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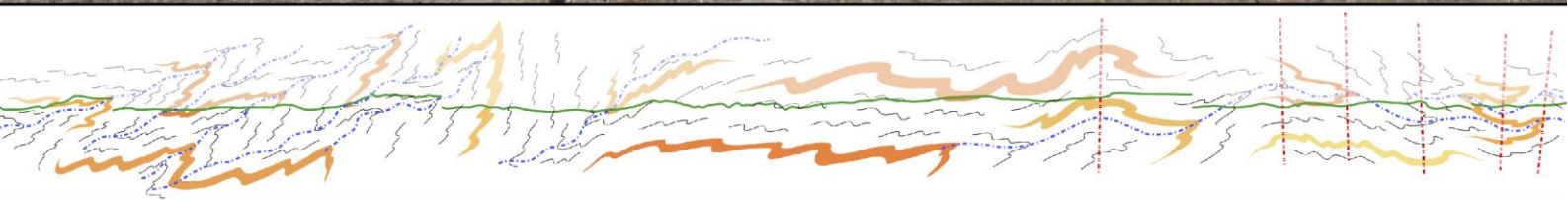
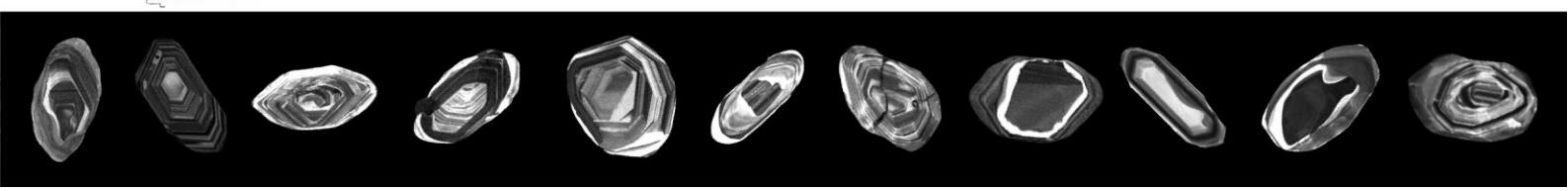
Pre- and syn-orogenic evolution of the Variscan Moroccan Mesetas

Cristina Accotto





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La pietra antica non emette suono
Ma parla come il mondo e come il sole
Parole troppo grandi per un uomo.

Francesco GUCCINI
Radici

Saper leggere il libro del mondo
Con parole cangianti e nessuna scrittura

Fabrizio DE ANDRÈ
Khorakhané (a forza di essere vento)

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Acknowledgments

This Ph.D. Thesis is the result of the work I carried out during the last four years. When I look back at the first paper we published I can see how much I have evolved as a geologist, and many (and from many countries) are the people I want to acknowledge for helping me in this process and allowing me to grow professionally and as a person.

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Abstract

The Rheic Ocean was formed by the early Paleozoic drifting of Avalonian (Amazonian-type) terranes from northwest Gondwana. These terranes docked with Laurentia and Baltica during middle Paleozoic time (Acadian/Caledonian orogeny) forming Laurussia. The late Paleozoic Variscan/Alleghanian orogeny resulted from the closure of the Rheic Ocean and the subsequent collision among Laurussia, Gondwana and a number of peri-Gondwanan terranes. In the European portion of the Variscan belt, the Rheic suture is considered to run from Poland to SW Iberia, separating Avalonian terranes to the west from Gondwanan terranes to the east, although true Rheic Ocean ophiolites have not been found yet. To the south, the Rheic suture might reappear in the Mauritanides. In between, the northern Moroccan Variscides, which include the Moroccan Mesetas, are considered part of the northern Gondwana margin involved in the Variscan orogeny, although the trace of the Rheic suture is uncertain or even nonexistent.

This Ph.D. Thesis investigates the Paleozoic Moroccan Mesetas, with focus on: (i) sediment provenance according to U-Pb and Hf isotopic analyses on detrital zircon grains, and (ii) the Variscan evolution based on detailed structural analysis of selected areas. The obtained results shed light on: (i) the pre- and syn-orogenic Paleozoic paleogeography, (ii) the Eo-Variscan tectonics, and (iii) the possible location of the Rheic suture.

Detrital zircon grains from the pre-orogenic Cambrian-Devonian succession show the predominance of two populations peaked at c. 700-550 Ma (Cadomian/Pan-African orogenies) and c. 2.1 Ga (Eburnean orogeny) ages, and a general lack of Mesoproterozoic and late-Paleoproterozoic (c. 1.8-1.1 Ga) ages. These features are distinctive of the West African Craton (WAC), which therefore can be considered the main sediment source during early-middle Paleozoic time. A Stenian-Tonian (c. 1.0 Ga) detrital zircon population is locally present and points to distant and intermittent NE African sources (*e.g.*, Sahara Metacraton, Arabian-Nubian Shield). Finally, rift-related Cambrian-Ordovician volcanism provided locally abundant zircon grains in the Cambrian-Lower Ordovician succession. Altogether, these data suggest that the entire region belonged to the northern Gondwana passive margin, with paleogeographic continuity among the subdomains that are traditionally described within the Moroccan Mesetas.

The flysch-like Famennian-Tournaisian successions from the Tiflet (northern Western Moroccan Meseta) and Debdou-Mekkam (Eastern Moroccan Meseta) inliers show the presence of a Late Devonian (c. 370 Ma) detrital zircon population, accompanied by a noticeable number of Mesoproterozoic-late Paleoproterozoic (c. 1.8-1.1 Ga) grains. These ages, unknown in the WAC, could have been provided by an active Avalonian (Amazonian-type) arc approaching the northern Gondwana margin during the Rheic Ocean closure.

The appearance of these exotic detrital zircon populations was immediately followed by an Eo-Variscan intense deformational phase that has been studied in the Debdou-Mekkam region. In these inliers, a thick Famennian-Tournaisian succession is strongly deformed by folds that are tight to isoclinal, overturned to recumbent, have SE regional vergence, and are associated with axial-planar cleavage. The reconstructed folded structure implies an important NW-SE shortening, which is interpreted as the result of a frontal SE-directed push of the Avalonian promontory. Accordingly, the Rheic suture would be concealed in between this Avalonian promontory and the Gondwanan margin. Lateral correlatives of the suture are likely found (i) to the north at the boundary between the Ossa-Morena and South Portuguese Zones, and (ii) to the west in the late Variscan thrust which superposed the Caledonian Sehoul Block onto the Western Moroccan Meseta.

The post-Eo-Variscan succession also shows a WAC affinity, with variable record of NE African and Avalonian sources and local Variscan granitoids sources.

Resumen

El Océano Rheico se formó por la separación de terrenos Avalonianos (de tipo Amazónico) del borde noroeste del continente Gondwana. Tales terrenos colisionaron con Laurentia y Báltica durante el Paleozoico medio dando lugar a la orogenia Acadiense/Caledoniana y a la formación del continente Laurrusia. Durante el Paleozoico superior, el cierre del Océano Rheico y posterior colisión entre Laurrusia, Gondwana y una serie de fragmentos peri-Gondwánicos formó el orógeno Varisco/Apalachiano. En la parte europea de la cadena Varisca, la sutura Rheica discurre probablemente desde Polonia hasta el sudoeste de Iberia, separando terrenos Avalonianos al oeste y terrenos Gondwánicos al este, si bien no se conocen ofiolitas verdaderamente Rheicas. Más al sur, la sutura Rheica podría localizarse de nuevo en los Mauritánides. Entre ambas regiones, se sitúan los macizos Variscos del norte de Marruecos (incluyendo la Meseta Marroquí), que se interpretan como parte del margen septentrional de Gondwana involucrado en la orogenia Varisca, y donde se desconoce, si es que existe, la posición de la sutura Rheica.

La presente Tesis Doctoral investiga el Paleozoico de la Meseta Marroquí, prestando especial atención a: (i) la procedencia de sedimentos mediante el análisis sistemático de los isotopos de U-Pb y Hf de poblaciones de circones detríticos, y (ii) la evolución Varisca mediante el estudio estructural detallado de algunos sectores clave. Los resultados obtenidos constituyen un avance importante en el conocimiento de: (i) la paleogeografía Paleozoica pre- y sin-orogénica, (ii) la tectónica Eo-Varisca, y (iii) la posible situación de la sutura Rheica.

Los circones detríticos de la sucesión pre-orogénica (Cámbrico-Devónico) se agrupan en dos poblaciones principales con edades de c. 700-550 Ma (orogenia Cadomiense/Pan-Africana) y c. 2.1 Ga (orogenia Eburniense), y no existen apenas circones Mesoproterozoicos o tardi-Paleoproterozoicos (c. 1.8-1.1 Ga). Tal distribución de edades es representativa del Cratón Africano Occidental, el cual sería por tanto la fuente principal de sedimentos en la Meseta Marroquí durante del Paleozoico inferior y medio. Además, algunas muestras tienen una población variable de edad c. 1.0 Ga (Esténico-Tónico inferior), cuya fuente, relativamente lejana y con aportes detríticos intermitentes, puede estar en los cratones del noreste de Africa (Metacratón del Sáhara, Escudo de Arabia-Nubia). Por último, circones detríticos de edad Cambro-Ordovícico inferior constituyen poblaciones significativas en algunas muestras de esa misma edad, y se relacionan con la existencia de actividad volcánica local durante un episodio de rifting continental. En conjunto, todos los datos disponibles sugieren que la Meseta Marroquí formó parte de un único margen continental pasivo desarrollado en el norte de Gondwana, habiendo existido continuidad paleogeográfica entre los distintos sub-dominios en los que tradicionalmente se ha subdividido la Meseta Marroquí.

La sucesión Fameniense-Tournaisiense de Tiflet (borde septentrional de la Meseta Occidental Marroquí) y Debdou-Mekkam (Meseta Oriental Marroquí) incluye, además de las dos poblaciones dominantes en las sucesión Cambro-Devónica, circones detríticos del Devónico superior (c. 370 Ma, con valores de ε_{Hf} positivos) y del Mesoproterozoico-Paleoproterozoico superior (c. 1.8-1.1 Ma). Tales edades se desconocen en el Cratón Africano Occidental. Estos circones exóticos podrían provenir de la erosión de un arco magmático Devónico desarrollado sobre un basamento Avaloniano, durante su aproximación al margen de Gondwana al final del cierre del Océano Rheico.

Tras el cierre del Océano Rheico, tuvo lugar un episodio de intensa deformación Eo-Varisca, que ha sido estudiada en la región de Debdou-Mekkam. Aquí, la sucesión Fameniense-Tournaisiense, de gran espesor y carácter flyschoide, está deformada por pliegues con foliación de plano-axial, cuya vergencia regional es hacia el sudeste y sus geometrías isoclinales, volcadas y recumbentes. El tren de pliegues reconstruido implica un importante acortamiento de orientación NO-SE, que se interpreta como el resultado del empuje frontal hacia el sudeste de un promontorio Avaloniano. Por tanto, la sutura Rheica se localizaría de manera críptica entre este promontorio avaloniano y el margen de Gondwana. La sutura continuaría hacia el norte a lo largo del límite entre la Zonas de Ossa-Morena y Sud-Portuguesa, y hacia el oeste estaría oculta bajo el cabalgamiento que superpuso el Bloque Caledoniano de Sehoul sobre La Meseta Occidental Marroquí.

Los circones detríticos de la sucesión post-Eo-Varisca de la Meseta Marroquí también muestran afinidad con el Cratón Africano Occidental, más un registro variable procedente de fuentes Avalonianas y de granitos Variscos.

Chapter I

Introduction

1. Geographic location

The region that is the focus of this Ph.D. Thesis is located in the Moroccan Mesetas, northern Morocco, and consists of a roughly ENE-WSW elongated sector between the cities of Rabat (to the west), Khenifra (to the south), and Oujda (to the northeast; Figure 1.1). To the north, the Betic-Rif Alpine orogenic system separates the Moroccan Mesetas from the Variscan Iberian Massif; to the south, the High Atlas Alpine mountain range separates the Moroccan Mesetas from the Anti-Atlas region. The Moroccan Mesetas can be subdivided into two territories (Western and Eastern), separated by the moderately uplifted NE-SW trending Middle Atlas range that runs between the cities of Taza, to the NE, and Khenifra, to the SW.

The Eastern Moroccan Meseta extends from the Middle Atlas to Oujda, and is characterized by a wide plateau (c. 600 m a.s.l.) crosscut by the rivers Za and Moulouya, both draining toward the Mediterranean Sea. This plateau is locally interrupted by isolated massifs that can reach c. 1600 m a.s.l.

The Western Moroccan Meseta extends from the Middle Atlas to the Rabat-Casablanca Atlantic coast, with catchments draining westwards. It is characterized by moderately and variably elevated landscapes that gradually loose altitude westwards and are bounded to the north by the Fes-Rabat plain.

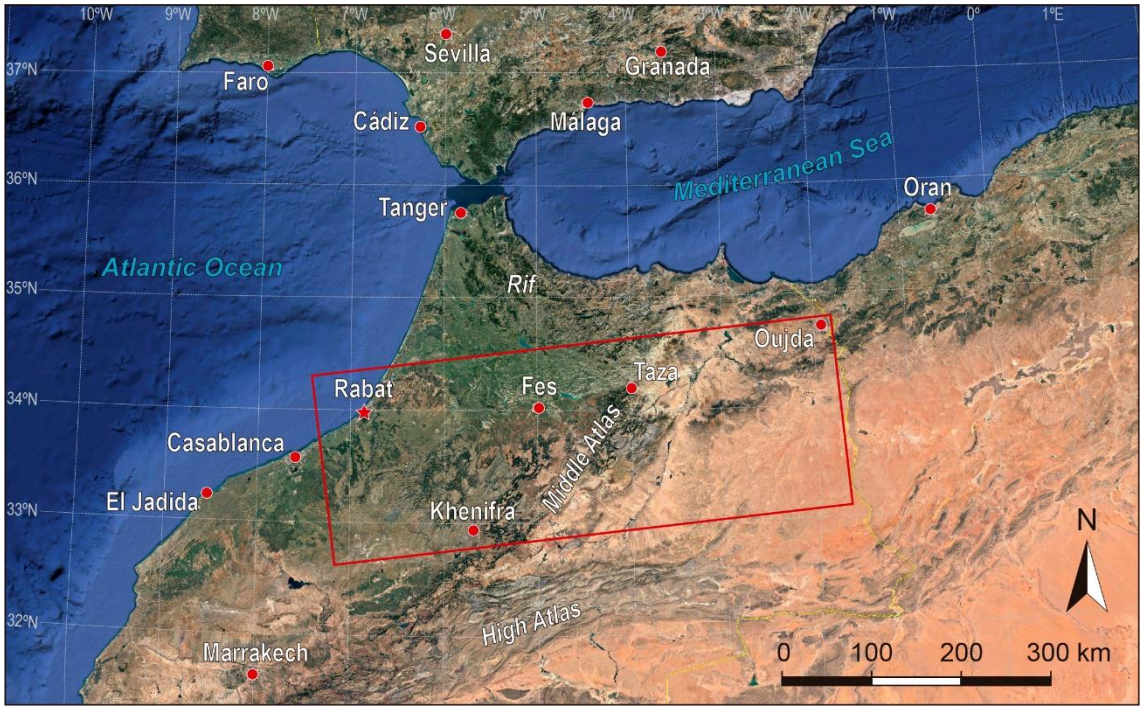

Figure 1.1. Approximate location of the studied region (red square). Satellite image: Landsat/Copernicus 2020 from Google Earth.

2. The Variscan-Appalachian belt

At the end of the Neoproterozoic era, the global geodynamic scenario included three main continents: Laurentia and Baltica, separated from Gondwana by the Iapetus and Tornquist Oceans, respectively (Figure 1.2a). Previously, the northern part of Gondwana was involved in the collisional Pan-African (Cryogenian-Ediacaran) and in the Cadomian Andean-type (Ediacaran) orogenies. After the cessation of the Cadomian subduction, an Early Paleozoic continental rift affected the northern margin of Gondwana. This rift culminated in the diachronous opening of the Rheic Ocean at Late Cambrian-Early Ordovician time (Nance et al., 2010, 2012), and in the drifting of a number of ribbon-like microcontinents, collectively referred to as peri-Gondwanan terranes. Some of these terranes drifted far away (*e.g.*, Avalonian terrane, derived from northwestern Gondwana; Figure 1.2b; *e.g.*, Nance et al., 2002); other terranes seem to have remained close to Gondwana (*e.g.*, Ossa-Morena, Armorica, Saxo-Thuringia terranes, derived from northwestern Gondwana), separated by minor oceanic realms.

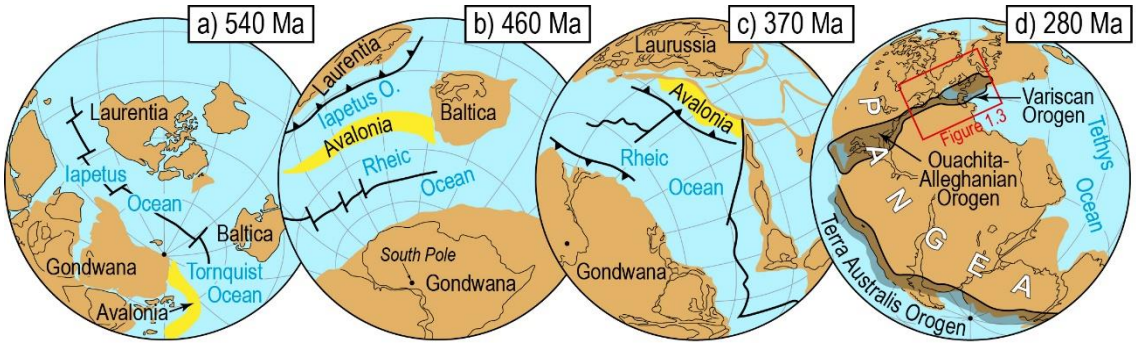

Figure 1.2. Paleogeographic reconstruction showing the opening and closure of the Rheic Ocean. Modified from Nance et al. (2010 and references therein).

The Early Paleozoic opening of the Rheic Ocean was coeval to the closure of the Iapetus Ocean (*e.g.*, Franke et al., 2017 and references therein; Nance et al., 2012 and references therein) which, in turn, resulted in the Silurian-Early Devonian collision between Avalonia, Baltica and Laurentia (Caledonian-Acadian orogeny). This collision also triggered the diachronous closure of the Rheic Ocean (Figure 1.2c; *e.g.*, Nance et al., 2010; 2012) that ended with the continental collision of northern Laurussia with northern Gondwana at Late Devonian-Early Carboniferous time (Variscan orogeny; *e.g.*, Kroner et al., 2007; Matte, 2001) and southern Laurussia with western Gondwana at Late Carboniferous-Permian time (Alleghanian orogeny; *e.g.*, Nance et al., 2012; Sacks and Secor, 1990). The final result was the formation of a huge orogenic belt and the assemblage of the supercontinent Pangea (Figure 1.2d and 1.3).

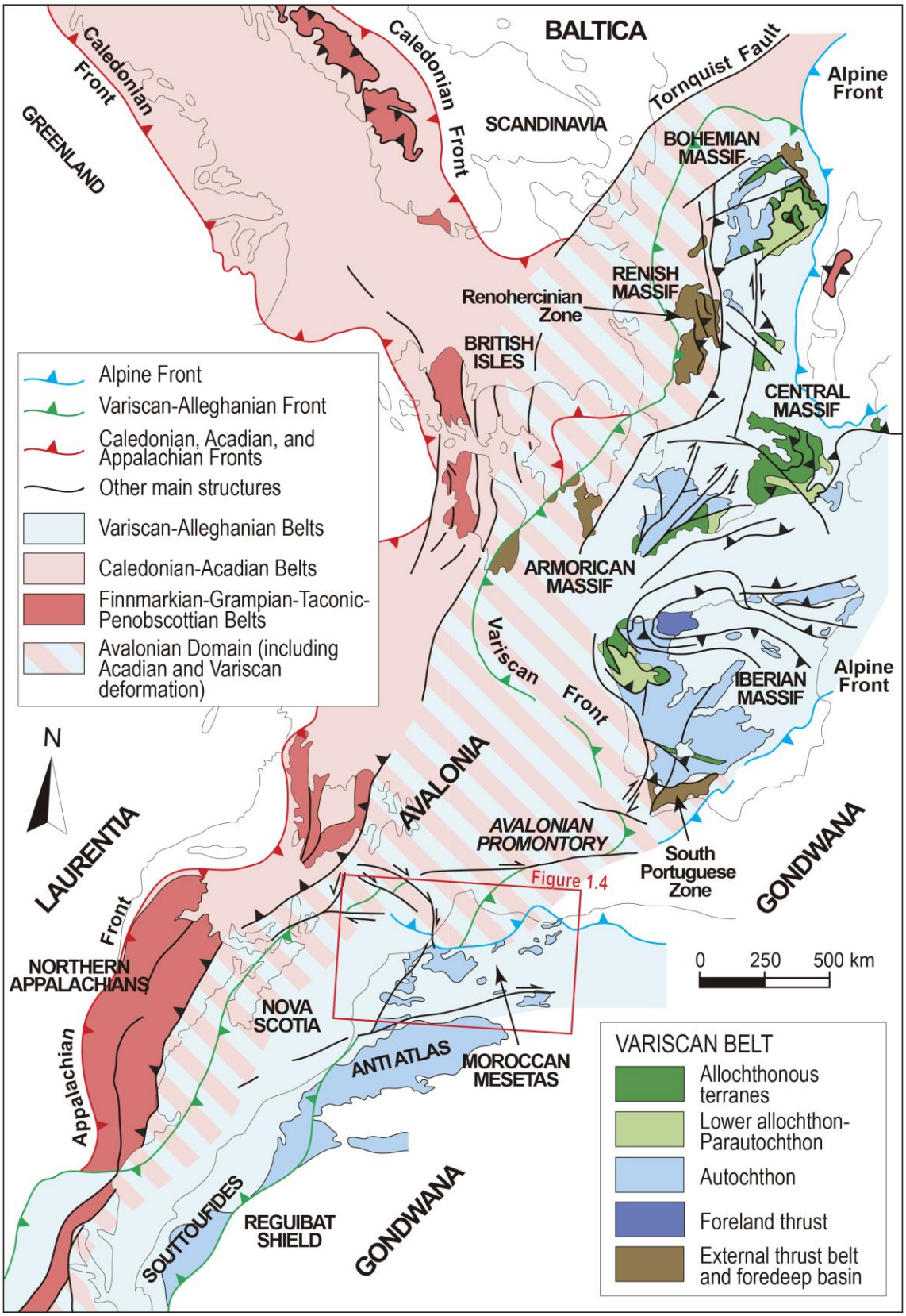

Figure 1.3. Large-scale reconstruction of the Variscan-Alleghanian and Caledonian belts at the end of the Paleozoic (modified from Martínez Catalán et al., 2002; Michard et al., 2010b; Simancas et al., 2009).

The paleogeographic and paleotectonic reconstructions of such a large and complex orogenic belt are still far from being well constrained, due to the uncertainty of correlating

the many continental pieces and ophiolitic/high-pressure units involved. The Variscan part of the belt, namely Variscides, extends from Central Europe to Morocco through Iberia (Figure 1.3). The northwestern orogenic front (the Laurussian foreland) is well defined from England to Germany, while the southeastern one (the Gondwanan foreland) is mostly obscured due to Alpine reworking, except in Morocco where it is exposed in the Anti-Atlas region.

In Europe, there is agreement on the Avalonian affinity of the Rheno-Hercynian and South Portuguese terranes (*e.g.*, Franke and Dulce, 2017; Linnemann et al., 2012; Pérez-Cáceres et al., 2017). The remaining Gondwana-derived continental pieces involved in the Variscan orogeny would have never drifted far away from Gondwana, having evolved either as ribbon microcontinents separated by minor oceanic realms from the mainland, or as aborted rifts and passive margins attached to it. The primary Rheic ocean suture should be located between the Avalonian and other peri-Gondwanan terranes, but it appears concealed by a superimposed and protracted Variscan tectonometamorphic imprint (*e.g.*, Franke et al., 2017; Pérez-Cáceres et al., 2017).

The continuation of the Rheic suture in the Moroccan Variscides is unclear and based on indirect data. This Ph.D. Thesis provides additional information with which to constrain the possible location of this suture in northern Morocco. Between the southwestern Iberian Variscides and the Mauritanides (located just to the south of the Souttoufides shown in Figure 1.3) there is no evidence of ophiolitic rocks and/or high-pressure metamorphic units, which would suggest the presence of the Rheic suture. However, several pieces of evidence suggest that an exotic (probably Avalonian) basement occurs to the north and west of the Moroccan Mesetas. To the north, the Sehoul Block (Figure 1.4; see below) recorded a Caledonian deformation (Tahiri et al., 2010) not recognized in the remaining Moroccan Mesetas. To the west, some Mesoproterozoic (c. 1.45-1.18 Ga) and late Paleoproterozoic (c. 1.95-1.65 Ga) zircon and monazite grains were recently reported (El Haibi et al., 2020; Kuiper et al., 2019) in igneous rocks from the offshore Mazagan escarpment and the El Jadida coastal locality (Figure 1.4). To the south, Caledonian zircon populations were found (Bea et al., 2020; Gärtner et al., 2013) in the Souttouf massif (Figure 1.3). Finally, ophiolitic rocks (Villeneuve, 2008 and references therein) and Carboniferous eclogitic facies rocks (Le Goff et al., 2001) were described in the Mauritanides.

3. The northern Moroccan Variscides

In northern Morocco, the Paleozoic sequence affected by the Variscan orogeny (Moroccan Variscides) crops out in different domains (Figure 1.4) limited by fault zones, whose paleogeographic and tectonic importance is still a matter of debate (*e.g.*, Hoepffner et al., 2006; Michard et al., 2010a, 2010b; Simancas et al., 2009, 2010).

To the northwest, the Rabat-Tiflet Fault Zone (RTFZ) separates the Sehoul Block from the remaining Moroccan Mesetas. The Sehoul Block (in lilac in Figure 1.4) contains a

lower-middle Cambrian sequence of phyllites and metaquartzites strongly foliated at low-grade metamorphic conditions. The sequence is intruded by undeformed Late Devonian (c. 367 Ma) granitoids (Tahiri et al., 2010) which suggests a middle Paleozoic age , likely Caledonian (Silurian-Early Devonian), for the foliation. This deformation has not been observed in any other part of the northern Moroccan Variscides and, hence, the Sehoul Block is considered to be part of an exotic terrane (*i.e.*, Avalonian promontory; *e.g.*, Simancas et al., 2005) accreted to the northern Gondwanan margin during the Variscan orogeny (*e.g.*, Michard et al., 2010b and references therein; Tahiri et al., 2010).

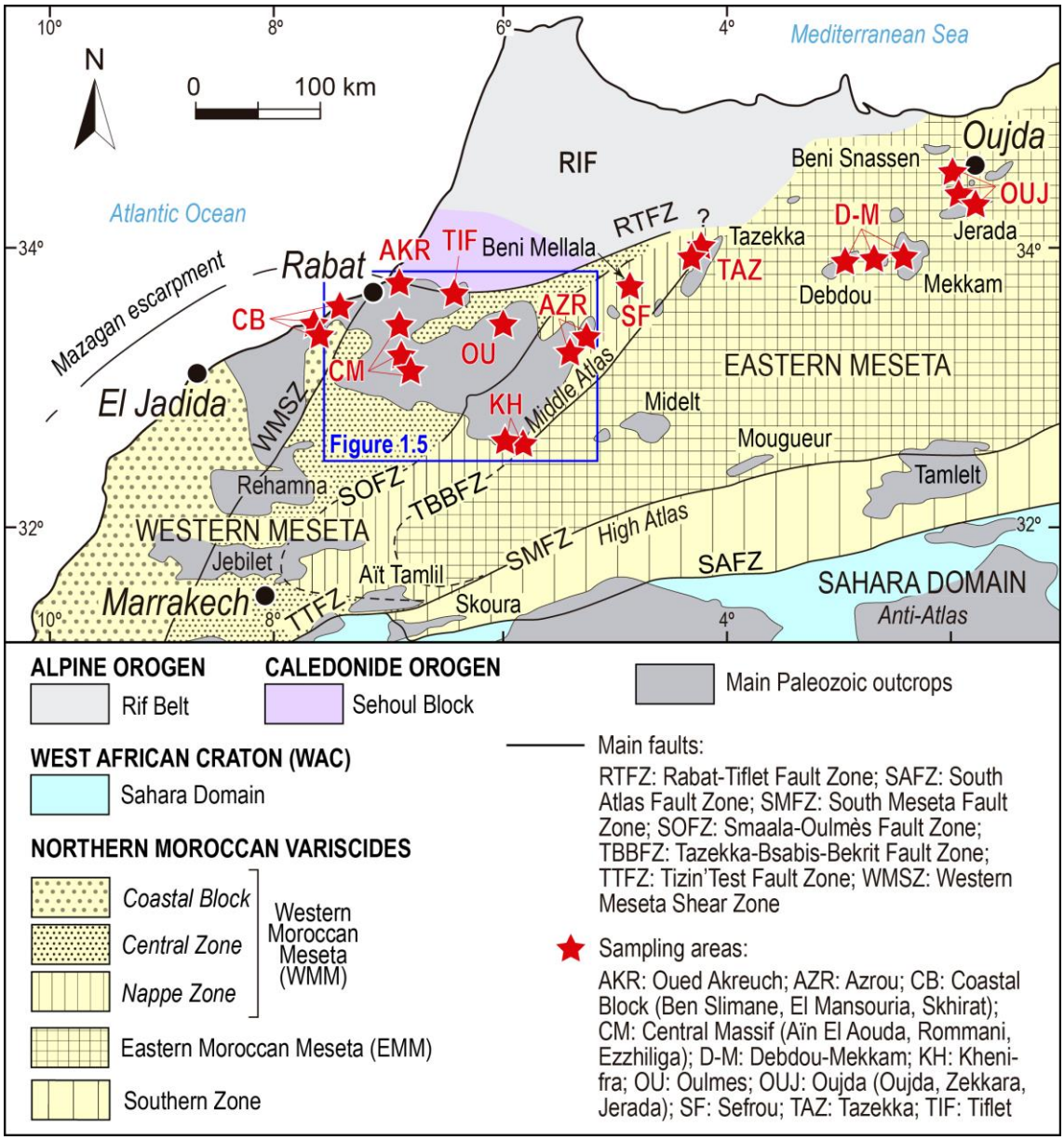

Figure 1.4. Map of the main structural domains and Paleozoic inliers in northern Morocco (modified from Hoepffner et al., 2006; Michard et al., 2010b).

The region that extends between the RTFZ to the north, and the South Meseta (SMFZ) and Tizin'Test (TTFZ) Fault Zones to the south corresponds to the Moroccan Mesetas

(Western and Eastern Mesetas; in yellow in Figure 1.4). These are the focus of this Ph.D. Thesis and are described in detail in the following subsections.

The SMFZ represents the northern limit of the Southern Zone (in yellow in Figure 1.4) which extends southwards up to the South Atlas Fault Zone (SAFZ). The Southern zone is made up of a Cambrian-Devonian siliciclastic and carbonatic platform sequence overlying a volcanic and volcanoclastic Neoproterozoic basement (Hoepffner et al., 2005 and references therein). During the Carboniferous, the sedimentation was turbiditic (Izart et al., 1989; Michard et al., 1982; Soualhine et al., 2003). There is no evidence of Variscan magmatism. The Variscan Pennsylvanian deformation formed E-W trending S-vergent folds and thrusts (Houari and Hoepffner, 2000, 2003). The metamorphism was of low- or very low-grade (Hoepffner et al., 2005).

The Sahara domain (in light blue in Figure 1.4), and in particular the Anti-Atlas, extends to the south of the TTFZ and SAFZ. On top of the Paleoproterozoic-Neoproterozoic basement, the metasedimentary sequence of this domain shows the passage from an Early Cambrian carbonatic platform to a more detrital shallow and epicontinental Early Ordovician platform. The Late Ordovician is marked by the deposition of glaciogenic deposits followed by Silurian transgressive black shales and carbonate platform deposits during the Early Devonian. The Late Devonian-Pennsylvanian period is characterized by mainly detrital sedimentation (Hoepffner et al., 2005 and references therein; Michard et al., 2010b and references therein). The Variscan structure consists of SW-NE to W-E trending upright open folds with no associated foliation. The intensity of the deformation gradually decreases southwards until the undeformed Tindouf Basin (Hoepffner et al., 2005; Michard et al., 2010b). Due to the style of the Variscan deformation, the Anti-Atlas is considered to represent the foreland of the Variscan belt.

3.1. The Western Moroccan Meseta

The Western Moroccan Meseta (WMM) extends from the Tazekka-Bsabis-Bekrit Fault Zone (TBBFZ) to the east, to the Atlantic coast to the west, and is bounded by the RTFZ to the north and the TTFZ and SMFZ, to the south. Within the WMM, three sub-domains were traditionally differentiated (Figure 1.4; Hoepffner et al., 2005 and references therein; Michard et al., 2010b and references therein): the Coastal Block, the Central Zone, and the Nappe Zone, separated by the Western Meseta Shear Zone (WMSZ) and the Smaala-Oulmes Fault Zone (SOFZ), respectively.

3.1.1. <u>The Coastal Block</u>

The Coastal Block is the westernmost sub-domain of the WMM and it is characterized by a Cambrian-Mississippian sedimentary sequence overlying a Precambrian basement. The latter is found in small outcrops of by Paleoproterozoic Eburnean rhyolites and rhyolitic porphyroids exposed in western Rehamna (Pereira et al., 2015), and

Neoproterozoic Cadomian rhyolites cropping out in El Jadida (El Haibi et al., 2020; El Houicha et al., 2018; Hoepffner et al., 2005 and references therein).

The base of the Paleozoic sequence is represented by lower Cambrian limestones. The carbonatic platform was interrupted during the middle Cambrian by the opening of a NNE-SSW oriented graben filled by a thick siliciclastic sequence that locally intercalates basaltic flows. This graben is the expression of an aborted rift branch associated with the opening of the Rheic Ocean (Bernardin et al., 1988; Ouali et al., 2003; Piqué, 2003, 1979; Piqué et al., 1995; Piqué and Michard, 1989). Two middle-late Cambrian volcanic centers are located in the El Jadida (Sidi Saïd Maâchou; Mohsine, 2002; Remmal et al., 2009) and the Ben Slimane (Oued Rhebar; El Attari et al., 2019; El Hadi et al., 2006b) areas.

The Early-Middle Ordovician detrital sedimentation returned to shallow platform conditions (Hammoumi, 1988), followed by Late Ordovician glacial deposits (Destombe and Jeannette, 1966). With the withdrawal of the glacial sheet during the Silurian period, the sedimentation in all the Moroccan Variscides became pelitic and represented by a sequence of black shales with graptolites. In the Coastal Block, these black shales are interbedded with Late Silurian carbonatic levels and, locally, basalt flows (Cornée et al., 1985; El Kamel et al., 1998).

The amount of limestones increased during Early Devonian with the establishment of a carbonatic platform that emerged during Middle-Late Devonian (Zahraoui, 1991). Finally, siliciclastic sedimentation resumed in new depocenters during the Famennian-Visean (Zahraoui, 1991). Postorogenic Triassic rocks (red shales and basalts) lie unconformably over the previous Paleozoic succession.

The Coastal Block is affected by weak Variscan deformation characterized by NNE-SSW trending upright folds, slaty cleavage, and weak metamorphism, which increases eastwards (*e.g.*, Hoepffner et al., 2005, 2006; Michard et al., 2010b; Piqué et al., 1980).

3.1.2. The Central Zone

The Ediacaran Cadomian basement of the Central Zone crops out locally in the Tiflet (El Haïbi et al., 2021; Tahiri et al., 2010), central Rehamna (Figure 1.4; Baudin et al., 2003; Pereira et al., 2015 and references therein), and Marrakech (Eddif, 2002) areas. On top of this basement, the Paleozoic sedimentary sequence starts with Cambrian limestones and slates, followed by a Tremadocian *hiatus*. The Ordovician sequence is very similar to the one on the Coastal Block, with shallow platform siliciclastic sediments followed by glaciogenic deposits. To the north, in the area adjacent to the Sehoul Block (Rabat-Tiflet, or Bou Regreg corridor; Figure 1.5), the Early-Middle Ordovician sedimentation is made up of shales with interbedded basalt flows and cross-cut by doleritic dykes; Late Ordovician rocks are missing (Piqué, 1979).

During the early Silurian, black shales with graptolites deposited, passing upwards to carbonatic facies at late Silurian time. In the Rabat-Tiflet area, the lower Silurian shales

are lacking and the upper Silurian limestones directly overlie the Middle Ordovician rocks.

The Devonian sedimentation in the Central Zone is mainly siliciclastic, and marked by a basin instability event (Cornée, 1989; Cornée et al., 1987a, 1987b; Hollard et al., 1982; Mayol and Muller, 1985) that ended with the development of the Ben Slimane and Sidi Bettache depocenters in the Late Devonian (Figure 1.5). These basins are filled with Famennian-Tournaisian coarse deposits (olistostromes) that laterally grade to sandstones and shales (El Hassani, 1990; Fadli, 1990; Izart et al., 2001; Piqué, 1979; Tahiri, 1991; Tahiri and Hoepffner, 1988).

The terrigenous sedimentation continued during the Visean-Serpukhovian, with the deposition of turbiditic shales, sandstones and greywackes with some conglomerate and limestone intercalations (Izart, 1991; Piqué, 1979). Moscovian alternation of lacustrine conglomerates and black limestones are found in some areas (eg. Sidi Bettache; Piqué, 1979), as well as unconformable Permian red conglomerates and volcanic rocks (Sidi Bettache and Oulmes areas; (Cailleux et al., 1986; El Wartiti, 1990; El Wartiti et al., 1990; Youbi et al., 1995). Finally, Triassic red shales and basaltic lavas unconformably overlie the previous successions (Destombe, 1987).

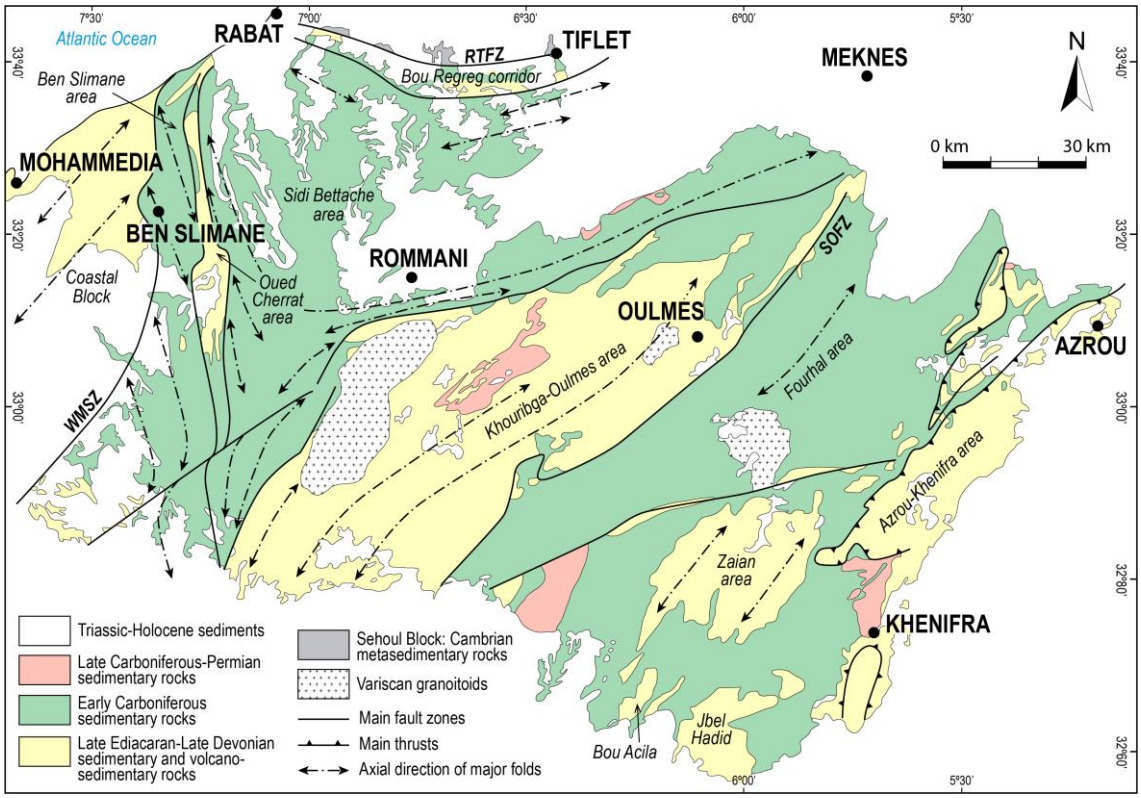

Figure 1.5. Simplified geological map of the Rabat-Khenifra region from the Coastal Block to the Nappe Zone (northern Western Moroccan Meseta). Modified from Becker and El Hassani (2020); RTFZ: Rabat-Tiflet Fault Zone; SOFZ: Smaala-Oulmes Fault Zone; WMSZ: Western Meseta Shear Zone.

The main Variscan deformation in the Central Zone took place during the Pennsylvanian/early Permian and developed variably oriented (polyphasic?) fold trains

(Figure 1.5;(Hoepffner et al., 2006, 2005). The attitudes of the axial planes in folds varies from mostly upright to moderate vergent towards diverse directions, and have associated slaty cleavage and very low- to low-grade regional metamorphism. K-Ar dating on neoformed mica grains yielded ages varying from 300 to 290 Ma (Huon et al., 1987).

A number of granitic bodies were also emplaced during the Late Carboniferous-Permian (El Hadi et al., 2006a and references therein). An exception to the moderate folding intensity and related weak metamorphism described above is found in the Rehamna and Jebilet massifs (Figure 1.4). In these massifs, a late- (post-?) Variscan medium-grade thermal imprint and intense ductile deformation were recognized and described (Chopin et al., 2014; Delchini et al., 2018; Wernert et al., 2016).

3.1.3. The Nappe Zone

The Nappe Zone is the easternmost sub-domain of the WMM, located between the SOFZ and the TBBFZ (Figure 1.4; Hoepffner et al., 2005). Most of the zone shares the features of the Central Zone, and only in the eastern part (Azrou-Khenifra) a remarkable west-directed thrust tectonics has been recognized (Figure 1.5; Ben Abbou et al., 2001; Michard et al., 2010b).

The Cadomian basement in the Nappe Zone crops out in small inliers located to the west of Khenifra: Bou Acila, Jebel Hadid, and Goaïda (Ouabid et al., 2017; Ouali et al., 2003), and is represented by granitoids and metavolcanic rocks with Ediacaran ages (U-Pb on magmatic zircons; Letsch et al., 2018; Ouabid et al., 2017). The Ediacaran basement is covered by lower Cambrian carbonatic levels that in Bou Acila are followed by a volcano-sedimentary sequence ascribed to the lower Cambrian (Ouali et al., 2003). In Goaïda, rift-related bimodal magmatic rocks (gabbros and rhyolites) that cross-cut the Ediacaran and Cambrian succession yielded ages varying from c. 519 to c. 479 Ma (U-Pb on magmatic zircons; Ouabid et al., 2020).

The Ordovician-Silurian metasedimentary sequence of the Nappe Zone is similar to the one described in the other sub-domains of the WMM, although more distal and deeper facies (shales and turbiditic deposits) are common here.

The Early Devonian time is characterized by an open carbonatic marine shelf (Chakiri, 2002; Piqué, 1979; Tahiri, 1991; Termier, 1936). In the autochthonous and para-autochthonous nappes, the Late Devonian sequence is representative of a shelf environment with gravitational deposits; the allochthonous sequence presents more distal turbiditic facies (Allary et al., 1976; Bouabdelli, 1989).

The Visean-Serpukhovian sequence unconformably overlies the previous ones (Bouabdelli, 1989). The latter is made up of shales and sandy or calci-turbidites with conglomeratic and olistrostromic deposits (Lahfid et al., 2019 and references therein), which mark an increase of the tectonic activity in the region. Synorogenic flysch sedimentation continued up to the Moscovian at the front of the nappes in the Azrou-Khenifra area (Ben Abbou et al., 2001).

Finally, during the Late Carboniferous, the Nappe Zone was deformed by NE-SW trending, upright to west-vergent folds in a similar way to the deformation in the Central Zone (Hoepffner et al., 2005, 2006). Neoformed mica grains yielded c. 330-320 Ma K-Ar ages (Huon et al., 1987). Furthermore, a pre-Visean (Eo-Variscan) folding event was recently described in the Zaian anticline located west of Khenifra (Lahfid et al., 2019). It consists of NW-SE to N-S trending upright to recumbent folds with related slaty cleavage formed at c. 300-350 °C, while the late Carboniferous folds only developed spaced cleavage formed at c. 150-250 °C (Lahfid et al., 2019).

3.2. The Eastern Moroccan Meseta

In the Eastern Moroccan Meseta (EMM; Figure 1.4) the outcrops of Paleozoic rocks are relatively small (not more than c. 1200 km^2) and isolated by the overlying Mesozoic-Cenozoic cover, which complicates the reconstruction of the pre-Mesozoic geology.

The Precambrian basement is not exposed in the EMM, where the oldest rocks are shales and greywackes attributed to the Cambrian based on their similarities with the Cambrian succession of the WMM (Hoepffner, 1987). Evidence of Cambrian magmatism is absent, except in Midelt (Figure 1.4) where outcropping amphibolites were interpreted as intraplate alkaline basalts (Ouali et al., 2000).

During Early-Middle Ordovician time (Hoepffner, 1977; Rauscher et al., 1982; Torbi, 1996), sandy pelitic rocks were deposited in a shallow marine environment, followed by Late Ordovician sandstones and quartzites, and by a Silurian pelitic succession of phtanites and black shales with graptolites (Hoepffner, 1987).

The late Silurian carbonatic levels and Early Devonian platform limestones, common in the WMM, are completely absent in the EMM. The Devonian sequence here is characterized by sandstones and shales, followed by a thick sequence of turbiditic shales and greywackes that crops out in the Debdou and Mekkam and eastern Tazekka (to the east of the TBBFZ) inliers (Hoepffner et al., 2005). Attempts to date these turbidites yielded Middle Devonian (palynomorphs; Marhoumi, 1984; Marhoumi et al., 1983) and Tournaisian-Visean (fragments of fossil plants; Médioni, 1980) ages.

A horizon of conglomerates unconformably overlies the Devonian (-Early Carboniferous?) turbiditic sequence, followed by Late Visean limestones (Berkhli et al., 1999; Huvelin and Mamet, 1989; Médioni, 1980). At late Visean-Serpukhovian time, a succession of olistotromic deposits made up of blocks of the lower-middle Paleozoic sequence (El Ghazi and Huvelin, 1981; Huvelin, 1986; Torbi, 1996), and a thick volcano-sedimentary sequence were put in place (Chalot-Prat, 1990; Hoepffner, 1981; Huvelin, 1986), the latter containing ignimbrites and andesitic, dacitic, and rhyolitic flows.

Finally, late Serpukhovian-early Kasimovian sedimentation is recorded only in the easternmost areas of the EMM, where shales and greywackes are found (Desteucq et al., 1988; Essamoud and Courel, 1998; Izart, 1991; Torbi, 1996). Triassic red shales and basalts unconformably overlie the Late Carboniferous succession.

At least two folding events were described in the EMM: Eo-Variscan (Late Devonian-early Carboniferous) and Variscan (late Pennsylvanian). In the Tazekka area, a Visean deformational event was also recognized (Hoepffner et al., 2005, 2006; Michard et al., 2010b and references therein).

The Eo-Variscan phase is characterized by intense folding and the development of pervasive slaty cleavage particularly well defined in the Midelt, Debdou-Mekkam, and eastern Tazekka inliers. Hoepffner (1987) described these structures as west-vergent, although structural maps and cross-sections were not provided. The metamorphism associated with these structures was generally of low-grade, except in Midelt where it reached greenschist to amphibolite grade conditions (Hoepffner et al., 2005, 2006; Michard et al., 2010b and references therein). The Late Devonian age of the Eo-Variscan phase was determined in Midelt as being c. 366 Ma (Rb-Sr; Clauer et al., 1980), while in the Tazekka area (to the east of the TBBFZ) the slaty cleavage formed at low-grade metamorphic conditions dated c. 330 Ma (K-Ar; Huon et al., 1987). In the Debdou-Mekkam inliers (Figure 1.4) K-Ar analyses on neoformed mica grains gave ages ranging from c. 372 and c. 368 Ma (Huon et al., 1987). This Ph.D. Thesis provides new structural maps and cross-sections which support a re-interpretation of the structure of this region.

The Variscan event deformed the Cambrian-Carboniferous succession with NE-SW to E-W trending open folds, described as north-vergent (Erraji, 1997; Hoepffner, 1987; Hoepffner et al., 2005, 2006), and associated with spaced cleavage and very low- to low-grade metamorphism dated c. 300 Ma (K-Ar; Huon et al., 1987). Numerous granitoid bodies were emplaced from Visean to Permian times (El Hadi et al., 2006a and references therein).

4. Aims and structure of the Ph.D. Thesis

The northern Moroccan Variscides have been extensively studied in terms of stratigraphy and classical igneous petrology. Modern structural and geochronological studies are scarce and mainly focused on discrete areas of the WMM (*e.g.*, Rehamna, Jebilet, Göaida). As for U-Pb detrital zircon geochronology, the beginning of this work coincided with the first published studies on early Paleozoic rocks of the WMM (El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018; Pérez-Cáceres et al., 2017).

This work is organized as a compendium of papers focused on the detrital zircon provenance analysis and paleogeographic reconstruction of the northern margin of Gondwana in the Moroccan Mesetas at pre-Variscan (Chapter II; Accotto et al., 2019, in press, submitted) and syn-/post-Variscan (Chapters III and IV; Accotto et al., 2020, 2021) times.

From a tectonic point of view, the Variscan structure of the WMM is relatively well known (although still far from fully understood) and seems to be rather simple. On the contrary, similar studies focused on the EMM are very scarce in comparison (Hoepffner, 1989, 1987). In particular, some inliers of the EMM record a clear polyphasic Variscan

evolution (*e.g.*, Debdou-Mekkam, Tazekka, Midelt), evidenced by a refolded Eo-Variscan pervasive foliation, that had not been previously investigated using modern structural approaches. Chapter III of this Thesis contains new structural data collected in the Debdou-Mekkam inliers. In this latter area, an extensive structural field work was carried out, complemented with detrital zircon geochronology, which allowed for the formulation of a new proposed tectonic evolution of the region (Accotto et al., 2020).

Finally, Chapter V summarizes the conclusions obtained in this Thesis and makes references to a few main issues suitable for future research in the Moroccan Mesetas.

Supplementary materials cited in this work are collected in the Appendix.

5. Methodologies

In order to achieve the aims described in the previous section, the following methodologies were applied:

- Detailed field structural work, including observations at the microscale (thin sections).
- U-Pb geochronology on detrital zircon grains from 46 samples (Table 1.1) of the Cambrian-Carboniferous succession of the Moroccan Mesetas (Figure 1.4). Zircon grains were extracted and imaged by standard procedures. Most of the analyses were carried out using laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS) in the laboratory of the John de Laeter Centre (JdLC) of the Curtin University (Perth, Australia). Nevertheless, many detrital zircon grains were too small to be analyzed with this technique, therefore they were studied using sensitive high-resolution ion microprobe (SHRIMP; JdLC, Curtin University) or secondary ion mass spectrometry (SIMS; University of Edinburgh, UK).
- Hf analyses on selected samples characterized by peculiar detrital zircon populations; these analyses were carried out in the JdLC of the Curtin University.

Furthermore, part of this Thesis was carried out during two internships in foreign institutions:

- *Laboratoire de Géodynamique des Chaînes Anciennes*, Department of Geology of the Faculty of Science Ben M'sik, University Hassan II of Casablanca (Morocco).
- Colorado School of Mines, Golden (Colorado, USA).

The interaction with experts of these two institutions working on the tectonic evolution of the Variscan/Appalachian belt has been significant for the development of the interpretations proposed in this Ph.D. Thesis.

Table 1.1. List of the samples.

Sample	IGSN (IEACC)	Location (UTM, NDAS 83)			Lithology	Stratigraphic age	Analyses	
		Zone	Lat. (m N)	Long. (m E)			U-Pb	Hf
COASTAL BLOCK (CB in Figure 1.4; see chapters II.3 and IV)								
SKH1	0011	29S	3748316	678921	Quartzitic sandstone	Visean	LA-ICPMS and SHRIMP	X
BES1	0009	29S	3720500	674467	Quartzitic sandstone	Visean	LA-ICPMS	X
BES2	0010	29S	3724273	671847	Quartzitic sandstone	Famennian	LA-ICPMS	-
MAN1	0040	29S	3735681	3735681	Quartzitic sandstone	Early Ordovician	LA-ICPMS	-
TIFLET AREA (TIF in Figure 1.4; see chapter IV)								
TIF1	0016	29S	3752612	750380	Sandstone	Tournaisian	LA-ICPMS	X
TIF2	0017	29S	3752611	750354	Sandstone	Tournaisian	LA-ICPMS	X
OUED AKREUCH AREA (AKR in Figure 1.4; see chapter II.3)								
AKR1	0038	29S	3757672	704231	Quartzitic sandstone	Late Ordovician	LA-ICPMS	-
AKR2	0039	29S	3757780	704321	Quartzitic sandstone	Early Ordovician	LA-ICPMS	-
CENTRAL MASSIF (CM in Figure 1.4; see chapters II.3 and IV)								
ROM1	0012	29S	37122830	719745	Sandstone	Visean	LA-ICPMS and SHRIMP	-
AOU1	0013	29S	3736131	708680	Sandstone	Visean	LA-ICPMS and SIMS	-
EZ7	0037	29S	3683869	735286	Quartzitic sandstone	Early Devonian	LA-ICPMS and SIMS	-
EZ1	0032	29S	3682713	733796	Quartzitic sandstone	Late Ordovician	LA-ICPMS and SHRIMP	-
EZ2	0033	29S	3682624	733776	Quartzitic sandstone	Late Ordovician	LA-ICPMS	-
EZ5	0035	29S	3682849	737554	Quartzitic sandstone	Late Ordovician	LA-ICPMS	-
EZ6	0036	29S	3684150	739164	Quartzitic sandstone	Late Ordovician	LA-ICPMS	-
EZ4	0034	29S	3682341	737693	Quartzitic sandstone	Late-Mid. Ordovician	LA-ICPMS	-
OULMES AREA (OU in Figure 1.4; see chapters II.3 and IV)								
OU1	0014	30S	3731845	244382	Sandy shale	Late Visean	LA-ICPMS	-
OU4	0015	29S	3716170	777438	Quartzitic sandstone	Famennian	LA-ICPMS	-
OU5	0031	29S	3715910	777396	Sandstone	Early Devonian	LA-ICPMS	-
KHENIFRA AREA (KH in Figure 1.4; see chapter II.3)								
AZR10	0029	30S	3633628	233758	Quartzitic sandstone	Early-Mid. Ordovician	LA-ICPMS	X
AZR11	0030	30S	3643326	252046	Sandstone	Cambrian-Ordovician	LA-ICPMS and SIMS	-
AZROU AREA (AZR in Figure 1.4; see chapters II.1 and II.3)								
AZR7	0028	30S	3695342	271772	Quartzitic sandstone	Early Devonian	LA-ICPMS	-
AZR6	0027	30S	269001	3690998	Quartzitic sandstone	Devonian	LA-ICPMS	-

Table 1.1 ***(continues)*****.**

Sample	IGSN (IEACC)	Location (UTM, NDAS 83)			Lithology	Stratigraphic age	Analyses	
		Zone	Lat. (m N)	Long. (m E)			U-Pb	Hf
AZROU AREA (AZR in Figure 1.4; see chapters II.1 and II.3)								
AZR5	0026	30S	268951	3692089	Quartzitic sandstone	Devonian	LA-ICPMS	-
AZR4	0025	30S	267866	3692882	Quartzitic sandstone	Devonian	LA-ICPMS	-
AZR2	0024	30S	296820	3705220	Quartzitic sandstone	Late Ordovician	LA-ICPMS	-
AZR1	0023	30S	3821747	574362	Quartzitic sandstone	Late Ordovician	LA-ICPMS and SIMS	-
SEFROU AREA (SF in Figure 1.4; see chapter II.2)								
SF1	0006	30S	321855	3746816	Quartzitic sandstone	Late Ordovician	LA-ICPMS	-
SF2	0007	30S	321334	3747211	Quartzitic sandstone	Early-Mid. Ordovician	LA-ICPMS and SIMS	-
SF3	0008	30S	320976	3747518	Quartzitic sandstone	Early-Mid. Ordovician	LA-ICPMS and SHRIMP	-
TAZEKKA AREA (TAZ in Figure 1.4; see chapter II.1)								
TAZ6	0044	30S	373058	3765756	Quartzitic sandstone	Silurian	LA-ICPMS	-
TAZ5	0043	30S	373058	3765756	Quartzitic sandstone	Silurian	LA-ICPMS	-
TAZ3	0042	30S	381775	3773906	Sandstone	Late Ordovician	LA-ICPMS and SHRIMP	-
TAZ2	0041	30S	380945	3774869	Sandstone	Late Ordovician	LA-ICPMS and SHRIMP	-
DEBDOU-MEKKAM AREA (D-M in Figure 1.4; see chapter III)								
MIM2	0004	30S	3763408	509359	Quartzitic sandstone	Famennian-Tournaisian	LA-ICPMS	-
DEB2	0005	30S	3754573	486535	Greywacke	Famennian-Tournaisian	LA-ICPMS	X
OUJ13	0003	30S	3775692	533485	Quartzitic sandstone	Famennian-Tournaisian	LA-ICPMS	X
OUJ11	0002	30S	3764944	536550	Arkose	Famennian-Tournaisian	LA-ICPMS	X
OUJ10	0001	30S	3764944	536550	Arkose	Famennian-Tournaisian	LA-ICPMS	X
OUJDA AREA (OUJ in Figure 1.4; see chapters II.1, II.3, III, and IV)								
OUJ18	0019	30S	3796505	587288	Sandstone	Late Carbonif.	LA-ICPMS and SIMS	X
OUJ19	0020	30S	3796474	587262	Sandstone	Late Carbonif.	LA-ICPMS	X
OUJ16	0018	30S	3796135	587342	Sandstone	Middle Carbonif.	LA-ICPMS	X
OUJ2	0045	30S	582303	3834439	Quartzitic sandstone	Late Ordovician	LA-ICPMS	-
OUJ3	0046	30S	582303	3834439	Arkose	Late Ordovician	LA-ICPMS	-
OUJ5	0021	30S	3821747	574362	Greywacke	Early-Mid. Ordovician	LA-ICPMS	-
OUJ6	0022	30S	3821747	574362	Greywacke	Early-Mid. Ordovician	LA-ICPMS	-

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Chapter II

The pre-orogenic evolution of the Moroccan Mesetas

This chapter is focused on the geochronological analyses on detrital zircon grains from Cambrian-Early Devonian rocks of the Moroccan Meseta. This aim was achieved in three papers focused on (i) the first data from the Eastern Moroccan Meseta, (ii) the Ordovician evolution of sources in the Nappe Zone (Western Moroccan Meseta), and (iii) an extensive comparison of data from the two Mesetas showing the evolution of the sources since Late Cambrian to Early Devonian.

Section II.1

Mixed and recycled detrital zircons in the Paleozoic rocks of the Eastern Moroccan Meseta: paleogeographic inferences

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Abstract

The paleogeographic evolution of the Moroccan Variscides has been a matter of discussion for several decades, with current theories mostly based on classical geological correlations. In this regard, the scarce number of studies devoted to U-Pb geochronological analyses of detrital zircon populations is particularly limiting when trying to ascribe the different domains to a single continental piece either derived from the West African Craton or to different sources, with some located in the Nubian Shield or the Saharan Metacraton. In this work, detrital zircon grains from 10 samples of sandstones from the Paleozoic (Ordovician to Devonian) sequence of the Eastern Meseta and Middle Atlas were dated in order to identify possible sediment sources and elucidate the paleogeography of this easternmost portion of the Moroccan Variscides. The main detrital zircon populations have Ediacaran-Cryogenian ages (610-670 Ma, related to the Cadomian and/or Pan-African orogeny) and middle Paleoproterozoic ages (1980-2080 Ma, related to the Eburnean orogeny), which are in agreement with previous data from the Western Meseta, suggesting similarity between both Mesetas, and strong West African Craton affinity. Such an affinity verifies the most accepted paleogeographic interpretation considering that the Moroccan Mesetas remained attached to northern Gondwana during the entire Paleozoic period. The main differences between our samples and those from the Western Meseta concern the minor detrital zircon populations, such as the Cambro-Ordovician and the Tonian-Stenian ones. In particular, Eastern Meseta and Middle Atlas samples lack a Cambro-Ordovician detrital zircon population, usually interpreted as related to the rifting that opened the Rheic Ocean. This population is locally reported in the Western Meseta and widely described in southwestern Europe, where magmatism of this age is well known. Furthermore, the most northeastern samples are also characterized by a Tonian-Stenian detrital zircon population (up to 30% of the data), which might imply northeastern African sources (Saharan Metacraton and/or Arabian-Nubian Shield).

Keywords

Eastern Moroccan Meseta, Paleozoic paleogeography, West African Craton, U-Pb geochronology, Zircon provenance

Highlights

- Ordovician-Devonian samples from Eastern Meseta and Middle Atlas were studied
- The main detrital zircon populations are Ediacaran-Cryogenian and Paleoproterozoic
- These detrital zircon populations suggest WAC affinity for the studied area
- The minor Tonian-Stenian population might be sourced in north-eastern Africa
- There is no evidence of the Cambro-Ordovician rifting in the studied region

1. Introduction

Zircon is a very common accessory mineral, formed in a wide range of magmatic and metamorphic rocks in orogenic crustal growth areas, and very commonly present in sedimentary detrital rocks, which combined with its strong physical and chemical endurance, make it a valuable tool for geochronological and paleogeographic studies (*e.g.*, Avigad et al., 2003; Fernández-Suárez et al., 2002; Linnemann et al., 2004). Detrital zircon grains in sedimentary rocks might have survived a number of sedimentary cycles, preserving primary source signatures. In addition, technological improvements in analytical methods (*e.g.*, LA-ICPMS, SHRIMP) have permitted a wide application of detrital zircon geochronology in paleogeographic and geodynamic reconstructions (*e.g.*, Fedo et al., 2003), carried out by comparing statistically meaningful detrital zircon age populations with those of possible source areas. This technique has been widely applied to Variscan terranes in central and southern Europe (*e.g.*, Braid et al., 2011; Fernández-Suárez et al., 2014; Linnemann et al., 2004, 2008; Pereira et al., 2017; Pérez-Cáceres et al., 2017; Shaw et al., 2014), but only a few works have focused on the Moroccan Meseta Variscides (ensemble of the Variscan domains cropping out in Morocco; *e.g.*, El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018; Pérez-Cáceres et al., 2017).

A magmatic arc was active in the northern margin of the Gondwanan continent during Ediacaran times (*i.e.* Cadomian orogeny). Later, a new Wilson cycle began with the fragmentation of Gondwana during the Cambro-Ordovician rifting that preceded the opening of the Rheic Ocean and the drifting of Gondwana-derived terranes (Franke et al., 2017; Matte, 2001; Murphy et al., 2004; Nance et al., 2012). During the Devonian, subduction narrowed the Rheic Ocean, culminating in continental collision during Carboniferous times (Variscan-Alleghanian orogeny). On a broad scale, this collision involved the northern margin of Gondwana and the southern margin of Laurussia (already docked Gondwana-derived terranes, Laurentia and Baltica), leading to the assembly of the Pangea supercontinent (Franke et al., 2017; Matte, 2001; Nance et al., 2012).

The northwestern African Variscides are considered the southern termination of the Variscan Belt (Matte, 2001), and usually divided into six structural domains (Figure 2.1A; Hoepffner et al., 2006): (i) the Sehoul Block, or Caledonian block, characterized by a Caledonian tectonothermal imprint (Michard et al., 2010b; Simancas et al., 2005; Tahiri et al., 2010) and juxtaposed with the Moroccan Meseta domains along the Late-Variscan Rabat-Tiflet Fault Zone; (ii) the Coastal Block (considered the western part of the Western Meseta *s.l.*; Michard et al., 2010b), weakly deformed by the Variscan orogeny and limited to the east by the Western Meseta Shear Zone; (iii) the Central zone of the Western Meseta, deformed by fold and thrusts and bounded to the east by the so-called Nappe Zone and the Tazekka-Bsabis-Bekrit Fault Zone (TBBFZ), located in the Middle Atlas (Michard et al., 2010b); (iv) the Eastern Meseta domain, characterized by small and variably deformed Paleozoic outcrops; (v) the Southern Zone (Hoepffner et al., 2006; Michard et al. 2008), bounded to the north by the Atlas Paleozoic Transform Zone (APTZ) and to the south by the South Moroccan Variscan Front (SMF), which separates the Variscan domains from the almost undeformed Anti-Atlas foreland (Figure 2.1A);

and (vi) the Mauritanides belt (Villeneuve, 2008), located west of the West African Craton (WAC) and extending from southern Morocco to Senegal (not represented in Figure 2.1A).

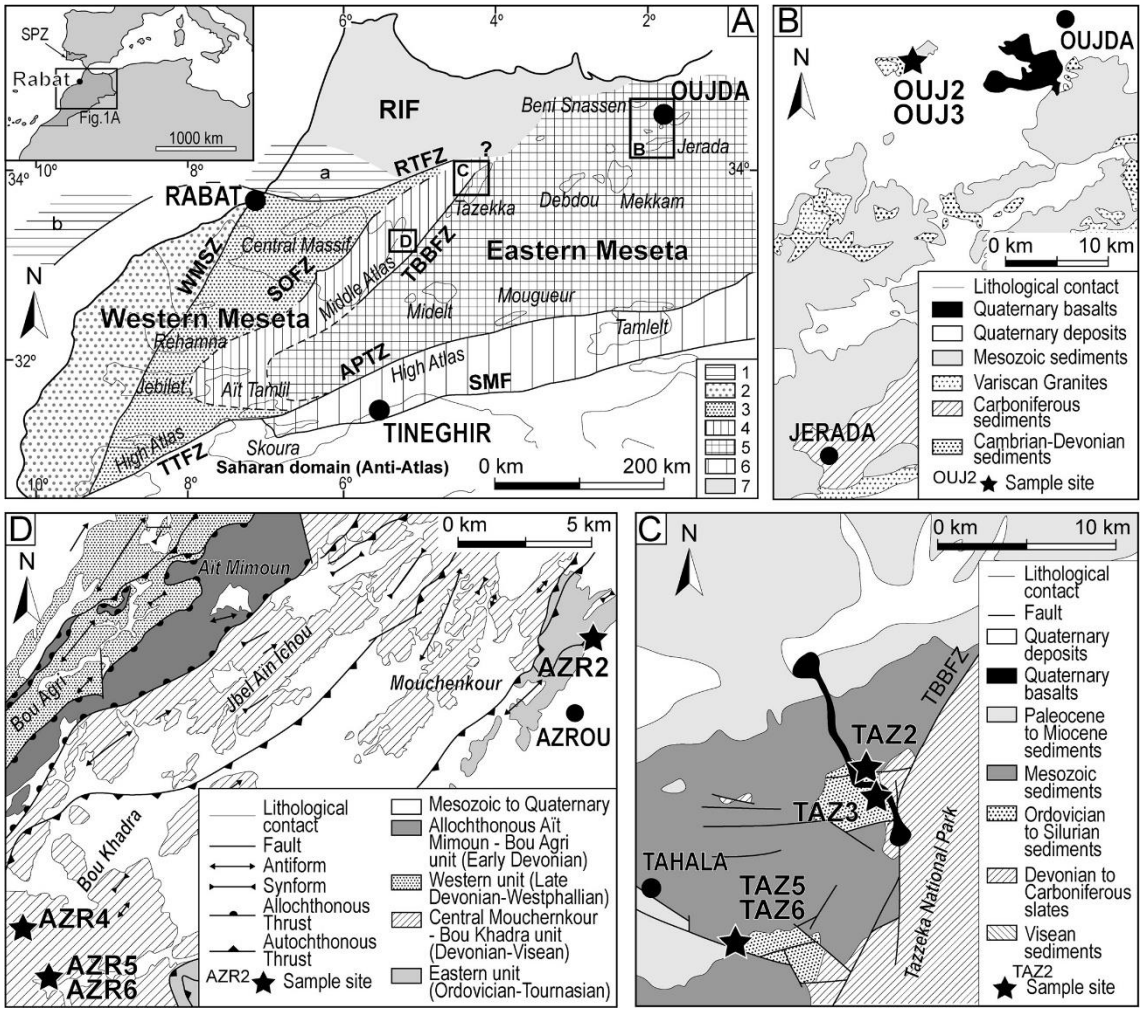


Figure 2.1. Geological maps of the northwestern African Variscides with sampling areas. (A) Structural domains (modified from Hoepffner et al., 2006; Michard et al., 2010b). 1: Sehoul Block (a) and Mazagan escarpment (b); 2: Coastal Block; 3: Central zone; 4: Nappe Zone; 5: Eastern Meseta; 6: Southern Zone; 7: Rif Belt. Main structural features: Rabat-Tiflet Fault Zone (RTFZ); Western Meseta Shear Zone (WMSZ); Smaala-Oulmès Fault Zone (SOFZ); Tazekka-Bsabis-Bekrit Fault Zone (TBBFZ); Atlas Paleozoic Transform Zone (APTZ); South Moroccan Front (SMF); Tizin'Test Fault Zone (TTFZ); SPZ: South Portuguese Zone. Black boxes refer to the detailed geological sketches of the sampling areas: (B) Oujda area (after Kharbouch et al., 1989); (C) Tazekka area (after Vidal and Hoepffner, 1979); (D) Azrou area (after Bouabdelli et al., 1989).

The pre-Variscan paleogeographic evolution of the Moroccan Mesetas was studied by several authors (*e.g.*, El Hassani et al., 2003; Hoepffner et al., 2006; Michard, 1976; Michard et al., 1989, 2010a, 2010b; Piqué, 2001; Piqué and Michard, 1981, 1989; Simancas et al., 2005, 2009; Walliser et al. 1995, 2000), who suggested that they were part of the northern margin of Gondwana because of the stratigraphic similarity that they share with other autochthonous Gondwanan domains (*e.g.*, Anti-Atlas Variscan foreland; Figure 2.1A). Further evidence supporting this paleogeographic attribution is the absence of Variscan ophiolitic and/or high-pressure metamorphic rocks indicating the presence of

suture zones separating the Moroccan Meseta domains and the foreland (Michard et al., 2010a, 2010b; Simancas et al., 2009). From Cambrian to Devonian times, the entire region was a passive margin (Hoepffner et al., 2005, 2006; Michard et al., 2010b; Piqué, 2001) characterized, from a stratigraphic point of view, by mainly Cambrian-Silurian detrital sequences with some hiatuses, *e.g.,* the regression tied to the Late Ordovician glaciation (Le Heron, 2007; Le Heron et al., 2009). The stratigraphic sequences of the Moroccan Meseta domains began to differentiate during the Devonian, which is characterized by reefal platform facies in the Western Meseta, and by more basinal facies in the Eastern Meseta (Hoepffner et al., 2005, 2006; Michard et al., 2010b; Piqué, 2001). From a structural point of view and according to Michard et al. (2010b), the Moroccan Meseta domains were originally separated by narrow Early Paleozoic thinned-crust zones, probably related to incipient intra-continental rifting, which were later reactivated as shear zones during the Variscan orogeny. To the south, the Moroccan Meseta domains were separated from the Anti-Atlas foreland by a major intra-continental fault corresponding to the SMF, a polyphasic crustal-scale flower-structure characterized by dextral transpressive kinematics (Houari and Hoepffner, 2003) with a minimum offset of tens of kilometers (Michard et al., 2010b).

In this context where different domains are recognized, detrital zircon dates become a helpful tool to identify the main source areas of the sediments and, therefore, their paleogeographic affinities. In particular, the WAC affinity is usually characterized by Ediacaran-Cryogenian and Paleoproterozoic peaks, as well as a general Mesoproterozoic gap in the age distribution pattern. However, it must be noticed that detrital zircon populations of this age (1.0-1.5 Ga) were locally described by Bradley et al. (2015) in the Ediacaran clastic sequences unconformably overlying the western part of the WAC basement in Mauritania. The source of these Mesoproterozoic detrital zircons is unlikely the WAC basement, since primary sources of that age are unknown in the WAC, and relevant Mesoproterozoic detrital zircon populations have not been detected in Ediacaran/Paleozoic sediments located to the North of the WAC and derived from it (see below). Therefore, suitable sources for these Mesoproterozoic zircons could be the Amazonian basements adjoining western Gondwana at Ediacaran time.

In the Moroccan Variscides north of the WAC, most of the previous detrital zircon studies focused on Cambro-Ordovician and Precambrian sedimentary sequences from the Anti-Atlas (Abati et al., 2010; Avigad et al., 2012), Middle Atlas, Western Meseta and Coastal Block (El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018), all of them having highlighted a strong WAC affinity. Very similar results were obtained on Triassic sandstones and siltstones of the High Atlas (Domènech et al., 2018; Marzoli et al., 2017) and Middle Atlas (Pratt et al., 2015). Furthermore, Avigad et al. (2012), Marzoli et al. (2017), and Ghienne et al. (2018) also identified, on Middle Cambrian sandstones and siltstones (Anti-Atlas), Late Triassic siltstones (High Altas), and Late Ordovician sandstones (Middle Atlas) respectively, a minor 1.1-0.9 Ga detrital zircon population that they attributed to distal north-eastern African sources, probably located in the Precambrian basement of the Saharan Metacraton or the Arabian-Nubian Shield (Bea et al., 2010; Linnemann et al., 2011). In the Central zone of the Western Moroccan Meseta

(Figure 2.1A), an unimodal detrital zircon population centered around 488 Ma was recognized in a Lower Paleozoic greywacke (Letsch et al., 2018), and Late Cambrian granite boulders in a Devonian conglomerate were dated by Tahiri et al. (2017). These pieces of evidence suggest the presence of a nearby and unknown igneous Late Cambrian source. A few Cambro-Ordovician detrital zircon grains were also found in the Middle Atlas in Late Ordovician sandstones of the Tifarouine Formation (Ghienne et al., 2018) and in Middle Jurassic sandstones of the Bou Rached Formation (Pratt et al., 2015). These Cambro-Ordovician ages have been interpreted as evidence of magmatism related to the continental rifting that preceded the opening of the Rheic Ocean (*e.g.*, Cambeses et al., 2017; Nance et al., 2010, 2012). Finally, U-Pb zircon ages from Cambrian sandstones of the Sehoul Block (Pérez-Cáceres et al., 2017) also show main Ediacaran and Paleoproterozoic peaks, together with a very minor 1.1-0.9 Ga population and scattered Archean data, suggesting that this terrane was close to the Gondwana margin at Cambrian time.

Despite the new advances, the paleogeographic interpretation of the Moroccan Variscides is still a matter of debate and lacks data, in particular from the Paleozoic sedimentary sequences of the Eastern Meseta. In this paper we present the first U-Pb detrital zircon ages for Ordovician sedimentary rocks from the Eastern Meseta (Oujda area; Figure 2.1B) and new data from the Ordovician to Devonian sequence cropping out at the boundary between the Eastern and Western Mesetas (Middle Atlas: Tazekka and Azrou massifs; Figures 2.1C and D).

2. Geological setting

The Moroccan Mesetas (Figure 2.1A; Hoepffner et al., 2006) include scarce outcrops of Precambrian basement (mainly igneous Cadomian rocks) unconformably overlain by Cambro-Devonian sedimentary rocks (Chopin et al., 2014; El Houicha et al., 2018; Hoepffner et al., 2005; Letsch et al., 2018; Michard et al., 2008, 2010b; Ouabid et al., 2017; Pereira et al., 2015). The Precambrian basement does not crop out in the Eastern Meseta domain, where the Paleozoic sequence seems to be continuous from Late Cambrian to Devonian time, being unconformably overlaid by a Visean to Westphalian flysch with limestones and volcanic rocks (Hoepffner, 1987; Michard et al., 2010b). Several Variscan and post-Variscan (330-250 Ma) granitic plutons outcrop in the Moroccan Meseta domains, intruding the Paleozoic sequences (El Hadi et al., 2006 and references therein).

The Variscan deformation that characterizes the Eastern Meseta domain is variable in style and intensity and occurred under very low- to low-grade metamorphic conditions (Hoepffner et al., 2006 and references therein). According to these authors, the deformation is generally expressed by one or more folding phases associated with a cleavage that can be penetrative or locally spaced and poorly defined. Late Variscan fault zones delineate the current boundaries between the different domains of the Moroccan Mesetas.

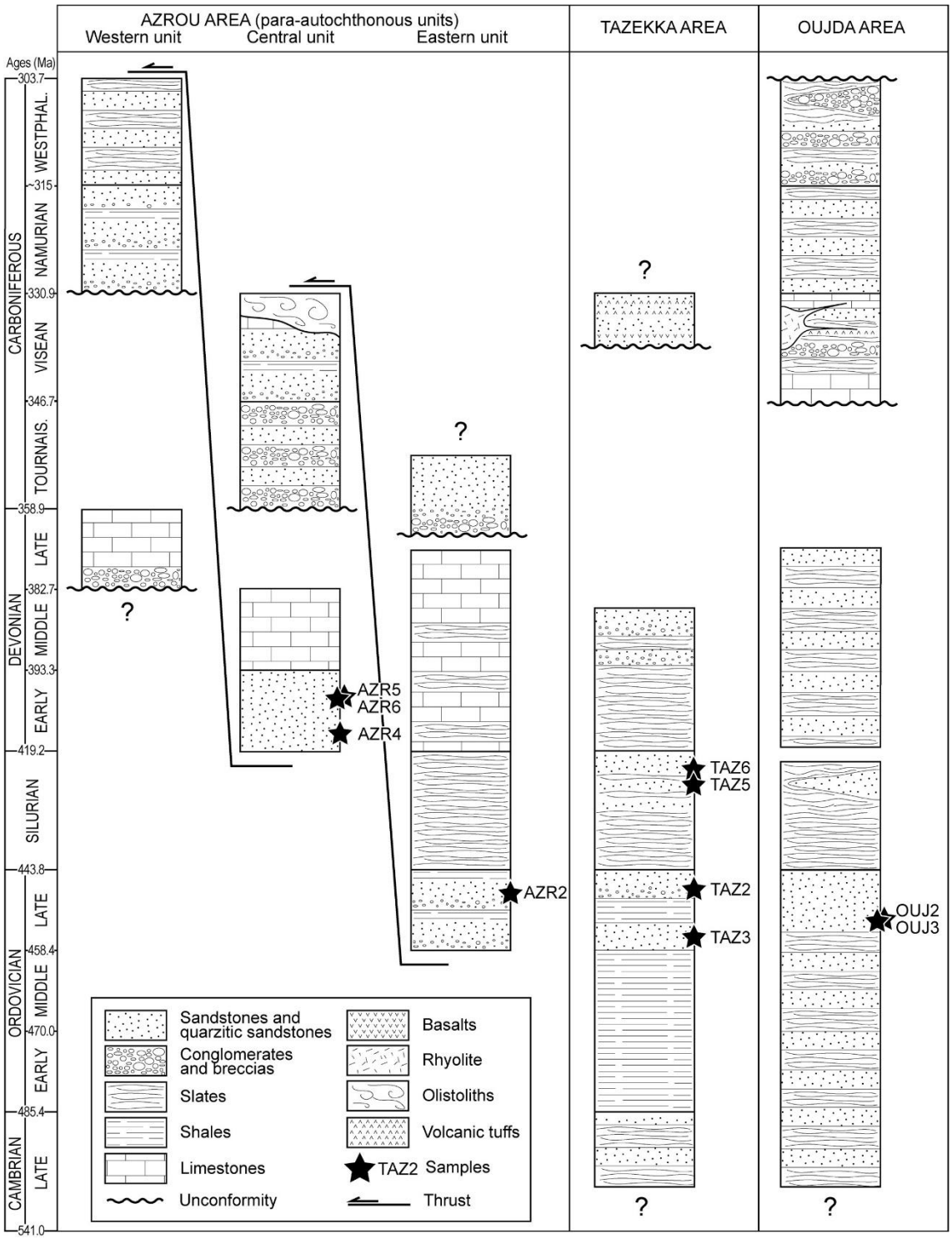


Figure 2.2. Schematic correlation of the stratigraphic columns from different Paleozoic outcrops of the Eastern Meseta and Middle Atlas (not to scale): Azrou area (Bouabdelli et al., 1989 and references therein), Tazekka area (Marhoumi et al., 1989 and references therein; Vidal and Hoepffner, 1979), and Oujda area (Choubert et al., 1978; Hoepffner, 1989; Horon, 1952; Marhoumi et al., 1989).

In the three sampled areas, the general Variscan structure consists on low- to moderate-dipping beds as a result of N-S (with variations from NW to NE) oriented upright folding and related rough axial-planar cleavage.

2.1. Oujda area

The Paleozoic sequence of the Eastern Meseta domain crops out in several relatively small areas in the Oujda region (Figures 2.1B and 2.2), where it is characterized by Cambro-Ordovician shales, slates, minor greywackes and quartzites, dated by stratigraphic correlations with neighboring regions (Huvelin, 1970; Valin, 1979). The Silurian is characterized by black shales with Graptolites and few intercalations of thin layers of fine-grained black sandstones (Horon, 1952). The upper limit of the Silurian is not exposed in this area. The Devonian sequence is an alternation of slates, greywackes and sandstones, dated as Emsian-Frasnian with palynomorphs (Marhoumi et al., 1983). The whole Cambrian-Devonian sequence attests a general subsidence episode which was interrupted by a Late Devonian-Early Carboniferous initial Variscan deformation phase responsible for the exhumation of at least part of the Moroccan Meseta (Hoepffner, 1989). The Visean sedimentation is represented by turbidites associated with volcanic rocks (Hoepffner, 1989), whose age was assigned by facies analogy with similar deposits cropping out in the Debdou-Mekkam area palaeontologically dated by Marie (1931) and Marhoumi (1984).

2.2. Tazekka area

The Tazekka area is located in the northern part of the Middle Atlas, at the boundary between Eastern and Western Mesetas, corresponding with the TBBFZ (Figure 2.1C). The stratigraphic sequence outcropping east of the TBBFZ is characterized by homogeneous, low-grade, intensively deformed schists (Tazekka Schists), attributed to the Devonian-Carboniferous (Hoepffner, 1987 and references therein) by facies comparison with the Debdou-Mekkam area (Mekkam Schists), where they were dated with palynomorph (Medioni, 1980) and plant fragments (Marhoumi and Rauscher, 1984). West of the TBBFZ, a less deformed and less metamorphosed Late Cambrian to Middle Devonian detrital sequence that resembles the Oujda sequence crops out (Figure 2.2; Hoepffner, 1987). The sequence begins with Cambro-Ordovician slates and greywackes (dated by facies comparison with the Cambrian Paradoxides Shales of the Coastal Block; Hoepffner, 1987 and references therein), which turns upward into a thick sequence of green shales and slates dated as Lower-Middle Ordovician with fossils and palynolomorphs (Desteucq and Fournier-Vinas, 1981; Hoepffner, 1977; Rauscher et al., 1982). The Late Ordovician is characterized by sandy shales interbedded with quartzites (Tifarouine Fm.; Hoepffner, 1987; Huvelin, 1970; Khoukhi and Hamoumi, 2001; Valin, 1979), interpreted as glacial deposits (Le Heron, 2007). Similar to most of the Moroccan Variscides outcrops, the Silurian is represented by black shales with Graptolites (Destombe, 1971), and coarser beds in the upper part of the sequence (Hoepffner, 1977), gradually passing upwards to Devonian sandstones dated with palynomorphs (Marhoumi et al., 1983).

The sedimentation appears to have been interrupted during a Late Devonian-Tournaisian tectonic phase, and then started again during the Visean, with a volcano-sedimentary succession; the age of these rocks was established by facies comparison with

similar rocks cropping out in the Debdou-Mekkam area and dated by palynology (Hoepffner, 1981; Marhoumi, 1984).

2.3. Azrou area

The Azrou area (Figure 2.1D) is located in the Middle Atlas, and it is characterized by the tectonic imbrication of three para-autochthonous units (Figure 2.2) and an allochthonous one (Bouabdelli et al., 1989). The age of the stratigraphic sequences cropping out in these units (Ordovician to Early Carboniferous) was established by means of palynomorphs and fossil micro- and macrofaunas (Bouabdelli, 1989 and references therein).

The eastern sector corresponds to the oldest and structurally highest para-autochthonous unit, and it is characterized by a stratigraphic sequence that includes Late Ordovician sandy sediments, rarely interbedded with shales (Bouabdelli, 1982), which passes upwards to the Silurian black shales with graptolites. The Devonian sequence is characterized by alternating slates and fossiliferous Late Devonian limestones. Tournaisian quartzitic deposits lay unconformably onto the Devonian limestones.

In the central sector, the sequence is detached at the level of the Silurian shales, which are overlain by Early Devonian quartzitic and sandy slates and Middle to Upper Devonian limestones (Walliser et al., 2000; Lazreq, 1999). The sedimentation was interrupted during Late Devonian time and started again at Early Carboniferous time with the deposition of quartzitic and conglomeratic beds, passing upwards to turbiditic and gravitational deposits (Bouabdelli et al., 1989; Berkhli, 1999; Berkhli et al., 2000).

In the western sector of the Azrou area, the structurally lowest para-autochthonous unit crops out, constituted by a basal conglomerate followed by Late Devonian limestones. A Middle Carboniferous flysch and limestones with crinoids (Bouabdelli et al., 1989; Dir. Geol. Maroc, 2005; Wollen, 1974) unconformably overlay the Late Devonian succession.

The allochthonous Aït Mimoun-Bou Agri unit of Early Devonian age is characterized by turbidites passing upwards to calcarenites and calcareous reef breccias with abundant fossiliferous material (Bouabdelli et al., 1989; Dir. Geol. Maroc, 2005; Said et al., 2010).

3. Samples and methods

This study is based on the results obtained on 10 samples collected in the Late Ordovician-Early Devonian siliciclastic rocks of the Oujda, Tazekka and Azrou areas. The geographic, geological and stratigraphic locations of each sample are shown in Figures 2.1 and 2.2, and Table 2.1.

OUJ2 and OUJ3 were collected 20 km westward from Oujda and they correspond to quartzites sampled in the upper part of the Ordovician sequence, just below Silurian beds of fine-grained black quartzites (according to the “Oujda” geological map scale 1:500.000; Choubert et al., 1978).

Table 2.1. Details of the analyses carried out on the zircon grains separated from the studied samples; (*) UTM coordinates, WGS84 system, zone 30 S; (**) total analyses carried out and total concordant results (bold numbers).

Area	Sample	Location*		Lithology	Age	Zircon grains	Type of analyses	Number analyses**
		X	Y					
Oujda	OUJ2	582303	3834439	Quartzite	Ordovician	123	LA-ICPMS	150/**126**
	OUJ3	582303	3834439	Arkose	Ordovician	124	LA-ICPMS	150/**135**
Tazekka	TAZ2	380945	3774869	Sandstone	Ordovician	79	LA-ICPMS SHRIMP	30/**21** 56/**44**
	TAZ3	381775	3773906	Sandstone	Ordovician	92	LA-ICPMS SHRIMP	54/**45** 48/**41**
	TAZ5	373058	3765756	Quartzite	Silurian	114	LA-ICPMS	150/**136**
	TAZ6	373058	3765756	Quartzite	Silurian	126	LA-ICPMS	150/**115**
Azrou	AZR2	296820	3705220	Quartzite	Late Ordovician	125	LA-ICPMS	150/**131**
	AZR4	267866	3692882	Quartzite	Devonian	121	LA-ICPMS	150/**140**
	AZR5	268951	3692089	Quartzite	Devonian	129	LA-ICPMS	149/**143**
	AZR6	269001	3690998	Quartzite	Devonian	131	LA-ICPMS	150/**137**

Four samples were collected close to the Tazekka National Park (Geological map "Tahala", scale 1:50.000; Vidal and Hoepffner, 1979) in the western block of the TBBFZ. Based on this geological map, samples TAZ2 and TAZ3 from Ahel Boudriss are Late Ordovician quartzites, while samples TAZ5 and TAZ6, collected 5 km south-east of Tahala, are Silurian quartzites.

Three samples (AZR4, AZR5 and AZR6) were collected 25 km south-west of Azrou, in the Sidi Bel Khair area. Based on the Geological map “Azrou” (Dir. Geol. Maroc, 2005), all of them correspond to Early Devonian quartzitic sandstones from the central para-autochthonous unit (Bouabdelli et al., 1989). Sample AZR2 was collected 5 km north-east of Azrou from the quartzitic beds of the Late Ordovician Kaâorana Formation, dated with fossiliferous material (eastern para-autochthonous unit of Bouabdelli et al., 1989; Geological map "Azrou", scale 1:50.000; Dir. Geol. Maroc, 2005).

About four kilograms of rock were collected for each sample and processed in the laboratories at the University of Granada (Spain). Samples were mechanically smashed in a jaw-crusher and sorted by sieving. A heavy mineral concentrate was obtained by manual panning. Magnetic minerals were removed from the concentrate material using a Nd magnet and, finally, about 120-160 zircon grains were separated by handpicking under a binocular microscope.

The selected zircon grains were mounted in epoxy rounds and imaged by cathodoluminescence (Figure 2.3) to reveal internal structures using a Mira3 FESEM instrument at the Microscopy and Microanalysis Facility of the John de Laeter Centre (JdLC, Curtin University, Perth, Australia).

Most of the zircon grains were large enough to be analyzed with Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICPMS). Where possible, 150 analyses were performed per sample in order to obtain representative and statistically significant age populations after discordant analyses were removed (Vermeesch, 2004). Fifty-six zircon grains from sample TAZ2 and 48 from TAZ3 were too small to be analyzed with LA-ICPMS, and were analyzed using the Sensitive High-Resolution Ion Microprobe (SHRIMP II) at the JdLC. Detailed analytical methods are described in the supplementary material (Appendix A).

Data with > ±10% discordance and/or > 1% ^{206}Pbc were not taken into account for results interpretation. Furthermore, SHRIMP data were processed using the software package SQUID, which calculates the discordance percentage based on the ^{207}Pb/^{206}Pb and the ^{206}Pb/^{238}U ages corrected for common Pb. For young zircon ages, the uncertainty of ^{207}Pb/^{206}Pb ages is bigger due to the low content of ^{207}Pb and may produce data with high discordance level. However, when these high discordant data are plotted in a concordia diagram, they are actually concordant. ^{206}Pb/^{238}U dates were used to characterize zircon grains younger than 1500 Ma, and ^{207}Pb/^{206}Pb dates were utilized for older zircon grains. The data were plotted as combined histograms and Kernel Density Estimates (KDE) using DensityPlotter 8.4 (Vermeesch, 2012) and applying an adaptive bandwidth of 40 Ma for the KDE and a bin width of 40 Ma for the histograms (Figures 2.4, 2.5, and 2.6). Detrital zircon populations were defined using the mixture modeling tool of DensityPlotter 8.4, while the mean square weighted deviation (MSWD) of the youngest populations was calculated with IsoplotR online (Vermeesch, 2018).

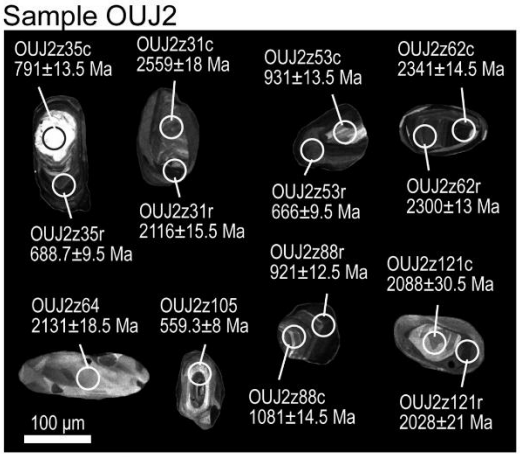
4. Results

A synthesis of the U-Pb analyses and estimated ages is provided in Tables 2.1 and 2.2 (the detailed analytical dataset is given in the supplementary material as Appendix D, tables D.1 to D.10). Distribution histograms and KDE diagrams for each sample are reported in Figures 2.4, 2.5, and 2.6. A description of the zircon grains of each sample (size, color, morphology, internal structure) has been included in the supplementary material as Appendix B. Because of the size of the zircon grains and/or their continuous oscillatory zoning (Figure 2.3), most of the analyses were carried out only in the core of the detrital zircons; nevertheless, in some cases it was possible to analyze both the core and the rim of the grains. Errors are expressed at the 1σ level.

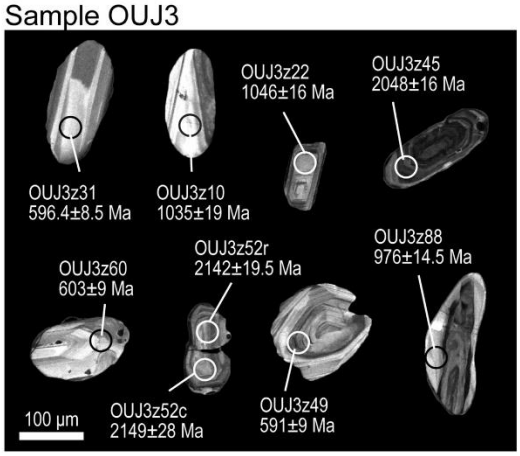
4.1. Oujda area

From the two samples of the Oujda area (OUJ2 and OUJ3, of Late Ordovician age), a total of 247 zircon grains were selected and 300 analyses were carried out yielding 261 concordant results.

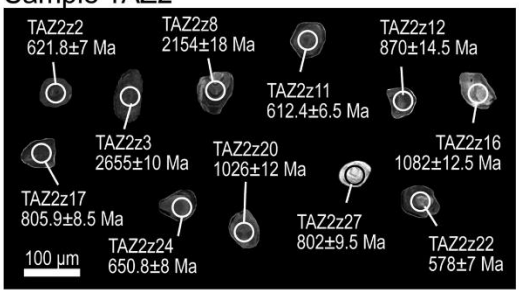
Sample OUJ2



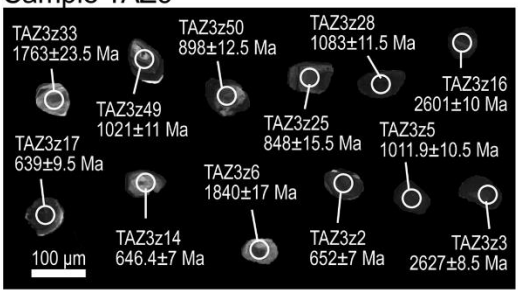
Sample OUJ3



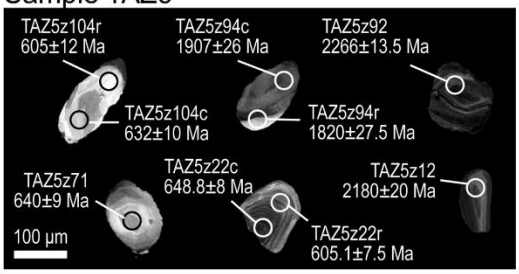
Sample TAZ2



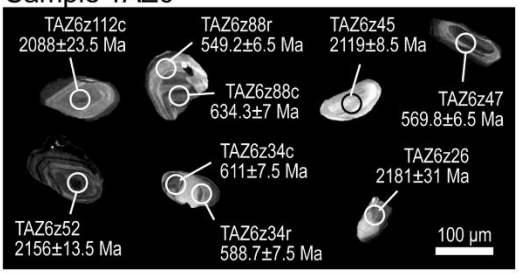
Sample TAZ3



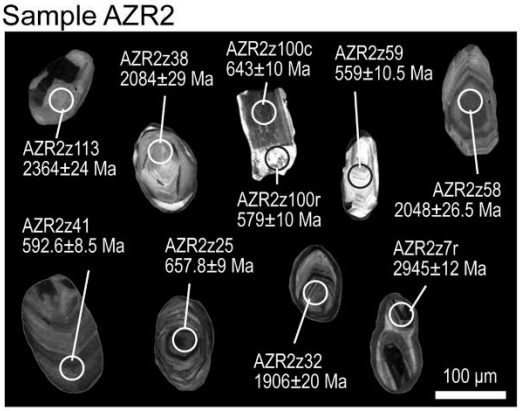
Sample TAZ5



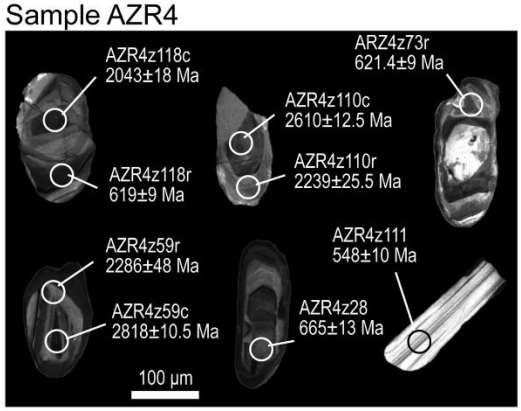
Sample TAZ6



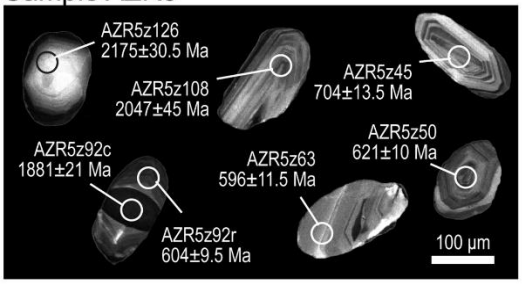
Sample AZR2



Sample AZR4



Sample AZR5



Sample AZR6

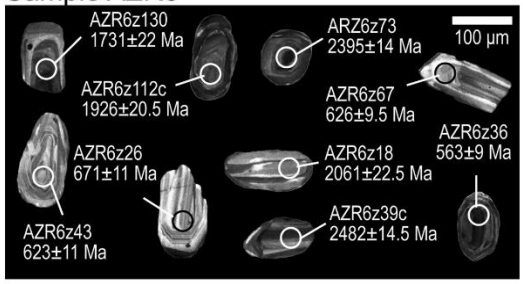


Figure 2.3 (previous page). Cathodoluminescence images of selected detrital zircon grains; darker zones correspond to high-U sectors and brighter zones to low-U sectors.

The OUJ2 sample is a medium-grained quartzite, with muscovite and iron oxides. From this sample, 150 analyses were carried out on 123 detrital zircon grains, yielding 126 concordant data (Figure 2.4A). Two main detrital zircon populations were obtained, of 529-791 Ma (Ediacaran mean age of 621.5±1.1 Ma, 57.9%) and 1781-2215 Ma (Paleoproterozoic mean age of 2037.6±3.9 Ma, 23.8%) ages. A few dates can be grouped into two minor and not well defined peaks: 921-1081 Ma (Tonian mean age of 975.6±5.3 Ma, 5.6%) and 2300-2743 Ma (Neoarchean mean age of 2523.7±4.7 Ma, 8.7%). Four scattered Mesoproterozoic data (1207-1461 Ma) cannot be grouped in a significant population. The youngest detrital zircon population, comprising 4 analyses, yielded an age of 537.5±3.9 Ma (MSWD = 0.66), thus indicating an earliest Cambrian maximum depositional age.

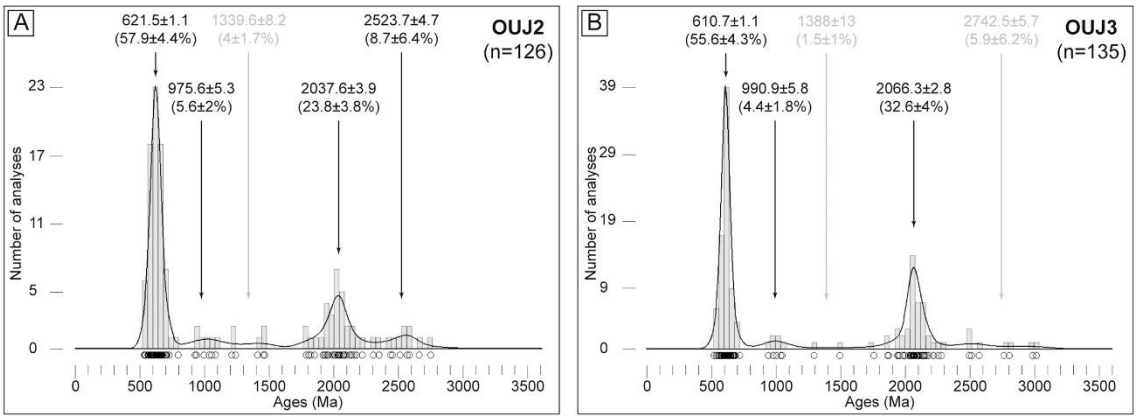


Figure 2.4. Kernel Density Estimates (black lines) combined with distribution histograms (grey bars) showing the detrital zircon ages ($^{206}Pb/^{238}U$ for dates <1500Ma; $^{207}Pb/^{206}U$ for dates >1500Ma) obtained from the samples of the Oujda area. Errors are expressed at the 1σ level and data with a discordance level >10% and/or >1% ^{206}Pbc were discarded. The circles in the lowest part of the diagrams show the single analyses. The arrows indicate the main detrital zircon populations estimated using the mixture modeling tool in DensityPlotter 8.4 (Vermeesch, 2012). Grey text identifies the populations comprising scattered dates with no geological meaning. These populations were not considered in the interpretation.

The sample OUJ3 is a fine-grained quartzite with a faint planar fabric marked by quartz grains and opaque minerals. One hundred twenty-four detrital zircon grains were separated from this sample and a total of 150 analyses were carried out, 135 of which were concordant (Figure 2.4B). The two main detrital zircon populations identified are 520-717 Ma (Ediacaran mean age of 610.7±1.1 Ma, 55.6%) and 1754-2281 Ma (Paleoproterozoic mean age of 2066.3±2.8 Ma, 32.6%). A few grains (941-1046 Ma) correspond to a Tonian minor peak (mean age 990.9±5.8 Ma, 4.4%). A few data yield Mesoproterozoic (1293-1493 Ma) and Archean (2495-3013 Ma) ages, but they are too scattered to characterize minor populations. The youngest detrital zircon population, made up of 5 data, yielded an age of 545.3±3.7 Ma (MSWD = 1.28), indicating a Late Ediacaran maximum depositional age.

In summary, detrital zircon populations of both Oujda samples are very similar and show an important Ediacaran detrital zircon population at ≈610-620 Ma, which represents ≈55-60% of the analyses. A second main peak corresponds to a Paleoproterozoic population (≈2030-2070 Ma), which represents ≈25-35% of the data. Minor detrital zircon populations yielded Tonian (≈975-990 Ma, ≈5%) and Archean (≈2520 Ma, ≈10%) ages. The maximum depositional age for both samples is Late Ediacaran - Early Cambrian (≈540 Ma).

4.2. Tazekka area

A total of 411 zircon grains were isolated from the 4 samples of the Tazekka area: TAZ2 and TAZ3, of Late Ordovician age, and TAZ5 and TAZ6, of Silurian age. A total of 488 analyses were carried out (104 with SHRIMP in samples TAZ2 and TAZ3) yielding 402 concordant results (86 with SHRIMP in samples TAZ2 and TAZ3).

Sample TAZ2 is a very fine-grained quartzite with some detrital micas. From this sample, 79 zircon grains were separated and 86 analyses were carried out, 65 of which gave concordant ages (21 LA-ICPMS and 44 SHRIMP analyses, see Tables D.3a and D.3b in Appendix D). Concordant LA-ICPMS and SHRIMP data were then combined to create the histogram and KDE shown in Figure 2.5A. The main detrital zircon populations are 480-674 Ma (Ediacaran mean age of 613±1.4 Ma, 47.7%) and 731-1082 Ma (Tonian mean age of 914.1±2.6 Ma, 30.8%). Minor populations in this sample are 1908-2154 Ma (Paleoproterozoic mean age of 1999.5±7.7 Ma, 6.2%) and 2369-3012 Ma (Archean mean age of 2639.6±3 Ma, 12.3%). Two data yield Mesoproterozoic ages (1373-1425 Ma). The youngest detrital zircon population, made up of 8 grains, gave an age of 581.4±2.8 Ma (MSWD = 0.53), indicating a Late Ediacaran maximum depositional age.

Sample TAZ3 corresponds to a quarzitic sandstone. Its grain size is very fine and homogeneous, quartz crystals being rounded and with no preferential orientation. 92 grains were separated from sample TAZ3, and 102 analyses were carried out yielding 86 concordant dates (45 LA-ICPMS and 41 SHRIMP analyses, see Tables D.4a and D.4b in Appendix D). Concordant SHRIMP and LA-ICPMS data were used to generate the histogram and the KDE curve showed in Figure 2.5B. The main detrital zircon populations are 547-803 Ma (Cryogenian mean age of 668.5±1.5 Ma, 34.9%) and 813-1146 Ma (Tonian mean age of 972.1±2.4 Ma, 32.6%). Paleoproterozoic (1746-2211 Ma, mean age 1982.4±3.2 Ma, 20.9%) and Archean (2583-2851 Ma, mean age 2689.3±4.1 Ma, 8.1%) peaks represent minor populations. Three scattered data gave Late Silurian-Devonian ages (426, 399, and 359 Ma), which will not be considered to establish the maximum depositional age. Thus, the youngest detrital zircon population, composed of 4 concordant analyses, yielded an age of 607.6 ± 3.5 Ma (MSWD = 0.34), indicating an Ediacaran maximum depositional age.

Sample TAZ5 is a medium- to coarse-grained quartzite. The quartz grains are rounded and do not show any preferential shape orientation. From this sample 114 zircon grains were handpicked and a total of 150 analyses were performed, yielding 136 concordant

results (Figure 2.5C). The main detrital zircon population is 488-750 Ma (Ediacaran mean age of 612±0.87 Ma, 57.4%); a Paleoproterozoic (1702-2316 Ma, mean age 2055.6±2.4 Ma, 25.7%) peak represents a minor detrital zircon population. Scattered data gave Tonian (782-977 Ma), Mesoproterozoic (1231-1513 Ma) and Siderian-Archean ages (2460-3407 Ma). The youngest population, comprising 5 grains, yielded an age of 554.2±3 Ma (MSWD = 0.77), indicating a Late Ediacaran maximum depositional age.

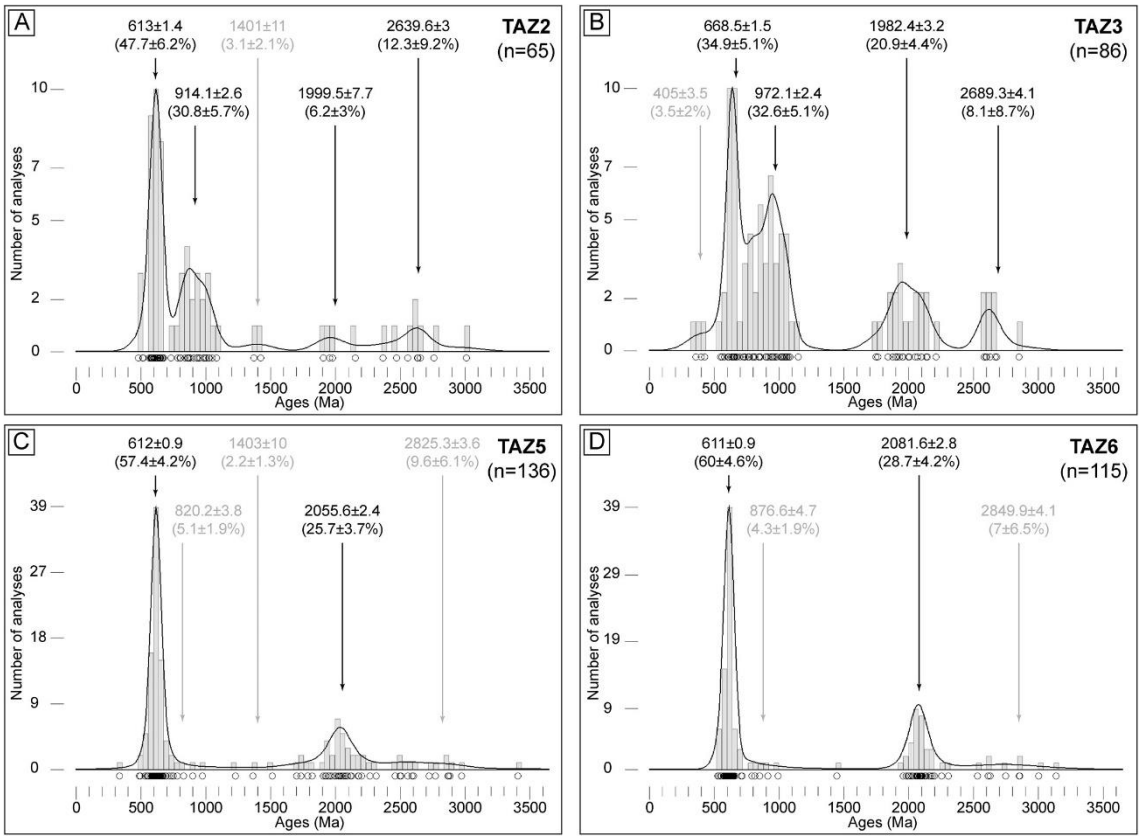


Figure 2.5. Kernel Density Estimates (black lines) combined with distribution histograms (grey bars) showing the detrital zircon ages ($^{206}Pb/^{238}U$ for dates <1500Ma; $^{207}Pb/^{206}U$ for dates >1500Ma) obtained from the samples of the Tazekka area. Errors are expressed at the 1σ level and data with a discordance level >10% and/or >1% ^{206}Pbc were discarded. The circles in the lowest part of the diagrams show the single analyses. The arrows indicate the main detrital zircon populations estimated using the mixture modeling tool in DensityPlotter 8.4 (Vermeesch, 2012). Grey text identifies the populations comprising scattered dates with no geological meaning. These populations were not considered in the interpretation.

Sample TAZ6 is a medium-grained quartzite with equidimensional quartz grains and some small mica grains. 126 zircons were separated from this sample and 150 analyses were carried out, yielding 115 concordant ages (Figure 2.5D). The two main detrital zircon populations are 527-714 Ma (Ediacaran mean age of 611.04±0.92 Ma, 60%) and 1955-2304 Ma (Paleoproterozoic mean age of 2081.6±2.8 Ma, 28.7%). A few, very scattered data yielded Tonian (787-992 Ma), Mesoproterozoic (1442±17.5 Ma), and Archean (2528-3135 Ma) ages. The youngest detrital zircon population, made up of 10 analyses, yielded an age of 579.7±2.3 Ma (MSWD = 0.95), indicating a Late Ediacaran maximum depositional age.

To sum up, all samples from the Tazzeka area are characterized by a main Ediacaran-Cryogenian detrital zircon population (≈610-670 Ma, ≈35-60%) and a minor Paleoproterozoic peak (≈1980-2080 Ma, ≈5-30%). Nevertheless, in samples TAZ2 and TAZ3 an important Tonian population (≈915-975 Ma, ≈30%) and a secondary Archean peak (≈2640-2690 Ma, ≈10-15%) are observed. The maximum depositional ages are Ediacaran (≈555-605 Ma).

4.3. Azrou area

Of the 506 zircon grains isolated from the 4 samples of the Azrou area (AZR2, Late Ordovician age; AZR4, AZR5, and AZR6, Early Devonian age), a total of 597 analyses were carried out, yielding 555 concordant ages.

Sample AZR2 is a medium- to fine-grained quartzite with rare detrital micas and a very faint preferential shape orientation of the quartz grains. From this sample 125 zircon grains were separated and 150 analyses yielded 131 concordant dates (Figure 2.6A). The main detrital zircon populations are 511-725 Ma (Ediacaran mean age of 618.1±1.3 Ma, 42.7%) and 1906-2273 Ma (Paleoproterozoic mean age of 2068.9±2.7 Ma, 38.9%), while ages in the range 2364-2966 Ma (Archean mean age of 2753.1±4.4 Ma, 7.6%) represent a third minor population. A few scattered data yielded Tonian-Stenian (769-1154 Ma) and Mesoproterozoic (1253-1756 Ma) ages. The youngest detrital zircon population, made up of 8 analyses, yielded an age of 570±3.5 Ma (MSWD = 1.10), indicating a Late Ediacaran maximum depositional age.

Sample AZR4 corresponds to a medium-grained quartzite with rounded grains that do not define any planar fabric. A total of 150 analyses were carried out on 121 zircon grains separated from this sample. One hundred and forty of the analyses gave concordant results (Figure 2.6B). A 548-733 Ma population (Ediacaran mean age of 620±1.2 Ma, 47.9%) marks the principal peak in this sample; minor populations yielded 1762-2358 Ma (Paleoproterozoic mean age of 2050.4±2.8 Ma, 36.4%) and 2441-2838 Ma (Archean mean age of 2622.7±4 Ma, 11.4%) ages. A few data, too scattered to be considered as minor populations, gave Mesoproterozoic (1012-1500 Ma) and Paleoarchean (3325±12 Ma) ages. The youngest detrital zircon population, made up of 21 analyses, yielded an age of 591±2 Ma (MSWD = 1.03), indicating an Ediacaran maximum depositional age.

Sample AZR5 is a homogeneous medium-grained quartzite, with a few opaque minerals filling fractures and very scarce micas. From this sample 129 zircon grains were handpicked, 149 analyses were performed, yielding 143 concordant ages (Figure 2.6C). Fifty-five percent of the data correspond to the age range 532-716 Ma (Ediacaran mean age of 625.5±1.1 Ma), while 32.9 % define a Paleoproterozoic age (1793-2267 Ma, mean age 2054.4±3 Ma). A few scattered data yielded Tonian (786-926 Ma), Mesoproterozoic (1374-1517 Ma), and Archean (2367-3225 Ma) ages. The youngest zircon population, made up of 41 data, gave an age of 612±2 Ma (MSWD = 1.3), indicating an Ediacaran maximum depositional age.

Finally, sample AZR6 is a quartzite very similar to samples AZR4 and AZR5. The grain size is medium and homogeneous and there is no evidence of preferential shape quartz orientation. 131 zircon grains were separated from this sample and 150 analyses were carried out, yielding 137 concordant dates (Figure 2.6D). The 545-726 Ma detrital zircon population (Ediacaran mean age of 620.5±1.2 Ma, 46%) represents the highest peak in this sample; a second population yielded a Paleoproterozoic age (1729-2308 Ma, mean age 2073.3±2.9 Ma, 32.1%), while a third minor peak represents a Siderian population (2395-2572 Ma, mean age 2481.9±5.1 Ma, 8%). A few scattered data yielded Tonian (798-910 Ma), Mesoproterozoic (1389-1424 Ma), and Archean (2699-3029 Ma) ages. The youngest population, composed of 4 analyses, gave an age of 577±8 Ma (MSWD = 1.3), indicating a Late Ediacaran maximum depositional age.

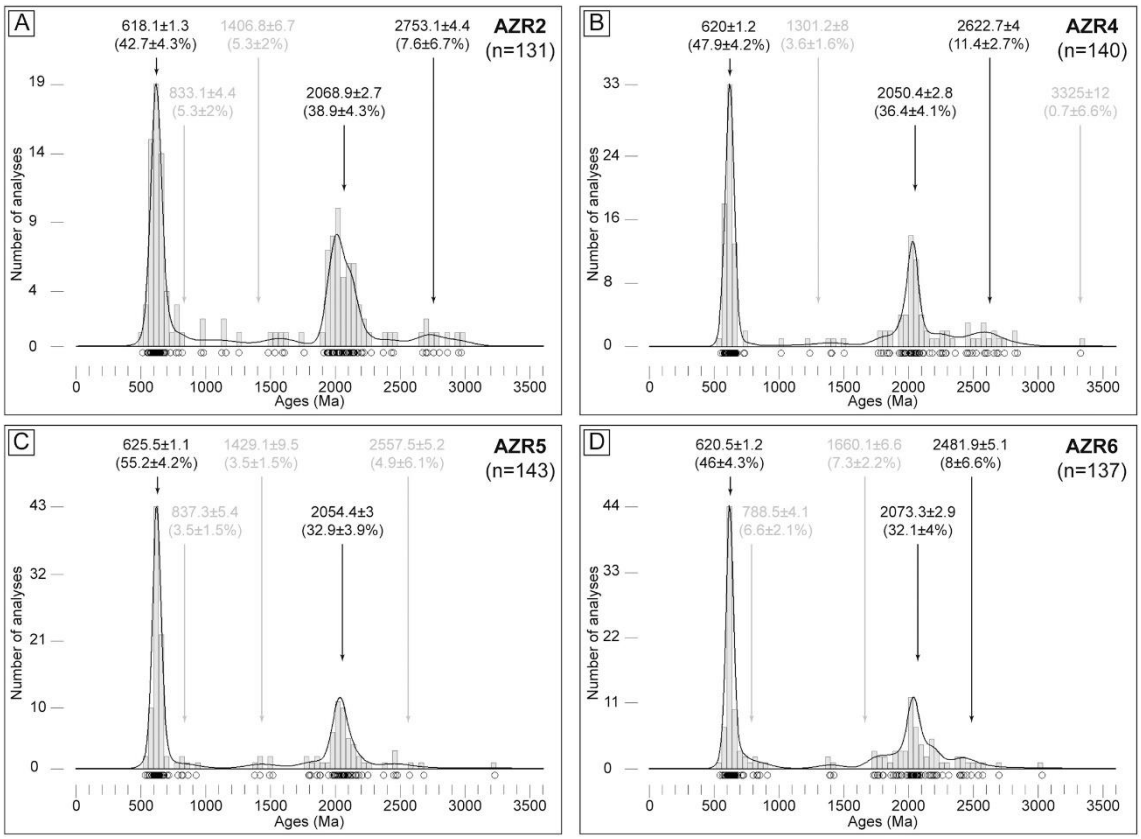


Figure 2.6. Kernel Density Estimates (black lines) combined with distribution histograms (grey bars) showing the detrital zircon ages ($^{206}Pb/^{238}U$ for dates <1500Ma; $^{207}Pb/^{206}U$ for dates >1500Ma) obtained from the samples of the Azrou areas. Errors are expressed at the 1σ level and data with a discordance level >10% and/or >1% ^{206}Pbc were discarded. The circles in the lowest part of the diagrams show the single analyses. The arrows indicate the main detrital zircon populations estimated using the mixture modeling tool in DensityPlotter 8.4 (Vermeesch, 2012). Grey text identifies the populations comprising scattered dates with no geological meaning. These populations were not considered in the interpretation.

In summary, the most prominent feature of the Azrou samples is the Ediacaran peak at ≈620 Ma, which represents the ≈40-55% of the results. The Paleoproterozoic population (≈2050-2080 Ma) is well defined and represents ≈30-40% of the data. A third minor peak (≈5-10%) corresponds to an Archean population at ≈2480-2750 Ma. The maximum depositional age for these samples is Ediacaran (≈570-615 Ma).

Table 2.2. Details of the different detrital zircon populations in the analyzed samples; errors are expressed at the 1σ level; Nº: number of grains in the youngest population.

Area	Sample	Youngest zircon population		Youngest zircon age (Ma)	Ediacaran-Cryogenian		Tonian-Stenian		Paleoproterozoic		Archean	
		age (Ma)	Nº		Age (Ma)	Prob. (%)	Age (Ma)	Prob. (%)	Age (Ma)	Prob. (%)	Age (Ma)	Prob. (%)
Oujda	OUJ2	537.5 ± 3.9	4	529 ± 8.5	621.5 ± 1.1	57.9	975.6 ± 5.3	5.6	2037.6 ± 3.9	23.8	2523.7 ± 4.7	8.7
	OUJ3	545.3 ± 3.7	5	520 ± 10	610.7 ± 1.1	55.6	990.9 ± 5.8	4.4	2066.3 ± 2.8	32.6	-	-
Tazekka	TAZ2	581.4 ± 2.8	8	480 ± 6	613 ± 1.4	47.7	914.1 ± 2.6	30.8	1999.5 ± 7.7	6.2	2639.6 ± 3	12.3
	TAZ3	607.5 ± 3.5	4	339 ± 6	668.5 ± 1.5	34.9	972.1 ± 2.4	32.6	1982.4 ± 3.2	20.9	2689.3 ± 4.1	8.1
	TAZ5	554.2 ± 3	5	336 ± 5.5	612 ± 0.9	57.4	-	-	2055.6 ± 2.4	25.7	-	-
	TAZ6	579.7 ± 2.3	10	527.4 ± 7	611 ± 0.9	60	-	-	2081.6 ± 2.8	28.7	-	-
Azrou	AZR2	570 ± 3.5	8	511.8 ± 7.5	618.1 ± 1.3	42.7	-	-	2068.9 ± 2.7	38.9	2753.1 ± 4.4	7.6
	AZR4	591 ± 2	21	548 ± 10	620 ± 1.2	47.9	-	-	2050.4 ± 2.8	36.4	2622.7 ± 4	11.4
	AZR5	612 ± 2	41	532 ± 8.5	625.5 ± 1.1	55.2	-	-	2054.4 ± 3	32.9	-	-
	AZR6	577 ± 8	4	545.3 ± 8	620.5 ± 1.2	46	-	-	2073.3 ± 2.9	32.1	2481.9 ± 5.1	8

5. Discussion

5.1. Maximum depositional ages and stratigraphic attributions

The age of the youngest detrital zircon population is often used to constrain the maximum depositional age of the sample. In this study, all the samples yielded (earliest Cambrian-) Ediacaran ages for the youngest zircon populations (Table 2.2). Specifically, the Ordovician samples OUJ2 and OUJ3 from the Oujda area gave a youngest detrital zircon population age of ≈540 Ma, while the Late Ordovician-Devonian samples from Azrou area yielded youngest zircon populations with variable ages between ≈570 and 610 Ma; finally, the samples from the Tazekka area (TAZ2 and TAZ3, Ordovician; TAZ5 and TAZ6, Silurian) gave maximum depositional ages of ≈555-605 Ma. Therefore, our data are compatible with the previous stratigraphic attribution of these samples, since the maximum depositional age is in all cases older than the putative stratigraphic age. Regarding the reliability of the stratigraphic ages of the different formations sampled in this work, it must be noticed that in a few cases those ages are based on previously reported fossiliferous content, though in most cases they rely on regional stratigraphic correlations of analogous passive margin sequences (see section 2). Furthermore, an Ediacaran age attribution can be discarded by considering that the rocks of that age locally cropping out in the Moroccan Meseta are quite different from the Paleozoic rocks: they consist on felsic volcanic and volcanoclastic rocks with granitoids, all of them probably attesting a Cadomian magmatic arc bordering northern Gondwana at that time (Eddif et al., 2007; El Houicha et al., 2018; Letsch et al., 2018; Ouabid et al., 2017; Tahiri et al., 2010). The consistent Ediacaran maximum depositional age of our samples simply reflects that the magmatism of that age generated the youngest zircons incorporated as detrital material into these Ordovician to Devonian rocks (see next subsections).

5.2. West African Craton provenance

Most of the U-Pb geochronological results published so far in detrital rocks from the Moroccan Variscides (*e.g.,* Abati et al., 2010; Avigad et al., 2012; Domènech et al., 2018; El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018; Marzoli et al., 2017; Pérez-Cáceres et al., 2017; Pratt et al., 2015) are characterized by Ediacaran-Cryogenian and Paleoproterozoic detrital zircon populations, with a significant gap at Mesoproterozoic ages. Such characteristics are considered the typical signature of WAC affinity (Figure 2.7), the main detrital zircon populations being attributed to the Cadomian and/or Pan-African (Ediacaran-Cryogenian) and Eburnean (Paleoproterozoic) orogenies (Nance et al., 2008 and references therein). An Archean population, possibly attributed to the Liberian orogeny (Nance et al., 2008 and references therein), is often present but at very scarce percentages. The absence of relevant Mesoproterozoic populations strongly suggests that the source of the zircons of that age described by Bradley et al. (2015) in

Ediacaran samples directly overlying the western WAC in Mauritania should be located in a more westerner area, *i.e.* an Amazonian basement.

All the samples described in this work include the above-mentioned WAC-diagnostic three detrital zircon populations (Ediacaran-Cryogenian, Paleoproterozoic, and Archean). In particular, the Late Ordovician-Early Devonian samples from the Azrou area (AZR2, AZR4, AZR5, and AZR6) and the two Silurian samples from the Tazekka area (TAZ5 and TAZ6) are characterized by a strong WAC affinity, their detrital zircon content being comparable with previously published studies in the region (*e.g.*, Abati et al., 2010; Avigad et al., 2012; Domènech et al., 2018; El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018; Marzoli et al., 2017; Pérez-Cáceres et al., 2017; Pratt et al., 2015). For this reason, and because of the similarities in the Early Paleozoic stratigraphic record within the Moroccan Variscides (Michard et al., 2010b and references therein), it seems plausible that the Moroccan Meseta domains were all part of the same continental margin located to the north of the WAC (*i.e.* at the northern margin of the Gondwanan continent). In fact, a WAC-type basement locally crops out in the Western Moroccan Meseta: besides Cadomian rocks (see section 5.1), an Eburnean (≈2.05 Ga) meta-rhyolite has been described covered by Lower Cambrian sedimentary rocks (Pereira et al., 2015). This Moroccan Meseta Precambrian basement, if exposed during the Ordovician-Devonian, could have been and additional local source for the Ediacaran and Paleoproterozoic zircon grains of our samples.

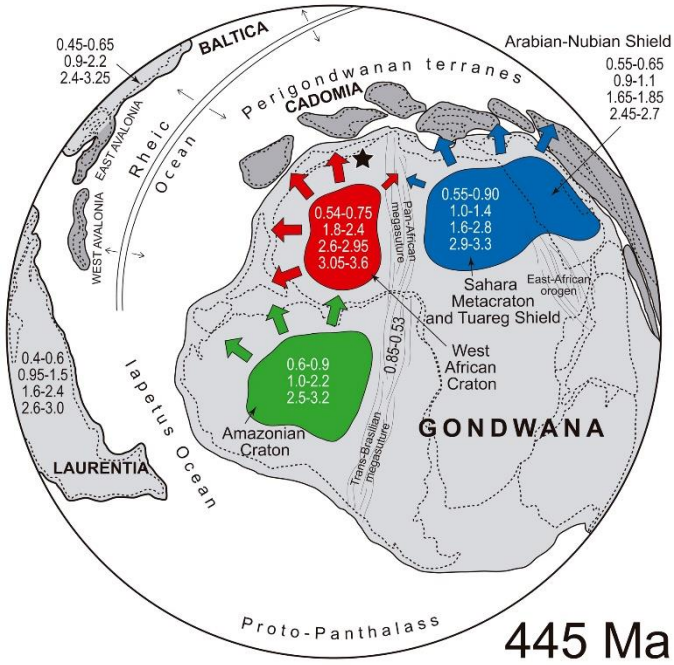


Figure 2.7. Palinspastic reconstruction of Gondwana, Laurentia, and Baltica (light grey) and Peri-Gondwanan terranes (dark grey) during Late Ordovician (about 445 Ma; modified from Bea et al., 2010; Linnemann et al., 2011; Naidoo et al., 2018). Ages are from Abati et al. (2010), Bea et al. (2010), Linnemann et al. (2011 and references therein), Naidoo et al. (2018), and Nance et al. (2008), and they are expressed in Ga. Colored arrows indicate the main transport directions of the sediments from the source areas within the northwestern Gondwanan continent. The black star indicates the approximate location of the area studied.

5.3. Tonian-Stenian population

Although all the samples show a dominant WAC affinity, the detrital zircon distribution patterns of a few of them diverge from the classical WAC signature, with secondary or minor detrital zircon populations of Tonian-Stenian age (Figure 2.8). In particular, the Late Ordovician samples from the Oujda area (OUJ2 and OUJ3) and the Late Ordovician samples from the Tazekka area (TAZ2 and TAZ3) include a Tonian-Stenian (about 1.0 Ga) population which reaches 30% of the analyses in the samples from Tazekka. Primary sources of that age are unknown in the WAC, but they are typical of the Grenville orogeny which affected Laurentia, Baltica, Avalonia, and the Amazonian Craton (Figure 2.7; Slagstad et al., 2017 and references therein), as well as the Arabian-Nubian shield and the Saharan Metacraton. Furthermore, because of the very small dimensions of the grains and their rounded morphology (particularly evident in samples TAZ2 and TAZ3; Figure 2.3), these zircons probably went through several cycles of erosion, transportation, and deposition, being finally deposited during the Late Ordovician glaciation that affected northern Gondwana (Ghienne et al., 2018; Le Heron et al., 2009). Consequently, it is possible that the Tonian-Stenian zircon grains analyzed in this work hailed from distant source areas that might be thousands of kilometers away from the current location of the sample sites.

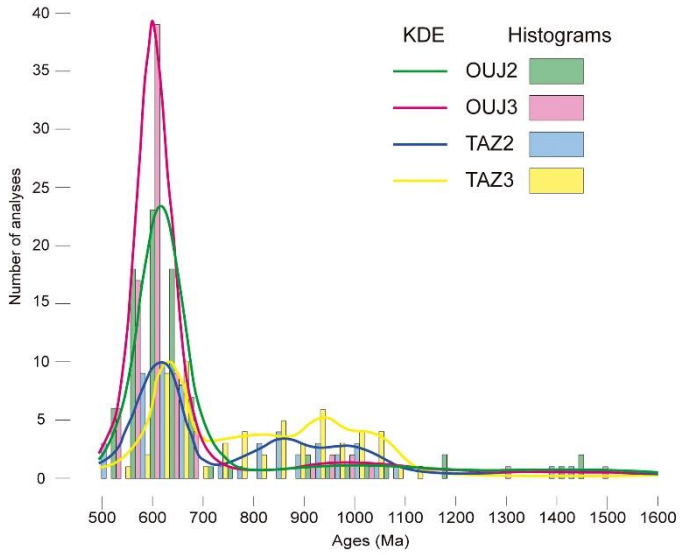


Figure 2.8. Summary Kernel Density Estimator (KDE, lines) and histograms (bars) combination of samples OUJ2 (n=85 of 126, in green), OUJ3 (n=83 of 135, in red), TAZ2 (n=53 of 65, in blue) and TAZ3 (n=59 of 88, in yellow) showing the different distribution patterns of data in the age range from 450 to 1600 Ma.

Laurentia, Baltica and Avalonian sources can be dismissed because they were separated from Gondwana by the Rheic Ocean at Ordovician to Late Devonian times (Figure 2.7). On the contrary, the Amazonian Craton was part of the Gondwana continent and it might be a plausible source area. However, zircon ages from this craton are continuous during all the Mesoproterozoic (1.0-1.6 Ga, and up to 2.2 Ga, Figure 2.7). Therefore, we would expect to find an analogous age pattern in detrital samples (Figure 2.9A) sourced from an Amazonian-type basement (for instance, the zircons described in

Bradley et al., 2015), but our samples only contain a few scattered Early to Middle Mesoproterozoic zircon grains (Figure 2.9B), thus suggesting a different source area. Actually, a more plausible source for the 1.0 Ga detrital zircons might be the Saharan Metacraton and/or the Arabian-Nubian Shield, which also contain zircons of that age (Figure 2.7). In this regard, northeastern African igneous sources were already suggested to explain the presence of Tonian-Stenian detrital zircon populations in samples from central and northern Iberia (Bea et al., 2010; Fernández-Suárez et al., 2014; Gutiérrez-Alonso et al., 2015; Pastor-Galán et al., 2013; Shaw et al., 2014; Talavera et al., 2012). Furthermore, such sources were previously claimed to explain minor Tonian-Stenian detrital zircon populations in samples from the Anti-Atlas (Avigad et al., 2012), High Atlas (Marzoli et al., 2017), and Middle Atlas (Ghienne et al., 2018; Pratt et al., 2015). However, Marzoli et al. (2017) and Pratt et al. (2015) studied post-Variscan rocks, which hampers provenance investigations because continental terranes with 1.0 Ga primary sources (*e.g.,* Avalonia, Baltica and Laurentia) were already amalgamated with Gondwana at the time of deposition of the studied samples. Accordingly, the above-mentioned authors proposed northeastern African sources as well as Amazonian or Avalonian provenance areas. However, the continuous Mesoproterozoic age distribution patterns in the Avalonian and Amazonian areas, in contrast to the pattern observed in the Moroccan samples (Figure 2.9), remains, in our opinion, the strongest point in favour of northeastern African sources. For the same reason, Ghienne et al. (2018) discarded the Amazonian Craton as a source area for Tonian-Stenian detrital zircons in the Tazekka area. According to these authors, 1.0 Ga grains in this area are found in sedimentary rocks deposited during a glacial maximum, making it possible that glaciers enhanced the transportation of detrital zircon grains from the northeastern regions of Africa (Saharan Metacraton and Arabian-Nubian Shield; Figure 2.7) to the Tazekka glacial depocenter. In this regard, the Ordovician age of samples OUJ2, OUJ3, TAZ2, and TAZ3 suggests that similar processes might be responsible for the accumulation of a Tonian-Stenian detrital zircon population in our samples.

Apart from the possibility of a very distant NE African source, it is possible that during the Ordovician, the Eastern Meseta was located in a closer position to the 1.0 Ga zircon sources of NE Africa. In this case, important regional faults, such as the SMF, would be necessary to explain the current position of the Eastern Meseta. Nevertheless, the SMF is characterized by dextral transpressional kinematics (Cerrina Feroni et al., 2010; Michard et al., 2010b), which is not congruent with the type of displacement needed to move the studied terranes from an original eastern position to their present day location. Moreover, the age and kinematic history of this structure is still a matter of discussion (Michard et al., 2010a; Simancas et al., 2009, 2010).

To conclude, the deposition of Tonian-Stenian detrital zircon grains probably occurred through long-travelled transportation from northeastern Africa, enhanced by Ordovician glaciation, and/or involving several cycles of erosion, transportation and sedimentation.

5.4. Cambro-Ordovician rifting in northern Gondwana

After the Ediacaran Cadomian subduction, the northern border of Gondwana was dominated, during the Early Paleozoic, by a rifting episode that preceded the opening of the Rheic Ocean (*e.g.*, Cambeses et al., 2017; Nance et al., 2010, 2012). Continental rift features, including very thick Cambrian and Ordovician sedimentary accumulations (up to 10 km) and copious Cambro-Ordovician rift-related plutonic and volcanic rocks (and the detrital zircon populations derived from them), are common in Variscan terranes now cropping out in central and southern Europe (*e.g.*, Cambeses et al., 2017; Demange, 1994; Linnemann et al., 2008 and references therein; Montero et al., 2009; Pastor-Galán et al., 2013; Pereira et al., 2012 and references therein; Pérez-Estaún et al., 1990).

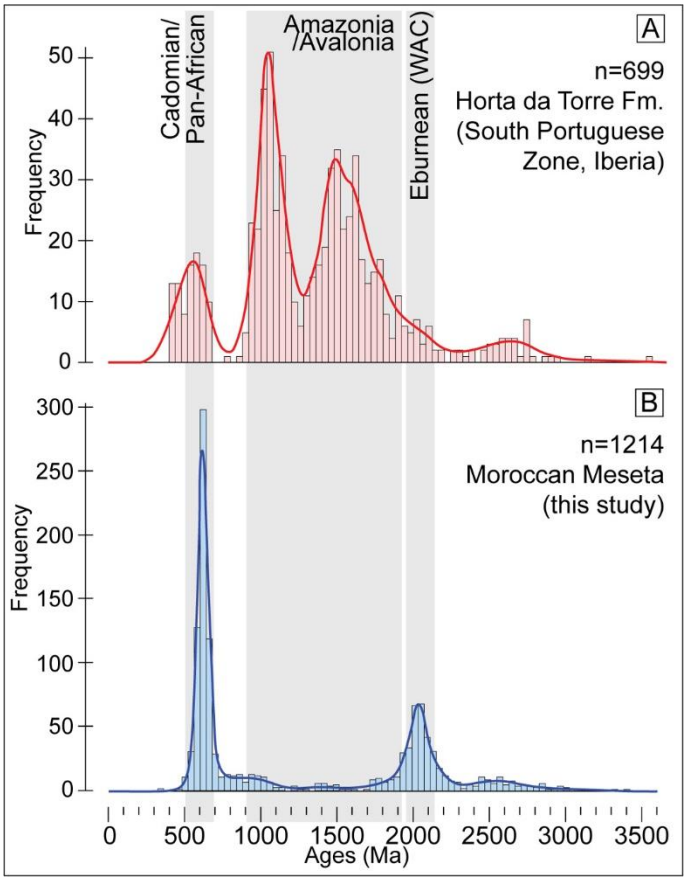


Figure 2.9. Comparison between Kernel Density Estimator (KDE) and histograms of U-Pb detrital zircon concordant ages: (A) data from the Devonian quartzites of the Horta da Torre Formation (Pulo do Lobo unit, South Portuguese Zone, SW Variscan Iberian Massif (Figure 2.1A); data compiled from Braid et al. (2011) and Pérez-Cáceres et al. (2017)), considered a typical example of Avalonian/Amazonian-derived sediments; (B) our data from the Eastern Meseta and Middle Atlas. Grey areas indicate the main crustal growth events in northern Gondwana.

In the Moroccan Meseta, evidence of Lower Paleozoic rifting is rather restricted in space and time. Sedimentary *grabens* have only been documented in the Middle Cambrian of the Coastal Block (Bernardin et al., 1988). Magmatic rocks are represented by discrete lenses of Cambrian mafic volcanics in the Coastal Block and rarely in the Central zone of the Western Moroccan Meseta (Pouclet et al., 2018 and references

therein). Cambro-Ordovician detrital zircon populations are almost missing, with the exception of a narrow unimodal zircon population centered at around 488 Ma recognized by Letsch et al. (2018) in a Lower Paleozoic greywacke from the Western Moroccan Meseta. A few Cambro-Ordovician detrital zircon ages were also obtained in Late Ordovician sandstones (Ghienne et al., 2018) and in Middle Jurassic sandstones (Pratt et al., 2015) from the Middle Atlas. As shown in Figures 2.4, 2.5, and 2.6, no Cambro-Ordovician detrital zircon populations were found in any of our samples from the Eastern Moroccan Meseta and Middle Atlas.

Based on the extent of the rift-related magmatism and detrital zircon content in Ordovician-Devonian rocks, it is generally accepted that Cambro-Ordovician rifting widely affected northern Gondwana-derived terranes, which are now exposed in Variscan massifs of central and southern Europe (*e.g.*, Cambeses et al., 2017; Linnemann et al., 2008; Montero et al., 2009; Pereira et al., 2012). Regarding the Moroccan Mesetas, we propose that Early Paleozoic rifting, accompanied by magmatism, partially affected the Western Meseta and aborted soon in late Cambrian time, but had no influence on the Eastern Meseta. Therefore, we suggest that the latter was located in a more inland position than the Western Meseta, and far from the rifted continental margin affected by rift-related magmatism (Iberia and central Europe correlatives).

6. Conclusion

The detrital zircon U-Pb dates obtained on Ordovician-Devonian rocks of the Eastern Moroccan Meseta (Oujda area) and Middle Atlas (Tazekka and Azrou areas) are similar to those obtained on other samples from the Western Meseta, attesting a strong WAC affinity, characterized by Ediacaran-Cryogenian, Paleoproterozoic, and minor Archean populations. Despite these similarities, it is worth highlighting that the samples studied in this work did not record Cambro-Ordovician magmatism (rifting phase preceding the opening of the Rheic Ocean that allowed the drift of peri-Gondwanan terranes). Such magmatism is locally evidenced in the Western Meseta, and widespread in southwestern Europe. This suggests that the Eastern Moroccan Meseta (and to some extent the Western Meseta) was located in northern Gondwana, relatively far from the portion of the continental margin affected by the rifting pulse.

The Late Ordovician samples from the Tazekka area and, to a lesser extent, the samples from the Oujda area, show an important (up to 30% of the data) Tonian-Stenian population which suggests the presence of exotic sources apart from the WAC, probably located in northeastern Africa (Saharan Metacraton and Arabian-Nubian Shield). The presence of this population in Ordovician samples from northwestern Africa sequences might be explained by the glaciation that occurred during the Late Ordovician in northern Gondwana. Furthermore, the small size and rounded morphology of the grains suggest that they experienced significant sedimentary recycling.

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Section II.2

Detrital zircon sources in the Ordovician metasedimentary rocks of the Moroccan Meseta: inferences for northern Gondwanan passive margin paleogeography

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Abstract

Detrital zircon U-Pb geochronology has been widely used to constrain the pre-Carboniferous geography of the European and, to a lesser extent, the Moroccan Variscides. The latter have been generally considered as part of a long-lasting passive margin that characterized northern Gondwana from Ordovician to Devonian time, and was subsequently involved in the Late Paleozoic Variscan orogeny. We report detrital zircon ages for three Early to Late Ordovician samples from the Beni Mellala inlier in the northeastern part of the Western Moroccan Meseta in order to discuss the temporal evolution of the sources of sediments in this region. The detrital zircon spectra of these samples, characterized by two main populations with mean ages of 630-610 Ma and 2170-2060 Ma, are typical of Cambrian-Devonian rocks from the Moroccan Variscides and confirm their link to the West African Craton. A minor Stenian-Tonian population (peak at ca. 970 Ma) suggests the influence of a distant and intermittent NE-African source (Sahara Metacraton), which was probably interrupted after Ordovician time. Our data support previous interpretations of the Moroccan Meseta (and the entire northern Moroccan Variscides) as part of the northern Gondwana passive margin. The main sources of these sediments would have been the West African Craton in the western regions of the passive margin (Moroccan Meseta and central European Paleozoic massifs), and the Arabian-Nubian Shield and/or Sahara Metacraton in the eastern areas (Libya, Egypt, Jordan, central and NW Iberian zones during Paleozoic time) where the 1.0 Ga detrital zircon population is persistent throughout the Ordovician-Devonian time span.

1. Introduction

Zircon is an essential mineral in geochronological studies and paleogeographic reconstructions. Systematic dating and statistical analysis of detrital zircon ages in sedimentary clastic rocks (*e.g.*, Fedo et al., 2003; Gehrels, 2012) has particular value in pre-Alpine orogenies where plate reconstruction and kinematics cannot be based on direct seafloor magnetic stripe observations.

The Variscan orogeny is the result of the consumption of the Rheic Ocean and the collision between Gondwana, Laurussia, and a number of peri-Gondwanan terranes during Late Devonian-Permian time (*e.g.*, Franke et al., 2017; Matte, 2001; Simancas et al., 2005). The resulting Late Paleozoic Variscan belt in Europe has been extensively studied with detrital zircon geochronology during the last two decades (*e.g.*, Linnemann et al., 2004; Nance et al., 2008; Braid et al., 2011; Pereira et al., 2012a, 2017; Eckelmann et al., 2014; Fernández-Suárez et al., 2014; Shaw et al., 2014; Gutiérrez-Alonso et al., 2015; Franke and Dulce, 2017; Pérez-Cáceres et al., 2017). These studies enabled the identification of Gondwanan and Avalonian/Laurussian terranes incorporated into the Variscan belt, which have been interpreted as separated by the Paleozoic Rheic ocean from Late Cambrian to Early Devonian times (*e.g.*, Cocks and Fortey, 1982; Nance et al., 2010). However, along-strike differences in Gondwana-sourced detrital zircons and the

presence of putative second-order orogenic sutures still mask the regional paleogeographic picture (cf. Franke et al., 2017 and Stephan et al., 2019b).

An important portion of the Variscan belt crops out in NW Africa (Morocco and Mauritania) and represents the along-strike extension of the European segment, although the exact correlation is obliterated by the Alpine Betic-Rif orogenic system between the European and African plates (Figure 2.10A). Unfortunately, the number of studies devoted to detrital zircon systematics in the Paleozoic sequences of the NW African Variscides is still relatively small (Abati et al., 2010; Avigad et al., 2012; Gärtner et al., 2017, 2018; Pérez-Cáceres et al., 2017; El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018; Accotto et al., 2019), while proposed paleogeographic correlation with other Variscan massifs has primarily been based on magmatic similarities and the apparent absence of orogenic sutures (*e.g.*, El Hadi et al., 2006; Simancas et al., 2009). This work focuses on the detrital zircon populations in the Ordovician sequence of the Beni Mellala inlier (Figure 2.10B), located in the northeastern part of the Western Moroccan Meseta. The Paleozoic succession in this inlier is paleontologically well dated (Charriere, 1990), allowing us to propose better characterization of the temporal variations of the putative sediment sources and compare them with other Paleozoic outcrops of similar age in Morocco and Europe.

2. Geological setting

The Paleozoic massifs in northern Morocco that were affected by the Variscan orogeny are collectively known as "northern Moroccan Variscides". They crop out in different domains (Figure 2.10) that are separated by faults and/or tectonic lineaments (Hoepffner et al., 2006; Michard et al., 2010b), whose paleogeographic significance is still under debate (*e.g.*, Simancas et al., 2009, 2010; Michard et al., 2010a). To the north, the Sehoul Block is characterized by Caledonian deformation and magmatism (Simancas et al., 2005; Michard et al., 2010b; Tahiri et al., 2010) and is, therefore, considered as part of an allochthonous terrane, probably an Avalonian promontory (Simancas et al., 2005), juxtaposed during the Early Carboniferous with the Meseta Domain along the Rabat-Tiflet Fault Zone.

The Moroccan Meseta Domain is a vast area with variably deformed Cambrian to Carboniferous metasedimentary rocks intruded by Carboniferous-Permian Variscan granitoids, and partially covered by post-Variscan Mesozoic-Cenozoic sediments. This domain is subdivided into Eastern (EMM) and Western (WMM) Moroccan Mesetas, separated by the Tazekka-Bsabis-Bekrit Fault Zone. The WMM includes the Coastal Block to the west, the Central Zone, and the "Nappe Zone" to the east, separated by the Western Meseta Shear Zone and the Smaala-Oulmès Fault Zone, respectively (Michard et al., 2010b). The Paleozoic succession in the WMM is characterized by eastward-increasing deformation and low- to very-low grade metamorphism (Hoepffner et al., 2006). In contrast, the Paleozoic rocks of the EMM crop out in relatively small and isolated inliers affected by weak to intense deformation and low- to very low-grade

metamorphism (Hoepffner et al., 2006; Accotto et al., 2020). To the south, the Meseta Domain is juxtaposed with the Southern Zone along the South Meseta Fault Zone (Hoepffner et al., 2006). Farther to the south, the South Atlas Fault Zone separates the Southern Zone and the Sahara Domain (Anti-Atlas), the latter being characterized by almost no Variscan deformation and metamorphism, and hence considered to be part of the Gondwanan foreland of the Variscan Belt (Michard et al., 2010b).

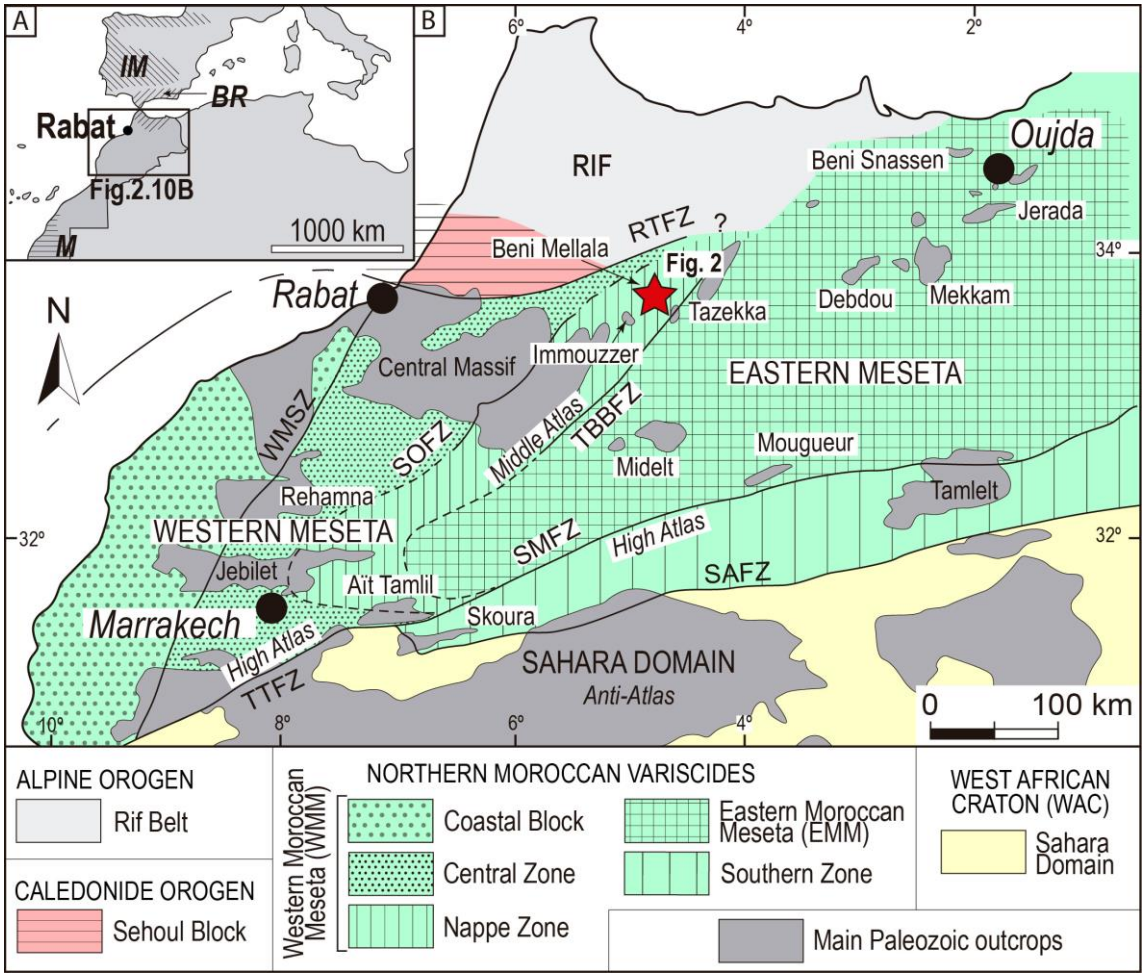

Figure 2.10 (previous page). Geographical and geological location of the studied area. A) Map of NW Africa and Iberia with the location of the northern Moroccan Variscides (rectangle); IM: Iberian Massif; BR: Betic-Rif Belt; M: Mauritanides. B) Geological map of the northern Moroccan Variscides (modified from Hoepffner et al., 2006; Michard et al., 2010b): RTFZ: Rabat-Tiflet Fault Zone; WMSZ: Western Meseta Shear Zone; SOFZ: Smaala-Oulmès Fault Zone; TBBFZ: Tazekka-Bsabis-Bekrit Fault Zone; TTFZ: Tizin'Test Fault Zone; SMFZ: South Meseta Fault Zone; SAFZ: South Atlas Fault Zone. The red star indicates the location of the studied area (Figure 2.11).

2.1. Stratigraphy of the Beni Mellala inlier

The Paleozoic succession of the WMM is roughly continuous from Cambrian to Visean time (Hoepffner et al., 2005), and unconformably overlies a Neoproterozoic metaigneous basement exposed in a few small outcrops (Tahiri et al., 2010; Pereira et al., 2014, 2015; Ouabid et al., 2017; El Houicha et al., 2018; El Haibi et al., 2020).

The Cambrian succession is characterized by carbonate sedimentation followed by shales and greywackes, and, locally (*e.g.*, in the Coastal Block; Pouclet et al., 2018), lenses of volcanic rocks (Hoepffner et al., 2005; Michard et al., 2008 and references therein), related to magmatism at the opening of the Rheic Ocean (Murphy et al., 2006; Schulz et al., 2008; Nance et al., 2010, 2012). The Ordovician-Devonian sedimentation defines a passive margin stage, characterized by shales and sandstones (Ordovician), black shales (Silurian), and a succession of quartzitic sandstones and shales passing upwards to limestones (Devonian) (Hoepffner et al., 2005; Michard et al., 2008 and references therein).

The syn-orogenic succession unconformably overlies the Cambrian-Devonian strata and consists of siliciclastic and volcanoclastic sediments deposited during an Early Carboniferous ("intra-Visean") extensional episode (Hoepffner et al., 2006) that predated the main Variscan compressional tectonic event (Hoepffner et al., 2005; Michard et al., 2010b).

The Beni Mellala inlier is characterized by gently folded Lower Ordovician-Silurian strata (Figures 2.11A and B; Baudelot et al., 1990; Charriere, 1990), unconformably overlain by an undeformed Mesozoic sequence (Charriere, 1990). The oldest outcropping rocks are the "Bsabis Shales" (Figure 2.11C; Charriere, 1990), which consist of a several hundred meter-thick sequence of black shales with a decameter-thick intercalation of quartzites in the lower part (sample SF3), and sporadic sandy intercalations, which become more common upwards (sample SF2); the uppermost part of the "Bsabis Shales" is made up of green shales. The black shales overlying the quartzite level were dated based on microfossil content as Arenig-Llanvirn (now Floian-Darriwillian, Early-Middle Ordovician; Ouarhache, 1987). These ages were also confirmed by the palynomorph content of several samples throughout the "Bsabis Shales" (Baudelot et al., 1990). As a whole, the "Bsabis Shales" are correlated with the Lower-Middle Ordovician succession of the northwestern sector of the Tazekka inlier (Hoepffner, 1977; Marhoumi et al., 1982; Rauscher et al., 1982; Chakir, 1983).

The "Microconglomeratic Shales" of Late Ordovician age (Upper Katian-Hirnantian; Figure 2.11C) conformably overlay the "Bsabis Shales". They consist of a thick sequence of grey-greenish shales with a decametre-thick intercalation of black microconglomeratic quartzites (sample SF1; Figure 2.11C). These Upper Ordovician rocks also crop out in the nearby Immouzer inlier (Figure 2.10B), where two samples from the bottom and topmost part of the succession yielded fossils of Early Ashgill (now Katian, Late Ordovician) and earliest Llandovery (Early Silurian) ages, respectively (Charriere, 1990). The "Microconglomeratic Shales" were also recognized in other inliers of the Moroccan Variscides (Charriere, 1990 and references therein), for instance in the Tazekka area (Hoepffner, 1977; Ghienne et al., 2018), having been associated with the glaciation that widely affected Gondwana in the Late Ordovician (Le Heron, 2007; Le Heron et al., 2009, 2008).

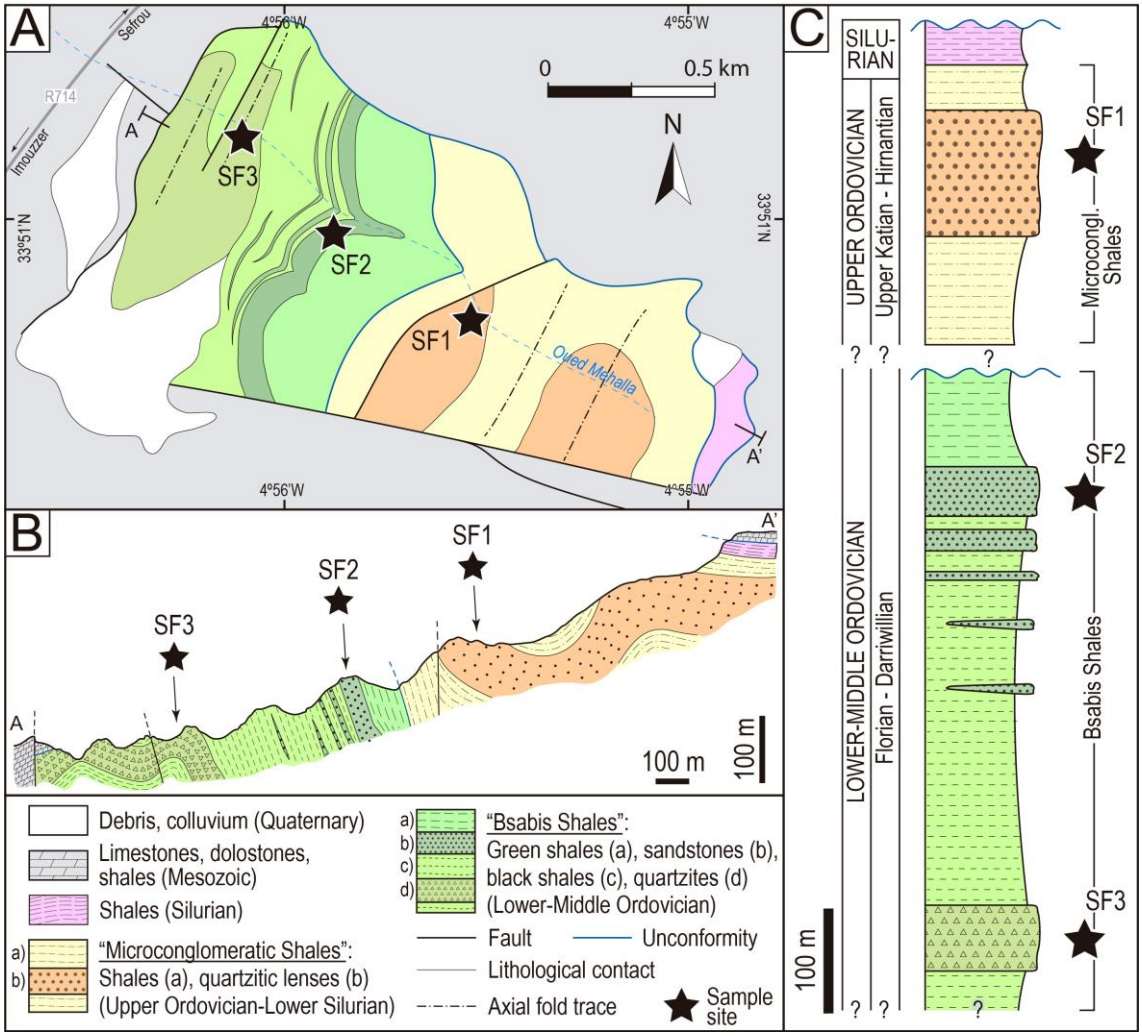

Figure 2.11. Geology of the Beni Mellala inlier (after Baudelot et al. (1990) and Charriere (1990)). (A) Schematic geological map with sample location; (B) Cross section and (C) stratigraphic column of the Paleozoic (Lower Ordovician-Silurian) succession.

Silurian black shales with graptolites (Figure 2.11C) crop out on top of the "Microconglomeratic Shales" (Horon, 1954; Charriere, 1990; Willefert and Charriere, 1990).

3. Sample and methods

During this study, three samples were collected in the Beni Mellala inlier (Figure 2.11). SF1 (IGSN: IEACC0006) was sampled from the black quartzite level, locally microconglomeratic, intercalated within the Upper Ordovician-Lower Silurian (Upper Katian-Lower Llandovery) "Microconglomeratic Shales" (Charriere, 1990). At the microscale, the sample is made up of > 90% rounded, medium-sized, mainly undeformed quartz grains with a few interstitial mica grains. SF2 (IGSN: IEACC0007) was collected from a meter-thick bed of sandstones within the upper part of the Lower-Middle Ordovician (Florian-Darriwilian) "Bsabis Shales" (Charriere, 1990). More than 80% of the sample is made up of angular, fine-sized, mainly undeformed quartz grains, with a

few interstitial oxide and mica grains. Finally, SF3 (IGSN: IEACC0008) was sampled from the quartzitic intercalation in the lower part of the "Bsabis Shales" (Charriere, 1990). At the microscale, the sample is made of > 90% angular, mainly undeformed quartz grains.

At each sample site, 4-5 kg of rock was collected and processed at the University of Granada (Spain). Detrital zircon grains were separated from each sample using mechanical smashing in a jaw-crusher, sorting by sieving, manual panning, and, finally, handpicking. Cathodoluminescence images (CL; Figure 2.12) of the zircon grains were taken with a Mira3 FESEM instrument at the John de Laeter Centre (JdLC), Curtin University (Perth, Australia) and Carl Zeiss SIGMA HD VP Field Emission SEM at the School of GeoSciences, University of Edinburgh (United Kingdom), in order to recognize zoning and alteration textures within the zircon grains.

Because of the variable size of the detrital zircon grains, U-Th-Pb analyses were conducted using laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS, with a spot bin of c. 33 μm), sensitive high-resolution ion microprobe (SHRIMP), and secondary ion mass spectrometry (SIMS) techniques (both of them with a spot bin of c. 15 μm), as summarized in Table 2.3. LA-ICPMS and SHRIMP analyses were performed at the JdLC GeoHistory Facility (Curtin University, Perth, Australia); SIMS measurements were realized at the University of Edinburgh (UK). Details of the analytical methods are described in the Appendix A and the raw results are provided in Appendix D (Tables D.11 to D.13b) and in the Mendeley Dataset repository (doi: 10.17632/t69w5cwyrp.2)1.

Table 2.3. Details of the samples and analyses.

Sample	Location*		Lithology	Age	Zircon grains analyzed	Type of analyses	Number of analyses§
	X	Y					
SF1	321855	3746816	Quartzite	Late Ordovician	143	LA-ICPMS	150/**139**
SF2	321334	3747211	Quartzite	Early-Middle Ordovician	131	LA-ICMPS SIMS	80/**64** 52/**47**
SF3	320976	3747518	Quartzite	Early-Middle Ordovician	109	LA-ICPMS SHRIMP	65/**54** 51/**42**

§UTM coordinates, WGS84 ellipsoid, zone 30 S.
*Total number of analyses carried out with number of concordant ages (in bold).

All dates with a discordance higher than 10% were discarded. $^{206}Pb/^{238}U$ dates were used for zircon grains younger than 1.5 Ga. Due to the significant increase in error on $^{206}Pb/^{238}U$ dates for grains older than 1.5 Ga, the $^{207}Pb/^{206}Pb$ ratio was considered more appropriate for > 1.5 Ga material analyzed in this work (Spencer et al., 2016). The mean square weighted deviation (MSWD) of the youngest detrital zircon population was calculated using IsoplotR online (Vermeesch, 2018). Finally, Kernel Density Estimators (KDE) and histograms were realized using the software DensityPlotter 8.4 (Vermeesch, 2012), applying a KDE bandwidth and histogram bin of 20 Ma. Errors are expressed at 1σ level.

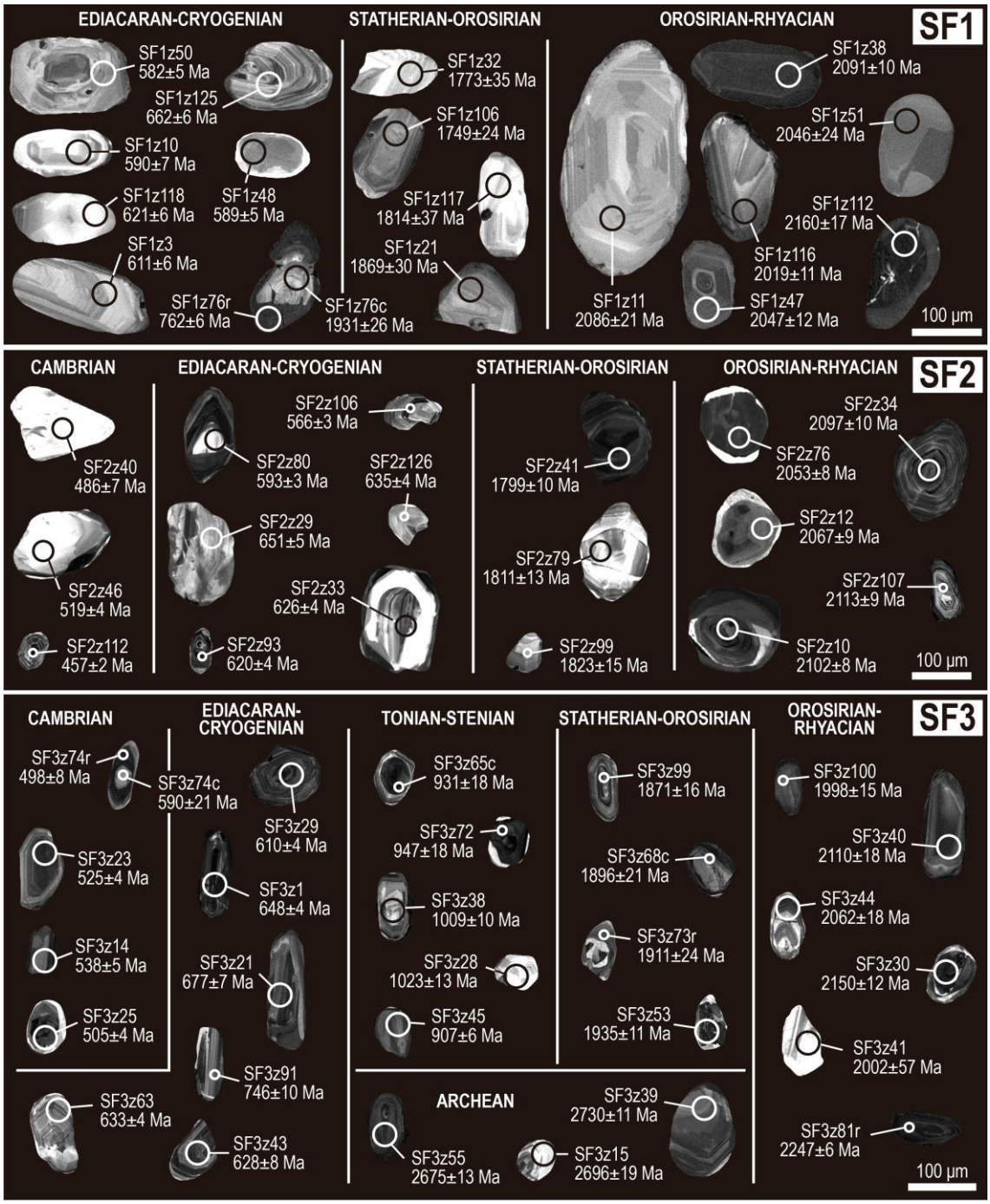

Figure 2.12 (previous page). Cathodoluminescence images of detrital zircon grains from the studied samples; high-U sectors of the crystals correspond to darker zones in the images.

4. Results

From sample SF1, we separated 250 detrital zircon grains with different degrees of roundness and whitish or yellowish color. Grains width vary between ca. 60 and 200 µm. The CL images show continuous oscillatory and sector zoning, and partially resorbed cores with thin overgrowths (Figure 2.12). One hundred and fifty LA-ICPMS analyses were performed, yielding 139 concordant dates (Table 2.3 and Figure 2.13A).

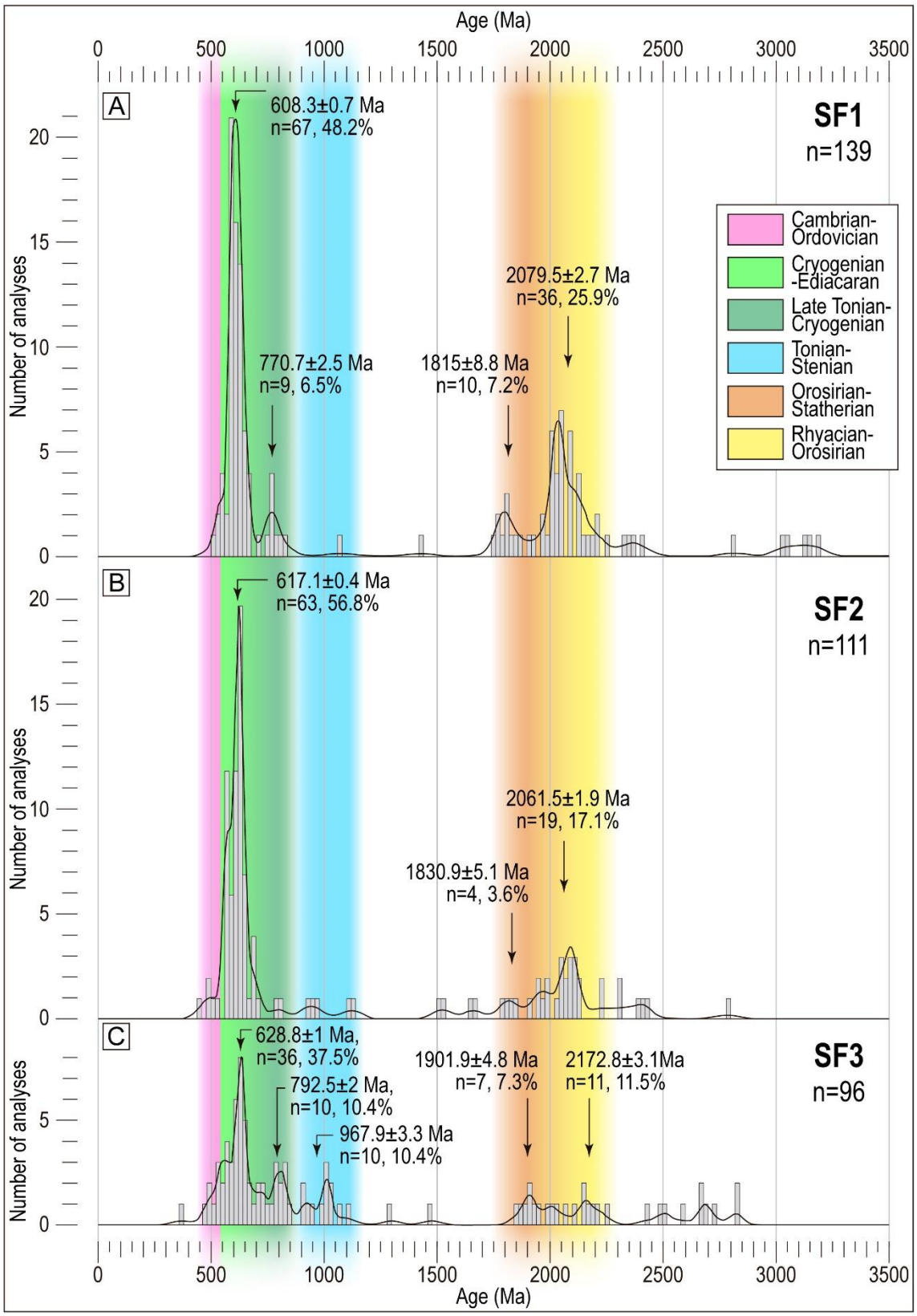

Figure 2.13. Results of U-Pb analyses of detrital zircon grains from the studied samples: combination of Kernel Density Estimates plots (KDE, black lines) and histograms (grey bars) based on $^{206}Pb/^{238}U$ (for grains < 1.5 Ga) and $^{207}Pb/^{206}Pb$ (for grains > 1.5 Ga) ages. Black arrows indicate the detrital zircon populations calculated with DensityPlotter 8.4 (Vermeesch, 2012); (A) sample SF1; (B) sample SF2; (C) sample SF3.

The most prominent detrital zircon population yielded an Ediacaran mean age of 608.3±0.7 Ma, including 67 Cryogenian-Ediacaran dates (from ca. 668 to 544 Ma, 48.2% of the data). Another important population gave a Rhyacian age (2079.5±2.7 Ma), comprising 36 Rhyacian-Orosirian ages from ca. 2239 to 1972 Ma (25.9% of the data). Minor detrital zircon populations yielded Orosirian-Statherian (mean age 1815±8.8 Ma, 10 dates between ca. 1869 and 1749 Ma, 7.2% of the data) and Late Tonian-Early Cryogenian (mean age 770.7±2.5 Ma, 9 dates from ca. 834 to 712 Ma, 6.5% of the data) ages. Three grains have Cambrian ages (between ca. 534 and 501 Ma), while two analyses yielded Mesoproterozoic ages (ca. 1424 and 1064 Ma), and a few grains gave ages between ca. 3188 and 2320 Ma. The youngest detrital zircon population, defined by 5 dates, yielded a Late Ediacaran age of 543.7±2.5 Ma (MSWD = 1.15) compatible with the stratigraphic age of the sample (Late Ordovician).

Approximately 250 detrital zircons were separated from sample SF2. The grains are differently rounded, generally whitish or yellowish, and show continuous oscillatory or sector zoning with composite textures and overgrown high- or low-U rims (Figure 2.12). The grain size is highly variable (width between ca. 30 and 120 μm). Grains were generally small and only 80 LA-ICPMS analyses were carried out, while another 51 analyses were performed with SIMS (Table 2.3), yielding 64 and 47 concordant dates, respectively. The results were combined to obtain the age distribution shown in Figure 2.13B.

The most important detrital zircon population in sample SF2 yielded an Ediacaran mean age of 617.1±0.4 Ma, including 63 dates with ages ranging from ca. 703 to 560 Ma (Cryogenian-Ediacaran, 56.8% of the data). Nineteen dates (17.1% of the data, dates ranging from ca. 2137 to 1940 Ma) are included in a Rhyacian detrital zircon population with a mean age of 2061.5±1.9 Ma. Minor peaks gave Cambrian-Ordovician (5 dates from ca. 527 to 457 Ma, 4.5% of the data) and Orosirian (mean age 1830.9±5.1 Ma, 4 dates from ca. 1857 to 1799 Ma, 3.6% of the data) ages. Scattered data yielded Statherian-Tonian (11 data with ages from ca. 1670 to 791 Ma) and Rhyacian-Neoarchean (8 data between ca. 2781 and 2223 Ma) ages. The youngest detrital zircon population includes 8 dates with an Ediacaran mean age of 562.7±1.2 Ma (MSWD = 0.92), which is compatible with the stratigraphic age of this sample (Early Ordovician).

Two hundred and ten detrital zircons of variable size and color were separated from sample SF3. CL images show continuous oscillatory and sector zoning, as well as partially resorbed cores overgrown by low- or high-U rims (Figure 2.12). The width of the grains varies from ca. 30 to 100 μm. Only 65 LA-ICPMS analyses were performed, yielding 54 concordant results. An additional 42 concordant dates were obtained from 51 SHRIMP analyses (Table 2.3). All of the results were combined to obtain the age distribution shown in Figure 2.13C.

The most important detrital zircon population in sample SF3 has an Ediacaran mean age (628.8±1 Ma) and includes 36 dates (37.5% of the data) ranging from ca. 746 to 541 Ma (Cryogenian-Ediacaran). A minor population (10.4% of the data), defined by 10 dates from ca. 847 to 779 Ma (Late Tonian-Cryogenian), gave a Late Tonian mean age of

792.5±2 Ma. Another 10 dates (10.4% of the data) define a Stenian-Tonian population ranging from ca. 1023 to 907 Ma, which yields an Early Tonian mean age of 967.9±3.3 Ma (with two minor peaks at 912.5±5.3 and 1000.3±4.3 Ma). The Rhyacian-Orosirian population includes only 11 dates (11.5% of the data) with ages from ca. 2247 to 1998 Ma and a Rhyacian mean age of 2172.8±3.1 Ma. Seven dates from ca. 1953 to 1848 Ma (Orosirian-Statherian) depict a minor Orosirian peak at 1901.9±4.8 Ma (7.3% of the data). Finally, 7 Cambrian-Ordovician dates (7.3% of the data) ranging from ca. 538 to 467 Ma can be differentiated from the dominant Cryogenian-Ediacaran population. Scattered grains yielded Late Devonian (ca. 371 Ma, incompatible with the stratigraphic age of the sample), Calymmian-Stenian (ca. 1475-1066 Ma) and Mesoarchean-Siderian (ca. 2828-2430 Ma) ages. The youngest detrital zircon population, including four data, gave a Late Ediacaran age of 543±2.2 Ma (MSWD = 1.38), which is consistent with the stratigraphic age of the sample (Early Ordovician).

In summary, the three samples from the Beni Mellala Ordovician rocks are characterized by a prominent (35-55% of the data) Cryogenian-Ediacaran detrital zircon population with mean ages between ca. 630 and 610 Ma. A second important peak is defined by a Rhyacian-Orosirian population with mean ages ranging from ca. 2170 to 2060 Ma (11-26% of the data). Minor populations found in all three samples define an Orosirian-Statherian peak (ca. 1910-1815 Ma, 4-7% of the data) and a variable number (2-7% of the data) of Cambrian-Ordovician grains have ages ranging between ca. 538 and 457 Ma. A Late Tonian-Cryogenian peak (6-10% of the data) is present in samples SF1 and SF3, with mean ages ranging from ca. 790 to 770 Ma. Sample SF3 is also characterized by a Stenian-Tonian population (ca. 970 Ma defined by 10% of the data), which is absent in the other two samples. The youngest detrital zircon population in all the samples is Ediacaran (ca. 563 Ma in sample SF2; ca. 543 Ma in samples SF1 and SF3).

5. Discussion

5.1. Detrital zircon-derived maximum depositional ages versus true depositional ages

Youngest detrital zircon populations are often used to constrain the maximum depositional ages (MDA) of sampled sedimentary rocks. True depositional ages (TDA), generally based on fossil content and/or direct geochronological dating of volcanic intercalations, can be coeval or slightly younger with respect to the MDA, or they can be separated by hundreds of millions of years (*e.g.*, Sharman and Malkowski, 2020). The time lapse between the MDA and TDA mainly depends on the geographical (*e.g.*, topography, size of drainage systems, etc.) and geological (*e.g.*, active vs passive margins, syn- vs pre-orogenic sequences, etc.) setting. In the case of the Beni Mellala inlier, the studied samples yielded a Late Ediacaran MDA, on average 100 Ma older than the

Ordovician TDA defined on the basis of paleontological and palynomorphic content (Ouarhache, 1987; Baudelot et al., 1990; Charriere, 1990).

Ediacaran MDA are dominant in Cambrian to Devonian rocks all over the Variscan belt (*e.g.*, Fernández-Suárez et al., 2002; Martínez Catalán et al., 2004; Díez Fernández et al., 2010; Avigad et al., 2012; Pereira et al., 2012b, 2012c; Linnemann et al., 2014; Gutiérrez-Alonso et al., 2015; Pérez-Cáceres et al., 2017; Ghienne et al., 2018; Accotto et al., 2019), confirming the spatial and temporal importance of Ediacaran (Pan-African/Cadomian) arc-related magmatism. Offsets between the TDA and the detrital zircon-based MDA vary between ca. 10 and 200 Ma. Therefore, the common assumption of approximating MDA to TDA must be used with caution, especially in passive margin settings such as the one recognized for the Upper Cambrian – Devonian successions all over the Gondwanan side of the Variscides. On the contrary, syn-orogenic successions usually reveal short temporal offsets between the detrital zircon-derived MDA and fossil-based TDA. This is the case for the uppermost Devonian – lowermost Carboniferous Debdou-Mekkan metasedimentary syn-orogenic rocks of the EMM (Accotto et al., 2020), but also of other syn-orogenic sequences in SW (Pereira et al., 2012a, 2017, 2020; Pérez-Cáceres et al., 2017) and NW Iberia (Martínez Catalán et al., 2004).

The presence of very scarce Cambrian (and even Lower Ordovician) detrital zircon grains in the studied samples is compatible with the TDA, and would attest to the very modest syn-rift magmatism at that time in the Moroccan Variscides (red line in Figure 2.14; *e.g.*, Ghienne et al., 2018; Accotto et al., 2019). In this regard, syn- and post-rift magmatism seems to be underrepresented in Ordovician-Devonian metasedimentary rocks in other transects of the Variscan belt with abundant Early Ordovician felsic magmatism (for instance the Central Iberian Zone in Spain; blue line in Figure 2.14; Gutiérrez-Alonso et al., 2015). The simplest explanation for this fact is that the Early Ordovician igneous rocks did not crop out until the collisional and/or post-collisional stages of the Variscan orogeny (*i.e.*, they would have only reached the surface during Carboniferous or even Permian times). However, the Cambrian-Ordovician detrital zircon populations are abundant in the central European Variscan massifs (*e.g.*, Armorican massif, French Central Massif, Saxothuringian Zone, and Moldanubian Zone; black line in Figure 2.14; Linnemann et al., 2004; Strnad and Mihaljevič, 2005; Bahlburg et al., 2010; Drost et al., 2011; Košler et al., 2014; Lin et al., 2016, 2019; Žák and Sláma, 2018; Szczepański et al., 2020). Unlike central/northern Iberia and northern Morocco, it is possible that during Ordovician-Devonian time, the northern Gondwanan passive margin in central European regions was affected by local tectonic activity that led to the exposure of the Cambrian-Ordovician magmatic rocks.

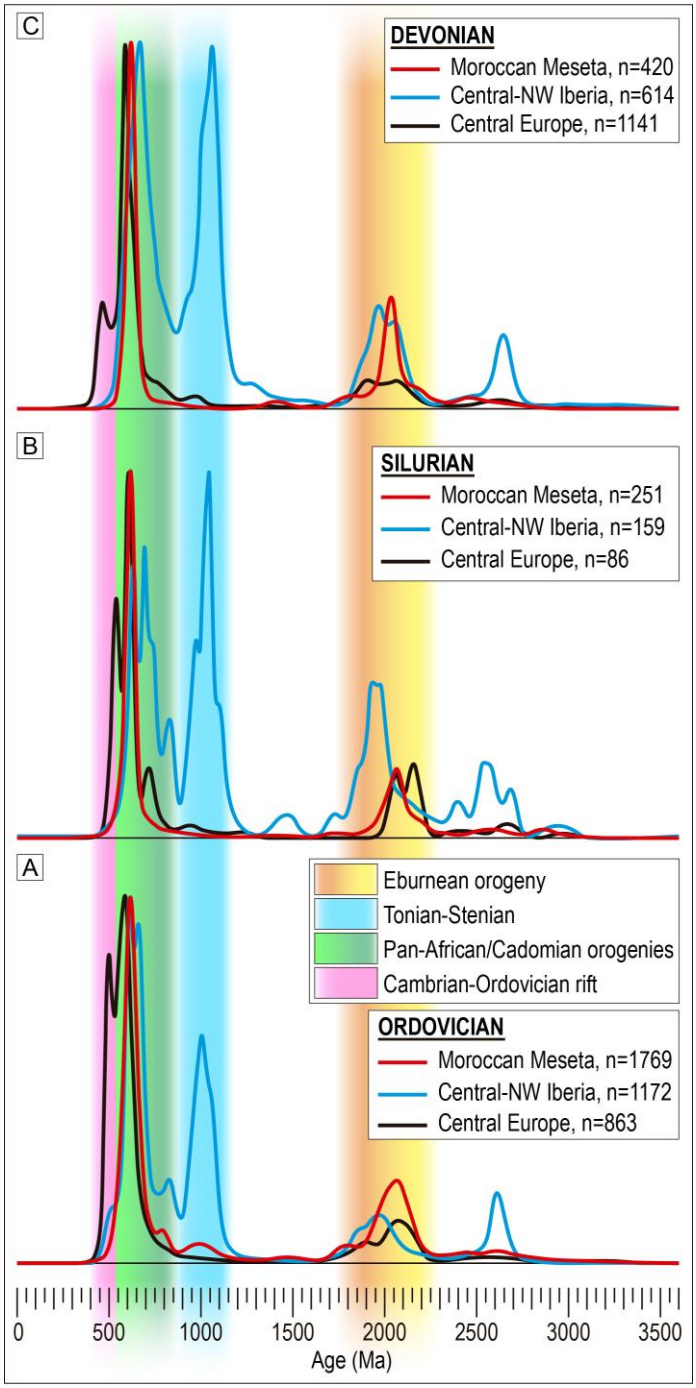

Figure 2.14. Combined KDE plots showing the detrital zircon populations observed in Ordovician-Devonian samples from the Moroccan Meseta (red lines), central and NW Iberia (blue lines), and central European Variscan massifs (Armorican massif, French Central Massif, Saxothurigian Zone, and Moldanubian Zone; black lines); A) Ordovician samples (Moroccan Meseta: Ghienne et al., 2018 and Accotto et al., 2019; central and NW Iberia: Shaw et al., 2014; central Europe: Linnemann et al., 2004; Bahlburg et al., 2010; Drost et al., 2011; Žák and Sláma, 2018; Szczepański et al., 2020); B) Silurian samples (Moroccan Meseta: Accotto et al., 2019; central and NW Iberia: Pastor-Galán et al., 2013 and Gutiérrez-Alonso et al., 2015; central Europe: Žák and Sláma, 2018); C) Devonian samples (Moroccan Meseta: Accotto et al., 2019; central and NW Iberia: Gutiérrez-Alonso et al., 2015; central Europe: Strnad and Mihaljevič, 2005; Košler et al., 2014; Lin et al., 2016, 2019; Žák and Sláma, 2018).

5.2. Stable detrital zircon sources throughout the Ordovician in the northern Moroccan Variscides

Most of the U-Pb geochronological studies carried out on detrital zircons from the Cambrian to Triassic rocks of the northern Moroccan Variscides point out the prevalence of two main populations, also identified in the samples from the Beni Mellala inlier, with Cryogenian-Ediacaran (ca. 750-540 Ma; in light green in Figure 2.13) and Paleoproterozoic (ca. 2.25-1.95 Ga; in yellow in Figure 2.13) ages (*e.g.*, Abati et al., 2010; Avigad et al., 2012; Pratt et al., 2015; Marzoli et al., 2017; Pérez-Cáceres et al., 2017; Domènech et al., 2018; El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018; Accotto et al., 2019). These two detrital zircon populations are generally attributed to the Pan-African/Cadomian and Eburnean orogenies (Nance et al., 2008 and references therein), and their presence, together with a significant Mesoproterozoic gap, is considered typical of sediments sourced from the West African Craton (WAC) and nearby areas (*e.g.*, Nance et al., 2008; Abati et al., 2010; Linnemann et al., 2011). We endorse this interpretation and consider the WAC and surrounding Pan-African/Cadomian arc magmatic rocks as the main sources of detrital zircon grains in the Moroccan Variscides. According to our data, these sources would have been stable throughout the Ordovician (at least 50 Ma) and would have supplied detritus to the northern Gondwanan passive margin, developed after Cambrian rifting and through the opening of the Rheic Ocean. However, the samples from Beni Mellala are also characterized by minor detrital zircon populations that deserve more discussion with regard to their potential sources.

A small number of grains (2-7% of the data in samples SF2 and SF3 and 3 grains in sample SF1) yielded Cambrian-Ordovician ages (ca. 538-457 Ma). Although this minor population does not form a real peak in the KDE diagrams (in pink in Figure 2.13), we separated it from the main Cryogenian-Ediacaran population because these data could represent a very different tectonic setting. In this regard, the Pan-African and Cadomian orogenies are considered to have ended by 615-580 Ma (Thomas et al., 2002; Inglis et al., 2004) and 545-540 Ma (Linnemann et al., 2008) respectively. Thus, the Cambrian-Ordovician detrital zircon grains found in our samples, might be related to the Cambrian-Ordovician rifting that preceded the opening of the Rheic Ocean (Linnemann et al., 2008; Schulz et al., 2008), marking the onset of the Variscan cycle. Detrital zircon grains of this age were only found in Early Ordovician samples from the Central Zone of the WMM (Letsch et al., 2018) and Late Ordovician rocks from the Middle Atlas (Ghienne et al., 2018). Cambrian eruptive centers are known in the Anti-Atlas, High Atlas, and Coastal Block, being volumetrically scarce and of basaltic composition (*e.g.*, Pouclet et al., 2018 and references therein). Thus, the scarcity or absence of Cambrian-Ordovician detrital zircon grains in the Ordovician sequence of the northern Moroccan Variscides might suggest that: (i) rifting only had a very local influence, (ii) zircon grains of that age were scarce due to the mafic composition of the parental magmas, and/or (iii) Cambrian magmatic rocks were not exposed at Ordovician time.

A minor Late Tonian-Cryogenian detrital zircon population is also present in samples SF1 and SF3 (790-770 Ma, in dark green in Figure 2.13). These detrital zircon grains

might be correlated with the earliest magmatic pulses of the Pan-African orogenic cycle characterized by the formation of an intra-oceanic volcanic arc (770-750 Ma; Soulaimani and Hefferan, 2017) that followed the Rodinia supercontinent breakup (885-860 Ma; Ernst et al., 2008; Hefferan et al., 2014 and references therein; Soulaimani and Hefferan, 2017 and references therein). Actually, a Pan-African oceanic suture was traced through the Anti-Atlas region (Bou Azzer inlier; El Hadi et al., 2010) and might have been the source of the subordinate Tonian-Cryogenian population transported through the same river catchments that brought the Paleoproterozoic and Ediacaran grains.

Stenian-Tonian (900-1100 Ma; 10% of sample SF3 and a few grains in the other samples) detrital zircon grains in the Paleozoic succession of the Moroccan Variscides have been noted in the Anti-Atlas (Avigad et al., 2012), High Atlas (Perez et al., 2019), Middle Atlas (WMM; Ghienne et al., 2018; Accotto et al., 2019), and EMM (Accotto et al., 2019; 2020), as well as in some Mesozoic rocks of the High Atlas (Marzoli et al., 2017), Middle Atlas (Pratt et al., 2015), and Rif (Azdimousa et al., 2019). Primary sources of this age are very common in areas affected by the Grenville orogeny (1.3-0.9 Ga; Ernst et al., 2008), such as Laurentia, Baltica, Avalonia, and Amazonia (Figure 2.15); nevertheless, they are unknown in regions near to the WAC, except in some Neoproterozoic metasedimentary samples from the Mauritanides (Figure 2.10A; Bradley et al., 2015). During Ordovician time, Laurentia, Baltica, and Avalonia were separated from Gondwana by the Rheic Ocean (Figure 2.15) and they cannot be considered primary sources for the Moroccan Ordovician metasedimentary rocks (Accotto et al., 2019). Furthermore, the zircon age spectra of all these Grenvillian terranes (*e.g.*, Drost et al., 2011; Linnemann et al., 2011 and references therein), as well as some of the samples from the Mauritanide orogen (*e.g.*, Bradley et al., 2015; Bea et al., 2020), are continuous throughout the Mesoproterozoic, while the Stenian-Tonian detrital zircon population so far described in Paleozoic rocks from the Moroccan Variscides is characterized by a single peak centered at c. 1.0 Ga (Avigad et al., 2012; Ghienne et al., 2018; Accotto et al., 2019; Perez et al., 2019; this work) with no ages older than 1.1-1.15 Ga. Considering this, and regardless of the paleogeographic setting, direct or recycled Amazonian, Laurentian, Baltian, and/or Avalonian sources were likely excluded in the Ordovician metasedimentary rocks of the northern Moroccan Variscides. Regarding the particular case of the Mauritanides, the absence of both ca. 1.0 Ga and 1.2-1.5 Ga detrital zircon populations in samples from areas located between the Mauritanides and the Moroccan Meseta, namely the Anti-Atlas (except a minor and very localized 1.0 Ga peak; Avigad et al., 2012), suggests that there were no drainage systems facilitating the direct transportation of sediments between these two regions (Mauritanides and northern Moroccan Variscides). Ghienne et al. (2018) proposed a ca. 1.0 Ga source located in an exotic Avalonian terrane remnant that did not drift apart from the main Gondwana continent during the Cambrian rifting and was accreted to the WAC during the Pan-African/Cadomian orogeny. The only evidence for the existence of such terrane is an obsolete charnockite K-Ar date from the Mazagan escarpment (offshore Morocco; Ruellan, 1985), recently re-dated with more reliable techniques at 1.95-1.64 Ga (zircon and monazite U-Pb; Kuiper, 2019; Kuiper et al., 2019). Therefore, the most widely

accepted explanation for the occurrence of a Stenian-Tonian detrital zircon population in samples from the northern Moroccan Variscides (Avigad et al., 2012; Accotto et al., 2019) is a distant source located in the Sahara Metacraton.

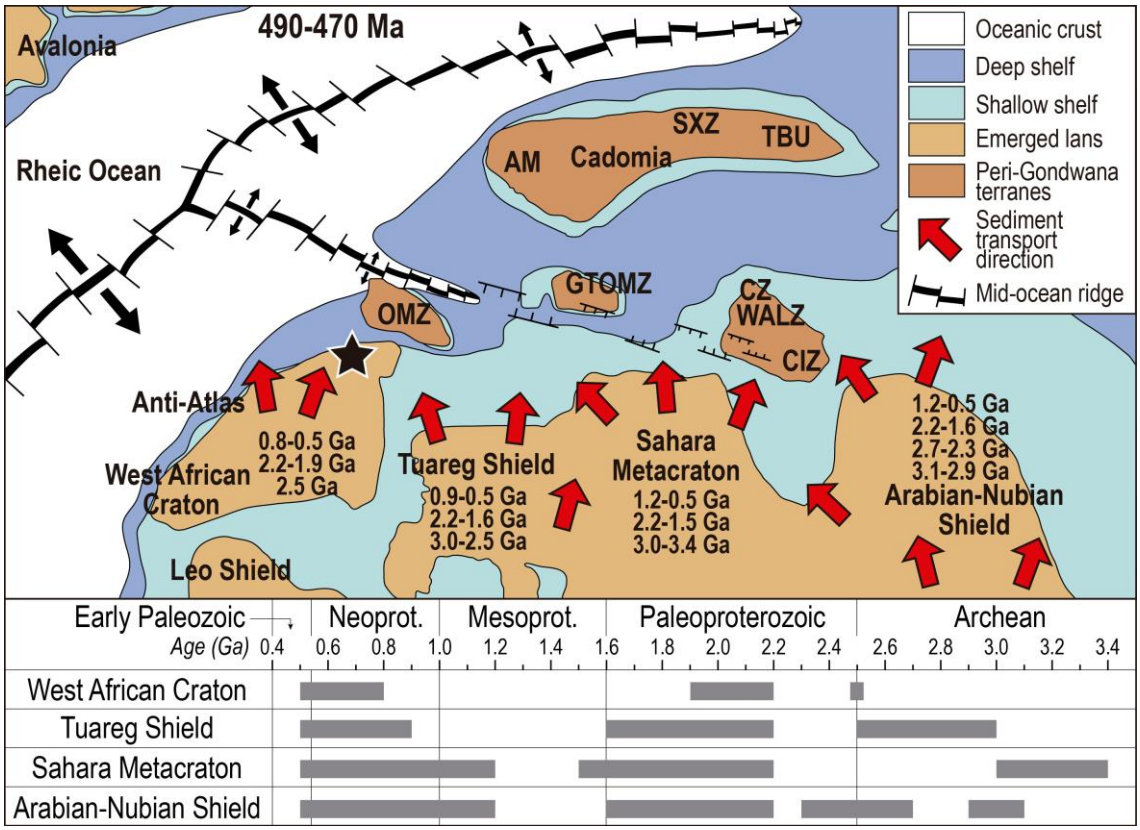

Figure 2.15. Paleogeographic reconstruction of northern Gondwana at Late Ordovician time (490-470 Ma) and distribution of magmatic zircon ages (expressed in Ga) in the main source areas (in map and graphical time scale). The black star locates the Moroccan Meseta. Central and NW Iberia: West-Asturian Leonese Zone (WALZ), Galicia-Tras-os-Montes Zone (GTOMZ), Central Iberian Zone (CIZ), Cantabrian Zone (CZ); SW Iberia: Ossa-Morena Zone (OMZ); Cadomia: Armorican Massif (AM), Saxo-Thuringian Zone (SXZ), Tepla-Barrandian Unit (TBU) (modified from Cambeses et al. (2017) and references therein).

The Sahara Metacraton, together with the Tuareg Shield (Figure 2.15), might also be the source of the Orosirian-Statherian (1.95-1.75 Ga) detrital zircon grains found in our samples. In fact, a zircon age source postdating the end of the Eburnean orogeny is unknown in the WAC, except some sets of bimodal dykes in the Anti-Atlas associated with the breakup of the Nuna/Columbia supercontinent and dated at 1.75 Ga (Lama et al., 1993; Gasquet et al., 2004; Youbi et al., 2013). Nevertheless, it is unlikely that these bimodal dykes yielded the volume of zircon grains of this age found in our samples and in other samples from the northern Moroccan Variscides (*e.g.*, Abati et al., 2010; Avigad et al., 2012; Ghienne et al., 2018; Letsch et al., 2018; Accotto et al., 2019, 2020).

Finally, a few scattered zircon grains in all the samples yielded Archean ages (2.5-3.2 Ga), possibly sourced from the Leonean-Liberian orogenies in central Africa (Hurley et al., 1971; Nance et al., 2008 and references therein), although the precise determination of the primary source areas of these grains has likely been obscured by sedimentary recycling.

In summary, based on the main detrital zircon populations observed in our samples we conclude that the principal source of sediments in this part of the WMM during the Ordovician was the WAC, in addition to some very subordinate Cambrian-Ordovician rift-related magmatic sources, probably located within the Moroccan Mesetas, and distant NE African sources that supplied the scarce Stenian-Tonian and Orosirian-Statherian detrital zircon grains.

5.3. Paleogeography of the northern Moroccan Variscides and correlation with European counterparts

Several attempts to reconstruct the paleogeographic evolution of the Moroccan Variscides have been carried out (*e.g.*, Michard, 1976; Michard et al., 1989, 2010a, 2010b; Piqué and Michard, 1989, 2018; Walliser et al., 1995, 2000; Piqué, 2001; El Hassani et al., 2003; Hoepffner et al., 2005, 2006; Simancas et al., 2005, 2009), proposing the affinity of the Meseta Domain with the northern Gondwanan (Sahara domain; Figure 2.10) based on stratigraphic similarities and the absence of suture-related units in-between (Simancas et al., 2009; Michard et al., 2010a, 2010b). The geochronological analyses of detrital zircon grains from the Paleozoic succession of the Anti-Atlas (Abati et al., 2010; Avigad et al., 2012), WMM (El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018; Accotto et al., 2019; this study), and EMM (Accotto et al., 2019) confirm this paleogeographic picture and place the whole northern Moroccan Variscides (with the exception of the Sehoul Block with Avalonian affinity and its putative eastwards prolongation in the EMM; Accotto et al., 2020) close to the WAC throughout the Paleozoic (see previous sub-section).

From a tectonic point of view, all previously quoted reconstructions consider that the Moroccan Variscides as a whole represents a Cambrian-Devonian northern Gondwana passive margin, later inverted during the Variscan collision (*e.g.*, Hoepffner et al., 2005, 2006; Michard et al., 2010b; Accotto et al., 2020). Nevertheless, comparison of the detrital zircon distribution in the Ordovician-Devonian rocks of Morocco with the distribution seen in other paleogeographically well constrained northern Gondwanan sequences (*e.g.*, the central/northwestern Iberia and central Europe transects) yields remarkable differences. The most important of these concerns the ca. 1.0 Ga detrital zircon population (Figure 2.14). In this regard, a minor Stenian-Tonian detrital zircon population was described in some samples from the Cambrian-Ordovician succession of the Moroccan Variscides (Avigad et al., 2012; Ghienne et al., 2018; Accotto et al., 2019), but it generally represents less than 10-15% of the data (except in two samples from the Tazekka inlier with up to 30% Stenian-Tonian ages; Accotto et al., 2019). In contrast, the ca. 1.0 Ga population is always represented in samples from central and northwestern Iberia (*e.g.*, Bea et al., 2010; Talavera et al., 2012; Pastor-Galán et al., 2013; Fernández-Suárez et al., 2014; Shaw et al., 2014; Gutiérrez-Alonso et al., 2015) with abundances of up to 30-50% (red line in Figure 2.14). The detrital zircon age spectra for the Gondwana-derived central European Variscan massifs (*e.g.*, Armorican massif, French Central Massif, Saxothuringian Zone, and Moldanubian Zone; Linnemann et al., 2004; Strnad

and Mihaljevič, 2005; Bahlburg et al., 2010; Drost et al., 2011; Košler et al., 2014; Lin et al., 2016, 2019; Žák and Sláma, 2018; Szczepański et al., 2020) are very similar to those of the Moroccan Meseta (black line in Figure 2.14). Thus, the Stenian-Tonian detrital zircon population in these regions always represents less than 5% of the data. Accordingly, there is now consensus to place central and NW Iberian zones close to either the Arabian-Nubian Shield and/or the Sahara Metacraton (*e.g.*, Bea et al., 2010; Gutiérrez-Alonso et al., 2015) where primary Stenian-Tonian sources are common (Figure 2.15), while other central European massifs were probably located in more western areas. Thus, the northern Gondwana Paleozoic margin can be reconstructed as a several thousand km-long platform, with central and northern Iberia located in an eastern position and the Moroccan and central European Variscides in a western location, closer to the WAC (Figure 2.15). The differences between the Moroccan Paleozoic and the central and NW Iberian rocks seem to persist throughout the passive margin stage (ca. 200 Ma).

6. Conclusions

The detrital zircon content of the Beni Mellala Ordovician rocks in the EMM attests to a typical and temporally stable WAC source area (providing a ca. 750-540 Ma dominant population and a ca. 2250-1950 Ma subordinate one) with a distant -and maybe intermittent- influence from the Sahara Metacraton (minor population of ca. 970 Ma in an Early Ordovician sample). This detrital zircon spectrum is common in most of the Ordovician-Devonian rocks so far analyzed in the Moroccan Variscides. It has usually been interpreted, in combination with other geological data (especially the absence of suture-related rocks to the south (Variscan foreland)), as indicative of a northern Gondwana long-lasting passive margin stage. Therefore, the northern Gondwana margin have comprised a several thousand km-long and laterally continuous Ordovician-Devonian platform with diverse sediment routing systems (as shown by the detrital zircon content): Arabian-Nubian Shield and/or Saharan Metacraton sources would have dominated the eastern regions (including central and northwestern Iberia) throughout the passive margin stage, while WAC sources would have prevailed in western regions (Moroccan Variscides and central European massifs).

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Section II.3

Systematics of detrital zircon grains from Cambrian-Lower Devonian rocks of the Moroccan Mesetas

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Abstract

The systematic acquisition of U-Pb geochronological data from detrital zircon grains has become an essential tool in tectonic studies focused on the reconstruction of the pre-Variscan geography of the early-middle Paleozoic northern Gondwanan passive margin. New detrital zircon ages of 16 samples from the Cambrian-Early Devonian succession of the Moroccan Mesetas are reported here. The obtained results, combined with previously published data, reassert the strong West African Craton affinity of the Paleozoic sedimentary rocks, characterized by dominant Cadomian/Pan-African (c. 850-540 Ma) and Eburnean (c. 2.2-1.9 Ga) detrital zircon populations, with a minor Leonian/Liberian (c. 2.5 Ga) one. Primary sources of these populations are well-known in the West African Craton located just to the south, but also in the Precambrian basement that locally crops out in the Moroccan Mesetas themselves. During the Cambrian-Early Ordovician, erosion dismantled preferentially Cadomian (c. 590-540 Ma) arc-derived rocks of the Gondwanan continental margin, while later on slightly older Pan-African (c. 650-600 Ma) basement became the main sediment source. In the studied samples, minor detrital zircon populations irregularly present suggest additional sediment provenance from secondary sources such as: (i) remote northeastern African cratons (*e.g.*, Sahara Metacraton and/or Arabian-Nubian Shield) that likely could have provided the c. 1.1-0.9 Ga and, possibly, the c. 1.9-1.7 Ga zircon grains, and (ii) rift-related Cambrian-Early Ordovician volcanic centers in the Moroccan Mesetas that supplied heterogeneously distributed - although locally dominant in small areas - sedimentary detritus before rift abortion and burial underneath the overlying passive margin sedimentary succession.

1. Introduction

The systematic U-Pb dating of detrital zircon grains is a powerful tool that in the last decades has been widely applied in sediment provenance studies and paleogeographic reconstructions (*e.g.*, Fedo et al., 2003; Gehrels, 2012). These studies have been fundamental in the recognition of the terranes involved in pre-Alpine orogenies, whose present-day field relationships are often complex and/or obliterated by superposed tectonics. In Europe, geochronology of detrital zircon grains is the basis of a good number of studies (*e.g.*, Braid et al., 2011; Eckelmann et al., 2014; Fernández-Suárez et al., 2014; Franke and Dulce, 2017; Gutiérrez-Alonso et al., 2015; Linnemann et al., 2004; Nance et al., 2008; Pereira et al., 2017, 2012; Pérez-Cáceres et al., 2017; Shaw et al., 2014) that allowed a better understanding of the late Paleozoic Variscan belt, which was formed by the closure of the Rheic Ocean and the subsequent collision between the Gondwanan and Laurussian supercontinents, with several minor peri-Gondwanan terranes (*e.g.*, Franke et al., 2017; Matte, 2001; Simancas et al., 2005).

The southward along-strike extension of the European Variscan belt, partially obliterated by younger orogenic systems (*e.g.*, Alpine Betic-Rif belt, Figure 2.16A), crops out in northern Morocco and western Mauritania. In Morocco, the areas affected by the Variscan orogeny are collectively referred to as the “Moroccan Variscides”, and have

been mainly investigated from the stratigraphic and tectonic points of view (*e.g.*, El Hassani et al., 2003; Hoepffner et al., 2006; Michard, 1976; Michard et al., 2010b, 2010a, 1989; Pique, 1994; Piqué, 2001, 1981; Piqué and Michard, 1989; Simancas et al., 2009, 2005; Tahiri, 1991; Villeneuve et al., 2010; Walliser et al., 2000, 1995). Furthermore, the use of detrital zircon geochronological data has been recently incorporated into the study of this part of the Variscan belt, although the number of works dedicated to this technique is still relatively scarce (Abati et al., 2010; Accotto et al., 2019, 2020, 2021, in press; Avigad et al., 2012; El Houicha et al., 2018; Gärtner et al., 2017, 2018; Ghienne et al., 2018; Letsch et al., 2018; Pérez-Cáceres et al., 2017).

The northern Moroccan Variscides crop out in several domains (Figure 2.16B) separated by fault zones, whose paleogeographic importance is still a matter of debate (*e.g.*, Hoepffner et al., 2006; Michard et al., 2010a, 2010b; Simancas et al., 2009, 2010):

- The Sehoul Block is located north of the Rabat-Tiflet Fault Zone (RTFZ) and characterized by a lower-middle Cambrian siliciclastic succession that was deformed and metamorphosed before the intrusion of Devonian granitoids (Tahiri et al., 2010). This middle Paleozoic deformation has not been observed in any other part of the northern Moroccan Variscides and, hence, the Sehoul Block is considered to be part of a Caledonian exotic terrane (i.e., Avalonian promontory; *e.g.*, Simancas et al., 2005) accreted to the northern margin of Gondwana during the Carboniferous (*e.g.*, Michard et al., 2010b and references therein; Tahiri et al., 2010).
- The Western Moroccan Meseta (WMM; see section 2.1) is limited by the RTFZ (to the north), the Tizin'Test Fault Zone (TTFZ, to the south), and the Tazekka-Bsabis-Bekrit Fault Zone (TBBFZ, to the east), and divided into Coastal Block, Central Zone and Nappe Zone, separated by the Western Meseta Shear Zone (WMSZ) and the Smaala-Oulmès Fault Zone (SOFZ), respectively.
- The Eastern Moroccan Meseta (EMM; see section 2.2) is located east of the TBBFZ and limited, to the south, by the South Meseta Fault Zone (SMFZ).
- The Southern Zone is bordered to the north by the SMFZ and to the south by the South Atlas Fault Zone (SAFZ), and characterized by a Cambrian-Carboniferous detrital succession slightly deformed and poorly metamorphosed.
- The Anti-Atlas is located south of the TTFZ and SAFZ, and considered to be the Gondwanan foreland of the Variscan belt; the Paleozoic succession of this domain is constituted by Cambrian-lower Carboniferous sedimentary rocks partially detached from the Precambrian basement and characterized by weak deformation, progressively decreasing southwards (Michard et al., 2010b and references therein).

With the exception of the Sehoul Block, all of the domains of the northern Moroccan Variscides are considered to have belonged to the northern Gondwanan passive margin during the Cambrian-Early Devonian time span. This is based on stratigraphic similarities and absence of ophiolite and/or high-pressure metamorphic belts between the different domains (*e.g.*, Michard et al., 2010b; Simancas et al., 2005).

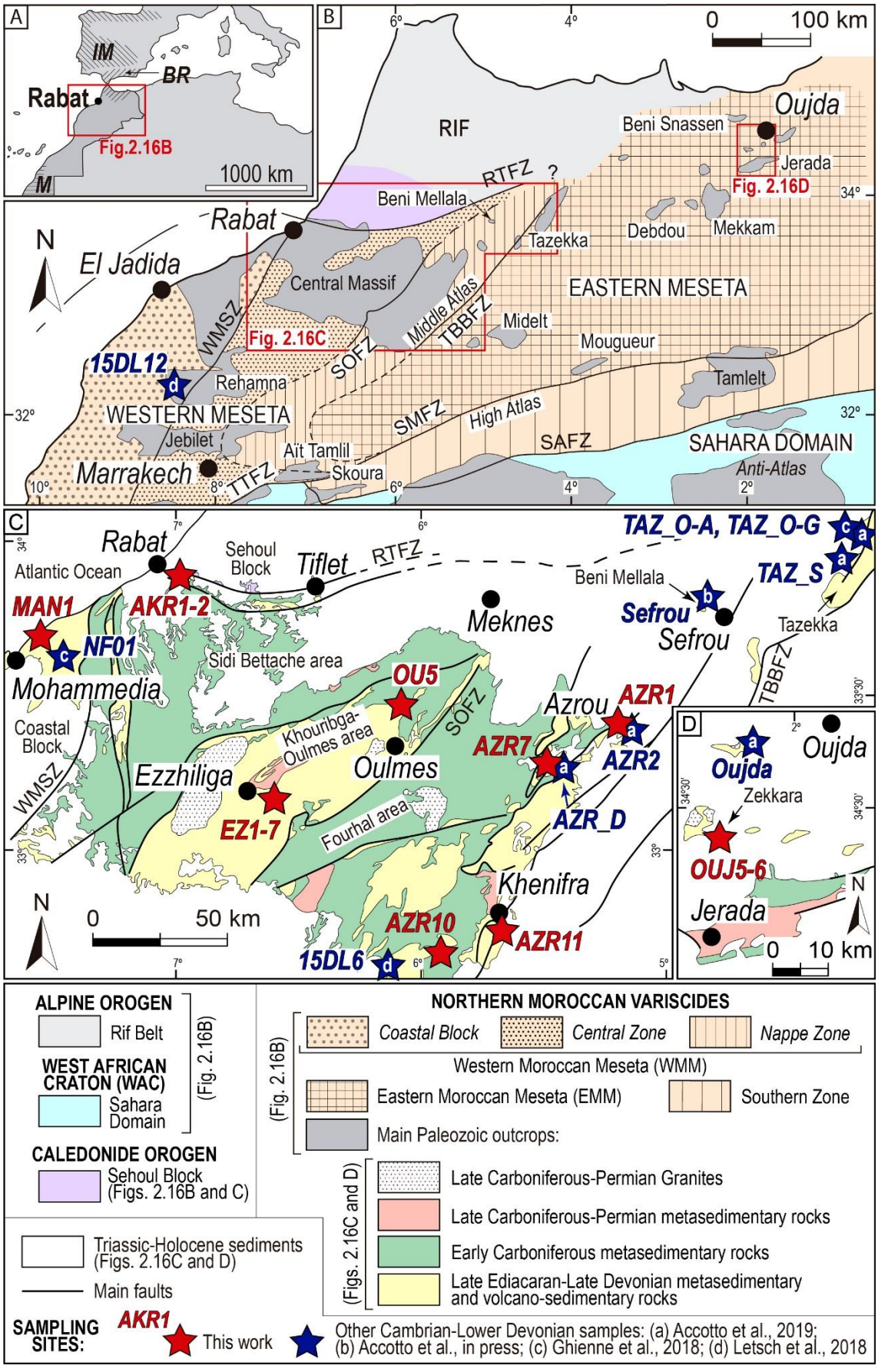

A
IM
BR
Rabat
Fig.2.16B
M
1000 km
B
0
100 km
RIF
Oujda
Beni Snassen
Jerada
Fig. 2.16D
RTFZ
?
Beni Mellala
Rabat
Tazekka
Debdou
Mekkam
N
El Jadida
Central Massif
EASTERN MESETA
WMSZ
Middle Atlas
TBBFZ
Midelt
Fig. 2.16C
SOFZ
Mougueur
15DL12
Rehamna
Tamlelt
WESTERN MESETA
SMFZ
High Atlas
Jebilet
SAFZ
SAHARA DOMAIN
Aït Tamlil
Marrakech
TTFZ
Skoura
Anti-Atlas
C
Rabat
Sehoul Block
Tiflet
RTFZ
Atlantic Ocean
TAZ_O-A, TAZ_O-G
TAZ_S
Beni Mellala
Sefrou
Tazekka
MAN1
AKR1-2
NF01
Meknes
Sidi Bettache area
OU5
Mohammedia
Azrou
AZR1
Coastal Block
Khouribga-Oulmes area
SOFZ
AZR7
AZR2
WMSZ
Ezzhiliga
Oulmes
Fourhal area
EZ1-7
AZR_D
Khenifra
N
0
50 km
AZR10
AZR11
15DL6
D
Oujda
Zekkara
OUJ5-6
Jerada
0
10 km
ALPINE OROGEN
Rif Belt
WEST AFRICAN CRATON (WAC)
Sahara Domain
(Fig. 2.16B)
CALEDONIDE OROGEN
Sehoul Block (Figs. 2.16B and C)
NORTHERN MOROCCAN VARISCIDES
Coastal Block
Central Zone
Nappe Zone
Western Moroccan Meseta (WMM)
Eastern Moroccan Meseta (EMM)
Southern Zone
Main Paleozoic outcrops:
(Figs. 2.16C and D)
Late Carboniferous-Permian Granites
Late Carboniferous-Permian metasedimentary rocks
Early Carboniferous metasedimentary rocks
Late Ediacaran-Late Devonian metasedimentary and volcano-sedimentary rocks
Triassic-Holocene sediments (Figs. 2.16C and D)
Main faults
SAMPLING SITES:
AKR1
This work
Other Cambrian-Lower Devonian samples: (a) Accotto et al., 2019; (b) Accotto et al., in press; (c) Ghienne et al., 2018; (d) Letsch et al., 2018

Figure 2.16 (previous page): Schematic geological maps of the Paleozoic inliers and structural domains in northern Morocco. A) Location of northern Morocco; IM: Iberian Massif; BR: Betic-Rif Belt; M: Mauritanides. B) Northern Moroccan Variscides (modified from Hoepffner et al., 2006; Michard et al., 2010b). C) Detail of the northern Western Moroccan Meseta (modified from Arboleya et al., 2004; Becker and El Hassani, 2020; Charriere, 1989). D) Detail of the Oujda-Zekkara area (modified from Muratet, 1995). RTFZ: Rabat-Tiflet Fault Zone; WMSZ: Western Meseta Shear Zone; SOFZ: Smaala-Oulmès Fault Zone; TBBFZ: Tazekka-Bsabis-Bekrit Fault Zone; TTFZ: Tizin'Test Fault Zone; SMFZ: South Meseta Fault Zone; SAFZ: South Atlas Fault Zone. Stars indicate the location of the samples studied in this work (in red) and other Cambrian-Early Devonian samples already published (in blue, see references in the Figure legend).

In this study, we collected 16 upper Cambrian-Lower Devonian (meta)sandstone samples from different areas of the Moroccan Mesetas (WMM and EMM; Figure 2.16) and carried out U-Pb geochronological analyses on detrital zircon grains in order to investigate the detrital sources that controlled the sedimentation in the northern Gondwanan passive margin. To do so, we have also considered the already published data from other coeval samples of the region, which are listed in Table 2.4.

Table 2.4: previously published results used in this work.

Original sample code	Codes used in this work	Age	Reference
COASTAL BLOCK			
15DL12	15DL12	Late Cambrian	Letsch et al., 2018
NF01	NF01	Late Ordovician	Ghienne et al., 2018
NAPPE ZONE (KHENIFRA AREA)			
15DL6	15DL6	Late Cambrian-Early Ordovician	Letsch et al., 2018
NAPPE ZONE (AZROU AREA)			
AZR2	AZR2	Late Ordovician	Accotto et al., 2019
AZR4, AZR5, AZR6	AZR_D	Early Devonian	
NAPPE ZONE (SEFROU AREA)			
SF1, SF2, SF3	Sefrou	Early-Late Ordovician	Accotto et al., in press
NAPPE ZONE (TAZEKKA AREA)			
TAZ2, TAZ3	TAZ_O-A	Late Ordovician	Accotto et al., 2019
TeB1, TeB2, TeB3, Tf1, Tf2, Tf3, Tf4, Tf5, Tf6	TAZ_O-G	Late Ordovician	Ghienne et al., 2018
TAZ5, TAZ6	TAZ_S	Silurian	Accotto et al., 2019
EASTERN MOROCCAN MESETA (OUJDA AREA)			
OUJ2, OUJ3	Oujda	Late Ordovician	Accotto et al., 2019

2. Geological setting

2.1. The Western Moroccan Meseta

The igneous Paleoproterozoic-Ediacaran basement of the northern Moroccan Variscides crops out locally in the WMM in the El Jadida (Coastal Block; El Haibi et al., 2020; El Houicha et al., 2018), Tiflet (Central Zone; El Haïbi et al., 2021; Tahiri et al., 2010), and Rehamna areas (Central Zone; Baudin et al., 2003; Pereira et al., 2015). The unconformable Cambrian-Lower Devonian sedimentary succession is represented by siliciclastic passive margin deposits, locally intruded by Cambrian-Ordovician magmatic rocks (Pouclet et al., 2018 and references therein), and followed by a Devonian mainly carbonatic sequence. Local differences are showed in Figure 2.17 and described in the following subsections. After Late Devonian time, the synorogenic succession is mainly made up of siliciclastic rocks with a few carbonatic intercalations of early Carboniferous age. Unconformable late Carboniferous-Permian continental basins developed locally. The Paleozoic succession is intruded by upper Carboniferous-Permian Variscan dykes and granitoids (*e.g.*, El Hadi et al., 2006 and references therein; Kharbouch, 1994; Kharbouch et al., 1985), and unconformably overlain by post-orogenic Triassic volcano-sedimentary rocks (Destombe, 1987).

The Paleozoic succession of the WMM was deformed by late Carboniferous Variscan folding, coeval to low- to very low-grade metamorphism (Hoepffner et al., 2005; Michard et al., 2010b).

2.1.1. The Coastal Block

The Cambrian succession of the Coastal Block is characterized by siliciclastic deposits locally intruded by basalts and andesites (*e.g.*, Oued Rhebar – c. 40 km SW of Rabat – and Sidi Saïd Maâchou – c. 35 km E of El Jadida – volcanic centers; Pouclet et al., 2018 and references therein). The siliciclastic succession records an increase of grain size from a predominance of shales in the early-middle Cambrian ("Schistes à Paradoxides") to mainly sandy sediments, which culminate in late Cambrian with the deposition of a thick and continuous level of quartzitic microconglomeratic sandstones and arkoses ("El Hank" Formation; Figure 2.17; Cailleux, 1994 and references therein). The base of the Ordovician is marked by a transgression. After a basal level of conglomerates and greywackes, the succession is mainly characterized by shales with an increase of sandy and microconglomeratic layers deposited at middle-late Ordovician time (Cailleux, 1994 and references therein). The Silurian succession is very similar in all of the Moroccan Mesetas and characterized by black shales with graptolites (Zahraoui, 1994 and references therein). A particularity of the Coastal Block is the presence of a few carbonatic layers, more common upwards, which appear interbedded with the shales. The deposition of shales continued during the Early Devonian with an increase of the

carbonatic beds, thus indicating the establishment of a carbonatic platform in this part of the Gondwanan passive margin.

2.1.2. The Central Zone

No Cambrian rocks have been recognized until now in the studied areas of the Central Zone (Oued Akreuch, Ezzhiliga and Oulmes areas). The Paleozoic succession (Figure 2.17) starts with the deposition of Ordovician shales with sandy and/or conglomeratic intercalations, more common during the Middle-Late Ordovician (*e.g.*, El Hassani, 1991; Tahiri and El Hassani, 1994). In the northwestern sector of this zone close to the Coastal Block (*e.g.*, Oued Akreuch area), basaltic and gabbroic intercalations are also common (El Hassani, 1991 and references therein). The Silurian is represented by black shales with graptolites and carbonatic beds, which are more common at late Silurian time and, in particular, in the Oued Akreuch area, where they can also be found in the lower Silurian succession (El Hassani, 1991 and references therein). The Lower Devonian deposition records the establishment of a carbonatic platform in the western sectors (*e.g.*, Oued Akreuch area), and more subsiding conditions in the eastern ones, which resulted in the prevalence of turbiditic deposits (*e.g.*, Ezzhiliga and Oulmes areas; Razin et al., 2001; Tahiri, 1991 and references therein).

2.1.3. The Nappe Zone

The Nappe Zone corresponds to the easternmost part of the WMM, and is characterized by Variscan thrust tectonics (Michard et al., 2010b and references therein) that was particularly relevant in the eastern part of the zone (Azrou-Khenifra areas; Figure 2.16C; Hoepffner et al., 2006).

To the southeast, the Khenifra nappe is made up of an upper Cambrian-Upper Ordovician succession of turbiditic shales, sandstones and subordinate conglomerates, followed by the Silurian black shales with graptolites and by Lower Devonian turbidites (Bouabdelli and Piqué, 1996).

In the Azrou area, three para-autochthonous units, characterized by an Upper Ordovician-upper Carboniferous succession, are overlain by an allochthonous nappe of Lower Devonian rocks (see sketched structural relationships in Figure 2.17; Bouabdelli et al., 1989). We only collected samples from the basal section of the Eastern (Upper Ordovician-lower Carboniferous) and Central (Lower Devonian-middle Carboniferous) para-autochthonous units. The Eastern unit is characterized by Upper Ordovician turbiditic microconglomeratic to shaly rocks, followed by a monotonous succession of Silurian black shales. The increase of carbonatic layers interbedded with the shales marks the establishment of an Early Devonian carbonatic platform (Bouabdelli, 1982). The correspondent Lower Devonian succession in the Central unit , on the contrary, ischaracterized by siliciclastic deposits, while the carbonatic sedimentation started Middle Devonian time (Walliser et al., 2000).

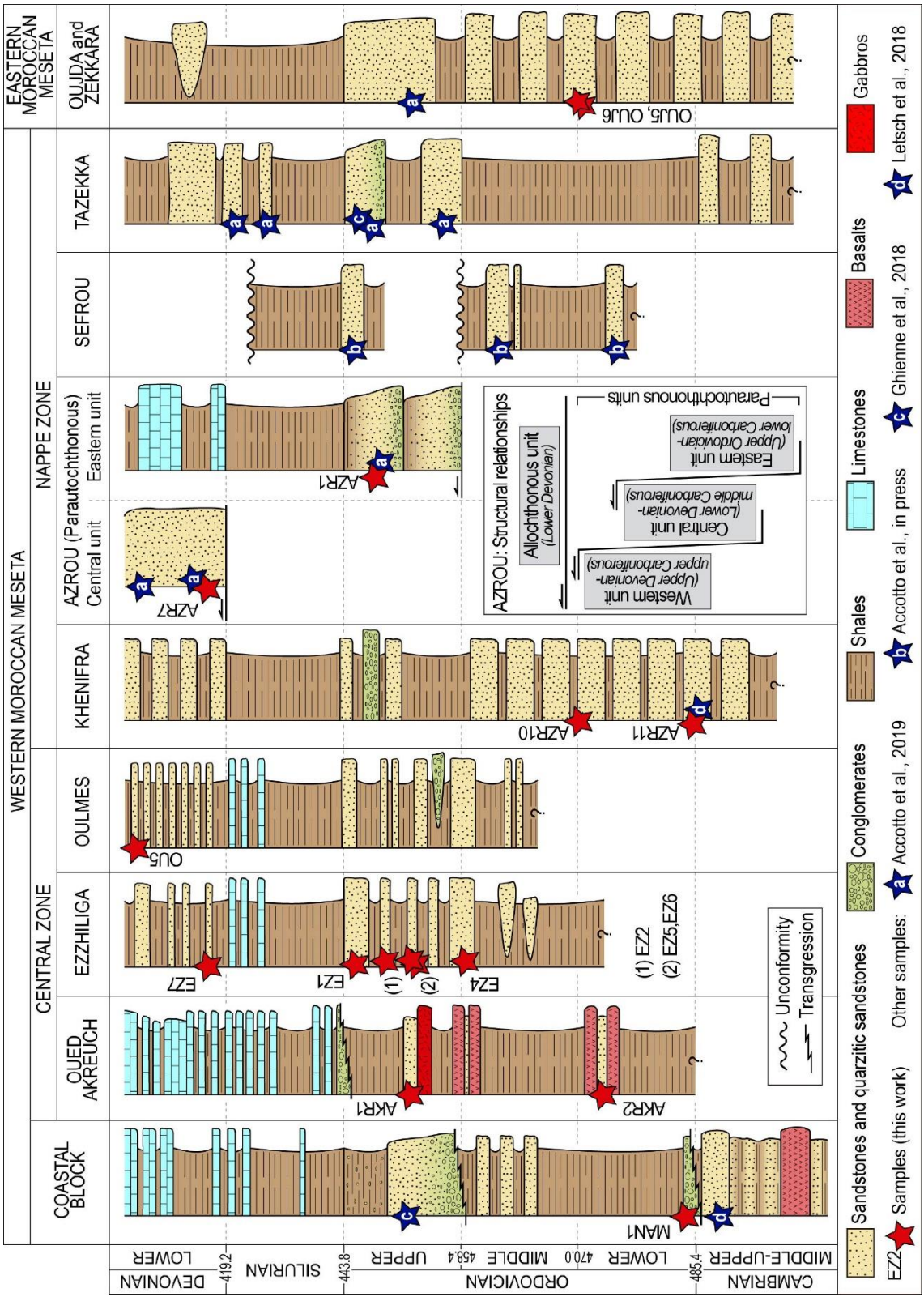


Figure 2.17: Schematic stratigraphic columns of the middle Cambrian-Lower Devonian successions of the northern Moroccan Variscides cropping out in the studied areas (Bouabdelli et al., 1989; Cailleux, 1994; Charriere, 1990; Choubert et al., 1978; El Hassani, 1991; Hoepffner, 1989; Horon, 1952; Marhoumi et al., 1989; Razin et al., 2001; Tahiri, 1991, 1994; Vidal and Hoepffner, 1979). Stars indicate the approximate location of the studied samples (in red) and other samples already published (in white, see references in the figure legend). Not to scale.

Towards the northeast, in the Sefrou and Tazekka areas the sedimentation is characterized by siliciclastic shales and sandstones during all the Cambrian-Devonian period (Charriere, 1990 and references therein; Hoepffner, 1987 and references therein). There are no evidences of carbonatic sedimentation during the Silurian and Devonian, although in the Sefrou area the stratigraphic sequence is incomplete (Charriere, 1990).

2.2. The Eastern Moroccan Meseta

The Paleozoic rocks of the EMM (Figure 2.16B, D) crops out in relatively small inliers below the Mesozoic-Cenozoic cover. The lower Paleozoic succession is a monotonous succession of shales, sandstones, and greywackes (Figure 2.17) attributed to the Cambrian-Ordovician (Desteucq and Fournier-Vinas, 1981; Hoepffner, 1989, 1977; Rauscher et al., 1982), which are followed by the Silurian black shales. The Lower Devonian is composed of siliciclastic sediments, mainly shales with a few sandy lenses that become more common during the Middle-Late Devonian and Tournaisian, and represent a subsident environment, in contrast with the coeval carbonatic platform that characterized most of the WMM. An upper Visean-Kasimovian succession unconformably overlies the Famennian-Tournaisian rocks (Médioni, 1979 and references therein); this second syn-orogenic succession is constituted by upper Visean volcano-sedimentary layers followed by siliciclastic turbidites and continental (limnic facies) sediments (*e.g.*, Jerada area).

Variscan metamorphism in the EMM is generally of low- to very low-grade (except in Midelt and northern Tamlet areas; Hoepffner, 1989) and deformation is variable: in some areas the Paleozoic succession recorded both Eovariscan (intense recumbent folding) and Variscan (upright folding) deformational events (*e.g.*, Debdou-Mekkam areas; Accotto et al., 2020), while others were only affected by the Variscan tectonic phase (*e.g.*, Jerada, Oujda, Beni Snassen areas; Figure 2.16B). The EMM was also intruded by upper Carboniferous-Permian granitoids (El Hadi et al., 2006a and references therein).

3. Samples and methods

During this study, we collected 16 sandstone samples in different areas of the Western and Eastern Moroccan Mesetas (Figure 2.16C and D). The location of the samples and other details are synthetized in Table 2.5.

Most of the samples are quartzites or quartzitic sandstones, with 90-99% of quartz grains of variable size: c. 0.05 mm in samples AKR1, EZ2, and AZR10, c. 0.1-0.3 mm in samples AKR1, AKR2, EZ1, EZ6, AZR10, and AZR1, and c. 0.4-1.0 mm in samples EZ4, EZ5, AZR10, AZR7. The quartz grains are usually sub-rounded and muscovite and/or oxides can be observed in fractures or interstitial positions. Samples EZ7, OU5, and AZR11 are sandstones with abundant sub-rounded quartz grains (diameters varying between c. 0.05 and c. 0.25 mm) and abundant phyllosilicates and oxides. Finally, samples MAN 1, OUJ5 and OUJ6 are greywackes characterized by a fine-grained matrix,

embedding c. 0.3-1.0 mm grains of quartz, shale, sandstone, plagioclase, volcanic rocks, oxides, and phyllosilicates.

3.1. U-Pb analyses

Each sample consisted in c. 4-5 kg of rock, which was mechanically smashed with a jaw-crusher and sorted by sieving in the laboratories of the University of Granada (Spain). Zircon grains were separated from the 0.3-0.05 mm fraction using magnetic separation and, finally, handpicking. The grains were then mounted in epoxy discs, polished, cleaned, gold-coated, and imaged by cathodoluminescence (CL) using a Mira3 Field Emission SEM instrument at the John the Laeter Centre (JdLC) of the Curtin University (Perth, Australia) and a Carl Zeiss SIGMA HD VP Field Emission SEM at the School of GeoSciences of the University of Edinburgh (United Kingdom). A selection of CL images for each sample is presented in Appendix C.

The U-Th-Pb analyses on most of the detrital zircon grains were performed at the JdLC GeoHistory Facility (Curtin University, Perth, Australia) using a laser ablation inductively coupled plasma mass spectrometry (LA-ICPMS) with a spot bin of c. 33 μm (Table 2.5). Nevertheless, because of the great variability of grain size in a few samples, sensitive high-resolution ion microprobe (SHRIMP) and secondary ion mass spectrometry (SIMS) techniques, both characterized by a spot bin of c. 15 μm, were performed (Table 2.5), respectively, at the JdLC GeoHistory Facility and at the University of Edinburgh. These analytical methods are explained in Appendix A and the results can be found in Appendix D.

LA-ICPMS, SHRIMP, and SIMS results were then combined to have a sufficient number of data to run statistical analyses (Vermeesch, 2004). Among the data, those with a discordance level exceeding 10% were discarded. The statistical analyses were performed using $^{206}Pb/^{238}U$ dates for ages younger than 1.5 Ga and $^{207}Pb/^{206}Pb$ dates for older ages (Spencer et al., 2016). The Kernel Density Estimators (KDE) and histograms were done by using DensityPlotter 8.4 software (Vermeesch, 2012) and applying a KDE bandwidth and a histogram bin width of 30 or 5 Ma (Figures 2.18 to 2.24). Each detrital zircon population was defined choosing age intervals that were statistically (i.e., peaks in the KDE diagrams) and geologically (i.e., ages of the main geological events; see legend in Figure 1 and section 5 for discussion) meaningful. The mean ages of the populations were calculated using the mixture-modelling tool in DensityPlotter 8.4. The youngest detrital zircon populations were calculated using the Isoplot software (Ludwig, 2003). All the errors are expressed at 1σ level.

Table 2.5: List and details of the studied samples. (*) total number of analyses performed vs concordant results (in bold).

Sample	IGSN (IEACC)	Location (UTM, NDAS 83)			Lithology	Stratigraphic age	U-Pb geochronology	
		Zone	Lat. (m N)	Long. (m E)			Method	Analyses (*)
COASTAL BLOCK (EL MANSOURIA AREA)								
MAN1	0040	29S	3735681	3735681	Greywacke	Early Ordovician	LA-ICPMS	120/**109**
OUED AKREUCH AREA								
AKR1	0038	29S	3757672	704231	Quartzitic sandstone	Late Ordovician	LA-ICPMS	150/**124**
AKR2	0039	29S	3757780	704321	Quartzitic sandstone	Early Ordovician	LA-ICPMS	150/**130**
EZZHILIGA AREA								
EZ1	0032	29S	3682713	733796	Quartzitic sandstone	Late Ordovician	LA-ICPMS SHRIMP	42/**30** 50/**36**
EZ2	0033	29S	3682624	733776	Quartzitic sandstone	Late Ordovician	LA-ICPMS	75/**68**
EZ4	0034	29S	3682341	737693	Quartzitic sandstone	Middle-Late Ordovician	LA-ICPMS	165/**156**
EZ5	0035	29S	3682849	737554	Quartzitic sandstone	Late Ordovician	LA-ICPMS	180/**167**
EZ6	0036	29S	3684150	739164	Quartzitic sandstone	Late Ordovician	LA-ICPMS	150/**135**
EZ7	0037	29S	3683869	735286	Quartzitic sandstone	Early Devonian	LA-ICPMS SIMS	99/**86** 40/**35**
OULMES AREA								
OU5	0031	29S	3715910	777396	Sandstone	Early Devonian	LA-ICPMS	150/**135**
KHENIFRA AREA								
AZR10	0029	30S	3633628	233758	Quartzitic sandstone	Early-Middle Ordovician	LA-ICPMS	120/**97**
AZR11	0030	30S	3643326	252046	Sandstone	Cambrian-Ordovician	LA-ICPMS SIMS	78/**67** 47/**44**
AZROU AREA								
AZR1	0023	30S	3821747	574362	Quartzitic sandstone	Late Ordovician	LA-ICPMS SIMS	100/**90** 31/**31**
AZR7	0028	30S	3695342	271772	Quartzitic sandstone	Early Devonian	LA-ICPMS	168/**146**
ZEKKARA AREA								
OUJ5	0021	30S	3821747	574362	Greywacke	Cambrian-Ordovician	LA-ICPMS	145/**143**
OUJ6	0022	30S	3821747	574362	Greywacke	Cambrian-Ordovician	LA-ICPMS	150/**144**

3.2. Hf isotopes analyses

Due to the peculiar U-Pb results obtained in sample AZR10 (see section 4), Hf analyses were performed on the detrital zircon grains of this sample that yielded concordant U-Pb results. These analyses were performed at the JdLC (Curtin University, Perth, Australia) using a Resonetics resolution M-50A excimer laser, coupled to a Nu Plasma II multi-collector inductively coupled plasma mass spectrometer (LA-MC-ICPMS). The detailed analytical methods are described in Appendix A; the results are listed in Appendix E. The statistical analysis was realized using an Excel® worksheet and errors are expressed at 2σ level.

4. Results

<u>El Mansouria area</u>

One hundred and nineteen zircon grains from a lower Ordovician sample (MAN1) were analyzed by LA-ICPMS, obtaining 120 ages, 109 of which yielded concordant results (Figure 2.18A). The main detrital zircon populations obtained in this sample are:

- Cambrian-Ordovician dates (c. 537-450 Ma, n=40, 36.7% of the data) with a Cambrian mean age (506.6±0.7 Ma) and peaks at c. 460, 505 (main peak) and 530 Ma (Figure 2.18B); the grains of this population are generally euhedral or subhedral, with generally rounded edges and continuous oscillatory zoning.
- Ediacaran-Cryogenian dates (c. 660-551 Ma, n=50, 45.9% of the data) with a Late Ediacaran mean age (596.5±0.8 Ma) and peaks at c. 575, 580 (main peak), 600, 630, and 660 Ma (Figure 2.18B); the grains are variable in shape and size, with common oscillatory zoning.
- Rhyacian-Orosirian dates (c. 2096-2010 Ma, n=12, 11% of the data) with a late Orosirian mean age (2048.7±5.0 Ma); the shape and size of the grains are variable, usually with very rounded edges and variable internal zoning.

Scattered grains yielded early Orosirian (n=2, c. 1940 Ma) and late Rhyacian-Neoarchean (n=5, c. 2720-2260 Ma) ages. The youngest detrital zircon population of this sample comprises 28 dates and yielded a Cambrian age (506±1 Ma, MSWD=1.05).

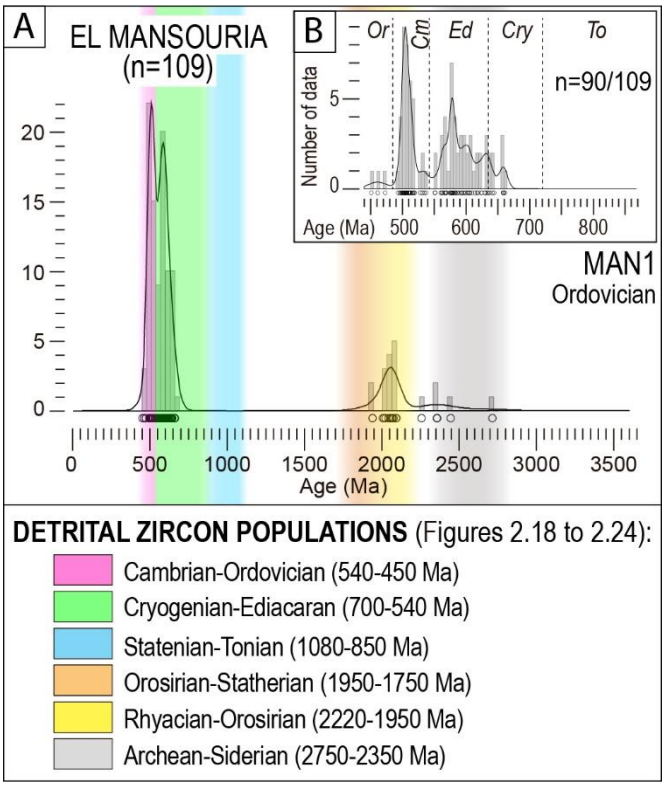


Figure 2.18: KDE (black lines) and histograms (grey bars) showing the U-Pb results in the El Mansouria area (Coastal Block, sample MAN1). (A) Detrital zircon age distribution; (B) window with the 440-870 Ma interval; Or: Ordovician; Cm: Cambrian; Ed: Ediacaran; Cry: Cryogenian; To: Tonian. The graphs were realized using DensityPlotter 8.4 (Vermeesch, 2012) with a KDE bandwidth and histogram bins of 30 Ma (A) and 5 Ma (B). Color bars indicate the most common detrital zircon populations recognized in all the samples.

Oued Akreuch area

On both Ordovician samples from this area, 150 LA-ICPMS analyses were carried out on detrital zircon grains (143 grains in AKR1 and 149 grains in AKR2), yielding 124 and 130 concordant results, respectively (Table 2.5). The age distribution is statistically identical on both samples, and the results have been combined in Figure 2.19. The main detrital zircon populations are as follows:

- Late Tonian-Ediacaran dates (c. 856-543 Ma, n=125, 49.2% of the data) with a late Cryogenian (639.2±0.4 Ma) mean age. Main peaks appear at c. 600, 635 and 650 Ma. Secondary peaks have c. 550, 620, and 670 Ma (Figure 2.19B), while dates between c. 856 and c. 706 Ma appear more scattered. The detrital zircon grains included in this population are generally rounded to elongated, with common concentric oscillatory zoning and cores overgrown by rims.
- Stenian-early Tonian dates (c. 1119-891 Ma, n= 22, 8.7% of the data) with an early Tonian mean age (974.3±1.4 Ma). This population is characterized by rounded to elongated grains showing sector or oscillatory zoning, as well as cores with overgrowth rims.

- Orosirian-Statherian dates (c. 1929-1766 Ma, n=19, 7.5% of the data) with a late Orosirian mean age (1836.0±3.7 Ma). The grains have irregular shapes, sometimes elongated and always characterized by rounded edges; their internal structures show frequent cores with overgrown rims and sector zoning.
- Rhyacian-Orosirian dates (c. 2188-1941 Ma, n=53, 20.8% of the data) clustered in two peaks with Rhyacian (2143.5±3.4 Ma) and early Orosirian (2018.1±3.2 Ma) ages. The detrital zircon grains are generally rounded, with sector zoning or cores with overgrown rims.
- Siderian-Neoarchean dates (c. 2770-2404 Ma, n=19, 7.5% of the data) with a late Neoarchean mean age (2587.2±2.9 Ma). The zircon grains of this populations are rounded to elongated and show variable internal structures.

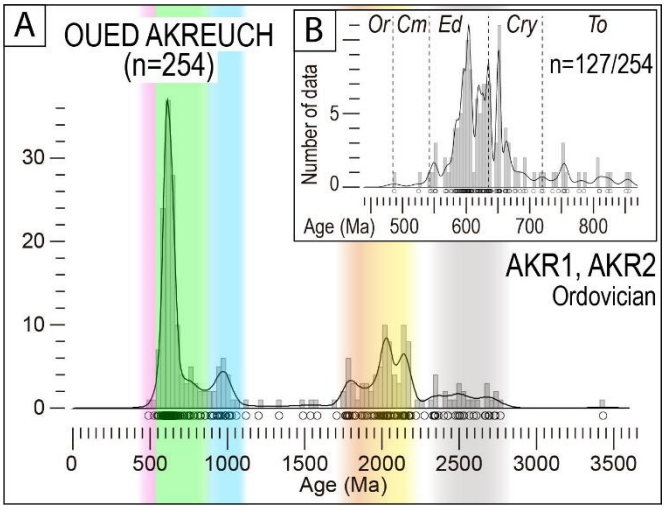


Figure 2.19: U-Pb results in the Oued Akreuch area (combined samples AKR1 and AKR2). Caption and legend as in Figure 2.18.

Scattered grains yielded Cambrian (c. 525-487 Ma, n=2), Statherian-Ectasian (c. 1707-1200 Ma, n=6), Rhyacian (c. 2366-2225 Ma, n=7), and Paleoarchean (c. 3437 Ma, n=1) ages. The youngest detrital zircon population of the two samples is late Ediacaran (549.6±2.1 Ma, MSWD=0.59) and comprises 5 dates.

Ezzhiliga area

In this area, five Middle-Upper Ordovician samples and one Lower Devonian sample were collected (Figure 2.20A and C). Six hundred and sixty-two LA-ICPMS and SHRIMP analyses were carried out on a total of 628 zircon grains from the five Ordovician samples. Of these results, 592 yielded concordant dates. All the Ordovician samples show statistically identical results and, accordingly, they have been plotted together (Figure 2.20A). The following detrital zircon populations have been found:

- Cambrian-Ordovician dates (c. 539-476 Ma, n=16, 2.7% of the data) with a Cambrian mean age (519.9±1.3 Ma) and a peak at c. 535 Ma (Figure 2.20B). The detrital zircon

grains of this population are generally rounded to elongate, with variable zoning and sometimes cores with overgrown rims.

- Late Tonian-Ediacaran dates (c. 853-541 Ma, n=332, 56.1% of the data) with an Ediacaran mean age (627.0±0.3 Ma) and a main peak at c. 620 Ma. Second-order peaks appear at c. 560, 590, 630, and 650 Ma, while data between c. 853 and c. 694 Ma are more scarce and scattered (Figure 2.20B). Grains are usually elongate with more or less rounded edges, continuous oscillatory zoning, sector zoning and cores overgrown by rims.
- A very minor Stenian-Tonian population (c. 1049-875 Ma, n=11, 1.9% of the data), mainly concentrated in samples EZ1, EZ5, and EZ6. The mean age is early Tonian (991.7±2.3 Ma) and the grains are elongate, with rounded edges, and in some cases have irregular shapes. The internal structures show oscillatory zoning and rims overgrowing cores.
- Orosirian-Statherian dates (c. 1902-1716 Ma, n=21, 3.5% of the data) with an early Statherian mean age (1815.8±3.5 Ma). This population is characterized by rounded grains, sometimes slightly elongated, with variable internal structures.
- Rhyacian-Orosirian dates (c. 2210-1926 Ma, n=150, 25.3% of the data) with a late Rhyacian mean age (2069.3±1.1 Ma). The detrital zircon grains in this range of ages are generally elongated with rounded edges; the internal structures are variable.
- Siderian-early Rhyacian dates (c. 2478-2291 Ma, n=27, 4.6%) yielding a Siderian mean age (2411.7±2.7 Ma). The grains in this range of ages have variable shapes, usually with very rounded edges, and variable internal structures.

Scattered grains in the Ordovician samples yielded Calymmian-Stenian (c. 1584-1195 Ma, n=14) and Archean (c. 3608-2514 Ma, n=21) ages. The youngest detrital zircon population of the combined group of Ordovician samples is Early Cambrian (536.9±1.5 Ma, MSWD=0.67) and includes 5 dates.

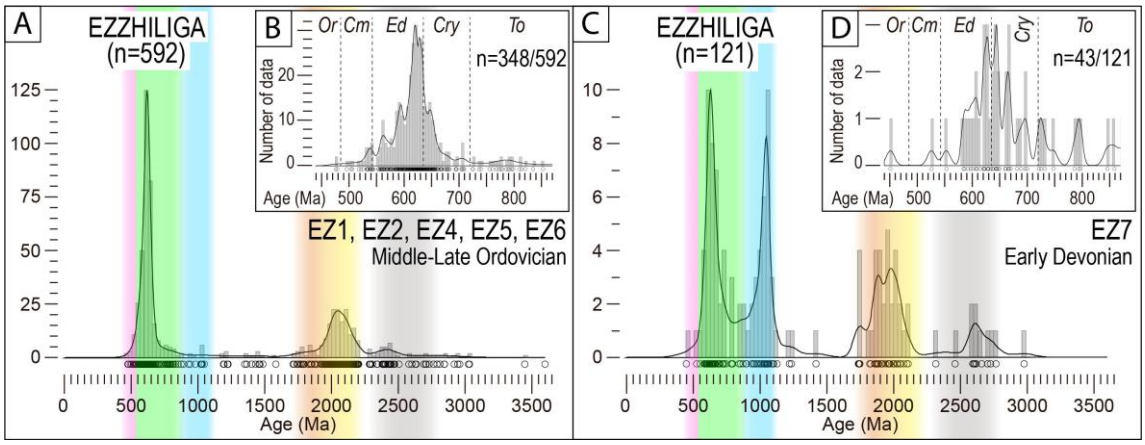


Figure 2.20: U-Pb results in the Ezzhiliga area. (A, B) Ordovician samples (combined EZ1, EZ2, EZ4, EZ5, and EZ6); (C, D) Devonian sample EZ7; Caption and legend as in Figure 2.18.

One hundred and thirty-six detrital zircon grains from the Devonian sample EZ7 were analyzed both with LA-ICPMS (99 grains) and SIMS (37 grains) techniques. These

analyses yielded a total of 121 concordant results (Table 2.5 and Figure 2.20C), clustered as follows:

- Late Tonian-Ediacaran dates (c. 845-553 Ma, n=40, 33.1% of the data) with a Cryogenian mean age (660.1±0.6 Ma) and multiple peaks at c. 610, 630, 645, 665, 695, 725, and 795 Ma (Figure 2.20D). Detrital grains are subhedral with more or less rounded edges and frequent oscillatory zoning or rims overgrowing cores.
- Stenian-Tonian dates (c. 1133-858 Ma, n=33, 27.3% of the data), yielding a late Stenian mean age (1017.6±1.0 Ma) and a main peak centered at c. 1050 Ma. The grains show irregular shapes and cores overgrown by rims.
- Orosirian-Statherian dates (c. 1925-1740 Ma, n=15, 12.4% of the data) clustered in two peaks at 1749.2±8.9 Ma and 1901.9±3.0 Ma (main peak). The detrital zircons show irregular shapes and variable internal structures.
- Rhyacian-Orosirian dates (c. 2117-1947 Ma, n=17, 14% of the data) with a late Rhyacian mean age (2067.3±1.8) and a main peak centered at c. 1995 Ma. Grains are variably shaped, generally featuring sector zoning or cores overgrown by rims.
- Neoarchean dates (c. 2774-2600 Ma, n=8, 6.6% of the data) that give a mean age of 2662.2±2.3 Ma. The detrital zircon grains with these ages are usually elongated but with very rounded edges; the internal structures are variable.

Scattered data yielded Cambrian (c. 526-451 Ma, n=2), Calymmian-Stenian (c. 1424-1222 Ma, n=3), Siderian (c. 2467-2325 Ma, n=2), and Mesoarchean (c. 2986 Ma, n=1) ages. The youngest detrital zircon population in this sample includes 4 dates and yielded an Ediacaran age (604.5±1.8 Ma, MSWD=1.52).

Oulmes area

From the Early Devonian sample OU5, 148 detrital zircon grains were separated and 150 analyses were carried out, 135 of which yielded concordant results (Figure 2.21A). The main detrital zircon populations recognized in this sample are:

- Late Tonian-Ediacaran dates (c. 862-552 Ma, n=74, 54.8% of the data) with an early Ediacaran mean age (627.0±0.3 Ma). This population is characterized by a main peak at c. 635 Ma and second order peaks at c. 565, 590, 610, 660, and 675 Ma; data between c. 862 and c. 692 Ma show a more scattered pattern (Figure 2.21B). Grains are generally subhedral to irregular, with more or less rounded edges. Among the internal structures, continuous oscillatory, sector zoning, and overgrown rims are the most common.
- Stenian-Tonian dates (c. 1101-922 Ma, n=9, 6.7% of the data) with a late Stenian mean age (1006.2±2.1 Ma). The grains of this population show variable shape and internal structure.

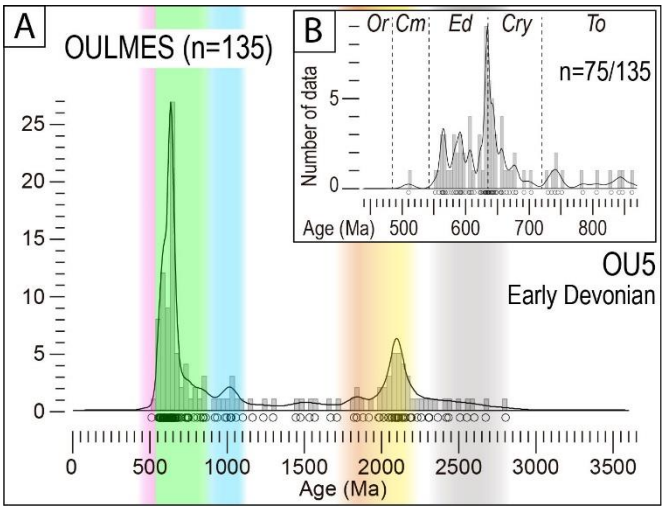


Figure 2.21: U-Pb results in the Oulmes area (sample OU5). Caption and legend as in Figure 2.18.

- A few Orosirian-Statherian dates (c. 1883-1824 Ma, n=4, 3% of the data) peaked at 1852.1±5.5 Ma (Late Orosirian). The grains in this age range are rounded and lack internal structure.
- Rhyacian-Orosirian dates (c. 2198-1984 Ma, n=25, 18.5% of the data) characterized by a Rhyacian mean age (2107.6±2.0 Ma). The grains of this population show variable shapes and continuous oscillatory zoning.

Scattered grains yielded Cambrian (c. 510 Ma, n=1), Statherian-Stenian (c. 1711-1163 Ma, n=9), Orosirian (c. 1922 Ma, n=1), and Mesoarchean-Rhyacian (c. 2810-2236 Ma, n=12) ages. The youngest detrital zircon population in this sample includes 7 dates that define a Late Ediacaran age (563.7±1.4 Ma, MSWD=0.92).

Khenifra area

From the Cambrian-Ordovician sample (AZR11) collected in this area, only 78 detrital zircon grains could be analyzed with LA-ICPMS, yielding 67 concordant results. Other 47 grains, smaller in size, were analyzed with SIMS, having obtained 44 concordant results (Table 2.5). Combining all the concordant data (Figure 2.22A), the following detrital zircon populations have been recognized:

- Late Tonian-Ediacaran dates (c. 797-550 Ma, n=60, 54.1% of the data) with a late Ediacaran mean age (630.9±0.4 Ma). Multiple peaks are distributed along the c. 550-690 age interval, and several scattered data are older than c. 728 Ma (Figure 2.22B). The shape of the grains is variable, from subhedral to elongate and irregular, with a variety of internal structures.
- Orosirian-Statherian dates (c. 1827-1761 Ma, n=6, 5.4% of the data) peaked at 1777.5±4.9 Ma (Late Orosirian). The grains are rounded to irregularly shaped with variable internal zonation.

- Rhyacian-Orosirian dates (c. 2199-1907 Ma, n=26, 23.4% of the data) with a late Rhyacian mean age (2057.2±1.5 Ma). The zircon grains of this age range are elongated to rounded, with common cores overgrown by rims.

Scattered data yielded Cambrian-Late Ordovician (c. 528-483 Ma, n=2), late Statherian-late Tonian (c. 1624-905 Ma, n=12, partially clustered at 1358.5±2.6 Ma), and Mesoarchean-late Siderian (c. 2864-2371 Ma, n=5) ages. The youngest detrital zircon population in this sample is Late Ediacaran in age (551.6±1.6 Ma, MSWD=0.09) and comprises 4 dates.

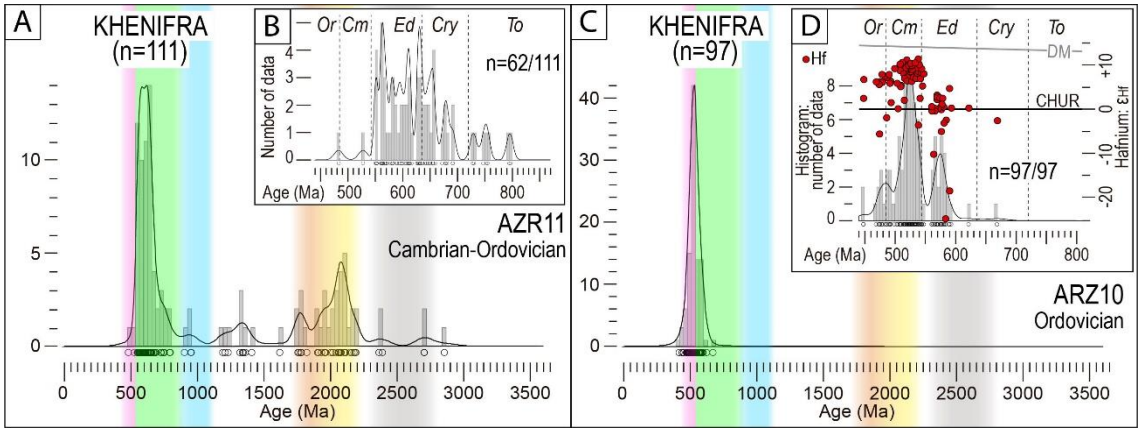


Figure 2.22: U-Pb results in the Khenifra area. (A, B) Cambrian-Ordovician sample AZR11; (C, D) Ordovician sample AZR10; (D) also shows the εHf values (red circles); CHUR: Chondritic Uniform Reservoir (Iizuka et al., 2015); DM: depleted mantle (Chauvel et al., 2008). Caption and legend as in Figure 2.18.

One hundred and twenty zircon grains from the Ordovician sample (AZR10) were separated and analyzed, yielding 97 U/Pb concordant data. With the exception of two Silurian-Late Devonian (c. 434-412 Ma) and two Cryogenian-early Ediacaran (c. 669-622 Ma) scattered grains, all the data are clustered in a late Cambrian peak (531.5±0.3 Ma; Figure 2.22C). A more careful observation of the detrital zircon spectrum shows the following age distribution (Figure 2.22D):

- Among the Cambrian-Ordovician dates (c. 541-448 Ma, n=66, 68% of the data), 50 ages are peaked at c. 524 Ma, while the other 16 are clustered around c. 479 Ma. The ε_{Hf} values associated with these ages are mainly positive and clustered between ε_{Hf} c. +5 and +11 (Figure 2.22D), with only a few sub-CHUR values (down to -5.6). The grains that constitute this detrital zircon population are generally euhedral to subhedral, with sharp to slightly rounded edges. Continuous oscillatory zoning is a very common feature.
- The Ediacaran dates (c. 593-541 Ma, n=29, 29.9% of the data) are peaked at 569.2±0.6 Ma. The corresponding ε_{Hf} values are clustered between c. 0 and +5, with a few negative values (down to c. -25). These zircon grains have variable shapes and commonly oscillatory zoning.

The youngest detrital zircon population of this sample includes 5 dates that define an Early Ordovician mean age (476.3±1.2 Ma, MSWD=0.87).

Azrou area

One hundred and thirty detrital zircon grains were separated from the Ordovician sample AZR1. One hundred of these grains were analyzed with LA-ICPMS; due to the small size of some of the zircons in this sample, 31 SIMS analyses were additionally performed in the 30 remaining grains. In total, we obtained 121 concordant results (90 LA-ICPMS and 31 SIMS) that are showed in Figure 2.23A. The main detrital zircon populations recognizable are:

- Late Tonian-Ediacaran dates (c. 828-541 Ma, n=63, 52.1% of the data), with a mean age of 631.3±0.5 Ma (early Ediacaran) and peaks distributed along the c. 665-540 Ma interval, as well as scattered dates older than c. 680 Ma (Figure 2.23B). The grains within this population show a high variety of shapes and internal structures.
- Orosirian-Statherian dates (c. 1883-1765 Ma, n=6, 5% of the data) peaked at 1854.1±9.9 Ma (late Orosirian). These zircon grains are characterized by rounded shapes with sector zoning.
- Rhyacian-Orosirian dates (c. 2195-1973 Ma, n=28, 23.1% of the data) with an Orosirian mean age (2081.4±2.5 Ma). These grains show elongated to rounded shapes, oscillatory zoning and overgrown rims.

Scattered grains yielded Cambrian-Early Devonian (c. 538-415 Ma, n=2), Statherian-Stenian (c. 1745-1067 Ma, n=8, partially clustered around 1371.6±3.2 Ma), and Archean-Siderian (c. 3335-2302 Ma, n=13) ages. The youngest detrital zircon population in this sample is late Ediacaran (542.4±1.8 Ma, MSWD=1.15) and includes 4 dates.

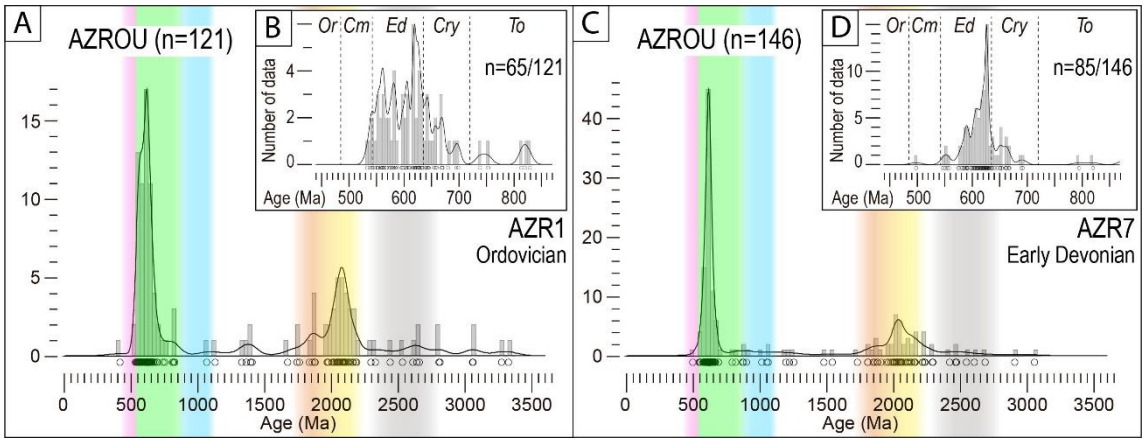


Figure 2.23: U-Pb results in the Azrou area. (A, B) Ordovician sample AZR1; (C, D) Devonian sample AZR7; Caption and legend as in Figure 2.18.

From the Devonian sample AZR7, we analyzed 153 zircon grains, yielding 168 analyses, 146 of which were concordant (Figure 2.23C). These data can be grouped in 3 detrital zircon populations:

- Cryogenian-Ediacaran dates (c. 692-546 Ma, n=82, 56.2% of the data) with an Ediacaran mean age (617.6±0.3 Ma). These dates are clustered at c. 625 Ma (main peak), 550, 590, 610, and 655 Ma (secondary peaks; Figure 2.23D). The grains vary from subhedral to elongate, and their internal structure is variable (homogeneous, oscillatory zoning, cores overgrown by rims).
- Orosirian-Statherian dates (c. 1911-1851 Ma, n=5, 3.4% of the data) peaked at 1877.4±5.6 Ma (Late Orosirian). This population is characterized by rounded grains with variable internal structure.
- Rhyacian-Orosirian dates (c. 2243-1955 Ma, n=32, 21.9% of the data) with a mean age of 2086.7±0.7 Ma (Late Rhyacian). The grains in this age range are generally rounded and characterized by sector and oscillatory zoning.

One grain has a Cambrian age (c. 497 Ma), while scattered zircon grains yielded late Orosirian-late Tonian (c. 1814-795 Ma, n=16) and Mesoarchean-Rhyacian (c. 3064-2296 Ma, n=10) ages. The youngest detrital zircon population is late Ediacaran (589.2±0.9 Ma, MSWD=1.1 n=8).

Zekkara area

From the two Cambrian-Ordovician samples collected in the Zekkara area (OUJ5 and OUJ6), 140 and 150 detrital zircon grains were separated, respectively. A total of 295 LA-ICPMS analyses were performed, yielding 287 concordant results (see details in Table 2.5). The detrital zircon populations recognized in both samples are statistically identical and have been plotted together (Figure 2.24A):

- Cambrian-Ordovician dates (c. 539-446 Ma, n=59, 20.6% of the data) with a Cambrian mean age (498.7±0.3 Ma), a main peak at c. 505 Ma, and second order peaks at c. 460 and 495 Ma (Figure 2.24B). The grains within this age range are generally euhedral to subhedral, with frequent continuous oscillatory or sector zoning.
- Late Tonian-Ediacaran dates (c. 805-544 Ma, n=134, 46.9% of the data) with a mean age of 609.0±0.3 Ma (Ediacaran). Excluding relatively scattered grains younger than c. 560 Ma or older than c. 644 Ma, most of the dates are clustered at c. 580 (main peak) and 615 Ma (Figure 2.24B). The grains are euhedral to subhedral, mainly characterized by continuous oscillatory zoning.
- Rhyacian-Late Orosirian dates (c. 2186-2002 Ma, n= 33, 11.5% of the data) with a late Rhyacian mean age (2103.4±2.9 Ma). This population is characterized by rounded to elongated grains with variable internal structure.
- Neaoarchean-Siderian dates (c. 2694-2386 Ma, n=27, 9.4% of the data) with a late Siderian mean age (2552.9±2.8 Ma). The grains are elongated with frequent oscillatory zoning and overgrown cores.

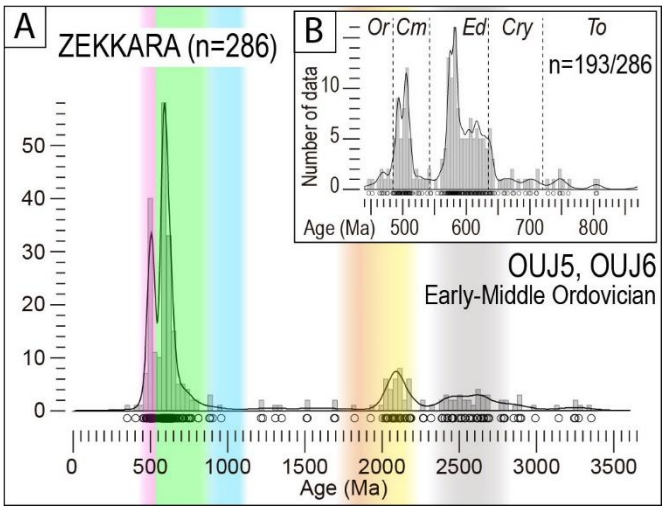


Figure 2.24: U-Pb results in the Zekkara area (samples OUJ5 and OUJ6). Caption and legend as in Figure 2.18.

Scattered grains yielded Early Devonian-early Carboniferous (c. 398-341 Ma, n=2), Orosirian-Tonian (c. 1923-875 Ma, n=14), Early Siderian-Rhyacian (c. 2315-2263 Ma, n=3), and Archean (c. 3357-2771 Ma, n=14) ages. The youngest detrital zircon population of the combined two samples includes 5 dates that define an Early-Middle Ordovician age (470.5±1.3 Ma, MSWD=1.4), although, when taken separately, the two samples yield late Cambrian youngest detrital zircon population ages (495.4±0.9 Ma for sample OUJ5 and 492.2±1.0 Ma for OUJ6).

To sum up, with the exception of the peculiar results obtained in sample AZR10, the late Tonian-Ediacaran and Rhyacian-Orosirian populations are always dominant in our samples, representing 33-56% and 11-23% of the data, respectively. The occurrence of minor detrital zircon populations (Neoarchean-Siderian, Orosirian-Statherian, Tonian-Stenian, and Cambrian Ordovician) is very variable in time and space (Table 2.6).

Table 2.6 (next page): Summary of the detrital zircon populations recognized in the studied samples with approximate ages ad percentage of occurrences.

	COASTAL BLOCK	OUED AKREUCH	EZZHILIGA		OULMES	KHENIFRA		AZROU		ZEKKARA
	ORDOVICIAN	*ORDOVICIAN*	*ORDOVICIAN*	*DEVONIAN*	*DEVONIAN*	*ORDOVICIAN*	*CAMBRIAN-ORDOVICIAN*	*ORDOVICIAN*	*DEVONIAN*	*CAMBRIAN-ORDOVICIAN*
YOUNGEST DETRITAL ZIRCON POPULATION	506.1±0.9 Ma MSWD = 1.05 n = 29	549.6±2.1 Ma MSWD = 0.59 n = 5	536.9±1.5 Ma MSWD = 0.67 n = 14	604.5±1.8 Ma MSWD = 1.52 n = 4	563.7±1.4 Ma MSWD = 0.92 n = 7	476.3±1.2 Ma MSWD = 0.87 n = 5	551.6±1.6 Ma MSWD = 0.09 n = 4	542.4±1.8 Ma MSWD = 1.15 n = 4	589.2±0.9 Ma MSWD = 1.10 n = 8	470.5±1.3 Ma MSWD = 1.40 n = 5
CAMBRIAN-ORDOVICIAN ca. 540-450 Ma	c. 507 Ma 36.7%	-	c. 520 Ma 2.7%	-	-	c. 479 Ma c. 524 Ma 68%	-	-	-	c. 499 Ma 20.6%
LATE TONIAN-EDIACARAN ca. 850-540 Ma	c. 596 Ma 45.9%	c. 639 Ma 49.2%	c. 627 Ma 56.1%	c. 660 Ma 33.1%	c. 627 Ma 54.8%	c. 569 Ma 29.9%	c. 631 Ma 54.1%	c. 631 Ma 52.1%	c. 617 Ma 56.2%	c. 609 Ma 46.9%
STENIAN-EARLY TONIAN ca. 1080-850 Ma	-	c. 974 Ma 8.7%	c. 992 Ma 1.9%	c. 1015 Ma 26.4%	c. 1006 Ma 6.7%	-	-	-	-	-
OROSIRIAN-STATHERIAN ca. 1950-1750 Ma	-	c. 1836 Ma 7.5%	c. 1816 Ma 3.5%	c. 1749 Ma c. 1901 Ma 12.4%	c. 1852 Ma 3.0%	-	c. 1777 Ma 5.4%	c. 1854 Ma 5.0%	c. 1877 Ma 3.4%	-
RHYACIAN-OROSIRIAN ca. 2220-1950 Ma	c. 2049 Ma 11.0%	c. 2018 Ma c. 2143 Ma 20.8%	c. 2069 Ma 25.3%	c. 2067 Ma 14.0%	c. 2108 Ma 18.5%	-	c. 2057 Ma 23.4%	c. 2081 Ma 23.1%	c. 2087 Ma 21.9%	c. 2103 Ma 11.5%
NEOARCHEAN-SIDERIAN ca. 2800-2300 Ma	-	c. 2516 Ma 4.7%	c. 2412 Ma 4.6%	c. 2662 Ma 6.6%	-	-	-	-	-	c. 2467 Ma c. 2635 Ma 9.4%

5. Discussion

5.1. Maximum depositional ages

The analysis of detrital zircon ages in metasedimentary rocks is a powerful tool to ascertain the possible sources of sediments and constrain maximum depositional ages (MDA). MDA is defined by the youngest detrital zircon population made up of at least 4 dates in each sample, or group of statistically homogeneous samples. Thus, MDA might be virtually coeval or more commonly older (up to hundreds of millions of years; Sharman and Malkowski, 2020) than true depositional ages (TDA), these latter normally inferred from fossil content and/or geochronological dating of volcanic intercalations. The delay between MDA and TDA depends on the geographical and geological setting in which the sedimentary rocks were deposited, such as topography, drainage systems, basin configuration, tectonic setting, etc. In those cases in which TDA are poorly constrained, MDA might be taken as a rough approximation to the age of a sedimentary rock.

In the case of all the Cambrian-Lower Devonian samples studied in this work, TDA (constrained by the biostratigraphic knowledge of the sampled sections) are younger than MDA (Table 2.6). In most samples, the difference between MDA and TDA is between c. 100 and 200 Ma, which supports that sedimentation occurred in a passive continental margin free from the influence of magmatic activity. Nevertheless, in a few cases the delay between MDA and TDA is reduced to just a few tens of millions of years (*e.g.*, sample MAN1, Coastal Block) or even less (sample AZR10, Khenifra area, and samples OUJ5 and OUJ6, Zekkara area), suggesting the existence of some magmatic activity in the region at Cambrian-Ordovician time, although its relevance, as discussed in section 5.4.1, was probably minor and reduced to a local scale.

5.2. Main sediment source: West African Craton affinity

Provenance studies supported by statistical analysis of detrital zircon age distribution are based on the comparison among age spectra in detrital samples and those of potential source areas (*e.g.*, Fedo et al., 2003 and references therein). In the case of the Moroccan Variscides, the typical age spectrum of the West African Craton (WAC) accords quite well with the patterns found in Ediacaran to Carboniferous metasedimentary rocks (*e.g.*, Abati et al., 2010; Accotto et al., 2019, 2020, 2021, in press; Avigad et al., 2012; El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018). This source area (WAC) is characterized by late Tonian-Ediacaran (c. 750-540 Ma) and Rhyacian-Orosirian (c. 2.2-1.95 Ga) ages (Figure 2.25), which are related to the Cadomian/Pan-African and Eburnean orogenies, respectively (Nance et al., 2008 and references therein). Furthermore, Neoarchean-Paleoproterozoic ages (c. 2.5 Ga) are also common in the WAC and have been generally associated with the Leonian-Liberian orogenies (Hurley et al.,

1971; Nance et al., 2008 and references therein). On the contrary, Mesoproterozoic magmatic sources are common in Baltica, Laurentia, Avalonia, Amazonia and other Grenvillian terranes (Ernst et al., 2008), but absent in the WAC.

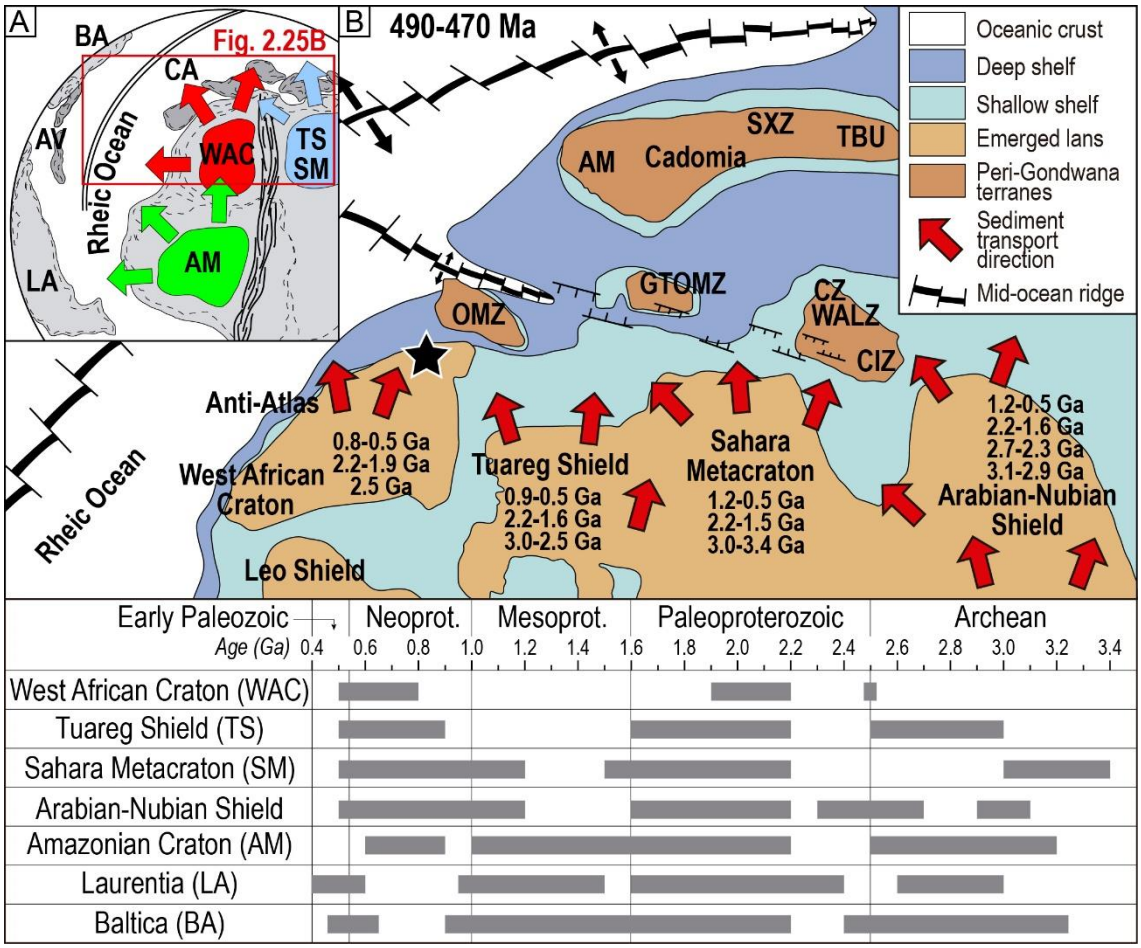


Figure 2.25: (A) Paleogeographic reconstruction of the northwestern margin of Gondwana and peri-Gondwanan terranes at Late Ordovician time (490-470 Ma); AM: Amazonia AV: Avalonia; BA: Baltica; CA: Cadomia; LA: Laurussia; TS-SM: Tuareg Shieald and Sahara Metacraton; WAC: West African Craton; (B) A more detailed reconstruction with the different cratonic areas. The numbers in the map and the grey bars in the graphical time scale indicate the magmatic zircon age distribution in the main source areas. The studied area is located with a black star. AM: Armorican Massif; CIZ: Central Iberian Zone; CZ: Cantabrian Zone; GTOMZ: Galicia-Tras-os-Monte Zone; OMZ: Ossa Morena Zone; SXZ: Saxo-Thuringian Zone; TBU: Tepla-Barrandian Unit; WALZ: West-Leonese Zone. Modified from Díez Fernández et al. (2010) and Cambeses et al. (2017) and references therein.

Figure 2.26 shows a comparison among all the detrital zircon age spectra from lower Cambrian-Lower Devonian detrital metasedimentary rocks described in this work and in previous studies carried out in the Moroccan Mesetas (Accotto et al., 2019, in press; Ghienne et al., 2018; Letsch et al., 2018). This comparison clearly demonstrates that the main detrital zircon populations present in all of the samples are consistent with those that characterize the WAC and, therefore, features a WAC affinity for the studied rocks. The almost general lack of Mesoproterozoic detrital zircon grains can also be taken as evidence of WAC provenance. Furthermore, our new data are also consistent with the detrital zircon spectra from other Neoproterozoic-Early Paleozoic rocks from the High

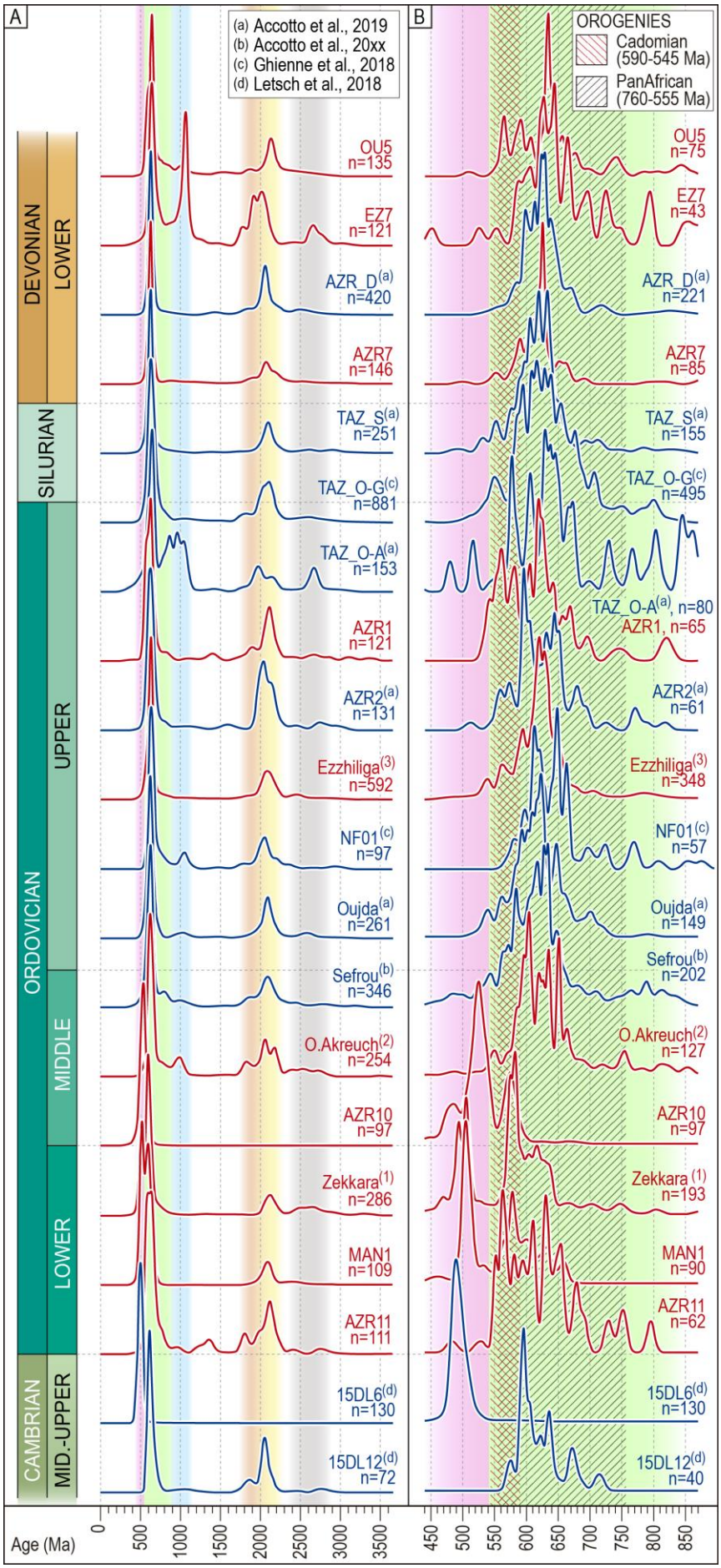
Atlas and Anti-Atlas (Abati et al., 2010; Avigad et al., 2012; Perez et al., 2019), unanimously supporting the common interpretation that the WAC represented the main source region for the sediments deposited in this part of the northern passive margin of Gondwana.

The (meta)igneous rocks that constitute the Precambrian basement of the Moroccan Mesetas could have also been the source of detrital zircon grains found in the overlying Paleozoic sedimentary succession. Though very small and scarce, some outcrops have revealed the existence of Eburnian (Pereira et al., 2015) and Cadomian (El Haibi et al., 2020; El Haïbi et al., 2021; El Houicha et al., 2018; Letsch et al., 2018; Ouabid et al., 2017; Tahiri et al., 2010) basement in the Western Meseta. This basement might have been exposed and prone to erosion during the earliest Paleozoic rifting, prior to be covered by the passive margin sediments. Particularly, two metarhyolites from the Khenifra area yielded protholith ages of c. 564 Ma and c. 570 Ma (Letsch et al., 2018), that agree well with the c. 570 Ma detrital zircon population found in our nearby Cambrian-Ordovician samples AZR10 and AZR11 (Figure 2.22).

5.3. Discriminating between Pan-African and Cadomian sources

The Late Tonian-Ediacaran detrital zircon population is related to both the Cadomian (590-545 Ma; Linnemann et al., 2008 and references therein) and Pan-African (760-555 Ma; Hefferan et al., 2014 and references therein) orogenies, which partially overlap in time and space. The Pan-African orogeny is commonly considered responsible for the subductional/collisional tectonic events that assembled northern Africa along the Neoproterozoic, while the Cadomian orogeny refers to the Andean-type tectonic setting that was active in the North Gondwana margin at Ediacaran time. In the detailed KDE plots shown in Figure 2.26B we can observe that the highest peaks of the Late Tonian-Ediacaran population (green background) in the Lower Ordovician samples (AZR11, MAN1, OUJ5 and OUJ6, and AZR10) appear at c. 590 and c. 555 Ma, i.e., the period of time when the two orogenies overlap. On the contrary, in the Middle Ordovician-Upper Devonian samples, despite the presence of second- and/or third-order peaks at the 590-555 Ma interval, the highest ones are slightly older (c. 650-600 Ma). Accordingly, we suggest that during the early Paleozoic (Cambrian to Early Ordovician) the Moroccan Meseta sediments were sourced by both Cadomian and Pan-African rocks, i.e., from the neighboring and recently active subduction-related continental margin. Later on, from Middle Ordovician time onwards, continued subsidence at the continental now passive margin led to the burial of the remaining Cadomian magmatic arc, displacing the main sediment source to more inland and stable areas of the WAC where Pan-African older rocks cropped out.

Figure 2.26 (following page): Comparison among KDE plots from the Moroccan Mesetas; A) entire age spectra (3600-0 Ma); B) Late Tonian-Ordovician spectra (870-440 Ma). Red lines represent samples from this study; blue lines are data from previous works (see references in the figure). (1) Zekkara: OUJ5 and OUJ6; (2) Oued Akreuch: AKR1 and AKR2; (3) Ezzhiliga: EZ1, EZ2, EZ4, EZ5, and EZ6.


A
B
(a) Accotto et al., 2019
(b) Accotto et al., 20xx
(c) Ghienne et al., 2018
(d) Letsch et al., 2018
OROGENIES
Cadomian (590-545 Ma)
PanAfrican (760-555 Ma)
DEVONIAN
LOWER
SILURIAN
ORDOVICIAN
UPPER
MIDDLE
LOWER
CAMBRIAN
MID.-UPPER
OU5 n=135
EZ7 n=121
AZR_D(a) n=420
AZR7 n=146
TAZ_S(a) n=251
TAZ_O-G(c) n=881
TAZ_O-A(a) n=153
AZR1 n=121
AZR2(a) n=131
Ezzhiliga(3) n=592
NF01(c) n=97
Oujda(a) n=261
Sefrou(b) n=346
O.Akreuch(2) n=254
AZR10 n=97
Zekkara(1) n=286
MAN1 n=109
AZR11 n=111
15DL6(d) n=130
15DL12(d) n=72
OU5 n=75
EZ7 n=43
AZR_D(a) n=221
AZR7 n=85
TAZ_S(a) n=155
TAZ_O-G(c) n=495
TAZ_O-A(a), n=80
AZR1, n=65
AZR2(a) n=61
Ezzhiliga(3) n=348
NF01(c) n=57
Oujda(a) n=149
Sefrou(b) n=202
O.Akreuch(2) n=127
AZR10 n=97
Zekkara(1) n=193
MAN1 n=90
AZR11 n=62
15DL6(d) n=130
15DL12(d) n=40
Age (Ma)
0
500
1000
1500
2000
2500
3000
3500
450
500
550
600
650
700
750
800
850

5.4. Minor detrital zircon populations and secondary sediment sources

5.4.1. Cambrian-Ordovician magmatism

Despite the predominance of Paleozoic sediments with WAC affinity in the Moroccan Mesetas, the occurrence of minor detrital zircon populations suggests the influence of additional secondary incomes from other terranes and/or local magmatic sources.

In this regard, the presence and distribution of a Cambrian-Ordovician (c. 525-480 Ma) detrital zircon population in the Moroccan Meseta deserves some consideration. All of the available tectonic reconstructions consider that a Cambrian-Ordovician rifting episode followed the conclusion of the Cadomian subduction, giving way to a new Wilson cycle during which the Rheic Ocean developed (Figure 2.25; *e.g.*, Cambeses et al., 2017; Nance et al., 2012, 2010). This rifting episode is well recognized in the Variscan massifs of central and southern Europe, where it is characterized by thick Cambrian-Ordovician sedimentary successions accompanied by rift-related magmatic rocks (*e.g.*, Álvaro et al., 2018 and references therein; Linnemann et al., 2007 and references therein; Sánchez-García et al., 2003). Detrital zircon grains of Cambrian-Ordovician age are also relatively common in the lower-middle Paleozoic (meta)sedimentary rocks of these regions (*e.g.*, Bahlburg et al., 2010; Drost et al., 2011; Košler et al., 2014; Lin et al., 2019, 2016; Linnemann et al., 2008; Montero et al., 2009; Pastor-Galán et al., 2013b; Pereira et al., 2012; Shaw et al., 2014; Strnad and Mihaljevič, 2005; Szczepański et al., 2020; Žák and Sláma, 2018).

In northern Morocco, the Cambrian-Ordovician rifting seems to had been aborted before reaching the oceanic phase (Bernardin et al., 1988; Ouali et al., 2003; Piqué, 2003, 1979; Piqué et al., 1995; Piqué and Michard, 1989). Paleogeographic studies allowed the reconstruction of this rift, extending from the western part of the Anti-Atlas to the northern part of the Coastal Block with a broadly NNE-SSW trend (Figure 2.27; *e.g.*, Álvaro et al., 2014; Bernardin et al., 1988; Ezzouhairi et al., 2008; Ouali et al., 2003; Piqué, 2003; Piqué et al., 1995; Piqué and Michard, 1989; Pouclet et al., 2018 and references therein). In the Anti-Atlas, Pouclet et al. (2018 and references therein) recognized 6 magmatic pulses related to the aborted rift, the youngest of which (c. 500-497 Ma) also affected the Western Moroccan Meseta in the northern part of the Coastal Block (El Hadi et al., 2006a) and the southern part of the Central Zone (Khenifra area; Figure 2.27; Ouabid et al., 2020; Ouali et al., 2003). Nevertheless, Cambrian-Ordovician detrital zircon grains are not common in the Cambrian-Devonian rocks of the Moroccan Mesetas, where they have been only reported locally and, except for an isolated case in the Khenifra area (sample 15DL6 by Letsch et al., 2018), in limited percentages (less than 5% of the data; Figure 2.27; Accotto et al., 2019, in press; Ghienne et al., 2018).

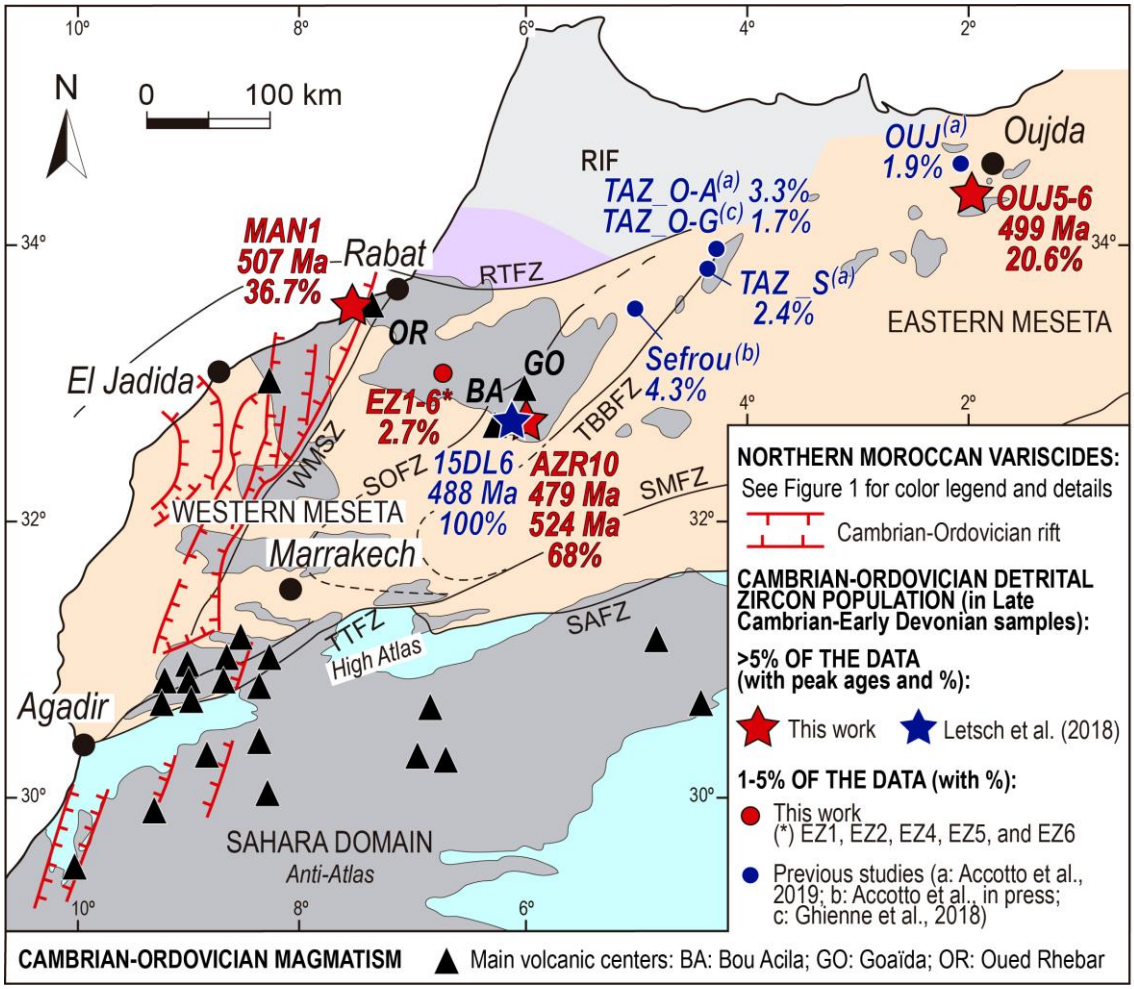


Figure 2.27: Distribution of the Cambrian-Ordovician rift and volcanic centers described in northern Morocco (after Pouclet et al., 2018 and references therein; Ouabid et al., 2020), with percentages of the Cambrian-Ordovician detrital zircon populations. See caption of Figure 2.16 for acronyms.

In the new data reported here, the Cambrian-Ordovician detrital zircon population is generally scarce, except in a few Lower-Middle Ordovician samples from the Coastal Block (MAN1), Khenifra (AZR10), and Zekkara (OUJ5 and OUJ6) areas (Figure 2.27). In the first two cases the samples were collected c. 10-15 km from the Oued Rhebar and Bou Acila volcanic centers (Pouclet et al., 2018 and references therein), respectively. In the Oued Rhebar sector, acid to intermediate trachyandesites (El Hadi et al., 2006b) yielded a geochronological date of 507±5 Ma (U-Pb on magmatic zircon grains; El Attari et al., 2019), perfectly coincident with the average age of the Cambrian peak found in MAN1 (c. 507 Ma, 36.7% of the data). In the Bou Acila sector, at least two magmatic events poorly dated but separated by lower Cambrian limestones were recognized (Morin, 1960; Ouali et al., 2003; Pouclet et al., 2018; Verset, 1988). Interestingly, Letsch et al. (2018) published data from a sample of this sector (15DL6, Figures 2.26 and 2.27), which depicts a single late Cambrian (c. 488 Ma) detrital zircon peak; this sample suggests that at least one magmatic pulse in the Bou Acila sector occurred at late Cambrian time. Furthermore, our data from the nearby sample AZR10 show a main peak at c. 524 Ma (52% of the data) and a minor one at c. 479 Ma (16% of the data) (Figure 2.26B), both characterized by positive ε_{Hf} values clustered between +5 and +11 (Figure 2.22D). These

peaks can be tentatively related to other magmatic pulses of the Bou Acila volcanic center. The positive ε_{Hf} values appear to confirm the juvenile nature of some of the magmas associated with the rifting episode.

In both the Coastal Block and Khenifra samples, however, the overall imprint of the Cambrian magmatism might have been limited, since other almost coeval samples collected c. 40 km away from the Oued Rhebar (AKR1 and AKR2, Lower-Upper Ordovician) and Bou Acila (AZR11, Cambrian-Ordovician) volcanic centers, as well as a slightly younger sample located very close to the Oued Rhebar sector (NF01, Upper Ordovician, Ben Slimane area; Ghienne et al., 2018) only contain a couple of scattered Cambrian grains or none (Figure 2.26B).

In the Eastern Moroccan Meseta, no Cambrian-Ordovician volcanic centers have been reported until now, but the samples from Zekkara (OUJ5 and OUJ6, Figures 2.16D, 2.16B and 2.27) yielded 20.6% of Cambrian-Ordovician ages (mean age c. 499 Ma), suggesting that at least one magmatic source of that age existed in that area. Nevertheless, other Late Ordovician samples from the nearby Oujda area (15 km NE from Zekkara) only yielded 1.9% of Cambrian ages (Accotto et al., 2019), which points to a rather very local influence of the claimed Cambrian-Ordovician EMM magmatic source.

The occurrence of Cambrian-Ordovician detrital zircon grains sensibly decreases in Middle Ordovician-Silurian samples (≤ 5% of the data), while in the Lower Devonian ones almost no Cambrian-Ordovician detrital zircon ages have been found (Figures 2.16B). These data suggest, therefore, that shortly after the rift abortion (Bernardin et al., 1988; Ouali et al., 2003; Piqué, 2003, 1979; Piqué et al., 1995; Piqué and Michard, 1989) and a brief erosional phase, the volcanic centers in the Moroccan Meseta were probably covered by the passive margin sedimentary sequence, mainly fed by erosion of the WAC and partial recycling of older sedimentary rocks.

5.4.2. Stenian-early Tonian detrital zircon ages

Another minor detrital zircon population already discussed by several authors in the northern Moroccan Variscides is the Stenian-early Tonian one (c. 1.0 Ga). This population has been described in middle Cambrian rocks from the Anti-Atlas (Avigad et al., 2012), a Lower Ordovician rock from the Coastal Block (WMM; sample NF01; Figure 11A; Ghienne et al., 2018), Lower-Middle Ordovician and Upper Ordovician-Silurian rocks from the Middle Atlas (WMM; Figures 2.26A; Accotto et al., 2019, in press; Ghienne et al., 2018), Upper Devonian rocks from the Central Zone (WMM; Accotto et al., 2021), and Upper Ordovician (Figures 2.26A) and middle-upper Carboniferous rocks from the EMM (Oujda and Jerada areas; Accotto et al., 2019, 2021). Among the samples analyzed in this study, we have identified the c. 1 Ga detrital zircon population in two Middle Ordovician rocks from the Oued Akreuch area (AKR1 and AKR2, 8.7% of the data), five Ordovician (EZ1, EZ2, EZ4, EZ5, and EZ6, 1.9%) and one Lower Devonian rocks from the Ezzhiliga area (EZ7, 26.4%), and one Lower Devonian rock from the Oulmes area (OU5, 6.7%). In the remaining samples, Mesoproterozoic ages

are absent or represented by scarce scattered grains that cannot be considered a proper detrital zircon population (Table 2.6).

Stenian-early Tonian sources are virtually unknown in the WAC, although a recent work (El Bouougri et al., 2020) pointed out the existence of a limited early Tonian (c. 883 Ma) magmatic activity in the Anti-Atlas related to an incipient phase of the Rodinia breakup. Nevertheless, even if this event would have been sufficiently widespread to provide zircon grains up to the Moroccan Meseta, it could only explain the youngest ages within the Stenian-early Tonian detrital zircon population found in our samples.

Ages ranging from c. 1.3 to c. 0.9 Ga are typical of the Grenvillian terranes (Ernst et al., 2008) that, before the opening of the Rheic Ocean at Cambrian-Ordovician time (Nance et al., 2012, 2010), were relatively close to the northern Gondwanan margin (*e.g.*, Amazonia). Nevertheless, these terranes are also characterized by other Mesoproterozoic sources in the range 1.7-1.1 Ga (Figures 2.25). Interestingly, detrital zircon age distributions compatible with Amazonian sources were found in Neoproterozoic metasedimentary rocks overlying the western WAC in Mauritania (Figures 2.16A; Bradley et al., 2015). On the contrary, all of the Neoproterozoic-Carboniferous metasedimentary rocks sampled from the Anti-Atlas (*e.g.*, Abati et al., 2010; Avigad et al., 2012) and, further north, in the High Atlas (Perez et al., 2019) and Moroccan Meseta (Accotto et al., 2019 2021, in press; El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al., 2018; this work) did not record Mesoproterozoic ages older than c. 1.1 Ga (except for a very few scattered grains, *e.g.*, AZR11 and AZR1; Figures 2.23A). Therefore, it is very unlikely that Amazonian (c. 1.7-0.9 Ga) sources could have supplied the c. 1.0 Ga detrital zircon population that episodically is found in the northern Moroccan Variscides. As an exception, a statistically significant number of detrital zircon grains yielded ages between c. 1.7 and 1.1 Ga in a few lower Carboniferous samples from the Mohammedia (Coastal Block), Tiflet (northern Central Zone), and Debdou-Mekkam (EMM) areas (Figures 2.16; Accotto et al., 2020, 2021). In these specific cases, the authors invoked an Avalonian (Amazonia-derived) source only available since the early Variscan (Tournaisian-early Visean) collision.

To explain the occurrences of c. 1.0 Ga detrital zircon ages in the pre-collisional succession of the northern Moroccan Variscides, several authors (Accotto et al., 2019, 2021, in press; Avigad et al., 2012; Ghienne et al., 2018) claimed for northeastern African sources (*e.g.*, Sahara Metacraton, Arabian-Nubian Shield; Figure 10). The age spectra of our samples containing the c. 1.0 Ga detrital zircon population are compatible with these northeastern African sources (Figures 2.26A).

The spatial and temporal distribution of samples containing Stenian-early Tonian dates is highly irregular, as well as the statistical relevance of this population (Figures 2.26A). In most of the cases, grains of these ages represent less than 10% of the data, but they locally reach c. 25% (*e.g.*, sample EZ7 from this work and the Ordovician samples from the Tazekka area in Accotto et al., 2019). This irregularity contrasts with other northern Gondwanan terranes cropping out in central and northwestern Iberia, where the c. 1.0 Ga detrital zircon population is very common and represents 30-50% of the data (Bea et al.,

2010; Fernández-Suárez et al., 2014; Gutiérrez-Alonso et al., 2015; Pastor-Galán et al., 2013a; Shaw et al., 2014; Talavera et al., 2012). Accordingly, we suggest that at Ordovician-Early Devonian time the Moroccan Mesetas belonged to the northern Gondwana passive margin, but was located in a more western and distal position than the current central/northwestern Iberian terranes (Figures 2.25), and, hence, the sedimentary incomes from northeastern African sources were distant and intermittent.

5.4.3. Orosirian-Statherian detrital zircon ages

The Orosirian-Statherian (c. 1.95-1.75 Ga) detrital zircon population found in NW Africa is considered by several authors to be related to the last pulses of the Eburnean orogeny (*e.g.*, Abati et al., 2012; Bessoles, 1977; Ghienne et al., 2018). Nevertheless, magmatic rocks related to this orogeny show ages not younger than c. 1.95 Ga (Rb/Sr, Sm/Nd, and U/Pb methods; Abouchami et al., 1990; Aït Malek et al., 1998; Boher et al., 1992; Hirdes et al., 1992; Liégeois et al., 1991; Schofield et al., 2006). Statherian (c. 1.75 Ga) bimodal dykes were described and dated in the Anti-Atlas, and considered to be the only remnants of a large igneous province developed during the breakup of the Nuna/Columbia supercontinent (Gasquet et al., 2004; Lama et al., 1993; Youbi et al., 2013) during the vanishing stages of the Eburnean orogeny. However, it is unlikely that volumetrically small dyke intrusions would have produced the amount of Orosirian-Statherian detrital zircon grains found in our samples (up to 12.4% of the data in sample EZ7; Table 2.6) and other Paleozoic samples from the northern Moroccan Variscides (*e.g.*, Abati et al., 2010; Accotto et al., 2019, 2020, 2021, in press; Avigad et al., 2012; Ghienne et al., 2018; Letsch et al., 2018).

Recent U-Pb dating on zircon grains in charnockites from the Mazagan escarpment, offshore the western Moroccan coast, highlighted crystallization ages varying from c. 1.95 to c. 1.75 Ga (Kuiper, 2019; Kuiper et al., 2019). These ages are compatible with those found in detrital samples from the northern Moroccan Variscides, including those studied in this work. However, the available data on the Mazagan escarpment are still scarce and, even if it is possible that at least part of the Orosirian-Statherian zircon grains were sourced in this terrane, the uncertainty still remains.

Other Orosirian-Statherian sources are known in Amazonia, Laurentia, and Baltica (Figures 2.25; Linnemann et al., 2011 and references therein; Nance et al., 2008). However, as previously discussed for the provenance of the Stenian-early Tonian detrital zircon population (see section 5.4.2), we exclude these terranes as possible sources because they would have provided also zircon grains in the range 1.75-1.2 Ga, which are generally absent in our samples. Alternatively, northeastern African sources (*e.g.*, Tuareg Shield, Sahara Metacraton, Arabian-Nubian Shield; Figures 2.25) might have provided both the Stenian-early Tonian and Orosirian-Statherian detrital zircon grains. If this were the case, we would expect a simultaneous occurrence of both detrital zircon populations, something that, on the contrary, does not always occur (Table 2.6 and Figures 2.26A).

To conclude, based on the data available we cannot define a unique source for the Orosirian-Statherian detrital zircon grains found in our samples and other rocks from the northern Moroccan Variscides (*e.g.*, Abati et al., 2010; Accotto et al., 2019, 2020, 2021, in press; Avigad et al., 2012; Ghienne et al., 2018; Letsch et al., 2018). Nonetheless, admitting that both the WAC and northeastern African cratons (*e.g.*, Sahara Metacraton) were the source of sediments on the passive margin of northern Gondwana during the Paleozoic, it is possible that the 1.95-1.75 Ga detrital zircon grains were actually sourced from different areas.

5.5. Relevance of the tectonic boundaries within the Moroccan Mesetas

The Moroccan Mesetas have been historically divided into several domains separated by fault zones (see section 1, Figure 2.16B). The tectonic relevance and significance of these boundaries is still under debate (*e.g.*, Hoepffner et al., 2006; Michard et al., 2010b, 2010a; Simancas et al., 2010, 2009).

According to some authors (*e.g.*, Hoepffner et al., 2006 and references therein; Michard et al., 2010a and references therein, 2010b), the faults bounding the different domains in the Moroccan Mesetas accommodated tens to hundreds of kilometers of displacement related to an important E-W oriented Variscan shortening. Nevertheless, the stratigraphic similarities between the Paleozoic successions within the Moroccan Mesetas and the Anti-Atlas (Piqué, 1994) suggest that there was a paleogeographic continuity between these regions. Furthermore, within the Moroccan Mesetas, our data on detrital zircon grains in the Cambrian-Lower Devonian successions from different areas also support this paleogeographic continuity. In particular, if the easternmost parts of the Moroccan Mesetas were located in a more eastern position, as suggested by Michard et al. (2010b and references therein), we would expect an increase of Stenian-early Tonian detrital zircon ages there. Nevertheless, the presence and distribution of this NE-African-sources is highly irregular and does not show an eastward systematic increase. Similarly, other minor detrital zircon populations found in samples from diverse areas and with different ages do not appear to be geographically controlled. The internal boundaries within the Moroccan Mesetas, therefore, seem to have had limited effects on the sedimentation in the different domains. Nonetheless, further tectono-metamorphic studies are needed to better constrain the tectonic relevance of the intra-Mesetas fault zones.

6. Conclusions

New U-Pb geochronological data on detrital zircon grains from 16 Cambrian-Lower Devonian samples from different zones of the Moroccan Mesetas show homogeneous age-frequency distributions. This similarity points to paleogeographical irrelevance of the proposed tectonic boundaries between the different zones/domains (with the exception of the Caledonian Sehoul Block) usually considered in the Moroccan Variscides, in accordance with other geological evidence (comparable stratigraphic successions, absence of ophiolite and/or high-pressure metamorphic belts). The main detrital zircon

populations common to our samples have late Tonian-Ediacaran (c. 850-540 Ma) and Rhyacian-Orosirian ages (c. 2220-1950 Ma), which suggest that the West African Craton was the main source of sediments for this part of the northern Gondwanan margin at early-middle Paleozoic time. Particularly, the Cadomian orogen (c. 590-540 Ma) constituted the main source during the Cambrian-Early Ordovician sedimentation, while erosion of slightly older Pan-African basement (c. 650-600 Ma) prevailed from the Middle Ordovician onwards. This change in the main sediment source during the Ordovician can be explained in terms of the progressive dismantling and burial of the Cadomian arc-related rocks at the continental margin, shifting the main source region to older areas located inland of the West African Craton.

The presence of additional minor detrital zircon populations suggests sediment income from other secondary sources:

- Cambrian-Early Ordovician (c. 540-450 Ma) zircon grains might have been sourced from active magmatic centers that developed in the Anti-Atlas and Western Moroccan Meseta in relation to the ongoing rifting process at that time. This detrital zircon population is only significant close to some of the known magmatic centers, and drastically reduces at Middle Ordovician time, probably due to rift cessation and burial underneath the ongoing passive margin sedimentation.
- Stenian-early Tonian ages (c. 1080-850 Ma) might have been sourced from northeastern African cratons, such as the Sahara Metacraton or the Arabian-Nubian Shield. The spatial distribution and statistical relevance of this detrital zircon population is variable, thus suggesting that this part of the northern Gondwanan passive margin was located in a relatively western position where the incomes from northeastern African sources were intermittent during Cambrian-Early Devonian time. A west Gondwana (Amazonia) source is excluded because it would also have provided other Mesoproterozoic ages (c. 1.7-1.1 Ga), which, on the contrary, are generally absent in our samples.
- Orosirian-Statherian (c. 1950-1750 Ma) detrital zircon grains are often present in our samples and a number of possible source areas are identified: (i) bimodal dykes in the Anti-Atlas related to the breakup of the Nuna/Columbia supercontinent, (ii) the Mazagan terrane offshore west Morocco, and/or (iii) northeastern African cratons that might have provided both the c. 1080-850 and 1950-1750 Ma zircon grains.

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Chapter III

Tectonic evolution of the Eastern Moroccan Meseta during the Eovariscan phase

The aim of this chapter is the reconstruction of the tectonic evolution of the Easter Moroccan Meseta during the closure of the Rheic Ocean and the first phases of the collision between the northern margin of Gondwana and an Avalonian promontory (Tournaisian-Visean).

Tectonic evolution of the Eastern Moroccan Meseta: from Late Devonian fore-arc sedimentation to Early Carboniferous collision of an Avalonian promontory

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Key-Points

- The Debdou-Mekkam Metasediments deposited during the Late Devonian (Early Tournaisian?) closure of the Rheic Ocean on the N-Gondwanan margin
- An important input of Mesoproterozoic and Devonian detrital zircons points to Avalonian basement and arc sources
- The collision between an Avalonian promontory and N-Gondwana deformed the Debdou-Mekkam metasediments forming a SE-vergent fold belt

Abstract

The deformed Paleozoic succession of the Eastern Moroccan Meseta crops out in relatively small and isolated inliers surrounded by Mesozoic and Cenozoic rocks. Two of the largest inliers (Mekkam and Debdou) are characterized by a monotonous succession of slates and greywackes affected by polyphasic folding that occurred at low- to very low-grade metamorphic conditions. New U-Pb ages on detrital zircon grains from the Debdou-Mekkam Metasediments constrain the maximal depositional age as Late Devonian, interpreted to be close to the true sedimentation age. Furthermore, the εHf values of the Devonian detrital zircons, together with the presence of a series of scattered zircon grains with ages between c. 0.9 and c. 1.9 Ga suggest provenance from a subduction related magmatic arc located on the Avalonian margin.

The Debdou-Mekkam massif is characterized by an Early Carboniferous first deformational event (D1), which gave way to a pervasive cleavage (S1) associated with plurikilometric-scale, tight to isoclinal, overturned to recumbent folds. Later events (Dc) occurred at Late Carboniferous time and generated variably developed crenulation cleavages (Sc) associated with variously oriented metric- to kilometric-scale folds, which complicate the pattern of both D1 intersection lineations (L1) and axial traces. The restoration of this pronounced curved pattern yields originally SW-NE oriented D1 fold axes with regional SE-vergence. This important Early Carboniferous shortening and SE-directed tectonic transport can be explained by closure of the Rheic Ocean and the first phases of the collision between the northern passive margin of Gondwana and an Avalonian promontory.

1. Introduction

The recognition of ophiolites in old collisional orogenic belts is the most valuable evidence of ancient oceanic closure and continental docking (*e.g.*, Dewey & Bird, 1971). However, the complete consumption of oceanic lithosphere is common in subduction zones, which makes many orogenic sutures appear as cryptic (*e.g.*, Pérez-Cáceres et al., 2015; Schulmann et al., 2014). In these cases, indirect lines of evidence (*e.g.*, recognition of paleogeographically exotic terranes and presence of high-pressure and/or intensely deformed belts) are usually employed to locate orogenic sutures and account for plate tectonic reconstructions (*e.g.*, Franke et al., 2017; Matte, 2001; Romer & Kroner, 2019; Van Hinsbergen et al., 2019).

The Late Paleozoic Variscan/Alleghanian Belt (Figure 3.1A) is frequently discussed in terms of the meaning and correlation of the orogenic sutures along the different transects (*e.g.*, Díez Fernández & Arenas, 2015; Faryad & Kachlik, 2013; Martínez Catalán et al., 2019; Pérez-Cáceres et al., 2015). The Variscan orogeny resulted from Rheic Ocean consumption and subsequent collision between Gondwana and Laurussia, with the final assembly of the Pangea supercontinent by the end of the Paleozoic (*e.g.*, Matte, 2001). Before that, Early Paleozoic rifting along the northern Gondwana margin gave way to the

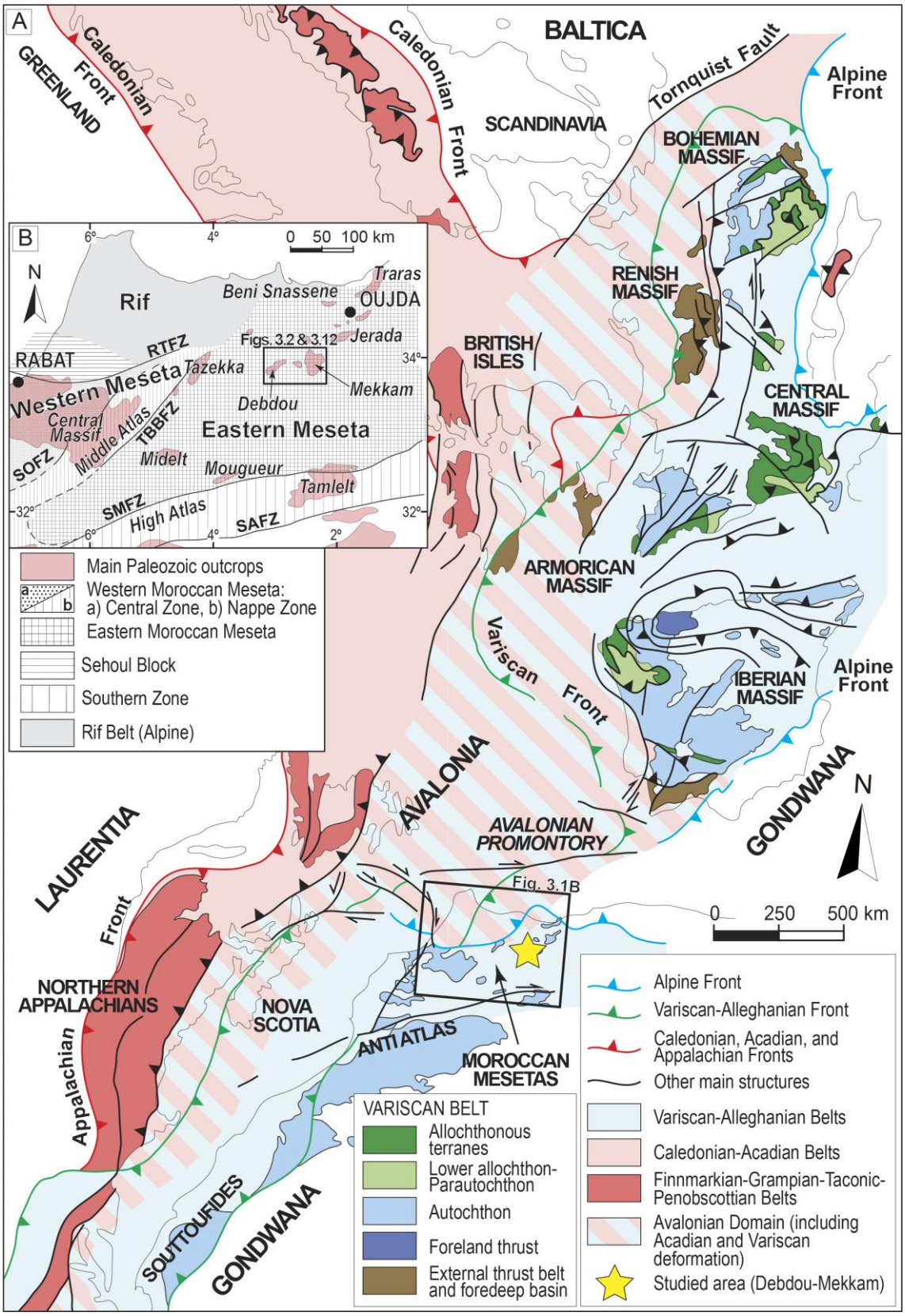

Figure 3.1. Large-scale geological setting of northern Morocco as part of the Variscan/Alleghanian Belt. (A) Reconstruction of the Variscan/Alleghanian and Caledonian belts at the end of the Paleozoic (modified from Martínez Catalán et al., 2002; Michard et al., 2010; Simancas et al., 2009). (B) Sketched geological map of the north-eastern Moroccan Variscides. RTFZ: Rabat-Tiflet Fault Zone; SOFZ: Smaala-Oulmès Fault Zone; TBBFZ: Tazekka-Bsabis-Bekrit Fault Zone; SMFZ: South Meseta Fault Zone; SAFZ: South Atlas Fault Zone (modified from Hoepffner et al., 2006; Michard et al., 2010).

opening of the Rheic Ocean during the drifting of continental domains (collectively called Avalonia) that were connected to the western part of northern Gondwana (Amazonia; Murphy et al., 2006) at Neoproterozoic time. On the other hand, Laurussia resulted from the amalgamation of Laurentia, Baltica and Avalonia during mid-Paleozoic time (Caledonian Orogeny s.l.).

Only a few of the sutures-related units recognized along the Variscan Belt preserve ophiolites, which were classically considered the remnants of the Rheic Ocean (*e.g.*, Matte, 2001) and were later reinterpreted as witnessing minor younger oceanic realms (*e.g.*, Arenas et al., 2014; Martínez Catalán et al., 2019; Shail & Leveridge, 2009). Thus, no direct relicts of the Rheic Ocean seem to crop out along the Variscides, which compromises all of the available paleogeographic reconstructions. Actually, the Rheic Ocean has been located based on indirect data derived from paleomagnetic, geochemical, and geochronological studies (*e.g.*, Gärtner et al., 2013; Villeneuve et al., 2015, in the SW Moroccan transect; Hoepffner et al., 2005; Michard et al., 2010; Simancas et al., 2005; Tahiri et al., 2010, in the NW Moroccan transect; Azor et al., 2008; Braid et al., 2011; Pérez-Cáceres et al., 2017, 2015, in the SW Iberian transect; Arenas et al., 2014; Martínez Catalán et al., 2019, in the NW Iberian transect; and Franke et al., 2017, in the central European transect).

The present-day dispersed configuration of the Variscan/Alleghanian Orogeny is the result of large-scale Late Carboniferous-Early Permian right-lateral wrenching, Pangea breakup and Alpine reworking. The Gondwanan side of the Variscan Belt crops out in a number of massifs distributed from western and central Europe to NW Africa (Figure 3.1A). In northern Morocco (Figure 3.1B), erosion of the Triassic-Cenozoic cover has exposed several deformed Paleozoic massifs (collectively known as the "Moroccan Variscides") in the Moroccan Meseta and High Atlas; southwards, the front of the Variscan Belt can be traced through the almost undeformed Paleozoic series of the Anti-Atlas region. Previous regional tectonic studies (El Hassani et al., 2003; Hoepffner, 1987; Hoepffner et al., 2005, 2006; Michard et al., 2008, 2010; Piqué, 1994, 2001; Piqué & Michard, 1981, 1989; Simancas et al., 2005, 2009; Tahiri & Hoepffner, 1988) subdivided the Moroccan Variscides into different domains (Coastal Block, Western Moroccan Meseta, Eastern Moroccan Meseta, and High Atlas or Sub-Meseta Domain; Figure 3.1B) based on stratigraphic and tectonic differences that would have paleogeographic implications (Michard et al., 2010 and references therein). The boundaries between these domains are regional-scale fault zones that reactivated former narrow rifted areas (Hoepffner et al., 2005, 2006; Michard et al., 2010). Nevertheless, the paleogeographic relevance of these structures is unclear, since they do not include suture-related rocks (*e.g.*, ophiolites), and the Ordovician-Devonian stratigraphic successions in all the Moroccan Variscides, as well as in other zones of the northern margin of Gondwana, indicate deposition in a shared passive margin (Piqué, 1994; Simancas et al., 2009), suggesting that all the domains of the Moroccan Variscides remained attached to northern Gondwana throughout the Paleozoic. This paleogeographic affinity is also supported by the detrital zircon provenance studies performed to date (Abati et al., 2010; Accotto et al., 2019; Avigad et al., 2012; El Houicha et al., 2018; Ghienne et al., 2018; Letsch et al.,

2018), which suggest a Gondwanan provenance for the Cambrian to Devonian sediments of the Moroccan Variscides. The only exception would be the Sehoul Block in the Western Moroccan Meseta (Figure 3.1B), which is thought to have an Avalonian derivation based on the presence of a mid-Paleozoic (i.e., Caledonian) deformation occurred before the emplacement of granites radiometrically dated at the Late Devonian (U-Pb on zircons; Tahiri et al., 2010).

This work aims to unravel the Late Paleozoic tectonic evolution of the complex and poorly known Debdou-Mekkam Massif in the Eastern Moroccan Meseta (Figure 3.1B). To do so, a detailed structural study of the metasedimentary Paleozoic rocks of this area was carried out, together with U-Pb geochronology and Hf isotope systematics on detrital zircon grains. This approach helped to constrain rock ages, provenance and tectonic evolution in the context of the Moroccan Variscides. On a broad scale, a new tectonic model emerges which highlights the close influence of the Rheic Ocean suture in the Eastern Moroccan Meseta, although the suture itself seems to be concealed and, hence, cryptic, as well as in many other transects of the Variscan Belt.

2. Geological setting

Paleozoic rocks are exposed in the Eastern Moroccan Meseta in relatively small (from a few square kilometers up to c. 1200 km2) and isolated inliers (Figure 3.1B), characterized by Cambrian-Permian successions deformed by Eovariscan (Late Devonian-Early Carboniferous) to Variscan (Carboniferous) events (Hoepffner, 1987). The Ediacaran basement that crops out in several areas of the Western Moroccan Meseta and Coastal Block (*e.g.*, El Haibi et al., 2020; El Houicha et al., 2018; Ouabid et al., 2017; Pereira et al., 2014, 2015; Tahiri et al., 2010) has not been reported in the Eastern Moroccan Meseta. Thus, the oldest sedimentary rocks described in this latter region are shales and schists attributed to the Cambrian-Ordovician in the Midelt Massif by correlation with similar facies in the Western Moroccan Meseta (Hoepffner, 1989). Only the highest levels of this succession were dated in Tazekka based on their paleontological and palynological content, which yielded Early Ordovician ages (Desteucq & Fournier-Vinas, 1981; Hoepffner, 1977; Rauscher et al., 1984). The overlying quartzitic sandstones, attributed to the Late Ordovician, reach maximum thickness at Tazekka (Hoepffner, 1989). The Silurian succession is characterized by black fine-grained quartzitic sandstones and shales with graptolites. Based on palynological content, the Devonian consists of slates followed by siliciclastic flysch sediments dated at Emsian (Marhoumi et al., 1983).

The Devonian flysch marks the change from a passive margin context, more or less continuous since the Cambrian, to a subsiding basin that preceded an “Eovariscan” tectonic event associated with the partial exhumation of the Moroccan Meseta (Hoepffner, 1987, 1989). In the Eastern Moroccan Meseta, the different inliers were variably affected by this “Eovariscan” deformation, which associated with very low-grade metamorphism, although greenschist to amphibolite facies conditions were locally

reached (Midelt and North Tamlet areas); the available ages point to the Late Devonian for the "Eovariscan" event: 366 ± 7 Ma obtained with Rb-Sr methods in the Midelt area (Clauer et al., 1980; Tisserant, 1977); 372.3 ± 8.1 and 368.3 ± 7.9 Ma obtained with the K-Ar method on syn-deformational illite grains from the Debdou and Mekkam Massifs, respectively (Huon et al., 1987). Hoepffner (1987) proposed that the "Eovariscan" tectonic event comprises two stages in the Midelt and Tamlet regions, both characterized by NW-SE trending isoclinal recumbent or overturned folds with W- to SW-vergences. The first of these stages would be associated with the development of a slaty cleavage, while the second would be related to a crenulation cleavage, horizontal shear and stretching lineation (Hoepffner, 1987; Hoepffner et al., 2006).

An "Intravisean" extensional phase (Hoepffner et al., 2006), associated with a transgression and the opening of volcano-clastic basins in the northern part of the Eastern Moroccan Meseta, was also described (*e.g.*, Debdou-Mekkam, Jerada, Traras basins, Figure 3.1B). The Late Visean sedimentary rocks were dated based on their fossil fauna content (Médioni, 1979 and references therein); they locally contain (*e.g.*, in the Mekkam region) a basal level of limestones and carbonatic breccias, which unconformably overlie the Cambrian-Devonian succession. The Late Visean volcanosedimentary deposition was accompanied by the emplacement of granitoids (El Hadi et al., 2006 and references therein).

The main Variscan event was described as responsible for E-W to ENE-WSW oriented, N-vergent folds (Hoepffner et al., 2006) that occurred at very low-grade metamorphic conditions during Late Carboniferous (c. 300 Ma; K-Ar methods on neoformed micas from the Tazekka Massif; Huon et al., 1987). This event was followed by the emplacement of several post-kinematic granitoids (c. 290 Ma; El Hadi et al., 2003, 2006 and references therein). Finally, Late Carboniferous-Early Permian tardi-Variscan events affected the Eastern Moroccan Meseta giving way to mainly compressional E-W, NW-SE, and N-S faults (Hoepffner et al., 2006).

The Permian post-orogenic continental red-beds that characterize the Western Moroccan Meseta and the Coastal Block (Hoepffner et al., 2005) have not been described in the Eastern Moroccan Meseta, where Lower Triassic red shales and basalts directly overlay in unconformity over the Carboniferous (Visean-Westphalian) volcano-sedimentary rocks.

2.1. The Debdou-Mekkam massifs

The Debdou-Mekkam massifs (comprising the Paleozoic outcrops in the Debdou and Mekkam areas, and a few smaller inliers between them; Figure 3.2) are characterized by a monotonous sequence of siliciclastic turbidites, previously called "Mekkam schists" (Hoepffner, 1987 and references therein). We prefer to refer to them as the "Debdou-Mekkam metasediments" (DMMS), because of the low-grade metamorphic imprint that these rocks underwent (as compared with the non-metamorphic overlying succession). The DMMS were originally dated as Tournaisian-Late Visean by Médioni (1980), based

on the presence of fragments of fossil plants. However, palynological data (Marhoumi, 1984; Marhoumi et al., 1983) yielded Middle-Late Devonian ages (Givetian-Frasnian).

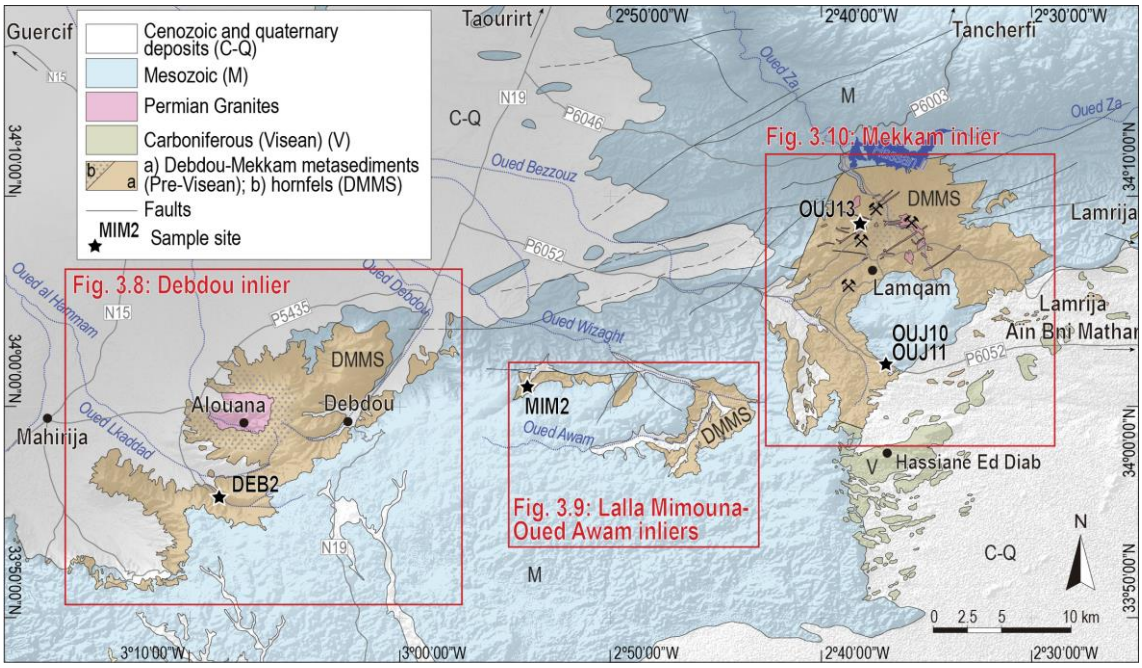

Figure 3.2. Paleozoic inliers in the Debdou-Mekkam region. The red squares refer to the detailed structural maps shown in Figures 3.8, 3.9, and 3.10. The topographic base is the Digital Earth Model SRTM 1 Arc-second Global (https://earthexplorer.usgs.gov/), with a superposed hillshade function to show altitude.

From a lithological point of view, the DMMS are an irregular alternation of slates and greywackes. The slates are particularly predominant in the minor inliers and, locally, in the Debdou and Mekkam areas; they are composed by very fine-grained sediments with abundant detrital mica (Figure 3.3A). The coarse-grained portion of the sequence is characterized by decimetric- to decametric-thick beds of greywackes with subordinate sandstones, quartzitic sandstones, arkoses, and, locally, microconglomerates (Figure 3.3B); under the microscope, these rocks show abundant quartz (often rounded), fragments of magmatic crystalline rocks, phyllosilicates (mica and clay), and oxides. The DMMS often show sedimentary structures, such as ripple laminations (Figure 3.3C) or graded bedding (Figure 3.3D), which were used in the field to identify the polarity of the sequence. The basal contact of the DMMS is not exposed in the region, hence its global thickness is unknown. The metamorphism is of very low- to low-grade with the phyllosilicate-rich rocks occurring as slates to phyllites.

The DMMS are unconformably overlain by a Visean succession, characterized by a basal breccia with carbonate cement and clasts of quartzitic sandstones and slates, probably reworked from the underlain sequence, and fragments of volcanites (Figure 3.3E), followed by limestones containing fragments of brachiopods and polyps of Late Visean age (Médioni, 1979 and references therein). The succession continues upwards with a 300 m-thick series of tuffs with interbedded rhyolites, trachyandesites and radiolarites, followed by a thick series of slates and sandstones, paleontologically dated at Late Visean (Médioni, 1979 and references therein). The Visean unconformity (Figure

3.3F) crops out in the southern zone of Mekkam area, NW of Hassiane Ed Diab (Figure 3.3), where is partially affected by a WNW-ESE trending fault (Section 4.4).

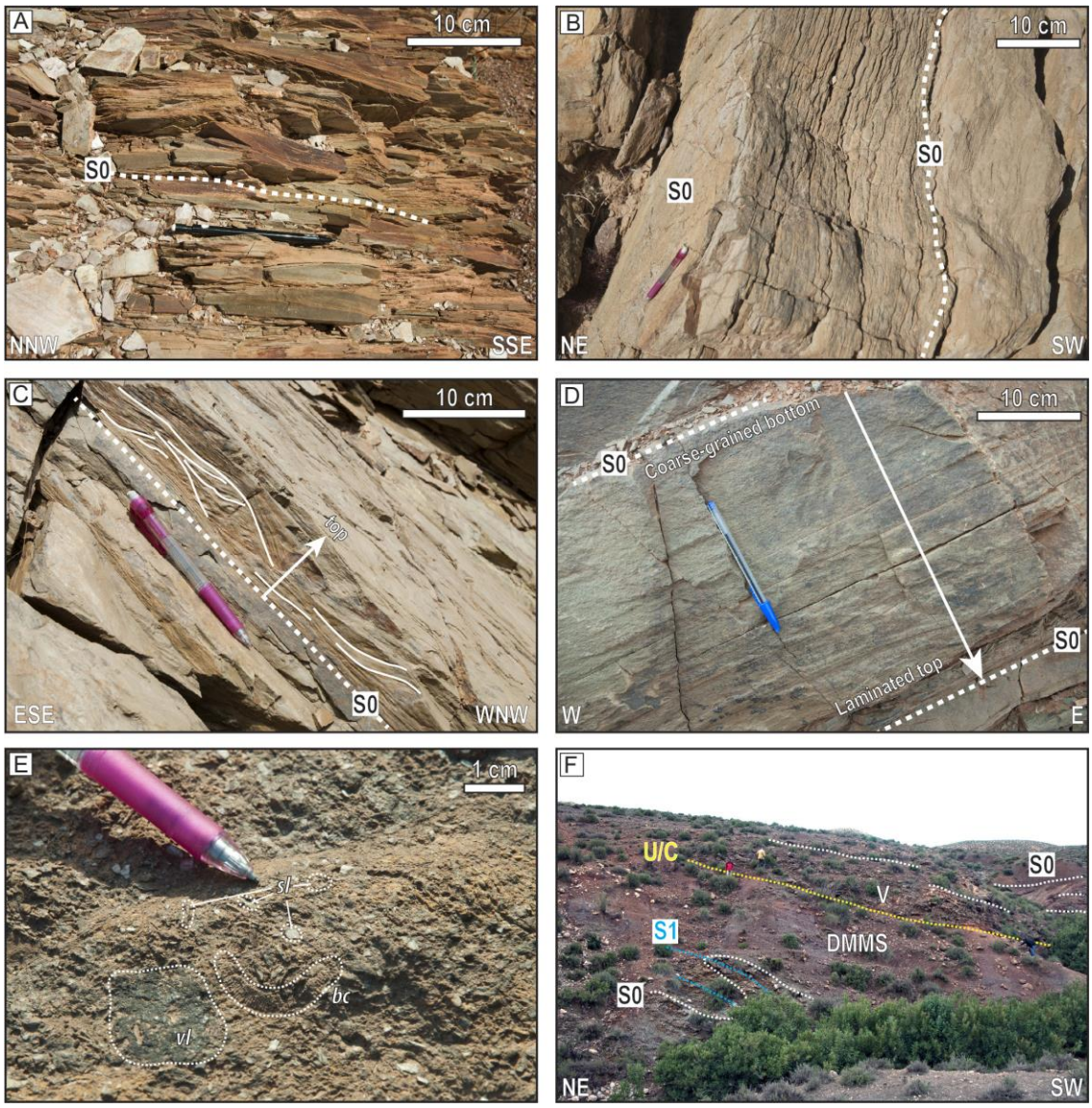

Figure 3.3. Main lithologies cropping out in the Debdou-Mekkam region: slates (A) and greywackes (B), which characterize the Debdou-Mekkam Metasediments (DMMS); cross-lamination in the slates (C) and graded bedding in a layer of greywackes (D) used as stratigraphic polarity criteria; (E) Upper Visean carbonate breccia with reworked clasts of DMMS slates (sl), volcanites (vl), and bioclasts (bc); (F) unconformity (U/C) between the previously deformed DMMS and the Visean succession (V) cropping out in the Hassian Ed Diab area: S0, stratigraphic bedding; S1, main cleavage.

3. Detrital zircon geochronology

3.1. U-Pb analyses

Four to five kilograms of rock were collected from five outcrops of the DMMS (Figure 3.2). DEB2 (IGSN: IEACC0005) is a greywacke sampled in the Debdou inlier and made

up of abundant fine-sized (c. 0.1 mm in diameter) quartz and phyllosilicate grains, with subordinate altered feldspars and oxides. MIM2 (IGSN: IEACC0004) is a quartzitic sandstone sampled in the westernmost Lalla Mimouna-Oued Awam inliers, and composed of dominant medium-sized (c. 0.2 mm in diameter) quartz grains with subordinate phyllosilicates and oxides, which define the main cleavage. Samples OUJ10 (IGSN: IEACC0001), OUJ11 (IGSN: IEACC0002), and OUJ13 (IGSN: IEACC0003) were collected in the Mekkam inlier. OUJ10 is an arkose characterized by medium-sized (c. 0.2 mm in diameter) quartz grains, slightly oriented parallel to the main cleavage, which is defined by phyllosilicates. OUJ11 was sampled not far from OUJ10 (but in a different outcrop) and is a coarse-grained (c. 0.25-0.3 mm in diameter) arkose with abundant quartz and mica clasts; this latter is partially recrystallized, which suggests a slight metamorphic overprint. Finally, OUJ13 is a quartz-rich sandstone with abundant phyllosilicate grains and the quartzitic clasts varying from fine to medium in size (diameter from c. 0.1 mm to c. 0.2 mm).

All the samples were processed in the laboratories of the University of Granada (Spain). They were crashed, and detrital zircon grains were separated using granulometric (sieves) and density (panning) separation procedures. Finally, 150-250 zircon grains were handpicked from each sample and sent to the John de Laeter Centre (JdLC) at Curtin University in Perth (Australia), where they were imaged by cathodoluminescence using a Mira3 FESEM instrument at the Microscopy and Microanalysis Facility (a selection of cathodoluminescence images of the most representative grains is included in the Appendix C, Figures C.13 to C.17), and then analyzed with Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICPMS). In order to have a statistically significant amount of data (Vermeesch, 2004), a minimum of 146 analyses were carried out on each sample and the results that showed a discordance higher than 10% were considered anomalous and not accounted further. Given the increased errors associated with $^{206}Pb/^{238}U$ values observed for ages older than 1500 Ma, this ratio was only used to date younger grains; for ages older than 1500 Ma, the $^{207}Pb/^{206}Pb$ ratio was considered more appropriate. The detailed analytical methodology is provided in Appendix A. The statistical analysis of the data was carried out using DensityPlotter 8.4 software (Vermeesch, 2012). The histograms were created using a bin of 40 Ma, while an adaptive bandwidth of 40 Ma was applied for the Kernel Density Estimators (KDE). The youngest detrital zircon populations were calculated with IsoplotR online (Vermeesch, 2018). Errors are expressed at the 1σ level. The raw analytical results are listed in Tables D.30 to D.34 of the Appendix D.

3.1.1. Results

The zircon grains separated from the studied samples are between 100 μm and 300 μm in length. Most of the grains are yellowish or whitish; some of them are rounded, while others are euhedral; a few zircons are purple to pink, with a generally rounded shape. Cathodoluminescence images (Figures C.13 to C.17 in Appendix C) show continuous

oscillatory zoning, partially reabsorbed cores with low or high U overgrowth rims, sector zoning, or structureless grains.

From sample DEB2 (Figure 3.4A), 150 analyses were carried out on 147 detrital zircon grains, yielding 139 concordant results. Fifty-nine percent of the data (n = 82) range from c. 690 to c. 540 Ma and represent a main population with an Ediacaran mean age of 605.1 ± 0.4 Ma. Two minor detrital zircon populations yielded Paleoproterozoic mean ages, with two peaks at 2071.1 ± 2.7 Ma (c. 1.96-2.29 Ga, 16.5%) and 2458.8 ± 4.5 Ma (c. 2.49-2.43 Ga, 6.5%). A number of scattered data gave Cambrian (n = 4, c. 532-503 Ma), Tonian-Ectasian (n = 11, c. 1346-823 Ma), Orosirian (n = 5, c. 1938-1771 Ma), and Archean (n = 3, c. 3.0-2.7 Ga) ages. The youngest detrital zircon population in this sample (n = 9) yielded a Late Ediacaran weighted average age (549.6 ± 1.2 Ma, MSWD = 1.12); however, the 2 youngest detrital zircon grains gave Late Devonian (Late Frasnian) ages (374-375 Ma).

One hundred thirty-five detrital zircon grains from sample MIM2 were analyzed (Figure 3.4B) and 146 analyses were carried out, with 130 yielding concordant results. The main detrital zircon population has an Ediacaran mean age (616.3 ± 0.4 Ma; c. 786-547 Ma) and comprises the 50.8% of the data (n = 66). Furthermore, three minor populations can be defined: a Late Devonian population (average age of 369.6 ± 0.6 Ma; c. 380-357 Ma) that comprises 6.2% of the concordant data (n = 8), a c. 2013-2221 Ma Paleoproterozoic peak (2095.2 ± 3.8 Ma, 13.8%, n = 18), and a c. 2.43-2.6 Ga Siderian-Neoarchean population (mean age 2493.9 ± 4.2 Ma, 10%, n = 13). Scattered data gave Cambrian (n = 2, c. 523-501 Ma), Tonian-Orosirian (n = 14, c. 1940-873 Ma), and Mesoarchean (n = 9, c. 2.7-3.1 Ga) ages. The youngest detrital zircon population is Late Devonian (weighted average age 370.4 ± 0.9 Ma, MSWD = 1.28) and includes 4 data.

One hundred ninety detrital zircon grains from sample OUJ10 were analyzed (Figure 3.4C) and 200 analyses were carried out, yielding 180 concordant results. The two main detrital zircon populations yielded mean ages of 615.9 ± 0.9 Ma (Ediacaran; c. 790-541 Ma, 39.4%, n = 71) and 371.4 ± 0.8 Ma (Late Devonian; c. 425-320 Ma, 19.4%, n = 35). Nine percent of the data (n = 16) are included in a minor Tonian-Stenian population (mean age of 1073.6 ± 2.9 Ma; c. 1215-847 Ma) and 12.2% in a Paleoproterozoic peak (mean age of 2078.1 ± 3.3 Ma; c. 2.23-1.94 Ga). Scattered data yielded Cambrian (n = 7, c. 538-514 Ma), Ectasian-Orosirian (n = 19, c. 1.28-1.9 Ga), and Siderian-Archean (n = 10, c. 2.44-2.83 Ga) ages. The youngest detrital zircon population in this sample is Late Devonian (weighted average age 361.7 ± 1.7 Ma, MSWD = 1.25) and includes 7 data.

From sample OUJ11 (Figure 3.4D), 301 analyses were performed on 269 zircon grains, yielding 267 concordant results. The main detrital zircon populations yielded Ediacaran (mean age of 627.4 ± 0.8 Ma; c. 823-543 Ma, 39.3%) and Late Devonian (mean age of 376.9 ± 0.6 Ma; c. 426-343 Ma, 23.2%, n = 62) ages. Seventeen percent of the data (n = 45) can be grouped into a minor Paleoproterozoic population with a mean age of 2089 ± 2.5 Ma (c. 2.35-1.99 Ga). Scattered data yielded Cambrian (n = 9, c. 538-499 Ma), Tonian-Orosirian (n = 35, c. 1931-975 Ma), and Archean (n = 11, c. 3.37-2.47 Ga) ages.

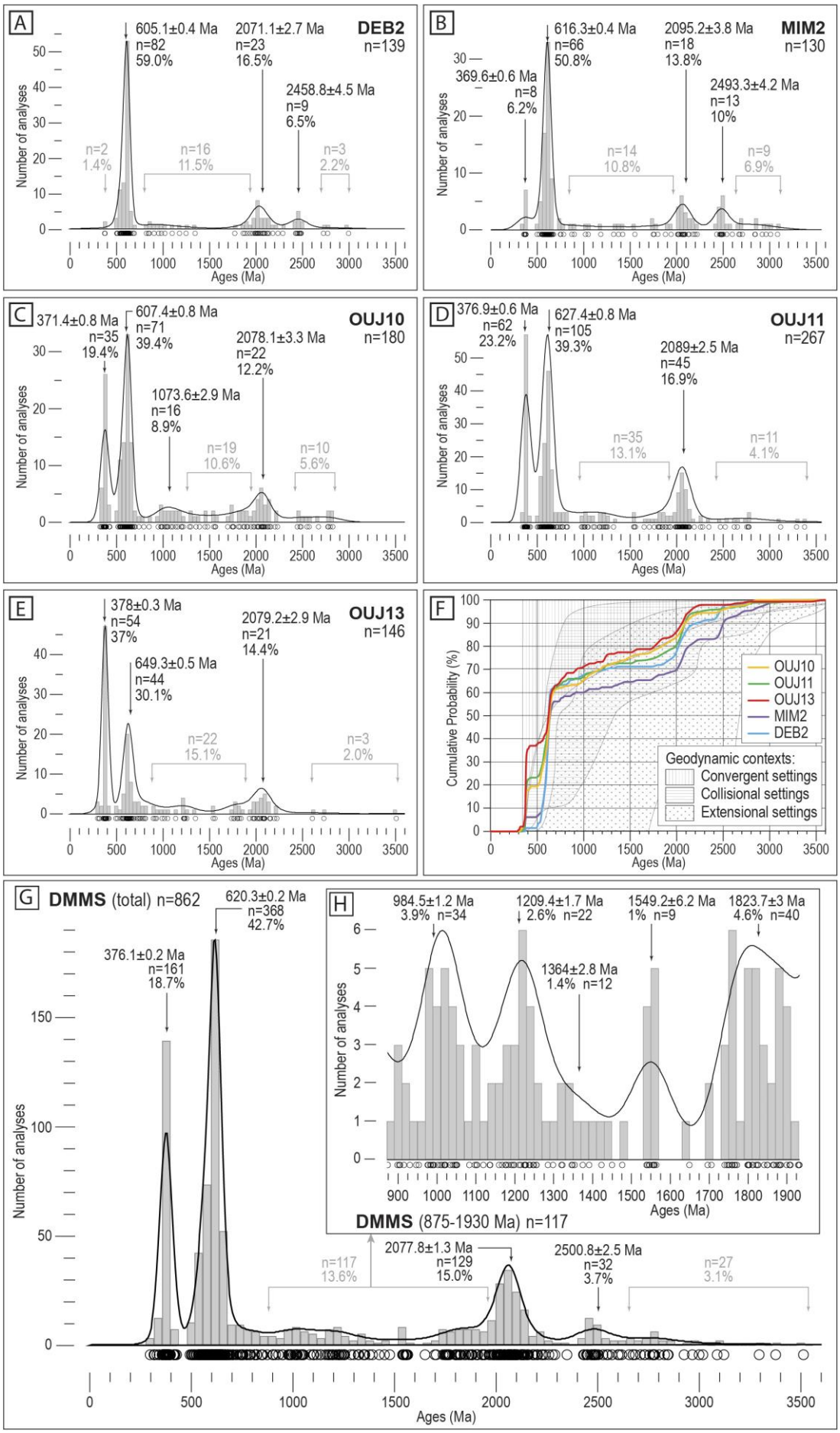
A
DEB2
n=139
605.1±0.4 Ma
n=82
59.0%
2071.1±2.7 Ma
n=23
16.5%
2458.8±4.5 Ma
n=9
6.5%
n=2
1.4%
n=16
11.5%
n=3
2.2%
B
MIM2
n=130
616.3±0.4 Ma
n=66
50.8%
2095.2±3.8 Ma
n=18
13.8%
369.6±0.6 Ma
n=8
6.2%
2493.3±4.2 Ma
n=13
10%
n=14
10.8%
n=9
6.9%
C
OUJ10
n=180
371.4±0.8 Ma
n=35
19.4%
607.4±0.8 Ma
n=71
39.4%
2078.1±3.3 Ma
n=22
12.2%
1073.6±2.9 Ma
n=16
8.9%
n=19
10.6%
n=10
5.6%
D
OUJ11
n=267
376.9±0.6 Ma
n=62
23.2%
627.4±0.8 Ma
n=105
39.3%
2089±2.5 Ma
n=45
16.9%
n=35
13.1%
n=11
4.1%
E
OUJ13
n=146
378±0.3 Ma
n=54
37%
2079.2±2.9 Ma
n=21
14.4%
649.3±0.5 Ma
n=44
30.1%
n=22
15.1%
n=3
2.0%
F
OUJ10
OUJ11
OUJ13
MIM2
DEB2
Geodynamic contexts:
Convergent settings
Collisional settings
Extensional settings
Cumulative Probability (%)
G
DMMS (total) n=862
620.3±0.2 Ma
n=368
42.7%
376.1±0.2 Ma
n=161
18.7%
n=117
13.6%
2077.8±1.3 Ma
n=129
15.0%
2500.8±2.5 Ma
n=32
3.7%
n=27
3.1%
H
984.5±1.2 Ma
3.9% n=34
1209.4±1.7 Ma
2.6% n=22
1549.2±6.2 Ma
1% n=9
1823.7±3 Ma
4.6% n=40
1364±2.8 Ma
1.4% n=12
DMMS (875-1930 Ma) n=117
Number of analyses
Ages (Ma)

Figure 3.4 (previous page). U-Pb results. (A-E) KDE (Kernel Density Estimator; black solid lines) and histogram (grey bars) plots showing the results of the detrital zircon U-Pb geochronological analyses for each sample; (F) Cumulative probability plot showing the results of the 5 samples from the DMMS and the cumulative areas typical of different geodynamic contexts (Cawood et al., 2012); (G) Cumulative KDE (black solid lines) and histogram (grey bars) for the DMMS and (h) zoom for the ages ranging from c. 900 to c. 1900 Ma. All the plots were built using $^{206}Pb/^{238}U$ ages for dates < 1500 Ma, $^{207}Pb/^{206}Pb$ ages for dates > 1500 Ma, and errors expressed at the 1σ level. KDE and histograms were performed with DensityPlotter 8.4 (Vermeesch, 2012).

The youngest detrital zircon population is composed of 9 data with a Late Devonian weighted average age (362.3 ± 1.3 Ma, MSWD = 1.02).

Finally, from sample OUJ13 (Figure 3.4E), 149 grains were analyzed yielding 150 results, 146 of which were concordant. Thirty-seven percent of the data (n = 35) are included in a main detrital zircon population with Late Devonian mean age (peak at 378 ± 0.3 Ma), with individual ages ranging from c. 417 Ma to c. 296 Ma. Another main population yielded a Cryogenian mean age of 649.3 ± 0.5 Ma (c. 811-543 Ma, 31.5%, n = 44). Fourteen percent of the data (n = 21) are included in a minor Paleoproterozoic peak with a mean age of 2079.2 ± 2.9 Ma and an age range of c. 2.23-1.93 Ga. Scattered analyses gave Cambrian (n = 2, c. 494-510 Ma), Tonian-Orosirian (n = 22, c. 1840-898 Ma), and Archean (c. 3.5-2.6 Ga, n = 3) ages. The youngest detrital zircon population (n = 4) yielded a Late Devonian age (weighted average age 360 ± 1.1 Ma, MSWD = 1.16).

In summary (Figure 3.4F and G), all samples are characterized by an important Ediacaran-Cryogenian detrital zircon population (peaked at c. 618 Ma and comprising c. 30-60% of the data) and by minor Paleoproterozoic-Archean populations (c. 2.1 Ga, c. 15%, and c. 2.5 Ga, c. 4%). Finally, a Devonian detrital zircon population (c. 375 Ma) can be dominant (OUJ10, OUJ11, and OUJ13; 20-35%), secondary (MIM2, 6%), or almost absent (DEB2), thus pointing to a Late Devonian maximum depositional age for the DMMS. Scattered data with Tonian-Orosirian ages are common in all the samples (as highlighted in Figure 3.4H).

3.2. Hf isotope analyses

The four samples characterized by the Devonian detrital zircon population were analyzed for Hf isotopes with the aim of defining their isotopic signature. Therefore, Hf isotopes were not analyzed on sample DEB2, where only two Devonian zircons were found.

Hf isotopes in zircon were measured at the Geohistory facility in the JdLC, Curtin University (Australia). Previously dated zircon crystals were ablated using a Resonetics resolution M-50A excimer laser, coupled to a Nu Plasma II multi-collector inductively coupled plasma mass spectrometer (LA-MC-ICPMS). All isotopes (^{180}Hf, ^{179}Hf, ^{178}Hf, ^{177}Hf, ^{176}Hf, ^{175}Lu, ^{174}Hf, ^{173}Yb, ^{172}Yb, and ^{171}Yb) were counted on the Faraday collector array. Calculation of ε_{Hf} values employed the decay constant of Scherer et al. (2001) and the Chondritic Uniform Reservoir (CHUR) values of Blichert-Toft & Albarède (1997).

The detailed analytical methodology and results are included in Appendix A and E (Tables E.2 to E.5) respectively.

To calculate Hf model ages of the continental crust (T_{NC}) where the Devonian zircon grains were formed, the new continental crust composition of Dhuime et al. (2011) was used, which is more isotopically enriched than the depleted mantle and similar to the composition of island arc rocks.

3.2.1. Results

One hundred and twenty-nine analyses were carried out on detrital zircon grains from sample MIM2 (Figure 3.5A). The Devonian zircon population (mean age of 369.6 ± 0.6 Ma) is characterized by slightly negative (-6 to 0; n = 8) ε_{Hf} values and T_{NC} between 1.2 Ga and 1.6 Ga. The Ediacaran detrital zircon population (mean age of 616.3 ± 0.4 Ma) is characterized by a very wide range of ε_{Hf} values (from -24 to +12, n = 68), as is the Paleoproterozoic population (mean age of 2095.2 ± 3.8 Ma, ε_{Hf} values from -13 to +6, plus an isolated value at +15, n = 18). The Siderian-Neoarchean peak (2493.3 ± 4.2 Ma) shows mostly negative ε_{Hf} (from -10 to +3, n = 12). The scattered Tonian-Orosirian grains mainly yielded positive ε_{Hf} values (from -10 to +11, n = 14), while the scattered Archean grains mostly displayed negative values (-17 to +2, n = 9).

On the detrital zircons from sample OUJ10, 59 Hf isotope analyses were performed (Figure 3.5B). Ten grains from the Devonian population (mean age of 371.4 ± 0.8 Ma) were analyzed: nine yielded positive ε_{Hf} values from +0 to +6, while one gave a ε_{Hf} value of -4; T_{NC} varies between 0.7 Ga and 1.5 Ga. The Ediacaran peak (607.4 ± 0.8 Ma, n = 27) yielded a wide range of ε_{Hf} values ranging from -21 to +10, while the Paleoproterozoic peak (2078.1 ± 3.3 Ma, n = 7) is characterized by mostly positive values (-1 to +5), with an isolated strongly negative result (-17). The scattered Tonian-Orosirian zircons yielded mostly positive ε_{Hf} values (-2 to +3), with a couple of strongly negative data (-20 and -17). Two Archean grains gave negative values (-7 and -4).

One hundred and twenty-eight analyses were performed on detrital zircons from sample OUJ11 (Figure 3.5C). Twenty-one Devonian zircons (peak at 376.9 ± 0.6 Ma) yielded mainly positive ε_{Hf} values varying from -0.4 to +6 and T_{NC} varying from 0.6 Ga to 1.3 Ga. The ε_{Hf} range increases for the Ediacaran peak (627.4 ± 0.8 Ma, n = 56, ε_{Hf} from -24 to +12) and the Paleoproterozoic peak (2089 ± 2.5 Ma, n = 27, ε_{Hf} from -2 to +9). The scattered Tonian-Orosirian zircons yielded variable values (from -20 to +7) with predominance of positive values, while the Archean zircons yielded negative values between -13 and -3.

Finally, 125 analyses were carried out on grains from sample OUJ13 (Figure 3.5D). The Devonian detrital zircon population (mean age 378 ± 0.3 Ma) is characterized by mostly positive ε_{Hf} values ranging from -1 to +8 (n = 47) and T_{NC} between 0.8 Ga and 1.2 Ga. The Ediacaran peak (649.3 ± 0.5 Ma, n = 39) yielded a very wide range of values (-25 to +12) and the Paleoproterozoic peak (2079.2 ± 2.9 Ma, n = 17) mostly gave positive values (-6 to +6), with an isolated strongly negative ε_{Hf} value (-15). Twenty scattered

Tonian-Orosirian zircons yielded a wide range of values (-16 to +13). Two Archean data gave ε_{Hf} values of -3 and +3.

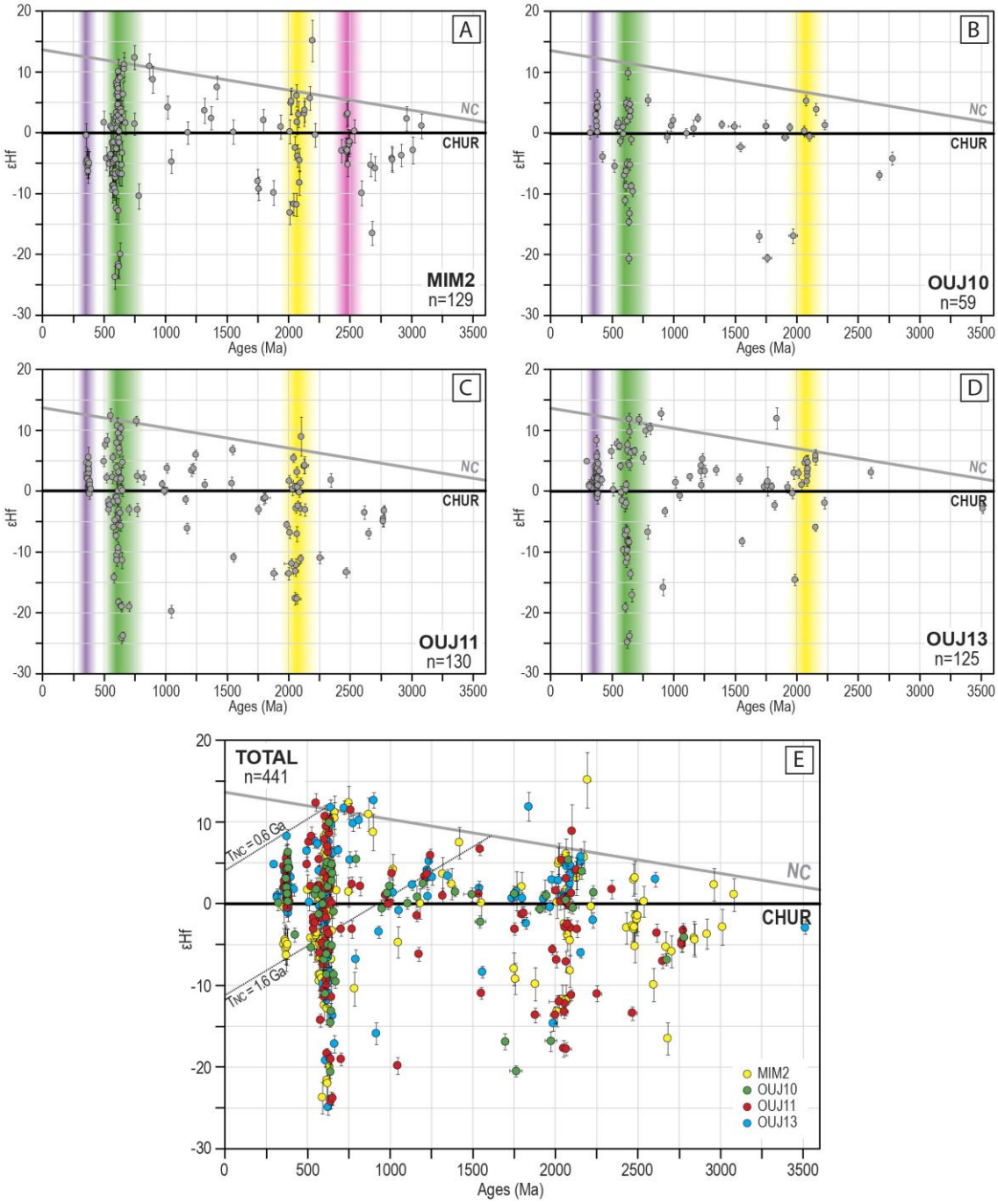

Figure 3.5. Mean ε_{Hf} values versus U-Pb ages plots for each sample (A-D) and cumulative (E). CHUR: Chondritic Uniform Reservoir (Bouvier et al., 2008); NC: new crust (Dhuime et al., 2011). The T_{NC} lines represent the bulk crust ($^{176}Lu/^{177}Hf = 0.015$) corresponding with the new crust ages of the Devonian detrital zircon population. Colors bands indicate the main detrital zircon populations described in section 3.1: Late Devonian (purple), Ediacaran-Cryogenian (green), Paleoproterozoic (yellow), and Archean (pink).

In summary (Figure 3.5E), the Devonian detrital zircon population is characterized by mostly (> 80% of the data) positive ε_{Hf} values ranging from -6 to +8, except for those in sample MIM2 which gave slightly negative values (between 0 and -6). The T_{NC} vary from

0.6 Ga to 1.6 Ga. The Ediacaran and Paleoproterozoic populations are characterized by a very wide range of ε_{Hf} values (-25 to +12, and -17 to +9, respectively). The scattered Tonian-Orosirian grains yielded mostly positive ε_{Hf} values, while the Siderian-Archean zircons gave mostly negative values.

4. Structural analysis

From a structural point of view, the Debdou-Mekkam Massif was previously described by Hoepffner (1987), who identified two "Eovariscan" deformational events. According to this author, the main deformation produced W-vergent structures related to an important shortening, though neither detailed structural maps, nor cross-sections of the inliers were provided.

Based on our field observations, the Debdou-Mekkam Massif is characterized by a polyphasic deformation. The first event (D1) is characterized by a pervasive cleavage (S1) associated with plurikilometric-scale SE-vergent folds. Later event (or events; Dc) generated variably developed crenulation cleavages (Sc) associated with differently oriented metric- to kilometric-scale folds. All of the cleavages observed are aligned with the axial-plane to the respective folding phase. Neither mineral/stretching lineations, nor structures indicative of simple shear deformation were observed. Some post-Variscan (post Dc) rectilinear fractures can locally limit the Paleozoic inliers (Figure 3.2). Our structural analysis focused on the D1 structures at outcrop scale and large-scale reconstruction.

4.1. Main tectonic fabrics

4.1.1. Early fabric

The earliest tectonic fabric recognizable is a foliation (S1) superimposed on the stratigraphic bedding (S0; Figure 3.3). Since overturned folds are present, a careful inspection of sedimentary polarity criteria was carried out, *e.g.*, graded bedding, basal erosive surfaces, geometry of sedimentary sets with cross lamination, and recognition of Bouma sequences (Figure 3.3C and D). S1 is a slaty (locally disjunctive) cleavage, well developed in phyllosilicate-rich beds, and less penetrative in coarse-grained layers, where refraction with respect to S0 is more intense (Figure 3.6). The obliquity between S0 and S1 usually defines a well-developed intersection lineation (L1). S1 represents the axial-planar cleavage of milimetric- to decametric-scale folds (Figure 3.6A, B, and E) and the orientation of L1 roughly indicates the hinge orientation. The folds are tight to isoclinal, inclined to recumbent, and often asymmetric. Fold asymmetry (S or Z shapes), together with local vergence (i.e., S0-S1 relationships; Bell, 1981) (Figure 3.6C, D and F) and stratigraphic polarities (Figure 3.3C and D) were systematically examined in order to reconstruct the large-scale D1 structure in the Debdou-Mekkam Massif. When D1 folds

are not affected by later deformations, normal limbs are low-dipping and S1 is not very penetrative; on the contrary, overturned limbs show higher dips and more penetrative S1.

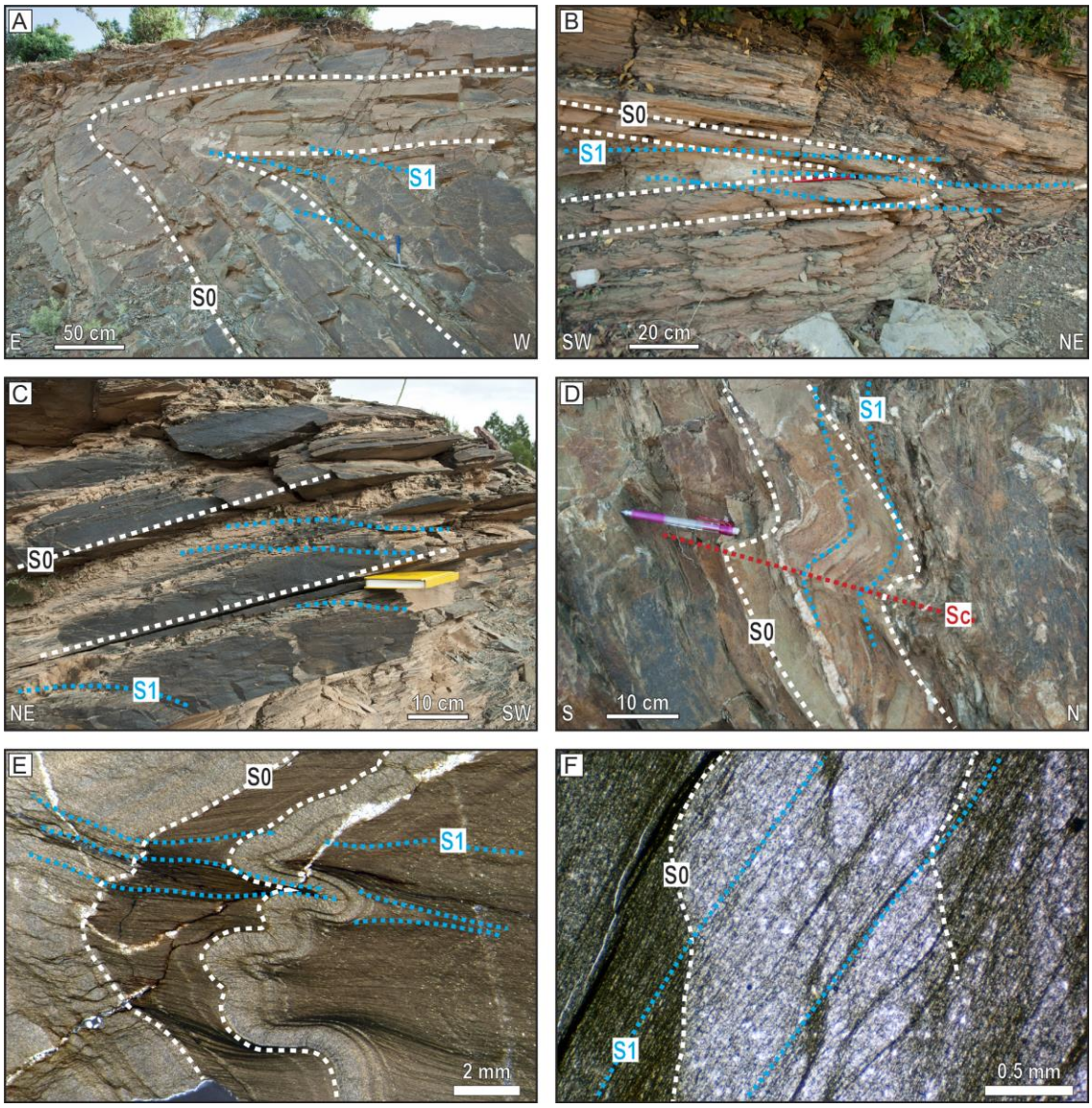

Figure 3.6. Field and microscopic images of bedding (S0) and principal cleavage (S1): mesoscale metric folds associated with S1 (A and B); S0/S1 relationships (C and D); microscale folds and axial plane cleavage, S1 (E); microscale relationships between S0 and S1 (F).

At microscopic scale, S1 is easily visible and defined by the sharp and continuous orientation of white mica, chlorite, and Fe-oxides (Figure 3.6E and F). In coarse-grained layers, S1 is a rough to anastomosing spaced cleavage, marked by the orientation of Fe-oxide concentrates, but less penetrative than within the fine-grained pelitic domains. When S1 presents an anastomosing geometry, it isolates sigmoidal-shaped quartz- and feldspar-rich domains.

4.1.2. Late fabrics

The late ductile deformational event (or events; Dc) generated folds with axial-planar cleavages (Sc) that refold and crenulate the previous structures (Figure 3.7A and E). The visible folds are, centimetric- to metric-scale (Figure 3.7B), open to tight, and they feature chevron or kink-band geometries. The orientation of the folds (and their corresponding axial-planar crenulation cleavages) is variable, and they can be grouped into three sets: two of them have steeply dipping to vertical axial planes trending NW-SE (Sc1) and NE-SW (Sc2) respectively; the third set (Sc3) is associated with low-dip to horizontal axial-plane kink-folds.

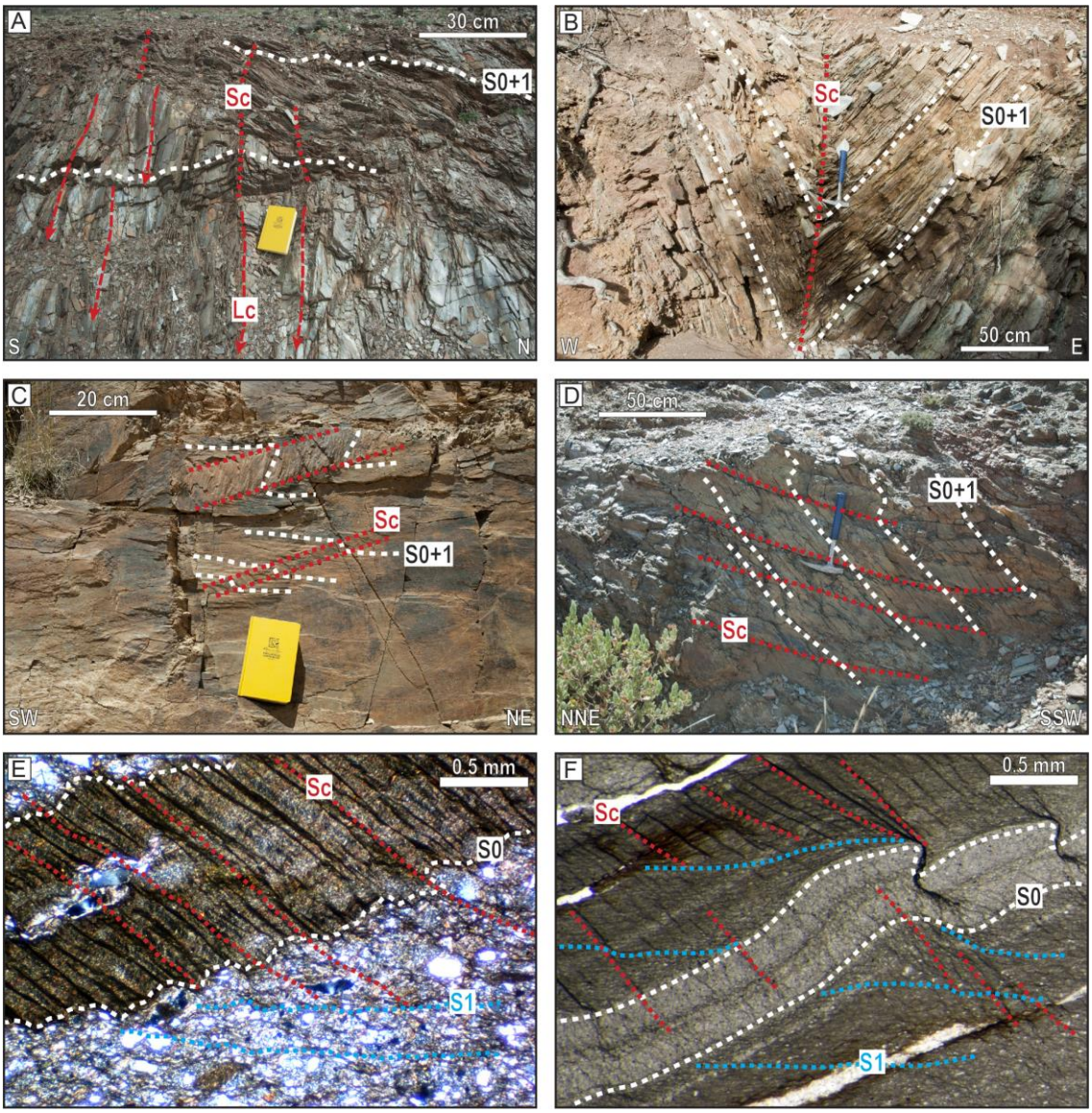

Figure 3.7. Late fabrics: crenulation cleavage (Sc) deforming S0 and S1 (A, B); incipient (C) and well developed (D) tectonic banding associated with a low-dipping crenulation cleavage; microscopic crenulation and its relationships with S0 and S1 (E, F).

At the outcrop scale, the penetrative nature of Sc varies from absent (only S0+S1 is observed), to spaced crenulation cleavage, to centimetric- to decimetric-scale tectonic

banding (Figure 3.7C and D). The distribution of Dc folds and related crenulation cleavages is heterogeneous across the Debdou-Mekkam Massif, and they rarely appear superposed at the outcrop scale, making the geometric and temporal relationships among the three sets unclear. Therefore, the interpretation of their genesis remains ambiguous: (i) they might be the result of successive deformational phases occurred under different regional stress orientations, or (ii) a unique deformational event resulted in different crenulation orientations due to local interference with the pre-existing, variably oriented, D1 structures (see section 5.3). Whatever the case, we have taken into account the geometry of the crenulation folds during the reconstruction of the D1 structures (the main purpose of our structural analysis), while the proposed tectonic evolution is restricted to the D1 event in order to avoid possible misinterpretations derived from the uncertain meaning of Dc structures.

At microscopic scale, Sc only appears in the phyllosilicate-rich layers as a spaced cleavage with anastomosing geometry defined by Fe-oxides (Figure 3.7E). Sometimes, Sc also deforms the previous S1 and S0 forming micro-kink bands (Figure 3.7F).

4.2. The Debdou inlier

The Debdou inlier has been divided into two sectors according to the orientation of S1 and L1. The southern sector (Figure 3.8) is characterized by variable trends of S1 (from NW-SE, through N-S, to NE-SW), with dominant low dips to the west and L1 mostly plunging to the south. In the R'chida area (western portion of cross-section A-A', Figure 3.8), a normal limb crops out, characterized by sub-horizontal S0 with a few indicators of normal polarity, and S1 gently dipping to the NW with L1 gently plunging to the SW. The local vergence of D1 is to the SE. A vertical E-W trending crenulation cleavage (Sc1) is present, though scarcely penetrative. In the eastern portion of cross-section A-A' (Figure 3.8), S1 and L1 trends rotate to NW-SE and a D1 hinge zone is observed. Similar L1 orientations are observed in the Galbi Al Hayyar area (cross-section B-B'; Figure 3.8), where S1 is sub-horizontal and S0 dips gently to the SW with reverse polarity. The local D1 vergence in this area is to the SW. To the SE, along cross-section B-B', the stratigraphic polarity is normal for a couple of kilometers, with S0 and S1 dipping to the SW, and showing the angular relationships typical of a normal limb. L1 is rotated with respect to the Galbi Al Hayyar area, being now oriented NE-SW and gently plunging to the SW. The asymmetry of the D1 parasitic folds and the relationships between S0 and S1 indicate local SE-vergence. In the remaining eastern portion of cross-section B-B' (Oulad Tayar area), S0 dips moderately to the west and repeated evidence of reverse polarity are observed (mainly graded bedding; Figure 3.3B). S1 and L1 are NE-SW to N-S trending, the cleavage dips gently to moderately to the west, and L1 plunges to the SSW. S0/S1 relationships and the asymmetry of the mesoscale D1 folds indicate local W-vergence. In one outcrop, a top-to-the-east, low-dipping thrust plane was observed crosscutting the S1 (cross-section B-B', Figure 3.8), which can be interpreted as a late-D1 brittle structure that contributed to shortening accommodated by D1 folds.

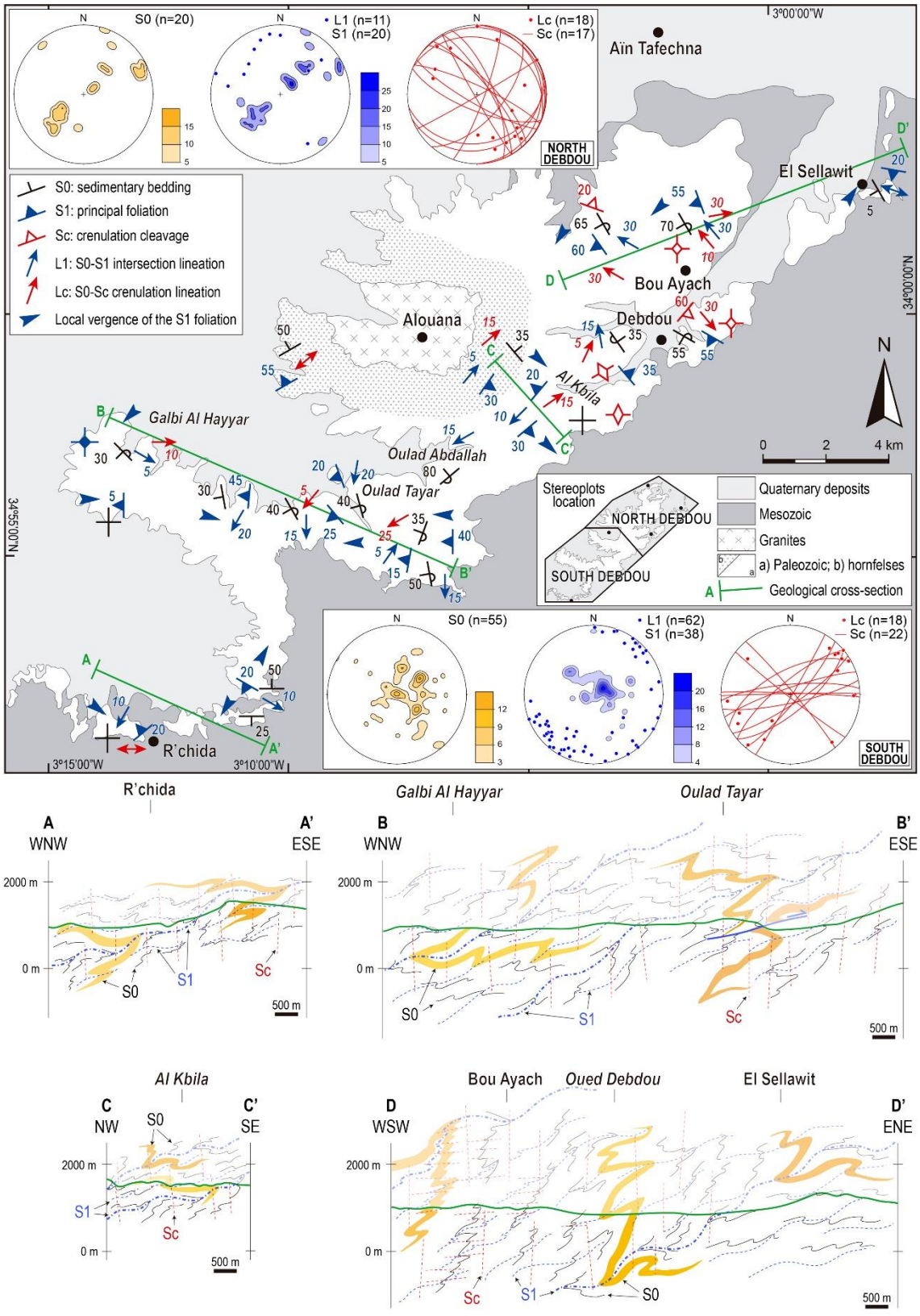

Figure 3.8. Structural map and cross-sections of the Debdou inlier. Colors for different structural elements in the cross-sections correspond to those in the map.

To the SE of Alouana, (Al Kbila area, cross-section C-C'; Figure 3.8), normal limb relationships dominate with NE-SW trending S0 and S1, and low-dips towards the NW

and SE due to Sc2 folds. L1 is NE-SW trending and sub-horizontal. D1 local vergence, defined mostly by the asymmetry of the mesoscale folds, is to the SE. Towards Alouana, the crenulation cleavage Sc2 (NE-SW trending and highly-dipping) intensifies, while contact metamorphism due to the nearby Alouana pluton obliterates the previous structures.

The northern sector of the Debdou inlier (cross-section D-D', Figure 3.8) is mostly characterized by NW-SE trending, SW-dipping S1, and L1 plunging to the NW. In the Debdou and Bou Ayach areas, S0 shows evidence of reverse polarity (cross-laminations and internal graded bedding). The crenulation cleavage is penetrative, with three different orientations: Sc1, with NW-SE trends and high dips, which is probably responsible for the dip variation of S0 and S1 from SW to NE; Sc2, with NE-SW trends, which is particularly prominent SW of Debdou; and Sc3, which is locally very penetrative east of Debdou and close to Bou Ayach, where Sc3 develops a sub-horizontal tectonic banding (Figure 3.7C and D). Finally, normal stratigraphic polarities were observed further NE, close to El Sellawit village, where S0 is sub-horizontal, S1 dips gently to the SSW and the local vergence is to the NE. No crenulation cleavages were observed in this area.

4.3. The Lalla Mimouna-Oued Awam inliers

These inliers extend from Lalla Mimouna to the valley of the Oued Awam, covering a sector in between the two large-scale Paleozoic outcrops of Debdou and Mekkam. In the westernmost inlier, the so called "Inlier 1" in Figure 3.9 (cross-sections E-E' and F-F'), S0 and S1 have NE-SW to ENE-WSW trends and dip gently to moderately both to the NW and SE as the result of late Dc open upright folds with E-W to ENE-WSW trends. The crenulation cleavage associated with these folds is locally penetrative and often obliterates the S0/S1 relationships. Where the S0/S1 relationships are preserved, they show dominant SE-vergences, although some NW-vergences suggest the presence of local overturned limbs related to parasitic D1 folds developed on a dominant normal limb (cross-sections E-E' and F-F'; Figure 3.9).

In the central inlier ("Inlier 2" in Figure 3.9), the trend of the D1 structures is WNW-ESE, with both S0 and S1 gently dipping to the NNE. The bedding polarity is generally normal, though reverse polarity is also found locally (cross-section G-G', Figure 3.9). Where the polarity is normal, S0/S1 relationships and the asymmetry of small-scale parasitic D1 folds indicate local vergence to the south. A N-S highly dipping crenulation cleavage locally affects the previous structures.

In the eastern inlier ("Inlier 3" in Figure 3.9), the D1 structures show similar orientation as in "Inlier 1": both S0, S1 and L1 are WSW-ENE trending. As showed in cross-section H-H' (Figure 3.9), S0 and S1 dip steeply to the NW and SE, due to Dc upright folding. The observed polarity is generally normal and the local vergence of D1 structures is to the SE. In the northern and central sectors of the inlier, the crenulation cleavage trends NE-SW (Sc2), while in the southern one it has NW-SE trends (Sc1).

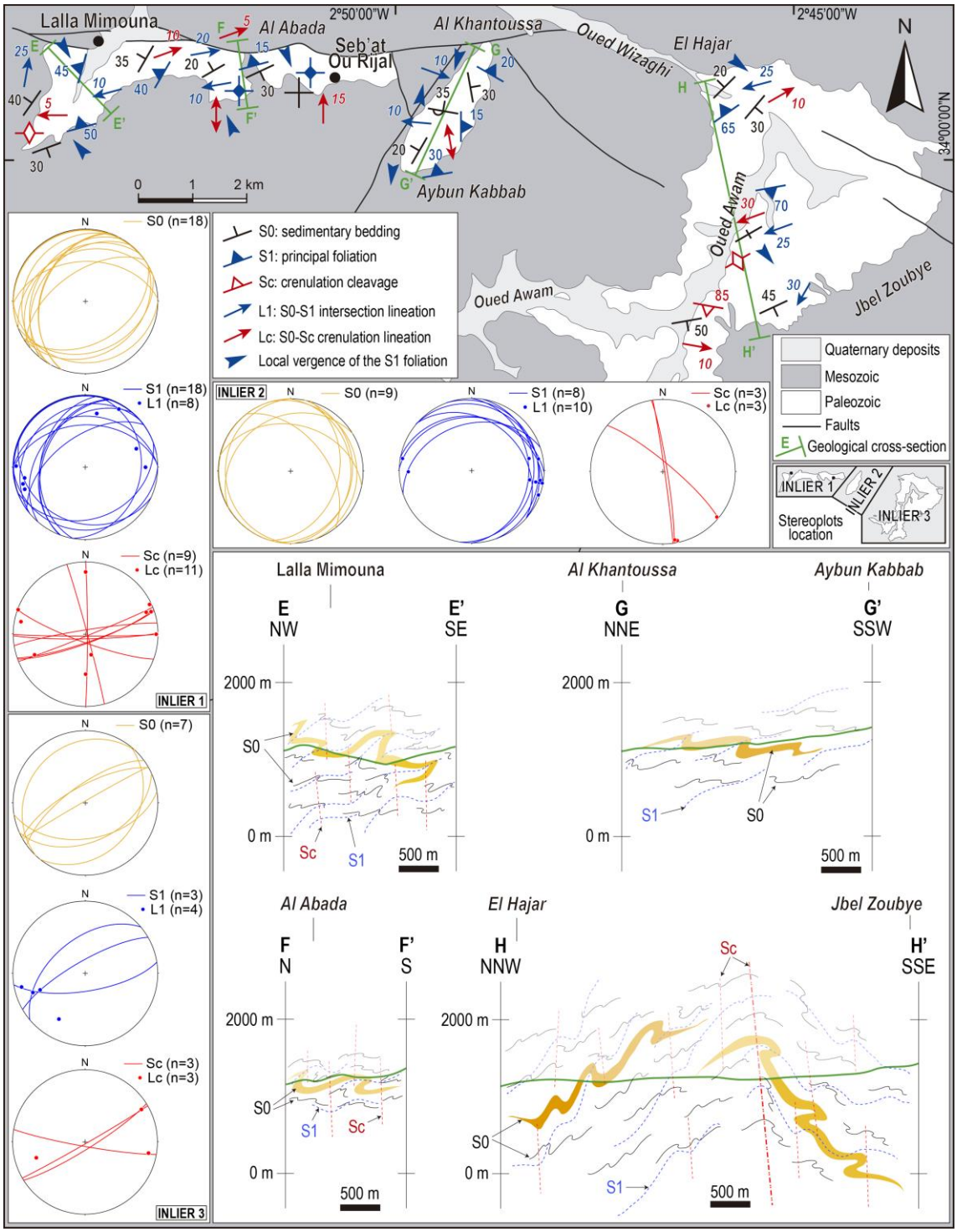

Figure 3.9. Structural map and cross-sections of the Lalla Mimouna-Oued Awam inliers. Colors for the different structural elements in the cross-sections correspond to those in the map.

4.4. The Mekkam inlier

In the Mekkam inlier, the dominant structural grain is NW-SE due to upright Dc folds (Sc1), with the exception of the southwestern and northwestern sectors where the dominant structural orientations are controlled by NE-SW trending Dc folds (Sc2) (Figure 3.10).

The southwestern sector of the Mekkam inlier (cross-section I-I'; Figures 3.10 and 3.11) is characterized by S0 and S1 trending NE-SW, with gentle to moderate dips to the NW and SE. The intersection lineation L1 trends mostly NW-SE. Along cross-section I-I', the polarity varies: clear reverse polarity criteria (graded bedding) were recognized in the Ayn Serraq area, where the S0/S1 relationships indicate west-vergences (western portion of cross-section I-I'); towards the SE, the opposite stratigraphic polarity and structural relationships were observed, with S0 and S1 folded by a Dc NE-SW trending upright synform (central portion of cross-section I-I'); further to the SE, in the corresponding Dc antiform, the dominant polarity is reverse and D1 structures show NW-vergence, although minor normal limbs locally crop out (eastern portion of cross-section I-I'). Besides the NE-SW highly-dipping crenulation cleavage associated with the macro-scale Dc folds, a second crenulation cleavage oriented NW-SE (Sc1) was also recognized.

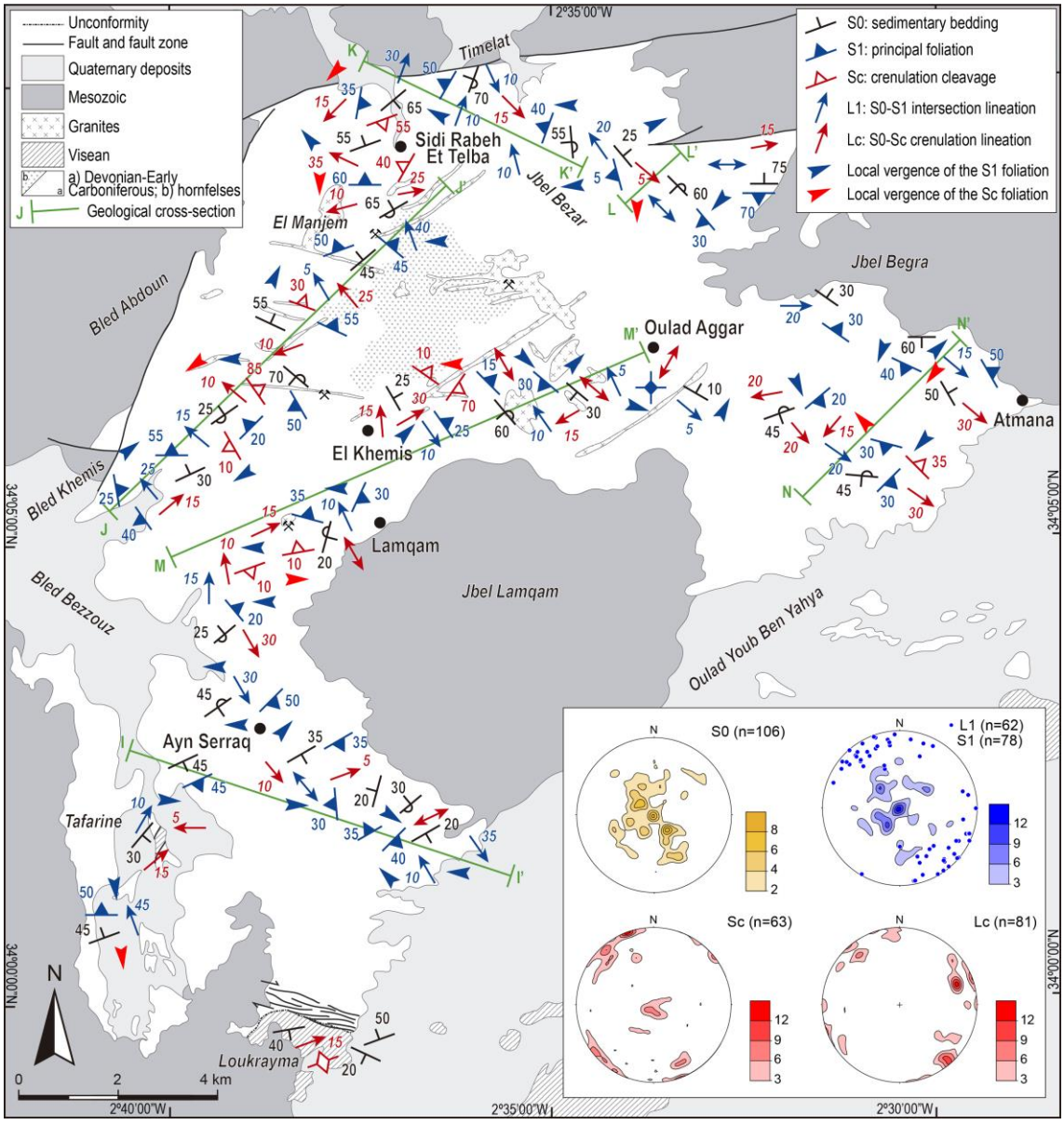

Figure 3.10. Structural map of the Mekkam inlier.

In the central and western sectors of the Mekkam inlier (cross-sections J-J' and M-M'; Figures 3.10 and 3.11), the S0 trend is variable and dip is usually low. Concerning the D1 folds, L1 is systematically oriented NW-SE, with gentle plunges towards the NW and SE. The western segment of cross-sections J-J' and M-M' is dominated by reverse polarities suggesting the presence of a kilometric-scale overturned D1 limb. Besides local rotations, S1 is generally NW-SE trending and its geometric relationships with S0, together with the asymmetry of the parasitic folds, indicate SW-vergences associated with the overturned limb; the scarce NE-vergences correspond to minor normal limbs. Towards the NE (eastern segment of cross-sections J-J' and M-M'), polarity and local vergence are dominantly the opposite, indicating a D1 normal limb (with NE-vergence). The three sets of crenulation cleavage (Sc1, Sc2, and Sc3; see Section appear variably (4.1.2 ,developed. The main structural trend (NW-SE) in controlled by Sc1 but in the northern segment of cross-section J-J', dip directions towards the NW were found due to the existence of a WSW-ENE oriented open antiform (Sc2) between El Manjem and El Khemis. The low-dip Sc3 cleavage can be locally very penetrative, especially in cross-section J-J' south of El Manjem mine and in the El Khemis area, where this cleavage often produces tectonic banding that partially obliterates the previous structures. As in other sectors of the region studied, the different sets of crenulation cleavages do not appear developed together, and, therefore, their mutual relationships are unclear.

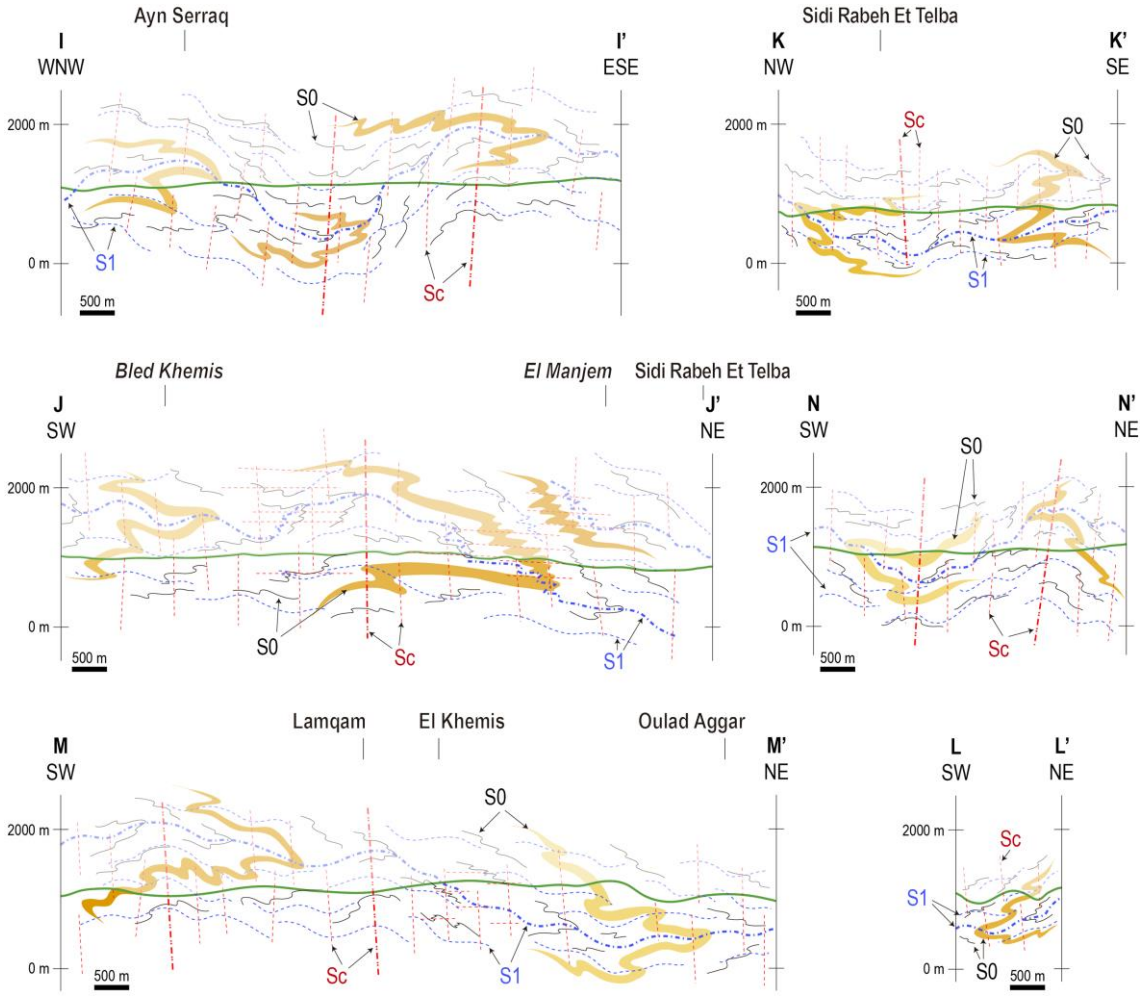

Figure 3.11 (previous page). Cross-sections of the Mekkam inlier. See location in Figure 3.10. Colors of the different structural elements in the cross-sections correspond to those in the map.

The structural trend in the northern sector of the Mekkam inlier (cross-sections K-K' and L-L'; Figures 3.10 and 3.11) is dominated by NE-SW (western part) and NW-SE (eastern part) crenulation upright folds. The S1/S0 relationships indicate west-vergences, which, together with reverse polarity criteria, suggest a dominant D1 overturned limb.

In the easternmost sector of the inlier (cross-section N-N', Figures 3.10 and 3.11), S0, S1, and L1 are mainly oriented NW-SE due to the presence of Sc1 crenulation folds. In the Dc synform, the stratigraphic polarity is reverse, which, together with the relationship between S1 and S0 showing local SW-vergence, indicates the presence of an overturned limb of a kilometric-scale D1 fold. Opposite relationships and polarities were observed in the corresponding Dc antiform (cross-section N-N', Figure 3.11).

The DMMS deformed by D1 are unconformably overlain by Visean sediments cropping out in relatively small outcrops in the southern and southeastern parts of the Mekkam inlier (Figure 3.2). The angular unconformity is well exposed NW of Hassiane Ed Diab (Loukrayma area, Figures 3.3F and 3.10) and in a small and tectonized outcrop in the Tafarine area (Figure 3.10). In both outcrops, the D1 structures do not penetrate into the Visean sediments, which, in turn, are only affected by the NE-SW trending crenulation cleavage (Sc2) observed in the DMMS.

In the Loukrayma area, the Visean unconformity is partially affected by an important WNW-ESE trending semi-brittle shear zone with dextral strike-slip kinematics, which produced a tectonized band of at least 500 m-thick in the DMMS.

4.5. Building up a composite cross-section of the Debdou-Mekkam region

The above descriptions show that the Debdou-Mekkam region is characterized by a series of pre-Late Visean tight to isoclinal, inclined to recumbent, plurikilometric D1 folds (Figure 3.12) with a related axial-planar main foliation S1. The L1 map delineated in Figure 3.12 shows important strike variations from NW-SE, through N-S, NE-SW, to E-W, being the relative regional vergence towards the NE, E, SE and S respectively.

In the Debdou inlier (cross-sections 1-1' to 4-4'; Figure 3.12), the folds are asymmetric with axial surfaces moderately dipping towards the west. The direction of D1 structures changes from NW-SE (cross-section 1-1') to NNE-SSW (cross-sections 2-2' and 3-3'), and then again to NW-SE (cross-section 4-4'). The regional vergence is towards the east, with the normal limbs dominated by normal polarities and local east-vergences while the overturned limbs show reverse polarities and local west-vergences. As a whole, this inlier is characterized by the regular alternation of normal and overturned limbs. The moderately inclined D1 folds in this inlier are scarcely affected by the later Dc deformations.

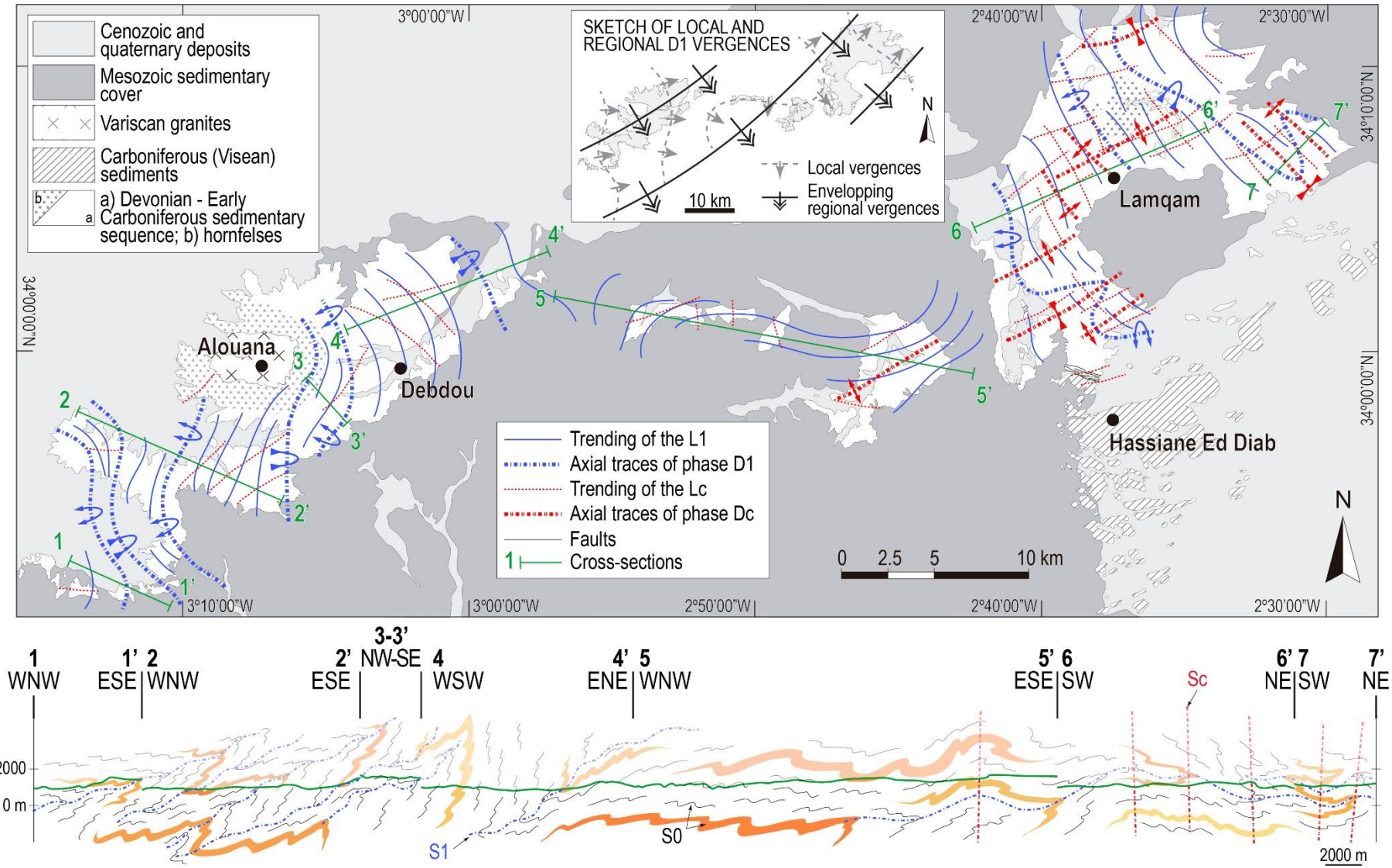
Cenozoic and quaternary deposits
Mesozoic sedimentary cover
Variscan granites
Carboniferous (Visean) sediments
a) Devonian - Early Carboniferous sedimentary sequence; b) hornfelses
SKETCH OF LOCAL AND REGIONAL D1 VERGENCES
Local vergences
Enveloping regional vergences
10 km
N
Trending of the L1
Axial traces of phase D1
Trending of the Lc
Axial traces of phase Dc
Faults
Cross-sections
0 2.5 5 10 km
Alouana
Debdou
Lamqam
Hassiane Ed Diab
3°00'00"W
2°40'00"W
2°30'00"W
3°10'00"W
2°50'00"W
34°00'00"N
34°10'00"N
1 WNW
1' ESE
2 WNW
2' ESE
3-3' NW-SE
4 WSW
4' ENE
5 WNW
5' ESE
6 SW
6' NE
7 SW
7' NE
Sc
S1
S0
2000
0 m
2000 m

Figure 3.12 (previous page). Synthetic map and cross-sections of the Debdou-Mekkam region. Colors of the different structural elements in the cross-sections correspond to those in the map. Inset: sketch of the local and regional vergences of the D1 structures. See Figure 3.1B for a more general geological sketch with the location of the inliers.

The D1 Debdou fold train continues towards the east across the Lalla Mimouna-Oued Awam inliers. From the easternmost part of the Debdou inlier to the southwestern part of the Mekkam inlier, a D1 normal limb approximately 30 km-long is reconstructed (cross-section 5-5'; Figure 3.12). S0 and S1 are mostly subhorizontal, and the stratigraphic polarity dominantly normal. Toward the east, the SW-NE trending upright crenulation folds become more penetrative with a kilometric-scale antiform deforming the previous structures (cross-section 5-5' in Figure 3.12). Along this plurikilometric D1 normal limb, the structural trend is rotated, from west to east: in the western part L1 is rotated clockwise changing from NW-SE to E-W; on the contrary, in the eastern part, L1 trend rotates counterclockwise from E-W to NNW-SSE (Figure 3.12).

The axial surface of the D1 anticline whose c. 30 km-long normal limb crops out in the Lalla Mimouna-Oued Awam inliers, emerges in the SW sector of the Mekkam inlier, where it is folded by SW-NE trending upright crenulation folds (Dc). Here, the D1 normal limb crops out in the core of a Dc synform, and is underlain by a new overturned limb that appears in Dc antiforms located towards the SE and NW (Figure 3.11). L1 is crenulated by Dc folds and trends SE-NW. Towards the north, this overturned limb appears flat-lying in a wide area west of Lamqam village, maintaining the same L1 trend (western segment of cross-section 6-6', Figure 3.12). Moreover, just to the north of Lamqam, the axial surface of the D1 anticline dips towards the NE (refolded plunging anticline), thus causing the overlying normal limb to crop out again (eastern segment of cross-section 6-6', Figure 3.12). Further east, this normal limb is overlain by a new overturned limb, and the axial surface between them is deformed by NW-SE upright crenulation folds (cross-section 7-7', Figure 3.12). In that sector, L1 maintains the NW-SE trend but, towards the NW, it rotates to N-S and then to SW-NE due to WSW-ENE crenulation folds. Overall, the crenulation deformations are more penetrative in the Mekkam inlier than in the western inliers. Besides the variable development of the low-dipping crenulation cleavage, the occurrence of NE-SW and NW-SE trending upright crenulation folds forms a dome-and-basin-like interference pattern that makes the D1 structure in the Mekkam inlier to be, on average, flat-lying.

5. Discussion

5.1. Age of the Debdou-Mekkam Metasediments

Previous dating of the DMMS based on fossil plant fragments (Médioni, 1980) and palynomorphs (Marhoumi, 1984; Marhoumi et al., 1983) gave Early Carboniferous and Middle-Late Devonian biostratigraphic ages, respectively. Our detrital zircon geochronological study (Section 3.1) constrainsthe maximum depositionalage of the

DMMS at Late Devonian (more specifically Famennian) according to the youngest .zircon population observed in four of the five samples Therefore, our U-Pb data indicate that a younger putative age for the DMMS deposition would be compatible with the Early Carboniferous ages deduced from fossil plant fragments, but not with the Middle-Late Devonian ages suggested by palynomorphs, which would probably represent redeposited material. The real depositional age of the DMMS can be constrained by taking into account the series of subsequent events, specifically D1 deformation, emersion, partial erosion, renewed subsidence and unconformable sedimentation of the overlying Late Visean succession, this latter well dated with brachiopods and polyps (Médioni, 1979 and references therein). In our preferred interpretation, the deposition of the DMMS occurred at Late Devonian time (Late Frasnian to Late Famennian), while D1 deformation likely occurred during Early Carboniferous (Tournaisian). Nonetheless, the presence of fossil plant fragments (Médioni, 1980) suggests that the deposition of the DMMS might have continued until the Early Carboniferous. In this case, the D1 deformational event, and the subsequent emersion/erosion would have occurred in a very short time span (1-5 Ma?), i.e., sedimentation would not cease until the Early Tournaisian, while D1 deformation would have occurred during Late Tournaisian-Early Visean time.

A closer examination of the average maximum depositional ages suggests, not without uncertainty, an eastward younging direction (see Figure 3.2 for sample location): from 375 Ma (2 data from sample DEB2), to 370 Ma (4 data from sample MIM2), and c. 362 Ma (n = 7, 9 and 4 from samples OUJ10, OUJ11 and OUJ13, respectively). This observation is in accordance with our interpretation that the DMMS represents a fore-arc basin fed by a close active magmatic (zircon-forming) arc, which was probably migrating towards the SE in relation to the subduction of the Rheic oceanic lithosphere underneath an Avalonian promontory (see Sections 5.2 and 5.4). In this scenario, the neo-formed zircons would have been rapidly incorporated into the neighboring fore-arc basin and, therefore, the zircon crystallization ages and the maximum depositional ages of the sediments would be almost coeval. Furthermore, if the sedimentation continued during the Early Tournaisian, the youngest part of the DMMS would have been deposited in a foreland basin fed by the dismantling of the already inactive Devonian magmatic arc.

5.2. Detrital zircon provenance in the Debdou-Mekkam Metasediments

With the exception of the Devonian population, the relevant old inherited detrital zircon populations in the DMMS samples are the prevalent Ediacaran peak (c. 620 Ma), a secondary middle Paleoproterozoic peak (c. 2.1 Ga), and sometimes a Neo-Archean minor population (c. 2.5 Ga; Figure 3.4). These populations are respectively related to primary sources of Cadomian/Pan-African, Eburnean and Liberian ages, which were formed by successive orogenies in northern Gondwana, and they are globally interpreted as indicative of West African Craton (WAC) affinity (*e.g.*, Nance et al., 2008 and references therein). Recent U-Pb geochronological data on detrital zircons from the Ordovician-Devonian passive margin sequence of the para-autochthonous Eastern Moroccan Meseta (Accotto et al., 2019; Ghienne et al., 2018) highlighted the presence of

these detrital zircon populations and inferred their primary WAC affinity. In addition, these studies also found a Tonian-Stenian (c. 1 Ga) population, and a Mesoproterozoic (c. 1.7-1.1 Ga) gap which, considered together, point to NE-Africa secondary sources (Saharan Metacraton and/or Arabian-Nubian Shield), instead of Grenville (Amazonian) sources (Accotto et al., 2019; Ghienne et al., 2018). However, the new data provided in this study include a minor but remarkably continuous zircon content (up to 13.6%) in the c. 0.9-1.9 Ga time span (Figure 3.4H). Sources of these ages are virtually unknown in the WAC, unless in the Rokelides (De Waele et al., 2015; Villeneuve et al., 2015) and in the Bassarides (Brinckmann and Meinhold, 2007; Villeneuve et al., 2015). Nevertheless, these potential detrital zircon source areas (southern WAC) are a long way from the Eastern Moroccan Meseta and, more importantly, if they were the source of our Mesoproterozoic detrital zircon grains, similar ages would have been encountered also in detrital zircon grains from other Variscan domains located between the source regions and the studied area (*e.g.*, the Anti-Atlas region; Abati et al., 2010; Avigad et al., 2012), which is not the case. On the other hand, c. 0.9-1.9 Ga ages are typical of an Amazonian-type basement, which suggests that the Precambrian zircon inheritance in our samples is from both WAC and Amazonian-type basements, i.e., they contain Gondwanan- and Avalonian-derived detrital zircons. The most plausible explanation for the presence of zircon grains derived from an Amazonian/Avalonian source resides in the commonly accepted paleogeographic attribution of Avalonia as part of northern Gondwana during Neoproterozoic-Cambrian time (Figure 3.13A), which is prior to its northward Early Paleozoic drift during the opening of the Rheic Ocean (Figure 3.13B). In fact, Avalonia is thought to have been located in a western position of the northern Gondwana margin during the Neoproterozoic-Cambrian time, and therefore connected not only to the WAC, but also to Amazonia (*e.g.*, Cocks & Fortey, 2009; Linnemann et al., 2012; Murphy et al., 2006).

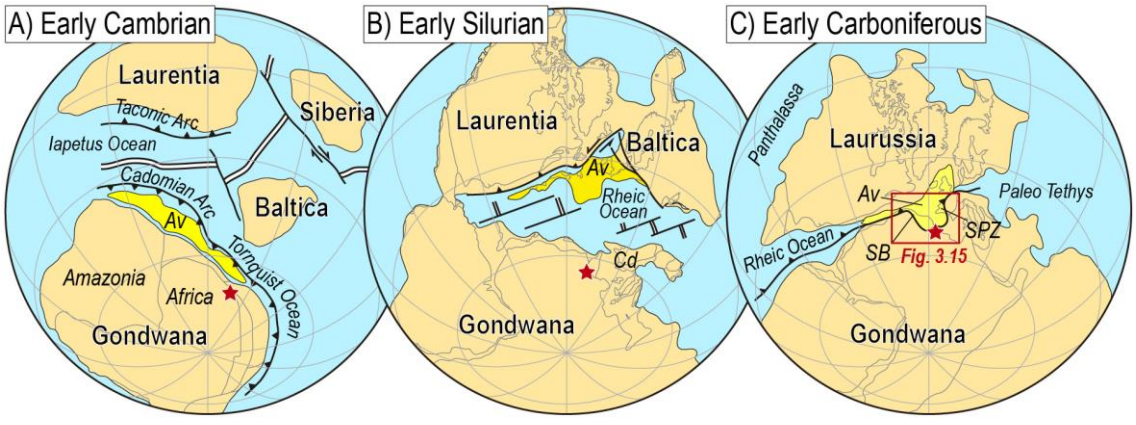

Figure 3.13. Paleogeographic reconstruction of the main continents during Early Cambrian (A), Early Silurian (B), and Early Carboniferous times (C). Av: Avalonia, Cd: Cadomia, SB: Sehoul Block, SPZ: South Portuguese Zone (after Murphy et al., 2016 and references therein; Nance et al., 2012 and references therein). Red stars indicate the approximate location of the studied area.

An outstanding feature of our zircon study is the presence of a Devonian detrital zircon population (c. 360-390 Ma, peak at c. 376 Ma; Figure 3.4). The content of Devonian

detrital zircons in the analyzed samples is very variable (1.4% in sample DEB2, up to 37% in sample OUJ13), which can be taken as evidence of a nearby and immature (heterogeneous) source, instead of a homogeneous one. Furthermore, the generally almost idiomorphic morphology of the Devonian detrital zircon grains (see Appendix C) suggests a limited transportation of the sediments, in agreement with a relatively close source.

When considering a source for these Devonian zircon grains, the absence of outcropping igneous rocks of these ages in all NW-Africa must be stressed. The only exception is the Sehoul Block in Western Morocco (Figure 3.1; see Section 1), where Famennian (c. 367 Ma; U/Pb on igneous zircons) granites are exposed and postdate a presumably middle Paleozoic (Caledonian?) deformation (Tahiri et al., 2010). Just north of the Moroccan Variscides, in SW Iberia, Late Paleozoic metasediments from both the South Portuguese and Ossa-Morena Zones also provided Middle-Late Devonian detrital zircon populations, interpreted as derived from an unexposed magmatic arc, active along the Avalonian convergent margin during the Middle-Late Devonian subduction of the Rheic Ocean (Pereira et al., 2012, 2017; Pérez-Cáceres et al., 2017). Similarly, and based on the comparable ages of the Devonian detrital zircon populations and the paleogeographic vicinity between the Iberian and Moroccan Variscides, we interpret the DMMS as being primarily derived from a Devonian magmatic arc formed in the Avalonian margin, as a consequence of the northward subduction of the Rheic oceanic lithosphere. Furthermore, the hypothesis of a convergent/collisional geodynamic setting, in which the DMMS were deposited, is also supported by the comparison between the Cumulative Probability Plots of our samples and the areas defined by Cawood et al. (2012) for different geodynamic contexts (Figure 3.4F).

The Hf isotope analyses carried out on the Devonian zircons of the DMMS show a vertical ε_{Hf} array varying from +8.5 to -6.5, with T_{NC} ranging from c. 0.6 Ga to c. 1.6 Ga (Figure 3.5E). Despite this variability, most ε_{Hf} data are positive and suggest that these zircon grains formed from a magma generated by partial melting of Neoproterozoic continental crust. Nevertheless, some interaction with older Mesoproterozoic continental basement might also have occurred, which would account for the older model ages (T_{NC}) and the slight negative ε_{Hf} values recorded in MIM2. Very similar results were obtained by Pereira et al. (2017) in the Devonian zircon grains from SW Iberia (Figure 3.14A). Furthermore, the comparison between the Hf isotopic signature of our older data (> 450 Ma; Figure 3.14B) with those from Avalonian terranes (Henderson et al., 2018 and references therein) and the WAC (Abati et al., 2012; Avigad et al., 2012) shows similar distributions of the Ediacaran-Cryogenian (c. 620 Ma) and Paleoproterozoic (c. 2.1 Ga) main detrital zircon populations, suggesting that these terranes had a common evolution in North Gondwana (including both the Cadomian and Eburnean orogenies). The quite abundant Mesoproterozoic population in Avalonia, which is absent in the WAC (gap between c. 1.1 and 1.8 Ga), shows the majority of ε_{Hf} values between c. +10 and c. -10, being many of them slightly positive (from c. +5 to c. 0); a comparable distribution is found in our samples (Figure 3.14B), indicating that an Avalonia-type basement could have supplied detrital zircons to the DMMS.

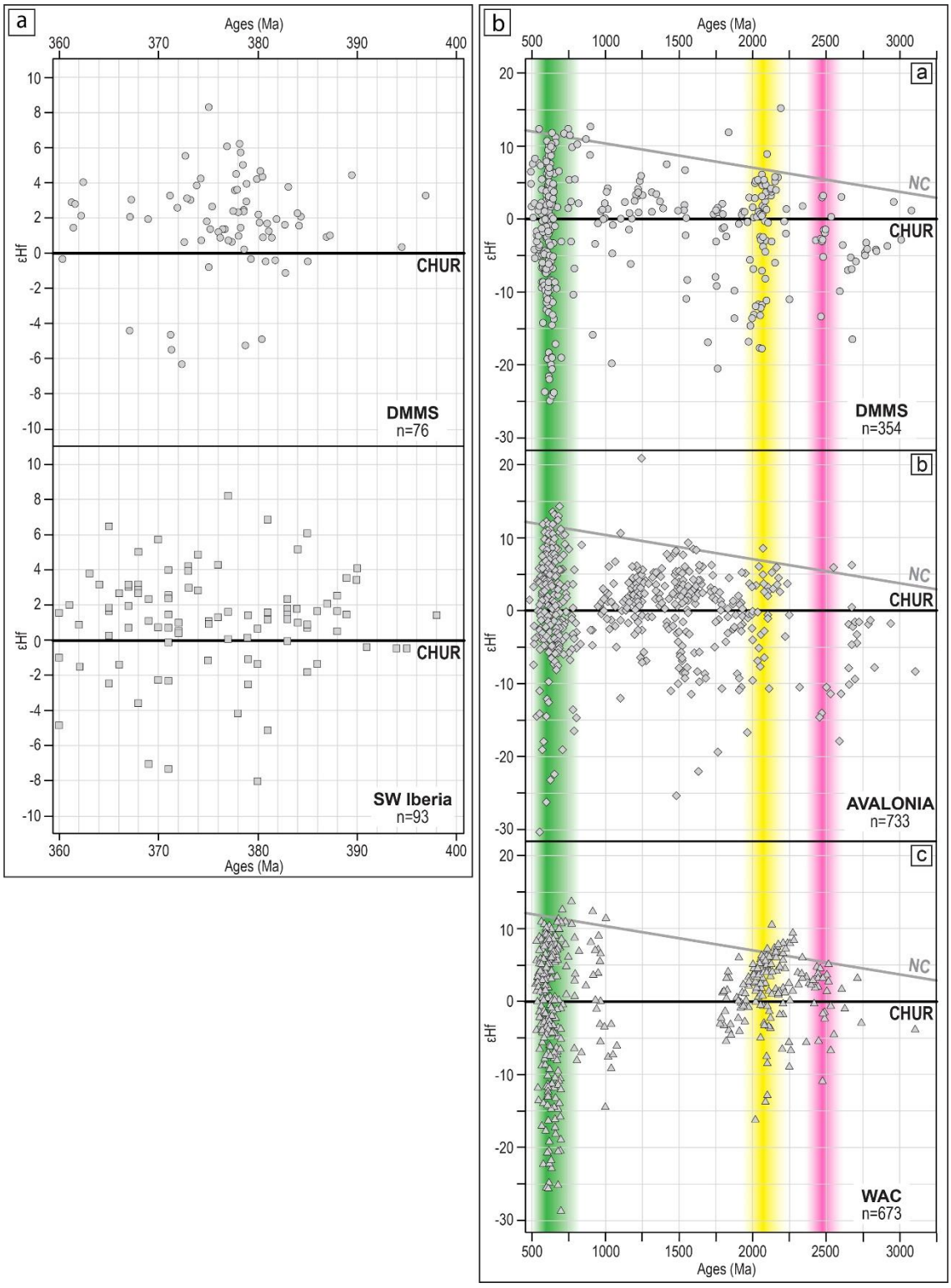

Figure 3.14. Comparison of Hf isotopic data of detrital zircon grains: (A) comparison between Devonian (400-360 Ma) data from DMMS (a: this work) and from SW Iberia (b: Pereira et al., 2017); (B) comparison among pre-Devonian (3250-450 Ma) data from DMMS (a: this work), Avalonian terranes (b: modified from Henderson et al., 2018 and references therein), and WAC (c: Abati et al., 2012; Avigad et al., 2012). Colors indicate some of the main detrital zircon populations identified in this work: Ediacaran-Cryogenian (green), Paleoproterozoic (yellow), and Archean (pink).

As a whole, our Hf isotope data provide additional evidence for the deposition of the DMMS in a fore-arc (and/or foreland) geological setting fed by both the north Gondwanan margin (WAC source) and a Devonian magmatic arc built on a Neoproterozoic crustal basement that included subordinate Mesoproterozoic Avalonia-derived igneous rocks. In this respect, both the Sehoul Block and the South Portuguese Zone are considered Avalonia-derived terranes (Michard et al., 2010; Pérez-Cáceres et al., 2017; Simancas et al., 2005; Tahiri et al., 2010 and references therein), i.e., they are nearby examples of a source type for the DMMS, which would include a Middle-Late Devonian continental magmatic arc with the Avalonian basement.

5.3. Original vergence of D1 folds

Our structural study focused on D1 folds across the investigated region (Section 4). The structural map in Figure 3.12 shows a complicated pattern for the trends of L1 intersection lineation (S0/S1) and the inferred axial traces of D1 folds (see Section 4.5 for a summary of D1 trends and Dc interference patterns). The simplified trend of D1 folds changes from NNW-SSE in the Debdou inlier, with ENE-vergence, to E-W in the Lalla Mimouna-Oued Awam inliers, with S-vergence, and, finally, to NW-SE in the Mekkam inlier, with NE-vergence, depicting an apparent clockwise rotation between the Debdou and Lalla Mimouna-Oued Awam inliers and a counterclockwise one between the latter and the Mekkam inlier (sketch in Figure 3.12). Accordingly, the local vergence on the D1 normal limbs is towards the ENE in the Debdou inlier, towards the south in the Lalla Mimouna-Oued Awam inliers, and towards the NE in the Mekkam inlier (grey arrows in the sketch in Figure 3.12). The pronounced curved trend of D1 folds, if restored to an original straight orientation, results in an average SW-NE trend with SE vergence on the normal limbs (sketch in Figure 3.12). We interpret that most of the present-day curvature of D1 folds is due to the post-Visean upright crenulation folds (Dc), as observed in some sectors of the Mekkam inlier (Figure 3.10). However, part of the curved trend of D1 folds might be primary, i.e., D1 folds could have been formed with an oscillatory trend that was later tightened by the upright crenulation folds. The reason for this putative primary undulated fold pattern is uncertain, although it can be speculated that the arcuate edge (at scale of tens of kilometers) of a southeastward-pushing crustal block could have formed a slightly curved D1 fold belt (see section 5.4).

5.4. Proposing a large-scale plate tectonic scenario

The Moroccan Variscides are generally viewed as an intracontinental part of the Variscan-Alleghanian orogenic system, developed on the northern Gondwanan margin and constituted by a number of tectonic domains bounded by crustal-scale strike-slip shear zones (*e.g.*, Hoepffner et al., 2005, 2006; Michard et al., 2010). The absence of ophiolitic rocks and high-pressure belts seems to support this interpretation. However, the presence of Devonian granites, which postdate the ductile (seemingly Caledonian) deformation observed in the Sehoul Block, suggests a non-Gondwanan origin for this domain and points to a cryptic suture, namely the Rheic Ocean suture, between itself and

the rest of the Moroccan Variscides (*e.g.*, Hoepffner et al., 2005; Michard et al., 2010 and references therein; Simancas et al., 2005; Tahiri et al., 2010). To the south, this cryptic suture has also been inferred in the Souttoufides (western Saharan belts; Figure 3.1A), by the recognition of "exotic" (Laurentian-derived) terranes (*e.g.*, Gärtner et al., 2013; Villeneuve et al., 2015), and in the Mauritanides (the southernmost outcropping transect of the Variscan-Alleghanian orogenic system in Africa; *e.g.*, Villeneuve, 2008; Villeneuve et al., 2010). To the north, the Rheic Ocean suture is masked in SW Iberia at the boundary between the Ossa Morena Zone and the South Portuguese Zone (*e.g.*, Braid et al., 2011; Pérez-Cáceres et al., 2015, 2017). Further north, the identification of the Rheic Ocean suture in the allochthonous complexes of NW Iberia is uncertain (*e.g.*, Arenas et al., 2014; Martínez Catalán et al., 2019).

The flysch nature (turbidites with coarse-grained greywackes), great thickness (more than 10 km according to an approximate restoration of our synthetic cross-section in Figure 3.12) and intense deformation (D1 folding accounting for important tectonic shortening) that characterize the Late Devonian-earliest Carboniferous DMMS have no equivalent in nearby Paleozoic inliers of the Eastern Moroccan Meseta. In this area (Beni Snassene, Oujda, and Jerada inliers; Figure 3.1B), a relatively thin pre-Carboniferous passive margin sequence is weakly deformed, together with the overlying Early Carboniferous succession, by E-W upright open folds. Furthermore, the deformation decreases to the west and southwest: in the Western Moroccan Meseta, NW- to NNE-trending upright folds associated with spaced cleavage and low- to very low-grade metamorphism were described, together with NNE-SSW transtensional basins, while the Coastal Block is characterized by NNE-trending upright open folds and no metamorphism (Hoepffner et al., 2006).

The Moroccan Meseta at Ordovician-Devonian time was part of the northwestern continental passive margin of Gondwana with the Rheic Ocean developed to the N and NW (Figure 3.13B). The counterpart was the Laurussia continental margin, which resulted from the middle Paleozoic Caledonian-Acadian collision between Avalonia and Laurentia-Baltica. The subduction of the Rheic Ocean began at Middle Devonian time and a magmatic arc formed along the Avalonian margin (Nance et al., 2010, 2012; Pereira et al., 2017). The subduction continued during Late Devonian (Figure 3.15A) with the partial closure of the Rheic Ocean at the frontal part of an Avalonian promontory (Simancas et al., 2005; Figure 3.15B). At the Famennian (and Tournaisian?) time, the Late Devonian magmatic arc and its Avalonian basement experienced denudation giving way to thick turbiditic flysch sedimentation (*e.g.*, DMMS) took place in a basin located in the fore-arc region, and likely attesting the oceanic trench that separated the Avalonian magmatic arc from the Gondwana continental passive margin (Figure 3.15B). The sediments were supplied mainly by erosion of the adjacent upper plate (Avalonian basement and its Middle-Late Devonian magmatic arc), but mature detritus could have also been provided from the WAC as pointed out by the presence of a relatively important Paleoproterozoic detrital zircon population, which is less abundant in Avalonian terranes. The advance of the Avalonian front towards the SE might have produced the coeval migration of the depocenter in the DMMS basin throughout the Famennian.

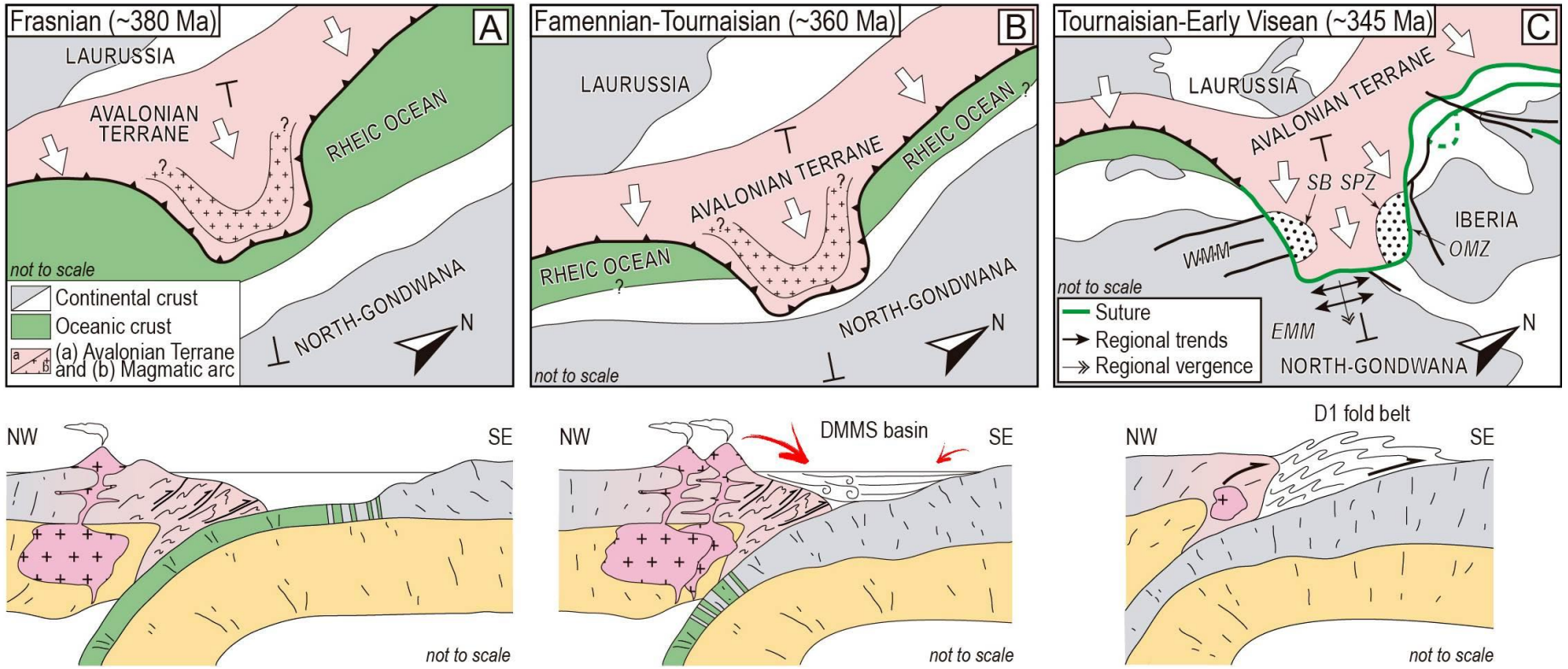
Frasnian (~380 Ma)
A
LAURUSSIA
AVALONIAN TERRANE
RHEIC OCEAN
NORTH-GONDWANA
N
not to scale
Continental crust
Oceanic crust
(a) Avalonian Terrane and (b) Magmatic arc
Famennian-Tournaisian (~360 Ma)
B
LAURUSSIA
AVALONIAN TERRANE
RHEIC OCEAN
NORTH-GONDWANA
N
not to scale
Tournaisian-Early Visean (~345 Ma)
C
LAURUSSIA
AVALONIAN TERRANE
SB SPZ
IBERIA
OMZ
WMM
EMM
NORTH-GONDWANA
N
not to scale
Suture
Regional trends
Regional vergence
NW
SE
not to scale
NW
DMMS basin
SE
not to scale
D1 fold belt
NW
SE
not to scale

Figure 3.15 (previous page). Schematic large-scale evolution of the studied region between Frasnian and Tournaisian time. SH: Sehoul Block; WMM: Western Moroccan Meseta; EMM: Eastern Moroccan Meseta; SPZ: South Portuguese Zone; OMZ: Ossa-Morena Zone (modified from Pereira et al. (2017) and Simancas et al. (2005)).

At Early Carboniferous time (Tournaisian-Early Visean), continued convergence between the Avalonian promontory and Gondwana cut sediment supply to the DMMS basin and triggered compressive collisional deformation (D1 folding; Figure 3.15C). Thus, km-scale NE-SW trending SE-verging inclined to recumbent folds formed due to the south-eastward pushing of the overriding Avalonian promontory located to the NW of the DMMS basin. The geometry and outcropping (visible) size of the D1 fold belt (Figure 3.12) entails a considerable NW-SE shortening that implies the existence of a basal detachment between the folded belt and its relative para-autochthonous, which is the passive margin sequence of North Gondwana exposed in the neighbouring inliers (Beni Snassene, Oujda; Figure 3.1B). Unfortunately, the D1 deformation front and the transition to its relative Gondwanan foreland are not exposed.

The low- to very low-metamorphic grade of the DMMS suggests that these rocks never reached deep orogenic conditions and thus D1 deformation occurred at a relatively high structural level, i.e., the DMMS were not deeply underthrust below the Avalonian crust. Furthermore, the age of the Eo-Variscan metamorphic event proposed by Huon et al. (1987) based on K-Ar analyses of allegedly metamorphic illite grains from the Debdou and Mekkam inliers (372.3 ± 8.1 Ma and 368.3 ± 7.9 Ma, respectively) is overestimated according to our detrital zircon ages. These ages are older than, or coeval with, the maximum depositional ages of the DMMS deduced from the youngest detrital zircon population. We suggest that D1 occurred shortly after the deposition of the DMMS, in accordance with the proposed continued southeastwards advance of the adjacent Avalonian promontory. Furthermore, D1 occurred before the formation of the Visean unconformity, since the Late Visean sediments were not affected by this deformational event. Therefore, D1 should have occurred at Tournaisian-Early Visean time.

Concerning the Avalonian nature of the continental promontory that collided with the Gondwanan margin (Figure 3.13C) to generate the SE-verging km-scale D1 folds in the Eastern Moroccan Meseta, the existence of neighbouring terranes interpreted as Avalonian derived supports our model. To the north, in SW Iberia, Devonian detrital zircons were interpreted as remnants of a missing subduction-related (Avalonian?) magmatic arc (Pereira et al., 2012), while the South Portuguese Zone is considered part of the Avalonian terrane (Pérez-Cáceres et al., 2017 and references therein), and its boundary with the adjacent Ossa-Morena Zone hides the Rheic suture (Pérez-Cáceres et al., 2015, 2016). The dominant left-lateral kinematics along the Ossa-Morena-South Portuguese Zone boundary agrees with the paleogeographic location of SW Iberia on the northern side of the Avalonian salient (Figure 3.15C). The southern side of that promontory would be represented by the Caledonian Sehoul Block (Figure 3.15C; Simancas et al., 2005; Tahiri et al., 2010), where a Late Carboniferous brittle thrust would have obliterated previous right-lateral kinematics concomitant to the left-lateral one occurred in SW Iberia. In-between SW Iberia and the Sehoul Block, the southeastwards

frontal impingement of the Avalonian promontory would have produced the km-scale SE-vergent recumbent folds in the Eastern Moroccan Meseta.

To sum up, the Early Carboniferous collisional deformation and detrital zircon isotopic data (U-Pb and Hf) recorded by the DMMS provide with indirect evidence on the location of a cryptic Rheic Ocean suture in the Eastern Moroccan Meseta, separating Avalonia and northern Gondwana (Figure 3.13C). In this context, correlations with other suture contacts can be proposed in an attempt to reconstruct the large-scale Variscan scenario. To the west of the Eastern Moroccan Meseta, the suture would continue concealed by the thrust of the Sehoul Block onto the Western Moroccan Meseta (Tahiri et al., 2010) and, further south, in the Souttoufides and, perhaps, the Mauritanides (Villeneuve et al., 2015). To the north of the Eastern Moroccan Meseta, the Rheic Ocean suture appears blurred in SW Iberia (Pérez-Cáceres et al., 2015), and prolongs between SW England and other European Variscan Massifs in France, Belgium, Germany and Czech Republic (*e.g.*, Franke et al., 2017; Martínez Catalán et al., 2019; Shail & Leveridge, 2009).

6. Conclusions

The DMMS constitutes a low- to very low-grade intensely deformed siliciclastic succession, previously attributed to either Middle-Late Devonian or Early Carboniferous ages. New U-Pb ages on detrital zircons constrain the maximal depositional age at Late Devonian and, therefore, are compatible with Early Carboniferous deposition. However, the fact that the DMMS underwent the main deformational event (D1) prior to the deposition of the unconformable Upper Visean sediments, together with the euhedral morphologies of the Devonian detrital zircons, points to deposition at Late Devonian time (or no later than Early Tournaisian) and subsequent deformation at Early Carboniferous time (Tournaisian-Early Visean).

Apart from the Late Devonian detrital zircon population, the DMMS shows the common presence of Ediacaran and Paleoproterozoic populations compatible with a northern WAC source. Furthermore, a conspicuous amount of scattered grains with ages between 1.9 Ga and 0.9 Ga evokes the possibility of an exotic source that might be found in the basement of an Avalonian promontory approaching the northern margin of Gondwana during the closure of the Rheic Ocean at Late Devonian time. These Avalonia-derived terranes crop out in the South Portuguese Zone in SW Iberia, and in the Sehoul Block in NW Morocco. Furthermore, the Hf isotopic signature of the Devonian detrital zircons suggests that they might be sourced in a subduction related magmatic arc located on the Avalonian margin, in which reworking of Neo- and Mesoproterozoic Avalonian crust would have occurred. Thus, the DMMS would represent turbiditic deposits in a fore-arc (and/or foreland) basin.

The deformational events that affected the Debdou-Mekkam massif are: (i) a main D1 event characterized by tight to isoclinal folds and slaty cleavage, with regional NE-SW trend and SE vergence, which occurred at Early Carboniferous (probably Tournaisian) time; and (ii) a late Dc event (or events) responsible for upright open to tight folds and

crenulation cleavage, which affected both the DMMS and the overlying Upper Visean succession. The main deformation D1 accounts for regional shortening that occurred during the first phases of the collision between the northern passive margin of Gondwana and an Avalonian promontory. In this scenario, the Avalonian block over-thrusted the Gondwanan margin, giving way to the SE-verging D1 structures. Therefore, the DMMS attests to sedimentation related to the denudation of a missing Late Devonian magmatic arc and subsequent Early Carboniferous collisional deformation triggered by an Avalonian promontory that approached the Gondwana margin after the consumption of the Rheic Ocean lithosphere. In this context, the DMMS might represent a syn-orogenic Eo-Variscan basin witnessing the cryptic oceanic suture between Avalonia and Gondwana in the Eastern Moroccan Meseta.

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Supporting information can be obtained in Appendix A to E and in Mendeley Data: http://dx.doi.org/10.17632/b8fdbykmbx.1 (https://data.mendeley.com/datasets/b8fdbykmbx/draft?a=eaae2da0-8e22-4056-861b-4824984f1c10).

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Chapter IV

Evolution of the sedimentary sources during the Eovariscan phase in the Moroccan Mesetas

This chapter is a comparison among Late Devonian-late Carboniferous samples from the Moroccan Mesetas. Its objective is the study of the evolution of the sedimentary sources that fed this region during the first phases of the Variscan Orogeny.

Syn-collisional detrital zircon source evolution in the northern Moroccan Variscides

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Abstract

U-Pb dating and Hf isotopic analyses of detrital zircon grains from Cambrian-Devonian strata in the Moroccan Mesetas were undertaken in order to constrain its Paleozoic paleogeographic evolution. In this work, we analyzed 12 Late Devonian-Late Carboniferous samples of syn-collisional detrital rocks from the Western and Eastern Moroccan Mesetas. All our samples present significant Ediacaran (ca. 620 Ma) and Rhyacian (ca. 2.1 Ga) detrital zircon populations, suggesting that the West African Craton remained the main source of sediments for northern Morocco at least until the Late Carboniferous. Locally, a Stenian-Tonian (ca. 1.0 Ga) detrital zircon population is also present, probably fed from intermittent and distant source areas located in NE Africa (*e.g.*, Sahara Metacraton). The collisional evolution started with the approach of an Avalonian promontory to the northern Gondwana continental margin (latest Devonian - earliest Carboniferous), after the closure of the Rheic Ocean. This process entailed the former subduction of the Rheic oceanic lithosphere underneath the Avalonian continental terrane and the formation of a magmatic arc in the upper plate. In this scenario, the first syn-collisional sediments (Tournaisian; Tiflet and Debdou-Mekkam areas) are characterized by a Devonian detrital zircon population (ca. 370 Ma), presumably derived from the magmatic arc, and an increasing number of Mesoproterozoic dates, putatively also sourced from the continental crust of the Avalonian terrane. After the initial collision, only the Visean samples located in areas close to the exotic terrane (*e.g.*, Ben Slimane area) displayed a minor Avalonian component. Finally, the Late Carboniferous samples from the Jerada area recorded an important Middle Carboniferous (ca. 330 Ma) detrital zircon population, probably sourced from Variscan granitoids emplaced in the Eastern Moroccan Meseta and attesting to crustal thickening and subsequent thermal maturation of the Gondwana continental crust in this area.

Highlights

- Robust detrital zircon ages for Late Paleozoic metasediments of the Moroccan Meseta
- The West African Craton was the main sediment source in the Moroccan Variscides
- Avalonia and Devonian arc provided additional detritus after Rheic ocean closure

Keywords

Detrital zircon provenance; Moroccan Mesetas; syn-collisional sediments; Avalonian magmatic arc.

1. Introduction

The study of syn-orogenic sediments is key to understanding collisional processes and orogenesis. In this regard, the age and distribution of syn-orogenic basins have traditionally been used to constrain the temporal and spatial evolution of the ongoing collision. Furthermore, the composition of the detrital fraction of syn-orogenic sediments can help to clarify which rocks were exhumed as a consequence of underthrusting (and/or extensional deformation) and concomitant mountain building/erosion. The possibility of dating some of the minerals included in the detrital fraction of syn-orogenic sediments has introduced a new dimension to the study of orogenesis and paleogeotectonic reconstructions. Thus, the systematic dating of minerals, especially zircon, is now used to track the continental terranes involved in collision, the successive input from originally deeper - and older - sources, and the contribution of syn-collisional neo-formed magmatic sources.

The Late Paleozoic Variscan belt constitutes an excellent opportunity to evaluate the role of systematic syn-orogenic sediment detrital zircon dating in elucidating orogenic evolution (*e.g.*, Pastor-Galán et al., 2013a, 2013b; Pereira et al., 2012, 2020a). This orogen resulted from Devonian-Permian complex collision between Gondwana and Laurussia, with a number of peri-Gondwanan terranes also involved in the process (*e.g.*, Franke et al., 2017; Matte, 2001; Simancas et al., 2005). In the Moroccan transects of the Variscan orogen, detrital zircon investigations have been focused on the pre-orogenic evolution (*e.g.*, Abati et al., 2010; Accotto et al., 2019, 2020; Avigad et al., 2012; Ghienne et al., 2018; Letsch et al., 2018; Pérez-Cáceres et al., 2017), but to date, no data have been reported on the syn-orogenic sediments, with the exception of a recent work on the Eastern Moroccan Meseta (Accotto et al., 2020). The present work provides a wide-scale study of U-Pb geochronological and Hf isotope detrital zircon analyses carried out on syn-collisional Late Devonian-Late Carboniferous samples from the Western and Eastern Moroccan Mesetas.

2. Geological setting

The Paleozoic successions of northwestern Africa (Figure 4.1A) crop out in different domains of the Moroccan Mesetas and surroundings (Figure 4.1B), having been variably affected by the Variscan orogeny. These domains are separated by putative regional fault zones, the paleogeographic importance of which is unclear and controversial (*e.g.*, Hoepffner et al., 2006; Michard et al., 2010a, 2010b; Simancas et al., 2009, 2010). The Rabat-Tiflet Fault Zone (RTFZ; Figure 4.1B) separates the Moroccan Mesetas domains from the Sehoul Block, located to the north and characterized by a Cambrian siliciclastic succession affected by Caledonian penetrative deformation and intruded by Devonian granites (Michard et al., 2010b; Simancas et al., 2005; Tahiri et al., 2010). Due to this Caledonian deformation, which did not affect any other domain of the Moroccan Variscides, the Sehoul Block is considered to be part of an exotic Avalonian promontory (Simancas et al., 2005), juxtaposed to the Moroccan Mesetas during the Carboniferous.

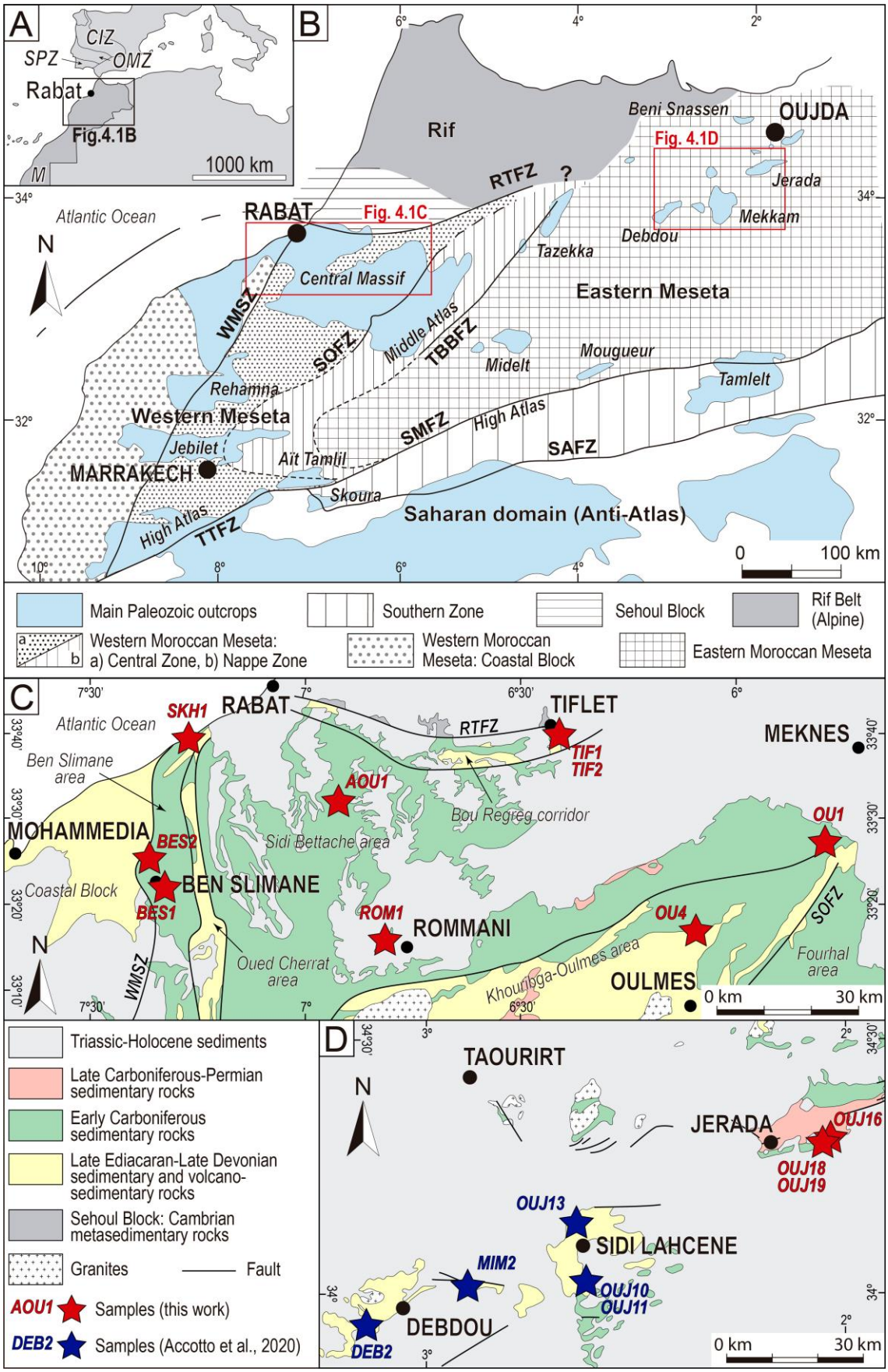

Figure 4.1. A) Schematic map of NW Africa and Iberia showing the location of the northern Moroccan Variscides (rectangle); SPZ: South Portuguese Zone; OMZ: Ossa-Morena Zone; M: Mauritanides; CIZ:

Central Iberian Zone; B) Geological map of the northern Moroccan Variscides (after Hoepffner et al., 2006; Michard et al., 2010b). RTFZ: Rabat-Tiflet Fault Zone; WMSZ: Western Meseta Shear Zone; SOFZ: Smaala-Oulmès Fault Zone; TBBFZ: Tazekka-Bsabis-Bekrit Fault Zone; TTFZ: Tizin'Test Fault Zone; SMFZ: South Meseta Fault Zone; SAFZ: South Atlas Fault Zone. C) Schematic geological map of part of the Western Moroccan Meseta (after Becker and El Hassani, 2020) with location of the studied samples. D) Schematic geological map of part of the Eastern Moroccan Meseta (after Muratet, 1988) with location of the studied samples.

South of the RTFZ, the Western Moroccan Meseta (WMM) is divided into three subdomains, namely the Coastal Block to the west, the Central Zone, and the so-called "Nappe Zone" to the east, separated by the Western Meseta Shear Zone (WMSZ) and the Smaala-Oulmès Fault Zone (SOFM), respectively (Figure 4.1B; Michard et al., 2010b). Eastwards, the Tazekka-Bsabis-Bekrit Fault Zone (TBBFZ) juxtaposes the WMM to the Eastern Moroccan Meseta (EMM). Finally, the South Meseta Fault Zone (Hoepffner et al., 2006) separates the Moroccan Mesetas from the Southern Zone, and, further south, the South Atlas and the Tizin'Test Fault Zones represent the limit of the Gondwanan foreland (Anti-Atlas; Michard et al., 2010b).

The igneous Precambrian basement of the northern Moroccan Variscides crops out in the WMM in relatively small and isolated areas of the Central Zone and Coastal Block (*e.g.*, El Haibi et al., 2020; El Houicha et al., 2018; Ouabid et al., 2017; Pereira et al., 2014, 2015; Tahiri et al., 2010). This basement is covered by a thick, more or less continuous, passive margin succession that is exposed in large areas of the WMM, and in more scarce and relatively small inliers of the EMM (Figure 4.1). The Cambrian-Silurian succession is mainly terrigenous, with the exception of local Lower Cambrian limestones in the WMM (Michard et al., 2010b and references therein); in the Coastal Block, this siliciclastic succession shows interbedded rift-related Cambrian-Ordovician basaltic lenses (Pouclet et al., 2018). During the Devonian, a carbonatic platform developed in the WMM (Michard et al., 2010b and references therein), while sedimentation in the EMM continued to be mainly terrigenous (Hoepffner, 1987; Marhoumi et al., 1983). The metamorphism affecting the whole Paleozoic succession is generally of low- to very low-grade and the tectonic deformation seems to increase eastwards (Hoepffner et al., 2006).

The studied samples were collected in the Upper Devonian – Upper Carboniferous successions from different parts of the Moroccan Mesetas (Figure 4.1C and D, Figure 4.2, and Table 4.1 for coordinates). These successions are described in detail in the following subsections.

2.1.Ben Slimane area

The Lower-Middle Devonian succession of the Coastal Block and Central Zone of the WMM is mainly characterized by limestones deposited in a shelf (Zahraoui, 1991). Locally, the carbonate succession changes laterally to carbonatic olistoliths or turbiditic sandstones and shales, deposited in deeper environments.

At Middle Devonian time, the Coastal Block and Central Zone regions were affected by a general uplift, which culminated in the emersion of some areas and the subsidence

of others (see subsection 2.2) during the Famennian. Thus, in the subsident Ben Slimane area (Figure 4.1C), transgressive turbiditic sandstones, shales and deltaic quartzitic sandstones (Piqué, 1979, 1984; Zahraoui, 1991) directly overlay the Lower-Middle Devonian carbonatic sequence. The turbiditic sedimentation continued until the Tournaisian with local hiatus (Figure 4.2; Zahraoui, 1991). A new subsiding phase started at Late Visean time (Izart, 1991) with the deposition of fossiliferous sandstones and shales with limestone intercalations (Destombe, 1987; Zahraoui, 1991).

The Triassic succession, characterized by red shales, conglomerates and basaltic lavas, unconformably overlays the Late Visean sediments (Figure 4.2; Destombe, 1987).

2.2.Sidi Bettache area

The Sidi Bettache area (Figure 4.1C) attests an allegedly pull-apart basin opened at Famennian-Tournaisian time (Piqué, 1979, 1984) in a regional contractive context (Fadli, 1990; Hoepffner, 1987; Piqué, 1979; Rolin et al., 1985). The opening of the basin triggered the deposition of turbiditic sequences dominated by quartzitic sandstones, conglomerates, and shales (Piqué et al., 1989), which transgressively overlie the Lower-Middle Devonian limestones (Figure 4.2; Destombe, 1987). Locally, along the main faults bounding the Sidi Bettache basin, limestone olistoliths were deposited (Piqué et al., 1989), while gabbroic dikes and, in a lesser amount, dolerite lavas were emplaced (Figure 4.2; Kharbouch, 1994; Kharbouch et al., 1989; Piqué, 1979).

Most of the Lower Visean succession, characterized by turbiditic deposits of sandstones and shales, was eroded during a period of subaerial emersion (Izart and Vieslet, 1988), with Middle-Upper Visean turbiditic sandstones, shales, and greywackes transgressively resting on the Tournaisian-lowermost Visean succession (Figure 4.2; Bouabdelli, 1989; Izart, 1991; Termier et al., 1975; Verset, 1983, 1985). Nonetheless, a recent review of the micropaleontological content of the Visean succession suggests that the Lower-Middle Visean sediments are absent in the Sidi Bettache basin (Cózar et al., 2020).

The terrigenous sedimentation continued in the Serpukhovian-Middle Bashkirian (corresponding to the former Namurian) with the deposition of turbiditic shales, greywackes, and carbonatic sandstones (Beauchamp and Izart, 1987; Chakiri and Tahiri, 2000; Izart, 1991; Piqué, 1984; Zahraoui, 1991). The Middle Bashkirian-Kasimovian (corresponding to the former Westphalian) is characterized by the deposition of alternating conglomerates and fossiliferous black limestones deposited in a lacustrine environment (Cailleux et al., 2001; Piqué, 1984).

The Permian succession, characterized by red conglomerates, shales, and sandstones with intercalations of volcanic ashes and rhyolitic lavas (El Wartiti, 1994), unconformably overlays the Middle Bashkirian-Kasimovian rocks (Figure 4.2). Finally, Triassic red shales and basaltic lavas unconformably overlay the Permian and pre-Permian successions (El Touhami, 1993).

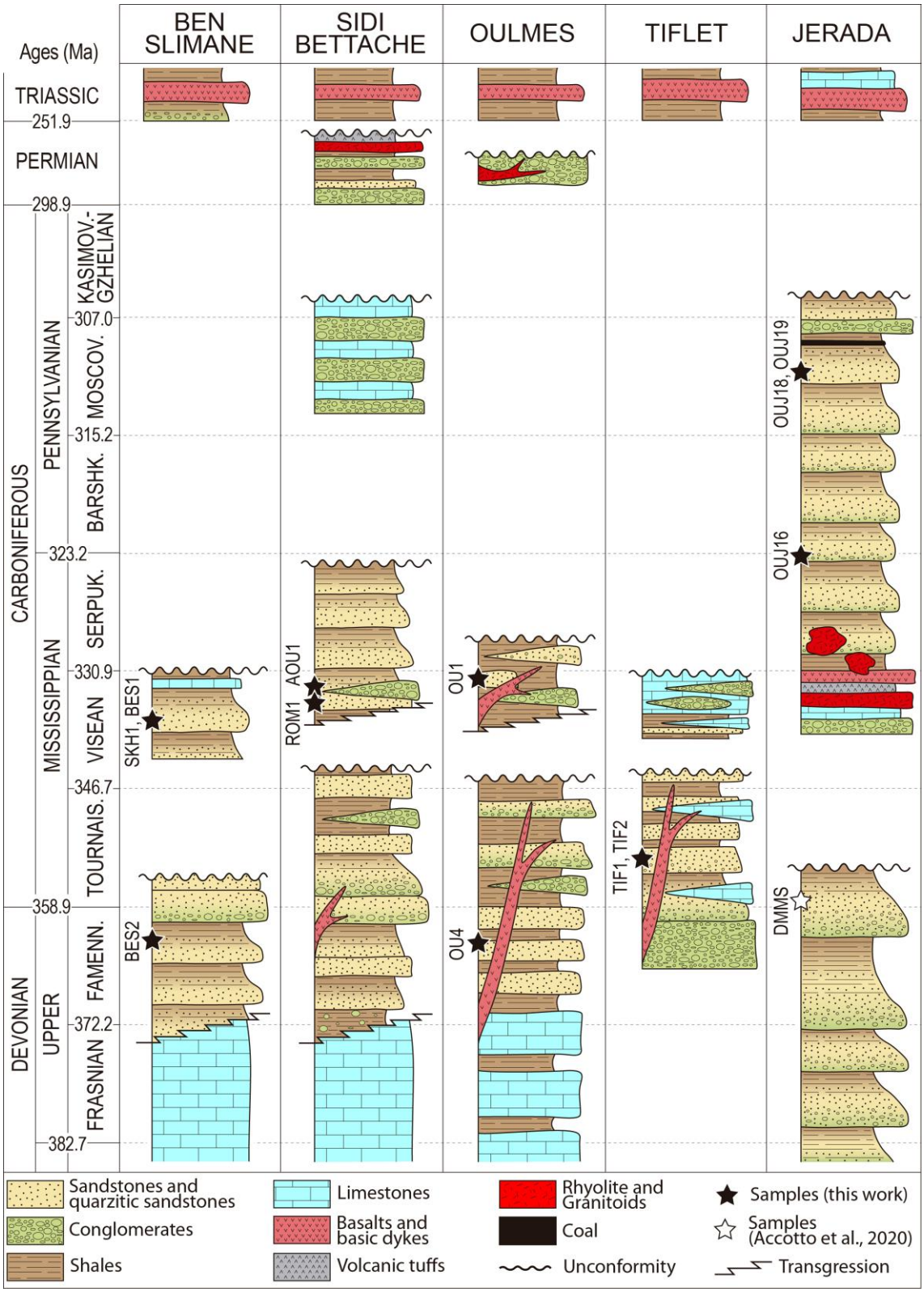

Figure 4.2. Schematic comparison among stratigraphic columns of the Upper Devonian-Triassic successions in different parts of the Moroccan Mesetas: Ben Slimane area (Destombe, 1987; Piqué, 1984; Zahraoui, 1991), Sidi Bettache area (Beauchamp and Izart, 1987; Cailleux et al., 2001; Chakiri and Tahiri, 2000; Cózar et al., 2020; El Wartiti, 1994; Izart, 1991; Kharbouch, 1994; Piqué, 1984; Razin et al., 2001; Vidal, 1989), Oulmes area (El Hassani et al., 2002; Izart et al., 2001; Kaiser et al., 2007), Tiflet area (Cózar et al., 2020; El Hassani, 1991, 1987; Kharbouch, 1994), and Jerada area (El Hadi et al., 2006; Hoepffner, 1989; Horon, 1952; Médioni, 1979, 1977; Muratet, 1988). Not to scale.

2.3. Oulmes area

The Oulmes area is part of a structural high separating the Sidi Bettache and Fourhal areas (Khouribga-Oulmes area in Figure 4.1C). The Upper Devonian succession is characterized by alternation of fossiliferous nodular limestones and shales, dated at the Frasnian-Famennian (Kaiser et al., 2007), passing upward to Upper Famennian quartzitic sandstones (Figure 4.2). During the Tournaisian, the deposition of shales was acompaigned by local olistoliths of Middle Devonian limestones and beds of turbiditic sandstones (Izart et al., 2001). The Upper Visean- Serpukhovian shales with lenses of sandstones directly rest on the Tournaisian succession and are unconformably overlain by Permian continental conglomerates (El Hassani et al., 2002; Izart et al., 2001). The entire Upper Devonian-Carboniferous succession is cross-cut by basic and acid dykes (Izart et al., 2001; Kharbouch, 1994; Kharbouch et al., 1985) and intruded by Late Carboniferous-Permian granitoids (Izart et al., 2001). The Triassic red shales and basaltic lavas unconformably overlie the Permian conglomerates.

2.4. Tiflet area

To the south of the RTFZ, the Upper Famennian-Upper Visean succession of the Bou Regreg corridor (Figure 4.1C) unconformably overlies the Lower Devonian succession, the latter being characterized by black shales and black fossiliferous limestones of Lochkovian-Emsian age (Alberti, 1969; El Hassani, 1991). The Famennian period is characterized by deposition of conglomerates (Figure 4.2) with Ordovician-Devonian clasts (Lecointre and Delepine, 1933), dated by stratigraphic correlation with similar conglomerates cropping out in the Rabat area containing interbedded arkoses and shales with Famennian fossil plants (El Hassani, 1991 and references therein). The sedimentation continued with sandstones and shales interbedded with sporadic lenses of limestones containing Tournaisian fauna (Figure 4.2; Lecointre and Delepine, 1933). Upwards, a 400 m-thick succession of sandstones and shales with abundant limestone lenses was dated as Lower Visean (Izart and Vieslet, 1988; Lecointre and Delepine, 1933), although recent studies have re-dated it as Upper Visean based on a review of their foraminiferal content (Cózar et al., 2020). The entire Upper Devonian-Tournaisian succession is intruded by Permian basic dykes (Figure 4.2; Cailleux et al., 1983; Kharbouch, 1994). The Upper Visean sequence, characterized by oolitic limestones with conglomeratic lenses, unconformably overlies the Tournaisian (-Early Visean?) succession (El Hassani, 1991).

In this area, there is no record of Middle-Upper Carboniferous rocks, and the Triassic red shales and basalts unconformably overlie the Upper Visean succession (El Hassani et al., 2002).

2.5. Jerada area

Unlike the WMM, where the Devonian period was characterized by a carbonatic platform that was progressively fragmented, the EMM (Figure 4.1D) experienced more or less continuous sedimentation (*e.g.*, Debdou and Mekkam inliers) with a Devonian-Tournaisian thick siliciclastic turbiditic succession of shales, greywackes, and sandstones (Figure 4.2; Hoepffner, 1989), intensely deformed by a Tournaisian-Early Visean tectonic event induced by the collision between the northern margin of Gondwana and an Avalonian promontory (inferred as the eastern prolongation of the Sehoul Block; Accotto et al., 2020).

After this tectonic event, sedimentation resumed during the Late Visean with the deposition of basal conglomerates in relatively small and fragmented basins, local and subordinate carbonatic platform deposits, and a thick volcano-sedimentary sequence with rhyolites, andesites, and tuffs (Izart, 1991; Kharbouch et al., 1989; Médioni, 1979). The Serpukhovian-Middle Bashkirian succession in the Jerada area (Figure 4.2) is characterized by shales and sandstones, (Chellai et al., 2011; Muratet, 1988), typical of deltaic environments (Izart, 1991). Deltaic sedimentation continued during the Middle Bashkirian-Kasimovian, but the environment became progressively more lacustrine, accompanied by deposition of fluvial conglomerates and coal levels (Figure 4.2; Chellai et al., 2011).

After a Late Carboniferous Variscan tectonic event responsible for open ENE-WSW trending folds (*e.g.*, Hoepffner, 1989; Horon, 1952), Triassic red shales, basalts, and limestones unconformably overlay the Paleozoic succession (Figure 4.2; Muratet, 1988).

3. Samples and methods

This study is based on the U-Pb and Hf isotopic analysis of 12 samples collected in different areas of the Moroccan Mesetas (Figures 4.1 and 4.2). The samples are listed in Table 4.1, together with their location, lithology, stratigraphic age, as well as the number and kind of analyses carried out.

In the Ben Slimane area (Figure 4.1C), sample BES2 is a Famennian (Upper Devonian; Figure 4.2) white quartzitic sandstone collected a few kilometers north of Ben Slimane. At the microscope scale, it is composed of more than 90% of quartz grains with diameters between ca. 0.25 and 0.1 mm, not particularly rounded. Rare interstitial phyllosilicates are present. Samples BES1 and SKH1 are Visean (Figure 4.2) white quartzitic sandstones collected in Ben Slimane and along the coast, north of Ben Slimane. Both samples are characterized at the microscopic scale by more than 90% of angular quartz grains with diameters between ca. 0.2 and 0.1 mm. Interstitial phyllosilicates are very rare.

Table 4.1. List of samples and analyses carried out; (*) number of analyses and number of concordant results (in bold).

Sample	IGSN (IEACC)	Location (UTM, NDAS83)			Lithology	Age	U-Pb geochronology		Hf isotope analyses
		Zone	Lat. (m N)	Long. (m E)			Method	Analyses (*)	
BEN SLIMANE AREA									
BES1	0009	29S	3720500	674467	Quartzitic sandstone	Visean	LA-ICPMS	150/**120**	107
BES2	0010	29S	3724273	671847	Quartzitic sandstone	Famennian	LA-ICPMS	180/**156**	-
SKH1	0011	29S	3748316	678921	Quartzitic sandstone	Visean	SHRIMP LA-ICPMS	52/**41** 104/**95**	90
SIDI BETTACHE AREA									
ROM1	0012	29S	37122830	719745	Sandstone	Visean	SHRIMP LA-ICPMS	52/**42** 114/**88**	-
AOU1	0013	29S	3736131	708680	Sandstone	Visean	SIMS LA-ICPMS	28/**26** 84/**72**	-
OULMES AREA									
OU1	0014	30S	3731845	244382	Sandy shale	Late Visean	LA-ICPMS	124/**104**	-
OU4	0015	29S	3716170	777438	Quartzitic sandstone	Famennian	LA-ICPMS	150/**134**	-
TIFLET AREA									
TIF1	0016	29S	3752612	750380	Sandstone	Tournaisian	LA-ICPMS	100/**73**	66
TIF2	0017	29S	3752611	750354	Sandstone	Tournaisian	LA-ICPMS	120/**89**	88
JERADA AREA									
OUJ16	0018	30S	3796135	587342	Sandstone	Serpukhovian-Mid. Bashkirian	LA-ICPMS	150/**128**	128
OUJ18	0019	30S	3796505	587288	Sandstone	Mid. Bashkirian -Kasimovian	SIMS LA-ICPMS	70/**58** 50/**46**	46
OUJ19	0020	30S	3796474	587262	Sandstone	Mid. Bashkirian -Kasimovian	LA-ICPMS	130/**120**	106

From the Visean succession of the Sidi Bettache area we collected two samples (Figures 4.1C and 4.2). Sample ROM1 was sampled a few kilometers West of the city of Rommani. This sample is a reddish sandstone characterized by abundant quartz grains (about 75%) with very variable diameters from ca. 0.05 to 0.3 mm. Interstitial phyllosilicates and Fe-oxides are also frequent. Sample AOU1 was collected about 7 km SE of the city of Aïn El Aouda and it is a reddish Late Visean sandstone made up of ≈ 70% of fine-grained quartz (ca. 0.05 mm in diameter) and abundant phyllosilicates and Fe-oxides.

Sample OU4 was collected about 14 km North of the city of Oulmes (Figure 4.1C). It is a quartzitic sandstone of Famennian age (Figure 4.2) composed of ≈ 70% of quartz grains, mainly rounded and with a diameter between ca. 0.25 and 0.1 mm. Interstitial phyllosilicates and oxides are frequent. Sample OU1 was collected about 30 km SW of Meknes (Figure 4.1C), along the road connecting this city with Oulmes. It is an Upper Visean (Figure 4.2) sandy shale with a very heterogeneous texture characterized by zones with a fine-grained matrix (less than 0.03 mm); other portions of the sample are made up of ≈ 80% of angular quartz clasts of ca. 0.05 mm in diameter, together with frequent interstitial phyllosilicates and Fe-oxides.

The two samples from the Tiflet area, TIF1 and TIF2, were collected 2 km East of Tiflet, along the Tiflet river (Figure 4.1C). They are Tournaisian sandstones (Figure 4.2) characterized by medium-sized (ca. 0.2-0.05 mm) grains of quartz (ca.70%), and abundant phyllosilicates and Fe-oxides.

Samples OUJ16, OUJ18, and OUJ19 were collected about 10 km East of Jerada (Figure 4.1D), in the southern flank of the Jerada synform. Sample OUJ16 is a Serpukhovian-Middle Bashkirian sandstone (Figure 4.2) characterized by a very variable grain-size. The matrix is mainly composed of 70% of rounded quartz grains with diameters of ca. 0.05 mm, interstitial phyllosilicates, and oxides. The clasts represent about 30% of the sample, have diameters of 0.3-0.8 mm, and comprise variable lithologies (*e.g.*, angular quartz grains, quartzitic sandstones, volcanic rocks, and foliated shales). Samples OUJ18 and OUJ19 were both collected from sandstone layers within the Middle Bashkirian-Kasimovian succession (Figure 4.2), being OUJ18 stratigraphically younger than OUJ19. They are both composed of abundant (ca. 65-70%) more or less rounded quartz grains with diameters varying between 0.05 and 0.2 mm. Phyllosilicates and oxides are also frequent, together with scarce glauconite.

For each sample, 4-5 kg of rock were collected and processed at the University of Granada (Spain). The separation processing of the detrital zircon grains included mechanical smashing with jaw- and ring-crusher, sorting with sieving, manual panning, and handpicking. A Mira3 VP-FESEM instrument at the John de Laeter Centre (JdLC) of Curtin University (Perth, Australia), and a Carl Zeiss SIGMA HD VP Field Emission SEM at the School of GeoSciences of the University of Edinburgh (United Kingdom) were used to obtain cathodoluminescence (CL) images of the zircon grains. A selection of these CL images is presented in Appendix C (Figures C.18 to C.29). Most of the detrital zircon grains were analyzed using laser ablation inductively coupled plasma mass

spectrometer (LA-ICPMS) at the JdLC GeoHistory Facility. Nevertheless, in some samples, the size of the zircon grains was very variable and sensitive high-resolution ion microprobe (SHRIMP) and secondary ion mass spectrometry (SIMS) analyses were performed to grant a statistically significant number of results in each sample (Vermeesch, 2004). SHRIMP measurements were carried out at the JdLC, while SIMS analyses were performed at the University of Edinburgh. A more detailed description of the analytical methods can be found in Appendix A.

All the raw U-Pb results are listed in Appendix D (Tables D.35 to D.46). Concordant (with a discordance level ≤ 10%) $^{206}Pb/^{238}U$ dates were used for grains with ages younger than 1.5 Ga; for older grains $^{207}Pb/^{206}Pb$ concordant dates were used, due to the significant increase in error on $^{206}Pb/^{238}U$ dates for > 1.5 Ga zircon grains. Kernel Density Estimators (KDE) and histograms of the concordant dates were made using DensityPlotter 8.4 (Vermeesch, 2012) applying a KDE bandwidth of 25 Ma and histogram bin of 20 Ma. Mean ages of the detrital zircon populations were calculated applying the mixture modelling tool in DensityPlotter 8.4 (Vermeesch, 2012) to groups of dates considered statistically (i.e., peaks in the KDE plots) and geologically (i.e., ages of the main geological events) meaningful. The ranges of dates used to calculate the mean ages of each population are detailed in section 4 (Results). The youngest age populations were calculated by using a weighted mean and assessed by the mean square weighted deviation (MSWD) within the software Isoplot (Ludwig, 2009, 2003) and IsoplotR (Vermeesch, 2018). Errors of mean ages and weighted mean ages are expressed at 1σ level.

Hf isotope analyses were run on those samples characterized by determinant detrital zircon populations (Carboniferous, Devonian, and Mesoproterozoic) in order to discriminate juvenile mantle-derived from recycled crustal-derived primary magmatic sources. These analyses were carried out at the JdLC on samples BES1, SKH1, TIF1, TIF2, OUJ16, OUJ18, and OUJ19 (Table 4.1). The details of the analytical methods are described in Appendix A, while the results are listed in Appendix E (Tables E.6 to E.12). Errors are expressed at 2σ level.

4. Results

4.1. Ben Slimane area

One hundred and eighty LA-ICPMS analyses were performed on detrital zircon grains from Famennian sample BES2, yielding 156 concordant results. The KDE diagram in Figure 4.3A shows an important Cryogenian-Ediacaran population with an Ediacaran mean age of 612.8±0.6 Ma (age range: ca. 701-542 Ma, n=98, 62.8% of the data). A second detrital zircon population yielded a Rhyacian mean age of 2062.7±2.2 Ma (ca. 2207-1932 Ma, n=37, 23.7% of the data). A few scattered data have Archean-Rhyacian, Orosirian-Tonian, and Cambrian ages. The youngest detrital zircon population of this

sample defines an Early Cambrian age (538.9±3.0 Ma, MSWD=1.38) and includes 4 dates.

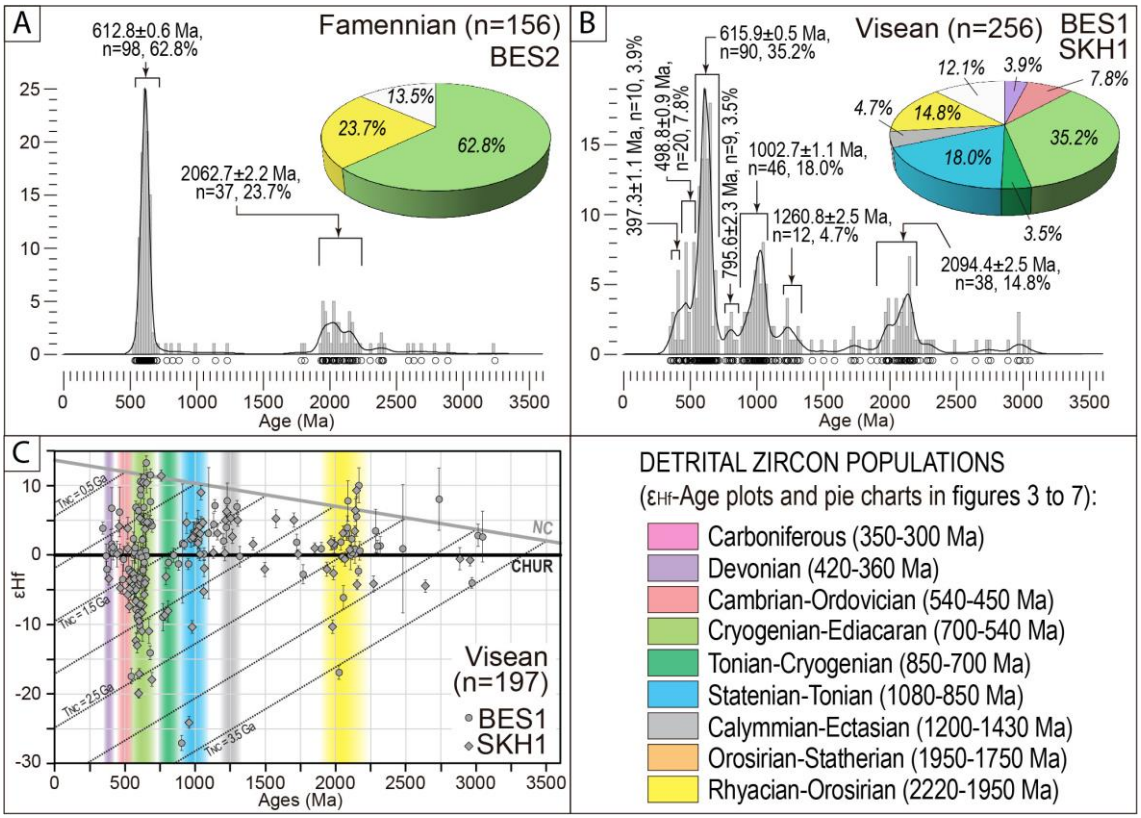

Figure 4.3. U-Pb and Hf results in the Ben Slimane area. A and B) Kernel Density Estimates (KDE, black lines), histograms (grey bars), and pie-charts (colors correspond to the different ages of the detrital zircon populations as in legend; white represents scattered data) showing the detrital zircon age distribution of Famennian (A) and Visean (B) samples. C) ε_{Hf} values versus U-Pb ages for the Ben Slimane samples (BES1 and SKH1); CHUR: Chondritic Uniform Reservoir (Bouvier et al., 2008); NC: new crust (Dhuime et al., 2011); dotted lines indicate the TNC new crust ages of the bulk crust ($^{176}Lu/^{177}Hf = 0.015$). Colors indicate the different detrital zircon populations used in the text.

The plot in Figure 4.3B represents a combination of the results from the two statistically identical Visean samples (BES1 and SHK1). Two hundred and fifty-four LA-ICPMS analyses were carried out on the two samples, yielding 215 concordant results. On sample SHK1, 52 SHRIMP measurements were also run, giving 41 concordant dates. Furthermore, 197 Hf isotope analyses were performed on detrital zircon grains from both samples, the results of which are shown in Figure 4.3C. The most outstanding feature of the resulting KDE/histogram plot (Figure 4.3B) is a Cryogenian-Ediacaran peak, which includes 35.2% of the data (n=90, ages from ca. 711 to 547 Ma) and yields an Ediacaran mean age of 615.9±0.5 Ma. The ε_{Hf} values associated with this population (n=71) show considerable variability (-19.8 and +13.1). Second-order peaks gave Tonian-Stenian (1002.7±1.1 Ma, ca. 1072-887 Ma, n=46, 18% of the data) and Rhyacian-Orosirian (2094.4±2.5 Ma, ca. 2224-1932 Ma, n=38, 14.8% of the data) mean ages; both of these populations are characterized by mostly positive ε_{Hf} values, with a few scattered strongly negative ones (30 εHf values between -26.9 and +8.9 for the Tonian-Stenian population, and 28 data from -16.8 to +9.9 for the Rhyacian-Orosirian one). Minor detrital zircon

populations are clustered at 1260.8±2.5 Ma (ca. 1322-1206 Ma, n=12, 4.7%; 11 ε_{Hf} values between -0.3 and +7.8), 795.6±2.3 Ma (ca. 852-764 Ma, n=9, 3.5%; 7 ε_{Hf} values between -8.9 and +11.3), 498.8±0.9 Ma (ca. 538-450 Ma, n=20, 7.8%; 14 ε_{Hf} values between -7.4 and +6.1), and 397.3±1.1 Ma (ca. 419-370 Ma, n=10, 3.9%; 7 ε_{Hf} values between -3.4 and +6.7). A few scattered dates have Archean-Rhyacian, Orosirian-Calymmian, and Stenian ages. The youngest detrital zircon populations of the Visean samples are Late Ediacaran (BES1: 578.3±1.8 Ma, MSWD=1.32, n=6) and Early-Middle Ordovician (SKH1: 470.0±2.3 Ma, MSWD=1.30, n=5); nonetheless, the youngest detrital zircon population of the combined two Visean samples is Early Devonian (409.7±1.6 Ma, MSWD=0.85, n=5).

4.2.Sidi Bettache area

The results from the two Visean samples (ROM1 and AOU1) are represented in Figure 4.4. One hundred and ninety-eight LA-ICPMS analyses were carried out, together with 52 SHRIMP and 28 SIMS measurements, which yielded a total of 228 concordant results. The most important detrital zircon population is Cryogenian-Ediacaran (ca. 686-543 Ma), which yielded an Ediacaran mean age of 618.6±0.5 Ma (n=94, 41.2% of the data). Another significant peak corresponds to the Rhyacian-Orosirian (ca. 2193-1902 Ma) population, with a mean age of 2052.3±3.4 Ma (n=49, 21.5% of the data). Minor detrital zircon populations gave Statherian (1784.6±6.2 Ma, ca. 1824-1689 Ma, n=13, 5.7% of the data) and Tonian (748.0±1.8 Ma, ca. 808-716 Ma, n=10, 4.4% of the data) mean ages. Scattered data have Paleoarchean-Rhyacian, Calymmian-Tonian, and Cambrian-Carboniferous ages. The youngest detrital zircon populations in these two samples are Late Ediacaran (AOU1: 583.7±1.7 Ma, MSWD=0.85, n=6) and Late Devonian (ROM1: 373.6±1.9 Ma, MSWD=1.32, n=4). If the two statistically identical samples are considered together as representative of the Visean succession in the area, the youngest detrital zircon population is Late Devonian (373.6±1.9 Ma, MSWD=1.32, n=4).

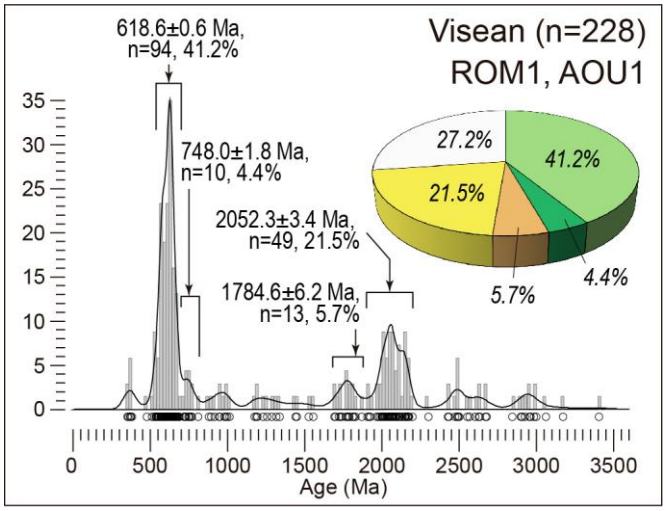

Figure 4.4. Kernel Density Estimates (KDE, black lines), histograms (grey bars), and pie-charts (colors correspond to detrital zircon populations as indicated legend in Figure 4.3; white represents scattered data)

showing the detrital zircon age distribution of two Visean samples (ROM1 and AOU1) from the Sidi Bettache area.

4.3. Oulmes area

One hundred and fifty LA-ICPMS analyses were carried out on the detrital zircon grains from Famennian sample OU4, which yielded 134 concordant results (Figure 4.5A). Three detrital zircon age populations can be identified in this sample, clustered at Cryogenian-Ediacaran (626.8±0.5 Ma, ca. 717-549 Ma, n=73, 54.5% of the data), Tonian-Stenian (1010.6±1.7 Ma, ca. 1078-923 Ma, n=13, 9.7% of the data) and Rhyacian-Orosirian (2049.4±5.6 Ma, ca. 2133-2002 Ma, n=14, 10.4% of the data). Furthermore, twelve dates yielded Cambrian-Devonian ages, although they do not define a peak in the KDE diagram. Scattered dates gave Archean-Siderian, Orosirian-Stenian, and Tonian ages. The youngest detrital zircon population includes 5 dates that define a Late Ediacaran age of 558.7±1.7 Ma (MSWD=1.04).

One hundred and twenty-four LA-ICMPS analyses were run on detrital zircon grains from the Visean sample OU1, yielding 104 concordant dates (Figure 4.5B). The main detrital zircon age populations observed in this sample are Cryogenian-Ediacaran (ca. 685-543 Ma), with an Ediacaran mean age of 619.8±0.4 Ma (n=53, 51% of the data), and Rhyacian-Orosirian (ca. 2144-1940 Ma), with an Orosirian mean age of 2044.1±1.8 Ma (n=23, 22.1% of the data). A few scattered dates yielded Paleoarchean-Rhyacian, Statherian-Tonian, and Late Devonian ages. The youngest detrital zircon population gave a Late Ediacaran mean age of 561.9±1.5 Ma and includes 4 dates (MSWD=1.20).

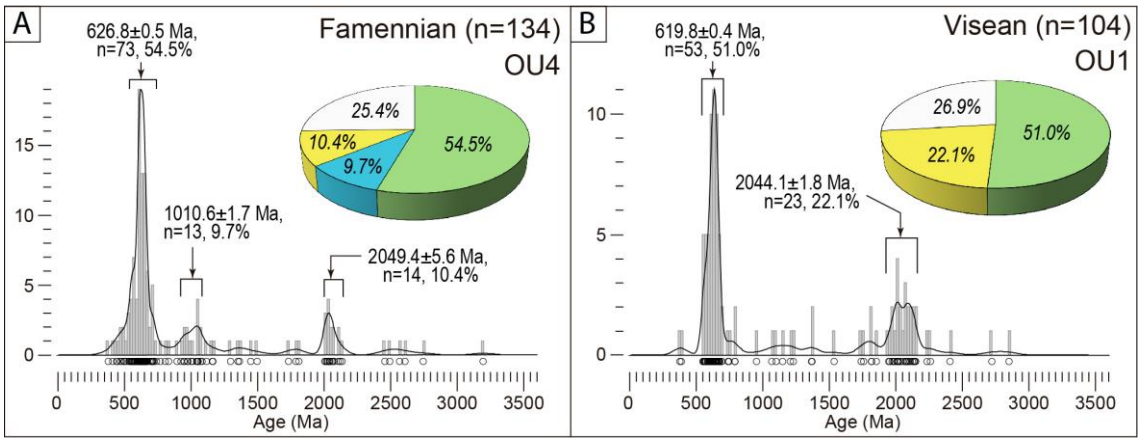

Figure 4.5. Kernel Density Estimates (KDE, black lines), histograms (grey bars), and pie-charts (colors correspond to detrital zircon populations as in legend indicated Figure 4.3; white represents scattered data) showing the detrital zircon age distribution of a Famennian (A; OU4) and a Visean (B; OU1) sample from the Oulmes area.

4.4. Tiflet area

The KDE diagram and histogram in Figure 4.6A show the results of the two Tournaisian samples (TIF1 and TIF2). Two hundred and twenty LA-ICPMS analyses

were carried out on detrital zircon grains from those samples, 162 of which yielded concordant results. Together with the U-Pb analyses, 154 Hf isotope analyses were performed. The results are shown in Figure 4.6B. Forty percent of the data are included in a Cryogenian-Ediacaran detrital zircon population (65 dates from ca. 713 Ma to ca. 544 Ma), which has an Ediacaran mean age of 614.5±0.4 Ma and is characterized by a wide range of ε_{Hf} values (between -37.7 and +11.9, n=64). Secondary detrital zircon populations yielded Devonian (383.2±0.6 Ma, ca. 415-361 Ma, n=15, 9.3% of the data; 15 ε_{Hf} values from -10.6 to +1.9), Stenian-Tonian (1005.7±1.3 Ma, ca. 1058-970 Ma, n=13, 8% of the data; 11 ε_{Hf} values between -14.1 and +7.0), and Orosirian-Statherian (1783.1±3.9 Ma, ca. 1814-1747 Ma, n=10, 6.2% of the data; 8 ε_{Hf} values between -17.0 and +3.2) mean ages. Minor populations are clustered around 1357.2±2.9 Ma (Calymmian, ca. 1433-1280 Ma, n=8, 4.9% of the data; 8 ε_{Hf} values between -5.4 and +7.7) and 2097.7±4.0 Ma (Rhyacian, ca. 2177-1965 Ma, n=11, 6.8% of the data; 11 ε_{Hf} values from -17.6 to +5.0). Scattered data have Mesoarchean-Rhyacian, Orosirian, Statherian-Calymmian, Ectasian-Stenian, Tonian, Cambrian-Ordovician, and Carboniferous ages. The youngest detrital zircon populations are Late Ediacaran in TIF1 (620.0±1.5 Ma, MSWD=1.4, n=6) and Late Devonian in TIF2 (374.0±1.5 Ma, MSWD=0.88, n=4). Combining both samples, the youngest detrital zircon population is Late Devonian and corresponds to the youngest detrital zircon population in TIF2.

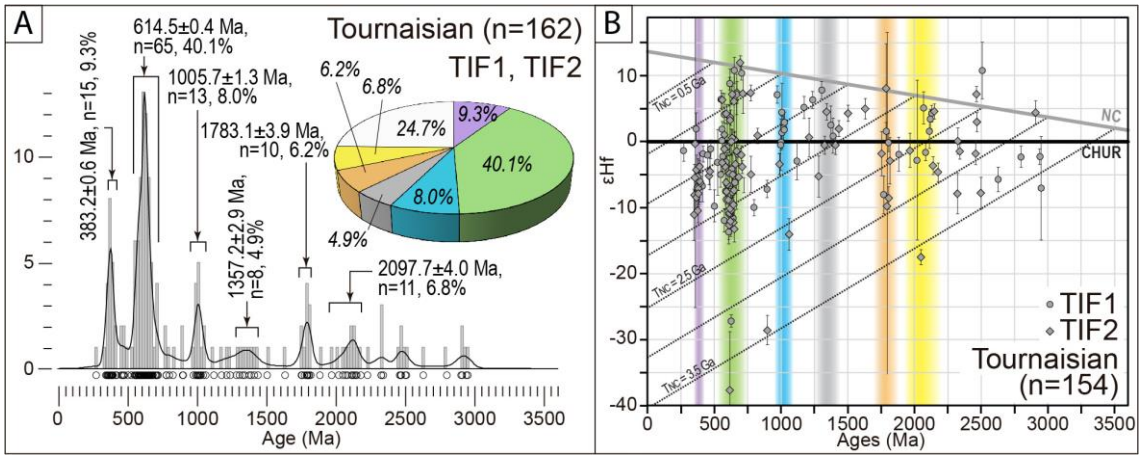

Figure 4.6. U-Pb and Hf results in the Tiflet area. A) Kernel Density Estimates (KDE, black lines), histograms (grey bars), and pie-charts (colors correspond to detrital zircon populations as indicated legend in Figure 4.3; white represents scattered data) showing the detrital zircon age distribution of two Tournaisian samples (TIF1 and TIF2). B) ε_{Hf} values versus U-Pb ages for samples TIF1 and TIF2; CHUR: Chondritic Uniform Reservoir (Bouvier et al., 2008); NC: new crust (Dhuime et al., 2011); dotted lines indicate the TNC new crust ages of the bulk crust ($^{176}Lu/^{177}Hf$ = 0.015). Colors indicate the detrital zircon populations described in the text (see Figure 4.3 for legend).

4.5. Jerada area

One Serpukhovian-Middle Bashkirian (OUJ16) and two Middle Bashkirian-Kasimovian samples (OUJ18 and OUJ19) were collected in this area. The results are shown in Figure 4.7A, where all the concordant data have been plotted together, being the three samples statistically identical and representative of the Middle Carboniferous

succession in this area. Three hundred and thirty LA-ICMPS analyses were carried out, with 294 concordant results, 280 of which were then analyzed for Hf isotope signature (Figure 4.7B). Due to the variable size of zircon grains in sample OUJ18, 70 additional SIMS analyses were run on this sample to reach a statistically representative number of data points; 58 of the SIMS analyses gave concordant dates. The most important detrital zircon age population in these samples is Cryogenian-Ediacaran, which yields a mean age of 615.3±0.3 Ma (dates from ca. 685 to 543 Ma, n=129; 36.6% of the data); one hundred and three of these zircon spots were analyzed for Hf isotopes and yielded ε_{Hf} values varying between -30.1 and +9.0. Nineteen percent of the data (n=66) are clustered at Rhyacian-Orosirian ages (ca. 2218-1900 Ma) with a mean age of 2076.6±2.5 Ma and a considerable variability in ε_{Hf} values (-16.9 to +5.9, n=58). Another important detrital zircon population yielded a Late Visean mean age (331.8±0.3 Ma, dates from 351 to 297 Ma, n=52, 14.8% of the data). The ε_{Hf} values of this Carboniferous population are variable between -4.8 and +9.5 (n=44). Minor populations gave Cambrian (508.1±1.0 Ma, ca. 538-478 Ma, n=14, 4% of the data; 8 ε_{Hf} values from -12.2 to +10.9), Late Tonian (754.0±1.4 Ma, ca. 796-702 Ma, n=12, 3.4% of the data; 8 ε_{Hf} values from -14.5 to +11.3), Early Tonian (971.5±1.1 Ma, ca. 1077-851 Ma, n= 33, 9.4% of the data; 19 ε_{Hf} values between -19.7 and +12.2), and Orosirian (1847.8.8±9.5 Ma, ca. 1895-1811 Ma, n=8, 2.3% of the data; 7 ε_{Hf} values between -17.0 and +3.2) mean ages. Very scattered data yielded Mesoarchean-Rhyacian, Statherian-Stenian, Tonian, and Middle Devonian ages. The youngest detrital zircon populations in the three samples are Serpukhovian-Middle Bashkirian (OUJ16: 323.0±1.5 Ma, MSWD=1.4, n=4; OUJ18: 322.0±2.5 Ma, MSWD=0.35, n=4) and Visean (OUJ19: 339.3±0.7 Ma, MSWD=1.32, n=7). Combining the three samples, the youngest detrital zircon population includes 6 dates and yields an Early Bashkirian mean age (316.6±0.9 Ma, MSWD=1.25).

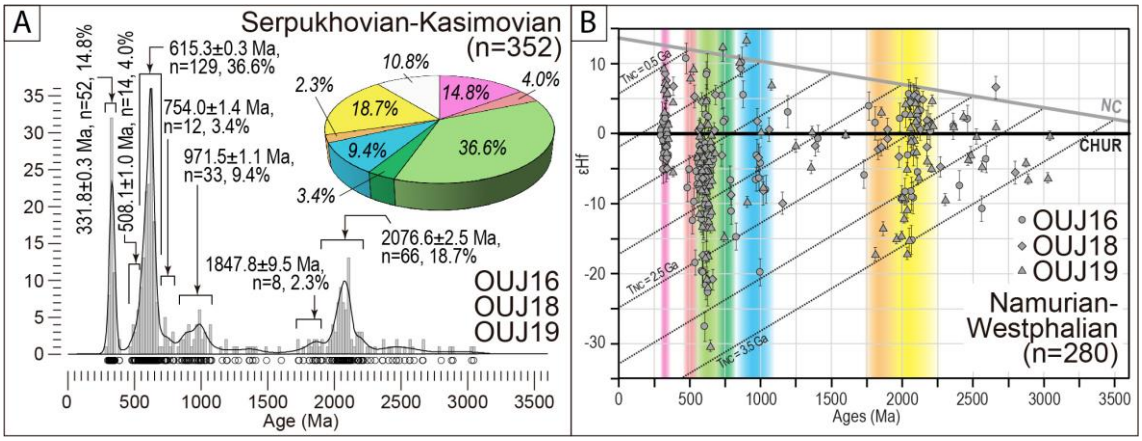

Figure 4.7. U-Pb and Hf results in the Jerada area. A) Kernel Density Estimates (KDE, black lines), histograms (grey bars), and pie-charts (colors correspond to detrital zircon populations as in legend indicated Figure 4.3; white represents scattered data) showing the detrital zircon age distribution of Serpukhovian-Middle Bashkirian (OUJ16) and Middle Bashkirian-Kasimovian (OUJ18 and OUJ19) samples. B) ε_{Hf} values versus U-Pb ages for samples OUJ16, OUJ18, and OUJ19; CHUR: Chondritic Uniform Reservoir (Bouvier et al., 2008); NC: new crust (Dhuime et al., 2011); dotted lines indicate the TNC new crust ages of the bulk crust ($^{176}Lu/^{177}Hf$ = 0.015). Colors indicate the detrital zircon populations described in the text (see Figure 4.3 for legend).

To sum up, Cryogenian-Ediacaran and Rhyacian-Orosirian populations are always present in the studied Upper Devonian to Carboniferous samples, though at very different percentages. The Cryogenian-Ediacaran population encompasses 35-65% of the data, while the Rhyacian-Orosirian one represents 5-20% of the data. Taking into account all of the samples, up to seven minor detrital zircon populations can be defined: Orosirian-Statherian (ca. 1950-1750 Ma), Calymmian-Ectasian (ca. 1430-1200 Ma), Stenian-Tonian (ca. 1080-850 Ma), Tonian-Cryogenian (ca. 850-700 Ma), Cambrian-Ordovician (ca. 540-450 Ma), Devonian (ca. 420-360 Ma), and Carboniferous (ca. 350-300 Ma). The distribution of these populations in each area is summarized in Table 4.2.

5. Discussion

5.1.Maximum depositional ages

The youngest detrital zircon population in a sample is often used to define the maximum depositional age (MDA) of the rock (see Dickinson and Gehrels (2009) for methodology, and Sharman and Malkowski (2020) for discussion). This kind of data might be particularly useful to constrain the true depositional age (TDA) of the sediment, generally inferred either from the fossiliferous/palynological content or regional stratigraphic correlation. TDA can be coeval or younger than MDA (*e.g.*, Sharman and Malkowski, 2020) depending on the geodynamic and geographic setting in which the sediment was deposited.

All of the studied samples have MDA spanning from Late Ediacaran (ca. 585 Ma) to Late Carboniferous (ca. 315 Ma), which are coherent with the TDA based on palynomorphs/paleontological studies and/or regional stratigraphic correlation (Destombe, 1987; El Hassani, 1991 and references therein; Horon, 1952; Izart, 1991 and references therein; Kaiser et al., 2007; Muratet, 1988; Vidal, 1989; Zahraoui, 1991 and references therein). When considering groups of samples with similar TDA (see section 4; Figure 4.2), the Late Ediacaran youngest detrital zircon populations are replaced by Devonian to Late Carboniferous ones, thus suggesting that Devonian-Carboniferous magmatic rocks supplied detritus to all the Moroccan Mesetas, although in certain areas their impact is not noticeable in single samples. Our data show the necessity of exhaustive sampling and data density when trying to approximate MDA to TDA, especially in syn-orogenic settings, where high variability in the detrital zircon content is expected due to a combination of neo-formed with mixed and recycled sources.

Table 4.2. Summary of the detrital zircon populations identified in each area, with approximate mean ages, percentage of occurrence, and, when available, range of ε_{Hf} values.

	BEN SLIMANE		SIDI BETTACHE	OULMES		TIFLET	JERADA
	FAMENNIAN	VISEAN	VISEAN	FAMENNIAN	VISEAN	TOURNAISIAN	SERPUKHOVIAN -BASHKIRIAN
CARBONIFEROUS ca. 350-300 Ma	-	-	-	-	-	-	ca. 330 Ma 14.8% ε_{Hf} −4.8 / +9.5
DEVONIAN ca. 420-360 Ma	-	ca. 400 Ma 3.9% ε_{Hf} -3.4 / +6.7	-	-	-	ca. 385 Ma 9.3% ε_{Hf} −10.6 / +1.9	-
CAMBRIAN-ORDOVICIAN ca. 540-450 Ma	-	ca. 500 Ma 7.8% ε_{Hf} −7.4 / +6.1	-	-	-	-	ca. 510 Ma 4.0% ε_{Hf} −12.2 / +10.9
CRYOGENIAN-EDIACARAN ca. 700-540 Ma	ca. 615 Ma 62.8%	ca. 615 Ma 35.2% ε_{Hf} -19.8 / +13.1	ca. 620 Ma 41.2%	ca. 630 Ma 54.5%	ca. 620 Ma 51.0%	ca. 615 Ma 40.1% ε_{Hf} −37.7 / +11.9	ca. 615 Ma 36.6% ε_{Hf} −30.1 / +9.0
TONIAN-CRYOGENIAN ca. 850-700 Ma	-	ca. 795 Ma 3.5% ε_{Hf} −8.9 / +11.3	ca. 750 Ma 4.4%	-	-	-	ca. 750 Ma 3.4% ε_{Hf} −14.5 / +11.3
STENIAN-TONIAN ca. 1080-850 Ma	-	ca. 1000 Ma 18.0% ε_{Hf} −26.9 / +8.9	-	ca. 1010 Ma 9.7%	-	ca. 1005 Ma 8.0% ε_{Hf} −14.1 / +7.0	ca. 970 Ma 9.4% ε_{Hf} −19.7 / +12.2
CALYMMIAN-ECTASIAN ca. 1430-1200 Ma	-	ca. 1260 Ma 4.7% ε_{Hf} −0.3 / +7.8	-	-	-	ca. 1355 Ma 4.9% ε_{Hf} −5.4 / +7.7	-
OROSIRIAN-STATHERIAN ca. 1950-1750 Ma	-	-	ca. 1785 Ma 5.7%	-	-	ca. 1785 Ma 6.2% ε_{Hf} −9.9 / +8.0	ca. 1850 Ma 2.3% ε_{Hf} −17.0 / +3.2
RHYACIAN-OROSIRIAN ca. 2220-1950 Ma	ca. 2065 Ma 23.7%	ca. 2095 Ma 14.8% ε_{Hf} −16.8 / +9.9	ca. 2055 Ma 21.5%	ca. 2050 Ma 10.4%	ca. 2045 Ma 22.1%	ca. 2100 Ma 6.8% ε_{Hf} −17.6 / +5.0	ca. 2075 Ma 18.7% ε_{Hf} −16.9 / +5.9

5.2.Provenance of pre-Devonian detrital zircon grains

Geochronological studies on detrital zircon grains from Late Ediacaran-Early Carboniferous samples of the Moroccan Variscides have been carried out by several authors (Abati et al., 2010, 2012; Accotto et al., 2019, 2020; Avigad et al., 2012; Ghienne et al., 2018; Letsch et al., 2018; Pérez-Cáceres et al., 2017) with the aim of finding out the main sources of sediments that fed the northern Gondwanan margin during the Paleozoic. All of these authors agreed that the main source area of sediments in the Moroccan Variscides is the West African Craton (WAC; Figure 4.8), based on: (i) the recurrent presence of important Cryogenian-Ediacaran (ca. 0.6-0.75 Ga) and Paleoproterozoic (ca. 2.0 Ga) detrital zircon populations, which can be related to the Cadomian/Pan-African and Eburnean orogenic cycles, respectively (Nance et al., 2008 and references therein); and (ii) the absence of a significant Mesoproterozoic population, which is otherwise very common in areas affected by the Grenville orogeny (1.3-0.9 Ga; Ernst et al., 2008), such as Amazonia, Avalonia, and Baltica/Laurentia (Figure 4.8), and in some European Variscan zones fed from the Arabian-Nubian shield and/or the Saharan Metacraton (*e.g.*, Bea et al., 2010; Fernández-Suárez et al., 2014).

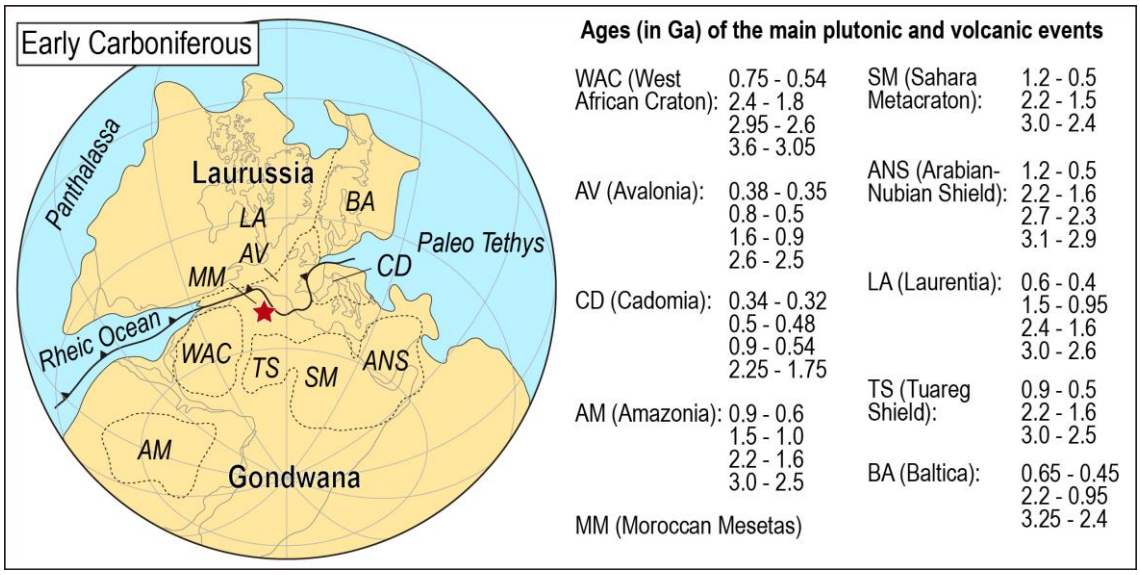

Figure 4.8. Paleogeographic reconstruction of Gondwana and Laurussia at Early Carboniferous time (after Murphy et al., 2016 and references therein; Nance et al., 2012 and references therein). Ages of the main magmatic events are from Abati et al. (2010), Bea et al. (2010), Cambeses et al. (2017) and references therein, Linnemann et al. (2011) and references therein, Marzoli et al., (2017) and references therein, Nance et al. (2008), Pereira et al. (2012, 2017), and Santos et al. (1987). The red star indicates the approximate location of the studied area.

In terms of detrital zircon populations, the magmatic input of Cambrian-Ordovician Rheic Ocean rifting (Linnemann et al., 2008; Nance et al., 2012, 2010) in the Moroccan Variscides was scarce or negligible (Accotto et al., 2019, 2020; Ghienne et al., 2018; Letsch et al., 2018), except in a few, very localized areas (Letsch et al., 2018). In our samples, Cambrian-Ordovician zircon grains are rare (0-8% of the data). Cambrian mafic

magmatic rocks are known in the Coastal Block (Pouclet et al., 2018), but they are restricted to volcanic focuses with limited spread. Therefore, we can infer that the Moroccan Variscides were only partially affected by the magmatism related to the Cambrian-Ordovician rifting, probably because of their more inland position in the Gondwana margin than other regions, such as the Ossa-Morena and Central Iberian Zones (Figure 4.1A), where this kind of magmatism was ubiquitous and Cambrian-Ordovician detrital zircon grains are usually present in syn-orogenic rocks (Martínez Catalán et al., 2008; Pastor-Galán et al., 2013b; Pereira et al., 2020b).

A Stenian-Tonian (ca. 1.0 Ga) detrital zircon population is identified in the Moroccan Variscides (up to 30% of the data) although it is not present everywhere. This population was found in Ediacaran-Late Devonian samples from the Anti-Atlas (Avigad et al., 2012) and the Moroccan Mesetas (Accotto et al., 2019, 2020; Ghienne et al., 2018). To explain the occurrence of these ages, the source of which is unknown in the WAC (Figure 4.8), a distal and probably intermittent NE African source (namely the Sahara Metacraton; Figure 4.8) was invoked.

5.3.Source evolution during Late Devonian-Carboniferous time

In this study, we analyzed two Famennian samples (BES2 and OU4 in the Ben Slimane and Oulmes areas, respectively), which have the same detrital zircon populations as those described by other authors in the Moroccan Variscides (Abati et al., 2010, 2012; Accotto et al., 2019, 2020; Avigad et al., 2012; Letsch et al., 2018; Pérez-Cáceres et al., 2017), thus suggesting that in Late Devonian times, this part of the northern margin of Gondwana was still mostly fed by the WAC (Eburnean and Cadomian/Pan-African orogenies), together with some minor and distant NE African (ca. 1.0 Ga) sources recorded in the Oulmes area (Figure 4.9A).

Slightly younger samples (Tournaisian) collected in the Tiflet area (TIF1 and TIF2) show a Devonian detrital zircon population, which could not have be supplied by the WAC. Very similar results were described by Accotto et al. (2020) in the Debdou-Mekkam area (EMM), and were interpreted as coming from a Devonian magmatic arc (Pereira et al., 2012), formed along the margin of an Avalonian terrane (*e.g.*, Simancas et al., 2005) during the closure of the Rheic ocean and the first collisional stages between this terrane and northern Gondwana (Tournaisian-Early Visean; Accotto et al., 2020). This hypothesis is reinforced by the presence of Mesoproterozoic detrital zircon grains in these samples, which was also attributed to the approaching Avalonian block. Interestingly, the Tiflet area samples yielded a bimodal Mesoproterozoic detrital zircon population with peaks at ca. 1.0 and 1.35 Ga, which can be related to Grenvillian sources (*e.g.*, Ernst et al., 2008). Because of the location of the Tiflet area (i.e., very close to the RTFZ separating the Moroccan Mesetas from the Caledonian Sehoul Block; Figure 4.1C), we claim that Tournaisian sedimentation in this area was partially fed from this exotic terrane (Figure 4.9B), which delivered zircon grains of Mesoproterozoic (Grenvillian orogeny) and Devonian (magmatic arc) ages; additionally, the WAC would

have provided the Cryogenian-Ediacaran and Paleoproterozoic detrital zircon grains. The similarities between the Tournaisian samples from Tiflet and Debdou-Mekkam areas also extend to the Hf isotope data (Figure 4.6B; Accotto et al., 2020). Actually, the Devonian ε_{Hf} range in the Tiflet samples (-10.6 to +1.9) is similar to that of sample MIM2 (-6 to 0) in the Debdou-Mekkam area. The new crustal ages (T_{NC}; Dhuime et al., 2011) of the Tiflet samples range from ca. 1.0 to 2.0 Ga, which suggests that these zircon grains formed from partial melting of Mesoproterozoic and Paleoproterozoic crust, supporting the hypothesis of Avalonian sources for the Devonian detrital zircon population. Furthermore, the Stenian-Tonian and Ectasian detrital zircon populations are characterized by mostly positive εHf values (-5.4 to +7.7, with the exception of only one more negative value at -14.1), a range compatible with that seen in the Debdou-Mekkam area (ca. -5 to +5; Accotto et al., 2020) and some Avalonian terranes (ca. -5 to +7; Henderson et al., 2018 and references therein). These mostly positive data might indicate that the magmas in which the zircon grains formed were generated from Late Paleoproterozoic-Mesoproterozoic crust. Based on these similarities and assuming that the Debdou-Mekkam region was a fore-arc basin located at the front of the Avalonian promontory (Accotto et al., 2020), we can infer that the Tournaisian sediments in the Tiflet area might have been deposited in an analogous context but in a more lateral position with respect to the frontal promontory. Moreover, the Devonian detrital zircon population in the Tiflet samples (ca. 385 Ma) is slightly older than in the EMM (ca. 376 Ma), which might support an eastward migration of the Avalonian promontory, as well as the accompanying magmatic arc, in Late Devonian times.

After the initial collision between Gondwana and Avalonia (Late Tournaisian-Early Visean; Accotto et al., 2020), the detrital zircon spectra in younger syn-orogenic sediments are characterized by a mix of Gondwanan (WAC) and non-Gondwanan (Avalonian-Grenvillian) sources (Figure 4.9C). This is particularly noticeable in a couple of samples from the Alborán Domain (Rif, Figure 4.1B) published by Azdimoussa et al. (2019), and in the Visean samples from the Ben Slimane area (BES1 and SKH1). All these samples, in fact, are characterized by a significant number of Mesoproterozoic dates. In particular, our samples include almost 5% of Ectasian (ca. 1.2-1.35 Ga) ages and, moreover, an Early Devonian (ca. 400 Ma) population that was not recorded in the Famennian sample (BES2). When looking at the Hf isotope signature, the εHf values of the Devonian and Ectasian detrital zircon populations are very similar to those described in the Tiflet area. Therefore, we conclude that these zircon grains might have been sourced from the erosion of the Avalonian promontory already accreted to the northern Gondwana margin or its lateral continuation offshore of the Atlantic Moroccan coast. In this regards, further south in the Oulad Dlim Massif (SW Morocco), the existence of non-Gondwana-derived rocks with a Silurian-Devonian (Caledonian) tectono-magmatic imprint (Bea et al., 2020; Gärtner et al., 2013) suggests that the Rheic Ocean suture might be located close to the Atlantic coastline.

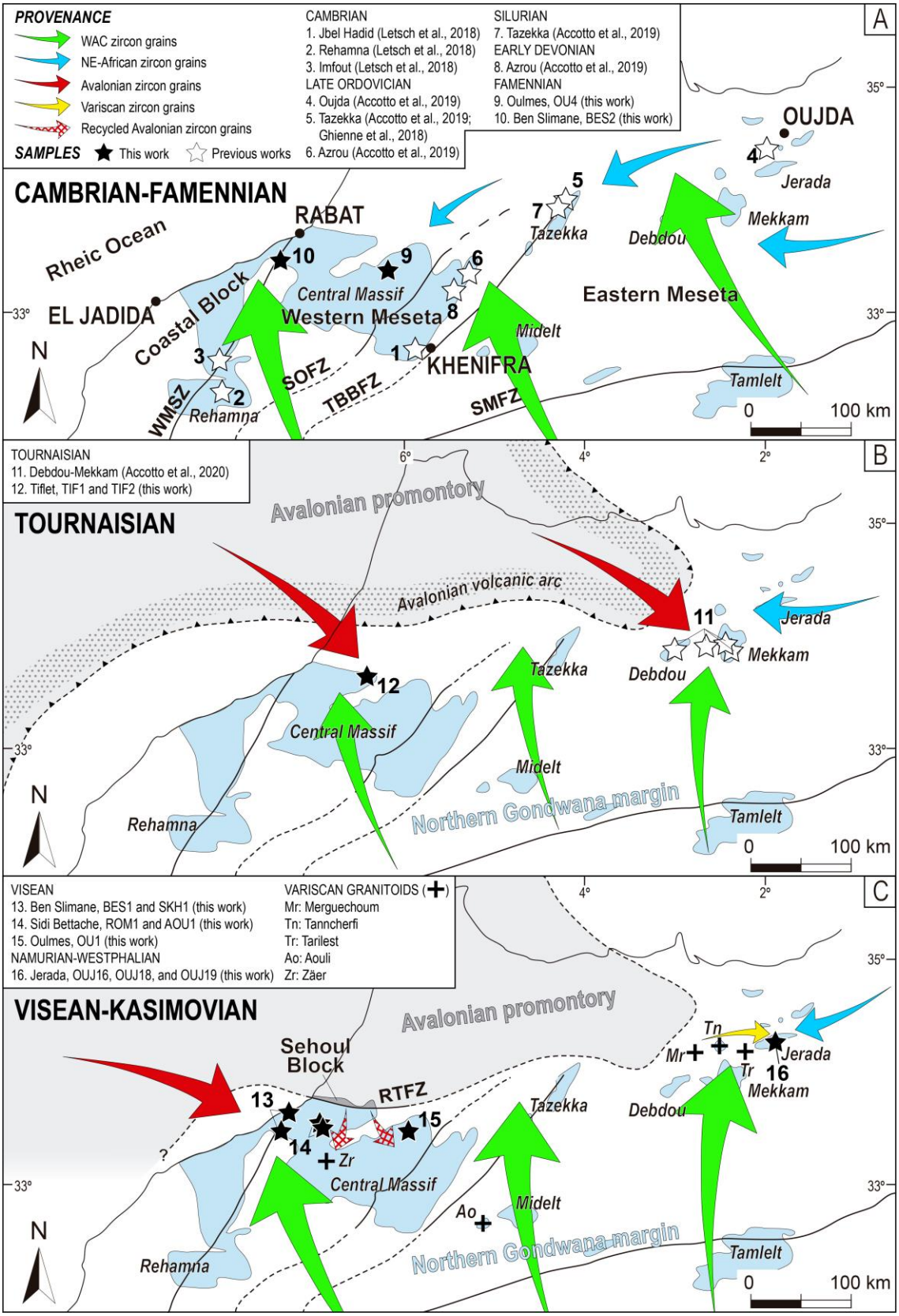

Figure 4.9. Evolutionary sketches showing the variation in detrital zircon sources in the Moroccan Mesetas. (A) Cambrian-Late Devonian, (B) Tournaisian, and (C) Visean-Kasimovian time.

In the Visean samples from the Sidi Bettache (ROM1, AOU1) and Oulmes areas (OU1), the influence of Avalonian sources seems to be minor as compared to the Ben Slimane area. In this regard, dates between ca. 1.6-1.05 Ga are scarce and very scattered in samples ROM1, AOU1 and OU1; combining the data of these three samples (Figures 4.4B and 4.5), the Mesoproterozoic data represents ca. 6% of the dates, although the rather scattered distribution precludes the individualization of any detrital zircon population of that age. Therefore, the influence of the Avalonian promontory in the Sidi Bettache and Oulmes areas appears to be minor with respect to the Ben Slimane, Tiflet, and Debdou-Mekkam areas, probably due to the longer distance from the exotic block. Furthermore, since these Visean samples postdate the Eo-Variscan collision between the Avalonian promontory and Gondwana, part of the Mesoproterozoic zircon grains might have been recycled from previous syn-orogenic sediments of Tournaisian-Early Visean ages deposited in areas close to the Avalonian terrane (i.e., Tiflet area; Figure 4.9C).

The Late Carboniferous samples from the Jerada area (OUJ16, OUJ18, and OUJ19) are characterized by detrital zircon spectra similar to older samples (i.e., Ordovician) from the Oujda EMM area (Accotto et al., 2019). Besides the Cryogenian-Ediacaran and Paleoproterozoic detrital zircon populations, the Oujda and Jerada samples are characterized by Stenian-Tonian dates clustered at ca. 0.95-0.97 Ga and representing 5-9% of the data. This similarity might suggest that the sources, at least in the eastern part of the EMM, did not change during the Ordovician-Carboniferous period. It is therefore plausible that the influence of the Avalonian promontory as a source of sediments only embraced the EMM to the Debdou-Mekkam area, while eastwards, the Oujda-Jerada region could have not received this input and represents a stable part of the northern Gondwana margin. Actually, the eastern part of the EMM (Beni Snassen, Oujda and Jerada areas) was not deformed during the initial collision between Avalonia and Gondwana (Accotto et al., 2020), and was principally fed by (primary or recycled) WAC sources during all of the Paleozoic and, to a lesser extent, by NE-African sources (*e.g.*, Sahara Metacraton, Figure 4.8).

The Late Carboniferous samples from the Jerada area are also characterized by ca. 15% of the data clustered in a Middle Carboniferous (ca. 330 Ma) detrital zircon population, with ε_{Hf} values ranging from -10 to +10, and T_{NC} from ca. 1.5 to 0.5 Ga. Variscan granitoids of Middle Carboniferous age are known in the EMM (*e.g.*, Tarilest, Tanncherfi, and Merguechoum; El Hadi et al., 2006) and they probably represent the source of the detrital zircon grains with this age found in our samples. The crustal thickening originated by the collision between Avalonia and Gondwana (Accotto et al., 2020) probably induced an increase in the temperature within the Gondwanan crust, which, in turn, gave way to several middle Carboniferous igneous rocks, later exposed and partially eroded at Late Carboniferous times.

6. Conclusions

i) The systematic dating and Hf-isotopic characterization of Late Devonian-Late Carboniferous samples collected in several areas of the Moroccan Mesetas have allowed us to identify the influence of an allochthonous Avalonian promontory that approached and collided with the northern margin of Gondwana at Late Tournaisian-Early Visean time (Accotto et al., 2020). This Avalonian terrane is represented by the Sehoul Block, though it probably continues southwards offshore the Atlantic coastline.

ii) Before Late Devonian time, sediments in the Moroccan Variscides were sourced from the West African Craton, with a secondary and intermittent input from the distant Sahara Metacraton.

iii) The approaching and collision of the Avalonian promontory was recorded in Tournaisian samples from the Tiflet (this study) and Debdou-Mekkam (EMM; Accotto et al., 2020) areas, both characterized by a considerable number of Late Devonian (ca. 385-375 Ma) and Mesoproterozoic (ca. 1.6-1.0 Ga) zircon grains. The influence of this exotic terrane continued after its initial collision with Gondwana, delivering Devonian and Mesoproterozoic detrital zircon grains during the Visean in the adjacent areas to the Sehoul Block or its lateral prolongation offshore along the Moroccan Atlantic coastline.

iv) Among the Carboniferous samples analyzed, only those from the Ben Slimane are characterized by Mesoproterozoic and Devonian detrital zircon ages, while the samples from the Sidi Bettache, Oulmes, and Jerada areas did not recorded these dates or contain only a few (probably recycled) Mesoproterozoic grains.

v) The Late Carboniferous Jerada samples are characterized by a noteworthy Middle Carboniferous detrital zircon population sourced from syn-orogenic granites cropping out in the EMM and attesting the Early Variscan thickening and subsequent thermal maturation of the Gondwanan crust.

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Data availability

Supplementary material including the Appendix A, C, D, and E cited in the text might be found in Mendeley Datasets repository with the doi: 10.17632/x7zwsgzhnb.1 (https://data.mendeley.com/datasets/x7zwsgzhnb/draft?a=4c930b1c-4108-449f-abcf-f8cb1b7e3cb7)

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Chapter V

Conclusions

This Ph.D. Thesis deals with the pre- and syn-orogenic paleogeographic reconstruction of the Moroccan Mesetas, as well as their Eo-Variscan tectonic evolution during the Paleozoic era. To achieve these objectives, an extensive study on the Paleozoic variation of sedimentary sources of this part of the Gondwana margin was carried out by using detrital zircon data from 46 sandstone samples. Furthermore, the Variscan structure of the Eastern Moroccan Meseta was investigated through a detailed structural analysis of the Debdou-Mekkam area, which is particularly significant for the understanding of the early Variscan deformations in this region. The main results and interpretations are summarized below, presented in geochronological order.

Cambrian-Devonian (passive margin phase)

Based on the detrital zircon content found in the siliciclastic Cambrian-Devonian rocks from the Moroccan Mesetas (Eastern – EMM – and Western – WMM – Moroccan Mesetas), the main sources of sediments in this part of the northern Gondwanan margin were the following:

- Nearby West African Craton (WAC).
  This was the principal sediment source in the Moroccan Variscides, characterized by detrital zircon dates clustered in two main populations: a main Cryogenian-Ediacaran (c. 700-540 Ma) peak, and a secondary Rhyacian-Orosirian (c. 2.2-1.9 Ga) one, plus some Archean-early Paleoproterozoic zircon grains. These detrital zircon populations can be related to the Cadomian/Pan-African, Eburnean and Leonian/Liberian orogenies, respectively (e.g., Nance et al., 2008 and references therein).

- Distant northeast Africa (e.g., Sahara Metacraton, Arabian-Nubian Shield).
  These sources have been invoked to explain the presence of Stenian-early Tonian (c. 1.1-0.9 Ga) detrital zircon ages and the almost systematic lack of older Mesoproterozoic ages. Nevertheless, the presence of this population in the Cambrian-Devonian samples of the Moroccan Mesetas is very irregular (geographically, in time, and in abundance), suggesting that this region was located in a distant position where paleocurrents from northeast Africa were intermittent.

- Local Cambrian-Ordovician rift magmatism.
  Several volcanic centers formed during the Cambrian-Ordovician aborted rift in the Anti-Atlas and WMM (Pouclet et al., 2018) seem to have provided some detrital zircon grains to the studied samples. Cambrian-Ordovician (c. 540-450 Ma) detrital zircon ages are generally uncommon in the Cambrian-Devonian samples of the Moroccan Meseta. Nevertheless, Lower Ordovician samples collected in areas close to some of the known volcanic centers of the WMM contain important (c. 35-70%) Cambrian-Ordovician detrital zircon grains. In the EMM, the Ordovician samples from the Zekkara inlier also contain c. 20% of Cambrian-Ordovician zircon grains,

pointing to the existence of a nearby and unknown volcanic center. The effect of these sources was very local and limited in time.

Famennian-Tournaisian (Rheic Ocean closure)

Samples from these ages collected in the Tiflet (WMM) and Debdou-Mekkam (EMM) areas include the detrital zircon populations described above. Additionally, c. 10-35% of the data from these samples yielded Devonian (c. 420-360 Ma) ages (characterized by mostly positive ε_{Hf} values) and an appreciable amount (c. 5-15%) of zircon grains gave Mesoproterozoic-late Paleoproterozoic ages. These ages are virtually unknown in the source areas invoked for the Cambrian-Devonian samples, but are common in Amazonian-type terranes such as Avalonia. Thus, the Devonian zircon populations might be sourced from a magmatic arc developed on the Avalonian margin during the subduction of the Rheic Ocean (Pereira et al., 2012), while the Mesoproterozoic-late Paleoproterozoic zircon grains might have come from the erosion of the Avalonian basement.

The presence of both sources (north Gondwanan and Avalonian) in the Famennian-Tournaisian samples suggests that the sedimentation in the northern Gondwanan margin was influenced by an approaching Avalonian volcanic arc active during the final stages of Rheic Ocean closure. The flysch-like lithologies and great thickness (thousands of meters) of the Famennian-Tournaisian Debdou-Mekkam metasedimentary rocks fully concord with this arc-related setting.

Tournaisian-early Visean (Eo-Variscan collision)

The approaching of the Avalonian promontory was followed by its collision with the northern Gondwanan margin (Eo-Variscan deformational event). In the Debdou-Mekkam area this collision is recorded by the presence of kilometric-scale inclined to recumbent folds associated with pervasive axial-planar cleavage formed at low-grade metamorphic conditions. These folds have variable trends at the scale of the single inlier (from NW-SE, through N-S, to E-W). Nevertheless, at a wider scale, an average NE-SW fold trend with SE-vergence is inferred, as a result of the southeastward-directed pushing of the Avalonian terrane. The related NW-SE shortening is considerable, but difficult to estimate due to the absence of stratigraphic markers in the deformed sequence.

In the Mekkam inlier, the upper Visean rocks unconformably overlie the Famennian-Tournaisian succession, and they are not deformed by the Eo-Variscan event, thus constraining the latter at Tournaisian-early Visean time.

The Eo-Variscan deformational front is unexposed, although its location can be roughly inferred between the inliers of Mekkam to the west, and those of Zekkara, Jerada, and Oujda to the east: the last three, in fact, are unaffected by the Eo-Variscan deformation.

The description and reinterpretation of the Eo-Variscan structure in this part of the EMM represents one of the most outstanding results of this Ph.D. Thesis. Previous studies in this area described NW-SE trending isoclinal recumbent to overturned folds with W-SW vergences (Hoepffner, 1987), although none of them provided detailed structural maps, cross-sections, nor geodynamic interpretations were provided.

Visean-Moscovian (Variscan s.s. deformation)

In the Debdou-Mekkam area, a second deformational event (Variscan *s.s.*) is responsible for the formation of metric- to kilometric-scale upright open folds associated with axial-planar crenulation cleavage, which complicated the original Eo-Variscan fold trends. These structures deformed all the Paleozoic succession exposed in the Debdou-Mekkam area (Famennian-late Visean) and they have been described also in other inliers of the EMM (e.g., Jerada; Hoepffner, 1987).

The detrital zircon populations observed in samples from the post-Eo-Variscan sequence of the Moroccan Mesetas show similar characteristics to the Cambrian-Devonian pre-orogenic samples: strong WAC affinity (Cryogenian-Ediacaran and Rhyacian-Orosirian ages), variable occurrence of secondary northeastern African sources (Stenian-early Tonian ages), and scarce (probably recycled) Cambrian-Ordovician zircon grains. A few local features are summarized below:

- The westernmost Visean samples (Ben Slimane area) still recorded the effect of Avalonian sources, with a small but statistically significant number of Devonian (c. 4%) and Mesoproterozoic (c. 5%) detrital zircon grains.
- In other parts of the WMM (Sidi Bettache and Oulmes areas), the Visean samples appear to be unaffected by Avalonian sources, except a few scattered Devonian and Mesoproterozoic grains probably recycled from the Famennian-Tournaisian succession in the Tiflet area.
- In the EMM, Serpukhovian-Moscovian samples contain c. 15% of Carboniferous (c. 350-300 Ma) zircon grains. These grains were likely sourced by the granitoids that attest to the crustal thickening and thermal maturation of the Gondwanan crust resulting from the Variscan orogeny.

Open issues

The results of this Ph.D. Thesis represent an important contribution to the knowledge of the Paleozoic paleogeographic and tectonic evolution of the northern Moroccan Variscides. Nevertheless, a few issues remain open for further research. Some of the most significant of these open questions are indicated below:

- The northern Moroccan Variscides have been usually divided in domains (e.g., Eastern and Western Moroccan Mesetas, Southern Zone, Anti-Atlas) and sub-domains (Coastal Block, Central Zone, and Nappe Zone of the Western Moroccan

Meseta) separated by large-scale fault zones whose Variscan and pre-Variscan paleogeographic significance is still debated (e.g., Michard et al., 2010a; Simancas et al., 2010, 2009). Despite some proposals attributing offsets of hundreds of kilometers (e.g., Michard et al., 2010b and references therein) to these fault zones, the sedimentary successions do not show important differences between domains or sub-domains. Furthermore, the detrital zircon data described and discussed in this Ph.D. Thesis do not show significant variations among the sampled domains, suggesting that all the region belonged to the same passive margin fed by the same source areas. Nevertheless, more data are required from poorly sampled Paleozoic successions in other domains (e.g., Southern Zone and Anti-Atlas). Furthermore, detailed tectono-metamorphic studies focused on the boundaries among the different domains should not be exclude.

- The re-interpretation of the Eo-Variscan structures in the Debdou-Mekkam area, EMM, opens new questions on putative coeval structures in other parts of the Moroccan Mesetas, in particular those that are close to the WMM/EMM boundary. For instance, Hoepffner (1987) described refolded W-vergent Eo-Variscan structures in the Tazekka inlier, which they propose to be similar to those described in the Debdou-Mekkam area, in the same work. W-vergences were also described in the Azrou-Khenifra nappe area (Ben Abbou et al., 2001; Bouabdelli, 1989). To the west, in the Zaian area, Lahfid et al. (2019) described Eo-Variscan upright and recumbent folds. More detailed modern structural analyses are needed in these regions in order to understand how these supposedly W-vergent structures, if present, fit in the geodynamic model presented in this Ph.D. Thesis.

- The recognition of the Rheic suture and its correlation among different transects of the Variscan belt is an issue of the foremost importance. In central and southern Europe, the location of the Rheic suture is relatively clear, as it separates Avalonian terranes (Rheno-Hercynian and South Portuguese Zones) from Gondwanan terranes, to the east. However, the features of the original suture were blurred by later strong Variscan imprint (e.g., Franke et al., 2017; Pérez-Cáceres et al., 2017). The prolongation of this orogenic suture in northwestern Africa (or eastern North America) is uncertain. In northwest Morocco, the Sehoul Block is considered to be part of an Avalonian promontory due to its Caledonian imprint (Tahiri et al., 2010), a feature that is absent in the remaining northern Moroccan Variscides. Therefore, the Rheic suture might be concealed along the limit between the Sehoul Block and the WMM, which is represented at present by a late Variscan thrust. The occurrence of Avalonian-derived sediments in the Tiflet and Debdou-Mekkam areas suggests an eastward continuation of the suture. Furthermore, the style of the Debdou-Mekkam Eo-Variscan structures suggests that the front of the Avalonian promontory (and hence the Rheic suture) might be located somewhere to the northwest of these inliers, although covered by younger sediments. Further north, the Rheic suture would continue in SW Iberia at the boundary between the Ossa-Morena (Gondwanan) and the South Portuguese (Avalonian) Zones (Pérez-Cáceres et al., 2015, 2017). The

southward prolongation of the Rheic suture remains uncertain between the Sehoul Block and the Souttoufides/Mauritanides. A possible location might be offshore the Moroccan Atlantic coast, based only on the recent findings of some Mesoproterozoic and late Paleoproterozoic zircon grains in magmatic rocks of the El Jadida coast and offshore in the Mazagan escarpment (El Haibi et al., 2020; Kuiper et al., 2019). As a corollary, the general lack of primary remnants of Rheic Oceanic crust (pre-Late Devonian ophiolites) in the whole Variscan belt has to be stressed, in light of the indirect nature of the evidences of this suture. Nevertheless, the uncertainties about the location of the Rheic suture are still high and need more studies.

- Last but not least, a concern worth pursuing would be deciphering whether the affinity of the Moroccan Mesetas Gondwanan basement is of WAC-type (which lacks Mesoproterozoic crust) or northeast African-type (which includes c. 1.0 Ga old crust, such as for instance the Sahara Metacraton). The Pan-African suture between both crust types can be precisely located in the Anti-Atlas (Bou-Azzer ophiolite; El Hadi et al., 2010), and it was suggested to continue northwards in Iberia (Pérez-Cáceres et al., 2017). Excluding the El Jadida area (see above), the scarce Precambrian outcrops in the WMM suggest a WAC-type basement (Ouabid et al., 2017; Pereira et al., 2015). The high variability of the c. 1.0 Ga detrital zircon population found in the Paleozoic Moroccan Mesetas and its possible long transport from distant sources (as suggested in this Ph.D. Thesis) complicates the attempt to unraveling this issue. A systematic study of the ages of xenocrystic zircon grains, and zircon cores in igneous rocks (in particular in Variscan granitoids) exposed in the Moroccan Mesetas, might be a more powerful tool to shed light on this issue, and perhaps leading to delineate the location of the Pan-African suture between the Anti-Atlas and Iberia.

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APPENDIX

Appendix A – ***Analytical methods***
(all the chapters)

Appendix B – ***Description of the zircon grains***
(Chapter II, Section II.1)

Appendix C – ***Cathodoluminescence images***
(Chapter II, Section II.3; Chapter III; Chapter IV)

Appendix D – ***Results of the U-Pb analyses***
(all the chapters)
Only in the digital version of this Ph.D. Thesis (CD)

Appendix E – ***Results of the Hf analyses***
(Chapter II, Section II.3; Chapter III; Chapter IV)
Only in the digital version of this Ph.D. Thesis (CD)

Appendix A

Analytical methods

LA-ICPMS Geochronology

LA-ICPMS geochronology was performed in the GeoHistory Facility, John de Laeter Centre (JdLC), Curtin University, Perth, Australia. Individual zircon grains (mounted and polished in 1" epoxy rounds) were ablated using a Resonetics RESOlution M-50A-LR, incorporating a Compex 102 excimer laser. Following two cleaning pulses and 45 s of total baseline signal acquisition, ablations were undertaken at a 33 µm spot diameter with a 7 Hz laser repetition rate and on sample laser energy of 2 J cm^{-2}. Ultrahigh purity He (350 mL min^{-1}) and N_2 (3.8 mL min^{-1}) was used to flush the cell and high purity Ar was employed as the plasma carrier gas (flow rate 0.98 L min^{-1}). Isotopic intensities were measured on an Agilent 7700s quadrupole ICP-MS and for this work, the following isotopes were monitored for 0.03 s each: ^{28}Si, ^{29}Si, ^{49}Ti, ^{91}Sr, ^{147}Sm, ^{202}Hg, ^{204}Pb, ^{206}Pb, ^{207}Pb, ^{208}Pb, ^{232}Th, and ^{238}U.

The primary and secondary reference materials used in this study are listed in Table A.1. $^{206}Pb/^{238}U$ ages calculated for all zircon age standards, treated as unknowns, were found to be within 3% of the accepted value. The time-resolved mass spectra were reduced using the U_Pb_Geochronology3 data reduction scheme in Iolite (Paton et al, 2011 and references therein).

Table A.1. Recommended values for the standard materials used during the LA-ICPMS sessions

Zircon standard	Recommended values
91500	1062.4±0.4 Ma (Wiedenbeck et al., 1995)
Plešoviçe	337.13±0.37 Ma (Sláma et al., 2008)
GJ-1	608.5±1.5 Ma (Jackson et a., 2004) 601.5±0.40 Ma (Horstwood et al., 2016)
OGC	3465.4±0.6 Ma (Stern et al., 2009)

SHRIMP analyses

The analytical procedures for the Curtin consortium SHRIMP II have been described by De Laeter and Kennedy (1998) and Kennedy and De Laeter (1994), and are similar to those described by Compston et al. (1984) and Williams (1998). Because of the small grain size, a 10-15 μm diameter spot was used, with a mass-filtered O_2^--primary beam of ~1.1-1.3 nA. Data for each spot were collected in sets of five scans on the zircons through the mass range of $^{196}Zr_2O^+$, $^{204}Pb^+$, Background, $^{206}Pb^+$, $^{207}Pb^+$, $^{208}Pb^+$, $^{238}U^+$, $^{248}ThO^+$, and $^{254}UO^+$. The $^{206}Pb/^{238}U$ age standard and U-content standard used was BR266 (559 Ma and 903 ppm U; Stern, 2001). The $^{207}Pb/^{206}Pb$ standard used to monitor instrument induced mass fractionation is OGC zircon (3465±3 Ma; Stern et al., 2009). The $^{207}Pb/^{206}Pb$ dates obtained on OGC zircons during the SHRIMP sessions matched the $^{207}Pb/^{206}Pb$ standard age within uncertainty and no fractionated correction was warranted. The common Pb correction was based on the measured ^{204}Pb-correction (Compston et al., 1984). The correction formula for Pb/U fractionation is:

$$^{206}Pb^+/^{238}U^+ = a(^{254}UO^+/^{238}U^+)^b$$

(Claoué-Long et al., 1995) using the parameter values of Black et al. (2003). The constant *a* was determined empirically from analyses of the standard during the analytical session. The program SQUID 2 (Ludwig, 2009) was used for data processing.

SIMS analyses

The zircon U-Th-Pb isotopic analyses were performed using a Cameca IMS1270 secondary ion mass spectrometer (SIMS) at the NERC Ion Microprobe Facility, University of Edinburgh, the United Kingdom, applying the procedures described by Chen et al. (2019).

A 10-15 μm diameter spot was used with a 3.5-5.4 nA O_2^- primary ion source on zircons from sample EZ7, AOU1, OUJ18, AZR11, AZR1, and SF2. Data for each analysis was collected in 20 scans on the zircons over the following masses of interest: $^{196}(Zr_2O)$, ^{204}Pb, 204.3 background, ^{206}Pb, ^{207}Pb, ^{208}Pb, $^{212}(Zr_2O_2)$, ^{238}U, $^{248}(ThO)$, $^{254}(UO)$, and $^{270}(UO_2)$. U/Pb ratios were calibrated against measurements of the Geostandards 91500 zircon (c. 1062.5 Ma; Wiedenbeck et al., 1995). Measurements over single 'sessions' gave a standard deviation on the $^{206}Pb/^{238}U$ ratio on single repeats of 91500 of about 1% (1σ). SL1 (Maas et al., 1992), OGC (Stern et al., 2009), and Phalaborwa baddeleyite (Heaman and LeCheminant, 1993) standards were run as a secondary standards to check on high U counts and the absolute mass fractionation of lead. Correction for in situ common Pb has been made using measured ^{204}Pb counts above that of detector background (0.03–0.08 c.p.s.; 0.2–1.5 ppb) and using modern day composition of common Pb. Uncertainty on this correction (typically, 15 ppb of ^{206}Pb) is included in the calculation of errors on the U/Pb and Pb/Pb ratios. Data were processed

offline using in-house data reduction spreadsheets (R. W. Hinton). Uncertainties on ages quoted in tables for single analyses (ratios and dates) are at the 1σ level. All uncertainties in calculated group age are reported at 95% confidence limits. Plots and age calculations have been made using ISOPLOT (Ludwig, 2003).

LA-ICPMS Hf isotope analyses

The Hf isotopic analysis of zircon was undertaken over five sessions at the GeoHistory facility, JdLC, Curtin University. Previously dated zircon crystals were ablated using a Resonetics RESOlution M-50A-LR, incorporating a Compex 102 excimer laser, coupled to a Nu Plasma II multi-collector inductively coupled plasma mass spectrometer (MC-ICPMS). Following two cleaning pulses and a 45 s period of background analysis, samples were spot ablated for 40 s at a 10 Hz repetition rate using a 50 μm beam and laser energy at the sample surface of 2.0 J cm^{-2}. An additional 15 s of baseline was collected after ablation. The sample cell was flushed with ultrahigh purity He (320 mL min^{-1}) and N_2 (1.2 mL min^{-1}) and high purity Ar was employed as the plasma carrier gas. All isotopes (^{180}Hf, ^{179}Hf, ^{178}Hf, ^{177}Hf, ^{176}Hf, ^{175}Lu, ^{174}Hf, ^{173}Yb, ^{172}Yb, and ^{171}Yb) were counted on the Faraday collector array. Time resolved data was baseline subtracted and reduced using Iolite (DRS after Woodhead et al., 2004), where ^{176}Yb and ^{176}Lu were removed from the 176 mass signal using $^{176}Yb/^{173}Yb = 0.7962$ (Chu et al., 2002) and $^{176}Lu/^{175}Lu = 0.02655$ (Chu et al., 2002) with an exponential law mass bias correction, assuming $^{172}Yb/^{173}Yb = 1.35274$ (Chu et al., 2002). An effective $^{176}Yb/^{173}Yb$ correction factor was determined for each session by iteratively adjusting the $^{176}Yb/^{173}Yb$ ratio until standard corrected ratios on both high Yb (e.g., R33, FC-1) and low Yb (e.g., 91500, GJ-1) zircon reference materials yielded values within the recommended range. No correlation was apparent between the abundance of interfering isotopes (Yb or Lu) and corrected $^{176}Hf/^{177}Hf$ ratios. The interference corrected $^{176}Hf/^{177}Hf$ was normalized to $^{179}Hf/^{177}Hf = 0.7325$ (Patchett and Tatsumoto, 1980) for mass bias correction. Zircons from the Mud Tank carbonatite locality were utilized as the primary reference material and analyzed together with secondary reference zircons Plešoviçe, 91500, GJ-1, and FC-1 zircons and samples in each session (Table A.2). The weighted mean $^{176}Hf/^{177}Hf$ ratio of the primary and secondary standards for these five sessions were within uncertainty of recommended values. The corrected $^{178}Hf/^{177}Hf$ ratio was calculated to monitor the accuracy of the mass bias correction and yielded the average values listed in Table A.3, which are within the range of values reported by Thirlwall and Anczkiewicz (2004). Calculation of ε_{Hf} values employed the decay constant of Scherer et al. (2001) and the Chondritic Uniform Reservoir (CHUR) values of Blichert-Toft and Albarède (1997).

Table A.2. Recommended values for the standard materials used during the Hf analyses

Zircon standard	Recommended $^{176}Hf/^{177}Hf$ ratios
Mud Tank	0.282505±0.000044 (Woodhead and Hergt, 2005)
Plešovice	0.252482±0.000013 (Sláma et al., 2008)
GJ-1	0.282000±0.000005 (Morel et al., 2008)
91500	0.282306±0.000311 (Woodhead et al., 2004)
FC1	0.282172±0.000042 (Woodhead and Hergt, 2005)

Table A.3. Average values of the corrected $^{178}Hf/^{177}Hf$ ratio calculated in each session.

Session		$^{178}Hf/^{177}Hf$ ratios	Samples
1st	14th of October 2018	1.46723 ± 0.000014 (n=100)	OUJ10, OUJ11, BES1, SKH1
2nd	25th of February 2019	1.46708 ± 17 (n=100)	MIM2, OUJ16, AZR10
3rd	28th of February 2019	1.46721 ± 0.000011 (n=100)	OUJ13, OUJ19
4th	7th of August 2019	1.46722 ± 0.0000087 (n=100)	TIF1, TIF2
5th	9th of August 2019	1.46722 ± 0.0000061 (n=100)	OUJ18

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APPENDIX B

Description of the zircon grains (Chapter II, Section II.1)

Sample OUJ2

Zircon grain size in this sample varies from 80 to 200 μm, being 150 μm the average size. The grains are generally whitish or yellowish, with rounded or elongated shapes; their cathodoluminiscence (CL) images show continuous oscillatory zoning; some grains present partially resorbed cores overgrown by high- or low-U rims. Normally, the cores are characterized by higher Th/U ratios than the rims.

Sample OUJ3

The majority of the zircons separated from this sample are elongated or rounded, with white, caramel, or violet colors. Their size varies from 80 to 240 μm, though most of them present a diameter of about 140 μm. Their CL images show continuous oscillatory zoning or partially resorbed cores overgrown by low- o high-U rims; at the same time, the rims generally show lower Th/U ratios than the cores. A few grains show sector zoning.

Sample TAZ2

Zircon grains are elongated or rounded, though most of them are broken and they generally have reddish or dark green colors. Their size varies from 40 to 100 μm, with an average size of 60 μm. CL images of these zircons show continuous oscillatory zoning or partially resorbed cores with low- or high-U rims overgrowth; several grains are unstructured.

Sample TAZ3

The zircon grains in this sample are elongated, though most of them appear broken. Their size varies between 50 and 130 μm, being 80 μm the average size; they are normally whitish or yellowish. CL images show that the internal structure of some of these grains is a continuous oscillatory zoning or consisting in partially resorbed cores overgrown by low- or high-U rims. Several grains are unstructured.

Sample TAZ5

Detrital zircon grains from this sample are variably colored (most of them are whitish or yellowish, but several grains are dark green or red colored); they are rounded and elongated, although some of them seem to be broken. The size varies from 90 to 190 μm, being 130 μm the average diameter. The most common internal structure showed up by the CL images is a continuous oscillatory zoning; nevertheless, there are also a few complex grains with partially resorbed cores overgrown by rims characterized by low- or high-U content and low Th/U ratios.

Sample TAZ6

The grain size of the detrital zircons in this sample varies from 70 to 200 μm, being 130 μm the average size. Under the miscrocope, the grains appear to be rounded or elongated, and mostly whitish or yellowish. CL images of them show continuous oscillatory zoning, sector zoning, or partially resorbed cores overgrown by low- or high-U rims. The rims are also characterized by lower Th/U values than the cores.

Sample AZR2

The zircons separated from this samples appear to have yellowish, reddish or pinkish colors. They are rounded or slightly elongated, the most equidimensional and rounded being generally the clearest. They have a grain size varying from 100 to 200 μm, with an average diameter of around 140 μm. CL images show continuous oscillatory zoning and some composite grains with cores overgrown by low- or high-U rims, also characterized by low Th/U ratios. A few grains appear to be unstructured or with sector zoning.

Sample AZR4

Most of the detrital zircons separated from sample AZR4 are characterized by violet and pink colors, although a few whitish and yellowish grains are also present. Their size varies from 100 to 200 μm, and the average diameter is around 150 μm. From a morphological point of view, they appear to be elongated and often broken. CL images of these zircons show continuous oscillatory zoning or partially resorbed cores with low- or high-U and lower Th/U rims. A few grains present sector zoning.

Sample AZR5

The detrital zircon grains from this sample have an average diameter of 180 μm, though their size varies from 100 to 260 μm. They are generally elongated and pinkish or yellowish in color. Their internal structure, imaged by CL, often presents continuous oscillatory zoning, but a few grains also appear to be composite with partially resorbed cores overgrown by rims with lower Th/U values. A few grains are also characterized by sector zoning.

Sample AZR6

This sample shows zircons generally elongated and whitish, yellowish or pinkish in color. Their size varies from 120 to 260 μm, being 160 μm the average diameter. CL images show that most of these zircons appear to be characterized by continuous oscillatory zoning or partially resorbed cores overgrown by low- or high-U rims; a few grains show however sector zoning. Where present, the rims are usually characterized by lower Th/U values than the cores.

Appendix C

Cathodoluminescence images

Chapter II, Section II.3

El Mansouria area

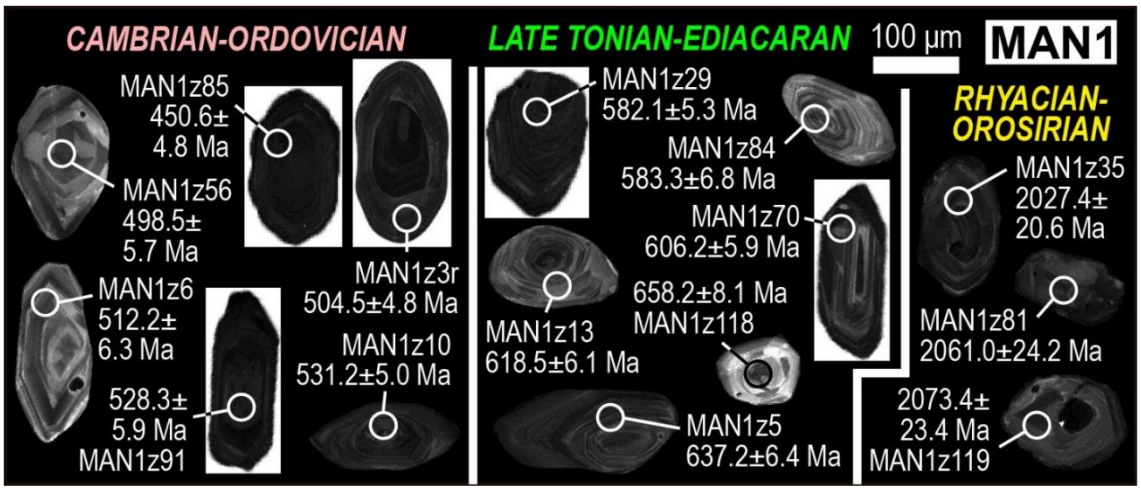

Figure C.1. Cathodoluminescence images of selected detrital zircon grains from the Early Ordovician sample MAN1 (IGSN: IEACC0040), accompanied by the result of the corresponding U-Pb analysis.

Oued Akreuch area

Figure C.2. Cathodoluminescence images of selected detrital zircon grains from the Late Ordovician samples AKR1 (IGSN: IEACC0038) and Early Ordovician sample AKR2 (IGSN: IEACC0039), accompanied by the result of the corresponding U-Pb analysis.

Ezzhiliga area

Figure C.3. Cathodoluminescence images of selected detrital zircon grains from the Late Ordovician samples EZ1 (IGSN: IEACC0032) and EZ2 (IGSN: IEACC0033), accompanied by the result of the corresponding U-Pb analysis.

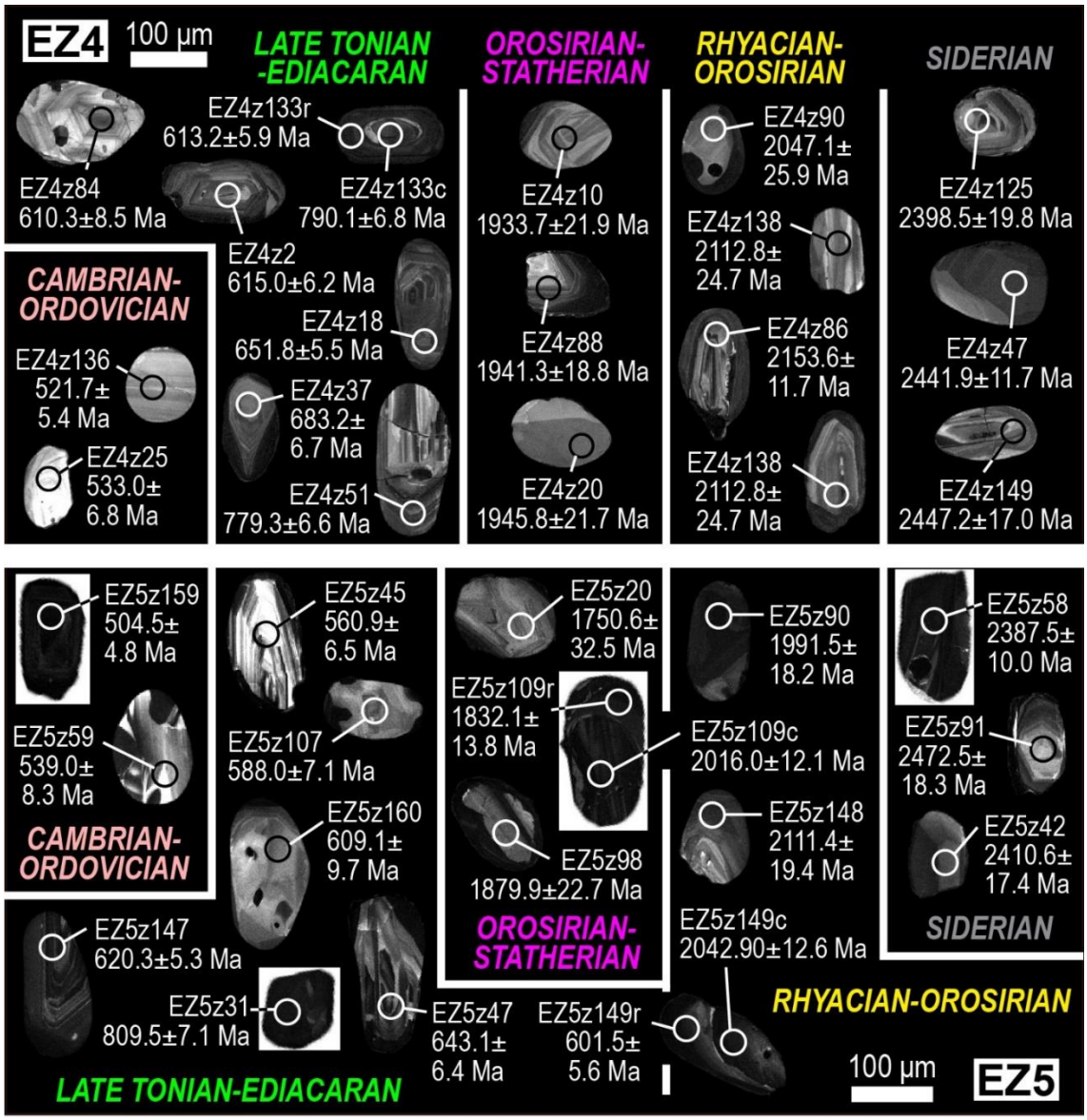

Figure C.4. Cathodoluminescence images of selected detrital zircon grains from the Middle-Late Ordovician sample EZ4 (IGSN: IEACC0034) and Late Ordovician sample EZ5 (IGSN: IEACC0035), accompanied by the result of the corresponding U-Pb analysis.

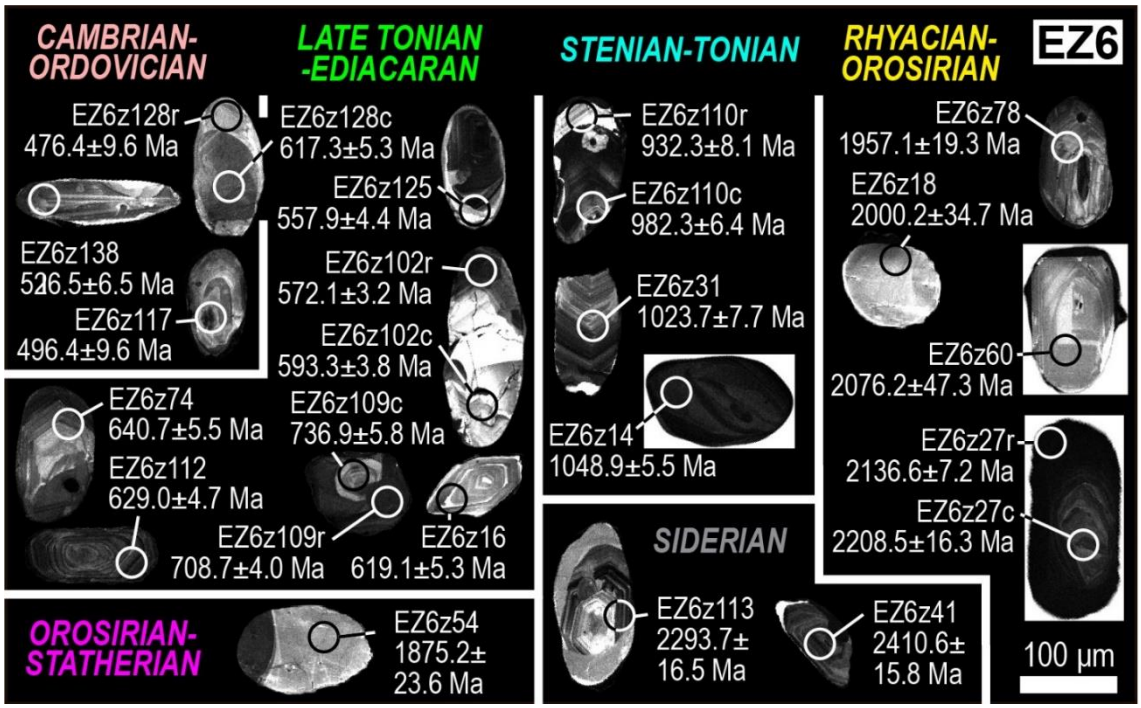

Figure C.5. Cathodoluminescence images of selected detrital zircon grains from the Late Ordovician sample EZ6 (IGSN: IEACC0036), accompanied by the result of the corresponding U-Pb analysis.

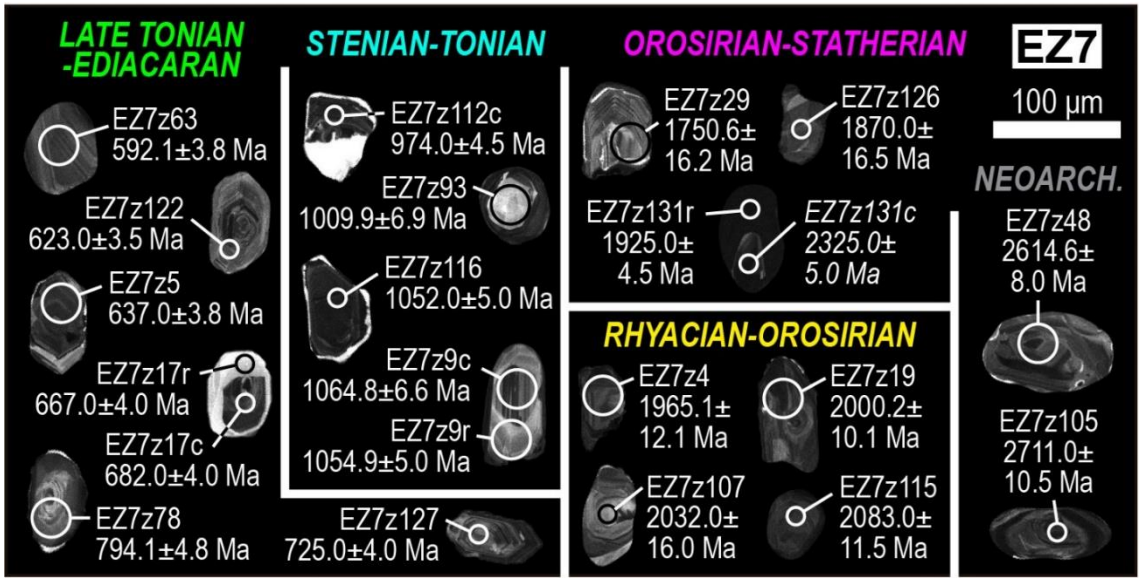

Figure C.6. Cathodoluminescence images of selected detrital zircon grains from the Early Devonian sample EZ7 (IGSN: IEACC0037), accompanied by the result of the corresponding U-Pb analysis.

Azrou area

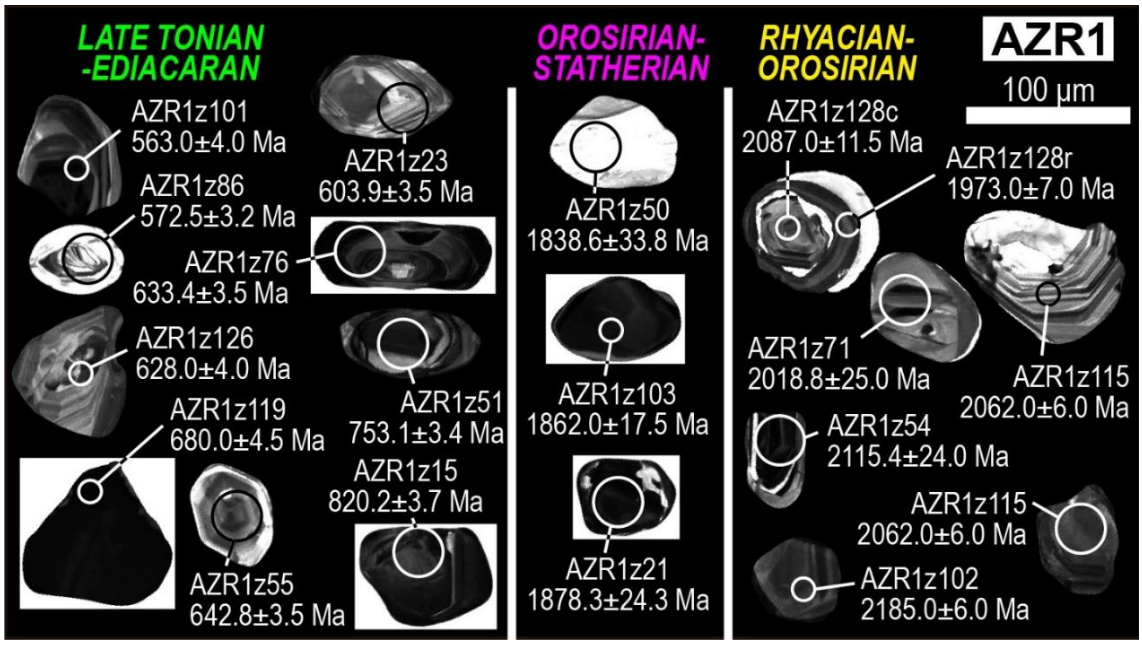

Figure C.7. Cathodoluminescence images of selected detrital zircon grains from the Late Ordovician sample AZR1 (IGSN: IEACC0023), accompanied by the result of the corresponding U-Pb analysis.

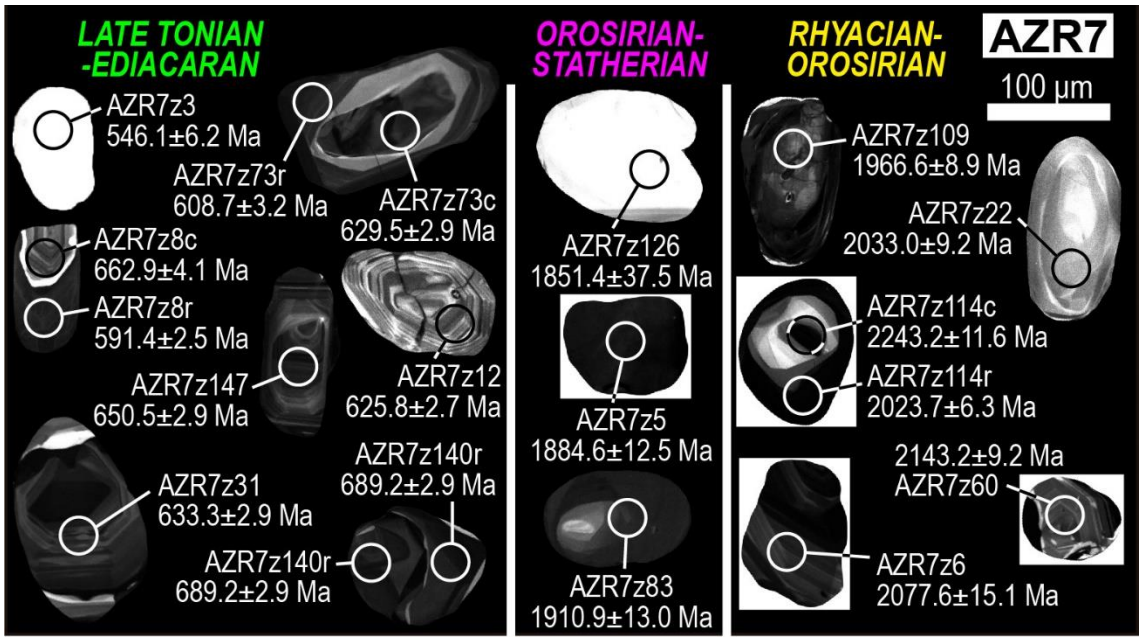

Figure C.8. Cathodoluminescence images of selected detrital zircon grains from the Early Devonian sample AZR7 (IGSN: IEACC0028), accompanied by the result of the corresponding U-Pb analysis.

Khenifra area

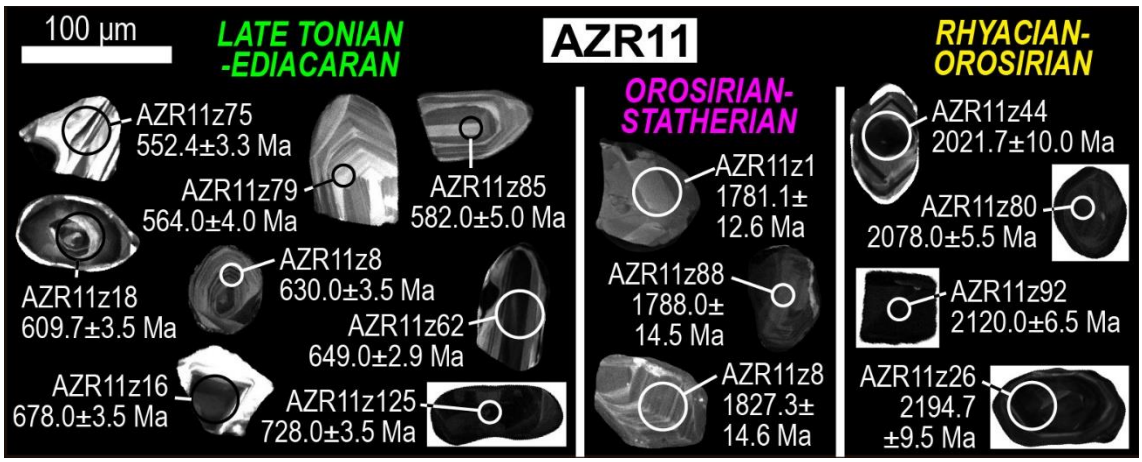

Figure C.9. Cathodoluminescence images of selected detrital zircon grains from the Cambrian-Ordovician sample AZR11 (IGSN: IEACC0030), accompanied by the result of the corresponding U-Pb analysis.

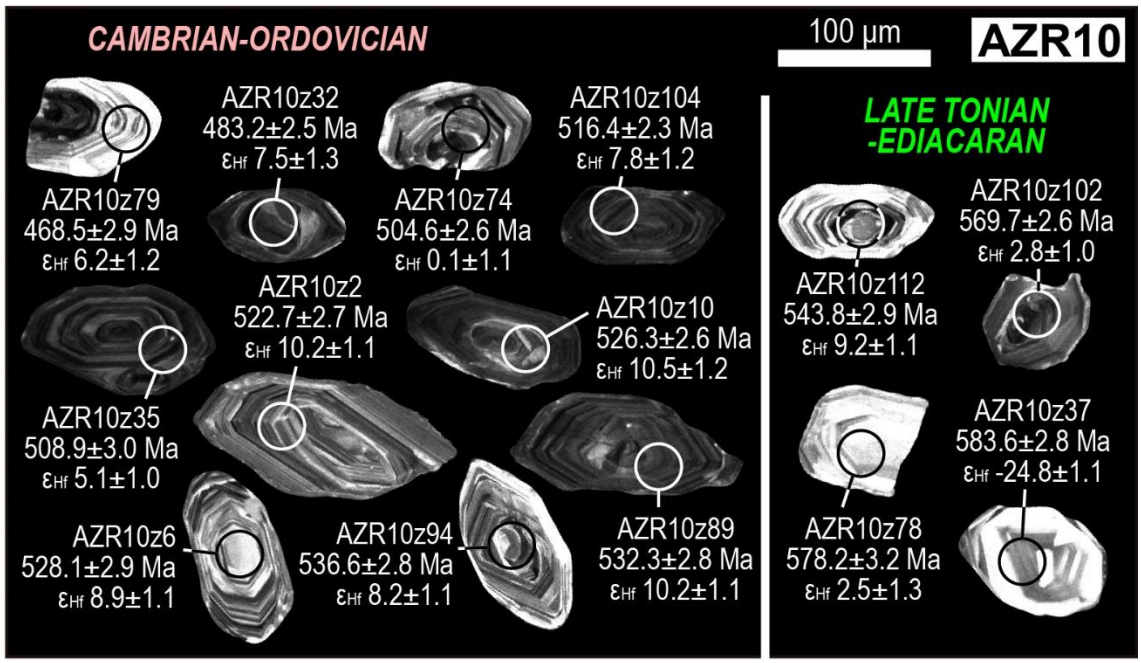

Figure C.10. Cathodoluminescence images of selected detrital zircon grains from the Early-Middle Ordovician sample AZR10 (IGSN: IEACC0029), accompanied by the result of the corresponding U-Pb and Hf analyses.

Zekkara area

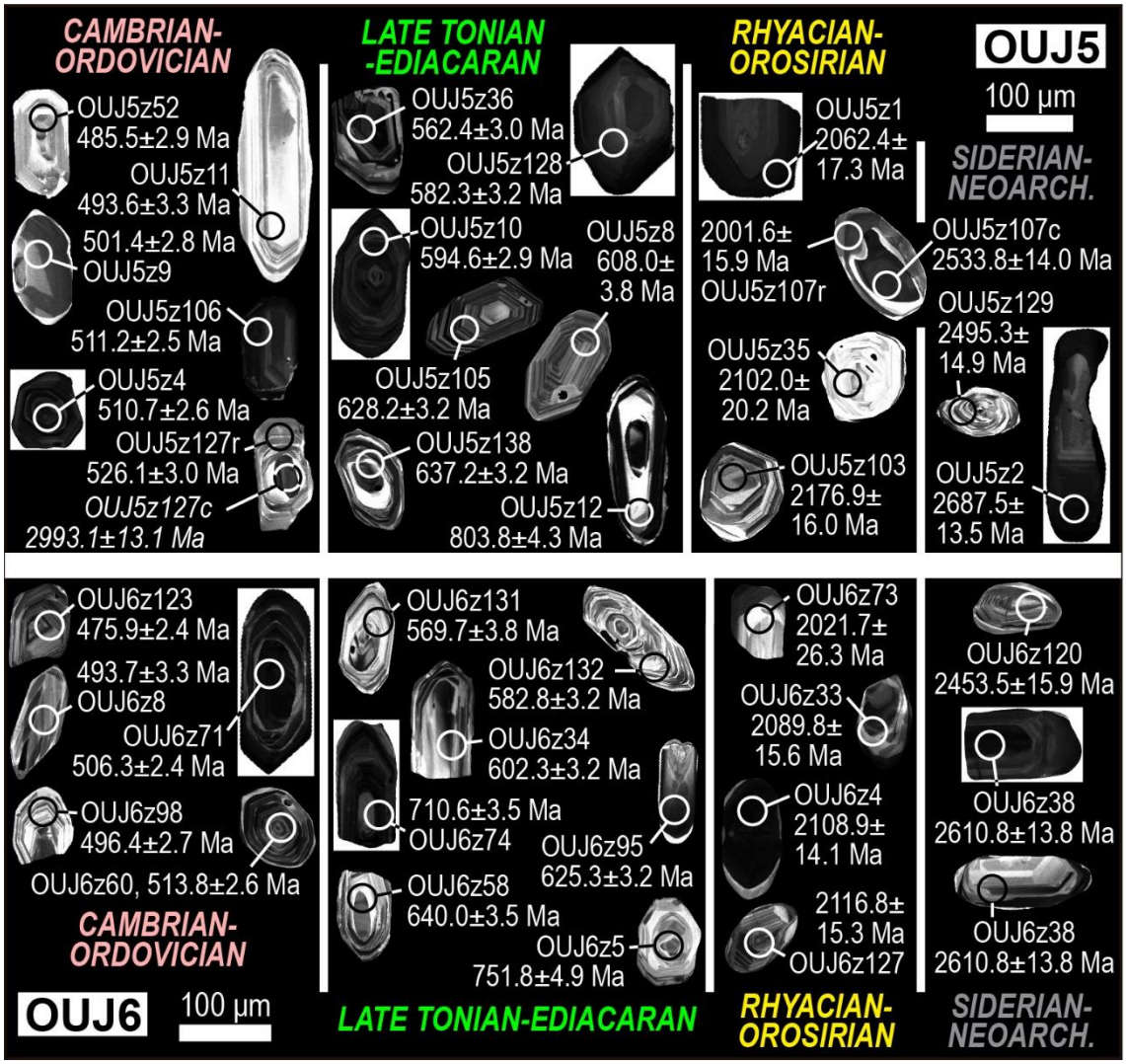

Figure C.11. Cathodoluminescence images of selected detrital zircon grains from the Early-Middle Ordovician samples OUJ5 (IGSN: IEACC0021) and OUJ6 (IGSN: IEACC0022), accompanied by the result of the corresponding U-Pb analysis.

Oulmes area

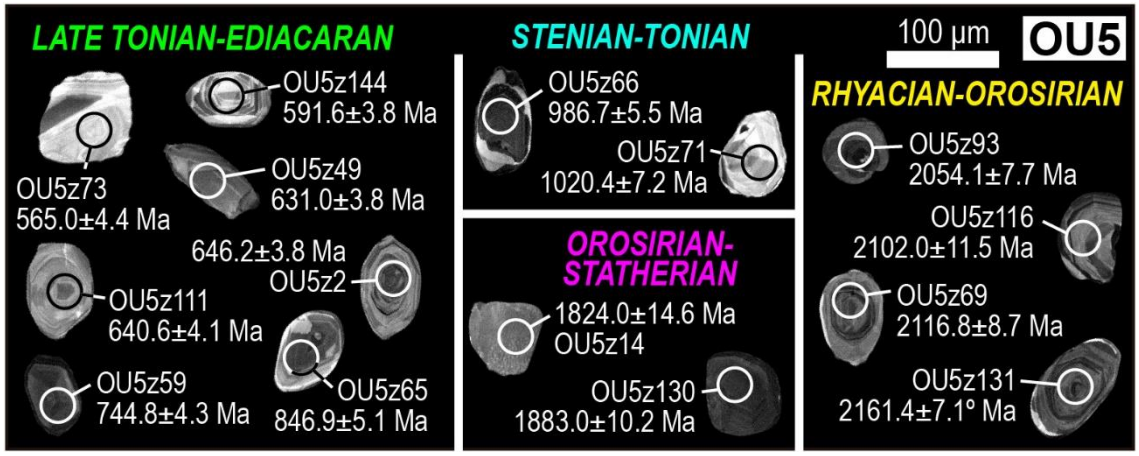

Figure C.12. Cathodoluminescence images of selected detrital zircon grains from the Early Devonian sample OU5 (IGSN: IEACC0031), accompanied by the result of the corresponding U-Pb analysis and, when available, Hf analyses.

Chapter III

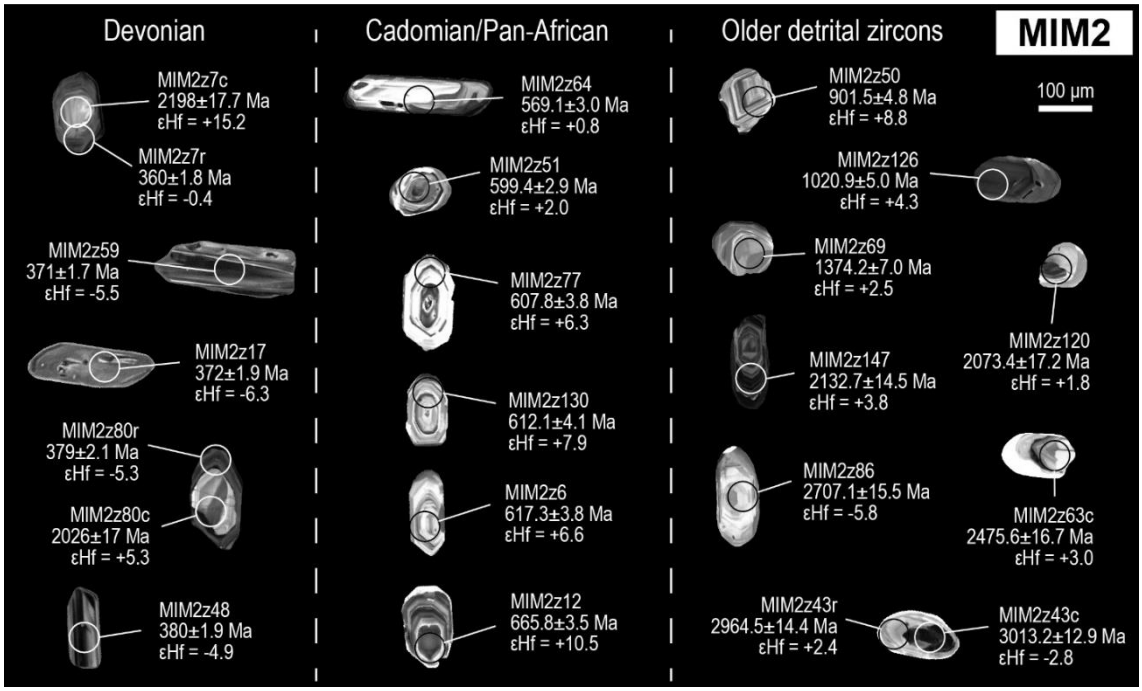

Figure C.13. Cathodoluminescence images of selected detrital zircon grains from sample MIM2 (IGSN: IEACC0004), accompanied by the result of the corresponding U-Pb and Hf analyses.

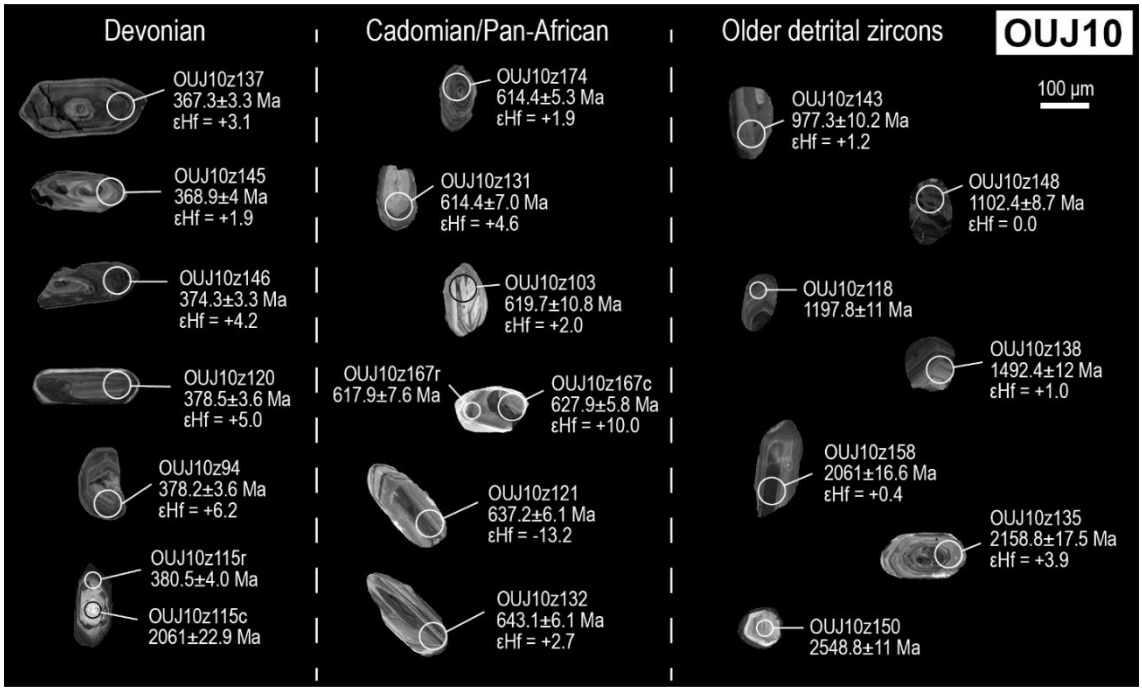

Figure C.14. Cathodoluminescence images of selected detrital zircon grains from sample OUJ10 (IGSN: IEACC0001), accompanied by the result of the corresponding U-Pb and, when available, Hf analyses.

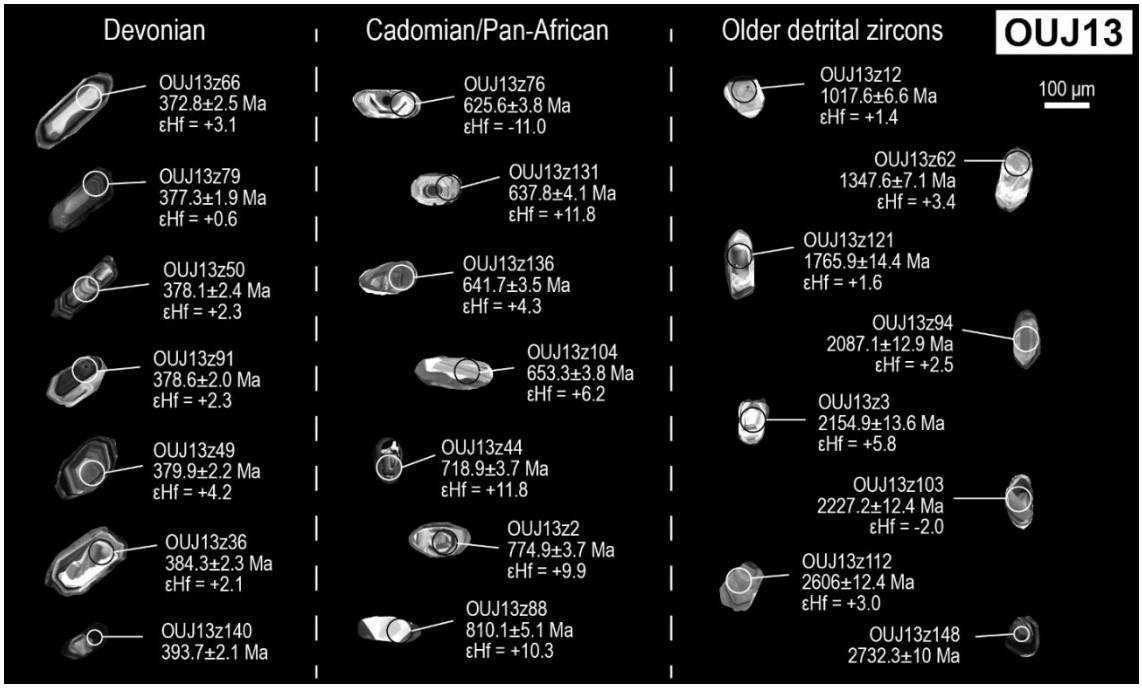

Figure C.15. Cathodoluminescence images of selected detrital zircon grains from sample OUJ11 (IGSN: IEACC0002), accompanied by the result of the corresponding U-Pb and Hf analyses.

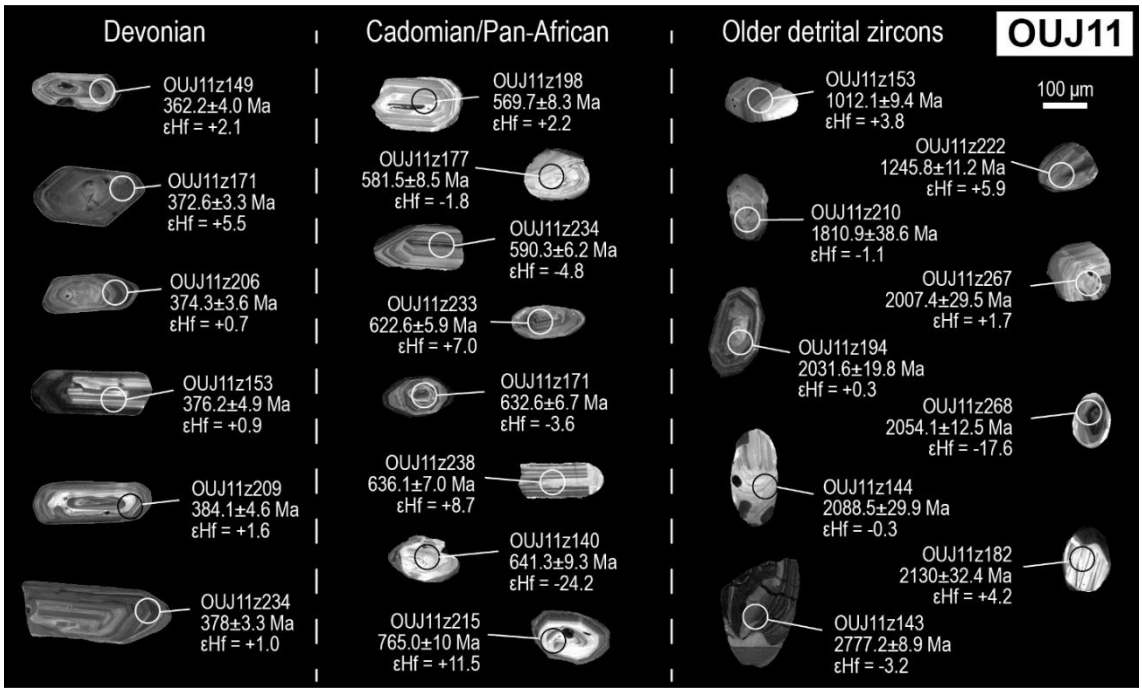

Figure C.16. Cathodoluminescence images of selected detrital zircon grains from sample OUJ13 (IGSN: IEACC0003), accompanied by the result of the corresponding U-Pb and Hf analyses.

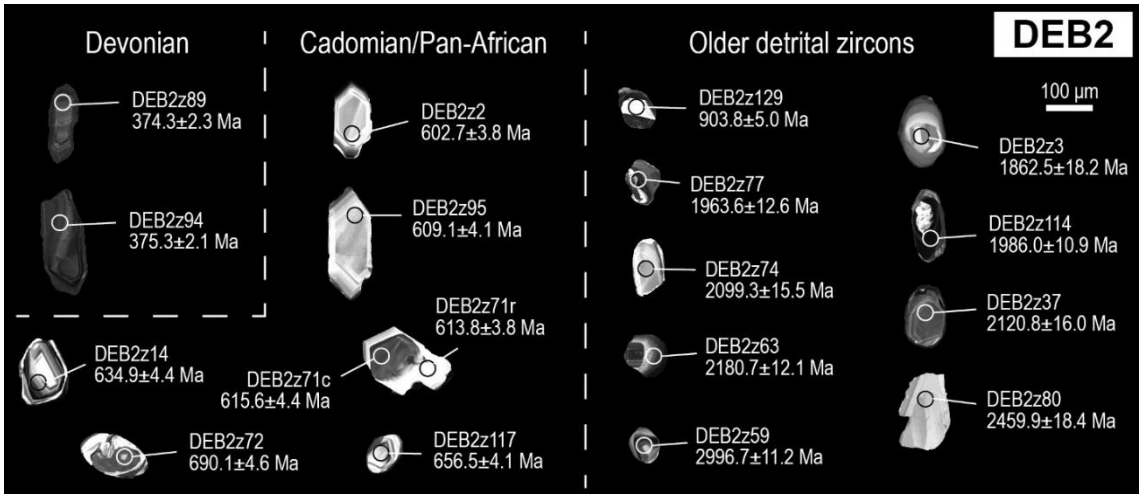

Figure C.17. Cathodoluminescence images of selected detrital zircon grains from sample DEB2 (IGSN: IEACC0005), accompanied by the result of the corresponding U-Pb analyses.

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Ben Slimane area

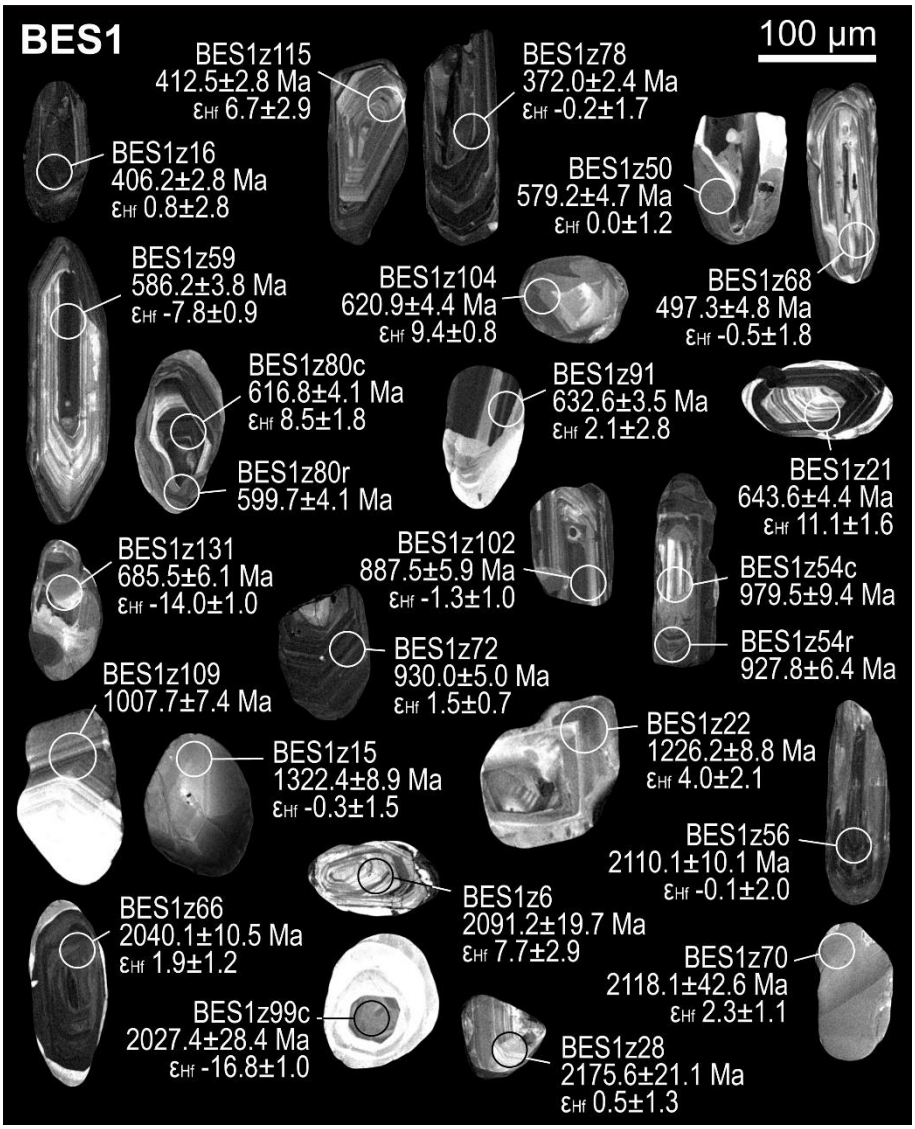

Figure C.18. Cathodoluminescence images of selected detrital zircon grains from the Visean sample BES1 (IGSN: IEACC0009), accompanied by the result of the corresponding U-Pb analyses and, when available, Hf analyses.

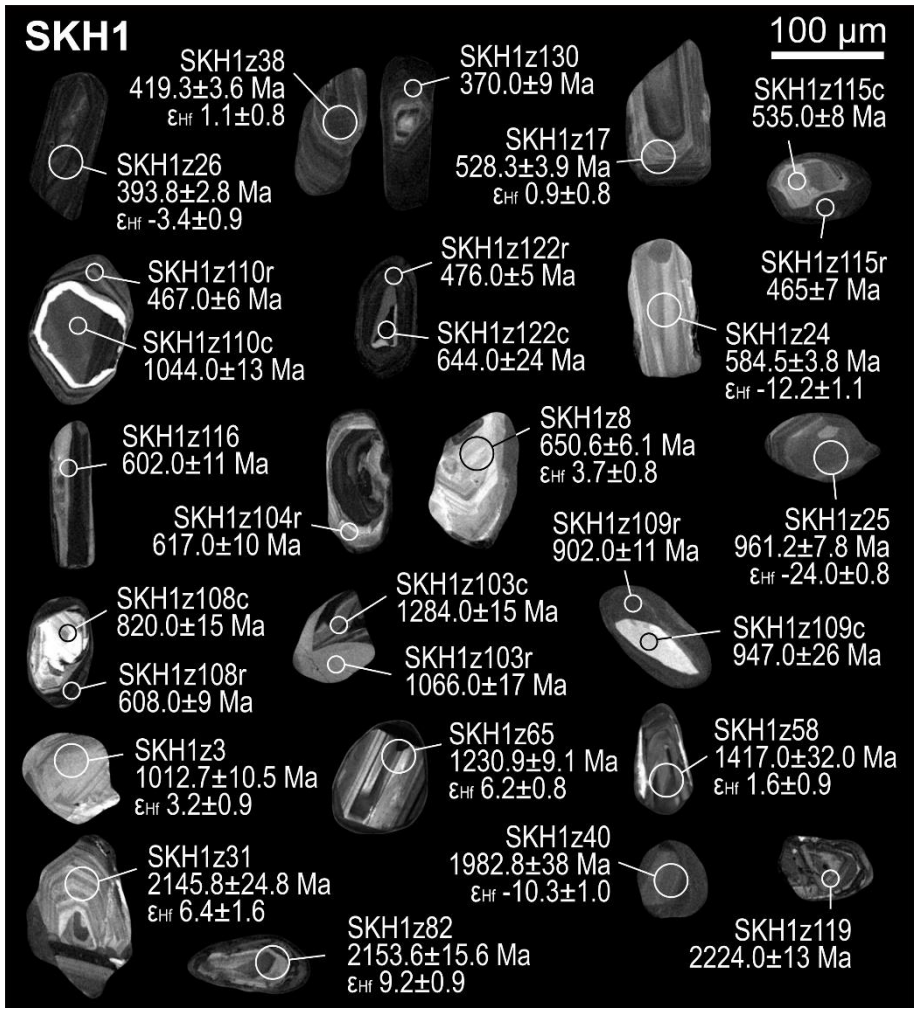

Figure C.19. Cathodoluminescence images of selected detrital zircon grains from the Visean sample SKH1 (IGSN: IEACC0011), accompanied by the result of the corresponding U-Pb analyses and, when available, Hf analyses.

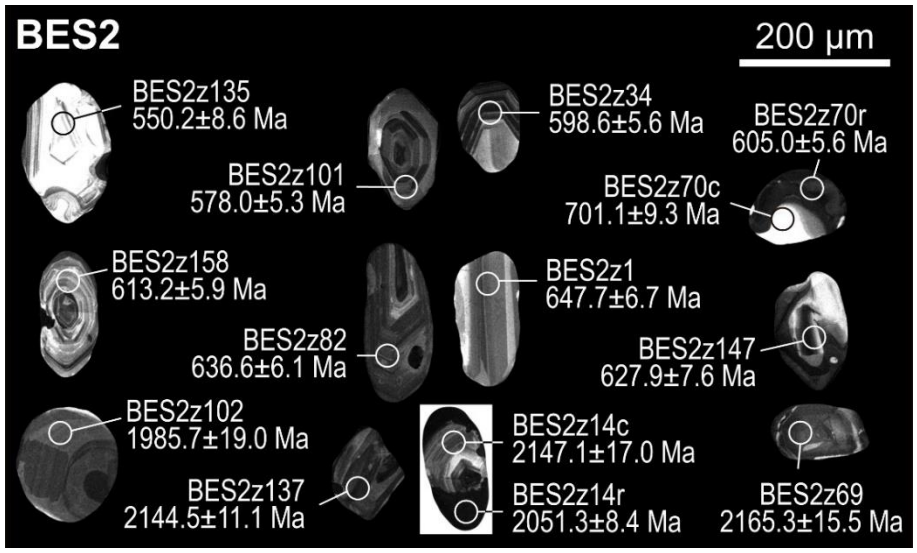

Figure C.20. Cathodoluminescence images of selected detrital zircon grains from the Famennian sample BES2 (IGSN: IEACC0010), accompanied by the result of the corresponding U-Pb analyses.

Sidi Bettache area

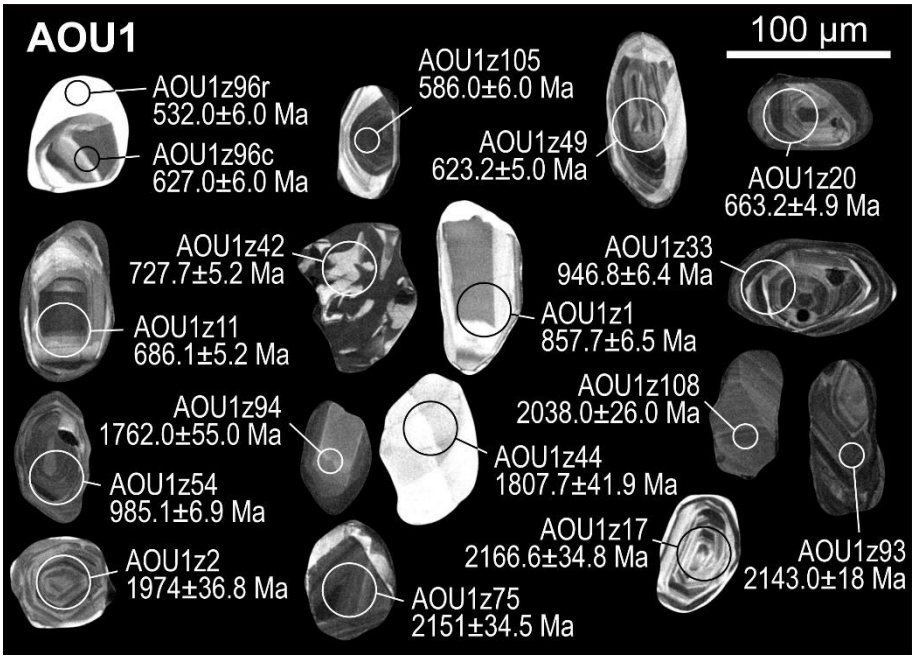

Figure C.21. Cathodoluminescence images of selected detrital zircon grains from the Visean sample AOU1 (IGSN: IEACC0013), accompanied by the result of the corresponding U-Pb analyses.

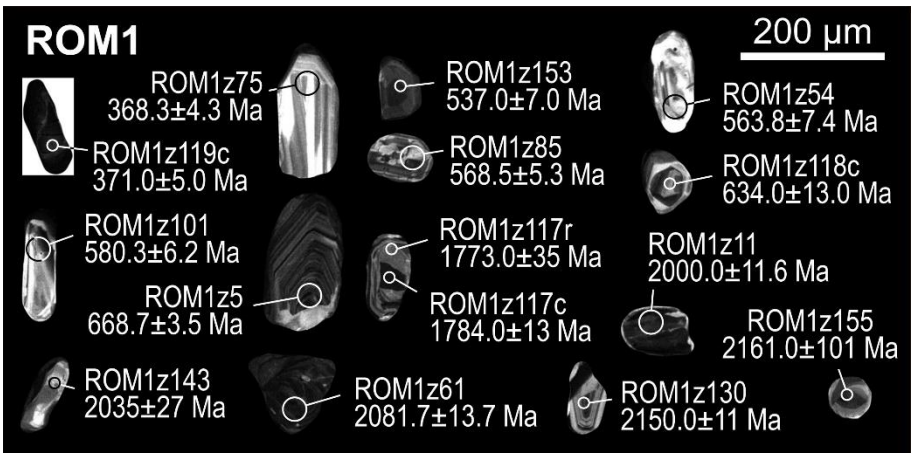

Figure C.22. Cathodoluminescence images of selected detrital zircon grains from the Visean sample ROM1 (IGSN: IEACC0012), accompanied by the result of the corresponding U-Pb analyses.

Tiflet area

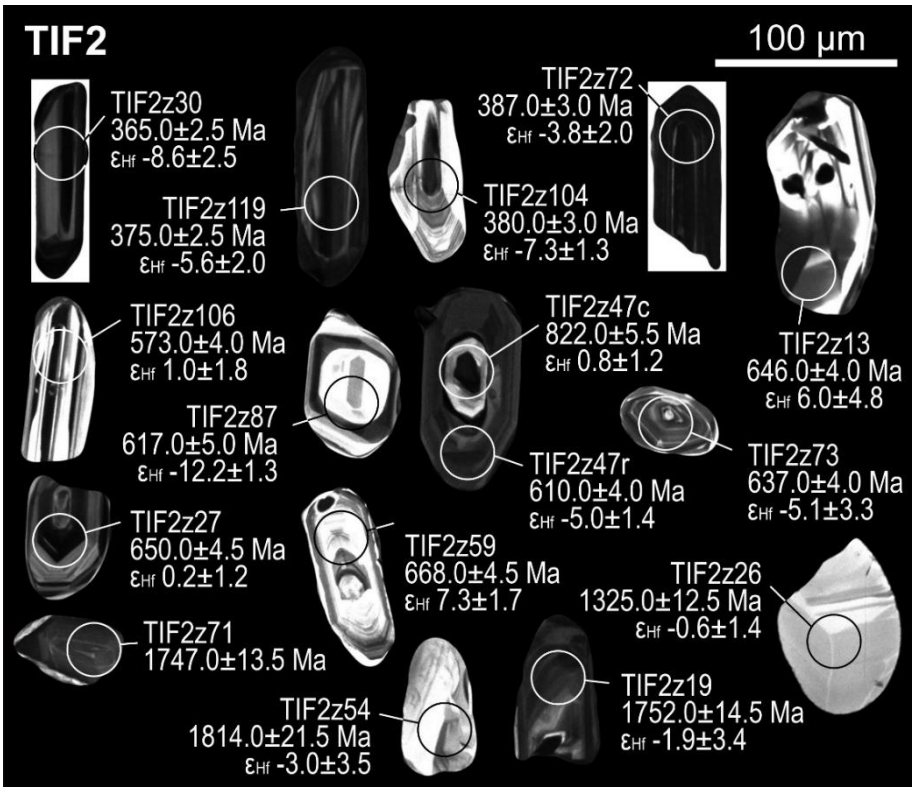

Figure C.23. Cathodoluminescence images of selected detrital zircon grains from the Tournaisian sample TIF2 (IGSN: IEACC0017), accompanied by the result of the corresponding U-Pb analyses and, when available, Hf analyses.

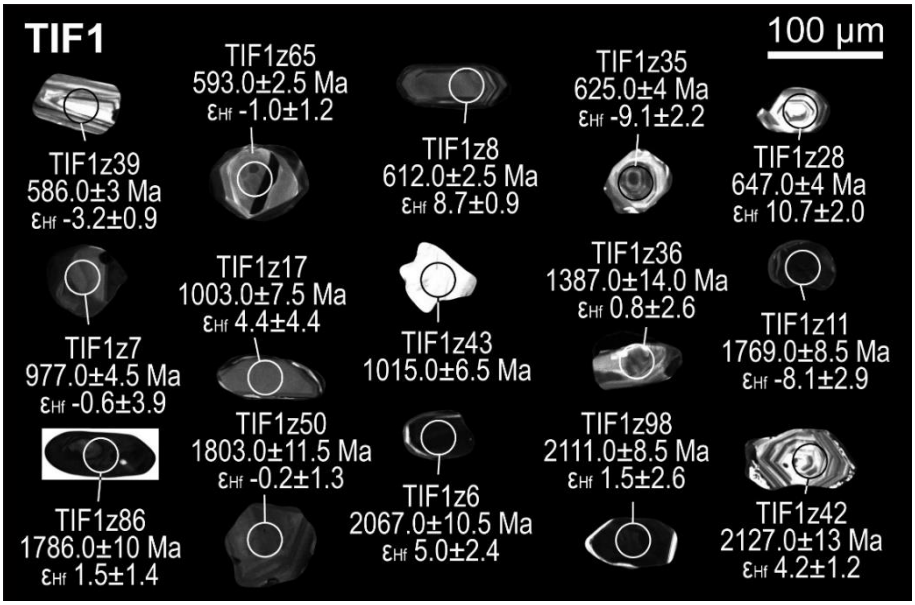

Figure C.24. Cathodoluminescence images of selected detrital zircon grains from the Tournaisian sample TIF1 (IGSN: IEACC0016), accompanied by the result of the corresponding U-Pb and Hf analyses.

Oulmes area

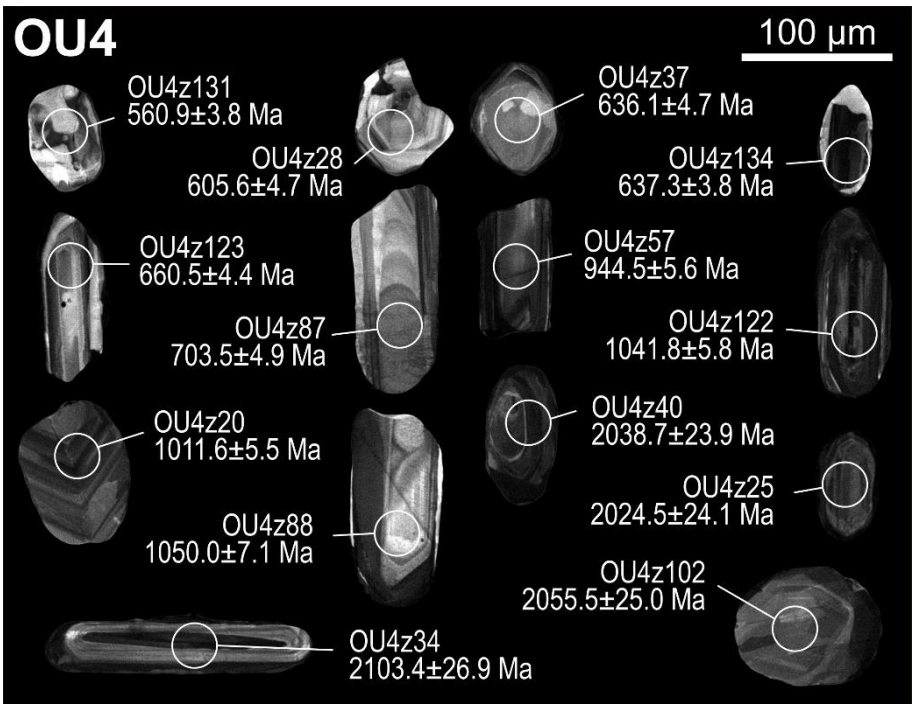

Figure C.25. Cathodoluminescence images of selected detrital zircon grains from the Famennian sample OU4 (IGSN: IEACC0015), accompanied by the result of the corresponding U-Pb analyses.

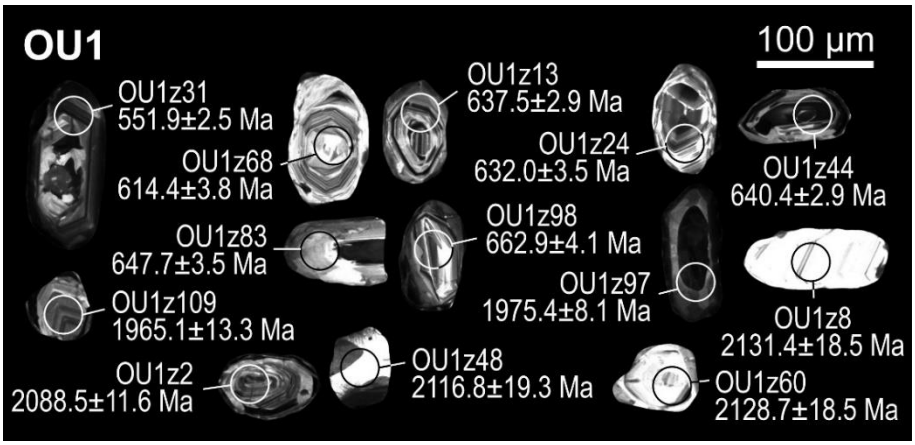

Figure BC.26. Cathodoluminescence images of selected detrital zircon grains from the Late Visean sample OU1 (IGSN: IEACC0014), accompanied by the result of the corresponding U-Pb analyses.

Jerada area

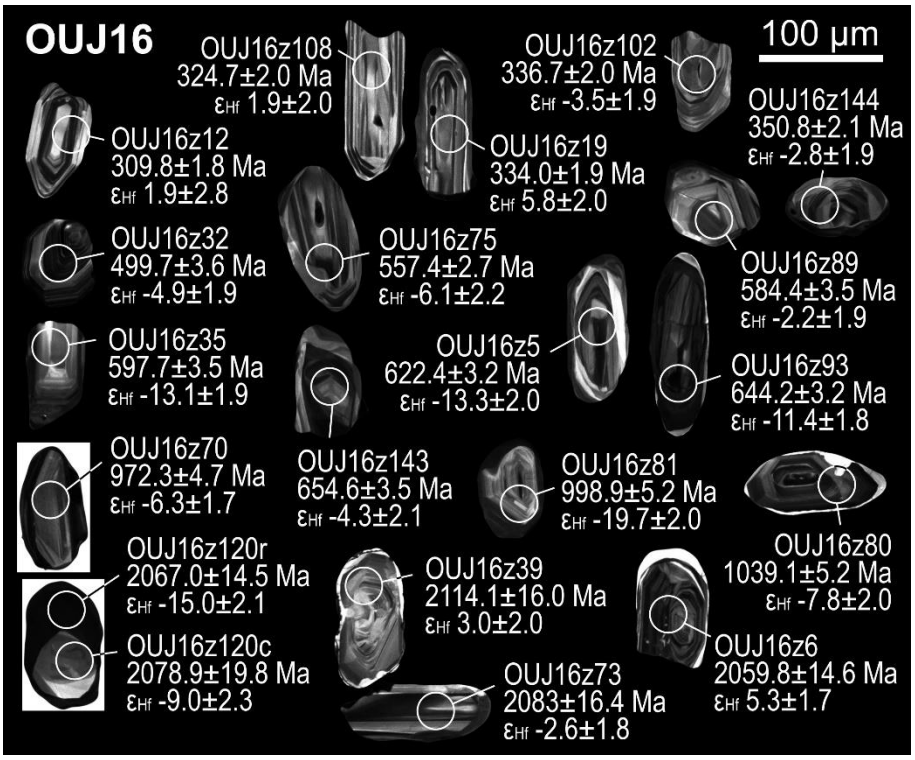

Figure C.27. Cathodoluminescence images of selected detrital zircon grains from the Middle Carboniferous sample OUJ16 (IGSN: IEACC0018), accompanied by the result of the corresponding U-Pb and Hf analyses.

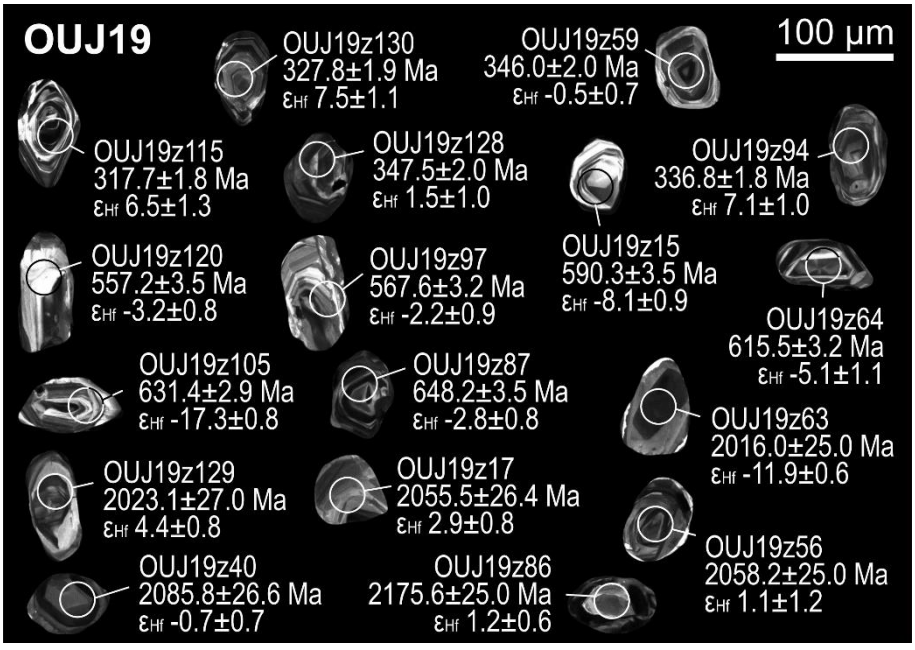

Figure C.28. Cathodoluminescence images of selected detrital zircon grains from the Late Carboniferous sample OUJ19 (IGSN: IEACC0020), accompanied by the result of the corresponding U-Pb and Hf analyses.

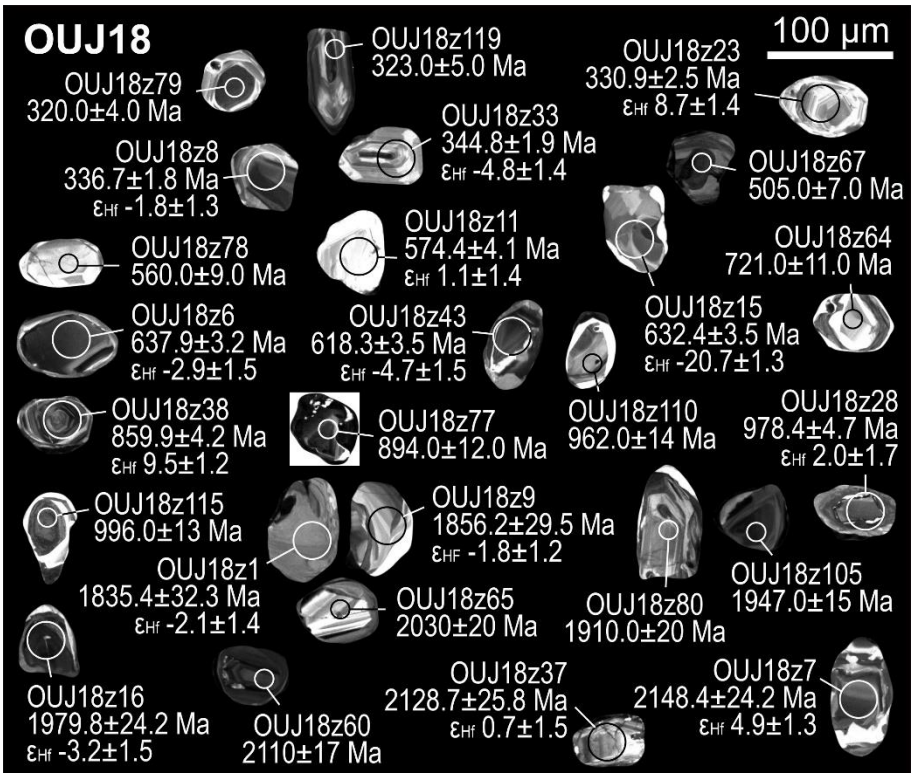

Figure C.29. Cathodoluminescence images of selected detrital zircon grains from the Late Carboniferous sample OUJ18 (IGSN: IEACC0019), accompanied by the result of the corresponding U-Pb analyses and, when available, Hf analyses.

Appendix D

Results of the U-Pb analyses

Chapter II –	***Section II.1: Table D.1 to D.10***
	Section II.2: Table D.11 to D.13b
	Section II.3: Table D.14 to D.29
Chapter III –	***Tables D.30 to D.34***
Chapter IV –	***Tables D.35 to D.46***

Table D.1: Sample OUJ2 (LA-ICPMS)

IGSN: IEACC0045 Coordinate UTM: Zone 30S, 582303 m E, 3834439 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ2z1	148.00	90.00	44.80	0.495	-1.20E+05	2.30E+05	0.1192	0.0024	5.040	0.270	0.3110	0.0170	0.9198	1951	21.5	43	1821	22.0	44	1742	41.5	83	96
OUJ2z3r	782.00	38.00	10.82	0.046	3.20E+05	5.50E+05	0.0612	0.0015	0.798	0.019	0.0961	0.0027	0.2029	646	24.5	49	597	5.5	11	592	8.0	16	99
OUJ2z4c	346.00	171.40	210.70	0.484	-8.00E+06	1.20E+06	0.1798	0.0019	11.740	0.160	0.4781	0.0130	0.5388	2653	13.5	27	2583	6.5	13	2522	28.5	57	98
OUJ2z4r	252.00	183.00	209.00	0.653	-4.40E+05	9.70E+05	0.1720	0.0027	10.560	0.320	0.4492	0.0150	0.8520	2579	16.5	33	2481	14.0	28	2390	33.0	66	96
OUJ2z5	99.80	88.00	21.90	0.846	7.00E+04	4.80E+04	0.0622	0.0047	0.721	0.056	0.0852	0.0030	0.1005	650	75.0	150	555	16.0	32	529	8.5	17	95
OUJ2z6	86.50	154.00	148.00	1.716	-1.90E+05	2.90E+05	0.1279	0.0036	6.710	0.190	0.3785	0.0110	0.2218	2070	25.5	51	2071	12.5	25	2073	25.0	50	100
OUJ2z7	39.80	53.00	44.90	1.259	-2.70E+04	7.80E+04	0.1136	0.0053	5.020	0.210	0.3267	0.0100	0.1360	1843	44.5	89	1827	19.0	38	1822	25.5	51	100
OUJ2z8	161.00	174.00	47.80	1.002	-3.00E+05	1.10E+05	0.0640	0.0029	0.878	0.039	0.1020	0.0030	0.1168	720	50.0	100	638	10.5	21	626	9.0	18	98
OUJ2z9	554.00	407.00	112.10	0.703	-2.00E+05	2.00E+05	0.0614	0.0019	0.825	0.025	0.0983	0.0028	0.2166	646	35.0	70	610	7.0	14	604	8.0	16	99
OUJ2z10	28.94	48.70	12.99	1.642	-2.00E+04	1.60E+04	0.0680	0.0100	0.890	0.130	0.0972	0.0050	0.0317	700	150.0	300	642	34.5	69	597	14.5	29	93
OUJ2z11	169.00	319.00	85.30	1.810	6.70E+04	7.70E+04	0.0565	0.0034	0.765	0.046	0.0989	0.0031	0.1722	480	65.0	130	577	13.0	26	608	9.0	18	105
OUJ2z12	179.20	146.00	55.10	0.755	-1.00E+06	1.60E+05	0.0614	0.0031	0.984	0.051	0.1142	0.0037	0.2464	670	50.0	100	692	13.0	26	697	10.5	21	101
OUJ2z13	250.80	260.10	63.80	0.995	2.00E+05	1.30E+05	0.0602	0.0030	0.705	0.037	0.0865	0.0026	0.5351	570	55.0	110	543	11.5	23	535	7.5	15	98
OUJ2z15	558.00	546.00	162.90	0.962	2.40E+05	2.30E+05	0.0652	0.0019	0.912	0.027	0.1030	0.0029	0.1281	776	32.0	64	660	7.5	15	633	9.0	18	96
OUJ2z16	181.20	147.20	41.20	0.781	-7.00E+05	1.20E+05	0.0560	0.0025	0.755	0.035	0.0974	0.0031	0.0686	494	49.0	98	572	10.0	20	599	9.0	18	105
OUJ2z17	412.00	363.00	450.00	0.901	-4.00E+06	1.20E+06	0.1720	0.0022	11.390	0.160	0.4843	0.0140	0.5217	2579	14.5	29	2555	6.5	13	2546	29.5	59	100
OUJ2z18	131.00	105.00	27.80	0.774	-2.90E+04	7.10E+04	0.0582	0.0042	0.748	0.050	0.0930	0.0030	0.0359	520	70.0	140	562	15.0	30	573	9.0	18	102
OUJ2z19	608.00	367.00	107.20	0.579	-9.00E+05	2.70E+05	0.0603	0.0016	0.862	0.024	0.1045	0.0029	0.2977	619	29.0	58	630	6.5	13	641	8.5	17	102
OUJ2z20	246.00	142.90	38.20	0.561	6.00E+05	1.80E+05	0.0621	0.0025	0.819	0.034	0.0952	0.0030	0.1606	683	45.0	90	605	9.5	19	586	9.0	18	97
OUJ2z21	533.00	206.60	219.40	0.375	6.20E+05	9.90E+05	0.1574	0.0017	9.073	0.097	0.4182	0.0120	0.5332	2432	13.5	27	2345	4.9	10	2252	26.5	53	96
OUJ2z22	352.00	266.50	78.10	0.735	-1.20E+05	1.40E+05	0.0594	0.0019	0.828	0.023	0.1007	0.0029	-0.0316	574	34.5	69	612	6.5	13	619	8.5	17	101
OUJ2z24	125.60	82.30	21.97	0.628	-7.00E+04	6.40E+04	0.0624	0.0042	0.781	0.053	0.0911	0.0028	0.1364	690	65.0	130	592	13.5	27	562	8.5	17	95
OUJ2z25	66.50	99.80	77.40	1.451	-1.10E+05	1.20E+05	0.1167	0.0045	4.820	0.200	0.2990	0.0100	0.2868	1920	37.0	74	1781	17.5	35	1685	25.0	50	95
OUJ2z26	43.10	58.40	16.55	1.337	-1.30E+04	2.30E+04	0.0648	0.0086	0.870	0.110	0.0981	0.0039	-0.0056	700	130.0	260	643	30.0	60	603	11.5	23	94
OUJ2z27	190.20	144.80	39.40	0.743	2.90E+04	8.70E+04	0.0584	0.0033	0.795	0.046	0.0978	0.0030	0.0964	540	60.0	120	590	13.0	26	602	9.0	18	102
OUJ2z28	230.00	272.00	90.90	1.068	-1.20E+05	1.50E+05	0.0643	0.0021	1.047	0.036	0.1187	0.0035	0.3498	756	34.0	68	726	9.0	18	723	10.0	20	100
OUJ2z29	232.00	82.40	47.00	0.350	3.40E+05	3.50E+05	0.0815	0.0019	2.332	0.055	0.2110	0.0061	0.3519	1224	23.0	46	1220	8.5	17	1234	16.0	32	101
OUJ2z30c	48.60	45.00	14.40	0.867	-1.10E+05	1.10E+05	0.0670	0.0064	0.956	0.093	0.1063	0.0047	0.3136	760	95.0	190	668	24.5	49	651	13.5	27	97
OUJ2z30r	36.81	18.81	5.85	0.487	-1.40E+04	2.30E+04	0.0694	0.0063	0.930	0.100	0.1006	0.0042	0.3527	850	105.0	210	679	26.0	52	618	12.5	25	91
OUJ2z31c	148.20	81.80	94.20	0.538	-4.30E+05	3.20E+05	0.1690	0.0030	10.630	0.180	0.4545	0.0130	0.4360	2559	18.0	36	2490	8.0	16	2415	29.0	58	97
OUJ2z31r	348.00	116.80	120.90	0.323	-9.00E+06	1.10E+06	0.1302	0.0017	6.612	0.084	0.3726	0.0100	0.3522	2116	15.5	31	2060	5.5	11	2041	24.5	49	99
OUJ2z32c	137.40	146.90	161.80	1.018	2.10E+05	3.90E+05	0.1580	0.0039	8.650	0.220	0.4004	0.0120	0.2073	2446	23.0	46	2299	11.5	23	2170	28.0	56	94
OUJ2z32r	101.40	162.40	156.30	1.546	-1.20E+05	1.70E+05	0.1205	0.0032	6.230	0.180	0.3788	0.0120	0.2622	1986	25.0	50	2009	12.0	24	2070	27.0	54	103
OUJ2z33	297.00	275.00	271.00	0.894	4.00E+05	7.20E+05	0.1337	0.0022	6.940	0.180	0.3807	0.0130	0.7538	2168	17.5	35	2100	11.5	23	2078	30.5	61	99
OUJ2z34	149.30	59.80	58.70	0.389	6.00E+05	2.60E+05	0.1327	0.0027	6.990	0.150	0.3843	0.0110	0.4299	2150	21.0	42	2111	9.5	19	2096	26.5	53	99
OUJ2z35c	64.90	22.50	9.22	0.340	-3.70E+04	3.30E+04	0.0715	0.0057	1.290	0.110	0.1306	0.0047	0.3223	900	85.0	170	826	24.5	49	791	13.5	27	96
OUJ2z35r	406.00	5.10	6.40	0.010	2.10E+05	3.70E+05	0.0632	0.0024	0.984	0.033	0.1128	0.0033	0.1013	719	40.5	81	697	9.0	18	689	9.5	19	99
OUJ2z36	96.10	48.10	60.90	0.507	-2.00E+05	2.40E+05	0.1684	0.0036	11.430	0.310	0.4944	0.0150	0.5299	2559	21.0	42	2556	12.5	25	2589	32.0	64	101
OUJ2z37	440.00	327.00	210.60	0.728	1.20E+05	4.70E+05	0.0894	0.0015	2.940	0.056	0.2434	0.0069	0.2999	1415	14.5	29	1394	7.0	14	1404	18.0	36	101
OUJ2z38	80.50	29.66	9.03	0.356	1.20E+04	3.00E+04	0.0604	0.0062	0.755	0.083	0.0904	0.0030	0.2652	480	105.0	210	559	23.0	46	558	9.0	18	100
OUJ2z39	464.00	365.00	101.30	0.767	2.00E+05	1.80E+05	0.0596	0.0020	0.813	0.026	0.1005	0.0029	0.2231	592	36.5	73	606	7.0	14	617	8.5	17	102
OUJ2z40	42.20	78.90	71.60	1.799	-2.00E+05	1.00E+05	0.1286	0.0066	5.820	0.330	0.3345	0.0120	0.3494	2074	47.0	94	1955	24.5	49	1865	29.0	58	95
OUJ2z41	298.00	355.00	98.60	1.164	-6.00E+05	1.70E+05	0.0595	0.0027	0.810	0.035	0.0998	0.0029	0.0402	582	49.5	99	600	10.0	20	613	8.5	17	102
OUJ2z42	219.00	194.00	60.20	0.851	1.00E+06	1.20E+06	0.0621	0.0027	0.994	0.046	0.1149	0.0037	0.2415	680	45.5	91	702	12.0	24	701	11.0	22	100
OUJ2z43	180.20	91.20	85.20	0.491	-7.00E+06	1.10E+06	0.1202	0.0024	6.030	0.140	0.3687	0.0110	0.4675	1985	20.5	41	1980	10.0	20	2023	24.5	49	102
OUJ2z44	171.90	79.90	25.17	0.454	1.90E+05	2.80E+05	0.0646	0.0030	1.027	0.043	0.1153	0.0034	0.0255	780	50.0	100	719	11.5	23	705	10.0	20	98
OUJ2z45	450.00	49.00	17.62	0.111	1.90E+05	3.70E+05	0.0629	0.0015	0.921	0.027	0.1076	0.0032	0.5202	705	25.0	50	662	7.0	14	659	9.5	19	100
OUJ2z46	198.20	107.90	32.10	0.528	-2.00E+05	1.30E+05	0.0629	0.0022	0.919	0.034	0.1056	0.0033	0.1060	697	40.0	80	660	9.0	18	647	9.5	19	98
OUJ2z47	444.00	806.00	214.00	1.742	-6.00E+03	2.30E+05	0.0590	0.0017	0.779	0.023	0.0968	0.0028	0.1325	574	32.0	64	584	6.5	13	595	8.0	16	102
OUJ2z48	295.00	180.00	153.00	0.582	1.00E+06	5.00E+05	0.1068	0.0016	4.740	0.100	0.3227	0.0092	0.7638	1781	17.0	34	1772	9.0	18	1803	22.5	45	102
OUJ2z49	129.00	69.90	23.50	0.532	-2.30E+04	6.10E+04	0.0684	0.0042	0.973	0.057	0.1032	0.0034	0.1115	880	65.0	130	695	14.5	29	633	10.0	20	91
OUJ2z50r	37.20	29.10	25.34	0.765	-1.26E+06	9.80E+05	0.1190	0.0057	5.380	0.280	0.3303	0.0120	0.4589	1948	45.0	90	1878	22.5	45	1838	29.0	58	98
OUJ2z51	147.40	123.40	37.30	0.818	-2.40E+04	6.90E+04	0.0667	0.0044	0.976	0.064	0.1054	0.0034	0.2180	830	70.0	140	690	17.0	34	646	10.0	20	94
OUJ2z52r	173.10	163.90	47.10	0.919	3.50E+04	7.90E+04	0.0608	0.0029	0.857	0.038	0.1030	0.0033	-0.2187	610	50.0	100	626	10.5	21	632	9.5	19	101
OUJ2z53c	116.00	64.90	27.70	0.559	-3.00E+05	1.10E+05	0.0657	0.0033	1.430	0.078	0.1554	0.0049	0.2067	810	55.0	110	901	16.0	32	931	13.5	27	103
OUJ2z53r	523.50	127.60	37.60	0.228	6.70E+06	3.10E+06	0.0638	0.0017	0.940	0.027	0.1089	0.0033	0.4192	733	27.5	55	672	7.0	14	666	9.5	19	99
OUJ2z54	168.40	90.60	22.51	0.527	9.00E+05	1.20E+05	0.0532	0.0030	0.630	0.037	0.0878	0.0027	0.2669	300	60.0	120	501	12.0	24	543	8.0	16	108
OUJ2z55	202.00	189.00	49.70	0.885	-8.00E+05	1.90E+05	0.0608	0.0036	0.873	0.051	0.1063	0.0032	0.1568	600	65.0	130	633	14.0	28	651	9.5	19	103
OUJ2z57	35.60	22.20	6.18	0.611	-2.90E+04	4.80E+04	0.0594	0.0093	0.790	0.120	0.0966	0.0039	-0.0882	440	160.0	320	575	35.0	70	594	11.5	23	103
OUJ2z58	192.90	152.50	43.40	0.758	1.20E+05	2.20E+05	0.0592	0.0029	0.824	0.042	0.1018	0.0031	0.0966	550	55.0	110	607	11.5	23	625	9.0	18	103

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ2z59	847.00	180.00	73.40	0.210	3.20E+05	4.90E+05	0.0902	0.0014	2.548	0.054	0.2059	0.0061	0.7042	1427	14.5	29	1285	8.0	16	1207	16.5	33	94
OUJ2z60	83.50	51.50	14.00	0.601	1.30E+05	1.80E+05	0.0641	0.0056	0.853	0.072	0.0953	0.0031	-0.0920	750	90.0	180	630	18.5	37	587	9.0	18	93
OUJ2z61	133.00	71.30	35.66	0.526	8.00E+05	1.70E+05	0.0745	0.0030	1.833	0.075	0.1771	0.0052	0.1682	1059	41.5	83	1053	13.5	27	1051	14.5	29	100
OUJ2z62c	561.00	534.00	553.00	0.923	-4.00E+06	1.60E+06	0.1468	0.0018	8.330	0.110	0.4144	0.0120	0.6234	2341	14.5	29	2267	6.0	12	2235	27.0	54	99
OUJ2z62r	397.00	229.80	239.10	0.563	1.70E+06	1.60E+06	0.1440	0.0014	8.470	0.110	0.4264	0.0120	0.6516	2300	13.0	26	2282	5.5	11	2289	27.0	54	100
OUJ2z63c	95.90	76.60	23.00	0.770	1.90E+04	6.00E+04	0.0610	0.0044	0.853	0.055	0.1039	0.0034	-0.2604	590	75.0	150	621	15.5	31	637	10.0	20	103
OUJ2z63r	245.00	231.00	61.50	0.917	-6.00E+05	1.80E+05	0.0595	0.0029	0.818	0.036	0.1000	0.0031	0.0139	550	55.0	110	605	10.0	20	614	9.0	18	101
OUJ2z64	199.00	141.00	137.50	0.698	-4.40E+05	6.30E+05	0.1296	0.0024	6.500	0.140	0.3662	0.0110	0.5102	2131	18.5	37	2044	9.5	19	2015	26.0	52	99
OUJ2z65	92.10	51.30	13.54	0.546	-7.80E+04	8.00E+04	0.0578	0.0042	0.755	0.057	0.0958	0.0030	0.1390	500	75.0	150	575	16.5	33	592	9.5	19	103
OUJ2z66	233.50	111.40	87.40	0.468	-1.00E+06	2.40E+06	0.1265	0.0021	5.270	0.160	0.3048	0.0100	0.8145	2073	17.5	35	1870	13.5	27	1714	25.5	51	92
OUJ2z68	116.10	88.40	81.30	0.724	-1.50E+05	2.10E+05	0.1164	0.0032	5.380	0.160	0.3399	0.0100	0.2514	1912	27.0	54	1878	12.5	25	1886	24.5	49	100
OUJ2z69	60.10	53.60	45.20	0.890	1.26E+05	9.90E+04	0.1086	0.0044	4.890	0.210	0.3252	0.0110	0.3765	1799	39.0	78	1793	18.0	36	1814	27.0	54	101
OUJ2z70	195.80	159.00	53.50	0.804	-3.00E+03	1.10E+05	0.0632	0.0030	0.941	0.045	0.1063	0.0034	0.1393	720	50.0	100	676	11.0	22	651	10.0	20	96
OUJ2z71	164.90	65.30	87.50	0.386	-3.90E+05	3.90E+05	0.1892	0.0025	13.640	0.210	0.5331	0.0160	0.5430	2743	14.5	29	2724	7.0	14	2754	33.0	66	101
OUJ2z73	586.00	719.00	211.00	1.192	-3.20E+05	4.20E+05	0.0611	0.0019	0.879	0.025	0.1060	0.0031	0.0331	626	34.0	68	642	7.0	14	649	9.0	18	101
OUJ2z74c	101.90	17.30	8.20	0.115	-7.50E+04	8.60E+04	0.0603	0.0037	0.919	0.056	0.1094	0.0038	0.2139	600	65.0	130	657	14.5	29	669	11.0	22	102
OUJ2z74r	328.00	364.00	101.80	1.052	-2.00E+05	1.70E+05	0.0593	0.0028	0.828	0.034	0.1012	0.0028	-0.2001	580	50.0	100	613	9.5	19	621	8.5	17	101
OUJ2z75c	283.00	186.40	196.10	0.661	-7.00E+05	9.00E+05	0.1648	0.0023	9.030	0.310	0.4050	0.0160	0.8762	2505	15.5	31	2340	15.5	31	2188	38.0	76	94
OUJ2z75r	301.00	138.00	166.00	0.432	2.30E+05	3.70E+05	0.1394	0.0020	7.380	0.140	0.3894	0.0110	0.5789	2215	16.0	32	2159	9.0	18	2120	25.5	51	98
OUJ2z76	892.00	465.00	115.00	0.474	2.10E+05	5.30E+05	0.0617	0.0017	0.801	0.021	0.0957	0.0031	0.1554	649	29.5	59	597	6.0	12	589	9.0	18	99
OUJ2z77c	139.00	80.10	21.10	0.570	3.20E+04	9.70E+04	0.0603	0.0031	0.775	0.042	0.0919	0.0029	0.2705	630	60.0	120	579	12.0	24	566	8.5	17	98
OUJ2z77r	55.00	42.90	11.18	0.775	2.90E+04	2.70E+04	0.0615	0.0057	0.790	0.075	0.0935	0.0037	0.1245	550	105.0	210	581	22.0	44	576	11.0	22	99
OUJ2z78	191.00	70.20	70.90	0.351	6.60E+05	4.50E+05	0.1276	0.0021	6.770	0.140	0.3846	0.0120	0.6155	2066	17.5	35	2080	9.0	18	2097	27.0	54	101
OUJ2z79	11.70	13.33	3.88	1.116	1.00E+03	6.30E+03	0.0630	0.0170	0.860	0.240	0.1075	0.0073	0.1092	340	275.0	550	610	80.0	160	657	21.0	42	108
OUJ2z80	524.00	288.00	279.00	0.546	-1.19E+06	9.20E+05	0.1251	0.0018	6.268	0.093	0.3657	0.0100	0.2641	2019	16.5	33	2013	6.5	13	2009	24.0	48	100
OUJ2z81	422.70	364.70	107.40	0.846	2.70E+05	2.80E+05	0.0621	0.0021	0.866	0.026	0.1015	0.0029	0.0582	684	34.0	68	632	7.0	14	623	8.5	17	99
OUJ2z82	511.00	680.00	186.80	1.299	7.80E+05	6.30E+05	0.0588	0.0019	0.790	0.027	0.0975	0.0027	0.2052	541	36.5	73	590	8.0	16	600	8.0	16	102
OUJ2z83	171.90	90.40	23.17	0.476	3.00E+05	1.20E+05	0.0651	0.0037	0.899	0.049	0.1015	0.0032	0.0997	740	60.0	120	647	13.0	26	623	9.5	19	96
OUJ2z84	112.50	99.80	28.40	0.877	-1.00E+05	9.60E+04	0.0640	0.0034	0.938	0.051	0.1059	0.0038	0.1464	730	60.0	120	668	13.5	27	649	11.0	22	97
OUJ2z85	111.80	148.40	144.30	1.309	3.00E+05	1.90E+05	0.1234	0.0026	6.290	0.140	0.3695	0.0120	0.4062	1998	22.0	44	2014	10.0	20	2026	27.5	55	101
OUJ2z86	84.60	35.55	10.38	0.413	1.00E+04	5.30E+04	0.0619	0.0052	0.868	0.077	0.1005	0.0032	0.3649	590	95.0	190	624	21.5	43	617	9.5	19	99
OUJ2z87	94.00	117.00	32.80	1.176	-1.60E+04	4.90E+04	0.0646	0.0039	0.892	0.058	0.0990	0.0037	0.2302	760	65.0	130	647	16.0	32	608	11.0	22	94
OUJ2z88c	314.00	135.90	69.60	0.428	8.90E+06	6.20E+06	0.0770	0.0017	1.941	0.044	0.1827	0.0053	0.2198	1112	22.0	44	1094	7.5	15	1081	14.5	29	99
OUJ2z88r	881.00	92.90	43.20	0.104	3.00E+06	1.00E+06	0.0737	0.0014	1.545	0.029	0.1535	0.0045	0.4356	1027	19.0	38	948	6.0	12	921	12.5	25	97
OUJ2z89	724.00	120.00	73.90	0.162	-1.10E+06	2.50E+06	0.1248	0.0012	6.320	0.110	0.3692	0.0110	0.9182	2004	13.5	27	2020	7.5	15	2025	26.5	53	100
OUJ2z90	151.70	264.00	77.30	1.645	-4.60E+05	4.80E+05	0.0581	0.0037	0.810	0.052	0.1020	0.0032	0.3495	520	70.0	140	608	15.0	30	626	9.0	18	103
OUJ2z91c	261.30	263.50	84.40	0.991	1.30E+05	1.70E+05	0.0594	0.0021	0.919	0.032	0.1130	0.0032	0.1509	573	40.0	80	660	8.5	17	690	9.5	19	105
OUJ2z91r	269.10	269.60	88.70	0.978	-2.10E+05	2.10E+05	0.0651	0.0022	1.032	0.032	0.1152	0.0035	0.0385	791	35.5	71	718	8.0	16	703	10.0	20	98
OUJ2z93	383.50	384.00	95.00	1.001	-5.00E+05	2.00E+05	0.0587	0.0023	0.713	0.028	0.0878	0.0025	0.3083	559	43.5	87	548	8.5	17	543	7.5	15	99
OUJ2z94c	407.00	160.00	51.90	0.385	2.80E+05	3.90E+05	0.0633	0.0023	0.898	0.033	0.1045	0.0032	0.2193	721	39.0	78	651	8.5	17	641	9.5	19	98
OUJ2z94r	114.70	232.00	66.10	1.908	6.30E+04	7.50E+04	0.0613	0.0029	0.920	0.048	0.1075	0.0035	0.2596	680	55.0	110	668	11.5	23	658	10.0	20	99
OUJ2z95	333.00	298.00	173.60	0.878	1.10E+05	3.90E+05	0.1112	0.0022	3.836	0.075	0.2524	0.0071	0.1146	1819	17.5	35	1601	8.0	16	1450	18.5	37	91
OUJ2z96	310.00	223.00	101.80	0.727	1.00E+05	3.00E+05	0.0756	0.0021	1.726	0.050	0.1660	0.0048	0.1589	1092	27.0	54	1016	9.5	19	990	13.0	26	97
OUJ2z97r	50.00	13.70	11.22	0.268	1.00E+05	1.50E+05	0.1110	0.0049	3.970	0.180	0.2546	0.0100	0.3723	1832	45.0	90	1626	19.5	39	1461	26.0	52	90
OUJ2z98	310.00	308.20	90.60	0.980	7.00E+05	1.70E+05	0.0614	0.0021	0.876	0.031	0.1054	0.0030	0.1938	670	37.0	74	643	9.0	18	646	8.5	17	100
OUJ2z99	190.80	166.00	143.60	0.867	-1.00E+05	4.40E+05	0.1134	0.0027	5.140	0.120	0.3317	0.0096	0.2398	1816	25.0	50	1844	10.0	20	1846	23.0	46	100
OUJ2z101	107.80	154.10	47.10	1.413	-3.80E+04	9.40E+04	0.0582	0.0042	0.837	0.061	0.1074	0.0034	0.1060	490	80.0	160	616	16.5	33	658	10.0	20	107
OUJ2z102	123.60	227.00	211.90	1.799	-5.10E+05	4.60E+05	0.1209	0.0024	5.900	0.110	0.3598	0.0110	0.3641	1933	20.5	41	1962	8.0	16	1981	25.5	51	101
OUJ2z103	533.00	134.30	63.00	0.251	-1.90E+06	1.70E+06	0.0777	0.0018	1.840	0.060	0.1739	0.0063	0.7247	1140	23.5	47	1062	11.0	22	1033	17.0	34	97
OUJ2z104	211.00	184.00	55.00	0.853	2.00E+05	1.10E+05	0.0668	0.0030	0.921	0.040	0.1005	0.0029	0.0596	797	49.5	99	664	10.5	21	617	8.5	17	93
OUJ2z105	208.00	232.00	57.00	1.103	1.70E+05	1.40E+05	0.0593	0.0032	0.731	0.036	0.0906	0.0027	-0.1144	570	60.0	120	558	11.0	22	559	8.0	16	100
OUJ2z107	266.00	247.00	73.00	0.822	-4.00E+05	2.10E+05	0.0660	0.0029	0.964	0.043	0.1056	0.0031	0.0187	806	49.0	98	686	11.5	23	647	9.0	18	94
OUJ2z108	271.00	230.80	60.50	0.855	3.90E+05	2.40E+05	0.0603	0.0026	0.751	0.034	0.0909	0.0027	0.2506	582	48.5	97	567	10.0	20	561	8.0	16	99
OUJ2z109	134.20	109.30	107.30	0.801	-5.00E+05	2.60E+05	0.1296	0.0033	6.800	0.210	0.3773	0.0110	0.3732	2055	25.0	50	2085	13.0	26	2063	26.0	52	99
OUJ2z111	391.10	448.00	128.20	1.133	-1.50E+05	2.00E+05	0.0618	0.0024	0.861	0.029	0.1027	0.0030	-0.0528	639	42.0	84	632	8.0	16	630	8.5	17	100
OUJ2z113	90.50	51.30	49.40	0.565	-2.20E+05	2.10E+05	0.1274	0.0031	6.510	0.150	0.3707	0.0110	0.2258	2036	25.5	51	2045	10.0	20	2032	26.0	52	99
OUJ2z114	88.70	75.60	71.60	0.860	1.90E+05	2.20E+05	0.1264	0.0037	6.370	0.150	0.3658	0.0100	0.1290	2027	28.0	56	2026	10.5	21	2009	24.5	49	99
OUJ2z115	575.90	216.20	59.90	0.369	-8.40E+05	7.20E+05	0.0591	0.0015	0.784	0.022	0.0965	0.0027	0.3777	560	27.0	54	589	6.0	12	594	8.0	16	101
OUJ2z117c	352.70	214.80	57.00	0.602	-5.00E+05	1.90E+05	0.0611	0.0021	0.810	0.030	0.0973	0.0028	0.2107	647	38.5	77	601	8.5	17	599	8.5	17	100
OUJ2z117r	148.40	56.20	16.72	0.382	-9.00E+04	8.00E+04	0.0603	0.0032	0.795	0.039	0.0946	0.0032	0.0932	610	55.0	110	591	11.5	23	583	9.5	19	99
OUJ2z118c	162.00	251.90	240.50	1.575	5.30E+05	7.30E+05	0.1276	0.0023	6.350	0.110	0.3622	0.0100	0.4658	2039	19.0	38	2026	8.0	16	1992	25.0	50	98
OUJ2z118r	75.20	84.10	88.50	1.111	-1.10E+05	2.90E+05	0.1241	0.0034	6.200	0.200	0.3645	0.0120	0.6209	2002	26.5	53	2009	13.5	27	2002	29.5	59	100
OUJ2z121c	79.20	126.80	121.40	1.600	1.30E+05	1.50E+05	0.1315	0.0043	6.610	0.190	0.3627	0.0110	0.1589	2088	30.5	61	2057	13.0	26	1994	26.0	52	97
OUJ2z121r	216.00	129.90	128.00	0.603	-8.80E+06	7.60E+06	0.1264	0.0026	6.500	0.140	0.3731	0.0110	0.2353	2028	21.0	42	2047	9.5	19	2044	24.5	49	100
OUJ2z122c	644.00	111.50	34.80	0.174	4.10E+05	4.00E+05	0.0623	0.0011	0.921	0.018	0.1081	0.0031	0.3078	684	20.0	40	663	4.7	9	662	9.0	18	100
OUJ2z123r	308.50	223.00	73.70	0.723	-1.60E+05	3.70E+05	0.0654	0.0023	1.050	0.038	0.1151	0.0034	0.3620	791	37.0	74	731	9.0	18	702	10.0	20	96

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Pb loss, high common Pb and/or discordant data																							
OUJ2z2	141.40	119.00	30.21	0.803	6.90E+04	4.90E+04	0.0531	0.0032	0.649	0.039	0.0906	0.0028	0.1715	310	65.0	130	505	12.0	24	559	8.0	16	111
OUJ2z3c	615.00	128.00	92.20	0.192	3.50E+05	4.00E+05	0.0822	0.0018	1.615	0.053	0.1437	0.0047	0.8202	1250	22.0	44	974	10.0	20	866	13.0	26	89
OUJ2z14	89.00	83.60	27.90	0.903	1.00E+05	3.20E+04	0.0782	0.0080	1.070	0.110	0.1019	0.0035	0.1939	1100	100.0	200	741	26.5	53	625	10.5	21	84
OUJ2z23	623.00	746.00	556.00	1.117	5.30E+05	1.70E+05	0.1551	0.0015	6.990	0.330	0.3260	0.0170	0.9739	2408	12.5	25	2100	21.0	42	1825	43.5	87	87
OUJ2z50c	32.30	37.40	46.10	1.094	5.30E+04	4.20E+04	0.1520	0.0140	7.370	0.750	0.3518	0.0120	0.4718	2310	80.0	160	2124	45.0	90	1949	31.0	62	92
OUJ2z52c	688.00	1360.00	287.00	1.916	1.32E+05	9.10E+04	0.0939	0.0034	0.932	0.033	0.0728	0.0025	0.2880	1498	35.0	70	672	8.5	17	453	7.5	15	67
OUJ2z56	9.04	2.23	1.36	0.236	-3.00E+04	1.20E+04	0.1100	0.0150	4.000	0.560	0.2590	0.0140	0.3026	1740	125.0	250	1630	60.0	120	1482	35.5	71	91
OUJ2z67	750.00	281.00	149.40	0.364	8.00E+06	1.10E+06	0.1011	0.0015	2.847	0.048	0.2058	0.0057	0.5416	1640	13.5	27	1367	6.5	13	1206	15.0	30	88
OUJ2z72c	123.00	77.30	66.40	0.617	-1.00E+03	2.20E+05	0.2582	0.0049	12.620	0.320	0.3549	0.0110	0.6720	3245	17.0	34	2648	12.0	24	1958	26.0	52	74
OUJ2z72r	443.00	60.90	55.50	0.131	5.00E+06	1.80E+06	0.2520	0.0025	15.040	0.480	0.4350	0.0160	0.9586	3200	12.0	24	2817	15.0	30	2328	35.5	71	83
OUJ2z92	1545.00	1053.00	1250.00	0.645	1.43E+06	6.50E+05	0.1790	0.0230	6.200	0.990	0.2600	0.0130	0.6883	2480	100.0	200	1980	65.0	130	1489	33.0	66	75
OUJ2z97c	417.00	115.00	70.60	0.276	1.30E+05	3.90E+05	0.1106	0.0023	3.240	0.200	0.2118	0.0110	0.9440	1823	17.5	35	1454	24.0	48	1236	30.0	60	85
OUJ2z100	1176.00	709.00	598.80	0.585	-3.10E+06	2.10E+06	0.1486	0.0014	6.607	0.088	0.3232	0.0093	0.7948	2301	12.5	25	2060	6.0	12	1805	23.0	46	88
OUJ2z106	465.00	880.00	273.00	1.555	1.51E+05	8.30E+04	0.1031	0.0080	1.390	0.100	0.1001	0.0031	0.1877	1650	65.0	130	880	22.5	45	615	9.0	18	70
OUJ2z110c	1025.00	215.00	155.50	0.208	4.50E+05	5.00E+05	0.0885	0.0025	1.648	0.061	0.1355	0.0040	0.6438	1398	28.0	56	986	11.5	23	819	11.5	23	83
OUJ2z110r	747.00	109.00	187.10	0.145	1.29E+05	1.40E+04	0.1440	0.0044	2.260	0.110	0.1140	0.0040	0.8061	2273	26.0	52	1192	17.0	34	696	11.5	23	58
OUJ2z112	1950.00	1051.00	153.00	0.541	5.80E+05	3.80E+05	0.0832	0.0016	0.613	0.034	0.0538	0.0031	0.9315	1267	19.0	38	483	10.5	21	338	9.5	19	70
OUJ2z116	1181.00	404.00	377.00	0.270	-1.60E+06	5.40E+06	0.1862	0.0019	10.570	0.190	0.4143	0.0120	0.6905	2689	12.0	24	2487	8.5	17	2234	27.0	54	90
OUJ2z119c	835.00	79.00	87.00	0.085	7.00E+06	2.30E+06	0.1964	0.0015	12.170	0.200	0.4508	0.0130	0.8343	2782	12.5	25	2617	7.5	15	2398	29.0	58	92
OUJ2z119r	88.00	38.20	14.00	0.469	-6.00E+03	2.80E+05	0.1580	0.0110	8.300	1.300	0.3580	0.0430	0.9675	2400	65.0	130	2110	85.0	170	1940	105.0	210	92
OUJ2z120c	189.00	92.20	109.80	0.491	2.00E+04	1.00E+06	0.2087	0.0032	13.940	0.320	0.4814	0.0150	0.7751	2880	15.0	30	2743	11.0	22	2532	31.5	63	92
OUJ2z120r	44.20	27.60	85.00	0.581	3.35E+04	4.90E+03	0.3640	0.0280	12.800	1.500	0.2520	0.0210	0.8614	3700	70.0	140	2640	65.0	130	1450	55.0	110	55
OUJ2z122r	266.10	117.80	48.00	0.446	2.60E+05	1.40E+05	0.0897	0.0056	1.180	0.070	0.0970	0.0029	0.3115	1410	60.0	120	785	16.5	33	597	8.5	17	76
OUJ2z123c	172.20	168.00	119.00	0.958	1.68E+05	5.00E+04	0.1726	0.0076	3.040	0.160	0.1267	0.0040	0.6800	2585	36.0	72	1417	20.5	41	769	11.5	23	54

Footnotes:

- Analysis references: OUJ2z is zircon from sample OUJ2 (mount CT17-9), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.2: Sample OUJ3 (LA-ICPMS)

IGSN: IEACC0046 Coordinate UTM: Zone 30S, 582303 m E, 3834439 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ3z1	84.10	95.90	26.50	1.135	9.50E+04	5.20E+04	0.0573	0.0053	0.786	0.068	0.1003	0.0035	0.0243	430	95.0	190	587	18.5	37	616	10.5	21	105
OUJ3z2	206.40	177.50	47.90	0.864	-7.00E+05	1.70E+05	0.0634	0.0035	0.837	0.040	0.0947	0.0028	-0.0949	670	60.0	120	615	11.0	22	583	8.5	17	95
OUJ3z3	830.00	697.00	209.00	0.820	6.00E+05	8.30E+05	0.0598	0.0011	0.847	0.016	0.1034	0.0029	0.2700	597	19.5	39	623	4.5	9	634	8.5	17	102
OUJ3z4	74.00	36.40	37.50	0.490	4.30E+05	5.10E+05	0.1346	0.0031	7.180	0.170	0.3887	0.0130	0.3129	2143	22.0	44	2132	11.0	22	2115	29.5	59	99
OUJ3z6	64.50	28.59	26.07	0.439	-1.70E+05	2.50E+05	0.1451	0.0036	6.810	0.180	0.3382	0.0110	0.4590	2281	24.5	49	2084	12.0	24	1877	25.5	51	90
OUJ3z7c	135.10	169.50	45.70	1.256	2.10E+05	1.30E+05	0.0589	0.0035	0.769	0.049	0.0953	0.0029	0.1136	550	65.0	130	585	13.0	26	587	8.5	17	100
OUJ3z7r	160.50	133.00	37.60	0.834	1.60E+05	1.60E+05	0.0598	0.0031	0.822	0.040	0.0977	0.0031	0.0373	580	55.0	110	607	11.5	23	601	9.0	18	99
OUJ3z8	627.00	244.00	279.60	0.384	1.60E+07	1.60E+07	0.1644	0.0017	10.680	0.110	0.4689	0.0130	0.2710	2495	13.0	26	2497	4.7	9	2481	27.0	54	99
OUJ3z9	345.00	400.00	396.00	1.165	-9.00E+06	1.60E+06	0.1267	0.0015	6.575	0.095	0.3731	0.0110	0.5967	2046	14.5	29	2055	6.5	13	2044	25.0	50	99
OUJ3z10	38.30	63.60	29.20	1.577	-9.70E+04	9.70E+04	0.0673	0.0058	1.640	0.140	0.1743	0.0070	0.1802	890	95.0	190	990	27.5	55	1035	19.0	38	105
OUJ3z11	604.00	504.00	148.70	0.831	4.70E+05	6.90E+05	0.0612	0.0014	0.885	0.022	0.1049	0.0029	0.2230	638	23.5	47	643	6.0	12	643	8.5	17	100
OUJ3z12	1510.00	2440.00	607.00	1.604	3.00E+06	1.20E+06	0.0578	0.0011	0.711	0.015	0.0881	0.0025	0.4732	520	21.0	42	545	4.4	9	544	7.5	15	100
OUJ3z13	293.60	452.00	134.80	1.546	2.90E+06	1.50E+06	0.0619	0.0027	0.908	0.032	0.1052	0.0031	-0.3196	652	45.5	91	655	8.5	17	645	9.0	18	98
OUJ3z14	125.70	113.20	32.20	0.907	3.00E+05	1.30E+05	0.0688	0.0040	0.906	0.056	0.0945	0.0031	0.3559	900	60.0	120	650	15.0	30	582	9.0	18	90
OUJ3z15	699.00	70.70	70.30	0.101	4.00E+04	1.70E+06	0.1294	0.0014	6.739	0.093	0.3756	0.0100	0.5513	2090	14.0	28	2077	6.0	12	2056	24.5	49	99
OUJ3z16	120.00	176.00	46.40	1.256	-2.70E+05	2.10E+05	0.0578	0.0037	0.809	0.049	0.1006	0.0032	-0.0068	560	65.0	130	608	12.5	25	618	9.0	18	102
OUJ3z17c	96.90	68.10	19.40	0.695	2.40E+05	3.30E+05	0.0592	0.0040	0.814	0.056	0.0989	0.0033	0.2102	600	75.0	150	610	15.5	31	608	9.5	19	100
OUJ3z17r	50.40	49.80	14.85	0.970	3.20E+04	2.50E+04	0.0692	0.0070	1.010	0.100	0.1050	0.0040	-0.1366	820	110.0	220	701	25.0	50	643	11.5	23	92
OUJ3z18c	152.70	90.60	93.40	0.583	4.40E+05	4.10E+05	0.1328	0.0023	7.210	0.150	0.3923	0.0120	0.6159	2140	17.5	35	2136	9.0	18	2133	27.0	54	100
OUJ3z18r	139.90	111.30	111.50	0.787	2.20E+05	3.90E+05	0.1305	0.0031	7.000	0.160	0.3862	0.0110	0.3948	2108	23.0	46	2116	10.0	20	2105	26.0	52	99
OUJ3z19	217.00	187.00	56.40	0.862	7.50E+05	5.00E+05	0.0601	0.0025	0.907	0.039	0.1062	0.0032	0.0502	654	46.5	93	656	11.0	22	650	9.0	18	99
OUJ3z20	658.00	132.40	115.50	0.205	-1.50E+06	1.30E+06	0.1213	0.0010	5.525	0.072	0.3276	0.0094	0.7423	1980	12.5	25	1906	6.0	12	1826	22.5	45	96
OUJ3z21	124.40	110.00	105.80	0.883	3.00E+05	5.60E+05	0.1271	0.0025	6.600	0.140	0.3731	0.0110	0.3624	2060	20.0	40	2058	9.5	19	2044	26.0	52	99
OUJ3z22	63.20	95.10	49.60	1.499	-1.60E+04	7.30E+04	0.0730	0.0041	1.790	0.100	0.1763	0.0059	0.2459	1000	60.0	120	1042	19.0	38	1046	16.0	32	100
OUJ3z23	218.00	372.00	366.00	1.681	8.40E+06	5.00E+06	0.1269	0.0016	6.550	0.100	0.3715	0.0110	0.2414	2061	15.0	30	2054	6.5	13	2036	24.5	49	99
OUJ3z24	457.00	229.00	105.60	0.507	1.30E+05	5.90E+05	0.0743	0.0016	1.738	0.034	0.1679	0.0047	0.1624	1042	22.0	44	1022	6.5	13	1002	12.5	25	98
OUJ3z25	726.00	272.00	234.00	0.376	-8.00E+06	2.00E+06	0.1283	0.0010	5.904	0.063	0.3288	0.0092	0.6777	2083	12.0	24	1961	4.6	9	1832	22.5	45	93
OUJ3z26	97.20	37.50	11.54	0.389	5.00E+03	1.10E+05	0.0664	0.0037	1.013	0.053	0.1092	0.0035	0.0824	790	60.0	120	707	13.5	27	668	10.5	21	94
OUJ3z27	122.70	127.30	35.80	1.044	4.10E+04	8.40E+04	0.0656	0.0035	0.940	0.058	0.1003	0.0032	0.2865	790	65.0	130	673	15.5	31	616	9.5	19	92
OUJ3z28	38.60	19.62	5.99	0.510	3.20E+04	4.50E+04	0.0644	0.0066	0.911	0.090	0.1014	0.0038	-0.1483	690	120.0	240	653	25.5	51	623	11.0	22	95
OUJ3z30	459.00	254.80	72.80	0.552	1.90E+05	3.30E+05	0.0603	0.0022	0.853	0.029	0.1015	0.0030	0.2665	616	37.5	75	625	8.0	16	623	9.0	18	100
OUJ3z31	134.80	116.00	33.00	0.847	-3.00E+05	1.40E+05	0.0611	0.0043	0.844	0.055	0.0969	0.0030	0.0948	680	75.0	150	622	14.5	29	596	8.5	17	96
OUJ3z32	86.30	67.30	19.42	0.768	4.00E+05	1.20E+05	0.0631	0.0050	0.879	0.066	0.1003	0.0033	0.0288	740	75.0	150	640	17.5	35	616	9.5	19	96
OUJ3z33	206.00	97.60	97.60	0.473	1.30E+06	1.50E+06	0.1280	0.0028	6.950	0.130	0.3880	0.0110	0.0667	2089	23.0	46	2107	7.5	15	2113	26.5	53	100
OUJ3z34	538.00	241.00	74.70	0.450	3.60E+05	5.10E+05	0.0605	0.0017	0.880	0.028	0.1032	0.0030	0.4223	620	29.5	59	640	7.5	15	633	8.5	17	99
OUJ3z35	341.00	30.10	29.30	0.089	-3.40E+06	4.20E+06	0.1252	0.0019	6.473	0.095	0.3676	0.0110	0.5123	2041	17.0	34	2044	6.0	12	2017	26.0	52	99
OUJ3z36	654.00	675.00	192.00	1.024	3.40E+05	9.20E+05	0.0588	0.0013	0.830	0.023	0.1012	0.0029	0.2467	549	25.5	51	617	5.5	11	621	8.5	17	101
OUJ3z37	212.10	102.90	29.91	0.491	8.00E+05	2.50E+05	0.0615	0.0030	0.879	0.042	0.1016	0.0032	0.2024	620	55.0	110	638	11.5	23	623	9.5	19	98
OUJ3z38	614.60	944.00	302.00	1.511	4.50E+05	7.20E+05	0.0625	0.0016	0.986	0.024	0.1120	0.0033	0.1582	689	25.5	51	696	6.0	12	684	9.5	19	98
OUJ3z39	32.80	9.74	8.87	0.301	-1.80E+05	1.30E+05	0.1198	0.0055	6.030	0.280	0.3528	0.0120	0.1780	1955	44.5	89	1970	20.5	41	1954	30.0	60	99
OUJ3z41c	426.00	347.00	90.10	0.818	1.00E+06	4.00E+05	0.0574	0.0024	0.749	0.031	0.0919	0.0026	0.1385	492	47.0	94	569	9.5	19	567	7.5	15	100
OUJ3z41r	272.40	165.40	45.50	0.604	1.00E+06	3.20E+05	0.0618	0.0026	0.796	0.035	0.0919	0.0028	0.2372	655	43.0	86	596	9.5	19	567	8.0	16	95
OUJ3z42	41.10	32.70	34.80	0.810	8.00E+05	3.70E+05	0.1338	0.0046	7.540	0.250	0.4015	0.0130	0.1647	2162	34.0	68	2173	15.0	30	2175	30.0	60	100
OUJ3z43	333.00	188.00	46.80	0.561	1.10E+05	2.50E+05	0.0589	0.0024	0.731	0.028	0.0868	0.0026	-0.0608	554	47.0	94	556	8.0	16	537	7.5	15	97
OUJ3z44c	945.00	1855.00	1819.00	1.992	1.70E+06	2.90E+06	0.1259	0.0012	6.664	0.089	0.3731	0.0100	0.6671	2064	12.5	25	2067	6.0	12	2044	24.5	49	99
OUJ3z44r	274.00	210.00	207.80	0.763	4.80E+05	9.50E+05	0.1260	0.0020	6.660	0.110	0.3773	0.0110	0.4299	2057	17.0	34	2067	7.0	14	2063	25.0	50	100
OUJ3z45	416.00	130.90	109.00	0.318	1.80E+06	1.30E+06	0.1252	0.0018	5.670	0.120	0.3189	0.0100	0.7548	2048	16.0	32	1925	9.0	18	1788	24.0	48	93
OUJ3z47	323.00	265.30	218.70	0.839	2.00E+06	2.60E+06	0.1064	0.0017	4.487	0.098	0.3037	0.0087	0.5689	1754	18.0	36	1730	9.0	18	1709	21.5	43	99
OUJ3z48c	459.00	790.00	208.00	1.726	-3.70E+05	5.60E+05	0.0606	0.0013	0.796	0.021	0.0944	0.0029	0.3262	627	25.0	50	596	5.5	11	581	8.5	17	98
OUJ3z48r	95.40	15.83	4.15	0.167	-4.10E+05	2.50E+05	0.0588	0.0042	0.785	0.056	0.0936	0.0028	0.1979	540	80.0	160	589	16.5	33	577	8.5	17	98
OUJ3z49	154.70	40.00	11.01	0.257	8.00E+05	1.30E+05	0.0583	0.0029	0.803	0.051	0.0960	0.0031	0.4563	580	60.0	120	598	14.0	28	591	9.0	18	99
OUJ3z50	451.00	944.00	829.00	2.101	9.00E+04	1.50E+06	0.1128	0.0015	5.216	0.082	0.3293	0.0091	0.4078	1862	16.0	32	1854	6.5	13	1835	22.0	44	99
OUJ3z51	165.80	56.70	34.50	0.345	-4.60E+05	7.10E+05	0.0827	0.0024	2.610	0.089	0.2221	0.0066	0.2070	1269	31.5	63	1300	12.5	25	1293	17.5	35	99
OUJ3z52c	85.70	52.20	52.60	0.606	-1.90E+05	5.50E+05	0.1326	0.0039	7.280	0.200	0.3880	0.0120	0.1795	2149	28.0	56	2147	12.5	25	2113	27.0	54	98
OUJ3z52r	111.20	69.70	69.50	0.625	8.00E+03	5.90E+05	0.1322	0.0025	7.140	0.150	0.3835	0.0110	0.4570	2142	19.5	39	2130	9.0	18	2092	26.5	53	98
OUJ3z53c	232.70	21.98	5.24	0.094	2.20E+05	3.90E+05	0.0611	0.0025	0.817	0.032	0.0949	0.0029	0.0632	617	44.0	88	605	9.0	18	584	8.5	17	97
OUJ3z53r	588.00	431.00	116.70	0.736	-1.42E+06	5.80E+05	0.0587	0.0017	0.786	0.025	0.0945	0.0027	0.2662	553	32.0	64	588	7.0	14	582	8.0	16	99
OUJ3z54	493.00	87.20	83.30	0.180	-1.70E+06	1.50E+06	0.1269	0.0013	6.476	0.097	0.3619	0.0110	0.7136	2074	13.5	27	2044	7.0	14	1994	26.0	52	98
OUJ3z55c	295.40	191.60	211.20	0.658	-7.00E+06	1.20E+06	0.1640	0.0026	10.130	0.160	0.4380	0.0120	0.5444	2513	16.5	33	2446	7.5	15	2346	26.0	52	96
OUJ3z55r	140.20	65.60	46.40	0.462	5.40E+05	8.10E+05	0.1380	0.0037	6.440	0.240	0.3307	0.0110	0.6170	2218	24.5	49	2047	17.0	34	1841	26.0	52	90

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ3z56	461.00	529.00	144.00	1.098	-2.00E+06	1.60E+06	0.0603	0.0020	0.860	0.029	0.1011	0.0030	0.3390	606	35.0	70	629	8.0	16	621	9.0	18	99
OUJ3z57	117.20	60.50	16.79	0.515	-6.00E+05	1.50E+05	0.0563	0.0036	0.776	0.048	0.0963	0.0031	0.0461	480	65.0	130	583	14.0	28	593	9.0	18	102
OUJ3z58	119.60	85.90	83.20	0.710	1.70E+05	6.30E+05	0.1255	0.0028	6.610	0.150	0.3726	0.0110	0.2889	2047	22.0	44	2058	10.0	20	2041	25.0	50	99
OUJ3z59	578.00	43.80	42.60	0.077	2.00E+06	2.80E+06	0.1287	0.0015	7.058	0.083	0.3871	0.0110	0.4293	2096	14.5	29	2120	5.0	10	2109	25.5	51	99
OUJ3z60	156.10	197.00	54.60	1.258	-6.00E+05	1.40E+05	0.0550	0.0027	0.752	0.039	0.0981	0.0031	0.0416	380	55.0	110	567	11.5	23	603	9.0	18	106
OUJ3z61	603.00	318.00	88.90	0.538	8.00E+06	1.30E+06	0.0648	0.0020	0.898	0.037	0.0990	0.0039	0.6529	764	31.5	63	652	10.0	20	609	11.5	23	93
OUJ3z62	118.90	126.30	120.80	1.066	-5.00E+05	6.90E+05	0.1240	0.0028	6.410	0.160	0.3677	0.0110	0.3960	2024	22.5	45	2032	11.0	22	2018	25.0	50	99
OUJ3z63	65.70	54.60	16.30	0.832	-8.00E+05	1.30E+05	0.0561	0.0059	0.762	0.078	0.0980	0.0035	0.0680	330	105.0	210	564	22.0	44	603	10.0	20	107
OUJ3z64	160.00	139.00	41.80	0.790	-9.00E+06	1.40E+06	0.0608	0.0037	0.815	0.049	0.0963	0.0031	0.2663	600	65.0	130	601	13.5	27	593	9.0	18	99
OUJ3z65	200.60	218.80	62.90	1.107	3.50E+05	3.50E+05	0.0581	0.0030	0.844	0.043	0.1015	0.0030	0.1143	520	60.0	120	618	12.0	24	623	8.5	17	101
OUJ3z66	105.60	98.80	94.10	0.950	-4.30E+05	5.40E+05	0.1252	0.0033	6.370	0.200	0.3596	0.0110	0.3497	2037	26.0	52	2024	14.0	28	1980	26.0	52	98
OUJ3z67c	322.00	335.00	306.00	1.030	5.00E+06	1.50E+06	0.1258	0.0018	6.231	0.093	0.3495	0.0098	0.4196	2050	16.0	32	2008	6.5	13	1932	23.5	47	96
OUJ3z67r	120.40	104.90	106.30	0.876	2.30E+05	6.30E+05	0.1287	0.0030	6.760	0.160	0.3714	0.0110	0.3308	2085	23.5	47	2078	10.5	21	2036	26.5	53	98
OUJ3z68	249.00	188.50	289.00	0.761	-1.50E+06	2.80E+06	0.2194	0.0024	18.970	0.200	0.6126	0.0170	0.5696	2987	13.0	26	3040	5.0	10	3084	36.0	72	101
OUJ3z69c	192.60	200.70	54.90	1.048	3.10E+05	4.10E+05	0.0595	0.0032	0.774	0.037	0.0936	0.0027	-0.1475	540	60.0	120	580	10.5	21	577	8.0	16	99
OUJ3z69r	39.89	66.60	20.19	1.695	-2.40E+04	4.70E+04	0.0554	0.0056	0.753	0.079	0.0989	0.0043	0.2838	420	115.0	230	577	25.0	50	607	12.5	25	105
OUJ3z70	701.00	84.80	83.90	0.118	-4.80E+06	2.80E+06	0.1298	0.0012	6.750	0.083	0.3668	0.0110	0.7334	2107	13.5	27	2080	5.5	11	2014	25.0	50	97
OUJ3z71	323.00	192.00	55.00	0.596	1.00E+05	2.30E+05	0.0597	0.0022	0.838	0.031	0.0991	0.0028	0.3297	583	40.0	80	616	8.5	17	609	8.5	17	99
OUJ3z73	50.60	46.40	46.00	0.926	5.90E+05	4.30E+05	0.1239	0.0046	6.770	0.230	0.3846	0.0130	0.3665	2035	33.5	67	2081	16.0	32	2096	30.0	60	101
OUJ3z74	444.00	295.60	96.70	0.680	-1.13E+06	8.90E+05	0.0603	0.0019	0.922	0.033	0.1103	0.0033	0.3803	606	35.5	71	670	8.5	17	675	9.5	19	101
OUJ3z75	752.00	184.00	81.80	0.248	9.00E+06	1.50E+06	0.0709	0.0010	1.637	0.032	0.1635	0.0046	0.5833	949	15.0	30	984	6.0	12	976	12.5	25	99
OUJ3z76	156.10	119.80	29.70	0.775	-8.00E+03	1.20E+05	0.0634	0.0036	0.781	0.043	0.0871	0.0028	-0.0737	730	60.0	120	587	13.0	26	538	8.5	17	92
OUJ3z77c	659.20	680.00	201.60	1.042	5.20E+05	8.10E+05	0.0610	0.0016	0.860	0.020	0.0996	0.0029	0.0740	647	27.0	54	630	5.5	11	612	8.5	17	97
OUJ3z77r	72.50	59.20	19.10	0.832	9.00E+03	1.00E+05	0.0567	0.0047	0.874	0.073	0.1095	0.0038	0.1887	480	90.0	180	644	20.0	40	670	11.0	22	104
OUJ3z78	98.60	80.10	101.40	0.838	-2.50E+05	5.50E+05	0.1712	0.0033	11.480	0.260	0.4720	0.0150	0.5747	2570	19.0	38	2564	11.0	22	2497	32.0	64	97
OUJ3z79	165.00	95.70	93.50	0.577	-1.10E+06	1.00E+06	0.1419	0.0030	7.500	0.150	0.3748	0.0110	0.3422	2254	21.0	42	2175	9.5	19	2052	25.5	51	94
OUJ3z80	42.90	61.90	18.50	1.439	-1.50E+05	9.50E+04	0.0542	0.0059	0.808	0.081	0.1083	0.0042	0.0906	350	115.0	230	607	21.5	43	662	12.0	24	109
OUJ3z81	108.30	42.20	20.60	0.388	-7.10E+05	5.60E+05	0.0748	0.0034	1.672	0.082	0.1573	0.0047	0.2027	1060	50.0	100	993	16.0	32	941	13.0	26	95
OUJ3z82	27.20	18.70	5.74	0.680	3.40E+04	5.70E+04	0.0520	0.0088	0.780	0.140	0.1024	0.0046	0.0211	230	170.0	340	576	40.0	80	628	13.5	27	109
OUJ3z83	29.00	11.20	4.22	0.376	-2.90E+04	5.50E+04	0.0633	0.0079	1.030	0.120	0.1177	0.0053	0.0843	610	135.0	270	700	31.0	62	717	15.5	31	102
OUJ3z84	68.90	42.40	50.20	0.627	1.70E+05	3.40E+05	0.1654	0.0040	10.720	0.300	0.4650	0.0140	0.4009	2512	21.5	43	2495	13.0	26	2461	30.0	60	99
OUJ3z85c	181.70	186.00	161.60	1.031	-1.70E+05	6.70E+05	0.1183	0.0025	5.570	0.140	0.3356	0.0100	0.4857	1948	21.5	43	1909	10.5	21	1865	24.5	49	98
OUJ3z85r	359.00	187.50	164.70	0.532	1.00E+06	1.50E+06	0.1191	0.0019	5.540	0.130	0.3301	0.0100	0.7061	1941	17.5	35	1904	10.5	21	1838	24.5	49	97
OUJ3z86c	247.20	196.60	278.00	0.784	1.50E+06	1.10E+06	0.1979	0.0038	14.350	0.320	0.5170	0.0150	0.4550	2803	18.5	37	2779	10.5	21	2686	32.0	64	97
OUJ3z86r	108.00	80.40	73.40	0.755	-4.00E+05	6.90E+05	0.1276	0.0024	6.760	0.140	0.3755	0.0120	0.4961	2064	20.5	41	2079	9.5	19	2060	28.5	57	99
OUJ3z87c	70.00	33.40	32.70	0.471	5.00E+05	3.70E+05	0.1341	0.0041	7.080	0.260	0.3746	0.0110	0.5393	2138	28.5	57	2115	16.5	33	2050	26.5	53	97
OUJ3z88	136.20	82.10	37.30	0.604	2.00E+05	4.30E+05	0.0697	0.0032	1.591	0.066	0.1636	0.0052	-0.0580	952	43.0	86	963	13.0	26	976	14.5	29	101
OUJ3z90	83.90	76.60	22.26	0.912	-2.00E+06	1.10E+06	0.0638	0.0053	0.873	0.074	0.0993	0.0033	0.1719	690	85.0	170	634	20.5	41	610	10.0	20	96
OUJ3z91	790.00	670.00	164.00	0.868	8.00E+06	1.20E+06	0.0617	0.0022	0.780	0.022	0.0906	0.0035	0.2658	673	35.5	71	587	6.5	13	559	10.5	21	95
OUJ3z92	159.50	109.50	30.90	0.694	2.80E+06	2.80E+06	0.0574	0.0027	0.805	0.040	0.0995	0.0032	0.2754	510	50.0	100	597	11.0	22	611	9.5	19	102
OUJ3z93c	86.40	43.30	15.19	0.498	3.00E+05	1.20E+05	0.0642	0.0051	1.057	0.081	0.1177	0.0041	-0.0844	650	90.0	180	723	20.0	40	717	11.5	23	99
OUJ3z93r	606.00	191.00	15.84	0.303	1.07E+06	7.40E+05	0.0637	0.0019	0.800	0.022	0.0898	0.0027	0.1901	718	31.0	62	596	6.0	12	555	8.0	16	93
OUJ3z94	523.00	215.00	62.00	0.414	3.00E+06	1.10E+06	0.0597	0.0017	0.857	0.026	0.1022	0.0030	0.3238	578	32.0	64	630	7.0	14	627	9.0	18	100
OUJ3z95c	70.40	74.60	19.90	1.012	-2.90E+05	2.20E+05	0.0571	0.0046	0.807	0.073	0.1014	0.0037	0.2975	580	90.0	180	614	18.0	36	622	10.5	21	101
OUJ3z95r	45.80	45.20	12.10	0.926	-1.70E+04	7.60E+04	0.0607	0.0069	0.807	0.085	0.0981	0.0045	0.1355	570	105.0	210	606	22.5	45	603	13.0	26	100
OUJ3z96	389.00	326.00	87.70	0.840	7.00E+05	4.10E+05	0.0618	0.0022	0.820	0.032	0.0930	0.0026	0.2668	696	39.0	78	606	9.0	18	573	7.5	15	95
OUJ3z97	742.00	12.56	3.81	0.017	8.00E+06	1.20E+06	0.0608	0.0016	0.834	0.024	0.0993	0.0027	0.1214	632	29.5	59	617	6.5	13	610	8.0	16	99
OUJ3z98c	348.00	126.40	129.50	0.369	-3.70E+06	3.60E+06	0.1329	0.0018	7.190	0.110	0.3858	0.0110	0.8008	2132	16.0	32	2137	7.5	15	2103	25.5	51	98
OUJ3z99	61.50	89.30	86.20	1.441	4.70E+05	2.80E+05	0.1276	0.0030	6.570	0.210	0.3683	0.0120	0.4993	2069	25.5	51	2056	14.0	28	2021	27.5	55	98
OUJ3z100	123.30	80.80	23.00	0.662	5.00E+05	1.60E+05	0.0598	0.0035	0.811	0.048	0.0963	0.0030	0.1675	570	60.0	120	599	13.5	27	594	9.5	19	99
OUJ3z101	381.00	875.00	247.00	2.303	-1.20E+05	4.30E+05	0.0604	0.0022	0.842	0.030	0.0997	0.0029	0.3708	596	39.0	78	619	8.5	17	612	8.5	17	99
OUJ3z102	137.50	95.70	90.90	0.701	-4.40E+05	7.50E+05	0.1370	0.0030	7.070	0.150	0.3732	0.0110	0.3189	2179	21.5	43	2119	9.5	19	2044	26.5	53	96
OUJ3z103	708.00	474.00	141.10	0.669	-1.00E+07	1.20E+06	0.0619	0.0014	0.878	0.020	0.1021	0.0028	0.1517	660	23.5	47	640	5.5	11	627	8.5	17	98
OUJ3z104	64.90	23.40	7.73	0.363	6.60E+05	6.30E+05	0.0633	0.0073	0.898	0.099	0.1028	0.0037	-0.0361	720	120.0	240	644	26.0	52	630	11.0	22	98
OUJ3z105	128.00	155.00	43.80	1.229	-3.70E+05	2.70E+05	0.0588	0.0027	0.822	0.042	0.1012	0.0032	0.4222	560	49.0	98	606	11.5	23	621	9.5	19	102
OUJ3z106	62.40	56.20	58.20	0.885	-4.00E+05	3.20E+05	0.1335	0.0054	7.010	0.290	0.3767	0.0120	0.2476	2120	38.0	76	2117	18.5	37	2060	27.0	54	97
OUJ3z107c	699.00	762.00	217.80	1.105	-1.00E+06	1.20E+06	0.0623	0.0015	0.893	0.024	0.1041	0.0029	0.3855	674	26.5	53	649	6.5	13	639	8.5	17	98
OUJ3z107r	691.00	335.00	96.20	0.483	-1.20E+06	1.90E+06	0.0608	0.0015	0.866	0.019	0.1021	0.0029	0.0710	621	26.5	53	633	5.0	10	627	8.5	17	99
OUJ3z108	370.00	176.70	168.20	0.484	-6.00E+06	1.50E+06	0.1268	0.0021	6.256	0.090	0.3569	0.0100	0.2916	2048	18.0	36	2014	6.5	13	1967	24.0	48	98
OUJ3z109c	43.00	61.70	17.43	1.441	1.01E+05	7.50E+04	0.0604	0.0075	0.840	0.100	0.0986	0.0036	0.1386	600	125.0	250	611	28.0	56	606	10.5	21	99
OUJ3z110	275.10	161.90	50.00	0.598	7.50E+05	7.50E+05	0.0604	0.0025	0.817	0.036	0.0978	0.0029	0.4447	620	44.0	88	604	10.0	20	601	8.5	17	100
OUJ3z111c	337.00	57.50	18.70	0.175	7.00E+06	1.10E+06	0.0629	0.0022	0.920	0.030	0.1057	0.0030	0.1599	683	36.5	73	661	8.0	16	647	8.5	17	98
OUJ3z111r	408.00	78.20	25.80	0.191	1.27E+06	7.00E+05	0.0641	0.0025	0.898	0.036	0.1021	0.0029	0.1354	748	42.0	84	655	9.5	19	627	8.5	17	96
OUJ3z112c	165.10	93.80	86.30	0.562	1.99E+06	8.20E+05	0.1232	0.0026	5.910	0.150	0.3413	0.0120	0.4571	1997	21.5	43	1960	11.0	22	1892	28.0	56	97
OUJ3z113c	483.40	107.70	33.40	0.221	3.90E+06	1.90E+06	0.1055	0.0019	3.773	0.089	0.2606	0.0080	0.5688	1723	16.0	32	1588	9.0	18	1493	20.5	41	94
OUJ3z113r	320.00	98.10	23.40	0.309	2.40E+05	6.50E+05	0.0705	0.0032	1.081	0.064	0.1115	0.0041	0.6296	908	47.0	94	739	15.5	31	681	12.0	24	92
OUJ3z116	15.53	20.00	17.23	1.299	-7.00E+05	1.10E+05	0.1159	0.0089	5.080	0.380	0.3180	0.0150	0.3696	1870	65.0	130	1831	33.0	66	1775	35.5	71	97

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ3z117	115.70	14.79	5.09	0.127	-2.70E+06	1.60E+06	0.0630	0.0036	0.860	0.044	0.0994	0.0032	-0.0505	660	65.0	130	627	12.0	24	611	9.5	19	97
OUJ3z118	62.50	117.70	35.00	1.923	-1.10E+05	1.20E+05	0.0631	0.0066	0.861	0.084	0.1023	0.0043	-0.0611	630	110.0	220	619	23.0	46	627	12.5	25	101
OUJ3z119	49.50	37.50	9.35	0.760	8.00E+05	1.70E+05	0.0580	0.0073	0.678	0.084	0.0841	0.0034	0.1172	400	125.0	250	512	25.0	50	520	10.0	20	102
OUJ3z120c	175.40	69.50	87.90	0.400	-4.00E+06	1.30E+06	0.1924	0.0026	13.040	0.200	0.4900	0.0140	0.5125	2763	15.0	30	2686	7.0	14	2570	29.5	59	96
OUJ3z121	360.00	207.00	59.80	0.573	2.60E+05	6.10E+05	0.0614	0.0021	0.856	0.031	0.1002	0.0030	0.3522	643	37.0	74	629	8.5	17	616	8.5	17	98
OUJ3z122c	110.40	111.40	29.80	1.014	-1.00E+06	1.70E+06	0.0600	0.0042	0.801	0.059	0.0961	0.0030	0.2600	560	75.0	150	591	17.0	34	591	9.0	18	100
OUJ3z123	243.20	337.40	316.50	1.408	-6.00E+06	1.50E+06	0.1268	0.0020	6.252	0.098	0.3597	0.0110	0.3360	2051	17.5	35	2013	7.0	14	1980	25.0	50	98
OUJ3z124	87.70	28.99	37.16	0.338	1.14E+06	6.70E+05	0.2251	0.0042	16.550	0.330	0.5347	0.0170	0.5089	3013	18.0	36	2907	9.5	19	2760	34.5	69	95
Pb loss and discordant data																							
OUJ3z5	590.00	465.00	327.00	0.709	1.10E+05	2.40E+04	0.1890	0.0170	3.140	0.370	0.1215	0.0048	0.8838	2690	75.0	150	1454	43.0	86	739	13.5	27	51
OUJ3z29c	642.00	95.50	224.00	0.149	2.00E+05	3.30E+05	0.1630	0.0290	3.260	0.750	0.1374	0.0077	0.9730	2110	155.0	310	1360	85.0	170	829	21.5	43	61
OUJ3z29r	889.00	12.80	8.55	0.015	9.40E+05	9.50E+05	0.0850	0.0012	1.746	0.034	0.1454	0.0042	0.6871	1312	13.5	27	1025	6.5	13	875	12.0	24	85
OUJ3z40	716.00	214.00	243.00	0.287	2.90E+06	3.90E+06	0.1767	0.0017	10.030	0.200	0.4009	0.0130	0.9239	2636	12.5	25	2440	9.0	18	2172	29.5	59	89
OUJ3z46	43.20	101.60	29.80	2.390	-1.30E+05	1.20E+05	0.0530	0.0064	0.723	0.085	0.0992	0.0038	0.0506	240	125.0	250	547	26.0	52	612	10.5	21	112
OUJ3z72	911.00	476.00	374.00	0.532	2.60E+06	1.90E+06	0.1402	0.0017	6.730	0.120	0.3440	0.0100	0.7804	2236	14.5	29	2075	8.0	16	1905	25.0	50	92
OUJ3z87r	229.00	26.50	21.70	0.121	-9.30E+05	9.20E+05	0.1175	0.0023	3.850	0.120	0.2354	0.0080	0.7185	1919	16.5	33	1601	12.0	24	1362	21.0	42	85
OUJ3z89	1000.00	267.80	71.50	0.274	1.00E+06	1.10E+06	0.0915	0.0019	1.923	0.089	0.1480	0.0061	0.8793	1456	20.0	40	1084	15.5	31	889	17.0	34	82
OUJ3z98r	1020.00	1400.00	102.30	0.472	2.40E+06	4.50E+06	0.1323	0.0014	6.240	0.360	0.3350	0.0200	0.9782	2125	14.0	28	1995	25.5	51	1858	48.0	96	93
OUJ3z109r	20.37	16.14	4.43	0.793	2.50E+04	4.90E+04	0.0460	0.0110	0.610	0.140	0.0974	0.0043	-0.0905	80	205.0	410	480	50.0	100	599	12.5	25	125
OUJ3z112r	6.39	4.83	4.75	0.761	-2.20E+05	3.10E+05	0.1070	0.0170	5.720	0.880	0.3710	0.0230	0.2955	1720	165.0	330	1930	70.0	140	2027	55.0	110	105
OUJ3z114	19.17	5.50	1.39	0.294	1.00E+04	3.80E+04	0.0520	0.0096	0.710	0.130	0.1026	0.0057	0.3136	130	175.0	350	536	39.5	79	629	16.5	33	117
OUJ3z115	248.00	311.00	195.60	1.248	1.40E+05	8.50E+05	0.1233	0.0026	4.410	0.140	0.2587	0.0088	0.7689	1999	18.5	37	1714	12.5	25	1482	22.5	45	86
OUJ3z120r	297.00	108.60	120.50	0.366	-6.00E+04	1.90E+06	0.1877	0.0028	10.690	0.170	0.4099	0.0120	0.5486	2721	15.5	31	2498	7.5	15	2214	27.5	55	89
OUJ3z122r	29.20	12.87	3.78	0.454	-6.70E+04	4.20E+04	0.0730	0.0098	0.950	0.120	0.0982	0.0045	0.0178	870	145.0	290	677	35.5	71	604	13.0	26	89

Footnotes:

- Analysis references: OUJ3z is zircon from sample OUJ3 (mount CT17-9), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.3a: Sample TAZ2 (LA-ICPMS)

IGSN: IEACC0041 Coordinate UTM: Zone 30S, 380945 m E, 3774869 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
TAZ2z2	834.00	78.90	26.10	0.100	1.04E+07	9.20E+06	0.0622	0.0028	0.864	0.049	0.1013	0.0024	0.5011	687	44.0	88	633	13.0	26	622	7.0	14	98
TAZ2z3	412.00	332.00	458.00	0.827	2.00E+07	1.00E+07	0.1777	0.0075	12.870	0.670	0.5266	0.0110	0.4880	2655	10.0	20	2669	24.5	49	2730	23.0	46	102
TAZ2z6	732.00	131.30	39.40	0.185	4.50E+06	8.60E+06	0.0605	0.0028	0.864	0.049	0.1029	0.0023	0.2407	626	55.0	110	632	13.5	27	632	6.5	13	100
TAZ2z7	570.00	8.30	2.91	0.012	-3.00E+06	9.90E+06	0.0616	0.0029	0.894	0.050	0.1053	0.0024	0.0258	663	50.0	100	648	13.5	27	645	7.0	14	100
TAZ2z8	119.00	54.00	59.70	0.466	1.80E+06	3.30E+06	0.1325	0.0060	7.510	0.420	0.4098	0.0098	0.5466	2154	18.0	36	2175	26.0	52	2214	22.5	45	102
TAZ2z9	621.00	646.20	173.30	1.085	9.90E+06	7.80E+06	0.0601	0.0028	0.784	0.044	0.0951	0.0021	0.0875	612	55.0	110	589	12.0	24	585	6.0	12	99
TAZ2z11	355.00	116.90	32.70	0.338	-6.00E+04	2.20E+06	0.0596	0.0031	0.811	0.049	0.0997	0.0023	0.0007	581	55.0	110	602	14.0	28	612	6.5	13	102
TAZ2z12	484.10	479.00	202.30	1.021	-7.10E+06	5.40E+06	0.0727	0.0034	1.439	0.087	0.1445	0.0052	0.7572	1011	47.0	94	906	18.5	37	870	14.5	29	96
TAZ2z13	38.00	54.30	25.40	1.486	8.00E+05	5.00E+05	0.0761	0.0065	1.670	0.160	0.1597	0.0044	0.2574	1050	90.0	180	991	30.5	61	955	12.0	24	96
TAZ2z14	358.00	493.00	232.00	1.387	-2.70E+06	4.50E+06	0.0743	0.0036	1.714	0.100	0.1688	0.0038	0.4501	1037	49.0	98	1012	19.0	38	1005	10.5	21	99
TAZ2z16	167.60	99.00	66.70	0.595	-8.80E+06	5.50E+06	0.0918	0.0069	2.270	0.190	0.1828	0.0045	0.5665	1440	70.0	140	1197	30.5	61	1082	12.5	25	90
TAZ2z17	636.00	121.60	44.20	0.194	-1.03E+07	7.20E+06	0.0657	0.0029	1.197	0.065	0.1332	0.0030	0.4477	796	46.5	93	799	15.0	30	806	8.5	17	101
TAZ2z20	181.90	112.40	57.00	0.634	3.00E+06	3.60E+06	0.0741	0.0041	1.736	0.120	0.1725	0.0043	0.5716	1059	60.0	120	1022	23.0	46	1026	12.0	24	100
TAZ2z21	155.10	377.00	113.80	2.467	-2.50E+06	1.60E+06	0.0614	0.0038	0.877	0.061	0.1050	0.0025	0.1970	670	65.0	130	637	16.5	33	643	7.5	15	101
TAZ2z22	420.00	534.00	142.50	1.307	-9.90E+06	5.10E+06	0.0631	0.0034	0.801	0.048	0.0936	0.0025	0.0494	706	55.0	110	599	13.0	26	578	7.0	14	96
TAZ2z23	191.10	170.50	51.30	0.896	-1.60E+06	2.90E+06	0.0644	0.0044	0.920	0.066	0.1068	0.0037	0.2682	720	75.0	150	663	18.0	36	654	10.5	21	99
TAZ2z24	213.00	145.30	43.60	0.707	-2.90E+06	3.40E+06	0.0619	0.0038	0.898	0.065	0.1062	0.0027	0.4175	660	70.0	140	647	17.5	35	651	8.0	16	101
TAZ2z27	181.70	181.00	65.40	0.978	-6.00E+07	1.80E+07	0.0700	0.0040	1.265	0.081	0.1324	0.0033	0.1442	914	60.0	120	828	18.5	37	802	9.5	19	97
TAZ2z28	294.00	187.10	110.40	0.654	-3.00E+08	7.20E+08	0.0963	0.0043	3.233	0.170	0.2475	0.0058	0.2354	1549	41.0	82	1464	21.0	42	1425	15.0	30	97
TAZ2z29	362.00	173.60	47.80	0.488	-1.50E+07	5.30E+07	0.0594	0.0033	0.802	0.052	0.0977	0.0022	0.2697	578	60.0	120	596	15.0	30	602	7.0	14	101
TAZ2z30	415.00	235.00	113.40	0.568	1.70E+07	4.50E+07	0.0741	0.0035	1.792	0.100	0.1764	0.0041	0.2396	1036	47.5	95	1041	18.5	37	1049	11.5	23	101
Discordant data																							
TAZ2z1	720.00	1367.00	409.00	1.969	-2.87E+06	9.50E+05	0.0913	0.0061	1.169	0.100	0.0925	0.0044	0.6411	1450	70.0	140	777	24.0	48	574	12.5	25	74
TAZ2z4	939.00	388.00	259.00	0.428	-1.60E+07	5.40E+06	0.1993	0.0092	9.890	0.670	0.3597	0.0110	0.9411	2837	18.5	37	2427	30.0	60	1979	27.0	54	82
TAZ2z5	1026.00	445.00	160.40	0.464	-1.23E+07	8.30E+06	0.1141	0.0047	3.202	0.180	0.2044	0.0055	0.9033	1865	37.5	75	1456	22.0	44	1199	14.5	29	82
TAZ2z10	493.00	318.00	317.00	0.659	-4.30E+06	9.00E+06	0.1687	0.0071	7.950	0.430	0.3437	0.0090	0.7476	2568	10.0	20	2224	24.0	48	1904	21.5	43	86
TAZ2z15	1200.00	1104.00	532.00	0.941	-1.35E+07	6.60E+06	0.1252	0.0053	2.970	0.190	0.1728	0.0080	0.9619	2032	36.0	72	1399	25.5	51	1026	22.0	44	73
TAZ2z18	1530.00	659.00	199.00	0.436	-1.04E+07	3.30E+06	0.0752	0.0033	0.814	0.066	0.0780	0.0046	0.9695	1069	44.0	88	605	19.0	38	483	14.0	28	80
TAZ2z19	82.80	64.60	44.60	0.786	2.90E+06	4.10E+06	0.1140	0.0180	2.980	0.520	0.1859	0.0056	0.6827	1790	135.0	270	1370	60.0	120	1099	15.0	30	80
TAZ2z25	469.00	628.00	177.00	1.333	2.60E+07	3.90E+07	0.0729	0.0040	0.896	0.061	0.0888	0.0021	0.3783	1003	60.0	120	647	16.5	33	549	6.5	13	85
TAZ2z26	37.00	254.00	105.00	5.263	-1.00E+06	1.20E+06	0.1450	0.0150	3.580	0.380	0.1877	0.0091	0.2547	2210	95.0	190	1524	44.5	89	1108	24.5	49	73

Footnotes:

- Analysis references: TAZ2z is zircon from sample TAZ2 (mount CT17-10), followed by grain number.

Table D.3b: Sample TAZ2 (SHRIMP)

IGSN: IEACC0041 Coordinate UTM: Zone 30S, 380945 m E, 3774869 m N

ANALYSIS	U (ppm)	Th (ppm)	Ratios											Ages (Ma)						Discordace (%)
			$^{232}Th/^{238}U$	% ^{206}Pbc	$^{204}Pb/^{206}Pb$	σ (%)	$^{207}Pb/^{206}Pb$	σ (%)	$^{207}Pb/^{235}U$	σ (%)	$^{206}Pb/^{238}U$	σ (%)	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^{*}/^{238}U$	σ	2σ	
Concordant data																				
TAZ2z32	171	234	1.41	0.32	1.80E-04	71	0.058	4.1	0.66	4.6	0.083	2.1	0.5	525	89	178	515	10	20	2
TAZ2z33r	342	83	0.25	0.03	1.80E-05	71	0.152	1.2	8.82	1.8	0.420	1.3	0.7	2369	21	42	2262	24	48	5
TAZ2z33c	134	92	0.71	0.00	---	---	0.178	0.7	11.68	1.7	0.475	1.5	0.9	2639	11	22	2504	32	64	6
TAZ2z34r	204	93	0.47	--	----	---	0.059	1.9	0.83	2.4	0.102	1.4	0.6	569	42	84	628	8	16	-11
TAZ2z35r	132	71	0.56	0.00	---	---	0.070	2.0	1.45	2.6	0.151	1.7	0.7	921	41	82	906	15	30	2
TAZ2z35c	153	149	1.00	--	----	---	0.069	3.6	1.32	4.0	0.139	1.7	0.4	895	74	148	839	13	26	7
TAZ2z36c	370	189	0.53	0.27	1.50E-04	50	0.057	2.5	0.80	2.8	0.102	1.3	0.5	491	55	110	625	7	14	-29
TAZ2z37r	74	191	2.66	0.05	3.90E-05	100	0.170	1.0	10.71	2.2	0.456	1.9	0.9	2560	17	34	2424	39	78	6
TAZ2z39	283	35	0.13	0.26	1.50E-04	45	0.070	3.6	1.38	3.8	0.143	1.3	0.3	928	74	148	863	10	20	7
TAZ2z41c	570	324	0.59	--	-1.60E-05	100	0.070	1.0	1.38	1.7	0.142	1.4	0.8	941	21	42	858	11	22	9
TAZ2z42	289	258	0.92	--	----	---	0.061	3.0	0.79	3.5	0.093	1.9	0.5	639	64	128	576	10	20	10
TAZ2z43	79	35	0.45	1.03	6.00E-04	41	0.072	5.5	1.63	6.3	0.165	2.9	0.5	982	113	226	983	27	54	0
TAZ2z44	318	416	1.35	0.09	5.00E-05	100	0.063	2.1	0.67	2.5	0.077	1.3	0.5	700	45	90	480	6	12	33
TAZ2z45c	543	488	0.93	--	-5.00E-06	100	0.178	0.3	11.96	1.6	0.488	1.5	1.0	2632	6	12	2562	33	66	3
TAZ2z46	442	157	0.37	--	-1.30E-05	71	0.192	0.4	12.76	1.3	0.481	1.2	1.0	2762	6	12	2532	25	50	10
TAZ2z47	186	184	1.02	--	-7.10E-05	100	0.061	2.7	0.79	3.0	0.094	1.4	0.5	635	58	116	577	8	16	10
TAZ2z49	384	231	0.62	0.11	6.30E-05	58	0.071	1.3	1.53	1.8	0.156	1.2	0.7	962	27	54	932	11	22	3
TAZ2z51c	485	198	0.42	0.05	2.60E-05	100	0.061	1.4	0.87	1.8	0.103	1.2	0.6	647	30	60	635	7	14	2
TAZ2z51r	119	24	0.21	0.83	4.60E-04	50	0.053	7.0	0.70	7.2	0.095	1.7	0.2	340	159	318	588	9	18	-76
TAZ2z52	207	149	0.74	0.10	6.70E-05	50	0.120	0.8	5.65	1.6	0.342	1.4	0.9	1956	15	30	1894	23	46	4
TAZ2z53	598	421	0.73	--	-4.70E-06	100	0.162	0.4	10.21	1.2	0.458	1.2	1.0	2473	6	12	2431	24	48	2
TAZ2z54	43	44	1.04	--	-0.00036	71	0.077	5.4	1.78	5.9	0.167	2.4	0.4	1133	108	216	995	22	44	13
TAZ2z55	102	45	0.46	0.03	2.40E-05	100	0.224	1.1	17.99	2.1	0.582	1.7	0.8	3012	18	36	2955	41	82	2
TAZ2z56r	120	21	0.18	--	----	---	0.067	2.8	0.77	3.3	0.084	1.7	0.5	841	59	118	518	8	16	40
TAZ2z57	460	383	0.86	0.20	1.20E-04	50	0.060	1.9	0.79	2.3	0.095	1.2	0.5	615	42	84	583	7	14	5
TAZ2z58	184	108	0.60	--	-8.00E-05	71	0.075	1.8	1.79	2.3	0.172	1.4	0.6	1079	35	70	1022	14	28	6
TAZ2z59	844	628	0.77	0.12	7.10E-05	41	0.066	1.0	1.18	1.5	0.130	1.1	0.7	808	22	44	786	8	16	3
TAZ2z60	360	168	0.48	--	-1.60E-04	50	0.062	2.4	0.80	2.7	0.093	1.2	0.5	671	50	100	576	7	14	15
TAZ2z61	104	130	1.29	0.45	2.50E-04	71	0.055	5.7	0.74	6.2	0.097	2.6	0.4	407	127	254	598	15	30	-49
TAZ2z62	260	46	0.18	--	-8.90E-05	71	0.064	2.2	0.96	2.5	0.109	1.3	0.5	735	46	92	665	8	16	10
TAZ2z63	327	332	1.05	--	-5.60E-05	71	0.069	1.5	1.39	1.9	0.146	1.3	0.7	901	30	60	880	10	20	3
TAZ2z65	270	79	0.30	0.43	2.40E-04	45	0.054	3.4	0.77	3.7	0.103	1.3	0.4	387	77	154	633	8	16	-67
TAZ2z67	112	52	0.48	--	----	---	0.117	1.1	5.08	2.0	0.316	1.7	0.8	1908	20	40	1768	26	52	8
TAZ2z68	142	73	0.53	--	-1.80E-04	71	0.066	3.6	0.90	3.9	0.099	1.5	0.4	820	76	152	607	9	18	27
TAZ2z69	383	141	0.38	0.45	2.60E-04	30	0.070	2.0	1.39	2.3	0.143	1.2	0.5	937	41	82	864	10	20	8
TAZ2z70	182	79	0.45	0.11	6.50E-05	100	0.061	2.5	0.93	2.9	0.110	1.4	0.5	636	55	110	674	9	18	-6
TAZ2z72	325	406	1.29	0.31	1.70E-04	50	0.056	2.8	0.71	3.1	0.091	1.3	0.4	466	63	126	563	7	14	-22
TAZz73	234	183	0.81	--	----	---	0.061	1.7	0.86	2.2	0.102	1.3	0.6	631	37	74	627	8	16	1
TAZ2z74	210	112	0.55	--	-1.60E-04	58	0.065	2.7	0.98	3.0	0.109	1.4	0.5	773	56	112	667	9	18	15
TAZ2z75	697	594	0.88	0.01	5.10E-06	100	0.122	0.7	5.68	1.9	0.339	1.7	0.9	1980	12	24	1882	28	56	6
TAZ2z76	232	87	0.39	0.15	9.30E-05	45	0.090	1.1	2.94	1.7	0.237	1.3	0.8	1425	21	42	1373	16	32	4
TAZ2z77	438	264	0.62	0.08	4.80E-05	58	0.072	1.1	1.57	1.6	0.157	1.2	0.8	1000	22	44	942	11	22	6
TAZ2z78	168	41	0.25	0.59	3.30E-04	41	0.059	3.9	0.98	4.1	0.120	1.4	0.3	574	85	170	731	10	20	-29
TAZ2z79	935	246	0.27	0.69	4.00E-04	18	0.065	1.8	0.97	2.2	0.108	1.2	0.6	779	38	76	664	8	16	16
High common Pb and/or discordant data																				
TAZ2z31	1526	985	0.67	2.19	1.20E-03	11	0.064	3.4	0.48	3.6	0.054	1.1	0.3	340	4	8	743	72	144	56
TAZ2z34c	213	139	0.68	0.24	1.70E-04	35	0.170	2.4	5.35	4.8	0.228	4.1	0.9	1324	50	100	2559	40	80	53
TAZ2z36r	2662	388	0.15	1.29	7.50E-04	13	0.068	2.2	0.36	2.4	0.039	1.1	0.4	245	3	6	871	46	92	73
TAZ2z37c	353	133	0.39	--	----	---	0.179	0.9	9.43	1.6	0.382	1.3	0.8	2088	23	46	2643	15	30	25
TAZ2z38	622	323	0.54	0.14	9.20E-05	29	0.119	1.0	3.95	1.5	0.241	1.1	0.8	1391	14	28	1939	17	34	31
TAZ2z40	570	165	0.30	0.18	1.20E-04	27	0.128	0.6	4.41	1.4	0.251	1.2	0.9	1442	16	32	2064	11	22	34
TAZ2z48	2123	1945	0.95	1.74	1.00E-03	10	0.072	2.5	0.53	3.2	0.054	2.0	0.6	339	7	14	975	51	102	67

ANALYSIS	U (ppm)	Th (ppm)	Ratios											Ages (Ma)						Discordace (%)
			$^{232}Th/^{238}U$	$\%\ ^{206}Pbc$	$^{204}Pb/^{206}Pb$	σ (%)	$^{207}Pb/^{206}Pb$	σ (%)	$^{207}Pb/^{235}U$	σ (%)	$^{206}Pb/^{238}U$	σ (%)	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	
TAZ2z50	836	558	0.69	1.78	1.00E-03	15	0.067	3.6	0.53	3.8	0.058	1.1	0.3	361	4	8	832	75	150	58
TAZ2z56c	833	68	0.08	0.02	1.60E-05	58	0.115	0.4	4.43	1.9	0.280	1.8	1.0	1593	26	52	1875	8	16	17
TAZ2z64	45	122	2.79	3.55	2.30E-03	29	0.123	9.3	3.07	9.7	0.181	2.6	0.3	1072	26	52	2003	165	330	50
TAZ2z66	428	102	0.25	0.05	3.00E-05	71	0.111	0.8	3.19	1.4	0.209	1.2	0.8	1223	13	26	1810	14	28	36
TAZ2z71	284	184	0.67	0.08	5.10E-05	58	0.124	0.9	5.02	1.6	0.293	1.3	0.8	1655	19	76	2021	16	16	20

Footnotes:

- $\%\ ^{206}Pb^c$ is % of ^{206}Pb from common Pb
- Errors are 1-sigma
- Pb* indicates radiogenic Pb, corrected for common Pb.
- Analysis references: TAZ2z is zircon from sample TAZ2 (mount CT17-10), followed by grain number "c" or "r", meaning core or rim, respectively.
- Error in standard calibration was 0.23% (not included in above errors but required when comparing data from different mounts).

Table D.4a: Sample TAZ3 (LA-ICPMS)

IGSN: IEACC0042 Coordinate UTM: Zone 30S,381775 m E, 3773906 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
TAZ3z1	215.60	102.00	32.50	0.382	-1.30E+07	1.10E+07	0.0605	0.0035	0.955	0.064	0.1145	0.0027	0.1987	634	60.0	120	681	16.0	32	699	8.0	16	103
TAZ3z2	645.00	172.20	47.45	0.265	1.90E+07	1.90E+07	0.0627	0.0028	0.922	0.050	0.1064	0.0024	0.2490	690	48.0	96	663	13.5	27	652	7.0	14	98
TAZ3z3	576.00	212.30	239.20	0.368	1.34E+08	6.50E+07	0.1753	0.0073	11.480	0.610	0.4733	0.0100	0.7348	2627	8.5	17	2562	24.5	49	2498	22.5	45	98
TAZ3z4	1890.00	798.00	124.40	0.423	7.60E+07	2.80E+07	0.0742	0.0032	1.222	0.067	0.1192	0.0029	0.6210	1042	43.5	87	810	15.5	31	726	8.5	17	90
TAZ3z5	458.40	511.80	239.10	1.109	1.30E+07	1.40E+07	0.0717	0.0034	1.697	0.097	0.1700	0.0038	0.2730	990	46.5	93	1006	18.5	37	1012	10.5	21	101
TAZ3z6	137.70	207.00	191.00	1.484	7.00E+07	1.80E+07	0.1111	0.0050	5.600	0.310	0.3650	0.0090	0.3686	1840	17.0	34	1914	24.0	48	2005	21.0	42	105
TAZ3z7	366.00	429.00	405.00	1.149	1.90E+07	2.60E+07	0.1211	0.0051	6.080	0.330	0.3629	0.0084	0.6709	1999	11.0	22	1986	24.0	48	1999	20.5	41	101
TAZ3z9	467.00	126.50	39.20	0.268	7.10E+06	7.20E+06	0.0596	0.0028	0.857	0.047	0.1040	0.0024	0.1655	587	50.0	100	630	13.0	26	638	7.0	14	101
TAZ3z10	442.00	415.00	372.00	0.923	-6.00E+05	1.70E+07	0.1168	0.0049	5.578	0.300	0.3445	0.0076	0.5721	1930	10.5	21	1912	23.0	46	1908	18.0	36	100
TAZ3z11	39.70	40.50	39.00	0.997	-2.10E+06	1.80E+06	0.1275	0.0068	6.780	0.430	0.3861	0.0100	0.3910	2068	32.0	64	2095	28.5	57	2104	23.5	47	100
TAZ3z13	117.20	101.70	49.00	0.828	2.20E+06	1.90E+06	0.0733	0.0045	1.760	0.120	0.1728	0.0045	0.0677	1030	65.0	130	1035	22.5	45	1027	12.5	25	99
TAZ3z14	294.10	383.00	106.30	1.287	1.50E+07	1.10E+07	0.0618	0.0033	0.905	0.056	0.1055	0.0024	0.2904	682	55.0	110	653	15.0	30	646	7.0	14	99
TAZ3z16	585.00	339.00	347.00	0.566	-1.40E+06	7.70E+06	0.1726	0.0073	9.730	0.530	0.4068	0.0100	0.6554	2601	10.0	20	2413	25.0	50	2205	24.5	49	91
TAZ3z17	83.40	86.70	23.67	1.017	-6.00E+06	3.40E+06	0.0641	0.0051	0.932	0.085	0.1043	0.0033	0.2869	740	85.0	170	666	23.0	46	639	9.5	19	96
TAZ3z19	134.10	237.00	230.10	1.724	1.80E+06	2.80E+06	0.1286	0.0058	6.750	0.370	0.3777	0.0094	0.5751	2099	17.5	35	2081	23.5	47	2065	22.0	44	99
TAZ3z20	174.50	144.80	168.60	0.802	-5.70E+06	5.60E+06	0.1789	0.0076	11.370	0.620	0.4525	0.0110	0.7315	2666	11.5	23	2552	25.0	50	2406	24.0	48	94
TAZ3z21	63.00	40.10	11.96	0.588	5.00E+05	5.30E+05	0.0765	0.0056	1.490	0.130	0.1389	0.0062	0.4242	1110	75.0	150	923	27.5	55	843	17.0	34	91
TAZ3z22	364.00	1251.00	575.00	3.274	1.60E+06	4.30E+06	0.0746	0.0035	1.622	0.095	0.1559	0.0038	0.4702	1066	42.5	85	983	18.5	37	934	10.5	21	95
TAZ3z24	92.90	62.70	16.90	0.646	2.30E+05	5.10E+05	0.0624	0.0046	0.862	0.070	0.0986	0.0026	0.2655	670	75.0	150	631	18.5	37	606	7.5	15	96
TAZ3z25	1022.00	140.00	43.20	0.115	5.10E+06	5.60E+06	0.0677	0.0029	1.347	0.085	0.1407	0.0055	0.9197	855	44.5	89	863	18.5	37	848	15.5	31	98
TAZ3z27	232.70	198.60	79.60	0.829	-1.00E+07	1.50E+07	0.0674	0.0035	1.434	0.092	0.1497	0.0037	0.4207	832	55.0	110	900	19.0	38	899	10.0	20	100
TAZ3z28	442.00	373.00	176.00	0.746	1.10E+07	1.20E+07	0.0736	0.0034	1.898	0.110	0.1829	0.0042	0.2550	1028	49.0	98	1082	19.0	38	1083	11.5	23	100
TAZ3z29	98.30	77.10	35.20	0.750	1.50E+06	1.00E+06	0.0729	0.0045	1.817	0.130	0.1776	0.0043	0.2914	1006	65.0	130	1056	23.0	46	1056	12.0	24	100
TAZ3z30	827.00	201.20	95.30	0.231	1.80E+06	5.40E+06	0.0743	0.0032	1.828	0.098	0.1760	0.0038	0.3632	1049	43.0	86	1055	17.5	35	1045	10.5	21	99
TAZ3z32	313.70	168.80	58.20	0.511	3.00E+06	1.30E+06	0.0636	0.0033	1.130	0.068	0.1267	0.0029	0.1083	719	55.0	110	766	16.5	33	769	8.0	16	100
TAZ3z33	121.10	222.50	177.10	1.776	1.10E+06	1.40E+06	0.1072	0.0051	4.690	0.270	0.3115	0.0080	0.4947	1763	23.5	47	1761	25.0	50	1748	19.5	39	99
TAZ3z34	416.00	142.50	63.10	0.334	1.90E+06	2.10E+06	0.0723	0.0034	1.680	0.096	0.1648	0.0043	0.3698	993	45.5	91	999	18.5	37	983	12.0	24	98
TAZ3z35	511.00	467.00	205.70	0.881	2.40E+06	4.20E+06	0.0724	0.0032	1.660	0.092	0.1621	0.0039	0.4545	992	45.0	90	995	17.0	34	968	11.0	22	97
TAZ3z36	298.90	341.00	304.20	1.096	9.40E+06	3.90E+06	0.1189	0.0052	5.970	0.330	0.3577	0.0086	0.4651	1955	15.5	31	1970	24.0	48	1974	20.0	40	100
TAZ3z37	153.00	586.00	204.40	3.622	1.31E+06	6.20E+05	0.0718	0.0048	1.257	0.088	0.1256	0.0035	0.0168	1010	70.0	140	827	19.0	38	762	10.0	20	92
TAZ3z38	150.00	69.80	20.70	0.439	3.80E+05	4.60E+05	0.0589	0.0045	0.901	0.073	0.1079	0.0027	0.1151	520	85.0	170	647	19.5	39	661	8.0	16	102
TAZ3z39	341.00	428.00	120.70	1.188	7.80E+06	3.30E+06	0.0623	0.0030	0.867	0.052	0.0982	0.0023	0.4094	682	50.0	100	633	14.0	28	604	6.5	13	95
TAZ3z40	779.00	630.00	216.00	0.754	1.20E+06	4.80E+06	0.0648	0.0030	1.154	0.064	0.1264	0.0028	0.3738	758	48.0	96	778	15.0	30	767	8.0	16	99
TAZ3z42	197.00	89.90	42.70	0.445	1.00E+07	1.50E+06	0.0751	0.0036	1.878	0.100	0.1749	0.0043	0.2147	1078	44.5	89	1073	18.0	36	1039	11.5	23	97
TAZ3z43	462.00	267.40	98.00	0.552	5.30E+06	6.80E+06	0.0761	0.0064	1.640	0.290	0.1410	0.0140	0.9786	1030	85.0	170	940	55.0	110	843	39.0	78	90
TAZ3z44	131.30	62.70	23.50	0.462	6.20E+05	5.40E+05	0.0609	0.0036	1.138	0.072	0.1311	0.0033	-0.0797	636	65.0	130	769	17.5	35	794	9.5	19	103
TAZ3z45	88.70	93.00	42.40	1.003	-3.10E+05	3.70E+05	0.0733	0.0045	1.664	0.110	0.1615	0.0040	-0.3191	1020	60.0	120	995	20.5	41	967	10.5	21	97
TAZ3z46	639.00	184.00	101.30	0.275	-4.00E+06	2.50E+06	0.0883	0.0039	2.441	0.160	0.1949	0.0094	0.9006	1384	43.0	86	1250	23.5	47	1146	25.5	51	92
TAZ3z47	647.00	610.00	423.00	0.908	7.20E+06	4.40E+06	0.1138	0.0048	4.570	0.260	0.2843	0.0090	0.8926	1877	12.0	24	1742	24.0	48	1612	22.5	45	93
TAZ3z49	390.80	276.70	130.40	0.697	4.30E+06	1.90E+06	0.0728	0.0033	1.772	0.098	0.1716	0.0040	0.3898	1008	48.0	96	1034	18.0	36	1021	11.0	22	99
TAZ3z50	286.10	267.50	129.60	0.903	1.45E+06	9.90E+05	0.0749	0.0036	1.576	0.091	0.1495	0.0045	0.5322	1065	46.0	92	959	18.0	36	898	12.5	25	94
TAZ3z51	830.00	297.00	90.70	0.345	-5.60E+06	5.40E+06	0.0606	0.0027	0.944	0.053	0.1099	0.0028	0.6707	624	49.5	99	674	14.0	28	672	8.0	16	100
TAZ3z52	169.00	180.20	169.30	1.056	-3.00E+06	2.10E+06	0.1223	0.0053	6.230	0.350	0.3607	0.0091	0.6032	2003	14.5	29	2009	23.5	47	1985	21.5	43	99
TAZ3z53	256.40	78.30	27.59	0.295	3.10E+05	4.90E+05	0.0628	0.0035	0.882	0.057	0.0998	0.0024	-0.0271	688	65.0	130	643	16.0	32	613	7.0	14	95
TAZ3z54	409.00	200.00	65.40	0.474	-4.90E+06	3.30E+06	0.0625	0.0030	1.076	0.060	0.1217	0.0029	0.1758	695	50.0	100	741	15.0	30	740	8.5	17	100
Discordant data																							
TAZ3z8	525.00	373.00	438.00	0.703	2.50E+07	2.30E+07	0.2382	0.0099	14.960	0.870	0.4540	0.0140	0.9591	3126	7.5	15	2808	28.0	56	2411	32.0	64	86
TAZ3z12	2160.00	938.00	208.00	0.407	1.10E+07	3.40E+06	0.0737	0.0032	0.798	0.044	0.0781	0.0019	0.5976	1033	45.5	91	595	12.5	25	485	6.0	12	81
TAZ3z15	207.00	57.20	31.60	0.279	7.50E+06	6.10E+06	0.1128	0.0110	2.760	0.550	0.1650	0.0210	0.9827	1760	95.0	190	1240	75.0	150	970	55.0	110	78
TAZ3z18	744.00	225.40	43.20	0.290	6.00E+06	3.90E+06	0.0677	0.0032	0.840	0.048	0.0885	0.0022	0.3611	858	47.0	94	620	13.5	27	547	6.5	13	88
TAZ3z23	3070.00	1743.00	255.00	0.537	5.07E+06	8.30E+05	0.0672	0.0032	0.393	0.026	0.0428	0.0016	0.8873	838	50.0	100	336	9.5	19	270	4.9	10	80
TAZ3z26	1845.00	412.00	42.30	0.215	7.00E+06	5.40E+06	0.0627	0.0028	0.559	0.033	0.0636	0.0019	0.7976	697	47.0	94	452	10.5	21	397	6.0	12	88
TAZ3z31	1052.00	226.00	70.60	0.212	1.30E+06	4.50E+06	0.0729	0.0031	1.172	0.063	0.1139	0.0030	0.6741	1008	44.5	89	787	15.0	30	695	8.5	17	88
TAZ3z41	1930.00	1282.00	229.20	0.651	6.00E+06	2.90E+06	0.0632	0.0029	0.315	0.032	0.0342	0.0032	0.9705	712	50.0	100	275	12.0	24	216	10.0	20	79
TAZ3z48	895.00	388.00	71.40	0.408	2.23E+06	8.50E+05	0.0707	0.0033	0.736	0.049	0.0741	0.0028	0.7946	954	47.5	95	562	13.5	27	460	8.5	17	82

Footnotes:

- Analysis references: TAZ3z is zircon from sample TAZ3 (mount CT17-10), followed by grain number.

Table D.4b: Sample TAZ3 (SHRIMP)

IGSN: IEACC0042 Coordinate UTM: Zone 30S,381775 m E, 3773906 m N

ANALYSIS	U (ppm)	Th (ppm)	Ratios											Ages (Ma)						Discordace (%)
			$^{232}Th/^{238}U$	% ^{206}Pbc	$^{204}Pb/^{206}Pb$	σ (%)	$^{207}Pb/^{206}Pb$	σ (%)	$^{207}Pb/^{235}U$	σ (%)	$^{206}Pb/^{238}U$	σ (%)	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	
Concordant data																				
TAZ3z56c	140	29	0.21	--	-5.90E-05	58	0.133	0.8	6.66	1.7	0.364	1.5	0.9	2137	15	30	1999	26.0	52	8
TAZ3z56r	852	135	0.16	0.56	3.60E-04	16	0.107	0.9	1.96	1.8	0.133	1.6	0.9	1754	17	34	803	12.0	24	58
TAZ3z57	186	61	0.34	0.07	4.10E-05	100	0.097	1.4	2.09	2.8	0.156	2.4	0.9	1569	26	52	935	21.0	42	43
TAZ3z58c	103	45	0.46	0.00	---	---	0.061	5.3	0.86	5.6	0.103	1.7	0.3	630	114	228	629	10.0	20	0
TAZ3z58r	19	1	0.04	0.92	5.70E-04	100	0.097	9.7	1.40	10.3	0.104	3.5	0.3	1567	181	362	640	21.0	42	62
TAZ3z59c	139	86	0.64	--	-1.70E-04	58	0.073	2.5	1.34	2.9	0.134	1.5	0.5	1000	51	102	813	11.0	22	20
TAZ3z59r	1022	369	0.37	0.52	2.90E-04	24	0.060	2.0	0.53	2.6	0.064	1.7	0.7	620	43	86	399	7.0	14	37
TAZ3z60	500	780	1.61	0.27	1.50E-04	38	0.062	1.8	0.91	2.2	0.106	1.2	0.5	681	39	78	650	7.0	14	5
TAZ3z61c	436	184	0.44	--	-2.30E-05	100	0.064	1.3	1.05	1.8	0.120	1.2	0.7	738	27	54	729	8.0	16	1
TAZ3z61r	770	130	0.17	0.05	2.70E-05	71	0.062	1.0	0.95	1.5	0.111	1.1	0.7	677	21	42	677	7.0	14	0
TAZ3z62c	190	120	0.65	--	----	---	0.059	2.1	0.75	2.5	0.091	1.4	0.6	585	46	92	561	8.0	16	4
TAZ3z63c	880	16	0.02	0.02	1.10E-05	58	0.120	0.4	5.42	1.2	0.328	1.1	0.9	1953	7	14	1829	17.0	34	7
TAZ3z63r	154	22	0.15	0.03	2.20E-05	100	0.117	0.9	5.35	1.7	0.331	1.5	0.8	1912	16	32	1845	23.0	46	4
TAZ3z64c	138	83	0.62	0.49	2.70E-04	58	0.058	4.7	0.83	5.0	0.104	1.6	0.3	517	104	208	637	10.0	20	-24
TAZ3z64r	90	39	0.44	--	-2.70E-04	71	0.067	4.9	0.95	5.2	0.103	1.8	0.3	842	102	204	630	11.0	22	26
TAZ3z65c	242	89	0.38	--	-6.40E-05	71	0.071	1.6	1.56	2.1	0.158	1.3	0.6	967	32	64	946	12.0	24	2
TAZ3z65r	71	49	0.71	0.94	5.10E-04	58	0.052	9.2	0.76	10.0	0.105	3.8	0.4	293	211	422	645	23.0	46	-126
TAZ3z66	374	198	0.55	--	-2.80E-05	100	0.063	1.4	0.95	2.2	0.110	1.6	0.8	702	31	62	674	10.0	20	4
TAZ3z67	144	87	0.63	0.03	2.10E-05	100	0.130	0.8	6.54	1.7	0.365	1.5	0.9	2097	15	30	2006	26.0	52	5
TAZ3z68	216	52	0.25	0.12	7.20E-05	71	0.070	1.8	1.47	2.2	0.153	1.4	0.6	923	36	72	917	12.0	24	1
TAZ3z69	113	74	0.68	0.31	1.80E-04	58	0.068	2.9	1.50	3.3	0.160	1.6	0.5	867	59	118	958	14.0	28	-11
TAZ3z70	226	113	0.52	0.29	1.70E-04	45	0.071	3.2	1.37	3.5	0.141	1.3	0.4	946	65	130	849	11.0	22	11
TAZ3z71	249	108	0.45	--	-2.50E-05	71	0.133	0.6	6.79	1.5	0.369	1.3	0.9	2144	11	22	2024	23.0	46	7
TAZ3z72	163	48	0.30	0.08	0.000047	100	0.072	1.9	1.41	4.1	0.142	3.6	0.9	991	38	76	855	29	58	15
TAZ3z73	478	1293	2.80	0.19	0.0001	50	0.060	1.8	0.73	2.2	0.089	1.2	0.5	593	39	78	547	6	12	8
TAZ3z74	93	67	0.75	0.18	0.00013	45	0.183	0.9	12.17	1.9	0.483	1.7	0.9	2678	15	30	2540	36	72	6
TAZ3z75	835	390	0.48	--	-0.000019	71	0.072	0.7	1.54	1.3	0.156	1.1	0.8	985	15	30	933	10	20	6
TAZ3z76	173	173	1.03	0.08	0.000055	58	0.127	0.8	6.63	1.7	0.380	1.4	0.9	2051	15	30	2076	25	50	-1
TAZ3z77	257	374	1.51	0.00	---	---	0.075	2.6	1.64	2.9	0.159	1.3	0.4	1069	53	106	950	12	24	12
TAZ3z78	79	123	1.62	0.59	0.00034	50	0.072	4.1	1.78	4.5	0.179	1.8	0.4	981	84	168	1063	18	36	-9
TAZ3z80	118	118	1.03	0.11	0.000082	50	0.174	0.8	11.66	2.3	0.486	2.2	0.9	2598	13	26	2551	47	94	2
TAZ3z81	370	479	1.33	0.04	0.000027	58	0.116	0.6	5.42	1.3	0.338	1.2	0.9	1901	10	20	1877	20	40	1
TAZ3z82	347	59	0.18	0.30	0.00017	41	0.061	2.1	0.84	2.4	0.099	1.2	0.5	652	46	92	608	7	14	7
TAZ3z83	3412	403	0.12	0.99	0.00056	9	0.061	1.4	0.48	2.3	0.057	1.9	0.8	648	29	58	359	7	14	46
TAZ3z84	63	107	1.74	0.10	0.000074	71	0.173	1.0	11.51	2.2	0.483	1.9	0.9	2583	17	34	2542	41	82	2
TAZ3z85	298	63	0.22	0.06	0.000034	100	0.062	1.6	0.90	2.1	0.105	1.2	0.6	680	35	70	645	8	16	5
TAZ3z86	70	0	0.00	0.65	0.00036	71	0.058	7.4	0.75	8.0	0.094	3.0	0.4	529	163	326	577	17	34	-9
TAZ3z87	196	132	0.70	0.01	0.000011	100	0.203	0.5	14.66	1.5	0.524	1.4	0.9	2851	8	16	2714	30	60	6
TAZ3z88	327	172	0.54	0.98	0.00056	33	0.066	4.6	0.49	4.9	0.054	1.7	0.3	801	96	192	339	6	12	59
TAZ3z89	677	100	0.15	0.75	0.00042	22	0.058	2.6	0.55	2.8	0.068	1.1	0.4	541	57	114	426	5	10	22
TAZ3z90	81	68	0.86	0.07	0.000046	100	0.107	1.4	4.63	2.3	0.315	1.8	0.8	1746	26	52	1763	27	54	-1
TAZ3z91	145	79	0.56	0.14	0.00008	71	0.077	1.8	1.91	2.3	0.181	1.5	0.6	1117	35	70	1071	14	28	4
TAZ3z92	63	39	0.64	0.50	0.00034	38	0.139	5.6	7.11	6.0	0.372	1.9	0.3	2211	98	196	2038	34	68	9
High common Pb and/or discordant data																				
TAZ3z55	285	20	0.07	0.03	0.000023	71	0.159	0.6	7.06	1.4	0.322	1.3	0.9	1797	21	42	2449	10	20	30
TAZ3z62r	251	137	0.57	1.60	0.00092	32	0.066	8.6	0.78	8.8	0.085	1.5	0.2	527	8	16	811	180	360	36
TAZ3z79	2076	704	0.35	4.01	0.0023	7	0.063	3.7	0.39	3.9	0.045	1.1	0.3	286	3	6	698	80	160	60
TAZ3z85c	279	161	0.60	0.03	0.000019	100	0.110	0.9	3.26	1.5	0.214	1.3	0.8	1252	15	30	1806	16	32	34
TAZ3z87r	797	49	0.06	0.01	0.0000098	71	0.180	4.3	7.93	4.7	0.320	1.9	0.4	1787	29	58	2653	72	144	37

Footnotes:

- $\%^{206}Pb^c$ is % of ^{206}Pb from common Pb

- Errors are 1-sigma
- Pb* indicates radiogenic Pb, corrected for common Pb.
- Analysis references: TAZ3z is zircon from sample TAZ3 (mount CT17-10), followed by grain number "c" or "r", meaning core or rim, respectively.
- Error in standard calibration was 0.23% (not included in above errors but required when comparing data from different mounts).

Table D.5: Sample TAZ5 (LA-ICPMS)

IGSN: IEACC0043 Coordinate UTM: Zone 30S, 373058 m E, 3765756 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
TAZ5z1	86.50	53.20	57.30	0.611	-6.00E+06	1.10E+06	0.1313	0.0061	7.450	0.420	0.4025	0.0097	0.3440	2125	20.0	40	2171	25.5	51	2180	22.0	44	100
TAZ5z2	483.00	270.00	71.70	0.551	3.00E+06	1.10E+06	0.0619	0.0031	0.829	0.049	0.0957	0.0023	0.1828	655	55.0	110	614	13.5	27	589	7.0	14	96
TAZ5z3c	164.00	197.00	58.80	1.161	7.00E+06	1.20E+06	0.0636	0.0044	0.914	0.069	0.1037	0.0026	0.1262	700	75.0	150	667	18.0	36	636	7.5	15	95
TAZ5z3r	74.00	55.90	17.60	0.761	4.10E+05	7.80E+05	0.0627	0.0047	0.965	0.083	0.1108	0.0035	0.2433	680	80.0	160	685	21.0	42	677	10.0	20	99
TAZ5z6	68.20	31.30	29.20	0.448	4.70E+05	3.40E+05	0.1257	0.0059	6.460	0.370	0.3661	0.0100	0.3022	2064	23.5	47	2038	25.0	50	2010	24.0	48	99
TAZ5z7	125.30	90.40	25.70	0.703	-2.10E+05	3.40E+05	0.0604	0.0040	0.856	0.061	0.1012	0.0026	-0.0246	630	65.0	130	625	17.0	34	621	7.5	15	99
TAZ5z8	149.40	208.70	68.00	1.391	-1.20E+05	4.50E+05	0.0589	0.0039	0.940	0.069	0.1130	0.0029	0.0608	570	75.0	150	669	18.0	36	690	8.5	17	103
TAZ5z9	160.10	75.90	20.94	0.465	-4.00E+05	5.80E+05	0.0585	0.0041	0.803	0.061	0.0975	0.0024	0.1881	540	75.0	150	603	17.0	34	600	7.0	14	99
TAZ5z10	839.00	326.00	92.90	0.380	-1.40E+06	1.50E+06	0.0598	0.0027	0.822	0.046	0.0974	0.0022	0.3657	595	48.0	96	609	12.5	25	599	6.5	13	98
TAZ5z11	313.00	109.60	115.20	0.351	-4.00E+06	3.50E+06	0.1311	0.0057	7.300	0.390	0.3996	0.0089	0.4547	2125	14.0	28	2148	24.0	48	2167	20.5	41	101
TAZ5z12	101.20	82.00	88.10	0.803	1.71E+06	7.10E+05	0.1350	0.0062	7.800	0.430	0.4144	0.0110	0.2684	2180	20.0	40	2207	25.0	50	2234	25.0	50	101
TAZ5z13	90.90	57.80	48.90	0.630	-1.90E+05	5.10E+05	0.1091	0.0054	4.950	0.300	0.3230	0.0082	0.4677	1789	26.5	53	1810	26.0	52	1804	20.0	40	100
TAZ5z14	218.00	45.00	53.20	0.211	-4.00E+06	2.00E+06	0.1688	0.0073	11.310	0.610	0.4782	0.0120	0.5680	2558	13.0	26	2547	25.0	50	2519	25.0	50	99
TAZ5z15	305.00	362.00	91.90	1.147	-2.10E+05	7.30E+05	0.0577	0.0031	0.740	0.043	0.0933	0.0023	0.1328	510	60.0	120	562	12.5	25	575	7.0	14	102
TAZ5z16	419.00	50.60	13.84	0.120	1.40E+06	1.10E+06	0.0583	0.0031	0.797	0.047	0.0995	0.0023	0.0408	543	55.0	110	596	13.0	26	612	6.5	13	103
TAZ5z17c	155.10	193.00	57.40	1.175	-9.90E+05	8.70E+05	0.0591	0.0039	0.843	0.062	0.1012	0.0026	0.1695	560	70.0	140	621	17.0	34	621	7.5	15	100
TAZ5z17r	45.10	39.00	12.59	0.855	9.00E+04	6.60E+04	0.0699	0.0063	1.052	0.100	0.1087	0.0032	0.2191	910	95.0	190	734	25.5	51	665	9.5	19	91
TAZ5z19c	520.00	320.00	287.40	0.606	1.10E+06	2.70E+06	0.1172	0.0049	5.407	0.280	0.3318	0.0075	0.5976	1931	9.5	19	1885	22.5	45	1847	18.0	36	98
TAZ5z20	220.00	180.80	143.30	0.798	-6.00E+06	1.40E+06	0.1250	0.0054	5.743	0.310	0.3322	0.0081	0.4526	2041	14.0	28	1937	23.5	47	1849	19.5	39	95
TAZ5z21	498.00	173.80	185.40	0.342	4.70E+06	3.50E+06	0.1463	0.0061	8.429	0.440	0.4157	0.0096	0.6047	2316	9.5	19	2281	24.0	48	2241	22.0	44	98
TAZ5z22c	339.00	157.00	46.10	0.442	8.00E+06	1.10E+06	0.0609	0.0032	0.893	0.052	0.1059	0.0027	0.1615	616	60.0	120	647	14.0	28	649	8.0	16	100
TAZ5z22r	118.00	31.80	9.49	0.265	-2.00E+03	1.60E+05	0.0580	0.0044	0.794	0.063	0.0984	0.0025	0.0884	510	85.0	170	589	18.0	36	605	7.5	15	103
TAZ5z23c	96.40	79.30	101.00	0.824	1.40E+05	7.50E+05	0.1865	0.0080	12.200	0.670	0.4746	0.0120	0.7086	2723	11.5	23	2621	26.5	53	2508	27.5	55	96
TAZ5z23r	144.00	112.30	141.50	0.772	-4.00E+06	1.70E+06	0.1919	0.0083	14.130	0.760	0.5357	0.0130	0.4013	2773	12.5	25	2757	25.5	51	2765	26.5	53	100
TAZ5z24c	206.00	175.00	47.80	0.822	8.00E+06	1.30E+06	0.0606	0.0036	0.820	0.053	0.0973	0.0024	0.0189	618	65.0	130	606	15.0	30	598	7.0	14	99
TAZ5z24r	142.00	16.18	4.38	0.113	6.00E+05	2.00E+05	0.0565	0.0042	0.724	0.058	0.0936	0.0025	0.0957	410	80.0	160	549	17.0	34	577	7.5	15	105
TAZ5z25	409.20	203.50	208.30	0.485	-1.51E+07	9.10E+06	0.1260	0.0053	6.629	0.350	0.3821	0.0086	0.5740	2055	11.5	23	2062	23.5	47	2086	20.0	40	101
TAZ5z26c	162.20	198.00	54.30	1.183	1.10E+05	3.10E+05	0.0599	0.0037	0.837	0.057	0.1024	0.0024	0.1254	560	70.0	140	619	16.5	33	628	7.0	14	101
TAZ5z26r	62.50	42.30	12.70	0.664	-5.80E+05	8.30E+05	0.0571	0.0050	0.817	0.081	0.1032	0.0029	0.3183	410	90.0	180	598	22.0	44	633	8.5	17	106
TAZ5z27	297.40	223.70	60.90	0.726	3.10E+05	3.90E+05	0.0587	0.0031	0.816	0.051	0.0990	0.0024	0.0053	585	65.0	130	604	14.5	29	608	7.0	14	101
TAZ5z28	32.20	17.70	6.19	0.535	1.00E+06	1.10E+05	0.0590	0.0086	0.960	0.140	0.1172	0.0044	-0.0039	400	150.0	300	665	37.5	75	717	12.5	25	108
TAZ5z29	820.00	150.00	55.10	0.174	-7.00E+07	1.10E+07	0.0677	0.0031	0.998	0.055	0.1069	0.0026	0.2706	852	47.5	95	702	14.0	28	655	7.5	15	93
TAZ5z30	111.10	55.30	66.00	0.476	1.80E+06	1.50E+06	0.1718	0.0076	11.820	0.640	0.4961	0.0120	0.5157	2603	14.5	29	2589	25.5	51	2596	25.5	51	100
TAZ5z32c	215.00	130.90	35.90	0.596	8.00E+05	3.80E+05	0.0593	0.0037	0.822	0.058	0.1010	0.0025	0.2486	550	70.0	140	609	16.5	33	620	7.5	15	102
TAZ5z32r	280.00	175.20	49.50	0.612	9.00E+05	3.40E+05	0.0607	0.0036	0.846	0.058	0.1018	0.0023	0.1928	612	65.0	130	623	15.5	31	625	6.5	13	100
TAZ5z33	115.10	49.50	15.42	0.424	2.20E+05	1.70E+05	0.0622	0.0040	0.925	0.068	0.1086	0.0030	0.0601	670	75.0	150	670	18.0	36	665	8.5	17	99
TAZ5z34	190.40	149.70	146.50	0.766	1.40E+06	1.10E+06	0.1303	0.0059	6.930	0.380	0.3875	0.0092	0.2920	2116	18.5	37	2101	24.0	48	2111	21.0	42	100
TAZ5z35	266.00	235.00	231.00	0.857	-5.00E+06	1.70E+06	0.1247	0.0053	6.517	0.340	0.3840	0.0086	0.4091	2035	11.5	23	2047	23.0	46	2095	20.0	40	102
TAZ5z36	544.00	277.00	78.60	0.499	-1.40E+06	1.00E+06	0.0608	0.0029	0.848	0.048	0.1033	0.0023	0.1166	620	50.0	100	623	13.0	26	634	7.0	14	102
TAZ5z37	85.60	50.20	14.13	0.577	-4.00E+05	1.70E+05	0.0634	0.0046	0.888	0.072	0.1029	0.0028	0.2104	660	80.0	160	650	18.0	36	631	8.0	16	97
TAZ5z39	360.40	409.40	110.90	1.105	-4.60E+05	6.60E+05	0.0598	0.0034	0.805	0.050	0.0987	0.0023	-0.1504	567	60.0	120	601	14.5	29	607	6.5	13	101
TAZ5z40	192.00	106.30	129.90	0.535	6.00E+06	1.10E+06	0.1632	0.0071	10.870	0.600	0.4885	0.0120	0.6323	2498	14.0	28	2510	25.0	50	2564	26.0	52	102
TAZ5z41	158.20	96.90	67.20	0.605	9.00E+05	8.60E+05	0.0888	0.0041	3.246	0.180	0.2645	0.0063	0.2281	1420	24.0	48	1469	22.0	44	1513	16.0	32	103
TAZ5z42	101.60	123.60	129.40	1.183	-8.50E+05	5.10E+05	0.1369	0.0062	7.770	0.440	0.4197	0.0100	0.4235	2203	17.0	34	2202	26.0	52	2258	23.0	46	103
TAZ5z43c	67.40	70.30	18.75	1.014	-4.60E+04	6.20E+04	0.0572	0.0048	0.762	0.065	0.0987	0.0029	0.0667	430	90.0	180	570	19.0	38	607	8.5	17	106
TAZ5z43r	150.00	64.10	20.00	0.429	2.20E+05	3.00E+05	0.0642	0.0041	0.960	0.070	0.1082	0.0029	0.2523	720	75.0	150	679	18.5	37	662	8.5	17	97
TAZ5z44	130.20	97.90	153.30	0.730	3.00E+06	1.10E+06	0.2864	0.0120	25.940	1.400	0.6633	0.0160	0.5488	3407	10.5	21	3343	25.5	51	3279	31.5	63	98
TAZ5z45	470.00	819.00	770.00	1.717	4.20E+06	4.00E+06	0.1225	0.0052	6.186	0.330	0.3686	0.0082	0.5435	2006	12.0	24	2002	23.0	46	2023	19.0	38	101
TAZ5z46	658.00	396.00	97.80	0.585	7.00E+05	6.50E+05	0.0604	0.0029	0.736	0.042	0.0886	0.0020	0.2085	616	50.0	100	559	12.5	25	548	6.0	12	98
TAZ5z47	48.30	77.00	24.60	1.325	4.90E+04	6.10E+04	0.0627	0.0078	0.880	0.120	0.1049	0.0044	0.3514	640	135.0	270	641	32.5	65	643	12.5	25	100
TAZ5z48	201.70	83.00	82.30	0.407	9.00E+06	1.10E+06	0.1282	0.0056	6.730	0.360	0.3862	0.0092	0.4243	2081	16.0	32	2075	24.0	48	2105	21.5	43	101
TAZ5z49	3310.00	132.00	47.80	0.040	2.40E+06	2.30E+06	0.0631	0.0027	0.690	0.037	0.0801	0.0020	0.6732	707	45.0	90	533	11.0	22	497	6.0	12	93
TAZ5z50c	205.00	197.50	56.50	0.950	5.00E+05	3.00E+05	0.0601	0.0035	0.828	0.053	0.1007	0.0024	-0.0900	605	60.0	120	611	14.5	29	619	7.0	14	101
TAZ5z50r	142.10	146.60	41.10	1.010	-5.30E+05	4.60E+05	0.0567	0.0039	0.763	0.055	0.0985	0.0024	-0.1687	430	75.0	150	573	16.0	32	606	7.0	14	106
TAZ5z52c	110.40	103.40	30.40	0.932	-1.00E+05	1.40E+05	0.0604	0.0045	0.869	0.068	0.1067	0.0029	0.0442	560	80.0	160	635	19.0	38	654	8.5	17	103
TAZ5z53c	174.60	192.70	53.90	1.101	-2.00E+06	1.50E+06	0.0569	0.0036	0.761	0.056	0.0987	0.0025	0.1569	470	65.0	130	579	15.0	30	607	7.5	15	105
TAZ5z53r	92.90	61.70	17.02	0.664	7.00E+05	1.40E+05	0.0606	0.0046	0.793	0.063	0.0973	0.0026	0.0576	580	80.0	160	589	18.0	36	599	7.5	15	102

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
TAZ5z54c	131.00	156.00	43.90	1.190	-7.00E+05	1.70E+05	0.0581	0.0040	0.769	0.060	0.0958	0.0028	0.2539	510	80.0	160	580	18.0	36	590	8.0	16	102
TAZ5z54r	88.20	72.10	19.10	0.804	-9.00E+05	1.10E+05	0.0574	0.0044	0.669	0.054	0.0860	0.0025	0.0235	470	80.0	160	516	16.5	33	532	7.5	15	103
TAZ5z55	146.00	42.40	12.69	0.288	-1.00E+05	2.10E+05	0.0600	0.0044	0.852	0.069	0.1038	0.0027	0.1791	560	85.0	170	625	18.5	37	637	8.0	16	102
TAZ5z56	123.80	67.10	69.60	0.543	5.20E+05	3.10E+05	0.1371	0.0063	6.980	0.400	0.3755	0.0091	0.4041	2203	20.0	40	2110	24.5	49	2055	21.0	42	97
TAZ5z57	68.50	118.10	33.60	1.739	7.10E+04	5.70E+04	0.0559	0.0044	0.766	0.067	0.1006	0.0031	0.3296	400	85.0	170	583	21.5	43	618	9.0	18	106
TAZ5z58	154.80	66.00	19.74	0.417	-6.90E+05	4.70E+05	0.0599	0.0039	0.877	0.066	0.1067	0.0032	0.3900	610	70.0	140	643	18.0	36	653	9.0	18	102
TAZ5z59r	802.00	677.00	184.30	0.863	6.20E+05	6.30E+05	0.0633	0.0030	0.769	0.044	0.0894	0.0024	0.4689	721	55.0	110	579	12.5	25	552	7.0	14	95
TAZ5z60	365.00	239.00	71.10	0.662	-4.00E+05	4.70E+05	0.0607	0.0031	0.855	0.050	0.1046	0.0025	0.1186	622	55.0	110	628	14.0	28	641	7.0	14	102
TAZ5z61	185.10	184.00	53.20	1.000	1.00E+05	1.70E+05	0.0593	0.0032	0.835	0.052	0.1019	0.0025	0.2452	584	55.0	110	615	14.5	29	625	7.5	15	102
TAZ5z62	28.73	0.08	0.08	-0.001	2.00E+04	4.40E+04	0.0677	0.0091	0.920	0.120	0.1036	0.0040	0.0021	720	145.0	290	654	31.0	62	635	11.5	23	97
TAZ5z63	531.00	401.00	107.10	0.776	6.40E+05	4.10E+05	0.0643	0.0032	0.825	0.048	0.0944	0.0022	0.1590	738	50.0	100	610	13.5	27	581	6.5	13	95
TAZ5z64	553.00	438.00	287.60	0.801	1.50E+06	1.20E+06	0.1001	0.0043	3.226	0.170	0.2357	0.0053	0.3811	1627	41.0	82	1465	20.0	40	1364	14.0	28	93
TAZ5z65c	182.90	105.30	49.40	0.583	9.00E+05	3.70E+05	0.0687	0.0038	1.508	0.099	0.1636	0.0040	0.4717	877	60.0	120	934	20.5	41	977	11.0	22	105
TAZ5z65r	113.30	48.90	20.60	0.433	-1.20E+05	1.70E+05	0.0723	0.0042	1.494	0.100	0.1499	0.0037	0.0840	994	65.0	130	924	20.5	41	900	10.5	21	97
TAZ5z66	107.70	131.80	38.30	1.236	2.00E+05	1.30E+05	0.0615	0.0048	0.836	0.068	0.1002	0.0026	0.0044	630	90.0	180	617	19.5	39	616	7.5	15	100
TAZ5z67	103.70	62.00	18.71	0.612	-1.80E+05	1.90E+05	0.0587	0.0036	0.801	0.055	0.1013	0.0027	0.0795	540	70.0	140	599	16.5	33	622	8.0	16	104
TAZ5z68	696.00	129.00	111.50	0.188	-5.00E+06	1.90E+06	0.1205	0.0051	5.253	0.280	0.3194	0.0070	0.5063	1972	11.5	23	1862	22.0	44	1789	17.5	35	96
TAZ5z69	34.00	25.98	10.14	0.777	3.80E+04	3.80E+04	0.0689	0.0072	1.210	0.130	0.1283	0.0043	0.0706	800	115.0	230	806	30.5	61	782	11.5	23	97
TAZ5z70c	88.70	45.60	66.50	0.511	1.30E+06	3.10E+06	0.2044	0.0091	15.830	0.880	0.5616	0.0130	0.5620	2871	15.0	30	2864	27.0	54	2872	27.0	54	100
TAZ5z70r	64.30	16.26	25.07	0.257	-1.70E+05	5.50E+05	0.2065	0.0091	17.010	0.970	0.6100	0.0160	0.8494	2883	15.0	30	2932	27.5	55	3068	32.0	64	105
TAZ5z71	39.30	37.70	11.48	0.981	-7.30E+04	5.30E+04	0.0608	0.0068	0.837	0.097	0.1044	0.0032	0.2694	590	120.0	240	621	27.0	54	640	9.0	18	103
TAZ5z73c	305.00	421.00	126.00	1.355	2.10E+06	1.80E+06	0.0629	0.0036	0.865	0.057	0.1014	0.0025	0.2352	723	65.0	130	631	15.5	31	623	7.0	14	99
TAZ5z73r	152.00	110.00	32.20	0.706	2.80E+04	9.60E+04	0.0619	0.0051	0.676	0.068	0.0788	0.0060	0.7762	670	85.0	170	517	21.5	43	488	18.0	36	94
TAZ5z74c	27.00	17.86	5.00	0.659	9.80E+04	3.80E+04	0.0595	0.0095	0.810	0.130	0.1011	0.0039	0.0248	480	160.0	320	596	36.5	73	621	11.5	23	104
TAZ5z74r	67.50	80.70	13.40	1.209	6.50E+04	5.60E+04	0.0597	0.0077	0.443	0.054	0.0535	0.0018	-0.0591	590	130.0	260	365	19.0	38	336	5.5	11	92
TAZ5z75	216.10	29.23	29.30	0.138	-7.00E+05	7.00E+05	0.1264	0.0055	6.470	0.350	0.3796	0.0093	0.4607	2053	14.0	28	2040	24.0	48	2074	21.5	43	102
TAZ5z76	265.30	143.40	43.30	0.533	1.40E+05	2.80E+05	0.0615	0.0037	0.855	0.057	0.1028	0.0025	0.3280	635	65.0	130	625	15.5	31	631	7.0	14	101
TAZ5z77	283.90	132.90	37.50	0.474	7.00E+05	2.00E+05	0.0584	0.0033	0.755	0.049	0.0950	0.0024	0.2183	548	60.0	120	575	13.0	26	585	7.0	14	102
TAZ5z78	12.30	4.74	1.33	0.386	4.00E+04	1.30E+04	0.0590	0.0150	0.860	0.210	0.1094	0.0054	0.0065	430	225.0	450	640	55.0	110	669	15.5	31	105
TAZ5z79c	196.00	121.40	169.00	0.631	-1.00E+06	1.40E+06	0.2182	0.0092	16.640	0.900	0.5641	0.0140	0.7723	2976	10.5	21	2915	27.0	54	2882	29.5	59	99
TAZ5z79r	79.60	49.60	66.50	0.624	-6.10E+05	8.10E+05	0.2055	0.0090	14.930	0.830	0.5213	0.0120	0.4273	2875	14.5	29	2809	26.5	53	2704	26.0	52	96
TAZ5z80	97.40	59.60	57.60	0.618	7.00E+03	2.40E+05	0.1241	0.0058	6.130	0.350	0.3655	0.0088	0.3915	2025	20.5	41	1992	24.5	49	2008	21.0	42	101
TAZ5z81c	165.00	25.70	7.94	0.159	-1.50E+05	2.10E+05	0.0592	0.0044	0.828	0.064	0.1029	0.0026	-0.0477	510	85.0	170	608	18.0	36	631	7.5	15	104
TAZ5z81r	189.00	45.00	13.04	0.243	-1.40E+05	2.60E+05	0.0589	0.0037	0.802	0.057	0.1005	0.0024	0.2030	590	70.0	140	602	16.0	32	617	7.0	14	103
TAZ5z82c	175.00	8.20	10.80	0.035	4.30E+05	4.60E+05	0.1291	0.0056	7.080	0.380	0.4057	0.0097	0.5889	2095	13.0	26	2125	25.5	51	2195	22.5	45	103
TAZ5z82r	522.00	246.80	235.80	0.481	-3.00E+06	2.40E+06	0.1188	0.0051	5.824	0.310	0.3611	0.0081	0.5615	1944	12.0	24	1953	21.5	43	1987	19.0	38	102
TAZ5z83	422.00	743.00	234.00	1.785	1.20E+05	5.00E+05	0.0613	0.0030	0.944	0.057	0.1135	0.0026	0.3387	655	49.5	99	674	15.0	30	693	7.5	15	103
TAZ5z84	200.80	108.60	26.50	0.553	2.10E+05	2.50E+05	0.0624	0.0037	0.760	0.051	0.0909	0.0022	0.2543	671	60.0	120	575	15.0	30	561	6.5	13	98
TAZ5z85c	223.30	86.90	86.90	0.394	-2.30E+06	1.60E+06	0.1251	0.0054	6.390	0.340	0.3782	0.0088	0.4118	2034	13.0	26	2034	23.0	46	2067	20.5	41	102
TAZ5z85r	355.00	144.00	143.70	0.411	-1.10E+06	3.00E+06	0.1230	0.0052	6.480	0.340	0.3885	0.0086	0.6429	2006	10.5	21	2042	23.5	47	2118	19.0	38	104
TAZ5z86	219.40	171.00	43.70	0.780	2.90E+05	4.80E+05	0.0626	0.0046	0.842	0.065	0.0996	0.0023	-0.0485	650	80.0	160	617	18.0	36	612	7.0	14	99
TAZ5z87	636.00	153.90	143.70	0.244	2.20E+06	1.60E+06	0.1283	0.0054	6.380	0.340	0.3660	0.0087	0.7824	2079	10.5	21	2028	23.5	47	2010	20.5	41	99
TAZ5z88	153.00	126.80	117.80	0.832	-8.70E+05	8.70E+05	0.1255	0.0059	6.240	0.350	0.3679	0.0082	0.3462	2035	21.5	43	2008	25.0	50	2019	19.5	39	101
TAZ5z89	664.00	414.00	156.20	0.629	-4.00E+06	1.10E+06	0.0667	0.0029	1.237	0.067	0.1371	0.0031	0.4322	828	47.0	94	819	16.0	32	828	9.0	18	101
TAZ5z91	218.00	382.00	367.00	1.773	2.10E+06	1.30E+06	0.1218	0.0053	6.190	0.340	0.3674	0.0087	0.4668	1995	15.5	31	2002	23.5	47	2017	20.5	41	101
TAZ5z92	341.00	193.00	183.00	0.562	6.00E+06	1.20E+06	0.1425	0.0062	7.150	0.430	0.3706	0.0110	0.8819	2266	13.5	27	2129	26.5	53	2031	27.0	54	95
TAZ5z93c	76.00	69.70	55.90	1.042	2.30E+05	3.10E+05	0.1059	0.0056	4.390	0.290	0.3059	0.0100	0.5133	1734	33.0	66	1702	28.0	56	1719	24.5	49	101
TAZ5z93r	70.10	81.60	64.30	1.147	3.00E+05	2.70E+05	0.1043	0.0056	4.100	0.260	0.2893	0.0077	0.2476	1702	32.0	64	1653	25.0	50	1638	19.5	39	99
TAZ5z94c	87.00	47.00	42.60	0.548	-3.60E+05	2.20E+05	0.1160	0.0057	5.370	0.320	0.3392	0.0084	0.2943	1907	26.0	52	1879	25.0	50	1882	20.0	40	100
TAZ5z94r	94.80	64.90	52.60	0.678	-1.30E+05	3.70E+05	0.1116	0.0056	4.840	0.280	0.3201	0.0081	0.1339	1820	27.5	55	1792	23.5	47	1794	20.5	41	100
TAZ5z95	86.30	115.20	30.60	1.334	8.60E+04	9.80E+04	0.0599	0.0050	0.798	0.071	0.0954	0.0029	0.0645	550	90.0	180	589	20.0	40	587	8.5	17	100
TAZ5z96c	51.60	64.10	16.32	1.232	-2.70E+04	3.30E+04	0.0631	0.0067	0.772	0.087	0.0895	0.0027	0.0569	650	115.0	230	577	24.0	48	552	8.0	16	96
TAZ5z97r	557.00	13.42	4.32	0.023	1.00E+05	3.50E+05	0.0603	0.0032	0.785	0.049	0.0957	0.0024	0.3223	605	55.0	110	587	13.5	27	589	7.0	14	100
TAZ5z98c	296.00	405.00	117.50	1.387	3.00E+05	3.00E+05	0.0590	0.0031	0.821	0.049	0.1047	0.0025	0.0447	561	55.0	110	610	13.0	26	642	7.5	15	105
TAZ5z98r	103.50	104.50	29.72	1.028	-7.00E+04	7.30E+04	0.0615	0.0048	0.854	0.068	0.1048	0.0030	0.0777	630	80.0	160	632	18.5	37	642	9.0	18	102
TAZ5z99	51.70	92.90	26.90	1.789	4.80E+04	3.60E+04	0.0595	0.0067	0.791	0.092	0.0969	0.0028	0.0343	570	120.0	240	588	25.0	50	596	8.5	17	101
TAZ5z101c	61.60	58.90	16.69	0.951	-1.66E+06	9.00E+05	0.0564	0.0068	0.727	0.089	0.0970	0.0029	0.1145	360	120.0	240	541	26.5	53	596	8.5	17	110
TAZ5z101r	180.00	174.00	48.60	0.962	-8.00E+05	1.50E+05	0.0580	0.0033	0.779	0.050	0.1007	0.0024	-0.0100	530	65.0	130	589	14.5	29	618	7.0	14	105
TAZ5z102	151.20	146.40	115.20	0.972	-6.10E+05	6.40E+05	0.1060	0.0049	4.328	0.240	0.3024	0.0071	0.3710	1737	20.0	40	1700	22.0	44	1706	18.0	36	100
TAZ5z103	126.60	56.70	16.91	0.448	6.00E+05	1.10E+05	0.0624	0.0049	0.919	0.072	0.1055	0.0027	0.1200	710	80.0	160	663	18.0	36	646	8.0	16	97
TAZ5z104c	40.80	44.50	12.52	1.079	3.00E+04	5.10E+04	0.0633	0.0068	0.862	0.094	0.1030	0.0035	0.0895	610	115.0	230	635	27.0	54	632	10.0	20	100
TAZ5z104r	28.60	24.67	7.54	0.880	1.90E+04	2.60E+04	0.0613	0.0096	0.760	0.120	0.0985	0.0040	0.0240	550	160.0	320	596	35.5	71	605	12.0	24	102
TAZ5z105	367.00	185.00	44.70	0.501	-1.10E+05	5.50E+05	0.0586	0.0033	0.717	0.048	0.0906	0.0022	0.3197	555	60.0	120	547	14.0	28	559	6.5	13	102
TAZ5z106	956.00	65.80	57.20	0.068	3.00E+06	2.00E+06	0.1196	0.0049	5.528	0.290	0.3424	0.0073	0.6185	1955	8.5	17	1905	22.5	45	1898	17.5	35	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
TAZ5z107	410.00	138.00	130.00	0.311	-8.00E+06	1.40E+06	0.1248	0.0053	6.058	0.320	0.3619	0.0085	0.6341	2029	11.5	23	1983	23.5	47	1991	20.0	40	100
TAZ5z108c	360.00	245.60	71.20	0.683	2.10E+05	2.10E+05	0.0603	0.0031	0.843	0.050	0.1023	0.0025	0.1076	627	55.0	110	620	14.0	28	628	7.5	15	101
TAZ5z108r	431.00	67.50	20.62	0.155	-3.10E+05	7.20E+05	0.0634	0.0031	0.865	0.050	0.1003	0.0023	0.3495	719	50.0	100	634	13.0	26	616	6.5	13	97
TAZ5z109c	274.00	209.00	68.60	0.746	8.30E+05	6.70E+05	0.0634	0.0034	1.026	0.063	0.1208	0.0028	0.1536	699	60.0	120	715	15.5	31	735	8.0	16	103
TAZ5z109r	83.40	49.20	16.10	0.585	-1.10E+04	5.50E+04	0.0608	0.0041	1.022	0.082	0.1234	0.0034	0.3512	600	75.0	150	714	20.0	40	750	9.5	19	105
TAZ5z110c	170.50	240.80	202.70	1.427	2.00E+05	3.20E+05	0.1179	0.0053	5.090	0.280	0.3175	0.0077	0.5106	1924	17.5	35	1833	23.5	47	1777	19.0	38	97
TAZ5z110r	17.90	28.90	16.02	1.572	5.00E+04	3.10E+04	0.0975	0.0100	2.800	0.310	0.2107	0.0082	0.1207	1530	105.0	210	1324	41.0	82	1231	22.0	44	93
TAZ5z111c	176.50	128.00	33.70	0.651	-1.10E+05	1.00E+05	0.0636	0.0038	0.872	0.058	0.1034	0.0026	0.0348	693	65.0	130	637	16.5	33	634	7.5	15	100
TAZ5z111r	159.80	88.30	27.00	0.566	8.00E+05	1.60E+05	0.0629	0.0044	0.858	0.064	0.1016	0.0026	0.0499	690	75.0	150	634	18.5	37	624	7.5	15	98
TAZ5z112c	79.30	13.26	4.65	0.169	3.00E+05	1.00E+05	0.0664	0.0041	1.027	0.074	0.1137	0.0031	0.2096	800	70.0	140	713	18.5	37	694	9.0	18	97
TAZ5z112r	439.00	16.05	4.24	0.037	-8.00E+06	4.90E+06	0.0593	0.0029	0.765	0.044	0.0965	0.0022	0.2196	574	55.0	110	576	12.5	25	594	6.5	13	103
TAZ5z113c	171.00	84.70	101.60	0.484	3.20E+05	5.20E+05	0.1733	0.0076	11.430	0.630	0.4884	0.0120	0.7713	2594	14.5	29	2556	26.5	53	2563	26.0	52	100
TAZ5z113r	183.00	75.20	72.10	0.423	-3.70E+05	5.20E+05	0.1362	0.0062	6.970	0.410	0.3803	0.0099	0.7588	2178	18.5	37	2108	27.0	54	2077	23.0	46	99
TAZ5z114c	140.70	76.90	90.30	0.543	-9.00E+05	3.60E+05	0.1647	0.0071	10.470	0.570	0.4740	0.0120	0.4750	2506	12.5	25	2476	25.0	50	2500	25.5	51	101
TAZ5z114r	151.50	65.40	77.10	0.425	2.80E+05	6.40E+05	0.1600	0.0069	10.150	0.540	0.4697	0.0110	0.4221	2460	13.0	26	2448	24.5	49	2482	23.0	46	101
Discordant data																							
TAZ5z4	578.00	27.70	22.60	0.040	4.20E+06	4.40E+06	0.1111	0.0049	3.770	0.220	0.2405	0.0064	0.8363	1813	40.0	80	1583	24.0	48	1389	16.5	33	88
TAZ5z5	880.00	700.00	140.30	0.810	1.26E+06	3.70E+05	0.0812	0.0039	0.743	0.044	0.0654	0.0018	0.5730	1216	46.5	93	563	13.0	26	408	5.5	11	72
TAZ5z18	157.00	107.50	82.90	0.668	6.00E+05	5.30E+05	0.1095	0.0051	3.681	0.210	0.2417	0.0057	0.3205	1790	41.5	83	1565	22.5	45	1395	15.0	30	89
TAZ5z19r	532.00	189.10	172.00	0.354	1.60E+06	1.70E+06	0.1103	0.0059	4.230	0.290	0.2758	0.0067	0.8888	1805	29.5	59	1673	26.0	52	1570	17.0	34	94
TAZ5z31	48.00	55.90	15.95	1.125	-1.00E+05	1.10E+05	0.0709	0.0077	0.980	0.110	0.0987	0.0034	-0.0320	1010	115.0	230	701	29.0	58	607	10.0	20	87
TAZ5z38	861.00	969.00	209.00	1.100	6.20E+05	5.30E+05	0.0719	0.0032	0.761	0.042	0.0781	0.0020	0.4095	984	47.5	95	574	12.0	24	485	6.0	12	84
TAZ5z51	888.00	134.40	109.00	0.142	3.80E+06	2.30E+06	0.1206	0.0051	3.990	0.230	0.2411	0.0065	0.8948	1962	38.0	76	1630	22.5	45	1392	17.0	34	85
TAZ5z52r	5.50	0.92	0.28	0.169	-1.10E+04	1.10E+04	0.0890	0.0420	1.440	0.600	0.1158	0.0093	0.0540	520	480.0	960	1010	90.0	180	704	27.0	54	70
TAZ5z59c	531.00	655.00	135.30	1.242	4.00E+05	4.50E+05	0.0661	0.0033	0.693	0.043	0.0765	0.0029	0.5717	804	55.0	110	534	13.0	26	475	8.5	17	89
TAZ5z72	39.20	21.65	15.30	0.564	1.07E+05	8.20E+04	0.1040	0.0100	2.060	0.230	0.1474	0.0048	0.3723	1630	100.0	200	1120	38.0	76	886	13.5	27	79
TAZ5z90	2360.00	562.00	93.20	0.243	1.42E+06	6.20E+05	0.0796	0.0034	0.799	0.045	0.0745	0.0020	0.7383	1194	44.5	89	596	12.5	25	463	6.0	12	78
TAZ5z96r	255.00	339.00	1260.00	1.087	2.16E+04	4.50E+03	0.6230	0.0610	42.800	8.900	0.4460	0.0740	0.9925	4510	85.0	170	3450	160.0	320	2270	165.0	330	66
TAZ5z97c	469.00	145.00	106.60	0.305	1.00E+05	6.40E+05	0.1105	0.0049	3.427	0.200	0.2299	0.0058	0.6413	1802	41.5	83	1508	22.5	45	1334	15.0	30	88
TAZ5z100	544.00	622.00	244.00	1.164	1.52E+05	5.00E+04	0.1540	0.0120	2.130	0.200	0.1013	0.0024	0.7178	2390	65.0	130	1159	31.5	63	622	7.0	14	54

Footnotes:

- Analysis references: TAZ5z is zircon from sample TAZ5 (mount CT17-10), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.6: Sample TAZ6 (LA-ICPMS)

IGSN: IEACC0044 Coordinate UTM: Zone 30S, 373058 m E, 3765756 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
TAZ6z1	167.40	86.10	33.40	0.512	9.00E+05	1.70E+05	0.0687	0.0036	1.192	0.075	0.1299	0.0033	0.6099	871	55.0	110	798	18.0	36	787	9.5	19	99
TAZ6z3	96.40	223.00	216.60	2.297	2.20E+05	2.10E+05	0.1259	0.0060	6.490	0.360	0.3829	0.0091	0.0991	2050	22.0	44	2046	24.0	48	2093	20.5	41	102
TAZ6z4r	198.20	110.10	103.30	0.543	1.10E+06	1.00E+06	0.1239	0.0056	6.120	0.330	0.3676	0.0085	0.4365	2016	17.5	35	1994	23.0	46	2021	19.5	39	101
TAZ6z5r	165.00	99.70	137.30	0.615	1.30E+06	1.10E+06	0.2029	0.0086	14.190	0.810	0.5193	0.0140	0.8748	2850	11.5	23	2762	27.0	54	2695	29.0	58	98
TAZ6z5c	152.80	153.80	228.80	0.992	-3.30E+05	5.70E+05	0.2421	0.0100	20.210	1.100	0.6180	0.0150	0.7128	3135	9.5	19	3105	26.0	52	3112	30.0	60	100
TAZ6z6	30.89	20.54	6.03	0.668	2.90E+04	1.60E+04	0.0674	0.0075	0.930	0.110	0.1023	0.0038	0.0990	770	130.0	260	663	30.5	61	627	11.0	22	95
TAZ6z8	216.60	154.40	152.80	0.706	1.12E+06	6.90E+05	0.1272	0.0056	6.640	0.360	0.3870	0.0086	0.2820	2058	15.5	31	2063	23.5	47	2108	20.0	40	102
TAZ6z9	207.00	124.00	38.70	0.585	2.30E+05	1.30E+05	0.0703	0.0058	0.893	0.074	0.0951	0.0026	-0.1038	860	80.0	160	649	20.5	41	586	7.5	15	90
TAZ6z10	107.30	70.20	25.71	0.655	-6.70E+05	4.90E+05	0.0621	0.0042	1.143	0.090	0.1342	0.0044	0.1080	650	75.0	150	768	21.0	42	812	12.5	25	106
TAZ6z11	334.00	357.00	207.60	1.076	1.51E+06	7.30E+05	0.1295	0.0056	6.150	0.330	0.3501	0.0093	0.6900	2091	13.0	26	1996	24.0	48	1934	22.5	45	97
TAZ6z12	205.80	208.60	96.50	1.016	-1.18E+06	7.80E+05	0.0708	0.0036	1.584	0.096	0.1663	0.0040	0.1417	946	55.0	110	962	19.0	38	992	11.0	22	103
TAZ6z13	146.40	83.60	80.10	0.572	-2.00E+05	3.90E+05	0.1229	0.0054	6.150	0.330	0.3684	0.0088	0.2743	2001	15.0	30	1995	23.5	47	2022	21.0	42	101
TAZ6z14	70.40	35.80	37.50	0.514	-8.00E+05	1.60E+05	0.1299	0.0063	6.950	0.410	0.3988	0.0110	0.3340	2097	25.0	50	2113	26.5	53	2168	24.0	48	103
TAZ6z15	133.50	65.90	27.90	0.499	-3.00E+05	1.20E+05	0.0698	0.0041	1.433	0.093	0.1516	0.0037	0.0445	970	55.0	110	904	19.0	38	910	10.0	20	101
TAZ6z16c	318.60	337.00	101.60	1.071	1.10E+05	1.60E+05	0.0686	0.0044	0.924	0.066	0.1002	0.0024	0.0193	898	65.0	130	673	16.5	33	616	7.0	14	91
TAZ6z16r	176.00	68.40	22.50	0.408	-6.00E+03	1.40E+05	0.0595	0.0032	0.951	0.061	0.1168	0.0034	0.3893	606	55.0	110	676	15.5	31	712	9.5	19	105
TAZ6z17	89.00	101.50	31.60	1.183	5.00E+05	1.00E+05	0.0617	0.0046	0.980	0.085	0.1157	0.0035	0.2517	680	75.0	150	693	21.0	42	706	10.0	20	102
TAZ6z18	329.80	177.20	50.20	0.539	3.50E+05	3.60E+05	0.0588	0.0033	0.787	0.050	0.0994	0.0022	0.1630	531	65.0	130	588	14.5	29	611	6.5	13	104
TAZ6z19	645.00	769.00	228.60	1.193	3.60E+05	3.70E+05	0.0611	0.0031	0.866	0.051	0.1061	0.0023	0.1454	625	55.0	110	633	13.5	27	650	7.0	14	103
TAZ6z20c	116.70	148.70	42.60	1.282	1.80E+04	6.00E+04	0.0646	0.0044	0.862	0.065	0.0992	0.0028	0.2650	720	80.0	160	639	18.5	37	609	8.5	17	95
TAZ6z20r	76.60	53.10	14.88	0.695	4.20E+04	3.80E+04	0.0589	0.0051	0.838	0.076	0.1060	0.0030	0.0199	530	90.0	180	622	21.0	42	649	8.5	17	104
TAZ6z21r	518.00	128.10	33.50	0.249	2.10E+05	4.80E+04	0.0586	0.0029	0.759	0.045	0.0952	0.0022	0.3434	546	55.0	110	572	13.0	26	587	6.5	13	103
TAZ6z22	269.60	194.10	55.50	0.729	3.00E+05	2.50E+05	0.0604	0.0031	0.835	0.051	0.1024	0.0024	0.1511	611	55.0	110	615	14.0	28	628	7.0	14	102
TAZ6z24	394.00	224.70	60.60	0.577	1.05E+06	6.00E+05	0.0564	0.0030	0.692	0.044	0.0897	0.0021	0.2084	458	60.0	120	533	13.0	26	554	6.0	12	104
TAZ6z25	100.10	103.70	31.70	1.034	3.80E+05	5.20E+05	0.0680	0.0048	0.947	0.075	0.1019	0.0024	0.3108	830	70.0	140	672	19.5	39	626	7.0	14	93
TAZ6z26	42.40	41.80	51.00	0.981	1.27E+05	4.30E+04	0.1375	0.0074	7.520	0.510	0.3966	0.0100	0.5884	2181	31.0	62	2166	30.0	60	2152	23.5	47	99
TAZ6z27	154.00	119.50	30.00	0.792	2.20E+05	1.40E+05	0.0582	0.0039	0.736	0.056	0.0928	0.0023	0.3309	510	75.0	150	564	16.5	33	572	7.0	14	101
TAZ6z29	518.50	457.40	185.80	0.883	1.70E+05	6.30E+05	0.0696	0.0032	1.324	0.073	0.1406	0.0032	0.0913	915	49.0	98	855	16.0	32	849	9.5	19	99
TAZ6z30	130.70	94.20	99.60	0.721	2.20E+06	1.00E+06	0.1276	0.0057	6.920	0.380	0.3956	0.0095	0.3477	2067	15.5	31	2107	23.5	47	2148	22.0	44	102
TAZ6z31	142.40	107.00	146.20	0.755	7.00E+05	6.10E+05	0.1907	0.0083	13.570	0.730	0.5273	0.0130	0.5626	2745	13.5	27	2725	25.5	51	2735	28.0	56	100
TAZ6z32r	177.00	155.00	147.00	0.877	-2.20E+05	4.70E+05	0.1215	0.0054	6.030	0.330	0.3638	0.0085	0.3089	1980	17.0	34	1981	23.0	46	2000	20.0	40	101
TAZ6z32c	119.10	112.90	108.40	0.942	4.60E+05	4.80E+05	0.1226	0.0057	6.310	0.360	0.3801	0.0089	0.3324	1994	21.5	43	2024	23.5	47	2076	21.0	42	103
TAZ6z34r	106.60	88.00	22.69	0.831	-2.20E+04	7.10E+04	0.0604	0.0045	0.797	0.066	0.0956	0.0025	0.1722	570	85.0	170	590	18.5	37	589	7.5	15	100
TAZ6z34c	121.00	122.10	34.40	0.971	1.90E+05	1.90E+05	0.0640	0.0041	0.867	0.060	0.0994	0.0025	0.0271	700	65.0	130	631	16.0	32	611	7.5	15	97
TAZ6z35	202.00	95.60	26.27	0.473	1.50E+05	1.60E+05	0.0621	0.0041	0.799	0.058	0.0938	0.0024	0.2182	630	70.0	140	593	16.5	33	578	7.0	14	97
TAZ6z36	190.60	87.90	94.10	0.446	-5.00E+05	4.70E+05	0.1775	0.0076	11.060	0.610	0.4564	0.0120	0.7153	2626	12.5	25	2536	24.5	49	2423	26.0	52	96
TAZ6z38	107.50	107.70	161.50	1.004	-2.00E+05	3.00E+05	0.2230	0.0095	17.830	0.950	0.5781	0.0130	0.5281	3000	11.0	22	2980	25.5	51	2940	27.0	54	99
TAZ6z39	45.30	59.90	16.68	1.332	1.01E+05	8.10E+04	0.0609	0.0061	0.867	0.092	0.1022	0.0031	0.0246	550	105.0	210	631	25.5	51	627	9.0	18	99
TAZ6z40	73.40	61.10	19.75	0.826	4.60E+04	6.00E+04	0.0672	0.0049	0.983	0.079	0.1064	0.0031	0.1938	830	70.0	140	694	19.5	39	651	9.0	18	94
TAZ6z41	91.80	55.10	53.50	0.576	2.10E+06	2.00E+06	0.1278	0.0060	6.590	0.380	0.3786	0.0089	0.3002	2060	21.5	43	2054	25.5	51	2069	20.5	41	101
TAZ6z42	86.60	104.80	27.70	1.192	3.00E+04	7.10E+04	0.0596	0.0055	0.760	0.074	0.0959	0.0030	0.2027	520	105.0	210	578	21.5	43	590	9.0	18	102
TAZ6z43	365.00	143.50	41.10	0.394	-1.58E+06	8.00E+05	0.0609	0.0034	0.867	0.054	0.1029	0.0023	0.0292	621	60.0	120	635	15.0	30	631	7.0	14	99
TAZ6z44	380.00	372.50	112.00	0.981	-4.50E+05	3.80E+05	0.0622	0.0031	0.898	0.055	0.1044	0.0025	0.3384	694	55.0	110	649	14.5	29	640	7.0	14	99
TAZ6z45	795.00	388.00	399.00	0.459	-4.00E+06	2.10E+06	0.1317	0.0055	7.075	0.370	0.3909	0.0090	0.6574	2119	8.5	17	2120	23.0	46	2127	21.0	42	100
TAZ6z46	261.70	148.50	43.30	0.564	4.00E+03	1.10E+05	0.0605	0.0036	0.834	0.056	0.1007	0.0024	0.0548	604	65.0	130	616	15.0	30	618	7.0	14	100
TAZ6z47	301.00	136.10	34.20	0.451	1.50E+05	2.20E+05	0.0632	0.0034	0.803	0.049	0.0924	0.0023	0.1676	691	60.0	120	600	14.5	29	570	6.5	13	95
TAZ6z49c	175.60	155.50	187.90	0.874	2.50E+05	3.60E+05	0.1671	0.0072	10.980	0.580	0.4727	0.0110	0.3878	2528	12.0	24	2520	25.0	50	2495	23.5	47	99
TAZ6z51	242.00	101.30	28.70	0.415	-1.40E+05	1.50E+05	0.0633	0.0040	0.853	0.060	0.0975	0.0024	0.1654	720	65.0	130	623	16.0	32	600	7.0	14	96
TAZ6z52	207.00	155.00	159.00	0.722	-3.00E+05	3.10E+05	0.1347	0.0058	7.310	0.390	0.3939	0.0093	0.5982	2156	13.5	27	2150	24.0	48	2144	21.0	42	100
TAZ6z54	58.70	80.10	78.20	1.355	-4.00E+03	1.60E+05	0.1301	0.0065	6.900	0.400	0.3883	0.0100	0.3285	2085	26.0	52	2102	27.0	54	2114	23.0	46	101
TAZ6z55	274.00	168.30	50.80	0.611	-8.00E+05	1.30E+05	0.0613	0.0038	0.885	0.060	0.1045	0.0025	-0.0617	630	70.0	140	641	16.5	33	640	7.5	15	100
TAZ6z56	547.00	360.00	97.10	0.654	1.40E+06	1.10E+06	0.0608	0.0030	0.830	0.048	0.0985	0.0024	0.2988	636	55.0	110	613	13.5	27	606	7.0	14	99
TAZ6z57	230.90	265.20	64.40	1.147	-4.70E+05	5.20E+05	0.0645	0.0038	0.838	0.056	0.0935	0.0024	0.3301	744	60.0	120	619	16.0	32	576	7.0	14	93
TAZ6z58r	183.80	106.60	30.27	0.571	1.50E+05	1.20E+05	0.0613	0.0041	0.868	0.062	0.1013	0.0024	0.1770	660	70.0	140	635	17.5	35	622	7.0	14	98
TAZ6z59	23.40	15.20	4.85	0.610	1.00E+05	1.20E+04	0.0620	0.0094	0.990	0.180	0.1074	0.0048	0.2554	670	160.0	320	682	48.0	96	657	14.0	28	96
TAZ6z60	134.00	142.00	38.10	0.859	1.90E+04	7.70E+04	0.0632	0.0048	0.868	0.071	0.0983	0.0027	-0.0526	670	80.0	160	634	19.0	38	604	8.0	16	95
TAZ6z62	149.30	54.60	18.68	0.369	-9.00E+04	6.80E+04	0.0622	0.0041	1.022	0.072	0.1171	0.0029	-0.0986	700	70.0	140	712	18.0	36	714	8.5	17	100
TAZ6z63	118.30	225.80	220.40	1.890	6.20E+05	4.40E+05	0.1288	0.0059	6.600	0.360	0.3725	0.0091	0.3493	2078	19.0	38	2064	24.5	49	2041	21.5	43	99
TAZ6z64c	205.00	162.00	190.00	0.748	2.60E+05	6.20E+05	0.1758	0.0076	11.660	0.640	0.4724	0.0120	0.6952	2612	12.5	25	2575	26.0	52	2493	25.5	51	97
TAZ6z66	150.60	137.50	37.30	0.899	1.60E+04	8.10E+04	0.0620	0.0041	0.833	0.061	0.0984	0.0025	0.1904	670	75.0	150	612	17.0	34	605	7.5	15	99

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
TAZ6z67	72.00	44.20	11.68	0.601	2.00E+04	3.80E+04	0.0550	0.0050	0.748	0.074	0.0963	0.0028	0.2034	450	100.0	200	565	22.5	45	593	8.0	16	105
TAZ6z68	335.00	145.20	137.90	0.432	-2.30E+05	4.40E+05	0.1331	0.0056	6.912	0.360	0.3728	0.0085	0.5105	2133	10.5	21	2102	24.5	49	2042	20.0	40	97
TAZ6z69c	173.10	138.10	39.60	0.794	1.80E+04	6.50E+04	0.0573	0.0042	0.783	0.059	0.0981	0.0025	-0.0272	490	80.0	160	592	17.0	34	603	7.0	14	102
TAZ6z69r	214.50	151.80	45.50	0.697	-5.00E+05	1.20E+05	0.0596	0.0034	0.857	0.058	0.1030	0.0025	0.3514	576	60.0	120	629	15.5	31	632	7.5	15	100
TAZ6z70	78.00	20.65	14.54	0.258	-3.60E+05	2.50E+05	0.0916	0.0052	3.170	0.210	0.2508	0.0069	0.2207	1461	55.0	110	1444	25.5	51	1442	17.5	35	100
TAZ6z71	22.67	9.99	2.76	0.445	1.00E+04	1.50E+04	0.0639	0.0087	0.900	0.120	0.1029	0.0043	-0.0288	660	135.0	270	656	30.5	61	631	12.5	25	96
TAZ6z72	123.30	92.90	27.40	0.745	-3.10E+04	5.60E+04	0.0638	0.0049	0.941	0.079	0.1055	0.0026	0.2896	710	80.0	160	678	20.5	41	647	7.5	15	95
TAZ6z73	121.70	100.80	29.10	0.793	1.10E+05	1.60E+05	0.0596	0.0046	0.841	0.071	0.1009	0.0029	0.3256	600	80.0	160	619	19.0	38	620	8.5	17	100
TAZ6z75c	109.30	54.00	15.30	0.493	7.00E+04	7.90E+04	0.0602	0.0041	0.842	0.063	0.0996	0.0029	0.0939	600	80.0	160	621	18.0	36	612	8.5	17	99
TAZ6z75r	108.80	61.70	17.83	0.564	2.90E+05	2.10E+05	0.0593	0.0047	0.855	0.075	0.0999	0.0026	0.0046	580	90.0	180	621	20.0	40	614	7.5	15	99
TAZ6z77	93.00	40.60	12.89	0.435	-1.30E+05	1.10E+05	0.0609	0.0053	0.871	0.075	0.1029	0.0031	-0.2380	600	95.0	190	635	20.0	40	631	9.0	18	99
TAZ6z78r	97.30	36.03	10.36	0.365	1.70E+04	4.30E+04	0.0607	0.0047	0.866	0.074	0.1009	0.0030	0.2439	610	90.0	180	627	20.0	40	620	8.5	17	99
TAZ6z79c	115.00	159.70	48.50	1.370	-2.00E+04	5.90E+04	0.0667	0.0048	0.985	0.074	0.1035	0.0028	-0.0020	830	75.0	150	692	19.0	38	635	8.0	16	92
TAZ6z80r	25.70	19.60	5.23	0.726	0.00E+00	1.50E+04	0.0633	0.0090	0.850	0.120	0.1000	0.0039	0.0871	620	140.0	280	643	35.0	70	617	11.0	22	96
TAZ6z82	154.50	353.00	366.00	2.146	5.30E+05	3.80E+05	0.1357	0.0059	7.670	0.410	0.4027	0.0094	0.3683	2164	14.5	29	2192	24.0	48	2181	21.5	43	99
TAZ6z83	45.10	14.21	12.82	0.306	-9.20E+04	6.50E+04	0.1312	0.0069	6.730	0.420	0.3634	0.0093	0.3057	2094	30.0	60	2075	28.5	57	1998	22.0	44	96
TAZ6z84	242.20	172.90	45.90	0.702	3.00E+04	8.10E+04	0.0576	0.0030	0.786	0.048	0.0970	0.0024	0.0596	515	60.0	120	590	14.0	28	597	7.0	14	101
TAZ6z85	50.50	41.20	42.70	0.799	7.80E+04	7.20E+04	0.1472	0.0078	8.730	0.610	0.4170	0.0130	0.7002	2304	28.5	57	2312	32.0	64	2245	30.5	61	97
TAZ6z86r	176.60	248.00	67.30	1.381	-6.10E+05	5.30E+05	0.0602	0.0035	0.816	0.054	0.0963	0.0023	0.2792	607	65.0	130	604	15.0	30	594	7.0	14	98
TAZ6z86c	284.00	541.00	154.60	1.866	-8.00E+05	2.00E+05	0.0685	0.0096	1.040	0.200	0.0992	0.0026	0.9081	700	110.0	220	664	31.5	63	610	7.5	15	92
TAZ6z87c	380.00	666.00	187.70	1.731	-2.20E+05	1.70E+05	0.0610	0.0031	0.856	0.051	0.0999	0.0022	0.0933	633	60.0	120	627	14.0	28	614	6.5	13	98
TAZ6z87r	132.80	150.00	42.00	1.089	2.90E+04	7.80E+04	0.0615	0.0042	0.881	0.064	0.1007	0.0028	0.1494	620	75.0	150	642	18.5	37	620	8.0	16	97
TAZ6z88r	240.00	61.20	15.90	0.253	-1.10E+05	1.50E+05	0.0601	0.0036	0.766	0.048	0.0889	0.0022	0.0009	627	65.0	130	579	14.5	29	549	6.5	13	95
TAZ6z88c	164.00	170.00	50.00	1.022	-6.00E+04	9.80E+04	0.0616	0.0040	0.881	0.062	0.1034	0.0025	0.1841	610	70.0	140	647	18.0	36	634	7.0	14	98
TAZ6z89	99.20	35.60	9.53	0.354	1.15E+05	7.40E+04	0.0579	0.0043	0.846	0.066	0.1038	0.0028	0.0296	500	85.0	170	623	18.5	37	637	8.5	17	102
TAZ6z90	68.80	76.40	18.60	1.076	-2.00E+04	2.10E+04	0.0620	0.0060	0.735	0.072	0.0861	0.0031	0.0511	600	100.0	200	559	20.0	40	532	9.5	19	95
TAZ6z91	109.50	104.70	31.20	0.953	-1.17E+05	8.30E+04	0.0631	0.0049	0.920	0.078	0.1041	0.0028	0.2663	660	85.0	170	666	21.5	43	638	8.0	16	96
TAZ6z93	117.70	133.50	130.70	1.112	2.50E+05	1.50E+05	0.1282	0.0063	6.740	0.380	0.3719	0.0084	0.1447	2064	24.0	48	2075	25.5	51	2038	20.0	40	98
TAZ6z95	312.00	297.00	292.00	0.927	4.80E+06	2.90E+06	0.1277	0.0054	6.888	0.360	0.3823	0.0087	0.5469	2058	10.5	21	2098	22.5	45	2090	20.0	40	100
TAZ6z96	146.60	152.00	42.60	1.016	3.00E+04	6.10E+04	0.0625	0.0040	0.862	0.059	0.0981	0.0025	-0.0050	650	70.0	140	629	16.0	32	605	7.0	14	96
TAZ6z97	117.80	44.70	62.50	0.370	1.20E+05	2.20E+05	0.2041	0.0087	16.320	0.880	0.5640	0.0130	0.6458	2854	12.0	24	2894	26.0	52	2882	27.5	55	100
TAZ6z98	98.60	86.30	92.70	0.862	1.20E+05	2.10E+05	0.1430	0.0063	8.530	0.460	0.4188	0.0099	0.3981	2253	15.0	30	2288	25.0	50	2254	22.5	45	99
TAZ6z99	27.12	14.12	3.88	0.517	-1.60E+05	1.40E+05	0.0704	0.0086	0.990	0.120	0.1002	0.0038	0.0037	750	130.0	260	687	31.5	63	615	11.0	22	90
TAZ6z100c	75.00	56.30	15.64	0.743	6.00E+04	3.20E+04	0.0591	0.0051	0.802	0.072	0.0984	0.0027	0.0202	570	85.0	170	608	19.5	39	607	8.0	16	100
TAZ6z101	79.00	66.80	81.30	0.763	5.50E+04	9.30E+04	0.1387	0.0065	7.280	0.430	0.3638	0.0092	0.4368	2196	21.0	42	2142	26.5	53	1999	21.5	43	93
TAZ6z104	238.70	219.00	212.00	0.881	-9.00E+05	5.30E+05	0.1253	0.0054	6.577	0.350	0.3671	0.0082	0.3092	2030	14.5	29	2055	23.5	47	2016	19.5	39	98
TAZ6z105	268.00	360.00	355.00	1.345	4.30E+05	5.50E+05	0.1246	0.0054	6.340	0.340	0.3588	0.0088	0.5061	2016	14.0	28	2022	23.5	47	1976	21.0	42	98
TAZ6z107	195.60	176.90	45.50	0.892	-6.90E+05	8.00E+05	0.0618	0.0037	0.812	0.057	0.0941	0.0024	0.1960	650	70.0	140	601	16.0	32	580	7.0	14	96
TAZ6z108	166.60	255.00	62.60	1.495	-2.30E+04	5.20E+04	0.0613	0.0046	0.740	0.062	0.0853	0.0023	0.2819	600	80.0	160	561	18.5	37	527	7.0	14	94
TAZ6z109	145.80	134.30	33.00	0.909	-7.50E+04	6.20E+04	0.0585	0.0037	0.714	0.050	0.0863	0.0020	-0.0746	510	70.0	140	545	15.0	30	534	6.0	12	98
TAZ6z110	158.00	98.30	97.50	0.613	-3.40E+06	3.00E+06	0.1287	0.0060	7.170	0.400	0.3910	0.0093	0.3289	2071	19.5	39	2130	25.0	50	2127	21.5	43	100
TAZ6z111	167.30	91.10	97.10	0.536	-4.60E+05	2.70E+05	0.1312	0.0058	6.960	0.380	0.3746	0.0085	0.4320	2102	16.5	33	2111	25.5	51	2051	20.0	40	97
TAZ6z112c	60.00	36.50	38.20	0.597	-9.50E+04	8.50E+04	0.1305	0.0063	7.140	0.420	0.3855	0.0100	0.4116	2088	23.5	47	2129	25.5	51	2101	23.5	47	99
TAZ6z113	122.40	35.40	9.93	0.286	-3.50E+04	7.00E+04	0.0610	0.0050	0.854	0.071	0.0967	0.0027	-0.0110	610	85.0	170	621	19.5	39	595	8.0	16	96
TAZ6z114	134.90	102.50	30.90	0.751	4.30E+04	5.10E+04	0.0652	0.0045	0.957	0.071	0.1040	0.0027	-0.0149	750	80.0	160	678	18.5	37	638	8.0	16	94
TAZ6z115	226.00	24.61	26.98	0.109	2.40E+05	4.90E+05	0.1302	0.0056	7.460	0.410	0.3998	0.0095	0.6052	2088	14.0	28	2167	24.5	49	2168	22.0	44	100
TAZ6z117	116.70	49.20	54.60	0.417	9.00E+05	1.60E+05	0.1335	0.0060	7.750	0.430	0.4084	0.0097	0.4043	2130	17.5	35	2206	26.0	52	2207	22.0	44	100
TAZ6z118	53.60	49.30	12.32	0.912	2.50E+04	1.60E+04	0.0592	0.0063	0.786	0.088	0.0933	0.0032	0.0927	540	110.0	220	587	23.5	47	575	9.5	19	98
TAZ6z119	119.70	69.40	20.26	0.583	1.52E+05	6.50E+04	0.0635	0.0045	0.909	0.069	0.1014	0.0028	-0.0341	670	75.0	150	661	19.5	39	623	8.0	16	94
TAZ6z120	147.80	162.00	154.30	1.087	-9.60E+05	8.30E+05	0.1287	0.0059	6.610	0.370	0.3674	0.0089	0.4469	2065	19.0	38	2062	24.0	48	2017	21.0	42	98
TAZ6z122	145.20	85.90	28.60	0.585	1.00E+05	8.50E+04	0.0640	0.0039	0.960	0.068	0.1036	0.0025	0.0120	727	60.0	120	688	16.5	33	636	7.5	15	92
TAZ6z123	166.00	143.00	36.60	0.861	-6.00E+04	6.80E+04	0.0564	0.0041	0.727	0.057	0.0898	0.0023	-0.0911	480	85.0	170	559	18.0	36	554	7.0	14	99
TAZ6z124	179.60	62.40	19.38	0.351	-7.00E+05	1.30E+05	0.0597	0.0034	0.889	0.059	0.1034	0.0025	0.3942	613	60.0	120	644	16.0	32	634	7.0	14	98
TAZ6z125	143.80	89.70	25.97	0.623	1.28E+05	8.50E+04	0.0662	0.0041	0.918	0.063	0.0976	0.0025	-0.0060	790	70.0	140	658	17.0	34	600	7.5	15	91
TAZ6z126	123.00	113.90	115.50	0.962	-2.90E+06	2.10E+06	0.1197	0.0053	6.410	0.350	0.3781	0.0094	0.4833	1955	16.5	33	2031	24.0	48	2067	22.0	44	102
High common Pb, Pb loss and/or discordant data																							
TAZ6z2	115.50	103.60	79.70	0.899	1.50E+05	2.80E+05	0.1009	0.0066	3.260	0.240	0.2429	0.0061	0.6554	1607	60.0	120	1471	30.0	60	1402	16.0	32	95
TAZ6z4c	516.00	176.00	180.80	0.344	1.25E+05	1.20E+04	0.1753	0.0078	4.026	0.220	0.1695	0.0052	0.8883	2604	36.5	73	1638	22.0	44	1009	14.5	29	62
TAZ6z7	268.00	319.00	104.00	1.116	3.40E+05	4.20E+05	0.1332	0.0058	4.050	0.240	0.2282	0.0078	0.8044	2137	38.0	76	1645	23.0	46	1324	20.5	41	80
TAZ6z21c	424.00	183.00	1202.00	0.429	4.05E+04	3.00E+03	0.2970	0.0190	18.600	1.600	0.4760	0.0190	0.9657	3444	37.0	74	3010	41.5	83	2505	40.0	80	83
TAZ6z23	358.00	122.90	46.70	0.344	-2.90E+05	7.10E+05	0.0848	0.0041	1.590	0.110	0.1347	0.0044	0.7515	1300	47.5	95	962	21.0	42	814	12.5	25	85
TAZ6z28c	235.00	191.00	187.00	0.770	-2.80E+05	5.40E+05	0.1335	0.0060	6.240	0.340	0.3481	0.0078	0.3959	2141	17.5	35	2011	25.0	50	1925	19.0	38	96
TAZ6z28r	110.00	89.00	88.00	0.752	1.30E+05	2.00E+05	0.1312	0.0062	5.970	0.370	0.3354	0.0100	0.6361	2107	22.5	45	1977	25.0	50	1869	24.0	48	95
TAZ6z33	287.00	185.50	134.90	0.643	-8.00E+05	6.10E+05	0.1049	0.0051	3.280	0.230	0.2278	0.0090	0.8952	1718	42.0	84	1481	26.5	53	1321	24.0	48	89
TAZ6z37	445.00	300.00	250.00	0.674	-5.90E+05	6.60E+05	0.1235	0.0052	5.274	0.280	0.3104	0.0068	0.5104	2007	11.5	23	1866	21.5	43	1742	16.5	33	93
TAZ6z48	229.30	325.00	106.40	1.408	3.00E+05	1.00E+05	0.0772	0.0048	1.106	0.075	0.1042	0.0025	-0.1183	1136	60.0	120	764	17.5	35	639	7.5	15	84

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
TAZ6z49r	460.00	63.70	100.00	0.132	3.00E+05	3.80E+05	0.1438	0.0069	7.550	0.530	0.3714	0.0110	0.8401	2264	21.5	43	2169	30.5	61	2034	26.5	53	94
TAZ6z50	257.40	130.30	134.00	0.495	2.90E+05	2.50E+05	0.1357	0.0066	6.490	0.400	0.3445	0.0086	0.4999	2162	23.0	46	2040	26.5	53	1911	20.0	40	94
TAZ6z53c	190.00	95.60	113.00	0.500	5.60E+04	2.30E+04	0.2260	0.0440	3.660	0.950	0.1146	0.0095	0.9820	2540	180.0	360	1440	110.0	220	697	27.0	54	48
TAZ6z53r	796.00	185.00	137.00	0.215	1.24E+05	1.70E+04	0.1077	0.0068	1.434	0.100	0.0945	0.0022	-0.1228	1742	55.0	110	899	20.5	41	582	6.5	13	65
TAZ6z58c	147.00	119.30	8200.00	0.803	8.31E+03	2.00E+02	0.7930	0.0350	318.000	59.000	2.7200	0.4800	0.9938	4944	17.5	35	5590	115.0	230	7890	445.0	890	141
TAZ6z61	620.00	400.00	155.00	0.418	1.90E+05	1.20E+05	0.0922	0.0074	1.404	0.120	0.1094	0.0033	0.0782	1400	75.0	150	882	24.5	49	669	9.5	19	76
TAZ6z65	483.00	189.00	125.50	0.375	5.50E+05	1.20E+05	0.1188	0.0052	4.100	0.280	0.2460	0.0130	0.9396	1934	39.0	78	1651	28.0	56	1414	33.5	67	86
TAZ6z64r	99.70	55.10	53.00	0.524	2.20E+05	2.90E+05	0.1739	0.0079	9.490	0.720	0.3940	0.0200	0.9195	2594	17.0	34	2370	36.0	72	2147	45.5	91	91
TAZ6z74c	431.00	647.00	250.40	1.307	6.70E+05	3.40E+05	0.1253	0.0055	4.590	0.380	0.2600	0.0170	0.9569	2034	38.0	76	1729	35.0	70	1485	43.0	86	86
TAZ6z74r	363.00	243.00	325.00	0.676	4.30E+05	2.20E+05	0.1535	0.0110	7.300	0.510	0.3428	0.0095	-0.2047	2342	48.5	97	2144	31.0	62	1899	23.0	46	89
TAZ6z76c	1150.00	1230.00	332.00	1.066	6.40E+04	7.80E+03	0.1479	0.0100	1.370	0.120	0.0643	0.0024	0.8293	2296	60.0	120	862	27.5	55	402	7.5	15	47
TAZ6z76r	987.00	414.00	298.20	0.425	4.42E+04	4.50E+03	0.2010	0.0110	2.091	0.130	0.0742	0.0017	-0.4988	2818	46.0	92	1143	21.5	43	461	5.0	10	40
TAZ6z78c	30.90	17.46	4.97	0.570	-2.00E+04	1.80E+04	0.0692	0.0091	1.050	0.130	0.1034	0.0042	0.0474	860	130.0	260	726	32.5	65	634	12.0	24	87
TAZ6z79r	81.20	313.00	371.90	3.747	1.08E+04	6.40E+02	0.5950	0.0280	23.500	1.600	0.2849	0.0110	0.8750	4486	16.5	33	3251	34.5	69	1614	26.5	53	50
TAZ6z80c	40.00	33.30	21.15	0.812	2.30E+04	5.80E+04	0.0964	0.0067	3.090	0.260	0.2236	0.0094	0.5715	1540	70.0	140	1431	33.5	67	1299	24.5	49	91
TAZ6z81	646.00	490.00	430.00	0.734	4.13E+04	6.10E+03	0.2090	0.0250	3.710	0.610	0.1221	0.0056	0.9613	2910	100.0	200	1520	60.0	120	742	16.0	32	49
TAZ6z92	817.00	494.00	652.00	0.600	1.28E+05	6.80E+03	0.1627	0.0068	7.260	0.390	0.3119	0.0075	0.7133	2476	9.0	18	2143	23.5	47	1750	18.5	37	82
TAZ6z94	314.00	716.00	214.50	2.259	-5.00E+05	1.10E+05	0.0797	0.0087	1.190	0.140	0.1017	0.0026	-0.3111	1150	105.0	210	787	30.5	61	625	7.5	15	79
TAZ6z100r	50.60	26.70	7.32	0.517	-3.00E+04	4.90E+04	0.0692	0.0058	0.970	0.088	0.0987	0.0030	0.0498	880	90.0	180	687	23.5	47	607	8.5	17	88
TAZ6z102	360.00	196.80	133.00	0.536	3.20E+04	8.60E+04	0.1380	0.0230	2.320	0.450	0.1119	0.0040	0.9409	1890	155.0	310	1130	70.0	140	683	11.5	23	60
TAZ6z103	159.00	66.30	54.40	0.415	1.90E+05	1.40E+05	0.1234	0.0078	5.450	0.700	0.3030	0.0280	0.9742	1964	49.0	98	1830	70.0	140	1710	70.0	140	93
TAZ6z106	81.00	93.00	29.50	1.174	5.00E+04	3.70E+04	0.0779	0.0066	1.154	0.110	0.1050	0.0028	0.2649	1080	85.0	170	776	24.0	48	644	8.5	17	83
TAZ6z112r	97.90	38.00	49.80	0.382	2.20E+05	1.20E+05	0.1557	0.0095	5.190	0.380	0.2360	0.0180	0.7072	2410	50.0	100	1846	31.0	62	1359	45.5	91	74
TAZ6z116	198.30	194.00	133.80	0.966	-1.10E+05	2.50E+05	0.1053	0.0048	3.717	0.210	0.2457	0.0062	0.6167	1720	43.0	86	1573	22.5	45	1416	16.0	32	90
TAZ6z121	380.00	301.00	116.20	0.791	1.35E+05	9.80E+04	0.0920	0.0120	1.360	0.230	0.0986	0.0032	0.9110	1370	115.0	230	831	43.0	86	606	9.5	19	73

Footnotes:

- Analysis references: TAZ6z is zircon from sample TAZ6 (mount CT17-10), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.7: Sample AZR2 (LA-ICPMS)

IGSN: IEACC0024 Coordinate UTM: Zone 30S, 296820 m E, 3705220 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AZR2z1	768.00	570.00	163.50	0.732	-8.00E+06	1.50E+06	0.0630	0.0038	0.832	0.043	0.0961	0.0027	-0.0649	698	65.0	130	614	12.0	24	592	8.0	16	96
AZR2z2	217.00	185.70	56.90	0.831	-1.30E+05	2.50E+05	0.0619	0.0048	0.843	0.057	0.0980	0.0032	-0.1795	670	85.0	170	618	15.5	31	603	9.5	19	98
AZR2z3	177.10	172.30	179.60	0.954	-4.20E+05	8.40E+05	0.1283	0.0074	6.260	0.310	0.3535	0.0100	0.3439	2079	18.5	37	2011	21.5	43	1951	24.5	49	97
AZR2z4c	262.00	106.40	51.30	0.400	6.20E+05	6.60E+05	0.0747	0.0048	1.698	0.100	0.1641	0.0049	0.6363	1054	70.0	140	1005	19.5	39	979	13.5	27	97
AZR2z4r	70.00	0.35	-0.41	0.004	1.40E+05	2.30E+05	0.0621	0.0082	0.960	0.120	0.1137	0.0051	0.1422	560	135.0	270	669	31.5	63	694	14.5	29	104
AZR2z5	428.00	401.00	98.30	0.915	-1.50E+05	9.20E+05	0.0637	0.0043	0.711	0.042	0.0826	0.0026	0.0077	707	75.0	150	547	13.0	26	512	7.5	15	94
AZR2z7r	310.60	227.20	340.00	0.718	1.90E+06	2.10E+06	0.2152	0.0120	15.730	0.800	0.5339	0.0150	0.6321	2945	12.0	24	2859	24.5	49	2761	32.5	65	97
AZR2z8	86.10	133.30	40.30	1.520	-2.20E+05	2.70E+05	0.0602	0.0064	0.837	0.084	0.0988	0.0034	0.0148	620	110.0	220	622	23.0	46	607	10.0	20	98
AZR2z8c	95.80	79.30	23.30	0.796	-1.30E+06	1.20E+06	0.0589	0.0051	0.822	0.065	0.1014	0.0034	-0.0326	520	95.0	190	610	18.5	37	622	10.0	20	102
AZR2z8r	64.50	29.50	9.30	0.446	1.10E+05	1.60E+05	0.0641	0.0067	0.898	0.093	0.0999	0.0038	0.2097	720	115.0	230	649	26.0	52	614	11.0	22	95
AZR2z9	150.00	170.70	47.80	1.109	4.00E+03	1.70E+05	0.0626	0.0050	0.827	0.060	0.0969	0.0029	-0.1204	650	90.0	180	609	16.5	33	596	8.5	17	98
AZR2z11	35.80	29.20	32.90	0.818	3.80E+05	4.20E+05	0.1365	0.0096	7.430	0.470	0.3950	0.0150	0.3549	2164	39.5	79	2165	30.0	60	2142	33.5	67	99
AZR2z12	53.28	60.10	17.03	1.116	-1.40E+05	1.70E+05	0.0531	0.0070	0.709	0.090	0.0925	0.0034	-0.0898	300	140.0	280	532	27.0	54	570	10.0	20	107
AZR2z13	498.00	325.20	369.00	0.652	-2.30E+06	2.90E+06	0.1393	0.0077	7.620	0.370	0.3967	0.0110	0.2976	2219	12.0	24	2187	22.0	44	2154	25.5	51	98
AZR2z14	87.20	63.20	65.10	0.723	-6.50E+05	5.60E+05	0.1320	0.0082	6.730	0.370	0.3722	0.0120	0.2487	2127	26.5	53	2078	23.0	46	2039	28.0	56	98
AZR2z15	425.00	246.00	69.20	0.588	-9.60E+05	5.90E+05	0.0596	0.0042	0.736	0.050	0.0901	0.0034	0.3437	600	80.0	160	562	15.5	31	556	10.0	20	99
AZR2z16	1004.00	580.00	174.60	0.572	-1.50E+06	1.20E+06	0.0622	0.0037	0.841	0.045	0.0972	0.0028	0.1906	681	70.0	140	619	12.5	25	598	8.0	16	97
AZR2z17	108.70	31.30	33.10	0.279	6.00E+05	5.70E+05	0.1198	0.0072	6.060	0.320	0.3666	0.0110	0.2659	1956	26.0	52	1985	23.5	47	2013	26.0	52	101
AZR2z18	283.70	113.90	123.10	0.391	-3.10E+06	2.10E+06	0.1341	0.0076	7.330	0.360	0.3959	0.0110	0.2255	2168	17.5	35	2153	23.0	46	2150	26.5	53	100
AZR2z19	60.00	153.00	152.00	2.519	-7.20E+05	3.10E+05	0.1234	0.0079	6.310	0.380	0.3683	0.0120	0.3736	2028	29.0	58	2025	26.0	52	2020	28.0	56	100
AZR2z20	227.00	230.00	63.40	1.012	-3.50E+06	3.70E+06	0.0568	0.0040	0.726	0.046	0.0929	0.0029	-0.0080	480	85.0	170	552	13.5	27	572	8.5	17	104
AZR2z21	191.50	216.50	60.90	1.114	-4.00E+05	3.20E+05	0.0593	0.0047	0.787	0.058	0.0966	0.0030	0.1658	570	85.0	170	595	16.5	33	594	8.5	17	100
AZR2z22	510.00	108.80	52.00	0.213	7.00E+04	1.20E+06	0.0716	0.0043	1.578	0.086	0.1612	0.0045	0.2483	965	60.0	120	963	16.5	33	964	12.5	25	100
AZR2z23c	414.00	198.30	213.50	0.474	-2.30E+06	4.30E+06	0.1329	0.0074	7.210	0.360	0.3927	0.0110	0.4360	2136	14.0	28	2136	22.5	45	2135	26.5	53	100
AZR2z23r	563.00	94.60	82.10	0.169	-5.00E+06	4.50E+06	0.1221	0.0068	5.060	0.240	0.3028	0.0085	0.4044	1990	14.0	28	1829	20.5	41	1707	20.5	41	93
AZR2z24	162.00	90.40	28.40	0.545	-4.40E+05	4.10E+05	0.0624	0.0049	0.974	0.067	0.1116	0.0037	-0.0954	640	85.0	170	688	17.5	35	682	10.5	21	99
AZR2z25	411.00	318.90	103.50	0.772	4.20E+06	3.80E+06	0.0629	0.0041	0.930	0.056	0.1074	0.0031	0.2602	697	70.0	140	666	14.5	29	658	9.0	18	99
AZR2z26	36.00	33.00	33.50	0.920	6.00E+05	2.00E+05	0.1323	0.0092	6.170	0.480	0.3440	0.0230	0.6869	2130	36.0	72	1997	33.5	67	1900	55.0	110	95
AZR2z27c	250.00	427.00	408.00	1.715	-6.00E+04	2.10E+06	0.1212	0.0070	5.980	0.300	0.3543	0.0100	0.1860	1979	21.0	42	1972	22.0	44	1955	24.5	49	99
AZR2z27r	88.90	104.00	107.00	1.104	-1.07E+06	8.40E+05	0.1179	0.0078	5.940	0.350	0.3633	0.0110	0.4446	1936	36.0	72	1975	28.0	56	1997	26.0	52	101
AZR2z28c	250.40	284.00	80.50	1.155	-1.30E+05	3.70E+05	0.0617	0.0045	0.800	0.053	0.0966	0.0030	0.1955	670	75.0	150	599	15.5	31	594	9.0	18	99
AZR2z28r	322.30	439.00	126.90	1.372	-1.50E+05	8.10E+05	0.0589	0.0041	0.773	0.047	0.0950	0.0030	0.0270	551	80.0	160	580	13.5	27	585	9.0	18	101
AZR2z29	391.00	234.00	70.90	0.591	1.90E+06	1.20E+06	0.0618	0.0039	0.861	0.053	0.1027	0.0030	0.2964	651	70.0	140	629	14.5	29	630	8.5	17	100
AZR2z30	323.00	422.00	140.00	1.307	-1.08E+06	5.20E+05	0.0635	0.0047	0.808	0.053	0.0966	0.0033	0.1602	690	80.0	160	603	14.5	29	595	10.0	20	99
AZR2z31	341.00	326.20	96.80	0.963	-1.70E+05	5.50E+05	0.0575	0.0039	0.816	0.049	0.1028	0.0031	-0.1811	532	80.0	160	607	13.0	26	631	9.0	18	104
AZR2z32	207.50	252.00	236.20	1.218	8.00E+06	1.40E+06	0.1164	0.0067	5.400	0.280	0.3358	0.0100	0.1788	1906	20.0	40	1883	22.0	44	1866	24.5	49	99
AZR2z33	123.10	78.30	99.00	0.617	-6.60E+05	8.00E+05	0.1293	0.0076	6.850	0.370	0.3903	0.0110	0.3643	2085	21.5	43	2103	23.0	46	2124	26.5	53	101
AZR2z34	55.70	43.20	14.51	0.787	-1.40E+05	1.20E+05	0.0617	0.0069	0.960	0.100	0.1114	0.0041	0.3047	660	120.0	240	690	24.5	49	681	12.0	24	99
AZR2z35	197.00	47.20	50.10	0.243	-1.20E+06	1.20E+06	0.1244	0.0071	6.500	0.320	0.3799	0.0110	0.5081	2026	16.0	32	2051	19.5	39	2076	25.0	50	101
AZR2z36	77.70	41.22	44.50	0.534	-3.70E+05	5.40E+05	0.1380	0.0087	7.750	0.440	0.4080	0.0130	0.2085	2194	30.0	60	2198	26.0	52	2205	29.0	58	100
AZR2z37c	163.00	200.00	60.60	1.156	1.00E+06	2.60E+05	0.0603	0.0047	0.868	0.062	0.1048	0.0036	0.2510	620	80.0	160	631	17.0	34	642	10.5	21	102
AZR2z37r	70.60	40.30	11.96	0.573	-3.30E+05	6.20E+05	0.0594	0.0056	0.831	0.065	0.1027	0.0037	0.1019	540	95.0	190	610	18.0	36	630	11.0	22	103
AZR2z38	115.20	116.10	159.20	1.072	1.30E+06	1.10E+06	0.1864	0.0120	13.430	0.920	0.5240	0.0180	0.7737	2705	26.0	52	2709	32.5	65	2716	38.0	76	100
AZR2z39	255.00	133.00	78.30	0.543	-6.80E+05	8.90E+05	0.0810	0.0053	2.146	0.130	0.1962	0.0064	0.3799	1232	65.0	130	1160	21.0	42	1154	17.0	34	99
AZR2z41	393.00	228.60	67.40	0.581	1.30E+05	6.60E+05	0.0610	0.0039	0.803	0.047	0.0963	0.0028	0.0568	625	70.0	140	597	13.0	26	593	8.5	17	99
AZR2z42	233.50	241.30	240.60	1.037	-1.50E+06	1.80E+06	0.1258	0.0072	6.380	0.320	0.3702	0.0100	0.2634	2050	18.0	36	2032	21.0	42	2030	24.0	48	100
AZR2z43	102.00	27.33	28.10	0.272	-1.20E+06	6.50E+05	0.1238	0.0073	6.180	0.330	0.3620	0.0110	0.4987	2008	22.5	45	1999	23.5	47	1991	26.5	53	100
AZR2z44c	277.00	193.00	62.70	0.695	2.00E+05	8.30E+05	0.0624	0.0041	0.934	0.056	0.1100	0.0032	0.2394	666	70.0	140	672	15.5	31	673	9.5	19	100
AZR2z45	71.70	45.74	45.30	0.646	3.00E+05	7.60E+05	0.1209	0.0074	6.050	0.320	0.3648	0.0110	0.2169	1971	28.0	56	1984	24.0	48	2004	26.5	53	101
AZR2z47	323.00	336.10	288.20	1.048	-1.90E+06	1.90E+06	0.1292	0.0072	5.950	0.300	0.3395	0.0094	0.5130	2088	14.5	29	1967	22.5	45	1884	22.5	45	96
AZR2z48	733.00	183.80	141.10	0.255	-2.40E+06	2.30E+06	0.0983	0.0055	3.835	0.190	0.2821	0.0079	0.3631	1591	16.5	33	1602	19.0	38	1602	20.0	40	100
AZR2z49	268.40	475.00	157.40	1.804	-3.10E+05	5.80E+05	0.0586	0.0041	0.916	0.054	0.1138	0.0036	-0.0455	523	75.0	150	659	14.0	28	694	10.5	21	105
AZR2z50	438.00	315.00	388.00	0.734	2.50E+06	5.80E+06	0.1815	0.0100	11.920	0.570	0.4773	0.0130	0.3103	2668	11.5	23	2597	22.5	45	2515	29.0	58	97
AZR2z51	317.00	317.00	317.00	1.020	-2.10E+06	2.60E+06	0.1216	0.0069	6.210	0.310	0.3668	0.0110	0.3490	1985	17.5	35	2004	22.0	44	2014	25.0	50	100
AZR2z53	36.50	33.20	10.27	0.930	-5.00E+05	1.10E+05	0.0653	0.0078	0.940	0.120	0.1062	0.0046	0.3702	730	135.0	270	681	32.5	65	650	13.5	27	95
AZR2z54	283.10	132.60	93.60	0.474	2.10E+06	1.30E+06	0.0885	0.0053	3.152	0.170	0.2580	0.0072	0.1575	1393	60.0	120	1444	20.5	41	1480	18.5	37	102
AZR2z55	66.10	61.50	65.00	0.933	1.70E+05	8.20E+05	0.1338	0.0086	7.390	0.420	0.3982	0.0120	-0.0364	2139	31.0	62	2155	25.5	51	2160	29.0	58	100
AZR2z56	235.00	71.00	64.40	0.289	-2.50E+06	3.70E+06	0.1188	0.0072	4.850	0.330	0.3001	0.0110	0.8823	1934	26.0	52	1784	30.5	61	1691	28.0	56	95
AZR2z57	414.60	93.70	92.70	0.229	-5.00E+06	2.30E+06	0.1247	0.0070	5.597	0.270	0.3250	0.0092	0.3918	2024	15.5	31	1915	21.0	42	1814	22.5	45	95
AZR2z58	93.20	121.00	122.00	1.318	-1.06E+06	9.50E+05	0.1268	0.0078	6.620	0.370	0.3800	0.0130	0.3262	2048	26.5	53	2059	24.5	49	2075	29.5	59	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR2z59	81.40	95.00	25.40	1.199	1.20E+05	1.30E+05	0.0539	0.0057	0.679	0.068	0.0907	0.0035	-0.1402	400	110.0	220	534	20.0	40	559	10.5	21	105
AZR2z60	241.00	120.90	151.70	0.509	1.80E+07	1.10E+07	0.1575	0.0089	10.270	0.510	0.4690	0.0130	0.4646	2429	14.5	29	2460	23.5	47	2479	29.0	58	101
AZR2z61	38.50	42.50	13.90	1.125	-1.11E+05	6.50E+04	0.0646	0.0095	0.940	0.140	0.1039	0.0043	0.1840	650	160.0	320	651	36.0	72	637	12.5	25	98
AZR2z62c	307.00	120.00	40.60	0.389	3.90E+06	4.70E+06	0.0630	0.0045	0.964	0.059	0.1108	0.0033	-0.2461	696	75.0	150	684	15.0	30	677	9.5	19	99
AZR2z63	274.00	221.00	237.00	0.797	-3.40E+06	4.10E+06	0.1330	0.0075	7.360	0.390	0.3998	0.0130	0.8567	2143	15.5	31	2154	24.0	48	2168	29.0	58	101
AZR2z64	347.00	143.80	151.00	0.408	2.00E+06	2.90E+06	0.1255	0.0072	6.110	0.310	0.3547	0.0100	0.4358	2034	18.5	37	1989	22.0	44	1957	24.5	49	98
AZR2z65	450.00	217.00	65.40	0.494	3.00E+06	1.10E+06	0.0613	0.0042	0.889	0.050	0.1062	0.0031	-0.1599	625	75.0	150	645	13.5	27	651	9.0	18	101
AZR2z66	77.60	55.50	57.30	0.723	-1.60E+05	4.70E+05	0.1300	0.0080	6.780	0.380	0.3743	0.0110	0.4255	2102	25.5	51	2080	24.5	49	2049	26.5	53	99
AZR2z67	68.90	54.20	16.41	0.798	-2.10E+05	1.30E+05	0.0585	0.0059	0.837	0.080	0.1035	0.0040	-0.2301	540	100.0	200	625	20.5	41	635	11.5	23	102
AZR2z68	638.00	408.00	562.00	0.649	4.50E+06	7.10E+06	0.1909	0.0110	14.060	0.680	0.5370	0.0150	0.6106	2751	10.0	20	2753	23.0	46	2770	32.0	64	101
AZR2z69	470.00	161.20	45.80	0.351	7.90E+06	5.40E+06	0.0563	0.0035	0.768	0.042	0.0990	0.0029	0.4208	453	70.0	140	578	12.0	24	609	8.5	17	105
AZR2z70	187.00	27.60	21.70	0.146	-9.00E+04	1.70E+06	0.0987	0.0057	3.905	0.200	0.2862	0.0085	0.3781	1605	21.5	43	1616	20.0	40	1626	20.5	41	101
AZR2z71	124.20	91.80	27.30	0.743	-1.80E+05	2.40E+05	0.0580	0.0050	0.803	0.064	0.1010	0.0032	-0.0301	560	90.0	180	594	18.0	36	620	9.5	19	104
AZR2z72c	113.20	75.10	22.40	0.664	-1.00E+06	3.90E+05	0.0577	0.0062	0.838	0.080	0.1051	0.0036	0.0652	500	115.0	230	618	23.0	46	644	10.5	21	104
AZR2z72r	210.70	110.30	34.10	0.531	9.00E+03	3.90E+05	0.0572	0.0038	0.846	0.055	0.1060	0.0032	0.2445	494	65.0	130	620	15.0	30	649	9.5	19	105
AZR2z73	145.20	113.40	33.60	0.804	2.70E+05	3.30E+05	0.0618	0.0049	0.828	0.059	0.0982	0.0031	0.2553	670	80.0	160	614	16.0	32	604	9.0	18	98
AZR2z74	163.00	89.70	90.70	0.599	-4.00E+04	1.20E+06	0.1244	0.0075	6.360	0.340	0.3737	0.0110	0.2441	2017	23.5	47	2029	22.5	45	2047	25.5	51	101
AZR2z75c	688.00	782.00	751.00	1.140	-5.90E+06	6.20E+06	0.1244	0.0069	6.190	0.300	0.3607	0.0100	0.6843	2021	13.0	26	2002	21.5	43	1985	24.0	48	99
AZR2z75c	467.90	207.90	204.10	0.458	-2.10E+06	3.40E+06	0.1192	0.0067	5.928	0.290	0.3627	0.0100	0.4821	1945	14.0	28	1964	21.5	43	1998	23.5	47	102
AZR2z76	271.10	150.50	43.20	0.559	-2.10E+05	6.00E+05	0.0571	0.0040	0.827	0.056	0.1049	0.0030	0.2144	467	80.0	160	614	14.5	29	643	9.0	18	105
AZR2z77c	155.00	282.00	272.00	1.742	1.00E+06	2.10E+06	0.1220	0.0073	6.350	0.340	0.3816	0.0120	0.4690	1982	23.5	47	2022	23.5	47	2083	27.0	54	103
AZR2z77r	120.50	100.70	111.70	0.848	-1.00E+06	1.90E+06	0.1224	0.0078	6.450	0.370	0.3786	0.0120	-0.0135	2026	31.5	63	2045	25.0	50	2069	27.0	54	101
AZR2z79c	272.70	43.50	60.40	0.164	-9.00E+06	2.80E+06	0.2041	0.0110	14.320	0.700	0.5098	0.0140	0.4293	2860	12.0	24	2770	23.0	46	2655	31.0	62	96
AZR2z79r	103.30	100.00	33.50	0.984	6.00E+03	2.40E+05	0.0579	0.0044	0.863	0.058	0.1083	0.0033	-0.2438	510	90.0	180	634	16.5	33	665	10.0	20	105
AZR2z80	151.10	138.00	40.30	0.878	-1.40E+05	2.70E+05	0.0610	0.0046	0.817	0.059	0.0981	0.0033	0.0882	630	75.0	150	612	15.5	31	603	9.5	19	99
AZR2z81	708.00	132.60	120.60	0.191	-7.90E+06	4.90E+06	0.1323	0.0073	6.698	0.320	0.3686	0.0110	0.6069	2134	11.5	23	2072	21.0	42	2022	26.0	52	98
AZR2z82	65.10	90.90	89.80	1.422	-2.60E+05	4.60E+05	0.1231	0.0080	5.950	0.340	0.3508	0.0110	-0.0370	2029	31.0	62	1982	23.5	47	1943	25.5	51	98
AZR2z83	65.30	116.10	120.50	1.794	-1.02E+06	4.90E+05	0.1295	0.0081	6.720	0.370	0.3751	0.0120	0.1209	2084	29.0	58	2072	24.5	49	2058	26.0	52	99
AZR2z84	591.00	221.00	218.40	0.383	-3.60E+06	3.00E+06	0.1222	0.0068	5.820	0.290	0.3477	0.0110	0.6605	1990	14.0	28	1957	22.5	45	1923	25.5	51	98
AZR2z85	67.30	43.40	17.10	0.652	-1.10E+05	2.40E+05	0.0694	0.0062	1.248	0.100	0.1301	0.0044	0.1171	890	95.0	190	823	24.5	49	788	12.5	25	96
AZR2z86	229.00	184.00	56.30	0.813	-3.30E+05	5.10E+05	0.0636	0.0050	0.892	0.067	0.1037	0.0032	0.1690	710	80.0	160	659	17.5	35	636	9.5	19	97
AZR2z87c	32.90	24.76	23.51	0.761	-3.00E+03	2.30E+05	0.1177	0.0085	5.480	0.390	0.3338	0.0120	0.4527	1944	46.5	93	1886	31.0	62	1856	29.0	58	98
AZR2z90	680.00	323.00	361.00	0.471	2.10E+06	5.70E+06	0.1242	0.0069	6.616	0.320	0.3844	0.0110	0.4110	2018	14.0	28	2061	21.0	42	2096	26.0	52	102
AZR2z91	97.70	98.40	101.10	1.027	9.00E+04	1.10E+06	0.1208	0.0073	6.280	0.330	0.3782	0.0110	0.0080	1972	24.5	49	2017	21.5	43	2068	26.0	52	103
AZR2z92	98.90	52.20	53.90	0.538	-2.00E+06	1.40E+06	0.1265	0.0077	6.630	0.370	0.3804	0.0110	0.4282	2062	26.0	52	2060	24.5	49	2078	26.5	53	101
AZR2z93	265.00	208.00	59.90	0.801	-2.00E+05	8.30E+05	0.0613	0.0039	0.840	0.048	0.0996	0.0031	0.3556	647	70.0	140	618	13.0	26	612	9.0	18	99
AZR2z94	24.76	20.48	21.30	0.831	-1.90E+05	1.30E+05	0.1312	0.0089	6.880	0.500	0.3760	0.0150	0.6104	2099	38.0	76	2084	31.5	63	2064	35.5	71	99
AZR2z95	230.60	146.60	144.70	0.642	-1.00E+06	1.80E+06	0.1190	0.0068	5.950	0.310	0.3624	0.0110	0.5509	1941	18.5	37	1966	22.5	45	1993	25.0	50	101
AZR2z96	163.00	67.40	37.30	0.418	6.00E+05	8.50E+05	0.0759	0.0048	2.001	0.120	0.1901	0.0058	0.3564	1104	70.0	140	1113	19.5	39	1122	15.5	31	101
AZR2z97	162.10	98.10	29.30	0.620	-1.60E+05	3.80E+05	0.0658	0.0055	0.857	0.064	0.0971	0.0030	0.2646	770	85.0	170	630	18.0	36	597	9.0	18	95
AZR2z98c	41.30	52.30	13.70	1.290	-3.00E+05	1.50E+05	0.0581	0.0088	0.720	0.110	0.0908	0.0035	0.0130	360	160.0	320	531	32.0	64	560	10.0	20	105
AZR2z98r	40.30	30.18	8.42	0.787	-9.00E+05	1.20E+05	0.0543	0.0073	0.696	0.094	0.0930	0.0036	0.2486	310	140.0	280	525	27.5	55	573	10.5	21	109
AZR2z99c	144.40	71.60	27.60	0.501	6.50E+05	4.60E+05	0.0676	0.0049	1.170	0.080	0.1272	0.0040	0.0828	864	75.0	150	793	17.0	34	771	11.5	23	97
AZR2z99r	217.80	38.90	15.11	0.179	3.70E+05	8.90E+05	0.0631	0.0044	1.105	0.072	0.1268	0.0037	0.1297	726	75.0	150	758	18.0	36	770	10.5	21	102
AZR2z100c	109.00	102.00	31.20	0.906	2.10E+05	5.30E+05	0.0637	0.0053	0.917	0.071	0.1049	0.0033	-0.0202	680	95.0	190	656	19.0	38	643	10.0	20	98
AZR2z100r	68.90	60.00	17.40	0.870	-1.40E+06	1.10E+06	0.0652	0.0076	0.852	0.097	0.0940	0.0035	-0.0319	750	130.0	260	624	26.0	52	579	10.0	20	93
AZR2z101	130.40	68.40	20.00	0.539	1.60E+05	2.90E+05	0.0561	0.0051	0.765	0.069	0.0974	0.0032	0.1699	420	95.0	190	571	19.5	39	599	9.5	19	105
AZR2z102	217.00	229.00	287.00	1.060	-5.00E+06	4.00E+06	0.1584	0.0089	9.780	0.500	0.4483	0.0130	0.6827	2443	14.5	29	2412	23.5	47	2387	29.5	59	99
AZR2z103	535.00	146.90	109.60	0.279	-2.20E+06	3.10E+06	0.0951	0.0054	3.610	0.180	0.2751	0.0078	0.3823	1530	18.0	36	1554	21.0	42	1566	19.5	39	101
AZR2z104	83.50	44.70	47.50	0.551	-4.90E+06	2.40E+06	0.1446	0.0095	7.590	0.460	0.3838	0.0130	0.4111	2273	33.5	67	2183	28.5	57	2093	29.5	59	96
AZR2z105	82.00	39.70	12.71	0.495	1.00E+03	2.70E+05	0.0643	0.0062	0.878	0.083	0.1026	0.0035	0.0904	770	95.0	190	647	23.0	46	629	10.0	20	97
AZR2z107	275.00	88.90	25.10	0.332	-1.50E+06	1.90E+06	0.0566	0.0043	0.695	0.051	0.0885	0.0028	0.2364	490	80.0	160	547	16.0	32	547	8.5	17	100
AZR2z108	191.10	261.00	264.00	1.357	1.90E+06	3.20E+06	0.1209	0.0072	6.260	0.330	0.3779	0.0110	0.2808	1983	22.5	45	2011	23.5	47	2066	25.0	50	103
AZR2z109	117.20	81.20	25.70	0.678	-1.90E+06	1.60E+06	0.0586	0.0060	0.857	0.083	0.1065	0.0034	0.2370	530	115.0	230	628	22.0	44	653	10.0	20	104
AZR2z110c	104.30	18.84	29.60	0.183	-3.00E+06	2.10E+06	0.2180	0.0120	18.140	0.920	0.6010	0.0190	0.6249	2966	16.0	32	2995	24.5	49	3040	37.5	75	102
AZR2z110r	89.00	19.97	25.05	0.224	1.10E+06	1.60E+06	0.1830	0.0110	12.380	0.720	0.4870	0.0170	0.7634	2692	22.0	44	2628	27.5	55	2554	37.5	75	97
AZR2z111	273.00	418.80	129.90	1.553	-7.50E+05	5.50E+05	0.0570	0.0039	0.786	0.053	0.0988	0.0029	0.3464	481	75.0	150	590	14.5	29	607	8.5	17	103
AZR2z112c	183.20	104.70	81.10	0.587	-5.40E+06	5.10E+06	0.1061	0.0065	4.090	0.230	0.2755	0.0086	0.2344	1756	27.0	54	1649	23.0	46	1568	21.5	43	95
AZR2z113	73.90	48.10	56.40	0.666	-7.00E+06	1.20E+06	0.1504	0.0092	9.260	0.500	0.4460	0.0170	0.4712	2364	24.0	48	2361	25.0	50	2373	38.5	77	101
AZR2z114	100.40	52.00	76.10	0.523	0.00E+00	2.20E+06	0.1965	0.0110	15.060	0.780	0.5562	0.0170	0.6618	2797	17.5	35	2817	24.5	49	2850	35.0	70	101
AZR2z116	147.90	94.70	101.30	0.648	8.00E+06	1.40E+06	0.1311	0.0076	7.000	0.390	0.3879	0.0120	0.7193	2113	19.0	38	2118	22.0	44	2112	27.5	55	100
AZR2z117c	147.00	30.10	30.10	0.207	8.00E+06	3.00E+06	0.1284	0.0074	6.460	0.330	0.3679	0.0110	0.2985	2076	19.0	38	2039	22.5	45	2019	26.0	52	99
AZR2z117r	191.00	7.40	2.34	0.038	5.00E+06	1.10E+06	0.0546	0.0044	0.836	0.063	0.1067	0.0031	-0.0572	430	90.0	180	614	17.0	34	653	9.0	18	106
AZR2z118	836.00	120.60	146.10	0.143	-9.80E+06	8.60E+06	0.1379	0.0076	7.920	0.380	0.4157	0.0110	0.3375	2203	11.5	23	2221	21.5	43	2241	26.0	52	101
AZR2z119	277.00	213.00	63.50	0.770	1.10E+06	1.50E+06	0.0579	0.0041	0.812	0.053	0.1017	0.0029	0.0274	567	70.0	140	605	15.5	31	624	8.5	17	103
AZR2z120c	112.00	154.00	158.00	1.364	1.00E+06	2.50E+06	0.1187	0.0072	6.250	0.330	0.3836	0.0120	0.4987	1941	24.0	48	2013	22.5	45	2092	28.5	57	104
AZR2z121	333.00	170.30	65.40	0.517	-9.00E+04	1.40E+06	0.0673	0.0044	1.247	0.072	0.1352	0.0038	0.0235	828	70.0	140	820	16.5	33	817	10.5	21	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR2z122	45.40	43.30	13.02	0.963	-8.00E+05	1.10E+05	0.0566	0.0089	0.790	0.120	0.1007	0.0047	-0.0072	460	160.0	320	596	33.5	67	618	13.5	27	104
AZR2z123	187.20	77.20	46.90	0.415	4.90E+06	3.70E+06	0.0826	0.0053	2.435	0.140	0.2146	0.0061	0.1465	1243	65.0	130	1250	20.5	41	1253	16.0	32	100
AZR2z124	360.00	410.00	124.80	1.140	-1.90E+06	1.20E+06	0.0605	0.0040	0.893	0.055	0.1050	0.0031	0.2476	645	75.0	150	646	14.5	29	644	9.0	18	100
AZR2z125	153.60	99.00	31.94	0.644	2.80E+05	4.30E+05	0.0667	0.0055	1.101	0.084	0.1190	0.0038	0.0340	830	85.0	170	755	19.5	39	725	11.0	22	96
Pb loss, low U and/or discordant data																							
AZR2z6	750.00	461.00	470.00	0.603	-1.60E+06	7.10E+06	0.1804	0.0100	10.430	0.530	0.4261	0.0130	0.8523	2657	11.5	23	2475	24.5	49	2288	29.5	59	92
AZR2z7c	50.80	82.90	21.00	1.618	1.50E+04	5.20E+04	0.0648	0.0076	0.778	0.090	0.0857	0.0037	0.1544	780	125.0	250	601	26.0	52	530	11.0	22	88
AZR2z10	618.00	631.00	158.60	0.989	-8.20E+05	2.20E+05	0.0697	0.0045	0.808	0.046	0.0830	0.0034	0.2086	915	70.0	140	600	13.0	26	514	10.5	21	86
AZR2z40	407.00	430.00	185.80	1.073	-1.60E+06	6.80E+05	0.1355	0.0080	3.430	0.220	0.1831	0.0066	0.7662	2164	50.0	100	1504	25.0	50	1083	18.0	36	72
AZR2z44r	9.80	1.39	0.58	0.144	-4.00E+04	3.50E+04	0.0970	0.0220	1.690	0.370	0.1202	0.0084	0.0753	1370	220.0	440	990	65.0	130	738	25.5	51	75
AZR2z46	191.10	125.60	100.30	0.670	-1.70E+05	3.60E+05	0.1174	0.0071	3.880	0.240	0.2410	0.0095	0.7635	1907	55.0	110	1610	24.0	48	1391	24.5	49	86
AZR2z52	146.50	177.90	154.50	1.252	2.40E+05	8.10E+05	0.1321	0.0080	5.250	0.330	0.2874	0.0120	0.8136	2121	24.5	49	1860	27.0	54	1627	30.5	61	87
AZR2z62r	525.50	32.30	19.16	0.061	-8.00E+06	1.60E+06	0.0696	0.0046	0.781	0.045	0.0820	0.0027	-0.0999	912	70.0	140	585	12.5	25	508	8.0	16	87
AZR2z78	637.00	68.00	71.60	0.108	7.00E+07	1.30E+07	0.1818	0.0100	10.090	0.480	0.3995	0.0110	0.0559	2674	13.0	26	2443	22.0	44	2166	26.0	52	89
AZR2z87r	58.70	99.30	86.30	1.686	-2.60E+05	4.50E+05	0.1228	0.0082	4.820	0.300	0.2812	0.0093	0.3620	2012	35.5	71	1789	25.5	51	1597	23.5	47	89
AZR2z88c	92.20	52.20	68.50	0.577	-1.46E+06	9.00E+05	0.2418	0.0140	16.550	0.880	0.4898	0.0160	0.7032	3131	16.5	33	2912	24.0	48	2569	34.5	69	88
AZR2z88r	22.16	12.80	16.70	0.584	2.30E+05	3.40E+05	0.2187	0.0150	14.800	1.300	0.4880	0.0220	0.8089	2985	35.5	71	2801	41.0	82	2557	48.0	96	91
AZR2z89	710.00	149.70	150.50	0.219	-5.90E+06	6.10E+06	0.1413	0.0079	7.010	0.360	0.3608	0.0100	0.5346	2244	13.0	26	2114	22.0	44	1986	24.5	49	94
AZR2z106	1097.00	234.00	116.80	0.208	-6.40E+05	1.20E+05	0.0922	0.0054	1.387	0.074	0.1095	0.0032	0.4600	1473	55.0	110	886	16.5	33	670	9.0	18	76
AZR2z112r	1303.00	201.00	57.30	0.157	-3.10E+06	2.60E+06	0.1030	0.0058	1.762	0.093	0.1239	0.0045	0.7659	1677	50.0	100	1033	17.5	35	753	13.0	26	73
AZR2z115	816.00	154.70	29.80	0.191	-1.05E+06	8.10E+05	0.1034	0.0061	1.080	0.160	0.0770	0.0110	0.9890	1689	50.0	100	733	39.0	78	477	32.5	65	65
AZR2z120r	177.00	175.00	140.30	0.994	-3.40E+06	2.60E+06	0.1158	0.0069	3.770	0.410	0.2390	0.0260	0.9634	1885	55.0	110	1557	42.0	84	1370	65.0	130	88

Footnotes:

- Analysis references: AZR2z is zircon from sample AZR2 (mount CT17-8), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.8: Sample AZR4 (LA-ICPMS)

IGSN: IEACC0025 Coordinate UTM: Zone 30S, 267866 m E, 3692882 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AZR4z1	815.00	288.00	81.10	0.354	-3.00E+06	2.10E+06	0.0606	0.0037	0.811	0.047	0.0974	0.0028	0.2662	627	60.0	120	610	12.5	25	599	8.0	16	98
AZR4z12	69.90	39.40	10.43	0.559	-1.80E+05	3.30E+05	0.0559	0.0080	0.725	0.099	0.0938	0.0032	-0.1869	330	150.0	300	548	30.0	60	578	9.5	19	105
AZR4z2	58.00	63.00	58.10	1.101	1.10E+06	3.20E+06	0.1104	0.0076	5.190	0.310	0.3437	0.0120	0.2222	1803	38.0	76	1852	25.0	50	1909	29.0	58	103
AZR4z3c	225.70	238.70	67.80	1.053	-4.20E+05	5.40E+05	0.0587	0.0043	0.769	0.050	0.0960	0.0027	-0.0758	540	85.0	170	581	15.0	30	591	8.0	16	102
AZR4z3r	122.70	90.80	23.46	0.746	-1.40E+05	3.80E+05	0.0557	0.0048	0.749	0.063	0.0954	0.0031	0.0224	390	90.0	180	563	18.0	36	587	9.0	18	104
AZR4z4	62.70	71.80	21.00	1.119	-2.70E+05	3.90E+05	0.0588	0.0088	0.820	0.120	0.1031	0.0035	-0.0190	540	150.0	300	625	33.5	67	632	10.5	21	101
AZR4z5	552.00	1343.00	395.00	2.398	-3.10E+06	1.70E+06	0.0605	0.0038	0.873	0.047	0.1051	0.0030	0.0207	618	65.0	130	637	12.5	25	644	9.0	18	101
AZR4z6	500.00	127.20	133.30	0.244	-8.30E+06	7.00E+06	0.1262	0.0070	6.640	0.330	0.3798	0.0110	0.4010	2049	12.5	25	2066	21.0	42	2075	25.5	51	100
AZR4z7c	31.10	84.20	82.50	2.710	-3.20E+05	2.40E+05	0.1290	0.0094	6.730	0.520	0.3751	0.0130	0.6395	2081	41.5	83	2062	35.0	70	2052	30.5	61	100
AZR4z7r	19.97	57.90	57.10	2.933	-7.00E+05	2.10E+05	0.1248	0.0099	6.300	0.480	0.3690	0.0150	0.5373	2030	55.0	110	2006	33.5	67	2022	35.0	70	101
AZR4z8	74.90	38.80	63.30	0.512	5.60E+06	4.00E+06	0.2730	0.0150	24.820	1.200	0.6596	0.0200	0.6789	3325	12.5	25	3300	23.5	47	3265	38.0	76	99
AZR4z9	18.12	56.70	50.80	3.049	-3.00E+05	1.80E+05	0.1142	0.0090	5.340	0.430	0.3530	0.0170	0.4662	1830	55.0	110	1897	36.0	72	1945	39.5	79	103
AZR4z10	490.00	95.50	96.90	0.195	-9.00E+06	4.60E+06	0.1276	0.0072	6.450	0.320	0.3688	0.0110	0.6366	2071	15.5	31	2041	23.0	46	2023	25.5	51	99
AZR4z11	73.30	72.60	20.93	0.971	-1.30E+05	2.00E+05	0.0607	0.0063	0.821	0.084	0.0970	0.0038	0.2595	600	115.0	230	615	24.5	49	596	11.0	22	97
AZR4z13	385.00	169.30	47.80	0.434	-1.60E+06	1.30E+06	0.0585	0.0041	0.786	0.049	0.0978	0.0028	-0.0593	537	70.0	140	587	14.0	28	601	8.5	17	102
AZR4z14	547.00	258.00	70.60	0.466	-1.97E+06	8.40E+05	0.0627	0.0042	0.790	0.047	0.0911	0.0029	0.4057	711	60.0	120	590	13.0	26	562	8.5	17	95
AZR4z15	244.00	109.60	96.10	0.447	-3.30E+06	2.50E+06	0.1238	0.0071	6.000	0.300	0.3510	0.0100	0.4046	2018	18.0	36	1974	21.5	43	1939	24.5	49	98
AZR4z16	48.80	34.93	48.10	0.707	-2.20E+05	7.80E+05	0.1899	0.0120	13.900	0.790	0.5360	0.0190	0.7648	2736	27.5	55	2738	27.0	54	2765	39.5	79	101
AZR4z17c	35.00	20.09	17.86	0.573	3.20E+05	3.60E+05	0.1093	0.0080	4.800	0.350	0.3265	0.0120	0.4510	1784	49.5	99	1781	33.0	66	1820	29.0	58	102
AZR4z17r	170.30	86.10	72.80	0.504	-2.00E+06	2.70E+06	0.1079	0.0063	4.710	0.260	0.3155	0.0093	0.5318	1762	22.5	45	1766	23.0	46	1768	23.0	46	100
AZR4z18	382.00	185.00	172.10	0.477	-4.00E+06	3.70E+06	0.1207	0.0070	6.000	0.300	0.3620	0.0100	0.2862	1966	19.5	39	1974	22.0	44	1991	23.5	47	101
AZR4z20	91.10	62.10	18.36	0.680	2.40E+05	4.00E+05	0.0622	0.0056	0.897	0.073	0.1056	0.0038	0.1083	610	95.0	190	645	19.5	39	647	11.0	22	100
AZR4z21c	52.50	9.09	8.60	0.172	-1.90E+06	3.70E+06	0.1231	0.0081	6.340	0.380	0.3743	0.0120	0.1725	2019	34.5	69	2026	24.5	49	2049	28.0	56	101
AZR4z21r	54.70	88.20	85.00	1.563	-3.00E+03	5.90E+05	0.1214	0.0081	6.400	0.390	0.3748	0.0120	0.2125	1979	36.0	72	2027	26.5	53	2051	28.0	56	101
AZR4z22	59.70	36.30	46.70	0.587	5.70E+05	8.10E+05	0.1828	0.0110	13.450	0.730	0.5260	0.0160	0.6755	2679	18.5	37	2713	26.5	53	2723	34.0	68	100
AZR4z23	166.40	70.10	78.60	0.415	-1.30E+06	2.10E+06	0.1510	0.0086	9.110	0.450	0.4391	0.0130	0.4077	2358	17.0	34	2351	22.0	44	2346	28.5	57	100
AZR4z24	151.70	220.00	212.30	1.441	1.50E+06	3.10E+06	0.1260	0.0074	6.740	0.350	0.3834	0.0110	0.2423	2049	20.5	41	2079	22.5	45	2092	27.0	54	101
AZR4z25	29.30	13.96	4.74	0.469	3.00E+05	1.60E+05	0.0587	0.0082	0.930	0.120	0.1204	0.0047	-0.0193	510	135.0	270	688	33.5	67	733	13.5	27	107
AZR4z26	64.10	75.50	70.10	1.176	-2.40E+05	5.10E+05	0.1237	0.0086	6.130	0.390	0.3729	0.0140	0.4810	2021	36.5	73	2026	31.5	63	2049	31.0	62	101
AZR4z27	289.00	400.00	385.00	1.361	4.00E+06	5.30E+06	0.1196	0.0068	6.127	0.300	0.3707	0.0110	0.2247	1951	17.5	35	1993	21.0	42	2033	25.0	50	102
AZR4z28	217.60	118.00	30.00	0.510	2.10E+05	6.00E+05	0.0621	0.0045	0.947	0.064	0.1088	0.0044	0.3125	650	80.0	160	673	17.0	34	665	13.0	26	99
AZR4z29	881.00	606.00	180.10	0.681	1.90E+07	2.10E+07	0.0594	0.0035	0.880	0.045	0.1068	0.0030	0.0507	584	60.0	120	642	11.5	23	654	9.0	18	102
AZR4z30	102.20	134.90	38.60	1.305	4.00E+05	4.00E+05	0.0678	0.0068	0.962	0.094	0.1022	0.0034	0.1987	810	100.0	200	683	23.5	47	627	10.0	20	92
AZR4z32	130.00	143.70	122.90	1.096	6.00E+06	1.60E+06	0.1239	0.0073	5.780	0.300	0.3399	0.0100	0.3269	2012	22.0	44	1946	21.0	42	1890	23.0	46	97
AZR4z33	207.00	271.00	263.50	1.300	-2.90E+06	2.00E+06	0.1231	0.0072	6.370	0.340	0.3754	0.0110	0.4712	2001	21.5	43	2026	24.0	48	2054	26.0	52	101
AZR4z34	39.79	59.90	16.58	1.468	-1.00E+05	1.70E+05	0.0651	0.0072	0.878	0.095	0.1015	0.0040	0.1523	660	120.0	240	638	26.5	53	623	12.0	24	98
AZR4z35	256.40	92.40	89.50	0.360	1.10E+06	2.60E+06	0.1268	0.0074	6.530	0.350	0.3820	0.0110	0.4022	2054	19.5	39	2052	24.5	49	2085	26.0	52	102
AZR4z36	98.30	88.10	24.40	0.914	-1.80E+05	2.90E+05	0.0529	0.0058	0.768	0.080	0.1048	0.0035	-0.0916	250	110.0	220	571	22.5	45	642	10.5	21	112
AZR4z37	299.70	97.20	95.20	0.324	-1.30E+06	5.50E+06	0.1311	0.0075	7.050	0.350	0.3903	0.0110	0.0758	2113	17.5	35	2117	22.0	44	2128	24.0	48	101
AZR4z38	251.00	103.00	120.00	0.408	-3.70E+06	3.60E+06	0.1627	0.0091	10.740	0.530	0.4782	0.0140	0.4910	2491	12.0	24	2500	23.0	46	2519	30.5	61	101
AZR4z39c	74.90	46.10	54.00	0.617	7.00E+06	1.00E+06	0.1594	0.0100	9.960	0.610	0.4562	0.0150	0.4698	2441	31.5	63	2431	29.5	59	2429	32.0	64	100
AZR4z39r	88.00	87.10	76.60	0.982	0.00E+00	8.30E+05	0.1206	0.0076	5.970	0.330	0.3558	0.0110	0.2500	1970	29.0	58	1967	24.5	49	1962	26.0	52	100
AZR4z40	163.70	83.00	99.70	0.512	-3.70E+06	2.10E+06	0.1716	0.0098	11.620	0.580	0.4887	0.0140	0.1450	2584	17.0	34	2578	23.5	47	2565	31.0	62	99
AZR4z41	150.40	65.70	18.87	0.438	-1.80E+06	1.10E+06	0.0589	0.0047	0.867	0.066	0.1063	0.0036	0.2206	540	90.0	180	635	18.5	37	651	10.5	21	103
AZR4z42	249.00	307.00	305.00	1.252	-5.00E+06	2.80E+06	0.1250	0.0072	6.550	0.330	0.3793	0.0110	0.1711	2029	19.0	38	2051	22.0	44	2073	25.0	50	101
AZR4z43	167.70	180.00	217.20	1.042	1.60E+06	2.40E+06	0.2012	0.0110	14.220	0.700	0.5084	0.0140	0.4359	2838	14.5	29	2763	23.5	47	2649	30.5	61	96
AZR4z44	233.30	18.30	4.93	0.079	-9.70E+05	9.90E+05	0.0620	0.0048	0.863	0.061	0.0998	0.0031	-0.0830	650	85.0	170	629	16.5	33	613	9.0	18	97
AZR4z45	63.10	73.40	19.85	1.168	1.60E+05	2.20E+05	0.0684	0.0070	0.940	0.089	0.1027	0.0038	0.0706	920	100.0	200	681	23.5	47	630	11.0	22	93
AZR4z46	73.40	46.00	42.60	0.629	2.20E+06	3.30E+06	0.1278	0.0084	6.640	0.380	0.3778	0.0120	0.2243	2058	32.5	65	2060	25.5	51	2065	28.0	56	100
AZR4z47	69.70	67.30	80.60	0.948	-1.12E+06	8.10E+05	0.1649	0.0100	10.120	0.570	0.4401	0.0140	0.3405	2520	27.5	55	2447	25.0	50	2350	32.5	65	96
AZR4z48	253.00	161.10	43.00	0.635	-1.50E+06	1.10E+06	0.0609	0.0044	0.853	0.058	0.1012	0.0029	0.1147	620	80.0	160	624	16.0	32	621	8.5	17	100
AZR4z49	131.10	153.60	40.10	1.172	-5.90E+05	5.10E+05	0.0575	0.0046	0.729	0.057	0.0940	0.0030	0.3360	510	95.0	190	568	17.5	35	579	9.0	18	102
AZR4z51	150.30	110.90	29.90	0.726	3.00E+05	4.60E+05	0.0595	0.0045	0.805	0.061	0.0972	0.0031	0.3470	590	85.0	170	596	17.0	34	598	9.0	18	100
AZR4z52	45.10	35.60	9.36	0.789	-9.00E+03	1.50E+05	0.0617	0.0072	0.870	0.110	0.1018	0.0043	0.5271	550	125.0	250	622	29.0	58	625	12.5	25	100
AZR4z53	286.80	46.10	13.33	0.163	-1.00E+07	1.30E+06	0.0596	0.0039	0.846	0.050	0.1027	0.0030	0.3284	586	70.0	140	621	14.0	28	630	9.0	18	101
AZR4z54	142.20	135.90	122.10	0.955	-1.40E+06	1.70E+06	0.1191	0.0073	5.670	0.300	0.3478	0.0110	0.1681	1940	26.5	53	1925	22.5	45	1924	25.5	51	100
AZR4z55	329.00	224.30	215.20	0.677	-8.00E+06	4.40E+06	0.1303	0.0074	6.860	0.340	0.3787	0.0110	0.3676	2108	18.0	36	2092	22.0	44	2070	25.0	50	99
AZR4z56c	229.70	59.80	57.60	0.261	8.00E+06	3.20E+06	0.1263	0.0073	6.780	0.350	0.3856	0.0110	0.1133	2047	19.0	38	2082	22.5	45	2102	26.0	52	101
AZR4z56r	187.90	50.50	49.50	0.271	8.00E+06	2.30E+06	0.1260	0.0073	6.590	0.350	0.3728	0.0110	0.4242	2043	18.5	37	2056	23.0	46	2042	25.5	51	99
AZR4z57	153.10	79.30	50.40	0.509	-1.60E+06	1.10E+06	0.0871	0.0059	2.920	0.170	0.2439	0.0077	-0.0086	1343	65.0	130	1389	23.0	46	1406	20.0	40	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR4z58	228.00	42.50	12.00	0.191	-1.00E+06	1.30E+06	0.0590	0.0044	0.836	0.056	0.1035	0.0033	-0.1391	570	85.0	170	619	15.0	30	635	9.5	19	103
AZR4z59c	407.00	347.00	438.00	0.842	-1.20E+07	1.50E+07	0.1983	0.0110	14.420	0.690	0.5289	0.0150	0.7119	2818	10.5	21	2777	22.5	45	2737	31.0	62	99
AZR4z59r	162.00	62.00	80.00	0.269	6.00E+06	9.00E+06	0.1471	0.0110	8.790	0.990	0.4210	0.0220	0.9465	2286	48.0	96	2274	50.0	100	2258	50.0	100	99
AZR4z60	101.50	64.30	65.00	0.630	1.00E+07	1.90E+06	0.1346	0.0080	7.610	0.400	0.4069	0.0130	0.3901	2158	22.5	45	2183	24.0	48	2200	29.0	58	101
AZR4z61	58.00	29.50	38.50	0.509	-3.10E+06	2.30E+06	0.1841	0.0110	12.990	0.670	0.5147	0.0150	0.3193	2689	20.5	41	2676	24.5	49	2676	33.0	66	100
AZR4z62	845.00	248.00	151.00	0.238	-1.26E+07	9.50E+06	0.0821	0.0047	1.955	0.099	0.1700	0.0051	0.6122	1250	60.0	120	1099	17.0	34	1012	14.0	28	92
AZR4z63	510.00	506.00	154.50	0.991	-9.00E+06	2.90E+06	0.0613	0.0039	0.903	0.052	0.1071	0.0030	0.1152	678	60.0	120	655	14.5	29	656	9.0	18	100
AZR4z64r	222.00	164.60	48.50	0.737	-6.60E+05	5.90E+05	0.0614	0.0044	0.879	0.059	0.1026	0.0031	0.1549	640	80.0	160	638	16.0	32	630	9.0	18	99
AZR4z65	284.00	221.60	207.70	0.772	-6.40E+06	5.60E+06	0.1250	0.0071	6.450	0.320	0.3730	0.0100	0.2294	2036	17.0	34	2041	21.0	42	2043	24.5	49	100
AZR4z66	314.80	332.30	311.00	1.053	-2.80E+06	7.10E+06	0.1245	0.0072	6.220	0.310	0.3618	0.0100	0.2024	2022	18.5	37	2008	21.5	43	1990	24.5	49	99
AZR4z67c	292.00	38.20	12.02	0.138	-1.50E+06	1.80E+06	0.0610	0.0043	0.991	0.078	0.1190	0.0046	0.4818	613	75.0	150	700	19.0	38	724	13.0	26	103
AZR4z67r	190.00	25.24	7.64	0.132	-2.00E+06	1.00E+06	0.0629	0.0045	0.939	0.067	0.1086	0.0035	0.3417	676	75.0	150	674	17.0	34	664	10.0	20	99
AZR4z68	143.90	56.70	55.50	0.390	5.00E+06	3.10E+06	0.1290	0.0077	6.830	0.350	0.3854	0.0110	-0.1426	2083	23.5	47	2087	22.5	45	2101	26.0	52	101
AZR4z69c	64.90	51.30	13.80	0.765	2.40E+06	2.60E+06	0.0651	0.0079	0.873	0.100	0.0978	0.0040	0.1282	770	120.0	240	644	25.5	51	601	12.0	24	93
AZR4z69r	28.87	13.60	3.79	0.464	-6.00E+03	1.60E+05	0.0685	0.0096	0.980	0.160	0.1015	0.0049	0.4862	790	145.0	290	679	39.5	79	623	14.5	29	92
AZR4z70c	85.20	38.50	37.30	0.444	-9.00E+04	1.80E+06	0.1416	0.0082	7.620	0.410	0.3845	0.0120	0.4136	2254	18.5	37	2184	24.0	48	2096	29.0	58	96
AZR4z70r	341.00	77.60	68.00	0.226	-2.80E+06	5.30E+06	0.1262	0.0071	6.060	0.310	0.3496	0.0099	0.2702	2048	16.0	32	1987	22.5	45	1932	23.5	47	97
AZR4z71	102.70	83.70	22.40	0.797	-5.00E+06	1.30E+06	0.0616	0.0048	0.864	0.065	0.1012	0.0031	0.4322	640	90.0	180	629	17.5	35	621	9.0	18	99
AZR4z72	102.80	100.50	26.50	0.954	-5.00E+05	6.20E+05	0.0573	0.0054	0.811	0.074	0.0986	0.0032	0.2900	500	100.0	200	597	20.5	41	606	9.5	19	102
AZR4z73r	135.70	64.00	18.30	0.464	-2.00E+06	1.10E+06	0.0621	0.0055	0.869	0.071	0.1012	0.0030	0.1046	670	85.0	170	630	19.5	39	621	9.0	18	99
AZR4z74	102.60	126.50	36.00	1.209	4.90E+05	5.40E+05	0.0671	0.0066	0.945	0.091	0.1018	0.0033	0.0781	830	95.0	190	675	23.0	46	625	9.5	19	93
AZR4z75c	70.60	73.40	21.21	1.035	-1.10E+05	4.10E+05	0.0660	0.0062	0.888	0.081	0.1021	0.0037	0.1857	800	100.0	200	654	20.0	40	627	11.0	22	96
AZR4z75r	109.90	85.60	24.96	0.771	1.70E+06	1.20E+06	0.0604	0.0052	0.868	0.071	0.1041	0.0033	0.1362	580	100.0	200	630	19.5	39	638	10.0	20	101
AZR4z76c	130.20	66.70	83.10	0.500	-3.70E+06	2.60E+06	0.1801	0.0100	13.300	0.650	0.5268	0.0150	0.4457	2657	14.5	29	2701	23.0	46	2727	32.5	65	101
AZR4z76r	170.00	237.00	219.00	1.355	4.70E+06	2.70E+06	0.1206	0.0069	6.680	0.370	0.3973	0.0120	0.6942	1974	18.0	36	2066	24.5	49	2156	27.0	54	104
AZR4z77	432.00	225.00	62.80	0.515	-1.00E+06	2.90E+06	0.0586	0.0039	0.829	0.050	0.1023	0.0029	0.0624	529	75.0	150	615	13.5	27	629	9.0	18	102
AZR4z78	310.00	139.30	126.50	0.442	2.00E+06	4.10E+06	0.1255	0.0072	6.100	0.340	0.3503	0.0120	0.8253	2044	17.5	35	1986	24.5	49	1935	29.0	58	97
AZR4z79	91.20	36.80	36.70	0.397	-3.10E+06	3.20E+06	0.1359	0.0084	7.620	0.420	0.4040	0.0130	0.1465	2181	25.5	51	2188	23.5	47	2187	29.5	59	100
AZR4z80	105.50	44.30	11.96	0.416	-6.00E+03	4.90E+05	0.0616	0.0065	0.896	0.085	0.1083	0.0035	-0.1548	630	110.0	220	649	22.0	44	663	10.5	21	102
AZR4z81c	103.70	111.40	29.30	1.047	1.10E+05	4.20E+05	0.0630	0.0056	0.848	0.069	0.0971	0.0037	0.1532	670	95.0	190	625	18.5	37	597	11.0	22	96
AZR4z81r	138.80	123.50	33.70	0.861	1.80E+06	2.20E+06	0.0552	0.0050	0.734	0.062	0.0952	0.0033	-0.0619	390	95.0	190	560	18.5	37	586	9.5	19	105
AZR4z82c	243.20	235.00	62.50	0.962	-2.50E+05	9.80E+05	0.0584	0.0042	0.773	0.052	0.0953	0.0028	0.1073	530	75.0	150	579	15.0	30	587	8.0	16	101
AZR4z82r	142.50	89.80	23.30	0.618	-3.50E+05	5.70E+05	0.0594	0.0048	0.776	0.056	0.0958	0.0030	0.0668	560	85.0	170	585	17.0	34	590	9.0	18	101
AZR4z83	127.20	111.10	31.50	0.872	-4.50E+05	6.40E+05	0.0629	0.0054	0.835	0.073	0.0970	0.0033	0.2963	670	100.0	200	618	19.0	38	597	10.0	20	97
AZR4z84	65.70	65.90	62.90	1.005	-3.60E+06	2.30E+06	0.1210	0.0084	6.380	0.410	0.3752	0.0120	0.1395	1957	39.5	79	2021	28.5	57	2053	27.5	55	102
AZR4z85	277.00	251.00	70.50	0.889	-2.10E+06	1.20E+06	0.0612	0.0048	0.876	0.061	0.1041	0.0032	-0.0299	650	80.0	160	641	15.5	31	638	9.5	19	100
AZR4z86c	595.00	87.90	77.70	0.144	1.60E+07	2.80E+07	0.1225	0.0069	5.592	0.270	0.3298	0.0097	0.5446	2001	14.0	28	1919	20.5	41	1837	23.5	47	96
AZR4z86r	431.00	134.10	125.30	0.303	-7.00E+07	1.10E+07	0.1253	0.0070	6.180	0.300	0.3564	0.0100	0.6148	2037	12.5	25	2003	22.5	45	1965	24.5	49	98
AZR4z87c	135.00	30.80	8.22	0.219	-6.00E+06	1.10E+06	0.0611	0.0050	0.861	0.061	0.1028	0.0033	-0.0883	590	90.0	180	628	16.5	33	631	9.5	19	100
AZR4z87r	78.30	20.00	5.99	0.249	-2.00E+03	6.80E+05	0.0656	0.0064	0.924	0.089	0.1026	0.0040	0.3133	790	95.0	190	657	23.0	46	629	12.0	24	96
AZR4z88	157.10	144.70	38.10	0.913	-2.00E+06	1.30E+06	0.0593	0.0053	0.809	0.070	0.0970	0.0031	0.1298	570	105.0	210	596	19.5	39	597	9.0	18	100
AZR4z89	461.00	310.00	368.10	0.663	-2.00E+06	9.20E+06	0.1609	0.0089	10.390	0.500	0.4700	0.0130	0.5062	2469	11.5	23	2469	22.0	44	2483	28.0	56	101
AZR4z90	605.00	226.30	68.10	0.369	-5.20E+06	2.80E+06	0.0619	0.0039	0.910	0.049	0.1075	0.0031	0.3834	671	65.0	130	659	12.0	24	658	9.0	18	100
AZR4z91	64.60	47.60	12.72	0.732	-2.20E+05	2.80E+05	0.0586	0.0069	0.780	0.097	0.0932	0.0036	0.1975	610	120.0	240	600	26.0	52	575	10.5	21	96
AZR4z92	370.00	385.00	111.30	1.029	-2.80E+07	2.50E+07	0.0591	0.0042	0.823	0.052	0.1016	0.0030	0.1544	570	80.0	160	608	14.5	29	624	9.0	18	103
AZR4z93c	218.00	72.70	19.80	0.314	1.00E+07	1.80E+06	0.0611	0.0044	0.848	0.058	0.0999	0.0031	0.2333	632	75.0	150	621	16.0	32	614	9.0	18	99
AZR4z93r	414.00	62.40	17.14	0.150	5.80E+06	7.80E+06	0.0625	0.0041	0.818	0.048	0.0941	0.0029	0.2803	688	70.0	140	606	13.5	27	580	8.5	17	96
AZR4z94	86.40	62.60	20.07	0.705	3.70E+05	4.70E+05	0.0619	0.0054	0.935	0.086	0.1099	0.0041	0.0834	670	105.0	210	671	21.0	42	672	12.0	24	100
AZR4z95	252.80	126.30	90.20	0.491	3.30E+06	9.20E+06	0.0935	0.0054	3.462	0.170	0.2672	0.0075	0.1676	1500	19.5	39	1521	20.5	41	1526	19.0	38	100
AZR4z96	643.00	10.61	2.72	0.017	-3.00E+06	5.50E+06	0.0577	0.0037	0.819	0.047	0.1028	0.0029	0.3776	499	75.0	150	606	13.5	27	631	8.5	17	104
AZR4z97r	112.00	38.80	11.62	0.347	-2.70E+05	4.40E+05	0.0551	0.0053	0.777	0.070	0.0985	0.0033	-0.0206	410	110.0	220	585	19.5	39	606	9.5	19	104
AZR4z99	425.00	856.00	228.30	1.972	2.10E+07	1.70E+07	0.0602	0.0038	0.796	0.044	0.0957	0.0028	0.5096	609	70.0	140	594	12.5	25	589	8.5	17	99
AZR4z100	118.30	63.80	43.50	0.534	-1.60E+06	1.80E+06	0.0909	0.0056	3.060	0.180	0.2422	0.0075	0.3196	1455	65.0	130	1421	22.0	44	1398	19.5	39	98
AZR4z101	418.00	376.00	111.20	0.889	4.90E+06	5.00E+06	0.0631	0.0043	0.885	0.054	0.1008	0.0030	0.1089	720	70.0	140	642	14.5	29	619	8.5	17	96
AZR4z102c	213.00	373.00	357.00	1.714	5.00E+06	5.00E+06	0.1174	0.0068	5.800	0.300	0.3586	0.0110	0.5624	1924	20.5	41	1945	22.5	45	1975	26.5	53	102
AZR4z102r	99.70	142.20	130.80	1.393	-4.00E+06	3.90E+06	0.1134	0.0068	5.440	0.290	0.3409	0.0100	0.2664	1853	24.5	49	1889	22.5	45	1890	25.0	50	100
AZR4z103c	90.70	73.00	99.00	0.772	2.10E+06	4.40E+06	0.1738	0.0110	12.180	0.690	0.5016	0.0160	0.6079	2593	23.5	47	2614	26.5	53	2620	33.5	67	100
AZR4z103r	228.60	78.10	85.90	0.334	-5.00E+06	4.80E+06	0.1441	0.0084	8.430	0.440	0.4186	0.0120	0.3230	2284	19.5	39	2276	24.0	48	2254	28.0	56	99
AZR4z104	36.40	26.50	25.60	0.681	-2.00E+06	1.20E+06	0.1260	0.0093	6.520	0.420	0.3772	0.0130	0.3270	2038	43.0	86	2041	29.5	59	2062	30.0	60	101
AZR4z105c	265.90	148.20	167.00	0.546	-1.00E+05	1.30E+07	0.1723	0.0098	10.600	0.540	0.4418	0.0130	0.4494	2582	16.0	32	2487	24.0	48	2359	28.0	56	95
AZR4z105r	178.00	70.20	78.10	0.385	-1.13E+07	8.90E+06	0.1590	0.0093	9.260	0.520	0.4149	0.0130	0.5310	2453	20.0	40	2360	25.5	51	2237	29.5	59	95
AZR4z106	127.80	49.10	27.80	0.375	1.10E+06	1.50E+06	0.0818	0.0056	2.384	0.140	0.2110	0.0063	0.0163	1232	65.0	130	1234	21.5	43	1234	17.0	34	100
AZR4z107	598.00	459.00	431.00	0.750	-1.91E+07	9.40E+06	0.1236	0.0069	6.172	0.300	0.3616	0.0100	0.3857	2013	14.0	28	2000	21.5	43	1989	24.0	48	99
AZR4z108	219.00	83.00	24.60	0.371	9.00E+06	2.40E+06	0.0581	0.0041	0.837	0.055	0.1040	0.0034	0.0353	500	80.0	160	624	15.0	30	638	10.0	20	102
AZR4z109	95.00	73.50	21.40	0.760	4.50E+05	7.80E+05	0.0594	0.0064	0.865	0.086	0.1052	0.0039	-0.0703	560	105.0	210	640	22.0	44	647	12.0	24	101
AZR4z110c	207.70	170.70	202.80	0.807	-3.20E+07	1.80E+07	0.1746	0.0097	11.660	0.570	0.4837	0.0140	0.5632	2610	12.5	25	2576	23.0	46	2543	29.5	59	99
AZR4z110r	116.80	71.40	73.00	0.602	-1.50E+06	3.40E+06	0.1397	0.0085	8.150	0.550	0.4150	0.0150	0.7675	2239	25.5	51	2238	30.5	61	2238	34.5	69	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR4z111	95.40	118.80	29.00	1.248	-1.40E+06	1.50E+06	0.0555	0.0060	0.686	0.074	0.0887	0.0033	0.3709	410	120.0	240	530	23.0	46	548	10.0	20	103
AZR4z112	105.50	75.60	19.90	0.678	-2.50E+05	6.60E+05	0.0604	0.0057	0.775	0.075	0.0939	0.0031	0.1897	570	105.0	210	588	21.5	43	579	9.0	18	98
AZR4z114c	183.00	115.10	35.50	0.619	3.00E+06	1.20E+06	0.0591	0.0047	0.829	0.063	0.1027	0.0033	0.0551	550	90.0	180	620	18.0	36	630	10.0	20	102
AZR4z114r	96.80	33.25	10.10	0.339	1.10E+06	1.20E+06	0.0582	0.0064	0.860	0.084	0.1056	0.0040	-0.1472	560	120.0	240	636	23.5	47	647	11.5	23	102
AZR4z115	762.00	68.90	19.38	0.089	-5.00E+06	9.60E+06	0.0588	0.0037	0.807	0.044	0.0998	0.0029	-0.3777	542	70.0	140	600	12.5	25	613	8.5	17	102
AZR4z116	497.00	168.00	180.00	0.204	-1.40E+07	2.50E+07	0.1341	0.0075	7.700	0.380	0.4150	0.0120	0.6351	2157	13.5	27	2195	22.5	45	2237	28.5	57	102
AZR4z117	71.59	91.00	89.30	1.250	-2.40E+06	1.70E+06	0.1267	0.0075	6.510	0.360	0.3706	0.0110	0.2820	2053	23.0	46	2044	24.5	49	2032	25.5	51	99
AZR4z118c	283.00	49.90	45.50	0.173	-2.60E+06	6.30E+06	0.1258	0.0072	6.020	0.300	0.3447	0.0099	0.2183	2043	18.0	36	1980	22.0	44	1909	24.0	48	96
AZR4z118r	326.00	17.07	5.24	0.051	-9.00E+07	1.00E+07	0.0569	0.0042	0.793	0.054	0.1008	0.0031	0.0158	470	85.0	170	595	14.5	29	619	9.0	18	104
AZR4z119	135.30	113.40	33.10	0.811	-8.00E+05	9.10E+05	0.0556	0.0047	0.783	0.066	0.1005	0.0031	0.2655	410	90.0	180	582	19.0	38	617	9.0	18	106
AZR4z120c	376.00	275.00	269.00	0.722	-1.50E+07	1.90E+07	0.1234	0.0070	6.210	0.320	0.3696	0.0110	0.5692	2009	17.0	34	2007	21.0	42	2027	25.5	51	101
AZR4z120r	390.00	3.17	3.00	0.008	-9.30E+06	9.40E+06	0.1125	0.0064	5.240	0.250	0.3358	0.0096	0.2353	1843	17.0	34	1859	20.5	41	1866	23.0	46	100
AZR4z121	237.00	211.00	222.30	0.881	-9.90E+06	9.30E+06	0.1430	0.0083	8.170	0.430	0.4109	0.0120	0.7983	2266	18.5	37	2247	23.5	47	2219	27.0	54	99
Discordant data																							
AZR4z2b	45.50	56.60	64.20	1.232	-2.30E+05	6.80E+05	0.1183	0.0088	6.470	0.410	0.3952	0.0140	-0.1059	1919	48.0	96	2048	27.5	55	2146	31.5	63	105
AZR4z19	114.30	228.00	61.20	1.908	-4.80E+05	4.00E+05	0.0530	0.0050	0.655	0.057	0.0915	0.0032	0.1498	270	100.0	200	507	17.5	35	565	9.5	19	111
AZR4z31	323.00	326.00	158.00	0.977	-1.50E+06	1.40E+06	0.1203	0.0072	2.930	0.170	0.1774	0.0068	0.6752	1962	50.0	100	1391	21.5	43	1052	18.5	37	76
AZR4z50	601.00	637.00	148.70	1.062	-9.00E+06	1.00E+06	0.0708	0.0046	0.824	0.048	0.0825	0.0030	0.2361	962	70.0	140	609	13.5	27	511	9.0	18	84
AZR4z64c	530.00	282.00	271.00	0.513	-5.90E+06	7.60E+06	0.1488	0.0082	7.700	0.380	0.3755	0.0100	0.5252	2340	12.0	24	2198	21.5	43	2055	24.5	49	93
AZR4z73c	35.50	63.10	17.98	1.764	1.30E+06	1.10E+06	0.0800	0.0100	1.160	0.140	0.1057	0.0042	0.0113	1110	145.0	290	774	34.0	68	647	12.5	25	84
AZR4z97c	118.40	126.70	42.30	1.060	1.70E+05	9.00E+05	0.0795	0.0098	1.140	0.150	0.1022	0.0038	0.6030	1080	125.0	250	753	34.0	68	627	11.0	22	83
AZR4z98c	195.00	87.00	91.00	0.410	7.00E+06	6.90E+06	0.1648	0.0100	8.910	0.550	0.3930	0.0140	0.7816	2503	24.5	49	2329	27.0	54	2133	33.5	67	92
AZR4z98r	189.00	106.70	108.00	0.548	1.40E+06	4.60E+06	0.1780	0.0100	10.190	0.600	0.4140	0.0170	0.8381	2640	20.0	40	2447	27.0	54	2232	38.0	76	91
AZR4z113	213.00	177.00	140.90	0.793	2.20E+06	3.60E+06	0.1324	0.0077	5.510	0.300	0.2996	0.0092	0.6909	2137	18.5	37	1899	23.0	46	1694	24.0	48	89

Footnotes:

- Analysis references: AZR4z is zircon from sample AZR4 (mount CT17-8), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.9: Sample AZR5 (LA-ICPMS)

IGSN: IEACC0026 Coordinate UTM: Zone 30S, 268951 m E, 3692089 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AZR5z1	118.40	127.80	36.70	1.068	1.50E+05	8.10E+05	0.0609	0.0053	0.846	0.067	0.0976	0.0031	-0.1267	660	100.0	200	624	19.5	39	600	9.0	18	96
AZR5z2	24.28	7.48	7.78	0.304	6.00E+06	1.30E+06	0.1353	0.0100	7.590	0.540	0.3980	0.0150	0.2535	2163	46.5	93	2172	32.0	64	2158	34.5	69	99
AZR5z3c	651.00	452.00	505.00	0.685	2.00E+07	2.80E+07	0.1588	0.0089	9.330	0.450	0.4250	0.0120	0.5043	2447	13.0	26	2372	21.5	43	2283	28.0	56	96
AZR5z3r	349.50	129.60	127.00	0.371	-5.00E+07	1.00E+07	0.1283	0.0071	6.570	0.340	0.3710	0.0110	0.6918	2084	12.5	25	2061	22.5	45	2034	25.5	51	99
AZR5z4	279.00	242.00	237.10	0.854	-1.00E+07	1.20E+07	0.1262	0.0072	6.590	0.320	0.3741	0.0110	0.1457	2060	18.5	37	2056	21.5	43	2048	25.5	51	100
AZR5z5	288.00	271.00	326.50	0.929	-6.00E+07	1.00E+07	0.1707	0.0096	11.370	0.550	0.4803	0.0140	0.2191	2568	13.5	27	2553	22.5	45	2528	29.5	59	99
AZR5z6	126.70	141.00	40.01	1.117	-8.00E+06	1.50E+06	0.0596	0.0050	0.826	0.064	0.1005	0.0032	0.0617	530	95.0	190	612	17.5	35	617	9.5	19	101
AZR5z7	797.00	313.00	91.40	0.389	-2.80E+06	7.50E+06	0.0622	0.0037	0.895	0.047	0.1048	0.0030	0.2963	682	65.0	130	648	12.5	25	643	8.5	17	99
AZR5z8c	272.00	272.00	78.80	0.992	-7.00E+07	1.20E+07	0.0606	0.0046	0.859	0.059	0.1018	0.0031	0.4670	580	85.0	170	627	16.0	32	625	9.0	18	100
AZR5z8r	53.20	30.10	8.99	0.567	-7.20E+05	5.30E+05	0.0672	0.0089	0.950	0.120	0.1045	0.0042	0.0637	780	140.0	280	685	33.0	66	640	12.5	25	93
AZR5z9	260.30	160.50	46.70	0.616	3.10E+06	3.80E+06	0.0614	0.0049	0.842	0.059	0.1014	0.0031	0.0244	620	85.0	170	622	15.5	31	622	9.0	18	100
AZR5z10	146.50	122.50	37.00	0.834	-1.60E+06	1.20E+06	0.0561	0.0047	0.807	0.064	0.1028	0.0032	-0.0447	480	95.0	190	603	19.0	38	631	9.5	19	105
AZR5z11	47.10	91.70	77.40	1.916	-1.90E+06	1.60E+06	0.1188	0.0078	4.920	0.280	0.3002	0.0110	0.1428	1943	34.5	69	1802	24.0	48	1691	26.0	52	94
AZR5z12	265.90	295.50	293.80	1.107	4.20E+06	8.90E+06	0.1293	0.0073	6.920	0.340	0.3839	0.0110	0.2924	2097	15.0	30	2101	21.5	43	2094	26.0	52	100
AZR5z13	44.70	44.50	13.08	0.983	-2.60E+05	4.00E+05	0.0595	0.0067	0.862	0.093	0.1039	0.0043	0.2894	540	120.0	240	621	25.5	51	637	12.5	25	103
AZR5z14	984.00	424.00	555.00	0.429	-7.00E+07	3.90E+07	0.1822	0.0100	13.100	0.620	0.5208	0.0150	0.3743	2679	9.5	19	2687	22.0	44	2702	31.0	62	101
AZR5z15	124.70	103.00	70.50	0.828	-4.20E+06	3.00E+06	0.0930	0.0061	3.200	0.190	0.2459	0.0076	0.1978	1497	60.0	120	1453	24.0	48	1417	19.5	39	98
AZR5z16	537.00	354.00	336.00	0.694	-2.60E+07	2.70E+07	0.1257	0.0070	6.730	0.330	0.3873	0.0110	0.4996	2044	13.5	27	2076	21.5	43	2110	25.0	50	102
AZR5z17	131.10	114.00	111.20	0.864	-6.20E+06	5.20E+06	0.1226	0.0072	6.380	0.330	0.3726	0.0110	0.3464	2009	21.5	43	2027	22.0	44	2048	25.5	51	101
AZR5z18	342.00	496.00	151.90	1.450	2.40E+07	3.70E+07	0.0610	0.0040	0.939	0.055	0.1099	0.0033	0.0699	638	65.0	130	671	14.0	28	672	9.5	19	100
AZR5z19	374.00	104.70	30.20	0.239	-6.50E+06	4.20E+06	0.0597	0.0041	0.827	0.051	0.0993	0.0030	0.0910	601	80.0	160	614	15.0	30	610	9.0	18	99
AZR5z20	152.30	77.30	25.80	0.507	-4.90E+06	4.00E+06	0.0590	0.0045	0.905	0.061	0.1107	0.0033	-0.0428	550	80.0	160	652	16.5	33	677	9.5	19	104
AZR5z21	59.96	55.00	15.76	0.918	2.60E+06	3.90E+06	0.0514	0.0063	0.688	0.084	0.1000	0.0040	0.1356	220	130.0	260	531	26.5	53	614	11.5	23	116
AZR5z22c	130.80	91.60	27.80	0.702	2.60E+06	2.80E+06	0.0631	0.0055	0.902	0.071	0.1050	0.0034	0.0937	670	95.0	190	648	19.0	38	644	10.0	20	99
AZR5z22r	378.00	197.00	55.80	0.505	4.90E+06	6.40E+06	0.0633	0.0042	0.868	0.052	0.0986	0.0032	0.0949	699	70.0	140	633	14.0	28	606	9.0	18	96
AZR5z23	173.00	120.40	34.60	0.705	-2.60E+06	1.70E+06	0.0562	0.0046	0.826	0.066	0.1050	0.0033	-0.0045	470	85.0	170	613	17.0	34	643	9.5	19	105
AZR5z24c	51.00	48.30	13.39	0.929	-2.30E+06	1.70E+06	0.0645	0.0074	0.908	0.099	0.1016	0.0042	-0.0124	790	110.0	220	645	27.0	54	624	12.0	24	97
AZR5z24r	85.10	105.40	30.64	1.221	1.10E+06	2.00E+06	0.0607	0.0069	0.853	0.093	0.1013	0.0034	0.0827	550	120.0	240	624	26.0	52	622	10.0	20	100
AZR5z25	222.00	145.20	177.20	0.652	3.00E+07	2.00E+07	0.1600	0.0089	10.460	0.520	0.4751	0.0140	0.5774	2464	11.5	23	2478	22.0	44	2506	29.5	59	101
AZR5z26	538.00	305.00	83.50	0.562	1.20E+06	7.00E+06	0.0567	0.0036	0.770	0.042	0.0974	0.0028	-0.0027	477	70.0	140	579	12.0	24	599	8.0	16	103
AZR5z27	82.00	76.90	72.10	0.943	3.10E+07	2.10E+07	0.1256	0.0081	6.220	0.360	0.3573	0.0110	0.3480	2054	31.5	63	2009	23.5	47	1974	26.0	52	98
AZR5z28	189.30	127.80	126.70	0.681	-1.31E+07	9.50E+06	0.1240	0.0074	6.390	0.330	0.3692	0.0110	0.1831	2015	23.0	46	2033	21.5	43	2025	25.0	50	100
AZR5z30	62.30	43.80	12.34	0.709	9.20E+06	7.00E+06	0.0573	0.0062	0.780	0.078	0.1001	0.0040	-0.0125	410	115.0	230	578	22.5	45	615	12.0	24	106
AZR5z31c	57.60	34.50	8.36	0.588	7.40E+05	7.90E+05	0.0577	0.0063	0.696	0.067	0.0891	0.0034	-0.1005	450	120.0	240	538	21.5	43	550	10.0	20	102
AZR5z31r	128.90	27.70	6.84	0.214	3.00E+06	3.00E+06	0.0594	0.0063	0.754	0.079	0.0911	0.0032	0.3663	550	110.0	220	569	22.5	45	562	9.5	19	99
AZR5z32	124.70	69.30	72.40	0.564	1.00E+08	1.10E+07	0.1336	0.0077	7.470	0.380	0.4022	0.0120	0.2484	2154	19.0	38	2173	23.0	46	2179	27.0	54	100
AZR5z33c	37.40	46.40	14.15	1.253	1.20E+06	1.00E+06	0.0498	0.0078	0.740	0.110	0.1095	0.0045	-0.0754	170	155.0	310	572	34.5	69	669	13.0	26	117
AZR5z33r	43.00	54.20	16.32	1.272	-1.80E+05	9.10E+05	0.0628	0.0085	0.910	0.110	0.1064	0.0041	-0.0570	620	135.0	270	641	30.5	61	652	12.0	24	102
AZR5z34	193.00	134.10	37.50	0.707	1.00E+07	3.90E+06	0.0596	0.0052	0.858	0.071	0.1037	0.0033	-0.0021	560	95.0	190	630	19.0	38	636	9.5	19	101
AZR5z35	451.00	221.00	215.60	0.492	-2.30E+07	2.60E+07	0.1257	0.0070	6.490	0.320	0.3728	0.0110	0.2255	2043	14.5	29	2044	21.5	43	2042	25.5	51	100
AZR5z36c	180.00	104.20	28.40	0.552	-2.00E+06	3.50E+06	0.0591	0.0045	0.862	0.062	0.1047	0.0032	0.1648	530	85.0	170	628	16.5	33	642	9.0	18	102
AZR5z36r	215.00	80.90	23.80	0.375	-2.00E+06	6.60E+06	0.0636	0.0045	0.902	0.061	0.1012	0.0031	0.3811	700	80.0	160	650	16.5	33	621	9.0	18	96
AZR5z37	57.50	27.00	7.91	0.466	-1.80E+06	1.20E+06	0.0638	0.0071	0.832	0.100	0.0998	0.0036	0.3540	650	125.0	250	632	26.5	53	613	10.5	21	97
AZR5z38	58.40	29.80	8.95	0.510	1.00E+07	1.60E+06	0.0670	0.0072	0.923	0.098	0.1041	0.0045	0.3463	760	115.0	230	654	25.5	51	638	13.5	27	98
AZR5z39	429.00	1049.00	342.80	2.451	6.00E+06	9.30E+06	0.0611	0.0041	0.984	0.058	0.1175	0.0033	-0.0847	619	70.0	140	694	14.5	29	716	9.5	19	103
AZR5z40	974.00	257.90	83.40	0.265	-1.30E+07	1.90E+07	0.0640	0.0037	0.916	0.049	0.1030	0.0029	0.3891	742	60.0	120	660	13.0	26	632	8.5	17	96
AZR5z41	25.08	14.62	4.50	0.583	-4.90E+05	8.50E+05	0.0700	0.0120	1.020	0.180	0.1029	0.0048	-0.1231	810	185.0	370	697	42.5	85	631	14.0	28	91
AZR5z42c	193.20	135.00	96.90	0.678	7.00E+07	1.10E+07	0.1115	0.0073	4.070	0.340	0.2599	0.0110	0.7891	1810	55.0	110	1636	32.0	64	1488	29.0	58	91
AZR5z42r	236.00	200.00	190.00	0.848	-7.00E+07	2.70E+07	0.1216	0.0070	6.300	0.320	0.3710	0.0110	0.4311	1988	18.5	37	2017	22.0	44	2038	25.0	50	101
AZR5z43	325.00	92.90	95.10	0.288	5.00E+07	3.40E+07	0.1258	0.0071	6.600	0.330	0.3776	0.0110	0.4845	2044	15.0	30	2059	22.0	44	2065	25.0	50	100
AZR5z44	149.40	281.90	79.40	1.888	4.20E+06	3.90E+06	0.0568	0.0054	0.762	0.067	0.0970	0.0034	0.1497	440	105.0	210	576	19.0	38	597	10.0	20	104
AZR5z45	60.30	76.00	21.10	1.215	-5.00E+06	2.50E+06	0.0570	0.0063	0.818	0.089	0.1037	0.0046	0.1404	470	115.0	230	605	25.5	51	636	13.5	27	105
AZR5z46	136.10	136.10	139.60	1.005	-2.70E+07	3.10E+07	0.1220	0.0071	6.530	0.350	0.3845	0.0120	0.3333	1987	21.0	42	2047	23.5	47	2097	28.0	56	102
AZR5z47	283.00	262.00	75.20	0.917	9.00E+08	1.10E+08	0.0596	0.0039	0.855	0.053	0.1038	0.0031	0.3056	570	70.0	140	626	14.5	29	636	9.0	18	102
AZR5z48	143.30	125.50	38.30	0.877	3.10E+06	6.90E+06	0.0686	0.0061	1.007	0.078	0.1061	0.0035	0.0513	850	95.0	190	702	20.0	40	650	10.5	21	93
AZR5z49	1038.00	227.80	224.60	0.222	-4.00E+08	2.70E+08	0.1305	0.0072	6.906	0.330	0.3796	0.0110	0.2852	2114	13.0	26	2099	21.0	42	2074	25.0	50	99
AZR5z50	99.60	69.80	20.60	0.691	-1.00E+08	1.10E+07	0.0604	0.0058	0.850	0.074	0.1012	0.0034	-0.1418	580	100.0	200	619	20.5	41	621	10.0	20	100
AZR5z51	162.50	127.80	130.90	0.797	-9.30E+07	3.30E+07	0.1371	0.0078	7.640	0.380	0.4001	0.0120	0.1131	2201	17.5	35	2189	22.5	45	2169	26.5	53	99
AZR5z52	425.00	245.00	76.30	0.559	-1.20E+07	2.40E+07	0.0638	0.0041	0.975	0.056	0.1101	0.0032	-0.0203	718	70.0	140	690	14.5	29	674	9.5	19	98
AZR5z53c	39.10	20.60	19.30	0.530	4.10E+07	4.30E+07	0.1232	0.0094	6.050	0.440	0.3598	0.0120	-0.0043	2000	50.0	100	1980	33.0	66	1980	29.5	59	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR5z53r	104.90	111.80	108.20	1.088	1.00E+07	2.10E+07	0.1211	0.0073	6.130	0.320	0.3720	0.0110	0.4174	1972	24.5	49	1993	22.5	45	2038	26.5	53	102
AZR5z54	254.10	127.80	36.60	0.501	1.40E+07	1.40E+07	0.0584	0.0039	0.799	0.048	0.1003	0.0032	0.3499	534	75.0	150	595	13.5	27	616	9.5	19	104
AZR5z55	100.90	87.40	87.10	0.855	1.80E+07	3.90E+07	0.1331	0.0077	7.230	0.380	0.3913	0.0120	0.4253	2149	20.5	41	2146	21.0	42	2128	27.5	55	99
AZR5z56	85.80	60.10	17.00	0.685	4.80E+07	5.30E+07	0.0526	0.0051	0.730	0.064	0.0975	0.0033	0.2596	330	100.0	200	558	20.0	40	600	9.5	19	108
AZR5z57	165.10	24.00	7.26	0.148	-1.29E+07	9.80E+06	0.0601	0.0057	0.845	0.078	0.1011	0.0031	0.2218	530	100.0	200	622	20.5	41	621	9.0	18	100
AZR5z58	319.00	176.80	170.00	0.556	3.20E+08	2.50E+08	0.1268	0.0072	6.400	0.320	0.3627	0.0100	0.3868	2063	17.5	35	2032	22.0	44	1995	24.5	49	98
AZR5z59	236.00	232.00	227.40	0.985	-1.19E+09	7.40E+08	0.1237	0.0070	6.440	0.340	0.3746	0.0110	0.5442	2014	17.0	34	2038	22.5	45	2051	26.5	53	101
AZR5z60	75.50	53.60	15.56	0.720	-3.40E+07	4.20E+07	0.0618	0.0075	0.903	0.099	0.1041	0.0039	0.1480	630	120.0	240	652	25.5	51	638	11.5	23	98
AZR5z61	281.00	206.00	185.90	0.741	3.50E+08	3.20E+08	0.1278	0.0075	6.120	0.310	0.3453	0.0100	0.2497	2070	20.5	41	1992	22.0	44	1912	24.0	48	96
AZR5z62c	53.50	67.70	67.20	1.284	-6.60E+07	2.90E+07	0.1242	0.0087	6.420	0.420	0.3710	0.0120	0.3379	2033	37.0	74	2035	29.5	59	2033	28.0	56	100
AZR5z62r	48.60	89.70	89.20	1.873	-5.00E+07	8.90E+07	0.1251	0.0082	6.350	0.380	0.3701	0.0120	0.6563	2034	34.5	69	2028	27.5	55	2029	29.0	58	100
AZR5z63	52.00	39.80	10.58	0.779	1.20E+07	1.70E+07	0.0632	0.0078	0.866	0.100	0.0970	0.0039	-0.0304	650	135.0	270	630	28.5	57	596	11.5	23	95
AZR5z64	133.60	26.60	25.10	0.202	-3.70E+08	3.90E+08	0.1224	0.0071	6.140	0.320	0.3611	0.0110	0.3769	1994	21.0	42	1994	22.5	45	1987	26.0	52	100
AZR5z65	245.00	108.20	30.50	0.446	1.80E+09	3.50E+09	0.0590	0.0041	0.791	0.050	0.0952	0.0029	0.0740	550	80.0	160	590	14.5	29	586	8.5	17	99
AZR5z66	82.70	56.10	13.98	0.696	-8.00E+08	1.00E+08	0.0558	0.0063	0.724	0.082	0.0918	0.0034	-0.0680	360	120.0	240	543	24.5	49	566	10.0	20	104
AZR5z67	205.60	126.00	141.00	0.623	-6.00E+06	3.00E+08	0.1499	0.0086	8.890	0.440	0.4260	0.0120	0.4008	2367	15.5	31	2326	23.0	46	2287	28.0	56	98
AZR5z68	245.00	109.50	107.30	0.442	2.20E+08	2.90E+08	0.1243	0.0072	6.400	0.330	0.3738	0.0110	0.3881	2023	18.5	37	2037	22.5	45	2046	27.0	54	100
AZR5z69	63.70	58.00	17.23	0.928	-7.00E+07	1.00E+07	0.0595	0.0080	0.860	0.120	0.1036	0.0036	-0.0210	570	140.0	280	636	31.0	62	635	10.5	21	100
AZR5z70	68.30	34.60	10.44	0.509	1.26E+07	4.90E+06	0.0628	0.0067	0.885	0.090	0.1019	0.0040	0.1625	710	115.0	230	652	24.5	49	625	12.0	24	96
AZR5z71	125.00	139.70	40.40	1.138	-6.00E+07	1.00E+07	0.0566	0.0056	0.810	0.075	0.1025	0.0036	-0.1831	430	105.0	210	596	21.0	42	629	10.5	21	106
AZR5z72	71.10	70.00	67.80	0.968	-1.70E+07	4.60E+07	0.1220	0.0074	6.190	0.350	0.3633	0.0120	0.5390	1994	26.5	53	1998	25.5	51	1997	28.0	56	100
AZR5z73	58.80	44.60	13.30	0.762	9.00E+06	4.90E+06	0.0616	0.0069	0.950	0.096	0.1083	0.0037	0.0625	610	120.0	240	677	24.5	49	662	10.5	21	98
AZR5z74	114.90	107.60	29.20	0.951	9.60E+06	8.70E+06	0.0573	0.0059	0.750	0.076	0.0943	0.0031	0.3319	530	100.0	200	569	21.0	42	581	9.0	18	102
AZR5z75	94.40	48.90	15.56	0.515	2.90E+06	4.40E+06	0.0571	0.0057	0.828	0.077	0.1047	0.0036	0.0493	490	95.0	190	606	21.5	43	642	10.5	21	106
AZR5z76	108.00	90.10	21.04	0.840	-1.30E+06	7.30E+06	0.0564	0.0053	0.680	0.062	0.0860	0.0028	0.2432	430	100.0	200	527	19.0	38	532	8.5	17	101
AZR5z77	148.10	141.20	139.20	0.948	-6.00E+07	4.20E+07	0.1245	0.0074	6.300	0.330	0.3698	0.0110	0.3102	2031	22.0	44	2019	24.0	48	2028	25.5	51	100
AZR5z78	237.70	117.70	120.70	0.503	7.00E+07	5.10E+07	0.1275	0.0073	6.820	0.330	0.3829	0.0110	0.1283	2073	16.5	33	2087	21.5	43	2089	26.5	53	100
AZR5z79	398.00	298.70	83.90	0.750	-1.25E+08	7.00E+07	0.0614	0.0038	0.846	0.051	0.0980	0.0030	0.6764	638	65.0	130	621	14.0	28	603	8.5	17	97
AZR5z80	509.00	172.70	111.80	0.344	3.60E+07	6.90E+07	0.0874	0.0052	2.879	0.150	0.2376	0.0069	0.3780	1361	55.0	110	1375	20.0	40	1374	18.0	36	100
AZR5z81c	110.50	52.90	62.60	0.483	3.00E+07	1.70E+07	0.1617	0.0095	10.360	0.540	0.4625	0.0130	-0.2422	2475	20.5	41	2465	24.0	48	2450	29.5	59	99
AZR5z81r	123.80	65.50	62.20	0.540	-3.00E+07	2.00E+07	0.1229	0.0072	6.250	0.320	0.3662	0.0110	0.2737	2001	22.0	44	2013	21.5	43	2011	25.5	51	100
AZR5z82	91.00	98.00	28.90	0.987	-5.00E+06	4.20E+06	0.0588	0.0060	0.848	0.084	0.1064	0.0035	0.3154	510	110.0	220	621	24.5	49	651	10.5	21	105
AZR5z83	165.20	347.00	334.00	2.106	-8.10E+07	6.70E+07	0.1212	0.0071	6.080	0.310	0.3615	0.0110	0.2715	1984	21.5	43	1990	23.0	46	1989	25.5	51	100
AZR5z84	94.80	97.60	27.80	1.046	-4.30E+06	2.40E+06	0.0561	0.0059	0.789	0.082	0.0997	0.0032	0.0738	400	110.0	220	582	23.0	46	613	9.5	19	105
AZR5z85	169.30	46.50	48.20	0.281	8.00E+07	2.70E+07	0.1273	0.0073	6.620	0.340	0.3776	0.0110	0.4531	2065	19.0	38	2061	22.5	45	2065	26.5	53	100
AZR5z86	268.00	309.00	97.00	1.018	8.00E+07	1.10E+07	0.0652	0.0062	0.963	0.100	0.1051	0.0033	0.7136	750	85.0	170	676	24.0	48	644	9.5	19	95
AZR5z87	62.10	80.70	63.30	1.292	3.80E+06	5.90E+06	0.1093	0.0073	4.580	0.280	0.3047	0.0110	0.2128	1793	35.0	70	1746	26.0	52	1714	26.5	53	98
AZR5z88	322.00	227.00	64.20	0.718	6.00E+07	1.20E+07	0.0595	0.0042	0.812	0.052	0.0977	0.0029	0.0372	570	80.0	160	601	14.5	29	601	8.5	17	100
AZR5z89	176.60	100.60	29.80	0.565	-3.50E+07	3.10E+07	0.0619	0.0051	0.902	0.066	0.1051	0.0034	-0.0687	670	85.0	170	649	17.5	35	644	10.0	20	99
AZR5z90	114.60	60.00	38.90	0.521	1.00E+06	9.30E+06	0.0913	0.0059	3.040	0.170	0.2456	0.0076	0.1348	1452	65.0	130	1419	21.5	43	1415	19.5	39	100
AZR5z91	1022.00	367.00	102.10	0.356	-2.00E+07	2.90E+07	0.0600	0.0036	0.822	0.043	0.1002	0.0028	0.1067	595	65.0	130	613	11.0	22	616	8.5	17	100
AZR5z92c	276.00	120.90	104.10	0.435	-1.00E+07	2.90E+07	0.1149	0.0067	5.270	0.270	0.3303	0.0100	0.5448	1881	21.0	42	1862	22.5	45	1839	24.5	49	99
AZR5z92r	136.30	31.60	9.82	0.233	1.40E+07	2.10E+07	0.0597	0.0052	0.874	0.071	0.1044	0.0033	0.2424	610	90.0	180	633	19.5	39	640	9.5	19	101
AZR5z93c	41.90	34.10	10.70	0.818	-4.00E+06	1.90E+06	0.0690	0.0072	1.053	0.110	0.1095	0.0039	0.1378	890	110.0	220	727	27.5	55	670	11.0	22	92
AZR5z93r	184.00	98.60	32.30	0.539	-1.10E+07	1.10E+07	0.0609	0.0041	0.977	0.060	0.1155	0.0036	0.1337	612	75.0	150	690	15.5	31	704	10.5	21	102
AZR5z94	286.00	303.00	82.60	1.067	5.20E+06	4.10E+06	0.0581	0.0039	0.779	0.051	0.0967	0.0029	0.4868	543	75.0	150	583	14.5	29	595	8.5	17	102
AZR5z95	48.00	25.70	8.18	0.534	-1.60E+06	1.80E+06	0.0588	0.0090	0.840	0.120	0.1036	0.0039	0.1746	580	150.0	300	624	31.5	63	639	12.0	24	102
AZR5z96	208.80	91.00	26.50	0.433	-2.10E+06	3.10E+06	0.0642	0.0053	0.862	0.065	0.0975	0.0032	-0.2229	690	95.0	190	632	17.0	34	600	9.5	19	95
AZR5z97r	138.00	5.63	6.35	0.039	8.00E+04	3.30E+06	0.0653	0.0057	0.936	0.078	0.1044	0.0034	0.1895	750	90.0	180	671	21.0	42	640	10.0	20	95
AZR5z98	227.90	134.50	37.60	0.588	1.60E+06	5.40E+06	0.0630	0.0041	0.840	0.050	0.0967	0.0029	0.2654	702	75.0	150	618	14.0	28	595	8.5	17	96
AZR5z99	180.00	192.30	60.80	1.058	2.80E+06	3.00E+06	0.0603	0.0053	0.913	0.075	0.1108	0.0033	0.0537	550	95.0	190	654	20.0	40	678	9.5	19	104
AZR5z100	156.30	44.80	12.53	0.288	3.00E+06	3.00E+06	0.0597	0.0048	0.804	0.063	0.0971	0.0033	0.3974	610	85.0	170	600	18.5	37	597	10.0	20	100
AZR5z101	115.30	90.10	27.40	0.778	1.30E+06	2.00E+06	0.0567	0.0063	0.786	0.085	0.1027	0.0039	0.4161	450	115.0	230	589	25.5	51	630	11.5	23	107
AZR5z102	98.20	99.90	102.40	1.021	-5.00E+06	4.60E+06	0.1328	0.0082	7.080	0.380	0.3888	0.0120	0.2913	2134	27.0	54	2124	25.5	51	2117	28.5	57	100
AZR5z104	452.20	439.90	452.00	0.978	7.00E+07	3.40E+07	0.1313	0.0073	6.978	0.330	0.3816	0.0110	0.1360	2122	14.0	28	2108	21.0	42	2083	25.0	50	99
AZR5z106	104.50	59.20	19.20	0.572	-6.00E+04	2.20E+06	0.0603	0.0060	0.922	0.083	0.1109	0.0039	-0.0747	560	105.0	210	663	21.0	42	678	11.5	23	102
AZR5z107	118.00	53.40	57.20	0.458	6.00E+07	1.60E+07	0.1289	0.0078	7.010	0.380	0.3945	0.0120	0.4515	2091	25.0	50	2115	25.5	51	2143	29.0	58	101
AZR5z108	39.90	43.10	42.40	1.053	3.00E+06	1.90E+06	0.1265	0.0089	6.600	0.450	0.3704	0.0120	0.2556	2047	45.0	90	2049	30.5	61	2031	28.0	56	99
AZR5z109	170.90	157.70	73.80	0.904	7.70E+06	5.20E+06	0.1238	0.0076	5.090	0.270	0.2954	0.0089	0.2308	2020	25.5	51	1832	22.5	45	1668	22.0	44	91
AZR5z110	124.20	133.60	36.80	1.053	6.00E+04	1.40E+06	0.0552	0.0050	0.764	0.065	0.0988	0.0032	-0.1511	420	105.0	210	572	19.0	38	607	9.5	19	106
AZR5z111	211.00	125.00	93.70	0.587	-8.00E+07	1.10E+07	0.0943	0.0056	3.610	0.200	0.2738	0.0078	0.4479	1517	25.0	50	1549	22.5	45	1560	19.5	39	101
AZR5z112	92.70	94.40	28.20	1.003	-2.30E+07	1.60E+07	0.0630	0.0069	0.866	0.089	0.0991	0.0031	-0.1712	670	115.0	230	641	24.0	48	609	9.0	18	95
AZR5z113	453.00	119.80	124.00	0.242	3.00E+07	2.50E+07	0.1226	0.0069	6.180	0.310	0.3659	0.0100	0.5463	2000	15.0	30	2001	21.5	43	2010	24.5	49	100
AZR5z114	21.00	15.23	22.97	0.752	4.10E+06	5.20E+06	0.2560	0.0180	22.600	2.100	0.6500	0.0370	0.8506	3225	37.5	75	3191	45.5	91	3220	75.0	150	101
AZR5z115c	85.40	75.30	64.80	0.872	8.30E+06	5.80E+06	0.1097	0.0075	4.810	0.300	0.3069	0.0095	0.1872	1796	41.0	82	1786	27.0	54	1725	23.5	47	97
AZR5z115r	109.00	43.30	41.00	0.388	4.30E+06	3.30E+06	0.1143	0.0077	5.170	0.360	0.3252	0.0100	0.6025	1877	34.0	68	1848	26.5	53	1814	25.0	50	98
AZR5z116	86.20	55.60	25.90	0.650	-1.40E+06	2.60E+06	0.0676	0.0054	1.433	0.110	0.1545	0.0051	0.1764	870	85.0	170	904	22.0	44	926	14.0	28	102

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR5z117c	273.00	178.50	58.00	0.644	-1.30E+06	3.40E+06	0.0633	0.0042	0.940	0.059	0.1065	0.0034	0.6661	710	75.0	150	671	15.5	31	652	10.0	20	97
AZR5z117r	176.00	37.70	12.00	0.212	-8.30E+06	4.70E+06	0.0586	0.0047	0.823	0.064	0.0999	0.0032	0.2684	580	90.0	180	606	18.0	36	613	9.5	19	101
AZR5z118	115.60	119.20	115.20	1.035	1.60E+06	6.20E+06	0.1293	0.0079	6.520	0.360	0.3580	0.0110	0.2118	2098	26.5	53	2051	25.0	50	1977	26.5	53	96
AZR5z119c	79.00	58.00	18.45	0.725	3.20E+06	2.30E+06	0.0643	0.0066	0.869	0.082	0.0994	0.0034	0.0171	720	110.0	220	642	22.0	44	610	10.0	20	95
AZR5z119r	488.00	40.10	16.20	0.082	-4.20E+06	8.60E+06	0.0606	0.0039	0.847	0.048	0.1002	0.0030	0.1640	624	65.0	130	625	14.0	28	616	9.0	18	98
AZR5z120	86.00	52.20	14.94	0.609	-7.00E+06	1.20E+06	0.0656	0.0071	0.891	0.087	0.0996	0.0036	-0.1630	680	120.0	240	645	24.0	48	612	10.5	21	95
AZR5z121c	95.80	53.90	50.30	0.553	1.40E+06	2.50E+06	0.1129	0.0071	5.430	0.320	0.3397	0.0100	0.3800	1855	32.0	64	1885	25.5	51	1885	25.0	50	100
AZR5z121r	135.90	84.50	78.60	0.612	-4.30E+06	7.00E+06	0.1094	0.0069	5.120	0.280	0.3347	0.0097	0.0646	1808	30.0	60	1841	22.5	45	1861	23.5	47	101
AZR5z122	254.50	44.20	17.71	0.173	-5.00E+06	3.20E+06	0.0655	0.0041	1.225	0.071	0.1347	0.0039	0.3105	788	70.0	140	810	16.0	32	815	11.0	22	101
AZR5z123	53.90	40.10	12.58	0.732	7.00E+06	1.50E+06	0.0648	0.0078	0.910	0.110	0.0994	0.0037	0.1933	720	125.0	250	644	30.0	60	611	11.0	22	95
AZR5z124c	276.20	196.00	99.00	0.602	-2.00E+06	4.00E+06	0.0752	0.0052	1.407	0.094	0.1361	0.0041	0.5720	1048	70.0	140	888	20.0	40	823	11.5	23	93
AZR5z125	247.00	61.10	16.80	0.242	-3.30E+06	3.30E+06	0.0573	0.0041	0.773	0.051	0.0979	0.0030	0.0873	495	75.0	150	583	14.0	28	602	9.0	18	103
AZR5z126	36.50	29.00	29.10	0.773	1.40E+06	1.70E+06	0.1336	0.0091	6.780	0.470	0.3706	0.0130	0.3508	2175	30.5	61	2082	30.0	60	2031	31.5	63	98
AZR5z127	106.10	270.10	110.90	2.511	1.11E+06	9.80E+05	0.0644	0.0050	1.282	0.097	0.1429	0.0047	0.2541	760	80.0	160	832	21.5	43	861	13.0	26	103
AZR5z128	174.00	105.10	94.00	0.607	2.40E+06	2.70E+06	0.1416	0.0087	6.740	0.360	0.3387	0.0110	-0.0737	2247	26.5	53	2076	23.5	47	1880	26.0	52	91
AZR5z129	327.00	55.90	21.11	0.169	3.60E+06	2.80E+06	0.0644	0.0042	1.141	0.067	0.1297	0.0039	0.1802	737	70.0	140	771	16.0	32	786	11.0	22	102
Pb loss and discordant data																							
AZR5z29	21.12	0.82	0.23	0.031	4.90E+05	8.10E+05	0.0730	0.0160	0.960	0.210	0.0952	0.0043	-0.0437	750	200.0	400	670	49.0	98	586	12.5	25	87
AZR5z42b	125.30	83.70	67.50	0.678	-1.90E+06	8.10E+06	0.1122	0.0072	4.590	0.370	0.2990	0.0150	0.8721	1843	33.0	66	1756	33.5	67	1685	37.5	75	96
AZR5z97c	729.00	18.20	81.00	0.022	1.62E+07	5.30E+06	0.1285	0.0075	4.870	0.310	0.2691	0.0097	0.9059	2088	18.5	37	1797	26.5	53	1535	24.5	49	85
AZR5z103c	434.30	422.10	493.00	0.963	-1.00E+05	2.10E+07	0.1698	0.0095	9.320	0.510	0.3945	0.0130	0.8463	2561	14.0	28	2372	24.5	49	2148	30.0	60	91
AZR5z103r	334.00	62.40	77.00	0.139	6.60E+07	6.50E+07	0.1310	0.0120	4.390	0.820	0.2220	0.0300	0.9880	2100	90.0	180	1570	90.0	180	1270	80.0	160	81
AZR5z105	40.20	139.80	12.80	3.597	5.90E+05	3.50E+05	0.0630	0.0170	0.450	0.120	0.0479	0.0033	-0.1064	590	270.0	540	380	42.0	84	302	10.0	20	79
AZR5z124r	167.60	111.70	42.80	0.617	6.00E+06	1.80E+06	0.0772	0.0073	1.211	0.110	0.1140	0.0036	-0.1319	1130	95.0	190	797	24.0	48	696	10.5	21	87

Footnotes:

- Analysis references: AZR5z is zircon from sample AZR5 (mount CT17-8), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.10: Sample AZR6 (LA-ICPMS)

IGSN: IEACC0027 Coordinate UTM: Zone 30S, 269001 m E, 3690998 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AZR6z1c	75.70	81.20	24.02	1.063	-1.08E+06	9.10E+05	0.0673	0.0062	0.934	0.080	0.1005	0.0038	0.1016	880	85.0	170	678	20.5	41	617	11.0	22	91
AZR6z1r	62.30	60.10	19.20	0.926	-1.10E+05	3.20E+05	0.0612	0.0076	0.860	0.100	0.1011	0.0035	-0.0966	590	130.0	260	626	27.5	55	623	10.5	21	100
AZR6z2	346.00	483.00	147.80	1.371	5.10E+06	5.60E+06	0.0629	0.0041	0.876	0.051	0.1023	0.0030	-0.1697	687	70.0	140	641	14.5	29	628	8.5	17	98
AZR6z3	243.00	141.20	56.40	0.578	2.80E+07	1.90E+07	0.0660	0.0046	1.208	0.077	0.1318	0.0041	0.2463	814	75.0	150	802	17.5	35	798	12.0	24	100
AZR6z4c	19.80	18.80	23.60	0.947	4.00E+05	5.40E+05	0.1557	0.0110	9.880	0.700	0.4540	0.0200	0.5912	2408	41.5	83	2429	32.5	65	2409	44.5	89	99
AZR6z4r	296.70	142.10	149.60	0.473	5.30E+06	7.20E+06	0.1540	0.0086	8.430	0.410	0.3948	0.0110	0.4428	2398	12.5	25	2278	22.0	44	2145	25.5	51	94
AZR6z5	127.60	99.60	32.80	0.772	2.00E+06	2.00E+06	0.0590	0.0047	0.978	0.072	0.1182	0.0040	0.0081	620	100.0	200	701	19.0	38	720	11.5	23	103
AZR6z6c	349.00	107.40	111.10	0.305	-8.30E+06	9.50E+06	0.1287	0.0072	6.740	0.340	0.3804	0.0110	0.2979	2086	14.5	29	2077	22.0	44	2081	26.0	52	100
AZR6z6r	616.00	215.00	212.00	0.329	1.30E+08	1.30E+08	0.1251	0.0070	6.570	0.320	0.3789	0.0110	0.6110	2038	13.5	27	2054	21.5	43	2075	25.0	50	101
AZR6z7	219.30	92.00	90.20	0.415	-2.00E+07	1.20E+07	0.1317	0.0074	6.429	0.310	0.3491	0.0099	0.3397	2127	15.0	30	2035	21.0	42	1930	23.5	47	95
AZR6z8	90.00	37.80	38.90	0.417	-3.50E+07	3.00E+07	0.1270	0.0078	6.740	0.370	0.3795	0.0120	0.2550	2085	25.5	51	2075	24.5	49	2073	28.0	56	100
AZR6z9	81.10	73.10	20.52	0.892	-2.50E+05	7.90E+05	0.0660	0.0066	0.944	0.090	0.1017	0.0037	0.0196	780	105.0	210	674	22.5	45	624	11.0	22	93
AZR6z10	245.90	264.40	80.40	1.063	-7.00E+06	1.70E+06	0.0632	0.0047	0.895	0.058	0.1027	0.0031	-0.0699	680	80.0	160	650	16.0	32	630	9.0	18	97
AZR6z11	255.00	219.00	63.50	0.843	6.00E+06	1.90E+06	0.0616	0.0042	0.892	0.056	0.1031	0.0031	0.2467	672	70.0	140	646	15.0	30	632	9.0	18	98
AZR6z12r	320.00	356.00	350.00	1.099	-1.00E+06	8.10E+06	0.1382	0.0077	6.945	0.340	0.3578	0.0100	0.4858	2216	13.0	26	2104	21.5	43	1971	24.5	49	94
AZR6z13	58.20	126.80	36.10	2.169	3.50E+06	2.40E+06	0.0622	0.0075	0.877	0.100	0.0985	0.0038	0.1859	580	135.0	270	626	29.0	58	606	11.0	22	97
AZR6z14c	43.60	58.20	50.60	1.318	9.90E+06	7.10E+06	0.1192	0.0088	5.320	0.350	0.3274	0.0120	0.3283	1944	45.0	90	1889	25.5	51	1825	29.0	58	97
AZR6z14r	33.00	33.90	30.00	1.002	-2.90E+06	2.40E+06	0.1076	0.0091	4.850	0.410	0.3273	0.0120	0.2975	1740	60.0	120	1791	33.0	66	1824	30.0	60	102
AZR6z15c	434.00	265.90	298.60	0.606	-1.50E+07	2.70E+07	0.1565	0.0088	9.510	0.460	0.4389	0.0120	0.4977	2425	14.5	29	2390	23.5	47	2346	28.0	56	98
AZR6z15r	35.80	148.00	143.90	4.102	-6.10E+05	8.60E+05	0.1260	0.0083	6.410	0.410	0.3661	0.0120	0.3182	2067	38.5	77	2027	28.5	57	2010	28.0	56	99
AZR6z16	219.90	191.80	163.60	0.856	3.40E+06	4.00E+06	0.1056	0.0061	4.615	0.230	0.3128	0.0096	0.4228	1729	20.5	41	1751	20.5	41	1754	23.5	47	100
AZR6z17	61.80	50.30	45.20	0.810	-6.00E+06	1.60E+06	0.1096	0.0072	4.910	0.320	0.3232	0.0110	0.7710	1802	32.0	64	1797	27.5	55	1805	26.5	53	100
AZR6z18	78.80	69.20	73.60	0.852	2.00E+06	1.90E+06	0.1271	0.0075	6.640	0.370	0.3750	0.0120	0.4410	2061	22.5	45	2061	25.0	50	2052	29.0	58	100
AZR6z19	417.00	814.00	229.90	1.950	-7.00E+06	3.30E+06	0.0563	0.0038	0.740	0.045	0.0952	0.0027	0.1199	455	75.0	150	561	13.0	26	586	8.0	16	104
AZR6z20	79.00	57.70	24.43	0.727	5.90E+05	5.80E+05	0.0682	0.0061	1.306	0.110	0.1384	0.0046	0.3745	860	95.0	190	841	24.0	48	835	13.0	26	99
AZR6z21	236.00	176.00	52.90	0.744	-7.00E+04	2.40E+06	0.0621	0.0042	0.884	0.056	0.1033	0.0032	0.3320	668	75.0	150	645	14.5	29	633	9.5	19	98
AZR6z22c	263.00	140.00	137.90	0.530	-1.40E+07	1.30E+07	0.1247	0.0071	6.720	0.330	0.3855	0.0110	0.4565	2036	17.0	34	2074	22.0	44	2101	26.0	52	101
AZR6z22r	229.00	208.00	194.30	0.921	-2.90E+06	5.30E+06	0.1190	0.0068	6.250	0.310	0.3749	0.0110	0.3491	1947	16.5	33	2011	21.5	43	2052	26.0	52	102
AZR6z23	92.60	163.60	179.00	1.741	1.10E+06	2.50E+06	0.1350	0.0083	7.670	0.420	0.4098	0.0130	0.2624	2174	27.5	55	2190	24.5	49	2214	29.0	58	101
AZR6z24	104.60	88.20	60.10	0.842	-1.80E+06	1.50E+06	0.0884	0.0058	2.990	0.190	0.2423	0.0074	0.1755	1375	65.0	130	1401	24.0	48	1398	19.0	38	100
AZR6z25	72.00	79.50	23.20	1.105	-6.00E+05	6.00E+05	0.0562	0.0067	0.799	0.086	0.1029	0.0042	0.0430	390	120.0	240	595	23.5	47	631	12.5	25	106
AZR6z26	97.00	41.30	12.51	0.416	1.60E+06	1.10E+06	0.0621	0.0062	0.957	0.091	0.1097	0.0038	-0.0634	630	100.0	200	674	24.0	48	671	11.0	22	100
AZR6z27	94.50	39.30	41.30	0.420	2.00E+06	3.10E+06	0.1282	0.0080	6.800	0.400	0.3806	0.0120	0.4891	2099	27.5	55	2081	26.0	52	2078	28.5	57	100
AZR6z28	151.00	99.00	28.70	0.510	-1.50E+06	1.90E+06	0.0584	0.0048	0.844	0.058	0.1042	0.0036	-0.0880	490	90.0	180	623	15.5	31	639	10.5	21	103
AZR6z29	279.00	67.10	19.70	0.239	-6.00E+06	2.20E+06	0.0607	0.0039	0.859	0.051	0.1001	0.0029	0.1296	625	75.0	150	628	14.0	28	615	8.5	17	98
AZR6z30	481.00	84.00	23.20	0.174	-4.00E+06	3.20E+06	0.0622	0.0040	0.839	0.046	0.0986	0.0028	0.0812	674	70.0	140	621	13.5	27	606	8.5	17	98
AZR6z31	55.50	28.55	40.80	0.511	-1.50E+06	1.50E+06	0.2254	0.0140	17.200	0.960	0.5554	0.0170	0.5428	3029	20.5	41	2942	26.5	53	2847	35.5	71	97
AZR6z32	157.10	104.10	86.80	0.660	2.60E+06	3.30E+06	0.1282	0.0077	5.480	0.300	0.3054	0.0097	0.6052	2083	23.5	47	1898	24.5	49	1717	24.0	48	90
AZR6z33	140.60	55.50	64.90	0.385	2.00E+06	5.20E+06	0.1368	0.0082	7.960	0.400	0.4150	0.0130	0.3242	2189	23.0	46	2225	22.5	45	2237	28.5	57	101
AZR6z35	169.80	83.90	75.90	0.475	3.70E+06	1.60E+06	0.1376	0.0078	6.470	0.350	0.3373	0.0130	0.7722	2204	16.0	32	2039	24.0	48	1872	30.5	61	92
AZR6z36	603.00	378.00	98.00	0.598	1.70E+06	2.70E+06	0.0661	0.0041	0.839	0.045	0.0913	0.0030	0.2452	808	65.0	130	618	12.5	25	563	9.0	18	91
AZR6z37c	89.50	112.80	109.20	1.255	-2.20E+06	2.90E+06	0.1253	0.0080	6.420	0.360	0.3682	0.0110	0.4371	2042	30.0	60	2038	23.0	46	2020	26.5	53	99
AZR6z37r	334.00	255.70	237.30	0.762	-1.00E+07	1.10E+07	0.1251	0.0071	6.200	0.310	0.3597	0.0110	0.3264	2036	17.0	34	2003	22.0	44	1980	26.0	52	99
AZR6z38	548.00	90.20	27.30	0.175	2.70E+06	3.10E+06	0.0649	0.0043	0.911	0.058	0.1029	0.0032	0.3045	767	70.0	140	662	16.5	33	631	9.5	19	95
AZR6z39c	299.00	145.00	136.00	0.437	8.00E+06	6.40E+06	0.1619	0.0091	10.940	0.750	0.4800	0.0220	0.9386	2482	14.5	29	2507	32.5	65	2523	48.5	97	101
AZR6z39r	572.00	23.30	23.50	0.040	-2.20E+07	5.80E+07	0.1275	0.0071	6.512	0.310	0.3683	0.0100	0.5836	2074	13.5	27	2047	21.0	42	2021	24.5	49	99
AZR6z40	13.77	15.82	13.52	1.138	-1.20E+05	1.80E+05	0.1202	0.0120	5.070	0.530	0.3190	0.0150	0.4532	1900	80.0	160	1876	41.5	83	1784	37.5	75	95
AZR6z41	326.00	137.00	127.90	0.405	8.00E+06	8.00E+06	0.1228	0.0069	6.371	0.310	0.3699	0.0110	0.3960	2009	15.0	30	2028	21.5	43	2028	25.0	50	100
AZR6z42	373.00	307.00	325.00	0.250	-1.20E+07	1.60E+07	0.1423	0.0081	7.830	0.420	0.3979	0.0140	0.7998	2262	16.5	33	2208	24.0	48	2158	32.5	65	98
AZR6z43	109.20	169.00	51.10	1.513	1.30E+06	1.60E+06	0.0640	0.0055	0.905	0.074	0.1015	0.0037	0.1847	710	85.0	170	649	19.5	39	623	11.0	22	96
AZR6z44	240.40	275.50	68.30	1.148	-1.06E+06	9.10E+05	0.0574	0.0048	0.707	0.055	0.0883	0.0026	-0.1856	530	90.0	180	540	16.5	33	545	8.0	16	101
AZR6z45	190.30	113.30	105.30	0.592	2.80E+06	2.60E+06	0.1238	0.0071	6.120	0.300	0.3561	0.0100	0.0889	2024	18.0	36	1995	22.5	45	1963	23.5	47	98
AZR6z46	396.20	320.00	91.30	0.791	-5.00E+06	3.00E+06	0.0613	0.0042	0.872	0.053	0.1020	0.0031	-0.0614	624	75.0	150	635	14.5	29	626	9.0	18	99
AZR6z47	103.90	128.00	35.00	1.190	1.15E+06	5.10E+05	0.0584	0.0059	0.800	0.080	0.0994	0.0033	0.2782	470	110.0	220	589	22.5	45	611	9.5	19	104
AZR6z48	120.00	104.30	27.00	0.850	-3.00E+03	4.80E+05	0.0606	0.0049	0.786	0.064	0.0943	0.0031	0.2332	600	85.0	170	590	17.5	35	581	9.0	18	98
AZR6z49	249.40	107.20	44.00	0.430	-2.00E+06	1.40E+06	0.0685	0.0046	1.452	0.091	0.1517	0.0045	0.3659	922	65.0	130	916	19.0	38	910	12.5	25	99
AZR6z51r	104.40	76.70	22.16	0.730	-3.10E+05	4.20E+05	0.0602	0.0054	0.897	0.076	0.1058	0.0036	-0.0317	550	100.0	200	644	21.0	42	648	10.5	21	101
AZR6z52c	57.40	106.40	104.50	1.845	-2.00E+06	1.40E+06	0.1244	0.0086	6.570	0.410	0.3774	0.0120	0.2442	2010	38.5	77	2056	26.0	52	2063	29.0	58	100
AZR6z52r	53.90	58.70	55.30	1.076	8.00E+06	1.00E+06	0.1239	0.0082	6.250	0.380	0.3610	0.0110	0.1756	2033	37.0	74	2007	26.0	52	1986	27.0	54	99
AZR6z53	88.50	33.70	35.90	0.370	5.00E+06	2.40E+06	0.1368	0.0084	7.620	0.420	0.4071	0.0130	0.4722	2187	27.0	54	2183	25.0	50	2201	30.0	60	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR6z54	254.00	306.00	84.10	1.188	-2.00E+06	2.10E+06	0.0592	0.0043	0.793	0.054	0.0972	0.0030	0.3196	560	85.0	170	595	16.0	32	598	9.0	18	100
AZR6z55	209.50	198.30	128.60	0.939	-7.50E+06	3.90E+06	0.0926	0.0057	3.220	0.180	0.2472	0.0070	0.0617	1477	60.0	120	1467	20.0	40	1424	18.0	36	97
AZR6z56	238.00	244.00	70.60	1.015	-2.50E+05	8.50E+05	0.0649	0.0049	0.871	0.061	0.0983	0.0030	0.2797	750	75.0	150	633	17.0	34	604	9.0	18	95
AZR6z57	209.80	142.00	145.20	0.661	-3.50E+06	3.20E+06	0.1261	0.0072	6.880	0.350	0.3924	0.0110	0.1781	2051	17.5	35	2100	22.5	45	2134	25.5	51	102
AZR6z58	225.70	177.10	49.60	0.778	3.00E+06	1.20E+06	0.0626	0.0047	0.880	0.063	0.1024	0.0031	-0.0818	670	85.0	170	647	16.5	33	628	9.0	18	97
AZR6z59	280.60	170.20	46.00	0.604	1.90E+06	1.60E+06	0.0576	0.0041	0.802	0.053	0.0994	0.0030	0.1926	534	75.0	150	599	15.5	31	611	9.0	18	102
AZR6z60	280.70	52.50	16.10	0.191	-6.00E+06	4.00E+06	0.0596	0.0047	0.775	0.056	0.0932	0.0029	0.2119	570	80.0	160	580	16.0	32	574	8.5	17	99
AZR6z61	283.00	294.00	84.30	1.048	-4.50E+06	4.50E+06	0.0607	0.0041	0.863	0.055	0.1014	0.0029	0.3982	603	75.0	150	630	15.0	30	623	8.5	17	99
AZR6z63	1156.00	203.90	200.10	0.177	1.20E+07	1.60E+07	0.1246	0.0069	6.706	0.320	0.3863	0.0110	0.4558	2031	12.0	24	2073	21.0	42	2106	25.0	50	102
AZR6z64	278.00	313.00	99.00	1.126	1.30E+06	1.20E+06	0.0608	0.0042	0.935	0.059	0.1116	0.0033	0.0658	640	80.0	160	676	14.0	28	682	9.5	19	101
AZR6z66	676.00	379.00	115.80	0.554	3.30E+06	2.60E+06	0.0655	0.0040	0.939	0.050	0.1027	0.0029	0.2522	790	65.0	130	672	13.5	27	630	8.5	17	94
AZR6z67	170.50	87.40	26.02	0.506	8.60E+05	5.90E+05	0.0592	0.0051	0.842	0.068	0.1020	0.0033	0.0310	520	90.0	180	616	18.0	36	626	9.5	19	102
AZR6z68	154.00	195.00	57.80	1.253	-3.00E+06	1.60E+06	0.0601	0.0054	0.914	0.076	0.1075	0.0036	0.0478	620	100.0	200	654	20.5	41	658	10.5	21	101
AZR6z69	199.30	96.70	26.70	0.479	-2.00E+06	1.50E+06	0.0621	0.0044	0.866	0.055	0.0999	0.0032	0.0026	680	80.0	160	632	15.0	30	613	9.5	19	97
AZR6z70	195.00	128.00	117.80	0.656	1.40E+06	2.30E+06	0.1224	0.0072	6.210	0.320	0.3654	0.0110	0.3339	1995	21.0	42	2008	21.5	43	2007	25.5	51	100
AZR6z71	53.09	50.10	47.70	0.943	9.70E+05	6.60E+05	0.1253	0.0084	6.290	0.360	0.3587	0.0130	0.2809	2039	34.5	69	2019	25.0	50	1975	29.5	59	98
AZR6z72	44.80	21.30	6.50	0.466	9.00E+05	2.80E+05	0.0620	0.0082	0.930	0.120	0.1085	0.0043	0.2976	620	135.0	270	681	33.5	67	664	12.5	25	98
AZR6z73	267.20	132.40	156.40	0.494	4.30E+06	4.10E+06	0.1533	0.0086	9.710	0.480	0.4541	0.0130	0.4613	2395	14.0	28	2407	22.5	45	2413	29.5	59	100
AZR6z74	148.00	123.00	35.00	0.795	-9.00E+06	1.30E+06	0.0569	0.0051	0.849	0.074	0.1057	0.0032	0.0601	480	100.0	200	619	20.0	40	649	10.0	20	105
AZR6z75	356.00	191.80	201.70	0.532	8.80E+06	8.80E+06	0.1456	0.0082	8.520	0.420	0.4235	0.0120	0.2646	2308	13.5	27	2290	21.5	43	2276	28.0	56	99
AZR6z76	293.00	21.30	21.50	0.066	2.50E+06	6.30E+06	0.1256	0.0070	6.460	0.320	0.3716	0.0100	0.4275	2054	13.5	27	2042	20.5	41	2037	24.5	49	100
AZR6z77	346.00	388.00	109.20	1.104	-1.20E+07	1.50E+07	0.0586	0.0041	0.818	0.049	0.1018	0.0031	0.0975	540	75.0	150	610	14.5	29	625	9.0	18	102
AZR6z79	58.00	67.50	18.38	1.167	-3.40E+05	3.10E+05	0.0584	0.0065	0.799	0.085	0.0981	0.0033	0.2692	480	110.0	220	587	24.5	49	603	9.5	19	103
AZR6z80	532.00	24.60	20.60	0.043	-2.90E+07	2.30E+07	0.1162	0.0067	4.656	0.240	0.2895	0.0092	0.3761	1912	21.0	42	1762	22.5	45	1638	23.0	46	93
AZR6z81	38.40	41.50	12.74	1.067	1.20E+05	1.40E+05	0.0603	0.0096	0.850	0.130	0.1016	0.0046	0.1120	450	165.0	330	600	36.0	72	623	13.5	27	104
AZR6z82c	84.10	42.50	12.31	0.510	2.30E+05	4.10E+05	0.0603	0.0051	0.896	0.075	0.1055	0.0034	0.3279	580	100.0	200	644	20.5	41	646	10.0	20	100
AZR6z82r	129.40	58.70	17.26	0.446	1.30E+05	4.40E+05	0.0607	0.0046	0.889	0.059	0.1018	0.0034	0.0053	640	80.0	160	643	16.0	32	625	10.0	20	97
AZR6z83	231.00	75.80	72.90	0.330	5.00E+06	4.00E+06	0.1221	0.0069	6.380	0.320	0.3727	0.0110	0.3215	1994	16.5	33	2032	23.0	46	2042	25.5	51	100
AZR6z84	143.80	99.10	100.30	0.687	-1.00E+06	3.60E+06	0.1391	0.0082	7.960	0.420	0.4154	0.0120	0.3963	2222	20.5	41	2224	23.5	47	2239	28.0	56	101
AZR6z85	36.40	16.55	22.10	0.459	1.90E+05	6.60E+05	0.1830	0.0120	13.340	0.790	0.5239	0.0160	0.1527	2699	33.0	66	2699	27.5	55	2714	35.0	70	101
AZR6z86	100.40	96.20	33.10	0.945	5.30E+05	4.70E+05	0.0743	0.0060	1.393	0.110	0.1374	0.0050	0.0451	1000	90.0	180	886	22.0	44	829	14.0	28	94
AZR6z87	177.00	18.35	5.05	0.103	-2.20E+05	5.80E+05	0.0629	0.0044	0.858	0.062	0.0988	0.0032	0.4621	677	80.0	160	636	15.0	30	607	9.5	19	95
AZR6z88	75.40	108.10	29.10	1.414	-1.80E+05	2.10E+05	0.0587	0.0068	0.789	0.080	0.0973	0.0037	-0.1518	520	120.0	240	583	23.0	46	598	11.0	22	103
AZR6z89	55.90	55.60	54.90	0.983	-8.00E+05	6.60E+05	0.1253	0.0080	6.610	0.390	0.3803	0.0130	0.3168	2030	31.5	63	2061	25.5	51	2076	30.5	61	101
AZR6z90	56.60	47.30	13.15	0.843	3.40E+05	3.70E+05	0.0599	0.0063	0.833	0.084	0.1008	0.0035	0.0472	540	120.0	240	614	24.5	49	619	10.5	21	101
AZR6z91	67.10	94.90	80.20	1.416	1.00E+06	1.30E+06	0.1143	0.0075	5.110	0.300	0.3238	0.0110	0.3060	1864	34.0	68	1834	25.0	50	1819	26.0	52	99
AZR6z92	137.70	66.00	60.50	0.486	-2.50E+06	3.00E+06	0.1338	0.0077	6.940	0.370	0.3686	0.0110	0.4563	2155	19.0	38	2102	23.0	46	2027	27.5	55	96
AZR6z93	184.90	164.90	49.00	0.867	-2.20E+06	1.50E+06	0.0606	0.0049	0.844	0.062	0.1020	0.0038	0.2752	570	90.0	180	618	17.5	35	626	11.0	22	101
AZR6z94	173.30	68.00	19.50	0.394	1.37E+06	5.60E+05	0.0599	0.0046	0.834	0.058	0.0985	0.0029	-0.0521	620	90.0	180	613	16.0	32	606	8.5	17	99
AZR6z95	71.50	47.90	47.90	0.672	1.40E+06	7.90E+05	0.1340	0.0086	7.310	0.440	0.3909	0.0120	0.3507	2160	30.0	60	2151	26.0	52	2126	27.0	54	99
AZR6z96c	35.73	36.33	42.20	1.036	4.00E+06	1.00E+06	0.1705	0.0110	11.180	0.680	0.4720	0.0180	0.4087	2572	31.5	63	2532	27.5	55	2490	39.0	78	98
AZR6z96r	106.60	82.60	102.00	0.766	1.40E+06	2.20E+06	0.1669	0.0096	11.570	0.590	0.5021	0.0150	0.5662	2538	18.5	37	2573	22.0	44	2622	32.5	65	102
AZR6z97	319.00	280.00	81.60	0.880	9.70E+05	8.10E+05	0.0614	0.0043	0.875	0.053	0.1038	0.0033	-0.0253	630	80.0	160	637	14.5	29	636	9.5	19	100
AZR6z98	438.00	232.00	223.00	0.520	8.00E+06	8.10E+06	0.1273	0.0071	6.820	0.330	0.3809	0.0110	0.5673	2069	14.0	28	2087	21.5	43	2080	25.5	51	100
AZR6z99	116.00	76.90	25.75	0.664	1.01E+06	9.80E+05	0.0635	0.0053	1.019	0.078	0.1166	0.0036	-0.0618	750	85.0	170	726	20.0	40	711	10.5	21	98
AZR6z101c	302.00	419.00	114.00	1.318	-1.00E+05	8.80E+05	0.0597	0.0044	0.834	0.055	0.1001	0.0031	0.0245	580	75.0	150	614	15.0	30	615	9.0	18	100
AZR6z102	74.40	31.70	25.20	0.413	2.20E+05	9.40E+05	0.1018	0.0071	3.470	0.230	0.2405	0.0079	0.3094	1650	70.0	140	1513	26.0	52	1389	20.5	41	92
AZR6z103	240.80	280.80	78.20	1.169	3.70E+05	8.00E+05	0.0634	0.0047	0.882	0.057	0.1025	0.0031	0.1024	700	80.0	160	640	15.5	31	629	9.0	18	98
AZR6z104c	102.10	116.10	35.90	1.126	-1.50E+05	3.30E+05	0.0572	0.0049	0.824	0.067	0.1027	0.0037	0.0757	500	100.0	200	618	20.5	41	630	10.5	21	102
AZR6z104r	59.70	46.40	13.19	0.775	8.00E+05	1.70E+05	0.0651	0.0068	0.900	0.087	0.0981	0.0036	-0.2975	710	115.0	230	643	23.5	47	603	10.5	21	94
AZR6z105	210.20	382.60	357.00	1.787	3.00E+06	5.00E+06	0.1212	0.0070	6.140	0.320	0.3633	0.0100	0.3042	1980	20.0	40	1994	22.5	45	1997	24.5	49	100
AZR6z106	444.00	361.00	385.00	0.794	6.00E+07	1.60E+07	0.1588	0.0089	9.520	0.460	0.4309	0.0130	0.2787	2451	14.0	28	2389	22.5	45	2309	28.5	57	97
AZR6z107	190.50	211.80	69.70	1.107	-3.90E+06	4.10E+06	0.0630	0.0046	1.035	0.073	0.1164	0.0037	0.1698	690	80.0	160	723	17.5	35	710	10.5	21	98
AZR6z108	276.00	282.00	83.10	1.035	6.00E+06	8.20E+06	0.0590	0.0046	0.841	0.060	0.1020	0.0031	0.1908	560	85.0	170	616	16.5	33	626	9.0	18	102
AZR6z109	40.73	41.48	12.24	1.028	2.50E+05	2.70E+05	0.0623	0.0086	0.870	0.110	0.0987	0.0033	-0.1020	610	145.0	290	632	30.0	60	607	10.0	20	96
AZR6z110	847.00	380.00	120.30	0.444	1.90E+06	2.30E+06	0.0654	0.0040	0.981	0.055	0.1070	0.0030	0.3497	777	65.0	130	696	13.5	27	655	9.0	18	94
AZR6z111	22.25	26.86	22.08	1.217	-2.40E+05	4.60E+05	0.1097	0.0093	5.100	0.400	0.3350	0.0140	0.2852	1800	55.0	110	1830	35.5	71	1872	33.0	66	102
AZR6z112c	216.10	109.30	89.50	0.501	4.00E+06	2.20E+06	0.1177	0.0069	5.050	0.320	0.3070	0.0140	0.9143	1926	20.5	41	1829	26.5	53	1725	35.5	71	94
AZR6z113c	230.00	82.40	32.20	0.373	8.00E+05	8.70E+05	0.0751	0.0051	1.480	0.089	0.1412	0.0050	0.2841	1113	70.0	140	924	19.5	39	851	14.0	28	92
AZR6z113r	613.00	80.20	32.50	0.130	1.20E+06	1.90E+06	0.0664	0.0042	0.984	0.057	0.1064	0.0031	0.1443	819	60.0	120	698	13.5	27	652	9.0	18	93
AZR6z115c	106.30	84.20	23.37	0.786	2.00E+05	5.00E+05	0.0598	0.0051	0.853	0.070	0.1016	0.0037	0.5073	590	90.0	180	622	19.0	38	624	11.0	22	100
AZR6z115r	222.10	5.66	2.31	0.026	-4.20E+05	8.90E+05	0.0612	0.0046	0.831	0.056	0.0972	0.0029	-0.0751	650	75.0	150	612	15.5	31	598	8.5	17	98
AZR6z116	435.00	210.50	170.80	0.483	-2.20E+06	3.80E+06	0.1074	0.0061	4.708	0.230	0.3129	0.0088	0.3242	1769	16.0	32	1768	20.0	40	1755	21.5	43	99
AZR6z117	414.00	248.70	66.90	0.593	-7.00E+06	1.00E+06	0.0590	0.0039	0.818	0.049	0.0986	0.0028	0.0441	575	70.0	140	608	13.0	26	606	8.0	16	100
AZR6z118	187.40	141.70	125.00	0.755	-1.00E+04	1.50E+06	0.1148	0.0067	5.560	0.290	0.3454	0.0110	0.4569	1883	20.5	41	1908	22.5	45	1912	26.5	53	100
AZR6z119	60.40	54.00	19.20	0.883	1.00E+06	1.80E+05	0.0617	0.0072	1.006	0.110	0.1193	0.0051	0.0037	620	125.0	250	731	27.0	54	726	15.0	30	99
AZR6z120	137.50	82.00	21.83	0.591	-3.70E+05	3.50E+05	0.0575	0.0051	0.786	0.063	0.0977	0.0030	-0.0055	450	95.0	190	585	18.0	36	601	9.0	18	103

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR6z121	64.00	29.20	8.45	0.442	2.10E+05	2.00E+05	0.0579	0.0068	0.827	0.088	0.1004	0.0042	-0.1156	570	125.0	250	611	24.0	48	616	12.0	24	101
AZR6z122	415.00	340.00	98.10	0.812	-4.00E+06	1.00E+06	0.0608	0.0039	0.880	0.050	0.1023	0.0030	0.1926	658	75.0	150	640	13.5	27	628	8.5	17	98
AZR6z123	89.00	67.80	60.20	0.758	2.00E+06	1.40E+06	0.1231	0.0076	6.220	0.340	0.3567	0.0110	0.1209	2022	27.5	55	2008	25.0	50	1971	26.5	53	98
AZR6z125	141.70	137.60	38.20	0.958	3.30E+05	6.50E+05	0.0600	0.0045	0.842	0.062	0.0997	0.0032	0.2800	580	80.0	160	622	17.5	35	612	9.5	19	98
AZR6z126	634.00	292.00	272.40	0.455	1.15E+07	7.90E+06	0.1235	0.0069	6.010	0.300	0.3530	0.0100	0.6984	2016	14.0	28	1979	22.5	45	1948	24.5	49	98
AZR6z127	62.10	57.40	17.23	0.920	-2.00E+06	1.00E+06	0.0623	0.0064	0.912	0.099	0.1056	0.0041	0.1955	630	115.0	230	665	26.0	52	647	12.0	24	97
AZR6z128	755.00	414.90	315.60	0.546	1.21E+07	5.10E+06	0.1069	0.0060	4.217	0.210	0.2836	0.0082	0.7311	1760	13.5	27	1679	20.0	40	1609	20.5	41	96
AZR6z129	270.10	273.90	81.10	1.004	9.00E+06	1.80E+06	0.0626	0.0045	0.918	0.060	0.1046	0.0032	0.1409	679	75.0	150	659	15.5	31	641	9.5	19	97
AZR6z130	198.80	141.70	117.00	0.707	1.80E+06	1.90E+06	0.1056	0.0062	4.648	0.230	0.3156	0.0091	-0.0088	1731	22.0	44	1757	21.0	42	1768	22.0	44	101
AZR6z131	112.60	96.20	94.90	0.839	7.00E+06	1.30E+06	0.1353	0.0079	7.920	0.440	0.4212	0.0140	0.8127	2174	19.5	39	2224	26.0	52	2265	32.5	65	102
Discordant data																							
AZR6z12c	687.00	522.00	304.00	0.755	8.80E+06	8.70E+06	0.1141	0.0065	3.053	0.150	0.1933	0.0058	0.4488	1862	50.0	100	1420	19.0	38	1139	15.5	31	80
AZR6z34	55.80	74.90	22.51	1.319	4.80E+05	3.80E+05	0.0670	0.0081	0.900	0.100	0.0957	0.0031	-0.0191	820	130.0	260	659	27.5	55	589	9.5	19	89
AZR6z50	1288.00	301.00	248.50	0.235	5.59E+05	4.50E+04	0.1692	0.0098	1.424	0.097	0.0606	0.0025	0.8944	2552	46.0	92	901	21.5	43	379	7.5	15	42
AZR6z51c	311.00	451.00	134.60	1.441	6.00E+04	1.40E+06	0.0708	0.0053	1.032	0.078	0.1038	0.0031	0.3798	974	70.0	140	715	19.5	39	637	9.0	18	89
AZR6z62	39.20	35.97	9.34	0.917	1.20E+05	1.80E+05	0.0529	0.0097	0.650	0.110	0.0897	0.0036	-0.2344	180	165.0	330	497	33.0	66	557	11.0	22	112
AZR6z65	1387.00	191.20	68.90	0.136	4.90E+06	1.20E+06	0.0708	0.0041	0.781	0.041	0.0783	0.0023	0.2414	952	60.0	120	588	11.0	22	486	7.0	14	83
AZR6z78	42.60	28.40	9.08	0.675	7.00E+05	1.20E+05	0.0980	0.0160	1.220	0.210	0.0893	0.0039	0.4176	1540	145.0	290	812	49.0	98	551	11.5	23	68
AZR6z100	215.00	106.90	170.00	0.495	1.13E+06	3.00E+05	0.1850	0.0170	8.470	1.000	0.3240	0.0170	0.7663	2670	55.0	110	2242	48.5	97	1803	40.5	81	80
AZR6z101r	102.90	63.60	23.80	0.581	-1.40E+05	2.40E+05	0.0920	0.0160	1.300	0.240	0.0999	0.0036	0.6489	1280	170.0	340	802	49.5	99	614	10.5	21	77
AZR6z112r	344.00	80.60	74.10	0.235	4.90E+06	4.00E+06	0.1117	0.0067	3.430	0.210	0.2202	0.0078	0.7847	1828	50.0	100	1512	25.0	50	1283	20.5	41	85
AZR6z114	21.39	31.40	8.80	1.412	8.00E+04	9.60E+04	0.0830	0.0160	1.220	0.230	0.1015	0.0055	-0.0980	1150	200.0	400	782	50.0	100	623	16.0	32	80
AZR6z124	42.80	25.80	11.40	0.610	-3.00E+05	1.80E+05	0.0920	0.0140	1.320	0.180	0.1072	0.0047	0.6333	1280	155.0	310	830	39.5	79	656	13.5	27	79

Footnotes:

- Analysis references: AZR6z is zircon from sample AZR6 (mount CT17-8), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.11: Sample SF1 (LA-ICPMS)

IGSN: IEACC0006 Coordinate UTM: Zone 30S, 321855 m E, 3746816 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
SF1z1	45.40	26.99	300.00	0.568	-6.00E+05	4.30E+05	0.1410	0.0036	7.600	0.360	0.3854	0.0085	0.3889	2239.5	22.1	44.2	2184.9	21.2	42.5	2101.5	19.8	39.6	96
SF1z2	42.37	94.10	987.00	2.121	7.00E+03	3.10E+05	0.1271	0.0039	6.270	0.310	0.3535	0.0082	0.2313	2058.2	27.1	54.1	2014.3	21.6	43.3	1951.3	19.5	39.1	97
SF1z3	69.50	59.70	184.20	0.813	7.00E+05	1.70E+05	0.0642	0.0048	0.876	0.061	0.0994	0.0020	0.1522	748.2	79.0	158.0	638.8	16.5	33.0	610.9	5.9	11.7	96
SF1z4	46.90	59.40	188.50	1.209	-6.00E+05	1.30E+05	0.0643	0.0071	0.859	0.088	0.0982	0.0024	-0.0967	751.5	116.6	233.2	629.6	24.0	48.0	603.9	7.0	14.1	96
SF1z5	245.10	131.20	1306.00	0.510	-1.80E+06	2.60E+06	0.1290	0.0019	5.805	0.250	0.3233	0.0054	0.5134	2084.4	13.0	25.9	1947.2	18.6	37.3	1805.8	13.2	26.3	93
SF1z6	85.90	212.60	2122.00	2.370	-3.40E+05	6.60E+05	0.1240	0.0029	6.030	0.270	0.3500	0.0067	0.1413	2014.6	20.7	41.5	1980.2	19.5	39.0	1934.6	16.0	32.0	98
SF1z7	240.90	118.70	297.40	0.464	-1.57E+06	9.20E+05	0.0589	0.0036	0.658	0.035	0.0808	0.0015	0.0270	563.4	66.6	133.1	513.4	10.7	21.4	500.8	4.5	8.9	98
SF1z10	64.60	198.70	600.00	2.884	3.80E+05	4.70E+05	0.0611	0.0044	0.819	0.055	0.0958	0.0023	0.1390	642.8	77.4	154.8	607.5	15.3	30.7	589.7	6.8	13.5	97
SF1z11	75.50	174.30	1741.00	2.157	-5.70E+05	8.70E+05	0.1291	0.0031	6.400	0.290	0.3567	0.0063	0.1854	2085.8	21.1	42.2	2032.3	19.9	39.8	1966.5	15.0	29.9	97
SF1z12	27.50	86.90	886.00	2.979	5.90E+05	5.00E+05	0.1211	0.0046	6.020	0.310	0.3591	0.0085	0.1131	1972.5	33.8	67.7	1978.7	22.4	44.8	1977.9	20.2	40.3	100
SF1z13	133.50	47.42	704.00	0.332	-1.60E+06	2.00E+06	0.2505	0.0030	18.960	0.840	0.5476	0.0100	0.7823	3187.9	9.5	19.0	3039.8	21.3	42.7	2815.2	20.8	41.7	93
SF1z14c	289.90	367.00	1041.00	1.175	5.50E+06	3.50E+06	0.0598	0.0036	0.783	0.041	0.0950	0.0017	-0.0331	596.3	65.2	130.4	587.2	11.7	23.3	584.9	5.0	10.0	100
SF1z14r	213.00	809.00	2320.00	3.554	2.00E+05	9.50E+05	0.0615	0.0037	0.796	0.042	0.0948	0.0019	0.1352	656.8	64.5	129.0	594.6	11.9	23.7	583.9	5.6	11.2	98
SF1z15	135.40	192.80	585.00	1.332	-1.10E+05	7.40E+05	0.0615	0.0041	0.856	0.054	0.0999	0.0020	0.1613	656.8	71.5	143.0	627.9	14.8	29.5	613.8	5.9	11.7	98
SF1z16	51.80	60.00	525.00	1.058	-2.30E+05	4.50E+05	0.1092	0.0035	4.820	0.240	0.3167	0.0064	0.1480	1786.1	29.2	58.4	1788.4	20.9	41.8	1773.6	15.7	31.3	99
SF1z17	101.90	55.70	163.70	0.512	-1.50E+06	1.10E+06	0.0607	0.0043	0.816	0.052	0.0974	0.0025	-0.1450	628.6	76.3	152.6	605.8	14.5	29.0	599.2	7.3	14.7	99
SF1z18	35.60	51.50	158.00	1.353	-3.00E+05	1.30E+05	0.0631	0.0058	0.887	0.076	0.1026	0.0027	0.0988	711.6	97.7	195.4	644.8	20.4	40.9	629.6	7.9	15.8	98
SF1z19	92.10	36.20	351.00	0.365	-7.00E+06	1.70E+06	0.1331	0.0030	6.370	0.280	0.3501	0.0067	0.1958	2139.3	19.7	39.4	2028.1	19.3	38.5	1935.1	16.0	32.0	95
SF1z20	125.00	144.60	426.00	1.088	8.60E+05	8.10E+05	0.0641	0.0040	0.884	0.050	0.1002	0.0019	0.0678	744.9	66.0	131.9	643.1	13.5	26.9	615.6	5.6	11.1	96
SF1z21	42.00	54.80	455.00	1.179	9.00E+03	4.00E+05	0.1143	0.0038	4.960	0.260	0.3115	0.0066	0.2212	1868.9	30.0	60.0	1812.5	22.1	44.3	1748.1	16.2	32.4	96
SF1z22	327.80	90.20	243.70	0.258	-2.50E+06	2.10E+06	0.0612	0.0035	0.781	0.040	0.0930	0.0018	0.2669	646.3	61.4	122.9	586.1	11.4	22.8	573.3	5.3	10.6	98
SF1z23	306.30	224.20	680.00	0.681	4.00E+06	2.00E+06	0.0631	0.0037	0.870	0.044	0.1005	0.0020	0.0547	711.6	62.3	124.6	635.6	11.9	23.9	617.3	5.9	11.7	97
SF1z24	164.50	200.90	543.00	1.142	-7.60E+05	8.80E+05	0.0582	0.0040	0.689	0.046	0.0849	0.0016	0.2982	537.3	75.2	150.4	532.2	13.8	27.6	525.3	4.8	9.5	99
SF1z25	29.12	46.54	129.50	1.471	3.00E+05	2.00E+05	0.0624	0.0074	0.824	0.090	0.0974	0.0032	-0.0828	687.8	126.5	253.0	610.3	25.0	50.1	599.2	9.4	18.8	98
SF1z26	343.00	271.00	750.00	0.737	-2.10E+06	2.10E+06	0.0604	0.0033	0.789	0.038	0.0952	0.0017	0.1513	617.9	59.0	117.9	590.6	10.8	21.5	586.2	5.0	10.0	99
SF1z27	242.80	166.00	474.00	0.638	-6.00E+06	1.40E+06	0.0589	0.0035	0.788	0.042	0.0964	0.0019	0.1413	563.4	64.7	129.5	590.0	11.9	23.8	593.3	5.6	11.2	101
SF1z28	145.30	149.90	448.00	0.958	-1.29E+06	9.10E+05	0.0638	0.0039	0.866	0.048	0.0998	0.0020	0.2414	735.0	64.7	129.4	633.4	13.0	26.1	613.2	5.9	11.7	97
SF1z29	155.70	182.00	512.00	1.081	-8.00E+04	1.20E+06	0.0626	0.0042	0.812	0.049	0.0943	0.0017	0.0218	694.7	71.5	143.0	603.6	13.7	27.4	580.9	5.0	10.0	96
SF1z30	339.40	1055.00	2470.00	2.871	-1.00E+07	1.50E+06	0.0681	0.0038	0.814	0.041	0.0889	0.0019	0.3634	871.6	57.8	115.6	604.7	11.5	22.9	549.0	5.6	11.2	91
SF1z32	43.40	73.90	587.00	1.560	4.00E+06	1.30E+06	0.1084	0.0041	4.530	0.250	0.3003	0.0067	0.0905	1772.7	34.5	69.0	1736.5	22.9	45.9	1692.8	16.6	33.2	97
SF1z34	131.10	83.50	239.00	0.599	-2.00E+06	1.40E+06	0.0611	0.0041	0.861	0.050	0.1016	0.0020	-0.0706	642.8	72.1	144.3	630.7	13.6	27.3	623.8	5.9	11.7	99
SF1z35	24.70	31.19	270.50	1.170	8.80E+05	7.10E+05	0.1101	0.0049	4.960	0.300	0.3244	0.0091	0.4059	1801.1	40.5	81.0	1812.5	25.5	51.1	1811.2	22.1	44.3	100
SF1z36	185.10	178.00	2572.00	0.880	-1.78E+07	7.90E+06	0.2272	0.0027	17.150	0.710	0.5440	0.0091	0.5707	3032.4	9.5	19.1	2943.3	19.8	39.7	2800.2	19.0	38.0	95
SF1z37	261.60	403.00	1115.00	1.426	3.00E+06	1.80E+06	0.0618	0.0038	0.800	0.045	0.0948	0.0016	0.1384	667.2	65.8	131.6	596.8	12.7	25.4	584.1	4.7	9.4	98
SF1z38	424.00	50.00	333.00	0.102	3.00E+07	1.70E+07	0.1295	0.0015	6.300	0.280	0.3530	0.0084	0.8550	2091.2	10.2	20.4	2018.5	19.5	38.9	1948.9	20.0	40.0	97
SF1z39	196.00	289.00	2870.00	1.366	-3.00E+07	1.00E+07	0.1254	0.0021	6.480	0.280	0.3705	0.0063	0.2026	2034.5	14.8	29.6	2043.2	19.0	38.0	2031.8	14.8	29.6	99
SF1z41	51.60	30.50	344.00	0.548	1.80E+06	2.90E+06	0.1388	0.0030	7.190	0.330	0.3755	0.0074	0.3698	2212.3	18.7	37.5	2135.3	20.4	40.9	2055.2	17.3	34.7	96
SF1z42	65.60	49.90	175.00	0.712	8.00E+06	1.10E+06	0.0678	0.0055	1.181	0.090	0.1270	0.0029	0.1275	862.4	84.1	168.3	791.8	20.9	41.9	770.7	8.3	16.6	97
SF1z44	43.00	48.20	406.00	1.036	4.60E+06	4.90E+06	0.1121	0.0036	4.970	0.250	0.3251	0.0071	0.2502	1833.7	29.1	58.2	1814.2	21.2	42.5	1814.6	17.3	34.5	100
SF1z45	166.20	126.90	1275.00	0.719	5.40E+06	9.80E+06	0.1264	0.0018	6.470	0.290	0.3723	0.0066	0.7137	2048.5	12.6	25.2	2041.8	19.7	39.4	2040.2	15.5	31.0	100
SF1z46	64.70	81.30	234.50	1.167	-3.00E+04	1.30E+06	0.0615	0.0052	0.821	0.067	0.0965	0.0024	0.0858	656.8	90.7	181.3	608.6	18.7	37.3	593.9	7.1	14.1	98
SF1z47	244.50	56.40	509.00	0.208	-4.10E+07	2.10E+07	0.1263	0.0017	6.243	0.260	0.3544	0.0062	0.4777	2047.1	11.9	23.8	2010.5	18.2	36.4	1955.6	14.8	29.5	97
SF1z48	303.00	159.00	449.00	0.394	3.00E+07	3.50E+07	0.0614	0.0035	0.813	0.043	0.0957	0.0017	0.2239	653.3	61.2	122.3	604.1	12.0	24.1	589.2	5.0	10.0	98
SF1z49	73.30	104.30	951.00	1.335	-1.19E+07	9.70E+06	0.1172	0.0028	5.370	0.250	0.3384	0.0071	0.4014	1914.0	21.4	42.9	1880.1	19.9	39.8	1879.0	17.1	34.2	100
SF1z50	142.60	113.00	334.00	0.737	1.40E+06	8.10E+06	0.0662	0.0046	0.862	0.057	0.0944	0.0018	0.2259	812.7	72.6	145.3	631.2	15.5	31.1	581.5	5.3	10.6	92
SF1z51	82.40	47.90	459.00	0.540	3.50E+07	6.70E+07	0.1262	0.0034	6.460	0.300	0.3654	0.0064	0.1321	2045.7	23.8	47.6	2040.5	20.4	40.8	2007.7	15.1	30.2	98
SF1z52	80.70	61.30	186.20	0.715	2.00E+06	2.80E+06	0.0605	0.0050	0.731	0.056	0.0887	0.0021	0.2060	621.5	89.1	178.3	557.1	16.4	32.8	547.8	6.2	12.4	98
SF1z53	344.00	132.70	385.00	0.363	-1.30E+06	7.50E+06	0.0655	0.0038	0.963	0.052	0.1064	0.0021	0.1455	790.4	60.9	121.7	684.8	13.4	26.9	651.8	6.1	12.2	95
SF1z54	412.00	140.40	510.00	0.323	1.30E+08	1.10E+08	0.0657	0.0036	0.954	0.045	0.1058	0.0018	0.1159	796.8	57.4	114.9	680.2	11.7	23.4	648.3	5.2	10.5	95
SF1z55c	104.90	139.80	2023.00	1.272	6.00E+07	1.50E+07	0.2297	0.0031	18.250	0.780	0.5680	0.0100	0.5308	3050.0	10.8	21.6	3003.0	20.6	41.1	2899.6	20.6	41.1	97
SF1z57	158.20	59.00	165.10	0.351	-1.80E+06	2.20E+06	0.0595	0.0040	0.761	0.045	0.0939	0.0018	-0.1553	585.4	73.0	145.9	574.6	13.0	25.9	578.6	5.3	10.6	101
SF1z55r	15.24	17.64	203.20	1.114	3.20E+05	7.20E+05	0.1478	0.0069	9.070	0.550	0.4310	0.0130	0.2469	2320.6	40.0	80.0	2345.1	27.7	55.4	2310.2	29.3	58.6	99
SF1z58	363.00	250.00	725.00	0.658	7.50E+06	8.50E+06	0.0607	0.0032	0.869	0.042	0.1032	0.0019	0.1685	628.6	56.8	113.6	635.0	11.4	22.8	633.1	5.6	11.1	100
SF1z59	598.00	691.00	1925.00	1.097	4.00E+06	5.00E+06	0.0606	0.0031	0.799	0.036	0.0972	0.0016	0.1673	625.1	55.1	110.3	596.3	10.2	20.3	598.0	4.7	9.4	100
SF1z60	217.00	70.70	695.00	0.279	-3.50E+06	8.50E+06	0.1327	0.0017	7.209	0.300	0.3910	0.0072	0.5496	2134.0	11.2	22.4	2137.6	18.5	37.1	2127.5	16.7	33.4	100
SF1z61c	52.20	61.30	234.10	1.100	1.10E+05	7.40E+05	0.0628	0.0054	1.150	0.094	0.1343	0.0037	0.1884	701.5	91.5	183.1	777.2	22.2	44.4	812.3	10.5	21.0	105
SF1z62	364.50	410.20	1146.00	1.058	2.50E+06	2.90E+06	0.0594	0.0032	0.776	0.037	0.0950	0.0017	0.0782	581.8	58.5	117.0	583.2	10.6	21.1	584.9	5.0	10.0	100
SF1z63	66.50	89.20	255.00	1.284	5.30E+06	7.10E+06	0.0584	0.0051	0.802	0.065	0.1003	0.0023	0.0549	544.8	95.4	190.8	598.0	18.3	36.6	616.2	6.7	13.5	103
SF1z64	80.30	120.20	346.00	1.416	2.60E+05	5.80E+05	0.0591	0.0046	0.815	0.056	0.0989	0.0020	-0.1852	570.8	84.7	169.3	605.3	15.7	31.3	608.0	5.9	11.7	100
SF1z61r	325.30	108.70	397.00	0.318	4.30E+06	2.80E+06	0.0666	0.0037	1.129	0.056	0.1234	0.0022	0.3027	825.3	58.0	115.9	767.3	13.3	26.7	750.1	6.3	12.6	98
SF1z65c	71.40	81.50	929.00	1.080	1.00E+06	2.90E+06	0.1560	0.0032	9.220	0.410	0.4293	0.0078	0.3597	2412.8	17.4	34.8	2360.1	20.3	40.7	2302.6	17.6	35.2	98

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
SF1z66	71.70	76.30	613.00	0.995	-2.00E+06	1.60E+06	0.1087	0.0038	4.380	0.230	0.2902	0.0059	0.1767	1777.7	31.9	63.8	1708.6	21.7	43.4	1642.5	14.7	29.5	96
SF1z67	201.10	159.00	422.00	0.739	5.00E+04	1.10E+06	0.0604	0.0038	0.782	0.047	0.0945	0.0018	0.2128	617.9	67.9	135.8	586.6	13.4	26.8	582.1	5.3	10.6	99
SF1z65r	193.00	139.00	1206.00	0.670	-4.40E+07	4.00E+07	0.1132	0.0020	5.173	0.220	0.3313	0.0058	0.4197	1851.4	16.0	31.9	1848.2	18.1	36.2	1844.7	14.0	28.1	100
SF1z68	55.30	56.40	227.80	0.985	-3.00E+05	5.20E+05	0.0645	0.0053	1.220	0.094	0.1381	0.0030	0.1983	758.1	86.7	173.3	809.8	21.5	43.0	833.9	8.5	17.0	103
SF1z69	63.50	75.40	216.00	1.129	2.90E+05	4.40E+05	0.0637	0.0053	0.893	0.075	0.1024	0.0024	0.2795	731.7	88.1	176.3	648.0	20.1	40.2	628.5	7.0	14.0	97
SF1z70	236.00	30.10	93.20	0.115	-9.00E+06	1.40E+06	0.0631	0.0037	0.885	0.047	0.1020	0.0017	0.1336	711.6	62.3	124.6	643.7	12.6	25.3	626.3	5.0	9.9	97
SF1z71	124.80	91.10	277.00	0.698	8.60E+06	4.60E+06	0.0628	0.0043	0.868	0.056	0.1021	0.0023	0.4489	701.5	72.9	145.8	634.5	15.2	30.4	626.7	6.7	13.5	99
SF1z72	203.80	244.10	717.00	1.151	-2.00E+06	1.30E+06	0.0606	0.0037	0.825	0.045	0.0978	0.0018	0.2524	625.1	65.8	131.6	610.8	12.5	25.0	601.5	5.3	10.6	98
SF1z73c	118.20	177.90	559.00	1.460	2.40E+05	4.70E+05	0.0622	0.0042	0.882	0.054	0.1034	0.0021	0.1089	681.0	72.1	144.2	642.1	14.6	29.1	634.3	6.1	12.3	99
SF1z73r	141.20	119.90	363.00	0.812	1.80E+05	5.50E+05	0.0627	0.0038	0.907	0.050	0.1049	0.0022	0.1993	698.1	64.6	129.1	655.5	13.3	26.6	643.1	6.4	12.8	98
SF1z74	113.60	57.70	595.00	0.476	1.00E+06	1.20E+06	0.1238	0.0029	6.660	0.310	0.3834	0.0068	0.2779	2011.7	20.8	41.6	2067.3	20.5	41.1	2092.1	15.8	31.7	101
SF1z75	150.70	137.00	406.00	0.898	-5.00E+05	4.90E+05	0.0603	0.0040	0.823	0.051	0.0983	0.0018	0.0003	614.4	71.6	143.3	609.7	14.2	28.4	604.4	5.3	10.6	99
SF1z76c	73.90	106.00	997.00	1.412	5.00E+05	8.70E+05	0.1183	0.0034	4.540	0.230	0.2768	0.0058	0.4064	1930.7	25.7	51.5	1738.3	21.1	42.1	1575.2	14.6	29.3	91
SF1z77	71.30	81.30	244.80	1.114	1.10E+05	3.30E+05	0.0624	0.0048	0.843	0.061	0.1002	0.0023	0.1139	687.8	82.1	164.1	620.8	16.8	33.6	615.6	6.7	13.5	99
SF1z78c	26.92	24.54	257.40	0.892	7.20E+05	5.60E+05	0.1368	0.0047	7.310	0.400	0.3856	0.0100	0.4690	2187.1	29.9	59.8	2150.0	24.4	48.8	2102.4	23.3	46.5	98
SF1z76r	649.00	14.10	44.40	0.018	-8.00E+06	3.80E+06	0.0641	0.0032	1.109	0.048	0.1255	0.0020	0.4386	746.3	52.7	105.4	757.7	11.5	23.1	762.1	5.7	11.5	101
SF1z78r	36.80	28.55	292.00	0.730	-2.50E+06	2.10E+06	0.1251	0.0057	6.030	0.500	0.3490	0.0150	0.8447	2030.2	40.3	80.7	1980.2	36.1	72.2	1929.8	35.8	71.7	97
SF1z79	76.80	157.10	394.00	2.002	-3.90E+05	5.30E+05	0.0641	0.0050	0.782	0.059	0.0881	0.0019	0.0052	744.9	82.4	164.9	586.6	16.8	33.6	544.3	5.6	11.3	93
SF1z80	150.30	64.90	719.00	0.426	4.20E+06	2.50E+06	0.1337	0.0026	7.490	0.330	0.4006	0.0070	0.2705	2147.1	17.0	34.0	2171.8	19.7	39.4	2171.8	16.1	32.2	100
SF1z81	120.40	153.40	437.00	1.241	5.20E+05	5.20E+05	0.0623	0.0043	0.857	0.052	0.0984	0.0022	0.0316	684.4	73.7	147.4	628.5	14.2	28.4	605.0	6.5	12.9	96
SF1z82	56.20	99.20	896.00	1.730	-8.20E+05	9.70E+05	0.1262	0.0034	5.880	0.300	0.3339	0.0083	0.6107	2045.7	23.8	47.6	1958.3	22.1	44.2	1857.3	20.1	40.1	95
SF1z83	84.70	85.30	255.30	0.996	1.00E+04	2.30E+05	0.0608	0.0047	0.834	0.055	0.1006	0.0023	-0.1394	632.2	83.2	166.5	615.8	15.2	30.4	617.9	6.7	13.5	100
SF1z84	13.59	5.40	19.60	0.395	3.40E+04	3.80E+04	0.0753	0.0097	1.270	0.170	0.1255	0.0051	0.1357	1076.5	129.3	258.6	832.4	38.0	76.0	762.1	14.6	29.2	92
SF1z85	124.50	122.50	362.00	0.966	1.00E+05	3.50E+05	0.0605	0.0040	0.869	0.053	0.1020	0.0022	0.1820	621.5	71.3	142.6	635.0	14.4	28.8	626.1	6.4	12.9	99
SF1z88	39.40	43.00	130.00	1.008	2.90E+05	2.70E+05	0.0622	0.0067	0.887	0.090	0.1050	0.0034	0.0464	681.0	115.0	230.1	644.8	24.2	48.4	643.6	9.9	19.8	100
SF1z89	174.20	230.40	698.00	1.326	-2.20E+05	4.30E+05	0.0628	0.0038	0.886	0.048	0.1036	0.0020	0.2286	701.5	64.4	128.8	644.2	12.9	25.8	635.5	5.8	11.7	99
SF1z90	69.10	53.20	158.40	0.746	1.90E+05	1.80E+05	0.0617	0.0047	0.904	0.064	0.1075	0.0023	0.0398	663.7	81.6	163.2	653.9	17.1	34.1	658.2	6.7	13.4	101
SF1z91	59.07	73.70	215.50	1.248	-4.00E+05	1.80E+05	0.0671	0.0057	0.906	0.074	0.0989	0.0027	0.2121	840.9	88.4	176.8	654.9	19.7	39.4	608.0	7.9	15.8	93
SF1z92	65.40	199.00	535.00	2.879	5.80E+05	3.20E+05	0.0542	0.0053	0.702	0.064	0.0949	0.0026	0.0225	379.4	109.9	219.9	540.0	19.1	38.1	584.5	7.7	15.3	108
SF1z93	77.40	89.50	331.60	1.156	-1.07E+07	4.40E+06	0.0668	0.0048	1.167	0.075	0.1264	0.0028	-0.0713	831.5	74.9	149.8	785.2	17.6	35.1	767.3	8.0	16.0	98
SF1z94	528.00	234.20	2501.00	0.442	-7.80E+06	3.80E+06	0.1239	0.0015	6.419	0.270	0.3724	0.0060	0.4594	2013.1	10.7	21.5	2034.9	18.5	36.9	2040.7	14.1	28.2	100
SF1z95	95.40	165.50	1609.00	1.722	-2.00E+05	7.00E+05	0.1235	0.0029	6.230	0.290	0.3663	0.0067	0.3027	2007.4	20.8	41.7	2008.7	20.3	40.7	2012.0	15.8	31.6	100
SF1z96	416.00	130.20	405.00	0.284	6.60E+06	5.90E+06	0.0620	0.0034	0.929	0.045	0.1092	0.0019	0.1934	674.1	58.6	117.3	667.1	11.8	23.7	668.1	5.5	11.0	100
SF1z97	157.20	162.70	518.00	1.035	3.30E+05	3.10E+05	0.0638	0.0038	0.952	0.053	0.1081	0.0021	0.2891	735.0	63.1	126.1	679.1	13.8	27.5	661.7	6.1	12.2	97
SF1z98	363.00	129.80	1268.00	0.350	-1.40E+06	4.00E+06	0.1266	0.0017	6.189	0.260	0.3520	0.0063	0.5351	2051.3	11.9	23.7	2002.9	18.3	36.7	1944.1	15.0	30.0	97
SF1z99	206.80	260.70	2703.00	1.267	1.40E+06	1.30E+06	0.1299	0.0021	7.010	0.300	0.3858	0.0065	0.2933	2096.6	14.2	28.4	2112.7	19.0	38.0	2103.3	15.1	30.2	100
SF1z100	39.50	86.70	857.00	2.206	2.00E+05	3.00E+05	0.1212	0.0040	6.080	0.330	0.3574	0.0078	0.3862	1974.0	29.4	58.8	1987.4	23.6	47.3	1969.8	18.5	37.0	99
SF1z101	149.70	114.20	330.00	0.763	1.10E+05	4.10E+05	0.0657	0.0043	0.915	0.051	0.1011	0.0020	-0.0381	796.8	68.6	137.2	659.7	13.5	27.0	620.9	5.9	11.7	94
SF1z102	45.80	20.30	138.00	0.443	-2.30E+05	2.10E+05	0.0834	0.0054	2.890	0.190	0.2473	0.0057	0.3218	1278.6	63.1	126.2	1379.3	24.8	49.6	1424.5	14.7	29.5	103
SF1z103	111.60	146.80	381.00	1.348	9.00E+05	1.50E+05	0.0592	0.0048	0.721	0.055	0.0881	0.0018	-0.0565	574.5	88.2	176.3	551.3	16.2	32.4	544.3	5.3	10.7	99
SF1z104	159.40	161.90	1806.00	1.019	-5.40E+06	3.30E+06	0.1510	0.0021	8.860	0.370	0.4221	0.0070	0.5978	2357.3	11.9	23.8	2323.7	19.0	38.1	2270.0	15.9	31.7	98
SF1z105	168.70	140.00	407.00	0.840	2.10E+05	4.10E+05	0.0596	0.0038	0.800	0.047	0.0973	0.0017	-0.0079	589.1	69.1	138.3	596.8	13.2	26.5	598.6	5.0	10.0	100
SF1z106	70.90	86.40	750.00	1.238	1.00E+05	3.10E+05	0.1070	0.0028	4.610	0.220	0.3117	0.0059	0.2427	1748.9	24.0	47.9	1751.1	19.9	39.8	1749.1	14.5	29.0	100
SF1z107	226.70	198.30	1005.00	0.887	-7.40E+05	7.90E+05	0.0738	0.0039	1.840	0.086	0.1795	0.0031	0.1255	1036.0	53.4	106.7	1059.9	15.4	30.7	1064.2	8.5	16.9	100
SF1z108	221.60	24.65	357.00	0.112	2.30E+06	3.10E+06	0.1990	0.0023	15.410	0.650	0.5564	0.0094	0.6796	2818.0	9.4	18.9	2840.9	20.1	40.2	2851.7	19.5	38.9	100
SF1z109	25.79	24.17	71.30	0.945	1.10E+04	6.80E+04	0.0563	0.0071	0.794	0.100	0.1022	0.0042	0.1281	464.2	139.7	279.4	593.4	28.3	56.5	627.3	12.3	24.6	106
SF1z110	135.70	42.20	168.00	0.307	-1.20E+05	4.40E+05	0.0654	0.0039	1.169	0.061	0.1307	0.0024	0.2358	787.2	62.6	125.2	786.2	14.3	28.5	791.9	6.8	13.7	101
SF1z111	37.30	42.90	388.00	1.170	4.00E+05	1.60E+05	0.1101	0.0044	4.960	0.270	0.3256	0.0075	0.1620	1801.1	36.3	72.7	1812.5	23.0	46.0	1817.0	18.2	36.5	100
SF1z112	91.30	69.20	718.00	0.753	-9.00E+06	1.50E+06	0.1347	0.0027	7.270	0.340	0.3913	0.0076	0.5736	2160.1	17.5	35.0	2145.1	20.9	41.7	2128.9	17.6	35.2	99
SF1z113	243.00	149.00	1578.00	0.632	-3.30E+06	3.60E+06	0.1378	0.0019	7.990	0.340	0.4174	0.0068	0.3174	2199.7	12.0	23.9	2229.9	19.2	38.4	2248.7	15.5	30.9	101
SF1z114	103.90	18.77	337.00	0.181	-2.80E+06	2.20E+06	0.2453	0.0033	22.890	1.100	0.6720	0.0160	0.8444	3154.7	10.7	21.3	3222.3	23.4	46.7	3313.6	30.8	61.7	103
SF1z115	98.90	53.80	531.00	0.553	5.20E+05	5.70E+05	0.1270	0.0024	6.540	0.290	0.3743	0.0069	0.4387	2056.9	16.7	33.4	2051.3	19.5	39.0	2049.6	16.2	32.4	100
SF1z116	375.00	370.00	3690.00	0.998	6.30E+06	5.40E+06	0.1243	0.0015	6.424	0.270	0.3736	0.0062	0.5177	2018.8	10.7	21.4	2035.6	18.4	36.9	2046.3	14.5	29.1	101
SF1z117	29.86	40.02	346.50	1.344	3.60E+05	1.40E+05	0.1109	0.0045	4.680	0.270	0.3070	0.0073	0.2979	1814.2	36.8	73.7	1763.7	24.1	48.2	1725.9	18.0	36.0	98
SF1z118	62.00	66.50	199.00	1.091	3.00E+05	1.40E+05	0.0604	0.0054	0.846	0.075	0.1011	0.0022	0.1534	617.9	96.5	193.0	622.5	20.6	41.2	620.9	6.4	12.9	100
SF1z119	182.90	260.80	4157.00	1.460	1.60E+06	1.40E+06	0.2407	0.0029	21.060	0.870	0.6324	0.0110	0.3718	3124.6	9.6	19.2	3141.4	20.0	40.0	3159.1	21.7	43.4	101
SF1z120	60.80	59.40	171.80	0.989	3.00E+05	1.00E+05	0.0642	0.0057	0.860	0.075	0.0985	0.0026	0.2675	748.2	93.8	187.6	630.1	20.5	40.9	605.6	7.6	15.3	96
SF1z121	312.30	356.90	1071.00	1.157	1.13E+06	8.50E+05	0.0611	0.0036	0.867	0.047	0.1034	0.0018	0.1973	642.8	63.3	126.7	633.9	12.8	25.5	634.3	5.3	10.5	100
SF1z122	285.00	212.80	584.00	0.756	-7.10E+05	6.40E+05	0.0587	0.0035	0.768	0.041	0.0945	0.0017	0.0836	556.0	65.0	130.1	578.6	11.8	23.5	582.1	5.0	10.0	101
SF1z123	87.90	138.00	1400.00	1.149	-1.10E+06	1.10E+06	0.1300	0.0034	6.780	0.320	0.3795	0.0086	0.4232	2098.0	23.0	45.9	2083.1	20.9	41.7	2073.9	20.1	40.2	100
SF1z124	46.80	71.90	689.00	1.555	-6.00E+05	6.20E+05	0.1237	0.0040	6.230	0.310	0.3646	0.0076	0.1234	2010.3	28.7	57.4	2008.7	21.7	43.5	2003.9	18.0	35.9	100
SF1z125	123.00	88.00	258.00	0.719	2.10E+05	1.80E+05	0.0623	0.0039	0.918	0.053	0.1081	0.0022	0.2311	684.4	66.8	133.6	661.3	14.0	28.0	661.7	6.4	12.8	100
SF1z126	82.40	93.20	229.70	1.134	1.30E+05	2.50E+05	0.0559	0.0054	0.653	0.060	0.0863	0.0019	-0.0229	448.4	107.3	214.6	510.3	18.4	36.8	533.6	5.6	11.3	105
SF1z128	207.80	119.10	1162.00	0.571	-1.40E+06	1.80E+06	0.1220	0.0019	6.320	0.270	0.3730	0.0069	0.6253	1985.7	13.9	27.7	2021.2	18.7	37.4	2043.5	16.2	32.4	101
SF1z129	67.60	61.10	603.00	0.912	-2.30E+05	4.50E+05	0.1252	0.0035	6.500	0.320	0.3763	0.0075	0.3873	2031.6	24.7	49.5	2045.9	21.6	43.3	2059.0	17.6	35.1	101
SF1z130	52.60	18.51	197.00	0.358	4.60E+05	4.20E+05	0.1318	0.0039	7.020	0.350	0.3852	0.0082	0.2714	2122.1	25.9	51.8	2114.0	22.1	44.3	2100.5	19.1	38.2	99
SF1z131	55.40	105.60	306.00	1.938	-2.20E+04	9.00E+04	0.0633	0.0054	0.873	0.073	0.1004	0.0023	0.2776	718.3	90.6	181.1	637.2	19.8	39.5	616.8	6.7	13.5	97
SF1z132	155.70	251.80	852.00	1.631	4.30E+05	3.70E+05	0.0682	0.0044	1.099	0.066	0.1169	0.0023	0.2369	874.6	66.8	133.6	752.9	15.9	31.9	712.7	6.6	13.3	95
SF1z133	309.00	224.50	1911.00	0.743	-1.90E+07	1.20E+07	0.1529	0.0022	7.940	0.410	0.3750	0.0120	0.9219	2378.6	12.3	24.5	2224.2	23.3	46.5	2052.9	28.1	56.3	92

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
SF1z134	151.10	126.90	380.00	0.856	-2.00E+05	2.30E+05	0.0625	0.0042	0.899	0.054	0.1045	0.0022	0.1790	691.3	71.7	143.3	651.2	14.4	28.8	640.7	6.4	12.8	98
SF1z135	147.90	200.30	540.00	1.366	-1.57E+06	7.50E+05	0.0598	0.0038	0.791	0.046	0.0947	0.0019	0.0997	596.3	68.8	137.7	591.7	13.0	26.1	583.3	5.6	11.2	99
SF1z136	67.30	103.70	294.20	1.570	-1.70E+04	9.00E+04	0.0606	0.0050	0.812	0.065	0.0971	0.0027	0.0928	625.1	88.9	177.9	603.6	18.2	36.4	597.4	7.9	15.9	99
SF1z137	112.90	123.50	1125.00	1.119	2.00E+05	7.50E+05	0.1325	0.0025	6.560	0.290	0.3556	0.0062	0.3364	2131.4	16.5	33.0	2054.0	19.5	38.9	1961.3	14.7	29.5	95
SF1z138	60.60	60.10	179.20	0.988	-1.40E+05	1.50E+05	0.0612	0.0042	0.890	0.060	0.1078	0.0026	0.2940	646.3	73.7	147.4	646.4	16.1	32.2	660.0	7.6	15.1	102
SF1z140	87.40	64.20	628.00	0.742	8.00E+05	8.70E+05	0.1297	0.0029	6.990	0.320	0.3899	0.0076	0.2726	2093.9	19.6	39.3	2110.2	20.3	40.6	2122.4	17.6	35.2	101
SF1z141	55.84	120.90	332.00	2.211	8.40E+04	6.20E+04	0.0584	0.0052	0.783	0.067	0.0963	0.0025	0.1531	544.8	97.3	194.6	587.2	19.1	38.1	592.7	7.4	14.7	101
SF1z142	57.70	67.70	196.00	1.153	8.90E+04	8.60E+04	0.0643	0.0055	0.922	0.076	0.1040	0.0027	0.1772	751.5	90.3	180.6	663.4	20.1	40.1	637.8	7.9	15.8	96
SF1z143	299.50	117.00	1100.00	0.169	-1.40E+06	1.40E+06	0.1253	0.0019	6.350	0.270	0.3648	0.0063	0.4132	2033.0	13.4	26.8	2025.4	18.6	37.3	2004.9	14.9	29.8	99
Discordant data																							
SF1z8	503.00	282.00	2280.00	0.528	1.60E+06	5.20E+06	0.1362	0.0016	5.590	0.340	0.2960	0.0140	0.9721	2179	10.2	20.4	1915	26.2	52.3	1671	34.8	69.6	87
SF1z9	657.00	1002.00	6750.00	1.422	3.10E+06	3.90E+06	0.1314	0.0064	4.700	0.270	0.2580	0.0110	0.9648	2117	42.7	85.4	1767	24.0	48.1	1480	28.2	56.4	84
SF1z31	816.00	45.80	316.10	0.052	-8.00E+07	2.30E+07	0.1181	0.0057	4.161	0.170	0.2568	0.0045	0.6406	1928	43.2	86.5	1666	16.7	33.4	1473	11.5	23.1	88
SF1z33	67.50	71.80	244.00	0.985	2.10E+07	1.40E+07	0.0768	0.0064	1.096	0.094	0.1033	0.0027	0.5499	1116	83.2	166.3	751	22.7	45.5	634	7.9	15.8	84
SF1z40	669.00	409.00	4210.00	0.558	4.00E+07	3.80E+07	0.1370	0.0015	6.010	0.270	0.3148	0.0078	0.9129	2190	9.5	19.0	1977	19.5	39.1	1764	19.1	38.2	89
SF1z43	31.26	44.70	136.90	1.332	-6.00E+06	1.00E+06	0.0518	0.0072	0.708	0.096	0.0986	0.0033	0.1286	277	159.2	318.3	544	28.5	57.0	606	9.7	19.4	112
SF1z56	278.10	84.00	334.00	0.272	2.20E+06	7.90E+06	0.0913	0.0065	2.140	0.260	0.1640	0.0130	0.9686	1453	67.7	135.5	1162	42.0	84.0	979	36.0	72.0	84
SF1z86	735.00	586.00	2800.00	0.810	-2.62E+06	9.60E+05	0.1053	0.0060	1.762	0.100	0.1198	0.0028	0.8442	1720	52.4	104.7	1032	18.4	36.7	729	8.1	16.1	71
SF1z87	259.00	331.00	1228.00	1.211	-1.50E+06	2.40E+06	0.1268	0.0064	3.640	0.220	0.2063	0.0094	0.9217	2054	44.6	89.1	1558	24.1	48.1	1209	25.1	50.2	78
SF1z127	461.00	349.20	2482.00	0.765	1.10E+06	1.30E+06	0.1240	0.0016	4.746	0.200	0.2751	0.0047	0.4907	2015	11.4	22.9	1775	17.7	35.3	1567	11.9	23.8	88
SF1z139	2230.00	2050.00	2760.00	0.882	-3.52E+05	2.80E+04	0.1287	0.0066	0.816	0.035	0.0470	0.0012	0.4887	2080	45.1	90.3	606	9.8	19.6	296	3.7	7.4	49

Footnotes:

- Analysis references: SF1z is zircon from sample SF1 (mount CT18-03), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.12a: Sample SF2 (LA-ICPMS)

IGSN: IEACC0007 Coordinate UTM: Zone 30S, 321334 m E, 3747211 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																						
SF2z1	88.40	49.46	14.05	0.560	4.60E+03	4.00E+03	0.0611	0.0031	0.796	0.037	0.0946	0.0013	0.0561	643	54.5	109.0	595	10.5	21.0	583	4.0	8.0	98
SF2z3	277.80	193.40	59.90	0.700	1.60E+04	2.20E+04	0.0613	0.0022	0.891	0.027	0.1062	0.0010	0.1097	650	38.5	77.0	647	7.0	14.0	651	3.0	6.0	101
SF2z4	388.50	375.10	121.40	0.970	-9.00E+04	3.10E+04	0.0664	0.0023	0.967	0.029	0.1064	0.0010	0.2668	819	36.0	72.0	687	7.5	15.0	652	3.0	6.0	95
SF2z6	87.70	67.30	18.82	0.770	-7.10E+03	8.30E+03	0.0630	0.0032	0.838	0.041	0.0980	0.0012	0.1708	708	54.0	108.0	618	11.5	23.0	603	3.5	7.0	98
SF2z7	348.90	310.90	321.70	0.890	-6.00E+05	1.10E+05	0.1271	0.0010	6.674	0.160	0.3845	0.0033	0.4799	2059	7.0	14.0	2069	10.5	21.0	2097	7.5	15.0	101
SF2z8	574.80	531.90	155.90	0.930	-5.00E+04	4.20E+04	0.0604	0.0020	0.848	0.023	0.1027	0.0009	0.2220	619	35.5	71.0	624	6.5	13.0	630	2.5	5.0	101
SF2z9	54.30	33.91	28.82	0.620	-2.30E+04	1.20E+04	0.1025	0.0025	3.950	0.130	0.2828	0.0030	0.3432	1670	22.5	45.0	1624	13.5	27.0	1605	7.5	15.0	99
SF2z10	278.20	166.20	170.60	0.600	4.90E+05	1.60E+05	0.1303	0.0011	6.854	0.160	0.3854	0.0032	0.3691	2102	7.5	15.0	2093	10.5	21.0	2101	7.5	15.0	100
SF2z11	391.70	626.00	192.60	1.600	3.80E+05	3.30E+05	0.0646	0.0021	0.922	0.027	0.1037	0.0010	0.3516	761	34.5	69.0	663	7.0	14.0	636	3.0	6.0	96
SF2z12	199.00	51.72	53.18	0.260	-2.30E+05	1.80E+05	0.1277	0.0013	6.762	0.160	0.3882	0.0033	0.3634	2067	9.0	18.0	2081	10.5	21.0	2114	7.5	15.0	102
SF2z13	130.50	137.40	39.90	1.050	-2.00E+04	1.30E+04	0.0587	0.0027	0.822	0.034	0.1017	0.0011	0.0231	556	50.0	100.0	609	9.5	19.0	624	3.0	6.0	103
SF2z14	248.80	95.10	25.38	0.380	-1.20E+04	1.90E+04	0.0567	0.0022	0.718	0.025	0.0933	0.0010	0.2104	480	43.0	86.0	549	7.5	15.0	575	3.0	6.0	105
SF2z15	96.70	57.71	66.20	0.600	-2.90E+04	3.60E+04	0.1543	0.0020	9.410	0.290	0.4477	0.0072	0.7827	2394	11.0	22.0	2379	14.0	28.0	2385	16.0	32.0	100
SF2z16	25.22	20.28	24.49	0.800	-1.14E+04	9.10E+03	0.1573	0.0035	9.780	0.310	0.4568	0.0058	0.2854	2427	19.0	38.0	2414	14.5	29.0	2425	13.0	26.0	100
SF2z17	60.80	52.20	52.70	0.860	-3.00E+04	2.10E+04	0.1300	0.0023	6.790	0.190	0.3822	0.0039	0.1274	2098	15.5	31.0	2084	12.5	25.0	2087	9.0	18.0	100
SF2z18	320.50	39.70	34.87	0.120	-6.50E+04	9.60E+04	0.1292	0.0010	6.984	0.170	0.3993	0.0047	0.7361	2087	7.0	14.0	2109	11.0	22.0	2166	11.0	22.0	103
SF2z19	283.00	239.00	296.00	0.840	-1.44E+05	9.60E+04	0.1945	0.0014	13.290	0.310	0.5000	0.0045	0.6187	2781	6.0	12.0	2700	11.0	22.0	2614	9.5	19.0	97
SF2z20	130.60	85.53	101.50	0.650	-5.00E+04	4.50E+04	0.1475	0.0018	8.150	0.230	0.4017	0.0050	0.7022	2317	10.5	21.0	2248	13.0	26.0	2177	11.5	23.0	97
SF2z21	77.30	51.70	15.33	0.670	-8.30E+03	6.80E+03	0.0616	0.0031	0.870	0.040	0.1023	0.0014	0.0080	660	54.0	108.0	636	11.0	22.0	628	4.0	8.0	99
SF2z22	376.40	164.20	52.60	0.440	-5.90E+04	4.10E+04	0.0605	0.0021	0.928	0.027	0.1114	0.0010	0.1765	622	37.5	75.0	667	7.0	14.0	681	3.0	6.0	102
SF2z23	161.50	288.20	91.50	1.780	-3.90E+04	2.00E+04	0.0612	0.0025	0.956	0.036	0.1136	0.0013	0.1155	646	44.0	88.0	681	9.5	19.0	694	4.0	8.0	102
SF2z25	159.20	143.30	153.70	0.900	-1.24E+05	6.20E+04	0.1304	0.0013	7.165	0.170	0.4023	0.0034	0.3262	2103	9.0	18.0	2132	10.5	21.0	2180	8.0	16.0	102
SF2z26	117.00	46.38	44.32	0.400	-3.00E+04	3.10E+04	0.1189	0.0017	5.872	0.150	0.3618	0.0033	0.1391	1940	13.0	26.0	1957	11.0	22.0	1991	8.0	16.0	102
SF2z27	62.48	75.29	70.17	1.210	-2.20E+04	1.80E+04	0.1175	0.0021	5.626	0.160	0.3501	0.0037	0.1799	1919	16.0	32.0	1920	12.0	24.0	1935	9.0	18.0	101
SF2z28	222.80	192.70	65.90	0.860	-5.90E+04	2.80E+04	0.0640	0.0023	1.007	0.032	0.1153	0.0012	0.1767	742	38.0	76.0	707	8.0	16.0	703	3.5	7.0	99
SF2z29	87.50	65.13	18.78	0.740	-1.26E+04	9.00E+03	0.0635	0.0032	0.914	0.048	0.1063	0.0018	0.6068	725	53.5	107.0	659	12.5	25.0	651	5.0	10.0	99
SF2z30	97.15	116.68	34.08	1.200	-2.90E+04	1.10E+04	0.0579	0.0029	0.799	0.035	0.1012	0.0012	-0.0242	526	55.0	110.0	596	10.0	20.0	621	3.5	7.0	104
SF2z32	72.21	50.43	14.86	0.700	2.90E+03	4.50E+03	0.0601	0.0031	0.810	0.039	0.0990	0.0013	-0.0143	607	56.0	112.0	602	11.0	22.0	609	4.0	8.0	101
SF2z33	132.20	140.90	40.10	1.070	1.10E+04	1.00E+04	0.0616	0.0028	0.856	0.035	0.1020	0.0013	0.1079	660	48.5	97.0	628	9.5	19.0	626	4.0	8.0	100
SF2z34	226.30	137.10	138.00	0.610	-1.37E+05	5.70E+04	0.1299	0.0014	6.282	0.150	0.3540	0.0030	0.3909	2097	9.5	19.0	2016	10.5	21.0	1954	7.0	14.0	97
SF2z35	153.40	87.30	68.40	0.570	1.00E+04	3.00E+04	0.1014	0.0015	4.080	0.110	0.2965	0.0025	0.0923	1650	13.5	27.0	1650	11.0	22.0	1674	6.0	12.0	101
SF2z36	446.40	176.40	132.50	0.400	-1.90E+05	1.10E+05	0.0945	0.0009	3.558	0.087	0.2745	0.0027	0.5699	1519	9.0	18.0	1540	9.5	19.0	1564	7.0	14.0	102
SF2z39	20.92	4.34	5.35	0.210	-1.36E+04	9.30E+03	0.1554	0.0038	10.610	0.350	0.5039	0.0067	0.3156	2406	21.0	42.0	2490	15.5	31.0	2631	14.5	29.0	106
SF2z40	74.80	56.10	15.80	0.750	-3.50E+03	4.50E+03	0.0603	0.0036	0.632	0.037	0.0783	0.0023	0.3592	614	64.5	129.0	497	11.5	23.0	486	7.0	14.0	98
SF2z41	199.10	196.90	172.20	0.990	1.10E+04	3.90E+04	0.1100	0.0012	4.926	0.120	0.3272	0.0029	0.3421	1799	10.0	20.0	1807	10.5	21.0	1825	7.0	14.0	101
SF2z42	106.60	61.80	18.33	0.580	-1.49E+05	8.00E+04	0.0650	0.0029	0.879	0.035	0.0986	0.0013	0.0267	774	47.0	94.0	640	9.5	19.0	606	4.0	8.0	95
SF2z43	96.80	93.40	28.03	0.960	1.50E+03	7.30E+03	0.0597	0.0027	0.834	0.033	0.1026	0.0013	0.0577	593	49.0	98.0	616	9.0	18.0	630	4.0	8.0	102
SF2z44	197.00	62.45	57.38	0.320	1.03E+06	3.90E+05	0.1222	0.0013	5.892	0.140	0.3548	0.0031	0.3139	1989	9.5	19.0	1960	10.5	21.0	1957	7.5	15.0	100
SF2z46	55.23	32.34	7.99	0.590	3.80E+03	4.40E+03	0.0584	0.0034	0.663	0.037	0.0838	0.0013	0.1058	545	63.5	127.0	516	11.5	23.0	519	4.0	8.0	100
SF2z47	107.70	75.90	20.31	0.700	-2.70E+03	7.70E+03	0.0573	0.0026	0.712	0.028	0.0909	0.0011	0.0236	503	50.0	100.0	546	8.5	17.0	561	3.5	7.0	103
SF2z48	332.00	187.30	54.10	0.560	-9.00E+04	2.80E+04	0.0611	0.0021	0.864	0.025	0.1031	0.0009	0.1333	643	37.0	74.0	632	7.0	14.0	633	2.5	5.0	100
SF2z49	189.50	126.00	34.60	0.660	-1.20E+04	1.70E+04	0.0597	0.0023	0.822	0.029	0.1002	0.0009	0.2257	593	42.0	84.0	609	8.0	16.0	615	3.0	6.0	101
SF2z50	53.11	15.44	4.10	0.290	-1.16E+04	6.30E+03	0.0598	0.0035	0.752	0.042	0.0915	0.0015	-0.0348	596	63.5	127.0	569	12.0	24.0	564	4.5	9.0	99
SF2z51	137.30	315.00	145.50	2.290	-9.00E+04	1.70E+04	0.0771	0.0028	1.626	0.054	0.1555	0.0022	0.4798	1124	36.0	72.0	980	10.5	21.0	932	6.0	12.0	95
SF2z53	393.70	175.30	54.76	0.450	-8.30E+04	4.20E+04	0.0618	0.0020	0.925	0.025	0.1094	0.0010	0.0047	667	34.5	69.0	665	6.5	13.0	669	3.0	6.0	101
SF2z54	111.20	140.00	43.20	1.260	-1.01E+04	9.60E+03	0.0581	0.0025	0.819	0.032	0.1035	0.0013	0.0393	534	47.0	94.0	607	9.0	18.0	635	4.0	8.0	105
SF2z55	102.80	69.10	69.20	0.670	-2.20E+04	3.20E+04	0.1249	0.0015	6.496	0.160	0.3801	0.0033	0.2158	2027	10.5	21.0	2045	11.0	22.0	2077	7.5	15.0	102
SF2z56	87.67	46.40	12.14	0.530	2.40E+03	7.60E+03	0.0585	0.0030	0.748	0.036	0.0927	0.0010	-0.1116	549	56.0	112.0	567	10.5	21.0	571	3.0	6.0	101
SF2z57	190.60	113.40	51.45	0.590	-4.00E+04	2.70E+04	0.0739	0.0026	1.576	0.054	0.1573	0.0029	0.5611	1039	35.5	71.0	961	10.5	21.0	942	8.0	16.0	98
SF2z59	265.10	277.90	296.20	1.050	7.00E+04	8.60E+04	0.1269	0.0010	6.923	0.160	0.3975	0.0033	0.5111	2055	7.0	14.0	2102	10.0	20.0	2158	7.5	15.0	103
SF2z60	121.30	74.20	21.67	0.610	-1.39E+04	9.60E+03	0.0604	0.0027	0.838	0.033	0.1012	0.0011	0.1291	618	48.0	96.0	618	9.0	18.0	621	3.0	6.0	101
SF2z61	373.00	505.00	141.50	1.350	-3.40E+04	2.80E+04	0.0664	0.0022	0.900	0.025	0.0990	0.0011	0.1962	819	34.5	69.0	652	6.5	13.0	609	3.0	6.0	93
SF2z62	36.00	26.30	8.23	0.730	1.20E+04	4.50E+04	0.0609	0.0041	0.862	0.056	0.1009	0.0016	0.0354	636	72.5	145.0	631	15.5	31.0	620	4.5	9.0	98
SF2z64	654.00	248.20	192.20	0.380	7.40E+04	8.80E+04	0.0946	0.0009	3.557	0.089	0.2743	0.0033	0.7177	1520	8.5	17.0	1540	10.0	20.0	1563	8.5	17.0	101
SF2z65	683.00	299.30	88.90	0.440	-8.00E+04	5.90E+04	0.0628	0.0020	0.849	0.023	0.0987	0.0010	0.1904	701	34.0	68.0	624	6.5	13.0	607	3.0	6.0	97
SF2z67	282.30	227.80	69.30	0.810	-4.30E+04	2.70E+04	0.0604	0.0022	0.867	0.026	0.1058	0.0011	0.0541	618	39.5	79.0	634	7.0	14.0	648	3.0	6.0	102
SF2z69	254.00	161.60	46.20	0.640	-2.70E+04	1.90E+04	0.0604	0.0023	0.794	0.026	0.0966	0.0010	0.0735	618	41.0	82.0	593	7.5	15.0	595	3.0	6.0	100
SF2z72	323.10	512.60	131.40	1.590	-7.00E+04	1.70E+04	0.0605	0.0024	0.703	0.025	0.0851	0.0010	0.0381	622	43.0	86.0	541	7.5	15.0	527	3.0	6.0	97
SF2z74	39.99	55.23	17.66	1.380	1.70E+03	2.60E+03	0.0650	0.0046	0.994	0.067	0.1132	0.0021	0.1247	774	74.5	149.0	701	17.0	34.0	691	6.0	12.0	99
SF2z75	313.30	423.00	118.20	1.350	-2.60E+04	1.80E+04	0.0588	0.0023	0.789	0.027	0.0977	0.0011	0.0379	560	42.5	85.0	591	7.5	15.0	601	3.0	6.0	102
SF2z76	499.00	215.50	191.30	0.430	-8.00E+05	1.00E+05	0.1267	0.0011	6.031	0.160	0.3453	0.0056	0.8590	2053	7.5	15.0	1980	11.5	23.0	1912	13.5	27.0	97
SF2z78	52.56	43.90	11.25	0.840	-6.00E+02	2.50E+03	0.0566	0.0043	0.756	0.051	0.0927	0.0017	-0.0029	476	84.0	168.0	572	14.5	29.0	571	5.0	10.0	100
SF2z79	244.00	369.80	327.30	1.520	-8.00E+04	4.30E+04	0.1107	0.0015	4.792	0.120	0.3178	0.0029	0.2104	1811	12.5	25.0	1783	10.5	21.0	1779	7.0	14.0	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
SF2z80	433.00	127.30	31.80	0.290	-2.40E+04	2.30E+04	0.0596	0.0022	0.787	0.025	0.0963	0.0009	0.0942	589	40.0	80.0	589	7.0	14.0	593	2.5	5.0	101
Discordant data																							
SF2z2	581.00	125.30	113.40	0.220	1.89E+06	8.30E+05	0.1454	0.0011	6.620	0.180	0.3301	0.0053	0.8658	2293	6.5	13.0	2062	12.0	12.0	1839	13.0	13.0	89
SF2z5	687.20	481.00	244.80	0.700	1.85E+06	8.90E+05	0.1463	0.0048	4.091	0.130	0.2073	0.0039	0.6859	2303	28.0	56.0	1653	13.0	13.0	1214	10.5	10.5	73
SF2z24	213.70	186.80	119.20	0.870	-4.80E+04	3.40E+04	0.1088	0.0035	3.382	0.090	0.2244	0.0021	0.2475	1779	29.5	59.0	1500	10.5	10.5	1305	5.5	5.5	87
SF2z31	86.20	38.23	189.00	0.440	1.03E+04	5.50E+03	0.2870	0.0350	13.200	2.900	0.2730	0.0260	0.9970	3401	95.0	190.0	2694	103.5	103.5	1556	66.0	66.0	58
SF2z37	315.90	1419.00	441.00	4.490	5.80E+04	1.40E+04	0.1189	0.0062	1.919	0.110	0.1155	0.0013	0.7305	1940	46.5	93.0	1088	19.0	19.0	705	4.0	4.0	65
SF2z38	740.00	364.40	106.00	0.490	1.90E+04	9.30E+04	0.0615	0.0023	0.815	0.028	0.0992	0.0015	0.2980	657	40.0	80.0	605	8.0	8.0	610	4.5	4.5	101
SF2z45	1936.00	661.00	238.60	0.340	3.20E+05	1.10E+05	0.1312	0.0041	1.778	0.046	0.0997	0.0014	0.5589	2114	27.5	55.0	1037	8.5	8.5	613	4.0	4.0	59
SF2z52	236.30	137.70	99.90	0.580	-9.60E+04	6.80E+04	0.1264	0.0014	4.918	0.120	0.2836	0.0030	0.6155	2048	10.0	20.0	1805	10.5	10.5	1609	7.5	7.5	89
SF2z58	151.10	38.17	41.02	0.250	-2.90E+04	3.70E+04	0.1264	0.0018	4.618	0.120	0.2696	0.0026	0.2540	2048	12.5	25.0	1753	11.0	11.0	1539	6.5	6.5	88
SF2z63	81.80	68.90	52.70	0.840	-1.90E+04	1.80E+04	0.1424	0.0025	5.383	0.150	0.2786	0.0034	0.2850	2257	15.0	30.0	1882	12.0	12.0	1584	8.5	8.5	84
SF2z66	385.00	219.00	78.20	0.570	-1.50E+05	8.90E+04	0.1808	0.0016	7.470	0.350	0.3010	0.0120	0.9664	2660	7.5	15.0	2169	21.0	21.0	1696	29.5	29.5	78
SF2z68	1405.00	527.00	152.00	0.380	9.00E+05	1.10E+05	0.0794	0.0028	0.822	0.026	0.0761	0.0017	0.4514	1182	35.0	70.0	609	7.0	7.0	473	5.0	5.0	78
SF2z70	949.00	1284.00	297.00	1.350	-9.96E+04	9.70E+04	0.0687	0.0026	0.751	0.025	0.0805	0.0016	0.4055	890	39.0	78.0	569	7.0	7.0	499	5.0	5.0	88
SF2z71	1765.00	812.00	158.40	0.460	-8.00E+05	1.40E+05	0.0684	0.0026	0.646	0.026	0.0702	0.0019	0.6542	881	39.5	79.0	506	8.0	8.0	437	5.5	5.5	86
SF2z73	1191.00	1427.00	898.00	1.200	2.40E+05	2.50E+05	0.1273	0.0013	4.970	0.170	0.2856	0.0076	0.8874	2061	9.0	18.0	1814	14.5	14.5	1620	19.0	19.0	89
SF2z77	1310.00	465.50	229.90	0.360	1.35E+05	9.10E+04	0.0857	0.0028	2.007	0.062	0.1732	0.0025	0.5952	1331	31.5	63.0	1118	10.5	10.5	1030	7.0	7.0	92

Footnotes:

- Analysis references: SF2z is zircon from sample SF2 (mounts CT18-11 and CT19-1), followed by grain number.

Table D.12b: Sample SF2 (SIMS)

IGSN: IEACC0007 Coordinate UTM: Zone 30S, 321334 m E, 3747211 m N

ANALYSIS	^{238}U (ppm)	^{206}Pb (ppm)	Th/U	^{204}Pb (ppb)	$^{207}Pb/^{206}Pb$	σ	$^{207}Pb/^{235}U$	σ	$^{206}Pb/^{238}U$	σ	Rho	Ages (Ma) $^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	Concordance (%)
Concordant data																					
SF2z81	156.00	13.80	0.70	0.000	0.0604	0.0016	0.850	0.020	0.1000	0.0010	0.4020	616	57.0	114.0	622	14.0	28.0	625	7.0	14.0	100
SF2z82	469.00	134.50	0.60	12.000	0.1136	0.0010	5.190	0.070	0.3300	0.0030	0.7501	1857	15.0	30.0	1849	12.0	24.0	1845	16.0	32.0	100
SF2z83	218.00	17.60	0.85	7.100	0.0558	0.0022	0.720	0.040	0.0900	0.0010	0.2446	445	89.0	178.0	548	22.0	44.0	574	7.0	14.0	105
SF2z84	175.00	28.50	0.21	5.400	0.0749	0.0023	1.950	0.070	0.1900	0.0020	0.3063	1066	61.0	122.0	1098	23.0	46.0	1115	11.0	22.0	102
SF2z85	485.00	38.20	0.74	7.700	0.0604	0.0010	0.760	0.020	0.0900	0.0010	0.4282	617	37.0	74.0	572	11.0	22.0	561	5.0	10.0	98
SF2z86	191.00	16.60	2.34	6.000	0.0600	0.0019	0.830	0.040	0.1000	0.0010	0.2601	602	70.0	140.0	614	20.0	40.0	618	6.0	12.0	101
SF2z87	97.00	8.20	0.86	17.700	0.0604	0.0033	0.820	0.090	0.1000	0.0010	0.1118	617	119.0	238.0	605	51.0	102.0	602	7.0	14.0	100
SF2z88	419.00	36.20	0.46	4.900	0.0577	0.0012	0.790	0.020	0.1000	0.0010	0.4174	519	48.0	96.0	593	12.0	24.0	613	6.0	12.0	103
SF2z89	157.00	12.70	0.32	5.500	0.0555	0.0017	0.710	0.030	0.0900	0.0010	0.2574	433	67.0	134.0	546	20.0	40.0	574	7.0	14.0	105
SF2z90c	242.00	16.20	0.65	11.500	0.0648	0.0014	0.690	0.030	0.0800	0.0010	0.3094	766	47.0	94.0	532	19.0	38.0	480	6.0	12.0	90
SF2z90r	948.00	77.30	0.04	17.500	0.0613	0.0009	0.800	0.020	0.0900	0.0010	0.4759	649	32.0	64.0	594	10.0	20.0	581	5.0	10.0	98
SF2z91	581.00	167.90	0.16	2.800	0.1197	0.0008	5.510	0.070	0.3300	0.0030	0.8228	1952	12.0	24.0	1901	11.0	22.0	1857	16.0	32.0	98
SF2z92	177.00	61.70	0.35	4.600	0.1327	0.0010	7.370	0.100	0.4000	0.0040	0.7918	2134	13.0	26.0	2156	13.0	26.0	2182	19.0	38.0	101
SF2z93	286.00	24.90	0.85	3.900	0.0591	0.0016	0.820	0.030	0.1000	0.0010	0.3669	569	60.0	120.0	609	15.0	30.0	620	7.0	14.0	102
SF2z94	422.00	38.90	0.11	3.900	0.0615	0.0009	0.900	0.020	0.1100	0.0010	0.5311	656	32.0	64.0	653	10.0	20.0	652	7.0	14.0	100
SF2z96	205.00	19.90	0.41	7.600	0.0601	0.0016	0.930	0.040	0.1100	0.0010	0.2862	606	59.0	118.0	665	19.0	38.0	683	7.0	14.0	103
SF2z98	90.00	31.90	0.61	2.400	0.1400	0.0027	7.940	0.180	0.4100	0.0050	0.4932	2226	33.0	66.0	2223	21.0	42.0	2222	21.0	42.0	100
SF2z99	191.00	56.30	0.83	5.400	0.1115	0.0018	5.240	0.100	0.3400	0.0040	0.5787	1823	29.0	58.0	1857	18.0	36.0	1889	19.0	38.0	102
SF2z100	298.00	104.90	0.17	2.900	0.1471	0.0021	8.250	0.150	0.4100	0.0040	0.5953	2312	25.0	50.0	2257	18.0	36.0	2200	20.0	40.0	97
SF2z101	100.00	16.60	1.03	1.100	0.0727	0.0037	1.920	0.100	0.1900	0.0020	0.2129	1004	103.0	206.0	1086	35.0	70.0	1128	12.0	24.0	104
SF2z102	415.00	47.60	0.32	8.500	0.0644	0.0008	1.180	0.020	0.1300	0.0010	0.5113	753	28.0	56.0	790	11.0	22.0	803	8.0	16.0	102
SF2z104	297.00	26.70	0.72	7.900	0.0569	0.0011	0.820	0.030	0.1000	0.0010	0.3520	488	44.0	88.0	605	14.0	28.0	637	7.0	14.0	105
SF2z105	160.00	12.60	0.63	3.500	0.0603	0.0033	0.750	0.050	0.0900	0.0010	0.1776	614	120.0	240.0	570	27.0	54.0	560	6.0	12.0	98
SF2z106	245.00	19.40	0.59	0.000	0.0571	0.0014	0.720	0.020	0.0900	0.0010	0.4280	497	54.0	108.0	552	12.0	24.0	566	6.0	12.0	102
SF2z107	209.00	71.00	0.45	4.100	0.1311	0.0012	7.100	0.100	0.3900	0.0040	0.7109	2113	17.0	34.0	2123	14.0	28.0	2135	18.0	36.0	101
SF2z108	416.00	141.30	0.43	1.100	0.1330	0.0011	7.190	0.090	0.3900	0.0040	0.7573	2137	15.0	30.0	2133	13.0	26.0	2132	18.0	36.0	100
SF2z109	137.00	11.50	1.07	4.300	0.0567	0.0033	0.760	0.050	0.1000	0.0010	0.2201	478	128.0	256.0	572	30.0	60.0	596	9.0	18.0	104
SF2z110	481.00	136.50	0.13	30.800	0.1229	0.0010	5.550	0.070	0.3300	0.0030	0.7571	1998	14.0	28.0	1908	13.0	26.0	1828	16.0	32.0	96
SF2z111	123.00	17.30	0.74	5.700	0.0699	0.0025	1.560	0.070	0.1600	0.0020	0.3096	924	74.0	148.0	956	27.0	54.0	970	12.0	24.0	102
SF2z112	1458.00	92.70	1.32	75.100	0.0621	0.0012	0.630	0.020	0.0700	0.0010	0.3331	676	43.0	86.0	495	12.0	24.0	457	4.0	8.0	92
SF2z113	357.00	30.30	0.69	3.400	0.0593	0.0012	0.800	0.020	0.1000	0.0010	0.4069	577	45.0	90.0	597	12.0	24.0	603	6.0	12.0	101
SF2z114	409.00	46.20	0.50	2.200	0.0647	0.0012	1.160	0.020	0.1300	0.0010	0.4772	763	38.0	76.0	783	12.0	24.0	791	8.0	16.0	101
SF2z115	124.00	38.80	0.85	6.300	0.1208	0.0019	6.040	0.130	0.3600	0.0050	0.6028	1967	29.0	58.0	1980	20.0	40.0	1994	22.0	44.0	101
SF2z116	417.00	37.20	0.46	5.100	0.0619	0.0013	0.880	0.020	0.1000	0.0010	0.4248	670	46.0	92.0	641	13.0	26.0	633	7.0	14.0	99
SF2z117	140.00	12.20	0.54	1.600	0.0633	0.0031	0.880	0.050	0.1000	0.0010	0.1926	719	105.0	210.0	639	25.0	50.0	617	6.0	12.0	97
SF2z118	72.00	5.70	1.62	2.900	0.0552	0.0029	0.700	0.050	0.0900	0.0020	0.2267	420	119.0	238.0	537	32.0	64.0	566	9.0	18.0	105
SF2z119	134.00	43.50	0.55	3.500	0.1287	0.0018	6.620	0.120	0.3700	0.0040	0.6083	2079	25.0	50.0	2061	17.0	34.0	2045	19.0	38.0	99
SF2z120	13.00	1.20	0.30	2.300	0.0683	0.0109	0.990	0.240	0.1100	0.0040	0.1533	877	332.0	664.0	699	115.0	230.0	645	22.0	44.0	92
SF2z121	262.00	94.80	0.86	0.500	0.1397	0.0015	8.030	0.120	0.4200	0.0040	0.6801	2223	19.0	38.0	2233	15.0	30.0	2248	19.0	38.0	101
SF2z122	152.00	13.90	1.08	1.700	0.0661	0.0022	0.960	0.040	0.1100	0.0020	0.4262	808	71.0	142.0	683	20.0	40.0	646	10.0	20.0	95
SF2z123	823.00	72.60	0.75	10.600	0.0615	0.0009	0.860	0.020	0.1000	0.0010	0.5171	656	31.0	62.0	632	10.0	20.0	626	6.0	12.0	99
SF2z125	299.00	24.70	1.01	3.000	0.0565	0.0015	0.740	0.020	0.1000	0.0010	0.3339	470	58.0	116.0	564	13.0	26.0	587	6.0	12.0	104
SF2z126	74.00	6.60	0.86	2.300	0.0586	0.0017	0.840	0.040	0.1000	0.0010	0.2641	554	62.0	124.0	617	22.0	44.0	635	8.0	16.0	103
SF2z127	249.00	21.80	0.67	10.200	0.0634	0.0014	0.880	0.030	0.1000	0.0010	0.2901	721	48.0	96.0	641	17.0	34.0	620	6.0	12.0	97
SF2z129	222.00	17.50	0.32	3.600	0.0609	0.0017	0.760	0.030	0.0900	0.0010	0.3426	635	60.0	120.0	575	16.0	32.0	561	6.0	12.0	97
SF2z130	164.00	14.50	0.56	2.900	0.0614	0.0021	0.870	0.040	0.1000	0.0010	0.3400	655	72.0	144.0	635	19.0	38.0	630	8.0	16.0	99
SF2z131	181.00	16.00	0.58	6.500	0.0610	0.0016	0.860	0.040	0.1000	0.0010	0.3140	639	58.0	116.0	630	19.0	38.0	628	8.0	16.0	100
Discordant data																					
SF2z95	557.00	120.30	0.38	40.400	0.1290	0.0004	4.440	0.070	0.2500	0.0030	0.9211	2084	5.0	10.0	1719	13.0	26.0	1437	17.0	34.0	84
SF2z97	1789.00	76.70	0.89	78.600	0.0603	0.0008	0.410	0.010	0.0500	0.0010	0.3484	615	28.0	56.0	350	9.0	18.0	311	3.0	6.0	89
SF2z103	39.00	1.90	0.25	6.000	0.0380	0.0038	0.300	0.120	0.0600	0.0010	0.0516	#N/A	262.0	524.0	263	89.0	178.0	354	7.0	14.0	135
SF2z124	603.00	179.00	0.27	75.000	0.1835	0.0018	8.680	0.130	0.3400	0.0040	0.7385	2684	16.0	32.0	2303	15.0	30.0	1902	18.0	36.0	83
SF2z128	803.00	91.80	0.83	30.300	0.1323	0.0010	2.410	0.030	0.1300	0.0010	0.7630	2128	13.0	26.0	1244	11.0	22.0	799	8.0	16.0	64

Footnotes:

- Analysis references: SF2z is zircon from sample SF2 (mounts CT18-11 and CT19-1), followed by grain number "c" or "r", meaning core or rim, respectively.
- Pb* indicates radiogenic Pb, corrected for common Pb.

Chapter II, Section II.2

Table D.13a: Sample SF3 (LA-ICPMS)

IGSN: IEACC0008 Coordinate UTM: Zone 30S, 320976 m E, 3747518 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
SF3z1	162.60	199.10	646.00	1.266	3.20E+05	2.30E+05	0.0629	0.0028	0.925	0.039	0.1057	0.0014	-0.2017	704.9	47.4	94.7	665.0	10.3	20.6	647.7	4.1	8.2	97
SF3z2	254.00	614.00	4030.00	2.268	-2.30E+05	5.90E+05	0.0848	0.0019	2.625	0.067	0.2231	0.0032	0.3939	1311.0	21.7	43.5	1307.7	9.4	18.8	1298.2	8.4	16.9	99
SF3z5	116.60	255.00	720.00	2.179	8.00E+05	1.30E+05	0.0595	0.0034	0.755	0.041	0.0929	0.0019	0.0148	585.4	62.0	124.0	571.1	11.9	23.7	572.7	5.6	11.2	100
SF3z6	269.90	28.90	114.00	0.086	2.60E+05	3.50E+05	0.0640	0.0021	0.993	0.032	0.1121	0.0014	0.2036	741.6	34.7	69.4	700.2	8.1	16.3	684.9	4.1	8.1	98
SF3z7	344.50	154.70	1583.00	0.452	-1.30E+06	1.50E+06	0.1352	0.0016	6.770	0.100	0.3639	0.0042	0.6682	2166.6	10.3	20.6	2081.8	6.5	13.1	2000.6	9.9	19.9	96
SF3z8	57.20	34.60	96.70	0.604	7.00E+04	6.50E+04	0.0583	0.0048	0.775	0.067	0.0959	0.0023	0.3235	541.1	90.0	180.0	582.6	19.1	38.3	590.3	6.8	13.5	101
SF3z9	238.00	164.00	686.00	0.695	3.00E+05	3.90E+05	0.0724	0.0019	1.366	0.045	0.1358	0.0026	0.5124	997.2	26.7	53.3	874.4	9.6	19.3	820.9	7.4	14.8	94
SF3z10	300.00	170.30	531.00	0.561	-3.80E+05	5.20E+05	0.0655	0.0030	0.802	0.034	0.0889	0.0013	-0.0308	790.4	48.1	96.1	598.0	9.6	19.1	549.0	3.8	7.7	92
SF3z11	66.30	104.40	308.10	1.572	-2.80E+04	8.60E+04	0.0620	0.0051	0.846	0.070	0.0992	0.0023	0.0986	674.1	88.0	175.9	622.5	19.2	38.5	609.7	6.7	13.5	98
SF3z12	231.70	275.80	862.00	1.189	-2.30E+05	3.10E+05	0.0628	0.0028	0.896	0.039	0.1032	0.0013	0.0937	701.5	47.5	94.9	649.6	10.4	20.9	633.1	3.8	7.6	97
SF3z13c	47.00	52.30	671.00	1.104	1.00E+05	2.60E+05	0.1656	0.0044	10.800	0.300	0.4747	0.0087	0.4183	2513.7	22.3	44.7	2506.1	12.9	25.8	2504.1	19.0	38.0	100
SF3z13r	118.80	42.40	467.00	0.354	-6.10E+05	4.40E+05	0.1394	0.0022	7.730	0.140	0.4031	0.0054	0.5447	2219.8	13.7	27.4	2200.1	8.1	16.3	2183.3	12.4	24.8	99
SF3z14	161.70	162.90	502.00	0.952	3.40E+05	3.00E+05	0.0657	0.0035	0.789	0.044	0.0871	0.0018	0.1943	796.8	55.8	111.7	590.6	12.5	25.0	538.4	5.3	10.7	91
SF3z15	63.40	37.80	505.00	0.587	5.60E+05	6.30E+05	0.1848	0.0042	12.210	0.280	0.4815	0.0085	0.3516	2696.4	18.8	37.5	2620.7	10.8	21.5	2533.8	18.5	37.0	97
SF3z16	294.20	213.90	596.00	0.717	1.10E+05	3.10E+05	0.0604	0.0019	0.731	0.022	0.0876	0.0013	0.1569	617.9	34.0	67.9	557.1	6.4	12.9	541.3	3.9	7.7	97
SF3z17	447.30	655.00	1867.00	1.449	2.00E+05	4.90E+05	0.0600	0.0020	0.826	0.026	0.0998	0.0012	0.0935	603.6	36.1	72.1	611.4	7.2	14.4	613.2	3.5	7.0	100
SF3z18	110.20	183.40	550.00	1.641	9.00E+05	1.50E+05	0.0641	0.0036	0.918	0.051	0.1039	0.0018	0.1286	744.9	59.4	118.7	661.3	13.5	27.0	637.2	5.3	10.5	96
SF3z19	253.20	178.60	2250.00	0.697	8.00E+06	1.50E+06	0.1829	0.0023	12.380	0.170	0.4910	0.0051	0.4435	2679.3	10.4	20.8	2633.7	6.4	12.9	2575.0	11.0	22.1	98
SF3z21	147.90	250.00	795.00	1.616	4.00E+05	1.70E+05	0.0628	0.0029	0.950	0.043	0.1108	0.0023	0.2668	701.5	49.2	98.3	678.1	11.2	22.4	677.4	6.7	13.3	100
SF3z23	161.50	161.00	397.00	0.982	-2.00E+05	1.80E+05	0.0579	0.0033	0.678	0.037	0.0849	0.0015	0.0563	526.0	62.5	125.0	525.6	11.2	22.4	525.3	4.5	8.9	100
SF3z24	395.00	538.00	1644.00	1.335	-9.00E+03	5.20E+05	0.0617	0.0018	0.877	0.026	0.1025	0.0013	0.3074	663.7	31.2	62.5	639.4	7.0	14.1	629.0	3.8	7.6	98
SF3z25	448.00	187.00	457.00	0.397	3.40E+05	4.20E+05	0.0651	0.0019	0.733	0.025	0.0815	0.0013	0.4311	777.6	30.7	61.4	558.3	7.3	14.6	505.1	3.9	7.7	90
SF3z26	356.20	540.00	1460.00	1.350	7.90E+05	6.10E+05	0.0629	0.0018	0.862	0.029	0.0997	0.0020	0.4994	704.9	30.4	60.9	631.2	7.9	15.8	612.7	5.9	11.7	97
SF3z27	253.20	141.00	523.00	0.552	-1.70E+05	3.80E+05	0.0666	0.0018	1.184	0.033	0.1285	0.0016	0.2869	825.3	28.2	56.4	793.2	7.7	15.3	779.3	4.6	9.1	98
SF3z28	31.30	54.10	269.00	1.669	6.70E+05	3.60E+05	0.0756	0.0062	1.770	0.130	0.1720	0.0049	-0.0815	1084.5	82.2	164.4	1034.5	23.8	47.6	1023.1	13.5	27.0	99
SF3z29	358.00	539.00	1505.00	1.447	-3.10E+05	4.70E+05	0.0616	0.0022	0.844	0.029	0.0992	0.0012	0.1307	660.3	38.3	76.6	621.4	8.0	16.0	609.7	3.5	7.0	98
SF3z30	338.00	188.20	1813.00	0.551	4.10E+06	3.00E+06	0.1339	0.0019	6.930	0.100	0.3760	0.0044	0.4872	2149.7	12.4	24.8	2102.5	6.4	12.8	2057.6	10.3	20.6	98
SF3z31	163.00	161.00	472.00	0.964	7.30E+05	5.00E+05	0.0635	0.0028	0.881	0.043	0.0997	0.0017	0.3511	725.0	46.8	93.5	641.5	11.6	23.2	612.7	5.0	10.0	95
SF3z32	67.70	52.50	212.60	0.767	-9.00E+05	1.10E+05	0.0674	0.0037	1.300	0.069	0.1404	0.0027	0.0840	850.2	57.1	114.1	845.7	15.2	30.4	846.9	7.6	15.3	100
SF3z33	126.00	90.20	318.00	0.629	-2.70E+05	1.90E+05	0.0694	0.0032	1.247	0.059	0.1302	0.0027	0.2753	910.7	47.5	94.9	822.1	13.3	26.6	789.0	7.7	15.4	96
SF3z34	283.70	171.80	541.00	0.602	3.00E+03	3.10E+05	0.0611	0.0018	0.923	0.027	0.1098	0.0019	0.4180	642.8	31.7	63.3	663.9	7.1	14.2	671.6	5.5	11.0	101
SF3z35	182.70	152.40	1856.00	0.831	1.30E+06	1.10E+06	0.1576	0.0022	9.970	0.160	0.4596	0.0049	0.5123	2430.1	11.8	23.7	2432.0	7.4	14.8	2437.8	10.8	21.6	100
SF3z36	336.00	175.50	1221.00	0.520	5.30E+06	2.60E+06	0.0912	0.0015	3.241	0.063	0.2572	0.0028	0.4708	1450.8	15.7	31.3	1467.0	7.5	15.1	1475.5	7.2	14.4	101
SF3z38	86.80	134.90	727.00	1.548	1.38E+06	6.60E+05	0.0806	0.0036	1.877	0.079	0.1694	0.0035	0.1469	1211.7	44.0	87.9	1073.0	13.9	27.9	1008.8	9.6	19.3	94
SF3z39	115.30	148.10	2002.00	1.285	1.52E+06	9.90E+05	0.1886	0.0026	13.840	0.220	0.5331	0.0070	0.5818	2730.0	11.3	22.7	2738.8	7.5	15.0	2754.5	14.7	29.4	101
SF3z40	106.10	90.00	1010.00	0.730	1.43E+06	8.80E+05	0.1309	0.0027	7.420	0.160	0.4114	0.0051	0.4110	2110.1	18.1	36.2	2163.4	9.6	19.3	2221.3	11.6	23.3	103
SF3z41	22.80	37.90	352.00	1.631	-3.40E+05	2.50E+05	0.1231	0.0079	4.840	0.300	0.2920	0.0130	0.2673	2001.6	57.0	114.0	1791.9	26.1	52.1	1651.5	32.4	64.9	92
SF3z42	223.40	110.50	516.00	0.495	5.20E+05	4.60E+05	0.0725	0.0022	1.650	0.052	0.1649	0.0023	0.2329	1000.0	30.8	61.6	989.6	10.0	19.9	984.0	6.4	12.7	99
SF3z43	201.70	231.80	677.00	1.160	2.10E+05	2.20E+05	0.0616	0.0025	0.863	0.035	0.1024	0.0014	0.2876	660.3	43.5	87.0	631.8	9.5	19.1	628.5	4.1	8.2	99
SF3z44	204.00	74.30	710.00	0.374	7.70E+05	9.90E+05	0.1274	0.0026	6.380	0.130	0.3630	0.0050	0.4342	2062.4	18.0	36.0	2029.5	8.9	17.9	1996.4	11.8	23.6	98
SF3z45	177.20	100.20	422.00	0.554	-4.30E+06	2.80E+06	0.0697	0.0026	1.436	0.052	0.1510	0.0022	0.2556	919.5	38.3	76.7	904.1	10.8	21.7	906.6	6.2	12.3	100
SF3z46	126.90	57.90	718.00	0.422	1.90E+06	1.20E+06	0.2002	0.0039	13.230	0.410	0.4785	0.0086	0.8200	2827.8	15.9	31.8	2696.2	14.6	29.2	2520.7	18.7	37.5	93
SF3z48	67.50	167.60	502.00	2.544	1.20E+05	1.00E+05	0.0637	0.0051	0.920	0.073	0.1048	0.0019	-0.0319	731.7	84.8	169.6	662.4	19.3	38.6	642.5	5.5	11.1	97
SF3z50	71.20	29.50	105.20	0.372	1.10E+05	1.10E+05	0.0660	0.0037	1.105	0.067	0.1213	0.0023	0.3920	806.4	58.7	117.3	755.8	16.1	32.3	738.0	6.6	13.2	98
SF3z51	319.20	154.00	587.00	0.494	3.30E+06	1.80E+06	0.0662	0.0019	1.244	0.033	0.1365	0.0016	0.0881	812.7	30.0	60.0	820.7	7.5	14.9	824.8	4.5	9.1	101
SF3z52	35.37	23.70	73.50	0.606	4.40E+04	4.10E+04	0.0572	0.0071	0.814	0.098	0.1067	0.0031	0.1524	499.3	136.7	273.4	604.7	27.4	54.8	653.6	9.0	18.1	108
SF3z53	335.00	332.00	2770.00	0.988	-9.90E+06	7.30E+06	0.1186	0.0014	4.830	0.120	0.2953	0.0061	0.8781	1935.2	10.6	21.1	1790.1	10.4	20.9	1668.0	15.2	30.4	93
SF3z55	273.70	239.00	2800.00	0.887	-6.50E+06	4.40E+06	0.1824	0.0029	11.390	0.460	0.4510	0.0140	0.9500	2674.8	13.2	26.3	2555.6	18.8	37.7	2399.7	31.1	62.2	94
SF3z59	493.00	107.70	743.00	0.220	7.80E+06	4.90E+06	0.1250	0.0015	5.340	0.120	0.3104	0.0050	0.8069	2028.8	10.6	21.2	1875.3	9.6	19.2	1742.7	12.3	24.6	93
SF3z60	350.00	111.60	1186.00	0.327	7.30E+06	3.30E+06	0.1993	0.0023	13.470	0.200	0.4891	0.0048	0.6377	2820.5	9.4	18.8	2713.2	7.0	14.0	2566.8	10.4	20.8	95
SF3z61	188.70	232.00	1970.00	1.268	2.20E+06	1.20E+06	0.1130	0.0014	4.972	0.077	0.3194	0.0034	0.6174	1848.2	11.2	22.4	1814.6	6.5	13.1	1786.8	8.3	16.6	98
SF3z62	62.40	76.40	220.00	1.264	-7.70E+04	7.60E+04	0.0587	0.0047	0.834	0.065	0.1037	0.0024	0.0967	556.0	87.3	174.6	615.8	18.0	36.0	636.1	7.0	14.0	103
SF3z63	114.60	82.20	243.40	0.739	3.50E+05	2.40E+05	0.0603	0.0030	0.855	0.043	0.1031	0.0015	0.1987	614.4	53.7	107.5	627.4	11.8	23.5	632.6	4.4	8.8	101
SF3z64	352.00	68.90	184.70	0.200	3.60E+05	4.30E+05	0.0667	0.0021	0.949	0.030	0.1033	0.0013	0.2012	828.4	32.8	65.7	677.6	7.8	15.6	633.7	3.8	7.6	94
Discordant data																							
SF3z3	49.70	112.30	558.00	2.288	2.90E+04	5.10E+04	0.0838	0.0053	1.860	0.130	0.1596	0.0061	0.3384	1287.9	61.6	123.1	1067.0	23.1	46.1	954.6	17.0	33.9	89
SF3z4	814.00	126.40	600.00	0.157	4.90E+05	5.50E+05	0.0793	0.0013	0.959	0.024	0.0879	0.0020	0.6963	1179.6	16.2	32.4	682.8	6.2	12.4	543.1	5.9	11.9	80
SF3z20	46.34	56.40	205.70	1.188	3.90E+05	1.70E+05	0.0883	0.0070	1.310	0.110	0.1067	0.0030	0.2783	1389.0	76.1	152.2	850.1	24.2	48.3	653.6	8.7	17.5	77
SF3z22	301.70	221.10	980.00	0.712	-4.90E+05	5.20E+05	0.0773	0.0071	1.190	0.130	0.1091	0.0018	0.6084	1128.9	91.5	183.0	796.0	30.1	60.2	667.5	5.2	10.5	84
SF3z37	57.10	128.70	1281.00	2.240	1.45E+06	8.20E+05	0.1481	0.0046	6.920	0.220	0.3381	0.0068	0.2983	2324.1	26.6	53.2	2101.2	14.1	28.2	1877.5	16.4	32.8	89
SF3z47	50.40	133.00	338.00	2.463	2.00E+05	1.50E+05	0.0820	0.0120	0.830	0.130	0.0715	0.0028	0.2919	1245.5	143.3	286.6	613.6	36.0	72.1	445.2	8.4	16.8	73

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
SF3z49	762.00	223.00	906.00	0.279	5.10E+05	5.60E+05	0.0791	0.0016	1.192	0.026	0.1094	0.0016	0.4553	1174.6	20.0	40.0	796.9	6.0	12.0	669.3	4.6	9.3	84
SF3z54	502.00	627.00	2820.00	1.272	3.50E+05	1.10E+05	0.1386	0.0028	2.697	0.062	0.1410	0.0017	0.5172	2209.8	17.5	35.1	1327.6	8.5	17.0	850.3	4.8	9.6	64
SF3z56	1217.00	110.80	783.00	0.089	4.78E+05	9.20E+04	0.0914	0.0019	0.721	0.027	0.0573	0.0023	0.8367	1455.0	19.8	39.5	551.3	8.0	15.9	359.2	7.0	14.0	65
SF3z57	211.20	104.40	892.00	0.508	2.30E+05	6.20E+05	0.1504	0.0023	6.980	0.160	0.3356	0.0063	0.7185	2350.5	13.1	26.1	2108.9	10.2	20.3	1865.5	15.2	30.4	88
SF3z58	504.00	251.00	769.00	0.510	7.50E+05	3.60E+05	0.0745	0.0020	0.808	0.023	0.0783	0.0011	0.3172	1055.0	27.0	54.1	601.3	6.5	12.9	486.0	3.3	6.6	81

Footnotes:

- Analysis references: SF3z is zircon from sample SF3(mount CT18-03), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.13b: Sample SF3 (SHRIMP)

IGSN: IEACC0008 Coordinate UTM: Zone 30S, 320976 m E, 3747518 m N

ANALYSIS	U (ppm)	Th (ppm)	Th/U	% $^{206}Pb^{c}$	Ratios									Ages (Ma)						Discordance (%)
					$^{204}Pb/^{206}Pb$	±%	$^{207}Pb^{*}/^{206}Pb^{*}$	±%	$^{207}Pb^{*}/^{235}U$	±%	$^{206}Pb^{*}/^{238}U$	±%	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^{*}/^{238}U$	σ	2σ	
Concordant data																				
SF3z65c	173.00	131.00	0.780	0.190	1.10E-04	5.80E+01	0.0700	1.9000	1.5100	2.8000	0.1550	2.1000	0.7000	939	39	78	931	18	36	1
SF3z66	316.00	62.00	0.200	0.060	3.90E-05	4.10E+01	0.1730	0.4000	10.5900	1.3000	0.4430	1.2000	0.9000	2591	7	14	2363	24	48	10
SF3z67c	268.00	168.00	0.650	0.100	5.80E-05	5.80E+01	0.0730	1.2000	1.7200	1.7000	0.1690	1.2000	0.7000	1028	25	50	1009	11	22	2
SF3z67r	114.00	56.00	0.510	0.080	4.90E-05	1.00E+02	0.0730	1.9000	1.8100	2.4000	0.1800	1.5000	0.6000	1013	39	78	1066	15	30	-6
SF3z68c	104.00	54.00	0.540	0.170	1.10E-04	5.00E+01	0.1160	1.2000	4.9400	1.9000	0.3090	1.5000	0.8000	1896	21	42	1735	23	46	10
SF3z69c	383.00	139.00	0.380	0.000	---	---	0.0690	0.9000	1.4500	1.8000	0.1520	1.6000	0.9000	910	19	38	912	13	26	0
SF3z70	415.00	69.00	0.170	0.050	3.20E-05	5.80E+01	0.0780	2.0000	2.0300	2.5000	0.1890	1.4000	0.6000	1144	40	80	1114	14	28	3
SF3z71	178.00	159.00	0.920	0.380	2.20E-04	4.50E+01	0.0650	3.8000	1.1900	4.0000	0.1330	1.4000	0.3000	771	80	160	808	10	20	-5
SF3z72	166.00	67.00	0.420	0.400	2.30E-04	3.80E+01	0.0690	2.3000	1.5000	3.1000	0.1580	2.0000	0.7000	887	48	96	947	18	36	-7
SF3z73r	226.00	77.00	0.350	0.040	2.60E-05	7.10E+01	0.1170	1.3000	5.3500	1.9000	0.3310	1.3000	0.7000	1911	24	48	1846	21	42	4
SF3z74c	62.00	42.00	0.700	0.490	2.80E-04	7.10E+01	0.0570	7.4000	0.7500	8.3000	0.0960	3.6000	0.4000	482	163	326	590	21	42	-23
SF3z74r	800.00	529.00	0.680	0.650	3.60E-04	1.80E+01	0.0610	1.8000	0.6700	2.5000	0.0800	1.7000	0.7000	624	39	78	498	8	16	21
SF3z75	983.00	534.00	0.560	0.040	2.10E-05	5.80E+01	0.0660	0.7000	1.1800	1.4000	0.1300	1.3000	0.9000	812	14	28	785	9	18	4
SF3z77	199.00	21.00	0.110	0.090	5.00E-05	1.00E+02	0.0590	2.2000	0.7400	2.6000	0.0920	1.3000	0.5000	555	48	96	565	7	14	-2
SF3z78	833.00	88.00	0.110	0.710	4.00E-04	1.80E+01	0.0720	1.7000	0.9200	2.2000	0.0920	1.4000	0.7000	986	34	68	570	8	16	44
SF3z79	319.00	1101.00	3.570	0.070	4.20E-05	7.10E+01	0.0660	1.3000	1.1900	1.7000	0.1300	1.2000	0.7000	813	27	54	788	9	18	3
SF3z80	200.00	138.00	0.710	--	-3.10E-05	5.80E+01	0.1640	0.5000	10.5300	2.2000	0.4660	2.1000	1.0000	2498	9	18	2464	44	88	2
SF3z81r	694.00	110.00	0.160	0.020	1.60E-05	5.00E+01	0.1420	0.3000	7.5800	3.0000	0.3880	3.0000	1.0000	2247	6	12	2115	53	106	7
SF3z82	332.00	15.00	0.050	--	-6.10E-05	7.10E+01	0.0620	1.7000	0.8200	2.3000	0.0960	1.5000	0.7000	672	36	72	589	9	18	13
SF3z83c	143.00	28.00	0.200	0.190	1.10E-04	7.10E+01	0.0590	2.6000	0.9500	3.5000	0.1160	2.4000	0.7000	585	57	114	708	16	32	-22
SF3z83r	151.00	17.00	0.120	--	----	---	0.0600	1.8000	0.9700	2.3000	0.1170	1.4000	0.6000	614	39	78	712	9	18	-17
SF3z84	699.00	189.00	0.280	0.660	3.70E-04	2.00E+01	0.0610	2.1000	0.6500	2.3000	0.0780	1.1000	0.5000	626	44	88	484	5	10	24
SF3z85	39.00	109.00	2.870	0.730	4.30E-04	5.80E+01	0.0660	6.3000	1.5400	6.6000	0.1690	2.2000	0.3000	810	131	262	1006	21	42	-26
SF3z87	193.00	88.00	0.470	0.360	2.10E-04	4.50E+01	0.0640	2.6000	1.0500	2.9000	0.1190	1.3000	0.5000	743	55	110	727	9	18	2
SF3z88	490.00	270.00	0.570	0.010	6.40E-06	1.00E+02	0.1170	0.5000	5.4300	1.6000	0.3370	1.5000	1.0000	1911	8	16	1871	24	48	2
SF3z89	373.00	186.00	0.510	--	-1.10E-05	7.10E+01	0.1370	0.4000	7.6400	1.9000	0.4030	1.9000	1.0000	2194	7	14	2184	35	70	1
SF3z91	162.00	68.00	0.430	0.250	1.40E-04	5.80E+01	0.0650	3.6000	1.1000	3.9000	0.1230	1.5000	0.4000	781	75	150	746	10	20	5
SF3z92	606.00	297.00	0.510	0.060	3.40E-05	5.80E+01	0.0670	0.9000	1.2800	1.7000	0.1390	1.4000	0.8000	825	19	38	838	11	22	-2
SF3z93	319.00	39.00	0.130	0.000	---	---	0.0620	1.3000	0.9200	1.8000	0.1070	1.2000	0.7000	667	28	56	658	8	16	1
SF3z94	421.00	620.00	1.520	0.000	---	---	0.0620	1.1000	0.8800	1.9000	0.1040	1.5000	0.8000	662	24	48	636	9	18	4
SF3z95	593.00	338.00	0.590	0.760	4.20E-04	2.20E+01	0.0610	3.0000	0.6300	3.2000	0.0750	1.1000	0.4000	630	65	130	467	5	10	27
SF3z96	696.00	319.00	0.470	0.760	4.30E-04	1.80E+01	0.0630	2.1000	0.7500	2.3000	0.0870	1.1000	0.5000	693	44	88	538	6	12	23
SF3z97	795.00	185.00	0.240	--	----	---	0.0610	0.9000	0.8400	1.6000	0.1010	1.3000	0.8000	624	19	38	619	8	16	1
SF3z98	64.00	81.00	1.300	0.140	9.00E-05	7.10E+01	0.1200	1.4000	5.9400	2.3000	0.3600	1.8000	0.8000	1953	26	52	1981	31	62	-2
SF3z99	181.00	166.00	0.950	0.110	7.20E-05	5.00E+01	0.1140	0.9000	4.9900	2.1000	0.3160	1.9000	0.9000	1871	16	32	1772	30	60	6
SF3z100	134.00	42.00	0.330	0.060	3.80E-05	7.10E+01	0.1230	0.8000	6.1700	1.7000	0.3640	1.4000	0.9000	1998	15	30	2003	25	50	0
SF3z101	100.00	104.00	1.070	0.190	1.10E-04	7.10E+01	0.0720	2.4000	1.7000	2.9000	0.1720	1.6000	0.6000	979	48	96	1022	15	30	-5
SF3z103	416.00	161.00	0.400	0.080	4.60E-05	7.10E+01	0.0590	1.5000	0.7400	1.9000	0.0910	1.2000	0.6000	576	32	64	560	6	12	3
SF3z104	232.00	264.00	1.180	--	----	---	0.0600	2.1000	0.4900	3.4000	0.0590	2.7000	0.8000	591	47	94	371	10	20	38
SF3z107	91.00	34.00	0.380	0.780	4.40E-04	4.50E+01	0.0550	5.9000	0.8000	6.1000	0.1050	1.7000	0.3000	406	132	264	645	10	20	-62
SF3z108	310.00	113.00	0.380	0.270	1.60E-04	3.50E+01	0.0740	1.5000	1.3800	1.9000	0.1340	1.2000	0.6000	1051	30	60	813	9	18	24
SF3z109	309.00	74.00	0.25	--	-1.60E-05	7.10E+01	0.1340	0.5000	7.2200	1.3000	0.3910	1.2000	0.9000	2150	9	18	2127	22	44	1
Discordant and/or high common Pb data																				
SF3Z65r	74.00	53.00	0.740	3.190	1.80E-03	2.10E+01	0.0580	11.8000	1.2000	11.9000	0.1510	1.8000	0.2000	526	258	516	904	15	30	-77
SF3z68r	205.00	55.00	0.280	0.610	3.70E-04	2.20E+01	0.1130	1.3000	3.4700	3.5000	0.2230	3.2000	0.9000	1849	23	46	1296	38	76	33
SF3z73c	386.00	308.00	0.830	0.080	5.30E-05	3.80E+01	0.1720	0.5000	9.1500	1.6000	0.3860	1.5000	1.0000	2576	8	16	2104	27	54	21
SF3z76	72.00	33.00	0.470	1.330	7.70E-04	3.20E+01	0.0600	6.5000	1.2500	6.8000	0.1500	1.8000	0.3000	615	141	282	903	15	30	-50
SF3z81c	842.00	209.00	0.260	0.080	5.30E-05	2.40E+01	0.1420	0.3000	6.8200	1.4000	0.3490	1.4000	1.0000	2250	6	12	1930	23	46	16
SF3z90	1218.00	286.00	0.240	1.170	6.70E-04	9.00E+00	0.1150	0.8000	2.1000	1.5000	0.1320	1.2000	0.8000	1884	15	30	801	9	18	61
SF3z102	518.00	163.00	0.320	1.310	7.50E-04	1.90E+01	0.0680	3.3000	1.0300	3.5000	0.1100	1.2000	0.3000	854	68	136	675	8	16	22

ANALYSIS	U (ppm)	Th (ppm)	Th/U	% $^{206}Pb^{c}$	Ratios									Ages (Ma)						Discordance (%)
					$^{204}Pb/^{206}Pb$	±%	$^{207}Pb^{*}/^{206}Pb^{*}$	±%	$^{207}Pb^{*}/^{235}U$	±%	$^{206}Pb^{*}/^{238}U$	±%	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^{*}/^{238}U$	σ	2σ	
SF3z105	69.00	55.00	0.810	0.600	3.50E-04	5.80E+01	0.0590	10.1000	1.0600	13.7000	0.1300	9.3000	0.7000	567	220	440	789	69	138	-42
SF3z106	669.00	789.00	1.220	1.380	7.60E-04	1.70E+01	0.0640	3.2000	0.5100	3.4000	0.0570	1.1000	0.3000	758	67	134	358	4	8	54

Footnotes:

- % $^{206}Pb^{c}$ is % of ^{206}Pb from common Pb
- Errors are 1-sigma
- Pb* indicates radiogenic Pb, corrected for common Pb.
- Analysis references: SF3z is zircon from sample SF3 (mount CT18-03), followed by grain number "c" or "r", meaning core or rim, respectively.
- Error in standard calibration was 0.26% (not included in above errors but required when comparing data from different mounts).

Table D.14: Sample MAN1 (LA-ICPMS)

IGSN: IEACC0040 Coordinate UTM: Zone 29S, 658014 m E, 3735681 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
MAN1z1	127.50	109.50	1034.00	0.871	4.30E+05	6.60E+05	0.1279	0.0027	6.350	0.280	0.3584	0.0066	0.4189	2069	18.6	37.2	2025	19.3	38.6	1975	15.7	31.3	97
MAN1z2	167.90	34.19	85.50	0.206	9.00E+05	1.40E+05	0.0580	0.0039	0.707	0.042	0.0893	0.0018	0.0250	530	73.7	147.3	543	12.5	25.0	551	5.3	10.7	102
MAN1z3r	271.70	87.90	209.10	0.326	3.00E+05	3.60E+05	0.0586	0.0035	0.656	0.035	0.0814	0.0016	0.0840	552	65.2	130.4	512	10.7	21.4	504	4.8	9.5	98
MAN1z5	129.70	93.50	306.00	0.739	1.30E+05	2.20E+05	0.0694	0.0050	0.993	0.069	0.1039	0.0022	0.2559	911	74.2	148.3	700	17.6	35.1	637	6.4	12.8	91
MAN1z6	95.10	42.30	101.30	0.444	5.00E+05	1.20E+05	0.0597	0.0049	0.680	0.055	0.0827	0.0021	0.0336	593	89.0	177.9	527	16.6	33.2	512	6.3	12.5	97
MAN1z8	377.00	161.90	451.00	0.438	3.00E+05	4.10E+05	0.0602	0.0035	0.766	0.040	0.0919	0.0016	0.1874	611	62.8	125.7	577	11.5	23.0	567	4.7	9.4	98
MAN1z9	123.80	66.00	149.90	0.535	-1.60E+05	1.60E+05	0.0624	0.0050	0.687	0.052	0.0812	0.0017	0.2598	688	85.5	171.0	531	15.6	31.3	503	5.1	10.1	95
MAN1z10	259.00	87.30	223.00	0.337	3.00E+05	3.40E+05	0.0577	0.0035	0.683	0.037	0.0859	0.0017	0.2962	518	66.6	133.2	529	11.2	22.3	531	5.0	10.1	101
MAN1z11	55.20	81.00	802.00	1.493	-1.00E+06	3.00E+05	0.1286	0.0037	6.760	0.330	0.3778	0.0080	0.0863	2079	25.3	50.6	2081	21.6	43.1	2066	18.7	37.4	99
MAN1z12	550.00	202.80	453.00	0.371	-5.20E+05	6.40E+05	0.0600	0.0032	0.717	0.032	0.0864	0.0016	0.0857	604	57.7	115.4	549	9.5	18.9	534	4.7	9.5	97
MAN1z13	149.50	124.90	366.00	0.856	1.60E+05	1.30E+05	0.0646	0.0046	0.888	0.058	0.1007	0.0021	0.1438	761	75.1	150.1	645	15.6	31.2	619	6.1	12.3	96
MAN1z14	298.40	183.50	506.00	0.615	-1.15E+06	7.50E+05	0.0619	0.0034	0.811	0.039	0.0972	0.0019	0.2906	671	58.8	117.5	603	10.9	21.8	598	5.6	11.2	99
MAN1z16	155.20	45.60	103.20	0.295	-8.00E+05	1.80E+05	0.0605	0.0058	0.670	0.063	0.0810	0.0017	-0.0242	622	103.4	206.8	521	19.1	38.3	502	5.1	10.1	96
MAN1z17	196.90	148.70	403.40	0.762	1.30E+05	1.90E+05	0.0619	0.0039	0.818	0.048	0.0953	0.0020	0.1929	671	67.4	134.8	607	13.4	26.8	587	5.9	11.8	97
MAN1z18	631.00	286.40	560.00	0.459	4.40E+05	6.90E+05	0.0601	0.0032	0.629	0.029	0.0742	0.0015	0.4083	607	57.6	115.1	495	9.0	18.1	461	4.5	9.0	93
MAN1z19	128.10	57.70	155.30	0.455	-8.50E+05	5.40E+05	0.0621	0.0042	0.805	0.050	0.0932	0.0019	0.0069	678	72.3	144.6	600	14.1	28.1	574	5.6	11.2	96
MAN1z20	138.20	106.50	317.00	0.773	4.00E+05	2.00E+05	0.0619	0.0038	0.924	0.051	0.1079	0.0022	0.0557	671	65.7	131.4	664	13.4	26.9	661	6.4	12.8	99
MAN1z21	147.70	62.27	162.10	0.423	-2.00E+05	1.40E+05	0.0616	0.0041	0.774	0.045	0.0913	0.0017	0.0507	660	71.3	142.7	582	12.9	25.7	563	5.0	10.0	97
MAN1z22	180.90	56.10	128.40	0.309	0.00E+00	1.40E+05	0.0581	0.0039	0.638	0.037	0.0810	0.0016	-0.0816	534	73.5	147.0	501	11.5	22.9	502	4.8	9.5	100
MAN1z23	293.60	93.90	218.50	0.324	-8.00E+05	3.30E+05	0.0583	0.0033	0.671	0.034	0.0827	0.0015	0.1158	541	61.9	123.8	521	10.3	20.6	512	4.5	8.9	98
MAN1z24	157.80	110.00	1130.00	0.699	2.60E+05	6.80E+05	0.1299	0.0021	6.870	0.300	0.3809	0.0067	0.4809	2097	14.2	28.4	2095	19.3	38.7	2080	15.6	31.3	99
MAN1z25	59.70	7.36	18.30	0.125	1.00E+04	5.00E+04	0.0553	0.0065	0.622	0.070	0.0802	0.0026	0.1377	424	131.1	262.2	491	21.9	43.8	497	7.8	15.5	101
MAN1z26	113.20	78.50	237.60	0.700	1.30E+05	1.30E+05	0.0631	0.0047	0.919	0.059	0.1050	0.0022	-0.1555	712	79.2	158.3	662	15.6	31.2	644	6.4	12.8	97
MAN1z27	603.00	249.00	548.00	0.411	4.90E+05	4.50E+05	0.0567	0.0030	0.629	0.030	0.0800	0.0014	0.2931	480	58.5	116.9	495	9.3	18.7	496	4.2	8.4	100
MAN1z28	83.20	71.50	623.00	0.854	-4.00E+05	3.20E+05	0.1282	0.0033	5.690	0.280	0.3167	0.0082	0.6337	2073	22.7	45.3	1930	21.2	42.5	1774	20.1	40.1	92
MAN1z29	277.00	137.90	356.00	0.500	-2.00E+05	1.80E+05	0.0606	0.0034	0.789	0.039	0.0945	0.0018	0.2684	625	60.5	121.0	591	11.1	22.1	582	5.3	10.6	99
MAN1z30	88.10	44.80	111.10	0.509	6.00E+04	6.10E+04	0.0609	0.0060	0.689	0.063	0.0818	0.0020	0.0525	636	106.0	212.0	532	18.9	37.8	507	6.0	11.9	95
MAN1z31	418.00	193.00	500.00	0.451	3.40E+05	3.70E+05	0.0592	0.0033	0.767	0.037	0.0940	0.0018	0.1139	574	60.6	121.2	578	10.6	21.2	579	5.3	10.6	100
MAN1z32	397.00	179.00	385.00	0.445	-9.00E+05	3.00E+05	0.0597	0.0037	0.660	0.036	0.0805	0.0014	0.0101	593	67.2	134.3	515	11.0	22.0	499	4.2	8.4	97
MAN1z33	220.00	140.00	359.00	0.633	-1.40E+05	2.10E+05	0.0574	0.0035	0.742	0.042	0.0937	0.0017	0.2444	507	67.1	134.1	564	12.2	24.5	577	5.0	10.0	102
MAN1z35	106.10	95.60	812.00	0.896	2.40E+05	5.20E+05	0.1249	0.0029	5.710	0.250	0.3320	0.0065	0.2222	2027	20.6	41.1	1933	18.9	37.8	1848	15.7	31.5	96
MAN1z36	31.10	18.24	162.10	0.588	-1.10E+05	1.20E+05	0.1190	0.0048	5.890	0.350	0.3522	0.0082	0.0853	1941	36.1	72.1	1960	25.8	51.5	1945	19.5	39.1	99
MAN1z37	154.90	73.10	699.00	0.471	-1.80E+05	3.40E+05	0.1297	0.0032	6.360	0.310	0.3533	0.0068	0.5173	2094	21.7	43.4	2027	21.4	42.7	1950	16.2	32.4	96
MAN1z38	75.50	93.50	250.90	1.235	1.50E+05	1.80E+05	0.0590	0.0053	0.791	0.064	0.0980	0.0023	0.0660	567	97.8	195.6	592	18.1	36.3	603	6.8	13.5	102
MAN1z39	112.50	68.30	178.40	0.614	9.90E+04	7.00E+04	0.0611	0.0044	0.785	0.050	0.0942	0.0021	-0.0972	643	77.4	154.8	588	14.2	28.4	580	6.2	12.4	99
MAN1z41	308.00	259.00	693.00	0.818	7.10E+05	6.20E+05	0.0587	0.0034	0.780	0.040	0.0951	0.0017	0.1546	556	63.2	126.3	585	11.4	22.8	586	5.0	10.0	100
MAN1z42	75.00	19.65	52.60	0.261	-8.20E+04	4.40E+04	0.0604	0.0058	0.683	0.059	0.0834	0.0022	0.0172	618	103.6	207.3	529	17.8	35.6	516	6.5	13.1	98
MAN1z43	564.00	516.00	1302.00	0.899	2.30E+05	4.90E+05	0.0587	0.0031	0.741	0.035	0.0910	0.0016	0.3724	556	57.6	115.2	563	10.2	20.4	562	4.7	9.5	100
MAN1z44	174.00	55.00	119.00	0.316	9.10E+04	8.50E+04	0.0566	0.0042	0.626	0.045	0.0808	0.0015	0.1532	476	82.0	164.1	494	14.0	28.1	501	4.5	8.9	101
MAN1z45	100.50	53.60	639.00	0.531	-2.70E+05	4.50E+05	0.1427	0.0035	7.940	0.380	0.3998	0.0077	0.5219	2260	21.2	42.3	2224	21.6	43.1	2168	17.7	35.5	97
MAN1z46	65.70	34.20	76.20	0.514	2.90E+04	5.00E+04	0.0634	0.0071	0.659	0.070	0.0761	0.0023	0.2670	722	118.8	237.6	514	21.4	42.8	473	6.9	13.8	92
MAN1z47	204.60	149.30	423.00	0.726	8.00E+05	2.10E+05	0.0608	0.0036	0.843	0.045	0.1016	0.0022	0.3132	632	63.8	127.5	621	12.4	24.8	624	6.4	12.9	100
MAN1z48	119.50	125.70	338.00	1.066	1.00E+05	1.10E+05	0.0576	0.0043	0.776	0.055	0.0968	0.0021	0.1411	515	82.0	164.0	583	15.7	31.4	596	6.2	12.3	102
MAN1z49	463.00	113.40	260.00	0.244	4.00E+05	4.00E+05	0.0595	0.0033	0.680	0.034	0.0823	0.0016	0.1408	585	60.2	120.4	527	10.3	20.5	510	4.8	9.5	97
MAN1z50	444.00	349.00	879.00	0.788	-6.00E+05	4.00E+05	0.0584	0.0032	0.738	0.035	0.0917	0.0016	0.1201	545	59.9	119.7	561	10.2	20.4	566	4.7	9.4	101
MAN1z51	526.00	481.00	1035.00	0.896	8.50E+05	5.70E+05	0.0631	0.0034	0.717	0.034	0.0832	0.0018	0.3334	712	57.3	114.5	549	10.0	20.1	515	5.4	10.7	94
MAN1z52	583.00	151.50	347.00	0.258	1.80E+05	4.00E+05	0.0593	0.0033	0.680	0.033	0.0836	0.0015	0.3470	578	60.5	120.9	527	10.0	19.9	518	4.5	8.9	98
MAN1z53	620.00	268.00	607.00	0.428	6.40E+05	6.40E+05	0.0586	0.0032	0.658	0.033	0.0817	0.0013	0.1280	552	59.6	119.2	513	10.1	20.2	506	3.9	7.7	99
MAN1z54	620.00	268.00	607.00	0.428	6.40E+05	6.40E+05	0.0586	0.0032	0.658	0.033	0.0817	0.0013	0.1280	552	59.6	119.2	513	10.1	20.2	506	3.9	7.7	99
MAN1z55	269.00	67.20	165.00	0.254	-4.00E+05	1.30E+05	0.0581	0.0038	0.650	0.038	0.0827	0.0016	0.0862	534	71.6	143.2	508	11.7	23.4	512	4.8	9.5	101
MAN1z56	139.20	51.70	113.00	0.367	5.20E+05	2.80E+05	0.0619	0.0049	0.678	0.049	0.0804	0.0019	0.1637	671	84.7	169.4	526	14.8	29.6	499	5.7	11.3	95
MAN1z57	106.10	75.30	215.30	0.714	1.00E+05	1.20E+05	0.0596	0.0039	0.815	0.051	0.0985	0.0020	0.3209	589	71.0	141.9	605	14.3	28.5	606	5.9	11.7	100
MAN1z58	197.00	62.70	141.80	0.318	-5.00E+05	1.30E+05	0.0586	0.0042	0.659	0.044	0.0822	0.0017	0.0158	552	78.2	156.4	514	13.5	26.9	509	5.1	10.1	99
MAN1z59	170.10	69.00	157.00	0.407	4.00E+05	1.20E+05	0.0616	0.0041	0.680	0.042	0.0816	0.0017	-0.0028	660	71.3	142.7	527	12.7	25.4	506	5.1	10.1	96
MAN1z60	219.40	71.80	188.60	0.326	-1.84E+06	6.90E+05	0.0629	0.0040	0.806	0.046	0.0936	0.0019	0.1147	705	67.7	135.3	600	12.9	25.8	577	5.6	11.2	96
MAN1z61	65.60	42.00	110.30	0.642	2.20E+04	5.60E+04	0.0649	0.0053	0.837	0.063	0.0959	0.0024	0.1125	771	86.0	171.9	617	17.4	34.8	590	7.1	14.1	96
MAN1z62	99.30	102.80	941.00	1.034	-1.50E+05	2.80E+05	0.1270	0.0029	6.090	0.300	0.3433	0.0075	0.5467	2057	20.1	40.3	1989	21.5	42.9	1903	18.0	36.0	96
MAN1z63	250.90	277.60	780.00	1.101	-7.00E+05	1.50E+05	0.0627	0.0038	0.857	0.048	0.0990	0.0017	0.0269	698	64.6	129.1	628	13.1	26.2	609	5.0	10.0	97
MAN1z64	447.00	291.80	732.00	0.649	5.70E+05	4.50E+05	0.0588	0.0032	0.767	0.038	0.0946	0.0016	0.2030	560	59.3	118.6	578	10.9	21.8	583	4.7	9.4	101
MAN1z65	85.80	77.70	981.00	0.902	-1.10E+05	3.60E+05	0.1872	0.0034	13.500	0.600	0.5241	0.0110	0.5793	2718	15.0	29.9	2715	21.0	42.0	2717	23.3	46.5	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
MAN1z66	61.23	62.00	184.00	1.019	8.00E+04	7.20E+04	0.0593	0.0046	0.847	0.064	0.1031	0.0024	0.0539	578	84.3	168.6	623	17.6	35.2	633	7.0	14.0	102
MAN1z67	124.20	44.40	101.10	0.351	-3.80E+05	4.50E+05	0.0613	0.0057	0.702	0.063	0.0834	0.0018	-0.1252	650	99.8	199.7	540	18.8	37.6	516	5.4	10.7	96
MAN1z68	143.00	45.80	151.00	0.306	-7.00E+04	7.80E+04	0.0644	0.0047	0.805	0.055	0.0892	0.0020	0.0864	755	77.0	154.0	600	15.5	30.9	551	5.9	11.8	92
MAN1z69	49.00	48.70	135.10	1.010	2.00E+04	3.90E+04	0.0610	0.0053	0.813	0.063	0.0964	0.0028	-0.0378	639	93.4	186.9	604	17.6	35.3	593	8.2	16.5	98
MAN1z70	135.70	102.30	265.20	0.749	3.00E+05	1.30E+05	0.0598	0.0042	0.806	0.053	0.0986	0.0020	0.1848	596	76.1	152.2	600	14.9	29.8	606	5.9	11.7	101
MAN1z72	154.20	128.40	1213.00	0.838	-4.10E+05	5.60E+05	0.1263	0.0026	6.510	0.290	0.3694	0.0066	0.3732	2047	18.2	36.4	2047	19.6	39.2	2027	15.5	31.1	99
MAN1z73	245.40	138.50	347.00	0.565	1.40E+05	1.10E+05	0.0609	0.0037	0.759	0.040	0.0908	0.0017	0.1227	636	65.4	130.8	573	11.5	23.1	560	5.0	10.0	98
MAN1z75	193.80	99.00	253.00	0.511	1.90E+05	1.80E+05	0.0640	0.0043	0.722	0.045	0.0819	0.0016	0.0179	742	71.1	142.1	552	13.3	26.5	507	4.8	9.5	92
MAN1z76	163.90	52.10	129.00	0.316	-5.80E+04	9.60E+04	0.0607	0.0041	0.691	0.045	0.0825	0.0017	0.3217	629	72.8	145.5	533	13.5	27.0	511	5.1	10.1	96
MAN1z77	77.00	97.40	856.00	1.256	-1.60E+05	1.50E+05	0.1191	0.0030	5.590	0.260	0.3399	0.0068	0.2759	1943	22.5	45.0	1915	20.0	40.0	1886	16.4	32.7	99
MAN1z78	82.50	55.30	576.00	0.674	2.40E+05	4.80E+05	0.1514	0.0030	8.290	0.380	0.3995	0.0083	0.5379	2362	16.9	33.8	2263	20.7	41.5	2167	19.1	38.2	96
MAN1z79	397.00	353.80	956.00	0.888	1.17E+06	6.00E+05	0.0589	0.0033	0.800	0.040	0.0980	0.0017	0.1018	563	61.0	122.1	597	11.3	22.5	603	5.0	10.0	101
MAN1z80r	760.00	424.00	1023.00	0.559	1.10E+05	3.80E+05	0.0604	0.0032	0.717	0.033	0.0868	0.0015	0.3779	618	57.2	114.4	549	9.7	19.5	537	4.4	8.9	98
MAN1z81	72.50	87.60	827.00	1.212	-2.00E+03	1.50E+05	0.1273	0.0035	6.680	0.320	0.3770	0.0074	0.4448	2061	24.2	48.5	2070	21.1	42.3	2062	17.3	34.6	100
MAN1z82	498.00	338.90	3205.00	0.679	-1.20E+06	1.40E+06	0.1241	0.0014	6.343	0.260	0.3710	0.0061	0.5261	2016	10.0	20.0	2024	18.0	35.9	2034	14.3	28.7	100
MAN1z83	113.60	85.70	251.60	0.766	1.40E+05	1.00E+05	0.0620	0.0043	0.877	0.058	0.1027	0.0022	0.1826	674	74.2	148.3	639	15.7	31.3	630	6.4	12.9	99
MAN1z84	95.60	90.10	237.80	0.944	-6.20E+04	6.20E+04	0.0629	0.0042	0.805	0.052	0.0947	0.0023	0.3195	705	71.0	142.1	600	14.6	29.2	583	6.8	13.5	97
MAN1z85	605.00	189.20	352.00	0.306	-2.40E+05	3.50E+05	0.0606	0.0033	0.610	0.031	0.0724	0.0016	0.3061	625	58.7	117.4	484	9.8	19.5	451	4.8	9.6	93
MAN1z86	109.00	101.10	315.90	0.937	-1.90E+05	2.00E+05	0.0608	0.0038	0.909	0.056	0.1077	0.0026	0.2257	632	67.3	134.6	657	14.9	29.8	659	7.6	15.1	100
MAN1z87	126.80	129.70	350.00	1.028	2.10E+05	2.20E+05	0.0603	0.0045	0.810	0.059	0.0973	0.0020	0.2536	614	80.6	161.2	602	16.5	33.1	599	5.9	11.7	99
MAN1z88	274.20	123.90	285.00	0.452	1.70E+05	2.80E+05	0.0534	0.0032	0.616	0.035	0.0839	0.0016	0.2500	346	67.8	135.6	487	11.0	22.0	519	4.8	9.5	107
MAN1z89	565.10	104.00	235.40	0.185	1.00E+05	4.00E+05	0.0585	0.0031	0.662	0.031	0.0816	0.0014	0.1580	549	57.9	115.7	516	9.5	18.9	506	4.2	8.3	98
MAN1z90	662.00	96.30	227.00	0.147	9.96E+05	6.90E+05	0.0596	0.0032	0.654	0.030	0.0794	0.0014	0.1512	589	58.2	116.5	511	9.2	18.4	493	4.2	8.4	96
MAN1z91	257.00	61.40	172.00	0.237	-6.00E+05	1.40E+05	0.0647	0.0038	0.770	0.045	0.0854	0.0020	0.4572	765	61.9	123.8	580	12.9	25.8	528	5.9	11.9	91
MAN1z92	155.90	176.00	499.00	1.104	-1.60E+06	1.10E+06	0.0647	0.0041	0.928	0.053	0.1035	0.0020	0.1355	765	66.8	133.5	667	13.9	27.9	635	5.8	11.7	95
MAN1z93	165.60	125.20	359.00	0.758	6.00E+05	1.50E+05	0.0585	0.0037	0.828	0.050	0.1000	0.0020	0.0695	549	69.1	138.1	613	13.9	27.7	614	5.9	11.7	100
MAN1z94	59.60	70.10	200.90	1.176	7.60E+04	6.60E+04	0.0647	0.0059	0.906	0.082	0.1005	0.0027	0.0208	765	96.1	192.2	655	21.8	43.6	617	7.9	15.8	94
MAN1z95	247.70	123.80	275.10	0.504	2.40E+05	2.50E+05	0.0578	0.0036	0.652	0.037	0.0812	0.0016	0.0586	522	68.3	136.6	510	11.4	22.7	503	4.8	9.5	99
MAN1z96	365.00	244.00	1682.00	0.669	-1.60E+06	3.00E+06	0.1237	0.0018	5.418	0.230	0.3141	0.0057	0.5799	2010	12.9	25.8	1888	18.2	36.4	1761	14.0	28.0	93
MAN1z97	136.20	96.50	1139.00	0.714	5.90E+05	6.80E+05	0.1595	0.0023	10.050	0.430	0.4550	0.0078	0.4946	2450	12.2	24.4	2439	19.7	39.5	2417	17.3	34.6	99
MAN1z98	124.10	33.75	84.80	0.270	1.70E+05	1.10E+05	0.0550	0.0044	0.637	0.048	0.0825	0.0017	-0.0221	412	89.4	178.9	500	14.9	29.7	511	5.1	10.1	102
MAN1z99	106.40	76.30	194.50	0.724	6.00E+04	7.60E+04	0.0611	0.0046	0.795	0.055	0.0939	0.0022	-0.0494	643	80.9	161.8	594	15.5	31.1	579	6.5	13.0	97
MAN1z100	327.90	179.80	515.00	0.548	-1.20E+05	1.60E+05	0.0643	0.0036	0.967	0.048	0.1075	0.0019	0.1153	752	59.1	118.2	687	12.4	24.8	658	5.5	11.1	96
MAN1z101	208.40	207.00	606.00	1.014	7.00E+05	1.30E+05	0.0608	0.0039	0.882	0.052	0.1046	0.0019	0.1433	632	69.1	138.1	642	14.0	28.0	641	5.5	11.1	100
MAN1z102	170.50	174.70	1844.00	1.029	8.00E+05	5.30E+05	0.1512	0.0026	8.770	0.380	0.4163	0.0074	0.5570	2360	14.7	29.4	2314	19.7	39.5	2244	16.8	33.7	97
MAN1z103	594.00	482.00	1105.00	0.821	4.20E+05	3.00E+05	0.0580	0.0030	0.649	0.029	0.0808	0.0013	0.2601	530	56.7	113.3	508	8.9	17.8	501	3.9	7.8	99
MAN1z104	195.60	145.00	409.00	0.739	-4.00E+05	1.30E+05	0.0627	0.0039	0.900	0.055	0.1027	0.0020	0.2733	698	66.2	132.5	652	14.7	29.4	630	5.8	11.7	97
MAN1z105	105.90	66.70	183.80	0.634	2.70E+04	7.40E+04	0.0613	0.0042	0.843	0.052	0.1017	0.0025	0.1650	650	73.6	147.1	621	14.3	28.6	624	7.3	14.6	101
MAN1z106	175.80	75.50	200.00	0.429	2.60E+05	2.00E+05	0.0592	0.0038	0.766	0.045	0.0937	0.0018	0.0770	574	69.8	139.6	577	12.9	25.9	577	5.3	10.6	100
MAN1z107	667.00	470.00	1222.00	0.708	3.00E+05	5.00E+05	0.0600	0.0032	0.771	0.035	0.0924	0.0016	0.0231	604	57.7	115.4	580	10.0	20.0	569	4.7	9.4	98
MAN1z109	387.00	177.60	489.00	0.458	4.00E+05	2.20E+05	0.0634	0.0036	0.815	0.040	0.0935	0.0017	0.1755	722	60.2	120.5	605	11.2	22.4	576	5.0	10.0	95
MAN1z110	221.00	130.90	342.00	0.592	3.60E+05	2.60E+05	0.0617	0.0038	0.811	0.045	0.0964	0.0018	0.0332	664	66.0	131.9	603	12.6	25.2	593	5.3	10.6	98
MAN1z111	720.00	334.00	759.00	0.459	4.60E+05	5.60E+05	0.0584	0.0031	0.655	0.031	0.0816	0.0014	0.1239	545	58.0	116.0	512	9.5	19.0	506	4.2	8.3	99
MAN1z113	287.00	198.50	525.00	0.696	3.20E+05	2.10E+05	0.0590	0.0034	0.747	0.039	0.0921	0.0016	0.1628	567	62.7	125.5	566	11.3	22.6	568	4.7	9.4	100
MAN1z114	155.00	53.00	130.50	0.346	-1.30E+05	3.10E+05	0.0587	0.0038	0.658	0.040	0.0814	0.0017	0.1621	556	70.6	141.2	513	12.2	24.5	504	5.1	10.1	98
MAN1z116	483.00	429.00	996.00	0.906	2.00E+05	3.00E+05	0.0585	0.0032	0.648	0.033	0.0807	0.0015	0.1832	549	59.7	119.5	507	10.2	20.3	500	4.5	8.9	99
MAN1z117	423.00	129.20	345.00	0.308	-4.00E+05	1.70E+05	0.0586	0.0033	0.749	0.037	0.0934	0.0017	0.1604	552	61.5	122.9	568	10.7	21.5	576	5.0	10.0	101
MAN1z118	36.10	33.10	100.20	0.917	1.70E+04	2.90E+04	0.0629	0.0078	0.950	0.120	0.1075	0.0028	0.0749	705	131.9	263.9	678	31.2	62.4	658	8.1	16.3	97
MAN1z119	69.30	25.76	252.00	0.375	1.50E+05	1.60E+05	0.1282	0.0034	6.750	0.310	0.3787	0.0074	0.2179	2073	23.4	46.7	2079	20.3	40.6	2070	17.3	34.6	100
Discordant data																							
MAN1z3c	463.00	178.00	1193.00	0.407	-8.30E+06	4.20E+06	0.1191	0.0058	3.870	0.260	0.2380	0.0130	0.9475	1943	43.5	87.1	1607	27.1	54.2	1376	33.8	67.7	86
MAN1z4	125.30	83.40	579.00	0.679	-6.10E+05	4.20E+05	0.1270	0.0031	5.010	0.240	0.2845	0.0057	0.2887	2057	21.5	43.1	1821	20.3	40.5	1614	14.3	28.6	89
MAN1z7	38.50	35.20	317.00	0.913	1.80E+05	1.80E+05	0.1464	0.0051	6.880	0.400	0.3331	0.0094	0.3332	2304	29.9	59.8	2096	25.7	51.5	1853	22.7	45.5	88
MAN1z15	265.00	212.00	1700.00	0.796	-2.90E+05	5.00E+05	0.1266	0.0020	4.850	0.230	0.2748	0.0073	0.7661	2051	13.9	27.9	1794	19.9	39.9	1565	18.5	36.9	87
MAN1z34	346.00	259.00	2053.00	0.748	-8.00E+05	3.70E+05	0.1359	0.0019	5.150	0.220	0.2737	0.0059	0.7070	2176	12.2	24.3	1844	18.1	36.3	1560	14.9	29.9	85
MAN1z40	2200.00	2400.00	2600.00	1.060	-3.24E+05	6.50E+04	0.1401	0.0070	0.630	0.028	0.0325	0.0008	0.6710	2228	43.3	86.5	496	8.7	17.4	206	2.5	4.9	42
MAN1z71	136.50	114.50	886.00	0.839	2.40E+05	4.00E+05	0.1323	0.0029	5.550	0.310	0.3014	0.0095	0.8084	2129	19.2	38.4	1908	24.0	48.0	1698	23.5	47.1	89
MAN1z74	981.00	414.00	527.00	0.398	5.90E+05	9.90E+05	0.0699	0.0037	0.503	0.027	0.0537	0.0024	0.7230	925	54.4	108.7	414	9.1	18.2	337	7.3	14.7	82
MAN1z80c	244.70	110.70	527.00	0.442	2.00E+06	1.20E+06	0.0790	0.0046	1.140	0.073	0.1049	0.0034	0.7356	1172	57.6	115.3	773	17.3	34.6	643	9.9	19.8	83
MAN1z108	42.10	19.23	2620.00	0.455	-2.71E+04	9.30E+03	0.4890	0.0650	27.700	6.800	0.3040	0.0550	0.9955	4208	98.2	196.3	3409	120.2	240.4	1711	135.9	271.9	50
MAN1z112	360.00	319.00	1583.00	0.864	3.50E+05	3.00E+05	0.1273	0.0063	3.500	0.220	0.2002	0.0100	0.9463	2061	43.6	87.3	1527	24.8	49.6	1176	26.9	53.7	77
MAN1z115	45.20	97.20	257.00	2.174	-1.47E+05	9.00E+04	0.0783	0.0093	0.890	0.110	0.0837	0.0025	0.3932	1154	117.9	235.7	646	29.5	59.0	518	7.4	14.9	80

Footnotes:

- Analysis references: MAN1z is zircon from sample MAN1 (mount CT18-05), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.15: Sample AKR1 (LA-ICPMS)

IGSN: IEACC0038 Coordinate UTM: Zone 29S, 704231 m E, 3757672 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AKR1z1	538.00	389.00	99.50	0.720	-9.00E+05	1.60E+05	0.0630	0.0015	0.803	0.015	0.0922	0.0012	0.0713	708	25.5	51.0	599	4.0	8.0	569	3.5	7.0	95
AKR1z2	13005.00	80300.00	19800.00	6.170	5.30E+06	3.50E+06	0.0599	0.0009	0.705	0.005	0.0849	0.0011	0.3053	599	16.5	33.0	541	1.5	3.0	525	3.5	7.0	97
AKR1z3	60.90	79.60	22.79	1.310	1.20E+04	2.00E+04	0.0605	0.0027	0.831	0.034	0.0977	0.0016	0.0019	622	48.0	96.0	614	9.5	19.0	601	4.5	9.0	98
AKR1z4	291.90	532.50	158.40	1.820	-1.09E+05	9.80E+04	0.0599	0.0015	0.854	0.017	0.1035	0.0014	-0.0045	600	27.0	54.0	627	4.5	9.0	635	4.0	8.0	101
AKR1z5	150.00	77.60	85.60	0.520	1.00E+05	2.00E+05	0.1361	0.0022	7.153	0.094	0.3806	0.0051	0.2837	2178	14.0	28.0	2131	6.0	12.0	2079	12.0	24.0	98
AKR1z6	58.04	85.15	80.70	1.470	-2.70E+04	6.50E+04	0.1268	0.0025	6.276	0.100	0.3605	0.0049	0.2138	2054	17.5	35.0	2015	7.0	14.0	1985	11.5	23.0	98
AKR1z7	36.05	78.10	79.40	2.170	-7.00E+04	4.20E+04	0.1278	0.0030	6.030	0.150	0.3394	0.0059	0.4078	2068	20.5	41.0	1980	11.0	22.0	1884	14.0	28.0	95
AKR1z8	584.00	308.00	297.00	0.530	-5.90E+05	7.50E+05	0.1367	0.0018	7.548	0.069	0.4004	0.0052	0.5107	2185	11.5	23.0	2179	4.0	8.0	2171	12.0	24.0	100
AKR1z9	9.02	41.80	12.88	4.630	-2.00E+02	2.60E+03	0.0608	0.0076	0.791	0.094	0.1020	0.0033	-0.0204	632	134.5	269.0	592	26.5	53.0	626	9.5	19.0	106
AKR1z11	469.40	276.30	253.90	0.590	-6.00E+05	4.30E+05	0.1294	0.0018	6.179	0.077	0.3458	0.0051	0.7568	2090	12.0	24.0	2001	5.5	11.0	1915	12.0	24.0	96
AKR1z12c	446.70	215.00	62.56	0.480	1.80E+05	1.70E+05	0.0618	0.0014	0.872	0.017	0.1022	0.0013	0.1425	667	24.5	49.0	637	4.5	9.0	627	4.0	8.0	98
AKR1z12r	762.00	294.80	88.40	0.390	-2.00E+05	2.60E+05	0.0619	0.0012	0.880	0.013	0.1031	0.0013	0.3654	670	21.0	42.0	641	3.5	7.0	633	4.0	8.0	99
AKR1z13	306.90	126.30	37.49	0.410	-6.00E+05	1.10E+05	0.0610	0.0016	0.836	0.018	0.0981	0.0013	-0.0081	639	28.0	56.0	617	5.0	10.0	603	4.0	8.0	98
AKR1z15	261.60	85.40	24.91	0.330	-2.00E+04	6.70E+04	0.0616	0.0015	0.866	0.018	0.1012	0.0014	0.2393	660	26.0	52.0	633	5.0	10.0	622	4.0	8.0	98
AKR1z16	55.60	43.40	12.39	0.780	-3.00E+04	1.70E+04	0.0596	0.0031	0.834	0.042	0.1012	0.0016	0.0282	589	56.5	113.0	616	11.5	23.0	621	4.5	9.0	101
AKR1z17c	385.30	412.60	364.60	1.070	2.00E+05	3.90E+05	0.1578	0.0022	8.060	0.140	0.3727	0.0076	0.8812	2432	12.0	24.0	2238	8.0	16.0	2042	18.0	36.0	91
AKR1z18	146.00	175.20	58.90	1.200	0.00E+00	5.40E+04	0.0630	0.0020	1.007	0.028	0.1157	0.0016	-0.0350	708	34.0	68.0	707	7.0	14.0	706	4.5	9.0	100
AKR1z19	759.00	648.00	188.00	0.850	-2.60E+05	2.90E+05	0.0652	0.0013	0.903	0.013	0.1006	0.0013	0.1590	782	21.0	42.0	653	3.5	7.0	618	4.0	8.0	95
AKR1z20	671.70	22.89	7.65	0.030	-7.00E+05	2.50E+05	0.0635	0.0012	1.036	0.015	0.1184	0.0015	0.3009	725	20.0	40.0	722	3.5	7.0	721	4.5	9.0	100
AKR1z21	520.80	340.00	131.00	0.650	1.20E+05	1.80E+05	0.0731	0.0013	1.353	0.022	0.1338	0.0021	0.6190	1016	18.0	36.0	869	4.5	9.0	810	6.0	12.0	93
AKR1z22	465.80	294.20	93.65	0.630	-1.90E+05	1.50E+05	0.0622	0.0013	0.957	0.015	0.1109	0.0015	0.1881	680	22.5	45.0	682	4.0	8.0	678	4.5	9.0	99
AKR1z23	283.00	167.40	52.60	0.590	7.00E+05	1.30E+05	0.0665	0.0015	1.190	0.022	0.1295	0.0018	0.1995	822	23.5	47.0	796	5.0	10.0	785	5.0	10.0	99
AKR1z24	147.10	117.00	31.73	0.800	1.20E+04	4.30E+04	0.0603	0.0020	0.808	0.025	0.0958	0.0014	0.1614	614	36.0	72.0	601	7.0	14.0	590	4.0	8.0	98
AKR1z25	260.70	90.90	26.27	0.350	-1.70E+05	1.30E+05	0.0638	0.0017	0.819	0.019	0.0934	0.0013	0.1233	735	28.0	56.0	607	5.5	11.0	576	4.0	8.0	95
AKR1z26	70.77	68.40	20.28	0.970	-3.40E+04	2.90E+04	0.0623	0.0029	0.893	0.038	0.1035	0.0016	0.0644	684	49.5	99.0	648	10.0	20.0	635	4.5	9.0	98
AKR1z27	325.00	132.60	130.40	0.410	-4.80E+05	4.50E+05	0.1364	0.0019	7.365	0.110	0.3909	0.0064	0.7921	2182	12.0	24.0	2157	6.5	13.0	2127	15.0	30.0	99
AKR1z28	61.08	45.24	13.49	0.740	4.00E+04	2.10E+04	0.0586	0.0029	0.848	0.039	0.1042	0.0017	0.0507	552	54.0	108.0	624	10.5	21.0	639	5.0	10.0	102
AKR1z29	189.50	202.20	56.50	1.070	6.80E+04	5.30E+04	0.0598	0.0017	0.802	0.021	0.0966	0.0014	0.1891	596	31.0	62.0	598	6.0	12.0	595	4.0	8.0	99
AKR1z32	226.00	129.10	113.10	0.570	-2.00E+05	2.10E+05	0.1169	0.0018	4.950	0.070	0.3050	0.0045	0.6089	1909	14.0	28.0	1811	6.0	12.0	1716	11.0	22.0	95
AKR1z33	132.60	803.00	854.00	6.060	4.60E+04	9.60E+04	0.1270	0.0033	5.230	0.220	0.2943	0.0073	0.8969	2057	23.0	46.0	1858	18.0	36.0	1663	18.0	36.0	90
AKR1z34	144.30	135.80	42.37	0.940	2.90E+04	4.20E+04	0.0619	0.0019	0.894	0.025	0.1040	0.0014	0.0093	671	33.0	66.0	649	6.5	13.0	638	4.0	8.0	98
AKR1z35	164.20	145.50	42.00	0.890	-2.40E+05	1.00E+05	0.0626	0.0020	0.868	0.025	0.1014	0.0015	0.1115	695	34.0	68.0	634	7.0	14.0	623	4.5	9.0	98
AKR1z36	187.00	185.00	51.70	0.990	-1.60E+05	1.30E+05	0.0596	0.0018	0.802	0.022	0.0973	0.0014	0.0904	589	33.0	66.0	598	6.0	12.0	599	4.0	8.0	100
AKR1z38	258.00	292.10	253.90	1.130	-4.00E+05	2.30E+05	0.1099	0.0017	4.858	0.059	0.3211	0.0042	0.3686	1798	14.0	28.0	1795	5.0	10.0	1795	10.0	20.0	100
AKR1z39	79.90	114.10	51.40	1.430	-2.10E+04	3.60E+04	0.0722	0.0023	1.685	0.050	0.1664	0.0025	0.2273	992	32.5	65.0	1003	9.5	19.0	992	7.0	14.0	99
AKR1z40	165.30	102.70	35.58	0.620	-3.00E+04	5.90E+04	0.0659	0.0017	1.030	0.025	0.1121	0.0017	0.1764	803	27.0	54.0	719	6.0	12.0	685	5.0	10.0	95
AKR1z42	88.20	88.30	23.04	1.000	-7.60E+04	3.30E+04	0.0569	0.0025	0.703	0.029	0.0894	0.0015	0.1187	488	48.5	97.0	541	8.5	17.0	552	4.5	9.0	102
AKR1z44	126.30	190.00	185.00	1.500	-2.40E+05	1.70E+05	0.1268	0.0021	6.940	0.110	0.3980	0.0061	0.5994	2054	14.5	29.0	2104	7.0	14.0	2160	14.0	28.0	103
AKR1z45	99.30	105.80	100.10	1.070	-1.00E+05	1.00E+05	0.1222	0.0022	6.087	0.085	0.3605	0.0049	0.1368	1989	16.0	32.0	1988	6.0	12.0	1985	11.5	23.0	100
AKR1z46	116.10	77.30	21.50	0.670	-1.20E+04	2.80E+04	0.0612	0.0022	0.789	0.024	0.0938	0.0014	0.0060	646	38.5	77.0	591	7.0	14.0	578	4.0	8.0	98
AKR1z47	441.00	179.10	152.90	0.410	3.10E+05	3.40E+05	0.1270	0.0018	5.473	0.078	0.3135	0.0047	0.7265	2057	12.5	25.0	1896	6.0	12.0	1758	11.5	23.0	93
AKR1z49	111.20	74.20	78.50	0.670	6.00E+06	1.50E+06	0.1328	0.0023	7.249	0.100	0.3941	0.0051	0.2398	2135	15.0	30.0	2143	6.0	12.0	2142	12.0	24.0	100
AKR1z50	685.00	165.50	187.20	0.240	-3.50E+05	9.50E+05	0.1504	0.0019	8.485	0.092	0.4062	0.0057	0.7745	2350	11.0	22.0	2284	5.0	10.0	2198	13.0	26.0	96
AKR1z51	183.70	129.60	113.89	0.710	-1.00E+05	1.60E+05	0.1259	0.0019	5.400	0.073	0.3106	0.0043	0.5098	2041	13.5	27.0	1885	6.0	12.0	1744	10.5	21.0	93
AKR1z53	124.20	156.00	49.50	1.260	-3.90E+04	4.20E+04	0.0683	0.0025	0.974	0.033	0.1035	0.0016	0.2047	878	38.0	76.0	691	8.5	17.0	635	4.5	9.0	92
AKR1z54	31.91	13.66	8.70	0.430	-1.40E+04	2.30E+04	0.0833	0.0033	2.665	0.096	0.2302	0.0037	-0.0403	1276	38.5	77.0	1319	13.5	27.0	1336	9.5	19.0	101
AKR1z55	21.07	9.74	9.96	0.460	1.60E+04	2.00E+04	0.1350	0.0039	7.060	0.190	0.3829	0.0061	0.1558	2164	25.0	50.0	2119	12.0	24.0	2090	14.0	28.0	99
AKR1z56	574.80	194.10	131.60	0.340	-1.60E+05	5.70E+05	0.1262	0.0017	5.949	0.065	0.3407	0.0047	0.6784	2046	12.0	24.0	1968	4.5	9.0	1890	11.5	23.0	96
AKR1z57	79.30	61.19	19.28	0.770	-1.90E+04	2.50E+04	0.0630	0.0026	0.952	0.036	0.1088	0.0017	0.0161	708	44.0	88.0	679	9.5	19.0	666	5.0	10.0	98
AKR1z58	158.30	210.20	100.60	1.330	5.70E+04	5.60E+04	0.0706	0.0018	1.624	0.037	0.1658	0.0023	0.1422	946	26.0	52.0	980	7.0	14.0	989	6.5	13.0	101
AKR1z59	902.00	505.00	231.10	0.560	-1.80E+05	3.50E+05	0.0720	0.0013	1.589	0.019	0.1598	0.0021	0.3424	987	18.5	37.0	966	3.5	7.0	956	6.0	12.0	99
AKR1z61	21.09	12.59	3.37	0.600	2.70E+03	5.40E+03	0.0564	0.0047	0.674	0.054	0.0879	0.0023	0.0474	468	92.5	185.0	523	16.5	33.0	543	7.0	14.0	104
AKR1z63	313.40	120.00	114.60	0.380	-2.20E+05	3.30E+05	0.1256	0.0019	5.966	0.068	0.3425	0.0045	0.3895	2037	13.5	27.0	1971	5.0	10.0	1899	11.0	22.0	96
AKR1z64r	17.42	5.21	5.58	0.300	-5.00E+04	1.60E+04	0.1399	0.0042	7.680	0.220	0.3971	0.0072	0.2840	2226	26.0	52.0	2194	13.0	26.0	2156	16.5	33.0	98
AKR1z65	220.10	119.40	115.50	0.540	-9.50E+05	4.10E+05	0.1311	0.0020	6.487	0.082	0.3579	0.0052	0.5297	2113	13.5	27.0	2044	5.5	11.0	1972	12.5	25.0	96
AKR1z66	115.60	94.90	116.90	0.820	-2.90E+06	1.10E+06	0.1579	0.0025	10.080	0.120	0.4622	0.0062	0.2786	2433	13.5	27.0	2442	5.5	11.0	2449	13.5	27.0	100
AKR1z67	559.60	656.00	194.90	1.170	5.00E+05	1.60E+05	0.0635	0.0015	0.860	0.016	0.0982	0.0013	0.1379	725	25.0	50.0	630	4.5	9.0	604	4.0	8.0	96
AKR1z68	79.30	38.41	20.92	0.480	-4.30E+04	4.40E+04	0.0767	0.0024	2.010	0.058	0.1896	0.0027	0.1955	1113	31.0	62.0	1119	10.0	20.0	1119	7.5	15.0	100
AKR1z70	252.70	241.20	75.00	0.950	-1.29E+05	9.10E+04	0.0591	0.0017	0.865	0.022	0.1056	0.0014	0.1278	571	31.5	63.0	633	6.0	12.0	647	4.0	8.0	102
AKR1z71	185.30	129.20	141.30	0.700	-2.10E+06	7.30E+05	0.1288	0.0020	6.990	0.083	0.3937	0.0051	0.3180	2082	13.5	27.0	2110	5.5	11.0	2140	12.0	24.0	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AKR1z72	200.50	121.00	32.90	0.600	-1.82E+05	7.80E+04	0.0592	0.0018	0.785	0.023	0.0951	0.0014	0.1758	574	33.0	66.0	588	6.5	13.0	586	4.0	8.0	100
AKR1z73	150.20	46.81	57.32	0.310	-2.70E+05	2.50E+05	0.1668	0.0024	10.550	0.120	0.4580	0.0061	0.4577	2526	12.0	24.0	2484	5.5	11.0	2431	13.5	27.0	98
AKR1z74	275.00	132.90	43.81	0.480	-6.00E+05	1.70E+05	0.0664	0.0017	1.043	0.024	0.1131	0.0016	0.1350	819	26.5	53.0	725	6.0	12.0	691	4.5	9.0	95
AKR1z75	314.00	106.30	84.40	0.340	-3.70E+05	3.20E+05	0.0956	0.0015	3.650	0.045	0.2781	0.0036	0.3181	1540	15.0	30.0	1561	5.0	10.0	1582	9.0	18.0	101
AKR1z76	101.50	63.08	18.98	0.620	6.60E+04	4.40E+04	0.0621	0.0020	0.888	0.025	0.1022	0.0015	0.0568	678	34.5	69.0	645	6.5	13.0	627	4.5	9.0	97
AKR1z77	205.00	158.10	47.90	0.770	-1.21E+05	6.20E+04	0.0627	0.0016	0.891	0.020	0.1030	0.0014	0.0844	698	27.0	54.0	647	5.5	11.0	632	4.0	8.0	98
AKR1z78	128.30	324.00	94.80	2.530	-1.80E+04	3.50E+04	0.0617	0.0020	0.874	0.026	0.1020	0.0015	0.1065	664	34.5	69.0	638	7.0	14.0	626	4.5	9.0	98
AKR1z79	543.80	381.80	118.20	0.700	1.10E+05	1.30E+05	0.0611	0.0013	0.895	0.015	0.1063	0.0014	0.3368	643	23.0	46.0	649	4.0	8.0	651	4.0	8.0	100
AKR1z81c	119.20	128.40	48.15	1.080	-2.00E+04	3.70E+04	0.0678	0.0022	1.163	0.035	0.1250	0.0019	0.2632	862	33.5	67.0	783	8.0	16.0	759	5.5	11.0	97
AKR1z81r	156.30	111.60	33.49	0.710	1.10E+04	4.50E+04	0.0605	0.0019	0.861	0.025	0.1030	0.0014	0.2152	622	34.0	68.0	631	7.0	14.0	632	4.0	8.0	100
AKR1z82c	185.30	35.79	34.88	0.190	-1.40E+05	1.70E+05	0.1161	0.0018	5.222	0.073	0.3260	0.0047	0.5839	1897	14.0	28.0	1856	6.0	12.0	1819	11.5	23.0	98
AKR1z82r	109.40	34.43	30.31	0.310	5.00E+04	8.90E+04	0.1081	0.0021	4.732	0.080	0.3147	0.0043	0.2612	1768	17.5	35.0	1773	7.0	14.0	1764	10.5	21.0	99
AKR1z83	204.70	149.30	42.07	0.730	-5.50E+04	5.50E+04	0.0607	0.0019	0.800	0.022	0.0947	0.0013	-0.0316	629	33.5	67.0	597	6.0	12.0	583	4.0	8.0	98
AKR1z84	190.50	123.20	34.68	0.650	-2.70E+04	4.90E+04	0.0597	0.0016	0.791	0.019	0.0963	0.0014	0.1826	593	29.0	58.0	592	5.5	11.0	592	4.0	8.0	100
AKR1z85	164.40	34.10	31.10	0.210	-4.00E+05	1.70E+05	0.1245	0.0020	6.066	0.082	0.3504	0.0047	0.4506	2022	14.0	28.0	1985	6.0	12.0	1937	11.0	22.0	98
AKR1z86	469.00	135.50	70.70	0.290	-1.00E+05	2.10E+05	0.0798	0.0016	1.735	0.035	0.1569	0.0031	0.6951	1192	20.0	40.0	1022	6.5	13.0	940	8.5	17.0	92
AKR1z87c	96.40	83.90	72.20	0.870	3.50E+04	6.70E+04	0.1093	0.0022	4.731	0.082	0.3134	0.0043	0.1667	1788	18.5	37.0	1773	7.5	15.0	1757	10.5	21.0	99
AKR1z87r	55.11	46.82	40.57	0.850	-9.00E+04	5.70E+04	0.1087	0.0025	4.598	0.097	0.3071	0.0046	0.2272	1778	21.0	42.0	1749	9.0	18.0	1726	11.5	23.0	99
AKR1z88	347.00	277.80	309.40	0.800	-1.30E+05	3.50E+05	0.1370	0.0020	7.200	0.110	0.3810	0.0067	0.8009	2190	12.5	25.0	2137	7.0	14.0	2081	15.5	31.0	97
AKR1z90	314.50	128.60	53.80	0.410	-8.00E+05	1.20E+05	0.0667	0.0015	1.303	0.025	0.1413	0.0018	0.3584	828	23.5	47.0	847	5.5	11.0	852	5.0	10.0	101
AKR1z91	371.90	172.30	40.04	0.460	7.30E+04	6.00E+04	0.0577	0.0016	0.626	0.014	0.0784	0.0011	-0.0456	518	30.5	61.0	494	4.5	9.0	487	3.5	7.0	99
AKR1z92	224.60	145.30	40.70	0.650	-6.00E+04	6.40E+04	0.0595	0.0017	0.780	0.019	0.0952	0.0013	0.0949	585	31.0	62.0	585	5.5	11.0	586	4.0	8.0	100
AKR1z93	200.20	44.43	20.36	0.220	-1.20E+05	1.10E+05	0.0710	0.0016	1.585	0.033	0.1611	0.0022	0.3178	957	23.0	46.0	964	6.5	13.0	963	6.0	12.0	100
AKR1z94	150.40	78.50	82.20	0.520	-8.00E+05	1.50E+05	0.1291	0.0022	6.521	0.089	0.3667	0.0049	0.3715	2086	15.0	30.0	2049	6.0	12.0	2014	11.5	23.0	98
AKR1z97	418.00	206.00	124.30	0.490	-2.90E+06	1.00E+06	0.0847	0.0015	2.390	0.035	0.2046	0.0027	0.4907	1309	17.0	34.0	1240	5.0	10.0	1200	7.0	14.0	97
AKR1z98	160.90	126.50	34.50	0.790	-5.70E+04	4.40E+04	0.0573	0.0019	0.711	0.022	0.0894	0.0013	0.1681	503	36.5	73.0	545	6.5	13.0	552	4.0	8.0	101
AKR1z100	214.60	127.00	138.40	0.590	-5.00E+06	1.90E+06	0.1339	0.0020	7.372	0.096	0.3992	0.0054	0.6215	2150	13.0	26.0	2158	6.0	12.0	2165	12.5	25.0	100
AKR1z101	390.20	392.00	401.00	1.000	-1.32E+06	5.90E+05	0.1318	0.0018	7.132	0.069	0.3920	0.0050	0.3818	2122	12.0	24.0	2128	4.5	9.0	2132	11.5	23.0	100
AKR1z102c	673.00	320.50	395.60	0.480	-1.90E+06	1.40E+06	0.1740	0.0022	11.373	0.110	0.4743	0.0065	0.7431	2597	10.5	21.0	2554	4.5	9.0	2502	14.0	28.0	98
AKR1z102r	256.00	63.70	69.60	0.250	-7.00E+05	2.80E+05	0.1553	0.0023	9.200	0.180	0.4285	0.0073	0.8455	2405	12.5	25.0	2358	9.0	18.0	2299	16.5	33.0	97
AKR1z103	212.30	213.50	64.60	1.010	-3.20E+05	1.40E+05	0.0602	0.0018	0.861	0.023	0.1036	0.0014	0.1141	611	32.5	65.0	631	6.5	13.0	636	4.0	8.0	101
AKR1z106	178.70	113.70	120.30	0.640	-7.20E+05	4.20E+05	0.1324	0.0021	7.176	0.088	0.3907	0.0050	0.2433	2130	14.0	28.0	2134	5.5	11.0	2126	11.5	23.0	100
AKR1z107	315.80	812.00	229.20	2.570	-8.50E+05	3.20E+05	0.0602	0.0016	0.822	0.017	0.0987	0.0013	0.0385	611	28.5	57.0	609	4.5	9.0	607	4.0	8.0	100
AKR1z108	675.00	469.00	700.00	0.690	-1.70E+06	1.50E+06	0.2937	0.0038	24.950	0.220	0.6171	0.0077	0.5678	3437	10.0	20.0	3306	4.5	9.0	3098	15.5	31.0	94
AKR1z109	561.00	407.30	201.70	0.730	-5.30E+05	5.10E+05	0.0744	0.0013	1.842	0.023	0.1785	0.0023	0.3144	1053	17.5	35.0	1061	4.0	8.0	1059	6.5	13.0	100
AKR1z110	18.50	17.85	5.53	0.960	-4.70E+04	1.60E+04	0.0628	0.0056	0.864	0.075	0.1008	0.0023	-0.0691	701	95.0	190.0	632	20.5	41.0	619	6.5	13.0	98
AKR1z111	354.00	211.00	223.00	0.600	-1.60E+06	7.50E+05	0.1622	0.0022	9.928	0.097	0.4434	0.0056	0.4035	2479	11.5	23.0	2428	4.5	9.0	2366	12.5	25.0	97
AKR1z112	142.10	37.80	12.62	0.270	1.50E+05	1.00E+05	0.0623	0.0019	0.975	0.026	0.1137	0.0016	0.0444	684	32.5	65.0	691	6.5	13.0	694	4.5	9.0	100
AKR1z113	451.20	364.40	485.60	0.810	5.10E+06	2.70E+06	0.1762	0.0023	12.555	0.120	0.5132	0.0067	0.6098	2617	11.0	22.0	2647	4.5	9.0	2670	14.5	29.0	101
AKR1z114	246.90	238.50	66.70	0.970	-4.60E+05	1.60E+05	0.0601	0.0018	0.811	0.021	0.0983	0.0014	0.0790	607	32.5	65.0	603	6.0	12.0	605	4.0	8.0	100
AKR1z115	439.80	351.80	97.90	0.800	4.50E+04	9.60E+04	0.0596	0.0014	0.799	0.016	0.0970	0.0013	0.1550	589	25.5	51.0	596	4.5	9.0	597	4.0	8.0	100
AKR1z117	430.00	505.00	90.30	1.170	-1.03E+06	4.90E+05	0.0666	0.0016	0.806	0.017	0.0883	0.0016	0.3523	825	25.0	50.0	600	5.0	10.0	545	4.5	9.0	91
AKR1z118	448.90	399.00	501.00	0.890	-1.70E+06	1.30E+06	0.1824	0.0024	12.253	0.110	0.4877	0.0060	0.4438	2675	11.0	22.0	2624	4.0	8.0	2561	13.0	26.0	98
AKR1z119	149.70	120.30	37.30	0.800	-1.00E+05	5.20E+04	0.0615	0.0019	0.875	0.025	0.1033	0.0014	0.0521	657	33.0	66.0	638	7.0	14.0	634	4.0	8.0	99
AKR1z120	169.20	90.50	72.29	0.530	-2.70E+05	1.30E+05	0.1190	0.0021	4.608	0.066	0.2800	0.0039	0.3585	1941	16.0	32.0	1751	6.0	12.0	1591	10.0	20.0	91
AKR1z121	275.00	212.50	203.20	0.770	-3.80E+05	2.30E+05	0.1108	0.0018	4.070	0.130	0.2677	0.0072	0.9257	1813	15.0	30.0	1648	13.0	26.0	1529	18.5	37.0	93
AKR1z122	269.80	256.90	351.70	0.950	-2.30E+05	4.40E+05	0.1843	0.0026	11.730	0.120	0.4585	0.0059	0.4467	2692	11.5	23.0	2583	5.0	10.0	2433	13.0	26.0	94
AKR1z123	216.40	194.70	209.10	0.900	-8.70E+06	2.90E+06	0.1341	0.0019	7.514	0.081	0.4053	0.0052	0.4412	2152	12.5	25.0	2175	5.0	10.0	2193	12.0	24.0	101
AKR1z124	134.80	124.70	53.82	0.930	-3.40E+05	2.10E+05	0.0703	0.0019	1.554	0.037	0.1584	0.0022	0.1793	937	27.5	55.0	952	7.5	15.0	948	6.0	12.0	100
AKR1z125	258.60	206.70	244.60	0.800	2.00E+07	1.50E+07	0.1887	0.0029	12.220	0.190	0.4698	0.0064	0.7141	2731	12.5	25.0	2621	7.5	15.0	2483	14.0	28.0	95
AKR1z127	375.80	384.00	114.20	1.020	-6.00E+05	2.00E+05	0.0611	0.0014	0.881	0.017	0.1040	0.0014	0.2393	643	24.5	49.0	642	4.5	9.0	638	4.0	8.0	99
AKR1z128	171.10	176.30	83.70	1.030	-3.40E+05	1.40E+05	0.0739	0.0017	1.740	0.033	0.1701	0.0022	0.0729	1039	23.0	46.0	1023	6.0	12.0	1013	6.0	12.0	99
AKR1z129	140.10	142.30	42.50	1.020	-1.80E+04	4.20E+04	0.0598	0.0020	0.825	0.024	0.1006	0.0015	0.0438	596	36.0	72.0	611	6.5	13.0	618	4.5	9.0	101
AKR1z130	247.10	405.00	398.00	1.640	-5.60E+05	3.60E+05	0.1518	0.0022	8.120	0.120	0.3882	0.0072	0.8625	2366	12.5	25.0	2244	6.5	13.0	2114	16.5	33.0	94
AKR1z131	161.80	74.20	66.20	0.460	-3.90E+05	1.60E+05	0.1342	0.0022	5.995	0.081	0.3222	0.0043	0.3685	2154	14.5	29.0	1975	6.0	12.0	1800	10.5	21.0	91
AKR1z132	131.80	249.00	259.00	1.890	-2.30E+05	3.00E+05	0.1250	0.0020	6.561	0.089	0.3799	0.0052	0.4202	2029	14.0	28.0	2054	6.0	12.0	2076	12.0	24.0	101
AKR1z133	808.00	266.00	101.70	0.330	8.00E+05	2.10E+05	0.0724	0.0014	1.216	0.019	0.1238	0.0022	0.5987	996	19.5	39.0	808	4.5	9.0	752	6.5	13.0	93
AKR1z134	226.30	62.40	48.85	0.280	-1.50E+05	1.60E+05	0.1116	0.0018	4.062	0.070	0.2643	0.0041	0.6948	1826	14.5	29.0	1647	7.0	14.0	1512	10.5	21.0	92
AKR1z135	152.70	172.70	55.60	1.130	-2.60E+04	4.40E+04	0.0605	0.0020	0.903	0.028	0.1092	0.0015	0.3188	622	35.5	71.0	653	7.5	15.0	668	4.5	9.0	102
AKR1z139	185.70	297.80	192.40	1.600	-1.30E+05	1.40E+05	0.1168	0.0020	4.415	0.078	0.2766	0.0044	0.6636	1908	15.5	31.0	1715	7.5	15.0	1574	11.0	22.0	92
AKR1z140	277.60	171.90	151.30	0.620	-5.60E+05	3.40E+05	0.1141	0.0017	5.150	0.058	0.3266	0.0041	0.2201	1866	13.5	27.0	1844	5.0	10.0	1822	10.0	20.0	99
AKR1z141	249.70	288.20	89.20	1.150	3.00E+05	1.20E+05	0.0616	0.0016	0.909	0.021	0.1066	0.0016	0.2749	660	28.0	56.0	657	5.5	11.0	653	4.5	9.0	99
AKR1z142	232.30	117.90	35.50	0.510	-5.80E+05	3.10E+05	0.0606	0.0017	0.889	0.022	0.1062	0.0014	0.1027	625	30.0	60.0	646	6.0	12.0	651	4.0	8.0	101
AKR1z143	292.80	98.30	41.00	0.340	1.51E+06	7.20E+05	0.0719	0.0016	1.192	0.021	0.1210	0.0017	0.1573	983	22.5	45.0	797	5.0	10.0	736	5.0	10.0	92
Discordant data																							
AKR1z10	626.60	35.90	24.14	0.060	5.40E+05	6.00E+05	0.1194	0.0019	4.307	0.040	0.2617	0.0033	0.4335	1947	14.0	28.0	1695	4.0	8.0	1499	8.5	17.0	88
AKR1z14	720.00	145.20	82.90	0.200	4.60E+05	1.20E+05	0.0814	0.0016	1.110	0.018	0.0984	0.0013	0.3103	1231	19.5	39.0	758	4.5	9.0	605	4.0	8.0	80

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AKR1z17r	564.00	63.80	24.11	0.110	-1.00E+05	2.00E+05	0.0850	0.0019	1.319	0.041	0.1119	0.0024	0.8507	1316	21.5	43.0	854	9.0	18.0	684	7.0	14.0	80
AKR1z30	867.00	498.10	146.10	0.570	6.50E+05	4.10E+05	0.1500	0.0024	4.117	0.083	0.1973	0.0043	0.9008	2346	13.5	27.0	1658	8.0	16.0	1161	11.5	23.0	70
AKR1z31	410.00	573.00	112.00	1.400	1.35E+05	3.70E+04	0.1225	0.0051	1.108	0.026	0.0657	0.0015	-0.3536	1993	37.0	74.0	757	6.5	13.0	410	4.5	9.0	54
AKR1z37	186.00	107.60	43.20	0.580	1.40E+04	5.70E+04	0.0816	0.0035	1.271	0.043	0.1114	0.0020	-0.3493	1236	42.0	84.0	833	9.5	19.0	681	6.0	12.0	82
AKR1z41	715.00	163.80	71.80	0.230	3.40E+05	1.30E+05	0.0803	0.0015	1.013	0.016	0.0913	0.0013	0.5020	1204	18.5	37.0	710	4.0	8.0	563	4.0	8.0	79
AKR1z43	275.70	272.00	202.20	0.990	3.40E+05	1.70E+05	0.1459	0.0023	6.706	0.100	0.3326	0.0065	0.7273	2298	13.5	27.0	2073	6.5	13.0	1851	15.5	31.0	89
AKR1z48	735.00	446.70	323.00	0.610	1.15E+06	3.00E+05	0.1548	0.0021	6.320	0.077	0.2949	0.0045	0.7475	2400	11.5	23.0	2021	5.5	11.0	1666	11.0	22.0	82
AKR1z52	759.00	821.00	267.00	1.080	2.12E+05	5.20E+04	0.1321	0.0041	1.266	0.039	0.0716	0.0011	0.2873	2126	27.0	54.0	831	8.5	17.0	446	3.5	7.0	54
AKR1z60	284.60	641.00	132.30	2.250	-1.00E+04	4.50E+04	0.1321	0.0034	1.321	0.026	0.0728	0.0011	-0.0548	2126	22.5	45.0	855	5.5	11.0	453	3.5	7.0	53
AKR1z62	460.00	419.00	140.00	0.910	2.18E+05	6.40E+04	0.0942	0.0031	1.234	0.041	0.0946	0.0013	0.3912	1512	31.0	62.0	816	9.5	19.0	582	4.0	8.0	71
AKR1z64c	75.98	34.79	22.30	0.460	-1.10E+04	7.70E+04	0.1730	0.0042	8.830	0.300	0.3686	0.0076	0.8460	2587	20.5	41.0	2321	15.5	31.0	2023	18.0	36.0	87
AKR1z69	726.00	552.00	391.00	0.760	-1.20E+05	7.10E+05	0.1432	0.0019	6.538	0.060	0.3292	0.0042	0.5493	2266	11.5	23.0	2051	4.0	8.0	1835	10.0	20.0	89
AKR1z80	586.00	794.00	237.30	1.350	1.50E+05	1.30E+05	0.0750	0.0016	1.086	0.019	0.1046	0.0016	0.4810	1069	21.5	43.0	747	4.5	9.0	641	4.5	9.0	86
AKR1z89	159.40	66.90	17.47	0.420	1.10E+04	2.30E+04	0.1084	0.0044	0.758	0.026	0.0547	0.0023	0.4091	1773	37.0	74.0	573	7.5	15.0	343	7.0	14.0	60
AKR1z95	1300.00	1570.00	2040.00	1.210	7.30E+04	2.10E+04	0.3860	0.0470	10.900	2.300	0.1170	0.0190	0.9933	3855	92.0	184.0	2515	98.0	196.0	713	55.0	110.0	28
AKR1z96	331.00	254.00	176.90	0.770	-3.20E+06	1.40E+06	0.1364	0.0020	5.402	0.066	0.2879	0.0042	0.5619	2182	13.0	26.0	1885	5.0	10.0	1631	10.5	21.0	87
AKR1z99	583.00	561.00	138.50	0.960	-3.80E+05	2.50E+05	0.0763	0.0017	0.899	0.017	0.0864	0.0017	0.6224	1103	22.5	45.0	651	4.5	9.0	534	5.0	10.0	82
AKR1z104	461.50	259.50	76.90	0.560	7.70E+04	9.50E+04	0.0710	0.0017	0.941	0.016	0.0977	0.0015	0.1066	957	24.5	49.0	673	4.0	8.0	601	4.5	9.0	89
AKR1z105	465.00	87.80	53.00	0.190	1.00E+06	1.10E+05	0.0833	0.0018	1.221	0.020	0.1063	0.0015	0.1676	1276	21.0	42.0	810	4.5	9.0	651	4.5	9.0	80
AKR1z116	650.00	580.00	168.30	0.890	2.78E+05	8.70E+04	0.0918	0.0021	1.152	0.019	0.0920	0.0013	0.0618	1463	21.5	43.0	778	4.5	9.0	568	4.0	8.0	73
AKR1z126	794.00	314.60	128.70	0.400	-3.00E+05	4.10E+05	0.1402	0.0024	3.179	0.048	0.1635	0.0026	0.7076	2230	15.0	30.0	1452	6.0	12.0	976	7.0	14.0	67
AKR1z136	285.50	83.80	97.70	0.290	-1.17E+06	5.80E+05	0.1968	0.0028	11.350	0.120	0.4176	0.0056	0.5685	2800	11.5	23.0	2552	5.0	10.0	2250	12.5	25.0	88
AKR1z137	587.70	76.24	39.60	0.130	-3.00E+05	1.30E+05	0.0890	0.0021	1.603	0.049	0.1299	0.0023	0.8435	1404	22.5	45.0	971	9.5	19.0	787	6.5	13.0	81
AKR1z138	166.80	226.20	111.80	1.360	3.60E+04	3.60E+04	0.1352	0.0055	2.209	0.090	0.1189	0.0018	0.2427	2167	35.5	71.0	1184	14.0	28.0	724	5.0	10.0	61

Footnotes:

- Analysis references: AKR1z is zircon from sample AKR1 (mount CT18-7), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.16: Sample AKR2 (LA-ICPMS)

IGSN: IEACC0039 Coordinate UTM: Zone 29S, 704221 m E, 3757780 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AKR2z1	429.00	402.30	359.20	0.940	-8.80E+05	6.60E+05	0.1239	0.0018	5.754	0.073	0.3385	0.0045	0.6627	2013	13.0	26.0	1940	5.5	11.0	1879	11.0	22.0	97
AKR2z2	58.54	44.28	39.39	0.760	-2.40E+05	1.10E+05	0.1199	0.0028	5.720	0.120	0.3437	0.0050	0.1876	1955	21.0	42.0	1934	9.0	18.0	1904	12.0	24.0	98
AKR2z3	255.50	167.60	43.74	0.660	-3.40E+05	2.00E+05	0.0590	0.0015	0.777	0.018	0.0960	0.0013	0.1784	567	27.5	55.0	584	5.0	10.0	591	4.0	8.0	101
AKR2z4	202.00	495.90	147.60	2.450	-2.30E+05	1.10E+05	0.0624	0.0017	0.925	0.022	0.1081	0.0015	0.0983	688	29.0	58.0	665	6.0	12.0	661	4.5	9.0	99
AKR2z5	197.80	209.70	59.80	1.060	-2.00E+05	1.20E+05	0.0631	0.0019	0.853	0.023	0.0983	0.0014	0.1703	712	32.0	64.0	626	6.5	13.0	605	4.0	8.0	97
AKR2z7	118.80	48.25	15.56	0.410	-9.90E+04	3.80E+04	0.0611	0.0021	0.833	0.025	0.1005	0.0016	0.0588	643	37.0	74.0	615	7.0	14.0	617	4.5	9.0	100
AKR2z8	65.00	73.88	70.61	1.140	-1.34E+05	8.20E+04	0.1210	0.0025	6.240	0.110	0.3709	0.0054	0.2430	1971	18.5	37.0	2010	7.5	15.0	2034	12.5	25.0	101
AKR2z9	304.70	212.50	61.05	0.700	2.30E+04	5.20E+04	0.0629	0.0015	0.867	0.018	0.1002	0.0013	0.1623	705	25.5	51.0	634	5.0	10.0	615	4.0	8.0	97
AKR2z10	216.50	278.80	84.10	1.290	-2.50E+05	1.30E+05	0.0623	0.0017	0.934	0.022	0.1082	0.0015	0.2495	684	29.0	58.0	670	6.0	12.0	662	4.5	9.0	99
AKR2z11	272.60	77.70	85.70	0.290	-5.00E+05	4.30E+05	0.1650	0.0023	9.924	0.100	0.4366	0.0055	0.5000	2508	11.5	23.0	2428	4.5	9.0	2335	12.5	25.0	96
AKR2z12	220.50	118.67	149.30	0.540	-2.00E+05	2.90E+05	0.1821	0.0026	12.820	0.150	0.5101	0.0066	0.5464	2672	12.0	24.0	2667	5.5	11.0	2657	14.0	28.0	100
AKR2z13	354.20	457.90	131.60	1.290	-3.20E+05	1.80E+05	0.0645	0.0021	0.863	0.024	0.0967	0.0013	-0.0620	758	34.5	69.0	632	6.5	13.0	595	4.0	8.0	94
AKR2z14	358.00	289.80	349.70	0.810	-6.70E+05	5.50E+05	0.1647	0.0023	10.813	0.100	0.4776	0.0059	0.3379	2504	11.5	23.0	2507	4.5	9.0	2517	13.0	26.0	100
AKR2z15	604.40	113.80	101.40	0.190	-4.60E+05	5.90E+05	0.1239	0.0017	5.793	0.055	0.3394	0.0042	0.4249	2014	12.0	24.0	1945	4.0	8.0	1884	10.0	20.0	97
AKR2z16	355.60	162.80	46.89	0.460	-5.90E+05	2.70E+05	0.0601	0.0015	0.846	0.018	0.1023	0.0014	0.1459	607	27.0	54.0	622	5.0	10.0	628	4.0	8.0	101
AKR2z17	127.70	70.07	32.18	0.550	-2.19E+05	9.80E+04	0.0729	0.0021	1.706	0.042	0.1695	0.0023	0.1392	1011	29.0	58.0	1011	8.0	16.0	1009	6.5	13.0	100
AKR2z18	132.00	233.60	65.70	1.770	-1.33E+05	6.80E+04	0.0590	0.0020	0.793	0.025	0.0979	0.0014	0.1822	567	37.0	74.0	593	7.0	14.0	602	4.0	8.0	102
AKR2z19	173.90	189.10	114.10	1.090	-4.00E+05	1.10E+05	0.1144	0.0021	4.483	0.076	0.2836	0.0041	0.4873	1870	16.5	33.0	1728	7.0	14.0	1609	10.5	21.0	93
AKR2z20	121.20	132.60	169.00	1.090	-2.60E+05	1.20E+05	0.1854	0.0027	13.130	0.140	0.5156	0.0067	0.4166	2702	12.0	24.0	2689	5.0	10.0	2680	14.0	28.0	100
AKR2z21	260.40	134.90	61.69	0.520	4.30E+06	2.10E+06	0.0710	0.0015	1.551	0.026	0.1583	0.0021	0.1682	957	21.5	43.0	951	5.0	10.0	947	6.0	12.0	100
AKR2z22	305.30	42.13	41.96	0.140	-6.10E+06	2.30E+06	0.1242	0.0018	6.305	0.071	0.3700	0.0048	0.4724	2017	13.0	26.0	2019	5.0	10.0	2029	11.5	23.0	101
AKR2z23	138.10	50.58	24.10	0.370	-3.70E+05	1.50E+05	0.0718	0.0018	1.701	0.037	0.1707	0.0024	0.2463	980	25.5	51.0	1009	7.0	14.0	1016	6.5	13.0	101
AKR2z24	238.50	145.30	45.20	0.610	4.10E+05	2.00E+05	0.0612	0.0017	0.901	0.022	0.1065	0.0015	0.1078	646	30.0	60.0	652	6.0	12.0	652	4.5	9.0	100
AKR2z25	358.30	291.90	89.60	0.810	2.50E+05	1.80E+05	0.0632	0.0015	0.941	0.017	0.1080	0.0014	0.1001	715	25.0	50.0	673	4.5	9.0	661	4.0	8.0	98
AKR2z26	329.90	51.17	50.96	0.160	1.70E+06	1.00E+06	0.1252	0.0018	6.660	0.071	0.3851	0.0049	0.4428	2032	12.5	25.0	2067	4.5	9.0	2100	11.5	23.0	102
AKR2z27	290.40	207.30	249.50	0.710	3.40E+06	2.10E+06	0.1635	0.0023	10.690	0.100	0.4759	0.0061	0.4651	2492	12.0	24.0	2497	4.5	9.0	2509	13.5	27.0	101
AKR2z28	268.30	118.10	36.94	0.440	-2.40E+05	1.30E+05	0.0627	0.0015	0.941	0.019	0.1092	0.0015	0.2375	698	25.5	51.0	673	5.0	10.0	668	4.5	9.0	99
AKR2z29	44.86	95.90	24.08	2.140	-4.30E+03	8.60E+03	0.0576	0.0036	0.717	0.040	0.0892	0.0017	-0.0327	515	68.5	137.0	549	12.0	24.0	551	5.0	10.0	100
AKR2z30	344.00	117.40	94.50	0.340	-6.70E+05	2.90E+05	0.1046	0.0016	4.380	0.053	0.3057	0.0042	0.4750	1707	14.0	28.0	1709	5.0	10.0	1720	10.5	21.0	101
AKR2z31	177.50	247.50	72.80	1.390	-6.60E+05	4.20E+05	0.0625	0.0018	0.874	0.023	0.1011	0.0015	0.2239	691	30.5	61.0	638	6.0	12.0	621	4.5	9.0	97
AKR2z33	391.00	196.40	173.10	0.500	-1.50E+06	1.10E+06	0.1201	0.0017	5.351	0.066	0.3230	0.0046	0.6407	1958	12.5	25.0	1877	5.5	11.0	1804	11.0	22.0	96
AKR2z34	301.70	492.70	145.10	1.630	-6.90E+05	3.30E+05	0.0621	0.0014	0.900	0.018	0.1059	0.0014	0.2336	678	24.0	48.0	652	5.0	10.0	649	4.0	8.0	100
AKR2z35	222.80	219.40	68.90	0.980	1.90E+05	1.20E+05	0.0632	0.0017	0.924	0.022	0.1063	0.0015	0.1037	715	28.5	57.0	664	6.0	12.0	651	4.5	9.0	98
AKR2z36	96.00	54.04	46.71	0.560	9.40E+05	3.10E+05	0.1093	0.0021	4.942	0.078	0.3271	0.0044	0.1877	1788	17.5	35.0	1809	6.5	13.0	1824	10.5	21.0	101
AKR2z39	228.00	120.00	120.60	0.530	6.30E+05	2.60E+05	0.1227	0.0021	5.756	0.076	0.3508	0.0053	0.5103	1996	15.0	30.0	1940	5.5	11.0	1938	12.5	25.0	100
AKR2z40	277.60	251.90	72.26	0.910	-2.00E+05	1.00E+05	0.0609	0.0015	0.816	0.018	0.0984	0.0014	0.2389	636	26.5	53.0	606	5.0	10.0	605	4.0	8.0	100
AKR2z41	63.35	61.60	18.61	0.970	-8.80E+04	4.40E+04	0.0607	0.0030	0.865	0.040	0.1042	0.0017	-0.0820	629	53.0	106.0	633	11.0	22.0	639	5.0	10.0	101
AKR2z42	207.80	106.50	30.10	0.510	-9.60E+04	6.70E+04	0.0692	0.0024	0.871	0.029	0.0925	0.0014	0.1417	905	35.5	71.0	636	8.0	16.0	570	4.0	8.0	90
AKR2z43	252.20	144.90	141.80	0.570	1.11E+06	5.40E+05	0.1252	0.0018	6.480	0.071	0.3746	0.0048	0.3711	2032	12.5	25.0	2043	5.0	10.0	2051	11.5	23.0	100
AKR2z44	137.70	54.10	57.30	0.390	7.40E+05	3.30E+05	0.1333	0.0021	7.405	0.089	0.4027	0.0051	0.3029	2142	14.0	28.0	2162	5.5	11.0	2181	11.5	23.0	101
AKR2z45	258.10	127.10	143.00	0.490	-7.50E+05	5.70E+05	0.1499	0.0023	8.900	0.140	0.4290	0.0067	0.7125	2345	13.0	26.0	2328	7.0	14.0	2301	15.0	30.0	99
AKR2z46	138.70	57.80	20.15	0.420	1.64E+05	7.30E+04	0.0635	0.0019	1.065	0.028	0.1225	0.0017	0.2431	725	31.5	63.0	736	7.0	14.0	745	5.0	10.0	101
AKR2z47	382.90	407.10	121.40	1.060	2.00E+05	1.10E+05	0.0620	0.0014	0.882	0.018	0.1038	0.0014	0.3060	674	24.0	48.0	642	5.0	10.0	637	4.0	8.0	99
AKR2z48	118.20	176.00	83.30	1.490	1.61E+06	6.70E+05	0.0746	0.0019	1.769	0.039	0.1726	0.0024	0.2098	1058	25.5	51.0	1034	7.0	14.0	1026	6.5	13.0	99
AKR2z49	405.20	121.70	46.80	0.300	6.70E+05	3.40E+05	0.0673	0.0015	1.233	0.023	0.1337	0.0017	0.2198	847	23.0	46.0	816	5.0	10.0	809	5.0	10.0	99
AKR2z50	349.00	345.00	92.90	0.990	6.60E+05	3.30E+05	0.0632	0.0016	0.835	0.017	0.0963	0.0013	0.2242	715	27.0	54.0	616	4.5	9.0	593	4.0	8.0	96
AKR2z51	99.80	47.49	12.91	0.480	-9.60E+04	4.70E+04	0.0609	0.0026	0.792	0.029	0.0947	0.0015	-0.0472	636	46.0	92.0	592	8.0	16.0	583	4.5	9.0	98
AKR2z52	298.50	410.10	189.90	1.370	1.23E+06	4.70E+05	0.0780	0.0016	1.788	0.029	0.1659	0.0023	0.2798	1147	20.5	41.0	1041	5.5	11.0	989	6.5	13.0	95
AKR2z53	89.70	67.67	20.63	0.750	1.72E+05	8.20E+04	0.0613	0.0024	0.888	0.032	0.1056	0.0017	0.0205	650	42.0	84.0	645	8.5	17.0	647	5.0	10.0	100
AKR2z54	325.70	138.90	104.20	0.430	2.50E+06	1.30E+06	0.0978	0.0015	3.785	0.044	0.2813	0.0036	0.3648	1582	14.5	29.0	1590	4.5	9.0	1598	9.0	18.0	101
AKR2z55	391.10	14.49	2.83	0.040	9.20E+05	2.50E+05	0.0630	0.0014	0.957	0.017	0.1106	0.0015	0.1124	708	23.5	47.0	682	4.5	9.0	676	4.5	9.0	99
AKR2z56	75.50	41.66	15.99	0.550	7.50E+04	3.20E+04	0.0670	0.0025	1.256	0.042	0.1361	0.0020	-0.0750	838	39.0	78.0	826	9.5	19.0	823	5.5	11.0	100
AKR2z57	80.00	42.51	13.23	0.530	1.70E+04	2.30E+04	0.0617	0.0025	0.887	0.034	0.1037	0.0016	0.1548	664	43.5	87.0	645	9.0	18.0	636	4.5	9.0	99
AKR2z59	104.60	51.13	15.27	0.490	3.20E+04	2.80E+04	0.0609	0.0020	0.901	0.027	0.1063	0.0016	0.0549	636	35.5	71.0	652	7.0	14.0	651	4.5	9.0	100
AKR2z60	239.00	159.30	47.29	0.670	-9.00E+04	4.70E+04	0.0612	0.0016	0.863	0.021	0.1019	0.0014	0.2540	646	28.0	56.0	632	5.5	11.0	626	4.0	8.0	99
AKR2z63	174.20	282.20	77.70	1.620	-8.50E+05	9.80E+05	0.0620	0.0019	0.832	0.023	0.0972	0.0013	-0.0121	674	33.0	66.0	615	6.5	13.0	598	4.0	8.0	97
AKR2z64	129.60	97.50	26.91	0.750	1.50E+05	2.80E+05	0.0601	0.0023	0.801	0.028	0.0972	0.0014	-0.0478	607	41.5	83.0	597	8.0	16.0	598	4.0	8.0	100
AKR2z65	202.50	154.40	43.89	0.760	-2.42E+05	8.10E+04	0.0614	0.0020	0.829	0.025	0.0989	0.0014	0.1425	653	35.0	70.0	613	7.0	14.0	608	4.0	8.0	99
AKR2z66	312.00	525.00	143.20	1.680	5.30E+05	1.70E+05	0.0610	0.0018	0.806	0.019	0.0946	0.0013	-0.1576	639	31.5	63.0	600	5.5	11.0	582	4.0	8.0	97
AKR2z67	139.60	89.42	28.09	0.640	3.00E+06	1.70E+06	0.0636	0.0021	0.929	0.027	0.1065	0.0015	0.0575	728	35.0	70.0	667	7.0	14.0	652	4.5	9.0	98

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AKR2z68	65.27	69.00	62.59	1.060	-3.20E+04	4.20E+04	0.1182	0.0025	5.326	0.094	0.3276	0.0049	0.2894	1929	19.0	38.0	1873	7.5	15.0	1827	12.0	24.0	98
AKR2z69	209.10	160.20	136.30	0.770	1.30E+05	1.50E+05	0.1096	0.0018	4.841	0.063	0.3212	0.0041	0.3421	1793	15.0	30.0	1792	5.5	11.0	1796	10.0	20.0	100
AKR2z70	536.00	311.60	105.80	0.580	5.00E+05	1.40E+05	0.0628	0.0012	1.015	0.016	0.1179	0.0015	0.2534	702	20.5	41.0	711	4.0	8.0	718	4.5	9.0	101
AKR2z71	158.20	219.00	60.28	1.380	1.16E+05	5.40E+04	0.0608	0.0018	0.799	0.023	0.0955	0.0014	0.2002	632	32.0	64.0	596	6.5	13.0	588	4.0	8.0	99
AKR2z73	423.70	327.40	85.20	0.770	1.60E+05	1.00E+05	0.0620	0.0014	0.820	0.014	0.0965	0.0013	0.1832	674	24.0	48.0	608	4.0	8.0	594	4.0	8.0	98
AKR2z74	143.80	79.51	80.30	0.550	3.60E+05	1.70E+05	0.1301	0.0021	6.901	0.097	0.3829	0.0055	0.4857	2099	14.0	28.0	2099	6.0	12.0	2090	13.0	26.0	100
AKR2z75	261.10	326.50	93.60	1.250	4.40E+04	6.50E+04	0.0597	0.0016	0.809	0.018	0.0991	0.0014	0.1108	593	29.0	58.0	602	5.0	10.0	609	4.0	8.0	101
AKR2z76	294.60	27.32	28.25	0.090	1.31E+06	7.10E+05	0.1253	0.0018	6.601	0.076	0.3808	0.0050	0.5045	2033	12.5	25.0	2059	5.0	10.0	2080	11.5	23.0	101
AKR2z78	136.40	73.10	52.40	0.540	4.20E+05	1.30E+05	0.0929	0.0020	3.342	0.057	0.2598	0.0035	0.1264	1486	20.5	41.0	1491	6.5	13.0	1489	9.0	18.0	100
AKR2z79	126.70	86.00	69.80	0.680	1.19E+05	9.70E+04	0.1082	0.0022	4.337	0.079	0.2905	0.0039	0.3020	1769	18.5	37.0	1700	7.5	15.0	1644	9.5	19.0	97
AKR2z80	187.10	101.60	28.39	0.540	9.80E+04	4.80E+04	0.0616	0.0019	0.814	0.022	0.0968	0.0013	0.0008	660	33.0	66.0	605	6.0	12.0	595	4.0	8.0	98
AKR2z81	103.00	184.00	53.30	1.790	2.80E+04	2.60E+04	0.0604	0.0024	0.813	0.030	0.0984	0.0015	0.0990	618	43.0	86.0	604	8.5	17.0	605	4.5	9.0	100
AKR2z82	95.90	62.10	17.88	0.650	-4.00E+06	1.30E+06	0.0605	0.0026	0.803	0.032	0.0969	0.0015	0.0510	622	46.5	93.0	599	9.0	18.0	596	4.5	9.0	100
AKR2z83	140.10	113.00	123.40	0.810	2.60E+06	1.20E+06	0.1329	0.0024	7.250	0.120	0.3970	0.0054	0.5910	2137	16.0	32.0	2143	7.5	15.0	2155	12.5	25.0	101
AKR2z84	297.50	317.00	125.60	1.070	-2.00E+04	8.40E+04	0.0655	0.0015	1.239	0.023	0.1368	0.0018	0.2298	790	24.0	48.0	818	5.0	10.0	827	5.0	10.0	101
AKR2z85	361.40	483.00	144.90	1.340	5.20E+05	2.40E+05	0.0604	0.0014	0.889	0.016	0.1063	0.0014	0.0475	618	25.0	50.0	646	4.5	9.0	651	4.0	8.0	101
AKR2z87	148.80	118.60	41.90	0.800	6.00E+04	4.10E+04	0.0668	0.0020	1.141	0.028	0.1242	0.0017	0.0545	832	31.0	62.0	773	6.5	13.0	755	5.0	10.0	98
AKR2z88	146.00	94.00	28.48	0.640	5.30E+04	3.50E+04	0.0603	0.0019	0.855	0.024	0.1025	0.0015	0.0628	614	34.0	68.0	627	6.5	13.0	629	4.5	9.0	100
AKR2z89	97.30	73.70	21.20	0.760	1.22E+05	5.10E+04	0.0601	0.0023	0.833	0.029	0.1006	0.0015	0.0451	607	41.5	83.0	615	8.0	16.0	618	4.5	9.0	100
AKR2z90	116.50	94.90	26.28	0.810	1.08E+05	4.60E+04	0.0611	0.0022	0.838	0.028	0.0991	0.0015	0.0414	643	38.5	77.0	618	7.5	15.0	609	4.5	9.0	99
AKR2z91	371.70	298.10	100.10	0.800	1.41E+05	9.60E+04	0.0689	0.0016	1.028	0.021	0.1083	0.0016	0.3949	896	24.0	48.0	718	5.5	11.0	663	4.5	9.0	92
AKR2z92	271.00	469.00	127.80	1.730	1.80E+05	7.30E+04	0.0632	0.0017	0.853	0.020	0.0981	0.0014	0.2478	715	28.5	57.0	626	5.5	11.0	603	4.0	8.0	96
AKR2z93	460.00	264.00	121.70	0.570	1.60E+05	1.60E+05	0.0715	0.0013	1.492	0.019	0.1517	0.0019	0.1830	972	18.5	37.0	927	4.0	8.0	910	5.5	11.0	98
AKR2z94	124.00	98.20	25.09	0.790	9.00E+04	3.10E+04	0.0647	0.0022	0.958	0.028	0.1063	0.0016	-0.0951	765	36.0	72.0	682	7.5	15.0	651	4.5	9.0	95
AKR2z96	607.30	389.20	504.10	0.640	4.90E+06	1.60E+06	0.1675	0.0021	10.693	0.120	0.4607	0.0070	0.8335	2533	10.5	21.0	2497	5.0	10.0	2443	15.5	31.0	98
AKR2z98	91.16	91.38	42.16	1.000	4.30E+04	3.60E+04	0.0725	0.0022	1.640	0.045	0.1649	0.0023	0.1693	1000	31.0	62.0	986	8.5	17.0	984	6.5	13.0	100
AKR2z99	326.00	211.00	94.60	0.650	1.10E+05	1.00E+05	0.0782	0.0016	1.611	0.025	0.1497	0.0020	0.2513	1152	20.5	41.0	974	5.0	10.0	899	5.5	11.0	92
AKR2z100	298.00	162.60	77.50	0.550	1.30E+05	1.10E+05	0.0713	0.0014	1.592	0.029	0.1646	0.0027	0.5772	966	20.0	40.0	967	5.5	11.0	982	7.5	15.0	102
AKR2z101	179.50	181.50	52.40	1.010	1.30E+04	3.60E+04	0.0609	0.0018	0.827	0.020	0.0990	0.0014	0.0884	636	32.0	64.0	612	5.5	11.0	608	4.0	8.0	99
AKR2z102	266.30	337.00	95.60	1.270	5.30E+04	6.20E+04	0.0617	0.0015	0.846	0.018	0.0997	0.0013	0.0332	664	26.0	52.0	622	5.0	10.0	613	4.0	8.0	98
AKR2z103c	252.70	149.40	171.70	0.590	9.10E+05	5.00E+05	0.1490	0.0021	8.964	0.093	0.4326	0.0056	0.5084	2334	12.0	24.0	2334	4.5	9.0	2317	12.5	25.0	99
AKR2z103r	74.04	14.07	14.42	0.190	1.24E+05	8.60E+04	0.1362	0.0026	7.450	0.110	0.3975	0.0055	0.2093	2179	16.5	33.0	2167	6.5	13.0	2158	12.5	25.0	100
AKR2z104	539.90	491.70	141.80	0.910	-8.00E+03	1.00E+05	0.0600	0.0013	0.814	0.014	0.0987	0.0013	0.3145	603	23.5	47.0	605	4.0	8.0	607	4.0	8.0	100
AKR2z105	214.90	286.50	278.90	1.330	3.70E+05	2.00E+05	0.1216	0.0018	6.180	0.068	0.3658	0.0047	0.3217	1980	13.0	26.0	2002	5.0	10.0	2010	11.0	22.0	100
AKR2z106	132.40	69.70	19.14	0.530	7.00E+04	2.60E+04	0.0580	0.0019	0.768	0.024	0.0949	0.0014	0.1433	530	36.0	72.0	579	7.0	14.0	584	4.0	8.0	101
AKR2z107	386.00	221.80	104.80	0.570	4.70E+05	2.60E+05	0.0738	0.0014	1.587	0.025	0.1557	0.0023	0.4738	1037	19.0	38.0	965	5.0	10.0	933	6.5	13.0	97
AKR2z108	140.30	120.70	127.60	0.860	4.00E+05	1.20E+05	0.1337	0.0022	7.335	0.088	0.3934	0.0050	0.1905	2147	14.5	29.0	2153	5.5	11.0	2139	11.5	23.0	99
AKR2z109	468.30	503.40	462.00	1.070	1.22E+06	6.30E+05	0.1119	0.0016	5.188	0.062	0.3347	0.0048	0.6399	1830	13.0	26.0	1851	5.0	10.0	1861	11.5	23.0	101
AKR2z110	386.10	36.66	32.51	0.090	8.90E+05	4.30E+05	0.1260	0.0017	6.563	0.064	0.3747	0.0048	0.5308	2042	12.0	24.0	2054	4.5	9.0	2051	11.5	23.0	100
AKR2z111	204.90	103.20	29.30	0.500	-1.00E+03	3.30E+04	0.0596	0.0018	0.810	0.021	0.0991	0.0014	-0.0242	589	33.0	66.0	602	6.0	12.0	609	4.0	8.0	101
AKR2z112	466.30	361.80	310.20	0.780	1.90E+05	2.90E+05	0.1087	0.0015	4.732	0.047	0.3125	0.0039	0.5379	1778	12.5	25.0	1773	4.0	8.0	1753	9.5	19.0	99
AKR2z113	520.00	761.00	328.60	1.460	1.20E+06	5.40E+05	0.0754	0.0015	1.527	0.025	0.1483	0.0020	0.3257	1079	20.0	40.0	941	5.0	10.0	891	5.5	11.0	95
AKR2z114	756.00	94.30	75.00	0.120	8.10E+05	6.10E+05	0.1335	0.0018	7.173	0.071	0.3863	0.0050	0.6146	2144	12.0	24.0	2133	4.5	9.0	2106	11.5	23.0	99
AKR2z116	93.10	36.72	9.50	0.390	2.10E+04	1.70E+04	0.0582	0.0024	0.736	0.029	0.0920	0.0014	0.1121	537	45.0	90.0	560	8.5	17.0	567	4.0	8.0	101
AKR2z117	312.50	77.60	39.30	0.250	-5.00E+03	1.10E+05	0.0742	0.0015	1.687	0.049	0.1650	0.0036	0.8390	1047	20.5	41.0	1004	9.5	19.0	985	10.0	20.0	98
AKR2z118	521.10	301.80	272.30	0.580	3.50E+05	3.60E+05	0.1233	0.0017	5.531	0.068	0.3226	0.0047	0.7132	2004	12.0	24.0	1905	5.5	11.0	1802	11.5	23.0	95
AKR2z119	81.11	27.99	9.78	0.350	3.20E+04	2.10E+04	0.0621	0.0024	1.073	0.038	0.1242	0.0019	-0.0516	678	41.5	83.0	740	9.5	19.0	755	5.5	11.0	102
AKR2z120	114.60	185.90	60.60	1.620	7.00E+04	3.00E+04	0.0644	0.0023	0.876	0.028	0.1011	0.0016	0.0857	755	37.5	75.0	639	7.5	15.0	621	4.5	9.0	97
AKR2z122	215.90	135.80	132.60	0.630	9.00E+05	1.60E+05	0.1224	0.0019	5.291	0.066	0.3163	0.0046	0.4988	1992	14.0	28.0	1867	5.5	11.0	1772	11.5	23.0	95
AKR2z123	148.70	3.28	1.22	0.020	2.00E+04	3.00E+04	0.0622	0.0022	0.825	0.027	0.0974	0.0014	0.1244	681	38.0	76.0	611	7.5	15.0	599	4.0	8.0	98
AKR2z125	192.80	109.30	109.80	0.570	2.70E+06	1.60E+06	0.1362	0.0022	7.199	0.090	0.3816	0.0052	0.3423	2179	14.0	28.0	2136	5.5	11.0	2084	12.0	24.0	98
AKR2z126	359.60	268.00	85.00	0.750	4.80E+05	8.10E+05	0.0641	0.0014	0.937	0.017	0.1063	0.0014	0.1935	745	23.0	46.0	671	4.5	9.0	651	4.0	8.0	97
AKR2z127	181.30	128.30	139.20	0.710	5.00E+05	1.40E+05	0.1497	0.0022	8.744	0.092	0.4203	0.0056	0.3249	2343	12.5	25.0	2312	5.0	10.0	2262	12.5	25.0	98
AKR2z128	290.20	179.60	188.80	0.620	8.00E+05	2.40E+05	0.1713	0.0023	9.792	0.096	0.4102	0.0052	0.3974	2570	11.0	22.0	2415	4.5	9.0	2216	12.0	24.0	92
AKR2z129	270.30	429.70	435.90	1.590	1.20E+05	1.80E+05	0.1302	0.0019	6.787	0.076	0.3755	0.0054	0.4651	2101	13.0	26.0	2084	5.0	10.0	2055	12.5	25.0	99
AKR2z130	361.00	193.10	202.80	0.530	-4.20E+05	3.00E+05	0.1331	0.0019	7.167	0.085	0.3836	0.0053	0.6678	2139	12.5	25.0	2132	5.5	11.0	2093	12.5	25.0	98
AKR2z131	39.91	37.89	16.81	0.950	1.40E+04	1.10E+04	0.0785	0.0036	1.525	0.066	0.1420	0.0025	0.1077	1160	45.5	91.0	940	13.5	27.0	856	7.0	14.0	91
AKR2z132	179.90	226.60	195.50	1.260	3.00E+05	1.40E+05	0.1896	0.0027	12.030	0.130	0.4524	0.0060	0.4141	2739	11.5	23.0	2607	5.0	10.0	2406	13.5	27.0	92
AKR2z134	306.50	203.20	223.80	0.660	-1.20E+05	2.20E+05	0.1363	0.0019	7.507	0.075	0.3934	0.0050	0.4431	2181	12.0	24.0	2174	4.5	9.0	2139	11.5	23.0	98
AKR2z136	205.10	201.90	192.40	0.980	3.00E+05	1.40E+05	0.1153	0.0018	5.610	0.070	0.3490	0.0045	0.3781	1885	14.0	28.0	1918	5.5	11.0	1930	11.0	22.0	101
AKR2z137	271.80	178.90	55.30	0.660	-1.00E+03	5.50E+04	0.0603	0.0015	0.885	0.018	0.1066	0.0015	0.0940	614	27.0	54.0	644	5.0	10.0	653	4.5	9.0	101
AKR2z138	187.80	172.30	149.60	0.920	7.00E+05	1.10E+05	0.1117	0.0018	4.582	0.062	0.2931	0.0039	0.4107	1827	14.5	29.0	1746	5.5	11.0	1657	9.5	19.0	95
AKR2z141	126.60	72.00	35.77	0.570	1.90E+04	3.60E+04	0.0826	0.0026	1.709	0.050	0.1514	0.0022	0.1744	1260	31.0	62.0	1012	9.5	19.0	909	6.0	12.0	90
AKR2z142	148.30	220.30	215.60	1.490	1.20E+05	1.20E+05	0.1258	0.0022	6.588	0.092	0.3744	0.0050	0.2641	2040	15.5	31.0	2058	6.0	12.0	2050	11.5	23.0	100
AKR2z143	22.99	4.82	6.72	0.210	4.30E+04	3.30E+04	0.1932	0.0043	14.240	0.290	0.5319	0.0082	0.3445	2770	18.5	37.0	2766	9.5	19.0	2749	17.5	35.0	99
AKR2z144	299.60	132.84	200.00	0.440	4.40E+05	1.50E+05	0.1441	0.0031	8.330	0.200	0.4117	0.0054	0.6714	2277	18.5	37.0	2268	11.0	22.0	2223	12.5	25.0	98
AKR2z146	162.20	111.60	40.30	0.690	1.69E+05	6.30E+04	0.0632	0.0018	1.118	0.027	0.1282	0.0018	0.0345	715	30.5	61.0	762	6.5	13.0	778	5.0	10.0	102

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AKR2z147	284.80	200.40	58.10	0.700	1.70E+05	1.00E+05	0.0601	0.0016	0.812	0.018	0.0980	0.0013	0.0392	607	29.0	58.0	604	5.0	10.0	602	4.0	8.0	100
AKR2z148	106.90	128.40	37.05	1.200	5.40E+04	3.40E+04	0.0625	0.0021	0.853	0.028	0.0980	0.0015	0.0957	691	36.0	72.0	626	7.5	15.0	603	4.5	9.0	96
AKR2z149	50.83	44.05	30.67	0.870	-1.60E+06	3.40E+06	0.1236	0.0030	5.780	0.120	0.3366	0.0049	0.1662	2009	21.5	43.0	1943	9.0	18.0	1870	12.0	24.0	96
Discordant data																							
AKR2z6	566.70	157.10	160.90	0.280	-3.70E+05	6.80E+05	0.1768	0.0023	8.945	0.097	0.3674	0.0050	0.7447	2623	11.0	22.0	2332	5.0	10.0	2017	12.0	24.0	86
AKR2z32	340.20	421.00	242.30	1.240	4.90E+05	3.20E+05	0.1495	0.0026	4.950	0.120	0.2407	0.0050	0.8912	2340	15.0	30.0	1811	10.0	20.0	1390	13.0	26.0	77
AKR2z37	920.30	1006.20	285.10	1.090	-1.61E+06	9.30E+05	0.0604	0.0011	0.806	0.011	0.0974	0.0013	0.2996	619	19.5	39.0	600	3.0	6.0	599	4.0	8.0	100
AKR2z38	417.00	53.40	20.50	0.130	-2.00E+05	1.00E+05	0.0686	0.0015	0.817	0.016	0.0865	0.0014	0.3499	887	22.5	45.0	606	4.5	9.0	535	4.0	8.0	88
AKR2z58	692.00	725.00	5800.00	1.050	6.90E+04	1.70E+04	0.4970	0.0340	49.200	8.100	0.5740	0.0730	0.9832	4232	50.5	101.0	3976	82.0	164.0	2924	149.5	299.0	74
AKR2z61	157.50	104.20	60.10	0.660	2.30E+04	5.80E+04	0.0868	0.0021	1.957	0.042	0.1636	0.0023	0.2150	1356	23.5	47.0	1101	7.0	14.0	977	6.5	13.0	89
AKR2z62	692.00	291.00	165.40	0.420	1.85E+05	6.60E+04	0.1050	0.0032	1.875	0.051	0.1299	0.0018	0.1295	1714	28.0	56.0	1072	9.0	18.0	787	5.0	10.0	73
AKR2z72	497.00	109.30	61.80	0.220	2.55E+05	9.80E+04	0.0963	0.0032	1.204	0.031	0.0911	0.0014	-0.1257	1554	31.0	62.0	802	7.0	14.0	562	4.0	8.0	70
AKR2z77	606.00	113.80	62.20	0.190	7.90E+05	4.10E+05	0.0894	0.0022	1.386	0.038	0.1113	0.0018	0.7485	1413	23.5	47.0	883	8.0	16.0	680	5.0	10.0	77
AKR2z86	282.70	78.80	163.00	0.280	1.40E+05	1.10E+05	0.1972	0.0056	7.420	0.320	0.2669	0.0060	0.7463	2803	23.0	46.0	2163	19.5	39.0	1525	15.5	31.0	70
AKR2z95	425.40	391.70	275.60	0.920	3.90E+05	2.90E+05	0.1254	0.0022	4.450	0.110	0.2572	0.0052	0.8817	2034	15.5	31.0	1722	10.0	20.0	1476	13.5	27.0	86
AKR2z97	147.00	111.40	34.80	0.760	5.10E+04	3.20E+04	0.0734	0.0026	0.972	0.034	0.0960	0.0013	0.3043	1025	36.0	72.0	689	8.5	17.0	591	4.0	8.0	86
AKR2z115	432.00	522.00	172.60	1.210	1.51E+05	9.70E+04	0.0740	0.0018	1.123	0.026	0.1103	0.0016	0.4353	1041	24.5	49.0	764	6.0	12.0	675	4.5	9.0	88
AKR2z121	446.10	513.00	121.20	1.150	-6.40E+04	8.90E+04	0.0689	0.0015	0.840	0.015	0.0889	0.0012	0.2636	896	22.5	45.0	619	4.0	8.0	549	3.5	7.0	89
AKR2z124	938.00	450.00	550.00	0.480	6.90E+04	4.00E+03	0.2189	0.0061	3.391	0.081	0.1133	0.0015	0.2195	2973	22.5	45.0	1502	9.5	19.0	692	4.5	9.0	46
AKR2z133	0.00	0.00	67.43	#DIV/0!	no value	NAN	no value	NAN	no value	NAN	no value	NAN	NaN	#NUM!	#NUM!	#NUM!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
AKR2z135	120.40	9.05	406.00	0.080	3.21E+04	5.50E+03	0.4390	0.0250	18.300	1.900	0.2680	0.0170	0.9782	4048	42.5	85.0	3006	50.0	100.0	1531	43.0	86.0	51
AKR2z139	520.00	196.10	195.60	0.380	1.85E+05	2.80E+04	0.1254	0.0028	2.418	0.037	0.1417	0.0020	0.0417	2034	20.0	40.0	1248	5.5	11.0	854	5.5	11.0	68
AKR2z140	567.70	508.10	162.20	0.900	-1.40E+06	2.10E+06	0.0724	0.0015	1.037	0.017	0.1036	0.0014	0.2405	997	21.0	42.0	722	4.0	8.0	636	4.0	8.0	88
AKR2z145	125.50	42.70	22.20	0.340	4.40E+04	2.80E+04	0.0809	0.0034	1.174	0.040	0.1035	0.0017	-0.1952	1219	41.5	83.0	789	9.5	19.0	635	5.0	10.0	81

Footnotes:

- Analysis references: AKR2z is zircon from sample AKR2 (mount CT18-7), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.17a: Sample EZ1 (LA-ICPMS)

IGSN: IEACC0032 Coordinate UTM: Zone 29S, 733796 m E, 3682713 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
EZ1z1	143.40	85.90	895.00	0.600	1.50E+06	1.90E+06	0.1360	0.0028	7.550	0.170	0.4030	0.0054	0.4043	2177	17.9	35.8	2179	10.1	20.2	2183	12.4	24.8	100
EZ1z2	201.10	209.70	631.00	1.046	-9.70E+05	9.70E+05	0.0632	0.0025	0.939	0.036	0.1081	0.0016	0.0638	715	42.0	84.0	672	9.4	18.8	662	4.7	9.3	98
EZ1z3	254.00	126.60	271.00	0.495	-2.50E+05	8.10E+05	0.0701	0.0026	0.956	0.038	0.0995	0.0017	0.3107	931	38.1	76.1	681	9.9	19.7	611	5.0	10.0	90
EZ1z4	113.10	204.90	604.00	1.808	2.70E+05	3.90E+05	0.0592	0.0035	0.822	0.047	0.1006	0.0017	0.1498	574	64.3	128.6	609	13.1	26.2	618	5.0	10.0	101
EZ1z5	52.80	71.10	747.00	1.328	1.47E+06	8.60E+05	0.1208	0.0032	6.150	0.190	0.3690	0.0064	0.5023	1968	23.6	47.2	1997	13.5	27.0	2025	15.1	30.1	101
EZ1z6	313.00	205.60	1902.00	0.657	1.48E+07	8.40E+06	0.1365	0.0017	7.120	0.110	0.3782	0.0041	0.5859	2183	10.8	21.7	2127	6.9	13.7	2068	9.6	19.2	97
EZ1z7	335.00	347.00	960.00	0.943	4.00E+06	1.40E+06	0.0590	0.0020	0.847	0.030	0.1038	0.0016	0.2124	567	36.9	73.8	623	8.2	16.5	637	4.7	9.3	102
EZ1z8	71.70	103.80	243.40	1.462	2.50E+05	2.50E+05	0.0686	0.0049	0.849	0.058	0.0908	0.0022	-0.0507	887	73.8	147.6	624	15.9	31.8	560	6.5	13.0	90
EZ1z9	293.80	206.00	1503.00	0.668	2.20E+06	3.60E+06	0.1253	0.0018	5.570	0.089	0.3224	0.0034	0.4626	2033	12.7	25.4	1911	6.9	13.7	1801	8.3	16.6	94
EZ1z10	32.90	16.30	47.00	0.491	8.00E+05	1.10E+05	0.0651	0.0062	0.957	0.094	0.1058	0.0033	0.0624	778	100.1	200.3	682	24.4	48.7	648	9.6	19.2	95
EZ1z11	210.90	370.00	1006.00	1.751	-1.40E+06	1.80E+06	0.0650	0.0030	0.851	0.040	0.0952	0.0016	0.1704	774	48.6	97.1	625	11.0	21.9	586	4.7	9.4	94
EZ1z12	285.00	301.00	667.00	1.004	3.80E+06	2.90E+06	0.0631	0.0022	0.746	0.025	0.0860	0.0015	0.2433	712	37.1	74.1	566	7.3	14.5	532	4.5	8.9	94
EZ1z13	222.70	498.50	1448.00	2.238	-6.00E+05	6.60E+05	0.0607	0.0024	0.875	0.037	0.1038	0.0013	0.1464	629	42.6	85.2	638	10.0	20.0	637	3.8	7.6	100
EZ1z15	217.90	215.80	533.00	0.988	3.90E+05	5.90E+05	0.0640	0.0026	0.851	0.032	0.0969	0.0015	-0.0140	742	43.0	85.9	625	8.8	17.5	596	4.4	8.8	95
EZ1z16	320.10	245.50	1831.00	0.764	1.10E+06	2.30E+06	0.0979	0.0018	3.748	0.071	0.2777	0.0031	0.2834	1585	17.2	34.4	1582	7.6	15.2	1580	7.8	15.6	100
EZ1z17	293.60	211.00	553.00	0.684	2.40E+06	1.70E+06	0.0700	0.0018	0.992	0.026	0.1029	0.0011	0.1493	928	26.4	52.8	700	6.6	13.2	631	3.2	6.4	90
EZ1z18	376.00	653.00	1816.00	1.731	-1.40E+06	1.30E+06	0.0631	0.0019	0.894	0.027	0.1028	0.0013	0.2447	712	32.0	64.0	649	7.2	14.5	631	3.8	7.6	97
EZ1z19	217.00	39.50	448.00	0.180	2.60E+06	2.90E+06	0.1472	0.0025	8.540	0.200	0.4196	0.0055	0.7460	2314	14.6	29.1	2290	10.6	21.3	2259	12.5	25.0	99
EZ1z20	223.80	211.30	643.00	0.944	-6.90E+05	6.40E+05	0.0617	0.0024	0.900	0.034	0.1060	0.0015	0.1220	664	41.7	83.3	652	9.1	18.2	649	4.4	8.7	100
EZ1z22	97.80	111.20	284.00	1.142	2.40E+05	2.90E+05	0.0613	0.0046	0.769	0.057	0.0914	0.0019	0.1630	650	80.6	161.1	579	16.3	32.7	564	5.6	11.2	97
EZ1z23	259.70	339.00	965.00	1.307	-1.67E+06	9.80E+05	0.0621	0.0023	0.879	0.034	0.1027	0.0016	0.3320	678	39.6	79.2	640	9.2	18.4	630	4.7	9.4	98
EZ1z24	380.00	133.20	1200.00	0.348	3.60E+06	4.00E+06	0.1355	0.0016	6.990	0.110	0.3722	0.0051	0.6823	2170	10.3	20.6	2110	7.0	14.0	2040	12.0	24.0	97
EZ1z26	87.00	131.20	348.00	1.531	8.00E+05	1.80E+05	0.0639	0.0045	0.798	0.050	0.0923	0.0033	0.1012	738	74.5	149.0	596	14.1	28.2	569	9.7	19.5	96
EZ1z30	80.10	98.50	952.00	1.235	-1.50E+05	7.30E+05	0.1317	0.0029	7.020	0.180	0.3860	0.0060	0.4957	2121	19.3	38.6	2114	11.4	22.8	2104	14.0	27.9	100
EZ1z31	142.90	133.20	302.00	0.931	0.00E+00	3.40E+05	0.0599	0.0040	0.747	0.043	0.0898	0.0015	-0.0103	600	72.3	144.6	566	12.5	25.0	554	4.4	8.9	98
EZ1z32	304.00	330.00	2610.00	0.855	9.80E+06	5.50E+06	0.1312	0.0023	6.100	0.270	0.3350	0.0120	0.9404	2114	15.4	30.7	1990	19.3	38.6	1863	29.0	57.9	94
EZ1z36	146.50	248.70	1161.00	1.686	3.30E+05	5.90E+05	0.0736	0.0027	1.605	0.064	0.1580	0.0027	0.4294	1031	37.1	74.2	972	12.5	24.9	946	7.5	15.0	97
EZ1z37	200.70	220.40	575.00	1.105	1.30E+05	4.20E+05	0.0651	0.0027	0.838	0.033	0.0938	0.0021	0.1990	778	43.6	87.2	618	9.1	18.2	578	6.2	12.4	94
EZ1z38	51.54	24.16	268.10	0.467	-9.00E+05	4.10E+05	0.1351	0.0041	7.500	0.230	0.4022	0.0077	0.2843	2165	26.5	52.9	2173	13.7	27.5	2179	17.7	35.4	100
EZ1z42	142.40	150.70	873.00	1.082	2.00E+06	1.00E+06	0.1277	0.0026	5.640	0.150	0.3187	0.0065	0.6860	2067	17.9	35.9	1922	11.5	22.9	1783	15.9	31.8	93
Discordant data																							
EZ1z14	232.80	73.50	443.00	0.251	-2.00E+06	1.70E+06	0.1350	0.0027	4.230	0.140	0.2291	0.0094	0.8780	2164	17.4	34.9	1680	13.6	27.2	1330	24.7	49.3	79
EZ1z21	149.70	117.90	787.00	0.782	2.00E+06	1.20E+06	0.1735	0.0031	6.680	0.200	0.2788	0.0073	0.7930	2592	14.9	29.8	2070	13.2	26.4	1585	18.4	36.8	77
EZ1z25	140.60	133.00	800.00	0.867	-9.10E+05	7.80E+05	0.1090	0.0110	2.620	0.290	0.1724	0.0030	0.5195	1783	92.0	184.0	1306	40.6	81.3	1025	8.2	16.5	78
EZ1z27	367.00	93.20	181.20	0.223	7.00E+06	1.20E+06	0.0737	0.0022	1.028	0.033	0.1008	0.0018	0.3367	1033	30.2	60.3	718	8.3	16.5	619	5.3	10.5	86
EZ1z28	186.00	197.00	532.00	0.610	1.00E+06	1.20E+06	0.1403	0.0030	5.610	0.570	0.2940	0.0310	0.9807	2231	18.5	37.0	1918	43.7	87.5	1661	77.2	154.4	87
EZ1z29	174.80	254.50	908.00	1.475	7.40E+05	4.20E+05	0.1180	0.0120	1.590	0.170	0.0975	0.0015	0.1366	1926	91.1	182.2	966	33.3	66.6	600	4.4	8.8	62
EZ1z33	179.00	147.00	769.00	0.743	9.00E+04	1.10E+06	0.2164	0.0030	9.800	1.100	0.3280	0.0370	0.9921	2954	11.2	22.4	2416	51.7	103.3	1829	89.8	179.6	76
EZ1z34	550.00	492.00	2340.00	0.887	1.91E+06	4.60E+05	0.1356	0.0018	3.849	0.072	0.2059	0.0037	0.7395	2172	11.6	23.1	1603	7.5	15.1	1207	9.9	19.8	75
EZ1z35	211.00	452.00	2760.00	2.096	1.10E+06	1.30E+06	0.1169	0.0028	4.050	0.120	0.2539	0.0081	0.7248	1909	21.5	43.0	1644	12.1	24.1	1459	20.8	41.6	89
EZ1z39	111.90	158.00	292.00	1.481	-3.10E+06	1.90E+06	0.0707	0.0051	0.841	0.060	0.0876	0.0024	0.2595	949	73.8	147.7	620	16.5	33.1	541	7.1	14.2	87
EZ1z40	288.40	428.00	967.00	1.493	1.40E+05	5.50E+05	0.0698	0.0026	0.806	0.033	0.0841	0.0016	0.3847	922	38.3	76.6	600	9.3	18.5	521	4.8	9.5	87
EZ1z41	500.00	659.00	2980.00	1.355	9.50E+05	2.90E+05	0.1494	0.0031	3.600	0.140	0.1763	0.0088	0.9082	2339	17.8	35.5	1550	15.4	30.9	1047	24.1	48.2	68

Footnotes:

- Analysis references: EZ1z is zircon from sample EZ1 (mount CT18-2), followed by grain number.

Table D.17a: Sample EZ1 (SHRIMP)

IGSN: IEACC0032 Coordinate UTM: Zone 29S, 733796 m E, 3682713 m N

ANALYSIS	U (ppm)	Th (ppm)	Th/U	% $^{206}Pb^{c}$	Ratios								Error correction	Ages (Ma)						Discordance (%)
					$^{204}Pb/^{206}Pb$	±%	$^{207}Pb^{*}/^{206}Pb^{*}$	±%	$^{207}Pb^{*}/^{235}U$	±%	$^{206}Pb^{*}/^{238}U$	±%		$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^{*}/^{238}U$	σ	2σ	
Concordant data																				
EZ1z43r	54.00	50.00	0.960	0.800	5.20E-04	3.30E+01	0.1140	2.6000	5.5000	3.4000	0.3500	2.2000	0.7000	1941	37	74	1858	46	92	-5
EZ1z43c	443.00	237.00	0.550	0.020	1.40E-05	5.80E+01	0.2980	0.3000	26.4000	1.3000	0.6400	1.2000	1.0000	3202	31	62	3458	4	8	9
EZ1z44c	137.00	40.00	0.300	0.660	4.40E-04	2.20E+01	0.1310	1.3000	6.8000	2.0000	0.3800	1.5000	0.8000	2065	27	54	2115	23	46	3
EZ1z44r	15.00	3.00	0.240	0.970	6.40E-04	5.80E+01	0.1250	4.8000	6.4000	6.2000	0.3700	3.9000	0.6000	2023	67	134	2035	86	172	1
EZ1z45r	429.00	99.00	0.240	0.080	6.00E-05	3.00E+01	0.1870	3.3000	12.3000	4.4000	0.4800	2.9000	0.7000	2508	60	120	2717	55	110	9
EZ1z45c	97.00	59.00	0.630	0.000	---	1.00E+02	0.1540	2.5000	8.8000	3.0000	0.4100	1.7000	0.6000	2236	33	66	2392	42	84	8
EZ1z46	964.00	1049.00	1.120	0.090	5.00E-05	4.50E+01	0.0650	0.9000	1.0000	1.4000	0.1200	1.1000	0.8000	707	7	14	761	19	38	7
EZ1z47r	180.00	43.00	0.250	0.280	1.90E-04	3.00E+01	0.1280	0.9000	6.7000	1.7000	0.3800	1.4000	0.8000	2074	26	52	2075	17	34	0
EZ1z47c	116.00	55.00	0.490	0.300	2.00E-04	3.50E+01	0.1300	1.1000	6.5000	2.0000	0.3600	1.6000	0.8000	2005	28	56	2096	20	40	5
EZ1z48c	109.00	52.00	0.490	0.160	1.00E-04	5.80E+01	0.1080	1.3000	4.6000	2.1000	0.3100	1.7000	0.8000	1742	26	52	1774	24	48	2
EZ1z48r	653.00	314.00	0.500	0.010	5.50E-06	1.00E+02	0.1090	0.5000	4.6000	1.2000	0.3100	1.1000	0.9000	1733	17	34	1779	8	16	3
EZ1z50	142.00	103.00	0.750	--	----	---	0.0740	1.5000	1.8000	2.1000	0.1700	1.5000	0.7000	1025	15	30	1036	30	60	1
EZ1z52	267.00	131.00	0.510	--	----	---	0.0580	1.8000	0.7000	2.2000	0.0900	1.3000	0.6000	543	7	14	527	39	78	-3
EZ1z53	199.00	255.00	1.320	0.020	1.50E-05	1.00E+02	0.1310	0.7000	6.7000	1.6000	0.3700	1.4000	0.9000	2030	25	50	2118	12	24	5
EZ1z55	278.00	11.00	0.040	0.020	1.60E-05	7.10E+01	0.1970	0.4000	13.7000	1.4000	0.5100	1.3000	1.0000	2642	29	58	2799	7	14	7
EZ1z58	175.00	113.00	0.670	--	-1.40E-04	7.10E+01	0.0600	4.5000	0.7000	4.8000	0.0900	1.5000	0.3000	541	8	16	613	98	196	12
EZ1z61	168.00	148.00	0.910	0.250	1.40E-04	7.10E+01	0.0580	3.3000	0.8000	3.6000	0.1000	1.5000	0.4000	609	9	18	534	73	146	-15
EZ1z63	74.00	72.00	1.010	0.880	4.90E-04	5.80E+01	0.0540	10.2000	0.7000	10.4000	0.1000	2.0000	0.2000	585	11	22	364	230	460	-63
EZ1z64	75.00	55.00	0.760	0.360	2.40E-04	4.10E+01	0.1250	1.5000	6.2000	2.5000	0.3600	1.9000	0.8000	1988	33	66	2026	27	54	2
EZ1z65	220.00	174.00	0.820	0.140	1.00E-04	3.30E+01	0.1990	1.3000	12.9000	1.9000	0.4700	1.4000	0.7000	2477	29	58	2821	21	42	15
EZ1z66c	475.00	325.00	0.710	--	-9.50E-05	5.00E+01	0.0620	1.6000	0.9000	2.0000	0.1000	1.2000	0.6000	617	7	14	687	35	70	11
EZ1z66r	277.00	116.00	0.430	0.290	1.60E-04	5.00E+01	0.0580	2.6000	0.8000	2.9000	0.1000	1.3000	0.4000	591	7	14	541	57	114	-10
EZ1z68	84.00	47.00	0.580	0.810	4.60E-04	5.00E+01	0.0720	7.1000	1.2000	8.6000	0.1200	4.8000	0.6000	705	32	64	998	145	290	31
EZ1z70	61.00	85.00	1.450	0.080	5.30E-05	1.00E+02	0.1130	1.5000	5.1000	2.5000	0.3200	2.1000	0.8000	1811	32	64	1851	27	54	2
EZ1z71	128.00	279.00	2.260	0.160	9.50E-05	7.10E+01	0.0780	2.0000	1.9000	2.6000	0.1700	1.7000	0.6000	1036	16	32	1154	39	78	11
EZ1z72	110.00	128.00	1.200	--	-5.20E-04	5.00E+01	0.0670	6.1000	0.8000	6.4000	0.0900	1.8000	0.3000	539	9	18	829	128	256	36
EZ1z74	443.00	453.00	1.060	0.020	1.30E-05	7.10E+01	0.1310	2.9000	6.8000	3.1000	0.3800	1.3000	0.4000	2075	22	44	2109	50	100	2
EZ1z75	446.00	247.00	0.570	0.810	4.70E-04	1.90E+01	0.0700	2.0000	1.4000	2.4000	0.1500	1.2000	0.5000	895	10	20	921	42	84	3
EZ1z76	77.00	65.00	0.870	--	-1.30E-04	1.00E+02	0.0630	4.0000	0.9000	4.4000	0.1000	1.9000	0.4000	636	11	22	713	85	170	11
EZ1z77	326.00	228.00	0.720	0.160	9.30E-05	5.80E+01	0.0600	1.9000	0.9000	2.3000	0.1100	1.3000	0.6000	679	8	16	606	42	84	-13
EZ1z78	89.00	85.00	0.980	0.420	2.40E-04	7.10E+01	0.0540	5.5000	0.7000	5.8000	0.1000	1.8000	0.3000	612	11	22	367	124	248	-70
EZ1z79	288.00	265.00	0.950	0.320	1.80E-04	4.50E+01	0.0590	2.5000	0.8000	2.9000	0.1000	1.3000	0.5000	628	8	16	557	55	110	-13
EZ1z80	148.00	32.00	0.220	0.060	4.10E-05	7.10E+01	0.1200	3.9000	5.9000	4.6000	0.3600	2.5000	0.5000	1959	42	84	1961	70	140	0
EZ1z81	93.00	55.00	0.610	0.000	---	---	0.0650	2.9000	0.8000	3.4000	0.0900	1.8000	0.5000	558	10	20	781	60	120	30
EZ1z83	281.00	247.00	0.910	0.310	1.80E-04	4.50E+01	0.0610	2.4000	0.9000	2.8000	0.1100	1.3000	0.5000	668	8	16	629	52	104	-7
EZ1z85	48.00	30.00	0.640	0.430	2.40E-04	1.00E+02	0.0630	6.9000	0.8000	7.3000	0.0900	2.3000	0.3000	577	13	26	702	146	292	19
Discordant and/or high common Pb data																				
EZ1z49r	214.00	155.00	0.750	0.020	1.50E-05	1.00E+02	0.1020	11.4000	4.6000	15.1000	0.3300	10.0000	0.7000	1829	159	318	1668	210	420	-11
EZ1z49c	277.00	114.00	0.430	--	-1.10E-05	1.00E+02	0.1340	11.0000	7.1000	13.5000	0.3800	7.8000	0.6000	2096	140	280	2145	192	384	3
EZ1z51	466.00	912.00	2.020	1.960	1.10E-03	1.70E+01	0.0640	4.5000	0.8000	4.7000	0.0900	1.3000	0.3000	537	6	12	735	95	190	28
EZ1z54	172.00	387.00	2.330	6.370	3.50E-03	1.90E+01	0.0630	19.3000	0.4000	19.8000	0.0500	4.4000	0.2000	320	14	28	711	411	822	56
EZ1z56	406.00	190.00	0.480	0.630	3.80E-04	2.00E+01	0.1510	0.9000	4.7000	3.9000	0.2300	3.8000	1.0000	1316	45	90	2356	15	30	49
EZ1z57	172.00	26.00	0.160	--	-5.30E-05	7.10E+01	0.0970	4.0000	3.2000	6.1000	0.2400	4.6000	0.8000	1388	57	114	1566	74	148	13
EZ1z59	38.00	31.00	0.850	5.790	3.30E-03	2.90E+01	0.0340	45.8000	0.5000	45.9000	0.1000	3.0000	0.1000	607	17	34	-827	1307	2614	182
EZ1z60	577.00	275.00	0.490	0.120	7.70E-05	3.00E+01	0.1250	0.6000	4.8000	3.6000	0.2800	3.6000	1.0000	1590	51	102	2031	10	20	24
EZ1z62	886.00	301.00	0.350	1.630	9.40E-04	2.00E+01	0.0930	2.9000	1.8000	3.6000	0.1400	2.2000	0.6000	833	17	34	1495	54	108	47
EZ1z67	138.00	130.00	0.970	--	-2.50E-05	1.00E+02	0.1230	0.9000	5.3000	1.8000	0.3100	1.5000	0.9000	1739	24	48	2003	17	34	15
EZ1z69	710.00	363.00	0.530	0.050	3.30E-05	3.30E+01	0.1760	0.9000	10.4000	1.9000	0.4300	1.6000	0.9000	2305	32	64	2612	14	28	14
EZ1z73	500.00	670.00	1.380	2.540	1.50E-03	7.00E+00	0.1400	1.6000	4.4000	2.7000	0.2300	2.2000	0.8000	1316	26	52	2231	27	54	45
EZ1z82	128.00	64.00	0.520	0.140	9.30E-05	5.00E+01	0.1290	5.6000	5.9000	7.0000	0.3300	4.2000	0.6000	1845	67	134	2082	99	198	13
EZ1z84	102.00	165.00	1.670	1.390	7.80E-04	3.80E+01	0.0520	9.1000	0.7000	9.5000	0.1000	2.6000	0.3000	607	15	30	270	209	418	-131

Footnotes:

- $\%^{206}Pb^{c}$ is % of ^{206}Pb from common Pb
- Errors are 1-sigma
- Pb* indicates radiogenic Pb, corrected for common Pb.
- Analysis references: EZ1z is zircon from sample EZ1 (mount CT18-02), followed by grain number "c" or "r", meaning core or rim, respectively.
- Error in standard calibration was 0.09% (not included in above errors but required when comparing data from different mounts).

Chapter II, Section II.3

Table D.18: Sample EZ2 (LA-ICPMS)

IGSN: IEACC0033 Coordinate UTM: Zone 29S, 733776 m E, 3682624 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
EZ2z1	138.00	164.00	43.60	1.100	-1.20E+06	4.70E+06	0.0610	0.0048	0.855	0.065	0.1002	0.0023	0.0697	639	84.5	169.0	627	18.0	36.0	616	6.5	13.0	98
EZ2z2c	305.70	151.00	96.40	0.480	-4.70E+07	2.50E+07	0.0968	0.0052	2.816	0.150	0.2100	0.0040	0.5265	1563	50.5	101.0	1360	20.0	40.0	1229	10.5	21.0	90
EZ2z2r	171.20	36.03	9.49	0.200	8.30E+06	3.10E+06	0.0582	0.0040	0.772	0.052	0.0954	0.0020	0.1958	537	75.0	150.0	581	15.0	30.0	587	6.0	12.0	101
EZ2z3	47.10	51.60	14.27	1.070	3.80E+05	9.00E+05	0.0592	0.0080	0.788	0.100	0.0967	0.0031	-0.1052	574	147.0	294.0	590	28.5	57.0	595	9.0	18.0	101
EZ2z4	93.90	58.60	20.13	0.610	-3.00E+06	1.40E+06	0.0652	0.0054	1.079	0.086	0.1191	0.0027	-0.0094	781	87.0	174.0	743	21.0	42.0	725	8.0	16.0	98
EZ2z5	52.00	28.60	7.64	0.530	4.80E+05	7.00E+05	0.0583	0.0062	0.793	0.083	0.1001	0.0028	0.1629	541	116.5	233.0	593	23.5	47.0	615	8.0	16.0	104
EZ2z6	143.50	76.40	92.60	0.500	2.90E+07	2.20E+07	0.1621	0.0032	10.650	0.550	0.4747	0.0088	0.4824	2478	16.5	33.0	2493	24.0	48.0	2504	19.0	38.0	100
EZ2z7	104.20	80.40	22.20	0.730	-3.40E+05	7.00E+05	0.0620	0.0049	0.875	0.067	0.1009	0.0023	0.0953	674	84.5	169.0	638	18.0	36.0	620	6.5	13.0	97
EZ2z8	157.10	2.84	0.96	0.010	1.20E+06	1.50E+06	0.0594	0.0042	0.866	0.057	0.1073	0.0026	-0.0333	582	77.0	154.0	633	15.5	31.0	657	7.5	15.0	104
EZ2z9	127.00	83.60	24.08	0.650	-4.00E+06	1.00E+06	0.0621	0.0050	0.882	0.067	0.1038	0.0022	-0.0068	678	86.0	172.0	642	18.0	36.0	637	6.5	13.0	99
EZ2z10	66.90	34.20	8.76	0.500	2.10E+05	2.90E+05	0.0641	0.0059	0.878	0.077	0.0981	0.0028	-0.0478	745	97.5	195.0	640	21.0	42.0	603	8.0	16.0	94
EZ2z11	23.66	30.66	8.06	1.270	-7.70E+05	5.70E+05	0.0533	0.0088	0.760	0.120	0.0999	0.0041	0.1095	342	187.0	374.0	574	34.5	69.0	614	12.0	24.0	107
EZ2z12	203.40	199.80	171.30	0.960	3.00E+06	2.90E+06	0.1164	0.0022	5.400	0.270	0.3330	0.0058	0.3464	1902	17.0	34.0	1885	21.5	43.0	1853	14.0	28.0	98
EZ2z13	161.70	93.10	25.61	0.560	1.70E+05	6.60E+05	0.0615	0.0045	0.862	0.062	0.1003	0.0021	0.1345	657	78.5	157.0	631	17.0	34.0	616	6.0	12.0	98
EZ2z14	235.70	163.30	47.00	0.680	-1.62E+07	7.70E+06	0.0576	0.0037	0.804	0.050	0.1009	0.0019	0.1430	515	70.5	141.0	599	14.0	28.0	620	5.5	11.0	103
EZ2z15	112.50	213.00	57.40	1.860	4.10E+05	5.10E+05	0.0625	0.0055	0.822	0.068	0.0962	0.0023	0.0267	691	94.0	188.0	609	19.0	38.0	592	7.0	14.0	97
EZ2z17	250.10	127.50	133.90	0.500	4.20E+06	3.50E+06	0.1386	0.0019	7.890	0.380	0.4071	0.0070	0.5241	2210	12.0	24.0	2219	21.5	43.0	2202	16.0	32.0	99
EZ2z18	277.00	59.00	19.88	0.210	-1.00E+06	1.20E+06	0.0687	0.0042	1.207	0.072	0.1274	0.0026	0.2083	890	63.0	126.0	804	16.5	33.0	773	7.5	15.0	96
EZ2z19	139.80	0.87	0.75	0.000	5.00E+05	6.60E+05	0.0602	0.0047	0.846	0.063	0.1015	0.0020	0.0751	611	84.5	169.0	622	17.5	35.0	623	6.0	12.0	100
EZ2z20	184.60	163.60	43.60	0.870	-1.00E+05	1.10E+06	0.0577	0.0042	0.777	0.053	0.0975	0.0019	-0.0590	518	80.0	160.0	584	15.0	30.0	600	5.5	11.0	103
EZ2z21	91.80	78.30	63.60	0.830	5.00E+06	1.10E+06	0.1097	0.0036	4.590	0.270	0.2998	0.0058	0.2361	1794	30.0	60.0	1747	24.5	49.0	1690	14.5	29.0	97
EZ2z22	276.70	195.40	229.60	0.690	1.30E+06	3.60E+06	0.1729	0.0025	11.390	0.560	0.4704	0.0085	0.6262	2586	12.0	24.0	2556	23.0	46.0	2485	18.5	37.0	97
EZ2z23	187.80	63.80	64.00	0.340	9.00E+06	1.80E+06	0.1312	0.0023	7.050	0.350	0.3856	0.0068	0.4148	2114	15.5	31.0	2118	22.0	44.0	2102	16.0	32.0	99
EZ2z24	161.20	80.40	92.00	0.500	6.00E+06	1.80E+06	0.1501	0.0028	7.880	0.490	0.3760	0.0130	0.8706	2347	16.0	32.0	2217	28.0	56.0	2058	30.5	61.0	93
EZ2z25	375.00	70.00	67.90	0.180	2.10E+06	4.10E+06	0.1324	0.0018	6.830	0.330	0.3732	0.0067	0.5754	2130	12.0	24.0	2090	21.5	43.0	2044	15.5	31.0	98
EZ2z27	487.40	489.40	480.20	0.990	-9.60E+06	9.10E+06	0.1360	0.0018	7.089	0.340	0.3777	0.0065	0.4347	2177	11.5	23.0	2123	21.5	43.0	2066	15.0	30.0	97
EZ2z28	333.60	204.80	57.70	0.610	9.00E+04	1.20E+06	0.0603	0.0036	0.860	0.049	0.1024	0.0020	0.2780	614	64.5	129.0	630	13.5	27.0	628	6.0	12.0	100
EZ2z30	150.40	47.90	45.80	0.210	3.00E+06	1.50E+06	0.1266	0.0028	6.660	0.340	0.3790	0.0071	0.4246	2051	19.5	39.0	2067	22.5	45.0	2072	16.5	33.0	100
EZ2z31	290.00	312.00	84.20	1.080	-9.00E+06	1.30E+06	0.0610	0.0037	0.835	0.050	0.0970	0.0018	0.1290	639	65.0	130.0	616	14.0	28.0	597	5.5	11.0	97
EZ2z32	127.00	36.10	17.05	0.290	-3.70E+05	6.80E+05	0.0693	0.0047	1.258	0.081	0.1319	0.0029	0.2183	908	70.0	140.0	827	18.0	36.0	799	8.5	17.0	97
EZ2z33	336.00	67.60	64.30	0.200	3.50E+06	4.00E+06	0.1265	0.0022	6.410	0.320	0.3626	0.0065	0.3469	2050	15.5	31.0	2034	22.0	44.0	1994	15.5	31.0	98
EZ2z34	358.30	323.20	336.20	0.900	4.60E+06	4.10E+06	0.1356	0.0020	7.450	0.360	0.3929	0.0068	0.4027	2172	13.0	26.0	2167	21.5	43.0	2136	15.5	31.0	99
EZ2z35	268.20	169.10	220.90	0.640	-2.10E+06	3.10E+06	0.1787	0.0024	12.660	0.620	0.5102	0.0085	0.5214	2641	11.0	22.0	2655	23.0	46.0	2657	18.0	36.0	100
EZ2z36	21.02	19.28	21.97	0.930	-2.70E+05	3.20E+05	0.1503	0.0069	8.630	0.560	0.4120	0.0130	0.4429	2349	39.0	78.0	2300	29.5	59.0	2224	29.5	59.0	97
EZ2z37	45.40	15.90	17.70	0.350	1.20E+05	4.30E+05	0.1351	0.0040	8.070	0.450	0.4194	0.0097	0.2786	2165	26.0	52.0	2239	25.0	50.0	2258	22.0	44.0	101
EZ2z39	69.80	39.90	11.68	0.580	-1.70E+05	1.20E+05	0.0618	0.0054	0.888	0.075	0.1053	0.0024	0.1638	667	93.5	187.0	645	20.0	40.0	645	7.0	14.0	100
EZ2z40	53.30	49.70	50.90	0.940	1.60E+05	3.20E+05	0.1311	0.0042	6.970	0.390	0.3880	0.0090	0.2331	2113	28.0	56.0	2108	25.0	50.0	2114	21.0	42.0	100
EZ2z41	238.00	45.90	49.40	0.180	-5.00E+06	3.10E+06	0.1552	0.0022	8.750	0.430	0.4036	0.0074	0.5990	2404	12.0	24.0	2312	22.5	45.0	2186	17.0	34.0	95
EZ2z42	179.90	77.40	22.40	0.440	-6.90E+05	8.90E+05	0.0618	0.0041	0.880	0.057	0.1040	0.0020	0.2312	667	71.0	142.0	641	15.5	31.0	638	6.0	12.0	100
EZ2z43	178.10	38.00	38.50	0.210	6.00E+06	1.30E+06	0.1260	0.0020	6.570	0.330	0.3737	0.0070	0.5250	2043	14.0	28.0	2055	22.0	44.0	2047	16.5	33.0	100
EZ2z44	337.00	311.00	73.50	0.800	2.80E+06	2.20E+06	0.0616	0.0036	0.854	0.048	0.1007	0.0023	0.2813	660	62.5	125.0	627	13.0	26.0	619	6.5	13.0	99
EZ2z45	73.80	113.20	118.70	1.560	2.80E+06	2.20E+06	0.1308	0.0036	7.310	0.390	0.4051	0.0089	0.3438	2109	24.0	48.0	2150	24.0	48.0	2192	20.5	41.0	102
EZ2z46	62.50	71.20	19.86	1.150	-5.70E+04	9.70E+04	0.0634	0.0063	0.850	0.085	0.0986	0.0028	0.1371	722	105.5	211.0	625	23.5	47.0	606	8.0	16.0	97
EZ2z47	237.60	55.70	88.70	0.240	1.29E+07	7.60E+06	0.1574	0.0019	9.940	0.490	0.4526	0.0083	0.6509	2428	10.0	20.0	2429	22.5	45.0	2407	18.5	37.0	99
EZ2z48	412.00	379.00	150.90	0.900	-2.60E+06	2.80E+06	0.0724	0.0040	1.426	0.076	0.1415	0.0031	0.3914	997	56.0	112.0	900	16.0	32.0	853	9.0	18.0	95
EZ2z49	48.40	86.60	26.01	1.800	1.01E+05	9.40E+04	0.0536	0.0059	0.750	0.082	0.0988	0.0028	0.1224	354	124.5	249.0	568	24.0	48.0	607	8.0	16.0	107
EZ2z50	53.10	53.70	15.07	1.030	3.00E+04	7.10E+04	0.0574	0.0060	0.764	0.075	0.0966	0.0023	-0.1692	507	115.0	230.0	576	21.5	43.0	594	7.0	14.0	103
EZ2z51	94.00	62.20	19.48	0.680	-2.80E+05	2.40E+05	0.0608	0.0054	0.866	0.078	0.1025	0.0024	0.2961	632	95.5	191.0	633	21.0	42.0	629	7.0	14.0	99
EZ2z52	430.00	242.00	125.90	0.560	-2.20E+06	1.80E+06	0.0841	0.0045	2.020	0.110	0.1734	0.0031	0.5500	1295	52.0	104.0	1122	18.5	37.0	1031	8.5	17.0	92
EZ2z53	89.10	53.30	17.52	0.600	1.00E+05	2.00E+05	0.0640	0.0056	0.935	0.078	0.1072	0.0027	0.1406	742	92.5	185.0	670	20.5	41.0	656	8.0	16.0	98
EZ2z54	346.00	63.60	20.98	0.190	-1.28E+06	9.10E+05	0.0619	0.0036	0.921	0.051	0.1080	0.0021	0.1818	671	62.0	124.0	663	13.5	27.0	661	6.0	12.0	100
EZ2z55	38.10	30.02	9.11	0.810	2.30E+05	2.60E+05	0.0608	0.0085	0.810	0.110	0.0981	0.0030	-0.0818	632	150.5	301.0	602	31.0	62.0	603	9.0	18.0	100
EZ2z56c	80.30	72.30	21.78	0.910	2.00E+05	1.20E+05	0.0630	0.0057	0.934	0.083	0.1066	0.0026	0.0520	708	96.0	192.0	670	22.0	44.0	653	7.5	15.0	97
EZ2z56r	50.90	21.16	6.98	0.420	4.60E+04	5.90E+04	0.0580	0.0062	0.884	0.091	0.1093	0.0024	0.0540	530	117.0	234.0	643	24.5	49.0	669	7.0	14.0	104
EZ2z57	108.00	45.10	43.00	0.420	-9.00E+05	3.80E+05	0.1219	0.0025	5.980	0.310	0.3549	0.0072	0.5039	1984	18.0	36.0	1973	22.5	45.0	1958	17.0	34.0	99
EZ2z58	257.00	117.70	120.50	0.470	7.10E+06	3.90E+06	0.1277	0.0020	6.830	0.340	0.3813	0.0071	0.5108	2067	14.0	28.0	2090	22.0	44.0	2082	16.5	33.0	100
EZ2z59	92.30	111.90	32.70	1.230	8.00E+05	1.10E+05	0.0590	0.0050	0.822	0.068	0.1004	0.0023	0.1096	567	92.5	185.0	609	19.0	38.0	617	6.5	13.0	101
EZ2z60	44.60	35.73	30.99	0.810	5.60E+05	2.90E+05	0.1094	0.0045	4.760	0.300	0.3124	0.0080	0.3457	1789	37.5	75.0	1778	26.5	53.0	1753	19.5	39.0	99
EZ2z62	117.30	90.50	28.30	0.780	9.00E+03	1.10E+05	0.0640	0.0048	0.890	0.063	0.1003	0.0023	0.0328	742	79.5	159.0	646	17.0	34.0	616	6.5	13.0	95
EZ2z63	25.36	17.98	17.72	0.720	1.90E+05	1.40E+05	0.1280	0.0061	6.790	0.440	0.3878	0.0110	0.3451	2071	42.0	84.0	2084	28.5	57.0	2113	25.5	51.0	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
EZ2z64	336.50	75.70	106.80	0.230	-2.70E+06	2.60E+06	0.1896	0.0019	13.720	0.660	0.5166	0.0088	0.6976	2739	8.0	16.0	2731	22.5	45.0	2685	18.5	37.0	98
EZ2z65	181.00	144.00	22.80	0.760	3.60E+05	2.70E+05	0.0622	0.0042	0.813	0.054	0.0933	0.0019	0.0900	681	72.0	144.0	604	15.0	30.0	575	5.5	11.0	95
EZ2z66	272.80	218.10	63.90	0.810	-7.40E+05	6.90E+05	0.0613	0.0039	0.854	0.049	0.1008	0.0019	-0.0339	650	68.5	137.0	627	13.5	27.0	619	5.5	11.0	99
EZ2z67	377.00	170.50	148.00	0.460	2.20E+06	2.50E+06	0.1131	0.0016	4.864	0.240	0.3084	0.0060	0.6638	1850	13.0	26.0	1796	21.0	42.0	1733	15.0	30.0	96
EZ2z68	383.00	245.20	68.40	0.650	-1.19E+06	6.90E+05	0.0598	0.0038	0.790	0.047	0.0966	0.0018	0.0035	596	69.0	138.0	591	13.5	27.0	594	5.5	11.0	101
EZ2z69	108.40	68.00	21.80	0.630	9.00E+05	1.90E+05	0.0618	0.0048	0.877	0.061	0.1031	0.0024	-0.0441	667	83.0	166.0	639	16.5	33.0	633	7.0	14.0	99
EZ2z70	144.50	90.20	27.20	0.630	2.00E+05	1.30E+05	0.0585	0.0044	0.824	0.059	0.1015	0.0022	-0.0665	549	82.0	164.0	610	16.5	33.0	623	6.5	13.0	102
EZ2z71	51.30	35.30	15.22	0.670	-8.30E+04	7.60E+04	0.0688	0.0063	1.246	0.110	0.1314	0.0034	0.0479	893	94.5	189.0	822	25.0	50.0	796	9.5	19.0	97
Discordant data																							
EZ2z16	127.10	64.80	26.90	0.500	-3.00E+05	4.20E+05	0.0902	0.0110	1.250	0.160	0.1003	0.0022	0.5319	1430	116.5	233.0	823	36.0	72.0	616	6.5	13.0	75
EZ2z26	187.60	99.60	42.50	0.530	-9.00E+06	2.00E+06	0.0779	0.0049	1.367	0.080	0.1276	0.0024	0.1249	1144	62.5	125.0	875	17.0	34.0	774	7.0	14.0	88
EZ2z29	374.00	108.80	137.00	0.290	-4.20E+05	4.00E+05	0.1440	0.0190	2.590	0.400	0.1281	0.0037	0.9275	2276	113.5	227.0	1298	56.5	113.0	777	10.5	21.0	60
EZ2z38	61.66	64.40	51.20	1.050	2.10E+05	4.10E+05	0.1140	0.0087	3.600	0.250	0.2305	0.0058	0.1448	1864	69.0	138.0	1550	27.5	55.0	1337	15.0	30.0	86
EZ2z61	931.00	199.00	119.60	0.220	-1.21E+06	3.10E+05	0.0927	0.0051	1.306	0.075	0.1013	0.0025	0.7205	1482	52.0	104.0	848	16.5	33.0	622	7.5	15.0	73
EZ2z72	423.00	300.00	95.00	0.750	-5.70E+05	6.10E+05	0.0768	0.0054	1.103	0.081	0.1038	0.0022	0.6190	1116	70.0	140.0	755	19.5	39.0	637	6.5	13.0	84
EZ2z73	164.00	96.90	36.50	0.610	6.80E+05	5.30E+05	0.0789	0.0066	1.213	0.110	0.1087	0.0024	0.4901	1170	83.0	166.0	807	25.0	50.0	665	7.0	14.0	82

Footnotes:

- Analysis references: EZ2z is zircon from sample EZ2 (mount CT18-4), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.19: Sample EZ4 (LA-ICPMS)

IGSN: IEACC0034 Coordinate UTM: Zone 29S, 737693 m E, 3682341 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
EZ4z1	381.00	28.00	7.90	0.062	-2.30E+05	2.70E+05	0.0600	0.0036	0.805	0.046	0.0985	0.0019	0.1513	604	64.9	129.8	600	12.9	25.9	606	5.6	11.1	101
EZ4z2	142.70	166.00	49.40	1.136	-1.60E+06	1.50E+06	0.0599	0.0043	0.824	0.057	0.1001	0.0021	0.0440	600	77.7	155.4	610	15.9	31.7	615	6.2	12.3	101
EZ4z3	277.00	85.40	28.10	0.299	2.10E+05	2.20E+05	0.0597	0.0037	0.860	0.053	0.1058	0.0019	0.3761	593	67.2	134.3	630	14.5	28.9	648	5.5	11.1	103
EZ4z4	46.20	32.10	8.55	0.701	-7.00E+04	2.10E+04	0.0625	0.0086	0.795	0.100	0.0931	0.0029	-0.1145	691	146.7	293.4	594	28.3	56.5	574	8.6	17.1	97
EZ4z5	60.30	80.60	80.80	1.316	1.70E+05	1.80E+05	0.1294	0.0040	6.770	0.360	0.3795	0.0084	0.1273	2090	27.2	54.3	2082	23.5	47.0	2074	19.6	39.3	100
EZ4z6	372.00	436.00	618.00	1.167	2.00E+05	8.80E+05	0.2160	0.0020	16.520	0.780	0.5540	0.0094	0.6347	2951	7.5	14.9	2907	22.6	45.2	2842	19.5	39.0	98
EZ4z7	130.40	69.10	72.70	0.528	-4.00E+06	3.40E+06	0.1349	0.0026	7.430	0.380	0.3998	0.0072	0.4727	2163	16.8	33.6	2165	22.9	45.7	2168	16.6	33.2	100
EZ4z8	130.20	142.60	41.72	1.101	-2.30E+04	6.30E+04	0.0625	0.0050	0.854	0.066	0.1007	0.0023	0.0879	691	85.3	170.6	627	18.1	36.1	619	6.7	13.5	99
EZ4z9c	393.00	361.00	353.00	0.911	1.90E+05	6.60E+05	0.1296	0.0017	6.563	0.320	0.3699	0.0062	0.4238	2093	11.5	23.1	2054	21.5	42.9	2029	14.6	29.2	99
EZ4z9r	55.60	11.87	8.50	0.213	1.30E+04	7.00E+04	0.0905	0.0063	2.570	0.180	0.2100	0.0059	0.4587	1436	66.4	132.8	1292	25.6	51.2	1229	15.7	31.4	95
EZ4z10	86.90	42.70	40.70	0.495	-3.00E+05	2.30E+05	0.1185	0.0029	5.870	0.310	0.3595	0.0069	0.4173	1934	21.9	43.8	1957	22.9	45.8	1980	16.4	32.7	101
EZ4z11	183.50	140.40	149.30	0.760	-1.01E+06	4.60E+05	0.1373	0.0021	7.660	0.390	0.4058	0.0073	0.5914	2193	13.3	26.6	2192	22.8	45.7	2196	16.7	33.5	100
EZ4z12	99.60	70.10	21.90	0.694	5.60E+04	4.80E+04	0.0612	0.0051	0.887	0.070	0.1066	0.0027	0.1761	646	89.5	179.0	645	18.8	37.6	653	7.9	15.7	101
EZ4z13	87.10	62.90	20.08	0.722	2.50E+04	4.60E+04	0.0624	0.0052	0.899	0.073	0.1050	0.0023	0.1267	688	88.9	177.8	651	19.5	39.0	644	6.7	13.4	99
EZ4z14	219.00	51.90	47.10	0.233	1.30E+05	3.40E+05	0.1292	0.0026	6.180	0.370	0.3471	0.0100	0.8204	2087	17.7	35.4	2002	26.1	52.3	1921	23.9	47.9	96
EZ4z15	299.50	86.50	24.90	0.287	3.70E+05	3.10E+05	0.0633	0.0039	0.865	0.052	0.0995	0.0018	0.1987	718	65.4	130.8	633	14.1	28.3	611	5.3	10.6	97
EZ4z16	97.80	71.50	73.70	0.737	2.40E+05	2.80E+05	0.1319	0.0029	7.130	0.360	0.3943	0.0074	0.2195	2123	19.3	38.5	2128	22.5	44.9	2143	17.1	34.2	101
EZ4z17	167.80	89.10	99.70	0.530	2.10E+05	3.60E+05	0.1315	0.0020	7.240	0.360	0.3995	0.0071	0.4844	2118	13.3	26.7	2141	22.2	44.3	2167	16.4	32.7	101
EZ4z18	355.60	347.20	101.10	0.969	-1.00E+06	2.20E+05	0.0598	0.0034	0.876	0.047	0.1064	0.0019	0.2738	596	61.6	123.2	639	12.7	25.4	652	5.5	11.1	102
EZ4z19	114.90	118.30	32.60	1.021	-8.00E+05	1.10E+05	0.0630	0.0049	0.851	0.063	0.0977	0.0025	0.0388	708	82.7	165.4	625	17.3	34.5	601	7.3	14.7	96
EZ4z20	125.70	28.78	24.92	0.226	-1.70E+05	2.30E+05	0.1193	0.0029	5.520	0.290	0.3392	0.0064	0.1542	1946	21.7	43.5	1904	22.6	45.1	1883	15.4	30.8	99
EZ4z21	137.20	195.90	55.30	1.447	2.60E+04	7.80E+04	0.0614	0.0045	0.836	0.058	0.1005	0.0025	0.1825	653	78.6	157.3	617	16.0	32.0	617	7.3	14.6	100
EZ4z22	141.60	123.00	36.30	0.840	1.30E+05	1.50E+05	0.0625	0.0050	0.867	0.066	0.1003	0.0022	0.0725	691	85.3	170.6	634	17.9	35.9	616	6.4	12.9	97
EZ4z23	87.50	39.70	25.20	0.455	-2.60E+05	3.20E+05	0.0858	0.0053	2.740	0.170	0.2366	0.0053	0.2575	1334	59.7	119.5	1339	23.1	46.1	1369	13.8	27.6	102
EZ4z24	185.80	73.60	19.86	0.398	-2.80E+05	2.80E+05	0.0599	0.0044	0.787	0.054	0.0949	0.0018	-0.0920	600	79.5	159.0	589	15.3	30.7	584	5.3	10.6	99
EZ4z25	65.60	29.07	7.96	0.445	-5.00E+04	4.80E+04	0.0531	0.0056	0.633	0.066	0.0862	0.0023	0.0750	333	119.6	239.1	498	20.5	41.0	533	6.8	13.7	107
EZ4z26	167.10	127.20	128.40	0.757	-8.90E+05	4.20E+05	0.1367	0.0027	7.030	0.350	0.3733	0.0070	0.4381	2186	17.2	34.4	2115	22.1	44.2	2045	16.4	32.9	97
EZ4z27	89.30	102.80	30.01	1.159	-2.00E+04	7.80E+04	0.0624	0.0049	0.862	0.067	0.1015	0.0025	0.1922	688	83.8	167.6	631	18.3	36.5	623	7.3	14.6	99
EZ4z28	106.40	194.70	58.30	1.847	-1.80E+04	6.60E+04	0.0594	0.0048	0.829	0.063	0.1027	0.0022	-0.0956	582	87.7	175.5	613	17.5	34.9	630	6.4	12.9	103
EZ4z29	225.00	109.70	109.30	0.485	-4.10E+05	6.50E+05	0.1459	0.0025	7.080	0.360	0.3478	0.0068	0.4243	2298	14.7	29.4	2122	22.6	45.2	1924	16.3	32.5	91
EZ4z30	53.00	36.10	37.30	0.671	7.00E+05	1.10E+05	0.1306	0.0034	6.910	0.380	0.3810	0.0086	0.4286	2106	22.8	45.7	2100	24.4	48.7	2081	20.1	40.1	99
EZ4z31	140.80	204.10	58.60	1.464	-9.00E+04	7.60E+04	0.0646	0.0052	0.858	0.065	0.0988	0.0021	0.0355	761	84.9	169.7	629	17.7	35.5	607	6.2	12.3	97
EZ4z32	141.00	150.20	42.60	1.072	0.00E+00	8.00E+04	0.0593	0.0044	0.833	0.057	0.0993	0.0021	0.1515	578	80.6	161.2	615	15.8	31.5	610	6.2	12.3	99
EZ4z33	91.50	75.20	65.40	0.825	-9.00E+05	1.70E+05	0.1120	0.0024	5.030	0.270	0.3299	0.0070	0.5168	1832	19.4	38.8	1824	22.7	45.4	1838	17.0	33.9	101
EZ4z34	141.20	72.00	20.90	0.510	-1.15E+05	7.70E+04	0.0619	0.0046	0.810	0.055	0.0974	0.0021	-0.0707	671	79.5	159.0	602	15.4	30.8	599	6.2	12.3	99
EZ4z35	110.80	75.60	19.34	0.678	-3.00E+05	1.00E+05	0.0579	0.0050	0.715	0.059	0.0908	0.0022	0.0201	526	94.7	189.3	548	17.5	34.9	560	6.5	13.0	102
EZ4z36	192.80	60.50	41.40	0.314	5.50E+05	7.40E+05	0.0910	0.0049	3.170	0.160	0.2543	0.0042	0.1457	1447	51.3	102.5	1450	19.5	38.9	1461	10.8	21.6	101
EZ4z37	182.20	177.70	59.60	0.987	-5.10E+05	2.90E+05	0.0688	0.0046	1.056	0.068	0.1118	0.0023	0.2128	893	69.0	138.1	732	16.8	33.6	683	6.7	13.3	93
EZ4z38	396.00	215.00	85.30	0.537	-4.00E+05	4.20E+05	0.0698	0.0041	1.225	0.072	0.1280	0.0024	0.6907	922	60.4	120.7	812	16.4	32.8	776	6.9	13.7	96
EZ4z39	161.00	136.00	39.60	0.802	-1.30E+06	1.00E+06	0.0613	0.0042	0.866	0.057	0.1023	0.0022	0.1219	650	73.6	147.1	633	15.5	31.0	628	6.4	12.9	99
EZ4z40	201.40	237.20	68.20	1.187	-9.10E+05	4.80E+05	0.0599	0.0039	0.845	0.053	0.1025	0.0020	-0.0359	600	70.5	141.0	622	14.6	29.1	629	5.8	11.7	101
EZ4z41	185.90	170.70	46.30	0.922	-3.90E+05	2.30E+05	0.0569	0.0039	0.747	0.048	0.0950	0.0020	0.0536	488	75.6	151.3	566	13.9	27.9	585	5.9	11.8	103
EZ4z42	231.10	288.70	111.20	1.247	1.20E+05	2.10E+05	0.0696	0.0041	1.271	0.072	0.1359	0.0028	0.1638	917	60.6	121.2	833	16.1	32.2	821	7.9	15.9	99
EZ4z43	141.50	87.60	24.97	0.625	-1.20E+05	1.70E+05	0.0618	0.0046	0.872	0.063	0.1012	0.0022	0.1114	667	79.7	159.4	637	17.1	34.1	621	6.4	12.9	98
EZ4z44	182.50	24.45	25.57	0.134	-5.10E+05	5.10E+05	0.1317	0.0022	7.210	0.350	0.3959	0.0078	0.4319	2121	14.6	29.3	2138	21.6	43.2	2150	18.0	36.0	101
EZ4z45	89.30	145.80	39.60	1.648	5.90E+04	5.00E+04	0.0601	0.0054	0.794	0.070	0.0957	0.0023	0.1050	607	97.1	194.3	593	19.8	39.6	589	6.8	13.5	99
EZ4z46	196.50	129.80	39.00	0.672	6.00E+05	1.60E+05	0.0618	0.0037	0.887	0.051	0.1034	0.0021	0.1225	667	64.1	128.2	645	13.7	27.4	634	6.1	12.3	98
EZ4z47	219.80	182.30	218.50	0.838	2.60E+05	6.60E+05	0.1587	0.0022	9.900	0.480	0.4557	0.0083	0.5050	2442	11.7	23.5	2426	22.3	44.7	2421	18.4	36.8	100
EZ4z48	266.00	81.80	22.37	0.321	-7.00E+05	2.10E+05	0.0582	0.0039	0.718	0.046	0.0903	0.0019	0.1926	537	73.3	146.6	549	13.6	27.2	557	5.6	11.2	101
EZ4z49	229.20	66.90	44.90	0.295	-3.40E+05	6.60E+05	0.0930	0.0050	3.329	0.170	0.2599	0.0047	0.5391	1488	50.9	101.8	1488	19.9	39.8	1489	12.0	24.0	100
EZ4z50	665.00	983.00	287.70	1.520	-7.50E+05	4.10E+05	0.0608	0.0034	0.852	0.045	0.1008	0.0018	0.1007	632	60.2	120.4	626	12.3	24.7	619	5.3	10.5	99
EZ4z51	238.00	114.60	42.10	0.489	-2.40E+06	2.60E+06	0.0652	0.0037	1.167	0.064	0.1285	0.0023	0.0755	781	59.6	119.3	785	15.0	30.0	779	6.6	13.1	99
EZ4z52	54.78	56.58	17.48	1.045	-7.20E+04	7.50E+04	0.0600	0.0056	0.835	0.076	0.1025	0.0027	0.1876	604	101.0	202.0	616	21.0	42.0	629	7.9	15.8	102
EZ4z53	147.50	64.30	19.46	0.438	3.00E+05	1.80E+05	0.0600	0.0043	0.855	0.059	0.1031	0.0020	0.1011	604	77.5	155.1	627	16.1	32.3	633	5.8	11.7	101
EZ4z54c	175.60	250.00	77.00	1.427	4.90E+05	3.50E+05	0.0622	0.0042	0.901	0.060	0.1057	0.0021	0.1806	681	72.1	144.2	652	16.0	32.0	648	6.1	12.2	99
EZ4z54r	93.10	46.70	13.60	0.504	-1.10E+05	1.40E+05	0.0568	0.0045	0.802	0.063	0.1015	0.0021	0.1553	484	87.5	174.9	598	17.7	35.5	623	6.1	12.3	104
EZ4z55	194.40	40.20	39.80	0.210	-3.70E+05	9.40E+05	0.1255	0.0019	6.220	0.310	0.3628	0.0065	0.5073	2036	13.4	26.8	2007	21.8	43.6	1995	15.4	30.7	99
EZ4z56	96.10	101.30	72.10	1.058	5.00E+05	1.70E+05	0.0888	0.0054	3.060	0.180	0.2494	0.0051	0.3096	1400	58.3	116.5	1423	22.5	45.0	1435	13.2	26.3	101
EZ4z57	173.70	84.70	25.60	0.487	-6.40E+05	6.40E+05	0.0609	0.0041	0.853	0.058	0.1008	0.0021	0.3978	636	72.4	144.9	626	15.9	31.8	619	6.1	12.3	99
EZ4z58	82.00	121.00	36.10	1.357	-4.20E+04	9.70E+04	0.0625	0.0053	0.921	0.078	0.1071	0.0028	0.1130	691	90.4	180.8	663	20.6	41.2	656	8.2	16.3	99

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
EZ4z59c	62.80	89.40	29.46	1.447	-1.00E+05	1.30E+05	0.0651	0.0056	1.019	0.084	0.1139	0.0027	-0.0369	778	90.4	180.9	713	21.1	42.2	695	7.8	15.6	97
EZ4z59r	101.90	31.44	10.65	0.318	-4.00E+05	1.40E+05	0.0602	0.0041	0.883	0.058	0.1067	0.0024	0.0112	611	73.6	147.2	643	15.6	31.2	654	7.0	14.0	102
EZ4z60	69.70	53.90	21.80	0.801	-6.00E+05	1.20E+05	0.0647	0.0047	1.231	0.086	0.1383	0.0031	0.1278	765	76.5	153.1	815	19.6	39.1	835	8.8	17.6	102
EZ4z61	914.00	266.80	89.70	0.296	-4.80E+05	9.10E+05	0.0655	0.0035	0.995	0.052	0.1109	0.0020	0.3104	790	56.1	112.1	701	13.2	26.4	678	5.8	11.6	97
EZ4z62	241.50	43.30	12.79	0.171	1.50E+05	2.10E+05	0.0582	0.0040	0.788	0.052	0.0996	0.0020	0.1767	537	75.2	150.4	590	14.8	29.5	612	5.9	11.7	104
EZ4z63	101.00	57.10	16.94	0.572	3.70E+04	9.40E+04	0.0604	0.0051	0.813	0.065	0.0987	0.0025	0.1283	618	91.1	182.3	604	18.2	36.4	607	7.3	14.7	100
EZ4z64	154.00	71.90	41.30	0.472	-1.30E+05	2.50E+05	0.0807	0.0045	2.331	0.120	0.2092	0.0040	0.2428	1214	54.9	109.7	1222	18.3	36.5	1225	10.7	21.3	100
EZ4z65	37.10	49.60	14.79	1.332	1.50E+04	3.40E+04	0.0606	0.0082	0.870	0.120	0.1021	0.0037	0.3124	625	145.9	291.7	636	32.6	65.1	627	10.8	21.6	99
EZ4z66	164.10	68.00	69.80	0.425	-3.00E+05	5.10E+05	0.1272	0.0023	6.590	0.340	0.3738	0.0070	0.4972	2060	16.0	31.9	2058	22.7	45.4	2047	16.4	32.8	99
EZ4z67	67.60	32.20	33.15	0.485	-6.00E+05	4.00E+05	0.1334	0.0037	7.190	0.400	0.3869	0.0081	0.3698	2143	24.2	48.5	2135	24.8	49.5	2108	18.8	37.6	99
EZ4z68c	186.30	147.60	47.30	0.805	-2.50E+05	3.60E+05	0.0624	0.0039	0.944	0.058	0.1102	0.0022	-0.0416	688	66.7	133.4	675	15.1	30.3	674	6.4	12.8	100
EZ4z68r	632.80	288.50	91.90	0.462	2.00E+05	8.70E+05	0.0632	0.0034	0.946	0.048	0.1090	0.0019	0.1060	715	57.1	114.3	676	12.5	25.0	667	5.5	11.0	99
EZ4z69	159.00	88.10	24.30	0.561	-7.00E+05	1.50E+05	0.0607	0.0048	0.793	0.063	0.0971	0.0023	0.2397	629	85.2	170.4	593	17.8	35.6	597	6.8	13.5	101
EZ4z70	962.00	145.10	119.90	0.153	4.00E+04	2.40E+06	0.1180	0.0012	4.870	0.230	0.2982	0.0051	0.6637	1926	9.1	18.2	1797	19.9	39.8	1682	12.7	25.3	94
EZ4z71	622.00	319.00	96.90	0.504	2.30E+06	1.60E+06	0.0605	0.0033	0.860	0.046	0.1031	0.0017	0.3242	622	58.8	117.7	630	12.5	25.1	633	5.0	9.9	100
EZ4z72	407.90	252.10	256.00	0.635	-6.00E+06	2.30E+06	0.1262	0.0014	6.814	0.320	0.3920	0.0064	0.4774	2046	9.8	19.6	2088	20.8	41.5	2132	14.8	29.6	102
EZ4z73	256.60	295.00	89.80	1.156	1.40E+05	2.30E+05	0.0617	0.0038	0.862	0.051	0.1029	0.0019	0.2558	664	66.0	131.9	631	13.9	27.8	631	5.6	11.1	100
EZ4z74	293.80	276.90	82.80	0.948	-1.40E+05	3.80E+05	0.0625	0.0038	0.890	0.052	0.1031	0.0020	0.2195	691	64.8	129.7	646	14.0	27.9	633	5.8	11.7	98
EZ4z75	147.70	106.10	32.60	0.712	-2.00E+05	2.20E+05	0.0622	0.0046	0.880	0.064	0.1049	0.0020	0.0684	681	79.0	158.0	641	17.3	34.5	643	5.8	11.7	100
EZ4z76	541.00	201.00	59.60	0.373	-1.30E+05	4.20E+05	0.0628	0.0036	0.787	0.044	0.0907	0.0018	0.3794	701	61.0	122.0	589	12.5	25.0	560	5.3	10.6	95
EZ4z77	179.90	55.60	57.80	0.316	1.00E+05	6.10E+05	0.1239	0.0021	6.530	0.330	0.3823	0.0068	0.4153	2013	15.0	30.1	2050	22.2	44.5	2087	15.9	31.7	102
EZ4z78	183.80	220.40	221.20	1.205	2.30E+06	2.10E+06	0.1255	0.0022	6.610	0.330	0.3853	0.0072	0.4766	2036	15.5	31.0	2061	22.0	44.0	2101	16.8	33.5	102
EZ4z79	857.00	496.00	151.10	0.584	-9.90E+05	8.00E+05	0.0600	0.0032	0.852	0.042	0.1032	0.0017	0.2211	604	57.7	115.4	626	11.5	23.0	633	5.0	9.9	101
EZ4z80	178.00	100.40	111.00	0.557	4.00E+06	1.10E+06	0.1255	0.0025	6.660	0.340	0.3872	0.0076	0.5485	2036	17.6	35.2	2067	22.5	45.0	2110	17.7	35.3	102
EZ4z81	97.20	52.53	15.48	0.547	-1.80E+05	1.60E+05	0.0622	0.0050	0.882	0.067	0.1022	0.0025	-0.0003	681	85.9	171.7	642	18.1	36.1	627	7.3	14.6	98
EZ4z83	179.50	208.70	64.30	1.178	5.00E+05	1.90E+05	0.0615	0.0042	0.854	0.054	0.1033	0.0021	0.0431	657	73.2	146.5	627	14.8	29.5	634	6.1	12.3	101
EZ4z84	62.30	72.00	21.00	1.168	6.00E+05	1.20E+05	0.0594	0.0068	0.823	0.093	0.0993	0.0029	0.0764	582	124.3	248.6	610	25.9	51.8	610	8.5	17.0	100
EZ4z85	97.80	114.00	33.53	1.189	6.00E+06	1.10E+06	0.0626	0.0058	0.819	0.072	0.0953	0.0023	0.0959	695	98.7	197.5	607	20.1	40.2	587	6.8	13.5	97
EZ4z86	321.70	231.20	230.50	0.734	-3.00E+06	1.20E+06	0.1342	0.0018	6.733	0.320	0.3655	0.0065	0.4888	2154	11.7	23.4	2077	21.0	42.0	2008	15.3	30.7	97
EZ4z87	213.20	186.70	57.80	0.885	6.00E+03	2.70E+05	0.0620	0.0038	0.914	0.056	0.1052	0.0021	0.2960	674	65.5	131.1	659	14.8	29.7	645	6.1	12.2	98
EZ4z88	164.90	46.60	35.00	0.286	-6.50E+05	7.90E+05	0.1190	0.0025	4.590	0.240	0.2784	0.0053	0.3951	1941	18.8	37.6	1747	21.8	43.6	1583	13.4	26.7	91
EZ4z89	549.10	309.30	353.20	0.573	-1.70E+06	2.40E+06	0.1585	0.0018	9.150	0.450	0.4170	0.0086	0.7887	2440	9.6	19.2	2353	22.5	45.0	2247	19.6	39.1	95
EZ4z90	48.70	73.90	73.90	1.520	-9.00E+06	1.00E+06	0.1263	0.0037	6.400	0.350	0.3684	0.0090	0.3862	2047	25.9	51.8	2032	24.0	48.0	2022	21.2	42.4	99
EZ4z92	578.00	295.10	238.60	0.521	3.30E+06	2.20E+06	0.1056	0.0013	4.271	0.210	0.2929	0.0049	0.4644	1725	11.3	22.6	595	14.1	28.2	1656	12.2	24.4	98
EZ4z93	120.80	49.56	52.10	0.418	-9.50E+05	7.30E+05	0.1375	0.0030	7.270	0.370	0.3837	0.0072	0.3600	2196	19.0	37.9	782	16.4	32.9	2094	16.8	33.5	98
EZ4z95	331.00	199.60	58.50	0.604	-3.90E+05	4.60E+05	0.0590	0.0039	0.796	0.050	0.0974	0.0017	-0.0863	567	72.0	143.9	721	15.7	31.4	599	5.0	10.0	101
EZ4z96	164.20	291.90	107.10	1.797	-3.00E+05	3.10E+05	0.0684	0.0042	1.160	0.070	0.1245	0.0024	0.1605	881	63.5	127.0	597	42.3	84.5	756	6.9	13.8	97
EZ4z98	235.30	95.70	34.64	0.408	-2.60E+05	3.70E+05	0.0628	0.0039	1.034	0.063	0.1190	0.0023	0.2176	701	66.1	132.2	655	12.2	24.5	725	6.6	13.3	101
EZ4z99	20.70	14.31	3.80	0.701	4.10E+04	7.40E+04	0.0532	0.0095	0.800	0.150	0.1057	0.0039	0.1167	337	202.3	404.6	1958	22.1	44.2	648	11.4	22.7	109
EZ4z100	937.00	98.60	29.10	0.108	5.00E+06	2.10E+06	0.0630	0.0035	0.906	0.046	0.1056	0.0019	-0.0708	708	59.1	118.1	599	13.8	27.6	647	5.5	11.1	99
EZ4z101	219.50	215.40	178.60	0.990	2.10E+05	9.20E+05	0.1299	0.0026	5.880	0.300	0.3259	0.0071	0.6216	2097	17.6	35.2	618	16.6	33.1	1818	17.3	34.5	93
EZ4z102	239.90	240.00	70.10	1.014	2.60E+05	3.90E+05	0.0591	0.0038	0.804	0.049	0.0997	0.0018	0.1772	571	69.9	139.9	2003	21.9	43.7	613	5.3	10.6	102
EZ4z103	157.20	115.60	34.80	0.734	3.20E+05	3.40E+05	0.0594	0.0043	0.838	0.060	0.1023	0.0021	0.2016	582	78.6	157.2	625	43.9	87.7	628	6.1	12.3	102
EZ4z104	355.00	164.90	162.10	0.474	2.50E+06	2.70E+06	0.1285	0.0017	6.190	0.310	0.3495	0.0065	0.6682	2078	11.6	23.3	619	16.8	33.6	1932	15.5	31.0	96
EZ4z105c	20.77	12.38	3.54	0.600	5.00E+04	5.70E+04	0.0580	0.0110	0.850	0.160	0.1008	0.0034	0.2301	530	207.8	415.5	1718	21.5	43.0	619	10.0	19.9	99
EZ4z105r	172.00	83.10	25.37	0.489	-2.10E+05	3.60E+05	0.0594	0.0045	0.840	0.061	0.1031	0.0022	0.1814	582	82.3	164.5	2013	21.7	43.3	633	6.4	12.9	102
EZ4z106	148.90	84.10	70.30	0.572	-6.70E+05	7.80E+05	0.1080	0.0022	4.430	0.230	0.2985	0.0055	0.5030	1766	18.6	37.2	648	19.6	39.1	1684	13.7	27.3	98
EZ4z107	207.20	452.00	446.00	2.205	-5.00E+06	2.40E+06	0.1258	0.0023	6.260	0.310	0.3606	0.0064	0.3503	2040	16.2	32.3	643	17.2	34.5	1985	15.2	30.3	99
EZ4z109	116.50	70.90	20.56	0.613	1.70E+06	1.10E+06	0.0643	0.0053	0.893	0.073	0.1017	0.0023	0.2467	752	87.0	174.1	631	17.2	34.3	624	6.7	13.5	96
EZ4z110	126.30	72.90	22.16	0.584	-1.00E+05	2.70E+05	0.0632	0.0048	0.884	0.064	0.1041	0.0023	0.1525	715	80.7	161.3	788	18.7	37.3	638	6.7	13.4	99
EZ4z111	147.70	115.20	35.77	0.781	4.80E+05	5.80E+05	0.0609	0.0045	0.861	0.063	0.1035	0.0023	0.2523	636	79.5	159.0	2603	22.3	44.6	635	6.7	13.4	101
EZ4z112	77.70	24.10	9.21	0.314	3.10E+05	3.30E+05	0.0662	0.0049	1.173	0.080	0.1253	0.0032	0.1501	813	77.4	154.8	1888	22.9	45.8	761	9.2	18.3	97
EZ4z113	293.00	28.40	31.80	0.096	1.90E+07	1.30E+07	0.1848	0.0021	11.980	0.570	0.4664	0.0079	0.4086	2696	9.4	18.8	2078	22.3	44.6	2468	17.4	34.7	95
EZ4z114	164.10	64.30	55.30	0.390	1.90E+06	1.60E+06	0.1241	0.0023	5.420	0.290	0.3174	0.0081	0.7116	2016	16.4	32.9	2361	22.3	44.6	1777	19.8	39.6	94
EZ4z116	159.20	80.40	81.90	0.506	-1.40E+06	1.30E+06	0.1285	0.0025	6.740	0.340	0.3773	0.0068	0.3871	2078	17.1	34.3	640	14.3	28.6	2064	15.9	31.8	99
EZ4z117	257.70	141.40	150.90	0.549	-1.80E+07	3.60E+07	0.1599	0.0020	9.230	0.450	0.4144	0.0074	0.5534	2455	10.6	21.2	610	18.6	37.3	2235	16.9	33.7	95
EZ4z118	183.20	237.40	75.80	1.290	1.20E+06	1.30E+06	0.0587	0.0037	0.879	0.053	0.1064	0.0022	0.1284	556	68.7	137.5	629	15.3	30.6	652	6.4	12.8	102
EZ4z119	124.40	143.40	43.40	1.143	7.40E+05	9.10E+05	0.0584	0.0047	0.824	0.067	0.1024	0.0023	0.1828	545	87.9	175.9	655	18.6	37.2	628	6.7	13.4	103
EZ4z120	176.60	162.70	47.60	0.922	9.20E+05	8.50E+05	0.0616	0.0041	0.858	0.056	0.0993	0.0021	0.3018	660	71.3	142.7	1820	20.3	40.6	610	6.2	12.3	97
EZ4z121	112.20	76.90	24.59	0.669	3.00E+05	3.70E+05	0.0600	0.0049	0.907	0.070	0.1116	0.0027	0.2106	604	88.4	176.7	758	14.4	28.9	682	7.8	15.7	104
EZ4z122	1054.00	16.90	9.69	0.015	4.50E+07	2.10E+07	0.1238	0.0013	5.002	0.240	0.2910	0.0056	0.7763	2012	9.3	18.6	666	24.2	48.5	1647	14.0	28.0	90
EZ4z123	894.00	199.00	69.10	0.230	1.12E+08	6.10E+07	0.0661	0.0035	1.109	0.060	0.1216	0.0037	0.7400	810	55.4	110.8	2195	23.3	46.7	740	10.6	21.3	98
EZ4z124	51.20	37.20	10.80	0.737	-1.52E+06	7.00E+05	0.0670	0.0067	0.926	0.092	0.1020	0.0031	0.1172	838	104.1	208.3	581	13.2	26.3	626	9.1	18.1	94
EZ4z125	128.80	66.40	70.80	0.504	-1.70E+06	3.00E+06	0.1547	0.0036	7.690	0.400	0.3618	0.0073	0.5023	2399	19.8	39.6	654	16.5	33.0	1991	17.3	34.6	91
EZ4z126	215.00	89.90	24.60	0.413	-5.00E+05	7.50E+05	0.0595	0.0038	0.772	0.046	0.0950	0.0019	0.0407	585	69.3	138.6	2813	23.2	46.4	585	5.6	11.2	101
EZ4z127	145.80	145.30	43.20	0.988	-3.50E+05	9.80E+05	0.0615	0.0044	0.905	0.062	0.1074	0.0023	0.0455	657	76.7	153.4	669	13.7	27.3	658	6.7	13.4	100
EZ4z128	519.40	481.00	644.00	0.913	-9.00E+07	1.30E+07	0.2127	0.0023	14.960	0.730	0.5101	0.0092	0.7364	2926	8.7	17.5	2149	23.8	47.7	2657	19.6	39.3	94

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
EZ4z129	505.00	171.50	53.30	0.339	2.00E+07	1.50E+07	0.0646	0.0036	0.932	0.052	0.1034	0.0022	0.3522	761	58.7	117.5	2055	21.4	42.9	634	6.4	12.9	95
EZ4z130	72.80	45.70	47.70	0.616	1.90E+06	2.90E+06	0.1310	0.0036	7.300	0.390	0.3998	0.0080	0.2992	2111	24.1	48.2	607	19.5	39.0	2168	18.4	36.8	101
EZ4z131	229.80	262.70	253.30	1.126	-7.60E+06	7.10E+06	0.1267	0.0021	6.570	0.320	0.3736	0.0066	0.3882	2053	14.6	29.3	799	15.2	30.5	2046	15.5	31.0	100
EZ4z132	91.40	126.60	36.90	1.357	-6.00E+05	8.20E+05	0.0573	0.0050	0.819	0.070	0.1020	0.0026	0.1830	503	96.0	192.1	816	20.0	40.0	626	7.6	15.2	103
EZ4z133c	326.60	64.30	23.75	0.194	-1.60E+06	2.60E+06	0.0659	0.0038	1.196	0.066	0.1304	0.0024	0.2497	803	60.4	120.8	611	12.2	24.4	790	6.8	13.7	99
EZ4z133r	446.00	24.90	7.77	0.055	3.00E+06	4.10E+06	0.0595	0.0033	0.826	0.044	0.0998	0.0020	0.2568	585	60.2	120.4	513	17.4	34.9	613	5.9	11.7	100
EZ4z134	101.90	50.70	18.66	0.494	-1.20E+06	1.10E+06	0.0664	0.0051	1.233	0.088	0.1346	0.0032	0.0279	819	80.2	160.4	619	22.3	44.7	814	9.1	18.2	100
EZ4z135	73.40	61.30	18.00	0.840	2.90E+05	8.90E+05	0.0601	0.0057	0.840	0.081	0.0996	0.0024	0.1561	607	102.5	205.1	632	18.0	35.9	612	7.0	14.1	99
EZ4z136	109.10	45.10	10.90	0.403	-8.00E+06	1.50E+06	0.0560	0.0049	0.658	0.057	0.0843	0.0018	0.0963	452	97.1	194.3	2088	24.0	48.0	522	5.4	10.7	102
EZ4z137	98.20	102.50	29.30	1.031	3.60E+06	2.90E+06	0.0610	0.0047	0.863	0.066	0.1021	0.0027	0.3022	639	82.9	165.7	2731	22.7	45.5	627	7.9	15.8	99
EZ4z138	105.60	83.11	80.20	0.773	2.00E+07	1.60E+07	0.1311	0.0037	6.820	0.370	0.3689	0.0072	0.2672	2113	24.7	49.5	702	18.3	36.6	2024	17.0	33.9	97
EZ4z139	231.50	213.50	277.70	0.909	1.50E+07	4.40E+07	0.1932	0.0023	13.720	0.660	0.5149	0.0087	0.4903	2770	9.8	19.5	642	13.5	27.0	2678	18.5	37.0	98
EZ4z140	105.00	75.70	24.76	0.707	1.70E+07	1.20E+07	0.0632	0.0046	0.997	0.072	0.1136	0.0025	0.2853	715	77.3	154.6	636	13.3	26.6	694	7.2	14.5	99
EZ4z141	477.00	301.00	86.20	0.621	1.10E+09	2.20E+09	0.0627	0.0039	0.882	0.050	0.1018	0.0018	-0.0226	698	66.2	132.5	3032	24.3	48.7	625	5.3	10.5	97
EZ4z142	431.00	273.00	74.10	0.630	-4.40E+07	6.20E+07	0.0625	0.0037	0.871	0.049	0.1010	0.0018	0.0778	691	63.1	126.2	1689	20.2	40.4	620	5.3	10.5	98
EZ4z143	67.10	40.70	60.20	0.601	-6.60E+07	5.60E+07	0.2283	0.0045	18.800	0.950	0.5939	0.0120	0.3863	3040	15.8	31.6	2034	21.2	42.4	3005	24.3	48.5	99
EZ4z144	316.00	142.50	115.70	0.449	-2.40E+05	3.90E+05	0.1068	0.0020	4.279	0.210	0.2876	0.0051	0.2243	1746	17.2	34.3	644	15.3	30.7	1630	12.8	25.5	96
EZ4z145	314.80	278.70	264.00	0.879	-9.00E+05	9.10E+05	0.1280	0.0019	6.410	0.310	0.3573	0.0059	0.4272	2071	13.1	26.2	2140	31.4	62.9	1969	14.0	28.0	97
EZ4z146	139.10	178.50	52.00	1.280	-6.00E+05	1.10E+05	0.0623	0.0042	0.885	0.057	0.1013	0.0022	0.2069	684	72.0	143.9	1982	26.7	53.3	622	6.4	12.9	97
EZ4z147	25.71	32.99	34.72	1.271	5.00E+04	4.10E+04	0.1366	0.0063	7.230	0.510	0.3863	0.0100	0.6136	2185	40.1	80.2	2445	23.3	46.6	2106	23.3	46.5	98
EZ4z148	207.70	102.90	94.90	0.491	2.70E+05	4.20E+05	0.1347	0.0026	6.040	0.370	0.3220	0.0130	0.8701	2160	16.8	33.7	591	21.0	42.0	1799	31.7	63.4	91
EZ4z149	109.20	19.40	21.90	0.169	1.40E+05	3.10E+05	0.1592	0.0032	10.110	0.510	0.4503	0.0090	0.3886	2447	17.0	34.0	2148	28.1	56.3	2397	20.0	40.0	98
EZ4z150	71.60	89.60	23.22	1.244	-7.70E+04	5.40E+04	0.0608	0.0059	0.789	0.074	0.0923	0.0023	0.0107	632	104.5	209.0	624	19.2	38.4	569	6.8	13.6	96
EZ4z152	28.70	36.56	36.50	1.255	2.80E+04	4.60E+04	0.1318	0.0049	7.290	0.460	0.3967	0.0110	0.4480	2122	32.6	65.1	667	14.7	29.5	2154	25.4	50.8	100
EZ4z153	95.20	115.80	33.75	1.206	-4.70E+04	4.00E+04	0.0595	0.0049	0.848	0.070	0.1011	0.0025	0.2536	585	89.4	178.7	633	17.7	35.3	621	7.3	14.6	100
EZ4z154	288.70	203.20	65.30	0.699	4.00E+05	2.40E+05	0.0619	0.0040	0.929	0.056	0.1070	0.0021	0.1094	671	69.1	138.3	648	13.4	26.8	655	6.1	12.2	98
EZ4z156	133.20	76.66	21.95	0.568	2.20E+04	8.20E+04	0.0616	0.0047	0.866	0.065	0.0988	0.0021	0.1705	660	81.8	163.5	652	23.2	46.5	607	6.2	12.3	96
EZ4z157	438.00	157.00	48.40	0.354	-1.10E+05	3.60E+05	0.0608	0.0035	0.893	0.050	0.1059	0.0020	0.3018	632	62.0	124.0	649	5.8	11.7	649	5.8	11.7	100
EZ4z158	81.10	69.50	20.47	0.840	-8.60E+04	6.90E+04	0.0625	0.0059	0.900	0.087	0.1017	0.0024	0.3556	691	100.7	201.3	624	7.0	14.0	624	7.0	14.0	96
Discordant data																							
EZ4z82	1015.00	210.30	124.60	0.208	1.70E+06	1.50E+06	0.1175	0.0059	2.985	0.160	0.1846	0.0051	0.9363	1919	45.0	90.1	1404	20.4	40.7	1092	13.9	27.8	78
EZ4z91	708.00	329.90	101.20	0.475	2.20E+05	8.00E+05	0.0719	0.0044	0.968	0.057	0.0973	0.0017	0.4007	983	62.3	124.6	687	14.7	29.4	599	5.0	10.0	87
EZ4z94c	70.00	37.00	610.00	0.498	1.90E+05	1.10E+05	0.4330	0.0270	80.000	13.000	1.2400	0.1500	0.9882	4028	46.5	93.1	4462	81.4	162.8	5199	215.8	431.7	117
EZ4z94r	14.84	5.69	1.47	0.375	-2.90E+04	2.70E+04	0.0500	0.0150	0.610	0.180	0.0992	0.0052	-0.0190	195	348.7	697.3	484	56.7	113.4	610	15.2	30.5	126
EZ4z97	52.70	19.10	5.49	0.371	1.20E+05	1.50E+05	0.0511	0.0061	0.696	0.078	0.0988	0.0027	0.0376	245	137.5	274.9	536	23.3	46.7	607	7.9	15.8	113
EZ4z108	158.60	68.20	25.70	0.428	1.40E+05	2.70E+05	0.0797	0.0067	1.017	0.081	0.0927	0.0019	0.0975	1190	83.0	166.0	712	20.4	40.7	571	5.6	11.2	80
EZ4z115	204.30	104.80	1250.00	0.483	-2.40E+05	4.20E+05	0.4430	0.0470	31.600	4.400	0.4750	0.0260	0.9499	4062	79.0	158.0	3538	68.5	136.9	2505	56.8	113.6	71
EZ4z151	98.70	92.10	38.70	0.940	7.00E+05	1.00E+05	0.0837	0.0075	1.350	0.130	0.1150	0.0029	0.5441	1286	87.2	174.5	868	28.1	56.1	702	8.4	16.8	81
EZ4z155	588.00	203.90	165.70	0.343	8.20E+05	8.50E+05	0.1476	0.0018	6.887	0.330	0.3350	0.0057	0.4466	2318	10.5	20.9	2097	21.2	42.4	1863	13.8	27.5	89

Footnotes:

- Analysis references: EZ4z is zircon from sample EZ4 (mount CT18-4), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.20: Sample EZ5 (LA-ICPMS)

IGSN: IEACC0035 Coordinate UTM: Zone 29S, 737554 m E, 3682849 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
EZ5z1	61.40	77.60	22.76	1.290	-9.00E+05	1.40E+05	0.0576	0.0057	0.846	0.077	0.1014	0.0027	0.0971	515	108.7	217.4	622	21.2	42.3	623	7.9	15.8	100
EZ5z2	151.40	54.60	31.69	0.361	-3.10E+05	1.70E+05	0.0811	0.0045	2.282	0.120	0.2036	0.0035	0.0172	1224	54.5	109.0	1207	18.5	37.1	1195	9.4	18.7	99
EZ5z3	225.80	173.90	50.30	0.776	-4.00E+04	9.20E+04	0.0613	0.0037	0.840	0.048	0.0997	0.0021	0.3212	650	64.8	129.6	619	13.2	26.5	613	6.2	12.3	99
EZ5z4	517.00	94.00	79.60	0.182	7.30E+05	5.20E+05	0.1219	0.0015	5.346	0.260	0.3176	0.0056	0.4272	1984	10.9	21.9	1876	20.8	41.6	1778	13.7	27.4	95
EZ5z5	229.00	111.10	101.80	0.481	-1.60E+05	3.70E+05	0.1269	0.0017	6.015	0.290	0.3433	0.0065	0.6167	2055	11.8	23.6	1978	21.0	41.9	1903	15.6	31.2	96
EZ5z6	584.20	43.30	41.30	0.075	-3.00E+05	3.70E+05	0.1241	0.0013	6.013	0.290	0.3506	0.0057	0.5901	2016	9.3	18.6	1978	21.0	42.0	1937	13.6	27.2	98
EZ5z7	392.00	226.80	91.20	0.581	-1.50E+05	1.80E+05	0.0677	0.0038	1.337	0.070	0.1454	0.0025	0.1562	859	58.3	116.5	862	15.2	30.4	875	7.0	14.1	102
EZ5z8	192.70	126.60	36.40	0.663	-1.40E+05	1.30E+05	0.0633	0.0044	0.871	0.059	0.1016	0.0019	0.1852	718	73.8	147.6	636	16.0	32.0	624	5.6	11.1	98
EZ5z9	502.00	665.00	177.70	1.330	7.00E+05	2.00E+05	0.0572	0.0033	0.717	0.038	0.0903	0.0016	-0.0857	499	63.5	127.1	549	11.2	22.5	557	4.7	9.5	102
EZ5z10	586.00	237.10	69.70	0.403	2.50E+05	3.00E+05	0.0617	0.0034	0.878	0.045	0.1032	0.0018	-0.0341	664	59.0	118.0	640	12.2	24.3	633	5.3	10.5	99
EZ5z11	297.00	235.20	63.00	0.796	-3.00E+03	1.10E+05	0.0595	0.0035	0.767	0.042	0.0935	0.0016	0.0212	585	63.8	127.7	578	12.1	24.1	576	4.7	9.4	100
EZ5z12	333.00	50.40	15.43	0.155	-9.00E+05	1.20E+05	0.0589	0.0036	0.839	0.048	0.1041	0.0020	0.2369	563	66.6	133.1	619	13.2	26.5	638	5.8	11.7	103
EZ5z13	68.20	29.80	33.40	0.436	-6.80E+04	7.10E+04	0.1332	0.0031	7.380	0.390	0.4024	0.0088	0.4842	2141	20.3	40.7	2159	23.6	47.2	2180	20.2	40.5	101
EZ5z14	399.00	159.00	136.50	0.397	-6.00E+05	5.50E+05	0.1289	0.0017	5.754	0.280	0.3213	0.0053	0.4826	2083	11.6	23.2	1940	21.0	42.1	1796	12.9	25.9	93
EZ5z15	140.10	79.10	110.20	0.565	1.50E+05	2.80E+05	0.2035	0.0029	14.470	0.700	0.5204	0.0095	0.4307	2854	11.6	23.2	2781	23.0	45.9	2701	20.1	40.3	97
EZ5z16	323.50	3.81	1.01	0.012	-9.60E+04	6.80E+04	0.0592	0.0036	0.812	0.046	0.0996	0.0018	0.0544	574	66.1	132.2	604	12.9	25.8	612	5.3	10.6	101
EZ5z17	109.20	116.90	32.90	1.071	-7.60E+04	7.30E+04	0.0568	0.0044	0.793	0.062	0.1016	0.0022	0.1562	484	85.5	171.1	593	17.5	35.1	624	6.4	12.9	105
EZ5z18	53.10	34.20	11.84	0.665	-6.00E+04	2.70E+04	0.0677	0.0069	0.951	0.095	0.1041	0.0025	0.2091	859	105.8	211.5	679	24.7	49.4	638	7.3	14.6	94
EZ5z19	192.50	203.60	208.90	1.054	-4.00E+05	3.40E+05	0.1368	0.0020	7.270	0.360	0.3848	0.0071	0.5164	2187	12.7	25.4	2145	22.1	44.2	2099	16.5	33.1	98
EZ5z20	44.03	39.47	32.94	0.880	-2.00E+04	6.80E+04	0.1071	0.0038	4.840	0.280	0.3195	0.0076	0.1746	1751	32.5	64.9	1792	24.3	48.6	1787	18.6	37.1	100
EZ5z21	119.90	96.80	29.80	0.799	-5.10E+04	4.00E+04	0.0617	0.0042	0.892	0.061	0.1046	0.0023	0.3642	664	72.9	145.8	647	16.4	32.7	641	6.7	13.4	99
EZ5z22	934.00	184.50	150.60	0.197	-8.70E+05	7.50E+05	0.1224	0.0014	5.129	0.250	0.3059	0.0057	0.6790	1992	10.2	20.3	1841	20.7	41.4	1720	14.1	28.1	93
EZ5z23	119.00	65.90	37.90	0.542	4.10E+04	8.70E+04	0.0824	0.0047	2.330	0.130	0.2040	0.0043	0.1858	1255	55.8	111.6	1221	19.8	39.6	1197	11.5	23.0	98
EZ5z24	282.10	192.30	55.80	0.678	-4.80E+04	7.40E+04	0.0594	0.0039	0.845	0.053	0.1030	0.0021	0.0873	582	71.3	142.6	622	14.6	29.1	632	6.1	12.3	102
EZ5z25	144.10	99.30	29.70	0.688	2.80E+04	5.00E+04	0.0608	0.0044	0.852	0.055	0.1009	0.0023	-0.1233	632	77.9	155.8	626	15.1	30.1	620	6.7	13.5	99
EZ5z26	829.00	78.00	72.70	0.094	3.00E+06	1.40E+06	0.1263	0.0013	6.416	0.300	0.3680	0.0060	0.4997	2047	9.1	18.2	2034	20.5	41.0	2020	14.1	28.3	99
EZ5z27	95.60	88.40	26.50	0.912	1.00E+04	4.10E+04	0.0623	0.0053	0.896	0.074	0.1063	0.0024	0.1049	684	90.8	181.6	650	19.8	39.6	651	7.0	14.0	100
EZ5z28	402.00	289.00	276.00	0.715	3.70E+05	3.50E+05	0.1233	0.0015	6.199	0.300	0.3688	0.0063	0.5516	2005	10.8	21.6	2004	21.1	42.3	2024	14.8	29.7	101
EZ5z29	300.80	98.70	87.80	0.326	1.80E+05	4.80E+05	0.1337	0.0017	7.070	0.340	0.3845	0.0070	0.6218	2147	11.1	22.2	2120	21.4	42.7	2097	16.3	32.6	99
EZ5z30	243.00	283.90	245.10	1.154	-7.00E+05	3.30E+05	0.1135	0.0019	5.092	0.250	0.3273	0.0060	0.4545	1856	15.1	30.2	1835	20.8	41.6	1825	14.6	29.1	99
EZ5z31	349.00	259.00	97.90	0.734	-8.00E+05	2.10E+05	0.0671	0.0038	1.220	0.066	0.1338	0.0025	0.1659	841	58.9	117.9	810	15.1	30.2	810	7.1	14.2	100
EZ5z33	124.20	102.90	27.70	0.824	-9.30E+04	7.10E+04	0.0603	0.0042	0.818	0.054	0.0989	0.0022	0.0503	614	75.2	150.4	607	15.1	30.1	608	6.5	12.9	100
EZ5z35	50.00	43.90	10.71	0.870	-1.00E+06	1.60E+05	0.0620	0.0073	0.724	0.080	0.0878	0.0026	0.0008	674	125.9	251.8	553	23.5	47.1	543	7.7	15.4	98
EZ5z36	120.60	147.30	40.50	1.211	1.00E+05	2.90E+04	0.0603	0.0044	0.788	0.055	0.0960	0.0022	0.0515	614	78.8	157.6	590	15.6	31.2	591	6.5	12.9	100
EZ5z37	46.90	34.10	32.60	0.718	-1.80E+04	6.70E+04	0.1289	0.0045	6.800	0.400	0.3848	0.0086	0.2978	2083	30.7	61.4	2086	26.0	52.0	2099	20.0	40.0	101
EZ5z38	106.40	241.10	67.30	2.227	-1.40E+04	6.70E+04	0.0609	0.0048	0.862	0.067	0.1029	0.0022	0.2408	636	84.8	169.6	631	18.3	36.5	631	6.4	12.9	100
EZ5z40	68.60	94.40	22.49	1.351	1.00E+04	1.50E+04	0.0588	0.0059	0.694	0.068	0.0872	0.0019	0.1091	560	109.4	218.7	535	20.4	40.7	539	5.6	11.3	101
EZ5z41	591.00	189.50	173.80	0.315	-5.40E+05	8.50E+05	0.1258	0.0014	6.093	0.290	0.3522	0.0059	0.5517	2040	9.8	19.7	1989	20.7	41.5	1945	14.1	28.1	98
EZ5z42	115.10	137.00	164.60	1.167	3.00E+05	2.10E+05	0.1558	0.0032	10.020	0.500	0.4664	0.0086	0.2705	2411	17.4	34.9	2437	23.0	46.0	2468	18.9	37.8	101
EZ5z43	92.50	84.20	22.89	0.886	-7.20E+04	3.30E+04	0.0606	0.0049	0.821	0.065	0.0982	0.0022	0.1672	625	87.2	174.3	609	18.1	36.2	604	6.5	12.9	99
EZ5z44	344.00	205.00	59.20	0.420	-2.10E+05	1.80E+05	0.0629	0.0036	0.964	0.053	0.1140	0.0021	0.1770	705	60.9	121.8	685	13.7	27.4	696	6.1	12.2	102
EZ5z45	97.90	75.00	18.04	0.744	1.40E+05	1.10E+05	0.0577	0.0047	0.728	0.059	0.0909	0.0022	0.1988	518	89.4	178.8	555	17.3	34.6	561	6.5	13.0	101
EZ5z46	348.90	632.00	182.20	1.766	2.10E+05	2.80E+05	0.0607	0.0035	0.852	0.048	0.1026	0.0020	0.2936	629	62.1	124.2	626	13.1	26.3	630	5.8	11.7	101
EZ5z47	134.10	174.40	50.30	1.282	-1.30E+04	3.90E+04	0.0573	0.0044	0.836	0.063	0.1049	0.0022	0.2361	503	84.5	169.0	617	17.4	34.8	643	6.4	12.8	104
EZ5z48	236.10	29.90	36.00	0.120	1.20E+05	2.60E+05	0.1656	0.0024	10.330	0.520	0.4531	0.0087	0.6952	2514	12.2	24.4	2465	23.3	46.6	2409	19.3	38.6	98
EZ5z49	249.10	83.60	78.80	0.330	2.10E+05	2.40E+05	0.1236	0.0016	6.242	0.300	0.3694	0.0063	0.5680	2009	11.5	23.0	2010	21.0	42.0	2027	14.8	29.7	101
EZ5z51	271.10	41.70	40.90	0.151	-2.20E+05	4.90E+05	0.1282	0.0016	6.750	0.330	0.3826	0.0068	0.5601	2073	11.0	22.0	2079	21.6	43.2	2088	15.9	31.7	100
EZ5z52r	552.00	339.60	93.50	0.601	-9.50E+05	4.40E+05	0.0602	0.0034	0.834	0.045	0.1006	0.0017	0.2242	611	61.0	122.1	616	12.4	24.9	618	5.0	10.0	100
EZ5z52c	106.00	68.40	20.08	0.631	2.60E+04	5.80E+04	0.0656	0.0055	0.869	0.071	0.0970	0.0025	0.1601	794	87.9	175.9	635	19.3	38.5	597	7.3	14.7	94
EZ5z53	502.00	299.10	106.80	0.580	-2.50E+05	1.90E+05	0.0665	0.0038	1.173	0.063	0.1297	0.0023	0.1665	822	59.7	119.3	788	14.7	29.4	786	6.6	13.1	100
EZ5z54	324.10	247.00	76.20	0.732	-2.00E+04	6.80E+04	0.0703	0.0053	0.971	0.073	0.1023	0.0020	0.4889	937	77.3	154.6	689	18.8	37.6	628	5.8	11.7	91
EZ5z55	398.20	182.80	170.70	0.448	-1.00E+06	3.80E+05	0.1276	0.0016	6.400	0.310	0.3651	0.0062	0.3950	2065	11.1	22.1	2032	21.2	42.5	2006	14.6	29.3	99
EZ5z56	164.20	117.40	31.95	0.694	-5.00E+05	1.40E+05	0.0619	0.0041	0.865	0.058	0.1017	0.0022	0.3571	671	70.9	141.7	633	15.8	31.6	624	6.4	12.9	99
EZ5z57	480.00	337.60	283.00	0.684	8.00E+05	6.80E+05	0.1183	0.0015	5.246	0.250	0.3221	0.0056	0.5888	1931	11.4	22.7	1860	20.3	40.6	1800	13.7	27.3	97
EZ5z58	358.00	177.90	197.40	0.487	3.30E+05	7.60E+05	0.1537	0.0018	8.930	0.430	0.4233	0.0072	0.5574	2388	10.0	19.9	2331	22.0	43.9	2275	16.3	32.6	98
EZ5z59	66.30	51.80	12.70	0.729	6.00E+04	2.20E+04	0.0576	0.0065	0.670	0.076	0.0872	0.0028	0.2286	515	123.9	247.9	521	23.1	46.2	539	8.3	16.6	104
EZ5z61c	320.00	90.70	81.40	0.287	-1.00E+03	4.10E+05	0.1239	0.0019	6.090	0.300	0.3569	0.0066	0.6217	2013	13.6	27.2	1989	21.5	42.9	1967	15.7	31.4	99
EZ5z61r	307.80	142.50	134.00	0.454	-1.46E+06	7.70E+05	0.1242	0.0018	6.179	0.300	0.3627	0.0062	0.3351	2017	12.8	25.7	2001	21.2	42.4	1995	14.7	29.3	100
EZ5z62	158.60	73.60	76.10	0.466	-6.90E+05	3.00E+05	0.1372	0.0026	7.370	0.360	0.3936	0.0070	0.6865	2192	16.5	32.9	2157	21.8	43.6	2140	16.2	32.4	99
EZ5z63	79.00	79.30	93.70	0.980	-5.50E+05	2.90E+05	0.2181	0.0052	14.520	0.830	0.4851	0.0110	0.6335	2967	19.2	38.4	2784	27.1	54.3	2549	23.9	47.7	92

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
EZ5z64	104.30	125.20	36.42	1.171	3.50E+04	3.30E+04	0.0613	0.0048	0.866	0.063	0.1044	0.0021	-0.0825	650	84.1	168.1	633	17.1	34.3	640	6.1	12.3	101
EZ5z66	286.40	128.40	137.90	0.440	2.30E+06	4.30E+06	0.1620	0.0020	9.460	0.460	0.4222	0.0072	0.6008	2477	10.4	20.8	2384	22.3	44.6	2270	16.3	32.6	95
EZ5z67	189.90	77.50	93.70	0.406	7.40E+05	6.80E+05	0.1540	0.0024	9.840	0.480	0.4639	0.0082	0.3677	2391	13.3	26.5	2420	22.5	44.9	2457	18.1	36.1	102
EZ5z68	269.00	206.00	59.40	0.754	-4.00E+05	1.40E+05	0.0612	0.0039	0.844	0.051	0.1023	0.0018	0.1315	646	68.5	136.9	621	14.0	28.1	628	5.3	10.5	101
EZ5z69	232.00	185.00	46.60	0.758	-3.00E+05	1.00E+05	0.0612	0.0040	0.813	0.050	0.0985	0.0019	0.1818	646	70.2	140.4	604	14.0	28.0	606	5.6	11.1	100
EZ5z70	141.50	116.30	32.40	0.808	-3.80E+04	6.20E+04	0.0565	0.0042	0.787	0.056	0.1037	0.0025	0.2613	472	82.2	164.5	589	15.9	31.8	636	7.3	14.6	108
EZ5z71	639.00	38.40	30.40	0.059	-7.50E+05	9.10E+05	0.1257	0.0015	5.865	0.280	0.3400	0.0057	0.5720	2039	10.6	21.1	1956	20.7	41.4	1887	13.7	27.4	96
EZ5z72	711.90	217.00	62.10	0.275	-3.70E+05	2.20E+05	0.0600	0.0033	0.826	0.043	0.1007	0.0017	0.0942	604	59.5	119.0	611	11.9	23.9	618	5.0	10.0	101
EZ5z73	597.00	290.00	245.50	0.479	1.20E+05	7.10E+05	0.1100	0.0014	4.848	0.230	0.3231	0.0053	0.3158	1799	11.6	23.2	1793	19.9	39.9	1805	12.9	25.8	101
EZ5z74	235.80	146.10	161.10	0.608	1.80E+06	1.20E+06	0.1544	0.0020	9.140	0.460	0.4293	0.0080	0.6326	2395	11.0	22.0	2352	23.0	46.0	2303	18.0	36.1	98
EZ5z75	35.08	0.15	-0.21	-0.002	-1.00E+03	2.10E+04	0.0572	0.0085	0.760	0.110	0.0923	0.0030	-0.1078	499	163.6	327.3	574	31.7	63.4	569	8.9	17.7	99
EZ5z76	415.80	334.00	93.00	0.795	-1.31E+06	7.60E+05	0.0594	0.0033	0.831	0.045	0.1019	0.0018	0.1839	582	60.3	120.7	614	12.5	24.9	626	5.3	10.5	102
EZ5z77	37.30	46.50	10.89	1.232	-9.00E+04	1.20E+04	0.0657	0.0079	0.792	0.091	0.0907	0.0029	0.1287	797	126.0	252.1	592	25.8	51.5	560	8.6	17.1	94
EZ5z79	366.40	478.00	138.90	1.291	-2.30E+05	1.40E+05	0.0634	0.0038	0.913	0.053	0.1051	0.0019	0.1118	722	63.6	127.2	659	14.1	28.1	644	5.5	11.1	98
EZ5z80	247.80	128.50	36.40	0.517	-4.90E+05	2.50E+05	0.0579	0.0035	0.804	0.046	0.1015	0.0018	0.0872	526	66.3	132.5	599	12.9	25.9	623	5.3	10.5	104
EZ5z81	96.60	79.60	22.88	0.822	0.00E+00	2.90E+04	0.0591	0.0049	0.839	0.068	0.1033	0.0022	0.1238	571	90.2	180.4	619	18.8	37.5	634	6.4	12.9	102
EZ5z82	644.00	537.00	152.30	0.834	2.80E+05	2.10E+05	0.0607	0.0034	0.845	0.044	0.1012	0.0018	0.0103	629	60.3	120.7	622	12.1	24.2	621	5.3	10.5	100
EZ5z83	186.30	73.30	69.80	0.388	-3.00E+05	2.00E+05	0.1251	0.0018	6.248	0.300	0.3651	0.0066	0.5179	2030	12.7	25.5	2011	21.0	42.0	2006	15.6	31.2	100
EZ5z84	870.00	242.60	238.60	0.277	2.80E+05	9.20E+05	0.1276	0.0013	6.506	0.310	0.3713	0.0064	0.5723	2065	9.0	18.0	2047	20.9	41.9	2036	15.0	30.1	99
EZ5z85	573.00	115.20	108.90	0.199	-1.12E+06	6.10E+05	0.1241	0.0014	6.232	0.300	0.3671	0.0062	0.3452	2016	10.0	20.0	2009	21.0	42.1	2016	14.6	29.2	100
EZ5z86	373.60	449.00	449.20	1.191	4.20E+05	4.00E+05	0.1298	0.0016	6.660	0.330	0.3741	0.0069	0.6419	2095	10.8	21.7	2067	21.9	43.7	2049	16.2	32.4	99
EZ5z87	101.00	65.80	19.10	0.621	1.50E+04	3.50E+04	0.0602	0.0055	0.857	0.078	0.1061	0.0026	0.3068	611	98.7	197.5	628	21.3	42.6	650	7.6	15.2	103
EZ5z88	80.30	73.40	21.00	0.911	6.80E+04	6.90E+04	0.0547	0.0054	0.760	0.073	0.1023	0.0027	0.0547	400	110.6	221.2	574	21.0	42.1	628	7.9	15.8	109
EZ5z89	31.92	23.15	7.53	0.723	-2.10E+04	2.30E+04	0.0622	0.0077	0.950	0.110	0.1112	0.0033	-0.0355	681	132.2	264.4	678	28.6	57.2	680	9.6	19.1	100
EZ5z90	268.30	476.00	438.70	1.761	1.00E+05	2.50E+05	0.1224	0.0025	5.410	0.270	0.3193	0.0067	0.4254	1992	18.2	36.3	1886	21.4	42.7	1786	16.4	32.7	95
EZ5z91	61.88	32.51	39.10	0.519	2.00E+05	1.30E+05	0.1616	0.0035	10.000	0.520	0.4532	0.0092	0.5058	2472	18.3	36.6	2435	24.0	48.0	2409	20.4	40.8	99
EZ5z92	91.50	47.27	47.30	0.512	-6.00E+05	1.30E+05	0.1368	0.0033	7.350	0.380	0.3934	0.0080	0.2514	2187	21.0	42.0	2155	23.1	46.2	2139	18.5	37.0	99
EZ5z93	191.00	294.00	84.10	1.495	1.24E+05	9.40E+04	0.0634	0.0039	0.941	0.054	0.1106	0.0026	0.0852	722	65.3	130.5	673	14.1	28.2	676	7.5	15.1	100
EZ5z94	298.00	204.00	56.80	0.686	-5.00E+05	1.60E+05	0.0584	0.0037	0.764	0.044	0.0952	0.0019	0.0970	545	69.2	138.5	576	12.7	25.3	586	5.6	11.2	102
EZ5z95c	407.80	80.10	68.00	0.190	-2.50E+05	6.20E+05	0.1247	0.0020	5.750	0.290	0.3400	0.0066	0.5917	2025	14.2	28.4	1939	21.8	43.6	1887	15.9	31.8	97
EZ5z95r	677.00	133.20	116.40	0.196	-2.40E+06	1.40E+06	0.1234	0.0014	5.656	0.270	0.3354	0.0057	0.5188	2006	10.1	20.1	1925	20.6	41.2	1865	13.8	27.5	97
EZ5z96	275.40	243.20	69.30	0.879	-4.00E+05	1.50E+05	0.0622	0.0038	0.856	0.050	0.1010	0.0018	0.0368	681	65.3	130.5	628	13.7	27.3	620	5.3	10.5	99
EZ5z97	97.30	101.50	25.94	1.040	8.10E+04	6.00E+04	0.0580	0.0050	0.755	0.063	0.0942	0.0023	0.0356	530	94.4	188.9	571	18.2	36.4	580	6.8	13.6	102
EZ5z98	116.50	140.10	122.50	1.195	6.00E+05	1.50E+05	0.1150	0.0029	4.900	0.270	0.3088	0.0064	0.3681	1880	22.7	45.4	1802	23.2	46.4	1735	15.8	31.5	96
EZ5z99	72.40	81.40	68.60	1.105	-8.00E+05	1.40E+05	0.1051	0.0031	4.490	0.250	0.3098	0.0069	0.4401	1716	27.1	54.2	1729	23.1	46.2	1740	17.0	34.0	101
EZ5z100	467.00	384.00	109.90	0.829	-5.80E+06	3.00E+06	0.0601	0.0034	0.799	0.044	0.0970	0.0018	0.2859	607	61.2	122.3	596	12.4	24.8	597	5.3	10.6	100
EZ5z101	190.30	353.00	100.00	1.827	-7.00E+04	8.10E+04	0.0580	0.0042	0.781	0.055	0.1004	0.0020	0.3225	530	79.3	158.7	586	15.7	31.3	617	5.9	11.7	105
EZ5z102	67.00	79.00	23.38	1.185	-2.60E+04	3.70E+04	0.0626	0.0058	0.837	0.077	0.1004	0.0029	0.0939	695	98.7	197.5	617	21.3	42.5	617	8.5	17.0	100
EZ5z103	149.40	149.90	43.20	0.994	-2.20E+06	1.10E+06	0.0603	0.0043	0.822	0.058	0.0998	0.0019	0.2189	614	77.0	154.0	609	16.1	32.3	613	5.6	11.1	101
EZ5z104	189.50	21.32	5.52	0.110	2.20E+04	6.50E+04	0.0590	0.0039	0.733	0.048	0.0925	0.0017	0.1311	567	72.0	143.9	558	14.0	28.1	570	5.0	10.0	102
EZ5z105	169.60	105.10	31.20	0.621	5.10E+04	5.90E+04	0.0609	0.0039	0.880	0.056	0.1033	0.0021	0.1522	636	68.9	137.8	641	15.1	30.2	634	6.1	12.3	99
EZ5z106	149.50	163.50	166.30	1.085	1.10E+05	2.10E+05	0.1270	0.0020	6.740	0.330	0.3890	0.0071	0.4462	2057	13.9	27.8	2078	21.6	43.3	2118	16.5	33.0	102
EZ5z107	72.60	111.30	30.81	1.524	-5.00E+04	3.30E+04	0.0615	0.0055	0.821	0.070	0.0955	0.0024	-0.0641	657	95.9	191.8	609	19.5	39.0	588	7.1	14.1	97
EZ5z109c	359.60	320.60	288.50	0.891	1.30E+05	4.60E+05	0.1241	0.0017	5.722	0.280	0.3374	0.0064	0.7127	2016	12.1	24.3	1935	21.1	42.3	1874	15.4	30.8	97
EZ5z109r	275.00	244.80	203.90	0.908	-6.00E+05	3.50E+05	0.1120	0.0017	4.795	0.240	0.3119	0.0057	0.5134	1832	13.8	27.5	1784	21.0	42.0	1750	14.0	28.0	98
EZ5z110	320.00	252.80	76.60	0.790	-3.00E+05	2.70E+05	0.0633	0.0037	0.921	0.050	0.1047	0.0020	0.3343	718	62.1	124.1	663	13.2	26.4	642	5.8	11.7	97
EZ5z111	210.40	380.90	407.90	1.811	-1.50E+05	2.80E+05	0.1378	0.0021	7.550	0.370	0.4011	0.0070	0.4158	2200	13.2	26.5	2179	22.0	43.9	2174	16.1	32.2	100
EZ5z112	148.20	63.00	63.10	0.431	-2.80E+05	2.50E+05	0.1333	0.0021	6.420	0.320	0.3512	0.0066	0.6120	2142	13.8	27.5	2035	21.9	43.8	1940	15.7	31.5	95
EZ5z113	516.00	103.60	29.22	0.199	-2.00E+05	1.80E+05	0.0624	0.0035	0.834	0.043	0.0985	0.0017	0.2333	688	59.8	119.7	616	11.9	23.8	606	5.0	10.0	98
EZ5z114	219.00	93.50	89.80	0.392	6.40E+05	5.60E+05	0.1252	0.0019	6.375	0.310	0.3730	0.0067	0.3503	2032	13.4	26.9	2029	21.3	42.6	2044	15.7	31.5	101
EZ5z115	601.00	427.00	126.00	0.711	-1.40E+05	3.80E+05	0.0600	0.0033	0.824	0.043	0.1007	0.0019	0.2297	604	59.5	119.0	610	12.0	23.9	619	5.6	11.1	101
EZ5z116	72.80	20.66	20.80	0.283	-8.00E+05	1.40E+05	0.1278	0.0035	6.640	0.360	0.3787	0.0080	0.3271	2068	24.1	48.3	2065	23.9	47.8	2070	18.7	37.4	100
EZ5z117	274.60	64.90	53.40	0.237	-3.00E+06	1.60E+06	0.1230	0.0018	5.265	0.260	0.3168	0.0057	0.4882	2000	13.0	26.0	1863	21.1	42.1	1774	14.0	27.9	95
EZ5z118	205.50	132.90	38.90	0.641	-3.20E+04	7.80E+04	0.0624	0.0041	0.889	0.055	0.1039	0.0019	0.1158	688	70.1	140.2	646	14.8	29.5	637	5.5	11.1	99
EZ5z119	672.00	26.50	9.77	0.040	9.00E+05	3.20E+05	0.0651	0.0035	1.123	0.058	0.1265	0.0023	0.2619	778	56.5	113.1	764	13.9	27.7	768	6.6	13.2	100
EZ5z120	48.50	47.80	15.39	0.973	1.80E+04	4.20E+04	0.0602	0.0063	0.856	0.089	0.1011	0.0029	-0.0363	611	113.1	226.2	628	24.3	48.6	621	8.5	17.0	99
EZ5z121r	160.00	133.50	38.59	0.834	6.00E+04	6.20E+04	0.0618	0.0044	0.802	0.057	0.0971	0.0023	0.4007	667	76.2	152.4	598	16.0	32.1	597	6.8	13.5	100
EZ5z123	290.00	291.00	84.00	1.073	-7.00E+05	1.90E+05	0.0632	0.0038	0.907	0.053	0.1057	0.0022	0.0920	715	63.9	127.7	655	14.1	28.2	648	6.4	12.8	99
EZ5z124	57.20	61.00	19.40	1.042	-1.10E+04	2.70E+04	0.0620	0.0064	0.967	0.097	0.1156	0.0032	0.2082	674	110.4	220.8	687	25.0	50.0	705	9.2	18.5	103
EZ5z125	974.00	156.30	160.10	0.161	1.00E+06	1.20E+06	0.1307	0.0012	6.694	0.320	0.3732	0.0062	0.6305	2107	8.1	16.1	2072	21.1	42.2	2044	14.6	29.1	99
EZ5z126r	261.60	62.10	17.15	0.237	-1.50E+05	1.70E+05	0.0580	0.0037	0.736	0.045	0.0933	0.0019	0.2480	530	69.9	139.8	560	13.1	26.3	575	5.6	11.2	103
EZ5z127	811.00	37.20	28.69	0.046	-1.20E+06	2.30E+06	0.1183	0.0013	4.839	0.230	0.2991	0.0048	0.3964	1931	9.8	19.7	1792	20.0	40.0	1687	11.9	23.8	94
EZ5z128	96.30	75.20	23.58	0.799	-4.00E+04	6.10E+04	0.0637	0.0054	0.887	0.075	0.1022	0.0025	0.1492	732	89.8	179.6	645	20.2	40.3	627	7.3	14.6	97
EZ5z129	33.50	79.40	81.10	2.360	-4.20E+04	8.50E+04	0.1326	0.0054	6.990	0.420	0.3867	0.0100	0.2370	2133	35.6	71.3	2110	26.7	53.3	2108	23.2	46.5	100
EZ5z130	57.10	85.20	22.80	1.508	0.00E+00	3.60E+04	0.0593	0.0065	0.748	0.073	0.0912	0.0027	0.0170	578	119.1	238.2	567	21.2	42.4	563	8.0	16.0	99
EZ5z131	438.00	338.70	99.50	0.774	6.00E+05	4.80E+05	0.0605	0.0034	0.831	0.044	0.1007	0.0018	0.1141	622	60.6	121.2	614	12.2	24.4	619	5.3	10.5	101
EZ5z132	138.40	217.10	60.20	1.575	-8.00E+05	1.20E+05	0.0569	0.0044	0.742	0.057	0.0954	0.0020	0.2096	488	85.3	170.6	564	16.6	33.2	587	5.9	11.8	104

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
EZ5z133	71.10	50.80	55.50	0.711	5.00E+05	1.20E+05	0.1340	0.0030	7.070	0.380	0.3856	0.0075	0.5552	2151	19.5	39.1	2120	23.9	47.8	2102	17.4	34.9	99
EZ5z134	88.30	253.00	79.70	2.827	-8.60E+05	8.40E+05	0.0616	0.0055	0.886	0.077	0.1033	0.0024	0.1781	660	95.7	191.4	644	20.7	41.4	634	7.0	14.0	98
EZ5z135	111.60	98.40	99.00	0.882	-7.60E+05	5.30E+05	0.1251	0.0030	6.280	0.320	0.3679	0.0065	0.0665	2030	21.2	42.5	2016	22.3	44.6	2020	15.3	30.6	100
EZ5z136	265.40	217.20	66.20	0.831	1.10E+05	1.20E+05	0.0618	0.0038	0.842	0.052	0.1014	0.0021	0.2292	667	65.8	131.6	620	14.3	28.6	623	6.1	12.3	100
EZ5z137	277.40	207.20	61.50	0.752	-1.50E+05	2.00E+05	0.0622	0.0037	0.876	0.049	0.1025	0.0018	0.1263	681	63.5	127.1	639	13.2	26.5	629	5.3	10.5	98
EZ5z138	60.10	47.80	14.33	0.806	1.40E+04	3.80E+04	0.0562	0.0056	0.784	0.077	0.1000	0.0025	0.1431	460	110.5	220.9	588	21.9	43.8	614	7.3	14.7	105
EZ5z139r	127.20	118.30	136.50	0.926	-5.90E+05	4.10E+05	0.1596	0.0031	9.460	0.470	0.4296	0.0088	0.2851	2451	16.4	32.9	2384	22.8	45.6	2304	19.8	39.7	97
EZ5z140	649.00	479.00	451.00	0.739	3.00E+06	1.30E+06	0.1198	0.0014	5.871	0.280	0.3575	0.0060	0.5230	1953	10.4	20.9	1957	20.7	41.3	1970	14.2	28.5	101
EZ5z141	93.10	85.50	79.30	0.923	3.00E+05	2.30E+05	0.1224	0.0033	5.800	0.310	0.3431	0.0068	0.2412	1992	24.0	47.9	1946	23.1	46.2	1902	16.3	32.6	98
EZ5z142	167.30	415.80	115.20	2.490	7.00E+05	1.20E+05	0.0593	0.0042	0.785	0.053	0.0966	0.0020	0.0536	578	77.0	153.9	588	15.1	30.1	594	5.9	11.8	101
EZ5z143	180.00	86.20	86.50	0.487	-4.60E+05	5.00E+05	0.1232	0.0024	6.140	0.310	0.3651	0.0070	0.3161	2003	17.3	34.6	1996	22.0	44.0	2006	16.5	33.1	101
EZ5z144	792.00	33.30	9.78	0.042	8.60E+05	4.70E+05	0.0600	0.0033	0.873	0.046	0.1032	0.0018	0.2426	604	59.5	119.0	637	12.5	24.9	633	5.3	10.5	99
EZ5z145	75.10	63.60	19.30	0.849	-3.10E+05	1.90E+05	0.0593	0.0052	0.825	0.071	0.1026	0.0025	0.2140	578	95.3	190.6	611	19.7	39.5	630	7.3	14.6	103
EZ5z146	149.00	75.80	22.08	0.517	8.00E+05	1.30E+05	0.0575	0.0042	0.778	0.054	0.0987	0.0021	0.0689	511	80.3	160.6	584	15.4	30.8	607	6.2	12.3	104
EZ5z147	298.40	206.60	60.30	0.696	4.00E+03	2.10E+05	0.0607	0.0037	0.859	0.049	0.1010	0.0018	0.2059	629	65.7	131.3	630	13.4	26.7	620	5.3	10.5	99
EZ5z148	75.30	51.70	53.80	0.692	1.90E+05	1.80E+05	0.1310	0.0029	6.840	0.360	0.3768	0.0077	0.4772	2111	19.4	38.8	2091	23.3	46.6	2061	18.0	36.1	99
EZ5z149c	372.00	152.10	132.10	0.417	1.00E+06	1.00E+06	0.1260	0.0018	5.629	0.270	0.3202	0.0056	0.1850	2043	12.6	25.3	1921	20.7	41.3	1791	13.7	27.3	93
EZ5z149r	295.00	11.30	3.26	0.035	-2.80E+05	3.60E+05	0.0598	0.0037	0.821	0.052	0.0978	0.0019	0.3149	596	67.0	134.0	609	14.5	29.0	602	5.6	11.2	99
EZ5z150	193.40	148.10	44.30	0.769	3.00E+05	1.10E+05	0.0596	0.0040	0.829	0.053	0.1015	0.0021	0.2244	589	72.8	145.6	613	14.7	29.4	623	6.1	12.3	102
EZ5z151	585.50	482.50	486.80	0.826	-1.80E+06	1.50E+06	0.1275	0.0014	6.634	0.320	0.3734	0.0063	0.6546	2064	9.7	19.4	2064	21.3	42.5	2045	14.8	29.6	99
EZ5z152	277.00	252.00	79.00	0.947	9.00E+05	2.60E+05	0.0593	0.0038	0.886	0.054	0.1065	0.0020	0.3054	578	69.6	139.3	644	14.5	29.0	652	5.8	11.7	101
EZ5z153	184.00	147.50	42.60	0.812	5.90E+05	2.70E+05	0.0620	0.0044	0.872	0.061	0.1025	0.0020	0.1013	674	75.9	151.8	637	16.5	33.1	629	5.8	11.7	99
EZ5z154	144.40	92.30	26.98	0.636	8.10E+04	8.50E+04	0.0626	0.0044	0.886	0.060	0.1033	0.0021	-0.0453	695	74.9	149.8	644	16.1	32.3	634	6.1	12.3	98
EZ5z155	350.00	264.00	77.80	0.741	-5.00E+05	2.80E+05	0.0611	0.0037	0.899	0.052	0.1056	0.0020	0.1408	643	65.1	130.2	651	13.9	27.8	647	5.8	11.7	99
EZ5z156	82.80	44.20	43.30	0.537	1.80E+05	1.70E+05	0.1238	0.0037	6.520	0.360	0.3739	0.0072	0.1210	2012	26.5	53.0	2049	24.3	48.6	2048	16.9	33.8	100
EZ5z157	142.80	72.50	70.80	0.514	1.00E+05	2.40E+05	0.1272	0.0023	6.420	0.320	0.3621	0.0072	0.4055	2060	16.0	31.9	2035	21.9	43.8	1992	17.0	34.1	98
EZ5z158	117.10	68.00	44.90	0.586	2.00E+05	2.70E+05	0.0867	0.0049	2.945	0.160	0.2438	0.0052	0.1736	1354	54.5	109.0	1394	20.6	41.1	1406	13.5	27.0	101
EZ5z159	679.00	912.00	167.00	1.232	-2.10E+05	4.10E+05	0.0638	0.0035	0.726	0.038	0.0814	0.0016	0.1105	735	58.1	116.2	554	11.2	22.3	504	4.8	9.5	91
EZ5z160	49.70	33.50	9.81	0.681	3.00E+04	4.20E+04	0.0665	0.0073	0.919	0.095	0.0991	0.0033	-0.0262	822	114.6	229.2	662	25.1	50.2	609	9.7	19.4	92
EZ5z161	159.30	218.20	57.70	1.389	-5.00E+05	1.40E+05	0.0597	0.0044	0.813	0.057	0.0980	0.0023	0.0652	593	79.9	159.8	604	15.9	31.9	603	6.8	13.5	100
EZ5z162	164.20	99.70	114.60	0.609	-3.30E+06	1.40E+06	0.1459	0.0029	8.730	0.440	0.4270	0.0088	0.4973	2298	17.1	34.2	2310	22.9	45.9	2292	19.9	39.8	99
EZ5z163	308.00	78.70	23.27	0.260	6.00E+05	1.80E+05	0.0620	0.0039	0.861	0.053	0.0998	0.0020	0.2357	674	67.3	134.5	631	14.4	28.9	613	5.9	11.7	97
EZ5z164	281.80	251.60	73.40	0.890	0.00E+00	1.40E+05	0.0583	0.0038	0.816	0.052	0.1003	0.0019	0.3322	541	71.3	142.5	606	14.5	29.0	616	5.6	11.1	102
EZ5z165	288.00	67.10	50.40	0.232	4.50E+05	6.60E+05	0.1304	0.0021	6.000	0.310	0.3280	0.0076	0.7655	2103	14.1	28.3	1976	22.5	44.9	1829	18.4	36.9	93
EZ5z166	812.00	36.60	25.36	0.045	-4.00E+06	1.00E+06	0.0922	0.0047	3.284	0.160	0.2543	0.0043	0.4458	1472	48.4	96.7	1477	18.9	37.9	1461	11.0	22.1	99
EZ5z167	62.54	49.84	14.23	0.793	2.40E+04	4.20E+04	0.0613	0.0058	0.934	0.093	0.1045	0.0028	0.3007	650	101.6	203.2	670	24.4	48.8	641	8.2	16.3	96
EZ5z169	120.30	97.70	123.40	0.789	-3.40E+05	6.80E+05	0.1781	0.0028	12.190	0.600	0.4896	0.0094	0.4576	2635	13.1	26.1	2619	23.1	46.1	2569	20.3	40.7	98
EZ5z170	219.60	117.90	133.80	0.521	-1.20E+05	5.50E+05	0.1588	0.0024	9.470	0.460	0.4245	0.0079	0.4856	2443	12.8	25.6	2385	22.3	44.6	2281	17.9	35.8	96
EZ5z171	208.00	374.30	351.10	1.799	3.10E+05	3.40E+05	0.1228	0.0021	5.860	0.290	0.3420	0.0063	0.4355	1997	15.2	30.4	1955	21.4	42.9	1896	15.1	30.3	97
EZ5z172	255.40	141.60	38.09	0.550	-7.00E+05	2.00E+05	0.0605	0.0038	0.808	0.050	0.0957	0.0019	0.2821	622	67.8	135.5	601	14.0	28.1	589	5.6	11.2	98
Discordant data																							
EZ5z32	58.90	41.90	13.08	0.700	7.00E+04	2.30E+04	0.0716	0.0067	0.960	0.089	0.0983	0.0024	0.1972	975	95.4	190.8	683	23.0	46.1	604	7.0	14.1	88
EZ5z34	258.80	286.70	241.50	1.089	2.00E+03	3.30E+05	0.1170	0.0016	5.230	0.270	0.3234	0.0065	0.7685	1911	12.3	24.5	1858	22.0	44.0	1806	15.8	31.7	97
EZ5z39	85.70	41.20	41.80	0.478	1.00E+03	1.50E+05	0.1284	0.0031	6.770	0.350	0.3814	0.0077	0.3456	2076	21.3	42.5	2082	22.8	45.7	2083	18.0	35.9	100
EZ5z50	1077.00	621.00	367.00	0.560	1.84E+06	5.10E+05	0.1223	0.0061	4.189	0.200	0.2520	0.0049	0.7549	1990	44.4	88.7	1672	19.6	39.1	1449	12.6	25.2	87
EZ5z60	944.00	629.00	167.30	0.655	3.00E+03	2.30E+05	0.0614	0.0032	0.832	0.042	0.0996	0.0017	0.1001	653	55.9	111.8	615	11.6	23.3	612	5.0	10.0	100
EZ5z65	504.00	391.90	112.80	0.782	4.00E+03	1.30E+05	0.0615	0.0035	0.834	0.045	0.1010	0.0019	0.3313	657	61.0	122.1	616	12.4	24.9	620	5.6	11.1	101
EZ5z78	264.70	244.70	76.30	0.913	3.40E+04	5.80E+04	0.0793	0.0089	0.960	0.120	0.0884	0.0023	0.6899	1180	111.0	221.9	683	31.1	62.1	546	6.8	13.6	80
EZ5z108	192.00	153.00	48.60	0.799	-1.60E+04	9.00E+04	0.0715	0.0050	1.020	0.069	0.1037	0.0021	0.0793	972	71.3	142.6	714	17.3	34.7	636	6.1	12.3	89
EZ5z121c	305.00	191.10	83.60	0.635	-4.00E+05	1.70E+05	0.1050	0.0120	1.210	0.150	0.0863	0.0027	0.5389	1714	105.1	210.2	805	34.4	68.9	534	8.0	16.0	66
EZ5z122	339.70	142.00	122.70	0.418	-1.00E+06	1.10E+06	0.1283	0.0019	4.929	0.240	0.2805	0.0050	0.4772	2075	13.0	26.1	1807	20.5	41.1	1594	12.6	25.2	88
EZ5z126c	921.00	860.00	150.20	0.941	2.30E+05	2.20E+05	0.0699	0.0038	0.699	0.037	0.0742	0.0018	0.5600	925	55.8	111.7	538	11.0	22.1	461	5.4	10.8	86
EZ5z139c	419.00	68.80	62.90	0.166	-7.90E+05	6.10E+05	0.1510	0.0018	6.994	0.340	0.3348	0.0063	0.5684	2357	10.2	20.4	2111	21.6	43.1	1862	15.2	30.4	88
EZ5z168	1412.00	134.90	54.00	0.096	-2.30E+06	1.50E+06	0.1118	0.0057	2.610	0.210	0.1641	0.0095	0.9866	1829	46.2	92.4	1303	29.5	59.0	980	26.3	52.6	75

Footnotes:

- Analysis references: EZ5z is zircon from sample EZ5 (mount CT18-4), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.21: Sample EZ6 (LA-ICPMS)

IGSN: IEACC0036 Coordinate UTM: Zone 29S, 739164 m E, 3684150 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
EZ6z1	86.90	146.40	1163.00	1.672	-7.80E+06	3.80E+06	0.1101	0.0030	4.960	0.130	0.3217	0.0053	0.3021	1801	24.8	49.6	1813	11.1	22.1	1798	12.9	25.9	99
EZ6z2	462.00	1180.00	1490.00	1.733	4.20E+06	2.20E+06	0.0631	0.0018	0.754	0.021	0.0864	0.0014	0.2882	712	30.3	60.6	571	6.1	12.1	534	4.2	8.3	94
EZ6z3	45.70	89.40	202.00	1.972	-3.70E+04	6.30E+04	0.0644	0.0065	0.808	0.080	0.0920	0.0031	0.0589	755	106.5	213.0	601	22.4	44.9	567	9.2	18.3	94
EZ6z4	616.80	245.10	702.00	0.399	3.00E+05	6.20E+05	0.0644	0.0014	0.959	0.020	0.1079	0.0010	0.3037	755	22.9	45.9	683	5.2	10.4	661	2.9	5.8	97
EZ6z5	598.00	408.50	3493.00	0.687	6.30E+06	4.70E+06	0.1292	0.0011	6.405	0.074	0.3532	0.0032	0.6635	2087	7.5	15.0	2033	5.1	10.1	1950	7.6	15.2	96
EZ6z6	328.00	104.00	546.00	0.317	-6.90E+07	3.90E+07	0.1279	0.0017	5.650	0.100	0.3154	0.0043	0.6877	2069	11.7	23.4	1924	7.6	15.3	1767	10.5	21.1	92
EZ6z7	353.00	157.00	1270.00	0.418	-6.80E+06	5.10E+06	0.1255	0.0021	6.570	0.150	0.3735	0.0051	0.6806	2036	14.8	29.6	2055	10.1	20.1	2046	12.0	23.9	100
EZ6z8c	160.30	40.40	382.00	0.254	-7.90E+06	4.00E+06	0.1257	0.0020	6.730	0.110	0.3823	0.0047	0.4087	2039	14.1	28.1	2077	7.2	14.4	2087	11.0	21.9	101
EZ6z8r	247.30	94.20	827.00	0.380	-3.20E+06	2.10E+06	0.1230	0.0016	6.336	0.099	0.3672	0.0039	0.5598	2000	11.6	23.1	2023	6.8	13.7	2016	9.2	18.4	100
EZ6z9	242.70	52.20	454.00	0.161	-9.00E+06	1.40E+06	0.1277	0.0018	6.930	0.100	0.3876	0.0042	0.4764	2067	12.4	24.8	2103	6.4	12.8	2112	9.8	19.5	100
EZ6z10	114.00	297.00	510.00	2.375	-5.30E+05	2.90E+05	0.0671	0.0037	0.807	0.045	0.0871	0.0022	0.2234	841	57.4	114.8	601	12.6	25.3	538	6.5	13.0	90
EZ6z11	67.40	74.70	182.20	1.104	-2.30E+05	1.40E+05	0.0584	0.0050	0.749	0.066	0.0925	0.0021	0.2602	545	93.6	187.1	568	19.1	38.3	570	6.2	12.4	100
EZ6z12	116.00	64.90	564.00	0.551	-8.80E+05	7.80E+05	0.1221	0.0028	6.160	0.130	0.3610	0.0044	0.2313	1987	20.4	40.8	1999	9.2	18.4	1987	10.4	20.8	99
EZ6z13	180.10	111.50	1053.00	0.615	-3.10E+06	2.00E+06	0.1383	0.0022	7.320	0.130	0.3779	0.0046	0.5176	2206	13.8	27.6	2151	7.9	15.9	2066	10.8	21.5	96
EZ6z14	238.50	153.90	691.00	0.638	-1.80E+06	2.30E+06	0.0755	0.0020	1.850	0.051	0.1767	0.0020	0.2866	1082	26.6	53.1	1063	9.1	18.2	1049	5.5	11.0	99
EZ6z16	90.20	75.00	194.80	0.827	-5.30E+06	3.40E+06	0.0641	0.0038	0.905	0.056	0.1008	0.0018	0.2044	745	62.7	125.3	654	14.9	29.8	619	5.3	10.5	95
EZ6z17	263.50	199.80	2324.00	0.752	-1.07E+07	4.60E+06	0.1752	0.0019	11.820	0.140	0.4833	0.0051	0.5618	2608	9.0	18.1	2590	5.5	11.1	2542	11.1	22.2	98
EZ6z18	35.70	37.50	327.00	1.038	-5.70E+05	4.80E+05	0.1230	0.0048	6.080	0.270	0.3532	0.0068	0.4572	2000	34.7	69.3	1987	19.3	38.7	1950	16.2	32.4	98
EZ6z19	397.00	382.00	1027.00	0.961	1.65E+06	9.80E+05	0.0608	0.0019	0.840	0.027	0.0997	0.0010	0.2744	632	33.6	67.3	619	7.4	14.9	613	2.9	5.9	99
EZ6z20	278.90	170.20	412.00	0.599	-1.65E+06	9.50E+05	0.0616	0.0022	0.868	0.033	0.1011	0.0010	0.1163	660	38.3	76.6	634	9.0	17.9	621	2.9	5.7	98
EZ6z21	345.70	446.00	1247.00	1.279	-1.90E+06	1.10E+06	0.0629	0.0019	0.887	0.028	0.1018	0.0012	0.2481	705	32.1	64.3	645	7.5	15.1	625	3.5	7.0	97
EZ6z22	112.70	105.50	779.00	0.898	1.50E+06	1.70E+06	0.1333	0.0025	6.680	0.130	0.3603	0.0052	0.2927	2142	16.4	32.8	2070	8.6	17.2	1984	12.3	24.6	96
EZ6z23	133.00	36.30	94.50	0.247	2.00E+05	2.20E+05	0.0626	0.0034	0.874	0.045	0.1011	0.0016	0.0211	695	57.9	115.8	638	12.2	24.4	621	4.7	9.4	97
EZ6z24	129.20	430.00	970.00	1.608	4.70E+05	3.40E+05	0.0582	0.0030	0.681	0.037	0.0836	0.0012	0.1419	537	56.4	112.8	527	11.2	22.3	518	3.6	7.1	98
EZ6z25	60.10	112.20	1142.00	1.838	-1.61E+06	9.70E+05	0.1382	0.0036	8.100	0.220	0.4186	0.0064	0.4004	2205	22.6	45.2	2242	12.3	24.5	2254	14.5	29.1	101
EZ6z26	101.10	121.00	342.00	1.176	-5.30E+05	2.70E+05	0.0643	0.0040	0.950	0.062	0.1063	0.0017	0.1774	752	65.7	131.4	678	16.1	32.3	651	5.0	9.9	96
EZ6z27c	133.50	111.90	1013.00	0.836	-3.30E+06	2.00E+06	0.1385	0.0026	7.430	0.160	0.3836	0.0055	0.5350	2209	16.3	32.6	2165	9.6	19.3	2093	12.8	25.6	97
EZ6z27r	884.00	555.00	3553.00	0.624	-3.20E+08	1.60E+08	0.1329	0.0011	6.600	0.095	0.3556	0.0053	0.8286	2137	7.2	14.5	2059	6.3	12.7	1961	12.6	25.2	95
EZ6z28	129.50	83.50	738.00	0.639	-2.70E+06	1.30E+06	0.1214	0.0027	6.020	0.140	0.3551	0.0044	0.3863	1977	19.8	39.6	1979	10.1	20.2	1959	10.5	20.9	99
EZ6z29	354.50	320.80	864.00	0.902	3.20E+05	4.00E+05	0.0618	0.0021	0.837	0.028	0.0977	0.0010	0.1073	667	36.4	72.8	617	7.7	15.5	601	2.9	5.9	97
EZ6z30	31.25	43.08	117.90	1.372	-7.00E+04	6.90E+04	0.0621	0.0073	0.830	0.100	0.0970	0.0028	0.2187	678	125.6	251.3	614	27.7	55.4	597	8.2	16.5	97
EZ6z31	73.70	35.60	169.10	0.480	-2.70E+05	2.40E+05	0.0759	0.0039	1.809	0.098	0.1721	0.0028	0.2924	1092	51.5	102.9	1049	17.7	35.4	1024	7.7	15.4	98
EZ6z32	128.10	78.90	357.00	0.615	2.60E+06	2.10E+06	0.0752	0.0027	1.804	0.065	0.1729	0.0022	0.2002	1074	36.1	72.1	1047	11.8	23.5	1028	6.0	12.1	98
EZ6z33	115.30	10.20	36.40	0.015	-9.70E+05	6.00E+05	0.0625	0.0041	0.863	0.057	0.0998	0.0016	0.1940	691	69.9	139.9	632	15.5	31.0	613	4.7	9.4	97
EZ6z34	258.10	289.90	762.00	1.119	4.40E+05	3.50E+05	0.0626	0.0023	0.865	0.031	0.0997	0.0013	-0.0480	695	39.2	78.3	633	8.4	16.9	613	3.8	7.6	97
EZ6z35	324.40	153.30	2301.00	0.476	4.00E+06	3.70E+06	0.2275	0.0019	16.950	0.230	0.5330	0.0052	0.7719	3035	6.7	13.4	2932	6.5	13.0	2754	10.9	21.9	94
EZ6z36	159.60	283.00	829.00	1.777	-1.60E+06	1.10E+06	0.0647	0.0031	0.982	0.048	0.1092	0.0015	0.2306	765	50.5	101.0	695	12.3	24.6	668	4.4	8.7	96
EZ6z37	131.50	104.30	284.00	0.791	1.90E+06	1.10E+06	0.0621	0.0032	0.842	0.043	0.0980	0.0013	0.0970	678	55.1	110.1	620	11.8	23.7	603	3.8	7.6	97
EZ6z38	148.30	203.60	562.00	1.372	-6.50E+05	4.00E+05	0.0611	0.0028	0.856	0.038	0.1022	0.0015	0.1197	643	49.3	98.5	628	10.4	20.8	627	4.4	8.8	100
EZ6z39	88.70	108.10	280.00	1.235	-2.20E+05	1.90E+05	0.0663	0.0045	0.833	0.054	0.0936	0.0017	0.2934	816	70.9	141.9	615	14.9	29.9	577	5.0	10.0	94
EZ6z40r	294.00	321.00	89.60	1.127	7.80E+06	4.00E+06	0.0633	0.0021	0.678	0.025	0.0772	0.0014	0.3336	718	35.2	70.4	526	7.6	15.1	479	4.2	8.4	91
EZ6z41	169.70	176.00	1437.00	1.050	2.70E+06	2.90E+06	0.1558	0.0029	8.390	0.190	0.3876	0.0070	0.6522	2411	15.8	31.6	2274	10.3	20.5	2112	16.3	32.5	93
EZ6z42	131.50	224.00	628.00	1.631	4.60E+05	3.30E+05	0.0587	0.0030	0.845	0.043	0.1044	0.0024	0.2430	556	55.7	111.5	622	11.8	23.6	640	7.0	14.0	103
EZ6z43	145.40	143.60	367.00	0.969	-6.50E+05	5.00E+05	0.0619	0.0034	0.873	0.046	0.1022	0.0016	0.0510	671	58.8	117.5	637	12.5	24.9	627	4.7	9.4	98
EZ6z44	287.00	781.00	2071.00	2.753	-6.80E+05	6.50E+05	0.0613	0.0022	0.818	0.031	0.0963	0.0011	0.3264	650	38.5	77.1	607	8.6	17.3	593	3.2	6.5	98
EZ6z45	232.70	221.10	1993.00	0.966	-1.00E+06	2.30E+06	0.1232	0.0020	5.890	0.120	0.3434	0.0040	0.5902	2003	14.4	28.8	1960	8.8	17.7	1903	9.6	19.2	97
EZ6z46	266.00	52.90	614.00	0.200	1.70E+06	2.60E+06	0.1453	0.0041	7.990	0.360	0.3912	0.0085	0.8826	2291	24.3	48.5	2230	20.3	40.6	2128	19.7	39.4	95
EZ6z47	787.00	1280.00	2700.00	1.395	-1.70E+06	2.10E+06	0.0616	0.0013	0.826	0.019	0.0974	0.0011	0.2380	660	22.6	45.2	611	5.3	10.6	599	3.2	6.5	98
EZ6z48	234.80	147.70	414.00	0.640	5.00E+05	5.30E+05	0.0592	0.0024	0.819	0.033	0.1001	0.0013	0.1237	574	44.1	88.2	607	9.2	18.4	615	3.8	7.6	101
EZ6z50	156.20	47.20	331.70	0.308	-1.50E+06	1.30E+06	0.0965	0.0024	3.418	0.086	0.2556	0.0028	0.3007	1558	23.3	46.7	1509	9.9	19.7	1467	7.2	14.4	97
EZ6z51c	54.70	62.20	170.00	1.134	1.40E+05	1.20E+05	0.0634	0.0050	0.871	0.068	0.0999	0.0022	0.0384	722	83.7	167.3	636	18.4	36.9	614	6.4	12.9	96
EZ6z51r	70.20	45.80	122.90	0.667	-7.00E+05	1.40E+05	0.0582	0.0051	0.772	0.064	0.0965	0.0021	-0.0443	537	95.9	191.7	581	18.3	36.6	594	6.2	12.3	102
EZ6z52	236.00	225.00	558.00	0.957	-4.20E+05	5.20E+05	0.0627	0.0027	0.761	0.033	0.0875	0.0011	0.2740	698	45.9	91.7	575	9.5	19.0	541	3.3	6.5	94
EZ6z53r	905.00	143.20	224.50	0.161	-1.30E+07	8.00E+06	0.0590	0.0013	0.731	0.018	0.0896	0.0010	0.4615	567	24.0	48.0	557	5.3	10.5	553	2.9	5.7	99
EZ6z54	58.40	85.10	746.00	1.493	-9.50E+05	7.70E+05	0.1147	0.0030	5.210	0.150	0.3249	0.0062	0.3948	1875	23.6	47.2	1854	12.3	24.5	1814	15.1	30.2	98
EZ6z55	42.10	37.20	115.60	0.890	6.00E+05	1.10E+05	0.0659	0.0061	0.959	0.091	0.1056	0.0027	0.1994	803	96.9	193.8	683	23.6	47.1	647	7.9	15.7	95
EZ6z56	237.40	218.40	3607.00	0.945	5.20E+06	4.80E+06	0.3280	0.0031	32.770	0.380	0.7170	0.0088	0.6730	3608	7.2	14.5	3574	5.7	11.4	3485	16.5	33.0	98
EZ6z57	227.50	136.60	364.00	0.618	-2.60E+05	4.60E+05	0.0594	0.0020	0.783	0.026	0.0961	0.0010	0.2350	582	36.6	73.1	587	7.4	14.8	591	2.9	5.9	101
EZ6z58	141.70	150.70	1210.00	1.068	-1.20E+06	1.20E+06	0.1225	0.0027	5.120	0.180	0.2993	0.0079	0.7699	1993	19.6	39.2	1839	14.9	29.8	1688	19.6	39.2	92
EZ6z59	165.00	248.50	1068.00	1.493	5.00E+04	1.20E+06	0.1582	0.0026	8.510	0.290	0.3870	0.0110	0.8720	2437	13.9	27.8	2287	15.5	30.9	2109	25.6	51.1	92

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
EZ6z60	23.64	28.00	264.00	1.212	-2.01E+06	9.70E+05	0.1284	0.0069	5.920	0.340	0.3410	0.0170	0.5938	2076	47.3	94.6	1964	24.9	49.8	1891	40.9	81.7	96
EZ6z61	198.80	76.50	500.00	0.398	2.20E+05	9.80E+05	0.0853	0.0018	2.758	0.060	0.2335	0.0025	0.2782	1322	20.4	40.9	1344	8.1	16.2	1353	6.5	13.1	101
EZ6z62	319.50	210.40	802.00	0.668	-5.60E+06	3.80E+06	0.1213	0.0018	4.840	0.110	0.2861	0.0058	0.7585	1975	13.2	26.4	1792	9.6	19.1	1622	14.5	29.1	91
EZ6z63	230.70	63.50	199.60	0.287	1.60E+06	1.00E+06	0.0616	0.0023	0.899	0.035	0.1056	0.0012	0.2066	660	40.0	80.0	651	9.3	18.7	647	3.5	7.0	99
EZ6z64	153.60	159.30	450.00	1.078	1.51E+06	9.40E+05	0.0600	0.0028	0.832	0.036	0.1008	0.0015	-0.0905	604	50.5	101.0	615	10.0	19.9	619	4.4	8.8	101
EZ6z65	189.70	164.80	552.00	0.910	-2.20E+06	1.30E+06	0.0617	0.0026	0.991	0.041	0.1163	0.0015	0.1088	664	45.1	90.3	699	10.4	20.9	709	4.3	8.7	101
EZ6z66	279.80	544.70	1330.00	2.024	-4.90E+05	7.40E+05	0.0616	0.0025	0.774	0.033	0.0909	0.0012	0.3503	660	43.5	87.0	582	9.4	18.9	561	3.5	7.1	96
EZ6z69	241.90	263.00	664.00	1.001	-7.70E+06	5.70E+06	0.0611	0.0024	0.874	0.035	0.1030	0.0013	0.2427	643	42.2	84.4	638	9.5	18.9	632	3.8	7.6	99
EZ6z70	113.40	121.00	1252.00	1.119	-1.10E+06	1.40E+06	0.1337	0.0028	7.040	0.180	0.3765	0.0055	0.5091	2147	18.3	36.6	2116	11.4	22.7	2060	12.9	25.8	97
EZ6z72	384.00	260.00	106.00	0.345	-3.90E+06	2.10E+06	0.0652	0.0025	0.787	0.034	0.0880	0.0030	0.5392	781	40.3	80.6	589	9.7	19.3	544	8.9	17.8	92
EZ6z73	164.20	72.10	231.70	0.464	-4.10E+05	5.60E+05	0.0610	0.0028	0.910	0.041	0.1089	0.0013	0.2084	639	49.4	98.7	657	10.9	21.8	666	3.8	7.6	101
EZ6z74	79.00	58.64	181.70	0.787	-3.30E+05	3.00E+05	0.0608	0.0037	0.876	0.054	0.1045	0.0019	0.1343	632	65.5	131.1	639	14.6	29.2	641	5.5	11.1	100
EZ6z75	286.00	207.00	1785.00	0.772	-8.20E+07	4.00E+07	0.1552	0.0022	8.520	0.130	0.3954	0.0044	0.4750	2404	12.0	24.1	2288	6.9	13.9	2148	10.2	20.3	94
EZ6z76	127.40	49.90	501.00	0.414	1.00E+06	1.10E+06	0.1206	0.0024	6.130	0.130	0.3653	0.0044	0.3610	1965	17.7	35.5	1995	9.2	18.5	2007	10.4	20.8	101
EZ6z77	201.40	8.82	32.00	0.046	1.34E+06	7.30E+05	0.0636	0.0027	0.946	0.040	0.1080	0.0013	0.1555	728	45.0	90.0	676	10.4	20.9	661	3.8	7.6	98
EZ6z78	96.40	159.80	1554.00	1.764	3.00E+05	7.50E+05	0.1201	0.0026	4.910	0.110	0.2942	0.0046	0.3837	1958	19.3	38.6	1804	9.4	18.9	1662	11.5	22.9	92
EZ6z79	110.30	118.20	330.00	1.135	-3.60E+05	3.40E+05	0.0544	0.0030	0.737	0.045	0.0949	0.0018	-0.1586	388	61.9	123.8	561	13.1	26.3	584	5.3	10.6	104
EZ6z80	82.70	59.70	622.00	0.763	-1.10E+06	1.00E+06	0.1319	0.0028	7.020	0.180	0.3825	0.0051	0.5417	2123	18.6	37.2	2114	11.4	22.8	2088	11.9	23.8	99
EZ6z81	111.60	305.00	633.00	2.882	3.00E+06	1.30E+06	0.0678	0.0042	0.897	0.056	0.0965	0.0015	0.1298	862	64.3	128.5	650	15.0	29.9	594	4.4	8.8	91
EZ6z82	128.60	85.50	247.90	0.706	-2.60E+06	2.10E+06	0.0617	0.0034	0.818	0.043	0.0965	0.0014	-0.0346	664	59.0	118.0	607	12.0	24.0	594	4.1	8.2	98
EZ6z83	110.30	107.40	1096.00	1.032	-9.00E+06	1.40E+06	0.1203	0.0025	6.210	0.140	0.3712	0.0046	0.3553	1961	18.5	37.1	2006	9.8	19.7	2035	10.8	21.6	101
EZ6z84	407.00	102.90	831.00	0.268	-1.27E+07	7.50E+06	0.1209	0.0014	5.120	0.075	0.3042	0.0027	0.6244	1970	10.3	20.6	1839	6.2	12.4	1712	6.7	13.3	93
EZ6z85	90.90	75.10	244.20	0.876	-8.90E+05	6.00E+05	0.0637	0.0036	0.951	0.054	0.1077	0.0022	0.1806	732	59.9	119.7	679	14.0	28.1	659	6.4	12.8	97
EZ6z86	197.90	192.50	805.00	1.033	-8.90E+05	9.10E+05	0.0721	0.0041	1.300	0.074	0.1308	0.0020	0.1805	989	57.8	115.7	846	16.3	32.6	792	5.7	11.4	94
EZ6z88	106.90	145.00	1395.00	1.445	-3.80E+05	7.40E+05	0.1304	0.0027	6.150	0.140	0.3393	0.0051	0.4654	2103	18.2	36.3	1997	9.9	19.9	1883	12.3	24.5	94
EZ6z89	166.20	120.10	387.00	0.768	-1.04E+07	5.90E+06	0.0615	0.0024	0.906	0.035	0.1069	0.0015	0.2172	657	41.8	83.7	655	9.3	18.6	655	4.4	8.7	100
EZ6z91	35.00	24.48	77.00	0.737	5.00E+06	2.50E+06	0.0615	0.0055	0.879	0.081	0.1041	0.0031	0.1990	657	95.9	191.8	640	21.9	43.7	638	9.0	18.1	100
EZ6z92	68.20	86.70	274.30	1.346	-6.50E+05	4.20E+05	0.0600	0.0038	0.840	0.050	0.1036	0.0020	0.1318	604	68.5	137.0	619	13.8	27.6	635	5.8	11.7	103
EZ6z93	231.90	367.70	1120.00	1.688	-1.60E+06	1.20E+06	0.0615	0.0026	0.852	0.035	0.1014	0.0013	0.1975	657	45.3	90.7	626	9.6	19.2	623	3.8	7.6	99
EZ6z94	166.70	77.50	238.10	0.493	8.00E+05	4.70E+05	0.0605	0.0027	0.853	0.038	0.1024	0.0015	0.1790	622	48.1	96.3	626	10.4	20.8	628	4.4	8.8	100
EZ6z95	243.60	211.90	663.00	0.923	-2.00E+06	1.30E+06	0.0645	0.0026	0.928	0.037	0.1046	0.0013	0.1815	758	42.5	85.0	667	9.7	19.5	641	3.8	7.6	96
EZ6z96	32.20	35.86	118.20	1.170	-2.30E+05	2.30E+05	0.0648	0.0071	0.901	0.099	0.1018	0.0034	0.2053	768	115.4	230.8	652	26.4	52.8	625	9.9	19.9	96
EZ6z97	185.40	377.00	1027.00	2.114	1.25E+06	9.20E+05	0.0619	0.0029	0.738	0.035	0.0864	0.0015	0.2507	671	50.1	100.2	561	10.2	20.4	534	4.5	8.9	95
EZ6z100	311.00	233.00	2540.00	0.784	-7.90E+06	5.90E+06	0.1867	0.0015	12.740	0.160	0.4914	0.0057	0.7736	2713	6.6	13.2	2661	5.9	11.8	2577	12.3	24.6	97
EZ6z101	316.00	166.00	314.80	0.233	-5.80E+06	4.90E+06	0.1243	0.0017	6.000	0.100	0.3475	0.0038	0.5605	2019	12.1	24.2	1976	7.2	14.5	1923	9.1	18.2	97
EZ6z102c	141.90	39.00	119.30	0.277	-1.80E+05	5.20E+05	0.0607	0.0030	0.806	0.040	0.0964	0.0013	0.2068	629	53.2	106.5	600	11.2	22.5	593	3.8	7.6	99
EZ6z102r	346.70	121.10	85.00	0.331	-2.10E+07	1.40E+07	0.0602	0.0018	0.766	0.022	0.0928	0.0011	0.1507	611	32.3	64.6	577	6.3	12.6	572	3.2	6.5	99
EZ6z103	177.80	219.00	651.00	1.287	-1.90E+06	1.10E+06	0.0624	0.0022	0.900	0.034	0.1046	0.0017	0.2980	688	37.6	75.2	652	9.1	18.2	641	5.0	9.9	98
EZ6z104	425.90	124.80	400.00	0.305	5.10E+06	3.50E+06	0.0604	0.0018	0.842	0.027	0.1012	0.0010	0.3204	618	32.2	64.3	620	7.4	14.9	621	2.9	5.9	100
EZ6z105c	63.10	87.50	240.00	1.429	-5.00E+05	2.40E+05	0.0606	0.0053	0.820	0.068	0.0988	0.0020	-0.0357	625	94.3	188.6	608	19.0	37.9	607	5.9	11.7	100
EZ6z105r	193.00	226.90	636.00	1.239	-2.10E+06	1.40E+06	0.0619	0.0028	0.875	0.038	0.1030	0.0018	0.1680	671	48.4	96.8	638	10.3	20.6	632	5.3	10.5	99
EZ6z106	249.00	122.90	397.00	0.518	3.00E+06	1.10E+06	0.0630	0.0022	0.925	0.034	0.1068	0.0013	0.3051	708	37.1	74.3	665	9.0	17.9	654	3.8	7.6	98
EZ6z107	431.00	321.00	966.00	0.769	-1.50E+06	2.10E+06	0.0624	0.0016	0.883	0.022	0.1029	0.0011	0.1360	688	27.4	54.7	643	5.9	11.9	631	3.2	6.4	98
EZ6z108	51.20	62.20	672.00	1.271	-9.80E+05	8.10E+05	0.1314	0.0035	6.920	0.190	0.3804	0.0060	0.3350	2117	23.3	46.7	2101	12.2	24.3	2078	14.0	28.0	99
EZ6z109c	137.90	82.80	279.00	0.613	1.80E+06	1.70E+06	0.0642	0.0032	1.067	0.053	0.1211	0.0020	0.1374	748	52.7	105.3	737	13.0	26.0	737	5.8	11.5	100
EZ6z109r	216.10	110.90	388.00	0.532	4.00E+06	1.60E+06	0.0628	0.0025	0.996	0.039	0.1162	0.0014	0.2452	701	42.4	84.8	702	9.9	19.8	709	4.0	8.1	101
EZ6z110c	121.40	118.90	616.00	1.006	4.60E+05	7.10E+05	0.0723	0.0024	1.636	0.058	0.1646	0.0023	0.2556	994	33.7	67.5	984	11.2	22.3	982	6.4	12.7	100
EZ6z110r	127.10	93.80	395.00	0.774	-4.50E+05	9.10E+05	0.0764	0.0036	1.635	0.082	0.1556	0.0029	0.2914	1106	47.1	94.2	984	15.8	31.6	932	8.1	16.2	95
EZ6z111	530.00	310.80	876.00	0.610	-5.00E+06	2.10E+06	0.0609	0.0016	0.807	0.020	0.0965	0.0010	0.1276	636	28.3	56.5	601	5.6	11.2	594	2.9	5.9	99
EZ6z112	122.30	116.10	354.00	0.986	3.90E+05	3.50E+05	0.0603	0.0032	0.847	0.046	0.1025	0.0016	0.2543	614	57.3	114.6	623	12.6	25.3	629	4.7	9.4	101
EZ6z113	108.80	314.00	3325.00	2.991	-1.60E+06	1.80E+06	0.1455	0.0028	7.790	0.170	0.3861	0.0050	0.4708	2294	16.5	33.1	2207	9.8	19.6	2105	11.6	23.3	95
EZ6z114	50.40	33.30	102.70	0.676	1.00E+06	2.30E+05	0.0693	0.0064	0.916	0.082	0.0965	0.0022	-0.0223	908	95.1	190.2	660	21.7	43.4	594	6.5	12.9	90
EZ6z115	813.00	1524.00	5310.00	1.934	-1.40E+07	1.30E+07	0.1276	0.0012	5.637	0.096	0.3180	0.0057	0.8651	2065	8.3	16.6	1922	7.3	14.7	1780	13.9	27.9	93
EZ6z116	562.00	52.30	42.00	0.048	-6.20E+06	5.00E+06	0.0641	0.0018	0.802	0.025	0.0914	0.0014	0.4345	745	29.7	59.4	598	7.0	14.1	564	4.1	8.3	94
EZ6z117	169.10	903.00	1930.00	4.878	5.50E+06	6.10E+06	0.0594	0.0033	0.652	0.037	0.0799	0.0016	0.2935	582	60.3	120.7	510	11.4	22.7	496	4.8	9.6	97
EZ6z119	108.00	94.20	742.00	0.856	8.10E+06	3.90E+06	0.2034	0.0033	13.510	0.380	0.4809	0.0096	0.7933	2854	13.2	26.4	2716	13.3	26.6	2531	20.9	41.8	93
EZ6z120	355.00	287.00	609.00	0.817	-6.00E+06	1.40E+06	0.0592	0.0020	0.744	0.026	0.0915	0.0013	0.2608	574	36.7	73.5	565	7.6	15.1	564	3.8	7.7	100
EZ6z121	461.00	393.00	799.00	0.874	-7.30E+06	5.30E+06	0.0619	0.0017	0.812	0.023	0.0956	0.0014	0.3668	671	29.4	58.8	604	6.4	12.9	589	4.1	8.2	98
EZ6z122	91.20	133.90	354.00	1.513	-4.00E+05	2.20E+05	0.0657	0.0040	0.825	0.047	0.0918	0.0018	-0.0047	797	63.8	127.6	611	13.1	26.1	566	5.3	10.6	93
EZ6z123	24.00	23.10	262.00	0.973	-5.70E+05	5.40E+05	0.1353	0.0054	7.760	0.330	0.4110	0.0110	0.3046	2168	34.8	69.6	2204	19.1	38.2	2219	25.1	50.3	101
EZ6z124	970.00	683.00	1493.00	0.717	1.25E+07	8.00E+06	0.0623	0.0012	0.902	0.020	0.1054	0.0013	0.4630	684	20.6	41.1	653	5.3	10.7	646	3.8	7.6	99
EZ6z125	187.00	198.00	317.00	1.127	1.70E+06	1.40E+06	0.0582	0.0029	0.721	0.032	0.0904	0.0015	-0.0131	537	54.5	109.0	551	9.4	18.9	558	4.4	8.9	101
EZ6z126	706.00	204.80	1335.00	0.301	1.31E+08	6.80E+07	0.1153	0.0011	4.819	0.069	0.3018	0.0036	0.7985	1885	8.6	17.2	1788	6.0	12.0	1700	8.9	17.8	95
EZ6z127	136.00	102.50	971.00	0.775	-1.40E+06	2.40E+06	0.1320	0.0022	6.460	0.120	0.3529	0.0043	0.5081	2125	14.6	29.2	2040	8.2	16.3	1948	10.2	20.5	95
EZ6z128c	90.50	66.90	205.90	0.763	1.00E+05	4.40E+05	0.0596	0.0035	0.824	0.048	0.1005	0.0018	0.1847	589	63.7	127.4	610	13.3	26.7	617	5.3	10.5	101
EZ6z128r	60.70	83.90	85.70	1.393	-3.00E+05	2.30E+05	0.0590	0.0058	0.617	0.065	0.0767	0.0032	0.3393	567	107.0	214.0	488	20.4	40.8	476	9.6	19.2	98
EZ6z129	390.60	773.50	2217.00	2.049	5.00E+06	1.90E+06	0.0592	0.0020	0.767	0.026	0.0943	0.0010	0.2284	574	36.7	73.5	578	7.5	14.9	581	2.9	5.9	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
EZ6z130	278.00	287.00	822.00	1.036	6.00E+06	1.60E+06	0.0611	0.0020	0.849	0.028	0.1013	0.0015	0.1251	643	35.2	70.4	624	7.7	15.4	622	4.4	8.8	100
EZ6z131	121.90	176.00	565.00	1.471	-3.20E+07	1.70E+07	0.0598	0.0032	0.829	0.043	0.1014	0.0017	0.1346	596	58.0	115.9	613	11.9	23.9	623	5.0	9.9	102
EZ6z133	86.80	108.20	987.00	1.269	1.80E+06	2.00E+06	0.1290	0.0026	6.720	0.200	0.3756	0.0084	0.6858	2084	17.7	35.5	2075	13.1	26.3	2056	19.7	39.4	99
EZ6z136	600.00	230.00	495.00	0.377	-6.80E+06	3.90E+06	0.0622	0.0016	0.699	0.022	0.0817	0.0021	0.6281	681	27.5	54.9	538	6.6	13.1	506	6.3	12.5	94
EZ6z137	257.00	365.00	1045.00	1.479	-5.00E+06	1.50E+06	0.0639	0.0021	0.905	0.034	0.1032	0.0015	0.4394	738	34.8	69.5	654	9.1	18.1	633	4.4	8.8	97
EZ6z138	104.30	315.00	532.00	3.049	1.18E+07	6.20E+06	0.0650	0.0044	0.767	0.056	0.0851	0.0022	0.3201	774	71.2	142.4	578	16.1	32.2	526	6.5	13.1	91
EZ6z139	407.00	468.00	1237.00	1.171	-6.50E+06	4.80E+06	0.0636	0.0019	0.885	0.028	0.1015	0.0013	0.3342	728	31.7	63.3	644	7.5	15.1	623	3.8	7.6	97
EZ6z140	118.20	222.00	821.00	1.299	3.90E+06	3.00E+06	0.1306	0.0025	6.120	0.160	0.3400	0.0085	0.7116	2106	16.8	33.6	1993	11.4	22.8	1887	20.4	40.9	95
Discordant data																							
EZ6z15	189.30	151.40	382.00	0.801	-4.00E+05	2.50E+05	0.0783	0.0027	1.269	0.049	0.1179	0.0023	0.4732	1154	34.2	68.4	832	11.0	21.9	718	6.6	13.3	86
EZ6z40c	125.00	185.00	614.00	1.389	1.23E+06	7.00E+05	0.0948	0.0032	2.001	0.079	0.1516	0.0035	0.4745	1524	31.8	63.6	1116	13.4	26.7	910	9.8	19.6	82
EZ6z49	78.50	215.00	712.00	2.500	1.82E+07	9.10E+06	0.1431	0.0049	4.920	0.330	0.2460	0.0130	0.8264	2265	29.5	59.1	1806	28.3	56.6	1418	33.6	67.3	79
EZ6z53c	687.00	626.00	811.00	0.929	4.00E+06	5.50E+06	0.0720	0.0022	0.644	0.020	0.0650	0.0018	0.4820	986	31.1	62.2	505	6.2	12.3	406	5.4	10.9	80
EZ6z67	39.13	49.90	347.00	1.333	-7.10E+04	5.20E+04	0.1890	0.0240	3.210	0.520	0.1162	0.0044	0.8297	2733	104.5	209.0	1460	62.7	125.3	709	12.7	25.4	49
EZ6z68	38.20	52.80	173.00	1.447	-3.20E+04	9.90E+04	0.0777	0.0075	1.090	0.120	0.1027	0.0029	0.4951	1139	96.0	192.0	749	29.1	58.2	630	8.5	17.0	84
EZ6z71	486.00	227.00	1310.00	0.474	-9.00E+06	3.50E+06	0.1356	0.0021	5.270	0.110	0.2779	0.0045	0.7489	2172	13.5	27.0	1864	8.9	17.8	1581	11.4	22.7	85
EZ6z87	60.60	49.10	152.80	0.861	-7.00E+05	2.00E+05	0.0533	0.0047	0.756	0.064	0.1041	0.0023	-0.0538	342	99.8	199.6	572	18.5	37.0	638	6.7	13.4	112
EZ6z90	128.00	236.30	1020.00	1.974	-4.20E+05	4.20E+05	0.1180	0.0210	2.070	0.480	0.1120	0.0046	0.9266	1926	159.4	318.9	1139	79.3	158.6	684	13.3	26.7	60
EZ6z98	228.20	201.50	1618.00	0.934	-3.00E+06	2.40E+06	0.1301	0.0018	5.220	0.130	0.2897	0.0059	0.8272	2099	12.1	24.3	1856	10.6	21.2	1640	14.7	29.5	88
EZ6z99	190.70	283.00	2561.00	1.527	-1.00E+07	2.20E+06	0.1723	0.0028	9.240	0.270	0.3844	0.0087	0.8449	2580	13.6	27.1	2362	13.4	26.7	2097	20.3	40.5	89
EZ6z118	47.20	130.80	114.80	2.825	1.08E+06	5.90E+05	0.0806	0.0083	0.862	0.090	0.0780	0.0025	0.2818	1212	101.3	202.7	631	24.5	49.0	484	7.5	14.9	77
EZ6z132	291.00	682.00	1565.00	2.208	-8.20E+06	4.40E+06	0.1253	0.0023	3.300	0.130	0.1922	0.0073	0.8913	2033	16.2	32.5	1481	15.3	30.7	1133	19.7	39.5	77
EZ6z134	77.90	182.80	904.00	2.445	-1.10E+06	1.20E+06	0.1237	0.0038	4.750	0.140	0.2759	0.0060	0.4592	2010	27.3	54.5	1776	12.4	24.7	1571	15.2	30.3	88
EZ6z135	559.00	649.00	2980.00	1.215	3.90E+06	5.60E+06	0.1188	0.0021	2.970	0.110	0.1818	0.0051	0.9098	1938	15.8	31.6	1400	14.1	28.1	1077	13.9	27.8	77

Footnotes:

- Analysis references: EZ6z is zircon from sample EZ6 (mount CT18-2), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.22a: Sample EZ7 (LA-ICPMS)

IGSN: IEACC0037 Coordinate UTM: Zone 29S, 735286 m E, 3683869 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
EZ7z1	39.33	16.36	7.31	0.420	1.71E+04	8.10E+03	0.0767	0.0037	1.660	0.081	0.1609	0.0026	0.1059	1113	48.0	96.0	993	15.5	31.0	962	7.0	14.0	97
EZ7z2	415.00	226.20	69.10	0.550	9.80E+04	5.10E+04	0.0629	0.0020	0.902	0.030	0.1040	0.0013	0.2148	705	34.0	68.0	653	8.0	16.0	638	4.0	8.0	98
EZ7z3	507.30	104.40	45.39	0.210	3.20E+05	1.00E+05	0.0690	0.0020	1.419	0.044	0.1501	0.0017	0.2286	899	30.0	60.0	897	9.0	18.0	902	5.0	10.0	101
EZ7z4	138.70	160.90	163.10	1.160	9.70E+04	4.50E+04	0.1206	0.0017	6.176	0.190	0.3686	0.0045	0.2144	1965	12.5	25.0	2001	13.5	27.0	2023	10.5	21.0	101
EZ7z5	237.80	300.70	91.80	1.260	5.40E+04	2.10E+04	0.0669	0.0025	0.947	0.037	0.1039	0.0013	0.0281	835	39.0	78.0	677	9.5	19.0	637	4.0	8.0	94
EZ7z6	289.10	175.20	89.60	0.610	1.66E+05	5.60E+04	0.0750	0.0023	1.849	0.061	0.1793	0.0021	0.2638	1069	31.0	62.0	1063	11.0	22.0	1063	5.5	11.0	100
EZ7z7	166.50	77.05	39.07	0.460	-6.30E+05	2.00E+05	0.0745	0.0024	1.846	0.064	0.1807	0.0024	0.2208	1055	32.5	65.0	1062	11.5	23.0	1071	6.5	13.0	101
EZ7z8	319.20	277.00	146.80	0.870	-4.30E+04	2.80E+04	0.0859	0.0026	1.938	0.062	0.1644	0.0021	0.3282	1336	29.5	59.0	1094	10.5	21.0	981	6.0	12.0	90
EZ7z9c	110.30	48.30	25.17	0.440	-7.20E+04	2.60E+04	0.0733	0.0025	1.793	0.064	0.1796	0.0024	0.2096	1022	34.5	69.0	1043	11.5	23.0	1065	6.5	13.0	102
EZ7z9r	155.40	74.10	37.20	0.480	5.00E+04	2.90E+04	0.0763	0.0025	1.862	0.065	0.1778	0.0022	0.1273	1103	33.0	66.0	1068	11.5	23.0	1055	6.0	12.0	99
EZ7z10	146.70	195.30	93.90	1.330	8.70E+04	2.70E+04	0.0727	0.0026	1.683	0.062	0.1698	0.0023	0.0673	1006	36.5	73.0	1002	11.5	23.0	1011	6.5	13.0	101
EZ7z11	78.90	85.90	25.86	1.090	2.95E+04	9.70E+03	0.0621	0.0032	0.919	0.047	0.1079	0.0018	0.0475	678	55.0	110.0	662	12.5	25.0	661	5.0	10.0	100
EZ7z12	164.30	287.70	140.80	1.750	1.22E+05	5.10E+04	0.0738	0.0025	1.818	0.064	0.1779	0.0023	0.0674	1036	34.0	68.0	1052	11.5	23.0	1055	6.5	13.0	100
EZ7z13	390.10	7.58	2.68	0.020	3.10E+05	1.30E+05	0.0613	0.0020	0.964	0.033	0.1147	0.0015	0.1486	650	35.0	70.0	685	8.5	17.0	700	4.5	9.0	102
EZ7z14	179.70	157.50	48.40	0.880	2.60E+04	1.30E+04	0.0623	0.0023	0.906	0.035	0.1051	0.0017	0.1312	684	39.5	79.0	655	9.5	19.0	644	5.0	10.0	98
EZ7z15	77.40	67.33	33.10	0.870	9.40E+03	9.00E+03	0.0778	0.0029	1.914	0.075	0.1781	0.0025	0.2112	1142	37.0	74.0	1086	13.0	26.0	1057	7.0	14.0	97
EZ7z16	105.14	111.38	61.05	1.060	-5.00E+04	1.00E+04	0.0755	0.0028	2.019	0.076	0.1921	0.0026	0.0445	1082	37.0	74.0	1122	13.0	26.0	1133	7.0	14.0	101
EZ7z17	385.30	154.00	75.80	0.400	2.20E+04	3.90E+04	0.0745	0.0021	1.829	0.057	0.1775	0.0021	0.0825	1055	28.5	57.0	1056	10.0	20.0	1053	5.5	11.0	100
EZ7z18	158.60	135.00	127.60	0.850	4.10E+04	5.70E+04	0.1194	0.0016	5.981	0.180	0.3599	0.0044	0.2674	1947	12.0	24.0	1973	13.0	26.0	1982	10.5	21.0	100
EZ7z19	176.10	110.20	116.30	0.630	4.30E+05	1.40E+05	0.1230	0.0014	6.494	0.200	0.3828	0.0045	0.3261	2000	10.0	20.0	2045	13.5	27.0	2089	10.5	21.0	102
EZ7z20	610.00	668.00	186.50	1.100	-4.00E+07	1.00E+07	0.0608	0.0018	0.872	0.028	0.1033	0.0013	0.2371	631	32.0	64.0	637	7.5	15.0	634	4.0	8.0	100
EZ7z21	231.20	282.30	70.50	1.220	-4.50E+05	4.40E+05	0.0610	0.0022	0.853	0.033	0.1000	0.0014	0.1900	639	39.0	78.0	626	9.0	18.0	614	4.0	8.0	98
EZ7z22	212.00	148.60	142.40	0.700	2.37E+05	7.80E+04	0.1239	0.0015	6.292	0.190	0.3669	0.0044	0.2344	2013	10.5	21.0	2017	13.0	26.0	2015	10.5	21.0	100
EZ7z23	152.10	115.30	115.50	0.760	3.00E+05	9.00E+04	0.1233	0.0016	6.368	0.190	0.3745	0.0047	0.2465	2005	11.5	23.0	2028	13.0	26.0	2051	11.0	22.0	101
EZ7z24	362.80	299.00	289.30	0.820	-9.00E+06	2.00E+06	0.1272	0.0012	6.579	0.190	0.3757	0.0043	0.2858	2060	8.5	17.0	2057	12.5	25.0	2056	10.0	20.0	100
EZ7z25	250.30	225.40	67.00	0.900	6.60E+04	2.30E+04	0.0610	0.0022	0.870	0.033	0.1025	0.0013	-0.0723	639	39.0	78.0	636	9.0	18.0	629	4.0	8.0	99
EZ7z26	246.20	192.20	164.50	0.780	4.60E+05	1.60E+05	0.1069	0.0014	3.899	0.130	0.2649	0.0039	0.5827	1747	12.0	24.0	1613	13.5	27.0	1515	10.0	20.0	94
EZ7z27	140.90	101.20	41.10	0.720	-4.80E+05	1.20E+05	0.0682	0.0025	1.323	0.050	0.1402	0.0018	-0.0007	875	38.0	76.0	856	11.0	22.0	846	5.0	10.0	99
EZ7z28	322.50	193.20	255.00	0.600	-1.30E+07	1.70E+07	0.1752	0.0016	12.560	0.370	0.5178	0.0058	0.2879	2608	7.5	15.0	2647	14.0	28.0	2690	12.5	25.0	102
EZ7z29	126.10	144.60	119.90	1.150	1.80E+05	4.30E+05	0.1071	0.0019	4.071	0.130	0.2779	0.0035	0.2838	1751	16.0	32.0	1649	13.0	26.0	1581	9.0	18.0	96
EZ7z30	274.10	63.00	48.70	0.230	1.75E+05	7.70E+04	0.1065	0.0014	4.061	0.120	0.2779	0.0034	0.2332	1740	12.0	24.0	1647	12.0	24.0	1581	8.5	17.0	96
EZ7z31	151.80	66.60	21.90	0.440	1.60E+04	1.40E+04	0.0605	0.0023	0.917	0.036	0.1078	0.0015	0.0916	622	41.0	82.0	661	9.5	19.0	660	4.5	9.0	100
EZ7z32	304.60	122.00	163.90	0.400	9.60E+05	3.70E+05	0.1937	0.0017	13.870	0.410	0.5171	0.0064	0.4447	2774	7.0	14.0	2741	14.0	28.0	2687	13.5	27.0	98
EZ7z35	122.80	43.80	36.10	0.360	-6.10E+04	3.90E+04	0.1116	0.0020	4.555	0.140	0.2943	0.0037	0.1228	1826	16.5	33.0	1741	13.0	26.0	1663	9.0	18.0	96
EZ7z36	66.50	53.10	23.82	0.800	-1.23E+05	4.60E+04	0.0711	0.0034	1.409	0.070	0.1425	0.0025	0.3956	960	49.0	98.0	893	14.5	29.0	859	7.0	14.0	96
EZ7z37	212.30	70.90	64.00	0.330	-2.00E+06	1.40E+06	0.1314	0.0017	6.771	0.210	0.3708	0.0051	0.4599	2117	11.5	23.0	2082	13.5	27.0	2033	12.0	24.0	98
EZ7z41	180.90	104.80	127.30	0.580	-1.80E+05	6.20E+05	0.1611	0.0017	9.703	0.290	0.4365	0.0051	0.3319	2467	9.0	18.0	2407	13.5	27.0	2335	11.5	23.0	97
EZ7z43	279.70	293.00	88.50	1.050	2.70E+05	1.20E+05	0.0610	0.0020	0.887	0.031	0.1060	0.0014	0.2903	639	35.5	71.0	645	8.5	17.0	650	4.0	8.0	101
EZ7z44	328.60	349.30	97.20	1.060	3.70E+04	2.60E+04	0.0580	0.0019	0.782	0.028	0.0977	0.0012	0.0653	530	36.0	72.0	587	8.0	16.0	601	3.5	7.0	102
EZ7z45	466.60	155.00	60.50	0.330	1.76E+05	8.60E+04	0.0716	0.0021	1.549	0.049	0.1569	0.0021	0.3353	975	30.0	60.0	950	10.0	20.0	940	6.0	12.0	99
EZ7z46	47.98	14.31	9.15	0.300	3.50E+04	1.40E+04	0.0801	0.0034	2.303	0.100	0.2115	0.0031	0.1696	1199	42.0	84.0	1213	15.5	31.0	1237	8.0	16.0	102
EZ7z47	205.50	163.10	47.60	0.790	-4.00E+04	1.30E+04	0.0594	0.0023	0.829	0.033	0.1012	0.0014	0.1209	582	42.0	84.0	613	9.0	18.0	621	4.0	8.0	101
EZ7z48	175.90	405.00	501.70	2.300	5.40E+05	2.30E+05	0.1759	0.0017	11.810	0.340	0.4869	0.0057	0.2993	2615	8.0	16.0	2589	13.5	27.0	2557	12.5	25.0	99
EZ7z49	251.70	31.23	28.45	0.120	2.70E+05	1.10E+05	0.1121	0.0015	4.289	0.140	0.2783	0.0045	0.6293	1834	12.0	24.0	1691	13.5	27.0	1583	11.5	23.0	94
EZ7z50	238.20	214.30	63.50	0.900	6.70E+04	3.20E+04	0.0622	0.0023	0.873	0.033	0.1023	0.0013	0.1471	681	39.5	79.0	637	9.0	18.0	628	4.0	8.0	99
EZ7z51	123.50	135.80	122.50	1.100	8.10E+04	3.60E+04	0.1159	0.0018	5.307	0.170	0.3336	0.0045	0.3409	1894	14.0	28.0	1870	13.5	27.0	1856	11.0	22.0	99
EZ7z52	84.00	70.50	24.85	0.840	2.24E+04	9.00E+03	0.0626	0.0026	1.037	0.044	0.1202	0.0020	0.1524	695	44.5	89.0	722	11.0	22.0	732	6.0	12.0	101
EZ7z53	427.00	154.80	229.20	0.360	-1.05E+06	4.20E+05	0.1744	0.0013	12.158	0.350	0.5066	0.0062	0.6036	2600	6.0	12.0	2617	13.5	27.0	2642	13.5	27.0	101
EZ7z54	143.30	70.45	70.90	0.490	-7.70E+05	2.30E+05	0.1254	0.0016	6.595	0.210	0.3826	0.0048	0.3770	2034	11.5	23.0	2059	14.0	28.0	2088	11.0	22.0	101
EZ7z55	269.00	375.80	199.60	1.400	-3.00E+05	1.20E+05	0.0738	0.0022	1.881	0.061	0.1866	0.0025	0.2950	1036	30.0	60.0	1074	10.5	21.0	1103	7.0	14.0	103
EZ7z59	65.80	101.50	95.70	1.540	-1.21E+05	5.80E+04	0.1140	0.0021	5.475	0.180	0.3482	0.0046	0.1785	1864	16.5	33.0	1897	14.0	28.0	1926	11.0	22.0	102
EZ7z60	95.50	53.87	74.38	0.560	1.21E+05	5.20E+04	0.1890	0.0020	13.920	0.410	0.5353	0.0067	0.3322	2733	8.5	17.0	2744	14.0	28.0	2764	14.0	28.0	101
EZ7z61	645.00	128.90	63.80	0.200	3.10E+05	1.00E+05	0.0757	0.0021	1.630	0.051	0.1591	0.0021	0.5060	1086	28.0	56.0	982	10.0	20.0	952	6.0	12.0	97
EZ7z62	110.30	93.80	87.60	0.850	-4.70E+05	1.70E+05	0.1209	0.0017	5.698	0.180	0.3414	0.0044	0.3304	1970	12.5	25.0	1931	13.5	27.0	1893	10.5	21.0	98
EZ7z63	187.80	148.10	39.87	0.790	-7.60E+04	2.00E+04	0.0625	0.0025	0.807	0.032	0.0962	0.0013	-0.0205	691	42.5	85.0	601	9.0	18.0	592	4.0	8.0	99
EZ7z64	440.20	355.90	174.60	0.810	2.90E+05	1.30E+05	0.0754	0.0022	1.760	0.055	0.1732	0.0020	0.3192	1079	29.5	59.0	1031	10.0	20.0	1030	5.5	11.0	100
EZ7z65	433.00	408.00	201.60	0.940	3.80E+04	4.30E+04	0.0761	0.0022	1.799	0.056	0.1765	0.0022	0.2923	1098	29.0	58.0	1045	10.0	20.0	1048	6.0	12.0	100
EZ7z66	180.70	54.63	33.65	0.300	1.61E+05	7.20E+04	0.0841	0.0027	2.361	0.080	0.2088	0.0029	0.1815	1295	31.0	62.0	1231	12.0	24.0	1222	7.5	15.0	99
EZ7z67	992.00	94.80	27.61	0.100	1.68E+05	9.50E+04	0.0783	0.0021	1.807	0.054	0.1740	0.0023	0.4485	1153	26.5	53.0	1048	10.0	20.0	1034	6.5	13.0	99
EZ7z69	169.10	41.60	41.30	0.250	-2.16E+05	8.10E+04	0.1268	0.0016	6.683	0.210	0.3872	0.0049	0.4274	2054	11.0	22.0	2070	14.0	28.0	2110	11.5	23.0	102

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
EZ7z70	528.00	273.20	139.00	0.520	-5.80E+05	2.60E+05	0.0768	0.0024	1.734	0.060	0.1699	0.0020	0.3350	1116	31.0	62.0	1021	11.0	22.0	1012	5.5	11.0	99
EZ7z71	106.80	74.40	22.02	0.700	1.17E+04	9.30E+03	0.0651	0.0031	0.837	0.039	0.0971	0.0018	0.1596	778	50.0	100.0	617	11.0	22.0	597	5.5	11.0	97
EZ7z72	484.00	151.70	130.90	0.310	1.60E+05	1.10E+05	0.1253	0.0012	6.574	0.200	0.3799	0.0053	0.6546	2033	8.5	17.0	2056	13.5	27.0	2076	12.5	25.0	101
EZ7z73	461.60	239.30	117.30	0.520	1.49E+05	4.80E+04	0.0761	0.0022	1.806	0.056	0.1787	0.0021	0.2526	1098	29.0	58.0	1048	10.0	20.0	1060	5.5	11.0	101
EZ7z74	253.20	531.00	454.00	2.100	2.30E+05	1.10E+05	0.1149	0.0014	5.259	0.160	0.3315	0.0038	0.3228	1878	11.0	22.0	1862	13.0	26.0	1846	9.0	18.0	99
EZ7z76	506.50	177.00	241.00	0.350	-3.80E+05	2.10E+05	0.1771	0.0013	12.650	0.370	0.5232	0.0063	0.6680	2626	6.0	12.0	2654	13.5	27.0	2713	13.5	27.0	102
EZ7z77	42.08	30.49	27.81	0.720	-2.30E+04	1.20E+04	0.1152	0.0027	5.450	0.200	0.3443	0.0050	0.2346	1883	21.0	42.0	1893	15.5	31.0	1907	12.0	24.0	101
EZ7z78	204.90	164.20	60.80	0.800	-6.20E+04	3.10E+04	0.0742	0.0026	1.290	0.049	0.1311	0.0017	0.0949	1047	35.5	71.0	841	11.0	22.0	794	5.0	10.0	94
EZ7z79	299.20	122.10	106.90	0.410	-4.30E+05	1.60E+05	0.1170	0.0013	4.652	0.140	0.2896	0.0036	0.4058	1911	10.0	20.0	1759	12.5	25.0	1640	9.0	18.0	93
EZ7z81	316.60	187.10	95.70	0.590	-3.70E+05	1.50E+05	0.0775	0.0024	1.925	0.064	0.1870	0.0023	0.1193	1134	31.0	62.0	1090	11.0	22.0	1105	6.0	12.0	101
EZ7z82	168.30	253.90	230.00	1.510	-4.60E+05	3.90E+05	0.1215	0.0016	5.866	0.180	0.3507	0.0042	0.3027	1978	11.5	23.0	1956	13.5	27.0	1938	10.0	20.0	99
EZ7z83	122.30	143.40	76.40	1.170	-1.51E+05	5.20E+04	0.0775	0.0027	1.889	0.070	0.1841	0.0026	0.2123	1134	34.5	69.0	1077	12.5	25.0	1089	7.0	14.0	101
EZ7z85	132.40	155.10	33.61	1.170	-5.00E+04	1.40E+04	0.0597	0.0031	0.573	0.031	0.0725	0.0011	0.1213	593	56.5	113.0	460	10.0	20.0	451	3.5	7.0	98
EZ7z86	501.70	19.17	6.64	0.040	4.00E+06	1.50E+06	0.0662	0.0020	1.080	0.036	0.1230	0.0016	0.3182	813	31.5	63.0	744	9.0	18.0	748	4.5	9.0	101
EZ7z87	366.70	181.00	58.10	0.490	-3.50E+04	3.30E+04	0.0652	0.0021	0.985	0.033	0.1141	0.0014	0.0261	781	34.0	68.0	696	8.5	17.0	697	4.0	8.0	100
EZ7z88	70.00	43.52	13.89	0.620	1.80E+04	8.60E+03	0.0663	0.0034	0.999	0.051	0.1128	0.0017	-0.1554	816	53.5	107.0	703	13.0	26.0	689	5.0	10.0	98
EZ7z89	276.30	65.81	25.23	0.240	6.60E+04	2.20E+04	0.0709	0.0023	1.105	0.038	0.1184	0.0016	0.1762	955	33.0	66.0	756	9.0	18.0	721	4.5	9.0	95
EZ7z90	252.40	199.10	58.20	0.790	-1.00E+05	4.20E+04	0.0631	0.0021	0.865	0.032	0.1024	0.0013	0.1843	712	35.5	71.0	633	8.5	17.0	628	4.0	8.0	99
EZ7z92	174.50	75.80	26.04	0.430	4.10E+05	1.30E+05	0.0638	0.0023	0.943	0.037	0.1095	0.0015	0.1284	735	38.0	76.0	674	9.5	19.0	670	4.5	9.0	99
EZ7z93	55.34	39.77	20.51	0.720	5.90E+04	2.40E+04	0.0767	0.0037	1.741	0.084	0.1696	0.0025	0.0875	1113	48.0	96.0	1024	15.5	31.0	1010	7.0	14.0	99
EZ7z94	230.80	150.90	148.60	0.650	2.59E+05	7.00E+04	0.1173	0.0012	5.923	0.180	0.3694	0.0050	0.5398	1915	9.0	18.0	1965	13.0	26.0	2027	12.0	24.0	103
EZ7z95	228.60	196.70	172.20	0.860	-1.50E+05	7.20E+04	0.1073	0.0015	4.610	0.140	0.3117	0.0038	0.1736	1754	13.0	26.0	1751	12.5	25.0	1749	9.5	19.0	100
EZ7z96	467.00	451.00	141.50	0.970	-1.40E+05	5.00E+04	0.0619	0.0019	0.912	0.031	0.1088	0.0014	0.2510	671	33.0	66.0	658	8.0	16.0	666	4.0	8.0	101
EZ7z97	214.90	55.85	28.12	0.260	3.10E+05	1.40E+05	0.0803	0.0030	1.624	0.062	0.1494	0.0018	-0.0482	1204	37.0	74.0	980	12.0	24.0	898	5.0	10.0	92
EZ7z98	530.00	358.00	171.40	0.680	-9.80E+04	6.70E+04	0.0753	0.0021	1.845	0.056	0.1795	0.0021	0.2304	1077	28.0	56.0	1062	10.0	20.0	1064	5.5	11.0	100
EZ7z99	345.10	67.82	46.43	0.200	-1.46E+05	5.10E+04	0.0941	0.0026	3.124	0.100	0.2473	0.0041	0.6712	1510	26.0	52.0	1439	12.5	25.0	1425	10.5	21.0	99
Discordant data																							
EZ7z33	537.00	72.20	60.20	0.130	6.40E+05	2.20E+05	0.1026	0.0029	2.974	0.093	0.2078	0.0026	0.5943	1672	26.0	52.0	1401	12.0	24.0	1217	7.0	14.0	87
EZ7z34	254.00	209.40	67.70	0.820	-2.90E+05	4.40E+05	0.0816	0.0030	1.054	0.039	0.0934	0.0017	0.2075	1236	36.0	72.0	731	9.5	19.0	576	5.0	10.0	79
EZ7z38	262.00	67.10	58.30	0.260	8.00E+04	6.00E+04	0.1003	0.0030	2.483	0.093	0.1761	0.0028	0.9104	1630	28.0	56.0	1267	13.5	27.0	1046	7.5	15.0	83
EZ7z39	23.90	10.70	9.60	0.450	1.12E+05	7.10E+04	0.1300	0.0049	9.050	0.400	0.5071	0.0110	0.4436	2098	33.0	66.0	2343	20.0	40.0	2644	23.5	47.0	113
EZ7z40	27.30	27.28	10.71	1.000	1.47E+04	4.50E+03	0.0834	0.0072	1.460	0.140	0.1246	0.0030	0.4630	1279	84.0	168.0	914	29.0	58.0	757	8.5	17.0	83
EZ7z42	506.80	579.60	378.00	1.140	-4.50E+05	1.20E+05	0.1801	0.0018	6.625	0.200	0.2652	0.0032	0.4402	2654	8.5	17.0	2063	13.5	27.0	1516	8.0	16.0	74
EZ7z56	255.60	289.70	2124.00	1.130	-7.55E+03	2.10E+02	0.4976	0.0069	47.500	1.900	0.6910	0.0140	0.9416	4234	10.0	20.0	3941	20.0	40.0	3386	26.5	53.0	86
EZ7z57	426.20	319.20	490.00	0.750	-1.70E+04	1.00E+04	0.2100	0.0360	6.400	1.800	0.1480	0.0140	0.9968	2906	139.0	278.0	2032	123.5	247.0	890	39.5	79.0	44
EZ7z58	293.40	231.10	83.60	0.790	-1.57E+05	9.00E+04	0.0901	0.0032	1.268	0.049	0.1036	0.0015	0.2025	1428	34.0	68.0	831	11.0	22.0	635	4.5	9.0	76
EZ7z68	244.70	318.80	186.70	1.300	3.90E+04	2.30E+04	0.1057	0.0078	2.630	0.240	0.1798	0.0031	0.8323	1727	67.5	135.0	1309	33.5	67.0	1066	8.5	17.0	81
EZ7z75	630.00	102.50	70.70	0.160	-1.15E+07	7.60E+06	0.2262	0.0060	7.030	0.240	0.2332	0.0049	0.9204	3025	21.5	43.0	2115	15.0	30.0	1351	13.0	26.0	64
EZ7z80	160.50	100.42	120.00	0.630	-6.00E+03	4.30E+05	0.1672	0.0069	4.360	0.210	0.1951	0.0029	0.2023	2530	34.5	69.0	1705	20.0	40.0	1149	8.0	16.0	67
EZ7z84	554.00	657.00	330.00	1.190	-1.90E+04	4.20E+04	0.1050	0.0033	2.311	0.075	0.1652	0.0023	-0.0686	1714	29.0	58.0	1216	11.5	23.0	986	6.5	13.0	81
EZ7z91	1.65	0.09	0.17	0.060	no value	NAN	0.0650	0.0140	no value	NAN	no value	NAN	NaN	774	226.5	453.0	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!

Footnotes:

- Analysis references: EZ7z is zircon from sample EZ7 (mount CT19-1), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.22b: Sample EZ7 (SIMS)

IGSN: IEACC0037 Coordinate UTM: Zone 29S, 735286 m E, 3683869 m N

ANALYSIS	^{238}U (ppm)	^{206}Pb (ppm)	Th/U	^{204}Pb (ppb)	$^{207}Pb/^{206}Pb$	σ	$^{207}Pb/^{235}U$	σ	$^{206}Pb/^{238}U$	σ	Rho	Ages (Ma) $^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	Concordance (%)
Concordant data																					
EZ7z101	446.00	36.70	0.65	7.900	0.0593	0.0007	0.780	0.020	0.1000	0.0010	0.4893	577	26.0	52.0	584	10.0	20.0	586	6.0	12.0	100
EZ7z102	236.00	35.60	2.78	19.900	0.0777	0.0010	1.870	0.050	0.1700	0.0020	0.4596	1139	25.0	50.0	1071	17.0	34.0	1038	11.0	22.0	97
EZ7z103	746.00	85.00	0.42	4.900	0.0658	0.0008	1.200	0.020	0.1300	0.0010	0.5908	801	26.0	52.0	798	9.0	18.0	797	7.0	14.0	100
EZ7z104	242.00	110.70	0.71	12.800	0.1865	0.0023	13.610	0.220	0.5300	0.0050	0.6110	2711	21.0	42.0	2722	17.0	34.0	2739	22.0	44.0	101
EZ7z105	280.00	25.50	0.78	7.100	0.0603	0.0019	0.870	0.030	0.1100	0.0010	0.2760	615	68.0	136.0	637	18.0	36.0	644	6.0	12.0	101
EZ7z106	88.00	26.40	1.00	10.600	0.1253	0.0023	5.980	0.140	0.3500	0.0040	0.4689	2032	32.0	64.0	1971	22.0	44.0	1916	18.0	36.0	97
EZ7z107	260.00	116.40	0.45	67.500	0.2208	0.0013	15.730	0.190	0.5200	0.0050	0.8212	2986	10.0	20.0	2859	14.0	28.0	2686	22.0	44.0	94
EZ7z109	466.00	70.10	1.47	12.000	0.0729	0.0008	1.750	0.030	0.1700	0.0020	0.5817	1009	23.0	46.0	1025	11.0	22.0	1033	9.0	18.0	101
EZ7z110	487.00	40.00	1.31	14.000	0.0596	0.0008	0.780	0.020	0.0900	0.0010	0.4255	588	27.0	54.0	585	11.0	22.0	584	6.0	12.0	100
EZ7z111c	320.00	45.10	0.63	0.500	0.0732	0.0014	1.650	0.040	0.1600	0.0020	0.4447	1019	39.0	78.0	987	14.0	28.0	974	9.0	18.0	99
EZ7z113	384.00	32.80	1.47	3.200	0.0610	0.0012	0.830	0.020	0.1000	0.0010	0.4576	640	42.0	84.0	614	11.0	22.0	607	6.0	12.0	99
EZ7z114	148.00	47.10	1.02	2.000	0.1289	0.0017	6.520	0.110	0.3700	0.0040	0.6035	2083	23.0	46.0	2047	16.0	32.0	2014	17.0	34.0	98
EZ7z115	631.00	96.90	0.65	1.500	0.0752	0.0010	1.840	0.030	0.1800	0.0020	0.5857	1073	28.0	56.0	1058	12.0	24.0	1052	10.0	20.0	99
EZ7z116c	252.00	24.30	0.08	0.000	0.0628	0.0011	0.970	0.020	0.1100	0.0010	0.5981	700	37.0	74.0	686	11.0	22.0	682	8.0	16.0	99
EZ7z116r	63.00	5.90	0.77	5.300	0.0597	0.0035	0.900	0.080	0.1100	0.0010	0.1346	591	128.0	256.0	649	42.0	84.0	667	8.0	16.0	103
EZ7z117	208.00	31.50	0.57	2.500	0.0745	0.0017	1.800	0.050	0.1700	0.0020	0.4155	1054	46.0	92.0	1043	17.0	34.0	1039	10.0	20.0	100
EZ7z118	806.00	116.20	1.31	31.200	0.0737	0.0004	1.690	0.020	0.1700	0.0020	0.7543	1032	11.0	22.0	1005	9.0	18.0	993	10.0	20.0	99
EZ7z119	505.00	225.40	0.57	0.400	0.1818	0.0009	12.930	0.140	0.5200	0.0050	0.8961	2669	8.0	16.0	2673	12.0	24.0	2682	22.0	44.0	100
EZ7z120	1620.00	515.30	0.34	104.200	0.1306	0.0004	6.620	0.070	0.3700	0.0040	0.9469	2106	5.0	10.0	2060	10.0	20.0	2017	17.0	34.0	98
EZ7z121	207.00	18.20	1.33	0.400	0.0619	0.0015	0.870	0.020	0.1000	0.0010	0.4073	671	53.0	106.0	633	13.0	26.0	623	7.0	14.0	98
EZ7z122	224.00	17.40	0.36	2.400	0.0601	0.0010	0.740	0.020	0.0900	0.0010	0.5200	607	35.0	70.0	563	11.0	22.0	553	7.0	14.0	98
EZ7z123	220.00	61.70	1.39	7.100	0.1157	0.0009	5.170	0.070	0.3200	0.0030	0.7715	1891	14.0	28.0	1847	13.0	26.0	1810	16.0	32.0	98
EZ7z124	548.00	49.80	0.04	10.100	0.0605	0.0008	0.880	0.020	0.1000	0.0010	0.5243	622	27.0	54.0	638	10.0	20.0	643	6.0	12.0	101
EZ7z125	189.00	55.00	0.70	2.400	0.1144	0.0021	5.320	0.110	0.3400	0.0030	0.4761	1870	33.0	66.0	1870	19.0	38.0	1872	16.0	32.0	100
EZ7z126	119.00	12.30	0.35	2.500	0.0634	0.0012	1.040	0.030	0.1200	0.0010	0.4087	721	41.0	82.0	724	15.0	30.0	725	8.0	16.0	100
EZ7z127	456.00	139.70	0.70	6.600	0.1212	0.0010	5.920	0.080	0.3500	0.0040	0.7607	1974	15.0	30.0	1963	13.0	26.0	1954	17.0	34.0	100
EZ7z128	233.00	26.20	0.84	5.400	0.0710	0.0026	1.270	0.050	0.1300	0.0010	0.2619	958	74.0	148.0	832	23.0	46.0	786	8.0	16.0	94
EZ7z130c	505.00	185.90	0.95	15.000	0.1482	0.0009	8.690	0.100	0.4300	0.0040	0.8410	2325	10.0	20.0	2304	12.0	24.0	2284	19.0	38.0	99
EZ7z130r	740.00	219.70	0.22	9.700	0.1180	0.0006	5.580	0.060	0.3400	0.0030	0.8760	1925	9.0	18.0	1912	11.0	22.0	1902	16.0	32.0	99
EZ7z131	55.00	17.30	1.31	5.400	0.1211	0.0029	6.130	0.180	0.3700	0.0050	0.4301	1971	42.0	84.0	1993	26.0	52.0	2016	22.0	44.0	101
EZ7z132	338.00	42.50	0.38	5.500	0.0678	0.0009	1.360	0.030	0.1500	0.0020	0.6027	861	26.0	52.0	870	12.0	24.0	874	9.0	18.0	100
EZ7z133	353.00	30.30	1.63	1.900	0.0597	0.0015	0.810	0.020	0.1000	0.0010	0.4027	591	54.0	108.0	604	13.0	26.0	608	7.0	14.0	101
EZ7z134	88.00	6.50	1.64	0.400	0.0657	0.0026	0.770	0.030	0.0900	0.0010	0.3553	797	82.0	164.0	580	19.0	38.0	526	8.0	16.0	91
EZ7z135	415.00	36.40	0.16	1.400	0.0589	0.0011	0.820	0.020	0.1000	0.0010	0.5079	562	39.0	78.0	608	10.0	20.0	621	6.0	12.0	102
EZ7z136	95.00	8.70	0.95	6.400	0.0564	0.0022	0.820	0.050	0.1100	0.0020	0.2160	467	85.0	170.0	608	30.0	60.0	647	9.0	18.0	106
Discordant data																					
EZ7z100	457.00	69.60	0.42	5.100	0.0928	0.0010	2.250	0.040	0.1800	0.0030	0.7878	1483	21.0	42.0	1197	14.0	28.0	1045	14.0	28.0	87
EZ7z108	116.00	32.70	1.16	0.000	0.1213	0.0079	5.440	0.450	0.3300	0.0160	0.6012	1975	116.0	232.0	1890	69.0	138.0	1816	77.0	154.0	96
EZ7z111r	18.00	1.10	0.19	13.400	-0.0490	-0.0042	-0.480	-0.450	0.0700	0.0020	0.0332	#N/A	#NUM!	#NUM!	-670	-2158.0	-4316.0	446	13.0	26.0	-66
EZ7z112	485.00	89.70	0.70	3.700	0.1109	0.0016	3.270	0.060	0.2100	0.0030	0.6798	1813	25.0	50.0	1473	16.0	32.0	1249	15.0	30.0	85
EZ7z129	311.00	69.80	0.38	10.500	0.1174	0.0015	4.200	0.080	0.2600	0.0040	0.7208	1917	23.0	46.0	1673	17.0	34.0	1488	18.0	36.0	89

Footnotes:

- Analysis references: EZ7z is zircon from sample EZ7 (mount CT19-1), followed by grain number "c" or "r", meaning core or rim, respectively.
- Pb* indicates radiogenic Pb, corrected for common Pb.

Table D.23: Sample OU5 (LA-ICPMS)

IGSN: IEACC0031 Coordinate UTM: Zone 29S, 777396 m E, 3715910 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OU5z1	193.50	161.40	48.30	0.830	6.60E+04	5.70E+04	0.0600	0.0022	0.899	0.034	0.1072	0.0014	0.0189	604	39.5	79.0	651	9.0	18.0	656	4.0	8.0	101
OU5z2	277.50	246.00	68.60	0.890	3.80E+04	7.40E+04	0.0619	0.0020	0.914	0.032	0.1054	0.0013	0.1637	671	34.5	69.0	659	8.5	17.0	646	4.0	8.0	98
OU5z3	151.60	28.53	7.25	0.190	1.00E+05	3.00E+04	0.0560	0.0025	0.710	0.032	0.0904	0.0012	0.1290	452	49.5	99.0	545	9.5	19.0	558	3.5	7.0	102
OU5z6	380.80	506.40	127.50	1.330	1.46E+05	8.10E+04	0.0594	0.0020	0.763	0.027	0.0921	0.0012	0.1764	582	36.5	73.0	576	8.0	16.0	568	3.5	7.0	99
OU5z7	117.80	203.90	55.10	1.730	1.00E+03	2.60E+04	0.0604	0.0025	0.833	0.035	0.0998	0.0014	0.0319	618	44.5	89.0	615	9.5	19.0	613	4.0	8.0	100
OU5z8	174.70	119.90	95.90	0.690	6.00E+05	1.20E+05	0.1048	0.0015	4.433	0.140	0.3044	0.0039	0.2063	1711	13.0	26.0	1719	13.0	26.0	1713	9.5	19.0	100
OU5z9	75.55	45.47	13.10	0.600	4.30E+04	2.20E+04	0.0624	0.0031	0.909	0.047	0.1043	0.0016	0.1828	688	53.0	106.0	657	12.5	25.0	640	4.5	9.0	97
OU5z10	453.20	201.50	112.90	0.440	1.90E+05	2.00E+05	0.0799	0.0023	2.353	0.073	0.2109	0.0025	0.2992	1195	28.5	57.0	1228	11.0	22.0	1234	6.5	13.0	100
OU5z11	312.20	220.40	62.80	0.710	2.30E+04	6.10E+04	0.0595	0.0020	0.853	0.030	0.1036	0.0013	0.0372	585	36.5	73.0	626	8.0	16.0	636	4.0	8.0	101
OU5z12	407.80	210.50	74.00	0.520	-9.00E+05	1.00E+05	0.0654	0.0020	1.184	0.039	0.1294	0.0015	0.1300	787	32.0	64.0	793	9.0	18.0	784	4.5	9.0	99
OU5z13	465.00	357.00	112.40	0.770	7.00E+05	1.10E+05	0.0624	0.0020	0.946	0.032	0.1093	0.0013	0.2034	688	34.0	68.0	676	8.5	17.0	669	4.0	8.0	99
OU5z14	124.40	73.50	66.90	0.590	2.80E+05	1.20E+05	0.1115	0.0018	5.262	0.170	0.3381	0.0043	0.1636	1824	14.5	29.0	1863	14.0	28.0	1878	10.5	21.0	101
OU5z15	121.90	87.00	22.20	0.710	1.00E+05	2.10E+04	0.0597	0.0028	0.787	0.037	0.0949	0.0014	-0.0171	593	51.0	102.0	589	10.5	21.0	584	4.0	8.0	99
OU5z16	40.67	16.34	8.82	0.400	1.40E+04	1.50E+04	0.0789	0.0036	2.142	0.099	0.1978	0.0033	0.0472	1170	45.0	90.0	1162	16.0	32.0	1163	9.0	18.0	100
OU5z17	143.40	76.24	25.03	0.530	4.30E+04	3.40E+04	0.0628	0.0026	0.971	0.041	0.1111	0.0015	-0.0456	701	44.0	88.0	689	10.5	21.0	679	4.5	9.0	99
OU5z18	95.60	189.00	186.30	1.980	3.20E+04	6.80E+04	0.1242	0.0020	6.580	0.210	0.3810	0.0049	0.2200	2017	14.5	29.0	2057	14.0	28.0	2081	11.5	23.0	101
OU5z20	197.70	106.10	144.40	0.540	1.00E+03	2.00E+05	0.1980	0.0017	14.800	0.440	0.5342	0.0066	0.5651	2810	7.0	14.0	2802	14.0	28.0	2759	14.0	28.0	98
OU5z21	71.25	58.61	61.87	0.820	9.10E+04	6.70E+04	0.1341	0.0025	7.560	0.250	0.4048	0.0053	0.2452	2152	16.5	33.0	2180	15.0	30.0	2191	12.0	24.0	101
OU5z22	247.00	151.70	141.40	0.610	4.10E+05	3.00E+05	0.1219	0.0014	5.927	0.180	0.3500	0.0046	0.4701	1984	10.0	20.0	1965	13.0	26.0	1935	11.0	22.0	98
OU5z23	107.90	40.29	17.15	0.370	1.20E+04	3.20E+04	0.0677	0.0026	1.440	0.058	0.1537	0.0021	-0.0190	859	40.0	80.0	906	12.0	24.0	922	6.0	12.0	102
OU5z24	85.00	118.70	109.60	1.400	1.18E+05	6.20E+04	0.1177	0.0023	5.700	0.190	0.3485	0.0046	0.1822	1922	17.5	35.0	1931	14.5	29.0	1927	11.0	22.0	100
OU5z25	98.20	84.60	31.86	0.860	4.40E+04	2.70E+04	0.0648	0.0027	1.240	0.056	0.1372	0.0020	0.1851	768	44.0	88.0	819	12.5	25.0	829	5.5	11.0	101
OU5z26	39.03	28.61	8.51	0.730	5.00E+03	6.20E+03	0.0640	0.0045	0.888	0.061	0.1036	0.0019	-0.0381	742	74.5	149.0	645	16.5	33.0	635	5.5	11.0	98
OU5z27	300.60	169.80	165.20	0.560	1.40E+05	1.70E+05	0.1334	0.0014	7.342	0.220	0.3942	0.0047	0.3990	2143	9.0	18.0	2154	13.5	27.0	2142	11.0	22.0	99
OU5z29	375.00	318.20	99.20	0.850	5.50E+04	5.80E+04	0.0629	0.0022	0.877	0.031	0.1036	0.0013	0.0244	705	37.0	74.0	639	8.5	17.0	635	4.0	8.0	99
OU5z30	307.00	145.10	77.40	0.470	-8.30E+04	3.00E+04	0.1107	0.0045	1.453	0.063	0.0975	0.0013	0.2919	1811	37.0	74.0	911	13.0	26.0	600	4.0	8.0	66
OU5z31	84.23	242.70	105.10	2.880	6.20E+04	2.80E+04	0.0745	0.0031	1.554	0.064	0.1560	0.0022	0.0091	1055	42.0	84.0	952	12.5	25.0	935	6.0	12.0	98
OU5z32	90.40	74.10	19.31	0.820	4.00E+04	1.20E+04	0.0599	0.0030	0.745	0.038	0.0920	0.0015	0.0588	600	54.0	108.0	565	11.0	22.0	567	4.5	9.0	100
OU5z33	114.10	60.86	57.11	0.530	-1.00E+04	5.30E+04	0.1224	0.0022	5.270	0.180	0.3101	0.0052	0.4332	1992	16.0	32.0	1864	14.5	29.0	1741	13.0	26.0	93
OU5z34	228.40	225.10	65.00	0.990	5.00E+04	3.20E+04	0.0616	0.0023	0.853	0.034	0.1028	0.0014	0.1140	660	40.0	80.0	626	9.5	19.0	631	4.0	8.0	101
OU5z35	300.10	67.80	73.80	0.230	4.20E+05	2.30E+05	0.1583	0.0013	9.202	0.270	0.4193	0.0052	0.5996	2438	7.0	14.0	2358	13.5	27.0	2257	12.0	24.0	96
OU5z36	54.58	40.75	13.58	0.750	5.10E+03	9.50E+03	0.0702	0.0038	1.036	0.057	0.1103	0.0019	0.0876	934	55.5	111.0	722	14.0	28.0	674	5.5	11.0	93
OU5z37	289.40	368.40	98.20	1.270	1.90E+04	3.50E+04	0.0608	0.0022	0.772	0.029	0.0943	0.0012	0.1321	632	39.0	78.0	581	8.5	17.0	581	3.5	7.0	100
OU5z38	408.00	288.00	80.40	0.710	1.60E+04	5.40E+04	0.0632	0.0020	0.858	0.029	0.1021	0.0012	0.3768	715	33.5	67.0	629	8.0	16.0	626	3.5	7.0	100
OU5z39	99.62	186.20	93.80	1.870	6.50E+04	3.60E+04	0.0807	0.0028	2.014	0.073	0.1863	0.0025	0.0113	1214	34.0	68.0	1120	12.5	25.0	1101	7.0	14.0	98
OU5z40	350.00	481.00	150.60	1.370	-5.20E+04	4.20E+04	0.0636	0.0021	0.905	0.032	0.1049	0.0014	0.1387	728	35.0	70.0	654	8.5	17.0	643	4.0	8.0	98
OU5z41	468.00	433.60	476.80	0.930	0.00E+00	2.80E+05	0.1407	0.0012	8.050	0.240	0.4115	0.0048	0.4744	2236	7.5	15.0	2237	13.5	27.0	2222	11.0	22.0	99
OU5z42	313.10	289.30	84.60	0.920	-1.70E+04	3.60E+04	0.0628	0.0022	0.857	0.032	0.1030	0.0013	0.1483	701	37.5	75.0	628	8.5	17.0	632	4.0	8.0	101
OU5z43	61.45	41.75	11.66	0.680	1.09E+04	9.00E+03	0.0583	0.0033	0.779	0.045	0.0992	0.0017	0.1214	541	62.0	124.0	585	13.0	26.0	610	5.0	10.0	104
OU5z44	471.00	664.00	567.00	1.410	7.70E+05	2.70E+05	0.1127	0.0011	5.051	0.150	0.3223	0.0040	0.4491	1843	9.0	18.0	1828	12.5	25.0	1801	10.0	20.0	99
OU5z45	62.36	51.62	51.68	0.830	5.30E+04	3.70E+04	0.1291	0.0022	6.800	0.220	0.3831	0.0052	0.2923	2086	15.0	30.0	2086	14.5	29.0	2091	12.0	24.0	100
OU5z46	236.60	82.20	56.59	0.350	1.07E+05	8.50E+04	0.0947	0.0028	3.190	0.100	0.2511	0.0030	0.2483	1522	28.0	56.0	1455	12.0	24.0	1444	7.5	15.0	99
OU5z47	296.90	278.00	141.40	0.940	1.37E+05	8.30E+04	0.0822	0.0027	1.946	0.062	0.1782	0.0025	-0.1613	1250	32.0	64.0	1097	10.5	21.0	1057	7.0	14.0	96
OU5z48	87.06	33.04	25.09	0.380	9.50E+04	3.80E+04	0.0970	0.0019	3.770	0.130	0.2803	0.0036	0.2279	1567	18.5	37.0	1586	14.0	28.0	1593	9.0	18.0	100
OU5z49	209.20	175.20	51.40	0.840	8.00E+04	2.80E+04	0.0610	0.0022	0.832	0.032	0.1028	0.0013	0.0624	639	39.0	78.0	615	9.0	18.0	631	4.0	8.0	103
OU5z51	168.80	31.07	11.98	0.180	1.15E+05	3.70E+04	0.0674	0.0024	1.081	0.042	0.1198	0.0016	0.1721	850	37.0	74.0	744	10.0	20.0	729	4.5	9.0	98
OU5z52	231.40	184.00	51.80	0.800	1.26E+05	6.00E+04	0.0622	0.0023	0.818	0.032	0.0985	0.0014	0.1577	681	39.5	79.0	607	9.0	18.0	606	4.0	8.0	100
OU5z54	145.90	56.30	27.21	0.390	1.70E+05	7.10E+04	0.0752	0.0025	1.747	0.061	0.1719	0.0022	0.0813	1074	33.5	67.0	1026	11.5	23.0	1023	6.0	12.0	100
OU5z56	373.30	252.90	266.90	0.680	4.10E+05	2.00E+05	0.1310	0.0012	7.202	0.210	0.3956	0.0045	0.3527	2111	8.0	16.0	2137	13.0	26.0	2149	10.5	21.0	101
OU5z57	241.50	73.00	34.30	0.300	2.50E+04	3.90E+04	0.0738	0.0024	1.427	0.049	0.1430	0.0020	0.2356	1036	33.0	66.0	900	10.0	20.0	862	5.5	11.0	96
OU5z58	411.00	291.60	82.80	0.710	9.70E+04	5.20E+04	0.0613	0.0019	0.858	0.030	0.1031	0.0013	0.3791	650	33.5	67.0	629	8.0	16.0	632	4.0	8.0	101
OU5z59	403.10	196.30	69.10	0.490	2.85E+05	8.70E+04	0.0654	0.0020	1.098	0.036	0.1225	0.0015	0.0936	787	32.0	64.0	752	8.5	17.0	745	4.5	9.0	99
OU5z60	293.10	245.60	76.10	0.840	1.61E+05	5.10E+04	0.0633	0.0022	0.906	0.032	0.1051	0.0013	0.1443	718	37.0	74.0	655	8.5	17.0	644	4.0	8.0	98
OU5z61	99.10	63.05	31.55	0.640	2.70E+04	2.60E+04	0.0742	0.0029	1.698	0.068	0.1675	0.0023	0.1445	1047	39.5	79.0	1008	13.0	26.0	998	6.5	13.0	99
OU5z62	141.90	105.90	134.00	0.750	1.80E+05	1.40E+05	0.1569	0.0019	10.290	0.330	0.4744	0.0063	0.5677	2423	10.5	21.0	2461	15.0	30.0	2503	14.0	28.0	102
OU5z63	377.90	371.40	377.80	0.980	9.20E+05	3.40E+05	0.1325	0.0011	7.156	0.210	0.3875	0.0045	0.4363	2131	7.5	15.0	2131	13.0	26.0	2111	10.5	21.0	99
OU5z64	261.90	206.40	233.20	0.790	1.50E+05	1.40E+05	0.1519	0.0015	9.062	0.270	0.4288	0.0051	0.4462	2367	8.5	17.0	2344	13.5	27.0	2300	11.5	23.0	98
OU5z65	207.20	193.10	78.70	0.930	1.80E+04	3.40E+04	0.0675	0.0024	1.299	0.048	0.1404	0.0018	0.1974	853	37.0	74.0	845	10.5	21.0	847	5.0	10.0	100
OU5z66	292.40	157.60	73.50	0.540	5.00E+04	5.90E+04	0.0707	0.0022	1.605	0.053	0.1654	0.0020	0.1086	949	32.0	64.0	972	10.5	21.0	987	5.5	11.0	101
OU5z67	66.10	132.90	41.76	2.010	3.20E+04	1.30E+04	0.0613	0.0032	0.903	0.048	0.1071	0.0016	0.1047	650	56.0	112.0	653	13.0	26.0	656	4.5	9.0	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OU5z68	121.80	73.20	50.00	0.600	1.57E+05	9.10E+04	0.0963	0.0031	3.461	0.120	0.2569	0.0032	0.1651	1554	30.0	60.0	1518	13.5	27.0	1474	8.0	16.0	97
OU5z69	284.90	225.40	227.80	0.790	5.00E+05	1.30E+05	0.1314	0.0013	7.004	0.210	0.3859	0.0044	0.4222	2117	8.5	17.0	2112	13.5	27.0	2104	10.0	20.0	100
OU5z70	270.40	347.00	331.90	1.280	1.98E+06	8.70E+05	0.1278	0.0013	6.312	0.190	0.3570	0.0047	0.5268	2068	9.0	18.0	2020	13.0	26.0	1968	11.0	22.0	97
OU5z71	66.50	72.40	36.60	1.090	3.50E+04	2.10E+04	0.0806	0.0033	1.915	0.084	0.1715	0.0026	0.2743	1212	40.5	81.0	1086	14.5	29.0	1020	7.0	14.0	94
OU5z72	213.00	70.90	19.80	0.330	7.50E+04	3.80E+04	0.0603	0.0022	0.905	0.034	0.1086	0.0014	0.1748	614	39.5	79.0	654	9.0	18.0	664	4.0	8.0	102
OU5z73	72.70	14.89	4.16	0.200	-1.90E+04	9.80E+04	0.0570	0.0032	0.738	0.041	0.0916	0.0015	0.0780	492	62.0	124.0	561	12.0	24.0	565	4.5	9.0	101
OU5z74	73.30	101.70	30.17	1.390	1.16E+04	8.80E+03	0.0586	0.0032	0.828	0.045	0.1013	0.0017	0.0664	552	59.5	119.0	613	12.5	25.0	622	5.0	10.0	102
OU5z75	639.00	569.00	170.30	0.890	1.32E+05	7.70E+04	0.0628	0.0019	0.917	0.029	0.1038	0.0012	0.1895	702	32.0	64.0	661	7.5	15.0	637	3.5	7.0	96
OU5z76	476.00	343.00	318.00	0.720	4.60E+05	3.10E+05	0.1750	0.0021	10.210	0.340	0.4195	0.0060	0.7626	2606	10.0	20.0	2454	15.5	31.0	2258	13.5	27.0	92
OU5z77	91.00	52.90	54.80	0.580	-3.90E+04	2.30E+04	0.1370	0.0023	7.700	0.240	0.4028	0.0051	0.1245	2190	14.5	29.0	2197	14.0	28.0	2182	11.5	23.0	99
OU5z78	264.10	201.40	54.44	0.760	9.00E+04	4.70E+04	0.0594	0.0022	0.778	0.030	0.0913	0.0011	0.1960	582	40.0	80.0	584	8.5	17.0	563	3.0	6.0	96
OU5z79	393.00	760.00	846.00	1.930	2.40E+05	2.50E+05	0.1471	0.0013	8.368	0.250	0.4094	0.0048	0.5292	2312	7.5	15.0	2272	13.5	27.0	2212	11.0	22.0	97
OU5z81	371.40	487.70	136.50	1.310	4.60E+05	1.50E+05	0.0585	0.0018	0.879	0.030	0.1047	0.0013	0.2950	549	33.5	67.0	640	8.0	16.0	642	4.0	8.0	100
OU5z82	153.50	136.60	50.90	0.890	4.10E+04	2.80E+04	0.0657	0.0023	1.307	0.048	0.1394	0.0018	0.0458	797	36.5	73.0	849	10.5	21.0	841	5.0	10.0	99
OU5z83	65.70	71.90	71.70	1.090	4.60E+04	2.90E+04	0.1240	0.0026	6.560	0.230	0.3802	0.0050	0.2762	2015	18.5	37.0	2054	15.5	31.0	2077	11.5	23.0	101
OU5z84	10.43	610.00	215.10	58.490	1.50E+03	1.30E+03	0.0635	0.0063	1.080	0.110	0.1208	0.0036	0.0875	725	105.0	210.0	744	27.0	54.0	735	10.5	21.0	99
OU5z85	270.30	100.00	31.94	0.370	2.45E+05	7.80E+04	0.0602	0.0021	0.933	0.035	0.1077	0.0015	0.2892	611	37.5	75.0	669	9.0	18.0	659	4.5	9.0	99
OU5z86	190.30	140.20	39.20	0.740	1.06E+05	4.40E+04	0.0602	0.0022	0.869	0.033	0.1016	0.0013	0.0461	611	39.5	79.0	635	9.0	18.0	624	4.0	8.0	98
OU5z87	311.40	222.30	199.20	0.710	3.30E+05	1.40E+05	0.1262	0.0014	5.758	0.170	0.3297	0.0043	0.4235	2046	10.0	20.0	1940	13.0	26.0	1837	10.5	21.0	95
OU5z88	394.10	228.90	190.00	0.580	4.40E+05	2.00E+05	0.1296	0.0012	6.572	0.200	0.3669	0.0053	0.7226	2093	8.0	16.0	2056	13.5	27.0	2015	12.5	25.0	98
OU5z89	386.10	289.70	84.40	0.750	6.80E+05	1.80E+05	0.0596	0.0019	0.892	0.030	0.1050	0.0013	0.2225	589	34.5	69.0	647	8.0	16.0	643	4.0	8.0	99
OU5z90	304.50	297.40	84.60	0.980	1.50E+05	6.00E+04	0.0589	0.0020	0.856	0.031	0.1017	0.0014	0.1718	563	37.0	74.0	628	8.5	17.0	624	4.0	8.0	99
OU5z91	281.70	170.60	175.10	0.610	6.10E+05	1.90E+05	0.1329	0.0014	7.317	0.220	0.3980	0.0047	0.2936	2137	9.0	18.0	2151	13.5	27.0	2160	11.0	22.0	100
OU5z92	152.90	67.40	57.40	0.440	1.99E+05	9.90E+04	0.1308	0.0017	6.721	0.210	0.3701	0.0047	0.3639	2109	11.5	23.0	2075	14.0	28.0	2030	11.0	22.0	98
OU5z93	421.00	18.39	15.89	0.040	2.80E+05	1.70E+05	0.1268	0.0011	6.673	0.200	0.3805	0.0044	0.4876	2054	7.5	15.0	2069	13.0	26.0	2079	10.5	21.0	100
OU5z94	70.80	31.97	34.79	0.450	7.30E+04	4.40E+04	0.1427	0.0026	8.510	0.280	0.4288	0.0051	0.0703	2260	15.5	31.0	2287	15.0	30.0	2300	11.5	23.0	101
OU5z96	103.80	31.55	8.22	0.300	-2.35E+05	8.30E+04	0.0597	0.0029	0.809	0.039	0.0953	0.0014	-0.0182	593	52.5	105.0	602	11.0	22.0	587	4.0	8.0	97
OU5z97	436.90	93.10	24.40	0.210	3.10E+05	1.10E+05	0.0597	0.0019	0.797	0.026	0.0938	0.0012	0.1295	593	34.5	69.0	595	7.5	15.0	578	3.5	7.0	97
OU5z98c	206.40	144.50	114.40	0.700	3.70E+05	1.10E+05	0.1026	0.0016	3.759	0.120	0.2641	0.0034	0.1798	1672	14.5	29.0	1584	13.0	26.0	1511	8.5	17.0	95
OU5z98r	424.90	127.40	34.26	0.300	5.20E+05	1.60E+05	0.0581	0.0019	0.790	0.027	0.0958	0.0012	0.1801	534	36.0	72.0	591	7.5	15.0	590	3.5	7.0	100
OU5z99	683.00	107.90	36.70	0.160	-2.10E+04	5.80E+04	0.0652	0.0020	1.003	0.032	0.1070	0.0013	0.0306	781	32.0	64.0	705	8.0	16.0	656	4.0	8.0	93
OU5z100	169.80	274.90	85.40	1.620	3.00E+04	1.90E+04	0.0610	0.0023	0.995	0.039	0.1133	0.0015	0.0503	639	40.5	81.0	701	10.0	20.0	692	4.5	9.0	99
OU5z101c	218.10	547.00	147.70	2.510	3.50E+04	2.30E+04	0.0648	0.0025	0.842	0.035	0.0928	0.0012	0.1765	768	40.5	81.0	620	9.5	19.0	572	3.5	7.0	92
OU5z101r	167.20	272.00	68.91	1.630	1.40E+04	1.40E+04	0.0626	0.0025	0.807	0.033	0.0911	0.0012	0.0896	695	42.5	85.0	601	9.5	19.0	562	3.5	7.0	94
OU5z102	53.30	68.60	21.65	1.290	5.30E+03	5.00E+03	0.0624	0.0036	1.014	0.057	0.1152	0.0020	-0.0329	688	61.5	123.0	711	14.5	29.0	703	6.0	12.0	99
OU5z103	594.00	230.60	52.50	0.390	9.30E+04	5.20E+04	0.0565	0.0018	0.659	0.022	0.0824	0.0010	0.1893	472	35.0	70.0	514	6.5	13.0	510	3.0	6.0	99
OU5z104	384.10	195.20	54.46	0.510	1.70E+05	7.00E+04	0.0605	0.0019	0.881	0.031	0.1028	0.0013	0.2532	622	34.0	68.0	642	8.5	17.0	631	4.0	8.0	98
OU5z105	174.40	96.80	27.60	0.560	9.20E+04	4.20E+04	0.0599	0.0024	0.809	0.033	0.0963	0.0013	0.0616	600	43.5	87.0	602	9.5	19.0	593	4.0	8.0	98
OU5z106	66.10	41.80	12.51	0.630	-1.79E+05	8.70E+04	0.0616	0.0030	0.911	0.045	0.1040	0.0017	0.1540	660	52.0	104.0	658	12.0	24.0	638	5.0	10.0	97
OU5z107	362.80	158.00	47.30	0.440	1.36E+05	8.40E+04	0.0625	0.0020	0.976	0.033	0.1111	0.0014	0.2132	691	34.0	68.0	692	8.5	17.0	679	4.0	8.0	98
OU5z108	303.70	345.30	349.00	1.140	-7.40E+05	3.00E+05	0.1298	0.0013	7.029	0.210	0.3900	0.0049	0.4911	2095	9.0	18.0	2115	13.5	27.0	2123	11.5	23.0	100
OU5z109	377.00	192.40	56.50	0.510	1.36E+05	4.60E+04	0.0597	0.0019	0.871	0.030	0.1031	0.0013	0.3202	593	34.5	69.0	636	8.0	16.0	633	4.0	8.0	99
OU5z110	481.00	462.00	117.80	0.960	1.98E+05	7.90E+04	0.0651	0.0022	0.843	0.028	0.0915	0.0012	-0.1072	778	35.5	71.0	621	7.5	15.0	564	3.5	7.0	91
OU5z111	114.27	71.66	21.12	0.630	2.00E+05	2.90E+05	0.0598	0.0026	0.879	0.040	0.1045	0.0014	0.0031	596	47.0	94.0	640	11.0	22.0	641	4.0	8.0	100
OU5z112	44.49	17.15	8.56	0.390	9.90E+04	3.00E+04	0.0732	0.0039	1.777	0.097	0.1731	0.0028	0.0695	1019	54.0	108.0	1037	17.5	35.0	1029	7.5	15.0	99
OU5z113	351.00	249.90	263.40	0.710	-5.70E+05	2.50E+05	0.1468	0.0013	8.175	0.240	0.4025	0.0053	0.6232	2309	7.5	15.0	2251	13.5	27.0	2181	12.0	24.0	97
OU5z115	532.20	286.50	330.00	0.540	-1.91E+05	7.30E+04	0.1377	0.0021	7.240	0.240	0.3796	0.0044	0.7120	2198	13.0	26.0	2141	15.0	30.0	2074	10.5	21.0	97
OU5z116	141.50	112.70	101.80	0.800	3.40E+05	1.10E+05	0.1303	0.0017	6.790	0.210	0.3755	0.0046	0.3774	2102	11.5	23.0	2084	13.5	27.0	2055	11.0	22.0	99
OU5z117	309.50	309.70	88.70	1.000	-4.00E+05	1.40E+05	0.0589	0.0020	0.796	0.028	0.0974	0.0012	0.1184	563	37.0	74.0	595	8.0	16.0	599	3.5	7.0	101
OU5z118	76.70	82.00	20.63	1.070	2.07E+04	8.40E+03	0.0562	0.0032	0.702	0.040	0.0894	0.0015	-0.0551	460	63.0	126.0	540	12.0	24.0	552	4.5	9.0	102
OU5z119	340.20	287.90	100.60	0.850	1.19E+05	6.30E+04	0.0640	0.0020	1.101	0.037	0.1236	0.0015	0.2837	742	33.0	66.0	754	9.0	18.0	751	4.5	9.0	100
OU5z120	248.20	237.20	69.55	0.960	1.06E+05	4.10E+04	0.0611	0.0021	0.866	0.031	0.1035	0.0013	0.1232	643	37.0	74.0	633	8.5	17.0	635	4.0	8.0	100
OU5z121	343.00	542.00	340.00	1.580	1.06E+06	4.10E+05	0.0849	0.0025	2.608	0.082	0.2230	0.0027	0.3506	1313	28.5	57.0	1303	11.5	23.0	1298	7.0	14.0	100
OU5z122	146.20	93.20	115.70	0.640	-4.00E+06	2.20E+06	0.1653	0.0016	11.110	0.330	0.4836	0.0055	0.3309	2511	8.0	16.0	2532	14.0	28.0	2543	12.0	24.0	100
OU5z124	229.00	316.70	90.10	1.380	5.00E+04	2.30E+04	0.0612	0.0022	0.827	0.031	0.0984	0.0012	0.0971	646	38.5	77.0	612	8.5	17.0	605	3.5	7.0	99
OU5z125	33.19	26.20	8.87	0.790	5.40E+03	3.70E+03	0.0608	0.0040	1.006	0.067	0.1218	0.0021	0.1117	632	71.0	142.0	707	17.0	34.0	741	6.0	12.0	105
OU5z126	228.90	132.30	50.81	0.580	1.58E+05	5.00E+04	0.0675	0.0022	1.237	0.043	0.1332	0.0017	0.1421	853	34.0	68.0	818	10.0	20.0	806	5.0	10.0	99
OU5z127	93.90	84.20	86.30	0.900	6.20E+06	8.50E+06	0.1282	0.0020	6.880	0.220	0.3852	0.0046	0.1674	2073	13.5	27.0	2096	14.0	28.0	2101	10.5	21.0	100
OU5z128	329.90	669.70	188.00	2.030	1.57E+05	7.40E+04	0.0626	0.0021	0.829	0.029	0.0967	0.0012	0.1213	695	35.5	71.0	613	8.0	16.0	595	3.5	7.0	97
OU5z129	195.60	72.30	81.17	0.370	8.70E+04	7.30E+04	0.1698	0.0017	9.700	0.290	0.4154	0.0055	0.5732	2556	8.5	17.0	2407	13.5	27.0	2240	12.5	25.0	93
OU5z130	262.80	361.00	340.00	1.370	3.70E+05	1.30E+05	0.1152	0.0013	5.551	0.170	0.3479	0.0043	0.3239	1883	10.0	20.0	1909	13.0	26.0	1925	10.5	21.0	101
OU5z131	539.00	523.00	563.00	0.970	1.05E+06	4.40E+05	0.1348	0.0011	7.378	0.210	0.3952	0.0045	0.2407	2161	7.0	14.0	2158	12.5	25.0	2147	10.5	21.0	99
OU5z133	555.30	119.70	35.42	0.220	6.60E+05	1.90E+05	0.0612	0.0019	0.820	0.027	0.0989	0.0012	0.0850	646	33.5	67.0	608	7.5	15.0	608	3.5	7.0	100
OU5z134	187.20	90.50	95.90	0.480	-4.10E+05	1.70E+05	0.1309	0.0015	7.214	0.220	0.3980	0.0049	0.4514	2110	10.0	20.0	2138	13.5	27.0	2160	11.5	23.0	101
OU5z136	66.00	52.20	16.65	0.790	-6.80E+04	2.30E+04	0.0618	0.0031	0.888	0.046	0.1059	0.0016	0.1691	667	53.5	107.0	645	12.5	25.0	649	4.5	9.0	101
OU5z137	140.20	134.70	120.70	0.960	1.27E+05	5.50E+04	0.1125	0.0017	5.137	0.160	0.3303	0.0041	0.2148	1840	13.5	27.0	1842	13.0	26.0	1840	10.0	20.0	100
OU5z138	84.00	52.10	39.22	0.620	4.70E+04	1.70E+04	0.0953	0.0019	3.586	0.120	0.2718	0.0036	0.2333	1534	19.0	38.0	1546	13.5	27.0	1550	9.0	18.0	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OU5z139	119.60	474.10	629.20	3.960	4.80E+04	5.60E+04	0.1828	0.0020	12.770	0.380	0.5060	0.0060	0.3757	2678	9.0	18.0	2663	14.0	28.0	2640	13.0	26.0	99
OU5z140	163.70	198.70	56.90	1.210	9.80E+04	3.40E+04	0.0622	0.0024	0.826	0.034	0.0963	0.0013	0.0623	681	41.0	82.0	611	9.5	19.0	593	4.0	8.0	97
OU5z141	147.00	51.10	15.78	0.350	4.70E+05	2.60E+05	0.0599	0.0027	0.845	0.038	0.1035	0.0014	-0.0887	600	49.0	98.0	622	10.5	21.0	635	4.0	8.0	102
OU5z142	29.34	40.20	11.94	1.370	-6.00E+02	2.40E+03	0.0559	0.0044	0.825	0.063	0.1058	0.0022	-0.0219	448	87.5	175.0	611	17.5	35.0	648	6.5	13.0	106
OU5z143	204.10	232.10	247.00	1.140	-1.14E+06	3.80E+05	0.1281	0.0014	6.941	0.210	0.3918	0.0046	0.3601	2072	9.5	19.0	2104	13.5	27.0	2131	10.5	21.0	101
OU5z144	182.90	207.80	62.10	1.140	-4.90E+04	2.80E+04	0.0616	0.0024	0.803	0.033	0.0961	0.0013	0.1877	660	42.0	84.0	599	9.5	19.0	592	4.0	8.0	99
OU5z145	48.03	42.98	12.36	0.890	-4.60E+04	1.50E+04	0.0628	0.0038	0.811	0.050	0.0948	0.0017	0.0510	701	64.5	129.0	603	14.0	28.0	584	5.0	10.0	97
OU5z147	576.00	584.00	191.60	1.010	1.58E+05	9.00E+04	0.0706	0.0022	0.991	0.032	0.1034	0.0014	0.2234	946	32.0	64.0	699	8.0	16.0	634	4.0	8.0	91
OU5z148	315.50	305.00	358.60	0.970	3.50E+05	1.30E+05	0.1370	0.0012	8.000	0.230	0.4238	0.0049	0.3830	2190	7.5	15.0	2231	13.0	26.0	2278	11.0	22.0	102
Discordant data																							
OU5z4	571.00	963.00	92.10	1.690	-1.20E+04	9.50E+04	0.0730	0.0023	0.832	0.028	0.0814	0.0013	0.3434	1014	32.0	64.0	615	8.0	16.0	504	4.0	8.0	82
OU5z5	341.50	62.30	42.10	0.180	7.00E+05	1.20E+05	0.1263	0.0042	2.900	0.140	0.1646	0.0038	0.8868	2047	29.5	59.0	1382	18.0	36.0	982	10.5	21.0	71
OU5z19	256.60	231.00	82.80	0.900	1.30E+04	4.40E+04	0.0853	0.0035	1.167	0.047	0.0984	0.0014	-0.2001	1322	39.5	79.0	785	11.0	22.0	605	4.0	8.0	77
OU5z28	88.80	72.20	44.10	0.810	-2.00E+04	2.00E+04	0.1380	0.0120	2.470	0.270	0.1279	0.0029	0.8311	2202	75.5	151.0	1263	39.5	79.0	776	8.5	17.0	61
OU5z50	65.81	101.30	32.42	1.540	9.50E+03	8.60E+03	0.0855	0.0052	1.177	0.078	0.1024	0.0018	0.3659	1327	59.0	118.0	790	18.0	36.0	628	5.5	11.0	80
OU5z53	188.00	11.66	10.77	0.060	4.20E+05	1.50E+05	0.0960	0.0030	2.050	0.070	0.1580	0.0021	0.4052	1548	29.5	59.0	1132	11.5	23.0	946	6.0	12.0	84
OU5z55	69.40	27.41	16.70	0.390	1.20E+04	1.00E+04	0.1080	0.0120	1.470	0.180	0.0983	0.0020	0.7220	1766	101.5	203.0	918	37.0	74.0	604	6.0	12.0	66
OU5z80	325.00	317.00	118.30	0.980	-8.40E+05	3.70E+05	0.1148	0.0034	3.083	0.110	0.1946	0.0049	0.8229	1877	26.5	53.0	1428	13.5	27.0	1146	13.0	26.0	80
OU5z95	432.20	69.20	51.71	0.160	4.50E+05	2.70E+05	0.1029	0.0028	3.246	0.100	0.2204	0.0030	0.6780	1677	25.0	50.0	1468	12.0	24.0	1284	8.0	16.0	87
OU5z114	290.80	97.10	96.90	0.330	1.50E+05	1.50E+05	0.1223	0.0035	4.327	0.130	0.2563	0.0031	0.4076	1990	25.5	51.0	1699	12.5	25.0	1471	8.0	16.0	87
OU5z123	624.00	945.30	214.00	1.510	-6.40E+04	2.60E+04	0.1077	0.0033	1.271	0.040	0.0860	0.0013	0.2284	1761	28.0	56.0	833	9.0	18.0	532	4.0	8.0	64
OU5z132	531.00	430.00	144.30	0.810	-2.11E+05	8.80E+04	0.0749	0.0028	1.089	0.045	0.1069	0.0013	0.3680	1066	37.5	75.0	748	11.0	22.0	655	4.0	8.0	88
OU5z135	1387.00	295.00	302.00	0.210	-3.02E+05	9.30E+04	0.1387	0.0037	4.889	0.160	0.2575	0.0053	0.8394	2211	23.0	46.0	1800	14.0	28.0	1477	13.5	27.0	82
OU5z146	240.40	417.00	89.10	1.730	-4.90E+05	1.80E+05	0.0746	0.0027	0.995	0.036	0.0967	0.0013	-0.0233	1058	36.5	73.0	701	9.0	18.0	595	4.0	8.0	85

Footnotes:

- Analysis references: OU5z is zircon from sample OU5 (mount CT19-1), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.24a: Sample AZR11 (LA-ICPMS)

IGSN: IEACC0030 Coordinate UTM: Zone 30S, 252046 m E, 3643326 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AZR11z1	130.10	110.40	96.40	0.850	-1.63E+05	6.00E+04	0.1089	0.0015	4.939	0.130	0.3262	0.0030	0.2581	1781	12.5	25.0	1809	11.0	22.0	1820	7.5	15.0	101
AZR11z2	31.96	45.20	11.67	1.410	-1.23E+04	6.20E+03	0.0596	0.0042	0.770	0.052	0.0921	0.0016	0.0461	589	76.5	153.0	580	15.0	30.0	568	4.5	9.0	98
AZR11z3	285.00	135.80	141.70	0.480	-2.60E+05	1.50E+05	0.1310	0.0010	7.112	0.170	0.3876	0.0032	0.4480	2111	6.5	13.0	2126	10.5	21.0	2112	7.5	15.0	99
AZR11z4	439.00	14.00	10.10	0.030	-1.66E+05	8.20E+04	0.0649	0.0024	0.835	0.025	0.0924	0.0010	-0.0225	771	39.0	78.0	616	7.0	14.0	569	3.0	6.0	92
AZR11z5	106.20	108.30	27.78	1.020	1.33E+05	5.00E+04	0.0585	0.0026	0.760	0.031	0.0909	0.0011	0.0022	549	48.5	97.0	574	9.0	18.0	561	3.5	7.0	98
AZR11z6	173.00	97.10	29.50	0.560	2.50E+05	1.90E+05	0.0623	0.0024	0.904	0.029	0.1045	0.0012	0.0888	684	41.0	82.0	654	7.5	15.0	641	3.5	7.0	98
AZR11z7	199.00	82.80	25.08	0.420	-8.00E+05	4.00E+05	0.0595	0.0023	0.910	0.031	0.1098	0.0011	0.0492	585	42.0	84.0	657	8.0	16.0	672	3.0	6.0	102
AZR11z8	91.00	84.30	73.60	0.930	-1.05E+05	3.80E+04	0.1117	0.0018	5.004	0.140	0.3220	0.0030	0.1648	1827	14.5	29.0	1820	12.0	24.0	1799	7.5	15.0	99
AZR11z9	89.45	47.10	12.72	0.530	-6.90E+03	7.40E+03	0.0587	0.0026	0.834	0.034	0.1020	0.0011	0.1144	556	48.5	97.0	616	9.5	19.0	626	3.0	6.0	102
AZR11z10	178.50	139.60	37.50	0.780	-1.40E+04	1.30E+04	0.0574	0.0023	0.751	0.027	0.0937	0.0010	0.0665	507	44.0	88.0	569	8.0	16.0	578	3.0	6.0	102
AZR11z12	243.00	148.10	49.00	0.610	3.70E+05	1.20E+05	0.0637	0.0023	0.982	0.030	0.1110	0.0011	0.0979	732	38.0	76.0	695	7.5	15.0	679	3.0	6.0	98
AZR11z13	439.00	240.20	71.80	0.550	2.50E+04	1.40E+04	0.0615	0.0020	0.826	0.022	0.0965	0.0009	0.0717	657	35.0	70.0	611	6.0	12.0	594	2.5	5.0	97
AZR11z14	190.00	73.80	44.70	0.390	6.20E+05	2.50E+05	0.0918	0.0029	3.024	0.082	0.2354	0.0025	0.3891	1463	30.0	60.0	1414	10.5	21.0	1363	6.5	13.0	96
AZR11z15	67.20	87.30	22.16	1.300	8.00E+04	3.90E+04	0.0583	0.0033	0.722	0.037	0.0894	0.0012	-0.0837	541	62.0	124.0	552	11.0	22.0	552	3.5	7.0	100
AZR11z16	99.90	103.00	32.60	1.030	-1.20E+04	1.00E+04	0.0640	0.0026	0.993	0.038	0.1109	0.0012	0.2481	742	43.0	86.0	700	9.5	19.0	678	3.5	7.0	97
AZR11z17	87.30	94.10	29.81	1.080	-2.90E+04	1.10E+04	0.0596	0.0027	0.889	0.036	0.1077	0.0013	0.0847	589	49.0	98.0	646	9.5	19.0	659	4.0	8.0	102
AZR11z18	287.00	342.00	84.40	1.190	-3.10E+04	2.70E+04	0.0669	0.0024	0.916	0.027	0.0992	0.0012	0.2770	835	37.5	75.0	660	7.0	14.0	610	3.5	7.0	92
AZR11z19	67.80	22.93	7.03	0.340	-3.30E+04	1.80E+04	0.0602	0.0031	0.855	0.040	0.1024	0.0014	0.0031	611	55.5	111.0	627	11.0	22.0	628	4.0	8.0	100
AZR11z20	113.70	27.09	16.06	0.240	4.00E+04	1.80E+04	0.0820	0.0028	2.408	0.068	0.2111	0.0020	0.0299	1246	33.5	67.0	1245	10.0	20.0	1235	5.5	11.0	99
AZR11z21	488.00	104.00	88.10	0.210	9.00E+04	3.00E+04	0.1277	0.0009	6.433	0.150	0.3644	0.0038	0.7263	2066	6.0	12.0	2037	10.0	20.0	2003	9.0	18.0	98
AZR11z24	308.00	14.61	11.00	0.050	-3.40E+05	1.00E+05	0.1207	0.0012	5.074	0.120	0.3021	0.0023	0.1978	1967	9.0	18.0	1832	10.0	20.0	1702	5.5	11.0	93
AZR11z26	181.00	68.20	76.30	0.380	-3.90E+05	1.60E+05	0.1374	0.0015	8.216	0.200	0.4299	0.0041	0.4617	2195	9.5	19.0	2255	11.0	22.0	2305	9.0	18.0	102
AZR11z27	290.00	157.90	60.10	0.540	-3.80E+05	1.30E+05	0.0653	0.0022	1.188	0.034	0.1316	0.0011	0.1662	784	35.5	71.0	795	8.0	16.0	797	3.0	6.0	100
AZR11z29	111.30	171.80	43.61	1.540	-2.10E+04	1.40E+04	0.0616	0.0031	0.761	0.034	0.0891	0.0010	-0.0324	660	54.0	108.0	575	10.0	20.0	550	3.0	6.0	96
AZR11z30	96.60	84.10	53.78	0.870	1.10E+04	1.50E+04	0.0847	0.0031	2.738	0.087	0.2329	0.0023	0.1378	1309	35.5	71.0	1339	12.0	24.0	1350	6.0	12.0	101
AZR11z31	149.30	43.71	29.67	0.290	-4.00E+04	2.40E+04	0.0881	0.0030	2.976	0.083	0.2448	0.0022	0.0815	1385	32.5	65.0	1402	10.5	21.0	1412	5.5	11.0	101
AZR11z32	503.00	33.06	29.38	0.070	1.00E+06	1.80E+06	0.1236	0.0009	6.056	0.140	0.3555	0.0029	0.4901	2009	6.5	13.0	1984	10.0	20.0	1961	7.0	14.0	99
AZR11z33	269.40	152.10	116.80	0.560	-6.50E+04	5.40E+04	0.1000	0.0012	3.939	0.099	0.2850	0.0023	0.1703	1624	11.0	22.0	1622	10.0	20.0	1616	6.0	12.0	100
AZR11z34	118.40	159.20	158.90	1.340	-1.52E+05	4.80E+04	0.1313	0.0015	6.993	0.170	0.3857	0.0032	0.2863	2115	10.0	20.0	2111	11.0	22.0	2103	7.5	15.0	100
AZR11z35	318.70	280.30	383.70	0.880	6.70E+04	5.00E+04	0.1864	0.0012	13.847	0.320	0.5369	0.0043	0.3796	2711	5.5	11.0	2739	11.0	22.0	2770	9.0	18.0	101
AZR11z36	289.00	102.50	24.51	0.350	-2.40E+05	1.00E+05	0.0612	0.0023	0.807	0.026	0.0958	0.0009	0.0391	646	40.5	81.0	601	7.5	15.0	590	2.5	5.0	98
AZR11z37	99.10	89.00	23.07	0.900	-3.10E+04	1.70E+04	0.0590	0.0031	0.737	0.036	0.0908	0.0012	0.1589	567	57.0	114.0	561	10.5	21.0	560	3.5	7.0	100
AZR11z39	330.00	110.70	49.21	0.340	-2.11E+05	6.80E+04	0.0697	0.0022	1.551	0.042	0.1602	0.0014	0.1873	920	32.5	65.0	951	8.5	17.0	958	4.0	8.0	101
AZR11z40	494.00	412.00	146.50	0.830	-1.64E+05	9.20E+04	0.0621	0.0020	1.038	0.031	0.1228	0.0016	0.5891	678	34.5	69.0	723	7.5	15.0	747	4.5	9.0	103
AZR11z41	142.20	229.00	66.24	1.610	-1.40E+04	1.40E+04	0.0593	0.0026	0.848	0.033	0.1036	0.0012	0.1315	578	47.5	95.0	624	9.0	18.0	635	3.5	7.0	102
AZR11z42	406.00	34.20	34.70	0.080	-8.00E+05	1.20E+05	0.1275	0.0010	6.900	0.160	0.3899	0.0031	0.4152	2064	7.0	14.0	2099	10.5	21.0	2122	7.0	14.0	101
AZR11z43	361.20	193.60	129.30	0.540	-1.80E+04	5.70E+04	0.0824	0.0025	2.640	0.067	0.2312	0.0021	0.4419	1255	29.5	59.0	1312	9.5	19.0	1341	5.5	11.0	102
AZR11z44	189.00	275.60	283.60	1.460	-7.40E+04	4.80E+04	0.1245	0.0014	6.639	0.160	0.3864	0.0036	0.2790	2022	10.0	20.0	2065	10.5	21.0	2106	8.5	17.0	102
AZR11z45	274.00	230.00	230.00	0.840	1.40E+04	5.90E+04	0.1291	0.0013	6.735	0.170	0.3817	0.0039	0.5500	2086	9.0	18.0	2077	11.0	22.0	2084	9.0	18.0	100
AZR11z46	221.00	92.70	98.50	0.420	-2.20E+05	1.10E+05	0.1353	0.0013	7.631	0.180	0.4101	0.0035	0.3766	2168	8.5	17.0	2189	10.5	21.0	2215	8.0	16.0	101
AZR11z47	93.10	71.90	21.65	0.770	-1.36E+04	7.80E+03	0.0619	0.0029	0.890	0.039	0.1049	0.0012	0.1041	671	50.0	100.0	646	10.5	21.0	643	3.5	7.0	99
AZR11z48	353.80	340.30	106.00	0.960	1.60E+04	1.50E+04	0.0644	0.0022	0.936	0.027	0.1070	0.0014	0.3773	755	36.0	72.0	671	7.0	14.0	655	4.0	8.0	98
AZR11z49	173.50	176.40	50.40	1.020	-2.10E+04	1.50E+04	0.0606	0.0026	0.804	0.031	0.0972	0.0011	0.1784	625	46.5	93.0	599	8.5	17.0	598	3.0	6.0	100
AZR11z50	26.21	23.71	6.19	0.900	-1.01E+04	3.40E+03	0.0623	0.0056	0.743	0.063	0.0853	0.0022	-0.0025	684	96.0	192.0	564	18.5	37.0	528	6.5	13.0	94
AZR11z52	577.00	128.70	118.00	0.220	1.10E+06	1.20E+06	0.1262	0.0010	5.959	0.150	0.3462	0.0046	0.8044	2046	6.5	13.0	1970	11.0	22.0	1916	11.0	22.0	97
AZR11z53	868.00	480.00	154.60	0.550	9.90E+04	4.30E+04	0.0685	0.0022	0.920	0.024	0.0977	0.0008	0.2592	882	33.0	66.0	662	6.5	13.0	601	2.5	5.0	91
AZR11z54	132.50	24.53	16.04	0.190	-4.10E+04	2.20E+04	0.0871	0.0030	2.735	0.080	0.2278	0.0022	0.1469	1363	33.0	66.0	1338	11.0	22.0	1323	6.0	12.0	99
AZR11z56	491.00	250.00	87.20	0.510	4.00E+04	3.40E+04	0.0690	0.0022	1.181	0.035	0.1238	0.0018	0.5777	899	33.0	66.0	792	8.0	16.0	752	5.0	10.0	95
AZR11z57	43.00	4.86	7.22	0.110	-3.00E+04	1.80E+04	0.2047	0.0034	17.930	0.550	0.6450	0.0110	0.6731	2864	13.5	27.0	2986	14.5	29.0	3209	21.5	43.0	107
AZR11z58	393.00	97.10	61.30	0.250	-6.10E+05	2.80E+05	0.0833	0.0026	1.814	0.048	0.1596	0.0018	0.4161	1276	30.5	61.0	1051	8.5	17.0	955	5.0	10.0	91
AZR11z59	202.00	140.40	45.00	0.700	-2.20E+05	1.10E+05	0.0630	0.0023	0.976	0.033	0.1132	0.0011	0.1795	708	39.0	78.0	692	8.5	17.0	691	3.0	6.0	100
AZR11z60	24.51	23.30	20.33	0.950	1.88E+04	9.90E+03	0.1092	0.0032	4.760	0.170	0.3191	0.0046	0.1184	1786	26.5	53.0	1778	15.0	30.0	1785	11.0	22.0	100
AZR11z61	422.00	447.00	146.30	1.060	-4.90E+04	3.70E+04	0.0683	0.0024	1.041	0.030	0.1132	0.0016	0.1781	878	36.5	73.0	724	7.5	15.0	691	4.5	9.0	95
AZR11z62	455.40	524.00	162.10	1.150	-6.30E+04	3.80E+04	0.0600	0.0020	0.876	0.024	0.1059	0.0010	0.0377	604	36.0	72.0	639	6.5	13.0	649	3.0	6.0	102
AZR11z63	225.00	310.00	81.10	1.380	1.64E+05	6.70E+04	0.0570	0.0023	0.725	0.027	0.0912	0.0009	0.1791	492	44.5	89.0	554	8.0	16.0	563	3.0	6.0	102
AZR11z64	197.00	75.60	29.38	0.380	-1.52E+05	7.10E+04	0.0652	0.0024	1.184	0.039	0.1312	0.0013	0.2586	781	38.5	77.0	793	9.0	18.0	795	3.5	7.0	100
AZR11z65	138.00	175.00	53.10	1.270	-1.00E+05	1.00E+04	0.0574	0.0027	0.822	0.036	0.1030	0.0012	0.0162	507	51.5	103.0	609	10.0	20.0	632	3.5	7.0	104
AZR11z66	190.00	282.00	387.00	1.480	-2.60E+05	1.60E+05	0.1865	0.0016	13.580	0.320	0.5309	0.0041	0.1909	2712	7.0	14.0	2721	11.0	22.0	2745	8.5	17.0	101
AZR11z67	454.00	195.30	206.20	0.430	-2.85E+06	9.80E+05	0.1317	0.0011	6.574	0.160	0.3665	0.0042	0.7443	2121	7.5	15.0	2056	10.5	21.0	2013	10.0	20.0	98
AZR11z68	192.00	209.00	58.70	1.090	2.60E+05	2.10E+05	0.0618	0.0025	0.806	0.029	0.0955	0.0009	0.0141	667	43.5	87.0	600	8.0	16.0	588	2.5	5.0	98

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR11z69	64.18	44.11	13.92	0.690	-2.24E+04	8.90E+03	0.0587	0.0032	0.865	0.045	0.1071	0.0015	0.1182	556	59.5	119.0	633	12.0	24.0	656	4.5	9.0	104
AZR11z71	267.70	329.00	322.00	1.230	-2.70E+04	7.10E+04	0.1203	0.0011	6.040	0.140	0.3679	0.0029	0.2687	1961	8.0	16.0	1982	10.0	20.0	2020	7.0	14.0	102
AZR11z73	95.60	51.70	15.91	0.540	-3.40E+04	2.00E+04	0.0600	0.0029	0.910	0.039	0.1114	0.0016	-0.0023	604	52.5	105.0	657	10.5	21.0	681	4.5	9.0	104
AZR11z74	147.00	250.70	68.50	1.710	1.69E+05	8.00E+04	0.0609	0.0028	0.818	0.034	0.0983	0.0011	0.0318	636	49.5	99.0	607	9.5	19.0	604	3.0	6.0	100
AZR11z75	91.80	28.80	7.23	0.310	-1.20E+04	1.00E+04	0.0576	0.0030	0.706	0.034	0.0895	0.0011	0.0121	515	57.0	114.0	542	10.0	20.0	552	3.5	7.0	102
AZR11z77	490.00	281.30	95.30	0.570	-1.80E+04	4.60E+04	0.0644	0.0022	0.934	0.026	0.1061	0.0011	0.1788	755	36.0	72.0	670	7.0	14.0	650	3.0	6.0	97
AZR11z78	46.12	33.95	10.34	0.740	-5.60E+03	4.80E+03	0.0631	0.0038	0.903	0.052	0.1054	0.0015	0.1812	712	64.0	128.0	653	14.0	28.0	646	4.5	9.0	99
Discordant data																							
AZR11z11	416.00	232.80	142.90	0.560	3.40E+06	1.40E+06	0.1273	0.0037	4.416	0.120	0.2477	0.0033	0.7768	2061	25.5	51.0	1715	11.0	22.0	1427	8.5	17.0	83
AZR11z22	517.00	199.60	118.90	0.390	1.14E+05	3.00E+04	0.1427	0.0043	3.627	0.120	0.1858	0.0047	0.8969	2260	26.0	52.0	1555	13.0	26.0	1099	13.0	26.0	71
AZR11z23	236.20	148.40	41.70	0.630	-3.80E+04	2.10E+04	0.0686	0.0036	0.774	0.032	0.0817	0.0015	-0.2907	887	54.0	108.0	582	9.0	18.0	506	4.5	9.0	87
AZR11z25	80.50	39.80	34.60	0.490	-6.60E+04	2.80E+04	0.1157	0.0021	4.240	0.140	0.2628	0.0045	0.6608	1891	16.5	33.0	1682	13.5	27.0	1504	11.5	23.0	89
AZR11z28	208.00	54.30	19.00	0.260	-3.00E+04	1.40E+04	0.0715	0.0029	0.929	0.033	0.0934	0.0010	0.1033	972	41.5	83.0	667	8.5	17.0	576	3.0	6.0	86
AZR11z38	1025.00	396.00	152.00	0.390	5.70E+04	2.50E+04	0.1180	0.0035	2.454	0.064	0.1501	0.0019	0.7830	1926	26.5	53.0	1259	9.5	19.0	902	5.5	11.0	72
AZR11z51	2436.00	1717.00	377.00	0.700	4.39E+02	3.80E+01	0.0936	0.0037	0.899	0.027	0.0697	0.0011	0.0054	1500	37.5	75.0	651	7.0	14.0	434	3.5	7.0	67
AZR11z55	415.00	248.00	97.70	0.600	1.71E+04	7.90E+03	0.0874	0.0034	1.125	0.034	0.0931	0.0012	-0.2467	1369	37.5	75.0	765	8.0	16.0	574	3.5	7.0	75
AZR11z70	223.50	275.00	60.60	1.230	-1.60E+04	1.50E+04	0.0789	0.0030	0.853	0.028	0.0790	0.0016	0.1945	1170	37.5	75.0	626	7.5	15.0	490	5.0	10.0	78
AZR11z72	318.00	170.50	60.70	0.540	-1.10E+04	2.60E+04	0.0748	0.0028	1.121	0.034	0.1075	0.0011	-0.0721	1063	37.5	75.0	763	8.0	16.0	658	3.0	6.0	86
AZR11z76	303.00	473.00	450.00	1.560	6.00E+04	7.40E+04	0.1353	0.0021	5.270	0.160	0.2876	0.0059	0.6885	2168	13.5	27.0	1864	13.0	26.0	1630	15.0	30.0	87

Footnotes:

- Analysis references: AZR11z is zircon from sample AZR11 (mounts CT18-11 and CT19-1), followed by grain number.

Table D.24b: Sample AZR11 (SIMS)

IGSN: IEACC0030 Coordinate UTM: Zone 30S, 252046 m E, 3643326 m N

ANALYSIS	^{238}U (ppm)	^{206}Pb (ppm)	Th/U	^{204}Pb (ppb)	$^{207}Pb/^{206}Pb$	σ	$^{207}Pb/^{235}U$	σ	$^{206}Pb/^{238}U$	σ	Rho	Ages (Ma) $^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	Concordance (%)
Concordant data																					
AZR11z79	53.00	4.20	1.81	1.100	0.0591	0.0027	0.750	0.040	0.0900	0.0010	0.2708	572	100.0	200.0	565	25.0	50.0	564	8.0	16.0	100
AZR11z80	161.00	53.00	0.32	0.500	0.1285	0.0008	6.750	0.080	0.3800	0.0040	0.8507	2078	11.0	22.0	2078	12.0	24.0	2081	19.0	38.0	100
AZR11z81	508.00	136.80	0.04	4.900	0.1168	0.0011	5.010	0.070	0.3100	0.0030	0.6987	1907	17.0	34.0	1820	13.0	26.0	1747	15.0	30.0	96
AZR11z82	154.00	45.80	0.37	6.200	0.1174	0.0021	5.580	0.120	0.3400	0.0040	0.5019	1917	32.0	64.0	1912	19.0	38.0	1909	18.0	36.0	100
AZR11z83	307.00	95.80	0.23	5.100	0.1209	0.0006	6.010	0.070	0.3600	0.0040	0.8994	1969	8.0	16.0	1976	11.0	22.0	1985	18.0	36.0	100
AZR11z84	211.00	18.70	0.59	0.000	0.0642	0.0020	0.910	0.030	0.1000	0.0010	0.3330	749	67.0	134.0	656	17.0	34.0	630	7.0	14.0	96
AZR11z85	100.00	8.10	1.31	3.400	0.0580	0.0028	0.750	0.050	0.0900	0.0020	0.2737	528	107.0	214.0	571	28.0	56.0	582	10.0	20.0	102
AZR11z86	173.00	14.90	1.43	2.900	0.0609	0.0019	0.830	0.030	0.1000	0.0010	0.2728	634	68.0	136.0	616	18.0	36.0	611	6.0	12.0	99
AZR11z87	62.00	11.20	0.48	2.900	0.0841	0.0036	2.400	0.120	0.2100	0.0030	0.2638	1295	84.0	168.0	1243	35.0	70.0	1214	14.0	28.0	98
AZR11z88	131.00	36.00	0.56	5.900	0.1093	0.0017	4.770	0.100	0.3200	0.0030	0.5067	1788	29.0	58.0	1778	18.0	36.0	1771	16.0	32.0	100
AZR11z89	347.00	29.90	0.67	0.000	0.0616	0.0018	0.850	0.030	0.1000	0.0010	0.3215	660	62.0	124.0	622	15.0	30.0	612	6.0	12.0	98
AZR11z90	439.00	47.20	2.03	3.400	0.0654	0.0013	1.120	0.030	0.1200	0.0010	0.4531	788	41.0	82.0	763	13.0	26.0	755	7.0	14.0	99
AZR11z92	448.00	151.40	0.30	28.100	0.1317	0.0010	7.090	0.090	0.3900	0.0040	0.7764	2120	13.0	26.0	2121	13.0	26.0	2124	18.0	36.0	100
AZR11z93	106.00	9.80	0.46	5.200	0.0594	0.0019	0.870	0.050	0.1100	0.0010	0.2127	580	71.0	142.0	638	25.0	50.0	655	7.0	14.0	103
AZR11z94	96.00	7.50	1.14	4.700	0.0580	0.0029	0.720	0.050	0.0900	0.0010	0.1498	529	111.0	222.0	548	31.0	62.0	552	6.0	12.0	101
AZR11z95	341.00	27.90	0.87	3.500	0.0563	0.0016	0.730	0.020	0.0900	0.0010	0.3290	462	64.0	128.0	557	14.0	28.0	581	6.0	12.0	104
AZR11z96	334.00	58.80	0.36	7.600	0.0957	0.0015	2.680	0.050	0.2000	0.0020	0.5192	1541	30.0	60.0	1322	15.0	30.0	1193	11.0	22.0	90
AZR11z97	73.00	25.70	0.59	2.700	0.1343	0.0027	7.530	0.180	0.4100	0.0050	0.4924	2154	35.0	70.0	2175	22.0	44.0	2200	22.0	44.0	101
AZR11z98	1326.00	89.30	0.78	150.700	0.0605	0.0008	0.650	0.020	0.0800	0.0010	0.3371	622	28.0	56.0	508	13.0	26.0	483	5.0	10.0	95
AZR11z99	209.00	16.50	0.57	2.800	0.0644	0.0027	0.810	0.040	0.0900	0.0010	0.2644	753	88.0	176.0	601	21.0	42.0	562	6.0	12.0	93
AZR11z100	164.00	13.40	0.91	3.300	0.0587	0.0036	0.760	0.050	0.0900	0.0010	0.1738	555	133.0	266.0	576	29.0	58.0	581	6.0	12.0	101
AZR11z101	310.00	32.20	0.35	6.100	0.0605	0.0022	1.000	0.040	0.1200	0.0010	0.2399	620	78.0	156.0	703	20.0	40.0	730	7.0	14.0	104
AZR11z102	496.00	166.50	0.33	2.700	0.1365	0.0015	7.290	0.110	0.3900	0.0040	0.7134	2183	19.0	38.0	2146	15.0	30.0	2111	20.0	40.0	98
AZR11z103	100.00	8.00	0.60	0.500	0.0610	0.0026	0.770	0.040	0.0900	0.0020	0.3615	638	92.0	184.0	581	21.0	42.0	567	9.0	18.0	98
AZR11z104	697.00	243.60	0.11	2.200	0.1522	0.0009	8.480	0.100	0.4000	0.0040	0.8659	2371	10.0	20.0	2282	12.0	24.0	2187	18.0	36.0	96
AZR11z105	150.00	53.30	0.62	9.300	0.1378	0.0013	7.820	0.120	0.4100	0.0040	0.7076	2199	17.0	34.0	2209	15.0	30.0	2221	20.0	40.0	101
AZR11z107	171.00	15.20	0.80	5.100	0.0568	0.0029	0.810	0.050	0.1000	0.0010	0.1891	483	114.0	228.0	600	27.0	54.0	632	7.0	14.0	105
AZR11z108	470.00	157.80	0.65	3.300	0.1281	0.0012	6.850	0.090	0.3900	0.0040	0.7278	2072	16.0	32.0	2091	13.0	26.0	2113	17.0	34.0	101
AZR11z109	56.00	4.80	0.50	4.500	0.0681	0.0048	0.930	0.090	0.1000	0.0010	0.1527	870	147.0	294.0	666	47.0	94.0	607	9.0	18.0	91
AZR11z110	446.00	128.40	0.57	13.200	0.1247	0.0013	5.720	0.090	0.3300	0.0040	0.7245	2024	19.0	38.0	1933	15.0	30.0	1852	19.0	38.0	96
AZR11z111	540.00	43.40	0.25	2.200	0.0597	0.0018	0.760	0.020	0.0900	0.0010	0.3100	590	65.0	130.0	576	14.0	28.0	572	5.0	10.0	99
AZR11z112	258.00	22.40	0.99	5.000	0.0620	0.0026	0.860	0.040	0.1000	0.0010	0.2502	675	90.0	180.0	628	22.0	44.0	616	7.0	14.0	98
AZR11z113	430.00	141.60	0.36	0.500	0.1307	0.0010	6.850	0.090	0.3800	0.0040	0.7694	2107	14.0	28.0	2091	12.0	24.0	2078	17.0	34.0	99
AZR11z114	815.00	251.60	0.01	14.900	0.1189	0.0008	5.850	0.070	0.3600	0.0030	0.8144	1939	12.0	24.0	1952	11.0	22.0	1966	16.0	32.0	101
AZR11z115	180.00	49.50	0.71	5.100	0.1077	0.0010	4.710	0.070	0.3200	0.0030	0.7190	1761	17.0	34.0	1767	14.0	28.0	1775	17.0	34.0	100
AZR11z117	394.00	100.90	0.74	6.400	0.1081	0.0012	4.410	0.070	0.3000	0.0030	0.6712	1767	20.0	40.0	1713	13.0	26.0	1671	15.0	30.0	98
AZR11z118	740.00	63.80	1.30	23.100	0.0609	0.0011	0.840	0.020	0.1000	0.0010	0.3886	635	39.0	78.0	617	12.0	24.0	613	6.0	12.0	99
AZR11z119	405.00	36.40	0.71	4.900	0.0600	0.0013	0.860	0.020	0.1000	0.0010	0.4588	602	48.0	96.0	629	13.0	26.0	636	8.0	16.0	101
AZR11z120	238.00	70.50	0.22	3.700	0.1289	0.0019	6.090	0.140	0.3400	0.0060	0.7419	2083	27.0	54.0	1988	21.0	42.0	1900	28.0	56.0	96
AZR11z121	267.00	104.90	0.60	3.000	0.1545	0.0012	9.680	0.130	0.4500	0.0050	0.7899	2396	13.0	26.0	2403	13.0	26.0	2414	21.0	42.0	100
AZR11z122	781.00	102.00	0.17	9.700	0.0709	0.0009	1.470	0.020	0.1500	0.0020	0.6247	955	25.0	50.0	919	11.0	22.0	905	9.0	18.0	98
AZR11z123	97.00	8.10	1.16	2.300	0.0613	0.0017	0.820	0.030	0.1000	0.0010	0.2814	648	61.0	122.0	606	19.0	38.0	595	7.0	14.0	98
AZR11z124	229.00	20.30	1.66	0.000	0.0635	0.0019	0.900	0.030	0.1000	0.0010	0.4237	725	64.0	128.0	649	16.0	32.0	628	8.0	16.0	97
AZR11z125	881.00	91.10	0.24	9.200	0.0605	0.0013	1.000	0.020	0.1200	0.0010	0.3951	623	48.0	96.0	702	13.0	26.0	728	7.0	14.0	104
Discordant data																					
AZR11z91	880.00	220.40	0.25	51.100	0.1320	0.0007	5.260	0.060	0.2900	0.0030	0.8358	2124	10.0	20.0	1862	11.0	22.0	1638	14.0	28.0	88
AZR11z106	101.00	8.00	0.91	9.600	0.0480	0.0020	0.610	0.060	0.0900	0.0010	0.1385	99	99.0	198.0	482	39.0	78.0	567	8.0	16.0	118
AZR11z116	314.00	39.90	0.32	3.300	0.0840	0.0023	1.700	0.060	0.1500	0.0030	0.5377	1292	52.0	104.0	1008	21.0	42.0	883	14.0	28.0	88

Footnotes:

- Analysis references: AZR11z is zircon from sample AZR11 (mounts CT18-11 and CT19-1), followed by grain number.
- Pb* indicates radiogenic Pb, corrected for common Pb.

Table D.25: Sample AZR10 (LA-ICPMS)

IGSN: IEACC0029 Coordinate UTM: Zone 30S, 233758 m E, 3633628 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AZR10z1	1166.00	234.20	72.50	0.200	1.14E+05	6.80E+04	0.0639	0.0016	0.721	0.012	0.0819	0.0008	0.0569	738.0	26.5	53.0	551.0	3.5	7.0	508.0	2.5	5.0	92
AZR10z2	487.20	96.20	23.31	0.200	-2.30E+04	2.50E+04	0.0572	0.0017	0.666	0.017	0.0845	0.0009	0.1690	499.0	32.5	65.0	518.0	5.0	10.0	523.0	2.5	5.0	101
AZR10z3	1074.20	226.30	47.68	0.210	1.03E+05	3.40E+04	0.0596	0.0014	0.639	0.011	0.0792	0.0010	0.3612	590.0	25.5	51.0	502.0	3.5	7.0	491.0	3.0	6.0	98
AZR10z4	936.00	210.00	58.50	0.220	7.00E+04	2.80E+04	0.0619	0.0016	0.699	0.013	0.0820	0.0009	0.2629	671.0	27.5	55.0	538.0	4.0	8.0	508.0	2.5	5.0	94
AZR10z5	266.10	104.10	27.94	0.390	-2.30E+04	1.80E+04	0.0594	0.0022	0.783	0.025	0.0958	0.0011	0.0627	582.0	40.0	80.0	587.0	7.0	14.0	590.0	3.0	6.0	100
AZR10z6	416.80	162.90	40.42	0.390	-3.60E+04	2.90E+04	0.0585	0.0017	0.690	0.017	0.0854	0.0010	0.1313	549.0	31.5	63.0	533.0	5.0	10.0	528.0	3.0	6.0	99
AZR10z7	465.00	222.90	56.30	0.480	-1.00E+03	2.50E+04	0.0586	0.0018	0.707	0.018	0.0879	0.0009	0.0450	552.0	33.5	67.0	543.0	5.5	11.0	543.0	2.5	5.0	100
AZR10z9	1093.00	196.40	46.60	0.180	-3.00E+04	5.50E+04	0.0588	0.0015	0.692	0.013	0.0862	0.0009	0.1041	560.0	28.0	56.0	534.0	4.0	8.0	533.0	2.5	5.0	100
AZR10z10	781.00	172.90	41.60	0.220	8.00E+04	4.30E+04	0.0589	0.0015	0.690	0.013	0.0851	0.0009	0.1317	563.0	27.5	55.0	533.0	4.0	8.0	526.0	2.5	5.0	99
AZR10z11	771.00	218.60	56.20	0.280	-1.37E+05	6.40E+04	0.0593	0.0015	0.745	0.013	0.0923	0.0009	0.1155	578.0	27.5	55.0	565.0	4.0	8.0	569.0	2.5	5.0	101
AZR10z12	668.00	170.10	49.60	0.250	-4.20E+04	4.60E+04	0.0636	0.0017	0.758	0.014	0.0871	0.0010	0.0164	728.0	28.5	57.0	573.0	4.0	8.0	538.0	3.0	6.0	94
AZR10z13	602.10	108.10	26.95	0.180	2.00E+04	2.90E+04	0.0579	0.0016	0.687	0.015	0.0856	0.0009	0.1014	526.0	30.5	61.0	531.0	4.5	9.0	530.0	2.5	5.0	100
AZR10z14	1089.00	190.10	41.70	0.170	2.80E+04	3.90E+04	0.0605	0.0015	0.633	0.012	0.0765	0.0014	0.5479	620.0	27.0	54.0	498.0	3.5	7.0	475.0	4.0	8.0	95
AZR10z15	1082.00	261.30	64.40	0.240	-1.56E+05	8.70E+04	0.0584	0.0014	0.697	0.013	0.0866	0.0008	0.2827	545.0	26.0	52.0	537.0	4.0	8.0	535.0	2.5	5.0	100
AZR10z16	961.10	193.20	53.10	0.200	3.00E+04	4.00E+04	0.0626	0.0016	0.718	0.012	0.0832	0.0008	-0.0115	695.0	27.0	54.0	549.0	3.5	7.0	515.0	2.5	5.0	94
AZR10z17	711.50	289.50	81.00	0.410	-7.70E+04	4.50E+04	0.0590	0.0016	0.767	0.016	0.0942	0.0010	0.0624	567.0	29.5	59.0	578.0	4.5	9.0	580.0	3.0	6.0	100
AZR10z18	665.00	154.80	38.97	0.230	1.10E+04	3.10E+04	0.0578	0.0017	0.692	0.015	0.0873	0.0009	0.0290	522.0	32.5	65.0	534.0	4.5	9.0	540.0	2.5	5.0	101
AZR10z19	805.90	152.80	37.64	0.190	1.40E+04	4.20E+04	0.0579	0.0015	0.673	0.013	0.0846	0.0008	0.2104	526.0	28.5	57.0	523.0	4.0	8.0	523.0	2.5	5.0	100
AZR10z20	539.20	129.40	32.28	0.240	1.00E+04	3.10E+04	0.0580	0.0017	0.682	0.015	0.0855	0.0009	0.0208	530.0	32.0	64.0	528.0	4.5	9.0	529.0	2.5	5.0	100
AZR10z21	340.70	168.50	40.13	0.490	-4.80E+04	2.00E+04	0.0574	0.0019	0.661	0.018	0.0843	0.0009	0.0284	507.0	36.5	73.0	515.0	5.5	11.0	522.0	3.0	6.0	101
AZR10z22	735.00	122.80	30.82	0.170	-9.95E+04	4.50E+04	0.0607	0.0017	0.698	0.016	0.0835	0.0009	0.2814	629.0	30.0	60.0	538.0	5.0	10.0	517.0	2.5	5.0	96
AZR10z23	986.90	186.50	46.10	0.190	-1.14E+05	7.80E+04	0.0582	0.0014	0.685	0.011	0.0854	0.0008	0.1350	537.0	26.5	53.0	530.0	3.5	7.0	529.0	2.5	5.0	100
AZR10z25	261.60	173.80	45.82	0.660	-5.00E+04	1.60E+04	0.0624	0.0021	0.801	0.024	0.0943	0.0011	0.1080	688.0	36.0	72.0	597.0	7.0	14.0	581.0	3.0	6.0	97
AZR10z26	757.40	193.40	48.76	0.260	1.30E+04	3.70E+04	0.0584	0.0016	0.696	0.014	0.0863	0.0008	0.0286	545.0	30.0	60.0	536.0	4.0	8.0	534.0	2.5	5.0	100
AZR10z27	340.30	160.00	40.90	0.470	-1.30E+04	1.60E+04	0.0594	0.0020	0.755	0.020	0.0918	0.0010	0.0623	582.0	36.5	73.0	571.0	6.0	12.0	566.0	3.0	6.0	99
AZR10z28	385.00	131.50	35.30	0.340	-1.70E+04	2.00E+04	0.0598	0.0019	0.740	0.019	0.0908	0.0010	0.1585	596.0	34.5	69.0	562.0	5.5	11.0	560.0	3.0	6.0	100
AZR10z30	598.00	147.20	39.10	0.250	-5.00E+04	3.30E+04	0.0599	0.0018	0.699	0.016	0.0852	0.0009	0.1817	600.0	32.5	65.0	538.0	5.0	10.0	527.0	2.5	5.0	98
AZR10z31	371.00	73.20	15.85	0.200	1.00E+03	1.80E+04	0.0573	0.0019	0.659	0.019	0.0838	0.0012	0.2276	503.0	36.5	73.0	514.0	6.0	12.0	519.0	3.5	7.0	101
AZR10z32	846.40	177.96	43.98	0.210	-7.00E+04	4.90E+04	0.0602	0.0015	0.647	0.011	0.0778	0.0008	0.0366	611.0	27.0	54.0	507.0	3.5	7.0	483.0	2.5	5.0	95
AZR10z33	1210.00	343.00	81.50	0.280	5.40E+04	2.40E+04	0.0616	0.0014	0.673	0.011	0.0794	0.0010	0.4273	660.0	24.5	49.0	523.0	3.5	7.0	492.0	3.0	6.0	94
AZR10z34	883.00	323.40	83.50	0.370	-1.10E+04	4.50E+04	0.0600	0.0015	0.769	0.013	0.0935	0.0009	0.1392	604.0	27.0	54.0	579.0	3.5	7.0	576.0	2.5	5.0	99
AZR10z35	1026.00	218.00	54.80	0.210	-2.50E+04	4.60E+04	0.0619	0.0015	0.689	0.012	0.0821	0.0010	0.3892	671.0	26.0	52.0	532.0	3.5	7.0	509.0	3.0	6.0	96
AZR10z37	505.00	302.90	82.50	0.600	-3.70E+04	2.40E+04	0.0591	0.0016	0.771	0.016	0.0948	0.0010	0.1013	571.0	29.5	59.0	580.0	4.5	9.0	584.0	3.0	6.0	101
AZR10z38	816.60	157.00	39.28	0.190	-1.30E+04	4.70E+04	0.0584	0.0015	0.696	0.014	0.0860	0.0009	0.0717	545.0	28.0	56.0	536.0	4.0	8.0	532.0	2.5	5.0	99
AZR10z39	903.00	224.00	51.59	0.250	1.60E+04	5.00E+04	0.0580	0.0015	0.668	0.013	0.0839	0.0008	0.1604	530.0	28.5	57.0	519.0	4.0	8.0	519.0	2.5	5.0	100
AZR10z40	542.90	201.30	54.10	0.370	-2.20E+05	2.60E+05	0.0592	0.0018	0.762	0.019	0.0932	0.0009	0.0581	574.0	33.0	66.0	575.0	5.5	11.0	574.0	3.0	6.0	100
AZR10z41	359.90	174.00	46.21	0.480	7.00E+04	2.10E+04	0.0602	0.0019	0.768	0.020	0.0925	0.0011	0.1266	611.0	34.0	68.0	579.0	5.5	11.0	571.0	3.0	6.0	99
AZR10z42	1251.00	341.60	72.90	0.270	2.20E+04	6.30E+04	0.0594	0.0014	0.633	0.010	0.0771	0.0008	0.2273	583.0	25.5	51.0	498.0	3.0	6.0	479.0	2.5	5.0	96
AZR10z43	826.30	164.20	38.18	0.200	-1.60E+04	3.90E+04	0.0582	0.0015	0.675	0.014	0.0839	0.0008	0.0578	537.0	28.0	56.0	524.0	4.0	8.0	520.0	2.5	5.0	99
AZR10z45	830.00	160.20	35.40	0.190	-2.70E+04	3.70E+04	0.0599	0.0016	0.648	0.015	0.0789	0.0012	0.4060	600.0	29.0	58.0	507.0	4.5	9.0	490.0	3.5	7.0	97
AZR10z46	761.00	691.00	190.60	0.910	4.00E+04	4.80E+04	0.0598	0.0015	0.791	0.014	0.0957	0.0009	0.1956	596.0	27.0	54.0	592.0	4.0	8.0	589.0	3.0	6.0	100
AZR10z47	621.30	120.90	32.74	0.190	-8.80E+04	4.50E+04	0.0617	0.0018	0.718	0.017	0.0845	0.0008	0.1590	664.0	31.0	62.0	549.0	5.0	10.0	523.0	2.5	5.0	95
AZR10z48	787.00	154.70	39.00	0.200	-4.10E+04	4.70E+04	0.0576	0.0015	0.679	0.013	0.0858	0.0009	0.1266	515.0	28.5	57.0	526.0	4.0	8.0	530.0	2.5	5.0	101
AZR10z49	719.00	125.20	29.57	0.170	-2.10E+04	3.50E+04	0.0575	0.0016	0.672	0.014	0.0848	0.0009	0.1467	511.0	30.5	61.0	522.0	4.0	8.0	525.0	2.5	5.0	101
AZR10z50	798.00	196.00	48.40	0.250	-3.00E+04	4.40E+04	0.0608	0.0016	0.708	0.014	0.0846	0.0009	0.3050	632.0	28.5	57.0	544.0	4.0	8.0	523.0	2.5	5.0	96
AZR10z51	671.80	135.30	35.03	0.200	-7.60E+04	4.40E+04	0.0583	0.0016	0.686	0.015	0.0860	0.0009	0.2247	541.0	30.0	60.0	530.0	4.5	9.0	532.0	2.5	5.0	100
AZR10z52	548.80	267.50	68.60	0.490	-5.70E+04	3.70E+04	0.0574	0.0016	0.695	0.015	0.0876	0.0009	0.0971	507.0	30.5	61.0	536.0	4.5	9.0	541.0	2.5	5.0	101
AZR10z54	490.50	140.50	37.10	0.290	-5.20E+05	4.00E+05	0.0593	0.0019	0.724	0.019	0.0886	0.0009	0.1264	578.0	35.0	70.0	553.0	5.5	11.0	547.0	2.5	5.0	99
AZR10z56	722.30	171.90	42.43	0.240	4.20E+04	4.20E+04	0.0596	0.0016	0.677	0.014	0.0831	0.0008	0.0700	589.0	29.0	58.0	525.0	4.0	8.0	515.0	2.5	5.0	98
AZR10z57	833.00	358.00	92.20	0.430	-6.40E+04	4.60E+04	0.0609	0.0016	0.640	0.014	0.0763	0.0012	0.4571	636.0	28.5	57.0	502.0	4.5	9.0	474.0	3.5	7.0	94
AZR10z58	678.00	275.30	70.60	0.410	-2.60E+04	4.00E+04	0.0575	0.0016	0.694	0.014	0.0875	0.0009	0.0584	511.0	30.5	61.0	535.0	4.0	8.0	541.0	2.5	5.0	101
AZR10z59	491.00	133.20	32.94	0.270	-2.30E+04	2.70E+04	0.0605	0.0018	0.652	0.015	0.0783	0.0009	0.0889	622.0	32.0	64.0	510.0	4.5	9.0	486.0	2.5	5.0	95
AZR10z60	519.00	236.40	62.90	0.460	-2.70E+05	1.00E+05	0.0596	0.0017	0.768	0.017	0.0935	0.0010	0.1771	589.0	31.0	62.0	579.0	5.0	10.0	576.0	3.0	6.0	100
AZR10z63	876.00	319.00	87.60	0.360	-5.20E+04	6.50E+04	0.0610	0.0016	0.784	0.015	0.0934	0.0009	-0.1275	639.0	28.0	56.0	588.0	4.5	9.0	576.0	2.5	5.0	98
AZR10z65	1102.00	290.00	85.20	0.260	-4.80E+04	6.20E+04	0.0645	0.0016	0.728	0.013	0.0822	0.0009	0.1914	758.0	26.0	52.0	555.0	4.0	8.0	509.0	3.0	6.0	92
AZR10z66	1447.00	313.40	59.80	0.220	-1.04E+05	7.00E+04	0.0607	0.0015	0.544	0.009	0.0660	0.0008	0.3281	628.0	26.5	53.0	441.0	3.0	6.0	412.0	2.5	5.0	94
AZR10z67	1559.00	488.00	120.50	0.310	-1.15E+05	8.50E+04	0.0587	0.0013	0.688	0.010	0.0850	0.0008	0.1759	557.0	24.0	48.0	532.0	3.0	6.0	526.0	2.5	5.0	99
AZR10z68	1258.00	364.00	76.50	0.290	-3.50E+04	6.20E+04	0.0600	0.0014	0.628	0.011	0.0762	0.0008	0.3621	603.0	25.5	51.0	495.0	3.5	7.0	473.0	2.5	5.0	96
AZR10z69	772.00	305.00	82.50	0.400	-7.10E+04	4.60E+04	0.0597	0.0016	0.749	0.016	0.0917	0.0012	0.3180	593.0	29.0	58.0	568.0	4.5	9.0	566.0	3.5	7.0	100
AZR10z71	1002.00	225.60	53.10	0.230	1.20E+04	4.30E+04	0.0626	0.0016	0.596	0.012	0.0697	0.0010	0.3809	695.0	27.0	54.0	475.0	4.0	8.0	434.0	3.0	6.0	92

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR10z72	544.10	198.50	51.81	0.360	6.00E+04	3.10E+04	0.0596	0.0017	0.749	0.016	0.0909	0.0009	0.1250	589.0	31.0	62.0	568.0	4.5	9.0	561.0	2.5	5.0	99
AZR10z73	743.00	142.20	36.80	0.190	-8.20E+04	5.20E+04	0.0578	0.0016	0.682	0.014	0.0853	0.0009	0.1202	522.0	30.5	61.0	528.0	4.0	8.0	528.0	2.5	5.0	100
AZR10z74	759.00	354.00	88.00	0.470	4.90E+04	4.00E+04	0.0604	0.0018	0.682	0.016	0.0814	0.0009	0.0983	618.0	32.0	64.0	528.0	5.0	10.0	505.0	2.5	5.0	96
AZR10z76	571.00	114.50	30.36	0.200	-7.50E+04	6.00E+04	0.0596	0.0016	0.712	0.015	0.0864	0.0009	0.1375	589.0	29.0	58.0	546.0	4.5	9.0	534.0	2.5	5.0	98
AZR10z77	998.00	208.30	50.40	0.210	-4.90E+04	5.60E+04	0.0603	0.0015	0.644	0.016	0.0783	0.0017	0.6296	614.0	27.0	54.0	505.0	5.0	10.0	486.0	5.0	10.0	96
AZR10z78	262.60	79.10	22.21	0.300	-4.00E+04	1.70E+04	0.0609	0.0019	0.789	0.020	0.0938	0.0011	0.1360	636.0	33.5	67.0	591.0	5.5	11.0	578.0	3.0	6.0	98
AZR10z79	458.00	148.10	34.03	0.320	-4.80E+04	3.20E+04	0.0598	0.0019	0.613	0.015	0.0754	0.0010	0.1472	596.0	34.5	69.0	485.0	4.5	9.0	469.0	3.0	6.0	97
AZR10z81	507.00	170.40	40.90	0.340	-5.40E+04	3.10E+04	0.0585	0.0017	0.680	0.015	0.0847	0.0009	0.1261	549.0	31.5	63.0	527.0	4.5	9.0	524.0	2.5	5.0	99
AZR10z82	732.00	172.40	43.86	0.240	-2.60E+04	4.60E+04	0.0592	0.0017	0.714	0.015	0.0871	0.0009	0.1232	574.0	31.0	62.0	547.0	4.5	9.0	538.0	2.5	5.0	98
AZR10z83	492.80	147.60	39.42	0.300	3.00E+04	2.30E+04	0.0586	0.0017	0.747	0.017	0.0924	0.0010	0.1716	552.0	31.5	63.0	566.0	5.0	10.0	569.0	3.0	6.0	101
AZR10z84	990.10	288.50	68.10	0.290	-5.60E+04	5.40E+04	0.0587	0.0014	0.686	0.011	0.0844	0.0009	0.1879	557.0	26.0	52.0	530.0	3.5	7.0	522.0	2.5	5.0	98
AZR10z87	1388.00	391.90	86.80	0.280	-9.10E+04	7.50E+04	0.0578	0.0014	0.647	0.010	0.0812	0.0011	0.3947	524.0	26.5	53.0	507.0	3.0	6.0	503.0	3.5	7.0	99
AZR10z88	224.20	84.00	22.48	0.370	-4.70E+04	2.10E+04	0.0595	0.0022	0.770	0.025	0.0937	0.0010	-0.0137	585.0	40.0	80.0	580.0	7.0	14.0	577.0	3.0	6.0	100
AZR10z89	1102.00	262.00	68.90	0.240	-1.20E+05	7.20E+04	0.0609	0.0014	0.720	0.012	0.0861	0.0009	0.3482	634.0	25.0	50.0	551.0	3.5	7.0	532.0	3.0	6.0	97
AZR10z90	215.00	111.90	30.18	0.520	-1.90E+04	1.60E+04	0.0598	0.0025	0.784	0.029	0.0949	0.0012	0.0944	596.0	45.5	91.0	588.0	8.0	16.0	584.0	3.5	7.0	99
AZR10z91	332.00	325.00	90.50	0.980	-3.10E+04	2.30E+04	0.0593	0.0019	0.829	0.021	0.1012	0.0011	-0.0218	578.0	35.0	70.0	613.0	6.0	12.0	622.0	3.0	6.0	101
AZR10z92	973.00	328.70	84.00	0.340	-7.80E+04	6.90E+04	0.0596	0.0015	0.726	0.013	0.0882	0.0009	0.3019	589.0	27.5	55.0	554.0	4.0	8.0	545.0	2.5	5.0	98
AZR10z94	458.30	99.10	25.03	0.220	-7.90E+04	3.40E+04	0.0576	0.0017	0.690	0.015	0.0868	0.0009	-0.0001	515.0	32.5	65.0	533.0	4.5	9.0	537.0	3.0	6.0	101
AZR10z95	1316.00	294.80	75.20	0.220	-1.80E+05	1.90E+05	0.0602	0.0014	0.687	0.011	0.0835	0.0010	0.2741	610.0	25.0	50.0	531.0	3.5	7.0	517.0	3.0	6.0	97
AZR10z98	237.60	138.20	37.57	0.580	-2.40E+04	1.80E+04	0.0616	0.0024	0.778	0.026	0.0913	0.0012	0.0226	660.0	42.0	84.0	584.0	7.5	15.0	563.0	3.5	7.0	96
AZR10z99	1228.00	353.00	81.70	0.290	8.00E+04	2.70E+04	0.0610	0.0015	0.662	0.013	0.0795	0.0011	0.4685	639.0	26.5	53.0	516.0	4.0	8.0	493.0	3.5	7.0	96
AZR10z100	382.40	153.72	38.11	0.400	-4.80E+04	1.60E+04	0.0602	0.0019	0.697	0.018	0.0852	0.0009	0.1356	611.0	34.0	68.0	537.0	5.5	11.0	527.0	2.5	5.0	98
AZR10z102	551.00	216.90	57.60	0.390	-1.00E+03	3.30E+04	0.0584	0.0017	0.743	0.017	0.0924	0.0009	0.0991	545.0	32.0	64.0	564.0	5.0	10.0	570.0	2.5	5.0	101
AZR10z103	1150.00	579.00	146.90	0.500	1.80E+04	6.90E+04	0.0625	0.0015	0.747	0.013	0.0871	0.0013	0.3424	691.0	25.5	51.0	566.0	4.0	8.0	538.0	4.0	8.0	95
AZR10z104	1279.00	299.30	70.20	0.230	-1.30E+04	4.50E+04	0.0580	0.0013	0.667	0.009	0.0834	0.0008	0.0934	529.0	24.5	49.0	519.0	3.0	6.0	516.0	2.5	5.0	100
AZR10z106	473.00	842.00	262.40	1.780	-1.18E+05	5.00E+04	0.0620	0.0018	0.926	0.021	0.1093	0.0011	0.1382	674.0	31.0	62.0	666.0	5.5	11.0	669.0	3.0	6.0	100
AZR10z107	830.00	175.40	46.30	0.210	4.30E+04	4.30E+04	0.0605	0.0015	0.688	0.012	0.0826	0.0008	0.0944	622.0	26.5	53.0	532.0	3.5	7.0	512.0	2.5	5.0	96
AZR10z108	442.60	92.46	22.68	0.210	-7.00E+04	2.20E+04	0.0590	0.0020	0.687	0.018	0.0844	0.0009	-0.1149	567.0	37.0	74.0	531.0	5.5	11.0	522.0	2.5	5.0	98
AZR10z110	962.00	302.80	66.80	0.310	8.60E+04	3.70E+04	0.0594	0.0016	0.626	0.014	0.0770	0.0008	0.1234	582.0	29.0	58.0	494.0	4.5	9.0	478.0	2.5	5.0	97
AZR10z111	1255.00	304.00	58.80	0.240	5.90E+04	3.50E+04	0.0610	0.0015	0.607	0.010	0.0720	0.0008	0.2658	639.0	26.5	53.0	482.0	3.0	6.0	448.0	2.5	5.0	93
AZR10z112	513.00	262.00	67.50	0.510	-3.00E+05	1.60E+05	0.0583	0.0017	0.710	0.017	0.0880	0.0010	0.0432	541.0	32.0	64.0	545.0	5.0	10.0	544.0	3.0	6.0	100
AZR10z113	863.00	229.80	61.60	0.270	4.00E+04	4.00E+04	0.0620	0.0016	0.714	0.014	0.0838	0.0010	0.0237	674.0	27.5	55.0	547.0	4.0	8.0	519.0	3.0	6.0	95
AZR10z114	1536.00	471.00	100.80	0.310	8.60E+04	2.00E+04	0.0637	0.0015	0.606	0.011	0.0719	0.0014	0.6525	732.0	25.0	50.0	481.0	3.5	7.0	448.0	4.0	8.0	93
AZR10z117	1345.00	421.00	79.90	0.310	-5.00E+04	6.60E+04	0.0601	0.0014	0.663	0.013	0.0805	0.0010	0.4973	606.0	25.0	50.0	516.0	4.0	8.0	499.0	3.0	6.0	97
AZR10z118	863.00	374.00	108.80	0.430	1.40E+04	6.30E+04	0.0603	0.0014	0.793	0.012	0.0963	0.0010	0.3131	613.0	25.0	50.0	593.0	3.5	7.0	593.0	3.0	6.0	100
AZR10z119	1043.00	267.50	74.30	0.260	-1.00E+06	2.50E+06	0.0660	0.0017	0.755	0.013	0.0831	0.0009	-0.0148	806.0	27.0	54.0	571.0	4.0	8.0	514.0	2.5	5.0	90
AZR10z120	922.00	208.00	49.80	0.230	1.10E+06	1.80E+06	0.0599	0.0016	0.679	0.014	0.0820	0.0011	0.2729	600.0	29.0	58.0	526.0	4.0	8.0	508.0	3.5	7.0	97
Discordant data																							
AZR10z8	2415.00	352.00	68.70	0.150	6.00E+04	3.50E+04	0.0668	0.0016	0.329	0.006	0.0365	0.0007	0.4792	832.0	25.0	50.0	289.0	2.5	5.0	231.0	2.0	4.0	80
AZR10z24	416.00	168.80	62.90	0.410	1.00E+05	2.20E+04	0.0732	0.0038	0.968	0.046	0.0975	0.0011	0.5656	1019.0	52.5	105.0	687.0	12.0	24.0	600.0	3.0	6.0	87
AZR10z29	1807.00	671.00	98.20	0.370	9.60E+04	2.80E+04	0.0678	0.0016	0.508	0.010	0.0545	0.0009	0.4990	862.0	24.5	49.0	417.0	3.5	7.0	342.0	2.5	5.0	82
AZR10z36	1099.00	366.00	82.70	0.330	3.24E+04	9.00E+03	0.0693	0.0017	0.676	0.011	0.0713	0.0011	0.3064	908.0	25.5	51.0	524.0	3.5	7.0	444.0	3.5	7.0	85
AZR10z44	2517.00	737.00	90.70	0.290	3.28E+04	4.90E+03	0.0735	0.0018	0.338	0.006	0.0338	0.0006	0.4840	1028.0	25.0	50.0	295.0	2.5	5.0	215.0	2.0	4.0	73
AZR10z53	2764.00	1727.00	244.00	0.620	9.50E+04	2.80E+04	0.0789	0.0020	0.406	0.006	0.0376	0.0006	0.2488	1170.0	25.0	50.0	346.0	2.0	4.0	238.0	2.0	4.0	69
AZR10z55	1802.00	349.00	51.60	0.190	4.20E+04	1.30E+04	0.0615	0.0016	0.374	0.007	0.0437	0.0005	0.2751	657.0	28.0	56.0	323.0	2.5	5.0	276.0	1.5	3.0	85
AZR10z61	1082.00	272.60	80.30	0.250	7.90E+04	2.40E+04	0.0874	0.0025	0.676	0.011	0.0572	0.0011	0.0461	1369.0	27.5	55.0	524.0	3.5	7.0	359.0	3.5	7.0	68
AZR10z62	1380.00	259.00	47.50	0.190	-1.84E+05	6.70E+04	0.0679	0.0023	0.497	0.034	0.0572	0.0045	0.9320	866.0	35.0	70.0	410.0	11.5	23.0	359.0	13.5	27.0	88
AZR10z64	1124.00	341.00	96.40	0.300	8.10E+04	3.90E+04	0.0778	0.0019	0.750	0.012	0.0705	0.0008	0.1108	1142.0	24.5	49.0	568.0	3.5	7.0	439.0	2.5	5.0	77
AZR10z75	1534.00	619.00	91.00	0.400	-4.50E+04	7.90E+04	0.0704	0.0017	0.545	0.012	0.0571	0.0010	0.5358	940.0	24.5	49.0	442.0	4.0	8.0	358.0	3.0	6.0	81
AZR10z80	1556.00	375.80	130.30	0.240	8.00E+05	2.10E+05	0.0915	0.0025	0.760	0.012	0.0607	0.0008	0.0473	1457.0	26.0	52.0	574.0	3.5	7.0	380.0	2.5	5.0	66
AZR10z85	1414.00	355.50	123.30	0.250	8.60E+04	5.10E+04	0.0835	0.0021	0.731	0.012	0.0639	0.0010	0.3139	1281.0	24.5	49.0	557.0	3.5	7.0	399.0	3.0	6.0	72
AZR10z86	2013.00	423.00	152.70	0.210	1.04E+05	2.80E+04	0.0775	0.0023	0.664	0.009	0.0623	0.0014	0.1844	1134.0	29.5	59.0	517.0	3.0	6.0	390.0	4.0	8.0	75
AZR10z93	671.30	92.36	54.90	0.140	-1.40E+05	1.30E+05	0.1124	0.0023	3.445	0.066	0.2228	0.0037	0.8289	1839.0	18.5	37.0	1515.0	7.5	15.0	1297.0	10.0	20.0	86
AZR10z96	1663.00	366.00	83.20	0.220	6.70E+04	2.10E+04	0.0648	0.0016	0.609	0.011	0.0686	0.0012	0.5293	768.0	26.0	52.0	483.0	3.5	7.0	428.0	3.5	7.0	89
AZR10z97	1958.00	869.00	166.80	0.440	-4.00E+04	8.00E+04	0.0743	0.0018	0.604	0.008	0.0588	0.0008	0.2855	1050.0	24.5	49.0	480.0	2.5	5.0	369.0	2.5	5.0	77
AZR10z101	1467.00	367.00	97.20	0.250	5.90E+04	3.00E+04	0.0668	0.0016	0.671	0.010	0.0729	0.0008	0.0910	832.0	25.0	50.0	521.0	3.0	6.0	454.0	2.5	5.0	87
AZR10z105	1288.00	442.00	115.10	0.340	-8.00E+04	9.00E+04	0.0816	0.0019	0.787	0.011	0.0707	0.0010	0.2679	1236.0	23.0	46.0	589.0	3.0	6.0	440.0	3.0	6.0	75
AZR10z109	1299.00	530.00	182.80	0.410	9.70E+04	2.10E+04	0.1128	0.0028	0.977	0.015	0.0625	0.0009	0.0804	1845.0	22.5	45.0	692.0	4.0	8.0	391.0	2.5	5.0	56
AZR10z115	1870.00	218.00	29.10	0.120	-6.70E+04	5.90E+04	0.0686	0.0020	0.231	0.014	0.0257	0.0017	0.9146	887.0	30.0	60.0	211.0	6.0	12.0	164.0	5.5	11.0	78
AZR10z116	1305.00	328.30	94.30	0.250	1.60E+04	3.20E+04	0.0835	0.0031	0.463	0.018	0.0401	0.0006	0.5397	1281.0	36.0	72.0	386.0	6.0	12.0	253.0	2.0	4.0	66

Footnotes:

- Analysis references: AZR10z is zircon from sample AZR10 (mount CT18-10b), followed by grain number.

Table D.26a: Sample AZR1 (LA-ICPMS)

IGSN: IEACC0023 Coordinate UTM: Zone 30S, 295882 m E, 3705386 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AZR1z1	628.20	408.20	106.70	0.650	3.50E+04	3.30E+04	0.0595	0.0016	0.778	0.017	0.0948	0.0010	0.1168	585.0	29.0	58.0	584.0	5.0	10.0	584.0	3.0	6.0	100
AZR1z2	302.50	241.50	71.30	0.800	-3.10E+04	1.80E+04	0.0604	0.0019	0.877	0.023	0.1053	0.0011	0.1285	618.0	34.0	68.0	639.0	6.0	12.0	645.0	3.0	6.0	101
AZR1z3	402.60	763.00	242.30	1.900	-4.70E+04	2.50E+04	0.0632	0.0019	0.948	0.023	0.1093	0.0012	0.2534	715.0	32.0	64.0	677.0	6.0	12.0	669.0	3.5	7.0	99
AZR1z5	933.00	1066.00	556.20	1.140	-6.50E+04	9.70E+04	0.0766	0.0016	2.026	0.025	0.1921	0.0018	0.2828	1111.0	21.0	42.0	1124.0	4.0	8.0	1133.0	5.0	10.0	101
AZR1z6	724.00	507.00	100.90	0.700	-2.20E+04	3.50E+04	0.0637	0.0017	0.752	0.014	0.0861	0.0010	-0.0314	732.0	28.5	57.0	569.0	4.0	8.0	532.0	3.0	6.0	94
AZR1z7	371.60	188.00	173.80	0.510	-5.30E+04	5.60E+04	0.1324	0.0037	7.040	0.100	0.3884	0.0049	0.7220	2130.0	24.5	49.0	2116.0	6.5	13.0	2115.0	11.5	23.0	100
AZR1z8	113.60	55.02	14.57	0.480	3.50E+03	5.20E+03	0.0601	0.0030	0.756	0.034	0.0916	0.0013	-0.0738	607.0	54.0	108.0	572.0	10.0	20.0	565.0	4.0	8.0	99
AZR1z9	288.00	387.00	103.00	1.340	1.70E+04	1.70E+04	0.0644	0.0020	0.896	0.024	0.1002	0.0012	0.1956	755.0	33.0	66.0	650.0	6.5	13.0	616.0	3.5	7.0	95
AZR1z10	354.60	192.90	58.50	0.540	-8.00E+04	1.90E+04	0.0617	0.0020	0.926	0.024	0.1076	0.0011	-0.0375	664.0	34.5	69.0	666.0	6.5	13.0	659.0	3.0	6.0	99
AZR1z11	193.20	227.80	61.30	1.180	-9.00E+04	1.00E+04	0.0615	0.0023	0.835	0.026	0.0982	0.0012	0.1047	657.0	40.0	80.0	616.0	7.0	14.0	604.0	3.5	7.0	98
AZR1z12	577.00	399.50	413.60	0.690	3.00E+05	1.70E+05	0.1264	0.0034	6.894	0.064	0.3938	0.0039	0.4249	2048.0	24.0	48.0	2098.0	4.0	8.0	2140.0	9.0	18.0	102
AZR1z13	539.30	588.20	553.80	1.090	1.00E+06	1.20E+05	0.1296	0.0035	6.766	0.059	0.3786	0.0033	0.3180	2093.0	23.5	47.0	2081.0	4.0	8.0	2070.0	7.5	15.0	99
AZR1z14	78.10	129.80	164.00	1.660	-1.60E+04	1.80E+04	0.1984	0.0059	12.930	0.200	0.4688	0.0056	0.4128	2813.0	24.5	49.0	2675.0	7.5	15.0	2478.0	12.5	25.0	93
AZR1z15	436.00	792.00	298.00	1.820	-1.90E+04	2.50E+04	0.0665	0.0018	1.231	0.023	0.1357	0.0013	0.0583	822.0	28.5	57.0	815.0	5.0	10.0	820.0	3.5	7.0	101
AZR1z16	369.60	315.50	326.00	0.850	-8.40E+04	8.10E+04	0.1491	0.0041	8.513	0.094	0.4146	0.0040	0.4703	2336.0	23.5	47.0	2287.0	5.0	10.0	2236.0	9.0	18.0	98
AZR1z17	555.00	434.50	539.00	0.780	-1.80E+05	1.60E+05	0.1759	0.0047	12.020	0.110	0.4930	0.0047	0.5244	2615.0	22.0	44.0	2606.0	4.5	9.0	2584.0	10.0	20.0	99
AZR1z18	261.60	363.10	81.40	1.390	-8.00E+04	1.20E+04	0.0655	0.0024	0.804	0.025	0.0895	0.0012	-0.0458	790.0	38.5	77.0	599.0	7.0	14.0	552.0	3.5	7.0	92
AZR1z19	526.80	679.00	197.80	1.290	1.30E+04	3.20E+04	0.0597	0.0017	0.838	0.017	0.1021	0.0010	-0.0321	593.0	31.0	62.0	618.0	4.5	9.0	627.0	3.0	6.0	101
AZR1z20	561.50	100.90	163.50	0.180	-2.70E+05	2.30E+05	0.2751	0.0073	24.630	0.180	0.6496	0.0058	0.4898	3335.0	21.0	42.0	3294.0	3.5	7.0	3227.0	11.5	23.0	98
AZR1z21	813.40	767.90	702.60	0.940	1.20E+05	1.60E+05	0.1149	0.0031	5.319	0.048	0.3356	0.0030	0.2295	1878.0	24.5	49.0	1872.0	4.0	8.0	1865.0	7.0	14.0	100
AZR1z22	117.90	52.77	57.40	0.450	-5.00E+04	2.50E+04	0.1339	0.0041	7.620	0.120	0.4115	0.0042	0.0991	2150.0	26.5	53.0	2187.0	7.0	14.0	2222.0	9.5	19.0	102
AZR1z23	226.90	100.50	29.17	0.440	-5.00E+04	1.10E+04	0.0604	0.0022	0.815	0.025	0.0982	0.0012	0.1338	618.0	39.5	79.0	605.0	7.0	14.0	604.0	3.5	7.0	100
AZR1z24	292.60	162.70	201.70	0.560	-3.40E+04	7.70E+04	0.1792	0.0049	12.270	0.120	0.4992	0.0049	0.3734	2645.0	22.5	45.0	2625.0	4.5	9.0	2610.0	10.5	21.0	99
AZR1z25	85.57	308.50	79.50	3.610	-5.60E+03	4.40E+03	0.0555	0.0038	0.696	0.044	0.0902	0.0013	-0.0165	432.0	76.5	153.0	536.0	13.0	26.0	557.0	4.0	8.0	104
AZR1z26	275.80	315.00	96.70	1.140	8.00E+04	1.30E+04	0.0631	0.0022	0.950	0.027	0.1095	0.0012	-0.0499	712.0	37.0	74.0	678.0	7.0	14.0	670.0	3.5	7.0	99
AZR1z27	124.40	56.40	17.42	0.450	-1.41E+04	7.90E+03	0.0614	0.0029	0.903	0.038	0.1073	0.0015	0.0363	653.0	50.5	101.0	653.0	10.0	20.0	657.0	4.5	9.0	101
AZR1z28	141.80	82.70	31.16	0.580	-7.20E+03	7.40E+03	0.0612	0.0026	0.794	0.030	0.0949	0.0012	0.0307	646.0	45.5	91.0	593.0	8.5	17.0	584.0	3.5	7.0	98
AZR1z29	430.90	548.20	585.80	1.270	1.25E+05	9.90E+04	0.1302	0.0036	7.206	0.067	0.4012	0.0038	0.1928	2101.0	24.5	49.0	2137.0	4.0	8.0	2175.0	8.5	17.0	102
AZR1z30	519.80	328.00	498.50	0.630	3.00E+05	2.00E+05	0.2315	0.0062	17.840	0.240	0.5604	0.0075	0.8327	3062.0	21.5	43.0	2981.0	6.5	13.0	2868.0	15.5	31.0	96
AZR1z31	341.80	245.70	72.70	0.720	-2.10E+04	2.00E+04	0.0600	0.0020	0.839	0.024	0.1016	0.0011	-0.0499	604.0	36.0	72.0	619.0	6.5	13.0	624.0	3.0	6.0	101
AZR1z32	644.00	94.90	33.13	0.150	4.00E+04	4.10E+04	0.0648	0.0016	1.229	0.019	0.1371	0.0014	0.0573	768.0	26.0	52.0	814.0	4.5	9.0	828.0	4.0	8.0	102
AZR1z33	591.00	1095.00	302.00	1.850	-3.80E+04	3.10E+04	0.0614	0.0016	0.836	0.016	0.0988	0.0012	0.2571	653.0	28.0	56.0	617.0	4.5	9.0	607.0	3.5	7.0	98
AZR1z34	154.80	87.73	59.74	0.570	-4.00E+04	1.90E+04	0.0884	0.0025	2.958	0.061	0.2443	0.0028	0.1048	1391.0	27.0	54.0	1397.0	8.0	16.0	1409.0	7.5	15.0	101
AZR1z35	103.91	50.99	13.09	0.490	8.40E+03	6.30E+03	0.0611	0.0032	0.738	0.035	0.0896	0.0013	-0.0122	643.0	56.5	113.0	561.0	10.0	20.0	553.0	4.0	8.0	99
AZR1z37	348.00	385.00	466.00	1.110	-6.50E+04	7.10E+04	0.1462	0.0040	9.252	0.091	0.4589	0.0045	0.3683	2302.0	23.5	47.0	2363.0	4.5	9.0	2435.0	10.0	20.0	103
AZR1z38	417.80	166.80	51.00	0.400	-5.00E+04	2.50E+04	0.0618	0.0018	0.924	0.021	0.1093	0.0011	0.1192	667.0	31.0	62.0	664.0	5.5	11.0	669.0	3.0	6.0	101
AZR1z39	173.30	155.70	173.20	0.900	4.20E+04	2.50E+04	0.1289	0.0038	7.332	0.099	0.4105	0.0043	0.0824	2083.0	26.0	52.0	2153.0	6.0	12.0	2217.0	10.0	20.0	103
AZR1z40	518.00	462.00	300.00	0.890	-2.40E+05	1.50E+05	0.0885	0.0019	2.798	0.036	0.2294	0.0022	0.1902	1393.0	20.5	41.0	1355.0	5.0	10.0	1331.0	6.0	12.0	98
AZR1z41	119.00	127.40	87.90	1.070	4.00E+04	1.70E+04	0.0925	0.0027	3.096	0.073	0.2419	0.0026	0.1655	1478.0	27.5	55.0	1432.0	9.0	18.0	1397.0	6.5	13.0	98
AZR1z43	179.60	110.30	37.86	0.610	-8.00E+04	1.20E+04	0.0619	0.0023	1.038	0.033	0.1213	0.0014	0.0513	671.0	40.0	80.0	723.0	8.0	16.0	738.0	4.0	8.0	102
AZR1z44	334.00	301.00	91.00	0.900	2.30E+04	1.60E+04	0.0616	0.0019	0.889	0.022	0.1050	0.0012	0.0402	660.0	33.0	66.0	646.0	6.0	12.0	644.0	3.5	7.0	100
AZR1z45	94.19	113.19	35.43	1.200	-6.00E+02	5.20E+03	0.0636	0.0032	0.899	0.044	0.1009	0.0015	0.1776	728.0	53.5	107.0	651.0	12.0	24.0	620.0	4.5	9.0	95
AZR1z46	114.90	36.30	25.30	0.320	2.90E+04	2.80E+04	0.1212	0.0038	5.790	0.110	0.3448	0.0044	0.3475	1974.0	28.0	56.0	1945.0	8.0	16.0	1910.0	10.5	21.0	98
AZR1z47	701.00	386.00	115.00	0.550	7.50E+04	9.60E+04	0.1304	0.0035	5.614	0.050	0.3121	0.0033	0.3725	2103.0	23.5	47.0	1918.0	4.0	8.0	1751.0	8.0	16.0	91
AZR1z48	67.42	73.08	97.90	1.080	1.30E+04	2.00E+04	0.1812	0.0055	12.840	0.200	0.5116	0.0062	0.1507	2664.0	25.0	50.0	2668.0	7.5	15.0	2663.0	13.0	26.0	100
AZR1z49	132.20	282.00	251.00	2.130	-3.30E+04	1.90E+04	0.1149	0.0036	5.281	0.099	0.3325	0.0034	0.2148	1878.0	28.0	56.0	1866.0	8.0	16.0	1850.0	8.0	16.0	99
AZR1z50	59.60	103.90	91.30	1.740	1.00E+03	1.10E+04	0.1124	0.0042	5.020	0.130	0.3251	0.0039	0.0323	1839.0	34.0	68.0	1823.0	11.0	22.0	1815.0	9.5	19.0	100
AZR1z51	514.50	661.00	240.30	1.280	-3.00E+04	3.00E+04	0.0663	0.0018	1.128	0.022	0.1239	0.0012	0.1027	816.0	28.5	57.0	767.0	5.0	10.0	753.0	3.5	7.0	98
AZR1z52	551.00	116.20	21.81	0.210	3.00E+04	2.90E+04	0.0688	0.0019	0.884	0.018	0.0943	0.0013	0.2743	893.0	28.5	57.0	643.0	5.0	10.0	581.0	4.0	8.0	90
AZR1z53	592.10	510.00	157.90	0.860	1.30E+04	3.50E+04	0.0634	0.0018	0.909	0.020	0.1039	0.0010	0.2316	722.0	30.0	60.0	657.0	5.5	11.0	637.0	3.0	6.0	97
AZR1z54	747.00	303.00	204.00	0.410	5.00E+05	1.30E+05	0.1313	0.0036	6.209	0.058	0.3454	0.0037	0.5712	2115.0	24.0	48.0	2006.0	4.0	8.0	1913.0	9.0	18.0	95
AZR1z55	232.40	214.00	65.40	0.920	-2.40E+04	1.30E+04	0.0641	0.0021	0.929	0.024	0.1049	0.0012	0.0965	745.0	34.5	69.0	667.0	6.5	13.0	643.0	3.5	7.0	96
AZR1z56	132.40	128.50	190.70	0.970	-6.90E+04	5.00E+04	0.2321	0.0065	18.560	0.220	0.5800	0.0058	0.3697	3067.0	22.5	45.0	3019.0	5.5	11.0	2949.0	12.0	24.0	98
AZR1z57	596.50	90.20	147.70	0.150	-5.00E+05	2.20E+05	0.2658	0.0071	24.620	0.180	0.6736	0.0066	0.4682	3281.0	21.0	42.0	3293.0	3.5	7.0	3320.0	12.5	25.0	101
AZR1z58	477.00	10.85	10.96	0.020	-1.20E+05	1.20E+05	0.1591	0.0043	9.060	0.100	0.4115	0.0047	0.6412	2446.0	23.0	46.0	2344.0	5.0	10.0	2222.0	10.5	21.0	95
AZR1z59	345.40	322.10	108.20	0.930	5.20E+04	3.20E+04	0.0628	0.0018	0.995	0.025	0.1144	0.0014	0.2498	701.0	30.5	61.0	701.0	6.5	13.0	698.0	4.0	8.0	100
AZR1z60	190.90	240.30	64.40	1.260	-6.00E+04	1.10E+04	0.0614	0.0024	0.796	0.027	0.0936	0.0011	0.0197	653.0	42.0	84.0	595.0	7.5	15.0	577.0	3.0	6.0	97
AZR1z61	428.80	413.30	138.20	0.960	-4.10E+04	3.00E+04	0.0629	0.0017	0.986	0.021	0.1138	0.0012	0.1981	705.0	29.0	58.0	697.0	5.5	11.0	695.0	3.5	7.0	100
AZR1z62	245.50	164.00	108.30	0.670	3.60E+04	2.60E+04	0.0859	0.0021	2.789	0.044	0.2360	0.0023	0.0864	1336.0	23.5	47.0	1353.0	6.0	12.0	1366.0	6.0	12.0	101
AZR1z63	29.71	16.77	17.49	0.560	-3.80E+03	6.30E+03	0.1326	0.0056	6.870	0.210	0.3737	0.0056	0.1173	2133.0	37.0	74.0	2095.0	13.5	27.0	2047.0	13.0	26.0	98

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR1z64	406.00	288.50	277.40	0.710	-1.60E+04	7.80E+04	0.1152	0.0032	5.576	0.054	0.3503	0.0033	0.2064	1883.0	25.0	50.0	1912.0	4.0	8.0	1936.0	8.0	16.0	101
AZR1z65	86.40	53.40	65.40	0.620	-1.50E+04	1.90E+04	0.1680	0.0050	10.770	0.160	0.4616	0.0055	0.3351	2538.0	25.0	50.0	2503.0	7.0	14.0	2447.0	12.0	24.0	98
AZR1z67	727.00	168.60	148.40	0.230	-8.00E+05	1.80E+05	0.1300	0.0035	6.795	0.057	0.3804	0.0036	0.3864	2098.0	23.5	47.0	2085.0	3.5	7.0	2078.0	8.5	17.0	100
AZR1z68	513.20	1097.00	320.50	2.140	-5.00E+04	3.70E+04	0.0607	0.0018	0.852	0.020	0.1018	0.0011	0.0826	629.0	32.0	64.0	626.0	5.5	11.0	625.0	3.0	6.0	100
AZR1z69	380.20	87.70	34.59	0.230	-2.00E+04	2.90E+04	0.0666	0.0018	1.228	0.024	0.1344	0.0014	0.1424	825.0	28.0	56.0	813.0	5.5	11.0	813.0	4.0	8.0	100
AZR1z70	200.30	241.30	71.80	1.200	-1.20E+04	1.10E+04	0.0609	0.0024	0.852	0.029	0.1009	0.0013	0.1344	636.0	42.5	85.0	626.0	8.0	16.0	620.0	4.0	8.0	99
AZR1z71	219.00	459.00	452.00	2.100	1.10E+04	4.20E+04	0.1243	0.0035	6.321	0.074	0.3683	0.0035	0.1226	2019.0	25.0	50.0	2021.0	5.0	10.0	2021.0	8.0	16.0	100
AZR1z72	259.80	384.00	97.00	1.480	1.20E+04	1.40E+04	0.0591	0.0022	0.710	0.023	0.0871	0.0011	0.0737	571.0	40.5	81.0	545.0	7.0	14.0	538.0	3.5	7.0	99
AZR1z73	149.20	159.60	145.90	1.070	-8.00E+04	2.80E+04	0.1249	0.0038	5.780	0.210	0.3418	0.0097	0.8934	2027.0	27.0	54.0	1943.0	15.5	31.0	1895.0	23.5	47.0	98
AZR1z75	229.20	313.30	96.10	1.370	3.00E+04	1.30E+04	0.0612	0.0023	0.852	0.026	0.1010	0.0012	-0.0143	646.0	40.5	81.0	626.0	7.0	14.0	620.0	3.5	7.0	99
AZR1z76	632.30	146.70	47.81	0.230	-2.50E+04	3.10E+04	0.0636	0.0016	0.902	0.018	0.1033	0.0012	0.4504	728.0	26.5	53.0	653.0	5.0	10.0	633.0	3.5	7.0	97
AZR1z77	119.70	197.90	53.50	1.650	-5.50E+03	5.60E+03	0.0610	0.0032	0.787	0.036	0.0932	0.0015	-0.1429	639.0	56.5	113.0	589.0	10.0	20.0	574.0	4.5	9.0	97
AZR1z78	248.40	144.00	154.70	0.580	-2.60E+04	5.70E+04	0.1351	0.0038	7.439	0.090	0.3962	0.0037	0.2794	2165.0	24.5	49.0	2166.0	5.5	11.0	2152.0	8.5	17.0	99
AZR1z79	184.70	326.00	283.40	1.770	-2.90E+04	3.50E+04	0.1068	0.0032	4.643	0.068	0.3132	0.0034	0.2098	1746.0	27.5	55.0	1757.0	6.0	12.0	1756.0	8.5	17.0	100
AZR1z80	173.10	110.50	121.10	0.640	-9.00E+04	6.20E+04	0.1374	0.0040	7.880	0.100	0.4148	0.0039	0.1175	2195.0	25.5	51.0	2217.0	5.5	11.0	2237.0	9.0	18.0	101
AZR1z81	210.40	105.60	29.06	0.500	-5.00E+04	1.10E+04	0.0616	0.0023	0.777	0.026	0.0921	0.0011	0.1682	660.0	40.0	80.0	584.0	7.5	15.0	568.0	3.0	6.0	97
AZR1z82	681.00	288.40	86.30	0.420	3.10E+04	3.30E+04	0.0624	0.0015	0.856	0.013	0.1003	0.0010	0.0417	688.0	25.5	51.0	628.0	3.5	7.0	616.0	3.0	6.0	98
AZR1z83	242.60	229.30	224.60	0.950	-3.40E+04	5.90E+04	0.1217	0.0034	6.119	0.073	0.3641	0.0035	0.2258	1981.0	25.0	50.0	1993.0	5.0	10.0	2002.0	8.5	17.0	100
AZR1z84	331.00	337.00	99.10	1.020	-8.00E+04	1.80E+04	0.0599	0.0019	0.852	0.023	0.1030	0.0012	0.0366	600.0	34.5	69.0	626.0	6.5	13.0	632.0	3.5	7.0	101
AZR1z85	408.70	238.40	190.40	0.580	3.70E+04	7.00E+04	0.1263	0.0035	5.289	0.061	0.3035	0.0031	0.3282	2047.0	24.5	49.0	1867.0	5.0	10.0	1709.0	7.5	15.0	92
AZR1z86	222.00	94.10	25.75	0.420	-1.30E+04	1.30E+04	0.0588	0.0022	0.748	0.025	0.0929	0.0011	0.0852	560.0	41.0	82.0	567.0	7.5	15.0	572.0	3.0	6.0	101
AZR1z87	144.90	271.00	45.18	1.870	-7.80E+03	6.60E+03	0.0619	0.0028	0.769	0.031	0.0907	0.0012	0.0872	671.0	48.5	97.0	579.0	9.0	18.0	560.0	3.5	7.0	97
AZR1z89	165.79	86.40	128.60	0.520	-3.50E+05	1.50E+05	0.1990	0.0055	14.710	0.150	0.5370	0.0052	0.2803	2818.0	22.5	45.0	2797.0	5.0	10.0	2771.0	11.0	22.0	99
AZR1z90	551.00	359.00	383.00	0.650	3.00E+05	1.20E+05	0.1354	0.0037	7.607	0.066	0.4060	0.0038	0.3714	2169.0	24.0	48.0	2186.0	4.0	8.0	2197.0	8.5	17.0	100
AZR1z92	248.30	447.00	115.00	1.800	3.00E+04	1.40E+04	0.0577	0.0023	0.704	0.024	0.0884	0.0010	0.0867	518.0	44.0	88.0	541.0	7.0	14.0	546.0	3.0	6.0	101
AZR1z94	590.00	893.00	245.60	1.510	-7.00E+04	3.80E+04	0.0646	0.0017	0.858	0.017	0.0970	0.0013	0.2213	761.0	27.5	55.0	629.0	4.5	9.0	597.0	4.0	8.0	95
AZR1z95	368.00	344.30	105.00	0.940	-1.90E+04	2.20E+04	0.0606	0.0018	0.873	0.020	0.1045	0.0011	0.0973	625.0	32.0	64.0	637.0	5.5	11.0	640.0	3.0	6.0	101
AZR1z97	1058.00	480.00	207.10	0.450	3.80E+05	1.20E+05	0.1266	0.0034	5.166	0.041	0.2942	0.0030	0.4670	2051.0	23.5	47.0	1847.0	3.5	7.0	1662.0	7.5	15.0	90
AZR1z99	688.00	205.00	30.10	0.300	-1.50E+04	3.70E+04	0.0683	0.0019	0.885	0.033	0.0972	0.0037	0.7906	878.0	29.0	58.0	644.0	9.0	18.0	598.0	11.0	22.0	93
AZR1z100	446.90	42.68	10.68	0.100	-1.00E+05	2.80E+04	0.0580	0.0018	0.714	0.018	0.0893	0.0010	0.0533	530.0	34.0	68.0	547.0	5.5	11.0	552.0	3.0	6.0	101
Discordant data																							
AZR1z4	995.00	899.00	143.00	0.900	6.00E+04	4.50E+04	0.0739	0.0019	0.941	0.015	0.0926	0.0012	0.2044	1039.0	26.0	52.0	673.0	4.0	8.0	571.0	3.5	7.0	85
AZR1z36	1181.00	800.00	201.00	0.680	4.10E+04	2.90E+04	0.0776	0.0021	0.786	0.014	0.0746	0.0010	-0.0720	1137.0	27.0	54.0	589.0	4.0	8.0	464.0	3.0	6.0	79
AZR1z42	1012.00	1900.00	684.00	1.880	1.43E+05	5.90E+04	0.1433	0.0029	3.702	0.036	0.1871	0.0022	0.5337	2267.0	17.5	35.0	1572.0	4.0	8.0	1106.0	6.0	12.0	70
AZR1z66	732.00	867.00	181.70	1.180	-3.00E+04	2.40E+04	0.0794	0.0022	0.893	0.016	0.0828	0.0013	0.0522	1182.0	27.5	55.0	648.0	4.5	9.0	513.0	4.0	8.0	79
AZR1z74	290.30	252.90	42.50	0.870	-1.46E+04	9.90E+03	0.0701	0.0023	0.844	0.022	0.0879	0.0011	-0.0171	931.0	33.5	67.0	621.0	6.0	12.0	543.0	3.5	7.0	87
AZR1z88	274.50	304.90	78.70	1.110	-1.70E+04	1.70E+04	0.0675	0.0024	0.798	0.024	0.0860	0.0013	0.0852	853.0	37.0	74.0	596.0	7.0	14.0	532.0	4.0	8.0	89
AZR1z91	516.00	1045.00	244.20	2.030	-1.10E+04	2.40E+04	0.0709	0.0023	0.885	0.017	0.0916	0.0018	-0.0289	955.0	33.0	66.0	644.0	4.5	9.0	565.0	5.5	11.0	88
AZR1z93	77.50	96.40	32.40	1.240	1.40E+03	3.90E+03	0.0862	0.0071	1.114	0.099	0.0940	0.0021	0.5910	1343.0	79.5	159.0	760.0	24.0	48.0	579.0	6.0	12.0	76
AZR1z96	941.00	1978.00	510.00	2.100	2.80E+04	3.10E+04	0.0953	0.0029	1.126	0.025	0.0873	0.0012	-0.0091	1534.0	28.5	57.0	766.0	6.0	12.0	540.0	3.5	7.0	70
AZR1z98	244.00	781.00	209.00	3.200	-5.00E+04	1.40E+04	0.0771	0.0036	0.998	0.044	0.0951	0.0012	0.3176	1124.0	46.5	93.0	703.0	11.0	22.0	586.0	3.5	7.0	83

Footnotes:

- Analysis references: AZR1z is zircon from sample AZR1 (mounts CT18-10b and CT19-3), followed by grain number.

Table D.26b: Sample AZR1 (SIMS)

IGSN: IEACC0023 Coordinate UTM: Zone 30S, 295882 m E, 3705386 m N

ANALYSIS	^{238}U (ppm)	^{206}Pb (ppm)	Th/U	^{204}Pb (ppb)	$^{207}Pb/^{206}Pb$	σ	$^{207}Pb/^{235}U$	σ	$^{206}Pb/^{238}U$	σ	Rho	Ages (Ma) $^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	Concordance (%)
Concordant data																					
AZR1z101	547.00	43.20	0.22	1.800	0.0571	0.0016	0.720	0.020	0.0900	0.0010	0.4368	495	63.0	126.0	549	14.0	28.0	563	8.0	16.0	102
AZR1z102	148.00	50.50	0.55	9.300	0.1367	0.0010	7.450	0.120	0.4000	0.0050	0.8567	2185	12.0	24.0	2165	16.0	32.0	2147	25.0	50.0	99
AZR1z103	399.00	93.00	0.28	7.300	0.1139	0.0022	4.230	0.150	0.2700	0.0080	0.8302	1862	35.0	70.0	1679	29.0	58.0	1539	40.0	80.0	92
AZR1z104	31.00	9.60	1.15	1.200	0.1257	0.0018	6.280	0.130	0.3600	0.0050	0.6874	2039	25.0	50.0	2014	20.0	40.0	1992	25.0	50.0	99
AZR1z105	38.00	3.20	1.39	0.800	0.0681	0.0039	0.910	0.060	0.1000	0.0020	0.2755	870	120.0	240.0	656	32.0	64.0	595	10.0	20.0	91
AZR1z106	183.00	59.40	0.19	5.900	0.1282	0.0016	6.630	0.130	0.3800	0.0060	0.7622	2072	22.0	44.0	2062	18.0	36.0	2055	26.0	52.0	100
AZR1z107	312.00	27.10	0.80	6.300	0.0564	0.0011	0.780	0.020	0.1000	0.0010	0.5029	468	41.0	82.0	585	13.0	26.0	616	8.0	16.0	105
AZR1z108	497.00	40.50	0.28	2.500	0.0554	0.0013	0.720	0.020	0.0900	0.0010	0.5083	427	52.0	104.0	550	12.0	24.0	580	8.0	16.0	106
AZR1z109	537.00	132.80	0.28	16.300	0.1028	0.0012	4.050	0.070	0.2900	0.0040	0.7642	1674	21.0	42.0	1644	16.0	32.0	1621	20.0	40.0	99
AZR1z110	637.00	200.90	0.08	4.700	0.1278	0.0029	6.420	0.170	0.3600	0.0050	0.5406	2068	40.0	80.0	2034	24.0	48.0	2002	25.0	50.0	98
AZR1z111	139.00	10.50	0.45	1.200	0.0607	0.0016	0.730	0.020	0.0900	0.0010	0.4712	627	57.0	114.0	557	14.0	28.0	541	8.0	16.0	97
AZR1z112	319.00	27.40	0.15	2.500	0.0588	0.0016	0.800	0.030	0.1000	0.0010	0.4687	559	58.0	116.0	598	15.0	30.0	609	9.0	18.0	102
AZR1z113	96.00	7.30	0.99	1.600	0.0618	0.0026	0.750	0.040	0.0900	0.0020	0.3516	665	91.0	182.0	567	22.0	44.0	543	9.0	18.0	96
AZR1z114	418.00	37.10	0.05	5.100	0.0591	0.0010	0.840	0.020	0.1000	0.0020	0.6439	570	38.0	76.0	617	12.0	24.0	630	10.0	20.0	102
AZR1z115	197.00	63.60	0.67	8.400	0.1274	0.0009	6.540	0.110	0.3700	0.0050	0.8742	2062	12.0	24.0	2050	15.0	30.0	2040	25.0	50.0	100
AZR1z116	44.00	3.50	0.09	1.700	0.0622	0.0040	0.780	0.060	0.0900	0.0010	0.1793	681	136.0	272.0	586	36.0	72.0	562	8.0	16.0	96
AZR1z117	131.00	10.80	1.54	1.700	0.0675	0.0026	0.890	0.040	0.1000	0.0010	0.3423	854	79.0	158.0	645	21.0	42.0	587	8.0	16.0	91
AZR1z118	728.00	41.90	0.64	44.900	0.0566	0.0012	0.520	0.020	0.0700	0.0010	0.3629	475	47.0	94.0	424	14.0	28.0	415	6.0	12.0	98
AZR1z119	509.00	49.10	0.44	4.300	0.0612	0.0015	0.940	0.030	0.1100	0.0020	0.4881	645	52.0	104.0	672	14.0	28.0	680	9.0	18.0	101
AZR1z120	39.00	10.30	1.54	4.300	0.1080	0.0030	4.500	0.170	0.3000	0.0050	0.4827	1765	50.0	100.0	1729	31.0	62.0	1701	26.0	52.0	98
AZR1z121	147.00	23.00	0.25	8.700	0.0743	0.0018	1.840	0.060	0.1800	0.0030	0.4388	1048	50.0	100.0	1060	22.0	44.0	1067	14.0	28.0	101
AZR1z122	328.00	28.60	0.15	4.600	0.0568	0.0015	0.790	0.030	0.1000	0.0020	0.4769	483	57.0	114.0	590	15.0	30.0	619	9.0	18.0	105
AZR1z123	51.00	4.70	1.24	2.100	0.0593	0.0045	0.870	0.080	0.1100	0.0020	0.2362	576	163.0	326.0	636	42.0	84.0	654	13.0	26.0	103
AZR1z124	220.00	19.40	0.62	5.600	0.0588	0.0010	0.830	0.030	0.1000	0.0020	0.5037	559	39.0	78.0	611	14.0	28.0	625	9.0	18.0	102
AZR1z125	53.00	4.20	1.68	1.300	0.0565	0.0041	0.710	0.060	0.0900	0.0010	0.1982	470	162.0	324.0	542	35.0	70.0	560	9.0	18.0	103
AZR1z126	433.00	38.30	0.49	5.500	0.0640	0.0011	0.900	0.020	0.1000	0.0010	0.5786	740	37.0	74.0	652	12.0	24.0	628	8.0	16.0	96
AZR1z127	327.00	27.90	0.98	0.800	0.0607	0.0008	0.830	0.020	0.1000	0.0020	0.8070	628	27.0	54.0	611	10.0	20.0	606	10.0	20.0	99
AZR1z128c	246.00	79.80	0.69	4.300	0.1292	0.0017	6.680	0.130	0.3700	0.0050	0.7316	2087	23.0	46.0	2068	18.0	36.0	2051	25.0	50.0	99
AZR1z128r	347.00	104.60	0.10	8.000	0.1212	0.0009	5.810	0.090	0.3500	0.0050	0.8719	1973	14.0	28.0	1947	15.0	30.0	1925	24.0	48.0	99
AZR1z129	271.00	88.00	0.59	20.400	0.1309	0.0014	6.780	0.130	0.3800	0.0060	0.7937	2109	18.0	36.0	2082	18.0	36.0	2057	26.0	52.0	99
AZR1z130	619.00	175.20	0.18	10.300	0.1237	0.0013	5.580	0.100	0.3300	0.0050	0.8378	2009	18.0	36.0	1912	17.0	34.0	1825	25.0	50.0	95

Footnotes:

- Analysis references: AZR1z is zircon from sample AZR1 (mounts CT18-10b and CT19-3), followed by grain number "c" or "r", meaning core or rim, respectively.
- Pb* indicates radiogenic Pb, corrected for common Pb.

Table D.27: Sample AZR7 (LA-ICPMS)

IGSN: IEACC0028 Coordinate UTM: Zone 30S, 271772 m E, 3695342 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AZR7z1	134.10	43.10	45.39	0.320	-1.02E+05	5.90E+04	0.1352	0.0018	7.710	0.230	0.4108	0.0050	0.7543	2167.0	11.5	23.0	2198.0	13.5	27.0	2219.0	11.5	23.0	101
AZR7z2	83.20	73.80	62.10	0.890	2.00E+04	2.40E+04	0.1109	0.0018	4.847	0.130	0.3194	0.0032	0.3435	1814.0	14.5	29.0	1793.0	11.5	23.0	1787.0	8.0	16.0	100
AZR7z3	16.68	28.88	7.08	1.730	-1.70E+03	1.60E+03	0.0625	0.0068	0.739	0.077	0.0884	0.0021	0.0228	691.0	116.0	232.0	562.0	22.5	45.0	546.0	6.0	12.0	97
AZR7z4c	60.62	33.21	9.75	0.550	-4.40E+03	5.90E+03	0.0604	0.0034	0.846	0.044	0.1020	0.0014	0.0802	618.0	61.0	122.0	622.0	12.0	24.0	626.0	4.0	8.0	101
AZR7z4r	34.57	13.98	4.16	0.400	-9.10E+03	4.30E+03	0.0586	0.0040	0.861	0.056	0.1068	0.0017	-0.0236	552.0	74.5	149.0	631.0	15.5	31.0	654.0	5.0	10.0	104
AZR7z5	138.20	117.10	103.40	0.850	-8.70E+04	5.50E+04	0.1153	0.0016	5.114	0.130	0.3236	0.0031	0.2762	1885.0	12.5	25.0	1838.0	11.0	22.0	1807.0	7.5	15.0	98
AZR7z6	50.61	38.54	38.08	0.760	-5.50E+04	2.60E+04	0.1285	0.0022	6.850	0.190	0.3846	0.0038	0.2355	2078.0	15.0	30.0	2092.0	12.5	25.0	2098.0	9.0	18.0	100
AZR7z7	163.80	111.30	30.70	0.680	-5.20E+04	2.50E+04	0.0614	0.0026	0.811	0.031	0.0963	0.0010	0.1418	653.0	45.5	91.0	603.0	8.5	17.0	593.0	3.0	6.0	98
AZR7z8c	160.90	137.10	46.10	0.850	-2.10E+04	2.10E+04	0.0675	0.0039	1.018	0.069	0.1083	0.0014	0.8423	853.0	60.0	120.0	713.0	17.5	35.0	663.0	4.0	8.0	93
AZR7z8r	286.30	37.35	10.22	0.130	-1.88E+05	7.00E+04	0.0600	0.0021	0.793	0.025	0.0961	0.0009	0.0963	604.0	38.0	76.0	593.0	7.0	14.0	591.0	2.5	5.0	100
AZR7z9	110.70	69.68	19.64	0.630	-3.00E+04	1.10E+04	0.0582	0.0026	0.784	0.032	0.0978	0.0011	0.1558	537.0	49.0	98.0	588.0	9.0	18.0	602.0	3.0	6.0	102
AZR7z10	275.60	120.60	34.34	0.440	-1.15E+05	4.70E+04	0.0586	0.0021	0.818	0.026	0.1011	0.0009	0.0589	552.0	39.0	78.0	607.0	7.5	15.0	621.0	2.5	5.0	102
AZR7z11	471.00	265.60	318.00	0.560	1.72E+05	8.20E+04	0.1696	0.0017	9.120	0.220	0.3917	0.0040	0.4472	2554.0	8.5	17.0	2350.0	11.0	22.0	2131.0	9.5	19.0	91
AZR7z12	342.60	257.50	74.60	0.750	-1.13E+05	6.10E+04	0.0611	0.0021	0.860	0.025	0.1019	0.0009	0.1422	643.0	37.0	74.0	630.0	7.0	14.0	626.0	2.5	5.0	99
AZR7z13	228.50	193.20	203.40	0.850	-1.07E+05	8.00E+04	0.1330	0.0012	7.377	0.180	0.4018	0.0034	0.4360	2138.0	8.0	16.0	2158.0	11.0	22.0	2177.0	8.0	16.0	101
AZR7z14	51.56	42.18	12.44	0.820	-2.70E+03	5.50E+03	0.0578	0.0032	0.824	0.045	0.1023	0.0014	0.1283	522.0	60.5	121.0	610.0	12.5	25.0	628.0	4.0	8.0	103
AZR7z15	841.00	598.00	598.70	0.710	2.60E+05	3.50E+05	0.1267	0.0008	6.719	0.150	0.3841	0.0027	0.4665	2052.0	5.5	11.0	2075.0	10.0	20.0	2095.0	6.5	13.0	101
AZR7z16	56.00	37.40	32.09	0.670	-4.00E+04	1.90E+04	0.1107	0.0025	4.830	0.150	0.3176	0.0033	0.0661	1811.0	20.5	41.0	1790.0	13.0	26.0	1778.0	8.0	16.0	99
AZR7z17	266.10	57.00	17.19	0.210	-3.70E+04	2.80E+04	0.0617	0.0022	0.905	0.028	0.1063	0.0010	0.0942	664.0	38.0	76.0	654.0	7.5	15.0	651.0	3.0	6.0	100
AZR7z18	99.20	131.50	37.51	1.330	-1.60E+04	1.20E+04	0.0631	0.0029	0.868	0.035	0.1004	0.0011	0.0369	712.0	49.0	98.0	634.0	9.5	19.0	617.0	3.0	6.0	97
AZR7z19	325.60	99.30	26.51	0.300	-1.10E+04	2.70E+04	0.0590	0.0021	0.769	0.024	0.0945	0.0009	-0.0404	567.0	38.5	77.0	579.0	7.0	14.0	582.0	2.5	5.0	101
AZR7z21	404.30	166.40	147.20	0.410	-5.00E+05	1.90E+05	0.1139	0.0010	5.124	0.120	0.3262	0.0025	0.3423	1863.0	7.5	15.0	1840.0	10.0	20.0	1820.0	6.0	12.0	99
AZR7z22	161.80	118.70	116.80	0.730	-8.90E+04	7.00E+04	0.1253	0.0013	6.474	0.160	0.3742	0.0030	0.2804	2033.0	9.0	18.0	2042.0	11.0	22.0	2049.0	7.0	14.0	100
AZR7z23	193.20	89.70	26.31	0.460	-4.00E+04	2.00E+04	0.0612	0.0024	0.858	0.029	0.1019	0.0010	0.0090	646.0	42.0	84.0	629.0	8.0	16.0	626.0	3.0	6.0	99
AZR7z24c	729.40	245.60	68.72	0.340	-9.30E+04	7.60E+04	0.0599	0.0018	0.791	0.020	0.0958	0.0008	0.2042	601.0	32.5	65.0	592.0	5.5	11.0	589.0	2.5	5.0	100
AZR7z24r	225.80	106.77	29.47	0.470	-4.30E+04	2.60E+04	0.0609	0.0022	0.793	0.026	0.0951	0.0009	0.1351	636.0	39.0	78.0	593.0	7.5	15.0	585.0	3.0	6.0	99
AZR7z26	85.30	62.80	18.51	0.740	-8.50E+03	9.40E+03	0.0597	0.0028	0.850	0.037	0.1018	0.0012	0.0845	593.0	51.0	102.0	625.0	10.0	20.0	625.0	3.5	7.0	100
AZR7z27	38.06	37.57	10.72	0.990	-3.70E+03	4.00E+03	0.0616	0.0042	0.788	0.051	0.0934	0.0016	0.0212	660.0	73.0	146.0	590.0	14.5	29.0	576.0	4.5	9.0	98
AZR7z28	254.20	168.70	49.79	0.660	-1.30E+04	2.90E+04	0.0591	0.0021	0.828	0.026	0.1008	0.0009	0.1175	571.0	38.5	77.0	613.0	7.0	14.0	619.0	2.5	5.0	101
AZR7z29	20.16	10.75	3.32	0.530	-1.88E+04	8.60E+03	0.0628	0.0053	0.882	0.072	0.1021	0.0020	0.0177	701.0	90.0	180.0	642.0	19.5	39.0	627.0	6.0	12.0	98
AZR7z30	232.80	2.47	0.90	0.010	8.00E+04	1.80E+04	0.0596	0.0022	0.745	0.023	0.0904	0.0009	-0.0136	589.0	40.0	80.0	565.0	6.5	13.0	558.0	2.5	5.0	99
AZR7z31	134.00	116.00	35.32	0.870	-3.80E+04	1.90E+04	0.0606	0.0026	0.858	0.033	0.1032	0.0010	-0.1552	625.0	46.5	93.0	629.0	9.0	18.0	633.0	3.0	6.0	101
AZR7z32	12.33	11.10	3.25	0.900	-2.20E+03	1.60E+03	0.0667	0.0075	0.955	0.100	0.1026	0.0027	0.0099	828.0	117.5	235.0	681.0	26.0	52.0	630.0	8.0	16.0	92
AZR7z33	106.60	50.71	53.59	0.480	-2.80E+05	1.10E+05	0.1396	0.0016	7.640	0.190	0.3955	0.0035	0.1830	2222.0	10.0	20.0	2190.0	11.0	22.0	2148.0	8.0	16.0	98
AZR7z35	291.80	191.30	53.50	0.660	-4.00E+05	1.20E+05	0.0595	0.0021	0.768	0.024	0.0933	0.0008	0.1264	585.0	38.5	77.0	579.0	7.0	14.0	575.0	2.5	5.0	99
AZR7z37	31.70	28.65	26.63	0.900	-4.10E+03	9.80E+03	0.1155	0.0036	5.220	0.200	0.3289	0.0042	0.3410	1888.0	28.0	56.0	1856.0	16.5	33.0	1833.0	10.0	20.0	99
AZR7z38	205.20	72.90	73.40	0.360	-1.90E+05	1.00E+05	0.1296	0.0012	6.694	0.160	0.3753	0.0030	0.2395	2093.0	8.0	16.0	2072.0	10.5	21.0	2054.0	7.0	14.0	99
AZR7z39	187.00	162.40	161.60	0.870	-2.16E+05	9.80E+04	0.1310	0.0013	6.953	0.170	0.3849	0.0030	0.2959	2111.0	8.5	17.0	2105.0	11.0	22.0	2099.0	7.0	14.0	100
AZR7z40	213.30	104.70	31.86	0.490	6.00E+06	1.30E+06	0.0601	0.0022	0.876	0.027	0.1053	0.0010	0.0567	607.0	39.5	79.0	639.0	7.5	15.0	645.0	3.0	6.0	101
AZR7z41	266.60	236.40	64.70	0.890	-3.70E+04	3.20E+04	0.0603	0.0022	0.744	0.023	0.0898	0.0009	0.0250	614.0	39.5	79.0	565.0	6.5	13.0	554.0	2.5	5.0	98
AZR7z42	197.20	41.60	13.60	0.210	-1.10E+04	2.20E+04	0.0599	0.0023	0.800	0.027	0.0959	0.0009	0.1079	600.0	41.5	83.0	597.0	7.5	15.0	591.0	2.5	5.0	99
AZR7z43	146.70	79.90	89.80	0.540	-1.28E+05	8.30E+04	0.1460	0.0015	8.456	0.200	0.4196	0.0035	0.3788	2300.0	9.0	18.0	2281.0	10.5	21.0	2259.0	8.0	16.0	99
AZR7z44	483.80	255.20	68.14	0.530	-2.45E+05	9.50E+04	0.0601	0.0020	0.785	0.022	0.0950	0.0008	0.1895	607.0	36.0	72.0	588.0	6.5	13.0	585.0	2.5	5.0	99
AZR7z45	126.60	63.17	19.18	0.500	-1.90E+04	1.70E+04	0.0608	0.0025	0.867	0.032	0.1045	0.0010	0.1545	632.0	44.5	89.0	634.0	8.5	17.0	641.0	3.0	6.0	101
AZR7z46	135.30	59.60	36.50	0.440	2.50E+04	3.10E+04	0.0819	0.0028	2.419	0.069	0.2153	0.0018	0.0984	1243.0	33.5	67.0	1248.0	10.0	20.0	1257.0	5.0	10.0	101
AZR7z47	113.40	97.40	41.19	0.860	-3.20E+04	2.10E+04	0.0711	0.0025	1.471	0.045	0.1501	0.0014	0.1440	960.0	36.0	72.0	919.0	9.0	18.0	902.0	4.0	8.0	98
AZR7z48	79.50	31.60	28.66	0.400	-5.30E+04	3.40E+04	0.1278	0.0019	6.131	0.160	0.3468	0.0032	0.1755	2068.0	13.0	26.0	1995.0	11.5	23.0	1919.0	7.5	15.0	96
AZR7z49	131.30	68.39	34.71	0.520	-5.90E+04	3.40E+04	0.0773	0.0028	1.891	0.059	0.1778	0.0016	-0.0410	1129.0	36.0	72.0	1078.0	10.5	21.0	1055.0	4.5	9.0	98
AZR7z50c	65.90	30.22	9.67	0.460	-2.00E+04	1.20E+04	0.0625	0.0030	0.933	0.041	0.1090	0.0013	0.1001	691.0	51.0	102.0	669.0	11.0	22.0	667.0	4.0	8.0	100
AZR7z54	82.50	85.40	24.11	1.040	8.20E+04	3.30E+04	0.0597	0.0028	0.810	0.036	0.0984	0.0012	0.0513	593.0	51.0	102.0	602.0	10.0	20.0	605.0	3.5	7.0	100
AZR7z55	55.70	36.80	56.80	0.660	-3.00E+04	3.00E+04	0.2318	0.0029	19.520	0.490	0.6098	0.0063	0.3489	3065.0	10.0	20.0	3068.0	12.0	24.0	3069.0	12.5	25.0	100
AZR7z57	110.40	120.40	50.00	1.090	-1.10E+04	1.70E+04	0.0678	0.0028	1.372	0.049	0.1461	0.0015	0.0687	862.0	43.0	86.0	877.0	10.5	21.0	879.0	4.0	8.0	100
AZR7z58	303.00	416.00	121.80	1.370	1.73E+05	6.60E+04	0.0617	0.0021	0.861	0.026	0.1009	0.0009	0.2041	664.0	36.5	73.0	631.0	7.0	14.0	620.0	2.5	5.0	98
AZR7z59c	121.99	78.27	22.48	0.640	-3.50E+04	1.80E+04	0.0596	0.0028	0.858	0.037	0.1019	0.0011	0.0409	589.0	51.0	102.0	629.0	10.0	20.0	625.0	3.0	6.0	99
AZR7z60	178.40	93.80	95.80	0.530	-1.07E+05	7.10E+04	0.1334	0.0014	6.976	0.170	0.3773	0.0029	0.2100	2143.0	9.0	18.0	2108.0	11.0	22.0	2064.0	7.0	14.0	98
AZR7z61	206.40	180.70	180.60	0.880	-4.00E+05	1.30E+05	0.1308	0.0015	6.984	0.170	0.3851	0.0033	0.2343	2109.0	10.0	20.0	2109.0	11.0	22.0	2100.0	7.5	15.0	100
AZR7z62	574.00	238.90	68.70	0.420	-1.02E+05	6.90E+04	0.0615	0.0021	0.848	0.024	0.1000	0.0008	0.0306	657.0	36.5	73.0	624.0	6.5	13.0	615.0	2.5	5.0	99
AZR7z63r	1410.00	22.69	7.41	0.020	-1.80E+05	1.20E+05	0.0587	0.0018	0.763	0.019	0.0942	0.0008	0.2751	555.0	33.5	67.0	576.0	5.5	11.0	580.0	2.5	5.0	101
AZR7z64	646.00	422.40	118.40	0.650	2.30E+04	4.30E+04	0.0597	0.0020	0.813	0.022	0.0984	0.0008	0.1014	593.0	36.5	73.0	604.0	6.0	12.0	605.0	2.5	5.0	100
AZR7z65	103.20	102.20	30.90	0.990	-8.60E+03	9.70E+03	0.0624	0.0029	0.933	0.040	0.1080	0.0013	0.0348	688.0	49.5	99.0	669.0	10.5	21.0	661.0	4.0	8.0	99

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR7z67	203.50	170.30	171.90	0.840	-1.53E+06	7.60E+05	0.1347	0.0015	7.177	0.180	0.3847	0.0035	0.3663	2160.0	9.5	19.0	2134.0	11.0	22.0	2098.0	8.0	16.0	98
AZR7z68	179.60	220.20	219.00	1.230	-2.49E+05	8.00E+04	0.1276	0.0017	6.700	0.170	0.3774	0.0034	0.2152	2065.0	11.5	23.0	2073.0	11.0	22.0	2064.0	8.0	16.0	100
AZR7z69	525.40	381.30	113.80	0.730	-7.40E+04	4.80E+04	0.0606	0.0021	0.867	0.026	0.1037	0.0009	0.1257	625.0	37.5	75.0	634.0	7.0	14.0	636.0	2.5	5.0	100
AZR7z70	368.70	287.40	162.30	0.780	5.70E+04	5.40E+04	0.0815	0.0026	2.294	0.062	0.2039	0.0018	0.2812	1234.0	31.5	63.0	1210.0	9.5	19.0	1196.0	5.0	10.0	99
AZR7z71	30.11	19.51	5.61	0.650	-1.77E+04	9.10E+03	0.0622	0.0054	0.822	0.067	0.0991	0.0025	0.0743	681.0	92.5	185.0	609.0	18.5	37.0	609.0	7.5	15.0	100
AZR7z72	348.30	501.30	136.60	1.440	-9.00E+04	2.10E+04	0.0604	0.0023	0.824	0.027	0.0984	0.0009	0.0507	618.0	41.0	82.0	610.0	7.5	15.0	605.0	3.0	6.0	99
AZR7z73c	335.20	278.70	83.60	0.830	-1.90E+04	1.70E+04	0.0611	0.0025	0.871	0.031	0.1026	0.0010	0.0451	643.0	44.0	88.0	636.0	8.5	17.0	630.0	3.0	6.0	99
AZR7z73r	298.90	213.20	59.20	0.710	-2.00E+04	1.50E+04	0.0601	0.0025	0.824	0.031	0.0990	0.0011	0.1169	607.0	45.0	90.0	610.0	8.5	17.0	609.0	3.0	6.0	100
AZR7z74	1450.00	272.40	347.90	0.190	-2.30E+05	3.20E+05	0.1398	0.0011	7.705	0.190	0.3962	0.0035	0.7039	2225.0	7.0	14.0	2197.0	11.0	22.0	2152.0	8.0	16.0	98
AZR7z75	82.00	68.81	18.65	0.840	-1.20E+05	3.80E+05	0.0564	0.0038	0.746	0.047	0.0975	0.0017	0.0738	468.0	74.5	149.0	566.0	13.5	27.0	600.0	5.0	10.0	106
AZR7z76	37.42	27.37	22.82	0.730	2.50E+04	7.40E+04	0.1061	0.0040	4.530	0.190	0.3136	0.0053	0.1729	1733.0	34.5	69.0	1736.0	17.5	35.0	1758.0	13.0	26.0	101
AZR7z77	124.40	191.00	54.80	1.540	5.30E+03	4.70E+03	0.0605	0.0034	0.830	0.044	0.1003	0.0014	0.0884	622.0	60.5	121.0	614.0	12.0	24.0	616.0	4.0	8.0	100
AZR7z79	485.80	463.00	384.00	0.950	-2.30E+05	1.30E+05	0.1143	0.0039	4.042	0.110	0.2584	0.0025	0.2429	1869.0	31.0	62.0	1643.0	11.0	22.0	1482.0	6.5	13.0	90
AZR7z80	213.50	381.00	110.30	1.780	-1.41E+05	6.70E+04	0.0591	0.0029	0.807	0.037	0.0996	0.0012	0.2370	571.0	53.5	107.0	601.0	10.5	21.0	612.0	3.5	7.0	102
AZR7z81c	316.60	255.60	81.00	0.810	8.00E+04	6.30E+04	0.0602	0.0024	0.891	0.032	0.1080	0.0011	0.0960	611.0	43.0	86.0	647.0	8.5	17.0	661.0	3.0	6.0	102
AZR7z81r	104.10	54.04	17.41	0.520	-3.00E+03	5.90E+03	0.0606	0.0037	0.891	0.053	0.1062	0.0014	0.0828	625.0	66.0	132.0	647.0	14.0	28.0	651.0	4.0	8.0	101
AZR7z82	421.70	381.60	114.30	0.900	-1.05E+05	5.30E+04	0.0603	0.0024	0.857	0.029	0.1025	0.0010	0.0928	614.0	43.0	86.0	628.0	8.0	16.0	629.0	3.0	6.0	100
AZR7z83	269.10	417.00	390.40	1.550	-1.70E+04	4.70E+04	0.1170	0.0017	5.525	0.140	0.3397	0.0027	0.0842	1911.0	13.0	26.0	1904.0	11.0	22.0	1885.0	6.5	13.0	99
AZR7z84	64.10	88.90	25.03	1.390	-1.80E+03	3.70E+03	0.0644	0.0045	0.857	0.057	0.0972	0.0017	0.1143	755.0	73.5	147.0	628.0	15.5	31.0	598.0	5.0	10.0	95
AZR7z85	213.00	79.80	79.40	0.370	-3.80E+04	3.70E+04	0.1255	0.0020	5.229	0.140	0.2986	0.0033	0.2998	2036.0	14.0	28.0	1857.0	11.5	23.0	1684.0	8.0	16.0	91
AZR7z86	304.40	241.20	73.00	0.790	-2.80E+04	2.00E+04	0.0585	0.0024	0.811	0.030	0.1011	0.0010	0.0431	549.0	45.0	90.0	603.0	8.5	17.0	621.0	3.0	6.0	103
AZR7z87c	208.50	265.70	79.00	1.270	-2.30E+04	1.60E+04	0.0622	0.0029	0.852	0.035	0.0990	0.0010	0.0048	681.0	50.0	100.0	626.0	9.5	19.0	609.0	3.0	6.0	97
AZR7z87r	178.50	232.30	69.50	1.300	-1.70E+05	1.40E+05	0.0609	0.0030	0.851	0.038	0.1001	0.0011	0.0649	636.0	53.0	106.0	625.0	10.5	21.0	615.0	3.0	6.0	98
AZR7z88	526.00	523.00	149.40	0.990	-2.50E+04	3.00E+04	0.0592	0.0021	0.785	0.025	0.0960	0.0009	0.0046	574.0	38.5	77.0	588.0	7.0	14.0	591.0	2.5	5.0	100
AZR7z89	71.00	43.51	12.73	0.610	-2.90E+04	1.20E+04	0.0617	0.0036	0.883	0.049	0.1018	0.0017	0.0595	664.0	62.5	125.0	643.0	13.0	26.0	625.0	5.0	10.0	97
AZR7z90	186.70	175.20	52.30	0.940	-6.90E+04	4.80E+04	0.0632	0.0028	0.875	0.035	0.0999	0.0011	0.1824	715.0	47.0	94.0	638.0	9.5	19.0	614.0	3.0	6.0	96
AZR7z91	235.40	355.00	356.30	1.510	-4.00E+05	2.10E+05	0.1247	0.0014	6.357	0.160	0.3647	0.0030	0.2302	2025.0	10.0	20.0	2026.0	11.0	22.0	2004.0	7.0	14.0	99
AZR7z92	248.20	61.50	55.80	0.250	-1.40E+04	6.90E+04	0.1272	0.0014	5.869	0.160	0.3352	0.0043	0.7649	2060.0	9.5	19.0	1957.0	12.0	24.0	1864.0	10.5	21.0	95
AZR7z93	76.10	66.90	67.50	0.880	-2.30E+04	2.30E+04	0.1239	0.0023	6.400	0.180	0.3701	0.0037	0.2685	2013.0	16.5	33.0	2032.0	12.5	25.0	2030.0	8.5	17.0	100
AZR7z94	46.50	67.90	29.80	1.460	-5.40E+03	5.40E+03	0.0680	0.0041	1.362	0.076	0.1451	0.0021	-0.0530	869.0	62.5	125.0	873.0	16.5	33.0	873.0	6.0	12.0	100
AZR7z96	130.50	18.57	20.72	0.140	4.50E+05	7.30E+05	0.1323	0.0017	7.236	0.180	0.3916	0.0034	0.2296	2129.0	11.0	22.0	2141.0	11.0	22.0	2130.0	8.0	16.0	99
AZR7z97c	276.30	162.40	51.02	0.590	-8.10E+04	4.00E+04	0.0619	0.0023	0.871	0.028	0.1017	0.0009	0.0073	671.0	40.0	80.0	636.0	7.5	15.0	625.0	2.5	5.0	98
AZR7z97r	41.07	22.97	6.81	0.560	5.50E+03	3.40E+03	0.0645	0.0045	0.882	0.057	0.1008	0.0017	0.0777	758.0	73.5	147.0	642.0	15.5	31.0	619.0	5.0	10.0	96
AZR7z98	449.20	59.80	59.00	0.130	-6.00E+05	2.20E+05	0.1255	0.0011	6.378	0.150	0.3670	0.0028	0.2967	2036.0	8.0	16.0	2029.0	10.5	21.0	2015.0	6.5	13.0	99
AZR7z100	97.30	48.71	19.57	0.500	-2.30E+04	1.40E+04	0.0689	0.0030	1.281	0.049	0.1356	0.0014	0.0372	896.0	45.0	90.0	837.0	11.0	22.0	820.0	4.0	8.0	98
AZR7z101	179.20	93.96	115.50	0.520	7.00E+06	2.10E+06	0.1621	0.0015	10.242	0.240	0.4541	0.0035	0.3751	2478.0	8.0	16.0	2457.0	11.0	22.0	2413.0	8.0	16.0	98
AZR7z102	29.57	28.75	8.28	0.970	-4.60E+03	3.70E+03	0.0566	0.0047	0.758	0.060	0.0969	0.0018	-0.0199	476.0	92.0	184.0	573.0	17.5	35.0	596.0	5.5	11.0	104
AZR7z103	537.70	518.00	162.00	0.960	-9.60E+04	6.50E+04	0.0615	0.0020	0.865	0.024	0.1021	0.0009	0.1568	657.0	35.0	70.0	633.0	6.5	13.0	627.0	2.5	5.0	99
AZR7z105	336.20	151.90	160.90	0.450	-5.30E+06	4.80E+06	0.1353	0.0010	7.163	0.170	0.3784	0.0027	0.3449	2168.0	6.5	13.0	2132.0	10.5	21.0	2069.0	6.5	13.0	97
AZR7z106	101.00	42.56	54.72	0.420	-2.50E+05	1.30E+05	0.1755	0.0019	11.610	0.280	0.4782	0.0040	0.3203	2611.0	9.0	18.0	2573.0	11.5	23.0	2519.0	8.5	17.0	98
AZR7z107	43.58	36.10	18.72	0.830	-1.35E+05	8.80E+04	0.0755	0.0036	1.879	0.083	0.1796	0.0021	0.0890	1082.0	48.0	96.0	1074.0	14.5	29.0	1065.0	5.5	11.0	99
AZR7z108	57.90	45.20	14.51	0.780	-2.10E+04	1.30E+04	0.0652	0.0036	0.893	0.043	0.0989	0.0016	-0.0840	781.0	58.0	116.0	648.0	11.5	23.0	608.0	4.5	9.0	94
AZR7z109	169.17	81.70	72.69	0.480	-1.12E+05	7.80E+04	0.1207	0.0012	5.207	0.120	0.3090	0.0025	0.3153	1967.0	9.0	18.0	1854.0	10.0	20.0	1736.0	6.0	12.0	94
AZR7z111	124.80	39.05	36.73	0.310	-8.20E+04	8.80E+04	0.1221	0.0015	6.043	0.150	0.3560	0.0029	0.3626	1987.0	11.0	22.0	1982.0	11.0	22.0	1963.0	7.0	14.0	99
AZR7z112	131.70	47.53	45.41	0.360	-1.78E+05	8.60E+04	0.1199	0.0015	5.823	0.140	0.3483	0.0028	0.1157	1955.0	11.0	22.0	1950.0	10.5	21.0	1926.0	6.5	13.0	99
AZR7z113	94.90	157.30	50.05	1.660	-1.80E+04	1.80E+04	0.0653	0.0029	0.981	0.039	0.1092	0.0011	0.0882	784.0	46.5	93.0	694.0	10.0	20.0	668.0	3.0	6.0	96
AZR7z114c	292.80	17.80	18.60	0.060	-2.28E+06	8.70E+05	0.1413	0.0019	7.980	0.250	0.4040	0.0047	0.8726	2243.0	11.5	23.0	2229.0	14.0	28.0	2187.0	11.0	22.0	98
AZR7z114r	429.00	81.00	82.40	0.190	-7.10E+05	4.10E+05	0.1246	0.0009	6.635	0.150	0.3818	0.0030	0.5425	2024.0	6.5	13.0	2064.0	10.0	20.0	2085.0	7.0	14.0	101
AZR7z115c	211.60	173.20	50.50	0.820	-7.50E+04	3.70E+04	0.0610	0.0022	0.849	0.026	0.1015	0.0010	0.1100	639.0	39.0	78.0	624.0	7.0	14.0	623.0	3.0	6.0	100
AZR7z115r	66.25	43.14	13.07	0.650	-2.30E+04	1.30E+04	0.0614	0.0029	0.872	0.039	0.1019	0.0013	0.1540	653.0	50.5	101.0	637.0	10.5	21.0	626.0	4.0	8.0	98
AZR7z116	141.80	123.10	36.44	0.870	-3.50E+04	3.10E+04	0.0621	0.0025	0.900	0.032	0.1036	0.0011	0.1243	678.0	43.0	86.0	652.0	8.5	17.0	636.0	3.0	6.0	98
AZR7z117	11.59	7.24	3.40	0.620	-5.40E+03	5.90E+03	0.0707	0.0058	1.630	0.130	0.1706	0.0035	0.0582	949.0	84.0	168.0	982.0	25.0	50.0	1015.0	9.5	19.0	103
AZR7z118	64.33	75.70	21.68	1.180	-3.80E+04	2.60E+04	0.0616	0.0031	0.860	0.040	0.1012	0.0013	-0.0172	660.0	54.0	108.0	630.0	11.0	22.0	621.0	4.0	8.0	99
AZR7z119	344.80	139.80	101.70	0.410	2.60E+06	1.10E+06	0.0959	0.0010	3.562	0.086	0.2664	0.0021	0.2974	1546.0	10.0	20.0	1541.0	9.5	19.0	1523.0	5.5	11.0	99
AZR7z120	62.70	62.20	17.98	0.990	3.60E+05	5.70E+05	0.0620	0.0032	0.860	0.041	0.1005	0.0012	0.0963	674.0	55.0	110.0	630.0	11.0	22.0	617.0	3.5	7.0	98
AZR7z121	104.68	55.09	16.89	0.530	8.00E+04	1.00E+04	0.0650	0.0029	0.862	0.035	0.0957	0.0011	0.1024	774.0	47.0	94.0	631.0	9.5	19.0	589.0	3.0	6.0	93
AZR7z123	223.90	150.60	182.70	0.670	-2.60E+05	2.00E+05	0.1615	0.0011	10.695	0.250	0.4733	0.0035	0.4086	2471.0	5.5	11.0	2497.0	11.0	22.0	2498.0	7.5	15.0	100
AZR7z124	103.14	68.05	19.37	0.660	2.00E+04	1.50E+04	0.0614	0.0028	0.844	0.034	0.0995	0.0011	-0.0485	653.0	49.0	98.0	621.0	9.5	19.0	612.0	3.0	6.0	98
AZR7z125	209.50	152.60	44.24	0.730	-8.20E+04	4.60E+04	0.0610	0.0023	0.865	0.028	0.1022	0.0010	-0.0555	639.0	40.5	81.0	633.0	7.5	15.0	627.0	3.0	6.0	99
AZR7z126	12.13	10.60	9.39	0.870	-1.70E+04	1.10E+04	0.1132	0.0047	5.200	0.220	0.3298	0.0052	-0.0182	1851.0	37.5	75.0	1853.0	18.0	36.0	1837.0	12.5	25.0	99
AZR7z127	68.20	124.90	124.60	1.830	-1.92E+05	8.60E+04	0.1410	0.0046	7.490	0.340	0.3785	0.0050	0.6519	2240.0	28.0	56.0	2172.0	20.5	41.0	2069.0	11.5	23.0	95
AZR7z128	63.57	53.10	36.60	0.840	-1.04E+05	4.00E+04	0.0856	0.0034	2.495	0.088	0.2087	0.0023	0.1429	1329.0	38.5	77.0	1271.0	13.0	26.0	1222.0	6.0	12.0	96
AZR7z129	373.80	93.90	27.66	0.250	-7.00E+05	3.70E+05	0.0615	0.0021	0.863	0.024	0.1012	0.0008	0.1548	657.0	36.5	73.0	632.0	6.5	13.0	621.0	2.5	5.0	98
AZR7z130	238.30	55.80	12.98	0.230	1.00E+05	3.50E+05	0.0576	0.0021	0.640	0.021	0.0802	0.0008	0.0918	515.0	40.0	80.0	502.0	6.5	13.0	498.0	2.0	4.0	99
AZR7z131	119.50	96.10	36.19	0.800	1.50E+04	2.30E+04	0.0647	0.0024	1.185	0.040	0.1312	0.0013	0.1238	765.0	39.0	78.0	794.0	9.5	19.0	795.0	3.5	7.0	100
AZR7z133	479.00	150.80	120.30	0.310	-6.80E+05	3.90E+05	0.1231	0.0009	5.337	0.120	0.3109	0.0022	0.3104	2002.0	7.0	14.0	1875.0	9.5	19.0	1745.0	5.5	11.0	93
AZR7z135	231.00	76.50	78.80	0.330	-7.00E+05	1.20E+05	0.1261	0.0012	6.171	0.150	0.3522	0.0031	0.5365	2044.0	8.5	17.0	2000.0	10.5	21.0	1945.0	7.5	15.0	97

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AZR7z136	46.89	14.93	15.28	0.320	9.30E+04	6.40E+04	0.1349	0.0027	7.540	0.220	0.3967	0.0040	0.1337	2163.0	17.5	35.0	2178.0	13.0	26.0	2154.0	9.0	18.0	99
AZR7z137	299.40	465.40	137.20	1.550	-7.60E+04	6.30E+04	0.0637	0.0022	0.901	0.028	0.1019	0.0009	0.2718	732.0	36.5	73.0	652.0	7.5	15.0	626.0	2.5	5.0	96
AZR7z138	146.70	25.00	21.57	0.170	-5.10E+05	1.70E+05	0.1269	0.0013	6.348	0.150	0.3582	0.0031	0.3139	2055.0	9.0	18.0	2025.0	10.5	21.0	1974.0	7.5	15.0	97
AZR7z139	121.80	29.80	34.10	0.240	-3.90E+04	8.30E+04	0.1843	0.0018	12.030	0.300	0.4685	0.0041	0.4585	2692.0	8.0	16.0	2607.0	11.5	23.0	2477.0	9.0	18.0	95
AZR7z140c	271.20	84.61	32.06	0.310	-2.30E+05	1.10E+05	0.0679	0.0024	1.063	0.032	0.1134	0.0010	0.1552	866.0	36.5	73.0	735.0	8.0	16.0	692.0	3.0	6.0	94
AZR7z140r	273.30	25.67	8.70	0.090	1.40E+05	1.10E+05	0.0624	0.0021	0.978	0.028	0.1128	0.0010	0.3531	688.0	36.0	72.0	693.0	7.0	14.0	689.0	3.0	6.0	100
AZR7z141	207.60	164.80	45.42	0.790	-8.30E+05	3.80E+05	0.0615	0.0023	0.845	0.028	0.0982	0.0009	0.1230	657.0	40.0	80.0	622.0	7.5	15.0	604.0	2.5	5.0	97
AZR7z142	221.70	57.00	17.31	0.260	-6.90E+04	3.70E+04	0.0620	0.0023	0.890	0.029	0.1028	0.0010	0.0949	674.0	39.5	79.0	646.0	8.0	16.0	631.0	3.0	6.0	98
AZR7z143	86.00	105.10	26.23	1.220	7.00E+02	9.50E+03	0.0596	0.0029	0.740	0.034	0.0891	0.0011	0.1485	589.0	53.0	106.0	562.0	10.0	20.0	550.0	3.5	7.0	98
AZR7z144	323.00	329.20	367.10	1.020	-7.20E+06	3.00E+06	0.1457	0.0011	8.538	0.200	0.4191	0.0031	0.3717	2296.0	6.5	13.0	2290.0	10.5	21.0	2256.0	7.0	14.0	99
AZR7z145	122.60	117.67	33.86	0.960	1.00E+04	1.30E+04	0.0610	0.0026	0.871	0.033	0.1023	0.0011	0.0566	639.0	46.0	92.0	636.0	9.0	18.0	628.0	3.0	6.0	99
AZR7z146	284.50	98.70	28.65	0.350	-2.03E+05	8.20E+04	0.0615	0.0022	0.885	0.026	0.1039	0.0009	0.0530	657.0	38.5	77.0	644.0	7.0	14.0	637.0	2.5	5.0	99
AZR7z147	202.60	130.20	38.66	0.640	-6.00E+04	3.40E+04	0.0615	0.0024	0.910	0.031	0.1062	0.0010	0.1375	657.0	42.0	84.0	657.0	8.0	16.0	650.0	3.0	6.0	99
AZR7z148	174.40	137.70	39.90	0.790	-3.40E+04	2.40E+04	0.0601	0.0024	0.833	0.029	0.0993	0.0010	-0.0603	607.0	43.0	86.0	615.0	8.0	16.0	610.0	3.0	6.0	99
AZR7z149	220.20	193.40	185.40	0.880	-4.90E+05	2.00E+05	0.1237	0.0011	6.228	0.150	0.3598	0.0028	0.2570	2010.0	8.0	16.0	2008.0	10.5	21.0	1981.0	6.5	13.0	99
AZR7z150	263.90	123.90	136.80	0.470	-5.20E+05	2.80E+05	0.1573	0.0012	9.532	0.220	0.4327	0.0035	0.3645	2427.0	6.5	13.0	2391.0	10.5	21.0	2318.0	8.0	16.0	97
AZR7z151	65.14	15.92	4.53	0.240	-3.70E+04	1.30E+04	0.0595	0.0031	0.852	0.043	0.1022	0.0011	0.1252	585.0	56.5	113.0	626.0	12.0	24.0	627.0	3.0	6.0	100
AZR7z152	112.00	62.60	91.40	0.560	-1.70E+05	1.10E+05	0.2113	0.0019	16.750	0.390	0.5655	0.0047	0.3531	2916.0	7.5	15.0	2921.0	11.0	22.0	2889.0	9.5	19.0	99
AZR7z153	185.50	124.40	34.56	0.670	-1.00E+05	2.40E+05	0.0602	0.0024	0.814	0.029	0.0981	0.0010	0.1455	611.0	43.0	86.0	605.0	8.0	16.0	603.0	3.0	6.0	100
Discordant data																							
AZR7z20	421.00	357.00	94.30	0.850	-3.30E+04	3.30E+04	0.0684	0.0023	0.774	0.022	0.0825	0.0007	0.0902	881.0	35.0	70.0	582.0	6.5	13.0	511.0	2.0	4.0	88
AZR7z34	717.00	98.30	43.00	0.140	4.00E+05	4.10E+05	0.1885	0.0019	9.340	0.260	0.3584	0.0061	0.8633	2729.0	8.5	17.0	2372.0	13.0	26.0	1975.0	14.5	29.0	83
AZR7z36	1198.00	147.30	148.10	0.120	5.50E+05	2.70E+05	0.1337	0.0015	5.165	0.140	0.2807	0.0041	0.6867	2147.0	10.0	20.0	1847.0	11.5	23.0	1595.0	10.5	21.0	86
AZR7z50r	54.15	19.55	7.25	0.360	-2.30E+03	6.90E+03	0.0735	0.0044	1.033	0.053	0.1025	0.0022	-0.0361	1028.0	60.5	121.0	720.0	13.0	26.0	629.0	6.5	13.0	87
AZR7z51	289.00	221.00	1180.00	0.760	1.70E+04	5.40E+03	0.3630	0.0500	8.200	2.100	0.1130	0.0140	0.9911	3762.0	104.5	209.0	2253.0	116.0	232.0	690.0	40.5	81.0	31
AZR7z52c	33.91	20.39	13.46	0.600	-1.48E+04	9.90E+03	0.1017	0.0047	2.595	0.110	0.1834	0.0031	0.2676	1655.0	43.0	86.0	1299.0	15.5	31.0	1086.0	8.5	17.0	84
AZR7z52r	35.60	23.42	16.87	0.660	-7.90E+04	2.70E+04	0.1137	0.0058	2.670	0.130	0.1801	0.0044	0.2393	1859.0	46.0	92.0	1320.0	18.0	36.0	1068.0	12.0	24.0	81
AZR7z56	168.80	348.20	121.40	2.060	-3.20E+04	2.30E+04	0.0976	0.0068	1.470	0.110	0.1057	0.0015	0.7126	1579.0	65.0	130.0	918.0	22.5	45.0	648.0	4.5	9.0	71
AZR7z59r	76.30	30.67	12.40	0.400	-6.10E+03	7.10E+03	0.0827	0.0054	1.165	0.079	0.1020	0.0016	0.4488	1262.0	64.0	128.0	784.0	18.5	37.0	626.0	4.5	9.0	80
AZR7z63c	2123.00	211.00	82.50	0.100	-4.00E+05	6.00E+05	0.1144	0.0034	3.370	0.150	0.2177	0.0081	0.9661	1870.0	27.0	54.0	1497.0	17.5	35.0	1270.0	21.5	43.0	85
AZR7z66	304.00	406.90	509.00	1.340	2.17E+04	6.50E+03	0.3200	0.0380	6.300	1.100	0.1133	0.0075	0.9841	3570.0	91.5	183.0	2018.0	76.5	153.0	692.0	21.5	43.0	34
AZR7z78	1704.00	443.20	270.80	0.260	-6.00E+05	2.50E+05	0.1082	0.0032	3.288	0.078	0.2195	0.0018	0.5481	1770.0	27.0	54.0	1478.0	9.0	18.0	1279.0	5.0	10.0	87
AZR7z99c	299.60	93.40	274.00	0.310	7.10E+04	3.80E+04	0.2040	0.0240	7.300	1.400	0.2610	0.0140	0.9570	2858.0	95.5	191.0	2149.0	85.5	171.0	1495.0	36.0	72.0	70
AZR7z99r	2055.00	286.00	190.30	0.140	1.53E+05	6.40E+04	0.1099	0.0040	0.898	0.025	0.0597	0.0015	0.3609	1798.0	33.0	66.0	651.0	6.5	13.0	374.0	4.5	9.0	57
AZR7z104	587.00	255.00	80.90	0.430	-1.60E+04	8.40E+04	0.0727	0.0027	0.924	0.029	0.0925	0.0013	0.1511	1006.0	37.5	75.0	664.0	7.5	15.0	570.0	4.0	8.0	86
AZR7z110	11.10	9.67	2.78	0.870	-3.30E+03	1.80E+03	0.0687	0.0076	0.899	0.097	0.0943	0.0024	-0.0301	890.0	114.5	229.0	651.0	26.0	52.0	581.0	7.0	14.0	89
AZR7z132	839.00	510.00	157.10	0.610	-1.30E+06	1.20E+06	0.0632	0.0020	0.988	0.029	0.1129	0.0014	0.4923	714.0	33.5	67.0	698.0	7.5	15.0	690.0	4.0	8.0	99
AZR7z134	2218.00	626.00	235.70	0.280	1.70E+05	5.30E+04	0.1240	0.0042	0.799	0.024	0.0464	0.0007	0.4157	2015.0	30.0	60.0	596.0	7.0	14.0	292.0	2.5	5.0	49

Footnotes:

- Analysis references: AZR7z is zircon from sample AZR7 (mount CT18-7), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.28: Sample OUJ5 (LA-ICPMS)

IGSN: IEACC0021 Coordinate UTM: Zone 30S, 574362 m E, 3821747 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ5z1	107.80	92.70	92.00	0.860	-1.00E+05	1.40E+04	0.1274	0.0025	7.057	0.190	0.3947	0.0041	0.0349	2062.0	17.5	35.0	2119.0	12.0	24.0	2145.0	9.5	19.0	101
OUJ5z2	211.50	101.80	132.70	0.480	-3.80E+04	4.20E+04	0.1838	0.0030	13.670	0.360	0.5313	0.0050	0.3123	2687.0	13.5	27.0	2727.0	12.5	25.0	2747.0	10.5	21.0	101
OUJ5z3	728.80	81.30	21.75	0.110	1.00E+05	1.90E+04	0.0607	0.0019	0.825	0.024	0.0990	0.0009	0.1572	630.0	33.5	67.0	611.0	6.5	13.0	609.0	2.5	5.0	100
OUJ5z4	307.30	101.24	22.63	0.330	9.97E+03	7.10E+03	0.0569	0.0022	0.640	0.023	0.0824	0.0009	0.0810	488.0	42.5	85.0	502.0	7.0	14.0	511.0	2.5	5.0	102
OUJ5z5	145.20	58.36	64.27	0.400	3.50E+04	1.70E+04	0.1473	0.0027	8.940	0.240	0.4333	0.0044	0.3116	2315.0	15.5	31.0	2332.0	12.0	24.0	2321.0	10.0	20.0	100
OUJ5z6	767.40	262.50	68.83	0.340	1.60E+04	1.40E+04	0.0604	0.0019	0.778	0.022	0.0938	0.0009	0.2796	617.0	34.0	68.0	584.0	6.5	13.0	578.0	2.5	5.0	99
OUJ5z7	87.60	41.31	11.06	0.470	4.20E+04	3.20E+04	0.0593	0.0032	0.777	0.040	0.0942	0.0013	0.0727	578.0	58.5	117.0	584.0	11.5	23.0	580.0	4.0	8.0	99
OUJ5z8	108.77	158.34	43.67	1.460	-3.80E+03	2.50E+03	0.0631	0.0028	0.855	0.036	0.0989	0.0013	-0.0228	712.0	47.0	94.0	627.0	10.0	20.0	608.0	4.0	8.0	97
OUJ5z9	190.60	84.50	18.47	0.440	9.00E+02	2.30E+03	0.0586	0.0024	0.641	0.024	0.0809	0.0009	-0.0038	552.0	44.5	89.0	503.0	7.5	15.0	501.0	3.0	6.0	100
OUJ5z10	269.20	73.48	19.74	0.270	5.30E+03	5.20E+03	0.0603	0.0022	0.798	0.028	0.0966	0.0010	0.0578	614.0	39.5	79.0	596.0	8.0	16.0	595.0	3.0	6.0	100
OUJ5z11	104.20	34.89	7.85	0.330	-2.80E+03	1.70E+03	0.0585	0.0027	0.641	0.030	0.0796	0.0011	0.1964	549.0	50.5	101.0	503.0	9.5	19.0	494.0	3.5	7.0	98
OUJ5z12	260.00	113.40	42.10	0.440	-4.60E+03	7.70E+03	0.0653	0.0022	1.187	0.038	0.1328	0.0015	0.0521	784.0	35.5	71.0	795.0	9.0	18.0	804.0	4.5	9.0	101
OUJ5z13	1111.00	816.00	117.10	0.730	-9.30E+04	3.40E+04	0.0642	0.0020	0.653	0.025	0.0746	0.0024	0.9002	747.0	33.0	66.0	510.0	7.5	15.0	464.0	7.0	14.0	91
OUJ5z14	159.20	144.90	47.50	0.910	-9.50E+03	6.20E+03	0.0656	0.0025	1.039	0.036	0.1145	0.0013	-0.1001	794.0	40.0	80.0	723.0	9.0	18.0	699.0	4.0	8.0	97
OUJ5z15	655.20	33.60	39.20	0.050	-1.90E+04	8.40E+04	0.1651	0.0027	10.509	0.280	0.4540	0.0045	0.6148	2509.0	14.0	28.0	2481.0	12.5	25.0	2413.0	10.0	20.0	97
OUJ5z16	176.10	71.27	70.16	0.400	-2.50E+04	2.10E+04	0.1241	0.0023	6.701	0.180	0.3834	0.0037	0.2682	2016.0	16.5	33.0	2073.0	12.0	24.0	2092.0	8.5	17.0	101
OUJ5z17c	225.00	46.10	83.60	0.200	3.50E+04	3.70E+04	0.2612	0.0046	22.970	0.670	0.6277	0.0072	0.8266	3254.0	14.0	28.0	3226.0	14.0	28.0	3140.0	14.5	29.0	97
OUJ5z17r	354.60	71.20	81.20	0.200	5.00E+06	2.70E+06	0.1682	0.0027	10.840	0.280	0.4602	0.0043	0.4030	2540.0	13.5	27.0	2510.0	12.0	24.0	2440.0	9.5	19.0	97
OUJ5z19	318.00	98.40	27.54	0.310	-3.00E+04	1.20E+04	0.0625	0.0022	0.835	0.027	0.0975	0.0010	0.0781	691.0	37.5	75.0	616.0	7.5	15.0	600.0	3.0	6.0	97
OUJ5z20	94.30	34.32	7.73	0.360	-2.50E+03	2.90E+03	0.0596	0.0032	0.652	0.033	0.0807	0.0011	0.0861	589.0	58.0	116.0	510.0	10.0	20.0	500.0	3.5	7.0	98
OUJ5z21	19.41	22.15	24.80	1.140	-1.88E+04	8.20E+03	0.1536	0.0043	9.710	0.320	0.4510	0.0055	0.0462	2386.0	24.0	48.0	2408.0	15.0	30.0	2400.0	12.0	24.0	100
OUJ5z22	76.03	44.98	31.28	0.590	4.50E+04	2.00E+04	0.0935	0.0022	3.468	0.110	0.2641	0.0031	0.0596	1498.0	22.0	44.0	1520.0	12.5	25.0	1511.0	8.0	16.0	99
OUJ5z23	130.60	97.30	100.80	0.750	-7.00E+03	3.50E+05	0.1364	0.0025	7.836	0.210	0.4090	0.0043	0.2988	2182.0	16.0	32.0	2212.0	12.0	24.0	2210.0	10.0	20.0	100
OUJ5z24	38.50	31.88	53.80	0.830	1.60E+04	1.70E+04	0.2084	0.0043	19.000	0.550	0.6427	0.0076	0.3442	2893.0	16.5	33.0	3042.0	14.0	28.0	3200.0	15.0	30.0	105
OUJ5z25	155.90	30.20	7.18	0.190	-1.50E+05	1.70E+05	0.0577	0.0024	0.645	0.025	0.0815	0.0009	0.0732	518.0	45.5	91.0	505.0	7.5	15.0	505.0	2.5	5.0	100
OUJ5z26	276.90	177.50	45.42	0.640	-1.24E+05	4.90E+04	0.0618	0.0023	0.796	0.028	0.0932	0.0011	0.0432	667.0	40.0	80.0	595.0	8.0	16.0	575.0	3.0	6.0	97
OUJ5z27c	33.65	68.20	85.00	2.030	-6.10E+04	3.90E+04	0.1808	0.0039	12.770	0.370	0.5012	0.0063	0.2669	2660.0	18.0	36.0	2663.0	13.5	27.0	2619.0	13.5	27.0	98
OUJ5z27r	88.10	69.70	82.60	0.790	-5.00E+04	2.40E+04	0.1713	0.0032	11.120	0.320	0.4659	0.0054	0.5566	2570.0	15.5	31.0	2533.0	13.5	27.0	2466.0	12.0	24.0	97
OUJ5z28	1005.00	501.40	126.70	0.500	-4.60E+05	3.70E+05	0.0605	0.0019	0.727	0.020	0.0880	0.0008	0.2344	620.0	34.0	68.0	555.0	6.0	12.0	544.0	2.5	5.0	98
OUJ5z29	89.50	23.29	5.25	0.260	3.00E+05	2.30E+05	0.0570	0.0031	0.642	0.033	0.0804	0.0011	0.0431	492.0	60.0	120.0	504.0	10.0	20.0	499.0	3.5	7.0	99
OUJ5z30	329.20	369.40	100.70	1.120	1.08E+05	8.40E+04	0.0614	0.0021	0.826	0.026	0.0979	0.0010	0.0377	653.0	36.5	73.0	611.0	7.0	14.0	602.0	3.0	6.0	98
OUJ5z31	216.50	358.00	103.90	1.650	2.30E+04	4.90E+04	0.0602	0.0022	0.850	0.029	0.1027	0.0011	0.1538	611.0	39.5	79.0	625.0	8.0	16.0	630.0	3.0	6.0	101
OUJ5z32	451.40	123.20	28.55	0.270	1.08E+05	8.40E+04	0.0571	0.0019	0.645	0.020	0.0823	0.0008	0.1361	495.0	36.5	73.0	505.0	6.0	12.0	510.0	2.5	5.0	101
OUJ5z33	335.00	105.83	29.04	0.320	2.00E+05	1.00E+05	0.0612	0.0021	0.801	0.025	0.0951	0.0010	0.0132	646.0	37.0	74.0	597.0	7.0	14.0	585.0	3.0	6.0	98
OUJ5z34	105.50	175.40	234.30	1.660	-7.10E+05	3.70E+05	0.1958	0.0035	14.490	0.390	0.5317	0.0052	0.2155	2792.0	14.5	29.0	2782.0	13.0	26.0	2749.0	11.0	22.0	99
OUJ5z35	49.24	39.88	41.05	0.810	6.60E+04	3.60E+04	0.1303	0.0030	7.010	0.220	0.3891	0.0046	0.3388	2102.0	20.0	40.0	2113.0	14.0	28.0	2119.0	10.5	21.0	100
OUJ5z36	382.00	90.90	23.85	0.240	-1.90E+04	4.40E+04	0.0595	0.0020	0.749	0.024	0.0912	0.0010	0.3116	585.0	36.5	73.0	568.0	7.0	14.0	562.0	3.0	6.0	99
OUJ5z37	278.10	348.30	102.20	1.250	4.70E+04	4.00E+04	0.0603	0.0021	0.847	0.027	0.1021	0.0010	0.2230	614.0	37.5	75.0	623.0	7.5	15.0	627.0	3.0	6.0	101
OUJ5z38	326.10	46.48	42.10	0.140	-4.00E+05	2.40E+05	0.2068	0.0034	14.070	0.380	0.4932	0.0056	0.7428	2881.0	13.5	27.0	2754.0	13.0	26.0	2585.0	12.0	24.0	94
OUJ5z39	382.30	394.20	443.50	1.030	6.10E+05	3.40E+05	0.1593	0.0026	9.662	0.250	0.4406	0.0041	0.2846	2448.0	14.0	28.0	2403.0	12.0	24.0	2353.0	9.0	18.0	98
OUJ5z40	938.00	393.00	103.70	0.420	4.00E+04	8.70E+04	0.0594	0.0018	0.774	0.022	0.0950	0.0009	0.1643	582.0	33.0	66.0	582.0	6.5	13.0	585.0	2.5	5.0	100
OUJ5z41	801.00	282.00	213.30	0.350	-1.50E+05	2.70E+05	0.1359	0.0022	6.010	0.170	0.3213	0.0048	0.8548	2175.0	14.0	28.0	1977.0	12.5	25.0	1796.0	11.5	23.0	91
OUJ5z42	423.40	242.20	63.70	0.570	8.60E+04	5.00E+04	0.0591	0.0020	0.773	0.024	0.0941	0.0010	-0.0214	571.0	37.0	74.0	581.0	7.0	14.0	580.0	3.0	6.0	100
OUJ5z43	247.70	250.70	71.40	1.010	1.07E+05	5.90E+04	0.0597	0.0021	0.834	0.028	0.1012	0.0011	0.1180	593.0	38.0	76.0	616.0	7.5	15.0	621.0	3.0	6.0	101
OUJ5z44	328.70	162.00	43.40	0.490	9.90E+04	3.60E+04	0.0597	0.0021	0.782	0.025	0.0947	0.0009	0.0083	593.0	38.0	76.0	587.0	7.0	14.0	583.0	2.5	5.0	99
OUJ5z45	411.90	497.90	147.90	1.210	-3.60E+04	2.70E+04	0.0609	0.0020	0.864	0.027	0.1027	0.0011	0.0958	636.0	35.5	71.0	632.0	7.5	15.0	630.0	3.0	6.0	100
OUJ5z46	388.20	408.00	90.60	1.050	1.22E+05	4.60E+04	0.0600	0.0021	0.702	0.023	0.0848	0.0010	0.0961	604.0	38.0	76.0	540.0	7.0	14.0	525.0	3.0	6.0	97
OUJ5z47	424.00	117.70	31.22	0.280	5.00E+04	3.40E+04	0.0572	0.0019	0.798	0.026	0.1009	0.0011	0.2459	499.0	36.5	73.0	596.0	7.5	15.0	620.0	3.0	6.0	104
OUJ5z48	247.90	86.80	23.23	0.350	7.40E+04	2.60E+04	0.0579	0.0022	0.769	0.027	0.0963	0.0011	0.1105	526.0	41.5	83.0	579.0	7.5	15.0	592.0	3.0	6.0	102
OUJ5z49	451.80	192.90	51.99	0.430	6.40E+04	4.40E+04	0.0592	0.0020	0.780	0.024	0.0955	0.0010	0.1760	574.0	36.5	73.0	585.0	7.0	14.0	588.0	3.0	6.0	100
OUJ5z50	213.50	93.70	25.70	0.440	1.40E+04	1.90E+04	0.0593	0.0022	0.775	0.026	0.0947	0.0011	-0.0172	578.0	40.5	81.0	583.0	7.5	15.0	583.0	3.0	6.0	100
OUJ5z51	124.90	82.00	23.79	0.660	-6.00E+03	9.50E+03	0.0589	0.0024	0.840	0.033	0.1027	0.0013	0.2398	563.0	44.5	89.0	619.0	9.0	18.0	630.0	4.0	8.0	102
OUJ5z52	142.00	54.40	12.57	0.380	-1.59E+04	5.20E+03	0.0564	0.0026	0.605	0.027	0.0782	0.0010	0.0862	468.0	51.0	102.0	480.0	8.5	17.0	486.0	3.0	6.0	101
OUJ5z53	80.80	81.70	78.80	1.010	-3.30E+04	1.50E+04	0.1253	0.0027	6.408	0.190	0.3726	0.0040	0.1548	2033.0	19.0	38.0	2033.0	13.0	26.0	2042.0	9.5	19.0	100
OUJ5z54	385.00	171.40	39.43	0.450	-4.80E+04	1.30E+04	0.0564	0.0020	0.619	0.020	0.0794	0.0008	0.1170	468.0	39.5	79.0	489.0	6.5	13.0	493.0	2.5	5.0	101
OUJ5z55	145.00	111.70	114.60	0.770	-3.00E+04	5.60E+04	0.1332	0.0024	7.151	0.190	0.3893	0.0039	0.2565	2141.0	16.0	32.0	2130.0	12.0	24.0	2120.0	9.0	18.0	99
OUJ5z56	517.00	194.40	52.70	0.380	0.00E+00	4.30E+04	0.0592	0.0020	0.780	0.024	0.0964	0.0010	0.0209	574.0	36.5	73.0	585.0	7.0	14.0	593.0	3.0	6.0	101
OUJ5z57	156.44	103.96	16.54	0.660	-9.80E+03	5.20E+03	0.0529	0.0028	0.392	0.019	0.0544	0.0007	0.0833	325.0	60.0	120.0	336.0	7.0	14.0	341.0	2.0	4.0	102
OUJ5z58	172.00	145.60	180.20	0.850	-1.11E+05	4.00E+04	0.1761	0.0030	11.976	0.310	0.4909	0.0046	0.1610	2616.0	14.0	28.0	2603.0	12.0	24.0	2575.0	10.0	20.0	99
OUJ5z59	92.70	37.53	13.51	0.400	-4.00E+04	1.10E+04	0.0644	0.0027	1.115	0.043	0.1252	0.0016	-0.0160	755.0	44.0	88.0	761.0	10.5	21.0	760.0	4.5	9.0	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ5z60	356.00	82.60	19.12	0.230	-2.00E+04	2.40E+04	0.0600	0.0021	0.750	0.025	0.0908	0.0010	0.0134	604.0	38.0	76.0	568.0	7.0	14.0	560.0	3.0	6.0	99
OUJ5z61	311.80	148.00	157.30	0.470	1.70E+05	1.80E+05	0.1361	0.0023	7.675	0.200	0.4032	0.0038	0.2626	2178.0	14.5	29.0	2194.0	11.5	23.0	2184.0	8.5	17.0	100
OUJ5z62	98.20	53.30	59.82	0.540	5.10E+04	5.80E+04	0.1434	0.0027	8.710	0.240	0.4349	0.0045	0.3078	2269.0	16.0	32.0	2308.0	12.5	25.0	2328.0	10.0	20.0	101
OUJ5z63	165.90	99.28	33.44	0.600	-1.80E+04	1.80E+04	0.0637	0.0023	1.013	0.034	0.1165	0.0013	0.1024	732.0	38.0	76.0	710.0	8.5	17.0	710.0	4.0	8.0	100
OUJ5z64	538.20	226.70	61.60	0.420	-4.90E+04	4.70E+04	0.0609	0.0019	0.794	0.024	0.0947	0.0010	0.3182	635.0	33.5	67.0	593.0	7.0	14.0	583.0	3.0	6.0	98
OUJ5z65	113.16	175.40	51.60	1.550	-1.94E+04	7.20E+03	0.0623	0.0025	0.865	0.034	0.1000	0.0012	0.1448	684.0	43.0	86.0	633.0	9.0	18.0	615.0	3.5	7.0	97
OUJ5z66	101.50	100.60	31.45	0.990	-2.30E+04	6.00E+03	0.0646	0.0027	0.959	0.037	0.1076	0.0013	0.1256	761.0	44.0	88.0	683.0	9.5	19.0	659.0	4.0	8.0	96
OUJ5z67	229.50	91.44	25.80	0.400	-5.10E+04	1.30E+04	0.0602	0.0023	0.790	0.028	0.0952	0.0010	0.0131	611.0	41.5	83.0	591.0	8.0	16.0	586.0	3.0	6.0	99
OUJ5z68	225.60	63.83	17.69	0.280	-2.80E+04	1.30E+04	0.0609	0.0023	0.800	0.028	0.0956	0.0011	0.1548	636.0	40.5	81.0	597.0	8.0	16.0	589.0	3.0	6.0	99
OUJ5z70	192.90	58.20	13.96	0.300	2.50E+04	1.70E+04	0.0583	0.0024	0.656	0.026	0.0827	0.0010	0.1670	541.0	45.0	90.0	512.0	8.0	16.0	512.0	3.0	6.0	100
OUJ5z71	284.10	147.00	105.50	0.520	-4.40E+04	4.20E+04	0.0934	0.0017	3.426	0.093	0.2636	0.0025	0.2907	1496.0	17.0	34.0	1510.0	10.5	21.0	1508.0	6.5	13.0	100
OUJ5z72	615.60	134.30	174.40	0.220	3.00E+05	2.20E+05	0.1802	0.0028	12.773	0.330	0.5048	0.0045	0.4190	2655.0	13.0	26.0	2663.0	12.0	24.0	2634.0	9.5	19.0	99
OUJ5z73	362.50	93.40	25.09	0.260	-2.20E+04	1.80E+04	0.0597	0.0020	0.778	0.024	0.0940	0.0010	0.1500	593.0	36.5	73.0	584.0	7.0	14.0	579.0	3.0	6.0	99
OUJ5z74	1128.00	381.70	70.40	0.340	-4.40E+04	4.60E+04	0.0591	0.0018	0.593	0.017	0.0726	0.0007	0.3694	570.0	33.0	66.0	473.0	5.5	11.0	452.0	2.0	4.0	96
OUJ5z75	247.90	359.00	109.10	1.450	1.00E+03	1.50E+04	0.0673	0.0027	0.926	0.036	0.1010	0.0011	0.2232	847.0	41.5	83.0	666.0	9.5	19.0	620.0	3.0	6.0	93
OUJ5z76	278.00	368.00	90.30	1.320	1.90E+04	2.00E+04	0.0648	0.0022	0.887	0.030	0.0981	0.0013	0.3341	768.0	36.0	72.0	645.0	8.0	16.0	603.0	4.0	8.0	94
OUJ5z77	59.42	28.01	12.72	0.470	-5.10E+03	4.80E+03	0.0716	0.0032	1.572	0.067	0.1597	0.0022	0.0412	975.0	45.5	91.0	959.0	13.0	26.0	955.0	6.0	12.0	100
OUJ5z78	218.50	73.00	17.87	0.330	-4.60E+03	9.20E+03	0.0581	0.0023	0.653	0.024	0.0816	0.0009	0.1369	534.0	43.5	87.0	510.0	7.5	15.0	505.0	2.5	5.0	99
OUJ5z79	274.60	98.40	21.59	0.360	-1.88E+04	6.50E+03	0.0570	0.0022	0.600	0.022	0.0765	0.0008	0.0464	492.0	42.5	85.0	477.0	7.0	14.0	475.0	2.5	5.0	100
OUJ5z80	377.00	183.00	46.70	0.490	-1.60E+04	1.30E+04	0.0601	0.0021	0.763	0.025	0.0923	0.0009	0.0813	607.0	38.0	76.0	576.0	7.0	14.0	569.0	2.5	5.0	99
OUJ5z81	121.90	141.00	39.99	1.160	-4.10E+03	5.90E+03	0.0600	0.0025	0.821	0.032	0.0998	0.0012	0.0544	604.0	45.0	90.0	609.0	9.0	18.0	613.0	3.5	7.0	101
OUJ5z82	105.90	53.60	50.60	0.510	1.00E+03	1.90E+04	0.1281	0.0026	6.542	0.190	0.3677	0.0039	0.1985	2072.0	18.0	36.0	2052.0	13.0	26.0	2019.0	9.0	18.0	98
OUJ5z83	291.40	185.10	206.60	0.640	-2.70E+04	4.10E+04	0.1552	0.0025	9.249	0.240	0.4305	0.0042	0.4102	2404.0	13.5	27.0	2363.0	12.0	24.0	2308.0	9.5	19.0	98
OUJ5z84	277.00	80.35	21.12	0.290	-1.73E+04	5.40E+03	0.0582	0.0021	0.752	0.024	0.0930	0.0010	-0.0477	537.0	39.5	79.0	569.0	7.0	14.0	573.0	3.0	6.0	101
OUJ5z85	176.40	81.71	21.69	0.460	1.70E+04	1.10E+04	0.0593	0.0023	0.768	0.028	0.0941	0.0011	0.1115	578.0	42.0	84.0	579.0	8.0	16.0	580.0	3.0	6.0	100
OUJ5z86	717.00	726.00	202.70	1.010	-4.00E+04	1.70E+04	0.0607	0.0019	0.828	0.023	0.0988	0.0009	0.0794	628.0	33.5	67.0	613.0	6.5	13.0	607.0	2.5	5.0	99
OUJ5z87	162.40	218.70	61.40	1.350	9.50E+03	9.10E+03	0.0627	0.0025	0.855	0.033	0.0998	0.0012	0.1344	698.0	42.5	85.0	627.0	9.0	18.0	613.0	3.5	7.0	98
OUJ5z88	143.10	106.86	111.40	0.750	6.00E+04	3.30E+04	0.1367	0.0026	7.675	0.210	0.4045	0.0041	0.1219	2186.0	16.5	33.0	2194.0	12.5	25.0	2190.0	9.5	19.0	100
OUJ5z89	783.00	253.00	51.60	0.320	-4.70E+04	1.80E+04	0.0592	0.0019	0.601	0.019	0.0751	0.0014	0.6293	573.0	35.0	70.0	478.0	6.0	12.0	467.0	4.0	8.0	98
OUJ5z90	390.80	115.95	26.06	0.300	-3.00E+04	1.10E+04	0.0570	0.0020	0.636	0.021	0.0807	0.0008	0.1171	492.0	38.5	77.0	500.0	6.5	13.0	500.0	2.5	5.0	100
OUJ5z91	415.00	450.00	129.60	1.080	-4.30E+04	2.00E+04	0.0603	0.0020	0.861	0.027	0.1037	0.0011	0.0942	614.0	36.0	72.0	631.0	7.5	15.0	636.0	3.0	6.0	101
OUJ5z92	363.30	289.30	80.40	0.800	-2.30E+04	2.80E+04	0.0613	0.0021	0.849	0.026	0.1006	0.0010	-0.0030	650.0	37.0	74.0	624.0	7.0	14.0	618.0	3.0	6.0	99
OUJ5z93	297.10	201.50	46.80	0.680	-3.00E+04	2.60E+04	0.0585	0.0021	0.663	0.023	0.0826	0.0009	0.1089	549.0	39.0	78.0	516.0	7.0	14.0	512.0	2.5	5.0	99
OUJ5z94	512.00	195.30	43.00	0.380	1.00E+04	5.40E+04	0.0574	0.0019	0.629	0.019	0.0794	0.0008	0.0273	507.0	36.5	73.0	495.0	6.0	12.0	493.0	2.5	5.0	99
OUJ5z95	159.10	127.20	51.30	0.800	-6.40E+04	1.90E+04	0.0690	0.0024	1.372	0.045	0.1454	0.0015	0.0870	899.0	36.0	72.0	877.0	9.5	19.0	875.0	4.0	8.0	100
OUJ5z96	351.00	143.60	40.40	0.410	1.10E+05	1.10E+05	0.0602	0.0020	0.814	0.025	0.0978	0.0010	0.1914	611.0	36.0	72.0	605.0	7.0	14.0	601.0	3.0	6.0	99
OUJ5z97	488.00	150.20	35.11	0.310	-3.29E+05	8.00E+04	0.0571	0.0019	0.651	0.020	0.0821	0.0008	0.1050	495.0	36.5	73.0	509.0	6.0	12.0	509.0	2.5	5.0	100
OUJ5z98	497.70	134.30	22.28	0.270	-6.80E+05	5.20E+05	0.0592	0.0020	0.646	0.020	0.0798	0.0008	0.1399	574.0	36.5	73.0	506.0	6.0	12.0	495.0	2.5	5.0	98
OUJ5z99	289.80	88.20	23.16	0.300	-1.70E+05	2.60E+05	0.0581	0.0021	0.738	0.025	0.0927	0.0010	0.0460	534.0	39.5	79.0	561.0	7.5	15.0	572.0	3.0	6.0	102
OUJ5z100	217.90	158.30	144.00	0.730	3.20E+05	1.40E+05	0.1178	0.0021	5.700	0.150	0.3449	0.0033	0.1499	1923.0	16.0	32.0	1931.0	11.5	23.0	1910.0	8.0	16.0	99
OUJ5z101	143.00	54.20	14.53	0.380	1.50E+04	2.50E+04	0.0623	0.0027	0.815	0.032	0.0949	0.0011	-0.1317	684.0	46.5	93.0	605.0	9.0	18.0	584.0	3.0	6.0	97
OUJ5z102	835.00	352.90	81.15	0.420	2.00E+05	5.00E+04	0.0586	0.0019	0.656	0.019	0.0817	0.0008	0.0937	553.0	35.5	71.0	512.0	6.0	12.0	506.0	2.5	5.0	99
OUJ5z103	140.50	42.51	45.10	0.300	1.10E+05	4.20E+04	0.1360	0.0025	7.724	0.210	0.4040	0.0040	0.2364	2177.0	16.0	32.0	2199.0	12.0	24.0	2187.0	9.0	18.0	99
OUJ5z104c	258.90	213.20	62.90	0.820	-1.90E+04	2.80E+04	0.0614	0.0021	0.891	0.029	0.1051	0.0011	0.1678	653.0	36.5	73.0	647.0	8.0	16.0	644.0	3.0	6.0	100
OUJ5z105	213.50	166.40	49.48	0.780	2.41E+04	8.20E+03	0.0619	0.0024	0.873	0.031	0.1024	0.0011	-0.0747	671.0	41.5	83.0	637.0	8.5	17.0	628.0	3.0	6.0	99
OUJ5z106	367.30	86.00	20.15	0.230	-4.00E+04	2.20E+04	0.0578	0.0021	0.650	0.022	0.0825	0.0009	0.0514	522.0	40.0	80.0	508.0	7.0	14.0	511.0	2.5	5.0	101
OUJ5z107c	307.00	210.60	246.80	0.690	1.28E+05	4.20E+04	0.1676	0.0028	11.002	0.290	0.4626	0.0046	0.5511	2534.0	14.0	28.0	2523.0	12.5	25.0	2451.0	10.0	20.0	97
OUJ5z107r	234.40	79.92	70.70	0.340	-1.93E+05	8.00E+04	0.1231	0.0022	6.020	0.160	0.3444	0.0034	0.3274	2002.0	16.0	32.0	1979.0	11.5	23.0	1908.0	8.0	16.0	96
OUJ5z108	81.40	19.11	4.41	0.230	-3.30E+03	4.30E+03	0.0579	0.0031	0.642	0.033	0.0800	0.0012	0.0498	526.0	58.5	117.0	504.0	10.0	20.0	496.0	3.5	7.0	98
OUJ5z109	121.70	95.80	95.60	0.790	5.30E+04	1.40E+04	0.1284	0.0026	7.004	0.200	0.3853	0.0038	0.1416	2076.0	18.0	36.0	2112.0	12.5	25.0	2101.0	9.0	18.0	99
OUJ5z110	105.70	36.20	8.44	0.340	4.00E+03	3.30E+03	0.0584	0.0029	0.640	0.030	0.0794	0.0010	0.1539	545.0	54.5	109.0	502.0	9.5	19.0	493.0	3.0	6.0	98
OUJ5z111	149.80	137.80	142.20	0.920	1.30E+04	1.60E+04	0.1274	0.0056	5.480	0.300	0.3024	0.0040	0.8754	2062.0	39.0	78.0	1897.0	23.5	47.0	1703.0	10.0	20.0	90
OUJ5z112	347.50	76.50	86.40	0.220	1.76E+05	5.10E+04	0.1569	0.0026	9.716	0.250	0.4374	0.0041	0.4382	2423.0	14.0	28.0	2408.0	12.0	24.0	2339.0	9.0	18.0	97
OUJ5z113	241.60	232.50	320.20	0.960	1.28E+05	4.60E+04	0.2437	0.0040	20.060	0.520	0.5792	0.0055	0.4241	3144.0	13.0	26.0	3094.0	12.5	25.0	2945.0	11.0	22.0	95
OUJ5z114	805.00	379.60	91.00	0.470	-4.80E+04	6.40E+04	0.0621	0.0020	0.767	0.023	0.0898	0.0009	0.2910	677.0	34.5	69.0	578.0	6.5	13.0	555.0	2.5	5.0	96
OUJ5z115	225.70	103.00	27.67	0.460	0.00E+00	1.60E+04	0.0614	0.0023	0.797	0.028	0.0933	0.0010	-0.0176	653.0	40.0	80.0	595.0	8.0	16.0	575.0	3.0	6.0	97
OUJ5z116	259.60	129.60	34.45	0.500	5.00E+04	1.70E+04	0.0592	0.0022	0.760	0.026	0.0932	0.0010	0.1058	574.0	40.5	81.0	574.0	7.5	15.0	575.0	3.0	6.0	100
OUJ5z117	85.20	41.81	67.87	0.490	4.70E+04	3.30E+04	0.2646	0.0046	24.750	0.660	0.6564	0.0068	0.3637	3274.0	13.5	27.0	3298.0	13.0	26.0	3253.0	13.0	26.0	99
OUJ5z118	369.80	225.30	60.03	0.610	1.70E+04	2.50E+04	0.0606	0.0022	0.783	0.026	0.0934	0.0009	0.0570	625.0	39.0	78.0	587.0	7.5	15.0	576.0	3.0	6.0	98
OUJ5z119	470.80	221.80	59.81	0.470	6.10E+04	1.70E+04	0.0610	0.0021	0.789	0.024	0.0933	0.0010	0.0674	639.0	37.0	74.0	591.0	7.0	14.0	575.0	3.0	6.0	97
OUJ5z120	503.00	615.00	146.10	1.220	2.20E+04	2.50E+04	0.0635	0.0021	0.769	0.024	0.0872	0.0012	0.3819	725.0	35.0	70.0	579.0	7.0	14.0	539.0	3.5	7.0	93
OUJ5z121c	59.79	22.07	22.87	0.370	2.70E+04	1.00E+04	0.1314	0.0028	7.320	0.210	0.3946	0.0043	0.1000	2117.0	18.5	37.0	2151.0	13.0	26.0	2144.0	10.0	20.0	100
OUJ5z121r	189.90	50.45	50.37	0.270	-5.80E+04	7.30E+04	0.1270	0.0023	6.905	0.180	0.3799	0.0037	0.2136	2057.0	16.0	32.0	2099.0	11.5	23.0	2076.0	8.5	17.0	99
OUJ5z122	128.10	160.90	104.10	1.260	3.10E+04	1.60E+04	0.0907	0.0030	2.913	0.089	0.2323	0.0024	0.0592	1440.0	31.5	63.0	1385.0	11.5	23.0	1347.0	6.5	13.0	97
OUJ5z124	343.70	115.90	66.75	0.340	1.17E+05	2.90E+04	0.0831	0.0025	2.410	0.067	0.2087	0.0020	0.2878	1270.0	29.5	59.0	1246.0	10.0	20.0	1222.0	5.5	11.0	98
OUJ5z125c	308.00	64.80	15.52	0.210	3.12E+04	9.90E+03	0.0578	0.0022	0.605	0.021	0.0754	0.0009	0.0371	522.0	41.5	83.0	480.0	6.5	13.0	468.0	2.5	5.0	97
OUJ5z125r	551.50	117.06	26.82	0.210	5.80E+04	2.10E+04	0.0581	0.0019	0.650	0.020	0.0809	0.0008	0.1902	534.0	36.0	72.0	508.0	6.0	12.0	502.0	2.5	5.0	99

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ5z126	1027.00	64.90	15.13	0.060	-1.60E+05	1.00E+05	0.0591	0.0019	0.645	0.018	0.0785	0.0008	0.0713	569.0	35.0	70.0	505.0	5.5	11.0	487.0	2.5	5.0	96
OUJ5z127c	256.50	63.37	83.10	0.250	1.65E+05	6.10E+04	0.2217	0.0036	16.580	0.440	0.5222	0.0052	0.5483	2993.0	13.0	26.0	2911.0	12.5	25.0	2709.0	11.0	22.0	93
OUJ5z127r	174.10	61.34	14.98	0.350	1.88E+04	7.60E+03	0.0581	0.0025	0.686	0.029	0.0850	0.0010	0.0943	534.0	47.0	94.0	530.0	8.5	17.0	526.0	3.0	6.0	99
OUJ5z128	212.20	97.10	26.10	0.460	3.60E+04	9.50E+03	0.0600	0.0024	0.789	0.029	0.0945	0.0011	0.0142	604.0	43.5	87.0	591.0	8.0	16.0	582.0	3.0	6.0	99
OUJ5z129	146.20	97.70	119.40	0.670	1.15E+05	3.50E+04	0.1638	0.0029	10.980	0.300	0.4690	0.0047	0.4107	2495.0	15.0	30.0	2521.0	12.5	25.0	2479.0	10.5	21.0	98
OUJ5z130	187.30	87.40	88.90	0.470	1.18E+05	3.50E+04	0.1289	0.0024	7.060	0.190	0.3824	0.0036	0.1447	2083.0	16.5	33.0	2119.0	12.0	24.0	2087.0	8.5	17.0	99
OUJ5z131	1148.00	291.50	286.50	0.250	4.80E+05	2.60E+05	0.1339	0.0021	6.687	0.170	0.3499	0.0033	0.5373	2149.0	13.5	27.0	2071.0	11.0	22.0	1934.0	8.0	16.0	93
OUJ5z133c	96.72	20.75	4.78	0.210	9.60E+03	5.70E+03	0.0568	0.0029	0.628	0.031	0.0798	0.0010	-0.0281	484.0	56.5	113.0	495.0	9.5	19.0	495.0	3.0	6.0	100
OUJ5z133r	65.02	18.42	4.04	0.280	1.07E+04	3.20E+03	0.0587	0.0034	0.648	0.035	0.0812	0.0013	0.1234	556.0	63.0	126.0	507.0	11.0	22.0	503.0	4.0	8.0	99
OUJ5z134	383.60	160.10	44.08	0.420	-1.90E+04	5.00E+04	0.0619	0.0022	0.813	0.027	0.0942	0.0009	-0.0449	671.0	38.0	76.0	604.0	7.5	15.0	580.0	2.5	5.0	96
OUJ5z135	204.90	131.01	35.38	0.640	3.50E+04	1.10E+04	0.0607	0.0023	0.789	0.028	0.0931	0.0010	0.0376	629.0	41.0	82.0	591.0	8.0	16.0	574.0	3.0	6.0	97
OUJ5z136	171.50	211.70	59.40	1.230	3.30E+04	1.30E+04	0.0612	0.0026	0.847	0.033	0.0997	0.0012	-0.0818	646.0	45.5	91.0	623.0	9.0	18.0	612.0	3.5	7.0	98
OUJ5z137	1018.00	718.00	164.40	0.710	1.00E+05	9.50E+04	0.0630	0.0019	0.715	0.021	0.0813	0.0012	0.5976	708.0	32.0	64.0	548.0	6.0	12.0	504.0	3.5	7.0	92
OUJ5z138	280.00	213.00	65.60	0.760	4.70E+04	2.80E+04	0.0618	0.0022	0.889	0.029	0.1039	0.0011	0.0761	667.0	38.0	76.0	646.0	8.0	16.0	637.0	3.0	6.0	99
OUJ5z139	184.90	65.60	14.38	0.350	2.40E+04	1.10E+04	0.0588	0.0025	0.637	0.027	0.0780	0.0009	0.1905	560.0	46.5	93.0	500.0	8.5	17.0	484.0	2.5	5.0	97
OUJ5z140	402.50	135.90	31.48	0.340	2.90E+04	4.70E+04	0.0598	0.0021	0.677	0.022	0.0819	0.0008	0.1296	596.0	38.0	76.0	525.0	6.5	13.0	508.0	2.5	5.0	97
Discordant data																							
OUJ5z104r	44.71	24.38	8.30	0.550	3.40E+03	2.20E+03	0.0730	0.0044	1.077	0.062	0.1073	0.0017	0.0687	1014.0	61.0	122.0	742.0	15.0	30.0	657.0	5.0	10.0	89
OUJ5z123	35.90	6.81	0.95	0.190	-2.00E+02	3.60E+03	0.0655	0.0055	0.765	0.070	0.0825	0.0034	0.4921	790.0	88.0	176.0	577.0	20.0	40.0	511.0	10.0	20.0	89

Footnotes:

- Analysis references: OUJ5z is zircon from sample OUJ5 (mount CT18-6), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.29: Sample OUJ6 (LA-ICPMS)

IGSN: IEACC0022 Coordinate UTM: Zone 30S, 574362 m E, 3821747 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ6z1	125.52	55.18	56.15	0.440	1.70E+03	2.20E+03	0.1288	0.0025	6.849	0.190	0.3864	0.0039	0.1973	2082.0	17.0	34.0	2092.0	12.5	25.0	2106.0	9.0	18.0	101
OUJ6z2	674.00	489.00	133.10	0.730	1.41E+04	6.90E+03	0.0601	0.0019	0.775	0.023	0.0935	0.0012	0.4272	607.0	34.0	68.0	583.0	6.5	13.0	576.0	3.5	7.0	99
OUJ6z3	158.60	126.60	166.10	0.800	-5.60E+04	1.50E+04	0.1845	0.0031	13.300	0.350	0.5237	0.0051	0.3753	2694.0	14.0	28.0	2701.0	12.5	25.0	2715.0	11.0	22.0	101
OUJ6z4	872.00	372.00	318.30	0.430	-9.90E+03	8.90E+03	0.1308	0.0021	6.716	0.170	0.3741	0.0036	0.5721	2109.0	14.0	28.0	2075.0	11.0	22.0	2049.0	8.5	17.0	99
OUJ6z5	67.60	51.20	18.77	0.760	-4.20E+02	2.30E+02	0.0690	0.0032	1.175	0.052	0.1237	0.0017	0.1179	899.0	48.0	96.0	789.0	12.0	24.0	752.0	5.0	10.0	95
OUJ6z6	94.30	49.06	13.14	0.520	-1.40E+02	1.70E+02	0.0598	0.0028	0.771	0.035	0.0925	0.0013	0.1435	596.0	50.5	101.0	580.0	10.0	20.0	570.0	4.0	8.0	98
OUJ6z7	84.28	62.11	18.71	0.740	-4.00E+02	2.00E+02	0.0594	0.0028	0.858	0.038	0.1039	0.0014	-0.0378	582.0	51.0	102.0	629.0	10.5	21.0	637.0	4.0	8.0	101
OUJ6z8	104.65	33.18	7.81	0.320	-6.30E+02	2.40E+02	0.0555	0.0026	0.611	0.028	0.0796	0.0011	0.0851	432.0	52.0	104.0	484.0	9.0	18.0	494.0	3.5	7.0	102
OUJ6z9	930.00	688.00	569.50	0.740	-1.50E+03	4.40E+03	0.1348	0.0021	5.831	0.150	0.3176	0.0036	0.7416	2162.0	13.5	27.0	1951.0	11.0	22.0	1778.0	9.0	18.0	91
OUJ6z10	249.90	231.60	66.90	0.930	-8.30E+02	4.60E+02	0.0600	0.0021	0.834	0.027	0.1005	0.0010	0.1143	604.0	38.0	76.0	616.0	7.5	15.0	617.0	3.0	6.0	100
OUJ6z11	461.60	451.50	124.40	0.980	-3.40E+03	1.00E+03	0.0579	0.0019	0.800	0.024	0.0999	0.0010	0.1234	526.0	36.0	72.0	597.0	7.0	14.0	614.0	3.0	6.0	103
OUJ6z12	372.60	321.10	92.90	0.860	-1.23E+03	8.40E+02	0.0598	0.0019	0.839	0.026	0.1020	0.0011	0.3383	596.0	34.5	69.0	619.0	7.0	14.0	626.0	3.0	6.0	101
OUJ6z13	641.70	376.20	101.80	0.590	-2.13E+04	9.40E+03	0.0580	0.0018	0.762	0.022	0.0945	0.0009	0.2176	531.0	34.0	68.0	575.0	6.5	13.0	582.0	3.0	6.0	101
OUJ6z14	415.00	328.00	86.90	0.790	-5.20E+02	5.80E+02	0.0603	0.0020	0.809	0.025	0.0964	0.0010	0.0293	614.0	36.0	72.0	602.0	7.0	14.0	593.0	3.0	6.0	99
OUJ6z15	1014.00	595.00	145.20	0.590	-3.80E+03	5.90E+03	0.0598	0.0018	0.732	0.021	0.0881	0.0010	0.3544	597.0	32.5	65.0	558.0	6.0	12.0	544.0	3.0	6.0	98
OUJ6z16	148.90	197.70	55.26	1.330	1.30E+02	1.40E+02	0.0590	0.0025	0.802	0.032	0.0985	0.0011	0.1080	567.0	46.0	92.0	598.0	9.0	18.0	606.0	3.0	6.0	101
OUJ6z17	380.40	105.80	23.58	0.280	-4.50E+02	3.00E+02	0.0566	0.0021	0.617	0.021	0.0786	0.0008	-0.0191	476.0	41.0	82.0	488.0	6.5	13.0	488.0	2.5	5.0	100
OUJ6z18	93.75	79.70	35.80	0.850	5.00E+01	1.20E+02	0.0779	0.0030	1.626	0.059	0.1494	0.0018	0.1010	1144.0	38.5	77.0	980.0	11.5	23.0	898.0	5.0	10.0	92
OUJ6z19	272.80	106.10	23.30	0.390	-4.00E+02	2.10E+02	0.0561	0.0020	0.621	0.022	0.0793	0.0009	0.1931	456.0	39.5	79.0	490.0	7.0	14.0	492.0	2.5	5.0	100
OUJ6z20	274.30	75.80	95.20	0.280	-3.20E+03	2.20E+03	0.2096	0.0035	13.010	0.340	0.4574	0.0045	0.5148	2902.0	13.5	27.0	2680.0	12.5	25.0	2428.0	10.0	20.0	91
OUJ6z21	106.43	54.02	16.73	0.510	-3.40E+02	1.70E+02	0.0601	0.0027	0.899	0.039	0.1087	0.0013	0.1804	607.0	48.5	97.0	651.0	10.5	21.0	665.0	4.0	8.0	102
OUJ6z22	441.30	208.10	55.20	0.470	5.00E+04	1.10E+04	0.0580	0.0019	0.756	0.023	0.0939	0.0009	0.1418	530.0	36.0	72.0	572.0	6.5	13.0	579.0	3.0	6.0	101
OUJ6z23	297.90	160.30	35.51	0.540	-1.00E+02	5.10E+03	0.0559	0.0021	0.586	0.021	0.0757	0.0008	0.0156	448.0	41.5	83.0	468.0	6.5	13.0	470.0	2.5	5.0	100
OUJ6z24	206.50	145.40	41.48	0.700	-2.90E+03	4.70E+03	0.0600	0.0023	0.815	0.029	0.0978	0.0010	0.0295	604.0	41.5	83.0	605.0	8.0	16.0	602.0	3.0	6.0	99
OUJ6z25	347.00	352.60	102.10	1.020	-1.20E+03	5.80E+02	0.0620	0.0022	0.887	0.029	0.1031	0.0010	0.1151	674.0	38.0	76.0	645.0	8.0	16.0	633.0	3.0	6.0	98
OUJ6z26	141.30	27.79	38.17	0.200	-4.50E+03	2.50E+03	0.1951	0.0034	14.000	0.380	0.5284	0.0053	0.4791	2786.0	14.5	29.0	2750.0	13.0	26.0	2735.0	11.0	22.0	99
OUJ6z27	353.60	185.00	50.40	0.520	-7.30E+02	5.60E+02	0.0586	0.0021	0.770	0.026	0.0948	0.0010	-0.0646	552.0	39.0	78.0	580.0	7.5	15.0	584.0	3.0	6.0	101
OUJ6z28	636.00	279.80	73.00	0.440	-4.30E+03	2.00E+03	0.0580	0.0019	0.749	0.022	0.0930	0.0009	0.0869	530.0	36.0	72.0	568.0	6.5	13.0	573.0	2.5	5.0	101
OUJ6z29	227.20	231.90	243.40	1.020	2.40E+04	6.90E+04	0.1539	0.0026	8.514	0.230	0.4107	0.0042	0.4243	2390.0	14.5	29.0	2287.0	12.5	25.0	2218.0	9.5	19.0	97
OUJ6z30	119.50	51.20	12.56	0.430	-1.27E+03	5.30E+02	0.0576	0.0024	0.782	0.031	0.0967	0.0012	0.0174	515.0	46.0	92.0	587.0	9.0	18.0	595.0	3.5	7.0	101
OUJ6z31	40.13	77.50	21.33	1.930	-3.50E+02	1.60E+02	0.0619	0.0041	0.807	0.051	0.0958	0.0016	0.0358	671.0	71.0	142.0	601.0	14.5	29.0	590.0	4.5	9.0	98
OUJ6z32	337.40	102.60	24.20	0.300	2.05E+03	8.20E+02	0.0571	0.0019	0.650	0.020	0.0832	0.0009	0.1731	495.0	36.5	73.0	508.0	6.0	12.0	515.0	2.5	5.0	101
OUJ6z33	159.00	82.30	78.10	0.520	-3.00E+02	1.30E+03	0.1294	0.0023	6.141	0.170	0.3502	0.0036	0.3927	2090.0	15.5	31.0	1996.0	12.0	24.0	1936.0	8.5	17.0	97
OUJ6z34	156.10	484.50	139.50	3.100	-6.00E+02	5.90E+02	0.0618	0.0024	0.833	0.031	0.0979	0.0011	0.2270	667.0	41.5	83.0	615.0	8.5	17.0	602.0	3.0	6.0	98
OUJ6z35	124.10	99.40	26.93	0.800	-2.60E+03	1.10E+03	0.0588	0.0026	0.746	0.031	0.0930	0.0012	-0.0395	560.0	48.0	96.0	566.0	9.0	18.0	573.0	3.5	7.0	101
OUJ6z36	328.10	171.20	47.24	0.520	1.03E+04	4.50E+03	0.0588	0.0020	0.762	0.024	0.0945	0.0010	0.0643	560.0	37.0	74.0	575.0	7.0	14.0	582.0	3.0	6.0	101
OUJ6z37	314.20	114.00	17.54	0.360	2.90E+02	8.70E+02	0.0635	0.0024	0.621	0.024	0.0717	0.0012	0.4455	725.0	40.0	80.0	490.0	7.5	15.0	446.0	3.5	7.0	91
OUJ6z38	291.30	238.90	304.40	0.820	-1.69E+05	4.90E+04	0.1755	0.0029	11.365	0.290	0.4789	0.0044	0.4047	2611.0	14.0	28.0	2554.0	12.0	24.0	2522.0	9.5	19.0	99
OUJ6z39	424.40	11.15	8.76	0.030	-1.55E+05	5.30E+04	0.1279	0.0022	5.678	0.150	0.3306	0.0035	0.5027	2069.0	15.0	30.0	1928.0	11.5	23.0	1841.0	8.5	17.0	96
OUJ6z40	180.00	208.60	59.10	1.160	-1.16E+04	8.40E+03	0.0619	0.0023	0.823	0.028	0.0972	0.0011	0.1986	671.0	40.0	80.0	610.0	8.0	16.0	598.0	3.0	6.0	98
OUJ6z41	552.00	383.20	106.40	0.690	3.40E+05	1.40E+05	0.0616	0.0020	0.836	0.025	0.0992	0.0010	0.1179	660.0	35.0	70.0	617.0	7.0	14.0	610.0	3.0	6.0	99
OUJ6z42	406.70	207.30	46.50	0.510	1.39E+05	5.70E+04	0.0567	0.0020	0.604	0.020	0.0782	0.0008	0.0754	480.0	39.0	78.0	480.0	6.5	13.0	485.0	2.5	5.0	101
OUJ6z43	358.70	218.80	58.20	0.610	-4.00E+04	2.20E+04	0.0600	0.0021	0.764	0.024	0.0934	0.0010	0.0602	604.0	38.0	76.0	576.0	7.0	14.0	576.0	3.0	6.0	100
OUJ6z44	191.20	94.90	25.41	0.500	3.80E+04	2.70E+04	0.0594	0.0023	0.752	0.028	0.0927	0.0010	0.0819	582.0	42.0	84.0	569.0	8.0	16.0	571.0	3.0	6.0	100
OUJ6z45	245.70	241.40	72.42	0.980	8.00E+04	3.00E+04	0.0623	0.0021	0.891	0.028	0.1041	0.0011	0.1426	684.0	36.0	72.0	647.0	7.5	15.0	638.0	3.0	6.0	99
OUJ6z46	547.20	316.60	382.00	0.580	5.00E+05	5.10E+05	0.1731	0.0027	10.087	0.260	0.4302	0.0043	0.6625	2588.0	13.0	26.0	2443.0	12.0	24.0	2307.0	9.5	19.0	94
OUJ6z47	62.60	47.77	48.26	0.760	1.36E+06	4.60E+05	0.1313	0.0028	6.800	0.200	0.3819	0.0042	0.2600	2115.0	18.5	37.0	2086.0	13.0	26.0	2085.0	10.0	20.0	100
OUJ6z48	349.00	213.60	276.80	0.610	-1.81E+07	7.80E+06	0.1960	0.0031	13.420	0.380	0.5058	0.0071	0.9193	2793.0	13.0	26.0	2710.0	13.5	27.0	2639.0	15.0	30.0	97
OUJ6z49	276.70	185.80	48.95	0.670	-3.10E+07	2.00E+07	0.0591	0.0022	0.752	0.025	0.0927	0.0010	0.0166	571.0	40.5	81.0	569.0	7.0	14.0	572.0	3.0	6.0	100
OUJ6z50	328.00	251.00	317.00	0.770	-1.10E+07	1.70E+07	0.1791	0.0029	12.078	0.310	0.4960	0.0048	0.4561	2645.0	13.5	27.0	2610.0	12.0	24.0	2597.0	10.5	21.0	99
OUJ6z51	472.00	292.90	79.50	0.620	1.60E+05	1.20E+05	0.0584	0.0019	0.762	0.024	0.0946	0.0009	0.1700	545.0	35.5	71.0	575.0	7.0	14.0	583.0	2.5	5.0	101
OUJ6z52	124.20	98.60	95.20	0.790	3.10E+04	7.40E+04	0.1249	0.0023	6.186	0.170	0.3640	0.0036	0.2610	2027.0	16.5	33.0	2002.0	12.0	24.0	2001.0	8.5	17.0	100
OUJ6z53	866.00	304.70	51.25	0.350	1.29E+05	8.40E+04	0.0598	0.0019	0.527	0.016	0.0637	0.0008	0.4925	595.0	34.5	69.0	430.0	5.5	11.0	398.0	2.5	5.0	93
OUJ6z54c	89.49	33.73	10.65	0.380	-2.80E+04	1.90E+04	0.0597	0.0029	0.884	0.039	0.1079	0.0014	-0.0799	593.0	52.5	105.0	643.0	10.5	21.0	661.0	4.0	8.0	103
OUJ6z54r	122.60	63.50	18.79	0.520	-3.30E+04	2.00E+04	0.0587	0.0026	0.855	0.035	0.1037	0.0012	0.1037	556.0	48.5	97.0	627.0	9.5	19.0	636.0	3.5	7.0	101
OUJ6z55	883.00	582.00	156.90	0.660	-1.80E+05	8.40E+04	0.0595	0.0018	0.769	0.022	0.0932	0.0010	0.4539	584.0	33.0	66.0	579.0	6.5	13.0	575.0	3.0	6.0	99
OUJ6z57	277.70	114.10	123.00	0.410	-1.83E+05	7.40E+04	0.1606	0.0028	8.766	0.230	0.4003	0.0044	0.4217	2462.0	14.5	29.0	2314.0	12.0	24.0	2170.0	10.0	20.0	94
OUJ6z58	102.55	39.18	11.92	0.380	-1.17E+04	6.60E+03	0.0630	0.0027	0.897	0.036	0.1044	0.0012	0.0108	708.0	45.5	91.0	650.0	9.5	19.0	640.0	3.5	7.0	98
OUJ6z59	323.70	81.80	19.08	0.250	4.00E+04	1.30E+04	0.0557	0.0021	0.627	0.022	0.0812	0.0009	0.0533	440.0	42.0	84.0	494.0	7.0	14.0	504.0	2.5	5.0	102
OUJ6z60	335.00	137.80	32.90	0.410	-5.20E+04	2.50E+04	0.0565	0.0021	0.649	0.022	0.0830	0.0009	0.1322	472.0	41.0	82.0	508.0	7.0	14.0	514.0	2.5	5.0	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ6z61	590.90	275.90	71.40	0.470	-4.10E+04	4.50E+04	0.0585	0.0019	0.736	0.021	0.0908	0.0009	0.0571	549.0	35.5	71.0	560.0	6.0	12.0	560.0	2.5	5.0	100
OUJ6z62c	98.00	50.90	15.28	0.520	7.80E+04	5.70E+04	0.0612	0.0027	0.875	0.036	0.1041	0.0015	0.0778	646.0	47.5	95.0	638.0	9.5	19.0	638.0	4.5	9.0	100
OUJ6z62r	279.50	139.50	40.65	0.500	-3.70E+04	2.70E+04	0.0601	0.0021	0.834	0.027	0.1008	0.0010	-0.0270	607.0	38.0	76.0	616.0	7.5	15.0	619.0	3.0	6.0	101
OUJ6z63	340.20	143.60	39.91	0.420	-4.30E+05	2.60E+05	0.0587	0.0021	0.768	0.025	0.0950	0.0010	0.0850	556.0	39.0	78.0	579.0	7.0	14.0	585.0	3.0	6.0	101
OUJ6z64	97.40	32.35	7.65	0.330	-4.20E+04	2.50E+04	0.0562	0.0029	0.622	0.030	0.0801	0.0011	-0.0483	460.0	57.0	114.0	491.0	9.5	19.0	496.0	3.5	7.0	101
OUJ6z65	181.10	173.10	58.90	0.960	4.60E+04	4.50E+04	0.0638	0.0024	1.059	0.035	0.1196	0.0013	0.0002	735.0	40.0	80.0	733.0	8.5	17.0	728.0	3.5	7.0	99
OUJ6z66	408.70	1350.00	370.00	3.300	3.50E+05	2.00E+05	0.0603	0.0021	0.806	0.026	0.0967	0.0010	0.2349	614.0	37.5	75.0	600.0	7.5	15.0	595.0	3.0	6.0	99
OUJ6z67	657.60	322.00	87.10	0.490	-8.70E+06	8.20E+06	0.0583	0.0018	0.754	0.021	0.0934	0.0009	0.2121	541.0	33.5	67.0	571.0	6.0	12.0	575.0	2.5	5.0	101
OUJ6z68	366.30	177.30	169.30	0.480	-1.23E+07	5.00E+06	0.1311	0.0022	6.810	0.180	0.3781	0.0040	0.5494	2113.0	14.5	29.0	2087.0	11.5	23.0	2067.0	9.5	19.0	99
OUJ6z69	139.30	94.80	110.00	0.680	9.00E+05	2.00E+05	0.1570	0.0029	9.370	0.260	0.4309	0.0045	0.3195	2424.0	15.5	31.0	2375.0	12.5	25.0	2310.0	10.0	20.0	97
OUJ6z70	280.00	146.20	237.00	0.520	4.20E+05	3.30E+05	0.2790	0.0045	24.840	0.640	0.6449	0.0062	0.3663	3357.0	12.5	25.0	3302.0	12.5	25.0	3208.0	12.0	24.0	97
OUJ6z71	553.80	252.00	59.27	0.460	1.23E+05	6.60E+04	0.0567	0.0019	0.639	0.020	0.0817	0.0008	0.2610	480.0	37.0	74.0	502.0	6.0	12.0	506.0	2.5	5.0	101
OUJ6z72	95.00	32.94	34.53	0.350	6.80E+04	6.20E+04	0.1314	0.0027	7.107	0.200	0.3910	0.0040	0.1769	2117.0	18.0	36.0	2125.0	12.5	25.0	2127.0	9.5	19.0	100
OUJ6z73	25.50	38.68	37.47	1.520	5.70E+04	2.40E+04	0.1245	0.0037	6.500	0.220	0.3768	0.0050	0.1051	2022.0	26.5	53.0	2046.0	15.0	30.0	2061.0	11.5	23.0	101
OUJ6z74	448.20	288.20	84.40	0.640	-9.10E+04	7.30E+04	0.0713	0.0023	1.152	0.035	0.1165	0.0012	0.2916	966.0	33.0	66.0	778.0	8.0	16.0	711.0	3.5	7.0	91
OUJ6z75	36.49	76.10	23.07	2.090	-3.20E+04	1.40E+04	0.0592	0.0037	0.828	0.050	0.1017	0.0016	0.1359	574.0	68.0	136.0	613.0	14.0	28.0	624.0	4.5	9.0	102
OUJ6z76	82.21	47.93	60.79	0.580	-9.50E+04	5.70E+04	0.1783	0.0034	12.320	0.340	0.4971	0.0052	0.2289	2637.0	16.0	32.0	2629.0	13.0	26.0	2601.0	11.0	22.0	99
OUJ6z77	381.20	219.30	55.00	0.580	4.00E+04	1.70E+04	0.0599	0.0020	0.761	0.024	0.0916	0.0011	0.2841	600.0	36.0	72.0	575.0	7.0	14.0	565.0	3.0	6.0	98
OUJ6z78	481.60	299.10	70.10	0.620	1.90E+04	1.60E+04	0.0575	0.0019	0.651	0.020	0.0818	0.0008	0.1375	511.0	36.5	73.0	509.0	6.0	12.0	507.0	2.5	5.0	100
OUJ6z79	235.20	189.50	225.70	0.810	-2.90E+03	9.50E+03	0.1658	0.0028	10.733	0.280	0.4667	0.0045	0.3689	2516.0	14.0	28.0	2500.0	12.0	24.0	2469.0	10.0	20.0	99
OUJ6z80	236.00	120.40	127.30	0.510	-1.37E+04	7.60E+03	0.1429	0.0024	8.009	0.210	0.4023	0.0038	0.3341	2263.0	14.5	29.0	2232.0	12.0	24.0	2180.0	8.5	17.0	98
OUJ6z81	512.00	290.00	90.80	0.570	-6.70E+03	3.50E+03	0.0628	0.0020	0.953	0.028	0.1103	0.0011	0.2409	700.0	34.0	68.0	680.0	7.5	15.0	675.0	3.0	6.0	99
OUJ6z82	332.70	483.40	117.40	1.450	2.60E+05	1.30E+05	0.0616	0.0021	0.789	0.025	0.0919	0.0011	0.2685	660.0	36.5	73.0	591.0	7.0	14.0	567.0	3.0	6.0	96
OUJ6z83	140.30	121.70	39.90	0.870	3.10E+03	1.80E+03	0.0640	0.0027	1.066	0.041	0.1211	0.0014	0.0410	742.0	44.5	89.0	737.0	10.0	20.0	737.0	4.0	8.0	100
OUJ6z84	197.80	64.80	64.80	0.330	2.30E+03	3.70E+03	0.1257	0.0022	6.709	0.180	0.3831	0.0037	0.3121	2039.0	15.5	31.0	2074.0	12.0	24.0	2091.0	8.5	17.0	101
OUJ6z85	382.10	379.00	100.90	0.990	3.10E+03	1.70E+03	0.0613	0.0021	0.793	0.025	0.0939	0.0010	0.1266	650.0	37.0	74.0	593.0	7.0	14.0	578.0	3.0	6.0	98
OUJ6z86	112.40	87.00	75.20	0.770	0.00E+00	1.30E+03	0.1112	0.0023	5.199	0.150	0.3345	0.0034	0.2464	1819.0	19.0	38.0	1852.0	12.5	25.0	1860.0	8.0	16.0	100
OUJ6z87	529.70	255.80	68.30	0.480	8.70E+03	3.60E+03	0.0616	0.0020	0.800	0.024	0.0943	0.0009	0.2003	660.0	35.0	70.0	597.0	7.0	14.0	581.0	2.5	5.0	97
OUJ6z88	239.80	103.80	104.70	0.430	6.30E+03	4.50E+03	0.1283	0.0023	6.999	0.190	0.3901	0.0042	0.3712	2075.0	16.0	32.0	2111.0	12.0	24.0	2123.0	9.5	19.0	101
OUJ6z89	532.40	195.90	52.73	0.370	2.20E+03	1.80E+03	0.0594	0.0019	0.785	0.023	0.0962	0.0009	0.1877	583.0	34.5	69.0	588.0	6.5	13.0	592.0	3.0	6.0	101
OUJ6z90	73.70	61.90	52.39	0.840	-5.00E+01	7.80E+02	0.1035	0.0027	4.611	0.140	0.3179	0.0034	0.0365	1688.0	24.0	48.0	1751.0	12.5	25.0	1779.0	8.5	17.0	102
OUJ6z92	225.60	118.04	32.28	0.520	4.10E+02	6.60E+02	0.0609	0.0022	0.799	0.028	0.0957	0.0010	0.1855	636.0	39.0	78.0	596.0	8.0	16.0	589.0	3.0	6.0	99
OUJ6z93	380.50	158.90	41.80	0.420	-7.70E+02	9.60E+02	0.0590	0.0021	0.760	0.025	0.0939	0.0010	0.1175	567.0	38.5	77.0	574.0	7.0	14.0	578.0	3.0	6.0	101
OUJ6z94	487.00	193.40	303.00	0.400	-3.20E+03	8.10E+03	0.2599	0.0041	24.320	0.620	0.6665	0.0061	0.2398	3246.0	12.5	25.0	3281.0	12.5	25.0	3292.0	12.0	24.0	100
OUJ6z95	564.30	1.42	0.37	0.000	1.50E+03	1.50E+03	0.0614	0.0019	0.864	0.025	0.1019	0.0011	0.2515	653.0	33.0	66.0	632.0	7.0	14.0	625.0	3.0	6.0	99
OUJ6z96	207.40	168.60	174.00	0.810	6.30E+03	3.40E+03	0.1320	0.0024	7.453	0.200	0.4021	0.0040	0.2917	2125.0	16.0	32.0	2167.0	12.0	24.0	2179.0	9.0	18.0	101
OUJ6z97	691.00	450.00	120.30	0.650	2.70E+03	1.60E+03	0.0605	0.0019	0.789	0.022	0.0948	0.0009	0.1200	623.0	34.0	68.0	591.0	6.0	12.0	584.0	2.5	5.0	99
OUJ6z98	305.10	124.00	28.56	0.410	-5.70E+02	4.30E+02	0.0574	0.0021	0.633	0.022	0.0801	0.0009	-0.0223	507.0	40.0	80.0	498.0	7.0	14.0	496.0	2.5	5.0	100
OUJ6z99	180.30	130.10	42.40	0.720	3.80E+02	5.10E+02	0.0616	0.0025	0.956	0.036	0.1135	0.0012	0.0985	660.0	43.5	87.0	681.0	9.5	19.0	693.0	3.5	7.0	102
OUJ6z100	1294.00	572.00	135.70	0.440	4.30E+03	2.70E+03	0.0594	0.0018	0.666	0.019	0.0815	0.0009	0.4140	583.0	33.0	66.0	518.0	6.0	12.0	505.0	2.5	5.0	97
OUJ6z101	86.30	65.20	22.44	0.760	9.30E+02	4.80E+02	0.0659	0.0028	1.110	0.042	0.1230	0.0015	0.0329	803.0	44.5	89.0	758.0	10.0	20.0	748.0	4.5	9.0	99
OUJ6z102	203.30	136.20	175.50	0.670	-4.60E+03	3.60E+03	0.1824	0.0032	12.950	0.350	0.5053	0.0052	0.4915	2675.0	14.5	29.0	2676.0	12.5	25.0	2637.0	11.0	22.0	99
OUJ6z103	158.00	45.72	10.85	0.290	7.00E+02	6.90E+03	0.0569	0.0025	0.636	0.026	0.0816	0.0009	0.0641	488.0	48.5	97.0	500.0	8.0	16.0	505.0	3.0	6.0	101
OUJ6z104	680.40	456.70	126.10	0.670	-1.30E+03	1.70E+03	0.0603	0.0019	0.792	0.023	0.0954	0.0009	0.1045	613.0	34.0	68.0	592.0	6.5	13.0	588.0	2.5	5.0	99
OUJ6z105	142.30	94.30	27.46	0.660	-3.10E+02	4.60E+02	0.0628	0.0026	0.880	0.036	0.1010	0.0013	0.1401	701.0	44.0	88.0	641.0	9.5	19.0	620.0	4.0	8.0	97
OUJ6z106	210.10	243.00	78.30	1.160	1.40E+03	1.10E+03	0.0638	0.0024	1.013	0.036	0.1149	0.0013	0.1310	735.0	40.0	80.0	710.0	9.0	18.0	701.0	4.0	8.0	99
OUJ6z107	308.50	384.60	108.50	1.250	1.20E+03	1.20E+03	0.0626	0.0021	0.858	0.027	0.1001	0.0011	0.1974	695.0	35.5	71.0	629.0	7.5	15.0	615.0	3.0	6.0	98
OUJ6z108	382.10	211.30	49.20	0.550	7.90E+03	2.90E+03	0.0571	0.0020	0.626	0.021	0.0792	0.0008	0.1972	495.0	38.5	77.0	494.0	6.5	13.0	491.0	2.5	5.0	100
OUJ6z109	286.00	166.10	44.42	0.580	5.60E+03	2.40E+03	0.0591	0.0022	0.771	0.026	0.0950	0.0010	0.0039	571.0	40.5	81.0	580.0	7.5	15.0	585.0	3.0	6.0	101
OUJ6z110	284.80	193.70	60.90	0.680	1.20E+03	1.40E+03	0.0633	0.0022	0.974	0.031	0.1117	0.0011	-0.0313	718.0	37.0	74.0	691.0	8.0	16.0	683.0	3.0	6.0	99
OUJ6z111	52.50	59.93	84.20	1.140	4.00E+02	1.60E+03	0.2031	0.0039	16.010	0.440	0.5645	0.0061	0.3061	2851.0	15.5	31.0	2877.0	13.0	26.0	2885.0	12.5	25.0	100
OUJ6z112	590.80	183.00	41.84	0.310	9.00E+02	2.70E+03	0.0585	0.0019	0.666	0.020	0.0822	0.0008	0.0646	549.0	35.5	71.0	518.0	6.0	12.0	509.0	2.5	5.0	98
OUJ6z113	195.10	201.80	69.40	1.030	2.40E+03	1.60E+03	0.0646	0.0024	1.094	0.037	0.1227	0.0014	0.0240	761.0	39.0	78.0	750.0	9.0	18.0	746.0	4.0	8.0	99
OUJ6z114	617.80	197.40	47.90	0.320	-1.50E+03	3.10E+03	0.0598	0.0019	0.695	0.021	0.0844	0.0008	0.1540	596.0	34.5	69.0	536.0	6.5	13.0	522.0	2.5	5.0	97
OUJ6z115	421.30	235.00	55.10	0.560	-2.90E+04	4.30E+04	0.0576	0.0020	0.648	0.021	0.0814	0.0009	0.1699	515.0	38.0	76.0	507.0	6.5	13.0	504.0	2.5	5.0	99
OUJ6z116	204.10	98.69	22.34	0.480	1.00E+02	1.40E+03	0.0574	0.0024	0.635	0.026	0.0796	0.0010	0.2067	507.0	46.0	92.0	499.0	8.0	16.0	494.0	3.0	6.0	99
OUJ6z119	363.50	267.60	319.80	0.740	-2.90E+05	1.30E+05	0.1606	0.0026	10.057	0.260	0.4498	0.0042	0.3884	2462.0	13.5	27.0	2440.0	12.0	24.0	2394.0	9.5	19.0	98
OUJ6z120	102.39	112.20	126.90	1.100	3.00E+04	1.20E+04	0.1598	0.0030	9.890	0.270	0.4447	0.0045	0.2155	2454.0	16.0	32.0	2425.0	12.5	25.0	2372.0	10.0	20.0	98
OUJ6z121c	329.90	238.20	101.20	0.720	1.80E+04	1.10E+04	0.0708	0.0023	1.432	0.043	0.1471	0.0015	0.0453	952.0	33.0	66.0	902.0	9.0	18.0	885.0	4.0	8.0	98
OUJ6z121r	478.00	231.60	63.80	0.480	1.70E+04	1.70E+04	0.0617	0.0020	0.838	0.025	0.0987	0.0010	0.0541	664.0	34.5	69.0	618.0	7.0	14.0	607.0	3.0	6.0	98
OUJ6z122	809.90	330.40	66.98	0.410	1.40E+04	1.80E+04	0.0613	0.0019	0.719	0.021	0.0858	0.0012	0.4215	650.0	33.5	67.0	550.0	6.0	12.0	530.0	3.5	7.0	96
OUJ6z123	388.30	180.80	39.86	0.470	1.36E+04	8.70E+03	0.0574	0.0020	0.607	0.020	0.0766	0.0008	0.0881	507.0	38.5	77.0	482.0	6.5	13.0	476.0	2.5	5.0	99
OUJ6z124	350.30	290.00	89.80	0.830	2.80E+04	1.50E+04	0.0630	0.0021	0.954	0.029	0.1100	0.0012	0.2411	708.0	35.5	71.0	680.0	7.5	15.0	673.0	3.5	7.0	99
OUJ6z126	268.00	150.83	198.00	0.560	-3.20E+04	4.30E+04	0.1934	0.0031	14.125	0.360	0.5228	0.0050	0.3421	2771.0	13.0	26.0	2758.0	12.0	24.0	2711.0	10.5	21.0	98
OUJ6z127	173.40	275.60	277.90	1.590	1.00E+04	2.30E+04	0.1314	0.0023	7.210	0.190	0.3955	0.0038	0.2719	2117.0	15.5	31.0	2138.0	11.5	23.0	2148.0	9.0	18.0	100
OUJ6z128	60.40	58.00	16.75	0.960	2.10E+03	2.50E+03	0.0584	0.0033	0.858	0.048	0.1061	0.0015	0.0211	545.0	61.5	123.0	629.0	13.0	26.0	650.0	4.5	9.0	103
OUJ6z129	341.30	217.00	57.90	0.640	7.00E+04	1.60E+04	0.0596	0.0021	0.796	0.026	0.0971	0.0010	0.1427	589.0	38.0	76.0	595.0	7.5	15.0	597.0	3.0	6.0	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ6z130	116.00	79.40	104.50	0.680	1.00E+04	2.50E+04	0.1765	0.0033	12.560	0.340	0.5156	0.0051	0.1699	2620.0	15.5	31.0	2647.0	12.5	25.0	2680.0	11.0	22.0	101
OUJ6z131	95.80	65.10	17.69	0.680	-7.20E+03	4.70E+03	0.0587	0.0030	0.740	0.036	0.0924	0.0013	0.0477	556.0	55.5	111.0	562.0	10.5	21.0	570.0	4.0	8.0	101
OUJ6z132	106.50	147.50	40.04	1.380	6.10E+03	7.80E+03	0.0608	0.0028	0.787	0.034	0.0946	0.0011	0.0120	632.0	49.5	99.0	589.0	9.5	19.0	583.0	3.0	6.0	99
OUJ6z133	100.96	127.12	36.85	1.260	-2.94E+04	9.60E+03	0.0608	0.0029	0.856	0.039	0.1028	0.0014	0.1345	632.0	51.5	103.0	628.0	10.5	21.0	631.0	4.0	8.0	100
OUJ6z134	640.70	196.00	44.75	0.310	5.70E+04	7.30E+04	0.0577	0.0019	0.645	0.019	0.0816	0.0008	0.1404	520.0	36.0	72.0	505.0	6.0	12.0	506.0	2.5	5.0	100
OUJ6z135	525.40	181.90	38.74	0.350	-8.00E+04	4.70E+04	0.0575	0.0020	0.624	0.020	0.0789	0.0009	0.2530	511.0	38.0	76.0	492.0	6.0	12.0	490.0	2.5	5.0	99
OUJ6z136	126.90	62.83	22.84	0.500	1.70E+04	2.90E+04	0.0658	0.0026	1.193	0.044	0.1331	0.0016	0.0831	800.0	41.5	83.0	797.0	10.0	20.0	806.0	4.5	9.0	101
OUJ6z137	177.30	110.40	31.53	0.620	1.70E+04	4.90E+04	0.0644	0.0025	0.887	0.033	0.1015	0.0012	0.1336	755.0	41.0	82.0	645.0	9.0	18.0	623.0	3.5	7.0	97
OUJ6z139	90.76	69.63	86.70	0.770	-1.73E+05	5.80E+04	0.1705	0.0032	11.610	0.330	0.4922	0.0049	0.3838	2563.0	15.5	31.0	2573.0	13.5	27.0	2580.0	10.5	21.0	100
OUJ6z140	322.00	154.00	136.20	0.480	-9.10E+04	8.00E+04	0.1252	0.0022	5.379	0.150	0.3085	0.0041	0.4163	2032.0	15.5	31.0	1882.0	12.0	24.0	1733.0	10.0	20.0	92
OUJ6z142	107.50	22.64	15.24	0.210	9.00E+04	1.10E+04	0.1040	0.0035	3.177	0.110	0.2245	0.0039	0.6353	1697.0	31.0	62.0	1452.0	13.5	27.0	1306.0	10.5	21.0	90
OUJ6z143	287.90	179.30	52.60	0.620	-3.00E+04	1.30E+04	0.0626	0.0023	0.901	0.031	0.1047	0.0011	0.1464	695.0	39.0	78.0	652.0	8.5	17.0	642.0	3.0	6.0	98
OUJ6z144	126.80	119.50	32.30	0.940	-1.10E+03	5.10E+03	0.0607	0.0026	0.834	0.035	0.1003	0.0012	0.0872	629.0	46.0	92.0	616.0	9.5	19.0	616.0	3.5	7.0	100
OUJ6z145	225.60	151.30	83.90	0.670	-5.20E+04	2.20E+04	0.0833	0.0027	2.365	0.069	0.2069	0.0020	0.0555	1276.0	31.5	63.0	1232.0	10.5	21.0	1212.0	5.5	11.0	98
OUJ6z146	158.80	316.30	86.40	1.990	-8.90E+03	6.00E+03	0.0627	0.0026	0.842	0.033	0.0984	0.0012	0.1195	698.0	44.0	88.0	620.0	9.0	18.0	605.0	3.5	7.0	98
OUJ6z147	342.90	209.80	157.30	0.610	-4.40E+04	3.10E+04	0.1039	0.0019	3.978	0.110	0.2743	0.0028	0.2846	1695.0	17.0	34.0	1630.0	11.0	22.0	1563.0	7.0	14.0	96
Discordant data																							
OUJ6z56	546.00	125.90	159.40	0.230	-8.90E+05	3.70E+05	0.2644	0.0041	18.740	0.480	0.5221	0.0049	0.6061	3273.0	12.0	24.0	3029.0	12.5	25.0	2708.0	10.5	21.0	89
OUJ6z125	1197.00	614.00	95.50	0.510	5.30E+04	2.90E+04	0.0630	0.0019	0.560	0.019	0.0643	0.0015	0.7648	709.0	32.0	64.0	452.0	6.0	12.0	402.0	4.5	9.0	89

Footnotes:

- Analysis references: OUJ6z is zircon from sample OUJ6 (mount CT18-6), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.30: Sample DEB2 (LA-ICPMS)

IGSN: IEACC0005 Coordinate UTM: Zone 30S, 486535 m E, 3754573 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios								Error correction	Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ		$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
DEB2z2	98.30	98.30	26.26	1.000	-1.00E+06	4.40E+06	0.0584	0.0027	0.786	0.036	0.0980	0.0013	0.1054	545	50.5	101	589	10.2	20	603	3.8	8	102
DEB2z3	82.70	134.10	111.40	1.622	9.00E+06	4.90E+06	0.1139	0.0023	5.166	0.120	0.3305	0.0040	0.3419	1863	18.2	36	1847	9.9	20	1841	9.7	19	100
DEB2z4	96.50	99.50	42.86	1.031	-3.20E+05	1.90E+05	0.0759	0.0022	1.652	0.049	0.1591	0.0020	0.1038	1092	29.0	58	990	9.4	19	952	5.6	11	96
DEB2z5	415.60	219.90	51.10	0.529	-1.90E+05	1.30E+05	0.0596	0.0014	0.732	0.018	0.0892	0.0010	0.1587	589	25.5	51	558	5.3	11	551	3.0	6	99
DEB2z6	90.50	91.70	23.57	1.013	-3.70E+04	2.40E+04	0.0599	0.0027	0.812	0.036	0.0995	0.0014	0.0324	600	48.8	98	604	10.1	20	611	4.1	8	101
DEB2z7	112.70	106.60	26.74	0.946	-3.50E+04	3.20E+04	0.0608	0.0024	0.779	0.030	0.0935	0.0013	-0.0237	632	42.5	85	585	8.6	17	576	3.8	8	99
DEB2z8	20.83	21.33	12.99	1.024	-2.40E+03	8.60E+03	0.0861	0.0042	2.690	0.120	0.2322	0.0039	0.0154	1340	47.1	94	1326	16.5	33	1346	10.2	20	102
DEB2z9	115.50	102.10	28.97	0.884	-3.30E+04	2.80E+04	0.0622	0.0023	0.890	0.030	0.1028	0.0013	-0.0730	681	39.5	79	646	8.1	16	631	3.8	8	98
DEB2z10	148.20	293.40	332.90	1.980	-7.00E+05	1.30E+05	0.1630	0.0024	10.580	0.170	0.4694	0.0050	0.2469	2487	12.4	25	2487	7.4	15	2481	11.0	22	100
DEB2z11	235.60	166.40	44.80	0.706	-1.80E+04	4.00E+04	0.0597	0.0018	0.814	0.025	0.0990	0.0012	0.1095	593	32.7	65	605	7.0	14	609	3.5	7	101
DEB2z12	229.80	182.90	41.59	0.796	-4.40E+04	3.30E+04	0.0596	0.0017	0.701	0.020	0.0861	0.0011	0.0330	589	30.9	62	539	6.0	12	532	3.3	7	99
DEB2z13	70.87	34.81	8.47	0.491	7.30E+03	9.90E+03	0.0593	0.0030	0.719	0.037	0.0892	0.0014	0.0818	578	55.0	110	550	10.9	22	551	4.1	8	100
DEB2z14	66.60	44.20	12.17	0.664	-7.20E+03	8.00E+03	0.0615	0.0031	0.872	0.041	0.1035	0.0015	-0.1113	657	54.1	108	637	11.1	22	635	4.4	9	100
DEB2z15	99.00	69.90	57.20	0.706	3.50E+05	1.50E+05	0.1083	0.0021	4.738	0.095	0.3174	0.0036	0.2008	1771	17.7	35	1774	8.4	17	1777	8.8	18	100
DEB2z16	362.80	228.00	60.20	0.628	1.11E+05	5.30E+04	0.0598	0.0017	0.796	0.022	0.0965	0.0011	0.0910	596	30.8	62	595	6.2	12	594	3.2	6	100
DEB2z17	90.70	29.00	7.18	0.320	-1.30E+04	1.30E+04	0.0570	0.0026	0.707	0.032	0.0916	0.0013	0.1541	492	50.3	101	543	9.5	19	565	3.8	8	104
DEB2z18	94.80	93.10	24.01	0.982	-1.03E+04	9.90E+03	0.0580	0.0025	0.798	0.034	0.0998	0.0013	-0.1487	530	47.2	94	596	9.6	19	613	3.8	8	103
DEB2z19	569.60	439.40	105.10	0.771	6.20E+04	3.70E+04	0.0591	0.0013	0.724	0.016	0.0889	0.0010	0.1570	571	23.9	48	553	4.7	9	549	2.9	6	99
DEB2z20	16.72	179.20	78.40	10.718	-1.31E+04	6.30E+03	0.0798	0.0057	1.870	0.130	0.1714	0.0037	0.0218	1192	70.5	141	1071	23.0	46	1020	10.2	20	95
DEB2z22	304.90	151.00	173.70	0.495	-1.90E+05	1.40E+05	0.1614	0.0022	10.655	0.160	0.4809	0.0048	0.2209	2470	11.5	23	2494	7.0	14	2531	10.4	21	102
DEB2z23c	351.00	117.80	30.80	0.336	-4.90E+04	3.60E+04	0.0603	0.0016	0.773	0.021	0.0927	0.0010	0.1748	614	28.7	57	581	6.0	12	572	2.9	6	98
DEB2z23r	1472.00	493.20	120.20	0.335	-8.00E+04	1.20E+06	0.0593	0.0011	0.758	0.014	0.0927	0.0010	0.0880	578	20.2	40	573	4.0	8	571	2.8	6	100
DEB2z24	289.00	36.80	9.19	0.127	-6.00E+04	2.30E+04	0.0594	0.0016	0.767	0.021	0.0932	0.0011	0.1467	582	29.2	58	578	6.0	12	574	3.2	6	99
DEB2z25	624.00	594.00	219.40	0.952	-8.80E+05	3.20E+05	0.0672	0.0013	1.312	0.025	0.1411	0.0014	0.1457	844	20.1	40	851	5.5	11	851	4.0	8	100
DEB2z26	218.20	74.67	16.75	0.342	-5.50E+04	2.20E+04	0.0569	0.0019	0.638	0.021	0.0811	0.0010	0.0390	488	36.8	74	501	6.5	13	503	2.9	6	100
DEB2z27	505.60	422.40	326.70	0.835	-1.11E+06	4.30E+05	0.1293	0.0017	5.750	0.088	0.3235	0.0033	0.4747	2088	11.6	23	1939	6.6	13	1807	8.0	16	93
DEB2z28	211.50	82.50	21.95	0.390	-1.60E+04	1.30E+04	0.0604	0.0020	0.817	0.026	0.0984	0.0012	-0.0152	618	35.7	71	606	7.3	15	605	3.5	7	100
DEB2z29	343.00	313.50	299.00	0.914	8.00E+05	1.00E+05	0.1292	0.0018	6.981	0.110	0.3901	0.0040	0.1830	2087	12.3	25	2109	7.0	14	2123	9.3	19	101
DEB2z30	82.90	87.70	20.31	1.058	-8.00E+03	9.40E+03	0.0557	0.0029	0.677	0.034	0.0886	0.0014	0.0104	440	57.9	116	525	10.3	21	547	4.1	8	104
DEB2z32	156.40	143.30	61.00	0.916	6.00E+02	9.70E+03	0.0715	0.0019	1.626	0.041	0.1649	0.0020	-0.0142	972	27.1	54	980	7.9	16	984	5.5	11	100
DEB2z33	158.50	183.20	46.99	1.156	2.00E+03	6.40E+03	0.0593	0.0022	0.804	0.028	0.0982	0.0012	0.0154	578	40.3	81	599	7.9	16	604	3.5	7	101
DEB2z34	311.00	181.90	96.20	0.585	-2.20E+05	1.40E+05	0.0808	0.0015	2.363	0.044	0.2136	0.0022	0.2101	1217	18.3	37	1231	6.6	13	1248	5.8	12	101
DEB2z36	245.00	247.80	65.70	1.011	-1.00E+04	1.60E+04	0.0605	0.0018	0.833	0.025	0.0996	0.0011	0.0508	622	32.1	64	615	6.9	14	612	3.2	6	99
DEB2z37	99.70	89.50	88.80	0.898	-2.60E+04	2.50E+04	0.1317	0.0024	7.210	0.150	0.3952	0.0046	0.4519	2121	16.0	32	2138	9.3	19	2147	10.6	21	100
DEB2z38	503.20	322.90	278.60	0.642	-3.00E+06	4.20E+06	0.1243	0.0017	6.159	0.091	0.3596	0.0036	0.2121	2018	12.1	24	1999	6.4	13	1980	8.5	17	99
DEB2z39	88.41	88.04	82.20	0.996	-6.00E+04	2.00E+04	0.1281	0.0024	6.708	0.130	0.3807	0.0043	0.1431	2072	16.5	33	2074	8.6	17	2080	10.0	20	100
DEB2z40	101.38	80.88	23.36	0.798	-3.00E+04	1.10E+04	0.0614	0.0024	0.839	0.032	0.1010	0.0014	0.1855	653	41.9	84	619	8.8	18	620	4.1	8	100
DEB2z41	200.80	185.40	52.20	0.923	-1.30E+04	1.20E+04	0.0599	0.0020	0.819	0.026	0.0990	0.0012	0.0373	600	36.1	72	607	7.3	15	608	3.5	7	100
DEB2z42	83.70	41.20	10.91	0.492	6.40E+03	5.20E+03	0.0598	0.0028	0.745	0.034	0.0909	0.0014	0.0943	596	50.7	101	565	9.9	20	561	4.1	8	99
DEB2z43	30.79	22.76	13.29	0.739	1.00E+02	3.90E+03	0.0789	0.0039	2.177	0.097	0.2003	0.0033	-0.0007	1170	48.9	98	1174	15.5	31	1177	8.9	18	100
DEB2z44	279.60	270.90	234.00	0.969	-9.40E+04	6.00E+04	0.1230	0.0018	5.251	0.088	0.3087	0.0032	0.3777	2000	13.0	26	1861	7.1	14	1734	7.9	16	93
DEB2z45	931.00	899.00	265.00	0.966	5.50E+04	3.60E+04	0.0654	0.0012	0.919	0.017	0.1017	0.0011	0.0123	786	19.3	39	662	4.5	9	624	3.2	6	94
DEB2z46	92.70	90.00	26.53	0.971	8.00E+04	2.60E+04	0.0567	0.0023	0.776	0.031	0.0987	0.0014	0.0584	480	44.8	90	583	8.9	18	607	4.1	8	104
DEB2z47	199.40	210.80	64.80	1.057	-2.00E+04	1.60E+04	0.0591	0.0018	0.840	0.026	0.1024	0.0012	0.0646	571	33.1	66	619	7.2	14	628	3.5	7	101
DEB2z49	70.00	26.90	8.20	0.384	8.00E+02	4.20E+03	0.0618	0.0032	0.806	0.041	0.0953	0.0014	-0.0159	667	55.4	111	600	11.5	23	587	4.1	8	98
DEB2z50	90.10	25.72	7.64	0.285	-1.64E+05	8.90E+04	0.0586	0.0026	0.719	0.031	0.0889	0.0012	0.0065	552	48.4	97	550	9.1	18	549	3.6	7	100
DEB2z51	720.00	790.00	256.10	1.097	-3.40E+04	4.40E+04	0.0604	0.0012	0.857	0.016	0.1022	0.0011	0.0816	618	21.4	43	628	4.4	9	627	3.2	6	100
DEB2z52	35.10	34.12	9.73	0.972	-4.00E+04	1.50E+04	0.0582	0.0043	0.725	0.049	0.0880	0.0017	0.0009	537	80.8	162	554	14.4	29	544	5.0	10	98
DEB2z53	179.40	122.00	38.35	0.680	-6.00E+04	1.20E+04	0.0591	0.0019	0.800	0.025	0.0981	0.0012	-0.0150	571	35.0	70	597	7.0	14	603	3.5	7	101
DEB2z54	85.40	128.00	39.50	1.499	-7.30E+03	6.50E+03	0.0604	0.0025	0.820	0.034	0.0976	0.0014	0.1201	618	44.7	89	608	9.5	19	600	4.1	8	99
DEB2z55	646.10	44.85	47.29	0.069	-3.60E+05	1.80E+05	0.1224	0.0016	5.825	0.086	0.3454	0.0034	0.4010	1992	11.6	23	1950	6.4	13	1913	8.1	16	98
DEB2z56	260.50	75.90	20.05	0.291	-8.00E+04	1.80E+04	0.0561	0.0017	0.633	0.019	0.0813	0.0009	0.0184	456	33.6	67	498	5.9	12	504	2.7	5	101
DEB2z57	93.70	78.60	107.70	0.839	-2.70E+04	3.10E+04	0.1593	0.0026	10.220	0.180	0.4652	0.0051	0.2594	2448	13.8	28	2455	8.1	16	2462	11.2	22	100
DEB2z58	314.60	182.50	59.98	0.580	-1.00E+05	2.30E+04	0.0610	0.0015	0.855	0.020	0.1023	0.0012	0.0866	639	26.4	53	627	5.5	11	628	3.5	7	100
DEB2z59	125.40	184.90	307.40	1.474	-4.70E+04	4.00E+04	0.2222	0.0031	18.360	0.280	0.5971	0.0064	0.3570	2997	11.2	22	3009	7.3	15	3018	12.9	26	100
DEB2z60	325.90	193.60	223.20	0.594	-1.31E+05	8.50E+04	0.1331	0.0018	6.927	0.100	0.3787	0.0039	0.3165	2139	11.8	24	2102	6.4	13	2070	9.1	18	98
DEB2z61	97.20	105.80	33.10	1.088	4.40E+03	6.00E+03	0.0585	0.0026	0.805	0.035	0.0998	0.0014	0.1333	549	48.5	97	600	9.8	20	613	4.1	8	102
DEB2z63	182.80	72.50	79.00	0.397	0.00E+00	4.80E+04	0.1363	0.0019	6.933	0.110	0.3690	0.0038	0.2226	2181	12.1	24	2103	7.0	14	2025	8.9	18	96
DEB2z64	49.12	33.03	10.21	0.672	-7.00E+03	5.00E+03	0.0585	0.0037	0.816	0.051	0.1005	0.0016	0.0226	549	69.1	138	606	14.2	28	617	4.7	9	102
DEB2z65	40.19	21.45	6.94	0.534	-2.50E+03	2.80E+03	0.0547	0.0033	0.771	0.044	0.1025	0.0017	-0.0548	400	67.6	135	580	12.6	25	629	5.0	10	108

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
DEB2z66	61.92	42.12	11.46	0.680	1.19E+04	6.50E+03	0.0570	0.0031	0.688	0.035	0.0874	0.0013	-0.0264	492	60.0	120	532	10.5	21	540	3.9	8	102
DEB2z67	42.15	51.47	65.32	1.221	4.70E+04	2.60E+04	0.1621	0.0034	10.330	0.230	0.4582	0.0058	0.1786	2478	17.7	35	2465	10.3	21	2432	12.8	26	99
DEB2z68	318.20	143.83	40.12	0.452	-2.90E+04	2.10E+04	0.0594	0.0015	0.769	0.020	0.0931	0.0011	0.1742	582	27.4	55	579	5.7	11	574	3.2	6	99
DEB2z69	143.80	130.10	38.53	0.905	4.30E+03	8.70E+03	0.0614	0.0020	0.852	0.028	0.1004	0.0012	0.0545	653	35.0	70	626	7.7	15	616	3.5	7	99
DEB2z70	102.90	137.50	40.17	1.336	2.00E+03	7.10E+03	0.0604	0.0024	0.837	0.032	0.0999	0.0013	0.0006	618	42.9	86	617	8.8	18	614	3.8	8	99
DEB2z71c	100.40	65.90	19.40	0.656	-9.00E+02	5.90E+03	0.0593	0.0023	0.828	0.034	0.1002	0.0015	0.2954	578	42.1	84	613	9.4	19	616	4.4	9	101
DEB2z71r	133.00	89.40	24.40	0.672	3.50E+03	7.40E+03	0.0578	0.0023	0.798	0.033	0.0999	0.0013	0.0070	522	43.6	87	596	9.3	19	614	3.8	8	103
DEB2z72	71.40	178.70	57.30	2.503	-3.70E+03	5.30E+03	0.0654	0.0029	1.008	0.045	0.1130	0.0016	0.0821	787	46.6	93	708	11.4	23	690	4.6	9	97
DEB2z73	122.60	64.10	17.11	0.523	2.60E+03	6.00E+03	0.0603	0.0026	0.832	0.035	0.0996	0.0013	-0.0441	614	46.6	93	615	9.7	19	612	3.8	8	100
DEB2z74	130.30	154.90	148.90	1.189	-3.20E+04	2.90E+04	0.1301	0.0023	6.769	0.120	0.3779	0.0043	0.1500	2099	15.5	31	2082	7.8	16	2066	10.1	20	99
DEB2z75	530.90	480.50	453.10	0.905	-1.60E+05	1.30E+05	0.1256	0.0016	6.391	0.094	0.3685	0.0036	0.2813	2037	11.3	23	2031	6.5	13	2022	8.5	17	100
DEB2z76	62.89	71.90	81.90	1.143	4.00E+04	1.40E+04	0.1578	0.0030	10.250	0.210	0.4720	0.0055	0.1807	2432	16.1	32	2458	9.5	19	2492	12.0	24	101
DEB2z77	312.40	25.82	23.76	0.083	-5.50E+04	6.70E+04	0.1205	0.0017	5.561	0.090	0.3334	0.0036	0.4018	1964	12.6	25	1910	7.0	14	1855	8.7	17	97
DEB2z79	116.20	87.15	24.73	0.750	-8.80E+03	6.20E+03	0.0650	0.0034	0.912	0.052	0.1021	0.0016	0.4973	774	55.0	110	658	13.8	28	627	4.7	9	95
DEB2z80	52.84	81.00	87.80	1.533	-1.70E+04	1.60E+04	0.1604	0.0035	10.160	0.220	0.4604	0.0055	0.1979	2460	18.4	37	2449	10.0	20	2441	12.1	24	100
DEB2z81	766.80	584.00	147.10	0.762	-1.00E+05	4.90E+04	0.0600	0.0012	0.797	0.016	0.0964	0.0010	0.1079	602	21.7	43	595	4.5	9	593	2.9	6	100
DEB2z82	693.90	456.80	122.30	0.658	-9.80E+04	4.80E+04	0.0596	0.0011	0.852	0.016	0.1030	0.0011	0.1205	589	20.0	40	626	4.4	9	632	3.2	6	101
DEB2z83	155.20	154.10	168.40	0.993	-8.20E+04	4.70E+04	0.1592	0.0024	10.230	0.170	0.4663	0.0049	0.2854	2447	12.8	26	2456	7.7	15	2467	10.8	22	100
DEB2z84	382.20	105.30	80.70	0.276	-2.90E+04	7.30E+04	0.1188	0.0017	5.491	0.096	0.3357	0.0043	0.6216	1938	12.8	26	1899	7.5	15	1866	10.4	21	98
DEB2z85	357.50	310.00	70.83	0.867	2.30E+04	1.20E+04	0.0577	0.0015	0.713	0.020	0.0889	0.0010	0.1790	518	28.5	57	547	5.9	12	549	3.0	6	100
DEB2z86	824.00	299.60	374.30	0.364	-3.00E+05	2.50E+05	0.1934	0.0023	14.380	0.200	0.5391	0.0052	0.4481	2771	9.8	20	2775	6.6	13	2780	10.9	22	100
DEB2z88	364.20	278.40	246.90	0.764	-1.16E+05	8.10E+04	0.1256	0.0017	6.224	0.097	0.3617	0.0037	0.2554	2037	12.0	24	2008	6.8	14	1990	8.8	18	99
DEB2z89	463.50	118.20	19.75	0.255	-9.00E+04	1.50E+04	0.0557	0.0017	0.460	0.014	0.0598	0.0008	-0.0787	440	34.0	68	384	4.9	10	374	2.3	5	97
DEB2z90	156.80	122.70	106.80	0.783	3.60E+04	2.10E+04	0.1167	0.0021	5.604	0.100	0.3453	0.0038	0.1554	1906	16.2	32	1917	7.7	15	1912	9.1	18	100
DEB2z91	186.50	102.90	49.50	0.552	-2.60E+04	2.20E+04	0.0750	0.0018	1.916	0.048	0.1856	0.0021	0.1427	1069	24.1	48	1087	8.3	17	1097	5.7	11	101
DEB2z92	82.90	35.17	37.98	0.424	-1.60E+04	2.00E+04	0.1451	0.0029	8.710	0.180	0.4365	0.0047	0.1238	2289	17.2	34	2308	9.4	19	2335	10.5	21	101
DEB2z93	328.50	183.00	46.91	0.557	1.90E+04	1.20E+04	0.0576	0.0016	0.754	0.021	0.0940	0.0010	0.1008	515	30.5	61	571	6.1	12	579	2.9	6	102
DEB2z94	530.00	92.20	15.46	0.174	-2.80E+04	1.90E+04	0.0529	0.0015	0.443	0.013	0.0600	0.0007	0.1157	325	32.2	64	372	4.6	9	375	2.1	4	101
DEB2z95	92.70	81.40	22.03	0.878	-2.90E+03	4.90E+03	0.0586	0.0026	0.805	0.035	0.0991	0.0014	0.0322	552	48.4	97	600	9.8	20	609	4.1	8	102
DEB2z96	168.20	172.20	166.80	1.024	-9.40E+04	3.80E+04	0.1280	0.0021	6.538	0.110	0.3718	0.0038	0.1466	2071	14.5	29	2051	7.4	15	2038	8.9	18	99
DEB2z97	112.30	45.70	11.65	0.407	-1.00E+02	4.80E+03	0.0573	0.0025	0.715	0.031	0.0898	0.0013	0.0021	503	48.0	96	548	9.2	18	554	3.8	8	101
DEB2z98	396.00	202.30	55.20	0.511	-3.60E+04	2.30E+04	0.0582	0.0014	0.793	0.019	0.0983	0.0010	0.1998	537	26.3	53	593	5.4	11	604	2.9	6	102
DEB2z99	88.60	71.76	19.18	0.810	-3.50E+03	4.40E+03	0.0604	0.0026	0.788	0.033	0.0956	0.0013	0.1317	618	46.5	93	590	9.4	19	589	3.8	8	100
DEB2z100	63.19	47.60	13.52	0.753	-4.20E+03	3.30E+03	0.0611	0.0031	0.841	0.043	0.0996	0.0015	0.0905	643	54.5	109	620	11.8	24	612	4.4	9	99
DEB2z101	95.30	126.90	35.50	1.332	-1.50E+03	4.20E+03	0.0591	0.0028	0.821	0.037	0.0984	0.0014	-0.0601	571	51.5	103	609	10.3	21	605	4.1	8	99
DEB2z102c	306.00	122.60	111.60	0.401	1.30E+04	3.70E+04	0.1241	0.0019	5.330	0.100	0.3140	0.0045	0.6774	2016	13.6	27	1874	8.0	16	1760	11.0	22	94
DEB2z102r	152.20	125.60	122.40	0.825	-4.30E+04	2.80E+04	0.1244	0.0021	5.978	0.110	0.3476	0.0038	0.1476	2020	15.0	30	1973	8.0	16	1923	9.1	18	97
DEB2z103	395.00	256.30	75.30	0.649	-3.00E+04	1.70E+04	0.0602	0.0015	0.880	0.021	0.1049	0.0011	0.0351	611	26.9	54	641	5.7	11	643	3.2	6	100
DEB2z104	383.80	142.40	42.60	0.371	-2.30E+04	2.20E+04	0.0597	0.0014	0.868	0.020	0.1045	0.0012	0.1415	593	25.4	51	634	5.4	11	641	3.5	7	101
DEB2z105	218.00	127.00	35.35	0.583	-1.30E+03	9.60E+03	0.0601	0.0018	0.838	0.026	0.1011	0.0012	0.0992	607	32.4	65	618	7.2	14	621	3.5	7	100
DEB2z106	95.70	59.00	16.80	0.617	-2.60E+03	4.50E+03	0.0590	0.0025	0.819	0.033	0.0999	0.0014	-0.0431	567	46.1	92	607	9.2	18	614	4.1	8	101
DEB2z107	98.20	91.13	22.99	0.928	-9.50E+03	4.90E+03	0.0596	0.0026	0.747	0.031	0.0906	0.0013	0.0400	589	47.3	95	566	9.0	18	559	3.8	8	99
DEB2z108	66.79	73.22	20.32	1.096	-6.10E+03	3.60E+03	0.0576	0.0026	0.804	0.039	0.1003	0.0017	0.2193	515	49.6	99	599	11.0	22	616	5.0	10	103
DEB2z109	192.60	143.90	117.30	0.747	9.00E+04	2.60E+04	0.1151	0.0019	4.919	0.096	0.3090	0.0035	0.4595	1881	14.9	30	1806	8.2	16	1736	8.6	17	96
DEB2z110	222.40	329.00	95.60	1.479	-1.60E+03	9.10E+03	0.0599	0.0018	0.871	0.026	0.1047	0.0013	0.1586	600	32.5	65	636	7.0	14	642	3.8	8	101
DEB2z111	87.70	81.10	22.93	0.925	-6.40E+03	4.20E+03	0.0588	0.0028	0.803	0.037	0.1000	0.0015	0.0471	560	51.9	104	599	10.4	21	614	4.4	9	103
DEB2z112	653.20	436.20	165.80	0.668	-2.60E+04	3.50E+04	0.0674	0.0013	1.306	0.024	0.1400	0.0015	0.0805	851	20.0	40	848	5.3	11	845	4.2	8	100
DEB2z113	91.71	68.80	19.05	0.750	1.90E+03	3.00E+03	0.0622	0.0027	0.865	0.037	0.1004	0.0015	-0.0417	681	46.4	93	633	10.1	20	617	4.4	9	97
DEB2z114	935.00	85.90	78.80	0.092	-1.30E+05	1.40E+05	0.1220	0.0015	5.874	0.086	0.3487	0.0035	0.4136	1986	10.9	22	1957	6.3	13	1928	8.4	17	99
DEB2z116	138.20	113.40	29.62	0.821	1.20E+03	4.80E+03	0.0610	0.0024	0.827	0.031	0.0978	0.0012	0.0777	639	42.3	85	612	8.6	17	602	3.5	7	98
DEB2z117	92.10	71.10	23.00	0.772	2.80E+03	3.40E+03	0.0590	0.0026	0.879	0.038	0.1072	0.0014	0.0361	567	48.0	96	640	10.3	21	656	4.1	8	103
DEB2z118	321.90	213.30	64.47	0.663	-2.30E+04	1.60E+04	0.0621	0.0016	0.954	0.024	0.1111	0.0013	0.0798	678	27.5	55	680	6.2	12	679	3.8	8	100
DEB2z119	91.11	57.17	15.70	0.627	-1.10E+03	3.40E+03	0.0561	0.0025	0.760	0.035	0.0983	0.0014	0.1000	456	49.4	99	574	10.1	20	604	4.1	8	105
DEB2z120	342.00	233.40	193.40	0.682	-4.40E+04	4.30E+04	0.1246	0.0018	5.566	0.087	0.3241	0.0034	0.1614	2023	12.8	26	1911	6.7	13	1810	8.3	17	95
DEB2z121	131.60	202.30	212.00	1.537	1.00E+03	2.20E+04	0.1628	0.0026	9.760	0.170	0.4360	0.0047	0.2332	2485	13.5	27	2412	8.0	16	2333	10.5	21	97
DEB2z123	94.70	106.50	29.75	1.125	-1.10E+03	3.50E+03	0.0595	0.0026	0.837	0.036	0.1016	0.0015	-0.0292	585	47.4	95	617	9.9	20	624	4.4	9	101
DEB2z125	522.20	398.90	112.50	0.764	-2.00E+04	2.50E+04	0.0605	0.0012	0.860	0.018	0.1026	0.0011	0.1097	622	21.4	43	630	4.9	10	630	3.2	6	100
DEB2z126	196.70	199.40	53.50	1.014	-9.80E+03	8.30E+03	0.0593	0.0019	0.813	0.026	0.1000	0.0012	0.0961	578	34.8	70	604	7.3	15	614	3.5	7	102
DEB2z127	680.00	132.90	156.70	0.195	-5.00E+05	1.20E+05	0.1882	0.0023	12.610	0.200	0.4876	0.0057	0.8171	2726	10.1	20	2651	7.5	15	2560	12.4	25	97
DEB2z128	163.10	165.50	46.14	1.015	5.20E+03	4.90E+03	0.0597	0.0019	0.849	0.028	0.1026	0.0012	-0.0116	593	34.5	69	624	7.7	15	629	3.5	7	101
DEB2z129	224.50	258.60	108.30	1.152	-7.00E+04	1.30E+04	0.0661	0.0017	1.372	0.034	0.1505	0.0018	0.1078	810	26.9	54	877	7.3	15	904	5.0	10	103
DEB2z130	312.00	142.40	40.90	0.456	3.00E+04	1.30E+04	0.0607	0.0015	0.868	0.022	0.1034	0.0012	0.0109	629	26.6	53	634	6.0	12	634	3.5	7	100
DEB2z131	487.20	155.77	144.80	0.320	-1.85E+05	8.70E+04	0.1267	0.0017	6.133	0.093	0.3523	0.0035	0.3465	2053	11.8	24	1995	6.6	13	1946	8.3	17	98
DEB2z132	69.30	51.00	13.94	0.736	5.00E+02	2.50E+03	0.0624	0.0032	0.883	0.041	0.1003	0.0015	-0.0449	688	54.7	109	643	11.0	22	616	4.4	9	96
DEB2z133	350.50	528.00	575.80	1.506	-4.30E+04	7.30E+04	0.1572	0.0021	9.476	0.140	0.4361	0.0045	0.4636	2426	11.3	23	2385	6.8	14	2333	10.1	20	98
DEB2z134	102.00	61.58	17.62	0.604	-3.20E+03	4.50E+03	0.0616	0.0023	0.840	0.030	0.1007	0.0014	-0.0384	660	40.0	80	619	8.3	17	619	4.1	8	100
DEB2z135	178.40	306.60	85.60	1.719	-6.40E+03	7.90E+03	0.0593	0.0019	0.794	0.024	0.0977	0.0011	-0.0407	578	34.8	70	593	6.8	14	601	3.2	6	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
DEB2z136	123.50	98.50	26.13	0.798	-1.80E+03	4.00E+03	0.0606	0.0021	0.782	0.027	0.0940	0.0012	0.0511	625	37.4	75	587	7.7	15	579	3.5	7	99
DEB2z137	102.50	86.30	24.90	0.842	-4.80E+03	4.80E+03	0.0585	0.0021	0.817	0.030	0.1006	0.0014	0.1141	549	39.2	78	606	8.4	17	618	4.1	8	102
DEB2z138	125.70	68.94	19.81	0.548	-6.40E+03	6.00E+03	0.0599	0.0019	0.833	0.027	0.1009	0.0012	0.0685	600	34.3	69	615	7.5	15	620	3.5	7	101
DEB2z139	166.00	142.70	41.20	0.860	-7.00E+02	5.70E+03	0.0600	0.0018	0.854	0.026	0.1031	0.0013	0.0440	604	32.5	65	627	7.1	14	633	3.8	8	101
DEB2z140	286.10	150.40	43.74	0.526	4.00E+04	1.20E+04	0.0589	0.0015	0.821	0.021	0.1004	0.0011	0.0947	563	27.7	55	609	5.8	12	617	3.2	6	101
DEB2z141	106.30	73.80	71.40	0.694	4.00E+04	1.40E+04	0.1233	0.0022	6.184	0.120	0.3630	0.0041	0.2342	2005	15.8	32	2002	8.5	17	1996	9.7	19	100
DEB2z142	103.20	48.70	11.86	0.472	-2.30E+03	3.50E+03	0.0560	0.0024	0.642	0.028	0.0826	0.0011	0.1422	452	47.6	95	504	8.6	17	512	3.3	7	102
DEB2z143	194.10	74.30	75.10	0.383	2.60E+04	2.40E+04	0.1409	0.0021	7.071	0.130	0.3644	0.0042	0.5619	2238	12.9	26	2120	8.2	16	2003	9.9	20	94
DEB2z144	57.70	59.80	17.70	1.036	-1.80E+03	2.70E+03	0.0601	0.0030	0.821	0.040	0.0982	0.0015	0.0998	607	54.0	108	609	11.1	22	604	4.4	9	99
DEB2z145	152.20	87.70	25.91	0.576	-3.60E+03	7.20E+03	0.0589	0.0018	0.799	0.024	0.0991	0.0012	0.0434	563	33.3	67	596	6.8	14	609	3.5	7	102
DEB2z146	339.30	123.60	134.70	0.364	-4.80E+04	6.20E+04	0.1320	0.0018	7.300	0.110	0.3998	0.0040	0.3602	2125	11.9	24	2149	6.7	13	2168	9.2	18	101
DEB2z147	430.00	300.50	119.30	0.699	-5.40E+04	3.00E+04	0.0664	0.0013	1.248	0.026	0.1362	0.0014	0.1687	819	20.4	41	823	5.9	12	823	4.0	8	100
Discordant data																							
DEB2z1	1814.00	957.00	196.40	0.528	-1.30E+06	5.00E+05	0.1359	0.0019	2.922	0.066	0.1563	0.0028	0.9420	2176	12.2	24	1388	8.5	17	936	7.8	16	67
DEB2z21	346.00	184.70	141.80	0.534	7.40E+04	9.90E+04	0.2268	0.0030	12.700	0.330	0.4058	0.0088	0.9299	3030	10.6	21	2658	12.2	24	2196	20.2	40	83
DEB2z31	970.00	1570.00	934.00	1.619	-3.00E+05	2.50E+05	0.1465	0.0019	5.687	0.100	0.2806	0.0034	0.7659	2305	11.1	22	1929	7.6	15	1594	8.6	17	83
DEB2z35	136.50	93.60	40.20	0.686	-1.20E+04	1.00E+04	0.1064	0.0074	1.550	0.130	0.1045	0.0017	0.7762	1739	63.7	127	950	25.9	52	641	5.0	10	67
DEB2z48	29.11	43.95	35.02	1.510	8.40E+03	6.70E+03	0.1187	0.0043	4.400	0.160	0.2680	0.0049	0.2931	1937	32.4	65	1712	15.0	30	1531	12.5	25	89
DEB2z62	60.30	80.60	25.51	1.337	9.00E+02	3.10E+03	0.0810	0.0058	1.050	0.078	0.0927	0.0013	0.3358	1221	70.4	141	729	19.3	39	571	3.8	8	78
DEB2z78	1608.00	313.00	110.00	0.195	-1.30E+05	1.00E+05	0.1049	0.0016	1.722	0.041	0.1193	0.0021	0.9199	1713	14.0	28	1017	7.6	15	727	6.0	12	71
DEB2z87	512.70	131.80	88.70	0.257	-1.73E+05	8.60E+04	0.1176	0.0017	4.291	0.072	0.2633	0.0029	0.5408	1920	13.0	26	1692	6.9	14	1507	7.4	15	89
DEB2z115	982.00	542.00	96.90	0.552	-1.30E+04	2.10E+04	0.0672	0.0025	0.547	0.018	0.0590	0.0007	-0.4499	844	38.7	77	443	5.9	12	370	2.2	4	83
DEB2z122	776.00	1167.00	247.90	1.504	-4.30E+04	2.80E+04	0.0768	0.0018	0.991	0.021	0.0948	0.0014	0.1174	1116	23.4	47	699	5.4	11	584	4.1	8	84
DEB2z124	486.30	901.00	588.90	1.853	6.00E+04	5.00E+04	0.1204	0.0018	4.282	0.066	0.2580	0.0026	0.2898	1962	13.3	27	1690	6.3	13	1480	6.7	13	88

Footnotes:

- Analysis references: DEB2z is zircon from sample DEB2 (mount CT18-8), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.31: Sample MIM2 (LA-ICPMS)

IGSN: IEACC0004 Coordinate UTM: Zone 30S, 509359 m E, 3763408 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
MIM2z1	72.00	72.10	71.60	1.001	-6.50E+03	6.40E+03	0.1239	0.0027	6.171	0.180	0.3663	0.0040	0.1142	2013	19.3	39	2000	12.7	25	2012	9.4	19	101
MIM2z2	106.40	82.60	24.31	0.776	1.30E+03	2.70E+03	0.0613	0.0027	0.862	0.037	0.1023	0.0012	0.1279	650	47.3	95	631	10.1	20	628	3.5	7	99
MIM2z4	406.20	185.20	161.20	0.456	-5.00E+04	5.00E+04	0.1099	0.0019	4.771	0.130	0.3194	0.0031	0.2978	1798	15.7	31	1780	11.4	23	1787	7.6	15	100
MIM2z5	254.20	164.40	46.38	0.647	2.80E+04	3.20E+04	0.0624	0.0023	0.832	0.027	0.0971	0.0010	0.1609	688	39.3	79	615	7.5	15	597	2.9	6	97
MIM2z6	89.30	70.84	21.07	0.793	-8.60E+03	4.60E+03	0.0603	0.0028	0.833	0.037	0.1005	0.0013	-0.0504	614	50.1	100	615	10.2	20	617	3.8	8	100
MIM2z7c	78.20	43.62	46.18	0.558	-1.80E+04	1.90E+04	0.1377	0.0028	7.474	0.210	0.3990	0.0042	0.1397	2198	17.7	35	2170	12.6	25	2164	9.7	19	100
MIM2z7r	539.40	180.70	31.41	0.335	-1.30E+04	2.00E+04	0.0544	0.0019	0.432	0.014	0.0575	0.0006	0.2065	388	39.2	78	364	5.0	10	360	1.8	4	99
MIM2z8	199.70	168.90	52.06	0.846	-6.20E+04	2.60E+04	0.0609	0.0023	0.883	0.031	0.1054	0.0012	0.0562	636	40.6	81	643	8.4	17	646	3.5	7	101
MIM2z9	1025.00	475.00	149.00	0.463	-2.60E+05	1.60E+05	0.0608	0.0018	0.907	0.025	0.1075	0.0011	0.2261	631	31.9	64	655	6.7	13	658	3.2	6	100
MIM2z10	258.00	340.40	334.50	1.319	-3.50E+05	2.20E+05	0.1262	0.0021	6.247	0.160	0.3640	0.0034	0.2876	2046	14.7	29	2011	11.2	22	2001	8.0	16	100
MIM2z11	208.10	130.20	36.10	0.626	-1.70E+05	1.60E+05	0.0605	0.0022	0.809	0.028	0.0968	0.0011	0.1397	622	39.2	78	602	7.9	16	596	3.2	6	99
MIM2z12	245.00	188.40	59.90	0.769	3.00E+05	1.60E+05	0.0624	0.0022	0.941	0.031	0.1088	0.0012	0.1407	688	37.6	75	673	8.1	16	666	3.5	7	99
MIM2z13	119.62	82.50	92.60	0.690	-1.13E+05	6.00E+04	0.1359	0.0025	7.431	0.200	0.4036	0.0041	0.3082	2176	16.0	32	2165	12.0	24	2186	9.4	19	101
MIM2z14	164.10	84.20	93.10	0.513	6.50E+05	3.00E+05	0.1395	0.0025	7.805	0.210	0.4130	0.0040	0.1269	2221	15.5	31	2209	12.1	24	2229	9.1	18	101
MIM2z15	175.60	171.50	173.10	0.977	1.40E+05	1.90E+05	0.1277	0.0023	6.619	0.180	0.3822	0.0040	0.4069	2067	15.9	32	2062	12.0	24	2087	9.3	19	101
MIM2z16	631.00	180.10	208.00	0.285	-9.80E+05	3.30E+05	0.1579	0.0025	8.918	0.230	0.4173	0.0045	0.7383	2433	13.4	27	2330	11.8	24	2248	10.2	20	97
MIM2z17	564.80	120.80	19.48	0.214	-3.00E+04	2.00E+04	0.0533	0.0019	0.441	0.014	0.0595	0.0006	-0.0108	342	40.3	81	371	4.9	10	372	1.9	4	100
MIM2z18	198.00	180.00	52.00	0.909	-2.00E+04	1.00E+04	0.0591	0.0022	0.819	0.028	0.1001	0.0011	0.0593	571	40.5	81	607	7.8	16	615	3.2	6	101
MIM2z19r	434.90	19.75	5.95	0.045	-2.00E+05	1.00E+05	0.0593	0.0019	0.802	0.023	0.0982	0.0010	0.0691	578	34.8	70	598	6.5	13	604	2.8	6	101
MIM2z20	74.80	79.70	22.60	1.066	-1.00E+03	1.00E+03	0.0620	0.0032	0.859	0.041	0.1008	0.0016	0.0667	674	55.2	110	630	11.2	22	619	4.7	9	98
MIM2z21	293.40	483.50	141.70	1.648	2.40E+04	1.00E+04	0.0602	0.0021	0.841	0.026	0.1011	0.0011	0.0201	611	37.7	75	620	7.2	14	621	3.2	6	100
MIM2z22c	197.70	125.20	38.43	0.633	3.90E+03	3.20E+03	0.0605	0.0022	0.891	0.030	0.1057	0.0012	0.2099	622	39.2	78	647	8.0	16	648	3.5	7	100
MIM2z22r	278.40	30.69	8.59	0.110	1.70E+03	1.00E+03	0.0591	0.0020	0.760	0.024	0.0927	0.0010	0.0256	571	36.8	74	574	6.9	14	571	2.9	6	100
MIM2z23	201.10	165.80	49.20	0.824	7.60E+03	3.90E+03	0.0598	0.0022	0.839	0.030	0.1009	0.0011	0.1215	596	39.9	80	619	8.3	17	620	3.2	6	100
MIM2z24	404.70	312.20	449.60	0.771	3.30E+04	1.70E+04	0.2025	0.0032	15.495	0.400	0.5602	0.0052	0.4517	2846	12.9	26	2846	12.3	25	2867	10.7	21	101
MIM2z25	215.00	288.00	358.70	1.340	-2.40E+04	1.50E+04	0.1639	0.0028	10.716	0.280	0.4765	0.0044	0.3151	2496	14.4	29	2499	12.1	24	2512	9.6	19	101
MIM2z26	631.30	274.10	204.00	0.434	1.30E+04	1.00E+04	0.0963	0.0016	3.611	0.096	0.2734	0.0028	0.4612	1553	15.6	31	1552	10.6	21	1558	7.1	14	100
MIM2z27	68.10	24.17	30.10	0.355	-2.60E+04	2.40E+04	0.1683	0.0032	11.910	0.360	0.5162	0.0078	0.6652	2541	15.9	32	2597	14.1	28	2683	16.6	33	103
MIM2z28	128.00	55.62	58.60	0.435	-4.90E+03	2.60E+03	0.1289	0.0024	6.734	0.180	0.3813	0.0038	0.1854	2083	16.4	33	2077	11.8	24	2082	8.9	18	100
MIM2z29	414.00	70.60	19.20	0.171	-1.60E+03	2.10E+03	0.0609	0.0020	0.850	0.026	0.1010	0.0010	0.1023	636	35.3	71	625	7.1	14	620	2.9	6	99
MIM2z30	12.81	10.41	2.71	0.813	-5.40E+01	4.70E+01	0.0567	0.0070	0.755	0.090	0.0967	0.0027	0.0553	480	136.4	273	571	26.0	52	595	7.9	16	104
MIM2z31	65.30	55.10	15.80	0.844	6.30E+03	2.60E+03	0.0601	0.0030	0.768	0.036	0.0927	0.0013	0.1499	607	54.0	108	579	10.3	21	571	3.8	8	99
MIM2z33	1125.00	28.05	27.38	0.025	6.00E+04	1.50E+04	0.1283	0.0020	6.082	0.160	0.3449	0.0032	0.5481	2075	13.7	27	1988	11.5	23	1910	7.7	15	96
MIM2z34	370.50	349.40	91.50	0.943	1.20E+03	1.30E+03	0.0577	0.0019	0.717	0.022	0.0900	0.0009	0.0711	518	36.1	72	549	6.5	13	555	2.6	5	101
MIM2z35	188.56	108.94	30.06	0.578	1.30E+03	7.80E+02	0.0603	0.0023	0.802	0.028	0.0956	0.0011	0.0276	614	41.2	82	598	7.9	16	589	3.2	6	98
MIM2z36	170.00	124.60	34.52	0.733	-5.20E+02	4.20E+02	0.0607	0.0024	0.822	0.031	0.0981	0.0011	0.0405	629	42.6	85	609	8.6	17	603	3.2	6	99
MIM2z37	236.10	223.30	257.50	0.946	3.80E+03	3.10E+03	0.1629	0.0027	9.391	0.250	0.4151	0.0040	0.3026	2486	14.0	28	2377	12.2	24	2238	9.1	18	94
MIM2z38	79.40	52.97	15.13	0.667	5.40E+02	3.50E+02	0.0632	0.0030	0.855	0.040	0.0990	0.0013	0.0872	715	50.4	101	627	10.9	22	609	3.8	8	97
MIM2z39c	106.70	79.60	67.55	0.746	2.10E+03	1.50E+03	0.1076	0.0023	4.566	0.130	0.3070	0.0031	0.0797	1759	19.5	39	1743	11.8	24	1726	7.6	15	99
MIM2z39r	669.70	451.40	370.70	0.674	-1.10E+05	5.30E+04	0.1072	0.0018	4.454	0.120	0.3003	0.0028	0.3609	1751	15.4	31	1722	11.2	22	1693	6.9	14	98
MIM2z41	190.80	156.20	145.10	0.819	2.20E+04	1.10E+04	0.1270	0.0024	6.134	0.170	0.3496	0.0038	0.3847	2057	16.7	33	1995	12.1	24	1933	9.1	18	97
MIM2z42	150.90	118.20	104.40	0.783	-7.10E+03	4.40E+03	0.1151	0.0022	5.255	0.150	0.3300	0.0033	0.3013	1881	17.2	34	1862	12.2	24	1838	8.0	16	99
MIM2z43c	278.00	186.80	273.00	0.672	6.00E+04	6.90E+04	0.2245	0.0036	17.840	0.460	0.5747	0.0054	0.4714	3013	12.9	26	2981	12.4	25	2927	11.1	22	98
MIM2z43r	106.10	46.02	69.00	0.434	-2.60E+04	1.10E+04	0.2178	0.0039	17.840	0.490	0.5917	0.0063	0.5068	2964	14.4	29	2981	13.2	26	2996	12.8	26	101
MIM2z44	110.40	141.60	39.20	1.283	-4.80E+02	5.30E+02	0.0609	0.0028	0.819	0.036	0.0963	0.0011	0.0496	636	49.5	99	607	10.0	20	593	3.2	6	98
MIM2z46	160.90	234.90	60.90	1.460	1.10E+03	1.20E+03	0.0574	0.0022	0.705	0.026	0.0885	0.0010	0.0425	507	42.2	84	542	7.7	15	547	2.9	6	101
MIM2z47	120.20	183.50	50.80	1.527	6.20E+02	9.40E+02	0.0604	0.0026	0.814	0.033	0.0978	0.0013	0.1535	618	46.5	93	605	9.2	18	602	3.8	8	99
MIM2z48	498.90	207.70	37.42	0.416	3.90E+03	2.90E+03	0.0557	0.0020	0.468	0.016	0.0608	0.0006	0.1138	440	39.9	80	390	5.5	11	380	1.9	4	98
MIM2z49	168.30	70.80	16.52	0.421	-1.30E+03	1.50E+03	0.0568	0.0023	0.637	0.024	0.0809	0.0009	0.1172	484	44.7	89	500	7.4	15	501	2.8	6	100
MIM2z50	119.40	44.00	19.04	0.369	4.30E+03	3.40E+03	0.0689	0.0026	1.429	0.051	0.1501	0.0017	0.0765	896	38.9	78	901	10.7	21	902	4.8	10	100
MIM2z51	220.10	176.10	49.70	0.800	1.15E+04	5.50E+03	0.0606	0.0023	0.811	0.028	0.0975	0.0010	0.1126	625	40.9	82	603	7.8	16	599	2.9	6	99
MIM2z52	73.71	55.43	16.52	0.752	2.00E+03	1.60E+03	0.0624	0.0031	0.875	0.042	0.1001	0.0014	0.1138	688	53.0	106	638	11.4	23	615	4.1	8	96
MIM2z54	157.60	141.00	140.00	0.895	-2.00E+04	1.30E+04	0.1295	0.0024	6.780	0.180	0.3788	0.0037	0.2280	2091	16.3	33	2083	11.7	23	2071	8.6	17	99
MIM2z55	231.90	168.58	53.36	0.727	1.31E+04	7.10E+03	0.0666	0.0024	0.959	0.032	0.1041	0.0011	0.2049	825	37.6	75	683	8.3	17	638	3.2	6	93
MIM2z56	216.30	29.48	7.73	0.136	4.50E+03	5.00E+03	0.0596	0.0023	0.736	0.027	0.0894	0.0010	0.0375	589	41.9	84	560	7.9	16	552	3.0	6	99
MIM2z57	489.40	146.40	42.76	0.299	3.20E+05	7.60E+05	0.0591	0.0019	0.825	0.025	0.1009	0.0010	0.0400	572	34.9	70	611	6.9	14	619	2.9	6	101
MIM2z59	1181.00	1139.00	199.70	0.964	3.10E+04	2.20E+04	0.0552	0.0017	0.450	0.013	0.0593	0.0006	0.1579	420	34.4	69	377	4.5	9	371	1.7	3	98
MIM2z60	443.20	106.42	29.80	0.240	3.46E+04	9.50E+03	0.0592	0.0020	0.787	0.024	0.0967	0.0010	0.0748	574	36.7	73	589	6.8	14	595	2.9	6	101
MIM2z61	76.89	96.90	134.70	1.260	-1.00E+05	1.10E+04	0.1832	0.0033	13.530	0.370	0.5294	0.0055	0.2390	2682	14.9	30	2717	12.9	26	2739	11.6	23	101
MIM2z62	63.13	69.38	20.47	1.099	-5.00E+02	1.80E+03	0.0604	0.0032	0.850	0.044	0.1020	0.0015	0.1396	618	57.2	114	625	12.1	24	626	4.4	9	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
MIM2z63c	83.58	23.09	22.47	0.276	-1.20E+04	1.10E+04	0.1619	0.0032	9.310	0.260	0.4153	0.0044	0.1445	2476	16.7	33	2369	12.8	26	2239	10.0	20	95
MIM2z64	158.40	93.60	25.10	0.591	1.56E+04	7.40E+03	0.0605	0.0023	0.770	0.028	0.0923	0.0010	0.0807	622	41.0	82	580	8.0	16	569	3.0	6	98
MIM2z65	148.80	107.80	34.56	0.724	2.24E+04	7.10E+03	0.0696	0.0029	0.957	0.038	0.1005	0.0012	0.0014	917	42.9	86	682	9.8	20	617	3.5	7	91
MIM2z66	480.00	176.40	33.19	0.368	9.50E+03	7.90E+03	0.0596	0.0021	0.467	0.015	0.0570	0.0006	0.0793	589	38.2	76	389	5.2	10	357	1.9	4	92
MIM2z68	184.60	150.20	40.81	0.814	-6.70E+04	2.90E+04	0.0593	0.0023	0.775	0.028	0.0944	0.0011	0.0018	578	42.1	84	583	8.0	16	582	3.2	6	100
MIM2z69	65.82	36.22	23.81	0.550	-3.00E+04	5.10E+04	0.0908	0.0032	2.931	0.096	0.2376	0.0027	0.1621	1442	33.6	67	1390	12.4	25	1374	7.0	14	99
MIM2z71	112.90	25.29	30.91	0.224	3.80E+04	2.30E+04	0.1627	0.0028	10.726	0.280	0.4709	0.0045	0.2456	2484	14.5	29	2500	12.1	24	2488	9.9	20	100
MIM2z74	45.00	33.30	9.86	0.740	1.80E+04	1.80E+04	0.0600	0.0037	0.861	0.050	0.1060	0.0017	0.0781	604	66.7	133	631	13.6	27	649	5.0	10	103
MIM2z75	355.00	237.90	252.20	0.670	1.59E+06	6.50E+05	0.1743	0.0030	9.900	0.310	0.4058	0.0057	0.8919	2599	14.3	29	2426	14.4	29	2196	13.1	26	91
MIM2z76	409.80	42.60	12.60	0.104	-7.00E+04	2.00E+04	0.0618	0.0021	0.872	0.027	0.1028	0.0010	0.0015	667	36.4	73	637	7.3	15	631	2.9	6	99
MIM2z77	93.20	95.90	27.01	1.029	-6.50E+03	4.10E+03	0.0595	0.0026	0.804	0.033	0.0989	0.0013	-0.0293	585	47.4	95	599	9.3	19	608	3.8	8	101
MIM2z78	749.00	474.90	140.20	0.634	-2.20E+04	1.80E+04	0.0618	0.0019	0.881	0.025	0.1031	0.0010	0.2075	669	32.9	66	642	6.7	13	632	2.9	6	99
MIM2z79	115.46	57.72	16.90	0.500	-3.20E+03	2.70E+03	0.0598	0.0026	0.845	0.036	0.1011	0.0012	0.0504	596	47.1	94	622	9.9	20	621	3.5	7	100
MIM2z80c	184.00	108.70	90.10	0.591	-2.20E+04	1.20E+04	0.1248	0.0024	5.131	0.140	0.2955	0.0031	0.3175	2026	17.0	34	1841	11.6	23	1669	7.7	15	91
MIM2z80r	371.50	117.50	20.18	0.316	-1.30E+04	1.00E+04	0.0566	0.0021	0.478	0.017	0.0605	0.0007	0.0881	476	41.0	82	397	5.8	12	379	2.1	4	95
MIM2z81	55.82	37.08	11.21	0.664	-1.30E+03	1.10E+03	0.0618	0.0031	0.896	0.043	0.1052	0.0016	0.1559	667	53.7	107	650	11.5	23	645	4.7	9	99
MIM2z82	63.40	48.10	14.74	0.759	-5.30E+02	9.00E+02	0.0607	0.0030	0.904	0.044	0.1087	0.0017	0.0830	629	53.2	106	654	11.7	23	665	4.9	10	102
MIM2z83	105.20	33.82	22.63	0.321	-7.30E+03	5.90E+03	0.0902	0.0030	3.094	0.096	0.2468	0.0027	0.1147	1430	31.7	63	1431	11.9	24	1422	7.0	14	99
MIM2z84	84.00	53.65	15.42	0.639	2.03E+04	7.60E+03	0.0616	0.0029	0.862	0.039	0.1016	0.0013	0.1856	660	50.5	101	631	10.6	21	624	3.8	8	99
MIM2z85	1101.00	648.00	890.00	0.589	7.50E+04	7.00E+04	0.2121	0.0033	16.358	0.420	0.5512	0.0050	0.6395	2922	12.6	25	2898	12.3	25	2830	10.4	21	98
MIM2z86	79.20	60.90	75.40	0.769	-1.09E+04	5.90E+03	0.1860	0.0035	12.540	0.340	0.4810	0.0050	0.2964	2707	15.5	31	2646	12.7	25	2532	10.9	22	96
MIM2z87	38.46	30.27	14.79	0.787	-1.03E+03	6.60E+02	0.0752	0.0038	1.835	0.091	0.1771	0.0024	0.1883	1074	50.7	101	1058	16.3	33	1051	6.6	13	99
MIM2z88	269.20	181.30	211.70	0.673	3.00E+02	7.50E+03	0.1625	0.0027	10.713	0.280	0.4718	0.0045	0.4113	2482	14.0	28	2499	12.1	24	2491	9.9	20	100
MIM2z89	51.43	49.99	48.35	0.972	-2.70E+03	1.80E+03	0.1240	0.0031	6.390	0.190	0.3671	0.0042	-0.0136	2015	22.2	44	2031	13.0	26	2016	9.9	20	99
MIM2z91	386.30	242.20	84.07	0.627	3.00E+03	2.40E+03	0.0655	0.0021	1.124	0.034	0.1235	0.0012	0.1046	790	33.6	67	765	8.1	16	751	3.4	7	98
MIM2z92	89.10	116.20	148.20	1.304	1.20E+03	3.30E+03	0.1819	0.0032	12.910	0.350	0.5113	0.0053	0.3466	2670	14.6	29	2673	12.8	26	2662	11.3	23	100
MIM2z93	443.30	191.90	50.81	0.433	8.00E+02	2.80E+03	0.0587	0.0019	0.772	0.024	0.0942	0.0009	0.1605	556	35.3	71	581	6.9	14	581	2.7	5	100
MIM2z94	170.60	120.20	34.22	0.705	-2.30E+03	1.40E+03	0.0617	0.0025	0.857	0.033	0.1005	0.0012	0.0255	664	43.4	87	628	9.0	18	618	3.5	7	98
MIM2z95	177.40	308.80	348.90	1.741	-3.70E+04	1.70E+04	0.1622	0.0028	9.201	0.240	0.4109	0.0042	0.2660	2479	14.6	29	2358	11.9	24	2219	9.6	19	94
MIM2z96	283.10	199.20	179.10	0.704	1.70E+03	4.90E+03	0.1189	0.0021	5.545	0.150	0.3375	0.0033	0.2188	1940	15.8	32	1908	11.6	23	1875	8.0	16	98
MIM2z97	37.88	41.06	12.18	1.084	-2.30E+03	1.00E+03	0.0591	0.0040	0.861	0.056	0.1035	0.0018	-0.0643	571	73.6	147	631	15.3	31	635	5.3	11	101
MIM2z98	23.84	22.74	32.13	0.954	5.00E+04	2.30E+04	0.2019	0.0046	14.970	0.440	0.5371	0.0071	0.1126	2842	18.6	37	2813	14.0	28	2771	14.9	30	99
MIM2z99	62.77	65.46	78.44	1.043	-1.00E+05	1.00E+05	0.1611	0.0033	10.220	0.300	0.4604	0.0051	0.3332	2467	17.3	35	2455	13.6	27	2441	11.3	23	99
MIM2z100	132.70	257.70	307.80	1.942	-1.33E+04	8.10E+03	0.1613	0.0029	10.407	0.280	0.4701	0.0047	0.2006	2469	15.2	30	2472	12.5	25	2484	10.3	21	100
MIM2z101	75.47	65.29	18.44	0.865	-9.60E+02	9.10E+02	0.0587	0.0030	0.823	0.041	0.1009	0.0013	0.1086	556	55.7	111	610	11.4	23	620	3.8	8	102
MIM2z102	192.00	185.00	47.50	0.964	-5.80E+03	3.90E+03	0.0642	0.0025	0.813	0.029	0.0925	0.0013	0.0167	748	41.1	82	604	8.1	16	570	3.8	8	94
MIM2z103	314.40	298.30	304.60	0.949	5.00E+04	1.50E+04	0.1324	0.0022	7.018	0.180	0.3888	0.0036	0.3641	2130	14.5	29	2114	11.4	23	2117	8.4	17	100
MIM2z104	108.50	128.30	37.94	1.182	-2.10E+03	1.70E+03	0.0590	0.0029	0.837	0.038	0.1033	0.0013	-0.0836	567	53.5	107	617	10.5	21	634	3.8	8	103
MIM2z105	65.12	45.03	12.93	0.691	-5.00E+02	1.10E+03	0.0563	0.0030	0.783	0.039	0.1011	0.0016	0.0290	464	59.0	118	587	11.1	22	621	4.7	9	106
MIM2z106	229.00	363.00	105.50	1.585	-3.40E+03	5.30E+03	0.0591	0.0021	0.834	0.027	0.1019	0.0011	0.0535	571	38.7	77	616	7.5	15	625	3.2	6	102
MIM2z107	619.60	236.00	64.63	0.381	-5.20E+04	2.40E+04	0.0587	0.0018	0.795	0.023	0.0982	0.0009	0.1657	556	33.4	67	594	6.5	13	604	2.7	5	102
MIM2z108	73.40	73.10	21.25	0.996	1.50E+03	1.30E+03	0.0608	0.0029	0.847	0.039	0.1006	0.0014	0.1030	632	51.4	103	623	10.7	21	618	4.1	8	99
MIM2z109c	521.00	79.96	21.55	0.153	2.00E+04	3.20E+04	0.0577	0.0019	0.727	0.022	0.0905	0.0010	0.1148	518	36.1	72	555	6.5	13	558	2.8	6	101
MIM2z109r	592.00	88.40	19.22	0.149	-5.40E+04	2.40E+04	0.0585	0.0020	0.685	0.021	0.0845	0.0008	0.0903	549	37.3	75	530	6.3	13	523	2.5	5	99
MIM2z110	363.00	76.60	28.80	0.211	-1.28E+06	7.90E+05	0.0645	0.0021	1.166	0.035	0.1297	0.0013	-0.0180	758	34.3	69	785	8.2	16	786	3.7	7	100
MIM2z111c	356.00	122.30	24.07	0.344	-1.01E+04	9.60E+03	0.0578	0.0021	0.471	0.016	0.0586	0.0007	0.1507	522	39.9	80	392	5.5	11	367	2.0	4	94
MIM2z111r	599.30	246.10	44.48	0.411	-3.30E+04	1.60E+04	0.0559	0.0019	0.460	0.015	0.0593	0.0006	-0.0022	448	37.8	76	384	5.2	10	371	1.8	4	97
MIM2z113	67.60	640.00	791.00	9.467	1.30E+04	1.10E+04	0.1645	0.0031	10.740	0.300	0.4770	0.0050	0.1836	2502	15.9	32	2501	13.0	26	2514	10.9	22	101
MIM2z114	570.00	255.00	189.70	0.447	1.10E+04	4.90E+04	0.1296	0.0021	5.323	0.160	0.2977	0.0047	0.8584	2092	14.2	28	1873	12.8	26	1680	11.7	23	90
MIM2z115c	294.70	350.00	90.20	1.188	-1.10E+04	8.10E+03	0.0652	0.0023	0.844	0.028	0.0937	0.0013	0.3504	781	37.1	74	621	7.7	15	577	3.8	8	93
MIM2z115r	808.00	84.30	21.89	0.104	-5.70E+05	7.80E+05	0.0603	0.0019	0.771	0.022	0.0928	0.0009	0.1108	613	34.1	68	580	6.3	13	572	2.7	5	99
MIM2z116	32.74	23.19	6.73	0.708	-9.00E+02	9.60E+02	0.0640	0.0041	0.867	0.054	0.0986	0.0018	0.0924	742	67.7	135	634	14.7	29	606	5.3	11	96
MIM2z117	68.90	27.36	28.71	0.397	1.14E+05	3.30E+04	0.1278	0.0026	6.761	0.200	0.3820	0.0043	0.1037	2068	17.9	36	2081	13.1	26	2086	10.0	20	100
MIM2z118	94.36	74.78	115.80	0.792	4.00E+04	1.80E+04	0.2349	0.0039	20.330	0.540	0.6193	0.0062	0.3611	3086	13.2	26	3107	12.8	26	3107	12.3	25	100
MIM2z120	111.60	61.40	58.90	0.550	-7.20E+04	3.30E+04	0.1282	0.0025	6.850	0.200	0.3815	0.0045	0.5322	2073	17.2	34	2092	12.9	26	2083	10.5	21	100
MIM2z121	106.06	101.03	41.22	0.953	8.00E+05	7.40E+05	0.0691	0.0027	1.387	0.051	0.1451	0.0017	-0.0181	902	40.3	81	883	10.8	22	873	4.8	10	99
MIM2z122	48.97	44.61	54.57	0.911	-9.30E+04	5.40E+04	0.1632	0.0037	10.700	0.320	0.4686	0.0053	0.1707	2489	19.1	38	2497	13.9	28	2477	11.6	23	99
MIM2z123	169.60	96.20	60.40	0.567	-1.35E+05	7.10E+04	0.0850	0.0027	2.672	0.079	0.2277	0.0023	0.0391	1316	30.8	62	1321	10.9	22	1322	6.0	12	100
MIM2z124	104.00	115.61	31.99	1.112	2.80E+03	5.00E+03	0.0625	0.0030	0.824	0.037	0.0951	0.0012	-0.0671	691	51.2	102	610	10.3	21	586	3.5	7	96
MIM2z125	78.90	31.97	11.39	0.405	1.32E+04	7.80E+03	0.0631	0.0029	1.077	0.048	0.1239	0.0016	0.1497	712	48.8	98	742	11.7	23	753	4.6	9	101
MIM2z126	205.60	99.93	48.26	0.486	-1.03E+05	3.50E+04	0.0746	0.0025	1.764	0.054	0.1716	0.0018	0.1990	1058	33.7	67	1032	9.9	20	1021	5.0	10	99
MIM2z127	311.00	103.70	32.13	0.333	-3.90E+03	6.70E+03	0.0631	0.0021	0.960	0.030	0.1108	0.0011	0.1409	712	35.4	71	683	7.8	16	677	3.2	6	99
MIM2z128	564.50	437.40	133.80	0.775	3.70E+04	2.00E+04	0.0619	0.0020	0.902	0.027	0.1056	0.0010	0.1583	672	34.5	69	653	7.2	14	647	2.9	6	99
MIM2z129	101.37	82.90	23.40	0.818	5.60E+03	2.70E+03	0.0607	0.0028	0.830	0.037	0.0984	0.0012	-0.0081	629	49.7	99	614	10.3	21	605	3.5	7	99
MIM2z130	59.00	43.10	12.39	0.731	-1.80E+03	1.20E+03	0.0600	0.0034	0.829	0.046	0.0996	0.0014	0.0334	604	61.3	123	613	12.8	26	612	4.1	8	100
MIM2z131	122.20	104.40	29.10	0.854	6.80E+03	2.90E+03	0.0642	0.0027	0.866	0.035	0.0984	0.0012	0.0368	748	44.4	89	633	9.5	19	605	3.5	7	96
MIM2z132	336.00	166.60	175.00	0.496	-2.00E+04	1.70E+04	0.1326	0.0022	7.493	0.200	0.4031	0.0039	0.3830	2133	14.5	29	2172	11.9	24	2183	9.0	18	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
MIM2z133	203.00	88.48	50.35	0.436	-4.00E+02	4.80E+03	0.0798	0.0026	2.216	0.065	0.2014	0.0020	0.0631	1192	32.2	64	1186	10.3	21	1183	5.4	11	100
MIM2z134	214.30	85.84	23.20	0.401	-9.40E+03	4.10E+03	0.0603	0.0024	0.781	0.029	0.0946	0.0010	-0.0679	614	43.0	86	586	8.3	17	582	2.9	6	99
MIM2z135	97.00	27.95	27.84	0.288	1.00E+03	3.30E+04	0.1244	0.0025	6.417	0.180	0.3687	0.0039	0.2379	2020	17.8	36	2035	12.3	25	2023	9.2	18	99
Discordant data																							
MIM2z3	985.00	586.00	188.70	0.595	-6.70E+04	1.10E+04	0.2102	0.0059	4.780	0.160	0.1638	0.0039	0.9566	2907	22.7	45	1781	14.0	28	978	10.8	22	55
MIM2z19c	629.00	680.00	623.30	1.081	4.10E+05	2.40E+05	0.1580	0.0025	7.521	0.200	0.3523	0.0040	0.7614	2434	13.4	27	2175	11.9	24	1946	9.5	19	89
MIM2z32	2170.00	1780.00	297.40	0.820	1.67E+04	3.60E+03	0.2008	0.0058	3.650	0.380	0.1300	0.0130	0.9961	2833	23.6	47	1561	41.5	83	788	37.1	74	50
MIM2z40	1335.00	384.00	145.30	0.288	3.64E+03	5.60E+02	0.1015	0.0058	0.837	0.066	0.0585	0.0017	0.9004	1652	53.0	106	617	18.2	36	366	5.2	10	59
MIM2z45	417.00	332.00	207.00	0.796	1.90E+04	1.10E+04	0.2131	0.0034	9.470	0.570	0.3200	0.0170	0.9903	2929	12.9	26	2385	27.6	55	1790	41.5	83	75
MIM2z53	284.90	38.05	23.22	0.134	2.30E+04	1.10E+04	0.0864	0.0027	1.820	0.053	0.1521	0.0018	0.4214	1347	30.2	60	1053	9.5	19	913	5.0	10	87
MIM2z58	780.00	882.00	625.00	1.131	6.70E+04	1.20E+04	0.1193	0.0019	4.416	0.120	0.2668	0.0032	0.7399	1946	14.2	28	1715	11.2	22	1525	8.1	16	89
MIM2z63r	17.57	13.99	3.49	0.796	9.00E+01	3.90E+02	0.0707	0.0074	0.832	0.084	0.0849	0.0024	0.1019	949	107.1	214	615	23.3	47	525	7.1	14	85
MIM2z67	618.30	430.00	210.00	0.695	5.10E+04	2.60E+04	0.1102	0.0032	3.058	0.110	0.2024	0.0059	0.9445	1803	26.4	53	1422	13.7	27	1188	15.8	32	84
MIM2z70	1001.00	629.00	202.60	0.628	1.50E+04	2.50E+04	0.1549	0.0044	3.896	0.120	0.1837	0.0032	0.9293	2401	24.1	48	1613	12.4	25	1087	8.7	17	67
MIM2z72	1134.00	295.70	61.45	0.261	3.40E+04	2.30E+04	0.0715	0.0023	0.498	0.014	0.0507	0.0005	-0.0928	972	32.8	66	410	4.7	9	319	1.6	3	78
MIM2z73r	163.60	66.82	55.12	0.408	3.50E+04	1.60E+04	0.1251	0.0025	4.980	0.160	0.2837	0.0039	0.7711	2030	17.7	35	1816	13.6	27	1610	9.8	20	89
MIM2z73r2	1168.00	238.20	48.30	0.204	1.00E+04	4.90E+04	0.0696	0.0022	0.459	0.013	0.0482	0.0005	0.1951	917	32.5	65	384	4.5	9	303	1.5	3	79
MIM2z90	316.40	548.00	352.00	1.732	-7.00E+02	3.30E+03	0.1560	0.0046	5.248	0.160	0.2414	0.0038	0.9189	2413	25.0	50	1860	13.0	26	1394	9.9	20	75
MIM2z112	596.00	223.90	243.90	0.376	-9.60E+04	8.20E+04	0.2153	0.0034	12.940	0.370	0.4364	0.0065	0.9063	2946	12.8	26	2675	13.5	27	2335	14.6	29	87
MIM2z119	640.00	58.81	58.70	0.092	-9.10E+04	6.60E+04	0.1224	0.0020	4.543	0.130	0.2652	0.0038	0.7759	1992	14.5	29	1739	11.9	24	1516	9.7	19	87

Footnotes:

- Analysis references: MIM2z is zircon from sample MIM2 (mount CT18-6), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.32: Sample OUJ10 (LA-ICPMS)

IGSN: IEACC0001 Coordinate UTM: Zone 30S, 536550 m E, 3764944 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ10z1	87.90	25.10	12.75	0.289	1.00E+05	3.90E+05	0.0759	0.0037	1.819	0.086	0.1739	0.0057	0.2277	1070	50.0	100	1047	15.5	31	1033	16.0	32	99
OUJ10z3	106.90	44.10	7.98	0.413	9.90E+05	9.00E+05	0.0544	0.0061	0.444	0.050	0.0585	0.0022	0.0421	340	125.0	250	370	18.5	37	366	6.5	13	99
OUJ10z4	226.50	110.90	33.00	0.491	1.50E+05	6.60E+05	0.0634	0.0028	0.909	0.040	0.1038	0.0032	0.0753	690	50.0	100	658	10.0	20	637	9.5	19	97
OUJ10z5	90.00	87.20	23.40	0.981	2.00E+05	1.50E+05	0.0590	0.0053	0.786	0.070	0.0959	0.0033	0.0482	500	95.0	190	581	19.5	39	590	10.0	20	102
OUJ10z6	243.00	163.30	31.60	0.671	1.80E+05	2.60E+05	0.0601	0.0038	0.501	0.032	0.0603	0.0019	0.2011	630	65.0	130	409	11.0	22	377	5.5	11	92
OUJ10z7	269.20	262.20	87.70	0.980	2.80E+05	6.10E+05	0.0603	0.0021	0.942	0.031	0.1129	0.0038	0.4063	618	36.5	73	672	8.0	16	690	11.0	22	103
OUJ10z8	141.00	156.00	39.90	1.112	2.00E+05	3.40E+05	0.0541	0.0043	0.654	0.049	0.0863	0.0028	0.0478	340	85.0	170	506	15.0	30	533	8.0	16	105
OUJ10z9	433.00	140.10	68.10	0.322	-1.20E+06	2.50E+06	0.0754	0.0014	1.774	0.039	0.1711	0.0050	0.5152	1081	19.0	38	1035	7.0	14	1018	13.5	27	98
OUJ10z10	706.00	206.00	68.90	0.290	3.90E+06	4.70E+06	0.0732	0.0011	1.238	0.050	0.1220	0.0053	0.8915	1014	16.0	32	815	11.5	23	741	15.5	31	91
OUJ10z11	300.00	131.00	65.50	0.435	-1.40E+07	1.40E+07	0.0793	0.0021	1.996	0.060	0.1823	0.0060	0.5891	1178	24.5	49	1115	10.5	21	1082	16.5	33	97
OUJ10z12a	230.10	160.40	220.60	0.697	4.90E+06	4.10E+06	0.1947	0.0018	14.430	0.220	0.5367	0.0150	0.6525	2773	12.0	24	2780	7.0	14	2769	32.0	64	100
OUJ10z12b	298.00	219.00	284.00	0.724	2.90E+07	2.10E+07	0.1965	0.0025	14.570	0.200	0.5408	0.0160	0.5110	2826	13.5	27	2787	6.5	13	2786	33.0	66	100
OUJ10z13	166.90	120.20	95.70	0.734	2.16E+06	8.90E+05	0.1126	0.0026	4.520	0.120	0.2943	0.0110	0.6307	1825	23.0	46	1731	11.0	22	1662	26.5	53	96
OUJ10z14	199.80	92.20	51.20	0.458	1.20E+06	1.30E+06	0.0807	0.0027	2.313	0.085	0.2074	0.0060	0.4668	1206	32.0	64	1212	13.0	26	1215	16.0	32	100
OUJ10z15	651.00	425.00	110.20	0.678	3.70E+06	2.20E+06	0.0692	0.0028	0.803	0.043	0.0853	0.0061	0.7807	893	41.0	82	595	12.5	25	532	18.0	36	89
OUJ10z17	135.40	120.00	29.80	0.826	1.50E+05	2.70E+05	0.0573	0.0051	0.669	0.060	0.0860	0.0030	0.3070	470	90.0	180	524	18.0	36	532	9.0	18	102
OUJ10z18	462.00	1020.00	143.00	2.028	-1.30E+06	1.70E+06	0.0561	0.0020	0.416	0.017	0.0544	0.0017	0.2765	467	43.0	86	353	6.0	12	341	5.5	11	97
OUJ10z19	371.00	480.00	145.90	1.292	2.20E+06	2.10E+06	0.0604	0.0020	0.877	0.028	0.1047	0.0030	-0.0013	634	38.0	76	638	7.5	15	642	8.5	17	101
OUJ10z20	120.60	104.50	31.70	0.860	-3.00E+05	4.40E+05	0.0619	0.0040	0.898	0.062	0.1038	0.0037	0.1302	720	65.0	130	660	16.0	32	637	10.5	21	97
OUJ10z21	180.00	200.90	61.80	1.091	-7.30E+05	4.60E+05	0.0623	0.0030	0.934	0.043	0.1091	0.0031	-0.0335	689	47.0	94	671	11.0	22	668	9.0	18	100
OUJ10z22	332.00	208.00	57.10	0.634	4.40E+06	3.20E+06	0.0602	0.0022	0.839	0.028	0.1021	0.0029	0.1071	615	38.5	77	620	8.0	16	627	8.5	17	101
OUJ10z23c	87.30	66.00	22.90	0.695	2.50E+05	4.10E+05	0.0615	0.0049	0.999	0.069	0.1142	0.0043	0.0088	650	75.0	150	696	18.0	36	697	12.5	25	100
OUJ10z23r	287.00	180.00	51.00	0.415	1.80E+06	2.00E+06	0.0664	0.0029	0.948	0.038	0.1043	0.0034	0.0452	822	47.0	94	681	10.5	21	639	10.0	20	94
OUJ10z24	201.80	143.30	132.90	0.699	-1.30E+06	2.00E+06	0.1171	0.0028	4.520	0.098	0.2802	0.0086	0.2457	1898	23.0	46	1736	9.5	19	1592	21.5	43	92
OUJ10z25	313.20	169.20	29.00	0.537	-2.00E+06	2.10E+06	0.0553	0.0035	0.431	0.025	0.0568	0.0023	0.0828	400	65.0	130	362	9.0	18	356	7.0	14	98
OUJ10z26a	174.60	112.60	33.20	0.635	8.00E+05	7.80E+05	0.0627	0.0030	0.903	0.037	0.1050	0.0034	-0.1829	680	50.0	100	654	9.5	19	644	10.0	20	98
OUJ10z26b	273.70	211.50	58.40	0.765	-1.10E+07	1.10E+07	0.0594	0.0024	0.802	0.035	0.0981	0.0031	0.2814	589	40.5	81	596	10.0	20	603	9.0	18	101
OUJ10z27	64.10	58.60	17.49	0.919	7.00E+05	1.80E+05	0.0636	0.0058	0.890	0.079	0.1004	0.0033	-0.0246	650	100.0	200	636	21.5	43	617	9.5	19	97
OUJ10z28	409.00	327.40	89.10	0.808	-8.00E+06	1.60E+06	0.0607	0.0020	0.826	0.027	0.0991	0.0028	0.0914	622	35.0	70	613	7.5	15	609	8.5	17	99
OUJ10z29	88.10	116.40	32.30	1.318	-1.10E+05	4.20E+05	0.0623	0.0039	0.870	0.052	0.1018	0.0032	0.1119	690	70.0	140	637	13.5	27	625	9.0	18	98
OUJ10z30	95.20	103.80	96.80	1.080	2.50E+06	3.00E+06	0.1165	0.0037	5.710	0.180	0.3605	0.0110	0.3574	1872	29.0	58	1939	14.0	28	1984	26.0	52	102
OUJ10z32	209.60	76.50	24.60	0.367	5.60E+05	6.80E+05	0.0634	0.0031	0.942	0.045	0.1065	0.0033	0.1880	710	55.0	110	671	12.0	24	652	9.5	19	97
OUJ10z33	703.00	214.00	35.20	0.279	5.00E+04	1.70E+06	0.0565	0.0017	0.438	0.015	0.0566	0.0018	0.0850	471	35.5	71	370	5.0	10	355	5.5	11	96
OUJ10z34	86.30	72.30	48.30	0.847	-1.09E+06	6.80E+05	0.0873	0.0034	2.817	0.099	0.2336	0.0073	0.0803	1344	38.5	77	1361	13.0	26	1353	19.0	38	99
OUJ10z35c	341.60	143.50	25.50	0.424	1.80E+05	6.70E+05	0.0537	0.0024	0.431	0.022	0.0591	0.0018	0.2681	350	47.5	95	363	8.0	16	370	5.5	11	102
OUJ10z35r	320.00	147.10	25.70	0.439	3.00E+06	3.20E+06	0.0540	0.0023	0.447	0.019	0.0601	0.0018	0.0410	364	49.0	98	374	6.5	13	376	5.5	11	101
OUJ10z36	319.00	139.50	161.20	0.436	3.40E+07	4.60E+07	0.1659	0.0026	10.230	0.170	0.4503	0.0130	0.4609	2483	16.5	33	2454	8.0	16	2396	29.0	58	98
OUJ10z37	60.10	53.90	15.35	0.902	8.00E+05	2.00E+05	0.0605	0.0065	0.780	0.079	0.0936	0.0036	-0.1299	560	110.0	220	583	21.5	43	579	11.0	22	99
OUJ10z38	947.00	160.80	138.70	0.168	6.00E+06	9.00E+06	0.1304	0.0013	6.899	0.090	0.3863	0.0110	0.8056	2068	13.5	27	2098	5.5	11	2105	26.0	52	100
OUJ10z39	587.00	13.31	15.41	0.023	-1.10E+08	1.30E+08	0.2007	0.0018	13.590	0.120	0.4929	0.0140	0.5080	2800	12.0	24	2721	4.2	8	2586	28.5	57	95
OUJ10z40	371.00	191.00	194.00	0.522	-4.50E+06	5.10E+06	0.1311	0.0017	6.930	0.110	0.3849	0.0110	0.6097	2077	15.5	31	2107	7.5	15	2099	25.5	51	100
OUJ10z41a	324.00	91.00	14.70	0.254	6.00E+06	1.10E+06	0.0559	0.0029	0.447	0.020	0.0582	0.0017	-0.1790	450	55.0	110	374	7.0	14	365	5.5	11	97
OUJ10z41b	240.00	62.00	10.18	0.249	-8.10E+06	5.50E+06	0.0605	0.0035	0.512	0.029	0.0617	0.0019	0.0133	570	65.0	130	418	9.5	19	386	6.0	12	92
OUJ10z42c	41.40	7.60	2.21	-0.007	6.00E+05	2.80E+05	0.0592	0.0056	0.823	0.078	0.1017	0.0042	0.0956	570	105.0	210	598	22.5	45	624	12.5	25	104
OUJ10z42r	146.00	21.90	6.30	0.103	1.80E+06	1.70E+06	0.0602	0.0044	0.833	0.057	0.1002	0.0032	-0.0481	590	75.0	150	610	16.0	32	616	9.5	19	101
OUJ10z43	1332.00	69.30	12.10	0.051	6.30E+06	9.80E+06	0.0888	0.0009	2.723	0.039	0.2231	0.0065	0.7304	1405	9.0	18	1334	5.5	11	1298	17.0	34	97
OUJ10z44	207.00	128.40	30.90	0.635	4.00E+06	1.00E+06	0.0536	0.0034	0.616	0.041	0.0831	0.0024	0.1031	350	70.0	140	488	13.0	26	514	7.0	14	105
OUJ10z45	281.00	134.00	23.60	0.459	3.00E+06	2.00E+06	0.0597	0.0022	0.494	0.017	0.0607	0.0018	0.1243	584	42.0	84	407	5.5	11	380	5.5	11	93
OUJ10z46	229.00	275.00	70.50	1.192	-6.00E+05	9.40E+05	0.0645	0.0028	0.813	0.032	0.0922	0.0028	-0.1804	740	50.0	100	605	9.5	19	569	8.0	16	94
OUJ10z47	418.00	125.00	21.90	0.307	5.00E+06	1.10E+06	0.0565	0.0027	0.466	0.021	0.0613	0.0020	0.1563	450	55.0	110	387	7.5	15	383	6.0	12	99
OUJ10z49	250.60	154.70	145.30	0.612	1.40E+06	3.90E+06	0.1324	0.0020	6.438	0.088	0.3556	0.0100	0.1661	2092	17.0	34	2037	6.0	12	1961	24.5	49	96
OUJ10z51	444.00	299.00	51.10	0.653	-2.10E+06	1.50E+06	0.0570	0.0026	0.474	0.019	0.0616	0.0018	-0.0118	490	55.0	110	398	7.5	15	385	5.5	11	97
OUJ10z52	187.50	94.60	66.20	0.503	2.40E+06	2.30E+06	0.0960	0.0022	3.339	0.076	0.2574	0.0075	0.2756	1553	23.0	46	1489	9.0	18	1476	19.0	38	99
OUJ10z53	214.70	66.10	13.00	0.300	2.60E+06	1.50E+06	0.0555	0.0039	0.451	0.030	0.0603	0.0021	0.0153	390	80.0	160	379	11.0	22	378	6.5	13	100
OUJ10z54	228.00	163.00	27.20	0.691	8.20E+05	7.90E+05	0.0600	0.0043	0.466	0.036	0.0575	0.0020	0.4396	580	70.0	140	389	12.0	24	361	6.0	12	93
OUJ10z55c	850.00	514.00	583.00	0.602	-5.00E+07	1.60E+07	0.1643	0.0017	9.420	0.380	0.4240	0.0180	0.9707	2474	13.5	27	2371	20.0	40	2273	42.0	84	96
OUJ10z55r	348.00	5.10	0.93	0.008	-7.00E+06	4.10E+06	0.0698	0.0021	1.331	0.037	0.1405	0.0048	0.4300	927	30.0	60	863	8.0	16	847	13.5	27	98
OUJ10z57	312.20	741.00	184.70	2.388	-5.00E+06	1.90E+06	0.0606	0.0026	0.714	0.030	0.0883	0.0026	0.0854	610	45.5	91	548	9.0	18	545	7.5	15	100
OUJ10z58	71.70	73.00	21.10	0.833	-3.60E+05	6.40E+05	0.0660	0.0062	0.904	0.080	0.1001	0.0033	-0.2624	710	105.0	210	643	22.0	44	615	10.0	20	96
OUJ10z59	285.70	171.20	93.30	0.593	-6.00E+06	4.90E+06	0.0802	0.0022	2.112	0.070	0.1927	0.0060	0.5186	1198	27.0	54	1150	11.5	23	1136	16.5	33	99

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ10z60	69.30	72.20	22.80	1.044	2.50E+05	9.20E+05	0.0721	0.0075	0.947	0.098	0.0987	0.0036	0.3179	900	105.0	210	671	26.0	52	607	10.5	21	90
OUJ10z61	179.00	348.00	304.00	1.962	-3.70E+06	5.10E+06	0.1239	0.0027	5.460	0.130	0.3262	0.0096	0.2584	1983	22.0	44	1903	10.5	21	1820	23.0	46	96
OUJ10z62	256.00	271.00	267.00	1.050	-9.20E+06	9.90E+06	0.1335	0.0020	6.950	0.099	0.3819	0.0100	0.3033	2123	16.5	33	2107	6.5	13	2085	24.0	48	99
OUJ10z63	207.50	198.00	38.50	0.953	2.28E+06	7.70E+05	0.0528	0.0035	0.495	0.034	0.0674	0.0022	0.0334	340	80.0	160	405	11.5	23	421	7.0	14	104
OUJ10z64	123.70	90.90	65.00	0.725	-6.00E+06	4.70E+06	0.0921	0.0027	3.163	0.096	0.2521	0.0073	0.2870	1457	28.0	56	1445	11.5	23	1449	19.0	38	100
OUJ10z65	504.00	70.20	38.90	0.136	6.00E+07	1.80E+07	0.0761	0.0017	1.847	0.037	0.1759	0.0050	0.1573	1097	21.5	43	1062	6.5	13	1044	14.0	28	98
OUJ10z66	345.00	212.40	140.90	0.612	6.00E+07	1.40E+07	0.1005	0.0022	3.040	0.110	0.2205	0.0081	0.8129	1627	20.0	40	1413	14.5	29	1284	21.0	42	91
OUJ10z67	810.00	520.00	122.00	0.627	7.00E+07	1.50E+07	0.0670	0.0018	0.798	0.021	0.0883	0.0026	0.5584	835	27.0	54	595	6.0	12	546	8.0	16	92
OUJ10z68	349.00	231.00	56.40	0.681	3.00E+06	3.80E+06	0.0622	0.0031	0.762	0.052	0.0909	0.0058	0.6883	650	55.0	110	570	15.0	30	560	17.0	34	98
OUJ10z69	394.00	210.20	36.20	0.522	-3.10E+06	3.80E+06	0.0541	0.0018	0.448	0.015	0.0604	0.0017	0.4092	370	38.5	77	376	5.5	11	378	5.5	11	100
OUJ10z70	172.60	210.00	54.50	1.205	6.80E+06	4.90E+06	0.0652	0.0031	0.864	0.042	0.0978	0.0037	0.3656	780	47.0	94	633	12.0	24	601	11.0	22	95
OUJ10z71	258.00	40.90	18.10	0.157	4.60E+07	2.30E+07	0.0748	0.0022	1.674	0.047	0.1645	0.0048	0.3265	1062	29.0	58	997	9.0	18	982	13.0	26	98
OUJ10z72	158.00	89.10	82.10	0.559	-4.00E+07	1.30E+07	0.1388	0.0024	7.560	0.150	0.3954	0.0120	0.4128	2202	17.5	35	2179	9.0	18	2147	27.0	54	99
OUJ10z73	419.00	247.00	40.30	0.538	7.00E+07	1.00E+07	0.0522	0.0022	0.440	0.019	0.0610	0.0019	0.1555	271	47.0	94	369	6.5	13	382	6.0	12	103
OUJ10z74	151.10	139.50	38.10	0.896	5.90E+06	4.20E+06	0.0589	0.0034	0.726	0.040	0.0912	0.0028	0.1352	550	60.0	120	559	11.0	22	562	8.5	17	101
OUJ10z75	325.00	261.00	50.80	0.778	-9.00E+08	1.40E+08	0.0612	0.0022	0.587	0.020	0.0683	0.0035	0.4208	657	43.0	86	470	6.5	13	425	10.5	21	90
OUJ10z78	640.00	228.20	40.70	0.356	-2.20E+08	1.70E+08	0.0555	0.0021	0.461	0.016	0.0611	0.0017	-0.0327	422	41.0	82	384	5.5	11	382	5.0	10	100
OUJ10z79	266.80	495.00	146.60	1.828	2.60E+07	4.80E+07	0.0655	0.0028	0.894	0.041	0.1007	0.0030	0.3906	771	46.0	92	652	11.0	22	618	8.5	17	95
OUJ10z80	191.50	345.00	105.00	1.812	4.40E+07	5.70E+07	0.0616	0.0036	0.887	0.047	0.1043	0.0031	-0.1673	620	65.0	130	645	12.5	25	639	9.0	18	99
OUJ10z81	619.00	280.00	48.10	0.450	1.70E+08	2.10E+08	0.0521	0.0020	0.437	0.015	0.0615	0.0018	0.2739	295	41.5	83	368	5.5	11	385	5.5	11	105
OUJ10z82	126.50	130.00	41.90	0.935	2.80E+07	2.00E+07	0.0616	0.0042	0.797	0.051	0.0945	0.0031	-0.1438	670	70.0	140	596	14.0	28	582	9.0	18	98
OUJ10z86	171.10	85.60	62.00	0.501	2.00E+07	2.00E+07	0.0970	0.0029	3.474	0.096	0.2617	0.0076	0.0851	1563	29.5	59	1522	10.5	21	1498	19.5	39	98
OUJ10z87	866.00	191.00	24.70	0.219	5.00E+06	8.10E+06	0.0575	0.0018	0.415	0.013	0.0528	0.0015	0.1271	507	32.0	64	354	4.5	9	331	4.6	9	94
OUJ10z88	411.00	332.00	95.10	0.791	1.80E+06	6.60E+06	0.0680	0.0022	0.959	0.031	0.1040	0.0035	0.4342	862	31.5	63	681	8.0	16	638	10.0	20	94
OUJ10z89	400.00	236.20	208.80	0.589	1.50E+07	2.60E+07	0.1276	0.0018	6.070	0.120	0.3484	0.0100	0.7916	2084	16.5	33	1987	9.5	19	1927	24.5	49	97
OUJ10z90	866.00	143.70	25.50	0.162	-1.90E+07	2.10E+07	0.0644	0.0018	0.796	0.027	0.0906	0.0032	0.6047	758	30.0	60	596	8.0	16	559	9.5	19	94
OUJ10z91	192.60	105.40	92.30	0.549	6.00E+07	1.10E+07	0.1129	0.0028	5.040	0.110	0.3248	0.0094	0.2398	1866	25.0	50	1824	9.5	19	1813	23.0	46	99
OUJ10z92	432.30	50.70	14.50	0.112	-9.00E+06	5.50E+06	0.0630	0.0018	0.834	0.026	0.0971	0.0028	0.1948	705	30.5	61	617	7.0	14	597	8.0	16	97
OUJ10z93	96.00	116.60	1326.00	1.229	8.00E+03	2.50E+05	0.1588	0.0030	9.810	0.430	0.4447	0.0084	0.5186	2443	16.0	32	2417	20.2	40	2372	18.7	37	98
OUJ10z94	356.00	168.90	292.00	0.473	-1.30E+05	2.40E+05	0.0537	0.0032	0.453	0.025	0.0604	0.0012	0.2529	358	67.2	134	379	8.7	17	378	3.6	7	100
OUJ10z95	115.00	203.00	596.00	1.840	7.00E+05	1.10E+05	0.0643	0.0047	0.932	0.062	0.1052	0.0022	0.0680	752	77.2	154	669	16.3	33	645	6.4	13	96
OUJ10z96	36.80	26.70	76.90	0.728	1.30E+04	2.30E+04	0.0578	0.0070	0.760	0.085	0.0966	0.0034	0.0991	522	132.8	266	574	24.5	49	594	10.0	20	104
OUJ10z97	166.20	216.60	2800.00	1.307	1.70E+06	1.30E+06	0.1940	0.0026	13.420	0.570	0.5021	0.0093	0.6260	2776	11.0	22	2710	20.1	40	2623	20.0	40	97
OUJ10z98	21.52	22.80	69.40	1.070	1.40E+04	1.50E+04	0.0602	0.0082	0.850	0.110	0.1053	0.0036	0.0522	611	147.2	294	625	30.2	60	645	10.5	21	103
OUJ10z99	249.00	150.10	383.00	0.606	3.00E+05	1.50E+05	0.0598	0.0037	0.687	0.038	0.0834	0.0016	0.1148	596	67.0	134	531	11.4	23	516	4.8	10	97
OUJ10z100	96.30	63.30	504.00	0.657	1.30E+05	2.00E+05	0.1070	0.0027	4.470	0.210	0.3005	0.0058	0.3333	1749	23.1	46	1725	19.5	39	1694	14.4	29	98
OUJ10z101	217.00	32.70	308.00	0.156	3.20E+06	2.10E+06	0.1249	0.0021	6.350	0.270	0.3657	0.0064	0.5166	2027	14.9	30	2025	18.6	37	2009	15.1	30	99
OUJ10z103	43.89	36.50	94.60	0.801	3.60E+04	3.50E+04	0.0621	0.0071	0.858	0.094	0.1009	0.0037	0.0880	678	122.2	244	629	25.7	51	620	10.8	22	99
OUJ10z104	177.80	104.60	1010.00	0.583	-8.00E+05	2.70E+05	0.1267	0.0020	6.370	0.280	0.3638	0.0066	0.5148	2053	13.9	28	2028	19.3	39	2000	15.6	31	99
OUJ10z105	39.50	28.89	85.70	0.727	2.50E+04	2.80E+04	0.0567	0.0059	0.875	0.087	0.1087	0.0035	0.2146	480	115.0	230	638	23.5	47	665	10.2	20	104
OUJ10z106	37.50	56.90	476.00	1.515	5.00E+04	7.10E+04	0.1067	0.0041	4.790	0.280	0.3184	0.0080	0.3595	1744	35.2	70	1783	24.5	49	1782	19.6	39	100
OUJ10z107	358.00	87.30	742.00	0.242	-7.00E+05	7.50E+05	0.1244	0.0016	6.127	0.260	0.3546	0.0061	0.6394	2020	11.4	23	1994	18.5	37	1957	14.5	29	98
OUJ10z108	95.00	287.00	477.00	3.003	-9.00E+04	4.00E+04	0.0624	0.0059	0.556	0.052	0.0674	0.0031	0.3456	688	100.9	202	449	17.0	34	420	9.4	19	94
OUJ10z109	147.60	294.00	830.00	1.996	-4.20E+05	3.20E+05	0.0604	0.0040	0.856	0.051	0.1031	0.0021	0.1699	618	71.5	143	628	13.9	28	633	6.1	12	101
OUJ10z110	339.00	236.00	2095.00	0.694	1.38E+06	9.10E+05	0.1338	0.0018	6.355	0.270	0.3412	0.0056	0.4745	2148	11.7	23	2026	18.6	37	1892	13.5	27	93
OUJ10z111	232.00	124.10	1192.00	0.525	6.00E+05	3.40E+05	0.1236	0.0019	6.330	0.270	0.3653	0.0064	0.4448	2009	13.6	27	2023	18.7	37	2007	15.1	30	99
OUJ10z112	218.40	65.60	568.00	0.300	-1.50E+05	3.60E+05	0.1192	0.0017	5.561	0.230	0.3360	0.0055	0.3576	1944	12.7	25	1910	17.8	36	1867	13.3	27	98
OUJ10z113	183.00	264.00	744.00	1.374	-4.60E+06	2.60E+06	0.0608	0.0037	0.830	0.046	0.0993	0.0020	0.1834	632	65.5	131	614	12.8	26	610	5.9	12	99
OUJ10z114	203.30	553.00	1630.00	2.716	-8.00E+05	1.60E+05	0.0621	0.0035	0.917	0.047	0.1070	0.0019	0.1376	678	60.2	120	661	12.4	25	655	5.5	11	99
OUJ10z115c	67.20	33.55	330.80	0.501	-6.00E+05	1.30E+05	0.1273	0.0033	6.060	0.280	0.3399	0.0068	0.2586	2061	22.9	46	1985	20.1	40	1886	16.4	33	95
OUJ10z115r	450.90	102.60	174.10	0.229	2.10E+05	1.30E+05	0.0586	0.0032	0.492	0.026	0.0608	0.0013	0.6485	552	59.6	119	406	8.8	18	380	4.0	8	94
OUJ10z116	228.30	255.30	632.00	1.129	2.30E+04	7.00E+04	0.0628	0.0041	0.736	0.043	0.0861	0.0019	0.0110	701	69.5	139	560	12.6	25	532	5.6	11	95
OUJ10z117	202.70	470.00	1273.00	2.326	2.90E+05	1.30E+05	0.0598	0.0035	0.812	0.044	0.0962	0.0019	0.2830	596	63.4	127	604	12.3	25	592	5.6	11	98
OUJ10z118	126.20	77.80	391.00	0.620	-5.00E+05	2.00E+05	0.0856	0.0046	2.399	0.120	0.2042	0.0041	0.3557	1329	52.0	104	1242	17.9	36	1198	11.0	22	96
OUJ10z119	67.30	62.40	533.00	0.941	1.20E+05	1.40E+05	0.1167	0.0039	5.330	0.270	0.3315	0.0064	0.2526	1906	30.0	60	1874	21.6	43	1846	15.5	31	99
OUJ10z120	204.00	208.00	340.00	1.010	-7.10E+04	9.00E+04	0.0530	0.0034	0.445	0.027	0.0605	0.0012	0.1148	329	72.8	146	374	9.5	19	378	3.6	7	101
OUJ10z121	86.00	120.70	353.00	1.427	-2.80E+05	1.50E+05	0.0652	0.0045	0.920	0.057	0.1039	0.0021	0.2115	781	72.5	145	662	15.1	30	637	6.1	12	96
OUJ10z122	274.00	601.00	4380.00	2.173	2.00E+05	3.50E+05	0.1039	0.0021	3.773	0.170	0.2623	0.0043	0.3375	1695	18.6	37	1587	18.1	36	1502	11.0	22	95
OUJ10z123	363.20	160.40	281.70	0.443	2.00E+05	1.40E+05	0.0531	0.0033	0.445	0.026	0.0608	0.0012	0.2021	333	70.5	141	374	9.1	18	380	3.6	7	102
OUJ10z124	315.00	150.20	254.00	0.473	1.40E+05	2.00E+05	0.0533	0.0033	0.446	0.024	0.0603	0.0012	0.0062	342	70.1	140	374	8.4	17	377	3.6	7	101
OUJ10z125	67.60	157.50	448.00	2.319	1.03E+05	6.40E+04	0.0594	0.0048	0.820	0.063	0.1007	0.0027	0.0903	582	87.7	175	608	17.6	35	619	7.9	16	102
OUJ10z126	337.10	224.40	642.00	0.662	4.00E+05	1.40E+05	0.0591	0.0032	0.832	0.040	0.1015	0.0018	0.1870	571	58.9	118	615	11.1	22	623	5.3	11	101
OUJ10z127	402.00	399.00	991.00	0.983	-2.00E+05	5.00E+05	0.0574	0.0032	0.693	0.034	0.0875	0.0016	0.2035	507	61.3	123	535	10.2	20	541	4.7	9	101
OUJ10z128	24.81	46.40	431.00	1.890	-6.00E+04	4.70E+04	0.1303	0.0059	6.200	0.370	0.3525	0.0110	0.4430	2102	39.8	80	2004	26.1	52	1947	26.2	52	97
OUJ10z129	62.30	44.60	120.40	0.708	9.00E+04	2.30E+04	0.0587	0.0056	0.803	0.072	0.0997	0.0022	-0.1026	556	104.0	208	599	20.3	41	613	6.4	13	102
OUJ10z130	99.40	103.20	270.00	1.045	-4.80E+04	5.70E+04	0.0558	0.0046	0.685	0.055	0.0876	0.0021	0.0014	444	91.6	183	530	16.6	33	541	6.2	12	102
OUJ10z131	97.60	91.60	273.10	0.943	7.00E+04	4.40E+04	0.0609	0.0047	0.842	0.061	0.1000	0.0024	0.0963	636	83.0	166	620	16.8	34	614	7.0	14	99

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ10z132	190.80	265.00	769.00	1.274	2.60E+04	8.40E+04	0.0626	0.0037	0.906	0.049	0.1049	0.0021	0.1555	695	63.0	126	655	13.0	26	643	6.1	12	98
OUJ10z133	71.40	50.40	186.70	0.706	-2.00E+04	3.60E+04	0.0661	0.0054	1.172	0.089	0.1303	0.0030	0.0305	810	85.5	171	788	20.8	42	790	8.6	17	100
OUJ10z134	95.20	286.00	793.00	2.967	-3.00E+05	2.60E+05	0.0625	0.0045	0.854	0.056	0.0983	0.0021	0.1933	691	76.8	154	627	15.3	31	604	6.2	12	96
OUJ10z135	100.20	87.50	886.00	0.859	-1.60E+05	1.80E+05	0.1346	0.0027	7.080	0.330	0.3775	0.0080	0.5283	2159	17.5	35	2122	20.7	41	2065	18.7	37	97
OUJ10z136	135.20	81.70	832.00	0.601	-1.40E+05	2.10E+05	0.1324	0.0025	7.210	0.320	0.3907	0.0074	0.4152	2130	16.5	33	2138	19.8	40	2126	17.2	34	99
OUJ10z137	376.00	172.00	279.00	0.457	2.20E+05	1.60E+05	0.0537	0.0034	0.439	0.025	0.0586	0.0011	0.0712	358	71.5	143	370	8.8	18	367	3.3	7	99
OUJ10z138	173.40	86.90	622.00	0.502	1.49E+06	6.90E+05	0.0966	0.0050	3.481	0.150	0.2605	0.0047	0.0888	1559	48.5	97	1523	17.0	34	1492	12.0	24	98
OUJ10z139	526.00	67.70	117.70	0.128	3.80E+05	2.50E+05	0.0540	0.0030	0.447	0.021	0.0601	0.0011	0.1294	371	62.6	125	375	7.4	15	376	3.3	7	100
OUJ10z140	276.50	470.70	1351.00	1.701	-1.00E+03	1.60E+05	0.0607	0.0033	0.842	0.041	0.0996	0.0018	0.0347	629	58.6	117	620	11.3	23	612	5.3	11	99
OUJ10z141	226.00	158.50	665.00	0.704	8.00E+05	1.30E+05	0.0705	0.0038	1.538	0.073	0.1580	0.0029	0.1891	943	55.2	110	946	14.6	29	946	8.1	16	100
OUJ10z143	93.10	75.80	345.00	0.812	-7.00E+04	5.00E+04	0.0734	0.0047	1.659	0.096	0.1637	0.0037	0.1738	1025	64.8	130	993	18.3	37	977	10.2	20	98
OUJ10z144	765.00	322.00	785.00	0.422	-2.00E+06	1.20E+06	0.0624	0.0033	0.796	0.036	0.0929	0.0018	0.0662	688	56.4	113	595	10.2	20	573	5.3	11	96
OUJ10z145	218.60	106.10	181.10	0.492	0.00E+00	4.70E+04	0.0552	0.0035	0.445	0.026	0.0589	0.0013	0.0941	420	70.8	142	374	9.1	18	369	4.0	8	99
OUJ10z146	465.00	236.90	405.00	0.510	-2.00E+05	1.70E+05	0.0519	0.0030	0.428	0.022	0.0598	0.0011	0.1584	281	66.1	132	362	7.8	16	374	3.3	7	103
OUJ10z147	284.00	145.20	804.00	0.511	8.00E+05	2.80E+05	0.0805	0.0041	2.252	0.100	0.2037	0.0036	0.2408	1209	50.1	100	1197	15.6	31	1195	9.6	19	100
OUJ10z148	222.00	90.90	427.00	0.410	-8.90E+05	4.90E+05	0.0811	0.0042	2.086	0.095	0.1865	0.0032	0.3562	1224	50.9	102	1144	15.6	31	1102	8.7	17	96
OUJ10z150	42.46	80.90	931.00	1.890	1.21E+05	7.90E+04	0.1691	0.0037	10.450	0.510	0.4446	0.0086	0.5051	2549	18.3	37	2475	22.6	45	2371	19.2	38	96
OUJ10z151	31.50	77.50	640.00	2.450	6.40E+04	6.20E+04	0.1076	0.0042	4.600	0.270	0.3078	0.0071	0.2766	1759	35.7	71	1749	24.5	49	1730	17.5	35	99
OUJ10z152	25.88	56.50	160.00	2.196	3.90E+04	2.10E+04	0.0723	0.0087	1.000	0.120	0.1037	0.0031	0.1977	994	122.3	245	704	30.4	61	636	9.1	18	90
OUJ10z153	672.00	188.00	295.00	0.272	1.80E+05	2.40E+05	0.0564	0.0031	0.442	0.022	0.0570	0.0010	0.1166	468	60.9	122	372	7.7	15	358	3.0	6	96
OUJ10z155	286.90	92.60	310.00	0.322	6.00E+05	1.50E+05	0.0622	0.0035	0.914	0.043	0.1048	0.0020	0.0087	681	60.1	120	659	11.4	23	642	5.8	12	97
OUJ10z156	279.90	212.30	1368.00	0.751	-3.10E+05	2.40E+05	0.0879	0.0045	2.911	0.130	0.2409	0.0040	0.1503	1380	49.2	98	1385	16.9	34	1391	10.4	21	100
OUJ10z157	132.10	57.80	570.00	0.437	-1.40E+05	2.80E+05	0.1283	0.0025	6.700	0.290	0.3801	0.0067	0.4214	2075	17.2	34	2073	19.1	38	2077	15.6	31	100
OUJ10z158	116.00	174.00	1480.00	1.484	3.70E+05	2.40E+05	0.1273	0.0024	5.740	0.270	0.3274	0.0069	0.6311	2061	16.6	33	1937	20.3	41	1826	16.8	34	94
OUJ10z159	323.00	277.00	789.00	0.847	4.00E+05	1.70E+05	0.0662	0.0038	0.864	0.046	0.0951	0.0023	0.3496	813	60.0	120	632	12.5	25	586	6.8	14	93
OUJ10z160	351.00	137.10	635.00	0.387	-7.00E+05	3.50E+05	0.0740	0.0037	1.797	0.079	0.1769	0.0034	0.2717	1041	50.5	101	1044	14.3	29	1050	9.3	19	101
OUJ10z161	403.00	119.50	877.00	0.297	-1.00E+05	6.10E+05	0.1249	0.0016	5.490	0.250	0.3165	0.0084	0.8699	2027	11.3	23	1899	19.5	39	1773	20.6	41	93
OUJ10z162	284.00	372.00	935.00	1.297	2.30E+05	1.70E+05	0.0588	0.0034	0.734	0.038	0.0910	0.0018	0.0496	560	63.0	126	559	11.1	22	561	5.3	11	100
OUJ10z163	113.20	122.40	373.00	1.079	-3.80E+05	2.00E+05	0.0626	0.0045	0.918	0.064	0.1066	0.0024	0.1681	695	76.6	153	661	16.9	34	653	7.0	14	99
OUJ10z164	470.00	235.00	856.00	0.465	2.80E+06	2.30E+06	0.0709	0.0038	1.061	0.057	0.1106	0.0025	0.5363	955	54.8	110	734	14.0	28	676	7.3	15	92
OUJ10z165	267.00	200.00	355.00	0.741	-7.70E+04	7.60E+04	0.0583	0.0040	0.490	0.031	0.0605	0.0012	0.0774	541	75.0	150	405	10.6	21	379	3.6	7	94
OUJ10z167c	250.00	58.70	187.00	0.233	1.90E+05	1.60E+05	0.0643	0.0037	0.901	0.048	0.1023	0.0020	0.3622	752	60.8	122	652	12.8	26	628	5.8	12	96
OUJ10z167r	79.00	32.50	105.10	0.417	4.40E+04	4.20E+04	0.0653	0.0057	0.913	0.076	0.1006	0.0026	0.1889	784	91.7	183	659	20.2	40	618	7.6	15	94
OUJ10z168	212.30	80.10	1011.00	0.380	9.40E+05	6.00E+05	0.1712	0.0021	10.660	0.450	0.4445	0.0078	0.5930	2569	10.3	21	2494	19.6	39	2371	17.4	35	95
OUJ10z169	159.80	201.90	579.00	1.252	1.20E+05	1.30E+05	0.0627	0.0044	0.897	0.058	0.1035	0.0021	0.0840	698	74.7	149	650	15.5	31	635	6.1	12	98
OUJ10z170	58.90	44.42	213.20	0.750	-8.00E+04	4.90E+04	0.0721	0.0058	1.630	0.120	0.1663	0.0044	0.3167	989	81.8	164	982	23.1	46	992	12.2	24	101
OUJ10z171	40.50	73.70	698.00	1.815	-4.50E+04	8.30E+04	0.1209	0.0048	6.120	0.310	0.3646	0.0095	-0.0296	1970	35.4	71	1993	22.1	44	2004	22.4	45	101
OUJ10z172	386.00	273.80	521.00	0.715	-1.00E+05	1.50E+05	0.0606	0.0039	0.514	0.029	0.0617	0.0012	-0.1524	625	69.4	139	421	9.7	19	386	3.6	7	92
OUJ10z173	57.90	59.90	496.00	1.052	3.70E+04	9.90E+04	0.1107	0.0036	4.960	0.260	0.3152	0.0070	0.4716	1811	29.5	59	1813	22.1	44	1766	17.2	34	97
OUJ10z174	377.00	356.00	1029.00	0.946	-4.70E+06	3.40E+06	0.0627	0.0035	0.860	0.042	0.1000	0.0018	0.0802	698	59.5	119	630	11.5	23	614	5.3	11	98
OUJ10z175	359.80	114.00	294.00	0.319	5.80E+05	3.70E+05	0.0605	0.0035	0.721	0.039	0.0871	0.0015	0.2753	622	62.4	125	551	11.5	23	538	4.4	9	98
OUJ10z176	70.80	120.70	872.00	1.699	1.40E+05	1.20E+05	0.0958	0.0033	3.640	0.190	0.2708	0.0061	0.1724	1544	32.4	65	1558	20.8	42	1545	15.5	31	99
OUJ10z177	117.50	94.60	1112.00	0.806	5.20E+05	3.50E+05	0.1821	0.0031	11.800	0.520	0.4686	0.0096	0.6650	2672	14.1	28	2589	20.6	41	2477	21.1	42	96
OUJ10z178	680.00	123.90	204.50	0.188	-1.40E+05	1.60E+05	0.0580	0.0033	0.405	0.020	0.0509	0.0010	0.0862	530	62.3	125	345	7.2	14	320	2.9	6	93
OUJ10z179	159.60	57.90	147.50	0.360	7.70E+04	9.60E+04	0.0574	0.0045	0.725	0.053	0.0914	0.0020	0.1792	507	86.2	172	554	15.6	31	564	5.9	12	102
OUJ10z181	87.20	108.60	308.70	1.245	2.00E+04	3.00E+04	0.0673	0.0055	0.924	0.067	0.1003	0.0024	0.0028	847	85.0	170	664	17.7	35	616	7.0	14	93
OUJ10z183	118.90	147.40	454.00	1.235	-1.70E+05	1.10E+05	0.0657	0.0046	0.967	0.064	0.1046	0.0022	0.0337	797	73.4	147	687	16.5	33	641	6.4	13	93
OUJ10z184	163.30	166.70	443.00	1.022	3.00E+04	7.20E+04	0.0595	0.0039	0.780	0.047	0.0953	0.0017	0.1874	585	71.1	142	585	13.4	27	587	5.0	10	100
OUJ10z185	102.90	180.20	506.00	1.753	7.80E+04	3.70E+04	0.0606	0.0049	0.820	0.060	0.0991	0.0022	-0.2300	625	87.2	174	608	16.7	33	609	6.5	13	100
OUJ10z186	518.00	230.00	1255.00	0.449	6.00E+05	4.50E+05	0.0806	0.0040	2.200	0.095	0.1970	0.0033	0.2947	1212	48.8	98	1181	15.1	30	1159	8.9	18	98
OUJ10z188	212.10	59.50	388.00	0.278	2.00E+05	3.30E+05	0.1402	0.0021	6.544	0.280	0.3370	0.0056	0.4046	2230	13.0	26	2052	18.8	38	1872	13.5	27	91
OUJ10z189	190.60	255.50	628.00	1.332	2.10E+05	2.10E+05	0.0559	0.0035	0.694	0.040	0.0892	0.0018	0.1342	448	69.6	139	535	12.0	24	551	5.3	11	103
OUJ10z190	186.30	134.10	393.00	0.716	-1.66E+06	8.00E+05	0.0626	0.0041	0.940	0.055	0.1087	0.0021	0.1839	695	69.8	140	673	14.4	29	665	6.1	12	99
Discordant data																							
OUJ10z2	1000.00	801.00	90.80	0.789	1.20E+06	1.40E+06	0.0696	0.0021	0.497	0.016	0.0513	0.0018	0.3902	914	30.5	61	410	5.5	11	323	5.5	11	79
OUJ10z16	278.70	201.00	56.40	0.671	-1.20E+06	1.90E+06	0.0710	0.0029	0.990	0.040	0.1016	0.0033	0.2514	943	45.0	90	700	10.5	21	624	9.5	19	89
OUJ10z31a	193.00	78.70	186.00	0.418	2.10E+05	1.50E+05	0.3940	0.0470	5.800	1.000	0.1049	0.0098	0.9764	3920	110.0	220	1870	105.0	210	641	28.5	57	34
OUJ10z31b	272.40	111.20	22.30	0.405	-2.60E+06	3.50E+06	0.0634	0.0037	0.541	0.034	0.0614	0.0019	0.2876	690	65.0	130	436	11.0	22	384	6.0	12	88
OUJ10z48	346.00	158.10	121.00	0.460	3.50E+06	2.50E+06	0.1276	0.0020	3.770	0.340	0.2240	0.0230	0.9813	2072	14.0	28	1585	37.0	74	1310	60.0	120	83
OUJ10z50	604.00	89.00	22.00	0.142	2.00E+06	7.30E+06	0.1390	0.0018	5.474	0.085	0.2867	0.0083	0.6505	2184	15.5	31	1898	7.0	14	1625	21.0	42	86
OUJ10z56	665.00	505.00	290.00	0.752	-1.40E+06	8.10E+06	0.0988	0.0016	2.841	0.050	0.2088	0.0070	0.7081	1596	15.0	30	1366	6.5	13	1222	18.5	37	89
OUJ10z76	1070.00	213.00	19.30	0.192	-7.00E+08	1.40E+08	0.0796	0.0031	0.793	0.044	0.0749	0.0027	0.9020	1188	41.5	83	600	12.5	25	466	8.0	16	78
OUJ10z77	435.00	120.00	21.70	0.246	8.70E+07	6.40E+07	0.0660	0.0046	0.468	0.039	0.0519	0.0023	0.5032	800	70.0	140	386	13.5	27	328	7.0	14	85
OUJ10z83	778.00	324.00	298.00	0.415	-3.00E+08	1.80E+08	0.1951	0.0018	11.230	0.130	0.4204	0.0120	0.6436	2797	12.0	24	2541	5.5	11	2262	28.0	56	89
OUJ10z84	1001.00	694.00	56.20	0.693	-1.40E+07	1.10E+07	0.0709	0.0024	0.359	0.019	0.0367	0.0021	0.6959	961	36.0	72	310	7.0	14	232	6.5	13	75
OUJ10z85	360.00	245.00	123.70	0.677	-2.80E+07	2.80E+07	0.1303	0.0019	4.610	0.100	0.2610	0.0082	0.8127	2099	12.5	25	1748	9.5	19	1495	21.0	42	86
OUJ10z102	655.00	321.80	935.00	0.481	-2.00E+05	4.30E+05	0.1062	0.0053	2.264	0.130	0.1549	0.0062	0.9162	1735	45.8	92	1201	20.2	40	928	17.3	35	77

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ10z142	671.00	457.00	3759.00	0.686	-4.30E+05	8.50E+05	0.1839	0.0019	8.598	0.350	0.3374	0.0059	0.6432	2688	8.5	17	2296	18.5	37	1874	14.2	28	82
OUJ10z149	43.40	88.80	229.00	2.038	2.20E+04	3.10E+04	0.0723	0.0071	0.955	0.086	0.0957	0.0029	0.1359	994	99.8	200	681	22.3	45	589	8.5	17	87
OUJ10z154	129.10	137.30	1120.00	1.063	-1.80E+04	1.90E+04	0.1880	0.0360	3.210	0.760	0.1180	0.0069	0.9664	2725	157.7	315	1460	91.6	183	719	19.9	40	49
OUJ10z166	684.00	127.90	486.00	0.189	-3.40E+05	3.00E+05	0.1239	0.0061	3.010	0.140	0.1753	0.0049	0.8604	2013	43.7	87	1410	17.7	35	1041	13.4	27	74
OUJ10z180	3010.00	660.00	3350.00	0.236	-4.00E+05	2.30E+05	0.1277	0.0062	1.673	0.070	0.0956	0.0018	0.7726	2067	42.8	86	998	13.3	27	589	5.3	11	59
OUJ10z182	30.40	34.80	102.60	1.164	5.00E+04	1.50E+04	0.0734	0.0086	1.060	0.120	0.1044	0.0044	0.1672	1025	118.5	237	734	29.5	59	640	12.8	26	87
OUJ10z187	696.00	308.40	598.00	0.445	2.50E+06	1.60E+06	0.0648	0.0036	0.589	0.029	0.0661	0.0014	0.3258	768	58.5	117	470	9.3	19	413	4.2	8	88

Footnotes:

- Analysis references: OUJ10z is zircon from sample OUJ10 (mounts CT17-9 and CT18-5), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.33: Sample OUJ11 (LA-ICPMS)

IGSN: IEACC0002 Coordinate UTM: Zone 30S, 536550 m E, 3764944 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ11z1	455.00	261.00	46.50	0.573	-4.00E+04	4.20E+06	0.0533	0.0025	0.449	0.021	0.0620	0.0018	0.1873	340	50.0	100	375	7.5	15	388	5.5	11	103
OUJ11z2	284.00	77.70	12.59	0.271	3.00E+06	5.20E+06	0.0560	0.0024	0.452	0.021	0.0594	0.0017	0.1276	425	47.0	94	377	7.5	15	372	5.5	11	99
OUJ11z4	753.00	88.10	15.80	0.111	2.20E+06	3.80E+06	0.0546	0.0017	0.464	0.013	0.0616	0.0019	0.0882	389	36.5	73	387	4.6	9	385	5.5	11	100
OUJ11z5	85.40	98.30	30.90	1.124	-6.00E+06	1.20E+06	0.0631	0.0048	0.955	0.071	0.1089	0.0038	-0.1200	650	80.0	160	679	17.5	35	668	10.5	21	98
OUJ11z6	798.00	152.00	35.80	0.186	-5.30E+06	4.10E+06	0.0614	0.0023	0.498	0.018	0.0591	0.0017	0.1963	640	39.5	79	410	6.0	12	370	5.0	10	90
OUJ11z7	583.00	807.00	822.10	1.371	-2.11E+07	6.80E+06	0.1344	0.0012	6.878	0.071	0.3717	0.0100	0.5513	2187	13.0	26	2097	4.4	9	2037	24.5	49	97
OUJ11z8c	72.50	65.00	18.25	0.914	-4.90E+05	6.90E+05	0.0594	0.0049	0.772	0.059	0.0947	0.0032	-0.0905	520	85.0	170	575	17.0	34	583	9.5	19	101
OUJ11z8r	48.10	38.30	10.54	0.787	-4.20E+05	2.80E+05	0.0636	0.0060	0.822	0.084	0.0931	0.0036	0.3875	680	100.0	200	605	24.5	49	574	10.5	21	95
OUJ11z9	172.00	103.90	18.70	0.601	-7.00E+06	1.50E+06	0.0534	0.0052	0.429	0.039	0.0600	0.0021	-0.0153	250	100.0	200	366	14.5	29	376	6.5	13	103
OUJ11z10	55.00	31.00	22.10	0.544	9.00E+06	1.50E+06	0.1003	0.0045	3.710	0.170	0.2666	0.0081	0.1359	1648	45.0	90	1566	18.5	37	1523	20.5	41	97
OUJ11z11c	221.20	282.40	232.50	1.263	2.30E+06	3.40E+06	0.1114	0.0021	4.690	0.095	0.3038	0.0086	0.3970	1849	20.0	40	1764	8.5	17	1710	21.5	43	97
OUJ11z11r	591.00	49.00	8.49	0.082	-2.60E+06	4.20E+06	0.0547	0.0019	0.443	0.014	0.0593	0.0017	0.0668	381	39.0	78	375	5.0	10	371	5.0	10	99
OUJ11z12	128.70	157.90	40.40	1.205	-8.20E+05	8.20E+05	0.0621	0.0044	0.790	0.051	0.0926	0.0030	-0.1231	680	75.0	150	597	15.5	31	571	9.0	18	96
OUJ11z13c	374.80	132.80	23.04	0.345	-6.10E+05	9.70E+05	0.0541	0.0026	0.443	0.020	0.0599	0.0018	-0.0035	360	50.0	100	371	7.0	14	375	5.5	11	101
OUJ11z13r	434.00	141.30	24.60	0.324	7.50E+06	5.60E+06	0.0533	0.0030	0.444	0.025	0.0603	0.0017	-0.0996	340	65.0	130	371	9.0	18	377	5.0	10	102
OUJ11z14	516.00	88.20	15.34	0.168	-7.00E+06	2.80E+06	0.0543	0.0022	0.464	0.019	0.0626	0.0018	-0.0372	356	46.0	92	386	6.5	13	392	5.5	11	101
OUJ11z15c	33.50	28.70	25.18	0.855	1.20E+06	1.30E+06	0.1149	0.0056	5.170	0.210	0.3255	0.0110	-0.0498	1930	42.5	85	1846	17.5	35	1816	27.5	55	98
OUJ11z15c	190.00	49.70	8.76	0.267	-2.30E+05	4.30E+05	0.0588	0.0037	0.543	0.037	0.0660	0.0021	0.2322	550	75.0	150	437	12.0	24	412	6.5	13	94
OUJ11z17c	609.00	268.00	72.50	0.437	-2.40E+07	2.80E+07	0.0583	0.0019	0.768	0.026	0.0952	0.0027	0.2607	539	32.5	65	580	7.5	15	586	8.0	16	101
OUJ11z17r	79.50	40.00	10.33	0.506	-1.11E+06	9.60E+05	0.0626	0.0048	0.816	0.065	0.0941	0.0033	0.3307	610	85.0	170	598	18.5	37	580	9.5	19	97
OUJ11z18c	148.00	114.00	59.00	0.685	-7.90E+06	4.90E+06	0.0753	0.0019	1.986	0.068	0.1894	0.0059	0.6205	1078	23.0	46	1108	11.5	23	1118	16.0	32	101
OUJ11z18r	97.20	61.70	35.60	0.639	5.00E+05	6.30E+05	0.0800	0.0030	2.249	0.086	0.2031	0.0063	0.3371	1199	37.5	75	1192	13.5	27	1191	17.0	34	100
OUJ11z19	330.00	189.00	47.40	0.543	-1.60E+06	2.80E+06	0.0564	0.0026	0.677	0.035	0.0869	0.0027	0.3543	430	50.0	100	529	10.0	20	537	8.0	16	102
OUJ11z20	255.00	111.50	19.50	0.442	-5.00E+05	8.30E+05	0.0569	0.0032	0.468	0.023	0.0616	0.0019	-0.0489	460	65.0	130	395	8.0	16	385	6.0	12	98
OUJ11z21	250.90	326.00	97.80	1.306	-6.00E+06	1.40E+06	0.0582	0.0024	0.840	0.035	0.1048	0.0031	0.1811	537	42.5	85	617	9.5	19	642	9.0	18	104
OUJ11z22	123.90	88.90	31.70	0.709	1.90E+05	9.90E+05	0.0621	0.0030	1.050	0.050	0.1228	0.0039	0.2857	690	50.0	100	734	11.5	23	747	11.0	22	102
OUJ11z23	149.70	42.40	20.22	0.282	1.60E+06	1.30E+06	0.0743	0.0025	1.752	0.058	0.1693	0.0049	0.1793	1033	34.0	68	1029	10.0	20	1008	13.5	27	98
OUJ11z24	75.80	90.10	27.20	1.175	4.50E+05	2.60E+05	0.0583	0.0053	0.828	0.075	0.1039	0.0038	0.0117	500	95.0	190	609	21.0	42	637	11.0	22	105
OUJ11z25	360.20	139.30	23.70	0.378	1.70E+05	7.10E+05	0.0513	0.0026	0.418	0.020	0.0588	0.0017	-0.0796	230	55.0	110	354	7.0	14	368	5.5	11	104
OUJ11z26	431.30	98.40	17.00	0.224	5.20E+06	4.20E+06	0.0547	0.0026	0.446	0.021	0.0592	0.0017	0.2825	400	50.0	100	373	7.5	15	371	5.5	11	99
OUJ11z27	220.00	75.30	13.40	0.337	-3.00E+05	7.20E+05	0.0553	0.0035	0.456	0.027	0.0614	0.0019	0.2261	390	65.0	130	380	9.5	19	384	5.5	11	101
OUJ11z28r	109.80	56.70	15.54	0.518	5.00E+05	5.10E+05	0.0575	0.0044	0.733	0.054	0.0928	0.0032	0.0769	480	80.0	160	553	16.0	32	572	9.5	19	103
OUJ11z29	427.00	50.90	10.58	0.118	-7.80E+06	4.70E+06	0.0573	0.0028	0.473	0.020	0.0600	0.0018	-0.0590	510	50.0	100	395	7.0	14	376	5.5	11	95
OUJ11z30	376.00	214.80	62.10	0.561	-7.50E+05	8.50E+05	0.0608	0.0021	0.867	0.035	0.1029	0.0031	0.3700	626	39.0	78	632	9.5	19	631	9.0	18	100
OUJ11z31	466.00	263.00	255.70	0.569	-3.80E+06	5.90E+06	0.1243	0.0016	6.360	0.110	0.3688	0.0110	0.6801	2023	15.5	31	2026	7.5	15	2023	25.5	51	100
OUJ11z32	42.50	28.10	8.80	0.588	8.00E+05	2.30E+05	0.0607	0.0052	0.952	0.075	0.1108	0.0048	0.0602	640	95.0	190	678	20.5	41	677	14.0	28	100
OUJ11z33	283.00	202.00	180.00	0.711	1.10E+06	4.10E+06	0.1658	0.0026	9.730	0.190	0.4268	0.0120	0.5646	2522	16.5	33	2408	9.0	18	2291	28.0	56	95
OUJ11z34	86.60	71.70	23.50	0.789	-5.20E+06	4.40E+06	0.0649	0.0040	1.107	0.068	0.1225	0.0039	0.1200	710	70.0	140	750	16.5	33	745	11.5	23	99
OUJ11z35	264.00	118.70	103.60	0.439	8.20E+06	8.50E+06	0.1237	0.0021	5.800	0.100	0.3363	0.0098	0.4332	2017	17.5	35	1945	8.0	16	1869	23.5	47	96
OUJ11z36	257.00	28.10	5.20	0.114	1.00E+07	1.10E+06	0.0568	0.0026	0.467	0.023	0.0593	0.0019	0.2902	450	50.0	100	388	8.0	16	371	5.5	11	96
OUJ11z37c	309.10	301.00	52.90	0.957	-2.10E+06	1.50E+06	0.0548	0.0028	0.456	0.024	0.0595	0.0017	0.0381	380	55.0	110	380	8.0	16	373	5.0	10	98
OUJ11z37r	277.00	122.20	23.20	0.437	8.40E+05	7.90E+05	0.0566	0.0026	0.499	0.025	0.0633	0.0019	0.2908	500	55.0	110	413	8.0	16	395	5.5	11	96
OUJ11z38	136.30	48.30	12.44	0.352	-4.30E+05	3.10E+05	0.0592	0.0039	0.777	0.054	0.0933	0.0030	0.1090	570	70.0	140	583	15.5	31	575	9.0	18	99
OUJ11z39	473.00	157.30	26.80	0.330	-3.10E+06	2.90E+06	0.0519	0.0020	0.435	0.018	0.0602	0.0018	0.4611	305	45.5	91	368	6.5	13	377	5.5	11	102
OUJ11z40c	372.00	189.00	185.00	0.490	-7.00E+06	3.60E+06	0.1255	0.0016	6.593	0.091	0.3775	0.0110	0.4537	2044	15.0	30	2060	6.5	13	2067	24.5	49	100
OUJ11z40r	488.40	85.90	15.21	0.175	-5.00E+06	1.30E+06	0.0530	0.0022	0.460	0.019	0.0620	0.0018	0.0582	318	46.5	93	383	6.5	13	388	5.5	11	101
OUJ11z41	521.00	267.00	38.80	0.493	-1.00E+07	1.10E+06	0.0571	0.0025	0.438	0.017	0.0546	0.0020	0.0640	465	46.5	93	370	6.0	12	343	6.0	12	93
OUJ11z42	345.00	130.00	31.90	0.364	-6.10E+05	9.70E+05	0.0565	0.0030	0.676	0.034	0.0864	0.0026	-0.0297	460	60.0	120	522	10.5	21	534	7.5	15	102
OUJ11z43	46.60	32.90	27.99	0.697	-2.40E+05	8.00E+05	0.1142	0.0045	5.120	0.180	0.3310	0.0110	0.1133	1878	38.0	76	1844	15.5	31	1842	26.5	53	100
OUJ11z44c	122.80	63.80	107.60	0.518	-1.00E+06	2.10E+06	0.2810	0.0033	25.910	0.380	0.6640	0.0190	0.4904	3373	13.0	26	3342	7.5	15	3282	37.0	74	98
OUJ11z45	513.00	194.30	34.80	0.374	-1.07E+06	6.00E+05	0.0523	0.0023	0.455	0.019	0.0619	0.0018	-0.0005	287	48.0	96	380	6.5	13	387	5.5	11	102
OUJ11z46	76.50	54.10	17.99	0.696	-1.20E+05	3.00E+05	0.0611	0.0052	0.918	0.079	0.1073	0.0035	0.1912	600	95.0	190	659	22.0	44	657	10.0	20	100
OUJ11z47	60.20	55.20	16.15	0.925	4.00E+05	1.70E+05	0.0639	0.0064	0.889	0.081	0.1014	0.0037	-0.2596	640	105.0	210	635	22.0	44	622	11.0	22	98
OUJ11z49	117.00	30.60	32.20	0.265	3.00E+04	1.40E+06	0.1309	0.0023	7.240	0.110	0.3965	0.0120	0.3153	2117	18.5	37	2142	7.5	15	2152	26.5	53	100
OUJ11z50	416.00	124.00	79.00	0.274	-1.80E+06	2.20E+06	0.1288	0.0019	5.490	0.180	0.3053	0.0120	0.8756	2092	16.5	33	1900	14.0	28	1723	31.5	63	91
OUJ11z51	226.00	154.00	50.90	0.651	-5.40E+05	6.40E+05	0.0647	0.0027	0.989	0.043	0.1101	0.0035	0.3013	765	43.0	86	696	11.0	22	673	10.5	21	97
OUJ11z52	167.50	45.60	12.49	0.271	-3.50E+05	2.30E+05	0.0609	0.0032	0.807	0.048	0.0936	0.0030	0.1384	630	65.0	130	597	13.5	27	577	9.0	18	97
OUJ11z53	334.00	84.40	14.99	0.253	1.00E+05	5.30E+05	0.0507	0.0023	0.443	0.022	0.0620	0.0019	0.4504	240	50.0	100	371	8.0	16	388	6.0	12	105
OUJ11z54	464.00	79.10	64.30	0.165	-1.80E+06	4.60E+06	0.1174	0.0014	5.073	0.094	0.3111	0.0091	0.7871	1931	15.0	30	1830	8.0	16	1746	22.5	45	95
OUJ11z55	427.00	228.00	35.90	0.531	-1.00E+05	5.10E+05	0.0523	0.0030	0.437	0.025	0.0601	0.0018	0.0596	310	55.0	110	367	9.0	18	376	5.5	11	102

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ11z56	235.50	218.50	52.00	0.922	5.10E+06	3.40E+06	0.0591	0.0029	0.738	0.035	0.0879	0.0026	-0.3236	570	55.0	110	562	10.0	20	543	8.0	16	97
OUJ11z57	392.00	48.70	9.41	0.129	-3.10E+05	5.70E+05	0.0530	0.0020	0.459	0.018	0.0615	0.0019	0.2869	318	43.5	87	383	6.5	13	385	5.5	11	101
OUJ11z58	263.10	51.90	14.56	0.196	2.10E+05	8.00E+05	0.0599	0.0028	0.859	0.043	0.1035	0.0031	0.1898	560	50.0	100	630	11.5	23	635	9.0	18	101
OUJ11z59	549.00	69.00	12.40	0.120	-1.20E+06	1.10E+06	0.0516	0.0023	0.435	0.019	0.0607	0.0018	0.0137	262	48.5	97	368	6.5	13	380	5.5	11	103
OUJ11z63	425.00	148.80	41.90	0.348	-3.10E+06	1.90E+06	0.0601	0.0017	0.818	0.025	0.0976	0.0029	0.4485	593	31.0	62	608	7.5	15	600	8.5	17	99
OUJ11z64	71.10	78.60	64.20	1.095	-3.20E+05	5.20E+05	0.1111	0.0034	4.940	0.160	0.3197	0.0100	0.5091	1848	28.5	57	1815	14.5	29	1788	25.0	50	99
OUJ11z65	74.10	96.40	27.00	1.307	-1.70E+05	2.00E+05	0.0640	0.0040	0.889	0.059	0.1009	0.0034	0.3576	710	65.0	130	646	16.5	33	619	10.0	20	96
OUJ11z66	227.20	144.50	88.00	0.630	-2.90E+05	6.70E+05	0.0811	0.0022	2.388	0.064	0.2119	0.0060	0.2752	1222	25.5	51	1243	9.0	18	1239	16.0	32	100
OUJ11z67	717.00	278.30	52.30	0.385	-9.30E+06	6.70E+06	0.0592	0.0033	0.485	0.025	0.0586	0.0017	-0.1926	540	60.0	120	403	8.5	17	367	5.0	10	91
OUJ11z68	691.00	268.00	47.40	0.384	1.30E+06	1.40E+06	0.0559	0.0019	0.477	0.017	0.0608	0.0018	0.2969	440	37.5	75	395	6.0	12	381	5.5	11	96
OUJ11z69	581.00	122.00	38.70	0.149	-6.00E+06	1.70E+06	0.0616	0.0016	0.918	0.033	0.1066	0.0037	0.7104	649	27.0	54	660	8.5	17	655	10.5	21	99
OUJ11z70a	202.00	113.00	65.20	0.551	1.80E+05	7.60E+05	0.0785	0.0021	2.372	0.068	0.2150	0.0068	0.4099	1163	27.5	55	1232	10.5	21	1255	18.0	36	102
OUJ11z71	55.00	32.30	10.49	0.563	-7.00E+05	1.10E+05	0.0550	0.0055	0.899	0.085	0.1155	0.0045	0.0379	390	105.0	210	647	23.5	47	704	13.0	26	109
OUJ11z73	242.00	40.30	7.71	0.160	-6.30E+05	9.00E+05	0.0553	0.0035	0.452	0.030	0.0573	0.0018	0.1721	460	65.0	130	380	10.0	20	359	5.5	11	95
OUJ11z74	653.00	1201.00	309.00	1.799	-5.00E+06	1.20E+06	0.0585	0.0015	0.753	0.021	0.0917	0.0026	0.2167	555	27.0	54	573	6.0	12	566	8.0	16	99
OUJ11z75	179.70	105.00	90.00	0.572	-1.00E+07	1.00E+06	0.1088	0.0024	4.880	0.110	0.3190	0.0095	0.4420	1802	22.5	45	1801	9.0	18	1785	23.5	47	99
OUJ11z76	126.00	246.00	268.00	1.927	-4.00E+06	1.10E+06	0.1423	0.0026	8.320	0.150	0.4164	0.0120	0.4675	2277	18.5	37	2265	8.5	17	2244	28.0	56	99
OUJ11z77	61.00	59.10	17.69	0.968	-5.00E+05	1.60E+05	0.0549	0.0061	0.776	0.080	0.1051	0.0040	0.0609	410	110.0	220	605	23.0	46	644	12.0	24	106
OUJ11z78	247.00	208.10	107.00	0.831	-1.60E+05	6.90E+05	0.0727	0.0022	1.891	0.061	0.1862	0.0053	0.2769	1011	30.5	61	1075	11.0	22	1101	14.5	29	102
OUJ11z79	81.20	88.90	24.30	1.091	-9.00E+05	1.80E+05	0.0644	0.0048	0.881	0.067	0.1015	0.0038	0.1256	690	80.0	160	648	17.5	35	623	11.0	22	96
OUJ11z80	236.00	121.30	20.00	0.499	1.50E+05	2.00E+05	0.0578	0.0035	0.496	0.032	0.0606	0.0019	0.2291	480	70.0	140	410	10.5	21	380	5.5	11	93
OUJ11z81c	79.40	210.50	80.30	2.667	7.00E+06	1.10E+06	0.0652	0.0049	1.190	0.088	0.1337	0.0043	0.1301	690	80.0	160	792	20.5	41	809	12.0	24	102
OUJ11z81r	465.00	551.00	208.30	1.179	-4.60E+05	8.50E+05	0.0648	0.0018	1.253	0.033	0.1360	0.0040	-0.0325	765	28.0	56	824	7.5	15	822	11.5	23	100
OUJ11z82	299.00	291.60	87.00	0.984	1.10E+06	1.60E+06	0.0597	0.0026	0.883	0.038	0.1045	0.0030	0.0247	601	48.5	97	640	10.5	21	641	8.5	17	100
OUJ11z83	291.00	141.50	24.31	0.485	-3.00E+05	4.60E+05	0.0561	0.0032	0.461	0.026	0.0575	0.0017	0.0155	470	60.0	120	383	9.0	18	360	5.5	11	94
OUJ11z84	137.70	103.10	27.60	0.699	-1.00E+05	1.40E+05	0.0591	0.0035	0.741	0.044	0.0899	0.0030	0.2788	540	65.0	130	560	12.5	25	555	9.0	18	99
OUJ11z85	151.00	517.00	146.20	3.367	-5.00E+05	2.30E+05	0.0582	0.0027	0.788	0.035	0.0973	0.0030	0.0458	500	50.0	100	591	10.5	21	598	9.0	18	101
OUJ11z86	905.00	174.60	32.60	0.192	-8.00E+05	7.20E+05	0.0550	0.0020	0.461	0.017	0.0599	0.0017	0.0601	389	41.5	83	384	6.0	12	375	5.0	10	98
OUJ11z88	417.00	111.00	88.00	0.229	-1.10E+06	1.50E+06	0.1211	0.0019	5.075	0.076	0.3017	0.0086	0.3379	1988	17.5	35	1833	6.0	12	1699	21.0	42	93
OUJ11z89	285.00	507.00	123.00	1.689	1.20E+05	5.00E+05	0.0605	0.0028	0.756	0.036	0.0889	0.0028	0.1752	603	49.5	99	569	10.5	21	549	8.0	16	97
OUJ11z90r	232.80	95.30	15.45	0.402	-6.00E+05	1.70E+05	0.0520	0.0024	0.442	0.026	0.0593	0.0020	0.5545	300	55.0	110	370	9.0	18	371	6.0	12	100
OUJ11z90c	305.10	102.90	18.42	0.337	-5.90E+05	4.70E+05	0.0545	0.0028	0.475	0.025	0.0624	0.0018	0.1878	390	55.0	110	393	8.5	17	390	5.5	11	99
OUJ11z91	231.00	121.30	20.50	0.512	-6.00E+05	3.00E+05	0.0560	0.0033	0.468	0.026	0.0602	0.0018	-0.0359	440	70.0	140	388	9.0	18	377	5.5	11	97
OUJ11z92	73.10	60.70	21.61	0.822	-3.00E+05	1.80E+05	0.0651	0.0036	1.080	0.057	0.1192	0.0038	0.1005	810	60.0	120	745	14.5	29	726	11.0	22	97
OUJ11z93	291.00	140.60	25.34	0.490	-5.00E+05	2.80E+05	0.0516	0.0032	0.466	0.030	0.0637	0.0021	0.1178	250	65.0	130	386	10.5	21	398	6.5	13	103
OUJ11z95	128.40	78.30	20.51	0.610	-1.90E+05	1.50E+05	0.0572	0.0038	0.710	0.046	0.0908	0.0028	0.2316	440	70.0	140	546	14.0	28	560	8.0	16	103
OUJ11z96	78.60	24.00	11.33	0.304	-6.20E+05	8.90E+05	0.0700	0.0042	1.720	0.100	0.1751	0.0056	0.1211	910	65.0	130	1015	19.5	39	1040	15.5	31	102
OUJ11z97	576.00	69.60	12.45	0.120	-1.30E+05	6.60E+05	0.0526	0.0021	0.452	0.019	0.0608	0.0017	0.0779	335	48.0	96	380	6.5	13	380	5.5	11	100
OUJ11z99	295.00	74.90	13.33	0.250	4.00E+05	3.90E+05	0.0502	0.0031	0.439	0.029	0.0618	0.0019	0.2071	190	65.0	130	367	10.0	20	386	5.5	11	105
OUJ11z100r	589.00	1014.00	933.00	1.705	1.00E+05	3.60E+06	0.1225	0.0013	5.990	0.074	0.3510	0.0100	0.5025	1999	14.0	28	1975	5.0	10	1939	24.0	48	98
OUJ11z100c	109.80	98.50	97.50	0.883	-6.40E+05	8.70E+05	0.1229	0.0028	6.420	0.180	0.3693	0.0110	0.5014	2009	24.5	49	2031	12.5	25	2034	24.5	49	100
OUJ11z101	229.00	95.60	18.80	0.416	1.04E+06	7.40E+05	0.0550	0.0034	0.518	0.031	0.0684	0.0021	0.0929	360	70.0	140	421	10.5	21	427	6.0	12	101
OUJ11z102	313.00	122.80	22.49	0.394	-3.40E+05	2.40E+05	0.0567	0.0025	0.484	0.022	0.0613	0.0019	0.1186	450	50.0	100	399	7.5	15	384	5.5	11	96
OUJ11z103	562.00	44.20	39.30	0.078	-3.90E+06	4.10E+06	0.1166	0.0017	5.392	0.065	0.3308	0.0091	0.0325	1908	16.0	32	1885	5.0	10	1842	22.0	44	98
OUJ11z104c	337.00	203.10	61.00	0.599	1.90E+05	4.50E+05	0.0609	0.0019	0.904	0.028	0.1049	0.0031	0.5171	649	33.5	67	655	7.5	15	643	9.0	18	98
OUJ11z104r	409.00	237.00	73.10	0.601	-1.85E+07	9.80E+06	0.0599	0.0021	0.845	0.027	0.1018	0.0030	-0.0519	578	37.0	74	621	7.5	15	625	9.0	18	101
OUJ11z106	288.00	292.00	80.70	0.983	-8.40E+05	4.50E+05	0.0588	0.0026	0.809	0.039	0.0999	0.0029	0.2908	560	50.0	100	607	11.0	22	614	8.5	17	101
OUJ11z108	117.70	72.80	22.09	0.613	1.60E+05	2.40E+05	0.0551	0.0040	0.788	0.059	0.1021	0.0032	0.1165	400	80.0	160	584	16.5	33	627	9.0	18	107
OUJ11z109	122.30	98.40	27.10	0.801	1.00E+05	1.30E+05	0.0638	0.0035	0.836	0.047	0.0951	0.0031	0.1687	730	55.0	110	613	13.0	26	586	9.0	18	96
OUJ11z110c	219.00	137.20	37.80	0.625	2.90E+05	6.30E+05	0.0635	0.0030	0.820	0.036	0.0918	0.0028	-0.0185	726	47.5	95	606	10.0	20	566	8.5	17	93
OUJ11z110r	117.20	52.40	15.30	0.429	1.50E+05	1.70E+05	0.0589	0.0039	0.848	0.057	0.1039	0.0036	0.0603	580	70.0	140	629	15.5	31	637	10.5	21	101
OUJ11z111c	133.70	114.60	30.40	0.847	-3.40E+05	3.00E+05	0.0570	0.0033	0.737	0.044	0.0936	0.0029	0.2042	450	65.0	130	562	13.5	27	577	8.5	17	103
OUJ11z111r	538.00	769.00	202.50	1.417	-1.80E+06	1.10E+06	0.0577	0.0016	0.747	0.021	0.0920	0.0026	0.3169	521	31.0	62	566	6.0	12	568	8.0	16	100
OUJ11z112	26.42	24.15	7.02	0.898	9.00E+04	2.50E+04	0.0612	0.0094	0.850	0.130	0.1014	0.0042	0.2241	460	155.0	310	619	38.0	76	622	12.5	25	100
OUJ11z113c	305.50	298.70	302.10	0.977	1.11E+07	8.40E+06	0.1298	0.0016	6.932	0.091	0.3838	0.0110	0.4339	2089	15.0	30	2102	6.0	12	2094	25.0	50	100
OUJ11z113r	106.10	87.50	92.40	0.811	6.00E+06	1.20E+06	0.1262	0.0030	6.900	0.190	0.3944	0.0120	0.4777	2035	23.0	46	2095	12.0	24	2143	28.0	56	102
OUJ11z114c	145.00	106.00	33.40	0.726	6.00E+03	3.10E+05	0.0630	0.0037	0.911	0.052	0.1038	0.0034	0.1153	700	60.0	120	658	13.5	27	636	10.0	20	97
OUJ11z114r	53.40	141.20	41.80	2.634	1.70E+04	8.40E+04	0.0594	0.0052	0.858	0.081	0.1019	0.0036	0.1343	590	95.0	190	634	22.0	44	625	10.5	21	99
OUJ11z115	22.18	42.96	11.29	1.934	-6.00E+04	3.40E+04	0.0620	0.0140	0.750	0.180	0.0899	0.0042	0.1279	320	240.0	480	550	60.0	120	558	13.0	26	101
OUJ11z116c	147.00	22.70	16.97	0.152	-7.00E+05	5.60E+05	0.1315	0.0025	6.850	0.210	0.3740	0.0150	0.7732	2108	19.5	39	2092	13.5	27	2047	34.0	68	98
OUJ11z116r	259.00	37.70	37.30	0.128	-9.00E+06	1.50E+06	0.1263	0.0022	6.720	0.150	0.3849	0.0110	0.5840	2052	19.0	38	2074	10.0	20	2099	25.5	51	101
OUJ11z117	389.30	329.80	99.30	0.838	8.80E+06	4.70E+06	0.0610	0.0022	0.869	0.032	0.1034	0.0030	0.1484	639	40.5	81	639	9.0	18	635	8.5	17	99
OUJ11z118c	78.13	29.40	5.08	0.374	-1.80E+04	8.40E+04	0.0518	0.0071	0.429	0.053	0.0612	0.0024	-0.3727	220	135.0	270	366	20.0	40	383	7.5	15	105
OUJ11z119c	318.00	140.00	172.30	0.441	-1.01E+07	5.80E+06	0.2686	0.0024	23.550	0.530	0.6330	0.0210	0.9246	3290	11.5	23	3251	11.0	22	3159	42.0	84	97
OUJ11z119r	328.10	190.10	300.10	0.574	-5.20E+06	4.10E+06	0.2410	0.0026	20.960	0.260	0.6308	0.0180	0.4697	3117	12.5	25	3136	6.0	12	3152	34.5	69	101
OUJ11z120c	456.00	78.60	95.60	0.173	-5.00E+06	3.60E+06	0.1924	0.0020	12.650	0.120	0.4769	0.0130	0.4759	2753	13.0	26	2654	4.4	9	2517	30.5	61	95
OUJ11z120r	74.20	21.80	7.03	0.293	7.00E+05	1.20E+05	0.0594	0.0052	0.828	0.077	0.1028	0.0037	0.3612	520	95.0	190	616	20.5	41	631	10.5	21	102

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ11z121c	269.10	262.00	74.20	0.970	-4.30E+05	4.20E+05	0.0593	0.0024	0.802	0.031	0.0979	0.0029	-0.0254	602	42.5	85	596	9.0	18	602	8.5	17	101
OUJ11z121r	110.90	100.80	26.40	0.835	-2.40E+05	1.30E+05	0.0695	0.0057	0.808	0.058	0.0888	0.0044	0.2189	880	80.0	160	602	17.0	34	548	13.0	26	91
OUJ11z122c	689.00	754.00	746.00	1.078	-3.30E+06	3.80E+06	0.1337	0.0010	7.200	0.099	0.3915	0.0110	0.7582	2135	12.0	24	2136	6.0	12	2129	26.0	52	100
OUJ11z122r	502.00	107.50	112.50	0.215	1.10E+06	1.50E+06	0.1282	0.0012	6.861	0.080	0.3855	0.0110	0.5149	2064	13.5	27	2093	5.0	10	2102	25.0	50	100
OUJ11z123c	262.00	129.40	103.80	0.498	1.00E+06	1.10E+06	0.1053	0.0017	4.209	0.088	0.2915	0.0084	0.5968	1705	18.0	36	1680	7.5	15	1649	21.0	42	98
OUJ11z123r	18.97	13.89	12.21	0.721	-2.40E+04	5.50E+04	0.1126	0.0067	4.910	0.290	0.3217	0.0130	0.1156	1820	65.0	130	1807	27.0	54	1796	31.5	63	99
OUJ11z124r	331.60	107.80	79.70	0.318	7.00E+05	8.40E+05	0.1277	0.0022	5.680	0.150	0.3211	0.0110	0.8047	2060	17.0	34	1929	11.5	23	1794	25.5	51	93
OUJ11z125	158.20	97.60	960.00	0.617	-2.00E+05	1.70E+05	0.1258	0.0030	6.470	0.290	0.3693	0.0070	0.5080	2040	21.1	42	2042	19.7	39	2026	16.5	33	99
OUJ11z126	118.50	75.70	235.00	0.639	6.40E+05	3.40E+05	0.0655	0.0051	0.915	0.059	0.1039	0.0023	-0.1982	790	81.7	163	660	15.6	31	637	6.7	13	97
OUJ11z127	16.68	74.40	178.80	4.545	-5.40E+04	4.80E+04	0.0690	0.0180	0.820	0.200	0.0890	0.0039	-0.0169	899	269.1	538	608	55.7	111	550	11.5	23	90
OUJ11z128c	186.00	97.50	1276.00	0.529	-1.20E+05	3.60E+05	0.1934	0.0024	13.810	0.580	0.5127	0.0090	0.6663	2771	10.2	20	2737	19.9	40	2668	19.2	38	97
OUJ11z128r	97.00	39.50	486.00	0.414	-9.00E+05	1.50E+05	0.1931	0.0031	13.080	0.570	0.4844	0.0098	0.6343	2769	13.2	26	2685	20.5	41	2546	21.3	43	95
OUJ11z129	180.00	140.10	390.00	0.789	-3.50E+04	8.20E+04	0.0642	0.0041	0.857	0.050	0.0971	0.0020	0.0920	748	67.5	135	628	13.7	27	597	5.9	12	95
OUJ11z130	117.90	79.10	739.00	0.674	4.00E+05	1.40E+05	0.1279	0.0025	6.490	0.290	0.3646	0.0061	0.3930	2069	17.2	34	2045	19.6	39	2004	14.4	29	98
OUJ11z131	216.30	277.00	775.00	1.247	2.70E+05	1.80E+05	0.0644	0.0039	0.867	0.048	0.0983	0.0020	0.3558	755	63.9	128	634	13.0	26	604	5.9	12	95
OUJ11z132	302.00	227.00	633.00	0.737	2.10E+05	1.90E+05	0.0616	0.0034	0.851	0.041	0.1004	0.0018	0.1897	660	59.2	118	625	11.2	22	617	5.3	11	99
OUJ11z134	242.30	75.90	570.00	0.320	5.00E+05	1.80E+05	0.0959	0.0019	3.659	0.160	0.2708	0.0047	0.3639	1546	18.6	37	1562	17.4	35	1545	11.9	24	99
OUJ11z135	121.00	70.30	668.00	0.588	6.60E+05	2.40E+05	0.1238	0.0027	6.260	0.290	0.3605	0.0066	0.3884	2012	19.3	39	2013	20.3	41	1985	15.6	31	99
OUJ11z136	55.40	62.10	179.40	1.130	-6.00E+04	5.30E+04	0.0676	0.0064	0.942	0.083	0.1012	0.0027	0.0906	856	98.3	197	674	21.7	43	621	7.9	16	92
OUJ11z137c	193.30	55.50	205.00	0.281	-2.70E+04	7.00E+04	0.0670	0.0040	1.171	0.064	0.1274	0.0024	0.1233	838	62.2	124	787	15.0	30	773	6.9	14	98
OUJ11z137r	410.00	86.80	295.00	0.185	-5.00E+05	1.30E+05	0.0684	0.0039	0.868	0.041	0.0932	0.0025	0.1543	881	59.0	118	634	11.1	22	574	7.4	15	91
OUJ11z138	105.50	92.80	164.60	0.873	2.70E+04	3.20E+04	0.0597	0.0060	0.519	0.052	0.0631	0.0018	0.3149	593	108.9	218	424	17.4	35	394	5.5	11	93
OUJ11z139	162.00	48.40	87.50	0.301	1.60E+05	1.60E+05	0.0584	0.0043	0.480	0.034	0.0595	0.0014	0.1453	545	80.5	161	398	11.7	23	373	4.3	9	94
OUJ11z140	45.50	58.10	179.70	1.287	-1.30E+04	1.30E+04	0.0637	0.0064	0.913	0.088	0.1046	0.0032	0.1258	732	106.4	213	659	23.3	47	641	9.3	19	97
OUJ11z141	158.90	97.60	284.00	0.615	6.00E+04	4.20E+04	0.0631	0.0044	0.853	0.058	0.0979	0.0021	0.1789	712	74.1	148	626	15.9	32	602	6.2	12	96
OUJ11z142	58.10	30.26	168.30	0.519	2.60E+04	5.50E+04	0.0863	0.0059	2.360	0.140	0.1984	0.0051	0.1805	1345	66.0	132	1231	21.1	42	1167	13.7	27	95
OUJ11z143	327.20	100.40	1206.00	0.311	-1.46E+07	6.20E+06	0.1941	0.0021	12.800	0.530	0.4753	0.0081	0.5853	2777	8.9	18	2665	19.5	39	2507	17.7	35	94
OUJ11z144	39.20	69.30	687.00	1.783	-5.00E+05	1.00E+05	0.1293	0.0044	6.770	0.350	0.3739	0.0099	0.2918	2088	29.9	60	2082	22.8	46	2048	23.2	46	98
OUJ11z146	155.60	270.60	750.00	1.741	1.15E+05	6.80E+04	0.0621	0.0041	0.860	0.053	0.0988	0.0020	0.2223	678	70.6	141	630	14.5	29	607	5.9	12	96
OUJ11z147	98.70	64.80	178.50	0.674	-6.50E+04	4.60E+04	0.0554	0.0041	0.643	0.043	0.0842	0.0018	0.1149	428	82.5	165	504	13.3	27	521	5.4	11	103
OUJ11z148	169.00	116.00	310.00	0.672	2.30E+04	4.90E+04	0.0594	0.0040	0.757	0.048	0.0915	0.0019	0.2181	582	73.1	146	572	13.9	28	564	5.6	11	99
OUJ11z150	137.50	137.20	224.80	0.992	1.50E+04	3.30E+04	0.0586	0.0051	0.476	0.037	0.0601	0.0016	0.1430	552	95.0	190	395	12.7	25	376	4.9	10	95
OUJ11z151	88.60	137.40	381.00	1.558	-1.40E+04	2.50E+04	0.0623	0.0055	0.872	0.074	0.1006	0.0023	0.1749	684	94.2	188	637	20.1	40	618	6.7	13	97
OUJ11z152	26.63	30.90	101.90	1.171	-1.60E+04	1.70E+04	0.0717	0.0099	1.160	0.150	0.1156	0.0045	0.0668	977	140.7	281	782	35.2	70	705	13.0	26	90
OUJ11z153	136.10	53.70	275.80	0.397	3.20E+04	9.60E+04	0.0777	0.0048	1.834	0.094	0.1700	0.0034	-0.1081	1139	61.4	123	1058	16.8	34	1012	9.4	19	96
OUJ11z154	125.50	111.90	290.00	0.888	1.60E+04	3.20E+04	0.0596	0.0042	0.771	0.052	0.0927	0.0019	0.3000	589	76.4	153	580	14.9	30	571	5.6	11	98
OUJ11z155	180.70	272.30	1467.00	1.490	-1.12E+06	6.80E+05	0.0798	0.0043	2.217	0.110	0.2000	0.0034	0.2661	1192	53.2	106	1186	17.3	35	1175	9.1	18	99
OUJ11z156	107.20	90.70	791.00	0.853	-1.60E+05	3.80E+05	0.1075	0.0024	4.900	0.240	0.3309	0.0067	0.5985	1757	20.4	41	1802	20.6	41	1843	16.2	32	102
OUJ11z157	174.20	299.00	820.00	1.727	2.60E+04	6.50E+04	0.0602	0.0045	0.784	0.055	0.0936	0.0019	-0.0845	611	80.8	162	588	15.6	31	577	5.6	11	98
OUJ11z158	307.00	147.10	258.00	0.477	-6.00E+04	6.60E+04	0.0556	0.0037	0.461	0.028	0.0604	0.0012	0.1005	436	74.1	148	385	9.7	19	378	3.6	7	98
OUJ11z159	60.95	89.50	265.70	1.468	-7.00E+04	1.50E+04	0.0634	0.0061	0.904	0.081	0.1044	0.0027	-0.0217	722	102.1	204	654	21.6	43	640	7.9	16	98
OUJ11z160	33.41	59.10	564.00	1.751	1.03E+05	6.70E+04	0.1232	0.0046	6.160	0.330	0.3644	0.0092	0.2454	2003	33.2	66	1999	23.4	47	2003	21.7	43	100
OUJ11z161	84.70	84.00	770.00	0.997	1.30E+05	1.30E+05	0.1271	0.0030	6.330	0.290	0.3571	0.0074	0.1793	2058	20.8	42	2023	20.1	40	1968	17.6	35	97
OUJ11z163	56.00	88.50	842.00	1.577	3.10E+04	4.90E+04	0.1279	0.0045	6.380	0.330	0.3573	0.0085	0.3383	2069	31.0	62	2030	22.7	45	1969	20.2	40	97
OUJ11z164	166.70	201.10	577.00	1.193	2.60E+04	6.30E+04	0.0615	0.0044	0.842	0.056	0.1007	0.0021	0.1361	657	76.7	153	620	15.4	31	619	6.1	12	100
OUJ11z165	229.80	157.50	876.00	0.676	6.00E+06	1.00E+06	0.0821	0.0043	2.365	0.110	0.2096	0.0036	0.1588	1248	51.3	103	1232	16.6	33	1227	9.6	19	100
OUJ11z166	247.10	93.50	164.70	0.362	3.20E+05	2.00E+05	0.0571	0.0039	0.458	0.029	0.0586	0.0010	-0.1234	495	75.3	151	383	10.1	20	367	3.0	6	96
OUJ11z167	115.20	149.30	518.00	1.285	6.50E+04	5.80E+04	0.0682	0.0050	1.198	0.083	0.1273	0.0026	-0.0585	875	75.9	152	800	19.2	38	772	7.4	15	97
OUJ11z168	327.10	132.90	225.70	0.403	1.18E+05	7.20E+04	0.0551	0.0034	0.447	0.027	0.0595	0.0011	0.4336	416	68.9	138	375	9.5	19	373	3.3	7	99
OUJ11z169	365.00	309.00	2566.00	0.839	7.00E+05	8.20E+05	0.1277	0.0017	5.399	0.230	0.3022	0.0050	0.5415	2067	11.7	23	1885	18.2	36	1702	12.4	25	90
OUJ11z170c	168.00	76.50	734.00	0.469	2.00E+05	2.60E+05	0.1284	0.0026	6.990	0.320	0.3902	0.0092	0.6717	2076	17.8	36	2110	20.3	41	2124	21.3	43	101
OUJ11z170r	154.10	160.50	1597.00	1.025	2.00E+05	1.40E+05	0.1290	0.0019	6.940	0.290	0.3864	0.0068	0.5177	2084	13.0	26	2104	18.5	37	2106	15.8	32	100
OUJ11z171	142.90	210.70	574.00	1.466	-6.70E+04	8.10E+04	0.0614	0.0044	0.863	0.057	0.1031	0.0023	0.2185	653	76.9	154	632	15.5	31	633	6.7	13	100
OUJ11z172	450.00	314.40	2213.00	0.688	3.40E+05	4.20E+05	0.0964	0.0015	3.544	0.150	0.2639	0.0044	0.5838	1556	14.6	29	1537	16.7	33	1510	11.2	22	98
OUJ11z173	76.00	164.90	451.00	2.154	8.00E+04	6.00E+04	0.0617	0.0059	0.853	0.075	0.0980	0.0028	0.0572	664	102.4	205	626	20.5	41	603	8.2	16	96
OUJ11z175	253.60	280.70	818.00	1.091	1.10E+05	1.20E+05	0.0590	0.0033	0.823	0.040	0.1019	0.0018	0.0928	567	60.9	122	610	11.1	22	626	5.3	11	103
OUJ11z176	620.00	21.70	169.20	0.033	1.33E+06	9.80E+05	0.1300	0.0013	6.566	0.270	0.3640	0.0062	0.5967	2098	8.8	18	2055	18.1	36	2001	14.7	29	97
OUJ11z177	49.40	60.60	156.50	1.218	3.90E+04	2.90E+04	0.0602	0.0071	0.782	0.085	0.0944	0.0029	-0.0734	611	127.4	255	587	24.2	48	582	8.5	17	99
OUJ11z178	131.50	170.00	477.00	1.208	4.40E+04	5.50E+04	0.0652	0.0047	0.900	0.060	0.1005	0.0022	0.0721	781	75.8	152	652	16.0	32	617	6.4	13	95
OUJ11z179	93.90	76.70	766.00	0.786	7.00E+05	1.60E+05	0.1303	0.0026	6.960	0.310	0.3861	0.0077	0.5405	2102	17.5	35	2106	19.8	40	2105	17.9	36	100
OUJ11z180	197.50	97.80	237.60	0.493	-4.00E+04	4.10E+04	0.0612	0.0041	0.689	0.042	0.0827	0.0018	0.1126	646	72.0	144	532	12.6	25	512	5.4	11	96
OUJ11z181	100.70	106.00	1006.00	1.036	-6.00E+03	1.50E+05	0.1273	0.0025	6.410	0.290	0.3564	0.0067	0.4665	2061	17.3	35	2034	19.9	40	1965	15.9	32	97
OUJ11z182	35.80	19.70	211.00	0.526	3.00E+04	5.20E+04	0.1324	0.0049	6.860	0.420	0.3726	0.0092	0.5424	2130	32.4	65	2094	27.1	54	2042	21.6	43	98
OUJ11z183	210.60	143.00	242.00	0.664	-4.60E+04	7.10E+04	0.0593	0.0043	0.501	0.035	0.0604	0.0013	0.1329	578	78.8	158	412	11.8	24	378	4.0	8	92
OUJ11z184	106.00	160.20	476.00	1.511	6.30E+04	4.10E+04	0.0665	0.0051	0.958	0.065	0.1060	0.0023	0.0067	822	80.1	160	682	16.8	34	649	6.7	13	95
OUJ11z185c	16.61	11.07	38.70	0.662	3.90E+03	6.40E+03	0.0820	0.0180	1.200	0.250	0.0995	0.0081	0.0289	1246	215.0	430	801	57.6	115	611	23.7	47	76
OUJ11z185r	35.18	58.50	143.50	1.618	4.80E+04	3.10E+04	0.0635	0.0070	0.784	0.090	0.0867	0.0028	0.2390	725	116.9	234	588	25.6	51	536	8.3	17	91

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ11z186	53.70	63.90	624.00	1.147	-6.50E+04	8.50E+04	0.1321	0.0037	7.120	0.370	0.3909	0.0097	0.6091	2126	24.5	49	2127	23.1	46	2127	22.5	45	100
OUJ11z187	80.20	90.50	265.00	1.106	8.70E+04	7.40E+04	0.0689	0.0059	0.984	0.079	0.1034	0.0026	0.0425	896	88.4	177	696	20.2	40	634	7.6	15	91
OUJ11z188c	151.70	196.90	544.00	1.272	-2.70E+05	1.30E+05	0.0658	0.0046	0.889	0.056	0.0979	0.0022	0.0444	800	73.2	146	646	15.0	30	602	6.5	13	93
OUJ11z188r	74.60	60.00	171.20	0.789	1.00E+04	1.80E+04	0.0662	0.0058	0.906	0.074	0.1008	0.0025	0.1021	813	91.6	183	655	19.7	39	619	7.3	15	95
OUJ11z189	259.60	175.90	2092.00	0.665	-1.90E+05	4.60E+05	0.1799	0.0022	12.500	0.520	0.5015	0.0086	0.6292	2652	10.1	20	2643	19.5	39	2620	18.5	37	99
OUJ11z190	456.00	213.00	1857.00	0.462	4.00E+05	5.80E+05	0.1221	0.0016	5.753	0.240	0.3400	0.0058	0.6101	1987	11.7	23	1939	18.0	36	1887	14.0	28	97
OUJ11z191	249.00	480.00	1265.00	1.901	-3.90E+05	2.80E+05	0.0610	0.0037	0.832	0.045	0.0984	0.0020	0.2282	639	65.2	130	615	12.5	25	605	5.9	12	98
OUJ11z192	187.50	106.00	252.20	0.575	-6.20E+04	6.00E+04	0.0630	0.0043	0.732	0.046	0.0852	0.0016	0.2060	708	72.6	145	558	13.5	27	527	4.8	10	95
OUJ11z193	90.90	32.20	162.00	0.352	3.00E+04	3.70E+04	0.0778	0.0055	1.750	0.110	0.1632	0.0032	-0.0961	1142	70.3	141	1027	20.3	41	975	8.9	18	95
OUJ11z194	139.50	75.20	667.00	0.523	-1.80E+05	2.70E+05	0.1252	0.0028	6.070	0.280	0.3471	0.0070	0.4920	2032	19.8	40	1986	20.1	40	1921	16.7	33	97
OUJ11z195	156.00	210.20	527.00	1.331	1.20E+04	5.30E+04	0.0622	0.0043	0.740	0.048	0.0870	0.0019	0.2948	681	73.8	148	562	14.0	28	538	5.6	11	96
OUJ11z196	106.70	51.90	97.40	0.495	-1.00E+05	1.80E+04	0.0585	0.0053	0.485	0.042	0.0608	0.0015	0.1462	549	98.9	198	401	14.3	29	380	4.6	9	95
OUJ11z197	280.00	175.00	798.00	0.620	1.20E+05	2.40E+05	0.0742	0.0039	1.722	0.081	0.1681	0.0032	0.3589	1047	53.0	106	1017	15.1	30	1002	8.8	18	99
OUJ11z198	49.00	51.60	139.50	1.022	1.00E+05	2.10E+04	0.0649	0.0065	0.801	0.082	0.0924	0.0028	0.2727	771	105.4	211	597	23.1	46	570	8.3	17	95
OUJ11z199	309.40	343.10	965.00	1.089	9.00E+05	1.30E+05	0.0636	0.0038	0.882	0.047	0.1005	0.0018	0.2383	728	63.3	127	642	12.7	25	617	5.3	11	96
OUJ11z200	39.40	33.10	89.00	0.833	-8.00E+04	1.10E+04	0.0619	0.0075	0.802	0.099	0.0897	0.0036	0.0070	671	129.6	259	598	27.9	56	554	10.6	21	93
OUJ11z201	291.00	52.20	90.70	0.180	5.90E+04	6.70E+04	0.0571	0.0045	0.476	0.035	0.0598	0.0012	-0.0934	495	86.8	174	395	12.0	24	374	3.6	7	95
OUJ11z202	82.40	101.50	304.00	1.222	4.00E+04	8.60E+04	0.0642	0.0049	0.920	0.068	0.1052	0.0026	0.3016	748	80.6	161	662	18.0	36	645	7.6	15	97
OUJ11z203	134.30	91.00	163.40	0.671	8.20E+04	5.40E+04	0.0613	0.0054	0.512	0.044	0.0614	0.0015	0.2399	650	94.6	189	420	14.8	30	384	4.6	9	92
OUJ11z204	53.10	31.40	312.00	0.573	3.00E+05	1.80E+05	0.1424	0.0040	7.410	0.370	0.3710	0.0091	0.3892	2257	24.2	48	2162	22.3	45	2034	21.4	43	94
OUJ11z205	288.00	316.20	894.00	1.068	-1.18E+05	7.40E+04	0.0605	0.0034	0.815	0.042	0.0979	0.0017	0.2796	622	60.6	121	605	11.7	23	602	5.0	10	99
OUJ11z206	57.80	52.40	166.90	0.899	6.00E+04	2.60E+04	0.0655	0.0073	0.978	0.099	0.1072	0.0034	-0.0069	790	116.9	234	693	25.4	51	656	9.9	20	95
OUJ11z208	17.00	25.70	262.00	1.517	7.40E+04	4.50E+04	0.1249	0.0090	5.890	0.520	0.3630	0.0180	0.4047	2027	63.8	128	1960	38.3	77	1996	42.6	85	102
OUJ11z209	272.00	123.60	913.00	0.457	-5.40E+05	4.60E+05	0.0955	0.0017	3.632	0.160	0.2711	0.0047	0.2944	1538	16.7	33	1557	17.5	35	1546	11.9	24	99
OUJ11z210	45.70	39.70	338.00	0.850	4.40E+04	3.90E+04	0.1107	0.0047	4.840	0.270	0.3184	0.0085	0.3099	1811	38.6	77	1792	23.5	47	1782	20.8	42	99
OUJ11z211	92.50	108.80	271.00	1.122	4.00E+04	5.60E+04	0.0624	0.0058	0.853	0.078	0.0977	0.0043	0.0772	688	99.2	198	626	21.4	43	601	12.6	25	96
OUJ11z212	65.33	78.30	230.60	1.193	-3.00E+04	2.10E+04	0.0668	0.0062	0.926	0.082	0.0999	0.0030	0.2319	832	96.7	193	666	21.6	43	614	8.8	18	92
OUJ11z214	75.60	122.30	1082.00	1.590	4.50E+05	3.20E+05	0.1273	0.0035	6.010	0.300	0.3426	0.0069	0.3559	2061	24.2	48	1977	21.7	43	1899	16.6	33	96
OUJ11z215	68.10	45.90	158.00	0.673	2.60E+04	3.20E+04	0.0692	0.0059	1.197	0.100	0.1260	0.0035	0.1974	905	87.9	176	799	23.1	46	765	10.0	20	96
OUJ11z216	434.00	286.00	459.00	0.637	3.20E+04	9.50E+04	0.0555	0.0037	0.442	0.026	0.0577	0.0012	-0.1125	432	74.3	149	372	9.1	18	361	3.7	7	97
OUJ11z218	83.80	97.70	985.00	1.148	7.20E+05	5.40E+05	0.1271	0.0031	6.620	0.320	0.3733	0.0081	0.3205	2058	21.5	43	2062	21.3	43	2045	19.0	38	99
OUJ11z219	121.30	54.90	231.00	0.454	-1.60E+04	2.50E+04	0.0865	0.0092	1.230	0.140	0.1017	0.0026	0.1903	1349	102.6	205	814	31.8	64	624	7.6	15	77
OUJ11z222	120.40	83.30	481.00	0.684	-3.20E+05	2.20E+05	0.0817	0.0047	2.423	0.120	0.2132	0.0042	0.0212	1238	56.4	113	1249	17.8	36	1246	11.2	22	100
OUJ11z223	336.00	450.00	4140.00	1.314	1.20E+05	2.50E+05	0.1297	0.0018	6.426	0.270	0.3536	0.0060	0.4218	2094	12.2	24	2036	18.4	37	1952	14.3	29	96
OUJ11z224	421.60	134.50	261.00	0.318	1.30E+04	5.50E+04	0.0575	0.0035	0.481	0.027	0.0604	0.0011	0.2662	511	66.9	134	399	9.2	18	378	3.3	7	95
OUJ11z225	232.80	136.00	327.00	0.543	6.20E+04	3.90E+04	0.0587	0.0041	0.663	0.046	0.0804	0.0017	0.3151	556	76.2	152	516	14.0	28	499	5.1	10	97
OUJ11z226	56.50	48.90	239.00	0.851	3.90E+04	2.40E+04	0.0816	0.0058	1.876	0.120	0.1656	0.0043	0.2046	1236	69.7	139	1073	21.2	42	988	11.9	24	92
OUJ11z227	195.50	264.20	786.00	1.344	4.30E+04	9.20E+04	0.0645	0.0040	0.936	0.052	0.1053	0.0020	-0.2173	758	65.4	131	671	13.6	27	645	5.8	12	96
OUJ11z228	119.90	70.70	419.00	0.589	1.00E+06	1.00E+05	0.0821	0.0046	2.346	0.110	0.2065	0.0040	0.1919	1248	54.8	110	1226	16.7	33	1210	10.7	21	99
OUJ11z229	161.80	137.00	352.00	0.846	2.00E+04	4.60E+04	0.0618	0.0045	0.738	0.051	0.0868	0.0021	0.2876	667	77.9	156	561	14.9	30	537	6.2	12	96
OUJ11z230	61.60	52.30	440.00	0.841	8.40E+04	6.90E+04	0.1100	0.0032	4.760	0.240	0.3133	0.0070	0.3814	1799	26.5	53	1778	21.1	42	1757	17.2	34	99
OUJ11z231	198.50	54.20	536.00	0.262	-6.00E+05	2.20E+05	0.1280	0.0024	6.870	0.300	0.3812	0.0068	0.3561	2071	16.5	33	2095	19.3	39	2082	15.9	32	99
OUJ11z232	137.60	158.50	1549.00	1.147	-6.00E+03	1.10E+05	0.1328	0.0027	6.940	0.310	0.3764	0.0070	0.4350	2135	17.8	36	2104	19.8	40	2059	16.4	33	98
OUJ11z233	182.00	307.00	873.00	1.678	-7.00E+05	3.30E+05	0.0629	0.0038	0.876	0.046	0.1014	0.0020	0.2055	705	64.3	129	639	12.4	25	623	5.9	12	97
OUJ11z234	163.10	134.30	364.00	0.816	-1.70E+04	3.10E+04	0.0620	0.0041	0.822	0.050	0.0959	0.0021	0.2399	674	70.7	141	609	13.9	28	590	6.2	12	97
OUJ11z235	255.10	116.50	377.00	0.451	5.00E+06	2.40E+06	0.0632	0.0035	0.997	0.051	0.1157	0.0023	0.3179	715	58.8	118	702	13.0	26	706	6.6	13	100
OUJ11z236	87.00	68.90	129.80	0.779	-1.40E+04	1.30E+04	0.0489	0.0057	0.420	0.049	0.0610	0.0015	0.2115	143	136.8	274	356	17.5	35	382	4.6	9	107
OUJ11z237	193.80	20.43	143.10	0.104	1.20E+04	8.70E+04	0.0886	0.0047	2.791	0.130	0.2272	0.0042	0.2024	1396	50.9	102	1353	17.4	35	1320	11.0	22	98
OUJ11z238	131.50	158.00	473.00	1.211	2.50E+05	2.10E+05	0.0651	0.0050	0.931	0.066	0.1037	0.0024	0.0389	778	80.8	162	668	17.3	35	636	7.0	14	95
OUJ11z239	145.10	155.00	1723.00	1.064	-4.00E+05	1.10E+05	0.1500	0.0024	8.590	0.360	0.4114	0.0077	0.4886	2346	13.7	27	2295	19.0	38	2221	17.6	35	97
OUJ11z242	144.20	190.50	789.00	1.311	-2.00E+04	5.00E+04	0.0741	0.0044	1.386	0.072	0.1362	0.0027	0.0931	1044	59.9	120	883	15.3	31	823	7.7	15	93
OUJ11z243	488.00	94.40	249.50	0.193	2.50E+05	1.60E+05	0.0595	0.0033	0.779	0.039	0.0945	0.0016	0.1319	585	60.2	120	585	11.1	22	582	4.7	9	99
OUJ11z246	189.80	135.40	256.00	0.717	1.70E+04	4.30E+04	0.0580	0.0045	0.492	0.035	0.0619	0.0012	-0.0184	530	85.0	170	406	11.9	24	387	3.6	7	95
OUJ11z247	445.00	230.20	432.00	0.517	-2.00E+05	1.60E+05	0.0559	0.0034	0.445	0.024	0.0570	0.0011	-0.0318	448	67.6	135	374	8.4	17	357	3.4	7	96
OUJ11z248	71.60	69.00	208.00	0.951	3.40E+04	4.00E+04	0.0623	0.0054	0.907	0.078	0.1065	0.0025	0.2230	684	92.5	185	655	20.7	41	652	7.3	15	100
OUJ11z249	73.90	168.40	1664.00	2.203	4.00E+04	6.00E+04	0.1613	0.0052	9.420	0.540	0.4191	0.0110	0.5909	2469	27.2	54	2380	26.3	53	2256	25.0	50	95
OUJ11z251	224.50	121.70	224.90	0.537	-7.80E+04	7.40E+04	0.0566	0.0042	0.464	0.032	0.0597	0.0013	0.0005	476	82.0	164	387	11.1	22	374	4.0	8	97
OUJ11z253	516.00	480.00	6170.00	0.931	1.30E+05	5.80E+05	0.1762	0.0018	12.260	0.510	0.4989	0.0089	0.8089	2617	8.5	17	2625	19.5	39	2609	19.1	38	99
OUJ11z254	239.60	554.00	1671.00	2.344	1.20E+05	1.20E+05	0.0658	0.0040	0.948	0.053	0.1040	0.0020	0.1354	800	63.7	127	677	13.8	28	638	5.8	12	94
OUJ11z255	292.30	96.10	169.60	0.333	-9.00E+05	5.70E+05	0.0543	0.0035	0.429	0.025	0.0578	0.0013	0.1696	384	72.4	145	362	8.9	18	362	4.0	8	100
OUJ11z256	290.10	193.20	359.00	0.669	1.80E+06	1.20E+06	0.0546	0.0038	0.465	0.028	0.0603	0.0012	-0.0677	396	78.0	156	388	9.7	19	378	3.6	7	97
OUJ11z257	383.50	452.50	1326.00	1.199	9.00E+05	1.30E+05	0.0615	0.0035	0.873	0.044	0.1035	0.0018	0.2690	657	61.0	122	637	11.9	24	635	5.3	11	100
OUJ11z258	26.88	23.40	71.60	0.870	-4.10E+03	8.20E+03	0.0616	0.0079	0.880	0.120	0.1039	0.0033	0.1311	660	137.4	275	641	32.4	65	637	9.6	19	99
OUJ11z259	353.00	385.00	1115.00	1.099	-2.30E+06	1.30E+06	0.0608	0.0036	0.832	0.043	0.0988	0.0019	-0.0268	632	63.8	128	615	11.9	24	607	5.6	11	99
OUJ11z260	136.90	242.50	738.00	1.791	1.44E+06	9.10E+05	0.0605	0.0039	0.842	0.050	0.1005	0.0021	0.1063	622	69.5	139	620	13.8	28	617	6.2	12	100
OUJ11z261	176.40	81.50	163.00	0.456	-2.40E+05	3.10E+05	0.0615	0.0048	0.516	0.037	0.0606	0.0016	0.0199	657	83.7	167	422	12.4	25	379	4.9	10	90
OUJ11z262	121.40	103.40	180.00	0.861	2.30E+04	1.30E+04	0.0555	0.0046	0.440	0.034	0.0577	0.0014	0.1967	432	92.3	185	370	12.0	24	362	4.3	9	98

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ11z263	27.60	43.90	226.00	1.592	1.55E+05	9.40E+04	0.0771	0.0065	1.890	0.150	0.1765	0.0051	0.0727	1124	84.0	168	1078	26.3	53	1048	14.0	28	97
OUJ11z264	242.10	84.20	861.00	0.353	-7.10E+05	3.80E+05	0.1301	0.0020	6.900	0.300	0.3784	0.0070	0.5086	2099	13.5	27	2099	19.3	39	2069	16.4	33	99
OUJ11z265	70.40	150.20	1313.00	2.129	-8.90E+04	4.90E+04	0.1152	0.0033	5.140	0.250	0.3223	0.0065	0.1391	1883	25.8	52	1843	20.7	41	1801	15.8	32	98
OUJ11z266	274.60	186.30	334.00	0.689	4.50E+04	4.60E+04	0.0552	0.0038	0.470	0.029	0.0605	0.0012	-0.0150	420	76.8	154	391	10.0	20	379	3.6	7	97
OUJ11z267	48.20	63.20	401.00	1.330	-1.70E+05	1.20E+05	0.1235	0.0041	5.690	0.290	0.3267	0.0076	0.3744	2007	29.5	59	1930	22.0	44	1822	18.5	37	94
OUJ11z268	342.00	9.86	111.00	0.028	1.60E+05	3.90E+05	0.1268	0.0018	6.320	0.270	0.3558	0.0061	0.5364	2054	12.5	25	2021	18.7	37	1962	14.5	29	97
Discordant data																							
OUJ11z3	910.00	177.90	32.20	0.193	-5.50E+06	3.00E+06	0.0667	0.0028	0.494	0.017	0.0541	0.0016	-0.3545	813	47.0	94	409	6.0	12	340	5.0	10	83
OUJ11z16	643.00	171.00	32.60	0.240	-1.70E+06	1.40E+06	0.0680	0.0028	0.542	0.020	0.0597	0.0020	0.4295	870	41.5	83	439	6.5	13	374	6.0	12	85
OUJ11z28c	1240.00	776.00	195.00	0.623	-6.39E+05	5.40E+04	0.1213	0.0025	0.978	0.030	0.0584	0.0020	0.7183	1970	18.5	37	691	7.5	15	366	6.0	12	53
OUJ11z44r	487.00	273.00	85.70	0.542	-4.00E+06	1.20E+06	0.1162	0.0035	1.965	0.096	0.1218	0.0040	0.8560	1887	27.5	55	1108	15.5	31	741	11.5	23	67
OUJ11z48	131.00	101.00	24.80	0.894	-2.70E+05	3.50E+05	0.0750	0.0140	0.790	0.100	0.0708	0.0074	0.1589	1150	160.0	320	602	30.0	60	439	22.5	45	73
OUJ11z60	352.00	111.70	24.90	0.313	-2.20E+06	1.70E+06	0.0643	0.0030	0.596	0.030	0.0669	0.0023	0.2615	750	50.0	100	476	9.5	19	417	7.0	14	88
OUJ11z61	73.60	37.10	11.39	0.506	1.20E+05	1.30E+05	0.0695	0.0048	0.967	0.058	0.1017	0.0035	-0.0427	880	75.0	150	703	17.0	34	624	10.0	20	89
OUJ11z62	51.00	70.10	19.24	1.364	-4.00E+05	1.20E+05	0.0532	0.0060	0.732	0.078	0.1022	0.0045	0.0119	260	105.0	210	563	22.5	45	627	13.0	26	111
OUJ11z70b	138.00	55.40	34.00	0.396	9.00E+06	1.10E+06	0.0804	0.0022	2.798	0.086	0.2466	0.0074	0.3164	1205	26.0	52	1352	11.5	23	1421	19.0	38	105
OUJ11z72	546.00	122.20	24.90	0.219	2.00E+05	7.70E+05	0.0693	0.0025	0.519	0.019	0.0526	0.0017	0.1744	923	38.0	76	424	6.5	13	331	5.0	10	78
OUJ11z87	250.00	215.00	44.30	0.863	-1.20E+05	1.70E+05	0.0830	0.0084	0.675	0.062	0.0588	0.0021	-0.3237	1180	105.0	210	521	18.5	37	368	6.5	13	71
OUJ11z94	656.00	81.50	49.30	0.120	-5.00E+06	1.40E+06	0.1138	0.0017	2.780	0.160	0.1750	0.0110	0.9466	1856	14.0	28	1352	21.0	42	1035	31.5	63	77
OUJ11z98	924.00	302.00	77.20	0.326	-7.00E+05	4.70E+05	0.0815	0.0018	0.696	0.018	0.0600	0.0021	0.5534	1234	21.5	43	535	5.5	11	375	6.5	13	70
OUJ11z105	982.00	591.00	113.40	0.589	-7.30E+05	2.40E+05	0.0794	0.0031	0.564	0.017	0.0514	0.0017	-0.1059	1160	39.0	78	457	6.0	12	323	5.0	10	71
OUJ11z107	820.00	530.00	86.90	0.637	-2.70E+05	4.90E+05	0.0640	0.0026	0.507	0.019	0.0571	0.0018	0.0810	743	43.0	86	418	7.0	14	358	5.5	11	86
OUJ11z118r	1149.00	199.00	55.30	0.169	-7.70E+05	2.00E+05	0.0725	0.0016	0.574	0.015	0.0570	0.0018	0.4369	1010	23.5	47	460	4.9	10	357	5.5	11	78
OUJ11z124c	1517.00	948.00	585.00	0.622	-2.53E+06	5.30E+05	0.1321	0.0012	4.210	0.220	0.2310	0.0150	0.9797	2127	8.5	17	1665	22.5	45	1336	38.5	77	80
OUJ11z133	753.00	160.70	406.00	0.215	-6.00E+05	1.60E+05	0.0635	0.0035	0.512	0.025	0.0587	0.0011	0.2191	725	58.4	117	420	8.4	17	368	3.3	7	88
OUJ11z145	105.00	55.80	105.70	0.531	5.00E+04	1.80E+04	0.0627	0.0060	0.548	0.047	0.0632	0.0018	-0.1061	698	101.9	204	444	15.4	31	395	5.5	11	89
OUJ11z149	60.90	54.70	102.80	0.901	2.10E+04	3.00E+04	0.0770	0.0120	0.619	0.089	0.0633	0.0026	0.0436	1121	155.4	311	489	27.9	56	396	7.9	16	81
OUJ11z162	137.20	180.00	311.00	1.314	2.50E+04	2.80E+04	0.0636	0.0086	0.516	0.067	0.0596	0.0015	-0.0223	728	143.3	287	422	22.4	45	373	4.6	9	88
OUJ11z174	100.10	55.00	333.00	0.550	-5.50E+04	4.30E+04	0.0887	0.0059	2.120	0.150	0.1734	0.0048	0.7635	1398	63.8	128	1155	24.4	49	1031	13.2	26	89
OUJ11z207	170.90	120.50	214.40	0.697	-2.40E+04	2.30E+04	0.0655	0.0061	0.550	0.045	0.0605	0.0018	-0.1582	790	97.7	195	445	14.7	29	379	5.5	11	85
OUJ11z213	91.20	56.70	167.00	0.602	-4.60E+04	4.20E+04	0.0718	0.0061	0.987	0.073	0.0991	0.0025	-0.1207	980	86.5	173	697	18.6	37	609	7.3	15	87
OUJ11z217	50.90	22.39	49.40	0.426	4.00E+04	1.30E+04	0.0810	0.0110	0.709	0.090	0.0635	0.0026	-0.0249	1221	133.4	267	544	26.7	53	397	7.9	16	73
OUJ11z220	42.50	37.20	128.30	0.864	-1.80E+04	1.80E+04	0.0845	0.0097	1.280	0.140	0.1063	0.0043	-0.0718	1304	111.5	223	837	31.1	62	651	12.5	25	78
OUJ11z221	77.40	26.80	87.20	0.340	5.90E+04	3.20E+04	0.0709	0.0075	0.985	0.100	0.1005	0.0031	0.0763	955	108.2	216	696	25.6	51	617	9.1	18	89
OUJ11z240	15.93	19.30	71.70	1.188	-1.80E+04	1.60E+04	0.1070	0.0200	1.680	0.290	0.1192	0.0089	-0.0394	1749	171.1	342	1001	54.9	110	726	25.6	51	73
OUJ11z241	81.00	56.70	97.70	0.694	-1.40E+04	1.10E+04	0.0612	0.0058	0.500	0.048	0.0583	0.0015	0.2034	646	101.8	204	412	16.2	32	365	4.6	9	89
OUJ11z244	208.00	181.00	288.00	0.870	1.00E+04	3.40E+04	0.0645	0.0061	0.511	0.046	0.0578	0.0014	0.2439	758	99.7	199	419	15.4	31	362	4.3	9	86
OUJ11z245	612.00	363.00	523.00	0.575	-9.98E+04	5.40E+04	0.0726	0.0043	0.468	0.026	0.0471	0.0014	0.3614	1003	60.1	120	390	9.0	18	297	4.3	9	76
OUJ11z250	22.05	40.90	117.00	1.883	-2.90E+03	5.60E+03	0.0840	0.0150	1.110	0.200	0.0964	0.0045	-0.1028	1293	173.7	347	758	48.1	96	593	13.2	26	78
OUJ11z252	377.00	162.00	319.00	0.450	7.10E+04	7.70E+04	0.0701	0.0050	0.505	0.032	0.0522	0.0014	-0.1440	931	73.2	146	415	10.8	22	328	4.3	9	79
OUJ11z269	334.00	158.10	1713.00	0.478	6.10E+06	3.80E+06	0.2090	0.0026	10.960	0.470	0.3777	0.0075	0.7706	2898	10.1	20	2520	19.9	40	2066	17.5	35	82

Footnotes:

- Analysis references: OUJ11z is zircon from sample OUJ11 (mounts CT17-9 and CT18-5), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.34: Sample OUJ13 (LA-ICPMS)

IGSN: IEACC0003 Coordinate UTM: Zone 30S, 533485 m E, 3775692 m N

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ13z1	614.00	270.60	46.50	0.441	-1.15E+05	4.70E+04	0.0529	0.0012	0.440	0.010	0.0604	0.0007	0.0644	325	25.8	52	371	3.5	7	378	2.0	4	102
OUJ13z2	302.60	168.40	59.80	0.557	-7.00E+04	1.90E+04	0.0652	0.0013	1.146	0.024	0.1277	0.0013	0.1682	781	21.0	42	775	5.7	11	775	3.7	7	100
OUJ13z3	133.30	61.80	67.00	0.464	-9.10E+04	9.70E+04	0.1343	0.0021	7.450	0.130	0.4036	0.0043	0.3858	2155	13.6	27	2167	7.8	16	2186	9.9	20	101
OUJ13z4	818.00	278.40	256.50	0.340	2.00E+05	2.10E+05	0.1258	0.0015	5.893	0.082	0.3409	0.0033	0.2497	2040	10.5	21	1960	6.0	12	1891	7.9	16	96
OUJ13z5	132.70	84.40	25.23	0.636	-1.60E+04	1.40E+04	0.0595	0.0019	0.855	0.028	0.1024	0.0013	0.1379	585	34.7	69	627	7.7	15	628	3.8	8	100
OUJ13z6	554.00	399.00	110.20	0.720	-3.10E+04	3.90E+04	0.0580	0.0012	0.765	0.016	0.0961	0.0010	0.2098	529	22.7	45	577	4.6	9	592	2.9	6	103
OUJ13z7	329.50	89.80	90.70	0.273	-3.30E+05	1.30E+05	0.1296	0.0018	6.736	0.100	0.3770	0.0039	0.3404	2093	12.2	24	2077	6.6	13	2062	9.1	18	99
OUJ13z8	301.70	27.76	7.97	0.092	-9.00E+04	1.60E+04	0.0602	0.0014	0.826	0.019	0.0987	0.0011	0.0703	611	25.1	50	611	5.3	11	607	3.2	6	99
OUJ13z9	130.00	60.40	11.19	0.465	2.50E+04	1.70E+04	0.0552	0.0024	0.458	0.019	0.0601	0.0008	0.0404	420	48.5	97	383	6.6	13	376	2.5	5	98
OUJ13z10	407.00	387.00	71.00	0.951	2.63E+05	9.40E+04	0.0533	0.0014	0.448	0.011	0.0609	0.0007	0.1019	342	29.7	59	376	3.9	8	381	2.0	4	101
OUJ13z11	732.00	61.10	10.80	0.083	-6.00E+04	7.10E+04	0.0542	0.0012	0.448	0.009	0.0601	0.0007	0.0201	379	24.9	50	376	3.3	7	376	2.0	4	100
OUJ13z12	53.49	20.25	9.72	0.379	-1.80E+04	1.60E+04	0.0735	0.0027	1.725	0.059	0.1710	0.0024	0.0231	1028	37.1	74	1018	11.0	22	1018	6.6	13	100
OUJ13z13	221.70	102.60	18.55	0.463	-5.00E+04	1.50E+04	0.0535	0.0018	0.443	0.015	0.0599	0.0008	0.1176	350	38.0	76	372	5.3	11	375	2.3	5	101
OUJ13z14	722.00	93.50	32.07	0.130	-9.00E+05	1.00E+05	0.0612	0.0011	0.906	0.016	0.1081	0.0013	0.3408	647	19.3	39	655	4.3	9	662	3.8	8	101
OUJ13z15	132.10	55.60	10.69	0.421	5.80E+05	3.20E+05	0.0520	0.0023	0.448	0.020	0.0619	0.0008	0.0285	285	50.6	101	376	7.0	14	387	2.5	5	103
OUJ13z16	417.00	154.10	28.36	0.370	6.20E+04	3.70E+04	0.0539	0.0014	0.449	0.012	0.0605	0.0007	-0.0031	367	29.3	59	377	4.2	8	379	2.0	4	101
OUJ13z17	236.30	205.00	188.00	0.868	-3.20E+05	1.30E+05	0.1114	0.0016	5.099	0.079	0.3329	0.0033	0.1439	1823	13.0	26	1836	6.6	13	1852	8.0	16	101
OUJ13z18	416.00	419.00	128.70	1.007	-7.50E+05	2.40E+05	0.0612	0.0012	0.878	0.017	0.1045	0.0011	0.1035	646	21.1	42	640	4.6	9	640	3.2	6	100
OUJ13z19	117.00	45.70	13.35	0.391	1.30E+05	1.10E+05	0.0592	0.0019	0.746	0.026	0.0912	0.0013	0.3271	574	34.9	70	566	7.6	15	563	3.8	8	99
OUJ13z20	101.60	77.80	23.25	0.766	2.00E+05	1.40E+05	0.0597	0.0019	0.831	0.026	0.1018	0.0012	0.1785	593	34.5	69	614	7.2	14	625	3.5	7	102
OUJ13z21	329.20	86.70	32.59	0.263	-2.04E+05	9.40E+04	0.0655	0.0012	1.120	0.020	0.1245	0.0013	0.1724	791	19.2	38	763	4.8	10	756	3.7	7	99
OUJ13z22	238.10	205.30	61.00	0.862	-4.70E+05	8.10E+05	0.0594	0.0015	0.835	0.021	0.1016	0.0011	0.1271	582	27.4	55	616	5.8	12	624	3.2	6	101
OUJ13z23	216.20	93.90	16.77	0.434	0.00E+00	1.10E+04	0.0554	0.0018	0.459	0.015	0.0608	0.0008	0.1620	428	36.2	72	384	5.2	10	380	2.3	5	99
OUJ13z24	723.00	107.90	19.29	0.149	-1.80E+05	3.60E+05	0.0543	0.0012	0.455	0.010	0.0607	0.0006	0.0808	384	24.8	50	381	3.5	7	380	1.9	4	100
OUJ13z25	434.30	329.90	105.80	0.760	-2.30E+04	6.70E+04	0.0861	0.0016	1.831	0.034	0.1523	0.0018	0.4069	1340	18.0	36	1057	6.1	12	914	5.0	10	86
OUJ13z26	159.40	36.11	67.68	0.227	-8.00E+05	1.50E+05	0.3081	0.0037	31.410	0.440	0.7394	0.0074	0.4202	3511	9.3	19	3532	6.9	14	3568	13.7	27	101
OUJ13z27	1032.00	770.00	142.10	0.746	-7.00E+04	7.20E+04	0.0615	0.0015	0.484	0.010	0.0573	0.0006	-0.0730	657	26.2	52	401	3.4	7	359	2.0	4	90
OUJ13z28	79.00	63.72	19.47	0.807	-1.35E+04	9.00E+03	0.0608	0.0026	0.880	0.036	0.1049	0.0013	-0.0385	632	46.0	92	641	9.7	19	643	3.8	8	100
OUJ13z29	243.70	98.86	87.73	0.406	1.79E+06	8.10E+05	0.1079	0.0016	4.786	0.077	0.3218	0.0032	0.0989	1764	13.5	27	1782	6.8	14	1799	7.8	16	101
OUJ13z30	58.90	37.30	38.60	0.633	7.40E+05	2.90E+05	0.1277	0.0027	6.910	0.150	0.3916	0.0047	0.0436	2067	18.6	37	2100	9.6	19	2130	10.9	22	101
OUJ13z31	63.80	67.30	70.10	1.055	-5.70E+04	4.70E+04	0.1286	0.0022	6.763	0.130	0.3817	0.0043	0.3184	2079	15.1	30	2081	8.5	17	2084	10.0	20	100
OUJ13z32	97.30	40.08	9.79	0.412	-4.70E+04	2.10E+04	0.0575	0.0024	0.624	0.026	0.0796	0.0011	0.1096	511	45.9	92	492	8.1	16	494	3.3	7	100
OUJ13z33	1623.00	118.30	9.63	0.073	-9.50E+05	5.50E+05	0.0595	0.0010	0.539	0.010	0.0660	0.0009	0.6164	585	18.2	36	438	3.3	7	412	2.6	5	94
OUJ13z34	500.30	328.70	58.67	0.657	-6.80E+05	2.80E+05	0.0537	0.0013	0.448	0.010	0.0608	0.0007	0.0208	358	27.3	55	376	3.5	7	381	2.0	4	101
OUJ13z35	88.60	79.70	24.15	0.900	1.41E+05	6.70E+04	0.0585	0.0022	0.837	0.031	0.1047	0.0013	0.0388	549	41.1	82	617	8.6	17	642	3.8	8	104
OUJ13z36	185.00	140.10	24.90	0.757	5.30E+05	1.90E+05	0.0521	0.0020	0.440	0.017	0.0614	0.0008	-0.0704	290	43.9	88	370	6.0	12	384	2.3	5	104
OUJ13z37	1334.00	833.00	112.50	0.624	-9.00E+06	1.30E+06	0.0610	0.0014	0.388	0.010	0.0470	0.0015	0.7349	639	24.7	49	333	3.7	7	296	4.6	9	89
OUJ13z39	54.45	28.92	5.73	0.531	-9.98E+03	8.00E+03	0.0557	0.0038	0.507	0.034	0.0668	0.0011	0.0089	440	75.9	152	416	11.4	23	417	3.3	7	100
OUJ13z40	158.00	100.10	17.54	0.634	-1.54E+05	7.60E+04	0.0542	0.0020	0.439	0.015	0.0600	0.0008	0.0135	379	41.5	83	370	5.3	11	375	2.4	5	102
OUJ13z41	62.40	29.18	5.08	0.468	9.00E+03	1.00E+05	0.0570	0.0035	0.466	0.027	0.0599	0.0010	-0.1271	492	67.7	135	388	9.3	19	375	3.0	6	97
OUJ13z42	140.20	75.49	22.33	0.538	4.00E+04	3.40E+04	0.0614	0.0018	0.866	0.024	0.1033	0.0012	-0.0058	653	31.5	63	633	6.5	13	634	3.5	7	100
OUJ13z43	361.00	192.00	30.30	0.532	2.20E+04	5.00E+04	0.0554	0.0017	0.438	0.013	0.0578	0.0007	0.1067	428	34.2	68	369	4.6	9	362	2.2	4	98
OUJ13z44	212.30	102.23	34.34	0.482	-1.09E+05	4.10E+04	0.0628	0.0015	1.018	0.026	0.1180	0.0013	0.1246	701	25.4	51	713	6.5	13	719	3.7	7	101
OUJ13z45	521.00	337.80	104.10	0.648	-1.00E+05	1.40E+05	0.0613	0.0012	0.888	0.017	0.1060	0.0011	0.0490	651	21.0	42	645	4.6	9	650	3.2	6	101
OUJ13z46	698.00	220.00	36.90	0.315	3.70E+04	9.00E+04	0.0557	0.0011	0.453	0.010	0.0599	0.0007	0.2275	438	22.0	44	379	3.3	7	375	2.1	4	99
OUJ13z47	88.50	32.93	5.99	0.372	-1.90E+04	2.00E+04	0.0562	0.0023	0.461	0.019	0.0598	0.0008	0.0496	460	45.4	91	385	6.6	13	374	2.6	5	97
OUJ13z48	393.30	81.10	23.62	0.206	-1.68E+06	8.10E+05	0.0601	0.0013	0.844	0.018	0.1020	0.0011	0.1122	607	23.4	47	621	5.0	10	626	3.2	6	101
OUJ13z49	229.10	140.00	24.37	0.611	-3.70E+04	4.10E+04	0.0538	0.0018	0.442	0.015	0.0607	0.0007	-0.0068	363	37.7	75	372	5.3	11	380	2.2	4	102
OUJ13z50	187.00	60.25	10.49	0.322	1.10E+04	3.70E+04	0.0550	0.0021	0.455	0.017	0.0604	0.0008	0.0462	412	42.7	85	381	5.9	12	378	2.4	5	99
OUJ13z51	86.87	90.72	26.05	1.044	3.70E+05	1.50E+05	0.0622	0.0022	0.841	0.028	0.0989	0.0014	0.1169	681	37.8	76	620	7.7	15	608	4.1	8	98
OUJ13z52	555.00	189.80	60.60	0.342	-2.00E+06	1.40E+06	0.0632	0.0012	0.968	0.018	0.1123	0.0012	0.0805	714	20.2	40	687	4.6	9	686	3.5	7	100
OUJ13z53	371.00	89.90	15.23	0.242	4.00E+03	1.40E+05	0.0550	0.0015	0.447	0.012	0.0593	0.0007	-0.0023	412	30.5	61	375	4.2	8	371	2.0	4	99
OUJ13z54	281.20	90.53	48.88	0.322	-4.10E+05	4.00E+05	0.0780	0.0014	2.069	0.037	0.1925	0.0020	0.2031	1147	17.8	36	1139	6.1	12	1135	5.4	11	100
OUJ13z55	116.40	74.20	55.60	0.637	6.00E+06	1.80E+06	0.0965	0.0017	3.628	0.068	0.2731	0.0030	0.1704	1558	16.5	33	1556	7.5	15	1557	7.6	15	100
OUJ13z56	396.00	147.00	148.60	0.371	-3.80E+06	2.30E+06	0.1294	0.0017	6.882	0.100	0.3855	0.0039	0.4455	2089	11.6	23	2096	6.4	13	2102	9.1	18	100
OUJ13z57	212.40	93.60	53.70	0.441	-9.50E+05	4.80E+05	0.0792	0.0015	2.265	0.044	0.2098	0.0022	0.1562	1177	18.7	37	1201	6.8	14	1228	5.9	12	102
OUJ13z58	566.00	27.08	26.10	0.048	4.00E+06	3.70E+06	0.1256	0.0016	6.070	0.088	0.3509	0.0035	0.3987	2037	11.3	23	1986	6.3	13	1939	8.4	17	98

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ13z59	878.00	300.00	34.90	0.342	-1.50E+06	1.20E+06	0.0599	0.0012	0.399	0.012	0.0499	0.0015	0.7397	601	21.7	43	341	4.4	9	314	4.6	9	92
OUJ13z60	205.30	203.30	225.20	0.990	2.70E+06	5.50E+06	0.1379	0.0019	7.880	0.120	0.4138	0.0043	0.2986	2201	12.0	24	2217	6.9	14	2232	9.8	20	101
OUJ13z61	70.50	63.00	62.10	0.894	7.20E+06	4.40E+06	0.1258	0.0025	6.620	0.130	0.3809	0.0043	0.0565	2040	17.6	35	2062	8.7	17	2080	10.0	20	101
OUJ13z62	80.60	37.47	24.33	0.465	9.30E+05	6.90E+05	0.0876	0.0019	2.779	0.063	0.2325	0.0027	0.1732	1374	20.9	42	1350	8.5	17	1348	7.1	14	100
OUJ13z63	291.60	144.90	108.00	0.497	-2.30E+06	1.80E+06	0.0956	0.0014	3.646	0.058	0.2763	0.0028	0.3902	1540	13.8	28	1560	6.3	13	1573	7.1	14	101
OUJ13z64	575.00	367.00	219.30	0.638	1.00E+07	1.40E+06	0.0814	0.0013	2.322	0.038	0.2089	0.0022	0.3684	1231	15.7	31	1219	5.8	12	1223	5.9	12	100
OUJ13z65	484.00	299.60	51.00	0.619	4.20E+05	3.70E+05	0.0547	0.0015	0.452	0.012	0.0602	0.0006	-0.0774	400	30.7	61	379	4.2	8	377	1.9	4	100
OUJ13z66	195.70	34.89	5.78	0.178	6.00E+04	6.30E+04	0.0564	0.0020	0.451	0.015	0.0595	0.0008	0.0673	468	39.3	79	378	5.2	10	373	2.5	5	99
OUJ13z68	277.50	112.50	31.38	0.405	3.50E+05	2.30E+05	0.0606	0.0015	0.813	0.021	0.0984	0.0011	0.1266	625	26.7	53	604	5.9	12	605	3.2	6	100
OUJ13z69	571.00	121.10	20.71	0.212	1.07E+06	4.60E+05	0.0549	0.0013	0.459	0.011	0.0609	0.0007	0.1516	408	26.5	53	383	3.8	8	381	2.0	4	99
OUJ13z70	247.50	132.60	22.52	0.536	-1.20E+05	1.10E+05	0.0556	0.0018	0.465	0.015	0.0610	0.0008	0.0896	436	36.0	72	388	5.2	10	382	2.3	5	98
OUJ13z71	528.40	133.40	82.39	0.252	-8.00E+03	2.70E+05	0.1125	0.0015	4.118	0.063	0.2661	0.0027	0.4380	1840	12.1	24	1658	6.2	12	1521	6.9	14	92
OUJ13z72	237.40	142.40	58.44	0.600	-9.00E+05	1.30E+05	0.0717	0.0014	1.519	0.031	0.1551	0.0017	0.1882	977	19.9	40	938	6.2	12	929	4.7	9	99
OUJ13z73	632.00	284.10	68.60	0.450	1.40E+05	1.50E+05	0.0594	0.0013	0.663	0.015	0.0824	0.0012	0.3024	582	23.8	48	516	4.6	9	510	3.6	7	99
OUJ13z74	925.70	387.00	55.60	0.418	-1.10E+06	1.40E+06	0.0558	0.0011	0.438	0.010	0.0577	0.0007	0.3231	442	21.9	44	369	3.4	7	361	2.0	4	98
OUJ13z75	275.90	216.50	60.88	0.785	1.31E+05	8.50E+04	0.0621	0.0016	0.918	0.023	0.1083	0.0012	0.0165	678	27.5	55	661	6.1	12	663	3.5	7	100
OUJ13z76	116.00	161.70	43.80	1.394	-3.20E+04	3.20E+04	0.0663	0.0024	0.927	0.034	0.1019	0.0013	0.1596	816	37.8	76	666	8.9	18	626	3.8	8	94
OUJ13z77	38.22	69.70	61.70	1.824	1.40E+04	3.20E+04	0.1220	0.0033	6.240	0.160	0.3703	0.0050	0.1459	1986	24.1	48	2010	11.2	22	2031	11.8	24	101
OUJ13z78	178.10	169.60	27.03	0.952	8.00E+04	2.50E+04	0.0565	0.0022	0.467	0.019	0.0605	0.0008	-0.0335	472	43.1	86	389	6.6	13	379	2.3	5	97
OUJ13z79	434.50	140.80	23.18	0.324	4.00E+04	5.90E+04	0.0541	0.0014	0.444	0.011	0.0603	0.0006	0.0951	375	29.1	58	373	3.9	8	377	1.9	4	101
OUJ13z80	171.90	158.40	133.40	0.921	4.10E+05	2.50E+05	0.1181	0.0020	5.603	0.100	0.3449	0.0036	0.2608	1928	15.2	30	1917	7.7	15	1910	8.6	17	100
OUJ13z81	1007.00	142.00	23.96	0.141	-8.90E+04	9.40E+04	0.0554	0.0011	0.450	0.010	0.0596	0.0006	0.3061	428	22.1	44	377	3.4	7	373	1.9	4	99
OUJ13z82	170.50	44.10	6.97	0.259	2.30E+04	2.30E+04	0.0542	0.0022	0.447	0.018	0.0599	0.0008	0.0817	379	45.6	91	375	6.3	13	375	2.3	5	100
OUJ13z83c	276.00	89.80	13.87	0.325	2.50E+04	3.20E+04	0.0547	0.0019	0.461	0.016	0.0614	0.0008	0.2496	400	38.9	78	385	5.6	11	384	2.3	5	100
OUJ13z83r	128.80	71.80	10.89	0.557	2.00E+04	1.00E+04	0.0542	0.0025	0.444	0.020	0.0602	0.0009	0.1122	379	51.9	104	373	7.0	14	377	2.6	5	101
OUJ13z84	202.90	125.60	19.95	0.619	-1.50E+04	1.90E+04	0.0542	0.0021	0.466	0.017	0.0623	0.0008	0.1257	379	43.6	87	388	5.9	12	389	2.4	5	100
OUJ13z85	1040.00	211.00	25.90	0.203	-3.20E+05	2.00E+05	0.0575	0.0013	0.379	0.012	0.0502	0.0016	0.6479	511	24.8	50	326	4.4	9	316	4.9	10	97
OUJ13z86	166.50	243.60	57.70	1.463	3.80E+04	2.50E+04	0.0603	0.0019	0.758	0.024	0.0932	0.0011	0.1363	614	34.0	68	573	6.9	14	574	3.2	6	100
OUJ13z87	28.62	16.93	6.70	0.592	1.47E+04	7.50E+03	0.0687	0.0036	1.432	0.074	0.1495	0.0025	0.1091	890	54.1	108	902	15.4	31	898	7.0	14	100
OUJ13z88	91.40	99.90	33.30	1.093	1.00E+04	1.90E+04	0.0660	0.0025	1.213	0.045	0.1339	0.0018	-0.0146	806	39.6	79	807	10.3	21	810	5.1	10	100
OUJ13z89	55.10	62.50	15.48	1.134	8.40E+03	9.20E+03	0.0573	0.0030	0.797	0.042	0.1000	0.0016	0.1096	503	57.6	115	595	11.9	24	614	4.7	9	103
OUJ13z90	727.00	279.60	75.50	0.385	2.00E+05	1.20E+05	0.0613	0.0012	0.870	0.017	0.1041	0.0010	0.1144	650	21.0	42	636	4.6	9	638	2.9	6	100
OUJ13z91	450.00	89.53	14.89	0.199	3.10E+04	4.50E+04	0.0555	0.0016	0.459	0.013	0.0605	0.0007	0.0933	432	32.1	64	384	4.5	9	379	2.0	4	99
OUJ13z92	152.20	81.12	64.06	0.533	4.70E+04	7.30E+04	0.1101	0.0017	4.996	0.087	0.3281	0.0034	0.2137	1801	14.0	28	1819	7.4	15	1829	8.3	17	101
OUJ13z93	72.20	31.50	5.54	0.436	-7.00E+03	8.50E+03	0.0516	0.0032	0.439	0.026	0.0615	0.0009	-0.0448	268	71.1	142	370	9.2	18	385	2.8	6	104
OUJ13z94	194.60	128.20	120.80	0.659	-7.00E+05	1.10E+05	0.1292	0.0019	6.734	0.110	0.3796	0.0038	0.2294	2087	12.9	26	2077	7.2	14	2074	8.9	18	100
OUJ13z95	210.80	54.11	9.00	0.257	2.40E+04	1.80E+04	0.0542	0.0021	0.447	0.017	0.0604	0.0007	-0.0726	379	43.6	87	375	6.0	12	378	2.2	4	101
OUJ13z96	432.90	264.40	149.60	0.611	-5.00E+06	1.90E+06	0.0821	0.0014	2.416	0.041	0.2150	0.0022	0.1455	1248	16.7	33	1247	6.1	12	1255	5.8	12	101
OUJ13z97	334.50	114.80	101.20	0.343	3.90E+05	2.60E+05	0.1242	0.0018	5.758	0.088	0.3379	0.0037	0.2906	2017	12.8	26	1940	6.6	13	1877	8.9	18	97
OUJ13z98	215.20	66.67	30.19	0.310	-2.00E+06	1.50E+06	0.0741	0.0016	1.676	0.038	0.1660	0.0018	0.1922	1044	21.8	44	999	7.2	14	990	5.0	10	99
OUJ13z99	504.00	288.00	45.50	0.571	-5.90E+04	6.00E+04	0.0573	0.0014	0.445	0.011	0.0569	0.0009	0.3334	503	26.9	54	373	3.9	8	357	2.6	5	95
OUJ13z100	326.50	121.20	95.60	0.371	-1.00E+05	9.20E+04	0.1207	0.0017	5.010	0.083	0.2999	0.0035	0.5771	1967	12.6	25	1821	7.0	14	1691	8.7	17	93
OUJ13z101	179.80	129.90	120.80	0.722	4.00E+05	2.40E+05	0.1215	0.0019	6.088	0.100	0.3634	0.0038	0.2047	1978	13.9	28	1989	7.2	14	1998	9.0	18	100
OUJ13z102	144.90	114.70	97.30	0.792	8.50E+04	7.30E+04	0.1100	0.0019	4.957	0.088	0.3263	0.0034	0.1855	1799	15.7	31	1812	7.5	15	1820	8.3	17	100
OUJ13z103	133.70	135.10	146.80	1.010	1.50E+05	1.90E+05	0.1400	0.0020	8.073	0.130	0.4197	0.0043	0.1828	2227	12.4	25	2239	7.3	15	2259	9.8	20	101
OUJ13z104	161.80	112.40	34.70	0.695	-3.50E+05	2.60E+05	0.0616	0.0018	0.898	0.027	0.1067	0.0013	0.0045	660	31.3	63	651	7.2	14	653	3.8	8	100
OUJ13z105	142.10	99.40	101.10	0.700	-1.90E+05	1.30E+05	0.1290	0.0020	6.785	0.110	0.3819	0.0040	0.2983	2084	13.6	27	2084	7.2	14	2085	9.3	19	100
OUJ13z106	57.84	54.30	16.69	0.939	1.60E+04	1.40E+04	0.0613	0.0026	0.865	0.035	0.1021	0.0015	-0.0256	650	45.5	91	633	9.5	19	627	4.4	9	99
OUJ13z107	534.70	187.90	34.35	0.351	2.70E+05	1.20E+05	0.0549	0.0012	0.456	0.010	0.0607	0.0007	0.1366	408	24.5	49	381	3.5	7	380	2.0	4	100
OUJ13z108	232.70	34.80	33.30	0.150	-2.00E+05	1.20E+05	0.1295	0.0019	5.918	0.093	0.3329	0.0036	0.2857	2091	12.9	26	1964	6.8	14	1852	8.7	17	94
OUJ13z109	684.00	578.00	160.70	0.845	-4.00E+03	1.10E+05	0.0583	0.0011	0.730	0.013	0.0921	0.0009	0.1182	541	20.6	41	557	3.8	8	568	2.7	5	102
OUJ13z110	97.80	83.30	17.00	0.852	-1.90E+04	1.80E+04	0.0776	0.0048	0.670	0.044	0.0635	0.0010	0.3177	1137	61.5	123	521	13.4	27	397	2.9	6	76
OUJ13z111	91.00	34.00	6.92	0.374	1.60E+04	1.20E+04	0.0545	0.0026	0.454	0.022	0.0610	0.0008	0.1290	392	53.5	107	380	7.7	15	381	2.6	5	100
OUJ13z112	76.70	39.61	55.70	0.516	-6.00E+04	6.50E+04	0.1750	0.0026	12.210	0.200	0.5072	0.0053	0.1606	2606	12.4	25	2621	7.7	15	2645	11.3	23	101
OUJ13z113	91.80	58.28	11.21	0.635	8.60E+03	9.30E+03	0.0531	0.0025	0.436	0.020	0.0602	0.0009	-0.0610	333	53.4	107	367	7.1	14	377	2.6	5	103
OUJ13z114	224.30	150.40	28.50	0.671	1.70E+04	3.00E+04	0.0537	0.0017	0.441	0.014	0.0605	0.0007	0.1125	358	35.7	71	371	4.9	10	379	2.1	4	102
OUJ13z115	175.60	218.30	70.50	1.243	1.51E+06	7.20E+05	0.0605	0.0017	0.838	0.023	0.1013	0.0011	-0.0123	622	30.3	61	618	6.3	13	622	3.2	6	101
OUJ13z116	41.22	54.21	17.89	1.315	4.20E+04	2.10E+04	0.0636	0.0033	0.871	0.045	0.1001	0.0017	-0.0272	728	55.0	110	636	12.2	24	615	5.0	10	97
OUJ13z117	94.20	58.80	24.80	0.624	9.00E+04	2.40E+04	0.0675	0.0021	1.124	0.037	0.1212	0.0015	0.1415	853	32.3	65	765	8.8	18	737	4.3	9	96
OUJ13z118	337.50	391.00	111.30	1.159	-1.00E+04	6.60E+04	0.0596	0.0013	0.719	0.015	0.0878	0.0010	0.1408	589	23.7	47	550	4.4	9	543	2.8	6	99
OUJ13z119	535.00	120.00	124.00	0.224	-5.30E+05	6.90E+05	0.1240	0.0016	5.740	0.086	0.3349	0.0034	0.5641	2015	11.4	23	1937	6.5	13	1862	8.2	16	96
OUJ13z120	59.87	73.10	25.01	1.221	2.30E+04	1.60E+04	0.0598	0.0027	0.847	0.037	0.1036	0.0014	0.0403	596	48.9	98	623	10.2	20	635	4.1	8	102
OUJ13z121	143.20	169.60	160.30	1.184	-1.40E+04	8.00E+04	0.1080	0.0017	4.334	0.079	0.2924	0.0035	0.3879	1766	14.4	29	1700	7.5	15	1654	8.7	17	97
OUJ13z123	145.90	100.10	31.94	0.686	1.79E+05	8.80E+04	0.0610	0.0018	0.826	0.024	0.1000	0.0012	0.0822	639	31.7	63	611	6.7	13	614	3.5	7	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{204}Pb/^{206}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ13z124	66.10	28.83	34.20	0.436	4.00E+07	1.00E+07	0.1341	0.0025	7.110	0.140	0.3861	0.0042	0.1006	2152	16.3	33	2125	8.8	18	2105	9.8	20	99
OUJ13z125	273.60	182.40	172.70	0.667	1.47E+07	7.30E+06	0.1064	0.0016	4.490	0.074	0.3072	0.0032	0.3580	1739	13.8	28	1729	6.8	14	1727	7.9	16	100
OUJ13z126	257.30	92.30	51.00	0.359	1.60E+05	1.40E+05	0.0732	0.0014	1.761	0.034	0.1770	0.0018	0.1177	1019	19.4	39	1031	6.2	12	1050	4.9	10	102
OUJ13z127	219.30	94.10	18.44	0.429	6.00E+04	4.60E+04	0.0553	0.0018	0.462	0.015	0.0612	0.0007	-0.0628	424	36.3	73	386	5.2	10	383	2.2	4	99
OUJ13z128	56.78	46.73	13.84	0.823	3.80E+04	3.00E+04	0.0561	0.0025	0.712	0.030	0.0942	0.0013	0.0046	456	49.4	99	546	8.9	18	580	3.8	8	106
OUJ13z129c	38.17	12.10	8.08	0.317	1.02E+05	4.90E+04	0.0835	0.0026	2.390	0.074	0.2093	0.0028	0.0752	1281	30.3	61	1240	11.1	22	1225	7.5	15	99
OUJ13z129r	117.90	36.71	23.55	0.311	-4.40E+04	6.40E+04	0.0812	0.0018	2.353	0.053	0.2113	0.0024	0.1664	1226	21.8	44	1228	8.0	16	1236	6.4	13	101
OUJ13z130	339.40	95.50	19.05	0.281	8.30E+05	3.80E+05	0.0542	0.0016	0.443	0.013	0.0603	0.0007	0.2033	379	33.2	66	372	4.6	9	378	2.1	4	101
OUJ13z131	82.99	55.42	18.47	0.668	-2.00E+04	3.40E+04	0.0604	0.0024	0.866	0.034	0.1040	0.0014	-0.0069	618	42.9	86	633	9.2	18	638	4.1	8	101
OUJ13z132	182.40	82.30	94.80	0.451	2.60E+05	3.20E+05	0.1342	0.0019	7.511	0.120	0.4063	0.0041	0.1819	2154	12.4	25	2174	7.2	14	2198	9.4	19	101
OUJ13z133	459.00	128.30	26.70	0.280	8.10E+05	3.10E+05	0.0549	0.0014	0.452	0.011	0.0602	0.0007	-0.1042	408	28.5	57	378	3.8	8	377	2.0	4	100
OUJ13z134	311.10	60.65	22.80	0.195	1.45E+06	4.70E+05	0.0652	0.0013	1.103	0.023	0.1237	0.0013	0.2920	781	21.0	42	755	5.5	11	752	3.7	7	100
OUJ13z135	209.00	132.30	24.50	0.633	2.00E+06	3.60E+06	0.0556	0.0019	0.463	0.016	0.0612	0.0008	0.2006	436	38.0	76	386	5.5	11	383	2.3	5	99
OUJ13z136	188.17	81.10	26.16	0.431	2.20E+06	1.00E+06	0.0615	0.0017	0.871	0.023	0.1047	0.0012	-0.0972	657	29.6	59	636	6.2	12	642	3.5	7	101
OUJ13z137	175.80	30.80	12.06	0.175	1.60E+05	1.40E+05	0.0663	0.0017	1.189	0.031	0.1308	0.0015	0.0808	816	26.8	54	795	7.2	14	793	4.3	9	100
OUJ13z138	92.10	52.91	16.43	0.574	8.30E+04	8.90E+04	0.0591	0.0023	0.856	0.034	0.1040	0.0014	0.0644	571	42.3	85	628	9.3	19	638	4.1	8	102
OUJ13z139	153.60	193.00	57.60	1.257	1.10E+05	1.20E+05	0.0607	0.0020	0.831	0.027	0.0994	0.0012	0.1641	629	35.5	71	614	7.5	15	611	3.5	7	99
OUJ13z140	552.00	54.71	10.95	0.099	4.60E+05	3.30E+05	0.0532	0.0014	0.461	0.012	0.0630	0.0007	0.1038	337	29.8	60	385	4.2	8	394	2.1	4	102
OUJ13z142	152.70	260.00	84.80	1.703	4.00E+05	3.60E+05	0.0627	0.0017	0.962	0.024	0.1117	0.0013	0.1533	698	28.9	58	684	6.2	12	682	3.8	8	100
OUJ13z143	456.00	199.00	35.20	0.436	-9.00E+06	2.10E+06	0.0563	0.0016	0.468	0.014	0.0612	0.0007	0.1271	464	31.5	63	390	4.8	10	383	2.1	4	98
OUJ13z144	1198.00	60.80	10.63	0.051	-4.00E+07	2.20E+07	0.0544	0.0010	0.441	0.008	0.0594	0.0006	0.0000	386	20.7	41	371	3.0	6	372	1.8	4	100
OUJ13z145	412.20	452.70	123.20	1.098	3.00E+06	4.00E+06	0.0614	0.0014	0.838	0.018	0.0993	0.0011	0.0757	653	24.5	49	618	5.0	10	610	3.2	6	99
OUJ13z146	259.60	129.80	21.82	0.500	-8.00E+05	4.90E+05	0.0550	0.0017	0.457	0.014	0.0603	0.0007	0.1019	412	34.6	69	382	4.9	10	378	2.1	4	99
OUJ13z147	190.80	267.00	96.70	1.399	9.90E+05	6.10E+05	0.0654	0.0017	1.209	0.032	0.1341	0.0015	0.1177	787	27.3	55	805	7.3	15	811	4.3	9	101
OUJ13z148	656.80	196.20	242.10	0.299	-1.03E+07	5.30E+06	0.1889	0.0023	12.996	0.190	0.4996	0.0049	0.4467	2732	10.0	20	2679	6.9	14	2612	10.5	21	97
Discordant data																							
OUJ13z38	69.20	45.80	9.77	0.662	-2.40E+04	1.40E+04	0.0729	0.0051	0.614	0.046	0.0616	0.0010	0.2779	1011	70.9	142	486	14.5	29	385	3.0	6	79
OUJ13z67	81.50	167.00	44.60	2.049	1.12E+05	7.30E+04	0.0702	0.0032	0.886	0.041	0.0915	0.0013	0.0662	934	46.8	94	644	11.0	22	564	3.8	8	88
OUJ13z122	388.00	173.20	111.40	0.446	1.46E+06	6.50E+05	0.1157	0.0018	3.716	0.069	0.2346	0.0032	0.6840	1891	14.0	28	1575	7.4	15	1359	8.4	17	86
OUJ13z141	2659.00	227.70	52.90	0.086	5.60E+06	2.00E+06	0.0797	0.0014	0.270	0.006	0.0245	0.0005	0.7601	1190	17.3	35	243	2.5	5	156	1.5	3	64

Footnotes:

- Analysis references: OUJ13z is zircon from sample OUJ13 (mount CT18-8), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.35: Sample BES1 (LA-ICPMS)

IGSN: IEACC0009 Coordinate UTM: Zone 29S, 3720500 m N, 674467 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
BES1z1	411.90	59.50	306.00	0.147	-1.46E+07	8.90E+06	0.0742	0.0015	1.754	0.040	0.1723	0.0016	0.4018	1046.9	20.4	40.8	1028.6	7.4	14.7	1024.8	4.4	8.8	100
BES1z3	180.40	111.80	592.00	0.575	9.00E+06	5.50E+06	0.0720	0.0020	1.711	0.048	0.1735	0.0022	0.1588	985.9	28.3	56.5	1012.7	9.0	18.0	1031.4	6.0	12.1	102
BES1z4	103.00	92.10	287.00	0.923	-8.90E+05	8.50E+05	0.0620	0.0032	0.832	0.042	0.0982	0.0020	0.1488	674.1	55.2	110.4	614.7	11.6	23.3	603.9	5.9	11.7	98
BES1z5	88.30	50.30	341.50	0.587	-9.00E+06	1.40E+06	0.0864	0.0034	2.650	0.110	0.2240	0.0033	0.2067	1347.1	38.0	76.0	1314.6	15.3	30.6	1303.0	8.7	17.4	99
BES1z6	115.10	72.10	762.00	0.641	-2.00E+06	3.50E+06	0.1295	0.0029	6.160	0.140	0.3437	0.0042	0.2883	2091.2	19.7	39.4	1998.8	9.9	19.8	1904.4	10.1	20.1	95
BES1z8	169.00	96.40	563.00	0.565	-8.00E+04	2.40E+06	0.0771	0.0026	2.054	0.075	0.1943	0.0027	0.4130	1123.8	33.6	67.2	1133.6	12.5	24.9	1144.6	7.3	14.6	101
BES1z9	597.00	572.00	4190.00	0.984	-1.20E+07	1.20E+07	0.1333	0.0014	6.519	0.099	0.3532	0.0043	0.7236	2141.9	9.2	18.4	2048.5	6.7	13.4	1949.9	10.2	20.5	95
BES1z10	212.20	153.70	374.00	0.739	2.00E+06	1.30E+06	0.0562	0.0028	0.580	0.029	0.0754	0.0012	0.1617	460.3	55.2	110.5	464.5	9.3	18.6	468.6	3.6	7.2	101
BES1z11	62.10	77.20	276.00	1.238	-1.70E+06	1.40E+06	0.0844	0.0044	2.050	0.130	0.1806	0.0045	0.5968	1301.8	50.6	101.3	1132.3	21.6	43.2	1070.3	12.3	24.6	95
BES1z12	23.50	23.80	266.00	1.021	-4.20E+05	7.90E+05	0.1292	0.0059	6.960	0.360	0.3900	0.0100	0.4652	2087.1	40.2	80.3	2106.3	22.9	45.9	2122.8	23.2	46.4	101
BES1z13	311.00	341.00	2630.00	1.043	-1.00E+07	1.60E+07	0.2297	0.0023	15.990	0.710	0.5030	0.0210	0.9769	3050.0	8.0	16.0	2876.2	21.2	42.4	2626.7	45.0	90.1	91
BES1z14	167.00	379.00	916.00	2.358	-3.30E+06	2.20E+06	0.0652	0.0033	0.772	0.040	0.0866	0.0019	0.3001	780.8	53.2	106.4	580.9	11.5	22.9	535.4	5.6	11.3	92
BES1z15	91.10	61.50	412.00	0.685	6.70E+06	3.80E+06	0.0886	0.0027	2.768	0.095	0.2277	0.0034	0.4486	1395.5	29.2	58.4	1347.0	12.8	25.6	1322.4	8.9	17.9	98
BES1z16	481.00	273.00	544.00	0.583	-5.00E+06	2.80E+06	0.0572	0.0024	0.504	0.019	0.0650	0.0009	-0.1361	499.3	46.2	92.4	414.4	6.4	12.8	406.2	2.8	5.6	98
BES1z17	336.00	92.70	747.00	0.279	1.20E+07	1.50E+07	0.1225	0.0018	5.451	0.083	0.3224	0.0038	0.4628	1993.0	13.1	26.1	1892.9	6.5	13.1	1801.4	9.3	18.5	95
BES1z19	118.90	135.80	810.00	1.155	-5.90E+06	4.50E+06	0.0769	0.0028	2.022	0.071	0.1927	0.0024	0.1986	1118.6	36.3	72.6	1122.9	11.9	23.8	1136.0	6.5	13.0	101
BES1z20	65.60	89.20	428.00	1.357	-2.80E+06	1.90E+06	0.0790	0.0037	2.020	0.100	0.1864	0.0048	0.5417	1172.1	46.4	92.7	1122.3	16.8	33.6	1101.8	13.0	26.1	98
BES1z21	142.40	177.60	594.00	1.259	1.42E+07	8.60E+06	0.0591	0.0031	0.849	0.045	0.1050	0.0015	0.1685	570.8	57.1	114.1	624.1	12.3	24.7	643.6	4.4	8.8	103
BES1z22	87.50	48.33	314.60	0.553	-4.20E+06	3.20E+06	0.0811	0.0029	2.331	0.089	0.2095	0.0033	0.3714	1223.9	35.1	70.2	1221.8	13.6	27.1	1226.2	8.8	17.6	100
BES1z23	182.10	216.50	680.00	1.189	4.80E+06	2.80E+06	0.0594	0.0023	0.845	0.033	0.1038	0.0014	0.1430	581.8	42.0	84.1	621.9	9.1	18.1	636.6	4.1	8.2	102
BES1z26	306.00	280.00	745.00	0.900	1.90E+06	3.80E+06	0.0872	0.0027	2.036	0.085	0.1710	0.0035	0.7583	1364.9	29.8	59.6	1127.6	14.2	28.4	1017.6	9.6	19.3	90
BES1z27	288.40	278.00	727.00	0.912	-4.30E+06	5.00E+06	0.0659	0.0021	1.013	0.031	0.1125	0.0019	0.2079	803.2	33.4	66.7	710.4	7.8	15.6	687.3	5.5	11.0	97
BES1z28	66.30	61.20	674.00	0.892	-1.60E+06	4.70E+06	0.1359	0.0033	7.600	0.190	0.4047	0.0057	0.3426	2175.6	21.1	42.3	2184.9	11.2	22.4	2190.6	13.1	26.2	100
BES1z29	21.63	37.10	153.00	1.572	-5.60E+05	6.70E+05	0.0665	0.0083	1.360	0.170	0.1495	0.0059	0.2030	822.2	130.3	260.6	871.9	36.5	73.1	898.2	16.5	33.1	103
BES1z31c	46.60	67.50	200.00	1.351	2.30E+05	4.60E+05	0.0615	0.0060	0.851	0.080	0.0999	0.0026	-0.0542	656.8	104.6	209.2	625.2	21.9	43.8	613.8	7.6	15.2	98
BES1z32	175.40	179.30	368.00	0.972	-6.40E+06	3.70E+06	0.0540	0.0029	0.501	0.028	0.0677	0.0011	0.2182	371.0	60.5	120.9	412.4	9.5	18.9	422.3	3.3	6.6	102
BES1z33	104.20	97.40	1160.00	0.887	-6.50E+07	6.10E+07	0.1451	0.0025	8.510	0.150	0.4255	0.0059	0.5046	2289.0	14.8	29.6	2287.0	8.0	16.0	2285.4	13.3	26.7	100
BES1z34	79.46	84.50	246.90	0.992	-4.30E+06	3.00E+06	0.0748	0.0038	1.389	0.077	0.1348	0.0030	0.3958	1063.1	51.1	102.2	884.3	16.3	32.7	815.2	8.5	17.0	92
BES1z36	428.00	455.00	1362.00	0.966	3.00E+07	1.10E+07	0.0616	0.0021	0.883	0.031	0.1045	0.0012	0.1794	660.3	36.5	73.1	642.6	8.4	16.7	640.7	3.5	7.0	100
BES1z37	268.00	164.60	482.00	0.543	5.00E+04	5.70E+06	0.0618	0.0023	0.898	0.036	0.1068	0.0017	0.3135	667.2	39.8	79.7	650.7	9.6	19.2	654.1	5.0	9.9	101
BES1z40	120.40	70.90	416.00	0.531	1.50E+07	1.00E+07	0.0823	0.0023	2.322	0.063	0.2057	0.0029	0.2492	1252.7	27.3	54.7	1219.0	9.6	19.2	1205.9	7.8	15.5	99
BES1z42	842.00	2052.00	5270.00	2.182	-2.40E+08	1.10E+08	0.0586	0.0012	0.739	0.017	0.0918	0.0010	0.4389	552.3	22.3	44.7	561.8	5.0	9.9	566.4	2.8	5.6	101
BES1z43	134.00	59.70	273.00	0.400	-1.10E+07	1.50E+07	0.0716	0.0024	1.713	0.063	0.1736	0.0026	0.3230	974.6	34.2	68.3	1013.4	11.8	23.6	1031.9	7.1	14.3	102
BES1z45c	155.80	92.30	240.00	0.493	-5.30E+07	2.90E+07	0.0589	0.0033	0.756	0.043	0.0934	0.0014	0.2224	563.4	61.0	122.1	571.7	12.4	24.8	575.6	4.1	8.3	101
BES1z45r	205.40	169.40	474.00	0.729	2.00E+07	2.90E+07	0.0628	0.0025	0.865	0.033	0.1004	0.0014	0.1128	701.5	42.4	84.8	632.8	9.0	18.0	616.8	4.1	8.2	97
BES1z46	49.90	39.60	191.00	0.703	7.60E+06	7.10E+06	0.0722	0.0046	1.660	0.100	0.1670	0.0040	0.0700	991.6	64.8	129.6	993.4	19.1	38.1	995.6	11.0	22.1	100
BES1z47	248.00	145.20	399.00	0.501	-6.00E+07	4.30E+07	0.0613	0.0024	0.879	0.034	0.1046	0.0013	0.0921	649.8	42.0	84.1	640.4	9.2	18.4	641.3	3.8	7.6	100
BES1z49	383.90	252.00	504.00	0.567	-8.30E+07	7.30E+07	0.0583	0.0020	0.630	0.022	0.0788	0.0013	0.3649	541.1	37.5	75.0	496.1	6.8	13.7	489.0	3.9	7.8	99
BES1z50	134.30	120.30	256.00	0.790	-3.50E+08	1.90E+08	0.0654	0.0033	0.843	0.043	0.0940	0.0016	0.2209	787.2	53.0	105.9	620.8	11.8	23.7	579.2	4.7	9.4	93
BES1z51	49.20	89.40	170.40	1.592	1.60E+07	6.80E+07	0.0612	0.0061	0.792	0.078	0.0948	0.0022	0.1721	646.3	107.1	214.1	592.3	22.1	44.2	583.9	6.5	13.0	99
BES1z52	16.96	28.20	62.00	1.385	2.40E+08	1.30E+08	0.0720	0.0120	1.030	0.160	0.1075	0.0041	-0.1188	985.9	169.6	339.2	718.9	40.0	80.0	658.2	11.9	23.9	92
BES1z53	98.40	299.00	3090.00	2.620	3.00E+07	2.90E+07	0.1479	0.0031	8.450	0.190	0.4145	0.0059	0.4044	2321.8	18.0	35.9	2280.6	10.2	20.4	2235.5	13.4	26.9	98
BES1z54c	88.90	113.00	481.00	1.042	-7.30E+07	4.20E+07	0.0748	0.0034	1.688	0.082	0.1641	0.0034	0.3556	1063.1	45.7	91.4	1004.0	15.5	30.9	979.5	9.4	18.8	98
BES1z54r	150.90	117.00	478.00	0.693	4.60E+07	3.20E+07	0.0699	0.0031	1.488	0.059	0.1548	0.0023	-0.0867	925.4	45.6	91.1	925.5	12.0	24.1	927.8	6.4	12.8	100
BES1z55	268.30	419.00	677.00	1.379	-1.40E+07	1.40E+07	0.0666	0.0022	0.868	0.030	0.0948	0.0014	0.3642	825.3	34.5	68.9	634.5	8.1	16.3	583.9	4.1	8.2	92
BES1z56	393.00	280.00	2880.00	0.611	8.70E+07	7.30E+07	0.1309	0.0015	6.770	0.110	0.3741	0.0047	0.6675	2110.1	10.1	20.1	2081.8	7.2	14.4	2048.7	11.0	22.0	98
BES1z57	119.30	170.40	749.00	1.276	-8.40E+06	7.10E+06	0.0707	0.0030	1.550	0.061	0.1600	0.0023	-0.0285	948.8	43.4	86.9	950.5	12.1	24.3	956.8	6.4	12.8	101
BES1z58	475.00	366.00	1076.00	0.662	7.40E+07	5.20E+07	0.1352	0.0016	6.270	0.150	0.3356	0.0079	0.8712	2166.6	10.3	20.6	2014.3	10.5	20.9	1865.5	19.1	38.1	93
BES1z59	353.00	459.00	1130.00	0.958	8.00E+07	1.00E+07	0.0606	0.0028	0.785	0.035	0.0952	0.0013	0.1477	625.1	49.8	99.6	588.3	9.9	19.9	586.2	3.8	7.7	100
BES1z60	122.20	219.20	607.00	1.627	-2.00E+06	3.30E+06	0.0597	0.0032	0.833	0.043	0.1015	0.0017	0.0110	592.7	58.1	116.2	615.3	11.9	23.8	623.2	5.0	9.9	101
BES1z61	161.10	132.00	1439.00	0.744	-8.60E+07	5.80E+07	0.1461	0.0023	8.490	0.150	0.4192	0.0045	0.5391	2300.8	13.5	27.0	2284.9	8.0	16.0	2256.8	10.2	20.4	99
BES1z62	101.60	59.40	536.00	0.532	-2.90E+06	7.70E+06	0.1084	0.0023	4.990	0.120	0.3331	0.0048	0.4518	1772.7	19.4	38.7	1817.6	10.2	20.3	1853.4	11.6	23.2	102
BES1z63	651.00	531.00	1514.00	0.750	1.80E+07	2.20E+07	0.0758	0.0014	1.577	0.032	0.1512	0.0018	0.4594	1089.8	18.5	37.0	961.2	6.3	12.6	907.7	5.0	10.1	94
BES1z64	410.00	323.00	468.00	0.732	-1.05E+07	7.40E+06	0.0557	0.0020	0.462	0.019	0.0600	0.0010	0.5423	440.4	39.9	79.9	385.6	6.6	13.2	375.6	3.0	6.1	97
BES1z66	350.80	222.60	1914.00	0.592	-1.00E+07	2.10E+07	0.1258	0.0015	5.724	0.088	0.3292	0.0042	0.6413	2040.1	10.5	21.1	1935.0	6.6	13.3	1834.5	10.2	20.4	95
BES1z67	104.50	111.10	1081.00	0.992	-2.00E+07	1.20E+07	0.1289	0.0028	6.650	0.160	0.3727	0.0038	0.4093	2083.0	19.1	38.2	2066.0	10.6	21.2	2042.1	8.9	17.8	99
BES1z68	155.10	144.60	306.00	0.878	-1.00E+06	2.10E+06	0.0599	0.0030	0.658	0.031	0.0802	0.0016	0.0732	600.0	54.2	108.4	513.4	9.5	19.0	497.3	4.8	9.5	97
BES1z69	133.90	273.40	789.00	1.925	-9.50E+06	5.10E+06	0.0615	0.0034	0.852	0.047	0.1008	0.0017	0.1947	656.8	59.3	118.6	625.7	12.9	25.7	619.1	5.0	10.0	99
BES1z70	27.85	15.70	164.30	0.525	-1.20E+07	1.10E+07	0.1315	0.0064	7.010	0.310	0.3885	0.0094	0.1012	2118.1	42.6	85.3	2112.7	19.6	39.3	2115.9	21.8	43.6	100
BES1z71	47.40	47.10	119.80	0.917	-1.50E+06	1.20E+06	0.0781	0.0047	1.489	0.083	0.1413	0.0040	0.2024	1149.4	59.8	119.5	925.9	16.9	33.8	852.0	11.3	22.6	92

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
BES1z72	335.00	270.90	933.00	0.773	4.00E+06	7.30E+06	0.0774	0.0020	1.651	0.043	0.1552	0.0018	0.1499	1131.5	25.7	51.5	989.9	8.2	16.5	930.0	5.0	10.0	94
BES1z73	267.40	226.80	1857.00	0.816	8.00E+07	1.10E+07	0.1057	0.0016	4.404	0.068	0.3018	0.0030	0.3742	1726.5	13.9	27.8	1713.1	6.4	12.8	1700.2	7.4	14.9	99
BES1z74	230.40	435.80	1342.00	1.828	1.40E+07	8.50E+06	0.0639	0.0021	0.932	0.032	0.1054	0.0013	0.1396	738.3	34.8	69.5	668.7	8.4	16.8	646.0	3.8	7.6	97
BES1z75	134.90	78.90	803.00	0.560	9.30E+07	4.40E+07	0.1318	0.0021	7.190	0.160	0.3949	0.0069	0.7303	2122.1	14.0	27.9	2135.3	9.9	19.8	2145.5	15.9	31.9	100
BES1z76	114.50	90.60	243.00	0.768	9.00E+06	1.20E+06	0.0585	0.0039	0.724	0.046	0.0906	0.0013	-0.2580	548.5	72.8	145.6	553.0	13.5	27.1	559.1	3.8	7.7	101
BES1z77	568.00	430.00	751.00	0.727	-7.90E+06	7.50E+06	0.0653	0.0015	0.874	0.025	0.0972	0.0019	0.5934	784.0	24.1	48.3	637.7	6.8	13.5	598.0	5.6	11.2	94
BES1z78	439.00	278.00	418.00	0.627	2.60E+06	3.70E+06	0.0563	0.0025	0.460	0.020	0.0594	0.0008	0.2084	464.2	49.2	98.4	384.3	6.9	13.9	372.0	2.4	4.9	97
BES1z79	99.80	79.70	262.00	0.777	1.60E+06	1.40E+06	0.0634	0.0041	0.933	0.060	0.1073	0.0018	-0.0282	721.7	68.6	137.2	669.2	15.7	31.5	657.0	5.2	10.5	98
BES1z80c	291.00	349.00	910.00	1.227	-6.70E+06	3.30E+06	0.0623	0.0024	0.861	0.033	0.1004	0.0014	0.1309	684.4	41.1	82.2	630.7	9.0	18.0	616.8	4.1	8.2	98
BES1z80r	189.00	158.00	440.00	0.831	-1.60E+07	7.10E+06	0.0599	0.0029	0.802	0.041	0.0975	0.0014	0.2087	600.0	52.4	104.8	598.0	11.5	23.1	599.7	4.1	8.2	100
BES1z81	576.00	56.60	282.00	0.094	8.00E+07	1.80E+07	0.1266	0.0015	5.676	0.094	0.3246	0.0038	0.6903	2051.3	10.5	20.9	1927.7	7.1	14.3	1812.2	9.2	18.5	94
BES1z82	185.70	111.70	577.00	0.608	2.00E+06	3.50E+06	0.0739	0.0024	1.786	0.056	0.1765	0.0019	0.1375	1038.7	32.8	65.6	1040.4	10.2	20.4	1047.8	5.2	10.4	101
BES1z83	98.10	107.20	219.50	1.112	2.40E+05	6.00E+05	0.0534	0.0052	0.480	0.045	0.0662	0.0014	0.0462	345.8	110.1	220.3	398.1	15.4	30.8	413.2	4.2	8.5	104
BES1z84	230.40	285.50	855.00	1.262	2.00E+06	1.90E+06	0.0607	0.0019	0.819	0.027	0.0974	0.0012	0.1734	628.6	33.7	67.4	607.5	7.5	15.1	599.2	3.5	7.0	99
BES1z85	250.80	97.80	484.00	0.398	5.30E+06	4.20E+06	0.0729	0.0024	1.693	0.057	0.1686	0.0020	0.2447	1011.2	33.4	66.7	1005.9	10.7	21.5	1004.4	5.5	11.0	100
BES1z87	42.60	30.70	106.80	0.737	3.50E+05	5.00E+05	0.0628	0.0060	0.966	0.086	0.1125	0.0024	-0.1771	701.5	101.7	203.4	686.4	22.2	44.4	687.3	7.0	13.9	100
BES1z88	171.30	167.00	531.00	0.995	-1.80E+05	8.30E+05	0.0637	0.0027	0.921	0.039	0.1051	0.0014	0.1105	731.7	44.9	89.8	662.9	10.3	20.6	644.2	4.1	8.2	97
BES1z89r	250.00	55.00	76.90	0.224	-9.00E+06	1.80E+06	0.0635	0.0026	0.782	0.032	0.0895	0.0014	0.1667	725.0	43.4	86.8	586.6	9.1	18.2	552.6	4.1	8.3	94
BES1z90	107.10	126.00	728.00	1.166	-6.40E+06	4.20E+06	0.0873	0.0031	2.532	0.092	0.2107	0.0039	0.2975	1367.1	34.2	68.4	1281.3	13.2	26.4	1232.5	10.4	20.8	96
BES1z91	408.00	405.00	1233.00	1.005	4.00E+06	3.60E+06	0.0593	0.0016	0.843	0.024	0.1031	0.0012	0.2997	578.1	29.3	58.6	620.8	6.6	13.2	632.6	3.5	7.0	102
BES1z92	107.50	79.70	654.00	0.762	-1.70E+06	2.70E+06	0.1272	0.0025	5.930	0.130	0.3397	0.0048	0.5340	2059.6	17.3	34.7	1965.6	9.5	19.0	1885.2	11.5	23.1	96
BES1z93	190.40	258.40	615.00	1.403	8.00E+06	1.10E+06	0.0590	0.0027	0.622	0.029	0.0756	0.0011	0.1841	567.1	49.8	99.6	491.1	9.1	18.1	469.8	3.3	6.6	96
BES1z94	106.80	53.10	276.50	0.515	1.60E+06	1.60E+06	0.0735	0.0027	1.757	0.065	0.1737	0.0029	0.2401	1027.8	37.1	74.3	1029.7	12.0	23.9	1032.5	8.0	15.9	100
BES1z96	321.10	355.50	1031.00	1.145	-2.80E+06	2.70E+06	0.0604	0.0021	0.800	0.028	0.0961	0.0014	0.2068	617.9	37.5	75.1	596.8	7.9	15.8	591.5	4.1	8.2	99
BES1z99c	77.10	89.90	926.00	1.252	-6.00E+06	1.60E+06	0.1249	0.0040	6.300	0.340	0.3650	0.0140	0.7825	2027.4	28.4	56.7	2018.5	23.6	47.3	2005.8	33.1	66.1	99
BES1z100	103.20	115.10	1183.00	1.147	-1.40E+06	2.40E+06	0.1333	0.0027	7.010	0.150	0.3830	0.0057	0.4562	2141.9	17.7	35.4	2112.7	9.5	19.0	2090.3	13.3	26.6	99
BES1z101	216.10	409.50	1236.00	1.962	7.20E+06	3.60E+06	0.0633	0.0027	0.889	0.038	0.1020	0.0014	0.2022	718.3	45.3	90.6	645.8	10.2	20.4	626.1	4.1	8.2	97
BES1z102	204.80	388.90	1675.00	1.964	3.00E+04	1.90E+06	0.0709	0.0023	1.439	0.042	0.1476	0.0021	0.0754	954.5	33.2	66.3	905.3	8.7	17.5	887.5	5.9	11.8	98
BES1z103	412.00	1070.00	1610.00	2.697	9.00E+06	1.50E+06	0.0576	0.0026	0.442	0.019	0.0557	0.0010	0.1132	514.6	49.6	99.2	371.7	6.7	13.4	349.4	3.1	6.1	94
BES1z104	132.80	88.60	275.50	0.691	-5.80E+06	3.30E+06	0.0605	0.0032	0.842	0.045	0.1011	0.0015	0.1911	621.5	57.1	114.1	620.2	12.4	24.8	620.9	4.4	8.8	100
BES1z105	50.80	54.70	249.60	1.111	1.79E+06	8.60E+05	0.0749	0.0042	1.607	0.085	0.1569	0.0034	0.0131	1065.8	56.4	112.8	972.9	16.5	33.1	939.5	9.5	18.9	97
BES1z106c	55.70	20.07	95.60	0.372	1.90E+06	1.40E+06	0.0702	0.0038	1.620	0.091	0.1676	0.0033	0.2334	934.2	55.5	111.0	978.0	17.6	35.2	998.9	9.1	18.2	102
BES1z106r	120.00	61.30	302.50	0.529	-1.00E+04	1.00E+06	0.0750	0.0030	1.745	0.068	0.1704	0.0023	0.1918	1068.5	40.2	80.4	1025.3	12.6	25.1	1014.3	6.3	12.7	99
BES1z107r	312.50	22.00	47.50	0.046	-1.10E+06	1.90E+06	0.0613	0.0028	0.780	0.036	0.0925	0.0015	0.1698	649.8	49.0	98.1	585.5	10.3	20.5	570.3	4.4	8.9	97
BES1z109	99.80	80.20	434.00	0.824	5.60E+05	7.10E+05	0.0803	0.0048	1.900	0.120	0.1692	0.0027	0.0555	1204.4	58.9	117.8	1081.1	21.0	42.0	1007.7	7.4	14.9	93
BES1z110	90.70	95.00	309.00	0.967	-9.00E+05	5.40E+05	0.0583	0.0032	0.930	0.053	0.1146	0.0022	0.2091	541.1	60.0	120.0	667.6	13.9	27.9	699.4	6.4	12.7	105
BES1z111	147.00	212.00	1095.00	1.460	-8.00E+06	1.80E+06	0.1165	0.0026	4.470	0.140	0.2784	0.0062	0.6710	1903.2	20.0	40.1	1725.4	13.0	26.0	1583.3	15.6	31.3	92
BES1z112	345.00	268.00	2684.00	0.799	1.80E+07	1.10E+07	0.1309	0.0016	6.920	0.110	0.3833	0.0042	0.6003	2110.1	10.7	21.4	2101.2	7.0	14.1	2091.7	9.8	19.6	100
BES1z113	179.00	185.00	1577.00	1.042	7.80E+06	5.00E+06	0.1320	0.0028	6.540	0.180	0.3592	0.0061	0.6161	2124.7	18.6	37.1	2051.3	12.1	24.2	1978.4	14.5	28.9	96
BES1z114	533.00	463.90	1268.00	0.904	1.30E+07	6.30E+06	0.0646	0.0017	0.836	0.023	0.0939	0.0012	0.3021	761.3	27.7	55.5	616.9	6.4	12.7	578.6	3.5	7.1	94
BES1z115	172.70	112.10	209.10	0.669	6.90E+05	5.80E+05	0.0547	0.0029	0.497	0.026	0.0661	0.0009	0.0931	400.0	59.4	118.8	409.7	8.8	17.6	412.5	2.8	5.6	101
BES1z116	201.00	141.80	408.00	0.723	-4.20E+05	8.30E+05	0.0608	0.0027	0.816	0.037	0.0974	0.0015	0.2732	632.2	47.8	95.6	605.8	10.3	20.7	599.2	4.4	8.8	99
BES1z117	332.90	233.70	3354.00	0.717	-2.90E+07	1.60E+07	0.2250	0.0020	18.760	0.190	0.6045	0.0056	0.5582	3016.8	7.1	14.3	3029.6	4.9	9.8	3047.9	11.2	22.5	101
BES1z118r	380.00	305.00	1920.00	0.823	5.20E+06	8.10E+06	0.1916	0.0025	12.440	0.300	0.4699	0.0070	0.5524	2755.9	10.7	21.4	2638.2	11.3	22.6	2483.1	15.3	30.7	94
BES1z118c	89.60	71.40	1025.00	0.820	2.20E+06	2.50E+06	0.2190	0.0033	16.970	0.300	0.5620	0.0069	0.5298	2973.4	12.1	24.3	2933.1	8.5	16.9	2874.9	14.2	28.5	98
BES1z119	94.90	20.30	79.40	0.211	1.50E+06	1.10E+06	0.0610	0.0036	0.830	0.053	0.0976	0.0018	0.1739	639.2	63.5	126.9	613.6	14.7	29.4	600.3	5.3	10.6	98
BES1z120	269.00	200.00	2040.00	0.747	-1.20E+06	3.90E+06	0.1341	0.0018	7.050	0.130	0.3810	0.0049	0.6429	2152.3	11.7	23.4	2117.8	8.2	16.4	2081.0	11.4	22.9	98
BES1z121	154.90	195.00	1874.00	1.106	-2.20E+07	1.60E+07	0.1896	0.0049	11.600	0.230	0.4470	0.0150	0.6484	2738.7	21.3	42.5	2572.7	9.3	18.5	2381.9	33.4	66.8	93
BES1z123	50.10	29.77	159.30	0.602	6.40E+05	6.10E+05	0.0798	0.0044	2.080	0.110	0.1891	0.0037	0.1721	1192.0	54.4	108.8	1142.2	18.1	36.2	1116.5	10.0	20.1	98
BES1z125	63.10	44.30	175.10	0.693	-1.07E+06	6.70E+05	0.0731	0.0039	1.505	0.073	0.1527	0.0048	0.1953	1016.7	54.0	108.1	932.4	14.8	29.6	916.1	13.4	26.8	98
BES1z127	205.00	175.30	1065.00	0.852	3.00E+06	2.40E+06	0.1282	0.0023	5.680	0.110	0.3220	0.0034	0.4843	2073.4	15.8	31.6	1928.3	8.4	16.7	1799.5	8.3	16.6	93
BES1z129	211.50	152.60	432.00	0.723	1.10E+06	1.20E+06	0.0588	0.0025	0.789	0.034	0.0976	0.0015	0.1960	559.7	46.3	92.7	590.6	9.6	19.3	600.3	4.4	8.8	102
BES1z130	42.40	49.80	139.70	1.171	-2.50E+05	1.80E+05	0.0570	0.0066	0.760	0.083	0.0983	0.0027	-0.0234	491.5	127.7	255.4	574.0	23.9	47.8	604.4	7.9	15.8	105
BES1z131	90.50	111.60	365.00	1.230	-5.90E+05	4.30E+05	0.0594	0.0038	0.918	0.060	0.1122	0.0021	0.2334	581.8	69.5	138.9	661.3	15.9	31.7	685.5	6.1	12.2	104
BES1z135	399.00	241.00	682.00	0.598	-8.10E+06	4.80E+06	0.0623	0.0017	0.888	0.025	0.1033	0.0011	0.2835	684.4	29.1	58.3	645.3	6.7	13.4	633.7	3.2	6.4	98
BES1z136	145.10	201.00	580.00	1.403	1.50E+05	4.40E+05	0.0597	0.0028	0.834	0.037	0.1015	0.0016	0.0055	592.7	50.8	101.7	615.8	10.2	20.5	623.2	4.7	9.4	101
BES1z137	747.70	572.00	2026.00	0.761	-2.00E+06	3.00E+06	0.0676	0.0014	1.189	0.026	0.1279	0.0019	0.3371	856.3	21.5	43.0	795.5	6.0	12.0	775.9	5.4	10.9	98
BES1z138	66.70	101.60	310.00	1.527	-1.40E+05	2.50E+05	0.0639	0.0047	0.922	0.070	0.1034	0.0021	0.0482	738.3	77.8	155.7	663.4	18.5	36.9	634.3	6.1	12.3	96
BES1z139	65.90	71.70	826.00	1.094	8.00E+05	9.80E+05	0.1626	0.0034	10.400	0.240	0.4614	0.0073	0.5659	2482.9	17.6	35.3	2471.0	10.7	21.4	2445.7	16.1	32.2	99
BES1z140	149.00	158.20	465.00	1.000	-8.60E+06	8.60E+06	0.1354	0.0030	6.050	0.270	0.3270	0.0140	0.8730	2169.2	19.3	38.6	1983.1	19.4	38.9	1823.8	34.0	68.0	92
Discordant data and/or high common Pb data																							
BES1z2	69.40	66.80	499.00	1.005	2.20E+06	1.60E+06	0.1498	0.0051	6.210	0.580	0.2930	0.0210	0.9420	2343.6	29.1	58.2	2005.9	40.8	81.6	1656.5	52.3	104.7	83
BES1z7	308.00	242.00	824.00	0.787	2.10E+06	2.30E+06	0.0766	0.0035	1.036	0.044	0.0994	0.0015	0.0453	1110.8	45.6	91.3	721.9	11.0	21.9	610.9	4.4	8.8	85
BES1z18	385.00	456.00	16400.00	1.116	-1.16E+06	3.50E+05	0.2880	0.0200	21.200	2.100	0.5100	0.0180	0.9799	3406.8	54.0	108.1	3147.8	48.0	96.0	2656.6	38.4	76.8	84
BES1z24	727.00	814.00	2573.00	1.120	-2.43E+06	2.40E+05	0.1740	0.0025	2.610	0.130	0.1091	0.0051	0.9583	2596.5	12.0	24.0	1303.5	18.3	36.5	667.5	14.8	29.6	51
BES1z25	98.00	106.60	165.00	1.096	-3.00E+06	1.10E+06	0.0725	0.0048	0.847	0.051	0.0859	0.0030	0.1851	1000.0	67.2	134.5	623.0	14.0	28.0	531.2	8.9	17.8	85
BES1z30	675.20	425.00	1470.00	0.602	-2.00E+07	1.00E+07	0.1184	0.0018	2.850	0.120	0.1746	0.0058	0.9506	1932.2	13.6	27.2	1368.8	15.8	31.6	1037.4	15.9	31.8	76

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
BES1z31r	20.80	27.95	77.40	1.272	2.60E+06	1.10E+06	0.0760	0.0110	0.930	0.130	0.0908	0.0031	0.0024	1095.1	144.9	289.8	667.6	34.2	68.3	560.3	9.2	18.3	84
BES1z35	88.50	177.00	642.00	1.825	-1.69E+08	8.20E+07	0.1040	0.0040	2.470	0.110	0.1735	0.0044	0.4629	1696.7	35.4	70.9	1263.3	16.1	32.2	1031.4	12.1	24.2	82
BES1z38	396.00	132.10	891.00	0.299	-1.30E+07	1.50E+07	0.1232	0.0019	3.733	0.091	0.2206	0.0040	0.7907	2003.1	13.7	27.4	1578.5	9.8	19.5	1285.0	10.6	21.1	81
BES1z39	157.60	373.00	1350.00	1.842	-4.30E+06	2.10E+06	0.1500	0.0300	2.410	0.650	0.0978	0.0057	0.9763	2345.9	171.0	342.0	1245.6	96.7	193.4	601.5	16.7	33.5	48
BES1z41	588.00	311.00	658.00	0.433	-1.71E+08	9.00E+07	0.1223	0.0012	4.666	0.083	0.2763	0.0046	0.7943	1990.0	8.7	17.4	1761.2	7.4	14.9	1572.7	11.6	23.2	89
BES1z44	189.10	280.80	552.00	1.344	2.80E+06	9.50E+06	0.0712	0.0034	0.867	0.041	0.0890	0.0016	0.1832	963.2	48.8	97.5	633.9	11.1	22.3	549.6	4.7	9.5	87
BES1z48	1217.00	3300.00	918.00	2.404	-3.60E+07	2.10E+07	0.0851	0.0033	0.281	0.010	0.0242	0.0006	0.1299	1317.8	37.6	75.2	251.5	3.8	7.6	154.3	1.8	3.5	61
BES1z65	84.40	82.30	2250.00	0.884	2.80E+05	4.00E+05	0.3430	0.0490	10.000	1.900	0.1740	0.0200	0.4803	3676.2	109.0	218.1	2434.8	87.6	175.2	1034.1	54.9	109.8	42
BES1z86	799.00	692.00	2690.00	0.883	2.83E+06	8.40E+05	0.1902	0.0023	5.680	0.067	0.2168	0.0019	0.3444	2743.9	9.9	19.9	1928.3	5.1	10.2	1264.9	5.0	10.1	66
BES1z89c	61.90	52.90	254.00	0.848	2.60E+05	4.10E+05	0.1503	0.0085	2.160	0.120	0.1051	0.0027	0.2318	2349.3	48.3	96.7	1168.3	19.3	38.5	644.2	7.9	15.7	55
BES1z95	106.80	348.00	498.00	2.976	3.30E+06	1.80E+06	0.0725	0.0056	0.530	0.041	0.0546	0.0022	0.3050	1000.0	78.4	156.9	431.8	13.6	27.2	342.7	6.7	13.4	79
BES1z97	504.00	90.30	630.00	0.184	3.20E+06	8.30E+06	0.1182	0.0014	4.021	0.089	0.2465	0.0042	0.8491	1929.2	10.6	21.2	1638.5	9.0	18.0	1420.4	10.9	21.7	87
BES1z98	673.00	685.00	4830.00	1.063	4.00E+07	1.50E+07	0.2036	0.0015	12.330	0.260	0.4391	0.0087	0.9367	2855.3	6.0	12.0	2629.9	9.9	19.8	2346.6	19.5	39.0	89
BES1z99r	48.30	147.90	1071.00	3.211	-1.30E+05	5.10E+05	0.1123	0.0049	3.710	0.160	0.2428	0.0071	0.4856	1837.0	39.5	79.0	1573.5	17.2	34.5	1401.2	18.4	36.8	89
BES1z107c	184.00	12.87	61.30	0.066	3.30E+07	1.50E+07	0.0744	0.0054	1.290	0.180	0.1202	0.0085	0.9676	1052.3	73.1	146.2	841.3	39.9	79.7	731.7	24.5	48.9	87
BES1z108	60.60	75.50	241.00	1.287	-8.40E+05	5.10E+05	0.0699	0.0092	0.960	0.140	0.0967	0.0025	0.3501	925.4	135.2	270.4	683.3	36.2	72.5	595.0	7.3	14.7	87
BES1z122	513.00	774.00	2860.00	1.538	4.00E+06	4.80E+06	0.2211	0.0034	9.140	0.690	0.2950	0.0190	0.9850	2988.7	12.4	24.7	2352.1	34.5	69.0	1666.5	47.3	94.6	71
BES1z124	269.00	203.70	839.00	0.754	-1.90E+06	2.60E+06	0.1250	0.0023	4.760	0.180	0.2752	0.0090	0.8610	2028.8	16.3	32.6	1777.9	15.9	31.7	1567.1	22.7	45.5	88
BES1z126	98.90	121.60	304.00	1.236	1.50E+05	2.90E+05	0.0787	0.0040	1.099	0.054	0.1018	0.0020	0.1532	1164.6	50.4	100.7	752.9	13.0	26.1	624.9	5.9	11.7	83
BES1z128	121.60	154.00	351.00	1.021	3.00E+05	4.70E+05	0.0877	0.0099	1.200	0.110	0.1033	0.0024	-0.5442	1375.9	108.5	217.1	800.6	25.4	50.7	633.7	7.0	14.0	79
BES1z132	93.20	181.00	600.00	1.764	2.10E+05	7.30E+05	0.1358	0.0040	5.000	0.280	0.2690	0.0150	0.8824	2174.3	25.7	51.3	1819.3	23.7	47.3	1535.7	38.1	76.2	84
BES1z133	570.00	853.00	747.00	1.468	9.00E+06	1.20E+06	0.0768	0.0024	0.791	0.025	0.0750	0.0016	0.3116	1116.0	31.2	62.4	591.7	7.1	14.2	466.2	4.8	9.6	79
BES1z134	923.00	258.00	1240.00	0.272	6.00E+07	1.00E+07	0.1832	0.0021	6.691	0.070	0.2660	0.0027	0.2570	2682.1	9.5	19.0	2071.4	4.6	9.2	1520.5	6.9	13.7	73
BES1z141	62.80	204.00	674.00	2.268	3.00E+05	6.00E+05	0.1301	0.0044	4.960	0.260	0.2780	0.0120	0.7922	2099.3	29.7	59.4	1812.5	22.1	44.3	1581.3	30.3	60.5	87

Footnotes:

- Analysis references: BES1z is zircon from sample BES1 (mount CT18-2), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.36: Sample BES2 (LA-ICPMS)

IGSN: IEACC00010 Coordinate UTM: Zone 29S, 3724273 m N, 671847 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
BES2z1	126.70	125.20	38.08	1.008	2.10E+04	2.30E+04	0.0635	0.0045	0.948	0.065	0.1057	0.0023	0.2840	725.0	75.1	150.3	677.1	75.1	33.9	647.7	6.7	13.4	96
BES2z2	249.50	107.50	105.90	0.442	6.00E+05	2.10E+05	0.1208	0.0019	6.213	0.300	0.3626	0.0063	0.3652	1968.1	14.0	28.0	2006.3	14.0	42.2	1994.5	14.9	29.8	99
BES2z3	41.00	14.13	14.79	0.347	3.50E+04	2.90E+04	0.1361	0.0047	7.770	0.430	0.4031	0.0095	0.2295	2178.2	30.1	60.1	2204.7	30.1	49.7	2183.3	21.8	43.6	99
BES2z4	232.70	47.20	48.40	0.205	-5.00E+05	1.50E+05	0.1262	0.0017	6.690	0.330	0.3747	0.0062	0.5426	2045.7	11.9	23.8	2071.3	11.9	43.5	2051.5	14.5	29.1	99
BES2z5	87.60	68.80	68.20	0.799	7.50E+04	6.00E+04	0.1255	0.0033	6.700	0.350	0.3763	0.0073	0.2581	2035.9	23.3	46.5	2072.6	23.3	46.1	2059.0	17.1	34.2	99
BES2z6	667.00	233.80	255.30	0.354	1.10E+05	7.80E+05	0.1545	0.0013	9.247	0.440	0.4205	0.0066	0.5872	2396.3	7.2	14.3	2362.8	7.2	43.6	2262.7	15.0	30.0	96
BES2z7	80.80	44.70	38.65	0.559	3.00E+04	5.60E+04	0.1091	0.0033	4.850	0.270	0.3133	0.0061	-0.0706	1784.4	27.6	55.1	1793.6	27.6	46.8	1756.9	15.0	29.9	98
BES2z8	31.88	15.28	3.88	0.486	-1.30E+05	1.30E+05	0.0621	0.0088	0.810	0.110	0.0924	0.0030	0.1076	677.6	151.4	302.9	602.5	151.4	61.7	569.7	8.9	17.7	95
BES2z9	250.70	79.20	46.40	0.321	1.70E+05	1.70E+05	0.0801	0.0042	2.389	0.120	0.2098	0.0037	0.5757	1199.5	51.7	103.4	1239.3	51.7	35.9	1227.8	9.9	19.7	99
BES2z10c	115.70	46.20	13.66	0.404	6.30E+04	2.90E+04	0.0620	0.0050	0.892	0.063	0.1016	0.0023	-0.2860	674.1	86.2	172.5	647.4	86.2	33.8	623.8	6.7	13.5	96
BES2z10r	652.00	184.40	52.20	0.294	5.00E+05	1.90E+05	0.0619	0.0034	0.880	0.047	0.0996	0.0019	0.3160	670.7	58.8	117.5	641.0	58.8	25.4	612.1	5.6	11.1	95
BES2z11	73.40	60.70	18.06	0.838	-2.00E+04	1.20E+04	0.0611	0.0063	0.876	0.086	0.1024	0.0026	0.1000	642.8	110.8	221.7	638.8	110.8	46.5	628.5	7.6	15.2	98
BES2z14c	117.00	51.70	52.50	0.443	6.70E+04	8.40E+04	0.1337	0.0026	7.270	0.360	0.3832	0.0075	0.4056	2147.1	17.0	34.0	2145.1	17.0	44.2	2091.2	17.5	35.0	97
BES2z14r	690.00	6.96	8.58	0.010	1.30E+05	3.80E+05	0.1266	0.0012	6.137	0.290	0.3409	0.0054	0.5818	2051.3	8.4	16.7	1995.5	8.4	41.2	1891.0	13.0	26.0	95
BES2z15	105.70	46.00	49.20	0.440	2.20E+04	7.60E+04	0.1344	0.0026	7.220	0.370	0.3752	0.0069	0.4754	2156.2	16.9	33.8	2139.0	16.9	45.7	2053.8	16.2	32.3	96
BES2z16c	92.80	102.60	28.12	1.111	-1.80E+04	2.10E+04	0.0601	0.0049	0.808	0.064	0.0955	0.0023	-0.0093	607.2	88.2	176.3	601.3	88.2	35.9	588.0	6.8	13.5	98
BES2z16r	78.00	66.40	18.02	0.868	-1.00E+04	2.10E+04	0.0636	0.0049	0.840	0.067	0.0943	0.0021	0.2461	728.4	81.7	163.3	619.1	81.7	36.9	580.9	6.2	12.4	94
BES2z17	235.40	516.00	155.80	2.230	8.40E+04	6.20E+04	0.0634	0.0036	0.948	0.051	0.1063	0.0021	0.1547	721.7	60.2	120.5	677.1	60.2	26.6	651.2	6.1	12.2	96
BES2z18	48.80	25.40	11.93	0.523	-3.00E+04	2.10E+04	0.0763	0.0058	1.780	0.140	0.1664	0.0043	0.2072	1103.0	76.0	152.0	1038.2	76.0	51.1	992.2	11.9	23.8	96
BES2z19	332.00	153.90	41.10	0.471	-1.50E+05	1.90E+05	0.0589	0.0033	0.765	0.041	0.0917	0.0016	0.1373	563.4	61.0	122.1	576.9	61.0	23.6	565.5	4.7	9.4	98
BES2z20	173.10	64.20	18.98	0.378	3.00E+04	6.30E+04	0.0586	0.0039	0.827	0.051	0.0992	0.0020	-0.1724	552.3	72.6	145.3	611.9	72.6	28.3	609.7	5.9	11.7	100
BES2z21	43.70	36.10	11.94	0.838	-4.20E+03	8.70E+03	0.0670	0.0065	1.028	0.099	0.1074	0.0027	0.2155	837.8	101.0	202.1	717.9	101.0	49.5	657.6	7.9	15.7	92
BES2z22	163.40	76.50	23.17	0.471	-7.00E+04	5.10E+04	0.0598	0.0040	0.884	0.059	0.1045	0.0020	0.2293	596.3	72.5	144.9	643.1	72.5	31.8	640.7	5.8	11.7	100
BES2z23	76.90	60.20	16.10	0.805	-2.00E+04	1.90E+04	0.0585	0.0051	0.770	0.067	0.0945	0.0022	0.0774	548.5	95.2	190.4	579.8	95.2	38.4	582.1	6.5	13.0	100
BES2z24	28.07	15.83	13.16	0.564	2.80E+04	2.90E+04	0.1108	0.0061	4.910	0.340	0.3145	0.0083	0.1790	1812.6	50.0	100.0	1804.0	50.0	58.4	1762.8	20.4	40.7	98
BES2z25r	249.20	65.40	18.28	0.267	2.90E+04	9.90E+04	0.0602	0.0038	0.799	0.049	0.0938	0.0017	0.1378	610.8	68.2	136.4	596.3	68.2	27.6	578.0	5.0	10.0	97
BES2z26	84.60	98.40	27.41	1.178	6.00E+04	1.50E+04	0.0561	0.0049	0.775	0.064	0.0995	0.0022	0.0955	456.3	96.9	193.8	582.6	96.9	36.6	611.5	6.4	12.9	105
BES2z27c	405.00	50.90	13.91	0.127	2.20E+04	6.10E+04	0.0603	0.0034	0.804	0.043	0.0951	0.0018	0.2426	614.4	60.9	121.8	599.1	60.9	24.2	585.6	5.3	10.6	98
BES2z27r	136.40	85.40	23.48	0.631	1.00E+04	4.10E+04	0.0604	0.0044	0.801	0.054	0.0944	0.0019	-0.0394	617.9	78.6	157.2	597.4	78.6	30.4	581.5	5.6	11.2	97
BES2z29	313.00	60.80	15.26	0.197	3.10E+04	6.40E+04	0.0601	0.0035	0.834	0.046	0.0981	0.0017	0.1669	607.2	63.0	125.9	615.8	63.0	25.4	603.4	5.0	10.0	98
BES2z31	483.00	95.60	90.60	0.196	-9.00E+03	4.90E+05	0.1191	0.0014	5.736	0.280	0.3411	0.0057	0.6030	1942.8	10.5	21.0	1936.8	10.5	42.2	1892.0	13.7	27.4	98
BES2z32	469.80	282.90	79.60	0.603	-2.00E+04	8.60E+04	0.0622	0.0035	0.850	0.044	0.0978	0.0018	0.0256	681.0	60.1	120.2	624.6	60.1	24.1	601.5	5.3	10.6	96
BES2z34	204.00	91.80	27.30	0.455	2.10E+04	5.80E+04	0.0608	0.0039	0.829	0.052	0.0973	0.0019	0.2382	632.2	69.1	138.1	613.1	69.1	28.8	598.6	5.6	11.2	98
BES2z35	528.20	41.60	39.20	0.078	2.00E+05	5.80E+05	0.1243	0.0012	6.239	0.300	0.3546	0.0066	0.7468	2018.8	8.6	17.1	2009.9	8.6	42.0	1956.5	15.7	31.4	97
BES2z36	261.80	229.70	62.00	0.877	2.10E+04	5.90E+04	0.0586	0.0036	0.782	0.045	0.0960	0.0018	0.1717	552.3	67.0	134.1	586.6	67.0	25.6	590.9	5.3	10.6	101
BES2z37	96.70	100.00	26.70	0.987	-8.10E+04	9.30E+04	0.0596	0.0049	0.795	0.065	0.0948	0.0022	-0.1367	589.1	89.2	178.3	594.0	89.2	36.7	583.9	6.5	13.0	98
BES2z38	64.61	39.86	10.84	0.626	-1.10E+04	1.20E+04	0.0606	0.0063	0.795	0.082	0.0946	0.0023	0.2177	625.1	112.1	224.1	594.0	112.1	46.3	582.7	6.8	13.5	98
BES2z39	147.90	97.40	52.80	0.645	-8.90E+04	9.60E+04	0.0780	0.0044	2.123	0.110	0.1933	0.0037	0.1392	1146.9	56.0	112.1	1156.3	56.0	35.7	1139.2	10.0	20.0	99
BES2z40	131.00	241.00	67.00	1.555	-4.60E+04	4.00E+04	0.0610	0.0045	0.896	0.064	0.1046	0.0022	0.0318	639.2	79.3	158.7	649.6	79.3	34.2	641.3	6.4	12.8	99
BES2z41	48.30	39.60	11.08	0.822	-6.10E+04	4.90E+04	0.0572	0.0058	0.770	0.080	0.0976	0.0024	0.1216	499.3	111.7	223.3	579.8	111.7	45.9	600.3	7.0	14.1	104
BES2z42	326.00	54.80	19.20	0.164	1.00E+05	1.10E+05	0.0590	0.0035	0.852	0.050	0.1038	0.0021	0.4669	567.1	64.6	129.2	625.7	64.6	27.4	636.6	6.1	12.3	102
BES2z43	230.20	73.50	100.50	0.319	4.60E+05	8.20E+05	0.1960	0.0021	15.220	0.730	0.5491	0.0089	0.5035	2793.2	8.8	17.5	2829.1	8.8	45.7	2821.4	18.5	37.0	100
BES2z45	55.60	29.18	8.71	0.530	-4.00E+04	1.00E+04	0.0557	0.0059	0.737	0.074	0.0937	0.0024	0.0151	440.4	117.8	235.7	560.7	117.8	43.2	577.4	7.1	14.1	103
BES2z46	351.90	353.00	100.50	1.001	9.00E+04	6.70E+04	0.0604	0.0034	0.842	0.047	0.0997	0.0017	0.3302	617.9	60.8	121.5	620.2	60.8	25.9	612.6	5.0	10.0	99
BES2z47	98.90	123.50	33.90	1.217	2.30E+04	3.30E+04	0.0585	0.0047	0.786	0.063	0.0957	0.0019	0.1439	548.5	87.7	175.5	588.9	87.7	35.8	589.2	5.6	11.2	100
BES2z48	106.60	106.20	95.90	0.993	-1.70E+05	1.50E+05	0.1191	0.0024	5.610	0.290	0.3368	0.0068	0.3916	1942.8	18.0	36.0	1917.6	18.0	44.5	1871.3	16.4	32.8	98
BES2z49	691.00	318.00	333.00	0.462	1.18E+06	7.80E+05	0.1550	0.0014	8.050	0.410	0.3704	0.0088	0.9087	2401.8	7.7	15.4	2236.7	7.7	46.0	2031.3	20.7	41.4	91
BES2z51	72.20	56.73	16.98	0.769	2.00E+04	2.70E+04	0.0609	0.0051	0.874	0.075	0.1009	0.0023	0.2503	635.7	90.1	180.2	637.7	90.1	40.6	619.7	6.7	13.5	97
BES2z52c	49.10	59.90	17.46	1.200	-5.00E+04	1.30E+04	0.0596	0.0064	0.804	0.088	0.0978	0.0023	0.2028	589.1	116.5	232.9	599.1	116.5	49.5	601.5	6.8	13.5	100
BES2z52r	12.45	0.93	0.26	0.063	-2.10E+03	3.80E+03	0.0620	0.0150	0.810	0.200	0.0996	0.0055	-0.1154	674.1	258.7	517.4	602.5	258.7	112.1	612.1	16.1	32.2	102
BES2z53	349.00	303.00	88.00	0.850	9.00E+05	1.20E+05	0.0604	0.0035	0.897	0.050	0.1057	0.0018	0.0366	617.9	62.5	125.1	650.1	62.5	26.7	647.7	5.2	10.5	100
BES2z54	141.60	87.30	26.00	0.618	-1.80E+04	4.60E+04	0.0588	0.0039	0.859	0.053	0.1045	0.0021	-0.0140	559.7	72.3	144.6	629.6	72.3	28.9	640.7	6.1	12.3	102
BES2z55	379.30	321.90	333.60	0.842	-4.50E+05	8.00E+05	0.1355	0.0016	7.668	0.370	0.4004	0.0065	0.3976	2170.5	10.3	20.6	2192.9	10.3	43.3	2170.9	15.0	29.9	99
BES2z56	211.00	202.70	59.40	0.958	1.20E+04	4.50E+04	0.0591	0.0039	0.838	0.052	0.1019	0.0021	-0.0149	570.8	71.8	143.6	618.0	71.8	28.7	625.5	6.1	12.3	101
BES2z57	23.75	27.58	25.30	1.136	-2.00E+04	1.90E+04	0.1196	0.0065	5.060	0.360	0.3056	0.0083	0.1835	1950.3	48.6	97.1	1829.4	48.6	60.3	1719.0	20.5	41.0	94
BES2z58	287.00	174.00	52.20	0.587	1.50E+04	8.30E+04	0.0675	0.0040	0.945	0.054	0.0996	0.0018	0.0541	853.2	61.6	123.1	675.5	61.6	28.2	612.1	5.3	10.6	91
BES2z59	479.00	1764.00	503.10	3.672	8.00E+03	1.20E+05	0.0620	0.0034	0.876	0.045	0.1016	0.0017	0.1420	674.1	58.6	117.3	638.8	58.6	24.3	623.5	5.0	9.9	98
BES2z60	107.00	70.10	73.20	0.647	-4.10E+05	4.00E+05	0.1384	0.0029	7.820	0.390	0.4005	0.0080	0.3240	2207.3	18.2	36.4	2210.5	18.2	44.9	2171.3	18.4	36.8	98
BES2z61	88.90	81.20	75.20	0.904	-1.16E+05	7.30E+04	0.1253	0.0032	6.150	0.330	0.3471	0.0077	0.5009	2033.0	22.6	45.2	1997.4	22.6	46.8	1920.7	18.4	36.8	96
BES2z62	315.70	205.00	58.60	0.644	-1.16E+05	8.30E+04	0.0594	0.0037	0.832	0.049	0.1012	0.0018	0.1357	581.8	67.6	135.3	614.7	67.6	27.1	621.4	5.3	10.5	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
BES2z63	80.70	30.24	31.13	0.376	-2.60E+04	9.80E+04	0.1306	0.0029	7.060	0.370	0.3853	0.0076	0.3591	2106.0	19.5	39.0	2119.0	19.5	46.6	2101.0	17.7	35.4	99
BES2z64	178.50	119.40	33.57	0.667	5.00E+04	5.20E+04	0.0597	0.0041	0.801	0.051	0.0964	0.0020	0.0009	592.7	74.4	148.9	597.4	74.4	28.7	593.3	5.9	11.8	99
BES2z65	109.20	45.00	43.30	0.408	-1.90E+05	1.00E+05	0.1276	0.0030	6.680	0.340	0.3731	0.0067	0.2728	2065.2	20.7	41.5	2070.0	20.7	44.9	2044.0	15.7	31.5	99
BES2z66	556.00	709.00	189.50	1.244	-1.39E+06	7.40E+05	0.0587	0.0032	0.769	0.040	0.0939	0.0017	0.2558	556.0	59.5	118.9	579.2	59.5	22.9	578.3	5.0	10.0	100
BES2z68	29.03	57.15	16.16	1.946	-6.40E+03	6.30E+03	0.0625	0.0081	0.880	0.110	0.1016	0.0032	0.1137	691.3	138.2	276.4	641.0	138.2	59.4	623.8	9.4	18.7	97
BES2z69	151.00	87.50	89.80	0.577	1.70E+04	8.70E+04	0.1351	0.0024	7.430	0.370	0.3887	0.0072	0.3207	2165.3	15.5	31.0	2164.6	15.5	44.5	2116.8	16.7	33.4	98
BES2z70c	53.40	38.90	12.00	0.736	1.00E+04	1.10E+04	0.0604	0.0059	0.949	0.090	0.1149	0.0032	0.2063	617.9	105.4	210.9	677.6	105.4	46.8	701.1	9.3	18.5	103
BES2z70r	409.00	127.70	36.30	0.296	-1.10E+05	1.70E+05	0.0590	0.0035	0.812	0.046	0.0984	0.0019	0.2124	567.1	64.6	129.2	603.6	64.6	25.8	605.0	5.6	11.2	100
BES2z71	459.00	343.00	98.00	0.763	3.30E+04	9.50E+04	0.0609	0.0033	0.866	0.047	0.1025	0.0018	0.2326	635.7	58.3	116.6	633.4	58.3	25.6	629.0	5.3	10.5	99
BES2z72	86.30	56.25	86.60	0.651	6.00E+05	1.90E+05	0.2586	0.0046	23.040	1.400	0.6300	0.0180	0.9703	3238.2	14.0	28.0	3228.6	14.0	59.1	3149.6	35.6	71.2	98
BES2z73	292.00	317.00	88.20	1.081	2.80E+04	8.10E+04	0.0598	0.0036	0.835	0.049	0.1009	0.0019	0.2058	596.3	65.2	130.4	616.4	65.2	27.1	619.7	5.6	11.1	101
BES2z74	79.80	42.00	42.20	0.511	6.10E+04	9.60E+04	0.1326	0.0027	7.370	0.370	0.3963	0.0078	0.3804	2132.7	17.8	35.6	2157.3	17.8	44.8	2152.0	18.0	36.0	100
BES2z75	107.60	120.90	33.38	1.122	4.90E+04	4.00E+04	0.0648	0.0047	0.866	0.059	0.0963	0.0022	0.1236	767.8	76.4	152.8	633.4	76.4	32.1	592.7	6.5	12.9	94
BES2z76	222.80	240.80	235.30	1.068	7.00E+05	2.60E+05	0.1264	0.0021	6.640	0.330	0.3753	0.0069	0.3467	2048.5	14.7	29.3	2064.7	14.7	43.8	2054.3	16.2	32.3	99
BES2z77	98.60	127.50	36.14	1.292	-5.60E+04	4.70E+04	0.0594	0.0043	0.849	0.061	0.1024	0.0021	0.1507	581.8	78.6	157.2	624.1	78.6	33.5	628.5	6.1	12.3	101
BES2z81	343.00	161.90	180.30	0.472	-1.90E+05	3.30E+05	0.1733	0.0019	11.590	0.560	0.4778	0.0083	0.6483	2589.8	9.1	18.3	2571.9	9.1	45.1	2517.7	18.1	36.2	98
BES2z82	168.20	87.90	26.50	0.522	-2.40E+04	4.70E+04	0.0599	0.0042	0.850	0.058	0.1038	0.0021	0.1482	600.0	75.9	151.8	624.6	75.9	31.8	636.6	6.1	12.3	102
BES2z83	81.90	75.60	24.61	0.925	1.60E+04	1.90E+04	0.0600	0.0045	0.950	0.074	0.1108	0.0025	0.3266	603.6	81.1	162.3	678.1	81.1	38.5	677.4	7.3	14.5	100
BES2z84	144.50	15.30	5.88	0.105	-5.10E+04	4.80E+04	0.0605	0.0043	0.937	0.065	0.1099	0.0023	0.1356	621.5	76.7	153.3	671.3	76.7	34.0	672.2	6.7	13.4	100
BES2z85r	218.00	71.80	62.10	0.331	1.50E+05	2.00E+05	0.1207	0.0017	5.631	0.280	0.3351	0.0058	0.5289	1966.6	12.6	25.1	1920.9	12.6	42.8	1863.1	14.0	28.0	97
BES2z86	152.40	56.20	62.60	0.367	-9.00E+05	1.40E+05	0.1538	0.0023	9.310	0.460	0.4350	0.0079	0.6343	2388.6	12.7	25.5	2369.0	12.7	45.3	2328.2	17.7	35.5	98
BES2z89	787.00	156.70	47.70	0.202	-3.00E+05	3.00E+05	0.0627	0.0034	0.917	0.046	0.1060	0.0018	0.1799	698.1	57.8	115.5	660.8	57.8	24.3	649.7	5.2	10.5	98
BES2z90	499.00	72.50	20.06	0.146	8.00E+05	1.10E+05	0.0628	0.0035	0.910	0.048	0.1053	0.0018	0.2697	701.5	59.3	118.7	657.1	59.3	25.5	645.3	5.2	10.5	98
BES2z92	81.80	54.00	14.92	0.657	-1.90E+04	2.50E+04	0.0645	0.0060	0.869	0.076	0.1004	0.0023	-0.0782	758.1	98.1	196.2	635.0	98.1	41.3	616.8	6.7	13.5	97
BES2z93	115.70	81.70	24.10	0.711	-2.00E+04	3.70E+04	0.0614	0.0045	0.902	0.062	0.1052	0.0023	-0.0114	653.3	78.6	157.3	652.8	78.6	33.1	644.8	6.7	13.4	99
BES2z94	346.30	283.20	264.50	0.818	-2.00E+05	4.00E+05	0.1212	0.0015	6.094	0.290	0.3604	0.0060	0.3231	1974.0	11.0	22.1	1989.4	11.0	41.5	1984.1	14.2	28.4	100
BES2z95	338.00	185.30	53.40	0.553	-4.00E+05	1.10E+05	0.0604	0.0036	0.861	0.049	0.1024	0.0018	-0.0276	617.9	64.3	128.7	630.7	64.3	26.7	628.5	5.3	10.5	100
BES2z96	637.00	162.10	43.20	0.256	2.60E+05	1.20E+05	0.0607	0.0033	0.788	0.041	0.0935	0.0016	0.1664	628.6	58.6	117.1	590.0	58.6	23.3	576.4	4.7	9.4	98
BES2z97	283.70	240.40	238.60	0.850	-8.00E+05	2.10E+05	0.1213	0.0017	6.231	0.300	0.3703	0.0063	0.4578	1975.4	12.5	25.0	2008.8	12.5	42.1	2030.8	14.8	29.6	101
BES2z98	178.20	102.30	29.68	0.571	7.00E+04	7.40E+04	0.0673	0.0043	0.930	0.061	0.1025	0.0025	0.4026	847.1	66.4	132.9	667.6	66.4	32.1	629.0	7.3	14.6	94
BES2z99	23.63	34.45	29.70	1.456	8.40E+04	6.00E+04	0.1194	0.0052	5.500	0.450	0.3290	0.0180	0.8618	1947.3	38.9	77.8	1900.6	38.9	70.2	1833.5	43.7	87.3	96
BES2z100	116.40	77.70	95.30	0.683	2.90E+05	3.50E+05	0.1776	0.0028	11.880	0.590	0.4828	0.0092	0.4680	2630.6	13.1	26.2	2595.0	13.1	46.5	2539.5	20.0	40.0	98
BES2z101	334.10	179.20	47.70	0.540	7.90E+04	7.80E+04	0.0621	0.0036	0.810	0.044	0.0938	0.0018	0.0594	677.6	62.0	123.9	602.5	62.0	24.7	578.0	5.3	10.6	96
BES2z102	112.60	34.00	32.33	0.307	-9.60E+04	8.80E+04	0.1220	0.0026	6.020	0.310	0.3549	0.0070	0.3947	1985.7	19.0	37.9	1978.7	19.0	44.8	1958.0	16.7	33.3	99
BES2z103	714.00	232.90	98.50	0.328	1.70E+05	2.10E+05	0.0699	0.0037	1.407	0.070	0.1439	0.0024	0.1642	925.4	54.4	108.7	891.9	54.4	29.5	866.7	6.8	13.5	97
BES2z104	1023.00	24.19	44.80	0.024	7.20E+05	3.70E+05	0.1316	0.0011	6.501	0.310	0.3546	0.0060	0.7322	2119.2	7.3	14.7	2046.0	7.3	41.9	1956.5	14.3	28.6	96
BES2z105	154.20	40.37	10.71	0.262	-5.80E+04	3.40E+04	0.0594	0.0039	0.838	0.054	0.1010	0.0019	0.1055	581.8	71.3	142.6	618.0	71.3	29.8	620.3	5.6	11.1	100
BES2z106	64.20	28.13	8.41	0.442	-3.00E+04	2.80E+04	0.0589	0.0062	0.836	0.078	0.1015	0.0028	-0.2894	563.4	114.7	229.3	616.9	114.7	43.1	623.2	8.2	16.4	101
BES2z107c	138.00	100.60	95.70	0.732	-4.00E+05	2.00E+05	0.1244	0.0025	6.330	0.320	0.3642	0.0067	0.3831	2020.3	17.8	35.6	2022.6	17.8	44.3	2002.1	15.8	31.7	99
BES2z107r	105.20	84.30	82.90	0.810	-3.00E+05	1.60E+05	0.1248	0.0024	6.250	0.310	0.3651	0.0065	0.2991	2026.0	17.0	34.1	2011.5	17.0	43.4	2006.3	15.3	30.7	100
BES2z108	426.80	42.57	11.55	0.101	7.80E+04	9.90E+04	0.0632	0.0035	0.851	0.046	0.0976	0.0017	0.3115	715.0	58.8	117.6	625.2	58.8	25.2	600.5	5.0	10.0	96
BES2z109	47.30	70.80	20.40	1.486	3.00E+04	1.80E+04	0.0655	0.0058	0.961	0.085	0.1059	0.0030	0.1744	790.4	92.9	185.8	683.8	92.9	44.0	648.9	8.7	17.5	95
BES2z111	285.00	49.70	14.04	0.175	-1.20E+05	1.70E+05	0.0612	0.0038	0.882	0.055	0.1030	0.0019	0.2653	646.3	66.7	133.4	642.1	66.7	29.6	632.0	5.6	11.1	98
BES2z112	313.80	241.10	72.30	0.771	4.50E+04	7.00E+04	0.0610	0.0036	0.898	0.049	0.1069	0.0019	0.0131	639.2	63.5	126.9	650.7	63.5	26.2	654.7	5.5	11.1	101
BES2z113	146.30	197.00	53.00	1.366	1.10E+04	6.40E+04	0.0584	0.0041	0.769	0.053	0.0956	0.0019	0.1212	544.8	76.7	153.4	579.2	76.7	30.4	588.6	5.6	11.2	102
BES2z114	53.00	30.30	8.14	0.575	0.00E+00	1.80E+04	0.0621	0.0064	0.837	0.080	0.0972	0.0023	0.0193	677.6	110.1	220.3	617.5	110.1	44.2	598.0	6.8	13.5	97
BES2z115	84.70	57.50	17.48	0.684	9.00E+04	3.00E+04	0.0648	0.0049	0.901	0.065	0.1030	0.0023	0.0992	767.8	79.6	159.3	652.3	79.6	34.7	632.0	6.7	13.4	97
BES2z116	158.20	189.10	49.70	1.209	-2.60E+05	1.50E+05	0.0582	0.0041	0.742	0.051	0.0922	0.0019	0.1121	537.3	77.1	154.1	563.6	77.1	29.7	568.5	5.6	11.2	101
BES2z117	128.00	88.20	23.34	0.697	-6.20E+04	4.90E+04	0.0557	0.0045	0.719	0.060	0.0934	0.0022	0.2851	440.4	89.9	179.7	550.1	89.9	35.4	575.6	6.5	13.0	105
BES2z118	100.80	142.50	47.30	1.420	-4.20E+04	4.50E+04	0.0607	0.0047	0.946	0.070	0.1137	0.0024	0.0273	628.6	83.4	166.8	676.0	83.4	36.5	694.2	6.9	13.9	103
BES2z119c	143.70	22.30	22.08	0.156	1.00E+05	1.30E+05	0.1300	0.0021	6.920	0.340	0.3822	0.0068	0.5070	2098.0	14.2	28.4	2101.2	14.2	43.6	2086.6	15.9	31.7	99
BES2z119r	43.30	40.52	39.10	0.957	-5.40E+04	8.10E+04	0.1277	0.0043	6.650	0.400	0.3751	0.0085	0.3982	2066.6	29.7	59.4	2066.0	29.7	53.0	2053.4	19.9	39.8	99
BES2z120	236.80	157.80	162.50	0.676	-8.00E+05	3.50E+05	0.1407	0.0021	7.520	0.370	0.3840	0.0074	0.6238	2235.8	12.9	25.8	2175.4	12.9	44.1	2094.9	17.2	34.5	96
BES2z121c	263.90	183.70	44.80	0.716	2.80E+04	6.40E+04	0.0579	0.0036	0.688	0.043	0.0861	0.0015	0.3177	526.0	68.2	136.3	531.6	68.2	25.8	532.7	4.5	8.9	100
BES2z121r	137.10	59.40	15.62	0.442	-3.30E+04	7.70E+04	0.0594	0.0047	0.706	0.054	0.0877	0.0019	0.2693	581.8	85.9	171.8	542.4	85.9	32.1	541.9	5.6	11.3	100
BES2z122	66.70	64.70	18.70	0.980	-2.80E+04	4.80E+04	0.0603	0.0057	0.845	0.079	0.1018	0.0025	0.2063	614.4	102.1	204.2	621.9	102.1	43.4	624.9	7.3	14.6	100
BES2z123	124.50	154.30	42.10	1.245	-3.50E+04	3.10E+04	0.0610	0.0046	0.794	0.057	0.0949	0.0021	-0.0490	639.2	81.1	162.2	593.4	81.1	32.2	584.5	6.2	12.4	98
BES2z125	162.50	312.00	303.00	1.922	-4.30E+06	3.60E+06	0.1223	0.0023	6.190	0.310	0.3624	0.0065	0.4296	1990.0	16.7	33.4	2003.0	16.7	43.7	1993.5	15.4	30.8	100
BES2z126	1151.00	364.00	342.70	0.320	-1.30E+06	1.00E+06	0.1282	0.0012	6.235	0.300	0.3510	0.0058	0.5561	2073.4	8.2	16.5	2009.4	8.2	42.1	1939.4	13.8	27.7	97
BES2z127	254.00	55.70	21.06	0.222	-1.10E+05	1.80E+05	0.0660	0.0039	1.217	0.070	0.1352	0.0025	0.2837	806.4	61.8	123.7	808.4	61.8	32.0	817.5	7.1	14.2	101
BES2z128	32.07	20.85	20.92	0.646	2.20E+05	1.40E+05	0.1374	0.0047	7.320	0.440	0.3902	0.0100	0.5075	2194.7	29.7	59.4	2151.3	29.7	53.6	2123.8	23.2	46.4	99
BES2z129	78.10	47.75	45.70	0.622	-3.60E+05	4.50E+05	0.1194	0.0033	6.000	0.330	0.3589	0.0073	0.3225	1947.3	24.7	49.4	1975.8	24.7	47.8	1977.0	17.3	34.6	100
BES2z130	88.50	46.50	13.89	0.524	-1.90E+04	2.30E+04	0.0621	0.0046	0.857	0.061	0.0999	0.0025	0.0383	677.6	79.2	158.3	628.5	79.2	33.3	613.8	7.3	14.7	98
BES2z131	57.20	50.90	14.32	0.884	1.80E+04	2.60E+04	0.0616	0.0059	0.852	0.080	0.1010	0.0027	0.1633	660.3	102.7	205.3	625.7	102.7	43.8	620.3	7.9	15.8	99
BES2z132	243.00	193.00	54.80	0.786	6.20E+05	6.00E+05	0.0650	0.0041	0.876	0.052	0.0974	0.0018	0.0618	774.3	66.4	132.7	638.8	66.4	28.1	599.2	5.3	10.6	94
BES2z133	82.30	61.90	17.30	0.760	-1.90E+04	2.50E+04	0.0555	0.0048	0.764	0.066	0.0975	0.0023	0.1658	432.4	96.3	192.7	576.3	96.3	38.0	599.7	6.8	13.5	104
BES2z135	42.30	143.30	35.70	3.405	-1.90E+04	1.30E+04	0.0547	0.0071	0.674	0.085	0.0891	0.0029	-0.0306	400.0	145.4	290.8	523.1	145.4	51.5	550.2	8.6	17.2	105

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
BES2z137	305.00	154.60	160.90	0.510	2.20E+05	4.40E+05	0.1335	0.0017	6.780	0.330	0.3660	0.0065	0.5011	2144.5	11.1	22.3	2083.1	11.1	43.0	2010.6	15.3	30.7	97
BES2z138	29.10	22.45	5.86	0.782	-1.40E+03	9.40E+03	0.0584	0.0079	0.682	0.093	0.0879	0.0029	0.2896	544.8	147.8	295.6	528.0	147.8	56.1	543.1	8.6	17.2	103
BES2z140	72.50	19.70	5.38	0.274	-5.50E+04	5.50E+04	0.0543	0.0052	0.687	0.068	0.0916	0.0025	0.1155	383.5	107.6	215.2	531.0	107.6	40.9	565.0	7.4	14.8	106
BES2z141	157.40	136.10	157.30	0.882	-1.90E+05	8.00E+05	0.1519	0.0028	9.300	0.470	0.4395	0.0080	0.4489	2367.4	15.7	31.4	2368.0	15.7	46.3	2348.4	17.9	35.8	99
BES2z142	58.70	39.90	36.30	0.702	-8.00E+05	2.50E+05	0.1184	0.0039	5.310	0.330	0.3178	0.0087	0.5062	1932.2	29.5	59.0	1870.5	29.5	53.1	1779.0	21.3	42.6	95
BES2z143	323.30	151.90	50.90	0.474	6.00E+05	2.70E+05	0.0665	0.0041	0.934	0.055	0.1004	0.0019	-0.0706	822.2	64.4	128.7	669.7	64.4	28.8	616.8	5.6	11.1	92
BES2z144c	291.80	254.10	78.60	0.882	1.08E+06	6.10E+05	0.0617	0.0037	0.906	0.052	0.1058	0.0019	-0.0564	663.7	64.2	128.5	654.9	64.2	27.7	648.3	5.5	11.1	99
BES2z144r	250.00	163.40	50.80	0.669	-1.50E+05	4.10E+05	0.0597	0.0041	0.875	0.056	0.1046	0.0021	0.0796	592.7	74.4	148.9	638.3	74.4	30.3	641.3	6.1	12.3	100
BES2z145c	178.50	38.10	11.27	0.216	1.30E+05	1.50E+05	0.0611	0.0040	0.823	0.053	0.0977	0.0020	0.2345	642.8	70.4	140.7	609.7	70.4	29.5	600.9	5.9	11.7	99
BES2z145r	157.60	63.80	18.03	0.407	-1.20E+05	1.20E+05	0.0610	0.0042	0.833	0.054	0.0988	0.0021	0.0325	639.2	74.0	148.1	615.3	74.0	29.9	607.4	6.2	12.3	99
BES2z146	281.70	230.00	61.30	0.796	2.10E+05	2.00E+05	0.0616	0.0040	0.820	0.052	0.0966	0.0022	0.3752	660.3	69.6	139.2	608.0	69.6	29.0	594.5	6.5	12.9	98
BES2z147	110.50	92.00	23.30	0.798	3.20E+04	9.60E+04	0.0626	0.0046	0.900	0.070	0.1023	0.0026	0.4246	694.7	78.3	156.6	651.7	78.3	37.4	627.9	7.6	15.2	96
BES2z148	116.60	71.20	19.38	0.616	-1.70E+05	2.30E+05	0.0599	0.0046	0.767	0.058	0.0914	0.0020	0.2117	600.0	83.1	166.3	578.0	83.1	33.3	563.8	5.9	11.8	98
BES2z149	29.80	32.40	9.53	1.101	1.20E+04	2.60E+04	0.0521	0.0092	0.750	0.130	0.1017	0.0037	0.0854	289.8	201.7	403.5	568.2	201.7	75.4	624.4	10.8	21.6	110
BES2z150	135.90	86.30	123.90	0.639	5.10E+05	9.40E+05	0.2073	0.0028	16.050	0.800	0.5569	0.0110	0.7153	2884.6	11.0	21.9	2879.8	11.0	47.6	2853.8	22.8	45.5	99
BES2z151	292.00	261.00	77.70	0.906	1.70E+06	1.30E+06	0.0590	0.0036	0.851	0.050	0.1052	0.0020	0.0835	567.1	66.4	132.8	625.2	66.4	27.4	644.8	5.8	11.7	103
BES2z153	45.40	31.30	9.17	0.693	7.80E+04	5.10E+04	0.0615	0.0071	0.838	0.093	0.1002	0.0029	0.1223	656.8	123.8	247.6	618.0	123.8	51.3	615.6	8.5	17.0	100
BES2z154	528.00	146.00	41.40	0.279	5.00E+05	3.70E+05	0.0593	0.0034	0.783	0.043	0.0954	0.0017	0.1184	578.1	62.3	124.6	587.2	62.3	24.5	587.4	5.0	10.0	100
BES2z155	333.50	237.50	71.30	0.717	-1.90E+05	3.60E+05	0.0618	0.0036	0.858	0.049	0.0993	0.0019	0.1846	667.2	62.4	124.7	629.0	62.4	26.8	610.3	5.6	11.1	97
BES2z156	109.30	112.00	32.85	1.030	4.00E+04	7.30E+04	0.0612	0.0045	0.877	0.065	0.1026	0.0023	0.3329	646.3	79.0	158.0	639.4	79.0	35.1	629.6	6.7	13.4	98
BES2z157	44.70	23.09	5.87	0.514	-1.60E+05	3.30E+05	0.0609	0.0067	0.859	0.088	0.1002	0.0031	-0.1424	635.7	118.4	236.8	629.6	118.4	48.0	615.6	9.1	18.2	98
BES2z158	184.30	152.10	45.10	0.824	-1.10E+05	1.80E+05	0.0626	0.0042	0.878	0.058	0.0998	0.0020	0.1309	694.7	71.5	143.0	639.9	71.5	31.3	613.2	5.9	11.7	96
BES2z159	115.50	74.80	95.00	0.662	-4.30E+05	3.90E+05	0.1835	0.0037	12.820	0.680	0.4987	0.0095	0.5246	2684.8	16.7	33.3	2666.5	16.7	49.9	2608.2	20.4	40.9	98
BES2z160	39.40	54.50	15.84	1.389	2.30E+06	1.10E+06	0.0591	0.0075	0.850	0.110	0.1006	0.0035	0.2062	570.8	138.1	276.1	624.6	138.1	60.3	617.9	10.3	20.5	99
BES2z161	369.00	317.00	290.00	0.719	6.00E+06	1.30E+06	0.1461	0.0018	7.630	0.400	0.3713	0.0090	0.8732	2300.8	10.6	21.2	2188.4	10.6	47.0	2035.5	21.2	42.3	93
BES2z162c	332.00	87.30	98.20	0.269	4.00E+06	1.30E+06	0.1340	0.0018	7.640	0.370	0.4053	0.0069	0.4179	2151.0	11.7	23.5	2189.6	11.7	43.4	2193.4	15.8	31.7	100
BES2z163	223.20	206.00	59.30	0.925	9.00E+05	1.70E+05	0.0594	0.0039	0.814	0.051	0.0996	0.0019	-0.0566	581.8	71.3	142.6	604.7	71.3	28.5	612.1	5.6	11.1	101
BES2z164	160.30	130.30	47.90	0.818	-9.00E+05	1.40E+05	0.0644	0.0042	1.134	0.072	0.1274	0.0023	0.1850	754.8	68.8	137.6	769.7	68.8	34.2	773.0	6.6	13.2	100
BES2z165	1001.00	29.13	27.23	0.029	3.50E+06	2.10E+06	0.1248	0.0012	5.906	0.280	0.3384	0.0055	0.6301	2026.0	8.5	17.0	1962.1	8.5	41.1	1879.0	13.2	26.5	96
Discordant data																							
BES2z12	726.00	54.70	14.40	0.075	3.00E+03	1.90E+05	0.0608	0.0033	0.839	0.042	0.0979	0.0016	0.0150	632.2	58.4	116.9	618.6	11.6	23.2	601.8	4.7	9.4	97
BES2z13	3720.00	268.00	480.00	0.074	2.29E+04	1.10E+03	0.2105	0.0110	0.985	0.051	0.0336	0.0015	0.8280	2909.4	42.3	84.7	696.2	13.0	26.1	213.0	4.7	9.4	31
BES2z25c	230.50	213.00	85.50	0.933	5.20E+04	3.50E+04	0.0930	0.0130	1.450	0.230	0.1078	0.0028	0.8262	1487.9	132.4	264.7	909.9	47.6	95.2	660.0	8.1	16.3	73
BES2z28	754.00	92.50	216.00	0.123	1.06E+05	2.40E+04	0.1489	0.0083	3.560	0.200	0.1740	0.0039	0.5518	2333.3	47.7	95.4	1540.7	22.2	44.5	1034.1	10.7	21.4	67
BES2z30	722.00	1190.00	319.00	1.590	5.00E+03	2.00E+05	0.0631	0.0034	0.837	0.043	0.0953	0.0017	0.3787	711.6	57.3	114.5	617.5	11.9	23.7	586.8	5.0	10.0	95
BES2z33	1820.00	76.40	80.10	0.043	1.27E+05	4.70E+04	0.0909	0.0048	0.672	0.034	0.0529	0.0015	0.6134	1444.5	50.3	100.6	521.9	10.3	20.6	332.3	4.6	9.2	64
BES2z44	86.90	111.30	55.80	1.280	-1.80E+04	5.40E+04	0.0956	0.0060	2.494	0.150	0.1847	0.0040	0.1705	1539.9	59.0	118.0	1270.3	21.8	43.6	1092.6	10.9	21.8	86
BES2z50	419.00	89.60	47.90	0.208	8.00E+03	2.00E+05	0.0787	0.0042	2.098	0.110	0.1914	0.0036	0.3549	1164.6	52.9	105.7	1148.2	18.0	36.0	1129.0	9.7	19.5	98
BES2z67	1037.00	103.20	87.00	0.101	6.10E+05	4.60E+05	0.1166	0.0059	3.850	0.230	0.2372	0.0094	0.9696	1904.7	45.4	90.9	1603.3	24.1	48.1	1372.1	24.5	49.0	86
BES2z78	4.04	86.20	25.89	21.277	-1.10E+02	9.00E+02	0.0960	0.0340	1.520	0.530	0.1229	0.0096	0.2701	1547.8	332.7	665.4	938.5	106.7	213.4	747.2	27.6	55.1	80
BES2z79	233.80	46.00	43.50	0.196	7.00E+03	3.30E+05	0.1256	0.0017	6.415	0.310	0.3627	0.0064	0.5196	2037.3	12.0	23.9	2034.3	21.2	42.4	1995.0	15.1	30.3	98
BES2z80	1420.00	128.60	187.20	0.091	3.31E+05	3.00E+04	0.1382	0.0069	4.307	0.210	0.2238	0.0046	0.7932	2204.8	43.3	86.7	1694.7	20.1	40.1	1301.9	12.1	24.2	77
BES2z85c	312.00	49.90	38.90	0.170	3.50E+05	3.90E+05	0.1897	0.0024	10.360	0.520	0.3894	0.0083	0.7583	2739.6	10.4	20.8	2467.5	23.2	46.4	2120.0	19.3	38.5	86
BES2z87	161.80	165.90	56.80	1.029	-3.90E+04	5.90E+04	0.0744	0.0051	1.137	0.077	0.1107	0.0022	0.2399	1052.3	69.1	138.1	771.1	18.3	36.6	676.8	6.4	12.8	88
BES2z88	851.00	388.00	934.00	0.457	2.72E+04	3.10E+03	0.2810	0.0200	8.430	0.760	0.2114	0.0079	0.9435	3368.5	55.5	111.1	2278.4	40.9	81.8	1236.3	21.0	42.0	54
BES2z91	829.00	74.30	65.00	0.089	6.90E+05	3.60E+05	0.1191	0.0060	3.701	0.180	0.2250	0.0043	0.7810	1942.8	45.0	90.1	1571.6	19.4	38.8	1308.2	11.3	22.6	83
BES2z110c	155.40	197.60	74.70	1.263	3.10E+04	3.00E+04	0.0792	0.0052	1.247	0.082	0.1132	0.0023	0.3341	1177.1	64.9	129.9	822.1	18.5	37.0	691.3	6.7	13.3	84
BES2z110r	634.00	420.40	199.00	0.670	4.90E+04	7.70E+04	0.0990	0.0080	1.530	0.130	0.1113	0.0022	0.5908	1605.4	75.3	150.7	942.5	26.1	52.1	680.3	6.4	12.8	72
BES2z124	450.00	257.00	91.40	0.571	1.12E+05	3.90E+04	0.1048	0.0077	1.261	0.100	0.0873	0.0021	0.6890	1710.8	67.6	135.2	828.4	22.4	44.9	539.5	6.2	12.5	65
BES2z134	685.00	482.00	148.60	0.709	1.60E+05	1.20E+05	0.0783	0.0042	1.045	0.052	0.0980	0.0019	0.1982	1154.5	53.2	106.4	726.4	12.9	25.8	602.7	5.6	11.2	83
BES2z136	145.90	74.20	51.60	0.511	5.20E+04	3.30E+04	0.1150	0.0190	1.710	0.320	0.1084	0.0033	0.8038	1879.9	148.8	297.7	1012.3	59.9	119.8	663.4	9.6	19.2	66
BES2z139	907.00	439.00	181.00	0.516	-2.51E+06	6.70E+05	0.1461	0.0023	6.310	0.320	0.3084	0.0057	0.4193	2300.8	13.5	27.0	2019.8	22.2	44.4	1732.8	14.0	28.1	86
BES2z152	581.00	227.90	67.30	0.397	6.00E+03	6.00E+05	0.0607	0.0033	0.872	0.046	0.1026	0.0019	0.3607	628.6	58.6	117.1	636.7	12.5	24.9	629.6	5.6	11.1	99
BES2z162r	1010.00	108.30	111.50	0.108	-1.55E+06	5.40E+05	0.1344	0.0068	4.423	0.220	0.2374	0.0059	0.9010	2156.2	44.1	88.3	1716.7	20.6	41.2	1373.2	15.4	30.7	80

Footnotes:

- Analysis references: BES2z is zircon from sample BES2 (mount CT18-4), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.37a: Sample SKH1 (LA-ICPMS)

IGSN: IEACC00011 Coordinate UTM: Zone 29S, 3748316 m N, 678921 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
SHK1z1	245.80	179.20	526.00	0.750	7.30E+05	5.00E+05	0.0592	0.0020	0.853	0.033	0.1034	0.0012	0.4254	574.5	36.7	73.5	626.3	9.0	18.1	634.3	3.5	7.0	101
SHK1z2	69.10	159.20	470.00	2.355	1.70E+05	1.00E+05	0.0641	0.0055	0.868	0.075	0.0992	0.0027	0.1391	744.9	90.7	181.4	634.5	20.4	40.7	609.7	7.9	15.8	96
SHK1z3	35.78	14.11	66.30	0.404	5.40E+04	7.10E+04	0.0744	0.0060	1.730	0.130	0.1701	0.0038	-0.0247	1052.3	81.2	162.5	1019.8	24.2	48.3	1012.7	10.5	20.9	99
SHK1z4	162.70	151.90	951.00	0.960	8.00E+05	3.50E+05	0.0844	0.0023	2.618	0.076	0.2254	0.0028	0.3304	1301.8	26.5	52.9	1305.7	10.7	21.3	1310.3	7.4	14.7	100
SHK1z5	74.20	56.40	324.00	0.776	9.00E+05	1.70E+05	0.0784	0.0038	2.240	0.110	0.2079	0.0033	0.1777	1157.0	48.1	96.2	1193.7	17.2	34.4	1217.6	8.8	17.6	102
SHK1z6	47.40	22.85	111.90	0.492	1.40E+05	1.10E+05	0.0758	0.0050	1.790	0.120	0.1713	0.0033	0.2589	1089.8	66.1	132.2	1041.8	21.8	43.6	1019.3	9.1	18.2	98
SHK1z7	117.50	51.20	238.00	0.444	4.00E+05	1.80E+05	0.0737	0.0029	1.782	0.064	0.1752	0.0027	0.0980	1033.3	39.8	79.5	1038.9	11.7	23.3	1040.7	7.4	14.8	100
SHK1z8	66.70	46.10	141.90	0.699	1.14E+05	9.20E+04	0.0629	0.0049	0.919	0.071	0.1062	0.0021	0.2363	704.9	82.9	165.8	661.8	18.8	37.5	650.6	6.1	12.2	98
SHK1z9c	42.80	93.40	292.00	2.218	-2.80E+05	2.00E+05	0.0600	0.0056	0.923	0.082	0.1143	0.0029	0.1248	603.6	101.0	202.0	663.9	21.6	43.3	697.7	8.4	16.8	105
SHK1z11	381.00	182.40	1230.00	0.487	1.16E+06	7.40E+05	0.0890	0.0047	2.360	0.140	0.1923	0.0021	0.5767	1404.2	50.6	101.2	1230.6	21.1	42.3	1133.8	5.7	11.4	92
SHK1z12	118.90	91.20	226.40	0.767	1.70E+05	1.60E+05	0.0635	0.0036	0.760	0.045	0.0870	0.0016	0.3235	725.0	60.1	120.2	574.0	13.0	25.9	537.8	4.7	9.5	94
SHK1z13	297.00	130.80	626.00	0.444	2.60E+06	1.50E+06	0.0735	0.0018	1.796	0.047	0.1768	0.0020	0.2629	1027.8	24.8	49.5	1044.0	8.5	17.1	1049.5	5.5	11.0	101
SHK1z14	115.20	50.30	240.30	0.441	2.70E+05	2.40E+05	0.0690	0.0028	1.663	0.067	0.1755	0.0026	0.2109	898.7	41.9	83.7	994.5	12.8	25.5	1042.3	7.1	14.3	105
SHK1z15c	122.10	141.40	392.80	1.164	-2.00E+05	1.20E+05	0.0606	0.0033	0.880	0.052	0.1052	0.0018	0.3953	625.1	58.7	117.4	641.0	14.0	28.1	644.8	5.2	10.5	101
SHK1z15r	241.80	102.90	285.90	0.425	2.70E+05	3.10E+05	0.0612	0.0024	0.889	0.032	0.1054	0.0012	-0.0756	646.3	42.1	84.3	645.8	8.6	17.2	646.0	3.5	7.0	100
SHK1z16	85.70	82.50	229.80	0.964	-2.00E+04	7.00E+04	0.0575	0.0044	0.755	0.059	0.0952	0.0016	0.2001	510.8	84.1	168.2	571.1	17.1	34.1	586.2	4.7	9.4	103
SHK1z17	149.10	183.20	432.00	1.222	5.10E+06	2.70E+06	0.0587	0.0028	0.689	0.034	0.0854	0.0013	0.3141	556.0	52.0	104.0	532.2	10.2	20.4	528.3	3.9	7.7	99
SHK1z19	274.00	143.80	673.00	0.514	-3.00E+05	4.30E+05	0.0752	0.0017	1.847	0.046	0.1786	0.0020	0.3957	1073.9	22.7	45.4	1062.4	8.2	16.4	1059.3	5.5	10.9	100
SHK1z20	49.40	35.20	133.00	0.617	-1.07E+05	7.30E+04	0.0626	0.0048	0.951	0.071	0.1114	0.0030	0.0528	694.7	81.7	163.4	678.6	18.5	36.9	680.9	8.7	17.4	100
SHK1z21	175.30	172.40	819.00	0.970	6.00E+05	3.20E+05	0.0750	0.0021	1.845	0.049	0.1798	0.0023	0.2430	1068.5	28.1	56.3	1061.6	8.7	17.5	1065.9	6.3	12.6	100
SHK1z22	219.90	248.00	587.00	1.103	3.10E+05	2.70E+05	0.0617	0.0027	0.746	0.031	0.0885	0.0012	0.1125	663.7	46.9	93.7	565.9	9.0	18.0	546.7	3.6	7.1	97
SHK1z23	79.70	80.60	228.00	0.999	5.60E+04	8.00E+04	0.0636	0.0038	0.945	0.059	0.1069	0.0020	0.2383	728.4	63.3	126.6	675.5	15.4	30.8	654.7	5.8	11.6	97
SHK1z24	136.70	183.70	474.00	1.312	1.20E+05	1.50E+05	0.0632	0.0036	0.824	0.048	0.0949	0.0013	0.1877	715.0	60.5	121.0	610.3	13.3	26.7	584.5	3.8	7.7	96
SHK1z25	103.30	129.80	529.00	1.228	5.00E+05	1.60E+05	0.0729	0.0032	1.611	0.073	0.1608	0.0028	0.2897	1011.2	44.5	89.0	974.5	14.2	28.4	961.2	7.8	15.5	99
SHK1z26	412.50	426.40	721.00	1.003	-2.20E+05	2.80E+05	0.0557	0.0026	0.481	0.022	0.0630	0.0009	0.0196	440.4	51.9	103.9	398.8	7.5	15.1	393.8	2.8	5.6	99
SHK1z27	81.40	90.70	237.50	1.082	-4.60E+05	2.50E+05	0.0635	0.0044	0.924	0.064	0.1061	0.0018	0.1423	725.0	73.5	147.0	664.5	16.9	33.7	650.1	5.2	10.5	98
SHK1z28	41.44	21.87	100.80	0.507	-7.30E+05	4.80E+05	0.0750	0.0051	1.860	0.130	0.1810	0.0032	0.0648	1068.5	68.3	136.7	1067.0	23.1	46.1	1072.4	8.7	17.5	101
SHK1z30	683.00	144.00	335.00	0.192	2.00E+05	5.50E+05	0.0620	0.0015	0.877	0.024	0.1029	0.0011	0.4800	674.1	25.9	51.7	639.4	6.5	13.0	631.4	3.2	6.4	99
SHK1z31	60.30	34.78	337.20	0.555	3.00E+05	2.50E+05	0.1336	0.0038	7.360	0.190	0.3997	0.0070	0.2769	2145.8	24.8	49.7	2156.1	11.5	23.1	2167.7	16.1	32.2	101
SHK1z32	441.00	184.40	2091.00	0.403	9.80E+06	4.70E+06	0.1788	0.0015	12.180	0.130	0.4915	0.0044	0.6472	2641.8	7.0	13.9	2618.4	5.0	10.0	2577.2	9.5	19.0	98
SHK1z33	203.90	226.70	549.00	1.044	1.40E+05	1.70E+05	0.0615	0.0027	0.792	0.035	0.0937	0.0016	0.2590	656.8	47.1	94.2	592.3	9.9	19.8	577.4	4.7	9.4	97
SHK1z34	189.50	145.60	919.00	0.729	2.30E+05	4.70E+05	0.0977	0.0024	3.831	0.083	0.2837	0.0035	0.2318	1580.7	23.0	46.0	1599.3	8.7	17.4	1610.0	8.8	17.6	101
SHK1z35	174.00	147.40	729.00	0.826	-1.70E+05	5.70E+05	0.1382	0.0049	6.980	0.290	0.3660	0.0055	0.5908	2204.8	30.8	61.5	2108.9	18.4	36.9	2010.6	13.0	26.0	95
SHK1z36	65.70	57.30	605.00	0.802	-2.00E+05	2.30E+05	0.1439	0.0034	8.750	0.230	0.4354	0.0068	0.5030	2274.7	20.4	40.7	2312.3	12.0	23.9	2330.0	15.3	30.5	101
SHK1z37	222.00	132.90	721.00	0.571	2.50E+05	4.20E+05	0.0804	0.0018	2.410	0.057	0.2182	0.0022	0.2574	1206.8	22.0	44.1	1245.6	8.5	17.0	1272.4	5.8	11.6	102
SHK1z38	257.60	164.20	323.00	0.610	-1.60E+05	2.00E+05	0.0613	0.0037	0.569	0.038	0.0672	0.0012	0.4301	649.8	64.8	129.6	457.4	12.3	24.6	419.3	3.6	7.2	92
SHK1z39	467.00	62.80	145.00	0.130	1.80E+05	4.40E+05	0.0606	0.0018	0.846	0.024	0.1018	0.0012	0.0921	625.1	32.0	64.0	622.5	6.6	13.2	624.9	3.5	7.0	100
SHK1z40	38.60	260.00	2034.00	5.952	1.00E+06	1.20E+05	0.1218	0.0052	6.080	0.250	0.3609	0.0071	0.1368	1982.8	38.0	76.0	1987.4	17.9	35.8	1986.4	16.8	33.6	100
SHK1z41	241.00	46.93	437.00	0.187	2.90E+06	2.30E+06	0.1343	0.0018	6.997	0.090	0.3747	0.0039	0.3769	2154.9	11.7	23.4	2111.0	5.7	11.4	2051.5	9.1	18.3	97
SHK1z42	275.70	536.00	1485.00	1.863	1.70E+05	2.60E+05	0.0595	0.0019	0.876	0.029	0.1071	0.0013	0.3143	585.4	34.7	69.3	638.8	7.8	15.7	655.9	3.8	7.6	103
SHK1z43	116.60	232.00	453.00	1.862	-2.40E+05	1.40E+05	0.0563	0.0039	0.584	0.042	0.0746	0.0015	0.1292	464.2	76.7	153.5	467.0	13.4	26.9	463.8	4.5	9.0	99
SHK1z44	114.00	72.30	368.00	0.615	6.00E+05	3.70E+05	0.0824	0.0027	2.246	0.077	0.1978	0.0026	0.3490	1255.0	32.0	64.1	1195.5	12.0	24.1	1163.5	7.0	14.0	97
SHK1z45	285.70	110.50	464.00	0.371	9.00E+05	3.70E+05	0.0715	0.0017	1.612	0.036	0.1635	0.0019	0.1999	971.7	24.2	48.5	974.9	7.0	14.0	976.2	5.3	10.5	100
SHK1z46	115.80	80.30	746.00	0.666	6.00E+06	2.50E+06	0.1270	0.0027	6.840	0.150	0.3875	0.0047	0.3632	2056.9	18.8	37.5	2090.9	9.7	19.4	2111.2	10.9	21.8	101
SHK1z47	360.80	929.00	2285.00	2.470	-6.00E+05	2.50E+05	0.0617	0.0020	0.772	0.027	0.0911	0.0015	0.4746	663.7	34.7	69.4	580.9	7.7	15.5	562.0	4.4	8.9	97
SHK1z48	143.60	108.60	259.20	0.730	-2.00E+05	1.50E+05	0.0587	0.0032	0.787	0.042	0.0969	0.0015	-0.1089	556.0	59.5	118.9	589.5	11.9	23.8	596.2	4.4	8.8	101
SHK1z49	157.80	157.60	1272.00	0.957	-4.80E+05	4.90E+05	0.1225	0.0023	5.960	0.120	0.3502	0.0041	0.2934	1993.0	16.7	33.4	1970.0	8.7	17.5	1935.6	9.8	19.6	98
SHK1z50	45.20	72.50	184.20	1.538	-1.00E+04	2.30E+04	0.0581	0.0058	0.801	0.083	0.0986	0.0023	0.1601	533.5	109.3	218.6	597.4	23.4	46.8	606.2	6.7	13.5	101
SHK1z51c	110.30	44.20	139.00	0.386	2.10E+05	1.30E+05	0.0631	0.0030	1.009	0.049	0.1167	0.0023	0.1466	711.6	50.5	101.1	708.4	12.4	24.7	711.5	6.6	13.3	100
SHK1z51r	170.30	137.80	363.00	0.784	-5.00E+03	1.30E+05	0.0650	0.0029	0.951	0.043	0.1066	0.0017	0.2136	774.3	46.9	93.9	678.6	11.2	22.4	653.0	5.0	9.9	96
SHK1z52	126.50	122.40	269.00	0.940	4.20E+04	9.70E+04	0.0600	0.0032	0.713	0.038	0.0866	0.0014	0.1401	603.6	57.7	115.4	546.5	11.3	22.5	535.4	4.2	8.3	98
SHK1z53	197.50	252.00	2383.00	1.238	2.70E+05	8.60E+05	0.2172	0.0022	14.860	0.380	0.4920	0.0110	0.9254	2960.0	8.2	16.3	2806.3	12.2	24.3	2579.3	23.8	47.5	92
SHK1z54	46.60	54.30	517.00	1.122	4.00E+05	2.70E+05	0.1306	0.0038	7.530	0.240	0.4161	0.0091	0.3571	2106.0	25.5	51.1	2176.6	14.3	28.5	2242.8	20.7	41.4	103
SHK1z55	67.10	29.20	90.00	0.425	-1.60E+04	7.90E+04	0.0625	0.0035	1.079	0.063	0.1258	0.0025	0.3125	691.3	59.7	119.4	743.1	15.4	30.7	763.9	7.2	14.3	103
SHK1z56	203.80	145.00	972.00	0.687	1.11E+07	5.40E+06	0.0926	0.0019	3.373	0.074	0.2619	0.0031	0.3752	1479.7	19.4	38.9	1498.1	8.6	17.2	1499.6	7.9	15.8	100
SHK1z57	123.00	51.90	232.60	0.413	2.70E+05	2.40E+05	0.0762	0.0028	1.836	0.066	0.1757	0.0026	0.1693	1100.3	36.8	73.5	1058.4	11.8	23.6	1043.4	7.1	14.3	99
SHK1z58	62.80	63.00	415.00	0.983	-5.80E+05	4.30E+05	0.0896	0.0030	3.300	0.110	0.2667	0.0043	0.3595	1417.0	32.0	64.0	1481.1	13.0	26.0	1524.0	10.9	21.9	103
SHK1z59	255.00	64.30	220.00	0.247	1.90E+06	1.10E+06	0.0648	0.0020	1.167	0.035	0.1309	0.0014	0.1763	767.8	32.5	65.0	785.2	8.2	16.4	793.0	4.0	8.0	101
SHK1z60	117.00	108.00	584.00	0.912	9.10E+06	4.70E+06	0.0822	0.0032	2.448	0.084	0.2154	0.0031	0.0910	1250.3	38.1	76.2	1256.8	12.4	24.7	1257.5	8.2	16.4	100
SHK1z62	160.30	139.50	283.00	0.842	-1.10E+05	1.10E+05	0.0573	0.0033	0.601	0.035	0.0765	0.0014	0.1260	503.1	63.4	126.8	477.9	11.1	22.2	475.2	4.2	8.4	99

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
SHK1z63	188.40	343.00	760.00	1.799	5.00E+05	1.30E+05	0.0558	0.0028	0.656	0.034	0.0855	0.0013	0.2278	444.4	55.8	111.6	512.2	10.4	20.8	528.9	3.9	7.7	103
SHK1z64	104.00	240.40	626.00	2.328	-5.00E+04	8.90E+04	0.0616	0.0035	0.843	0.046	0.0998	0.0017	0.0647	660.3	60.9	121.8	620.8	12.7	25.3	613.2	5.0	10.0	99
SHK1z65	135.70	36.69	201.30	0.267	1.70E+05	2.60E+05	0.0811	0.0024	2.372	0.081	0.2104	0.0034	0.3883	1223.9	29.1	58.1	1234.2	12.2	24.4	1230.9	9.1	18.1	100
SHK1z66	68.50	78.00	200.40	1.140	-8.10E+05	4.10E+05	0.0613	0.0050	0.786	0.067	0.0932	0.0019	0.2046	649.8	87.6	175.1	588.9	19.0	38.1	574.4	5.6	11.2	98
SHK1z67	43.50	47.90	167.90	1.096	4.50E+05	3.00E+05	0.0671	0.0057	1.210	0.100	0.1315	0.0035	0.1471	840.9	88.4	176.8	805.2	23.0	45.9	796.4	10.0	19.9	99
SHK1z68	215.00	202.00	427.00	0.928	6.00E+05	1.80E+05	0.0644	0.0025	0.916	0.037	0.1034	0.0016	0.3057	754.8	41.0	81.9	660.2	9.8	19.6	634.3	4.7	9.3	96
SHK1z70	143.60	167.40	1472.00	1.176	-5.00E+05	2.50E+05	0.1223	0.0027	6.020	0.140	0.3544	0.0048	0.3238	1990.0	19.6	39.3	1978.7	10.1	20.2	1955.6	11.4	22.8	99
SHK1z71	308.00	350.00	921.00	1.152	2.00E+05	2.40E+05	0.0608	0.0033	0.805	0.040	0.0986	0.0014	0.3626	632.2	58.4	116.9	599.6	11.2	22.5	606.2	4.1	8.2	101
SHK1z73	96.70	80.00	1077.00	0.835	5.00E+05	4.50E+05	0.2076	0.0035	16.600	0.360	0.5743	0.0075	0.6170	2886.9	13.7	27.4	2912.0	10.4	20.8	2925.5	15.4	30.7	100
SHK1z74	123.90	67.10	163.80	0.553	-7.70E+04	9.50E+04	0.0589	0.0036	0.717	0.042	0.0887	0.0017	0.1161	563.4	66.6	133.1	548.9	12.4	24.8	547.8	5.0	10.1	100
SHK1z75	524.00	440.00	1037.00	0.853	-2.50E+06	1.30E+06	0.0593	0.0018	0.694	0.021	0.0850	0.0010	0.2680	578.1	33.0	66.0	535.2	6.3	12.6	526.1	3.0	5.9	98
SHK1z76	174.80	210.00	488.00	1.178	9.70E+05	6.90E+05	0.0595	0.0031	0.710	0.036	0.0869	0.0013	-0.0107	585.4	56.5	113.1	544.7	10.7	21.4	537.2	3.9	7.7	99
SHK1z78	106.80	132.60	343.60	1.271	-2.20E+05	1.20E+05	0.0565	0.0032	0.749	0.040	0.0964	0.0016	-0.0228	472.1	62.7	125.3	567.6	11.6	23.2	593.3	4.7	9.4	105
SHK1z79	112.90	36.42	282.20	0.332	1.60E+05	2.40E+05	0.1047	0.0027	4.380	0.110	0.3011	0.0039	0.2342	1709.1	23.7	47.5	1708.6	10.4	20.7	1696.8	9.7	19.3	99
SHK1z80	173.40	116.90	310.00	0.693	-3.00E+05	1.40E+05	0.0620	0.0026	0.865	0.037	0.1007	0.0015	0.1138	674.1	44.8	89.7	632.8	10.1	20.1	618.5	4.4	8.8	98
SHK1z82	163.10	102.40	814.00	0.623	5.00E+05	3.50E+05	0.1342	0.0024	6.660	0.220	0.3570	0.0100	0.8403	2153.6	15.6	31.2	2067.3	14.6	29.1	1967.9	23.8	47.5	95
SHK1z83	116.90	114.90	1114.00	0.985	-7.70E+05	5.10E+05	0.1280	0.0029	6.940	0.160	0.3873	0.0050	0.2494	2070.7	20.0	39.9	2103.8	10.2	20.4	2110.3	11.6	23.2	100
SHK1z84	247.00	190.20	386.00	0.793	7.00E+05	1.40E+05	0.0562	0.0025	0.565	0.025	0.0724	0.0009	0.2456	460.3	49.3	98.6	454.8	8.1	16.2	450.5	2.8	5.7	99
SHK1z85	173.40	72.50	633.00	0.427	-5.00E+05	4.50E+05	0.1135	0.0021	5.390	0.110	0.3425	0.0040	0.4361	1856.2	16.7	33.4	1883.3	8.7	17.5	1898.7	9.6	19.2	101
SHK1z86	94.60	74.50	201.00	0.676	1.10E+04	6.40E+04	0.0574	0.0036	0.787	0.048	0.0999	0.0019	0.1018	506.9	69.0	137.9	589.5	13.6	27.3	613.8	5.6	11.1	104
SHK1z87	128.50	18.67	109.70	0.150	-2.00E+05	2.20E+05	0.0826	0.0024	2.369	0.071	0.2084	0.0038	0.3009	1259.8	28.4	56.8	1233.3	10.7	21.4	1220.3	10.1	20.3	99
SHK1z88	24.40	13.98	45.60	0.587	5.00E+04	1.90E+04	0.0703	0.0096	1.040	0.130	0.1077	0.0040	0.1066	937.1	140.0	280.0	723.9	32.3	64.6	659.4	11.6	23.3	91
SHK1z89	170.20	106.70	476.00	0.633	7.40E+05	4.30E+05	0.0736	0.0025	1.688	0.056	0.1661	0.0019	0.0512	1030.5	34.3	68.7	1004.0	10.6	21.1	990.6	5.3	10.5	99
SHK1z90	78.80	62.30	196.00	0.800	1.30E+05	1.00E+05	0.0669	0.0050	0.997	0.074	0.1088	0.0025	0.0548	834.7	77.9	155.7	702.3	18.8	37.6	665.8	7.3	14.5	95
SHK1z91	318.00	148.30	1233.00	0.485	1.00E+07	1.00E+06	0.1211	0.0016	5.237	0.092	0.3109	0.0041	0.6415	1972.5	11.8	23.5	1858.7	7.5	15.0	1745.1	10.1	20.2	94
SHK1z92	167.90	128.50	347.00	0.791	-2.20E+05	1.70E+05	0.0611	0.0028	0.791	0.039	0.0936	0.0012	0.3739	642.8	49.3	98.5	591.7	11.0	22.1	576.8	3.5	7.1	97
SHK1z93	147.00	274.00	790.00	1.215	-5.80E+05	4.10E+05	0.0623	0.0040	0.963	0.064	0.1108	0.0024	0.2474	684.4	68.5	137.1	684.8	16.5	33.1	677.4	7.0	13.9	99
SHK1z94	18.20	30.00	143.00	1.653	6.90E+05	4.80E+05	0.0778	0.0089	1.900	0.210	0.1805	0.0073	0.2753	1141.8	113.7	227.4	1081.1	36.7	73.5	1069.7	19.9	39.9	99
SHK1z95	146.40	47.10	222.30	0.333	-1.07E+06	5.30E+05	0.0739	0.0029	1.758	0.069	0.1725	0.0024	0.2243	1038.7	39.6	79.2	1030.1	12.7	25.4	1025.9	6.6	13.2	100
SHK1z96	166.10	52.70	200.10	0.325	5.60E+05	3.20E+05	0.0698	0.0025	1.291	0.046	0.1343	0.0021	0.2003	922.5	36.8	73.6	841.7	10.2	20.4	812.3	6.0	11.9	97
SHK1z97	73.20	36.00	110.20	0.418	-3.50E+04	9.30E+04	0.0820	0.0052	1.763	0.097	0.1579	0.0048	0.0368	1245.5	62.1	124.2	1032.0	17.8	35.6	945.1	13.4	26.7	92
SHK1z98	118.10	65.50	600.00	0.574	-3.20E+05	3.40E+05	0.1190	0.0025	5.960	0.130	0.3602	0.0050	0.4166	1941.3	18.8	37.6	1970.0	9.5	18.9	1983.1	11.8	23.7	101
SHK1z99	98.10	124.30	550.00	1.314	1.20E+05	1.20E+05	0.0737	0.0039	1.655	0.076	0.1651	0.0026	-0.1324	1033.3	53.5	106.9	991.5	14.5	29.0	985.1	7.2	14.4	99
SHK1z100	172.30	80.90	649.00	0.494	2.90E+04	1.10E+04	0.1063	0.0022	4.526	0.098	0.3061	0.0039	0.3186	1736.9	19.0	37.9	1735.8	9.0	18.0	1721.5	9.6	19.2	99
SHK1z101	124.80	152.50	1467.00	1.258	-7.80E+05	5.00E+05	0.1333	0.0026	6.970	0.130	0.3772	0.0048	0.3853	2141.9	17.0	34.1	2107.6	8.3	16.5	2063.2	11.2	22.5	98
Discordant data																							
SHK1z9r	20.60	27.44	91.30	1.351	3.10E+04	2.50E+04	0.0525	0.0086	0.800	0.130	0.1155	0.0042	0.1815	307.2	186.6	373.1	596.8	36.6	73.3	704.6	12.1	24.3	118
SHK1z10	142.10	143.40	514.00	1.026	5.00E+05	1.30E+05	0.0770	0.0083	1.140	0.130	0.1089	0.0019	0.5015	1121.2	107.5	215.0	772.5	30.8	61.6	666.4	5.5	11.0	86
SHK1z18	200.20	156.80	696.00	0.778	2.50E+05	1.60E+05	0.1067	0.0079	1.440	0.120	0.0971	0.0017	0.5366	1743.8	67.8	135.6	905.7	24.9	49.9	597.4	5.0	10.0	66
SHK1z29	743.00	201.00	1350.00	0.262	5.02E+03	5.40E+02	0.1119	0.0021	2.530	0.072	0.1642	0.0030	0.7448	1830.5	17.0	34.0	1280.7	10.3	20.7	980.1	8.3	16.6	77
SHK1z61	319.80	396.00	3278.00	1.230	4.70E+05	2.80E+05	0.2185	0.0023	11.140	0.200	0.3656	0.0050	0.8137	2969.7	8.5	17.0	2534.9	8.4	16.7	2008.7	11.8	23.6	79
SHK1z69	198.30	120.70	1034.00	0.604	2.37E+05	8.70E+04	0.1378	0.0064	3.530	0.180	0.1856	0.0024	0.4168	2199.7	40.3	80.7	1534.0	20.2	40.3	1097.5	6.5	13.0	72
SHK1z72	341.00	312.00	2960.00	0.930	3.60E+05	2.80E+05	0.2260	0.0053	11.880	0.380	0.3770	0.0060	0.7142	3023.9	18.8	37.6	2595.0	15.0	29.9	2062.3	14.0	28.1	79
SHK1z77	246.00	342.00	853.00	1.416	-1.80E+05	2.30E+05	0.1070	0.0170	1.150	0.200	0.0778	0.0014	0.6814	1748.9	145.4	290.9	777.2	47.2	94.4	483.0	4.2	8.4	62
SHK1z81	795.00	834.00	2900.00	1.081	4.40E+05	1.90E+05	0.1462	0.0025	2.571	0.068	0.1282	0.0040	0.8325	2301.9	14.7	29.4	1292.4	9.7	19.3	777.6	11.4	22.9	60

Footnotes:

- Analysis references: SKH1z is zircon from sample SKH1 (mount CT18-03), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.37b: Sample SKH1 (SHRIMP)

IGSN: IEACC00011 Coordinate UTM: Zone 29S, 3748316 m N, 678921 m E

ANALYSIS	U (ppm)	Th (ppm)	$^{232}Th/^{238}U$	% $^{206}Pb^{c}$	Ratios									Ages (Ma)						Discordant (%)
					$^{204}Pb/^{206}Pb$	±%	$^{207}Pb^{*}/^{206}Pb^{*}$	±%	$^{207}Pb^{*}/^{235}U$	±%	$^{206}Pb^{*}/^{238}U$	±%	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^{*}/^{238}U$	σ	2σ	
Concordant data																				
SKH1z102	208.00	93.00	0.460	0.410	2.30E-04	5.80E+01	0.0500	4.6000	0.3900	5.2000	0.0570	2.3000	0.4000	208	107	214	355	8	16	-72
SKH1z103c	282.00	29.00	0.110	--	----	---	0.0890	0.7000	2.7100	1.5000	0.2200	1.3000	0.9000	1407	14	28	1284	15	30	10
SKH1z103r	69.00	62.00	0.920	--	-3.00E-04	5.00E+01	0.0840	3.2000	2.0700	3.6000	0.1800	1.7000	0.5000	1283	62	124	1066	17	34	18
SKH1z104r	86.00	20.00	0.240	0.660	3.70E-04	5.80E+01	0.0690	5.3000	0.9500	5.6000	0.1010	1.7000	0.3000	894	109	218	617	10	20	32
SKH1z105c	105.00	36.00	0.350	--	-4.90E-05	1.00E+02	0.0760	1.8000	1.7000	2.4000	0.1630	1.5000	0.6000	1015	38	76	982	15	30	12
SKH1z105r	113.00	24.00	0.220	0.080	4.80E-05	1.00E+02	0.0730	1.9000	1.6600	2.5000	0.1640	1.6000	0.7000	1091	36	72	973	14	28	4
SKH1z107r	511.00	14.00	0.030	0.000	---	---	0.0600	1.0000	0.8100	1.5000	0.0980	1.1000	0.7000	613	22	44	603	6	12	2
SKH1z108c	55.00	26.00	0.480	0.670	3.90E-04	5.80E+01	0.0610	6.2000	1.1400	6.5000	0.1360	2.0000	0.3000	635	133	266	820	15	30	-31
SKH1z108r	550.00	11.00	0.020	0.000	---	---	0.0590	1.1000	0.8100	1.9000	0.0990	1.6000	0.8000	570	24	48	608	9	18	-7
SKH1z109c	20.00	4.00	0.200	--	-3.00E-04	1.00E+02	0.0820	6.3000	1.7900	7.0000	0.1580	3.0000	0.4000	1251	124	248	947	26	52	26
SKH1z109r	175.00	7.00	0.040	0.000	---	---	0.0700	1.4000	1.4500	1.9000	0.1500	1.3000	0.7000	922	28	56	902	11	22	2
SKH1z110c	191.00	34.00	0.180	--	----	---	0.0750	1.2000	1.8200	1.8000	0.1760	1.3000	0.8000	1067	24	48	1044	13	26	2
SKH1z110r	219.00	14.00	0.070	0.100	5.50E-05	1.00E+02	0.0550	2.4000	0.5700	2.8000	0.0750	1.3000	0.5000	418	54	108	467	6	12	-12
SKH1z111c	54.00	20.00	0.380	0.210	1.20E-04	1.00E+02	0.0720	3.6000	1.3100	4.7000	0.1330	3.0000	0.6000	974	73	146	806	23	46	18
SKH1z112	82.00	33.00	0.420	0.210	1.20E-04	1.00E+02	0.0590	4.0000	0.7900	4.4000	0.0970	1.7000	0.4000	557	88	176	598	10	20	-8
SKH1z113	1091.00	34.00	0.030	0.270	1.50E-04	2.40E+01	0.0600	1.2000	0.8000	2.1000	0.0960	1.7000	0.8000	604	25	50	593	10	20	2
SKH1z115c	104.00	83.00	0.830	--	-1.00E-04	1.00E+02	0.0600	3.6000	0.7100	3.9000	0.0860	1.6000	0.4000	586	78	156	535	8	16	9
SKH1z115r	358.00	37.00	0.110	--	-1.40E-04	5.00E+01	0.0600	2.3000	0.6200	2.7000	0.0750	1.6000	0.6000	596	49	98	465	7	14	23
SKH1z116	489.00	457.00	0.960	0.000	---	---	0.0590	1.0000	0.8000	2.1000	0.0980	1.9000	0.9000	584	22	44	602	11	22	-3
SKH1z117	253.00	258.00	1.050	--	----	---	0.0550	1.8000	0.5600	2.2000	0.0740	1.3000	0.6000	425	41	82	460	6	12	-9
SKH1z118c	377.00	177.00	0.490	--	-1.00E-04	5.80E+01	0.0570	2.1000	0.5100	2.4000	0.0650	1.2000	0.5000	473	47	94	408	5	10	14
SKH1z118r	276.00	117.00	0.440	0.090	5.20E-05	1.00E+02	0.0550	2.4000	0.5000	2.7000	0.0650	1.2000	0.5000	405	53	106	409	5	10	-1
SKH1z119	138.00	53.00	0.400	0.070	4.80E-05	5.80E+01	0.1400	0.7000	7.6300	1.6000	0.3960	1.4000	0.9000	2224	13	26	2150	26	52	4
SKH1z120	254.00	75.00	0.310	0.070	4.40E-05	5.00E+01	0.1210	0.7000	5.7000	2.3000	0.3420	2.2000	1.0000	1969	12	24	1896	37	74	4
SKH1z121	267.00	248.00	0.960	0.360	2.00E-04	4.50E+01	0.0590	2.9000	0.7500	3.7000	0.0920	2.3000	0.6000	552	63	126	569	12	24	-3
SKH1z122c	449.00	96.00	0.220	--	----	---	0.0590	1.1000	0.8600	4.0000	0.1050	3.8000	1.0000	583	25	50	644	24	48	-11
SKH1z122r	403.00	72.00	0.180	0.230	1.30E-04	5.00E+01	0.0560	2.3000	0.5900	2.6000	0.0770	1.2000	0.5000	445	51	102	476	5	10	-7
SKH1z124	84.00	70.00	0.860	--	-3.60E-05	7.10E+01	0.2190	0.6000	17.8700	1.7000	0.5920	1.6000	0.9000	2973	10	20	2998	39	78	-1
SKH1z125	251.00	138.00	0.570	--	-3.90E-05	1.00E+02	0.0630	1.8000	0.8800	2.5000	0.1020	1.7000	0.7000	700	38	76	628	10	20	11
SKH1z126r	197.00	48.00	0.250	--	-6.10E-05	7.10E+01	0.0750	2.5000	1.7500	3.6000	0.1690	2.6000	0.7000	1075	50	100	1005	24	48	7
SKH1z127	181.00	94.00	0.540	--	----	---	0.0620	1.7000	0.9000	2.2000	0.1060	1.3000	0.6000	679	37	74	647	8	16	5
SKH1z129	430.00	102.00	0.250	0.040	2.20E-05	1.00E+02	0.0600	1.3000	0.8200	2.3000	0.0990	2.0000	0.8000	608	28	56	607	11	22	0
SKH1z130	382.00	69.00	0.190	--	-8.10E-05	7.10E+01	0.0540	2.3000	0.4400	3.4000	0.0590	2.6000	0.7000	376	51	102	370	9	18	2
SKH1z132	551.00	318.00	0.600	0.200	1.20E-04	2.70E+01	0.0740	0.9000	1.8100	1.6000	0.1760	1.4000	0.8000	1053	18	36	1045	13	26	1
SKH1z133c	105.00	117.00	1.150	--	-3.80E-04	5.00E+01	0.0700	4.5000	0.8900	4.7000	0.0930	1.6000	0.3000	921	92	184	571	9	18	40
SKH1z133r	171.00	79.00	0.480	--	----	---	0.0590	1.9000	0.7400	3.3000	0.0910	2.7000	0.8000	561	41	82	561	14	28	0
SKH1z134	95.00	40.00	0.440	--	-4.70E-05	7.10E+01	0.1360	0.9000	7.5500	1.8000	0.4020	1.6000	0.9000	2181	16	32	2177	29	58	0
SKH1z135	49.00	37.00	0.770	0.370	2.10E-04	1.00E+02	0.0590	6.5000	0.8200	7.5000	0.1020	3.7000	0.5000	551	142	284	624	22	44	-14
SKH1z136	201.00	161.00	0.830	0.000	---	---	0.1210	1.2000	5.9100	2.2000	0.3530	1.8000	0.8000	1977	22	44	1950	30	60	2
SKH1z137	538.00	22.00	0.040	0.140	7.60E-05	5.80E+01	0.0560	1.7000	0.6200	2.1000	0.0800	1.1000	0.5000	455	39	78	499	5	10	-10
SKH1z138	200.00	75.00	0.390	--	-2.70E-05	1.00E+02	0.0730	1.3000	1.6600	2.1000	0.1660	1.7000	0.8000	1010	26	52	988	16	32	2
Discordant and/or high common Pb data																				
SKH1z104c	343.00	126.00	0.380	0.170	1.10E-04	3.00E+01	0.1740	0.6000	6.4700	2.7000	0.2700	2.6000	1.0000	2593	9	18	1542	36	72	45
SKH1z106c	1216.00	1615.00	1.370	3.320	1.90E-03	6.00E+00	0.1020	1.9000	1.3300	3.2000	0.0950	2.5000	0.8000	1657	36	72	584	14	28	68
SKH1z106r	60.00	78.00	1.340	0.150	9.70E-05	7.10E+01	0.1240	1.5000	4.8500	2.3000	0.2830	1.8000	0.8000	2016	26	52	1608	26	52	23
SKH1z107c	590.00	592.00	1.040	2.170	1.30E-03	1.41E+02	0.1150	50.8000	2.2300	51.4000	0.1410	7.8000	0.2000	1876	916	1832	851	62	124	58
SKH1z111r	26.00	10.00	0.400	1.360	7.90E-04	5.80E+01	0.0620	13.9000	1.3900	14.2000	0.1630	2.8000	0.2000	666	298	596	975	26	52	-50
SKH1z114	415.00	124.00	0.310	0.060	3.50E-05	5.00E+01	0.1170	0.6000	3.5700	1.6000	0.2220	1.5000	0.9000	1908	11	22	1291	17	34	36
SKH1z123	708.00	322.00	0.470	0.780	4.70E-04	1.20E+01	0.1630	0.8000	4.8600	1.3000	0.2160	1.1000	0.8000	2491	13	26	1259	13	26	54
SKH1z126c	193.00	86.00	0.460	0.510	3.00E-04	2.80E+01	0.0930	2.9000	2.3900	3.2000	0.1870	1.3000	0.4000	1486	55	110	1104	13	26	28
SKH1z128	465.00	25.00	0.060	0.030	2.50E-05	4.10E+01	0.2160	1.4000	14.9400	3.0000	0.5010	2.7000	0.9000	2953	23	46	2618	58	116	14
SKH1z131	186.00	129.00	0.720	--	----	---	0.1300	0.7000	4.9300	1.5000	0.2740	1.3000	0.9000	2103	13	26	1561	18	36	29

ANALYSIS	U (ppm)	Th (ppm)	$^{232}Th/^{238}U$	$\%\ ^{206}Pb^{c}$	Ratios									Ages (Ma)						Discordant (%)
					$^{204}Pb/^{206}Pb$	±%	$^{207}Pb^{*}/^{206}Pb^{*}$	±%	$^{207}Pb^{*}/^{235}U$	±%	$^{206}Pb^{*}/^{238}U$	±%	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^{*}/^{238}U$	σ	2σ	
SKH1z139	486.00	572.00	1.210	0.230	1.50E-04	1.80E+01	0.2060	0.3000	10.7200	2.1000	0.3770	2.1000	1.0000	2876	6	12	2062	37	74	33

Footnotes:

- $\%^{206}Pb^{c}$ is % of ^{206}Pb from common Pb
- Errors are 1-sigma
- Pb* indicates radiogenic Pb, corrected for common Pb.
- Analysis references: SKH1z is zircon from sample SKH1 (mount CT18-03), followed by grain number "c" or "r", meaning core or rim, respectively.
- Error in standard calibration was 0.26% (not included in above errors but required when comparing data from different mounts).

Table D.38a: Sample ROM1 (LA-ICPMS)

IGSN: IEACC00012 Coordinate UTM: Zone 29S, 3712830 m N, 719745 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
ROM1z1	114.60	38.20	231.00	0.346	-5.60E+05	8.23E-02	0.0032	8.10E+05	2.445	0.094	0.2147	0.0029	0.1498	1252.7	38.0	76.1	1256.0	13.8	27.7	1253.8	7.7	15.4	100
ROM1z2	47.63	41.90	517.00	0.887	-1.00E+05	1.78E-01	0.0047	5.20E+05	12.170	0.370	0.4914	0.0071	0.4013	2629.6	22.0	44.0	2617.6	14.3	28.5	2576.7	15.3	30.7	98
ROM1z3	43.90	64.50	182.00	1.506	-2.20E+06	6.25E-02	0.0068	1.20E+06	0.844	0.093	0.0973	0.0027	0.2943	691.3	116.0	232.0	621.4	25.6	51.2	598.6	7.9	15.9	96
ROM1z5	289.00	142.00	475.00	0.463	-1.20E+05	6.55E-02	0.0023	5.70E+05	0.986	0.034	0.1093	0.0012	0.1103	790.4	36.8	73.7	696.7	8.7	17.4	668.7	3.5	7.0	96
ROM1z6	8.28	0.94	6.20	0.087	8.20E+04	6.60E-02	0.0230	4.90E+04	0.740	0.250	0.0880	0.0060	-0.1450	806.4	364.7	729.4	562.4	72.9	145.8	543.7	17.8	35.6	97
ROM1z7	27.40	20.50	90.50	0.761	-3.00E+05	7.03E-02	0.0070	2.20E+05	1.440	0.150	0.1484	0.0051	0.3509	937.1	102.1	204.2	905.7	31.2	62.4	892.0	14.3	28.6	98
ROM1z8	237.00	240.00	698.00	1.029	6.30E+05	5.89E-02	0.0022	5.70E+05	0.842	0.032	0.1036	0.0015	0.2455	563.4	40.7	81.4	620.2	8.8	17.6	635.5	4.4	8.8	102
ROM1z9	46.90	44.50	128.80	0.974	-4.00E+05	6.27E-02	0.0061	2.20E+05	0.911	0.090	0.1050	0.0024	0.1960	698.1	103.6	207.2	657.6	23.9	47.8	643.6	7.0	14.0	98
ROM1z11	432.70	68.50	836.00	0.145	2.40E+07	1.23E-01	0.0016	1.70E+07	5.319	0.069	0.3119	0.0027	0.3908	2000.2	11.6	23.1	1871.9	5.5	11.1	1750.0	6.6	13.3	93
ROM1z13	132.20	20.41	202.20	0.158	1.52E+07	1.28E-01	0.0020	8.20E+06	7.020	0.120	0.3950	0.0042	0.4420	2067.9	13.8	27.6	2114.0	7.6	15.2	2146.0	9.7	19.4	102
ROM1z14	372.00	171.30	466.00	0.476	-2.50E+05	6.15E-02	0.0018	4.90E+05	0.899	0.026	0.1059	0.0011	0.0927	656.8	31.4	62.8	651.2	6.9	13.9	648.9	3.2	6.4	100
ROM1z15	179.90	152.00	521.00	0.887	-1.80E+06	6.97E-02	0.0031	1.10E+06	1.046	0.043	0.1091	0.0017	0.0269	919.5	45.7	91.4	726.9	10.7	21.3	667.5	4.9	9.9	92
ROM1z16	83.70	51.60	362.00	0.633	-4.00E+05	9.38E-02	0.0031	4.30E+05	3.240	0.110	0.2511	0.0040	0.1662	1504.1	31.2	62.5	1466.8	13.2	26.3	1444.1	10.3	20.6	98
ROM1z17	85.40	44.00	469.00	0.529	2.00E+06	1.33E-01	0.0027	1.60E+06	7.510	0.160	0.4057	0.0062	0.4343	2141.9	17.7	35.4	2174.2	9.5	19.1	2195.2	14.2	28.4	101
ROM1z18	151.50	89.50	956.00	0.617	1.88E+07	1.46E-01	0.0023	8.30E+06	8.540	0.150	0.4207	0.0047	0.4616	2298.4	13.5	27.1	2290.2	8.0	16.0	2263.7	10.7	21.3	99
ROM1z19	46.80	42.40	344.00	0.928	-1.30E+05	1.05E-01	0.0036	2.50E+05	4.290	0.160	0.2935	0.0066	0.4214	1717.8	31.4	62.9	1691.4	15.3	30.7	1659.0	16.4	32.9	98
ROM1z20	304.00	301.00	894.00	1.021	-4.40E+05	6.41E-02	0.0020	7.70E+05	0.897	0.030	0.1011	0.0013	0.2902	744.9	33.0	66.0	650.1	8.0	16.0	620.9	3.8	7.6	95
ROM1z21	90.90	116.20	946.00	1.318	6.40E+06	1.04E-01	0.0029	3.80E+06	4.310	0.110	0.2985	0.0051	0.2104	1696.7	25.7	51.4	1695.3	10.5	21.0	1683.9	12.7	25.3	99
ROM1z22	193.50	28.30	82.70	0.151	1.20E+05	5.98E-02	0.0031	4.00E+05	0.765	0.040	0.0928	0.0013	0.1331	596.3	56.2	112.3	576.9	11.5	23.0	572.1	3.8	7.7	99
ROM1z23	109.70	128.70	1636.00	1.212	2.90E+06	1.63E-01	0.0025	2.20E+06	11.100	0.190	0.4875	0.0068	0.4385	2489.1	12.9	25.8	2531.6	8.0	15.9	2559.9	14.7	29.5	101
ROM1z24	69.00	50.43	135.10	0.761	2.80E+05	6.33E-02	0.0046	1.90E+05	0.768	0.055	0.0885	0.0021	0.1461	718.3	77.1	154.3	578.6	15.8	31.6	546.7	6.2	12.4	94
ROM1z26c	79.60	66.50	193.00	0.839	-3.80E+05	6.25E-02	0.0048	2.60E+05	0.905	0.070	0.1051	0.0020	0.0872	691.3	81.9	163.8	654.4	18.6	37.3	644.2	5.8	11.7	98
ROM1z26r	389.00	62.80	211.70	0.170	1.41E+06	6.34E-02	0.0020	9.90E+05	0.883	0.030	0.1006	0.0012	0.3153	721.7	33.5	66.9	642.6	8.1	16.2	617.9	3.5	7.0	96
ROM1z27	327.70	392.20	1103.00	1.248	7.50E+05	5.93E-02	0.0021	8.00E+05	0.777	0.028	0.0949	0.0014	0.2478	578.1	38.5	77.0	583.8	8.0	16.0	584.5	4.1	8.2	100
ROM1z30	133.70	89.50	244.80	0.700	5.00E+05	6.00E-02	0.0032	4.10E+05	0.769	0.037	0.0939	0.0016	-0.0492	603.6	57.7	115.4	579.2	10.6	21.2	578.6	4.7	9.4	100
ROM1z31	125.00	205.30	526.00	1.736	5.00E+05	5.90E-02	0.0036	2.50E+05	0.745	0.046	0.0913	0.0015	0.2088	567.1	66.4	132.8	565.3	13.4	26.7	563.2	4.4	8.9	100
ROM1z32	61.10	77.10	956.00	1.318	7.40E+05	1.63E-01	0.0036	7.30E+05	10.740	0.260	0.4727	0.0068	0.6329	2486.0	18.6	37.3	2500.9	11.2	22.5	2495.4	14.9	29.8	100
ROM1z34	92.30	135.40	1451.00	1.543	-2.80E+06	1.37E-01	0.0031	1.50E+06	7.650	0.180	0.4011	0.0060	0.4004	2193.4	19.6	39.2	2190.7	10.6	21.1	2174.1	13.8	27.6	99
ROM1z35	108.10	81.30	814.00	0.787	-2.00E+06	1.23E-01	0.0025	1.60E+06	6.390	0.140	0.3725	0.0058	0.3845	2000.2	18.1	36.1	2030.9	9.6	19.2	2041.2	13.6	27.2	101
ROM1z37	544.00	809.00	7962.00	1.562	-1.71E+08	1.23E-01	0.0012	8.60E+07	6.269	0.075	0.3636	0.0033	0.5233	2003.1	8.6	17.3	2014.1	5.2	10.5	1999.2	7.8	15.6	99
ROM1z38	61.60	124.50	327.00	2.115	-9.00E+04	5.84E-02	0.0042	8.60E+04	0.745	0.053	0.0915	0.0023	0.0601	544.8	78.6	157.2	565.3	15.4	30.8	564.4	6.8	13.6	100
ROM1z41	167.50	280.10	827.00	1.739	-1.23E+07	6.90E-02	0.0031	6.60E+06	0.933	0.042	0.0979	0.0015	0.1417	898.7	46.3	92.7	669.2	11.0	22.0	602.1	4.4	8.8	90
ROM1z42	145.60	115.40	367.00	0.820	6.60E+05	5.92E-02	0.0026	5.30E+05	0.855	0.038	0.1043	0.0015	0.2598	574.5	47.7	95.5	627.4	10.4	20.8	639.6	4.4	8.8	102
ROM1z43	260.00	202.20	720.00	0.816	1.00E+06	6.43E-02	0.0024	5.20E+05	1.089	0.039	0.1225	0.0015	0.1030	751.5	39.4	78.8	748.0	9.5	18.9	744.9	4.3	8.6	100
ROM1z44	16.24	82.90	224.60	5.313	1.60E+05	6.90E-02	0.0160	1.10E+05	0.860	0.200	0.0934	0.0053	-0.0766	898.7	239.2	478.3	630.1	54.5	109.1	575.6	15.6	31.2	91
ROM1z45	295.60	231.00	714.00	0.812	-3.80E+05	6.18E-02	0.0022	6.50E+05	0.886	0.032	0.1036	0.0013	0.0969	667.2	38.1	76.2	644.2	8.6	17.2	635.5	3.8	7.6	99
ROM1z46	76.10	67.50	215.00	0.929	-5.00E+05	6.09E-02	0.0039	1.50E+05	0.891	0.053	0.1074	0.0025	0.0429	635.7	68.9	137.8	646.9	14.2	28.4	657.6	7.3	14.6	102
ROM1z47	260.80	226.20	3020.00	0.905	7.50E+06	1.58E-01	0.0018	4.60E+06	11.010	0.170	0.4978	0.0057	0.6220	2432.2	9.7	19.3	2524.0	7.2	14.4	2604.3	12.3	24.5	103
ROM1z48	69.10	79.90	259.00	1.208	2.00E+05	6.61E-02	0.0045	1.70E+05	0.953	0.063	0.1047	0.0025	0.2956	809.5	71.2	142.4	679.7	16.4	32.7	641.9	7.3	14.6	94
ROM1z49	318.10	273.40	2718.00	0.897	1.40E+06	2.20E-01	0.0020	1.50E+06	15.260	0.390	0.4960	0.0140	0.9328	2982.9	7.3	14.6	2831.6	12.2	24.3	2596.6	30.2	60.3	92
ROM1z50	45.80	22.75	73.80	0.519	9.00E+04	6.44E-02	0.0060	7.30E+04	0.940	0.083	0.1082	0.0029	0.1216	754.8	98.3	196.6	672.9	21.7	43.4	662.3	8.4	16.9	98
ROM1z51	204.80	213.40	665.00	1.087	9.30E+05	6.71E-02	0.0028	3.90E+05	0.941	0.039	0.1016	0.0014	0.0643	840.9	43.4	86.9	673.4	10.2	20.4	623.8	4.1	8.2	93
ROM1z52	137.70	84.80	850.00	0.641	1.60E+06	1.18E-01	0.0023	1.10E+06	5.960	0.120	0.3620	0.0046	0.1673	1923.1	17.5	35.0	1970.0	8.7	17.5	1991.6	10.9	21.8	101
ROM1z53	283.60	402.00	1208.00	1.481	-1.10E+05	6.18E-02	0.0019	4.10E+05	0.876	0.028	0.1018	0.0013	0.0638	667.2	32.9	65.8	638.8	7.6	15.1	624.9	3.8	7.6	98
ROM1z54	45.07	157.60	434.00	3.623	1.40E+05	6.66E-02	0.0067	1.30E+05	0.825	0.082	0.0914	0.0025	0.2590	825.3	105.0	209.9	610.8	22.8	45.6	563.8	7.4	14.8	92
ROM1z55	65.60	69.20	1036.00	1.070	2.70E+06	2.02E-01	0.0040	1.60E+06	16.830	0.390	0.5969	0.0085	0.5267	2840.8	16.2	32.3	2925.2	11.1	22.2	3017.3	17.2	34.3	103
ROM1z59	592.00	421.00	1253.00	0.737	1.31E+06	6.13E-02	0.0016	9.30E+05	0.841	0.021	0.0996	0.0011	0.2872	649.8	28.0	56.0	619.7	5.8	11.6	612.1	3.2	6.4	99
ROM1z61	190.90	200.50	2134.00	1.074	-1.10E+06	1.29E-01	0.0020	1.40E+06	6.920	0.100	0.3853	0.0046	0.3717	2081.7	13.7	27.3	2101.2	6.4	12.8	2101.0	10.7	21.4	100
ROM1z62	250.00	229.00	562.00	0.907	-5.90E+05	6.35E-02	0.0026	4.50E+05	0.825	0.032	0.0938	0.0013	0.0351	725.0	43.4	86.8	610.8	8.9	17.8	578.0	3.8	7.7	95
ROM1z63	470.00	220.00	2380.00	0.484	-5.40E+06	1.71E-01	0.0020	5.60E+06	9.970	0.370	0.4170	0.0120	0.9591	2562.6	9.8	19.6	2432.0	17.1	34.2	2246.8	27.3	54.6	92
ROM1z64	43.40	53.23	161.50	1.263	1.16E+05	6.12E-02	0.0061	9.20E+04	0.811	0.073	0.0981	0.0029	-0.0533	646.3	107.1	214.1	603.0	20.4	40.9	603.3	8.5	17.0	100
ROM1z66	188.90	237.40	909.00	1.292	-3.90E+05	7.27E-02	0.0026	3.30E+05	1.232	0.043	0.1234	0.0016	0.2322	1005.6	36.3	72.6	815.2	9.8	19.5	750.1	4.6	9.2	92
ROM1z67	272.00	456.00	1348.00	1.720	9.00E+05	5.92E-02	0.0021	4.50E+05	0.837	0.029	0.1023	0.0013	-0.0225	574.5	38.6	77.1	617.5	8.0	16.0	627.9	3.8	7.6	102
ROM1z68	120.60	42.40	117.20	0.358	-9.90E+05	5.96E-02	0.0038	5.60E+05	0.720	0.043	0.0879	0.0013	0.0451	589.1	69.1	138.3	550.7	12.7	25.4	543.1	3.9	7.7	99
ROM1z69	167.40	65.20	679.00	0.402	2.50E+06	1.26E-01	0.0020	1.50E+06	6.640	0.120	0.3778	0.0044	0.4852	2042.9	14.0	28.1	2064.7	8.0	15.9	2066.0	10.3	20.6	100
ROM1z70	87.10	98.70	1048.00	1.160	8.10E+05	1.27E-01	0.0031	6.70E+05	6.870	0.190	0.3837	0.0054	0.3511	2062.4	21.5	42.9	2094.8	12.2	24.5	2093.5	12.6	25.2	100
ROM1z71	174.20	169.70	1749.00	0.998	1.10E+06	1.31E-01	0.0021	1.00E+06	6.900	0.110	0.3789	0.0039	0.3890	2108.7	14.1	28.2	2098.7	7.1	14.1	2071.1	9.1	18.2	99
ROM1z75	75.30	70.90	132.60	0.948	7.50E+04	5.51E-02	0.0057	6.50E+04	0.449	0.048	0.0588	0.0014	0.1035	416.3	115.6	231.1	376.6	16.8	33.6	368.3	4.3	8.5	98
ROM1z76	185.10	218.00	2315.00	1.181	4.60E+06	1.33E-01	0.0024	2.30E+06	7.170	0.140	0.3887	0.0044	0.3592	2131.4	15.8	31.7	2132.8	8.7	17.4	2116.8	10.2	20.4	99
ROM1z77	295.40	424.20	4504.00	1.468	-9.70E+06	1.24E-01	0.0016	4.30E+06	6.380	0.088	0.3723	0.0041	0.4972	2007.4	11.5	23.0	2029.5	6.0	12.1	2040.2	9.6	19.3	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
ROM1z78	170.40	224.00	877.00	1.333	2.80E+06	6.84E-02	0.0028	1.40E+05	1.262	0.052	0.1335	0.0018	0.2097	880.7	42.3	84.7	828.8	11.7	23.3	807.8	5.1	10.2	97
ROM1z79	215.00	196.00	1900.00	0.923	1.10E+05	1.22E-01	0.0019	9.50E+05	5.950	0.100	0.3516	0.0036	0.3898	1984.2	13.9	27.7	1968.6	7.3	14.6	1942.2	8.6	17.2	99
ROM1z81	347.10	321.90	4359.00	0.951	6.00E+06	1.82E-01	0.0019	2.30E+06	12.330	0.160	0.4891	0.0055	0.6797	2666.6	8.7	17.3	2629.9	6.1	12.2	2566.8	11.9	23.8	98
ROM1z83	119.40	169.10	547.00	1.458	8.00E+05	6.15E-02	0.0034	1.60E+05	0.882	0.047	0.1047	0.0016	0.1954	656.8	59.3	118.6	642.1	12.7	25.3	641.9	4.7	9.3	100
ROM1z84	65.30	96.50	968.00	1.534	7.00E+05	1.24E-01	0.0034	3.70E+05	6.260	0.180	0.3639	0.0048	0.0961	2020.3	24.2	48.4	2012.9	12.6	25.2	2000.6	11.3	22.7	99
ROM1z85	78.20	90.20	254.00	1.156	-6.00E+04	6.08E-02	0.0050	9.00E+04	0.765	0.064	0.0922	0.0018	0.0573	632.2	88.5	177.1	576.9	18.4	36.8	568.5	5.3	10.6	99
ROM1z86	72.20	45.70	455.00	0.650	-2.60E+05	1.21E-01	0.0032	3.60E+05	5.680	0.160	0.3383	0.0055	0.2144	1963.6	23.7	47.4	1928.3	12.1	24.3	1878.5	13.2	26.5	97
ROM1z87	180.20	79.70	272.40	0.456	-8.30E+05	6.18E-02	0.0026	4.60E+05	0.883	0.037	0.1034	0.0015	0.1315	667.2	45.0	90.1	642.6	10.0	19.9	634.3	4.4	8.8	99
ROM1z88	152.70	230.60	2367.00	1.560	8.10E+05	1.24E-01	0.0027	7.50E+05	6.190	0.140	0.3591	0.0041	0.3436	2014.6	19.3	38.6	2003.0	9.9	19.8	1977.9	9.7	19.4	99
ROM1z89	88.50	27.03	92.50	0.314	8.00E+05	6.55E-02	0.0040	5.00E+05	0.991	0.061	0.1099	0.0024	0.0987	790.4	64.1	128.2	699.2	15.5	31.1	672.2	7.0	13.9	96
ROM1z91	270.00	84.90	163.00	0.308	-6.00E+05	5.78E-02	0.0031	2.20E+05	0.480	0.025	0.0602	0.0008	0.0582	522.2	58.8	117.7	398.1	8.6	17.1	376.7	2.5	5.0	95
ROM1z92	150.30	220.60	766.00	1.517	9.50E+05	6.01E-02	0.0028	7.30E+05	0.898	0.043	0.1079	0.0013	0.1521	607.2	50.4	100.7	650.7	11.5	23.0	660.5	3.8	7.6	102
ROM1z93	199.00	344.00	2450.00	1.754	1.02E+06	1.69E-01	0.0027	3.60E+05	9.600	0.160	0.4116	0.0060	0.5505	2549.7	13.4	26.7	2397.2	7.7	15.3	2222.2	13.7	27.4	93
ROM1z94	149.40	154.90	1803.00	1.067	-3.00E+05	1.31E-01	0.0023	8.30E+05	6.910	0.120	0.3815	0.0036	0.2122	2110.1	15.4	30.8	2099.9	7.7	15.4	2083.3	8.4	16.8	99
ROM1z97	287.20	158.60	1743.00	0.568	-9.60E+06	1.29E-01	0.0018	4.60E+06	6.702	0.084	0.3750	0.0039	0.2368	2088.5	12.2	24.5	2072.9	5.5	11.1	2052.9	9.1	18.3	99
ROM1z98	588.00	208.90	675.00	0.370	-4.50E+06	6.11E-02	0.0016	1.80E+06	0.820	0.021	0.0971	0.0009	0.0682	642.8	28.1	56.3	608.0	5.9	11.7	597.5	2.7	5.5	98
ROM1z99	116.00	127.80	358.00	1.143	-2.30E+05	6.41E-02	0.0034	1.80E+05	0.815	0.044	0.0917	0.0016	0.1923	744.9	56.1	112.1	605.3	12.3	24.6	565.6	4.7	9.4	93
ROM1z101	61.50	54.60	167.00	0.925	-4.20E+04	6.49E-02	0.0059	4.30E+04	0.826	0.071	0.0942	0.0021	0.0355	771.1	95.7	191.4	611.4	19.7	39.4	580.3	6.2	12.4	95
ROM1z102	109.30	87.10	286.60	0.831	-4.00E+05	6.48E-02	0.0041	1.60E+05	0.920	0.057	0.1031	0.0016	-0.0768	767.8	66.6	133.3	662.4	15.1	30.1	632.6	4.7	9.4	95
ROM1z103	242.00	145.40	1981.00	0.634	8.00E+06	2.16E-01	0.0022	1.30E+06	14.600	0.420	0.4890	0.0130	0.9414	2951.1	8.2	16.4	2789.5	13.7	27.3	2566.3	28.1	56.3	92
ROM1z104	126.00	131.00	421.00	1.033	1.90E+05	6.22E-02	0.0029	2.20E+05	0.922	0.046	0.1062	0.0020	0.1947	681.0	49.8	99.6	663.4	12.1	24.3	650.6	5.8	11.7	98
ROM1z105	241.40	204.80	2213.00	0.879	2.10E+06	1.31E-01	0.0020	1.60E+06	6.760	0.110	0.3738	0.0041	0.4242	2112.8	13.4	26.8	2080.5	7.2	14.4	2047.3	9.6	19.2	98
ROM1z106	149.60	152.90	2044.00	1.060	-4.00E+05	1.62E-01	0.0024	9.20E+05	10.390	0.160	0.4687	0.0057	0.5134	2473.5	12.5	25.1	2470.2	7.1	14.3	2477.9	12.5	25.0	100
ROM1z109	458.00	541.00	6010.00	1.253	7.00E+06	1.57E-01	0.0018	2.00E+06	8.290	0.140	0.3828	0.0052	0.7093	2423.6	9.7	19.4	2263.2	7.6	15.3	2089.4	12.1	24.2	92
ROM1z110	103.10	94.30	920.00	0.942	-1.90E+05	1.14E-01	0.0025	4.80E+05	5.250	0.130	0.3336	0.0048	0.5151	1865.7	19.8	39.5	1860.8	10.6	21.1	1855.8	11.6	23.2	100
ROM1z111	144.20	122.40	377.00	0.875	-1.30E+05	6.17E-02	0.0030	2.10E+05	0.886	0.043	0.1039	0.0018	0.1635	663.7	52.1	104.2	644.2	11.6	23.1	637.2	5.3	10.5	99
ROM1z112	180.00	340.00	1045.00	1.923	-3.50E+05	6.08E-02	0.0027	2.10E+05	0.857	0.038	0.1021	0.0017	0.2155	632.2	47.8	95.6	628.5	10.4	20.8	626.7	5.0	9.9	100
ROM1z113	47.68	90.70	256.40	1.923	2.00E+05	6.25E-02	0.0060	1.30E+05	0.804	0.074	0.0939	0.0027	0.0642	691.3	102.4	204.7	599.1	20.8	41.6	578.6	8.0	15.9	97
Discordant data																							
ROM1z4	293.00	286.50	931.00	0.997	-1.24E+06	9.60E-02	0.0100	8.90E+05	1.290	0.150	0.0962	0.0014	0.5506	1547.8	97.9	195.7	841.3	33.2	66.5	592.1	4.1	8.2	70
ROM1z10	227.00	325.00	1910.00	1.433	2.60E+05	1.73E-01	0.0240	2.20E+05	3.110	0.570	0.1168	0.0051	0.9392	2586.9	115.8	231.5	1435.2	70.3	140.7	712.1	14.7	29.4	50
ROM1z12	236.00	252.00	1835.00	1.076	-9.50E+06	1.24E-01	0.0020	5.00E+06	4.750	0.160	0.2751	0.0070	0.8489	2008.8	14.4	28.7	1776.1	14.1	28.2	1566.6	17.7	35.4	88
ROM1z25	15.00	2.60	624.00	0.153	3.50E+05	1.00E-01	0.0045	1.80E+05	0.890	0.040	0.0642	0.0007	0.2492	1627.8	41.7	83.5	646.4	10.7	21.5	401.2	2.2	4.4	62
ROM1z28	6.70	15.00	1044.00	1.464	-3.30E+06	7.07E-02	0.0027	2.00E+06	0.988	0.037	0.1011	0.0012	0.0944	948.8	39.1	78.2	697.7	9.4	18.9	620.9	3.5	7.0	89
ROM1z29	1.90	1.60	288.30	1.721	3.60E+05	9.08E-02	0.0084	2.10E+05	1.270	0.110	0.1029	0.0030	-0.0454	1442.4	88.1	176.3	832.4	24.6	49.2	631.4	8.8	17.5	76
ROM1z33	7.90	13.00	885.00	1.362	2.40E+06	7.01E-02	0.0030	1.20E+06	0.970	0.041	0.0995	0.0013	0.1733	931.3	43.9	87.8	688.5	10.6	21.1	611.5	3.8	7.6	89
ROM1z36	26.00	26.00	1493.00	1.242	4.20E+05	1.00E-01	0.0049	1.60E+05	0.811	0.036	0.0587	0.0008	-0.2717	1631.5	45.3	90.7	603.0	10.1	20.2	367.8	2.3	4.6	61
ROM1z39	1.70	6.60	277.00	2.519	-4.70E+04	1.37E-01	0.0092	4.80E+04	4.440	0.310	0.2390	0.0140	0.4141	2184.5	58.6	117.2	1719.8	28.9	57.8	1381.5	36.4	72.8	80
ROM1z40	18.00	21.00	2320.00	0.697	1.40E+06	1.22E-01	0.0017	1.30E+06	4.650	0.100	0.2719	0.0037	0.7693	1990.0	12.4	24.7	1758.3	9.0	18.0	1550.4	9.4	18.8	88
ROM1z56	14.00	5.20	761.00	0.323	5.70E+05	8.60E-02	0.0027	1.70E+05	0.740	0.025	0.0621	0.0008	0.3289	1338.2	30.3	60.7	562.4	7.3	14.6	388.4	2.3	4.6	69
ROM1z57	15.00	5.10	458.00	0.377	-6.60E+05	7.94E-02	0.0045	9.50E+05	0.678	0.039	0.0616	0.0008	0.2662	1182.1	56.0	112.0	525.6	11.8	23.6	385.3	2.6	5.1	73
ROM1z58	1.40	3.10	193.00	1.063	9.20E+04	7.55E-02	0.0058	9.00E+04	1.112	0.082	0.1056	0.0026	-0.0584	1081.8	77.0	154.1	759.1	19.7	39.4	647.1	7.6	15.2	85
ROM1z60	11.00	18.00	771.00	1.873	3.70E+05	1.14E-01	0.0062	2.00E+05	1.510	0.089	0.0956	0.0020	0.4315	1859.4	49.2	98.5	934.4	18.0	36.0	588.6	5.9	11.8	63
ROM1z65	1.30	1.60	505.00	1.007	3.00E+05	1.00E-01	0.0140	1.50E+05	1.600	0.300	0.1105	0.0036	0.8821	1624.1	130.2	260.4	970.2	58.5	117.1	675.7	10.4	20.9	70
ROM1z72	472.00	144.20	2496.00	0.310	7.90E+05	1.48E-01	0.0018	1.20E+05	6.730	0.110	0.3254	0.0037	0.6258	2327.6	10.4	20.8	2076.6	7.2	14.4	1816.0	9.0	18.0	87
ROM1z73	291.00	181.00	406.00	0.638	5.40E+05	6.62E-02	0.0055	3.70E+05	0.566	0.045	0.0629	0.0009	0.2408	812.7	86.9	173.7	455.4	14.6	29.2	393.0	2.9	5.7	86
ROM1z74	323.00	375.00	1204.00	1.151	2.70E+05	7.46E-02	0.0030	4.30E+05	1.044	0.039	0.1015	0.0013	-0.1276	1057.7	40.5	81.0	725.9	9.7	19.4	623.2	3.8	7.6	86
ROM1z80	173.00	153.00	630.00	0.887	7.00E+05	1.24E-01	0.0130	1.50E+05	1.410	0.140	0.0835	0.0024	-0.1444	2014.6	93.0	185.9	893.2	29.5	58.9	517.0	7.1	14.3	58
ROM1z82	221.00	396.00	1300.00	1.818	1.40E+05	7.21E-02	0.0066	2.90E+05	1.005	0.097	0.0999	0.0015	0.2782	988.8	93.1	186.2	706.3	24.5	49.1	613.8	4.4	8.8	87
ROM1z90	286.30	288.80	1180.00	1.035	2.80E+05	9.54E-02	0.0039	1.50E+05	1.366	0.056	0.1033	0.0012	0.0228	1536.0	38.5	76.9	874.4	12.0	24.0	633.7	3.5	7.0	72
ROM1z95	216.10	105.00	413.00	0.448	5.00E+05	8.18E-02	0.0069	2.20E+05	1.044	0.088	0.0925	0.0013	-0.0426	1240.7	82.7	165.3	725.9	21.8	43.7	570.3	3.8	7.7	79
ROM1z96	170.90	119.40	958.00	0.713	2.40E+06	1.29E-01	0.0026	1.60E+06	5.070	0.120	0.2837	0.0041	0.5871	2087.1	17.7	35.4	1831.1	10.0	20.1	1610.0	10.3	20.6	88
ROM1z100	36.40	39.00	168.00	1.131	5.90E+04	9.20E-02	0.0071	8.50E+04	1.460	0.120	0.1119	0.0033	0.2204	1467.4	73.3	146.6	914.0	24.7	49.5	683.8	9.6	19.1	75
ROM1z107	85.10	2230.00	5270.00	17.637	7.10E+04	2.36E-01	0.0270	4.50E+04	4.060	0.510	0.1286	0.0035	0.7574	3093.2	91.2	182.5	1646.3	51.1	102.3	779.9	10.0	20.0	47
ROM1z108	375.00	256.70	2534.00	0.702	1.10E+06	2.18E-01	0.0020	1.40E+06	12.920	0.220	0.4300	0.0070	0.8303	2962.3	7.4	14.8	2673.8	8.0	16.0	2305.7	15.8	31.6	86

Footnotes:

- Analysis references: ROM1z is zircon from sample ROM1 (mount CT18-03), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.38b: Sample ROM1 (SHRIMP)

IGSN: IEACC00012 Coordinate UTM: Zone 29S, 3712830 m N, 719745 m E

ANALYSIS	U (ppm)	Th (ppm)	$^{232}Th/^{238}U$	% $^{206}Pb^{c}$	Ratios								Error correction	Ages (Ma)						Discordant (%)
					$^{204}Pb/^{206}Pb$	±%	$^{207}Pb^{*}/^{206}Pb^{*}$	±%	$^{207}Pb^{*}/^{235}U$	±%	$^{206}Pb^{*}/^{238}U$	±%		$^{207}Pb/^{206}Pb$	σ	2σ	$^{206}Pb^{*}/^{238}U$	σ	2σ	
Concordant data																				
ROM1z115r	72.00	26.00	0.370	0.630	3.60E-04	5.80E+01	0.0660	5.4000	1.1000	5.7000	0.1300	2.0000	0.3000	792	113	226	767	14	28	3
ROM1z116c	73.00	53.00	0.750	0.470	3.00E-04	4.10E+01	0.1040	2.1000	4.2000	2.9000	0.2900	2.0000	0.7000	1689	40	80	1658	29	58	2
ROM1z116r	149.00	71.00	0.500	0.000	---	---	0.1080	0.9000	4.5000	1.7000	0.3000	1.5000	0.9000	1773	16	32	1702	22	44	5
ROM1z117c	319.00	422.00	1.370	0.090	5.60E-05	4.50E+01	0.1090	0.7000	4.5000	1.5000	0.3000	1.3000	0.9000	1784	13	26	1692	20	40	6
ROM1z117r	79.00	44.00	0.570	0.440	2.80E-04	4.10E+01	0.1080	2.0000	4.3000	2.7000	0.2900	1.8000	0.7000	1773	36	72	1645	27	54	8
ROM1z118c	48.00	49.00	1.050	0.000	---	---	0.0660	7.2000	0.9000	7.5000	0.1000	2.2000	0.3000	812	150	300	634	13	26	23
ROM1z119c	336.00	171.00	0.530	0.820	4.50E-04	3.50E+01	0.0490	5.4000	0.4000	5.6000	0.0600	1.4000	0.2000	126	127	254	371	5	10	-201
ROM1z120c	254.00	198.00	0.800	0.140	7.70E-05	1.00E+02	0.0530	3.2000	0.4000	3.5000	0.0600	1.4000	0.4000	320	73	146	356	5	10	-12
ROM1z120r	75.00	29.00	0.400	--	-2.30E-04	1.00E+02	0.0640	6.2000	0.5000	6.5000	0.0600	1.9000	0.3000	741	132	264	368	7	14	52
ROM1z121	87.00	52.00	0.620	0.050	3.20E-05	1.00E+02	0.1330	1.7000	6.8000	2.5000	0.3700	1.8000	0.7000	2142	30	60	2040	32	64	6
ROM1z123	593.00	37.00	0.060	0.020	1.40E-05	5.80E+01	0.1270	0.4000	6.5000	1.2000	0.3700	1.1000	0.9000	2054	7	14	2033	20	40	1
ROM1z124	251.00	203.00	0.840	0.070	4.10E-05	1.00E+02	0.0600	1.9000	0.8000	2.3000	0.1000	1.3000	0.6000	596	41	82	609	8	16	-2
ROM1z125	624.00	161.00	0.270	0.010	7.70E-06	1.00E+02	0.0860	0.6000	2.6000	1.9000	0.2200	1.8000	0.9000	1347	12	24	1282	20	40	5
ROM1z126	190.00	189.00	1.030	0.150	1.10E-04	3.20E+01	0.1750	0.6000	11.6000	1.5000	0.4800	1.4000	0.9000	2602	10	20	2532	29	58	3
ROM1z128	24.00	16.00	0.690	0.750	4.20E-04	1.00E+02	0.0530	13.3000	0.7000	13.6000	0.0900	3.0000	0.2000	321	302	604	581	17	34	-85
ROM1z129	102.00	37.00	0.370	0.200	1.10E-04	1.00E+02	0.0580	4.0000	0.7000	4.4000	0.0900	1.7000	0.4000	529	88	176	532	9	18	0
ROM1z130	239.00	161.00	0.690	--	-2.20E-05	7.10E+01	0.1310	0.6000	7.0000	2.2000	0.3900	2.1000	1.0000	2105	11	22	2123	38	76	-1
ROM1z131	287.00	303.00	1.090	0.000	---	---	0.0620	1.6000	0.9000	5.2000	0.1000	5.0000	1.0000	679	33	66	638	30	60	6
ROM1z132	91.00	67.00	0.750	--	----	---	0.1630	1.4000	10.5000	2.2000	0.4700	1.8000	0.8000	2485	23	46	2466	36	72	1
ROM1z134	257.00	279.00	1.120	--	-9.00E-05	7.10E+01	0.0600	2.3000	0.8000	2.9000	0.0900	1.8000	0.6000	619	50	100	572	10	20	8
ROM1z135	623.00	97.00	0.160	0.060	4.50E-05	2.70E+01	0.2100	0.3000	14.8000	1.5000	0.5100	1.4000	1.0000	2905	4	8	2656	31	62	10
ROM1z137	314.00	152.00	0.500	0.060	3.20E-05	1.00E+02	0.0620	1.6000	0.9000	2.0000	0.1000	1.3000	0.6000	663	34	68	622	8	16	6
ROM1z138	213.00	45.00	0.220	0.140	7.60E-05	1.00E+02	0.0530	3.2000	0.4000	5.0000	0.0600	3.8000	0.8000	349	73	146	350	13	26	0
ROM1z139	161.00	82.00	0.530	0.230	1.30E-04	5.80E+01	0.0700	2.2000	1.5000	2.7000	0.1600	1.5000	0.6000	916	46	92	944	13	26	-3
ROM1z141	143.00	42.00	0.300	0.140	7.90E-05	1.00E+02	0.0580	3.0000	0.8000	3.4000	0.1100	1.6000	0.5000	541	66	132	645	10	20	-20
ROM1z142	31.00	42.00	1.410	--	----	---	0.0640	5.0000	0.8000	5.6000	0.0900	2.6000	0.5000	751	105	210	564	14	28	26
ROM1z143	71.00	24.00	0.350	0.260	1.70E-04	5.00E+01	0.1250	1.5000	5.9000	2.4000	0.3400	1.9000	0.8000	2035	27	54	1898	31	62	8
ROM1z144	491.00	101.00	0.210	0.230	1.40E-04	2.10E+01	0.1120	0.6000	4.9000	1.3000	0.3200	1.2000	0.9000	1824	11	22	1796	18	36	2
ROM1z145	330.00	24.00	0.080	--	-2.00E-05	7.10E+01	0.1290	0.6000	6.4000	2.7000	0.3600	2.6000	1.0000	2079	11	22	1985	44	88	5
ROM1z146	446.00	453.00	1.050	0.660	3.70E-04	2.50E+01	0.0620	2.6000	0.9000	2.8000	0.1000	1.2000	0.4000	661	55	110	615	7	14	7
ROM1z147	52.00	26.00	0.510	0.320	2.00E-04	5.80E+01	0.1060	2.2000	4.5000	3.1000	0.3100	2.2000	0.7000	1737	41	82	1726	33	66	1
ROM1z148	232.00	216.00	0.960	--	----	---	0.1160	0.7000	5.4000	1.5000	0.3400	1.4000	0.9000	1902	12	24	1863	22	44	2
ROM1z149	143.00	80.00	0.580	0.460	2.60E-04	5.80E+01	0.0560	4.6000	0.7000	4.9000	0.0900	1.6000	0.3000	445	103	206	539	8	16	-22
ROM1z150	59.00	29.00	0.510	--	----	---	0.0600	3.3000	0.8000	3.8000	0.0900	2.0000	0.5000	613	71	142	581	11	22	6
ROM1z151	115.00	74.00	0.660	0.130	9.30E-05	4.50E+01	0.1770	0.7000	11.9000	1.8000	0.4900	1.6000	0.9000	2622	12	24	2560	34	68	3
ROM1z152	41.00	24.00	0.620	--	-2.70E-04	1.00E+02	0.0670	6.9000	0.9000	7.3000	0.1000	2.4000	0.3000	835	143	286	605	14	28	29
ROM1z153	191.00	52.00	0.280	0.380	2.20E-04	5.00E+01	0.0570	3.4000	0.7000	3.7000	0.0900	1.4000	0.4000	492	75	150	537	7	14	-10
ROM1z154	78.00	62.00	0.820	0.210	1.40E-04	5.00E+01	0.1260	1.3000	6.6000	2.2000	0.3800	1.8000	0.8000	2046	23	46	2064	32	64	-1
ROM1z155	164.00	128.00	0.810	0.080	5.00E-05	5.80E+01	0.1350	5.8000	6.9000	6.4000	0.3700	2.6000	0.4000	2161	101	202	2044	46	92	6
ROM1z156	115.00	83.00	0.750	0.320	1.80E-04	7.10E+01	0.0610	5.7000	0.9000	5.9000	0.1000	1.6000	0.3000	651	122	244	626	10	20	4
ROM1z158	80.00	35.00	0.450	--	-1.40E-04	1.00E+02	0.0660	4.3000	0.8000	4.7000	0.0900	1.8000	0.4000	820	90	180	562	10	20	33
ROM1z159	291.00	157.00	0.560	0.110	6.70E-05	5.00E+01	0.0790	1.1000	2.2000	1.7000	0.2000	1.3000	0.8000	1179	22	44	1182	14	28	0
Discordant and/or high common Pb data																				
ROM1z115c	906.00	922.00	1.050	14.730	8.30E-03	1.00E+01	0.0660	26.5000	0.8000	26.6000	0.0900	2.7000	0.1000	801	555	1110	554	14	28	32
ROM1z118r	64.00	38.00	0.620	1.190	6.70E-04	5.00E+01	0.0550	9.7000	0.8000	10.0000	0.1000	2.1000	0.2000	418	218	436	631	13	26	-54
ROM1z119r	735.00	385.00	0.540	5.620	3.10E-03	1.40E+01	0.0560	11.8000	0.4000	11.9000	0.0500	1.4000	0.1000	458	263	526	331	5	10	28
ROM1z122	365.00	22.00	0.060	1.190	6.80E-04	1.80E+01	0.0670	4.3000	1.3000	4.9000	0.1400	2.4000	0.5000	850	89	178	831	19	38	2
ROM1z127	186.00	117.00	0.650	0.100	6.30E-05	5.00E+01	0.1330	0.8000	6.4000	4.0000	0.3500	3.9000	1.0000	2136	13	26	1928	65	130	11
ROM1z133	172.00	136.00	0.810	1.460	9.10E-04	1.70E+01	0.1090	2.2000	4.2000	2.6000	0.2800	1.5000	0.6000	1784	40	80	1579	20	40	13
ROM1z138	564.00	215.00	0.390	17.230	9.80E-03	4.00E+00	0.0720	10.7000	1.1000	10.8000	0.1200	1.7000	0.2000	984	218	436	706	11	22	30
ROM1z140	643.00	410.00	0.660	0.130	9.80E-05	1.70E+01	0.2740	0.2000	22.9000	1.1000	0.6000	1.1000	1.0000	3331	3	6	3046	27	54	11
ROM1z146	397.00	253.00	0.660	0.390	2.70E-04	1.60E+01	0.1990	0.5000	11.9000	1.3000	0.4300	1.2000	0.9000	2815	7	14	2320	24	48	21
ROM1z157	68.00	25.00	0.370	1.100	6.20E-04	5.00E+01	0.0510	11.5000	0.7000	11.6000	0.1000	2.0000	0.2000	227	265	530	631	12	24	-187

Footnotes:

- $\%^{206}Pb^{c}$ is % of ^{206}Pb from common Pb
- Errors are 1-sigma
- Pb* indicates radiogenic Pb, corrected for common Pb.
- Analysis references: ROM1z is zircon from sample ROM1 (mount CT18-03), followed by grain number "c" or "r", meaning core or rim, respectively.
- Error in standard calibration was 0.09% (not included in above errors but required when comparing data from different mounts).

Table D.39a: Sample AOU1 (LA-ICPMS)

IGSN: IEACC00013 Coordinate UTM: Zone 29S, 3736131 m N, 708680 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
AOU1z1	121.64	96.23	39.38	0.790	-2.06E+04	8.80E+03	0.0662	3.00E-03	1.328	0.055	0.1455	0.0023	0.0403	812.7	47.4	94.8	858.0	12.0	24.0	875.7	6.5	12.9	102
AOU1z2	96.40	83.30	80.40	0.860	-3.60E+05	3.70E+05	0.1212	5.00E-03	6.034	0.220	0.3686	0.0056	0.1124	1974.0	36.8	73.5	1980.8	15.9	31.7	2022.8	13.2	26.4	102
AOU1z3	204.10	130.20	124.30	0.640	1.00E+06	1.40E+06	0.1334	5.30E-03	7.176	0.250	0.3967	0.0058	0.3308	2143.2	34.7	69.4	2133.5	15.5	31.0	2153.8	13.4	26.8	101
AOU1z4	115.60	72.40	22.85	0.630	-1.74E+04	6.10E+03	0.0592	3.00E-03	0.871	0.043	0.1071	0.0018	0.1349	574.5	55.1	110.2	636.1	11.7	23.3	655.9	5.2	10.5	103
AOU1z5	176.70	497.00	139.30	2.810	-1.95E+04	8.80E+03	0.0578	2.70E-03	0.789	0.035	0.0997	0.0016	-0.0053	522.2	51.2	102.5	590.6	9.9	19.8	612.7	4.7	9.4	104
AOU1z6	290.90	186.40	86.40	0.640	-9.30E+04	3.10E+04	0.0693	2.80E-03	1.592	0.060	0.1666	0.0024	0.1223	907.7	41.6	83.2	967.1	11.7	23.5	993.4	6.6	13.3	103
AOU1z7	179.20	170.70	281.40	0.950	-5.10E+05	1.80E+05	0.2875	1.10E-02	26.180	0.920	0.6704	0.0100	0.6228	3404.1	29.8	59.6	3353.3	17.2	34.3	3307.4	19.3	38.6	99
AOU1z9	248.20	177.50	189.50	0.720	-3.60E+05	1.40E+05	0.1357	5.40E-03	7.566	0.270	0.4116	0.0065	0.5214	2173.0	34.7	69.3	2180.8	16.0	32.0	2222.2	14.8	29.7	102
AOU1z10	339.60	97.10	33.80	0.290	1.20E+04	2.50E+04	0.0633	2.60E-03	1.012	0.039	0.1175	0.0018	0.2058	718.3	43.6	87.2	709.9	9.8	19.7	716.1	5.2	10.4	101
AOU1z11	174.20	110.90	35.50	0.640	-4.10E+04	3.30E+04	0.0601	2.80E-03	0.928	0.041	0.1123	0.0018	0.1569	607.2	50.4	100.7	666.6	10.8	21.6	686.1	5.2	10.4	103
AOU1z12	414.50	316.70	215.70	0.760	-6.90E+05	4.60E+05	0.0852	3.20E-03	2.661	0.100	0.2260	0.0044	0.7594	1320.1	36.4	72.8	1317.7	13.9	27.7	1313.5	11.6	23.1	100
AOU1z13	20.48	32.90	8.56	1.610	2.90E+05	1.20E+05	0.0623	6.00E-03	0.824	0.078	0.0941	0.0025	0.0328	684.4	102.8	205.6	610.3	21.7	43.4	579.7	7.4	14.7	95
AOU1z14	445.50	266.60	75.00	0.600	3.90E+05	1.80E+05	0.0598	2.40E-03	0.799	0.031	0.0968	0.0014	0.2875	596.3	43.5	86.9	596.3	8.7	17.5	595.4	4.1	8.2	100
AOU1z16	102.80	52.20	75.00	0.510	7.10E+04	5.40E+04	0.2089	8.30E-03	16.330	0.570	0.5719	0.0087	0.4479	2897.0	32.2	64.4	2896.3	16.7	33.4	2915.6	17.8	35.7	101
AOU1z17	188.10	123.10	120.60	0.650	2.36E+05	7.30E+04	0.1352	5.40E-03	7.040	0.250	0.3816	0.0056	0.3446	2166.6	34.8	69.6	2116.5	15.8	31.5	2083.8	13.1	26.1	98
AOU1z18	454.00	228.00	330.00	0.500	4.40E+05	1.70E+05	0.2123	8.30E-03	16.810	0.570	0.5806	0.0083	0.4795	2923.2	31.6	63.3	2924.1	16.2	32.5	2951.2	16.9	33.9	101
AOU1z19	347.10	261.80	244.70	0.750	1.70E+05	7.20E+04	0.1261	5.00E-03	6.145	0.210	0.3574	0.0050	0.4050	2044.3	35.0	70.1	1996.7	14.9	29.8	1969.8	11.9	23.7	99
AOU1z20	252.40	341.70	105.00	1.350	1.20E+04	1.20E+04	0.0618	2.70E-03	0.926	0.037	0.1084	0.0017	0.0446	667.2	46.8	93.5	665.5	9.7	19.5	663.2	4.9	9.9	100
AOU1z21	292.90	200.10	171.40	0.680	6.70E+04	3.40E+04	0.1091	4.40E-03	4.798	0.170	0.3218	0.0046	0.2293	1784.4	36.8	73.5	1784.5	14.9	29.7	1798.5	11.2	22.4	101
AOU1z22	121.20	105.50	103.60	0.870	3.30E+04	1.50E+04	0.1235	5.10E-03	6.319	0.230	0.3747	0.0056	0.1996	2007.4	36.6	73.3	2021.1	15.9	31.9	2051.5	13.1	26.3	102
AOU1z23	138.57	131.20	39.51	0.950	6.80E+03	5.10E+03	0.0604	3.00E-03	0.907	0.043	0.1084	0.0017	0.0763	617.9	53.6	107.2	655.5	11.4	22.9	663.6	4.9	9.9	101
AOU1z24	48.30	23.87	25.27	0.490	2.36E+04	9.10E+03	0.1353	5.90E-03	7.300	0.290	0.3932	0.0062	0.3378	2167.9	38.0	76.0	2148.8	17.7	35.4	2137.7	14.3	28.7	99
AOU1z25	385.00	243.00	223.80	0.630	5.50E+04	3.90E+04	0.1274	5.00E-03	5.877	0.200	0.3364	0.0050	0.3798	2062.4	34.6	69.2	1957.8	14.8	29.5	1869.3	12.1	24.1	95
AOU1z26	65.75	46.46	39.79	0.710	2.07E+04	7.40E+03	0.1109	4.80E-03	4.807	0.180	0.3203	0.0051	0.1562	1814.2	39.3	78.6	1786.1	15.7	31.4	1791.2	12.5	24.9	100
AOU1z27	74.40	97.30	27.39	1.310	1.10E+03	1.60E+03	0.0613	3.50E-03	0.848	0.046	0.0986	0.0018	0.0624	649.8	61.3	122.6	623.6	12.6	25.3	606.2	5.3	10.6	97
AOU1z29	72.70	130.20	49.20	1.790	8.40E+03	3.40E+03	0.0625	3.40E-03	1.072	0.054	0.1258	0.0023	0.0326	691.3	58.0	116.0	739.7	13.2	26.4	763.9	6.6	13.2	103
AOU1z31	103.50	122.30	36.32	1.180	2.60E+03	2.70E+03	0.0613	3.30E-03	0.877	0.044	0.1041	0.0018	0.0011	649.8	57.8	115.6	639.4	11.9	23.8	638.4	5.3	10.5	100
AOU1z32	180.70	67.68	38.07	0.370	3.10E+05	1.00E+05	0.0796	3.20E-03	2.226	0.083	0.2026	0.0030	0.1629	1187.1	39.7	79.4	1189.3	13.1	26.1	1189.3	8.0	16.1	100
AOU1z33	311.60	263.90	119.40	0.850	1.39E+05	5.80E+04	0.0721	2.90E-03	1.570	0.058	0.1582	0.0023	0.1399	988.8	40.9	81.8	958.4	11.4	22.9	946.8	6.4	12.8	99
AOU1z34	144.30	291.90	83.40	2.020	1.40E+03	3.80E+03	0.0605	3.00E-03	0.834	0.038	0.0998	0.0016	-0.0450	621.5	53.5	107.0	615.8	10.5	21.0	613.0	4.7	9.4	100
AOU1z35	192.80	282.00	424.00	1.460	9.90E+04	4.50E+04	0.2220	8.70E-03	18.140	0.620	0.6001	0.0089	0.3227	2995.3	31.5	63.0	2997.2	16.4	32.9	3030.2	17.9	35.9	101
AOU1z36	142.90	134.20	42.30	0.940	1.16E+04	6.00E+03	0.0625	2.90E-03	0.920	0.041	0.1064	0.0017	0.1753	691.3	49.5	99.0	662.4	10.8	21.7	651.5	5.0	9.9	98
AOU1z37	32.20	10.84	3.45	0.340	2.90E+02	7.70E+02	0.0667	5.10E-03	0.955	0.072	0.1057	0.0025	0.1551	828.4	79.7	159.5	680.7	18.7	37.4	647.7	7.3	14.6	95
AOU1z38	136.50	162.20	152.70	1.190	1.60E+04	1.30E+04	0.1272	5.20E-03	6.243	0.230	0.3604	0.0056	0.2856	2059.6	36.1	72.1	2010.5	16.1	32.2	1984.1	13.3	26.5	99
AOU1z39	99.20	21.35	34.03	0.220	7.00E+04	1.50E+04	0.2311	9.10E-03	19.180	0.660	0.6114	0.0089	0.4007	3059.7	31.5	63.0	3050.9	16.6	33.2	3075.6	17.8	35.6	101
AOU1z40	133.90	12.43	4.60	0.090	2.80E+03	3.70E+03	0.0601	3.10E-03	0.857	0.042	0.1024	0.0018	0.1322	607.2	55.8	111.5	628.5	11.5	22.9	628.5	5.3	10.5	100
AOU1z42	225.40	227.70	77.30	1.010	2.60E+04	1.10E+04	0.0621	2.70E-03	1.029	0.042	0.1195	0.0018	0.1607	677.6	46.5	92.9	718.4	10.5	21.0	727.7	5.2	10.4	101
AOU1z44	38.30	31.43	28.19	0.820	1.12E+04	6.00E+03	0.1105	5.10E-03	4.930	0.210	0.3300	0.0059	0.0904	1807.7	41.9	83.9	1807.4	18.0	35.9	1838.4	14.3	28.6	102
AOU1z45	186.80	133.20	152.00	0.710	4.60E+04	3.40E+04	0.2474	9.70E-03	20.000	0.680	0.6002	0.0089	0.4755	3168.2	31.1	62.2	3091.4	16.4	32.9	3030.6	17.9	35.9	98
AOU1z46	293.70	223.70	64.70	0.760	1.13E+04	8.30E+03	0.0586	2.60E-03	0.801	0.033	0.0982	0.0015	0.0866	552.3	48.4	96.8	597.4	9.3	18.6	604.0	4.4	8.8	101
AOU1z47	334.70	95.20	65.05	0.280	-2.90E+04	1.90E+04	0.0877	3.30E-03	3.020	0.110	0.2498	0.0035	0.1413	1375.9	36.2	72.4	1412.7	13.9	27.8	1437.4	9.0	18.1	102
AOU1z48	255.20	292.90	80.80	1.150	1.76E+04	9.10E+03	0.0626	2.80E-03	0.871	0.037	0.0998	0.0015	0.1387	694.7	47.7	95.3	636.1	10.0	20.1	613.5	4.4	8.8	96
AOU1z49	170.10	154.00	44.50	0.910	4.70E+03	5.90E+03	0.0593	2.80E-03	0.833	0.036	0.1015	0.0017	0.0432	578.1	51.3	102.6	615.3	10.0	19.9	623.2	5.0	9.9	101
AOU1z50	23.82	21.04	6.42	0.880	2.80E+03	1.10E+03	0.0690	5.90E-03	0.915	0.078	0.0960	0.0025	0.1396	898.7	88.2	176.4	659.7	20.7	41.3	590.9	7.4	14.7	90
AOU1z51	58.53	38.34	21.99	0.660	6.10E+04	4.80E+04	0.0772	3.60E-03	2.127	0.094	0.1997	0.0034	0.0317	1126.4	46.5	92.9	1157.6	15.2	30.5	1173.7	9.1	18.3	101
AOU1z52	139.10	135.40	58.20	0.970	5.60E+04	6.20E+04	0.0703	3.00E-03	1.490	0.061	0.1522	0.0024	0.2225	937.1	43.8	87.5	926.3	12.4	24.9	913.3	6.7	13.4	99
AOU1z53	76.40	46.24	48.19	0.610	4.40E+06	8.70E+06	0.1295	5.40E-03	6.680	0.250	0.3769	0.0058	0.2292	2091.2	36.7	73.3	2070.0	16.5	33.0	2061.8	13.6	27.2	100
AOU1z54	172.80	124.20	58.20	0.720	-1.29E+05	8.20E+04	0.0705	2.90E-03	1.621	0.063	0.1651	0.0025	0.0930	943.0	42.1	84.3	978.4	12.2	24.4	985.1	6.9	13.8	101
AOU1z57	241.20	3.49	0.84	0.010	-3.40E+04	1.60E+04	0.0568	2.70E-03	0.685	0.030	0.0869	0.0014	0.0412	483.8	52.5	105.0	529.8	9.0	18.1	537.2	4.2	8.3	101
AOU1z58	195.70	80.10	24.38	0.410	-3.00E+04	1.40E+04	0.0600	2.70E-03	0.864	0.037	0.1025	0.0016	0.0502	603.6	48.7	97.4	632.3	10.1	20.1	629.2	4.7	9.4	100
AOU1z59	362.00	82.30	109.40	0.230	-1.33E+05	8.70E+04	0.2169	8.50E-03	15.720	0.560	0.5310	0.0098	0.8392	2957.8	31.6	63.2	2859.9	17.0	34.0	2745.7	20.6	41.3	96
AOU1z60	81.69	52.52	64.90	0.640	-4.40E+04	1.50E+04	0.1641	6.70E-03	10.590	0.380	0.4669	0.0070	0.2611	2498.3	34.4	68.7	2487.8	16.6	33.3	2470.0	15.4	30.8	99
AOU1z61	150.70	235.60	79.50	1.560	-2.90E+03	4.60E+03	0.0675	3.50E-03	1.031	0.052	0.1112	0.0017	0.3181	853.2	53.9	107.7	719.4	13.0	26.0	679.6	4.9	9.9	94
AOU1z63	205.30	55.50	14.58	0.270	-8.40E+03	4.80E+03	0.0631	2.90E-03	0.833	0.037	0.0945	0.0015	0.1292	711.6	48.8	97.7	615.3	10.2	20.5	581.9	4.4	8.8	95
AOU1z64	110.60	130.10	40.00	1.180	-1.70E+03	2.60E+03	0.0622	3.40E-03	0.954	0.049	0.1100	0.0018	-0.0668	681.0	58.4	116.8	680.2	12.7	25.4	672.7	5.2	10.5	99
AOU1z66	228.10	134.40	37.30	0.590	-1.13E+04	5.90E+03	0.0588	2.60E-03	0.783	0.033	0.0953	0.0015	0.0826	559.7	48.2	96.4	587.2	9.4	18.8	586.6	4.4	8.8	100
AOU1z68	221.40	144.50	84.00	0.650	-1.13E+04	8.30E+03	0.0786	3.10E-03	2.315	0.085	0.2100	0.0030	0.2460	1162.1	39.1	78.2	1216.9	13.0	26.0	1228.8	8.0	16.0	101
AOU1z69	152.10	81.04	23.72	0.530	-3.50E+03	2.30E+03	0.0611	2.90E-03	0.862	0.038	0.1019	0.0016	0.1475	642.8	51.0	102.0	631.2	10.4	20.7	625.5	4.7	9.4	99
AOU1z71	332.00	426.00	113.80	1.280	-4.80E+03	4.40E+03	0.0596	2.50E-03	0.766	0.030	0.0924	0.0015	0.0989	589.1	45.5	91.0	577.5	8.6	17.2	569.7	4.4	8.9	99
AOU1z72	71.20	79.10	22.78	1.110	-6.10E+02	8.70E+02	0.0618	3.70E-03	0.847	0.048	0.0988	0.0019	-0.0707	667.2	64.1	128.2	623.0	13.2	26.4	607.4	5.6	11.1	97

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
AOU1z73	101.40	58.20	19.18	0.570	-3.80E+03	2.00E+03	0.0617	3.10E-03	1.017	0.047	0.1186	0.0020	0.0427	663.7	53.8	107.6	712.4	11.8	23.6	722.5	5.8	11.5	101
AOU1z74	239.30	255.00	71.70	1.070	-1.09E+04	4.90E+03	0.0625	2.80E-03	0.854	0.036	0.0980	0.0016	0.1408	691.3	47.8	95.5	626.8	9.8	19.7	602.9	4.7	9.4	96
AOU1z75	264.30	132.70	130.00	0.500	-5.10E+04	2.40E+04	0.1340	5.30E-03	6.965	0.240	0.3698	0.0053	0.2956	2151.0	34.5	69.1	2107.0	15.3	30.6	2028.5	12.5	24.9	96
AOU1z76	177.00	85.20	62.10	0.480	-7.90E+03	7.60E+03	0.0948	3.90E-03	3.530	0.130	0.2656	0.0039	0.1280	1524.1	38.8	77.5	1534.0	14.6	29.1	1518.4	9.9	19.9	99
AOU1z77	130.30	108.80	90.40	0.830	-1.80E+04	9.90E+03	0.1059	4.40E-03	4.601	0.170	0.3108	0.0046	0.0979	1730.0	38.1	76.3	1749.4	15.4	30.8	1744.6	11.3	22.6	100
AOU1z78	103.92	40.01	45.50	0.390	-2.60E+04	1.30E+04	0.1339	5.60E-03	7.510	0.280	0.4045	0.0062	0.4041	2149.7	36.5	73.0	2174.2	16.7	33.4	2189.7	14.2	28.5	101
AOU1z79	91.30	69.82	43.59	0.760	-7.90E+03	8.00E+03	0.0868	3.70E-03	2.799	0.110	0.2299	0.0035	0.0930	1356.1	41.1	82.2	1355.3	14.7	29.4	1334.0	9.2	18.3	98
AOU1z80	386.40	396.60	110.90	1.030	-4.20E+04	1.90E+04	0.0604	2.50E-03	0.844	0.033	0.1003	0.0015	0.1073	617.9	44.7	89.3	621.4	9.1	18.2	616.4	4.4	8.8	99
AOU1z81	270.90	258.00	69.40	0.950	-3.00E+04	2.60E+04	0.0618	2.80E-03	0.828	0.035	0.0969	0.0015	0.1026	667.2	48.5	97.0	612.5	9.7	19.4	596.0	4.4	8.8	97
AOU1z82	217.90	136.70	141.00	0.630	-1.12E+06	5.40E+05	0.1270	5.10E-03	6.966	0.240	0.3937	0.0059	0.3979	2056.9	35.4	70.9	2107.1	15.3	30.6	2140.0	13.6	27.3	102
AOU1z83	334.30	165.70	45.20	0.500	1.70E+05	6.80E+04	0.0594	2.50E-03	0.799	0.031	0.0975	0.0015	0.0892	581.8	45.7	91.4	596.3	8.7	17.5	599.7	4.4	8.8	101
AOU1z84	238.50	230.90	222.60	0.970	2.80E+04	5.10E+04	0.1226	4.90E-03	6.227	0.220	0.3666	0.0054	0.2738	1994.4	35.5	71.0	2008.2	15.4	30.9	2013.4	12.7	25.5	100
Discordant data																							
AOU1z8	342.00	841.70	298.50	2.460	-1.06E+05	5.20E+04	0.0773	3.30E-03	1.270	0.053	0.1193	0.0018	0.1947	1128.9	42.5	85.0	832.4	11.8	23.7	726.4	5.2	10.4	87
AOU1z15	776.00	504.00	402.00	0.650	3.60E+05	5.80E+04	0.1524	6.00E-03	5.650	0.200	0.2746	0.0050	0.7882	2373.0	33.6	67.1	1923.8	15.3	30.5	1564.1	12.6	25.3	81
AOU1z28	590.00	484.00	87.40	0.820	3.20E+03	8.30E+03	0.0782	3.10E-03	0.759	0.029	0.0699	0.0012	0.4054	1152.0	39.3	78.7	573.4	8.4	16.7	435.4	3.6	7.2	76
AOU1z30	413.00	268.00	132.30	0.650	1.30E+04	2.60E+04	0.1328	5.20E-03	5.300	0.230	0.2952	0.0094	0.9360	2135.3	34.2	68.5	1868.9	18.5	37.0	1667.5	23.4	46.8	89
AOU1z41	173.70	313.00	182.80	1.800	9.00E+04	1.20E+04	0.1290	5.30E-03	4.920	0.210	0.2823	0.0090	0.8676	2084.4	36.1	72.3	1805.7	18.0	36.0	1602.9	22.6	45.2	89
AOU1z43	344.90	36.73	32.03	0.110	6.40E+04	3.10E+04	0.1227	4.90E-03	4.384	0.150	0.2644	0.0038	0.4616	1995.9	35.5	71.0	1709.3	14.1	28.3	1512.3	9.7	19.4	88
AOU1z55	564.00	385.00	139.20	0.680	-1.30E+05	7.20E+04	0.0836	3.20E-03	1.574	0.058	0.1355	0.0025	0.4844	1283.3	37.3	74.6	960.0	11.4	22.9	819.2	7.1	14.2	85
AOU1z56	502.00	359.00	243.00	0.720	-2.10E+05	1.30E+05	0.2086	8.20E-03	9.240	0.340	0.3248	0.0065	0.8732	2894.7	31.9	63.8	2362.1	16.8	33.7	1813.1	15.8	31.6	77
AOU1z62	129.00	117.80	33.40	0.910	-5.30E+03	3.20E+03	0.0757	4.30E-03	0.891	0.047	0.0863	0.0024	0.2415	1087.1	56.9	113.9	646.9	12.6	25.2	533.6	7.1	14.2	82
AOU1z65	911.00	700.00	205.80	0.770	-5.60E+04	2.30E+04	0.1791	6.70E-03	3.865	0.150	0.1548	0.0033	0.8873	2644.6	31.0	62.1	1606.4	15.6	31.3	927.8	9.2	18.4	58
AOU1z67	436.00	375.00	131.20	0.860	-2.30E+04	1.00E+04	0.0741	3.90E-03	1.058	0.056	0.1040	0.0017	0.4582	1044.2	53.1	106.2	732.8	13.8	27.6	637.8	5.0	9.9	87
AOU1z70	575.00	67.80	28.60	0.120	-1.27E+04	7.00E+03	0.0708	2.80E-03	0.855	0.032	0.0873	0.0014	0.4553	951.6	40.5	80.9	627.4	8.8	17.5	539.7	4.2	8.3	86

Footnotes:

- Analysis references: AOU1z is zircon from sample AOU1 (mount CT19-1), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.39b: Sample AOU1 (SIMS)

IGSN: IEACC00013 Coordinate UTM: Zone 29S, 3736131 m N, 708680 m E

ANALYSIS	^{238}U (ppm)	^{206}Pb (ppm)	Th/U	^{204}Pb (ppb)	Ratios							Ages (Ma)									Concordance (%)
					$^{207}Pb/^{206}Pb$	σ	$^{207}Pb/^{235}U$	σ	$^{206}Pb/^{238}U$	σ	Rho	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	
Concordant data																					
AOU1z85	158.00	36.90	0.42	4.800	0.0963	0.0019	3.580	0.080	0.2700	0.0030	0.4754	1552	37.0	74.0	1545	19.0	38.0	1540	15.0	30.0	100
AOU1z86	171.00	55.50	0.36	5.600	0.1283	0.0013	6.630	0.100	0.3700	0.0040	0.7201	2074	17.0	34.0	2061	14.0	28.0	2051	19.0	38.0	99
AOU1z87	449.00	46.10	0.84	13.800	0.0608	0.0006	0.990	0.020	0.1200	0.0010	0.5240	631	22.0	44.0	701	11.0	22.0	723	7.0	14.0	103
AOU1z88	181.00	60.50	0.64	8.900	0.1311	0.0023	7.000	0.140	0.3900	0.0040	0.4956	2112	31.0	62.0	2109	19.0	38.0	2109	18.0	36.0	100
AOU1z90	228.00	33.40	0.53	5.000	0.0717	0.0017	1.680	0.050	0.1700	0.0020	0.3898	976	47.0	94.0	999	18.0	36.0	1010	10.0	20.0	101
AOU1z91	109.00	9.30	0.06	1.500	0.0623	0.0026	0.840	0.040	0.1000	0.0010	0.2884	685	88.0	176.0	620	22.0	44.0	602	8.0	16.0	97
AOU1z92	262.00	77.60	0.58	5.100	0.1172	0.0011	5.540	0.070	0.3400	0.0030	0.7093	1914	16.0	32.0	1906	13.0	26.0	1901	16.0	32.0	100
AOU1z93	350.00	107.90	0.25	6.000	0.1334	0.0014	6.540	0.100	0.3600	0.0040	0.6960	2143	18.0	36.0	2050	14.0	28.0	1962	17.0	34.0	96
AOU1z94	82.00	23.30	1.92	8.100	0.1078	0.0032	4.890	0.170	0.3300	0.0040	0.3273	1762	55.0	110.0	1800	29.0	58.0	1835	18.0	36.0	102
AOU1z95	526.00	47.20	1.64	24.200	0.0588	0.0013	0.840	0.030	0.1000	0.0010	0.3499	560	46.0	92.0	619	15.0	30.0	636	7.0	14.0	103
AOU1z96c	207.00	18.30	0.44	2.000	0.0630	0.0018	0.890	0.030	0.1000	0.0010	0.3266	708	59.0	118.0	645	15.0	30.0	627	6.0	12.0	97
AOU1z96r	28.00	2.10	0.46	1.500	0.0589	0.0075	0.700	0.100	0.0900	0.0010	0.0850	564	276.0	552.0	538	60.0	120.0	532	6.0	12.0	99
AOU1z97	279.00	24.40	0.93	1.500	0.0636	0.0016	0.890	0.030	0.1000	0.0010	0.3928	728	54.0	108.0	644	14.0	28.0	621	7.0	14.0	96
AOU1z98	279.00	89.80	0.17	1.500	0.1250	0.0008	6.420	0.070	0.3700	0.0040	0.8357	2029	11.0	22.0	2033	11.0	22.0	2040	17.0	34.0	100
AOU1z99	355.00	25.20	0.92	6.300	0.0572	0.0009	0.650	0.020	0.0800	0.0010	0.4148	498	34.0	68.0	506	11.0	22.0	507	5.0	10.0	100
AOU1z100	574.00	46.70	0.70	12.100	0.0592	0.0011	0.770	0.020	0.0900	0.0010	0.4695	575	40.0	80.0	578	12.0	24.0	579	7.0	14.0	100
AOU1z101	139.00	14.90	0.58	4.500	0.0664	0.0021	1.130	0.050	0.1200	0.0020	0.3164	819	67.0	134.0	769	22.0	44.0	752	9.0	18.0	98
AOU1z102	51.00	7.20	1.26	5.000	0.0656	0.0024	1.480	0.090	0.1600	0.0020	0.1862	794	75.0	150.0	922	37.0	74.0	977	10.0	20.0	106
AOU1z104	344.00	146.40	0.28	4.600	0.1823	0.0010	12.360	0.140	0.4900	0.0050	0.8615	2674	9.0	18.0	2631	12.0	24.0	2578	21.0	42.0	98
AOU1z105	657.00	54.10	0.40	5.700	0.0600	0.0007	0.790	0.010	0.1000	0.0010	0.6158	605	24.0	48.0	589	8.0	16.0	586	6.0	12.0	99
AOU1z106	415.00	132.50	0.32	16.600	0.1275	0.0013	6.480	0.090	0.3700	0.0040	0.6793	2063	18.0	36.0	2041	14.0	28.0	2022	17.0	34.0	99
AOU1z107	134.00	11.80	0.85	4.400	0.0533	0.0024	0.750	0.040	0.1000	0.0010	0.2153	340	101.0	202.0	567	24.0	48.0	625	7.0	14.0	110
AOU1z108	119.00	38.40	0.54	3.400	0.1257	0.0019	6.490	0.120	0.3700	0.0040	0.5657	2038	26.0	52.0	2043	18.0	36.0	2050	18.0	36.0	100
AOU1z109	751.00	49.70	0.79	2.900	0.0559	0.0013	0.590	0.020	0.0800	0.0010	0.3714	447	53.0	106.0	470	10.0	20.0	475	4.0	8.0	101
AOU1z110	146.00	11.30	0.08	4.100	0.0532	0.0019	0.660	0.030	0.0900	0.0020	0.3286	337	83.0	166.0	512	21.0	42.0	552	9.0	18.0	108
AOU1z112	301.00	21.90	0.49	10.000	0.0554	0.0016	0.640	0.030	0.0800	0.0010	0.2636	429	63.0	126.0	504	16.0	32.0	522	5.0	10.0	103
Discordant data																					
AOU1z89	3511.00	120.90	0.61	583.200	0.0657	0.0005	0.360	0.020	0.0400	0.0000	0.2335	798	16.0	32.0	313	11.0	22.0	252	2.0	4.0	80
AOU1z103	399.00	83.20	0.29	15.100	0.1182	0.0013	3.930	0.070	0.2400	0.0030	0.6902	1928	20.0	40.0	1618	14.0	28.0	1391	14.0	28.0	86
AOU1z111	164.00	35.90	0.31	0.900	0.1155	0.0024	4.030	0.090	0.2500	0.0030	0.4611	1888	37.0	74.0	1639	20.0	40.0	1453	14.0	28.0	89

Footnotes:

- Analysis references: AOU1z is zircon from sample AOU1 (mount CT19-1), followed by grain number "c" or "r", meaning core or rim, respectively.
- Pb* indicates radiogenic Pb, corrected for common Pb.

Table D.40: Sample OU1 (LA-ICPMS)

IGSN: IEACC00014 Coordinate UTM: Zone 30S, 3731845 m N, 244382 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OU1z1	75.10	94.40	24.88	1.260	-2.80E+03	3.60E+03	0.0542	3.70E-03	0.704	0.046	0.0940	0.0015	0.0037	379.4	76.8	153.5	541.2	13.7	27.4	579.2	4.4	8.8	107
OU1z2	214.40	114.40	114.80	0.530	-3.00E+05	1.30E+05	0.1293	1.70E-03	6.751	0.170	0.3816	0.0033	0.1608	2088.5	11.6	23.1	2079.3	11.1	22.3	2083.8	7.7	15.4	100
OU1z3	291.10	115.10	28.23	0.400	-2.90E+04	1.30E+04	0.0572	2.60E-03	0.722	0.029	0.0914	0.0011	-0.0142	499.3	50.1	100.1	551.8	8.5	17.1	564.0	3.2	6.5	102
OU1z5	298.60	326.00	232.70	1.090	-5.20E+04	3.70E+04	0.0952	1.50E-03	3.574	0.096	0.2754	0.0024	0.2376	1532.0	14.8	29.7	1543.8	10.6	21.3	1568.2	6.1	12.1	102
OU1z6	1045.00	1233.00	375.20	1.180	-3.80E+04	4.90E+04	0.0601	2.00E-03	0.869	0.024	0.1055	0.0010	0.2101	607.2	36.0	72.0	635.0	6.5	13.0	646.5	2.8	5.7	102
OU1z8	92.50	45.50	48.10	0.490	1.40E+04	1.40E+04	0.1325	2.80E-03	7.100	0.210	0.3924	0.0041	0.0913	2131.4	18.5	37.0	2124.0	13.2	26.3	2133.9	9.5	19.0	100
OU1z9	424.80	519.00	799.00	1.220	-1.40E+05	1.30E+05	0.2447	1.70E-03	20.930	0.480	0.6283	0.0049	0.4620	3150.8	5.5	11.0	3135.4	11.1	22.2	3142.9	9.7	19.4	100
OU1z10	377.40	345.10	327.80	0.910	-3.70E+05	1.60E+05	0.1189	1.30E-03	5.759	0.140	0.3537	0.0028	0.2370	1939.8	9.8	19.6	1940.3	10.5	21.0	1952.2	6.7	13.3	101
OU1z11	498.00	241.00	126.30	0.480	-6.40E+04	4.40E+04	0.0733	2.40E-03	1.848	0.052	0.1854	0.0021	0.3965	1022.3	33.1	66.3	1062.7	9.3	18.5	1096.4	5.7	11.4	103
OU1z13	334.50	390.00	118.20	1.170	-7.00E+04	1.60E+04	0.0597	2.40E-03	0.860	0.030	0.1039	0.0010	0.1104	592.7	43.6	87.1	630.1	8.2	16.4	637.5	2.9	5.8	101
OU1z14	221.50	197.30	63.40	0.890	7.50E+03	8.20E+03	0.0624	2.90E-03	0.853	0.037	0.0999	0.0012	0.2266	687.8	49.6	99.2	626.3	10.1	20.3	613.8	3.5	7.0	98
OU1z15	1168.00	825.00	498.00	0.710	5.80E+04	8.20E+04	0.0869	2.90E-03	2.304	0.068	0.1939	0.0018	0.4880	1358.3	32.2	64.3	1213.5	10.4	20.9	1142.5	4.9	9.7	94
OU1z16	611.00	333.70	54.00	0.550	9.00E+04	1.30E+04	0.0516	2.30E-03	0.421	0.017	0.0595	0.0006	0.0841	267.7	51.1	102.2	356.8	6.1	12.1	372.5	1.9	3.8	104
OU1z17	1122.00	106.90	107.10	0.100	-1.20E+05	1.40E+05	0.1237	8.40E-04	6.029	0.140	0.3554	0.0033	0.6636	2010.6	6.0	12.0	1980.0	10.1	20.2	1960.3	7.8	15.7	99
OU1z18	74.28	118.00	32.56	1.590	2.40E+03	3.20E+03	0.0593	4.20E-03	0.785	0.053	0.0967	0.0016	0.0565	578.1	77.0	153.9	588.3	15.1	30.1	595.0	4.7	9.4	101
OU1z19	233.90	179.90	195.70	0.770	2.30E+04	3.50E+04	0.1281	1.50E-03	6.995	0.180	0.3996	0.0036	0.3504	2072.1	10.3	20.6	2110.8	11.4	22.8	2167.2	8.3	16.6	103
OU1z20	216.40	155.00	45.21	0.720	-5.70E+03	9.20E+03	0.0567	2.70E-03	0.771	0.032	0.0991	0.0011	-0.1162	479.9	52.6	105.2	580.3	9.2	18.3	609.1	3.2	6.5	105
OU1z22	457.70	406.40	382.40	0.890	-4.00E+05	1.80E+05	0.1130	1.20E-03	5.386	0.130	0.3498	0.0029	0.2289	1848.2	9.6	19.2	1882.6	10.3	20.7	1933.6	6.9	13.8	103
OU1z23	258.60	83.80	87.10	0.320	0.00E+00	5.10E+04	0.1250	1.40E-03	6.494	0.160	0.3800	0.0031	0.2247	2028.8	9.9	19.8	2045.1	10.8	21.7	2076.3	7.2	14.5	102
OU1z24	162.80	173.20	52.40	1.060	-6.80E+03	9.00E+03	0.0610	2.70E-03	0.868	0.037	0.1030	0.0012	0.1790	639.2	47.6	95.2	634.5	10.0	20.1	632.0	3.5	7.0	100
OU1z25	185.40	128.90	39.40	0.700	-8.00E+06	1.30E+06	0.0623	2.70E-03	0.909	0.036	0.1065	0.0011	-0.0498	684.4	46.3	92.5	656.5	9.6	19.1	652.6	3.2	6.4	99
OU1z26	616.60	365.60	377.90	0.590	-2.00E+05	1.70E+05	0.1277	1.00E-03	6.688	0.160	0.3835	0.0030	0.2903	2066.6	6.9	13.8	2071.0	10.6	21.1	2092.6	7.0	14.0	101
OU1z27	759.00	303.20	91.80	0.400	-3.30E+04	4.60E+04	0.0610	2.00E-03	0.869	0.023	0.1037	0.0008	0.1495	639.9	35.2	70.5	635.0	6.2	12.5	636.2	2.4	4.8	100
OU1z28	467.00	365.00	576.00	0.780	-2.60E+05	1.60E+05	0.2359	1.40E-03	20.560	0.470	0.6320	0.0052	0.5410	3092.5	4.7	9.5	3118.1	11.1	22.1	3157.5	10.3	20.5	101
OU1z29	265.60	300.60	76.00	1.130	-1.60E+04	1.50E+04	0.0589	2.30E-03	0.731	0.025	0.0899	0.0010	0.0716	563.4	42.5	85.1	557.1	7.3	14.7	554.8	2.9	5.8	100
OU1z30	249.10	209.10	73.50	0.840	1.40E+04	1.90E+04	0.0705	2.70E-03	1.048	0.035	0.1078	0.0010	0.1089	943.0	39.2	78.5	727.9	8.7	17.3	659.7	2.9	5.8	91
OU1z31	311.40	192.80	50.88	0.620	-1.30E+04	1.90E+04	0.0610	2.30E-03	0.755	0.024	0.0894	0.0009	0.0606	639.2	40.6	81.1	571.1	6.9	13.9	551.9	2.5	5.1	97
OU1z32	311.60	371.80	95.30	1.190	-1.50E+04	2.10E+04	0.0596	2.20E-03	0.723	0.024	0.0879	0.0009	0.1470	589.1	40.0	80.1	552.4	7.1	14.1	543.3	2.5	5.0	98
OU1z33	501.00	312.20	92.40	0.620	6.00E+04	3.80E+04	0.0606	2.00E-03	0.862	0.023	0.1031	0.0009	-0.0380	625.1	35.6	71.2	631.2	6.3	12.5	632.6	2.6	5.1	100
OU1z34	59.26	68.30	19.79	1.150	-2.50E+03	4.20E+03	0.0601	3.40E-03	0.861	0.046	0.1037	0.0014	0.0189	607.2	61.2	122.3	630.7	12.5	25.1	636.1	4.1	8.2	101
OU1z35	256.20	12.43	14.39	0.050	-4.70E+04	9.60E+04	0.2021	1.40E-03	15.160	0.350	0.5453	0.0043	0.4095	2843.2	5.6	11.3	2825.3	11.0	22.0	2805.6	9.0	17.9	99
OU1z36	87.90	54.80	17.12	0.620	4.60E+03	7.60E+03	0.0620	3.20E-03	0.893	0.043	0.1049	0.0014	0.0842	674.1	55.2	110.4	648.0	11.5	23.0	643.1	4.1	8.2	99
OU1z37	60.89	77.07	68.01	1.270	-1.10E+04	1.60E+04	0.1106	2.50E-03	4.980	0.150	0.3295	0.0032	-0.0797	1809.3	20.5	41.1	1815.9	12.7	25.4	1836.0	7.8	15.5	101
OU1z38	511.00	55.60	15.66	0.110	-6.10E+04	3.90E+04	0.0603	1.90E-03	0.831	0.023	0.0998	0.0009	0.3466	614.0	34.0	68.1	614.2	6.4	12.7	613.2	2.5	5.0	100
OU1z39	117.70	4.88	2.94	0.040	-5.30E+04	1.70E+04	0.0679	3.00E-03	1.045	0.043	0.1119	0.0012	0.1231	865.5	45.8	91.6	726.4	10.7	21.3	683.8	3.5	7.0	94
OU1z40	590.00	252.00	82.10	0.430	2.00E+04	5.20E+04	0.0703	2.40E-03	1.005	0.028	0.1053	0.0013	0.1820	937.1	35.0	70.0	706.3	7.1	14.2	645.4	3.8	7.6	91
OU1z41	121.40	84.90	24.37	0.700	-3.50E+04	1.90E+04	0.0597	2.60E-03	0.827	0.032	0.1017	0.0011	0.1008	592.7	47.2	94.4	611.9	8.9	17.8	624.2	3.2	6.4	102
OU1z42	172.80	107.80	140.90	0.620	7.00E+04	7.30E+04	0.1871	1.40E-03	13.550	0.320	0.5261	0.0041	0.3434	2716.8	6.2	12.3	2718.8	11.2	22.3	2725.0	8.7	17.3	100
OU1z43	400.50	137.90	42.00	0.340	-6.40E+04	4.80E+04	0.0611	2.10E-03	0.865	0.024	0.1034	0.0010	0.0932	642.8	36.9	73.9	632.8	6.5	13.1	634.1	2.8	5.6	100
OU1z44	187.60	200.00	61.40	1.070	-1.20E+04	1.70E+04	0.0632	2.50E-03	0.909	0.033	0.1044	0.0010	0.1903	715.0	42.0	84.0	656.5	8.8	17.5	640.4	2.9	5.8	98
OU1z46	90.00	95.40	27.54	1.060	-5.10e+03	7.10E+03	0.0655	3.30E-03	0.865	0.041	0.0972	0.0011	0.1238	790.4	52.9	105.7	632.8	11.2	22.3	598.2	3.2	6.5	95
OU1z47	143.30	15.59	5.56	0.110	8.00E+04	1.40E+04	0.0657	2.60E-03	0.991	0.035	0.1089	0.0011	0.0866	796.8	41.5	83.0	699.2	8.9	17.8	666.5	3.2	6.4	95
OU1z48	39.59	15.38	16.47	0.390	-2.00E+04	1.60E+04	0.1314	2.90E-03	7.330	0.220	0.4053	0.0044	0.0688	2116.8	19.3	38.7	2152.5	13.4	26.8	2193.4	10.1	20.2	102
OU1z49	405.70	256.00	267.40	0.630	-3.00E+05	1.50E+05	0.1304	8.90E-04	7.155	0.160	0.3970	0.0030	0.4026	2103.5	6.0	12.0	2130.9	10.0	19.9	2155.2	6.9	13.8	101
OU1z50	229.60	304.60	97.10	1.330	2.80E+04	2.70E+04	0.0624	2.30E-03	0.963	0.030	0.1121	0.0011	0.0691	687.8	39.3	78.6	684.8	7.8	15.5	684.9	3.2	6.4	100
OU1z51	159.80	88.80	57.52	0.560	1.60E+04	3.40E+04	0.0851	2.70E-03	2.756	0.073	0.2352	0.0022	0.2626	1317.8	30.8	61.5	1343.7	9.9	19.7	1361.7	5.7	11.5	101
OU1z52	105.93	91.10	30.37	0.860	1.30E+04	9.80E+03	0.0665	2.80E-03	1.100	0.040	0.1204	0.0012	0.0107	822.2	44.0	87.9	753.4	9.7	19.3	732.9	3.5	6.9	97
OU1z53	122.80	81.20	22.69	0.660	3.00E+04	1.00E+04	0.0595	2.60E-03	0.827	0.033	0.1009	0.0012	0.1891	585.4	47.4	94.8	611.9	9.2	18.3	619.7	3.5	7.0	101
OU1z54	145.70	102.70	31.86	0.700	-4.30E+04	2.10E+04	0.0618	2.50E-03	0.904	0.032	0.1059	0.0012	-0.0516	667.2	43.3	86.6	653.9	8.5	17.1	649.0	3.5	7.0	99
OU1z55	371.00	243.00	78.50	0.650	-5.10E+04	4.10E+04	0.0672	2.40E-03	0.967	0.029	0.1041	0.0009	0.0151	844.0	37.2	74.3	686.9	7.5	15.0	638.2	2.6	5.2	93
OU1z56	388.00	162.90	81.00	0.420	-1.31E+05	7.00E+04	0.0753	2.40E-03	1.862	0.049	0.1793	0.0014	0.0485	1076.5	32.0	64.0	1067.7	8.7	17.4	1063.1	3.8	7.7	100
OU1z57	155.10	121.90	40.90	0.790	-3.90E+04	1.90E+04	0.0627	2.50E-03	1.045	0.037	0.1218	0.0012	0.0196	698.1	42.5	84.9	726.4	9.2	18.4	740.9	3.4	6.9	102
OU1z59	333.30	62.24	10.74	0.190	1.50E+04	1.70E+04	0.0540	2.20E-03	0.451	0.016	0.0609	0.0006	0.0533	371.0	45.9	91.7	378.0	5.6	11.2	381.0	1.8	3.6	101
OU1z60	51.17	57.30	60.83	1.120	1.40E+04	1.80E+04	0.1323	2.80E-03	7.430	0.220	0.4088	0.0042	0.1573	2128.7	18.5	37.0	2164.6	13.2	26.5	2209.4	9.6	19.2	102
OU1z61	348.10	421.90	404.60	1.210	1.00E+05	1.10E+05	0.1219	1.10E-03	5.924	0.140	0.3544	0.0029	0.3166	1984.2	8.0	16.1	1964.8	10.3	20.5	1955.6	6.9	13.8	100
OU1z62	347.00	113.50	167.60	0.330	8.00E+05	1.70E+05	0.2278	1.60E-03	17.020	0.410	0.5436	0.0059	0.7915	3036.7	5.6	11.3	2936.0	11.5	23.1	2798.5	12.3	24.6	95
OU1z63	265.90	287.00	78.80	1.080	-4.00E+04	2.80E+04	0.0597	2.20E-03	0.818	0.026	0.0989	0.0009	0.0072	592.7	39.9	79.9	606.9	7.3	14.5	607.7	2.8	5.5	100
OU1z64	463.00	247.60	238.40	0.530	-1.40E+05	1.40E+05	0.1233	9.30E-04	6.103	0.150	0.3598	0.0033	0.5757	2004.8	6.7	13.4	1990.7	10.7	21.4	1981.2	7.8	15.6	100
OU1z65	233.60	446.00	125.20	1.910	-6.00E+04	1.70E+04	0.0640	2.40E-03	0.835	0.028	0.0950	0.0010	0.3331	741.6	39.7	79.3	616.4	7.7	15.5	584.7	2.9	5.9	95
OU1z66	164.40	91.10	25.40	0.550	1.70E+04	1.50E+04	0.0592	2.50E-03	0.820	0.030	0.1004	0.0011	0.1357	574.5	45.9	91.8	608.0	8.4	16.7	616.9	3.2	6.4	101

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OU1z67	171.50	38.50	37.80	0.220	-1.10E+04	5.50E+04	0.1267	1.60E-03	6.544	0.170	0.3763	0.0037	0.5572	2052.7	11.1	22.3	2051.8	11.4	22.9	2059.0	8.7	17.3	100
OU1z68	79.00	81.20	22.90	1.030	-8.80E+03	6.00E+03	0.0563	3.00E-03	0.784	0.039	0.1000	0.0013	0.0143	464.2	59.0	118.1	587.8	11.1	22.2	614.4	3.8	7.6	105
OU1z69	350.40	491.00	500.80	1.400	3.00E+05	1.10E+05	0.1231	1.00E-03	6.530	0.150	0.3845	0.0032	0.4129	2001.6	7.2	14.4	2050.0	10.1	20.2	2097.3	7.4	14.9	102
OU1z70	496.00	460.00	125.10	0.930	4.60E+04	3.90E+04	0.0619	2.10E-03	0.821	0.024	0.0966	0.0008	0.2143	670.7	36.3	72.6	608.6	6.7	13.4	594.4	2.4	4.8	98
OU1z71	236.70	278.10	78.80	1.170	-1.60E+04	1.90E+04	0.0598	2.20E-03	0.831	0.027	0.1002	0.0010	0.0925	596.3	39.9	79.7	614.2	7.5	15.0	615.6	2.9	5.9	100
OU1z72	498.00	597.00	439.00	1.200	2.94E+05	6.30E+04	0.1421	1.20E-03	6.531	0.160	0.3338	0.0038	0.6002	2253.0	7.3	14.6	2050.1	10.8	21.6	1856.8	9.2	18.4	91
OU1z73	110.00	83.70	27.00	0.760	3.00E+02	9.60E+03	0.0641	2.90E-03	0.966	0.042	0.1092	0.0014	0.2344	744.9	47.8	95.6	686.4	10.8	21.7	668.1	4.1	8.1	97
OU1z74	711.00	180.90	52.20	0.250	-5.00E+04	5.90E+04	0.0605	1.90E-03	0.841	0.023	0.1010	0.0008	0.2737	620.4	33.9	67.8	619.7	6.3	12.7	620.4	2.4	4.8	100
OU1z76	235.00	96.80	27.00	0.410	-1.00E+04	1.80E+04	0.0602	2.40E-03	0.811	0.028	0.0981	0.0010	-0.0631	610.8	43.1	86.2	603.0	7.8	15.7	603.1	2.9	5.8	100
OU1z78	191.70	259.10	272.10	1.350	1.00E+03	5.80E+04	0.1239	1.50E-03	6.784	0.170	0.3950	0.0038	0.4616	2013.1	10.7	21.5	2083.6	11.1	22.2	2146.0	8.8	17.6	103
OU1z79	190.90	205.00	52.60	1.070	-1.00E+03	1.40E+04	0.0624	2.70E-03	0.787	0.030	0.0911	0.0009	0.0346	687.8	46.2	92.3	589.5	8.5	17.0	561.7	2.7	5.5	95
OU1z80	231.40	71.20	22.29	0.310	-3.90E+04	2.70E+04	0.0608	2.20E-03	0.913	0.029	0.1097	0.0012	0.2213	632.2	39.0	77.9	658.7	7.7	15.4	671.0	3.5	7.0	102
OU1z81	231.00	52.96	22.27	0.230	-3.40E+04	2.90E+04	0.0661	2.40E-03	1.178	0.036	0.1291	0.0012	0.0185	809.5	38.0	76.0	790.4	8.4	16.8	782.8	3.4	6.9	99
OU1z83	178.10	155.70	55.50	0.870	3.00E+04	1.60E+04	0.0606	2.40E-03	0.883	0.031	0.1057	0.0012	0.1004	625.1	42.7	85.4	642.6	8.4	16.7	647.7	3.5	7.0	101
OU1z84	407.40	886.40	876.10	2.180	5.00E+05	1.30E+05	0.1250	1.00E-03	6.582	0.150	0.3806	0.0030	0.3693	2028.8	7.1	14.2	2056.9	10.0	20.1	2079.1	7.0	14.0	101
OU1z85	358.30	467.60	414.00	1.310	-1.38E+05	9.10E+04	0.1071	1.10E-03	4.649	0.110	0.3137	0.0026	0.1896	1750.6	9.4	18.8	1758.1	9.9	19.8	1758.9	6.4	12.8	100
OU1z87	86.51	87.20	72.21	1.010	1.20E+04	2.30E+04	0.1061	2.10E-03	4.150	0.120	0.2844	0.0028	0.2369	1733.5	18.2	36.3	1664.2	11.8	23.6	1613.5	7.0	14.1	97
OU1z88	122.00	42.40	24.28	0.350	-3.90E+04	2.40E+04	0.0799	2.80E-03	2.319	0.071	0.2093	0.0020	0.0986	1194.5	34.6	69.1	1218.1	10.9	21.7	1225.1	5.3	10.7	101
OU1z89	149.50	115.70	31.72	0.770	-1.00E+04	1.40E+04	0.0578	2.60E-03	0.779	0.032	0.0979	0.0011	0.0565	522.2	49.3	98.7	584.9	9.1	18.2	601.9	3.2	6.5	103
OU1z90	154.30	126.80	33.90	0.820	-7.00E+04	1.30E+04	0.0611	2.60E-03	0.755	0.029	0.0904	0.0010	0.0957	642.8	45.7	91.5	571.1	8.4	16.8	557.6	3.0	5.9	98
OU1z91	309.60	166.10	176.40	0.540	-9.00E+05	1.20E+05	0.1332	1.10E-03	7.329	0.170	0.3979	0.0034	0.4558	2140.6	7.2	14.4	2152.4	10.4	20.7	2159.4	7.8	15.7	100
OU1z94	89.20	76.80	34.50	0.860	-4.00E+04	1.10E+04	0.0704	2.90E-03	1.531	0.056	0.1580	0.0018	0.1755	940.0	42.2	84.4	942.9	11.2	22.4	945.7	5.0	10.0	100
OU1z96	83.60	58.33	18.48	0.700	-6.80E+03	9.50E+03	0.0623	3.00E-03	0.928	0.039	0.1093	0.0013	-0.0537	684.4	51.4	102.8	666.6	10.3	20.5	668.7	3.8	7.6	100
OU1z97	413.00	534.00	428.00	1.290	3.00E+05	1.20E+05	0.1213	1.10E-03	5.390	0.160	0.3222	0.0057	0.8902	1975.4	8.1	16.2	1883.3	12.7	25.4	1800.5	13.9	27.8	96
OU1z98	71.20	87.70	26.76	1.230	-2.40E+03	7.80E+03	0.0629	3.20E-03	0.933	0.044	0.1083	0.0014	-0.0129	704.9	54.1	108.3	669.2	11.5	23.1	662.9	4.1	8.1	99
OU1z100	478.70	195.30	191.60	0.410	-3.00E+05	1.70E+05	0.1285	8.50E-04	6.588	0.150	0.3721	0.0027	0.4553	2077.1	5.8	11.6	2057.7	10.0	20.1	2039.3	6.3	12.7	99
OU1z101	295.00	341.00	235.60	1.160	-4.20E+04	7.50E+04	0.0900	2.90E-03	2.905	0.083	0.2359	0.0026	0.4902	1425.5	30.8	61.5	1383.2	10.8	21.6	1365.3	6.8	13.6	99
OU1z102	464.30	408.00	121.50	0.880	2.16E+05	9.60E+04	0.0647	2.20E-03	0.955	0.027	0.1076	0.0009	0.0345	764.6	35.8	71.7	680.7	7.0	14.0	658.6	2.6	5.2	97
OU1z103	207.00	24.24	21.70	0.120	-5.90E+04	6.00E+04	0.1107	1.40E-03	4.079	0.110	0.2654	0.0030	0.5226	1810.9	11.5	23.0	1650.1	11.0	22.0	1517.4	7.6	15.3	92
OU1z104	655.00	545.00	144.00	0.830	2.40E+04	5.00E+04	0.0645	2.30E-03	0.804	0.023	0.0917	0.0012	0.1213	758.1	37.6	75.2	599.1	6.5	12.9	565.6	3.5	7.1	94
OU1z105	121.10	48.10	11.96	0.400	1.44E+04	9.60E+03	0.0627	2.70E-03	0.751	0.031	0.0879	0.0010	0.2845	698.1	45.9	91.7	568.8	9.0	18.0	542.8	3.0	5.9	95
OU1z106	220.10	46.00	13.70	0.210	-4.30E+04	2.30E+04	0.0609	2.20E-03	0.900	0.028	0.1057	0.0011	0.1446	635.7	38.9	77.7	651.7	7.5	15.0	647.9	3.2	6.4	99
OU1z109	98.60	67.20	63.90	0.680	4.00E+04	2.90E+04	0.1206	1.80E-03	5.844	0.150	0.3513	0.0036	0.2930	1965.1	13.3	26.6	1953.0	11.1	22.2	1940.8	8.6	17.2	99
OU1z112	197.30	106.20	32.58	0.540	-5.00E+04	1.80E+04	0.0643	2.60E-03	0.835	0.029	0.0941	0.0011	0.0969	751.5	42.7	85.4	616.4	8.0	16.0	579.7	3.2	6.5	94
OU1z113	127.30	216.70	63.10	1.700	0.00E+00	1.10E+04	0.0587	2.60E-03	0.816	0.032	0.1012	0.0011	0.1638	556.0	48.3	96.6	605.8	8.9	17.9	621.2	3.2	6.4	103
OU1z115	61.06	9.08	9.77	0.150	-3.50E+04	1.70E+04	0.1402	2.20E-03	7.480	0.200	0.3878	0.0039	0.3313	2229.7	13.6	27.2	2170.6	12.0	23.9	2112.6	9.1	18.1	97
OU1z116	129.30	53.40	52.68	0.410	-5.80E+04	5.20E+04	0.1292	1.50E-03	6.891	0.170	0.3861	0.0033	0.2178	2087.1	10.2	20.4	2097.5	10.9	21.9	2104.7	7.7	15.3	100
OU1z117	130.80	82.20	92.20	0.630	-6.50E+04	5.00E+04	0.1335	1.50E-03	8.119	0.200	0.4428	0.0046	0.4407	2144.5	9.8	19.6	2244.4	11.1	22.3	2363.2	10.3	20.6	105
OU1z118	500.00	54.50	50.00	0.110	1.40E+05	1.40E+05	0.1195	1.00E-03	4.704	0.120	0.2844	0.0030	0.6554	1948.8	7.5	15.0	1768.0	10.7	21.3	1613.5	7.5	15.1	91
OU1z119	112.80	40.18	12.00	0.360	-2.00E+04	1.40E+04	0.0681	2.90E-03	1.222	0.049	0.1296	0.0013	0.1774	871.6	44.1	88.2	810.7	11.2	22.4	785.6	3.7	7.4	97
OU1z121	331.00	234.90	62.60	0.710	0.00E+00	3.30E+04	0.0629	2.20E-03	0.838	0.026	0.0971	0.0009	0.1761	704.9	37.2	74.4	618.0	7.2	14.4	597.5	2.5	5.0	97
OU1z122	193.50	83.70	46.60	0.430	-9.00E+04	5.70E+04	0.0790	2.60E-03	2.234	0.060	0.2052	0.0019	0.0764	1172.1	32.6	65.1	1191.8	9.4	18.8	1203.2	5.1	10.2	101
OU1z123	677.00	702.00	201.70	1.040	4.70E+04	5.80E+04	0.0632	2.00E-03	0.894	0.023	0.1034	0.0008	0.1151	716.3	33.6	67.2	648.5	6.2	12.3	634.5	2.3	4.7	98
OU1z124	70.00	67.40	78.90	0.960	5.00E+04	3.00E+04	0.1551	2.30E-03	9.870	0.260	0.4644	0.0042	0.2009	2402.9	12.6	25.2	2422.7	12.1	24.3	2459.0	9.2	18.5	101
Discordant data																							
OU1z4	921.00	274.40	114.60	0.300	2.80E+04	2.90E+04	0.0749	2.50E-03	1.066	0.029	0.1036	0.0009	0.1170	1065.8	33.6	67.1	736.8	7.1	14.2	635.5	2.7	5.5	86
OU1z7	430.20	168.80	126.10	0.390	1.70E+04	3.30E+04	0.0986	3.10E-03	2.462	0.066	0.1817	0.0016	0.2761	1597.8	29.3	58.7	1260.9	9.7	19.3	1076.3	4.4	8.7	85
OU1z12	2030.00	1540.00	594.00	0.760	2.30E+05	4.60E+04	0.2166	6.30E-03	4.060	0.140	0.1382	0.0035	0.9583	2955.6	23.5	46.9	1646.3	14.0	28.1	834.5	9.9	19.8	51
OU1z21	669.00	542.30	163.30	0.810	1.10E+04	2.20E+04	0.0796	3.30E-03	1.029	0.041	0.0940	0.0009	0.5909	1187.1	40.9	81.9	718.4	10.2	20.5	579.1	2.7	5.4	81
OU1z45	713.00	204.00	61.10	0.290	9.40E+04	3.60E+04	0.0832	2.80E-03	1.072	0.029	0.0960	0.0016	0.4247	1273.9	32.8	65.6	739.7	7.1	14.2	590.9	4.7	9.4	80
OU1z58	38.80	24.20	7.73	0.620	-2.60E+03	3.40E+03	0.0753	4.70E-03	0.975	0.055	0.0948	0.0014	-0.0597	1076.5	62.7	125.3	691.0	14.1	28.3	583.9	4.1	8.2	84
OU1z75	249.40	62.93	44.07	0.250	7.80E+04	4.90E+04	0.1136	3.50E-03	3.450	0.089	0.2206	0.0024	0.4677	1857.8	27.8	55.7	1515.9	10.1	20.3	1285.0	6.3	12.7	85
OU1z77	575.00	686.00	218.30	1.190	5.00E+04	2.40E+04	0.0930	3.60E-03	1.263	0.047	0.0981	0.0009	0.4476	1487.9	36.7	73.3	829.3	10.5	21.1	603.4	2.6	5.2	73
OU1z82	645.00	564.00	386.00	0.870	-4.60E+05	3.20E+05	0.2158	1.20E-03	9.040	0.280	0.3051	0.0063	0.9437	2949.6	4.5	9.0	2342.1	14.1	28.3	1716.5	15.6	31.1	73
OU1z86	392.00	197.00	69.80	0.500	3.00E+04	3.00E+04	0.0739	2.60E-03	1.038	0.032	0.1014	0.0009	0.2896	1038.7	35.5	71.0	722.9	8.0	15.9	622.8	2.7	5.3	86
OU1z92	731.00	543.00	167.80	0.740	4.60E+04	4.70E+04	0.0872	2.90E-03	0.953	0.024	0.0800	0.0010	0.1190	1364.9	32.0	64.0	679.7	6.2	12.5	496.4	3.0	6.0	73
OU1z93	683.00	165.00	135.00	0.240	7.00E+04	2.80E+04	0.1261	4.90E-03	1.428	0.043	0.0844	0.0011	-0.0660	2044.3	34.3	68.7	900.7	9.0	18.0	522.2	3.3	6.5	58
OU1z95	103.90	97.30	31.40	0.940	7.20E+03	7.20E+03	0.1143	9.90E-03	1.550	0.130	0.0976	0.0011	0.0554	1868.9	78.1	156.3	950.5	25.9	51.7	600.3	3.2	6.5	63
OU1z99	169.50	36.50	20.80	0.220	-3.00E+04	1.60E+04	0.0784	2.90E-03	1.345	0.045	0.1234	0.0014	0.2228	1157.0	36.7	73.4	865.4	9.7	19.5	750.1	4.0	8.0	87
OU1z107	185.20	121.60	46.60	0.660	-2.00E+04	1.70E+04	0.0877	4.00E-03	1.203	0.052	0.1007	0.0010	0.2284	1375.9	43.9	87.7	802.0	12.0	23.9	618.5	2.9	5.9	77
OU1z108	342.00	157.60	54.68	0.460	3.50E+04	3.00E+04	0.0720	2.60E-03	1.016	0.034	0.1024	0.0010	0.3249	985.9	36.7	73.5	711.9	8.6	17.1	628.3	2.9	5.8	88
OU1z110	414.10	159.40	264.00	0.380	5.70E+04	2.20E+04	0.1860	1.80E-02	3.840	0.430	0.1358	0.0034	0.9445	2707.1	79.8	159.7	1601.2	45.1	90.1	820.9	9.6	19.3	51
OU1z111	860.00	307.00	120.50	0.360	1.67E+05	3.20E+04	0.1023	4.40E-03	1.170	0.045	0.0834	0.0007	-0.0405	1666.3	39.8	79.6	786.6	10.5	21.0	516.5	2.1	4.2	66
OU1z114	957.00	317.00	88.50	0.330	5.00E+04	1.70E+04	0.1221	4.20E-03	0.648	0.022	0.0387	0.0005	0.5674	1987.1	30.6	61.2	507.2	6.8	13.5	245.0	1.7	3.4	48
OU1z120	1354.00	498.00	218.00	0.370	2.50E+05	2.10E+05	0.1207	3.50E-03	3.786	0.095	0.2296	0.0028	0.8865	1966.3	25.9	51.7	1589.8	10.1	20.1	1332.4	7.3	14.7	84

Footnotes:

- Analysis references: OU1z is zircon from sample OU1 (mount CT18-11), followed by grain number.

Table D.41: Sample OU4 (LA-ICPMS)

IGSN: IEACC00015 Coordinate UTM: Zone 29S, 3716170 m N, 777438 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OU4z1	277.70	209.10	63.50	0.750	-3.80E+05	1.50E+05	0.0612	2.00E-03	0.883	0.031	0.1057	0.0013	0.0759	646.3	35.1	70.2	642.6	8.4	16.7	647.9	3.8	7.6	101
OU4z2	182.90	143.90	141.70	0.790	3.00E+06	1.70E+06	0.1264	1.60E-03	6.513	0.200	0.3723	0.0043	0.2490	2067.9	24.8	49.7	2047.7	13.5	27.0	2040.2	10.1	20.2	100
OU4z3	310.90	284.80	229.40	0.920	-4.50E+05	1.80E+05	0.1047	1.70E-03	3.870	0.230	0.2630	0.0110	0.9758	1730.0	27.7	55.5	1607.4	24.0	47.9	1505.2	28.1	56.1	94
OU4z5	246.00	309.00	87.80	1.260	1.53E+06	8.40E+05	0.0625	2.30E-03	0.856	0.032	0.1006	0.0013	0.1147	691.3	39.2	78.5	627.9	8.7	17.5	618.0	3.8	7.6	98
OU4z6	296.80	445.00	107.80	1.500	5.70E+05	3.60E+05	0.0614	2.00E-03	0.840	0.029	0.0990	0.0013	0.0785	653.3	35.0	69.9	619.1	8.0	16.0	608.7	3.8	7.6	98
OU4z7	364.00	341.00	153.80	0.940	4.40E+06	3.20E+06	0.0922	2.60E-03	2.956	0.090	0.2349	0.0029	0.4129	1471.5	26.8	53.5	1396.4	11.5	23.1	1360.1	7.6	15.1	97
OU4z8	271.40	206.20	59.80	0.760	-1.10E+05	1.10E+05	0.0586	2.00E-03	0.789	0.028	0.0980	0.0012	-0.0261	552.3	37.2	74.5	590.6	7.9	15.9	602.5	3.5	7.0	102
OU4z9	225.80	273.00	30.91	1.210	4.70E+04	6.90E+04	0.0632	2.50E-03	0.772	0.034	0.0896	0.0028	0.5477	715.0	42.0	84.0	580.9	9.7	19.5	553.2	8.3	16.6	95
OU4z10	185.90	110.10	31.43	0.590	9.40E+05	4.30E+05	0.0588	2.10E-03	0.787	0.029	0.0974	0.0012	-0.0015	559.7	38.9	77.9	589.5	8.2	16.5	599.3	3.5	7.0	102
OU4z11	476.00	259.00	162.20	0.540	6.20E+05	4.40E+05	0.0869	2.40E-03	2.780	0.084	0.2329	0.0029	0.3798	1358.3	26.6	53.2	1350.2	11.3	22.5	1349.7	7.6	15.2	100
OU4z13	243.70	201.10	64.27	0.830	2.02E+05	9.70E+04	0.0624	2.10E-03	0.910	0.032	0.1059	0.0013	0.0889	687.8	35.9	71.8	657.1	8.5	17.0	648.9	3.8	7.6	99
OU4z14	665.00	220.10	122.20	0.330	7.00E+05	1.40E+05	0.0787	2.10E-03	2.134	0.063	0.1972	0.0022	0.3731	1164.6	26.4	52.9	1159.9	10.2	20.4	1160.3	5.9	11.8	100
OU4z15	259.00	211.00	203.00	0.810	4.30E+05	2.70E+05	0.1591	1.40E-03	7.900	0.240	0.3618	0.0051	0.7063	2453.5	22.8	45.5	2219.7	13.7	27.4	1990.7	12.1	24.1	90
OU4z16	504.00	30.90	11.50	0.060	2.00E+05	1.30E+05	0.0625	1.90E-03	0.987	0.032	0.1147	0.0014	0.1895	691.3	32.4	64.8	697.2	8.2	16.3	700.0	4.0	8.1	100
OU4z17	593.00	818.00	230.00	1.380	4.30E+05	1.70E+05	0.0669	2.00E-03	0.902	0.029	0.0987	0.0016	0.4318	834.7	31.1	62.3	652.8	7.7	15.5	606.8	4.7	9.4	93
OU4z18	88.20	65.70	20.90	0.740	-3.90E+05	1.60E+05	0.0613	3.00E-03	0.906	0.043	0.1072	0.0016	-0.0673	649.8	52.5	105.1	654.9	11.4	22.9	656.5	4.7	9.3	100
OU4z19	284.60	861.00	251.00	3.030	4.30E+05	1.50E+05	0.0604	2.10E-03	0.834	0.030	0.1008	0.0012	0.0720	617.9	37.5	75.1	615.8	8.3	16.6	619.0	3.5	7.0	101
OU4z20	258.60	317.90	158.20	1.230	-2.50E+05	2.00E+05	0.0724	2.20E-03	1.700	0.054	0.1699	0.0020	0.1115	997.2	30.9	61.7	1008.5	10.1	20.3	1011.6	5.5	11.0	100
OU4z21	427.00	348.00	114.10	0.810	2.60E+05	1.50E+05	0.0620	1.90E-03	0.961	0.031	0.1130	0.0013	0.1855	672.4	32.8	65.6	683.8	8.0	16.0	690.3	3.8	7.5	101
OU4z22	146.60	57.03	23.36	0.390	4.70E+04	3.70E+04	0.0672	2.40E-03	1.262	0.047	0.1369	0.0017	0.1738	844.0	37.2	74.3	828.8	10.5	21.1	827.1	4.8	9.6	100
OU4z25	246.90	165.00	167.50	0.670	3.20E+06	4.10E+06	0.1247	1.30E-03	6.473	0.190	0.3762	0.0042	0.3474	2024.5	24.1	48.3	2042.2	12.9	25.8	2058.5	9.8	19.7	101
OU4z26	85.70	110.90	32.50	1.290	1.80E+04	2.00E+04	0.0603	3.00E-03	0.838	0.041	0.1002	0.0015	-0.0421	614.4	53.7	107.5	618.0	11.3	22.6	615.6	4.4	8.8	100
OU4z27	100.80	23.74	25.91	0.240	8.80E+04	8.40E+04	0.1329	1.90E-03	7.120	0.220	0.3889	0.0046	0.2230	2132.7	25.1	50.1	2126.5	13.7	27.5	2117.7	10.7	21.4	100
OU4z28	66.30	104.20	30.87	1.570	-5.00E+04	1.20E+04	0.0592	3.20E-03	0.808	0.044	0.0985	0.0016	0.0624	574.5	58.8	117.5	601.3	12.3	24.7	605.6	4.7	9.4	101
OU4z29	285.80	50.90	42.45	0.180	4.70E+05	2.50E+05	0.1031	3.00E-03	3.705	0.130	0.2604	0.0040	0.7674	1680.7	26.9	53.7	1572.4	14.0	28.0	1491.9	10.2	20.5	95
OU4z30	181.50	139.20	144.60	0.770	3.00E+05	1.40E+05	0.1284	1.30E-03	6.882	0.210	0.3882	0.0047	0.5420	2072.1	24.1	48.1	2096.3	13.5	27.0	2114.5	10.9	21.8	101
OU4z31	540.70	385.00	109.30	0.710	3.50E+05	1.70E+05	0.0619	1.80E-03	0.849	0.027	0.0993	0.0012	0.2449	671.3	31.1	62.2	624.1	7.4	14.8	610.2	3.5	7.0	98
OU4z32	300.80	117.80	31.40	0.390	-2.70E+05	1.20E+05	0.0590	2.00E-03	0.728	0.026	0.0890	0.0011	0.2685	567.1	36.9	73.8	555.4	7.6	15.3	549.4	3.3	6.5	99
OU4z33	577.00	567.00	663.00	0.980	1.70E+06	9.40E+05	0.1752	1.10E-03	10.830	0.360	0.4494	0.0094	0.9283	2603.2	21.5	42.9	2508.6	15.4	30.9	2392.6	20.9	41.8	95
OU4z34	81.60	45.60	49.90	0.560	4.30E+04	7.20E+04	0.1308	2.30E-03	7.270	0.240	0.4044	0.0053	0.3146	2103.4	26.9	53.9	2145.1	14.7	29.4	2189.3	12.2	24.3	102
OU4z35	714.00	710.00	145.10	0.990	-1.30E+04	9.20E+04	0.0635	2.00E-03	0.618	0.020	0.0708	0.0009	0.0946	725.0	33.4	66.8	488.6	6.3	12.5	441.2	2.8	5.7	90
OU4z36	482.00	284.00	67.60	0.590	7.40E+04	9.80E+04	0.0571	1.80E-03	0.651	0.022	0.0825	0.0010	0.0051	495.4	34.7	69.5	509.1	6.8	13.5	511.2	3.0	6.0	100
OU4z37	71.15	60.17	17.85	0.850	3.10E+04	2.10E+04	0.0609	3.00E-03	0.862	0.042	0.1037	0.0016	0.0755	635.7	53.0	106.0	631.2	11.4	22.9	636.1	4.7	9.3	101
OU4z38c	74.90	63.30	58.20	0.850	2.40E+04	5.40E+04	0.1094	2.20E-03	4.450	0.170	0.2913	0.0061	0.6747	1784.4	29.2	58.5	1721.7	15.8	31.6	1648.0	15.2	30.5	96
OU4z39	475.00	647.00	201.80	1.360	1.80E+05	1.30E+05	0.0608	1.90E-03	0.895	0.029	0.1063	0.0013	0.1881	632.2	33.6	67.3	649.1	7.8	15.5	651.4	3.8	7.6	100
OU4z40	288.10	116.00	108.60	0.400	2.80E+05	2.40E+05	0.1260	1.10E-03	5.867	0.170	0.3361	0.0040	0.3962	2038.7	23.9	47.8	1956.4	12.6	25.1	1867.9	9.6	19.3	95
OU4z41	220.50	308.00	90.30	1.400	-5.40E+04	4.90E+04	0.0619	2.20E-03	0.860	0.032	0.1008	0.0013	0.0939	670.7	38.0	76.1	630.1	8.7	17.5	619.3	3.8	7.6	98
OU4z42	749.60	761.00	110.50	1.020	1.80E+05	1.50E+05	0.0564	1.80E-03	0.468	0.016	0.0598	0.0007	0.0212	468.1	35.3	70.7	389.5	5.5	11.1	374.2	2.2	4.4	96
OU4z43	254.00	320.80	94.80	1.260	8.20E+04	6.60E+04	0.0614	2.00E-03	0.831	0.029	0.0986	0.0012	0.0513	653.3	35.0	69.9	614.2	8.0	16.1	606.4	3.5	7.0	99
OU4z44	287.70	153.40	52.15	0.530	4.00E+05	1.00E+05	0.0631	2.10E-03	0.998	0.035	0.1159	0.0014	0.1904	711.6	35.4	70.7	702.8	8.9	17.8	707.2	4.0	8.1	101
OU4z45	306.80	166.30	52.10	0.540	5.30E+04	8.50E+04	0.0599	2.10E-03	0.837	0.030	0.1009	0.0013	0.1479	600.0	38.0	75.9	617.5	8.3	16.6	619.7	3.8	7.6	100
OU4z46	498.50	210.70	56.11	0.420	-4.00E+05	1.20E+05	0.0580	1.80E-03	0.739	0.024	0.0925	0.0011	0.1181	529.4	34.0	68.0	561.8	7.0	14.0	570.2	3.2	6.5	101
OU4z47	312.20	253.30	56.78	0.810	1.07E+05	8.70E+04	0.0636	2.00E-03	0.790	0.027	0.0897	0.0011	0.3929	728.4	33.3	66.7	591.2	7.7	15.3	553.6	3.3	6.5	94
OU4z48	242.70	433.00	122.70	1.780	6.50E+04	7.40E+04	0.0618	2.20E-03	0.837	0.032	0.0981	0.0013	0.2568	667.2	38.1	76.2	617.5	8.8	17.7	603.5	3.8	7.6	98
OU4z49	161.80	158.60	48.90	0.980	1.10E+06	1.40E+06	0.0616	2.40E-03	0.876	0.036	0.1044	0.0014	0.1515	660.3	41.8	83.5	638.8	9.7	19.5	640.0	4.1	8.2	100
OU4z50	227.00	82.00	25.20	0.360	9.97E+04	5.60E+04	0.0640	2.50E-03	0.919	0.049	0.1051	0.0030	0.7713	741.6	41.3	82.6	661.8	13.0	25.9	644.2	8.7	17.5	97
OU4z51	102.90	66.20	19.49	0.640	2.60E+04	3.40E+04	0.0644	2.70E-03	0.858	0.037	0.0975	0.0014	0.1602	754.8	44.2	88.5	629.0	10.1	20.2	599.7	4.1	8.2	95
OU4z52	253.80	129.80	86.10	0.510	3.90E+05	2.40E+05	0.0920	2.60E-03	3.172	0.098	0.2515	0.0029	0.2784	1467.4	26.8	53.7	1450.4	11.9	23.8	1446.2	7.5	14.9	100
OU4z53	926.00	105.80	24.56	0.110	6.10E+05	2.70E+05	0.0621	1.80E-03	0.851	0.027	0.0988	0.0012	0.4297	678.6	31.0	61.9	625.2	7.4	14.8	607.4	3.5	7.0	97
OU4z54	287.30	193.30	32.30	0.670	5.50E+04	6.80E+04	0.0561	2.10E-03	0.510	0.020	0.0656	0.0009	0.1481	456.3	41.5	83.1	418.4	6.7	13.4	409.5	2.8	5.5	98
OU4z55	100.70	96.30	28.21	0.960	4.30E+04	3.70E+04	0.0592	2.60E-03	0.837	0.038	0.1031	0.0014	0.1505	574.5	47.7	95.5	617.5	10.5	21.0	632.6	4.1	8.2	102
OU4z56	116.50	77.60	25.60	0.670	7.10E+04	4.80E+04	0.0632	2.70E-03	1.017	0.045	0.1169	0.0016	0.0468	715.0	45.4	90.8	712.4	11.3	22.6	712.7	4.6	9.2	100
OU4z57	278.40	485.00	214.00	1.740	2.00E+05	1.70E+05	0.0715	2.30E-03	1.554	0.052	0.1578	0.0020	0.0084	971.7	32.8	65.6	952.1	10.3	20.7	944.5	5.6	11.1	99
OU4z58	683.00	399.00	182.60	0.580	2.00E+05	4.60E+05	0.0712	2.00E-03	1.600	0.049	0.1626	0.0019	0.3241	964.0	28.7	57.3	970.2	9.6	19.1	971.2	5.3	10.5	100
OU4z59	35.51	36.66	10.42	1.030	6.00E+04	1.30E+04	0.0630	4.30E-03	0.867	0.057	0.0996	0.0019	-0.0664	708.2	72.6	145.2	633.9	15.5	31.0	612.1	5.6	11.1	97
OU4z60	307.60	223.00	337.00	0.720	4.80E+05	7.30E+05	0.2501	1.90E-03	21.430	0.620	0.6229	0.0073	0.5568	3193.0	20.8	41.6	3158.2	14.0	28.0	3121.4	14.5	29.0	99
OU4z61	145.70	78.50	23.47	0.540	2.20E+05	1.10E+05	0.0609	2.40E-03	0.909	0.037	0.1083	0.0014	0.0786	635.7	42.4	84.8	656.5	9.8	19.7	662.8	4.1	8.1	101
OU4z62	205.60	285.90	81.30	1.390	1.60E+05	1.00E+05	0.0617	2.30E-03	0.887	0.034	0.1038	0.0013	0.1389	663.7	39.9	79.9	644.8	9.1	18.3	636.8	3.8	7.6	99
OU4z63	674.00	345.00	108.70	0.510	2.50E+05	3.40E+05	0.0678	2.00E-03	1.118	0.035	0.1212	0.0016	0.3714	862.4	30.6	61.2	762.0	8.4	16.8	737.5	4.6	9.2	97
OU4z65	158.70	72.38	16.94	0.460	-5.10E+04	3.30E+04	0.0568	2.40E-03	0.637	0.028	0.0804	0.0012	0.1736	483.8	46.7	93.3	500.4	8.7	17.4	498.2	3.6	7.2	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OU4z66	286.30	151.50	36.90	0.530	1.10E+05	1.20E+05	0.0580	2.10E-03	0.683	0.026	0.0860	0.0011	0.0579	529.8	39.7	79.3	528.6	7.8	15.7	532.0	3.3	6.5	101
OU4z67	264.70	290.00	78.60	1.100	3.00E+05	1.40E+05	0.0607	2.20E-03	0.794	0.029	0.0956	0.0012	-0.0366	628.6	39.0	78.1	593.4	8.2	16.4	588.7	3.5	7.1	99
OU4z68	171.50	256.00	76.20	1.490	2.30E+05	1.30E+05	0.0617	2.30E-03	0.888	0.034	0.1057	0.0015	0.1091	663.7	39.9	79.9	645.3	9.1	18.3	647.7	4.4	8.7	100
OU4z69	502.00	367.40	98.72	0.730	2.40E+05	2.50E+05	0.0591	1.90E-03	0.780	0.026	0.0962	0.0012	0.1352	570.8	35.0	69.9	585.5	7.4	14.8	592.2	3.5	7.1	101
OU4z70	292.20	420.60	389.00	1.440	4.60E+05	5.40E+05	0.1221	1.30E-03	5.990	0.180	0.3565	0.0042	0.3229	2004.5	24.5	49.0	1974.4	13.1	26.1	1965.6	10.0	20.0	100
OU4z72	154.50	106.90	29.69	0.690	-1.40E+04	7.50E+04	0.0606	2.40E-03	0.856	0.034	0.1037	0.0014	-0.0190	625.1	42.7	85.4	627.9	9.3	18.6	636.3	4.1	8.2	101
OU4z73	244.50	108.90	34.80	0.450	7.00E+05	1.40E+05	0.0614	2.10E-03	0.907	0.034	0.1078	0.0014	0.2619	653.3	36.7	73.4	655.5	9.0	18.1	659.7	4.1	8.1	101
OU4z74	143.90	106.00	31.00	0.740	1.80E+05	1.10E+05	0.0634	2.70E-03	0.907	0.039	0.1050	0.0014	-0.0120	721.7	45.2	90.4	655.5	10.4	20.7	643.5	4.1	8.2	98
OU4z75	180.80	268.00	76.10	1.480	4.00E+05	1.30E+05	0.0628	2.40E-03	0.905	0.036	0.1062	0.0014	0.2315	701.5	40.7	81.4	654.4	9.6	19.2	650.5	4.1	8.2	99
OU4z76	378.00	639.00	195.10	1.690	5.00E+05	2.40E+05	0.0710	2.10E-03	1.052	0.034	0.1087	0.0014	0.2887	957.4	30.2	60.5	729.9	8.4	16.8	665.2	4.1	8.1	91
OU4z77	226.80	166.20	49.40	0.730	-1.60E+05	1.80E+05	0.0641	2.20E-03	0.953	0.035	0.1088	0.0014	0.1110	744.9	36.3	72.6	679.7	9.1	18.2	665.9	4.1	8.1	98
OU4z78	143.70	150.50	42.66	1.050	3.00E+05	1.10E+05	0.0611	2.50E-03	0.855	0.036	0.1029	0.0014	0.1311	642.8	44.0	88.0	627.4	9.8	19.7	631.3	4.1	8.2	101
OU4z79	305.00	158.00	106.80	0.520	2.40E+06	1.10E+06	0.1086	1.30E-03	4.569	0.140	0.3039	0.0036	0.3030	1806.0	25.5	51.0	1743.6	12.8	25.5	1710.6	8.9	17.8	98
OU4z80	102.60	56.60	28.26	0.550	-3.00E+05	1.40E+05	0.0759	2.60E-03	1.844	0.069	0.1764	0.0024	0.1990	1092.4	34.3	68.6	1061.3	12.3	24.6	1047.3	6.6	13.2	99
OU4z81	84.00	14.70	4.54	0.180	-4.20E+04	7.20E+04	0.0628	3.20E-03	0.859	0.045	0.0999	0.0015	0.0525	701.5	54.2	108.5	629.6	12.3	24.6	613.8	4.4	8.8	97
OU4z82	612.00	1079.00	243.00	1.760	-1.80E+05	5.90E+05	0.0635	1.90E-03	0.901	0.029	0.1043	0.0013	0.2337	726.4	31.7	63.4	652.3	7.7	15.5	639.4	3.8	7.6	98
OU4z83	202.20	69.80	20.11	0.350	8.00E+05	3.30E+05	0.0619	2.30E-03	0.894	0.034	0.1061	0.0013	-0.0236	670.7	39.8	79.5	648.5	9.1	18.2	650.2	3.8	7.6	100
OU4z84	169.30	368.00	339.00	2.170	-4.00E+05	5.80E+05	0.1221	1.50E-03	5.972	0.190	0.3542	0.0055	0.7467	2020.3	24.9	49.9	1971.8	13.8	27.6	1954.6	13.1	26.2	99
OU4z85	821.00	370.10	102.30	0.450	1.76E+06	9.50E+05	0.0611	1.80E-03	0.822	0.026	0.0996	0.0012	0.2472	641.3	31.7	63.4	609.2	7.2	14.5	611.9	3.5	7.0	100
OU4z86	205.10	83.87	23.88	0.410	2.80E+05	2.50E+05	0.0588	2.20E-03	0.793	0.031	0.0990	0.0013	0.0420	559.7	40.8	81.6	592.9	8.8	17.5	608.5	3.8	7.6	103
OU4z87	85.70	32.38	10.58	0.380	7.00E+05	1.20E+05	0.0625	2.90E-03	0.971	0.045	0.1153	0.0017	0.0525	691.3	49.5	99.0	689.0	11.6	23.2	703.5	4.9	9.8	102
OU4z88	49.00	61.10	29.56	1.250	6.00E+05	1.10E+05	0.0693	3.30E-03	1.683	0.083	0.1769	0.0026	0.2249	907.7	49.0	98.1	1002.1	15.7	31.4	1050.0	7.1	14.2	105
OU4z89	31.46	98.90	25.35	3.140	1.00E+03	4.10E+04	0.0627	4.70E-03	0.790	0.061	0.0924	0.0020	0.1041	698.1	79.8	159.7	591.2	17.3	34.6	569.7	5.9	11.8	96
OU4z90	362.90	24.72	26.67	0.070	-1.40E+06	2.50E+06	0.1862	1.50E-03	11.780	0.340	0.4552	0.0055	0.6209	2741.3	21.7	43.3	2587.1	13.5	27.0	2418.3	12.2	24.4	93
OU4z91	303.00	350.00	99.10	1.160	-3.20E+05	4.80E+05	0.0614	2.00E-03	0.841	0.029	0.1012	0.0012	0.1725	653.3	35.0	69.9	619.7	8.0	16.0	621.4	3.5	7.0	100
OU4z92	173.10	162.30	47.70	0.940	-3.20E+05	2.80E+05	0.0602	2.40E-03	0.837	0.034	0.1030	0.0014	0.1508	610.8	43.1	86.2	617.5	9.4	18.8	632.0	4.1	8.2	102
OU4z94	363.20	195.70	64.90	0.540	2.40E+06	1.10E+06	0.0648	2.00E-03	1.029	0.035	0.1177	0.0014	0.2284	767.8	32.5	65.0	718.4	8.7	17.5	717.3	4.0	8.1	100
OU4z95	195.70	83.10	38.70	0.420	-6.90E+05	8.40E+05	0.0736	2.40E-03	1.679	0.058	0.1677	0.0022	0.1956	1030.5	33.0	65.9	1000.6	11.0	22.0	999.4	6.1	12.1	100
OU4z96	1000.00	176.40	37.45	0.180	1.00E+04	2.30E+06	0.0628	1.80E-03	0.656	0.020	0.0765	0.0011	0.4074	701.8	30.5	61.0	511.9	6.1	12.3	475.1	3.3	6.6	93
OU4z97	720.40	52.20	11.61	0.070	3.50E+06	2.60E+06	0.0600	1.80E-03	0.711	0.023	0.0873	0.0010	0.1221	601.8	32.5	65.0	545.3	6.8	13.6	539.5	3.0	5.9	99
OU4z98	260.90	129.10	59.28	0.490	9.30E+06	4.40E+06	0.0770	2.40E-03	1.833	0.060	0.1752	0.0022	0.2248	1121.2	31.1	62.2	1057.4	10.7	21.5	1040.7	6.0	12.1	98
OU4z99	664.00	150.70	31.62	0.230	-1.70E+07	1.00E+07	0.0572	1.70E-03	0.581	0.019	0.0747	0.0010	0.5159	500.4	32.7	65.4	465.1	6.1	12.2	464.5	3.0	6.0	100
OU4z100	341.60	393.40	446.90	1.150	-2.20E+06	6.20E+06	0.1681	1.40E-03	10.459	0.310	0.4497	0.0057	0.5793	2562.6	22.1	44.2	2476.3	13.7	27.4	2393.9	12.7	25.3	97
OU4z101	716.00	595.00	234.50	0.830	1.70E+06	3.80E+06	0.0744	2.10E-03	1.606	0.050	0.1584	0.0024	0.5536	1053.2	28.4	56.8	972.6	9.7	19.5	947.9	6.7	13.4	97
OU4z102	139.20	86.00	85.60	0.620	-2.30E+06	1.60E+06	0.1254	1.60E-03	6.534	0.200	0.3760	0.0046	0.2672	2055.5	25.0	50.1	2050.5	13.5	26.9	2057.6	10.8	21.6	100
OU4z103	304.80	274.40	82.50	0.900	-6.50E+05	7.80E+05	0.0618	2.00E-03	0.887	0.030	0.1049	0.0013	0.0387	667.2	34.6	69.3	644.8	8.1	16.1	642.9	3.8	7.6	100
OU4z105	797.00	157.20	74.50	0.200	-2.70E+06	5.10E+06	0.1261	9.00E-04	5.487	0.160	0.3124	0.0042	0.7342	2060.5	22.9	45.7	1898.6	12.5	25.0	1752.5	10.3	20.6	92
OU4z106	502.00	138.10	42.90	0.280	3.40E+06	1.40E+06	0.0618	1.80E-03	0.924	0.030	0.1084	0.0013	0.2516	668.6	31.2	62.3	664.5	7.9	15.8	663.2	3.8	7.6	100
OU4z107	167.30	82.30	52.15	0.490	6.30E+05	9.00E+05	0.1231	1.60E-03	5.170	0.190	0.3049	0.0062	0.8252	2013.1	25.1	50.1	1847.7	15.6	31.2	1715.6	15.3	30.6	93
OU4z108	496.00	167.40	86.40	0.340	7.00E+06	1.20E+06	0.0744	2.10E-03	1.854	0.056	0.1801	0.0021	0.2047	1053.2	28.4	56.8	1064.9	10.0	19.9	1067.5	5.7	11.5	100
OU4z109	288.70	200.70	51.59	0.700	-2.50E+05	3.80E+05	0.0618	2.20E-03	0.779	0.029	0.0910	0.0012	0.1431	667.2	38.1	76.2	584.9	8.3	16.5	561.6	3.5	7.1	96
OU4z110	405.30	164.70	162.80	0.410	-1.80E+06	2.20E+06	0.1250	9.90E-04	6.294	0.180	0.3627	0.0042	0.3854	2034.5	23.3	46.6	2017.6	12.5	25.0	1995.0	9.9	19.9	99
OU4z111	437.60	138.40	32.10	0.320	-6.60E+05	5.30E+05	0.0560	1.90E-03	0.616	0.023	0.0793	0.0010	0.0462	452.4	37.7	75.3	487.3	7.2	14.4	491.7	2.9	5.7	101
OU4z112	594.90	111.00	38.91	0.190	9.30E+05	7.90E+05	0.0629	1.80E-03	0.994	0.031	0.1146	0.0013	0.1708	704.5	30.5	60.9	700.8	7.9	15.8	699.5	3.8	7.5	100
OU4z113	244.50	62.70	23.10	0.260	4.00E+05	3.20E+05	0.0656	2.10E-03	1.215	0.042	0.1326	0.0017	0.1484	793.6	33.6	67.1	807.5	9.6	19.2	802.7	4.8	9.7	99
OU4z114	219.70	426.60	123.20	1.940	6.00E+05	2.00E+05	0.0628	2.20E-03	0.895	0.032	0.1011	0.0013	0.0273	701.5	37.3	74.6	649.1	8.6	17.1	621.0	3.8	7.6	96
OU4z115	196.00	55.80	32.24	0.280	1.50E+05	2.90E+05	0.0751	2.30E-03	2.062	0.067	0.1964	0.0023	0.1739	1071.2	30.8	61.5	1136.3	11.1	22.2	1156.0	6.2	12.4	102
OU4z116	338.20	263.80	132.00	0.780	2.80E+05	5.50E+05	0.0755	2.10E-03	1.973	0.060	0.1888	0.0024	0.3261	1082.4	27.9	55.8	1106.3	10.2	20.5	1114.9	6.5	13.0	101
OU4z118	252.30	63.80	18.76	0.250	9.00E+05	1.90E+05	0.0599	2.10E-03	0.871	0.033	0.1031	0.0013	0.1158	600.0	38.0	75.9	636.1	8.9	17.9	632.3	3.8	7.6	99
OU4z119	155.10	101.30	32.75	0.650	9.00E+05	1.30E+05	0.0631	2.40E-03	0.962	0.037	0.1083	0.0015	0.0966	711.6	40.4	80.8	684.3	9.6	19.1	662.9	4.4	8.7	97
OU4z120	661.00	161.20	125.30	0.240	2.70E+06	2.10E+06	0.1324	1.10E-03	6.601	0.200	0.3581	0.0046	0.6856	2116.8	23.3	46.7	2059.5	13.3	26.7	1973.2	10.9	21.8	96
OU4z121	133.00	221.40	61.94	1.660	6.30E+04	8.90E+04	0.0605	2.60E-03	0.788	0.035	0.0937	0.0014	0.0942	621.5	46.4	92.7	590.0	9.9	19.9	577.4	4.1	8.3	98
OU4z122	237.10	230.40	115.40	0.970	-1.10E+05	2.60E+05	0.0740	2.30E-03	1.804	0.061	0.1754	0.0021	0.2299	1041.5	31.4	62.7	1046.9	11.0	22.1	1041.8	5.8	11.5	100
OU4z123	127.10	126.70	39.20	1.000	-1.57E+05	9.20E+04	0.0645	2.70E-03	0.960	0.041	0.1079	0.0015	-0.0303	758.1	44.2	88.3	683.3	10.6	21.2	660.5	4.4	8.7	97
OU4z124	238.40	205.00	55.70	0.860	-4.90E+05	2.20E+05	0.0682	2.50E-03	1.204	0.045	0.1264	0.0024	0.3818	874.6	38.0	75.9	802.4	10.4	20.7	767.3	6.9	13.7	96
OU4z125	242.00	2.24	0.72	0.010	-6.00E+05	1.30E+05	0.0595	2.20E-03	0.825	0.032	0.0981	0.0012	0.0783	585.4	40.1	80.2	610.8	8.9	17.8	603.1	3.5	7.0	99
OU4z126	764.00	817.00	313.80	1.070	5.90E+05	5.80E+05	0.0725	2.00E-03	1.564	0.048	0.1539	0.0021	0.5691	1000.3	28.0	56.0	956.1	9.5	19.0	922.8	5.9	11.7	97
OU4z127	104.68	101.79	29.69	0.970	5.70E+04	4.90E+04	0.0608	2.50E-03	0.872	0.037	0.1024	0.0015	0.1350	632.2	44.3	88.5	636.7	10.0	20.1	628.5	4.4	8.8	99
OU4z128	257.80	195.70	102.40	0.760	2.40E+05	2.30E+05	0.0731	2.20E-03	1.870	0.060	0.1821	0.0021	0.2212	1016.7	30.5	61.0	1070.5	10.6	21.2	1078.4	5.7	11.5	101
OU4z129	233.30	105.90	32.66	0.450	1.40E+05	1.10E+05	0.0615	2.10E-03	0.888	0.034	0.1048	0.0018	0.4552	656.8	36.6	73.2	645.3	9.1	18.3	642.5	5.3	10.5	100
OU4z130	836.00	194.00	41.70	0.230	5.00E+03	3.20E+05	0.0634	1.90E-03	0.830	0.027	0.0937	0.0015	0.4272	721.7	31.8	63.6	613.6	7.5	15.0	577.4	4.4	8.8	94
OU4z131	121.30	108.50	30.14	0.890	-4.00E+04	4.50E+04	0.0600	2.70E-03	0.777	0.036	0.0909	0.0013	0.0719	603.6	48.7	97.4	583.8	10.3	20.6	560.9	3.8	7.7	96
OU4z132	396.20	149.10	134.90	0.380	3.00E+05	6.30E+05	0.1658	1.50E-03	9.340	0.300	0.4043	0.0058	0.7807	2489.1	22.7	45.4	2372.0	14.7	29.4	2188.8	13.3	26.6	92
OU4z134	458.00	221.00	56.90	0.480	2.00E+05	1.90E+05	0.0623	1.90E-03	0.912	0.030	0.1039	0.0013	0.1414	684.4	32.6	65.1	658.1	8.0	15.9	637.3	3.8	7.6	97
OU4z135	253.70	355.50	61.00	1.400	6.20E+04	6.80E+04	0.0609	2.20E-03	0.608	0.023	0.0704	0.0011	0.1308	635.7	38.9	77.7	482.3	7.3	14.5	438.6	3.3	6.6	91
OU4z136	291.10	182.80	54.50	0.630	-5.00E+05	1.10E+05	0.0601	2.10E-03	0.871	0.031	0.1019	0.0013	0.0267	607.2	37.8	75.6	636.1	8.4	16.8	625.5	3.8	7.6	98
OU4z138	146.70	195.10	163.00	1.330	-2.20E+05	1.70E+05	0.1250	1.80E-03	5.497	0.170	0.3192	0.0042	0.4625	2001.6	26.0	51.9	1900.1	13.3	26.5	1785.8	10.3	20.5	94

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OU4z139	290.20	354.70	92.80	1.220	-1.44E+05	9.50E+04	0.0580	2.00E-03	0.751	0.028	0.0909	0.0012	0.1773	529.8	37.8	75.5	568.8	8.1	16.2	560.7	3.5	7.1	99
OU4z141	326.00	369.00	97.80	1.130	1.00E+05	1.00E+05	0.0644	2.20E-03	0.897	0.033	0.0983	0.0013	0.1913	754.8	36.1	72.1	650.1	8.8	17.6	604.6	3.8	7.6	93
OU4z142	106.50	64.60	39.30	0.610	8.90E+04	7.00E+04	0.0857	2.90E-03	2.686	0.097	0.2222	0.0029	0.1673	1331.4	32.7	65.5	1324.6	13.3	26.7	1293.5	7.6	15.3	98
OU4z143	798.00	1860.00	121.80	2.330	4.00E+05	3.60E+05	0.0772	2.10E-03	1.759	0.055	0.1624	0.0025	0.6388	1126.9	27.1	54.2	1030.5	10.1	20.2	970.1	6.9	13.9	94
OU4z144	355.00	248.00	56.60	0.700	1.50E+05	1.20E+05	0.0574	1.90E-03	0.694	0.025	0.0857	0.0012	0.2669	506.9	36.4	72.8	535.2	7.5	15.0	530.1	3.6	7.1	99
OU4z147	556.00	216.60	58.10	0.390	1.30E+05	1.70E+05	0.0608	1.90E-03	0.764	0.026	0.0894	0.0010	0.2100	632.2	33.6	67.3	576.3	7.5	15.0	551.9	3.0	5.9	96
OU4z148	456.00	194.10	49.99	0.430	1.50E+05	2.00E+05	0.0726	2.10E-03	1.510	0.051	0.1484	0.0024	0.6312	1002.8	29.4	58.7	934.4	10.3	20.6	892.0	6.7	13.5	95
Discordant data																							
OU4z4	802.00	122.10	96.50	0.150	4.00E+05	2.10E+05	0.1050	2.90E-03	2.568	0.084	0.1803	0.0026	0.8425	1714.3	25.4	50.8	1291.6	11.9	23.9	1068.6	7.1	14.2	83
OU4z12	456.00	444.00	129.70	0.970	2.00E+05	1.30E+05	0.0695	2.40E-03	0.858	0.033	0.0912	0.0012	0.4434	913.6	35.5	71.1	629.0	9.0	18.0	562.3	3.5	7.1	89
OU4z23	332.40	657.90	344.30	1.980	4.60E+05	2.40E+05	0.1169	3.20E-03	3.502	0.110	0.2165	0.0033	0.7106	1909.4	24.6	49.1	1527.7	12.4	24.8	1263.4	8.7	17.5	83
OU4z24	1123.00	597.00	117.70	0.530	-1.48E+06	7.00E+05	0.1279	3.40E-03	3.186	0.096	0.1809	0.0027	0.7754	2069.7	23.4	46.8	1453.8	11.6	23.3	1071.9	7.4	14.7	74
OU4z38r	149.40	72.40	17.83	0.480	2.40E+04	4.70E+04	0.0831	3.10E-03	1.461	0.069	0.1280	0.0030	0.7020	1271.6	36.4	72.8	914.4	14.2	28.4	776.4	8.6	17.1	85
OU4z64	120.20	40.70	53.10	0.340	1.25E+05	6.30E+04	0.1471	4.90E-03	2.905	0.110	0.1448	0.0019	0.3528	2312.5	28.6	57.2	1383.2	14.3	28.6	871.7	5.3	10.7	63
OU4z71	154.50	72.30	35.62	0.470	8.00E+05	1.70E+05	0.1015	3.10E-03	2.685	0.088	0.1927	0.0025	0.2271	1651.7	28.3	56.6	1324.3	12.1	24.2	1136.0	6.8	13.5	86
OU4z93	503.00	579.00	217.20	1.150	6.00E+06	1.30E+06	0.1579	4.50E-03	2.960	0.160	0.1373	0.0050	0.9882	2433.3	24.1	48.3	1397.4	20.5	41.0	829.4	14.2	28.3	59
OU4z104	1368.00	2400.00	154.50	1.750	-6.00E+06	1.20E+06	0.0759	2.20E-03	0.591	0.021	0.0574	0.0016	0.7897	1092.4	29.0	58.1	471.5	6.7	13.4	359.8	4.9	9.8	76
OU4z117	254.50	348.00	83.80	1.370	-3.50E+05	4.90E+05	0.1140	3.40E-03	3.847	0.140	0.2443	0.0052	0.6153	1864.1	26.9	53.8	1602.6	14.7	29.3	1409.0	13.5	26.9	88
OU4z133	320.90	152.50	30.00	0.480	8.00E+04	9.20E+04	0.0656	2.20E-03	0.645	0.024	0.0686	0.0009	0.3270	793.6	35.2	70.3	505.4	7.4	14.8	427.8	2.7	5.4	85
OU4z137	811.00	1213.00	365.00	1.500	-4.70E+05	3.70E+05	0.1148	3.10E-03	2.704	0.085	0.1656	0.0023	0.7463	1876.7	24.3	48.7	1329.6	11.6	23.3	987.8	6.4	12.7	74
OU4z140	903.00	857.00	90.00	0.950	-1.80E+05	1.30E+05	0.0972	3.20E-03	0.800	0.027	0.0577	0.0011	0.4096	1571.1	30.8	61.7	596.8	7.6	15.2	361.6	3.4	6.7	61
OU4z145	683.00	121.10	35.80	0.180	8.00E+05	2.10E+05	0.0702	2.10E-03	1.030	0.032	0.1044	0.0013	0.2934	934.2	30.7	61.4	718.9	8.0	16.0	640.1	3.8	7.6	89
OU4z146	845.00	282.40	58.02	0.330	-1.00E+05	1.60E+05	0.0646	2.00E-03	0.625	0.021	0.0689	0.0009	0.3950	761.3	32.6	65.3	493.0	6.6	13.1	429.5	2.8	5.6	87
OU4z149	941.00	1461.00	198.00	1.550	-1.30E+05	1.90E+05	0.0723	2.10E-03	0.730	0.024	0.0717	0.0012	0.5302	994.4	29.5	59.0	556.6	7.0	14.1	446.4	3.6	7.2	80

Footnotes:

- Analysis references: OU4z is zircon from sample OU4 (mount CT19-1), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.42: Sample TIF1 (LA-ICPMS)

IGSN: IEACC00016 Coordinate UTM: Zone 29S, 3752612 m N, 750380 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
TIF1z1	91.90	31.11	16.93	0.340	-5.30E+04	1.30E+04	0.0772	2.20E-03	2.043	0.055	0.1891	0.0021	0.2471	1126	28.5	57	1130	9.0	18	1116	5.5	11	99
TIF1z3	318.60	279.50	57.80	0.850	-2.95E+04	6.60E+03	0.0672	1.70E-03	0.898	0.021	0.0964	0.0009	0.0770	844	26.5	53	651	5.5	11	593	2.5	5	91
TIF1z6	273.50	97.30	92.00	0.360	1.09E+06	2.50E+05	0.1277	1.50E-03	6.306	0.094	0.3566	0.0028	0.2512	2067	10.5	21	2019	6.5	13	1966	6.5	13	97
TIF1z7	176.70	70.22	32.27	0.390	6.60E+05	1.50E+05	0.0734	1.90E-03	1.700	0.041	0.1672	0.0016	0.1634	1025	26.0	52	1009	7.5	15	997	4.5	9	99
TIF1z8	330.20	285.70	81.90	0.860	3.53E+04	7.50E+03	0.0615	1.70E-03	0.846	0.021	0.0997	0.0009	0.1380	657	29.5	59	622	6.0	12	612	2.5	5	98
TIF1z10	234.60	66.40	39.99	0.280	-2.90E+04	7.30E+03	0.0811	1.70E-03	2.369	0.045	0.2109	0.0017	0.1067	1224	20.5	41	1233	7.0	14	1234	4.5	9	100
TIF1z11	525.00	441.00	384.00	0.840	-2.30E+05	5.50E+04	0.1082	1.00E-03	4.537	0.063	0.3032	0.0023	0.4517	1769	8.5	17	1738	6.0	12	1707	5.5	11	98
TIF1z12	62.43	28.97	14.02	0.460	3.08E+04	7.40E+03	0.0760	2.90E-03	1.796	0.067	0.1709	0.0020	0.1253	1095	38.0	76	1044	12.0	24	1017	5.5	11	97
TIF1z17	209.00	249.00	62.60	0.580	-5.80E+05	1.50E+05	0.0768	1.80E-03	1.763	0.046	0.1683	0.0028	0.5651	1116	23.5	47	1032	8.5	17	1003	7.5	15	97
TIF1z19	497.00	82.10	42.40	0.160	-6.80E+04	1.80E+04	0.0735	1.40E-03	1.751	0.028	0.1725	0.0013	0.1405	1029	19.0	38	1028	5.0	10	1026	3.5	7	100
TIF1z20	348.60	336.30	69.31	0.970	-6.40E+04	1.50E+04	0.0587	1.60E-03	0.578	0.015	0.0720	0.0007	0.1463	556	29.5	59	463	5.0	10	448	2.0	4	97
TIF1z22	187.10	128.00	34.57	0.680	-6.30E+03	1.80E+03	0.0640	2.40E-03	0.744	0.028	0.0845	0.0012	0.2115	742	39.5	79	565	8.0	16	523	3.5	7	93
TIF1z23	111.20	90.00	109.20	0.810	8.10E+04	1.80E+04	0.1649	2.30E-03	10.550	0.170	0.4630	0.0038	0.2143	2507	11.5	23	2484	7.5	15	2453	8.5	17	99
TIF1z25	197.20	206.00	136.40	1.040	8.00E+04	1.70E+04	0.1150	1.70E-03	4.298	0.089	0.2719	0.0032	0.5776	1880	13.5	27	1693	8.5	17	1550	8.0	16	92
TIF1z26	202.70	172.60	44.30	0.850	6.10E+04	1.30E+04	0.0596	1.90E-03	0.726	0.021	0.0886	0.0009	0.1017	589	34.5	69	554	6.0	12	547	2.5	5	99
TIF1z28	99.90	45.60	14.40	0.450	-2.04E+05	4.60E+04	0.0628	2.60E-03	0.919	0.035	0.1056	0.0014	0.1119	701	44.0	88	662	9.5	19	647	4.0	8	98
TIF1z29	627.70	297.00	277.00	0.450	-2.50E+05	4.80E+04	0.1772	1.60E-03	10.064	0.140	0.4119	0.0036	0.7007	2627	7.5	15	2441	6.5	13	2224	8.0	16	91
TIF1z31	343.40	58.90	15.19	0.170	-5.50E+04	1.30E+04	0.0611	1.70E-03	0.671	0.020	0.0803	0.0010	0.5043	643	30.0	60	521	6.0	12	498	3.0	6	96
TIF1z32	16260.00	14700.00	2139.00	0.910	-1.04E+06	2.10E+05	0.0553	8.80E-04	0.410	0.005	0.0539	0.0004	0.4911	423	18.0	36	349	2.0	4	338	1.0	2	97
TIF1z34	432.00	354.00	98.40	0.800	-9.90E+04	2.60E+04	0.0657	1.60E-03	0.938	0.020	0.1039	0.0008	0.1372	797	25.5	51	672	5.0	10	637	2.5	5	95
TIF1z35	118.70	99.40	30.89	0.830	-2.12E+05	5.00E+04	0.0639	2.80E-03	0.894	0.038	0.1018	0.0013	0.0663	738	46.5	93	649	10.0	20	625	4.0	8	96
TIF1z36	116.70	139.50	84.80	1.200	-1.70E+04	4.30E+03	0.0983	2.40E-03	3.238	0.086	0.2401	0.0053	0.6293	1592	23.0	46	1466	10.5	21	1387	14.0	28	95
TIF1z38	115.30	58.80	56.20	0.510	-1.61E+04	5.20E+03	0.1243	1.90E-03	6.393	0.120	0.3721	0.0034	0.2189	2019	13.5	27	2031	8.0	16	2039	8.0	16	100
TIF1z39	268.40	461.80	121.60	1.730	-3.77E+04	9.30E+03	0.0651	1.90E-03	0.857	0.024	0.0952	0.0009	0.3607	778	30.5	61	628	6.5	13	586	3.0	6	93
TIF1z40	44.60	17.37	11.42	0.390	-2.68E+04	6.00E+03	0.0814	3.10E-03	2.504	0.094	0.2238	0.0027	0.1101	1231	37.5	75	1273	13.5	27	1302	7.0	14	102
TIF1z41c	259.90	292.20	79.58	1.140	-2.07E+05	4.80E+04	0.0617	1.90E-03	0.801	0.023	0.0941	0.0010	0.0857	664	33.0	66	597	6.5	13	580	3.0	6	97
TIF1z41r	69.50	94.20	26.40	1.370	-2.35E+03	7.30E+02	0.0636	3.80E-03	0.829	0.045	0.0949	0.0013	-0.1251	728	63.5	127	613	12.5	25	584	4.0	8	95
TIF1z42	103.63	60.09	63.35	0.590	-4.30E+04	1.00E+04	0.1322	2.00E-03	7.066	0.120	0.3887	0.0035	0.0957	2127	13.0	26	2120	7.5	15	2117	8.0	16	100
TIF1z43	47.80	20.52	9.81	0.430	-1.60E+04	3.30E+03	0.0762	3.20E-03	1.767	0.068	0.1705	0.0023	-0.0548	1100	42.0	84	1033	12.5	25	1015	6.5	13	98
TIF1z44	167.90	130.40	37.42	0.780	-2.60E+04	5.30E+03	0.0612	2.30E-03	0.837	0.028	0.0988	0.0011	-0.0035	646	40.5	81	617	7.5	15	607	3.0	6	98
TIF1z45	319.90	248.10	73.70	0.770	-2.70E+04	7.00E+03	0.0621	1.80E-03	0.862	0.021	0.1010	0.0009	-0.0318	678	31.0	62	631	5.5	11	620	2.5	5	98
TIF1z46	332.40	202.00	97.90	0.610	-3.60E+04	1.00E+04	0.0724	1.60E-03	1.687	0.033	0.1688	0.0014	0.0750	997	22.5	45	1004	6.0	12	1005	4.0	8	100
TIF1z47	323.00	232.70	54.10	0.710	-1.86E+05	4.40E+04	0.0603	1.80E-03	0.629	0.019	0.0757	0.0008	0.2944	614	32.0	64	495	6.0	12	471	2.5	5	95
TIF1z49	210.30	85.20	26.80	0.400	-6.50E+04	1.60E+04	0.0629	2.00E-03	0.897	0.029	0.1024	0.0016	0.4217	705	34.0	68	650	8.0	16	628	4.5	9	97
TIF1z50	210.90	182.70	158.50	0.870	-4.00E+04	1.00E+04	0.1102	1.40E-03	4.848	0.077	0.3168	0.0024	0.1235	1803	11.5	23	1793	6.5	13	1774	6.0	12	99
TIF1z51	473.80	165.50	48.75	0.350	1.52E+05	3.60E+04	0.0609	1.50E-03	0.854	0.018	0.1009	0.0008	-0.0160	636	26.5	53	627	5.0	10	620	2.5	5	99
TIF1z54	147.90	68.30	62.40	0.430	-1.61E+05	3.70E+04	0.2159	2.40E-03	14.200	0.340	0.4798	0.0098	0.9447	2950	9.0	18	2763	11.5	23	2526	21.5	43	91
TIF1z55	260.90	114.70	24.40	0.440	-2.30E+04	6.10E+03	0.0574	1.90E-03	0.525	0.016	0.0665	0.0007	0.0096	507	36.5	73	428	5.5	11	415	2.0	4	97
TIF1z56	570.00	115.30	52.30	0.190	-1.05E+05	2.20E+04	0.0717	1.40E-03	1.606	0.026	0.1624	0.0012	0.1861	978	20.0	40	973	5.0	10	970	3.5	7	100
TIF1z57	322.80	91.90	45.40	0.280	-1.18E+05	2.90E+04	0.0749	1.70E-03	1.757	0.034	0.1713	0.0014	0.1080	1066	23.0	46	1030	6.5	13	1019	4.0	8	99
TIF1z58	210.80	126.50	29.42	0.600	1.36E+05	3.40E+04	0.0647	2.10E-03	0.825	0.026	0.0929	0.0010	0.2058	765	34.0	68	611	7.0	14	573	3.0	6	94
TIF1z60	320.00	203.00	59.90	0.630	-2.38E+04	5.80E+03	0.0622	1.80E-03	0.869	0.023	0.1017	0.0009	0.1071	681	31.0	62	635	6.0	12	624	2.5	5	98
TIF1z61	86.00	45.91	47.60	0.530	-7.40E+04	1.70E+04	0.1399	2.40E-03	7.690	0.150	0.3975	0.0042	0.2497	2226	15.0	30	2195	9.0	18	2158	9.5	19	98
TIF1z62	210.30	130.50	114.00	0.630	6.10E+04	1.30E+04	0.1096	1.50E-03	4.867	0.077	0.3225	0.0028	0.1080	1793	12.5	25	1797	6.5	13	1802	7.0	14	100
TIF1z64	422.30	77.30	103.20	0.180	-1.75E+05	4.20E+04	0.1966	1.70E-03	14.633	0.190	0.5371	0.0038	0.4226	2798	7.0	14	2792	6.0	12	2771	8.0	16	99
TIF1z65	806.00	139.00	44.10	0.140	-1.48E+05	3.30E+04	0.0653	1.40E-03	0.867	0.017	0.0964	0.0008	0.2221	784	22.5	45	634	4.5	9	593	2.5	5	94
TIF1z66	222.70	259.60	44.90	1.200	-2.09E+04	5.00E+03	0.0544	2.10E-03	0.429	0.015	0.0575	0.0006	0.1029	388	43.5	87	362	5.5	11	361	2.0	4	99
TIF1z68	348.20	102.80	48.44	0.300	5.10E+05	1.00E+05	0.0725	1.50E-03	1.678	0.030	0.1674	0.0014	0.1723	1000	21.0	42	1000	5.5	11	998	4.0	8	100
TIF1z69	273.40	108.00	38.70	0.360	-4.08E+04	9.70E+03	0.0663	1.80E-03	1.210	0.031	0.1314	0.0012	0.1489	816	28.5	57	805	7.0	14	796	3.5	7	99
TIF1z70	233.80	105.20	13.26	0.450	-1.04E+04	2.50E+03	0.0511	2.50E-03	0.297	0.014	0.0425	0.0005	0.0758	245	56.5	113	264	5.5	11	268	1.5	3	102
TIF1z71	191.00	118.70	30.80	0.620	-2.64E+04	8.00E+03	0.0639	2.60E-03	0.770	0.025	0.0880	0.0012	-0.1939	738	43.0	86	580	7.0	14	544	3.5	7	94
TIF1z73	172.40	164.10	46.70	0.940	3.25E+05	6.10E+04	0.0614	2.00E-03	0.852	0.026	0.1006	0.0010	-0.0044	653	35.0	70	626	7.0	14	618	3.0	6	99
TIF1z74	198.30	77.20	20.75	0.390	9.50E+04	2.00E+04	0.0593	2.00E-03	0.738	0.023	0.0901	0.0009	0.0807	578	36.5	73	561	6.5	13	556	2.5	5	99
TIF1z75	333.60	126.40	37.48	0.380	5.70E+04	1.50E+04	0.0631	1.80E-03	0.870	0.022	0.1003	0.0010	0.1663	712	30.5	61	636	6.0	12	616	3.0	6	97
TIF1z76	73.70	65.90	22.40	0.890	7.00E+04	1.50E+04	0.0694	3.00E-03	1.091	0.045	0.1149	0.0014	0.1351	911	44.5	89	749	11.0	22	701	4.0	8	94
TIF1z78	107.90	72.20	19.05	0.660	1.03E+04	2.30E+03	0.0614	2.40E-03	0.759	0.029	0.0908	0.0011	0.1033	653	42.0	84	573	8.5	17	561	3.5	7	98
TIF1z79	89.70	76.50	108.90	0.850	8.00E+04	1.60E+04	0.2143	2.60E-03	16.720	0.250	0.5654	0.0052	0.3451	2938	10.0	20	2919	7.0	14	2889	10.5	21	99
TIF1z81	37.50	33.00	8.65	0.900	8.40E+03	2.30E+03	0.0526	4.20E-03	0.657	0.051	0.0900	0.0017	-0.0834	312	91.0	182	513	15.5	31	556	5.0	10	108
TIF1z82	370.00	233.00	42.40	0.610	-7.90E+04	1.90E+04	0.0571	1.60E-03	0.511	0.013	0.0653	0.0006	-0.0276	495	31.0	62	419	4.5	9	408	2.0	4	97
TIF1z84	79.13	53.20	53.67	0.670	-1.35E+05	3.20E+04	0.1288	2.30E-03	6.740	0.130	0.3796	0.0035	0.0197	2082	15.5	31	2078	8.5	17	2074	8.0	16	100

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
TIF1z85	168.00	176.80	56.40	1.050	-1.32E+04	3.50E+03	0.0599	1.90E-03	0.883	0.028	0.1067	0.0011	0.2452	600	34.5	69	643	7.5	15	654	3.0	6	102
TIF1z86	314.70	131.40	110.70	0.420	-3.29E+05	6.60E+04	0.1092	1.20E-03	4.748	0.069	0.3146	0.0025	0.2821	1786	10.0	20	1776	6.0	12	1763	6.0	12	99
TIF1z87	426.10	37.59	18.50	0.090	-3.13E+04	8.70E+03	0.0738	1.60E-03	1.678	0.033	0.1653	0.0013	0.2838	1036	22.0	44	1000	6.5	13	986	3.5	7	99
TIF1z88	55.10	48.30	39.06	0.880	-2.25E+05	5.30E+04	0.1316	2.80E-03	5.820	0.230	0.3220	0.0120	0.7539	2119	18.5	37	1949	17.0	34	1799	29.5	59	92
TIF1z89	276.60	113.40	64.90	0.410	1.87E+05	4.40E+04	0.0904	1.90E-03	2.961	0.054	0.2372	0.0022	0.1631	1434	20.0	40	1398	7.0	14	1372	5.5	11	98
TIF1z90	243.20	154.80	84.00	0.650	-2.16E+04	5.20E+03	0.0793	1.80E-03	2.204	0.043	0.1993	0.0016	0.0149	1180	22.5	45	1182	7.0	14	1172	4.5	9	99
TIF1z91	400.50	245.10	73.40	0.610	3.60E+04	9.00E+03	0.0608	1.50E-03	0.868	0.019	0.1031	0.0009	0.1016	632	26.5	53	634	5.0	10	632	2.5	5	100
TIF1z92	60.70	51.30	15.80	0.840	-5.00E+03	1.10E+03	0.0643	2.90E-03	0.978	0.045	0.1100	0.0015	0.0762	752	47.5	95	693	11.5	23	673	4.5	9	97
TIF1z93	380.00	128.10	68.20	0.320	-8.60E+05	1.90E+05	0.0785	1.70E-03	1.616	0.053	0.1485	0.0036	0.8501	1160	21.5	43	976	10.5	21	893	10.0	20	91
TIF1z94	550.20	234.90	62.60	0.420	3.36E+04	7.90E+03	0.0585	1.40E-03	0.751	0.016	0.0927	0.0007	0.0848	549	26.0	52	569	4.5	9	572	2.0	4	101
TIF1z97	239.00	169.70	230.60	0.710	-5.60E+04	1.50E+04	0.2093	1.90E-03	15.380	0.210	0.5321	0.0039	0.3916	2900	7.5	15	2839	6.5	13	2750	8.0	16	97
TIF1z98	455.40	64.30	64.60	0.140	-2.03E+05	4.70E+04	0.1310	1.30E-03	6.791	0.092	0.3757	0.0029	0.2295	2111	8.5	17	2085	6.0	12	2056	7.0	14	99
TIF1z99	82.87	45.57	23.32	0.550	2.41E+04	5.70E+03	0.0788	2.50E-03	1.892	0.057	0.1751	0.0019	0.1883	1167	31.5	63	1078	10.0	20	1040	5.0	10	96
Discordant data																							
TIF1z2	138.30	111.40	62.90	0.810	1.37E+05	5.10E+04	0.1420	1.00E-02	2.120	0.240	0.0987	0.0023	0.9682	2252	61.0	122	1155	39.0	78	607	6.5	13	53
TIF1z4	75.98	140.50	42.83	1.860	1.71E+05	4.00E+04	0.0767	3.70E-03	1.088	0.049	0.1037	0.0013	-0.1173	1113	48.0	96	748	12.0	24	636	4.0	8	85
TIF1z5	55.86	48.60	11.41	0.870	1.28E+04	2.80E+03	0.0823	3.50E-03	1.463	0.062	0.1281	0.0017	0.1980	1253	41.5	83	915	13.0	26	777	5.0	10	85
TIF1z9	308.00	191.20	67.90	0.630	8.30E+04	2.40E+04	0.0953	1.90E-03	2.100	0.036	0.1608	0.0017	0.3121	1534	19.0	38	1149	6.0	12	961	4.5	9	84
TIF1z13	92.87	34.31	16.57	0.370	-3.70E+03	1.80E+03	0.0822	2.60E-03	2.099	0.064	0.1865	0.0020	0.2388	1250	31.0	62	1148	10.5	21	1102	5.5	11	96
TIF1z14	200.00	1802.00	1522.00	9.010	-5.14E+02	2.00E+01	0.7913	1.10E-02	42.490	0.820	0.3849	0.0053	0.6010	4906	10.0	20	3831	9.5	19	2099	12.5	25	55
TIF1z15	364.40	114.60	82.50	0.320	-1.56E+05	3.80E+04	0.1193	2.20E-03	3.938	0.062	0.2393	0.0019	0.3988	1946	16.5	33	1622	6.5	13	1383	5.0	10	85
TIF1z16	402.80	182.40	162.60	0.460	-4.30E+04	1.20E+04	0.1384	2.40E-03	4.890	0.170	0.2551	0.0086	0.9574	2207	15.0	30	1801	14.5	29	1465	22.0	44	81
TIF1z18	420.20	348.00	64.30	0.820	8.20E+04	2.20E+04	0.0783	2.30E-03	0.725	0.017	0.0670	0.0014	0.2099	1154	29.0	58	554	5.0	10	418	4.0	8	76
TIF1z21	365.00	100.00	23.20	0.230	6.50E+04	2.40E+04	0.0597	2.40E-03	0.698	0.026	0.0850	0.0011	0.0871	593	43.5	87	538	8.0	16	526	3.5	7	98
TIF1z24	566.00	106.80	34.10	0.180	-7.00E+03	2.10E+03	0.0992	3.50E-03	0.712	0.021	0.0530	0.0009	-0.0964	1609	33.0	66	546	6.0	12	333	3.0	6	61
TIF1z27	516.90	24.04	25.40	0.050	-4.70E+05	1.10E+05	0.0786	1.70E-03	1.167	0.023	0.1079	0.0009	0.0145	1162	21.5	43	785	5.5	11	661	2.5	5	84
TIF1z30	236.20	287.00	90.50	1.210	-1.36E+04	4.50E+03	0.0776	2.40E-03	1.188	0.033	0.1109	0.0011	0.1001	1137	31.0	62	795	7.5	15	678	3.0	6	85
TIF1z33	2.66	3.23	39.10	1.270	-8.30E+03	3.90E+03	0.7720	2.50E-02	87.800	5.300	0.8180	0.0430	0.8586	4871	23.0	46	4555	30.5	61	3853	76.0	152	85
TIF1z37	89.50	88.20	30.74	0.980	-6.90E+03	1.80E+03	0.0929	3.20E-03	1.314	0.042	0.1023	0.0014	0.3402	1486	32.5	65	852	9.0	18	628	4.0	8	74
TIF1z48	126.20	127.20	27.78	1.020	1.07E+05	2.40E+04	0.0784	3.40E-03	0.930	0.040	0.0858	0.0013	0.2209	1157	43.0	86	668	10.5	21	531	4.0	8	79
TIF1z52	443.00	77.40	30.20	0.160	-6.90E+04	1.80E+04	0.0689	1.80E-03	1.145	0.036	0.1222	0.0023	0.6373	896	27.0	54	775	8.5	17	743	6.5	13	96
TIF1z53	364.00	596.00	172.90	1.620	1.81E+05	4.40E+04	0.0701	1.70E-03	0.932	0.020	0.0960	0.0009	0.1006	931	25.0	50	669	5.5	11	591	2.5	5	88
TIF1z59	74.80	44.51	23.81	0.600	-2.69E+04	6.40E+03	0.1126	3.40E-03	3.048	0.100	0.1970	0.0032	0.4339	1842	27.5	55	1420	12.5	25	1159	8.5	17	82
TIF1z63	2255.00	962.00	856.00	0.430	-1.94E+03	1.00E+02	0.2841	8.20E-03	3.100	0.130	0.0789	0.0016	0.9291	3386	22.5	45	1433	16.0	32	490	5.0	10	34
TIF1z67	258.00	270.00	75.40	1.040	1.85E+05	7.20E+04	0.0943	3.30E-03	0.999	0.033	0.0778	0.0010	0.0288	1514	33.0	66	703	8.5	17	483	3.0	6	69
TIF1z72	337.50	541.00	68.90	1.450	-6.00E+04	1.70E+04	0.0668	2.70E-03	0.526	0.019	0.0568	0.0009	-0.0346	832	42.0	84	429	6.5	13	356	2.5	5	83
TIF1z77	127.30	108.54	30.75	0.850	-2.90E+03	9.30E+02	0.0699	2.90E-03	0.922	0.037	0.0963	0.0014	0.1684	925	42.5	85	663	10.0	20	593	4.0	8	89
TIF1z80	0.00	0.00	0.43	#VALUE!	no value	NAN	no value	NAN	no value	NAN	no value	NAN	NaN	#NUM!	#NUM!	#NUM!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
TIF1z83	727.00	180.20	136.60	0.250	-1.20E+05	1.10E+05	0.1482	2.80E-03	3.540	0.240	0.1700	0.0100	0.9879	2325	16.0	32	1536	27.0	54	1012	27.5	55	66
TIF1z95	274.50	91.90	62.40	0.330	4.90E+04	1.40E+04	0.1293	2.70E-03	4.430	0.120	0.2464	0.0043	0.3106	2088	18.5	37	1718	11.0	22	1420	11.0	22	83
TIF1z96	252.70	216.80	131.40	0.870	2.20E+03	3.90E+03	0.1315	1.80E-03	5.065	0.088	0.2803	0.0041	0.5752	2118	12.0	24	1830	7.5	15	1593	10.5	21	87

Footnotes:

- Analysis references: TIF1z is zircon from sample TIF1 (mount CT18-9), followed by grain number.

Table D.43: Sample TIF2 (LA-ICPMS)

IGSN: IEACC00017 Coordinate UTM: Zone 29S, 3752611 m N, 750354 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
TIF2z1	219.40	174.10	56.43	0.790	3.00E+05	1.40E+05	0.0631	1.40E-03	1.007	0.019	0.1160	0.0016	0.1960	711.6	23.6	47.2	707.4	4.8	9.6	707.3	4.6	9.2	100
TIF2z3	518.90	184.80	32.06	0.360	-1.57E+06	9.10E+05	0.0547	1.50E-03	0.455	0.010	0.0600	0.0008	0.0924	400.0	30.7	61.4	380.8	3.5	7.0	375.8	2.5	5.0	99
TIF2z5	53.86	54.85	32.43	1.020	9.60E+04	7.10E+04	0.0866	3.00E-03	2.622	0.085	0.2197	0.0034	0.2245	1351.6	33.4	66.8	1306.8	11.9	23.8	1280.3	9.0	18.0	98
TIF2z6	150.80	75.20	19.79	0.500	6.70E+04	7.70E+04	0.0584	1.80E-03	0.765	0.020	0.0949	0.0013	0.0531	544.8	33.7	67.4	576.9	5.7	11.5	584.7	3.8	7.7	101
TIF2z7	74.12	96.60	27.52	1.300	2.30E+04	3.40E+04	0.0624	2.70E-03	0.860	0.033	0.1003	0.0017	-0.0759	687.8	46.2	92.3	630.1	9.0	18.0	616.2	5.0	10.0	98
TIF2z8	197.80	330.10	393.10	1.670	-6.40E+05	3.10E+05	0.1641	2.30E-03	10.728	0.110	0.4754	0.0061	0.3780	2498.3	11.8	23.6	2499.9	4.8	9.5	2507.2	13.3	26.7	100
TIF2z9	145.00	110.50	30.10	0.760	-4.20E+04	5.90E+04	0.0594	2.00E-03	0.840	0.026	0.1026	0.0015	0.1340	581.8	36.6	73.1	619.1	7.2	14.3	629.4	4.4	8.8	102
TIF2z10	199.80	56.77	35.76	0.280	6.10E+05	3.00E+05	0.0865	1.80E-03	2.754	0.045	0.2310	0.0030	0.2863	1349.4	20.1	40.2	1343.2	6.1	12.2	1339.7	7.9	15.7	100
TIF2z11	276.20	164.70	115.90	0.600	9.00E+05	3.60E+05	0.0929	1.50E-03	3.372	0.048	0.2622	0.0035	0.4256	1485.8	15.3	30.6	1497.9	5.6	11.1	1501.1	8.9	17.9	100
TIF2z12	398.00	242.60	66.50	0.610	9.00E+05	2.10E+05	0.0590	1.30E-03	0.805	0.015	0.0996	0.0013	0.1619	567.1	24.0	48.0	599.6	4.2	8.4	612.0	3.8	7.6	102
TIF2z13	255.90	145.50	44.22	0.570	2.02E+06	6.90E+05	0.0603	1.50E-03	0.873	0.019	0.1053	0.0014	0.2406	614.4	26.9	53.7	637.2	5.1	10.3	645.5	4.1	8.2	101
TIF2z14	134.00	125.90	105.20	0.940	3.60E+06	1.60E+06	0.1093	2.00E-03	4.825	0.071	0.3202	0.0042	0.1775	1787.8	16.7	33.3	1789.3	6.2	12.4	1790.7	10.3	20.5	100
TIF2z17	614.00	218.00	60.30	0.360	5.00E+05	2.30E+05	0.0666	1.80E-03	0.826	0.017	0.0897	0.0012	-0.0810	825.3	56.4	56.4	611.4	4.7	9.4	553.5	3.5	7.1	91
TIF2z19	221.60	105.80	89.20	0.480	5.60E+05	4.70E+05	0.1072	1.70E-03	4.672	0.053	0.3153	0.0041	0.2333	1752.4	14.5	29.0	1762.2	4.7	9.5	1766.7	10.0	20.1	100
TIF2z20	444.00	242.90	69.90	0.550	4.30E+05	2.70E+05	0.0604	1.30E-03	0.888	0.015	0.1056	0.0014	0.1208	616.9	23.2	46.5	645.3	4.0	8.1	647.0	4.1	8.2	100
TIF2z21	707.00	176.80	27.13	0.250	1.30E+05	2.10E+05	0.0572	1.20E-03	0.489	0.008	0.0622	0.0009	0.2550	497.7	23.1	46.2	404.0	2.8	5.6	388.8	2.6	5.2	96
TIF2z23	616.50	309.00	35.50	0.500	1.17E+06	4.40E+05	0.0631	1.50E-03	0.811	0.013	0.0936	0.0020	0.4421	711.6	25.3	50.5	603.0	3.6	7.3	576.8	5.9	11.8	96
TIF2z24	248.00	162.70	181.40	0.660	7.40E+05	5.70E+05	0.1494	2.10E-03	8.872	0.110	0.4289	0.0060	0.6282	2339.1	12.0	24.1	2324.9	5.7	11.3	2300.8	13.5	27.1	99
TIF2z25	400.60	148.00	22.30	0.370	-9.00E+05	1.00E+05	0.0562	1.40E-03	0.463	0.010	0.0592	0.0008	0.1608	460.3	27.6	55.2	386.6	3.4	6.7	370.6	2.4	4.8	96
TIF2z26	11.63	10.07	5.86	0.870	1.30E+04	1.20E+04	0.0877	4.80E-03	2.750	0.140	0.2281	0.0048	0.1216	1375.9	52.6	105.2	1342.1	18.9	37.9	1324.5	12.6	25.2	99
TIF2z27	273.40	765.00	227.50	2.800	1.30E+05	1.30E+05	0.0617	1.40E-03	0.899	0.018	0.1060	0.0015	0.2685	663.7	24.3	48.6	651.2	4.8	9.6	649.7	4.4	8.7	100
TIF2z28	276.90	172.80	36.06	0.620	4.80E+04	9.10E+04	0.0573	1.70E-03	0.581	0.016	0.0739	0.0010	0.1559	503.1	32.6	65.3	465.1	5.1	10.3	459.5	2.9	5.9	99
TIF2z30	249.00	100.90	15.65	0.410	3.90E+04	6.80E+04	0.0559	1.90E-03	0.454	0.015	0.0582	0.0008	0.2191	448.4	37.8	75.5	380.1	5.2	10.5	364.5	2.5	4.9	96
TIF2z32	274.50	307.50	100.50	1.120	-9.00E+05	1.50E+05	0.0636	1.60E-03	1.006	0.020	0.1149	0.0016	0.1355	728.4	26.7	53.3	706.9	5.1	10.1	701.0	4.6	9.3	99
TIF2z34	45.04	48.40	57.84	1.070	2.00E+05	1.20E+05	0.1601	3.20E-03	10.290	0.180	0.4682	0.0068	0.2189	2456.7	16.9	33.8	2461.2	8.1	16.2	2475.7	14.9	29.9	101
TIF2z35	251.30	216.90	78.30	0.860	1.50E+05	1.60E+05	0.0637	1.50E-03	1.132	0.022	0.1273	0.0018	0.1616	731.7	24.9	49.9	768.7	5.2	10.5	772.4	5.1	10.3	100
TIF2z37	631.00	359.00	49.90	0.570	1.30E+05	1.10E+05	0.0571	1.50E-03	0.448	0.010	0.0567	0.0010	0.1874	495.4	28.9	57.9	376.0	3.5	6.9	355.5	3.0	6.0	95
TIF2z38	696.00	389.00	69.50	0.560	-1.00E+05	1.70E+05	0.0555	1.30E-03	0.474	0.009	0.0619	0.0009	0.3577	433.6	26.1	52.1	394.1	3.2	6.3	386.9	2.7	5.4	98
TIF2z40	642.00	146.90	34.73	0.230	3.30E+05	2.50E+05	0.0593	1.30E-03	0.743	0.013	0.0904	0.0013	0.2617	576.3	23.8	47.7	564.2	3.8	7.6	557.8	3.8	7.7	99
TIF2z41	389.00	192.50	51.37	0.490	-1.30E+05	1.60E+05	0.0588	1.50E-03	0.756	0.014	0.0933	0.0012	-0.0526	559.7	27.8	55.6	571.7	4.0	8.1	574.7	3.5	7.1	101
TIF2z42	499.00	238.00	38.10	0.480	3.00E+05	1.30E+05	0.0607	1.90E-03	0.485	0.011	0.0581	0.0009	-0.1866	628.6	33.7	67.4	401.5	3.8	7.5	364.1	2.7	5.5	91
TIF2z43	48.15	29.21	28.87	0.610	6.40E+05	3.10E+05	0.1337	2.60E-03	7.420	0.130	0.3970	0.0056	0.3319	2147.1	17.0	34.0	2163.4	7.8	15.7	2155.2	12.9	25.8	100
TIF2z44	214.30	64.00	20.75	0.300	2.90E+05	1.80E+05	0.0608	1.70E-03	0.969	0.024	0.1170	0.0016	-0.0278	632.2	30.1	60.2	687.9	6.2	12.4	713.0	4.6	9.2	104
TIF2z45	292.30	206.60	154.10	0.710	1.90E+05	3.30E+05	0.1003	1.60E-03	3.878	0.047	0.2796	0.0035	0.2660	1629.7	14.8	29.7	1609.1	4.9	9.8	1589.3	8.8	17.6	99
TIF2z47c	374.00	415.00	156.60	1.110	3.50E+05	1.90E+05	0.0693	1.50E-03	1.297	0.022	0.1360	0.0020	0.2754	907.7	22.3	44.6	844.4	4.9	9.7	822.0	5.7	11.3	97
TIF2z47r	312.20	29.56	8.21	0.090	2.30E+05	1.50E+05	0.0619	1.60E-03	0.850	0.018	0.0993	0.0013	0.1183	670.7	27.7	55.3	624.6	4.9	9.9	610.3	3.8	7.6	98
TIF2z48	114.70	82.70	22.09	0.720	7.70E+04	5.50E+04	0.0608	2.20E-03	0.814	0.026	0.0972	0.0014	0.0438	632.2	39.0	77.9	604.7	7.3	14.5	598.2	4.1	8.2	99
TIF2z49	264.60	154.30	26.93	0.580	-3.20E+04	6.80E+04	0.0550	1.90E-03	0.452	0.015	0.0596	0.0009	0.1148	412.2	38.6	77.2	378.7	5.2	10.5	373.4	2.7	5.5	99
TIF2z51	153.40	180.00	52.87	1.170	7.90E+04	7.50E+04	0.0636	2.00E-03	0.914	0.026	0.1044	0.0015	0.1185	728.4	33.3	66.7	659.2	6.9	13.8	639.9	4.4	8.8	97
TIF2z52	149.20	125.10	36.33	0.840	7.50E+04	5.40E+04	0.0597	1.90E-03	0.850	0.024	0.1028	0.0015	0.0293	592.7	34.5	69.0	624.6	6.6	13.2	631.0	4.4	8.8	101
TIF2z53	82.60	113.60	110.10	1.380	-7.00E+05	1.00E+05	0.1264	2.30E-03	7.000	0.120	0.3981	0.0060	0.4595	2048.5	16.1	32.1	2111.4	7.6	15.2	2160.3	13.8	27.7	102
TIF2z54	50.52	32.40	27.22	0.640	-1.00E+03	6.30E+04	0.1109	2.60E-03	4.768	0.100	0.3104	0.0044	0.2031	1814.2	21.3	42.6	1779.3	8.8	17.6	1742.7	10.8	21.6	98
TIF2z55	673.00	194.60	34.06	0.290	1.40E+05	1.80E+05	0.0546	1.20E-03	0.456	0.008	0.0606	0.0008	0.2419	395.5	24.6	49.3	381.3	2.8	5.6	379.2	2.4	4.9	99
TIF2z56	196.20	33.40	11.88	0.170	6.00E+05	1.00E+05	0.0652	1.60E-03	1.150	0.025	0.1272	0.0017	0.1672	780.8	25.8	51.6	777.2	5.9	11.8	771.7	4.9	9.7	99
TIF2z58	883.00	270.10	45.50	0.310	-1.30E+05	1.80E+05	0.0595	1.20E-03	0.451	0.008	0.0556	0.0009	0.5064	584.3	21.9	43.8	377.8	2.8	5.5	348.9	2.8	5.6	92
TIF2z59	113.90	83.60	25.57	0.730	4.00E+04	5.70E+04	0.0615	2.30E-03	0.923	0.032	0.1091	0.0016	0.0653	656.8	40.1	80.2	663.9	8.4	16.9	667.5	4.6	9.3	101
TIF2z61	247.20	150.90	40.40	0.610	3.30E+04	9.20E+04	0.0591	1.70E-03	0.812	0.019	0.0996	0.0013	-0.0162	570.8	31.3	62.6	603.6	5.3	10.6	611.9	3.8	7.6	101
TIF2z63	91.60	110.40	32.09	1.210	7.00E+04	4.00E+04	0.0592	2.50E-03	0.831	0.032	0.1017	0.0016	0.1869	574.5	45.9	91.8	614.2	8.9	17.7	624.4	4.7	9.4	102
TIF2z64	255.40	121.78	124.90	0.480	-1.40E+05	4.40E+05	0.1331	2.00E-03	7.328	0.085	0.3983	0.0051	0.3624	2139.3	13.1	26.3	2152.2	5.2	10.4	2161.2	11.8	23.5	100
TIF2z65	177.40	132.30	133.20	0.750	-1.80E+05	2.50E+05	0.1360	2.00E-03	7.284	0.082	0.3856	0.0051	0.3601	2176.9	12.8	25.6	2146.9	5.0	10.0	2102.4	11.9	23.7	98
TIF2z66	262.90	330.00	94.30	1.260	4.00E+05	1.10E+05	0.0642	1.60E-03	0.905	0.019	0.1019	0.0014	0.1552	748.2	26.3	52.7	654.4	5.1	10.1	625.2	4.1	8.2	96
TIF2z67	332.50	117.00	20.13	0.350	1.00E+04	7.70E+04	0.0523	1.50E-03	0.439	0.011	0.0608	0.0008	0.2226	298.5	32.7	65.4	369.5	3.9	7.8	380.7	2.6	5.1	103
TIF2z68	161.00	57.90	17.22	0.360	2.20E+04	7.60E+04	0.0622	2.00E-03	0.949	0.027	0.1085	0.0018	0.1562	681.0	34.3	68.7	677.6	7.0	14.1	664.0	5.2	10.5	98
TIF2z69	121.50	80.70	27.15	0.660	6.00E+04	6.30E+04	0.0612	1.80E-03	0.949	0.025	0.1136	0.0019	0.1533	646.3	31.6	63.2	677.6	6.5	13.0	693.6	5.5	11.0	102
TIF2z70	38.84	279.10	79.30	7.190	1.50E+04	1.40E+04	0.0614	3.30E-03	0.825	0.045	0.0957	0.0018	0.1264	653.3	57.7	115.3	610.8	12.5	25.0	589.2	5.3	10.6	96
TIF2z71	324.10	357.70	293.70	1.100	-2.10E+05	4.00E+05	0.1069	1.60E-03	4.363	0.050	0.2959	0.0039	0.2796	1747.2	13.7	27.4	1705.4	4.7	9.5	1670.9	9.7	19.4	98
TIF2z72	782.00	368.00	62.60	0.470	-2.70E+05	2.00E+05	0.0611	1.30E-03	0.517	0.009	0.0618	0.0010	0.3685	642.8	22.9	45.7	422.9	3.1	6.2	386.6	3.0	6.0	91
TIF2z73	210.00	86.90	25.23	0.410	-2.10E+05	1.60E+05	0.0598	1.60E-03	0.863	0.021	0.1039	0.0014	0.2863	596.3	29.0	58.0	631.8	5.7	11.4	637.2	4.1	8.2	101
TIF2z74	79.10	69.81	81.20	0.880	-1.00E+05	1.70E+05	0.1608	2.80E-03	10.060	0.140	0.4514	0.0062	0.2667	2464.1	14.7	29.4	2440.3	6.4	12.8	2401.5	13.8	27.5	98
TIF2z75	88.30	54.90	67.60	0.620	-1.70E+05	1.80E+05	0.1611	2.50E-03	10.410	0.120	0.4665	0.0065	0.4014	2467.2	13.1	26.2	2471.9	5.3	10.7	2468.2	14.3	28.6	100
TIF2z76	183.80	99.80	112.10	0.540	1.30E+05	2.90E+05	0.1482	2.30E-03	8.559	0.100	0.4164	0.0055	0.3706	2325.3	13.3	26.6	2292.2	5.3	10.6	2244.1	12.5	25.0	98

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
TIF2z78	86.90	94.90	89.70	1.090	-1.80E+05	1.30E+05	0.1206	2.30E-03	6.013	0.096	0.3596	0.0050	0.2222	1965.1	17.0	34.0	1977.7	6.9	13.9	1980.3	11.9	23.7	100
TIF2z79	482.00	118.20	94.40	0.250	-7.30E+05	4.90E+05	0.1103	1.60E-03	5.042	0.058	0.3303	0.0046	0.5945	1804.4	13.2	26.4	1826.4	4.9	9.7	1839.8	11.1	22.3	101
TIF2z80	567.00	455.00	124.50	0.800	4.00E+05	2.00E+05	0.0630	1.20E-03	0.906	0.014	0.1043	0.0015	0.2727	709.2	20.2	40.5	654.9	3.7	7.5	639.8	4.4	8.8	98
TIF2z81	97.40	123.60	35.06	1.270	4.20E+04	4.30E+04	0.0602	2.30E-03	0.842	0.030	0.1001	0.0015	-0.0471	610.8	41.3	82.6	620.2	8.3	16.5	615.2	4.4	8.8	99
TIF2z82	692.00	173.30	54.30	0.250	1.00E+05	2.10E+05	0.0685	1.50E-03	0.932	0.014	0.0987	0.0014	0.1628	883.7	22.6	45.3	668.7	3.7	7.4	607.0	4.1	8.2	91
TIF2z83	307.60	195.80	203.80	0.640	-6.80E+05	4.10E+05	0.1480	2.10E-03	8.676	0.100	0.4243	0.0057	0.6256	2322.9	12.2	24.3	2304.6	5.2	10.5	2280.0	12.9	25.8	99
TIF2z84	115.80	98.10	42.32	0.850	5.00E+04	7.30E+04	0.0685	2.00E-03	1.414	0.037	0.1491	0.0021	0.2399	883.7	30.2	60.4	894.8	7.8	15.5	895.9	5.9	11.8	100
TIF2z86	179.40	188.60	59.20	1.050	1.50E+04	6.40E+04	0.0592	1.80E-03	0.867	0.022	0.1068	0.0015	0.1368	574.5	33.1	66.1	633.9	6.0	12.0	654.1	4.4	8.7	103
TIF2z87	55.77	141.20	39.80	2.530	1.10E+04	2.20E+04	0.0559	2.80E-03	0.793	0.039	0.1005	0.0017	0.0896	448.4	55.6	111.3	592.9	11.0	22.1	617.3	5.0	10.0	104
TIF2z88	318.10	221.10	322.80	0.700	1.07E+06	9.80E+05	0.2103	2.80E-03	16.530	0.150	0.5699	0.0072	0.4179	2907.9	10.8	21.6	2908.0	4.3	8.7	2907.4	14.8	29.6	100
TIF2z89	326.20	210.00	122.20	0.640	4.00E+05	2.50E+05	0.0824	1.60E-03	2.359	0.034	0.2063	0.0027	0.2881	1255.0	19.0	38.0	1230.3	5.1	10.3	1209.1	7.2	14.4	98
TIF2z90	441.90	284.00	228.20	0.640	5.30E+05	5.10E+05	0.1097	1.50E-03	4.365	0.052	0.2873	0.0040	0.6071	1793.9	12.5	24.9	1705.7	4.9	9.8	1628.0	10.0	20.0	95
TIF2z94	74.70	35.80	16.89	0.480	-2.60E+04	4.50E+04	0.0709	2.20E-03	1.620	0.047	0.1656	0.0024	0.1609	954.5	31.7	63.5	978.0	9.1	18.2	987.8	6.6	13.3	101
TIF2z95	308.00	440.00	119.00	1.430	-4.00E+05	1.10E+05	0.0592	1.60E-03	0.778	0.016	0.0953	0.0013	-0.0564	574.5	29.4	58.8	584.3	4.6	9.1	586.5	3.8	7.7	100
TIF2z96	429.70	400.90	190.20	0.930	-1.30E+05	2.90E+05	0.0780	1.60E-03	1.934	0.038	0.1783	0.0025	0.6032	1146.9	20.4	40.8	1092.9	6.6	13.1	1057.7	6.8	13.7	97
TIF2z97	326.00	498.00	103.70	1.530	-1.30E+04	7.80E+04	0.0560	1.50E-03	0.579	0.014	0.0748	0.0011	0.2100	452.4	29.7	59.5	463.8	4.5	9.0	464.8	3.3	6.6	100
TIF2z98	130.20	19.34	6.39	0.150	2.00E+04	4.90E+04	0.0614	2.10E-03	0.928	0.030	0.1086	0.0016	0.1535	653.3	36.7	73.4	666.6	7.9	15.8	664.6	4.7	9.3	100
TIF2z99	711.00	771.00	228.90	1.080	2.70E+05	2.40E+05	0.0629	1.20E-03	0.911	0.014	0.1048	0.0014	0.3864	705.9	20.3	40.6	657.6	3.7	7.4	642.4	4.1	8.2	98
TIF2z100	779.00	574.00	159.60	0.740	2.00E+05	2.70E+05	0.0606	1.10E-03	0.822	0.011	0.0979	0.0012	0.2705	624.7	19.6	39.1	609.2	3.1	6.1	602.0	3.5	7.0	99
TIF2z101	207.10	110.10	62.00	0.530	-2.40E+05	1.90E+05	0.0930	1.80E-03	3.213	0.052	0.2490	0.0034	0.5001	1487.9	18.3	36.7	1460.3	6.3	12.5	1433.3	8.8	17.5	98
TIF2z102	411.50	173.80	54.80	0.420	1.20E+05	1.70E+05	0.0615	1.40E-03	0.941	0.017	0.1110	0.0015	0.1588	656.8	24.4	48.8	673.4	4.4	8.9	678.8	4.4	8.7	101
TIF2z104	162.40	108.60	17.91	0.670	-3.90E+04	4.10E+04	0.0541	2.20E-03	0.455	0.017	0.0608	0.0010	-0.0213	375.2	45.8	91.5	380.8	5.9	11.9	380.3	2.9	5.8	100
TIF2z106	275.00	140.00	34.70	0.510	-4.80E+04	8.80E+04	0.0586	1.50E-03	0.751	0.018	0.0930	0.0013	0.2110	552.3	27.9	55.9	568.8	5.2	10.4	573.3	3.8	7.7	101
TIF2z110	625.40	355.80	58.27	0.570	-1.80E+05	1.40E+05	0.0571	1.40E-03	0.440	0.009	0.0550	0.0009	0.2593	495.4	27.0	54.0	369.9	3.3	6.6	345.0	2.7	5.5	93
TIF2z112	148.90	95.40	63.20	0.640	-6.00E+05	1.40E+05	0.0898	1.90E-03	3.035	0.052	0.2439	0.0032	0.2227	1421.3	20.2	40.4	1416.5	6.5	13.1	1406.9	8.3	16.6	99
TIF2z113	524.00	190.40	30.80	0.360	-3.00E+05	1.00E+05	0.0600	1.60E-03	0.465	0.010	0.0556	0.0008	-0.0139	603.6	28.9	57.7	387.6	3.3	6.6	348.8	2.3	4.6	90
TIF2z115	173.20	65.10	18.97	0.380	-4.60E+04	6.70E+04	0.0607	1.90E-03	0.842	0.025	0.0999	0.0014	0.1387	628.6	33.7	67.4	620.2	6.9	13.8	614.1	4.1	8.2	99
TIF2z119	557.00	147.00	25.90	0.260	1.10E+05	1.30E+05	0.0554	1.30E-03	0.460	0.009	0.0599	0.0008	0.0436	428.4	26.2	52.3	383.9	3.1	6.2	374.8	2.4	4.9	98
Discordant data																							
TIF2z2	66.60	75.30	26.09	1.130	3.30E+04	3.00E+04	0.1469	9.90E-03	1.730	0.130	0.0819	0.0018	0.7068	2310.1	57.8	115.7	1019.8	24.2	48.3	507.5	5.4	10.7	50
TIF2z4	0.00	0.00	-0.01	#DIV/0!	no value	NAN	no value	NAN	no value	NAN	no value	NAN	NaN	#NUM!	#NUM!	#NUM!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
TIF2z15	28.86	36.73	12.90	1.270	2.50E+04	1.30E+04	0.0869	9.90E-03	1.330	0.240	0.0952	0.0028	0.9287	1358.3	109.8	219.6	858.9	52.2	104.5	586.2	8.2	16.5	68
TIF2z16	1950.00	1770.00	95.70	0.910	3.00E+05	1.20E+05	0.1105	3.10E-03	0.271	0.007	0.0180	0.0003	0.0657	1807.7	25.5	51.0	243.5	2.7	5.3	114.9	1.0	2.0	47
TIF2z18	1743.00	1674.00	264.70	0.960	3.14E+05	6.80E+04	0.1435	2.80E-03	0.736	0.010	0.0371	0.0006	0.3778	2269.9	16.8	33.6	559.9	2.9	5.8	234.9	1.9	3.8	42
TIF2z22	0.00	0.00	0.02	#DIV/0!	no value	NAN	no value	NAN	no value	NAN	no value	NAN	NaN	#NUM!	#NUM!	#NUM!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
TIF2z29	1127.00	247.60	37.70	0.220	-4.00E+05	1.90E+05	0.0618	1.30E-03	0.412	0.007	0.0485	0.0006	0.1196	667.2	22.5	45.0	350.4	2.5	5.0	305.5	2.0	3.9	87
TIF2z31	1375.00	1625.00	197.00	1.180	6.70E+05	2.80E+05	0.1522	2.60E-03	1.384	0.028	0.0658	0.0012	0.8704	2370.8	14.6	29.1	882.1	6.0	11.9	410.7	3.6	7.3	47
TIF2z33	3.84	21.12	31.18	5.500	1.20E+04	1.20E+04	0.7590	2.50E-02	42.000	1.400	0.4170	0.0120	0.2965	4846.7	23.5	47.1	3819.1	16.5	33.0	2246.8	27.3	54.6	59
TIF2z36	0.00	0.00	0.00	#DIV/0!	no value	NAN	no value	NAN	no value	NAN	no value	NAN	NaN	#NUM!	#NUM!	#NUM!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
TIF2z39	101.90	57.78	33.76	0.570	8.10E+04	8.00E+04	0.1143	2.70E-03	3.440	0.075	0.2183	0.0033	0.4273	1868.9	21.3	42.6	1513.6	8.6	17.1	1272.9	8.7	17.5	84
TIF2z46	0.00	0.00	11.48	#DIV/0!	no value	NAN	no value	NAN	no value	NAN	no value	NAN	NaN	#NUM!	#NUM!	#NUM!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
TIF2z50	770.00	418.50	213.00	0.540	1.04E+06	5.20E+05	0.1890	3.70E-03	4.450	0.260	0.1682	0.0083	0.9864	2733.5	16.1	32.2	1721.7	24.2	48.4	1002.2	22.9	45.8	58
TIF2z57	1096.00	499.00	82.00	0.460	4.00E+05	1.90E+05	0.0705	1.50E-03	0.487	0.008	0.0501	0.0007	0.3160	943.0	21.8	43.6	403.0	2.9	5.7	315.3	2.2	4.4	78
TIF2z60	1269.00	1503.00	172.60	1.180	2.08E+05	3.60E+04	0.1758	3.70E-03	0.710	0.012	0.0299	0.0006	0.3703	2613.6	17.5	35.0	544.7	3.6	7.1	190.1	1.7	3.4	35
TIF2z62	1210.00	834.00	89.60	0.690	2.00E+05	1.90E+05	0.0687	1.40E-03	0.382	0.007	0.0403	0.0007	0.5570	889.4	21.1	42.1	328.3	2.7	5.4	254.7	2.2	4.3	78
TIF2z77	587.00	465.00	173.40	0.790	1.70E+05	7.80E+05	0.2096	2.80E-03	10.700	0.150	0.3673	0.0061	0.8374	2902.5	10.8	21.7	2497.4	6.5	13.0	2016.7	14.4	28.8	81
TIF2z85	1413.00	166.00	60.00	0.120	2.90E+05	1.50E+05	0.0927	1.90E-03	0.487	0.009	0.0379	0.0008	0.5918	1481.8	19.4	38.8	402.7	2.9	5.8	240.1	2.6	5.2	60
TIF2z91	16.15	141.80	99.40	8.780	2.68E+04	6.30E+03	0.6220	1.70E-02	22.890	0.810	0.2679	0.0084	0.7181	4560.2	19.8	39.6	3222.3	17.2	34.4	1530.1	21.4	42.7	47
TIF2z92	815.00	321.00	148.40	0.390	2.90E+05	4.40E+05	0.0985	1.60E-03	2.164	0.029	0.1594	0.0024	0.7369	1595.9	15.2	30.3	1169.6	4.6	9.3	953.4	6.7	13.3	82
TIF2z93	159.10	79.50	85.70	0.500	-1.40E+05	1.80E+05	0.1328	2.30E-03	5.326	0.080	0.2899	0.0039	0.4332	2135.3	15.1	30.3	1873.0	6.4	12.8	1641.0	9.7	19.5	88
TIF2z103	1071.00	554.00	172.80	0.520	9.50E+05	9.10E+05	0.1637	2.60E-03	5.743	0.086	0.2552	0.0048	0.8793	2494.2	13.4	26.8	1937.9	6.5	12.9	1465.2	12.3	24.7	76
TIF2z105	1268.00	716.00	52.50	0.560	2.60E+05	1.20E+05	0.0704	1.70E-03	0.383	0.007	0.0394	0.0007	0.1419	940.0	24.7	49.5	329.2	2.4	4.8	249.2	2.1	4.2	76
TIF2z107	499.00	579.00	147.30	1.160	6.00E+05	1.50E+05	0.0851	1.80E-03	1.085	0.017	0.0930	0.0015	0.3165	1317.8	20.5	41.0	746.1	4.1	8.3	573.3	4.4	8.8	77
TIF2z108	545.00	185.00	27.20	0.340	-1.10E+05	1.20E+05	0.0652	1.50E-03	0.489	0.010	0.0552	0.0010	0.3876	780.8	24.2	48.4	404.1	3.4	6.7	346.5	3.1	6.1	86
TIF2z109	910.00	601.00	64.10	0.660	-9.00E+05	1.20E+05	0.0647	1.80E-03	0.428	0.009	0.0488	0.0013	0.2697	764.6	29.3	58.6	362.0	3.1	6.1	307.2	4.0	8.0	85
TIF2z111	578.00	214.00	36.40	0.370	3.00E+05	1.10E+05	0.0655	1.80E-03	0.496	0.011	0.0557	0.0008	0.1461	790.4	28.8	57.7	409.0	3.7	7.5	349.5	2.6	5.1	85
TIF2z114	1082.00	832.00	155.80	0.770	5.10E+05	1.60E+05	0.1300	2.20E-03	1.201	0.031	0.0669	0.0018	0.9154	2098.0	14.9	29.7	801.0	7.1	14.3	417.5	5.4	10.9	52
TIF2z116	226.10	233.10	52.70	1.030	8.00E+04	5.50E+04	0.0686	2.20E-03	0.709	0.021	0.0743	0.0011	0.2007	886.7	33.1	66.3	544.2	6.2	12.5	462.0	3.3	6.6	85
TIF2z117	280.50	205.40	49.70	0.730	-1.70E+05	1.20E+05	0.0790	2.30E-03	0.766	0.032	0.0706	0.0025	0.7683	1172.1	28.8	57.6	577.5	9.2	18.4	439.8	7.5	15.1	76
TIF2z118	208.70	128.40	42.50	0.620	6.30E+04	6.00E+04	0.0803	3.10E-03	1.089	0.039	0.0981	0.0014	0.0960	1204.4	38.0	76.1	748.0	9.5	18.9	603.0	4.1	8.2	81

Footnotes:

- Analysis references: TIF2z is zircon from sample TIF2 (mount CT18-7), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.44: Sample OUJ16 (LA-ICPMS)

IGSN: IEACC00018 Coordinate UTM: Zone 30S, 3796135 m N, 587342 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ16z1	213.20	230.40	243.80	1.080	-2.70E+05	1.10E+05	0.1367	2.40E-03	7.594	0.200	0.3961	0.0039	0.1829	2185.8	15.3	30.5	2184.2	11.8	23.6	2151.1	9.0	18.0	98
OUJ16z2	59.70	44.20	45.50	0.740	-1.19E+04	6.00E+03	0.1378	3.00E-03	7.700	0.220	0.3992	0.0047	0.2281	2199.7	18.9	37.8	2196.6	12.8	25.7	2165.4	10.8	21.7	99
OUJ16z4	168.00	111.20	17.81	0.660	-2.00E+04	1.60E+04	0.0545	2.80E-03	0.399	0.020	0.0534	0.0007	0.0136	391.8	57.6	115.3	340.9	7.3	14.5	335.1	2.1	4.2	98
OUJ16z5	268.80	266.10	77.00	0.990	-2.30E+04	1.20E+04	0.0626	2.20E-03	0.864	0.027	0.1014	0.0011	0.1317	694.7	37.5	74.9	632.3	7.3	14.7	622.4	3.2	6.4	98
OUJ16z6	430.40	189.50	184.70	0.440	9.00E+04	1.10E+04	0.1272	2.10E-03	6.622	0.170	0.3728	0.0035	0.3538	2059.8	14.6	29.1	2062.3	11.3	22.6	2042.6	8.2	16.4	99
OUJ16z7	290.50	51.70	37.54	0.180	-1.05E+04	7.60E+03	0.1272	2.20E-03	6.700	0.180	0.3779	0.0039	0.3713	2059.6	15.3	30.5	2072.6	11.9	23.7	2066.5	9.1	18.2	100
OUJ16z8	263.60	179.90	57.45	0.680	-2.39E+04	8.30E+03	0.0639	2.20E-03	0.963	0.031	0.1096	0.0012	0.1873	738.3	36.4	72.9	684.8	8.0	16.0	670.1	3.5	7.0	98
OUJ16z9	395.00	383.00	54.70	0.970	-1.07E+04	4.30E+03	0.0534	2.10E-03	0.368	0.014	0.0503	0.0006	0.0871	345.8	44.5	89.0	318.2	5.2	10.4	316.3	1.8	3.6	99
OUJ16z10	496.20	328.30	50.30	0.660	-2.14E+04	7.40E+03	0.0554	2.10E-03	0.400	0.014	0.0527	0.0006	-0.0892	428.4	42.3	84.5	341.6	5.1	10.1	331.3	1.7	3.4	97
OUJ16z11	422.00	64.50	25.77	0.150	-4.80E+03	3.30E+03	0.0750	2.40E-03	1.336	0.056	0.1300	0.0036	0.8871	1068.5	32.2	64.3	861.5	12.2	24.3	787.9	10.3	20.5	91
OUJ16z12	259.10	137.00	18.95	0.530	-2.10E+03	1.20E+03	0.0545	2.50E-03	0.362	0.015	0.0492	0.0006	0.1273	391.8	51.5	102.9	313.7	5.6	11.2	309.8	1.8	3.7	99
OUJ16z13	239.80	145.83	43.19	0.610	-5.70E+03	2.30E+03	0.0600	2.10E-03	0.840	0.028	0.1018	0.0011	0.2255	603.6	37.9	75.7	619.1	7.7	15.4	624.7	3.2	6.4	101
OUJ16z14	124.00	124.60	32.10	1.000	-4.80E+02	7.20E+02	0.0610	2.90E-03	0.766	0.034	0.0914	0.0012	0.0870	639.2	51.1	102.3	577.5	9.8	19.5	563.8	3.5	7.1	98
OUJ16z15	257.70	330.20	88.10	1.280	-3.90E+03	1.90E+03	0.0634	2.30E-03	0.774	0.026	0.0889	0.0010	0.1632	721.7	38.5	77.0	582.1	7.4	14.9	549.0	2.9	5.7	94
OUJ16z16	213.60	156.70	43.13	0.730	-7.00E+03	2.80E+03	0.0615	2.40E-03	0.818	0.030	0.0962	0.0010	0.0209	656.8	41.8	83.7	606.9	8.4	16.7	592.3	2.9	5.9	98
OUJ16z17	223.30	100.30	28.96	0.450	-3.00E+04	1.40E+04	0.0627	2.40E-03	0.902	0.032	0.1050	0.0011	0.1115	698.1	40.8	81.5	652.8	8.5	17.1	643.5	3.2	6.4	99
OUJ16z19	322.60	286.50	48.20	0.890	3.50E+03	1.40E+03	0.0556	2.20E-03	0.408	0.015	0.0532	0.0006	0.0710	436.4	44.0	88.1	347.4	5.4	10.8	334.0	1.9	3.7	96
OUJ16z20	224.60	179.40	74.10	0.800	-3.90E+04	1.80E+04	0.0696	2.40E-03	1.317	0.043	0.1372	0.0014	0.0675	916.6	35.5	70.9	853.2	9.4	18.8	828.8	4.0	7.9	97
OUJ16z22	1038.00	164.20	21.35	0.160	-6.30E+03	3.20E+03	0.0566	1.90E-03	0.371	0.011	0.0483	0.0006	0.2755	476.0	37.1	74.2	320.1	4.1	8.1	303.8	2.0	3.9	95
OUJ16z24	889.00	480.00	55.00	0.540	-1.10E+03	1.60E+03	0.0550	1.90E-03	0.350	0.011	0.0471	0.0009	0.4155	412.2	38.6	77.2	304.4	4.1	8.3	296.8	2.6	5.3	97
OUJ16z25	214.70	202.50	55.27	0.940	5.00E+03	1.70E+03	0.0598	2.20E-03	0.792	0.028	0.0962	0.0011	0.1047	596.3	39.9	79.7	592.3	7.9	15.9	591.8	3.2	6.5	100
OUJ16z26	98.10	75.00	76.20	0.760	2.81E+04	8.00E+03	0.1288	2.60E-03	6.756	0.190	0.3813	0.0039	0.1671	2081.7	17.8	35.5	2080.0	12.4	24.9	2082.4	9.1	18.2	100
OUJ16z27	33.73	25.16	20.82	0.750	-1.58E+03	8.90E+02	0.1060	3.50E-03	4.450	0.170	0.3048	0.0039	0.0980	1731.7	30.3	60.6	1721.7	15.8	31.6	1715.1	9.6	19.3	100
OUJ16z28	271.00	155.40	22.16	0.570	1.45E+04	5.90E+03	0.0517	2.40E-03	0.363	0.016	0.0499	0.0006	-0.0704	272.2	53.2	106.4	314.5	6.0	11.9	314.2	1.9	3.7	100
OUJ16z29	114.70	114.10	91.90	0.990	-9.00E+02	1.30E+03	0.1107	2.40E-03	4.666	0.140	0.3074	0.0034	0.2187	1810.9	19.7	39.4	1761.2	12.5	25.1	1727.9	8.4	16.8	98
OUJ16z31	178.80	274.00	75.00	1.530	3.60E+02	5.70E+02	0.0602	2.30E-03	0.801	0.029	0.0967	0.0012	0.1621	610.8	41.3	82.6	597.4	8.2	16.3	594.7	3.5	7.1	100
OUJ16z32	439.00	669.00	153.30	1.520	-1.80E+03	1.50E+03	0.0617	2.10E-03	0.683	0.022	0.0806	0.0012	0.4064	663.7	36.5	72.9	528.6	6.6	13.3	499.7	3.6	7.2	95
OUJ16z33	271.20	159.80	179.70	0.590	-4.40E+04	1.80E+04	0.1514	2.60E-03	9.009	0.240	0.4300	0.0042	0.4014	2361.8	14.7	29.3	2338.9	12.2	24.3	2305.7	9.5	18.9	99
OUJ16z34	897.00	182.30	23.58	0.200	-2.90E+04	1.30E+04	0.0531	1.80E-03	0.378	0.012	0.0516	0.0005	0.1723	331.8	38.5	76.9	325.8	4.4	8.8	324.1	1.6	3.2	99
OUJ16z35	92.20	102.90	29.14	1.120	1.30E+02	4.10E+02	0.0632	3.00E-03	0.836	0.038	0.0972	0.0012	0.0290	715.0	50.4	100.8	616.9	10.5	21.0	597.7	3.5	7.1	97
OUJ16z36	707.00	245.00	292.10	0.350	6.00E+04	2.10E+04	0.1740	2.80E-03	10.820	0.320	0.4488	0.0067	0.9237	2596.5	13.4	26.8	2507.8	13.7	27.5	2389.9	14.9	29.8	95
OUJ16z37	63.85	89.97	26.42	1.410	2.70E+02	4.60E+02	0.0588	3.20E-03	0.810	0.041	0.1011	0.0015	0.1530	559.7	59.3	118.6	602.5	11.5	23.0	620.9	4.4	8.8	103
OUJ16z38	413.00	259.00	54.40	0.630	3.60E+03	3.10E+03	0.0576	2.00E-03	0.612	0.020	0.0770	0.0008	0.1586	514.6	38.1	76.3	484.8	6.3	12.6	478.0	2.3	4.6	99
OUJ16z39	137.80	64.64	66.63	0.470	4.70E+03	6.10E+03	0.1312	2.40E-03	7.100	0.190	0.3927	0.0041	0.2138	2114.1	16.0	32.1	2124.0	11.9	23.8	2135.3	9.5	19.0	101
OUJ16z40	466.60	414.60	126.80	0.890	2.09E+04	8.40E+03	0.0618	2.00E-03	0.922	0.027	0.1085	0.0011	0.0226	667.2	34.6	69.3	663.4	7.1	14.3	663.8	3.2	6.4	100
OUJ16z41	38.54	15.52	15.26	0.400	1.65E+04	8.60E+03	0.1264	3.50E-03	6.760	0.220	0.3828	0.0045	-0.0385	2048.5	24.5	48.9	2080.5	14.4	28.8	2089.4	10.5	21.0	100
OUJ16z42	374.70	523.70	150.50	1.400	2.90E+04	1.30E+04	0.0617	2.10E-03	0.851	0.027	0.1000	0.0010	0.1368	663.7	36.5	72.9	625.2	7.4	14.8	614.2	2.9	5.9	98
OUJ16z44	339.70	170.80	47.10	0.500	-1.00E+04	2.80E+04	0.0592	2.10E-03	0.759	0.025	0.0929	0.0010	0.0083	574.5	38.6	77.1	573.4	7.2	14.4	572.7	2.8	5.6	100
OUJ16z45	702.20	429.10	66.49	0.610	-1.09E+06	5.10E+05	0.0557	1.90E-03	0.411	0.013	0.0539	0.0006	0.1839	440.4	37.9	75.9	349.7	4.7	9.3	338.7	1.7	3.4	97
OUJ16z46	181.00	76.20	21.70	0.420	2.40E+04	1.40E+04	0.0607	2.40E-03	0.824	0.031	0.0986	0.0011	-0.0587	628.6	42.6	85.2	610.3	8.6	17.2	606.0	3.2	6.5	99
OUJ16z47	233.80	107.70	15.60	0.460	-8.70E+04	4.50E+04	0.0535	2.40E-03	0.375	0.016	0.0512	0.0006	0.0660	350.1	50.7	101.4	323.4	5.9	11.8	321.6	1.9	3.9	99
OUJ16z48	140.20	99.90	15.44	0.710	-2.55E+04	7.80E+03	0.0539	3.10E-03	0.407	0.023	0.0540	0.0007	0.0583	366.9	64.8	129.6	346.7	8.3	16.6	339.3	2.3	4.5	98
OUJ16z49	102.30	86.77	25.92	0.850	8.00E+05	1.80E+05	0.0598	2.90E-03	0.849	0.038	0.1034	0.0013	0.0443	596.3	52.5	105.1	624.1	10.4	20.8	634.3	3.8	7.6	102
OUJ16z50	176.10	191.60	56.40	1.090	1.89E+04	8.10E+03	0.0628	2.40E-03	0.873	0.031	0.1020	0.0012	0.0712	701.5	40.7	81.4	637.2	8.4	16.8	626.3	3.5	7.0	98
OUJ16z51	227.50	157.00	23.89	0.690	-1.77E+05	8.10E+04	0.0525	2.40E-03	0.392	0.016	0.0540	0.0006	-0.0646	307.2	52.1	104.1	335.8	5.8	11.7	338.8	1.9	3.7	101
OUJ16z52	154.10	104.40	29.36	0.680	1.47E+04	9.40E+03	0.0589	2.60E-03	0.803	0.033	0.0978	0.0012	-0.0368	563.4	48.1	96.2	598.5	9.3	18.6	601.7	3.5	7.0	101
OUJ16z54	196.13	93.40	23.48	0.480	3.70E+03	2.50E+03	0.0598	2.20E-03	0.750	0.027	0.0907	0.0011	0.1649	596.3	39.9	79.7	568.2	7.8	15.7	559.6	3.3	6.5	98
OUJ16z55	244.50	139.70	164.90	0.570	1.10E+04	1.00E+04	0.1608	2.70E-03	10.286	0.270	0.4554	0.0044	0.2747	2464.1	14.2	28.4	2460.8	12.1	24.3	2419.2	9.7	19.5	98
OUJ16z56	103.30	100.30	28.64	0.970	2.21E+03	9.30E+02	0.0637	2.90E-03	0.874	0.039	0.0991	0.0013	0.1113	731.7	48.2	96.4	637.7	10.6	21.1	609.1	3.8	7.6	96
OUJ16z57	276.30	53.99	15.60	0.200	-1.30E+05	1.40E+05	0.0616	2.10E-03	0.876	0.028	0.1034	0.0011	0.1400	660.3	36.5	73.1	638.8	7.6	15.1	634.2	3.2	6.4	99
OUJ16z59	254.50	129.50	20.72	0.510	4.90E+03	1.90E+03	0.0559	2.50E-03	0.418	0.018	0.0539	0.0006	0.0665	448.4	49.7	99.4	354.6	6.4	12.9	338.2	1.9	3.9	95
OUJ16z60	347.00	308.70	87.11	0.890	-1.12E+04	3.60E+03	0.0597	2.00E-03	0.807	0.025	0.0985	0.0010	0.1153	592.7	36.3	72.6	600.8	7.0	14.0	605.5	2.9	5.9	101
OUJ16z61	14.58	12.02	4.14	0.820	-6.00E+00	7.10E+01	0.0724	6.50E-03	1.187	0.100	0.1198	0.0028	0.0283	997.2	91.2	182.4	794.6	23.2	46.4	729.4	8.1	16.1	92
OUJ16z65	598.00	345.00	84.60	0.580	-2.40E+04	4.80E+04	0.0642	2.10E-03	0.746	0.023	0.0844	0.0011	0.3943	748.2	34.6	69.1	565.9	6.7	13.4	522.6	3.3	6.5	92
OUJ16z66	295.00	160.80	48.30	0.550	-3.70E+04	2.30E+04	0.0618	2.20E-03	0.870	0.028	0.1020	0.0011	0.0562	667.2	38.1	76.2	635.6	7.6	15.2	625.9	3.2	6.4	98
OUJ16z68	300.40	113.00	17.51	0.380	8.70E+02	9.20E+02	0.0547	2.30E-03	0.399	0.016	0.0524	0.0006	0.0588	400.0	47.1	94.2	340.9	5.8	11.6	329.4	1.8	3.6	97
OUJ16z69	187.40	110.90	94.40	0.590	1.47E+04	6.20E+03	0.1081	2.10E-03	4.820	0.130	0.3156	0.0031	0.1693	1767.6	17.7	35.5	1788.4	11.3	22.7	1768.2	7.6	15.2	99
OUJ16z70	263.00	126.70	58.00	0.480	4.00E+05	1.20E+05	0.0739	2.50E-03	1.644	0.051	0.1628	0.0017	0.1549	1038.7	34.1	68.3	987.2	9.8	19.6	972.3	4.7	9.4	98
OUJ16z71	55.89	78.93	19.81	1.410	-2.10E+02	1.60E+02	0.0621	3.80E-03	0.766	0.045	0.0895	0.0014	-0.0269	677.6	65.4	130.8	577.5	12.9	25.9	552.6	4.1	8.3	96
OUJ16z72	311.80	244.00	238.00	0.780	2.40E+03	2.60E+03	0.1277	2.20E-03	6.399	0.170	0.3553	0.0041	0.6177	2066.6	15.2	30.4	2032.1	11.7	23.3	1959.9	9.8	19.5	96

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ16z73	177.80	319.00	329.00	1.790	-9.30E+03	5.80E+03	0.1289	2.40E-03	7.081	0.190	0.3887	0.0038	0.2612	2083.0	16.4	32.8	2121.7	11.9	23.9	2116.8	8.8	17.6	100
OUJ16z74	264.40	84.90	79.90	0.320	-1.30E+04	1.20E+04	0.1220	2.20E-03	5.880	0.160	0.3427	0.0033	0.3078	1985.7	16.0	32.1	1958.3	11.8	23.6	1899.6	7.9	15.8	97
OUJ16z75	311.50	311.70	80.00	1.000	4.00E+04	1.90E+04	0.0615	2.20E-03	0.770	0.026	0.0903	0.0009	0.1801	656.8	38.4	76.7	579.8	7.5	14.9	557.4	2.7	5.5	96
OUJ16z76	901.00	692.00	163.10	0.770	6.90E+04	6.80E+04	0.0667	2.10E-03	0.806	0.024	0.0878	0.0012	0.5444	827.2	32.9	65.7	600.2	6.7	13.5	542.7	3.6	7.1	90
OUJ16z77	594.00	472.10	64.40	0.790	-4.10E+04	1.90E+04	0.0562	2.20E-03	0.383	0.015	0.0494	0.0013	0.7117	460.3	43.4	86.8	329.2	5.5	11.0	310.8	4.0	8.0	94
OUJ16z78	435.00	97.90	61.35	0.230	2.43E+04	7.90E+03	0.0943	2.80E-03	3.195	0.092	0.2442	0.0034	0.8115	1514.1	28.0	56.0	1456.0	11.1	22.2	1408.5	8.8	17.6	97
OUJ16z79c	77.50	106.30	30.80	1.370	-3.50E+03	4.20E+03	0.0644	3.20E-03	0.890	0.042	0.1008	0.0015	0.0920	754.8	52.4	104.9	646.4	11.3	22.5	619.1	4.4	8.8	96
OUJ16z79r	37.01	42.35	12.01	1.140	-5.20E+02	3.20E+02	0.0621	3.90E-03	0.869	0.053	0.1024	0.0017	0.1031	677.6	67.1	134.2	635.0	14.4	28.8	628.5	5.0	9.9	99
OUJ16z80	150.40	119.60	61.05	0.800	-9.00E+02	1.00E+03	0.0749	2.60E-03	1.812	0.057	0.1749	0.0019	0.1758	1065.8	34.9	69.8	1049.8	10.3	20.6	1039.1	5.2	10.4	99
OUJ16z81	98.90	109.80	50.20	1.110	-6.00E+04	1.80E+04	0.0739	2.80E-03	1.715	0.060	0.1676	0.0019	0.1255	1038.7	38.2	76.5	1014.2	11.2	22.4	998.9	5.2	10.5	98
OUJ16z83	220.80	193.60	48.10	0.880	-1.80E+03	1.20E+03	0.0640	2.50E-03	0.804	0.029	0.0912	0.0010	0.1089	741.6	41.3	82.6	599.1	8.2	16.3	562.7	3.0	5.9	94
OUJ16z84	337.20	338.30	90.80	1.000	4.80E+03	3.20E+03	0.0598	2.10E-03	0.782	0.025	0.0945	0.0010	0.0637	596.3	38.0	76.1	586.6	7.1	14.2	582.2	2.9	5.8	99
OUJ16z85	298.10	232.30	105.70	0.780	7.70E+03	3.90E+03	0.0720	2.30E-03	1.624	0.048	0.1637	0.0016	0.1611	985.9	32.5	65.0	979.5	9.3	18.6	977.0	4.4	8.9	100
OUJ16z86	249.40	212.50	59.40	0.850	1.00E+03	1.70E+03	0.0606	2.30E-03	0.833	0.029	0.0995	0.0011	0.1204	625.1	40.9	81.8	615.3	8.0	16.1	611.7	3.2	6.4	99
OUJ16z87	26.94	32.89	32.72	1.220	-8.00E+02	1.00E+03	0.1278	4.00E-03	6.650	0.230	0.3791	0.0051	0.0697	2067.9	27.6	55.2	2066.0	15.3	30.5	2072.1	11.9	23.8	100
OUJ16z88	325.50	94.40	18.54	0.290	2.94E+04	8.80E+03	0.0570	2.10E-03	0.619	0.022	0.0785	0.0009	0.0443	491.5	40.6	81.2	489.2	6.9	13.8	487.0	2.6	5.1	100
OUJ16z89	117.80	113.10	32.43	0.960	4.80E+03	2.40E+03	0.0659	2.90E-03	0.867	0.035	0.0949	0.0012	-0.0222	803.2	46.1	92.2	633.9	9.5	19.0	584.4	3.5	7.1	92
OUJ16z90	248.00	164.50	48.10	0.660	4.30E+04	1.80E+04	0.0599	2.30E-03	0.838	0.029	0.1012	0.0010	-0.0141	600.0	41.6	83.1	618.0	8.0	16.0	621.5	2.9	5.9	101
OUJ16z91	223.40	195.20	56.10	0.870	-2.00E+02	2.30E+03	0.0598	2.30E-03	0.844	0.030	0.1025	0.0011	0.1090	596.3	41.7	83.3	621.4	8.3	16.5	629.2	3.2	6.4	101
OUJ16z92	106.70	109.12	30.17	1.020	-9.97E+03	3.30E+03	0.0618	2.90E-03	0.842	0.038	0.0983	0.0012	0.1489	667.2	50.2	100.5	620.2	10.5	20.9	604.3	3.5	7.0	97
OUJ16z93	328.00	475.00	138.20	1.450	-2.10E+04	1.40E+04	0.0615	2.20E-03	0.896	0.029	0.1051	0.0011	0.0309	656.8	38.4	76.7	649.6	7.8	15.5	644.2	3.2	6.4	99
OUJ16z94	188.60	115.10	136.40	0.610	1.42E+05	6.10E+04	0.1705	2.90E-03	10.978	0.290	0.4658	0.0044	0.2281	2562.6	14.2	28.5	2521.3	12.3	24.6	2465.1	9.7	19.4	98
OUJ16z95	425.60	258.60	117.70	0.610	1.26E+05	6.00E+04	0.0719	2.20E-03	1.644	0.046	0.1661	0.0016	0.1509	982.8	31.2	62.3	987.2	8.8	17.7	990.4	4.4	8.8	100
OUJ16z96	204.50	141.80	22.23	0.690	-9.00E+02	1.70E+03	0.0526	2.60E-03	0.391	0.019	0.0540	0.0006	0.1940	311.6	56.2	112.5	335.1	6.9	13.9	339.0	1.9	3.9	101
OUJ16z97	324.00	203.20	33.61	0.630	5.10E+03	3.20E+03	0.0574	2.30E-03	0.430	0.016	0.0549	0.0006	0.0656	506.9	44.1	88.1	363.2	5.7	11.4	344.4	1.8	3.6	95
OUJ16z98	99.10	49.90	16.89	0.500	1.10E+03	2.40E+03	0.0644	2.80E-03	1.080	0.044	0.1217	0.0015	0.0455	754.8	45.9	91.8	743.6	10.7	21.5	740.3	4.3	8.6	100
OUJ16z99	276.80	111.60	30.54	0.400	-1.70E+03	4.90E+03	0.0602	2.20E-03	0.814	0.028	0.0986	0.0010	0.0160	610.8	39.5	79.0	604.7	7.8	15.7	606.4	2.9	5.9	100
OUJ16z101	25.33	17.75	9.10	0.700	1.01E+03	7.40E+02	0.0793	4.80E-03	1.820	0.110	0.1676	0.0030	0.1817	1179.6	59.8	119.7	1052.7	19.8	39.6	998.9	8.3	16.6	95
OUJ16z102	189.70	141.30	22.72	0.740	5.00E+03	2.30E+03	0.0535	2.80E-03	0.394	0.019	0.0536	0.0006	-0.0611	350.1	59.2	118.3	337.3	6.9	13.8	336.7	2.0	3.9	100
OUJ16z103	316.70	115.00	48.76	0.360	7.30E+04	4.90E+04	0.0671	2.20E-03	1.205	0.036	0.1315	0.0013	0.1347	840.9	34.1	68.3	802.9	8.3	16.6	796.2	3.7	7.4	99
OUJ16z104	128.30	95.45	28.87	0.740	-1.20E+05	1.70E+05	0.0638	2.60E-03	0.928	0.036	0.1065	0.0012	0.0977	735.0	43.1	86.3	666.6	9.5	18.9	652.6	3.5	7.0	98
OUJ16z105	190.00	26.75	27.05	0.140	-2.50E+05	1.10E+05	0.1309	2.40E-03	6.976	0.190	0.3867	0.0038	0.1395	2110.1	16.1	32.2	2108.4	12.1	24.2	2107.5	8.8	17.7	100
OUJ16z106	89.49	71.62	70.87	0.800	-3.30E+04	1.80E+04	0.1302	2.70E-03	6.813	0.190	0.3782	0.0039	0.1996	2100.7	18.2	36.4	2087.4	12.3	24.7	2067.9	9.1	18.2	99
OUJ16z107	521.50	291.10	45.57	0.560	-3.00E+04	1.00E+04	0.0542	2.00E-03	0.392	0.013	0.0530	0.0006	0.0661	379.4	41.5	83.0	335.9	4.7	9.5	333.0	1.7	3.4	99
OUJ16z108	286.80	155.90	22.88	0.540	-6.80E+04	2.80E+04	0.0527	2.30E-03	0.375	0.016	0.0517	0.0006	0.2068	315.9	49.6	99.3	323.4	5.9	11.8	324.7	2.0	3.9	100
OUJ16z109	757.30	231.20	34.63	0.310	-2.10E+04	5.60E+04	0.0538	1.90E-03	0.377	0.012	0.0510	0.0005	0.0708	362.7	39.8	79.7	324.7	4.4	8.8	320.5	1.6	3.1	99
OUJ16z110	115.10	77.50	31.50	0.670	-4.20E+04	4.40E+04	0.0695	2.50E-03	1.393	0.046	0.1462	0.0017	0.0973	913.6	37.0	74.0	886.0	9.8	19.5	879.6	4.8	9.6	99
OUJ16z111	67.18	57.30	16.83	0.850	-4.30E+05	2.20E+05	0.0668	3.30E-03	0.916	0.044	0.1008	0.0014	0.0301	831.5	51.5	103.0	660.2	11.6	23.3	619.1	4.1	8.2	94
OUJ16z112	106.90	78.20	22.25	0.730	1.90E+05	1.10E+05	0.0582	2.60E-03	0.815	0.034	0.1011	0.0012	0.0243	537.3	48.9	97.8	605.3	9.5	19.0	621.0	3.5	7.0	103
OUJ16z113	55.13	31.88	32.71	0.580	-2.80E+05	1.50E+05	0.1306	2.90E-03	7.150	0.220	0.3950	0.0045	0.4439	2106.0	19.5	39.0	2130.3	13.7	27.4	2146.0	10.4	20.8	101
OUJ16z114	411.30	288.60	83.70	0.700	-1.25E+05	9.20E+04	0.0617	2.00E-03	0.853	0.026	0.1010	0.0010	0.2226	663.7	34.7	69.4	626.3	7.1	14.2	620.4	2.9	5.9	99
OUJ16z116	188.90	225.50	67.74	1.190	-5.00E+05	2.00E+05	0.0608	2.40E-03	0.873	0.032	0.1044	0.0012	0.0096	632.2	42.5	85.0	637.2	8.7	17.3	640.3	3.5	7.0	100
OUJ16z117	45.65	55.63	53.12	1.220	4.00E+02	8.90E+03	0.1229	3.10E-03	6.090	0.190	0.3574	0.0043	0.1066	1998.7	22.4	44.8	1988.8	13.6	27.2	1969.8	10.2	20.4	99
OUJ16z118	240.50	138.30	21.98	0.580	-3.00E+04	1.70E+04	0.0535	2.30E-03	0.404	0.017	0.0546	0.0007	0.2515	350.1	48.6	97.2	344.5	6.1	12.3	342.5	2.0	4.0	99
OUJ16z119	35.69	56.70	16.35	1.590	3.00E+02	1.50E+03	0.0644	4.60E-03	0.911	0.062	0.1028	0.0018	-0.0666	754.8	75.4	150.8	657.6	16.5	32.9	630.8	5.3	10.5	96
OUJ16z120c	71.41	35.37	35.23	0.500	-4.90E+03	9.80E+03	0.1286	2.90E-03	6.780	0.200	0.3785	0.0040	0.1093	2078.9	19.8	39.7	2083.1	13.0	26.1	2069.3	9.4	18.7	99
OUJ16z120r	519.60	227.40	203.30	0.440	3.60E+05	1.10E+05	0.1277	2.10E-03	6.477	0.170	0.3624	0.0034	0.5194	2067.0	14.5	29.0	2042.8	11.5	23.1	1993.5	8.0	16.1	98
OUJ16z122	828.00	446.00	115.90	0.540	1.50E+04	1.70E+04	0.0656	2.10E-03	0.785	0.023	0.0859	0.0009	0.0966	793.6	33.6	67.1	588.3	6.5	13.1	531.4	2.7	5.4	90
OUJ16z123	204.90	118.90	119.90	0.580	7.80E+04	3.30E+04	0.1324	2.30E-03	7.342	0.200	0.3951	0.0039	0.3632	2130.0	15.2	30.4	2153.9	12.2	24.3	2146.4	9.0	18.0	100
OUJ16z125	248.70	236.90	246.60	0.950	1.32E+05	4.40E+04	0.1279	2.30E-03	6.845	0.180	0.3811	0.0038	0.2542	2069.3	15.8	31.7	2091.6	11.6	23.3	2081.4	8.9	17.7	100
OUJ16z126	372.00	258.00	68.40	0.690	2.50E+04	1.50E+04	0.0631	2.20E-03	0.876	0.028	0.0996	0.0011	0.1205	711.6	37.1	74.1	638.8	7.6	15.1	612.1	3.2	6.4	96
OUJ16z127	246.60	190.40	185.00	0.770	1.11E+05	5.00E+04	0.1244	2.20E-03	6.435	0.170	0.3689	0.0036	0.1828	2020.3	15.7	31.3	2037.1	11.6	23.2	2024.2	8.5	17.0	99
OUJ16z128	111.70	98.00	26.93	0.880	3.00E+02	2.30E+03	0.0604	2.80E-03	0.806	0.035	0.0959	0.0012	0.0325	617.9	50.0	100.1	600.2	9.8	19.7	590.5	3.5	7.1	98
OUJ16z129	43.16	16.79	6.83	0.390	9.00E+01	8.30E+02	0.0683	4.00E-03	1.390	0.074	0.1448	0.0019	-0.0810	877.7	60.6	121.2	884.7	15.7	31.4	871.7	5.3	10.7	99
OUJ16z132	181.40	98.67	100.00	0.540	-3.20E+04	1.80E+04	0.1307	2.30E-03	7.009	0.190	0.3835	0.0038	0.2790	2107.4	15.4	30.9	2112.6	12.0	24.1	2092.6	8.9	17.7	99
OUJ16z133	892.00	222.50	56.50	0.250	8.00E+04	2.10E+04	0.0607	1.90E-03	0.779	0.023	0.0926	0.0010	0.3358	627.6	33.7	67.5	584.9	6.6	13.1	570.7	2.8	5.6	98
OUJ16z135	556.00	134.00	23.49	0.240	-2.20E+04	1.10E+04	0.0589	2.20E-03	0.427	0.016	0.0524	0.0006	0.4960	563.4	40.7	81.4	361.0	5.7	11.4	329.2	2.0	3.9	91
OUJ16z136	610.00	422.20	124.80	0.690	-8.00E+05	2.90E+05	0.0621	2.00E-03	0.875	0.025	0.1017	0.0010	0.1585	678.6	34.4	68.8	638.3	6.8	13.5	624.6	2.8	5.7	98
OUJ16z137	220.90	54.40	54.39	0.250	-1.37E+05	5.00E+04	0.1250	2.20E-03	6.498	0.180	0.3710	0.0036	0.2664	2028.8	15.6	31.2	2045.6	12.2	24.4	2034.1	8.5	16.9	99
OUJ16z138	64.73	41.36	13.17	0.640	-1.30E+03	1.10E+03	0.0644	3.20E-03	0.948	0.045	0.1056	0.0014	-0.0872	754.8	52.4	104.9	677.1	11.7	23.4	647.1	4.1	8.2	96
OUJ16z139	300.00	391.30	115.70	1.300	-2.30E+05	2.70E+05	0.0612	2.10E-03	0.857	0.027	0.1013	0.0011	0.0144	646.3	36.9	73.7	628.5	7.4	14.8	622.1	3.2	6.4	99
OUJ16z140	143.40	16.42	4.44	0.110	1.80E+03	3.70E+03	0.0589	2.40E-03	0.788	0.031	0.0954	0.0011	-0.0207	563.4	44.4	88.8	590.0	8.8	17.6	587.2	3.2	6.5	100
OUJ16z141	216.70	47.80	26.87	0.220	1.20E+04	1.10E+04	0.0801	2.60E-03	2.240	0.067	0.2035	0.0021	0.1741	1199.5	32.0	64.0	1193.7	10.5	21.0	1194.1	5.6	11.2	100
OUJ16z142	644.60	296.60	38.64	0.460	1.22E+04	9.50E+03	0.0522	1.90E-03	0.352	0.012	0.0489	0.0006	0.1615	294.2	41.5	83.1	306.5	4.5	9.0	307.7	1.8	3.6	100
OUJ16z143	156.20	163.40	50.13	1.050	2.80E+04	1.10E+04	0.0611	2.50E-03	0.904	0.035	0.1069	0.0012	0.0874	642.8	44.0	88.0	653.9	9.3	18.6	654.6	3.5	7.0	100
OUJ16z144	225.10	117.20	20.25	0.520	2.40E+04	1.00E+04	0.0559	2.50E-03	0.426	0.019	0.0559	0.0007	0.2066	448.4	49.7	99.4	360.3	6.8	13.5	350.8	2.1	4.3	97
OUJ16z145	336.90	588.00	687.20	1.750	5.70E+04	7.20E+04	0.1554	2.60E-03	9.360	0.340	0.4350	0.0110	0.9533	2406.2	14.2	28.4	2373.9	16.6	33.3	2328.2	24.7	49.4	98

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ16z146	237.70	106.90	108.30	0.450	-3.80E+05	3.50E+05	0.1258	2.20E-03	6.646	0.180	0.3824	0.0037	0.4719	2040.1	15.5	30.9	2065.5	11.9	23.9	2087.5	8.6	17.3	101
Discordant data																							
OUJ16z3	1322.00	635.00	44.90	0.480	-1.32E+05	8.80E+04	0.0608	2.00E-03	0.354	0.012	0.0429	0.0011	0.7246	632.2	35.4	70.8	307.5	4.5	9.0	270.8	3.4	6.8	88
OUJ16z18	751.00	395.00	315.50	0.530	7.30E+04	3.10E+04	0.1340	2.10E-03	5.356	0.140	0.2892	0.0027	0.4912	2150.4	13.7	27.4	1877.8	11.2	22.3	1637.5	6.8	13.5	87
OUJ16z21	705.00	839.00	97.00	1.190	2.40E+03	1.60E+03	0.0652	2.30E-03	0.371	0.012	0.0412	0.0005	0.2120	780.8	37.1	74.1	320.6	4.4	8.9	260.0	1.5	3.0	81
OUJ16z23	421.00	349.00	59.80	0.830	-8.10E+03	3.70E+03	0.0624	2.60E-03	0.364	0.017	0.0431	0.0013	0.5512	687.8	44.5	88.9	315.2	6.3	12.6	272.0	4.0	8.0	86
OUJ16z30	230.20	92.20	84.50	0.400	-1.30E+03	2.50E+03	0.1532	2.70E-03	7.163	0.190	0.3402	0.0035	0.3135	2382.0	15.0	30.0	2131.9	11.8	23.6	1887.6	8.4	16.8	89
OUJ16z63	192.40	48.90	39.68	0.250	-5.30E+03	9.10E+03	0.0917	3.20E-03	1.793	0.062	0.1428	0.0020	0.5388	1461.2	33.2	66.3	1042.9	11.3	22.5	860.5	5.6	11.3	83
OUJ16z67	546.70	271.50	199.00	0.500	-3.90E+04	1.70E+04	0.1189	1.90E-03	4.553	0.120	0.2712	0.0025	0.3913	1939.0	14.3	28.6	1740.7	11.0	21.9	1546.9	6.3	12.7	89
OUJ16z82	1152.00	189.20	68.10	0.160	1.01E+04	6.50E+03	0.1045	3.10E-03	1.285	0.052	0.0887	0.0025	0.9204	1705.5	27.3	54.6	839.1	11.5	23.1	547.8	7.4	14.8	65
OUJ16z121	295.60	211.70	37.38	0.720	6.20E+04	2.70E+04	0.0668	3.40E-03	0.501	0.026	0.0544	0.0007	0.3691	831.5	53.1	106.1	412.4	8.8	17.6	341.5	2.2	4.3	83
OUJ16z124	579.00	224.10	202.30	0.390	4.70E+04	3.90E+04	0.1496	2.70E-03	5.710	0.240	0.2695	0.0073	0.9627	2341.4	15.4	30.9	1932.9	18.1	36.3	1538.3	18.5	37.1	80
OUJ16z130	259.10	156.80	29.76	0.610	-3.00E+04	4.80E+04	0.0671	2.80E-03	0.501	0.020	0.0535	0.0006	0.0478	840.9	43.4	86.9	412.4	6.8	13.5	335.9	1.9	3.9	81

Footnotes:

- Analysis references: OUJ16z is zircon from sample OUJ16 (mount CT18-6), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.45a: Sample OUJ18 (LA-ICPMS)

IGSN: IEACC00019 Coordinate UTM: Zone 30S, 3796505 m N, 587288 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																						
OUJ18z1	73.90	84.50	71.60	1.140	7.00E+04	1.20E+04	0.1122	4.00E-03	5.300	0.130	0.3421	0.0041	0.1766	1835.4	32.3	64.6	1868.9	10.5	20.9	1896.8	9.8	19.7	101
OUJ18z2	656.00	437.50	433.00	0.670	2.10E+05	1.50E+05	0.1302	3.60E-03	7.165	0.066	0.4030	0.0039	0.4015	2100.7	24.3	48.6	2132.2	4.1	8.2	2182.8	9.0	17.9	102
OUJ18z3	753.00	414.00	516.00	0.550	-1.00E+05	1.70E+05	0.1967	5.20E-03	14.350	0.170	0.5337	0.0074	0.8634	2799.0	21.6	43.3	2773.1	5.6	11.2	2757.0	15.6	31.1	99
OUJ18z4	56.60	64.21	31.05	1.130	7.50E+03	6.30E+03	0.0781	3.60E-03	2.099	0.085	0.1964	0.0027	0.0174	1149.4	45.8	91.5	1148.5	13.9	27.8	1156.0	7.3	14.5	101
OUJ18z6	356.20	529.00	151.90	1.490	1.70E+04	1.90E+04	0.0592	1.90E-03	0.842	0.020	0.1040	0.0011	0.0329	574.5	34.9	69.8	620.2	5.5	11.0	637.9	3.2	6.4	103
OUJ18z7	341.00	262.10	258.10	0.770	-2.20E+04	6.00E+04	0.1338	3.70E-03	7.342	0.074	0.3980	0.0037	0.1790	2148.4	24.2	48.3	2153.9	4.5	9.0	2159.8	8.5	17.1	100
OUJ18z8	484.80	267.90	38.80	0.550	1.00E+04	1.30E+04	0.0524	1.90E-03	0.388	0.012	0.0536	0.0006	0.0616	302.9	41.3	82.7	332.9	4.4	8.8	336.7	1.8	3.5	101
OUJ18z9	102.10	108.75	89.20	1.070	1.70E+04	1.70E+04	0.1135	3.70E-03	5.330	0.100	0.3399	0.0037	0.0945	1856.2	29.5	58.9	1873.7	8.0	16.0	1886.2	8.9	17.8	101
OUJ18z10	367.60	337.30	309.50	0.920	-2.80E+04	7.00E+04	0.1316	3.60E-03	6.908	0.071	0.3820	0.0035	0.3640	2119.4	24.0	47.9	2099.7	4.6	9.1	2085.6	8.2	16.3	99
OUJ18z11	85.70	55.98	13.66	0.650	-5.00E+02	3.80E+03	0.0590	3.50E-03	0.767	0.042	0.0932	0.0014	0.0393	567.1	64.6	129.2	578.0	12.1	24.1	574.4	4.1	8.3	99
OUJ18z12	401.80	501.40	130.20	1.250	-3.00E+04	1.80E+04	0.0610	1.90E-03	0.819	0.021	0.0971	0.0010	0.1237	639.2	33.5	67.0	607.5	5.9	11.7	597.2	2.9	5.8	98
OUJ18z13	120.40	146.00	40.98	1.210	-3.70E+03	5.10E+03	0.0567	3.00E-03	0.782	0.039	0.0998	0.0014	0.0293	479.9	58.5	116.9	586.6	11.1	22.2	613.2	4.1	8.2	105
OUJ18z15	278.10	122.50	38.90	0.440	9.00E+04	1.20E+04	0.0648	2.20E-03	0.928	0.025	0.1031	0.0012	-0.0351	767.8	35.8	71.5	666.6	6.6	13.2	632.4	3.5	7.0	95
OUJ18z16	835.00	585.00	482.70	0.700	1.00E+05	1.30E+05	0.1216	3.30E-03	5.346	0.052	0.3185	0.0032	0.4707	1979.8	24.2	48.3	1876.2	4.2	8.3	1782.4	7.8	15.6	95
OUJ18z18	446.00	1203.00	1256.00	2.700	-3.40E+04	8.40E+04	0.1360	3.70E-03	7.732	0.067	0.4129	0.0040	0.4015	2176.9	23.7	47.4	2200.3	3.9	7.8	2228.2	9.1	18.3	101
OUJ18z19	312.00	418.30	121.90	1.340	-2.00E+04	1.30E+04	0.0615	2.00E-03	0.928	0.023	0.1102	0.0012	-0.0058	656.8	34.9	69.7	666.6	6.1	12.1	673.6	3.5	7.0	101
OUJ18z20	365.00	68.40	68.70	0.190	1.60E+04	7.00E+04	0.1294	3.60E-03	7.143	0.090	0.3993	0.0042	0.5034	2089.8	24.5	48.9	2129.4	5.6	11.2	2165.8	9.7	19.3	102
OUJ18z21	299.00	240.00	35.97	0.800	1.00E+04	7.90E+03	0.0531	2.60E-03	0.402	0.019	0.0546	0.0007	0.0999	333.1	55.5	111.0	343.1	6.9	13.7	342.7	2.1	4.3	100
OUJ18z22	281.00	279.00	239.30	0.990	1.90E+04	4.30E+04	0.1163	3.40E-03	5.517	0.066	0.3459	0.0039	0.0701	1900.1	26.3	52.5	1903.2	5.1	10.3	1915.0	9.3	18.7	101
OUJ18z23	185.60	137.30	23.62	0.740	-2.70E+03	5.10E+03	0.0659	3.60E-03	0.476	0.027	0.0527	0.0008	0.2212	803.2	57.2	114.4	395.3	9.3	18.6	330.9	2.5	5.0	84
OUJ18z24	744.00	285.60	50.90	0.380	-2.00E+04	2.30E+04	0.0591	1.80E-03	0.492	0.014	0.0614	0.0008	0.2469	570.8	33.1	66.3	406.3	4.8	9.5	384.1	2.5	5.0	95
OUJ18z25	264.60	306.60	97.50	1.160	0.00E+00	1.50E+04	0.0621	2.10E-03	1.020	0.028	0.1192	0.0013	0.0095	677.6	36.1	72.3	713.9	7.0	14.1	726.0	3.7	7.5	102
OUJ18z26	491.50	358.60	101.70	0.730	8.00E+04	2.60E+04	0.0605	1.70E-03	0.889	0.020	0.1063	0.0011	0.1589	621.5	30.3	60.6	645.8	5.4	10.7	651.0	3.2	6.4	101
OUJ18z27	132.80	198.50	51.50	1.490	0.00E+00	5.50E+03	0.0573	2.90E-03	0.718	0.032	0.0918	0.0013	-0.1309	503.1	55.7	111.4	549.5	9.4	18.9	566.2	3.8	7.7	103
OUJ18z28	486.00	526.70	232.70	1.080	5.00E+04	3.90E+04	0.0702	1.70E-03	1.581	0.025	0.1639	0.0017	0.1210	934.2	24.8	49.7	962.8	4.9	9.8	978.4	4.7	9.4	102
OUJ18z30	497.00	973.00	281.80	1.960	-2.50E+04	3.10E+04	0.0611	1.70E-03	0.878	0.018	0.1051	0.0011	0.1342	642.8	29.9	59.8	639.9	4.9	9.7	644.1	3.2	6.4	101
OUJ18z31	443.40	304.00	106.50	0.690	2.00E+04	3.20E+04	0.0668	1.90E-03	1.201	0.025	0.1309	0.0013	0.1466	831.5	29.6	59.3	801.0	5.8	11.5	792.7	3.7	7.4	99
OUJ18z32	929.00	195.50	60.40	0.210	3.60E+04	5.20E+04	0.0617	1.50E-03	0.951	0.015	0.1121	0.0011	0.2314	664.4	26.0	52.1	678.6	3.9	7.8	684.7	3.2	6.4	101
OUJ18z33	377.00	377.00	58.70	1.000	1.30E+03	9.40E+03	0.0562	2.30E-03	0.426	0.016	0.0549	0.0006	0.0673	460.3	45.4	90.7	360.3	5.7	11.4	344.8	1.9	3.7	96
OUJ18z34	518.00	149.70	161.60	0.290	1.50E+05	1.30E+05	0.1436	3.90E-03	8.630	0.110	0.4365	0.0052	0.7640	2271.1	23.4	46.8	2299.7	5.8	11.6	2335.0	11.7	23.3	102
OUJ18z35	508.00	323.50	50.20	0.640	8.00E+04	1.40E+04	0.0561	2.10E-03	0.405	0.013	0.0529	0.0007	0.1317	456.3	41.5	83.1	345.3	4.7	9.4	332.4	2.2	4.3	96
OUJ18z36	291.00	257.50	229.30	0.880	8.30E+04	5.40E+04	0.1160	3.30E-03	5.595	0.069	0.3498	0.0035	0.2811	1895.5	25.6	51.2	1915.3	5.3	10.6	1933.6	8.4	16.7	101
OUJ18z37	257.00	126.50	107.70	0.490	4.00E+04	3.80E+04	0.1323	3.90E-03	5.507	0.096	0.3037	0.0047	0.6331	2128.7	25.8	51.6	1901.7	7.5	15.0	1709.6	11.6	23.2	90
OUJ18z38	566.00	712.00	250.90	1.260	1.09E+05	5.00E+04	0.0722	1.80E-03	1.404	0.027	0.1427	0.0015	0.1569	991.6	25.3	50.7	890.6	5.7	11.4	859.9	4.2	8.5	97
OUJ18z39	1961.00	207.50	57.10	0.110	-6.80E+04	8.70E+04	0.0595	1.30E-03	0.783	0.011	0.0954	0.0011	0.4575	585.1	23.7	47.4	587.2	3.1	6.3	587.3	3.2	6.5	100
OUJ18z40	677.00	171.00	128.80	0.250	-3.00E+04	7.60E+04	0.1015	2.10E-03	3.329	0.053	0.2403	0.0026	0.6307	1651.7	19.2	38.3	1487.9	6.2	12.4	1388.3	6.8	13.5	93
OUJ18z41	467.40	1233.00	316.60	2.640	-9.00E+04	2.20E+04	0.0639	1.70E-03	0.852	0.018	0.0970	0.0013	0.4237	738.3	28.2	56.3	625.7	4.9	9.9	596.8	3.8	7.6	95
OUJ18z42	564.50	239.60	230.20	0.420	3.00E+05	1.20E+05	0.1271	3.50E-03	6.710	0.075	0.3817	0.0039	0.5207	2058.2	24.3	48.6	2073.9	4.9	9.9	2084.2	9.1	18.2	100
OUJ18z43	297.00	687.00	193.20	2.310	2.00E+04	1.50E+04	0.0615	2.00E-03	0.851	0.024	0.1007	0.0012	0.1904	656.8	34.9	69.7	625.2	6.6	13.2	618.3	3.5	7.0	99
OUJ18z44	35.95	36.35	8.86	1.010	-2.00E+02	1.50E+03	0.0602	5.50E-03	0.699	0.061	0.0871	0.0019	-0.0124	610.8	98.7	197.5	538.2	18.2	36.4	538.4	5.6	11.3	100
OUJ18z45	388.00	215.20	211.00	0.550	5.40E+04	7.00E+04	0.1358	3.80E-03	6.755	0.075	0.3612	0.0035	0.3122	2174.3	24.4	48.7	2079.8	4.9	9.8	1987.9	8.3	16.6	96
OUJ18z46	585.00	302.40	116.90	0.520	6.60E+04	3.80E+04	0.0772	1.80E-03	1.755	0.026	0.1660	0.0017	0.1298	1126.4	23.2	46.5	1029.0	4.8	9.6	990.0	4.7	9.4	96
OUJ18z47	312.90	237.80	117.10	0.760	1.00E+03	2.90E+04	0.0748	1.90E-03	1.834	0.034	0.1790	0.0019	0.1195	1063.1	25.5	51.1	1057.7	6.1	12.2	1061.5	5.2	10.4	100
OUJ18z48	1046.00	1290.00	1570.00	1.230	-6.00E+05	2.30E+05	0.1810	4.80E-03	11.830	0.110	0.4758	0.0056	0.7332	2662.1	22.0	43.9	2591.0	4.3	8.7	2508.9	12.2	24.5	97
OUJ18z49	30.90	33.00	10.50	1.070	1.20E+03	2.10E+03	0.0595	5.10E-03	0.909	0.075	0.1088	0.0024	0.0364	585.4	93.0	186.0	656.5	19.9	39.9	665.8	7.0	14.0	101
OUJ18z50	756.00	481.00	213.30	0.640	-2.80E+04	6.20E+04	0.0724	1.60E-03	1.715	0.024	0.1714	0.0017	0.2526	995.8	22.5	44.9	1014.2	4.5	9.0	1019.8	4.7	9.4	101
Discordant data																						
OUJ18z5	336.00	119.80	64.60	0.360	-1.00E+04	2.60E+04	0.1033	2.60E-03	2.400	0.093	0.1684	0.0047	0.8771	1684.2	23.2	46.5	1243	13.9	28	1003.3	13.0	25.9	81
OUJ18z14	350.00	96.40	88.70	0.280	3.00E+04	2.10E+04	0.0994	2.40E-03	2.161	0.047	0.1575	0.0021	0.6028	1612.9	22.5	45.0	1169	7.5	15	942.9	5.8	11.7	81
OUJ18z17	477.00	561.00	124.80	1.180	1.40E+04	1.90E+04	0.0692	2.00E-03	0.885	0.019	0.0928	0.0012	0.0743	904.7	29.8	59.6	644	5.1	10	572.1	3.5	7.1	89
OUJ18z29	316.00	352.30	246.80	1.110	2.70E+05	1.20E+05	0.1222	2.90E-03	4.026	0.086	0.2416	0.0055	0.7260	1988.6	21.1	42.2	1639	8.7	17	1395.0	14.3	28.6	85

Footnotes:

- Analysis references: OUJ18z is zircon from sample OUJ18 (mounts CT18-10b and CT19-3), followed by grain number "c" or "r", meaning core or rim, respectively.

Table D.45b: Sample OUJ18 (SIMS)

IGSN: IEACC00019 Coordinate UTM: Zone 30S, 3796505 m N, 587288 m E

ANALYSIS	^{238}U (ppm)	^{206}Pb (ppm)	Th/U	^{204}Pb (ppb)	Ratios							Ages (Ma)									Concordance (%)
					$^{207}Pb/^{206}Pb$	σ	$^{207}Pb/^{235}U$	σ	$^{206}Pb/^{238}U$	σ	Rho	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	
Concordant data																					
OUJ18z51	131.00	20.70	0.58	3.400	0.0736	0.0015	1.850	0.050	0.1800	0.0030	0.5699	1030	40.0	80.0	1061	19.0	38.0	1077	16.0	32.0	102
OUJ18z52	296.00	13.80	1.00	2.400	0.0495	0.0020	0.370	0.020	0.0500	0.0010	0.3282	170	95.0	190.0	318	13.0	26.0	338	5.0	10.0	107
OUJ18z53	142.00	12.50	0.52	0.400	0.0596	0.0023	0.840	0.030	0.1000	0.0020	0.3953	590	82.0	164.0	618	19.0	38.0	626	10.0	20.0	101
OUJ18z54	94.00	7.90	0.40	0.900	0.0579	0.0026	0.780	0.040	0.1000	0.0020	0.3460	526	98.0	196.0	584	22.0	44.0	599	10.0	20.0	103
OUJ18z55	74.00	6.30	0.48	1.400	0.0657	0.0027	0.890	0.040	0.1000	0.0020	0.3399	798	85.0	170.0	647	24.0	48.0	605	10.0	20.0	94
OUJ18z56	661.00	49.50	0.08	0.400	0.0578	0.0012	0.690	0.020	0.0900	0.0010	0.5725	520	47.0	94.0	532	11.0	22.0	535	8.0	16.0	101
OUJ18z57	287.00	36.60	0.53	0.900	0.0696	0.0008	1.410	0.030	0.1500	0.0020	0.8066	916	23.0	46.0	894	12.0	24.0	886	13.0	26.0	99
OUJ18z58	266.00	23.70	0.71	0.000	0.0593	0.0010	0.840	0.020	0.1000	0.0020	0.6734	578	38.0	76.0	620	11.0	22.0	631	10.0	20.0	102
OUJ18z60	315.00	104.20	0.22	0.500	0.1309	0.0013	6.900	0.120	0.3800	0.0050	0.8227	2110	17.0	34.0	2097	16.0	32.0	2086	25.0	50.0	99
OUJ18z61	570.00	47.50	0.85	5.000	0.0614	0.0012	0.820	0.020	0.1000	0.0010	0.5656	653	43.0	86.0	605	12.0	24.0	593	8.0	16.0	98
OUJ18z62	258.00	22.60	0.70	2.200	0.0590	0.0016	0.820	0.030	0.1000	0.0020	0.4680	567	58.0	116.0	610	15.0	30.0	621	9.0	18.0	102
OUJ18z63	785.00	106.90	0.10	15.300	0.0684	0.0010	1.480	0.030	0.1600	0.0020	0.6667	881	30.0	60.0	923	13.0	26.0	942	12.0	24.0	102
OUJ18z64	109.00	11.20	0.80	1.600	0.0635	0.0020	1.040	0.040	0.1200	0.0020	0.4238	724	68.0	136.0	721	20.0	40.0	721	11.0	22.0	100
OUJ18z65	215.00	65.00	0.74	1.300	0.1251	0.0014	6.020	0.110	0.3500	0.0050	0.7778	2030	20.0	40.0	1977	17.0	34.0	1930	24.0	48.0	98
OUJ18z66	329.00	51.50	0.89	2.400	0.0746	0.0014	1.860	0.040	0.1800	0.0030	0.6071	1057	38.0	76.0	1066	16.0	32.0	1070	14.0	28.0	100
OUJ18z67	834.00	58.80	0.13	26.900	0.0567	0.0014	0.640	0.020	0.0800	0.0010	0.4450	478	54.0	108.0	500	13.0	26.0	505	7.0	14.0	101
OUJ18z68	116.00	12.70	0.52	0.000	0.0696	0.0022	1.210	0.040	0.1300	0.0020	0.4509	916	65.0	130.0	805	20.0	40.0	766	11.0	22.0	95
OUJ18z69	375.00	51.80	0.32	7.600	0.0698	0.0012	1.540	0.040	0.1600	0.0030	0.6522	923	36.0	72.0	946	16.0	32.0	956	15.0	30.0	101
OUJ18z70	811.00	115.40	0.19	5.200	0.0742	0.0011	1.680	0.040	0.1600	0.0020	0.6785	1046	31.0	62.0	1001	14.0	28.0	981	13.0	26.0	98
OUJ18z71	500.00	34.10	0.05	15.800	0.0612	0.0014	0.660	0.020	0.0800	0.0010	0.4671	645	51.0	102.0	517	14.0	28.0	489	7.0	14.0	95
OUJ18z73	58.00	7.60	0.76	1.900	0.0728	0.0023	1.530	0.060	0.1500	0.0020	0.3962	1009	63.0	126.0	942	25.0	50.0	914	14.0	28.0	97
OUJ18z74	390.00	27.70	0.64	2.800	0.0591	0.0010	0.670	0.020	0.0800	0.0010	0.6414	570	38.0	76.0	519	11.0	22.0	508	8.0	16.0	98
OUJ18z75	181.00	13.50	0.64	4.300	0.0584	0.0014	0.700	0.030	0.0900	0.0010	0.4139	544	53.0	106.0	537	16.0	32.0	535	8.0	16.0	100
OUJ18z76	161.00	21.50	0.45	5.500	0.0682	0.0017	1.460	0.050	0.1500	0.0030	0.4843	873	53.0	106.0	912	21.0	42.0	928	14.0	28.0	102
OUJ18z77	689.00	88.70	0.57	14.500	0.0712	0.0007	1.460	0.030	0.1500	0.0020	0.7669	962	20.0	40.0	913	11.0	22.0	894	12.0	24.0	98
OUJ18z78	122.00	9.60	1.61	4.300	0.0589	0.0017	0.740	0.040	0.0900	0.0020	0.3546	562	64.0	128.0	560	21.0	42.0	560	9.0	18.0	100
OUJ18z79	738.00	32.50	1.00	1.600	0.0531	0.0015	0.370	0.010	0.0500	0.0010	0.4337	332	64.0	128.0	321	9.0	18.0	320	4.0	8.0	100
OUJ18z80	221.00	61.40	1.44	0.300	0.1169	0.0013	5.190	0.100	0.3200	0.0050	0.7904	1910	20.0	40.0	1849	17.0	34.0	1798	23.0	46.0	97
OUJ18z82	502.00	46.80	0.31	1.200	0.0613	0.0009	0.910	0.020	0.1100	0.0020	0.6888	651	31.0	62.0	657	10.0	20.0	659	9.0	18.0	100
OUJ18z85	151.00	33.90	0.28	1.200	0.0991	0.0026	3.550	0.120	0.2600	0.0050	0.6134	1607	48.0	96.0	1538	27.0	54.0	1490	27.0	54.0	97
OUJ18z86	159.00	13.70	0.39	3.800	0.0585	0.0016	0.800	0.030	0.1000	0.0010	0.3825	547	61.0	122.0	598	17.0	34.0	612	9.0	18.0	102
OUJ18z87	283.00	23.80	0.85	1.700	0.0611	0.0016	0.820	0.030	0.1000	0.0010	0.4515	642	58.0	116.0	606	15.0	30.0	597	8.0	16.0	99
OUJ18z89	130.00	10.80	0.47	1.200	0.0599	0.0019	0.790	0.030	0.1000	0.0020	0.4154	600	70.0	140.0	592	17.0	34.0	590	9.0	18.0	100
OUJ18z92	507.00	22.70	1.07	41.800	0.0526	0.0007	0.380	0.020	0.0500	0.0010	0.2172	313	32.0	64.0	324	18.0	36.0	326	4.0	8.0	101
OUJ18z93	441.00	83.70	1.03	1.800	0.0857	0.0011	2.590	0.050	0.2200	0.0030	0.7553	1332	25.0	50.0	1298	15.0	30.0	1279	17.0	34.0	99
OUJ18z94	189.00	16.10	0.67	3.800	0.0548	0.0018	0.740	0.030	0.1000	0.0010	0.3627	405	75.0	150.0	564	18.0	36.0	605	9.0	18.0	107
OUJ18z95	228.00	21.80	0.51	4.100	0.0626	0.0018	0.950	0.030	0.1100	0.0020	0.4275	695	61.0	122.0	678	18.0	36.0	673	10.0	20.0	99
OUJ18z96	288.00	89.50	0.65	15.600	0.1284	0.0012	6.350	0.110	0.3600	0.0050	0.8193	2075	17.0	34.0	2024	17.0	34.0	1976	24.0	48.0	98
OUJ18z98	288.00	28.70	0.38	6.100	0.0601	0.0009	0.950	0.020	0.1200	0.0020	0.5833	606	33.0	66.0	679	13.0	26.0	702	10.0	20.0	103
OUJ18z99	455.00	40.90	0.55	14.700	0.0650	0.0006	0.930	0.020	0.1000	0.0020	0.6337	773	21.0	42.0	667	12.0	24.0	637	9.0	18.0	95
OUJ18z100	391.00	17.30	0.14	1.300	0.0526	0.0016	0.370	0.010	0.0500	0.0010	0.4307	312	68.0	136.0	321	10.0	20.0	322	5.0	10.0	100
OUJ18z101	684.00	31.50	0.55	2.400	0.0527	0.0012	0.390	0.010	0.0500	0.0010	0.5087	313	53.0	106.0	331	8.0	16.0	334	5.0	10.0	101
OUJ18z102	708.00	106.20	0.34	6.200	0.0731	0.0006	1.750	0.030	0.1700	0.0020	0.8352	1017	18.0	36.0	1026	12.0	24.0	1031	14.0	28.0	100
OUJ18z104	146.00	13.20	0.63	0.000	0.0592	0.0021	0.850	0.030	0.1000	0.0020	0.4054	575	76.0	152.0	625	18.0	36.0	639	9.0	18.0	102
OUJ18z105	171.00	48.20	0.56	10.600	0.1194	0.0010	5.370	0.090	0.3300	0.0050	0.8113	1947	15.0	30.0	1878	16.0	32.0	1818	22.0	44.0	97
OUJ18z106	99.00	12.60	1.06	1.900	0.0717	0.0026	1.460	0.060	0.1500	0.0030	0.4255	976	75.0	150.0	914	26.0	52.0	889	15.0	30.0	97
OUJ18z107	858.00	67.00	0.71	33.000	0.0609	0.0005	0.760	0.020	0.0900	0.0010	0.6257	637	17.0	34.0	573	10.0	20.0	557	8.0	16.0	97
OUJ18z108	247.00	21.80	0.04	5.100	0.0604	0.0015	0.850	0.030	0.1000	0.0010	0.4449	616	52.0	104.0	623	16.0	32.0	626	9.0	18.0	100
OUJ18z110	122.00	17.00	0.34	2.000	0.0732	0.0010	1.620	0.040	0.1600	0.0030	0.6984	1018	27.0	54.0	979	15.0	30.0	962	14.0	28.0	98
OUJ18z111	251.00	32.60	0.62	5.500	0.0661	0.0009	1.370	0.030	0.1500	0.0020	0.6527	808	27.0	54.0	874	14.0	28.0	901	12.0	24.0	103
OUJ18z112	291.00	13.70	0.68	0.000	0.0572	0.0030	0.430	0.020	0.0500	0.0010	0.3175	497	114.0	228.0	362	17.0	34.0	342	6.0	12.0	94
OUJ18z113	167.00	13.10	0.13	1.500	0.0582	0.0016	0.720	0.030	0.0900	0.0010	0.4455	536	62.0	124.0	552	15.0	30.0	557	8.0	16.0	101
OUJ18z114	193.00	17.10	1.29	1.500	0.0623	0.0022	0.880	0.040	0.1000	0.0020	0.3891	683	77.0	154.0	641	19.0	38.0	629	9.0	18.0	98
OUJ18z115	666.00	96.30	0.64	11.300	0.0739	0.0011	1.700	0.040	0.1700	0.0020	0.6537	1039	31.0	62.0	1009	14.0	28.0	996	13.0	26.0	99
OUJ18z116	45.00	15.90	0.12	1.500	0.1416	0.0026	7.910	0.200	0.4100	0.0060	0.6444	2246	32.0	64.0	2219	24.0	48.0	2192	30.0	60.0	99
OUJ18z118	965.00	66.90	0.40	36.700	0.0621	0.0009	0.690	0.020	0.0800	0.0010	0.5573	677	30.0	60.0	530	11.0	22.0	497	7.0	14.0	94

ANALYSIS	^{238}U	^{206}Pb	Th/U	^{204}Pb	Ratios							Ages (Ma)									Concordance
	(ppm)	(ppm)		(ppb)	$^{207}Pb/^{206}Pb$	σ	$^{207}Pb/^{235}U$	σ	$^{206}Pb/^{238}U$	σ	Rho	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb^*/^{238}U$	σ	2σ	(%)
OUJ18z119	182.00	8.10	0.43	0.800	0.0517	0.0028	0.370	0.020	0.0500	0.0010	0.2731	272	124.0	248.0	316	16.0	32.0	323	5.0	10.0	102
OUJ18z120	58.00	14.70	0.97	0.000	0.1059	0.0029	4.250	0.130	0.2900	0.0040	0.4680	1729	50.0	100.0	1682	26.0	52.0	1647	21.0	42.0	98
Discordant data																					
OUJ18z59	35.00	5.90	0.28	0.000	0.0972	0.0054	2.580	0.160	0.1900	0.0060	0.4845	1571	104.0	208.0	1294	46.0	92.0	1135	32.0	64.0	88
OUJ18z72	1177.00	164.80	0.56	28.400	0.1271	0.0007	2.840	0.080	0.1600	0.0040	0.9755	2058	10.0	20.0	1364	21.0	42.0	967	24.0	48.0	71
OUJ18z81	319.00	28.50	0.54	472.500	-0.0289	-0.0019	-0.410	-0.170	0.1000	0.0090	0.2277	#N/A	#NUM!	#NUM!	-538	-337.0	-674.0	633	55.0	110.0	-118
OUJ18z83	1058.00	200.00	0.20	21.900	0.1388	0.0039	4.180	0.130	0.2200	0.0030	0.4515	2212	49.0	98.0	1669	27.0	54.0	1273	17.0	34.0	76
OUJ18z84	77.00	3.90	1.11	14.700	0.0423	0.0013	0.340	0.090	0.0600	0.0010	0.0993	#N/A	79.0	158.0	294	64.0	128.0	362	9.0	18.0	123
OUJ18z88	900.00	356.20	0.69	49.800	0.3089	0.0010	19.480	0.280	0.4600	0.0060	0.9736	3515	5.0	10.0	3064	16.0	32.0	2428	28.0	56.0	79
OUJ18z90	26.00	2.40	1.18	1.300	0.0716	0.0049	1.040	0.090	0.1100	0.0030	0.3257	973	140.0	280.0	722	46.0	92.0	644	18.0	36.0	89
OUJ18z91	1879.00	108.90	1.26	214.200	0.0645	0.0006	0.600	0.020	0.0700	0.0010	0.5387	757	19.0	38.0	474	12.0	24.0	418	7.0	14.0	88
OUJ18z97	1039.00	123.30	0.16	35.700	0.0921	0.0007	1.740	0.030	0.1400	0.0020	0.8523	1469	15.0	30.0	1024	13.0	26.0	829	12.0	24.0	81
OUJ18z103	581.00	34.60	0.98	66.200	0.0676	0.0010	0.640	0.030	0.0700	0.0010	0.3370	857	30.0	60.0	503	19.0	38.0	429	7.0	14.0	85
OUJ18z109	721.00	130.50	0.06	6.200	0.1096	0.0014	3.160	0.060	0.2100	0.0030	0.7788	1792	23.0	46.0	1447	16.0	32.0	1224	18.0	36.0	85
OUJ18z117	332.00	100.50	0.66	4.000	0.1634	0.0017	7.890	0.200	0.3500	0.0080	0.9064	2491	18.0	36.0	2217	24.0	48.0	1936	38.0	76.0	87

Footnotes:

- Analysis references: OUJ18z is zircon from sample OUJ18 (mounts CT18-10b and CT19-3), followed by grain number.
- Pb* indicates radiogenic Pb, corrected for common Pb.

Table D.46: Sample OUJ19 (LA-ICPMS)

IGSN: IEACC00020 Coordinate UTM: Zone 30S, 3796474 m N, 587262 m E

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)									Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
Concordant data																							
OUJ19z1	973.00	60.10	56.00	0.060	2.01E+05	7.00E+04	0.0726	2.00E-03	1.224	0.026	0.1221	0.0012	-0.0610	1002.8	28.0	55.9	811.6	5.9	11.9	742.9	3.4	6.9	92
OUJ19z3	662.00	701.00	111.10	1.060	2.40E+04	1.70E+04	0.0602	2.20E-03	0.449	0.014	0.0545	0.0006	-0.1077	610.8	39.5	79.0	376.6	4.9	9.8	341.8	1.7	3.5	91
OUJ19z4	125.86	495.90	476.60	3.940	2.20E+04	2.40E+04	0.1265	3.90E-03	6.490	0.110	0.3741	0.0039	0.1256	2049.9	27.2	54.5	2044.5	7.4	14.9	2048.7	9.1	18.3	100
OUJ19z5	194.10	126.80	18.53	0.650	-2.20E+04	1.30E+04	0.0548	2.90E-03	0.382	0.019	0.0507	0.0007	0.1060	404.1	59.2	118.5	328.5	7.0	13.9	319.1	2.1	4.2	97
OUJ19z6	139.50	117.40	48.90	0.840	-5.70E+04	2.10E+04	0.0684	2.50E-03	1.317	0.040	0.1411	0.0018	-0.0035	880.7	37.8	75.6	853.2	8.8	17.5	850.9	5.1	10.2	100
OUJ19z7	243.50	557.70	152.60	2.290	-6.00E+05	1.50E+05	0.0598	2.20E-03	0.821	0.023	0.0996	0.0012	-0.1375	596.3	39.9	79.7	608.6	6.4	12.8	612.3	3.5	7.0	101
OUJ19z8	83.80	338.00	310.40	4.030	4.00E+04	1.10E+04	0.1276	4.30E-03	6.280	0.130	0.3606	0.0044	0.1807	2065.2	29.7	59.4	2015.7	9.1	18.1	1985.0	10.4	20.8	98
OUJ19z9	210.70	220.00	63.60	1.040	1.07E+04	8.40E+03	0.0630	2.40E-03	0.874	0.028	0.0997	0.0013	0.0769	708.2	40.5	81.0	637.7	7.6	15.2	612.7	3.8	7.6	96
OUJ19z10	269.50	70.91	96.40	0.260	1.03E+05	7.00E+04	0.2287	6.20E-03	18.060	0.160	0.5731	0.0053	0.2673	3043.0	21.7	43.4	2992.9	4.3	8.5	2920.5	10.9	21.7	98
OUJ19z11	235.50	119.20	140.30	0.510	7.00E+04	4.10E+04	0.1668	4.60E-03	10.670	0.100	0.4643	0.0045	0.2218	2525.8	23.2	46.3	2494.8	4.3	8.7	2458.5	9.9	19.8	99
OUJ19z12	206.40	126.10	72.60	0.610	1.60E+04	1.80E+04	0.0834	2.40E-03	2.455	0.050	0.2143	0.0021	0.0555	1278.6	28.0	56.1	1258.9	7.3	14.7	1251.7	5.6	11.1	99
OUJ19z13	906.90	917.40	140.60	1.010	2.00E+04	1.70E+04	0.0551	1.60E-03	0.412	0.010	0.0541	0.0006	0.1117	416.3	32.4	64.9	350.3	3.6	7.2	339.9	1.7	3.4	97
OUJ19z14	407.80	251.70	125.60	0.620	5.10E+04	2.90E+04	0.0745	1.80E-03	1.854	0.030	0.1818	0.0018	0.1380	1055.0	24.3	48.7	1064.9	5.3	10.7	1076.8	4.9	9.8	101
OUJ19z15	181.00	255.20	66.70	1.410	3.30E+04	1.50E+04	0.0591	2.60E-03	0.782	0.030	0.0959	0.0012	-0.0279	570.8	47.9	95.7	586.6	8.5	17.1	590.3	3.5	7.1	101
OUJ19z16	287.20	361.00	174.00	1.260	8.30E+04	3.10E+04	0.0735	1.90E-03	1.735	0.035	0.1719	0.0019	0.2402	1027.8	26.1	52.3	1021.6	6.5	13.0	1022.6	5.2	10.5	100
OUJ19z17	165.20	106.30	106.70	0.640	6.50E+04	3.50E+04	0.1269	3.80E-03	6.820	0.100	0.3919	0.0043	0.1820	2055.5	26.4	52.9	2088.3	6.5	13.0	2131.6	10.0	19.9	102
OUJ19z18	243.90	224.80	33.90	0.920	1.19E+04	6.10E+03	0.0532	2.40E-03	0.389	0.015	0.0536	0.0008	0.0348	337.3	51.1	102.2	333.6	5.5	11.0	336.8	2.3	4.6	101
OUJ19z19	146.10	133.50	135.70	0.910	5.10E+04	3.60E+04	0.1297	3.90E-03	7.190	0.110	0.3993	0.0043	0.2813	2093.9	26.4	52.8	2135.3	6.8	13.6	2165.8	9.9	19.8	101
OUJ19z20	12.23	16.06	4.29	1.310	4.40E+02	4.40E+02	0.0623	9.30E-03	0.800	0.120	0.0960	0.0033	0.0149	684.4	159.3	318.7	596.8	33.8	67.6	590.9	9.7	19.4	99
OUJ19z21	232.40	187.70	220.70	0.810	-1.60E+04	5.30E+04	0.1609	4.50E-03	10.540	0.120	0.4744	0.0044	0.2465	2465.1	23.6	47.2	2483.4	5.3	10.5	2502.8	9.6	19.2	101
OUJ19z22	64.30	38.95	40.72	0.610	8.50E+04	4.00E+04	0.1389	4.70E-03	7.780	0.160	0.4085	0.0049	0.0318	2213.5	29.3	58.7	2205.9	9.2	18.5	2208.1	11.2	22.4	100
OUJ19z23	282.20	160.40	143.80	0.570	-2.80E+04	3.20E+04	0.1256	3.60E-03	5.737	0.081	0.3320	0.0040	0.5461	2037.3	25.3	50.7	1937.0	6.1	12.2	1848.1	9.7	19.4	95
OUJ19z24	927.00	792.00	224.60	0.850	3.00E+04	3.90E+04	0.0597	1.40E-03	0.828	0.012	0.1013	0.0009	0.1375	592.4	25.4	50.8	612.5	3.3	6.7	621.8	2.7	5.3	102
OUJ19z25	270.00	147.80	50.30	0.550	1.00E+03	1.30E+04	0.0619	2.00E-03	1.031	0.028	0.1209	0.0013	0.0318	670.7	34.6	69.1	719.4	7.0	14.0	735.6	3.7	7.5	102
OUJ19z26	291.30	397.70	124.30	1.370	1.70E+04	1.60E+04	0.0633	1.90E-03	0.960	0.022	0.1109	0.0011	0.0544	718.3	31.9	63.7	683.3	5.7	11.4	677.7	3.2	6.4	99
OUJ19z27	241.30	139.00	131.90	0.580	-2.00E+04	3.40E+04	0.1204	3.50E-03	6.019	0.083	0.3631	0.0037	0.2094	1962.2	25.9	51.9	1978.6	6.0	12.0	1996.9	8.7	17.5	101
OUJ19z28	109.20	81.20	78.70	0.740	-4.00E+04	2.00E+04	0.1312	4.10E-03	7.070	0.110	0.3916	0.0040	-0.0161	2114.1	27.4	54.8	2120.3	6.9	13.8	2130.2	9.3	18.5	100
OUJ19z29	117.80	111.50	28.37	0.950	9.00E+03	5.80E+03	0.0584	2.90E-03	0.744	0.034	0.0919	0.0013	0.0980	544.8	54.3	108.5	564.7	9.9	19.8	566.8	3.8	7.7	100
OUJ19z30	357.00	63.19	18.32	0.180	1.90E+04	2.10E+04	0.0610	1.80E-03	0.848	0.021	0.1022	0.0011	0.1188	639.2	31.7	63.5	623.6	5.8	11.5	627.5	3.2	6.4	101
OUJ19z31	475.00	360.00	445.00	0.760	9.00E+05	1.80E+05	0.1811	4.90E-03	12.370	0.100	0.4940	0.0044	0.3280	2663.0	22.4	44.8	2632.9	3.8	7.6	2588.0	9.5	19.0	98
OUJ19z32	214.20	165.50	46.85	0.770	-1.40E+05	1.80E+05	0.0616	2.00E-03	0.880	0.025	0.1035	0.0013	0.1080	660.3	34.8	69.6	641.0	6.7	13.5	634.9	3.8	7.6	99
OUJ19z33	394.10	242.40	221.20	0.620	-2.70E+05	1.50E+05	0.1230	3.40E-03	5.443	0.076	0.3196	0.0041	0.5719	2000.2	24.6	49.1	1891.7	6.0	12.0	1787.8	10.0	20.0	95
OUJ19z34	159.70	113.00	33.68	0.710	8.10E+03	8.00E+03	0.0622	2.60E-03	0.886	0.033	0.1040	0.0014	0.0079	681.0	44.6	89.3	644.2	8.9	17.8	637.8	4.1	8.2	99
OUJ19z35	201.00	384.00	104.80	1.910	7.30E+03	8.20E+03	0.0620	2.50E-03	0.840	0.029	0.0981	0.0014	0.0672	674.1	43.1	86.2	619.1	8.0	16.0	603.3	4.1	8.2	97
OUJ19z36	131.10	125.30	36.77	0.960	1.19E+04	8.00E+03	0.0594	2.90E-03	0.862	0.037	0.1054	0.0013	-0.0803	581.8	53.0	106.0	631.2	10.1	20.2	646.0	3.8	7.6	102
OUJ19z37	224.60	73.10	20.19	0.330	-1.00E+03	1.10E+04	0.0609	2.20E-03	0.857	0.025	0.1024	0.0013	-0.0187	635.7	38.9	77.7	628.5	6.8	13.7	628.5	3.8	7.6	100
OUJ19z38	654.00	181.30	171.20	0.280	1.50E+05	1.30E+05	0.1305	3.50E-03	7.127	0.062	0.3974	0.0038	0.4376	2104.8	23.5	47.1	2127.4	3.9	7.7	2157.1	8.8	17.5	101
OUJ19z39	534.80	174.60	220.20	0.330	2.60E+05	2.40E+05	0.2077	5.60E-03	15.160	0.150	0.5286	0.0053	0.6370	2887.7	21.9	43.8	2825.3	4.7	9.4	2735.6	11.2	22.4	97
OUJ19z40	137.90	126.40	130.20	0.920	-2.00E+04	2.20E+04	0.1291	3.90E-03	7.200	0.110	0.4010	0.0039	0.1719	2085.8	26.6	53.1	2136.5	6.8	13.6	2173.6	9.0	17.9	102
OUJ19z41	143.10	120.70	35.24	0.840	4.10E+03	6.60E+03	0.0605	2.70E-03	0.866	0.035	0.1035	0.0014	0.0516	621.5	48.1	96.3	633.4	9.5	19.0	634.9	4.1	8.2	100
OUJ19z42	305.20	627.00	177.80	2.050	2.70E+04	1.60E+04	0.0606	2.00E-03	0.856	0.023	0.1027	0.0012	0.0196	625.1	35.6	71.2	627.9	6.3	12.6	630.4	3.5	7.0	100
OUJ19z43	231.70	291.00	78.70	1.260	6.50E+04	3.90E+04	0.0597	2.20E-03	0.768	0.024	0.0942	0.0011	0.1582	592.7	39.9	79.9	578.6	6.9	13.8	580.6	3.2	6.5	100
OUJ19z44	305.40	241.50	100.10	0.790	4.20E+04	2.40E+04	0.0696	1.90E-03	1.441	0.029	0.1505	0.0016	0.2938	916.6	28.1	56.2	906.1	6.0	12.1	903.8	4.5	9.0	100
OUJ19z45	233.90	142.20	37.27	0.610	-2.40E+03	8.40E+03	0.0584	2.20E-03	0.767	0.026	0.0950	0.0012	0.1506	544.8	41.2	82.3	578.0	7.5	14.9	585.2	3.5	7.1	101
OUJ19z46	296.80	175.90	28.41	0.590	1.00E+03	7.60E+03	0.0538	2.40E-03	0.404	0.015	0.0543	0.0007	-0.0037	362.7	50.3	100.6	344.5	5.4	10.8	340.9	2.1	4.3	99
OUJ19z47	275.50	220.80	225.30	0.800	2.10E+04	3.70E+04	0.1314	3.70E-03	7.029	0.077	0.3899	0.0036	0.2721	2116.8	24.7	49.4	2115.1	4.9	9.7	2122.4	8.3	16.7	100
OUJ19z48	195.30	147.30	37.50	0.750	1.03E+04	9.00E+03	0.0604	2.60E-03	0.765	0.030	0.0918	0.0012	0.0894	617.9	46.5	92.9	576.9	8.6	17.2	565.9	3.5	7.1	98
OUJ19z49	237.70	158.30	174.10	0.670	3.00E+04	3.80E+04	0.1515	4.20E-03	8.910	0.100	0.4255	0.0043	0.3205	2362.9	23.7	47.3	2328.8	5.1	10.2	2285.4	9.7	19.4	98
OUJ19z50	286.00	252.00	269.00	0.880	-1.10E+04	4.50E+04	0.1384	3.90E-03	7.275	0.097	0.3825	0.0041	0.4695	2207.3	24.5	48.9	2145.7	5.9	11.9	2088.0	9.6	19.1	97
OUJ19z51	287.60	450.00	140.10	1.560	2.30E+04	1.20E+04	0.0654	2.10E-03	0.952	0.026	0.1060	0.0012	0.2119	787.2	33.7	67.4	679.1	6.8	13.5	649.2	3.5	7.0	96
OUJ19z53	724.00	169.00	23.70	0.230	-1.40E+04	1.50E+04	0.0582	1.80E-03	0.409	0.010	0.0514	0.0007	-0.0779	537.3	33.8	67.7	347.8	3.5	7.1	322.8	2.0	4.0	93
OUJ19z54	951.00	1612.00	488.70	1.700	5.60E+04	4.60E+04	0.0619	1.40E-03	0.903	0.014	0.1067	0.0010	0.3493	668.9	24.2	48.4	653.3	3.7	7.5	653.5	2.9	5.8	100
OUJ19z55	8.87	1.49	1.62	0.170	-1.10E+03	1.70E+03	0.1708	8.50E-03	11.790	0.510	0.4957	0.0100	0.2745	2565.5	41.6	83.2	2587.9	20.2	40.5	2595.3	21.5	43.1	100
OUJ19z56	330.40	181.90	155.30	0.550	6.30E+04	5.00E+04	0.1271	3.60E-03	5.821	0.074	0.3343	0.0038	0.4469	2058.2	25.0	50.0	1949.5	5.5	11.0	1859.2	9.2	18.4	95
OUJ19z57	564.40	387.30	117.30	0.690	5.30E+04	3.50E+04	0.0605	1.60E-03	0.864	0.016	0.1043	0.0011	0.2027	621.5	28.5	57.1	632.3	4.4	8.7	639.7	3.2	6.4	101
OUJ19z59	484.00	527.00	82.60	1.090	4.60E+04	2.70E+04	0.0550	1.90E-03	0.413	0.013	0.0551	0.0007	0.1404	412.2	38.6	77.2	351.0	4.7	9.3	346.0	2.0	4.0	99
OUJ19z60	798.60	577.80	89.50	0.720	1.70E+04	1.80E+04	0.0534	1.70E-03	0.398	0.010	0.0537	0.0005	0.0276	345.8	36.0	72.0	340.2	3.6	7.3	337.4	1.7	3.3	99
OUJ19z61	172.50	72.00	21.50	0.420	2.10E+04	1.20E+04	0.0652	2.20E-03	1.099	0.032	0.1207	0.0016	0.0097	780.8	35.5	70.9	752.9	7.7	15.5	734.6	4.6	9.2	98
OUJ19z63	337.50	538.00	523.60	1.590	-5.20E+04	4.60E+04	0.1241	3.50E-03	6.516	0.081	0.3779	0.0039	0.4302	2016.0	25.0	50.0	2048.1	5.5	10.9	2066.5	9.1	18.2	101
OUJ19z64	218.70	306.50	86.60	1.400	1.47E+04	9.60E+03	0.0598	2.20E-03	0.815	0.026	0.1002	0.0011	0.0279	596.3	39.9	79.7	605.3	7.3	14.5	615.5	3.2	6.4	102

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ19z65	332.50	224.90	104.50	0.680	6.10E+04	3.80E+04	0.0727	1.90E-03	1.679	0.031	0.1687	0.0017	0.0225	1005.6	26.5	53.0	1000.6	5.9	11.7	1004.9	4.7	9.4	100
OUJ19z66	486.00	301.00	72.70	0.620	-2.00E+04	1.60E+04	0.0591	1.80E-03	0.674	0.018	0.0822	0.0009	0.2051	570.8	33.1	66.3	523.1	5.5	10.9	509.4	2.7	5.5	97
OUJ19z67	301.40	279.00	252.90	0.930	3.00E+05	1.90E+05	0.1142	3.20E-03	5.202	0.082	0.3362	0.0042	0.6273	1867.3	25.3	50.6	1852.9	6.7	13.4	1868.4	10.1	20.3	101
OUJ19z68	392.30	307.70	315.40	0.780	-4.40E+04	5.40E+04	0.1393	3.80E-03	7.833	0.077	0.4098	0.0037	0.3209	2218.5	23.6	47.3	2212.0	4.4	8.8	2214.0	8.5	16.9	100
OUJ19z69	142.60	146.10	60.58	1.020	-5.20E+03	8.60E+03	0.0716	2.50E-03	1.481	0.044	0.1513	0.0018	0.1676	974.6	35.6	71.2	922.6	9.0	18.0	908.2	5.0	10.1	98
OUJ19z70	537.00	269.20	45.50	0.500	-1.00E+04	1.40E+04	0.0553	1.80E-03	0.467	0.014	0.0615	0.0008	0.2711	424.4	36.3	72.6	389.1	4.8	9.7	384.8	2.4	4.9	99
OUJ19z71	510.20	112.10	32.39	0.220	3.40E+04	2.50E+04	0.0619	1.70E-03	0.889	0.018	0.1049	0.0011	0.0160	670.7	29.4	58.8	645.8	4.8	9.7	642.9	3.2	6.4	100
OUJ19z72	525.00	127.10	36.70	0.240	1.00E+04	2.40E+04	0.0617	1.60E-03	0.893	0.017	0.1050	0.0010	0.0128	663.7	27.8	55.6	648.0	4.6	9.1	643.8	2.9	5.8	99
OUJ19z73	320.40	328.40	97.50	1.020	1.00E+04	1.30E+04	0.0583	1.80E-03	0.854	0.021	0.1060	0.0011	-0.0307	541.1	33.8	67.5	626.8	5.7	11.5	649.5	3.2	6.4	104
OUJ19z74	103.30	154.90	42.60	1.500	4.80E+03	4.80E+03	0.0672	3.50E-03	0.871	0.039	0.0946	0.0016	-0.1675	844.0	54.2	108.4	636.1	10.6	21.1	582.7	4.7	9.4	92
OUJ19z75	1461.00	1116.00	1050.00	0.760	6.00E+05	1.50E+05	0.1464	3.90E-03	7.094	0.067	0.3524	0.0036	0.7263	2304.8	22.9	45.7	2123.3	4.2	8.4	1946.0	8.6	17.2	92
OUJ19z76	383.40	136.10	85.80	0.350	5.30E+04	4.40E+04	0.0857	2.00E-03	2.773	0.037	0.2360	0.0022	0.0150	1331.4	22.6	45.2	1348.3	5.0	9.9	1365.9	5.7	11.5	101
OUJ19z77	723.00	612.00	95.70	0.850	-1.80E+04	1.40E+04	0.0518	1.70E-03	0.381	0.010	0.0534	0.0006	0.0218	276.6	37.6	75.2	327.8	3.7	7.3	335.3	1.7	3.4	102
OUJ19z78	622.00	520.00	377.20	0.840	-3.60E+04	6.60E+04	0.0937	2.00E-03	3.045	0.035	0.2348	0.0028	0.3750	1502.1	20.2	40.3	1419.0	4.4	8.8	1359.6	7.3	14.6	96
OUJ19z79	968.00	1458.00	407.00	1.510	1.08E+05	5.70E+04	0.0611	1.40E-03	0.843	0.015	0.1012	0.0010	0.4681	643.1	24.6	49.2	620.8	4.1	8.3	621.6	2.9	5.9	100
OUJ19z80	273.80	232.30	70.10	0.850	-2.40E+04	1.60E+04	0.0592	2.00E-03	0.873	0.025	0.1066	0.0012	0.1807	574.5	36.7	73.5	637.2	6.8	13.5	652.9	3.5	7.0	102
OUJ19z81	235.40	8.68	2.34	0.040	3.60E+04	1.70E+04	0.0595	2.60E-03	0.716	0.028	0.0887	0.0010	0.0519	585.4	47.4	94.8	548.3	8.3	16.6	547.8	2.9	5.9	100
OUJ19z82	130.50	118.30	31.78	0.910	3.90E+03	5.80E+03	0.0586	2.60E-03	0.775	0.030	0.0961	0.0012	0.0177	552.3	48.4	96.8	582.6	8.6	17.1	591.3	3.5	7.1	101
OUJ19z83	254.90	153.00	154.00	0.600	5.00E+04	5.00E+04	0.1363	3.90E-03	7.421	0.087	0.3956	0.0038	0.2889	2180.7	24.9	49.8	2163.5	5.2	10.5	2148.7	8.8	17.6	99
OUJ19z84	145.00	135.60	36.62	0.940	1.33E+04	7.20E+03	0.0592	2.70E-03	0.751	0.031	0.0929	0.0013	-0.0386	574.5	49.6	99.2	568.8	9.0	18.0	572.7	3.8	7.7	101
OUJ19z85	861.00	44.40	43.50	0.050	1.50E+05	1.50E+05	0.1258	3.40E-03	5.640	0.058	0.3245	0.0032	0.5173	2040.1	23.9	47.8	1922.2	4.4	8.9	1811.7	7.8	15.6	94
OUJ19z86	253.70	131.10	136.40	0.520	-5.40E+04	5.60E+04	0.1359	3.90E-03	7.570	0.091	0.4053	0.0039	0.1608	2175.6	25.0	50.0	2181.3	5.4	10.8	2193.4	8.9	17.9	101
OUJ19z87	340.30	488.80	142.90	1.440	5.20E+04	3.40E+04	0.0597	2.00E-03	0.868	0.024	0.1058	0.0012	0.0904	592.7	36.3	72.6	634.5	6.5	13.0	648.2	3.5	7.0	102
OUJ19z88	379.10	195.60	195.90	0.520	1.60E+04	6.00E+04	0.1256	3.50E-03	6.550	0.073	0.3767	0.0037	0.2883	2037.3	24.6	49.3	2052.6	4.9	9.8	2060.8	8.7	17.3	100
OUJ19z89	924.00	877.00	259.30	0.950	1.30E+04	4.60E+04	0.0614	1.50E-03	0.908	0.015	0.1073	0.0011	0.1152	654.0	26.2	52.4	656.0	4.0	8.0	657.2	3.2	6.4	100
OUJ19z90	157.70	94.60	51.80	0.600	6.00E+04	1.30E+04	0.0819	2.60E-03	2.277	0.056	0.2029	0.0024	0.1361	1243.1	31.1	62.2	1205.2	8.7	17.3	1190.9	6.4	12.9	99
OUJ19z91	38.46	14.56	12.48	0.380	6.80E+03	7.40E+03	0.1143	4.80E-03	5.150	0.170	0.3287	0.0045	0.1149	1868.9	37.9	75.8	1844.4	14.0	28.0	1832.1	10.9	21.8	99
OUJ19z92	325.20	105.40	25.39	0.320	9.00E+04	1.50E+04	0.0578	2.00E-03	0.680	0.019	0.0852	0.0010	0.1528	522.2	38.0	75.9	526.8	5.7	11.5	527.3	2.9	5.9	100
OUJ19z93	560.00	412.20	124.30	0.740	4.10E+04	2.50E+04	0.0606	1.50E-03	0.863	0.015	0.1031	0.0013	0.4166	625.1	26.7	53.4	631.8	4.1	8.2	632.5	3.8	7.6	100
OUJ19z94	537.80	380.00	57.40	0.710	2.00E+04	1.30E+04	0.0543	1.90E-03	0.399	0.012	0.0536	0.0006	0.0767	383.5	39.3	78.6	340.9	4.4	8.7	336.8	1.8	3.6	99
OUJ19z95	535.20	355.70	331.00	0.660	1.60E+05	1.20E+05	0.1217	3.30E-03	6.185	0.054	0.3683	0.0035	0.2772	1981.3	24.1	48.3	2002.3	3.8	7.6	2021.4	8.2	16.5	101
OUJ19z97	223.00	213.50	55.95	0.960	-5.90E+03	7.20E+03	0.0620	2.40E-03	0.779	0.028	0.0920	0.0011	0.1757	674.1	41.4	82.8	584.9	8.0	16.0	567.6	3.2	6.5	97
OUJ19z98	601.10	40.10	32.10	0.070	5.00E+05	1.00E+05	0.0987	2.70E-03	4.041	0.043	0.2978	0.0029	0.3271	1599.3	25.5	51.1	1642.5	4.3	8.7	1680.4	7.2	14.4	102
OUJ19z99	786.00	759.00	111.90	0.970	3.20E+04	2.60E+04	0.0543	1.60E-03	0.409	0.010	0.0543	0.0006	0.1990	383.5	33.1	66.2	348.2	3.6	7.2	340.7	1.7	3.4	98
OUJ19z102	230.10	334.60	288.80	1.450	-2.50E+04	3.90E+04	0.1243	3.60E-03	6.037	0.086	0.3530	0.0039	0.3391	2018.8	25.7	51.3	1981.2	6.2	12.4	1948.9	9.3	18.6	98
OUJ19z103	478.10	158.60	47.66	0.330	1.80E+04	2.60E+04	0.0634	1.70E-03	0.974	0.020	0.1111	0.0012	0.1133	721.7	28.4	56.9	690.5	5.1	10.3	679.1	3.5	7.0	98
OUJ19z104	351.30	194.20	51.01	0.550	2.40E+04	1.80E+04	0.0606	2.00E-03	0.790	0.021	0.0953	0.0011	0.0875	625.1	35.6	71.2	591.2	6.0	11.9	586.6	3.2	6.5	99
OUJ19z105	357.50	241.00	69.40	0.670	0.00E+00	1.60E+04	0.0654	1.90E-03	0.928	0.023	0.1029	0.0010	0.1041	787.2	30.5	61.0	666.6	6.1	12.1	631.4	2.9	5.8	95
OUJ19z107	276.90	210.40	205.90	0.760	-5.80E+04	3.90E+04	0.1295	3.60E-03	7.052	0.078	0.3938	0.0038	0.3153	2091.2	24.4	48.9	2118.0	4.9	9.8	2140.4	8.8	17.6	101
OUJ19z108	692.60	221.80	59.00	0.320	1.00E+03	3.40E+04	0.0605	1.50E-03	0.838	0.015	0.1007	0.0010	0.1052	621.5	26.7	53.5	618.0	4.1	8.3	618.6	2.9	5.7	100
OUJ19z109	59.38	75.60	62.50	1.270	-9.60E+03	9.40E+03	0.1107	3.90E-03	5.190	0.120	0.3372	0.0045	0.1019	1810.9	32.0	64.0	1851.0	9.8	19.7	1873.2	10.8	21.7	101
OUJ19z110	113.70	111.90	27.87	0.980	3.30E+03	5.10E+03	0.0573	3.10E-03	0.744	0.039	0.0937	0.0014	0.1187	503.1	59.5	119.1	564.7	11.3	22.7	577.4	4.1	8.3	102
OUJ19z111	892.00	429.00	406.00	0.480	1.20E+05	1.00E+05	0.1133	3.10E-03	5.123	0.048	0.3270	0.0033	0.4691	1852.8	24.7	49.5	1839.9	4.0	8.0	1823.8	8.0	16.0	99
OUJ19z112	981.30	707.30	191.10	0.720	-3.50E+04	4.70E+04	0.0623	1.60E-03	0.859	0.015	0.0999	0.0010	-0.0634	684.4	27.4	54.8	629.6	4.1	8.2	613.6	2.8	5.7	97
OUJ19z113	625.30	288.80	271.80	0.460	1.20E+05	1.20E+05	0.1304	3.50E-03	6.800	0.048	0.3785	0.0033	0.0991	2103.4	23.6	47.1	2085.7	3.1	6.2	2069.3	7.7	15.4	99
OUJ19z114	830.00	222.00	231.80	0.270	2.40E+05	1.60E+05	0.1579	4.20E-03	9.051	0.077	0.4153	0.0044	0.5791	2433.3	22.5	45.1	2343.2	3.9	7.8	2239.1	10.0	20.0	96
OUJ19z115	846.00	866.00	126.30	1.020	1.70E+04	1.90E+04	0.0598	1.70E-03	0.417	0.010	0.0505	0.0006	0.1954	596.3	30.8	61.6	353.9	3.6	7.2	317.7	1.8	3.6	90
OUJ19z116	927.00	679.00	645.00	0.730	7.00E+05	1.30E+05	0.1228	3.30E-03	6.167	0.048	0.3643	0.0034	0.3599	1997.7	23.9	47.7	1999.8	3.4	6.8	2002.5	8.0	16.1	100
OUJ19z117	785.00	396.10	498.00	0.500	-2.10E+05	2.00E+05	0.2266	6.10E-03	16.370	0.140	0.5231	0.0048	0.5964	3028.2	21.6	43.2	2898.7	4.1	8.2	2712.3	10.2	20.3	94
OUJ19z118	545.60	621.00	158.50	1.140	3.00E+04	2.40E+04	0.0585	1.80E-03	0.757	0.020	0.0939	0.0010	0.1251	548.5	33.6	67.2	572.3	5.8	11.5	578.4	2.9	5.9	101
OUJ19z119	190.20	351.70	407.80	1.850	1.90E+05	1.00E+05	0.1628	4.50E-03	10.600	0.120	0.4734	0.0045	0.4174	2485.0	23.3	46.6	2488.7	5.2	10.5	2498.5	9.8	19.7	100
OUJ19z120	144.20	321.00	76.70	2.230	4.00E+02	5.30E+03	0.0602	2.90E-03	0.756	0.033	0.0903	0.0012	-0.0582	610.8	52.1	104.1	571.7	9.5	19.1	557.2	3.5	7.1	97
OUJ19z121	372.00	188.40	164.00	0.510	3.10E+04	6.20E+04	0.1306	3.70E-03	6.040	0.150	0.3391	0.0085	0.8779	2106.0	24.9	49.7	1981.6	10.8	21.6	1882.3	20.5	40.9	95
OUJ19z122	673.00	776.00	214.10	1.150	1.10E+04	3.10E+04	0.0634	1.50E-03	0.878	0.015	0.1018	0.0010	0.2285	721.7	25.1	50.2	639.9	4.1	8.1	624.7	2.9	5.9	98
OUJ19z123	130.50	152.90	146.90	1.170	1.10E+04	2.30E+04	0.1244	4.00E-03	5.700	0.120	0.3301	0.0048	0.4908	2020.3	28.5	57.0	1931.4	9.1	18.2	1838.9	11.6	23.3	95
OUJ19z124	110.20	257.90	70.60	2.340	2.70E+03	4.40E+03	0.0673	3.20E-03	0.921	0.040	0.1001	0.0014	0.1473	847.1	49.4	98.9	662.9	10.6	21.1	615.0	4.1	8.2	93
OUJ19z127	171.10	294.90	383.30	1.720	-2.90E+04	2.50E+04	0.2063	5.70E-03	15.160	0.210	0.5301	0.0059	0.6246	2876.7	22.4	44.9	2825.3	6.6	13.2	2741.9	12.4	24.9	97
OUJ19z128	460.30	335.00	50.29	0.730	-7.40E+03	7.90E+03	0.0547	2.00E-03	0.416	0.013	0.0554	0.0006	-0.1231	400.0	41.0	81.9	353.2	4.7	9.3	347.5	2.0	3.9	98
OUJ19z129	133.20	83.10	76.90	0.620	-4.00E+04	2.20E+04	0.1246	3.80E-03	6.449	0.098	0.3754	0.0043	0.1482	2023.1	27.0	54.0	2039.0	6.7	13.3	2054.8	10.1	20.2	101
OUJ19z130	378.90	258.20	38.10	0.680	-7.00E+03	7.40E+03	0.0533	2.30E-03	0.380	0.015	0.0522	0.0006	0.0403	341.6	48.8	97.7	327.0	5.5	11.0	327.8	1.9	3.9	100
Discordant data																							
OUJ19z2	717.00	334.90	140.50	0.470	5.00E+04	4.80E+04	0.1262	2.70E-03	3.038	0.038	0.1739	0.0019	0.3429	2045.7	18.9	37.8	1417.2	4.8	9.5	1033.6	5.2	10.4	73
OUJ19z52	633.00	532.00	340.80	0.840	9.50E+04	7.40E+04	0.1033	2.20E-03	2.922	0.035	0.2059	0.0020	0.3412	1684.2	19.7	39.3	1387.6	4.5	9.1	1206.9	5.3	10.7	87
OUJ19z58	413.00	595.00	292.40	1.440	2.19E+05	9.80E+04	0.1340	2.90E-03	4.500	0.120	0.2454	0.0063	0.8794	2151.0	18.9	37.8	1731.0	11.1	22.1	1414.7	16.3	32.6	82
OUJ19z62	920.00	444.30	143.10	0.480	8.50E+04	5.50E+04	0.0711	1.80E-03	0.997	0.019	0.1022	0.0010	0.3228	960.3	25.9	51.7	702.3	4.8	9.7	627.4	2.9	5.8	89
OUJ19z96	436.70	144.00	123.00	0.330	-1.50E+05	7.90E+04	0.1368	3.00E-03	4.408	0.095	0.2333	0.0035	0.7788	2187.1	19.1	38.1	1713.8	8.9	17.8	1351.8	9.1	18.3	79
OUJ19z100	257.20	270.60	86.30	1.050	0.00E+00	1.20E+04	0.0801	3.50E-03	1.154	0.047	0.1051	0.0013	0.4746	1199.5	43.1	86.1	779.1	11.1	22.1	644.2	3.8	7.6	83

ANALYSIS	U (ppm)	Th (ppm)	Pb (ppm)	Th/U	Ratios									Ages (Ma)								Concordance (%)
					$^{206}Pb/^{204}Pb$	2σ	$^{207}Pb/^{206}Pb$	2σ	$^{207}Pb/^{235}U$	2σ	$^{206}Pb/^{238}U$	2σ	Error correction	$^{207}Pb/^{206}Pb$	σ	2σ	$^{207}Pb/^{235}U$	σ	2σ	$^{206}Pb/^{238}U$	σ	2σ	
OUJ19z101	551.00	860.00	263.80	1.560	5.00E+04	2.10E+04	0.0876	2.80E-03	1.201	0.024	0.1003	0.0016	-0.2748	1373.7	30.7	61.5	801.0	5.5	11.1	616.2	4.7	9.4	77
OUJ19z106	277.50	106.20	22.30	0.380	9.20E+03	7.50E+03	0.0734	4.00E-03	0.540	0.029	0.0532	0.0007	0.2828	1025.0	55.1	110.3	438.4	9.6	19.1	334.1	2.1	4.2	76
OUJ19z125	1025.00	321.00	162.80	0.310	1.40E+05	1.10E+05	0.1449	2.80E-03	4.778	0.079	0.2399	0.0041	0.8247	2286.6	16.6	33.3	1781.0	6.9	13.9	1386.2	10.7	21.3	78
OUJ19z126	1836.00	1249.00	738.00	0.680	3.45E+04	3.10E+03	0.2178	5.20E-03	2.275	0.035	0.0756	0.0009	-0.2145	2964.5	19.2	38.5	1204.6	5.4	10.8	469.6	2.6	5.2	39

Footnotes:

- Analysis references: OUJ19z is zircon from sample OUJ19 (mount CT18-10b), followed by grain number.

Appendix E

Results of the Hf analyses

Chapter II – ***Section II.3: Table E.1***

Chapter III – ***Tables E.2 to E.5***

Chapter IV – ***Tables E.6 to E.12***

Table E.1: Sample AZR10

IGSN: IEACC0029 Coordinate UTM: Zone 30S, 233758 m E, 3633628 m N

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
AZR10z1	507.5	2.4	4.8	92	0.0006041	0.0000036	0.282739	0.000058	0.000058000	0.000058	9.8	2.0522
AZR10z2	522.7	2.7	5.4	101	0.0004031	0.0000016	0.282739	0.000061	0.000061000	0.000061	10.2	2.15915
AZR10z3	491.3	3.0	6.0	98	0.0011660	0.0000270	0.282642	0.000060	0.000060000	0.000060	5.8	2.11535
AZR10z4	507.8	2.5	5.1	94	0.0005166	0.0000034	0.282707	0.000056	0.000056000	0.000056	8.7	1.98146
AZR10z5	589.6	3.2	6.5	100	0.0009260	0.0000140	0.282548	0.000064	0.000064000	0.000064	4.7	2.26077
AZR10z6	528.1	2.9	5.8	99	0.0005187	0.0000080	0.282700	0.000063	0.000063000	0.000063	8.9	2.22773
AZR10z7	542.9	2.7	5.3	100	0.0006120	0.0000170	0.282674	0.000069	0.000069000	0.000069	8.3	2.43692
AZR10z9	533.0	2.5	5.0	100	0.0006840	0.0000120	0.282743	0.000059	0.000059000	0.000059	10.5	2.08469
AZR10z10	526.3	2.6	5.3	99	0.0004964	0.0000047	0.282747	0.000069	0.000069000	0.000069	10.5	2.44132
AZR10z11	569.1	2.6	5.3	101	0.0010260	0.0000180	0.282519	0.000064	0.000064000	0.000064	3.2	2.25935
AZR10z12	538.1	2.8	5.6	94	0.0005207	0.0000052	0.282764	0.000059	0.000059000	0.000059	11.4	2.0871
AZR10z13	529.6	2.6	5.1	100	0.0005184	0.0000094	0.282661	0.000061	0.000061000	0.000061	7.6	2.15643
AZR10z14	475.2	4.2	8.4	95	0.0010144	0.0000086	0.282662	0.000061	0.000061000	0.000061	6.2	2.15676
AZR10z15	535.3	2.5	4.9	100	0.0005640	0.0000030	0.282708	0.000056	0.000056000	0.000056	9.3	1.98166
AZR10z16	515.4	2.4	4.7	94	0.0008060	0.0000200	0.282654	0.000063	0.000063000	0.000063	6.9	2.22364
AZR10z17	580.3	2.8	5.6	100	0.0009210	0.0000110	0.282436	0.000071	0.000071000	0.000071	0.5	2.50983
AZR10z18	539.8	2.6	5.2	101	0.0006090	0.0000110	0.282727	0.000063	0.000063000	0.000063	10.1	2.22665
AZR10z19	523.4	2.5	4.9	100	0.0004748	0.0000020	0.282652	0.000061	0.000061000	0.000061	7.1	2.15901
AZR10z20	528.6	2.6	5.2	100	0.0004980	0.0000150	0.282656	0.000058	0.000058000	0.000058	7.4	2.04825
AZR10z21	521.9	2.8	5.6	101	0.0004762	0.0000063	0.282695	0.000061	0.000061000	0.000061	8.6	2.15751
AZR10z22	516.9	2.7	5.4	96	0.0005430	0.0000054	0.282722	0.000060	0.000060000	0.000060	9.4	2.12241
AZR10z23	528.5	2.4	4.8	100	0.0007640	0.0000360	0.282671	0.000065	0.000065000	0.000065	7.8	2.28871
AZR10z25	581.0	3.2	6.5	97	0.0006870	0.0000230	0.282329	0.000060	0.000060000	0.000060	-3.1	2.1157
AZR10z26	533.8	2.4	4.9	100	0.0005473	0.0000078	0.282639	0.000058	0.000058000	0.000058	6.9	2.05077
AZR10z27	566.1	3.0	5.9	99	0.0009070	0.0000260	0.282435	0.000071	0.000071000	0.000071	0.2	2.50422
AZR10z28	560.4	3.0	5.9	100	0.0011450	0.0000320	0.282455	0.000078	0.000078000	0.000078	0.7	2.74991
AZR10z30	527.1	2.7	5.5	98	0.0007940	0.0000095	0.282629	0.000063	0.000063000	0.000063	6.3	2.22721
AZR10z31	518.8	3.6	7.1	101	0.0002991	0.0000023	0.282767	0.000057	0.000057000	0.000057	11.2	2.01727
AZR10z32	483.2	2.5	4.9	95	0.0006339	0.0000068	0.282689	0.000073	0.000073000	0.000073	7.5	2.58215
AZR10z33	492.3	3.0	6.0	94	0.0006900	0.0000100	0.282653	0.000066	0.000066000	0.000066	6.4	2.3333
AZR10z34	576.0	2.7	5.3	99	0.0006841	0.0000060	0.282418	0.000061	0.000061000	0.000061	-0.1	2.15766
AZR10z35	508.9	3.0	6.0	96	0.0006640	0.0000100	0.282606	0.000057	0.000057000	0.000057	5.1	2.01464
AZR10z37	583.6	2.8	5.6	101	0.0010120	0.0000210	0.281719	0.000064	0.000064000	0.000064	-24.8	2.25808
AZR10z38	531.7	2.5	5.0	99	0.0007175	0.0000038	0.282650	0.000065	0.000065000	0.000065	7.1	2.30002
AZR10z39	519.4	2.3	4.6	100	0.0007641	0.0000081	0.282635	0.000061	0.000061000	0.000061	6.3	2.15689
AZR10z40	574.2	2.8	5.5	100	0.0009375	0.0000019	0.282498	0.000060	0.000060000	0.000060	2.6	2.12381
AZR10z41	570.5	3.2	6.5	99	0.0010760	0.0000280	0.282432	0.000061	0.000061000	0.000061	0.1	2.14932
AZR10z42	478.7	2.4	4.8	96	0.0008160	0.0000120	0.282653	0.000054	0.000054000	0.000054	6.1	1.90787
AZR10z43	519.5	2.5	5.0	99	0.0009089	0.0000081	0.282660	0.000057	0.000057000	0.000057	7.2	2.01527
AZR10z45	489.6	3.6	7.2	97	0.0006690	0.0000230	0.282696	0.000056	0.000056000	0.000056	7.9	1.97506
AZR10z46	589.3	2.8	5.5	100	0.0035266	0.0000086	0.281922	0.000067	0.000067000	0.000067	-18.5	2.36911
AZR10z47	522.9	2.5	4.9	95	0.0007038	0.0000023	0.282702	0.000057	0.000057000	0.000057	8.8	2.01728
AZR10z48	530.5	2.6	5.3	101	0.0009469	0.0000026	0.282683	0.000063	0.000063000	0.000063	8.2	2.22963
AZR10z49	524.7	2.6	5.2	101	0.0010800	0.0000210	0.282727	0.000059	0.000059000	0.000059	9.6	2.08158
AZR10z50	523.3	2.7	5.5	96	0.0009713	0.0000060	0.282675	0.000062	0.000062000	0.000062	7.7	2.19302
AZR10z51	531.7	2.6	5.2	100	0.0010800	0.0000120	0.282676	0.000060	0.000060000	0.000060	7.9	2.1201
AZR10z52	541.4	2.7	5.5	101	0.0014070	0.0000260	0.282644	0.000065	0.000065000	0.000065	6.9	2.29208
AZR10z54	547.4	2.7	5.4	99	0.0011375	0.0000085	0.282671	0.000066	0.000066000	0.000066	8.1	2.33376
AZR10z56	514.5	2.4	4.8	98	0.0017290	0.0000360	0.282526	0.000059	0.000059000	0.000059	2.0	2.07655
AZR10z57	474.0	3.6	7.2	94	0.0026060	0.0000300	0.282342	0.000066	0.000066000	0.000066	-5.6	2.32704
AZR10z58	540.9	2.7	5.4	101	0.0015470	0.0000160	0.282521	0.000064	0.000064000	0.000064	2.5	2.26026
AZR10z59	485.7	2.7	5.4	95	0.0016070	0.0000310	0.282431	0.000062	0.000062000	0.000062	-1.9	2.18493
AZR10z60	576.1	2.9	5.9	100	0.0030220	0.0000330	0.282302	0.000060	0.000060000	0.000060	-5.1	2.11192
AZR10z63	575.8	2.6	5.2	98	0.0021500	0.0000390	0.282456	0.000072	0.000072000	0.000072	0.7	2.53454
AZR10z65	509.4	2.8	5.6	92	0.0012380	0.0000130	0.282620	0.000064	0.000064000	0.000064	5.4	2.26146
AZR10z66	412.2	2.4	4.8	94	0.0011303	0.0000058	0.282609	0.000058	0.000058000	0.000058	3.0	2.0514
AZR10z67	525.8	2.4	4.8	99	0.0011289	0.0000050	0.282665	0.000061	0.000061000	0.000061	7.4	2.15797
AZR10z68	473.3	2.5	4.9	96	0.0012070	0.0000110	0.282646	0.000065	0.000065000	0.000065	5.6	2.29762
AZR10z69	565.6	3.5	7.1	100	0.0017430	0.0000130	0.282426	0.000061	0.000061000	0.000061	-0.4	2.15502
AZR10z71	434.3	3.0	5.9	92	0.0010470	0.0000170	0.282708	0.000062	0.000062000	0.000062	7.0	2.18978
AZR10z72	560.8	2.6	5.1	99	0.0013110	0.0000170	0.282424	0.000059	0.000059000	0.000059	-0.4	2.08274
AZR10z73	527.6	2.5	5.0	100	0.0008790	0.0000140	0.282735	0.000062	0.000062000	0.000062	10.0	2.19022
AZR10z74	504.6	2.6	5.1	96	0.0016880	0.0000260	0.282476	0.000062	0.000062000	0.000062	0.1	2.18631
AZR10z76	534.4	2.5	5.0	98	0.0005872	0.0000047	0.282649	0.000066	0.000066000	0.000066	7.2	2.33512
AZR10z77	486.0	5.1	10.2	96	0.0009355	0.0000090	0.282680	0.000059	0.000059000	0.000059	7.1	2.08582
AZR10z78	578.2	3.2	6.5	98	0.0008239	0.0000028	0.282491	0.000076	0.000076000	0.000076	2.5	2.69003
AZR10z79	468.5	2.9	5.9	97	0.0007810	0.0000140	0.282662	0.000066	0.000066000	0.000066	6.2	2.33209
AZR10z81	524.1	2.6	5.1	99	0.0007180	0.0000069	0.282651	0.000060	0.000060000	0.000060	7.0	2.1219
AZR10z82	538.2	2.5	5.0	98	0.0008435	0.0000052	0.282686	0.000063	0.000063000	0.000063	8.5	2.22873
AZR10z83	569.5	2.8	5.6	101	0.0011990	0.0000230	0.282493	0.000067	0.000067000	0.000067	2.2	2.36368
AZR10z84	522.0	2.5	5.1	98	0.0006470	0.0000230	0.282704	0.000064	0.000064000	0.000064	8.9	2.25794
AZR10z87	503.0	3.3	6.6	99	0.0006860	0.0000130	0.282632	0.000071	0.000071000	0.000071	5.9	2.5093
AZR10z88	577.3	2.9	5.9	100	0.0007552	0.0000039	0.282455	0.000076	0.000076000	0.000076	1.2	2.6896
AZR10z89	532.3	2.8	5.5	97	0.0009370	0.0000200	0.282660	0.000057	0.000057000	0.000057	7.4	2.01106
AZR10z90	584.2	3.5	7.1	99	0.0004397	0.0000060	0.282344	0.000065	0.000065000	0.000065	-2.5	2.2993
AZR10z91	621.6	3.2	6.4	101	0.0007230	0.0000150	0.282399	0.000067	0.000067000	0.000067	0.2	2.36645
AZR10z92	544.6	2.7	5.4	98	0.0007484	0.0000052	0.282589	0.000059	0.000059000	0.000059	5.3	2.08711
AZR10z94	536.6	2.8	5.5	101	0.0005844	0.0000045	0.282674	0.000060	0.000060000	0.000060	8.2	2.12276
AZR10z95	516.8	3.0	5.9	97	0.0007130	0.0000160	0.282708	0.000066	0.000066000	0.000066	8.9	2.33121
AZR10z98	563.2	3.5	7.1	96	0.0004806	0.0000033	0.282138	0.000064	0.000064000	0.000064	-10.2	2.26488
AZR10z99	493.1	3.3	6.6	96	0.0011190	0.0000240	0.282519	0.000063	0.000063000	0.000063	1.5	2.22251
AZR10z100	527.3	2.7	5.3	98	0.0010824	0.0000075	0.282631	0.000067	0.000067000	0.000067	6.2	2.36953
AZR10z102	569.7	2.6	5.2	101	0.0008520	0.0000036	0.282506	0.000058	0.000058000	0.000058	2.8	2.05234
AZR10z103	538.4	3.9	7.7	95	0.0017370	0.0000560	0.282354	0.000075	0.000075000	0.000075	-3.6	2.63546

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
AZR10z104	516.4	2.3	4.5	100	0.0009170	0.0000210	0.282680	0.000069	0.000069000	0.000069	7.8	2.43571
AZR10z106	668.8	3.2	6.4	100	0.0016700	0.0001400	0.282304	0.000061	0.000061000	0.000061	-2.6	2.09815
AZR10z107	511.7	2.4	4.8	96	0.0007105	0.0000039	0.282759	0.000062	0.000062000	0.000062	10.6	2.19373
AZR10z108	522.0	2.7	5.4	98	0.0006740	0.0000260	0.282733	0.000060	0.000060000	0.000060	9.9	2.11529
AZR10z110	478.0	2.3	4.6	97	0.0008110	0.0000160	0.282704	0.000059	0.000059000	0.000059	7.9	2.08361
AZR10z111	448.0	2.4	4.8	93	0.0010970	0.0000190	0.282692	0.000063	0.000063000	0.000063	6.7	2.2245
AZR10z112	543.8	2.9	5.8	100	0.0007011	0.0000051	0.282700	0.000065	0.000065000	0.000065	9.2	2.29959
AZR10z113	518.5	2.9	5.7	95	0.0007400	0.0000200	0.282756	0.000056	0.000056000	0.000056	10.6	1.97577
AZR10z114	447.6	4.2	8.4	93	0.0016420	0.0000790	0.282577	0.000073	0.000073000	0.000073	2.5	2.56067
AZR10z117	498.9	3.0	6.0	97	0.0009740	0.0000150	0.282729	0.000062	0.000062000	0.000062	9.1	2.19002
AZR10z118	592.7	2.9	5.8	100	0.0017010	0.0000260	0.282430	0.000067	0.000067000	0.000067	0.3	2.36226
AZR10z119	514.3	2.6	5.1	90	0.0008840	0.0000110	0.282685	0.000072	0.000072000	0.000072	7.9	2.54535
AZR10z120	508.2	3.3	6.6	97	0.0009340	0.0000260	0.282752	0.000078	0.000078000	0.000078	10.2	2.75273

Table E.2: Sample MIM2

IGSN: IEACC0004 Coordinate UTM: Zone 30S, 509359 m E, 3763408 m N

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
MIM2z1	2013.1	19.3	38.7	101	0.0010745	0.0000061	0.281550	0.000055	0.281508891	0.000055	0.3	2.0
MIM2z2	627.6	3.5	7.0	99	0.0005429	0.0000076	0.282396	0.000051	0.282389608	0.000051	0.3	1.8
MIM2z4	1797.7	15.7	31.5	100	0.0012340	0.0000470	0.281741	0.000050	0.281698925	0.000050	2.1	1.8
MIM2z5	597.4	2.9	5.9	97	0.0017260	0.0000100	0.282297	0.000056	0.282277663	0.000056	-4.3	2.0
MIM2z6	617.3	3.8	7.6	100	0.0011330	0.0000120	0.282588	0.000061	0.282574880	0.000061	6.6	2.2
MIM2z7c	2198.5	17.7	35.3	100	0.0012550	0.0000920	0.281862	0.000092	0.281809473	0.000092	15.2	3.4
MIM2z7r	360.3	1.8	3.7	99	0.0013640	0.0000300	0.282547	0.000054	0.282537804	0.000054	-0.4	1.9
MIM2z8	645.9	3.5	7.0	101	0.0010490	0.0000210	0.282192	0.000055	0.282179287	0.000055	-6.7	2.0
MIM2z9	658.2	3.2	6.4	100	0.0028660	0.0000340	0.282576	0.000056	0.282540601	0.000056	6.3	2.0
MIM2z10	2045.7	14.7	29.4	100	0.0015240	0.0000470	0.281210	0.000051	0.281150733	0.000051	-11.7	1.9
MIM2z11	595.7	3.2	6.5	99	0.0006790	0.0000540	0.282217	0.000058	0.282209414	0.000058	-6.8	2.1
MIM2z12	665.8	3.5	7.0	99	0.0030950	0.0000800	0.282692	0.000054	0.282653331	0.000054	10.5	1.9
MIM2z13	2175.6	16.0	32.0	101	0.0006493	0.0000058	0.281586	0.000055	0.281559113	0.000055	5.8	2.0
MIM2z14	2221.0	15.5	31.1	101	0.0006091	0.0000076	0.281385	0.000055	0.281359240	0.000055	-0.3	2.0
MIM2z15	2066.6	15.9	31.8	101	0.0003960	0.0000300	0.281152	0.000052	0.281136440	0.000052	-11.8	1.9
MIM2z16	2433.4	13.4	26.8	97	0.0004140	0.0000140	0.281167	0.000054	0.281147779	0.000054	-2.9	1.9
MIM2z17	372.3	1.9	3.9	100	0.0008570	0.0000440	0.282368	0.000055	0.282362028	0.000055	-6.3	2.0
MIM2z18	615.2	3.2	6.4	101	0.0007640	0.0000200	0.282444	0.000052	0.282435184	0.000052	1.6	1.8
MIM2z19r	603.9	2.8	5.6	101	0.0004390	0.0000077	0.282474	0.000053	0.282469028	0.000053	2.6	1.9
MIM2z20	619.1	4.7	9.4	98	0.0008850	0.0000250	0.282643	0.000052	0.282632722	0.000052	8.7	1.9
MIM2z21	620.9	3.2	6.4	100	0.0015400	0.0000370	0.282571	0.000052	0.282553063	0.000052	5.9	1.9
MIM2z22c	647.7	3.5	7.0	100	0.0010300	0.0000430	0.282232	0.000052	0.282219482	0.000052	-5.3	1.9
MIM2z22r	571.5	2.9	5.8	100	0.0007066	0.0000071	0.282158	0.000058	0.282150429	0.000058	-9.4	2.1
MIM2z23	619.6	3.2	6.4	100	0.0015007	0.0000083	0.282458	0.000051	0.282440559	0.000051	1.9	1.8
MIM2z24	2846.5	12.9	25.7	101	0.0008000	0.0000170	0.280881	0.000055	0.280837383	0.000055	-4.4	2.0
MIM2z25	2496.3	14.4	28.8	101	0.0007505	0.0000086	0.281173	0.000056	0.281137234	0.000056	-1.9	2.0
MIM2z26	1553.4	15.6	31.2	100	0.0012800	0.0001200	0.281839	0.000053	0.281801374	0.000053	0.2	2.0
MIM2z27	2540.8	15.9	31.9	103	0.0004480	0.0000030	0.281191	0.000052	0.281169260	0.000052	0.3	1.9
MIM2z28	2083.0	16.4	32.8	100	0.0018540	0.0000380	0.281617	0.000060	0.281543558	0.000060	3.1	2.2
MIM2z29	620.0	2.9	5.9	99	0.0008710	0.0000250	0.282213	0.000051	0.282202870	0.000051	-6.5	1.8
MIM2z30	595.0	7.9	15.9	104	0.0008660	0.0000140	0.282206	0.000054	0.282196336	0.000054	-7.3	1.9
MIM2z31	571.5	3.8	7.7	99	0.0008440	0.0000180	0.282181	0.000054	0.282171956	0.000054	-8.7	1.9
MIM2z33	2075.4	13.7	27.4	96	0.0001220	0.0000110	0.281360	0.000052	0.281355185	0.000052	-3.8	1.9
MIM2z34	555.5	2.6	5.3	101	0.0067100	0.0001500	0.282526	0.000059	0.282456125	0.000059	1.1	2.1
MIM2z35	588.6	3.2	6.5	98	0.0030090	0.0000360	0.282182	0.000054	0.282148785	0.000054	-9.1	1.9
MIM2z36	603.1	3.2	6.5	99	0.0035530	0.0000150	0.282364	0.000056	0.282323808	0.000056	-2.6	2.0
MIM2z37	2486.0	14.0	27.9	94	0.0017352	0.0000057	0.281133	0.000054	0.281050656	0.000054	-5.2	1.9
MIM2z38	608.5	3.8	7.6	97	0.0017510	0.0000290	0.282434	0.000055	0.282414014	0.000055	0.7	2.0
MIM2z39c	1759.2	19.5	39.1	99	0.0015690	0.0000460	0.281459	0.000052	0.281406670	0.000052	-9.2	1.9
MIM2z39r	1751.5	15.4	30.7	98	0.0022200	0.0000610	0.281519	0.000054	0.281445285	0.000054	-8.0	2.0
MIM2z41	2056.9	16.7	33.4	97	0.0006802	0.0000042	0.281431	0.000053	0.281404400	0.000053	-2.5	1.9
MIM2z42	1881.5	17.2	34.4	99	0.0066800	0.0000360	0.281548	0.000056	0.281309444	0.000056	-9.8	2.0
MIM2z43c	3013.2	12.9	25.7	98	0.0034700	0.0001200	0.280974	0.000055	0.280773413	0.000055	-2.8	2.2
MIM2z43r	2964.5	14.4	28.9	101	0.0012250	0.0000098	0.281021	0.000056	0.280951365	0.000056	2.4	2.0
MIM2z44	592.6	3.2	6.5	98	0.0005382	0.0000045	0.281739	0.000054	0.281733019	0.000054	-23.7	1.9
MIM2z46	546.8	2.9	5.7	101	0.0031700	0.0001500	0.282319	0.000053	0.282286505	0.000053	-5.1	1.9
MIM2z47	601.5	3.8	7.6	99	0.0025210	0.0000330	0.282149	0.000062	0.282120560	0.000062	-9.8	2.2
MIM2z48	380.4	1.9	3.8	98	0.0025400	0.0001000	0.282415	0.000052	0.282396918	0.000052	-4.9	1.9
MIM2z49	501.5	2.8	5.5	100	0.0025430	0.0000940	0.282532	0.000052	0.282508104	0.000052	1.7	1.9
MIM2z50	901.5	4.8	9.5	100	0.0020950	0.0000370	0.282493	0.000063	0.282457478	0.000063	8.8	2.3
MIM2z51	599.4	2.9	5.9	99	0.0009370	0.0000140	0.282467	0.000052	0.282456466	0.000052	2.0	1.8
MIM2z52	615.0	4.1	8.2	96	0.0010980	0.0000330	0.282366	0.000051	0.282353334	0.000051	-1.3	1.8
MIM2z54	2091.2	16.3	32.6	99	0.0012900	0.0001500	0.281272	0.000051	0.281220695	0.000051	-8.2	2.0
MIM2z55	638.1	3.2	6.4	93	0.0018590	0.0000370	0.282507	0.000056	0.282484745	0.000056	3.9	2.0
MIM2z56	551.8	3.0	5.9	99	0.0003460	0.0000100	0.282323	0.000056	0.282319421	0.000056	-3.9	2.0
MIM2z57	619.4	2.9	5.8	101	0.0004630	0.0000180	0.282031	0.000056	0.282025620	0.000056	-12.8	2.0
MIM2z59	371.2	1.7	3.3	98	0.0019200	0.0001400	0.282400	0.000053	0.282386660	0.000053	-5.5	1.9
MIM2z60	595.2	2.9	5.8	101	0.0001151	0.0000019	0.282226	0.000068	0.282224715	0.000068	-6.3	2.4
MIM2z61	2682.1	14.9	29.8	101	0.0004310	0.0000100	0.280628	0.000055	0.280605893	0.000055	-16.5	2.0
MIM2z62	626.1	4.4	8.8	100	0.0009110	0.0000210	0.282349	0.000057	0.282338300	0.000057	-1.5	2.0
MIM2z63c	2475.6	16.7	33.4	95	0.0010450	0.0000420	0.281336	0.000054	0.281286621	0.000054	3.0	2.0
MIM2z64	569.1	3.0	5.9	98	0.0009040	0.0000100	0.282450	0.000055	0.282440355	0.000055	0.8	2.0
MIM2z65	617.2	3.5	7.0	91	0.0008490	0.0000370	0.282521	0.000060	0.282511171	0.000060	4.4	2.1
MIM2z66	357.1	1.9	3.7	92	0.0012270	0.0000320	0.282419	0.000054	0.282410801	0.000054	-4.9	1.9
MIM2z68	581.6	3.2	6.5	100	0.0003920	0.0000170	0.282371	0.000055	0.282366725	0.000055	-1.5	2.0
MIM2z69	1374.2	7.0	14.1	99	0.0004873	0.0000019	0.281992	0.000054	0.281979350	0.000054	2.5	1.9
MIM2z71	2483.9	14.5	29.0	100	0.0005229	0.0000042	0.281313	0.000056	0.281288207	0.000056	3.2	2.0
MIM2z74	649.5	5.0	9.9	103	0.0003692	0.0000088	0.282278	0.000055	0.282273501	0.000055	-3.3	2.0
MIM2z75	2599.4	14.3	28.7	91	0.0009760	0.0000630	0.280893	0.000054	0.280844520	0.000054	-9.9	2.0
MIM2z76	630.7	2.9	5.8	99	0.0008430	0.0000270	0.282494	0.000052	0.282484025	0.000052	3.7	1.9
MIM2z77	607.8	3.8	7.6	101	0.0005561	0.0000054	0.282577	0.000052	0.282570661	0.000052	6.3	1.8
MIM2z78	632.3	2.9	5.8	99	0.0006811	0.0000031	0.282197	0.000055	0.282188920	0.000055	-6.7	1.9
MIM2z79	621.0	3.5	7.0	100	0.0005200	0.0000260	0.282473	0.000054	0.282466942	0.000054	2.9	1.9
MIM2z80c	2026.0	17.0	34.1	91	0.0008470	0.0000320	0.281675	0.000059	0.281642385	0.000059	5.3	2.1
MIM2z80r	378.7	2.1	4.2	95	0.0009453	0.0000080	0.282395	0.000063	0.282388299	0.000063	-5.3	2.2
MIM2z81	644.8	4.7	9.3	99	0.0006620	0.0000014	0.282443	0.000058	0.282434991	0.000058	2.3	2.1
MIM2z82	665.2	4.9	9.9	102	0.0006820	0.0000370	0.282683	0.000057	0.282674487	0.000057	11.2	2.0
MIM2z83	1422.0	7.0	14.0	99	0.0009104	0.0000099	0.282116	0.000054	0.282091534	0.000054	7.5	1.9
MIM2z84	623.6	3.8	7.6	99	0.0005939	0.0000015	0.282367	0.000054	0.282360053	0.000054	-0.8	1.9
MIM2z85	2921.6	12.6	25.2	98	0.0015910	0.0000150	0.280899	0.000051	0.280809905	0.000051	-3.7	1.8
MIM2z86	2707.1	15.5	31.0	96	0.0008240	0.0000041	0.280933	0.000055	0.280890330	0.000055	-5.8	2.0
MIM2z87	1051.1	6.6	13.1	99	0.0009453	0.0000038	0.282001	0.000054	0.281982286	0.000054	-4.7	1.9
MIM2z88	2481.8	14.0	28.0	100	0.0003220	0.0000160	0.281135	0.000056	0.281119745	0.000056	-2.8	2.0
MIM2z89	2014.6	22.2	44.3	99	0.0004660	0.0000020	0.281150	0.000053	0.281132159	0.000053	-13.1	1.9
MIM2z91	750.8	3.4	6.9	98	0.0014990	0.0000570	0.282367	0.000051	0.282345861	0.000051	1.5	1.8
MIM2z92	2670.3	14.6	29.1	100	0.0006520	0.0000190	0.280962	0.000052	0.280928708	0.000052	-5.3	1.9
MIM2z93	580.6	2.7	5.5	100	0.0008770	0.0000190	0.282234	0.000054	0.282224453	0.000054	-6.6	1.9
MIM2z94	617.6	3.5	7.0	98	0.0004628	0.0000024	0.282526	0.000051	0.282520639	0.000051	4.7	1.8
MIM2z95	2478.7	14.6	29.1	94	0.0014110	0.0000920	0.281182	0.000060	0.281115241	0.000060	-3.1	2.3

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
MIM2z96	1939.8	15.8	31.6	98	0.0008240	0.0000290	0.281608	0.000055	0.281577645	0.000055	1.0	2.0
MIM2z97	634.9	5.3	10.5	101	0.0017170	0.0000250	0.281834	0.000052	0.281813549	0.000052	-19.9	1.9
MIM2z98	2841.6	18.6	37.1	99	0.0001842	0.0000008	0.280858	0.000058	0.280847976	0.000058	-4.2	2.1
MIM2z100	2469.3	15.2	30.4	100	0.0008350	0.0000190	0.281172	0.000052	0.281132646	0.000052	-2.7	1.9
MIM2z101	619.7	3.8	7.6	102	0.0011530	0.0000460	0.282606	0.000054	0.282592597	0.000054	7.3	1.9
MIM2z102	570.3	3.8	7.7	94	0.0013470	0.0000420	0.282385	0.000060	0.282370597	0.000060	-1.6	2.1
MIM2z103	2130.0	14.5	29.1	100	0.0021500	0.0000480	0.281603	0.000057	0.281515872	0.000057	3.2	2.1
MIM2z104	633.7	3.8	7.6	103	0.0018940	0.0000120	0.282657	0.000057	0.282634482	0.000057	9.1	2.0
MIM2z105	620.9	4.7	9.4	106	0.0008290	0.0000078	0.282680	0.000058	0.282670345	0.000058	10.1	2.1
MIM2z106	625.3	3.2	6.4	102	0.0016200	0.0001100	0.281781	0.000055	0.281761997	0.000055	-22.0	2.0
MIM2z107	603.6	2.7	5.5	102	0.0007607	0.0000069	0.282054	0.000051	0.282045389	0.000051	-12.4	1.8
MIM2z108	617.9	4.1	8.2	99	0.0010000	0.0000300	0.281789	0.000056	0.281777409	0.000056	-21.6	2.0
MIM2z109c	558.3	2.8	5.6	101	0.0045500	0.0001600	0.282372	0.000054	0.282324375	0.000054	-3.5	2.0
MIM2z109r	523.0	2.5	4.9	99	0.0041460	0.0000680	0.282369	0.000054	0.282328359	0.000054	-4.2	1.9
MIM2z110	786.0	3.7	7.4	100	0.0032410	0.0000370	0.282036	0.000059	0.281988138	0.000059	-10.4	2.1
MIM2z111c	367.1	2.0	4.0	94	0.0020660	0.0000250	0.282433	0.000053	0.282418807	0.000053	-4.4	1.9
MIM2z111r	371.2	1.8	3.7	97	0.0026890	0.0000580	0.282429	0.000053	0.282410321	0.000053	-4.6	1.9
MIM2z113	2502.4	15.9	31.7	101	0.0005175	0.0000034	0.281170	0.000054	0.281145275	0.000054	-1.4	1.9
MIM2z114	2092.1	14.2	28.5	90	0.0022640	0.0000120	0.281416	0.000053	0.281325916	0.000053	-4.4	1.9
MIM2z115c	577.4	3.8	7.7	93	0.0011600	0.0000290	0.282288	0.000053	0.282275441	0.000053	-4.9	1.9
MIM2z115r	572.0	2.7	5.4	99	0.0024330	0.0000390	0.282253	0.000056	0.282226908	0.000056	-6.7	2.0
MIM2z116	606.2	5.3	10.6	96	0.0014441	0.0000086	0.282625	0.000056	0.282608581	0.000056	7.6	2.0
MIM2z117	2067.9	17.9	35.9	100	0.0004167	0.0000089	0.281656	0.000051	0.281639615	0.000051	6.1	1.8
MIM2z118	3085.7	13.2	26.5	100	0.0016470	0.0000230	0.280935	0.000055	0.280837436	0.000055	1.1	2.0
MIM2z120	2073.4	17.2	34.4	100	0.0005280	0.0000150	0.281534	0.000057	0.281513183	0.000057	1.8	2.0
MIM2z121	873.4	4.8	9.6	99	0.0013940	0.0000190	0.282559	0.000057	0.282536106	0.000057	11.0	2.0
MIM2z122	2489.1	19.1	38.2	99	0.0007600	0.0000280	0.281189	0.000057	0.281152888	0.000057	-1.5	2.1
MIM2z123	1322.4	6.0	12.1	100	0.0024560	0.0000440	0.282108	0.000056	0.282046674	0.000056	3.7	2.0
MIM2z124	585.5	3.5	7.1	96	0.0007745	0.0000019	0.282288	0.000056	0.282279496	0.000056	-4.5	2.0
MIM2z125	753.0	4.6	9.2	101	0.0007690	0.0000710	0.282664	0.000056	0.282653125	0.000056	12.4	2.0
MIM2z126	1020.9	5.0	9.9	99	0.0030810	0.0000470	0.282313	0.000052	0.282253775	0.000052	4.3	1.9
MIM2z127	677.5	3.2	6.4	99	0.0037860	0.0000510	0.282445	0.000053	0.282396863	0.000053	1.7	1.9
MIM2z128	646.9	2.9	5.8	99	0.0017880	0.0000450	0.282488	0.000053	0.282466297	0.000053	3.4	1.9
MIM2z129	605.1	3.5	7.0	99	0.0008330	0.0000150	0.282499	0.000059	0.282489546	0.000059	3.3	2.1
MIM2z130	612.1	4.1	8.2	100	0.0011390	0.0000170	0.282626	0.000056	0.282612924	0.000056	7.9	2.0
MIM2z131	605.0	3.5	7.0	96	0.0010120	0.0000320	0.282640	0.000057	0.282628516	0.000057	8.3	2.0
MIM2z132	2132.7	14.5	29.0	101	0.0015640	0.0000310	0.281594	0.000054	0.281530539	0.000054	3.8	2.0
MIM2z133	1182.8	5.4	10.7	100	0.0009200	0.0000190	0.282053	0.000051	0.282032479	0.000051	0.0	1.8
MIM2z134	582.4	2.9	5.9	99	0.0006250	0.0000170	0.282172	0.000053	0.282165175	0.000053	-8.6	1.9
MIM2z135	2020.3	17.8	35.6	99	0.0007247	0.0000011	0.281665	0.000053	0.281637174	0.000053	5.0	1.9

Table E.3: Sample OUJ10

IGSN: IEACC0001 Coordinate UTM: Zone 30S, 536550 m E, 3764944 m N

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ10z94	378.2	3.6	7.3	100	0.0017780	0.0000980	0.282726	0.000025	0.282713415	0.000025	6.2	0.9
OUJ10z95	644.8	6.4	12.8	96	0.0018820	0.0000660	0.282247	0.000026	0.282224231	0.000026	-5.2	0.9
OUJ10z96	594.5	10.0	20.0	104	0.0009902	0.0000087	0.282217	0.000034	0.282205961	0.000034	-6.9	1.2
OUJ10z97	2776.4	11.0	22.0	97	0.0008400	0.0001300	0.280936	0.000024	0.280891360	0.000024	-4.1	1.1
OUJ10z98	645.4	10.5	21.0	103	0.0007205	0.0000028	0.282482	0.000030	0.282473275	0.000030	3.7	1.1
OUJ10z99	516.4	4.8	9.5	97	0.0013800	0.0000400	0.282311	0.000029	0.282297646	0.000029	-5.4	1.0
OUJ10z100	1748.9	23.1	46.2	98	0.0023370	0.0000330	0.281782	0.000026	0.281704516	0.000026	1.2	1.0
OUJ10z103	619.7	10.8	21.7	99	0.0006630	0.0000190	0.282451	0.000017	0.282443293	0.000017	2.0	0.6
OUJ10z108	420.5	9.4	18.7	94	0.0028300	0.0001900	0.282423	0.000025	0.282400720	0.000025	-3.9	0.9
OUJ10z109	632.6	6.1	12.3	101	0.0019470	0.0000410	0.282517	0.000024	0.282493895	0.000024	4.1	0.9
OUJ10z112	1944.3	12.7	25.5	98	0.0004670	0.0000180	0.281590	0.000017	0.281572756	0.000017	0.9	0.6
OUJ10z113	610.3	5.9	11.7	99	0.0004790	0.0000200	0.282222	0.000025	0.282216517	0.000025	-6.2	0.9
OUJ10z114	655.3	5.5	11.1	99	0.0015130	0.0000340	0.282353	0.000024	0.282334396	0.000024	-1.0	0.9
OUJ10z119	1906.3	30.0	60.0	99	0.0010670	0.0000150	0.281590	0.000017	0.281551383	0.000017	-0.7	0.6
OUJ10z120	378.5	3.6	7.3	101	0.0025200	0.0001800	0.282696	0.000042	0.282678149	0.000042	5.0	1.5
OUJ10z121	637.2	6.1	12.3	96	0.0059400	0.0002400	0.282074	0.000024	0.282002987	0.000024	-13.2	1.0
OUJ10z122	1694.9	18.6	37.3	95	0.0016400	0.0001000	0.281282	0.000025	0.281229331	0.000025	-16.9	1.0
OUJ10z123	380.4	3.6	7.3	102	0.0023000	0.0000700	0.282674	0.000019	0.282657626	0.000019	4.3	0.7
OUJ10z125	618.5	7.9	15.8	102	0.0009130	0.0000770	0.282255	0.000023	0.282244407	0.000023	-5.0	0.8
OUJ10z128	2102.0	39.8	79.5	97	0.0010380	0.0000640	0.281470	0.000020	0.281428500	0.000020	-0.6	0.8
OUJ10z129	612.7	6.4	12.9	102	0.0005070	0.0000180	0.282151	0.000024	0.282145174	0.000024	-8.7	0.9
OUJ10z130	541.3	6.2	12.4	102	0.0022800	0.0001800	0.282489	0.000022	0.282465865	0.000022	1.1	0.8
OUJ10z131	614.4	7.0	14.1	99	0.0006240	0.0000500	0.282527	0.000025	0.282519809	0.000025	4.6	0.9
OUJ10z132	643.1	6.1	12.3	98	0.0016310	0.0000980	0.282468	0.000026	0.282448322	0.000026	2.7	1.0
OUJ10z133	789.6	8.6	17.1	100	0.0006090	0.0000220	0.282441	0.000026	0.282431966	0.000026	5.4	0.9
OUJ10z134	604.4	6.2	12.3	96	0.0006243	0.0000021	0.282090	0.000022	0.282082923	0.000022	-11.1	0.8
OUJ10z135	2158.8	17.5	35.0	97	0.0013090	0.0000650	0.281571	0.000024	0.281517221	0.000024	3.9	0.9
OUJ10z137	367.3	3.3	6.7	99	0.0014409	0.0000099	0.282640	0.000017	0.282630096	0.000017	3.1	0.6
OUJ10z138	1492.4	12.0	24.0	98	0.0008561	0.0000040	0.281887	0.000024	0.281862837	0.000024	1.0	0.9
OUJ10z139	376.0	3.3	6.7	100	0.0024090	0.0000290	0.282589	0.000022	0.282572048	0.000022	1.2	0.8
OUJ10z141	945.7	8.1	16.1	100	0.0007798	0.0000042	0.282178	0.000028	0.282164125	0.000028	-0.6	1.0
OUJ10z143	977.3	10.2	20.5	98	0.0008474	0.0000075	0.282212	0.000027	0.282196413	0.000027	1.2	1.0
OUJ10z145	368.9	4.0	7.9	99	0.0018180	0.0000520	0.282610	0.000026	0.282597448	0.000026	1.9	0.9
OUJ10z146	374.3	3.3	6.7	103	0.0016750	0.0000230	0.282671	0.000022	0.282659267	0.000022	4.2	0.8
OUJ10z147	1195.2	9.6	19.3	100	0.0008006	0.0000015	0.282111	0.000019	0.282092954	0.000019	2.5	0.7
OUJ10z148	1102.4	8.7	17.4	96	0.0008480	0.0000200	0.282099	0.000022	0.282081385	0.000022	0.0	0.8
OUJ10z151	1759.2	35.7	71.4	99	0.0011150	0.0000380	0.281123	0.000018	0.281085812	0.000018	-20.6	0.7
OUJ10z152	636.1	9.1	18.1	90	0.0013020	0.0000330	0.281979	0.000016	0.281963463	0.000016	-14.6	0.6
OUJ10z155	642.5	5.8	11.7	97	0.0016200	0.0001600	0.282526	0.000028	0.282506472	0.000028	4.8	1.1
OUJ10z156	1391.4	10.4	20.8	100	0.0008680	0.0000180	0.281962	0.000017	0.281939181	0.000017	1.4	0.6
OUJ10z157	2074.8	17.2	34.3	100	0.0008365	0.0000069	0.281645	0.000023	0.281611997	0.000023	5.3	0.8
OUJ10z158	2061.0	16.6	33.3	94	0.0009800	0.0000490	0.281520	0.000021	0.281481597	0.000021	0.4	0.8
OUJ10z159	585.6	6.8	13.5	93	0.0009600	0.0001700	0.282446	0.000043	0.282435457	0.000043	1.0	1.6
OUJ10z163	653.0	7.0	14.0	99	0.0019320	0.0000330	0.282142	0.000018	0.282118328	0.000018	-8.7	0.7
OUJ10z165	378.6	3.6	7.3	94	0.0011390	0.0000370	0.282551	0.000024	0.282542929	0.000024	0.2	0.9
OUJ10z167c	627.9	5.8	11.7	94	0.0006500	0.0001200	0.282671	0.000026	0.282663466	0.000026	9.8	1.0
OUJ10z169	634.9	6.1	12.3	98	0.0021560	0.0000620	0.281820	0.000024	0.281794320	0.000024	-20.6	0.9
OUJ10z170	991.7	12.2	24.3	101	0.0008290	0.0000720	0.282227	0.000028	0.282211525	0.000028	2.1	1.0
OUJ10z171	1969.5	35.4	70.8	101	0.0001626	0.0000033	0.281060	0.000035	0.281053916	0.000035	-16.9	1.2
OUJ10z174	614.4	5.3	10.5	98	0.0013190	0.0000560	0.282546	0.000026	0.282530799	0.000026	5.0	0.9
OUJ10z176	1543.9	32.4	64.7	99	0.0011540	0.0000200	0.281771	0.000020	0.281737290	0.000020	-2.3	0.7
OUJ10z177	2672.1	14.1	28.2	96	0.0013210	0.0000200	0.280948	0.000021	0.280880501	0.000021	-6.9	0.8
OUJ10z178	320.1	2.9	5.9	93	0.0030100	0.0002600	0.282594	0.000029	0.282575977	0.000029	0.1	1.1
OUJ10z179	563.8	5.9	11.8	102	0.0032400	0.0001600	0.282417	0.000021	0.282382751	0.000021	-1.4	0.8
OUJ10z184	586.8	5.0	10.0	100	0.0004600	0.0000250	0.282409	0.000027	0.282403938	0.000027	-0.1	1.0
OUJ10z186	1159.2	8.9	17.8	98	0.0010440	0.0000130	0.282091	0.000038	0.282068184	0.000038	0.8	1.4
OUJ10z188	2229.7	13.0	25.9	91	0.0004840	0.0000200	0.281421	0.000021	0.281400449	0.000021	1.4	0.8
OUJ10z189	550.8	5.3	10.7	103	0.0011020	0.0000160	0.282489	0.000023	0.282477621	0.000023	1.7	0.8
OUJ10z190	665.2	6.1	12.2	99	0.0006420	0.0000300	0.282095	0.000023	0.282086986	0.000023	-9.6	0.8

Table E.4: Sample OUJ11

IGSN: IEACC0002 Coordinate UTM: Zone 30S, 536550 m E, 3764944 m N

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ11z125	2040.1	21.1	42.2	99	0.0008010	0.0000180	0.281668	0.000019	0.281636937	0.000019	5.4	0.7
OUJ11z126	637.2	6.7	13.4	97	0.0005872	0.0000021	0.281849	0.000019	0.281841980	0.000019	-18.9	0.7
OUJ11z127	549.6	11.5	23.1	90	0.0005320	0.0000012	0.282371	0.000029	0.282365519	0.000029	-2.3	1.0
OUJ11z128c	2771.3	10.2	20.4	97	0.0021020	0.0000210	0.280983	0.000024	0.280871502	0.000024	-5.0	0.9
OUJ11z128r	2768.7	13.2	26.3	95	0.0013400	0.0001600	0.280955	0.000018	0.280883989	0.000018	-4.6	0.9
OUJ11z129	597.4	5.9	11.8	95	0.0019450	0.0000560	0.282394	0.000025	0.282372209	0.000025	-1.0	0.9
OUJ11z130	2069.3	17.2	34.4	98	0.0006522	0.0000021	0.281579	0.000024	0.281553338	0.000024	3.1	0.9
OUJ11z131	604.4	5.9	11.7	95	0.0011930	0.0000680	0.282632	0.000026	0.282618475	0.000026	7.9	0.9
OUJ11z132	616.8	5.3	10.5	99	0.0014400	0.0001100	0.282357	0.000026	0.282340341	0.000026	-1.7	1.0
OUJ11z134	1545.8	18.6	37.2	99	0.0006140	0.0000130	0.282009	0.000021	0.281991041	0.000021	6.7	0.8
OUJ11z135	2011.7	19.3	38.7	99	0.0000220	0.0000003	0.281312	0.000027	0.281311159	0.000027	-6.8	1.0
OUJ11z136	621.4	7.9	15.8	92	0.0002490	0.0000180	0.281871	0.000018	0.281868097	0.000018	-18.3	0.6
OUJ11z137c	773.0	6.9	13.7	98	0.0007300	0.0001700	0.282213	0.000028	0.282202400	0.000028	-3.1	1.1
OUJ11z138	394.5	5.5	10.9	93	0.0025030	0.0000600	0.282555	0.000027	0.282536519	0.000027	0.3	1.0
OUJ11z139	372.6	4.3	8.5	94	0.0014757	0.0000065	0.282569	0.000020	0.282558710	0.000020	0.6	0.7
OUJ11z140	641.3	9.3	18.7	97	0.0010600	0.0000940	0.281702	0.000022	0.281689246	0.000022	-24.2	0.8
OUJ11z141	602.1	6.2	12.3	96	0.0000112	0.0000007	0.282100	0.000020	0.282099874	0.000020	-10.5	0.7
OUJ11z142	1166.7	13.7	27.4	95	0.0006221	0.0000026	0.282016	0.000020	0.282002315	0.000020	-1.4	0.7
OUJ11z143	2777.2	8.9	17.7	94	0.0007880	0.0000680	0.280959	0.000021	0.280917110	0.000021	-3.2	0.9
OUJ11z144	2088.5	29.9	59.8	98	0.0004990	0.0000110	0.281466	0.000022	0.281446180	0.000022	-0.3	0.8
OUJ11z146	607.4	5.9	11.7	96	0.0004827	0.0000027	0.282272	0.000026	0.282266501	0.000026	-4.5	0.9
OUJ11z147	521.1	5.4	10.7	103	0.0008760	0.0000300	0.282518	0.000022	0.282509444	0.000022	2.2	0.8
OUJ11z150	376.2	4.9	9.7	95	0.0028000	0.0002000	0.282583	0.000036	0.282563284	0.000036	0.9	1.3
OUJ11z151	617.9	6.7	13.5	97	0.0014300	0.0001200	0.282315	0.000025	0.282298425	0.000025	-3.1	0.9
OUJ11z152	705.2	13.0	26.0	90	0.0007002	0.0000027	0.281806	0.000022	0.281796730	0.000022	-19.0	0.8
OUJ11z153	1012.1	9.4	18.7	96	0.0011969	0.0000067	0.282268	0.000023	0.282245193	0.000023	3.8	0.8
OUJ11z154	571.5	5.6	11.2	98	0.0010285	0.0000063	0.282583	0.000021	0.282571979	0.000021	5.5	0.7
OUJ11z155	1175.3	9.1	18.3	99	0.0006420	0.0000110	0.281878	0.000025	0.281863772	0.000025	-6.1	0.9
OUJ11z156	1757.5	20.4	40.8	102	0.0006557	0.0000016	0.281602	0.000021	0.281580152	0.000021	-3.0	0.7
OUJ11z157	576.8	5.6	11.2	98	0.0019780	0.0000640	0.282266	0.000026	0.282244607	0.000026	-6.0	0.9
OUJ11z158	377.8	3.6	7.3	98	0.0015210	0.0000340	0.282675	0.000023	0.282664245	0.000023	4.5	0.8
OUJ11z159	640.1	7.9	15.8	98	0.0019780	0.0000310	0.282407	0.000023	0.282383244	0.000023	0.4	0.8
OUJ11z160	2003.1	33.2	66.3	100	0.0004805	0.0000012	0.281145	0.000029	0.281126710	0.000029	-13.6	1.0
OUJ11z161	2058.2	20.8	41.6	97	0.0007471	0.0000060	0.281131	0.000022	0.281101764	0.000022	-13.2	0.8
OUJ11z163	2069.3	31.0	62.0	97	0.0019250	0.0000170	0.281043	0.000022	0.280967257	0.000022	-17.7	0.8
OUJ11z164	618.5	6.1	12.3	100	0.0005154	0.0000026	0.282233	0.000021	0.282227020	0.000021	-5.7	0.7
OUJ11z165	1226.7	9.6	19.2	100	0.0007120	0.0000073	0.282125	0.000024	0.282108523	0.000024	3.7	0.9
OUJ11z166	367.1	3.0	6.1	96	0.0012890	0.0000160	0.282611	0.000025	0.282602145	0.000025	2.1	0.9
OUJ11z167	772.4	7.4	14.9	97	0.0006750	0.0000340	0.282369	0.000026	0.282359206	0.000026	2.4	0.9
OUJ11z168	372.6	3.3	6.7	99	0.0023000	0.0004100	0.282713	0.000045	0.282696960	0.000045	5.5	1.7
OUJ11z169	2066.6	11.7	23.5	90	0.0009940	0.0000410	0.281307	0.000034	0.281267942	0.000034	-7.1	1.3
OUJ11z170c	2076.2	17.8	35.7	101	0.0015340	0.0000420	0.281454	0.000019	0.281393437	0.000019	-2.4	0.7
OUJ11z171	632.6	6.7	13.4	100	0.0009940	0.0000480	0.282287	0.000027	0.282275204	0.000027	-3.6	1.0
OUJ11z172	1555.6	14.6	29.2	98	0.0016485	0.0000097	0.281536	0.000020	0.281487474	0.000020	-10.9	0.7
OUJ11z173	602.7	8.2	16.4	96	0.0009310	0.0000210	0.282086	0.000027	0.282075477	0.000027	-11.4	1.0
OUJ11z175	625.5	5.3	10.5	103	0.0006530	0.0000100	0.282569	0.000021	0.282561337	0.000021	6.3	0.7
OUJ11z176	2098.0	8.8	17.6	97	0.0006710	0.0000370	0.281511	0.000020	0.281484225	0.000020	1.3	0.8
OUJ11z177	581.5	8.5	17.1	99	0.0016200	0.0000870	0.282378	0.000019	0.282360335	0.000019	-1.8	0.7
OUJ11z178	617.3	6.4	12.9	95	0.0012030	0.0000970	0.282401	0.000030	0.282387069	0.000030	0.0	1.1
OUJ11z179	2102.0	17.5	35.0	100	0.0050100	0.0006600	0.281896	0.000064	0.281695695	0.000064	8.9	3.2
OUJ11z180	512.2	5.4	10.7	96	0.0029391	0.0000082	0.282696	0.000020	0.282667789	0.000020	7.6	0.7
OUJ11z181	2061.0	17.3	34.6	97	0.0005508	0.0000026	0.281413	0.000023	0.281391416	0.000023	-2.8	0.8
OUJ11z182	2130.0	32.4	64.8	98	0.0007380	0.0000930	0.281575	0.000036	0.281545093	0.000036	4.2	1.4
OUJ11z183	378.3	4.0	7.9	92	0.0017540	0.0000280	0.282590	0.000020	0.282577581	0.000020	1.4	0.7
OUJ11z184	649.5	6.7	13.4	95	0.0008610	0.0000540	0.282379	0.000024	0.282368508	0.000024	0.0	0.9
OUJ11z185r	536.0	8.3	16.6	91	0.0018500	0.0002400	0.282395	0.000021	0.282376414	0.000021	-2.2	0.8
OUJ11z186	2126.1	24.5	49.0	100	0.0008120	0.0000200	0.281576	0.000033	0.281543156	0.000033	4.1	1.2
OUJ11z187	634.3	7.6	15.2	91	0.0015060	0.0000230	0.282444	0.000026	0.282426079	0.000026	1.7	0.9
OUJ11z188c	602.1	6.5	12.9	93	0.0015720	0.0000590	0.282524	0.000020	0.282506249	0.000020	3.9	0.7
OUJ11z188r	619.1	7.3	14.6	95	0.0012190	0.0000420	0.282489	0.000024	0.282474844	0.000024	3.1	0.9
OUJ11z189	2651.9	10.1	20.3	99	0.0011020	0.0000180	0.280948	0.000023	0.280892126	0.000023	-7.0	0.9
OUJ11z190	1987.1	11.7	23.3	97	0.0001934	0.0000007	0.281369	0.000017	0.281361697	0.000017	-5.6	0.6
OUJ11z191	605.0	5.9	11.7	98	0.0034870	0.0000650	0.282490	0.000023	0.282450431	0.000023	2.0	0.8
OUJ11z192	527.1	4.8	9.5	95	0.0022100	0.0001600	0.282701	0.000028	0.282679168	0.000028	8.3	1.0
OUJ11z193	974.5	8.9	17.7	95	0.0003930	0.0000230	0.282202	0.000019	0.282194792	0.000019	1.1	0.7
OUJ11z194	2031.6	19.8	39.6	97	0.0015020	0.0000590	0.281557	0.000027	0.281498998	0.000027	0.3	1.0
OUJ11z195	537.8	5.6	11.3	96	0.0011450	0.0000140	0.282402	0.000022	0.282390459	0.000022	-1.7	0.8
OUJ11z196	380.5	4.6	9.1	95	0.0018130	0.0000150	0.282574	0.000021	0.282561089	0.000021	0.9	0.7
OUJ11z197	1001.6	8.8	17.7	99	0.0009390	0.0000230	0.282168	0.000016	0.282150294	0.000016	0.2	0.6
OUJ11z198	569.7	8.3	16.5	95	0.0015300	0.0001700	0.282497	0.000026	0.282480657	0.000026	2.2	1.0
OUJ11z199	617.3	5.3	10.5	96	0.0007560	0.0000032	0.282664	0.000022	0.282655246	0.000022	9.5	0.8
OUJ11z200	553.8	10.6	21.3	93	0.0024500	0.0001800	0.282803	0.000028	0.282777566	0.000028	12.4	1.1
OUJ11z201	374.3	3.6	7.3	95	0.0018940	0.0000520	0.282572	0.000025	0.282558733	0.000025	0.7	0.9
OUJ11z202	644.8	7.6	15.2	97	0.0006878	0.0000043	0.281842	0.000023	0.281833679	0.000023	-19.0	0.8
OUJ11z203	384.1	4.6	9.1	92	0.0018320	0.0000560	0.282591	0.000026	0.282577828	0.000026	1.6	0.9
OUJ11z204	2256.6	24.2	48.5	94	0.0006210	0.0000160	0.281063	0.000027	0.281036307	0.000027	-11.0	1.0
OUJ11z205	602.1	5.0	10.0	99	0.0012500	0.0000460	0.282382	0.000074	0.282367885	0.000074	-1.0	2.6
OUJ11z206	656.5	9.9	19.8	95	0.0004230	0.0000210	0.281696	0.000020	0.281690789	0.000020	-23.8	0.7
OUJ11z208	2027.4	63.8	127.6	102	0.0008270	0.0000150	0.281189	0.000022	0.281157132	0.000022	-11.9	0.8
OUJ11z209	1538.0	16.7	33.5	99	0.0010170	0.0000180	0.281870	0.000028	0.281840407	0.000028	1.2	1.0
OUJ11z210	1810.9	38.6	77.1	99	0.0007930	0.0000360	0.281627	0.000022	0.281599760	0.000022	-1.1	0.8
OUJ11z211	600.9	12.6	25.3	96	0.0014700	0.0002200	0.282206	0.000018	0.282189433	0.000018	-7.4	0.7
OUJ11z212	613.8	8.8	17.6	92	0.0007120	0.0000280	0.282134	0.000027	0.282125802	0.000027	-9.3	1.0
OUJ11z214	2061.0	24.2	48.5	96	0.0003930	0.0000170	0.281144	0.000027	0.281128600	0.000027	-12.2	1.0
OUJ11z215	765.0	10.0	20.0	96	0.0011680	0.0000430	0.282636	0.000022	0.282619216	0.000022	11.5	0.8
OUJ11z216	361.3	3.7	7.3	97	0.0025460	0.0000810	0.282645	0.000021	0.282627786	0.000021	2.8	0.8
OUJ11z218	2058.2	21.5	43.0	99	0.0000999	0.0000013	0.281496	0.000019	0.281492091	0.000019	0.7	0.7
OUJ11z222	1245.8	11.2	22.3	100	0.0005110	0.0000180	0.282171	0.000022	0.282158988	0.000022	5.9	0.8
OUJ11z223	2093.9	12.2	24.4	96	0.0005170	0.0000210	0.281388	0.000028	0.281367411	0.000028	-2.9	1.0

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ11z224	378.0	3.3	6.7	95	0.0023900	0.0001800	0.282581	0.000018	0.282564092	0.000018	1.0	0.7
OUJ11z225	498.5	5.1	10.1	97	0.0021530	0.0000650	0.282619	0.000024	0.282598890	0.000024	4.9	0.9
OUJ11z226	987.8	11.9	23.8	92	0.0011920	0.0000120	0.282176	0.000018	0.282153836	0.000018	0.0	0.6
OUJ11z227	645.4	5.8	11.7	96	0.0032580	0.0000630	0.282088	0.000036	0.282048548	0.000036	-11.4	1.3
OUJ11z228	1210.1	10.7	21.4	99	0.0011161	0.0000085	0.282135	0.000028	0.282109524	0.000028	3.4	1.0
OUJ11z229	536.6	6.2	12.5	96	0.0015510	0.0000490	0.282367	0.000022	0.282351401	0.000022	-3.1	0.8
OUJ11z230	1799.4	26.5	52.9	99	0.0005483	0.0000053	0.281622	0.000027	0.281603287	0.000027	-1.3	1.0
OUJ11z231	2070.7	16.5	33.0	99	0.0009920	0.0000280	0.281522	0.000021	0.281482941	0.000021	0.6	0.8
OUJ11z232	2135.3	17.8	35.6	98	0.0009545	0.0000068	0.281376	0.000029	0.281337221	0.000029	-3.1	1.0
OUJ11z233	622.6	5.9	11.7	97	0.0029460	0.0000470	0.282617	0.000021	0.282582593	0.000021	7.0	0.8
OUJ11z234	590.3	6.2	12.4	97	0.0015300	0.0001100	0.282285	0.000037	0.282268062	0.000037	-4.8	1.4
OUJ11z235	705.8	6.6	13.3	100	0.0016190	0.0000210	0.282266	0.000022	0.282244549	0.000022	-3.1	0.8
OUJ11z236	381.7	4.6	9.1	107	0.0026310	0.0000380	0.282541	0.000024	0.282522204	0.000024	-0.4	0.9
OUJ11z237	1319.8	11.0	22.1	98	0.0000165	0.0000016	0.281973	0.000028	0.281972589	0.000028	1.0	1.0
OUJ11z238	636.1	7.0	14.0	95	0.0046600	0.0002300	0.282676	0.000049	0.282620392	0.000049	8.7	1.8
OUJ11z239	2345.9	13.7	27.4	97	0.0007850	0.0000530	0.281372	0.000029	0.281336893	0.000029	1.8	1.1
OUJ11z242	823.1	7.7	15.3	93	0.0020360	0.0000750	0.282351	0.000031	0.282319503	0.000031	2.2	1.1
OUJ11z243	581.8	4.7	9.4	99	0.0011120	0.0000290	0.282020	0.000023	0.282007868	0.000023	-14.2	0.8
OUJ11z246	387.2	3.6	7.3	95	0.0021910	0.0000880	0.282576	0.000031	0.282560120	0.000031	1.0	1.1
OUJ11z247	357.4	3.4	6.7	96	0.0016110	0.0000220	0.282691	0.000023	0.282680226	0.000023	4.6	0.8
OUJ11z248	652.4	7.3	14.6	100	0.0021860	0.0000590	0.282526	0.000027	0.282499240	0.000027	4.7	1.0
OUJ11z249	2469.3	27.2	54.4	95	0.0009260	0.0000590	0.280875	0.000020	0.280831358	0.000020	-13.4	0.8
OUJ11z251	373.8	4.0	7.9	97	0.0016840	0.0000950	0.282661	0.000030	0.282649219	0.000030	3.9	1.1
OUJ11z253	2617.4	8.5	17.0	99	0.0030400	0.0001800	0.281164	0.000022	0.281011921	0.000022	-3.5	1.1
OUJ11z254	637.8	5.8	11.7	94	0.0020900	0.0001500	0.282457	0.000051	0.282431991	0.000051	2.0	1.9
OUJ11z255	362.2	4.0	7.9	100	0.0022960	0.0000660	0.282623	0.000030	0.282607437	0.000030	2.1	1.1
OUJ11z256	377.7	3.6	7.3	97	0.0022200	0.0002000	0.282654	0.000024	0.282638307	0.000024	3.6	0.9
OUJ11z257	634.9	5.3	10.5	100	0.0012870	0.0000280	0.282230	0.000023	0.282214671	0.000023	-5.7	0.8
OUJ11z258	637.2	9.6	19.3	99	0.0007800	0.0000560	0.282675	0.000020	0.282665675	0.000020	10.3	0.7
OUJ11z259	607.4	5.6	11.1	99	0.0012930	0.0000250	0.282711	0.000038	0.282696270	0.000038	10.7	1.4
OUJ11z260	617.3	6.2	12.3	100	0.0013490	0.0000150	0.282122	0.000022	0.282106379	0.000022	-10.0	0.8
OUJ11z261	379.3	4.9	9.7	90	0.0023100	0.0002300	0.282543	0.000014	0.282526602	0.000014	-0.3	0.6
OUJ11z262	361.6	4.3	8.5	98	0.0019670	0.0000530	0.282639	0.000025	0.282625689	0.000025	2.8	0.9
OUJ11z263	1047.8	14.0	27.9	97	0.0010500	0.0001600	0.281579	0.000026	0.281558279	0.000026	-19.8	1.0
OUJ11z264	2099.3	13.5	27.0	99	0.0000853	0.0000006	0.281136	0.000019	0.281132594	0.000019	-11.1	0.7
OUJ11z265	1883.0	25.8	51.6	98	0.0009674	0.0000076	0.281237	0.000025	0.281202423	0.000025	-13.6	0.9
OUJ11z266	378.8	3.6	7.3	97	0.0031200	0.0001900	0.282642	0.000020	0.282619881	0.000020	2.9	0.8
OUJ11z267	2007.4	29.5	58.9	94	0.0011260	0.0000100	0.281595	0.000026	0.281552046	0.000026	1.7	0.9
OUJ11z268	2054.1	12.5	25.1	97	0.0008220	0.0000580	0.281011	0.000026	0.280978900	0.000026	-17.6	1.0

Table E.5: Sample OUJ13

IGSN: IEACC0003 Coordinate UTM: Zone 30S, 533485 m E, 3775692 m N

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ13z1	378.2	2.0	4.0	102	0.0026270	0.0000760	0.282716	0.000024	0.282697403	0.000024	5.7	0.9
OUJ13z2	774.9	3.7	7.4	100	0.0027200	0.0001300	0.282608	0.000025	0.282568405	0.000025	9.9	1.0
OUJ13z3	2154.9	13.6	27.3	101	0.0031800	0.0001300	0.281704	0.000024	0.281573594	0.000024	5.8	1.0
OUJ13z5	628.2	3.8	7.6	100	0.0009685	0.0000055	0.282606	0.000025	0.282594587	0.000025	7.6	0.9
OUJ13z6	591.5	2.9	5.9	103	0.0020800	0.0001100	0.282151	0.000019	0.282127927	0.000019	-9.8	0.7
OUJ13z7	2092.5	12.2	24.4	99	0.0013870	0.0000740	0.281639	0.000029	0.281583801	0.000029	4.7	1.1
OUJ13z8	607.0	3.2	6.5	99	0.0000258	0.0000009	0.281854	0.000023	0.281853706	0.000023	-19.1	0.8
OUJ13z10	381.1	2.0	4.0	101	0.0048100	0.0000940	0.282605	0.000022	0.282570691	0.000022	1.3	0.8
OUJ13z11	376.5	2.0	4.0	100	0.0007350	0.0000600	0.282582	0.000020	0.282576821	0.000020	1.4	0.7
OUJ13z12	1017.6	6.6	13.2	100	0.0012160	0.0000150	0.282198	0.000026	0.282174702	0.000026	1.4	0.9
OUJ13z13	375.2	2.3	4.6	101	0.0028090	0.0000690	0.282596	0.000026	0.282576275	0.000026	1.3	0.9
OUJ13z14	661.6	3.8	7.6	101	0.0019400	0.0002300	0.281900	0.000027	0.281875915	0.000027	-17.1	1.1
OUJ13z15	386.9	2.5	5.1	103	0.0035100	0.0003600	0.282583	0.000025	0.282557584	0.000025	0.9	1.0
OUJ13z16	378.8	2.0	4.1	101	0.0021600	0.0000970	0.282663	0.000018	0.282647684	0.000018	3.9	0.7
OUJ13z17	1822.7	13.0	26.1	101	0.0023710	0.0000500	0.281640	0.000019	0.281558016	0.000019	-2.3	0.7
OUJ13z19	562.6	3.8	7.7	99	0.0017480	0.0000310	0.282649	0.000015	0.282630562	0.000015	7.4	0.5
OUJ13z20	624.8	3.5	7.0	102	0.0012810	0.0000190	0.281695	0.000025	0.281679985	0.000025	-24.9	0.9
OUJ13z21	756.5	3.7	7.5	99	0.0009360	0.0000190	0.282467	0.000027	0.282453701	0.000027	5.4	1.0
OUJ13z22	623.5	3.2	6.4	101	0.0005830	0.0000280	0.282206	0.000023	0.282199181	0.000023	-6.5	0.8
OUJ13z23	380.2	2.3	4.6	99	0.0024310	0.0000500	0.282602	0.000029	0.282584702	0.000029	1.7	1.0
OUJ13z24	380.0	1.9	3.9	100	0.0029360	0.0000530	0.282619	0.000022	0.282598119	0.000022	2.2	0.8
OUJ13z25	913.8	5.0	10.1	86	0.0021030	0.0000320	0.281791	0.000037	0.281754851	0.000037	-15.8	1.3
OUJ13z26	3511.4	9.3	18.5	101	0.0004902	0.0000009	0.280477	0.000023	0.280443821	0.000023	-2.9	0.8
OUJ13z27	359.3	2.0	3.9	90	0.0059500	0.0001700	0.282649	0.000032	0.282608995	0.000032	2.1	1.2
OUJ13z28	643.1	3.8	7.6	100	0.0007520	0.0000250	0.282655	0.000026	0.282645927	0.000026	9.7	0.9
OUJ13z29	1764.3	13.5	27.1	101	0.0010820	0.0000110	0.281724	0.000022	0.281687806	0.000022	0.9	0.8
OUJ13z30	2066.6	18.6	37.3	101	0.0007520	0.0000160	0.281627	0.000021	0.281597451	0.000021	4.6	0.8
OUJ13z31	2078.9	15.1	30.1	100	0.0006317	0.0000062	0.281629	0.000020	0.281604027	0.000020	5.1	0.7
OUJ13z32	493.8	3.3	6.6	100	0.0028990	0.0000310	0.282675	0.000031	0.282648179	0.000031	6.5	1.1
OUJ13z34	380.7	2.0	4.1	101	0.0018720	0.0000370	0.282534	0.000019	0.282520660	0.000019	-0.5	0.7
OUJ13z35	641.7	3.8	7.6	104	0.0005623	0.0000075	0.281706	0.000023	0.281699230	0.000023	-23.8	0.8
OUJ13z36	384.3	2.3	4.7	104	0.0018630	0.0000660	0.282605	0.000025	0.282591599	0.000025	2.1	0.9
OUJ13z37	296.1	4.6	9.2	89	0.0042800	0.0002200	0.282749	0.000022	0.282725301	0.000022	4.9	0.8
OUJ13z39	417.1	3.3	6.6	100	0.0014600	0.0000530	0.282574	0.000021	0.282562599	0.000021	1.8	0.8
OUJ13z40	375.4	2.4	4.8	102	0.0015580	0.0000710	0.282624	0.000024	0.282613054	0.000024	2.6	0.9
OUJ13z41	375.1	3.0	6.1	97	0.0010200	0.0000160	0.282523	0.000021	0.282515840	0.000021	-0.8	0.7
OUJ13z42	634.0	3.5	7.0	100	0.0007556	0.0000039	0.282514	0.000020	0.282505013	0.000020	4.5	0.7
OUJ13z43	362.4	2.2	4.4	98	0.0018500	0.0001500	0.282673	0.000031	0.282660453	0.000031	4.0	1.1
OUJ13z44	718.9	3.7	7.5	101	0.0009840	0.0000380	0.282670	0.000022	0.282656718	0.000022	11.8	0.8
OUJ13z45	649.7	3.2	6.4	101	0.0009130	0.0000170	0.281992	0.000022	0.281980871	0.000022	-13.7	0.8
OUJ13z46	374.9	2.1	4.3	99	0.0025520	0.0000860	0.282608	0.000025	0.282590094	0.000025	1.8	0.9
OUJ13z48	625.9	3.2	6.4	101	0.0005780	0.0000830	0.282154	0.000021	0.282147214	0.000021	-8.3	0.8
OUJ13z49	379.9	2.2	4.5	102	0.0017830	0.0000280	0.282668	0.000020	0.282655323	0.000020	4.2	0.7
OUJ13z50	378.1	2.4	4.8	99	0.0015020	0.0000280	0.282613	0.000020	0.282602372	0.000020	2.3	0.7
OUJ13z51	608.0	4.1	8.2	98	0.0003757	0.0000046	0.282194	0.000021	0.282189716	0.000021	-7.2	0.7
OUJ13z52	686.2	3.5	7.0	100	0.0008918	0.0000087	0.282541	0.000019	0.282529514	0.000019	6.6	0.7
OUJ13z53	371.2	2.0	4.1	99	0.0022940	0.0000600	0.282650	0.000022	0.282634064	0.000022	3.3	0.8
OUJ13z54	1134.9	5.4	10.8	100	0.0006482	0.0000059	0.282141	0.000017	0.282127134	0.000017	2.3	0.6
OUJ13z55	1557.5	16.5	33.1	100	0.0006260	0.0000100	0.281577	0.000020	0.281558549	0.000020	-8.3	0.7
OUJ13z56	2089.3	11.6	23.1	100	0.0008500	0.0000270	0.281577	0.000025	0.281543226	0.000025	3.2	0.9
OUJ13z57	1227.8	5.9	11.7	102	0.0007178	0.0000049	0.282047	0.000024	0.282030375	0.000024	1.0	0.9
OUJ13z59	313.9	4.6	9.2	92	0.0020200	0.0001500	0.282618	0.000022	0.282606139	0.000022	1.0	0.8
OUJ13z61	2040.1	17.6	35.1	101	0.0007290	0.0000220	0.281541	0.000023	0.281512729	0.000023	1.0	0.8
OUJ13z62	1347.6	7.1	14.1	100	0.0008850	0.0000054	0.282046	0.000022	0.282023476	0.000022	3.4	0.8
OUJ13z63	1539.7	13.8	27.5	101	0.0008702	0.0000078	0.281886	0.000023	0.281860649	0.000023	2.0	0.8
OUJ13z64	1223.0	5.9	11.7	100	0.0011510	0.0000490	0.282123	0.000031	0.282096446	0.000031	3.2	1.1
OUJ13z65	376.8	1.9	3.9	100	0.0027500	0.0001500	0.282728	0.000020	0.282708605	0.000020	6.0	0.7
OUJ13z66	372.8	2.5	4.9	99	0.0015300	0.0001600	0.282639	0.000021	0.282628324	0.000021	3.1	0.8
OUJ13z68	605.3	3.2	6.5	100	0.0003380	0.0000110	0.282329	0.000025	0.282325163	0.000025	-2.5	0.9
OUJ13z69	380.9	2.0	4.1	99	0.0017340	0.0000400	0.282595	0.000020	0.282582638	0.000020	1.7	0.7
OUJ13z70	381.8	2.3	4.6	98	0.0014340	0.0000190	0.282599	0.000026	0.282588752	0.000026	1.9	0.9
OUJ13z71	1840.4	12.1	24.1	92	0.0002293	0.0000082	0.281957	0.000049	0.281948993	0.000049	11.9	1.8
OUJ13z72	929.4	4.7	9.5	99	0.0006794	0.0000032	0.282107	0.000021	0.282095121	0.000021	-3.4	0.7
OUJ13z73	510.2	3.6	7.1	99	0.0022900	0.0000780	0.282484	0.000029	0.282462106	0.000029	0.3	1.1
OUJ13z74	361.4	2.0	4.1	98	0.0020670	0.0000760	0.282602	0.000022	0.282588022	0.000022	1.4	0.8
OUJ13z76	625.6	3.8	7.6	94	0.0005850	0.0000640	0.282080	0.000016	0.282073135	0.000016	-11.0	0.6
OUJ13z77	1985.7	24.1	48.1	101	0.0005471	0.0000045	0.281129	0.000026	0.281108359	0.000026	-14.6	0.9
OUJ13z78	378.6	2.3	4.7	97	0.0016430	0.0000400	0.282617	0.000029	0.282605358	0.000029	2.4	1.0
OUJ13z79	377.3	1.9	3.9	101	0.0014620	0.0000270	0.282565	0.000023	0.282554675	0.000023	0.6	0.8
OUJ13z80	1927.7	15.2	30.3	100	0.0008610	0.0000230	0.281606	0.000025	0.281574483	0.000025	0.6	0.9
OUJ13z81	373.3	1.9	3.8	99	0.0021910	0.0000780	0.282640	0.000022	0.282624695	0.000022	3.0	0.8
OUJ13z82	375.1	2.3	4.6	100	0.0010580	0.0000670	0.282781	0.000025	0.282773572	0.000025	8.3	0.9
OUJ13z83c	384.0	2.3	4.6	100	0.0016620	0.0000510	0.282609	0.000027	0.282597054	0.000027	2.3	1.0
OUJ13z83r	376.7	2.6	5.2	101	0.0012532	0.0000064	0.282586	0.000023	0.282577164	0.000023	1.4	0.8
OUJ13z84	389.5	2.4	4.7	100	0.0021740	0.0000410	0.282671	0.000034	0.282655151	0.000034	4.4	1.2
OUJ13z85	315.7	4.9	9.8	97	0.0034050	0.0000990	0.282619	0.000022	0.282598890	0.000022	0.8	0.8
OUJ13z86	574.5	3.2	6.5	100	0.0043100	0.0001400	0.282454	0.000027	0.282407573	0.000027	-0.2	1.0
OUJ13z87	898.2	7.0	14.0	100	0.0010620	0.0000370	0.282587	0.000026	0.282569061	0.000026	12.7	0.9
OUJ13z88	810.1	5.1	10.2	100	0.0006830	0.0000170	0.282567	0.000026	0.282556603	0.000026	10.3	0.9
OUJ13z89	614.4	4.7	9.4	103	0.0007950	0.0000500	0.282342	0.000024	0.282332838	0.000024	-2.0	0.9
OUJ13z90	638.1	2.9	5.8	100	0.0007750	0.0000150	0.282147	0.000022	0.282137722	0.000022	-8.4	0.8
OUJ13z91	378.6	2.0	4.0	99	0.0016480	0.0000360	0.282614	0.000027	0.282602322	0.000027	2.3	1.0
OUJ13z92	1801.1	14.0	28.1	101	0.0009400	0.0000440	0.281690	0.000018	0.281657889	0.000018	0.7	0.7
OUJ13z93	385.0	2.8	5.6	104	0.0009190	0.0000360	0.282526	0.000023	0.282519378	0.000023	-0.5	0.8
OUJ13z94	2087.1	12.9	25.9	100	0.0009626	0.0000058	0.281563	0.000026	0.281524792	0.000026	2.5	0.9
OUJ13z95	378.0	2.2	4.5	101	0.0012870	0.0000210	0.282648	0.000025	0.282638895	0.000025	3.6	0.9
OUJ13z96	1255.4	5.8	11.7	101	0.0016820	0.0000510	0.282118	0.000026	0.282078154	0.000026	3.3	1.0
OUJ13z97	2017.4	12.8	25.7	97	0.0016000	0.0000640	0.281642	0.000020	0.281580653	0.000020	2.9	0.8
OUJ13z99	356.6	2.6	5.2	95	0.0015400	0.0001600	0.282615	0.000026	0.282604725	0.000026	1.9	1.0

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ13z100	1966.6	12.6	25.1	93	0.0001009	0.0000055	0.281525	0.000024	0.281521231	0.000024	-0.4	0.9
OUJ13z101	1978.4	13.9	27.8	100	0.0002480	0.0000130	0.281617	0.000028	0.281607679	0.000028	3.0	1.0
OUJ13z103	2227.2	12.4	24.7	101	0.0007527	0.0000081	0.281340	0.000026	0.281308076	0.000026	-2.0	0.9
OUJ13z104	653.3	3.8	7.6	100	0.0016200	0.0000290	0.282561	0.000023	0.282541140	0.000023	6.2	0.8
OUJ13z105	2084.4	13.6	27.3	100	0.0004564	0.0000037	0.281517	0.000022	0.281498909	0.000022	1.5	0.8
OUJ13z106	626.7	4.4	8.8	99	0.0005682	0.0000086	0.282576	0.000017	0.282569320	0.000017	6.6	0.6
OUJ13z107	380.1	2.0	4.1	100	0.0010330	0.0000320	0.282676	0.000020	0.282668651	0.000020	4.7	0.7
OUJ13z108	2091.2	12.9	25.8	94	0.0006590	0.0000270	0.281581	0.000020	0.281554791	0.000020	3.7	0.7
OUJ13z109	568.1	2.7	5.5	102	0.0012790	0.0000270	0.282548	0.000017	0.282534376	0.000017	4.1	0.6
OUJ13z110	396.9	2.9	5.8	76	0.0008370	0.0000340	0.282624	0.000029	0.282617782	0.000029	3.3	1.0
OUJ13z111	381.4	2.6	5.1	100	0.0009660	0.0000810	0.282567	0.000021	0.282560104	0.000021	0.9	0.8
OUJ13z112	2606.0	12.4	24.8	101	0.0010790	0.0000280	0.281258	0.000024	0.281204262	0.000024	3.0	0.9
OUJ13z113	377.0	2.6	5.3	103	0.0015950	0.0000380	0.282568	0.000027	0.282556745	0.000027	0.7	1.0
OUJ13z115	622.3	3.2	6.4	101	0.0006019	0.0000034	0.282116	0.000023	0.282108974	0.000023	-9.8	0.8
OUJ13z116	615.0	5.0	10.0	97	0.0004840	0.0000190	0.282063	0.000023	0.282057417	0.000023	-11.7	0.8
OUJ13z118	542.7	2.8	5.7	99	0.0023150	0.0000180	0.282677	0.000025	0.282653450	0.000025	7.8	0.9
OUJ13z120	635.5	4.1	8.2	102	0.0010071	0.0000054	0.282147	0.000023	0.282134993	0.000023	-8.5	0.8
OUJ13z121	1765.9	14.4	28.8	97	0.0004410	0.0000600	0.281720	0.000065	0.281705234	0.000065	1.6	2.4
OUJ13z123	614.4	3.5	7.0	100	0.0010431	0.0000094	0.282431	0.000019	0.282418979	0.000019	1.0	0.7
OUJ13z124	2152.3	16.3	32.5	99	0.0006270	0.0000560	0.281584	0.000022	0.281558320	0.000022	5.2	0.9
OUJ13z125	1738.6	13.8	27.6	100	0.0012115	0.0000097	0.281737	0.000022	0.281697073	0.000022	0.7	0.8
OUJ13z126	1050.3	4.9	9.9	102	0.0003121	0.0000017	0.282099	0.000022	0.282092826	0.000022	-0.8	0.8
OUJ13z127	382.8	2.2	4.4	99	0.0013680	0.0000400	0.282512	0.000027	0.282502199	0.000027	-1.1	1.0
OUJ13z128	580.3	3.8	7.7	106	0.0005258	0.0000082	0.282371	0.000028	0.282365278	0.000028	-1.6	1.0
OUJ13z129c	1225.1	7.5	14.9	99	0.0005310	0.0000110	0.282133	0.000029	0.282120728	0.000029	4.1	1.0
OUJ13z129r	1235.7	6.4	12.8	101	0.0006187	0.0000060	0.282161	0.000025	0.282146576	0.000025	5.3	0.9
OUJ13z131	637.8	4.1	8.2	101	0.0008760	0.0000081	0.282719	0.000026	0.282708518	0.000026	11.8	0.9
OUJ13z132	2153.6	12.4	24.7	101	0.0006913	0.0000018	0.281271	0.000016	0.281242668	0.000016	-6.0	0.6
OUJ13z135	383.0	2.3	4.7	99	0.0017320	0.0000360	0.282653	0.000027	0.282640583	0.000027	3.8	1.0
OUJ13z136	641.7	3.5	7.0	101	0.0008515	0.0000092	0.282503	0.000023	0.282492749	0.000023	4.3	0.8
OUJ13z137	792.6	4.3	8.6	100	0.0011900	0.0001200	0.282105	0.000030	0.282087279	0.000030	-6.7	1.1
OUJ13z139	610.7	3.5	7.0	99	0.0008700	0.0001800	0.282408	0.000018	0.282398034	0.000018	0.2	0.7
OUJ13z143	382.7	2.1	4.1	98	0.0012690	0.0000390	0.282588	0.000024	0.282578909	0.000024	1.6	0.9
OUJ13z144	371.9	1.8	3.7	100	0.0031930	0.0000860	0.282635	0.000024	0.282612779	0.000024	2.5	0.9
OUJ13z145	610.4	3.2	6.5	99	0.0006360	0.0000220	0.282218	0.000026	0.282210719	0.000026	-6.4	0.9
OUJ13z146	377.5	2.1	4.3	99	0.0019570	0.0000670	0.282619	0.000028	0.282605173	0.000028	2.4	1.0

Table E.6: Sample BES1

IGSN: IEACC0009 Coordinate UTM: Zone 29S, 3720500 m N, 674467 m E

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
BES1z1	1024.8	4.4	8.8	100	0.0005890	0.0000340	0.282225	0.000096	0.282213635	0.000096	2.9	3.4
BES1z3	1031.4	6.0	12.1	102	0.0009180	0.0000740	0.282206	0.000033	0.282188171	0.000033	2.2	1.2
BES1z4	603.9	5.9	11.7	98	0.0008681	0.0000055	0.282170	0.000043	0.282160168	0.000043	-8.4	1.5
BES1z5	1303.0	8.7	17.4	99	0.0020380	0.0000260	0.282199	0.000025	0.282148869	0.000025	6.9	0.9
BES1z6	2091.2	19.7	39.4	95	0.0015300	0.0001100	0.281729	0.000077	0.281668150	0.000077	7.7	2.9
BES1z8	1144.6	7.3	14.6	101	0.0007200	0.0001200	0.282270	0.000021	0.282254465	0.000021	7.0	0.8
BES1z9	2141.9	9.2	18.4	95	0.0015230	0.0000800	0.281483	0.000032	0.281420930	0.000032	0.1	1.3
BES1z10	468.6	3.6	7.2	101	0.0018800	0.0000260	0.282670	0.000100	0.282653498	0.000100	6.1	3.5
BES1z11	1070.3	12.3	24.6	95	0.0011940	0.0000870	0.282131	0.000023	0.282106928	0.000023	0.2	0.9
BES1z12	2087.1	40.2	80.3	101	0.0011240	0.0000460	0.281609	0.000044	0.281564386	0.000044	3.9	1.6
BES1z13	3050.0	8.0	16.0	91	0.0024400	0.0002000	0.281045	0.000090	0.280902185	0.000090	2.6	3.6
BES1z14	535.4	5.6	11.3	92	0.0021150	0.0000380	0.282401	0.000059	0.282379776	0.000059	-2.1	2.1
BES1z15	1322.4	8.9	17.9	98	0.0008163	0.0000074	0.281956	0.000041	0.281935617	0.000041	-0.3	1.5
BES1z16	406.2	2.8	5.6	98	0.0024000	0.0001600	0.282559	0.000079	0.282540749	0.000079	0.8	2.8
BES1z17	1993.0	13.1	26.1	95	0.0009720	0.0000260	0.281585	0.000034	0.281548192	0.000034	1.2	1.2
BES1z19	1136.0	6.5	13.0	101	0.0012480	0.0000740	0.282210	0.000045	0.282183278	0.000045	4.3	1.7
BES1z20	1101.8	13.0	26.1	98	0.0082000	0.0036000	0.282340	0.000190	0.282169752	0.000190	3.1	9.4
BES1z21	643.6	4.4	8.8	103	0.0028700	0.0002300	0.282719	0.000042	0.282684341	0.000042	11.1	1.6
BES1z22	1226.2	8.8	17.6	100	0.0022710	0.0000720	0.282168	0.000058	0.282115469	0.000058	4.0	2.1
BES1z23	636.6	4.1	8.2	102	0.0030500	0.0002400	0.282429	0.000041	0.282392570	0.000041	0.6	1.6
BES1z27	687.3	5.5	11.0	97	0.0026300	0.0001600	0.282593	0.000052	0.282559074	0.000052	7.6	1.9
BES1z28	2175.6	21.1	42.3	100	0.0009510	0.0000340	0.281452	0.000035	0.281412620	0.000035	0.5	1.3
BES1z31c	613.8	7.6	15.2	98	0.0003650	0.0000220	0.282107	0.000024	0.282102798	0.000024	-10.2	0.9
BES1z32	422.3	3.3	6.6	102	0.0012700	0.0000270	0.282528	0.000029	0.282517959	0.000029	0.3	1.0
BES1z33	2289.0	14.8	29.6	100	0.0044000	0.0005600	0.281612	0.000062	0.281420101	0.000062	3.4	3.1
BES1z34	815.2	8.5	17.0	92	0.0007000	0.0000280	0.282244	0.000025	0.282233276	0.000025	-1.1	0.9
BES1z36	640.7	3.5	7.0	100	0.0029700	0.0001200	0.282542	0.000032	0.282506297	0.000032	4.7	1.2
BES1z37	654.1	5.0	9.9	101	0.0088200	0.0005400	0.282490	0.000068	0.282381740	0.000068	0.6	2.6
BES1z40	1205.9	7.8	15.5	99	0.0007250	0.0000330	0.282088	0.000029	0.282071510	0.000029	1.9	1.1
BES1z42	566.4	2.8	5.6	101	0.0025630	0.0000240	0.282511	0.000028	0.282483782	0.000028	2.3	1.0
BES1z43	1031.9	7.1	14.3	102	0.0006160	0.0000110	0.282199	0.000036	0.282187030	0.000036	2.1	1.3
BES1z45c	575.6	4.1	8.3	101	0.0022100	0.0001400	0.282448	0.000038	0.282424147	0.000038	0.4	1.4
BES1z45r	616.8	4.1	8.2	97	0.0015270	0.0000950	0.282702	0.000029	0.282684334	0.000029	10.5	1.1
BES1z46	995.6	11.0	22.1	100	0.0007990	0.0000340	0.282249	0.000047	0.282234026	0.000047	3.0	1.7
BES1z47	641.3	3.8	7.6	100	0.0015010	0.0000320	0.282583	0.000034	0.282564940	0.000034	6.8	1.2
BES1z49	489.0	3.9	7.8	99	0.0046400	0.0002400	0.282411	0.000057	0.282368494	0.000057	-3.5	2.1
BES1z50	579.2	4.7	9.4	93	0.0009730	0.0000240	0.282423	0.000035	0.282412434	0.000035	0.0	1.2
BES1z51	583.9	6.5	13.0	99	0.0019470	0.0000790	0.282246	0.000064	0.282224683	0.000064	-6.5	2.3
BES1z52	658.2	11.9	23.9	92	0.0028240	0.0000250	0.282768	0.000029	0.282733120	0.000029	13.1	1.0
BES1z53	2321.8	18.0	35.9	98	0.0020660	0.0000710	0.281431	0.000034	0.281339574	0.000034	1.3	1.3
BES1z55	583.9	4.1	8.2	92	0.0014640	0.0000440	0.282616	0.000025	0.282599971	0.000025	6.8	0.9
BES1z56	2110.1	10.1	20.1	98	0.0013220	0.0000750	0.281490	0.000054	0.281436938	0.000054	-0.1	2.0
BES1z57	956.8	6.4	12.8	101	0.0008760	0.0000280	0.282153	0.000022	0.282137228	0.000022	-1.3	0.8
BES1z58	2166.6	10.3	20.6	93	0.0030810	0.0000780	0.281465	0.000017	0.281337957	0.000017	-2.3	0.7
BES1z59	586.2	3.8	7.7	100	0.0016000	0.0001600	0.282203	0.000025	0.282185411	0.000025	-7.8	0.9
BES1z60	623.2	5.0	9.9	101	0.0017860	0.0000600	0.282395	0.000041	0.282374121	0.000041	-0.3	1.5
BES1z61	2300.8	13.5	27.0	99	0.0009010	0.0000440	0.281389	0.000023	0.281349497	0.000023	1.2	0.9
BES1z62	1772.7	19.4	38.7	102	0.0010990	0.0000970	0.281615	0.000035	0.281578059	0.000035	-2.8	1.4
BES1z63	907.7	5.0	10.1	94	0.0016370	0.0000760	0.281474	0.000029	0.281446052	0.000029	-26.9	1.1
BES1z64	375.6	3.0	6.1	97	0.0019510	0.0000660	0.282494	0.000032	0.282480284	0.000032	-2.1	1.1
BES1z66	2040.1	10.5	21.1	95	0.0006900	0.0000480	0.281564	0.000032	0.281537241	0.000032	1.9	1.2
BES1z67	2083.0	19.1	38.2	99	0.0014770	0.0000230	0.281600	0.000026	0.281541492	0.000026	3.0	1.0
BES1z68	497.3	4.8	9.5	97	0.0021300	0.0001200	0.282467	0.000049	0.282447152	0.000049	-0.5	1.8
BES1z69	619.1	5.0	10.0	99	0.0012820	0.0000960	0.282407	0.000052	0.282392112	0.000052	0.2	1.9
BES1z70	2118.1	42.6	85.3	100	0.0006660	0.0000510	0.281527	0.000029	0.281500165	0.000029	2.3	1.1
BES1z71	852.0	11.3	22.6	92	0.0006470	0.0000200	0.282248	0.000028	0.282237637	0.000028	-0.1	1.0
BES1z72	930.0	5.0	10.0	94	0.0027600	0.0001400	0.282281	0.000017	0.282232709	0.000017	1.5	0.7
BES1z73	1726.5	13.9	27.8	99	0.0010890	0.0000330	0.281771	0.000032	0.281735364	0.000032	1.8	1.2
BES1z74	646.0	3.8	7.6	97	0.0039900	0.0008200	0.282387	0.000062	0.282338640	0.000062	-1.1	2.5
BES1z75	2122.1	14.0	27.9	100	0.0014830	0.0000540	0.281496	0.000022	0.281436131	0.000022	0.2	0.9
BES1z76	559.1	3.8	7.7	101	0.0011540	0.0000950	0.282367	0.000044	0.282354904	0.000044	-2.4	1.6
BES1z77	598.0	5.6	11.2	94	0.0011010	0.0000220	0.282291	0.000028	0.282278653	0.000028	-4.3	1.0
BES1z78	372.0	2.4	4.9	97	0.0016040	0.0000280	0.282547	0.000049	0.282535834	0.000049	-0.2	1.7
BES1z79	657.0	5.2	10.5	98	0.0018710	0.0000980	0.282382	0.000057	0.282358932	0.000057	-0.1	2.1
BES1z80c	616.8	4.1	8.2	98	0.0033700	0.0004000	0.282667	0.000046	0.282628013	0.000046	8.5	1.8
BES1z81	2051.3	10.5	20.9	94	0.0004090	0.0000350	0.281483	0.000017	0.281467050	0.000017	-0.4	0.7
BES1z82	1047.8	5.2	10.4	101	0.0005316	0.0000076	0.282248	0.000033	0.282237509	0.000033	4.3	1.2
BES1z83	413.2	4.2	8.5	104	0.0019900	0.0001400	0.282575	0.000032	0.282559605	0.000032	1.6	1.2
BES1z84	599.2	3.5	7.0	99	0.0012520	0.0000340	0.282322	0.000029	0.282307931	0.000029	-3.2	1.0
BES1z85	1004.4	5.5	11.0	100	0.0003010	0.0000240	0.282218	0.000029	0.282212309	0.000029	2.4	1.0
BES1z87	687.3	7.0	13.9	100	0.0004964	0.0000073	0.282671	0.000026	0.282664597	0.000026	11.4	0.9
BES1z88	644.2	4.1	8.2	97	0.0016200	0.0000500	0.282267	0.000036	0.282247419	0.000036	-4.4	1.3
BES1z89r	552.6	4.1	8.3	94	0.0058100	0.0002100	0.281998	0.000028	0.281937815	0.000028	-17.4	1.1
BES1z90	1232.5	10.4	20.8	96	0.0021000	0.0001000	0.282268	0.000069	0.282219168	0.000069	7.8	2.5
BES1z91	632.6	3.5	7.0	102	0.0026000	0.0004300	0.282468	0.000073	0.282437146	0.000073	2.1	2.8
BES1z92	2059.6	17.3	34.7	96	0.0008600	0.0002400	0.281334	0.000038	0.281300323	0.000038	-6.1	1.7
BES1z93	469.8	3.3	6.6	96	0.0013800	0.0002600	0.282504	0.000028	0.282491855	0.000028	0.4	1.1
BES1z94	1032.5	8.0	15.9	100	0.0015400	0.0001600	0.282272	0.000025	0.282242059	0.000025	4.1	1.0
BES1z96	591.5	4.1	8.2	99	0.0012520	0.0000510	0.282162	0.000063	0.282148112	0.000063	-9.1	2.3
BES1z99c	2027.4	28.4	56.7	99	0.0003500	0.0000170	0.281033	0.000027	0.281019513	0.000027	-16.8	1.0
BES1z100	2141.9	17.7	35.4	99	0.0010521	0.0000082	0.281485	0.000030	0.281442122	0.000030	0.8	1.1
BES1z101	626.1	4.1	8.2	97	0.0014160	0.0000210	0.282289	0.000046	0.282272368	0.000046	-3.9	1.6
BES1z102	887.5	5.9	11.8	98	0.0033800	0.0001600	0.282239	0.000025	0.282182589	0.000025	-1.3	1.0
BES1z103	349.4	3.1	6.1	94	0.0027820	0.0000880	0.282681	0.000024	0.282662811	0.000024	3.8	0.9
BES1z104	620.9	4.4	8.8	100	0.0006720	0.0000120	0.282658	0.000023	0.282650174	0.000023	9.4	0.8
BES1z106c	998.9	9.1	18.2	102	0.0003120	0.0000180	0.282246	0.000038	0.282240133	0.000038	3.3	1.4
BES1z106r	1014.3	6.3	12.7	99	0.0007030	0.0000130	0.282266	0.000031	0.282252575	0.000031	4.1	1.1

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
BES1z107r	570.3	4.4	8.9	97	0.0004570	0.0000360	0.282420	0.000190	0.282415113	0.000190	-0.1	6.7
BES1z110	699.4	6.4	12.7	105	0.0010890	0.0000410	0.282468	0.000026	0.282453702	0.000026	4.2	0.9
BES1z111	1903.2	20.0	40.1	92	0.0017190	0.0000210	0.281657	0.000026	0.281594889	0.000026	0.8	1.0
BES1z114	578.6	3.5	7.1	94	0.0018400	0.0001000	0.282461	0.000024	0.282441039	0.000024	1.0	0.9
BES1z115	412.5	2.8	5.6	101	0.0015940	0.0000910	0.282716	0.000082	0.282703690	0.000082	6.7	2.9
BES1z116	599.2	4.4	8.8	99	0.0014320	0.0000490	0.282292	0.000028	0.282275909	0.000028	-4.4	1.0
BES1z117	3016.8	7.1	14.3	101	0.0009860	0.0000210	0.280986	0.000043	0.280928934	0.000043	2.8	1.6
BES1z118c	2973.4	12.1	24.3	98	0.0008397	0.0000054	0.280814	0.000021	0.280766121	0.000021	-4.0	0.8
BES1z119	600.3	5.3	10.6	98	0.0026400	0.0002200	0.282425	0.000051	0.282395276	0.000051	-0.1	1.9
BES1z120	2152.3	11.7	23.4	98	0.0013860	0.0000800	0.281623	0.000075	0.281566233	0.000075	5.5	2.8
BES1z121	2738.7	21.3	42.5	93	0.0008450	0.0000920	0.281300	0.000120	0.281255719	0.000120	8.0	4.4
BES1z125	916.1	13.4	26.8	98	0.0008190	0.0000220	0.282260	0.000240	0.282245887	0.000240	1.6	8.5
BES1z130	604.4	7.9	15.8	105	0.0014130	0.0000330	0.282591	0.000028	0.282574981	0.000028	6.4	1.0
BES1z131	685.5	6.1	12.2	104	0.0012520	0.0000520	0.281965	0.000027	0.281948891	0.000027	-14.0	1.0
BES1z135	633.7	3.2	6.4	98	0.0011670	0.0000820	0.282330	0.000032	0.282316126	0.000032	-2.2	1.2
BES1z136	623.2	4.7	9.4	101	0.0019270	0.0000990	0.282551	0.000023	0.282528473	0.000023	5.1	0.9
BES1z137	775.9	5.4	10.9	98	0.0026400	0.0001500	0.282075	0.000052	0.282036521	0.000052	-8.9	1.9
BES1z138	634.3	6.1	12.3	96	0.0022500	0.0000420	0.282469	0.000071	0.282442225	0.000071	2.3	2.5
BES1z139	2482.9	17.6	35.3	99	0.0048000	0.0027000	0.281450	0.000130	0.281222506	0.000130	0.9	9.2
BES1z140	2169.2	19.3	38.6	92	0.0024500	0.0001500	0.281781	0.000065	0.281679853	0.000065	9.9	2.5

Table E.7: Sample SKH1

IGSN: IEACC00011 Coordinate UTM: Zone 29S, 3748316 m N, 678921 m E

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
SHK1z1	634.3	3.5	7.0	101	0.0006497	0.0000056	0.282676	0.000021	0.282668269	0.000021	10.3	0.7
SHK1z2	609.7	7.9	15.8	96	0.0008230	0.0000190	0.281921	0.000021	0.281911588	0.000021	-17.0	0.7
SHK1z3	1012.7	10.5	20.9	99	0.0008600	0.0000290	0.282246	0.000026	0.282229604	0.000026	3.2	0.9
SHK1z4	1310.3	7.4	14.7	100	0.0016110	0.0000420	0.282129	0.000025	0.282089145	0.000025	4.9	0.8
SHK1z5	1217.6	8.8	17.6	102	0.0005850	0.0000140	0.282027	0.000029	0.282013563	0.000029	0.1	1.0
SHK1z6	1019.3	9.1	18.2	98	0.0004260	0.0000140	0.282238	0.000033	0.282229825	0.000033	3.4	1.2
SHK1z7	1040.7	7.4	14.8	100	0.0006650	0.0000110	0.282136	0.000024	0.282122967	0.000024	0.1	0.8
SHK1z8	650.6	6.1	12.2	98	0.0007700	0.0000250	0.282481	0.000023	0.282471600	0.000023	3.7	0.8
SHK1z9c	697.7	8.4	16.8	105	0.0008380	0.0000120	0.281845	0.000028	0.281834025	0.000028	-17.8	1.0
SHK1z11	1133.8	5.7	11.4	92	0.0013400	0.0000180	0.282100	0.000025	0.282071363	0.000025	0.3	0.9
SHK1z12	537.8	4.7	9.5	94	0.0014890	0.0000240	0.282347	0.000018	0.282331991	0.000018	-3.7	0.6
SHK1z13	1049.5	5.5	11.0	101	0.0013590	0.0000410	0.282394	0.000030	0.282367139	0.000030	8.9	1.0
SHK1z14	1042.3	7.1	14.3	105	0.0005513	0.0000075	0.282214	0.000022	0.282203178	0.000022	2.9	0.8
SHK1z15c	644.8	5.2	10.5	101	0.0000760	0.0000110	0.282212	0.000018	0.282211081	0.000018	-5.6	0.6
SHK1z15r	646.0	3.5	7.0	100	0.0001330	0.0000005	0.282266	0.000026	0.282264389	0.000026	-3.7	0.9
SHK1z16	586.2	4.7	9.4	103	0.0003754	0.0000038	0.282223	0.000032	0.282218873	0.000032	-6.7	1.1
SHK1z17	528.3	3.9	7.7	99	0.0008960	0.0000110	0.282477	0.000023	0.282468129	0.000023	0.9	0.8
SHK1z19	1059.3	5.5	10.9	100	0.0005432	0.0000045	0.282250	0.000018	0.282239162	0.000018	4.6	0.6
SHK1z20	680.9	8.7	17.4	100	0.0012740	0.0000430	0.282499	0.000022	0.282482719	0.000022	4.8	0.8
SHK1z21	1065.9	6.3	12.6	100	0.0033200	0.0002500	0.282024	0.000032	0.281957342	0.000032	-5.2	1.0
SHK1z22	546.7	3.6	7.1	97	0.0027590	0.0000350	0.282312	0.000035	0.282283728	0.000035	-5.2	1.2
SHK1z24	584.5	3.8	7.7	96	0.0008470	0.0000480	0.282072	0.000032	0.282062717	0.000032	-12.2	1.1
SHK1z25	961.2	7.8	15.5	99	0.0016520	0.0000150	0.281525	0.000024	0.281495118	0.000024	-24.0	0.8
SHK1z26	393.8	2.8	5.6	99	0.0016240	0.0000380	0.282443	0.000026	0.282431029	0.000026	-3.4	0.9
SHK1z30	631.4	3.2	6.4	99	0.0028800	0.0002200	0.282105	0.000044	0.282070887	0.000044	-10.9	1.5
SHK1z31	2145.8	24.8	49.7	101	0.0023300	0.0003500	0.281691	0.000059	0.281595864	0.000059	6.4	1.6
SHK1z32	2641.8	7.0	13.9	98	0.0008070	0.0000180	0.281010	0.000026	0.280969244	0.000026	-4.5	0.9
SHK1z33	577.4	4.7	9.4	97	0.0017620	0.0000220	0.282334	0.000026	0.282314924	0.000026	-3.5	0.9
SHK1z34	1580.7	23.0	46.0	101	0.0013480	0.0000270	0.281964	0.000037	0.281923670	0.000037	5.1	1.3
SHK1z36	2274.7	20.4	40.7	101	0.0007870	0.0000270	0.281250	0.000033	0.281215895	0.000033	-4.2	1.1
SHK1z37	1272.4	5.8	11.6	102	0.0012600	0.0000790	0.282079	0.000030	0.282048743	0.000030	2.6	1.0
SHK1z38	419.3	3.6	7.2	92	0.0012500	0.0000290	0.282551	0.000022	0.282541188	0.000022	1.1	0.8
SHK1z39	624.9	3.5	7.0	100	0.0008080	0.0000530	0.282156	0.000021	0.282146527	0.000021	-8.4	0.7
SHK1z40	1982.8	38.0	76.0	100	0.0001310	0.0000110	0.281237	0.000028	0.281232065	0.000028	-10.3	1.0
SHK1z41	2154.9	11.7	23.4	97	0.0016600	0.0001200	0.281358	0.000025	0.281289926	0.000025	-4.3	0.7
SHK1z42	655.9	3.8	7.6	103	0.0011800	0.0000860	0.282277	0.000044	0.282262477	0.000044	-3.6	1.5
SHK1z43	463.8	4.5	9.0	99	0.0010690	0.0000210	0.282609	0.000024	0.282599713	0.000024	4.1	0.8
SHK1z44	1163.5	7.0	14.0	97	0.0014190	0.0000450	0.282163	0.000029	0.282131872	0.000029	3.1	1.0
SHK1z45	976.2	5.3	10.5	100	0.0007420	0.0000270	0.282241	0.000034	0.282227367	0.000034	2.3	1.2
SHK1z46	2056.9	18.8	37.5	101	0.0009680	0.0000250	0.281598	0.000030	0.281560146	0.000030	3.1	1.0
SHK1z47	562.0	4.4	8.9	97	0.0009300	0.0001200	0.282354	0.000021	0.282344200	0.000021	-2.8	0.7
SHK1z48	596.2	4.4	8.8	101	0.0011794	0.0000092	0.282165	0.000019	0.282151813	0.000019	-8.8	0.7
SHK1z49	1993.0	16.7	33.4	98	0.0010550	0.0000250	0.281598	0.000020	0.281558049	0.000020	1.5	0.7
SHK1z50	606.2	6.7	13.5	101	0.0005310	0.0000140	0.281841	0.000019	0.281834963	0.000019	-19.8	0.7
SHK1z51r	653.0	5.0	9.9	96	0.0009030	0.0000340	0.282260	0.000026	0.282248936	0.000026	-4.1	0.9
SHK1z52	535.4	4.2	8.3	98	0.0021110	0.0000600	0.282323	0.000029	0.282301816	0.000029	-4.9	1.0
SHK1z53	2960.0	8.2	16.3	92	0.0018500	0.0000540	0.280971	0.000026	0.280865999	0.000026	-0.8	0.8
SHK1z54	2106.0	25.5	51.1	103	0.0006980	0.0000200	0.281491	0.000019	0.281463039	0.000019	0.7	0.6
SHK1z55	763.9	7.2	14.3	103	0.0016850	0.0000750	0.282640	0.000024	0.282615824	0.000024	11.3	0.8
SHK1z56	1499.6	7.9	15.8	100	0.0008383	0.0000059	0.281795	0.000029	0.281771543	0.000029	-2.5	1.0
SHK1z57	1043.4	7.1	14.3	99	0.0004321	0.0000024	0.282212	0.000021	0.282203509	0.000021	3.0	0.7
SHK1z58	1417.0	32.0	64.0	103	0.0012660	0.0000250	0.281961	0.000025	0.281927097	0.000025	1.6	0.9
SHK1z59	793.0	4.0	8.0	101	0.0018280	0.0000660	0.282062	0.000023	0.282034764	0.000023	-8.6	0.8
SHK1z60	1257.5	8.2	16.4	100	0.0003480	0.0000150	0.282139	0.000024	0.282130742	0.000024	5.2	0.8
SHK1z62	475.2	4.2	8.4	99	0.0018690	0.0000640	0.282361	0.000021	0.282344362	0.000021	-4.7	0.7
SHK1z63	528.9	3.9	7.7	103	0.0015300	0.0001400	0.282297	0.000043	0.282281834	0.000043	-5.7	1.5
SHK1z64	613.2	5.0	10.0	99	0.0028870	0.0000740	0.282571	0.000024	0.282537792	0.000024	5.2	0.8
SHK1z65	1230.9	9.1	18.1	100	0.0008470	0.0000370	0.282196	0.000023	0.282176330	0.000023	6.2	0.8
SHK1z66	574.4	5.6	11.2	98	0.0005680	0.0000130	0.282286	0.000025	0.282279882	0.000025	-4.8	0.9
SHK1z67	796.4	10.0	19.9	99	0.0006872	0.0000032	0.282198	0.000035	0.282187717	0.000035	-3.1	1.2
SHK1z68	634.3	4.7	9.3	96	0.0014060	0.0000460	0.282191	0.000019	0.282174269	0.000019	-7.2	0.7
SHK1z70	1990.0	19.6	39.3	99	0.0000600	0.0000030	0.281446	0.000027	0.281443731	0.000027	-2.6	1.0
SHK1z71	606.2	4.1	8.2	101	0.0007700	0.0000150	0.282135	0.000019	0.282126245	0.000019	-9.5	0.7
SHK1z73	2886.9	13.7	27.4	100	0.0005670	0.0000250	0.280951	0.000046	0.280919636	0.000046	-0.6	1.6
SHK1z74	547.8	5.0	10.1	100	0.0019210	0.0000730	0.282379	0.000022	0.282359272	0.000022	-2.5	0.8
SHK1z75	526.1	3.0	5.9	98	0.0098100	0.0003500	0.282649	0.000047	0.282552277	0.000047	3.8	1.5
SHK1z76	537.2	3.9	7.7	99	0.0008430	0.0000770	0.282238	0.000026	0.282229512	0.000026	-7.4	0.9
SHK1z78	593.3	4.7	9.4	105	0.0010860	0.0000310	0.282048	0.000029	0.282035917	0.000029	-13.0	1.0
SHK1z79	1709.1	23.7	47.5	99	0.0018710	0.0000180	0.281897	0.000029	0.281836404	0.000029	5.0	1.0
SHK1z80	618.5	4.4	8.8	98	0.0005708	0.0000084	0.282194	0.000029	0.282187378	0.000029	-7.1	1.0
SHK1z82	2153.6	15.6	31.2	95	0.0011290	0.0000380	0.281717	0.000027	0.281670730	0.000027	9.2	0.9
SHK1z83	2070.7	20.0	39.9	100	0.0006600	0.0000190	0.281473	0.000029	0.281447013	0.000029	-0.6	1.0
SHK1z84	450.5	2.8	5.7	99	0.0010510	0.0000910	0.282504	0.000053	0.282495133	0.000053	0.1	1.8
SHK1z85	1856.2	16.7	33.4	101	0.0009270	0.0000220	0.281661	0.000022	0.281628347	0.000022	0.9	0.8
SHK1z86	613.8	5.6	11.1	104	0.0021850	0.0000690	0.282319	0.000040	0.282293843	0.000040	-3.4	1.4
SHK1z87	1220.3	10.1	20.3	99	0.0004860	0.0000140	0.282158	0.000025	0.282146813	0.000025	4.9	0.9
SHK1z88	659.4	11.6	23.3	91	0.0011400	0.0000330	0.282666	0.000043	0.282651894	0.000043	10.3	1.5
SHK1z89	990.6	5.3	10.5	99	0.0007810	0.0000330	0.282241	0.000019	0.282226437	0.000019	2.6	0.7
SHK1z90	665.8	7.3	14.5	95	0.0024300	0.0001700	0.282520	0.000035	0.282489639	0.000035	4.7	1.2
SHK1z91	1972.5	11.8	23.5	94	0.0002564	0.0000092	0.281586	0.000029	0.281576392	0.000029	1.7	1.0
SHK1z92	576.8	3.5	7.1	97	0.0017460	0.0000260	0.282292	0.000029	0.282273117	0.000029	-5.0	1.0
SHK1z93	677.4	7.0	13.9	99	0.0006540	0.0000530	0.282050	0.000049	0.282041685	0.000049	-10.9	1.7
SHK1z94	1069.7	19.9	39.9	99	0.0010500	0.0001100	0.282070	0.000035	0.282048842	0.000035	-1.9	1.2
SHK1z95	1025.9	6.6	13.2	100	0.0005968	0.0000009	0.282189	0.000022	0.282177471	0.000022	1.7	0.8
SHK1z96	812.3	6.0	11.9	97	0.0019740	0.0000330	0.282066	0.000043	0.282035866	0.000043	-8.1	1.5

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
SHK1z97	945.1	13.4	26.7	92	0.0004490	0.0000160	0.282317	0.000041	0.282309016	0.000041	4.5	1.4
SHK1z98	1941.3	18.8	37.6	101	0.0013470	0.0000230	0.281540	0.000029	0.281490339	0.000029	-2.0	1.0
SHK1z99	985.1	7.2	14.4	99	0.0007649	0.0000081	0.281880	0.000025	0.281865818	0.000025	-10.3	0.9
SHK1z100	1736.9	19.0	37.9	99	0.0018480	0.0000900	0.281741	0.000022	0.281680157	0.000022	0.0	0.7
SHK1z101	2141.9	17.0	34.1	98	0.0010460	0.0000520	0.281557	0.000023	0.281514370	0.000023	3.4	0.7

Table E.8: Sample TIF1

IGSN: IEACC00016 Coordinate UTM: Zone 29S, 3752612 m N, 750380 m E

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
TIF1z1	1116.0	5.5	11.0	99	0.0005930	0.0000110	0.282000	0.000079	0.281987528	0.000079	-3.1	2.8
TIF1z3	593.0	2.5	5.0	91	0.0003570	0.0000420	0.282370	0.000110	0.282366030	0.000110	-1.3	3.9
TIF1z6	2067.0	10.5	21.0	97	0.0006228	0.0000080	0.281633	0.000068	0.281608523	0.000068	5.0	2.4
TIF1z7	997.0	4.5	9.0	99	0.0003850	0.0000370	0.282140	0.000110	0.282132774	0.000110	-0.6	3.9
TIF1z8	612.0	2.5	5.0	98	0.0002270	0.0000190	0.282639	0.000026	0.282636394	0.000026	8.7	0.9
TIF1z10	1234.0	4.5	9.0	100	0.0007264	0.0000081	0.282191	0.000036	0.282174089	0.000036	6.2	1.3
TIF1z11	1769.0	8.5	17.0	98	0.0006436	0.0000075	0.281451	0.000081	0.281429412	0.000081	-8.1	2.9
TIF1z12	1017.0	5.5	11.0	97	0.0002964	0.0000088	0.282198	0.000048	0.282192325	0.000048	2.0	1.7
TIF1z17	1003.0	7.5	15.0	97	0.0006000	0.0001600	0.282280	0.000120	0.282268671	0.000120	4.4	4.4
TIF1z19	1026.0	3.5	7.0	100	0.0006090	0.0000170	0.282223	0.000042	0.282211235	0.000042	2.9	1.5
TIF1z20	448.0	2.0	4.0	97	0.0007010	0.0000560	0.282438	0.000058	0.282432118	0.000058	-2.2	2.1
TIF1z22	523.0	3.5	7.0	93	0.0005108	0.0000024	0.282360	0.000140	0.282354993	0.000140	-3.2	5.0
TIF1z23	2507.0	11.5	23.0	99	0.0003570	0.0000160	0.281500	0.000120	0.281482912	0.000120	10.7	4.3
TIF1z25	1880.0	13.5	27.0	92	0.0004025	0.0000042	0.281545	0.000072	0.281530637	0.000072	-2.0	2.6
TIF1z26	547.0	2.5	5.0	99	0.0010830	0.0000120	0.282620	0.000038	0.282608895	0.000038	6.3	1.3
TIF1z28	647.0	4.0	8.0	98	0.0012860	0.0000570	0.282687	0.000055	0.282671388	0.000055	10.7	2.0
TIF1z29	2627.0	7.5	15.0	91	0.0004418	0.0000083	0.280964	0.000052	0.280941816	0.000052	-5.8	1.9
TIF1z31	498.0	3.0	6.0	96	0.0016220	0.0000490	0.282200	0.000068	0.282184865	0.000068	-9.8	2.4
TIF1z34	637.0	2.5	5.0	95	0.0004370	0.0000300	0.282050	0.000044	0.282044777	0.000044	-11.7	1.6
TIF1z35	625.0	4.0	8.0	96	0.0002763	0.0000026	0.282129	0.000062	0.282125761	0.000062	-9.1	2.2
TIF1z36	1387.0	14.0	28.0	95	0.0006570	0.0000150	0.281941	0.000074	0.281923783	0.000074	0.8	2.6
TIF1z38	2019.0	13.5	27.0	100	0.0000890	0.0000140	0.281420	0.000340	0.281416585	0.000340	-2.9	12.1
TIF1z39	586.0	3.0	6.0	93	0.0006850	0.0000140	0.282323	0.000026	0.282315473	0.000026	-3.2	0.9
TIF1z40	1302.0	7.0	14.0	102	0.0006687	0.0000015	0.282189	0.000038	0.282172564	0.000038	7.7	1.3
TIF1z41c	580.0	3.0	6.0	97	0.0007160	0.0000650	0.282205	0.000048	0.282197213	0.000048	-7.6	1.7
TIF1z41r	584.0	4.0	8.0	95	0.0006570	0.0000340	0.282165	0.000057	0.282157805	0.000057	-8.9	2.0
TIF1z42	2127.0	13.0	26.0	100	0.0004677	0.0000077	0.281565	0.000034	0.281546074	0.000034	4.2	1.2
TIF1z44	607.0	3.0	6.0	98	0.0005440	0.0000200	0.282012	0.000051	0.282005807	0.000051	-13.7	1.8
TIF1z45	620.0	2.5	5.0	98	0.0003790	0.0000260	0.282491	0.000032	0.282486592	0.000032	3.6	1.1
TIF1z46	1005.0	4.0	8.0	100	0.0012800	0.0000320	0.282205	0.000068	0.282180782	0.000068	1.3	2.4
TIF1z47	471.0	2.5	5.0	95	0.0010960	0.0000620	0.282454	0.000039	0.282444330	0.000039	-1.2	1.4
TIF1z49	628.0	4.5	9.0	97	0.0009010	0.0000560	0.282272	0.000058	0.282261385	0.000058	-4.2	2.1
TIF1z50	1803.0	11.5	23.0	99	0.0006940	0.0000120	0.281654	0.000037	0.281630267	0.000037	-0.2	1.3
TIF1z51	620.0	2.5	5.0	99	0.0000205	0.0000008	0.282025	0.000037	0.282024762	0.000037	-12.8	1.3
TIF1z54	2950.0	9.0	18.0	91	0.0047000	0.0014000	0.280960	0.000140	0.280694172	0.000140	-7.1	7.8
TIF1z55	415.0	2.0	4.0	97	0.0008480	0.0000270	0.282464	0.000033	0.282457411	0.000033	-2.0	1.2
TIF1z56	970.0	3.5	7.0	100	0.0010160	0.0000570	0.282383	0.000036	0.282364453	0.000036	7.0	1.3
TIF1z57	1019.0	4.0	8.0	99	0.0005860	0.0000400	0.282194	0.000043	0.282182757	0.000043	1.7	1.6
TIF1z58	573.0	3.0	6.0	94	0.0013460	0.0000100	0.282091	0.000050	0.282076539	0.000050	-12.0	1.8
TIF1z60	624.0	2.5	5.0	98	0.0010430	0.0000190	0.281626	0.000026	0.281613791	0.000026	-27.3	0.9
TIF1z64	2798.0	7.0	14.0	99	0.0004310	0.0000190	0.280950	0.000044	0.280926912	0.000044	-2.4	1.6
TIF1z65	593.0	2.5	5.0	94	0.0002150	0.0000140	0.282378	0.000034	0.282375609	0.000034	-1.0	1.2
TIF1z66	361.0	2.0	4.0	99	0.0020720	0.0000650	0.282615	0.000067	0.282601003	0.000067	1.9	2.4
TIF1z68	998.0	4.0	8.0	100	0.0009810	0.0000300	0.282162	0.000034	0.282143570	0.000034	-0.2	1.2
TIF1z69	796.0	3.5	7.0	99	0.0025400	0.0001400	0.282029	0.000032	0.281991011	0.000032	-10.1	1.2
TIF1z70	268.0	1.5	3.0	102	0.0022500	0.0001700	0.282576	0.000044	0.282564726	0.000044	-1.4	1.6
TIF1z71	544.0	3.5	7.0	94	0.0042000	0.0005100	0.282333	0.000049	0.282290172	0.000049	-5.1	1.9
TIF1z73	618.0	3.0	6.0	99	0.0031100	0.0002300	0.282110	0.000092	0.282073948	0.000092	-11.1	3.4
TIF1z74	556.0	2.5	5.0	99	0.0033400	0.0003200	0.282464	0.000029	0.282429186	0.000029	0.1	1.1
TIF1z76	701.0	4.0	8.0	94	0.0014900	0.0000840	0.282645	0.000028	0.282625392	0.000028	10.3	1.0
TIF1z78	561.0	3.5	7.0	98	0.0022130	0.0000270	0.282378	0.000061	0.282354725	0.000061	-2.4	2.2
TIF1z79	2938.0	10.0	20.0	99	0.0006472	0.0000025	0.280872	0.000033	0.280835548	0.000033	-2.4	1.2
TIF1z81	556.0	5.0	10.0	108	0.0016000	0.0001000	0.282493	0.000032	0.282476323	0.000032	1.8	1.2
TIF1z82	408.0	2.0	4.0	97	0.0017090	0.0000290	0.282338	0.000067	0.282324946	0.000067	-6.8	2.4
TIF1z84	2082.0	15.5	31.0	100	0.0025000	0.0001200	0.281509	0.000032	0.281410017	0.000032	-1.7	1.3
TIF1z85	654.0	3.0	6.0	102	0.0018410	0.0000420	0.282209	0.000047	0.282186408	0.000047	-6.3	1.7
TIF1z86	1786.0	10.0	20.0	99	0.0015100	0.0001200	0.281740	0.000034	0.281688857	0.000034	1.5	1.4
TIF1z87	986.0	3.5	7.0	99	0.0011410	0.0000940	0.282078	0.000043	0.282056824	0.000043	-3.5	1.6
TIF1z88	2119.0	18.5	37.0	92	0.0021080	0.0000630	0.281612	0.000039	0.281527025	0.000039	3.3	1.5
TIF1z89	1372.0	5.5	11.0	98	0.0016220	0.0000510	0.282021	0.000081	0.281978961	0.000081	2.4	2.9
TIF1z90	1172.0	4.5	9.0	99	0.0016340	0.0000840	0.282218	0.000045	0.282181891	0.000045	5.1	1.7
TIF1z91	632.0	2.5	5.0	100	0.0012600	0.0000310	0.282174	0.000064	0.282159061	0.000064	-7.8	2.3
TIF1z92	673.0	4.5	9.0	97	0.0008390	0.0000330	0.282306	0.000040	0.282295403	0.000040	-2.0	1.4
TIF1z93	893.0	10.0	20.0	91	0.0005070	0.0000250	0.282018	0.000037	0.282009485	0.000037	-7.3	1.3
TIF1z94	572.0	2.0	4.0	101	0.0042500	0.0002300	0.282575	0.000087	0.282529419	0.000087	4.0	3.2
TIF1z98	2111.0	8.5	17.0	99	0.0007550	0.0000730	0.281510	0.000069	0.281479683	0.000069	1.5	2.6

Table E.9: Sample TIF2

IGSN: IEACC00017 Coordinate UTM: Zone 29S, 3752611 m N, 750354 m E

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	+2σ
TIF2z1	707.0	4.5	9.0	100	0.0022810	0.0000340	0.282250	0.000027	0.282219725	0.000027	-4.0	1.0
TIF2z3	376.0	2.5	5.0	99	0.0034100	0.0001500	0.282264	0.000050	0.282240004	0.000050	-10.6	1.8
TIF2z5	1280.0	9.0	18.0	98	0.0013850	0.0000640	0.281852	0.000086	0.281818539	0.000086	-5.4	3.1
TIF2z6	585.0	4.0	8.0	101	0.0019900	0.0000350	0.282252	0.000066	0.282230170	0.000066	-6.3	2.4
TIF2z7	616.0	5.0	10.0	98	0.0012310	0.0000420	0.282113	0.000045	0.282098776	0.000045	-10.3	1.6
TIF2z8	2498.0	12.0	24.0	100	0.0025800	0.0002000	0.281090	0.000059	0.280966960	0.000059	-7.9	2.4
TIF2z9	629.0	4.5	9.0	102	0.0009190	0.0000520	0.282591	0.000032	0.282580156	0.000032	7.1	1.2
TIF2z10	1340.0	8.0	16.0	100	0.0015170	0.0000360	0.282095	0.000034	0.282056611	0.000034	4.4	1.2
TIF2z11	1486.0	15.5	31.0	100	0.0041340	0.0000980	0.282073	0.000031	0.281956828	0.000031	4.2	1.2
TIF2z12	612.0	4.0	8.0	102	0.0020400	0.0002900	0.282099	0.000038	0.282075582	0.000038	-11.2	1.5
TIF2z13	646.0	4.0	8.0	101	0.0115900	0.0004100	0.282680	0.000130	0.282539520	0.000130	6.0	4.8
TIF2z14	1788.0	16.5	33.0	100	0.0014590	0.0000340	0.281920	0.000190	0.281870528	0.000190	8.0	6.8
TIF2z17	554.0	3.5	7.0	91	0.0021400	0.0001100	0.282358	0.000036	0.282335775	0.000036	-3.2	1.3
TIF2z19	1752.0	14.5	29.0	100	0.0014770	0.0000410	0.281665	0.000093	0.281615942	0.000093	-1.9	3.4
TIF2z20	647.0	4.0	8.0	100	0.0022910	0.0000610	0.282020	0.000055	0.281992188	0.000055	-13.3	2.0
TIF2z21	389.0	2.5	5.0	96	0.0024640	0.0000690	0.282372	0.000043	0.282354059	0.000043	-6.2	1.5
TIF2z23	577.0	6.0	12.0	96	0.0012840	0.0000800	0.282318	0.000031	0.282304108	0.000031	-3.8	1.1
TIF2z24	2339.0	12.0	24.0	99	0.0019650	0.0000320	0.281335	0.000031	0.281247385	0.000031	-1.6	1.2
TIF2z25	371.0	2.5	5.0	96	0.0022450	0.0000790	0.282361	0.000035	0.282345413	0.000035	-6.9	1.3
TIF2z26	1325.0	12.5	25.0	99	0.0004936	0.0000068	0.281936	0.000038	0.281923651	0.000038	-0.6	1.4
TIF2z27	650.0	4.5	9.0	100	0.0026600	0.0001000	0.282406	0.000034	0.282373558	0.000034	0.2	1.2
TIF2z28	459.0	3.0	6.0	99	0.0018030	0.0000290	0.282352	0.000037	0.282336499	0.000037	-5.3	1.3
TIF2z30	365.0	2.5	5.0	96	0.0017400	0.0001500	0.282315	0.000070	0.282303115	0.000070	-8.6	2.5
TIF2z32	701.0	4.5	9.0	99	0.0014200	0.0001700	0.282292	0.000039	0.282273314	0.000039	-2.2	1.5
TIF2z34	2457.0	17.0	34.0	101	0.0003970	0.0000110	0.281180	0.000046	0.281161385	0.000046	-1.9	1.7
TIF2z35	772.0	5.0	10.0	100	0.0013600	0.0001000	0.282168	0.000076	0.282148277	0.000076	-5.0	2.7
TIF2z37	355.0	3.0	6.0	95	0.0015500	0.0001400	0.282550	0.000700	0.282539704	0.000700	-0.4	24.8
TIF2z38	387.0	2.5	5.0	98	0.0032000	0.0001600	0.282383	0.000089	0.282359820	0.000089	-6.1	3.2
TIF2z40	558.0	4.0	8.0	99	0.0025910	0.0000770	0.282626	0.000029	0.282598895	0.000029	6.2	1.1
TIF2z41	575.0	3.5	7.0	101	0.0009900	0.0000180	0.282390	0.000027	0.282379326	0.000027	-1.2	1.0
TIF2z42	364.0	2.5	5.0	91	0.0019300	0.0001300	0.282435	0.000064	0.282421853	0.000064	-4.4	2.3
TIF2z43	2147.0	17.0	34.0	100	0.0003586	0.0000050	0.281556	0.000032	0.281541350	0.000032	4.5	1.1
TIF2z44	713.0	4.5	9.0	104	0.0006510	0.0000410	0.282539	0.000086	0.282530286	0.000086	7.2	3.1
TIF2z45	1630.0	15.0	30.0	99	0.0003660	0.0000370	0.281896	0.000043	0.281884703	0.000043	4.9	1.6
TIF2z47c	822.0	5.5	11.0	97	0.0006970	0.0000720	0.282292	0.000032	0.282281232	0.000032	0.8	1.2
TIF2z47r	610.0	4.0	8.0	98	0.0004980	0.0000160	0.282258	0.000038	0.282252302	0.000038	-5.0	1.4
TIF2z48	598.0	4.0	8.0	99	0.0008680	0.0000350	0.282222	0.000049	0.282212265	0.000049	-6.6	1.7
TIF2z49	373.0	2.5	5.0	99	0.0016240	0.0000640	0.282400	0.000076	0.282388663	0.000076	-5.4	2.7
TIF2z51	640.0	4.5	9.0	97	0.0014640	0.0000250	0.282043	0.000035	0.282025421	0.000035	-12.3	1.3
TIF2z52	631.0	4.5	9.0	101	0.0009390	0.0000160	0.282404	0.000034	0.282392884	0.000034	0.5	1.2
TIF2z53	2048.0	16.0	32.0	102	0.0000999	0.0000066	0.280988	0.000032	0.280984110	0.000032	-17.6	1.1
TIF2z54	1814.0	21.5	43.0	98	0.0005500	0.0000220	0.281564	0.000098	0.281545075	0.000098	-3.0	3.5
TIF2z55	379.0	2.5	5.0	99	0.0016900	0.0001500	0.282347	0.000078	0.282335012	0.000078	-7.1	2.8
TIF2z56	772.0	5.0	10.0	99	0.0002019	0.0000080	0.282499	0.000034	0.282496072	0.000034	7.3	1.2
TIF2z58	349.0	3.0	6.0	92	0.0017600	0.0001900	0.282411	0.000056	0.282399507	0.000056	-5.5	2.0
TIF2z59	668.0	4.5	9.0	101	0.0015890	0.0000560	0.282583	0.000047	0.282563080	0.000047	7.3	1.7
TIF2z61	612.0	4.0	8.0	101	0.0025300	0.0000510	0.282110	0.000065	0.282080958	0.000065	-11.0	2.3
TIF2z63	624.0	4.5	9.0	102	0.0005390	0.0000110	0.282094	0.000048	0.282087691	0.000048	-10.5	1.7
TIF2z64	2139.0	13.0	26.0	100	0.0009520	0.0000490	0.281355	0.000036	0.281316255	0.000036	-3.7	1.4
TIF2z65	2177.0	13.0	26.0	98	0.0010740	0.0000180	0.281308	0.000039	0.281263497	0.000039	-4.7	1.4
TIF2z66	625.0	4.0	8.0	96	0.0008080	0.0000250	0.282388	0.000055	0.282378527	0.000055	-0.1	2.0
TIF2z67	381.0	2.5	5.0	103	0.0004530	0.0000150	0.282312	0.000044	0.282308770	0.000044	-8.0	1.6
TIF2z68	664.0	5.0	10.0	98	0.0012049	0.0000091	0.282330	0.000250	0.282314986	0.000250	-1.5	8.9
TIF2z69	694.0	5.5	11.0	102	0.0011190	0.0000460	0.282689	0.000029	0.282674423	0.000029	11.9	1.0
TIF2z70	589.0	5.5	11.0	96	0.0018980	0.0000430	0.282542	0.000041	0.282521036	0.000041	4.1	1.5
TIF2z72	387.0	3.0	6.0	91	0.0022900	0.0001200	0.282440	0.000056	0.282423412	0.000056	-3.8	2.0
TIF2z73	637.0	4.0	8.0	101	0.0005050	0.0000960	0.282237	0.000093	0.282230965	0.000093	-5.1	3.3
TIF2z74	2464.0	14.5	29.0	98	0.0004620	0.0000540	0.281432	0.000030	0.281410274	0.000030	7.1	1.2
TIF2z75	2467.0	13.0	26.0	100	0.0009140	0.0000950	0.281332	0.000036	0.281288965	0.000036	2.9	1.4
TIF2z76	2325.0	13.5	27.0	98	0.0009330	0.0000370	0.281342	0.000054	0.281300654	0.000054	0.0	2.0
TIF2z78	1965.0	17.0	34.0	100	0.0009470	0.0000760	0.281528	0.000070	0.281492651	0.000070	-1.4	2.6
TIF2z79	1804.0	13.0	26.0	101	0.0031300	0.0001500	0.281500	0.000043	0.281392901	0.000043	-8.6	1.7
TIF2z80	640.0	4.5	9.0	98	0.0007660	0.0000310	0.282112	0.000037	0.282102802	0.000037	-9.6	1.3
TIF2z81	615.0	4.5	9.0	99	0.0006010	0.0000190	0.281330	0.000250	0.281323067	0.000250	-37.7	8.9
TIF2z82	607.0	4.0	8.0	91	0.0004810	0.0000480	0.282041	0.000063	0.282035524	0.000063	-12.7	2.3
TIF2z83	2323.0	12.0	24.0	99	0.0007500	0.0000660	0.281111	0.000084	0.281077793	0.000084	-8.0	3.1
TIF2z84	896.0	6.0	12.0	100	0.0003113	0.0000095	0.281410	0.000063	0.281404754	0.000063	-28.6	2.2
TIF2z86	654.0	4.5	9.0	103	0.0005270	0.0000430	0.282272	0.000053	0.282265533	0.000053	-3.5	1.9
TIF2z87	617.0	5.0	10.0	104	0.0003043	0.0000059	0.282047	0.000037	0.282043478	0.000037	-12.2	1.3
TIF2z88	2908.0	11.0	22.0	100	0.0009150	0.0000260	0.281094	0.000048	0.281043005	0.000048	4.3	1.8
TIF2z89	1209.0	7.0	14.0	98	0.0005760	0.0000120	0.282043	0.000083	0.282029865	0.000083	0.5	3.0
TIF2z90	1794.0	12.5	25.0	95	0.0007700	0.0000460	0.281390	0.000740	0.281363801	0.000740	-9.9	26.3
TIF2z94	988.0	6.5	13.0	101	0.0007900	0.0001300	0.282071	0.000043	0.282056308	0.000043	-3.5	1.6
TIF2z95	587.0	4.0	8.0	100	0.0007200	0.0001400	0.282198	0.000053	0.282190074	0.000053	-7.7	1.9
TIF2z96	1058.0	7.0	14.0	97	0.0008860	0.0000650	0.281729	0.000067	0.281711344	0.000067	-14.1	2.4
TIF2z97	465.0	3.5	7.0	100	0.0019240	0.0000390	0.282370	0.000077	0.282353242	0.000077	-4.6	2.7
TIF2z98	665.0	4.5	9.0	100	0.0000336	0.0000062	0.282557	0.000086	0.282556581	0.000086	7.0	3.0
TIF2z99	642.0	4.0	8.0	98	0.0002720	0.0000170	0.282166	0.000047	0.282162724	0.000047	-7.4	1.7
TIF2z100	602.0	3.5	7.0	99	0.0008940	0.0000710	0.282155	0.000049	0.282144906	0.000049	-8.9	1.8
TIF2z101	1433.0	9.0	18.0	98	0.0014300	0.0001000	0.281964	0.000031	0.281925267	0.000031	1.9	1.2
TIF2z102	679.0	4.5	9.0	101	0.0005670	0.0000170	0.282202	0.000058	0.282194774	0.000058	-5.5	2.1
TIF2z104	380.0	3.0	6.0	100	0.0007180	0.0000350	0.282336	0.000037	0.282330893	0.000037	-7.3	1.3
TIF2z106	573.0	4.0	8.0	101	0.0016100	0.0000290	0.282460	0.000050	0.282442703	0.000050	1.0	1.8
TIF2z110	345.0	2.5	5.0	93	0.0012180	0.0000660	0.282250	0.000110	0.282242138	0.000110	-11.2	3.9
TIF2z112	1407.0	8.5	17.0	99	0.0007460	0.0000170	0.281890	0.000038	0.281870165	0.000038	-0.7	1.4
TIF2z113	349.0	2.5	5.0	90	0.0015000	0.0000800	0.282333	0.000080	0.282323205	0.000080	-8.2	2.8
TIF2z115	614.0	4.0	8.0	99	0.0010190	0.0000310	0.282490	0.000220	0.282478264	0.000220	3.1	7.8
TIF2z119	375.0	2.5	5.0	98	0.0014130	0.0000340	0.282390	0.000057	0.282380083	0.000057	-5.6	2.0

Table E.10: Sample OUJ16

IGSN: IEACC00018 Coordinate UTM: Zone 30S, 3796135 m N, 587342 m E

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ16z1	2185.8	15.3	30.5	98	0.0017200	0.0001100	0.281517	0.000064	0.281445428	0.000064	2.0	2.1
OUJ16z2	2199.7	18.9	37.8	99	0.0005705	0.0000060	0.281422	0.000068	0.281398106	0.000068	0.6	2.4
OUJ16z4	335.1	2.1	4.2	98	0.0013490	0.0000350	0.282437	0.000054	0.282428545	0.000054	-4.8	1.9
OUJ16z5	622.4	3.2	6.4	98	0.0014170	0.0000740	0.282026	0.000057	0.282009467	0.000057	-13.3	2.0
OUJ16z6	2059.8	14.6	29.1	99	0.0011420	0.0000470	0.281665	0.000050	0.281620272	0.000050	5.3	1.7
OUJ16z7	2059.6	15.3	30.5	100	0.0010240	0.0000460	0.281669	0.000056	0.281628893	0.000056	5.6	1.9
OUJ16z8	670.1	3.5	7.0	98	0.0008780	0.0000510	0.282267	0.000056	0.282255960	0.000056	-3.5	2.0
OUJ16z9	316.3	1.8	3.6	99	0.0024470	0.0000910	0.282576	0.000061	0.282561536	0.000061	-0.5	2.1
OUJ16z10	331.3	1.7	3.4	97	0.0018510	0.0000600	0.282484	0.000054	0.282472538	0.000054	-3.3	1.9
OUJ16z11	787.9	10.3	20.5	91	0.0011030	0.0000320	0.282116	0.000056	0.282099670	0.000056	-6.4	2.0
OUJ16z12	309.8	1.8	3.7	99	0.0033500	0.0002200	0.282652	0.000080	0.282632576	0.000080	1.9	2.8
OUJ16z13	624.7	3.2	6.4	101	0.0013580	0.0000096	0.282122	0.000053	0.282106078	0.000053	-9.8	1.9
OUJ16z14	563.8	3.5	7.1	98	0.0007900	0.0000200	0.282318	0.000056	0.282309646	0.000056	-3.9	2.0
OUJ16z15	549.0	2.9	5.7	94	0.0024810	0.0000240	0.282311	0.000059	0.282285467	0.000059	-5.1	2.1
OUJ16z16	592.3	2.9	5.9	98	0.0011200	0.0000250	0.282095	0.000056	0.282082566	0.000056	-11.4	2.0
OUJ16z17	643.5	3.2	6.4	99	0.0002756	0.0000045	0.282210	0.000055	0.282206675	0.000055	-5.8	1.9
OUJ16z19	334.0	1.9	3.7	96	0.0019910	0.0000430	0.282741	0.000057	0.282728559	0.000057	5.8	2.0
OUJ16z20	828.8	4.0	7.9	97	0.0016730	0.0000280	0.281871	0.000055	0.281844933	0.000055	-14.5	1.9
OUJ16z22	303.8	2.0	3.9	95	0.0046600	0.0000530	0.282604	0.000063	0.282577505	0.000063	-0.2	2.2
OUJ16z24	296.8	2.6	5.3	97	0.0031210	0.0000940	0.282624	0.000059	0.282606665	0.000059	0.7	2.1
OUJ16z25	591.8	3.2	6.5	100	0.0008570	0.0000340	0.281864	0.000059	0.281854486	0.000059	-19.4	2.1
OUJ16z26	2081.7	17.8	35.5	100	0.0008740	0.0000180	0.281639	0.000059	0.281604396	0.000059	5.2	2.1
OUJ16z27	1731.7	30.3	60.6	100	0.0008280	0.0000310	0.281551	0.000058	0.281523817	0.000058	-5.6	2.0
OUJ16z28	314.2	1.9	3.7	100	0.0048970	0.0000620	0.282469	0.000059	0.282440239	0.000059	-4.8	2.1
OUJ16z29	1810.9	19.7	39.4	98	0.0020480	0.0000240	0.281748	0.000068	0.281677647	0.000068	1.6	2.4
OUJ16z31	594.7	3.5	7.1	100	0.0013700	0.0000200	0.281865	0.000064	0.281849713	0.000064	-19.5	2.3
OUJ16z32	499.7	3.6	7.2	95	0.0014630	0.0000600	0.282337	0.000055	0.282323294	0.000055	-4.9	1.9
OUJ16z33	2361.8	14.7	29.3	99	0.0004145	0.0000025	0.281330	0.000053	0.281311333	0.000053	1.2	1.9
OUJ16z34	324.1	1.6	3.2	99	0.0055700	0.0001500	0.282534	0.000056	0.282500241	0.000056	-2.5	1.9
OUJ16z35	597.7	3.5	7.1	97	0.0011480	0.0000150	0.282044	0.000055	0.282031125	0.000055	-13.1	1.9
OUJ16z36	2596.5	13.4	26.8	95	0.0013960	0.0000110	0.281097	0.000054	0.281027749	0.000054	-3.5	1.9
OUJ16z37	620.9	4.4	8.8	103	0.0011994	0.0000071	0.281919	0.000055	0.281905028	0.000055	-17.0	1.9
OUJ16z38	478.0	2.3	4.6	99	0.0013210	0.0000130	0.282795	0.000061	0.282783171	0.000061	10.9	2.2
OUJ16z39	2114.1	16.0	32.1	101	0.0008310	0.0000210	0.281556	0.000057	0.281522582	0.000057	3.0	2.0
OUJ16z40	663.8	3.2	6.4	100	0.0007550	0.0000370	0.282278	0.000061	0.282268592	0.000061	-3.2	2.1
OUJ16z41	2048.5	24.5	48.9	100	0.0005875	0.0000051	0.281667	0.000057	0.281644126	0.000057	5.9	2.0
OUJ16z42	614.2	2.9	5.9	98	0.0030600	0.0000470	0.282276	0.000056	0.282240758	0.000056	-5.3	2.0
OUJ16z44	572.7	2.8	5.6	100	0.0022200	0.0001400	0.282395	0.000054	0.282371149	0.000054	-1.6	1.9
OUJ16z45	338.7	1.7	3.4	97	0.0015360	0.0000220	0.282619	0.000057	0.282609258	0.000057	1.7	2.0
OUJ16z46	606.0	3.2	6.5	99	0.0006651	0.0000032	0.282249	0.000056	0.282241440	0.000056	-5.4	2.0
OUJ16z47	321.6	1.9	3.9	99	0.0016140	0.0000250	0.282627	0.000054	0.282617278	0.000054	1.6	1.9
OUJ16z48	339.3	2.3	4.5	98	0.0008490	0.0000120	0.282565	0.000058	0.282559615	0.000058	-0.1	2.0
OUJ16z49	634.3	3.8	7.6	102	0.0009930	0.0000100	0.282102	0.000059	0.282090189	0.000059	-10.2	2.1
OUJ16z50	626.3	3.5	7.0	98	0.0017500	0.0001800	0.282209	0.000064	0.282188449	0.000064	-6.9	2.2
OUJ16z51	338.8	1.9	3.7	101	0.0005725	0.0000096	0.282559	0.000053	0.282555369	0.000053	-0.2	1.9
OUJ16z52	601.7	3.5	7.0	101	0.0008550	0.0000170	0.282047	0.000057	0.282037347	0.000057	-12.7	2.0
OUJ16z54	559.6	3.3	6.5	98	0.0032700	0.0001400	0.282362	0.000062	0.282327669	0.000062	-3.4	2.1
OUJ16z55	2464.1	14.2	28.4	98	0.0011550	0.0000130	0.281329	0.000055	0.281274685	0.000055	2.3	1.9
OUJ16z56	609.1	3.8	7.6	96	0.0008586	0.0000085	0.281629	0.000060	0.281619193	0.000060	-27.4	2.1
OUJ16z57	634.2	3.2	6.4	99	0.0009350	0.0000170	0.282462	0.000058	0.282450879	0.000058	2.6	2.0
OUJ16z59	338.2	1.9	3.9	95	0.0015760	0.0000520	0.282588	0.000059	0.282578034	0.000059	0.6	2.1
OUJ16z60	605.5	2.9	5.9	101	0.0020400	0.0002100	0.282282	0.000075	0.282258852	0.000075	-4.8	2.6
OUJ16z61	729.4	8.1	16.1	92	0.0014730	0.0000510	0.282497	0.000055	0.282476837	0.000055	5.6	1.9
OUJ16z65	522.6	3.3	6.5	92	0.0009820	0.0000560	0.282112	0.000056	0.282102375	0.000056	-12.2	2.0
OUJ16z66	625.9	3.2	6.4	98	0.0012080	0.0000160	0.282650	0.000072	0.282635814	0.000072	9.0	2.5
OUJ16z68	329.4	1.8	3.6	97	0.0019870	0.0000180	0.282648	0.000059	0.282635771	0.000059	2.4	2.1
OUJ16z69	1767.6	17.7	35.5	99	0.0010270	0.0000260	0.281809	0.000058	0.281774572	0.000058	4.1	2.0
OUJ16z70	972.3	4.7	9.4	98	0.0025600	0.0001300	0.282033	0.000051	0.281986170	0.000051	-6.3	1.7
OUJ16z71	552.6	4.1	8.3	96	0.0036800	0.0001700	0.282266	0.000056	0.282227850	0.000056	-7.1	1.9
OUJ16z72	2066.6	15.2	30.4	96	0.0010340	0.0000890	0.281282	0.000058	0.281241361	0.000058	-8.0	1.9
OUJ16z73	2083.0	16.4	32.8	100	0.0012370	0.0000670	0.281433	0.000054	0.281383999	0.000054	-2.6	1.8
OUJ16z74	1985.7	16.0	32.1	97	0.0008260	0.0000130	0.281620	0.000057	0.281588832	0.000057	2.5	2.0
OUJ16z75	557.4	2.7	5.5	96	0.0019228	0.0000085	0.282273	0.000062	0.282252922	0.000062	-6.1	2.2
OUJ16z76	542.7	3.6	7.1	90	0.0016970	0.0000370	0.281937	0.000051	0.281919727	0.000051	-18.2	1.8
OUJ16z77	310.8	4.0	8.0	94	0.0022000	0.0001000	0.282499	0.000063	0.282486203	0.000063	-3.3	2.2
OUJ16z78	1408.5	8.8	17.6	97	0.0028360	0.0000330	0.281949	0.000054	0.281873543	0.000054	-0.5	1.9
OUJ16z79c	619.1	4.4	8.8	96	0.0011110	0.0000310	0.281795	0.000063	0.281782100	0.000063	-21.4	2.2
OUJ16z79r	628.5	5.0	9.9	99	0.0007360	0.0000120	0.281753	0.000054	0.281744329	0.000054	-22.5	1.9
OUJ16z80	1039.1	5.2	10.4	99	0.0011310	0.0000150	0.281925	0.000057	0.281902871	0.000057	-7.8	2.0
OUJ16z81	998.9	5.2	10.5	98	0.0015390	0.0000500	0.281622	0.000056	0.281593058	0.000056	-19.7	2.0
OUJ16z83	562.7	3.0	5.9	94	0.0026100	0.0001100	0.282239	0.000066	0.282211451	0.000066	-7.4	2.3
OUJ16z84	582.2	2.9	5.8	99	0.0021900	0.0001800	0.282095	0.000056	0.282071100	0.000056	-12.0	1.9
OUJ16z85	977.0	4.4	8.9	100	0.0016970	0.0000430	0.282111	0.000065	0.282079795	0.000065	-2.9	2.3
OUJ16z86	611.7	3.2	6.4	99	0.0019050	0.0000770	0.282189	0.000054	0.282167132	0.000054	-7.9	1.9
OUJ16z87	2067.9	27.6	55.2	100	0.0008234	0.0000047	0.281251	0.000056	0.281218623	0.000056	-8.8	2.0
OUJ16z88	487.0	2.6	5.1	100	0.0044200	0.0001000	0.282298	0.000059	0.282257672	0.000059	-7.5	2.1
OUJ16z89	584.4	3.5	7.1	92	0.0022090	0.0000230	0.282371	0.000055	0.282346809	0.000055	-2.2	1.9
OUJ16z90	621.5	2.9	5.9	101	0.0017340	0.0000720	0.282543	0.000065	0.282522801	0.000065	4.9	2.3
OUJ16z91	629.2	3.2	6.4	101	0.0023960	0.0000530	0.282086	0.000061	0.282057727	0.000061	-11.4	2.1
OUJ16z92	604.3	3.5	7.0	97	0.0009990	0.0000340	0.282127	0.000060	0.282115683	0.000060	-9.9	2.1
OUJ16z93	644.2	3.2	6.4	99	0.0010200	0.0000230	0.282061	0.000051	0.282048675	0.000051	-11.4	1.8
OUJ16z94	2562.6	14.2	28.5	98	0.0013440	0.0000160	0.280916	0.000052	0.280850197	0.000052	-10.5	1.8
OUJ16z95	990.4	4.4	8.8	100	0.0021368	0.0000092	0.282019	0.000051	0.281979181	0.000051	-6.2	1.8
OUJ16z96	339.0	1.9	3.9	101	0.0015250	0.0000250	0.282535	0.000053	0.282525328	0.000053	-1.3	1.9
OUJ16z97	344.4	1.8	3.6	95	0.0023140	0.0000510	0.282529	0.000055	0.282514107	0.000055	-1.6	1.9
OUJ16z98	740.3	4.3	8.6	100	0.0017390	0.0000310	0.282389	0.000055	0.282364834	0.000055	1.9	1.9
OUJ16z99	606.4	2.9	5.9	100	0.0022370	0.0000530	0.282387	0.000057	0.282361574	0.000057	-1.2	2.0

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ16z101	998.9	8.3	16.6	95	0.0028830	0.0000470	0.282090	0.000064	0.282035782	0.000064	-4.0	2.2
OUJ16z102	336.7	2.0	3.9	100	0.0011651	0.0000056	0.282471	0.000053	0.282463654	0.000053	-3.5	1.9
OUJ16z103	796.2	3.7	7.4	99	0.0032260	0.0000420	0.282014	0.000051	0.281965751	0.000051	-11.0	1.8
OUJ16z104	652.6	3.5	7.0	98	0.0015750	0.0000460	0.282281	0.000057	0.282261702	0.000057	-3.7	2.0
OUJ16z105	2110.1	16.1	32.2	100	0.0000402	0.0000019	0.281481	0.000052	0.281479387	0.000052	1.4	1.8
OUJ16z106	2100.7	18.2	36.4	99	0.0014530	0.0000270	0.281669	0.000064	0.281610936	0.000064	5.9	2.2
OUJ16z107	333.0	1.7	3.4	99	0.0018170	0.0000330	0.282653	0.000054	0.282641680	0.000054	2.7	1.9
OUJ16z108	324.7	2.0	3.9	100	0.0022150	0.0000360	0.282636	0.000057	0.282622534	0.000057	1.9	2.0
OUJ16z109	320.5	1.6	3.1	99	0.0041860	0.0000580	0.282636	0.000057	0.282610943	0.000057	1.3	2.0
OUJ16z110	879.6	4.8	9.6	99	0.0005499	0.0000089	0.282395	0.000054	0.282385901	0.000054	5.8	1.9
OUJ16z111	619.1	4.1	8.2	94	0.0004332	0.0000034	0.282254	0.000059	0.282248970	0.000059	-4.9	2.1
OUJ16z112	621.0	3.5	7.0	103	0.0005955	0.0000054	0.282633	0.000054	0.282626063	0.000054	8.5	1.9
OUJ16z113	2106.0	19.5	39.0	101	0.0005547	0.0000094	0.281599	0.000056	0.281576780	0.000056	4.8	2.0
OUJ16z114	620.4	2.9	5.9	99	0.0010920	0.0000340	0.282243	0.000054	0.282230300	0.000054	-5.5	1.9
OUJ16z116	640.3	3.5	7.0	100	0.0012825	0.0000057	0.282207	0.000057	0.282191600	0.000057	-6.4	2.0
OUJ16z117	1998.7	22.4	44.8	99	0.0011320	0.0000350	0.281295	0.000055	0.281252001	0.000055	-9.2	1.9
OUJ16z118	342.5	2.0	4.0	99	0.0011050	0.0000053	0.282518	0.000060	0.282510929	0.000060	-1.7	2.1
OUJ16z119	630.8	5.3	10.5	96	0.0007064	0.0000080	0.282237	0.000057	0.282228638	0.000057	-5.3	2.0
OUJ16z120c	2078.9	19.8	39.7	99	0.0004787	0.0000019	0.281226	0.000065	0.281207075	0.000065	-9.0	2.3
OUJ16z120r	2067.0	14.5	29.0	98	0.0005660	0.0000320	0.281067	0.000060	0.281044755	0.000060	-15.0	2.1
OUJ16z122	531.4	2.7	5.4	90	0.0006492	0.0000090	0.282179	0.000054	0.282172539	0.000054	-9.5	1.9
OUJ16z123	2130.0	15.2	30.4	100	0.0010084	0.0000041	0.281567	0.000055	0.281526136	0.000055	3.5	1.9
OUJ16z125	2069.3	15.8	31.7	100	0.0006810	0.0000520	0.281479	0.000063	0.281452209	0.000063	-0.5	2.2
OUJ16z126	612.1	3.2	6.4	96	0.0007880	0.0000180	0.282484	0.000058	0.282474954	0.000058	3.0	2.0
OUJ16z127	2020.3	15.7	31.3	99	0.0003060	0.0000019	0.281280	0.000054	0.281268252	0.000054	-8.1	1.9
OUJ16z128	590.5	3.5	7.1	98	0.0029270	0.0000760	0.282291	0.000058	0.282258560	0.000058	-5.2	2.0
OUJ16z129	871.7	5.3	10.7	99	0.0006765	0.0000081	0.282532	0.000060	0.282520908	0.000060	10.4	2.1
OUJ16z132	2107.4	15.4	30.9	99	0.0003583	0.0000050	0.281308	0.000054	0.281293640	0.000054	-5.3	1.9
OUJ16z133	570.7	2.8	5.6	98	0.0011560	0.0000280	0.282219	0.000061	0.282206624	0.000061	-7.4	2.1
OUJ16z134	329.2	2.0	3.9	91	0.0013680	0.0000380	0.282531	0.000061	0.282522580	0.000061	-1.6	2.2
OUJ16z136	624.6	2.8	5.7	98	0.0010240	0.0000150	0.282083	0.000067	0.282070994	0.000067	-11.0	2.4
OUJ16z137	2028.8	15.6	31.2	99	0.0008248	0.0000039	0.281606	0.000053	0.281574191	0.000053	2.9	1.9
OUJ16z138	647.1	4.1	8.2	96	0.0007140	0.0000089	0.282289	0.000062	0.282280332	0.000062	-3.1	2.2
OUJ16z139	622.1	3.2	6.4	99	0.0004278	0.0000075	0.282164	0.000057	0.282159008	0.000057	-8.0	2.0
OUJ16z140	587.2	3.2	6.5	100	0.0002004	0.0000023	0.282390	0.000063	0.282387794	0.000063	-0.7	2.2
OUJ16z141	1194.1	5.6	11.2	100	0.0007390	0.0000210	0.282134	0.000065	0.282117359	0.000065	3.3	2.3
OUJ16z142	307.7	1.8	3.6	100	0.0022450	0.0000520	0.282619	0.000061	0.282606067	0.000061	0.9	2.1
OUJ16z143	654.6	3.5	7.0	100	0.0005389	0.0000045	0.282250	0.000060	0.282243377	0.000060	-4.3	2.1
OUJ16z144	350.8	2.1	4.3	97	0.0006200	0.0000170	0.282478	0.000055	0.282473928	0.000055	-2.8	1.9
OUJ16z145	2406.2	14.2	28.4	98	0.0010280	0.0000130	0.281092	0.000059	0.281044821	0.000059	-7.2	2.1
OUJ16z146	2040.1	15.5	30.9	101	0.0006500	0.0000110	0.281430	0.000055	0.281404794	0.000055	-2.8	1.9

Table E.11: Sample OUJ18

IGSN: IEACC00019 Coordinate UTM: Zone 30S, 3796505 m N, 587288 m E

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ18z1	1835.4	32.3	64.6	101	0.0005362	0.0000096	0.281575	0.000039	0.281556332	0.000039	-2.1	1.4
OUJ18z2	2100.7	24.3	48.6	102	0.0006349	0.0000057	0.281529	0.000033	0.281503628	0.000033	2.1	1.2
OUJ18z3	2799.0	21.6	43.3	99	0.0009420	0.0000340	0.280892	0.000044	0.280841520	0.000044	-5.4	1.6
OUJ18z4	1156.0	7.3	14.5	101	0.0005020	0.0000220	0.281784	0.000044	0.281773060	0.000044	-9.8	1.6
OUJ18z6	637.9	3.2	6.4	103	0.0013930	0.0000390	0.282309	0.000042	0.282292326	0.000042	-2.9	1.5
OUJ18z7	2148.4	24.2	48.3	100	0.0013790	0.0000460	0.281610	0.000034	0.281553636	0.000034	4.9	1.3
OUJ18z8	336.7	1.8	3.5	101	0.0007130	0.0000310	0.282515	0.000037	0.282510505	0.000037	-1.8	1.3
OUJ18z9	1856.2	29.5	58.9	101	0.0006172	0.0000078	0.281574	0.000033	0.281552262	0.000033	-1.8	1.2
OUJ18z10	2119.4	24.0	47.9	99	0.0005650	0.0000100	0.281606	0.000037	0.281583224	0.000037	5.3	1.3
OUJ18z11	574.4	4.1	8.3	99	0.0006170	0.0000190	0.282451	0.000038	0.282444359	0.000038	1.1	1.4
OUJ18z12	597.2	2.9	5.8	98	0.0004590	0.0000230	0.281921	0.000050	0.281915861	0.000050	-17.2	1.8
OUJ18z13	613.2	4.1	8.2	105	0.0005566	0.0000088	0.282344	0.000037	0.282337600	0.000037	-1.9	1.3
OUJ18z15	632.4	3.5	7.0	95	0.0001936	0.0000037	0.281795	0.000037	0.281792705	0.000037	-20.7	1.3
OUJ18z16	1979.8	24.2	48.3	95	0.0002000	0.0000340	0.281441	0.000041	0.281433477	0.000041	-3.2	1.5
OUJ18z18	2176.9	23.7	47.4	101	0.0011690	0.0000480	0.281395	0.000051	0.281346561	0.000051	-1.8	1.9
OUJ18z19	673.6	3.5	7.0	101	0.0005970	0.0000210	0.282376	0.000032	0.282368448	0.000032	0.6	1.1
OUJ18z20	2089.8	24.5	48.9	102	0.0002580	0.0000510	0.281622	0.000037	0.281611745	0.000037	5.7	1.4
OUJ18z21	342.7	2.1	4.3	100	0.0007230	0.0000130	0.282472	0.000041	0.282467360	0.000041	-3.2	1.5
OUJ18z22	1900.1	26.3	52.5	101	0.0010440	0.0000350	0.281594	0.000038	0.281556343	0.000038	-0.6	1.4
OUJ18z23	330.9	2.5	5.0	84	0.0012060	0.0000120	0.282821	0.000040	0.282813532	0.000040	8.7	1.4
OUJ18z24	384.1	2.5	5.0	95	0.0006880	0.0000230	0.282734	0.000037	0.282729055	0.000037	6.9	1.3
OUJ18z25	726.0	3.7	7.5	102	0.0012070	0.0000170	0.282255	0.000044	0.282238546	0.000044	-2.9	1.6
OUJ18z26	651.0	3.2	6.4	101	0.0007040	0.0000300	0.282324	0.000037	0.282315401	0.000037	-1.8	1.3
OUJ18z27	566.2	3.8	7.7	103	0.0011430	0.0000260	0.282451	0.000039	0.282438871	0.000039	0.7	1.4
OUJ18z28	978.4	4.7	9.4	102	0.0015700	0.0001100	0.282246	0.000047	0.282217101	0.000047	2.0	1.7
OUJ18z30	644.1	3.2	6.4	101	0.0004460	0.0000410	0.282180	0.000140	0.282174611	0.000140	-6.9	5.0
OUJ18z31	792.7	3.7	7.4	99	0.0011600	0.0001100	0.282052	0.000038	0.282034717	0.000038	-8.6	1.4
OUJ18z32	684.7	3.2	6.4	101	0.0000201	0.0000033	0.282506	0.000039	0.282505742	0.000039	5.7	1.4
OUJ18z33	344.8	1.9	3.7	96	0.0014860	0.0000510	0.282431	0.000040	0.282421408	0.000040	-4.8	1.4
OUJ18z34	2271.1	23.4	46.8	102	0.0009870	0.0000430	0.281251	0.000039	0.281208299	0.000039	-4.5	1.5
OUJ18z35	332.4	2.2	4.3	96	0.0039700	0.0002400	0.282811	0.000039	0.282786342	0.000039	7.8	1.4
OUJ18z36	1895.5	25.6	51.2	101	0.0012280	0.0000580	0.281645	0.000043	0.281600824	0.000043	0.8	1.6
OUJ18z37	2128.7	25.8	51.6	90	0.0014260	0.0000140	0.281505	0.000041	0.281447240	0.000041	0.7	1.5
OUJ18z38	859.9	4.2	8.5	97	0.0022770	0.0000290	0.282539	0.000032	0.282502185	0.000032	9.5	1.2
OUJ18z39	587.3	3.2	6.5	100	0.0020140	0.0000600	0.282561	0.000037	0.282538831	0.000037	4.7	1.3
OUJ18z40	1388.3	6.8	13.5	93	0.0004470	0.0000150	0.281871	0.000044	0.281859278	0.000044	-1.5	1.6
OUJ18z41	596.8	3.8	7.6	95	0.0038900	0.0001400	0.282267	0.000046	0.282223447	0.000046	-6.3	1.7
OUJ18z42	2058.2	24.3	48.6	100	0.0012140	0.0000330	0.281652	0.000043	0.281604499	0.000043	4.7	1.6
OUJ18z43	618.3	3.5	7.0	99	0.0029400	0.0001500	0.282289	0.000041	0.282254918	0.000041	-4.7	1.5
OUJ18z44	538.4	5.6	11.3	100	0.0038900	0.0004200	0.282631	0.000042	0.282591772	0.000042	5.5	1.6
OUJ18z45	2174.3	24.4	48.7	96	0.0017170	0.0000160	0.281526	0.000041	0.281454954	0.000041	2.0	1.5
OUJ18z46	990.0	4.7	9.4	96	0.0021700	0.0002900	0.282102	0.000051	0.282061562	0.000051	-3.3	2.0
OUJ18z47	1061.5	5.2	10.4	100	0.0018400	0.0001100	0.282166	0.000045	0.282129193	0.000045	0.8	1.7
OUJ18z48	2662.1	22.0	43.9	97	0.0006500	0.0000490	0.281304	0.000043	0.281270915	0.000043	6.7	1.6
OUJ18z49	665.8	7.0	14.0	101	0.0013800	0.0001100	0.281790	0.000041	0.281772752	0.000041	-20.7	1.5
OUJ18z50	1019.8	4.7	9.4	101	0.0004600	0.0000330	0.281919	0.000058	0.281910166	0.000058	-7.9	2.1

Table E.12: Sample OUJ19

IGSN: IEACC00020 Coordinate UTM: Zone 30S, 3796474 m N, 587262 m E

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ19z1	742.9	3.4	6.9	92	0.0000381	0.0000048	0.281899	0.000020	0.281898468	0.000020	-14.5	0.7
OUJ19z3	341.8	1.7	3.5	91	0.0008270	0.0000310	0.282577	0.000030	0.282571708	0.000030	0.4	1.1
OUJ19z4	2049.9	27.2	54.5	100	0.0002820	0.0000180	0.281065	0.000049	0.281054010	0.000049	-15.1	1.7
OUJ19z5	319.1	2.1	4.2	97	0.0011530	0.0000130	0.282850	0.000022	0.282843120	0.000022	9.5	0.8
OUJ19z6	850.9	5.1	10.2	100	0.0009528	0.0000041	0.282549	0.000029	0.282533757	0.000029	10.4	1.0
OUJ19z7	612.3	3.5	7.0	101	0.0003710	0.0000180	0.282139	0.000019	0.282134741	0.000019	-9.1	0.7
OUJ19z8	2065.2	29.7	59.4	98	0.0002373	0.0000035	0.281454	0.000029	0.281444683	0.000029	-0.8	1.0
OUJ19z9	612.7	3.8	7.6	96	0.0004761	0.0000038	0.282533	0.000022	0.282527526	0.000022	4.9	0.8
OUJ19z10	3043.0	21.7	43.4	98	0.0005880	0.0000430	0.280864	0.000022	0.280829665	0.000022	-0.1	0.7
OUJ19z11	2525.8	23.2	46.3	99	0.0006700	0.0001100	0.281196	0.000035	0.281163681	0.000035	-0.2	1.1
OUJ19z12	1251.7	5.6	11.1	99	0.0005595	0.0000027	0.281957	0.000027	0.281943782	0.000027	-1.6	1.0
OUJ19z13	339.9	1.7	3.4	97	0.0011020	0.0000340	0.282731	0.000026	0.282723990	0.000026	5.8	0.9
OUJ19z14	1076.8	4.9	9.8	101	0.0005301	0.0000037	0.282311	0.000022	0.282300245	0.000022	7.2	0.8
OUJ19z15	590.3	3.5	7.1	101	0.0008100	0.0000150	0.282185	0.000025	0.282176038	0.000025	-8.1	0.9
OUJ19z16	1022.6	5.2	10.5	100	0.0008800	0.0000180	0.281938	0.000021	0.281921049	0.000021	-7.5	0.7
OUJ19z17	2055.5	26.4	52.9	102	0.0001946	0.0000041	0.281565	0.000023	0.281557397	0.000023	2.9	0.8
OUJ19z18	336.8	2.3	4.6	101	0.0006276	0.0000095	0.282566	0.000022	0.282562043	0.000022	0.0	0.8
OUJ19z19	2093.9	26.4	52.8	101	0.0006597	0.0000085	0.281605	0.000023	0.281578727	0.000023	4.6	0.8
OUJ19z20	590.9	9.7	19.4	99	0.0004173	0.0000048	0.282037	0.000031	0.282032375	0.000031	-13.2	1.1
OUJ19z21	2465.1	23.6	47.2	101	0.0003230	0.0000120	0.281127	0.000025	0.281111804	0.000025	-3.5	0.9
OUJ19z22	2213.5	29.3	58.7	100	0.0007648	0.0000074	0.281543	0.000023	0.281510760	0.000023	4.9	0.8
OUJ19z23	2037.3	25.3	50.7	95	0.0008750	0.0000330	0.281383	0.000027	0.281349119	0.000027	-4.9	0.9
OUJ19z24	621.8	2.7	5.3	102	0.0017200	0.0000760	0.282452	0.000019	0.282431931	0.000019	1.7	0.6
OUJ19z25	735.6	3.7	7.5	102	0.0006590	0.0000170	0.282640	0.000021	0.282630892	0.000021	11.3	0.7
OUJ19z26	677.7	3.2	6.4	99	0.0016000	0.0000330	0.282294	0.000028	0.282273640	0.000028	-2.7	1.0
OUJ19z27	1962.2	25.9	51.9	101	0.0002615	0.0000057	0.281126	0.000021	0.281116254	0.000021	-14.9	0.7
OUJ19z29	566.8	3.8	7.7	100	0.0004850	0.0000120	0.282229	0.000031	0.282223844	0.000031	-6.9	1.1
OUJ19z30	627.5	3.2	6.4	101	0.0001342	0.0000096	0.281768	0.000021	0.281766419	0.000021	-21.8	0.7
OUJ19z31	2663.0	22.4	44.8	98	0.0009450	0.0000540	0.281162	0.000028	0.281113882	0.000028	1.2	0.9
OUJ19z32	634.9	3.8	7.6	99	0.0013120	0.0000260	0.282434	0.000028	0.282418370	0.000028	1.5	1.0
OUJ19z33	2000.2	24.6	49.1	95	0.0029900	0.0001000	0.281373	0.000026	0.281259367	0.000026	-8.9	0.8
OUJ19z34	637.8	4.1	8.2	99	0.0016780	0.0000410	0.282287	0.000022	0.282266915	0.000022	-3.8	0.8
OUJ19z35	603.3	4.1	8.2	97	0.0028700	0.0001200	0.282339	0.000030	0.282306542	0.000030	-3.2	1.0
OUJ19z37	628.5	3.8	7.6	100	0.0019100	0.0004200	0.282123	0.000024	0.282100498	0.000024	-9.9	0.7
OUJ19z38	2104.8	23.5	47.1	101	0.0032130	0.0000500	0.281672	0.000024	0.281543355	0.000024	3.6	0.8
OUJ19z39	2887.7	21.9	43.8	97	0.0026800	0.0001100	0.280905	0.000026	0.280756694	0.000026	-6.3	0.7
OUJ19z40	2085.8	26.6	53.1	102	0.0016870	0.0000480	0.281501	0.000022	0.281434076	0.000022	-0.7	0.7
OUJ19z42	630.4	3.5	7.0	100	0.0036500	0.0001000	0.282149	0.000026	0.282105861	0.000026	-9.7	0.9
OUJ19z43	580.6	3.2	6.5	100	0.0039110	0.0000210	0.282386	0.000023	0.282343391	0.000023	-2.4	0.8
OUJ19z44	903.8	4.5	9.0	100	0.0047620	0.0000450	0.282634	0.000026	0.282553034	0.000026	12.2	0.9
OUJ19z47	2116.8	24.7	49.4	100	0.0023000	0.0001100	0.281358	0.000029	0.281265375	0.000029	-6.0	0.9
OUJ19z48	565.9	3.5	7.1	98	0.0016960	0.0000410	0.282121	0.000031	0.282103002	0.000031	-11.2	1.1
OUJ19z49	2362.9	23.7	47.3	98	0.0013412	0.0000035	0.281370	0.000022	0.281309572	0.000022	1.2	0.8
OUJ19z50	2207.3	24.5	48.9	97	0.0024700	0.0001700	0.281347	0.000022	0.281243212	0.000022	-4.8	0.5
OUJ19z51	649.2	3.5	7.0	96	0.0026860	0.0000770	0.281551	0.000022	0.281518292	0.000022	-30.1	0.7
OUJ19z53	322.8	2.0	4.0	93	0.0069100	0.0001700	0.282703	0.000022	0.282661249	0.000022	3.2	0.7
OUJ19z54	653.5	2.9	5.8	100	0.0034530	0.0000200	0.282098	0.000023	0.282055691	0.000023	-11.0	0.8
OUJ19z55	2565.5	41.6	83.2	100	0.0004790	0.0000110	0.281042	0.000022	0.281018529	0.000022	-4.5	0.8
OUJ19z56	2058.2	25.0	50.0	95	0.0015000	0.0001100	0.281562	0.000038	0.281503308	0.000038	1.1	1.2
OUJ19z59	346.0	2.0	4.0	99	0.0034650	0.0000770	0.282564	0.000020	0.282541568	0.000020	-0.5	0.7
OUJ19z60	337.4	1.7	3.3	99	0.0032650	0.0000950	0.282511	0.000025	0.282490415	0.000025	-2.6	0.9
OUJ19z63	2016.0	25.0	50.0	101	0.0022500	0.0001600	0.281250	0.000023	0.281163793	0.000023	-11.9	0.6
OUJ19z64	615.5	3.2	6.4	102	0.0058130	0.0000590	0.282311	0.000033	0.282243943	0.000033	-5.1	1.1
OUJ19z65	1004.9	4.7	9.4	100	0.0045590	0.0000650	0.282242	0.000027	0.282155744	0.000027	0.4	0.9
OUJ19z66	509.4	2.7	5.5	97	0.0041280	0.0000560	0.282726	0.000024	0.282686627	0.000024	8.2	0.8
OUJ19z68	2218.5	23.6	47.3	100	0.0029850	0.0000340	0.281532	0.000019	0.281405876	0.000019	1.3	0.6
OUJ19z69	908.2	5.0	10.1	98	0.0054080	0.0000780	0.282027	0.000023	0.281934640	0.000023	-9.6	0.8
OUJ19z70	384.8	2.4	4.9	99	0.0040460	0.0000540	0.282414	0.000022	0.282384844	0.000022	-5.2	0.8
OUJ19z71	642.9	3.2	6.4	100	0.0022050	0.0000390	0.282198	0.000017	0.282171399	0.000017	-7.1	0.6
OUJ19z72	643.8	2.9	5.8	99	0.0015140	0.0000590	0.282362	0.000020	0.282343706	0.000020	-1.0	0.7
OUJ19z73	649.5	3.2	6.4	104	0.0023150	0.0000450	0.282023	0.000023	0.281994766	0.000023	-13.2	0.8
OUJ19z74	582.7	4.7	9.4	92	0.0020240	0.0000400	0.282210	0.000020	0.282187873	0.000020	-7.8	0.7
OUJ19z75	2304.8	22.9	45.7	92	0.0021450	0.0000280	0.281148	0.000025	0.281053780	0.000025	-9.2	0.8
OUJ19z76	1365.9	5.7	11.5	101	0.0021820	0.0000810	0.281986	0.000021	0.281929697	0.000021	0.5	0.7
OUJ19z77	335.3	1.7	3.4	102	0.0044240	0.0000430	0.282753	0.000022	0.282725273	0.000022	5.7	0.8
OUJ19z78	1359.6	7.3	14.6	96	0.0032930	0.0000250	0.281874	0.000027	0.281789408	0.000027	-4.6	0.9
OUJ19z79	621.6	2.9	5.9	100	0.0050400	0.0001700	0.281865	0.000026	0.281806194	0.000026	-20.5	0.9
OUJ19z80	652.9	3.5	7.0	102	0.0039860	0.0000930	0.282413	0.000029	0.282364160	0.000029	0.0	1.0
OUJ19z82	591.3	3.5	7.1	101	0.0021130	0.0000160	0.282284	0.000023	0.282260581	0.000023	-5.1	0.8
OUJ19z83	2180.7	24.9	49.8	99	0.0020200	0.0000740	0.281372	0.000023	0.281288141	0.000023	-3.8	0.7
OUJ19z84	572.7	3.8	7.7	101	0.0023870	0.0000490	0.282439	0.000020	0.282413355	0.000020	-0.1	0.7
OUJ19z85	2040.1	23.9	47.8	94	0.0006910	0.0000310	0.281035	0.000026	0.281008204	0.000026	-16.9	0.9
OUJ19z86	2175.6	25.0	50.0	101	0.0060900	0.0002200	0.281682	0.000025	0.281429770	0.000025	1.2	0.6
OUJ19z87	648.2	3.5	7.0	102	0.0045200	0.0001200	0.282344	0.000024	0.282289043	0.000024	-2.8	0.8
OUJ19z88	2037.3	24.6	49.3	100	0.0006750	0.0000260	0.281210	0.000033	0.281183863	0.000033	-10.8	1.1
OUJ19z89	657.2	3.2	6.4	100	0.0045300	0.0002100	0.282233	0.000021	0.282177152	0.000021	-6.6	0.7
OUJ19z91	1868.9	37.9	75.8	99	0.0007180	0.0000180	0.281243	0.000029	0.281217531	0.000029	-13.4	1.0
OUJ19z92	527.3	2.9	5.9	100	0.0032810	0.0000170	0.282740	0.000022	0.282707594	0.000022	9.3	0.8
OUJ19z93	632.5	3.8	7.6	100	0.0030160	0.0000670	0.282067	0.000019	0.282031241	0.000019	-12.3	0.6
OUJ19z94	336.8	1.8	3.6	99	0.0035510	0.0000600	0.282786	0.000029	0.282763612	0.000029	7.1	1.0
OUJ19z97	567.6	3.2	6.5	97	0.0032980	0.0000670	0.282391	0.000025	0.282355878	0.000025	-2.2	0.9
OUJ19z98	1599.3	25.5	51.1	102	0.0027970	0.0000890	0.281852	0.000019	0.281767334	0.000019	0.0	0.6
OUJ19z99	340.7	1.7	3.4	98	0.0034800	0.0001900	0.282610	0.000024	0.282587798	0.000024	1.0	0.8
OUJ19z102	2018.8	25.7	51.3	98	0.0022290	0.0000530	0.281328	0.000022	0.281242468	0.000022	-9.1	0.7
OUJ19z104	586.6	3.2	6.5	99	0.0021380	0.0000260	0.282341	0.000020	0.282317466	0.000020	-3.2	0.7
OUJ19z105	631.4	2.9	5.8	95	0.0022530	0.0000130	0.281916	0.000022	0.281889330	0.000022	-17.3	0.8
OUJ19z107	2091.2	24.4	48.9	101	0.0019100	0.0000120	0.281583	0.000022	0.281507044	0.000022	2.0	0.8

GRAIN	Age (Ma)	σ	2σ	Concordia	$^{176}Lu/^{177}Hf$	2σ	$^{176}Hf/^{177}Hf$	2σ	$(^{176}Hf/^{177}Hf)_{init}$	2σ	εHf	2σ
OUJ19z108	618.6	2.9	5.7	100	0.0010000	0.0000540	0.282171	0.000021	0.282159389	0.000021	-8.0	0.7
OUJ19z109	1810.9	32.0	64.0	101	0.0014930	0.0000280	0.281203	0.000029	0.281151712	0.000029	-17.0	1.0
OUJ19z110	577.4	4.1	8.3	102	0.0016980	0.0000065	0.282324	0.000023	0.282305629	0.000023	-3.8	0.8
OUJ19z111	1852.8	24.7	49.5	99	0.0026840	0.0000590	0.281790	0.000023	0.281695624	0.000023	3.2	0.7
OUJ19z112	613.6	2.8	5.7	97	0.0021060	0.0000720	0.281919	0.000023	0.281894745	0.000023	-17.5	0.8
OUJ19z113	2103.4	23.6	47.1	99	0.0025550	0.0000230	0.281478	0.000023	0.281375799	0.000023	-2.4	0.8
OUJ19z114	2433.3	22.5	45.1	96	0.0013110	0.0000290	0.281368	0.000022	0.281307143	0.000022	2.7	0.7
OUJ19z115	317.7	1.8	3.6	90	0.0047600	0.0001800	0.282786	0.000038	0.282757686	0.000038	6.5	1.3
OUJ19z116	1997.7	23.9	47.7	100	0.0021290	0.0000920	0.281187	0.000018	0.281106171	0.000018	-14.4	0.5
OUJ19z117	3028.2	21.6	43.2	94	0.0025700	0.0000800	0.280820	0.000025	0.280670690	0.000025	-6.1	0.7
OUJ19z118	578.4	2.9	5.9	101	0.0016690	0.0000330	0.282467	0.000025	0.282448911	0.000025	1.3	0.9
OUJ19z119	2485.0	23.3	46.6	100	0.0014200	0.0000200	0.281184	0.000035	0.281116641	0.000035	-2.9	1.2
OUJ19z120	557.2	3.5	7.1	97	0.0016460	0.0000200	0.282353	0.000024	0.282335812	0.000024	-3.2	0.8
OUJ19z121	2106.0	24.9	49.7	95	0.0019920	0.0000210	0.281606	0.000021	0.281526204	0.000021	3.0	0.7
OUJ19z122	624.7	2.9	5.9	98	0.0019740	0.0000350	0.282260	0.000022	0.282236856	0.000022	-5.2	0.8
OUJ19z127	2876.7	22.4	44.9	97	0.0013800	0.0001100	0.280905	0.000021	0.280828932	0.000021	-4.0	0.5
OUJ19z128	347.5	2.0	3.9	98	0.0021650	0.0000520	0.282612	0.000029	0.282597944	0.000029	1.5	1.0
OUJ19z129	2023.1	27.0	54.0	101	0.0017770	0.0000430	0.281689	0.000024	0.281620675	0.000024	4.4	0.8
OUJ19z130	327.8	1.9	3.9	100	0.0031900	0.0001100	0.282800	0.000032	0.282780426	0.000032	7.5	1.1