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New constraints on the pre-Permian continental crust growth of Central Asia (West Junggar, China) by U-Pb and Hf isotopic data from detrital zircon.

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ABSTRACT

In-situ U–Pb geochronology of detrital zircons from various Palaeozoic sedimentary rocks of West Junggar accretionary complexes (Central Asia) suggests two distinct episodes of arc magmatism, and an evolution in three steps: i) Ordovician-Silurian subduction generating juvenile arc crust; ii) Late Silurian subduction jamming, erosion and intraplate magmatism, iii) development of two new opposed Devonian-Carboniferous subductions recycling the Early Palaeozoic crust. Zircon Hf isotopes document three pre-Permian episodes of mantle-derived magmatic input into the crust: 1) Neoproterozoic (850-550 Ma), 2) Early Palaeozoic (530-450 Ma) and 3) Late Palaeozoic (380-320 Ma). Zircons also record the recycling of Neoproterozoic and Early Palaeozoic juvenile crusts during the Early and Late Palaeozoic. These data support a model of episodic continental crust growth in Central Asia.

Introduction

Accretionary orogens are major sites of continental crust growth (Cawood and Buchan, 2007), with addition of juvenile magma, and accretion of oceanic and exotic materials (Rudnick, 1990; Condie, 2000; Jahn, 2004). Deciphering the origin of materials is critical to constrain continental growth; therefore, accretionary orogens have been extensively studied (e.g. Kusky et al., 1997; Kroner et al., 2007; Cawood et al., 2009; Isozaki et al., 2010).

Eurasia was partly formed by the huge Altaids collage, with numerous accreted terranes (Sengör et al.; 1993, Fig 1a). During the Palaeozoic, large volumes of juvenile crust were produced (Sengör et al., 1993; Jahn, 2004); however, the timing of continental crust growth is debated (Xiao et al., 2010). In West Junggar (western Altaids), the positive εNd(t) values of Permian granitoids reveal a mantle origin and subsequent differentiation of underplated magmas (Han et al., 1999; Chen and Jahn, 2004; Chen and Arakawa, 2005; Chen et al., 2010b). Alternatively, melting of the Early Palaeozoic juvenile lower crust was proposed (Hu et al., 2000; Chen and Arakawa, 2005; Su et al., 2006; Geng et al., 2009). Post-collisional setting is generally admitted (Han et al., 1999; Chen and Jahn, 2004) but oceanic subduction was recently forwarded (Geng et al., 2009). Permian magmatism obviously contributed to the Late Palaeozoic vertical growth of the continental crust. These studies pointed out the juvenile character of the Palaeozoic basement, but constraints on the pre-Permian evolution are lacking.

Several models for the pre-Permian terrane amalgamation in West Junggar are available (Wang et al., 2003; Buckman and Aitchison, 2004; Xiao et al., 2008), but timing and geometry remain uncertain. Several elements are apparently lacking (Early Palaeozoic arcs), or are poorly documented (e.g. the Laba unit). Mélange zones and major strike-slip faults separate the Palaeozoic terranes and hinder their original relationships. Therefore, exploring the provenance of sediments could be an effective method for reconstructing a reasonable pattern.

We report zircon U-Pb ages and Hf isotopic data from West Junggar accretionary complexes. Since zircons preserve the initial characteristics of their host magmas, U-Pb geochronology and Hf isotopes reveal the juvenile or contaminated character of their source. Provenance of detrital grains may be used to track continental growth processes (Condie et al., 2005). This method has been applied to Precambrian orogens (Griffin et al., 2004; Wu et al., 2007), but remains rare for Phanerozoic collages (e.g. Willner et al., 2008; Bahlburg et al., 2009), especially in the Altaids (Long et al., 2007; Sun et al., 2008). The direct investigation on subduction complex rocks could provide time constraints on magmatism and estimate the relative involvement of juvenile material versus crust recycling.

Geological setting and sampling

West Junggar, at the Kazakh-Chinese border separates into two parts along the Hueshentaolege Valley (Fig. 1b). To the north, Middle Ordovician ashes, Late Ordovician conglomerate, Early Silurian shales and Middle Silurian volcanic rocks are exposed in the Sharburt and Xiemisitai Mountains (Mu et al., 1986; Feng et al., 1989; BGMRXUAR, 1993). The Hongguleleng ophiolitic mélange containing Cambrian-Ordovician mafic rocks (Zhang and Huang, 1992; Jian et al., 2005) extends toward the Tarbagatay Mountains (Zhu and Xu, 2006). Early Palaeozoic rocks correlate with the Chingiz-Tarbagatay and the Maikan-Kyziltas belts (Degtyarev et al., 2011). 420-400 Ma A-type granites intrude the volcanic rocks of the Xiemisitai Mountains, but their emplacement setting is uncertain (Chen et al., 2010a). Late Silurian to Carboniferous sedimentary rocks cover the Early Palaeozoic rocks (Wei et al., 2009). In the Sawuer Mountains, Carboniferous I-type granites (Han et al., 2006; Zhou et al., 2008; Chen et al., 2010a; 2010b) intrude Middle Devonian to mid-Carboniferous volcanic rocks (Shen et al., 2008). The Sawuer arc is related to the Devonian-Carboniferous subduction of the Ob-Zaisan Ocean, closed in the Late Carboniferous (Buslov et al., 2001).

For the southern part of West Junggar, we follow the tectonostratigraphic terranes subdivision of Buckman and Aitchison (2004). In the Tangbale area, Early Silurian turbidites (Mu et al., 1986) are thrust over the Tangbale ophiolitic mélange that contains Cambrian-Ordovician gabbros (Kwon et al., 1989; Zhang and Huang, 1992; Jian et al., 2005), Middle Ordovician radiolarian cherts (Buckman and

Aitchison, 2001) and Ordovician blueschists (Zhang, 1997). Buckman and Aitchison (2004) described undated calk-alkaline diorite (Suyuenka Complex), postdated by Early Silurian turbidites. Ordovician-assigned metamorphosed terrestrial clastic rocks compose the Laba Terrane (Feng et al., 1989; Zhang et al., 1993). The Mayila Terrane comprises Early to Middle Silurian sedimentary units (Mu et al., 1986) and the Mayila ophiolitic mélangewith Silurian radiolarian chert (Li, 1994) and pyroxenite (Jian et al., 2005). Both Mayila and Tangbale terranes may correlate with the Agadyr-Tekturmas-North Balkash accretionary complexes in Kazakhstan (Degtyarev, 2011).

Unconformable Devonian turbidites overlie the Mayila mélange (BGMRXUAR, 1965). The Toli Terrane displays Middle Devonian to Carboniferous arc volcanic rocks and granodiorite (Jin and Xu, 1997; Buckman and Aitchison, 2004). To the southeast, Carboniferous turbidites (Jin and Li, 1999), tuffs (Zhang et al., 2011) and greywackes (Guo et al., 2010; Choulet et al., in press) are thrust over ophiolitic mélanges, with Devonian oceanic crust remnants (Zhang and Huang, 1992; Xu et al., 2006; Gu et al., 2009) and radiolarian chert (Zhu et al., 1987). Carboniferous intrusions like the Baogutu porphyry (Shen et al., 2009), and adakites (Geng et al., 2009; 2011; Tang, 2010;Yin et al., 2010) suggest Carboniferous ridge subduction. Late Palaeozoic units belong to the Kazakh orocline (Abrajevitch et al., 2008). Post-mélange (Chen and Guo, 2010) A- and I-type granitoids (305-240 Ma) were ascribed a post-collisional setting (Chen and Jahn, 2004; Chen andArakawa, 2005; Han et al., 2006), although Geng et al. (2009) proposed a suprasubduction setting. The Early Permian molasse postdates accretionary processes (BGMRXUAR, 1993).

Although remarkable stratigraphic localities are documented in West Junggar (BGMRXUAR, 1993), the lack of palaeontological data leaves some sedimentary units undated (e.g. clastic rocks from the Laba terrane). Therefore, twelve detrital rock samples were collected throughout West Junggar for detrital zircons analysis. Table 1 presents sample location, detailed petrography and stratigraphic assignments. Two hornblende-bearing granites (DJ259 and DJ303) from the Sawuer Mountains were also collected for U-Pb dating and Hf isotopes, because they represent potential sources of detrital zircons.

U-Pb Geochronology

Cathodoluminescence (CL) imaging, and simultaneous determination of U-Pb and Lu-Hf isotopes were carried out at the Institute of Geology and Geophysics, Chinese Academy of Sciences, Beijing (IGGCAS). Sample preparation and analytical procedure are described in Wu et al. (2010).

CL images reveal growth and sector zoning, suggesting igneous origin for the detrital zircons. Euhedral, unrounded grains indicate a relatively short transport (Fig. 2).

U-Pb dating of detrital zircons

Computation of U, Th and Pb isotopic ratios yields concordant ages (Fig. 3). All ages range from 300 to 600 Ma, whilst only one Early Proterozoic (1894±19 Ma) zircon was found (Table 2 and 3). Statistically, this occurrence is meaningless and might be due to sample contamination. Therefore, this grain will not be considered further in the discussion. All samples, except DJ15 display one single age population (Fig. 4).

Samples DJ46, DJ87, DJ89, DJ108 and DJ192 from the Mayila and Tangbale terranes show an Early Silurian maximum deposition age and Ordovician peak population (Fig. 4a and 4b). Sample DJ83 displays a Middle Devonian maximum deposition age and a Late Ordovician peak population (Fig. 4a; Table 2). Samples DJ98 and DJ188 from Mayila also present Devonian maximum deposition ages (Fig. 4b; Table 2), but Late Silurian to Early Devonian zircon sources.

Such source ages are similar to those of samples DJ325 and DJ149 (Fig. 4c; Table 2). Late Carboniferous turbidites from Sawuer and Karamay Units display an Early Carboniferous peak population with, for DJ15, a subsidiary Middle Silurian peak (Fig. 4c; Table 2).

U-Pb dating of magmatic zircons

Zircons extracted from the Sawuer granites exhibit prismatic shape and growth zoning (Fig. 5a). Sample DJ259 displays eighteen concordant ages ranging from 327 Ma to 353 Ma, with a Concordia age (Ludwig, 1998) of 339±1 Ma (Fig. 5b; Table 4). Twenty-four grains from sample DJ303 yield concordant ages ranging from 331 Ma to 355 Ma, with a Concordia age of 344±1 Ma (Fig. 5b; Table 4).

Zircon Lu–Hf isotope data

Lu-Hf isotope data were obtained from 13 out of 14 samples (Table 5). εHf values of detrital zircons fluctuate from +5 to +19. As the crust of West Junggar evolved from an immature arc (Buckman and Aitchison, 2004), two-stage Hf model ages (T_{DM}^{LC}), using the Lu/Hf ratio (0.022) of the lower mafic crust (Amelin et al., 1999), are proposed (Table 5). Only five Devonian-Carboniferous detrital zircons have Late Palaeozoic model ages. 30% and 60% of the grains display Cambrian-Ordovician and Neoproterozoic Hf model ages, respectively (Fig. 6). 33% of the Early Palaeozoic detrital zircons display Palaeozoic Hf model ages, but the other grains present Precambrian model ages (850 - 550 Ma) (Fig. 6; Table 5). εHf values of Carboniferous zircons from the two Sawuer granites vary between +11 and +16. Only three grains show Devonian-Carboniferous model ages (Fig. 6), other zircons have Cambrian-Ordovician (25%) and Neoproterozoic (75%) model ages (Table 5).

Discussion

Maximum ages of sedimentation

The detrital zircon data set has three characteristics: i) only one Precambrian grain; ii) narrow population peaks; and, iii) consistent maximum sedimentary age and main population peak age (Table 2). Andesite clasts (Fig. 7) and positive εHf(t) values of zircons indicate that volcaniclastic greywacke probably accumulated in the arc vicinity. Therefore, maximum deposition age closely mirrors the timing of arc magmatism. The similar U-Pb and stratigraphic ages (BGMRXUAR, 1993) of samples DJ87, DJ89, DJ149, and DJ325 support this postulate.

The Tangbale mélange was ascribed to Ordovician, but DJ46 greywacke block has an Early Silurian maximum deposition age. The Early Silurian ages of microconglomerate and greywacke blocks (DJ108 and DJ192) of the Mayila mélange are consistent with the Silurian ages of chert and pyroxenite blocks (Li, 1994; Jian et al., 2005). The incorporation of sedimentary rocks into the mélanges closely follows sedimentation because Silurian turbidites overlie it (Feng et al., 1989). The Early Devonian maximum deposition age of mafic sandstone DJ83 questions the Ordovician assignment of the Laba Terrane.

Middle to Late Devonian greywacke (DJ98 and DJ188) belongs to the sporadic molasse postdating the Mayila mélange (BGMRXUAR, 1965). Samples DJ15 and DJ329, previously assigned to the Early Carboniferous (BGMRXUAR, 1993) show Late Carboniferous maximum deposition ages consistent with the age of interlayered tuffs (Zhang et al., 2011).

Zircon provenance

Single zircon populations infer that local rocks principally supplied detrital zircons. Because of similar U-Pb age spectra and Hf isotopic signatures, the Sawuer arc represented by samples DJ259 and DJ303, is a potential source of the Carboniferous detrital zircons (Fig. 6).

In contrast with Kazakhstan, there is no Early Devonian magmatic arc in West Junggar (Windley et al., 2007); therefore, a possible local source for Late Silurian to Early Devonian zircons is the alkaline plutons of Xiemisitai Mountains (Chen et al., 2010a).

Zircon populations with age peaks at 426 and 424 Ma could derive from the Middle Silurian arc rocks of Sharburt Mountains (Feng et al., 1989). In Tangbale and Mayila, undated diorites of the Suyuenka complex (Buckman and Aitchison, 2004) could be potential sources. Zircons could also reasonably come from Early Palaeozoic units, suspected upon geochemical evidence (e.g. Chen and

Jahn, 2004), but hidden below Late Palaeozoic sediments. These Early Palaeozoic units may represent the eastern extension of the Ordovician Baydaulet-Aqbastau volcanic arc (Degtyarev, 2011) exposed in Kazakhstan (Fig. 8).

A polycyclic model for West Junggar

These new data support the polycyclic evolution of West Junggar, proposed by Buckman and Aitchison (2004). Ordovician to Middle Silurian subduction contributed to the formation of juvenile arc crust. The slight diachronism between Mayila and Tangbale areas (Fig. 9) suggests either two subduction zones (Buckman and Aitchison, 2004), or migration of a single one (Wang et al., 2003).

Subduction complexes were docked to the Chingiz-Tarbagatay margin. Lower Devonian terrigenous sediments (Feng et al., 1989) record an episode of erosion in response to collision. Late Silurian to Early Devonian A-type granite emplacement (Chen et al., 2010; Fig. 9) suggests an uplift of the asthenosphere that may be related to post-accretion slab break-off, back-arc, or intra-arc rifting.

Late Devonian-Early Carboniferous magmatic rocks replaced Early Palaeozoic rocks that initially supplied the basins. These rocks compose the Barliek and Sawuer arcs that ensue from two opposed new subduction zones (Filippova et al., 2001; Fig. 8). The final amalgamation occurred during the Late Carboniferous-Early Permian, due to the combined effect of oceanic closure and oroclinal bending (Abrajevitch et al., 2008; Choulet et al., 2011).

Crustal evolution of West Junggar and implication for the Altaids

The εHf(t) values close to the DM, with similar U-Pb ages and Hf model ages, imply a juvenile origin for several Palaeozoic zircons (Fig. 6). In contrast, grains with older model ages mirror the recycling of a pre-existing juvenile crust, during Palaeozoic magmatism (Fig. 6).

Numerous Palaeozoic zircons show Neoproterozoic Hf model ages that suggest provenance from a moderately evolved continental crust (Table 5). Considering the location of West Junggar in Palaeozoic time (Filippova et al., 2001), Kazakhstan is the most likely provenance for remote grains, conveyed towards the accretionary prism along the trench axis (Von Huene, 1974). However, this hypothesis contradicts the morphological and geochronological characteristics of the zircons population, which support a local origin. Although Precambrian rocks are neither exposed in West Junggar, nor inferred from zircon geochronology, a significant involvement of Precambrian primitive crustal materials in the formation of Palaeozoic arc magmas may be regarded. The Neoproterozoic model ages coincide with the break-up of Rodinia (Hoffman, 1999; Kheraskova et al., 2003; Zhang et al., 2010) and the emplacement of ophiolites in Central Asia (Khain et al., 2003). Heinhorst et al. (2000) and Kröner et al. (2007; 2008) observed a similar contamination of Palaeozoic rocks by Neoproterozoic juvenile material in Central Kazakhstan.

Our data suggest three pre-Permian magmatic episodes: 1) Neoproterozoic (850-550 Ma), 2) Cambro-Ordovician (530-450 Ma), and 3) Late Devonian-Carboniferous (380-320 Ma). Crustal growth terminates with the major Permian intraplate episode (Jahn, 2004). Results support episodic crust growth in West Junggar, like in Mongolia (Kovalenko et al., 2004), with lateral and vertical growth, but recycling of juvenile crust is seemingly a dominant process**.**

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FIGURE CAPTIONS

Table 1 Detrital sample localities and detailed petrographic analysis. Abbreviations: amph.: amphibole, and.: andesite, bas.: basalt, cc.: calcite, chl.: chlorite, cpx.: clinopyroxene, ep.: epidote, fsp.: feldspar (K-feldspar and plagioclase), FTO: Fe-Ti oxydes, LF: lithic fragments, Opx.: orthopyroxene, qz.: quartz. L.: Lower, M.: Middle, U.: Upper. Carb.: Carboniferous, Dev.: Devonian, Ord.: Ordovician, Sil. Silurian. Stratigraphic age and Formation are from BGMRXUAR (1993). *: For southern West Junggar, terrane assignment is from Buckman and Aitchinson (2004). **: BGMRXUAR (1993) assign these rocks to Late Devonian Tarbagatay Formation (Toli Sheet) or, alternatively, to Early Devonian (Bayanhe Sheet). The Ordovician age of the Laba terrane is uncertain and does not rely on palaeontological or radiometric evidence.

Table 2 Data summary. *: The age statistics were calculated by Age Pick software package of the Arizona University (http://www.geo.arizona.edu/alc/Analysis%20Tools.htm). †: N is the number of individual analyses taken into account for the age peak calculations, N_0 is the total number of analyses.For sample DJ188, mineral separation only provided 39 grains. Though this value is much below the threshold of 59 defined by Dodson et al. (1988), we chose to keep this sample as it represents the unconformable molasse deposits lying over the Mayila mélange.

Table 3 La-ICPMS U-Pb detrital zircon data. *: Degree of discordance.

Table 4 La-ICPMS U-Pb magmatic zircon data.

Table 5 Hf isotopic data on zircon. *: ^{206}Pb/^{238}U ages.

$$\left(\frac{^{176}Hf}{^{177}Hf}\right)_i = \left(\frac{^{176}Hf}{^{177}Hf}\right)_{SAMPLE} - \left[\left(\frac{^{176}Lu}{^{177}Hf}\right)_{SAMPLE}\left(e^{\frac{\lambda t}{1000}} - 1\right)\right]$$

$$\varepsilon_{Hf}(t) = 10^4 \times \left[\frac{\left(\frac{^{176}Hf}{^{177}Hf}\right)_{SAMPLE} - \left(\frac{^{176}Lu}{^{177}Hf}\right)_{SAMPLE}\left(e^{\frac{\lambda t}{1000}} - 1\right)}{\left(\frac{^{176}Hf}{^{177}Hf}\right)_{CHUR} - \left(\frac{^{176}Lu}{^{177}Hf}\right)_{CHUR}\left(e^{\frac{\lambda t}{1000}} - 1\right)} - 1\right]$$

$$T_{DM} = \frac{1}{\lambda} \times \ln\left(1 + \left[\frac{\left(\frac{^{176}Hf}{^{177}Hf}\right)_{SAMPLE} - \left(\frac{^{176}Hf}{^{177}Hf}\right)_{DM}}{\left(\frac{^{176}Lu}{^{177}Hf}\right)_{SAMPLE} - \left(\frac{^{176}Lu}{^{177}Hf}\right)_{DM}}\right]\right)$$

$$T_{DM}^{C} = \frac{t}{1000} + \left[\frac{1}{\lambda} \times \ln\left(1 + \left[\frac{\left(\frac{^{176}Hf}{^{177}Hf}\right)_{SAMPLE} - \left(\left(\frac{^{176}Hf}{^{177}Hf}\right)_{DM} - \left[\left(\frac{^{176}Lu}{^{177}Hf}\right)_{DM}\left(e^{\frac{\lambda t}{1000}t} - 1\right)\right]\right)}{\left(\frac{^{176}Lu}{^{177}Hf}\right)_{C} - \left(\frac{^{176}Lu}{^{177}Hf}\right)_{DM}}\right]\right)\right]$$

$$T_{DM}^{LC} = \frac{t}{1000} + \left[\frac{1}{\lambda} \times \ln\left(1 + \left[\frac{\left(\frac{^{176}Hf}{^{177}Hf}\right)_{SAMPLE} - \left(\left(\frac{^{176}Hf}{^{177}Hf}\right)_{DM} - \left[\left(\frac{^{176}Lu}{^{177}Hf}\right)_{DM}\left(e^{\frac{\lambda t}{1000}t} - 1\right)\right]\right)}{\left(\frac{^{176}Lu}{^{177}Hf}\right)_{LC} - \left(\frac{^{176}Lu}{^{177}Hf}\right)_{DM}}\right]\right)\right]$$

$\lambda = 1.865 \times 10^{-11}\ yr^{-1}$ (Scherer et al., 2001), $\left(\frac{^{176}Hf}{^{177}Hf}\right)_{CHUR} = 0.282772$, $\left(\frac{^{176}Lu}{^{177}Hf}\right)_{CHUR} = 0.0332$, $\left(\frac{^{176}Hf}{^{177}Hf}\right)_{DM} = 0.28325$, $\left(\frac{^{176}Lu}{^{177}Hf}\right)_{DM} = 0.0384$, $\left(\frac{^{176}Lu}{^{177}Hf}\right)_{C} = 0.015$, $\left(\frac{^{176}Lu}{^{177}Hf}\right)_{LC} = 0.022$

C: Average continental crust, CHUR: Chondritic Uniform Reservoir DM: Depleted Mantle.

Figure 1 a) Simplified map of northwestern Eurasia, indicating the Altaids and the location of West Junggar (WJG) within the collage, b) Tectonic map of West Junggar Mountains, modified after Feng et al. (1989), BGMRXUAR(1993), and Buckman and Aitchinson, (2004) showing the location of detrital zircon samples (Open diamond). Numbers in open circles refer to the ophiolitic mélanges mentioned in the text. 1: Tangbale mélange; 2: Mayila mélange; 3 Hongguleleng mélange; 4: Dalabute mélange; 5 Baijantan mélange; 6: Kokeshentan mélange. Black diamonds indicate Early Palaeozoic arc volcanic rocks (Feng et al., 1989; Buckman and Aitchinson, 2004).

Figure 2 CL images of selected representative detrital zircon grains from dated samples (greywacke, sandstone). For sample location, see Figure 1b and Table 1.

Figure 3 Concordia plots for detrital zircon grains from dated samples.

Figure 4 a, b and c: relative probability diagrams for detrital zircon ^{206}Pb/^{238}U ages from West Junggar units. The Early Proterozoic age obtained on a sole zircon from sample DJ83 is not shown.

Figure 5 a: CL images of selected representative magmatic zircon grains from Sawuer granites. b: Concordia plots for magmatic zircon grains from Sawuer granites and average Concordia age (Ludwig, 1998).

Figure 6 Plot of εHf(t) vs ^{206}Pb/^{238}U ages. Positive εHf(t) values indicate juvenile origin for zircons. Three episodes of mantle-derived magma input into the crust can be distinguished: 1) Late Palaeozoic, 2) Early Palaeozoic and 3) Neoproterozoic, but Early and Late Palaeozoic reworking of this new juvenile crust is also inferred. Two-stage Hf model ages (T_{DM}^{LC}), using a Lu/Hf ratio equal to 0.022, typical of the mafic crust (Amelin et al., 1999) were calculated, because they mirror a realistic estimate of the extraction time from a immature island arc crust. DM and CHUR notations correspond to the Depleted Mantle and Chondritic Uniform Reservoir, respectively. Details regarding initial Hf ratios and model age computation are in Table 5. Squares and diamonds correspond to detrital zircons and magmatic grains from Sawuer granites, respectively.

Figure 7 Microphotographs of andesite clasts from a) Sharburt Mountains (sample DJ325) and b) Dalabute Valley (Sample DJ15). Note the fluidal texture underlined by the alignment of altered plagioclase microlites.

Figure 8 a: Tectonic map illustrating the relationships between West Junggar and neighbouring areas. Originally, Ob-Zaisan and Junggar-Balkash Ocean separated West Junggar from Altai and North Tianshan, respectively; therefore these two areas are unlikely sources for the detrital zircons of our data set. Abbreviations: A: Arkalyk, Al: Alataw, BA: Baidaulet-Akbastau, BC: Bozchekul-Chingiz, Bo: Bole, CANTF: Chingiz-Alakol-North Tianshan Fault, CKF: Central Kazakhstan Fault, CT: Chingiz-Tarbagatay, DF: Dalabute Fault, IGSZ: Irtysh-Gornotsaev Fault Zone, Hg Hongguleleng mélange, IVB: Inner Volcanic Belt, Ma-Ta: Mayila-Tangbale mélange, MK: Maikan-Kyziltas mélange, MTF: Main Tianshan Fault, NB: Nord Balkash mélange, NTS: North Tianshan, OVB : Outer Volcanic Belt, S: Sawuer, Z: Zharma. 5: b: synoptic chart of magmatic events in West Junggar and Eastern Kazakhstan, adapted from Feng et al., (1989), Windley et al., (2007), Chen et al., (2010a) and Degtyarev (2011). This diagram illustrates the potential provenance of detrital zircons.

Figure 9 Synoptic chart showing population peak ages and maximum ages of sedimentation of detrital zircon samples and crystallization ages of magmatic samples. On the right, the major magmatic and sedimentary episodes, described by Feng et al. (1989), BGMRXUAR (1993), Buckman and Aitchison, (2004), and Chen et al. (2010a) are represented. Dashed lines figure the uncertainty of magmatic and sedimentary events through time.

Table 1

Sample	Coordinates	Lithology	Detailed petrography	Stratigraphic assignement	Stratigraphic age	Sampling environment
DJ46	45.4307°N ; 84.0212°E	Greywacke (CS)	Qz. (40%), fsp. (40%), LF (10%, chert), ep., cpx, chl	Ebinur - Kekesayi Terrane * (Tangbale Mélange)	U. Ord. - L. Sil.	Block within ophiolitic mélange
DJ83	45.2346°N ; 83.9952°E	Green sandstone (CS)	Qz. (55%), fsp. (15%), LF (15%, chert + bas.)	Laba Terrane * (Labahe Formation)	Ord. ?	Massive schistose detrital serie
DJ87	45.2819°N ; 83.8031°E	Greywacke (CS)	Fsp. (50%), qz. (20%), LF (15%, bas. + and.), chl. (15%)	Ebinur - Kekesayi Terrane * (Qiargaye Formation)	U. Ord. - L. Sil.	Turbidites
DJ89	45.2587°N ; 83.7424°E	Microconglomerate (CS)	Qz. (50%), LF (25%, and.), fsp. (15%), chl. (5%), amph.	Ebinur - Kekesayi Terrane * (Qiargaye Formation)	U. Ord. - L. Sil.	Turbidites
DJ98	45.6551°N ; 82.9492°E	Sandstone (CS)	Qz (70%), fsp. (20%), LF (5%, and.), cc., FTO.	Toli Terrane * (Barliek Formation)	L. Dev. - U. Dev.	Broken serie
DJ108	45.6640°N ; 83.2337°E	Microconglomerate (CS)	Qz (60%), fsp. (30%), LF (5%, and.), opx., cpx., ep., chl.	Mayila Terrane * (Mayila Mélange)	M. Sil. - U.Sil.	Block within ophiolitic mélange
DJ188	45.3624°N ; 82.7874°E	Microconglomerate (CS)	Qz, Fsp., LF	Mayila Terrane *	M. Sil. - U.Sil.	Detrital serie
DJ192	45.4079°N ; 82.7640°E	Greywacke (CS)	LF (40%, bas. + chert), fsp. (25%), qz. (15%), cpx. (10%), FTO (10%)	Mayila Terrane *	M. Sil. - U.Sil.	Block within ophiolitic mélange
DJ15	45.7214°N ; 84.4593°E	Greywacke (CS)	Fsp. (30%), LF (30%, and.), qz. (25%), chl. (15%)	Karamay Terrane *	L. Carb. - U. Carb.	Turbidites
DJ149	46.0789°N ; 84.0098°E	Greywacke (CS)	Fsp. (60%), LF (15%, and.), qz. (15%), chl. (10%)	Toli Terrane *	L. Dev. - U. Dev.	Volcanosedimentary serie
DJ325	46.8107°N ; 86.6885°E	Greywacke (CS)	Fsp. (40%),LF (25%, and.), qz. (20%), chl. (10%)	Hujiersite Formation **	M. Dev.	Detrital serie
DJ329	47.0640°N ; 86.5972°E	Greywacke (CS)	Fsp. (50%), qz. (20%), LF (20%, bas. + and.), FTO (10%)	Heishantou **	L. Carb.	Turbidites

Table 2

Sample	**Units**	**Coordinates**	**Youngest age***	**Main population (N/N$_0$)†**	**Other populations (N/N$_0$)**
DJ46	Tangbale	45.4307°N ; 84.0212°E	439 ± 12 Ma	464 ± 4 Ma (60/61)	-
DJ83	Tangbale	45.2346°N ; 83.9952°E	398 ± 8 Ma	445 ± 5 Ma (47/51)	
DJ87	Tangbale	45.2819°N ; 83.8031°E	437 ± 8 Ma	468 ± 5 Ma (38/57)	-
DJ89	Tangbale	45.2587°N ; 83.7424°E	434 ± 6 Ma	476 ± 7 Ma (39/60)	
DJ98	Mayila	45.6551°N ; 82.9492°E	395 ± 9 Ma	415 ± 6 Ma (51/59)	
DJ108	Mayila	45.6640°N ; 83.2337°E	440 ± 10 Ma	460 ± 5 Ma (51/58)	
DJ188	Mayila	45.3624°N ; 82.7874°E	379 ± 10 Ma	413 ± 5 Ma (32/39)	
DJ192	Mayila	45.4079°N ; 82.7640°E	429 ± 10 Ma	453 ± 3 Ma (58/66)	
DJ15	West Karamay	45.7214°N ; 84.4593°E	304 ± 13 Ma	322 ± 6 Ma (33/62)	426 ± 13 Ma (13/62)
DJ149	Barliek	46.0789°N ; 84.0098°E	373 ± 11 Ma	402 ± 7 Ma (47/50)	
DJ325	Chingiz-Tarbagatay	46.8107°N ; 86.6885°E	388 ± 10 Ma	424 ± 4 Ma (36/48)	
DJ329	Sawuer	47.0640°N ; 86.5972°E	307 ± 8 Ma	332 ± 3 Ma (62/78)	

Table 3

Analysis No.		Ratios								Age (Ma)								Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
DJ46 (n=61)																		
1	DJ46 01	0.0557	29	0.5487	485	0.0715	32	0.0255	29	442	112	444	32	445	19	509	57	-0.7
2	DJ46 02	0.0565	13	0.5902	251	0.0758	18	0.0222	15	471	46	471	16	471	11	443	29	0.07
3	DJ46 04	0.0568	45	0.6260	839	0.0800	54	0.0339	59	482	175	494	52	496	32	673	116	-2.98
4	DJ46 06	0.0559	21	0.5538	366	0.0719	25	0.0182	23	448	87	448	24	448	15	365	46	0.25
5	DJ46 07	0.0564	20	0.5912	370	0.0761	26	0.0260	20	467	79	472	24	473	15	519	40	-1.36
6	DJ46 08	0.0558	10	0.5501	190	0.0716	15	0.0218	9	444	44	445	12	445	9	437	17	-0.29
7	DJ46 09	0.0562	12	0.5743	219	0.0742	17	0.0224	15	460	40	461	14	461	10	449	30	-0.14
8	DJ46 10	0.0566	20	0.5914	360	0.0758	24	0.0229	24	476	75	472	23	471	14	458	48	1.01
9	DJ46 11	0.0561	17	0.5702	300	0.0738	21	0.0211	20	456	62	458	19	459	13	422	39	-0.49
10	DJ46 12	0.0567	7	0.6024	158	0.0772	14	0.0223	9	478	29	479	10	479	8	446	18	-0.22
11	DJ46 13	0.0561	13	0.5788	245	0.0749	18	0.0225	12	457	53	464	16	465	11	449	23	-1.91
12	DJ46 14	0.0567	14	0.6029	268	0.0772	20	0.0241	16	479	54	479	17	479	12	482	31	-0.1
13	DJ46 15	0.0560	8	0.5578	152	0.0723	13	0.0228	9	450	27	450	10	450	8	455	17	0.09
14	DJ46 16	0.0564	16	0.5868	299	0.0755	21	0.0213	12	467	64	469	19	469	13	426	24	-0.39
15	DJ46 17	0.0568	15	0.6054	292	0.0774	21	0.0223	15	483	55	481	18	480	12	445	29	0.71
16	DJ46 18	0.0561	13	0.5648	247	0.0730	18	0.0217	12	457	54	455	16	454	11	433	24	0.57
17	DJ46 19	0.0557	17	0.5408	291	0.0705	21	0.0227	17	440	65	439	19	439	12	453	33	0.18
18	DJ46 20	0.0565	4	0.5873	97	0.0755	11	0.0211	4	470	15	469	6	469	7	422	8	0.26
19	DJ46 21	0.0565	28	0.5938	508	0.0762	34	0.0220	21	473	104	473	32	473	20	441	42	-0.01
20	DJ46 22	0.0557	8	0.5442	162	0.0709	14	0.0205	8	441	33	441	11	441	8	411	15	-0.1
21	DJ46 23	0.0567	29	0.6136	536	0.0785	36	0.0279	34	481	99	486	34	487	21	556	66	-1.26
22	DJ46 24	0.0560	10	0.5577	187	0.0722	15	0.0210	11	454	38	450	12	449	9	420	22	1.07
23	DJ46 25	0.0566	11	0.5980	217	0.0767	17	0.0247	13	476	43	476	14	476	10	493	25	-0.1
24	DJ46 26	0.0561	9	0.5687	179	0.0735	15	0.0228	11	456	34	457	12	457	9	455	22	-0.23
25	DJ46 27	0.0562	11	0.5676	206	0.0732	16	0.0205	10	461	41	456	13	456	10	410	19	1.34
26	DJ46 28	0.0565	13	0.5614	231	0.0722	17	0.0220	14	470	49	452	15	449	10	441	28	4.65
27	DJ46 29	0.0567	14	0.6022	274	0.0771	20	0.0229	15	479	51	479	17	479	12	457	29	0.13
28	DJ46 30	0.0564	10	0.5871	202	0.0755	16	0.0223	14	469	40	469	13	469	9	446	27	-0.01
29	DJ46 31	0.0567	17	0.5858	311	0.0749	22	0.0229	20	481	59	468	20	466	13	457	39	3.23
30	DJ46 32	0.0566	17	0.5907	309	0.0758	22	0.0201	16	475	68	471	20	471	13	402	32	0.93
31	DJ46 33	0.0560	11	0.5547	204	0.0719	16	0.0201	8	450	44	448	13	448	10	403	17	0.63
32	DJ46 34	0.0561	5	0.5675	118	0.0733	12	0.0221	6	458	19	456	8	456	7	442	12	0.3
33	DJ46 35	0.0563	9	0.5749	177	0.0741	15	0.0209	9	464	35	461	11	461	9	418	19	0.72
34	DJ46 36	0.0559	11	0.5552	199	0.0721	15	0.0208	13	447	43	448	13	449	9	416	25	-0.34
35	DJ46 37	0.0572	23	0.6320	439	0.0802	30	0.0260	20	498	86	497	27	497	18	519	39	0.19
36	DJ46 38	0.0562	17	0.5716	303	0.0738	22	0.0204	15	459	66	459	20	459	13	407	30	0.11
37	DJ46 39	0.0564	14	0.5860	259	0.0753	19	0.0232	18	469	52	468	17	468	11	464	35	0.27
38	DJ46 40	0.0559	12	0.5599	225	0.0726	17	0.0219	13	449	46	451	15	452	10	438	26	-0.73
39	DJ46 41	0.0562	10	0.5730	192	0.0739	15	0.0210	12	461	39	460	12	460	9	420	24	0.3
40	DJ46 42	0.0568	10	0.6090	203	0.0778	16	0.0232	12	484	37	483	13	483	10	463	24	0.32
41	DJ46 43	0.0563	6	0.5806	136	0.0748	13	0.0229	8	464	25	465	9	465	8	457	16	-0.16

Analysis No.		Ratios								Age (Ma)								
		$^{207}Pb/^{206}Pb$	± 1s	$^{207}Pb/^{235}U$	± 1s	$^{206}Pb/^{238}U$	± 1s	$^{208}Pb/^{232}Th$	± 1s	$^{207}Pb/^{206}Pb$	± 1s	$^{207}Pb/^{235}U$	± 1s	$^{206}Pb/^{238}U$	± 1s	$^{208}Pb/^{232}Th$	± 1s	Disc* (%)
42	DJ46 44	0.0561	15	0.5699	277	0.0736	20	0.0251	16	458	61	458	18	458	12	500	32	-0.11
43	DJ46 45	0.0563	8	0.5799	157	0.0747	14	0.0243	10	465	31	464	10	464	8	485	20	0.27
44	DJ46 46	0.0563	12	0.5772	223	0.0744	17	0.0219	14	462	46	463	14	463	10	438	28	-0.11
45	DJ46 47	0.0563	12	0.5788	220	0.0746	17	0.0213	12	463	46	464	14	464	10	426	23	-0.06
46	DJ46 48	0.0563	13	0.5745	241	0.0740	18	0.0219	13	463	50	461	16	460	11	438	26	0.57
47	DJ46 50	0.0563	10	0.5816	202	0.0749	16	0.0233	12	466	42	465	13	465	9	465	23	0.09
48	DJ46 51	0.0565	6	0.5935	128	0.0761	13	0.0221	5	473	23	473	8	473	7	441	10	0.03
49	DJ46 52	0.0562	6	0.5707	135	0.0737	13	0.0212	9	458	25	458	9	459	8	423	18	-0.05
50	DJ46 53	0.0563	26	0.5803	458	0.0748	31	0.0240	30	463	87	465	29	465	18	479	60	-0.43
51	DJ46 54	0.0562	11	0.5696	208	0.0735	16	0.0203	11	462	44	458	13	457	10	407	22	1.1
52	DJ46 55	0.0567	15	0.6057	286	0.0775	21	0.0219	14	479	64	481	18	481	12	438	28	-0.45
53	DJ46 56	0.0572	22	0.6352	415	0.0806	27	0.0224	25	498	80	499	26	500	16	449	49	-0.41
54	DJ46 57	0.0566	13	0.5990	255	0.0767	19	0.0216	12	477	50	477	16	476	11	431	23	0.15
55	DJ46 58	0.0566	10	0.5986	195	0.0767	16	0.0218	10	475	38	476	12	477	9	435	20	-0.3
56	DJ46 59	0.0564	10	0.5801	203	0.0746	16	0.0213	9	469	44	465	13	464	10	426	17	1.07
57	DJ46 60	0.0562	5	0.5749	105	0.0742	11	0.0210	7	461	18	461	7	461	7	420	14	-0.13
58	DJ46 61	0.0565	6	0.5918	133	0.0759	13	0.0219	8	473	24	472	8	472	8	437	16	0.33
59	DJ46 62	0.0558	29	0.5649	498	0.0734	33	0.0253	44	444	112	455	32	457	20	506	86	-2.99
60	DJ46 63	0.0562	8	0.5769	161	0.0744	14	0.0213	10	462	31	462	10	462	8	426	20	-0.16
61	DJ46 64	0.0561	11	0.5685	213	0.0735	16	0.0230	15	455	46	457	14	457	10	459	30	-0.53
DJ83 (n=51)																		
1	DJ83 02	0.0557	23	0.5412	400	0.0704	28	0.0173	19	442	92	439	26	439	17	346	38	0.7
2	DJ83 03	0.0554	19	0.5300	323	0.0694	24	0.0164	16	427	76	432	21	432	14	330	31	-1.3
3	DJ83 04	0.0562	5	0.5772	90	0.0744	15	0.0209	4	462	20	463	6	463	9	418	9	-0.2
4	DJ83 05	0.0554	10	0.5245	202	0.0687	19	0.0177	8	427	39	428	13	428	11	354	16	-0.4
5	DJ83 06	0.0558	6	0.5504	69	0.0715	14	0.0188	3	445	24	445	5	445	9	375	6	0.0
6	DJ83 07	0.0561	9	0.5642	201	0.0729	19	0.0185	9	456	35	454	13	454	11	370	17	0.6
7	DJ83 08	0.0554	8	0.5254	159	0.0687	17	0.0182	7	429	32	429	11	428	10	365	14	0.0
8	DJ83 09	0.0558	17	0.5664	320	0.0735	24	0.0293	21	446	68	456	21	457	14	584	42	-2.7
9	DJ83 10	0.0561	10	0.5652	200	0.0731	18	0.0200	9	456	41	455	13	455	11	400	18	0.2
10	DJ83 11	0.0558	7	0.5506	153	0.0715	17	0.0199	7	445	26	445	10	445	10	399	15	-0.2
11	DJ83 12	0.0550	6	0.5054	116	0.0666	15	0.0186	5	411	22	415	8	416	9	372	10	-1.3
12	DJ83 13	0.0560	9	0.5590	199	0.0724	19	0.0204	10	451	37	451	13	451	11	409	20	0.1
13	DJ83 14	0.0556	7	0.5371	143	0.0700	16	0.0192	7	437	23	437	9	436	10	385	14	0.1
14	DJ83 15	0.0559	6	0.5571	135	0.0723	16	0.0212	7	448	22	450	9	450	10	423	14	-0.5
15	DJ83 16	0.0554	14	0.5214	248	0.0683	20	0.0200	12	427	56	426	17	426	12	399	24	0.2
16	DJ83 17	0.0564	14	0.5911	290	0.0759	23	0.0283	19	470	55	472	19	472	14	564	38	-0.5
17	DJ83 18	0.0556	6	0.5364	139	0.0699	16	0.0198	7	436	27	436	9	436	10	395	14	-0.1
18	DJ83 19	0.0558	13	0.5473	246	0.0711	21	0.0220	14	443	51	443	16	443	12	439	28	-0.1
19	DJ83 20	0.0558	18	0.5537	331	0.0719	25	0.0278	20	444	75	447	22	448	15	554	39	-0.9
20	DJ83 21	0.0557	6	0.5433	120	0.0707	15	0.0209	7	442	23	441	8	440	9	417	14	0.3
21	DJ83 22	0.0556	10	0.5289	197	0.0690	18	0.0229	12	436	41	431	13	430	11	457	23	1.4
22	DJ83 23	0.0557	10	0.5378	206	0.0700	19	0.0229	12	439	42	437	14	436	11	458	23	0.5

Analysis No.		Ratios								Age (Ma)								Disc*
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	(%)
23	DJ83 24	0.0557	6	0.5416	125	0.0705	16	0.0194	7	441	24	439	8	439	9	389	13	0.5
24	DJ83 25	0.0563	14	0.5753	281	0.0740	22	0.0220	18	465	59	461	18	460	13	441	36	1.0
25	DJ83 26	0.0555	6	0.5326	138	0.0695	16	0.0197	6	433	25	434	9	433	10	393	12	-0.1
26	DJ83 27	0.0559	8	0.5567	178	0.0722	18	0.0201	8	448	35	449	12	449	11	402	16	-0.3
27	DJ83 28	0.0558	6	0.5460	121	0.0710	15	0.0249	8	442	23	442	8	442	9	497	16	0.0
28	DJ83 29	0.0561	15	0.5594	292	0.0723	23	0.0226	18	454	60	451	19	450	14	452	35	0.9
29	DJ83 30	0.0558	5	0.5492	118	0.0713	15	0.0197	5	444	20	444	8	444	9	394	9	-0.1
30	DJ83 31	0.0563	6	0.5789	142	0.0746	17	0.0210	7	463	25	464	9	464	10	419	15	-0.1
31	DJ83 32	0.0562	11	0.5743	220	0.0741	19	0.0217	11	460	46	461	14	461	12	434	23	-0.1
32	DJ83 33	0.0563	9	0.5738	197	0.0739	19	0.0219	12	463	37	460	13	460	11	438	24	0.6
33	DJ83 34	0.0559	22	0.5566	404	0.0721	30	0.0242	21	450	90	449	26	449	18	483	42	0.1
34	DJ83 35	0.0555	6	0.5283	125	0.0690	15	0.0200	6	432	23	431	8	430	9	399	11	0.4
35	DJ83 36	0.0558	6	0.5470	135	0.0711	16	0.0206	7	442	24	443	9	443	10	412	15	-0.2
36	DJ83 37	0.0558	6	0.5497	145	0.0714	16	0.0212	8	444	26	445	9	445	10	424	16	-0.1
37	DJ83 38	0.0557	13	0.5420	246	0.0705	20	0.0218	14	440	49	440	16	439	12	437	27	0.0
38	DJ83 39	0.0564	26	0.5863	477	0.0753	34	0.0331	37	469	97	469	31	468	20	658	72	0.2
39	DJ83 40	0.0558	22	0.5537	393	0.0719	29	0.0279	27	446	87	447	26	447	17	556	53	-0.5
40	DJ83 41	0.0566	10	0.5959	222	0.0763	20	0.0215	14	477	40	475	14	474	12	430	27	0.6
41	DJ83 42	0.1159	13	5.4728	648	0.3421	69	0.0941	19	1894	19	1896	10	1897	33	1818	35	-0.2
42	DJ83 43	0.0564	7	0.5825	161	0.0749	17	0.0233	9	468	28	466	10	465	10	465	18	0.5
43	DJ83 44	0.0549	5	0.4932	83	0.0651	13	0.0180	3	407	20	407	6	407	8	361	7	-0.1
44	DJ83 45	0.0563	6	0.5782	141	0.0744	17	0.0254	9	464	23	463	9	463	10	507	18	0.1
45	DJ83 46	0.0563	6	0.5785	143	0.0745	17	0.0255	10	465	21	463	9	463	10	508	20	0.3
46	DJ83 47	0.0565	12	0.5923	249	0.0760	21	0.0221	16	472	49	472	16	472	13	443	31	0.0
47	DJ83 48	0.0553	6	0.5196	133	0.0681	15	0.0219	8	423	24	425	9	425	9	437	15	-0.6
48	DJ83 49	0.0547	5	0.4800	64	0.0636	13	0.0185	3	398	21	398	4	398	8	370	6	0.1
49	DJ83 50	0.0557	10	0.5444	210	0.0708	19	0.0237	11	441	44	441	14	441	11	473	21	-0.1
50	DJ83 51	0.0559	10	0.5533	202	0.0718	19	0.0198	11	448	39	447	13	447	11	396	21	0.2
51	DJ83 52	0.0557	6	0.5383	126	0.0701	16	0.0221	8	439	21	437	8	437	9	441	15	0.4
DJ87 (n=57)																		
1	DJ87 02	0.0581	18	0.6671	383	0.0832	27	0.0400	39	535	66	519	23	515	16	793	77	3.75
2	DJ87 04	0.0561	4	0.5698	81	0.0736	13	0.0220	5	458	16	458	5	458	8	440	10	-0.1
3	DJ87 05	0.0563	8	0.5789	176	0.0746	16	0.0217	9	463	33	464	11	464	10	433	18	-0.08
4	DJ87 06	0.0571	4	0.6302	91	0.0800	14	0.0254	5	496	16	496	6	496	8	507	10	-0.01
5	DJ87 07	0.0566	5	0.5953	128	0.0763	14	0.0240	9	475	22	474	8	474	9	479	17	0.25
6	DJ87 08	0.0564	9	0.5787	188	0.0745	17	0.0232	12	467	36	464	12	463	10	464	24	0.79
7	DJ87 09	0.0565	5	0.5860	116	0.0753	14	0.0233	6	471	20	468	7	468	8	465	11	0.59
8	DJ87 10	0.0561	4	0.5658	86	0.0732	13	0.0228	5	456	17	455	6	455	8	456	10	0.07
9	DJ87 11	0.0559	4	0.5539	95	0.0719	13	0.0222	6	449	17	448	6	447	8	444	12	0.34
10	DJ87 12	0.0560	4	0.5595	98	0.0725	13	0.0215	6	450	17	451	6	451	8	430	11	-0.22
11	DJ87 13	0.0560	6	0.5561	129	0.0720	14	0.0236	9	453	23	449	8	448	8	470	19	1.04
12	DJ87 14	0.0565	6	0.5861	141	0.0753	15	0.0197	7	471	20	468	9	468	9	393	14	0.77
13	DJ87 15	0.0561	5	0.5663	123	0.0732	14	0.0230	8	456	22	456	8	456	8	460	15	-0.01

Analysis No.		Ratios								Age (Ma)								Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
14	DJ87 16	0.0561	6	0.5663	134	0.0732	14	0.0208	9	458	22	456	9	455	9	417	17	0.51
15	DJ87 17	0.0567	6	0.5980	147	0.0765	15	0.0239	9	480	24	476	9	475	9	478	17	1.13
16	DJ87 18	0.0561	5	0.5663	101	0.0732	13	0.0222	7	457	20	456	7	455	8	445	13	0.3
17	DJ87 19	0.0558	7	0.5431	154	0.0707	15	0.0200	8	443	30	440	10	440	9	400	15	0.66
18	DJ87 20	0.0571	7	0.6268	161	0.0797	16	0.0236	9	494	23	494	10	494	10	471	17	0.04
19	DJ87 21	0.0566	5	0.6003	124	0.0769	14	0.0234	8	477	20	477	8	478	9	468	16	-0.07
20	DJ87 22	0.0566	7	0.5948	163	0.0762	16	0.0228	10	476	28	474	10	474	9	456	19	0.54
21	DJ87 23	0.0570	6	0.6207	136	0.0790	15	0.0237	8	492	23	490	9	490	9	474	16	0.41
22	DJ87 24	0.0566	10	0.5931	218	0.0761	18	0.0203	11	475	42	473	14	473	11	405	23	0.62
23	DJ87 25	0.0567	4	0.6028	80	0.0771	13	0.0220	3	481	17	479	5	479	8	440	7	0.43
24	DJ87 26	0.0563	7	0.5780	160	0.0744	16	0.0206	10	465	28	463	10	463	9	412	19	0.49
25	DJ87 27	0.0566	11	0.5937	232	0.0761	19	0.0219	11	474	43	473	15	473	11	438	22	0.32
26	DJ87 28	0.0567	5	0.6019	114	0.0770	14	0.0212	6	479	19	478	7	478	8	424	12	0.28
27	DJ87 29	0.0557	6	0.5433	129	0.0708	14	0.0217	9	438	22	441	8	441	8	434	17	-0.61
28	DJ87 30	0.0556	5	0.5373	105	0.0701	13	0.0204	5	436	19	437	7	437	8	408	9	-0.28
29	DJ87 31	0.0561	5	0.5654	121	0.0731	14	0.0218	7	456	22	455	8	455	8	436	14	0.35
30	DJ87 32	0.0562	5	0.5752	105	0.0742	13	0.0234	6	461	18	461	7	461	8	468	11	-0.08
31	DJ87 33	0.0572	5	0.6351	117	0.0805	15	0.0228	6	499	18	499	7	499	9	455	12	-0.01
32	DJ87 34	0.0563	5	0.5812	108	0.0748	14	0.0197	7	465	20	465	7	465	8	394	13	0.05
33	DJ87 35	0.0564	5	0.5864	110	0.0754	14	0.0230	7	469	20	469	7	468	8	459	13	0.1
34	DJ87 36	0.0569	8	0.6163	176	0.0786	17	0.0236	10	488	29	488	11	488	10	471	19	0.04
35	DJ87 37	0.0566	16	0.6009	320	0.0770	24	0.0233	21	476	67	478	20	478	14	466	42	-0.59
36	DJ87 38	0.0560	6	0.5594	127	0.0725	14	0.0228	9	452	22	451	8	451	8	455	17	0.23
37	DJ87 39	0.0566	11	0.5939	227	0.0761	19	0.0224	14	476	45	473	14	473	11	447	27	0.59
38	DJ87 40	0.0571	6	0.6220	143	0.0791	15	0.0248	10	494	23	491	9	491	9	496	19	0.71
39	DJ87 41	0.0567	6	0.6045	152	0.0774	16	0.0260	9	479	23	480	10	480	9	520	19	-0.26
40	DJ87 42	0.0561	6	0.5658	144	0.0731	15	0.0239	10	457	25	455	9	455	9	477	20	0.39
41	DJ87 43	0.0573	7	0.6356	175	0.0805	17	0.0237	10	502	26	500	11	499	10	472	19	0.6
42	DJ87 44	0.0563	4	0.5777	96	0.0745	13	0.0212	6	463	18	463	6	463	8	423	11	0.12
43	DJ87 45	0.0572	4	0.6376	91	0.0808	14	0.0269	6	500	17	501	6	501	8	537	12	-0.19
44	DJ87 46	0.0568	5	0.6138	121	0.0784	15	0.0253	8	484	19	486	8	486	9	505	17	-0.56
45	DJ87 47	0.0568	7	0.6085	164	0.0778	16	0.0242	11	482	27	483	10	483	10	484	21	-0.2
46	DJ87 48	0.0570	13	0.6240	280	0.0794	22	0.0328	16	490	53	492	18	493	13	652	32	-0.51
47	DJ87 49	0.0565	6	0.5884	132	0.0756	15	0.0208	7	471	22	470	8	470	9	416	14	0.38
48	DJ87 50	0.0573	9	0.6447	201	0.0816	18	0.0258	12	503	32	505	12	506	11	514	23	-0.63
49	DJ87 51	0.0563	5	0.5782	115	0.0745	14	0.0230	7	463	20	463	7	463	8	460	13	0.04
50	DJ87 52	0.0565	7	0.5904	152	0.0758	15	0.0227	9	471	26	471	10	471	9	454	18	-0.16
51	DJ87 53	0.0570	5	0.6206	117	0.0790	14	0.0235	7	490	19	490	7	490	9	470	14	-0.05
52	DJ87 54	0.0570	5	0.6256	135	0.0795	15	0.0258	8	493	20	493	8	493	9	514	17	-0.06
53	DJ87 55	0.0571	5	0.6271	108	0.0796	14	0.0253	7	496	18	494	7	494	9	504	13	0.49
54	DJ87 56	0.0580	10	0.6737	243	0.0843	20	0.0242	17	529	37	523	15	522	12	483	33	1.47
55	DJ87 57	0.0568	4	0.6081	89	0.0777	13	0.0227	5	482	17	482	6	482	8	453	10	-0.03
56	DJ87 58	0.0569	8	0.6189	189	0.0789	17	0.0257	11	487	30	489	12	490	10	512	21	-0.58
57	DJ87 59	0.0564	4	0.5872	90	0.0755	13	0.0226	5	469	17	469	6	469	8	452	9	0.06

		Ratios								Age (Ma)								
Analysis No.		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	Disc* (%)
DJ89 (n=60)																		
1	DJ89 01	0.0565	5	0.5909	109	0.0758	12	0.0206	6	473	19	471	7	471	7	412	12	0.38
2	DJ89 02	0.0568	5	0.6050	115	0.0773	12	0.0246	8	482	20	480	7	480	7	491	15	0.37
3	DJ89 03	0.0563	5	0.5812	116	0.0748	12	0.0242	6	465	19	465	7	465	7	483	12	-0.17
4	DJ89 04	0.0574	5	0.6463	130	0.0817	13	0.0235	6	505	21	506	8	506	8	469	12	-0.3
5	DJ89 05	0.0565	8	0.5938	171	0.0762	15	0.0219	11	473	28	473	11	473	9	437	22	-0.01
6	DJ89 06	0.0567	7	0.5993	158	0.0767	14	0.0239	8	479	27	477	10	476	8	477	17	0.6
7	DJ89 07	0.0569	7	0.6138	155	0.0782	14	0.0241	9	487	26	486	10	485	8	481	17	0.34
8	DJ89 08	0.0571	8	0.6300	172	0.0799	15	0.0231	7	497	30	496	11	496	9	461	14	0.22
9	DJ89 09	0.0556	4	0.5359	85	0.0699	10	0.0199	5	435	14	436	6	436	6	398	10	-0.14
10	DJ89 11	0.0560	5	0.5625	107	0.0728	11	0.0216	5	454	17	453	7	453	7	432	9	0.23
11	DJ89 12	0.0575	7	0.6535	163	0.0825	15	0.0235	8	510	25	511	10	511	9	469	15	-0.25
12	DJ89 13	0.0562	4	0.5748	80	0.0741	11	0.0211	4	461	14	461	5	461	6	421	9	0.09
13	DJ89 14	0.0571	8	0.6288	176	0.0798	15	0.0261	12	497	30	495	11	495	9	521	24	0.41
14	DJ89 15	0.0560	4	0.5616	86	0.0727	11	0.0209	4	454	15	453	6	452	6	418	8	0.39
15	DJ89 16	0.0570	6	0.6153	145	0.0783	13	0.0243	8	490	26	487	9	486	8	484	16	0.7
16	DJ89 17	0.0564	5	0.5868	124	0.0755	12	0.0214	7	468	21	469	8	469	7	428	14	-0.28
17	DJ89 18	0.0567	4	0.6029	95	0.0771	11	0.0222	5	479	16	479	6	479	7	443	10	0.01
18	DJ89 19	0.0563	5	0.5777	104	0.0744	11	0.0232	6	464	19	463	7	463	7	463	11	0.33
19	DJ89 20	0.0557	5	0.5386	107	0.0702	11	0.0207	7	439	20	438	7	437	7	415	14	0.48
20	DJ89 21	0.0561	4	0.5693	86	0.0736	11	0.0192	4	457	14	458	6	458	6	384	9	-0.12
21	DJ89 22	0.0565	5	0.5955	108	0.0764	12	0.0216	7	473	17	474	7	474	7	432	13	-0.3
22	DJ89 23	0.0570	10	0.6447	220	0.0821	17	0.0226	12	490	39	505	14	508	10	451	23	-4.05
23	DJ89 24	0.0557	10	0.5411	187	0.0705	15	0.0235	11	440	39	439	12	439	9	470	21	0.24
24	DJ89 26	0.0570	5	0.6174	126	0.0786	13	0.0232	6	490	22	488	8	488	8	463	12	0.36
25	DJ89 27	0.0560	9	0.5692	182	0.0737	15	0.0222	9	453	37	458	12	458	9	444	18	-1.3
26	DJ89 28	0.0560	4	0.5650	100	0.0731	11	0.0228	7	454	17	455	7	455	7	455	13	-0.34
27	DJ89 29	0.0565	4	0.5917	100	0.0759	11	0.0229	5	473	17	472	6	472	7	458	9	0.25
28	DJ89 30	0.0562	5	0.5747	115	0.0741	12	0.0223	5	461	19	461	7	461	7	446	11	-0.1
29	DJ89 31	0.0566	6	0.5963	138	0.0764	13	0.0238	9	476	20	475	9	474	8	475	18	0.3
30	DJ89 32	0.0560	5	0.5618	103	0.0728	11	0.0216	5	451	17	453	7	453	7	432	10	-0.41
31	DJ89 33	0.0568	5	0.6062	122	0.0775	12	0.0233	7	482	21	481	8	481	7	465	13	0.17
32	DJ89 34	0.0574	12	0.6471	261	0.0818	20	0.0275	13	506	44	507	16	507	12	549	26	-0.13
33	DJ89 35	0.0565	4	0.5892	99	0.0757	11	0.0224	7	471	17	470	6	470	7	449	13	0.15
34	DJ89 36	0.0558	3	0.5496	66	0.0714	10	0.0223	4	445	13	445	4	445	6	446	8	0.13
35	DJ89 37	0.0558	4	0.5454	76	0.0709	10	0.0219	5	443	14	442	5	442	6	438	10	0.25
36	DJ89 38	0.0564	5	0.5802	121	0.0747	12	0.0245	8	466	21	465	8	464	7	489	15	0.43
37	DJ89 39	0.0570	10	0.6257	218	0.0796	17	0.0230	11	493	39	493	14	493	10	460	21	-0.18
38	DJ89 40	0.0564	5	0.5875	114	0.0755	12	0.0231	5	470	17	469	7	469	7	461	10	0.11
39	DJ89 41	0.0565	4	0.5903	96	0.0758	11	0.0232	5	472	16	471	6	471	7	463	9	0.16
40	DJ89 42	0.0570	4	0.6189	87	0.0788	11	0.0237	4	490	15	489	5	489	7	474	8	0.22
41	DJ89 43	0.0573	6	0.6420	150	0.0813	14	0.0241	7	503	24	504	9	504	8	481	13	-0.21
42	DJ89 44	0.0568	4	0.6061	84	0.0774	11	0.0260	6	484	12	481	5	480	7	519	12	0.69

Analysis No.		Ratios								Age (Ma)										Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
43	DJ89 45	0.0569	16	0.6134	311	0.0782	22	0.0293	19	487	60	486	20	485	13	584	37	0.41
44	DJ89 46	0.0563	4	0.5825	99	0.0751	11	0.0243	7	463	16	466	6	467	7	484	14	-0.82
45	DJ89 47	0.0565	4	0.5926	86	0.0760	11	0.0235	5	473	14	473	5	472	7	469	10	0.2
46	DJ89 48	0.0565	5	0.5894	110	0.0757	12	0.0217	5	470	18	470	7	470	7	435	10	-0.1
47	DJ89 49	0.0565	4	0.5926	87	0.0760	11	0.0229	6	473	15	473	6	472	7	458	11	0.2
48	DJ89 50	0.0569	5	0.6140	114	0.0782	12	0.0234	6	488	17	486	7	486	7	467	12	0.41
49	DJ89 51	0.0566	4	0.5957	98	0.0763	11	0.0224	6	476	14	474	6	474	7	448	12	0.39
50	DJ89 52	0.0566	3	0.5986	69	0.0767	11	0.0235	4	477	13	476	4	476	6	469	8	0.21
51	DJ89 53	0.0568	3	0.6102	65	0.0778	11	0.0253	4	485	12	484	4	483	6	504	7	0.33
52	DJ89 54	0.0570	18	0.6373	351	0.0811	25	0.0277	20	490	71	501	22	503	15	552	39	-2.85
53	DJ89 55	0.0570	5	0.6223	119	0.0791	12	0.0225	6	492	18	491	7	491	7	450	11	0.26
54	DJ89 56	0.0570	5	0.6199	112	0.0789	12	0.0252	8	491	18	490	7	489	7	503	15	0.25
55	DJ89 57	0.0557	6	0.5538	129	0.0721	12	0.0229	7	441	24	447	8	448	7	457	14	-1.74
56	DJ89 58	0.0555	3	0.5328	66	0.0696	10	0.0202	3	434	13	434	4	434	6	404	7	-0.02
57	DJ89 59	0.0566	4	0.5975	79	0.0765	11	0.0237	4	477	14	476	5	475	6	473	8	0.29
58	DJ89 60	0.0565	8	0.5850	165	0.0751	14	0.0209	10	471	32	468	11	467	8	418	21	0.75
59	DJ89 61	0.0558	5	0.5543	102	0.0720	11	0.0198	6	446	18	448	7	448	7	396	12	-0.61
60	DJ89 62	0.0569	9	0.6165	183	0.0785	15	0.0248	9	489	32	488	12	487	9	495	18	0.41
DJ98 (n=59)																		
1	DJ98 01	0.0550	4	0.4951	84	0.0654	11	0.0185	5	410	17	408	6	408	7	371	10	0.55
2	DJ98 02	0.0549	8	0.4925	147	0.0652	14	0.0177	8	406	30	407	10	407	8	354	15	-0.16
3	DJ98 03	0.0548	6	0.4827	113	0.0640	12	0.0179	5	402	23	400	8	400	7	359	10	0.75
4	DJ98 04	0.0551	7	0.5051	134	0.0665	13	0.0191	7	415	28	415	9	415	8	382	14	-0.03
5	DJ98 05	0.0548	5	0.4819	92	0.0638	12	0.0188	5	402	18	399	6	399	7	377	9	0.93
6	DJ98 06	0.0552	13	0.5101	214	0.0671	16	0.0206	10	419	52	419	14	419	10	412	20	0.06
7	DJ98 07	0.0548	6	0.4857	119	0.0643	13	0.0183	6	404	26	402	8	402	8	367	12	0.51
8	DJ98 08	0.0547	6	0.4857	113	0.0644	12	0.0176	5	400	23	402	8	403	7	352	11	-0.74
9	DJ98 09	0.0548	7	0.4884	136	0.0647	13	0.0172	7	403	29	404	9	404	8	344	14	-0.3
10	DJ98 10	0.0551	7	0.5082	136	0.0669	13	0.0175	6	416	29	417	9	417	8	351	12	-0.27
11	DJ98 11	0.0550	12	0.4968	203	0.0655	17	0.0215	10	413	52	410	14	409	10	429	20	0.91
12	DJ98 12	0.0552	6	0.5163	125	0.0679	13	0.0200	5	419	23	423	8	424	8	400	10	-1.16
13	DJ98 13	0.0547	8	0.4814	143	0.0638	14	0.0179	7	401	31	399	10	399	8	359	14	0.65
14	DJ98 14	0.0551	4	0.5086	63	0.0669	11	0.0192	3	418	17	418	4	418	7	385	6	0.12
15	DJ98 15	0.0556	4	0.5342	60	0.0697	11	0.0179	3	435	18	435	4	435	7	359	5	0.18
16	DJ98 16	0.0549	26	0.5013	407	0.0662	28	0.0161	20	410	108	413	27	413	17	323	40	-0.83
17	DJ98 17	0.0552	8	0.5114	157	0.0672	15	0.0194	7	421	33	419	11	419	9	388	15	0.51
18	DJ98 18	0.0553	5	0.5176	108	0.0679	13	0.0180	6	423	21	424	7	424	8	361	11	-0.12
19	DJ98 19	0.0548	5	0.4909	95	0.0650	12	0.0178	5	404	18	406	6	406	7	357	9	-0.31
20	DJ98 20	0.0549	14	0.4980	229	0.0658	18	0.0174	9	409	60	410	16	411	11	349	19	-0.52
21	DJ98 21	0.0552	5	0.5146	111	0.0676	13	0.0198	5	421	21	422	7	422	8	395	9	-0.23
22	DJ98 22	0.0549	5	0.4950	103	0.0654	12	0.0171	5	409	20	408	7	408	7	342	10	0.08
23	DJ98 23	0.0552	5	0.5083	112	0.0668	13	0.0190	6	419	21	417	8	417	8	380	11	0.52
24	DJ98 24	0.0547	6	0.4782	122	0.0635	13	0.0168	5	398	24	397	8	397	8	336	10	0.46

Analysis No.		Ratios								Age (Ma)								Disc*
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	(%)
25	DJ98 25	0.0556	13	0.5367	232	0.0701	18	0.0179	9	435	53	436	15	437	11	359	18	-0.29
26	DJ98 26	0.0552	4	0.5106	87	0.0672	12	0.0189	4	419	18	419	6	419	7	379	8	-0.04
27	DJ98 27	0.0549	6	0.4925	118	0.0651	13	0.0177	6	408	24	407	8	406	8	355	13	0.34
28	DJ98 28	0.0552	4	0.5139	91	0.0675	12	0.0171	4	422	17	421	6	421	7	344	8	0.26
29	DJ98 29	0.0553	4	0.5217	72	0.0684	12	0.0182	3	426	16	426	5	426	7	365	6	-0.09
30	DJ98 30	0.0552	4	0.5141	78	0.0675	12	0.0192	3	421	17	421	5	421	7	384	6	-0.02
31	DJ98 31	0.0555	6	0.5321	120	0.0695	13	0.0194	5	433	23	433	8	433	8	388	9	0
32	DJ98 32	0.0554	7	0.5231	136	0.0685	14	0.0188	6	429	26	427	9	427	8	377	12	0.46
33	DJ98 33	0.0566	11	0.5937	233	0.0761	19	0.0202	10	474	43	473	15	473	11	405	20	0.22
34	DJ98 34	0.0552	6	0.5136	129	0.0675	13	0.0184	5	420	24	421	9	421	8	369	10	-0.15
35	DJ98 35	0.0546	11	0.4753	182	0.0632	15	0.0183	9	394	42	395	13	395	9	367	18	-0.19
36	DJ98 36	0.0549	10	0.4886	172	0.0646	15	0.0191	10	406	40	404	12	404	9	383	19	0.65
37	DJ98 37	0.0550	4	0.5035	69	0.0664	11	0.0187	4	413	17	414	5	414	7	375	8	-0.18
38	DJ98 38	0.0552	5	0.5154	104	0.0677	12	0.0195	4	422	19	422	7	422	7	391	8	-0.15
39	DJ98 39	0.0551	9	0.5097	174	0.0671	15	0.0205	9	417	40	418	12	418	9	410	18	-0.22
40	DJ98 40	0.0551	11	0.5100	193	0.0671	16	0.0200	10	417	43	418	13	419	10	399	19	-0.27
41	DJ98 41	0.0547	4	0.4833	85	0.0641	11	0.0166	4	398	17	400	6	401	7	332	8	-0.6
42	DJ98 42	0.0554	5	0.5235	97	0.0686	12	0.0192	5	427	16	428	6	428	7	385	9	-0.21
43	DJ98 43	0.0551	6	0.5073	121	0.0668	13	0.0180	5	415	23	417	8	417	8	360	11	-0.46
44	DJ98 44	0.0551	5	0.5054	95	0.0665	12	0.0184	4	416	18	415	6	415	7	368	9	0.15
45	DJ98 45	0.0553	5	0.5181	95	0.0680	12	0.0195	5	424	20	424	6	424	7	390	9	-0.08
46	DJ98 46	0.0552	4	0.5078	87	0.0667	12	0.0184	4	422	18	417	6	416	7	369	7	1.44
47	DJ98 47	0.0548	14	0.4940	230	0.0653	18	0.0202	13	406	55	408	16	408	11	404	27	-0.57
48	DJ98 48	0.0548	7	0.4814	128	0.0637	13	0.0170	6	403	27	399	9	398	8	341	12	1.15
49	DJ98 50	0.0555	4	0.5323	79	0.0695	12	0.0181	4	434	17	433	5	433	7	362	7	0.09
50	DJ98 51	0.0548	5	0.4878	95	0.0645	12	0.0174	4	406	20	403	6	403	7	349	8	0.69
51	DJ98 52	0.0550	4	0.4966	87	0.0655	12	0.0175	4	410	17	409	6	409	7	350	8	0.24
52	DJ98 53	0.0552	4	0.5103	90	0.0671	12	0.0181	4	420	18	419	6	418	7	362	8	0.26
53	DJ98 54	0.0549	7	0.4981	137	0.0658	14	0.0205	8	408	29	410	9	411	8	409	15	-0.67
54	DJ98 55	0.0560	7	0.5558	151	0.0720	15	0.0197	7	452	25	449	10	448	9	394	14	0.76
55	DJ98 56	0.0552	5	0.5145	54	0.0675	11	0.0184	3	422	19	421	4	421	7	369	5	0.03
56	DJ98 57	0.0551	9	0.5049	173	0.0664	15	0.0193	7	418	39	415	12	414	9	386	15	0.84
57	DJ98 58	0.0556	4	0.5381	77	0.0702	12	0.0186	3	436	18	437	5	437	7	373	6	-0.22
58	DJ98 59	0.0556	6	0.5310	131	0.0693	14	0.0206	7	434	23	432	9	432	8	413	14	0.56
59	DJ98 60	0.0553	5	0.5218	95	0.0684	12	0.0175	4	425	17	426	6	427	7	350	8	-0.45
DJ108 (n=58)																		
1	DJ108 01	0.0562	5	0.5738	111	0.0740	16	0.0209	7	459	21	460	7	460	10	419	13	-0.36
2	DJ108 02	0.0558	9	0.5459	193	0.0709	19	0.0206	9	443	38	442	13	442	11	413	18	0.15
3	DJ108 03	0.0562	6	0.5715	82	0.0736	15	0.0211	5	460	22	459	5	458	9	422	9	0.25
4	DJ108 04	0.0565	6	0.5891	129	0.0755	17	0.0232	7	471	22	470	8	469	10	464	14	0.27
5	DJ108 05	0.0564	6	0.5886	85	0.0755	16	0.0218	4	470	23	470	5	469	9	435	7	-0.07
6	DJ108 06	0.0560	6	0.5610	82	0.0726	15	0.0227	5	452	23	452	5	452	9	453	10	-0.15
7	DJ108 07	0.0566	6	0.6004	79	0.0768	16	0.0206	4	477	22	477	5	477	9	413	8	-0.09

Analysis No.		Ratios								Age (Ma)								Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
8	DJ108 08	0.0565	6	0.5902	122	0.0756	17	0.0219	6	472	20	471	8	470	10	437	11	0.4
9	DJ108 09	0.0559	5	0.5511	94	0.0714	15	0.0203	5	446	22	446	6	445	9	406	9	0.2
10	DJ108 10	0.0561	6	0.5727	89	0.0739	16	0.0219	5	456	22	460	6	460	9	438	9	-1.04
11	DJ108 11	0.0559	6	0.5559	78	0.0720	15	0.0218	4	450	22	449	5	448	9	435	8	0.21
12	DJ108 12	0.0558	6	0.5434	130	0.0706	16	0.0216	8	442	25	441	9	440	10	432	15	0.5
13	DJ108 13	0.0560	5	0.5571	109	0.0721	16	0.0204	5	451	20	450	7	449	9	409	10	0.31
14	DJ108 14	0.0561	6	0.5664	69	0.0731	15	0.0214	4	456	26	456	4	455	9	427	8	0.17
15	DJ108 15	0.0558	5	0.5516	110	0.0716	16	0.0206	6	446	23	446	7	445	9	413	12	-0.11
16	DJ108 16	0.0563	5	0.5762	108	0.0742	16	0.0237	7	463	21	462	7	461	10	473	13	0.18
17	DJ108 17	0.0561	7	0.5665	156	0.0732	18	0.0213	9	454	25	456	10	455	11	426	18	-0.37
18	DJ108 18	0.0560	5	0.5592	112	0.0724	16	0.0227	6	452	22	451	7	450	10	453	13	0.16
19	DJ108 19	0.0560	6	0.5611	118	0.0725	16	0.0200	5	454	24	452	8	451	10	401	10	0.47
20	DJ108 20	0.0562	5	0.5706	97	0.0736	16	0.0222	6	458	21	458	6	458	9	443	12	-0.02
21	DJ108 21	0.0560	5	0.5586	116	0.0723	16	0.0204	7	452	20	451	8	450	10	408	14	0.26
22	DJ108 22	0.0562	6	0.5727	83	0.0738	15	0.0219	5	460	23	460	5	459	9	437	9	0.15
23	DJ108 23	0.0568	6	0.6072	122	0.0775	17	0.0250	8	483	20	482	8	481	10	499	17	0.42
24	DJ108 24	0.0569	6	0.6140	86	0.0782	16	0.0233	4	486	23	486	5	485	10	466	8	0.1
25	DJ108 25	0.0562	5	0.5712	96	0.0736	16	0.0222	6	460	21	459	6	458	9	445	12	0.4
26	DJ108 26	0.0560	5	0.5654	114	0.0731	16	0.0201	5	454	19	455	7	455	10	402	10	-0.3
27	DJ108 28	0.0571	6	0.6336	157	0.0804	19	0.0235	7	496	22	498	10	498	11	469	14	-0.65
28	DJ108 29	0.0562	6	0.5742	81	0.0741	15	0.0131	2	459	22	461	5	461	9	263	5	-0.33
29	DJ108 31	0.0580	6	0.6825	96	0.0853	18	0.0243	5	529	22	528	6	528	11	484	10	0.17
30	DJ108 32	0.0562	6	0.5764	119	0.0743	17	0.0226	6	461	22	462	8	462	10	452	12	-0.18
31	DJ108 33	0.0558	6	0.5526	120	0.0717	16	0.0215	7	446	23	447	8	447	10	429	13	-0.3
32	DJ108 34	0.0560	6	0.5653	78	0.0731	15	0.0209	5	454	23	455	5	455	9	418	9	-0.38
33	DJ108 35	0.0564	5	0.5848	115	0.0752	17	0.0214	7	467	21	468	7	467	10	428	14	-0.15
34	DJ108 36	0.0564	6	0.5853	147	0.0752	18	0.0210	6	470	25	468	9	467	11	420	13	0.5
35	DJ108 37	0.0566	5	0.5978	105	0.0766	17	0.0210	5	474	21	476	7	476	10	420	11	-0.38
36	DJ108 38	0.0563	6	0.5814	119	0.0748	17	0.0199	8	466	23	465	8	465	10	399	15	0.11
37	DJ108 39	0.0565	5	0.5909	103	0.0758	16	0.0217	6	472	21	471	7	471	10	433	12	0.16
38	DJ108 40	0.0562	6	0.5713	87	0.0737	16	0.0207	5	458	23	459	6	459	9	415	10	-0.14
39	DJ108 41	0.0563	6	0.5807	80	0.0748	16	0.0210	5	464	25	465	5	465	9	419	9	-0.29
40	DJ108 42	0.0560	6	0.5638	85	0.0729	15	0.0211	5	454	24	454	6	454	9	421	9	-0.12
41	DJ108 43	0.0568	8	0.6129	192	0.0782	20	0.0247	8	485	30	485	12	485	12	494	16	-0.22
42	DJ108 44	0.0560	6	0.5577	63	0.0723	15	0.0216	4	451	25	450	4	450	9	432	7	0.2
43	DJ108 45	0.0562	5	0.5732	104	0.0739	16	0.0200	5	461	22	460	7	460	10	401	11	0.16
44	DJ108 46	0.0561	6	0.5666	149	0.0732	17	0.0202	7	457	26	456	10	455	10	404	14	0.35
45	DJ108 47	0.0564	6	0.5838	85	0.0751	16	0.0207	4	466	22	467	5	467	9	415	8	-0.19
46	DJ108 48	0.0569	6	0.6113	126	0.0780	17	0.0230	6	486	23	484	8	484	10	460	12	0.35
47	DJ108 49	0.0568	9	0.6138	213	0.0784	21	0.0241	13	482	32	486	13	487	12	482	25	-1.07
48	DJ108 50	0.0565	6	0.5910	93	0.0759	16	0.0206	4	471	22	472	6	471	10	412	9	-0.06
49	DJ108 51	0.0559	5	0.5562	106	0.0722	16	0.0207	6	448	20	449	7	449	10	414	12	-0.28
50	DJ108 52	0.0562	9	0.5657	203	0.0730	20	0.0208	11	460	34	455	13	454	12	416	22	1.36
51	DJ108 53	0.0565	6	0.5899	98	0.0758	16	0.0222	6	471	22	471	6	471	10	443	12	0.03

Analysis No.		Ratios								Age (Ma)								Disc*
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	(%)
52	DJ108 54	0.0568	10	0.6072	232	0.0776	22	0.0254	14	482	39	482	15	482	13	506	27	0.11
53	DJ108 55	0.0564	6	0.5851	98	0.0752	16	0.0210	6	469	21	468	6	467	10	421	11	0.32
54	DJ108 56	0.0569	7	0.6147	174	0.0784	19	0.0201	9	487	28	486	11	486	11	402	19	0.2
55	DJ108 57	0.0558	5	0.5450	103	0.0709	16	0.0214	6	443	21	442	7	442	9	428	11	0.31
56	DJ108 58	0.0570	6	0.6218	129	0.0791	18	0.0234	7	492	22	491	8	491	11	467	13	0.24
57	DJ108 59	0.0569	6	0.6128	80	0.0782	16	0.0224	4	486	23	485	5	485	10	447	8	0.11
58	DJ108 60	0.0570	6	0.6241	131	0.0794	18	0.0233	6	492	22	492	8	493	11	465	12	-0.03
DJ188 (n=39)																		
1	DJ188 02	0.0558	6	0.5458	73	0.0709	14	0.0214	4	443	23	442	5	442	9	428	7	0.2
2	DJ188 04	0.0553	8	0.5110	155	0.0670	16	0.0222	7	423	29	419	10	418	10	443	14	1.0
3	DJ188 06	0.0559	5	0.5562	99	0.0721	15	0.0250	6	449	20	449	6	449	9	499	12	-0.1
4	DJ188 09	0.0556	9	0.5313	183	0.0693	18	0.0202	7	435	37	433	12	432	11	404	14	0.6
5	DJ188 11	0.0542	10	0.4530	172	0.0606	16	0.0184	6	381	47	379	12	379	10	369	12	0.4
6	DJ188 12	0.0548	5	0.4950	107	0.0655	14	0.0210	5	403	21	408	7	409	9	420	10	-1.6
7	DJ188 15	0.0562	13	0.5495	245	0.0710	21	0.0244	14	458	50	445	16	442	12	488	28	3.7
8	DJ188 16	0.0554	5	0.5233	100	0.0686	15	0.0200	4	426	20	427	7	427	9	400	8	-0.3
9	DJ188 17	0.0552	18	0.4874	293	0.0640	23	0.0161	11	420	76	403	20	400	14	324	22	5.0
10	DJ188 18	0.0551	7	0.5198	141	0.0684	16	0.0202	6	416	26	425	9	427	10	405	12	-2.6
11	DJ188 19	0.0550	6	0.4998	63	0.0659	13	0.0189	3	411	23	412	4	412	8	379	6	-0.2
12	DJ188 20	0.0552	10	0.5093	189	0.0669	18	0.0194	8	420	41	418	13	418	11	389	16	0.6
13	DJ188 26	0.0550	5	0.4971	98	0.0656	14	0.0196	5	411	21	410	7	410	9	392	9	0.5
14	DJ188 29	0.0560	7	0.5379	159	0.0697	17	0.0240	8	451	30	437	10	434	10	480	16	3.8
15	DJ188 31	0.0557	11	0.5310	215	0.0691	19	0.0226	11	441	46	432	14	431	11	452	21	2.4
16	DJ188 32	0.0554	5	0.5090	71	0.0667	14	0.0196	3	428	23	418	5	416	8	393	7	2.8
17	DJ188 33	0.0549	9	0.4995	171	0.0660	17	0.0195	6	408	37	411	12	412	10	390	12	-1.1
18	DJ188 34	0.0556	11	0.5100	203	0.0666	18	0.0210	9	434	42	418	14	416	11	419	18	4.5
19	DJ188 35	0.0545	8	0.4742	154	0.0631	16	0.0193	7	393	33	394	11	394	9	386	13	-0.2
20	DJ188 37	0.0549	7	0.5124	148	0.0678	16	0.0199	7	407	29	420	10	423	10	398	13	-4.1
21	DJ188 39	0.0546	10	0.4773	187	0.0635	17	0.0197	9	395	44	396	13	397	10	395	17	-0.2
22	DJ188 40	0.0543	11	0.4613	191	0.0617	17	0.0204	8	383	44	385	13	386	10	408	15	-0.8
23	DJ188 41	0.0548	10	0.4779	175	0.0634	17	0.0178	7	402	42	397	12	396	10	357	14	1.6
24	DJ188 43	0.0544	7	0.4766	144	0.0636	15	0.0190	6	387	31	396	10	398	9	381	12	-2.7
25	DJ188 45	0.0551	13	0.4839	230	0.0637	19	0.0201	10	417	56	401	16	398	12	402	21	4.7
26	DJ188 47	0.0550	17	0.4971	292	0.0657	23	0.0186	12	411	72	410	20	410	14	373	24	0.4
27	DJ188 48	0.0550	11	0.4998	201	0.0660	18	0.0232	12	410	45	412	14	412	11	463	24	-0.4
28	DJ188 51	0.0558	8	0.5428	170	0.0705	17	0.0233	10	446	30	440	11	439	10	465	20	1.5
29	DJ188 54	0.0552	12	0.5013	212	0.0659	19	0.0190	7	420	47	413	14	411	11	380	13	2.3
30	DJ188 55	0.0549	9	0.4718	167	0.0624	16	0.0198	7	406	35	392	12	390	10	397	15	4.1
31	DJ188 58	0.0552	6	0.5048	126	0.0664	15	0.0225	6	419	25	415	8	414	9	450	12	1.1
32	DJ188 59	0.0556	14	0.5216	253	0.0681	21	0.0206	8	435	59	426	17	425	13	413	15	2.5
33	DJ188 60	0.0565	17	0.6117	346	0.0785	27	0.0245	16	473	62	485	22	487	16	490	32	-3.1
34	DJ188 61	0.0553	17	0.5388	314	0.0707	24	0.0233	14	424	67	438	21	440	15	465	28	-4.1
35	DJ188 62	0.0550	12	0.4868	205	0.0642	18	0.0177	9	413	45	403	14	401	11	354	18	2.9

Analysis No.		Ratios								Age (Ma)								Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
36	DJ188 63	0.0546	8	0.4739	155	0.0630	16	0.0199	8	396	37	394	11	394	10	398	15	0.6
37	DJ188 65	0.0550	8	0.4944	162	0.0652	16	0.0201	8	412	33	408	11	407	10	402	15	1.2
38	DJ188 66	0.0552	11	0.5074	208	0.0667	19	0.0193	8	420	43	417	14	416	11	386	16	1.1
39	DJ188 67	0.0552	5	0.5059	94	0.0665	14	0.0189	4	419	20	416	6	415	9	377	9	0.9
DJ192 (n=66)																		
1	DJ192 01	0.0564	5	0.5820	108	0.0749	16	0.0217	6	466	19	466	7	465	10	433	12	0.12
2	DJ192 02	0.0569	6	0.6166	141	0.0785	18	0.0239	7	488	23	488	9	487	11	477	14	0.08
3	DJ192 03	0.0565	8	0.5888	189	0.0755	19	0.0219	12	474	33	470	12	469	11	439	24	0.93
4	DJ192 04	0.0568	13	0.6199	286	0.0791	24	0.0275	22	485	51	490	18	491	14	549	44	-1.26
5	DJ192 05	0.0568	6	0.6067	153	0.0775	18	0.0234	9	483	25	481	10	481	11	467	17	0.29
6	DJ192 07	0.0559	8	0.5536	170	0.0718	18	0.0234	9	449	30	447	11	447	11	468	17	0.4
7	DJ192 08	0.0557	15	0.5557	293	0.0723	23	0.0253	18	441	62	449	19	450	14	505	36	-2.1
8	DJ192 09	0.0565	7	0.5884	157	0.0756	18	0.0236	9	471	27	470	10	470	11	471	18	0.18
9	DJ192 10	0.0562	5	0.5716	112	0.0738	16	0.0232	6	459	21	459	7	459	10	463	13	-0.1
10	DJ192 11	0.0557	5	0.5496	115	0.0716	16	0.0237	8	439	21	445	8	446	9	474	16	-1.66
11	DJ192 12	0.0562	6	0.5632	143	0.0727	17	0.0222	9	461	23	454	9	452	10	444	17	1.89
12	DJ192 13	0.0561	5	0.5667	110	0.0732	16	0.0228	7	457	21	456	7	456	9	456	14	0.23
13	DJ192 14	0.0566	6	0.5847	138	0.0749	17	0.0215	9	476	26	467	9	466	10	430	18	2.22
14	DJ192 15	0.0566	18	0.5702	343	0.0731	26	0.0267	22	474	66	458	22	455	16	532	44	4.17
15	DJ192 16	0.0561	5	0.5602	107	0.0725	16	0.0205	6	455	21	452	7	451	9	409	11	0.84
16	DJ192 17	0.0567	10	0.5970	221	0.0764	20	0.0235	12	480	38	475	14	474	12	469	24	1.19
17	DJ192 18	0.0556	5	0.5395	112	0.0704	15	0.0243	8	436	23	438	7	438	9	486	15	-0.58
18	DJ192 19	0.0558	6	0.5603	71	0.0728	15	0.0217	4	445	22	452	5	453	9	433	7	-1.92
19	DJ192 20	0.0558	6	0.5503	121	0.0715	16	0.0220	7	446	21	445	8	445	10	439	14	0.12
20	DJ192 21	0.0559	5	0.5564	90	0.0722	15	0.0213	4	447	21	449	6	450	9	425	9	-0.65
21	DJ192 22	0.0557	6	0.5494	127	0.0715	16	0.0236	9	440	21	445	8	445	10	472	17	-1.29
22	DJ192 23	0.0560	6	0.5537	84	0.0717	15	0.0210	5	452	19	447	5	447	9	419	9	1.14
23	DJ192 24	0.0560	8	0.5587	172	0.0724	18	0.0223	11	452	31	451	11	450	11	445	22	0.25
24	DJ192 25	0.0560	7	0.5619	158	0.0728	17	0.0258	10	452	27	453	10	453	10	515	20	-0.32
25	DJ192 26	0.0566	6	0.6008	150	0.0770	18	0.0223	8	476	25	478	10	478	11	446	16	-0.46
26	DJ192 27	0.0557	5	0.5454	107	0.0710	15	0.0205	6	442	23	442	7	442	9	410	13	0.02
27	DJ192 28	0.0568	9	0.6119	207	0.0781	20	0.0223	12	485	34	485	13	485	12	445	24	-0.05
28	DJ192 29	0.0565	6	0.5797	133	0.0745	17	0.0226	7	470	23	464	9	463	10	451	14	1.55
29	DJ192 30	0.0563	6	0.5753	74	0.0742	15	0.0220	4	462	22	461	5	461	9	439	8	0.22
30	DJ192 31	0.0565	17	0.5826	333	0.0748	25	0.0366	30	472	63	466	21	465	15	726	59	1.46
31	DJ192 32	0.0561	8	0.5647	184	0.0730	19	0.0211	11	458	31	455	12	454	11	421	22	0.79
32	DJ192 33	0.0571	6	0.6192	146	0.0787	18	0.0271	8	495	24	489	9	488	11	539	16	1.45
33	DJ192 34	0.0566	24	0.5786	442	0.0741	32	0.0261	32	477	87	464	28	461	19	522	64	3.44
34	DJ192 35	0.0561	6	0.5645	146	0.0730	17	0.0221	9	456	24	454	9	454	10	441	18	0.3
35	DJ192 36	0.0555	6	0.5352	142	0.0699	16	0.0213	9	434	27	435	9	436	10	427	18	-0.36
36	DJ192 37	0.0560	14	0.5419	259	0.0702	21	0.0253	17	452	50	440	17	437	13	504	33	3.45
37	DJ192 38	0.0561	7	0.5593	148	0.0723	17	0.0213	7	456	24	451	10	450	10	427	14	1.31
38	DJ192 40	0.0559	5	0.5576	106	0.0723	16	0.0214	6	450	19	450	7	450	9	428	12	-0.09

Analysis No.		Ratios								Age (Ma)								Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
39	DJ192 41	0.0561	5	0.5633	111	0.0729	16	0.0235	7	455	21	454	7	454	9	469	13	0.29
40	DJ192 42	0.0561	11	0.5664	233	0.0733	21	0.0234	16	455	42	456	15	456	12	467	31	-0.25
41	DJ192 43	0.0565	9	0.5855	203	0.0751	19	0.0233	14	473	37	468	13	467	12	465	27	1.39
42	DJ192 44	0.0561	9	0.5641	190	0.0730	19	0.0190	9	456	39	454	12	454	11	380	18	0.36
43	DJ192 45	0.0573	6	0.6326	155	0.0801	18	0.0259	8	502	25	498	10	497	11	516	15	0.97
44	DJ192 46	0.0560	5	0.5621	106	0.0728	16	0.0201	6	452	21	453	7	453	9	402	12	-0.15
45	DJ192 47	0.0563	7	0.5737	163	0.0739	18	0.0222	8	465	28	460	11	460	11	443	16	1.33
46	DJ192 48	0.0564	5	0.5819	112	0.0749	16	0.0209	8	468	21	466	7	465	10	418	15	0.66
47	DJ192 49	0.0555	5	0.5321	116	0.0695	15	0.0200	5	433	20	433	8	433	9	400	10	0
48	DJ192 50	0.0556	8	0.5268	171	0.0688	17	0.0224	11	435	31	430	11	429	10	448	22	1.56
49	DJ192 51	0.0562	6	0.5797	134	0.0748	17	0.0235	9	462	24	464	9	465	10	470	18	-0.66
50	DJ192 52	0.0556	5	0.5442	96	0.0710	15	0.0202	6	438	21	441	6	442	9	405	12	-1.01
51	DJ192 53	0.0557	5	0.5397	85	0.0703	15	0.0205	5	439	19	438	6	438	9	410	9	0.28
52	DJ192 54	0.0558	5	0.5472	84	0.0711	15	0.0214	5	446	24	443	6	443	9	428	9	0.68
53	DJ192 55	0.0572	7	0.6115	173	0.0776	19	0.0230	10	497	28	484	11	482	11	459	20	3.25
54	DJ192 56	0.0567	5	0.5996	114	0.0768	17	0.0233	6	479	21	477	7	477	10	466	12	0.45
55	DJ192 57	0.0567	7	0.6103	64	0.0781	16	0.0225	3	481	26	484	4	485	9	449	7	-0.71
56	DJ192 58	0.0559	9	0.5507	192	0.0715	19	0.0218	10	448	34	445	13	445	11	436	20	0.59
57	DJ192 59	0.0559	5	0.5584	111	0.0726	16	0.0215	7	446	20	450	7	452	9	431	13	-1.13
58	DJ192 60	0.0569	10	0.6134	222	0.0782	21	0.0214	14	488	37	486	14	485	12	427	28	0.7
59	DJ192 61	0.0558	7	0.5449	151	0.0709	17	0.0202	8	444	27	442	10	441	10	404	16	0.77
60	DJ192 62	0.0558	5	0.5429	105	0.0706	15	0.0222	6	444	22	440	7	440	9	444	12	1.03
61	DJ192 63	0.0566	7	0.5863	171	0.0752	18	0.0239	12	476	29	469	11	467	11	477	24	1.96
62	DJ192 64	0.0560	6	0.5669	138	0.0734	17	0.0253	10	454	24	456	9	457	10	504	21	-0.56
63	DJ192 65	0.0562	5	0.5738	108	0.0741	16	0.0228	7	461	21	460	7	461	10	455	13	0.06
64	DJ192 66	0.0559	6	0.5557	66	0.0722	15	0.0215	4	447	24	449	4	449	9	429	7	-0.52
65	DJ192 67	0.0559	5	0.5561	114	0.0722	16	0.0244	8	448	22	449	7	449	9	486	16	-0.26
66	DJ192 68	0.0570	5	0.6165	116	0.0785	17	0.0245	7	490	20	488	7	487	10	489	15	0.61
DJ15 (n=62)																		
1	DJ15 01	0.0530	24	0.3752	291	0.0513	21	0.0188	20	330	109	323	21	322	13	377	39	2.34
2	DJ15 02	0.0527	26	0.3507	297	0.0482	21	0.0151	9	317	105	305	22	304	13	303	17	4.21
3	DJ15 03	0.0526	9	0.3664	122	0.0505	11	0.0162	4	312	38	317	9	318	7	324	9	-1.68
4	DJ15 04	0.0530	4	0.3834	72	0.0524	9	0.0161	3	331	21	330	5	329	6	322	7	0.34
5	DJ15 05	0.0551	8	0.5054	152	0.0666	14	0.0210	7	415	32	415	10	415	8	420	14	-0.08
6	DJ15 06	0.0525	4	0.3555	63	0.0491	9	0.0150	3	308	17	309	5	309	5	301	6	-0.45
7	DJ15 07	0.0534	9	0.4022	129	0.0546	12	0.0183	6	347	38	343	9	343	7	366	12	1.17
8	DJ15 08	0.0562	45	0.5789	788	0.0747	51	0.0165	40	459	172	464	51	465	31	331	79	-1.15
9	DJ15 09	0.0526	17	0.3624	206	0.0500	16	0.0134	10	310	73	314	15	315	10	269	19	-1.55
10	DJ15 10	0.0530	7	0.3838	104	0.0525	11	0.0160	5	328	29	330	8	330	6	320	9	-0.83
11	DJ15 11	0.0527	7	0.3671	108	0.0505	10	0.0151	5	318	31	318	8	317	6	304	10	0.04
12	DJ15 12	0.0529	6	0.3749	91	0.0514	10	0.0155	4	324	25	323	7	323	6	310	8	0.29
13	DJ15 13	0.0533	15	0.4023	207	0.0548	16	0.0205	11	341	58	343	15	344	10	409	22	-0.9
14	DJ15 16	0.0535	8	0.4098	123	0.0555	12	0.0177	6	350	31	349	9	348	7	354	11	0.59

Analysis No.		Ratios								Age (Ma)								Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
15	DJ15 17	0.0524	18	0.3513	209	0.0486	15	0.0155	8	303	82	306	16	306	9	311	16	-0.89
16	DJ15 19	0.0527	6	0.3695	91	0.0508	10	0.0164	4	316	25	319	7	320	6	328	9	-1.24
17	DJ15 20	0.0539	10	0.4366	156	0.0588	13	0.0178	7	366	44	368	11	368	8	356	14	-0.73
18	DJ15 22	0.0531	5	0.3865	74	0.0528	9	0.0163	3	331	20	332	5	332	6	326	6	-0.31
19	DJ15 23	0.0527	24	0.3716	293	0.0512	21	0.0185	16	315	104	321	22	322	13	370	31	-2.32
20	DJ15 24	0.0538	24	0.4153	306	0.0560	20	0.0233	17	362	92	353	22	351	12	466	34	3.13
21	DJ15 27	0.0530	6	0.3839	101	0.0526	10	0.0167	5	327	28	330	7	330	6	335	10	-1.16
22	DJ15 28	0.0546	20	0.4698	300	0.0624	22	0.0239	18	394	80	391	21	390	13	477	36	0.97
23	DJ15 29	0.0556	32	0.5264	515	0.0687	33	0.0254	30	436	134	429	34	428	20	508	60	1.75
24	DJ15 30	0.0526	4	0.3588	54	0.0495	8	0.0154	3	312	16	311	4	311	5	309	5	0.11
25	DJ15 32	0.0526	7	0.3615	98	0.0498	10	0.0139	4	313	29	313	7	313	6	278	8	-0.18
26	DJ15 34	0.0527	7	0.3604	106	0.0496	10	0.0154	4	314	28	313	8	312	6	309	8	0.62
27	DJ15 35	0.0527	40	0.3709	471	0.0510	31	0.0269	36	317	182	320	35	321	19	536	71	-1.32
28	DJ15 36	0.0530	28	0.3694	331	0.0505	23	0.0157	11	329	121	319	25	318	14	315	21	3.4
29	DJ15 37	0.0524	15	0.3487	177	0.0483	13	0.0151	8	302	67	304	13	304	8	303	15	-0.5
30	DJ15 38	0.0530	8	0.3805	114	0.0521	11	0.0176	6	329	31	327	8	327	7	352	13	0.49
31	DJ15 39	0.0539	15	0.4322	216	0.0581	17	0.0177	9	367	64	365	15	364	10	354	19	0.7
32	DJ15 40	0.0530	5	0.3807	77	0.0521	10	0.0168	3	328	20	328	6	328	6	336	6	-0.02
33	DJ15 41	0.0556	10	0.5331	182	0.0696	15	0.0219	9	435	38	434	12	434	9	438	18	0.28
34	DJ15 42	0.0533	17	0.3973	224	0.0541	16	0.0150	8	341	74	340	16	339	10	301	16	0.52
35	DJ15 43	0.0528	5	0.3711	76	0.0510	9	0.0152	3	321	21	320	6	320	6	305	6	0.22
36	DJ15 44	0.0532	16	0.3921	212	0.0535	16	0.0138	8	336	66	336	15	336	10	276	15	-0.08
37	DJ15 45	0.0558	14	0.5515	259	0.0716	20	0.0217	16	446	55	446	17	446	12	434	31	0.02
38	DJ15 46	0.0526	17	0.3569	199	0.0492	15	0.0180	13	310	70	310	15	310	9	360	25	-0.02
39	DJ15 47	0.0532	23	0.3988	295	0.0543	21	0.0186	13	339	97	341	21	341	13	372	26	-0.75
40	DJ15 48	0.0525	13	0.3594	161	0.0497	13	0.0139	6	306	57	312	12	313	8	279	11	-2.37
41	DJ15 49	0.0530	5	0.3810	74	0.0521	9	0.0161	3	328	19	328	5	328	6	323	7	0.06
42	DJ15 50	0.0530	8	0.3779	115	0.0518	11	0.0140	5	327	34	325	8	325	7	282	10	0.42
43	DJ15 51	0.0541	6	0.4496	103	0.0602	12	0.0195	5	377	23	377	7	377	7	391	10	-0.03
44	DJ15 52	0.0526	7	0.3560	98	0.0491	10	0.0162	7	310	29	309	7	309	6	325	14	0.4
45	DJ15 53	0.0553	4	0.5169	74	0.0678	12	0.0211	3	424	16	423	5	423	7	421	7	0.13
46	DJ15 55	0.0553	7	0.5202	147	0.0682	14	0.0214	7	424	28	425	10	426	9	428	13	-0.5
47	DJ15 56	0.0558	15	0.5508	271	0.0716	20	0.0246	14	443	59	446	18	446	12	490	27	-0.75
48	DJ15 57	0.0525	9	0.3593	120	0.0496	11	0.0167	6	309	38	312	9	312	7	334	11	-1.18
49	DJ15 58	0.0553	10	0.5052	174	0.0663	15	0.0205	8	424	38	415	12	414	9	409	15	2.41
50	DJ15 59	0.0530	5	0.3839	80	0.0525	10	0.0162	3	328	20	330	6	330	6	324	7	-0.53
51	DJ15 61	0.0558	7	0.5426	148	0.0706	15	0.0195	7	443	28	440	10	439	9	390	13	0.87
52	DJ15 62	0.0531	5	0.3861	87	0.0527	10	0.0145	4	333	22	332	6	331	6	292	7	0.39
53	DJ15 63	0.0545	29	0.4919	339	0.0655	15	0.0205	4	390	126	406	23	409	9	409	8	-4.91
54	DJ15 64	0.0532	13	0.3982	186	0.0542	15	0.0189	10	338	57	340	14	341	9	379	20	-0.74
55	DJ15 65	0.0525	4	0.3525	63	0.0487	9	0.0145	3	306	19	307	5	307	5	291	5	-0.07
56	DJ15 66	0.0527	5	0.3650	74	0.0502	9	0.0153	3	318	20	316	5	316	6	307	6	0.62
57	DJ15 67	0.0552	15	0.5184	258	0.0681	20	0.0238	14	419	63	424	17	425	12	475	27	-1.57
58	DJ15 68	0.0527	5	0.3600	82	0.0496	9	0.0144	3	314	22	312	6	312	6	288	6	0.56

	Analysis No.	Ratios								Age (Ma)								Disc*
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	(%)
59	DJ15 69	0.0530	15	0.3810	195	0.0521	15	0.0142	9	330	62	328	14	327	9	286	17	0.82
60	DJ15 70	0.0555	9	0.5315	168	0.0694	15	0.0230	10	433	33	433	11	433	9	459	19	0.13
61	DJ15 72	0.0550	15	0.4992	242	0.0658	18	0.0225	12	412	66	411	16	411	11	450	24	0.31
62	DJ15 73	0.0535	12	0.4069	177	0.0552	14	0.0184	10	349	52	347	13	346	9	369	19	0.88
DJ149 (n=50)																		
1	DJ149 01	0.0546	6	0.4638	117	0.0616	14	0.0179	5	395	25	387	8	385	9	359	11	2.62
2	DJ149 02	0.0543	7	0.4674	130	0.0625	15	0.0203	7	382	31	389	9	391	9	405	13	-2.25
3	DJ149 03	0.0559	25	0.5214	409	0.0677	29	0.0254	22	446	94	426	27	422	17	507	43	5.57
4	DJ149 04	0.0575	26	0.6121	505	0.0772	36	0.0263	22	510	103	485	32	480	21	525	44	6.09
5	DJ149 06	0.0553	16	0.5162	279	0.0677	22	0.0208	11	426	63	423	19	422	14	416	22	0.85
6	DJ149 07	0.0557	27	0.5482	470	0.0714	33	0.0262	28	441	99	444	31	444	20	523	56	-0.84
7	DJ149 09	0.0544	20	0.4894	324	0.0652	25	0.0184	13	389	93	405	22	407	15	368	25	-4.74
8	DJ149 10	0.0547	7	0.4853	134	0.0644	16	0.0184	6	398	27	402	9	402	9	368	11	-1.01
9	DJ149 11	0.0550	9	0.5012	180	0.0661	18	0.0191	9	410	38	412	12	413	11	383	17	-0.68
10	DJ149 12	0.0547	25	0.5109	412	0.0677	30	0.0261	24	401	98	419	28	422	18	521	46	-5.44
11	DJ149 13	0.0547	8	0.4807	151	0.0637	16	0.0186	7	401	33	399	10	398	10	372	14	0.8
12	DJ149 14	0.0559	15	0.5207	267	0.0676	22	0.0210	13	448	55	426	18	421	13	421	26	6.21
13	DJ149 15	0.0547	10	0.4834	182	0.0641	17	0.0194	8	401	35	400	12	400	10	387	16	0.24
14	DJ149 16	0.0545	6	0.4742	120	0.0631	15	0.0171	5	393	25	394	8	394	9	343	10	-0.46
15	DJ149 18	0.0543	8	0.4628	155	0.0618	16	0.0162	6	383	36	386	11	387	10	325	12	-1.11
16	DJ149 19	0.0545	9	0.4599	168	0.0612	16	0.0174	8	391	40	384	12	383	10	349	15	1.95
17	DJ149 20	0.0547	14	0.4856	246	0.0644	20	0.0171	11	400	64	402	17	402	12	343	21	-0.58
18	DJ149 21	0.0547	12	0.4706	203	0.0624	18	0.0209	10	401	49	392	14	390	11	418	21	2.88
19	DJ149 22	0.0547	12	0.4732	208	0.0627	18	0.0203	9	402	47	393	14	392	11	407	17	2.48
20	DJ149 23	0.0549	14	0.5001	247	0.0661	21	0.0199	12	406	56	412	17	413	12	399	24	-1.69
21	DJ149 24	0.0551	16	0.4982	268	0.0656	22	0.0183	11	417	60	410	18	409	13	367	22	1.82
22	DJ149 25	0.0546	8	0.4752	153	0.0632	16	0.0194	8	394	32	395	11	395	10	388	15	-0.28
23	DJ149 26	0.0547	8	0.4937	152	0.0655	16	0.0188	7	400	31	407	10	409	10	377	14	-2.14
24	DJ149 27	0.0550	19	0.4809	302	0.0635	23	0.0193	15	411	80	399	21	397	14	387	29	3.75
25	DJ149 28	0.0551	15	0.5160	275	0.0679	22	0.0190	13	418	59	422	18	423	13	380	26	-1.34
26	DJ149 29	0.0547	13	0.4694	217	0.0622	19	0.0181	9	401	52	391	15	389	11	363	17	3.01
27	DJ149 30	0.0549	7	0.4953	146	0.0654	16	0.0189	7	409	29	409	10	409	10	378	13	0.01
28	DJ149 31	0.0545	8	0.4739	148	0.0631	16	0.0189	7	392	33	394	10	394	9	377	14	-0.66
29	DJ149 32	0.0541	14	0.4439	226	0.0595	19	0.0168	9	375	64	373	16	373	11	338	17	0.57
30	DJ149 34	0.0562	27	0.5559	466	0.0718	33	0.0191	14	459	110	449	30	447	20	381	29	2.76
31	DJ149 35	0.0550	7	0.4952	144	0.0653	16	0.0174	6	413	28	408	10	408	10	348	12	1.47
32	DJ149 36	0.0551	13	0.5123	245	0.0675	21	0.0187	10	415	53	420	16	421	12	374	19	-1.58
33	DJ149 37	0.0559	26	0.5431	448	0.0706	31	0.0225	19	447	107	440	29	440	19	450	37	1.74
34	DJ149 38	0.0552	9	0.4862	168	0.0639	17	0.0183	7	421	34	402	11	399	10	367	15	5.3
35	DJ149 39	0.0555	19	0.4999	312	0.0654	24	0.0190	13	431	74	412	21	409	14	380	26	5.41
36	DJ149 40	0.0547	22	0.5014	359	0.0666	26	0.0190	17	399	95	413	24	415	16	380	33	-4.12
37	DJ149 41	0.0547	7	0.4738	134	0.0628	15	0.0174	6	401	29	394	9	393	9	349	12	2.23
38	DJ149 43	0.0553	12	0.5112	218	0.0671	19	0.0249	13	424	46	419	15	419	12	496	25	1.24

Analysis No.		Ratios								Age (Ma)								Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
39	DJ149 44	0.0546	27	0.4822	412	0.0642	28	0.0205	18	394	110	400	28	401	17	410	36	-1.77
40	DJ149 45	0.0565	21	0.5444	369	0.0700	27	0.0190	17	471	82	441	24	436	16	380	34	7.83
41	DJ149 46	0.0557	25	0.5619	434	0.0732	30	0.0237	19	441	99	453	28	456	18	472	37	-3.35
42	DJ149 47	0.0557	41	0.4970	622	0.0647	41	0.0186	24	442	172	410	42	404	25	373	47	8.89
43	DJ149 48	0.0549	20	0.4840	316	0.0640	24	0.0174	13	409	84	401	22	400	14	348	26	2.52
44	DJ149 50	0.0543	12	0.4611	197	0.0617	17	0.0173	9	383	46	385	14	386	11	346	18	-0.6
45	DJ149 51	0.0554	14	0.4925	244	0.0646	20	0.0211	11	428	54	407	17	403	12	422	22	5.95
46	DJ149 52	0.0539	23	0.4522	341	0.0609	25	0.0215	17	368	91	379	24	381	15	430	33	-3.63
47	DJ149 53	0.0542	15	0.4736	245	0.0635	20	0.0247	13	377	64	394	17	397	12	493	26	-5.24
48	DJ149 54	0.0541	13	0.4472	206	0.0601	18	0.0171	10	374	49	375	14	376	11	343	19	-0.43
49	DJ149 56	0.0543	20	0.4823	313	0.0645	23	0.0168	14	383	91	400	21	403	14	336	28	-5.36
50	DJ149 57	0.0552	15	0.4713	246	0.0621	19	0.0186	11	419	57	392	17	388	12	372	22	7.67
DJ325 (n=48)																		
1	DJ325 01	0.0555	26	0.5230	360	0.0683	18	0.0180	8	434	108	427	24	426	11	361	16	1.93
2	DJ325 02	0.0553	32	0.5237	433	0.0686	20	0.0225	15	426	140	428	29	428	12	450	29	-0.47
3	DJ325 03	0.0554	16	0.5263	254	0.0688	16	0.0206	8	430	62	429	17	429	10	413	16	0.18
4	DJ325 04	0.0554	10	0.5269	185	0.0690	15	0.0194	5	427	40	430	12	430	9	389	9	-0.85
5	DJ325 05	0.0553	13	0.5095	215	0.0668	15	0.0184	7	423	53	418	14	417	9	369	14	1.47
6	DJ325 06	0.0550	7	0.5003	135	0.0659	14	0.0197	5	414	26	412	9	411	8	395	10	0.56
7	DJ325 10	0.0550	7	0.4842	128	0.0639	14	0.0183	5	411	23	401	9	399	8	367	9	3.07
8	DJ325 11	0.0549	46	0.4990	573	0.0659	24	0.0194	20	408	180	411	39	412	14	388	39	-0.98
9	DJ325 12	0.0551	20	0.5174	292	0.0681	17	0.0197	10	417	82	423	20	424	10	394	19	-1.84
10	DJ325 13	0.0551	7	0.5107	137	0.0672	14	0.0188	4	417	27	419	9	419	9	376	8	-0.42
11	DJ325 14	0.0552	32	0.5167	426	0.0679	20	0.0200	13	421	140	423	28	423	12	401	26	-0.63
12	DJ325 17	0.0544	22	0.4748	291	0.0633	16	0.0181	9	387	89	394	20	396	10	363	17	-2.39
13	DJ325 18	0.0553	18	0.5187	267	0.0681	16	0.0206	8	423	71	424	18	424	10	413	16	-0.32
14	DJ325 19	0.0546	30	0.4910	388	0.0652	19	0.0212	11	398	116	406	26	407	11	424	23	-2.45
15	DJ325 20	0.0551	11	0.5057	189	0.0666	15	0.0197	7	416	43	416	13	415	9	395	13	0.21
16	DJ325 21	0.0551	5	0.5110	115	0.0672	14	0.0194	4	418	22	419	8	419	8	388	9	-0.36
17	DJ325 23	0.0560	52	0.5482	689	0.0711	27	0.0221	21	451	207	444	45	442	16	441	41	1.9
18	DJ325 24	0.0550	16	0.5166	250	0.0681	16	0.0203	8	413	66	423	17	425	10	405	16	-2.8
19	DJ325 26	0.0563	42	0.5627	586	0.0725	25	0.0244	18	464	154	453	38	451	15	486	36	2.81
20	DJ325 27	0.0557	20	0.5315	296	0.0692	17	0.0190	9	440	80	433	20	432	10	380	17	1.9
21	DJ325 29	0.0554	9	0.5223	166	0.0684	15	0.0219	6	428	36	427	11	426	9	437	13	0.48
22	DJ325 30	0.0554	26	0.5213	362	0.0682	18	0.0265	16	428	97	426	24	425	11	529	31	0.69
23	DJ325 31	0.0553	12	0.5210	205	0.0683	15	0.0219	7	425	46	426	14	426	9	438	13	-0.19
24	DJ325 32	0.0555	7	0.5318	139	0.0695	15	0.0198	5	432	26	433	9	433	9	396	10	-0.29
25	DJ325 33	0.0557	7	0.5363	152	0.0699	15	0.0236	7	440	29	436	10	435	9	471	13	1.12
26	DJ325 34	0.0558	15	0.5418	254	0.0705	17	0.0198	9	443	64	440	17	439	10	396	17	1
27	DJ325 35	0.0559	14	0.5613	249	0.0728	17	0.0219	9	449	59	452	16	453	10	438	17	-0.87
28	DJ325 36	0.0556	11	0.5374	195	0.0700	15	0.0202	7	438	42	437	13	436	9	403	14	0.37
29	DJ325 37	0.0553	16	0.5154	248	0.0676	16	0.0219	9	424	60	422	17	422	10	438	17	0.67
30	DJ325 38	0.0560	11	0.5673	212	0.0735	16	0.0213	7	452	45	456	14	457	10	425	13	-1.07

Analysis No.		Ratios								Age (Ma)								Disc* (%)
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	
31	DJ325 39	0.0565	6	0.5824	138	0.0748	16	0.0221	6	470	23	466	9	465	9	442	11	1.09
32	DJ325 40	0.0557	15	0.5418	247	0.0706	16	0.0223	9	440	61	440	16	440	10	445	17	0
33	DJ325 41	0.0554	6	0.5191	53	0.0680	12	0.0214	3	428	24	425	4	424	7	429	7	0.87
34	DJ325 42	0.0547	7	0.4776	139	0.0634	15	0.0186	6	399	32	396	10	396	9	372	12	0.84
35	DJ325 43	0.0548	5	0.4917	83	0.0651	13	0.0175	4	405	20	406	6	406	8	351	8	-0.23
36	DJ325 44	0.0551	5	0.5055	79	0.0666	13	0.0197	4	416	17	415	5	415	8	394	8	0.25
37	DJ325 47	0.0555	5	0.5309	87	0.0694	13	0.0196	5	432	18	432	6	433	8	392	9	-0.23
38	DJ325 49	0.0548	6	0.4909	112	0.0649	14	0.0210	6	406	23	406	8	406	8	420	12	0.05
39	DJ325 50	0.0554	5	0.5198	72	0.0680	13	0.0195	3	429	18	425	5	424	8	390	6	1.2
40	DJ325 50	0.0547	5	0.4822	77	0.0639	12	0.0171	4	400	19	400	5	400	7	342	7	0.13
41	DJ325 51	0.0551	7	0.5062	137	0.0667	15	0.0229	10	416	27	416	9	416	9	457	19	-0.01
42	DJ325 52	0.0544	12	0.4648	201	0.0620	17	0.0176	8	386	52	388	14	388	10	352	15	-0.62
43	DJ325 53	0.0544	5	0.4653	86	0.0620	12	0.0165	3	388	21	388	6	388	7	331	7	0.03
44	DJ325 54	0.0547	7	0.4717	131	0.0626	14	0.0194	8	398	29	392	9	391	8	388	15	1.68
45	DJ325 55	0.0546	5	0.4780	56	0.0635	12	0.0164	2	397	21	397	4	397	7	328	5	0.12
46	DJ325 56	0.0560	23	0.5769	424	0.0747	31	0.0267	25	454	96	462	27	464	18	533	49	-2.44
47	DJ325 58	0.0547	6	0.4829	115	0.0640	13	0.0182	5	399	24	400	8	400	8	364	10	-0.28
48	DJ325 59	0.0549	5	0.4978	95	0.0658	13	0.0182	4	408	18	410	6	410	8	365	8	-0.61
DJ329 (n=78)																		
1	DJ329 01	0.0534	10	0.4073	157	0.0553	14	0.0173	7	347	45	347	11	347	8	346	13	-0.08
2	DJ329 02	0.0527	6	0.3782	95	0.0520	12	0.0146	4	317	26	326	7	327	7	292	7	-3.3
3	DJ329 03	0.0528	7	0.3600	111	0.0494	12	0.0141	5	322	30	312	8	311	7	283	11	3.51
4	DJ329 04	0.0533	6	0.3943	100	0.0537	12	0.0154	4	339	27	337	7	337	8	308	8	0.69
5	DJ329 05	0.0535	7	0.4158	129	0.0564	14	0.0172	7	348	29	353	9	354	9	344	13	-1.72
6	DJ329 06	0.0529	18	0.3715	227	0.0509	18	0.0166	12	325	74	321	17	320	11	332	23	1.64
7	DJ329 07	0.0538	5	0.4258	80	0.0574	13	0.0167	4	361	21	360	6	360	8	334	8	0.4
8	DJ329 08	0.0533	6	0.4017	48	0.0547	11	0.0156	3	341	24	343	3	343	7	312	5	-0.73
9	DJ329 09	0.0531	5	0.3874	60	0.0528	11	0.0155	3	335	24	332	4	332	7	310	6	0.82
10	DJ329 10	0.0536	5	0.4115	88	0.0557	12	0.0175	4	353	24	350	6	349	8	350	8	0.9
11	DJ329 12	0.0531	6	0.3782	97	0.0516	12	0.0143	4	334	26	326	7	324	7	286	8	2.89
12	DJ329 13	0.0529	5	0.3716	57	0.0510	11	0.0145	3	322	21	321	4	321	7	290	6	0.55
13	DJ329 14	0.0526	5	0.3667	70	0.0505	11	0.0155	4	313	23	317	5	318	7	311	7	-1.44
14	DJ329 15	0.0537	5	0.4246	78	0.0573	12	0.0164	4	358	20	359	6	359	8	329	8	-0.42
15	DJ329 16	0.0528	5	0.3667	67	0.0504	11	0.0145	3	319	22	317	5	317	7	291	6	0.78
16	DJ329 17	0.0531	5	0.3860	64	0.0527	11	0.0162	3	333	21	331	5	331	7	326	6	0.59
17	DJ329 18	0.0529	7	0.3819	112	0.0523	13	0.0162	6	325	28	328	8	329	8	325	12	-1.27
18	DJ329 19	0.0529	5	0.3730	65	0.0511	11	0.0139	3	325	21	322	5	321	7	279	6	0.94
19	DJ329 20	0.0531	5	0.3904	57	0.0534	11	0.0153	3	331	21	335	4	335	7	307	6	-1.17
20	DJ329 21	0.0536	7	0.4125	121	0.0558	14	0.0180	6	355	33	351	9	350	8	360	12	1.47
21	DJ329 22	0.0529	5	0.3881	87	0.0532	12	0.0161	4	325	22	333	6	334	7	323	8	-3.07
22	DJ329 23	0.0530	14	0.3974	203	0.0543	17	0.0126	9	330	64	340	15	341	10	253	18	-3.46
23	DJ329 24	0.0533	6	0.4042	54	0.0550	12	0.0163	3	343	23	345	4	345	7	326	6	-0.49
24	DJ329 25	0.0529	5	0.3667	64	0.0503	11	0.0131	2	325	23	317	5	316	7	263	5	2.63

Analysis No.		Ratios								Age (Ma)								Disc*
		^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{208}Pb/^{232}Th	± 1s	(%)
25	DJ329 26	0.0528	6	0.3727	50	0.0512	11	0.0148	3	319	25	322	4	322	7	296	5	-0.99
26	DJ329 27	0.0529	5	0.3826	85	0.0525	12	0.0152	4	323	22	329	6	330	7	304	8	-2.24
27	DJ329 28	0.0530	5	0.3860	66	0.0529	11	0.0148	3	328	23	331	5	332	7	296	7	-1.42
28	DJ329 29	0.0529	5	0.3664	78	0.0502	11	0.0141	4	324	23	317	6	316	7	284	8	2.56
29	DJ329 30	0.0532	6	0.3881	55	0.0529	11	0.0151	3	336	26	333	4	333	7	303	6	0.94
30	DJ329 31	0.0531	5	0.3860	71	0.0528	12	0.0149	4	331	23	331	5	332	7	299	7	-0.04
31	DJ329 32	0.0534	5	0.4025	67	0.0547	12	0.0171	4	347	21	343	5	343	7	342	7	1.1
32	DJ329 33	0.0527	5	0.3632	74	0.0500	11	0.0146	4	314	22	315	6	315	7	294	8	-0.16
33	DJ329 34	0.0530	5	0.3780	66	0.0517	11	0.0145	3	331	22	326	5	325	7	291	6	1.76
34	DJ329 35	0.0527	5	0.3744	55	0.0515	11	0.0149	3	317	22	323	4	324	7	300	5	-2.1
35	DJ329 36	0.0530	5	0.3776	68	0.0517	11	0.0150	3	328	22	325	5	325	7	301	7	1.1
36	DJ329 37	0.0530	6	0.3946	106	0.0540	13	0.0162	5	328	28	338	8	339	8	324	11	-3.66
37	DJ329 38	0.0531	5	0.3909	62	0.0534	11	0.0151	3	335	21	335	5	335	7	303	6	-0.08
38	DJ329 39	0.0533	5	0.3913	77	0.0533	12	0.0159	4	340	19	335	6	335	7	319	8	1.57
39	DJ329 40	0.0536	5	0.4127	69	0.0559	12	0.0162	4	353	24	351	5	351	7	325	7	0.87
40	DJ329 41	0.0531	13	0.3730	176	0.0510	16	0.0142	7	331	49	322	13	321	10	285	13	3.35
41	DJ329 42	0.0527	8	0.3546	116	0.0488	12	0.0148	6	318	31	308	9	307	8	298	11	3.45
42	DJ329 43	0.0529	5	0.3747	77	0.0514	12	0.0149	4	323	22	323	6	323	7	300	9	-0.11
43	DJ329 44	0.0532	5	0.4005	84	0.0546	12	0.0151	4	337	22	342	6	343	8	302	7	-1.77
44	DJ329 45	0.0530	6	0.3782	46	0.0518	11	0.0152	3	327	25	326	3	326	7	304	5	0.49
45	DJ329 46	0.0532	6	0.3781	103	0.0516	12	0.0145	5	337	27	326	8	324	8	290	9	4.05
46	DJ329 47	0.0534	6	0.4150	99	0.0564	13	0.0168	5	345	22	352	7	354	8	337	9	-2.42
47	DJ329 48	0.0527	5	0.3657	55	0.0504	11	0.0144	3	315	24	316	4	317	7	290	6	-0.53
48	DJ329 49	0.0529	5	0.3791	64	0.0520	11	0.0157	3	326	23	326	5	327	7	314	7	-0.04
49	DJ329 50	0.0531	6	0.3782	95	0.0517	12	0.0153	5	331	23	326	7	325	7	307	9	1.84
50	DJ329 51	0.0529	5	0.3798	71	0.0522	12	0.0165	4	322	23	327	5	328	7	332	8	-1.65
51	DJ329 52	0.0526	5	0.3555	73	0.0490	11	0.0136	4	312	21	309	5	309	7	272	7	1.03
52	DJ329 53	0.0535	5	0.4018	66	0.0545	12	0.0168	3	349	23	343	5	342	7	337	7	2.12
53	DJ329 54	0.0536	6	0.4133	94	0.0560	13	0.0154	4	354	21	351	7	351	8	308	8	0.87
54	DJ329 55	0.0533	5	0.4041	77	0.0550	12	0.0167	4	342	20	345	6	345	8	334	8	-0.9
55	DJ329 56	0.0533	5	0.3931	76	0.0536	12	0.0161	4	339	21	337	6	336	7	323	8	0.97
56	DJ329 57	0.0529	5	0.3849	67	0.0528	12	0.0146	3	326	24	331	5	332	7	293	6	-1.58
57	DJ329 58	0.0531	5	0.3868	64	0.0529	12	0.0160	4	334	23	332	5	332	7	322	8	0.82
58	DJ329 59	0.0529	5	0.3785	59	0.0519	11	0.0160	3	325	23	326	4	326	7	320	6	-0.37
59	DJ329 60	0.0533	5	0.4037	64	0.0550	12	0.0155	3	341	24	344	5	345	7	311	7	-1.09
60	DJ329 61	0.0532	5	0.3987	82	0.0544	12	0.0152	4	339	24	341	6	341	8	305	8	-0.58
61	DJ329 62	0.0528	9	0.3737	140	0.0514	14	0.0160	7	320	42	322	10	323	9	320	14	-0.94
62	DJ329 63	0.0531	5	0.3882	74	0.0531	12	0.0158	4	332	21	333	5	334	7	317	7	-0.46
63	DJ329 64	0.0531	5	0.3912	71	0.0535	12	0.0160	4	333	23	335	5	336	7	320	8	-0.61
64	DJ329 65	0.0537	6	0.4284	60	0.0579	13	0.0170	3	358	24	362	4	363	8	341	7	-1.31
65	DJ329 66	0.0531	5	0.3834	75	0.0524	12	0.0161	4	333	23	330	6	329	7	322	9	1.25
66	DJ329 68	0.0528	10	0.3556	138	0.0489	14	0.0166	9	321	40	309	10	308	8	333	17	4.23
67	DJ329 69	0.0534	6	0.4019	63	0.0547	12	0.0161	4	345	24	343	5	343	7	323	7	0.82
68	DJ329 70	0.0528	6	0.3873	92	0.0532	13	0.0161	5	322	25	332	7	334	8	322	9	-3.82

Analysis No.		Ratios								Age (Ma)								Disc*
		^{207}Pb/ ^{206}Pb	± 1s	^{207}Pb/ ^{235}U	± 1s	^{206}Pb/ ^{238}U	± 1s	^{208}Pb/ ^{232}Th	± 1s	^{207}Pb/ ^{206}Pb	± 1s	^{207}Pb/ ^{235}U	± 1s	^{206}Pb/ ^{238}U	± 1s	^{208}Pb/ ^{232}Th	± 1s	(%)
69	DJ329 71	0.0533	6	0.4016	91	0.0548	13	0.0150	4	339	22	343	7	344	8	301	8	-1.17
70	DJ329 72	0.0536	6	0.4084	105	0.0554	13	0.0177	6	353	26	348	8	347	8	355	13	1.76
71	DJ329 73	0.0530	16	0.3929	217	0.0539	18	0.0139	8	328	58	337	16	338	11	278	16	-3.08
72	DJ329 74	0.0534	6	0.4138	66	0.0563	12	0.0158	3	348	25	352	5	353	8	317	7	-1.4
73	DJ329 75	0.0531	5	0.3914	76	0.0535	12	0.0155	4	335	23	335	6	336	7	311	7	-0.22
74	DJ329 76	0.0532	7	0.3911	116	0.0534	13	0.0144	6	336	31	335	8	335	8	288	11	0.46
75	DJ329 77	0.0540	6	0.4388	120	0.0590	15	0.0180	7	371	25	369	8	370	9	361	14	0.53
76	DJ329 78	0.0530	6	0.3827	57	0.0525	11	0.0147	3	328	25	329	4	330	7	295	6	-0.55
77	DJ329 79	0.0532	6	0.3915	54	0.0535	12	0.0159	3	337	26	335	4	336	7	319	6	0.51
78	DJ329 80	0.0532	6	0.3951	57	0.0539	12	0.0157	3	339	25	338	4	339	7	316	6	0.19

Table 4

	Analysis No.	U/Th	Ratios						Age (Ma)					
			^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s	^{207}Pb/^{206}Pb	± 1s	^{207}Pb/^{235}U	± 1s	^{206}Pb/^{238}U	± 1s
DJ259		*46.9046°N, 84.2452°E*												
1	DJ259 01	1.31	0.05334	1.14	0.39453	1.76	0.05365	2.44	343	27	338	5	337	8
2	DJ259 02	1.3	0.05321	1.35	0.39498	1.28	0.05384	2.38	338	28	338	4	338	8
3	DJ259 03	1.28	0.05341	1.29	0.39386	1.35	0.05348	2.37	346	27	337	4	336	8
4	DJ259 04	1.5	0.05364	1.19	0.39471	1.63	0.05338	2.42	356	28	338	5	335	8
5	DJ259 06	1.42	0.05343	1.31	0.39538	1.34	0.05367	2.38	347	28	338	4	337	8
6	DJ259 07	1.64	0.05312	1.30	0.39279	1.37	0.05363	2.39	334	31	336	4	337	8
7	DJ259 08	1.53	0.0531	1.28	0.38635	1.40	0.05277	2.39	333	29	332	4	332	8
8	DJ259 11	2.04	0.05278	1.33	0.3816	1.36	0.05244	2.40	319	31	328	4	329	8
9	DJ259 12	1.05	0.05368	1.36	0.40094	1.29	0.05418	2.40	358	31	342	4	340	8
10	DJ259 13	1.43	0.05262	1.12	0.3828	1.98	0.05276	2.50	312	24	329	6	331	8
11	DJ259 14	1.47	0.05332	1.18	0.38895	2.67	0.05291	2.65	342	26	334	8	332	9
12	DJ259 15	1.2	0.05327	1.35	0.39665	1.31	0.054	2.41	340	30	339	4	339	8
13	DJ259 16	1.02	0.05347	1.38	0.41008	1.25	0.05563	2.39	349	29	349	4	349	8
14	DJ259 19	1.05	0.05338	1.39	0.41365	1.25	0.05621	2.40	345	32	352	4	353	8
15	DJ259 20	1.1	0.05274	1.35	0.40298	1.34	0.05542	2.42	318	30	344	4	348	8
16	DJ259 21	1.38	0.05278	1.36	0.40734	1.31	0.05598	2.43	319	32	347	4	351	8
17	DJ259 22	1.22	0.05221	1.36	0.39875	1.31	0.0554	2.42	295	30	341	4	348	8
18	DJ259 23	1.92	0.05285	1.12	0.3787	2.16	0.05198	2.56	322	25	326	6	327	8
DJ303		*47.0245°N, 86.0374°E*												
1	DJ303 01	0.62	0.05479	1.20	0.39822	2.69	0.05276	2.67	404	27	340	8	331	9
2	DJ303 02	1.54	0.05462	1.28	0.42085	2.91	0.05593	2.72	397	29	357	9	351	9
3	DJ303 03	1.08	0.05354	1.14	0.41151	2.07	0.05579	2.55	352	25	350	6	350	9
4	DJ303 04	1.67	0.05544	1.61	0.41317	3.60	0.0541	2.92	430	35	351	11	340	10
5	DJ303 05	1.27	0.05356	1.12	0.41638	2.30	0.05643	2.59	353	26	353	7	354	9
6	DJ303 06	0.59	0.054	1.13	0.40287	2.05	0.05415	2.53	371	25	344	6	340	8
7	DJ303 07	1.8	0.054	1.15	0.42161	2.48	0.05667	2.61	371	26	357	7	355	9
8	DJ303 08	1.09	0.05384	1.15	0.40493	2.51	0.05459	2.62	364	26	345	7	343	9
9	DJ303 09	1.32	0.05443	2.81	0.42212	5.51	0.05629	3.50	389	63	358	17	353	12
10	DJ303 10	0.77	0.05357	1.18	0.40427	1.79	0.05478	2.48	353	26	345	5	344	8
11	DJ303 11	1.08	0.05362	1.12	0.40575	2.35	0.05492	2.59	355	25	346	7	345	9
12	DJ303 12	1.13	0.0531	1.13	0.39641	2.05	0.05418	2.53	333	26	339	6	340	8
13	DJ303 13	0.82	0.05399	1.39	0.41239	3.19	0.05543	2.78	371	34	351	9	348	9
14	DJ303 15	1.27	0.05333	1.16	0.39946	1.75	0.05436	2.47	343	26	341	5	341	8
15	DJ303 16	2.01	0.05361	1.12	0.4008	2.37	0.05426	2.58	355	24	342	7	341	9
16	DJ303 17	1.61	0.05264	2.11	0.41012	4.43	0.05654	3.13	313	47	349	13	355	11
17	DJ303 18	2.18	0.05335	3.28	0.41069	6.22	0.05586	3.76	344	82	349	18	350	13
18	DJ303 19	1.41	0.05348	1.53	0.40462	3.46	0.05491	2.84	349	34	345	10	345	10
19	DJ303 20	0.58	0.05369	1.27	0.40109	2.90	0.05421	2.69	358	29	342	8	340	9
20	DJ303 21	1.09	0.05332	1.14	0.39281	2.47	0.05346	2.60	342	27	336	7	336	9
21	DJ303 22	1.37	0.05326	1.13	0.39488	2.01	0.0538	2.51	340	26	338	6	338	8
22	DJ303 23	0.67	0.05378	1.19	0.40186	1.68	0.05422	2.45	362	26	343	5	340	8
23	DJ303 24	1.44	0.05325	1.54	0.40451	3.49	0.05512	2.85	339	35	345	10	346	10
24	DJ303 26	1.98	0.05467	1.13	0.41246	2.39	0.05474	2.58	399	26	351	7	344	9

Table 5

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ46											
DJ46 01	445	0.28292	0.00003	0.0014	0.0310	0.282908	14.6	1.1	0.476	0.497	0.519
DJ46 02	471	0.28291	0.00002	0.0014	0.0258	0.282898	14.8	0.8	0.490	0.504	0.519
DJ46 04	496	0.28288	0.00003	0.0016	0.0294	0.282865	14.2	1.1	0.536	0.562	0.591
DJ46 06	448	0.28287	0.00003	0.0008	0.0165	0.282863	13.1	0.9	0.539	0.598	0.662
DJ46 07	473	0.28281	0.00002	0.0010	0.0217	0.282801	11.4	0.7	0.627	0.724	0.830
DJ46 08	445	0.28294	0.00003	0.0039	0.0770	0.282907	14.6	1.0	0.480	0.499	0.522
DJ46 09	461	0.28289	0.00002	0.0010	0.0196	0.282881	14.0	0.8	0.514	0.548	0.585
DJ46 10	471	0.28291	0.00002	0.0007	0.0130	0.282904	15.0	0.8	0.481	0.490	0.498
DJ46 11	459	0.28287	0.00002	0.0009	0.0168	0.282862	13.3	0.8	0.541	0.593	0.650
DJ46 12	479	0.28288	0.00002	0.0010	0.0192	0.282871	14.1	0.7	0.528	0.560	0.595
DJ46 13	465	0.28283	0.00003	0.0023	0.0479	0.282810	11.6	0.9	0.620	0.709	0.812
DJ46 14	479	0.28292	0.00002	0.0010	0.0186	0.282911	15.5	0.8	0.471	0.468	0.464
DJ46 15	450	0.28287	0.00003	0.0021	0.0394	0.282852	12.7	0.9	0.558	0.622	0.695
DJ46 16	469	0.28284	0.00002	0.0016	0.0357	0.282826	12.2	0.8	0.594	0.670	0.755
DJ46 17	480	0.28290	0.00003	0.0016	0.0302	0.282886	14.6	0.9	0.508	0.526	0.546
DJ46 18	454	0.28288	0.00002	0.0015	0.0326	0.282867	13.4	0.7	0.535	0.585	0.641
DJ46 19	439	0.28290	0.00002	0.0012	0.0249	0.282890	13.8	0.7	0.502	0.542	0.587
DJ46 20	469	0.28284	0.00003	0.0025	0.0538	0.282818	12.0	0.9	0.609	0.688	0.781
DJ46 21	473	0.28284	0.00002	0.0012	0.0260	0.282829	12.4	0.8	0.588	0.659	0.738
DJ46 22	441	0.28289	0.00002	0.0017	0.0368	0.282876	13.4	0.9	0.523	0.574	0.630
DJ46 23	487	0.28292	0.00002	0.0009	0.0199	0.282912	15.7	0.7	0.470	0.461	0.451
DJ46 24	449	0.28298	0.00002	0.0016	0.0317	0.282967	16.8	0.9	0.392	0.361	0.323
DJ46 25	476	0.28288	0.00002	0.0014	0.0266	0.282868	13.9	0.8	0.534	0.570	0.610
DJ46 26	457	0.28289	0.00002	0.0011	0.0203	0.282881	13.9	0.6	0.515	0.553	0.593
DJ46 27	456	0.28288	0.00002	0.0013	0.0296	0.282869	13.5	0.7	0.532	0.580	0.633
DJ46 28	449	0.28288	0.00002	0.0012	0.0222	0.282870	13.3	0.8	0.531	0.582	0.639
DJ46 29	479	0.28292	0.00003	0.0015	0.0284	0.282907	15.3	0.9	0.477	0.479	0.479
DJ46 30	469	0.28292	0.00003	0.0015	0.0284	0.282907	15.1	0.9	0.477	0.485	0.491
DJ46 31	466	0.28290	0.00002	0.0009	0.0172	0.282892	14.5	0.6	0.498	0.520	0.543
DJ46 32	471	0.28294	0.00002	0.0011	0.0203	0.282930	16.0	0.8	0.444	0.430	0.412
DJ46 33	448	0.28283	0.00003	0.0018	0.0384	0.282815	11.4	1.1	0.612	0.708	0.819
DJ46 34	456	0.28292	0.00002	0.0022	0.0499	0.282901	14.6	0.7	0.487	0.506	0.527
DJ46 35	461	0.28293	0.00003	0.0021	0.0405	0.282912	15.1	0.9	0.471	0.478	0.486
DJ46 36	449	0.28287	0.00002	0.0013	0.0258	0.282859	13.0	0.6	0.546	0.607	0.674
DJ46 37	497	0.28282	0.00002	0.0012	0.0270	0.282809	12.2	0.7	0.616	0.690	0.773
DJ46 38	459	0.28290	0.00002	0.0017	0.0349	0.282885	14.1	0.8	0.509	0.540	0.575
DJ46 39	468	0.28291	0.00002	0.0013	0.0240	0.282899	14.8	0.7	0.489	0.504	0.520
DJ46 40	452	0.28291	0.00002	0.0010	0.0190	0.282902	14.5	0.7	0.485	0.508	0.532
DJ46 41	460	0.28290	0.00002	0.0014	0.0248	0.282888	14.2	0.6	0.505	0.534	0.565
DJ46 42	483	0.28289	0.00002	0.0012	0.0222	0.282879	14.4	0.6	0.516	0.539	0.563
DJ46 43	465	0.28290	0.00002	0.0010	0.0189	0.282891	14.5	0.7	0.499	0.523	0.547
DJ46 44	458	0.28293	0.00002	0.0016	0.0305	0.282916	15.2	0.7	0.464	0.470	0.475

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ46 45	464	0.28290	0.00002	0.0014	0.0268	0.282888	14.3	0.6	0.505	0.531	0.560
DJ46 46	463	0.28288	0.00002	0.0008	0.0141	0.282873	13.8	0.6	0.525	0.566	0.610
DJ46 47	464	0.28283	0.00002	0.0008	0.0175	0.282823	12.0	0.8	0.596	0.679	0.771
DJ46 48	460	0.28289	0.00002	0.0015	0.0278	0.282877	13.8	0.7	0.521	0.559	0.601
DJ46 50	465	0.28290	0.00002	0.0013	0.0233	0.282889	14.4	0.7	0.503	0.529	0.556
DJ46 51	473	0.28287	0.00002	0.0028	0.0654	0.282845	13.0	0.7	0.569	0.623	0.687
DJ46 52	459	0.28289	0.00002	0.0018	0.0337	0.282875	13.7	0.7	0.525	0.565	0.610
DJ46 53	465	0.28292	0.00002	0.0009	0.0184	0.282912	15.2	0.7	0.470	0.475	0.479
DJ46 54	457	0.28288	0.00002	0.0012	0.0218	0.282870	13.5	0.7	0.531	0.577	0.629
DJ46 55	481	0.28286	0.00002	0.0012	0.0260	0.282849	13.3	0.7	0.559	0.609	0.663
DJ46 56	500	0.28289	0.00002	0.0012	0.0212	0.282879	14.8	0.6	0.516	0.529	0.541
DJ46 57	476	0.28292	0.00002	0.0017	0.0365	0.282905	15.2	0.7	0.480	0.485	0.488
DJ46 58	477	0.28286	0.00002	0.0014	0.0288	0.282847	13.2	0.7	0.562	0.615	0.674
DJ46 59	464	0.28283	0.00002	0.0015	0.0338	0.282817	11.8	0.7	0.607	0.693	0.791
DJ46 60	461	0.28287	0.00001	0.0016	0.0296	0.282856	13.1	0.5	0.551	0.606	0.667
DJ46 61	472	0.28290	0.00002	0.0009	0.0160	0.282892	14.6	0.5	0.498	0.517	0.536
DJ46 62	457	0.28289	0.00002	0.0004	0.0075	0.282887	14.1	0.6	0.506	0.539	0.574
DJ46 63	462	0.28288	0.00001	0.0011	0.0233	0.282870	13.7	0.5	0.529	0.572	0.619
DJ46 64	457	0.28287	0.00002	0.0008	0.0144	0.282863	13.3	0.5	0.539	0.592	0.650
DJ83											
DJ83 02	439	0.28287	0.00003	0.0006	0.0135	0.282865	13.0	0.9	0.536	0.600	0.668
DJ83 03	432	0.28288	0.00003	0.0014	0.0271	0.282869	12.9	1.1	0.534	0.596	0.666
DJ83 04	463	0.28286	0.00003	0.0013	0.0248	0.282849	12.9	0.9	0.561	0.621	0.689
DJ83 05	428	0.28289	0.00003	0.0018	0.0401	0.282876	13.1	1.0	0.525	0.583	0.649
DJ83 06	445	0.28280	0.00002	0.0033	0.0800	0.282772	9.8	0.8	0.683	0.807	0.961
DJ83 07	454	0.28285	0.00003	0.0016	0.0344	0.282836	12.3	0.9	0.580	0.655	0.741
DJ83 08	428	0.28288	0.00002	0.0017	0.0376	0.282866	12.8	0.7	0.538	0.604	0.679
DJ83 09	457	0.28283	0.00003	0.0010	0.0189	0.282821	11.8	0.9	0.599	0.688	0.786
DJ83 10	455	0.28285	0.00002	0.0012	0.0271	0.282840	12.4	0.8	0.573	0.647	0.729
DJ83 11	445	0.28287	0.00002	0.0011	0.0240	0.282861	12.9	0.8	0.543	0.606	0.674
DJ83 12	416	0.28279	0.00003	0.0015	0.0351	0.282778	9.4	1.0	0.664	0.812	0.981
DJ83 13	451	0.28289	0.00002	0.0015	0.0311	0.282877	13.7	0.8	0.521	0.564	0.612
DJ83 14	436	0.28286	0.00002	0.0021	0.0396	0.282843	12.1	0.8	0.573	0.652	0.744
DJ83 15	450	0.28287	0.00002	0.0013	0.0246	0.282859	13.0	0.8	0.546	0.606	0.673
DJ83 16	426	0.28283	0.00002	0.0009	0.0187	0.282823	11.2	0.7	0.597	0.705	0.823
DJ83 17	472	0.28284	0.00002	0.0012	0.0227	0.282829	12.4	0.8	0.588	0.660	0.740
DJ83 18	436	0.28282	0.00002	0.0017	0.0347	0.282806	10.8	0.9	0.625	0.736	0.864
DJ83 19	443	0.28288	0.00003	0.0016	0.0301	0.282867	13.1	0.9	0.536	0.593	0.657
DJ83 20	448	0.28283	0.00002	0.0021	0.0405	0.282812	11.3	0.9	0.617	0.714	0.827
DJ83 21	440	0.28282	0.00002	0.0017	0.0314	0.282806	10.9	0.8	0.625	0.734	0.859
DJ83 22	430	0.28281	0.00002	0.0008	0.0171	0.282804	10.6	0.8	0.624	0.746	0.880
DJ83 23	436	0.28291	0.00003	0.0027	0.0528	0.282888	13.7	1.1	0.508	0.549	0.598
DJ83 24	439	0.28292	0.00002	0.0016	0.0309	0.282907	14.4	0.8	0.479	0.504	0.532
DJ83 25	460	0.28286	0.00002	0.0008	0.0142	0.282853	13.0	0.6	0.553	0.613	0.679
DJ83 26	433	0.28287	0.00002	0.0023	0.0458	0.282851	12.3	0.8	0.561	0.635	0.721

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ83 27	449	0.28282	0.00002	0.0014	0.0297	0.282808	11.2	0.7	0.620	0.723	0.839
DJ83 28	442	0.28285	0.00002	0.0017	0.0311	0.282836	12.0	0.6	0.581	0.664	0.759
DJ83 29	450	0.28289	0.00002	0.0007	0.0149	0.282884	13.9	0.8	0.510	0.549	0.591
DJ83 30	444	0.28279	0.00002	0.0023	0.0541	0.282771	9.7	0.8	0.679	0.811	0.967
DJ83 31	464	0.28281	0.00002	0.0009	0.0168	0.282802	11.3	0.7	0.625	0.727	0.839
DJ83 32	461	0.28287	0.00002	0.0012	0.0233	0.282860	13.3	0.7	0.545	0.598	0.656
DJ83 33	460	0.28287	0.00002	0.0020	0.0357	0.282853	13.0	0.9	0.557	0.614	0.680
DJ83 34	449	0.28286	0.00003	0.0015	0.0303	0.282847	12.6	0.9	0.564	0.634	0.712
DJ83 35	430	0.28287	0.00002	0.0014	0.0282	0.282859	12.5	0.8	0.548	0.620	0.701
DJ83 36	443	0.28284	0.00002	0.0017	0.0311	0.282826	11.7	0.7	0.596	0.687	0.790
DJ83 37	445	0.28284	0.00002	0.0011	0.0220	0.282831	11.9	0.7	0.586	0.674	0.771
DJ83 38	439	0.28279	0.00002	0.0010	0.0217	0.282782	10.0	0.8	0.655	0.790	0.939
DJ83 39	468	0.28283	0.00002	0.0012	0.0227	0.282819	12.0	0.6	0.602	0.685	0.777
DJ83 40	447	0.28285	0.00002	0.0013	0.0247	0.282839	12.2	0.8	0.575	0.654	0.742
DJ83 41	474	0.28281	0.00002	0.0010	0.0194	0.282801	11.5	0.7	0.627	0.723	0.829
DJ83 42	1894	0.28137	0.00003	0.0004	0.0091	0.281356	-7.9	1.0	2.589	3.061	3.551
DJ83 43	465	0.28281	0.00002	0.0019	0.0379	0.282793	11.0	0.8	0.643	0.746	0.866
DJ83 44	407	0.28282	0.00002	0.0022	0.0492	0.282803	10.1	0.6	0.633	0.761	0.912
DJ83 45	463	0.28284	0.00002	0.0007	0.0132	0.282834	12.4	0.6	0.580	0.655	0.737
DJ83 46	463	0.28281	0.00002	0.0018	0.0330	0.282794	11.0	0.7	0.641	0.745	0.866
DJ83 47	472	0.28289	0.00002	0.0013	0.0245	0.282879	14.2	0.7	0.518	0.548	0.580
DJ83 48	425	0.28294	0.00002	0.0011	0.0212	0.282931	15.0	0.7	0.444	0.457	0.471
DJ83 49	398	0.28285	0.00002	0.0028	0.0595	0.282829	10.8	0.8	0.599	0.708	0.840
DJ83 50	441	0.28283	0.00002	0.0014	0.0302	0.282818	11.3	0.7	0.605	0.705	0.817
DJ83 51	447	0.28281	0.00001	0.0011	0.0219	0.282801	10.9	0.5	0.629	0.741	0.866
DJ83 52	437	0.28283	0.00001	0.0015	0.0278	0.282818	11.2	0.5	0.607	0.709	0.825
DJ87											
DJ87 02	515	0.28293	0.00002	0.0008	0.0148	0.282922	16.7	0.8	0.454	0.419	0.378
DJ87 04	458	0.28292	0.00002	0.0014	0.0257	0.282908	14.9	0.7	0.476	0.489	0.502
DJ87 05	464	0.28300	0.00003	0.0020	0.0393	0.282983	17.7	1.1	0.367	0.314	0.250
DJ87 06	496	0.28284	0.00002	0.0015	0.0338	0.282826	12.8	0.6	0.592	0.652	0.718
DJ87 07	474	0.28292	0.00002	0.0013	0.0263	0.282908	15.3	0.7	0.475	0.478	0.479
DJ87 08	463	0.28293	0.00002	0.0015	0.0316	0.282917	15.3	0.8	0.463	0.465	0.466
DJ87 09	468	0.28288	0.00002	0.0012	0.0272	0.282869	13.8	0.7	0.531	0.571	0.615
DJ87 10	455	0.28292	0.00002	0.0013	0.0235	0.282909	14.9	0.6	0.475	0.489	0.503
DJ87 11	447	0.28290	0.00002	0.0014	0.0265	0.282888	14.0	0.7	0.505	0.541	0.582
DJ87 12	451	0.28287	0.00002	0.0013	0.0235	0.282859	13.0	0.7	0.546	0.606	0.672
DJ87 13	448	0.28290	0.00002	0.0017	0.0316	0.282886	13.9	0.8	0.509	0.547	0.589
DJ87 14	468	0.28291	0.00002	0.0017	0.0326	0.282895	14.7	0.8	0.494	0.512	0.531
DJ87 15	456	0.28292	0.00002	0.0014	0.0259	0.282908	14.9	0.8	0.476	0.490	0.505
DJ87 16	455	0.28288	0.00002	0.0011	0.0217	0.282871	13.5	0.6	0.529	0.577	0.628
DJ87 17	475	0.28285	0.00002	0.0014	0.0310	0.282838	12.8	0.7	0.577	0.639	0.709
DJ87 18	455	0.28291	0.00002	0.0012	0.0234	0.282900	14.5	0.7	0.488	0.510	0.533
DJ87 19	440	0.28291	0.00002	0.0013	0.0277	0.282899	14.2	0.7	0.489	0.521	0.555
DJ87 20	494	0.28289	0.00002	0.0012	0.0229	0.282879	14.7	0.7	0.516	0.532	0.549

Analysis No.	Age* (Ma)	$^{176}Hf/^{177}Hf$	1σ	$^{176}Lu/^{177}Hf$	$^{176}Yb/^{177}Hf$	$(^{176}Hf/^{177}Hf)_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ87 21	478	0.28291	0.00002	0.0010	0.0194	0.282901	15.1	0.6	0.485	0.492	0.498
DJ87 22	474	0.28292	0.00002	0.0010	0.0229	0.282911	15.4	0.6	0.471	0.472	0.470
DJ87 23	490	0.28292	0.00002	0.0013	0.0266	0.282908	15.6	0.7	0.475	0.468	0.459
DJ87 24	473	0.28289	0.00002	0.0014	0.0285	0.282878	14.2	0.7	0.519	0.549	0.581
DJ87 25	479	0.28289	0.00002	0.0025	0.0593	0.282868	13.9	0.8	0.535	0.568	0.606
DJ87 26	463	0.28296	0.00002	0.0012	0.0234	0.282950	16.5	0.6	0.416	0.391	0.360
DJ87 27	473	0.28283	0.00002	0.0008	0.0193	0.282823	12.2	0.7	0.596	0.674	0.759
DJ87 28	478	0.28287	0.00002	0.0012	0.0267	0.282859	13.6	0.7	0.545	0.588	0.634
DJ87 29	441	0.28293	0.00002	0.0011	0.0209	0.282921	15.0	0.7	0.458	0.471	0.483
DJ87 30	437	0.28294	0.00002	0.0019	0.0469	0.282924	15.0	0.7	0.453	0.465	0.477
DJ87 31	455	0.28293	0.00002	0.0015	0.0302	0.282917	15.2	0.6	0.463	0.470	0.476
DJ87 32	461	0.28291	0.00002	0.0012	0.0259	0.282900	14.7	0.6	0.488	0.506	0.526
DJ87 33	499	0.28297	0.00002	0.0018	0.0338	0.282953	17.4	0.6	0.409	0.359	0.299
DJ87 34	465	0.28293	0.00002	0.0013	0.0257	0.282919	15.4	0.6	0.461	0.460	0.458
DJ87 35	468	0.28288	0.00002	0.0013	0.0248	0.282869	13.7	0.7	0.532	0.573	0.617
DJ87 36	488	0.28294	0.00002	0.0010	0.0219	0.282931	16.4	0.6	0.443	0.417	0.387
DJ87 37	478	0.28291	0.00002	0.0007	0.0134	0.282904	15.2	0.8	0.481	0.486	0.489
DJ87 38	451	0.28294	0.00002	0.0011	0.0216	0.282931	15.5	0.7	0.444	0.442	0.438
DJ87 39	473	0.28295	0.00002	0.0014	0.0273	0.282938	16.3	0.7	0.433	0.411	0.385
DJ87 40	491	0.28292	0.00002	0.0008	0.0169	0.282913	15.8	0.7	0.469	0.457	0.442
DJ87 41	480	0.28290	0.00002	0.0010	0.0199	0.282891	14.8	0.6	0.499	0.514	0.528
DJ87 42	455	0.28293	0.00002	0.0005	0.0092	0.282926	15.5	0.6	0.451	0.450	0.449
DJ87 43	499	0.28290	0.00002	0.0016	0.0331	0.282885	15.0	0.8	0.508	0.515	0.522
DJ87 44	463	0.28293	0.00002	0.0013	0.0260	0.282919	15.4	0.7	0.461	0.461	0.461
DJ87 45	501	0.28292	0.00002	0.0016	0.0351	0.282905	15.7	0.7	0.479	0.468	0.454
DJ87 46	486	0.28291	0.00002	0.0010	0.0181	0.282901	15.3	0.7	0.485	0.487	0.488
DJ87 47	483	0.28294	0.00002	0.0007	0.0168	0.282934	16.4	0.7	0.439	0.414	0.384
DJ87 48	493	0.28289	0.00002	0.0014	0.0326	0.282877	14.6	0.7	0.519	0.537	0.556
DJ87 49	470	0.28289	0.00002	0.0014	0.0326	0.282878	14.1	0.7	0.519	0.551	0.585
DJ87 50	506	0.28289	0.00002	0.0010	0.0233	0.282881	15.0	0.7	0.514	0.521	0.527
DJ87 51	463	0.28288	0.00002	0.0011	0.0223	0.282870	13.7	0.6	0.529	0.572	0.618
DJ87 52	471	0.28289	0.00002	0.0008	0.0161	0.282883	14.3	0.6	0.511	0.538	0.567
DJ87 53	490	0.28287	0.00002	0.0013	0.0263	0.282858	13.8	0.6	0.546	0.583	0.622
DJ87 54	493	0.28291	0.00002	0.0010	0.0206	0.282901	15.4	0.6	0.485	0.483	0.478
DJ87 55	494	0.28294	0.00002	0.0013	0.0256	0.282928	16.4	0.7	0.446	0.420	0.388
DJ87 56	522	0.28288	0.00002	0.0010	0.0191	0.282870	15.0	0.7	0.528	0.534	0.539
DJ87 57	482	0.28289	0.00002	0.0015	0.0291	0.282876	14.3	0.7	0.521	0.546	0.573
DJ87 58	490	0.28289	0.00002	0.0010	0.0221	0.282881	14.6	0.7	0.514	0.530	0.548
DJ87 59	469	0.28289	0.00002	0.0010	0.0221	0.282881	14.2	0.7	0.514	0.543	0.575
DJ89											
DJ89 01	471	0.28290	0.00002	0.0016	0.0306	0.282886	14.4	0.7	0.508	0.531	0.557
DJ89 02	480	0.28289	0.00002	0.0010	0.0194	0.282881	14.4	0.7	0.514	0.537	0.561
DJ89 03	465	0.28282	0.00002	0.0016	0.0354	0.282806	11.4	0.8	0.623	0.718	0.825
DJ89 04	506	0.28288	0.00002	0.0013	0.0274	0.282868	14.5	0.8	0.532	0.550	0.569
DJ89 05	473	0.28288	0.00002	0.0011	0.0205	0.282870	13.9	0.7	0.529	0.566	0.605

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ89 06	476	0.28286	0.00002	0.0011	0.0226	0.282850	13.2	0.7	0.558	0.610	0.667
DJ89 07	485	0.28283	0.00002	0.0010	0.0212	0.282821	12.4	0.7	0.599	0.671	0.750
DJ89 08	496	0.28284	0.00002	0.0015	0.0331	0.282826	12.8	0.8	0.592	0.652	0.718
DJ89 09	436	0.28287	0.00002	0.0011	0.0202	0.282861	12.7	0.6	0.543	0.611	0.685
DJ89 11	453	0.28287	0.00002	0.0017	0.0412	0.282856	12.9	0.8	0.552	0.612	0.680
DJ89 12	511	0.28284	0.00002	0.0010	0.0216	0.282830	13.3	0.7	0.585	0.632	0.684
DJ89 13	461	0.28287	0.00002	0.0013	0.0256	0.282859	13.2	0.7	0.546	0.600	0.659
DJ89 14	495	0.28291	0.00002	0.0015	0.0272	0.282896	15.3	0.8	0.492	0.492	0.491
DJ89 15	452	0.28282	0.00002	0.0014	0.0324	0.282808	11.2	0.7	0.620	0.721	0.836
DJ89 16	486	0.28289	0.00002	0.0011	0.0261	0.282880	14.5	0.6	0.515	0.535	0.556
DJ89 17	469	0.28292	0.00002	0.0008	0.0156	0.282913	15.3	0.8	0.469	0.471	0.471
DJ89 18	479	0.28284	0.00002	0.0012	0.0248	0.282829	12.6	0.8	0.588	0.656	0.731
DJ89 19	463	0.28288	0.00002	0.0012	0.0247	0.282870	13.6	0.8	0.531	0.574	0.621
DJ89 20	437	0.28292	0.00002	0.0007	0.0124	0.282914	14.7	0.7	0.467	0.489	0.510
DJ89 21	458	0.28289	0.00003	0.0014	0.0270	0.282878	13.8	0.9	0.519	0.558	0.600
DJ89 22	474	0.28288	0.00002	0.0009	0.0172	0.282872	14.0	0.9	0.526	0.561	0.598
DJ89 23	508	0.28291	0.00002	0.0016	0.0314	0.282895	15.5	0.8	0.493	0.487	0.478
DJ89 24	439	0.28291	0.00002	0.0018	0.0498	0.282895	14.0	0.7	0.496	0.531	0.570
DJ89 26	488	0.28281	0.00002	0.0010	0.0217	0.282801	11.8	0.7	0.627	0.715	0.811
DJ89 27	458	0.28284	0.00002	0.0009	0.0173	0.282832	12.2	0.7	0.583	0.662	0.749
DJ89 28	455	0.28294	0.00002	0.0012	0.0243	0.282930	15.6	0.7	0.445	0.441	0.435
DJ89 29	472	0.28281	0.00002	0.0013	0.0241	0.282799	11.3	0.6	0.632	0.730	0.840
DJ89 30	461	0.28295	0.00002	0.0017	0.0371	0.282935	15.9	0.6	0.437	0.425	0.409
DJ89 31	474	0.28295	0.00002	0.0015	0.0290	0.282937	16.3	0.7	0.434	0.413	0.387
DJ89 32	453	0.28282	0.00002	0.0014	0.0297	0.282808	11.2	0.7	0.620	0.721	0.834
DJ89 33	481	0.28289	0.00002	0.0010	0.0208	0.282881	14.4	0.6	0.514	0.536	0.559
DJ89 34	507	0.28283	0.00002	0.0011	0.0236	0.282820	12.9	0.7	0.600	0.659	0.724
DJ89 35	470	0.28294	0.00002	0.0014	0.0264	0.282928	15.9	0.6	0.447	0.436	0.422
DJ89 36	445	0.28290	0.00002	0.0011	0.0199	0.282891	14.0	0.7	0.501	0.537	0.576
DJ89 37	442	0.28287	0.00002	0.0013	0.0246	0.282859	12.8	0.6	0.546	0.611	0.683
DJ89 38	464	0.28293	0.00002	0.0007	0.0145	0.282924	15.6	0.7	0.453	0.449	0.442
DJ89 39	493	0.28286	0.00002	0.0011	0.0227	0.282850	13.6	0.7	0.558	0.599	0.645
DJ89 40	469	0.28282	0.00002	0.0013	0.0282	0.282809	11.6	0.7	0.618	0.709	0.811
DJ89 41	471	0.28286	0.00002	0.0013	0.0289	0.282849	13.1	0.6	0.561	0.617	0.679
DJ89 42	489	0.28285	0.00002	0.0017	0.0387	0.282834	13.0	0.6	0.581	0.637	0.700
DJ89 43	504	0.28283	0.00002	0.0012	0.0263	0.282819	12.8	0.6	0.602	0.663	0.731
DJ89 44	480	0.28290	0.00002	0.0009	0.0173	0.282892	14.8	0.6	0.498	0.512	0.525
DJ89 45	485	0.28288	0.00002	0.0011	0.0220	0.282870	14.1	0.7	0.529	0.558	0.590
DJ89 46	467	0.28291	0.00002	0.0011	0.0208	0.282900	14.8	0.6	0.487	0.501	0.515
DJ89 47	472	0.28294	0.00002	0.0013	0.0248	0.282929	15.9	0.7	0.446	0.433	0.416
DJ89 48	470	0.28284	0.00002	0.0009	0.0210	0.282832	12.5	0.7	0.583	0.655	0.734
DJ89 49	472	0.28289	0.00002	0.0009	0.0177	0.282882	14.3	0.6	0.512	0.539	0.568
DJ89 50	486	0.28285	0.00002	0.0013	0.0291	0.282838	13.0	0.5	0.575	0.631	0.692
DJ89 51	474	0.28289	0.00002	0.0010	0.0181	0.282881	14.3	0.7	0.514	0.540	0.568
DJ89 52	476	0.28284	0.00002	0.0008	0.0139	0.282833	12.6	0.6	0.582	0.649	0.723

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	$(^{176}$Hf/^{177}Hf$)_i$	εHf(t)	1σ	T_{DM}	T_{DM}^C	T_{DM}^{LC}
DJ89 53	483	0.28287	0.00002	0.0014	0.0324	0.282857	13.7	0.6	0.548	0.589	0.634
DJ89 54	503	0.28284	0.00002	0.0012	0.0244	0.282829	13.1	0.7	0.588	0.641	0.700
DJ89 55	491	0.28280	0.00002	0.0009	0.0190	0.282792	11.5	0.6	0.640	0.733	0.837
DJ89 56	489	0.28290	0.00001	0.0011	0.0206	0.282890	14.9	0.5	0.501	0.510	0.519
DJ89 57	448	0.28290	0.00002	0.0019	0.0468	0.282884	13.8	0.5	0.512	0.550	0.594
DJ89 58	434	0.28293	0.00002	0.0019	0.0362	0.282915	14.6	0.7	0.468	0.490	0.514
DJ89 59	475	0.28285	0.00001	0.0010	0.0188	0.282841	12.9	0.5	0.570	0.631	0.698
DJ89 60	467	0.28291	0.00002	0.0012	0.0218	0.282900	14.8	0.6	0.488	0.503	0.518
DJ89 61	448	0.28290	0.00002	0.0016	0.0364	0.282887	13.9	0.7	0.508	0.545	0.586
DJ89 62	487	0.28285	0.00002	0.0014	0.0323	0.282837	13.0	0.6	0.577	0.632	0.694
DJ98											
DJ98 01	408	0.28290	0.00002	0.0011	0.0208	0.282892	13.2	0.6	0.501	0.559	0.624
DJ98 02	407	0.28287	0.00002	0.0007	0.0121	0.282865	12.2	0.7	0.538	0.621	0.713
DJ98 03	400	0.28288	0.00002	0.0009	0.0195	0.282873	12.4	0.6	0.526	0.606	0.694
DJ98 04	415	0.28289	0.00002	0.0006	0.0111	0.282885	13.1	0.7	0.508	0.569	0.635
DJ98 05	399	0.28282	0.00002	0.0007	0.0159	0.282815	10.3	0.6	0.608	0.740	0.885
DJ98 06	419	0.28286	0.00002	0.0004	0.0079	0.282857	12.2	0.6	0.547	0.631	0.722
DJ98 07	402	0.28288	0.00002	0.0010	0.0186	0.282872	12.4	0.6	0.528	0.607	0.694
DJ98 08	403	0.28288	0.00002	0.0010	0.0198	0.282872	12.4	0.6	0.528	0.606	0.693
DJ98 09	404	0.28287	0.00002	0.0009	0.0160	0.282863	12.1	0.6	0.541	0.627	0.721
DJ98 10	417	0.28289	0.00002	0.0011	0.0216	0.282881	13.0	0.7	0.515	0.577	0.645
DJ98 11	409	0.28292	0.00002	0.0008	0.0147	0.282914	14.0	0.6	0.469	0.508	0.550
DJ98 12	424	0.28288	0.00002	0.0010	0.0222	0.282872	12.9	0.5	0.528	0.593	0.666
DJ98 13	399	0.28288	0.00002	0.0010	0.0201	0.282873	12.3	0.6	0.528	0.609	0.698
DJ98 14	418	0.28287	0.00002	0.0008	0.0172	0.282864	12.4	0.6	0.539	0.616	0.701
DJ98 15	435	0.28285	0.00001	0.0012	0.0259	0.282840	12.0	0.5	0.573	0.659	0.754
DJ98 16	413	0.28285	0.00002	0.0008	0.0169	0.282844	11.6	0.6	0.567	0.665	0.772
DJ98 17	419	0.28287	0.00002	0.0009	0.0178	0.282863	12.4	0.6	0.541	0.618	0.702
DJ98 18	424	0.28287	0.00002	0.0008	0.0154	0.282864	12.6	0.6	0.539	0.613	0.693
DJ98 19	406	0.28282	0.00002	0.0008	0.0160	0.282814	10.4	0.6	0.610	0.738	0.879
DJ98 20	411	0.28286	0.00002	0.0005	0.0093	0.282856	12.0	0.5	0.549	0.638	0.735
DJ98 21	422	0.28284	0.00002	0.0017	0.0389	0.282827	11.2	0.7	0.596	0.699	0.816
DJ98 22	408	0.28287	0.00002	0.0016	0.0322	0.282858	12.0	0.6	0.551	0.636	0.734
DJ98 23	417	0.28288	0.00001	0.0007	0.0151	0.282875	12.8	0.5	0.524	0.592	0.667
DJ98 24	397	0.28290	0.00002	0.0010	0.0207	0.282893	13.0	0.6	0.499	0.564	0.635
DJ98 25	437	0.28287	0.00002	0.0005	0.0098	0.282866	12.9	0.5	0.535	0.599	0.668
DJ98 26	419	0.28286	0.00002	0.0008	0.0173	0.282854	12.1	0.7	0.553	0.639	0.732
DJ98 27	406	0.28287	0.00002	0.0008	0.0143	0.282864	12.2	0.5	0.539	0.624	0.716
DJ98 28	421	0.28289	0.00002	0.0012	0.0224	0.282881	13.1	0.6	0.516	0.576	0.642
DJ98 29	426	0.28288	0.00002	0.0013	0.0286	0.282870	12.8	0.7	0.532	0.598	0.671
DJ98 30	421	0.28288	0.00002	0.0015	0.0347	0.282868	12.7	0.7	0.535	0.604	0.682
DJ98 31	433	0.28288	0.00002	0.0014	0.0318	0.282869	12.9	0.7	0.534	0.595	0.665
DJ98 32	427	0.28286	0.00001	0.0009	0.0178	0.282853	12.3	0.5	0.555	0.636	0.724
DJ98 33	473	0.28287	0.00001	0.0004	0.0077	0.282866	13.8	0.5	0.534	0.574	0.618
DJ98 34	421	0.28285	0.00002	0.0015	0.0355	0.282838	11.6	0.6	0.578	0.673	0.780

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ98 35	395	0.28286	0.00002	0.0008	0.0151	0.282854	11.6	0.7	0.553	0.653	0.763
DJ98 36	404	0.28287	0.00002	0.0006	0.0108	0.282865	12.2	0.6	0.536	0.622	0.714
DJ98 37	414	0.28286	0.00002	0.0010	0.0201	0.282852	11.9	0.6	0.556	0.645	0.744
DJ98 38	422	0.28288	0.00002	0.0013	0.0281	0.282870	12.7	0.6	0.532	0.600	0.676
DJ98 39	418	0.28286	0.00002	0.0008	0.0157	0.282854	12.1	0.6	0.553	0.639	0.733
DJ98 40	419	0.28287	0.00002	0.0004	0.0079	0.282867	12.6	0.5	0.534	0.609	0.689
DJ98 41	401	0.28285	0.00002	0.0010	0.0227	0.282842	11.3	0.7	0.570	0.676	0.793
DJ98 42	428	0.28284	0.00001	0.0008	0.0167	0.282834	11.6	0.5	0.582	0.679	0.785
DJ98 43	417	0.28287	0.00002	0.0008	0.0160	0.282864	12.4	0.7	0.539	0.617	0.702
DJ98 44	415	0.28289	0.00002	0.0013	0.0277	0.282880	13.0	0.6	0.518	0.581	0.652
DJ98 45	424	0.28291	0.00002	0.0009	0.0198	0.282903	14.0	0.7	0.484	0.523	0.565
DJ98 46	416	0.28289	0.00002	0.0014	0.0317	0.282879	12.9	0.7	0.519	0.583	0.654
DJ98 47	408	0.28284	0.00002	0.0006	0.0117	0.282835	11.2	0.7	0.578	0.687	0.806
DJ98 48	398	0.28285	0.00002	0.0015	0.0286	0.282839	11.1	0.6	0.578	0.686	0.809
DJ98 50	433	0.28286	0.00001	0.0008	0.0166	0.282854	12.4	0.5	0.553	0.630	0.714
DJ98 51	403	0.28289	0.00002	0.0015	0.0287	0.282879	12.6	0.6	0.521	0.592	0.672
DJ98 52	409	0.28285	0.00001	0.0012	0.0254	0.282841	11.4	0.5	0.573	0.675	0.787
DJ98 53	418	0.28290	0.00001	0.0015	0.0297	0.282888	13.3	0.5	0.506	0.560	0.621
DJ98 54	411	0.28290	0.00002	0.0010	0.0192	0.282892	13.3	0.5	0.499	0.556	0.617
DJ98 55	448	0.28286	0.00001	0.0008	0.0181	0.282853	12.7	0.5	0.553	0.621	0.694
DJ98 56	421	0.28285	0.00001	0.0011	0.0268	0.282841	11.7	0.5	0.572	0.666	0.770
DJ98 57	414	0.28288	0.00001	0.0009	0.0174	0.282873	12.7	0.5	0.526	0.598	0.676
DJ98 58	437	0.28282	0.00002	0.0016	0.0374	0.282807	10.9	0.5	0.623	0.734	0.860
DJ98 59	432	0.28286	0.00001	0.0006	0.0104	0.282855	12.4	0.5	0.550	0.627	0.710
DJ98 60	427	0.28285	0.00002	0.0010	0.0228	0.282842	11.9	0.5	0.570	0.660	0.759
DJ108											
DJ108 01	460	0.28290	0.00002	0.0007	0.0135	0.282894	14.4	0.6	0.495	0.520	0.546
DJ108 02	442	0.28286	0.00002	0.0009	0.0195	0.282853	12.6	0.6	0.555	0.626	0.705
DJ108 03	458	0.28287	0.00002	0.0011	0.0254	0.282861	13.2	0.6	0.543	0.598	0.657
DJ108 04	469	0.28293	0.00002	0.0010	0.0235	0.282921	15.6	0.7	0.457	0.452	0.444
DJ108 05	469	0.28284	0.00003	0.0024	0.0568	0.282819	12.0	1.0	0.607	0.686	0.778
DJ108 06	452	0.28287	0.00002	0.0010	0.0231	0.282862	13.1	0.6	0.542	0.599	0.662
DJ108 07	477	0.28286	0.00002	0.0017	0.0410	0.282845	13.1	0.7	0.567	0.621	0.683
DJ108 08	470	0.28290	0.00002	0.0024	0.0581	0.282879	14.1	0.8	0.519	0.548	0.581
DJ108 09	445	0.28287	0.00002	0.0018	0.0423	0.282855	12.7	0.8	0.554	0.619	0.693
DJ108 10	460	0.28285	0.00002	0.0013	0.0309	0.282839	12.5	0.6	0.575	0.646	0.725
DJ108 11	448	0.28288	0.00002	0.0013	0.0301	0.282869	13.3	0.6	0.532	0.585	0.643
DJ108 12	440	0.28290	0.00002	0.0012	0.0276	0.282890	13.9	0.5	0.502	0.542	0.585
DJ108 13	449	0.28289	0.00002	0.0018	0.0396	0.282875	13.5	0.6	0.525	0.571	0.623
DJ108 14	455	0.28287	0.00002	0.0019	0.0463	0.282854	12.9	0.5	0.555	0.615	0.683
DJ108 15	445	0.28287	0.00002	0.0016	0.0342	0.282857	12.8	0.6	0.551	0.615	0.687
DJ108 16	461	0.28286	0.00002	0.0024	0.0527	0.282839	12.5	0.7	0.578	0.644	0.722
DJ108 17	455	0.28288	0.00002	0.0013	0.0270	0.282869	13.4	0.8	0.532	0.581	0.634
DJ108 18	450	0.28290	0.00002	0.0017	0.0351	0.282886	13.9	0.7	0.509	0.545	0.586
DJ108 19	451	0.28290	0.00002	0.0011	0.0271	0.282891	14.1	0.6	0.501	0.533	0.568

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ108 20	458	0.28292	0.00002	0.0012	0.0250	0.282910	15.0	0.6	0.474	0.485	0.497
DJ108 21	450	0.28285	0.00002	0.0009	0.0183	0.282842	12.4	0.6	0.569	0.644	0.727
DJ108 22	459	0.28289	0.00001	0.0007	0.0163	0.282884	14.1	0.5	0.510	0.543	0.579
DJ108 23	481	0.28287	0.00001	0.0005	0.0094	0.282865	13.9	0.5	0.535	0.571	0.610
DJ108 24	485	0.28284	0.00002	0.0022	0.0524	0.282820	12.4	0.6	0.604	0.673	0.753
DJ108 25	458	0.28288	0.00002	0.0011	0.0223	0.282871	13.6	0.5	0.529	0.575	0.625
DJ108 26	455	0.28288	0.00002	0.0011	0.0265	0.282871	13.5	0.6	0.529	0.577	0.628
DJ108 29	461	0.28289	0.00002	0.0024	0.0565	0.282869	13.6	0.6	0.534	0.576	0.625
DJ108 30	431	0.28293	0.00003	0.0012	0.0238	0.282920	14.7	1.0	0.459	0.479	0.499
DJ108 31	528	0.28282	0.00002	0.0016	0.0359	0.282804	12.8	0.6	0.623	0.681	0.746
DJ108 32	462	0.28287	0.00002	0.0015	0.0348	0.282857	13.2	0.6	0.549	0.603	0.663
DJ108 33	447	0.28288	0.00001	0.0012	0.0246	0.282870	13.3	0.5	0.531	0.583	0.641
DJ108 34	455	0.28291	0.00002	0.0018	0.0376	0.282895	14.4	0.6	0.496	0.522	0.550
DJ108 35	467	0.28287	0.00002	0.0006	0.0112	0.282865	13.6	0.6	0.536	0.582	0.631
DJ108 36	467	0.28287	0.00002	0.0013	0.0301	0.282859	13.3	0.7	0.546	0.596	0.651
DJ108 37	476	0.28288	0.00001	0.0012	0.0278	0.282869	13.9	0.4	0.531	0.566	0.604
DJ108 38	465	0.28289	0.00002	0.0009	0.0185	0.282882	14.1	0.6	0.512	0.544	0.577
DJ108 39	471	0.28287	0.00001	0.0006	0.0138	0.282865	13.7	0.5	0.536	0.580	0.626
DJ108 40	459	0.28291	0.00002	0.0012	0.0249	0.282900	14.6	0.6	0.488	0.508	0.528
DJ108 41	465	0.28286	0.00001	0.0012	0.0233	0.282850	13.0	0.5	0.559	0.618	0.684
DJ108 42	454	0.28286	0.00001	0.0016	0.0383	0.282846	12.6	0.4	0.565	0.633	0.709
DJ108 43	485	0.28285	0.00002	0.0023	0.0581	0.282829	12.7	0.5	0.591	0.652	0.723
DJ108 44	450	0.28286	0.00002	0.0027	0.0672	0.282837	12.2	0.6	0.583	0.656	0.744
DJ108 45	460	0.28289	0.00001	0.0014	0.0282	0.282878	13.9	0.5	0.519	0.557	0.598
DJ108 46	455	0.28288	0.00001	0.0009	0.0226	0.282872	13.6	0.5	0.526	0.573	0.623
DJ108 47	467	0.28287	0.00001	0.0010	0.0240	0.282861	13.4	0.5	0.542	0.590	0.643
DJ108 48	484	0.28288	0.00001	0.0013	0.0305	0.282868	14.1	0.5	0.532	0.563	0.597
DJ108 49	487	0.28287	0.00001	0.0007	0.0138	0.282864	14.0	0.5	0.538	0.572	0.608
DJ108 50	471	0.28292	0.00002	0.0015	0.0347	0.282907	15.1	0.6	0.477	0.483	0.489
DJ108 51	449	0.28291	0.00002	0.0020	0.0456	0.282893	14.2	0.5	0.499	0.529	0.563
DJ108 52	454	0.28290	0.00002	0.0011	0.0243	0.282891	14.2	0.5	0.501	0.531	0.565
DJ108 53	471	0.28284	0.00002	0.0004	0.0074	0.282836	12.7	0.6	0.575	0.644	0.718
DJ108 54	482	0.28286	0.00002	0.0009	0.0166	0.282852	13.4	0.5	0.555	0.602	0.653
DJ108 55	467	0.28289	0.00001	0.0008	0.0179	0.282883	14.2	0.5	0.511	0.540	0.572
DJ108 56	486	0.28286	0.00001	0.0012	0.0295	0.282849	13.4	0.5	0.559	0.606	0.657
DJ108 57	442	0.28290	0.00002	0.0010	0.0228	0.282892	14.0	0.6	0.499	0.537	0.577
DJ108 58	491	0.28287	0.00001	0.0009	0.0217	0.282862	14.0	0.4	0.541	0.573	0.609
DJ108 59	485	0.28291	0.00001	0.0023	0.0573	0.282889	14.8	0.5	0.503	0.515	0.527
DJ108 60	493	0.28289	0.00001	0.0016	0.0372	0.282875	14.5	0.5	0.522	0.541	0.562
DJ188											
DJ188 02	442	0.28294	0.00003	0.0034	0.0749	0.282912	14.7	1.0	0.473	0.491	0.512
DJ188 04	418	0.28291	0.00002	0.0027	0.0608	0.282889	13.3	0.9	0.508	0.559	0.619
DJ188 06	449	0.28293	0.00003	0.0026	0.0508	0.282908	14.7	0.9	0.477	0.495	0.514
DJ188 09	432	0.28297	0.00003	0.0026	0.0591	0.282949	15.8	1.1	0.418	0.412	0.404
DJ188 11	379	0.28297	0.00003	0.0036	0.0858	0.282944	14.4	0.9	0.430	0.457	0.491

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ188 12	409	0.28295	0.00002	0.0009	0.0199	0.282943	15.1	0.8	0.427	0.441	0.454
DJ188 15	442	0.28287	0.00003	0.0017	0.0339	0.282856	12.7	1.0	0.552	0.619	0.694
DJ188 16	427	0.28296	0.00003	0.0024	0.0536	0.282941	15.4	0.9	0.430	0.434	0.437
DJ188 17	400	0.28299	0.00003	0.0018	0.0387	0.282977	16.0	1.1	0.380	0.370	0.357
DJ188 18	427	0.28308	0.00004	0.0041	0.1081	0.283047	19.1	1.5	0.265	0.190	0.088
DJ188 19	412	0.28300	0.00003	0.0036	0.0818	0.282972	16.2	1.2	0.384	0.372	0.355
DJ188 20	418	0.28294	0.00003	0.0022	0.0480	0.282923	14.5	0.9	0.457	0.481	0.508
DJ188 26	410	0.28291	0.00002	0.0010	0.0203	0.282902	13.6	0.7	0.485	0.533	0.586
DJ188 29	434	0.28293	0.00003	0.0020	0.0438	0.282914	14.6	0.9	0.469	0.492	0.516
DJ188 31	431	0.28291	0.00003	0.0016	0.0341	0.282897	13.9	1.0	0.493	0.532	0.575
DJ188 32	416	0.28293	0.00004	0.0053	0.1416	0.282889	13.3	1.3	0.516	0.561	0.622
DJ188 33	412	0.28290	0.00003	0.0024	0.0555	0.282881	12.9	1.1	0.519	0.580	0.651
DJ188 34	416	0.28289	0.00002	0.0009	0.0187	0.282883	13.1	0.8	0.512	0.574	0.641
DJ188 35	394	0.28295	0.00002	0.0022	0.0485	0.282934	14.4	0.9	0.443	0.472	0.505
DJ188 37	423	0.28288	0.00003	0.0021	0.0455	0.282863	12.5	1.1	0.544	0.614	0.695
DJ188 39	397	0.28292	0.00002	0.0020	0.0465	0.282905	13.4	0.7	0.484	0.535	0.594
DJ188 40	386	0.28295	0.00003	0.0012	0.0272	0.282941	14.5	0.9	0.431	0.460	0.491
DJ188 41	396	0.28295	0.00002	0.0023	0.0542	0.282933	14.4	0.8	0.444	0.472	0.505
DJ188 43	398	0.28293	0.00004	0.0038	0.1011	0.282902	13.3	1.3	0.494	0.543	0.604
DJ188 45	398	0.28292	0.00002	0.0020	0.0437	0.282905	13.5	0.8	0.484	0.535	0.593
DJ188 47	410	0.28288	0.00003	0.0016	0.0349	0.282868	12.4	0.9	0.536	0.612	0.699
DJ188 48	412	0.28283	0.00002	0.0017	0.0318	0.282817	10.7	0.6	0.610	0.727	0.861
DJ188 51	439	0.28289	0.00003	0.0018	0.0354	0.282875	13.3	1.0	0.525	0.577	0.635
DJ188 54	411	0.28295	0.00003	0.0025	0.0567	0.282931	14.7	1.0	0.446	0.468	0.492
DJ188 55	390	0.28292	0.00002	0.0009	0.0198	0.282913	13.6	0.6	0.470	0.521	0.577
DJ188 58	414	0.28294	0.00002	0.0016	0.0344	0.282928	14.6	0.6	0.450	0.473	0.498
DJ188 59	425	0.28296	0.00003	0.0052	0.1166	0.282919	14.5	0.9	0.466	0.486	0.513
DJ188 60	487	0.28292	0.00003	0.0018	0.0405	0.282904	15.4	0.9	0.481	0.480	0.477
DJ188 61	440	0.28290	0.00002	0.0017	0.0396	0.282886	13.7	0.8	0.509	0.551	0.599
DJ188 62	401	0.28297	0.00002	0.0022	0.0473	0.282953	15.2	0.8	0.413	0.422	0.431
DJ188 63	394	0.28294	0.00002	0.0032	0.0686	0.282916	13.8	0.7	0.470	0.512	0.562
DJ188 65	407	0.28293	0.00002	0.0019	0.0423	0.282916	14.0	0.7	0.468	0.505	0.547
DJ188 66	416	0.28296	0.00003	0.0022	0.0500	0.282943	15.2	1.0	0.428	0.437	0.446
DJ188 67	415	0.28290	0.00002	0.0014	0.0311	0.282889	13.3	0.6	0.505	0.560	0.622
DJ192											
DJ192 01	465	0.28293	0.00002	0.0015	0.0285	0.282917	15.4	0.8	0.463	0.464	0.464
DJ192 02	487	0.28287	0.00002	0.0007	0.0138	0.282864	14.0	0.8	0.538	0.572	0.608
DJ192 03	469	0.28291	0.00002	0.0008	0.0157	0.282903	15.0	0.6	0.483	0.493	0.504
DJ192 04	491	0.28292	0.00002	0.0008	0.0156	0.282913	15.8	0.8	0.469	0.457	0.442
DJ192 05	481	0.28291	0.00002	0.0020	0.0400	0.282892	14.8	0.8	0.499	0.511	0.523
DJ192 07	447	0.28285	0.00002	0.0013	0.0303	0.282839	12.2	0.9	0.575	0.654	0.742
DJ192 08	450	0.28290	0.00003	0.0017	0.0316	0.282886	13.9	0.9	0.509	0.545	0.586
DJ192 09	470	0.28292	0.00002	0.0014	0.0273	0.282908	15.2	0.8	0.476	0.482	0.487
DJ192 10	459	0.28295	0.00002	0.0024	0.0500	0.282929	15.7	0.8	0.445	0.440	0.431
DJ192 11	446	0.28292	0.00002	0.0008	0.0161	0.282913	14.8	0.6	0.469	0.485	0.501

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ192 12	452	0.28289	0.00002	0.0016	0.0311	0.282876	13.6	0.6	0.522	0.565	0.614
DJ192 13	456	0.28292	0.00002	0.0013	0.0245	0.282909	14.9	0.8	0.475	0.488	0.502
DJ192 14	466	0.28296	0.00003	0.0011	0.0192	0.282950	16.6	0.9	0.415	0.387	0.353
DJ192 15	455	0.28288	0.00002	0.0011	0.0209	0.282871	13.5	0.8	0.529	0.577	0.628
DJ192 16	451	0.28292	0.00002	0.0018	0.0389	0.282905	14.6	0.8	0.481	0.501	0.522
DJ192 17	474	0.28292	0.00003	0.0011	0.0235	0.282910	15.3	0.9	0.472	0.474	0.473
DJ192 18	438	0.28289	0.00002	0.0011	0.0225	0.282881	13.5	0.8	0.515	0.564	0.618
DJ192 19	453	0.28297	0.00002	0.0042	0.1051	0.282934	15.7	0.8	0.437	0.432	0.423
DJ192 20	445	0.28289	0.00002	0.0010	0.0206	0.282882	13.7	0.7	0.514	0.558	0.606
DJ192 21	450	0.28293	0.00002	0.0019	0.0400	0.282914	14.9	0.8	0.468	0.481	0.494
DJ192 22	445	0.28293	0.00002	0.0014	0.0273	0.282918	15.0	0.8	0.462	0.474	0.486
DJ192 23	447	0.28293	0.00002	0.0015	0.0320	0.282917	15.0	0.6	0.463	0.475	0.487
DJ192 24	450	0.28295	0.00002	0.0012	0.0228	0.282940	15.8	0.8	0.431	0.421	0.409
DJ192 25	453	0.28292	0.00002	0.0012	0.0254	0.282910	14.8	0.9	0.474	0.488	0.503
DJ192 26	478	0.28293	0.00002	0.0012	0.0249	0.282919	15.7	0.8	0.459	0.450	0.438
DJ192 27	442	0.28290	0.00002	0.0013	0.0280	0.282889	13.9	0.7	0.503	0.543	0.585
DJ192 28	485	0.28289	0.00003	0.0013	0.0225	0.282878	14.4	1.1	0.518	0.540	0.563
DJ192 29	463	0.28286	0.00002	0.0013	0.0279	0.282849	12.9	0.9	0.561	0.621	0.689
DJ192 30	461	0.28296	0.00002	0.0023	0.0444	0.282940	16.1	0.8	0.429	0.414	0.393
DJ192 31	465	0.28298	0.00002	0.0009	0.0173	0.282972	17.3	0.9	0.385	0.337	0.283
DJ192 32	454	0.28296	0.00002	0.0010	0.0207	0.282951	16.3	0.8	0.414	0.392	0.366
DJ192 33	488	0.28295	0.00003	0.0017	0.0322	0.282934	16.5	1.1	0.437	0.409	0.375
DJ192 34	461	0.28296	0.00003	0.0015	0.0276	0.282947	16.3	1.1	0.420	0.398	0.371
DJ192 35	454	0.28295	0.00002	0.0010	0.0191	0.282941	16.0	0.8	0.428	0.415	0.398
DJ192 36	436	0.28289	0.00002	0.0015	0.0300	0.282878	13.3	0.7	0.521	0.573	0.631
DJ192 37	437	0.28288	0.00002	0.0008	0.0140	0.282873	13.2	0.8	0.525	0.582	0.644
DJ192 38	450	0.28290	0.00002	0.0012	0.0230	0.282890	14.1	0.7	0.502	0.536	0.572
DJ192 40	450	0.28289	0.00002	0.0011	0.0223	0.282881	13.8	0.7	0.515	0.557	0.602
DJ192 41	454	0.28297	0.00003	0.0012	0.0214	0.282960	16.6	0.9	0.402	0.373	0.338
DJ192 42	456	0.28287	0.00002	0.0008	0.0156	0.282863	13.3	0.8	0.539	0.593	0.651
DJ192 43	467	0.28295	0.00003	0.0010	0.0187	0.282941	16.3	1.1	0.428	0.407	0.381
DJ192 44	454	0.28296	0.00003	0.0016	0.0319	0.282946	16.2	1.1	0.421	0.404	0.382
DJ192 45	497	0.28291	0.00003	0.0011	0.0201	0.282900	15.5	0.9	0.487	0.482	0.476
DJ192 46	453	0.28291	0.00002	0.0017	0.0323	0.282896	14.3	0.8	0.494	0.521	0.550
DJ192 47	460	0.28291	0.00002	0.0011	0.0192	0.282901	14.7	0.7	0.487	0.505	0.524
DJ192 48	465	0.28286	0.00002	0.0007	0.0117	0.282854	13.1	0.7	0.552	0.608	0.669
DJ192 49	433	0.28287	0.00002	0.0014	0.0320	0.282859	12.6	0.8	0.548	0.618	0.697
DJ192 50	429	0.28292	0.00003	0.0008	0.0150	0.282914	14.5	1.0	0.469	0.495	0.524
DJ192 51	465	0.28299	0.00003	0.0013	0.0247	0.282979	17.6	1.2	0.374	0.322	0.261
DJ192 52	442	0.28289	0.00002	0.0008	0.0154	0.282883	13.7	0.6	0.511	0.556	0.604
DJ192 53	438	0.28287	0.00002	0.0016	0.0360	0.282857	12.6	0.9	0.551	0.619	0.696
DJ192 54	443	0.28291	0.00003	0.0020	0.0439	0.282893	14.0	0.9	0.499	0.532	0.570
DJ192 55	482	0.28294	0.00002	0.0008	0.0163	0.282933	16.3	0.8	0.440	0.417	0.389
DJ192 56	477	0.28287	0.00003	0.0009	0.0191	0.282862	13.7	0.9	0.541	0.582	0.627
DJ192 57	485	0.28292	0.00002	0.0030	0.0683	0.282893	15.0	0.6	0.498	0.506	0.516

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ192 58	445	0.28294	0.00003	0.0019	0.0357	0.282924	15.2	1.2	0.453	0.461	0.467
DJ192 59	452	0.28295	0.00003	0.0013	0.0251	0.282939	15.9	0.9	0.432	0.422	0.409
DJ192 60	485	0.28294	0.00002	0.0011	0.0204	0.282930	16.3	0.8	0.444	0.421	0.394
DJ192 61	441	0.28289	0.00003	0.0015	0.0333	0.282878	13.4	1.0	0.521	0.570	0.625
DJ192 62	440	0.28288	0.00002	0.0014	0.0310	0.282868	13.1	0.7	0.534	0.591	0.656
DJ192 63	467	0.28294	0.00002	0.0014	0.0254	0.282928	15.8	0.7	0.447	0.438	0.426
DJ192 64	457	0.28290	0.00002	0.0018	0.0362	0.282885	14.0	0.7	0.510	0.543	0.580
DJ192 65	461	0.28291	0.00002	0.0012	0.0225	0.282900	14.7	0.7	0.488	0.506	0.526
DJ192 66	449	0.28286	0.00002	0.0022	0.0472	0.282842	12.3	0.6	0.575	0.647	0.731
DJ192 67	449	0.28288	0.00002	0.0008	0.0155	0.282873	13.5	0.7	0.525	0.574	0.628
DJ192 68	487	0.28283	0.00002	0.0012	0.0234	0.282819	12.4	0.7	0.602	0.674	0.753
DJ15											
DJ15 01	322	0.28302	0.00002	0.0010	0.0197	0.283014	15.6	0.6	0.329	0.335	0.341
DJ15 02	304	0.28289	0.00002	0.0018	0.0390	0.282880	10.5	0.9	0.525	0.653	0.802
DJ15 03	318	0.28296	0.00002	0.0021	0.0509	0.282948	13.2	0.7	0.427	0.490	0.563
DJ15 04	329	0.28279	0.00003	0.0015	0.0348	0.282781	7.5	1.0	0.664	0.862	1.088
DJ15 05	415	0.28292	0.00002	0.0019	0.0465	0.282905	13.8	0.8	0.483	0.524	0.570
DJ15 06	309	0.28294	0.00002	0.0021	0.0478	0.282928	12.3	0.9	0.456	0.540	0.639
DJ15 07	343	0.28270	0.00003	0.0007	0.0161	0.282696	4.8	1.0	0.777	1.047	1.344
DJ15 08	465	0.28295	0.00003	0.0012	0.0268	0.282940	16.2	1.0	0.431	0.412	0.390
DJ15 09	315	0.28300	0.00002	0.0024	0.0533	0.282986	14.5	0.7	0.371	0.404	0.442
DJ15 10	330	0.28284	0.00002	0.0010	0.0218	0.282834	9.4	0.7	0.585	0.741	0.916
DJ15 11	317	0.28294	0.00003	0.0015	0.0306	0.282931	12.6	0.9	0.449	0.528	0.618
DJ15 12	323	0.28293	0.00002	0.0009	0.0209	0.282925	12.5	0.7	0.456	0.539	0.631
DJ15 13	344	0.28298	0.00002	0.0010	0.0217	0.282974	14.7	0.7	0.386	0.413	0.443
DJ15 16	348	0.28297	0.00002	0.0012	0.0254	0.282962	14.4	0.7	0.402	0.437	0.475
DJ15 17	306	0.28296	0.00003	0.0019	0.0436	0.282949	13.0	1.1	0.424	0.494	0.574
DJ15 19	320	0.28299	0.00003	0.0024	0.0590	0.282976	14.2	0.9	0.386	0.424	0.469
DJ15 20	368	0.28293	0.00002	0.0012	0.0258	0.282922	13.4	0.8	0.459	0.516	0.579
DJ15 22	332	0.28291	0.00002	0.0022	0.0504	0.282896	11.7	0.8	0.501	0.598	0.710
DJ15 23	322	0.28305	0.00003	0.0014	0.0315	0.283042	16.6	1.0	0.289	0.272	0.250
DJ15 24	351	0.28299	0.00002	0.0009	0.0177	0.282984	15.2	0.8	0.370	0.385	0.399
DJ15 27	330	0.28297	0.00002	0.0021	0.0462	0.282957	13.8	0.7	0.412	0.460	0.516
DJ15 28	390	0.28296	0.00003	0.0004	0.0090	0.282957	15.1	0.9	0.408	0.421	0.434
DJ15 29	428	0.28292	0.00002	0.0003	0.0056	0.282918	14.6	0.8	0.462	0.487	0.512
DJ15 30	311	0.28290	0.00002	0.0017	0.0381	0.282890	11.0	0.8	0.509	0.625	0.759
DJ15 32	313	0.28284	0.00002	0.0019	0.0443	0.282829	8.9	0.9	0.599	0.763	0.954
DJ15 34	312	0.28298	0.00003	0.0017	0.0377	0.282970	13.9	1.0	0.393	0.442	0.497
DJ15 35	321	0.28299	0.00002	0.0014	0.0334	0.282982	14.5	0.7	0.375	0.410	0.448
DJ15 36	318	0.28295	0.00003	0.0021	0.0478	0.282938	12.8	1.2	0.441	0.513	0.595
DJ15 37	304	0.28299	0.00002	0.0016	0.0314	0.282981	14.1	0.8	0.378	0.422	0.473
DJ15 38	327	0.28299	0.00002	0.0021	0.0501	0.282977	14.4	0.8	0.383	0.416	0.454
DJ15 39	364	0.28299	0.00002	0.0020	0.0487	0.282976	15.2	0.7	0.382	0.394	0.407
DJ15 40	328	0.28297	0.00002	0.0035	0.0841	0.282949	13.5	0.8	0.428	0.481	0.546
DJ15 41	434	0.28293	0.00002	0.0006	0.0130	0.282925	15.0	0.6	0.452	0.466	0.479

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ15 42	339	0.28298	0.00002	0.0009	0.0185	0.282974	14.6	0.8	0.385	0.415	0.447
DJ15 43	320	0.28285	0.00002	0.0015	0.0329	0.282841	9.5	0.7	0.578	0.731	0.906
DJ15 44	336	0.28279	0.00003	0.0013	0.0295	0.282782	7.7	1.1	0.661	0.855	1.076
DJ15 45	446	0.28293	0.00002	0.0010	0.0191	0.282922	15.1	0.7	0.457	0.466	0.474
DJ15 46	310	0.28298	0.00002	0.0019	0.0403	0.282969	13.8	0.8	0.395	0.446	0.504
DJ15 47	341	0.28293	0.00002	0.0008	0.0150	0.282925	12.9	0.7	0.454	0.527	0.606
DJ15 48	313	0.28287	0.00003	0.0017	0.0357	0.282860	10.0	1.0	0.552	0.692	0.853
DJ15 49	328	0.28296	0.00002	0.0007	0.0144	0.282956	13.7	0.6	0.411	0.465	0.523
DJ15 50	325	0.28302	0.00002	0.0015	0.0305	0.283011	15.6	0.6	0.333	0.340	0.347
DJ15 51	377	0.28293	0.00002	0.0008	0.0185	0.282924	13.7	0.6	0.454	0.504	0.559
DJ15 52	309	0.28294	0.00002	0.0011	0.0222	0.282934	12.5	0.6	0.444	0.527	0.620
DJ15 53	423	0.28290	0.00002	0.0013	0.0313	0.282890	13.5	0.8	0.503	0.554	0.610
DJ15 55	426	0.28291	0.00002	0.0011	0.0261	0.282901	13.9	0.7	0.487	0.526	0.568
DJ15 56	446	0.28290	0.00002	0.0008	0.0190	0.282893	14.1	0.6	0.497	0.531	0.567
DJ15 57	312	0.28288	0.00002	0.0022	0.0493	0.282867	10.2	0.8	0.545	0.677	0.832
DJ15 58	414	0.28289	0.00002	0.0008	0.0156	0.282884	13.1	0.5	0.511	0.573	0.641
DJ15 59	330	0.28291	0.00002	0.0017	0.0420	0.282900	11.8	0.7	0.494	0.592	0.703
DJ15 61	439	0.28288	0.00002	0.0009	0.0200	0.282873	13.2	0.5	0.526	0.583	0.644
DJ15 62	331	0.28290	0.00002	0.0034	0.0860	0.282879	11.1	0.7	0.534	0.638	0.768
DJ15 63	409	0.28290	0.00002	0.0009	0.0182	0.282893	13.3	0.6	0.498	0.555	0.617
DJ15 64	341	0.28297	0.00001	0.0007	0.0132	0.282966	14.3	0.5	0.397	0.434	0.473
DJ15 65	307	0.28293	0.00002	0.0016	0.0359	0.282921	12.0	0.6	0.464	0.558	0.664
DJ15 66	316	0.28292	0.00002	0.0013	0.0275	0.282912	11.9	0.6	0.475	0.571	0.680
DJ15 67	425	0.28288	0.00002	0.0009	0.0210	0.282873	12.9	0.6	0.526	0.591	0.662
DJ15 68	312	0.28293	0.00002	0.0015	0.0332	0.282921	12.1	0.5	0.463	0.554	0.656
DJ15 69	327	0.28294	0.00001	0.0008	0.0186	0.282935	13.0	0.5	0.440	0.512	0.591
DJ15 70	433	0.28290	0.00001	0.0006	0.0127	0.282895	13.9	0.5	0.494	0.535	0.578
DJ15 72	411	0.28291	0.00002	0.0008	0.0193	0.282904	13.7	0.7	0.483	0.529	0.580
DJ15 73	346	0.28293	0.00001	0.0007	0.0146	0.282925	13.0	0.5	0.453	0.522	0.597
DJ149											
DJ149 01	385	0.28289	0.00002	0.0031	0.0752	0.282868	11.9	0.7	0.544	0.629	0.732
DJ149 02	391	0.28293	0.00003	0.0028	0.0674	0.282910	13.5	0.9	0.480	0.529	0.588
DJ149 03	422	0.28287	0.00002	0.0012	0.0272	0.282861	12.4	0.8	0.545	0.621	0.706
DJ149 04	480	0.28288	0.00003	0.0021	0.0480	0.282861	13.7	1.0	0.544	0.582	0.626
DJ149 06	422	0.28292	0.00003	0.0027	0.0645	0.282899	13.8	1.0	0.493	0.534	0.582
DJ149 07	444	0.28293	0.00002	0.0012	0.0274	0.282920	15.0	0.8	0.459	0.471	0.482
DJ149 09	407	0.28290	0.00002	0.0018	0.0405	0.282886	13.0	0.8	0.510	0.572	0.642
DJ149 10	402	0.28292	0.00002	0.0022	0.0503	0.282903	13.5	0.8	0.487	0.536	0.593
DJ149 11	413	0.28295	0.00002	0.0029	0.0687	0.282928	14.6	0.8	0.451	0.474	0.500
DJ149 12	422	0.28287	0.00002	0.0020	0.0463	0.282854	12.2	0.9	0.557	0.636	0.726
DJ149 13	398	0.28288	0.00003	0.0019	0.0449	0.282866	12.1	1.0	0.541	0.625	0.721
DJ149 14	421	0.28297	0.00003	0.0025	0.0588	0.282950	15.6	1.0	0.417	0.416	0.415
DJ149 15	400	0.28292	0.00002	0.0020	0.0460	0.282905	13.5	0.7	0.484	0.534	0.591
DJ149 16	394	0.28287	0.00003	0.0025	0.0591	0.282852	11.5	0.9	0.565	0.660	0.773
DJ149 18	387	0.28292	0.00002	0.0036	0.0835	0.282894	12.8	0.8	0.506	0.568	0.644

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ149 19	383	0.28292	0.00002	0.0024	0.0572	0.282903	13.1	0.9	0.489	0.550	0.621
DJ149 20	402	0.28290	0.00002	0.0022	0.0490	0.282883	12.8	0.7	0.516	0.582	0.658
DJ149 21	390	0.28294	0.00003	0.0026	0.0636	0.282921	13.9	0.9	0.462	0.504	0.552
DJ149 22	392	0.28290	0.00002	0.0026	0.0614	0.282881	12.5	0.7	0.522	0.594	0.680
DJ149 23	413	0.28292	0.00002	0.0024	0.0563	0.282901	13.7	0.8	0.489	0.533	0.585
DJ149 24	409	0.28290	0.00002	0.0024	0.0565	0.282882	12.9	0.8	0.519	0.581	0.655
DJ149 25	395	0.28290	0.00003	0.0029	0.0697	0.282879	12.5	0.9	0.526	0.597	0.684
DJ149 26	409	0.28290	0.00002	0.0021	0.0505	0.282884	13.0	0.8	0.515	0.576	0.647
DJ149 27	397	0.28292	0.00003	0.0020	0.0463	0.282905	13.4	0.9	0.484	0.535	0.594
DJ149 28	423	0.28291	0.00002	0.0021	0.0476	0.282893	13.6	0.7	0.500	0.545	0.598
DJ149 29	389	0.28289	0.00002	0.0020	0.0439	0.282875	12.2	0.7	0.528	0.608	0.702
DJ149 30	409	0.28294	0.00002	0.0031	0.0742	0.282916	14.1	0.7	0.469	0.502	0.542
DJ149 31	394	0.28293	0.00002	0.0029	0.0687	0.282909	13.5	0.9	0.481	0.529	0.587
DJ149 32	373	0.28293	0.00002	0.0026	0.0588	0.282912	13.2	0.8	0.477	0.536	0.605
DJ149 34	447	0.28290	0.00002	0.0020	0.0460	0.282883	13.8	0.8	0.513	0.553	0.598
DJ149 35	408	0.28297	0.00003	0.0039	0.0950	0.282940	14.9	0.9	0.433	0.448	0.465
DJ149 36	421	0.28288	0.00002	0.0021	0.0454	0.282863	12.5	0.8	0.544	0.615	0.698
DJ149 37	440	0.28294	0.00002	0.0016	0.0350	0.282927	15.2	0.8	0.450	0.458	0.465
DJ149 38	399	0.28294	0.00002	0.0028	0.0662	0.282919	14.0	0.8	0.465	0.502	0.546
DJ149 39	409	0.28292	0.00002	0.0029	0.0692	0.282898	13.5	0.8	0.496	0.544	0.602
DJ149 40	415	0.28301	0.00002	0.0028	0.0669	0.282988	16.8	0.8	0.360	0.333	0.298
DJ149 41	393	0.28291	0.00002	0.0025	0.0588	0.282892	12.9	0.8	0.505	0.569	0.644
DJ149 43	419	0.28294	0.00002	0.0019	0.0433	0.282925	14.6	0.8	0.453	0.475	0.500
DJ149 44	401	0.28292	0.00002	0.0026	0.0594	0.282900	13.4	0.7	0.492	0.543	0.604
DJ149 45	436	0.28294	0.00002	0.0021	0.0496	0.282923	14.9	0.7	0.456	0.470	0.484
DJ149 46	456	0.28293	0.00002	0.0026	0.0592	0.282908	14.8	0.8	0.477	0.491	0.506
DJ149 47	404	0.28289	0.00002	0.0029	0.0679	0.282868	12.3	0.8	0.541	0.616	0.706
DJ149 48	400	0.28296	0.00002	0.0034	0.0803	0.282935	14.6	0.8	0.442	0.466	0.494
DJ149 50	386	0.28294	0.00002	0.0019	0.0441	0.282926	14.0	0.8	0.453	0.494	0.540
DJ149 51	403	0.28295	0.00002	0.0027	0.0647	0.282930	14.4	0.8	0.449	0.476	0.506
DJ149 52	381	0.28294	0.00002	0.0024	0.0543	0.282923	13.7	0.6	0.460	0.505	0.558
DJ149 53	397	0.28289	0.00002	0.0019	0.0442	0.282876	12.4	0.5	0.526	0.602	0.690
DJ149 54	376	0.28297	0.00002	0.0023	0.0540	0.282954	14.7	0.8	0.414	0.438	0.464
DJ149 56	403	0.28293	0.00002	0.0020	0.0469	0.282915	13.9	0.5	0.469	0.509	0.554
DJ149 57	388	0.28293	0.00002	0.0019	0.0434	0.282916	13.6	0.6	0.468	0.516	0.571
DJ325											
DJ325 01	426	0.28291	0.00003	0.0015	0.0335	0.282898	13.8	1.0	0.492	0.533	0.578
DJ325 02	428	0.28289	0.00003	0.0011	0.0219	0.282881	13.3	0.9	0.515	0.570	0.631
DJ325 03	429	0.28290	0.00002	0.0010	0.0193	0.282892	13.7	0.8	0.499	0.545	0.594
DJ325 04	430	0.28299	0.00003	0.0030	0.0651	0.282966	16.3	1.0	0.392	0.375	0.351
DJ325 05	417	0.28293	0.00002	0.0013	0.0246	0.282920	14.4	0.8	0.461	0.489	0.519
DJ325 06	411	0.28289	0.00002	0.0012	0.0231	0.282881	12.9	0.8	0.516	0.582	0.655
DJ325 10	399	0.28290	0.00002	0.0016	0.0315	0.282888	12.9	0.6	0.508	0.573	0.647
DJ325 11	412	0.28298	0.00003	0.0009	0.0176	0.282973	16.2	1.0	0.385	0.370	0.352
DJ325 12	424	0.28284	0.00003	0.0012	0.0229	0.282830	11.4	1.0	0.588	0.688	0.801

Analysis No.	Age* (Ma)	^{176}Hf/^{177}Hf	1σ	^{176}Lu/^{177}Hf	^{176}Yb/^{177}Hf	(^{176}Hf/^{177}Hf)$_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ325 13	419	0.28294	0.00002	0.0011	0.0246	0.282931	14.9	0.9	0.444	0.461	0.479
DJ325 14	423	0.28299	0.00003	0.0014	0.0280	0.282979	16.6	1.1	0.375	0.350	0.318
DJ325 17	396	0.28288	0.00002	0.0013	0.0262	0.282870	12.2	0.8	0.532	0.615	0.709
DJ325 18	424	0.28289	0.00002	0.0014	0.0306	0.282879	13.1	0.8	0.519	0.578	0.643
DJ325 19	407	0.28287	0.00003	0.0010	0.0190	0.282862	12.2	1.0	0.542	0.627	0.720
DJ325 20	415	0.28288	0.00003	0.0014	0.0270	0.282869	12.6	0.9	0.534	0.606	0.687
DJ325 21	419	0.28289	0.00003	0.0016	0.0318	0.282877	13.0	0.9	0.522	0.584	0.655
DJ325 23	442	0.28285	0.00002	0.0010	0.0218	0.282842	12.2	0.8	0.570	0.651	0.740
DJ325 24	425	0.28285	0.00002	0.0008	0.0145	0.282844	11.9	0.7	0.567	0.658	0.757
DJ325 26	451	0.28295	0.00003	0.0010	0.0209	0.282942	15.9	1.0	0.428	0.417	0.402
DJ325 27	432	0.28286	0.00002	0.0015	0.0332	0.282848	12.2	0.6	0.564	0.644	0.734
DJ325 29	426	0.28286	0.00002	0.0010	0.0188	0.282852	12.2	0.6	0.556	0.638	0.728
DJ325 30	425	0.28288	0.00002	0.0009	0.0180	0.282873	12.9	0.7	0.526	0.591	0.662
DJ325 31	426	0.28285	0.00002	0.0015	0.0309	0.282838	11.7	0.7	0.578	0.670	0.774
DJ325 32	433	0.28287	0.00002	0.0011	0.0204	0.282861	12.7	0.7	0.543	0.613	0.689
DJ325 33	435	0.28288	0.00002	0.0014	0.0268	0.282869	13.0	0.7	0.534	0.594	0.662
DJ325 34	439	0.28287	0.00002	0.0011	0.0205	0.282861	12.8	0.7	0.543	0.609	0.682
DJ325 35	453	0.28286	0.00002	0.0014	0.0266	0.282848	12.7	0.7	0.562	0.629	0.704
DJ325 36	436	0.28289	0.00002	0.0009	0.0174	0.282883	13.5	0.6	0.512	0.561	0.615
DJ325 37	422	0.28288	0.00002	0.0015	0.0321	0.282868	12.7	0.8	0.535	0.604	0.681
DJ325 38	457	0.28279	0.00003	0.0008	0.0147	0.282783	10.5	1.0	0.652	0.775	0.910
DJ325 39	465	0.28279	0.00002	0.0012	0.0223	0.282780	10.5	0.7	0.659	0.778	0.911
DJ325 40	440	0.28285	0.00002	0.0012	0.0250	0.282840	12.1	0.6	0.573	0.656	0.748
DJ259											
DJ259 01	337	0.28293	0.00002	0.0029	0.0695	0.282912	12.4	0.8	0.481	0.559	0.654
DJ259 02	338	0.28295	0.00002	0.0031	0.0730	0.282930	13.0	0.7	0.454	0.516	0.592
DJ259 03	336	0.28289	0.00002	0.0021	0.0526	0.282877	11.1	0.7	0.529	0.639	0.768
DJ259 04	335	0.28289	0.00002	0.0022	0.0533	0.282876	11.1	0.8	0.531	0.641	0.772
DJ259 06	337	0.28297	0.00002	0.0022	0.0524	0.282956	13.9	0.6	0.413	0.458	0.509
DJ259 07	337	0.28294	0.00002	0.0016	0.0390	0.282930	13.0	0.6	0.450	0.518	0.595
DJ259 08	332	0.28298	0.00002	0.0019	0.0461	0.282968	14.2	0.6	0.395	0.433	0.477
DJ259 11	329	0.28293	0.00001	0.0011	0.0256	0.282923	12.6	0.5	0.458	0.538	0.627
DJ259 12	340	0.28291	0.00002	0.0017	0.0424	0.282899	12.0	0.6	0.494	0.586	0.690
DJ259 13	331	0.28295	0.00002	0.0025	0.0603	0.282935	13.0	0.7	0.446	0.511	0.588
DJ259 14	332	0.28291	0.00002	0.0019	0.0464	0.282898	11.8	0.5	0.497	0.593	0.704
DJ259 15	339	0.28296	0.00002	0.0024	0.0599	0.282945	13.6	0.6	0.430	0.482	0.544
DJ259 16	349	0.28298	0.00002	0.0024	0.0604	0.282964	14.5	0.7	0.401	0.431	0.466
DJ259 19	353	0.28293	0.00002	0.0027	0.0696	0.282912	12.7	0.6	0.478	0.548	0.631
DJ259 20	348	0.28291	0.00003	0.0035	0.0863	0.282887	11.7	0.9	0.520	0.608	0.719
DJ259 21	351	0.28293	0.00002	0.0029	0.0696	0.282911	12.6	0.6	0.481	0.552	0.637
DJ259 22	348	0.28294	0.00002	0.0026	0.0662	0.282923	13.0	0.7	0.462	0.526	0.602
DJ259 23	327	0.28289	0.00002	0.0013	0.0320	0.282882	11.1	0.6	0.518	0.633	0.763
DJ303											
DJ303 01	331	0.28293	0.00003	0.0034	0.0691	0.282909	12.1	1.1	0.488	0.569	0.671
DJ303 02	351	0.28290	0.00002	0.0013	0.0240	0.282891	11.9	0.9	0.503	0.596	0.701

Analysis No.	Age* (Ma)	$^{176}Hf/^{177}Hf$	1σ	$^{176}Lu/^{177}Hf$	$^{176}Yb/^{177}Hf$	$(^{176}Hf/^{177}Hf)_i$	εHf(t)	1σ	T_{DM}	T_{DM}^{C}	T_{DM}^{LC}
DJ303 03	350	0.28299	0.00003	0.0026	0.0473	0.282973	14.8	0.9	0.388	0.411	0.437
DJ303 04	340	0.28301	0.00003	0.0024	0.0457	0.282995	15.4	1.0	0.356	0.367	0.379
DJ303 05	354	0.28294	0.00002	0.0017	0.0318	0.282929	13.3	0.9	0.451	0.509	0.576
DJ303 06	340	0.28295	0.00003	0.0035	0.0687	0.282928	13.0	1.0	0.459	0.521	0.598
DJ303 07	355	0.28299	0.00003	0.0011	0.0197	0.282983	15.3	0.9	0.372	0.385	0.398
DJ303 08	343	0.28298	0.00003	0.0019	0.0371	0.282968	14.5	0.9	0.395	0.427	0.463
DJ303 09	353	0.28292	0.00002	0.0009	0.0159	0.282914	12.8	0.8	0.470	0.544	0.625
DJ303 10	344	0.28292	0.00003	0.0020	0.0395	0.282907	12.3	1.0	0.484	0.565	0.659
DJ303 11	345	0.28300	0.00003	0.0028	0.0515	0.282982	15.0	0.9	0.375	0.394	0.414
DJ303 12	340	0.28292	0.00002	0.0022	0.0410	0.282906	12.2	0.9	0.487	0.570	0.668
DJ303 13	348	0.28294	0.00002	0.0023	0.0437	0.282925	13.1	0.7	0.458	0.522	0.596
DJ303 15	341	0.28297	0.00002	0.0017	0.0323	0.282959	14.1	0.7	0.408	0.448	0.494
DJ303 16	341	0.28294	0.00002	0.0007	0.0127	0.282936	13.3	0.7	0.439	0.502	0.571
DJ303 17	355	0.28296	0.00003	0.0015	0.0264	0.282950	14.1	1.0	0.420	0.460	0.505
DJ303 18	350	0.28291	0.00002	0.0009	0.0167	0.282904	12.4	0.9	0.484	0.568	0.661
DJ303 19	345	0.28292	0.00002	0.0017	0.0332	0.282909	12.4	0.9	0.480	0.560	0.652
DJ303 20	340	0.28294	0.00003	0.0017	0.0335	0.282929	13.0	0.9	0.451	0.517	0.593
DJ303 21	336	0.28294	0.00003	0.0016	0.0297	0.282930	13.0	0.9	0.450	0.518	0.596
DJ303 22	338	0.28290	0.00002	0.0016	0.0307	0.282890	11.6	0.7	0.508	0.608	0.723
DJ303 23	340	0.28293	0.00002	0.0028	0.0571	0.282912	12.4	0.8	0.480	0.556	0.648
DJ303 24	346	0.28293	0.00002	0.0013	0.0246	0.282922	12.9	0.7	0.461	0.531	0.610
DJ303 26	344	0.28293	0.00002	0.0011	0.0198	0.282923	12.9	0.8	0.458	0.529	0.608

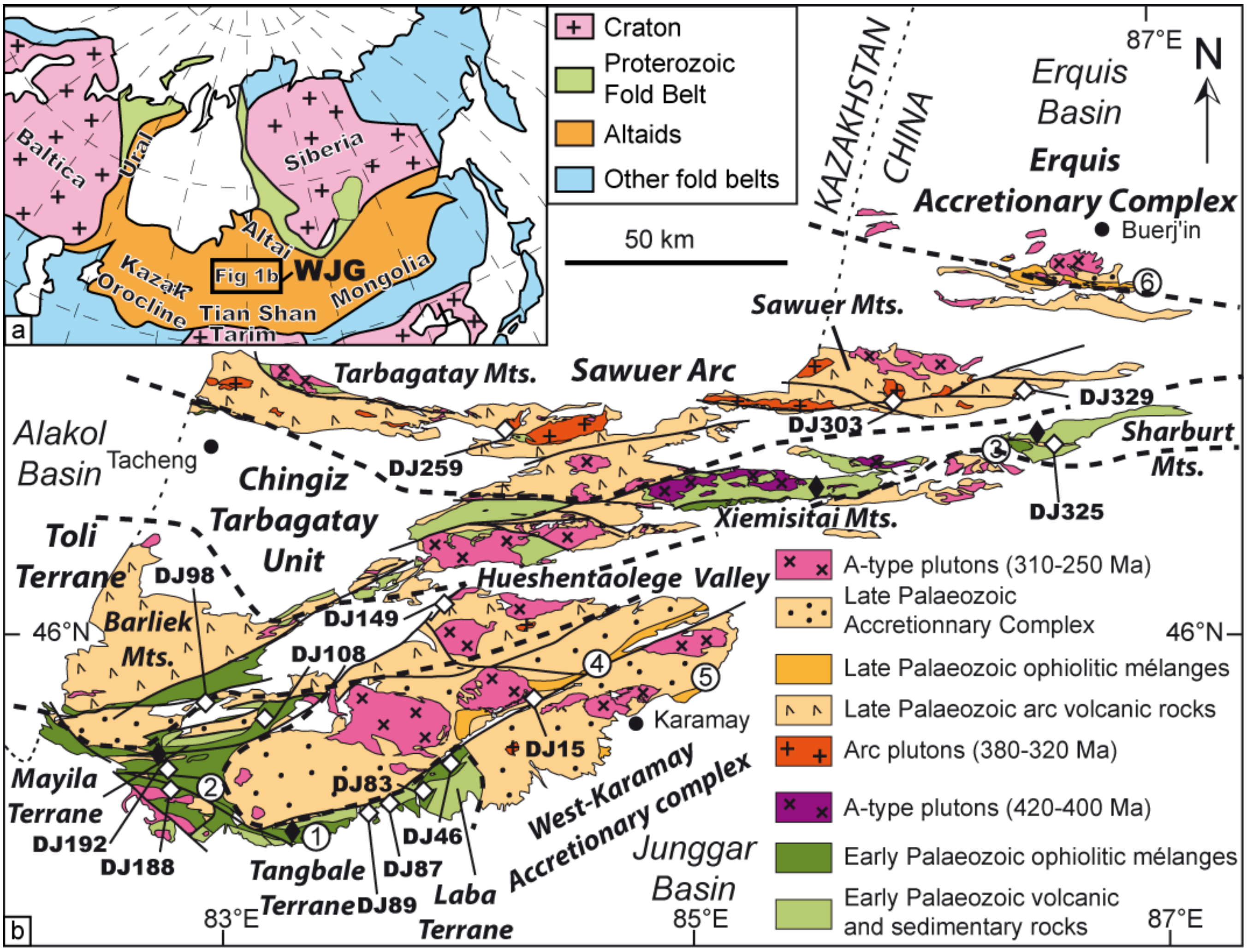

Craton
Proterozoic Fold Belt
Altaids
Other fold belts
Baltica
Ural
Siberia
Altai
Kazak Orocline
Fig 1b
WJG
Mongolia
Tian Shan
Tarim
a
KAZAKHSTAN
CHINA
87°E
N
Erquis Basin
Erquis Accretionary Complex
Buerj'in
50 km
⑥
Sawuer Mts.
Sawuer Arc
Tarbagatay Mts.
DJ329
DJ303
Sharburt Mts.
Alakol Basin
Tacheng
DJ259
Chingiz Tarbagatay Unit
③
DJ325
Xiemisitai Mts.
Toli Terrane
DJ98
Hueshentaolege Valley
46°N
Barliek Mts.
DJ149
DJ108
④
⑤
Karamay
DJ15
Mayila Terrane
②
DJ83
DJ192
DJ188
①
DJ46
DJ87
Tangbale Terrane
DJ89
Laba Terrane
West-Karamay Accretionary complex
Junggar Basin
83°E
85°E
87°E
46°N
A-type plutons (310-250 Ma)
Late Palaeozoic Accretionnary Complex
Late Palaeozoic ophiolitic mélanges
Late Palaeozoic arc volcanic rocks
Arc plutons (380-320 Ma)
A-type plutons (420-400 Ma)
Early Palaeozoic ophiolitic mélanges
Early Palaeozoic volcanic and sedimentary rocks
b

Figure 1

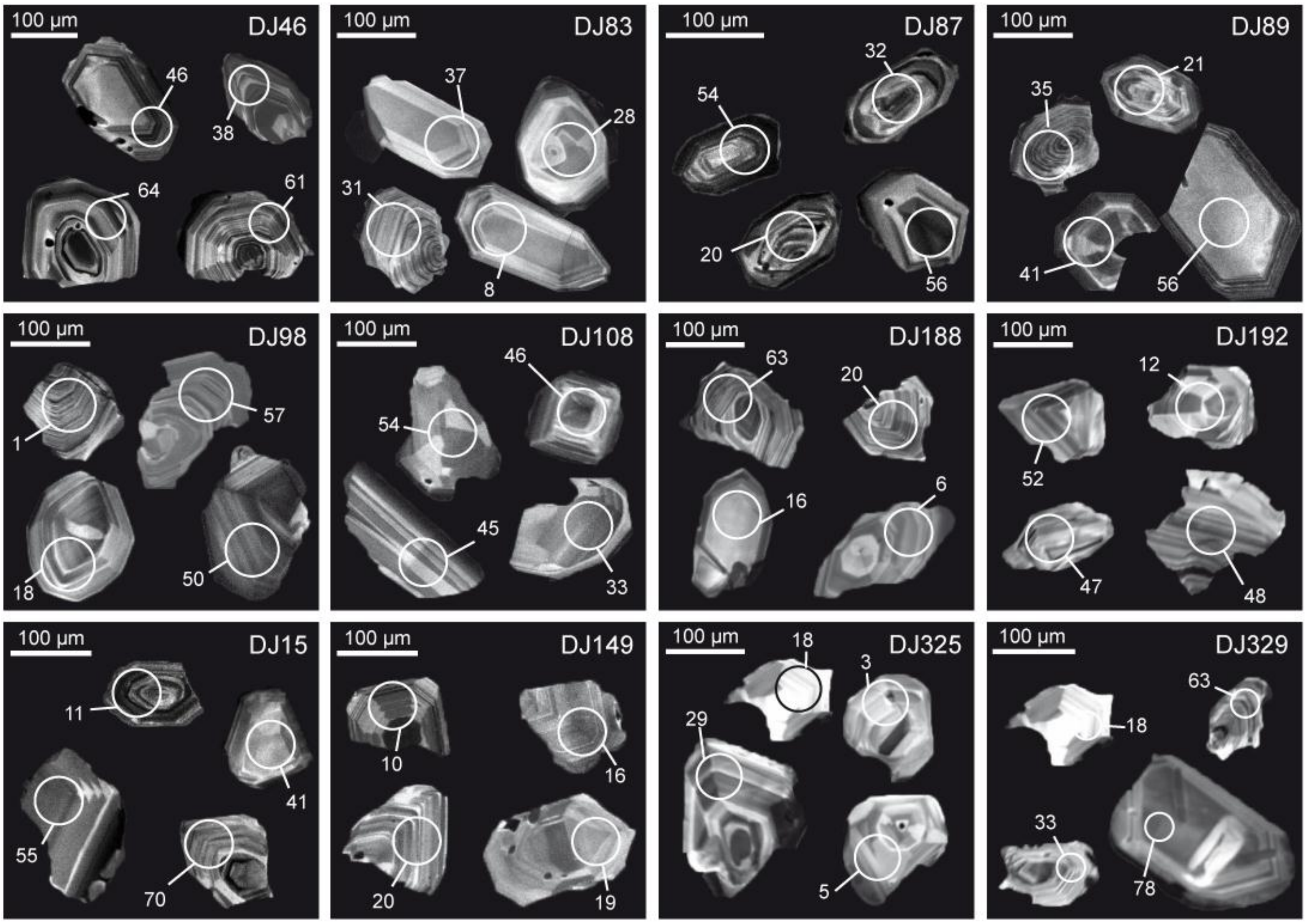
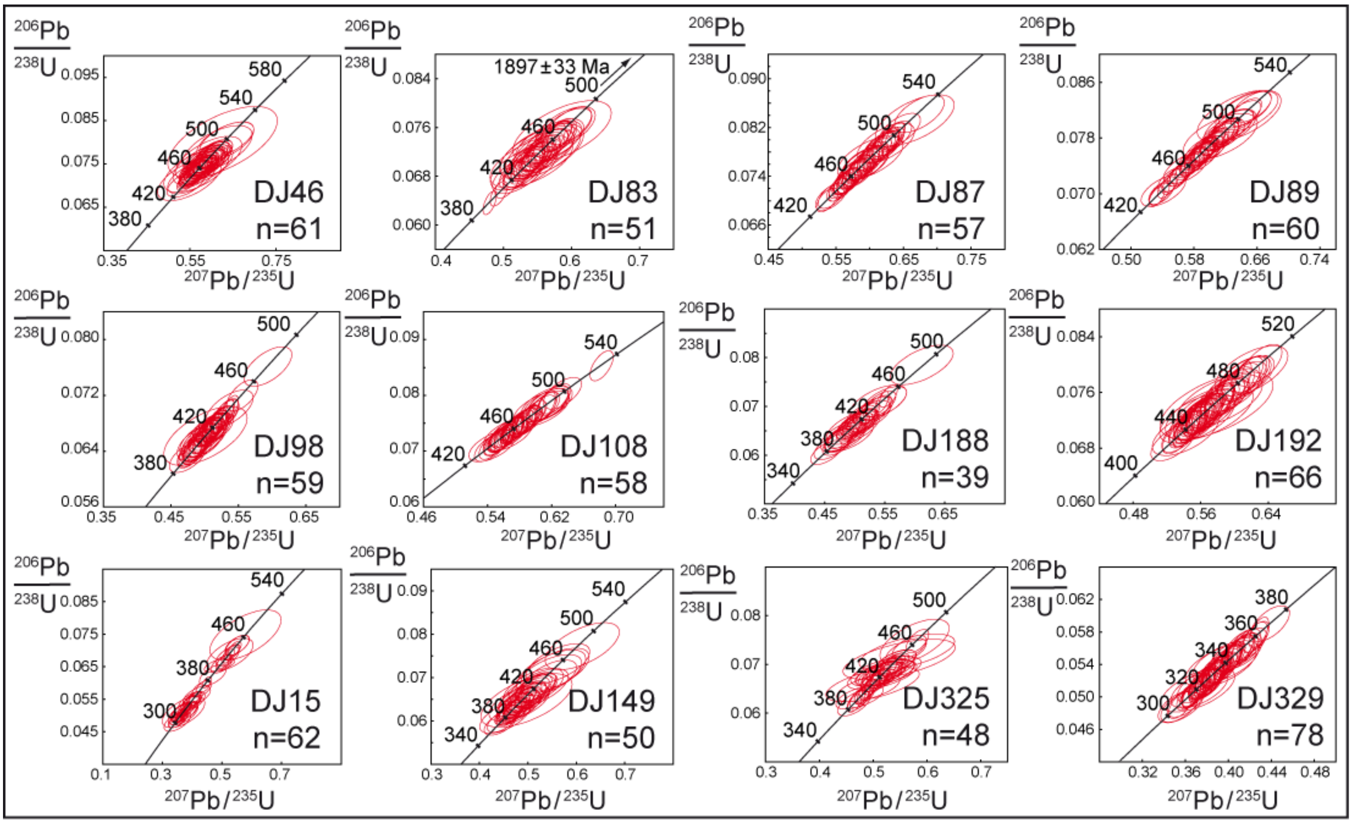

100 µm
DJ46
46
38
64
61
100 µm
DJ83
37
28
31
8
100 µm
DJ87
32
54
20
56
100 µm
DJ89
21
35
41
56
100 µm
DJ98
57
1
18
50
100 µm
DJ108
46
54
45
33
100 µm
DJ188
63
20
16
6
100 µm
DJ192
12
52
47
48
100 µm
DJ15
11
41
55
70
100 µm
DJ149
10
16
20
19
100 µm
DJ325
18
3
29
5
100 µm
DJ329
63
18
33
78

Figure 2



^{206}Pb/^{238}U
^{207}Pb/^{235}U
DJ46
n=61
0.095
0.085
0.075
0.065
0.35
0.55
0.75
380
420
460
500
540
580
DJ83
n=51
1897±33 Ma
0.084
0.076
0.068
0.060
0.4
0.5
0.6
0.7
380
420
460
500
DJ87
n=57
0.090
0.082
0.074
0.066
0.45
0.55
0.65
0.75
420
460
500
540
DJ89
n=60
0.086
0.078
0.070
0.062
0.50
0.58
0.66
0.74
420
460
500
540
DJ98
n=59
0.080
0.072
0.064
0.056
0.35
0.45
0.55
0.65
380
420
460
500
DJ108
n=58
0.09
0.08
0.07
0.06
0.46
0.54
0.62
0.70
420
460
500
540
DJ188
n=39
0.08
0.07
0.06
0.35
0.45
0.55
0.65
340
380
420
460
500
DJ192
n=66
0.084
0.076
0.068
0.060
0.48
0.56
0.64
400
440
480
520
DJ15
n=62
0.085
0.075
0.065
0.055
0.045
0.1
0.3
0.5
0.7
300
380
460
540
DJ149
n=50
0.09
0.08
0.07
0.06
0.3
0.4
0.5
0.6
0.7
340
380
420
460
500
540
DJ325
n=48
0.08
0.07
0.06
0.3
0.4
0.5
0.6
0.7
340
380
420
460
500
DJ329
n=78
0.062
0.058
0.054
0.050
0.046
0.32
0.36
0.40
0.44
0.48
300
320
340
360
380

Figure 3

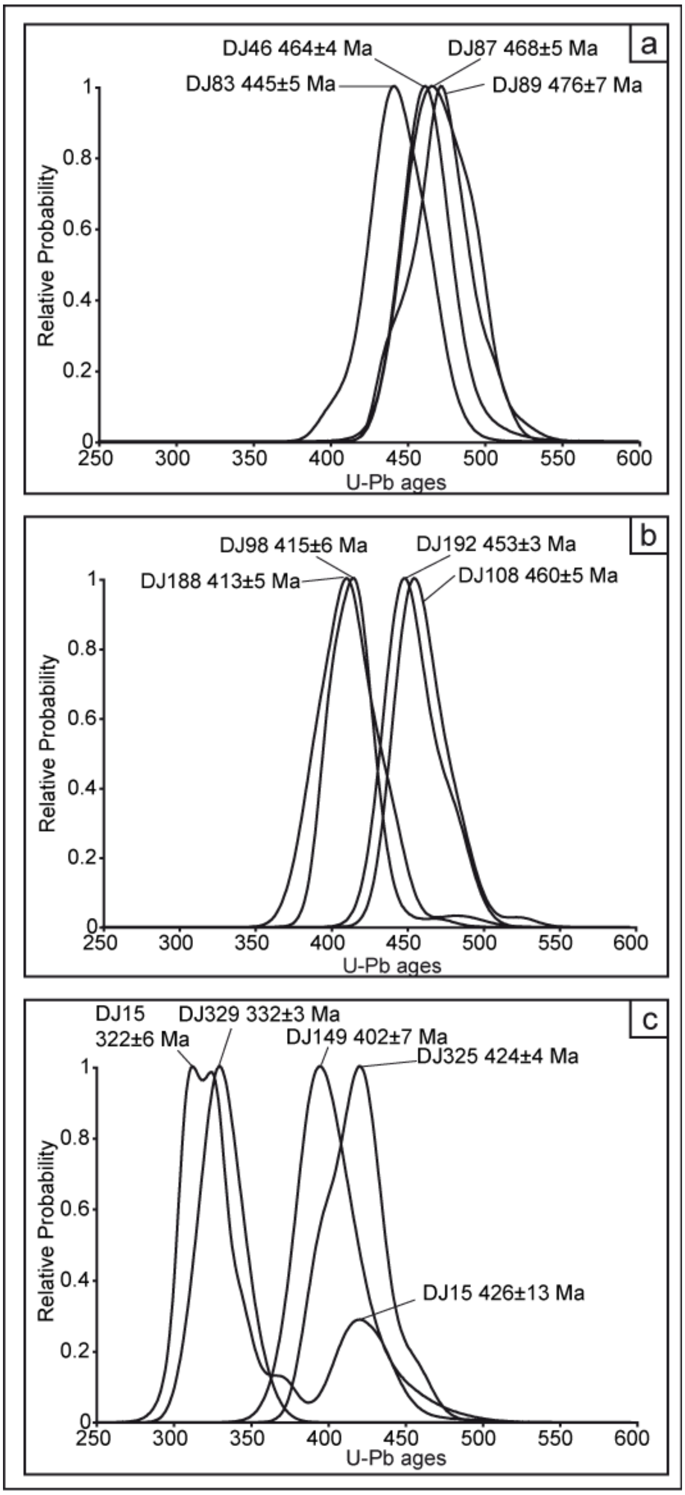

a
DJ46 464±4 Ma
DJ87 468±5 Ma
DJ83 445±5 Ma
DJ89 476±7 Ma
Relative Probability
U-Pb ages
b
DJ98 415±6 Ma
DJ192 453±3 Ma
DJ188 413±5 Ma
DJ108 460±5 Ma
c
DJ15 322±6 Ma
DJ329 332±3 Ma
DJ149 402±7 Ma
DJ325 424±4 Ma
DJ15 426±13 Ma
0
0.2
0.4
0.6
0.8
1
250
300
350
400
450
500
550
600

Figure 4

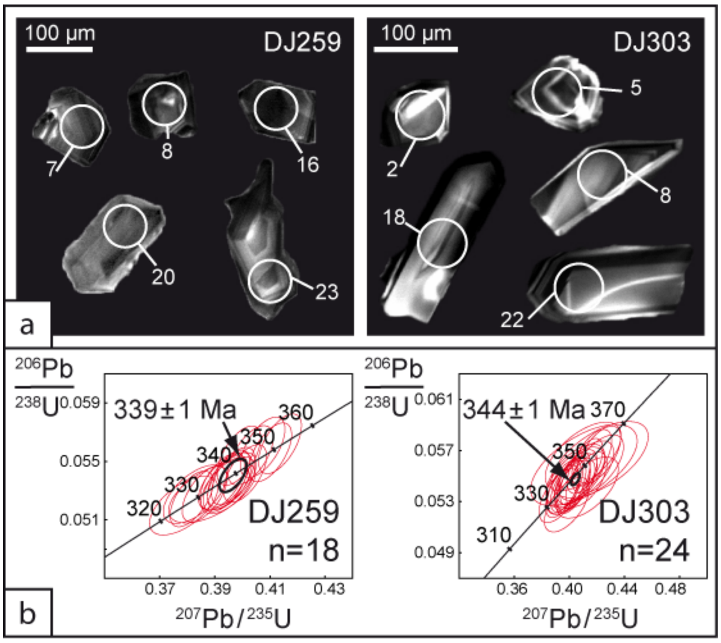

a
100 µm
DJ259
7
8
16
20
23
100 µm
DJ303
2
5
18
8
22
b
206Pb/238U
0.059
0.055
0.051
339±1 Ma
360
350
340
330
320
DJ259
n=18
0.37
0.39
0.41
0.43
207Pb/235U
206Pb/238U
0.061
0.057
0.053
0.049
344±1 Ma
370
350
330
310
DJ303
n=24
0.36
0.40
0.44
0.48
207Pb/235U

Figure 5

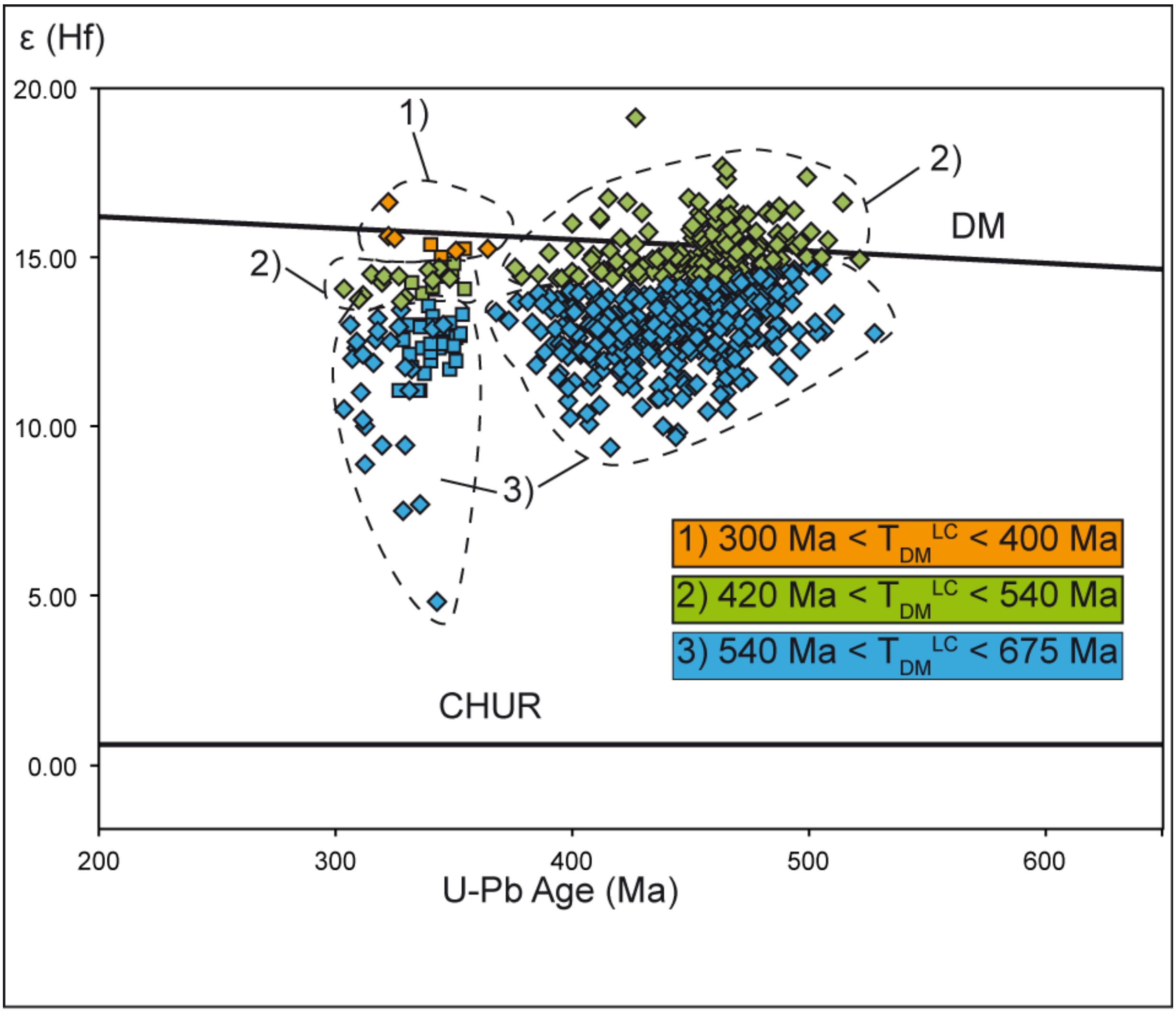

ε (Hf)
20.00
15.00
10.00
5.00
0.00
200
300
400
500
600
U-Pb Age (Ma)
1)
2)
2)
3)
DM
CHUR
1) 300 Ma < T_{DM}^{LC} < 400 Ma
2) 420 Ma < T_{DM}^{LC} < 540 Ma
3) 540 Ma < T_{DM}^{LC} < 675 Ma

Figure 6

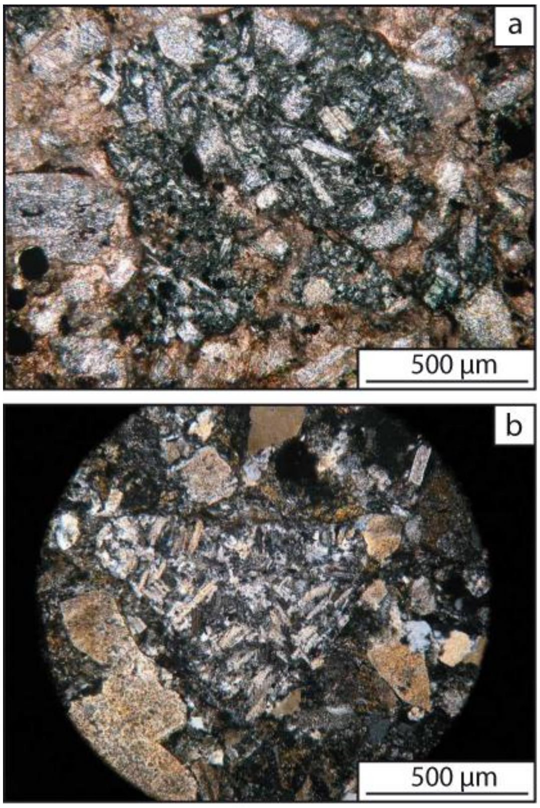


Figure 7

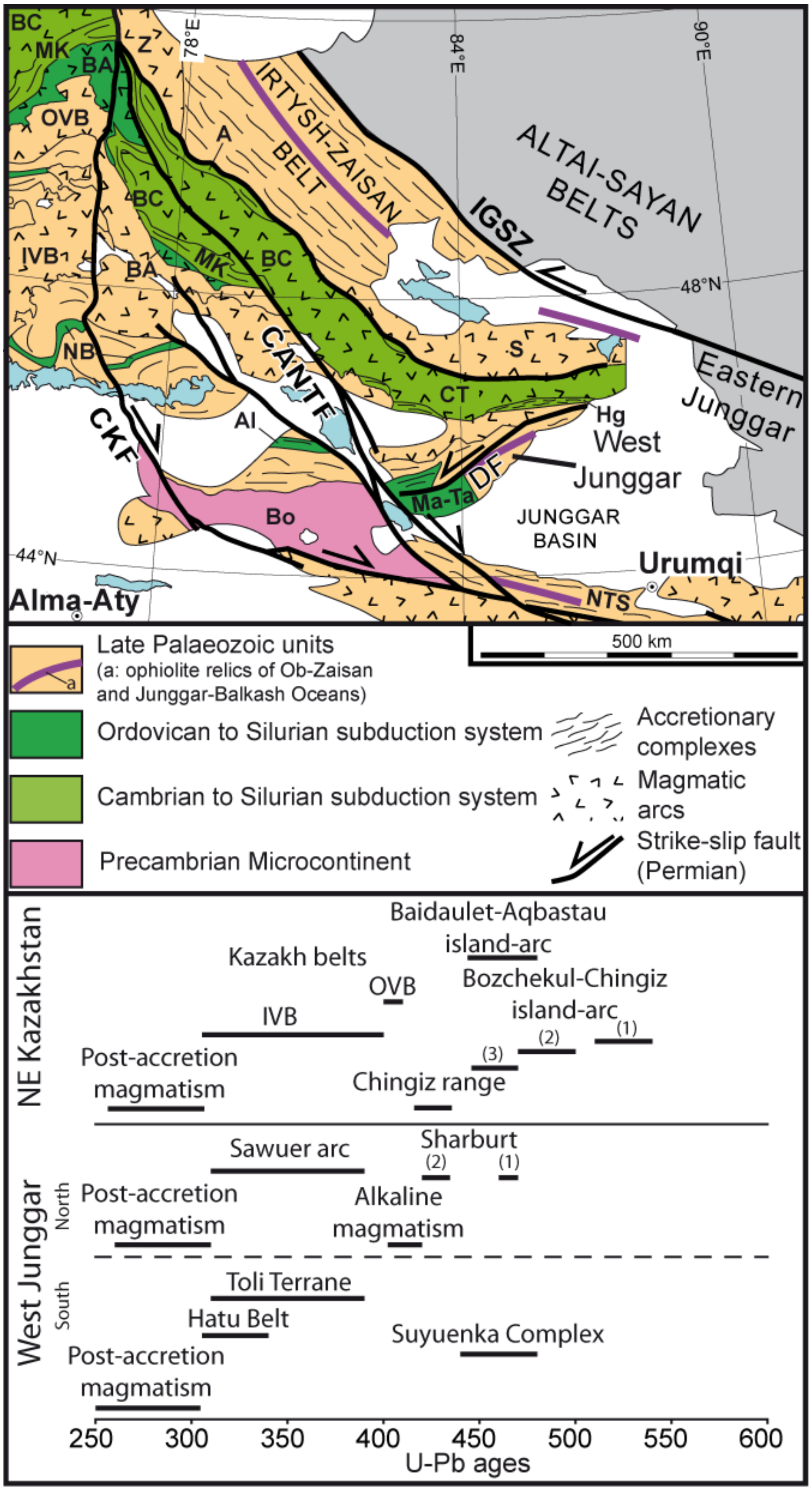

BC
MK
BA
OVB
Z
78°E
84°E
90°E
IRTYSH-ZAISAN BELT
A
ALTAI-SAYAN BELTS
IGSZ
BC
IVB
BA
MK
BC
48°N
NB
CANTF
S
CT
Eastern Junggar
Hg
West Junggar
AI
CKF
DF
Ma-Ta
Bo
JUNGGAR BASIN
44°N
Urumqi
NTS
Alma-Aty
500 km
Late Palaeozoic units
(a: ophiolite relics of Ob-Zaisan and Junggar-Balkash Oceans)
a
Ordovican to Silurian subduction system
Cambrian to Silurian subduction system
Precambrian Microcontinent
Accretionary complexes
Magmatic arcs
Strike-slip fault (Permian)
NE Kazakhstan
Baidaulet-Aqbastau island-arc
Kazakh belts
OVB
Bozchekul-Chingiz island-arc
IVB
(1)
(2)
(3)
Post-accretion magmatism
Chingiz range
West Junggar
North
Sawuer arc
Sharburt
(2)
(1)
Post-accretion magmatism
Alkaline magmatism
South
Toli Terrane
Hatu Belt
Suyuenka Complex
Post-accretion magmatism
250
300
350
400
450
500
550
600
U-Pb ages

Figure 8

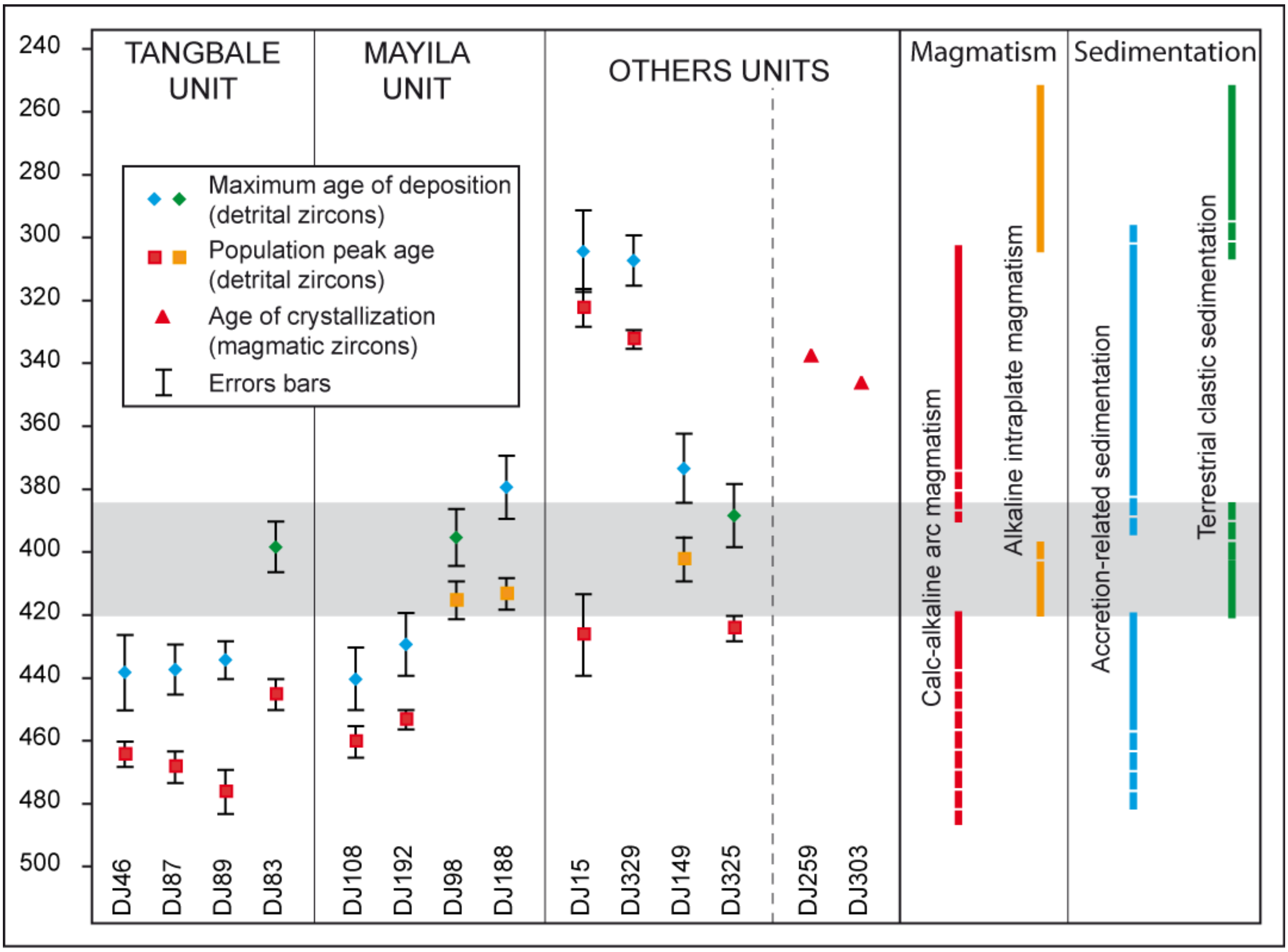

240
260
280
300
320
340
360
380
400
420
440
460
480
500
TANGBALE UNIT
MAYILA UNIT
OTHERS UNITS
Magmatism
Sedimentation
Maximum age of deposition (detrital zircons)
Population peak age (detrital zircons)
Age of crystallization (magmatic zircons)
Errors bars
DJ46
DJ87
DJ89
DJ83
DJ108
DJ192
DJ98
DJ188
DJ15
DJ329
DJ149
DJ325
DJ259
DJ303
Calc-alkaline arc magmatism
Alkaline intraplate magmatism
Accretion-related sedimentation
Terrestrial clastic sedimentation

Figure 9