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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  $\epsilon\text{Nd}(t)$  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 mélangé 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 mélangé 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 calc-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 and Arakawa, 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 ( $1894\pm 19$  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  $339\pm 1$  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  $344\pm 1$  Ma (Fig. 5b; Table 4).

### *Zircon Lu-Hf isotope data*

Lu-Hf isotope data were obtained from 13 out of 14 samples (Table 5).  $\epsilon_{\text{Hf}}$  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 ( $T_{\text{DM}}^{\text{LC}}$ ), 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).  $\epsilon_{\text{Hf}}$  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  $\epsilon_{\text{Hf}}(t)$  values of zircons indicate that volcanoclastic 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  $\epsilon_{\text{Hf}}(t)$  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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## References

- Abrajevitch, A., Van der Voo, R., Bazhenov, M.L., Levashova, N.M. and McCausland, P.J.A., 2008. The role of the Kazakhstan orocline in the late Palaeozoic amalgamation of Eurasia. *Tectonophysics*, **455**, 61-76.
- Amelin, Y., Lee, D.-C., Halliday, A.N. and Pidgeon, R.T., 1999. Nature of the Earth's earliest crust from hafnium isotopes in single detrital grains. *Nature*, **399**, 252-255.
- Bahlburg, H., Vervoort, J.D., Du Frane, S.A., Augustsson, C. and Reimann, C., 2009. Timing of crust formation and recycling in accretionary orogens: Insights learned from the western margin of South America. *Earth Science Reviews*, **97**, 215-241.
- BGMRXUAR (Bureau of Geology and Mineral Resources of Xinjiang Uygur Autonomous Region), 1965, Geological map (scale 1:200000), Taleailek sheet (L-44-23).
- BGMRXUAR (Bureau of Geology and Mineral Resources of Xinjiang Uygur Autonomous Region), 1993. *Regional Geology of Xinjiang Uygur Autonomous Region*. Geological Publishing House, Beijing. 841 pp. (in Chinese with English abstract).
- Buckman, S. and Aitchison, J.C., 2001. Middle Ordovician (Llandeilan) radiolarians from West Junggar, Xinjiang, China. *Micropaleontology*, **47**, 359-367.
- Buckman, S. and Aitchison, J.C., 2004. Tectonic evolution of Palaeozoic terranes in West Junggar, Xinjiang, NW China. In: Aspects of the tectonic evolution of China (J. Malpas, C.J. Fletcher and J.C. Aitchison, eds). *Geological Society Special Publication*, London, **226**, 101-129.
- Buslov, M.M., Saphonova, I.Yu., Watanabe, T., Obut, O.T., Fujiwara, Y., Iwata, K., Semakov, N.N., Sugai, Y., Smirnova, L.V. and Kazansky, A.Yu., 2001. Evolution of the Paleo-Asian Ocean (Altai-Sayan Region, Central Asia) and collision of possible Gondwana-derived terranes with the southern marginal part of the Siberian continent. *Geosciences Journal*, **5**, 203-224.

- Cawood, P.A., Kröner, A., Collins, W.J., Kusky, T.M., Mooney, W.D. and Windley, B.F., 2009. Accretionary orogen through earth history. In: Earth Accretionary systems in space and time (P.A. Cawood and A. Kröner, eds). *Geological Society Special Publication*, London, **318**, 1-36.
- Cawood, P.A. and Buchan, C., 2007. Linking accretionary orogenesis with supercontinent assembly. *Earth-Science Reviews*, **82**, 217-256.
- Chen, B. and Arakawa, Y., 2005. Elemental and Sr-Nd isotopic geochemistry of granitoids from the West Junggar foldbelt (NW China), with implications for Phanerozoic continental growth. *Geochimica et Cosmochimica Acta*, **69**, 1307-1320.
- Chen, B. and Jahn, B.M., 2004. Genesis of post-collisional granitoids and basement nature of the Junggar Terrane, NW China: Nd-Sr isotope and trace element evidence. *Journal of Asian Earth Sciences*, **23**, 691-703.
- Chen, J.F., Han, B.F., Ji, J.Q., Zhang, L., Xu, Z., He, G.Q. and Wang, T., 2010a. Zircon U-Pb ages and tectonic implications of Paleozoic plutons in northern West Junggar, North Xinjiang, China. *Lithos*, **115**, 137-152.
- Chen, J.F., Han, B.F. and Zhang, L., 2010b. Geochemistry, Sr-Nd isotopes and tectonic implications of two generations of Late Paleozoic plutons in northern West Junggar, Northwest China. *Acta Petrologica Sinica*, **26**, 2317-2335 (in Chinese with English abstract).
- Chen, S. and Guo, Z.J., 2010. Time constraints, tectonic setting of Dalabute ophiolitic complex and its significance for Late Paleozoic tectonic evolution in West Junggar. *Acta Petrologica Sinica*, **26**, 2336-2344 (in Chinese with English abstract).
- Choulet, F., Chen, Y., Wang, B., Faure, M., Cluzel, D., Charvet, J., Lin, W. and Xu, B., 2011. Late Palaeozoic paleogeographic reconstruction of western Central Asia based upon paleomagnetic data and its geodynamic implications. *Journal of Asian Earth Sciences*, **42**, 867-884.

- Choulet, F., Faure, M., Cluzel, D., Chen, Y., Lin, W. and Wang, B., in press. From oblique accretion to transpression in the evolution of the Altaid collage: new insights from West Junggar, northwestern China. *Gondwana Research*, doi:10.1016/j.gr.2011.07.015.
- Condie, K.C., 2000. Episodic continental growth models: afterthoughts and extensions. *Tectonophysics*, **322**, 153-162.
- Condie, K.C., Beyer, E., Belousova, E., Griffin, W.L. and O'Reilly, S.Y., 2005. U-Pb isotopic ages and Hf isotopic composition of single zircons: The search for juvenile Precambrian continental crust. *Precambrian Research*, **139**, 42-100.
- Degtyarev, K.E., 2011. Tectonic evolution of Early Paleozoic Island-arc systems and continental crust formation in the Caledonides of Kazakhstan and the North Tien Shan. *Geotectonics*, **45**, 23-50.
- Dodson, M.H., Compston, W., Williams, I.S. and Wilson, J.F., 1988. A search for ancient detrital zircons in Zimbabwean sediments. *Journal of the Geological Society*, **145**, 977-983.
- Feng, Y., Coleman, R.G., Tilton, G. and Xiao, X., 1989. Tectonic evolution of the West Junggar region, Xinjiang, China. *Tectonics*, **8**, 729-752.
- Filippova, I.B., Bush, V.A. and Didenko, A.N., 2001. Middle Paleozoic subduction belts: the leading factor in the formation of the Central Asian fold-and-thrust belt. *Russian Journal of Earth Sciences*, **3**, 405-426.
- Geng, H.Y., Sun, M., Yuan, C., Xiao, W.J., Xian, W.S., Zhao, G.C., Zhang, L.F., Wong, K. and Wu, F.Y., 2009. Geochemical, Sr-Nd and zircon U-Pb-Hf isotopic studies of Late Carboniferous magmatism in the West Junggar, Xinjiang: Implications for ridge subduction? *Chemical Geology*, **266**, 373-398.
- Geng, H.Y., Sun, M., Yuan, C., Zhao, G.C. and Xiao, W.J., 2011. Geochemical and geochronological study of early Carboniferous volcanic rocks from the West Junggar: Petrogenesis and tectonic implications. *Journal of Asian Earth Sciences*, **42**, 854-866.

- Griffin, W.L., Belousova, E.A., Shee, S.R., Pearson, N.J. and O'Reilly, S.Y., 2004. Archean crustal evolution in the northern Yilgam Craton: U-Pb and Hf-isotope evidence from detrital zircons. *Precambrian Research*, **131**, 231-282.
- Gu, P.Y., Li, Y.J., Zhang, B., Tong, L.L. and Wang, J.N., 2009. LA-ICP-MS zircon U-Pb dating of gabbro in the Darbut ophiolite, western Junggar, China. *Acta Petrologica Sinica*, **25**, 1364-1372 (in Chinese with English abstract).
- Guo, L.S., Liu, Y.L., Wang, Z.H., Song, D., Xu, F.J. and Su, L., 2010. The zircon U-Pb LA-ICP-MS geochronology of volcanic rocks in Baogutu areas, western Junggar. *Acta Petrologica Sinica*, **26**, 471-477 (in Chinese with English abstract).
- Han, B.F., He, G.Q. and Wang, S.G., 1999. Post-collisional mantle-derived magmatism, underplating and implications for basement of the Junggar basin. *Science in China Series D*, **42**, 113-119.
- Han, B.F., Ji, J.Q., Song, B., Chen, L.H. and Zhang, L., 2006. Late Paleozoic vertical growth of continental crust around the Junggar Basin, Xinjiang, China (Part I): Timing of post-collisional plutonism. *Acta Petrologica Sinica*, **22**, 1077-1086 (in Chinese with English abstract).
- Heinhorst, J., Lehmann, B., Ermolov, P., Serykh, V. and Zhurutin, S., 2000. Paleozoic crustal growth and metallogeny of central Asia: evidence from magmatic-hydrothermal ore systems of central Kazakhstan. *Tectonophysics*, **328**, 69-87.
- Hoffman, P.F., 1999. The break-up of Rodinia, birth of Gondwana, true polar wander and the snowball earth. *Journal of African Earth Science*, **28**, 17-34.
- Hu, A.Q., Jahn, B.M., Zhang, G.X., Chen, Y.B. and Zhang, Q.F., 2000. Crustal evolution and Phanerozoic crustal growth in northern Xinjiang: Nd isotopic evidence. Part I. Isotopic characterization of basement rocks. *Tectonophysics*, **328**, 15-51.
- Isozaki, Y., Aoki, K., Nakama, T and, Yanai, S., 2010. New insight into a subduction-related orogen: A reappraisal of the geotectonic framework and evolution of the Japanese Islands. *Gondwana Research*, **18**, 82-105.

- Jahn, B.M., 2004. The central Asian orogenic belt and growth of the continental crust in the Phanerozoic. In: Aspects of the tectonic evolution of China (J. Malpas, C.J. Fletcher and J.C. Aitchison, eds). *Geological Society Special Publication*, London, **226**, 73-100.
- Jian, P., Liu, D.Y., Shi, Y.R., Zhang, F.Q., 2005. SHRIMP dating of SSZ ophiolites from northern Xinjiang Province, China: implications for generation of oceanic crust in the central Asian orogenic belt. In: Sklyarov, E.V. (Ed.), Structural and tectonic correlation across the central Asian orogenic collage: northeastern segment, p. 246. Guidebook and abstract volume of the Siberian workshop IGCP-480.
- Jin, H.J. and Li, Y.C., 1999. Carboniferous biogenic sedimentary structures on the northwestern margin of Junggar Basin. *Chinese Science Bulletin*, **44**, 368-372.
- Jin, C. and Xu, Y., 1997. Petrology and genesis of the Bieluogaxi granitoids in Tuoli, Xinjiang, China. *Acta Petrologica Sinica*, **13**, 529-537 (in Chinese with English abstract).
- Khain, E.V., Bibikova, E.V., Salnikova, E.E., Kröner, A., Gibsher, A.S., Didenko, A.N., Degtyarev, K.E. and Fedotova, A.A., 2003. The Palaeo-Asian ocean in the Proterozoic and early Palaeozoic: new geochronologic data and palaeotectonic reconstructions. *Precambrian Research*, **122**, 329-358.
- Kheraskova, T.N., Didenko, A.N., Bush, V.A. and Volozh, Y.A., 2003. The Vendian – Early Paleozoic history of the continental margin of eastern Paleogondwana, Paleoasian ocean, and Central Asian foldbelt. *Russian Journal of Earth Sciences*, **5**, 165-184.
- Kovalenko, V.I., Yarmolyuk, V.V., Kovach, V.P., Kotov, A.B., Kozakov, I.K., Salnikova, E.B. and Larin, A.M., 2004. Isotopic provinces, mechanism of generation and sources of the continental crust in the Central Asian mobile belt: geological and isotopic evidence. *Journal of Asian Earth Sciences*, **23**, 605-627.
- Kröner, A., Windley, B.F., Badarch, G., Tomurtogoo, O., Hegner, E., Jahn, B.M., Gruschka, S., Khain, E.V., Demoux, A. and Wingate, M.T.D., 2007. Accretionary growth and crust-formation in the Central Asian Orogenic Belt and comparison with the Arabian-Nubian Shield. In: 4-D framework of

- the continental crust - Integrating crustal processes through time (R.D. Jr. Hatcher, ed). *Memoirs of the Geological Society of America*, **200**, 181-210.
- Kröner, A., Hegner, E., Lehmann, B., Heinhorst, J., Wingate, M.T.D., Liu, D.Y. and Ermelov, P., 2008. Palaeozoic arc magmatism in the Central Asian Orogenic Belt of Kazakhstan: SHRIMP zircon ages and whole-rock Nd isotopic systematics. *Journal of Asian Earth Sciences*, **32**, 118-130.
- Kusky, T.M., Bradley, D.C, Haeussler, P.J. and Karl, S., 1997. Controls on accretion of flysch and melange belts at convergent margins: Evidence from the Chugach Bay thrust and Iceworm melange, Chugach accretionary wedge, Alaska. *Tectonics*, **16**, 855-878.
- Kwon, S.T., Tilton, G.R., Coleman, R.G. and Feng, Y., 1989. Isotopic studies veering on the tectonics of the West Junggar region, Xinjiang, China. *Tectonics*, **8**, 719-727.
- Li, H.S., 1994. Middle Silurian radiolarians from Keerhada, Xinjiang. *Acta Micropalaeontologica Sinica*, **11**, 259-272 (in Chinese with English abstract).
- Long X., Sun M, Yuan C., Xiao W., Lin S., Wu F., Xia X. and Cai K., 2007, Detrital zircon age and Hf isotopic studies for metasedimentary rocks from the Chinese Altai: Implications for the Early Paleozoic tectonic evolution of the Central Asian Orogenic Belt, *Tectonics*, **26**, TC5015, doi:10.1029/2007TC002128.
- Ludwig, K.R, 1998, On the treatment of concordant uranium-lead ages. *Geochimica et Cosmochimica Acta*, **62**, 665-676.
- Mu, E.Z., Boucot, A.J., Chen, X. and Rong, J.Y., 1986. Correlation of the Silurian rocks in China. In: a part of the Silurian correlation for East Asia (A.B. Boucot, W.B. Berry eds). *Geological Society of America, Special Paper*, **202**, 1-80.
- Rudnick, R., 1990. Continental crust - growth from below. *Nature*, **347**, 711-712.
- Sengör, A.M.C., Natal'in, B.A. and Burtman, V.S., 1993. Evolution of the Altaid collage and paleozoic crustal growth in Eurasia. *Nature*, **364**, 299-307.



- Scherer, E., Münker, C. and Mezger, K., 2001. Calibration of the Lutetium–Hafnium clock. *Science*, **293**, 683–687.
- Shen, P., Shen, Y.C., Liu, T.B., Li, G.M. and Zeng, Q.D., 2008. Geology and geochemistry of the Early Carboniferous Eastern Sawur caldera complex and associated gold epithermal mineralization, Sawur Mountains, Xinjiang, China. *Journal of Asian Earth Sciences*, **32**, 259-279.
- Shen, P., Shen, Y., Liu, T., Meng, L., Dai, H. and Yang, Y., 2009. Geochemical signature of porphyries in the Baogutu porphyry copper belt, western Junggar, NW China. *Gondwana Research*, **16**, 227-242.
- Su, Y.P., Tang, H.F., Hou, G.S. and Liu, C.Q., 2006. Geochemistry of aluminous A-type granites along Darabut tectonic belt in West Junggar, Xinjiang. *Geochemica*, **35**, 1-5 (in Chinese with English abstract).
- Sun M., Yuan C., Xiao W., Long X., Xia X, Zhao G., Lin S., Wu F., Kröner A., 2008. Zircon U–Pb and Hf isotopic study of gneissic rocks from the Chinese Altai: progressive accretionary history in the early to middle Palaeozoic. *Chemical Geology*, **247**, 352-383.
- Tang, G., Wang, Q., Wyman, D.A., Li, Z.-X., Zhao, Z.-H., Jia, X.-H. and Jiang, Z.-Q., 2010. Ridge subduction and crustal growth in the Central Asian Orogenic Belt: evidence from Late Carboniferous adakites and high-Mg diorites in the western Junggar region, northern Xinjiang (west China). *Chemical Geology*, **277**, 281-300.
- Von Huene, R., 1974, Modern trench sediments: in: *The geology of continental margins* (C.H. Burk, C. L. Drake, eds). Springer-Verlag, New York.
- Wang, Z.H., Sun, S., Li, J.L., Qin, K.Z., Xiao, W.J. and Hao, J., 2003. Paleozoic tectonic evolution of the northern Xinjiang, China: geochemical and geochronological constraints from the ophiolites. *Tectonics*, **22**, 1014.

- Wei, W., Pang, X.Y., Wang, Y. and Xu, B., 2009. Sediment facies, provenance evolution and their implications of the Lower Devonian in Shaerbuerti mountain in North Xinjiang. *Acta Petrologica Sinica*, **25**, 689-698 (in Chinese with English abstract).
- Willner, A.P., Gerdes, A. and Massonne, H.J., 2008. History of crustal growth and recycling at the Pacific convergent margin of South America at latitudes 29 degrees-36 degrees S revealed by a U-Pb and Lu-Hf isotope study of detrital zircon from late Paleozoic accretionary systems. *Chemical Geology*, **253**, 114-129.
- Windley, B.F., Alexeiev, D., Xiao, W.J., Kroner, A. and Badarch, G., 2007. Tectonic models for accretion of the Central Asian Orogenic Belt. *Journal of the Geological Society*, **164**, 31-47.
- Wu, F.Y., Ji, W.Q., Liu, C.Z. and Chung, S.L., 2010. Detrital zircon U-Pb and Hf isotopic data from the Xigaze fore-arc basin: Constraints on Transhimalayan magmatic evolution in southern Tibet. *Chemical Geology*, **271**, 13-25.
- Wu, F.Y., Han, R.H., Yang, J.H., Wilde, S.A., Zhai, M.G. and Park, S.C., 2007. Initial constraints on the timing of granitic magmatism in North Korea using U-Pb zircon geochronology. *Chemical Geology*, **238**, 232-248.
- Xiao, W.J., Han, C.M., Yuan, C., Sun, M., Lin, S.F., Chen, H.L., Li, Z.L., Li, J.L., Sun, S., 2008. Middle Cambrian to Permian subduction-related accretionary orogenesis of Northern Xinjiang, NW China: Implications for the tectonic evolution of central Asia. *Journal of Asian Earth Sciences*, **32**, 102-117.
- Xiao, W.J., Huang, B.C., Han, C.M., Sun, S. and Li, J.L., 2010. A review of the western part of the Altaids: A key to understanding the architecture of accretionary orogens. *Gondwana Research*, **18**, 253-273.
- Xu, X., He, G.Q., Li, H.Q., Ding, T.F., Liu, X.Y. and Mei, S.W., 2006. Basic characteristics of the Karamay ophiolitic mélangé, Xinjiang, and its zircon SHRIMP dating. *Geology in China*, **3**, 470-475 (in Chinese with English abstract).

- Yin, J.Y., Yuan, C., Sun, M., Long, X.P., Zhao, G.C., Wong, K.P., Geng, H.Y. and Cai, K.D., 2010. Late Carboniferous high-Mg dioritic dikes in Western Junggar, NW China: geochemical features, petrogenesis and tectonic implications. *Gondwana Research*, **17**, 145-152.
- Zhang, C., Zhai, M.G., Allen, M.B., Saunders, A.D., Wang, G.R. and Huang, X., 1993. Implications of Paleozoic ophiolites from Western Junggar, NW China, for the tectonics of Central. *Journal of the Geological Society*, **150**, 551-561.
- Zhang, C. and Huang, X., 1992. The age and tectonic settings of ophiolites in West Junggar, Xinjiang. *Geological review*, **38**, 509-523 (in Chinese with English abstract).
- Zhang, L.F., 1997. The  $^{40}\text{Ar}/^{39}\text{Ar}$  metamorphic ages of Tangbale blueschists and their geological significance in West Junggar of Xinjiang. *Chinese Science Bulletin*, **42**, 1902-1904 (in Chinese with English abstract).
- Zhang, C.L., Yang, D.S., Wang, H.Y., Takahashi, Y. and Ye, H.M., 2010. Neoproterozoic mafic-ultramafic layered intrusion in Quruqtagh of northeastern Tarim Block, NW China: Two phases of mafic igneous activity with different mantle sources. *Gondwana Research*, **19**, 177-190.
- Zhang, J., Xiao, W. J., Han, C. M., Ao, S. J., Yuan, C., Sun, M., Geng, H.Y., Zhai G.C., Guo, Q.Q. and Ma, C., 2011. Kinematics and age constraints of deformation in a Late Carboniferous accretionary complex in Western Junggar, NW China. *Gondwana Research*, **19**, 958-974.
- Zhou T.F., Yuan F., Fan F., Zhang D.Y., Cooke D. and Zhao, G.C., 2008. Granites in the Sawuer region of the west Junggar, Xinjiang Province, China: Geochronological and geochemical characteristics and their geodynamic significance. *Lithos*, **106**, 191-206.
- Zhu, B.Q., Feng, Y.M. and Ye, L.H., 1987. Paleozoic ophiolites in West Junggar and their geological significance, Symposium on Plate Tectonics of Northern China. Geological Publishing House, Beijing, pp. 19-28.
- Zhu, Y.F. and Xu, X., 2006. The discovery of Early Ordovician ophiolite mélangé in Taerbahatai Mts., Xinjiang, NW China. *Acta Petrologica Sinica*, **22**, 2833-2842 (in Chinese with English abstract).

## 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<sub>0</sub> 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. \*: <sup>206</sup>Pb/<sup>238</sup>U ages.

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

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

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

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

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

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

$$\left( \frac{^{176}\text{Hf}}{^{177}\text{Hf}} \right)_{\text{DM}} = 0.28325, \left( \frac{^{176}\text{Lu}}{^{177}\text{Hf}} \right)_{\text{DM}} = 0.0384, \left( \frac{^{176}\text{Lu}}{^{177}\text{Hf}} \right)_C = 0.015, \left( \frac{^{176}\text{Lu}}{^{177}\text{Hf}} \right)_{\text{LC}} = 0.022$$

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  $^{206}\text{Pb}/^{238}\text{U}$  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  $\epsilon\text{Hf}(t)$  vs  $^{206}\text{Pb}/^{238}\text{U}$  ages. Positive  $\epsilon\text{Hf}(t)$  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 ( $T_{\text{DM}}^{\text{LC}}$ ), 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: Baidalet-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 mélangé, IVB: Inner Volcanic Belt, Ma-Ta: Mayila-Tangbale mélangé, MK: Maikan-Kyziltas mélangé, MTF: Main Tianshan Fault, NB: Nord Balkash mélangé, NTS: North Tianshan, OVB : Outer Volcanic Belt, S: Sawuer, Z: Zharmasay. 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 ;<br>84.0212°E | Greywacke (CS)         | Qz. (40%), fsp. (40%), LF<br>(10%, chert), ep., cpx, chl                   | Ebinur - Kekesayi Terrane *<br>(Tangbale Mélange)   | U. Ord. - L. Sil.      | Block within ophiolitic<br>mélange  |
| DJ83   | 45.2346°N ;<br>83.9952°E | Green sandstone (CS)   | Qz. (55%), fsp. (15%), LF<br>(15%, chert + bas.)                           | Laba Terrane *<br>(Labahe Formation)                | Ord. ?                 | Massive schistose<br>detrital serie |
| DJ87   | 45.2819°N ;<br>83.8031°E | Greywacke (CS)         | Fsp. (50%), qz. (20%), LF<br>(15%, bas. + and.), chl.<br>(15%)             | Ebinur - Kekesayi Terrane *<br>(Qiargaye Formation) | U. Ord. - L. Sil.      | Turbidites                          |
| DJ89   | 45.2587°N ;<br>83.7424°E | Microconglomerate (CS) | Qz. (50%), LF (25%,<br>and.), fsp. (15%), chl.<br>(5%), amph.              | Ebinur - Kekesayi Terrane *<br>(Qiargaye Formation) | U. Ord. - L. Sil.      | Turbidites                          |
| DJ98   | 45.6551°N ;<br>82.9492°E | Sandstone (CS)         | Qz (70%), fsp. (20%), LF<br>(5%, and.), cc., FTO.                          | Toli Terrane *<br>(Barliek Formation)               | L. Dev. - U. Dev.      | Broken serie                        |
| DJ108  | 45.6640°N ;<br>83.2337°E | Microconglomerate (CS) | Qz (60%), fsp. (30%), LF<br>(5%, and.), opx., cpx., ep.,<br>chl.           | Mayila Terrane *<br>(Mayila Mélange)                | M. Sil. - U.Sil.       | Block within ophiolitic<br>mélange  |
| DJ188  | 45.3624°N ;<br>82.7874°E | Microconglomerate (CS) | Qz, Fsp., LF   | Mayila Terrane *                                    | M. Sil. - U.Sil.       | Detrital serie                      |
| DJ192  | 45.4079°N ;<br>82.7640°E | Greywacke (CS)         | LF (40%, bas. + chert),<br>fsp. (25%), qz. (15%),<br>cpx. (10%), FTO (10%) | Mayila Terrane *                                    | M. Sil. - U.Sil.       | Block within ophiolitic<br>mélange  |
| DJ15   | 45.7214°N ;<br>84.4593°E | Greywacke (CS)         | Fsp. (30%), LF (30%,<br>and.), qz. (25%), chl.<br>(15%)                    | Karamay Terrane *                                   | L. Carb. - U.<br>Carb. | Turbidites                          |
| DJ149  | 46.0789°N ;<br>84.0098°E | Greywacke (CS)         | Fsp. (60%), LF (15%,<br>and.), qz. (15%), chl.<br>(10%)                    | Toli Terrane *                                      | L. Dev. - U. Dev.      | Volcanosedimentary<br>serie         |
| DJ325  | 46.8107°N ;<br>86.6885°E | Greywacke (CS)         | Fsp. (40%), LF (25%,<br>and.), qz. (20%), chl.<br>(10%)                    | Hujiersite Formation **                             | M. Dev.                | Detrital serie                      |
| DJ329  | 47.0640°N ;<br>86.5972°E | Greywacke (CS)         | Fsp. (50%), qz. (20%), LF<br>(20%, bas. + and.), FTO<br>(10%)              | Heishantou **                                       | L. Carb.               | Turbidites                          |



Table 2

| Sample | Units              | Coordinates           | Youngest age* | Main population<br>(N/N <sub>0</sub> )† | Other populations<br>(N/N <sub>0</sub> ) |
|--------|--------------------|-----------------------|---------------|---|--|
| DJ46   | Tangbale           | 45.4307°N ; 84.0212°E | 439 ± 12 Ma   | 464 ± 4 Ma<br>(60/61)                   | -  |
| DJ83   | Tangbale           | 45.2346°N ; 83.9952°E | 398 ± 8 Ma    | 445 ± 5 Ma<br>(47/51)                   |  |
| DJ87   | Tangbale           | 45.2819°N ; 83.8031°E | 437 ± 8 Ma    | 468 ± 5 Ma<br>(38/57)                   | -  |
| DJ89   | Tangbale           | 45.2587°N ; 83.7424°E | 434 ± 6 Ma    | 476 ± 7 Ma<br>(39/60)                   |  |
| DJ98   | Mayila             | 45.6551°N ; 82.9492°E | 395 ± 9 Ma    | 415 ± 6 Ma<br>(51/59)                   |  |
| DJ108  | Mayila             | 45.6640°N ; 83.2337°E | 440 ± 10 Ma   | 460 ± 5 Ma<br>(51/58)                   |  |
| DJ188  | Mayila             | 45.3624°N ; 82.7874°E | 379 ± 10 Ma   | 413 ± 5 Ma<br>(32/39)                   |  |
| DJ192  | Mayila             | 45.4079°N ; 82.7640°E | 429 ± 10 Ma   | 453 ± 3 Ma<br>(58/66)                   |  |
| DJ15   | West Karamay       | 45.7214°N ; 84.4593°E | 304 ± 13 Ma   | 322 ± 6 Ma<br>(33/62)                   | 426 ± 13 Ma<br>(13/62)                   |
| DJ149  | Barliek            | 46.0789°N ; 84.0098°E | 373 ± 11 Ma   | 402 ± 7 Ma<br>(47/50)                   |  |
| DJ325  | Chingiz-Tarbagatay | 46.8107°N ; 86.6885°E | 388 ± 10 Ma   | 424 ± 4 Ma<br>(36/48)                   |  |
| DJ329  | Sawuer             | 47.0640°N ; 86.5972°E | 307 ± 8 Ma    | 332 ± 3 Ma<br>(62/78)                   |  |

Table 3

| Analysis No. | $^{207}\text{Pb}/^{206}\text{Pb}$ |        | $^{207}\text{Pb}/^{235}\text{U}$ |        | Ratios          |        | $^{206}\text{Pb}/^{238}\text{U}$ |        | $^{208}\text{Pb}/^{232}\text{Th}$ |     | $^{207}\text{Pb}/^{206}\text{Pb}$ |     | Age (Ma)        |     | $^{208}\text{Pb}/^{232}\text{Th}$ |     | Disc* (%) |       |
|--------------|-----------------------------------|--------|----------------------------------|--------|-----------------|--------|----------------------------------|--------|-----------------------------------|-----|-----------------------------------|-----|-----------------|-----|-----------------------------------|-----|-----------|-------|
|              | $\pm 1\text{s}$                   |        | $\pm 1\text{s}$                  |        | $\pm 1\text{s}$ |        | $\pm 1\text{s}$                  |        | $\pm 1\text{s}$                   |     | $\pm 1\text{s}$                   |     | $\pm 1\text{s}$ |     | $\pm 1\text{s}$                   |     |           |       |
| 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.       | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | Ratios                                  |   |   | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ | Age (Ma)                                |   |     | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ | Disc* (%) |    |     |    |     |    |       |
|--------------------|--|---|---|---|---|--|--|---|---|-----|--|-----------|----|-----|----|-----|----|-------|
|                    |  |   | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ |  |  | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ |     |  |           |    |     |    |     |    |       |
| 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 |
| <b>DJ83 (n=51)</b> |  |   |   |   |   |  |  |   |   |     |  |           |    |     |    |     |    |       |
| 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* (%) |    |       |
|--------------|---------|--|---|---|---|--|--|--|---|---|---|--|--|--|----|-----------|----|-------|
|              |         | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1s$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1s$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1s$ | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1s$ | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1s$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1s$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1s$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1s$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1s$ |    |           |    |       |
| 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. | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | Ratios                                  |   |   | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ | Age (Ma)                                |   |     | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ | Disc* (%) |    |     |    |     |    |       |
|--------------|--|---|---|---|---|--|--|---|---|-----|--|-----------|----|-----|----|-----|----|-------|
|              |  |   | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ |  |  | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ |     |  |           |    |     |    |     |    |       |
| 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  |

| Analysis No.       | Ratios   |   |   |  |  |   |   |  |   |   | Age (Ma)   |     |    |     | Disc* (%) |     |    |       |
|--------------------|--|---|---|--|--|---|---|--|---|---|--|-----|----|-----|-----------|-----|----|-------|
|                    | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1s$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1s$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1s$ | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1s$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1s$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1s$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1s$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1s$ |     |    |     |           |     |    |       |
| <b>DJ89 (n=60)</b> |  |   |   |  |  |   |   |  |   |   |  |     |    |     |           |     |    |       |
| 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.       | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | Ratios   |   |   |  | Age (Ma)                                       |   |    |     | Disc* (%) |     |    |     |    |     |    |       |
|--------------------|---|--|--|---|---|--|--|---|----|-----|-----------|-----|----|-----|----|-----|----|-------|
|                    |   |  | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ |    |     |           |     |    |     |    |     |    |       |
| 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  |
| <b>DJ98 (n=59)</b> |   |  |  |   |   |  |  |   |    |     |           |     |    |     |    |     |    |       |
| 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* (%) |    |       |
|---------------------|----------|--|---|---|--|--|---|---|--|---|---|--|----|-----|----|-----------|----|-------|
|                     |          | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ |    |     |    |           |    |       |
| 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 |
| <b>DJ108 (n=58)</b> |          |  |   |   |  |  |   |   |  |   |   |  |    |     |    |           |    |       |
| 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. | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1\text{s}$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1\text{s}$ | Ratios   |   |   |  | Age (Ma)   |   |    |     | Disc* (%) |     |    |     |    |     |    |       |
|--------------|---|--|--|---|---|--|--|---|----|-----|-----------|-----|----|-----|----|-----|----|-------|
|              |   |  | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1\text{s}$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1\text{s}$ | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1\text{s}$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1\text{s}$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1\text{s}$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1\text{s}$ |    |     |           |     |    |     |    |     |    |       |
| 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.        | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | Ratios   |   |   |  | Age (Ma)                                       |   |    |     | Disc* (%) |     |    |     |    |     |    |       |
|---------------------|---|--|--|---|---|--|--|---|----|-----|-----------|-----|----|-----|----|-----|----|-------|
|                     |   |  | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ |    |     |           |     |    |     |    |     |    |       |
| 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 |
| <b>DJ188 (n=39)</b> |   |  |  |   |   |  |  |   |    |     |           |     |    |     |    |     |    |       |
| 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.        | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ |  | Ratios  |   |  |  | Age (Ma)  |        |    |     | Disc* (%) |     |    |     |    |     |    |       |
|---------------------|---|--|---|---|--|--|---|--------|----|-----|-----------|-----|----|-----|----|-----|----|-------|
|                     | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$  | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ |        |    |     |           |     |    |     |    |     |    |       |
| 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   |
| <b>DJ192 (n=66)</b> |   |  |   |   |  |  |   |        |    |     |           |     |    |     |    |     |    |       |
| 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. | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ | Ratios                                  |   |  |  |   |   | Age (Ma)                                 |    |     |    |     |    | Disc* (%) |    |     |    |       |
|--------------|--|---|---|--|--|---|---|--|----|-----|----|-----|----|-----------|----|-----|----|-------|
|              |  | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1s$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1s$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1s$ |    |     |    |     |    |           |    |     |    |       |
| 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. |         | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ |    | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ |     | Ratios |    | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ |    | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ |     | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ |    | Age (Ma) |    | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ |    | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ |  | Disc* (%) |
|--------------|---------|---|----|--|-----|--------|----|--|----|---|-----|---|----|----------|----|--|----|---|--|-----------|
|              |         |   |    |  |     |        |    |  |    |   |     |   |    |          |    |  |    |   |  |           |
| 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.        |          | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ |                 | Ratios                           |                 |                                  |                 | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ |                 |                                   |                 | Age (Ma)                         |                 |                                  |                 | Disc* (%) |                                   |                 |
|---------------------|----------|---|-----------------|----------------------------------|-----------------|----------------------------------|-----------------|---|-----------------|-----------------------------------|-----------------|----------------------------------|-----------------|----------------------------------|-----------------|-----------|-----------------------------------|-----------------|
|                     |          | $^{207}\text{Pb}/^{206}\text{Pb}$               | $\pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U}$ | $\pm 1\text{s}$ | $^{206}\text{Pb}/^{238}\text{U}$ | $\pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th}$               | $\pm 1\text{s}$ | $^{207}\text{Pb}/^{206}\text{Pb}$ | $\pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U}$ | $\pm 1\text{s}$ | $^{206}\text{Pb}/^{238}\text{U}$ | $\pm 1\text{s}$ |           | $^{208}\text{Pb}/^{232}\text{Th}$ | $\pm 1\text{s}$ |
| 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            |
| <b>DJ149 (n=50)</b> |          |   |                 |                                  |                 |                                  |                 |   |                 |                                   |                 |                                  |                 |                                  |                 |           |                                   |                 |
| 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. | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | Ratios   |   |   |  | Age (Ma)                                       |   |    |     | Disc* (%) |     |    |     |    |     |    |       |
|--------------|---|--|--|---|---|--|--|---|----|-----|-----------|-----|----|-----|----|-----|----|-------|
|              |   |  | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ |    |     |           |     |    |     |    |     |    |       |
| 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. | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | Ratios   |   |   |  | Age (Ma)                                       |   |    |     | Disc* (%) |     |    |     |    |     |    |       |
|--------------|---|--|--|---|---|--|--|---|----|-----|-----------|-----|----|-----|----|-----|----|-------|
|              |   |  | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1\text{s}$ | $^{207}\text{Pb}/^{235}\text{U} \pm 1\text{s}$ | $^{206}\text{Pb}/^{238}\text{U} \pm 1\text{s}$ | $^{208}\text{Pb}/^{232}\text{Th} \pm 1\text{s}$ |    |     |           |     |    |     |    |     |    |       |
| 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. | $^{207}\text{Pb}/^{206}\text{Pb} \pm 1s$ |          | Ratios                           |          |                                  |          | Age (Ma)                          |          |                                   |          | Disc* (%) |                                  |          |                                  |          |                                   |          |       |
|--------------|--|----------|----------------------------------|----------|----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------|----------------------------------|----------|----------------------------------|----------|-----------------------------------|----------|-------|
|              | $^{207}\text{Pb}/^{206}\text{Pb}$        | $\pm 1s$ | $^{207}\text{Pb}/^{235}\text{U}$ | $\pm 1s$ | $^{206}\text{Pb}/^{238}\text{U}$ | $\pm 1s$ | $^{208}\text{Pb}/^{232}\text{Th}$ | $\pm 1s$ | $^{207}\text{Pb}/^{206}\text{Pb}$ | $\pm 1s$ |           | $^{207}\text{Pb}/^{235}\text{U}$ | $\pm 1s$ | $^{206}\text{Pb}/^{238}\text{U}$ | $\pm 1s$ | $^{208}\text{Pb}/^{232}\text{Th}$ | $\pm 1s$ |       |
| 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. | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1\text{s}$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1\text{s}$ | Ratios   |   |   |  | Age (Ma)   |   |     |    | Disc* (%) |    |     |    |     |    |       |
|--------------|---|--|--|---|---|--|--|---|-----|----|-----------|----|-----|----|-----|----|-------|
|              |   |  | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1\text{s}$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1\text{s}$ | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm 1\text{s}$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm 1\text{s}$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm 1\text{s}$ | $\frac{^{208}\text{Pb}}{^{232}\text{Th}} \pm 1\text{s}$ |     |    |           |    |     |    |     |    |       |
| 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)                                  |          |  |          |  |          |    |
|--------------|----------|---|----------|--|----------|--|----------|---|----------|--|----------|--|----------|----|
|              |          | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$ | $\pm 1s$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}}$ | $\pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}}$ | $\pm 1s$ | $\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$ | $\pm 1s$ | $\frac{^{207}\text{Pb}}{^{235}\text{U}}$ | $\pm 1s$ | $\frac{^{206}\text{Pb}}{^{238}\text{U}}$ | $\pm 1s$ |    |
| <b>DJ259</b> |          | <i>46.9046°N, 84.2452°E</i>               |          |  |          |  |          |   |          |  |          |  |          |    |
| 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  |
| <b>DJ303</b> |          | <i>47.0245°N, 86.0374°E</i>               |          |  |          |  |          |   |          |  |          |  |          |    |
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | 1 $\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | 1 $\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|------------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|------------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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) | $^{176}\text{Hf}/^{177}\text{Hf}$ | $1\sigma$ | $^{176}\text{Lu}/^{177}\text{Hf}$ | $^{176}\text{Yb}/^{177}\text{Hf}$ | $(^{176}\text{Hf}/^{177}\text{Hf})_i$ | $\varepsilon\text{Hf}(t)$ | $1\sigma$ | $T_{\text{DM}}$ | $T_{\text{DM}}^{\text{C}}$ | $T_{\text{DM}}^{\text{LC}}$ |
|--------------|-----------|-----------------------------------|-----------|-----------------------------------|-----------------------------------|---------------------------------------|---------------------------|-----------|-----------------|----------------------------|-----------------------------|
| 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                       |

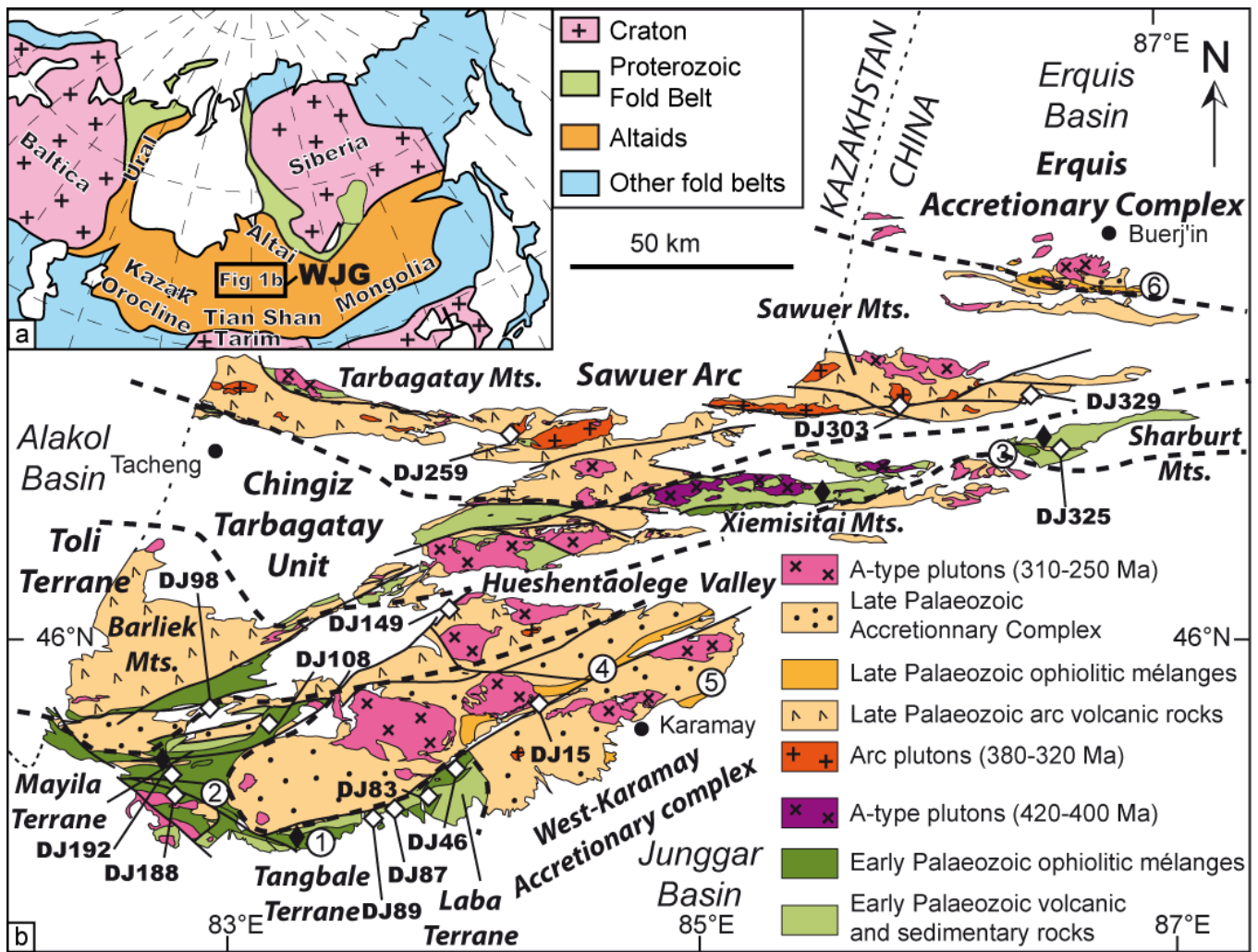


Figure 1

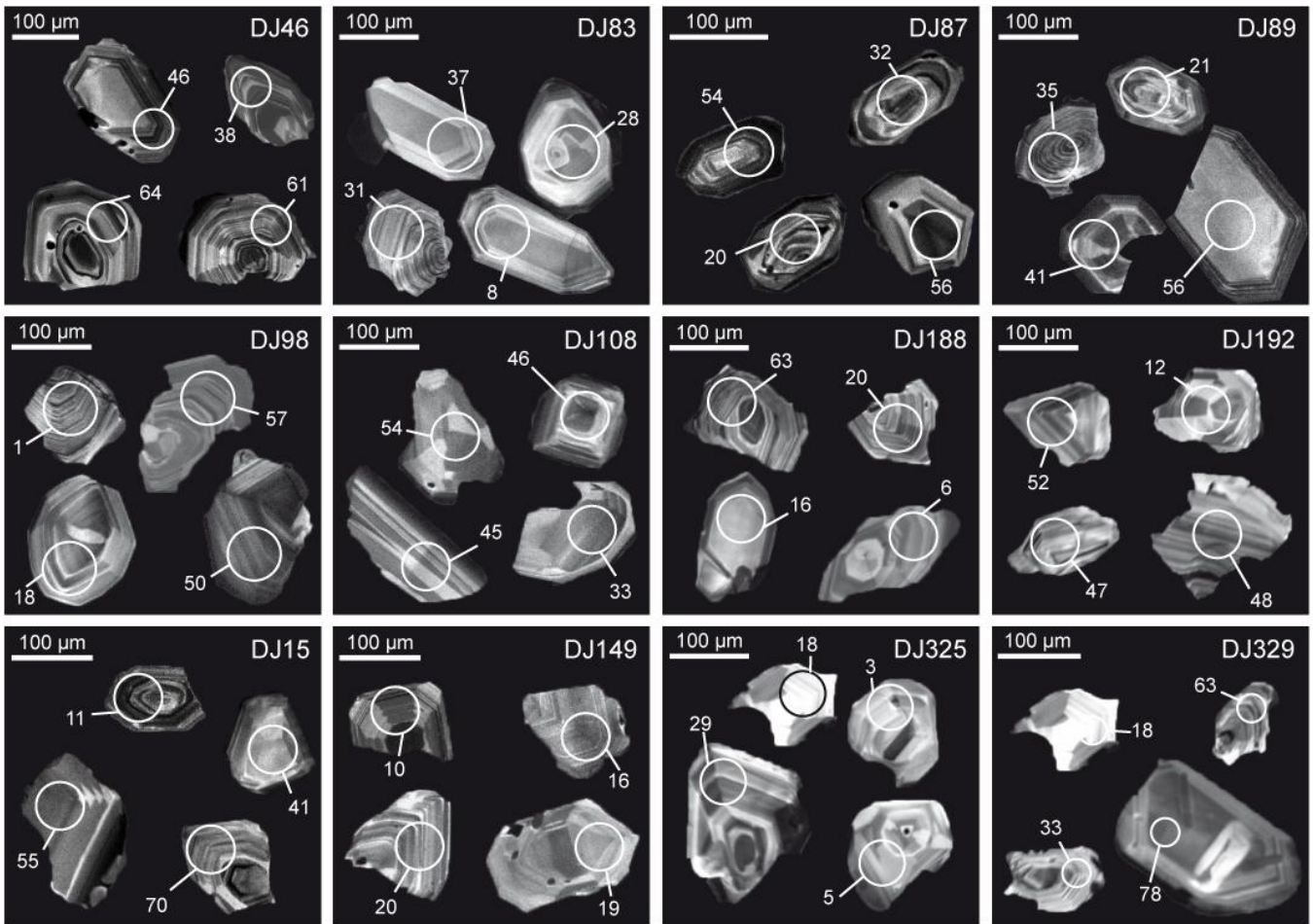


Figure 2

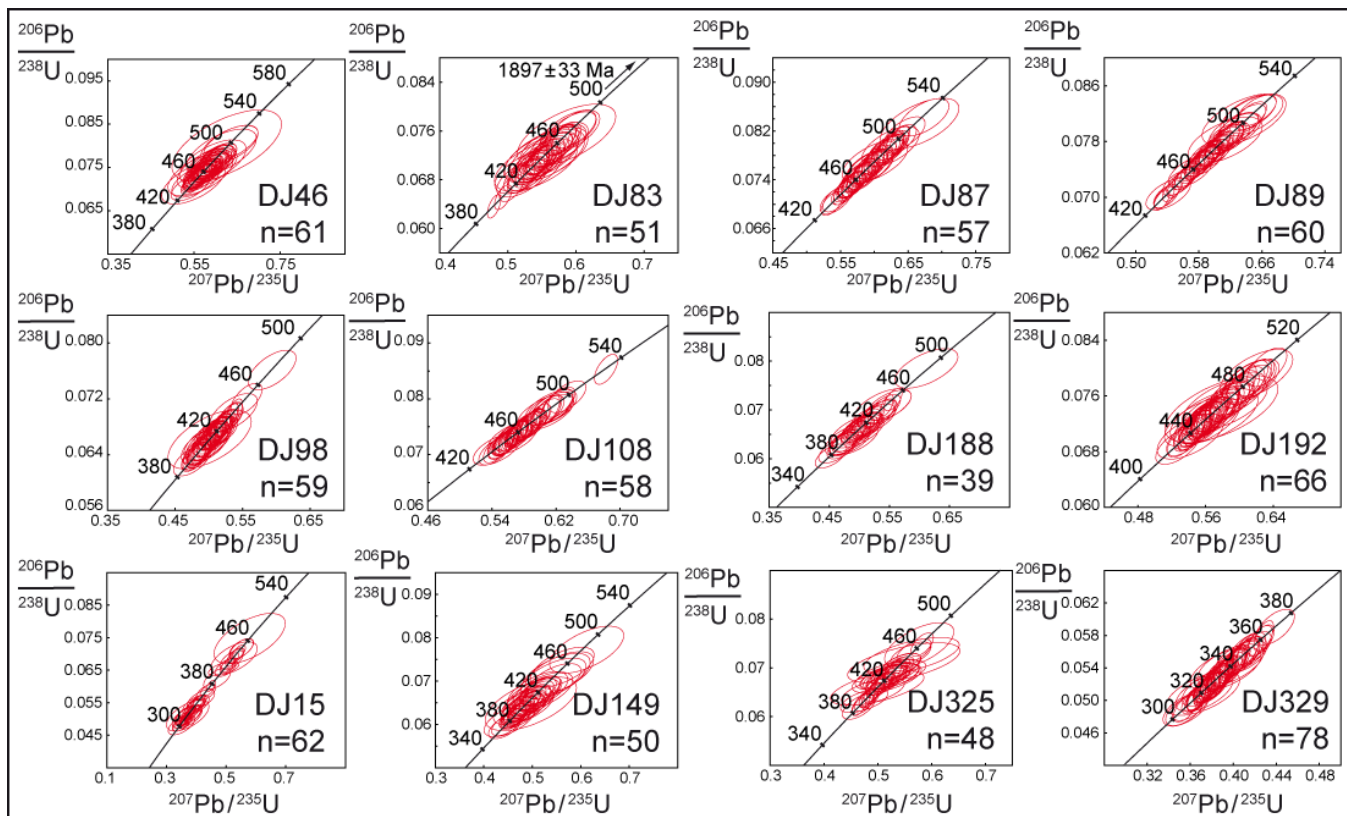


Figure 3

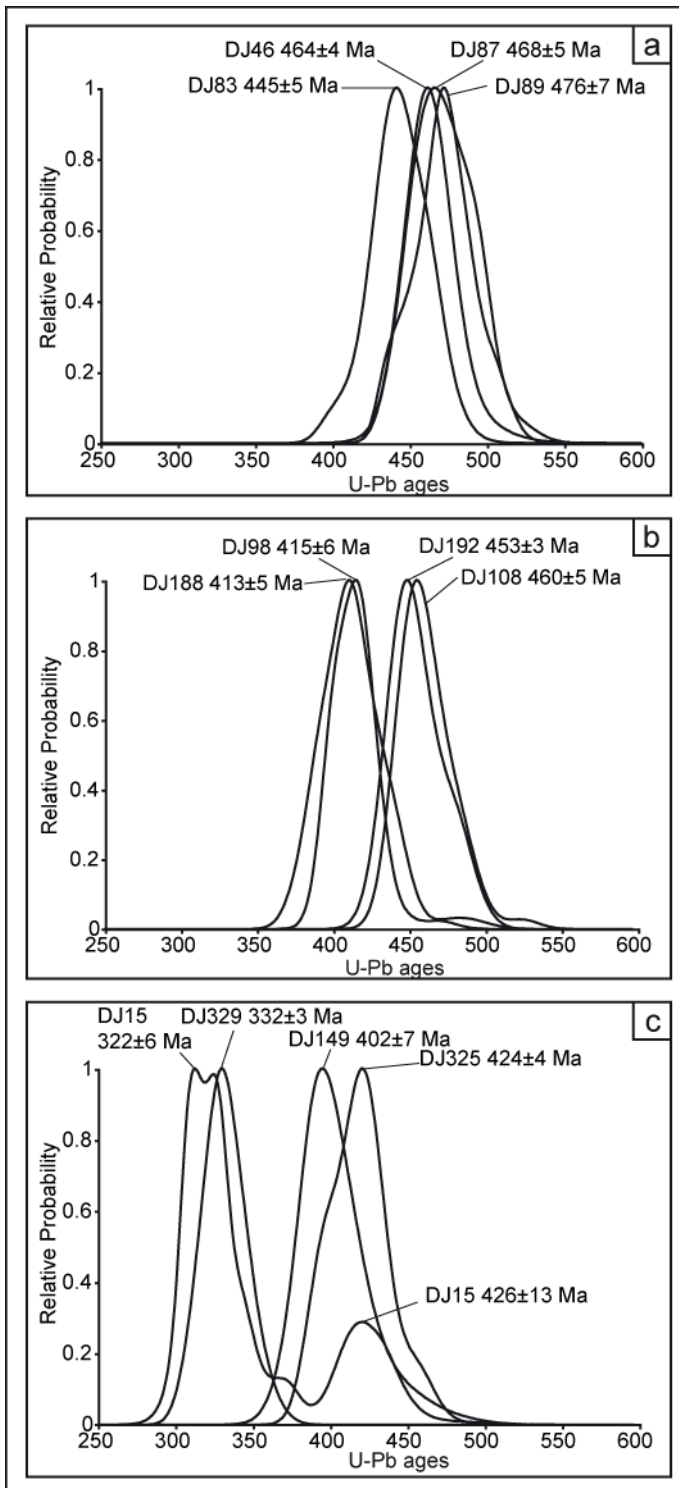


Figure 4

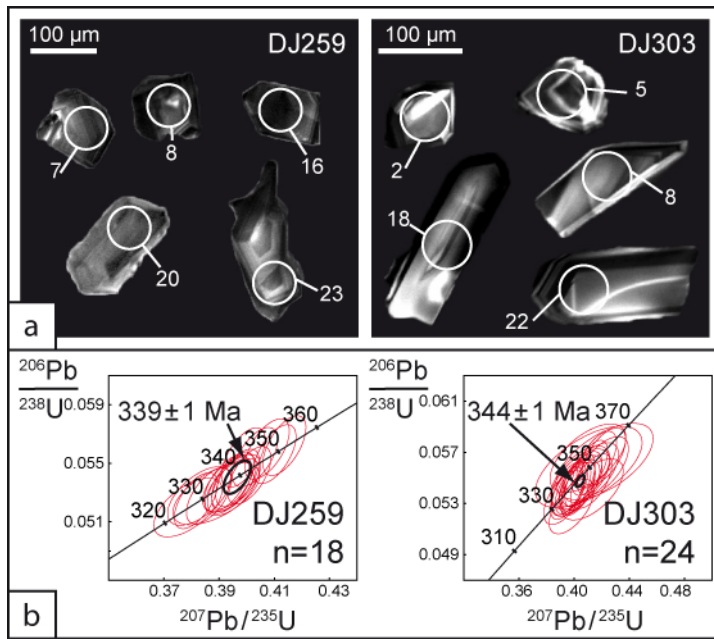


Figure 5

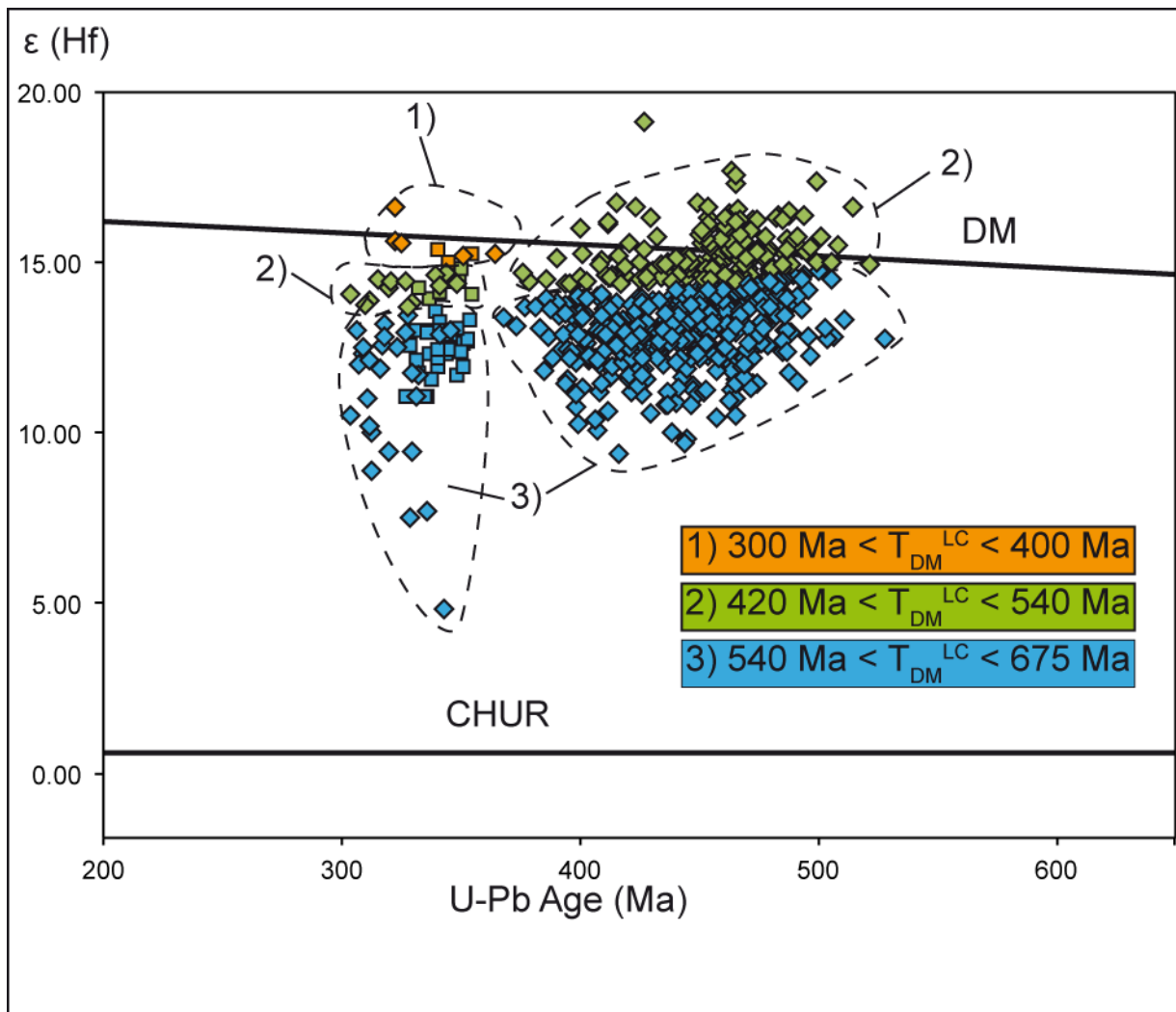


Figure 6



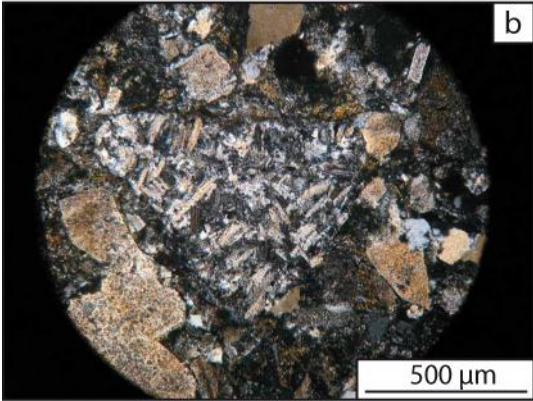
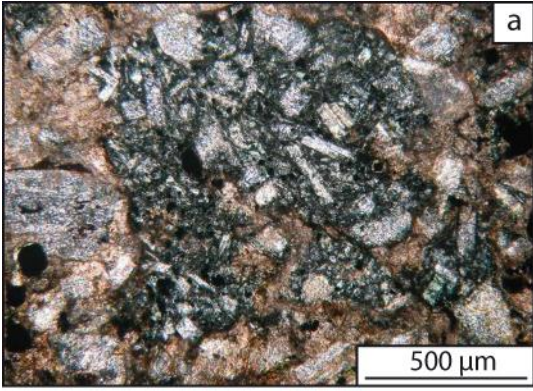


Figure 7

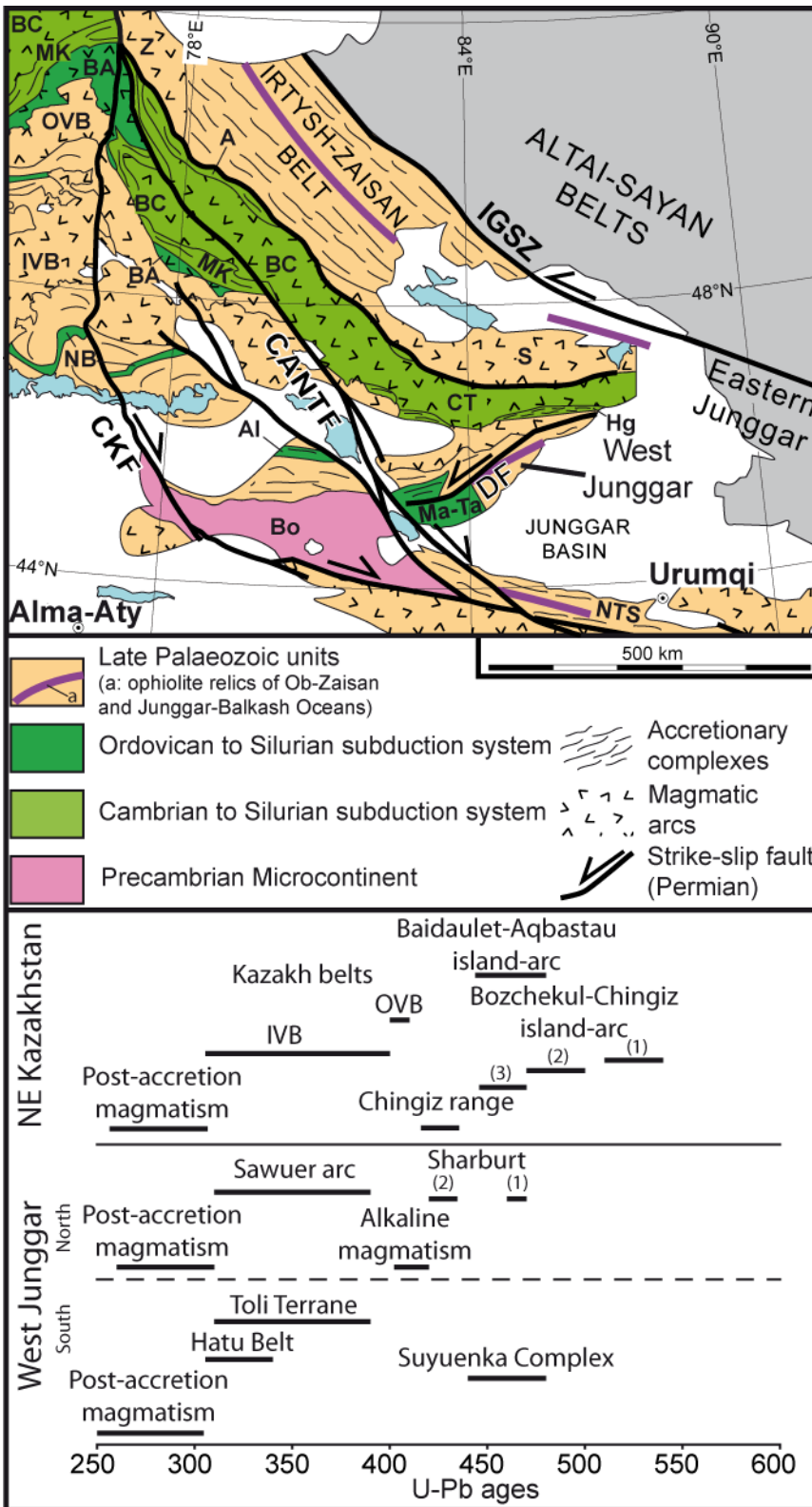


Figure 8

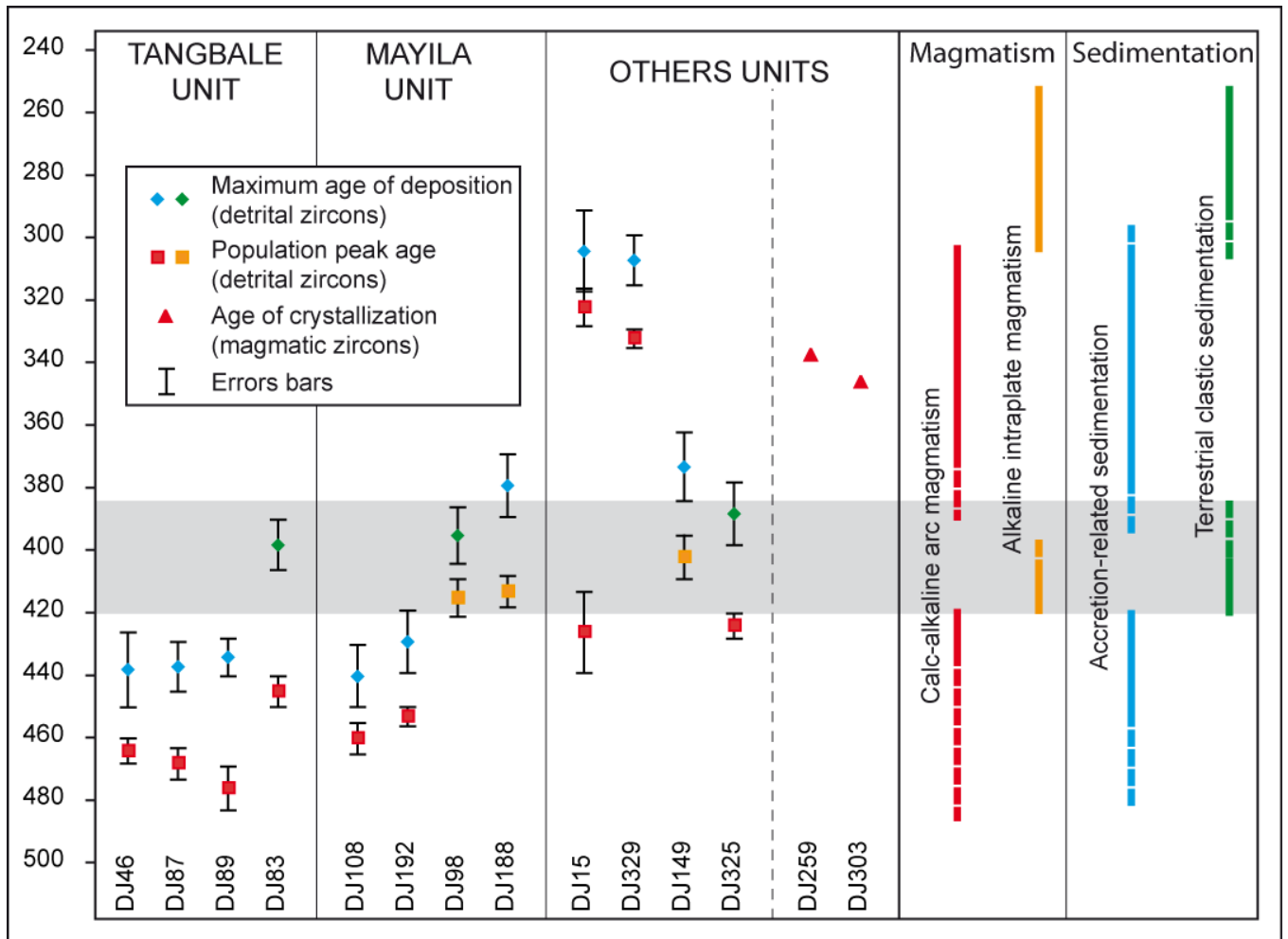


Figure 9