Beintema, K.A, Mason, P.R.D, Nelson, D.R, White, S.H. & Wijbrans, J.R. 2003. New constraints on the timing of tectonic events in the Archaean Central Pilbara Craton, Western Australia. *Journal of the Virtual Explorer*, **13**, 1-42.

# New constraints on the timing of tectonic events in the Archaean Central Pilbara Craton, Western Australia.

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**Abstract:** The Archaean Pilbara Craton in Western Australia has a domainal architecture which has been interpreted to reflect a history of accretion. The Tabba Tabba Shear Zone is the major division between the East and West Pilbara blocks: this interpretation is based on significant differences in the tectono-thermal histories of the bordering terranes. New laser ablation ICP-MS and SHRIMP U-Pb zircon geochronological data, coupled with trace element data for the same core parts of the sampled mineral grains, indicate a range of magmatic crystallization ages for representative igneous rocks emplaced before, during or after shearing. Results from both dating techniques agree for two separate homogeneous samples to within analytical error (2s). Our data indicate that a granodioritic suite intruded the area at about 3250 Ma, followed by gabbroic suite at 3235 Ma. The area was subsequently affected by an early dextral compressive event during which the Tabba Tabba Shear Zone was formed, and the granodiorites and gabbros were incorporated into the Tabba Tabba Shear Zone. A granitoid suite intruded the shear zone at 2940 Ma, with xenocrystic populations of 3115 Ma and 3015 Ma, a possibly West Pilbara association. The East and West Pilbara terranes may thus have been relatively close to each other between 3250 and 3115 Ma. The Tabba Tabba Shear Zone currently forms the eastern bounding fault of the Mallina Basin. The last major activity in the structure occurred during a major phase of oblique movement, corresponding to closure of the Mallina Basin. Ages of late syn-kinematic granitic intrusions indicate that this occurred at about 2940 Ma.

## INTRODUCTION

The Pilbara Craton in the north west of Western Australia (Figure 1) comprises a mid-Archaean granite-greenstone terrane and the overlying late-Archaean volcano-sedimentary sequence of the Hamersley Basin. This study is concerned only with older tectonic processes during the construction of the granite-greenstone terrane. The Tabba Tabba Shear Zone (Figure 2) has historically been interpreted as the major division between the East and West Pilbara because of the different tectono-thermal histories of the bordering terranes. Rocks to the west have no pre- 3.3 Ga history: the 3.5 Ga Coonterunah Group (Buick *et al*., 1995) and 3.47-3.43 Ga Warrawoona Group (Hickman, 1999) do not occur to the west of this shear zone, and the 3.45 and 3.3 Ga tectonic events recorded in the East Pilbara (White *et al*., 1998) have not been recognized in the West Pilbara.

Barley (1997) suggested that the Tabba Tabba Shear Zone is the boundary along which the West Pilbara Terrane was accreted onto the East Pilbara Terrane at about 2.9 Ga. This interpretation was adopted by Blewett (2002). However, our observations (Beintema *et al*., 2001) suggest that the East Pilbara granite-greenstone terrane may have been connected with the West Pilbara granite-greenstone terrane prior to 2.9 Ga.

This study aims to better constrain the timing of tectonic activity in the Central Pilbara, by dating major magmatic events related to activity on the shear zone. Laser ablation ICP-MS and SHRIMP U-Pb techniques have been applied to date rocks taken from key locations, previously identified from structural-kinematic analyses (Beintema *et al*., 2001). Regional and structural relationships based on detailed field mapping in combination with the geochronology provide time-constraints on the tectonic history.

## GEOLOGICAL SETTING

The Tabba Tabba Shear Zone is a major structural and compositional discontinuity that can be traced from northeast to southwest across the central part of the Pilbara Craton (Figure 1). The structure has a maximum width of approximately 2 km (Figure 2) and separates sedimentary units of very low metamorphic grade (the Mallina Basin) at its western margin from migmatitic gneisses (Carlindi Granitoid Complex) at its eastern margin.

Analysis of aerial photographs has revealed a regional foliation rotating into the Tabba Tabba Shear Zone

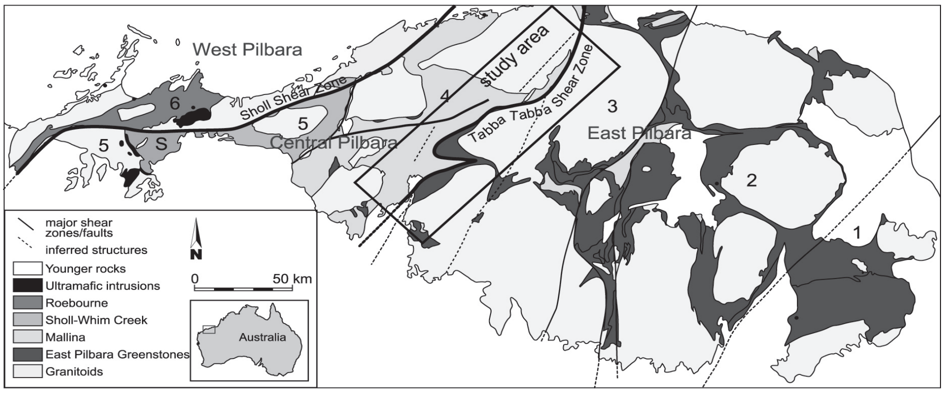



Figure 1. Simplified geological map of the Pilbara Craton, Western Australia. The location of the studied area is indicated.

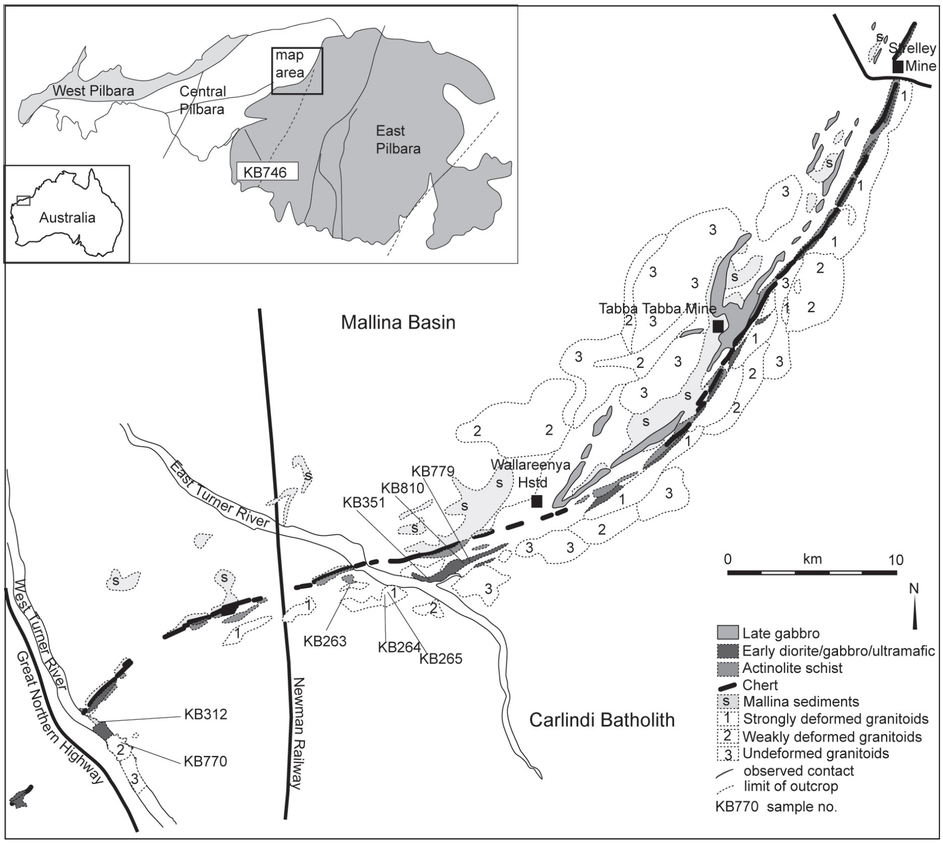



**Figure 2**. Overview of the geology of the exposed central section of the Tabba Tabba Shear Zone. Locality is indicated in Figure 1.

(Figure 2). Field data show that the shear zone has experienced an early phase of compressional deformation with a dextral component (Beintema *et al.*, 2001). The structural field data also indicate a major phase of sinistral oblique movement, overprinting most of the pre-existing structures in the shear zone and bringing the southeast block up relative to the northwest. Minor late brittle dextral deformation has overprinted the major sinistral phase. This phase may correspond to closure of the Mallina Basin (Beintema *et al.*, 2001). After deformation had ceased, the central part of the Pilbara Craton was intruded by large volumes of post-tectonic monzogranite, between at ca 2930 Ma (Smithies *et al.*, 2001).

The Tabba Tabba Shear Zone has been intruded by a suite of granodiorites, a suite of primitive mantle-derived gabbros and a later, more voluminous suite of gabbros derived from an enriched mantle source (De Leeuw *et al.*, 2001). This suggests the Tabba Tabba Shear Zone was part of a major crustal scale structure that enabled melts to rise from the subcontinental lithospheric mantle.

## SAMPLE DESCRIPTIONS

The sampling locations, rock type and mineralogy of the samples are given in Table 1 and Figure 2. An overview of the zircon morphologies for all samples is given in Table 2. Sample KB263 is a quartz-muscovite schist collected from the Tabba Tabba Shear Zone at the East Turner River (Figure 2). It is enclosed in quartz-albite-actinolite-chlorite schists. Based on petrology and chemical composition (De Leeuw *et al.*, 2001) these schists are interpreted to be deformed and metamorphosed granites and granodiorites. Sample KB312 is a quartz-muscovite schist from the same suite, collected at the West Turner River. These supracrustal rocks are incorporated in the south eastern side of the Tabba Tabba Shear Zone. They form the footwall and we interpret them to have originated from a crustal block now east of, and possibly also underlying the Mallina Basin.

Samples KB265 and KB264 were collected from the southern part of the Tabba Tabba Shear Zone at the East Turner River (Figure 2). They are a metagranodiorite and a metagranite respectively. Both rock types are moderately foliated and lineated. The orientation of their foliation is consistent with an early dextral phase of deformation in the Tabba Tabba Shear Zone, but the lineation in high-strain zones is parallel to that of the major sinistral phase of movement on the Tabba Tabba Shear Zone. Their magmatic ages must therefore predate early deformation of

**Table 1**. Sample locations and descriptions. GPS locations in UTM, zone 50K, Australian geodetic grid 1966.

| Sample | Location | GPS | Rock type | Mineralogy | Freshness |
|---|---|---|---|---|---|
| KB263 | East Turner River, Poonthuna Pool | 678504 7699525 | Muscovite schist | qtz, musc | moderate |
| KB264 | East Turner River, Poonthuna Pool | 678610 7699349 | Foliated granite | qtz, plg, musc, bio | very fresh |
| KB265 | East Turner River, Poonthuna Pool | 678876 7699316 | Foliated granodiorite | qtz, plg, bio, hbl | very fresh |
| KB312 | West Turner River, Red Rock Pool | 663537 7691680 | Muscovite schist | qtz, musc | moderate |
| KB351 | East Turner River, Balbryna Well | 682167 7699555 | Aplitic vein | qtz, plg, musc, garnet | moderate |
| KB746 | Yandeyarra, Black Gin Well | 642906 7654053 | Granite | qtz, plg, kfs, musc, bio | very fresh |
| KB770 | West Turner River, Red Rock Pool | 664812 7690743 | Granite | qtz, plg, kfs, musc, bio | moderate |
| KB779 | East Turner River, Balbryna Well | 684277 7700096 | Foliated metadiorite | hbl, plg, qtz, garnet | very fresh |
| KB810 | East Turner River, Balbryna Well | 684259 7700190 | Gabbro | ol, opx, tlc, srp, chl, opq | moderate |

**Table 2**. Zircon morphology

| sample | size | shape | Internal structure | clearness | color |
|---|---|---|---|---|---|
| KB263 | 60-120 µm | euhedral | Inclusions, zoning | medium | yellow |
| | 60-120 µm | square | Rounded cores, zoning | clear | pink |
| KB264 | 90-140 µm | euhedral | Sub rounded cores, zoning | clear | pink |
| KB265 | 90-140 µm | euhedral, elongate | Cracks along length, zoning | medium | pink |
| KB312 | 60-120 µm | euhedral | Oscillatory zoning | medium | yellow |
| | 60-120 µm | square | Rounded cores, zoning | clear | pink |
| KB351 | 60-140 µm | euhedral, elongate | Oscillatory zoning | medium | yellow-brown |
| | 60-140 µm | euhedral, elongate | Oscillatory zoning | medium | pink |
| | 30-90 µm | round, fragments | Oscillatory zoning | medium | orange |
| | 30-90 µm | subhedral | no structure at all | milky | yellow-white |
| KB746 | 90-120 µm | euhedral, elongate | Cores, oscillatory zoning | clear | pink |
| KB770 | 90-120 µm | rounded | Zoning, cracks, inclusions | milky | yellow |
| | 90-120 µm | euhedral | Cores, oscillatory zoning | clear | pink |
| | 90-120 µm | euhedral (fragments) | Zoning, inclusions | medium | yellow |
| KB779 | 60-120 µm | euhedral | Oscillatory zoning | clear | pink |
| | 60-120 µm | euhedral (fragments) | no structure at all | medium | pink |
| KB810 | 60-120 µm | round (fragments) | Oscillatory zoning | milky | pink |
| | 60-120 µm | round (fragments) | no structure at all | medium | pink |

the shear zone. The granite has intrusive contacts with the granodiorite, and is therefore expected to be younger.

Sample KB779 is a metadiorite consisting mainly of hornblende and plagioclase. It was collected from within the Tabba Tabba Shear Zone at Balbryna Well (Figure 2). The metadiorite occurs in elongate lenses along the southeastern side of the Tabba Tabba Shear Zone in the section near the East Turner River. Sample KB810 is a metagabbro with relics of olivine and orthopyroxene. Most of the rock now consists of talc, serpentine, chlorite and opaque minerals. The sample was collected from the Tabba Tabba Shear Zone at Balbryna Well, near sample location KB779. The metagabbro occurs in lenses that are up to a few hundred meters long and up to 50 meters wide, and is closely associated with the metadiorite of sample KB779 as it only occurs inside the lenses of metadiorite. Both rocks are expected to be younger than the quartz-muscovite schists and metagranite-granodiorite, as the metadiorite has been observed to have intruded the metagranite-granodiorite.

Sample KB770 is a granite from Red Rock Pool, just south east of the Tabba Tabba Shear Zone in the West Turner River (Figure 2). This granite is weakly deformed. Pegmatites associated with it intrude the Tabba Tabba Shear Zone at a low angle and are moderately deformed. They do not show evidence for deformation as a result of the early dextral phase of movement on the structure, supporting a younger age. These intrusions do show evidence for deformation related to the major sinistral phase and must therefore have been emplaced between the two tectonic events. This granite is interpreted have caused the observed contact metamorphism in the schists in the West Turner River.

Sample KB351 is an aplitic vein from the central part of the Tabba Tabba Shear Zone. It is moderately deformed and therefore interpreted to have intruded late syn-kinematically during the major sinistral phase (Beintema *et al.*, 2001). It is expected to provide a minimum age for this major phase of activity of the Tabba Tabba Shear Zone. As it is a thin vein it is expected to have picked up xenocrysts before or during emplacement, and thus may provide information on the ages of the underlying rocks.

Sample KB746 is a weakly foliated K-feldspar porphyritic biotite monzogranite from Yandeyarra. It occurs on the eastern boundary of what has been interpreted to be the southerly extension of the Tabba Tabba Shear Zone (Figure 1). The age of this late syn-kinematic granite constrains the last stages of movement of this part of the structure. This section is not linked in outcrop to the main part of the Tabba Tabba Shear Zone, but it does show a similar structural and tectonic history.

## ANALYTICAL PROCEDURES

### *Sample preparation*

Sample locations were selected on the basis of structural relations and the availability of suitable rock types. All samples showed evidence for at least low greenschist grade metamorphism. At each locality 20 kg was sampled of the freshest available rock. Mineral separation was done at the Vrije Universiteit, Amsterdam. The process involved crushing, sieving, cleaning, density and magnetic separation, and hand-picking of the final fractions. The selected grains were mounted in epoxy and polished to expose the interiors of the grains.

The SHRIMP mounts were evaporatively coated with high purity gold. The LA-ICP-MS mounts were carbon-coated for electron microscope imaging. Cathodoluminescence (CL) and Scanning Electron Microscope (SEM) images of the grains were made on a Philips XL30 SEM, to identify inclusions, inhomogeneiities and zoning.

### *Laser ablation ICP-MS U-Pb zircon analysis*

Laser ablation ICP-MS measurements were performed at Utrecht University, The Netherlands, in February 2002 and November 2002. We used the method of Horn *et al.* (2000) that employs simultaneous laser ablation and solution nebulization to correct for instrumental mass discrimination and laser related elemental fractionation. A standard solution containing a known concentration and isotopic composition of both Tl and U was used to correct for mass bias, eliminating the need for an external (solid) standard. The system hardware is described in detail by Mason and Kraan (2002). It consists of a Microlas Geolas 200Q 193 nm excimer laser ablation system (Gunther *et al.*, 1997) with optics designed to ensure a flat energy density profile across the beam at the point of ablation. Energy density at the sample surface was constant during all experiments at 6 mJ/cm2 per pulse and different apertures produced ablation crater sizes of 20, 30, 40, 60, 80 and 120 $\mu$m. Samples were ablated with a laser pulse repetition rate between 5 and 10 Hz. The sample cell was purged with He (0.45 l/min) which was then mixed with Ar (0.65 l/min) carrying the nebulized Tl-U standard solution before injection into the ICP-MS (Micromass Platform ICP). This quadrupole-based mass spectrometer has only one ion lens, which reduces the possibility to minimize mass bias but gives a very stable response over time. Typical sensitivity was approximately 9000 cps per ppm at m/z = 238 for the 91500 standard zircon at a laser pulse repetition rate of 10 Hz and with a 120 mm crater. The formation of uranium oxides was kept to a minimum; the ratio of $UO^+/U^+$ was less than 4% during all analyses.

Each zircon analysis started with 60 seconds of background signal measurement before the laser was switched on. Standard zircon 91500 (Table 3) and in-house standard CZ3 (Table 4) were measured for 100 seconds. Sample measurements lasted as long as was allowed by the thickness of the mineral with a maximum analysis time of 200 seconds. A typical example of a laser ablation signal is shown in Figure 3. The raw time-intensity laser ablation spectra were processed using a modified version of the LAMTRACE spreadsheet program (Jackson, 1997). Laser induced fractionation can be related to the ablation crater geometry (Horn *et al.*, 2000; Mank and Mason, 1999) and a correction factor was calculated using the standard data and applied as shown in Figure 4. A common Pb correction was applied as outlined below using the abundance of $^{204}$Pb following a correction for the isobaric overlap of $^{204}$Hg using $^{202}$Hg and assuming $^{202}$Hg/$^{204}$Hg to be 4.35. The calibration of Pb-Pb and U-Pb ages was checked against the 91500 zircon.

*SHRIMP U-Pb zircon analysis*

Sensitive High Resolution Ion Micro Probe (SHRIMP) measurements were performed on the facility at the Department of Applied Physics, at Curtin University of Technology in Perth, Western Australia in February 2001. Analytical procedures and data processing are described in detail by Nelson (1997).

Before every analysis the mount surface was cleaned to reduce the amount of common lead present. This was done by rastering the primary beam across the mount surface for at least two minutes. During the analysis the secondary ion beam was focused into an electron multiplier by switching the magnetic filter and moving the ion collector appropriately for the species of interest. Ten ion species were measured consecutively in seven cycles. During every cycle the following measurements were made: $^{90}Zr_2{}^{16}O^+$ (2 secs), $^{204}Pb^+$ (10 secs), background at 204.1 (10 secs), $^{206}Pb^+$ (10 secs), $^{207}Pb^+$ (20 secs), $^{208}Pb^+$ (10 secs), $^{238}U^+$ (5 secs), $^{232}Th_{16}O^+$ (5 secs), $^{238}U^{16}O^+$ (2 secs) and $^{238}U^{16}O_2{}^+$ (2 secs). A common Pb correction was applied as described below.

Isobaric interference in SHRIMP analysis arises from the formation of hydrides; e.g. $^{206}Pb^1H+$ interferes with $^{207}Pb^+$. The occurrence of these species was monitored by comparing the $^{208}$Pb corrected ratios on the standard, with the assumed value of 0.0592. It was not necessary to apply a correction to any of the samples in this study.

Analyses that were concordant, or which defined a recent lead-loss trajectory were pooled on the basis of their $^{207}$Pb/$^{206}$Pb ages. Individual analyses were rejected if they were highly discordant and on the basis of unusual zircon morphology (e.g. shape, zonation, cracks, lattice damage).

The errors reported on individual analyses in this study are based on counting statistics, include the scatter on the $UO^+/U^+$ versus $^{206}$Pb/$^{238}$U calibration curve, and include the errors introduced by the common Pb correction. Errors on the pooled ages include the uncertainty in the reproducibility of the Pb/U values in the standard.

*U-Pb data processing*

Analyses with large errors that can be attributed to the presence of zoning, cracks and inclusions in the analyzed zircon, were rejected from the dataset. All LA-ICP-MS analyses with an integration interval shorter than 20 seconds were rejected because of poor counting statistics. In some cases it was possible to use separate integration intervals in the LA-ICP-MS data to exclude disturbances, but when the intervals were shorter than 20 seconds those analyses were rejected. High uranium content may cause a zircon to become metamict due to destruction of the crystal lattice by radiation. This enhances the mobility of U and especially Pb. As a consequence, high uranium content was also a reason for rejection of some analyses.

A correction was applied for common Pb on the basis of the abundance of $^{204}$Pb, which was typically 10 ppm in all standards measured and variable in the samples. This was assumed to be common lead from the mount surface and a correction as described by Compston *et al*. (1984) was applied, assuming the common Pb component to have the isotopic composition of Broken Hill Pb ($^{204}$Pb/$^{206}$Pb=0.0625, $^{207}$Pb/$^{206}$Pb=0.9618 and $^{208}$Pb/$^{206}$Pb=2.2285). Pooled $^{207}$Pb/$^{206}$Pb ages and upper intercept U-Pb concordia ages were calculated using Isoplot (Ludwig, 2001). Cumulative probability diagrams were used to identify different populations within samples. Concordia diagrams show the U-Pb upper intercept ages and the degree of discordance. All samples show discordancy trends that are consistent with radiogenic Pb-loss at zero age. A summary of the interpreted ages is given in Table 5. All errors are 2$\sigma$ errors.

*Zircon major and trace element analysis*

The chemical composition of selected zircons from samples KB770, KB779 and KB810 was measured by electron microprobe (EMP) and laser ablation ICP-MS analysis. Major elements were determined using a Jeol 8600 Superprobe with 5 wavelength dispersive spectrometers. A 15 kV accelerating potential and 10 nA beam current were used to measure 1 mm analysis sites and a correction was applied using the f(rz) algorithm supplied by Noran.

Trace elements were measured by laser ablation ICP-MS analysis on 20 mm diameter sites within the same growth zones of each zircon and adjacent to the craters measured for the U-Pb dating described above. Zones were identified using optical microscopy and CL techniques, but as an additional check the Pb-Pb ages were determined within the same analytical run as the trace element measurements. Precision on these age measurements (not reported here) was degraded due to poorer counting statistics but was sufficient in most cases to check that the correct zone had been identified. Although we measured a different part of the sample to measure the trace elements the homogeneity

Table 3. Mean TIMS U-Pb zircon data for the 91500 zircon standard (from Wiedenbeck *et al*., 1995)

| | $^{207}$Pb/$^{235}$U | $^{206}$Pb/$^{238}$U | $^{207}$Pb/$^{206}$Pb |
|---|---|---|---|
| **Ratio** | 1.8502 | 0.17917 | 0.07488 |
| **Age (Ma)** | discordant | 1065.4 ± 0.6 | 1062.4 ± 0.8 |

Table 4. Mean TIMS U-Pb zircon data for the CZ3 zircon standard (from Nelson, 1997)

| | $^{207}$Pb/$^{235}$U | $^{206}$Pb/$^{238}$U | $^{207}$Pb/$^{206}$Pb | U (ppm) |
|---|---|---|---|---|
| **value** | 0.743 | 0.0914 | 0.05892 | 551 |
| **Age (Ma)** | 563.3 ± 1.0 | 562.8 ± 1.2 | 565.5 ± 1.5 | |

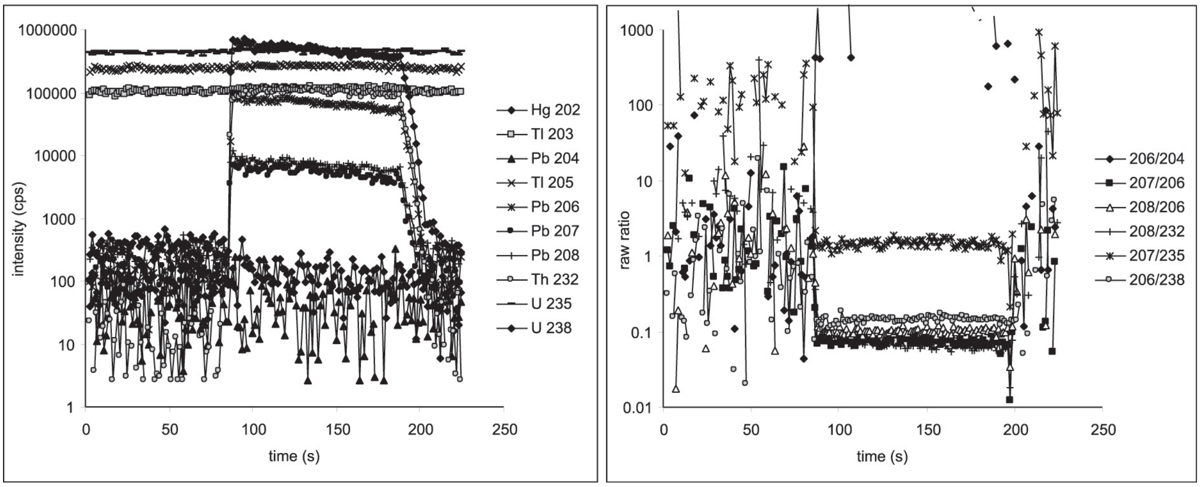



**Figure 3**. Typical example of a laser ablation signal. Count rates vs time (a) and isotope ratios vs time (b).

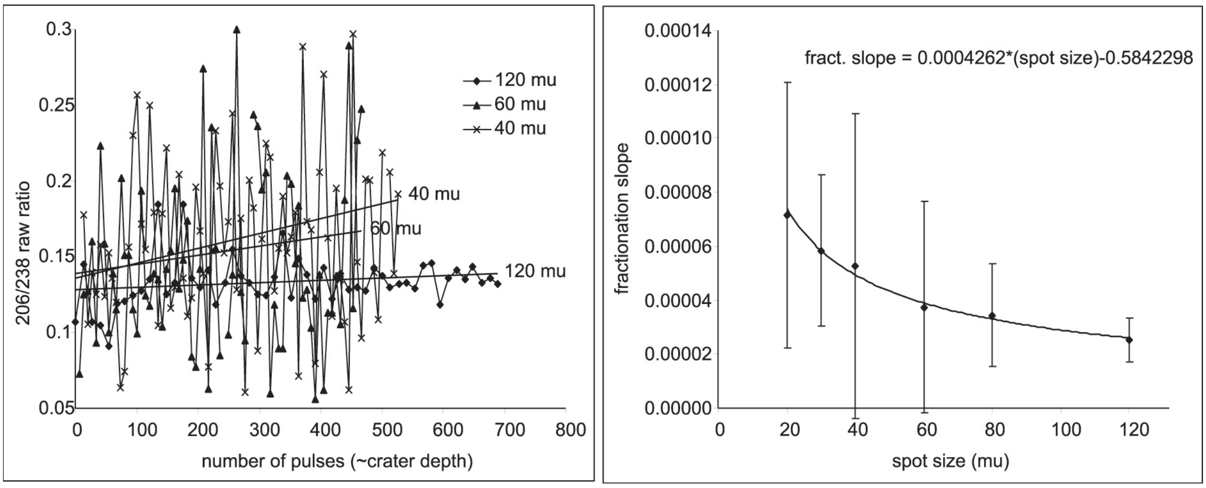



**Figure 4**. Fractionation slope for LA-ICP-MS analyses was determined on the standard, by plotting raw isotope ratios vs. crater depth (a). Fractionation slope vs. crater diameter (b).

of their distribution within a zone (as seen in depth resolved plots and during repeat analyses) supports this approach. Calibration was performed against NIST SRM 610 glass using the compiled concentration data of Pearce *et al* (1997) and EMP Hf data for internal standardization. Accuracy for trace element results was assessed using zircon 91500 (Wiedenbeck *et al.*, 1995).

## RESULTS

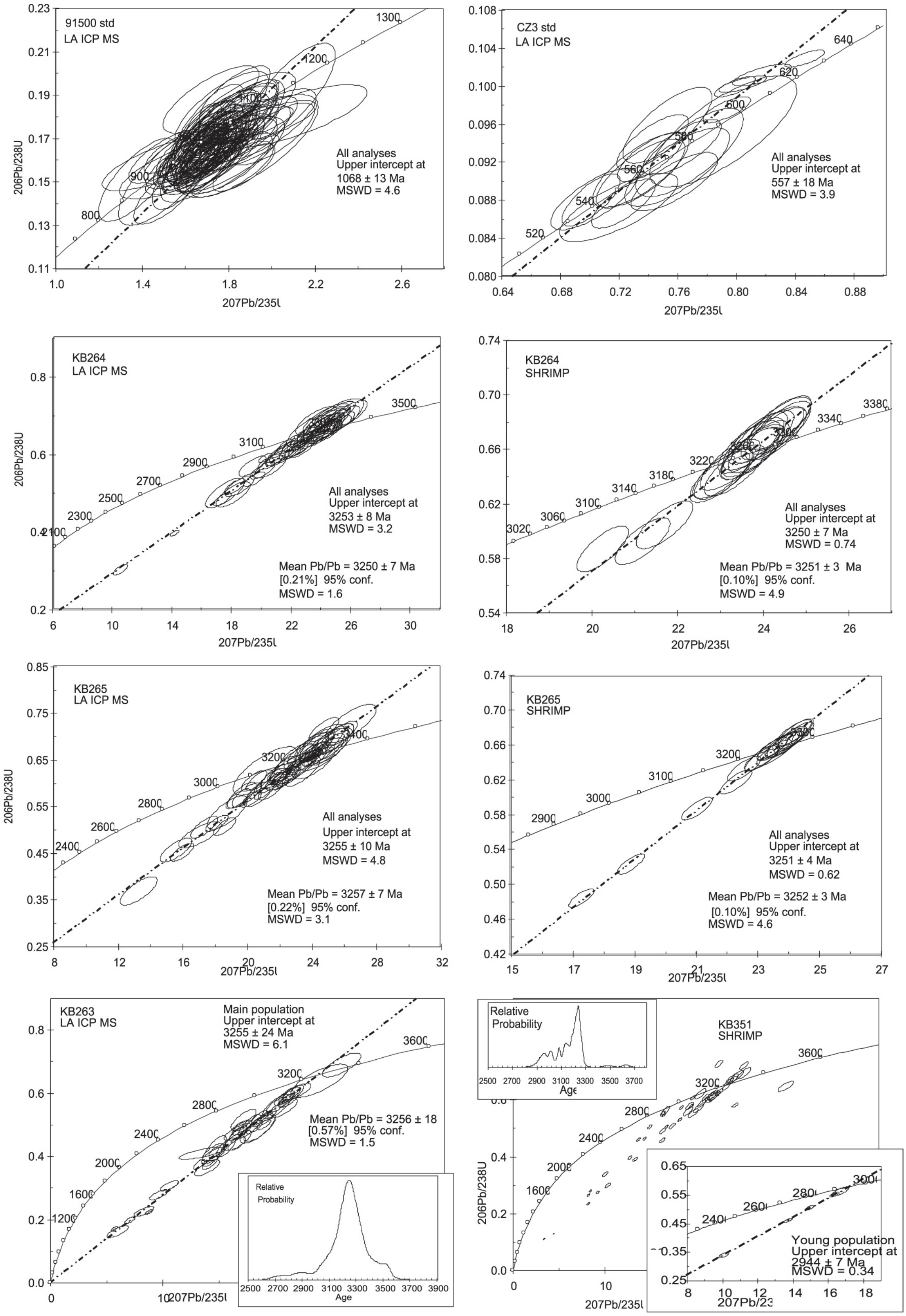
A summary of the U-Pb age dating results is given in Table 5. The concordia diagrams are shown in Figure 5. The Laser Ablation data tables can be found in Appendix A, the SHRIMP data tables in Appendix B. The inclusion of results in our dataset by both laser ablation ICP-MS and SHRIMP required a careful validation of the agreement of the two techniques for a number of samples. The relatively fast analysis time by laser ablation ICP-MS enabled populations of at least 60 zircons to be routinely measured per sample. However, in some samples heterogeneous populations were measured and a range of U-Pb ages could be determined depending upon the interpretation of the number of different xenocryst populations. To overcome this limitation, trace element data were used to better constrain the origin and extent of xenocryst groups. Full U-Pb and major and trace element concentration data are reported in Appendix C.

*Standard data*

The CZ3 in-house standard zircon was used as an internal standard for the SHRIMP analyses and as an external check for the LA-ICP-MS results. Pidgeon *et al.* (1994) reported that this Sri Lankan gem-quality zircon is free of inclusions and zoning, contains no detectable $^{204}$Pb and that its crystal lattice is undamaged. This homogeneous zircon was dated previously by the TIMS method (Nelson, 1997), giving a concordant age of 564 Ma. In this study, LA-ICP-MS gave a mean Pb-Pb age of 559 ± 20 Ma and an upper intercept U-Pb age of 557 ± 18 Ma (Figure 5) showing excellent agreement with the TIMS value.

Accuracy of the LA-ICP-MS was further assessed using the standard 91500 zircon. Wiedenbeck *et al.* (1995) reported that this very large (293 gm) single grain of zircon is free of inclusions and zoning, contains no significant $^{204}$Pb and that its crystal lattice is undamaged. On the basis of data acquired by the TIMS method, Wiedenbeck *et al.* (1995) assigned standard values and ages to the isotope ratios as shown in Table 3. The results are very slightly discordant with a mean $^{207}$Pb/$^{206}$Pb age of 1062.4 Ma.

The 91500 zircon standard was ablated during every analytical session at regular intervals. Furthermore it was ablated during the setting up of the instrument, and it was measured every 20 minutes to monitor drift. The results were stable and consistent over the time period during which all analyses were performed. Agreement with the



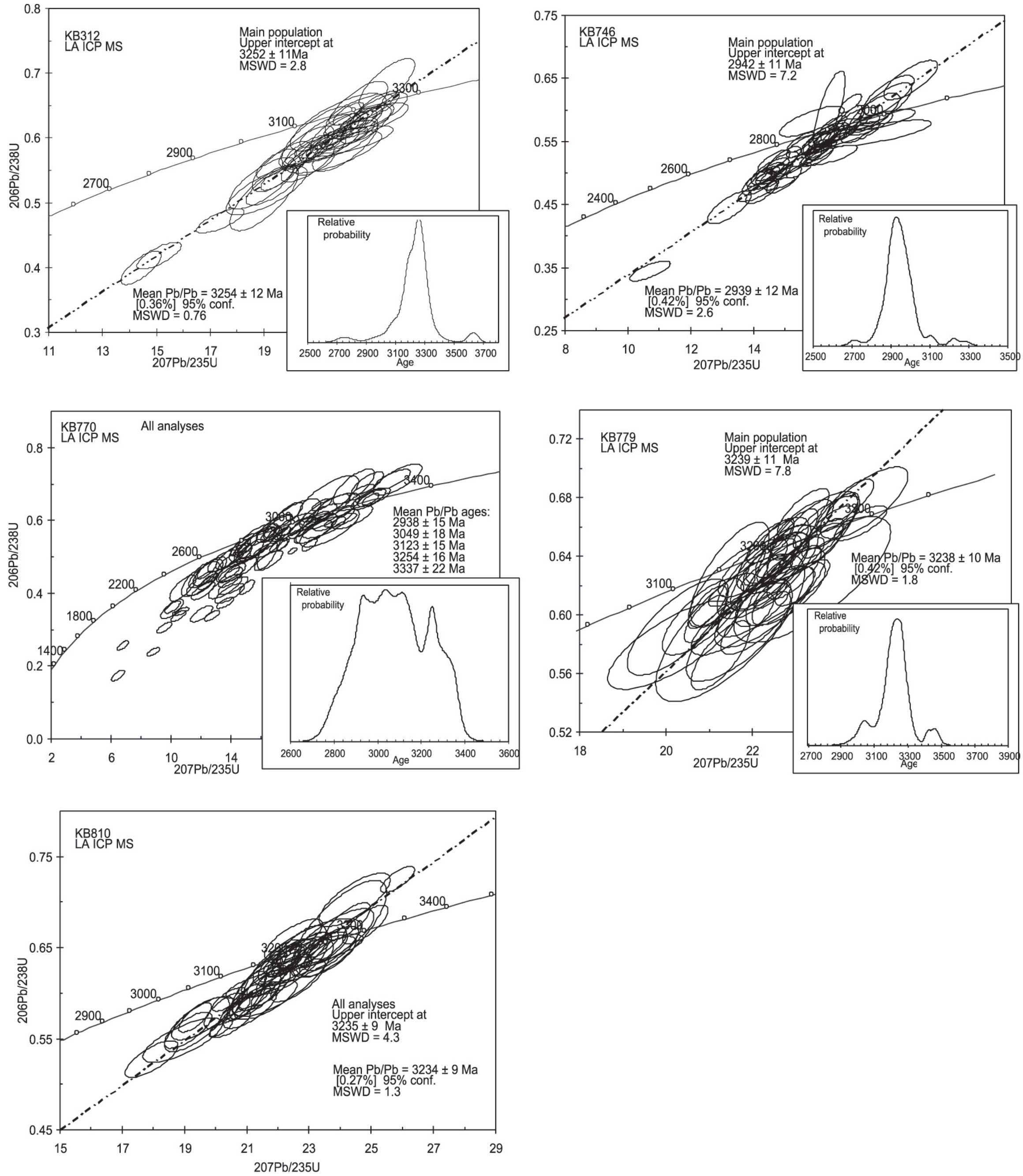



**Figure 5**. Concordia diagrams and cumulative probability plots of the results obtained on the 91500 standard zircon, the CZ3 standard zircon, and the samples.

reference TIMS data was again excellent; the TIMS age is within the error of both LA-ICP-MS Pb-Pb and U-Pb mean ages.

*Comparison of laser ablation ICP-MS and SHRIMP results*

Laser ablation ICP-MS has been widely used and developed for in situ U-Pb zircon dating over the past decade (e.g. Feng *et al*., 1993; Fryer *et al*., 1993; Hirata and Nesbitt, 1995). Recent techniques involving the simultaneous nebulization of a standard solution (as used here) have eliminated the need for an external standard (Horn *et al*., 2000) and give very similar results to SIMS for zircon dating (Kohler *et al*., 2002). We have further verified the ability of both techniques to give identical results in this study. Although the results on the 91500 and CZ3 zircon standards have shown that the LA-ICP-MS system returns accurate and reproducible data, it was necessary to show agreement with the SIMS results before further interpreting the ages in a geological context. A comparison was made by measuring two concordant samples with single populations (KB 264 and KB 265) by both methods. As these samples are significantly older (3250 Ma) than the 91500 standard zircon (1062 Ma) and CZ3 (564 Ma) they contain more radiogenic Pb, and therefore the results are more precise. Agreement was excellent, the laser ablation results being within error of the SHRIMP results and vice versa (Figure 5).

Table 5. Summary of age results. All errors are 2σ errors. n = number of analyses.

| Sample | Method | Main Population U/Pb concordia upper intercept age | $^{207}Pb/^{206}Pb$ (n) date | Xenocrysts $^{207}Pb/^{206}Pb$ (n) date | Overprint $^{207}Pb/^{206}Pb$ (n) date |
|---|---|---|---|---|---|
| KB263 | LA-ICP-MS | 3255 ± 24 Ma | 3256 ± 18 Ma (43) | 3464 ± 44 Ma (5) | 2766 ± 52 Ma (2) |
| KB264 | SHRIMP | 3250 ± 7 Ma | 3251 ± 3 Ma (21) | | |
| KB264 | LA-ICP-MS | 3253 ± 7 Ma | 3250 ± 7 Ma (60) | | |
| KB265 | SHRIMP | 3251 ± 4 Ma | 3252 ± 3 Ma (19) | | 3069 ± 41 Ma (4) |
| KB265 | LA-ICP-MS | 3255 ± 10 Ma | 3257 ± 7 Ma (66) | | |
| KB312 | LA-ICP-MS | 3252 ± 11 Ma | 3254 ± 12 Ma (50) | 3629 ± 35 Ma (2) | 2758 ± 44 Ma (2) |
| KB351 | SHRIMP | 2944 ± 8 Ma | 2944 ± 7 Ma (9) | 3241 ± 9 Ma (19) | |
| KB746 | LA-ICP-MS | 2942 ± 11 Ma | 2939 ± 12 Ma (55) | 3108 ± 38 Ma (1) | 2712 ± 51 Ma (1) |
| | | | | 3251 ± 32 Ma (2) | |
| KB770 | LA-ICP-MS | 2931 ± 16 Ma | 2938 ± 15 Ma (22) | 3049 ± 18 Ma (18) | 2851 ± 27 Ma (8) |
| | | | | 3123 ± 15 Ma (22) | 2789 ± 57 Ma (1) |
| | | | | 3254 ± 16 Ma (18) | |
| | | | | 3337 ± 22 Ma (7) | |
| KB779 | LA-ICP-MS | 3239 ± 11 Ma | 3238 ± 10 Ma (50) | 3426 ± 27 Ma (2) | 3045 ± 24 Ma (10) |
| | | | | 3465 ± 33 Ma (2) | |
| KB810 | LA-ICP-MS | 3235 ± 9 Ma | 3234 ± 9 Ma (54) | | |

The volume of material analyzed was significantly larger in laser ablation than for SHRIMP analyses. The SHRIMP spots were typically 15-20 mm in diameter and no more than 5-10 mm deep (Figure 6), whereas the laser ablation craters were typically 40-60 mm in diameter and penetrated all the way through the zircon grain (Figure 7). The greater 3D volume component during laser ablation increased the chance of sampling different zones within the zircon during an analysis. The chances of hitting a crack, inclusion or other impurity were therefore much larger during laser ablation and this may account for the generally more discordant nature of the laser ablation results. However, despite this it has been shown here that the pooled $^{207}Pb/^{206}Pb$ ages by laser ablation ICP-MS agree to within error to those of the SHRIMP.

## DISCUSSION

The oldest rocks found in the Tabba Tabba area are quartz-muscovite schists interleaved with actinolite schists. On the basis of their geochemistry (De Leeuw *et al*., 2001) they are interpreted to represent a deformed and metamorphosed granite-granodioritic suite. The obtained $^{207}Pb/^{206}Pb$ ages of 3256 ± 18 Ma and 3254 ± 12 Ma from samples KB263 and KB312 are within error of each other and are interpreted to record the time of igneous crystallization. The samples contain apparent zircon populations of 3464 ± 44 Ma and 3629 ± 35 Ma respectively that interpreted to be xenocrystic in origin.

Field relationships show that a granodiorite (sample KB265) has been intruded by granite (sample KB264). The SHRIMP $^{207}Pb/^{206}Pb$ ages of 3252 ± 3 Ma and 3251 ± 3 Ma are identical within error to the LA-ICP-MS results, and are interpreted as magmatic crystallization ages of the granodiorite and granite respectively. No other granites of this age are known to occur in this part of the Pilbara. The occurrence of these rocks and the quartz-mica-amphibole schists is confined to a narrow strip within the Tabba Tabba Shear Zone.

Dioritic and gabbroic suites represented by samples KB779 and KB810 intrude the granite-granodiorite suite. The $^{207}Pb/^{206}Pb$ ages of 3238 ± 10 Ma and 3234 ± 9 Ma are interpreted as the time of magmatic crystallization (Table 5). Their occurrences are confined to lenses within the Tabba Tabba Shear Zone. The diorite contains xenocrystic zircon populations of 3465 ± 33 Ma and 3426 ± 26 Ma. In order to establish the origin of the zircons, trace elements chemistry was determined by laser ablation ICP-MS. Their trace element concentrations and patterns (Figure 8) are consistent with dioritic to gabbroic source rocks and the ages of the zircons are therefore interpreted to correlate to the magmatic ages of the rocks.

Granite sample KB770 contains a young population at 2939 ± 21 Ma, which is interpreted to represent the magmatic crystallization age of the rock. It also contains apparent xenocrystic populations with $^{207}Pb/^{206}Pb$ ages of 3049 ± 18 Ma and 3123 ± 14 Ma, and a group at 3250 Ma which indicates the presence of basement rocks similar in age to the muscovite schists and granite-granodiorite suite (Table 5). Primary oscillatory zoning in zircons (as seen most clearly in CL images) is due to unstable chemical gradients. It has been suggested (Connely, 2000) that diffusion associated with metamorphism blurs and destroys the zoning, and this may be an indication of Pb loss and associated discordance. However, diffusion rates of Pb in zircon are probably so slow that under most geologic conditions Pb isotopes ratios will not be altered as the mean closure temperature for zircon is more than 900°C (Cherniak and Watson, 2000). The absence of zoning in many of the zircons sampled here is therefore unlikely to be the cause for the differences in the obtained ages.

The aplitic vein of sample KB351 is weakly deformed and its youngest zircons, with a $^{207}Pb/^{206}Pb$ age of 2944 ± 8 Ma, provide an estimate of the timing of the last stages deformation of the Tabba Tabba Shear Zone. The sample contains many xenocrysts, and the biggest population indicates the presence of rocks of 3250 Ma in this area. This is confirmed by the results of other samples presented here.

The weakly foliated granite of sample KB746 is from the southerly extension of the Tabba Tabba Shear Zone at Yandeyarra (Figure 1). The $^{207}Pb/^{206}Pb$ magmatic crystallization age of 2939 ± 12 Ma of this granite confines the last stages of movement of this part of the structure. It contains xenocrysts of 3108 ± 38 Ma and 3251 ± 32 Ma. This corresponds to the data obtained from the Turner River locations. This section is not linked in outcrop to the main part of the Tabba Tabba Shear, but it does show a relation in gravity and magnetic images (courtesy AGSO, Blewett pers. comm. 2000) and has a similar tectonic and geochronological history.

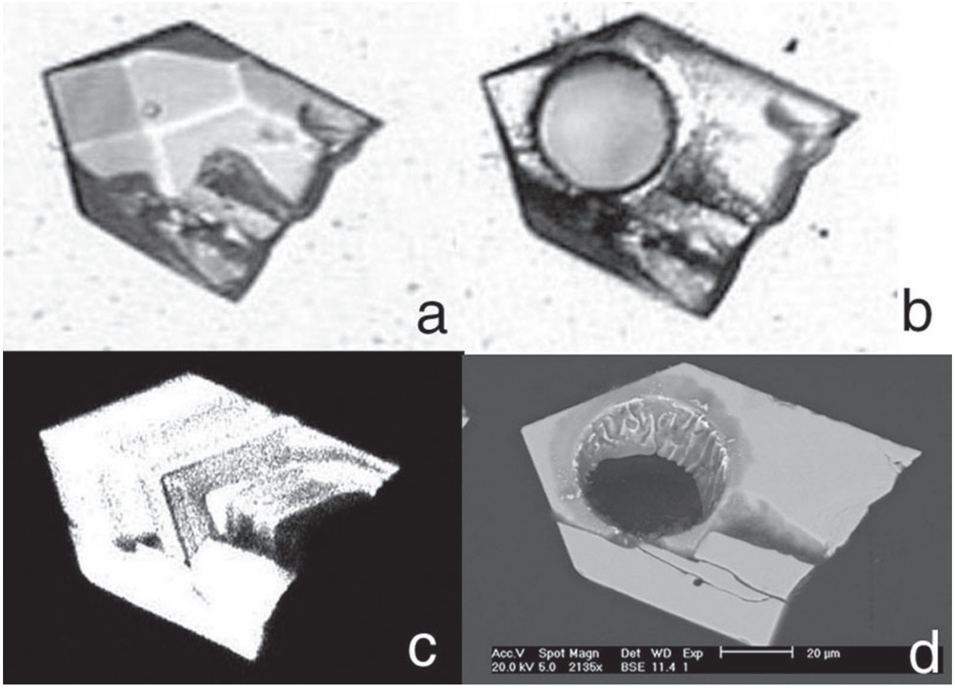



**Figure 6**. Photomicrograph of a zircon (a) before and (b) after analysis by LA-ICP-MS. CL image of the same zircon before analysis (c) and SEM image after analysis by LA-ICP-MS (d).

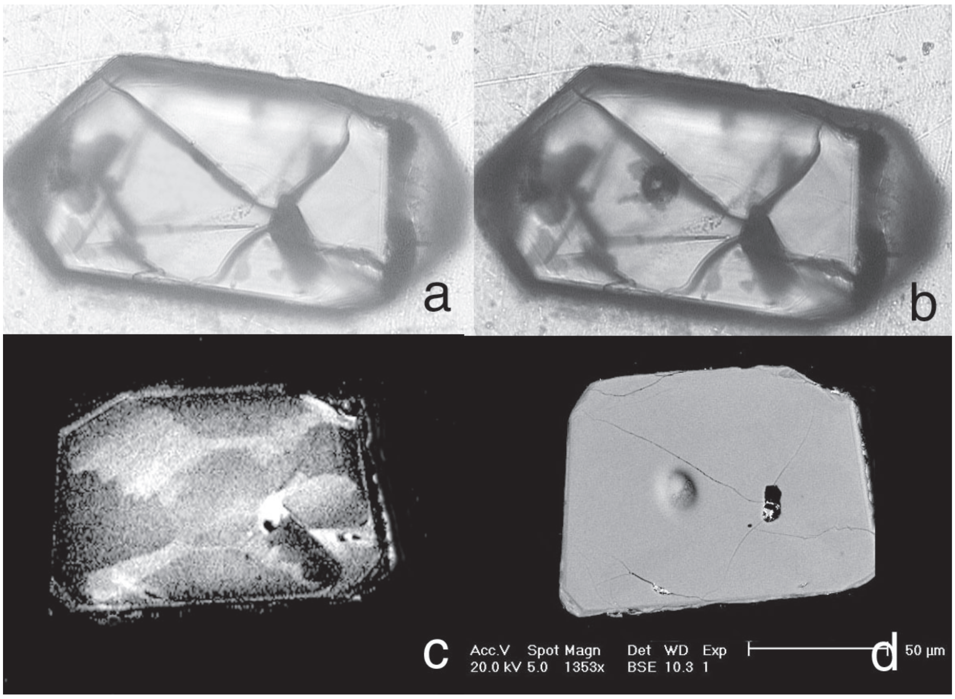



**Figure 7**. Photomicrograph of a zircon before (a) and (b) after analysis with the SHRIMP. CL image before analysis (c) and SEM image after analysis with the SHRIMP(d).

In order to identify possible multiple populations of zircons, we investigated the relationship between zircon morphology and age. In granite KB770, which is the sample with the most strikingly different populations (Table 5), there was no obvious correlation between age and length-width aspect ratio, CL intensity or discordance as can be seen in Figure 9. The type of zoning is the only visual indication of the presence of more than one age population, see Figure 10 and Figure 11.

Another, potentially more powerful tool for distinguishing populations is to use the trace element chemistry of the zircons (Belousova *et al.*, 2002). The zircons of sample KB770 can be divided into two groups on the basis of their REE patterns, as shown in Figure 8. There is a distinction between flat patterns and those that are enriched in HREE. The group with the flatter REE pattern corresponds to both the cores and rims of zircons from the group with an age of approximately 3250 Ma, confirming that this is most probably xenocrystic in nature. Zircons with this type of flat REE patterns typically originate from highly LREE enriched melts consistent with a granitic origin (Belousova *et al.*, 2002).

The HREE enriched zircons in sample KB770 are from groups with ages of ca 2940 Ma, 3050 Ma, and 3115 Ma. The magnitude of the HREE enrichment (Figure 12) is weakly related to age, being larger in the younger zircons. The Th/U ratio and Y content is lowest for the 3050 Ma group (Figure 12) whilst Eu/Eu* is elevated (>0.25 as opposed to <0.25 for the other groups). The whole rock analyses of the host granite (Appendix D) provide an opportunity to model the expected REE compositions in zircons that are in equilibrium with this rock. That is, assuming the whole rock is representative of the melt composition, and assuming the zircons were in equilibrium with the melt. The results for three different models (Bea *et al.*, 1994; Fujimaki, 1986; Nagasawa, 1970) and shown in Figure 13a. When compared with the zircon patterns in Figure 13b it might be concluded that the steepest pattern is most likely to be in equilibrium with the granite. It is concluded that the 2940 Ma age group represents the magmatic age of the rock. However, the differences are very small and it is difficult to convincingly separate the groups on the basis of this small amount of data.

## TECTONIC IMPLICATIONS

The history of this part of the Pilbara Craton started with the intrusion of a granite-granodiorite suite into unidentified

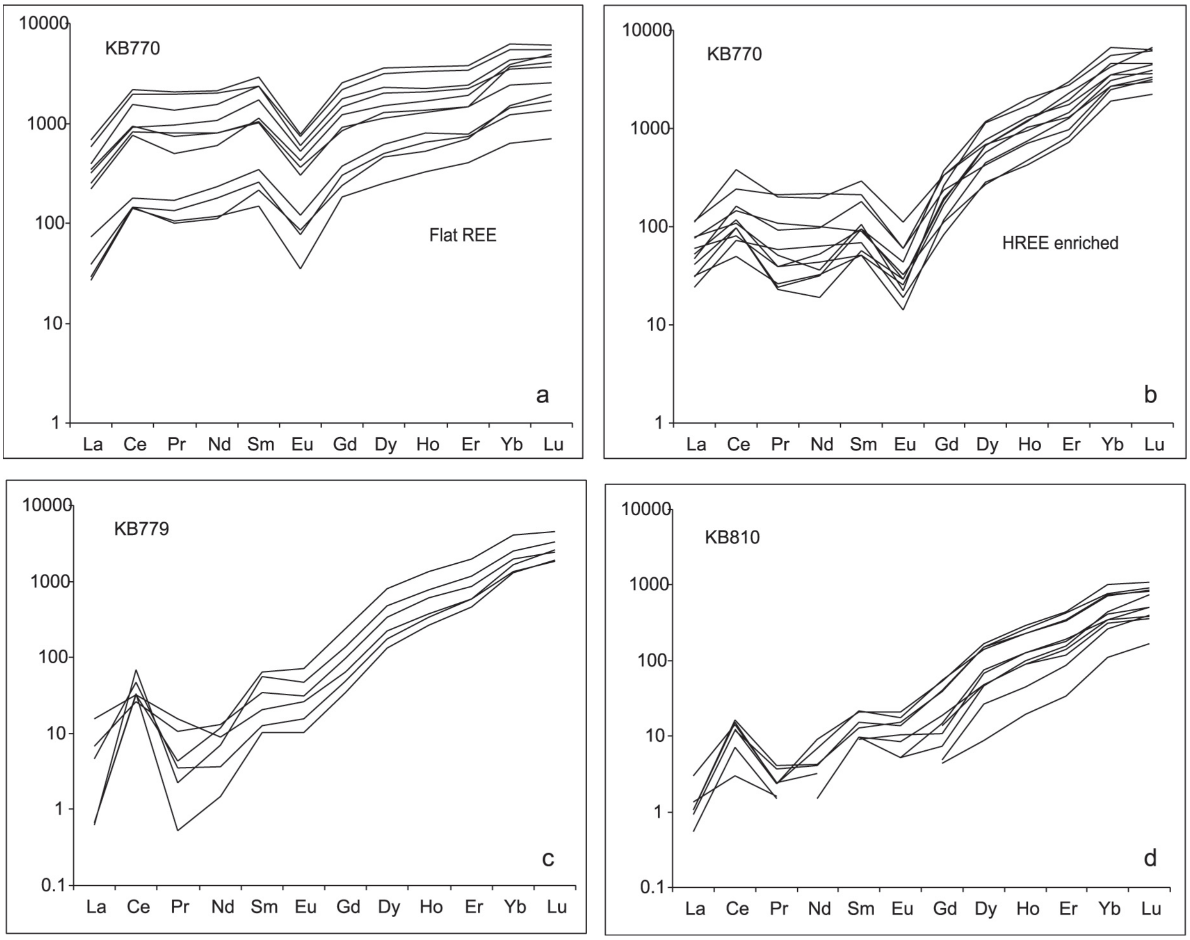



**Figure 8**. Chondrite-normalized REE patterns of zircons from sample KB770 (a, b), KB779 (c) and KB810 (d). Normalizing values from Sun and McDonough (1989).

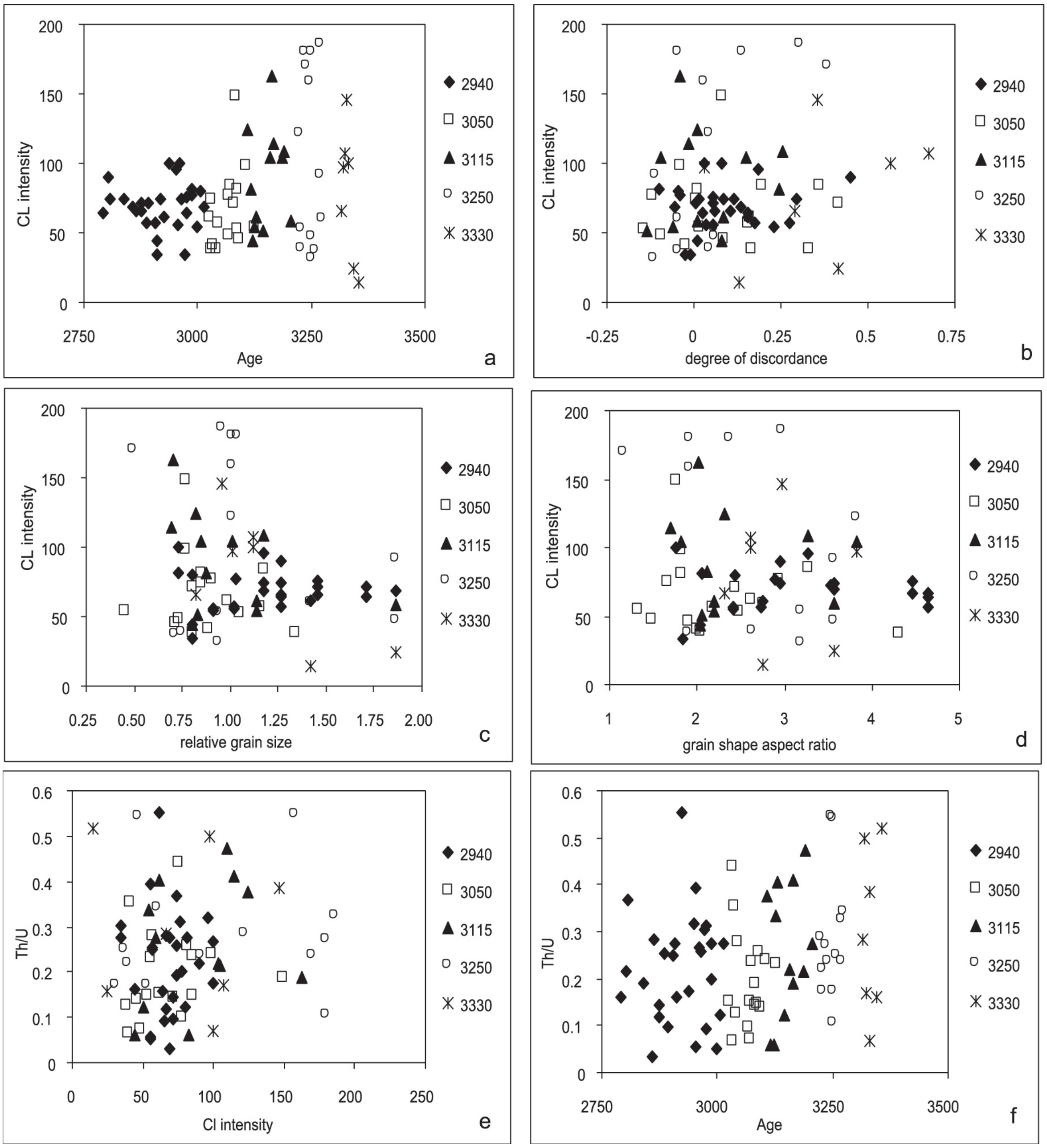



**Figure 9**. Plots of morphological relationship in the zircons of sample KB770. a) CL intensity (0 = dark, 255 = light) versus Age (Ma). b) CL intensity versus the degree of discordance. c) CL intensity versus relative grains size (normalized against the average grains size in the sample) d) CL intensity versus grain shape aspect ratio (length/width ratio for complete grains) e) Th/U ratio versus CL intensity. f) Th/U ratio versus age. No clear relations can be observed that allow a distinguishment between groups on the basis of the plotted characteristics.

basement at about 3255 Ma. The presence of xenocrysts similar in age to the 3475-3435 Ma Warrawoona Group (Bickle *et al*., 1993; Buick *et al*., 2002; McNaughton *et al*., 1993; Nelson, 1996; Nelson, 1998; Nelson, 1999; Nelson, 2000; Nelson, 2001; Pidgeon, 1978; Thorpe *et al*., 1992; Williams and Collins, 1990; Zegers *et al*., 1996; Zegers, 1996; Zegers *et al*., 2001), indicates a possible basement or precursor rock of that age, and implies a relation to the East Pilbara. The older (ca 3630 Ma) xenocrysts are similar in age to parts of the Warrawagine granite, also in the East Pilbara, and detrital zircons of this age range also occur in the Mallina Basin (Smithies *et al*., 2001). The granitic and granodioritic schists are similar in age to the Golden Cockatoo Formation in the Abydos Belt, between the Pilgangoora Belt and the Yule Batholith. These rocks are described as metamorphic pelite, quartzite, BIF and rhyolite, must have been deposited on >3312 Ma rocks and are crosscut by 3240 Ma granites (Blewett, 2002; Van Kranendonk *et al*., 2002). Alternatively the granite and granodiorite may correlate to intrusive components of the Sulphur Springs Group.

A dioritic and gabbroic suite intruded the area at about 3235 Ma, and the occurrence of these rocks restricted to lenses within the Tabba Tabba Shear Zone. This age is similar to the age of the intermediate to felsic volcanic Sulphur Springs Group and Strelley Granite in the East

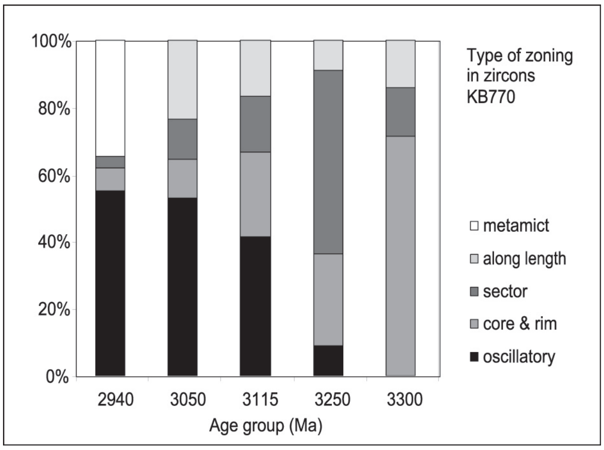



**Figure 10**. Diagram showing the different types of zoning in the five zircon populations in sample KB770.

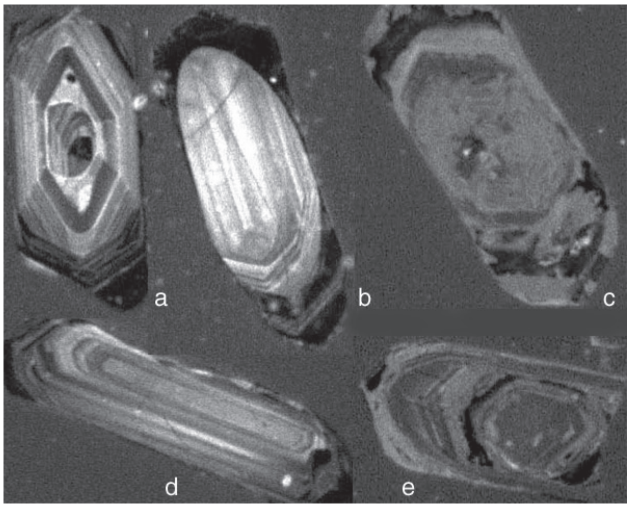



**Figure 11**. CL images of examples of the different types of zoning in zircons in sample KB770. a) sector zoning, b) core & rim, c) metamict, d) lengthwise zoning, e) oscillatory zoning.

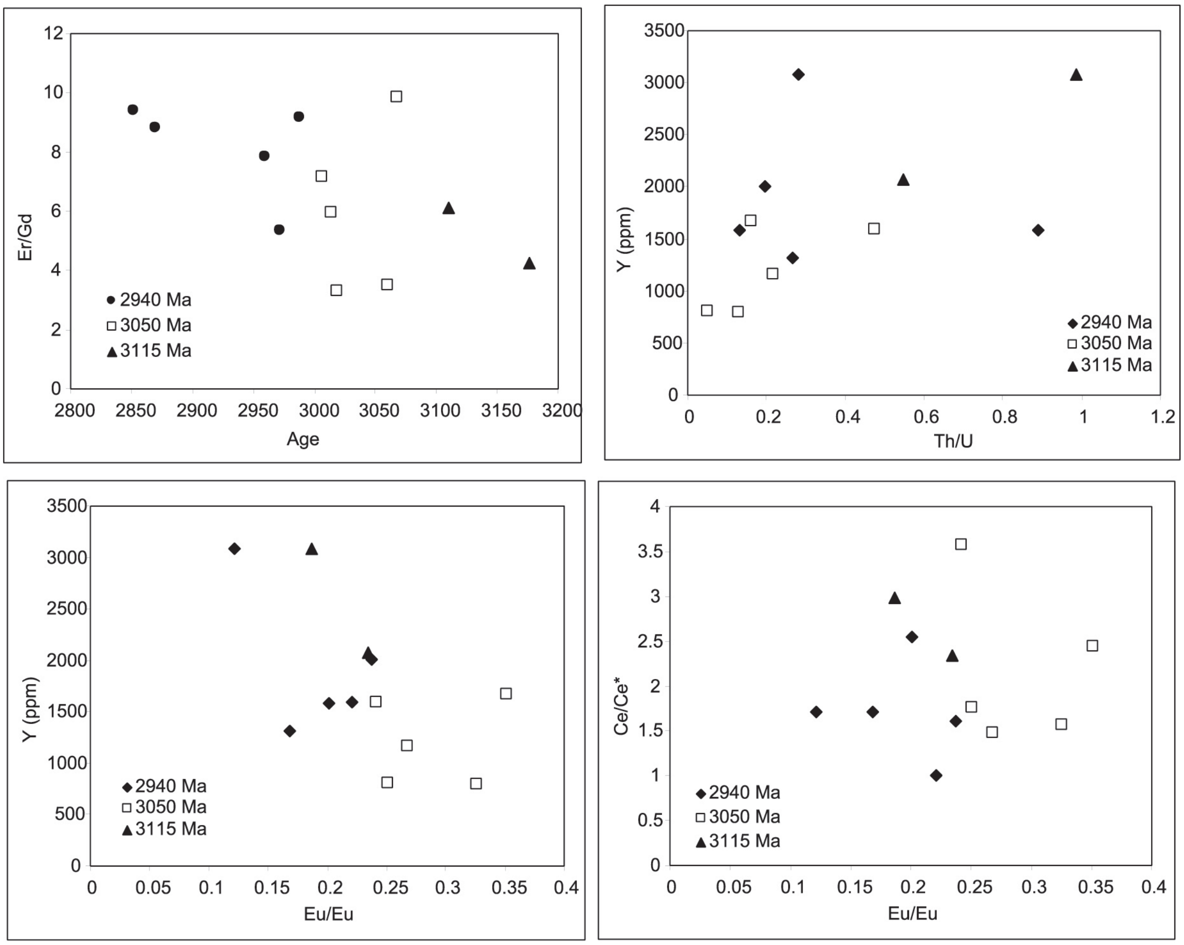



**Figure 12.** Trace element correlations for zircons from sample KB770, for the 2940 Ma, 3050 Ma and 3115 Ma populations.

Pilbara (Buick *et al*., 2002; Vearncombe and Kerrich, 1999), but their age is the only similarity between the two occurrences. These rocks also contain xenocrysts with ages corresponding to the ca 3.45 Ga Warrawoona Group and gneisses in the East Pilbara (Nelson, 1998; Nelson, 1999; Nelson, 2000; Pidgeon, 1978).

The rock types described above are the oldest in the area and they occur only within the Tabba Tabba Shear Zone. They are interpreted to represent an exotic block of possibly East Pilbara crust. A detrital zircon study of the Mallina Basin (Smithies *et al*., 2001) indicates that sediments containing zircons with ages between 3250 and 3200 Ma were derived from the east. This conforms with the interpretation that the strip of rocks of that age within the Tabba Tabba Shear Zone, represents a crustal block originally east of the Tabba Tabba Shear Zone.

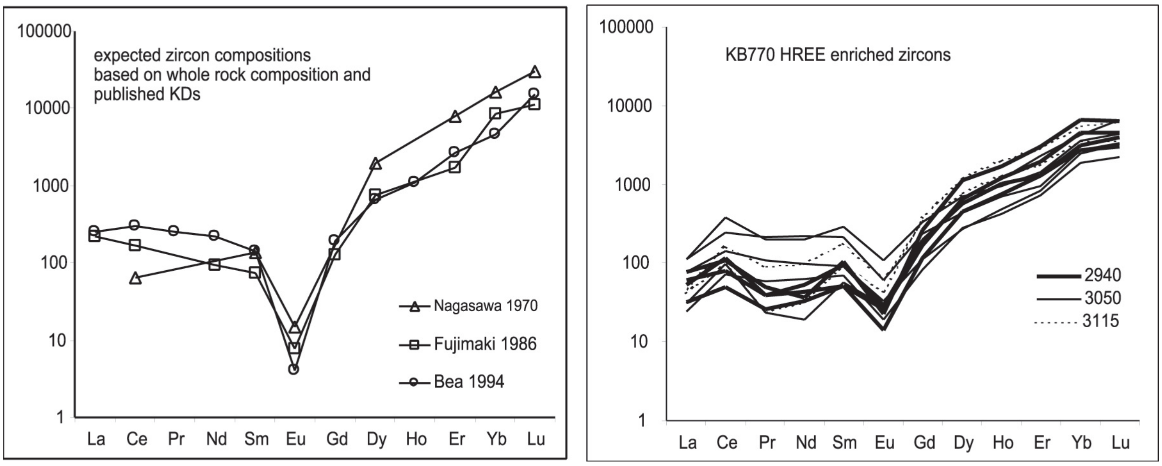



Figure 13. (a) Expected trace element concentrations in zircons from sample KB770, that are in equilibrium with the melt, modeled on the bulk rock composition of sample KB770. b) trace element ratios found in zircons of the three populations. On this basis it is interpreted that the steepest pattern is most likely to represent the magmatic zircons. This is the ca 2940 ma population. The other populations are then xenocrysts.

Structures within the Tabba Tabba Shear Zone indicate a dextral compressive event affected the area after the early intrusive events described above. The 3115 Ma age of xenocrystic zircons in younger granites within the Tabba Tabba Shear Zone corresponds to a magmatic and volcanic event in the West Pilbara represented by the Whundo Group and Cheratta Granitoid Complex (Hickman, 1999; Hickman *et al*., 2001; Nelson, 1996; Nelson, 1998; Smith *et al*., 1998), and may indicate that the East and the West Pilbara spatially closer associated by that time. The compressive event is interpreted to correspond to that event.

Undeformed to weakly deformed granitoids in the area have an age of 2940 Ma (Smithies *et al*., 1999). Older samples show a metamorphic overprint at about 2940 Ma. This overprint is interpreted to be due to a major oblique sinistral tectonic event on the Tabba Tabba Shear Zone, and the thermal disturbance associated with late- to post-kinematic granite intrusions. Its age is within error of data from other studies which suggest the main phase of activity of the Tabba Tabba Shear Zone took place between 2955 and 2928 Ma (Smithies *et al*., 2001). This major sinistral event is interpreted to correspond to closure of the Mallina Basin, which existed between 2970 and 2940 Ma.

Two much weaker and younger overprints possibly correspond to intrusion of tin-bearing monzogranites in the Pilbara at 2850 Ma (Nelson, 1998) and the onset of the Fortescue Group volcanism at 2770 Ma (Arndt *et al*., 1991; Nelson, 1997; Wingate, 1999). This indicates the structure may have been reactivated at that time.

## SUMMARY AND CONCLUSIONS

A comparison was made between LA-ICP-MS U-Pb zircon geochronology and SHRIMP. Two concordant samples with single populations were analysed by both methods. Agreement was excellent, the laser ablation results being within error of the SHRIMP results and vice versa. The volume of material analyzed was significantly larger in laser ablation than for SHRIMP analyses. The greater 3D volume component during laser ablation increased the chance of sampling different zones, cracks, inclusions or other impurities, and this may account for the generally more discordant nature of the laser ablation results. However, despite this it has been shown here that the pooled $^{207}Pb/^{206}Pb$ ages by laser ablation ICP-MS agree to within error to those of the SHRIMP.

The Tabba Tabba Shear Zone is a structure with a history of more than 300 million years. Early granite and granodiorite intruded between 3255 and 3250 Ma. Subsequently the area was intruded by diorite and gabbro, at about 3235 Ma. Xenocrysts in these rocks indicate the presence of basement rocks similar in age to the Warrawoona Group in the East Pilbara.

A compressive event with a dextral component affected the structure and the surrounding area before 3115 Ma, as indicated by xenocrystic ages in a suite of granites. The Whundo Group and Cheratta Granitoid Complex in the West Pilbara comprise extensive extrusive and intrusive suites of about 3115 Ma. This leads to the interpretation that the East and West Pilbara had coalesced at that time. The observed early dextral compression may be the structural record of that event.

The Tabba Tabba Shear Zone then acted as a bounding fault of the Mallina Basin, before it became reactivated during the major phase of oblique sinistral movement on the Tabba Tabba Shear Zone, that occurred before intrusion of granites at about 2940 Ma. The end of the major sinistral event is interpreted to correspond to closure of the Mallina Basin, which existed between 2970 and 2940 Ma. After deformation had ceased, the central Pilbara was intruded by post-tectonic granite, between 2940 and 2930 Ma. This marked the end of the active tectonics of the Pilbara Granite Greenstone Terrane.

## ACKNOWLEDGEMENTS

We are grateful to the Dr. Schürmann Fund for the financial support of our field work in the Pilbara with grant numbers 1999/14a, 2000/14a and 2001/14a, and we would like to thank the Molengraaff Fund for their financial support in 1999, 2000 and 2001. The Netherlands Organization for Scientific Research (NWO) is thanked for their financial contribution with grant number R75-386 to the SHRIMP part of this project, and for providing funding for the Utrecht LA-ICP-MS laboratory. We would like to thank R. van Elzas for his assistance with the mineral separation, Dr. H.L.M. van Roermond for his assistance with electron microscope imaging, A. Frew for his assistance with the SHRIMP analyses, and Dr. M. Barth and G. Nobbe for their help with the laser ablation analyses.

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## APPENDICES

*Appendix A. Laser ablation U-Pb data*

**KB263 LA-ICP-MS U-Pb analysis**

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikeg68 | 6D01 | | 6 | 6 | 40 | 89.2 | 10 | 13211 | 29206 | 2-26-02 | | 0.18790 | 20.79286 | 3.67 | 0.58502 | 3.24 | 0.25782 | 2.14 | 3232 | 68 | 97.4 |
| kikeg69 | 6D02 | | 6 | 6 | 40 | 73 | 10 | 24556 | 57023 | 2-26-02 | | 0.18920 | 19.28121 | 3.30 | 0.52973 | 2.85 | 0.26492 | 1.80 | 3276 | 58 | 93.9 |
| kikeg70 | 6D03 | | 6 | 6 | 40 | 43.3 | 10 | 42904 | 98669 | 2-26-02 | | 0.22540 | 28.77505 | 4.56 | 0.69418 | 4.18 | 0.29996 | 2.69 | 3470 | 84 | 99.9 |
| kikeg71 | 6D04 | | 6 | 6 | 30 | 83.8 | 10 | 70406 | 86548 | 2-26-02 | | 0.31510 | 14.43893 | 5.83 | 0.40320 | 5.30 | 0.26055 | 3.68 | 3250 | 116 | 86.1 |
| kikeh01 | 6D05 | | 5 | 6 | 60 | 54.1 | 72.4 | 47927 | 292569 | 2-27-02 | | 0.08500 | 18.85873 | 3.95 | 0.51629 | 3.50 | 0.26420 | 3.28 | 3270 | 104 | 93.4 |
| kikeh02 | 6D06 | | 5 | 6 | 60 | 56.8 | 10 | 41226 | 115537 | 2-27-02 | | 0.15780 | 25.85505 | 5.37 | 0.68938 | 4.50 | 0.27102 | 5.37 | 3310 | 168 | 101.5 |
| kikeh03 | 6D07 | | 5 | 6 | 60 | 71.6 | 86.2 | 120021 | 205963 | 2-27-02 | | 0.25780 | 16.11659 | 4.33 | 0.52070 | 10.71 | 0.22446 | 4.72 | 3012 | 152 | 96.4 |
| kikeh04 | 6C01 | | 5 | 6 | 60 | 79.7 | 10 | 102784 | 176127 | 2-27-02 | | 0.16800 | 21.43407 | 3.05 | 0.59875 | 2.87 | 0.25732 | 1.93 | 3230 | 62 | 98.4 |
| kikeh05 | 6C02 | | 5 | 6 | 60 | 78.4 | 10 | 168256 | 189999 | 2-27-02 | | 0.17660 | 18.09080 | 3.30 | 0.49373 | 3.50 | 0.26451 | 1.56 | 3272 | 50 | 92.1 |
| kikeh06 | 6C03 | thin | 5 | 6 | 60 | 29.8 | 10 | 176093 | 182375 | 2-27-02 | | 0.26530 | 13.90414 | 6.61 | 0.36432 | 5.74 | 0.27645 | 7.89 | 3342 | 248 | 82.6 |
| kikeh07 | 6C04 | zoned | 5 | 6 | 60 | 64.9 | 10 | 179483 | 369607 | 2-27-02 | | 0.23960 | 18.94850 | 2.64 | 0.50093 | 2.54 | 0.27434 | 1.61 | 3330 | 52 | 91.9 |
| kikeh08 | 6C05 | | 5 | 6 | 60 | 67.6 | 10 | 190356 | 323576 | 2-27-02 | | 0.23200 | 17.71301 | 4.61 | 0.49709 | 5.79 | 0.25809 | 5.00 | 3234 | 158 | 92.6 |
| kikeh09 | 6C06 | zoned | 5 | 6 | 60 | 54.1 | 43 | 314393 | 468912 | 2-27-02 | | 0.14540 | 8.76012 | 3.09 | 0.22445 | 2.62 | 0.28401 | 2.45 | 3384 | 76 | 68.9 |
| kikeh10 | 6C07 | | 5 | 6 | 60 | 70.3 | 10 | 292608 | 229365 | 2-27-02 | | 0.25490 | 16.56151 | 3.19 | 0.47136 | 3.58 | 0.25342 | 2.06 | 3206 | 66 | 91.4 |
| kikeh11 | 6C08 | zoned | 5 | 6 | 60 | 91.9 | 10 | 37940 | 99818 | 2-27-02 | | 0.17830 | 29.02074 | 2.93 | 0.67229 | 3.02 | 0.31189 | 1.64 | 3530 | 50 | 98.4 |
| kikeh12 | 6C09 | incl | 5 | 6 | 60 | 75.7 | 10 | 157427 | 271753 | 2-27-02 | x | 0.17250 | 3.77633 | 2.80 | 0.25805 | 3.57 | 0.10631 | 2.16 | 1736 | 80 | 92.4 |
| kikeh13 | 6C10 | | 5 | 6 | 60 | 29.8 | 10 | 94560 | 192514 | 2-27-02 | | 0.15900 | 23.88750 | 8.59 | 0.63974 | 6.72 | 0.26978 | 6.99 | 3304 | 220 | 99.4 |
| kikeh14 | 6C11 | | 5 | 6 | 60 | 43.3 | 10 | 48638 | 307930 | 2-27-02 | | 0.10930 | 18.83393 | 7.52 | 0.45312 | 5.20 | 0.30154 | 3.76 | 3478 | 116 | 87.8 |
| kikeh15 | 6C12 | | 5 | 6 | 60 | 17.6 | 10 | 70312 | 268712 | 2-27-02 | x | 0.14650 | 22.30656 | 5.67 | 0.53117 | 4.97 | 0.30457 | 6.37 | 3492 | 198 | 92.1 |
| kikeh16 | 6C13 | | 5 | 6 | 40 | 68.9 | 10 | 118101 | 159403 | 2-27-02 | | 0.30850 | 16.56014 | 3.86 | 0.43997 | 3.82 | 0.27401 | 2.44 | 3328 | 76 | 88.0 |
| kikeh17 | 6C14 | | 5 | 6 | 40 | 50 | 10 | 104791 | 202085 | 2-27-02 | x | 0.25720 | 2.00655 | 4.31 | 0.15715 | 3.53 | 0.09229 | 3.44 | 1472 | 130 | 76.8 |
| kikeh18 | 6C15 | | 5 | 6 | 40 | 39.2 | 10 | 146527 | 158998 | 2-27-02 | | 0.30220 | 16.67009 | 3.86 | 0.47328 | 3.99 | 0.25577 | 2.77 | 3220 | 86 | 91.1 |
| kikeh19 | 6C16 | | 5 | 6 | 40 | 67.6 | 10 | 74362 | 118874 | 2-27-02 | | 0.30460 | 14.18060 | 3.96 | 0.37930 | 4.29 | 0.27143 | 2.26 | 3314 | 70 | 83.9 |
| kikeh20 | 6C17 | thin | 5 | 6 | 40 | 27 | 10 | 90296 | 115176 | 2-27-02 | | 0.24710 | 15.57259 | 4.46 | 0.42854 | 5.72 | 0.26290 | 6.41 | 3264 | 202 | 87.9 |
| kikeh21 | 6C18 | thin | 5 | 6 | 40 | 17.6 | 10 | 44979 | 42198 | 2-27-02 | x | 0.22060 | 17.04083 | 5.60 | 0.47395 | 5.77 | 0.26032 | 7.11 | 3248 | 226 | 91.0 |
| kikeh22 | 6C19 | core | 5 | 6 | 40 | 20.3 | 10 | 174754 | 145025 | 2-27-02 | x | 0.29530 | 8.65526 | 16.04 | 0.24989 | 15.48 | 0.25097 | 6.44 | 3190 | 204 | 72.8 |
| kikeh23 | 6C20 | core | 5 | 6 | 40 | 48.7 | 10 | 69430 | 149258 | 2-27-02 | | 0.20050 | 14.86836 | 4.53 | 0.41818 | 4.12 | 0.25934 | 3.20 | 3242 | 102 | 87.2 |
| kikeh24 | 6C21 | rim | 5 | 6 | 40 | 44.6 | 10 | 52850 | 63519 | 2-27-02 | | 0.15640 | 13.22167 | 3.23 | 0.37507 | 3.56 | 0.25428 | 3.64 | 3210 | 116 | 84.6 |
| kikeh25 | 6C22 | | 5 | 6 | 40 | 25.7 | 10 | 68847 | 90473 | 2-27-02 | | 0.19070 | 14.53918 | 6.09 | 0.41741 | 9.58 | 0.25378 | 7.61 | 3208 | 240 | 87.4 |
| kikeh26 | 6C23 | | 5 | 6 | 40 | 32.5 | 10 | 31712 | 58763 | 2-27-02 | | 0.17020 | 16.89696 | 3.42 | 0.49680 | 2.77 | 0.24707 | 4.24 | 3166 | 134 | 93.1 |
| kikeh27 | 6C24 | | 5 | 6 | 40 | 20.3 | 10 | 84218 | 80985 | 2-27-02 | x | 0.26870 | 11.83566 | 8.29 | 0.31920 | 8.66 | 0.26979 | 4.83 | 3304 | 152 | 79.0 |
| kikeh28 | 6C25 | | 5 | 6 | 40 | 35.1 | 10 | 154217 | 307520 | 2-27-02 | x | 0.23700 | 0.44365 | 4.54 | 0.04579 | 2.76 | 0.07016 | 4.86 | 932 | 198 | 40.7 |
| kikeh29 | 6C26 | incl | 5 | 6 | 40 | 29.8 | 10 | 93138 | 224323 | 2-27-02 | x | 0.23090 | 0.66268 | 12.77 | 0.05146 | 4.57 | 0.09311 | 9.75 | 1490 | 372 | 35.2 |
| kikeh30 | 6C27 | | 5 | 6 | 40 | 54.1 | 10 | 54512 | 99779 | 2-27-02 | | 0.18280 | 20.10274 | 3.74 | 0.56246 | 3.64 | 0.25871 | 3.53 | 3238 | 110 | 96.2 |
| kikeh31 | 6C28 | thin | 5 | 6 | 40 | 29.8 | 10 | 109810 | 98635 | 2-27-02 | | 0.20190 | 19.80894 | 4.59 | 0.49286 | 7.23 | 0.29076 | 5.28 | 3420 | 164 | 90.7 |
| kikeh32 | 6C29 | core | 5 | 6 | 40 | 33.8 | 10 | 174004 | 104330 | 2-27-02 | | 0.40540 | 9.58989 | 9.24 | 0.23472 | 4.75 | 0.29576 | 8.69 | 3448 | 270 | 70.0 |
| kikeh33 | 6C30 | rim | 5 | 6 | 40 | 39.2 | 10 | 86728 | 79216 | 2-27-02 | | 0.22470 | 10.56283 | 6.22 | 0.30730 | 4.23 | 0.24785 | 5.64 | 3170 | 178 | 79.0 |
| kikeh34 | 6C31 | core | 5 | 6 | 40 | 37.9 | 10 | 242940 | 146742 | 2-27-02 | | 0.23580 | 8.29188 | 8.78 | 0.22627 | 5.46 | 0.26389 | 7.53 | 3270 | 236 | 69.8 |
| kikeh35 | 6C32 | | 5 | 6 | 40 | 62.2 | 10 | 49282 | 91633 | 2-27-02 | | 0.17760 | 20.90810 | 2.79 | 0.57754 | 2.71 | 0.26171 | 2.94 | 3256 | 92 | 96.9 |
| kikeh36 | 6C33 | | 5 | 6 | 40 | 36.5 | 10 | 27101 | 68057 | 2-27-02 | | 0.12770 | 17.01878 | 4.23 | 0.49181 | 4.03 | 0.24944 | 4.94 | 3180 | 156 | 92.9 |
| kikeh37 | 6C34 | | 5 | 6 | 40 | 28.4 | 10 | 22272 | 63500 | 2-27-02 | | 0.13710 | 20.61087 | 5.24 | 0.55258 | 4.62 | 0.27017 | 5.82 | 3306 | 182 | 95.0 |
| kikeh38 | 6C35 | | 5 | 6 | 40 | 24.3 | 10 | 59426 | 55231 | 2-27-02 | | 0.21120 | 16.58993 | 6.10 | 0.45062 | 5.87 | 0.26614 | 3.25 | 3282 | 102 | 89.3 |
| kikeh39 | 6C36 | core | 5 | 6 | 40 | 27 | 347.1 | 267903 | 372864 | 2-27-02 | | 0.65440 | 7.04689 | 5.30 | 0.19814 | 4.49 | 0.25553 | 4.64 | 3218 | 146 | 66.3 |
| kikeh40 | 6C37 | | 5 | 6 | 40 | 102.7 | 10 | 218340 | 177048 | 2-27-02 | | 0.27010 | 5.63823 | 4.29 | 0.17011 | 3.83 | 0.23954 | 2.15 | 3116 | 68 | 62.2 |
| kikeh41 | 6C38 | | 5 | 6 | 40 | 32.5 | 10 | 90236 | 57373 | 2-27-02 | | 0.24750 | 17.14422 | 5.39 | 0.51571 | 5.22 | 0.24084 | 5.83 | 3124 | 186 | 94.8 |
| kikeh42 | 6C39 | | 5 | 6 | 40 | 25.7 | 10 | 445590 | 948942 | 2-27-02 | x | 0.25020 | 0.39915 | 7.01 | 0.04176 | 5.29 | 0.06952 | 5.80 | 914 | 238 | 38.0 |
| kikeh43 | 6C40 | | 5 | 6 | 40 | 28.4 | 10 | 229165 | 582707 | 2-27-02 | x | 0.22300 | 1.00264 | 74.24 | 0.04589 | 4.46 | 0.15837 | 63.66 | 2438 | 2728 | 29.3 |
| kikeh44 | 6C41 | thin | 5 | 6 | 40 | 20.3 | 10 | 73479 | 83205 | 2-27-02 | x | 0.14840 | 18.90430 | 6.71 | 0.57917 | 10.91 | 0.23573 | 6.64 | 3090 | 212 | 98.9 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikeh45 | 6C42 | | 5 | 6 | 40 | 51.4 | 10 | 43547 | 30420 | 2-27-02 | x | 0.53530 | 2.39581 | 8.09 | 0.20074 | 3.10 | 0.08617 | 7.73 | 1340 | 300 | 93.7 |
| kikeh46 | 6C43 | | 5 | 6 | 40 | 56.8 | 10 | 75677 | 119139 | 2-27-02 | | 0.28690 | 21.11390 | 3.34 | 0.57859 | 3.31 | 0.26340 | 3.25 | 3266 | 102 | 96.8 |
| kikeh47 | 6C44 | | 5 | 6 | 40 | 27 | 42.6 | 149111 | 339203 | 2-27-02 | | 0.09390 | 16.62315 | 5.89 | 0.47750 | 4.53 | 0.25281 | 4.75 | 3202 | 150 | 91.6 |
| kikeh48 | 6C45 | thin | 5 | 6 | 40 | 28.4 | 10 | 560 | 790 | 2-27-02 | x | -0.40250 | 11.02970 | 36.44 | 0.37248 | 17.33 | 0.21461 | 87.22 | 2940 | 3914 | 86.5 |
| kikeh49 | 6C46 | dirty | 5 | 6 | 40 | 93.3 | 44.8 | 125360 | 228628 | 2-27-02 | | 0.21050 | 8.95749 | 4.66 | 0.30998 | 4.29 | 0.20962 | 2.96 | 2902 | 96 | 81.0 |
| kikeh50 | 6C47 | | 5 | 6 | 40 | 27.1 | 10 | 52389 | 131044 | 2-27-02 | x | 0.36250 | 1.10662 | 12.03 | 0.07152 | 6.13 | 0.11203 | 9.10 | 1832 | 332 | 41.9 |
| kikeh51 | 6C48 | | 5 | 6 | 40 | 39.2 | 10 | 110072 | 124171 | 2-27-02 | | 0.15290 | 10.18220 | 6.50 | 0.39331 | 4.61 | 0.18846 | 3.54 | 2728 | 116 | 90.5 |
| kikeh52 | 6C49 | | 5 | 6 | 40 | 31.1 | 84.8 | 540110 | 315618 | 2-27-02 | | 0.48650 | 5.95781 | 13.15 | 0.16243 | 9.40 | 0.26492 | 11.01 | 3276 | 348 | 60.7 |
| kikeh53 | 6C50 | | 5 | 6 | 40 | 77.1 | 10 | 136010 | 283783 | 2-27-02 | x | 0.31500 | 1.25293 | 42.18 | 0.04320 | 13.85 | 0.21057 | 43.18 | 2908 | 1526 | 28.7 |
| kikeh54 | 6C51 | | 5 | 6 | 40 | 39.2 | 10 | 47228 | 182228 | 2-27-02 | | 0.06440 | 9.60929 | 6.93 | 0.27888 | 4.64 | 0.24930 | 4.36 | 3180 | 138 | 76.0 |
| kikeh55 | 6C52 | | 5 | 6 | 40 | 39.2 | 10 | 117354 | 165712 | 2-27-02 | | 0.21230 | 11.70130 | 4.31 | 0.41952 | 3.45 | 0.20119 | 3.84 | 2834 | 126 | 91.7 |
| kikeh56 | 6C53 | | 5 | 6 | 40 | 50 | 10 | 52173 | 97591 | 2-27-02 | | 0.20780 | 13.43168 | 12.28 | 0.41002 | 3.85 | 0.23765 | 11.40 | 3104 | 366 | 88.0 |
| kikeh57 | 6C54 | thin | 5 | 6 | 40 | 24.4 | 10 | 55097 | 88842 | 2-27-02 | | 0.19180 | 18.58756 | 6.32 | 0.49162 | 7.11 | 0.27357 | 7.86 | 3326 | 248 | 91.4 |
| kikeh58 | 6C55 | | 5 | 6 | 40 | 47.3 | 10 | 31034 | 52240 | 2-27-02 | | 0.20430 | 18.58433 | 3.24 | 0.52243 | 3.56 | 0.25745 | 4.02 | 3230 | 126 | 94.1 |
| kikeh59 | 6C56 | | 5 | 6 | 40 | 31.1 | 10 | 55050 | 78591 | 2-27-02 | | 0.22940 | 21.87399 | 4.76 | 0.60490 | 3.53 | 0.26086 | 3.81 | 3250 | 120 | 98.4 |
| kikeh60 | 6C57 | | 5 | 6 | 40 | 40.6 | 10 | 51290 | 81150 | 2-27-02 | | 0.21060 | 21.39271 | 4.20 | 0.59722 | 3.91 | 0.25935 | 2.94 | 3242 | 94 | 98.0 |
| kikeh61 | 6C58 | | 5 | 6 | 40 | 32.5 | 10 | 45979 | 72696 | 2-27-02 | | 0.21320 | 20.08755 | 5.20 | 0.55843 | 5.59 | 0.26100 | 3.26 | 3252 | 102 | 95.8 |
| kikeh62 | 6C59 | core | 5 | 6 | 40 | 31.1 | 10 | 58860 | 103708 | 2-27-02 | | 0.22830 | 14.43736 | 5.34 | 0.41357 | 5.45 | 0.25241 | 3.58 | 3198 | 112 | 87.5 |
| kikeh63 | 6C60 | | 5 | 6 | 40 | 29.8 | 10 | 69732 | 106431 | 2-27-02 | | 0.16730 | 18.35912 | 6.79 | 0.48691 | 7.52 | 0.27379 | 5.26 | 3326 | 164 | 91.0 |
| kikeh64 | 6D08 | core | 5 | 6 | 40 | 36.5 | 209.8 | 1080736 | 254444 | 2-27-02 | x | 0.46970 | 5.95967 | 11.96 | 0.20400 | 9.83 | 0.21119 | 4.34 | 2914 | 140 | 68.2 |
| kikeh65 | 6D69 | | 5 | 6 | 60 | 125.7 | 298.3 | 51702 | 285856 | 2-27-02 | | 0.25410 | 10.56156 | 4.06 | 0.33398 | 3.42 | 0.23017 | 2.01 | 3052 | 64 | 82.0 |

**KB264 LA-ICP-MS**

| KB264 | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | rejecd | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikep01 | 2A04 | | 8 | 6 | 60 | 41.9 | 164.9 | 207629 | 493074 | 31-10-02 | | 0.15040 | 21.84802 | 1.58 | 0.62266 | 1.81 | 0.25508 | 1.35 | 3216 | 42 | 99.4 |
| kikep02 | 2A11 | | 8 | 6 | 60 | 64.9 | 68.9 | 310232 | 600920 | 31-10-02 | | 0.20580 | 24.25637 | 1.56 | 0.66826 | 1.24 | 0.26333 | 1.29 | 3266 | 40 | 101.0 |
| kikep03 | 2A13 | | 8 | 6 | 60 | 63.7 | 249.6 | 702193 | 1E+06 | 31-10-02 | | 0.23210 | 14.19118 | 1.70 | 0.39763 | 1.52 | 0.25946 | 0.75 | 3242 | 24 | 85.8 |
| kikep04 | 2A14 | | 8 | 6 | 60 | 49 | 98.8 | 260396 | 651165 | 31-10-02 | | 0.18050 | 22.61742 | 1.83 | 0.62650 | 2.00 | 0.26247 | 1.26 | 3260 | 40 | 99.1 |
| kikep05 | 2A17 | | 8 | 6 | 60 | 67.6 | 43.3 | 205566 | 537928 | 31-10-02 | | 0.15390 | 23.70561 | 1.58 | 0.65645 | 1.34 | 0.26170 | 1.10 | 3256 | 36 | 100.6 |
| kikep06 | 2A25 | | 8 | 6 | 60 | 43.3 | 51.5 | 371452 | 896406 | 31-10-02 | | 0.16310 | 25.12279 | 1.89 | 0.70253 | 1.86 | 0.25912 | 1.13 | 3240 | 36 | 102.9 |
| kikep07 | 2A05 | | 8 | 6 | 60 | 70.3 | 36.5 | 226690 | 583735 | 31-10-02 | | 0.15560 | 23.05195 | 1.37 | 0.64512 | 1.53 | 0.25966 | 1.10 | 3244 | 34 | 100.2 |
| kikep08 | 2B07 | | 8 | 6 | 60 | 96 | 140.7 | 430615 | 607567 | 31-10-02 | | 0.20080 | 18.22771 | 3.15 | 0.51754 | 3.18 | 0.25571 | 1.57 | 3220 | 50 | 93.8 |
| kikep09 | 2B25 | | 8 | 6 | 60 | 82.4 | 55.1 | 245149 | 474186 | 31-10-02 | | 0.19070 | 25.44168 | 3.82 | 0.69235 | 3.93 | 0.26652 | 1.56 | 3284 | 48 | 101.9 |
| kikep10 | 2B42 | | 8 | 6 | 60 | 67.6 | 76.8 | 365353 | 732346 | 31-10-02 | | 0.19770 | 25.33369 | 3.04 | 0.68486 | 3.09 | 0.26833 | 1.85 | 3296 | 58 | 101.4 |
| kikep11 | 2B44 | | 8 | 6 | 60 | 60.8 | 93 | 295154 | 573298 | 31-10-02 | | 0.18720 | 23.69013 | 4.76 | 0.68726 | 4.38 | 0.25018 | 2.04 | 3184 | 64 | 102.9 |
| kikep12 | 2B59 | | 8 | 6 | 60 | 79.8 | 60.2 | 314410 | 701639 | 31-10-02 | | 0.20120 | 20.61783 | 4.26 | 0.56880 | 4.18 | 0.26302 | 2.43 | 3264 | 76 | 96.2 |
| kikep13 | 2B46 | | 8 | 6 | 60 | 89.2 | 55.1 | 259611 | 564818 | 31-10-02 | | 0.16320 | 23.45414 | 3.53 | 0.65952 | 3.27 | 0.25776 | 1.75 | 3232 | 56 | 101.1 |
| kikep14 | 2B45 | | 8 | 6 | 60 | 75.7 | 48 | 261310 | 624476 | 31-10-02 | | 0.16930 | 24.21619 | 4.65 | 0.66960 | 4.59 | 0.26249 | 1.64 | 3260 | 52 | 101.1 |
| kikep15 | 2B40 | | 8 | 6 | 60 | 79.7 | | 321366 | 729573 | 31-10-02 | | 0.16680 | 24.27450 | 3.95 | 0.65750 | 3.58 | 0.26781 | 1.39 | 3292 | 44 | 100.2 |
| kikep16 | 2B54 | | 8 | 6 | 60 | 81.1 | 56.5 | 346216 | 805789 | 31-10-02 | | 0.17140 | 18.12579 | 5.17 | 0.49786 | 5.30 | 0.26441 | 1.40 | 3272 | 44 | 92.2 |
| kikep17 | 2B36 | | 8 | 6 | 60 | 105.4 | | 237311 | 508367 | 31-10-02 | | 0.16750 | 24.27235 | 2.92 | 0.65894 | 3.17 | 0.26724 | 1.75 | 3288 | 54 | 100.3 |
| kikep18 | 2B17 | | 8 | 6 | 60 | 100 | 30.4 | 246607 | 533380 | 31-10-02 | | 0.17800 | 24.54733 | 2.96 | 0.66528 | 2.81 | 0.26735 | 1.74 | 3290 | 54 | 100.6 |
| kikep19 | 2B03 | | 8 | 6 | 60 | 75.7 | 37.6 | 288245 | 453226 | 31-10-02 | | 0.23030 | 25.03047 | 3.41 | 0.67709 | 2.87 | 0.26851 | 2.62 | 3296 | 82 | 101.0 |
| kikep20 | 2B02 | | 8 | 6 | 60 | 105.4 | 46.4 | 537263 | 893423 | 31-10-02 | | 0.22970 | 19.42272 | 3.85 | 0.57034 | 3.71 | 0.24688 | 2.33 | 3164 | 74 | 97.4 |
| kikep21 | 2B01 | | 8 | 6 | 60 | 95.9 | 36.8 | 217215 | 493619 | 31-10-02 | | 0.15750 | 25.82868 | 4.11 | 0.70310 | 4.17 | 0.26657 | 1.76 | 3284 | 54 | 102.3 |
| kikep22 | 2B15 | | 8 | 6 | 60 | 90.5 | 74 | 311250 | 584728 | 31-10-02 | | 0.21070 | 22.59008 | 4.54 | 0.62717 | 4.43 | 0.26067 | 1.84 | 3250 | 58 | 99.4 |
| kikeq01 | 2B49 | | 8 | 6 | 60 | 87.8 | 143.9 | 368770 | 652975 | 01-11-02 | | 0.18250 | 21.70357 | 3.60 | 0.61152 | 3.26 | 0.25828 | 1.62 | 3236 | 50 | 98.6 |
| kikeq02 | 2B51 | | 8 | 6 | 60 | 81.1 | 216.4 | 392690 | 531325 | 01-11-02 | | 0.21650 | 25.14739 | 3.84 | 0.70675 | 3.48 | 0.25937 | 1.82 | 3242 | 58 | 102.8 |
| kikeq03 | 2B50-1 | | 8 | 6 | 60 | 67.6 | 158.3 | 288897 | 801309 | 01-11-02 | | 0.20240 | 17.57267 | 6.10 | 0.50131 | 6.22 | 0.25541 | 2.05 | 3218 | 66 | 92.8 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikeq04 | 2B50-2 | | 8 | 6 | 60 | 74.3 | 83.7 | 494452 | 904916 | 01-11-02 | | 0.18760 | 22.48541 | 2.51 | 0.61392 | 2.56 | 0.26591 | 1.36 | 3282 | 42 | 98.3 |
| kikeq05 | 2B35 | | 8 | 6 | 60 | 71.6 | 89.4 | 363460 | 739745 | 01-11-02 | | 0.17740 | 23.83027 | 2.22 | 0.65414 | 2.40 | 0.26454 | 1.37 | 3272 | 42 | 100.3 |
| kikeq06 | 2B34 | | 8 | 6 | 60 | 90.6 | 69.7 | 261195 | 534598 | 01-11-02 | | 0.16070 | 23.18121 | 2.70 | 0.65357 | 2.85 | 0.25730 | 1.30 | 3230 | 42 | 100.7 |
| kikeq07 | 2B16-2 | | 8 | 6 | 60 | 104 | | 305021 | 562174 | 01-11-02 | | 0.17470 | 22.83047 | 3.04 | 0.64435 | 3.24 | 0.25739 | 1.30 | 3230 | 40 | 100.3 |
| kikeq08 | 2B16-2 | | 8 | 6 | 60 | 112.2 | 110.9 | 367049 | 718833 | 01-11-02 | | 0.19020 | 22.08714 | 3.17 | 0.61066 | 3.20 | 0.26332 | 1.26 | 3266 | 40 | 98.2 |
| kikeq09 | 2B14 | | 8 | 6 | 60 | 100 | 168.4 | 509905 | 867896 | 01-11-02 | | 0.24630 | 17.39392 | 2.81 | 0.48557 | 2.87 | 0.26085 | 1.58 | 3250 | 50 | 91.6 |
| kikeq10 | 2B19 | | 8 | 6 | 60 | 102.7 | 90.2 | 474876 | 618142 | 01-11-02 | | 0.21490 | 22.10302 | 3.70 | 0.62851 | 3.26 | 0.25579 | 1.29 | 3220 | 40 | 99.6 |
| kikeq11 | 2B20 | | 8 | 6 | 60 | 86.5 | 159.2 | 476150 | 983841 | 01-11-02 | | 0.18690 | 24.40425 | 5.31 | 0.68323 | 5.02 | 0.25951 | 1.64 | 3242 | 52 | 101.9 |
| kikeq12 | 2B21 | | 8 | 6 | 60 | 97.3 | | 252512 | 579234 | 01-11-02 | | 0.16670 | 24.55410 | 2.49 | 0.68160 | 2.79 | 0.26171 | 1.34 | 3256 | 42 | 101.7 |
| kikeq13 | 2B12 | incl | 8 | 6 | 60 | 86.5 | 81.3 | 341854 | 729821 | 01-11-02 | | 0.18850 | 24.30988 | 3.78 | 0.67680 | 3.45 | 0.26130 | 1.53 | 3254 | 48 | 101.4 |
| kikeq14 | 2B30 | | 8 | 6 | 60 | 82.5 | 983.1 | 630466 | 675219 | 01-11-02 | | 0.39370 | 24.40612 | 5.35 | 0.69178 | 4.66 | 0.25671 | 1.32 | 3226 | 42 | 102.4 |
| kikeq15 | 2B31 | | 8 | 6 | 60 | 82.4 | 235.4 | 436776 | 1E+06 | 01-11-02 | | 0.23050 | 18.55640 | 4.31 | 0.51907 | 4.20 | 0.26060 | 1.52 | 3250 | 48 | 93.5 |
| kikeq16 | 2B32 | | 8 | 6 | 60 | 86.5 | | 589469 | 842329 | 01-11-02 | | 0.18760 | 20.10529 | 3.36 | 0.55939 | 3.27 | 0.26145 | 1.26 | 3254 | 40 | 95.8 |
| kikeq17 | 2B37 | | 8 | 6 | 60 | 60.8 | 128.5 | 493811 | 907948 | 01-11-02 | | 0.19500 | 24.09683 | 4.57 | 0.66394 | 5.26 | 0.26440 | 2.90 | 3272 | 92 | 100.6 |
| kikeq18 | 2B38 | | 8 | 6 | 60 | 90.5 | 90.2 | 289583 | 647174 | 01-11-02 | | 0.17840 | 20.69505 | 3.62 | 0.58234 | 2.88 | 0.25881 | 1.26 | 3238 | 40 | 97.1 |
| kikeq19 | 2B39 | | 8 | 6 | 60 | 97.4 | | 309270 | 560900 | 01-11-02 | | 0.19960 | 20.98386 | 2.70 | 0.59021 | 2.63 | 0.25830 | 1.45 | 3236 | 46 | 97.6 |
| kikeq20 | 2B48 | | 8 | 6 | 60 | 74.3 | 74.1 | 383762 | 811584 | 01-11-02 | | 0.18570 | 23.16093 | 5.08 | 0.66077 | 5.10 | 0.25566 | 1.62 | 3220 | 50 | 101.0 |
| kikeq21 | 2B55 | | 8 | 6 | 60 | 67.6 | 76.8 | 256230 | 608039 | 01-11-02 | | 0.19110 | 24.87093 | 6.61 | 0.69053 | 6.33 | 0.26250 | 1.97 | 3260 | 62 | 101.9 |
| kikeq22 | 2B53 | | 8 | 6 | 60 | 63.5 | | 257814 | 616238 | 01-11-02 | | 0.17890 | 23.28441 | 3.59 | 0.63955 | 3.47 | 0.26509 | 1.86 | 3276 | 60 | 99.5 |
| kikeq23 | 2B56 | | 8 | 6 | 60 | 95.9 | 112.8 | 578100 | 1E+06 | 01-11-02 | | 0.20300 | 10.55019 | 3.78 | 0.30355 | 3.64 | 0.25328 | 1.47 | 3204 | 46 | 78.1 |
| kikeq24 | 2B57 | | 8 | 6 | 60 | 74.4 | 72.4 | 222877 | 628566 | 01-11-02 | | 0.16290 | 21.49552 | 4.44 | 0.60326 | 4.23 | 0.25916 | 1.54 | 3240 | 48 | 98.2 |
| kikeq25 | 2B58 | | 8 | 6 | 60 | 77 | 64.6 | 412648 | 810546 | 01-11-02 | | 0.20310 | 22.52795 | 2.76 | 0.63062 | 2.81 | 0.26026 | 1.36 | 3248 | 42 | 99.3 |
| kikeq26 | 2B60-1 | crack | 8 | 6 | 60 | 109.4 | 94.8 | 173462 | 384359 | 01-11-02 | | 0.21620 | 20.29482 | 1.81 | 0.59203 | 1.61 | 0.24886 | 0.93 | 3176 | 30 | 98.4 |
| kikeq27 | 2B60-2 | | 8 | 6 | 60 | 89.2 | | 222600 | 499057 | 01-11-02 | | 0.17680 | 22.71924 | 3.08 | 0.61642 | 3.19 | 0.26833 | 1.54 | 3296 | 50 | 98.1 |
| kikeq28 | 2B62 | | 8 | 6 | 60 | 83.8 | 92.9 | 847067 | 851096 | 01-11-02 | | 0.24530 | 19.55531 | 2.97 | 0.53654 | 2.85 | 0.26502 | 1.05 | 3276 | 32 | 94.3 |
| kikeq29 | 2B61-1 | | 8 | 6 | 60 | 112.2 | | 213887 | 486509 | 01-11-02 | | 0.17040 | 24.09614 | 2.38 | 0.66749 | 2.39 | 0.26250 | 1.02 | 3260 | 32 | 101.0 |
| kikeq30 | 2B61-2 | | 8 | 6 | 60 | 108.1 | 166.4 | 344989 | 579316 | 01-11-02 | | 0.23170 | 24.27195 | 2.54 | 0.69274 | 2.60 | 0.25583 | 1.28 | 3220 | 40 | 102.5 |
| kikeq31 | 2B41 | | 8 | 6 | 60 | 48.7 | | 212893 | 525944 | 01-11-02 | | 0.16220 | 24.69894 | 1.51 | 0.69034 | 1.83 | 0.25962 | 1.23 | 3244 | 38 | 102.2 |
| kikeq32 | 2B29 | | 8 | 6 | 60 | 67.6 | 54.1 | 370892 | 748607 | 01-11-02 | | 0.18970 | 22.52834 | 1.90 | 0.62410 | 1.70 | 0.26247 | 1.02 | 3260 | 32 | 99.0 |
| kikeq33 | 2B22 | | 8 | 6 | 60 | 108.1 | | 210713 | 515059 | 01-11-02 | | 0.15660 | 24.74882 | 2.29 | 0.67930 | 2.55 | 0.26531 | 0.99 | 3278 | 32 | 101.2 |
| kikeq34 | 2B23 | | 8 | 6 | 60 | 101.4 | | 276771 | 632998 | 01-11-02 | | 0.17140 | 24.02088 | 3.24 | 0.65568 | 3.22 | 0.26655 | 1.26 | 3284 | 40 | 100.2 |
| kikeq35 | 2B11 | | 8 | 6 | 60 | 105.4 | | 357093 | 563125 | 01-11-02 | | 0.18290 | 22.87859 | 1.79 | 0.63264 | 1.80 | 0.26338 | 1.02 | 3266 | 32 | 99.2 |
| kikeq36 | 2B04 | | 8 | 6 | 60 | 62.2 | 163.9 | 430860 | 846515 | 01-11-02 | | 0.22800 | 24.51989 | 2.15 | 0.67459 | 2.14 | 0.26395 | 1.49 | 3270 | 46 | 101.2 |
| kikeq37 | 2B05 | | 8 | 6 | 60 | 108.4 | 91.3 | 656665 | 487735 | 01-11-02 | | 0.20070 | 21.43427 | 3.34 | 0.60192 | 3.31 | 0.25937 | 1.09 | 3242 | 34 | 98.0 |
| kikeq38 | 2B24 | | 8 | 6 | 60 | 73 | | 241957 | 512295 | 01-11-02 | | 0.17620 | 24.60535 | 3.47 | 0.69322 | 3.10 | 0.25853 | 1.61 | 3236 | 50 | 102.3 |

## KB265 LA-ICP-MS U-Pb analysis

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | ejecte | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikeq39 | 2C14 | | 8 | 6 | 60 | 109.5 | 94.6 | 495731 | 804877 | 01-11-02 | | 0.2688 | 20.72367 | 3.17 | 0.60739 | 2.98 | 0.24838 | 1.88 | 3174 | 58 | 99.1 |
| kikeq40 | 2C22 | | 8 | 6 | 60 | 139.2 | 10 | 332094 | 575096 | 01-11-02 | | 0.2343 | 19.92752 | 3.65 | 0.57523 | 3.61 | 0.25166 | 2.33 | 3194 | 74 | 97.3 |
| kikeq41 | 2C23 | | 8 | 6 | 60 | 113.9 | 10 | 536732 | 673779 | 01-11-02 | | 0.2731 | 25.33222 | 4.00 | 0.69533 | 3.86 | 0.2652 | 1.75 | 3276 | 54 | 102.0 |
| kikeq42 | 2C06 | | 8 | 6 | 60 | 113.6 | 10 | 463063 | 714316 | 01-11-02 | | 0.2512 | 21.51502 | 3.68 | 0.60653 | 3.63 | 0.25816 | 1.74 | 3234 | 56 | 98.4 |
| kikeq43 | 2C08 | | 8 | 6 | 60 | 111.2 | 10 | 330061 | 556778 | 01-11-02 | | 0.2656 | 20.40066 | 3.14 | 0.60595 | 3.00 | 0.24488 | 1.52 | 3150 | 48 | 99.4 |
| kikeq44 | 2C20 | | 8 | 6 | 60 | 74.3 | 10 | 1050920 | 2E+06 | 01-11-02 | | 0.2895 | 22.17083 | 3.99 | 0.61056 | 3.33 | 0.26444 | 2.02 | 3272 | 64 | 98.1 |
| kikeq45 | 2C27 | | 8 | 6 | 60 | 95.9 | 10 | 262958 | 616752 | 01-11-02 | | 0.1789 | 22.97669 | 3.80 | 0.65731 | 3.63 | 0.25523 | 1.96 | 3216 | 62 | 100.9 |
| kikeq46 | 2C21 | | 8 | 6 | 60 | 108.1 | 10 | 239273 | 334844 | 01-11-02 | | 0.2817 | 24.54165 | 4.76 | 0.68813 | 4.58 | 0.2591 | 1.87 | 3240 | 60 | 102.2 |
| kikeq47 | 2C16 | | 8 | 6 | 60 | 71.6 | 10 | 169671 | 331806 | 01-11-02 | | 0.2044 | 22.90828 | 5.32 | 0.64051 | 5.46 | 0.25977 | 3.08 | 3244 | 96 | 100.0 |
| kikeq48 | 2C06 | | 8 | 6 | 60 | 71.6 | 17 | 564073 | 919278 | 01-11-02 | | 0.3401 | 17.0519 | 6.29 | 0.49027 | 4.67 | 0.25292 | 4.09 | 3202 | 130 | 92.3 |
| kikeq49 | 2C13 | | 8 | 6 | 60 | 73 | 10 | 253912 | 422918 | 01-11-02 | | 0.2084 | 26.38229 | 4.87 | 0.72893 | 4.59 | 0.26365 | 2.18 | 3268 | 70 | 103.5 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikeq50 | 2C24 | | 8 | 6 | 60 | 121.7 | 10 | 426131 | 584472 | 01-11-02 | | 0.2479 | 24.31017 | 3.65 | 0.68448 | 3.88 | 0.25851 | 2.01 | 3236 | 64 | 102.0 |
| kikeq51 | 2C34-1 | | 8 | 6 | 60 | 64.9 | 10 | 925248 | 1E+06 | 01-11-02 | | 0.331 | 18.75014 | 5.43 | 0.5377 | 5.42 | 0.25398 | 3.22 | 3208 | 102 | 95.0 |
| kikeq52 | 2C34-2 | | 8 | 6 | 60 | 104.1 | 42.5 | 1540289 | 1E+06 | 01-11-02 | | 0.4669 | 15.56632 | 5.18 | 0.45744 | 4.61 | 0.24859 | 2.38 | 3174 | 76 | 90.4 |
| kikeq53 | 2C34-3 | | 8 | 6 | 60 | 74.4 | 76 | 1987743 | 2E+06 | 01-11-02 | | 0.6591 | 13.25146 | 7.06 | 0.36979 | 6.74 | 0.26155 | 4.16 | 3256 | 132 | 83.4 |
| kikeq54 | 2C44 | | 8 | 6 | 60 | 75.7 | 10 | 108677 | 514810 | 01-11-02 | | 0.1212 | 16.70861 | 4.95 | 0.53933 | 4.92 | 0.2256 | 2.35 | 3020 | 76 | 97.3 |
| kikeq55 | 2C43 | | 8 | 6 | 60 | 95.9 | 10 | 547666 | 1E+06 | 01-11-02 | | 0.2353 | 17.30788 | 3.95 | 0.5063 | 3.79 | 0.24952 | 1.97 | 3180 | 62 | 93.4 |
| kikeq56 | 2C51-1 | | 8 | 6 | 60 | 82.4 | 10 | 498413 | 632068 | 01-11-02 | | 0.2845 | 21.09568 | 7.70 | 0.62736 | 6.72 | 0.2446 | 2.45 | 3150 | 78 | 100.4 |
| kikeq57 | 2C51-2 | | 8 | 6 | 60 | 94.7 | 10 | 652831 | 770435 | 01-11-02 | | 0.3335 | 23.39368 | 3.83 | 0.6265 | 4.20 | 0.27213 | 2.31 | 3318 | 74 | 98.3 |
| kikeq58 | 2C50 | | 8 | 6 | 60 | 93.2 | 10 | 469009 | 614659 | 01-11-02 | | 0.2983 | 24.73726 | 5.19 | 0.67306 | 5.50 | 0.26755 | 2.53 | 3290 | 80 | 100.9 |
| kikeq59 | 2C41-1 | | 8 | 6 | 60 | 91.9 | 10 | 1060612 | 1E+06 | 01-11-02 | | 0.3248 | 25.4554 | 4.31 | 0.67661 | 4.47 | 0.27415 | 2.17 | 3328 | 68 | 100.5 |
| kikeq60 | 2C41-2 | | 8 | 6 | 60 | 132.5 | 10 | 1099802 | 1E+06 | 01-11-02 | | 0.3658 | 24.87181 | 3.47 | 0.67248 | 3.09 | 0.26993 | 1.73 | 3304 | 54 | 100.6 |
| kiker01 | 2C49 | | 8 | 6 | 60 | 108.2 | 47.2 | 580204 | 918138 | 04-11-02 | | 0.3036 | 20.70838 | 3.69 | 0.57821 | 3.97 | 0.25984 | 1.82 | 3244 | 58 | 96.9 |
| kiker02 | 2C40 | | 8 | 6 | 60 | 132.5 | 10 | 410181 | 669172 | 04-11-02 | | 0.297 | 15.74889 | 3.13 | 0.48038 | 3.53 | 0.23794 | 2.22 | 3106 | 70 | 92.8 |
| kiker03 | 2C39 | | 8 | 6 | 60 | 102.7 | 32.9 | 676510 | 879378 | 04-11-02 | | 0.3101 | 24.09016 | 4.44 | 0.64368 | 4.35 | 0.27141 | 1.72 | 3314 | 54 | 99.3 |
| kiker04 | 2C38 | cracks | 8 | 6 | 60 | 121.6 | 45.2 | 504148 | 1E+06 | 04-11-02 | | 0.2375 | 19.42438 | 3.26 | 0.56746 | 3.03 | 0.24861 | 1.87 | 3174 | 60 | 97.1 |
| kiker05 | 2C37 | | 8 | 6 | 60 | 43.3 | 36.8 | 703298 | 1E+06 | 04-11-02 | | 0.1981 | 19.64214 | 3.69 | 0.57504 | 3.93 | 0.24827 | 1.37 | 3172 | 44 | 97.5 |
| kiker06 | 2C36-1 | | 8 | 6 | 60 | 100 | 10 | 982717 | 2E+06 | 04-11-02 | | 0.2055 | 17.88951 | 3.50 | 0.5495 | 3.61 | 0.23661 | 1.62 | 3096 | 52 | 97.0 |
| kiker07 | 2C36-2 | | 8 | 6 | 60 | 96 | 25.4 | 772655 | 1E+06 | 04-11-02 | | 0.2241 | 22.0256 | 2.97 | 0.62371 | 2.76 | 0.25634 | 1.12 | 3224 | 34 | 99.4 |
| kiker08 | 2C42 | | 8 | 6 | 60 | 79.8 | 10 | 828742 | 1E+06 | 04-11-02 | | 0.2391 | 21.77501 | 3.48 | 0.61642 | 3.59 | 0.25718 | 1.35 | 3228 | 44 | 98.9 |
| kiker09 | 2D04 | | 8 | 6 | 60 | 78.4 | 30.5 | 898027 | 1E+06 | 04-11-02 | | 0.2988 | 22.7999 | 5.29 | 0.63206 | 4.43 | 0.26284 | 1.68 | 3262 | 52 | 99.3 |
| kiker10 | 2D12 | | 8 | 6 | 60 | 83.8 | 10 | 278283 | 464730 | 04-11-02 | | 0.2765 | 24.72148 | 3.05 | 0.71568 | 2.98 | 0.25133 | 1.44 | 3192 | 44 | 103.9 |
| kiker11 | 2D13 | | 8 | 6 | 60 | 114.9 | 35.1 | 1095263 | 1E+06 | 04-11-02 | | 0.3442 | 18.58746 | 3.01 | 0.50784 | 3.09 | 0.26559 | 1.23 | 3280 | 38 | 92.7 |
| kiker12 | 3B125 | | 8 | 6 | 60 | 59.5 | 138.4 | 1029607 | 1E+06 | 04-11-02 | | 0.382 | 22.42093 | 2.33 | 0.61018 | 2.34 | 0.26795 | 2.17 | 3294 | 68 | 97.8 |
| kiker13 | 3B124 | | 8 | 6 | 60 | 60.8 | 61.5 | 454062 | 785957 | 04-11-02 | | 0.2082 | 22.8783 | 1.06 | 0.62765 | 1.13 | 0.26457 | 0.58 | 3274 | 18 | 99.0 |
| kiker14 | 3B123 | | 8 | 6 | 60 | 78.4 | 51 | 935745 | 1E+06 | 04-11-02 | | 0.2586 | 22.65907 | 1.17 | 0.61603 | 1.23 | 0.2671 | 0.47 | 3288 | 16 | 98.3 |
| kiker15 | 3B115 | | 8 | 6 | 60 | 77 | 42.4 | 274142 | 551018 | 04-11-02 | | 0.1735 | 23.68885 | 1.45 | 0.65808 | 1.47 | 0.26181 | 0.65 | 3256 | 20 | 100.6 |
| kiker16 | 3B099 | | 8 | 6 | 60 | 60.8 | 51.5 | 477693 | 709260 | 04-11-02 | | 0.2415 | 23.98697 | 2.15 | 0.65683 | 2.31 | 0.26543 | 0.88 | 3278 | 28 | 100.3 |
| kiker17 | 3B096 | | 8 | 6 | 60 | 33.8 | 39.7 | 502597 | 767325 | 04-11-02 | | 0.2075 | 23.61153 | 2.72 | 0.62966 | 2.89 | 0.27267 | 1.14 | 3320 | 36 | 98.6 |
| kiker18 | 3B137-1 | | 8 | 6 | 60 | 62.2 | 76.8 | 2375262 | 2E+06 | 04-11-02 | | 0.3412 | 15.94176 | 3.72 | 0.45245 | 3.48 | 0.25628 | 1.19 | 3222 | 38 | 89.8 |
| kiker19 | 3B137-2 | | 8 | 6 | 60 | 54.1 | 10 | 777971 | 1E+06 | 04-11-02 | | 0.1947 | 17.45743 | 2.28 | 0.54797 | 2.27 | 0.23154 | 0.87 | 3062 | 28 | 97.3 |
| kiker20 | 3B118 | | 8 | 6 | 60 | 50 | 47.3 | 997433 | 1E+06 | 04-11-02 | | 0.3099 | 22.04784 | 1.78 | 0.59866 | 1.67 | 0.26825 | 0.69 | 3294 | 22 | 97.3 |
| kiker21 | 3B119 | | 8 | 6 | 60 | 39.2 | 48.8 | 407734 | 728374 | 04-11-02 | | 0.2149 | 23.88495 | 2.20 | 0.66259 | 1.96 | 0.26166 | 1.19 | 3256 | 38 | 100.8 |
| kiker22 | 3B094 | | 8 | 6 | 60 | 68.9 | 57.8 | 977101 | 1E+06 | 04-11-02 | | 0.2709 | 23.59487 | 1.96 | 0.64272 | 1.90 | 0.26686 | 0.62 | 3286 | 20 | 99.5 |
| kiker23 | 3B004 | | 8 | 6 | 60 | 58.1 | 53.3 | 348755 | 752415 | 04-11-02 | | 0.1804 | 24.46472 | 1.77 | 0.6695 | 1.78 | 0.26552 | 1.21 | 3278 | 38 | 100.9 |
| kiker24 | 3B012 | | 8 | 6 | 60 | 40.6 | 45.6 | 258022 | 491932 | 04-11-02 | | 0.1891 | 23.94297 | 3.66 | 0.67776 | 3.81 | 0.25609 | 1.36 | 3222 | 44 | 102.0 |
| kiker25 | 3B013 | | 8 | 6 | 60 | 46 | 46.9 | 372788 | 585660 | 04-11-02 | | 0.1777 | 22.32048 | 3.15 | 0.61603 | 2.98 | 0.26382 | 1.92 | 3268 | 60 | 98.4 |
| kiker26 | 3B028 | | 8 | 6 | 60 | 73 | 40.9 | 368032 | 579082 | 04-11-02 | | 0.1887 | 21.98806 | 1.53 | 0.6119 | 1.59 | 0.26144 | 0.86 | 3254 | 28 | 98.4 |
| kiker27 | 3B030 | | 8 | 6 | 60 | 54.1 | 43.1 | 271610 | 597837 | 04-11-02 | | 0.1638 | 23.92386 | 2.44 | 0.66797 | 2.23 | 0.2599 | 1.36 | 3246 | 42 | 101.2 |
| kiker28 | 3B009 | | 8 | 6 | 60 | 56.8 | 10 | 715879 | 841879 | 04-11-02 | | 0.2223 | 25.22922 | 2.39 | 0.68544 | 2.69 | 0.26709 | 1.61 | 3288 | 52 | 101.5 |
| kiker29 | 3B034 | | 8 | 6 | 60 | 46 | 10 | 878226 | 1E+06 | 04-11-02 | | 0.2606 | 21.69485 | 1.66 | 0.61094 | 1.78 | 0.2575 | 1.15 | 3230 | 36 | 98.8 |
| kiker30 | 3A14 | | 8 | 6 | 60 | 46 | 68.1 | 767031 | 1E+06 | 04-11-02 | | 0.2572 | 24.24363 | 3.61 | 0.67834 | 3.95 | 0.25987 | 1.36 | 3244 | 42 | 101.7 |
| kiker31 | 3A22 | | 8 | 6 | 60 | 78.4 | 80.2 | 1080667 | 1E+06 | 04-11-02 | | 0.2829 | 22.84419 | 1.69 | 0.62717 | 1.56 | 0.26494 | 0.89 | 3276 | 28 | 98.9 |
| kiker32 | 3A23 | | 8 | 6 | 60 | 70.3 | 55.2 | 510465 | 763950 | 04-11-02 | | 0.2449 | 22.96689 | 1.80 | 0.64042 | 1.66 | 0.26049 | 0.42 | 3248 | 14 | 99.9 |
| kiker33 | 3A06 | | 8 | 6 | 60 | 62.2 | 55.6 | 523563 | 833087 | 04-11-02 | | 0.2361 | 22.33018 | 2.55 | 0.63965 | 2.46 | 0.25372 | 1.23 | 3208 | 38 | 100.3 |
| kiker34 | 3A08 | | 8 | 6 | 60 | 35.2 | 40.8 | 528007 | 790504 | 04-11-02 | | 0.2573 | 24.97804 | 4.15 | 0.68122 | 5.05 | 0.26602 | 2.33 | 3282 | 74 | 101.4 |
| kiker35 | 3A20 | | 8 | 6 | 60 | 39.2 | 48 | 745839 | 1E+06 | 04-11-02 | | 0.2731 | 24.15984 | 2.34 | 0.65376 | 2.19 | 0.26908 | 1.69 | 3300 | 54 | 99.8 |
| kiker36 | 3A27-1 | | 8 | 6 | 60 | 48.7 | 41.3 | 416460 | 838546 | 04-11-02 | | 0.2161 | 24.29048 | 2.44 | 0.67133 | 2.29 | 0.26272 | 1.12 | 3262 | 36 | 101.2 |
| kiker37 | 3A27-2 | | 8 | 6 | 60 | 44.6 | 52.3 | 694074 | 928217 | 04-11-02 | | 0.2552 | 25.80565 | 3.13 | 0.70742 | 3.09 | 0.26438 | 1.35 | 3272 | 44 | 102.7 |
| kiker38 | 3A21 | | 8 | 6 | 60 | 48.7 | 88 | 711909 | 1E+06 | 04-11-02 | | 0.3118 | 20.21818 | 2.60 | 0.56563 | 2.34 | 0.25958 | 1.27 | 3244 | 42 | 96.2 |
| kiker39 | 3A16 | | 8 | 6 | 60 | 44.6 | 10 | 1224609 | 2E+06 | 04-11-02 | | 0.2876 | 23.52794 | 1.82 | 0.64253 | 1.72 | 0.26642 | 0.93 | 3284 | 28 | 99.5 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kiker40 | 3B090 | | 8 | 6 | 60 | 77 | 10 | 347686 | 677408 | 04-11-02 | | 0.2154 | 21.40771 | 2.90 | 0.5855 | 2.85 | 0.2653 | 0.87 | 3278 | 28 | 96.9 |
| kiker41 | 3B089 | | 8 | 6 | 60 | 81.1 | 36.8 | 444149 | 712067 | 04-11-02 | | 0.2132 | 22.08793 | 2.08 | 0.61411 | 1.75 | 0.26101 | 0.73 | 3252 | 24 | 98.6 |
| kiker42 | 3B081 | | 8 | 6 | 60 | 81.1 | 90.6 | 845564 | 759507 | 04-11-02 | | 0.2791 | 20.90262 | 1.94 | 0.5784 | 1.73 | 0.26228 | 0.87 | 3260 | 28 | 96.7 |
| kiker43 | 3B080 | | 8 | 6 | 60 | 47.3 | 70.2 | 357286 | 656680 | 04-11-02 | | 0.2577 | 23.7407 | 4.35 | 0.67027 | 3.97 | 0.25766 | 1.54 | 3232 | 50 | 101.4 |
| kiker44 | 3B055 | | 8 | 6 | 60 | 94.6 | 46 | 298273 | 501625 | 04-11-02 | | 0.2271 | 22.77696 | 1.84 | 0.64646 | 1.86 | 0.25587 | 0.77 | 3220 | 24 | 100.5 |
| kiker45 | 3B084 | | 8 | 6 | 60 | 77.1 | 33.9 | 222451 | 457950 | 04-11-02 | | 0.1597 | 23.94855 | 1.81 | 0.66077 | 1.66 | 0.2631 | 0.82 | 3264 | 26 | 100.7 |
| kiker46 | 3B051 | | 8 | 6 | 60 | 43.3 | 54.8 | 332935 | 645685 | 04-11-02 | | 0.2328 | 25.17904 | 4.19 | 0.68122 | 4.56 | 0.26897 | 1.67 | 3300 | 52 | 101.1 |
| kiker47 | 3B052 | | 8 | 6 | 60 | 60.8 | 38.4 | 376756 | 717912 | 04-11-02 | | 0.2076 | 24.62887 | 2.39 | 0.66499 | 2.24 | 0.26831 | 1.55 | 3296 | 50 | 100.5 |
| kiker48 | 3B046 | | 8 | 6 | 60 | 82.4 | 72.8 | 2854109 | 616646 | 04-11-02 | | 0.2755 | 18.09815 | 3.17 | 0.51456 | 2.78 | 0.25543 | 1.21 | 3218 | 38 | 93.7 |
| kiker49 | 3B020 | | 8 | 6 | 60 | 114.8 | 34.4 | 445507 | 731053 | 04-11-02 | | 0.2136 | 24.37289 | 1.43 | 0.67776 | 1.32 | 0.2619 | 0.46 | 3258 | 14 | 101.4 |
| kiker50 | 3B024 | | 8 | 6 | 60 | 83.8 | 25.6 | 311511 | 586993 | 04-11-02 | | 0.1744 | 23.39907 | 1.48 | 0.65242 | 1.38 | 0.26068 | 0.69 | 3250 | 22 | 100.4 |

**KB312 LA-ICP-MS U-Pb analysis**

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikeg05 | 6F01 | | 5 | 6 | 40 | 63.5 | 10 | 19207 | 73161 | 26-02-02 | | 0.1004 | 31.99102 | 3.94 | 0.70358 | 3.47 | 0.3285 | 1.96 | 3610 | 60 | 98.9 |
| kikeg06 | 6F02 | | 10 | 6 | 40 | 27.1 | 10 | 58774 | 170634 | 26-02-02 | | 0.0978 | 28.58229 | 2.67 | 0.61594 | 2.97 | 0.33666 | 1.86 | 3646 | 56 | 94.9 |
| kikeg07 | 6F03 | | 8 | 6 | 40 | 27 | 10 | 121868 | 169677 | 26-02-02 | | 0.1513 | 19.09344 | 6.42 | 0.51869 | 5.95 | 0.26603 | 2.52 | 3282 | 78 | 93.4 |
| kikeg08 | 6F04 | | 7 | 6 | 40 | 14.9 | 10 | 41348 | 103211 | 26-02-02 | x | 0.2155 | 19.82667 | 7.23 | 0.57437 | 9.34 | 0.25108 | 6.92 | 3190 | 220 | 97.2 |
| kikeg09 | 6F05 | | 7 | 6 | 40 | 35.2 | 10 | 63675 | 142436 | 26-02-02 | | 0.1951 | 23.57302 | 3.59 | 0.68371 | 4.65 | 0.2507 | 2.97 | 3188 | 94 | 102.6 |
| kikeg10 | 6F06 | crack | 7 | 6 | 40 | 25.7 | 10 | 57824 | 110129 | 26-02-02 | x | 0.1708 | 0 | 0.00 | 0 | 0.00 | 0.25199 | 5.91 | 3196 | 186 | 0.0 |
| kikeg11 | 6F08 | | 5 | 6 | 40 | 35.1 | 10 | | | 26-02-02 | | 0.1636 | 20.67359 | 3.48 | 0.58166 | 3.20 | 0.25876 | 3.79 | 3238 | 118 | 97.1 |
| kikeg12 | 6F09 | | 5 | 6 | 40 | 37.9 | 10 | 69150 | 138730 | 26-02-02 | | 0.2251 | 21.88624 | 3.66 | 0.59952 | 2.29 | 0.26584 | 4.18 | 3280 | 130 | 97.5 |
| kikeg13 | 6F10 | | 5 | 6 | 40 | 33.8 | 10 | 60988 | 146594 | 26-02-02 | | 0.2024 | 22.4422 | 4.21 | 0.64522 | 5.38 | 0.25223 | 4.84 | 3198 | 152 | 100.8 |
| kikeg14 | 6F11 | crack | 5 | 6 | 40 | 29.7 | 10 | 24506 | 69709 | 26-02-02 | | 0.1651 | 22.60919 | 4.29 | 0.64426 | 3.06 | 0.25509 | 3.59 | 3216 | 114 | 100.4 |
| kikeg15 | 6F12 | | 5 | 6 | 40 | 33.8 | 10 | 119096 | 231768 | 26-02-02 | | 0.245 | 21.89104 | 4.94 | 0.59674 | 4.12 | 0.26588 | 4.20 | 3280 | 132 | 97.5 |
| kikeg16 | 6F13 | | 5 | 6 | 40 | 28.4 | 73.6 | 232334 | 287364 | 26-02-02 | | 0.2779 | 14.42854 | 4.23 | 0.39936 | 5.27 | 0.26349 | 5.06 | 3266 | 160 | 85.7 |
| kikeg17 | 6F14 | thin | 5 | 6 | 40 | 14.9 | 10 | 6335 | 17684 | 26-02-02 | x | 0.3543 | 16.87589 | 22.69 | 0.46176 | 16.37 | 0.26612 | 19.14 | 3282 | 610 | 89.8 |
| kikeg18 | 6F15 | | 5 | 6 | 40 | 27 | 10 | 49291 | 105923 | 26-02-02 | | 0.1999 | 20.63233 | 3.90 | 0.56122 | 4.28 | 0.26684 | 4.20 | 3286 | 134 | 95.6 |
| kikeg19 | 6F16 | dirty | 5 | 6 | 40 | 35.2 | 10 | 112097 | 276698 | 26-02-02 | | 0.1501 | 17.41921 | 3.19 | 0.50736 | 3.71 | 0.24797 | 3.89 | 3170 | 124 | 93.9 |
| kikeg20 | 6F17 | zoned | 5 | 6 | 40 | 58.1 | 10 | 491784 | 218755 | 26-02-02 | | 0.2591 | 15.10023 | 4.46 | 0.41818 | 4.03 | 0.26217 | 2.23 | 3258 | 70 | 87.2 |
| kikeg21 | 6F18 | crack | 5 | 6 | 40 | 63.5 | 10 | 24878 | 62375 | 26-02-02 | | 0.1769 | 23.26608 | 3.74 | 0.64243 | 3.54 | 0.26232 | 2.38 | 3260 | 74 | 99.9 |
| kikeg22 | 6F19 | incl | 7 | 6 | 40 | 81.1 | 10 | 17949 | 44507 | 26-02-02 | | 0.1565 | 22.1332 | 3.64 | 0.6047 | 3.10 | 0.26549 | 1.92 | 3278 | 60 | 97.9 |
| kikeg23 | 6F20 | | 6 | 6 | 40 | 43.2 | 10 | 20870 | 69793 | 26-02-02 | | 0.1306 | 21.75767 | 6.67 | 0.6241 | 5.83 | 0.25276 | 6.39 | 3202 | 202 | 99.7 |
| kikeg24 | 6F21 | | 6 | 6 | 40 | 58.1 | 10 | 20938 | 51016 | 26-02-02 | | 0.1542 | 23.10791 | 3.39 | 0.71242 | 9.06 | 0.23426 | 3.23 | 3080 | 104 | 105.6 |
| kikeg25 | 6F22 | | 6 | 6 | 40 | 50 | 10 | 30317 | 74411 | 26-02-02 | | 0.1654 | 22.79274 | 3.34 | 0.62035 | 3.81 | 0.2672 | 2.28 | 3288 | 72 | 98.5 |
| kikeg26 | 6F23 | | 6 | 6 | 40 | 52.7 | 10 | 17993 | 48691 | 26-02-02 | | 0.1517 | 21.67201 | 3.45 | 0.61037 | 3.65 | 0.25846 | 2.32 | 3236 | 72 | 98.5 |
| kikeg27 | 6F24 | | 6 | 6 | 40 | 44.6 | 10 | 17222 | 43051 | 26-02-02 | x | 0.1798 | 25.17787 | 22.15 | 0.62755 | 4.05 | 0.29114 | 18.01 | 3422 | 568 | 97.5 |
| kikeg28 | 6F25 | | 6 | 6 | 40 | 50 | 89.9 | 169002 | 383787 | 26-02-02 | | 0.2579 | 21.97033 | 6.82 | 0.59434 | 3.41 | 0.26935 | 4.82 | 3302 | 150 | 97.0 |
| kikeg29 | 6F26 | | 6 | 6 | 40 | 56.8 | 10 | 103793 | 139482 | 26-02-02 | | 0.255 | 21.66359 | 4.44 | 0.6431 | 7.44 | 0.24304 | 3.00 | 3138 | 96 | 101.6 |
| kikeg30 | 6F27 | | 6 | 6 | 40 | 50 | 10 | 45338 | 178709 | 26-02-02 | x | 0.1288 | 0.441098 | 5.67 | 0.04915 | 3.96 | 0.06507 | 4.97 | 776 | 208 | 48.6 |
| kikeg31 | 6F28 | | 6 | 6 | 40 | 68.9 | 10 | 12870 | 42932 | 26-02-02 | | 0.1411 | 19.66213 | 4.52 | 0.55555 | 5.69 | 0.25651 | 3.02 | 3224 | 96 | 96.0 |
| kikeg32 | 6F29 | | 6 | 6 | 40 | 47.3 | 10 | 223723 | 133958 | 26-02-02 | | 0.2649 | 17.37775 | 4.17 | 0.47213 | 3.30 | 0.26667 | 1.49 | 3286 | 46 | 90.5 |
| kikeg33 | 6F30 | | 6 | 6 | 30 | 46 | 10 | 7590 | 21358 | 26-02-02 | | 0.1402 | 21.60508 | 6.71 | 0.57802 | 4.56 | 0.26812 | 4.98 | 3294 | 156 | 96.7 |
| kikeg34 | 6F31 | thin | 6 | 6 | 40 | 25.7 | 185.8 | 445656 | 1E+06 | 26-02-02 | | 0.204 | 16.57102 | 6.69 | 0.49363 | 9.71 | 0.2442 | 4.68 | 3146 | 148 | 93.1 |
| kikeg35 | 6F32 | | 6 | 6 | 40 | 36.5 | 10 | 255151 | 510740 | 26-02-02 | | 0.2278 | 22.79764 | 5.61 | 0.6265 | 3.59 | 0.26611 | 7.19 | 3282 | 226 | 98.7 |
| kikeg36 | 6F33 | | 6 | 6 | 40 | 35.2 | 10 | 50294 | 119169 | 26-02-02 | | 0.1883 | 20.57706 | 4.06 | 0.58666 | 4.42 | 0.25449 | 2.46 | 3212 | 78 | 97.7 |
| kikeg37 | 6F34 | | 6 | 6 | 40 | 33.8 | 10 | 33773 | 76846 | 26-02-02 | | 0.1803 | 21.42545 | 4.24 | 0.59021 | 3.59 | 0.26252 | 3.63 | 3260 | 114 | 97.5 |
| kikeg38 | 6F35 | | 6 | 6 | 40 | 47.3 | 10 | 69553 | 107391 | 26-02-02 | | 0.2154 | 19.48113 | 2.51 | 0.53808 | 2.86 | 0.26248 | 2.73 | 3260 | 84 | 94.6 |
| kikeg39 | 6F36 | | 6 | 6 | 40 | 27.1 | 10 | 49986 | 138786 | 26-02-02 | | 0.19 | 19.00583 | 5.45 | 0.50746 | 8.15 | 0.27266 | 6.05 | 3320 | 190 | 92.2 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikeg40 | 6F37 | thin | 6 | 6 | 40 | 24.4 | 10 | 40927 | 91683 | 26-02-02 | | 0.2274 | 22.02246 | 4.52 | 0.58973 | 5.77 | 0.27099 | 5.79 | 3310 | 182 | 96.8 |
| kikeg41 | 6F38 | | 6 | 6 | 40 | 40.6 | 10 | 76157 | 161580 | 26-02-02 | | 0.3015 | 21.1976 | 3.27 | 0.58157 | 2.80 | 0.2657 | 2.28 | 3280 | 72 | 96.6 |
| kikeg42 | 6F39 | | 6 | 6 | 40 | 35.2 | 10 | 19503 | 45652 | 26-02-02 | | 0.197 | 12.31644 | 2.70 | 0.46589 | 2.72 | 0.19083 | 2.80 | 2748 | 92 | 96.4 |
| kikeg43 | 6F40 | | 6 | 6 | 40 | 41.9 | 10 | 46665 | 177857 | 26-02-02 | x | 0.1465 | 22.04696 | 16.85 | 0.55574 | 2.95 | 0.28888 | 14.75 | 3410 | 462 | 94.0 |
| kikeg44 | 6F41 | | 6 | 6 | 40 | 39.2 | 10 | 34137 | 147488 | 26-02-02 | x | 0.0983 | 4.964092 | 3.43 | 0.31882 | 2.77 | 0.11392 | 2.87 | 1862 | 102 | 98.3 |
| kikeg45 | 6F42 | | 6 | 6 | 40 | 44.6 | 10 | 34897 | 62092 | 26-02-02 | x | 0.2354 | 0 | 0.00 | 0.26803 | 2.97 | | | | | |
| kikeg46 | 6F43 | | 6 | 6 | 40 | 37.9 | 10 | 32983 | 77069 | 26-02-02 | | 0.1602 | 21.29716 | 3.68 | 0.61056 | 3.37 | 0.25361 | 2.09 | 3206 | 66 | 98.9 |
| kikeg47 | 6F44 | | 6 | 6 | 40 | 40.6 | 10 | 40988 | 80431 | 26-02-02 | | 0.1449 | 19.46437 | 3.15 | 0.56064 | 3.31 | 0.2532 | 1.94 | 3204 | 62 | 96.3 |
| kikeg48 | 6F45 | | 6 | 6 | 40 | 48.7 | 10 | 38499 | 80198 | 26-02-02 | | 0.1767 | 23.59566 | 7.89 | 0.70838 | 9.62 | 0.24185 | 2.95 | 3132 | 94 | 104.5 |
| kikeg49 | 6F46 | | 6 | 6 | 40 | 29.7 | 10 | 97657 | 155741 | 26-02-02 | | 0.2318 | 21.0162 | 5.24 | 0.60259 | 6.24 | 0.25348 | 3.13 | 3206 | 98 | 98.5 |
| kikeg50 | 6G01 | zoned | 6 | 6 | 60 | 71.6 | 10 | 95666 | 235053 | 26-02-02 | | 0.2218 | 23.00971 | 2.90 | 0.62938 | 2.81 | 0.26685 | 2.01 | 3286 | 64 | 98.8 |
| kikeg51 | 6G02 | | 6 | 6 | 60 | 73 | 10 | 200573 | 429157 | 26-02-02 | | 0.2282 | 20.9085 | 2.78 | 0.55978 | 2.57 | 0.2709 | 1.74 | 3310 | 56 | 95.3 |
| kikeg52 | 6G03 | | 6 | 6 | 60 | 110.8 | 131.5 | 299895 | 724629 | 26-02-02 | | 0.2123 | 15.28143 | 3.55 | 0.47328 | 3.31 | 0.23397 | 1.76 | 3078 | 56 | 92.7 |
| kikeg53 | 6G04 | | 6 | 6 | 60 | 60.8 | 10 | 20923 | 77181 | 26-02-02 | | 0.1471 | 21.39712 | 2.25 | 0.59232 | 2.14 | 0.26212 | 2.56 | 3258 | 80 | 97.5 |
| kikeg54 | 6G05 | | 6 | 6 | 40 | 44.6 | 10 | 66489 | 140748 | 26-02-02 | | 0.2142 | 22.68377 | 2.60 | 0.62659 | 2.76 | 0.26186 | 1.43 | 3256 | 46 | 99.3 |
| kikeg55 | 6G06 | | 6 | 6 | 40 | 125.7 | 10 | 26239 | 55880 | 26-02-02 | | 0.1786 | 23.24305 | 2.81 | 0.65069 | 2.68 | 0.26034 | 1.28 | 3248 | 40 | 100.3 |
| kikeg56 | 6G07 | | 6 | 6 | 40 | 66.2 | 10 | 45175 | 85373 | 26-02-02 | | 0.1869 | 20.33275 | 2.68 | 0.56966 | 2.77 | 0.26126 | 1.80 | 3254 | 58 | 96.1 |
| kikeg57 | 6G08 | | 6 | 6 | 40 | 70.3 | 10 | 28888 | 74408 | 26-02-02 | | 0.1479 | 20.86332 | 2.65 | 0.60365 | 2.08 | 0.24853 | 1.62 | 3174 | 52 | 99.3 |
| kikeg58 | 6G09 | thin | 6 | 6 | 40 | 32.5 | 10 | 73777 | 159152 | 26-02-02 | | 0.1971 | 19.31413 | 4.12 | 0.52502 | 4.49 | 0.2665 | 3.25 | 3284 | 102 | 93.7 |
| kikeg59 | 6G10 | | 6 | 6 | 40 | 108.1 | 10 | 47370 | 112225 | 26-02-02 | | 0.1987 | 19.13783 | 2.71 | 0.55094 | 2.67 | 0.25034 | 1.22 | 3186 | 40 | 96.3 |
| kikeg60 | 6G11 | | 6 | 6 | 40 | 43.3 | 10 | 58631 | 124652 | 26-02-02 | | 0.2027 | 22.14516 | 2.11 | 0.63763 | 2.22 | 0.2509 | 1.55 | 3190 | 50 | 100.6 |
| kikeg61 | 6G12 | | 6 | 6 | 40 | 43.3 | 10 | 57565 | 168491 | 26-02-02 | | 0.1379 | 16.9737 | 1.85 | 0.50045 | 2.47 | 0.24703 | 1.69 | 3164 | 54 | 93.3 |
| kikeg62 | 6G13 | | 6 | 6 | 40 | 40.6 | 324.6 | 222849 | 791811 | 26-02-02 | | 0.1901 | 10.68876 | 5.48 | 0.35405 | 2.66 | 0.21901 | 3.29 | 2972 | 106 | 84.6 |
| kikeg63 | 6G14 | | 6 | 6 | 60 | 52.7 | 10 | 53238 | 114754 | 26-02-02 | | 0.1902 | 22.27707 | 2.13 | 0.61824 | 2.80 | 0.26206 | 1.56 | 3258 | 48 | 98.7 |
| kikeg64 | 6G15 | | 6 | 6 | 60 | 29.8 | 10 | 31730 | 111890 | 26-02-02 | | 0.1788 | 18.94448 | 5.36 | 0.53002 | 6.13 | 0.25827 | 4.32 | 3236 | 136 | 94.5 |
| kikeg65 | 6G16 | | 6 | 6 | 60 | 156.8 | 10 | 28026 | 85242 | 26-02-02 | | 0.1361 | 22.51452 | 2.48 | 0.62717 | 1.95 | 0.26014 | 2.47 | 3246 | 76 | 99.4 |
| kikeg66 | 6G17 | | 6 | 6 | 60 | 24.4 | 10 | 6585 | 23185 | 26-02-02 | | 0.0861 | 15.57524 | 3.71 | 0.50035 | 3.62 | 0.2266 | 3.61 | 3028 | 116 | 94.8 |
| kikeg67 | 6G18 | | 6 | 6 | 60 | 31.1 | 10 | 532 | 10776 | 26-02-02 | | 0.0176 | 14.00567 | 5.19 | 0.51571 | 3.51 | 0.19663 | 5.69 | 2798 | 186 | 99.0 |

## KB746 LA-ICP-MS U-Pb analysis

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikek57 | 5D01 | | 5 | 6 | 60 | 108.1 | 50.2 | 76080 | 168408 | 06-03-02 | | 0.2219 | 14.2091 | 2.41 | 0.4921 | 2.27 | 0.2094 | 1.33 | 2900 | 44 | 96.0 |
| kikek58 | 5D02 | | 5 | 6 | 60 | 66.2 | 10 | 76894 | 157642 | 06-03-02 | | 0.2014 | 16.5531 | 2.05 | 0.5763 | 2.08 | 0.2080 | 1.34 | 2888 | 44 | 101.4 |
| kikek59 | 5D03 | | 5 | 6 | 60 | 105.4 | 10 | 73669 | 164278 | 06-03-02 | | 0.1918 | 16.4194 | 2.51 | 0.5986 | 8.64 | 0.1991 | 1.97 | 2818 | 64 | 103.7 |
| kikek60 | 5D04 | | 5 | 6 | 60 | 83.8 | 10 | 94221 | 230425 | 06-03-02 | | 0.1834 | 21.7486 | 3.05 | 0.5934 | 2.65 | 0.2658 | 1.74 | 3280 | 56 | 97.3 |
| kikek61 | 5D05 | | 5 | 6 | 60 | 79.8 | 10 | 52493 | 151851 | 06-03-02 | | 0.1766 | 14.2852 | 2.65 | 0.4874 | 2.50 | 0.2123 | 1.56 | 2922 | 50 | 95.4 |
| kikek62 | 5D06 | | 5 | 6 | 60 | 66.2 | 10 | 114697 | 300074 | 06-03-02 | | 0.1793 | 13.2377 | 4.29 | 0.4454 | 4.75 | 0.2158 | 2.44 | 2948 | 80 | 92.1 |
| kikek63 | 5D07 | | 5 | 6 | 60 | 104.1 | 10 | 104084 | 225814 | 06-03-02 | x | 0.1825 | 16.4511 | 8.33 | 0.5343 | 2.21 | 0.2232 | 5.74 | 3002 | 184 | 97.4 |
| kikek64 | 5D08 | | 5 | 6 | 60 | 87.8 | 10 | 62628 | 139016 | 06-03-02 | | 0.2127 | 16.1529 | 2.87 | 0.5527 | 3.33 | 0.2110 | 1.55 | 2912 | 52 | 99.8 |
| kikek65 | 5D09 | | 5 | 6 | 60 | 120.3 | 10 | 72719 | 180432 | 06-03-02 | | 0.2924 | 16.6829 | 2.23 | 0.5611 | 2.03 | 0.2147 | 1.26 | 2940 | 40 | 99.9 |
| kikek66 | 5D10 | | 5 | 6 | 60 | 114.9 | 10 | 64952 | 138527 | 06-03-02 | | 0.2102 | 15.2674 | 2.21 | 0.5113 | 2.07 | 0.2168 | 1.38 | 2956 | 44 | 96.4 |
| kikel01 | 5D12 | | 7 | 6 | 60 | 79.7 | 10 | 180921 | 282554 | 07-03-02 | | 0.2990 | 16.0348 | 1.80 | 0.5331 | 1.94 | 0.2173 | 1.09 | 2960 | 36 | 97.9 |
| kikel02 | 5D13 | | 8 | 6 | 60 | 58.1 | 102.4 | 140743 | 412254 | 07-03-02 | | 0.1649 | 17.4197 | 2.89 | 0.5647 | 2.43 | 0.2240 | 1.57 | 3008 | 52 | 99.0 |
| kikel03 | 5D14 | | 7 | 6 | 60 | 63.5 | 58.6 | 137939 | 323592 | 07-03-02 | | 0.2060 | 16.2245 | 2.20 | 0.5366 | 2.56 | 0.2191 | 2.86 | 2974 | 92 | 97.8 |
| kikel04 | 5D15 | | 7 | 6 | 60 | 67.6 | 10 | 80170 | 214726 | 07-03-02 | | 0.1708 | 16.3935 | 1.93 | 0.5579 | 1.84 | 0.2114 | 1.51 | 2916 | 50 | 100.1 |
| kikel05 | 5D16 | crack | 7 | 6 | 60 | 85.1 | 10 | 286151 | 509347 | 07-03-02 | | 0.2818 | 15.4511 | 2.05 | 0.5041 | 1.97 | 0.2230 | 1.27 | 3002 | 42 | 95.4 |
| kikel06 | 5D17 | | 7 | 6 | 60 | 96 | 245.4 | 188880 | 891034 | 07-03-02 | | 0.1533 | 14.5953 | 2.67 | 0.4474 | 2.18 | 0.2385 | 1.19 | 3108 | 38 | 90.3 |
| kikel07 | 5D18 | | 7 | 6 | 60 | 96 | 10 | 184739 | 472028 | 07-03-02 | | 0.1768 | 16.0086 | 2.66 | 0.5260 | 2.43 | 0.2217 | 1.31 | 2992 | 42 | 96.8 |
| kikel08 | 5D19 | | 7 | 6 | 60 | 77.1 | 10 | 92914 | 215069 | 07-03-02 | | 0.1897 | 17.6253 | 1.85 | 0.5802 | 1.56 | 0.2206 | 1.47 | 2984 | 48 | 100.2 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikel09 | 5D20 | | 7 | 6 | 60 | 37.9 | 10 | 108025 | 269421 | 07-03-02 | | 0.1983 | 16.8931 | 1.95 | 0.5626 | 1.63 | 0.2193 | 1.67 | 2974 | 54 | 99.1 |
| kikel10 | 5D21 | | 7 | 6 | 60 | 87.9 | 122.9 | 230495 | 662572 | 07-03-02 | | 0.1794 | 18.0014 | 2.50 | 0.5108 | 2.08 | 0.2558 | 1.21 | 3220 | 40 | 93.4 |
| kikel11 | 5D22 | | 7 | 6 | 60 | 83.8 | 10 | 110395 | 293257 | 07-03-02 | | 0.1878 | 17.9735 | 7.70 | 0.5631 | 3.00 | 0.2317 | 7.90 | 3062 | 254 | 98.2 |
| kikel12 | 5D23 | zoned | 7 | 6 | 60 | 58.1 | 10 | 234535 | 528259 | 07-03-02 | | 0.1759 | 14.5396 | 3.37 | 0.5028 | 3.36 | 0.2100 | 1.29 | 2904 | 42 | 96.6 |
| kikel13 | 5D24 | | 7 | 6 | 60 | 121.7 | 10 | 73807 | 144876 | 07-03-02 | | 0.2288 | 15.6109 | 2.93 | 0.5432 | 2.77 | 0.2085 | 1.43 | 2892 | 46 | 99.3 |
| kikel14 | 5D25 | | 7 | 6 | 60 | 86.5 | 10 | 98199 | 225909 | 07-03-02 | | 0.2201 | 15.8501 | 1.70 | 0.5256 | 1.85 | 0.2185 | 1.25 | 2970 | 40 | 97.2 |
| kikel15 | 5D26 | | 7 | 6 | 60 | 66.2 | 120.9 | 70766 | 209486 | 07-03-02 | x | 0.2119 | 16.2301 | 15.75 | 0.5328 | 3.05 | 0.2218 | 16.81 | 2992 | 548 | 97.3 |
| kikel16 | 5D27 | | 7 | 6 | 60 | 58.1 | 10 | 80765 | 245851 | 07-03-02 | | 0.1813 | 15.7475 | 2.64 | 0.5257 | 2.47 | 0.2156 | 1.83 | 2948 | 58 | 97.7 |
| kikel17 | 5D28 | | 7 | 6 | 60 | 78.4 | 10 | 127432 | 327438 | 07-03-02 | | 0.2180 | 16.4581 | 4.25 | 0.5280 | 2.48 | 0.2261 | 3.48 | 3024 | 112 | 96.7 |
| kikel18 | 5D29 | | 7 | 6 | 60 | 47.3 | 10 | 111991 | 254841 | 07-03-02 | | 0.2659 | 14.9753 | 3.03 | 0.4896 | 3.62 | 0.2208 | 1.82 | 2986 | 58 | 94.9 |
| kikel19 | 5D30 | | 7 | 6 | 60 | 47.3 | 89.2 | 114636 | 255091 | 07-03-02 | | 0.2888 | 14.2811 | 3.05 | 0.4716 | 3.49 | 0.2213 | 3.70 | 2988 | 120 | 93.3 |
| kikel20 | 5D31 | | 7 | 6 | 60 | 63.5 | 10 | 118905 | 336891 | 07-03-02 | | 0.1736 | 18.0541 | 4.97 | 0.5841 | 2.35 | 0.2252 | 4.93 | 3016 | 158 | 99.9 |
| kikel21 | 5D32 | high U | 7 | 6 | 60 | 100 | 93.5 | 177747 | 760411 | 07-03-02 | | 0.1206 | 10.7026 | 4.97 | 0.3445 | 3.80 | 0.2247 | 1.46 | 3014 | 48 | 83.5 |
| kikel22 | 5D33 | | 7 | 6 | 60 | 44.6 | 70.4 | 144744 | 480997 | 07-03-02 | | 0.1763 | 14.1320 | 3.57 | 0.4713 | 2.87 | 0.2169 | 2.09 | 2956 | 68 | 94.0 |
| kikel23 | 5D34 | | 7 | 6 | 60 | 98.7 | 10 | 86665 | 225451 | 07-03-02 | x | 0.1941 | 16.7121 | 2.11 | 0.7074 | 23.41 | 0.1717 | 2.41 | 2574 | 80 | 114.1 |
| kikel24 | 5D35 | | 7 | 6 | 60 | 51.4 | 10 | 142086 | 462993 | 07-03-02 | | 0.1664 | 14.2403 | 3.41 | 0.4879 | 3.74 | 0.2127 | 2.08 | 2924 | 68 | 95.2 |
| kikel25 | 5D36 | | 7 | 6 | 60 | 43.3 | 10 | 170934 | 486265 | 07-03-02 | | 0.2096 | 17.2670 | 2.99 | 0.5854 | 2.57 | 0.2143 | 1.92 | 2938 | 62 | 101.1 |
| kikel26 | 5D37 | | 7 | 6 | 60 | 31.1 | 123.8 | 72441 | 269666 | 07-03-02 | | 0.2158 | 18.2986 | 3.64 | 0.6232 | 4.14 | 0.2129 | 2.48 | 2926 | 80 | 103.4 |
| kikel27 | 5D38 | | 7 | 6 | 60 | 46 | 249.6 | 95203 | 390998 | 07-03-02 | | 0.1683 | 16.5790 | 4.08 | 0.5639 | 3.28 | 0.2122 | 3.25 | 2922 | 104 | 100.3 |
| kikel28 | 5D39 | | 7 | 6 | 60 | 41.9 | 46 | 142722 | 478707 | 07-03-02 | | 0.1777 | 17.7241 | 3.28 | 0.5776 | 2.53 | 0.2207 | 2.66 | 2984 | 86 | 100.3 |
| kikel29 | 5D40 | | 7 | 6 | 60 | 106.7 | 10 | 93224 | 219969 | 07-03-02 | | 0.2012 | 14.5213 | 2.51 | 0.5020 | 2.35 | 0.2086 | 1.10 | 2894 | 36 | 96.9 |
| kikel30 | 5D41 | | 7 | 6 | 60 | 79.8 | 77.3 | 81226 | 254758 | 07-03-02 | x | 0.1573 | 18.7055 | 21.19 | 0.6384 | 15.71 | 0.2119 | 1.26 | 2920 | 42 | 104.3 |
| kikel31 | 5D42 | | 7 | 6 | 60 | 73 | 10 | 53498 | 122033 | 07-03-02 | | 0.2056 | 14.6292 | 2.46 | 0.4945 | 3.07 | 0.2144 | 1.90 | 2938 | 62 | 95.7 |
| kikel32 | 5D43 | | 7 | 6 | 60 | 89.2 | 10 | 65816 | 145845 | 07-03-02 | x | 0.1729 | 14.6468 | 2.12 | 0.7072 | 20.48 | 0.1493 | 2.70 | 2336 | 92 | 120.4 |
| kikel33 | 5D44 | | 7 | 6 | 60 | 70.3 | 10 | 87668 | 219566 | 07-03-02 | | 0.1835 | 17.0559 | 2.32 | 0.5825 | 3.50 | 0.2122 | 2.39 | 2922 | 78 | 101.2 |
| kikel34 | 5D45 | | 7 | 6 | 60 | 97.3 | 10 | 42171 | 107843 | 07-03-02 | | 0.2137 | 16.7638 | 4.93 | 0.5577 | 2.58 | 0.2172 | 4.67 | 2958 | 150 | 99.4 |
| kikel35 | 5D46 | | 7 | 6 | 60 | 147.3 | 10 | 80436 | 150789 | 07-03-02 | | 0.2491 | 17.0908 | 1.72 | 0.6100 | 2.03 | 0.2026 | 1.19 | 2846 | 40 | 104.0 |
| kikel36 | 5D47 | | 7 | 6 | 60 | 46 | 10 | 52461 | 177866 | 07-03-02 | | 0.2048 | 16.3244 | 2.79 | 0.5600 | 2.76 | 0.2102 | 2.65 | 2906 | 86 | 100.3 |
| kikel37 | 5D48 | | 7 | 6 | 60 | 105.4 | 10 | 51539 | 168312 | 07-03-02 | x | 0.2129 | 18.3250 | 23.94 | 0.5038 | 2.47 | 0.2627 | 13.36 | 3262 | 424 | 92.8 |
| kikel38 | 5D49 | | 7 | 6 | 60 | 55.4 | 10 | 67812 | 211768 | 07-03-02 | | 0.1785 | 14.6585 | 2.86 | 0.5190 | 2.76 | 0.2029 | 1.76 | 2848 | 58 | 98.8 |
| kikel39 | 5D50 | | 7 | 6 | 60 | 31.1 | 1264 | 80105 | 199450 | 07-03-02 | | 0.7148 | 15.8590 | 5.29 | 0.5820 | 3.40 | 0.1970 | 4.74 | 2800 | 156 | 103.1 |
| kikel40 | 5D51 | | 7 | 6 | 60 | 97.3 | 10 | 102085 | 303042 | 07-03-02 | | 0.1741 | 16.0921 | 2.88 | 0.5492 | 2.75 | 0.2117 | 2.48 | 2918 | 80 | 99.5 |
| kikel41 | 5D52 | | 7 | 6 | 60 | 66.2 | 10 | 63815 | 181579 | 07-03-02 | | 0.2139 | 14.6368 | 3.12 | 0.4976 | 2.62 | 0.2118 | 2.01 | 2918 | 64 | 96.3 |
| kikel42 | 5D53 | | 7 | 6 | 60 | 59.5 | 405.1 | 398197 | 1E+06 | 07-03-02 | | 0.2273 | 10.7171 | 2.69 | 0.4156 | 2.51 | 0.1867 | 1.60 | 2712 | 52 | 92.8 |
| kikel43 | 5D54 | | 7 | 6 | 60 | 48.7 | 10 | 76509 | 266362 | 07-03-02 | | 0.1927 | 16.4939 | 2.66 | 0.5604 | 2.77 | 0.2123 | 1.56 | 2922 | 50 | 100.1 |
| kikel44 | 5D55 | | 7 | 6 | 60 | 55.4 | 105.4 | 53364 | 205594 | 07-03-02 | | 0.2092 | 14.9674 | 2.96 | 0.5204 | 3.45 | 0.2081 | 2.47 | 2890 | 80 | 98.0 |
| kikel45 | 5D56 | | 5 | 6 | 60 | 46 | 112.5 | 38177 | 156450 | 07-03-02 | | 0.2572 | 14.8248 | 2.68 | 0.4832 | 1.68 | 0.2229 | 2.18 | 3000 | 70 | 94.1 |
| kikel46 | 5D57 | | 5 | 6 | 60 | 52.7 | 10 | 69895 | 279641 | 07-03-02 | | 0.1787 | 14.9179 | 2.81 | 0.5168 | 2.64 | 0.2091 | 1.87 | 2898 | 62 | 97.6 |
| kikel47 | 5D58 | | 5 | 6 | 60 | 85.1 | 10 | 80076 | 276058 | 07-03-02 | | 0.1720 | 16.0770 | 2.19 | 0.5366 | 2.08 | 0.2167 | 2.02 | 2956 | 66 | 98.1 |
| kikel48 | 5D59 | | 5 | 6 | 60 | 113.6 | 10 | 117085 | 456359 | 07-03-02 | | 0.1562 | 16.0498 | 1.78 | 0.5416 | 1.75 | 0.2136 | 1.23 | 2932 | 40 | 98.9 |
| kikel49 | 5D60 | | 7 | 6 | 60 | 93.3 | 10 | 74359 | 256644 | 07-03-02 | | 0.1738 | 15.5133 | 2.30 | 0.5486 | 2.33 | 0.2047 | 1.81 | 2864 | 58 | 100.1 |
| kikel50 | 5D61 | | 5 | 6 | 60 | 73 | 10 | 48236 | 203331 | 07-03-02 | | 0.1691 | 16.1502 | 1.81 | 0.5407 | 1.40 | 0.2149 | 1.49 | 2942 | 48 | 98.7 |
| kikel51 | 5D62 | | 5 | 6 | 60 | 62.2 | 10 | 149497 | 480733 | 07-03-02 | | 0.1938 | 15.1532 | 3.24 | 0.5118 | 2.80 | 0.2127 | 1.71 | 2926 | 54 | 97.2 |
| kikel52 | 5D63 | | 5 | 6 | 60 | 147.4 | 10 | 34069 | 91250 | 07-03-02 | | 0.1847 | 16.3175 | 1.93 | 0.5570 | 1.85 | 0.2116 | 1.23 | 2916 | 40 | 100.0 |
| kikem23 | 5D12b | 2nd int | 7 | 6 | 60 | 40.6 | 10 | 57309 | 109489 | 07-03-02 | | 0.1864 | 19.0060 | 3.68 | 0.6472 | 3.95 | 0.2126 | 2.65 | 2924 | 86 | 104.7 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikem24 | 5D20b | 2nd int | 7 | 6 | 60 | 45.9 | 64.6 | 103277 | 176121 | 07-03-02 | | 0.2160 | 18.2116 | 3.74 | 0.6104 | 4.37 | 0.2166 | 3.53 | 2954 | 114 | 102.2 |
| kikem25 | 5D35b | 2nd int | 7 | 6 | 60 | 28.4 | 10 | 1657 | 4095 | 07-03-02 | x | 0.1474 | 41.2937 | 12.50 | 1.5547 | 11.03 | 0.1941 | 4.94 | 2776 | 162 | 137.7 |
| kikem26 | 5D50b | 2nd int | 7 | 6 | 60 | 56.8 | 10 | 41224 | 97678 | 07-03-02 | | 0.1856 | 17.8576 | 3.68 | 0.5957 | 4.24 | 0.2170 | 2.76 | 2958 | 90 | 101.5 |

## KB757 LA-ICP-MS U-Pb analysis

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikeh66 | 5B01 | | 5 | 6 | 60 | 82.4 | 215.2 | 63298 | 282646 | 27-02-02 | | 0.20160 | 15.85963 | 8.83 | 0.49248 | 6.40 | 0.23393 | 6.53 | 3078 | 208 | 93.8 |
| kikeh67 | 5B02 | | 5 | 6 | 60 | 110.9 | 365 | 117196 | 300461 | 27-02-02 | | 0.28070 | 16.14423 | 5.02 | 0.52147 | 7.34 | 0.22406 | 2.91 | 3010 | 94 | 96.5 |
| kikeh68 | 5B03 | | 7 | 6 | 60 | 66.2 | 1712 | 337200 | 634679 | 27-02-02 | | 0.49400 | 8.24925 | 5.65 | 0.27994 | 3.77 | 0.21325 | 3.38 | 2930 | 108 | 77.7 |
| kikeh69 | 5B04 | | 7 | 6 | 60 | 104.1 | 165.5 | 68125 | 285712 | 27-02-02 | x | 0.16670 | 16.18813 | 15.65 | 0.49690 | 5.66 | 0.23653 | 12.35 | 3096 | 396 | 93.9 |
| kikeh70 | 5B05 | | 7 | 6 | 60 | 101.4 | 266.6 | 62343 | 277474 | 27-02-02 | x | 0.23450 | 13.88748 | 8.29 | 0.49632 | 12.68 | 0.20184 | 7.18 | 2840 | 234 | 97.2 |
| kikeh71 | 5B06 | | 7 | 6 | 60 | 121.7 | 90.8 | 439314 | 249789 | 27-02-02 | | 0.14510 | 15.09680 | 3.70 | 0.48614 | 2.66 | 0.22386 | 1.49 | 3008 | 48 | 94.4 |
| kikeh72 | 5B07 | | 7 | 6 | 60 | 100 | 384.9 | 104430 | 404693 | 27-02-02 | | 0.22830 | 13.72372 | 3.45 | 0.43574 | 2.97 | 0.22816 | 1.56 | 3038 | 48 | 90.5 |
| kikeh73 | 5B08 | | 7 | 6 | 60 | 89.2 | 492.6 | 136068 | 347704 | 27-02-02 | | 0.26970 | 13.19854 | 3.10 | 0.42250 | 2.76 | 0.22620 | 1.78 | 3024 | 56 | 89.7 |
| kikeh74 | 5B09 | | 7 | 6 | 60 | 90.6 | 821.8 | 83513 | 345172 | 27-02-02 | | 0.34120 | 13.63494 | 5.79 | 0.44832 | 3.72 | 0.21988 | 1.98 | 2978 | 64 | 92.1 |
| kikeh75 | 5B10 | | 7 | 6 | 60 | 74.3 | 1080 | 86122 | 353200 | 27-02-02 | | 0.45010 | 14.23136 | 10.49 | 0.40397 | 3.61 | 0.25410 | 6.06 | 3210 | 192 | 86.7 |
| kikeh76 | 5B11 | | 7 | 6 | 60 | 105.4 | 1298 | 115093 | 485946 | 27-02-02 | | 0.32030 | 18.20448 | 9.57 | 0.55651 | 5.22 | 0.23711 | 3.91 | 3100 | 124 | 97.4 |
| kikeh77 | 5B12 | | 7 | 6 | 60 | 63.5 | 82.5 | 64843 | 302549 | 27-02-02 | | 0.17520 | 13.40454 | 3.06 | 0.42662 | 6.66 | 0.22688 | 4.00 | 3030 | 128 | 90.0 |
| kikeh78 | 5B13 | | 7 | 6 | 60 | 213.5 | 5472 | 2410720 | 1E+06 | 27-02-02 | | 0.56440 | 13.16013 | 10.38 | 0.45350 | 5.77 | 0.21133 | 1.97 | 2914 | 64 | 93.0 |
| kikeh79 | 5B14 | | 7 | 6 | 60 | 68.9 | 808 | 147872 | 308088 | 27-02-02 | | 0.34050 | 14.09162 | 9.09 | 0.45264 | 6.46 | 0.22512 | 12.97 | 3016 | 418 | 92.0 |
| kikeh80 | 5B15 | | 7 | 6 | 60 | 93.3 | 148.4 | 69401 | 174574 | 27-02-02 | | 0.16700 | 19.74857 | 7.93 | 0.58848 | 2.28 | 0.24216 | 7.18 | 3134 | 228 | 98.9 |
| kikeh81 | 5B16 | | 7 | 6 | 60 | 86.5 | 2156 | 162292 | 623413 | 27-02-02 | | 0.67810 | 6.74181 | 5.65 | 0.24115 | 3.60 | 0.20289 | 3.38 | 2848 | 110 | 73.6 |
| kikeh82 | 5B17 | | 7 | 6 | 60 | 67.6 | 583.2 | 70415 | 399400 | 27-02-02 | | 0.35310 | 9.43848 | 3.90 | 0.30941 | 3.14 | 0.22143 | 2.16 | 2990 | 70 | 80.3 |
| kikeh83 | 5B18 | | 7 | 6 | 60 | 116.3 | 444.7 | 104936 | 422198 | 27-02-02 | | 0.25510 | 9.66946 | 3.37 | 0.30758 | 2.86 | 0.22772 | 1.41 | 3036 | 46 | 79.8 |
| kikeh84 | 5B19 | | 7 | 6 | 60 | 129.8 | 583.6 | 95682 | 450613 | 27-02-02 | | 0.34610 | 8.41546 | 3.01 | 0.26966 | 2.25 | 0.22511 | 1.84 | 3016 | 60 | 76.1 |
| kikeh85 | 5B20 | | 7 | 6 | 60 | 78.4 | 883.6 | 112877 | 360076 | 27-02-02 | | 0.43150 | 11.60908 | 7.47 | 0.35069 | 3.18 | 0.24044 | 5.36 | 3122 | 170 | 83.0 |
| kikeh86 | 5B21 | | 7 | 6 | 60 | 62.2 | 1994 | 217720 | 729809 | 27-02-02 | | 0.48100 | 7.42615 | 4.83 | 0.26803 | 5.35 | 0.20028 | 4.07 | 2828 | 132 | 77.2 |
| kikeh87 | 5B22 | | 7 | 6 | 60 | 54.1 | 1873 | 185985 | 498566 | 27-02-02 | | 0.67870 | 12.59045 | 7.90 | 0.37190 | 3.16 | 0.24610 | 5.90 | 3158 | 188 | 84.5 |
| kikeh88 | 5B23 | | 7 | 6 | 60 | 93.2 | 339.2 | 115998 | 306675 | 27-02-02 | | 0.23820 | 15.77173 | 2.69 | 0.51005 | 2.02 | 0.22400 | 1.48 | 3008 | 48 | 95.8 |
| kikeh89 | 5B24 | | 7 | 6 | 60 | 74.3 | 891 | 135681 | 398731 | 27-02-02 | | 0.39810 | 10.28098 | 5.64 | 0.38650 | 9.72 | 0.19226 | 4.07 | 2760 | 134 | 89.8 |
| kikeh90 | 5B25 | | 7 | 6 | 60 | 63.5 | 469 | 142450 | 365674 | 27-02-02 | | 0.29130 | 11.48658 | 3.29 | 0.38976 | 5.64 | 0.21274 | 2.76 | 2926 | 90 | 88.2 |
| kikeh91 | 5B26 | | 7 | 6 | 60 | 83.8 | 135.5 | 88918 | 267312 | 27-02-02 | | 0.19310 | 16.00046 | 3.12 | 0.56592 | 5.45 | 0.20469 | 2.98 | 2862 | 96 | 101.2 |
| kikeh92 | 5B27 | | 7 | 6 | 60 | 116.3 | 167.6 | 82910 | 338933 | 27-02-02 | | 0.14200 | 16.61335 | 2.45 | 0.52646 | 1.91 | 0.22752 | 1.40 | 3034 | 44 | 96.6 |
| kikeh93 | 5B28 | rim | 7 | 6 | 60 | 63.5 | 585.5 | 210939 | 839728 | 27-02-02 | | 0.21780 | 11.45992 | 2.78 | 0.36384 | 2.42 | 0.22702 | 1.99 | 3030 | 64 | 85.1 |
| kikeh94 | 5B29 | core | 7 | 6 | 60 | 123 | 6 | 71065 | 268519 | 27-02-02 | | 0.14110 | 17.75760 | 2.71 | 0.55363 | 2.31 | 0.23306 | 2.55 | 3072 | 82 | 97.5 |
| kikei01 | 5B31 | | 7 | 6 | 60 | 58.1 | 2107 | 328425 | 1E+06 | 28-02-02 | | 0.61950 | 5.17293 | 6.17 | 0.17290 | 3.98 | 0.21722 | 3.91 | 2960 | 126 | 63.0 |
| kikei02 | 5B32 | | 7 | 6 | 60 | 44.6 | 795.7 | 120205 | 522487 | 28-02-02 | | 0.26360 | 12.08859 | 6.59 | 0.39485 | 8.26 | 0.22285 | 5.65 | 3000 | 182 | 87.7 |
| kikei03 | 5B33 | 235 uns | 7 | 6 | 60 | 97.4 | 140.5 | 193639 | 267150 | 28-02-02 | | 0.17040 | 17.54651 | 2.71 | 0.56352 | 2.67 | 0.22570 | 1.67 | 3020 | 54 | 98.8 |
| kikei04 | 5B34 | | 7 | 6 | 60 | 50 | 94.1 | 79543 | 320884 | 28-02-02 | | 0.15580 | 17.26486 | 7.19 | 0.51226 | 4.45 | 0.24423 | 5.71 | 3146 | 180 | 94.4 |
| kikei05 | 5B35 | | 7 | 6 | 60 | 75.7 | 448.7 | 123022 | 387365 | 28-02-02 | | 0.30580 | 10.81665 | 4.53 | 0.33869 | 4.44 | 0.23112 | 3.22 | 3058 | 104 | 82.6 |
| kikei06 | 5B36 | | 7 | 6 | 60 | 68.9 | 915 | 118713 | 546086 | 28-02-02 | | 0.36390 | 8.94074 | 3.65 | 0.27802 | 2.76 | 0.23229 | 1.68 | 3066 | 54 | 76.6 |
| kikei07 | 5B37 | | 7 | 6 | 60 | 63.5 | 95.1 | 101974 | 278449 | 28-02-02 | | 0.17520 | 17.34335 | 3.68 | 0.53952 | 2.97 | 0.23183 | 2.59 | 3064 | 82 | 97.0 |
| kikei08 | 5B38 | | 7 | 6 | 60 | 48.7 | 2786 | 154786 | 637560 | 28-02-02 | | 0.68290 | 7.77865 | 7.61 | 0.26141 | 4.24 | 0.21480 | 3.27 | 2942 | 104 | 75.6 |
| kikei09 | 5B39 | | 7 | 6 | 60 | 91.9 | 288.3 | 60282 | 190468 | 28-02-02 | | 0.32990 | 16.06161 | 3.30 | 0.49325 | 3.00 | 0.23648 | 2.10 | 3096 | 66 | 93.7 |
| kikei10 | 5B40 | | 7 | 6 | 60 | 39.2 | 522.9 | 86080 | 328656 | 28-02-02 | | 0.29020 | 12.35525 | 6.61 | 0.41021 | 6.53 | 0.21797 | 3.70 | 2964 | 120 | 89.4 |
| kikei11 | 5B41 | | 7 | 6 | 60 | 35.2 | 121 | 174142 | 475784 | 28-02-02 | | 0.18470 | 13.47304 | 3.54 | 0.43402 | 4.64 | 0.22344 | 4.86 | 3004 | 156 | 91.0 |
| kikei12 | 5B42 | | 7 | 6 | 60 | 25.7 | 606.7 | 115302 | 394133 | 28-02-02 | | 0.32880 | 12.85231 | 8.38 | 0.40435 | 5.97 | 0.23129 | 5.05 | 3060 | 162 | 87.8 |
| kikei13 | 5B43 | | 7 | 6 | 60 | 40.6 | 396.9 | 101234 | 366569 | 28-02-02 | | 0.42790 | 12.61456 | 5.55 | 0.24989 | 7.11 | 0.36287 | 5.35 | 3760 | 162 | 71.0 |
| kikei14 | 5B44 | | 7 | 6 | 60 | 60.8 | 1423 | 99843 | 486720 | 28-02-02 | | 0.48520 | 8.15203 | 9.07 | 0.27053 | 5.85 | 0.21801 | 3.51 | 2966 | 112 | 76.4 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikei16 | 5B46 | | 7 | 6 | 60 | 68.9 | 10 | 73310 | 239116 | 28-02-02 | | 0.13990 | 17.43802 | 2.40 | 0.55286 | 2.32 | 0.22831 | 1.35 | 3040 | 42 | 98.0 |
| kikei17 | 5B47 | | 7 | 6 | 60 | 91.9 | 10 | 60497 | 205312 | 28-02-02 | | 0.13390 | 16.92695 | 1.74 | 0.54528 | 1.94 | 0.22447 | 1.49 | 3012 | 48 | 97.9 |
| kikei18 | 5B48 | | 7 | 6 | 60 | 74.3 | 10 | 73562 | 295286 | 28-02-02 | | 0.14710 | 17.09649 | 2.29 | 0.52368 | 2.52 | 0.23600 | 1.34 | 3092 | 44 | 95.7 |
| kikei19 | 5B49 | core | 7 | 6 | 60 | 55.4 | 999.9 | 105812 | 468662 | 28-02-02 | | 0.43010 | 9.34910 | 7.24 | 0.30278 | 5.16 | 0.22337 | 3.33 | 3004 | 106 | 79.6 |
| kikei20 | 5B50 | core | 7 | 6 | 60 | 64.9 | 10 | 67408 | 209715 | 28-02-02 | | 0.16460 | 18.24358 | 1.92 | 0.55574 | 2.01 | 0.23785 | 1.81 | 3104 | 58 | 97.4 |
| kikei21 | 5B51 | | 7 | 6 | 60 | 43.3 | 10 | 92108 | 424618 | 28-02-02 | | 0.17220 | 12.33908 | 2.49 | 0.37958 | 2.97 | 0.23556 | 1.64 | 3090 | 54 | 85.8 |
| kikei22 | 5B52 | | 7 | 6 | 60 | 82.5 | 771.3 | 58515 | 460435 | 28-02-02 | | 0.33070 | 9.33342 | 3.65 | 0.29030 | 3.39 | 0.23174 | 2.28 | 3064 | 74 | 78.0 |
| kikei23 | 5B53 | | 7 | 6 | 60 | 73 | 725.1 | 66199 | 372746 | 28-02-02 | | 0.38220 | 8.82539 | 4.14 | 0.29328 | 2.83 | 0.21847 | 2.82 | 2968 | 92 | 78.8 |
| kikei24 | 5B54 | | 7 | 6 | 60 | 46 | 915.5 | 82640 | 723495 | 28-02-02 | x | 0.51870 | 5.26799 | 21.07 | 0.15821 | 7.13 | 0.24084 | 5.36 | 3124 | 172 | 60.2 |
| kikei25 | 5B55 | | 7 | 6 | 60 | 56.8 | 1645 | 246414 | 1E+06 | 28-02-02 | | 0.47590 | 3.65305 | 5.73 | 0.12931 | 3.46 | 0.20487 | 2.50 | 2864 | 80 | 55.1 |
| kikei26 | 5B56 | | 7 | 6 | 60 | 52.7 | 1047 | 143911 | 610385 | 28-02-02 | | 0.39950 | 9.35900 | 3.12 | 0.30240 | 2.52 | 0.22400 | 1.70 | 3008 | 54 | 79.5 |
| kikei27 | 5B57 | | 7 | 6 | 60 | 33.8 | 277 | 58639 | 296807 | 28-02-02 | | 0.22270 | 14.76860 | 2.37 | 0.46819 | 3.35 | 0.22802 | 2.64 | 3038 | 84 | 92.8 |
| kikei28 | 5B58 | | 7 | 6 | 60 | 52.7 | 1301 | 118715 | 487099 | 28-02-02 | | 0.47670 | 9.81735 | 6.20 | 0.30653 | 3.50 | 0.23218 | 3.57 | 3066 | 114 | 79.5 |
| kikei29 | 5B59 | | 7 | 6 | 60 | 50 | 1052 | 127182 | 572858 | 28-02-02 | | 0.33970 | 10.44014 | 3.43 | 0.33677 | 2.93 | 0.22385 | 1.62 | 3008 | 52 | 82.9 |
| kikei30 | 5B60 | crack | 7 | 6 | 60 | 51.4 | 304.8 | 93804 | 325164 | 28-02-02 | | 0.21690 | 15.76908 | 2.45 | 0.51398 | 2.06 | 0.22224 | 1.16 | 2996 | 36 | 96.2 |
| kikei31 | 5B61 | rim | 7 | 6 | 60 | 73 | 112.3 | 61120 | 291932 | 28-02-02 | | 0.13380 | 16.55063 | 1.32 | 0.51917 | 1.59 | 0.23059 | 1.17 | 3056 | 38 | 95.8 |
| kikei32 | 5B62 | core | 7 | 6 | 60 | 81.1 | 115 | 61564 | 288875 | 28-02-02 | | 0.12830 | 16.79073 | 1.64 | 0.54326 | 1.78 | 0.22402 | 1.18 | 3008 | 38 | 97.8 |
| kikei33 | 5B63 | | 7 | 6 | 60 | 39.2 | 222.3 | 126759 | 399032 | 28-02-02 | | 0.20030 | 17.14588 | 4.59 | 0.55123 | 3.25 | 0.22524 | 2.46 | 3018 | 78 | 98.1 |
| kikei34 | 5B64 | | 7 | 6 | 60 | 71.6 | 206.4 | 65593 | 287316 | 28-02-02 | | 0.22360 | 13.75734 | 4.28 | 0.44707 | 4.54 | 0.22269 | 2.41 | 3000 | 78 | 91.7 |
| kikei35 | 5B65 | | 7 | 6 | 60 | 52.7 | 1352 | 239604 | 1E+06 | 28-02-02 | | 0.44060 | 4.11776 | 5.58 | 0.13709 | 2.59 | 0.21725 | 3.16 | 2960 | 102 | 56.6 |
| kikei36 | 5B66 | | 7 | 6 | 60 | 73 | 215.7 | 93966 | 335313 | 28-02-02 | | 0.20460 | 15.09347 | 2.72 | 0.49584 | 2.44 | 0.22044 | 1.69 | 2982 | 54 | 95.2 |
| kikei37 | 5B67 | | 7 | 6 | 60 | 62.2 | 1430 | 144135 | 700999 | 28-02-02 | | 0.49390 | 6.26916 | 4.88 | 0.20563 | 2.96 | 0.22057 | 2.54 | 2984 | 82 | 68.1 |
| kikei38 | 5B68 | | 7 | 6 | 60 | 44.6 | 3221 | 202904 | 634101 | 28-02-02 | | 0.58320 | 10.78225 | 5.17 | 0.38717 | 2.85 | 0.20113 | 3.63 | 2834 | 118 | 89.0 |
| kikem01 | 5B17b | 2nd int | 7 | 6 | 60 | 60.8 | 937.4 | 148642 | 444462 | 27-02-02 | x | 0.71650 | 3.06025 | 12.04 | 0.11126 | 6.75 | 0.19943 | 2.83 | 2820 | 92 | 51.0 |
| kikem02 | 5B18b | 2nd int | 7 | 6 | 60 | 36.5 | 857.7 | 45176 | 399387 | 27-02-02 | | 0.52220 | 5.10159 | 7.23 | 0.18470 | 3.98 | 0.20047 | 3.12 | 2830 | 100 | 65.5 |
| kikem03 | 5B22b | 2nd int | 7 | 6 | 60 | 41.9 | 6587 | 1851527 | 629225 | 27-02-02 | x | 1.36770 | 3.34758 | 17.59 | 0.15379 | 3.63 | 0.15815 | 6.36 | 2434 | 216 | 62.0 |
| kikem04 | 5B28b | 2nd int | 7 | 6 | 60 | 79.7 | 73.8 | 70366 | 251457 | 27-02-02 | | 0.13790 | 13.45912 | 2.59 | 0.45072 | 2.62 | 0.21520 | 1.23 | 2944 | 40 | 92.8 |
| kikem05 | 5B40b | 2nd int | 7 | 6 | 60 | 25.7 | 323.2 | 24938 | 76511 | 28-02-02 | | 0.54650 | 15.02409 | 10.11 | 0.44006 | 4.63 | 0.24943 | 5.73 | 3180 | 182 | 89.2 |
| kikem06 | 5B42b | 2nd int | 7 | 6 | 60 | 33.8 | 1124 | 114041 | 290331 | 28-02-02 | | 0.71600 | 7.45878 | 7.89 | 0.25085 | 4.16 | 0.21505 | 3.14 | 2944 | 100 | 74.3 |
| kikem07 | 5B48b | 2nd int | 7 | 6 | 60 | 31.1 | 94.1 | 100769 | 524945 | 28-02-02 | | 0.15590 | 14.33711 | 4.70 | 0.45638 | 5.08 | 0.22715 | 4.13 | 3032 | 132 | 92.1 |
| kikem08 | 5B51b | 2nd int | 7 | 6 | 60 | 32.4 | 10 | 4394 | 49881 | 28-02-02 | x | 0.28240 | 3.64795 | 18.03 | 0.09984 | 19.00 | 0.26428 | 5.29 | 3272 | 166 | 48.2 |
| kikem09 | 5B59b | 2nd int | 7 | 6 | 60 | 32.4 | 771.6 | 80138 | 332468 | 28-02-02 | | 0.64410 | 4.92225 | 4.29 | 0.17712 | 7.08 | 0.20016 | 6.64 | 2826 | 216 | 64.5 |
| kikem10 | 5B62b | 2nd int | 7 | 6 | 60 | 48.7 | 145.5 | 36215 | 105055 | 28-02-02 | | 0.27630 | 14.78928 | 4.66 | 0.44477 | 4.71 | 0.24091 | 3.04 | 3126 | 96 | 90.2 |
| kikem11 | 5B65b | 2nd int | 7 | 6 | 60 | 46 | 580 | 282180 | 734896 | 28-02-02 | | 0.46220 | 2.34583 | 5.17 | 0.08074 | 4.35 | 0.21043 | 2.78 | 2908 | 90 | 42.7 |
| kikem12 | 5B68b | 2nd int | 7 | 6 | 60 | 23 | 3011 | 1852556 | 839264 | 28-02-02 | x | 1.01130 | 1.61357 | 55.83 | 0.09504 | 13.19 | 0.12270 | 4.65 | 1994 | 166 | 49.5 |

## KB770 LA-ICP-MS U-Pb analysis

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikei39 | 5C01 | core | 7 | 6 | 60 | 43.3 | 613.7 | 193383 | 687658 | 28-02-02 | | 0.2012 | 13.52723 | 6.31 | 0.4896 | 5.10 | 0.20046 | 4.47 | 2863 | 146 | 95.564 |
| kikei40 | 5C02 | core | 7 | 6 | 60 | 36.5 | | 166888 | 535020 | 28-02-02 | | 0.2092 | 15.42001 | 4.26 | 0.51792 | 4.84 | 0.21457 | 2.77 | 2975 | 90 | 96.168 |
| kikei41 | 5C03 | high U | 7 | 6 | 60 | 23 | 2765 | 1192355 | 6E+06 | 28-02-02 | rev disc | 0.188 | 26.0925 | 3.25 | 0.8112 | 3.25 | 0.23333 | 2.72 | 3113 | 86 | 108.26 |
| kikei42 | 5C04 | | 7 | 6 | 60 | 73 | 86.6 | 125592 | 306654 | 28-02-02 | | 0.2325 | 19.74553 | 3.59 | 0.60326 | 2.82 | 0.23748 | 1.23 | 3166 | 38 | 97.884 |
| kikei43 | 5C05 | high U | 7 | 6 | 60 | 36.5 | 139.3 | 322240 | 4E+06 | 28-02-02 | high U | 0.0919 | 5.516518 | 4.75 | 0.2327 | 5.64 | 0.172 | 3.29 | 2607 | 110 | 73.686 |
| kikei44 | 5C06 | | 7 | 6 | 60 | 50 | 896.2 | 1723394 | 2E+06 | 28-02-02 | rev disc | 0.3656 | 24.02656 | 4.81 | 0.75072 | 4.64 | 0.23137 | 2.53 | 3101 | 80 | 106.06 |
| kikei45 | 5C07 | | 7 | 6 | 60 | 64.9 | 105 | 64209 | 881955 | 28-02-02 | | 0.0759 | 20.09343 | 2.71 | 0.64301 | 2.14 | 0.22626 | 2.13 | 3069 | 66 | 101.5 |
| kikei46 | 5C08 | | 7 | 6 | 60 | 41.9 | 41 | 186394 | 792999 | 28-02-02 | | 0.1755 | 12.07282 | 5.04 | 0.34349 | 5.30 | 0.25446 | 2.20 | 3239 | 68 | 81.167 |
| kikei47 | 5C09 | crack | 7 | 6 | 60 | 59.5 | | 146732 | 333132 | 28-02-02 | | 0.2117 | 17.46977 | 2.59 | 0.56515 | 2.45 | 0.22353 | 1.51 | 3031 | 50 | 98.317 |
| kikei48 | 5C10 | core | 7 | 6 | 60 | 21.7 | | 277016 | 1E+06 | 28-02-02 | | 0.1528 | 15.58386 | 7.00 | 0.52944 | 7.22 | 0.21273 | 2.32 | 2961 | 74 | 96.96 |
| kikei49 | 5C11 | | 7 | 6 | 60 | 73 | 608.2 | 396651 | 2E+06 | 28-02-02 | | 0.1633 | 16.61884 | 4.09 | 0.52435 | 9.11 | 0.22934 | 2.44 | 3082 | 78 | 95.133 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikei50 | 5C12 | | 7 | 6 | 60 | 32.4 | 164 | 82649 | 1E+06 | 28-02-02 | | 0.1197 | 13.64768 | 6.66 | 0.41827 | 6.50 | 0.23546 | 2.90 | 3116 | 92 | 88.094 |
| kikei51 | 5C13 | | 7 | 6 | 60 | 56.8 | 652.2 | 236699 | 3E+06 | 28-02-02 | | 0.2465 | 8.839502 | 3.94 | 0.23885 | 3.99 | 0.26867 | 3.00 | 3331 | 94 | 70.249 |
| kikei52 | 5C14 | rim | 5 | 6 | 60 | 97.3 | 2332 | 1385159 | 3E+06 | 28-02-02 | rev disc | 0.2523 | 26.96431 | 2.33 | 0.7536 | 2.53 | 0.25918 | 1.49 | 3289 | 46 | 103.44 |
| kikei53 | 5C15 | core | 5 | 6 | 60 | 36.5 | 423.7 | 272585 | 834241 | 28-02-02 | rev disc | 0.2277 | 25.83721 | 3.55 | 0.7655 | 3.22 | 0.2443 | 1.97 | 3189 | 62 | 105.36 |
| kikei54 | 5C16 | core | 5 | 6 | 60 | 160.9 | 429.5 | 264772 | 773936 | 28-02-02 | | 0.246 | 23.61134 | 3.76 | 0.66336 | 3.10 | 0.25898 | 1.77 | 3275 | 54 | 99.908 |
| kikei55 | 5C17 | high U | 5 | 6 | 60 | 129.8 | 1382 | 321669 | 3E+06 | 28-02-02 | | 0.2339 | 18.1592 | 1.40 | 0.5161 | 1.40 | 0.25534 | 0.82 | 3253 | 26 | 92.776 |
| kikei56 | 5C18 | | 5 | 6 | 60 | 82.4 | | 96277 | 436267 | 28-02-02 | | 0.1556 | 22.76452 | 3.11 | 0.67747 | 2.62 | 0.24303 | 1.81 | 3158 | 58 | 102.5 |
| kikei57 | 5C19 | core | 5 | 6 | 60 | 58.1 | 191.2 | 503320 | 2E+06 | 28-02-02 | | 0.1908 | 12.39475 | 3.67 | 0.42749 | 3.45 | 0.21025 | 1.96 | 2951 | 62 | 89.936 |
| kikei58 | 5C20 | rim | 5 | 6 | 60 | 67.6 | 661.8 | 694293 | 3E+06 | 28-02-02 | | 0.2082 | 10.52167 | 4.00 | 0.33744 | 3.60 | 0.22674 | 3.24 | 3073 | 102 | 81.386 |
| kikei59 | 5C21 | dirty | 5 | 6 | 60 | 85.2 | 144.3 | 193942 | 1E+06 | 28-02-02 | | 0.1351 | 14.00469 | 4.77 | 0.44333 | 5.07 | 0.22877 | 2.85 | 3070 | 90 | 90.195 |
| kikei60 | 5C22 | | 5 | 6 | 60 | 47.3 | | 52850 | 195924 | 28-02-02 | | 0.1966 | 23.35477 | 2.02 | 0.65798 | 1.97 | 0.25578 | 1.17 | 3235 | 36 | 100.83 |
| kikei61 | 5C23 | | 5 | 6 | 60 | 66.2 | | 180668 | 509181 | 28-02-02 | | 0.1979 | 18.2866 | 5.71 | 0.58886 | 4.20 | 0.22431 | 2.99 | 3035 | 96 | 99.638 |
| kikei62 | 5C24 | high U | 5 | 6 | 60 | 55.4 | | 955899 | 4E+06 | 28-02-02 | | 0.12 | 6.805904 | 4.57 | 0.25642 | 4.09 | 0.19312 | 1.78 | 2803 | 58 | 75.062 |
| kikei63 | 5C25 | high U | 5 | 6 | 60 | 24.3 | | 8149086 | 6E+06 | 28-02-02 | | 0.4814 | 10.099 | 6.18 | 0.35654 | 6.15 | 0.20726 | 1.99 | 2919 | 66 | 84.378 |
| kikei64 | 5C26 | core | 5 | 6 | 60 | 155.5 | | 76630 | 318205 | 28-02-02 | | 0.1746 | 20.14282 | 3.95 | 0.61997 | 3.24 | 0.23484 | 2.05 | 3104 | 64 | 100.45 |
| kikei65 | 5C27 | | 5 | 6 | 60 | 64.9 | | 111348 | 753533 | 28-02-02 | | 0.1092 | 22.23924 | 5.09 | 0.69293 | 5.68 | 0.23216 | 2.47 | 3086 | 78 | 104.15 |
| kikei66 | 5C28 | | 5 | 6 | 60 | 71.6 | 122.4 | 237304 | 2E+06 | 28-02-02 | | 0.1276 | 14.12886 | 2.85 | 0.45926 | 2.90 | 0.22241 | 1.61 | 3027 | 52 | 91.774 |
| kikei67 | 5C29 | | 5 | 6 | 60 | 105.5 | 142.5 | 172425 | 3E+06 | 28-02-02 | | 0.0648 | 14.98587 | 2.62 | 0.51322 | 3.14 | 0.21149 | 2.31 | 2955 | 74 | 95.905 |
| kikei68 | 5C30 | core | 5 | 6 | 60 | 66.2 | 208.3 | 141053 | 1E+06 | 28-02-02 | | 0.1771 | 23.177 | 3.72 | 0.70176 | 3.65 | 0.24 | 2.33 | 3146 | 74 | 103.43 |
| kikei69 | 5C31 | | 5 | 6 | 60 | 67.6 | 87.7 | 232194 | 660337 | 28-02-02 | rev disc | 0.2096 | 28.56808 | 2.76 | 0.79027 | 2.64 | 0.26097 | 1.34 | 3291 | 42 | 105.1 |
| kikei70 | 5C32 | core | 5 | 6 | 60 | 59.5 | | 218149 | 2E+06 | 28-02-02 | | 0.0873 | 14.67227 | 3.74 | 0.52646 | 3.55 | 0.20184 | 1.76 | 2875 | 56 | 97.843 |
| kikei71 | 5C33 | core | 5 | 6 | 60 | 98.7 | 102.4 | 123938 | 451832 | 28-02-02 | | 0.2507 | 20.90399 | 5.50 | 0.60576 | 4.56 | 0.24923 | 1.70 | 3205 | 54 | 98.409 |
| kikei72 | 5C34 | high U | 5 | 6 | 60 | 33.8 | 272 | 163474 | 5E+06 | 28-02-02 | | 0.0846 | 12.0933 | 9.44 | 0.4416 | 9.45 | 0.1993 | 1.92 | 2859 | 64 | 92.025 |
| kikei73 | 5C35 | high U | 5 | 6 | 60 | 64.9 | 635.9 | 374082 | 1E+06 | 28-02-02 | rev disc | 0.2525 | 40.89981 | 7.92 | 1.16208 | 6.02 | 0.25561 | 3.99 | 3257 | 126 | 117.07 |
| kikei74 | 5C36 | | 5 | 6 | 60 | 75.7 | 220.3 | 463161 | 2E+06 | 28-02-02 | | 0.2048 | 14.40306 | 7.57 | 0.46589 | 6.36 | 0.22428 | 2.62 | 3045 | 84 | 91.823 |
| kikei75 | 5C37 | | 5 | 6 | 40 | 50 | | 32484 | 147257 | 28-02-02 | rev disc | 0.1692 | 27.03977 | 6.40 | 0.75197 | 6.76 | 0.26047 | 4.52 | 3273 | 142 | 104.03 |
| kikei76 | 5C38 | crack | 5 | 6 | 40 | 36.5 | | 168913 | 2E+06 | 28-02-02 | | 0.0543 | 15.98115 | 7.55 | 0.53827 | 6.42 | 0.21484 | 3.41 | 2977 | 110 | 97.246 |
| kikei77 | 5C39 | thin | 5 | 6 | 40 | 32.5 | | 157573 | 2E+06 | 28-02-02 | | 0.0436 | 14.03595 | 5.94 | 0.49958 | 5.36 | 0.20403 | 3.39 | 2893 | 110 | 95.783 |
| kikei78 | 5C40 | | 5 | 6 | 40 | 39.2 | 84 | 92323 | 322829 | 28-02-02 | | 0.2467 | 20.24053 | 5.79 | 0.58147 | 4.20 | 0.25196 | 4.03 | 3223 | 126 | 96.866 |
| kikei79 | 5C41 | | 5 | 6 | 40 | 51.4 | 57.6 | 62328 | 288440 | 28-02-02 | | 0.2487 | 16.53868 | 4.67 | 0.4897 | 4.63 | 0.24214 | 3.41 | 3187 | 106 | 91.873 |
| kikei80 | 5C42 | | 5 | 6 | 40 | 48.7 | 143.7 | 41076 | 415821 | 28-02-02 | | 0.1179 | 20.53178 | 8.11 | 0.66019 | 7.85 | 0.22495 | 3.02 | 3068 | 94 | 102.22 |
| kikei81 | 5C43 | | 5 | 6 | 40 | 36.5 | 76.6 | 32089 | 169422 | 28-02-02 | | 0.1883 | 20.61303 | 7.95 | 0.62496 | 6.58 | 0.23826 | 3.27 | 3163 | 102 | 99.273 |
| kikei82 | 5C44 | core | 5 | 6 | 40 | 98.7 | 53.3 | 46644 | 233551 | 28-02-02 | | 0.1547 | 16.94792 | 5.91 | 0.57792 | 5.48 | 0.21263 | 2.30 | 2987 | 74 | 98.795 |
| kikej01 | 5C45 | | 5 | 16.5 | 40 | 21.7 | 52.8 | 63707 | 1E+06 | 05-03-02 | | 0.043 | 17.2627 | 3.07 | 0.53155 | 2.84 | 0.23628 | 3.39 | 3122 | 108 | 95.099 |
| kikej02 | 5C46 | thin | 5 | 16.5 | 40 | 18.9 | 866.4 | 1139132 | 2E+06 | 05-03-02 | short ii | 0.1929 | 21.83959 | 11.65 | 0.63888 | 8.76 | 0.24976 | 3.78 | 3235 | 118 | 98.794 |
| kikej03 | 5C47 | | 5 | 16.5 | 40 | 44.6 | 1678 | 734667 | 2E+06 | 05-03-02 | rev disc | 0.2395 | 31.22858 | 6.67 | 0.92035 | 5.90 | 0.24671 | 3.87 | 3227 | 120 | 109.89 |
| kikej04 | 5C48 | thin | 5 | 16.5 | 40 | 54.1 | 629.8 | 541974 | 2E+06 | 05-03-02 | | 0.2736 | 13.93609 | 5.76 | 0.39926 | 5.47 | 0.25501 | 2.15 | 3269 | 66 | 84.582 |
| kikej05 | 5C49 | thin | 5 | 16.5 | 40 | 40.6 | 493.7 | 557332 | 1E+06 | 05-03-02 | | 0.26 | 13.63209 | 3.44 | 0.37325 | 3.32 | 0.26555 | 2.29 | 3329 | 70 | 82.427 |
| kikej06 | 5C50 | crackec | 5 | 16.5 | 40 | 64.9 | 112.6 | 113931 | 490218 | 05-03-02 | | 0.1718 | 18.37784 | 1.81 | 0.57446 | 2.28 | 0.23251 | 1.67 | 3126 | 52 | 96.897 |
| kikej07 | 5C51 | thin | 5 | 16.5 | 40 | 21.6 | 179.8 | 574057 | 2E+06 | 05-03-02 | | 0.1257 | 15.58112 | 8.74 | 0.53856 | 8.00 | 0.21122 | 3.64 | 2965 | 118 | 96.83 |
| kikej08 | 5C52 | peak | 5 | 16.5 | 40 | 29.7 | 105.3 | 103611 | 374675 | 05-03-02 | | 0.1904 | 17.87344 | 4.31 | 0.61661 | 4.35 | 0.21065 | 3.53 | 2989 | 112 | 100.43 |
| kikej09 | 5C53 | high U | 5 | 16.5 | 40 | 86.5 | 122.8 | 335989 | 1E+06 | 05-03-02 | | 0.1643 | 20.77678 | 4.83 | 0.63706 | 4.42 | 0.23672 | 1.81 | 3126 | 58 | 100.7 |
| kikej10 | 5C54 | | 5 | 6 | 40 | 59.5 | 212.1 | 137329 | 546721 | 05-03-02 | | 0.2206 | 23.21698 | 4.11 | 0.65837 | 3.66 | 0.25593 | 3.02 | 3259 | 92 | 99.908 |
| kikej11 | 5C55 | | 5 | 6 | 40 | 46 | 188.2 | 92368 | 657966 | 05-03-02 | | 0.1779 | 16.33023 | 4.08 | 0.51821 | 3.22 | 0.22918 | 2.76 | 3092 | 88 | 94.308 |
| kikej12 | 5C56 | | 5 | 6 | 40 | 36.5 | 257.5 | 236553 | 2E+06 | 05-03-02 | | 0.1294 | 12.61211 | 7.29 | 0.46032 | 6.90 | 0.19991 | 3.74 | 2875 | 120 | 92.87 |
| kikej13 | 5C57 | | 5 | 6 | 40 | 29.8 | 217.9 | 424696 | 3E+06 | 05-03-02 | | 0.1082 | 10.80695 | 6.67 | 0.41434 | 7.03 | 0.19015 | 2.89 | 2791 | 94 | 90.469 |
| kikej14 | 5C58 | | 5 | 6 | 40 | 50 | 278.6 | 634714 | 2E+06 | 05-03-02 | | 0.1938 | 14.79986 | 3.35 | 0.51936 | 2.86 | 0.20715 | 1.80 | 2955 | 58 | 95.499 |
| kikej15 | 5C59 | thin | 5 | 6 | 40 | 20.3 | 281.9 | 65128 | 432529 | 05-03-02 | short ii | 0.2179 | 26.06682 | 12.74 | 0.8256 | 11.66 | 0.23002 | 7.36 | 3115 | 230 | 108.15 |
| kikej16 | 5C60 | | 5 | 6 | 40 | 60.8 | 10 | 55194 | 146608 | 05-03-02 | | 0.2034 | 18.78297 | 3.98 | 0.5808 | 4.22 | 0.2354 | 4.63 | 3108 | 148 | 98.134 |
| kikej17 | 5C61 | thin | 5 | 6 | 40 | 25.7 | 421.1 | 162923 | 951876 | 05-03-02 | | 0.2214 | 19.5365 | 5.22 | 0.56832 | 4.59 | 0.2493 | 6.84 | 3227 | 212 | 95.693 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikej18 | 5C62 | | 5 | 6 | 40 | 37.9 | 228.1 | 116393 | 531964 | 05-03-02 | | 0.259 | 19.75327 | 5.71 | 0.57773 | 5.75 | 0.24974 | 5.51 | 3229 | 172 | 95.974 |
| kikej19 | 5C63 | | 5 | 6 | 40 | 71.6 | 119.2 | 64068 | 520727 | 05-03-02 | | 0.1487 | 17.19498 | 4.46 | 0.5831 | 4.34 | 0.21385 | 2.70 | 3006 | 86 | 98.636 |
| kikej20 | 5C64 | | 5 | 6 | 40 | 63.5 | 10 | 86375 | 285702 | 05-03-02 | | 0.1417 | 16.52496 | 2.50 | 0.56083 | 2.88 | 0.21432 | 2.51 | 2973 | 82 | 98.453 |
| kikel53 | 4D01 | | 5 | 6 | 40 | 36.5 | 399.9 | 28652 | 157016 | 07-03-02 | ev disc | 0.2181 | 29.31396 | 3.94 | 0.8832 | 4.99 | 0.23905 | 9.35 | 3137 | 298 | 111.06 |
| kikel54 | 4D02 | | 5 | 6 | 40 | 47.3 | 716.2 | 99100 | 360990 | 07-03-02 | | 0.172 | 16.06514 | 4.61 | 0.55776 | 3.78 | 0.20597 | 2.20 | 2909 | 72 | 99.691 |
| kikem13 | 5C07b | 2nd int | 7 | 6 | 60 | 66.2 | 3083 | 97070 | 771541 | 28-02-02 | ev disc | 0.2105 | 24.86721 | 3.98 | 0.91286 | 4.10 | 0.19719 | 2.44 | 2827 | 80 | 117.55 |
| kikem14 | 5C10b | 2nd int | 7 | 6 | 60 | 54.1 | 3148 | 355931 | 2E+06 | 28-02-02 | | 0.1661 | 14.31858 | 5.84 | 0.49382 | 3.83 | 0.20981 | 2.62 | 2939 | 84 | 94.93 |
| kikem15 | 5C11b | 2nd int | 7 | 6 | 60 | 37.9 | 645.3 | 2608159 | 2E+06 | 28-02-02 | high U | 0.4628 | 11.82693 | 6.26 | 0.47664 | 7.13 | 0.17946 | 4.69 | 2671 | 156 | 97.716 |
| kikem16 | 5C15b | 2nd int | 5 | 6 | 60 | 87.9 | 733.1 | 225175 | 407627 | 28-02-02 | | 0.2364 | 12.69678 | 3.18 | 0.44064 | 2.49 | 0.20822 | 0.89 | 2925 | 30 | 91.487 |
| kikem17 | 5C22b | 2nd int | 5 | 6 | 60 | 116.2 | 590 | 27258 | 140017 | 28-02-02 | ev disc | 0.2441 | 34.92916 | 6.99 | 1.17034 | 5.88 | 0.21572 | 3.13 | 2973 | 102 | 123.01 |
| kikem18 | 5C25b | 2nd int | 5 | 6 | 60 | 40.6 | 502.2 | 252016 | 1E+06 | 28-02-02 | | 0.1326 | 12.21835 | 6.80 | 0.45082 | 6.50 | 0.19744 | 2.99 | 2839 | 98 | 92.99 |
| kikem19 | 5C27b | 2nd int | 5 | 6 | 60 | 51.4 | 1585 | 108498 | 713618 | 28-02-02 | ev disc | 0.193 | 22.26805 | 7.11 | 0.78346 | 5.64 | 0.20586 | 4.00 | 2897 | 130 | 110.98 |
| kikem20 | 5C45b | 2nd int | 5 | 16.5 | 40 | 25.7 | 983.4 | 130339 | 811355 | 05-03-02 | | 0.1295 | 15.06966 | 4.07 | 0.53462 | 4.66 | 0.20642 | 2.70 | 2911 | 88 | 97.527 |
| kikem21 | 5C52b | 2nd int | 5 | 16.5 | 40 | 20.3 | 121 | 4049 | 18311 | 05-03-02 | short ii | 0.1402 | 61.55841 | 9.05 | 2.39846 | 6.13 | 0.18712 | 2.85 | 2741 | 94 | 153.96 |
| kikem22 | 5C60b | 2nd int | 5 | 6 | 40 | 16.2 | 348.8 | 70786 | 315397 | 05-03-02 | short ii | 0.2114 | 6.796006 | 12.51 | 0.23914 | 9.12 | 0.20691 | 10.40 | 2905 | 340 | 72.392 |
| re5ct01 | 5CT01-1 | REE ru | 8 | 6 | 40 | 36.1 | 10 | 34136 | 515811 | 24-10-02 | | 0.0795 | 14.1119 | 5.23 | 0.45677 | 4.37 | 0.22363 | 2.79 | 3031 | 90 | 91.587 |
| re5ct02 | 5CT02-1 | REE ru | 8 | 6 | 40 | 114.7 | 309.2 | 322368 | 644054 | 24-10-02 | | 0.249 | 22.14094 | 4.99 | 0.60835 | 4.32 | 0.26347 | 1.57 | 3319 | 48 | 96.716 |
| re5ct03 | 5CT03-1 | REE ru | 8 | 6 | 40 | -461.7 | 90.8 | 88349 | 312088 | 24-10-02 | short ii | 0.2467 | 21.25943 | 5.61 | 0.6025 | 3.93 | 0.25539 | 2.12 | 3289 | 64 | 96.382 |
| re5ct04 | 5CT04-1 | REE ru | 8 | 6 | 40 | 24.9 | 10 | 305133 | 829860 | 24-10-02 | | 0.1186 | 12.41297 | 4.28 | 0.46416 | 4.25 | 0.19358 | 3.54 | 2807 | 116 | 94.585 |
| re5ct05 | 5CT05-1 | REE ru | 8 | 6 | 40 | 21.1 | 415.3 | 132981 | 770670 | 24-10-02 | | 0.2415 | 24.79576 | 4.05 | 0.71165 | 3.26 | 0.25256 | 2.84 | 3253 | 86 | 102.06 |
| re5ct06 | 5CT06-1 | REE ru | 8 | 6 | 40 | 26.1 | 10 | 62813 | 370343 | 24-10-02 | | 0.2441 | 6.476918 | 5.65 | 0.17395 | 7.15 | 0.27039 | 4.24 | 3323 | 132 | 62.022 |
| re5ct07 | 5CT07-1 | REE ru | 8 | 6 | 40 | 46 | 784.4 | 901984 | 2E+06 | 24-10-02 | | 0.254 | 19.27121 | 2.14 | 0.53242 | 2.64 | 0.26306 | 1.28 | 3355 | 38 | 91.654 |
| re5ct08 | 5CT08-1 | REE ru | 8 | 6 | 40 | 43.4 | 10 | 85921 | 333000 | 24-10-02 | | 0.1332 | 18.46888 | 5.89 | 0.57725 | 4.55 | 0.23233 | 3.15 | 3088 | 100 | 98.251 |
| re5ct09 | 5CT09-1 | REE ru | 8 | 6 | 40 | 32.3 | 39 | 80646 | 639043 | 24-10-02 | | 0.1067 | 10.67818 | 4.19 | 0.34973 | 2.72 | 0.22183 | 3.43 | 3039 | 110 | 82.725 |
| re5ct10 | 5CT10-1 | REE ru | 8 | 6 | 40 | 21.1 | 81.2 | 354001 | 745941 | 24-10-02 | | 0.2216 | 14.16561 | 5.74 | 0.42096 | 4.71 | 0.24459 | 3.31 | 3191 | 102 | 87.12 |
| re5ct11 | 5CT11-1 | REE ru | 8 | 6 | 40 | 62.1 | 10 | 12889 | 23635 | 24-10-02 | | 0.1803 | 21.35165 | 4.15 | 0.60067 | 2.60 | 0.25818 | 4.54 | 3249 | 142 | 97.692 |
| re5ct12 | 5CT12-1 | REE ru | 8 | 6 | 40 | 31.1 | 123.5 | 141708 | 989606 | 24-10-02 | | 0.1856 | 9.578618 | 4.32 | 0.30518 | 3.99 | 0.22803 | 2.21 | 3080 | 70 | 78.377 |
| re5ct13 | 5CT13-1 | REE ru | 8 | 6 | 40 | 70.8 | 10 | 87453 | 216480 | 24-10-02 | | 0.1331 | 17.44919 | 1.81 | 0.53126 | 2.03 | 0.23866 | 1.55 | 3130 | 48 | 95.176 |
| re5ct14 | 5CT14-1 | REE ru | 8 | 6 | 40 | 27.4 | 1036 | 853799 | 3E+06 | 24-10-02 | | 0.2335 | 15.09239 | 2.72 | 0.41645 | 3.86 | 0.26287 | 2.33 | 3317 | 70 | 85.62 |
| re5ct15 | 5CT15-1 | REE ru | 8 | 6 | 40 | 23.6 | 10 | 310206 | 1E+06 | 24-10-02 | | 0.1052 | 10.13202 | 4.15 | 0.36221 | 3.87 | 0.20327 | 2.99 | 2887 | 98 | 85.417 |
| re5ct16 | 5CT16-1 | REE ru | 8 | 6 | 40 | 48.5 | 10 | 160297 | 638345 | 24-10-02 | | 0.0681 | 12.06978 | 6.92 | 0.42653 | 6.36 | 0.20558 | 3.59 | 2905 | 118 | 90.499 |
| re5ct17 | 5CT17-1 | REE ru | 8 | 6 | 40 | 26.1 | 10 | 69421 | 693068 | 24-10-02 | short ii | 0.1369 | 11.28666 | 28.91 | 0.37786 | 20.98 | 0.21743 | 2.75 | 2985 | 88 | 85.963 |
| re5ct18 | 5CT18-1 | REE ru | 8 | 6 | 40 | 58.4 | 42.3 | 45012 | 188607 | 24-10-02 | | 0.216 | 25.16924 | 5.28 | 0.71213 | 4.84 | 0.25657 | 2.67 | 3271 | 82 | 101.96 |
| re5ct19 | 5CT19-1 | REE ru | 8 | 6 | 40 | 38.5 | 40.3 | 47017 | 897203 | 24-10-02 | | 0.0723 | 12.15357 | 5.30 | 0.40704 | 4.93 | 0.21688 | 2.42 | 3000 | 76 | 87.833 |
| re5ct20 | 5CT04-2 | REE ru | 8 | 6 | 40 | 37.3 | 173.9 | 298733 | 1E+06 | 24-10-02 | | 0.1436 | 18.11226 | 8.66 | 0.60077 | 8.04 | 0.21897 | 2.61 | 3013 | 84 | 100.07 |
| re5ct21 | 5CT17-2 | REE ru | 8 | 6 | 40 | 19.9 | 423.2 | 129152 | 1E+06 | 24-10-02 | short ii | 0.1901 | 21.99208 | 3.79 | 0.59626 | 4.39 | 0.26693 | 2.94 | 3313 | 92 | 96.68 |
| re5ct22 | 5CT17-3 | REE ru | 8 | 6 | 40 | 27.4 | 164.4 | 115426 | 619554 | 24-10-02 | short ii | 0.1648 | 20.01444 | 11.65 | 0.64512 | 10.75 | 0.22536 | 2.59 | 3043 | 84 | 102.27 |
| re5ct23 | 5CT17-4 | REE ru | 8 | 6 | 40 | 17.4 | 259.6 | 65320 | 917420 | 24-10-02 | short ii | 0.2021 | 18.90342 | 3.80 | 0.53827 | 3.10 | 0.25487 | 1.80 | 3239 | 56 | 94.35 |
| re5ct24 | 5CT18-2 | REE ru | 8 | 6 | 40 | 48.5 | 61.8 | 138144 | 255058 | 24-10-02 | | 0.2684 | 20.61205 | 7.91 | 0.57898 | 7.31 | 0.25838 | 2.33 | 3251 | 74 | 96.586 |
| re5ct25 | 5CT18-3 | REE ru | 8 | 6 | 40 | 33.5 | 587.8 | 330942 | 2E+06 | 24-10-02 | | 0.2511 | 12.75666 | 3.31 | 0.33792 | 3.38 | 0.27417 | 1.89 | 3345 | 58 | 80.149 |

## KB779 LA-ICP-MS U-Pb analysis

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikej21 | 5A01 | | 5 | 6 | 40 | 35.1 | 10 | 107243 | 92180 | 05-03-02 | | 0.3392 | 23.15221 | 2.56 | 0.65942 | 2.38 | 0.25712 | 2.43 | 3228 | 76 | 100.8 |
| kikej22 | 5A02 | | 5 | 6 | 60 | 66.2 | 10 | 285924 | 309517 | 05-03-02 | | 0.419 | 22.49747 | 2.30 | 0.63811 | 2.10 | 0.25619 | 1.32 | 3222 | 42 | 100.1 |
| kikej23 | 5A03 | | 5 | 6 | 40 | 75.7 | 10 | 144535 | 136623 | 05-03-02 | | 0.3991 | 22.26354 | 1.92 | 0.62736 | 1.50 | 0.25775 | 1.51 | 3232 | 48 | 99.5 |
| kikej24 | 5A04 | | 5 | 6 | 40 | 129.8 | 10 | 33432 | 42372 | 05-03-02 | | 0.2817 | 22.60007 | 1.32 | 0.65482 | 1.35 | 0.25024 | 1.39 | 3186 | 44 | 101.4 |
| kikej25 | 5A05 | | 5 | 6 | 40 | 86.5 | 10 | 265171 | 215319 | 05-03-02 | | 0.4553 | 23.98148 | 1.64 | 0.67008 | 1.62 | 0.26006 | 1.07 | 3246 | 32 | 101.3 |
| kikej26 | 5A06 | | 5 | 6 | 40 | 116.3 | 10 | 29295 | 34011 | 05-03-02 | | 0.3197 | 22.41868 | 1.98 | 0.64992 | 1.85 | 0.25113 | 1.42 | 3190 | 46 | 101.0 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikej27 | 5A07 | | 5 | 6 | 40 | 100.1 | 10 | 25898 | 30349 | 05-03-02 | | 0.3346 | 21.52531 | 2.06 | 0.61709 | 1.51 | 0.25285 | 1.76 | 3202 | 56 | 99.4 |
| kikej28 | 5A08 | | 5 | 6 | 60 | 86.5 | 10 | 640653 | 404345 | 05-03-02 | | 0.6493 | 24.51166 | 2.01 | 0.66259 | 1.46 | 0.2694 | 1.18 | 3302 | 38 | 100.2 |
| kikej29 | 5A09 | | 5 | 6 | 60 | 128.5 | 10 | 120810 | 138495 | 05-03-02 | x | 0.3602 | 24.32879 | 10.50 | 0.63206 | 3.65 | 0.27995 | 5.19 | 3362 | 162 | 98.2 |
| kikej30 | 5A10 | | 5 | 6 | 40 | 89.2 | 10 | 131563 | 107457 | 05-03-02 | | 0.4442 | 22.43024 | 1.88 | 0.62813 | 1.74 | 0.2603 | 1.15 | 3248 | 36 | 99.2 |
| kikej31 | 5A11 | | 5 | 6 | 40 | 40.6 | 10 | 342332 | 250024 | 05-03-02 | | 0.4947 | 23.81665 | 1.93 | 0.66 | 1.80 | 0.26229 | 1.29 | 3260 | 40 | 100.6 |
| kikej32 | 5A12 | | 5 | 6 | 40 | 46 | 10 | 110538 | 127332 | 05-03-02 | | 0.3474 | 23.18523 | 2.12 | 0.66922 | 2.08 | 0.25257 | 1.70 | 3200 | 54 | 101.7 |
| kikej33 | 5A13 | | 5 | 6 | 40 | 25.7 | 10 | 233323 | 191240 | 05-03-02 | | 0.4459 | 20.96357 | 1.75 | 0.60528 | 1.97 | 0.25249 | 1.45 | 3200 | 46 | 98.6 |
| kikej34 | 5A14 | | 5 | 6 | 40 | 43.3 | 10 | 459479 | 340135 | 05-03-02 | | 0.5232 | 23.64074 | 1.70 | 0.65242 | 1.69 | 0.26454 | 1.13 | 3272 | 34 | 100.0 |
| kikej35 | 5A15 | | 5 | 6 | 40 | 56.8 | 10 | 365848 | 259783 | 05-03-02 | | 0.5489 | 23.72364 | 2.66 | 0.6625 | 2.32 | 0.26064 | 1.39 | 3250 | 44 | 100.8 |
| kikej36 | 5A16 | | 5 | 6 | 60 | 67.6 | 10 | 317401 | 269560 | 05-03-02 | | 0.482 | 22.40515 | 2.21 | 0.636 | 2.05 | 0.25606 | 1.30 | 3222 | 42 | 100.0 |
| kikej37 | 5A17 | | 5 | 6 | 60 | 148.7 | 10 | 243953 | 242386 | 05-03-02 | | 0.4169 | 20.85273 | 3.68 | 0.59885 | 3.58 | 0.25217 | 1.41 | 3198 | 46 | 98.5 |
| kikej38 | 5A18 | | 5 | 6 | 40 | 146 | 10 | 191870 | 175246 | 05-03-02 | | 0.4106 | 20.00543 | 2.17 | 0.59472 | 1.85 | 0.24432 | 1.09 | 3148 | 34 | 98.8 |
| kikej39 | 5A19 | thin | 5 | 6 | 40 | 29.8 | 10 | 34747 | 45270 | 05-03-02 | | 0.3216 | 14.74822 | 5.91 | 0.42269 | 5.54 | 0.25029 | 3.50 | 3186 | 110 | 88.4 |
| kikej40 | 5A20 | thin | 5 | 6 | 40 | 25.7 | 10 | 25221 | 36594 | 05-03-02 | | 0.3022 | 20.15409 | 6.09 | 0.57936 | 4.26 | 0.25379 | 5.64 | 3208 | 178 | 97.2 |
| kikej41 | 5A21 | | 5 | 6 | 40 | 54.1 | 10 | 18601 | 21715 | 05-03-02 | | 0.3243 | 22.01766 | 2.96 | 0.63206 | 2.58 | 0.25145 | 3.05 | 3192 | 96 | 100.4 |
| kikej42 | 5A22 | | 5 | 6 | 40 | 86.5 | 10 | 212220 | 592473 | 05-03-02 | x | -1.4148 | 0.02401 | 14.99 | 0.00106 | 5.44 | 0.17022 | 199.33 | 2558 | 4000 | 1.0 |
| kikej43 | 5A23 | | 5 | 6 | 40 | 41.9 | 10 | 293990 | 788648 | 05-03-02 | x | 0.285 | 0.01323 | 20.21 | 0.00096 | 6.61 | 0.10225 | 22.08 | 1664 | 838 | 0.8 |
| kikej44 | 5A24 | | 5 | 6 | 40 | 77 | 10 | 172272 | 133695 | 05-03-02 | | 0.5211 | 23.49148 | 2.12 | 0.64675 | 2.02 | 0.2641 | 1.66 | 3270 | 52 | 99.9 |
| kikej45 | 5A25 | crack | 5 | 6 | 60 | 93.2 | 10 | 306781 | 238445 | 05-03-02 | | 0.563 | 23.16191 | 2.22 | 0.62208 | 2.07 | 0.27209 | 1.76 | 3318 | 54 | 98.0 |
| kikej46 | 5A26 | | 5 | 6 | 60 | 97.3 | 10 | 168623 | 123420 | 05-03-02 | | 0.5223 | 22.97218 | 2.22 | 0.62909 | 2.38 | 0.26417 | 1.38 | 3270 | 44 | 99.2 |
| kikej47 | 5A27 | moved | 5 | 6 | 60 | 85.2 | 10 | 43308 | 43462 | 05-03-02 | | 0.3633 | 24.26794 | 1.83 | 0.67834 | 1.72 | 0.26024 | 1.80 | 3248 | 58 | 101.6 |
| kikej48 | 5A28 | | 5 | 6 | 40 | 58.1 | 10 | 33226 | 53548 | 05-03-02 | | 0.3116 | 22.07695 | 3.00 | 0.59462 | 2.95 | 0.26927 | 2.21 | 3300 | 70 | 97.2 |
| kikej49 | 5A29 | | 5 | 6 | 40 | 67.6 | 10 | 303039 | 277196 | 05-03-02 | | 0.3618 | 17.24584 | 2.76 | 0.5375 | 2.17 | 0.23448 | 1.56 | 3082 | 50 | 96.3 |
| kikej50 | 5A30 | | 5 | 6 | 40 | 64.9 | 10 | 114645 | 120170 | 05-03-02 | | 0.3575 | 22.71914 | 2.32 | 0.64358 | 2.29 | 0.25741 | 1.73 | 3230 | 54 | 100.2 |
| kikej51 | 5A31 | | 5 | 6 | 40 | 93.2 | 10 | 100846 | 91339 | 05-03-02 | | 0.3871 | 18.77455 | 2.60 | 0.5639 | 1.88 | 0.24155 | 1.67 | 3130 | 54 | 97.4 |
| kikej52 | 5A32 | not Zr | 5 | 6 | 40 | 24.3 | 10 | 5336 | 6664 | 05-03-02 | | 0.287 | 14.00763 | 8.48 | 0.38688 | 6.05 | 0.26373 | 8.09 | 3268 | 256 | 84.7 |
| kikel55 | 4A01 | | 5 | 6 | 40 | 40.6 | 10 | 43326 | 105857 | 07-03-02 | | 0.2168 | 26.95657 | 1.97 | 0.64906 | 2.23 | 0.30042 | 1.84 | 3472 | 58 | 98.0 |
| kikel56 | 4A02 | | 5 | 6 | 40 | 119 | 10 | 30298 | 70577 | 07-03-02 | | 0.2045 | 28.57504 | 1.77 | 0.70541 | 1.66 | 0.29041 | 0.92 | 3418 | 30 | 101.2 |
| kikel57 | 4A03 | | 5 | 6 | 40 | 62.2 | 10 | 55000 | 114356 | 07-03-02 | | 0.2971 | 24.157 | 2.35 | 0.58416 | 2.30 | 0.29836 | 1.56 | 3460 | 48 | 95.2 |
| kikel58 | 4A04 | | 5 | 6 | 40 | 63.5 | 10 | 189485 | 205839 | 07-03-02 | | 0.497 | 22.97718 | 1.92 | 0.65501 | 2.17 | 0.25163 | 1.27 | 3194 | 40 | 101.6 |
| kikel59 | 4A05 | | 5 | 6 | 40 | 70.3 | 10 | 112205 | 122479 | 07-03-02 | | 0.482 | 22.42603 | 1.40 | 0.6145 | 1.34 | 0.26256 | 1.36 | 3262 | 42 | 98.8 |
| kikel60 | 4A06 | | 5 | 6 | 40 | 35.2 | 10 | 50069 | 124346 | 07-03-02 | | 0.2331 | 26.87434 | 2.61 | 0.6504 | 2.76 | 0.29727 | 1.76 | 3456 | 54 | 98.4 |
| kikel61 | 4A07 | | 5 | 6 | 40 | 48.7 | 10 | 102491 | 130556 | 07-03-02 | | 0.372 | 20.91212 | 1.90 | 0.59731 | 2.21 | 0.25175 | 1.88 | 3194 | 60 | 98.7 |
| kikel62 | 4A08 | | 5 | 6 | 40 | 35.1 | 10 | 267450 | 442542 | 07-03-02 | | 0.3237 | 14.48754 | 3.67 | 0.45734 | 3.00 | 0.22678 | 2.70 | 3028 | 88 | 92.5 |
| kikel63 | 4A09 | | 5 | 6 | 40 | 131.1 | 10 | 389098 | 386716 | 07-03-02 | | 0.4155 | 14.24832 | 3.13 | 0.44794 | 2.64 | 0.22828 | 1.52 | 3040 | 50 | 91.6 |
| kikel64 | 4A10 | | 5 | 6 | 40 | 110.9 | 10 | 323142 | 367939 | 07-03-02 | | 0.4078 | 15.14286 | 5.45 | 0.47731 | 4.92 | 0.228 | 1.39 | 3038 | 46 | 93.6 |
| kikel65 | 4A11 | | 5 | 6 | 40 | 98.7 | 10 | 37055 | 58497 | 07-03-02 | | 0.3372 | 21.47082 | 3.63 | 0.61958 | 3.71 | 0.24799 | 1.74 | 3170 | 54 | 100.3 |
| kikel66 | 4A12 | | 5 | 6 | 40 | 90.6 | 10 | 71178 | 81073 | 07-03-02 | | 0.4808 | 22.76971 | 3.27 | 0.61901 | 3.50 | 0.26576 | 1.74 | 3280 | 56 | 98.7 |
| kikel67 | 4A13 | | 5 | 6 | 40 | 40.6 | 10 | 139272 | 161165 | 07-03-02 | | 0.4185 | 19.91027 | 2.82 | 0.60077 | 2.14 | 0.23856 | 3.34 | 3110 | 106 | 99.9 |
| kikel68 | 4A14 | thin | 5 | 6 | 40 | 25.7 | 10 | 37784 | 69950 | 07-03-02 | | 0.2947 | 21.26571 | 2.61 | 0.57226 | 3.38 | 0.26792 | 2.41 | 3292 | 76 | 96.3 |
| kikel69 | 4A15 | | 5 | 6 | 40 | 79.7 | 10 | 64602 | 102399 | 07-03-02 | | 0.3467 | 22.52853 | 3.35 | 0.61258 | 2.73 | 0.26392 | 1.84 | 3270 | 58 | 98.7 |
| kikel70 | 4A16 | | 5 | 6 | 40 | 114.9 | 10 | 102982 | 116681 | 07-03-02 | | 0.4468 | 22.34547 | 3.49 | 0.63005 | 3.44 | 0.25402 | 1.36 | 3210 | 42 | 100.3 |
| kikel71 | 4A17 | | 5 | 6 | 40 | 81.1 | 10 | 49158 | 76594 | 07-03-02 | | 0.3423 | 22.4128 | 3.31 | 0.62938 | 3.48 | 0.25544 | 1.59 | 3218 | 50 | 100.1 |
| kikel72 | 4A18 | | 5 | 6 | 40 | 87.9 | 10 | 43846 | 69372 | 07-03-02 | | 0.3229 | 22.46866 | 3.01 | 0.64166 | 3.18 | 0.25203 | 1.72 | 3196 | 54 | 100.9 |
| kikel73 | 4A19 | | 5 | 6 | 40 | 68.9 | 10 | 239032 | 265309 | 07-03-02 | | 0.5026 | 21.70034 | 4.63 | 0.58819 | 4.67 | 0.26391 | 2.11 | 3270 | 66 | 97.6 |
| kikel74 | 4A20 | | 5 | 6 | 40 | 52.7 | 10 | 200779 | 207345 | 07-03-02 | | 0.4723 | 21.47807 | 3.46 | 0.62794 | 4.61 | 0.24745 | 3.42 | 3168 | 108 | 100.4 |
| kikel75 | 4A21 | | 5 | 6 | 40 | 73 | 10 | 188550 | 194250 | 07-03-02 | | 0.5473 | 22.0404 | 3.13 | 0.60432 | 2.62 | 0.26324 | 2.01 | 3266 | 62 | 98.1 |
| kikel76 | 4A22 | | 5 | 6 | 40 | 63.5 | 10 | 542542 | 508727 | 07-03-02 | | 0.5328 | 12.75235 | 2.62 | 0.408 | 2.84 | 0.22436 | 2.28 | 3012 | 74 | 89.0 |
| kikel77 | 4A23 | crack | 5 | 6 | 40 | 51.4 | 10 | 508346 | 441320 | 07-03-02 | | 0.6051 | 20.27904 | 4.70 | 0.59155 | 4.54 | 0.24567 | 2.65 | 3156 | 84 | 99.0 |
| kikel78 | 4A24 | | 5 | 6 | 40 | 112.2 | 10 | 32870 | 47760 | 07-03-02 | | 0.3197 | 24.59369 | 3.36 | 0.67651 | 2.97 | 0.26182 | 1.73 | 3256 | 54 | 101.7 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikel79 | 4A25 | crack | 5 | 6 | 40 | 40.5 | 10 | 45193 | 67040 | 07-03-02 | | 0.3519 | 21.53854 | 3.62 | 0.59414 | 2.97 | 0.25966 | 2.41 | 3244 | 76 | 98.1 |
| kikel80 | 4A26 | | 5 | 6 | 40 | 46 | 10 | 557995 | 495007 | 07-03-02 | | 0.5646 | 13.94119 | 8.29 | 0.46253 | 9.49 | 0.21666 | 3.70 | 2956 | 120 | 93.5 |
| kikel81 | 4A27 | | 5 | 6 | 40 | 74.4 | 10 | 331371 | 291865 | 07-03-02 | | 0.6021 | 14.18276 | 4.42 | 0.4487 | 4.47 | 0.22752 | 2.85 | 3034 | 90 | 91.7 |
| kikel82 | 4A28 | thin | 5 | 6 | 40 | 24.4 | 10 | 27170 | 39278 | 07-03-02 | | 0.3671 | 23.39172 | 6.33 | 0.62419 | 5.64 | 0.27109 | 10.47 | 3312 | 330 | 98.5 |
| kikel83 | 4A29 | dirty | 5 | 6 | 40 | 43.3 | 10 | 668385 | 509754 | 07-03-02 | | 0.7394 | 21.49042 | 6.56 | 0.59117 | 6.97 | 0.26129 | 4.20 | 3254 | 132 | 97.8 |
| kikel84 | 4A30 | | 5 | 6 | 40 | 56.8 | 10 | 99643 | 123922 | 07-03-02 | | 0.4644 | 22.35576 | 4.28 | 0.62947 | 4.16 | 0.25433 | 3.33 | 3210 | 104 | 100.3 |
| kikel85 | 4A31 | | 5 | 6 | 40 | 45.9 | 10 | 126646 | 115479 | 07-03-02 | | 0.5462 | 22.27266 | 4.22 | 0.60586 | 3.77 | 0.26376 | 2.45 | 3268 | 76 | 98.4 |
| kikel86 | 4A32 | | 5 | 6 | 40 | 143.3 | 10 | 70432 | 109623 | 07-03-02 | | 0.3018 | 23.39182 | 3.68 | 0.65443 | 3.72 | 0.25666 | 1.89 | 3226 | 58 | 101.1 |
| kikel87 | 4A33 | | 5 | 6 | 40 | 51.4 | 10 | 203000 | 196365 | 07-03-02 | | 0.5511 | 22.84547 | 3.05 | 0.61459 | 2.85 | 0.2658 | 2.77 | 3280 | 88 | 98.8 |
| kikel88 | 4A34 | | 5 | 6 | 40 | 43.3 | 10 | 113120 | 146285 | 07-03-02 | | 0.4455 | 22.8881 | 2.78 | 0.63725 | 2.04 | 0.25839 | 1.92 | 3236 | 60 | 100.2 |
| kikem27 | 4A05b | 2nd int | 5 | 6 | 40 | 29.8 | 10 | 38287 | 25564 | 07-03-02 | | 0.5417 | 29.2286 | 3.63 | 0.83712 | 4.67 | 0.25177 | 2.72 | 3194 | 86 | 109.0 |
| kikem28 | 4A23b | 2nd int | 5 | 6 | 40 | 20.3 | 10 | 233011 | 191118 | 07-03-02 | x | 0.5027 | 35.60409 | 6.35 | 1.0345 | 5.55 | 0.24675 | 3.11 | 3164 | 100 | 116.2 |

**KB810 LA-ICP-MS U-Pb analysis**

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikej53 | 5E01 | | 5 | 6 | 60 | 100 | 10 | 129854 | 229741 | 05-03-02 | | 0.2302 | 23.27137 | 5.15 | 0.64637 | 2.31 | 0.25950 | 5.81 | 3242 | 184 | 100.5 |
| kikej54 | 5E02 | | 5 | 6 | 40 | 79.7 | 10 | 86261 | 142709 | 05-03-02 | | 0.2514 | 23.71620 | 3.02 | 0.64896 | 3.06 | 0.26634 | 1.76 | 3284 | 54 | 99.8 |
| kikej55 | 5E03 | | 5 | 6 | 40 | 106.8 | 10 | 149542 | 276517 | 05-03-02 | | 0.2073 | 23.00256 | 2.04 | 0.63763 | 2.36 | 0.26350 | 1.30 | 3266 | 42 | 99.4 |
| kikej56 | 5E04 | | 5 | 6 | 40 | 140.6 | 10 | 48932 | 105305 | 05-03-02 | | 0.1876 | 25.84858 | 1.72 | 0.72470 | 1.62 | 0.25937 | 1.41 | 3242 | 44 | 103.7 |
| kikek01 | 5E05 | | 5 | 6 | 40 | 58.1 | 10 | 62028 | 181728 | 06-03-02 | | 0.1260 | 24.25510 | 2.43 | 0.67862 | 2.46 | 0.25948 | 1.74 | 3242 | 56 | 101.7 |
| kikek02 | 5E06 | | 5 | 6 | 40 | 85.1 | 49.1 | 88939 | 203518 | 06-03-02 | | 0.1497 | 22.89427 | 2.59 | 0.64550 | 2.76 | 0.25650 | 1.82 | 3224 | 56 | 100.6 |
| kikek03 | 5E07 | | 5 | 6 | 60 | 98.7 | 10 | 262149 | 173425 | 06-03-02 | | 0.5553 | 23.44630 | 1.78 | 0.65328 | 1.74 | 0.25977 | 1.06 | 3244 | 32 | 100.6 |
| kikek04 | 5E08 | | 5 | 6 | 40 | 75.7 | 10 | 192890 | 245556 | 06-03-02 | | 0.2894 | 22.69200 | 3.08 | 0.64790 | 3.35 | 0.25380 | 1.47 | 3208 | 46 | 100.8 |
| kikek05 | 5E09 | | 5 | 6 | 40 | 77.1 | 10 | 196199 | 288818 | 06-03-02 | | 0.2476 | 23.59497 | 2.15 | 0.65232 | 2.34 | 0.26303 | 1.62 | 3264 | 52 | 100.2 |
| kikek06 | 5E10 | | 5 | 6 | 40 | 82.5 | 10 | 106035 | 96926 | 06-03-02 | | 0.3909 | 23.40318 | 2.95 | 0.64771 | 2.48 | 0.26212 | 2.08 | 3258 | 64 | 100.2 |
| kikek07 | 5E11 | | 5 | 6 | 40 | 50 | 10 | 82602 | 77548 | 06-03-02 | | 0.3833 | 22.23081 | 2.50 | 0.63696 | 2.09 | 0.25325 | 2.76 | 3204 | 88 | 100.3 |
| kikek08 | 5E12 | | 5 | 6 | 60 | 73 | 10 | 52524 | 143243 | 06-03-02 | | 0.1436 | 24.80743 | 2.41 | 0.67526 | 2.56 | 0.26618 | 1.85 | 3282 | 58 | 101.2 |
| kikek09 | 5E13 | | 5 | 6 | 60 | 39.2 | 10 | 428055 | 687731 | 06-03-02 | | 0.2706 | 19.12284 | 3.22 | 0.55939 | 2.91 | 0.24946 | 2.17 | 3180 | 68 | 96.5 |
| kikek10 | 5E14 | | 5 | 6 | 60 | 55.4 | 10 | 284970 | 204956 | 06-03-02 | | 0.6046 | 21.61919 | 3.77 | 0.59270 | 2.99 | 0.26454 | 2.06 | 3272 | 64 | 97.4 |
| kikek11 | 5E15 | | 5 | 6 | 60 | 55.4 | 10 | 209448 | 146382 | 06-03-02 | | 0.6417 | 21.56921 | 3.18 | 0.60422 | 3.10 | 0.25913 | 1.99 | 3240 | 64 | 98.3 |
| kikek12 | 5E16 | | 5 | 6 | 60 | 64.9 | 10 | 67407 | 251554 | 06-03-02 | | 0.1091 | 18.94232 | 5.51 | 0.54854 | 3.62 | 0.25109 | 5.76 | 3190 | 182 | 95.9 |
| kikek13 | 5E17 | | 5 | 6 | 60 | 97.4 | 59.1 | 117205 | 108231 | 06-03-02 | | 0.4213 | 21.48768 | 4.42 | 0.61008 | 2.18 | 0.25552 | 5.22 | 3218 | 164 | 98.8 |
| kikek14 | 5E18 | | 5 | 6 | 60 | 56.8 | 10 | 142692 | 165171 | 06-03-02 | | 0.3672 | 20.46230 | 2.63 | 0.56621 | 2.17 | 0.26178 | 1.71 | 3256 | 54 | 96.2 |
| kikek15 | 5E19 | | 5 | 6 | 60 | 64.9 | 10 | 316667 | 615201 | 06-03-02 | | 0.2093 | 19.39734 | 4.40 | 0.56582 | 4.31 | 0.24979 | 1.72 | 3182 | 56 | 96.8 |
| kikek16 | 5E20 | | 5 | 6 | 60 | 35.2 | 10 | 86148 | 246249 | 06-03-02 | | 0.1370 | 22.14937 | 6.01 | 0.61805 | 5.76 | 0.25852 | 2.64 | 3236 | 84 | 99.2 |
| kikek17 | 5E21 | | 5 | 6 | 60 | 50 | 10 | 378218 | 359090 | 06-03-02 | | 0.4603 | 21.32931 | 3.01 | 0.59808 | 3.18 | 0.25873 | 2.15 | 3238 | 68 | 98.0 |
| kikek18 | 5E22 | | 5 | 6 | 40 | 71.6 | 10 | 28984 | 108557 | 06-03-02 | | 0.0971 | 19.34559 | 2.21 | 0.57331 | 2.30 | 0.24469 | 2.05 | 3150 | 66 | 97.7 |
| kikek19 | 5E23 | | 5 | 6 | 40 | 56.8 | 10 | 70004 | 207380 | 06-03-02 | | 0.1180 | 16.26996 | 2.98 | 0.49555 | 3.22 | 0.23788 | 1.78 | 3104 | 56 | 93.8 |
| kikek20 | 5E24 | | 5 | 6 | 40 | 51.4 | 10 | 33756 | 118756 | 06-03-02 | | 0.1046 | 22.89025 | 2.99 | 0.64675 | 2.51 | 0.25639 | 2.40 | 3224 | 76 | 100.6 |
| kikek21 | 5E25 | | 5 | 6 | 40 | 46 | 10 | 132767 | 376830 | 06-03-02 | | 0.1244 | 17.94213 | 3.87 | 0.52762 | 3.12 | 0.24681 | 3.05 | 3164 | 96 | 95.0 |
| kikek22 | 5E26 | | 5 | 6 | 40 | 89.2 | 10 | 123547 | 347042 | 06-03-02 | | 0.1327 | 22.93563 | 6.18 | 0.64512 | 4.68 | 0.25815 | 2.49 | 3234 | 80 | 100.3 |
| kikek23 | 5E27 | | 5 | 6 | 60 | 101.4 | 10 | 69968 | 233003 | 06-03-02 | | 0.1169 | 21.03933 | 2.28 | 0.59770 | 3.64 | 0.25511 | 1.42 | 3216 | 44 | 98.3 |
| kikek24 | 5E28 | | 5 | 6 | 60 | 108.1 | 10 | 137162 | 342324 | 06-03-02 | | 0.1477 | 20.25356 | 2.51 | 0.58080 | 2.74 | 0.25166 | 1.23 | 3194 | 40 | 97.8 |
| kikek25 | 5E29 | | 5 | 6 | 60 | 37.9 | 10 | 52087 | 255659 | 06-03-02 | | 0.0910 | 19.57962 | 4.14 | 0.57264 | 3.44 | 0.24842 | 2.44 | 3174 | 78 | 97.4 |
| kikek26 | 5E30 | | 5 | 6 | 60 | 74.3 | 10 | 40648 | 111936 | 06-03-02 | | 0.1289 | 22.18093 | 2.04 | 0.63082 | 1.77 | 0.25478 | 1.37 | 3214 | 44 | 99.9 |
| kikek27 | 5E31 | | 5 | 6 | 60 | 47.3 | 38.8 | 144926 | 145407 | 06-03-02 | | 0.4304 | 23.80988 | 4.39 | 0.66115 | 3.91 | 0.26152 | 1.49 | 3254 | 46 | 100.8 |
| kikek28 | 5E32 | | 5 | 6 | 60 | 169 | 10 | 133601 | 118258 | 06-03-02 | | 0.4294 | 21.52423 | 2.30 | 0.61882 | 3.05 | 0.25273 | 1.61 | 3200 | 50 | 99.4 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| kikek29 | 5E33 | | 5 | 6 | 40 | 150.1 | 10 | 71196 | 55059 | 06-03-02 | | 0.4835 | 22.15231 | 1.92 | 0.63322 | 1.89 | 0.25327 | 1.53 | 3204 | 48 | 100.2 |
| kikek30 | 5E34 | thin | 5 | 6 | 40 | 27.1 | 10 | 226900 | 322906 | 06-03-02 | | 0.2252 | 22.51462 | 2.99 | 0.64618 | 1.66 | 0.25267 | 3.18 | 3200 | 100 | 100.8 |
| kikek31 | 5E35 | | 5 | 6 | 40 | 129.8 | 10 | 33034 | 114860 | 06-03-02 | | 0.1059 | 22.50041 | 3.39 | 0.65885 | 2.78 | 0.24844 | 1.65 | 3174 | 52 | 101.6 |
| kikek32 | 5E36 | spike | 5 | 6 | 60 | 119 | 10 | 152714 | 126144 | 06-03-02 | x | 0.5308 | 25.99381 | 4.17 | 0.62966 | 2.93 | 0.29893 | 22.23 | 3464 | 704 | 97.2 |
| kikek33 | 5E37 | | 5 | 6 | 60 | 75.7 | 10 | 376210 | 277005 | 06-03-02 | x | 0.5992 | 23.19807 | 11.35 | 0.60701 | 3.68 | 0.27735 | 10.02 | 3348 | 316 | 97.2 |
| kikek34 | 5E38 | | 5 | 6 | 60 | 82.4 | 10 | 354302 | 221066 | 06-03-02 | | 0.6869 | 23.60526 | 3.15 | 0.64032 | 2.80 | 0.26679 | 1.88 | 3286 | 60 | 99.6 |
| kikek35 | 5E39 | | 5 | 6 | 60 | 91.9 | 10 | 102458 | 103229 | 06-03-02 | | 0.4067 | 21.44544 | 2.36 | 0.61526 | 2.22 | 0.25229 | 1.65 | 3198 | 52 | 99.4 |
| kikek36 | 5E40 | | 5 | 6 | 60 | 66.2 | 10 | 49544 | 70101 | 06-03-02 | | 0.2988 | 20.97955 | 2.38 | 0.59059 | 2.78 | 0.25827 | 2.18 | 3236 | 70 | 97.6 |
| kikek37 | 5E41 | | 5 | 6 | 80 | 112.2 | 10 | 77898 | 122326 | 06-03-02 | x | 0.2521 | 22.20298 | 3.43 | 0.65126 | 9.22 | 0.24754 | 2.82 | 3168 | 90 | 101.4 |
| kikek38 | 5E42 | | 5 | 6 | 60 | 91.9 | 10 | 51444 | 65874 | 06-03-02 | | 0.2929 | 20.42820 | 2.16 | 0.59318 | 1.78 | 0.24918 | 1.65 | 3178 | 52 | 98.5 |
| kikek39 | 5E43 | | 5 | 6 | 60 | 81.1 | 10 | 147105 | 152100 | 06-03-02 | x | 0.3899 | 21.81000 | 2.70 | 0.64234 | 8.01 | 0.24688 | 2.60 | 3164 | 82 | 101.0 |
| kikek40 | 5E44 | | 5 | 6 | 60 | 140.6 | 10 | 48811 | 155014 | 06-03-02 | x | 0.1323 | 23.18856 | 7.33 | 0.63302 | 3.90 | 0.26486 | 7.91 | 3274 | 250 | 99.4 |
| kikek41 | 5E45 | | 5 | 6 | 60 | 150 | 10 | 120079 | 130858 | 06-03-02 | | 0.3709 | 22.06166 | 2.57 | 0.63552 | 3.00 | 0.25197 | 1.57 | 3196 | 48 | 100.3 |
| kikek42 | 5E46 | | 5 | 6 | 60 | 75.7 | 228.3 | 98317 | 267759 | 06-03-02 | | 0.1429 | 20.54031 | 3.18 | 0.62410 | 2.93 | 0.23883 | 2.03 | 3112 | 66 | 100.8 |
| kikek43 | 5E47 | | 5 | 6 | 60 | 48.7 | 10 | 97991 | 363288 | 06-03-02 | | 0.1149 | 24.46247 | 3.82 | 0.70243 | 3.41 | 0.25335 | 1.75 | 3204 | 56 | 103.2 |
| kikek44 | 5E48 | | 5 | 6 | 60 | 73 | 10 | 79067 | 275577 | 06-03-02 | | 0.1144 | 21.26492 | 1.94 | 0.59558 | 1.71 | 0.25829 | 1.60 | 3236 | 50 | 98.0 |
| kikek45 | 5E49 | | 5 | 6 | 60 | 108.2 | 10 | 301673 | 631059 | 06-03-02 | | 0.1922 | 21.11087 | 3.33 | 0.58301 | 3.04 | 0.26276 | 3.23 | 3262 | 102 | 97.0 |
| kikek46 | 5E50 | | 5 | 6 | 60 | 104.1 | 10 | 99467 | 272833 | 06-03-02 | | 0.1445 | 22.49786 | 1.98 | 0.64598 | 1.76 | 0.25183 | 1.22 | 3196 | 38 | 100.9 |
| kikek47 | 5E51 | | 5 | 6 | 60 | 108.1 | 10 | 71563 | 227554 | 06-03-02 | | 0.1272 | 22.33195 | 2.75 | 0.62630 | 2.21 | 0.25896 | 2.03 | 3240 | 66 | 99.3 |
| kikek48 | 5E52 | | 5 | 6 | 60 | 105.5 | 10 | 429092 | 611389 | 06-03-02 | | 0.3090 | 22.64780 | 3.16 | 0.61421 | 3.16 | 0.26782 | 1.94 | 3292 | 60 | 98.2 |
| kikek49 | 5E53 | | 5 | 6 | 60 | 116.2 | 10 | 216104 | 173235 | 06-03-02 | | 0.4777 | 23.96580 | 5.21 | 0.67046 | 6.50 | 0.25774 | 5.23 | 3232 | 164 | 101.7 |
| kikek50 | 5E54 | | 5 | 6 | 60 | 81.1 | 10 | 93429 | 283984 | 06-03-02 | | 0.1293 | 22.20298 | 3.27 | 0.61958 | 2.72 | 0.25979 | 1.85 | 3244 | 58 | 99.0 |
| kikek51 | 5E55 | | 5 | 6 | 60 | 81.1 | 10 | 177988 | 156844 | 06-03-02 | | 0.4775 | 20.18535 | 1.51 | 0.56246 | 1.46 | 0.26041 | 1.24 | 3248 | 40 | 96.1 |
| kikek52 | 5E56 | | 5 | 6 | 60 | 78.4 | 10 | 135300 | 145788 | 06-03-02 | | 0.3656 | 21.60430 | 1.73 | 0.59914 | 1.84 | 0.26095 | 1.44 | 3252 | 46 | 98.0 |
| kikek53 | 5E57 | | 5 | 6 | 60 | 142 | 10 | 219035 | 229375 | 06-03-02 | x | 0.4404 | 26.68667 | 21.81 | 0.62035 | 2.50 | 0.31291 | 16.89 | 3534 | 526 | 96.0 |
| kikek54 | 5E58 | | 5 | 6 | 60 | 163.6 | 10 | 91030 | 115189 | 06-03-02 | | 0.3423 | 21.65134 | 2.42 | 0.61315 | 2.34 | 0.25639 | 1.53 | 3224 | 48 | 98.9 |
| kikek55 | 5E59 | | 5 | 6 | 60 | 102.7 | 10 | 92211 | 117967 | 06-03-02 | | 0.3115 | 20.63998 | 1.85 | 0.58147 | 1.91 | 0.25704 | 1.40 | 3228 | 44 | 97.3 |
| kikek56 | 5E60 | | 5 | 6 | 60 | 113.5 | 10 | 164249 | 178245 | 06-03-02 | | 0.3937 | 22.33381 | 1.92 | 0.63466 | 2.12 | 0.25540 | 1.61 | 3218 | 50 | 100.0 |

**91500 LA-ICP-MS U-Pb analysis**

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| zstdg01 | 91500 | | 10 | 6 | 120 | 100 | 5 | 97574 | 469351 | 26-02-02 | | 0.1049 | 1.805552 | 1.32 | 0.17059 | 0.94 | 0.07689 | 1.07 | 1118 | 42 | 94.9 |
| zstdg02 | 91500 | | 10 | 6 | 120 | 93.2 | 5 | 108190 | 498693 | 26-02-02 | | 0.1068 | 1.758708 | 1.39 | 0.16762 | 1.13 | 0.07629 | 1.11 | 1102 | 44 | 94.6 |
| zstdg03 | 91500 | | 10 | 6 | 120 | 113.6 | 8.1 | 95990 | 455926 | 26-02-02 | | 0.106 | 1.721566 | 1.27 | 0.16838 | 0.94 | 0.07424 | 1.12 | 1046 | 46 | 98.5 |
| zstdg04 | 91500 | | 5 | 6 | 60 | 104.1 | 5 | 14593 | 71191 | 26-02-02 | | 0.1266 | 1.76743 | 7.92 | 0.16704 | 5.58 | 0.07683 | 7.38 | 1116 | 294 | 93.8 |
| zstdg05 | 91500 | | 5 | 6 | 40 | 74.3 | 5 | 7285 | 32505 | 26-02-02 | x | 0.223 | 2.073092 | 14.84 | 0.17117 | 7.82 | 0.08788 | 13.77 | 1378 | 534 | 83.7 |
| zstdg06 | 91500 | | 5 | 6 | 40 | 64.9 | 5 | 6926 | 33976 | 26-02-02 | | 0.1537 | 1.815352 | 8.80 | 0.15581 | 7.01 | 0.0847 | 10.30 | 1308 | 402 | 81.3 |
| zstdg07 | 91500 | | 5 | 6 | 40 | 77 | 5 | 6581 | 33565 | 26-02-02 | | 0.1212 | 1.483622 | 15.12 | 0.1583 | 6.70 | 0.06803 | 14.42 | 868 | 604 | 107.8 |
| zstdg08 | 91500 | | 5 | 6 | 40 | 73 | 5 | 6948 | 31615 | 26-02-02 | | 0.1527 | 1.80222 | 11.83 | 0.16262 | 9.04 | 0.08015 | 15.62 | 1200 | 624 | 88.3 |
| zstdg09 | 91500 | | 6 | 6 | 40 | 78.4 | 5 | 7263 | 33627 | 26-02-02 | | 0.1126 | 1.767822 | 10.25 | 0.18298 | 8.35 | 0.07062 | 10.01 | 946 | 412 | 110.7 |
| zstdg10 | 91500 | | 6 | 6 | 40 | 75.7 | 5 | 6992 | 35063 | 26-02-02 | | 0.137 | 1.636698 | 8.27 | 0.16061 | 7.66 | 0.07454 | 11.57 | 1056 | 470 | 94.4 |
| zstdg11 | 91500 | | 6 | 6 | 40 | 75.7 | 5 | 6992 | 33220 | 26-02-02 | | 0.1411 | 1.775466 | 8.93 | 0.16435 | 8.42 | 0.07849 | 10.27 | 1158 | 410 | 90.7 |
| zstdg12 | 91500 | | 6 | 6 | 40 | 77 | 5 | 7605 | 38451 | 26-02-02 | | 0.1365 | 1.668842 | 6.43 | 0.16272 | 5.40 | 0.07432 | 7.10 | 1050 | 288 | 96.2 |
| zstdg13 | 91500 | | 6 | 6 | 40 | 79.8 | 5 | 7860 | 33362 | 26-02-02 | | 0.1145 | 1.869056 | 6.89 | 0.18221 | 6.98 | 0.07454 | 8.69 | 1056 | 350 | 102.7 |
| zstdg14 | 91500 | | 6 | 6 | 40 | 75.7 | 5 | 7253 | 32270 | 26-02-02 | x | 0.2215 | 1.689422 | 17.96 | 0.16675 | 7.97 | 0.07355 | 16.95 | 1028 | 696 | 98.9 |
| zstdg15 | 91500 | | 6 | 6 | 40 | 77 | 5 | 6947 | 36197 | 26-02-02 | | 0.1022 | 1.82672 | 9.44 | 0.17405 | 6.83 | 0.07601 | 6.84 | 1094 | 274 | 97.6 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| zstdg16 | 91500 | | 6 | 6 | 40 | 81.1 | 5 | 6190 | 31551 | 26-02-02 | | 0.12 | 1.768312 | 8.24 | 0.17088 | 7.70 | 0.07485 | 9.63 | 1064 | 390 | 98.4 |
| zstdg17 | 91500 | | 6 | 6 | 40 | 78.4 | 5 | 7083 | 34544 | 26-02-02 | | 0.1443 | 1.72235 | 7.71 | 0.1681 | 7.39 | 0.07444 | 12.25 | 1052 | 498 | 97.9 |
| zstdg18 | 91500 | | 6 | 6 | 40 | 74.4 | 5 | 7498 | 34965 | 26-02-02 | x | 0.1242 | 1.610728 | 12.31 | 0.15533 | 7.45 | 0.07519 | 11.60 | 1072 | 470 | 92.1 |
| zstdg19 | 91500 | | 6 | 6 | 30 | 78.4 | 5 | 3679 | 17027 | 26-02-02 | | 0.1332 | 1.892674 | 14.19 | 0.16656 | 12.12 | 0.08266 | 10.85 | 1260 | 426 | 86.7 |
| zstdg20 | 91500 | | 6 | 6 | 60 | 83.8 | 5 | 14172 | 77286 | 26-02-02 | | 0.1144 | 1.689128 | 5.66 | 0.15946 | 4.15 | 0.07687 | 4.60 | 1116 | 184 | 91.1 |
| zstdg21 | 91500 | | 6 | 6 | 60 | 81.1 | 5 | 14104 | 76772 | 26-02-02 | | 0.1075 | 1.80271 | 10.60 | 0.1631 | 4.78 | 0.08069 | 8.40 | 1212 | 332 | 87.5 |
| zstdh01 | 91500 | | 5 | 6 | 120 | 125.7 | 5 | 68165 | 358117 | 27-02-02 | | 0.1034 | 1.738422 | 1.93 | 0.16502 | 1.61 | 0.0763 | 1.17 | 1102 | 48 | 94.0 |
| zstdh02 | 91500 | | 5 | 6 | 120 | 102.8 | 5 | 66474 | 367824 | 27-02-02 | | 0.1045 | 1.687854 | 1.89 | 0.15773 | 1.63 | 0.07754 | 1.29 | 1134 | 52 | 89.7 |
| zstdh03 | 91500 | | 5 | 6 | 40 | 86.5 | 5 | 10333 | 45211 | 27-02-02 | | 0.1166 | 1.75616 | 5.06 | 0.16464 | 5.23 | 0.07691 | 6.55 | 1118 | 262 | 93.3 |
| zstdh04 | 91500 | | 5 | 6 | 60 | 73 | 5 | 22069 | 95253 | 27-02-02 | | 0.1259 | 1.680308 | 5.73 | 0.15427 | 5.04 | 0.07879 | 4.57 | 1166 | 182 | 87.0 |
| zstdh05 | 91500 | | 5 | 6 | 60 | 89.2 | 5 | 20354 | 89926 | 27-02-02 | | 0.1201 | 1.750476 | 5.36 | 0.16829 | 5.86 | 0.07527 | 3.66 | 1074 | 146 | 96.8 |
| zstdh06 | 91500 | | 5 | 6 | 60 | 73 | 5 | 21794 | 88332 | 27-02-02 | | 0.1199 | 1.816822 | 8.25 | 0.17328 | 5.67 | 0.0761 | 5.02 | 1096 | 202 | 97.2 |
| zstdh07 | 91500 | | 5 | 6 | 40 | 71.6 | 5 | 6905 | 33046 | 27-02-02 | | 0.1121 | 1.378566 | 10.94 | 0.15091 | 10.80 | 0.06631 | 10.50 | 816 | 442 | 109.3 |
| zstdh08 | 91500 | | 5 | 6 | 40 | 74.3 | 5 | 7036 | 31329 | 27-02-02 | x | 0.1074 | 1.739598 | 20.30 | 0.19133 | 19.71 | 0.06542 | 5.84 | 786 | 244 | 131.8 |
| zstdh09 | 91500 | | 5 | 6 | 40 | 81.1 | 5 | 6927 | 30594 | 27-02-02 | | 0.1019 | 1.654044 | 9.34 | 0.16262 | 7.73 | 0.07345 | 6.19 | 1026 | 252 | 97.9 |
| zstdh10 | 91500 | | 5 | 6 | 40 | 62.2 | 5 | 8842 | 32781 | 27-02-02 | x | 0.1343 | 2.66217 | 12.03 | 0.18096 | 10.59 | 0.10651 | 9.27 | 1740 | 340 | 76.6 |
| zstdh11 | 91500 | | 5 | 6 | 40 | 83.8 | 5 | 6561 | 28367 | 27-02-02 | x | 0.1348 | 1.834266 | 13.66 | 0.21888 | 14.01 | 0.06061 | 9.28 | 624 | 402 | 171.6 |
| zstdh12 | 91500 | | 5 | 6 | 40 | 82.4 | 5 | 7238 | 28969 | 27-02-02 | | 0.1711 | 1.969506 | 9.97 | 0.17645 | 7.92 | 0.08064 | 5.73 | 1212 | 226 | 92.3 |
| zstdh13 | 91500 | | 5 | 6 | 40 | 68.9 | 5 | 5512 | 23916 | 27-02-02 | x | 0.0866 | 4.596494 | 88.74 | 0.25123 | 28.18 | 0.13247 | 95.54 | 2130 | 3240 | 82.9 |
| zstdh14 | 91500 | | 5 | 6 | 40 | 75.7 | 5 | 6216 | 28911 | 27-02-02 | x | 0.1142 | 1.818782 | 27.91 | 0.1585 | 7.44 | 0.0831 | 19.72 | 1270 | 786 | 83.9 |
| zstdh15 | 91500 | | 5 | 6 | 40 | 71.6 | 5 | 6622 | 27720 | 27-02-02 | | 0.0994 | 1.822212 | 10.74 | 0.17683 | 9.78 | 0.07487 | 12.65 | 1064 | 514 | 100.3 |
| zstdh16 | 91500 | | 5 | 6 | 40 | 81.1 | 5 | 6357 | 29442 | 27-02-02 | | 0.111 | 1.745184 | 9.75 | 0.17443 | 8.69 | 0.0727 | 5.75 | 1004 | 234 | 103.4 |
| zstdh17 | 91500 | | 5 | 6 | 40 | 71.6 | 5 | 5768 | 27106 | 27-02-02 | x | 0.1062 | 2.140908 | 21.04 | 0.20131 | 25.15 | 0.07658 | 25.06 | 1110 | 1036 | 105.9 |
| zstdh18 | 91500 | | 5 | 6 | 40 | 78.4 | 5 | 5680 | 26651 | 27-02-02 | x | 0.1032 | 1.577898 | 9.35 | 0.19805 | 28.47 | 0.05751 | 10.52 | 510 | 466 | 191.0 |
| zstdh19 | 91500 | | 5 | 6 | 120 | 121.7 | 5 | 73035 | 322954 | 27-02-02 | | 0.1089 | 1.793302 | 1.68 | 0.17155 | 1.36 | 0.07597 | 1.27 | 1094 | 50 | 96.5 |
| zstdh20 | 91500 | | 5 | 6 | 60 | 79.7 | 5 | 20358 | 91251 | 27-02-02 | | 0.1242 | 1.784384 | 6.86 | 0.17011 | 7.47 | 0.07597 | 5.82 | 1094 | 234 | 96.3 |
| zstdh21 | 91500 | | 7 | 6 | 60 | 81.1 | 5 | 25404 | 118292 | 27-02-02 | | 0.1222 | 1.719312 | 7.44 | 0.16013 | 7.74 | 0.07799 | 7.12 | 1146 | 282 | 89.8 |
| zstdh22 | 91500 | | 7 | 6 | 60 | 71.6 | 5 | 27667 | 126411 | 27-02-02 | | 0.1106 | 1.691774 | 8.93 | 0.17174 | 11.53 | 0.07112 | 5.24 | 960 | 216 | 106.0 |
| zstdh23 | 91500 | | 7 | 6 | 60 | 82.4 | 5 | 29118 | 122444 | 27-02-02 | | 0.1542 | 1.640128 | 7.54 | 0.16224 | 5.94 | 0.07318 | 4.89 | 1018 | 198 | 98.1 |
| zstdh24 | 91500 | | 7 | 6 | 60 | 79.8 | 5 | 28262 | 124639 | 27-02-02 | | 0.1186 | 1.75273 | 6.80 | 0.1633 | 5.97 | 0.07753 | 5.91 | 1134 | 236 | 91.8 |
| zstdh25 | 91500 | | 7 | 6 | 60 | 83.8 | 5 | 26532 | 114063 | 27-02-02 | | 0.1141 | 1.850828 | 8.00 | 0.17914 | 7.77 | 0.07468 | 5.42 | 1058 | 218 | 101.8 |
| zstdh26 | 91500 | | 7 | 6 | 60 | 75.7 | 5 | 27950 | 125000 | 27-02-02 | | 0.1165 | 1.656494 | 6.94 | 0.16378 | 8.10 | 0.07328 | 5.92 | 1020 | 240 | 98.5 |
| zstdh27 | 91500 | | 7 | 6 | 60 | 85.1 | 5 | 28401 | 126187 | 27-02-02 | | 0.1816 | 1.637384 | 6.13 | 0.16339 | 7.59 | 0.07252 | 4.90 | 1000 | 200 | 99.7 |
| zstdh28 | 91500 | | 7 | 6 | 60 | 71.6 | 5 | 30051 | 128808 | 27-02-02 | | 0.1169 | 1.732052 | 7.24 | 0.16637 | 7.28 | 0.07554 | 8.22 | 1082 | 330 | 95.6 |
| zstdh29 | 91500 | | 7 | 6 | 60 | 86.5 | 5 | 26523 | 123668 | 27-02-02 | | 0.1099 | 1.738618 | 6.14 | 0.16915 | 8.38 | 0.07433 | 11.15 | 1050 | 454 | 98.7 |
| zstdi01 | 91500 | | 10 | 6 | 120 | 110.8 | 5 | 175591 | 646683 | 28-02-02 | | 0.1042 | 1.841126 | 3.46 | 0.16992 | 1.15 | 0.07844 | 3.17 | 1158 | 126 | 92.7 |
| zstdi02 | 91500 | | 10 | 6 | 120 | 116.3 | 5 | 173117 | 653535 | 28-02-02 | x | 0.1071 | 2.146102 | 17.84 | 0.17395 | 0.89 | 0.08955 | 16.57 | 1414 | 642 | 83.3 |
| zstdi03 | 91500 | | 10 | 6 | 120 | 94.6 | 5 | 168478 | 662851 | 28-02-02 | | 0.1018 | 1.699222 | 1.00 | 0.16522 | 0.78 | 0.07455 | 0.99 | 1056 | 40 | 96.7 |
| zstdi04 | 91500 | | 7 | 6 | 40 | 64.9 | 5 | 9153 | 38081 | 28-02-02 | x | 0.1039 | 1.532426 | 7.64 | 0.17232 | 4.43 | 0.06442 | 7.18 | 754 | 304 | 126.8 |
| zstdi05 | 91500 | | 7 | 6 | 120 | 87.8 | 5 | 87592 | 402741 | 28-02-02 | | 0.1116 | 1.74146 | 1.76 | 0.16858 | 0.80 | 0.0749 | 1.64 | 1064 | 66 | 97.5 |
| zstdi06 | 91500 | | 7 | 6 | 60 | 78.4 | 5 | 23728 | 104647 | 28-02-02 | | 0.121 | 1.76057 | 4.90 | 0.16675 | 6.22 | 0.07634 | 7.06 | 1104 | 282 | 94.6 |
| zstdi07 | 91500 | | 7 | 6 | 60 | 78.4 | 5 | 23315 | 105743 | 28-02-02 | | 0.1165 | 1.714216 | 6.35 | 0.16771 | 7.61 | 0.07382 | 4.76 | 1036 | 192 | 99.1 |
| zstdi08 | 91500 | | 7 | 6 | 60 | 83.8 | 5 | 24039 | 103042 | 28-02-02 | | 0.1282 | 1.775074 | 5.18 | 0.16982 | 6.06 | 0.07557 | 5.06 | 1082 | 204 | 97.0 |
| zstdi09 | 91500 | | 7 | 6 | 60 | 86.5 | 5 | 20841 | 95484 | 28-02-02 | | 0.1046 | 1.86396 | 7.11 | 0.16963 | 5.41 | 0.07962 | 4.13 | 1186 | 164 | 91.2 |
| zstdi10 | 91500 | | 7 | 6 | 60 | 77 | 5 | 20604 | 96845 | 28-02-02 | | 0.1047 | 1.743224 | 4.18 | 0.17904 | 3.89 | 0.07028 | 5.02 | 936 | 206 | 110.9 |
| zstdi11 | 91500 | | 7 | 6 | 60 | 82.4 | 5 | 20931 | 96467 | 28-02-02 | | 0.1115 | 1.646106 | 5.77 | 0.15888 | 5.84 | 0.07511 | 5.69 | 1070 | 228 | 93.6 |
| zstdi12 | 91500 | | 7 | 6 | 60 | 85.1 | 5 | 19992 | 96333 | 28-02-02 | | 0.1128 | 1.7297 | 6.14 | 0.1656 | 7.11 | 0.07534 | 4.17 | 1076 | 168 | 96.0 |
| zstdi13 | 91500 | | 7 | 6 | 60 | 81.1 | 5 | 21343 | 96769 | 28-02-02 | | 0.1164 | 1.673252 | 5.85 | 0.16368 | 6.73 | 0.07388 | 5.25 | 1038 | 212 | 97.4 |
| zstdi14 | 91500 | | 7 | 6 | 60 | 79.7 | 5 | 21106 | 100641 | 28-02-02 | | 0.1183 | 1.72333 | 6.46 | 0.1631 | 6.11 | 0.07665 | 5.18 | 1110 | 208 | 92.8 |
| zstdi15 | 91500 | | 7 | 6 | 60 | 77.1 | 10 | 21678 | 96292 | 28-02-02 | x | 0.1218 | 2.031736 | 34.84 | 0.17405 | 6.90 | 0.08445 | 30.90 | 1302 | 1266 | 87.6 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| zstdi16 | 91500 | | 7 | 6 | 60 | 75.7 | 5 | 21065 | 96827 | 28-02-02 | | 0.116 | 1.709512 | 9.80 | 0.16742 | 9.04 | 0.07394 | 5.51 | 1038 | 222 | 98.7 |
| zstdi17 | 91500 | | 7 | 6 | 60 | 81.1 | 5 | 19562 | 95541 | 28-02-02 | | 0.1113 | 1.798202 | 10.62 | 0.17654 | 8.55 | 0.0736 | 4.75 | 1030 | 192 | 102.7 |
| zstdi18 | 91500 | | 5 | 6 | 60 | 78.4 | 5 | 17910 | 80566 | 28-02-02 | | 0.1179 | 1.731856 | 7.44 | 0.16886 | 6.88 | 0.07406 | 4.67 | 1042 | 190 | 99.1 |
| zstdi19 | 91500 | | 5 | 6 | 120 | 52.7 | 37.9 | 65446 | 326914 | 28-02-02 | x | 0.1081 | 7.272776 | 91.73 | 0.16896 | 3.24 | 0.31206 | 81.85 | 3530 | 3524 | 61.3 |
| zstdi20 | 91500 | | 5 | 6 | 60 | 78.4 | 5 | 14591 | 80958 | 28-02-02 | | 0.1125 | 1.685404 | 10.04 | 0.1657 | 10.16 | 0.07337 | 6.17 | 1024 | 250 | 99.2 |
| zstdi21 | 91500 | | 5 | 6 | 60 | 83.8 | 5 | 16400 | 78106 | 28-02-02 | | 0.1173 | 1.803396 | 9.17 | 0.15878 | 7.63 | 0.08223 | 6.92 | 1250 | 272 | 84.8 |
| zstdi22 | 91500 | | 5 | 6 | 60 | 96 | 5 | 14664 | 68051 | 28-02-02 | | 0.1179 | 1.881698 | 6.61 | 0.1825 | 6.90 | 0.07459 | 4.00 | 1056 | 160 | 103.0 |
| zstdi23 | 91500 | | 5 | 6 | 60 | 83.8 | 5 | 15445 | 78400 | 28-02-02 | | 0.1314 | 1.87033 | 6.46 | 0.15658 | 5.94 | 0.08655 | 5.90 | 1350 | 228 | 80.3 |
| zstdi24 | 91500 | | 5 | 6 | 60 | 75.7 | 5 | 15299 | 79548 | 28-02-02 | | 0.1219 | 1.697556 | 7.43 | 0.15715 | 6.46 | 0.07822 | 5.70 | 1152 | 226 | 88.6 |
| zstdj01 | 91500 | | 5 | 16.5 | 40 | 96 | 5 | 19899 | 77981 | 05-03-02 | | 0.1115 | 1.812118 | 5.88 | 0.16589 | 4.29 | 0.07935 | 7.07 | 1180 | 280 | 90.1 |
| zstdj02 | 91500 | | 5 | 16.5 | 40 | 94.6 | 5 | 20410 | 81077 | 05-03-02 | | 0.1035 | 1.58515 | 4.66 | 0.15562 | 3.13 | 0.07364 | 3.57 | 1030 | 146 | 94.9 |
| zstdj03 | 91500 | | 5 | 16.5 | 40 | 91.9 | 5 | 20361 | 73331 | 05-03-02 | | 0.1088 | 1.844556 | 3.41 | 0.1703 | 2.11 | 0.07892 | 2.89 | 1170 | 116 | 91.9 |
| zstdj04 | 91500 | | 5 | 6 | 40 | 74.3 | 5 | 9481 | 38842 | 05-03-02 | | 0.1186 | 1.921486 | 7.64 | 0.17674 | 3.80 | 0.07899 | 7.08 | 1170 | 280 | 94.2 |
| zstdj05 | 91500 | | 5 | 6 | 40 | 83.8 | 5 | 8666 | 34708 | 05-03-02 | | 0.111 | 1.990576 | 9.06 | 0.17789 | 4.58 | 0.08141 | 13.54 | 1230 | 538 | 91.5 |
| zstdj06 | 91500 | | 5 | 6 | 40 | 78.4 | 5 | 8880 | 35773 | 05-03-02 | | 0.1199 | 1.68266 | 6.81 | 0.15926 | 5.33 | 0.07665 | 6.66 | 1112 | 266 | 91.3 |
| zstdj07 | 91500 | | 5 | 6 | 40 | 78.4 | 5 | 8107 | 32231 | 05-03-02 | | 0.1116 | 1.827504 | 7.49 | 0.1896 | 6.21 | 0.07008 | 5.87 | 930 | 242 | 114.9 |
| zstdj08 | 91500 | | 5 | 6 | 40 | 70.3 | 5 | 8308 | 35181 | 05-03-02 | | 0.1087 | 1.920114 | 8.64 | 0.17635 | 6.27 | 0.07933 | 6.53 | 1180 | 260 | 93.4 |
| zstdj09 | 91500 | | 5 | 6 | 40 | 70.3 | 5 | 8029 | 32235 | 05-03-02 | | 0.0996 | 1.718136 | 10.77 | 0.18797 | 7.00 | 0.06668 | 6.24 | 826 | 262 | 124.5 |
| zstdj10 | 91500 | | 5 | 6 | 40 | 64.9 | 5 | 6177 | 25300 | 05-03-02 | x | 0.1187 | 1.717646 | 12.36 | 0.17549 | 10.25 | 0.07122 | 9.25 | 962 | 380 | 106.9 |
| zstdj11 | 91500 | | 5 | 6 | 40 | 82.4 | 5 | 5220 | 21591 | 05-03-02 | | 0.1292 | 1.5141 | 9.71 | 0.16176 | 6.56 | 0.06764 | 9.26 | 856 | 386 | 110.7 |
| zstdj12 | 91500 | | 5 | 6 | 40 | 64.9 | 5 | 5313 | 23786 | 05-03-02 | x | 0.0984 | 1.74636 | 14.80 | 0.15331 | 5.92 | 0.08215 | 8.52 | 1248 | 334 | 83.3 |
| zstdj13 | 91500 | | 5 | 6 | 60 | 113.6 | 5 | 10245 | 41324 | 05-03-02 | | 0.115 | 1.719018 | 4.68 | 0.16723 | 3.68 | 0.07399 | 4.50 | 1040 | 182 | 98.9 |
| zstdj14 | 91500 | | 5 | 6 | 60 | 75.7 | 5 | 10556 | 42670 | 05-03-02 | | 0.1116 | 1.819076 | 7.69 | 0.17827 | 5.94 | 0.07405 | 8.78 | 1042 | 356 | 102.3 |
| zstdj15 | 91500 | | 5 | 6 | 40 | 83.8 | 5 | 4520 | 18255 | 05-03-02 | | 0.1291 | 2.094064 | 13.81 | 0.18019 | 6.90 | 0.08458 | 8.40 | 1304 | 328 | 89.0 |
| zstdj16 | 91500 | | 5 | 6 | 40 | 81.1 | 5 | 4175 | 17599 | 05-03-02 | | 0.1266 | 2.003022 | 8.06 | 0.17203 | 7.10 | 0.08437 | 8.58 | 1300 | 334 | 86.9 |
| zstdj17 | 91500 | | 5 | 6 | 60 | 100 | 5 | 10226 | 45120 | 05-03-02 | | 0.13 | 1.613178 | 6.34 | 0.16358 | 5.62 | 0.07184 | 6.21 | 980 | 254 | 100.8 |
| zstdk01 | 91500 | | 5 | 6 | 120 | 117.6 | 3 | 35213 | 180651 | 06-03-02 | | 0.1098 | 1.807806 | 3.06 | 0.17203 | 1.61 | 0.07635 | 2.93 | 1104 | 116 | 96.2 |
| zstdk02 | 91500 | | 5 | 6 | 120 | 74.3 | 5 | 40685 | 233703 | 06-03-02 | | 0.1168 | 1.84485 | 6.79 | 0.17434 | 3.41 | 0.07682 | 6.07 | 1116 | 242 | 96.3 |
| zstdk03 | 91500 | | 5 | 6 | 40 | 73 | 5 | 6733 | 29042 | 06-03-02 | | 0.1194 | 1.592696 | 9.09 | 0.15859 | 6.32 | 0.07319 | 8.70 | 1018 | 354 | 96.3 |
| zstdk04 | 91500 | | 5 | 6 | 60 | 75.7 | 3 | 14289 | 63833 | 06-03-02 | | 0.1148 | 1.727838 | 6.69 | 0.1657 | 3.90 | 0.07542 | 7.03 | 1078 | 284 | 95.7 |
| zstdk05 | 91500 | | 5 | 6 | 60 | 64.9 | 5 | 14204 | 65550 | 06-03-02 | | 0.118 | 1.698732 | 4.49 | 0.17462 | 3.89 | 0.07083 | 4.88 | 952 | 200 | 107.2 |
| zstdk06 | 91500 | | 5 | 6 | 60 | 81.1 | 5 | 14483 | 60515 | 06-03-02 | | 0.1121 | 1.808786 | 5.92 | 0.18019 | 5.17 | 0.07258 | 3.70 | 1002 | 150 | 106.0 |
| zstdk07 | 91500 | | 5 | 6 | 60 | 66.2 | 5 | 5375 | 21482 | 06-03-02 | x | 0.1059 | 0.915418 | 32.23 | 0.20448 | 18.58 | 0.03242 | 22.15 | 0 | 0 | #DIV/0! |
| zstdk08 | 91500 | | 5 | 6 | 60 | 77 | 5 | 14273 | 53580 | 06-03-02 | x | 0.1456 | 1.617 | 14.56 | 0.15878 | 16.53 | 0.0737 | 13.75 | 1032 | 562 | 95.9 |
| zstdk09 | 91500 | | 5 | 6 | 60 | 70.3 | 5 | 14562 | 59928 | 06-03-02 | | 0.1154 | 1.597302 | 9.84 | 0.16301 | 7.37 | 0.07071 | 4.67 | 948 | 190 | 103.6 |
| zstdk10 | 91500 | | 5 | 6 | 60 | 78.4 | 5 | 13652 | 63026 | 06-03-02 | | 0.1126 | 1.56555 | 4.98 | 0.15984 | 4.28 | 0.07107 | 5.48 | 958 | 224 | 101.1 |
| zstdk11 | 91500 | | 5 | 6 | 60 | 114.8 | 5 | 9175 | 32354 | 06-03-02 | | 0.1122 | 1.794968 | 6.19 | 0.18211 | 4.90 | 0.07133 | 4.97 | 966 | 202 | 109.4 |
| zstdk12 | 91500 | | 5 | 6 | 60 | 89.2 | 5 | 13454 | 57413 | 06-03-02 | | 0.1264 | 1.604554 | 9.87 | 0.15456 | 5.72 | 0.07519 | 5.47 | 1072 | 220 | 91.9 |
| zstdk13 | 91500 | | 5 | 6 | 60 | 113.6 | 5 | 12298 | 52664 | 06-03-02 | | 0.118 | 1.728426 | 5.09 | 0.16522 | 4.09 | 0.07566 | 4.97 | 1086 | 200 | 95.0 |
| zstdk14 | 91500 | | 5 | 6 | 60 | 83.8 | 2 | 13291 | 58754 | 06-03-02 | | 0.1166 | 1.611512 | 5.35 | 0.15859 | 4.59 | 0.07351 | 5.16 | 1028 | 210 | 96.0 |
| zstdk15 | 91500 | | 5 | 6 | 60 | 67.6 | 5 | 13165 | 54962 | 06-03-02 | | 0.1104 | 1.651594 | 4.32 | 0.16954 | 5.33 | 0.07048 | 5.68 | 942 | 234 | 106.5 |
| zstdk16 | 91500 | | 5 | 6 | 60 | 87.8 | 5 | 14483 | 55680 | 06-03-02 | x | -0.2954 | 1.724996 | 5.13 | -0.0372 | -12.79 | -0.33774 | -59.50 | 0 | 0 | #DIV/0! |
| zstdk17 | 91500 | | 5 | 6 | 60 | 112.2 | 5 | 12995 | 54103 | 06-03-02 | | 0.1108 | 1.51753 | 5.98 | 0.16262 | 4.57 | 0.06771 | 4.66 | 858 | 194 | 110.7 |
| zstdk18 | 91500 | | 5 | 6 | 60 | 106.8 | 5 | 12151 | 53878 | 06-03-02 | | 0.1016 | 1.54546 | 4.34 | 0.16157 | 4.59 | 0.06931 | 3.79 | 908 | 156 | 105.8 |
| zstdl01 | 91500 | | 10 | 6 | 120 | 86.5 | 5 | 97033 | 415379 | 07-03-02 | | 0.1074 | 1.718332 | 1.45 | 0.16723 | 0.83 | 0.07511 | 1.26 | 1070 | 50 | 96.1 |
| zstdl02 | 91500 | | 5 | 6 | 60 | 121.6 | 5 | 13451 | 62044 | 07-03-02 | | 0.122 | 1.670998 | 6.90 | 0.17069 | 8.10 | 0.07093 | 5.86 | 954 | 240 | 105.9 |
| zstdl03 | 91500 | | 5 | 6 | 60 | 68.9 | 5 | 15558 | 65637 | 07-03-02 | | 0.1192 | 1.84436 | 12.02 | 0.18134 | 9.00 | 0.07382 | 6.10 | 1036 | 246 | 103.8 |
| zstdl04 | 91500 | | 7 | 6 | 60 | 79.7 | 5 | 16487 | 79239 | 07-03-02 | | 0.1157 | 1.753416 | 8.20 | 0.16858 | 8.27 | 0.07547 | 7.54 | 1080 | 304 | 96.5 |
| zstdl05 | 91500 | | 7 | 6 | 60 | 79.7 | 5 | 16614 | 83597 | 07-03-02 | | 0.1329 | 1.650026 | 7.59 | 0.16032 | 8.65 | 0.07476 | 9.61 | 1062 | 390 | 94.4 |
| zstdl06 | 91500 | | 7 | 6 | 60 | 66.3 | 5 | 16173 | 82582 | 07-03-02 | | 0.1045 | 1.7199 | 8.99 | 0.17011 | 9.49 | 0.07295 | 9.21 | 1012 | 376 | 101.7 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| zstdl07 | 91500 | | 7 | 6 | 60 | 66.2 | 5 | 16407 | 85266 | 07-03-02 | | 0.127 | 1.69001 | 10.11 | 0.15955 | 10.09 | 0.0761 | 9.39 | 1096 | 378 | 92.9 |
| zstdl08 | 91500 | | 7 | 6 | 60 | 90.5 | 5 | 15680 | 79049 | 07-03-02 | | 0.1086 | 1.688442 | 6.86 | 0.1704 | 8.53 | 0.07151 | 7.68 | 972 | 314 | 104.6 |
| zstdl09 | 91500 | | 7 | 6 | 60 | 95.9 | 2 | 8328 | 31486 | 07-03-02 | | 0.1299 | 2.092986 | 7.99 | 0.19181 | 9.80 | 0.07873 | 10.27 | 1164 | 410 | 99.7 |
| zstdl10 | 91500 | | 7 | 6 | 60 | 71.6 | 2 | 15230 | 77360 | 07-03-02 | | 0.1211 | 1.605632 | 8.23 | 0.15696 | 10.70 | 0.07374 | 10.68 | 1034 | 434 | 95.3 |
| zstdl11 | 91500 | | 7 | 6 | 60 | 79.7 | 2 | 14823 | 74398 | 07-03-02 | | 0.1133 | 1.727054 | 8.07 | 0.16387 | 9.98 | 0.07541 | 9.93 | 1078 | 400 | 95.7 |
| zstdl12 | 91500 | | 7 | 6 | 60 | 79.7 | 5 | 14697 | 74754 | 07-03-02 | | 0.1138 | 1.646988 | 6.18 | 0.16944 | 8.51 | 0.07003 | 9.05 | 928 | 374 | 107.9 |
| zstdl13 | 91500 | | 5 | 6 | 60 | 74.3 | 5 | 10525 | 56555 | 07-03-02 | | 0.1182 | 1.608082 | 8.20 | 0.15974 | 6.41 | 0.07251 | 6.24 | 1000 | 256 | 98.6 |
| zstdl14 | 91500 | :une/tes | 10 | 6 | 120 | 50.3 | 5 | 37336 | 213820 | 07-03-02 | x | 0.1077 | 2.41766 | 2.30 | 0.23174 | 1.53 | 0.07555 | 2.06 | 1082 | 82 | 116.6 |
| zstdl15 | 91500 | | 5 | 6 | 60 | 83.8 | 5 | 8320 | 55560 | 07-03-02 | | 0.1233 | 1.707454 | 4.15 | 0.16358 | 4.08 | 0.07514 | 6.50 | 1072 | 262 | 95.5 |
| zstdl16 | 91500 | | 5 | 6 | 40 | 132.4 | 5 | 3370 | 20640 | 07-03-02 | | 0.1499 | 1.690598 | 9.82 | 0.15773 | 7.23 | 0.07728 | 11.28 | 1128 | 454 | 90.2 |
| zstdl17 | 91500 | | 5 | 6 | 40 | 77.1 | 5 | 4145 | 25148 | 07-03-02 | | 0.1412 | 1.507926 | 12.03 | 0.15168 | 12.19 | 0.0712 | 12.53 | 962 | 516 | 98.3 |
| zstdl18 | 91500 | | 5 | 6 | 40 | 78.4 | 2 | 3959 | 25074 | 07-03-02 | | 0.1216 | 1.580642 | 15.11 | 0.15629 | 7.71 | 0.07261 | 12.45 | 1002 | 510 | 97.3 |
| zstdl19 | 91500 | | 5 | 6 | 40 | 78.4 | 2 | 4440 | 24065 | 07-03-02 | x | 0.1333 | 1.784874 | 22.61 | 0.16032 | 13.37 | 0.07961 | 14.85 | 1186 | 594 | 88.8 |
| zstdl20 | 91500 | | 5 | 6 | 40 | 59.5 | 5 | 4074 | 31199 | 07-03-02 | | 0.107 | 1.518804 | 8.67 | 0.14525 | 8.57 | 0.07495 | 10.70 | 1066 | 434 | 89.1 |
| zstdl21 | 91500 | | 5 | 6 | 40 | 70.3 | 5 | 4158 | 26220 | 07-03-02 | | 0.1363 | 1.81398 | 9.69 | 0.16195 | 9.14 | 0.08033 | 6.83 | 1204 | 268 | 88.4 |
| zstdl22 | 91500 | | 5 | 6 | 40 | 101.4 | 5 | 3933 | 20610 | 07-03-02 | | 0.1465 | 1.858962 | 10.19 | 0.17011 | 7.75 | 0.0788 | 10.87 | 1166 | 434 | 92.6 |
| zstdp02 | 91500 | | 5 | 6 | 60 | 56.8 | 5 | 72278 | 297463 | 31-10-02 | | 0.1168 | 1.850142 | 4.03 | 0.1752 | 3.65 | 0.07653 | 3.25 | 1108 | 130 | 97.2 |
| zstdp03 | 91500 | | 5 | 6 | 60 | 54.1 | 5 | 66197 | 291544 | 31-10-02 | | 0.1164 | 1.663158 | 2.94 | 0.16733 | 3.52 | 0.07206 | 4.28 | 986 | 176 | 102.1 |
| zstdp04 | 91500 | | 8 | 6 | 60 | 62.2 | 5 | 108672 | 424630 | 31-10-02 | | 0.1063 | 1.797516 | 3.16 | 0.1775 | 2.20 | 0.07339 | 2.54 | 1024 | 102 | 103.3 |
| zstdp05 | 91500 | | 8 | 6 | 60 | 101.4 | 5 | 91055 | 340568 | 31-10-02 | | 0.1099 | 1.885324 | 2.86 | 0.18269 | 2.75 | 0.07487 | 1.84 | 1064 | 74 | 102.3 |
| zstdp06 | 91500 | | 8 | 6 | 60 | 94.6 | 5 | 98416 | 364908 | 31-10-02 | | 0.1118 | 1.861216 | 2.69 | 0.17587 | 2.29 | 0.07676 | 1.87 | 1114 | 74 | 97.0 |
| zstdp07 | 91500 | | 8 | 6 | 60 | 55.4 | 5 | 107666 | 403486 | 31-10-02 | | 0.1105 | 1.79095 | 4.95 | 0.18384 | 5.63 | 0.07072 | 2.68 | 948 | 110 | 111.3 |
| zstdp08 | 91500 | | 8 | 6 | 60 | 85.1 | 5 | 88902 | 327708 | 31-10-02 | | 0.1144 | 1.897084 | 6.61 | 0.18192 | 6.35 | 0.07569 | 2.33 | 1086 | 94 | 100.7 |
| zstdp09 | 91500 | | 8 | 6 | 60 | 62.2 | 5 | 98435 | 369042 | 31-10-02 | | 0.1124 | 1.939028 | 7.38 | 0.1849 | 5.93 | 0.07611 | 2.59 | 1096 | 104 | 101.1 |
| zstdp10 | 91500 | | 8 | 6 | 60 | 73 | 5 | 92371 | 366506 | 31-10-02 | | 0.1111 | 1.851122 | 3.83 | 0.17165 | 3.80 | 0.07824 | 2.43 | 1152 | 96 | 93.5 |
| zstdp11 | 91500 | | 8 | 6 | 60 | 82.4 | 5 | 85871 | 320600 | 31-10-02 | | 0.1226 | 1.796634 | 7.35 | 0.17405 | 7.30 | 0.07489 | 5.26 | 1064 | 212 | 99.3 |
| zstdp12 | 91500 | | 8 | 6 | 60 | 77 | 5 | 86046 | 340623 | 31-10-02 | | 0.122 | 1.707944 | 5.39 | 0.17069 | 5.87 | 0.07269 | 3.23 | 1004 | 130 | 102.1 |
| zstdp13 | 91500 | | 8 | 6 | 60 | 59.5 | 5 | 81161 | 326997 | 31-10-02 | | 0.1006 | 2.057314 | 7.14 | 0.20381 | 7.13 | 0.07332 | 3.31 | 1022 | 134 | 112.4 |
| zstdq01 | 91500 | | 8 | 6 | 60 | 55.4 | 10 | 108237 | 401466 | 01-11-02 | | 0.1171 | 1.796634 | 4.14 | 0.17059 | 3.57 | 0.07658 | 2.42 | 1110 | 96 | 95.2 |
| zstdq02 | 91500 | | 8 | 6 | 60 | 60.8 | 10 | 112395 | 400981 | 01-11-02 | | 0.1096 | 1.909138 | 3.31 | 0.18221 | 2.35 | 0.07628 | 1.88 | 1102 | 74 | 99.6 |
| zstdq03 | 91500 | | 8 | 6 | 60 | 51.4 | 10 | 107621 | 392418 | 01-11-02 | | 0.109 | 1.826426 | 4.20 | 0.17875 | 4.21 | 0.07441 | 2.41 | 1052 | 98 | 101.5 |
| zstdq04 | 91500 | | 8 | 6 | 60 | 71.6 | 10 | 86586 | 330857 | 01-11-02 | | 0.1075 | 1.80908 | 2.80 | 0.18125 | 1.95 | 0.07262 | 2.17 | 1002 | 88 | 106.0 |
| zstdq05 | 91500 | | 8 | 6 | 60 | 59.5 | 10 | 90389 | 345389 | 01-11-02 | | 0.1059 | 1.814176 | 3.42 | 0.18586 | 4.26 | 0.07105 | 2.32 | 958 | 94 | 111.1 |
| zstdq06 | 91500 | | 8 | 6 | 60 | 58.1 | 10 | 92305 | 355305 | 01-11-02 | | 0.1084 | 1.790362 | 3.36 | 0.17674 | 2.47 | 0.07363 | 1.92 | 1030 | 76 | 102.4 |
| zstdq07 | 91500 | | 8 | 6 | 60 | 75.7 | 5 | 80827 | 297532 | 01-11-02 | | 0.1139 | 1.881404 | 2.75 | 0.18192 | 2.54 | 0.07534 | 1.86 | 1076 | 76 | 101.1 |
| zstdq08 | 91500 | | 8 | 6 | 60 | 71.6 | 5 | 81510 | 301432 | 01-11-02 | | 0.1124 | 1.880424 | 2.83 | 0.1825 | 2.60 | 0.07506 | 1.87 | 1070 | 76 | 101.7 |
| zstdq09 | 91500 | | 8 | 6 | 60 | 66.5 | 5 | 81801 | 297750 | 01-11-02 | | 0.1114 | 1.994986 | 2.87 | 0.1895 | 2.67 | 0.07671 | 2.86 | 1112 | 114 | 101.4 |
| zstdq10 | 91500 | | 8 | 6 | 60 | 73 | 5 | 84981 | 319269 | 01-11-02 | | 0.1124 | 1.808982 | 3.56 | 0.17606 | 3.05 | 0.07488 | 2.24 | 1064 | 90 | 99.8 |
| zstdq11 | 91500 | | 8 | 6 | 60 | 73 | 5 | 76139 | 304857 | 01-11-02 | | 0.0992 | 1.861608 | 1.88 | 0.1848 | 1.56 | 0.07319 | 1.41 | 1018 | 56 | 106.2 |
| zstdq12 | 91500 | | 8 | 6 | 60 | 78.4 | 5 | 75410 | 284954 | 01-11-02 | | 0.1067 | 1.911588 | 3.05 | 0.18547 | 2.80 | 0.07501 | 1.81 | 1068 | 74 | 102.9 |
| zstdq13 | 91500 | | 8 | 6 | 60 | 75.7 | 5 | 73553 | 278879 | 01-11-02 | | 0.1115 | 1.865038 | 3.27 | 0.1825 | 3.04 | 0.07442 | 2.14 | 1052 | 86 | 102.9 |
| zstdq14 | 91500 | | 8 | 6 | 60 | 54.1 | 5 | 84366 | 334612 | 01-11-02 | | 0.1101 | 1.81006 | 3.17 | 0.17088 | 2.67 | 0.07689 | 2.48 | 1118 | 98 | 95.0 |
| zstdq15 | 91500 | | 8 | 6 | 60 | 78.4 | 5 | 80067 | 291573 | 01-11-02 | | 0.1106 | 1.880228 | 3.49 | 0.18826 | 3.33 | 0.07272 | 2.33 | 1006 | 94 | 108.2 |
| zstdq16 | 91500 | | 8 | 6 | 60 | 64.9 | 5 | 77926 | 302365 | 01-11-02 | | 0.1098 | 1.776152 | 4.09 | 0.17165 | 3.50 | 0.07532 | 2.30 | 1076 | 92 | 97.6 |
| zstdq17 | 91500 | | 8 | 6 | 60 | 63.5 | 5 | 75861 | 291705 | 01-11-02 | | 0.1038 | 1.889734 | 4.48 | 0.18912 | 3.73 | 0.07267 | 2.61 | 1004 | 106 | 108.7 |
| zstdq18 | 91500 | | 8 | 6 | 60 | 62.2 | 5 | 75666 | 298684 | 01-11-02 | | 0.1076 | 1.7003 | 3.73 | 0.17117 | 3.66 | 0.07205 | 2.14 | 986 | 88 | 103.7 |
| zstdr01 | 91500 | | 8 | 6 | 60 | 71.6 | 5 | 124229 | 460948 | 04-11-02 | | 0.1081 | 1.845144 | 1.87 | 0.1753 | 1.87 | 0.07635 | 2.06 | 1104 | 82 | 97.4 |
| zstdr02 | 91500 | | 8 | 6 | 60 | 98.6 | 5 | 110536 | 416284 | 04-11-02 | | 0.1058 | 1.914234 | 1.76 | 0.17971 | 1.74 | 0.07743 | 1.30 | 1132 | 50 | 97.2 |
| zstdr03 | 91500 | | 8 | 6 | 60 | 93.3 | 5 | 112869 | 425966 | 04-11-02 | | 0.1055 | 1.820154 | 1.69 | 0.17731 | 1.51 | 0.07439 | 1.45 | 1052 | 58 | 101.3 |
| zstdr04 | 91500 | | 8 | 6 | 60 | 58.1 | 5 | 108828 | 427348 | 04-11-02 | | 0.106 | 1.810158 | 2.34 | 0.17693 | 2.46 | 0.07434 | 1.93 | 1050 | 78 | 101.1 |

| datafile | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| zstdr05 | 91500 | | 8 | 6 | 60 | 50 | 5 | 112078 | 441775 | 04-11-02 | | 0.1043 | 1.806238 | 2.59 | 0.17654 | 2.44 | 0.07416 | 1.92 | 1044 | 76 | 101.6 |
| zstdr06 | 91500 | | 8 | 6 | 60 | 52.7 | 5 | 114633 | 441413 | 04-11-02 | | 0.1076 | 1.80173 | 3.75 | 0.17184 | 1.85 | 0.07597 | 3.43 | 1094 | 136 | 96.8 |
| zstdr07 | 91500 | | 8 | 6 | 60 | 70.3 | 5 | 92173 | 361492 | 04-11-02 | | 0.107 | 1.922858 | 3.70 | 0.18653 | 2.85 | 0.07491 | 2.77 | 1064 | 112 | 103.7 |
| zstdr08 | 91500 | | 8 | 6 | 60 | 51.4 | 5 | 102668 | 416766 | 04-11-02 | | 0.1147 | 1.82623 | 2.88 | 0.17731 | 2.96 | 0.07475 | 2.54 | 1060 | 102 | 100.8 |
| zstdr09 | 91500 | | 8 | 6 | 60 | 58.1 | 5 | 101943 | 405527 | 04-11-02 | | 0.1082 | 1.786246 | 2.72 | 0.17568 | 2.37 | 0.07376 | 1.99 | 1034 | 80 | 101.9 |
| zstdr10 | 91500 | | 8 | 6 | 60 | 47.3 | 5 | 102656 | 413026 | 04-11-02 | | 0.1099 | 1.82084 | 3.08 | 0.1776 | 3.04 | 0.07446 | 1.65 | 1052 | 66 | 101.3 |
| zstdr11 | 91500 | | 8 | 6 | 60 | 68.9 | 5 | 103084 | 384758 | 04-11-02 | | 0.114 | 1.801926 | 2.53 | 0.1727 | 2.07 | 0.07561 | 2.32 | 1084 | 94 | 97.7 |
| zstdr12 | 91500 | | 8 | 6 | 60 | 51.4 | 5 | 97466 | 399970 | 04-11-02 | | 0.1144 | 1.97274 | 3.07 | 0.18182 | 3.26 | 0.07889 | 2.52 | 1168 | 100 | 95.9 |

## CZ3 LA-ICP-MS U-Pb analysis

| data file | spot | comm | rep (Hz) | pwr (Jcm-2) | spot (mu) | sign (s) | Pb 204 | Th 232 | U 238 | date | reject | 208/206 | 207/235 | % 2rsd | 206/238 | % 2rsd | 207/206 | % 2rsd | 207/206 AGE | % 2rsd | % conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| cz3sr05 | CZ3 | | 8 | 6 | 60 | 40.6 | 34.3 | 115884 | 3E+06 | 04-11-02 | | 0.0184 | 0.702856 | 3.51 | 0.08813 | 3.12 | 0.05788 | 1.77 | 524 | 78 | 104.77 |
| cz3sr06 | CZ3 | | 8 | 6 | 60 | 25.7 | 25.3 | 103995 | 2E+06 | 04-11-02 | | 0.0196 | 0.700896 | 2.36 | 0.08803 | 2.66 | 0.05787 | 1.77 | 524 | 78 | 104.58 |
| cz3sr07 | CZ3 | | 8 | 6 | 60 | 17.6 | 28.3 | 89436 | 2E+06 | 04-11-02 | x | 0.0175 | 0.741272 | 2.63 | 0.09437 | 4.14 | 0.05723 | 3.54 | 500 | 156 | 114.4 |
| cz3sr08 | CZ3 | | 6 | 6 | 60 | 50 | 10.3 | 82349 | 2E+06 | 04-11-02 | | 0.0188 | 0.734608 | 3.42 | 0.09082 | 3.39 | 0.05886 | 1.67 | 560 | 72 | 101.43 |
| cz3sr09 | CZ3 | | 6 | 6 | 60 | 71.6 | 12.4 | 80411 | 2E+06 | 04-11-02 | | 0.0184 | 0.741174 | 2.50 | 0.09254 | 2.36 | 0.05817 | 1.35 | 536 | 58 | 106.72 |
| cz3sr10 | CZ3 | | 6 | 6 | 60 | 73 | 12.8 | 84695 | 2E+06 | 04-11-02 | | 0.0188 | 0.722946 | 2.51 | 0.08765 | 2.50 | 0.05995 | 2.00 | 600 | 88 | 93.5 |
| cz3sr11 | CZ3 | | 6 | 6 | 60 | 52.7 | | 82191 | 2E+06 | 04-11-02 | | 0.0181 | 0.757638 | 3.25 | 0.08995 | 2.91 | 0.06129 | 1.50 | 648 | 64 | 89.815 |
| cz3sr12 | CZ3 | | 6 | 6 | 60 | 60.8 | 12.5 | 82527 | 2E+06 | 04-11-02 | | 0.0178 | 0.734902 | 3.71 | 0.0912 | 3.68 | 0.05864 | 1.86 | 552 | 80 | 102.9 |
| cz3sr13 | CZ3 | | 6 | 6 | 60 | 27.1 | 15.9 | 81769 | 2E+06 | 04-11-02 | | 0.019 | 0.719712 | 4.67 | 0.08726 | 3.52 | 0.06001 | 2.94 | 604 | 128 | 92.55 |
| cz3sr14 | CZ3 | | 6 | 6 | 60 | 39.2 | 10.1 | 80918 | 2E+06 | 04-11-02 | | 0.0191 | 0.76293 | 2.92 | 0.0936 | 2.65 | 0.05935 | 1.73 | 578 | 76 | 101.21 |
| cz3sr15 | CZ3 | | 6 | 6 | 60 | 21.7 | 13.6 | 77618 | 2E+06 | 04-11-02 | | 0.0192 | 0.768026 | 3.97 | 0.09302 | 4.25 | 0.05998 | 3.68 | 602 | 160 | 97.674 |
| cz3sr16 | CZ3 | | 6 | 6 | 60 | 24.3 | 31.1 | 79029 | 2E+06 | 04-11-02 | | 0.0339 | 0.79086 | 5.28 | 0.09523 | 5.22 | 0.06051 | 4.44 | 620 | 192 | 96.935 |
| cz3sr17 | CZ3 | | 6 | 6 | 60 | 40.6 | 5 | 75133 | 2E+06 | 04-11-02 | | 0.0191 | 0.759598 | 3.92 | 0.09149 | 3.83 | 0.06031 | 2.03 | 614 | 86 | 94.951 |
| cz3sr18 | CZ3 | | 6 | 6 | 40 | 120.3 | 5 | 25556 | 648748 | 04-11-02 | | 0.017 | 0.798896 | 1.46 | 0.09994 | 0.91 | 0.05803 | 1.26 | 530 | 56 | 114.15 |
| cz3sr19 | CZ3 | | 6 | 6 | 40 | 83.8 | 5 | 29379 | 756755 | 04-11-02 | | 0.02 | 0.79331 | 1.71 | 0.09754 | 1.19 | 0.05925 | 1.58 | 576 | 70 | 104.51 |
| cz3sr20 | CZ3 | | 8 | 6 | 40 | 91.9 | 5 | 34927 | 879806 | 04-11-02 | | 0.0178 | 0.846524 | 1.33 | 0.10291 | 0.73 | 0.0597 | 1.26 | 592 | 54 | 106.76 |
| cz3sr21 | CZ3 | | 8 | 6 | 40 | 85.1 | 10.5 | 37587 | 940307 | 04-11-02 | | 0.018 | 0.804286 | 1.69 | 0.10022 | 0.73 | 0.05832 | 1.60 | 540 | 70 | 112.59 |
| cz3sr22 | CZ3 | | 8 | 6 | 40 | 64.9 | 5 | 36995 | 941004 | 04-11-02 | | 0.0186 | 0.817222 | 2.04 | 0.10118 | 0.96 | 0.05862 | 1.98 | 552 | 86 | 111.59 |
| cz3sr23 | CZ3 | | 8 | 6 | 60 | 85.1 | 43.8 | 85579 | 2E+06 | 04-11-02 | | 0.0192 | 0.742742 | 2.74 | 0.09408 | 2.64 | 0.05739 | 1.38 | 506 | 60 | 113.24 |
| cz3sr24 | CZ3 | | 8 | 6 | 60 | 71.7 | 30.2 | 86250 | 2E+06 | 04-11-02 | | 0.0187 | 0.753032 | 3.36 | 0.0959 | 3.55 | 0.0572 | 1.80 | 498 | 80 | 116.27 |

*Appendix B. SHRIMP U-Pb data*

**KB264 SHRIMP**

| spot | U/ppm | Th/ppm | Total Pb | 208/206 | 1rsd | 207/235 | 1rsd | 206/238 | 1rsd | 207/206 | 1rsd | 208/232 | 1rsd | AGE 207/206 | 1rsd | %conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 264a-11.1 | 151 | 107 | 121 | 0.190875 | 0.001502 | 23.081307 | 0.566313 | 0.641942 | 0.015169 | 0.26077343 | 0.00111618 | 0.171976 | 0.004379 | 3251 | 7 | 98 |
| 264a-4.1 | 150 | 99 | 126 | 0.175592 | 0.001449 | 24.388923 | 0.597905 | 0.679661 | 0.016074 | 0.2602549 | 0.00107805 | 0.181008 | 0.004643 | 3248 | 7 | 103 |
| 264a-5.1 | 128 | 85 | 99 | 0.178442 | 0.002455 | 21.694764 | 0.539942 | 0.604695 | 0.01428 | 0.26020609 | 0.00141592 | 0.162371 | 0.004518 | 3248 | 9 | 94 |
| 264a-17.1 | 119 | 91 | 97 | 0.204274 | 0.001577 | 23.052899 | 0.567208 | 0.642761 | 0.015213 | 0.26012041 | 0.00114121 | 0.171969 | 0.004383 | 3247 | 7 | 99 |
| 264a-14.1 | 160 | 97 | 130 | 0.158935 | 0.001409 | 23.771075 | 0.58139 | 0.66409 | 0.01568 | 0.25960951 | 0.00105899 | 0.173993 | 0.004487 | 3244 | 6 | 101 |
| 264a-13.1 | 235 | 161 | 198 | 0.181089 | 0.001085 | 24.394106 | 0.587685 | 0.675907 | 0.015876 | 0.26175612 | 0.00083048 | 0.178372 | 0.004389 | 3257 | 5 | 102 |
| 264a-25.1 | 343 | 245 | 287 | 0.19129 | 0.000751 | 23.869562 | 0.568656 | 0.668292 | 0.015637 | 0.25904595 | 0.00062819 | 0.179121 | 0.004291 | 3241 | 4 | 102 |
| 264b-7.1 | 124 | 89 | 105 | 0.190352 | 0.002243 | 23.665111 | 0.589274 | 0.661861 | 0.015676 | 0.25932265 | 0.00136781 | 0.174884 | 0.004727 | 3243 | 8 | 101 |
| 264b-25.1 | 91 | 44 | 74 | 0.12249 | 0.001641 | 24.367571 | 0.610521 | 0.678426 | 0.016192 | 0.2605005 | 0.0013556 | 0.173807 | 0.004938 | 3250 | 8 | 103 |
| 264b-42.1 | 137 | 90 | 114 | 0.176409 | 0.001262 | 23.997376 | 0.586977 | 0.669221 | 0.015821 | 0.2600714 | 0.0010363 | 0.178553 | 0.004517 | 3247 | 6 | 102 |
| 264b-44.1 | 96 | 50 | 74 | 0.136665 | 0.001679 | 22.990391 | 0.574451 | 0.639767 | 0.015233 | 0.2606294 | 0.00134519 | 0.167431 | 0.004641 | 3251 | 8 | 98 |
| 264b-59.1 | 121 | 81 | 98 | 0.18118 | 0.001417 | 23.328187 | 0.575472 | 0.64458 | 0.015287 | 0.2624839 | 0.00116629 | 0.174121 | 0.004472 | 3262 | 7 | 98 |
| 264b-46.1 | 86 | 47 | 69 | 0.151423 | 0.001586 | 23.767902 | 0.593263 | 0.659031 | 0.015709 | 0.26156754 | 0.0013088 | 0.180999 | 0.004886 | 3256 | 8 | 100 |
| 264b-45.1 | 116 | 49 | 90 | 0.112593 | 0.001378 | 23.730127 | 0.587653 | 0.657251 | 0.015608 | 0.26185902 | 0.00121961 | 0.174965 | 0.00484 | 3258 | 7 | 100 |
| 264b-40.1 | 104 | 44 | 83 | 0.110958 | 0.001494 | 24.211778 | 0.601271 | 0.671989 | 0.015967 | 0.26131445 | 0.00126399 | 0.175616 | 0.004962 | 3255 | 8 | 102 |
| 264b-54.1 | 246 | 172 | 202 | 0.189567 | 0.000918 | 23.681505 | 0.568119 | 0.656762 | 0.015403 | 0.26151712 | 0.00075986 | 0.177401 | 0.004304 | 3256 | 5 | 100 |
| 264b-36.1 | 133 | 55 | 102 | 0.111214 | 0.001125 | 23.2286 | 0.568354 | 0.648732 | 0.015334 | 0.25969088 | 0.00104505 | 0.175387 | 0.004647 | 3245 | 6 | 99 |
| 264b-17.1 | 196 | 129 | 163 | 0.178171 | 0.001046 | 24.289625 | 0.586372 | 0.671469 | 0.015784 | 0.26235748 | 0.00086425 | 0.181591 | 0.004473 | 3261 | 5 | 102 |
| 264b-13.1 | 158 | 102 | 130 | 0.173727 | 0.001123 | 23.892899 | 0.580364 | 0.661953 | 0.015595 | 0.26178255 | 0.00095837 | 0.177596 | 0.004426 | 3257 | 6 | 101 |
| 264b-13.2 | 163 | 112 | 116 | 0.148426 | 0.001197 | 20.249254 | 0.492196 | 0.58702 | 0.013805 | 0.25018118 | 0.00096875 | 0.126394 | 0.003195 | 3186 | 6 | 93 |
| 264b-3.1 | 118 | 108 | 89 | 0.203617 | 0.001857 | 21.18369 | 0.523692 | 0.592672 | 0.014008 | 0.25923045 | 0.00126301 | 0.132054 | 0.00341 | 3242 | 8 | 93 |

**KB265 SHRIMP**

| spot | U/ppm | Th/ppm | Total Pb | 208/206 | 1rsd | 207/235 | 1rsd | 206/238 | 1rsd | 207/206 | 1rsd | 208/232 | 1rsd | AGE 207/206 | 1rsd | %conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 264a-11.1 | 151 | 107 | 121 | 0.190875 | 0.001502 | 23.081307 | 0.566313 | 0.641942 | 0.015169 | 0.26077343 | 0.00111618 | 0.171976 | 0.004379 | 3251 | 7 | 98 |
| 264a-4.1 | 150 | 99 | 126 | 0.175592 | 0.001449 | 24.388923 | 0.597905 | 0.679661 | 0.016074 | 0.2602549 | 0.00107805 | 0.181008 | 0.004643 | 3248 | 7 | 103 |
| 264a-5.1 | 128 | 85 | 99 | 0.178442 | 0.002455 | 21.694764 | 0.539942 | 0.604695 | 0.01428 | 0.26020609 | 0.00141592 | 0.162371 | 0.004518 | 3248 | 9 | 94 |
| 264a-17.1 | 119 | 91 | 97 | 0.204274 | 0.001577 | 23.052899 | 0.567208 | 0.642761 | 0.015213 | 0.26012041 | 0.00114121 | 0.171969 | 0.004383 | 3247 | 7 | 99 |
| 264a-14.1 | 160 | 97 | 130 | 0.158935 | 0.001409 | 23.771075 | 0.58139 | 0.66409 | 0.01568 | 0.25960951 | 0.00105899 | 0.173993 | 0.004487 | 3244 | 6 | 101 |
| 264a-13.1 | 235 | 161 | 198 | 0.181089 | 0.001085 | 24.394106 | 0.587685 | 0.675907 | 0.015876 | 0.26175612 | 0.00083048 | 0.178372 | 0.004389 | 3257 | 5 | 102 |
| 264a-25.1 | 343 | 245 | 287 | 0.19129 | 0.000751 | 23.869562 | 0.568656 | 0.668292 | 0.015637 | 0.25904595 | 0.00062819 | 0.179121 | 0.004291 | 3241 | 4 | 102 |
| 264b-7.1 | 124 | 89 | 105 | 0.190352 | 0.002243 | 23.665111 | 0.589274 | 0.661861 | 0.015676 | 0.25932265 | 0.00136781 | 0.174884 | 0.004727 | 3243 | 8 | 101 |
| 264b-25.1 | 91 | 44 | 74 | 0.12249 | 0.001641 | 24.367571 | 0.610521 | 0.678426 | 0.016192 | 0.2605005 | 0.0013556 | 0.173807 | 0.004938 | 3250 | 8 | 103 |
| 264b-42.1 | 137 | 90 | 114 | 0.176409 | 0.001262 | 23.997376 | 0.586977 | 0.669221 | 0.015821 | 0.2600714 | 0.0010363 | 0.178553 | 0.004517 | 3247 | 6 | 102 |
| 264b-44.1 | 96 | 50 | 74 | 0.136665 | 0.001679 | 22.990391 | 0.574451 | 0.639767 | 0.015233 | 0.2606294 | 0.00134519 | 0.167431 | 0.004641 | 3251 | 8 | 98 |
| 264b-59.1 | 121 | 81 | 98 | 0.18118 | 0.001417 | 23.328187 | 0.575472 | 0.64458 | 0.015287 | 0.2624839 | 0.00116629 | 0.174121 | 0.004472 | 3262 | 7 | 98 |
| 264b-46.1 | 86 | 47 | 69 | 0.151423 | 0.001586 | 23.767902 | 0.593263 | 0.659031 | 0.015709 | 0.26156754 | 0.0013088 | 0.180999 | 0.004886 | 3256 | 8 | 100 |
| 264b-45.1 | 116 | 49 | 90 | 0.112593 | 0.001378 | 23.730127 | 0.587653 | 0.657251 | 0.015608 | 0.26185902 | 0.00121961 | 0.174965 | 0.00484 | 3258 | 7 | 100 |
| 264b-40.1 | 104 | 44 | 83 | 0.110958 | 0.001494 | 24.211778 | 0.601271 | 0.671989 | 0.015967 | 0.26131445 | 0.00126399 | 0.175616 | 0.004962 | 3255 | 8 | 102 |
| 264b-54.1 | 246 | 172 | 202 | 0.189567 | 0.000918 | 23.681505 | 0.568119 | 0.656762 | 0.015403 | 0.26151712 | 0.00075986 | 0.177401 | 0.004304 | 3256 | 5 | 100 |
| 264b-36.1 | 133 | 55 | 102 | 0.111214 | 0.001125 | 23.2286 | 0.568354 | 0.648732 | 0.015334 | 0.25969088 | 0.00104505 | 0.175387 | 0.004647 | 3245 | 6 | 99 |
| 264b-17.1 | 196 | 129 | 163 | 0.178171 | 0.001046 | 24.289625 | 0.586372 | 0.671469 | 0.015784 | 0.26235748 | 0.00086425 | 0.181591 | 0.004473 | 3261 | 5 | 102 |
| 264b-13.1 | 158 | 102 | 130 | 0.173727 | 0.001123 | 23.892899 | 0.580364 | 0.661953 | 0.015595 | 0.26178255 | 0.00095837 | 0.177596 | 0.004426 | 3257 | 6 | 101 |
| 264b-13.2 | 163 | 112 | 116 | 0.148426 | 0.001197 | 20.249254 | 0.492196 | 0.58702 | 0.013805 | 0.25018118 | 0.00096875 | 0.126394 | 0.003195 | 3186 | 6 | 93 |
| 264b-3.1 | 118 | 108 | 89 | 0.203617 | 0.001857 | 21.18369 | 0.523692 | 0.592672 | 0.014008 | 0.25923045 | 0.00126301 | 0.132054 | 0.00341 | 3242 | 8 | 93 |

**KB351 SHRIMP**

| labels | U/ppm | Th/ppm | Total Pb | 208/206 | 1rsd | 207/235 | 1rsd | 206/238 | 1rsd | 207/206 | 1rsd | 208/232 | 1rsd | AGE 207/206 | +/- | %conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 351-2-1.1 | 2463 | 3762 | 2096 | 0.362418 | 0.000357 | 21.736903 | 0.494112 | 0.607931 | 0.013746 | 0.25932372 | 0.00021871 | 0.144256 | 0.003268 | 3243 | 1 | 94 |
| 351-2-21.1 | 413 | 1306 | 179 | 0.177157 | 0.002185 | 10.066575 | 0.239657 | 0.339249 | 0.007702 | 0.21520993 | 0.00104723 | 0.018981 | 0.000492 | 2945 | 8 | 64 |
| 351-2-4.1 | 849 | 1619 | 149 | 0.300831 | 0.006344 | 3.424476 | 0.09328 | 0.111839 | 0.002552 | 0.22207533 | 0.00272907 | 0.017647 | 0.00055 | 2996 | 20 | 23 |
| 351-2-34.1 | 638 | 409 | 430 | 0.164428 | 0.000627 | 16.698381 | 0.383881 | 0.563171 | 0.01276 | 0.21504668 | 0.00042668 | 0.144458 | 0.003335 | 2944 | 3 | 98 |
| 351-2-26.1 | 547 | 422 | 390 | 0.179709 | 0.000721 | 20.269587 | 0.465904 | 0.571174 | 0.012943 | 0.25738034 | 0.00050103 | 0.13318 | 0.003079 | 3231 | 3 | 90 |
| 351-2-25.1 | 1298 | 974 | 1154 | 0.271365 | 0.000384 | 23.954916 | 0.545881 | 0.674438 | 0.01526 | 0.25760318 | 0.0002802 | 0.243884 | 0.005542 | 3232 | 2 | 103 |
| 351-2-27.1 | 1648 | 2379 | 1409 | 0.351335 | 0.000431 | 21.958825 | 0.500056 | 0.615315 | 0.013918 | 0.25882726 | 0.00026971 | 0.149749 | 0.003397 | 3240 | 2 | 95 |
| 351-2-42.1 | 577 | 510 | 413 | 0.235868 | 0.00069 | 19.681782 | 0.452094 | 0.554 | 0.012553 | 0.25766359 | 0.00048434 | 0.14795 | 0.003395 | 3232 | 3 | 88 |
| 351-2-41.1 | 1622 | 978 | 1361 | 0.159807 | 0.000285 | 24.503171 | 0.557731 | 0.685189 | 0.015497 | 0.25936446 | 0.0002569 | 0.181633 | 0.004129 | 3243 | 2 | 104 |
| 351-2-45.1 | 58 | 38 | 44 | 0.174239 | 0.00204 | 20.480418 | 0.510575 | 0.622079 | 0.01453 | 0.23877675 | 0.00149751 | 0.166483 | 0.00453 | 3112 | 10 | 100 |
| 351-2-48.1 | 822 | 750 | 653 | 0.237202 | 0.000465 | 21.79205 | 0.498285 | 0.617505 | 0.013983 | 0.2559508 | 0.00036477 | 0.16045 | 0.003658 | 3222 | 2 | 96 |
| 351-2-39.1 | 1786 | 1699 | 1303 | 0.261161 | 0.000369 | 19.108158 | 0.435025 | 0.560324 | 0.012671 | 0.24733083 | 0.00025602 | 0.153814 | 0.00349 | 3168 | 2 | 91 |
| 351-2-51.1 | 1887 | 2336 | 1775 | 0.306447 | 0.000353 | 25.284264 | 0.575213 | 0.694653 | 0.015711 | 0.26398615 | 0.00024204 | 0.171935 | 0.003899 | 3271 | 1 | 104 |
| 351-2-29.1 | 180 | 103 | 145 | 0.097375 | 0.000949 | 29.826991 | 0.696758 | 0.648628 | 0.014809 | 0.33351282 | 0.00095125 | 0.110438 | 0.002784 | 3633 | 4 | 89 |
| 351-2-40.1 | 424 | 589 | 153 | 0.094712 | 0.001711 | 10.359599 | 0.243194 | 0.299649 | 0.006798 | 0.25074286 | 0.00096121 | 0.020446 | 0.000595 | 3189 | 6 | 53 |
| 351-3a-5.1 | 1083 | 1904 | 979 | 0.472894 | 0.000688 | 21.719792 | 0.224844 | 0.602369 | 0.006081 | 0.26151214 | 0.00035337 | 0.162052 | 0.001669 | 3256 | 2 | 93 |
| 351-3a-1.1 | 179 | 119 | 148 | 0.177733 | 0.001048 | 23.785276 | 0.273275 | 0.668955 | 0.007105 | 0.25787551 | 0.00083822 | 0.17836 | 0.002313 | 3234 | 5 | 102 |
| 351-3a-2.1 | 1444 | 1532 | 1179 | 0.259975 | 0.000486 | 21.838089 | 0.224948 | 0.621918 | 0.006264 | 0.2546715 | 0.0003154 | 0.152297 | 0.001574 | 3214 | 2 | 97 |
| 351-3a-6.1 | 203 | 91 | 151 | 0.118043 | 0.000866 | 22.424138 | 0.253858 | 0.622028 | 0.006555 | 0.2614596 | 0.00079039 | 0.164676 | 0.00226 | 3256 | 5 | 96 |
| 351-3a-8.1 | 172 | 169 | 130 | 0.183669 | 0.001447 | 24.260775 | 0.283505 | 0.581514 | 0.006227 | 0.30258213 | 0.00106787 | 0.108634 | 0.001522 | 3483 | 5 | 85 |
| 351-3b-4.1 | 1092 | 1638 | 192 | 0.21355 | 0.002679 | 4.40784 | 0.052424 | 0.128668 | 0.001302 | 0.24845923 | 0.00126978 | 0.018315 | 0.000297 | 3175 | 8 | 25 |
| 351-3b-16.1 | 3509 | 3368 | 2728 | 0.244893 | 0.000244 | 19.665607 | 0.199574 | 0.608001 | 0.006102 | 0.23458578 | 0.00016451 | 0.155101 | 0.001572 | 3084 | 1 | 99 |
| 351-3b-7.1 | 1482 | 502 | 936 | 0.105617 | 0.000451 | 16.471781 | 0.170596 | 0.547765 | 0.005522 | 0.21809473 | 0.00031186 | 0.170925 | 0.001904 | 2967 | 2 | 95 |
| 351-3b-3.1 | 809 | 462 | 604 | 0.267017 | 0.000633 | 18.415351 | 0.19257 | 0.573758 | 0.00581 | 0.23278243 | 0.00038116 | 0.268648 | 0.002853 | 3071 | 3 | 95 |
| 351-3b-8.1 | 2300 | 3620 | 1874 | 0.384627 | 0.000416 | 19.510805 | 0.199524 | 0.579668 | 0.005831 | 0.2441152 | 0.00023669 | 0.141646 | 0.001442 | 3147 | 2 | 94 |
| 351-3b-19.1 | 641 | 385 | 386 | 0.130986 | 0.000576 | 16.784159 | 0.177279 | 0.50636 | 0.005142 | 0.24040226 | 0.00045705 | 0.110407 | 0.00125 | 3123 | 3 | 85 |
| 351-3b-24.1 | 2702 | 2590 | 1595 | 0.251691 | 0.000319 | 14.362401 | 0.146646 | 0.463494 | 0.004654 | 0.22474066 | 0.00021953 | 0.12173 | 0.00124 | 3015 | 2 | 81 |
| 351-3-25.1 | 837 | 725 | 554 | 0.19247 | 0.000563 | 18.218378 | 0.190623 | 0.530575 | 0.005375 | 0.24903564 | 0.0004081 | 0.117836 | 0.001264 | 3179 | 3 | 86 |
| 351-3-34.1 | 1302 | 1404 | 1135 | 0.280893 | 0.000449 | 23.317135 | 0.240479 | 0.656682 | 0.006628 | 0.25752453 | 0.00031066 | 0.171039 | 0.001767 | 3232 | 2 | 101 |
| 351-2-21.2 | 429 | 770 | 238 | 0.147352 | 0.001595 | 13.734649 | 0.187725 | 0.461232 | 0.005788 | 0.21597169 | 0.00087877 | 0.037829 | 0.000635 | 2951 | 7 | 83 |
| 351-2-21.3 | 703 | 2826 | 250 | 0.146233 | 0.002538 | 8.436043 | 0.120146 | 0.279308 | 0.003482 | 0.21905553 | 0.0012049 | 0.010155 | 0.000218 | 2974 | 9 | 53 |
| 351-2-34.2 | 475 | 299 | 282 | 0.127839 | 0.001071 | 14.961055 | 0.198589 | 0.506004 | 0.006327 | 0.21444038 | 0.0006777 | 0.102826 | 0.001582 | 2939 | 5 | 90 |
| 351-2-34.3 | 421 | 234 | 275 | 0.14341 | 0.001111 | 16.347963 | 0.218462 | 0.552242 | 0.006931 | 0.21470041 | 0.00070397 | 0.142394 | 0.002162 | 2941 | 5 | 96 |
| 351-3a-7.2 | 1714 | 1128 | 1229 | 0.185244 | 0.000488 | 19.304629 | 0.350473 | 0.579351 | 0.010383 | 0.24166778 | 0.00034365 | 0.163066 | 0.002968 | 3131 | 2 | 94 |
| 351-3a-24.2 | 2319 | 1797 | 1720 | 0.209082 | 0.00031 | 20.620847 | 0.372488 | 0.587729 | 0.010526 | 0.25446508 | 0.00025671 | 0.158649 | 0.002861 | 3213 | 2 | 93 |
| 351-3a-24.3 | 2011 | 1614 | 1233 | 0.205127 | 0.000386 | 16.350372 | 0.296039 | 0.491197 | 0.008796 | 0.24141851 | 0.00030062 | 0.125525 | 0.002268 | 3129 | 2 | 82 |
| 351-3b-46.1 | 656 | 923 | 196 | 0.135021 | 0.002034 | 8.23851 | 0.135459 | 0.23474 | 0.003622 | 0.2545427 | 0.00103657 | 0.022532 | 0.000488 | 3213 | 6 | 42 |
| 351-3b-32.1 | 2477 | 2668 | 2006 | 0.287647 | 0.000339 | 21.087666 | 0.32668 | 0.610865 | 0.009374 | 0.25036969 | 0.0002364 | 0.163155 | 0.002518 | 3187 | 1 | 96 |
| 351-3b-43.1 | 1050 | 520 | 361 | 0.176179 | 0.001 | 9.284662 | 0.147329 | 0.275367 | 0.004236 | 0.24454198 | 0.00059098 | 0.097996 | 0.001623 | 3150 | 4 | 50 |

**KB351 SHRIMP** continued

| labels | U/ppm | Th/ppm | Total Pb | 208/206 | 1rsd | 207/235 | 1rsd | 206/238 | 1rsd | 207/206 | 1rsd | 208/232 | 1rsd | AGE 207/206 | +/- | %conc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 351-3b-53.1 | 1512 | 843 | 688 | 0.089423 | 0.000421 | 12.783328 | 0.19957 | 0.396757 | 0.006094 | 0.23367828 | 0.00034404 | 0.063619 | 0.001028 | 3077 | 2 | 70 |
| 351-3b-50.1 | 295 | 354 | 190 | 0.179886 | 0.001718 | 17.384126 | 0.28644 | 0.50821 | 0.007906 | 0.24808939 | 0.00094827 | 0.07632 | 0.001412 | 3173 | 6 | 83 |
| 351-3b-48.1 | 1667 | 1902 | 1446 | 0.293872 | 0.000403 | 23.297107 | 0.36201 | 0.646728 | 0.009936 | 0.26126362 | 0.00028612 | 0.166615 | 0.002581 | 3254 | 2 | 99 |
| 351-3b-84.1 | 1458 | 1041 | 1139 | 0.181669 | 0.000347 | 22.548522 | 0.350805 | 0.6281 | 0.009653 | 0.26036809 | 0.00030334 | 0.159717 | 0.002488 | 3249 | 2 | 97 |
| 351-3b-65.1 | 2303 | 2741 | 2321 | 0.371188 | 0.000424 | 22.525492 | 0.349233 | 0.72801 | 0.011175 | 0.22440661 | 0.00022108 | 0.227059 | 0.003505 | 3013 | 2 | 117 |
| 351-3b-75.1 | 1804 | 1517 | 1391 | 0.22849 | 0.000341 | 21.10748 | 0.327477 | 0.602317 | 0.009247 | 0.25416156 | 0.00026074 | 0.163664 | 0.002535 | 3211 | 2 | 95 |
| 351-3b-72.1 | 1679 | 2295 | 1665 | 0.329816 | 0.000471 | 25.22461 | 0.391617 | 0.720732 | 0.011067 | 0.25383387 | 0.00027196 | 0.173965 | 0.002691 | 3209 | 2 | 109 |
| 351-3b-71.1 | 1592 | 341 | 496 | 0.111869 | 0.000718 | 8.250076 | 0.129706 | 0.265571 | 0.004077 | 0.22530758 | 0.00044443 | 0.138513 | 0.00233 | 3019 | 3 | 50 |
| 351-3b-60.1 | 386 | 644 | 214 | 0.124909 | 0.001169 | 16.301867 | 0.262994 | 0.458085 | 0.007094 | 0.25810113 | 0.00076966 | 0.03434 | 0.000627 | 3235 | 5 | 75 |
| 351-3b-79.1 | 532 | 1914 | 265 | 0.163769 | 0.001738 | 13.36052 | 0.217877 | 0.391513 | 0.006053 | 0.2475002 | 0.0008914 | 0.01781 | 0.000336 | 3169 | 6 | 67 |
| 351-3b-80.1 | 1578 | 1716 | 1409 | 0.27943 | 0.000393 | 24.095004 | 0.374423 | 0.672233 | 0.010329 | 0.25995962 | 0.00028305 | 0.172716 | 0.002677 | 3246 | 2 | 102 |

*Appendix C. Laser ablation trace element data*

**KB770** **LA-ICP-MS trace element analysis**

| KB770 | spot | 5CT3-1 | 5CT18-1 | 5CT18-2 | 5CT6-1 | 5CT2-1 | 5CT5-1 | 5CT7-1 | 5CT14-1 | 5CT18-3 | 5CT17-2 | 5CT17-4 | 5CT15-1 | 5CT16-1 | 5CT17-1 | 5CT4-1 | 5CT4-2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| La | | 73.0 | 27.0 | 39.2 | 29.1 | 250.2 | 320.7 | 588.2 | 679.3 | 392.4 | 347.7 | 221.1 | 60.3 | 31.6 | 312.7 | 52.7 | 77.6 |
| Ce | | 179.6 | 142.5 | 144.0 | 144.0 | 826.6 | 917.2 | 1971.7 | 2168.3 | 1539.7 | 934.5 | 755.6 | 79.7 | 49.5 | 255.9 | 116.7 | 109.5 |
| Pr | | 170.5 | 106.3 | 132.6 | 101.1 | 793.7 | 973.7 | 1956.8 | 2036.8 | 1344.2 | 736.8 | 496.8 | 38.9 | 26.3 | 194.7 | 38.9 | 50.5 |
| Nd | | 230.6 | 115.8 | 178.6 | 111.8 | 795.5 | 1068.7 | 2032.5 | 2127.4 | 1557.2 | 805.1 | 599.4 | 43.9 | 32.8 | 158.7 | 53.1 | 36.6 |
| Sm | | 346.1 | 148.0 | 256.2 | 216.3 | 1034.0 | 1698.4 | 2368.0 | 2901.6 | 2321.9 | 1003.3 | 1130.1 | 51.3 | 51.3 | 89.2 | 95.4 | 105.2 |
| Eu | | 119.0 | 34.5 | 77.6 | 86.2 | 358.6 | 527.6 | 596.6 | 775.9 | 734.5 | 300.0 | 420.7 | 25.9 | 14.1 | 25.9 | 29.3 | 22.4 |
| Gd | | 369.8 | 184.4 | 301.2 | 236.5 | 841.8 | 1456.0 | 1756.2 | 2520.2 | 2160.6 | 901.7 | 1231.6 | 166.4 | 116.8 | 145.0 | 196.1 | 263.3 |
| Dy | | 611.0 | 252.0 | 503.3 | 458.7 | 1285.2 | 1997.8 | 2261.0 | 3598.0 | 3181.1 | 1136.2 | 1488.4 | 666.3 | 450.6 | 514.4 | 575.2 | 1132.3 |
| Ho | | 793.3 | 325.1 | 655.5 | 526.5 | 1356.9 | 2083.0 | 2243.8 | 3720.8 | 3288.0 | 1289.8 | 1678.4 | 1192.6 | 749.1 | 864.0 | 1015.9 | 1692.6 |
| Er | | 784.9 | 401.2 | 734.1 | 698.5 | 1475.5 | 2259.2 | 2418.1 | 3800.0 | 3362.5 | 1472.5 | 1910.6 | 1941.4 | 1276.7 | 1412.1 | 1303.9 | 2994.6 |
| Yb | | 1430.0 | 637.1 | 1230.6 | 1515.3 | 2436.2 | 3505.0 | 4350.0 | 6181.2 | 5520.9 | 3637.1 | 3882.6 | 4542.6 | 3108.8 | 4102.9 | 2719.4 | 6661.2 |
| Lu | | 1661.4 | 692.9 | 1346.5 | 1972.4 | 2547.2 | 3637.8 | 4692.9 | 6141.7 | 5413.4 | 4039.4 | 4862.2 | 4590.6 | 3905.5 | 4523.6 | 2980.3 | 6366.1 |
| P | | 591.4 | 212.0 | 352.3 | 501.2 | 895.0 | 2147.8 | 1421.4 | 2156.9 | 2213.2 | 1035.0 | 1799.4 | 914.1 | 519.4 | 1008.2 | 1249.8 | 930.6 |
| Mn | | 43.6 | 7.7 | 20.8 | 37.0 | 112.4 | 143.9 | 242.0 | 229.2 | 138.5 | 124.3 | 97.6 | 30.6 | 61.6 | 156.9 | 47.8 | 33.8 |
| Ga | | 3.4 | 1.8 | 4.5 | 1.2 | 9.3 | 9.3 | 22.1 | 22.4 | 13.8 | 8.4 | 6.9 | 1.1 | | 3.4 | | 3.1 |
| Sr | | 9.8 | 8.5 | 12.4 | 11.3 | 24.6 | 42.8 | 58.8 | 67.8 | 57.9 | 42.5 | 38.3 | 11.8 | 6.8 | 33.6 | 6.8 | 14.6 |
| Y | | 1296.4 | 520.0 | 979.0 | 970.9 | 2101.5 | 3403.5 | 3592.0 | 5733.5 | 5320.8 | 2180.4 | 3132.8 | 2003.6 | 1313.5 | 1587.8 | 1584.8 | 3082.9 |
| Nb | | 15.0 | 15.7 | 16.1 | 17.9 | 46.9 | 26.4 | 85.1 | 89.3 | 68.0 | 39.1 | 18.2 | 18.0 | 16.4 | 22.0 | 21.4 | 46.0 |
| Ba | | 10.4 | 9.0 | 11.8 | 12.1 | 45.1 | 78.7 | 161.7 | 179.0 | 150.0 | 87.7 | 114.9 | 10.9 | 9.9 | 43.4 | 4.1 | 22.1 |
| La | | 17.3 | 6.4 | 9.3 | 6.9 | 59.3 | 76.0 | 139.4 | 161.0 | 93.0 | 82.4 | 52.4 | 14.3 | 7.5 | 74.1 | 12.5 | 18.4 |
| Ce | | 109.9 | 87.2 | 88.1 | 88.1 | 505.9 | 561.3 | 1206.7 | 1327.0 | 942.3 | 571.9 | 462.4 | 48.8 | 30.3 | 156.6 | 71.4 | 67.0 |
| Pr | | 16.2 | 10.1 | 12.6 | 9.6 | 75.4 | 92.5 | 185.9 | 193.5 | 127.7 | 70.0 | 47.2 | 3.7 | 2.5 | 18.5 | 3.7 | 4.8 |
| Nd | | 107.7 | 54.1 | 83.4 | 52.2 | 371.5 | 499.1 | 949.2 | 993.5 | 727.2 | 376.0 | 279.9 | 20.5 | 15.3 | 74.1 | 24.8 | 17.1 |
| Sm | | 53.0 | 22.7 | 39.2 | 33.1 | 158.2 | 259.9 | 362.3 | 444.0 | 355.3 | 153.5 | 172.9 | 7.9 | 7.9 | 13.7 | 14.6 | 16.1 |
| Eu | | 6.9 | 2.0 | 4.5 | 5.0 | 20.8 | 30.6 | 34.6 | 45.0 | 42.6 | 17.4 | 24.4 | 1.5 | 0.8 | 1.5 | 1.7 | 1.3 |
| Gd | | 76.0 | 37.9 | 61.9 | 48.6 | 173.0 | 299.2 | 360.9 | 517.9 | 444.0 | 185.3 | 253.1 | 34.2 | 24.0 | 29.8 | 40.3 | 54.1 |
| Dy | | 155.2 | 64.0 | 127.9 | 116.5 | 326.5 | 507.5 | 574.3 | 913.9 | 808.0 | 288.6 | 378.1 | 169.3 | 114.5 | 130.7 | 146.1 | 287.6 |
| Ho | | 44.9 | 18.4 | 37.1 | 29.8 | 76.8 | 117.9 | 127.0 | 210.6 | 186.1 | 73.0 | 95.0 | 67.5 | 42.4 | 48.9 | 57.5 | 95.8 |
| Er | | 129.9 | 66.4 | 121.5 | 115.6 | 244.2 | 373.9 | 400.2 | 628.9 | 556.5 | 243.7 | 316.2 | 321.3 | 211.3 | 233.7 | 215.8 | 495.6 |
| Yb | | 243.1 | 108.3 | 209.2 | 257.6 | 414.2 | 595.9 | 739.5 | 1050.8 | 938.6 | 618.3 | 660.1 | 772.3 | 528.5 | 697.5 | 462.3 | 1132.4 |
| Lu | | 42.2 | 17.6 | 34.2 | 50.1 | 64.7 | 92.4 | 119.2 | 156.0 | 137.5 | 102.6 | 123.5 | 116.6 | 99.2 | 114.9 | 75.7 | 161.7 |
| Hf | | 5983.7 | 6096.0 | 5943.4 | 5937.7 | 5814.4 | 5899.0 | 6023.4 | 6118.5 | 5997.6 | 5960.0 | 6085.5 | 6004.0 | 6011.2 | 5767.2 | 6074.1 | 5857.6 |
| Th | | 141.6 | 75.0 | 145.9 | 104.0 | 477.4 | 177.0 | 1031.6 | 799.2 | 386.9 | 145.3 | 82.0 | 350.7 | 372.0 | 226.7 | 762.0 | 1114.3 |
| U | | 421.0 | 177.6 | 391.7 | 481.7 | 713.3 | 1107.4 | 1931.9 | 2840.7 | 2212.5 | 1332.5 | 1166.2 | 1801.0 | 1394.3 | 1707.2 | 857.0 | 3983.9 |
| GLITTER age | | 3248 | 3135 | 3058 | 3136 | 3281 | 3222 | 3319 | 3328 | 3393 | 3353 | 3306 | 2860 | 2785 | 2722 | 2818 | 2715 |
| | error | 23 | 30 | 27 | 39 | 21 | 18 | 16 | 16 | 17 | 17 | 18 | 21 | 18 | 21 | 22 | 20 |
| LAMTRACE age | | 3264 | 3256 | 3236 | 3308 | 3304 | 3238 | 3340 | 3302 | 3330 | 3288 | 3214 | 2852 | 2870 | 2960 | 2972 | 2988 |
| | error | 64 | 82 | 74 | 132 | 48 | 86 | 38 | 70 | 58 | 92 | 56 | 98 | 118 | 88 | 116 | 84 |

**KB770** **KB770** **LA-ICP-MS trace element analysis - cont'd**

| KB770 | spot | 5CT1-1 | 5CT9-1 | 5CT17-3 | 5CT12-1 | 5CT8-1 | 5CT13-1 | 5CT10-1 | 5CT11-1 | 5CT19-1 |
|---|---|---|---|---|---|---|---|---|---|---|
| La | | 24.1 | 76.8 | 113.5 | 111.4 | 30.8 | 41.8 | 46.8 | 0.5 | 1.7 |
| Ce | | 72.1 | 144.8 | 242.8 | 380.1 | 96.6 | 98.4 | 162.1 | 7.7 | 6.7 |
| Pr | | 57.9 | 107.4 | 213.7 | 198.9 | 23.2 | 24.2 | 91.6 | 0.7 | 4.0 |
| Nd | | 63.2 | 98.7 | 219.9 | 197.9 | 19.1 | 31.5 | 97.0 | 5.6 | 7.1 |
| Sm | | 69.0 | 90.2 | 214.4 | 294.8 | 56.5 | 95.1 | 181.7 | 15.4 | 35.9 |
| Eu | | 19.0 | 32.8 | 60.3 | 110.3 | 29.3 | 43.1 | 60.3 | 10.7 | 5.2 |
| Gd | | 82.2 | 110.9 | 236.0 | 333.3 | 185.9 | 366.9 | 332.8 | 47.2 | 49.1 |
| Dy | | 281.5 | 270.9 | 429.3 | 691.7 | 660.6 | 1190.0 | 771.5 | 191.3 | 197.6 |
| Ho | | 425.8 | 477.0 | 697.9 | 952.3 | 1180.2 | 2030.0 | 1289.8 | 328.6 | 339.2 |
| Er | | 732.9 | 820.5 | 969.8 | 1446.5 | 2278.5 | 2780.7 | 1758.3 | 506.3 | 543.8 |
| Yb | | 1880.0 | 2475.0 | 2697.4 | 3550.0 | 4299.1 | 5493.2 | 3552.1 | 1066.5 | 2408.2 |
| Lu | | 2236.2 | 3189.0 | 3366.1 | 4437.0 | 6649.6 | 6129.9 | 3606.3 | 1429.1 | 2944.9 |
| P | | 301.2 | 490.1 | 557.6 | 1054.0 | 281.1 | 494.3 | 714.0 | 167.2 | 214.4 |
| Mn | | 15.7 | 81.3 | 75.1 | 47.6 | 116.5 | 24.8 | 82.9 | | 11.9 |
| Ga | | 1.1 | 1.1 | 2.5 | 4.0 | 1.8 | 2.0 | | | 0.4 |
| Sr | | 5.1 | 15.7 | 19.4 | 16.9 | 12.1 | 7.0 | 13.6 | 5.1 | 7.9 |
| Y | | 809.2 | 795.3 | 1165.2 | 1673.7 | 1590.3 | 3079.5 | 2072.0 | 585.7 | 590.9 |
| Nb | | 10.8 | 25.6 | 17.8 | 22.2 | 37.0 | 21.9 | 21.0 | 15.7 | 10.3 |
| Ba | | 3.5 | 26.1 | 29.2 | 19.2 | 30.1 | 2.7 | 9.1 | | 1.5 |
| La | | 5.7 | 18.2 | 26.9 | 26.4 | 7.3 | 9.9 | 11.1 | 0.1 | 0.4 |
| Ce | | 44.1 | 88.6 | 148.6 | 232.6 | 59.1 | 60.2 | 99.2 | 4.7 | 4.1 |
| Pr | | 5.5 | 10.2 | 20.3 | 18.9 | 2.2 | 2.3 | 8.7 | 0.1 | 0.4 |
| Nd | | 29.5 | 46.1 | 102.7 | 92.4 | 8.9 | 14.7 | 45.3 | 2.6 | 3.3 |
| Sm | | 10.6 | 13.8 | 32.8 | 45.1 | 8.7 | 14.6 | 27.8 | 2.4 | 5.5 |
| Eu | | 1.1 | 1.9 | 3.5 | 6.4 | 1.7 | 2.5 | 3.5 | 0.6 | 0.3 |
| Gd | | 16.9 | 22.8 | 48.5 | 68.5 | 38.2 | 75.4 | 68.4 | 9.7 | 10.1 |
| Dy | | 71.5 | 68.8 | 109.1 | 175.7 | 167.8 | 302.3 | 196.0 | 48.6 | 50.2 |
| Ho | | 24.1 | 27.0 | 39.5 | 53.9 | 66.8 | 114.9 | 73.0 | 18.6 | 19.2 |
| Er | | 121.3 | 135.8 | 160.5 | 239.4 | 377.1 | 460.2 | 291.0 | 83.8 | 90.0 |
| Yb | | 319.6 | 420.8 | 458.6 | 603.5 | 730.9 | 933.9 | 603.9 | 181.3 | 409.4 |
| Lu | | 56.8 | 81.0 | 85.5 | 112.7 | 168.9 | 155.7 | 91.6 | 36.3 | 74.8 |
| Hf | | 5843.6 | 6115.6 | 6057.7 | 5991.5 | 5717.8 | 5941.3 | 6098.6 | 5906.3 | 6192.7 |
| Th | | 18.9 | 130.8 | 224.6 | 206.9 | 112.0 | 778.4 | 621.1 | 25.0 | 36.8 |
| U | | 372.7 | 1025.8 | 1042.1 | 1283.6 | 235.8 | 789.9 | 1135.1 | 45.2 | 1265.2 |
| GLITTER age | | 5107 | 3016 | 3068 | | 3040 | 3343 | 3125 | | |
| | error | 4196 | 20 | 20 | | 39 | 18 | 21 | | |
| LAMTRACE age | | 3006 | 3014 | 3018 | 3060 | 3068 | 3110 | 3176 | 3234 | 2970 |
| | error | 90 | 110 | 84 | 70 | 100 | 48 | 102 | 142 | 76 |

**KB779 LA-ICP-MS trace element analysis**

| KB779 | spot | 5AT1-1 | 5AT1-2 | 5AT2-1 | 5AT3-1 | 5AT4-1 | 5AT3-1 |
|---|---|---|---|---|---|---|---|
| La | | 6.8 | 15.6 | 0.7 | 0.7 | 4.6 | 0.6 |
| Ce | | 26.3 | 32.4 | 32.2 | 33.5 | 47.2 | 69.9 |
| Pr | | 10.5 | 15.8 | 4.3 | 0.5 | 3.6 | 2.2 |
| Nd | | 13.3 | 9.0 | 11.8 | 1.5 | 3.6 | 7.1 |
| Sm | | 35.0 | 20.3 | 63.7 | 10.1 | 12.7 | 55.2 |
| Eu | | 31.0 | 25.9 | 70.7 | 10.3 | 15.5 | 46.6 |
| Gd | | 95.9 | 65.2 | 239.4 | 34.1 | 49.1 | 138.2 |
| Dy | | 332.1 | 220.3 | 812.2 | 132.3 | 174.0 | 478.9 |
| Ho | | 598.9 | 376.3 | 1337.5 | 268.6 | 333.9 | 775.6 |
| Er | | 869.5 | 587.3 | 1946.8 | 458.0 | 586.7 | 1155.9 |
| Yb | | 1986.5 | 1361.2 | 4019.7 | 1308.2 | 1652.4 | 2527.6 |
| Lu | | 2444.9 | 1807.1 | 4492.1 | 1874.0 | 2637.8 | 3342.5 |
| P | | 265.2 | 160.4 | 312.8 | 86.7 | 181.7 | 56.5 |
| Mn | | <0.7 | 3.7 | <0.9 | <0.7 | <0.7 | <1.1 |
| Ga | | <0.8 | <0.7 | <0.8 | <0.7 | <0.8 | <1.1 |
| Sr | | 10.2 | 9.0 | 7.0 | 3.9 | 4.2 | 2.4 |
| Y | | 1043.0 | 767.2 | 2208.6 | 558.4 | 689.2 | 1291.1 |
| Nb | | 19.5 | 18.8 | 20.0 | 13.2 | 14.7 | 13.0 |
| Ba | | <0.3 | 0.4 | 1.9 | 0.9 | 1.0 | <0.4 |
| La | | 1.6 | 3.7 | 0.2 | 0.2 | 1.1 | 0.2 |
| Ce | | 16.1 | 19.8 | 19.7 | 20.5 | 28.9 | 42.8 |
| Pr | | 1.0 | 1.5 | 0.4 | 0.1 | 0.3 | 0.2 |
| Nd | | 6.2 | 4.2 | 5.5 | 0.7 | 1.7 | 3.3 |
| Sm | | 5.4 | 3.1 | 9.8 | 1.6 | 2.0 | 8.5 |
| Eu | | 1.8 | 1.5 | 4.1 | 0.6 | 0.9 | 2.7 |
| Gd | | 19.7 | 13.4 | 49.2 | 7.0 | 10.1 | 28.4 |
| Dy | | 84.4 | 56.0 | 206.3 | 33.6 | 44.2 | 121.7 |
| Ho | | 33.9 | 21.3 | 75.7 | 15.2 | 18.9 | 43.9 |
| Er | | 143.9 | 97.2 | 322.2 | 75.8 | 97.1 | 191.3 |
| Yb | | 337.7 | 231.4 | 683.4 | 222.4 | 280.9 | 429.7 |
| Lu | | 62.1 | 45.9 | 114.1 | 47.6 | 67.0 | 84.9 |
| Hf | | 6149.6 | 6034.7 | 5902.2 | 6018.1 | 5984.5 | 5934.7 |
| Th | | 332.2 | 251.0 | 834.3 | 299.7 | 538.3 | 758.7 |
| U | | 221.5 | 175.1 | 420.2 | 757.9 | 1325.2 | 978.4 |

**KB810 LA-ICP-MS**

| KB810 | 5ET1-1 | 5ET2-1 | 5ET3-1 | 5ET3-2 | 5ET4-1 | 5ET5-1 | 5ET6-1 | 5ET7-1 | 5ET8-1 | 5ET9-1 | 5ET10-1 | 5ET2-1 | 5ET3-2 | 5ET4-1 | 5ET8-1 | 5ET10-1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| La | 0.5 | 3.0 | | 1.1 | | 0.9 | | | | 1.1 | 1.4 | 3.4 | | 4.6 | | 5.5 |
| Ce | 7.2 | 14.4 | 9.6 | 16.3 | 12.1 | 11.9 | 12.3 | 8.7 | 0.6 | 15.2 | 2.9 | 8.3 | 16.0 | 10.8 | | 9.8 |
| Pr | 1.5 | 2.4 | | 4.1 | | 3.7 | 2.3 | | | 2.3 | 1.6 | 5.3 | 3.2 | 5.3 | | 5.3 |
| Nd | | 3.2 | | 4.3 | | 4.1 | 6.9 | 1.5 | | 9.2 | | 14.3 | | | | |
| Sm | 5.2 | | 9.8 | 12.7 | 9.2 | 15.4 | 21.6 | 9.8 | | 20.9 | 2.6 | 47.1 | | 48.7 | 0.0 | 10.1 |
| Eu | | 5.2 | 5.2 | 15.5 | 10.3 | 13.8 | 17.2 | 8.4 | | 20.7 | | | | 17.2 | 6.9 | 15.5 |
| Gd | 13.6 | 7.3 | 14.6 | 38.9 | 10.7 | 40.4 | 54.5 | 18.5 | 4.4 | 52.6 | 4.9 | | 41.4 | | | 12.2 |
| Dy | 48.6 | 45.9 | 74.8 | 149.2 | 68.3 | 148.0 | 139.2 | 47.6 | 8.7 | 166.7 | 26.2 | 26.0 | 136.0 | 40.4 | 58.7 | 84.6 |
| Ho | 88.3 | 100.7 | 127.2 | 266.8 | 125.4 | 227.9 | 227.9 | 90.1 | 19.4 | 293.3 | 44.2 | 53.0 | 272.1 | 106.0 | 137.8 | 169.6 |
| Er | 139.6 | 154.1 | 189.7 | 430.2 | 180.7 | 336.0 | 349.2 | 118.4 | 34.4 | 444.1 | 85.2 | 76.7 | 426.6 | 151.1 | 248.9 | 351.1 |
| Yb | 345.9 | 440.6 | 345.3 | 777.6 | 415.9 | 728.2 | 747.4 | 309.4 | 110.6 | 1012.6 | 261.5 | 237.1 | 759.1 | 309.4 | 598.8 | 921.2 |
| Lu | 500.0 | 740.2 | 385.8 | 929.1 | 500.0 | 850.4 | 811.0 | 354.3 | 165.4 | 1102.4 | 393.7 | 496.1 | 1000.0 | 472.4 | 874.0 | 1500.0 |
| P | 145.2 | 280.2 | 155.6 | 190.0 | 199.3 | 177.8 | 208.3 | 134.0 | 72.1 | <52.0 | 118.0 | <65.5 | 268.2 | 317.0 | 255.2 | <43.4 |
| Mn | <1.3 | 67.3 | <1.2 | 14.0 | 4.8 | <1.3 | 3.3 | <1.3 | <1.2 | <1.4 | 21.5 | 93.9 | 48.7 | 25.8 | 21.0 | 88.0 |
| Ga | 1.7 | <1.3 | <1.7 | <1.4 | <2.3 | <1.6 | <1.4 | <1.6 | <1.2 | <1.5 | 0.9 | <2.4 | 3.9 | <2.7 | 13.6 | <1.2 |
| Sr | 8.9 | 8.9 | 10.6 | 10.2 | 11.3 | 9.1 | 8.2 | 9.6 | 8.3 | 7.3 | 5.5 | 6.5 | 14.9 | 12.5 | 1.4 | 7.8 |
| Y | 221.0 | 245.0 | 265.9 | 538.8 | 278.7 | 452.4 | 487.3 | 228.2 | 87.4 | 589.5 | 119.7 | 160.0 | 535.3 | 250.1 | 256.3 | 403.9 |
| Nb | 21.4 | 28.4 | 23.1 | 24.6 | 24.7 | 25.6 | 27.1 | 24.7 | 18.7 | 23.6 | 13.2 | 31.1 | 22.6 | 21.6 | 12.0 | 13.3 |
| Ba | 1.0 | <0.7 | <0.9 | 0.9 | <1.2 | <0.6 | <0.9 | 4.7 | 1.1 | <1.0 | 0.7 | <1.2 | <0.9 | <1.4 | <2.3 | 3.2 |
| La | 0.1 | 0.7 | <0.12 | 0.3 | <0.17 | 0.2 | <0.14 | <0.09 | <0.17 | 0.3 | 0.3 | 0.8 | <0.1 | 1.1 | <0.4 | 1.3 |
| Ce | 4.4 | 8.8 | 5.9 | 10.0 | 7.4 | 7.3 | 7.5 | 5.3 | 0.3 | 9.3 | 1.8 | 5.1 | 9.8 | 6.6 | <0.4 | 6.0 |
| Pr | 0.1 | 0.2 | <0.10 | 0.4 | <0.13 | 0.4 | 0.2 | <0.10 | <0.08 | 0.2 | 0.2 | 0.5 | 0.3 | 0.5 | <0.2 | 0.5 |
| Nd | <0.7 | 1.5 | <0.9 | 2.0 | <0.9 | 1.9 | 3.2 | 0.7 | <0.6 | 4.3 | <0.3 | 6.7 | <0.9 | <1.0 | <1.5 | <0.7 |
| Sm | 0.8 | | 1.5 | 2.0 | 1.4 | 2.4 | 3.3 | 1.5 | | 3.2 | 0.4 | 7.2 | | 7.5 | | 1.6 |
| Eu | <0.23 | 0.3 | 0.3 | 0.9 | 0.6 | 0.8 | 1.0 | 0.5 | <0.17 | 1.2 | <0.08 | <0.3 | <0.3 | 1.0 | 0.4 | 0.9 |
| Gd | 2.8 | 1.5 | 3.0 | 8.0 | 2.2 | 8.3 | 11.2 | 3.8 | 0.9 | 10.8 | 1.0 | <1.1 | 8.5 | <1.1 | <1.1 | 2.5 |
| Dy | 12.4 | 11.7 | 19.0 | 37.9 | 17.4 | 37.6 | 35.4 | 12.1 | 2.2 | 42.4 | 6.7 | 6.6 | 34.6 | 10.3 | 14.9 | 21.5 |
| Ho | 5.0 | 5.7 | 7.2 | 15.1 | 7.1 | 12.9 | 12.9 | 5.1 | 1.1 | 16.6 | 2.5 | 3.0 | 15.4 | 6.0 | 7.8 | 9.6 |
| Er | 23.1 | 25.5 | 31.4 | 71.2 | 29.9 | 55.6 | 57.8 | 19.6 | 5.7 | 73.5 | 14.1 | 12.7 | 70.6 | 25.0 | 41.2 | 58.1 |
| Yb | 58.8 | 74.9 | 58.7 | 132.2 | 70.7 | 123.8 | 127.1 | 52.6 | 18.8 | 172.2 | 44.5 | 40.3 | 129.1 | 52.6 | 101.8 | 156.6 |
| Lu | 12.7 | 18.8 | 9.8 | 23.6 | 12.7 | 21.6 | 20.6 | 9.0 | 4.2 | 28.0 | 10.0 | 12.6 | 25.4 | 12.0 | 22.2 | 38.1 |
| Hf | 5923.1 | 5976.9 | 5788.4 | 5919.8 | 6017.8 | 5868.9 | 5951.2 | 6012.5 | 5923.3 | 5885.5 | 5875.4 | 6041.8 | 5854.3 | 5831.6 | 6078.7 | 5986.3 |
| Th | 312.3 | 955.1 | 252.3 | 732.7 | 292.1 | 243.7 | 835.5 | 196.1 | 103.7 | 1091.7 | 310.2 | 209.7 | 613.7 | 249.5 | 46.2 | 196.5 |
| U | 215.2 | 1440.6 | 124.9 | 314.6 | 228.9 | 144.7 | 432.7 | 149.3 | 236.6 | 492.3 | 529.0 | 362.2 | 264.6 | 175.9 | 159.7 | 448.8 |

**Sample KB770 whole rock analysis: major elements, XRF (%)**

| SiO2 | TiO2 | Al2O3 | Fe2O3 | MnO | MgO | CaO | Na2O | K2O | P2O5 | LOI | dry sum |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 49.54 | 0.50 | 18.03 | 7.76 | 0.12 | 9.10 | 10.98 | 1.63 | 0.25 | 0.06 | 2.0241 | 99.57 |

| Li | Be | Ti | V | Cr | Mn | Co | Ni | Cu | Zn | Ga | Rb |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 156.11 | 1.56 | 2988.29 | 4.80 | 5.71 | 90.47 | 124.10 | 5.13 | 12.09 | 47.18 | 18.12 | 285.51 |

**Sample KB770 whole rock analysis: trace elements, ICP-MS (ppm)**

| Sr | Y | Zr | Nb | Mo | Cd | In | Sn | Sb | Cs | Ba | La |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 66.42 | 26.81 | 133.98 | 14.23 | 0.02 | 0.11 | 0.03 | 5.14 | 0.03 | 5.74 | 544.86 | 45.80 |

| Ce | Pr | Nd | Sm | Eu | Gd | Dy | Ho | Er | Yb | Lu | Hf |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 89.00 | 9.36 | 31.29 | 5.67 | 0.53 | 4.32 | 4.25 | 0.83 | 2.66 | 2.82 | 0.42 | 4.16 |

| Ta | Tl | Pb | Bi | Th | U |
|---|---|---|---|---|---|
| 0.72 | 9.00 | 56.20 | 0.04 | 30.38 | 21.11 |