



Tectonics

Supporting Information for

**Orogenic wedge evolution of the central Andes, Bolivia (21°S):
Implications for Cordilleran cyclicity**

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Introduction

The supporting information for this paper includes maps of sample locations (Figs. S1-S3), lab procedures for (U-Th)/He and Fission Track analysis, criteria for exclusion of single grains from the calculated mean (U-Th)/He ages, a discussion of anomalous (U-Th)/He mean ages that were excluded from the main text, assumptions of the age-depth analysis of cooling ages, and time-Temperature modeling parameters. Additional files uploaded separately include an excel file of all individual (U-Th)/He grain ages (Dataset S1), and all individual Fission Track grain ages (Dataset S2).

Text S1. Sample Location Maps

Paleozoic-Mesozoic sedimentary units were sampled along an E-W transect between 20°45' S and 21°45' S. The following maps show sample locations with sample numbers labeled for the Eastern Cordillera (Fig. S1), the Interandean Zone (Fig. S2), and the Subandean Zone (Fig. S3). The sample names in Figs. S1-S3 correspond to the sample names and reported ages in Tables 1-3.

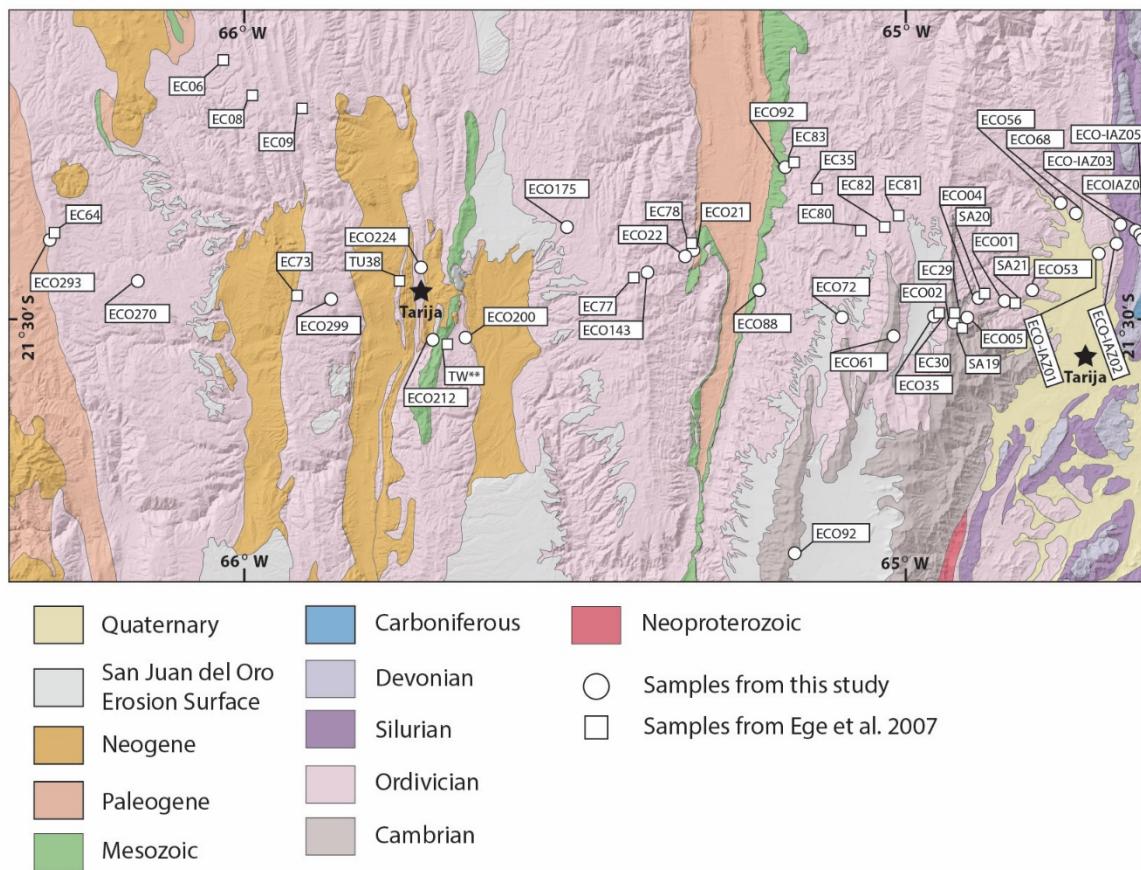


Figure S1. Geologic map of the Eastern Cordillera with sample names

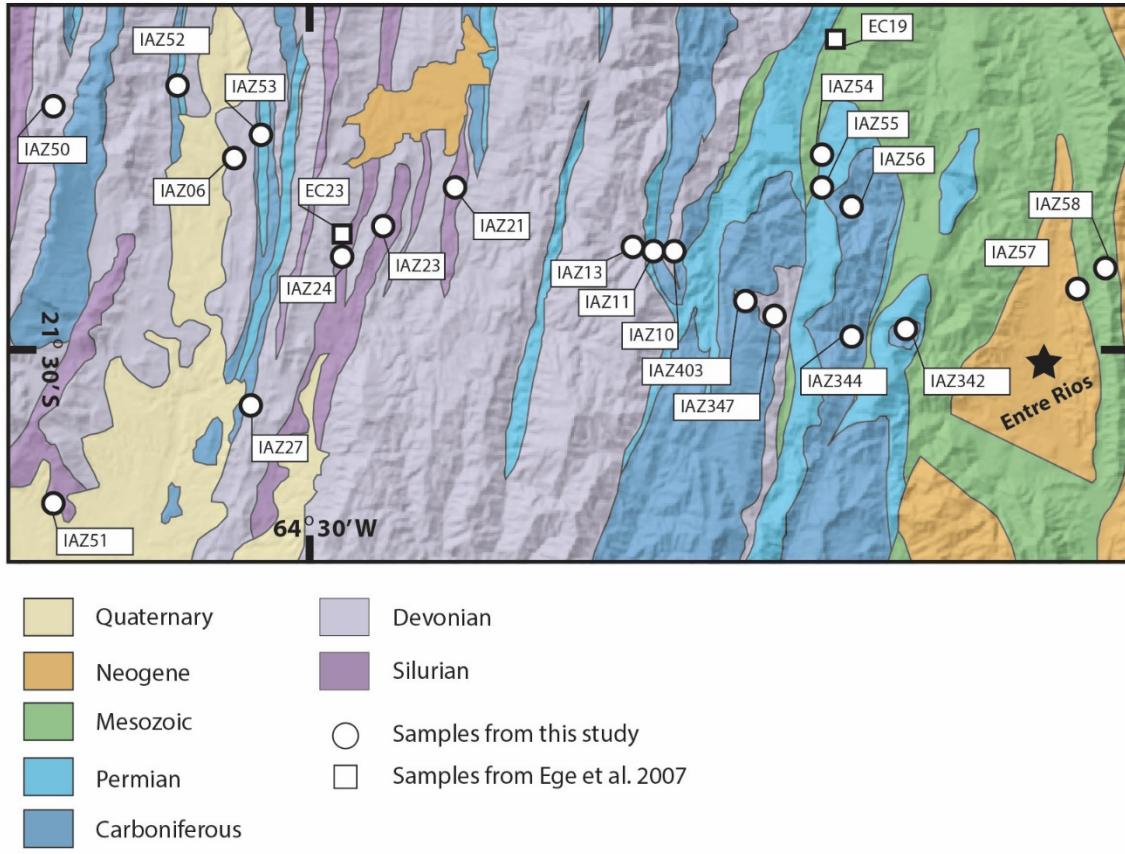


Figure S2. Geologic map of the Interandean Zone with sample names

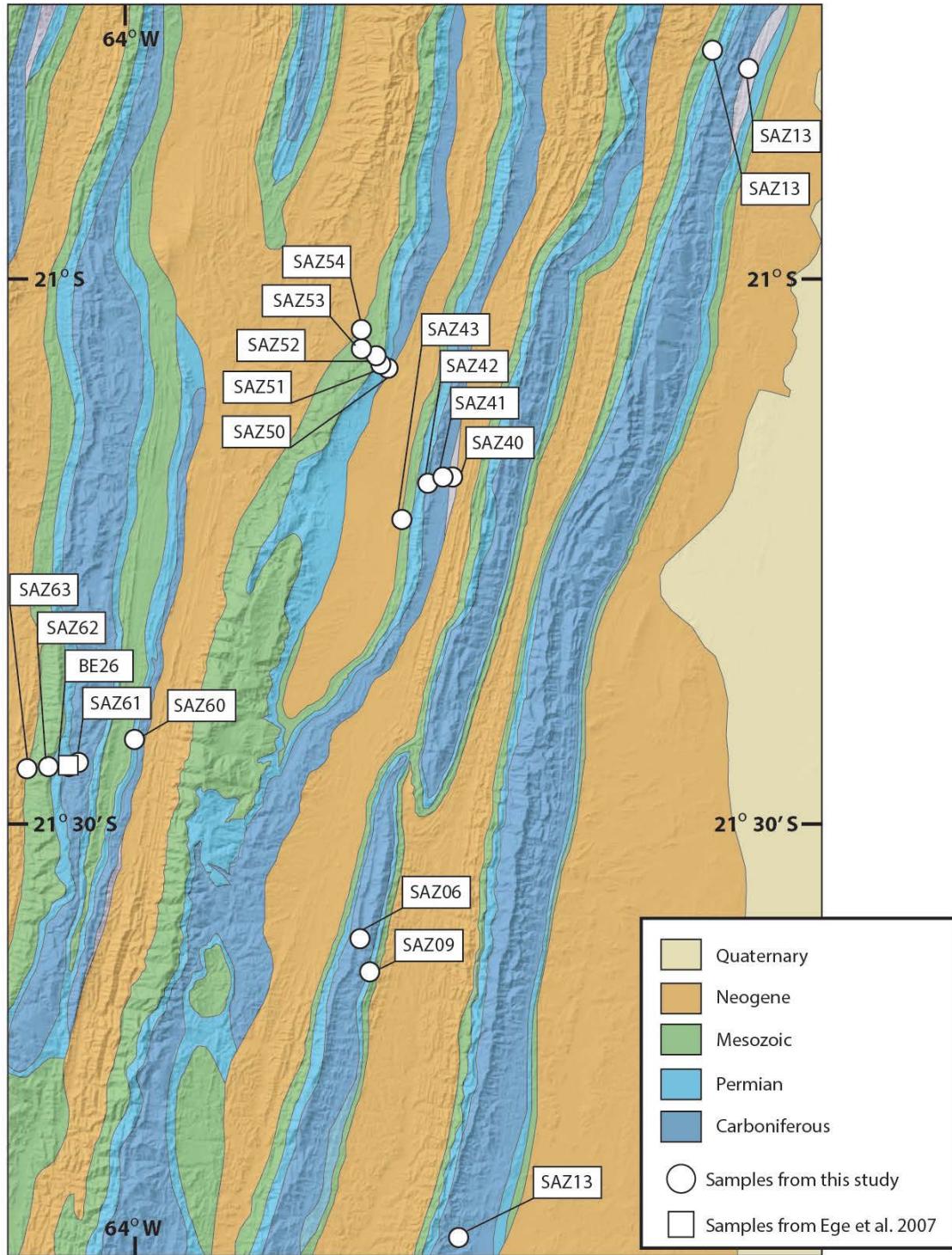


Figure S3. Geologic map of the Subandean Zone with sample names

Text S2. Analytical Procedures
(U-Th)/He Analytical Procedures

All (U-Th)/He analyses were performed at the University of Texas at Austin (U-Th)/He and U-Pb Geo-Thermochronometry Lab, and follow lab procedures as outlined in Prior et al. (2016) and online at <http://www.jsg.utexas.edu/he-lab/procedures/>. Single grain aliquots were photographed and measured for standard morphometric α -ejection age corrections, wrapped in Pt foil tubes, and heated with a diode laser twice for 5 minutes at $\sim 1000^{\circ}\text{C}$ (apatite), or for 10 minutes at 1300°C (zircon) until completely degassed (<1% He re-extract). Degassed ${}^4\text{He}$ was measured using isotope dilution and a Blazers Prisma QMS-200 quadropole mass spectrometer. Apatites and zircons were spiked with a 7 N nitric solution enriched in ${}^{235}\text{U}$, ${}^{230}\text{Th}$, and ${}^{149}\text{Sm}$ after complete degassing. Zircon aliquots underwent additional dissolution with hydrofluoric and nitric acid in a high pressure digestion vessel. All solutions were analyzed for ${}^{238}\text{U}$, ${}^{235}\text{U}$, ${}^{232}\text{Th}$, and ${}^{147}\text{Sm}$ with a Thermo Element 2 inductively coupled plasma mass spectrometer (ICP-MS). Raw ages were corrected for α -particle ejection using the Ft correction factor of Farley et al. (1996). A standard error of 8% for zircon and 6% for apatite was applied to each aliquot based on the internal reproducibility of Fish Canyon Tuff zircon and Durango apatite standards. Samples generally consisted of six individual aliquots; however, some samples may have fewer aliquots due to sparse, small, or poor quality zircon or apatite grains (see Data Set S1).

Fission Track Analytical Procedures

Fission track analyses were performed by S. Thomson at the University of Arizona Fission-Track Lab. Apatite grains were mounted in epoxy resin, alumina and diamond polished, and spontaneous fission tracks were revealed by etching with 5.5M HNO₃ at 20°C for 20 seconds. Samples were analyzed using the external detector method using very low uranium, annealed muscovite mica detectors, and irradiated at the Oregon State University Triga Reactor, Corvallis, U.S.A. The neutron fluence was monitored using European Institute for Reference Materials and Measurements (IRMM) uranium-dosed glasses IRMM 540R for apatite. After irradiation, induced tracks in the mica external detectors were revealed by etching with 48% HF for 18 minutes. Spontaneous and induced FT densities were counted using an Olympus BX61 microscope at 1250x magnification with an automated Kinetek Stage system. Apatite FT lengths and D_{par} values were measured using FTStage software, an attached drawing tube and digitizing tablet supplied by T. Dumitru of Stanford University calibrated against a stage micrometer. Sample central ages are reported along with the mean (U-Th)/He ages in Table 1, but individual grain data is compiled in Data Set S2.

For fission track samples, the χ^2 statistic is commonly utilized as a measure of variance of the grain age distribution in a sample (Galbraith, 1981; Green, 1981). Samples with a low age variance [$P(\chi^2) > 5\%$] are classified as concordant (Galbraith, 1981; Green, 1981), and the sample cooling age is reported as a central age. Samples with high age variance [$P(\chi^2) < 5\%$] are classified as over-dispersed, and the central age may not reflect a distinct geologic event. Over-dispersed ages are common in sedimentary rocks because detrital apatite or zircon grains may be derived from multiple source regions with contrasting cooling histories, a single region with a complex cooling history (e.g., Armstrong, 2005), or have variable annealing kinetics due to differing mineral

compositions (Ketcham et al., 1999, 2007; Carlson et al., 1999). For the samples with over-dispersed ages, we report both the central age, and the youngest component age calculated using the RadialPlotter software (Vermeesch, 2009). In samples where FT age dispersion is caused by partial resetting by burial, then the youngest age component will most likely represent the time of post-burial cooling recorded in those apatite grains least resistant to annealing.

Text S3. Criteria for Individual Grain Exclusion from (U-Th)/He Mean Ages

A total of 332 apatite and 140 zircon grains were analyzed for (U-Th)/He from 79 samples (59 apatite samples, 20 zircon samples) (Table DR1). We use cooling ages from individual aliquots to calculate a mean cooling age, standard deviation, and standard error for a sample. However, individual apatite and zircon aliquots may be excluded from the sample mean calculation if they are anomalously old, anomalously young, display erroneous negative values, or other analytical errors occur (e.g., grain loss, incomplete grain dissolution). Data for all aliquots for (U-Th)/He ages are reported in table DR1.

Anomalously old ages in apatite are presumably related to U and Th-rich inclusions such as zircon (Farley, 2002), but accumulated α -radiation damage may increase He retention in apatite (Shuster et al., 2006, 2009; Flowers et al., 2007, 2009). During measurement for standard morphometric α -ejection age corrections, apatite grains with visible inclusions, cracks, or broken tips are avoided, but may still have microinclusions not visible under magnification. Increased He retention of apatite due to accumulation of radiation damage is less of a concern in this study as the threshold for preservation of α -radiation damage should be comparable or lower than the annealing temperatures for fission track damage in apatite ($\sim 110 \pm 20^\circ\text{C}$) (Shuster et al., 2006), and the majority of apatite (U-Th)/He samples have not likely had sufficient time to accumulate significant α -radiation damage as most were cooled below their closure temperature since no later than the early Miocene.

For zircon, heterogeneous zoning of U and Th may bias the (U-Th)/He ages if not accounted for in the α -ejection corrections, which may produce both anomalously young or anomalously old ages depending on the pattern of zonation (Hourigan et al., 2005). The distribution of U and Th in zircon grains is not measured in this study, but biased ages are likely accounted for in our grain exclusion criteria (outlined below). In zircon, accumulated radiation damage reaches a critical threshold at which He retention and closure temperature is greatly reduced, resulting in anomalously young ages (Guenther et al., 2013). Except within a narrow zone of reset ages in the easternmost EC, unreset and partially reset zircon (U-Th)/He cooling ages at this latitude suggest that samples didn't reach sufficiently high temperatures to anneal α -radiation damage (e.g., Guenther et al., 2013), so zircon samples with high effective uranium concentrations (eU) and anomalously young ages are noted in Table DR1 as suspect.

Below we outline criteria followed for excluding cooling ages on individual aliquots from the mean cooling age of a sample. All reduced data for individual grains is included

Table DR1, with a brief description of which aliquots were used to calculate a mean cooling age.

- 1) Cooling ages on individual aliquots that are $> 3\sigma$ from the mean. Exclusion of such grains generally accounts for diffusion kinetics that are poorly understood or uncharacterized (e.g., high U and Th inclusions in apatite, biased ages due to uncharacterized zonation of U and Th, unknown crystal defects, or errors not noted during analysis).
- 2) Elevated helium during re-extract (apatite), or continued elevated re-extract in zircon can indicate high U and Th microinclusions that have different diffusion characteristics than the grain as a whole.
- 3) Measured He, U, Th ≈ 0 in zircon grains, which may indicate that the grain analyzed was not in fact a zircon.
- 4) Inverted mean cooling ages (e.g., AHe cooling age $>$ ZHe cooling age), which are typically the result of U or Th rich microinclusions in apatite, or U and Th rich rims in zircon. Because distribution of U and Th in our samples is uncharacterized, it is difficult to determine which of the two ages is biased and both mean AHe and ZHe ages are disregarded. Fortunately, this only occurred in one sample on our transect (CSM04). In the case where the AHe cooling age is greater than the AFT cooling age for a sample, or AFT cooling age is greater than ZHe cooling age, we defer to the AFT pooled age as they are typically more statistically robust and consist of 10's of individual grain ages rather 6 or less aliquots, as is the case with our AHe and ZHe ages. When this is the case, we used the aliquots in an AHe sample that are younger than the AFT pooled age, and ZHe ages that are older than pooled AFT age to calculate a mean AHe and ZHe age.
- 5) Erroneous negative ages, which suggest that the grain was lost or never packed in the platinum envelope, or that the grain was not an apatite or zircon crystal.
- 6) Aliquots where grain loss, breakup, or incomplete recovery is noted after the degassing stage (e.g., zircon grain is missing or lost when unpacked from the platinum envelope).
- 7) Additionally, other factors may contribute to dispersion of individual grain ages within a sample, such as size or quality of grains, may be grounds for exclusion. Care was taken to select grain sizes that have F_T corrections ranging between $\sim 0.65-0.85$, because the errors in α -ejection correction become increasingly large for $F_T < 0.65$ (Farley, 2002). However, in some samples the only grains available for analysis may have less than ideal F_T correction. Grains that are pristine and have good crystal morphology are ideal (e.g., Farley, 2002), but some samples may have poor quality crystals (e.g., pitted, cloudy, discolored, highly rounded), which was noted during the picking process.

Text S4. Mean (U-Th)/He Ages That Were Excluded From the Main Text

In the western EC, Middle Ordovician rocks at the EC-Altiplano boundary (ECO293) yielded a mixed reset ZHe age of 179.5 ± 112.6 Ma, similar to ages observed within the ZHe PRZ in the Cuesta de Sama anticlinorium, despite a restored depth of ~ 5 km below the base of Late Cretaceous rocks (Fig. 3). Contrariwise, sample ECO21 has an

apparent reset ZHe age of 26.6 ± 2.8 Ma, but only restores to ~ 1.4 km below the base of Late Cretaceous rocks. Stratigraphically-deeper samples collected from the same thrust sheet (Fig. 3) have a mixed reset ZHe age of 346.5 ± 18.8 Ma (ECO22), and an older AFT age of 36.7 ± 5.7 (EC78, Ege et al., 2007), which further contradict a reset ZHe age for sample ECO21. Anomalously young ZHe ages may be a result of reduced He retentivity in zircon due to accumulated radiation damage (Guenther et al., 2013), or an erroneous α -ejection correction due to zoning of parent U and Th (Hourigan et al., 2005). Yet, sample ECO21 does not display a negative correlation between individual grain age and effective uranium ($[U]_e$) that would be expected in the case of radiation damage (Table DR1). Extreme zoning of U and Th in zircon would only account for an α -ejection correction error of up to $\sim 30\%$ (Hourigan et al., 2005), which would still be younger than the adjacent AFT age (EC78). Though it is unclear why sample ECO21 has a reset ZHe age, the Jurassic mixed reset age for sample ECO293 indicates that Cenozoic burial temperatures did not exceed the ZHe PRZ, even at depths of ~ 5 km below Late Cretaceous rocks. Furthermore, the late Paleozoic age for sample ECO22 suggests that rocks positioned at a minimum of ~ 2 km below the Late Cretaceous rocks did not exceed ZHe PRZ temperature conditions (130°C) following early Carboniferous cooling. This suggests that the paleogeothermal gradient or magnitude of burial by Cenozoic synorogenic sediments in the western EC may have differed from the eastern EC, but further insight is limited by a lack of additional ZHe cooling data from a more extensive variety of stratigraphic depths across the western EC.

Anomalously older AHe ages may be a result of radiation damage (e.g., Shuster et al., 2006; Flowers et al., 2007), heterogeneous zoning of parent nuclides (e.g., Farley, 2002; Hourigan et al., 2005), or fluid and mineral inclusions containing excess He (e.g., Danišík et al., 2017). The AFT data in the EC indicate that burial temperatures prior to Cenozoic exhumation should have exceeded the AHe closure temperature ($\sim 65 \pm 10^\circ\text{C}$). However, the two shallowest samples in the EC (ECO88, ECO22) have a wide distribution of individual grain ages and resulting apparent mixed reset AHe ages of 82.3 ± 27.8 Ma and 76.9 ± 32.4 Ma (respectively, Table DR1). Though the cause of older grain ages in these samples is unclear, we note that using only the Cenozoic individual grain ages in these samples result in mean ages that are consistent with $\sim 15\text{-}12$ Ma reset AHe ages in the central and western EC (Table 1, Fig. 3), with the caveat that these calculated ages may not be that reliable. Contrariwise, individual grain ages from sample ECO270 are more consistently grouped (153.4–74.6, Table DR1), but the resulting 106 ± 22.2 Ma mixed reset age for this sample is regarded as an outlier given that samples in adjacent thrust sheets from similar stratigraphic depths (~ 5 km) have fully reset late Eocene-early Miocene AFT ages (Fig. 3). There is no positive $[U]_e$ -age trend in this sample to suggest radiation damage induced loss of retentivity (Table DR1). Therefore, this anomalously old age is assumed to be due to an erroneous α -ejection correction or uncharacterized excess helium within the apatite grains in this sample.

Samples IAZ23, IAZ27, and IAZ52, collected from Devonian and Silurian rocks (Fig. 4), have AHe ages (38.1, 20.5, 19.0 Ma, respectively) that are significantly older than any of the other observed AHe ages, and are older than any AFT age ($\sim 19\text{-}15$ Ma range) from Permian-Silurian samples in the western IAZ. There is no tectonic process that can

reasonably explain such early AHe cooling at Devonian-Silurian stratigraphic depths before later cooling through AFT closure, and no clear trend links radiation damage to increased He retentivity in these samples (e.g., eU vs age, Table DR1). Similar to the anomalously old age noted in the EC, we assume that the anomalously old AHe ages in these three samples are likely due to an erroneous α -ejection correction resulting from uncharacterized zoning of parent nuclide or excess helium from fluid or mineral inclusions.

Text S5. Age-Depth Analysis Assumptions

We take advantage of well-defined fossil ZHe and AHe PRZ's exposed in the eastern EC and SAZ (respectively) in order to estimate probable paleogeothermal gradients and plausible depths to the total annealing (AFT, ZFT) and total helium diffusion isotherms (AHe, ZHe), which are located at the lower inflection point of the PRZ and PAZ for each respective thermochronologic system (Gleadow et al., 1986; Stockli, 2005). Though most likely not linear in reality, an assumed linear gradient probably closely approximates the thermal structure at shallow crustal depths (Stockli et al., 2002). A well-defined age-depth profile from a single thrust sheet or structure within the IAZ is lacking, so no attempt was made to estimate the geothermal gradient in this zone. For apatite, an 85°C paleoisotherm is assumed as a conservative estimate for the total helium diffusion temperature (e.g., Wolf et al., 1998; Stockli et al., 2000). The total annealing temperature for fission tracks in apatite is empirically related to the etching characteristics of the individual apatite grain (e.g., Dpar), with lower values of Dpar indicative of reduced resistance to annealing (Donelick et al., 2005). Though Dpar values are commonly variable in detrital samples, the majority of our apatite grains have Dpar values near 2.0 or less (Table SM2), correlative with a total annealing temperature of ~120°C (Ketcham et al., 1999). Modern borehole studies show ZHe ages reduce to ~0 Ma at downhole temperatures of ~200°C (Wolfe and Stockli, 2010), but total helium diffusion in zircon may occur at temperatures as low as 140°C depending on accumulated radiation damage (Guenther et al., 2013). Given radiation damage is not a particular concern for the thermally reset samples in the eastern EC, a paleoisotherm range for total helium diffusion in zircon that spans the lower bound of typical closure temperatures (~170°C) and downhole temperature-age observations (~200°C) is assumed (e.g., Reiners et al., 2002; Wolfe and Stockli, 2010). The two concordant ZFT ages provide a check on calculated paleogeothermal gradients from the exhumed fossil ZHe PRZ, as they indicate the deepest samples collected from the EC probably did not reach temperatures above the ZFT PRZ (~262°C) after ~100 Ma.

Text S6. Time-Temperature Path Model Parameter Setup in HeFTy

We used the following model parameters after Lease et al. (2016) and Long et al. (2014). The t-T paths shown in Figure 9, were generated using HeFTy version 1.8.2 (Ketcham, 2005), using the following model parameters for ZHe, AFT, and AHe data.

For the ZHe model: Calibration: "Guenther et al., 2013 (Zircon)"; Radius: Average radius of all grains used to calculate the sample weighted mean age (Table SM3); Abraded: "0 µm" (default); Model precision: "Good"; Stopping distances: "Ketcham et al. 2011"; Alpha calculation: "Ejection"; Measured age (uncorrected): The weighted mean (U-Th)/He age of uncorrected ages ('Raw age' column on Table SM3 and associated 1σ error) was input here, so that the resulting corrected age is equivalent to the corrected weighted mean age for the sample; Age to report: "Corrected"; Alpha correction: "Ketcham et al. 2011"; Composition: The average U and Th concentration of all grains used to calculate the weighted mean age of the sample (Table SM3) was input here; Zoned? "No."

For the AFT model: Annealing model: "Ketcham et al. (2007a)"; C-axis projection: "Ketcham et al. (2007b), 5.5M"; Model C axis projected lengths?: "No"; Used Cf Irradiation?: "No"; Default initial mean track length: "From Dpar (µm), 16.3 µm" (default); Length reduction in standard: "0.893" (default); Kinetic parameter: "Dpar (µm)." Each sample was modeled using a single kinetic parameter (Dpar (µm)). Zeta mode: "Traditional"; Uncertainty mode: "1 SE."

For the AHe model: Calibration: "Shuster et al. (2006) (Do/a²) (Apatite)"; Radius: Average radius of all grains used to calculate the sample weighted mean age (Table SM4); Abraded: "0 µm" (default); Model precision: "Good"; Stopping distances: "Ketcham et al. 2011"; Alpha calculation: "Static ejection"; Measured age (uncorrected): The weighted mean (U-Th)/He age of uncorrected ages ('Raw age' column on Table SM4 and associated 1σ error) was input here, so that the resulting corrected age is equivalent to the corrected weighted mean age for the sample; Age to report: "Corrected"; Alpha correction: "Ketcham et al. 2011"; Composition: The average U and Th concentration of all grains used to calculate the weighted mean age of the sample (Table SM4) was input here; Zoned? "No."

Each randomly chosen T-t path ~~model~~ starting point was ~100 Myr older than the stratigraphic age and ~100°C hotter than the highest closure temperature thermochronometer analyzed to ensure an initial condition where no daughter products/tracks were retained. Constraint boxes were then applied to allow T-t paths to cool to an absolute temperature of 10-30°C at the time of Paleozoic deposition to simulate subaerial exposure. Further T-t constraint boxes subsequently allow heating related to Paleozoic-Cenozoic sedimentary burial. We constrained each T-t path ending point using a 0-20°C present day surface temperature. After initial randomly chosen T-t paths were run to explore parameter space, we added Cenozoic T-t constraint boxes to allow increased complexity of the cooling path without precluding viable paths. Depth constraints for individual samples were measured from the restored and deformed cross-sections (Figs. 3-5). Peak temperature conditions prior to Cenozoic exhumation were calculated using the depth constraints and the geothermal gradients calculated in Table 4.

For each sample, 50,000 T-t paths were generated (Monte Carlo) with annealing and diffusion model predicted data for each path compared with measured thermochronometric data for goodness of fit criteria. We report "good" and "acceptable"

thermal history envelopes according to the commonly used probability of fit calculated with a Kuiper's statistical test (good: 0.5; acceptable: 0.05; Ketcham, 2005).

Data Set S1. Excel file of all individual grain age data for (U-Th)/He samples

Data Set S2. Excel file of all individual grain age data for Fission Track samples

New Sample Name Original Sample name mineral Age, Ma err., Ma U (ppm)
 Individual aliquots used for mean age calculation for each sample are shown in bold

Reduced (U-Th[Sm])/He Data					
ECO22-1	CGO22-1	apatite	12.1	0.73	5.4
ECO22-2	CGO22-2	apatite	108.5	6.51	0.8
ECO22-3	CGO22-3	apatite	110.1	6.61	9.6
		Used only grain 1 because it is the only grain younger than			
SAZ60-1	CND03-1	apatite	6.2	0.37	18.3
SAZ60-2	CND03-2	apatite	221.7	13.30	22.7
SAZ60-3	CND03-3	apatite	7.6	0.45	23.5
SAZ60-4	CND03-4	apatite	9.2	0.55	35.9
SAZ60-5	CND03-5	apatite	5.5	0.33	2.2
SAZ60-6	CND03-6	apatite	169.5	10.17	14.5
		excluded grains 2, 6 due to anomalously old ages. Likely it			
ECO04-1	CSM04-1	apatite	36.2	2.17	5.8
ECO04-2	CSM04-2	apatite	26.1	1.56	8.9
ECO04-3	CSM04-3	apatite	29.7	1.78	9.2
ECO04-4	CSM04-4	apatite	30.2	1.81	20.7
ECO04-5	CSM04-5	apatite	26.9	1.61	3.7
ECO04-6	CSM04-6	apatite	30.6	1.84	18.0
ECO-IAZ03-1	IAZ02-1	apatite	13.5	0.81	6.7
ECO-IAZ03-2	IAZ02-2	apatite	18.8	1.13	32.3
ECO-IAZ03-3	IAZ02-3	apatite	20.6	1.24	41.4
ECO-IAZ03-4	IAZ02-4	apatite	16.4	0.98	8.8
ECO-IAZ03-5	IAZ02-5	apatite	15.7	0.94	6.0
ECO-IAZ03-6	IAZ02-6	apatite	13.8	0.83	12.2
		excluded grain 3, >3 sigma †			
ECO-IAZ04-1	IAZ03-1	apatite	22.0	1.32	8.7
ECO-IAZ04-2	IAZ03-2	apatite	17.6	1.06	26.9
ECO-IAZ04-3	IAZ03-3	apatite	3.9	0.23	4.2
ECO-IAZ04-4	IAZ03-4	apatite	18.2	1.09	7.9
ECO-IAZ04-5	IAZ03-5	apatite	19.3	1.16	8.1
ECO-IAZ04-6	IAZ03-6	apatite	23.9	1.44	7.5
		excluded gra			
IAZ06-1	IAZ06-1	apatite	40.3	2.42	6.7
IAZ06-2	IAZ06-2	apatite	12.8	0.77	17.5
IAZ06-3	IAZ06-3	apatite	11.2	0.67	8.3
IAZ06-4	IAZ06-4	apatite	16.2	0.97	29.0
IAZ06-5	IAZ06-5	apatite	33.7	2.02	25.2
IAZ06-6	IAZ06-6	apatite	16.0	0.96	0.9
		excluded ano			
IAZ23-1	IAZ23-1	apatite	39.9	2.39	28.1
IAZ23-2	IAZ23-2	apatite	26.9	1.61	18.9
IAZ23-3	IAZ23-3	apatite	49.6	2.97	5.4

IAZ23-4	IAZ23-4	apatite	41.7	2.50	11.9
IAZ23-5	IAZ23-5	apatite	22.6	1.36	33.8
IAZ23-6	IAZ23-6	apatite	48.1	2.89	16.6
					used all grain
IAZ24-1	IAZ24-1	apatite	12.1	0.73	4.0
IAZ24-2	IAZ24-2	apatite	11.7	0.70	7.6
IAZ24-3	IAZ24-3	apatite	13.6	0.81	9.9
IAZ24-4	IAZ24-4	apatite	14.3	0.86	20.8
IAZ24-5	IAZ24-5	apatite	14.3	0.86	14.4
IAZ24-6	IAZ24-6	apatite	12.8	0.77	25.7
IAZ27-1	IAZ27-1	apatite	15.9	0.96	23.7
IAZ27-2	IAZ27-2	apatite	20.3	1.22	51.6
IAZ27-3	IAZ27-3	apatite	22.9	1.37	5.4
IAZ27-4	IAZ27-4	apatite	22.9	1.37	17.2
					used all grain
IAZ52-1	RA14-13-2	apatite	169.4	10.16	0.2
IAZ52-2	RA14-13-3	apatite	19.0	1.14	9.3
IAZ52-3	RA14-13-4	apatite	1346.6	80.79	0.2
					excluded anom
ECO143-1	RA14-143-1	apatite	292.7	17.56	15.8
ECO143-2	RA14-143-2	apatite	16.6	0.99	2.9
ECO143-3	RA14-143-3	apatite	24.1	1.44	3.4
					excluded anom
ECO175-1	RA14-175-1	apatite	40.9	3.28	54.5
ECO175-2	RA14-175-2	apatite	16.9	1.36	0.1
ECO175-3	RA14-175-3	apatite	27.1	2.17	15.6
ECO175-4	RA14-175-4	apatite	35.1	2.81	16.1
ECO175-5	RA14-175-5	apatite	36.4	2.91	120.1
ECO175-6	RA14-175-6	apatite	16.0	1.28	0.7
					excluded grain
ECO-IAZ05-1	RA14-2-1	apatite	19.4	1.17	4.9
ECO-IAZ05-2	RA14-2-2	apatite	10.1	0.61	2.3
ECO-IAZ05-3	RA14-2-3	apatite	26.6	1.59	14.8
ECO-IAZ05-4	RA14-2-4	apatite	10.4	0.62	3.2
ECO-IAZ05-5	RA14-2-5	apatite	25.6	1.53	20.0
ECO-IAZ05-6	RA14-2-6	apatite	11.3	0.68	3.2
					all grain incl
ECO200-1	RA14-200-1	apatite	13.0	0.78	11.1
ECO200-2	RA14-200-2	apatite	11.6	0.70	13.3
ECO200-3	RA14-200-3	apatite	11.0	0.66	18.8
ECO200-4	RA14-200-4	apatite	11.6	0.70	16.8
ECO200-5	RA14-200-5	apatite	12.8	0.77	14.5
ECO200-6	RA14-200-6	apatite	14.6	0.87	14.1
ECO212-1	RA14-212-1	apatite	17.5	1.40	7.8
ECO212-2	RA14-212-2	apatite	16.0	1.28	6.2

ECO212-3	RA14-212-3	apatite	14.6	1.17	3.5
ECO212-4	RA14-212-4	apatite	7.6	0.61	6.6
ECO212-5	RA14-212-5	apatite	14.5	1.16	7.2
ECO212-6	RA14-212-6	apatite	11.8	0.95	4.4
					excluded grain
ECO244-1	RA14-224-1	apatite	95.9	5.76	1.7
ECO244-2	RA14-224-2	apatite	16.3	0.98	3.3
ECO244-3	RA14-224-3	apatite	-28.9	-1.73	4.4
ECO244-4	RA14-224-4	apatite	23.9	1.43	2.1
ECO244-5	RA14-224-5	apatite	7.9	0.48	1.3
ECO244-6	RA14-224-6	apatite	12.5	0.75	2.4
					excluded grain
ECO270-1	RA14-270-1	apatite	74.6	4.48	9.3
ECO270-2	RA14-270-2	apatite	113.4	6.80	5.0
ECO270-3	RA14-270-3	apatite	106.9	6.42	8.5
ECO270-4	RA14-270-4	apatite	86.3	5.18	6.2
ECO270-5	RA14-270-5	apatite	101.7	6.10	4.3
ECO270-6	RA14-270-6	apatite	153.4	9.21	6.8
					unreset
ECO293-1	RA14-293-1	apatite	24.8	1.49	6.0
ECO293-2	RA14-293-2	apatite	30.4	1.83	11.6
ECO293-3	RA14-293-3	apatite	30.1	1.80	8.3
ECO293-4	RA14-293-4	apatite	23.8	1.43	3.1
ECO293-5	RA14-293-5	apatite	41.4	2.48	7.5
ECO293-6	RA14-293-6	apatite	46.9	2.82	5.1
					excluded grain
ECO299-1	RA14-299-1	apatite	11.8	0.94	4.0
ECO299-2	RA14-299-2	apatite	9.0	0.72	6.7
ECO299-3	RA14-299-3	apatite	15.9	1.27	30.6
ECO299-4	RA14-299-4	apatite	6.4	0.51	12.9
ECO299-5	RA14-299-5	apatite	2303.5	184.28	2.2
ECO299-6	RA14-299-6	apatite	17.3	1.38	14.3
					excluded grain
IAZ50-1	RA14-3-1	apatite	1187.7	71.26	9.2
IAZ50-2	RA14-3-2	apatite	11.4	0.68	3.1
IAZ50-3	RA14-3-3	apatite	762.0	45.72	0.6
					single grain, z
IAZ51-1	RA14-34-1	apatite	36.1	2.17	14.6
IAZ51-2	RA14-34-2	apatite	21.4	1.28	11.2
IAZ51-3	RA14-34-3	apatite	12.5	0.75	12.1
IAZ51-4	RA14-34-4	apatite	24.3	1.46	25.1
IAZ51-5	RA14-34-5	apatite	25.8	1.55	7.1
IAZ51-6	RA14-34-6	apatite	22.4	1.34	16.5
					excluded grain
IAZ342-1	RA14-342-1	apatite	5.7	0.34	29.1
IAZ342-2	RA14-342-2	apatite	7.6	0.46	97.8
IAZ342-3	RA14-342-3	apatite	3.5	0.21	1.6

IAZ342-4	RA14-342-4	apatite	3.2	0.19	3.9
IAZ342-5	RA14-342-5	apatite	24.9	1.50	17.0
IAZ342-6	RA14-342-6	apatite	7.6	0.45	26.6
					excluded grai
IAZ344-1	RA14-344-1	apatite	8.6	0.69	63.6
IAZ344-2	RA14-344-2	apatite	6.4	0.51	6.9
IAZ344-3	RA14-344-3	apatite	8.5	0.68	56.0
IAZ344-4	RA14-344-4	apatite	7.8	0.63	17.1
IAZ344-5	RA14-344-5	apatite	4.9	0.39	6.4
IAZ344-6	RA14-344-6	apatite	6.3	0.50	19.0
IAZ347-1	RA14-347-1	apatite	32.0	1.92	7.5
IAZ347-2	RA14-347-2	apatite	59.1	3.54	4.4
IAZ347-3	RA14-347-3	apatite	10.0	0.60	45.8
IAZ347-4	RA14-347-4	apatite	24.7	1.48	23.7
IAZ347-5	RA14-347-5	apatite	30.4	1.82	5.7
IAZ347-6	RA14-347-6	apatite	18.7	1.12	46.1
					excluded all §
ECO35-1	RA14-35-1	apatite	18.1	1.09	14.0
ECO35-2	RA14-35-2	apatite	30.1	1.80	7.4
ECO35-3	RA14-35-3	apatite	26.5	1.59	27.8
ECO35-4	RA14-35-4	apatite	23.9	1.43	15.8
ECO35-5	RA14-35-5	apatite	22.0	1.32	14.5
ECO35-6	RA14-35-6	apatite	23.8	1.43	22.9
					excluded grai
IAZ403-1	RA14-403-1	apatite	8.2	0.49	12.1
IAZ403-2	RA14-403-2	apatite	11.1	0.67	70.8
IAZ403-3	RA14-403-3	apatite	9.5	0.57	9.0
IAZ403-4	RA14-403-4	apatite	10.4	0.62	12.4
IAZ403-5	RA14-403-5	apatite	10.2	0.61	24.4
IAZ403-6	RA14-403-6	apatite	7.3	0.44	1.4
ECO56-1	RA14-56-1	apatite	14.3	0.86	5.7
ECO56-2	RA14-56-2	apatite	14.1	0.84	4.4
ECO56-3	RA14-56-3	apatite	22.4	1.34	23.3
ECO56-4	RA14-56-4	apatite	22.9	1.38	28.3
ECO56-5	RA14-56-5	apatite	31.8	1.91	6.4
					excluded grai
ECO61-1	RA14-61-1	apatite	20.5	1.23	0.7
ECO61-2	RA14-61-2	apatite	26.9	1.61	11.4
ECO61-3	RA14-61-3	apatite	28.3	1.70	47.5
ECO61-4	RA14-61-4	apatite	19.9	1.19	37.0
ECO61-5	RA14-61-5	apatite	21.6	1.30	12.1
ECO61-6	RA14-61-6	apatite	17.1	1.02	4.2
ECO68-1	RA14-68-1	apatite	7.8	0.47	9.4
ECO68-2	RA14-68-2	apatite	16.1	0.97	11.3

ECO68-3	RA14-68-3		apatite	11.5	0.69	10.4
ECO88-1	RA14-88-1		apatite	115.9	6.96	6.7
ECO88-2	RA14-88-2		apatite	128.5	7.71	7.6
ECO88-3	RA14-88-3		apatite	136.6	8.20	5.2
ECO88-4	RA14-88-4		apatite	1708.9	102.53	0.2
ECO88-5	RA14-88-5		apatite	4.2	0.25	25.8
ECO88-6	RA14-88-6		apatite	26.3	1.58	3.8
					Only used gra	
SAZ61-1	RSL02-1		apatite	267.6	16.06	4.7
SAZ61-2	RSL02-2		apatite	16.7	1.00	5.3
SAZ61-3	RSL02-3		apatite	7.1	0.43	58.6
SAZ61-4	RSL02-4		apatite	6.9	0.42	24.8
SAZ61-5	RSL02-5		apatite	226.5	13.59	130.6
SAZ61-6	RSL02-6		apatite	66.7	4.00	11.9
					excluded gra	
SAZ62-1	RSL04-1		apatite	5.1	0.30	8.5
SAZ62-2	RSL04-2		apatite	4.7	0.28	2.4
SAZ62-3	RSL04-3		apatite	6.3	0.38	2.1
SAZ62-4	RSL04-4		apatite	7.7	0.46	1.6
SAZ62-5	RSL04-5		apatite	4.2	0.25	7.2
SAZ62-6	RSL04-6		apatite	47.7	2.86	3.5
					excluded gra	
SAZ63-1	RSL05-1		apatite	9.5	0.57	12.8
SAZ63-2	RSL05-2		apatite	1.6	0.10	3.8
SAZ63-3	RSL05-3		apatite	282.8	16.97	24.0
SAZ63-4	RSL05-4		apatite	156.7	9.40	2.4
SAZ63-5	RSL05-5		apatite	9.4	0.56	10.6
SAZ63-6	RSL05-6		apatite	84.5	5.07	0.8
					partial reset, ↴	
SAZ06-1	SAZ06-1		apatite	2.0	0.16	14.9
SAZ06-2	SAZ06-2		apatite	3.4	0.27	28.1
SAZ06-3	SAZ06-3		apatite	-1702.6	-136.21	0.1
SAZ06-4	SAZ06-4		apatite	10.6	0.84	74.5
SAZ06-5	SAZ06-5		apatite	63.3	5.06	3.3
SAZ06-6	SAZ06-6		apatite	5.0	0.40	19.8
					excluded gra	
SAZ09-1	SAZ09-1		apatite	150.1	12.01	28.0
SAZ09-2	SAZ09-2		apatite	68.5	5.48	7.8
SAZ09-3	SAZ09-3		apatite	346.5	27.72	39.4
SAZ09-4	SAZ09-4		apatite	17.2	1.37	23.6
SAZ09-5	SAZ09-5		apatite	79.1	6.32	5.9
SAZ09-6	SAZ09-6		apatite	1.5	0.12	10.1
					partial reset, ↴	
SAZ13-1	SAZ13-1		apatite	2.3	0.19	9.1
SAZ13-2	SAZ13-2		apatite	1.2	0.09	115.1
SAZ13-3	SAZ13-3		apatite	1.1	0.09	12.4

SAZ13-4	SAZ13-4	apatite	2.1	0.17	104.0
SAZ13-5	SAZ13-5	apatite	24.5	1.96	6.5
SAZ13-6	SAZ13-6	apatite	1.5	0.12	49.7
					excluded grai
SAZ15-1	SAZ15-1	apatite	3.1	0.18	8.3
SAZ15-2	SAZ15-2	apatite	1.3	0.08	13.0
SAZ15-3	SAZ15-3	apatite	1.2	0.07	13.8
SAZ15-4	SAZ15-4	apatite	4.3	0.26	8.7
SAZ15-5	SAZ15-5	apatite	44.7	2.68	71.4
SAZ15-6	SAZ15-6	apatite	6.9	0.41	28.1
					excluded grai
SAZ21-1	SAZ21-1	apatite	65.1	3.91	12.2
SAZ21-2	SAZ21-2	apatite	32.1	1.93	7.3
SAZ21-3	SAZ21-3	apatite	13.9	0.83	7.7
SAZ21-4	SAZ21-4	apatite	14.3	0.86	7.4
SAZ21-5	SAZ21-5	apatite	158.6	9.52	3.6
SAZ21-6	SAZ21-6	apatite	48.0	2.88	7.7
					partial reset, ↴
IAZ53-1	YSR04-1	apatite	12.4	0.7	14.9
IAZ53-2	YSR04-2	apatite	16.5	1.0	2.8
IAZ53-3	YSR04-3	apatite	21.4	1.3	4.2
IAZ53-4	YSR04-4	apatite	13.6	0.8	13.2
IAZ53-5	YSR04-5*	apatite	87.7	5.3	39.9
IAZ53-6	YSR04-6	apatite	8.8	0.5	18.9
					excluded grai
IAZ57-1	SSM04-1	apatite	3.6	0.2	1.8
IAZ57-2	SSM04-2	apatite	6.4	0.4	9.1
IAZ57-3	SSM04-3	apatite	5.3	0.3	11.9
IAZ57-4	SSM04-4*	apatite	293.9	17.6	6.7
IAZ57-5	SSM04-5	apatite	6.2	0.4	1.4
IAZ57-6	SSM04-6	apatite	4.9	0.3	22.9
					excluded grai
IAZ58-1	SSM01-1	apatite	4.0	0.2	10.2
IAZ58-2	SSM01-2*	apatite	15.5	0.9	4.5
IAZ58-3	SSM01-3	apatite	7.1	0.4	3.1
IAZ58-4	SSM01-4	apatite	4.6	0.3	20.5
IAZ58-5	SSM01-5*	apatite	26.6	1.6	4.6
IAZ58-6	SSM01-6	apatite	6.6	0.4	16.3
					excluded grai
ECO-IAZ02-1	SLL01-1	apatite	80.4	4.8	4.5
ECO-IAZ02-2	SLL01-2*	apatite	45.3	2.7	0.2
ECO-IAZ02-3	SLL01-3	apatite	19.1	1.1	29.1
ECO-IAZ02-4	SLL01-4	apatite	35.3	2.1	65.8
ECO-IAZ02-5	SLL01-5	apatite	20.1	1.2	19.6
					excluded grai
IAZ54-1	SAZ28-1	apatite	6.0	0.4	3.0
IAZ54-2	SAZ28-2*	apatite	11.4	0.7	3.4

IAZ54-3	SAZ28-3*	apatite	34.4	2.1	4.8
IAZ54-4	SAZ28-4	apatite	4.2	0.3	21.7
IAZ54-5	SAZ28-5	apatite	6.9	0.4	27.0
IAZ54-6	SAZ28-6	apatite	8.1	0.5	28.2
					excluded grai
IAZ55-1	SAZ27-1	apatite	5.4	0.3	9.1
IAZ55-2	SAZ27-2	apatite	8.3	0.5	7.4
IAZ55-3	SAZ27-3	apatite	7.1	0.4	1.9
IAZ55-4	SAZ27-4	apatite	6.4	0.4	7.8
IAZ55-5	SAZ27-5	apatite	4.6	0.3	1.7
IAZ55-6	SAZ27-6	apatite	8.0	0.5	24.7
IAZ56-1	SAZ26-1	apatite	4.8	0.3	12.4
IAZ56-2	SAZ26-2	apatite	6.0	0.4	38.8
IAZ56-3	SAZ26-3	apatite	5.4	0.3	11.8
IAZ56-4	SAZ26-4	apatite	5.6	0.3	7.9
IAZ56-5	SAZ26-5	apatite	7.8	0.5	2.8
IAZ56-6	SAZ26-6	apatite	5.6	0.3	10.5
					excluded grai
IAZ21-1	IAZ21-1	apatite	11.6	0.7	13.4
IAZ21-2	IAZ21-2	apatite	11.2	0.7	55.4
IAZ21-3	IAZ21-3	apatite	10.6	0.6	16.6
IAZ21-4	IAZ21-4	apatite	10.0	0.6	14.0
IAZ21-5	IAZ21-5	apatite	10.3	0.6	16.6
IAZ21-6	IAZ21-6	apatite	12.7	0.8	40.4
IAZ13-1	IAZ13-1	apatite	9.2	0.6	52.2
IAZ13-2	IAZ13-2	apatite	8.6	0.5	14.5
IAZ13-3	IAZ13-3	apatite	9.5	0.6	25.2
IAZ13-4	IAZ13-4	apatite	19.6	1.2	37.0
IAZ13-5	IAZ13-5	apatite	7.0	0.4	12.6
IAZ13-6	IAZ13-6	apatite	5.3	0.3	2.9
IAZ11-1	IAZ11-1	apatite	7.5	0.4	36.5
IAZ11-2	IAZ11-2	apatite	7.1	0.4	25.2
IAZ11-3	IAZ11-4	apatite	8.4	0.5	54.9
IAZ11-4	IAZ11-5	apatite	8.7	0.5	14.7
IAZ11-5	IAZ11-6	apatite	7.1	0.4	28.7
IAZ10-2	IAZ10-2	apatite	7.0	0.4	43.9
IAZ10-3	IAZ10-3	apatite	9.3	0.6	29.3
IAZ10-4	IAZ10-4	apatite	6.2	0.4	13.3
IAZ10-5	IAZ10-5	apatite	9.1	0.5	19.4
IAZ10-6	IAZ10-6	apatite	7.5	0.4	65.0
SAZ54-1	IVC01-1	apatite	0.8	0.05	11.0

SAZ54-2	IVC01-2	apatite	20.5	1.23	11.7
SAZ54-3	IVC01-3	apatite	2.8	0.17	13.9
SAZ54-4	IVC01-4	apatite	-7.4	-0.45	8.2
SAZ54-5	IVC01-5	apatite	10.2	0.61	40.9
SAZ54-6	IVC01-6	apatite	132.1	7.93	8.8
					excluded grain
SAZ53-1	IVC02-1*	apatite	19.7	1.18	11.5
SAZ53-2	IVC02-2	apatite	3.3	0.20	31.0
SAZ53-3	IVC02-3*	apatite	104.8	6.29	40.2
SAZ53-4	IVC02-4	apatite	5.7	0.34	10.1
SAZ53-5	IVC02-5	apatite	62.9	3.78	6.6
SAZ53-6	IVC02-6	apatite	14.3	0.86	72.8
					partial reset, ↴
SAZ52-1	IVC03-1*	apatite	82.4	4.94	14.9
SAZ52-2	IVC03-2*	apatite	158.5	9.51	2.4
SAZ52-3	IVC03-3	apatite	3.2	0.19	7.5
SAZ52-4	IVC03-4	apatite	27.7	1.66	17.1
					partial reset, ↴
SAZ51-1	IVC04-1	apatite	3.0	0.18	12.0
SAZ51-2	IVC04-2	apatite	3.1	0.18	13.5
SAZ51-3	IVC04-3	apatite	2.9	0.18	1.7
SAZ51-4	IVC04-4*	apatite	165.8	9.95	5.5
SAZ51-5	IVC04-5	apatite	3.5	0.21	15.6
SAZ51-6	IVC04-6	apatite	4.2	0.25	4.8
					excluded grain
SAZ50-1	IVC05-1	apatite	4.7	0.88	18.6
SAZ50-2	IVC05-2	apatite	3.8	1.91	10.1
SAZ50-3	IVC05-3	apatite	3.5	0.99	37.4
SAZ50-4	IVC05-4	apatite	4.2	0.25	1.8
SAZ50-5	IVC05-5	apatite	2.8	0.17	29.6
SAZ50-6	IVC05-6	apatite	3.8	0.23	11.1
SAZ40-1	MDY01-1	apatite	4.7	0.40	15.5
SAZ40-2	MDY01-2	apatite	4.0	0.48	14.1
SAZ40-3	MDY01-3	apatite	3.3	0.20	15.9
SAZ40-4	MDY01-4	apatite	3.8	0.23	49.1
SAZ41-1	MDY02-1	apatite	3.1	0.73	10.0
SAZ41-2	MDY02-2*	apatite	0.4	0.02	0.9
SAZ41-3	MDY02-3	apatite	5.6	0.34	13.4
SAZ41-4	MDY02-4	apatite	3.4	0.20	24.2
SAZ41-5	MDY02-5	apatite	3.1	0.19	14.1
SAZ41-6	MDY02-6	apatite	2.9	0.18	12.8
					excluded grain
SAZ42-1	MDY03-1	apatite	3.9	1.08	12.2
SAZ42-2	MDY03-2	apatite	3.7	0.22	17.4
SAZ42-3	MDY03-3	apatite	3.3	0.20	78.4

SAZ42-4	MDY03-4*	apatite	0.0	0.00	0.9
SAZ42-5	MDY03-5	apatite	4.4	0.26	3.9
SAZ42-6	MDY03-6	apatite	2.5	0.15	2.9
					excluded g
SAZ43-1	MDY06-1*	apatite	606.1	36.36	0.7
SAZ43-2	MDY06-2	apatite	69.7	4.18	0.4
SAZ43-3	MDY06-3	apatite	16.8	1.01	32.0
SAZ43-4	MDY06-4*	apatite	-351.4	-21.08	9.6
SAZ43-5	MDY06-5	apatite	1.6	0.09	4.4
SAZ43-6	MDY06-6	apatite	5.5	0.33	22.5
					partial reset, ↴
zECO-IAZ02-1	zSLL01-1	zircon	78.3	6.3	293.5
zECO-IAZ02-2	zSLL01-2	zircon	104.3	8.3	200.2
zECO-IAZ02-3	zSLL01-3	zircon	447.8	35.8	80.6
zECO-IAZ02-4	zSLL01-4	zircon	72.0	5.8	270.6
zECO-IAZ02-5	zSLL01-5*	zircon	1509.4	120.7	18.1
					excluded grai
zIAZ56-1	zSAZ26-1	zircon	306.8	24.5	274.5
zIAZ56-2	zSAZ26-2	zircon	452.9	36.2	59.4
zIAZ56-3	zSAZ26-3	zircon	455.3	36.4	128.8
zIAZ56-4	zSAZ26-4	zircon	386.1	30.9	149.7
zIAZ56-5	zSAZ26-5	zircon	392.9	31.4	107.8
zIAZ56-6	zSAZ26-6	zircon	347.4	27.8	140.5
zIAZ56-7	zSAZ26-7	zircon	370.1	29.6	151.5
zIAZ56-8	zSAZ26-8	zircon	282.8	22.6	297.5
zIAZ56-9	zSAZ26-9	zircon	373.9	29.9	182.6
zIAZ56-10	zSAZ26-10	zircon	380.9	30.5	150.0
zECO-IAZ01-1	zIAZ01-2	zircon	45.0	3.6	130.3
zECO-IAZ01-2	zIAZ01-3	zircon	52.9	4.2	264.4
zECO-IAZ01-3	zIAZ01-4	zircon	47.8	3.8	79.7
zECO-IAZ01-4	zIAZ01-5	zircon	154.5	12.4	75.1
zECO-IAZ01-5	zIAZ01-6	zircon	131.0	10.5	145.1
					partial reset, ↴
zECO05-1	zCSM05-1	zircon	55.9	4.5	133.9
zECO05-2	zCSM05-3	zircon	32.3	2.6	45.7
zECO05-3	zCSM05-4	zircon	30.2	2.4	194.1
zECO05-4	zCSM05-5	zircon	45.8	3.7	36.8
zECO05-5	zCSM05-6	zircon	22.8	1.8	108.9
zECO05-6	zCSM05-7	zircon	22.2	1.8	475.2
zECO02-1	zCSM02-1	zircon	41.5	3.3	204.0
zECO02-2	zCSM02-2	zircon	23.5	1.9	242.7
zECO02-3	zCSM02-3	zircon	40.7	3.3	79.7
zECO02-4	zCSM02-4	zircon	51.0	4.1	64.4
zECO01-1	zCSM01-1	zircon	28.6	2.3	80.6

zECO01-2	zCSM01-2	zircon	24.3	1.9	176.6
zECO01-3	zCSM01-3	zircon	24.2	1.9	105.2
zECO24-1	zCGO24-1	zircon	357.1	28.6	45.3
zECO24-2	zCGO24-2	zircon	264.9	21.2	136.9
zECO24-3	zCGO24-3	zircon	183.8	14.7	146.6
					partial reset, Z
zECO21-1	zCGO21-1*	zircon	40.3	3.2	200.6
zECO21-2	zCGO21-2	zircon	24.4	1.9	85.7
zECO21-3	zCGO21-3	zircon	23.9	1.9	81.6
zECO21-4	zCGO21-4	zircon	28.5	2.3	163.2
zECO21-5	zCGO21-5	zircon	29.6	2.4	126.7
					excluded grain
zECO22-1	zCGO22-1	zircon	329.5	26.36	61.7
zECO22-2	zCGO22-2	zircon	343.5	27.48	51.9
zECO22-3	zCGO22-3	zircon	366.6	29.33	117.0
zECO22-4	zCGO22-4	zircon	27.6	2.20	205.7
					grain 4 has hi
zECO04-1	zCSM04-1	zircon	26.2	2.10	128.4
zECO04-2	zCSM04-2	zircon	22.9	1.83	77.3
zECO04-3	zCSM04-3	zircon	20.4	1.63	74.2
zECO04-4	zCSM04-4	zircon	27.9	2.23	154.2
zECO04-5	zCSM04-5	zircon	279.4	22.35	457.5
zECO04-6	zCSM04-6	zircon	223.2	17.86	390.1
					excluded grain
ECO-IAZ03-1	zIAZ02-1	zircon	121.5	9.72	80.7
ECO-IAZ03-2	zIAZ02-2	zircon	222.2	17.78	185.3
ECO-IAZ03-3	zIAZ02-3	zircon	100.8	8.06	238.5
ECO-IAZ03-4	zIAZ02-4	zircon	236.6	18.93	185.0
ECO-IAZ03-5	zIAZ02-5	zircon	256.8	20.54	160.3
					partial reset, Z
ECO-IAZ04-1	zIAZ03-1	zircon	302.7	24.22	123.8
ECO-IAZ04-2	zIAZ03-2	zircon	279.6	22.37	127.4
ECO-IAZ04-3	zIAZ03-3	zircon	398.5	31.88	359.3
ECO-IAZ04-4	zIAZ03-4	zircon	302.6	24.21	101.3
ECO-IAZ04-5	zIAZ03-5	zircon	307.2	24.57	255.1
ECO-IAZ04-6	zIAZ03-6	zircon	10.6	0.85	0.7
					parial reset, Z
ECO-IAZ05-1	zRA14-2-1	zircon	324.1	25.93	123.5
ECO-IAZ05-2	zRA14-2-2	zircon	291.5	23.32	178.0
ECO-IAZ05-3	zRA14-2-3	zircon	298.3	23.86	179.5
ECO-IAZ05-4	zRA14-2-4	zircon	254.5	20.36	205.9
ECO-IAZ05-5	zRA14-2-5	zircon	133.0	10.64	685.6
ECO-IAZ05-6	zRA14-2-6	zircon	193.6	15.49	256.5
					partial reset, Z
zECO293-1	zRA14-293-1	zircon	457.8	36.62	91.3
zECO293-2	zRA14-293-2	zircon	119.0	9.52	202.6

zECO293-3	zRA14-293-3	zircon	132.5	10.60	133.1
zECO293-4	zRA14-293-4	zircon	98.3	7.87	550.9
zECO293-5	zRA14-293-5	zircon	159.1	12.73	270.9
zECO293-6	zRA14-293-6	zircon	110.2	8.82	169.6
					partial reset, 1
zECO35-1	zRA14-35-1	zircon	35.8	2.86	258.1
zECO35-2	zRA14-35-2	zircon	30.4	2.43	56.6
zECO35-3	zRA14-35-3	zircon	25.0	2.00	431.3
zECO35-4	zRA14-35-4	zircon	25.0	2.00	405.1
zECO35-5	zRA14-35-5	zircon	29.3	2.35	553.2
zECO35-6	zRA14-35-6*	zircon	119.2	9.54	471.1
					excluded grain
zECO53-1	zRA14-53-1	zircon	92.6	7.41	134.0
zECO53-2	zRA14-53-2	zircon	102.1	8.17	188.3
zECO53-3	zRA14-53-3	zircon	85.3	6.82	56.2
zECO53-4	zRA14-53-4	zircon	99.1	7.93	228.2
zECO53-5	zRA14-53-5	zircon	110.8	8.86	63.8
zECO53-6	zRA14-53-6	zircon	83.6	6.69	113.3
					partial reset, 1
zECO56-1	zRA14-56-1	zircon	68.8	5.50	844.6
zECO56-2	zRA14-56-2	zircon	86.4	6.91	242.4
zECO56-3	zRA14-56-3	zircon	99.6	7.97	183.8
zECO56-4	zRA14-56-4	zircon	117.0	9.36	169.4
zECO56-5	zRA14-56-5	zircon	83.4	6.67	277.7
zECO56-6	zRA14-56-6	zircon	-964839.0	-77187.10	1.7
					partial reset, 1
zECO61-1	zRA14-61-1	zircon	31.8	2.55	257.0
zECO61-2	zRA14-61-2	zircon	50.3	4.02	529.2
zECO61-3	zRA14-61-3	zircon	30.7	2.46	135.1
zECO61-4	zRA14-61-4	zircon	30.3	2.43	48.2
zECO61-5	zRA14-61-5	zircon	46.1	3.69	253.7
zECO61-6	zRA14-61-6	zircon	25.1	2.01	408.2
					excluded grain
zECO68-1	zRA14-68-1	zircon	20.1	1.61	94.9
zECO68-2	zRA14-68-2	zircon	24.4	1.95	81.2
zECO68-3	zRA14-68-3	zircon	323.8	25.91	141.2
zECO68-4	zRA14-68-4	zircon	27.7	2.21	83.8
zECO68-5	zRA14-68-5	zircon	24.4	1.95	461.4
zECO68-6	zRA14-68-6	zircon	124.1	9.93	49.7
					excluded grain
zECO72-1	zRA14-72-1	zircon	28.8	2.31	142.0
zECO72-2	zRA14-72-2	zircon	59.0	4.72	74.4
zECO72-3	zRA14-72-3	zircon	23.6	1.89	577.8
zECO72-4	zRA14-72-4	zircon	12.7	1.01	107.1
zECO72-5	zRA14-72-5	zircon	25.1	2.01	89.6
zECO72-6	zRA14-72-6	zircon	23.1	1.85	180.2
					excluded grain

zECO88-1	zRA14-88-1	zircon	199.5	15.96	207.4
zECO88-2	zRA14-88-2	zircon	352.8	28.23	100.5
zECO88-3	zRA14-88-3	zircon	451.2	36.09	155.4
zECO88-4	zRA14-88-4	zircon	213.0	17.04	106.4
zECO88-5	zRA14-88-5	zircon	225.4	18.03	153.3
zECO88-6	zRA14-88-6	zircon	133.3	10.67	263.0
					partial reset, ↴
zECO92-1	zRA14-92-1	zircon	256.8	20.54	116.6
zECO92-2	zRA14-92-2	zircon	136.0	10.88	328.4
zECO92-3	zRA14-92-3	zircon	31.8	2.54	103.8
zECO92-4	zRA14-92-4	zircon	27.8	2.23	254.2
zECO92-5	zRA14-92-5	zircon	31.9	2.55	206.9
zECO92-6	zRA14-92-6	zircon	45.6	3.65	724.0
					partial reset, ↴
zECO93-1	zRA14-93-1	zircon	5.3	0.42	144.0
zECO93-2	zRA14-93-2	zircon	28.0	2.24	64.6
zECO93-3	zRA14-93-3	zircon	29.7	2.38	103.2
zECO93-4	zRA14-93-4	zircon	41.8	3.34	487.0
zECO93-5	zRA14-93-5	zircon	40.2	3.21	211.3
zECO93-6	zRA14-93-6	zircon	35.9	2.87	55.1
					excluded grain

Th (ppm)	^{147}Sm (ppm)	[U]e	Th/U	He (nmol/g)	mass (ug)	Ft	ESR
7.6	146.5	7.9	1.40	0.4	5.71	0.75	62.79
3.8	0.0	1.6	5.08	0.4	0.38	0.45	25.88
40.1	77.9	19.3	4.16	6.9	1.09	0.58	36.29
the mixed reset AFT age of 36.7 Ma from sample EC78, collected from same stratigraphic level							
32.2	617.0	28.8	1.76	0.7	3.39	0.71	53.10
25.4	166.8	29.3	1.12	25.4	3.22	0.70	50.28
122.6	316.3	53.3	5.21	1.5	2.08	0.65	44.42
6.3	57.0	37.6	0.18	1.4	4.10	0.74	57.31
10.7	227.6	5.8	4.77	0.1	2.15	0.66	45.87
5.2	32.3	15.8	0.36	8.8	1.11	0.60	35.20
inclusions							
26.1	224.5	13.0	4.47	1.5	0.83	0.54	32.10
17.6	93.8	13.4	1.97	1.2	1.51	0.61	38.14
14.0	69.8	12.8	1.52	1.1	0.73	0.54	31.08
63.6	277.0	36.8	3.07	3.2	0.69	0.51	29.89
40.9	105.5	13.6	11.14	1.1	1.00	0.54	32.95
31.3	116.8	25.7	1.74	2.5	0.96	0.57	34.26
356.6	285.6	90.3	52.96	4.1	1.52	0.61	39.72
59.6	155.4	46.8	1.85	3.3	2.87	0.68	47.92
44.9	234.2	52.9	1.08	4.1	2.50	0.68	46.76
39.2	418.4	19.9	4.46	1.2	1.66	0.63	41.82
32.8	332.4	15.2	5.47	0.9	2.30	0.66	45.98
68.3	235.2	29.1	5.61	1.5	2.28	0.66	45.52
from the mean							
37.5	229.7	18.5	4.31	1.7	6.64	0.75	63.05
53.3	136.1	39.8	1.98	2.5	1.86	0.64	42.50
16.4	222.6	9.1	3.95	0.1	0.74	0.53	31.65
70.6	144.5	24.9	8.92	1.2	0.52	0.48	28.04
59.5	242.8	23.0	7.34	1.5	1.21	0.59	37.20
16.8	136.9	12.0	2.25	1.0	1.67	0.63	40.66
in 3 (3.9 Ma) because it is greater than 3sig below the sample mean							
24.4	214.5	13.4	3.67	1.8	1.25	0.57	35.10
19.1	195.4	22.9	1.09	0.9	0.67	0.53	30.16
44.5	214.1	19.6	5.34	0.6	0.56	0.50	29.43
28.9	233.4	36.8	1.00	1.7	0.66	0.53	29.92
15.7	401.3	30.8	0.63	3.0	0.57	0.51	28.55
151.4	73.3	36.2	163.33	1.5	0.47	0.47	27.63
malously old ages, grains 1 and 5 due likely to inclusions							
82.3	139.4	47.8	2.93	6.2	1.21	0.59	37.08
86.4	216.3	39.8	4.58	3.7	1.75	0.62	40.97
90.5	52.1	26.4	16.91	4.8	2.53	0.66	47.23

55.2	99.8	25.1	4.65	3.6	1.71	0.63	41.32
42.8	111.5	44.2	1.26	3.9	3.75	0.72	53.93
36.5	179.6	25.9	2.20	4.7	2.57	0.67	47.25

s, but sample is much older than any adjacent samples, noted during packing that apatites are covered in a brownish stain.

42.4	211.5	14.8	10.71	0.6	0.96	0.56	34.22
41.4	256.5	18.4	5.44	0.8	1.56	0.62	40.01
143.5	197.3	43.9	14.47	1.9	1.11	0.57	35.26
121.2	100.9	49.2	5.82	2.5	1.91	0.64	43.15
93.2	142.7	36.5	6.48	1.7	1.16	0.59	36.79
71.5	140.5	42.8	2.78	1.7	0.92	0.55	33.19

10.5	327.3	27.7	0.44	1.3	0.62	0.54	30.31
9.3	219.8	54.9	0.18	3.4	0.65	0.55	30.61
23.9	86.5	11.4	4.39	0.7	0.69	0.51	29.72
58.3	177.4	31.5	3.39	2.4	1.27	0.61	38.56

s, but FT corrections are quite low

2.3	3.4	0.8	10.08	0.6	9.38	0.78	75.40
28.5	313.2	17.4	3.07	1.3	2.19	0.66	44.82
0.1	0.0	0.2	0.48	3.8	2.78	0.70	49.08

Anomolously old ages (grains 2, 4), likely inclusion (grain 2) and grain loss (grain 4)

67.5	271.2	32.7	4.27	30.1	1.03	0.56	33.75
18.5	174.7	8.1	6.27	0.3	0.34	0.42	24.38
21.7	283.5	9.8	6.36	0.5	0.25	0.38	22.54

Anomolously old age (grain 1), likely an inclusion

47.7	111.0	66.0	0.88	8.7	1.10	0.59	35.68
16.4	220.6	5.0	143.33	0.4	5.06	0.73	60.66
5.2	95.9	17.3	0.34	1.4	0.68	0.54	30.06
60.5	132.5	30.6	3.77	3.2	0.81	0.53	31.65
80.5	212.9	139.7	0.67	16.6	1.06	0.60	35.75
59.5	296.0	15.8	87.96	0.8	0.86	0.54	32.85

Unusually low due to anomolously low U and He

16.3	180.7	9.5	3.35	0.7	2.14	0.66	45.56
10.9	183.3	5.7	4.75	0.2	2.00	0.63	41.31
2.1	232.1	16.4	0.14	1.6	1.21	0.63	38.21
9.3	179.8	6.3	2.91	0.2	1.39	0.61	39.43
23.5	88.9	25.8	1.17	2.1	0.83	0.57	33.67
16.9	139.6	7.8	5.32	0.3	1.13	0.59	37.06

Indeed, but ages are overly dispersed.

63.0	150.2	26.4	5.67	1.5	8.11	0.77	71.28
75.6	209.4	31.7	5.70	1.2	1.06	0.57	35.14
108.5	226.7	44.9	5.76	1.9	2.80	0.67	48.19
90.7	302.8	39.2	5.39	1.7	2.51	0.67	47.41
105.0	184.7	39.6	7.25	1.6	1.14	0.57	35.67
81.7	189.5	33.8	5.80	1.7	1.81	0.64	42.60
64.1	158.0	23.3	8.25	1.7	5.04	0.74	61.49
12.3	186.1	10.0	1.97	0.5	1.25	0.60	36.85

9.4	169.2	6.5	2.69	0.3	1.04	0.58	35.51
42.0	134.9	16.9	6.40	0.4	1.01	0.58	35.80
25.5	199.8	14.1	3.54	0.7	1.04	0.58	35.40
10.1	193.6	7.7	2.28	0.4	5.63	0.75	62.38
n 4, >than 3sigma from average							
45.3	167.6	12.9	26.98	3.5	0.52	0.48	28.75
56.8	235.2	17.5	17.36	0.7	0.36	0.43	25.37
62.4	205.0	19.8	14.21	-1.4	0.33	0.42	24.69
35.7	130.7	10.9	17.09	0.7	0.56	0.50	29.48
45.7	144.7	12.5	36.28	0.3	0.58	0.49	29.43
55.9	131.0	15.9	23.09	0.5	0.36	0.43	25.36
ns 1 (inclusions) and 3 (negative age, grain loss?). Ages are dispersed							
37.9	142.1	18.7	4.09	5.0	1.79	0.64	42.37
12.2	131.2	8.4	2.47	3.7	2.50	0.67	46.98
24.1	238.2	15.2	2.83	6.1	1.93	0.65	43.60
22.7	261.9	12.8	3.64	3.5	0.95	0.55	32.94
47.9	90.7	15.7	11.26	6.0	2.30	0.66	46.76
32.8	233.7	15.5	4.82	7.7	1.10	0.56	34.57
154.9	430.8	43.8	25.96	3.9	1.79	0.63	41.98
33.7	73.7	19.7	2.91	1.9	0.97	0.57	34.37
93.1	180.8	30.6	11.24	2.7	0.76	0.52	31.23
127.1	174.6	33.2	40.93	2.2	0.65	0.50	30.01
100.3	275.5	31.9	13.45	3.7	0.64	0.49	29.16
33.0	216.0	13.8	6.48	1.7	0.45	0.46	26.54
ns 5,6 because >3sigma from the mean							
14.4	163.5	8.1	3.63	0.4	3.23	0.69	51.29
17.4	266.2	12.1	2.59	0.4	2.23	0.64	43.02
58.7	299.8	45.6	1.92	2.9	3.54	0.72	54.57
27.0	260.0	20.4	2.10	0.5	3.19	0.71	52.75
3.6	1.8	3.0	1.65	70.2	0.79	0.53	30.81
27.1	286.9	22.0	1.90	1.1	0.60	0.49	28.11
n 5, likely grain loss. Ages are widely dispersed about the mean							
206.1	65.9	57.0	22.46	219.4	1.07	0.57	35.68
8.8	135.6	5.8	2.81	0.2	1.31	0.61	39.26
0.0	0.0	0.6	0.06	1.7	1.49	0.66	40.58
age questionable							
9.3	298.7	18.2	0.64	2.6	2.91	0.70	49.74
25.1	198.8	18.0	2.24	1.5	3.34	0.70	51.12
21.5	173.8	17.9	1.78	0.9	3.78	0.71	54.34
2.4	187.6	26.6	0.10	2.6	3.02	0.72	50.69
6.2	12.7	8.6	0.87	0.8	1.87	0.64	40.62
57.0	164.1	30.4	3.46	2.4	2.06	0.63	41.90
n 1,2,4,5,6 because they are older than the concordant AFT age							
38.1	426.0	40.0	1.31	0.8	1.98	0.65	42.97
44.7	262.9	109.4	0.46	2.8	1.26	0.62	37.73
19.6	170.3	6.9	12.55	0.1	2.21	0.66	45.90

96.2	324.4	27.7	24.57	0.3	0.81	0.53	32.43
114.1	220.5	44.4	6.71	3.7	1.34	0.60	38.53
16.0	192.9	31.2	0.60	0.9	2.54	0.68	46.87
n 5 as anomalously old, >3sigma of the mean							
46.7	250.5	75.6	0.73	2.1	1.16	0.60	35.77
2.0	180.6	8.2	0.30	0.2	1.48	0.64	39.67
19.4	174.2	61.4	0.35	1.7	1.00	0.59	34.59
3.4	292.7	19.4	0.20	0.5	1.39	0.63	37.60
67.0	142.5	22.5	10.48	0.4	1.85	0.63	41.62
75.7	293.3	37.9	3.98	0.9	2.23	0.65	44.35
17.1	245.3	12.7	2.29	1.4	1.68	0.61	38.85
5.2	88.5	6.0	1.18	1.4	2.34	0.67	45.77
136.6	94.3	77.7	2.98	2.8	1.85	0.65	44.08
6.9	213.3	26.4	0.29	2.5	2.36	0.68	45.22
9.4	162.7	8.6	1.65	1.1	3.35	0.70	51.23
9.8	118.4	48.9	0.21	3.8	4.66	0.75	59.60
grains older than the AFT pooled age of this sample 11.1 +/- 1.1 Ma.							
53.6	484.8	28.8	3.83	1.5	0.71	0.50	29.50
23.8	54.3	13.1	3.23	1.1	0.57	0.49	28.63
12.4	197.6	31.7	0.45	2.4	0.59	0.52	28.80
27.0	149.4	22.8	1.71	1.6	0.77	0.53	30.86
22.5	143.3	20.4	1.56	1.3	0.68	0.52	30.02
51.8	99.1	35.3	2.26	2.4	0.79	0.52	29.88
ns that were older than the pooled AFT age for sample EC30 (grains 2,3)							
42.9	236.3	23.2	3.53	0.7	2.67	0.68	48.56
54.7	190.3	84.4	0.77	3.2	1.63	0.63	39.98
34.8	89.8	17.5	3.86	0.5	1.10	0.58	36.41
56.7	339.3	27.2	4.56	1.0	1.43	0.60	38.56
65.2	182.5	40.3	2.67	1.4	1.62	0.63	40.56
114.0	73.7	28.0	83.93	0.6	0.86	0.54	33.33
12.0	232.8	9.6	2.11	0.5	1.16	0.60	37.51
12.4	210.1	8.4	2.79	0.4	0.84	0.54	32.06
40.0	306.5	34.0	1.72	2.0	0.43	0.46	26.09
32.2	50.5	36.0	1.14	2.1	0.43	0.47	26.07
14.6	24.2	9.9	2.29	0.8	0.52	0.48	27.39
n 5 as an outlier (>3sigma of mean of grains 1-4).							
33.0	143.7	9.0	45.45	0.6	1.19	0.59	37.48
101.7	244.5	36.0	8.92	3.4	1.84	0.63	42.41
59.2	462.4	63.5	1.25	6.2	1.43	0.62	38.77
125.8	662.4	69.2	3.40	4.2	0.82	0.55	32.88
107.6	468.3	39.2	8.87	2.8	1.01	0.57	35.44
66.5	184.8	20.5	15.69	1.3	1.87	0.63	42.73
28.3	89.1	16.4	3.00	0.4	0.81	0.55	32.87
22.1	210.8	17.5	1.95	1.2	5.67	0.75	63.07

20.5	20.0	15.2	1.98	0.5	0.78	0.53	30.82
18.1	120.6	11.5	2.69	5.0	2.15	0.66	45.65
18.5	38.5	12.0	2.44	5.4	1.79	0.63	41.63
16.3	46.8	9.2	3.11	4.3	1.37	0.61	39.01
3.7	1.2	1.1	14.74	5.1	0.59	0.48	28.24
8.2	213.3	28.7	0.32	0.4	0.91	0.58	33.08
12.4	51.2	6.9	3.24	0.5	0.69	0.53	31.22

ains 5 and 6 as they are younger or similar in age to AFT age from EC86, which was collected from same stratgr.

13.4	155.7	8.6	2.83	8.7	2.10	0.65	43.96
7.7	155.6	7.9	1.45	0.5	2.09	0.66	44.35
59.7	293.0	73.8	1.02	2.0	3.09	0.70	49.68
11.7	252.1	28.7	0.47	0.7	1.40	0.62	37.78
110.4	157.7	156.8	0.85	115.6	1.03	0.59	35.54
47.7	347.7	24.6	4.00	5.4	1.11	0.57	35.12

ns 1,,5,6. grains 1, 5 clearly are zircon or have zircon inclusions. Grain 6 is anomalously old (>3sigma from sam

6.6	70.1	10.3	0.78	0.2	2.58	0.69	48.01
13.5	23.4	5.7	5.52	0.1	2.20	0.65	45.22
13.9	65.0	5.6	6.71	0.1	2.49	0.66	46.86
12.1	51.9	4.7	7.37	0.1	2.07	0.64	42.80
37.9	33.7	16.1	5.28	0.3	2.68	0.68	49.48
14.2	47.7	7.0	4.10	1.2	1.82	0.64	42.66

n 6 as anomalously old (>3sigma from mean)

44.1	264.3	24.3	3.44	0.8	1.96	0.65	44.03
29.1	289.8	12.0	7.64	0.1	1.03	0.57	35.50
32.8	232.0	32.7	1.36	29.9	0.95	0.57	34.36
8.9	404.8	6.5	3.69	3.3	0.67	0.50	29.01
19.6	252.5	16.3	1.85	0.5	0.77	0.54	31.83
2.3	2.5	1.3	2.88	0.3	0.55	0.50	29.12

AHe prz.

15.7	69.1	18.8	1.05	0.1	3.59	0.71	53.37
11.5	157.9	31.5	0.41	0.4	3.04	0.70	49.10
-0.5	0.0	0.0	-5.76	0.2	1.75	0.61	41.50
9.4	315.9	78.2	0.13	3.0	2.17	0.68	43.90
6.0	17.9	4.8	1.81	1.0	1.48	0.61	38.59
152.8	204.9	56.0	7.73	1.1	3.07	0.69	50.65

ns 3 and 5. Grain 3 not apatite, grain 5 likely inclusion. Justified excluding grain 4 because it is 5 Ma older than

1.3	216.6	29.4	0.05	16.2	1.60	0.66	40.94
10.1	96.5	10.6	1.29	2.7	2.10	0.66	43.65
6.4	124.4	41.5	0.16	65.8	12.64	0.82	82.06
41.4	169.6	34.0	1.75	2.1	1.70	0.64	41.75
0.0	148.2	6.7	0.01	2.1	2.75	0.70	46.86
7.7	776.0	15.7	0.76	0.1	1.76	0.65	42.03

Ahe prz.

32.9	219.6	17.8	3.62	0.2	1.86	0.64	43.26
163.3	405.7	154.7	1.42	0.6	1.02	0.58	34.50
13.1	120.1	16.0	1.06	0.1	1.50	0.64	40.72

120.3	749.8	135.5	1.16	1.0	1.91	0.65	43.28
24.2	55.4	12.4	3.69	0.8	0.55	0.48	27.84
190.8	332.9	95.2	3.84	0.5	1.90	0.64	43.40
n 5 as anomalously old, >3sigma than the mean							
198.3	290.3	55.4	23.88	0.7	3.34	0.69	51.34
121.5	209.0	42.0	9.37	0.2	3.25	0.69	51.97
185.8	168.0	57.4	13.43	0.2	2.46	0.67	47.70
218.9	221.9	60.2	25.17	0.9	2.13	0.63	42.74
9.3	277.3	75.0	0.13	12.7	2.41	0.69	46.24
132.1	264.2	59.8	4.71	1.4	1.55	0.61	39.72
n 5, 6 as anomalously old, >3sigma than the mean							
122.9	383.7	42.4	10.08	10.7	3.10	0.68	49.86
46.9	173.7	19.0	6.42	2.3	2.94	0.68	49.39
52.1	251.5	21.0	6.76	1.1	2.21	0.65	45.37
52.4	248.2	20.7	7.04	1.2	4.22	0.72	56.81
16.0	228.9	8.5	4.41	5.1	1.73	0.63	41.91
48.5	174.3	19.7	6.33	3.8	3.81	0.71	54.69
AHe prz.							
18.5	57.2	19.5	1.24	0.8	1.64	0.64	40.93
3.2	3.9	3.5	1.14	0.2	2.98	0.70	50.30
10.6	58.7	6.9	2.50	0.5	1.97	0.64	42.39
9.3	32.1	15.5	0.70	0.7	1.03	0.59	34.78
13.1	40.7	43.1	0.33	11.4	0.80	0.56	31.22
38.9	68.2	28.2	2.05	0.8	1.81	0.61	38.24
n 5 anomalously old, >3sigma from mean							
1.3	7.0	2.1	0.73	0.0	0.87	0.56	32.43
0.7	35.8	9.4	0.08	0.2	1.06	0.61	35.48
11.7	8.2	14.6	0.98	0.2	0.82	0.55	32.15
9.5	6.2	8.9	1.43	8.1	1.04	0.57	33.59
3.9	6.0	2.3	2.84	0.0	1.52	0.62	40.05
18.3	10.2	27.2	0.80	0.4	0.82	0.55	31.75
n 4 as anomalously old age, >3sigma from mean							
31.5	63.4	17.7	3.10	0.3	2.55	0.67	47.35
5.7	11.4	5.9	1.26	0.3	0.88	0.57	33.87
18.0	88.5	7.7	5.78	0.2	1.96	0.65	44.09
35.0	31.7	28.7	1.71	0.5	3.59	0.70	51.32
33.8	24.3	12.5	7.40	1.2	2.88	0.66	46.41
42.1	97.3	26.5	2.58	0.6	2.43	0.67	46.38
ns 2,5. likely has inclusion.							
2.4	5.7	5.1	0.54	1.2	0.54	0.52	28.76
-0.6	0.0	0.0	-3.37	0.0	0.71	0.48	29.89
1.9	56.6	29.9	0.07	1.7	0.66	0.54	29.18
16.8	40.4	69.9	0.25	8.9	1.79	0.67	43.33
3.7	28.0	20.6	0.19	1.4	1.16	0.62	36.83
ns 1, 2. grain 1 anomalously old, >3sigma from mean. Grain 2 was lost							
12.3	87.5	6.3	4.10	0.1	1.29	0.59	37.43
11.3	51.5	6.3	3.33	0.2	1.10	0.58	36.17

10.0	24.0	7.3	2.07	0.8	1.21	0.59	36.70
116.4	178.2	49.4	5.37	0.6	0.76	0.53	31.56
9.1	57.9	29.4	0.34	0.6	0.80	0.57	32.03
115.8	60.9	55.2	4.10	1.3	0.71	0.53	31.28
ns 2,3, likely inclusions							
50.5	57.2	21.0	5.55	0.3	0.96	0.54	32.66
34.0	61.7	15.5	4.58	0.4	1.53	0.61	39.72
13.7	22.0	5.2	7.17	0.1	1.10	0.57	34.93
35.2	56.8	16.1	4.53	0.3	0.89	0.56	34.12
10.7	26.2	4.3	6.31	0.1	0.96	0.56	34.55
7.7	66.3	26.8	0.31	0.7	1.38	0.63	38.68
41.2	84.7	22.3	3.33	0.3	1.11	0.58	35.60
113.3	43.6	65.1	2.92	1.2	1.04	0.56	34.15
7.6	38.3	13.7	0.65	0.2	0.65	0.54	30.54
30.7	30.0	15.1	3.91	0.3	2.64	0.68	48.71
28.2	31.8	9.4	10.18	0.3	2.83	0.67	48.52
33.1	86.5	18.6	3.14	0.3	1.07	0.57	35.24
n 6, has inclusion							
20.6	30.4	18.3	1.54	0.7	1.44	0.63	40.09
47.0	30.8	66.4	0.85	2.7	2.45	0.67	45.70
111.9	46.4	42.6	6.73	1.3	0.91	0.53	31.84
139.7	16.2	46.2	9.97	1.4	0.96	0.54	33.06
100.8	39.7	40.0	6.06	1.3	0.93	0.56	34.19
64.8	12.1	55.4	1.60	2.1	0.79	0.55	32.27
33.0	68.7	60.2	0.63	1.9	1.36	0.62	37.96
18.1	35.4	18.8	1.25	0.5	1.15	0.59	36.11
24.9	60.8	31.3	0.99	1.0	1.17	0.61	37.19
20.7	36.6	42.0	0.56	2.8	1.24	0.62	38.37
30.4	76.0	20.0	2.41	0.5	1.07	0.59	36.23
41.0	72.1	12.7	13.95	0.2	0.64	0.51	30.58
85.0	20.9	56.2	2.33	1.6	3.37	0.69	49.22
101.8	16.4	48.7	4.04	1.2	1.65	0.62	40.47
189.0	51.9	98.7	3.44	3.0	2.77	0.67	47.58
70.4	48.0	31.1	4.80	1.0	2.82	0.68	49.40
211.2	69.7	77.6	7.37	1.8	1.19	0.59	37.23
57.7	18.5	57.3	1.32	1.3	1.02	0.58	34.56
12.2	35.2	32.3	0.41	1.1	2.22	0.68	45.15
63.3	52.5	28.1	4.78	0.5	0.78	0.53	31.83
60.7	53.0	33.6	3.12	0.9	0.83	0.54	32.38
32.5	55.9	72.8	0.50	1.8	1.04	0.60	35.30
62.7	26.6	25.5	5.72	0.1	1.24	0.59	37.59

38.9	149.8	21.4	3.33	1.5	1.45	0.61	39.57
79.0	95.3	32.5	5.70	0.3	1.72	0.62	40.44
7.4	22.0	10.1	0.90	-0.2	1.20	0.61	37.28
18.6	12.3	45.2	0.45	1.7	2.52	0.70	48.45
22.2	35.0	14.1	2.52	6.5	1.63	0.64	41.76
ns 1,4, no helium							
60.5	49.8	25.6	5.28	1.6	1.22	0.59	36.74
23.6	35.7	36.7	0.76	0.4	2.02	0.67	44.56
59.8	34.6	54.1	1.49	19.7	1.59	0.63	40.93
44.5	42.5	20.6	4.39	0.4	1.23	0.60	37.58
5.6	65.2	8.2	0.86	1.8	1.26	0.61	37.58
293.4	142.0	141.0	4.03	6.2	0.93	0.56	34.08
AHe PRZ							
7.2	13.3	16.6	0.49	4.6	1.29	0.62	38.14
16.1	20.0	6.2	6.63	3.7	2.36	0.67	47.70
23.6	28.3	13.0	3.15	0.1	1.64	0.62	40.66
10.3	48.8	19.7	0.60	2.1	2.46	0.69	47.97
AHe PRZ							
12.5	3.4	13.4	9.35	0.2	1.61	0.62	40.63
16.1	86.7	17.6	1.19	0.2	2.46	0.67	46.37
3.0	157.7	3.2	1.70	0.0	1.07	0.58	35.43
49.8	83.1	17.3	9.13	11.5	4.22	0.71	55.79
42.0	69.8	25.6	2.69	0.3	1.02	0.58	35.13
4.8	126.5	6.5	0.99	0.1	2.20	0.67	45.54
ns 3 and 4. grain 3 has no helium, grain 4 is anomalously old (zircon or inclusion)							
6.7	69.9	20.5	0.36	1.0	0.44	0.63	38.47
1.8	21.3	10.6	0.18	1.3	0.33	0.73	53.31
82.4	64.3	56.7	2.20	3.4	0.56	0.65	44.19
6.5	20.9	3.4	3.64	0.1	2.75	0.69	49.75
62.2	41.6	44.1	2.10	0.5	2.20	0.66	44.79
19.4	51.4	15.8	1.75	0.2	3.21	0.70	52.15
143.5	35.0	48.7	9.23	1.0	0.83	0.57	35.69
110.3	30.7	39.6	7.85	1.2	1.52	0.69	51.83
193.2	42.7	60.6	12.16	0.7	2.36	0.65	44.46
180.5	82.0	91.0	3.68	1.3	2.15	0.66	46.28
2.7	8.8	10.7	0.27	0.5	0.58	0.67	43.10
3.3	36.7	1.8	3.86	0.0	1.79	0.63	41.98
4.1	12.8	14.5	0.31	0.3	1.61	0.65	40.63
119.6	226.0	52.9	4.95	0.7	2.80	0.66	46.42
130.4	125.1	44.8	9.23	0.5	2.48	0.66	45.69
145.5	27.9	46.5	11.36	0.5	2.16	0.66	45.76
n 2, not apatite							
5.1	39.0	13.5	0.42	0.8	0.44	0.63	38.89
24.6	40.8	23.3	1.41	0.3	1.77	0.64	42.06
45.8	40.3	89.2	0.58	1.1	2.07	0.67	44.84

8.4	3.6	2.9	9.23	0.0	2.29	0.66	46.07
15.0	5.1	7.4	3.88	0.1	1.95	0.65	44.18
8.6	23.2	5.0	2.95	0.0	2.08	0.65	44.29
train 4 and 6, no helium. Not apatite?							
0.3	0.2	0.8	0.48	1.4	0.55	0.52	28.92
0.0	0.1	0.4	0.00	0.1	1.43	0.66	40.33
72.8	74.6	49.2	2.27	3.0	2.19	0.66	44.80
3.8	27.3	10.6	0.40	-10.9	0.63	0.55	30.50
-0.3	0.0	4.3	-0.06	0.0	0.67	0.57	30.53
6.1	56.0	24.2	0.27	0.5	3.23	0.72	52.62
AHe PRZ. Excluded grains 4,5, no helium							
92.2	4.5	314.8	0.31	112.5	21.63	0.84	75.00
79.0	1.1	218.3	0.39	100.7	12.01	0.81	63.31
61.1	0.7	94.7	0.76	188.3	9.29	0.79	58.48
120.5	4.4	298.4	0.45	90.9	7.61	0.78	53.43
7.4	0.3	19.8	0.41	157.9	16.89	0.83	68.28
n 5, grain lost							
74.2	1.6	291.6	0.27	396.5	11.11	0.80	59.51
39.7	1.0	68.6	0.67	146.4	22.57	0.84	76.76
54.1	1.8	141.3	0.42	267.8	4.46	0.75	45.82
83.1	2.2	168.8	0.56	277.5	6.39	0.77	50.47
65.2	0.8	122.8	0.60	216.4	10.24	0.81	61.66
77.2	1.8	158.3	0.55	221.1	3.23	0.73	42.52
132.6	3.2	182.1	0.88	265.0	2.90	0.71	40.27
184.3	2.7	339.9	0.62	407.1	6.16	0.77	51.01
155.1	3.0	218.3	0.85	342.9	5.58	0.76	48.94
136.2	2.7	181.4	0.91	287.5	5.54	0.75	47.43
61.3	2.1	144.4	0.47	26.4	4.55	0.75	46.84
105.7	3.4	288.7	0.40	65.0	7.27	0.79	54.77
67.9	2.4	95.4	0.85	19.5	8.74	0.79	57.14
41.3	1.2	84.7	0.55	56.9	8.00	0.80	58.54
91.5	4.9	166.1	0.63	90.4	5.25	0.76	49.50
ZHe PRZ							
41.5	1.4	143.4	0.31	34.9	12.82	0.80	59.66
24.8	1.0	51.4	0.54	7.3	10.84	0.81	62.35
74.3	1.6	211.2	0.38	27.7	11.05	0.80	60.08
62.7	0.8	51.2	1.70	9.3	3.88	0.73	43.98
42.0	0.7	118.6	0.39	10.9	3.64	0.74	45.05
33.5	0.5	482.9	0.07	44.7	5.52	0.77	50.10
58.7	3.3	217.6	0.29	38.5	8.31	0.79	55.09
161.0	1.9	279.8	0.66	27.4	5.79	0.77	51.41
47.9	0.9	90.7	0.60	15.4	7.24	0.77	51.60
28.9	0.9	71.0	0.45	15.6	9.99	0.79	57.68
42.0	0.7	90.3	0.52	10.3	3.57	0.74	43.94

106.4	0.8	201.1	0.60	17.6	1.70	0.66	33.72
24.9	0.7	111.0	0.24	9.7	1.63	0.67	33.24

32.7	0.7	52.8	0.72	76.2	3.19	0.73	43.31
57.0	3.1	150.1	0.42	138.0	1.15	0.63	30.23
142.7	6.4	179.5	0.97	114.0	1.14	0.63	30.86

ZHe PRZ. Sample also displays correlation between higher eU and younger cooling age. Samples 2 and 3 possib

85.9	1.1	220.4	0.43	34.5	2.64	0.72	40.54
60.3	0.3	99.6	0.70	10.0	4.97	0.76	50.13
53.6	1.0	94.0	0.66	8.4	2.18	0.69	37.43
74.7	0.4	180.4	0.46	19.5	2.43	0.70	38.15
96.9	1.3	149.0	0.76	17.1	2.95	0.72	41.05

ain 1, partial grain loss

37.0	1.3	70.2	0.60	97.7	4.73	0.76	49.95
35.4	13.3	60.2	0.68	87.4	5.69	0.76	49.96
34.3	1.8	124.9	0.29	169.9	2.32	0.67	34.11
115.4	0.0	232.3	0.56	20.9	0.83	0.60	27.93

gh eU, is possibly metamict and lost retentivity, and is >3sigma from the mean of grain 1-3

47.0	0.7	139.2	0.37	15.4	6.11	0.78	53.23
51.5	1.8	89.2	0.67	8.1	3.74	0.73	44.11
19.8	1.9	78.7	0.27	5.8	1.81	0.67	33.92
124.8	4.0	183.0	0.81	18.3	1.54	0.66	33.76
344.9	10.2	537.0	0.75	540.0	1.47	0.65	32.97
258.1	22.0	449.7	0.66	376.8	2.40	0.68	36.44

ns 5,6. >3sigma than the mean of grains 1-4

50.8	6.3	92.5	0.63	48.0	6.84	0.78	55.09
131.8	22.1	215.7	0.71	194.5	4.12	0.74	45.04
183.3	16.0	280.8	0.77	111.1	3.17	0.72	41.88
113.3	3.3	211.1	0.61	205.5	4.20	0.75	46.87
47.1	68.8	171.5	0.29	186.8	5.89	0.77	50.76

ZHe PRZ

77.3	20.5	141.7	0.62	195.1	13.39	0.82	67.89
57.1	6.6	140.6	0.45	174.4	10.91	0.80	60.82
185.9	31.9	402.3	0.52	705.4	7.42	0.79	56.70
85.3	31.4	121.1	0.84	156.9	6.52	0.77	53.08
179.9	35.0	296.7	0.70	400.2	8.48	0.79	58.20
0.7	0.3	0.8	1.00	0.0	4.27	0.74	45.91

IHe PRZ. Excluded grain 6, anomalously low U and Th, no helium

98.6	8.0	146.3	0.80	207.9	8.63	0.79	57.81
94.0	5.2	199.7	0.53	249.5	6.65	0.78	53.05
107.7	16.1	204.4	0.60	238.6	2.98	0.71	39.89
58.6	2.9	219.4	0.28	247.1	8.75	0.80	60.25
601.3	71.2	824.4	0.88	461.7	6.30	0.77	52.21
144.4	11.9	289.8	0.56	242.2	7.90	0.79	55.99

ZHe PRZ. Excluded grain 5, elevated eU suggests grain may be metamict, reduced retentivity

61.1	2.4	105.4	0.67	200.3	4.05	0.74	45.98
54.9	4.3	215.2	0.27	101.4	3.19	0.73	42.07

127.0	18.5	162.4	0.95	82.7	2.47	0.70	39.53
214.5	10.5	600.3	0.39	225.5	2.76	0.70	38.45
158.5	16.4	307.5	0.59	190.1	2.96	0.71	40.09
82.2	5.6	188.6	0.48	79.7	2.85	0.70	38.87
ZHe PRZ							
122.6	7.7	286.4	0.48	35.4	1.41	0.64	30.73
23.9	11.0	62.1	0.42	7.2	2.41	0.70	38.39
116.8	4.1	458.2	0.27	44.7	3.63	0.72	40.93
74.7	20.7	422.4	0.18	41.5	2.67	0.73	41.36
206.6	9.8	600.8	0.37	67.6	2.51	0.71	39.31
309.4	10.7	542.4	0.66	262.4	4.36	0.74	46.03
n 6, partial grain loss							
61.0	3.1	148.0	0.46	55.7	3.99	0.75	46.22
69.1	3.6	204.2	0.37	83.3	3.25	0.74	43.50
68.5	3.6	72.0	1.22	31.4	7.38	0.79	56.98
85.8	3.4	247.9	0.38	90.5	2.05	0.68	35.04
46.9	1.6	74.6	0.74	30.4	1.75	0.68	35.43
45.5	2.2	123.8	0.40	38.8	2.17	0.69	36.66
ZHe PRZ							
510.8	13.1	962.2	0.60	235.2	1.53	0.66	32.79
163.3	12.6	280.0	0.67	102.8	7.22	0.78	54.53
65.6	2.7	198.9	0.36	79.0	3.34	0.73	43.37
159.4	3.2	206.1	0.94	100.3	5.24	0.76	50.21
144.2	4.9	310.9	0.52	103.9	3.49	0.74	44.36
1.1	0.7	2.0	0.62	107.1	1.94	0.67	34.36
ZHe PRZ. Excluded grain 6, lost grain							
102.6	10.8	280.7	0.40	33.9	2.78	0.70	38.28
112.5	9.4	555.1	0.21	107.6	3.07	0.71	39.36
47.0	16.3	146.0	0.35	17.3	3.33	0.71	40.04
52.2	7.6	60.3	1.08	7.0	3.25	0.71	39.95
129.8	14.1	283.7	0.51	49.5	2.76	0.70	37.87
259.4	2.8	467.9	0.64	49.1	5.95	0.77	51.91
n 2 and 5, >3sigma from the mean of grains 1,3,4,6							
95.5	15.2	117.0	1.01	8.6	1.75	0.68	35.80
32.7	3.6	88.7	0.40	8.3	2.68	0.71	39.58
97.8	4.7	163.7	0.69	226.8	5.57	0.77	52.51
49.1	15.4	95.1	0.59	10.4	3.56	0.73	42.66
78.6	12.1	479.6	0.17	43.6	1.86	0.69	36.26
21.6	11.8	54.8	0.43	26.1	2.44	0.70	38.74
ns 3 and 6, anomalously old. >3 sigma from mean of grains 1,2,4,5							
13.7	5.2	145.2	0.10	15.9	2.11	0.70	37.29
44.2	4.6	84.6	0.60	20.7	5.01	0.76	49.70
136.1	4.3	609.1	0.24	50.6	1.41	0.65	31.73
69.6	2.1	123.2	0.65	5.7	1.99	0.68	35.55
76.5	3.0	107.2	0.85	9.7	1.81	0.67	34.33
95.9	6.0	202.3	0.53	17.0	1.70	0.67	34.29

111.5	4.3	233.1	0.54	177.0	2.74	0.70	37.67
67.7	2.4	116.1	0.67	177.9	6.73	0.78	55.05
37.7	4.3	164.1	0.24	305.2	4.03	0.74	44.01
69.4	3.5	122.4	0.65	101.2	2.57	0.71	39.77
42.9	5.6	163.2	0.28	136.9	1.99	0.68	35.07
169.0	79.1	302.3	0.64	133.1	0.90	0.61	28.18

ZHe PRZ

60.3	3.6	130.5	0.52	131.9	3.17	0.72	40.72
137.5	51.7	360.3	0.42	189.7	2.71	0.71	39.54
78.4	7.4	121.9	0.75	13.8	1.45	0.66	33.38
165.8	19.2	292.5	0.65	31.0	2.27	0.70	38.92
104.3	36.2	231.1	0.50	28.2	2.36	0.71	39.23
195.3	117.9	769.5	0.27	128.7	1.83	0.68	34.63

ZHe PRZ? Unsure if it is PRZ, but seems unlikely zircon should be reset because sample comes from K-O uncor

46.7	5.2	154.7	0.32	3.3	3.96	0.75	45.27
74.9	14.9	81.9	1.16	8.7	2.48	0.70	39.37
21.9	3.1	108.2	0.21	13.1	4.56	0.76	47.01
131.6	2.5	517.3	0.27	89.4	5.27	0.77	49.39
126.9	2.2	240.5	0.60	40.8	7.08	0.78	53.67
27.6	3.7	61.5	0.50	8.9	4.25	0.75	45.77

n 1 as anomalously young, >3sigma from mean

Mean age (Ma)	Std Dev (Ma)	n (analyzed)	n (included)	SE
12.1	0.7	3	1	0.7
			3	0.0
7.1	1.7	6	4	0.8
69.9				
29.9	3.6	6	6	1.5
15.6	2.2	6	5	1.0
20.2	2.7	6	5	1.2
14.1	2.4	6	4	1.2
38.1	11.1	6	6	4.5

nish film and rounded				
13.1	1.1	6	6	0.4
20.5	3.3	4	4	1.6
19.0*		3	1	1.1
20.3	5.3	3	2	3.8
34.9	5.8	6	4	2.9
17.2	7.7	6	6	3.1
12.4	1.3	6	6	0.5
14.9	2.1	6	5	0.9

15.2 6.7 6 4 3.4

106.1 27.2 6 6 11.1

27.3 3.5 6 4 1.7

12.1 4.6 6 5 2.0

11.4* 3 1 0.7

12.5 0.8 6 1 0.8

5.5 2.1 6 5 0.9

7.1 1.5 6 6 0.6

10.0 0.6 6 1 0.6

22.0 2.7 6 4 1.6

9.4 1.4 6 6 0.6

18.4 4.9 5 4 2.5

22.4 4.3 6 6 1.8

11.8 4.2 3 3 2.4

15.3 15.6 6 2 11.0

aphic level. Overall, Ahe cooling age is not that reliable

7.0 0.1 6 2 0.1

iple mean). Grain 2 is excluded as it is older than the strong 12.3 Ma young component in the AFT age for this sample.

5.6 1.4 6 5 0.6

90.8 111.8 6 6 45.6

3.5 1.5 6 3 0.9

grain 1,2,6. Has high eU and may be more retentive. It is >3sigma from the average of 1,2,6.

110.5 127.0 6 6 51.8

1.6 0.5 6 5 0.2

2.4	1.5	6	4	0.7
55.3	54.3	6	6	22.2
14.5	4.7	6	5	2.1
5.3	1.2	6	5	0.5
5.6	1.5	6	4	0.8
24.9	9.1	5	3	5.2
6.3	1.6	6	4	0.8

6.6	1.5	6	6	0.6
5.9	1.0	6	6	0.4
11.1	1.0	6	6	0.4
9.9	5.0	6	6	2.0
7.9	1.8			
7.8	0.8	5	5	0.3
7.8	1.4	5	5	0.6
41.4	60.9	6	4	30.5

35.1 40.4 6 6 16.5

67.9 68.9 4 4 34.4

3.4 0.5 6 4 0.3

3.8 0.6 6 6 0.3

4.0 0.6 4 4 0.3

3.6 1.1 6 5 0.5

3.8 0.5 6 4 0.2

174.5	289.1	6	4	144.5
175.6	182.0	5	4	91.0
374.9	51.9	10	10	16.4
86.2	52.3	5	5	23.4
34.9	13.4	6	6	5.5
39.2	11.5	4	4	5.7
25.7	2.5	3	3	1.5

268.6	86.7	3	3	50.0
only radiation damaged.				
26.6	2.9	5	4	1.4
29.3	6.6			
346.5	18.8	4	3	10.8
24.4	3.4	6	4	1.7
187.6	71.2	5	5	31.9
318.1	46.2	6	5	20.7
272.4	50.6	6	5	22.6
179.5	137.9	6	6	56.3

29.1 4.5 6 5 2.0

95.6 10.4 6 6 4.3

91.0 18.2 6 5 8.1

29.5 3.0 6 4 1.5

24.1 3.1 6 4 1.5

25.2 2.6 6 4 1.3

262.5 116.8 6 6 47.7

88.3 92.2 6 6 37.6

iformity, was only buried by 4 km max

35.1 6.1 6 5 2.7

new sample name	Sample	Age, Ma	err., Ma	[U]e	
zECO-IAZ02-1	zSLL01-1	78.3121	6.26497	314.791	
zECO-IAZ02-2	zSLL01-2	104.342	8.34738	218.345	
zECO-IAZ02-3	zSLL01-3	447.846	35.8276	94.6914	
zECO-IAZ02-4	zSLL01-4	71.9991	5.75993	298.41	
zECO-IAZ02-5	zSLL01-5*	1509.37	120.749	19.8216	
					(U)e
	zSAZ26-1	306.771	24.5417	291.586	
	zSAZ26-2	452.879	36.2303	68.571	
	zSAZ26-3	455.288	36.4231	141.277	
	zSAZ26-4	386.149	30.8919	168.816	
	zSAZ26-5	392.888	31.431	122.811	
	zSAZ26-6	347.375	27.79	158.323	
	zSAZ26-7	370.095	29.6076	182.094	
	zSAZ26-8	282.807	22.6246	339.948	
	zSAZ26-9	373.901	29.9121	218.305	
	zSAZ26-10	380.865	30.4692	181.401	
zECO-IAZ01-1	zIAZ01-2	44.9877	3.59902	144.366	
zECO-IAZ01-2	zIAZ01-3	52.885	4.2308	288.746	
zECO-IAZ01-3	zIAZ01-4	47.7556	3.82045	95.3769	
zECO-IAZ01-4	zIAZ01-5	154.478	12.3582	84.6503	
zECO-IAZ01-5	zIAZ01-6	131.009	10.4807	166.148	
					(U)e
ECO05-1	zCSM05-1	55.8816	4.47053	143.44	
ECO05-2	zCSM05-3	32.2758	2.58207	51.4367	
ECO05-3	zCSM05-4	30.1568	2.41254	211.202	
ECO05-4	zCSM05-5	45.7913	3.66331	51.1937	
ECO05-5	zCSM05-6	22.8158	1.82527	118.55	
ECO05-6	zCSM05-7	22.2056	1.77645	482.883	
ECO02-1	zCSM02-1	41.5256	3.32205	217.57	
ECO02-2	zCSM02-2	23.4789	1.87831	279.769	
ECO02-3	zCSM02-3	40.6762	3.2541	90.7016	
ECO02-4	zCSM02-4	50.9838	4.07871	71.0373	
ECO01-1	zCSM01-1	28.6203	2.28962	90.2965	
ECO01-2	zCSM01-2	24.3371	1.94697	201.06	
ECO01-3	zCSM01-3	24.1855	1.93484	110.975	
					(U)e
ECO24-1	zCGO24-1	357.074	28.566	52.8306	
ECO24-2	zCGO24-2	264.926	21.1941	150.071	
ECO24-3	zCGO24-3	183.826	14.7061	179.499	
ECO21-1	zCGO21-1*	40.2881	3.22305	220.434	
ECO21-2	zCGO21-2	24.3562	1.94849	99.5633	
ECO21-3	zCGO21-3	23.8508	1.90806	93.9806	

ECO21-4	zCGO21-4	28.524	2.28192	180.438	
ECO21-5	zCGO21-5	29.5776	2.36621	149.047	
ECO22-1	zCGO22-1	329.476	26.3581	70.1915	
ECO22-2	zCGO22-2	343.458	27.4767	60.1692	
ECO22-3	zCGO22-3	366.633	29.3307	124.867	
ECO22-4	zCGO22-4	27.5557	2.20446	232.296	
ECO04-1	zCSM04-1	26.18837	2.095069	139.1744	(U)e
ECO04-2	zCSM04-2	22.89834	1.831867	89.19227	
ECO04-3	zCSM04-3	20.42596	1.634077	78.72312	
ECO04-4	zCSM04-4	27.93694	2.234956	182.9723	
ECO04-5	zCSM04-5	279.3958	22.35167	536.981	
ECO04-6	zCSM04-6	223.2422	17.85937	449.6647	
ECO-IAZ03-1	zIAZ02-1	121.5198	9.721584	92.46199	
ECO-IAZ03-2	zIAZ02-2	222.2229	17.77783	215.7482	
ECO-IAZ03-3	zIAZ02-3	100.7938	8.063502	280.7792	
ECO-IAZ03-4	zIAZ02-4	236.5973	18.92779	211.0636	
ECO-IAZ03-5	zIAZ02-5	256.8028	20.54422	171.484	
ECO-IAZ04-1	zIAZ03-1	302.7413	24.21931	141.6739	
ECO-IAZ04-2	zIAZ03-2	279.6041	22.36833	140.5823	
ECO-IAZ04-3	zIAZ03-3	398.4832	31.87866	402.287	
ECO-IAZ04-4	zIAZ03-4	302.6195	24.20956	121.0861	
ECO-IAZ04-5	zIAZ03-5	307.1676	24.57341	296.7118	
ECO-IAZ04-6	zIAZ03-6	10.5713	0.845704	0.830934	
ECO-IAZ05-1	zRA14-2-1	324.106	25.9285	146.272	
ECO-IAZ05-2	zRA14-2-2	291.463	23.3171	199.693	
ECO-IAZ05-3	zRA14-2-3	298.26	23.8608	204.426	
ECO-IAZ05-4	zRA14-2-4	254.491	20.3593	219.389	
ECO-IAZ05-5	zRA14-2-5	132.994	10.6395	824.351	
ECO-IAZ05-6	zRA14-2-6	193.592	15.4874	289.821	
ECO293-1	zRA14-293-1	457.811	36.6249	105.351	
ECO293-2	zRA14-293-2	118.966	9.51731	215.21	
ECO293-3	zRA14-293-3	132.52	10.6016	162.395	
ECO293-4	zRA14-293-4	98.3182	7.86545	600.297	
ECO293-5	zRA14-293-5	159.11	12.7288	307.471	
ECO293-6	zRA14-293-6	110.217	8.81735	188.604	
ECO35-1	zRA14-35-1	35.8123	2.86499	286.375	
ECO35-2	zRA14-35-2	30.3982	2.43186	62.1384	
ECO35-3	zRA14-35-3	25.0381	2.00305	458.158	
ECO35-4	zRA14-35-4	25.0358	2.00286	422.389	
ECO35-5	zRA14-35-5	29.3173	2.34539	600.836	

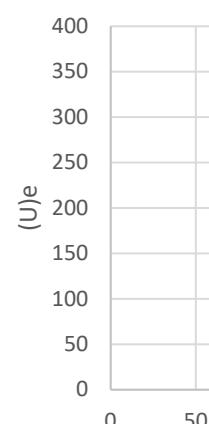
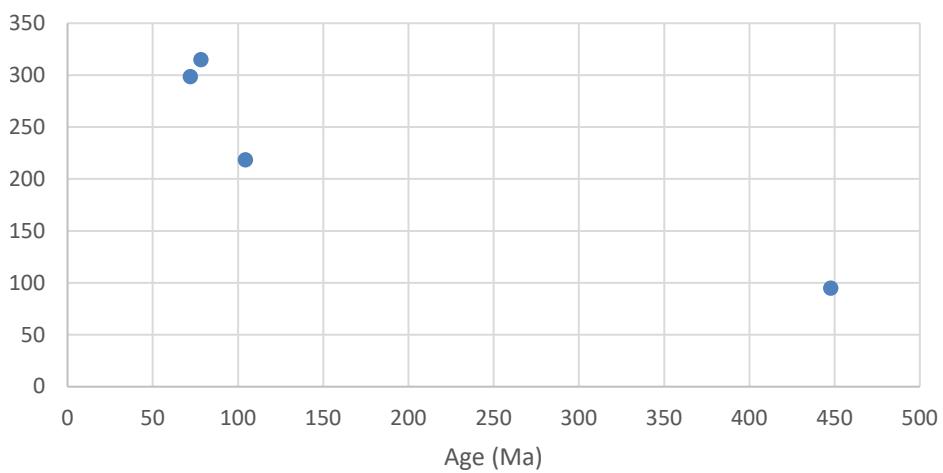
ECO35-6	zRA14-35-6*	119.197	9.53578	542.36	
ECO53-1	zRA14-53-1	92.6283	7.410264	148.028	
ECO53-2	zRA14-53-2	102.126	8.17008	204.248	
ECO53-3	zRA14-53-3	85.25699	6.820601	71.9904	
ECO53-4	zRA14-53-4	99.1192	7.92953	247.908	
ECO53-5	zRA14-53-5	110.765	8.8612	74.5721	
ECO53-6	zRA14-53-6	83.6498	6.69199	123.824	(U)e
ECO56-1	zRA14-56-1	68.7585	5.50068	962.223	
ECO56-2	zRA14-56-2	86.3724	6.90979	280.044	
ECO56-3	zRA14-56-3	99.5768	7.96614	198.901	
ECO56-4	zRA14-56-4	117.029	9.3623	206.069	
ECO56-5	zRA14-56-5	83.417	6.67336	310.882	
ECO56-6	zRA14-56-6	-964839	-77187.1	1.98024	
ECO61-1	zRA14-61-1	31.82791	2.546233	280.7037	
ECO61-2	zRA14-61-2	50.26087	4.020869	555.1397	
ECO61-3	zRA14-61-3	30.69788	2.45583	146.0462	
ECO61-4	zRA14-61-4	30.32352	2.425881	60.29904	
ECO61-5	zRA14-61-5	46.12759	3.690207	283.6925	
ECO61-6	zRA1461-6	25.12755	2.010204	467.8918	
ECO68-1	zRA14-68-1	20.1066	1.608528	116.9631	(U)e
ECO68-2	zRA14-68-2	24.38653	1.950923	88.69948	
ECO68-3	zRA14-68-3	323.8138	25.90511	163.6933	
ECO68-4	zRA14-68-4	27.66365	2.213092	95.12871	
ECO68-5	zRA14-68-5	24.35044	1.948036	479.5925	
ECO68-6	zRA14-68-6	124.0711	9.92569	54.7619	
ECO72-1	zRA14-72-1	28.83892	2.307114	145.159	
ECO72-2	zRA14-72-2	59.02042	4.721633	84.55972	
ECO72-3	zRA14-72-3	23.60714	1.888571	609.1232	
ECO72-4	zRA14-72-4	12.68564	1.014851	123.1723	
ECO72-5	zRA14-72-5	25.12781	2.010225	107.2269	1200
ECO72-6	zRA14-72-6	23.14151	1.851321	202.3113	
ECO88-1	zRA14-88-1	199.467	15.9573	233.096	1000
ECO88-2	zRA14-88-2	352.818	28.2254	116.109	800
ECO88-3	zRA14-88-3	451.161	36.0929	164.054	
ECO88-4	zRA14-88-4	212.979	17.0383	122.4	(U)e
ECO88-5	zRA14-88-5	225.415	18.0332	163.163	
ECO88-6	zRA14-88-6	133.322	10.6658	302.282	400
ECO92-1	zRA14-92-1	256.769	20.5415	130.483	200
ECO92-2	zRA14-92-2	136.023	10.8819	360.276	0
ECO92-3	zRA14-92-3	31.8049	2.54439	121.889	

ECO92-4	zRA14-92-4	27.8439	2.22751	292.472
ECO92-5	zRA14-92-5	31.8651	2.54921	231.103
ECO92-6	zRA14-92-6	45.6421	3.65137	769.532
ECO93-1	zRA14-93-1	5.279491	0.422359	154.7411
ECO93-2	zRA14-93-2	28.00836	2.240669	81.8755
ECO93-3	zRA14-93-3	29.74324	2.379459	108.2269
ECO93-4	zRA14-93-4	41.75211	3.340169	517.2814
ECO93-5	zRA14-93-5	40.17908	3.214326	240.5396
ECO93-6	zRA14-93-6	35.86512	2.869209	61.4854

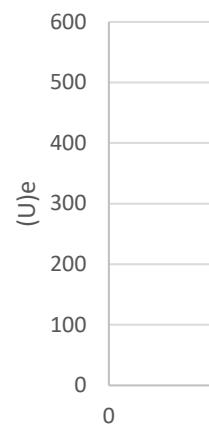
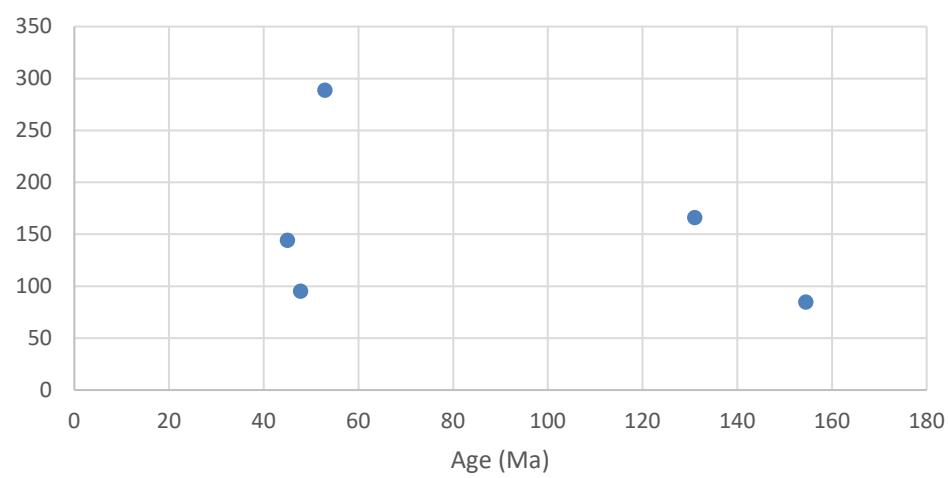
Samples showing a correlation between (U)e and age

zRA14-88	ages show younging with increase in (U)e
zRA14-56	youngest age has high (U)e
zRA14-2	younging with increase in (U)e, youngest age very high (U)e
zIAZ02	all ages except 1 show younging with increase in (U)e
zCGO22	anomalously young age has relatively elevated (U)e
zCGO24	ages show younging with increase in (U)e
zCSM02	not a mixed reset age, but individual ages show decrease in age with
zSLL01	ages show younging with increase in (U)e
zSAZ06	ages show younging with increase in (U)e

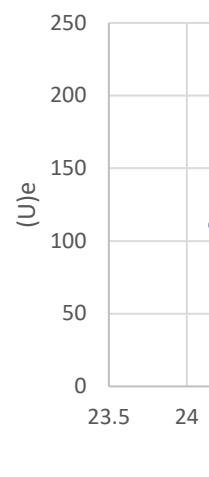
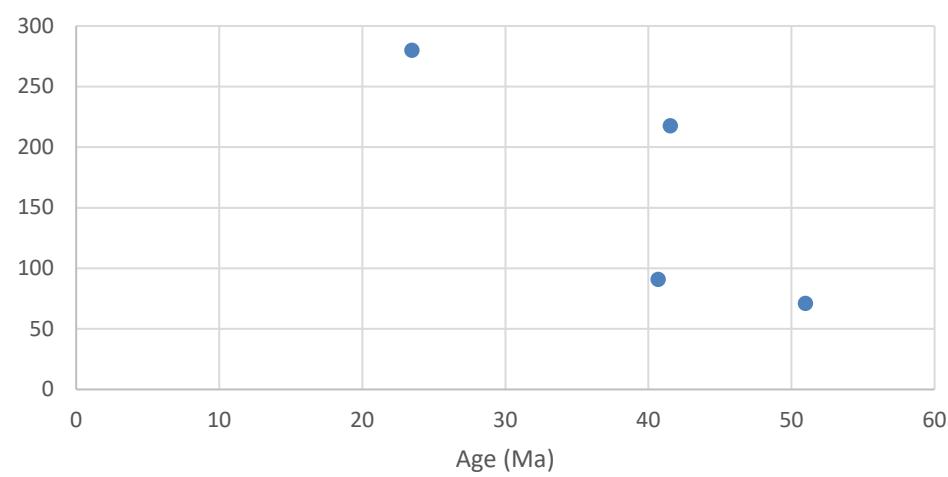
zSLL01 age vs. $(U)e$



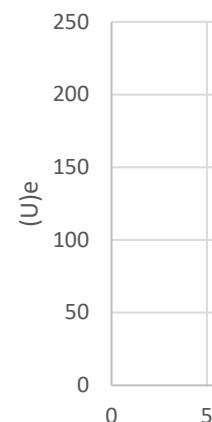
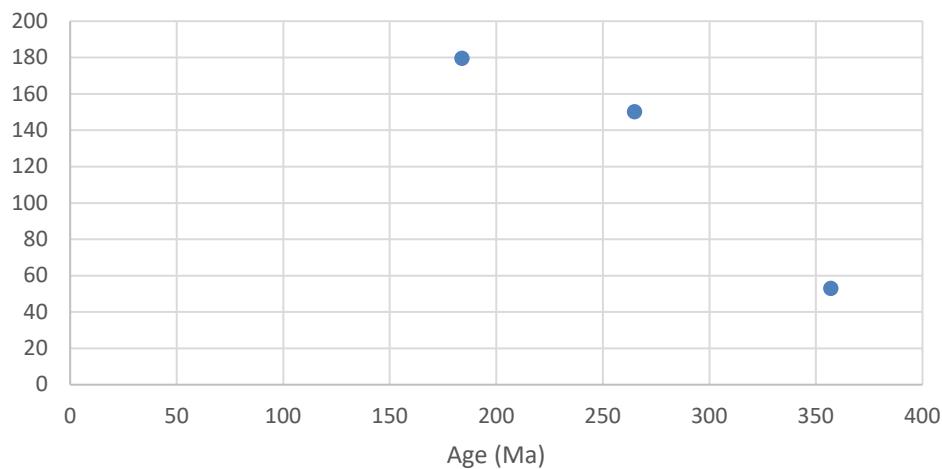
zIAZ01 age vs $(U)e$



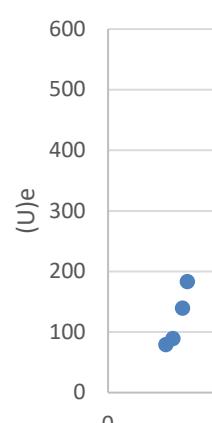
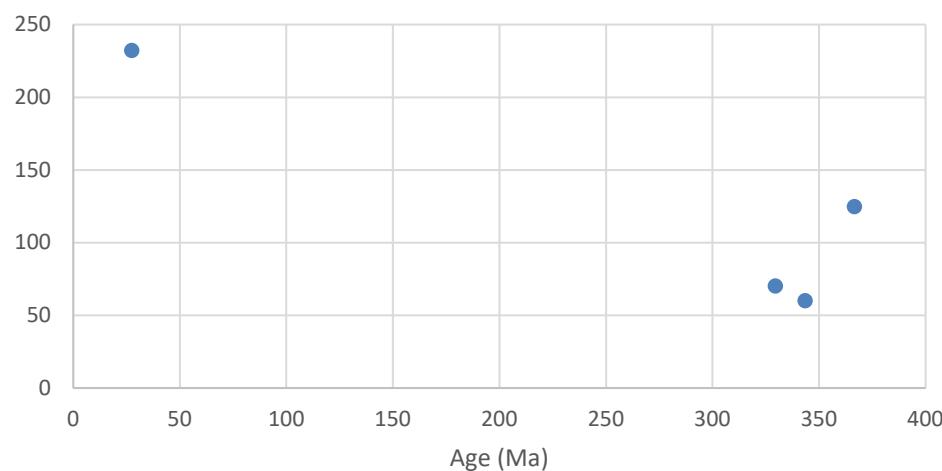
zCSM02 age vs. $(U)e$



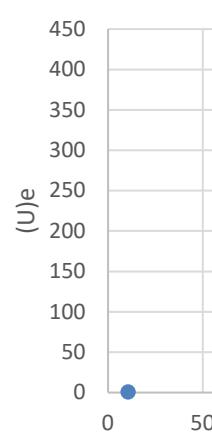
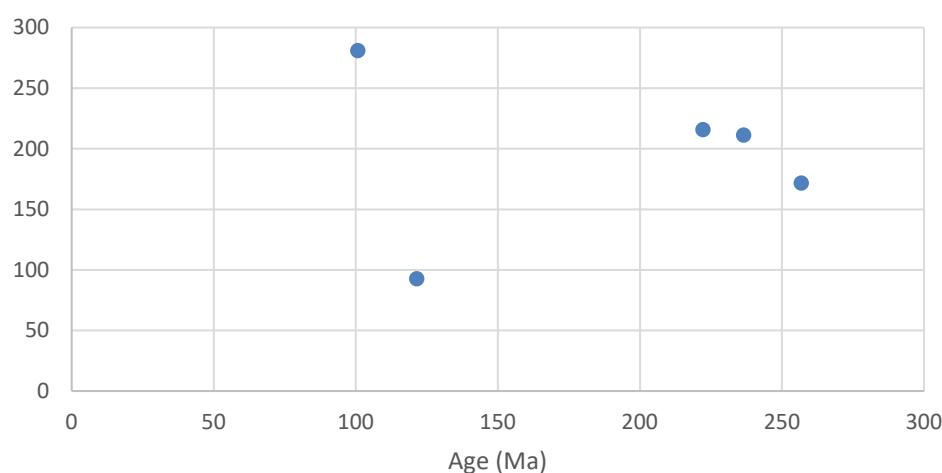
zCGO24 age vs. $(U)e$



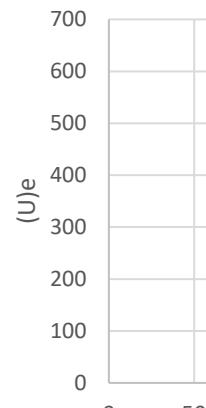
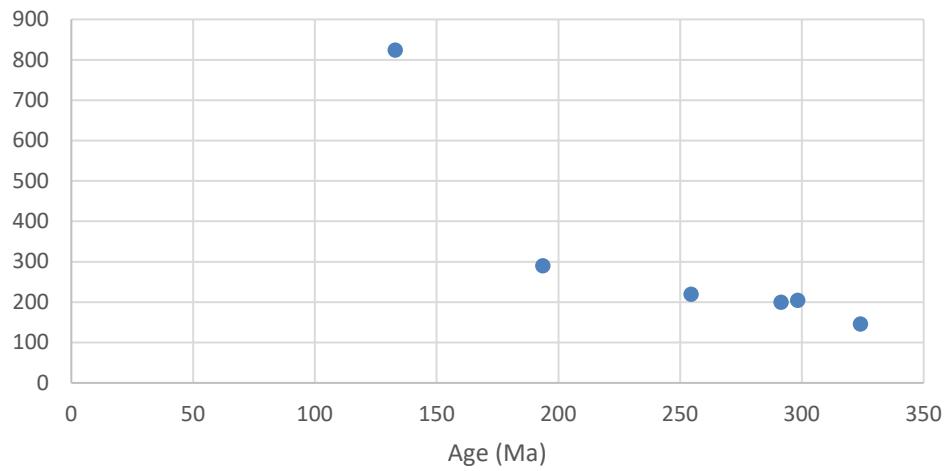
zCGO22 age vs. $(U)e$



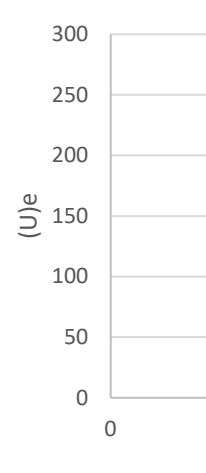
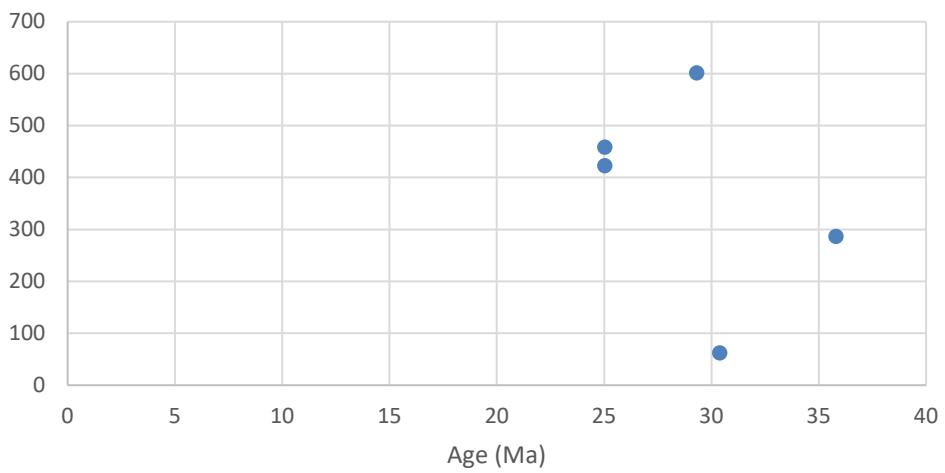
zIAZ02 age vs. $(U)e$



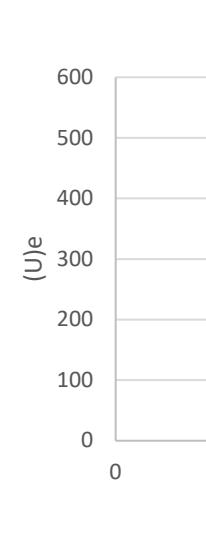
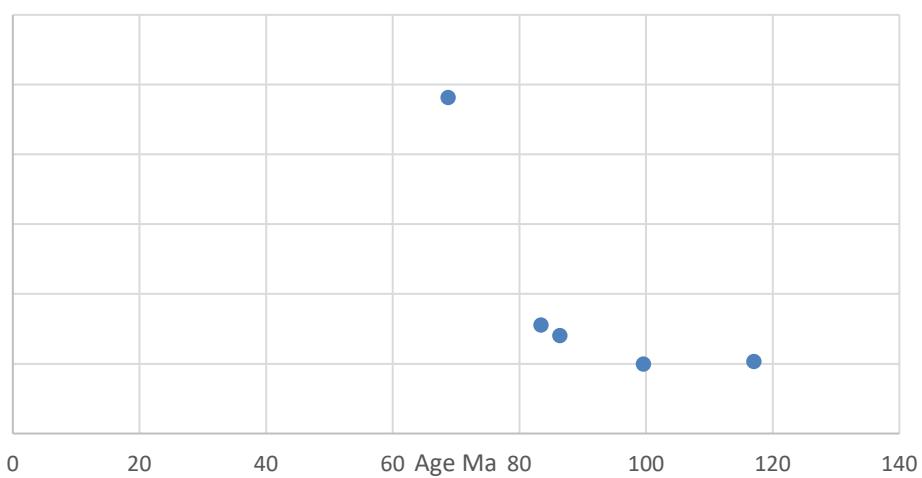
zRA14-2 age vs. $(U)e$

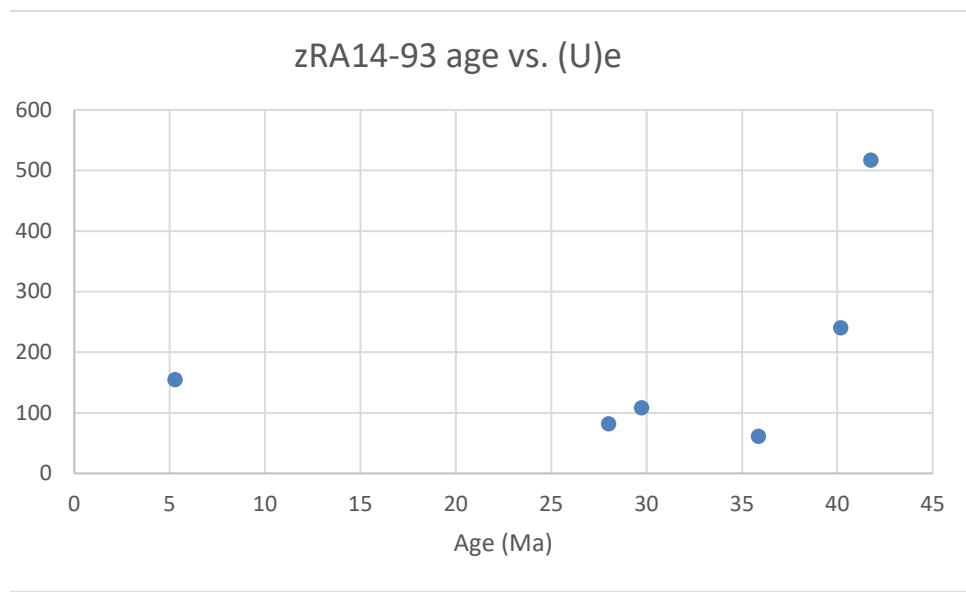
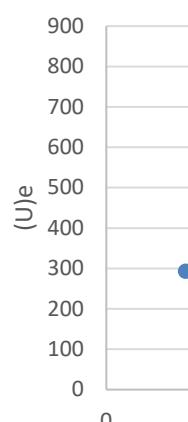
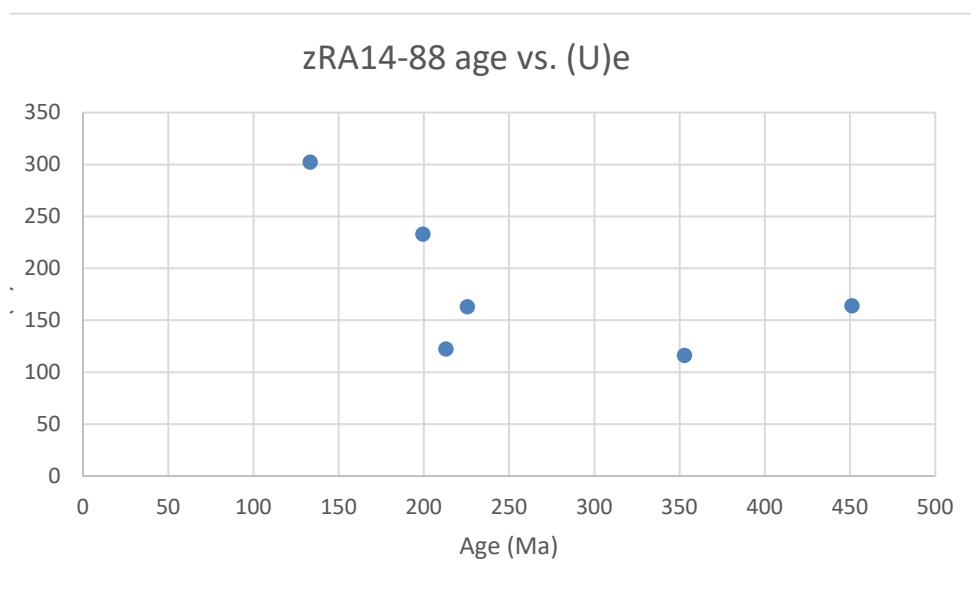
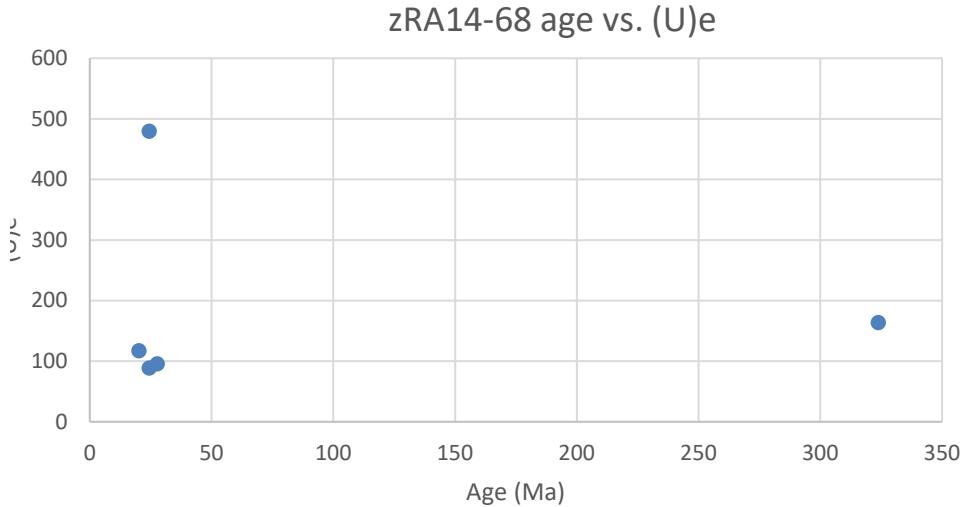


zRA14-35 age vs. $(U)e$

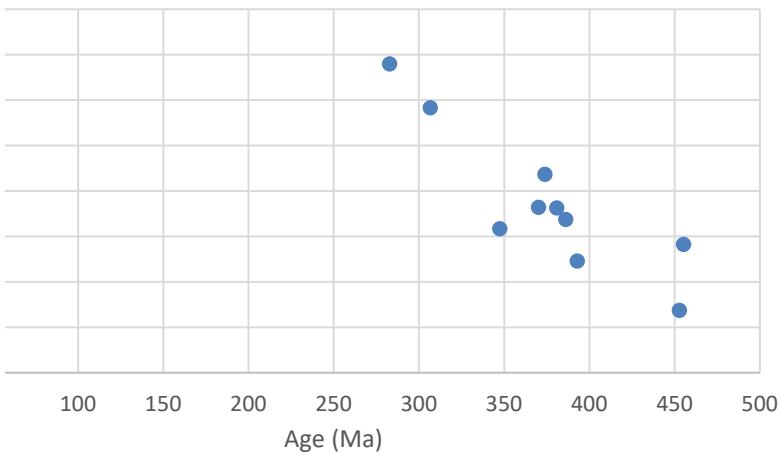


zRA14-56 age vs. $(U)e$

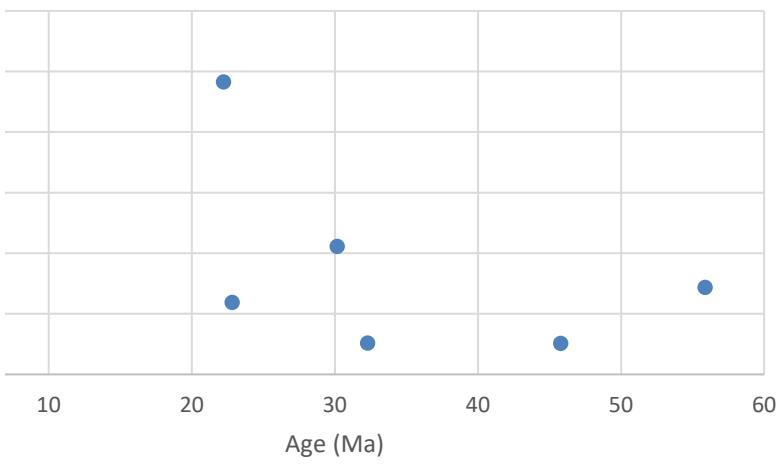




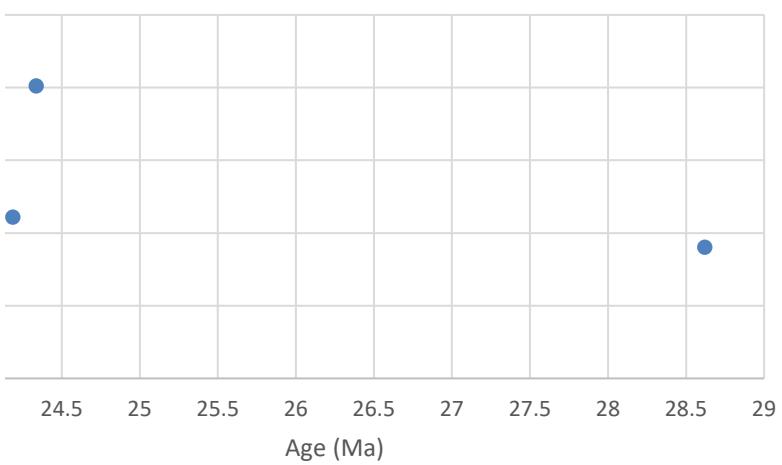
zSAZ06 age vs. (U)e



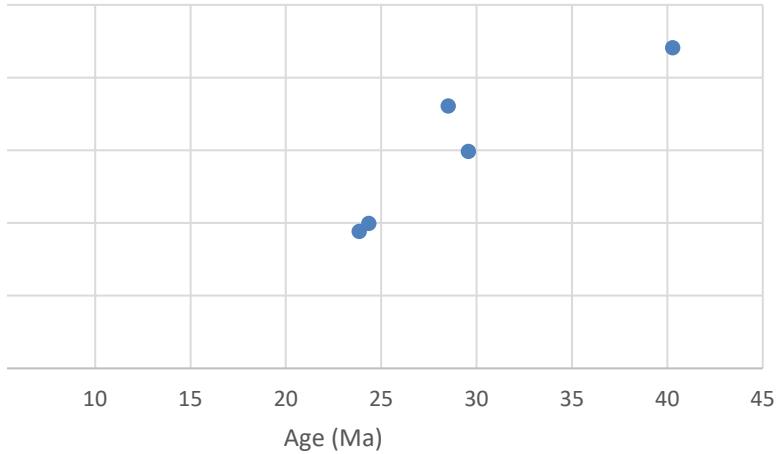
zCSM05 age vs (U)e



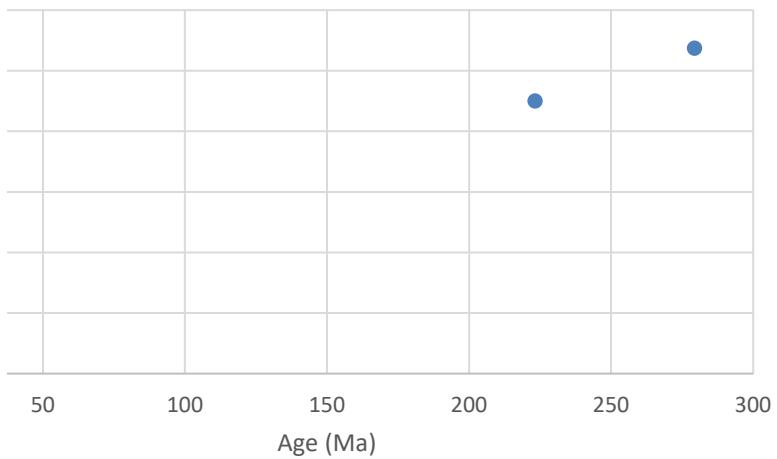
zCSM01 age vs (U)e



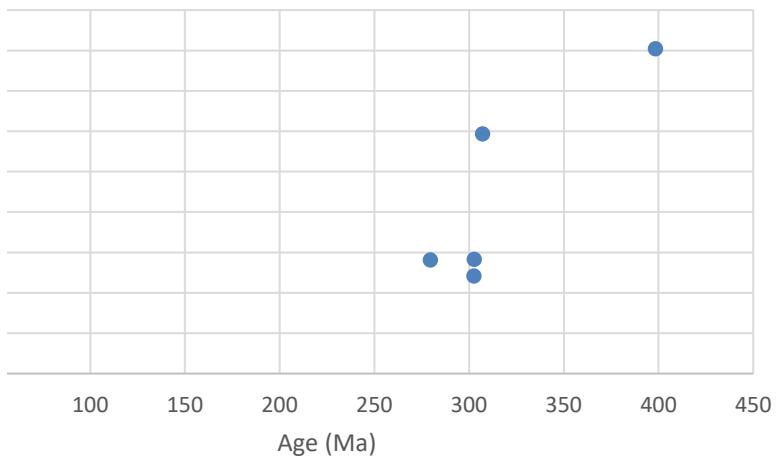
zCGO21 age vs. (U)e



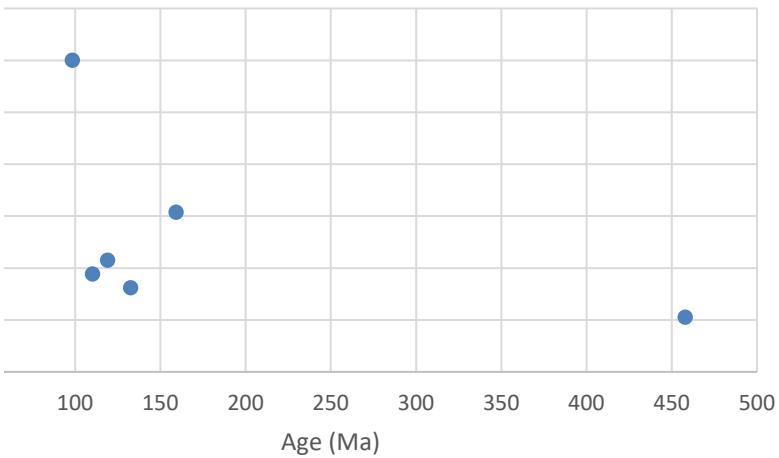
zCSM04 age vs (U)e



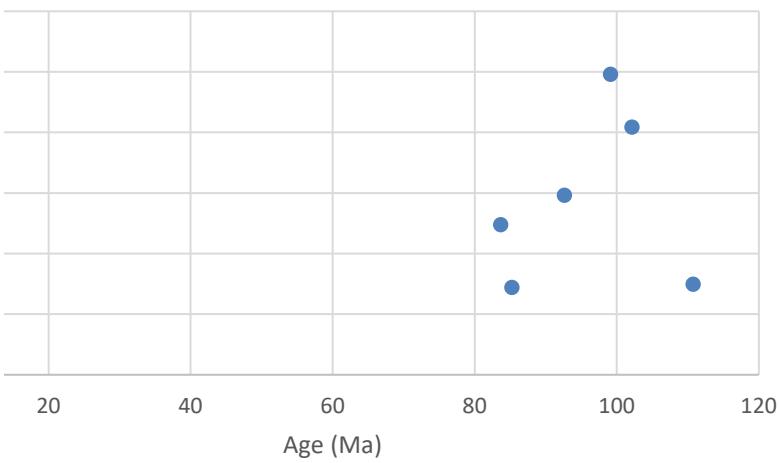
zIAZ03 age vs. (U)e



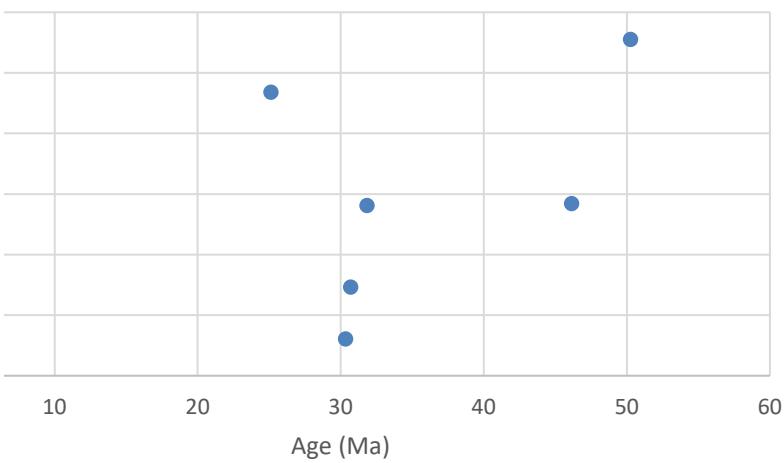
zRA14-293 age vs. (U)e



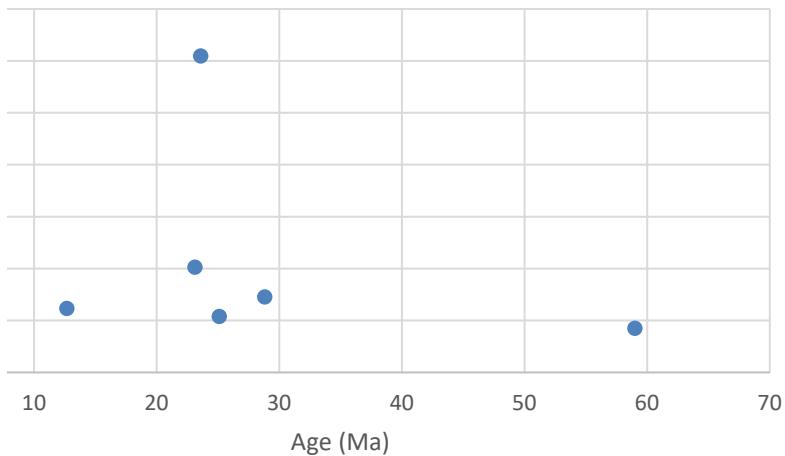
zRA14-53 age vs. (U)e



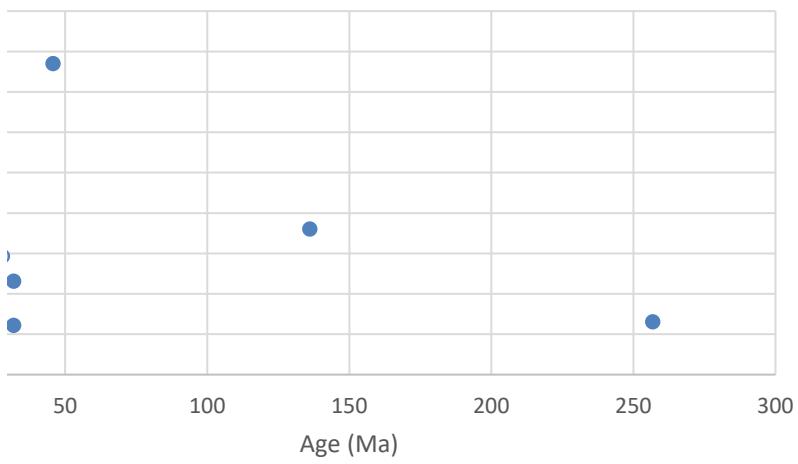
zRA14-61 age vs. (U)e



zRA14-72 age vs. (U)e



zRA14-92 age vs. (U)e



Compilation of Fission Track Data

Apatite Data

New Sample Number	ECO200	
Original Sample Number	RA14 200HP	
Position (#)	5	
Area of Graticule Square	6.40E-07	
No. of Crystals	9	
Zeta Factor ± Error	368.1	14.9
Rho d (% Relative Error)	1.43E+06	
N d	4575	

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
3	42	30	2.42	0.63	0.785	1.56E+05	2.19E+06	0.0714
4	54	40	2.66	0.89	0.766	1.56E+05	2.11E+06	0.0741
6	58	40	3.06	0.84	0.729	2.34E+05	2.27E+06	0.1034
4	35	30	2.29	0.65	0.795	2.08E+05	1.82E+06	0.1143
3	35	40	2.85	0.78	0.749	1.17E+05	1.37E+06	0.0857
5	62	50	2.86	0.73	0.748	1.56E+05	1.94E+06	0.0806
4	77	40	2.68	0.68	0.764	1.56E+05	3.01E+06	0.0519
3	29	20	3	0.7	0.735	2.34E+05	2.27E+06	0.1034
4	61	49	2.47	0.69	0.781	1.28E+05	1.95E+06	0.0656

36	453	339	2.7	0.73	0.762	1.66E+05	2.09E+06	0.0795
Pooled Ratio		0.0795 ±		0.0142				
Mean Ratio		0.0834 ±		0.0068				
Pooled Age		20.88 ±		3.73 1 S.E.				
Mean Crystal Age		21.91 ±		1.78 1 S.E.				
Binomial Age		21.28 +		8.04 "+95%"				
		-		6.84 "-95%"				
Central Age		20.88 ±		3.73				
Age Dispersion	<0.01	%						
Chi-squared		1.953 with		8 degrees of freedom				
P (Chi-Sq)		98.24 %						
MSWD		0.29						

New Sample Number	ECO-IAZ03
Original Sample Number	IAZ02+02HP
Position (#)	10+11
Area of Graticule Square	6.40E-07
No. of Crystals	27
	New Sample Number ECO200

Zeta Factor ± Error	368.1	14.9
Rho d (% Relative Error)	1.35E+06	
N d	4324	

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
2	19	16	2.43	0.64	0.784	1.95E+05	1.86E+06	0.1053
29	367	60	2.46	0.78	0.782	7.55E+05	9.56E+06	0.079
9	113	40	2.25	0.52	0.798	3.52E+05	4.41E+06	0.0796
1	28	16	2.17	0.5	0.803	9.77E+04	2.73E+06	0.0357
6	89	20	1.97	0.53	0.817	4.69E+05	6.95E+06	0.0674
4	90	20	1.81	0.58	0.827	3.13E+05	7.03E+06	0.0444
4	59	24	2.1	0.61	0.808	2.60E+05	3.84E+06	0.0678
9	216	70	1.75	0.45	0.831	2.01E+05	4.82E+06	0.0417
4	72	40	1.85	0.46	0.825	1.56E+05	2.81E+06	0.0556
3	39	30	1.96	0.43	0.818	1.56E+05	2.03E+06	0.0769
1	13	15	2.13	0.86	0.806	1.04E+05	1.35E+06	0.0769
7	76	20	1.97	0.48	0.817	5.47E+05	5.94E+06	0.0921
7	104	70	2.06	0.35	0.811	1.56E+05	2.32E+06	0.0673
4	44	40	1.87	0.47	0.823	1.56E+05	1.72E+06	0.0909
11	140	70	2.03	0.46	0.813	2.46E+05	3.13E+06	0.0786
5	50	70	1.77	0.39	0.83	1.12E+05	1.12E+06	0.1
8	74	35	1.86	0.46	0.824	3.57E+05	3.30E+06	0.1081
25	315	64	2.03	0.52	0.813	6.10E+05	7.69E+06	0.0794
2	30	24	1.85	0.4	0.825	1.30E+05	1.95E+06	0.0667
6	99	36	2.11	0.61	0.808	2.60E+05	4.30E+06	0.0606
11	174	60	1.99	0.5	0.816	2.87E+05	4.53E+06	0.0632
18	222	36	2.13	0.52	0.806	7.81E+05	9.64E+06	0.0811
7	89	30	1.59	0.49	0.841	3.65E+05	4.64E+06	0.0787
22	285	50	1.96	0.53	0.818	6.88E+05	8.91E+06	0.0772
10	108	42	1.93	0.63	0.82	3.72E+05	4.02E+06	0.0926
8	129	70	1.91	0.58	0.821	1.79E+05	2.88E+06	0.062
6	73	32	1.89	0.54	0.822	2.93E+05	3.56E+06	0.0822

229	3117	1100	1.99	0.53	0.815	3.25E+05	4.43E+06	0.0735

Pooled Ratio	0.0735 ±	0.0059
Mean Ratio	0.0745 ±	0.0035

Pooled Age	18.24 ±	1.48 1 S.E.
Mean Crystal Age	18.49 ±	0.86 1 S.E.
Binomial Age	18.3 +	2.57 "+95%"
	-	2.41 "-95%"

Central Age	18.24 ±	1.48
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Age Dispersion	<0.01 %	
Chi-squared	8.912 with	26 degrees of freedom

P (Chi-Sq)	99.93 %
MSWD	0.46

New Sample Number	IAZ51	
Original Sample Number	RA14 34+34HP	
Position (#)	3+4	
Area of Graticule Square	6.40E-07	
No. of Crystals	40	
Zeta Factor ± Error	368.1	14.9
Rho d (% Relative Error)	1.45E+06	
N d	4643	

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
11		147	30	2.11	0.38	0.808	5.73E+05	7.66E+06
3		71	40	2.04	0.57	0.812	1.17E+05	2.77E+06
4		61	36	1.9	0.56	0.821	1.74E+05	2.65E+06
3		53	50	2	0.68	0.815	9.38E+04	1.66E+06
12		185	40	1.99	0.59	0.816	4.69E+05	7.23E+06
0		37	32	-	-	-	0.00E+00	1.81E+06
4		75	40	2.37	0.56	0.789	1.56E+05	2.93E+06
1		17	5	2.17	0.45	0.803	3.13E+05	5.31E+06
10		130	40	2.01	0.67	0.814	3.91E+05	5.08E+06
1		46	30	1.99	0.41	0.816	5.21E+04	2.40E+06
14		206	50	1.98	0.56	0.816	4.38E+05	6.44E+06
12		167	36	1.95	0.39	0.818	5.21E+05	7.25E+06
8		108	49	2.21	0.56	0.801	2.55E+05	3.44E+06
6		69	50	2.08	0.56	0.81	1.88E+05	2.16E+06
3		60	70	1.94	0.4	0.819	6.70E+04	1.34E+06
2		35	35	1.88	0.49	0.823	8.93E+04	1.56E+06
3		48	60	2.57	0.49	0.773	7.81E+04	1.25E+06
3		48	60	2.33	0.42	0.792	7.81E+04	1.25E+06
3		48	60	2.17	0.44	0.803	7.81E+04	1.25E+06
3		48	30	1.85	0.63	0.825	1.56E+05	2.50E+06
8		97	60	2.15	0.59	0.805	2.08E+05	2.53E+06
3		47	60	1.86	0.48	0.824	7.81E+04	1.22E+06
6		63	49	2.19	0.6	0.802	1.91E+05	2.01E+06
10		126	50	2.27	0.72	0.796	3.13E+05	3.94E+06
1		17	40	2.53	0.58	0.777	3.91E+04	6.64E+05
10		141	24	2.17	0.54	0.803	6.51E+05	9.18E+06
1		29	30	2.52	0.64	0.777	5.21E+04	1.51E+06
5		80	30	1.92	0.66	0.82	2.60E+05	4.17E+06
5		51	50	1.97	0.45	0.817	1.56E+05	1.59E+06
7		111	30	2.2	0.46	0.801	3.65E+05	5.78E+06
4		56	60	2.31	0.55	0.793	1.04E+05	1.46E+06
4		40	100	2.06	0.5	0.811	6.25E+04	6.25E+05
6		97	50	2.06	0.62	0.811	1.88E+05	3.03E+06
12		188	60	2.11	0.63	0.808	3.13E+05	4.90E+06

7	78	40	1.83	0.57	0.826	2.73E+05	3.05E+06	0.0897
4	53	40	2.01	0.42	0.814	1.56E+05	2.07E+06	0.0755
5	54	49	2.31	0.76	0.793	1.59E+05	1.72E+06	0.0926
4	41	40	1.95	0.6	0.818	1.56E+05	1.60E+06	0.0976
7	81	50	2.17	0.53	0.803	2.19E+05	2.53E+06	0.0864
2	27	40	1.83	0.5	0.826	7.81E+04	1.06E+06	0.0741

217	3136	1795	2.1	0.54	0.808	1.89E+05	2.73E+06	0.0692
Pooled Ratio		0.0692 ±		0.0057				
Mean Ratio		0.0674 ±		0.0032				
Pooled Age		18.45 ±		1.52 1 S.E.				
Mean Crystal Age		17.97 ±		0.85 1 S.E.				
Binomial Age		18.51 +		2.66 "+95%"				
		-		2.5 "-95%"				
Central Age		18.45 ±		1.52				
Age Dispersion	<0.01	%						
Chi-squared		10.632 with		39 degrees of freedom				
P (Chi-Sq)	>99.9	%						
MSWD		0.28						

New Sample Number

Original Sample Number IAZ06

Position (#) 12

Area of Graticule Square 6.40E-07

No. of Crystals 20

Zeta Factor ± Error 368.1 14.9

Rho d (% Relative Error) 1.33E+06

Nd 4256

2	29	12	1.78	0.55	0.829	2.60E+05	3.78E+06	0.069
10	135	12	1.69	0.38	0.835	1.30E+06	1.76E+07	0.0741
0	7	12	-	-	-	0.00E+00	9.12E+05	0
7	79	12	2.33	0.53	0.792	9.12E+05	1.03E+07	0.0886
3	33	9	2.04	0.52	0.812	5.21E+05	5.73E+06	0.0909
0	15	12	-	-	-	0.00E+00	1.95E+06	0
0	9	12	-	-	-	0.00E+00	1.17E+06	0

41	541	230	1.98	0.5	0.816	2.79E+05	3.68E+06	0.0758
Pooled Ratio		0.0758 ±		0.0127				
Mean Ratio		0.0654 ±		0.0121				
Pooled Age		18.52 ±		3.11 1 S.E.				
Mean Crystal Age		15.98 ±		2.96 1 S.E.				
Binomial Age		18.84 +		6.62 "+95%"				
		-		5.69 "-95%"				
Central Age		18.52 ±		3.11				
Age Dispersion	<0.01	%						
Chi-squared		7.043 with		19 degrees of freedom				
P (Chi-Sq)		99.4 %						
MSWD		0.18						

New Sample Number	IAZ24
Original Sample Number	IAZ24 +24HP
Position (#)	13+14
Area of Graticule Square	6.40E-07
No. of Crystals	27
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.31E+06
N d	4188

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
1		18	21	1.75	0.5	0.831	7.44E+04	1.34E+06
13		236	21	2.17	0.48	0.803	9.67E+05	1.76E+07
2		22	15	2.14	0.44	0.805	2.08E+05	2.29E+06
2		27	6	1.44	0.4	0.849	5.21E+05	7.03E+06
7		85	16	2.14	0.53	0.805	6.84E+05	8.30E+06
2		40	12	1.9	0.67	0.821	2.60E+05	5.21E+06
9		108	15	2.03	0.43	0.813	9.38E+05	1.13E+07
3		61	15	1.85	0.43	0.825	3.13E+05	6.35E+06
1		12	8	1.97	0.8	0.817	1.95E+05	2.34E+06
11		156	16	1.99	0.46	0.816	1.07E+06	1.52E+07
0		16	24	-	-	0.00E+00	1.04E+06	0
1		8	16	2.29	0.46	0.795	9.77E+04	7.81E+05

1	28	28	1.86	0.89	0.824	5.58E+04	1.56E+06	0.0357
0	10	18	-	-	-	0.00E+00	8.68E+05	0
1	27	20	1.88	0.61	0.823	7.81E+04	2.11E+06	0.037
6	80	15	2.35	0.66	0.79	6.25E+05	8.33E+06	0.075
2	25	24	2.15	0.53	0.805	1.30E+05	1.63E+06	0.08
4	68	24	1.92	0.47	0.82	2.60E+05	4.43E+06	0.0588
0	7	18	-	-	-	0.00E+00	6.08E+05	0
3	28	20	1.97	0.35	0.817	2.34E+05	2.19E+06	0.1071
0	15	21	-	-	-	0.00E+00	1.12E+06	0
2	21	24	2.41	0.76	0.786	1.30E+05	1.37E+06	0.0952
8	135	35	1.96	0.38	0.818	3.57E+05	6.03E+06	0.0593
3	35	20	2.2	0.61	0.801	2.34E+05	2.73E+06	0.0857
7	121	25	1.92	0.38	0.82	4.38E+05	7.56E+06	0.0579
2	72	40	2.11	0.62	0.808	7.81E+04	2.81E+06	0.0278
13	195	25	2	0.56	0.815	8.13E+05	1.22E+07	0.0667

104	1656	542	2.02	0.54	0.813	3.00E+05	4.77E+06	0.0628
Pooled Ratio		0.0628 ±		0.0069				
Mean Ratio		0.0595 ±		0.0064				
Pooled Age		15.11 ±		1.66 1 S.E.				
Mean Crystal Age		14.31 ±		1.54 1 S.E.				
Binomial Age		15.21 +		3.21 "+95%"				
		-		2.93 "-95%"				
Central Age		15.11 ±		1.66				
Age Dispersion	<0.01	%						
Chi-squared		9.371 with		26 degrees of freedom				
P (Chi-Sq)		99.88 %						
MSWD		0.27						

New Sample Number	IAZ21
Original Sample Number	IAZ21
Position (#)	11
Area of Graticule Square	6.40E-07
No. of Crystals	20
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.39E+06 1.5
N d	4461

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
8		121	20	2.32	0.74	0.793	6.25E+05	9.45E+06
5		86	24	2.39	0.66	0.787	3.26E+05	5.60E+06
4		54	50	2.11	0.57	0.808	1.25E+05	1.69E+06
8		108	28	2.31	0.57	0.793	4.46E+05	6.03E+06

6	66	20	1.98	0.58	0.816	4.69E+05	5.16E+06	0.0909
3	42	18	2.77	0.75	0.756	2.60E+05	3.65E+06	0.0714
1	12	21	2.19	0.51	0.802	7.44E+04	8.93E+05	0.0833
3	34	16	2.6	0.65	0.771	2.93E+05	3.32E+06	0.0882
8	85	21	2.08	0.59	0.81	5.95E+05	6.32E+06	0.0941
3	51	20	1.96	0.58	0.818	2.34E+05	3.98E+06	0.0588
2	30	21	2.32	0.52	0.793	1.49E+05	2.23E+06	0.0667
8	118	40	2.33	0.65	0.792	3.13E+05	4.61E+06	0.0678
1	10	30	1.75	0.72	0.831	5.21E+04	5.21E+05	0.1
2	33	20	2.29	0.57	0.795	1.56E+05	2.58E+06	0.0606
7	112	15	2.13	0.7	0.806	7.29E+05	1.17E+07	0.0625
6	94	21	2.18	0.43	0.803	4.46E+05	6.99E+06	0.0638
3	43	20	2.15	0.58	0.805	2.34E+05	3.36E+06	0.0698
7	80	28	2.2	0.78	0.801	3.91E+05	4.46E+06	0.0875
8	106	21	2.09	0.55	0.809	5.95E+05	7.89E+06	0.0755
4	51	21	2.41	0.62	0.786	2.98E+05	3.80E+06	0.0784

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97	1336	475	2.23	0.62	0.799	3.19E+05	4.40E+06	0.0726
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Pooled Ratio 0.0726 ± 0.0083

Mean Ratio 0.0746 ± 0.0028

Pooled Age 18.6 ± 2.11 1 S.E.

Mean Crystal Age 19.11 ± 0.71 1 S.E.

Binomial Age 18.73 + 4.13 "+95%"
 - 3.75 "-95%"

Central Age 18.6 ± 2.11

Age Dispersion 0 %

Chi-squared 2.037 with 19 degrees of freedom

P (Chi-Sq) >99.99 %

MSWD 0.11

New Sample Number IAZ13

Original Sample Number IAZ13

Position (#) 10

Area of Graticule Square 6.40E-07

No. of Crystals 20

Zeta Factor ± Error 368.1 14.9

Rho d (% Relative Error) 1.40E+06 1.49

N d 4491

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
11	175	49	1.85	0.44	0.825	3.51E+05	5.58E+06	0.0629
6	71	56	1.88	0.45	0.823	1.67E+05	1.98E+06	0.0845
13	196	49	2.01	0.45	0.814	4.15E+05	6.25E+06	0.0663

9	104	56	2.26	0.43	0.797	2.51E+05	2.90E+06	0.0865
3	39	21	2.37	0.51	0.789	2.23E+05	2.90E+06	0.0769
17	251	50	2.26	0.51	0.797	5.31E+05	7.84E+06	0.0677
12	160	18	2.06	0.52	0.811	1.04E+06	1.39E+07	0.075
5	73	30	2.21	0.56	0.801	2.60E+05	3.80E+06	0.0685
12	130	60	2.51	0.75	0.778	3.13E+05	3.39E+06	0.0923
7	80	36	2.51	0.68	0.778	3.04E+05	3.47E+06	0.0875
8	105	30	2.23	0.58	0.799	4.17E+05	5.47E+06	0.0762
5	66	21	1.89	0.5	0.822	3.72E+05	4.91E+06	0.0758
24	323	60	1.98	0.52	0.816	6.25E+05	8.41E+06	0.0743
8	106	40	2.07	0.5	0.81	3.13E+05	4.14E+06	0.0755
3	61	28	2.16	0.47	0.804	1.67E+05	3.40E+06	0.0492
4	78	50	1.85	0.47	0.825	1.25E+05	2.44E+06	0.0513
4	70	36	2.2	0.45	0.801	1.74E+05	3.04E+06	0.0571
7	85	40	2	0.57	0.815	2.73E+05	3.32E+06	0.0824
4	48	28	1.89	0.55	0.822	2.23E+05	2.68E+06	0.0833
6	80	20	2.17	0.56	0.803	4.69E+05	6.25E+06	0.075

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168 2301 778 2.12 0.52 0.807 3.37E+05 4.62E+06 0.073

Pooled Ratio 0.073 ± 0.0066

Mean Ratio 0.0734 ± 0.0026

Pooled Age 18.83 ± 1.71 1 S.E.

Mean Crystal Age 18.93 ± 0.68 1 S.E.

Binomial Age 18.9 + 3.12 "+95%"
- 2.9 "-95%"

Central Age 18.83 ± 1.71

Age Dispersion 0 %

Chi-squared 3.004 with 19 degrees of freedom

P (Chi-Sq) 100 %

MSWD 0.17

New Sample Number IAZ11

Original Sample Number IAZ11

Position (#) 9

Area of Graticule Square 6.40E-07

No. of Crystals 14

Zeta Factor ± Error 368.1 14.9

Rho d (% Relative Error) 1.41E+06 1.49

N d 4521

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
8	148	30	2.26	0.46	0.797	4.17E+05	7.71E+06	0.0541
6	96	50	2.1	0.47	0.808	1.88E+05	3.00E+06	0.0625

10	125	60	2.03	0.41	0.813	2.60E+05	3.26E+06	0.08
1	25	50	2.36	0.49	0.79	3.13E+04	7.81E+05	0.04
5	90	49	2.01	0.6	0.814	1.59E+05	2.87E+06	0.0556
5	85	21	2.05	0.58	0.812	3.72E+05	6.32E+06	0.0588
17	296	40	2.26	0.67	0.797	6.64E+05	1.16E+07	0.0574
13	190	50	2.3	0.54	0.794	4.06E+05	5.94E+06	0.0684
6	139	50	2.17	0.62	0.803	1.88E+05	4.34E+06	0.0432
4	55	49	2.21	0.69	0.801	1.28E+05	1.75E+06	0.0727
19	208	50	2.21	0.56	0.801	5.94E+05	6.50E+06	0.0913
4	82	18	2.07	0.43	0.81	3.47E+05	7.12E+06	0.0488
8	111	50	2.2	0.45	0.801	2.50E+05	3.47E+06	0.0721
1	13	35	1.99	0.7	0.816	4.46E+04	5.80E+05	0.0769

107	1663	602	2.16	0.55	0.804	2.78E+05	4.32E+06	0.0643
Pooled Ratio		0.0643 ±		0.007				
Mean Ratio		0.063 ±		0.0039				
Pooled Age		16.71 ±		1.82 1 S.E.				
Mean Crystal Age		16.36 ±		1.02 1 S.E.				
Binomial Age		16.82 +		3.5 "+95%"				
		-		3.2 "-95%"				
Central Age		16.71 ±		1.82				
Age Dispersion		0 %						
Chi-squared		4.857 with		13 degrees of freedom				
P (Chi-Sq)		97.82 %						
MSWD		0.35						

New Sample Number	IAZ347
Original Sample Number	RA14 347+347HP
Position (#)	8+9
Area of Graticule Square	6.40E-07
No. of Crystals	30
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.38E+06
N d	4415

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
0	44	30 -	-	-	-	0.00E+00	2.29E+06	0
1	48	40	2.17	0.56	0.803	3.91E+04	1.88E+06	0.0208
3	55	30	1.9	0.63	0.821	1.56E+05	2.87E+06	0.0545
1	40	21	1.9	0.62	0.821	7.44E+04	2.98E+06	0.025
0	40	40 -	-	-	-	0.00E+00	1.56E+06	0
1	15	18	2.41	0.6	0.786	8.68E+04	1.30E+06	0.0667
2	49	28	2.14	0.41	0.805	1.12E+05	2.73E+06	0.0408

7	129	129	1.88	0.46	0.823	8.48E+04	1.56E+06	0.0543
7	205	205	1.75	0.48	0.831	5.34E+04	1.56E+06	0.0341
2	50	50	2.01	0.5	0.814	6.25E+04	1.56E+06	0.04
2	61	36	1.8	0.5	0.828	8.68E+04	2.65E+06	0.0328
3	57	50	2.03	0.54	0.813	9.38E+04	1.78E+06	0.0526
11	295	60	1.95	0.56	0.818	2.87E+05	7.68E+06	0.0373
14	267	70	2.1	0.48	0.808	3.13E+05	5.96E+06	0.0524
6	143	40	1.72	0.42	0.833	2.34E+05	5.59E+06	0.042
11	320	40	2.04	0.47	0.812	4.30E+05	1.25E+07	0.0344
2	27	21	1.83	0.53	0.826	1.49E+05	2.01E+06	0.0741
1	28	24	1.78	0.52	0.829	6.51E+04	1.82E+06	0.0357
4	106	60	2.06	0.56	0.811	1.04E+05	2.76E+06	0.0377
6	112	35	2.06	0.51	0.811	2.68E+05	5.00E+06	0.0536
4	109	36	1.96	0.54	0.818	1.74E+05	4.73E+06	0.0367
2	62	42	2.03	0.57	0.813	7.44E+04	2.31E+06	0.0323
9	185	30	2.06	0.44	0.811	4.69E+05	9.64E+06	0.0486
2	40	40	1.92	0.51	0.82	7.81E+04	1.56E+06	0.05
10	182	50	1.85	0.54	0.825	3.13E+05	5.69E+06	0.0549
1	30	24	1.78	0.48	0.829	6.51E+04	1.95E+06	0.0333
11	169	40	1.98	0.51	0.816	4.30E+05	6.60E+06	0.0651
7	160	42	1.72	0.49	0.833	2.60E+05	5.95E+06	0.0438
1	27	28	1.94	0.59	0.819	5.58E+04	1.51E+06	0.037
10	174	40	1.86	0.56	0.824	3.91E+05	6.80E+06	0.0575

141	3229	1399	1.95	0.52	0.818	1.58E+05	3.61E+06	0.0437

Pooled Ratio 0.0437 ± 0.0042

Mean Ratio 0.0416 ± 0.0031

Pooled Age 11.08 ± 1.07 1 S.E.

Mean Crystal Age 10.56 ± 0.78 1 S.E.

Binomial Age 11.13 + 1.98 "+95%"
 - 1.84 "-95%"

Central Age 11.08 ± 1.07

Age Dispersion <0.01 %

Chi-squared 11.504 with 29 degrees of freedom

P (Chi-Sq) 99.85 %

MSWD 0.26

New Sample Number IAZ56

Original Sample Number SAZ26

Position (#) 15

Area of Graticule Square 6.40E-07

No. of Crystals 14

Zeta Factor ± Error 368.1 14.9

Rho d (% Relative Error)	1.36E+06	1.52						
N d	4343							
N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
3	45	20	2.08	0.44	0.81	2.34E+05	3.52E+06	0.0667
3	42	50	1.85	0.52	0.825	9.38E+04	1.31E+06	0.0714
2	19	50	2.36	0.71	0.79	6.25E+04	5.94E+05	0.1053
3	34	42	2.1	0.53	0.808	1.12E+05	1.27E+06	0.0882
1	20	36	2.73	0.53	0.76	4.34E+04	8.68E+05	0.05
4	45	32	2.24	0.73	0.798	1.95E+05	2.20E+06	0.0889
6	81	24	2.08	0.47	0.81	3.91E+05	5.27E+06	0.0741
0	34	50	-	-		0.00E+00	1.06E+06	0
0	10	25	-	-		0.00E+00	6.25E+05	0
1	18	35	2.31	0.56	0.793	4.46E+04	8.04E+05	0.0556
1	9	50	1.93	0.61	0.82	3.13E+04	2.81E+05	0.1111
3	58	50	1.98	0.4	0.816	9.38E+04	1.81E+06	0.0517
6	103	35	1.97	0.44	0.817	2.68E+05	4.60E+06	0.0583
1	18	16	2.2	0.87	0.801	9.77E+04	1.76E+06	0.0556

34	536	515	2.15	0.57	0.804	1.03E+05	1.63E+06	0.0634
Pooled Ratio	0.0634 ±	0.0115						
Mean Ratio	0.0626 ±	0.0088						
Pooled Age	15.82 ±	2.88 1 S.E.						
Mean Crystal Age	15.62 ±	2.19 1 S.E.						
Binomial Age	16.14 +	6.23 "+95%"						
	-	5.3 "-95%"						
Central Age	15.82 ±	2.88						
Age Dispersion	0 %							
Chi-squared	4.71 with	13 degrees of freedom						
P (Chi-Sq)	98.1 %							
MSWD	0.11							

New Sample Number	IAZ344							
Original Sample Number	RA14 344							
Position (#)	7							
Area of Graticule Square	6.40E-07							
No. of Crystals	20							
Zeta Factor ± Error	368.1	14.9						
Rho d (% Relative Error)	1.40E+06							
N d	4484							

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
1		58	40	1.74	0.5	0.832	3.91E+04	2.27E+06

2	58	35	2.04	0.51	0.812	8.93E+04	2.59E+06	0.0345
0	29	40	-	-	-	0.00E+00	1.13E+06	0
0	37	30	-	-	-	0.00E+00	1.93E+06	0
0	7	60	-	-	-	0.00E+00	1.82E+05	0
0	32	40	-	-	-	0.00E+00	1.25E+06	0
7	202	49	2.12	0.54	0.807	2.23E+05	6.44E+06	0.0347
4	68	60	1.82	0.57	0.827	1.04E+05	1.77E+06	0.0588
1	24	70	2.17	0.62	0.803	2.23E+04	5.36E+05	0.0417
6	266	60	1.9	0.68	0.821	1.56E+05	6.93E+06	0.0226
6	187	100	1.97	0.53	0.817	9.38E+04	2.92E+06	0.0321
1	43	49	2.11	0.56	0.808	3.19E+04	1.37E+06	0.0233
4	128	28	2.18	0.56	0.803	2.23E+05	7.14E+06	0.0313
4	112	70	2.38	0.59	0.788	8.93E+04	2.50E+06	0.0357
2	52	28	2.09	0.57	0.809	1.12E+05	2.90E+06	0.0385
1	37	40	1.81	0.58	0.827	3.91E+04	1.45E+06	0.027
8	207	70	1.68	0.59	0.835	1.79E+05	4.62E+06	0.0386
2	36	18	1.73	0.52	0.832	1.74E+05	3.13E+06	0.0556
0	33	28	-	-	-	0.00E+00	1.84E+06	0
4	83	50	1.88	0.4	0.823	1.25E+05	2.59E+06	0.0482

53	1699	965	1.97	0.55	0.816	8.58E+04	2.75E+06	0.0312

Pooled Ratio	0.0312 ±	0.0046
Mean Ratio	0.027 ±	0.0042
Pooled Age	8.04 ±	1.17 1 S.E.
Mean Crystal Age	6.95 ±	1.09 1 S.E.
Binomial Age	8.14 +	2.42 "+95%"
	-	2.14 "-95%"
Central Age	8.04 ±	1.17
Age Dispersion	<0.01 %	
Chi-squared	9.032 with	19 degrees of freedom
P (Chi-Sq)	97.29 %	
MSWD	0.25	

New Sample Number
IAZ342

Original Sample Number

RA14 342

Position (#)

6

Area of Graticule Square

6.40E-07

No. of Crystals

20

Zeta Factor ± Error

368.1 14.9

Rho d (% Relative Error)

1.42E+06

N d

4529

Ns

Ni

Ng

Dpar

Dper

Rmr0

ρ s

ρ i

ρ s / ρ i

2	27	25	1.94	0.48	0.819	1.25E+05	1.69E+06	0.0741
6	186	18	1.66	0.46	0.836	5.21E+05	1.62E+07	0.0323
2	42	20	1.85	0.45	0.825	1.56E+05	3.28E+06	0.0476
2	44	24	1.82	0.64	0.827	1.30E+05	2.87E+06	0.0455
2	32	60	1.97	0.61	0.817	5.21E+04	8.33E+05	0.0625
1	34	25	2.19	0.32	0.802	6.25E+04	2.13E+06	0.0294
3	45	30	2.04	0.65	0.812	1.56E+05	2.34E+06	0.0667
1	33	30	1.62	0.4	0.839	5.21E+04	1.72E+06	0.0303
1	27	18	2	0.49	0.815	8.68E+04	2.34E+06	0.037
1	10	40	1.92	0.75	0.82	3.91E+04	3.91E+05	0.1
3	82	40	2.01	0.51	0.814	1.17E+05	3.20E+06	0.0366
6	120	32	1.88	0.67	0.823	2.93E+05	5.86E+06	0.05
5	107	48	1.77	0.47	0.83	1.63E+05	3.48E+06	0.0467
2	56	30	2.16	0.58	0.804	1.04E+05	2.92E+06	0.0357
2	60	60	2.43	0.57	0.784	5.21E+04	1.56E+06	0.0333
0	28	28	-	-	-	0.00E+00	1.56E+06	0
0	20	30	-	-	-	0.00E+00	1.04E+06	0
1	43	25	1.73	0.44	0.832	6.25E+04	2.69E+06	0.0233
0	30	24	-	-	-	0.00E+00	1.95E+06	0
3	84	40	1.76	0.63	0.83	1.17E+05	3.28E+06	0.0357

43	1110	647	1.93	0.54	0.819	1.04E+05	2.68E+06	0.0387

Pooled Ratio 0.0387 ± 0.0062
 Mean Ratio 0.0393 ± 0.0055

Pooled Age 10.08 ± 1.63 1 S.E.
 Mean Crystal Age 10.24 ± 1.44 1 S.E.
 Binomial Age 10.24 + 3.43 "+95%"
 - 2.98 "-95%"

Central Age 10.08 ± 1.63

Age Dispersion <0.01 %
 Chi-squared 7.35 with 19 degrees of freedom
 P (Chi-Sq) 99.21 %
 MSWD 0.16

New Sample Number	IAZ58
Original Sample Number	SSM01
Position (#)	16
Area of Graticule Square	6.40E-07
No. of Crystals	6
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.35E+06 1.52
N d	4313

N s	N i	N g	Dpar	Dper	Rmr0	ρ_s	ρ_i	ρ_s / ρ_i
5		4	25	3.12	0.96	0.723	3.13E+05	2.50E+05
2		14	20	1.84	0.75	0.825	1.56E+05	1.09E+06
1		6	25	2.2	0.64	0.801	6.25E+04	3.75E+05
7		6	36	2.85	0.7	0.749	3.04E+05	2.60E+05
3		45	24	1.74	0.47	0.832	1.95E+05	2.93E+06
3		20	42	2.27	0.51	0.796	1.12E+05	7.44E+05

21		95	172	2.34	0.67	0.788	1.91E+05	8.63E+05
Pooled Ratio			0.2211 ±		0.0542			
Mean Ratio			0.4905 ±		0.2277			
Pooled Age			54.61 ±		13.38 1 S.E.			
Mean Crystal Age			120.55 ±		56.24 1 S.E.			
Binomial Age			56.54 +		31.54 "+95%"			
			-		24.16 "-95%"			
Central Age			79.87 ±		35.64			
Age Dispersion			92.96 %					
Chi-squared			25.07 with		5 degrees of freedom			
P (Chi-Sq)			0.01 %					
MSWD			27.85					

New Sample Number	SAZ62
Original Sample Number	RSL04B
Position (#)	14
Area of Graticule Square	6.40E-07
No. of Crystals	20
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.37E+06 1.51
N d	4372

N s	N i	N g	Dpar	Dper	Rmr0	ρ_s	ρ_i	ρ_s / ρ_i
0		13	21 -	-	-	0.00E+00	9.67E+05	0
2		3	15	2.77	0.96	0.756	2.08E+05	3.13E+05
2		31	30	2.3	0.79	0.794	1.04E+05	1.62E+06
4		12	30	2.49	0.71	0.78	2.08E+05	6.25E+05
1		6	32	3.08	0.95	0.727	4.88E+04	2.93E+05
1		6	30	2.31	0.81	0.793	5.21E+04	3.13E+05
10		15	20	4.02	1.39	0.591	7.81E+05	1.17E+06
0		5	21 -	-	-	0.00E+00	3.72E+05	0
2		23	20	2.17	0.45	0.803	1.56E+05	1.80E+06
2		70	36	2.55	0.67	0.775	8.68E+04	3.04E+06
0		4	32 -	-	-	0.00E+00	1.95E+05	0
1		4	30	2.9	0.73	0.745	5.21E+04	2.08E+05

17	29	35	3.45	1.08	0.685	7.59E+05	1.30E+06	0.5862
0	7	20	-	-	-	0.00E+00	5.47E+05	0
4	83	30	1.92	0.63	0.82	2.08E+05	4.32E+06	0.0482
2	2	30	2.84	0.76	0.75	1.04E+05	1.04E+05	1
0	10	30	-	-	-	0.00E+00	5.21E+05	0
0	6	25	-	-	-	0.00E+00	3.75E+05	0
0	6	32	-	-	-	0.00E+00	2.93E+05	0
0	7	20	-	-	-	0.00E+00	5.47E+05	0

48	342	539	2.73	0.83	0.752	1.39E+05	9.91E+05	0.1404
Pooled Ratio		0.1404 ±		0.0225				
Mean Ratio		0.2032 ±		0.0659				
Pooled Age		35.19 ±		5.63 1 S.E.				
Mean Crystal Age		50.89 ±		16.55 1 S.E.				
Binomial Age		35.71 +		11.95 "+95%"				
		-		10.24 "-95%"				
Central Age		37.74 ±		11.87				
Age Dispersion		109.32 %						
Chi-squared		75.803 with		19 degrees of freedom				
P (Chi-Sq)		0 %						
MSWD		6.93						

New Sample Number	SAZ61
Original Sample Number	RSL02
Position (#)	15
Area of Graticule Square	6.40E-07
No. of Crystals	20
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.29E+06 20053
N d	4119

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
3	82	35	1.76	0.54	0.83	1.34E+05	3.66E+06	0.0366
0	32	30	-	-	-	0.00E+00	1.67E+06	0
1	16	42	1.83	0.57	0.826	3.72E+04	5.95E+05	0.0625
4	126	40	1.76	0.55	0.83	1.56E+05	4.92E+06	0.0317
1	18	24	2.13	0.51	0.806	6.51E+04	1.17E+06	0.0556
5	78	48	1.67	0.46	0.836	1.63E+05	2.54E+06	0.0641
3	118	28	1.77	0.53	0.83	1.67E+05	6.59E+06	0.0254
9	126	60	1.81	0.33	0.827	2.34E+05	3.28E+06	0.0714
1	42	16	1.8	0.37	0.828	9.77E+04	4.10E+06	0.0238
4	46	35	1.93	0.55	0.82	1.79E+05	2.05E+06	0.087
1	45	16	2.14	0.5	0.805	9.77E+04	4.40E+06	0.0222

5	70	24	1.77	0.56	0.83	3.26E+05	4.56E+06	0.0714
6	50	24	1.91	0.55	0.821	3.91E+05	3.26E+06	0.12
38	44	32	1.93	0.35	0.82	1.86E+06	2.15E+06	0.8636
1	52	36	2.26	0.48	0.797	4.34E+04	2.26E+06	0.0192
134	140	24	1.81	0.46	0.827	8.72E+06	9.12E+06	0.9571
3	56	32	2.01	0.4	0.814	1.47E+05	2.73E+06	0.0536
9	154	80	1.92	0.47	0.82	1.76E+05	3.01E+06	0.0584
5	91	70	1.92	0.49	0.82	1.12E+05	2.03E+06	0.0549
21	28	16	1.74	0.58	0.832	2.05E+06	2.73E+06	0.75

254	1414	712	1.89	0.49	0.822	5.57E+05	3.10E+06	0.1796
Pooled Ratio			0.1796 ±		0.0145			
Mean Ratio			0.1714 ±		0.0668			
Pooled Age			42.41 ±		3.43 1 S.E.			
Mean Crystal Age			40.48 ±		15.79 1 S.E.			
Binomial Age			42.53 +		5.95 "+95%"			
			-		5.55 "-95%"			
Central Age			29.43 ±		10.27			
Age Dispersion			150.21 %					
Chi-squared			441.94 with		19 degrees of freedom			
P (Chi-Sq)			<0.01 %					
MSWD			27.66					

New Sample Number	SAZ50
Original Sample Number	IVC05
Position (#)	12
Area of Graticule Square	6.40E-07
No. of Crystals	15
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.39E+06 1.5
N d	4432

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
3	27	100	1.89	0.72	0.822	4.69E+04	4.22E+05	0.1111
21	47	28	2.16	0.62	0.804	1.17E+06	2.62E+06	0.4468
2	33	60	1.87	0.42	0.823	5.21E+04	8.59E+05	0.0606
1	3	36	1.89	0.52	0.822	4.34E+04	1.30E+05	0.3333
1	51	60	1.71	0.44	0.833	2.60E+04	1.33E+06	0.0196
21	37	40	2.05	0.62	0.812	8.20E+05	1.45E+06	0.5676
1	9	21	1.92	0.73	0.82	7.44E+04	6.70E+05	0.1111
6	150	60	2.11	0.63	0.808	1.56E+05	3.91E+06	0.04
7	30	70	2.13	0.55	0.806	1.56E+05	6.70E+05	0.2333
6	224	80	2.16	0.52	0.804	1.17E+05	4.38E+06	0.0268

6	74	45	2.09	0.51	0.809	2.08E+05	2.57E+06	0.0811
3	226	50	2.2	0.7	0.801	9.38E+04	7.06E+06	0.0133
3	21	60	1.95	0.51	0.818	7.81E+04	5.47E+05	0.1429
9	18	20	1.83	0.48	0.826	7.03E+05	1.41E+06	0.5
1	20	32	1.97	0.78	0.817	4.88E+04	9.77E+05	0.05

91	970	762	2	0.58	0.815	1.87E+05	1.99E+06	0.0938
Pooled Ratio		0.0938 ±			0.0111			
Mean Ratio		0.1825 ±			0.0487			
Pooled Age		23.87 ±			2.81 1 S.E.			
Mean Crystal Age		46.35 ±			12.41 1 S.E.			
Binomial Age		24.05 +			5.55 "+95%"			
		-			5.01 "-95%"			
Central Age		37.93 ±			10.83			
Age Dispersion		97.39 %						
Chi-squared		161.849 with			14 degrees of freedom			
P (Chi-Sq)		0 %						
MSWD		60.44						

New Sample Number

SAZ40

Original Sample Number

MDY01

Position (#)

13

Area of Graticule Square

6.40E-07

No. of Crystals

13

Zeta Factor ± Error

368.1 14.9

Rho

1.38E+06

20	801	450	2.6	0.83	0.769	6.94E+04	2.78E+06	0.025
Pooled Ratio		0.025 ±		0.0058				
Mean Ratio		0.0192 ±		0.0042				
Pooled Age		6.32 ±		1.46 1 S.E.				
Mean Crystal Age		4.85 ±		1.07 1 S.E.				
Binomial Age		6.53 +		3.29 "+95%"				
		-		2.69 "-95%"				
Central Age		6.32 ±		1.46				
Age Dispersion		0 %						
Chi-squared		4.171 with		12 degrees of freedom				
P (Chi-Sq)		98.02 %						
MSWD		0.23						

New Sample Number
SAZ06

Original Sample Number	SAZ06
Position (#)	16
Area of Graticule Square	6.40E-07
No. of Crystals	20
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.27E+06 19947
N d	4073

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
24	24	70	1.86	0.5	0.824	5.36E+05	5.36E+05	1
12	13	24	1.89	0.34	0.822	7.81E+05	8.46E+05	0.9231
7	148	64	1.62	0.51	0.839	1.71E+05	3.61E+06	0.0473
39	55	50	1.77	0.39	0.83	1.22E+06	1.72E+06	0.7091
31	49	30	1.55	0.42	0.843	1.62E+06	2.55E+06	0.6327
24	34	56	1.79	0.5	0.828	6.70E+05	9.49E+05	0.7059
9	230	100	1.84	0.35	0.825	1.41E+05	3.59E+06	0.0391
29	32	28	2.45	0.55	0.783	1.62E+06	1.79E+06	0.9063
15	19	50	1.92	0.47	0.82	4.69E+05	5.94E+05	0.7895
32	42	80	1.92	0.49	0.82	6.25E+05	8.20E+05	0.7619
4	36	70	1.74	0.68	0.832	8.93E+04	8.04E+05	0.1111
35	31	40	2.97	0.84	0.738	1.37E+06	1.21E+06	1.129
66	48	30	3.01	0.81	0.734	3.44E+06	2.50E+06	1.375
71	56	28	2.62	0.46	0.769	3.96E+06	3.13E+06	1.2679
4	94	100	1.88	0.55	0.823	6.25E+04	1.47E+06	0.0426
71	68	32	1.86	0.77	0.824	3.47E+06	3.32E+06	1.0441
32	45	48	2.12	0.77	0.807	1.04E+06	1.47E+06	0.7111
90	85	32	2.28	0.63	0.796	4.40E+06	4.15E+06	1.0588
28	24	20	2.56	0.82	0.774	2.19E+06	1.88E+06	1.1667
3	84	60	1.82	0.59	0.827	7.81E+04	2.19E+06	0.0357

626	1217	1012	2.07	0.57	0.808	9.67E+05	1.88E+06	0.5144
Pooled Ratio		0.5144 ±		0.0337				
Mean Ratio		0.7228 ±		0.0987				
Pooled Age		119.4 ±		7.83 1 S.E.				
Mean Crystal Age		167.17 ±		23.07 1 S.E.				
Binomial Age		119.56 +		11.91 "+95%"				
		-		11.21 "-95%"				
Central Age		136.68 ±		26.29				
Age Dispersion		80.62 %						
Chi-squared		384.368 with		19 degrees of freedom				
P (Chi-Sq)		<0.01 %						
MSWD		313.91						

New Sample Number	SAZ15
Original Sample Number	SAZ15
Position (#)	17
Area of Graticule Square	6.40E-07
No. of Crystals	11
Zeta Factor ± Error	368.1 14.9
Rho d (% Relative Error)	1.26E+06 19837
N d	4028

N s	N i	N g	Dpar	Dper	Rmr0	ρ s	ρ i	ρ s / ρ i
2		30	20	2.02	0.48	0.814	1.56E+05	2.34E+06
5		118	35	1.82	0.42	0.827	2.23E+05	5.27E+06
1		21	25	2.09	0.57	0.809	6.25E+04	1.31E+06
1		42	25	2.24	0.54	0.798	6.25E+04	2.63E+06
2		24	30	1.84	0.45	0.825	1.04E+05	1.25E+06
16		39	15	1.49	0.39	0.846	1.67E+06	4.06E+06
2		42	21	1.83	0.56	0.826	1.49E+05	3.13E+06
4		19	15	1.86	0.54	0.824	4.17E+05	1.98E+06
4		54	36	2	0.47	0.815	1.74E+05	2.34E+06
5		73	49	1.9	0.53	0.821	1.59E+05	2.33E+06
9		98	30	2.01	0.38	0.814	4.69E+05	5.10E+06

51	560	301	1.92	0.48	0.82	2.65E+05	2.91E+06	0.0911
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Pooled Ratio	0.0911 ±	0.0139
Mean Ratio	0.1061 ±	0.0338

Pooled Age	21.07 ±	3.21 1 S.E.
Mean Crystal Age	24.53 ±	7.83 1 S.E.

Binomial Age	21.36 +	6.72 "+95%"
	-	5.85 "-95%"
Central Age	22.33 ±	6.43
Age Dispersion	79.01 %	
Chi-squared	40.369 with	10 degrees of freedom
P (Chi-Sq)	<0.01 %	
MSWD	3.65	

Zircon Data

New Sample Number	ECO61	
Old Sample Number	RA14-61	
Position (#)	3	
Area of Graticule Square	6.40E-07	
No. of Crystals	20	
Zeta Factor ± Error	116.8	1.5
Rho d (% Relative Error)	4.44E+05	1.88
N d	2844	

N s	N i	N g	ρ s	ρ i	ρ s / ρ i	U ppm	Age (Ma)	Age error
137	31	12	1.78E+07	4.04E+06	4.4194	448.7	113.69	22.76
198	39	12	2.58E+07	5.08E+06	5.0769	564.5	130.43	23.04
134	17	12	1.75E+07	2.21E+06	7.8824	246.1	201.39	52.05
118	21	8	2.31E+07	4.10E+06	5.619	455.9	144.21	34.31
168	30	8	3.28E+07	5.86E+06	5.6	651.3	143.72	28.67
137	21	14	1.53E+07	2.34E+06	6.5238	260.5	167.13	39.35
232	39	18	2.01E+07	3.39E+06	5.9487	376.3	152.57	26.63
232	33	12	3.02E+07	4.30E+06	7.0303	477.6	179.92	33.72
135	35	12	1.76E+07	4.56E+06	3.8571	506.6	99.33	18.98
263	44	30	1.37E+07	2.29E+06	5.9773	254.7	153.29	25.21
226	38	18	1.96E+07	3.30E+06	5.9474	366.7	152.53	26.97
227	44	18	1.97E+07	3.82E+06	5.1591	424.6	132.52	22.04
297	48	12	3.87E+07	6.25E+06	6.1875	694.8	158.62	24.94
184	24	12	2.40E+07	3.13E+06	7.6667	347.4	195.96	42.76
93	26	9	1.62E+07	4.51E+06	3.5769	501.8	92.17	20.55
107	20	8	2.09E+07	3.91E+06	5.35	434.2	137.37	33.61
185	33	12	2.41E+07	4.30E+06	5.6061	477.6	143.88	27.38
111	23	12	1.45E+07	3.00E+06	4.8261	332.9	124.05	28.56
91	18	9	1.58E+07	3.13E+06	5.0556	347.4	129.89	33.64
242	30	20	1.89E+07	2.34E+06	8.0667	260.5	206.03	40.15

3517	614	268	2.05E+07	3.58E+06	5.728	397.9	146.97	7.24

Pooled Ratio	5.728 ±	0.2823
Mean Ratio	5.7688 ±	0.2742
Pooled Age	146.97 ±	7.24 1 S.E.
Mean Crystal Age	148.01 ±	7.11 1 S.E.
Binomial Age	147.08 + -	13.14 "+95%" 12.09 "-95%"
Central Age	146.92 ±	7.28
Age Dispersion	2.17 %	
Chi-squared	20.948 with	19 degrees of freedom
P (Chi-Sq)	33.97 %	
MSWD	1.1	

New Sample Number	ECO93
Old Sample Number	RA14-93
Position (#)	4
Area of Graticule Square	6.40E-07
No. of Crystals	20
Zeta Factor ± Error	116.8 1.5
Rho d (% Relative Error)	4.42E+05 1.88
N d	2830

N s	N i	N g	ρ s	ρ i	ρ s / ρ i	U ppm	Age (Ma)	Age error
126	23	12	1.64E+07	3.00E+06	5.4783	334.5	139.97	31.9
115	20	8	2.25E+07	3.91E+06	5.75	436.3	146.84	35.73
87	14	15	9.06E+06	1.46E+06	6.2143	162.9	158.55	45.8
163	30	15	1.70E+07	3.13E+06	5.4333	349	138.84	27.76
176	28	10	2.75E+07	4.38E+06	6.2857	488.6	160.35	32.83
120	19	18	1.04E+07	1.65E+06	6.3158	184.2	161.11	39.95
95	20	10	1.48E+07	3.13E+06	4.75	349	121.54	30.03
149	34	18	1.29E+07	2.95E+06	4.3824	329.6	112.22	21.48
189	27	14	2.11E+07	3.01E+06	7	336.6	178.32	36.91
117	19	8	2.29E+07	3.71E+06	6.1579	414.5	157.13	39.03
154	24	12	2.01E+07	3.13E+06	6.4167	349	163.65	36.11
103	24	12	1.34E+07	3.13E+06	4.2917	349	109.91	25.04
249	44	30	1.30E+07	2.29E+06	5.6591	256	144.54	23.87
158	31	16	1.54E+07	3.03E+06	5.0968	338.1	130.33	25.77
142	30	16	1.39E+07	2.93E+06	4.7333	327.2	121.12	24.49
144	26	12	1.88E+07	3.39E+06	5.5385	378.1	141.5	30.32
138	30	20	1.08E+07	2.34E+06	4.6	261.8	117.74	23.87
135	32	30	7.03E+06	1.67E+06	4.2188	186.1	108.06	21.39
197	36	15	2.05E+07	3.75E+06	5.4722	418.8	139.82	25.54
139	30	12	1.81E+07	3.91E+06	4.6333	436.3	118.58	24.02

2896	541	303	1.49E+07	2.79E+06	5.353	311.6	136.81	7.12

Pooled Ratio	5.353 ±	0.2788
Mean Ratio	5.4214 ±	0.1815
Pooled Age	136.81 ±	7.12 1 S.E.
Mean Crystal Age	138.54 ±	4.69 1 S.E.
Binomial Age	136.92 + -	13.16 "+95%" 12.04 "-95%"
Central Age	136.81 ±	7.12
Age Dispersion	<0.01 %	
Chi-squared	9.615 with	19 degrees of freedom
P (Chi-Sq)	96.18 %	
MSWD	0.51	

U ppm	Age (Ma)	Age error
22.9	18.77	11.25
22.1	19.47	10.12
23.8	27.17	11.71
19.1	30.01	15.89
14.3	22.52	13.58
20.3	21.19	9.89
31.6	13.66	7.03
23.8	27.17	16.52
20.4	17.24	8.93

21.9	20.88	3.73

22.9	18.77	11.25
22.1	19.47	10.12
23.8	27.17	11.71
19.1	30.01	15.89
14.3	22.52	13.58
20.3	21.19	9.89
31.6	13.66	7.03
23.8	27.17	16.52
20.4	17.24	8.93

21.9	20.88	3.73
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U ppm	Age (Ma)	Age error
20.6	26.12	19.45
106.1	19.62	3.88
49	19.77	6.9
30.4	8.87	9.04
77.2	16.74	7.1
78.1	11.04	5.66
42.6	16.84	8.73
53.5	10.35	3.55
31.2	13.8	7.11
22.6	19.1	11.47
15	19.1	19.84
65.9	22.86	9.08
25.8	16.71	6.57
19.1	22.57	11.82
34.7	19.51	6.17
12.4	24.82	11.69
36.7	26.83	10.05
85.4	19.7	4.18
21.7	16.56	12.11
47.7	15.05	6.36
50.3	15.7	4.93
107	20.13	5.01
51.5	19.53	7.71
98.9	19.17	4.32
44.6	22.98	7.66
32	15.4	5.65
39.6	20.4	8.71

49.2	18.24	1.48

U ppm	Age (Ma)	Age error
79.1	19.95	6.3
28.7	11.27	6.66
27.4	17.49	9.06
17.1	15.1	8.98
74.7	17.3	5.21
18.7	0	0
30.3	14.23	7.33
54.9	15.69	16.16
52.5	20.51	6.79
24.8	5.8	5.87
66.5	18.12	5.07
74.9	19.16	5.79
35.6	19.75	7.29
22.3	23.18	9.92
13.8	13.34	7.91
16.2	15.24	11.1
12.9	16.67	9.95
12.9	16.67	9.95
12.9	16.67	9.95
25.8	16.67	9.95
26.1	21.99	8.14
12.7	17.02	10.16
20.8	25.38	10.9
40.7	21.16	7.01
6.9	15.69	16.16
94.9	18.91	6.24
15.6	9.2	9.37
43.1	16.67	7.72
16.5	26.13	12.3
59.8	16.82	6.59
15.1	19.05	9.89
6.5	26.65	14.02
31.3	16.5	6.98
50.6	17.02	5.12

31.5	23.92	9.49
21.4	20.12	10.47
17.8	24.68	11.59
16.6	26	13.67
26.2	23.04	9.13
10.9	19.75	14.5

28.2	18.45	1.52
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U ppm	Age (Ma)	Age error
8.2	34.87	37.31
20.6	34.87	26.41
39.6	9.06	9.23
66.1	24.43	14.83
43.5	19.82	11.93
85.9	18.8	11.29
25	14.38	14.81
17.6	20.37	21.22
7.3	0	0
24.2	44.35	34.15
44.1	0	0
7.3	0	0
21	19.55	14.39

42.6	16.86	12.35
198.2	18.11	5.99
10.3	0	0
116	21.65	8.59
64.6	22.21	13.43
22	0	0
13.2	0	0

41.5	18.52	3.11

U ppm	Age (Ma)	Age error
15.4	13.37	13.74
201.3	13.25	3.82
26.3	21.86	16.17
80.6	17.81	13.08
95.2	19.8	7.83
59.7	12.03	8.73
129	20.04	7.01
72.8	11.83	7.02
26.9	20.04	20.87
174.6	16.96	5.34
11.9	0	0
9	30.03	31.88

17.9	8.6	8.76
10	0	0
24.2	8.91	9.09
95.5	18.04	7.67
18.7	19.24	14.16
50.7	14.15	7.31
7	0	0
25.1	25.75	15.68
12.8	0	0
15.7	22.9	16.97
69.1	14.26	5.22
31.3	20.61	12.43
86.7	13.92	5.44
32.2	6.69	4.8
139.7	16.04	4.65

54.7	15.11	1.66

U ppm	Age (Ma)	Age error	50% Age	"+95%"	"-95%"
101.7	16.94	6.23	18.41	16.01	11.25
60.2	14.9	6.88	16.96	19.12	12.24
18.2	18.98	9.87	22.29	29.04	17.3
64.9	18.98	7	20.62	18.06	12.63

55.5	23.28	9.98	26.01	27.3	17.75
39.2	18.3	10.96	22.57	34.52	18.94
9.6	21.35	22.24	36.81	106.1	36.31
35.7	22.6	13.65	27.92	43.66	23.48
68.1	24.1	8.97	26.22	23.37	16.13
42.9	15.07	8.98	18.57	27.93	15.56
24	17.08	12.5	23.09	43.97	21.11
49.6	17.37	6.39	18.87	16.44	11.54
5.6	25.61	26.88	44.4	133.47	43.81
27.7	15.53	11.33	20.97	39.54	19.16
125.5	16.02	6.28	17.6	16.46	11.3
75.3	16.36	6.92	18.24	18.65	12.38
36.1	17.88	10.7	22.04	33.64	18.49
48	22.41	8.89	24.65	23.59	15.91
84.9	19.33	7.14	21.01	18.43	12.87
40.8	20.09	10.47	23.61	30.91	18.33

47.3	18.6	2.11	18.73	4.13	3.75
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U ppm	Age (Ma)	Age error	50% Age	"+95%"	"-95%"
59.7	16.21	5.09	17.23	12.47	9.28
21.2	21.78	9.31	24.33	25.37	16.58
66.8	17.1	4.95	18.01	11.9	9.06

31	22.31	7.81	24.04	19.89	14.11
31	19.83	11.91	24.48	37.71	20.55
83.9	17.47	4.44	18.17	10.33	8.15
148.5	19.34	5.85	20.46	14.23	10.66
40.6	17.66	8.2	20.12	22.93	14.54
36.2	23.79	7.25	25.18	17.75	13.18
37.1	22.55	8.94	24.81	23.74	16.02
58.5	19.64	7.25	21.35	18.73	13.08
52.5	19.53	9.1	22.26	25.56	16.11
89.9	19.16	4.14	19.71	9.29	7.61
44.3	19.46	7.18	21.15	18.54	12.95
36.4	12.69	7.52	15.61	23.18	13.06
26.1	13.23	6.81	15.51	19.68	11.99
32.5	14.74	7.6	17.29	22.08	13.38
35.5	21.23	8.4	23.35	22.24	15.05
28.6	21.48	11.22	25.25	33.25	19.62
66.8	19.34	8.23	21.58	22.3	14.68

49.4	18.83	1.71	18.9	3.12	2.9

U ppm	Age (Ma)	Age error	50% Age	"+95%"	"-95%"
81.8	14.04	5.13	15.25	13.12	9.29
31.8	16.23	6.87	18.11	18.48	12.29

34.6	20.77	6.88	22.22	17.21	12.49
8.3	10.39	10.61	17.67	45.56	17.42
30.5	14.43	6.66	16.42	18.46	11.85
67.1	15.28	7.06	17.39	19.62	12.55
122.7	14.92	3.78	15.52	8.76	6.94
63	17.77	5.15	18.71	12.38	9.42
46.1	11.22	4.7	12.5	12.51	8.45
18.6	18.89	9.81	22.18	28.85	17.21
69	23.71	5.77	24.58	13.35	10.58
75.6	12.67	6.51	14.86	18.79	11.48
36.8	18.72	6.9	20.34	17.78	12.45
6.2	19.97	20.75	34.37	97.46	33.9

45.8	16.71	1.82	16.82	3.5	3.2

U ppm	Age (Ma)	Age error
24.9	0	0
20.4	5.29	5.35
31.1	13.84	8.23
32.3	6.35	6.43
17	0	0
14.2	16.91	17.48
29.7	10.36	7.49

17	13.77	5.38
17	8.67	3.35
17	10.15	7.33
28.8	8.32	5.99
19.4	13.35	7.93
83.5	9.46	2.93
64.8	13.3	3.69
60.7	10.65	4.46
135.9	8.72	2.7
21.8	18.79	13.79
19.8	9.06	9.23
30	9.58	4.9
54.3	13.59	5.73
51.4	9.31	4.76
25.1	8.19	5.89
104.7	12.34	4.25
17	12.69	9.21
61.8	13.94	4.57
21.2	8.46	8.61
71.8	16.51	5.19
64.7	11.1	4.31
16.4	9.4	9.58
73.9	14.58	4.78

39.2	11.08	1.07
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U ppm	Age (Ma)	Age error	50% Age	"+95%"	"-95%"
38.9	16.63	9.94	20.5	31.16	17.19
14.5	17.82	10.67	21.97	33.61	18.44
6.6	26.24	19.54	35.68	72.38	32.71
14	22	13.28	27.19	42.51	22.86
9.6	12.48	12.8	21.28	56.32	20.98
24.3	22.16	11.6	26.07	34.54	20.27
58.3	18.47	7.86	20.62	21.29	14.03
11.7	0	0	5.14	17.82	5.14
6.9	0	0	17.9	68.75	17.9
8.9	13.86	14.25	23.69	63.6	23.36
3.1	27.69	29.21	48.2	149.02	47.56
20	12.91	7.66	15.88	23.67	13.3
50.8	14.53	6.14	16.2	16.47	10.99
19.4	13.86	14.25	23.69	63.6	23.36

18	15.82	2.88	16.14	6.23	5.3

U ppm Age (Ma) Age error
 24.3 4.44 4.49

27.7	8.89	6.4
12.1	0	0
20.6	0	0
2	0	0
13.4	0	0
69	8.93	3.45
19	15.15	7.82
5.7	10.73	10.97
74.2	5.81	2.41
31.3	8.27	3.45
14.7	5.99	6.07
76.5	8.05	4.1
26.8	9.2	4.7
31.1	9.91	7.15
15.5	6.97	7.07
49.5	9.96	3.61
33.5	14.31	10.41
19.7	0	0
27.8	12.41	6.38

29.5	8.04	1.17
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17.9	19.26	14.14
171.2	8.4	3.5
34.8	12.39	8.98
30.4	11.83	8.57
8.8	16.26	11.87
22.5	7.66	7.77
24.8	17.34	10.37
18.2	7.89	8.01
24.8	9.64	9.82
4.1	25.99	27.28
34	9.52	5.61
62.1	13.01	5.47
36.9	12.16	5.59
30.9	9.29	6.7
16.6	8.68	6.25
16.6	0	0
11	0	0
28.5	6.05	6.13
20.7	0	0
34.8	9.29	5.48

28.4	10.08	1.63

U ppm	Age (Ma)	Age error	50% Age	"+95%"	"-95%"
2.8	302.9	203.61	372.11	1027.29	305.7
12.2	35.35	26.76	48.37	104.13	44.46
4.2	41.22	44.56	73.06	259.06	72.16
2.9	283.14	158	327.12	639.22	244.36
32.6	16.52	9.88	20.36	30.95	17.08
8.3	37.11	23.03	46.16	78.12	39.08

9.6	54.61	13.38	56.54	31.54	24.16

U ppm	Age (Ma)	Age error	50% Age	"+95%"	"-95%"
10.6	0	0	13.75	51.07	13.75
3.4	165.47	151.22	246.63	1071.98	232.65
17.7	16.2	11.84	21.89	41.54	20.01
6.9	83.26	48.21	99.87	170.87	80.2
3.2	41.77	45.15	74.03	262.41	73.12
3.4	41.77	45.15	74.03	262.41	73.12
12.9	165.47	67.93	180.32	206.65	113.33
4.1	0	0	37.28	165.79	37.28
19.7	21.82	16.12	29.59	58.28	27.1
33.4	7.18	5.16	9.64	17.24	8.79
2.1	0	0	47.39	226.94	47.39
2.3	62.55	69.98	113.96	491.81	112.69

14.2	145.72	44.95	153.11	118.42	77.58
6	0	0	26.12	106.79	26.12
47.5	12.1	6.22	14.19	17.94	10.97
1.1	246.63	246.86	388.43	2386.84	370.24
5.7	0	0	18.02	69.2	18.02
4.1	0	0	30.72	130.06	30.72
3.2	0	0	30.72	130.06	30.72
6	0	0	26.12	106.79	26.12

10.9	35.19	5.63	35.71	11.95	10.24

U ppm	Age (Ma)	Age error
42.7	8.66	5.1
19.4	0	0
6.9	14.79	15.26
57.4	7.52	3.83
13.7	13.15	13.52
29.6	15.17	7.03
76.7	6.02	3.53
38.2	16.9	5.88
47.8	5.64	5.71
23.9	20.56	10.76
51.2	5.26	5.32

53.1	16.9	7.86
37.9	28.36	12.32
25	201.39	45.45
26.3	4.55	4.6
106.2	222.82	28.61
31.9	12.68	7.53
35.1	13.83	4.78
23.7	13	6
31.9	175.25	51.16

36.2	42.41	3.43
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U ppm	Age (Ma)	Age error	50% Age	"+95%"	"-95%"
4.6	28.26	17.24	35.01	56.38	29.51
28.4	112.9	30.03	117.28	74.17	52.93
9.3	15.43	11.26	20.83	39.29	19.04
1.4	84.41	97.54	158.11	821.74	156.49
14.4	5	5.05	8.44	20.62	8.32
15.7	143.08	39.58	148.9	99.94	68.94
7.3	28.26	29.81	49.19	152.04	48.54
42.3	10.19	4.26	11.35	11.33	7.67
7.3	59.21	24.98	65.56	71.17	43.55
47.4	6.82	2.84	7.6	7.48	5.12

27.8	20.64	8.8	23.04	23.95	15.69
76.5	3.38	1.97	4.15	5.86	3.45
5.9	36.31	22.47	45.14	75.68	38.18
15.2	126.21	51.81	138.01	154.04	87.77
10.6	12.73	13.06	21.72	57.48	21.41

21.5	23.87	2.81	24.05	5.55	5.01

U ppm	Age (Ma)	Age error	50% Age	"+95%"	"-95%"
16.7	0	0	3.76	12.88	3.76
45.7	8.08	4.75	9.92	14.39	8.28
54.8	6.29	3.19	7.36	9.05	5.66
56.8	4.22	4.26	7.12	17.27	7.02
6.2	0	0	13.85	51.45	13.85
36.8	7.03	4.13	8.63	12.45	7.2
17.9	0	0	8.49	30.22	8.49
4.3	0	0	30.94	131	30.94
21.6	6.66	6.75	11.28	28.05	11.11
39.5	3.9	3.93	6.57	15.88	6.47
19.5	6.33	6.41	10.71	26.54	10.55
34.1	10.54	6.23	12.96	19.05	10.84
32.4	9.99	5.9	12.28	17.99	10.26

30.3 6.32 1.46 6.53 3.29 2.69

U ppm	Age (Ma)	Age error
6.3	230.14	67.18
10	212.72	85.66
42.6	11.07	4.31
20.3	164.03	35.07
30.1	146.55	34.23
11.2	163.3	44.11
42.3	9.16	3.14
21	208.91	54.32
7	182.37	63.48
9.7	176.08	42.02
9.5	25.98	13.74
14.3	259.24	64.92
29.5	314.37	61.18
36.8	290.41	53.41
17.3	9.96	5.1
39.1	240.1	42.05
17.3	164.49	38.7
48.9	243.42	38.3
22.1	267.71	75.37
25.8	8.36	4.93

22.1 119.4 7.83

U ppm	Age (Ma)	Age error
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27.9	15.43	11.29
62.8	9.81	4.5
15.6	11.02	11.29
31.3	5.51	5.59
14.9	19.28	14.22
48.4	94.37	28.32
37.2	11.02	7.99
23.6	48.6	26.82
27.9	17.14	8.91
27.7	15.85	7.36
60.8	21.25	7.46

34.6 21.07 3.21
