

Supporting Information

S1. Cenozoic Lithostratigraphy of Jianchuan Basin

The Jianchuan basin is one of several in the SE flank of the Tibetan Plateau, whose origin is tied to the Cenozoic strike-slip faulting associated with the process of “extrusion” of rigid tectonic blocks away from the India-Eurasia collision zone (Morley, 2002; Tapponnier et al., 2001). Earlier mapping had suggested that this was a long-lived basin spanning Paleocene to Pliocene (Yunnan Bureau of Geology and Mineral Resources, 1990), but with disputed chronostratigraphy owing to the lack of absolute age anchors. Recent radiometric dating of volcanic rocks, tuff and volcano-sedimentary rocks interbedded in the sequences have enabled the reconstruction of a stratigraphy with much higher age precision (Gourbet et al., 2017; Yang et al., 2014), which is now further refined by new ages provided in this study. The following describes the lithologic formations of Cenozoic rocks from Jianchuan Basin, in the context of new chronology.

Yunlong Formation: Yunlong Formation is composed of dark red, mudstone and siltstone with minor sandstone (Fig. S1-A). Previous geological mapping suggests that the Yunlong Formation (termed Mengyanjing Formation by Gourbet et al. (2017)), although sparsely exposed in Jianchuan Basin, is widespread across the SE margin of Tibetan Plateau, and is of Paleocene age, as constrained by the presence of Paleocene to early Eocene ostracods (BGMRYP, 1996). Facies analysis indicates that the Yunlong Formation was deposited in a fluvial-lacustrine setting under a relatively arid regime, although one still requiring some precipitation. High contents of hematite and high degrees of redness of the sediments indicates strong oxidation.

Baoxiangsi Formation: The Baoxiangsi Formation makes up the largest single part of the basin fill, with a thickness up to ~600 m.

The lower part of Baoxiangsi Formation is composed predominantly of conglomerate and coarse sandstone (Figs. S1-B, C and D). Bedding is often thick (>1 m), and erosive contacts place poorly sorted, matrix-supported conglomerate over coarse to medium grained sandstones, which

are often massive in character, but locally show trough cross-bedding testifying to high energy current-driven sedimentation. The provenance of the conglomerates is spatially heterogeneous across the basin, suggestive of quite localized sources and short transport distances that preclude large-scale mixing. Facies analysis indicates that much of the lower Baoxiangsi Formation was deposited in a proximal alluvial fan and/or associated braided river systems.

The upper part of Baoxiangsi Formation, with an average thickness of ~200 m, consists mainly of red, thick-bedded, medium grain-size, sandstone with minor mudstone. Cross-bedding is present in places (Fig. S1-E). Facies analysis indicates that this unit was deposited in a fluvial system, mostly associated with braided rivers. This transition from alluvial fans to braided rivers reflects the progressive opening of the basin in which proximal alluvial fans constructed against extensional fault scarps were succeeded by fluvial sediments delivered by the through-going river that became located into the basin, as it opened sufficiently to allow connection to the regional drainage. Local rivers associated with the initial transtensional phase would be expected to expand from the basin and could capture a major stream flowing nearby into the basin center.

Jinsichang Formation: This formation consists of horizontally bedded, yellowish-whitish medium sandstone sets, with various bed thicknesses up to 2 m (Fig. S1-F). The Jinsichang Formation is about 300 m thick, slightly more than the 200 m estimated for these sandstone units by Gourbet et al. (2017), and is mostly exposed on the top of the regional topography, which is the surface of the so-called Yunnan Plateau. The Jinsichang Formation was mostly deposited in a fluvial system, largely of braided rivers. The light color differs remarkably to the redder color of the Baoxiangsi and Yunlong Formations.

Jiuziyan Formation: The Jiuziyan Formation consists of a multi-storey carbonate succession interbedded with massive, matrix-supported conglomerates and argillaceous calcisiltites (Fig. S1-G). The Jiuziyan Formation is restricted to a limited area in the central part of Jianchuan Basin, with a thickness of up to several tens of meters (Fig. S1-G). The Jiuziyan Formation has previously been interpreted as being a marine deposit (Li et al., 1987). However, recent studies suggested that it was deposited in a palustrine-lacustrine environment

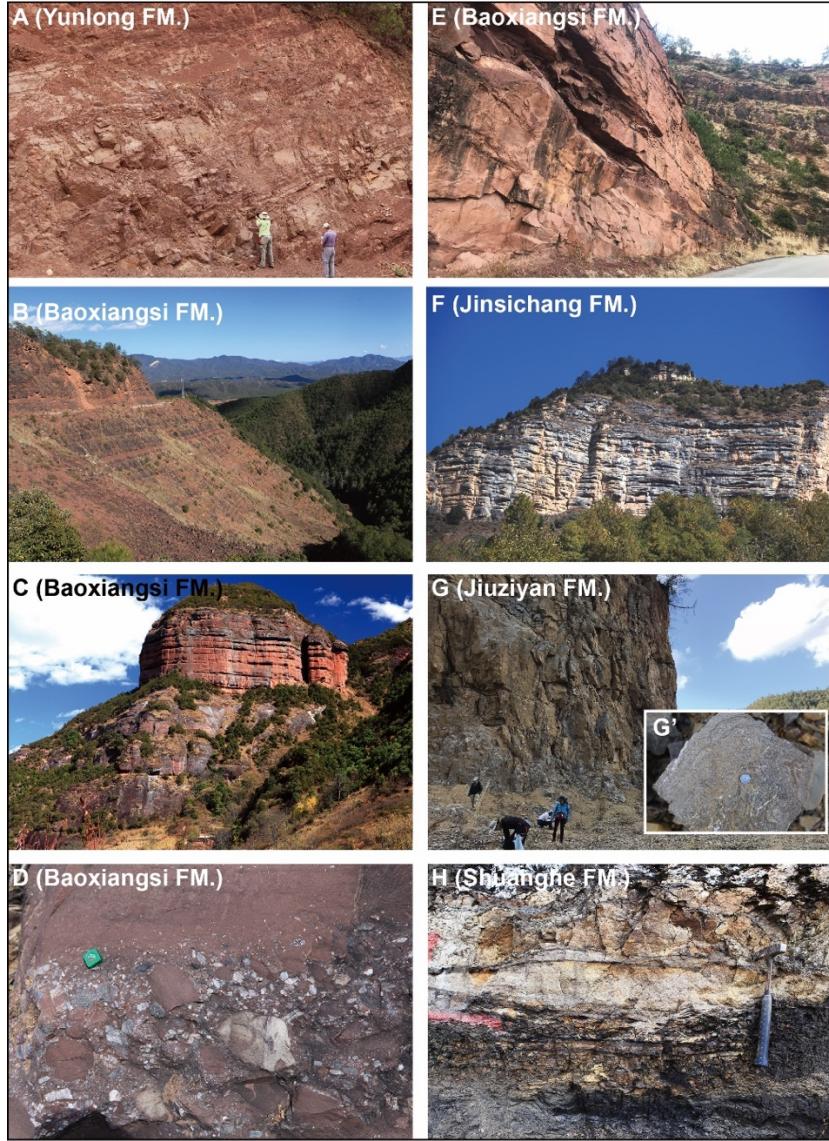


Fig. S1 Photos of representative Cenozoic lithology of Jianchuan Basin. A, Yunlong Formation showing red weathered siltstones interbedded with minor sandstones and conglomerates; B, Red, thin to medium bedded sandstones interbedded with conglomerates of the Baoxiangsi Formation; C, Massive think-bedded conglomerates of Baoxiangsi Formation; D, Poorly sorted fanglomerate and sandstones of the Baoxiangsi Formation; E, Upper Baoxiangsi Formation, showing red, thick-bedded sandstones with minor mudstone; F, Stacked, thick-bedded typical pale colored sandstones of the Jinsichang Formation; G, Massive thick-bedded limestone of the Jiuziyan Formation, and stromatolites within the limestone; H, Shuanghe Formation, showing coals with interbedded fine sandstones, siltstones, shales, and volcano-sedimentary rocks.

(Sorrel et al., 2017). The Jiuziyan Formation is characterized by micritic and microspar to sparry limestones, with interbedded marls and conglomerates. Fossil reeds, oncolite and stromatolites are locally abundant (Fig. S1-G). The Jiuziyan Formation was assigned a Paleocene to Middle Eocene age by Li et al. (1987), based on the fossil assemblages. Our new stratigraphic investigation indicates that it is Late Eocene in age.

Shuanghe Formation: The Shuanghe Formation is about 200 m thick, consisting of poorly consolidated sandstones and marlstones regularly interbedded with coal deposits (that thicken upwards) and occasional lava flows, tuffs and volcano-sedimentary levels (Fig. S1-H). The distribution of the Shuanghe Formation is restricted to the central part of Jianchuan Basin, where the Jinsichang Formation is absent. The Shuanghe Formation is observed to overlie the Baoxiangsi Formation conformably in some places. But in many cases the contact of Shuanghe Formation with the underlying unit is hard to observe due to poor exposure.

Jianchuan Formation: Jianchuan Formation overlies unconformably on Shuanghe Formation. It has previously been assigned a Pliocene age (Yunnan Bureau of Geology and Mineral Resources, 1990). Recent radiometric dating indicated that it is of late Eocene age. Jianchuan Formation consists mainly of pyroclastic rocks, volcanic tuff and volcano-sedimentary rocks.

S2. $^{40}\text{Ar}/^{39}\text{Ar}$ dating

Methodology

We prepared sanidine and/or biotite single-crystal aliquots from a pyroclastic flow (sample #140902-04) from the Shuanghe Formation and a biotite (#141021-01) and muscovite (#140903-05) crystal populations from two lamprophyre intrusions and a sanidine population (#140902-05) from a trachyte intrusions, all of them cross-cutting the Shuanghe Formation. The various were carefully hand-picked under a binocular microscope in order to select the freshest and inclusion-free crystals. The selected crystals were thoroughly rinsed with distilled water in an ultrasonic cleaner. Samples were loaded into large wells of one 1.9 cm diameter and 0.3 cm depth

aluminum discs. These wells were bracketed by small wells that included Fish Canyon sanidine (FCs) used as a neutron fluence monitor for which an age of 28.294 ± 0.036 Ma (1σ) was adopted (Renne et al., 2010). The discs were Cd-shielded (to minimize undesirable nuclear interference reactions) and irradiated during 3h in the USGS TRIGA reactor, in Denver, Colorado (USA) or in the Oregon State University TRIGA reactor, in Corvallis, Oregon (USA). The mean J-values computed from standard grains within the small pits and determined as the average and standard deviation of J-values of the small wells for each irradiation disc are given along with the raw data in Annex 1. Mass discrimination is given in Annex 1 for each sample and was monitored using an automated air pipette and calculated relative to an air ratio of 298.56 ± 0.31 (Lee et al., 2006). Correction factors for interfering isotopes were $(^{39}\text{Ar}/^{37}\text{Ar})\text{Ca} = 6.95 \times 10^{-4}$ ($\pm 1.3\%$), $(^{36}\text{Ar}/^{37}\text{Ar})\text{Ca} = 2.65 \times 10^{-4}$ ($\pm 0.84\%$) and $(^{40}\text{Ar}/^{39}\text{Ar})\text{K} = 7.30 \times 10^{-4}$ ($\pm 12.4\%$) (Renne et al., 2010) for the OSU reactor. The $^{40}\text{Ar}/^{39}\text{Ar}$ analyses were performed at the Western Australian Argon Isotope Facility at Curtin University on two different instruments (either a MAP 215-50 or an ARGUS VI), for which details are provided below. The raw data were processed using the ArArCALC software (Koppers, 2002) and ages were calculated using decay constants recommended by Renne et al. (2010). All parameters and relative abundance values are provided in Table S2 and have been corrected for blank, mass discrimination and radioactive decay.

Our criteria for the determination of plateaus or concordant age populations (for single crystals analyses) are as follows: plateaus must include at least 70% of ^{39}Ar , and be distributed over a minimum of three consecutive steps that agree at 95% confidence levels and indicate a probability of fit (P-value) of at least 0.05. Concordant single-crystal age population need to include three concordant ages and a P-value of at least 0.05. Plateau ages (Table 1 and Fig. 3) are given at the 2σ level and are calculated using the mean of all plateau steps, weighted by the inverse variances of their individual analytical uncertainties. Inverse isochrons include the maximum number of steps with a probability of fit ≥ 0.05 . S-factors showing the spread along the inverse isochron (Jourdan and Renne, 2007) and $^{40}\text{Ar}/^{36}\text{Ar}$ intercept values are provided (Table S2). Uncertainties include analytical and J-value errors; those that incorporate all sources

of uncertainty are indicated by square brackets (e.g. ± 3.0 ka). Finally, all ages calculated in this study are all given at the 2σ level. Ar isotope data corrected for blank, mass discrimination and radioactive decay are given in Annex 1. Individual errors in Table S2 are given at the 1σ level.

MAP 215-50

A biotite population from sample (#141021-01) was step-heated using a 110 W Spectron Laser Systems, with a continuous Nd-YAG (IR; 1064 nm) laser rastered over the sample for one minute to ensure an homogenously distributed temperature. The gas was purified in a stainless steel extraction line using two AP10 and one GP50 SAES getters for three minutes. Ar isotopes were measured in static mode using a MAP 215-50 mass spectrometer (resolution of ~ 400 ; sensitivity of 4×10^{-14} mol/V) with a Balzers SEV 217 electron multiplier using nine to ten cycles of peak-hopping. Data acquisition was performed with the Argus program written by M.O. McWilliams, running under a LabView environment. Blanks were monitored every 3 to 4 steps and typical ^{40}Ar blanks range from 1×10^{-16} to 2×10^{-16} mol.

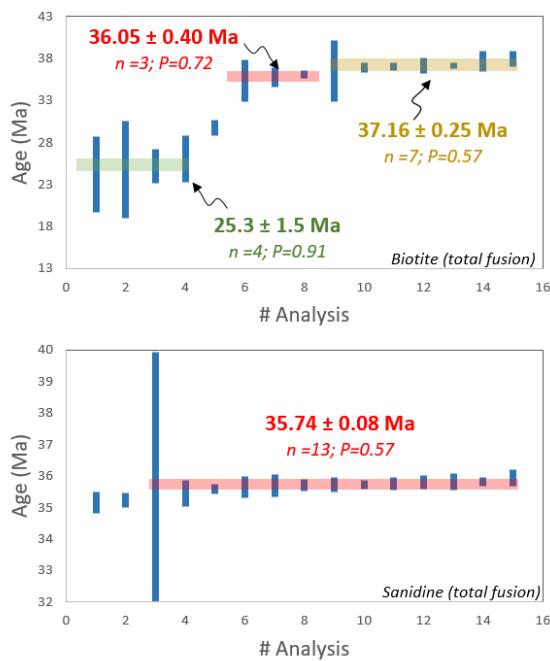


Fig. S4-1: Total fusion analyses for biotite and sanidine crystals from Sample #140902-04.

ARGUS VI

Each of the single crystal were fused in a single step whereas crystal populations were step-heated using a continuous 100 W PhotonMachine© CO₂ (IR, 10.4 μm) laser fired on the crystals for 60 seconds.

The gas was purified in an extra low-volume stainless steel extraction line of 240cc and using one SAES AP10 and one GP50 getter. Ar isotopes were measured in static mode using a low volume (600 cc) ARGUS VI mass spectrometer from Thermofisher© set with a permanent resolution of ~200. Measurements were carried out in multi-collection mode using four faradays to measure mass 40 to 37 and a 0-background compact discrete dynode ion counter to measure mass 36. We measured the relative abundance of each mass simultaneously using ten cycles of peak-hopping and 33 seconds of integration time for each mass. Detectors were calibrated to each other electronically and using Air shot beam signals.

RESULTS

Pyroclastic flow (#140902-04) – this sample yielded a robust age of 35.74 ± 0.08 Ma (n=13/15; P = 0.57) for the sanidine crystals and several age populations of 37.16 ± 0.25 Ma (n=7/15; P = 0.57), 36.05 ± 0.40 Ma (n=3/15; P = 0.72) and 25.3 ± 1.5 Ma (n = 4/15; P = 0.91) for the biotite crystals. We note that the sanidine age is in agreement with the biotite age population that returned an intermediate age, and since sanidine in general less easily affected by alteration and ³⁹Ar recoil loss problems, we therefore believe that sanidine provides the best age estimates (35.74 ± 0.08 Ma) for the eruption of this volcanic tuff.

Trachyte intrusion (140902-5) – the sanidine population from this sample yielded a plateau age of 35.65 ± 0.09 Ma (P = 0.14) and an inverse isochron age of 35.75 ± 0.10 Ma (P=0.73) with a ⁴⁰Ar/³⁶Ar intercept ratio of 290 ± 5 and a spreading factor of 25% anchored on the radiogenic axis (not shown).

Lamprophyre (#140903-5) – The muscovite population from this sample failed to give any plateau age and rather showed a diffusion profile converging toward an age of ~65 Ma.

Lamprophyre (#141021-01) – The biotite population from this sample did not yield any plateau age and showed a wavy spectra with individual step ages mostly distributed between 38 and 35 Ma.

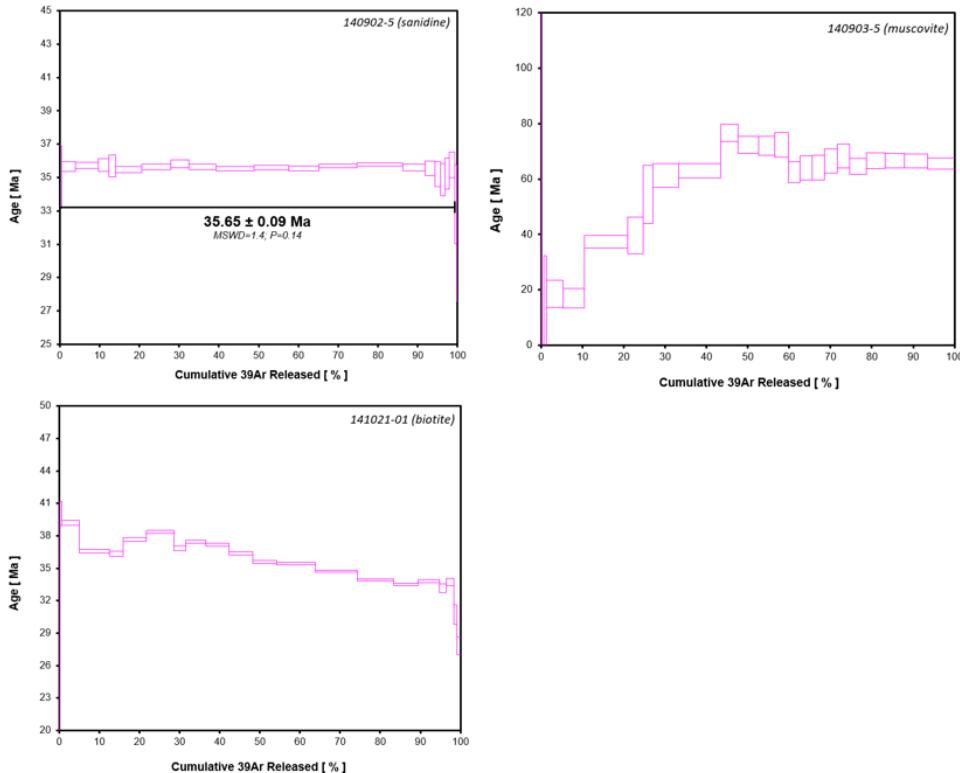


Fig. S4-2: Sanidine, biotite and muscovite step-heating $^{40}\text{Ar}/^{39}\text{Ar}$ age spectra of samples #140902-05, #140903-5 and #141021-01.

S3. Zircon U-Pb Dating

Zircons were extracted from the bulk sediments by conventional heavy liquid and magnetic separation techniques, >1000 zircon grains were picked out and about 300 grains for each were randomly selected under a binocular microscope. The grains were then mounted in epoxy disks and polished to expose their cores. The experiments were performed on a 193 excimer laser (Resolution M50) coupled with Agilent 7900 at the State Key Laboratory of Marine Geology of the Tongji University. A spot size of 26 μm and a 6 Hz repetition rate were used for analyses.

The state of the instrument was monitored by the standard reference material for synthetic silicate glass (NIST610), to ensure the instrument achieves high sensitivity, low background value and stable signal. All U–Th–Pb isotope measurements were calibrated by using zircon standard 91500, with a $^{206}\text{Pb}/^{238}\text{U}$ age of 1058 ± 3 Ma. Accuracy was controlled by the zircon Pleovice (PLE) with an age of 337 ± 1 Ma. The U–Th–Pb data acquisition parameters were made by in-house software (LaUPb: <http://60.205.227.89:3838/LaUPb/>) or Uranos 2.7 software. The age calculations were performed by using Isoplot (ver 3.0). We follow the convention of Compston et al. (1992) in using $^{206}\text{Pb}/^{238}\text{U}$ ages for zircons younger than 1.0 Ga and $^{207}\text{Pb}/^{206}\text{Pb}$ ages for grains older than 1.0 Ga (Griffin et al., 2004). We further filtered our data to use only dates from zircons that are $<10\%$ discordant (Weislogel et al., 2006). Data are presented in Table S3.

Zircon U-Pb Age Statistics

A detailed statistical analysis of the similarity between the different potential source terrains and the Paleocene sedimentary rocks deposited by the large continuous river system were considered in by the work of Clift et al. (2020). Here we also compare some of the new results with those from the Gonjo Basin using a multidimensional scaling diagram (MDS) from the work of Vermeesch et al. (2016). This is a form of principal component analysis that allows spectra of the different sediments and sources to be compared. In this approach the Kolmogorov–Smirnov (K-S) test is used to compare the age spectra of each sample to determine if they have similarities to their neighbors or not. The results of this analysis are shown in Figure S5. These show that there is a strong similarity between the sediments in the modern upper reaches of the Yangtze (Jinshajiang), as well as those in the Gonjo Basin and in the Jianchuan Basin. These sedimentary formations are different from modern sediments in the Mekong River, implying that the upper Mekong could not have been the Tibet-draining river that was supplying the Jianchuan Basin and other basins further downstream. In this analysis two of the Shuanghe Formation samples appear to be anomalous, probably reflecting influence from local sources. However, the divergence of sediments downstream in Vietnam reflects the addition of further sediments from tributaries to

the mainstream during its passage the South China Sea, when I received erosional flux from the Indochina Block (Clift et al., 2020). The overall similarity with the basement rocks of the Songpan Garze indicate that this is most likely the most important source of sediment.

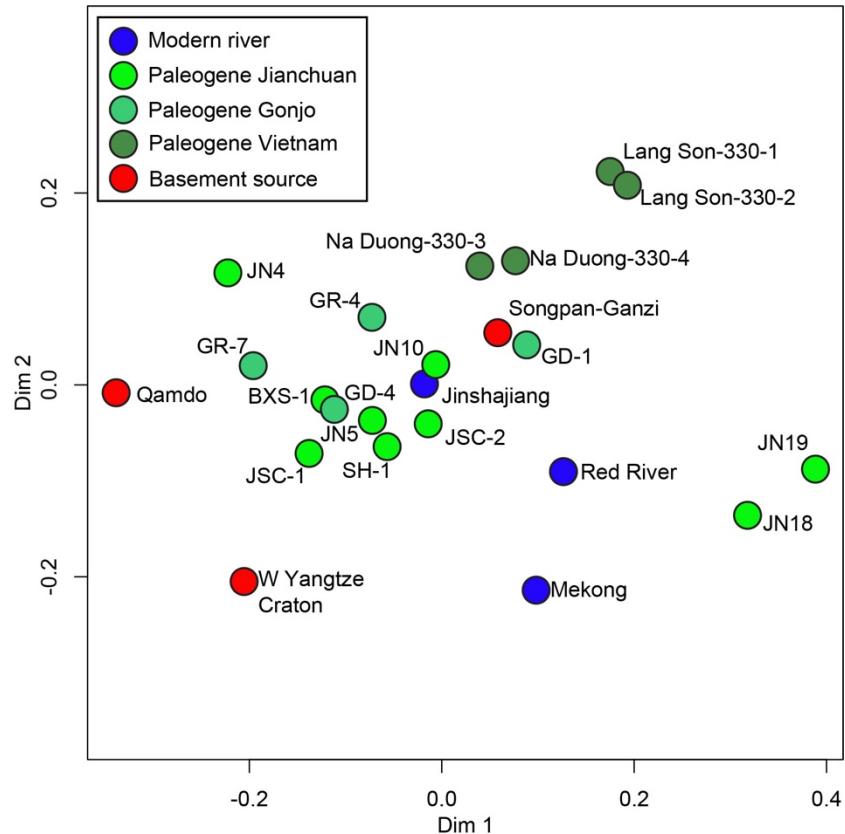


Fig. S5: Multidimensional scaling diagram (MDS) showing the relationships between potential basement sources, the modern river systems and the sedimentary rocks considered in this study. Note that the formations from the Gonjo Basin, as well as the Baoxiangsi Formation from the Jianchuan Basin have a strong similarity to the Yangtze River (Jianshajiang) in its upper reaches. The displacement towards the right of the Vietnamese basins suggests mixing from additional sources downstream. Na Duong and Lang Son basin data are from Clift et al. (2020), primary basement source terrains and the Jinshajiang are from compilation of He et al. (2014), Mekong data is from Clift et al. (2006) and the Red River data are from Hoang et al. (2009).

As an alternative approach to identifying similar sediments within the various basins of the study we also employ the DZStats software of Saylor and Sundell (2016). We used this software to make K-S tests between the observed spectra of the different sediments and sedimentary rocks, as well as the source regions in order to highlight potential similarities. In order to improve the statistical robustness we plot all the sediment samples from each different formations as a single sample in order to maximize the number of grains. The results of this analysis are shown graphically in Figure S6.

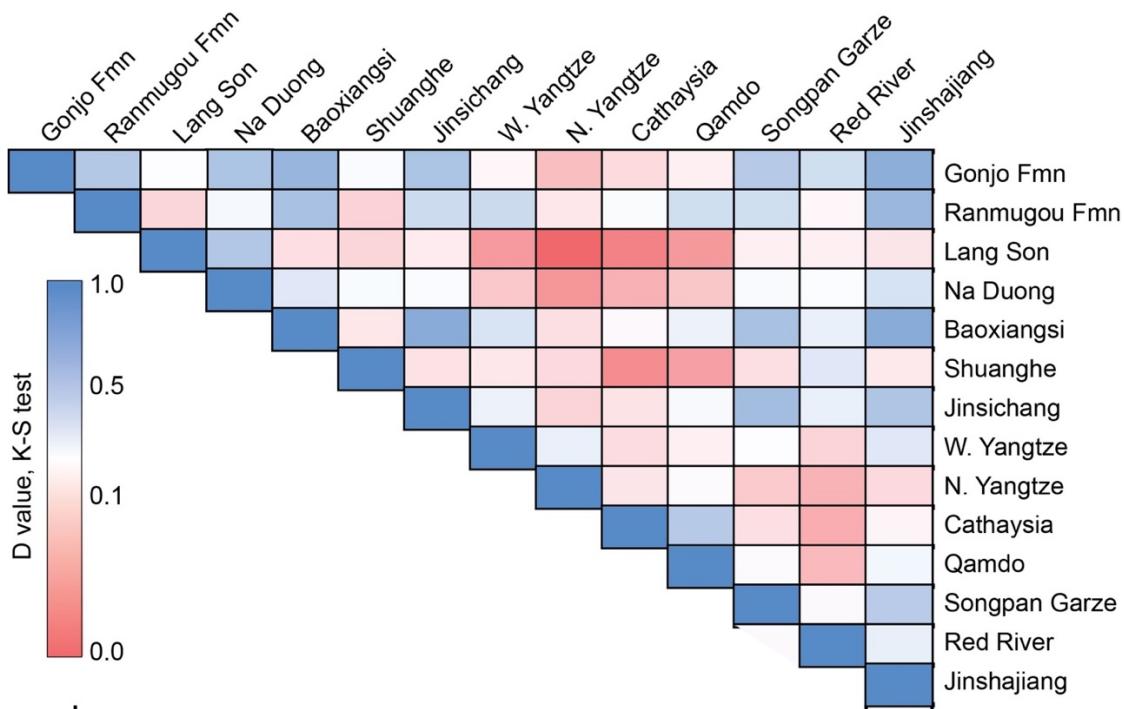


Figure S6: Results of the statistical analysis using the K-S test comparing sediments on sedimentary rocks with potential sources in Southwest China-Southeast Tibet. Data sources are the same as those used in Figure S5

The K-S analysis shows the strong similarity of sediments in the Gonjo Basin compared with those from Na Duong in northern Vietnam, as well as the Baoxiangsi Formation and Jinsichang Formation in the Jianchuan Basin. Note also the close similarity between these sediments and

both the modern Jinshajiang and potential bedrock sources in the Songpan Garze. The analysis suggests that little of the sediment was derived from the Yangtze Craton and what there is is probably from the western part of the Yangtze Craton. Only small amounts of sediment are derived from the Qamdo Block. Nonetheless, the comparison suggests significant similarities of sediments both in eastern Tibet, Yunnan province and in northern Vietnam consistent with the concept of a through-going large river system that passed through the Jianchuan Basin in the Eocene.

	No.	Stratigraphic Formation	Sample names	Longitude	Latitude	Reference
Jianchuan Basin	1	Shuanghe	SH-1	99°53'41"	26°26'51"	
	2		JN18			Clift et al. (2020)
	3		JN19			Clift et al. (2020)
	4	Jinsichang	JSC-1	99°50'7"	26°23'38"	
	5		JSC-2	99°39'25"	26°58'33"	
	6	Baoxiangsi	BXS-1	99°43'25"	26°32'24"	
	7		JN4			Clift et al. (2020)
	8		JN5			Clift et al. (2020)
	9		JN10			Clift et al. (2020)
Gonjo Basin	10	Gonjo	GD1	98°13'52"	30°55'41"	
	11	Gonjo	GD4	98°15'34"	30°56'34"	
	12	Ranmugou	GR4	98°18'19"	30°51'55"	
	13	Ranmugou	GR7	98°19'10"	30°51'13"	
Jinshajiang	14		JSJ-1	99°57'46.3"	26°53'25.0"	He et al. (2014)
	15		JSJ-2	99°53'47.8"	26°52'26.9"	He et al. (2014)
	16		JSJ-3	99°22'13.8"	28°11'09.2"	He et al. (2014)
	17		JSJ-4	100°04'26.5"	27°10'12.5"	He et al. (2014)
	18		JSJ-5	99°58'52.00"	26°52'14.0"	He et al. (2014)
Red River	19		RR-1	101°58'37.7"	23°38'33.4"	Hoang et al. (2009)
	20		RR-2	104°52'14.12"	21°41'43.8"	Hoang et al. (2009)
	21		RR-3	101°29'15.3"	24°13'58.3"	Hoang et al. (2009)

Table S1: Location of samples used for zircon U-Pb provenance analyses in this study. References are shown for previously published data. Other samples were dated as part of this work and shown in Table S3.

Table S2: Analytical data for the Ar-Ar dating performed on Jianchuan Basin igneous rocks and presented new in this study.

Table S3: U-Pb zircon analytical data for the Gonjo and Jianchuan basin sediments presented in this study.

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Table S2

Sample 141021-01BIO

Relative Abundances		36Ar [V]	%1s	37Ar [V]	%1s	38Ar [V]	%1s	39Ar [V]	%1s	40Ar [V]	%1s	40(r)/39(k)	± 2s	Age (Ma)	± 2s	40Ar(r) (%)	39Ar(k) (%)	K/Ca	± 2s
6M20316	1 °C	0.0000220	7.209	0.0001203	47.468	0.0000379	60.561	0.0002283	8.127	0.009756	7.948	14.07277	± 8.27961	19.92	± 11.65	32.92	0.05	0.8	± 0.8
6M20317	2 °C	0.0002459	0.734	0.0002121	26.615	0.0000534	44.797	0.0027421	0.699	0.151487	0.512	28.47844	± 0.79762	40.08	± 1.11	51.55	0.62	5.6	± 3.0
6M20319	3 °C	0.0016221	0.227	0.0006208	11.996	0.0005192	4.975	0.0192141	0.107	1.019252	0.076	27.84417	± 0.16028	39.19	± 0.22	52.49	4.38	13.3	± 3.2
6M20320	4 °C	0.0022400	0.190	0.0010865	4.635	0.0008382	3.149	0.0328160	0.074	1.520592	0.051	25.95959	± 0.10670	36.57	± 0.15	56.02	7.48	13.0	± 1.2
6M20322	4 °C	0.0007905	0.304	0.0004480	14.416	0.0002917	9.701	0.0146263	0.126	0.613531	0.127	25.81427	± 0.16188	36.37	± 0.23	61.54	3.33	14.0	± 4.0
6M20323	5 °C	0.0013617	0.234	0.0007580	9.277	0.0005777	5.135	0.0259925	0.080	1.101626	0.070	26.74415	± 0.10852	37.66	± 0.15	63.10	5.92	14.7	± 2.7
6M20324	6 °C	0.0014418	0.208	0.0009812	8.508	0.0006512	4.102	0.0296919	0.074	1.239256	0.063	27.24181	± 0.09403	38.36	± 0.13	65.27	6.77	13.0	± 2.2
6M20325	7 °C	0.0006548	0.326	0.0004722	12.934	0.0002280	10.622	0.0133196	0.147	0.543912	0.143	26.16039	± 0.17174	36.85	± 0.24	64.06	3.04	12.1	± 3.1
6M20327	7 °C	0.0009731	0.281	0.0007436	8.349	0.0004805	5.204	0.0218982	0.091	0.872838	0.089	26.59452	± 0.11668	37.45	± 0.16	66.72	4.99	12.7	± 2.1
6M20328	8 °C	0.0011293	0.264	0.0009165	6.178	0.0005583	5.924	0.0254541	0.085	1.009222	0.077	26.40507	± 0.10656	37.19	± 0.15	66.60	5.80	11.9	± 1.5
6M20329	9 °C	0.0011204	0.239	0.0009443	6.786	0.0005382	4.469	0.0258685	0.089	1.002497	0.078	25.82579	± 0.10115	36.38	± 0.14	66.64	5.90	11.8	± 1.6
6M20330	10 °C	0.0010997	0.297	0.0008901	6.275	0.0005355	4.294	0.0259914	0.083	0.984257	0.079	25.23957	± 0.10775	35.56	± 0.15	66.65	5.92	12.6	± 1.6
6M20332	12 °C	0.0016007	0.203	0.0015844	4.632	0.0008191	3.417	0.0419934	0.061	1.533579	0.051	25.14217	± 0.07046	35.43	± 0.10	68.84	9.57	11.4	± 1.1
6M20333	14 °C	0.0016006	0.214	0.0014183	4.969	0.0008970	2.632	0.0463893	0.061	1.620265	0.048	24.62866	± 0.06639	34.71	± 0.09	70.51	10.57	14.1	± 1.4
6M20334	16 °C	0.0012729	0.228	0.0018576	3.958	0.0007393	3.564	0.0396624	0.061	1.334837	0.058	24.07694	± 0.06839	33.94	± 0.10	71.54	9.04	9.2	± 0.7
6M20336	18 °C	0.0007269	0.336	0.0009261	6.806	0.0004170	5.770	0.0264127	0.083	0.844464	0.092	23.75848	± 0.09130	33.50	± 0.13	74.31	6.02	12.3	± 1.7
6M20337	22 °C	0.0006012	0.323	0.0008225	6.787	0.0004469	4.872	0.0235444	0.093	0.744097	0.104	23.98303	± 0.09486	33.81	± 0.13	75.88	5.37	12.3	± 1.7
6M20338	26 °C	0.0002469	0.682	0.0002937	21.761	0.0001806	13.892	0.0074311	0.264	0.248483	0.312	23.52036	± 0.27863	33.16	± 0.39	70.34	1.69	10.9	± 4.7
6M20340	30 °C	0.0002478	0.760	0.0001329	64.917	0.0001399	17.695	0.0080073	0.226	0.265534	0.292	23.92311	± 0.26331	33.73	± 0.37	72.14	1.82	25.9	± 33.6
6M20341	35 °C	0.0002177	0.804	0.0004249	13.510	0.0001315	17.892	0.0033349	0.730	0.137575	0.564	21.77363	± 0.64609	30.72	± 0.90	52.78	0.76	3.4	± 0.9
6M20342	40 °C	0.0003169	0.662	0.0004087	21.164	0.0002135	10.406	0.0041760	0.862	0.176823	0.439	19.69541	± 0.58758	27.81	± 0.82	46.51	0.95	4.4	± 1.9
Σ		0.0195329	0.064	0.0160628	1.906	0.0092945	1.257	0.4387944	0.024	16.973884	0.021								
Results		40(a)/36(a)	± 2s	40(r)/39(k)	± 2s		Age (Ma)	± 2s	Mswd	39Ar(k) (%,n)	K/Ca	± 2s							
Total Fusion Age		25.39560	0.027 0.001	35.78	± 0.07 ± 0.19%			21		11.7	± 0.4								
					Full External Error	± 0.27													
					Analytical Error	± 0.04													

Table S2

Sample 140903-05MSC

Relative Abundances	36Ar [V]	%1s	37Ar [V]	%1s	38Ar [V]	%1s	39Ar [V]	%1s	40Ar [V]	%1s	40(r)/39(k)	± 2s	Age (Ma)	± 2s	40Ar(r) (%)	39Ar(k) (%)	K/Ca	± 2s
6M21069	1 °C	0.0000099	20.199	0.0000538	990.566	0.0000474	150.619	0.0000035	388.589	0.0030481	2.854	29.17079 ± 421.42784	41.04	± 586.24	3.27	0.03	0.03	± 0.58
6M21070	1 °C	0.0000098	20.370	0.0003613	147.610	0.0000522	132.571	0.0000053	255.948	0.0031653	2.797	48.74575 ± 320.53927	70.73	± 474.33	8.63	0.06	0.01	± 0.04
6M21071	2 °C	0.0002728	0.784	0.0004194	126.298	0.0000094	729.493	0.0000702	23.865	0.0798832	0.110	21.73459 ± 21.36274	31.20	± 30.93	1.90	0.70	0.07	± 0.18
6M21072	2 °C	0.0000811	2.636	0.0006454	83.494	0.0000002	37087.483	0.0000561	25.856	0.0241189	0.359	0.51916 ± 23.21743	0.74	± 33.05	0.12	0.56	0.04	± 0.06
6M21074	3 °C	0.0002895	0.751	0.0004075	130.583	0.0001155	59.771	0.0004019	4.613	0.0916603	0.095	13.10068 ± 3.51249	18.55	± 4.95	5.74	4.04	0.42	± 1.11
6M21075	3 °C	0.0001694	1.201	0.0058968	9.252	0.0000634	110.519	0.0005199	3.110	0.0562870	0.156	11.98758 ± 2.51082	16.98	± 3.54	10.98	5.18	0.04	± 0.01
6M21076	4 °C	0.0004041	0.586	0.0002631	202.788	0.0001639	44.623	0.0010388	1.596	0.1481525	0.061	26.49421 ± 1.63176	37.31	± 2.27	18.57	10.44	1.70	± 6.88
6M21077	4 °C	0.0001688	1.280	0.0000687	782.185	0.0000557	130.190	0.0003696	5.503	0.0608084	0.144	28.17166 ± 4.70497	39.65	± 6.55	17.13	3.72	2.31	± 36.19
6M21079	4 °C	0.0001206	1.841	0.0003356	158.225	0.0000494	143.953	0.0002330	6.278	0.0450925	0.196	38.82435 ± 7.53909	54.42	± 10.41	20.08	2.34	0.30	± 0.95
6M21080	5 °C	0.0002730	0.822	0.0006681	79.387	0.0000897	79.065	0.0006266	2.604	0.1090652	0.080	43.85788 ± 3.15215	61.36	± 4.34	25.22	6.30	0.40	± 0.64
6M21081	6 °C	0.0003917	0.586	0.0007421	71.773	0.0000785	90.363	0.0010085	1.439	0.1625151	0.055	45.11003 ± 1.90279	63.08	± 2.61	28.01	10.14	0.58	± 0.84
6M21082	7 °C	0.0001795	0.377	0.0018319	7.285	0.0000701	48.678	0.0004261	1.900	0.0772554	0.050	55.01454 ± 2.30945	76.64	± 3.15	30.44	4.30	0.10	± 0.02
6M21084	7 °C	0.0001934	0.444	0.0011389	8.600	0.0000521	67.138	0.0004820	1.886	0.0828690	0.048	51.88371 ± 2.24312	72.36	± 3.07	30.23	4.85	0.18	± 0.03
6M21085	8 °C	0.0001640	0.450	0.0008838	18.507	0.0000373	88.616	0.0003938	2.073	0.0693944	0.056	51.62697 ± 2.43310	72.01	± 3.33	29.34	3.96	0.19	± 0.07
6M21086	9 °C	0.0001307	0.600	0.0006178	18.256	0.0000059	621.095	0.0003219	2.777	0.0557926	0.075	51.90215 ± 3.24458	72.39	± 4.44	29.99	3.24	0.22	± 0.08
6M21087	10 °C	0.0002122	0.333	0.0004706	24.246	0.0000630	60.411	0.0002890	2.574	0.0763261	0.053	44.71641 ± 2.77313	62.54	± 3.81	16.95	2.91	0.26	± 0.13
6M21089	12 °C	0.0001067	0.741	0.0001736	68.474	0.0000385	106.431	0.0002835	2.976	0.0448506	0.089	45.77493 ± 3.21237	63.99	± 4.41	28.94	2.85	0.70	± 0.96
6M21090	14 °C	0.0001097	0.655	0.0000762	153.413	0.0000238	134.291	0.0003034	3.146	0.0467067	0.087	45.92412 ± 3.23539	64.20	± 4.44	29.84	3.05	1.71	± 5.26
6M21091	16 °C	0.0001562	0.368	0.0001967	58.020	0.0000505	68.448	0.0003094	3.069	0.0613827	0.063	47.61459 ± 3.14887	66.52	± 4.32	24.01	3.11	0.68	± 0.79
6M21093	18 °C	0.0000995	0.651	0.0000449	195.007	0.0000128	262.818	0.0002905	2.886	0.0439059	0.090	48.94569 ± 3.14248	68.34	± 4.31	32.38	2.92	2.78	± 10.85
6M21094	22 °C	0.0001218	0.634	0.0004456	26.170	0.0000549	61.891	0.0004038	1.896	0.0549607	0.071	46.16960 ± 2.10938	64.53	± 2.90	33.89	4.06	0.39	± 0.20
6M21095	26 °C	0.0001334	0.550	0.0002095	47.432	0.0000036	921.456	0.0004597	1.876	0.0617517	0.068	47.72550 ± 2.04500	66.67	± 2.80	35.51	4.62	0.94	± 0.90
6M21097	30 °C	0.0001258	0.482	0.0000920	150.438	0.0000217	147.021	0.0004632	1.824	0.0596797	0.067	47.75935 ± 1.92527	66.72	± 2.64	37.06	4.66	2.17	± 6.52
6M21098	35 °C	0.0001448	0.551	0.0000535	174.493	0.0000303	116.869	0.0005583	1.639	0.0698273	0.056	47.65148 ± 1.79306	66.57	± 2.46	38.09	5.61	4.49	± 15.66
6M21099	40 °C	0.0001493	0.500	0.0000754	194.046	0.0000261	119.758	0.0006428	1.318	0.0747903	0.049	46.96967 ± 1.43112	65.63	± 1.96	40.38	6.46	3.66	± 14.22
Σ		0.0042176	0.182	0.0016132	113.313	0.0011518	23.249	0.0099500	0.626	1.6632896	0.020							
Results	40(a)/36(a)	± 2s	40(r)/39(k)	± 2s	Age (Ma)	± 2s	MWD	39Ar(k) (%n)	K/Ca	± 2s								
Total Fusion Age	40.63064	0.692 0.017	56.91 ± 1.69%		25	2.65												
			Full External Error	± 1.05														
			Analytical Error	± 0.95														

Table S2

Sample 140902-05KFS

Relative Abundances	36Ar [V]	%1s	37Ar [V]	%1s	38Ar [V]	%1s	39Ar [V]	%1s	40Ar [V]	%1s	40(r)/39(k)	± 2s	Age (Ma)	± 2s	40Ar(r) (%)	39Ar(k) (%)	K/Ca	± 2s	
6M21686	3 °C	0.0000008	88.640	0.0001002	165.461	0.0000034	755.715	0.0004873	1.667	0.0123625	1.199	24.85035	± 1.35623	35.02	± 1.89	97.97	0.53	2.1	± 6.9
6M21687	3 °C	0.0000139	5.118	0.0002824	64.883	0.0000067	456.924	0.0030703	0.263	0.0818171	0.181	25.30357	± 0.21520	35.65	± 0.30	94.95	3.33	4.7	± 6.1
6M21689	4 °C	0.0000176	4.459	0.0001995	96.259	0.0000431	64.013	0.0054300	0.143	0.1429316	0.103	25.35774	± 0.12525	35.73	± 0.17	96.33	5.89	11.7	± 22.5
6M21690	4 °C	0.0000127	5.556	0.0000703	204.396	0.0000050	589.788	0.0023767	0.349	0.0640993	0.230	25.36795	± 0.28021	35.74	± 0.39	94.06	2.58	14.5	± 59.4
6M21691	5 °C	0.0000135	5.932	0.0003341	52.410	0.0000120	235.690	0.0015677	0.590	0.0437701	0.338	25.32517	± 0.46746	35.68	± 0.65	90.72	1.70	2.0	± 2.1
6M21693	5 °C	0.0001788	0.579	0.0003594	49.191	0.0001064	28.617	0.0061052	0.143	0.2070947	0.072	25.18267	± 0.13491	35.48	± 0.19	74.24	6.62	7.3	± 7.2
6M21694	6 °C	0.0000439	1.801	0.0001149	140.692	0.0000542	57.188	0.0067446	0.149	0.1837141	0.081	25.29822	± 0.11184	35.65	± 0.16	92.87	7.31	25.2	± 71.0
6M21695	6 °C	0.0000230	3.365	0.0000444	381.072	0.0000477	60.171	0.0041094	0.193	0.1113301	0.133	25.42184	± 0.16569	35.82	± 0.23	93.84	4.45	39.8	± 303.6
6M21697	7 °C	0.0000576	1.475	0.0000592	343.948	0.0000640	45.598	0.0064202	0.136	0.1795740	0.083	25.29081	± 0.11480	35.64	± 0.16	90.42	6.96	46.6	± 320.7
6M21698	8 °C	0.0000830	0.934	0.0001477	110.909	0.0001542	20.223	0.0087265	0.123	0.2448837	0.061	25.22241	± 0.08895	35.54	± 0.12	89.88	9.46	25.4	± 56.4
6M21699	10 °C	0.0000633	1.236	0.0001875	97.403	0.0001163	22.053	0.0079719	0.150	0.2203377	0.068	25.26536	± 0.10293	35.60	± 0.14	91.41	8.64	18.3	± 35.6
6M21701	12 °C	0.0001116	0.747	0.0001591	96.066	0.0001407	24.798	0.0071271	0.128	0.2130351	0.070	25.21617	± 0.10466	35.53	± 0.15	84.36	7.73	19.3	± 37.0
6M21702	15 °C	0.0000579	1.391	0.0001816	93.898	0.0001536	18.992	0.0087929	0.098	0.2400244	0.063	25.33302	± 0.08159	35.69	± 0.11	92.80	9.53	20.8	± 39.1
6M21703	18 °C	0.0000323	2.308	0.0003882	45.860	0.0001509	20.400	0.0106495	0.089	0.2799876	0.053	25.38788	± 0.06771	35.77	± 0.09	96.56	11.54	11.8	± 10.8
6M21705	21 °C	0.0000340	2.797	0.0002237	83.800	0.0001206	25.157	0.0052008	0.160	0.1415241	0.105	25.26631	± 0.14749	35.60	± 0.21	92.85	5.64	10.0	± 16.8
6M21706	24 °C	0.0000182	4.460	0.0001223	154.637	0.0000604	51.011	0.0022207	0.356	0.0614128	0.240	25.21780	± 0.31239	35.53	± 0.44	91.19	2.41	7.8	± 24.2
6M21707	27 °C	0.0000097	7.756	0.0001498	141.273	0.0000655	46.414	0.0013368	0.670	0.0362831	0.408	24.97952	± 0.52499	35.20	± 0.73	92.02	1.45	3.8	± 10.8
6M21708	30 °C	0.0000112	7.351	0.0002645	59.404	0.0000086	368.371	0.0009882	0.726	0.0277697	0.532	24.74172	± 0.68358	34.87	± 0.95	88.03	1.07	1.6	± 1.9
6M21710	35 °C	0.0000058	13.600	0.0000164	1113.762	0.0000124	255.793	0.0010609	0.820	0.0282472	0.524	25.00197	± 0.66469	35.23	± 0.93	93.90	1.15	27.9	± 621.3
6M21711	40 °C	0.0000110	6.679	0.0003879	52.602	0.0000267	113.141	0.0012370	0.683	0.0346516	0.427	25.39642	± 0.55073	35.78	± 0.77	90.64	1.34	1.4	± 1.4
6M21712	45 °C	0.0000110	7.410	0.0000174	1145.132	0.0000305	102.246	0.0004009	1.944	0.0127837	1.172	23.68716	± 1.70112	33.40	± 2.38	74.28	0.43	9.9	± 226.7
6M21713	50 °C	0.0000242	3.216	0.0000356	489.031	0.0000305	91.574	0.0002225	3.321	0.0122148	1.219	22.42555	± 2.89601	31.63	± 4.05	40.85	0.24	2.7	± 26.3

Σ	0.0008350	0.450	0.0021834	38.488	0.0012561	11.183	0.0922469	0.045	2.5798493	0.027
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Results	40(a)/36(a)	± 2s	40(r)/39(k)	± 2s	Age (Ma)	± 2s	MWD	39Ar(k) (%,n)	K/Ca	± 2s
Age Plateau	25.29995	0.035 0.001	35.65	± 0.09 ± 0.24%	1.36 14%	99.32 20	1.0	± 1.1		
			Full External Error	± 0.28	1.65		2σ Confidence Limit			
			Analytical Error	± 0.05	1.1648		Error Magnification			
Total Fusion Age	25.26612	0.037 0.001	35.60	± 0.09 ± 0.24%		22	18.2	± 14.0		
			Full External Error	± 0.28						
			Analytical Error	± 0.05						
Normal Isochron No Convergence	305.29	± 9.95 ± 3.26%	25.17317	0.103 0.004	35.47	± 0.16 ± 0.45%	3.73 0%	99.32 20		
			Full External Error	± 0.31	1.67		2σ Confidence Limit			
			Analytical Error	± 0.14	1.9308		Error Magnification			
				100			Number of Iterations			
				0.0013404309			Convergence			
Inverse Isochron	289.88	± 4.99 ± 1.72%	25.37078	0.050 0.002	35.75	± 0.10 ± 0.28%	0.78 73%	99.32 20		
			Full External Error	± 0.28	1.67		2σ Confidence Limit			
			Analytical Error	± 0.07	1.0000		Error Magnification			
				4			Number of Iterations			
				0.0000041419			Convergence			
				25%			Spreading Factor			

Table S2

Sample 140902-04KFS

Relative Abundances	36Ar [V]	%1s	37Ar [V]	%1s	38Ar [V]	%1s	39Ar [V]	%1s	40Ar [V]	%1s	40(r)/39(k)	± 2s	Age (Ma)	± 2s	40Ar(r) (%)	39Ar(k) (%)	K/Ca	± 2s																								
6M21122	14 °C	0.0000123	4.241	0.0006657	18.765	0.0000101	318.074	0.0019804	0.351	0.0529991	0.081	24.94418	± 0.23953	35.15	± 0.33	93.18	4.57	1.279	± 0.480																							
6M21121	14 °C	0.0000209	1.885	0.0012566	10.967	0.0000501	51.257	0.0024224	0.267	0.0666610	0.069	24.99525	± 0.16975	35.22	± 0.24	90.80	5.59	0.829	± 0.182																							
6M21127	14 °C	0.0000092	4.705	0.0002350	57.106	0.0000056	608.705	0.0001466	5.285	0.0064019	0.681	25.13152	± 3.24870	35.41	± 4.53	57.48	0.34	0.268	± 0.307																							
6M21115	14 °C	0.0000249	2.397	0.0002255	57.684	0.0000194	159.046	0.0020496	0.464	0.0589726	0.076	25.15481	± 0.29463	35.45	± 0.41	87.42	4.73	3.908	± 4.509																							
6M21119	14 °C	0.0000231	2.326	0.0003776	29.789	0.0000810	30.004	0.0041600	0.155	0.1119409	0.041	25.26142	± 0.11232	35.59	± 0.16	93.87	9.60	4.737	± 2.822																							
6M21112	14 °C	0.0000179	2.774	0.0198902	2.057	0.0000541	60.154	0.0024001	0.390	0.0640960	0.073	25.29262	± 0.23942	35.64	± 0.33	94.11	5.50	0.052	± 0.002																							
6M21124	14 °C	0.0000071	6.250	0.0002035	61.205	0.0000016	1669.843	0.0019092	0.410	0.0504516	0.086	25.32804	± 0.25381	35.69	± 0.35	95.84	4.41	4.034	± 4.938																							
6M21109	14 °C	0.0000133	3.386	0.0001611	79.618	0.0000375	72.237	0.0038516	0.197	0.1016121	0.046	25.34499	± 0.12422	35.71	± 0.17	96.07	8.89	10.281	± 16.371																							
6M21125	14 °C	0.0000121	4.436	0.0000143	888.091	0.0000576	54.825	0.0032840	0.249	0.0868801	0.053	25.35737	± 0.16197	35.73	± 0.23	95.85	7.58	98.689	± 1752.902																							
6M21132	14 °C	0.0000311	1.813	0.0000843	166.273	0.0000395	39.466	0.0047189	0.118	0.1289314	0.011	25.35855	± 0.09346	35.73	± 0.13	92.81	10.89	24.080	± 80.076																							
6M21110	14 °C	0.0000206	2.610	0.0000296	452.667	0.0000797	33.022	0.0035189	0.229	0.0954524	0.048	25.38070	± 0.14991	35.76	± 0.21	93.57	8.12	51.141	± 462.997																							
6M21116	14 °C	0.0000207	2.194	0.0196411	2.090	0.0000441	63.784	0.0032885	0.252	0.0878123	0.053	25.40962	± 0.15708	35.80	± 0.22	94.73	7.56	0.072	± 0.003																							
6M21128	14 °C	0.0000179	3.482	0.0002272	62.004	0.0000423	62.386	0.0028660	0.238	0.0781781	0.063	25.42095	± 0.18101	35.82	± 0.25	93.19	6.61	5.424	± 6.727																							
6M21118	14 °C	0.0000091	4.980	0.0001929	59.137	0.0000491	58.246	0.0039236	0.158	0.1024403	0.045	25.42102	± 0.10855	35.82	± 0.15	97.36	9.06	8.748	± 10.346																							
6M21113	14 °C	0.0000099	6.157	0.0000759	173.459	0.0000059	554.845	0.0028390	0.255	0.0753895	0.060	25.51712	± 0.18538	35.95	± 0.26	96.09	6.55	16.093	± 55.831																							
Σ																																										
Results	40(a)/36(a)	± 2s	40(r)/39(k)	± 2s	Age (Ma)				MSWD		39Ar(k) (%,n)		K/Ca		± 2s																											
Age Plateau		25.36251	0.042 0.002	35.74	± 0.08 ± 0.23%	0.88 57%	89.84 13	0.058 0.058	± 0.006																																	
				Full External Error		± 0.28	1.82	2σ Confidence Limit																																		
				Analytical Error		± 0.06	1.0000	Error Magnification																																		
Total Fusion Age		25.31914	0.045 0.002	35.68	± 0.08 ± 0.24%			15	0.434	± 0.015																																
				Full External Error		± 0.28																																				
				Analytical Error		± 0.06																																				
Normal Isochron		280.82	± 20.95 ± 7.46%	25.44765	0.111 0.004	35.85	± 0.16 ± 0.46%	0.73 71%	89.84 13																																	
				Full External Error		± 0.31	1.85	2σ Confidence Limit																																		
				Analytical Error		± 0.15	1.0000	Error Magnification																																		
						1	0.0000287658	Number of Iterations																																		
							Convergence																																			
Inverse Isochron		282.22	± 20.88 ± 7.40%	25.44275	0.110 0.004	35.85	± 0.16 ± 0.46%	0.74 70%	89.84 13																																	
				Full External Error		± 0.31	1.85	2σ Confidence Limit																																		
				Analytical Error		± 0.15	1.0000	Error Magnification																																		
						3	0.0000000728	Number of Iterations																																		
							39%	Convergence																																		
								Spreading Factor																																		

Table S2

Sample 140902-04BIO

Relative Abundances	36Ar [V]	%1s	37Ar [V]	%1s	38Ar [V]	%1s	39Ar [V]	%1s	40Ar [V]	%1s	40(r)/39(k)	± 2s	Age (Ma)	± 2s	40Ar(r) (%)	39Ar(k) (%)	K/Ca	± 2s						
6M21136	10 °C	0.0000070	7.643	0.0000486	246.794	0.0000025	1175.711	0.0001284	5.935	0.0042968	0.309	17.14449	± 3.22307	24.23	± 4.53	51.27	1.37	1.14 ± 5.61						
6M21154	10 °C	0.0000040	13.792	0.0000059	1963.101	0.0000460	51.486	0.0001012	7.324	0.0029546	0.609	17.52662	± 4.14025	24.77	± 5.81	60.05	1.08	7.40 ± 290.70						
6M21144	10 °C	0.0000051	9.586	0.0001859	87.109	0.0000165	141.954	0.0002735	2.744	0.0063736	0.339	17.82982	± 1.45564	25.20	± 2.04	76.48	2.92	0.63 ± 1.10						
6M21134	10 °C	0.0000117	3.395	0.0002781	38.693	0.0000417	42.983	0.0001564	3.529	0.0063903	0.258	18.43903	± 2.00690	26.05	± 2.81	45.18	1.67	0.24 ± 0.19						
6M21138	10 °C	0.0000108	3.751	0.0046838	3.181	0.0000081	342.433	0.0006688	1.263	0.0169034	0.098	21.09815	± 0.65106	29.78	± 0.91	83.04	7.10	0.06 ± 0.00						
6M21142	10 °C	0.0000533	0.999	0.0000226	610.386	0.0000028	902.985	0.0003305	3.009	0.0242124	0.089	25.08954	± 1.79934	35.35	± 2.51	34.25	3.53	6.30 ± 76.92						
6M21156	10 °C	0.0000027	17.523	0.0002381	40.644	0.0000222	127.937	0.0005231	1.245	0.0140566	0.089	25.37398	± 0.83390	35.75	± 1.16	94.39	5.58	0.94 ± 0.77						
6M21152	10 °C	0.0000083	3.352	0.0000602	209.935	0.0000044	478.870	0.0010848	0.542	0.0302816	0.089	25.63441	± 0.32141	36.12	± 0.45	91.84	11.58	7.76 ± 32.56						
6M21162	10 °C	0.0000022	19.097	0.0000128	1068.345	0.0000037	798.941	0.0001870	4.341	0.0054906	0.234	25.89146	± 2.61298	36.47	± 3.64	88.21	2.00	6.30 ± 134.66						
6M21150	10 °C	0.0000050	9.446	0.0001034	96.656	0.0000137	176.618	0.0010777	0.637	0.0297258	0.058	26.22000	± 0.42423	36.93	± 0.59	95.05	11.50	4.48 ± 8.66						
6M21148	10 °C	0.0000058	8.407	0.0000238	565.229	0.0000049	120.462	0.0014109	0.552	0.0388299	0.056	26.28860	± 0.35831	37.03	± 0.50	95.52	15.06	25.54 ± 288.68						
6M21160	10 °C	0.0000053	6.841	0.0002211	48.168	0.0000051	394.375	0.0007855	1.062	0.0222751	0.068	26.37461	± 0.62557	37.15	± 0.87	92.99	8.38	1.53 ± 1.47						
6M21146	10 °C	0.0000060	6.169	0.0000802	162.661	0.0000041	668.168	0.0014461	0.401	0.0399451	0.041	26.37491	± 0.26262	37.15	± 0.37	95.48	15.44	7.75 ± 25.22						
6M21158	10 °C	0.0000012	30.477	0.0002620	52.632	0.0000426	61.513	0.0005111	1.448	0.0140042	0.164	26.76809	± 0.88611	37.70	± 1.23	97.66	5.45	0.84 ± 0.88						
6M21140	10 °C	0.0000013	22.810	0.0000946	165.631	0.0000699	34.020	0.0006864	1.124	0.0188882	0.078	26.95852	± 0.65738	37.96	± 0.92	97.98	7.33	3.12 ± 10.34						
Σ																								
Results	40(a)/36(a)	± 2s	40(r)/39(k)	± 2s	Age (Ma)			MSWD	39Ar(k) (%n)			K/Ca	± 2s											
Age Plateau				26.38214	0.171 0.006	37.16	± 0.25 ± 0.66%	0.81 57%	65.16 7	1.02	± 0.75													
				Full External Error			± 0.37	2.15	2σ Confidence Limit															
				Analytical Error			± 0.24	1.0000	Error Magnification															
Total Fusion Age				25.23266	0.190 0.008	35.55	± 0.27 ± 0.76%		15	0.78	± 0.15													
				Full External Error			± 0.38																	
				Analytical Error			± 0.27																	
Normal Isochron		139.32	± 147.78 ± 106.08%	27.05194	0.642 0.024	38.09	± 0.90 ± 2.35%	0.63 68%	65.16 7															
		Full External Error			± 0.94			2.26	2σ Confidence Limit															
		Analytical Error			± 0.89			1.0000	Error Magnification															
					100			0.0008954814	Number of Iterations															
					Convergence																			
Inverse Isochron		185.61	± 124.38 ± 67.01%	26.85372	0.632 0.024	37.82	± 0.88 ± 2.34%	0.57 73%	65.16 7															
		Full External Error			± 0.93			2.26	2σ Confidence Limit															
		Analytical Error			± 0.88			1.0000	Error Magnification															
					4			0.0000189617	Number of Iterations															
					6%																			
		Convergence																						
		Spreading Factor																						

Table S3

	Ratios										Ages										Best Age		
	$^{238}\text{U} / ^{232}\text{Th}$	$^{207}\text{Pb} / ^{206}\text{Pb}$	1sigma	$^{207}\text{Pb} / ^{235}\text{U}$	1sigma	$^{206}\text{Pb} / ^{238}\text{U}$	1sigma	$^{208}\text{Pb} / ^{232}\text{Th}$	1sigma	$^{207}\text{Pb} / ^{206}\text{Pb}$	1sigma	$^{207}\text{Pb} / ^{235}\text{U}$	1sigma	$^{206}\text{Pb} / ^{238}\text{U}$	1sigma	$^{208}\text{Pb} / ^{232}\text{Th}$	1sigma	(Ma)	1sigma				
Sample: SH-1																							
SH-1-1	2.600	0.05097	0.00125	0.21667	0.00607	0.03091	0.00049	0.01032	0.00023	239.0	52.8	199.1	5.1	196.3	3.1	207.6	4.6	196.3	3.1				
SH-1-2	2.458	0.05145	0.00150	0.22745	0.00701	0.03212	0.00047	0.01017	0.00025	261.2	66.7	208.1	5.8	203.8	2.9	204.6	5.0	203.8	2.9				
SH-1-3	2.405	0.05053	0.00160	0.22980	0.00716	0.03333	0.00047	0.01067	0.00025	220.4	78.7	210.0	5.9	211.4	2.9	214.5	5.0	211.4	2.9				
SH-1-4	1.280	0.05551	0.00139	0.25737	0.00734	0.03349	0.00042	0.01106	0.00022	431.5	55.6	232.5	5.9	212.4	2.6	222.4	4.4	212.4	2.6				
SH-1-5	2.923	0.04909	0.00112	0.22988	0.00602	0.03398	0.00048	0.01113	0.00024	153.8	53.7	210.1	5.0	215.4	3.0	223.7	4.8	215.4	3.0				
SH-1-6	2.964	0.05015	0.00174	0.23772	0.00843	0.03445	0.00057	0.01054	0.00030	211.2	79.6	216.6	6.9	218.4	3.6	212.0	6.0	218.4	3.6				
SH-1-7	1.530	0.05189	0.00153	0.25701	0.00806	0.03610	0.00055	0.01121	0.00027	279.7	66.7	232.3	6.5	228.6	3.4	225.4	5.4	228.6	3.4				
SH-1-8	0.594	0.04989	0.00125	0.25077	0.00717	0.03640	0.00056	0.01078	0.00020	190.8	62.0	227.2	5.8	230.5	3.5	216.7	4.1	230.5	3.5				
SH-1-9	2.232	0.05285	0.00145	0.26643	0.00780	0.03660	0.00056	0.01147	0.00024	324.1	63.0	239.8	6.3	231.7	3.5	230.5	4.8	231.7	3.5				
SH-1-10	4.045	0.05189	0.00127	0.26795	0.00718	0.03759	0.00059	0.01224	0.00030	279.7	55.6	241.1	5.8	237.9	3.7	245.9	6.0	237.9	3.7				
SH-1-11	5.785	0.05687	0.00139	0.29476	0.00767	0.03771	0.00069	0.01514	0.00047	487.1	53.7	262.3	6.0	238.6	4.3	303.8	9.3	238.6	4.3				
SH-1-12	0.483	0.06406	0.00394	0.32865	0.01956	0.03813	0.00074	0.01157	0.00030	742.6	134.2	288.5	15.0	241.2	4.6	232.5	5.9	241.2	4.6				
SH-1-13	3.517	0.05113	0.00153	0.27730	0.00917	0.03910	0.00056	0.01223	0.00033	255.6	73.1	248.5	7.3	247.3	3.5	245.8	6.7	247.3	3.5				
SH-1-14	3.436	0.05055	0.00168	0.27967	0.01050	0.04031	0.00079	0.01236	0.00038	220.4	75.9	250.4	8.3	254.8	4.9	248.4	7.6	254.8	4.9				
SH-1-15	2.878	0.05492	0.00140	0.31651	0.00880	0.04195	0.00061	0.01403	0.00031	409.3	57.4	279.2	6.8	264.9	3.8	281.6	6.2	264.9	3.8				
SH-1-16	1.054	0.05246	0.00221	0.30605	0.01375	0.04224	0.00070	0.01372	0.00036	305.6	96.3	271.1	10.7	266.7	4.3	275.5	7.3	266.7	4.3				
SH-1-17	2.344	0.05572	0.00191	0.34227	0.01904	0.04285	0.00147	0.01672	0.00083	442.6	75.9	298.9	14.4	270.5	9.1	335.1	16.6	270.5	9.1				
SH-1-18	2.761	0.06019	0.00199	0.36089	0.01341	0.04313	0.00063	0.01619	0.00052	609.3	70.4	312.9	10.0	272.2	3.9	324.7	10.3	272.2	3.9				
SH-1-19	1.021	0.05328	0.00133	0.32366	0.00902	0.04391	0.00066	0.01455	0.00032	338.9	55.6	284.7	6.9	277.0	4.1	292.1	6.3	277.0	4.1				
SH-1-20	1.391	0.05286	0.00149	0.33171	0.00924	0.04566	0.00055	0.01461	0.00032	324.1	64.8	290.9	7.0	287.8	3.4	293.2	6.4	287.8	3.4				
SH-1-21	1.370	0.05343	0.00141	0.34977	0.00922	0.04754	0.00074	0.01572	0.00031	346.4	59.3	304.6	6.9	299.4	4.6	315.3	6.1	299.4	4.6				
SH-1-22	1.078	0.05564	0.00199	0.40008	0.01590	0.05193	0.00079	0.01557	0.00041	438.9	75.0	341.7	11.5	326.3	4.9	312.4	8.2	326.3	4.9				
SH-1-23	1.370	0.05583	0.00208	0.39754	0.01534	0.05199	0.00082	0.01621	0.00040	455.6	83.3	339.9	11.1	326.7	5.0	325.0	8.0	326.7	5.0				
SH-1-24	1.238	0.05587	0.00113	0.44556	0.01091	0.05749	0.00074	0.01843	0.00032	455.6	16.7	374.2	7.7	360.4	4.5	369.2	6.3	360.4	4.5				
SH-1-25	3.739	0.06051	0.00126	0.48140	0.01068	0.05766	0.00068	0.02028	0.00036	620.4	44.4	399.0	7.3	361.4	4.1	405.9	7.1	361.4	4.1				
SH-1-26	0.887	0.05819	0.00154	0.52237	0.01491	0.06510	0.00099	0.02035	0.00043	600.0	57.4	426.7	10.0	406.6	6.0	407.2	8.5	406.6	6.0				
SH-1-27	23.636	0.05646	0.00146	0.52875	0.01672	0.06803	0.00110	0.02230	0.00092	472.3	57.4	431.0	11.1	424.3	6.6	445.7	18.2	424.3	6.6				
SH-1-28	1.461	0.05622	0.00149	0.54685	0.01528	0.07079	0.00099	0.02238	0.00046	461.2	26.9	442.9	10.0	440.9	6.0	447.3	9.1	440.9	6.0				
SH-1-29	4.141	0.05737	0.00144	0.55998	0.01573	0.07092	0.00100	0.02367	0.00067	505.6	55.6	451.5	10.2	441.7	6.0	472.9	13.2	441.7	6.0				
SH-1-30	1.383	0.05530	0.00142	0.54787	0.01551	0.07173	0.00096	0.02154	0.00043	433.4	57.4	443.6	10.2	446.6	5.8	430.7	8.4	446.6	5.8				
SH-1-31	3.829	0.05755	0.00121	0.56777	0.01499	0.07192	0.00149	0.02385	0.00051	522.3	50.9	456.6	9.7	447.7	8.9	476.3	10.2	447.7	8.9				
SH-1-32	1.936	0.05706	0.00176	0.56521	0.01939	0.07216	0.00113	0.02248	0.00049	494.5	63.9	454.9	12.6	449.2	6.8	449.4	9.7	449.2	6.8				
SH-1-33	2.333	0.05578	0.00137	0.57073	0.01671	0.07411	0.00114	0.02288	0.00047	442.6	55.6	458.5	10.8	460.9	6.8	457.2	9.3	460.9	6.8				
SH-1-34	1.155	0.05453	0.00128	0.57199	0.01617	0.07566	0.00117	0.02421	0.00050	387.1	53.7	459.3	10.4	470.2	7.0	483.5	10.0	470.2	7.0				
SH-1-35	10.196	0.06342	0.00165	0.69525	0.01919	0.07951	0.00095	0.03680	0.00131	724.1	55.6	535.9	11.5	493.2	5.7	730.5	25.5	493.2	5.7				
SH-1-36	2.045	0.05857	0.00143	0.70620	0.01916	0.08715	0.00122	0.02645	0.00059	550.0	53.7	542.5	11.4	538.7	7.2	527.7	11.7	538.7	7.2				
SH-1-37	21.275	0.06132	0.00129	0.77956	0.02325	0.09097	0.00179	0.03745	0.00114	650.0	44.4	585.2	13.3	561.3	10.6	743.1	22.2	561.3	10.6				
SH-1-38	108.477	0.06394	0.00115	0.81445	0.01648	0.09218	0.00101	0.09043	0.00373	738.9	37.8	604.9	9.2	568.4	6.0	1749.9	69.2	568.4	6.0				
SH-1-39	4.812	0.06187	0.00177	0.81255	0.03584	0.09241	0.00290	0.02472	0.00099	733.3	63.0	603.9	20.1	569.8	17.1	493.6	19.6	569.8	17.1				
SH-1-40	3.902	0.06252	0.00115	0.92170	0.02200	0.10683	0.00167	0.03255	0.00066	700.0	38.9	663.3	11.6	654.3	9.7	647.5	13.0	654.3	9.7				
SH-1-41	3.253	0.06676	0.00137	1.00191	0.02953	0.10848	0.00220	0.03476	0.00073	831.5	42.6	704.8	15.0	663.9	12.8	690.6	14.2	663.9	12.8				
SH-1-42	3.233	0.06478	0.00221	0.98767	0.03598	0.11062	0.00195	0.03410	0.00123	768.5	72.2	697.5	18.4	676.4	11.3	677.8	24.1	676.4	11.3				
SH-1-43	3.164	0.06877	0.00136	1.06461	0.02559	0.11180	0.00182	0.03413	0.00093	891.7	40.7	736.1	12.6	683.2	10.6	678.4	18.1	683.2	10.6				
SH-1-44	1.350	0.06959	0.00134	1.08176	0.02150	0.11253	0.00123	0.03499	0.00060	916.7</td													

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
SH-1-47	7.104	0.06550	0.00134	1.07294	0.03035	0.11894	0.00243	0.04033	0.00094	790.7	43.4	740.2	14.9	724.5	14.0	799.2	18.3	724.5	14.0			
SH-1-48	1.027	0.06712	0.00170	1.10551	0.04105	0.11969	0.00313	0.03929	0.00090	842.6	53.7	756.0	19.8	728.8	18.0	778.9	17.5	728.8	18.0			
SH-1-49	6.693	0.06575	0.00119	1.12732	0.03458	0.12337	0.00313	0.03865	0.00117	798.2	37.0	766.5	16.5	749.9	17.9	766.5	22.8	749.9	17.9			
SH-1-50	8.071	0.06865	0.00157	1.20988	0.02991	0.12712	0.00173	0.04134	0.00090	887.0	79.8	805.1	13.8	771.4	9.9	818.7	17.5	771.4	9.9			
SH-1-51	3.559	0.07272	0.00141	1.30290	0.04427	0.12866	0.00306	0.04896	0.00177	1005.6	44.6	847.0	19.5	780.2	17.5	966.2	34.1	780.2	17.5			
SH-1-52	8.392	0.06475	0.00135	1.16166	0.04081	0.12972	0.00369	0.04064	0.00109	764.8	44.4	782.7	19.2	786.3	21.0	805.1	21.2	786.3	21.0			
SH-1-53	1.194	0.06899	0.00161	1.23824	0.03433	0.12990	0.00215	0.03991	0.00093	898.2	48.1	818.1	15.6	787.3	12.3	791.1	18.1	787.3	12.3			
SH-1-54	4.312	0.06882	0.00143	1.25930	0.04391	0.13178	0.00346	0.04115	0.00127	894.4	75.0	827.6	19.7	798.0	19.7	815.1	24.7	798.0	19.7			
SH-1-55	1.864	0.06884	0.00170	1.26416	0.03306	0.13344	0.00191	0.04075	0.00087	894.4	50.8	829.8	14.8	807.5	10.9	807.3	16.9	807.5	10.9			
SH-1-56	2.331	0.06626	0.00170	1.24062	0.03512	0.13530	0.00216	0.04016	0.00103	814.5	58.3	819.2	15.9	818.1	12.3	795.9	20.0	818.1	12.3			
SH-1-57	1.756	0.07602	0.00151	1.41505	0.03782	0.13610	0.00324	0.02798	0.00072	1095.4	44.6	895.3	15.9	822.6	18.4	557.8	14.2	822.6	18.4			
SH-1-58	1.826	0.06343	0.00297	1.26392	0.06973	0.14114	0.00338	0.04245	0.00141	724.1	100.0	829.7	31.3	851.1	19.1	840.3	27.3	851.1	19.1			
SH-1-59	1.664	0.08208	0.00253	1.63591	0.05672	0.14354	0.00158	0.04837	0.00127	1247.8	59.7	984.1	21.9	864.6	8.9	954.7	24.4	864.6	8.9			
SH-1-60	1.389	0.07574	0.00185	1.51928	0.03755	0.14503	0.00185	0.04365	0.00081	1088.0	48.6	938.2	15.1	873.0	10.4	863.6	15.6	873.0	10.4			
SH-1-61	1.953	0.06996	0.00149	1.41174	0.04075	0.14549	0.00242	0.04535	0.00089	927.8	44.4	893.9	17.2	875.6	13.6	896.4	17.2	875.6	13.6			
SH-1-62	1.232	0.06805	0.00179	1.37666	0.05048	0.14622	0.00332	0.04511	0.00108	870.1	54.8	879.0	21.6	879.7	18.7	891.9	20.8	879.7	18.7			
SH-1-63	1.057	0.06718	0.00165	1.35393	0.03830	0.14659	0.00238	0.04613	0.00103	842.6	51.9	869.3	16.5	881.8	13.4	911.6	19.8	881.8	13.4			
SH-1-64	1.644	0.07132	0.00143	1.44374	0.03551	0.14679	0.00215	0.04312	0.00094	966.4	41.5	907.3	14.8	882.9	12.1	853.2	18.3	882.9	12.1			
SH-1-65	2.354	0.07217	0.00127	1.52386	0.03122	0.15310	0.00201	0.04759	0.00085	990.7	37.0	940.0	12.6	918.3	11.2	939.8	16.4	918.3	11.2			
SH-1-66	4.250	0.07251	0.00143	1.59168	0.03721	0.15830	0.00243	0.04823	0.00091	1011.1	39.4	967.0	14.6	947.3	13.5	952.1	17.6	947.3	13.5			
SH-1-67	1.814	0.07503	0.00159	1.66199	0.04218	0.16062	0.00238	0.05140	0.00125	1133.3	47.2	994.1	16.1	960.2	13.2	1013.1	24.1	960.2	13.2			
SH-1-68	7.678	0.07456	0.00153	1.66448	0.03997	0.16181	0.00206	0.04632	0.00116	1057.4	41.8	995.1	15.2	966.8	11.4	915.2	22.5	966.8	11.4			
SH-1-69	0.809	0.07207	0.00175	1.62410	0.04210	0.16335	0.00264	0.05075	0.00110	987.0	48.9	979.6	16.3	975.4	14.6	1000.5	21.2	975.4	14.6			
SH-1-70	1.507	0.07322	0.00142	1.69854	0.03952	0.16754	0.00234	0.05372	0.00115	1020.4	35.0	1008.0	14.9	998.5	13.0	1057.7	22.1	998.5	13.0			
SH-1-71	3.714	0.07188	0.00140	1.67489	0.04982	0.16802	0.00358	0.05008	0.00113	983.3	39.7	999.0	18.9	1001.2	19.8	987.7	21.7	983.3	39.7			
SH-1-72	2.674	0.08134	0.00236	2.13656	0.07890	0.18791	0.00250	0.06517	0.00255	1229.3	57.4	1160.7	25.6	1110.0	13.6	1276.0	48.4	1229.3	57.4			
SH-1-73	13.595	0.07964	0.00147	2.15568	0.06145	0.19438	0.00421	0.05739	0.00161	1188.0	40.9	1166.9	19.8	1145.1	22.7	1127.9	30.7	1188.0	40.9			
SH-1-74	1.556	0.09797	0.00176	3.45050	0.07524	0.25535	0.00312	0.07562	0.00147	1587.0	34.4	1516.0	17.2	1466.0	16.0	1473.5	27.6	1587.0	34.4			
SH-1-75	18.925	0.11309	0.00158	4.47022	0.10183	0.28592	0.00525	0.08213	0.00186	1850.0	25.8	1725.5	18.9	1621.1	26.3	1595.4	34.7	1850.0	25.8			
SH-1-76	12.980	0.11706	0.00227	4.75237	0.10010	0.29369	0.00347	0.05245	0.00158	1922.2	34.6	1776.5	17.7	1660.0	17.3	1033.3	30.4	1922.2	34.6			
SH-1-77	0.910	0.11091	0.00323	4.63481	0.14645	0.30318	0.00505	0.08847	0.00218	1814.5	52.6	1755.6	26.4	1707.1	25.0	1713.5	40.4	1814.5	52.6			
SH-1-78	2.773	0.11620	0.00214	4.89241	0.10305	0.30492	0.00386	0.08977	0.00170	1898.5	33.0	1800.9	17.8	1715.7	19.1	1737.6	31.5	1898.5	33.0			
SH-1-79	16.060	0.11963	0.00219	5.14662	0.10929	0.31128	0.00427	0.10088	0.00224	1950.9	32.7	1843.8	18.1	1747.0	21.0	1942.6	41.1	1950.9	32.7			
SH-1-80	13.109	0.11710	0.00222	5.04209	0.10737	0.31137	0.00387	0.09264	0.00178	1922.2	33.2	1826.4	18.1	1747.5	19.1	1790.8	33.0	1922.2	33.2			
SH-1-81	8.566	0.11602	0.00170	4.99612	0.09649	0.31243	0.00410	0.09594	0.00214	1896.0	26.2	1818.7	16.4	1752.6	20.2	1851.7	39.4	1896.0	26.2			
SH-1-82	6.502	0.10559	0.00171	4.59807	0.09611	0.31451	0.00460	0.09061	0.00196	1724.4	29.6	1748.9	17.5	1762.9	22.6	1753.2	36.3	1724.4	29.6			
SH-1-83	2.518	0.13378	0.00197	5.88719	0.10838	0.31776	0.00384	0.09235	0.00149	2147.8	25.9	1959.3	16.0	1778.8	18.8	1785.4	27.6	2147.8	25.9			
SH-1-84	5.885	0.10912	0.00183	4.81566	0.12292	0.31998	0.00584	0.09180	0.00173	1784.9	31.3	1787.6	21.5	1789.6	28.5	1775.3	32.0	1784.9	31.3			
SH-1-85	4.100	0.11338	0.00232	5.06842	0.12954	0.32142	0.00573	0.09908	0.00272	1854.0	36.7	1830.8	21.7	1796.7	28.0	1909.6	50.1	1854.0	36.7			
SH-1-86	0.968	0.11368	0.00250	5.02679	0.12460	0.32148	0.00515	0.09277	0.00215	1859.0	39.0	1823.8	21.0	1796.9	25.1	1793.2	39.8	1859.0	39.0			
SH-1-87	6.488	0.11392	0.00209	5.07366	0.11543	0.32285	0.00445	0.07937	0.00321	1862.7	33.0	1831.7	19.3	1803.6	21.7	1543.7	60.0	1862.7	33.0			
SH-1-88	11.760	0.11442	0.00197	5.11817	0.12008	0.32360	0.00533	0.09410	0.00222	1872.2	31.3	1839.1	20.0	1807.3	26.0	1817.8	41.1	1872.2	31.3			
SH-1-89	2.416	0.11452	0.00167	5.13686	0.10012	0.32526	0.00430	0.09125	0.00171	1872.5	21.5	1842.2	16.6	1815.4	21.0	1764.9	31.7	1872.5	21.5			
SH-1-90	2.416	0.11452	0.00167	5.13686	0.10012	0.32526	0.00430	0.09125	0.00171	1872.5	21.5	1842.2	16.6	1815.4	21.0	1764.9	31.7	1872.5	21.5			
SH-1-91	1.952	0.11249	0.00213	5.11021	0.12114	0.33012	0.00497	0.09448	0.00224	1839.8	34.1	1837.8	20.2	1839.0	24.1	1824.8	41.3	1839.8	34.1			
SH-1-92	7.833																					

Table S3

	Ratios										Ages								Best Age		
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma		
SH-1-96	4.950	0.12049	0.00244	5.86072	0.17299	0.35143	0.00747	0.09499	0.00249	1964.8	35.6	1955.4	25.6	1941.4	35.7	1834.2	46.0	1964.8	35.6		
SH-1-97	16.927	0.12262	0.00259	6.09957	0.26553	0.35293	0.01120	0.09354	0.00257	1994.8	32.6	1990.2	38.0	1948.6	53.4	1807.4	47.4	1994.8	32.6		
SH-1-98	3.379	0.13925	0.00231	6.93587	0.12947	0.36009	0.00412	0.11253	0.00211	2218.2	29.0	2103.3	16.6	1982.6	19.6	2155.3	38.3	2218.2	29.0		
SH-1-99	7.816	0.12788	0.00274	6.68830	0.27706	0.36666	0.01247	0.10422	0.00384	2068.8	37.5	2071.1	36.6	2013.7	58.8	2003.8	70.4	2068.8	37.5		
SH-1-100	3.728	0.13427	0.00220	7.18093	0.15207	0.38715	0.00553	0.10846	0.00207	2154.6	28.7	2134.1	18.9	2109.6	25.7	2081.3	37.8	2154.6	28.7		
SH-1-101	1.582	0.14243	0.00281	7.81121	0.16785	0.40014	0.00497	0.11577	0.00213	2257.1	28.5	2209.5	19.4	2169.7	22.9	2214.1	38.6	2257.1	28.5		
SH-1-102	2.391	0.16531	0.00268	9.49212	0.28433	0.41428	0.01021	0.11586	0.00285	2510.8	27.9	2386.8	27.6	2234.5	46.6	2215.8	51.6	2510.8	27.9		
SH-1-103	2.767	0.15793	0.00327	9.35962	0.24686	0.42661	0.00755	0.12083	0.00267	2435.2	35.2	2373.9	24.2	2290.4	34.1	2305.6	48.1	2435.2	35.2		
SH-1-104	2.473	0.15433	0.00247	9.26274	0.26409	0.43460	0.01087	0.11838	0.00316	2394.8	26.4	2364.3	26.2	2326.4	48.8	2261.4	57.2	2394.8	26.4		
SH-1-105	6.512	0.16172	0.00341	9.81649	0.23741	0.43866	0.00609	0.12863	0.00378	2473.8	35.0	2417.7	22.3	2344.6	27.3	2445.7	67.6	2473.8	35.0		
SH-1-106	3.007	0.16492	0.00225	10.79901	0.18787	0.47395	0.00595	0.13078	0.00236	2506.5	22.8	2506.0	16.3	2500.8	26.0	2484.2	42.1	2506.5	22.8		
SH-1-107	0.984	0.15960	0.00343	10.49999	0.26047	0.47676	0.00704	0.13821	0.00309	2451.5	36.4	2479.9	23.1	2513.2	30.8	2616.5	54.9	2451.5	36.4		
SH-1-108	1.509	0.16821	0.00339	11.27499	0.29515	0.48471	0.00941	0.13746	0.00353	2539.8	33.6	2546.1	24.5	2547.8	40.9	2603.3	62.8	2539.8	33.6		
SH-1-109	1.645	0.16458	0.00295	11.00740	0.28537	0.48483	0.00951	0.13559	0.00322	2503.4	29.9	2523.8	24.2	2548.3	41.3	2570.1	57.4	2503.4	29.9		
SH-1-110	1.450	0.18098	0.00299	12.87480	0.28055	0.51511	0.00777	0.14397	0.00251	2662.0	32.4	2670.5	20.6	2678.4	33.1	2718.6	44.4	2662.0	32.4		
SH-1-111	2.313	0.25652	0.00472	20.25565	0.51411	0.56853	0.01027	0.15334	0.00303	3225.6	29.0	3103.6	24.6	2901.8	42.2	2883.5	53.2	3225.6	29.0		
Sample: JSC-1																					
JSC-1-1	0.985	0.05036	0.00185	0.14283	0.00547	0.02062	0.00032	0.00644	0.00016	213.0	85.2	135.6	4.9	131.6	2.0	129.7	3.2	131.6	2.0		
JSC-1-2	1.607	0.04801	0.00177	0.19411	0.00782	0.02946	0.00050	0.00976	0.00028	98.2	87.0	180.1	6.6	187.2	3.2	196.3	5.7	187.2	3.2		
JSC-1-3	2.312	0.05137	0.00136	0.23205	0.00689	0.03263	0.00051	0.01093	0.00025	257.5	61.1	211.9	5.7	207.0	3.2	219.8	4.9	207.0	3.2		
JSC-1-4	1.373	0.05095	0.00153	0.23634	0.00729	0.03357	0.00047	0.01041	0.00023	239.0	68.5	215.4	6.0	212.9	3.0	209.4	4.7	212.9	3.0		
JSC-1-5	2.094	0.05061	0.00209	0.23403	0.00992	0.03381	0.00045	0.01114	0.00037	233.4	96.3	213.5	8.2	214.3	2.8	223.8	7.4	214.3	2.8		
JSC-1-6	4.240	0.05126	0.00109	0.25792	0.00611	0.03643	0.00054	0.01188	0.00025	253.8	45.4	233.0	4.9	230.7	3.4	238.8	5.0	230.7	3.4		
JSC-1-7	1.482	0.05327	0.00129	0.26807	0.00752	0.03656	0.00053	0.01185	0.00023	338.9	55.6	241.2	6.0	231.5	3.3	238.1	4.7	231.5	3.3		
JSC-1-8	1.704	0.04767	0.00133	0.23873	0.00684	0.03658	0.00052	0.01156	0.00026	83.4	64.8	217.4	5.6	231.6	3.2	232.3	5.3	231.6	3.2		
JSC-1-9	1.481	0.05318	0.00215	0.26796	0.01053	0.03662	0.00054	0.01134	0.00029	344.5	95.4	241.1	8.4	231.8	3.3	227.9	5.8	231.8	3.3		
JSC-1-10	1.566	0.04921	0.00159	0.26013	0.00881	0.03836	0.00052	0.01227	0.00032	166.8	75.9	234.8	7.1	242.7	3.2	246.5	6.4	242.7	3.2		
JSC-1-11	3.893	0.04986	0.00184	0.26826	0.01029	0.03919	0.00057	0.01229	0.00034	187.1	87.0	241.3	8.2	247.8	3.5	246.8	6.7	247.8	3.5		
JSC-1-12	1.463	0.05324	0.00176	0.29252	0.01013	0.03989	0.00069	0.01322	0.00033	338.9	75.9	260.5	8.0	252.1	4.3	265.4	6.6	252.1	4.3		
JSC-1-13	3.676	0.05227	0.00178	0.29611	0.01112	0.04085	0.00060	0.01231	0.00037	298.2	77.8	263.4	8.7	258.1	3.7	247.2	7.3	258.1	3.7		
JSC-1-14	0.974	0.05094	0.00171	0.28843	0.00937	0.04106	0.00053	0.01333	0.00031	239.0	77.8	257.3	7.4	259.4	3.3	267.7	6.2	259.4	3.3		
JSC-1-15	2.458	0.05146	0.00142	0.29806	0.00913	0.04192	0.00064	0.01310	0.00030	261.2	63.0	264.9	7.1	264.7	4.0	263.1	5.9	264.7	4.0		
JSC-1-16	1.052	0.05298	0.00236	0.31065	0.01358	0.04268	0.00069	0.01348	0.00035	327.8	100.0	274.7	10.5	269.4	4.3	270.7	7.0	269.4	4.3		
JSC-1-17	1.147	0.05631	0.00269	0.33283	0.01640	0.04278	0.00075	0.01361	0.00042	464.9	107.4	291.7	12.5	270.0	4.7	273.3	8.5	270.0	4.7		
JSC-1-18	1.139	0.05214	0.00217	0.31426	0.01343	0.04355	0.00073	0.01449	0.00036	300.1	94.4	277.5	10.4	274.8	4.5	290.7	7.3	274.8	4.5		
JSC-1-19	1.695	0.05359	0.00243	0.33108	0.01442	0.04444	0.00071	0.01409	0.00042	353.8	99.1	290.4	11.0	280.3	4.4	282.7	8.4	280.3	4.4		
JSC-1-20	0.864	0.05079	0.00227	0.31693	0.01456	0.04531	0.00069	0.01464	0.00035	231.6	103.7	279.5	11.2	285.7	4.3	293.7	7.0	285.7	4.3		
JSC-1-21	0.943	0.05282	0.00215	0.33486	0.01403	0.04635	0.00101	0.01570	0.00051	320.4	88.0	293.3	10.7	292.1	6.2	314.8	10.1	292.1	6.2		
JSC-1-22	2.551	0.05447	0.00151	0.35411	0.00996	0.04743	0.00084	0.01549	0.00038	390.8	61.1	307.8	7.5	298.8	5.1	310.7	7.6	298.8	5.1		
JSC-1-23	2.033	0.05450	0.00172	0.36587	0.01370	0.04850	0.00096	0.01567	0.00044	390.8	70.4	316.6	10.2	305.3	5.9	314.2	8.7	305.3	5.9		
JSC-1-24	1.021	0.05151	0.00165	0.34953	0.01181	0.04921	0.00077	0.01593	0.00034	264.9	78.7	304.4	8.9	309.7	4.7	319.5	6.8	309.7	4.7		
JSC-1-25	1.712	0.05172	0.00132	0.38984	0.01074	0.05451	0.00080	0.01851	0.00041	272.3	59.3	334.3	7.8	342.1	4.9	370.6	8.1	342.1	4.9		
JSC-1-26	1.818	0.05537	0.00143	0.50517	0.01483	0.06611	0.00091	0.02073	0.00050	427.8	57.4	415.2	10.0	412.7	5.5	414.7	9.9	412.7	5.5		
JSC-1-27	1.465	0.05996	0.00241	0.55703	0.02336	0.06683	0.00117	0.02275	0.00055	611.1	82.4	449.6	15.2	417.0	7.1	454.7	10.9	417.0	7.1		
JSC-1-28	2.489	0.05576	0.00158	0.52833	0.01548	0.06889	0.00103	0.02230	0.00055	442.6	58.3	430.7	10.3	429.4	6.2	445.8	10.9	429.4	6.2		
JSC-1-29	4.910	0.05370	0.00087	0.51214	0.01036	0.06907	0.00107	0.02307	0.00049	366.7	37.0	419.9	7.0	430.5	6.4	461.0	9.7	430.5	6.4		

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
JSC-1-30	1.316	0.05680	0.00123	0.55785	0.01398	0.07059	0.00116	0.02243	0.00049	483.4	48.1	450.1	9.1	439.7	7.0	448.3	9.8	439.7	7.0			
JSC-1-31	1.161	0.05693	0.00158	0.55549	0.01734	0.07084	0.00096	0.02186	0.00042	500.0	61.1	448.6	11.3	441.2	5.8	437.0	8.3	441.2	5.8			
JSC-1-32	1.640	0.05649	0.00152	0.55705	0.01550	0.07168	0.00102	0.02311	0.00055	472.3	61.1	449.6	10.1	446.2	6.2	461.7	10.9	446.2	6.2			
JSC-1-33	1.276	0.05823	0.00192	0.57590	0.01807	0.07189	0.00108	0.02334	0.00065	538.9	72.2	461.8	11.6	447.5	6.5	466.4	12.8	447.5	6.5			
JSC-1-34	1.380	0.05352	0.00190	0.53579	0.01896	0.07272	0.00097	0.02294	0.00058	350.1	47.2	435.6	12.5	452.5	5.8	458.4	11.6	452.5	5.8			
JSC-1-35	1.262	0.05712	0.00212	0.57952	0.02395	0.07330	0.00096	0.02124	0.00046	494.5	81.5	464.2	15.4	456.0	5.8	424.9	9.0	456.0	5.8			
JSC-1-36	1.836	0.05767	0.00152	0.58972	0.01828	0.07374	0.00129	0.02330	0.00052	516.7	57.4	470.7	11.7	458.6	7.7	465.6	10.2	458.6	7.7			
JSC-1-37	2.824	0.05638	0.00113	0.57622	0.01156	0.07387	0.00073	0.02221	0.00040	477.8	44.4	462.0	7.5	459.4	4.4	444.1	7.9	459.4	4.4			
JSC-1-38	1.033	0.06565	0.00273	0.74556	0.03904	0.08057	0.00123	0.02636	0.00099	794.4	87.0	565.6	22.7	499.5	7.4	525.9	19.4	499.5	7.4			
JSC-1-39	1.714	0.05746	0.00121	0.66166	0.01624	0.08330	0.00119	0.02639	0.00052	509.3	46.3	515.6	9.9	515.8	7.1	526.6	10.2	515.8	7.1			
JSC-1-40	2.097	0.07692	0.00192	1.02511	0.03086	0.09627	0.00193	0.03428	0.00090	1120.4	17.6	716.5	15.5	592.5	11.4	681.2	17.6	592.5	11.4			
JSC-1-41	1.168	0.06287	0.00174	0.87551	0.05096	0.09765	0.00438	0.03889	0.00107	705.6	59.3	638.6	27.6	600.6	25.7	771.2	20.8	600.6	25.7			
JSC-1-42	23.654	0.05786	0.00196	0.78189	0.03077	0.09783	0.00187	0.03779	0.00277	524.1	71.3	586.6	17.5	601.7	11.0	749.7	54.0	601.7	11.0			
JSC-1-43	13.530	0.06219	0.00128	0.90290	0.02365	0.10529	0.00166	0.03263	0.00096	679.6	44.4	653.3	12.6	645.3	9.7	649.0	18.8	645.3	9.7			
JSC-1-44	1.348	0.07001	0.00172	1.06555	0.03069	0.11014	0.00146	0.04082	0.00136	927.8	55.7	736.6	15.1	673.6	8.5	808.6	26.5	673.6	8.5			
JSC-1-45	12.184	0.06296	0.00143	1.04352	0.05134	0.11746	0.00455	0.05177	0.00260	705.6	48.1	725.7	25.5	715.9	26.3	1020.3	50.1	715.9	26.3			
JSC-1-46	0.746	0.07016	0.00305	1.18398	0.05008	0.12330	0.00197	0.03703	0.00097	933.0	88.9	793.2	23.3	749.5	11.3	735.0	18.9	749.5	11.3			
JSC-1-47	12.302	0.07045	0.00237	1.26761	0.04429	0.12986	0.00180	0.05074	0.00353	942.6	68.5	831.3	19.8	787.1	10.3	1000.4	67.9	787.1	10.3			
JSC-1-48	1.588	0.06927	0.00219	1.24961	0.03932	0.13120	0.00179	0.04100	0.00098	906.5	65.9	823.2	17.8	794.7	10.2	812.2	19.1	794.7	10.2			
JSC-1-49	1.062	0.07058	0.00215	1.32640	0.03694	0.13693	0.00197	0.04587	0.00097	946.3	61.1	857.3	16.1	827.3	11.2	906.5	18.7	827.3	11.2			
JSC-1-50	1.159	0.07806	0.00243	1.51310	0.05075	0.13997	0.00202	0.04855	0.00120	1150.0	61.1	935.7	20.5	844.5	11.4	958.2	23.2	844.5	11.4			
JSC-1-51	1.045	0.06410	0.00185	1.24203	0.03959	0.14097	0.00220	0.04523	0.00112	746.3	61.1	819.8	17.9	850.2	12.4	894.1	21.7	850.2	12.4			
JSC-1-52	1.463	0.06735	0.00207	1.36676	0.04495	0.14708	0.00217	0.04365	0.00114	850.0	69.4	874.8	19.7	884.6	12.2	863.5	22.0	884.6	12.2			
JSC-1-53	1.983	0.07493	0.00530	1.60611	0.10832	0.15220	0.00397	0.05337	0.00392	1066.4	143.1	972.6	42.2	913.3	22.2	1050.8	75.1	913.3	22.2			
JSC-1-54	1.384	0.07079	0.00168	1.55269	0.03992	0.15843	0.00176	0.04871	0.00105	951.5	48.6	951.6	15.9	948.1	9.8	961.4	20.2	948.1	9.8			
JSC-1-55	5.699	0.07065	0.00134	1.57490	0.03482	0.16137	0.00226	0.05001	0.00112	946.3	38.9	960.4	13.7	964.4	12.6	986.3	21.6	964.4	12.6			
JSC-1-56	2.094	0.07079	0.00214	1.60869	0.06692	0.16376	0.00429	0.05116	0.00152	951.5	62.5	973.6	26.1	977.6	23.8	1008.6	29.2	977.6	23.8			
JSC-1-57	1.030	0.07278	0.00194	1.78842	0.05390	0.17748	0.00353	0.05270	0.00117	1009.3	53.7	1041.2	19.6	1053.2	19.3	1038.0	22.4	1009.3	53.7			
JSC-1-58	0.914	0.08022	0.00199	2.25012	0.06582	0.20370	0.00294	0.06127	0.00124	1266.7	48.1	1196.8	20.6	1195.2	15.7	1202.0	23.7	1266.7	48.1			
JSC-1-59	2.573	0.07631	0.00145	2.18068	0.05219	0.20675	0.00310	0.06283	0.00137	1103.4	38.9	1174.9	16.7	1211.5	16.6	1231.5	26.0	1103.4	38.9			
JSC-1-60	1.231	0.08345	0.00205	2.42748	0.05867	0.21174	0.00270	0.06737	0.00151	1279.6	48.1	1250.8	17.4	1238.1	14.4	1317.9	28.6	1279.6	48.1			
JSC-1-61	3.483	0.10050	0.00185	3.54212	0.08321	0.25503	0.00418	0.07799	0.00160	1635.2	39.4	1536.7	18.6	1464.4	21.5	1517.8	30.1	1635.2	39.4			
JSC-1-62	1.138	0.10882	0.00229	4.23925	0.09056	0.28114	0.00328	0.08076	0.00166	1779.9	37.5	1681.7	17.6	1597.1	16.5	1569.7	31.1	1779.9	37.5			
JSC-1-63	1.740	0.11516	0.00222	4.69081	0.10766	0.29428	0.00420	0.08693	0.00184	1883.3	34.6	1765.6	19.2	1662.9	21.0	1684.8	34.3	1883.3	34.6			
JSC-1-64	1.348	0.11145	0.00209	4.62206	0.10107	0.29989	0.00433	0.09250	0.00175	1833.3	34.4	1753.3	18.3	1690.7	21.5	1788.1	32.4	1833.3	34.4			
JSC-1-65	0.621	0.10822	0.00197	4.51602	0.10591	0.30065	0.00475	0.08889	0.00175	1769.4	33.3	1733.9	19.5	1694.6	23.6	1721.3	32.5	1769.4	33.3			
JSC-1-66	1.610	0.11315	0.00321	4.77117	0.13997	0.30604	0.00432	0.09382	0.00256	1850.3	51.7	1779.8	24.7	1721.2	21.4	1812.6	47.2	1850.3	51.7			
JSC-1-67	1.314	0.11551	0.00275	4.92068	0.13366	0.30694	0.00536	0.09803	0.00247	1888.0	43.7	1805.8	23.0	1725.6	26.5	1890.1	45.4	1888.0	43.7			
JSC-1-68	4.174	0.11874	0.00211	5.15799	0.11242	0.31221	0.00516	0.09404	0.00207	1938.9	31.8	1845.7	18.6	1751.6	25.3	1816.6	38.3	1938.9	31.8			
JSC-1-69	1.536	0.10870	0.00263	4.71473	0.12462	0.31433	0.00458	0.09141	0.00204	1777.5	44.1	1769.9	22.2	1762.0	22.5	1767.9	37.8	1777.5	44.1			
JSC-1-70	1.776	0.10983	0.00179	4.80518	0.08920	0.31587	0.00356	0.09353	0.00158	1798.2	29.6	1785.8	15.6	1769.5	17.4	1807.2	29.3	1798.2	29.6			
JSC-1-71	1.061	0.10944	0.00224	4.82182	0.12337	0.31890	0.00491	0.09175	0.00208	1790.7	37.0	1788.7	21.6	1784.3	24.0	1774.3	38.4	1790.7	37.0			
JSC-1-72	6.526	0.11834	0.00197	5.27573	0.10870	0.32362	0.00395	0.09670	0.00186	1931.2	29.5	1864.9	17.6	1807.4	19.3	1865.8	34.2	1931.2	29.5			
JSC-1-73	6.780	0.11616	0.00181	5.22443	0.12171	0.32509	0.00589	0.09226	0.00178	1897.8	28.1	1856.6	19.9	1814.5	28.7	1783.7	32.9	1897.8	28.1			
JSC-1-74	1.213	0.10867	0.00293	4.88686	0.12649	0.32603	0.00432	0.09184	0.00219	1777.5	48.9	1800.0	21.9	1819.1	21.0	1775.9	40.5	1777.5	48.9			
JSC-1-75	6.667	0.11540	0.00227	5.23838	0.1138																	

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
JSC-1-78	0.853	0.11627	0.00213	5.36462	0.12357	0.33469	0.00478	0.10094	0.00198	1899.7	33.0	1879.2	19.8	1861.1	23.1	1943.6	36.3	1899.7	33.0			
JSC-1-79	3.353	0.11244	0.00203	5.21761	0.10600	0.33557	0.00359	0.09222	0.00172	1839.2	33.2	1855.5	17.4	1865.3	17.4	1782.9	31.9	1839.2	33.2			
JSC-1-80	1.370	0.11273	0.00244	5.23266	0.12419	0.33594	0.00443	0.10162	0.00203	1844.1	38.9	1858.0	20.3	1867.1	21.4	1956.2	37.3	1844.1	38.9			
JSC-1-81	3.279	0.11437	0.00204	5.32564	0.11503	0.33681	0.00480	0.10437	0.00205	1870.1	31.3	1873.0	18.5	1871.3	23.2	2006.6	37.6	1870.1	31.3			
JSC-1-82	0.804	0.11415	0.00213	5.31786	0.12364	0.33754	0.00428	0.09812	0.00191	1866.4	33.6	1871.7	19.9	1874.8	20.7	1891.8	35.1	1866.4	33.6			
JSC-1-83	4.611	0.11544	0.00224	5.43074	0.11729	0.33809	0.00524	0.09811	0.00199	1886.7	34.9	1889.7	18.6	1877.5	25.2	1891.7	36.7	1886.7	34.9			
JSC-1-84	1.299	0.10945	0.00196	5.11809	0.10961	0.33849	0.00464	0.09748	0.00204	1790.7	38.1	1839.1	18.2	1879.4	22.4	1880.1	37.5	1790.7	38.1			
JSC-1-85	1.934	0.11241	0.00209	5.27874	0.11517	0.33952	0.00437	0.09758	0.00179	1838.6	33.2	1865.4	18.7	1884.4	21.0	1881.9	32.9	1838.6	33.2			
JSC-1-86	1.872	0.11256	0.00169	5.35023	0.10397	0.34299	0.00507	0.09972	0.00201	1842.6	59.7	1876.9	16.7	1901.0	24.3	1921.2	36.9	1842.6	59.7			
JSC-1-87	3.787	0.12027	0.00274	5.74975	0.14525	0.34345	0.00548	0.10702	0.00254	1961.1	73.1	1938.9	21.9	1903.2	26.3	2055.0	46.4	1961.1	73.1			
JSC-1-88	2.469	0.11447	0.00185	5.42057	0.11623	0.34378	0.00508	0.10401	0.00188	1872.2	29.6	1888.1	18.4	1904.8	24.4	2000.0	34.3	1872.2	29.6			
JSC-1-89	4.532	0.11032	0.00203	5.33548	0.11382	0.35070	0.00485	0.10063	0.00227	1805.6	33.3	1874.6	18.3	1937.9	23.2	1938.0	41.7	1805.6	33.3			
JSC-1-90	5.825	0.11268	0.00224	5.45918	0.13813	0.35103	0.00603	0.09745	0.00202	1842.9	36.6	1894.2	21.8	1939.5	28.8	1879.5	37.1	1842.9	36.6			
JSC-1-91	3.499	0.11432	0.00240	5.62020	0.13651	0.35530	0.00544	0.10452	0.00264	1868.8	37.5	1919.2	21.0	1959.9	25.9	2009.3	48.4	1868.8	37.5			
JSC-1-92	3.740	0.11616	0.00210	5.70134	0.12449	0.35553	0.00534	0.10687	0.00240	1897.8	33.2	1931.6	18.9	1961.0	25.4	2052.3	43.9	1897.8	33.2			
JSC-1-93	0.618	0.11629	0.00279	5.75571	0.14951	0.35776	0.00457	0.10268	0.00230	1901.9	42.4	1939.8	22.5	1971.6	21.7	1975.6	42.2	1901.9	42.4			
JSC-1-94	4.329	0.11625	0.00235	5.89330	0.12627	0.36524	0.00436	0.11308	0.00260	1899.1	36.1	1960.2	18.6	2007.0	20.6	2165.4	47.3	1899.1	36.1			
JSC-1-95	1.514	0.13203	0.00362	6.92471	0.30287	0.36813	0.00911	0.10713	0.00306	2125.0	48.1	2101.8	38.8	2020.6	43.0	2057.0	55.9	2125.0	48.1			
JSC-1-96	2.476	0.11379	0.00163	5.81053	0.10117	0.36822	0.00453	0.10440	0.00177	1861.1	25.9	1948.0	15.1	2021.0	21.4	2007.1	32.4	1861.1	25.9			
JSC-1-97	3.432	0.11660	0.00199	5.98554	0.10828	0.37096	0.00386	0.10531	0.00190	1905.6	30.6	1973.7	15.8	2033.9	18.2	2023.7	34.8	1905.6	30.6			
JSC-1-98	5.724	0.16892	0.00395	9.86913	0.38176	0.40606	0.01186	0.11600	0.00335	2547.2	40.0	2422.6	35.7	2196.9	54.4	2218.2	60.6	2547.2	40.0			
JSC-1-99	20.850	0.14459	0.00268	8.32254	0.17523	0.41440	0.00524	0.13067	0.00365	2283.0	32.1	2266.8	19.1	2235.0	23.9	2482.3	65.3	2283.0	32.1			
JSC-1-100	2.695	0.15783	0.00273	9.23098	0.17893	0.42381	0.00461	0.12302	0.00267	2432.4	29.3	2361.2	17.8	2277.7	20.9	2345.1	48.1	2432.4	29.3			
JSC-1-101	6.489	0.15892	0.00294	9.43393	0.24813	0.42504	0.00753	0.13581	0.00384	2444.1	31.2	2381.1	24.2	2283.3	34.1	2573.9	68.3	2444.1	31.2			
JSC-1-102	2.820	0.13072	0.00298	7.81387	0.19464	0.43182	0.00670	0.11266	0.00255	2109.3	34.7	2209.8	22.5	2313.9	30.2	2157.7	46.3	2109.3	34.7			
JSC-1-103	1.357	0.15026	0.00316	9.09714	0.21540	0.43878	0.00613	0.12585	0.00260	2350.0	35.8	2347.8	21.7	2345.2	27.5	2396.0	46.7	2350.0	35.8			
JSC-1-104	2.469	0.15263	0.00300	9.32032	0.21784	0.43989	0.00714	0.13212	0.00342	2375.6	33.2	2370.0	21.5	2350.2	32.0	2508.2	61.1	2375.6	33.2			
JSC-1-105	1.888	0.14775	0.00314	9.00362	0.20759	0.44161	0.00561	0.12343	0.00261	2320.1	41.8	2338.4	21.1	2357.8	25.1	2352.4	47.0	2320.1	41.8			
JSC-1-106	1.627	0.15714	0.00269	9.98628	0.21661	0.45974	0.00648	0.12934	0.00258	2425.0	29.0	2433.5	20.1	2438.4	28.7	2458.5	46.2	2425.0	29.0			
JSC-1-107	1.312	0.15972	0.00346	10.31283	0.24794	0.46574	0.00643	0.12992	0.00256	2453.7	41.7	2463.3	22.3	2464.9	28.3	2468.9	45.8	2453.7	41.7			
JSC-1-108	1.606	0.15543	0.00281	9.98370	0.21531	0.46587	0.00548	0.12561	0.00236	2406.5	30.6	2433.3	20.0	2465.4	24.1	2391.7	42.4	2406.5	30.6			
JSC-1-109	1.535	0.16153	0.00347	10.43132	0.25441	0.46759	0.00621	0.13280	0.00287	2471.9	37.2	2473.8	22.7	2473.0	27.3	2520.3	51.2	2471.9	37.2			
JSC-1-110	2.211	0.15610	0.00370	10.49382	0.28631	0.48592	0.00734	0.13445	0.00300	2413.9	40.1	2479.4	25.3	2553.0	31.9	2549.8	53.4	2413.9	40.1			
JSC-1-111	2.637	0.16167	0.00305	11.08791	0.26494	0.49557	0.00739	0.13216	0.00307	2473.1	31.5	2530.5	22.3	2594.7	31.9	2509.0	54.8	2473.1	31.5			
JSC-1-112	3.066	0.16823	0.00275	11.77786	0.22914	0.50570	0.00703	0.14601	0.00304	2539.8	27.9	2586.9	18.3	2638.3	30.1	2754.6	53.7	2539.8	27.9			
JSC-1-113	1.055	0.17590	0.00354	12.45230	0.25629	0.50836	0.00704	0.14633	0.00314	2614.5	33.6	2639.1	19.4	2649.6	30.1	2760.2	55.4	2614.5	33.6			
JSC-1-114	2.803	0.20048	0.00420	15.10119	0.40049	0.54588	0.00994	0.14929	0.00439	2831.5	34.3	2821.6	25.3	2808.0	41.5	2812.4	77.3	2831.5	34.3			
JSC-1-115	2.071	0.27462	0.00553	25.96019	0.58569	0.67856	0.01178	0.18635	0.00462	3332.4	31.5	3345.0	22.2	3338.8	45.3	3453.9	78.8	3332.4	31.5			

Sample: JSC-2

JSC-2-1	1.611	0.04860	0.00202	0.11157	0.00464	0.01674	0.00025	0.00500	0.00013	127.9	102.8	107.4	4.2	107.0	1.6	100.9	2.6	107.0	1.6		
JSC-2-2	1.782	0.05482	0.00271	0.17856	0.00803	0.02426	0.00035	0.00789	0.00024	405.6	111.1	166.8	6.9	154.5	2.2	158.9	4.8	154.5	2.2		
JSC-2-3	0.676	0.05489	0.00245	0.17731	0.00964	0.02429	0.00035	0.00640	0.00036	409.3	100.0	165.7	8.3	154.7	2.2	129.0	7.2	154.7	2.2		
JSC-2-4	1.564	0.05404	0.00504	0.21212	0.01627	0.02645	0.00067	0.00796	0.00039	372.3	211.1	195.3	13.6	168.3	4.2	160.2	7.9	168.3	4.2		
JSC-2-5	6.166	0.05295	0.00175	0.22736	0.00736	0.03119	0.00036	0.01070	0.00030	3											

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
JSC-2-8	2.147	0.05260	0.00193	0.23927	0.00931	0.03287	0.00045	0.01076	0.00031	322.3	80.5	217.8	7.6	208.5	2.8	216.3	6.2	208.5	2.8			
JSC-2-9	1.343	0.05073	0.00201	0.23267	0.00927	0.03318	0.00044	0.01079	0.00025	227.8	58.3	212.4	7.6	210.4	2.7	217.0	4.9	210.4	2.7			
JSC-2-10	1.224	0.04965	0.00139	0.22884	0.00680	0.03335	0.00041	0.01019	0.00019	189.0	60.2	209.2	5.6	211.5	2.6	204.9	3.9	211.5	2.6			
JSC-2-11	1.905	0.05644	0.00154	0.26769	0.00729	0.03434	0.00034	0.01119	0.00022	477.8	59.3	240.8	5.8	217.7	2.1	224.9	4.3	217.7	2.1			
JSC-2-12	1.666	0.04634	0.00189	0.21424	0.01207	0.03463	0.00060	0.00916	0.00056	16.8	92.6	197.1	10.1	219.5	3.8	184.2	11.2	219.5	3.8			
JSC-2-13	1.391	0.05085	0.00165	0.24286	0.00815	0.03466	0.00049	0.01111	0.00026	235.3	69.4	220.8	6.7	219.6	3.0	223.4	5.2	219.6	3.0			
JSC-2-14	2.386	0.05143	0.00152	0.24718	0.00828	0.03477	0.00054	0.01076	0.00024	261.2	68.5	224.3	6.7	220.3	3.3	216.3	4.9	220.3	3.3			
JSC-2-15	2.488	0.04977	0.00134	0.23888	0.00675	0.03481	0.00047	0.01092	0.00024	183.4	67.6	217.5	5.5	220.6	2.9	219.6	4.8	220.6	2.9			
JSC-2-16	1.819	0.05079	0.00150	0.24355	0.00819	0.03509	0.00054	0.00997	0.00031	231.6	68.5	221.3	6.7	222.3	3.4	200.5	6.3	222.3	3.4			
JSC-2-17	3.075	0.05012	0.00152	0.24640	0.00842	0.03541	0.00056	0.01102	0.00029	211.2	102.8	223.6	6.9	224.3	3.5	221.5	5.7	224.3	3.5			
JSC-2-18	1.626	0.05039	0.00142	0.25870	0.00810	0.03711	0.00053	0.01173	0.00023	213.0	64.8	233.6	6.5	234.9	3.3	235.7	4.7	234.9	3.3			
JSC-2-19	2.263	0.05627	0.00193	0.29150	0.00977	0.03765	0.00048	0.01213	0.00030	461.2	77.8	259.7	7.7	238.2	3.0	243.7	6.0	238.2	3.0			
JSC-2-20	1.928	0.05740	0.00259	0.30457	0.01258	0.03922	0.00070	0.01217	0.00040	505.6	102.8	270.0	9.8	248.0	4.4	244.5	8.0	248.0	4.4			
JSC-2-21	5.385	0.05042	0.00165	0.27434	0.00959	0.03944	0.00053	0.01245	0.00042	213.0	43.5	246.2	7.6	249.3	3.3	250.2	8.3	249.3	3.3			
JSC-2-22	1.373	0.05369	0.00277	0.29902	0.01534	0.04085	0.00067	0.01322	0.00035	366.7	119.4	265.6	12.0	258.1	4.2	265.4	7.1	258.1	4.2			
JSC-2-23	0.941	0.05407	0.00308	0.31724	0.01672	0.04246	0.00082	0.01399	0.00036	372.3	129.6	279.8	12.9	268.1	5.1	280.7	7.3	268.1	5.1			
JSC-2-24	1.184	0.05189	0.00264	0.31762	0.01930	0.04452	0.00106	0.01361	0.00043	279.7	113.9	280.1	14.9	280.8	6.5	273.2	8.6	280.8	6.5			
JSC-2-25	1.769	0.05275	0.00165	0.34433	0.01164	0.04722	0.00065	0.01551	0.00038	316.7	65.7	300.4	8.8	297.4	4.0	311.1	7.6	297.4	4.0			
JSC-2-26	1.675	0.05592	0.00308	0.37124	0.01932	0.04754	0.00087	0.01454	0.00054	450.0	124.1	320.6	14.3	299.4	5.4	291.7	10.7	299.4	5.4			
JSC-2-27	1.257	0.05431	0.00233	0.36202	0.01542	0.04855	0.00069	0.01550	0.00038	383.4	96.3	313.7	11.5	305.6	4.3	310.9	7.6	305.6	4.3			
JSC-2-28	0.900	0.05125	0.00171	0.34938	0.01219	0.04933	0.00077	0.01363	0.00033	253.8	77.8	304.3	9.2	310.4	4.7	273.6	6.7	310.4	4.7			
JSC-2-29	1.060	0.05237	0.00212	0.37761	0.01561	0.05277	0.00078	0.01656	0.00035	301.9	92.6	325.3	11.5	331.5	4.8	332.1	7.1	331.5	4.8			
JSC-2-30	9.397	0.04906	0.00123	0.35866	0.01174	0.05286	0.00121	0.01532	0.00045	150.1	54.6	311.2	8.8	332.1	7.4	307.2	8.9	332.1	7.4			
JSC-2-31	1.173	0.05562	0.00186	0.45795	0.01619	0.05982	0.00077	0.01820	0.00039	438.9	74.1	382.8	11.3	374.5	4.7	364.5	7.8	374.5	4.7			
JSC-2-32	34.971	0.05706	0.00100	0.47499	0.00934	0.06025	0.00060	0.01998	0.00083	494.5	38.9	394.6	6.4	377.1	3.7	399.8	16.4	377.1	3.7			
JSC-2-33	2.975	0.06381	0.00142	0.53339	0.01397	0.06110	0.00109	0.02159	0.00054	744.5	48.1	434.1	9.3	382.3	6.6	431.7	10.6	382.3	6.6			
JSC-2-34	1.628	0.05405	0.00111	0.46595	0.01096	0.06250	0.00084	0.02063	0.00040	372.3	48.1	388.4	7.6	390.8	5.1	412.8	7.9	390.8	5.1			
JSC-2-35	3.477	0.06800	0.00223	0.59138	0.02018	0.06308	0.00088	0.02020	0.00048	877.8	100.9	471.8	12.9	394.3	5.3	404.3	9.5	394.3	5.3			
JSC-2-36	2.184	0.05373	0.00187	0.47757	0.01570	0.06482	0.00087	0.02110	0.00058	366.7	77.8	396.4	10.8	404.9	5.3	422.1	11.5	404.9	5.3			
JSC-2-37	1.447	0.05448	0.00146	0.50352	0.01420	0.06681	0.00075	0.02041	0.00037	390.8	59.3	414.1	9.6	416.9	4.6	408.4	7.3	416.9	4.6			
JSC-2-38	3.291	0.05407	0.00133	0.51444	0.01439	0.06860	0.00087	0.01971	0.00045	372.3	55.6	421.4	9.7	427.7	5.3	394.6	8.8	427.7	5.3			
JSC-2-39	1.496	0.05066	0.00131	0.48336	0.01397	0.06883	0.00096	0.01985	0.00043	233.4	59.2	400.4	9.6	429.1	5.8	397.3	8.6	429.1	5.8			
JSC-2-41	1.586	0.05776	0.00158	0.55583	0.01572	0.06961	0.00092	0.02236	0.00053	520.4	63.9	448.8	10.3	433.8	5.5	446.9	10.5	433.8	5.5			
JSC-2-42	2.083	0.05766	0.00160	0.55741	0.01850	0.06974	0.00135	0.02111	0.00058	516.7	61.1	449.8	12.1	434.6	8.1	422.3	11.5	434.6	8.1			
JSC-2-43	1.554	0.05397	0.00174	0.52159	0.01756	0.06994	0.00093	0.02130	0.00049	368.6	74.1	426.2	11.7	435.8	5.6	426.0	9.7	435.8	5.6			
JSC-2-44	1.332	0.05558	0.00123	0.55789	0.01305	0.07024	0.00091	0.02170	0.00036	435.2	48.1	437.0	8.6	437.6	5.5	434.0	7.2	437.6	5.5			
JSC-2-45	1.338	0.05036	0.00228	0.46907	0.03255	0.07055	0.00132	0.01677	0.00140	213.0	110.2	390.5	22.5	439.4	8.0	336.1	27.9	439.4	8.0			
JSC-2-46	1.379	0.05666	0.00149	0.55311	0.01619	0.07061	0.00100	0.02150	0.00046	479.7	89.8	447.0	10.6	439.8	6.0	429.9	9.0	439.8	6.0			
JSC-2-47	1.205	0.05923	0.00165	0.58105	0.01778	0.07107	0.00100	0.02304	0.00052	576.0	56.5	465.1	11.4	442.6	6.0	460.4	10.4	442.6	6.0			
JSC-2-48	1.684	0.05671	0.00137	0.55748	0.01448	0.07109	0.00081	0.02243	0.00042	479.7	49.1	449.9	9.4	442.7	4.9	448.4	8.3	442.7	4.9			
JSC-2-49	1.786	0.05455	0.00153	0.54505	0.01626	0.07237	0.00104	0.02367	0.00055	394.5	61.1	441.7	10.7	450.4	6.3	472.8	10.9	450.4	6.3			
JSC-2-50	354.647	0.05596	0.00116	0.56428	0.01305	0.07295	0.00096	0.04246	0.00324	450.0	44.4	454.3	8.5	453.9	5.7	840.4	62.8	453.9	5.7			
JSC-2-51	1.980	0.06057	0.00148	0.61754	0.01650	0.07388	0.00086	0.02358	0.00052	633.4	53.7	488.3	10.4	459.5	5.2	471.1	10.2	459.5	5.2			
JSC-2-52	1.865	0.05586	0.00184	0.57518	0.02392	0.07454	0.00134	0.02016	0.00064	455.6	72.2	461.4	15.4	463.5	8.1	403.5	12.6	463.5	8.1			
JSC-2-53	7.761	0.05822	0.00142	0.67637	0.01786	0.08407	0.00119	0.02601	0.00071	538.9	53.7	524.6	10.8	520.4	7.1	519.0	14.1	520.4	7.1			
JSC-2-54	12.189	0.06535	0.00153	1.04046	0.05574	0.10923	0.00499	0.03396	0.00148	787.0	45.4	724.1	27.7	668.3	29.0	675.1	28.9	668.3	29.0			
JSC-2-55	1.631	0.07350	0.00198																			

Table S3

	Ratios										Ages										Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
JSC-2-57	1.480	0.06777	0.00127	1.25549	0.03262	0.13448	0.00241	0.03771	0.00094	861.1	34.3	825.9	14.7	813.4	13.7	748.3	18.3	813.4	13.7			
JSC-2-58	1.575	0.07287	0.00194	1.37022	0.04333	0.13773	0.00357	0.04646	0.00105	1010.2	54.8	876.3	18.6	831.8	20.2	918.0	20.3	831.8	20.2			
JSC-2-59	18.907	0.07294	0.00115	1.44572	0.02773	0.14352	0.00156	0.06100	0.00152	1013.0	27.6	908.1	11.5	864.5	8.8	1196.8	28.9	864.5	8.8			
JSC-2-60	8.293	0.06542	0.00122	1.36981	0.03116	0.15100	0.00217	0.04233	0.00092	787.0	38.9	876.1	13.4	906.6	12.2	838.0	17.9	906.6	12.2			
JSC-2-61	2.442	0.07072	0.00161	1.52779	0.03831	0.15619	0.00193	0.04351	0.00092	950.0	46.8	941.6	15.4	935.5	10.8	860.9	17.9	935.5	10.8			
JSC-2-62	3.329	0.07355	0.00171	1.65380	0.04488	0.16253	0.00246	0.04421	0.00139	1029.3	47.4	991.0	17.2	970.8	13.7	874.4	26.9	970.8	13.7			
JSC-2-63	0.647	0.07230	0.00197	1.62351	0.04746	0.16292	0.00261	0.04990	0.00119	994.4	55.6	979.4	18.4	973.0	14.5	984.3	23.0	973.0	14.5			
JSC-2-64	3.876	0.07183	0.00153	1.89109	0.04828	0.18984	0.00281	0.06538	0.00233	981.2	47.2	1078.0	17.0	1120.5	15.2	1280.1	44.3	981.2	47.2			
JSC-2-65	1.486	0.07846	0.00151	2.07333	0.04788	0.19089	0.00276	0.05543	0.00113	1158.3	37.8	1140.0	15.8	1126.2	15.0	1090.4	21.6	1158.3	37.8			
JSC-2-66	1.628	0.06881	0.00254	1.78351	0.10425	0.19483	0.00412	0.04631	0.00330	894.4	75.9	1039.5	38.0	1147.5	22.2	914.9	63.7	894.4	75.9			
JSC-2-67	3.343	0.08416	0.00265	2.77420	0.15947	0.22918	0.00944	0.09302	0.00559	1298.2	65.7	1348.6	42.9	1330.2	49.5	1797.8	103.5	1298.2	65.7			
JSC-2-68	1.715	0.11329	0.00206	4.06273	0.09527	0.25825	0.00377	0.07406	0.00166	1853.7	33.3	1646.9	19.1	1480.9	19.3	1444.1	31.2	1853.7	33.3			
JSC-2-69	2.617	0.09238	0.00248	3.43880	0.09677	0.27041	0.00402	0.07974	0.00191	1475.9	45.8	1513.3	22.2	1542.9	20.4	1550.7	35.7	1475.9	45.8			
JSC-2-70	1.113	0.10844	0.00249	4.07886	0.13999	0.27418	0.00826	0.07885	0.00300	1773.2	41.5	1650.1	28.0	1562.0	41.8	1534.0	56.2	1773.2	41.5			
JSC-2-71	7.974	0.11231	0.00233	4.38249	0.09560	0.28209	0.00284	0.07712	0.00148	1838.9	38.4	1709.0	18.1	1601.9	14.3	1501.5	27.7	1838.9	38.4			
JSC-2-72	2.501	0.11285	0.00249	4.55120	0.13063	0.28993	0.00561	0.08654	0.00240	1855.6	39.8	1740.4	23.9	1641.2	28.1	1677.6	44.6	1855.6	39.8			
JSC-2-73	1.708	0.11004	0.00295	4.51701	0.13508	0.29722	0.00454	0.08921	0.00208	1811.1	48.8	1734.1	24.9	1677.5	22.6	1727.2	38.7	1811.1	48.8			
JSC-2-74	2.468	0.11825	0.00192	4.82697	0.13633	0.29785	0.00817	0.08528	0.00240	1931.5	28.6	1789.6	23.8	1680.6	40.6	1654.1	44.8	1931.5	28.6			
JSC-2-75	1.740	0.10870	0.00267	4.52764	0.11541	0.30151	0.00383	0.08894	0.00193	1777.5	44.8	1736.1	21.2	1698.8	19.0	1722.2	35.9	1777.5	44.8			
JSC-2-76	7.182	0.11345	0.00211	4.79825	0.10358	0.30526	0.00434	0.09329	0.00227	1855.3	33.6	1784.6	18.2	1717.3	21.4	1802.8	42.0	1855.3	33.6			
JSC-2-77	5.914	0.11258	0.00232	4.81047	0.12150	0.31204	0.00379	0.08374	0.00207	1842.6	37.0	1786.7	21.3	1750.7	18.6	1625.5	38.6	1842.6	37.0			
JSC-2-78	0.851	0.11458	0.00227	5.01958	0.10433	0.31775	0.00408	0.08996	0.00163	1873.2	35.2	1822.6	17.6	1778.7	20.0	1741.2	30.2	1873.2	35.2			
JSC-2-79	3.628	0.11604	0.00203	5.17069	0.11262	0.32250	0.00481	0.09040	0.00195	1896.0	31.5	1847.8	18.6	1801.9	23.4	1749.3	36.1	1896.0	31.5			
JSC-2-80	1.963	0.09959	0.00244	4.46986	0.12085	0.32381	0.00503	0.07676	0.00195	1616.7	45.7	1725.4	22.5	1808.3	24.5	1494.9	36.6	1616.7	45.7			
JSC-2-81	1.555	0.10568	0.00205	4.73673	0.10521	0.32399	0.00450	0.09558	0.00177	1727.8	30.7	1773.8	18.7	1809.2	21.9	1845.1	32.6	1727.8	30.7			
JSC-2-82	1.750	0.11244	0.00233	5.05063	0.11778	0.32443	0.00434	0.09571	0.00205	1839.2	32.6	1827.9	19.8	1811.3	21.2	1847.4	37.9	1839.2	32.6			
JSC-2-83	1.130	0.11522	0.00235	5.17544	0.11511	0.32448	0.00415	0.09320	0.00189	1883.0	37.2	1848.6	19.0	1811.6	20.2	1801.1	34.9	1883.0	37.2			
JSC-2-84	1.237	0.10869	0.00250	4.93397	0.12894	0.32787	0.00460	0.09685	0.00190	1777.5	10.2	1808.1	22.1	1828.0	22.4	1868.5	35.0	1777.5	10.2			
JSC-2-85	3.274	0.11652	0.00232	5.29456	0.11965	0.32812	0.00406	0.09308	0.00178	1903.4	2.9	1868.0	19.3	1829.3	19.7	1798.9	33.0	1903.4	2.9			
JSC-2-86	3.270	0.11630	0.00186	5.31204	0.10289	0.33115	0.00432	0.09910	0.00196	1901.9	28.2	1870.8	16.6	1844.0	21.0	1909.9	36.0	1901.9	28.2			
JSC-2-87	6.961	0.11391	0.00160	5.21943	0.08608	0.33125	0.00351	0.10143	0.00164	1862.7	24.5	1855.8	14.1	1844.4	17.0	1952.7	30.1	1862.7	24.5			
JSC-2-88	7.814	0.11488	0.00206	5.28106	0.11662	0.33262	0.00529	0.09972	0.00232	1879.6	27.3	1865.8	18.9	1851.1	25.6	1921.3	42.6	1879.6	27.3			
JSC-2-89	1.418	0.11295	0.00208	5.18163	0.11340	0.33270	0.00445	0.09101	0.00195	1847.2	33.3	1849.6	18.7	1851.4	21.6	1760.6	36.1	1847.2	33.3			
JSC-2-90	5.055	0.11702	0.00202	5.41032	0.10059	0.33411	0.00353	0.09915	0.00195	1922.2	31.3	1886.5	16.0	1858.3	17.1	1910.9	35.8	1922.2	31.3			
JSC-2-91	2.038	0.11434	0.00203	5.29516	0.10903	0.33545	0.00458	0.09918	0.00185	1869.4	31.5	1868.1	17.6	1864.7	22.2	1911.3	34.0	1869.4	31.5			
JSC-2-92	2.768	0.10368	0.00213	4.82537	0.10634	0.33663	0.00422	0.08448	0.00198	1691.1	37.5	1789.3	18.6	1870.4	20.4	1639.2	36.9	1691.1	37.5			
JSC-2-94	2.885	0.11310	0.00167	5.35671	0.10092	0.34224	0.00450	0.09701	0.00156	1850.0	21.5	1878.0	16.2	1897.4	21.6	1871.5	28.8	1850.0	21.5			
JSC-2-95	4.164	0.11921	0.00220	5.81727	0.13234	0.35279	0.00560	0.10177	0.00200	1946.3	33.0	1949.0	19.8	1947.9	26.7	1958.8	36.7	1946.3	33.0			
JSC-2-96	1.755	0.11753	0.00201	5.74951	0.11679	0.35367	0.00455	0.10011	0.00178	1920.4	31.0	1938.8	17.6	1952.1	21.7	1928.5	32.7	1920.4	31.0			
JSC-2-97	7.064	0.12200	0.00324	5.95861	0.26093	0.35887	0.00765	0.09434	0.00484	1987.0	46.8	1969.8	38.1	1976.8	36.3	1822.1	89.3	1987.0	46.8			
JSC-2-98	4.473	0.11291	0.00196	5.60538	0.12137	0.35946	0.00489	0.09558	0.00188	1846.6	31.5	1916.9	18.7	1979.6	23.2	1845.1	34.7	1846.6	31.5			
JSC-2-99	1.384	0.11049	0.00247	5.58647	0.14839	0.36586	0.00627	0.11071	0.00289	1809.3	40.7	1914.0	22.9	2009.9	29.6	2122.3	52.7	1809.3	40.7			
JSC-2-100	3.456	0.11669	0.00211	5.94959	0.13944	0.36837	0.00618	0.09689	0.00184	1905.9	32.9	1968.5	20.4	2021.7	29.1	1869.2	33.8	1905.9	32.9			
JSC-2-101	1.383	0.12912	0.00219	6.66167	0.13575	0.37360	0.00458	0.09916	0.00198	2087.0	29.6	2067.6	18.0	2046.3	21.5	1911.0	36.5	2087.0	29.6			
JSC-2-102	0.820	0.12438	0.00293	6.46379	0.17390	0.37677	0.00582	0.11113	0.00274	2020.1	41.7	2041.0	23.7	2061.2	2							

Table S3

	Ratios												Ages										Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma					
JSC-2-106	1.424	0.16755	0.00267	9.69581	0.19915	0.41719	0.00546	0.11413	0.00189	2533.0	27.3	2406.3	19.0	2247.7	24.9	2184.4	34.3	2533.0	27.3					
JSC-2-107	2.670	0.15234	0.00351	9.05612	0.25242	0.42909	0.00757	0.11952	0.00262	2372.5	40.3	2343.7	25.5	2301.6	34.2	2281.9	47.4	2372.5	40.3					
JSC-2-108	3.524	0.15283	0.00259	9.10789	0.24558	0.42972	0.00834	0.12646	0.00322	2388.9	28.2	2348.9	24.7	2304.5	37.6	2406.8	57.8	2388.9	28.2					
JSC-2-109	1.430	0.17518	0.00326	10.51466	0.24526	0.43637	0.00552	0.10586	0.00254	2609.3	31.2	2481.2	21.7	2334.4	24.8	2033.8	46.5	2609.3	31.2					
JSC-2-110	1.946	0.15441	0.00355	9.37935	0.29670	0.44803	0.00742	0.10935	0.00369	2395.4	34.3	2375.8	29.1	2386.5	33.0	2097.5	67.2	2395.4	34.3					
JSC-2-111	0.956	0.16287	0.00316	10.21312	0.24248	0.45467	0.00777	0.12594	0.00313	2487.0	32.3	2454.3	22.0	2416.0	34.4	2397.6	56.1	2487.0	32.3					
JSC-2-112	1.779	0.16533	0.00286	10.44530	0.20916	0.45700	0.00611	0.12247	0.00229	2510.8	28.2	2475.1	18.6	2426.3	27.1	2335.2	41.3	2510.8	28.2					
JSC-2-113	1.846	0.18138	0.00328	11.79914	0.28049	0.46922	0.00717	0.12938	0.00278	2665.7	29.9	2588.6	22.3	2480.1	31.5	2459.3	49.7	2665.7	29.9					
JSC-2-114	2.279	0.18152	0.00314	12.42389	0.24486	0.49475	0.00597	0.14135	0.00263	2733.3	28.2	2637.0	18.6	2591.2	25.8	2672.2	46.6	2733.3	28.2					
JSC-2-115	1.151	0.17365	0.00319	11.97801	0.26052	0.49767	0.00650	0.13316	0.00249	2594.4	30.6	2602.7	20.5	2603.8	28.0	2526.7	44.4	2594.4	30.6					
JSC-2-116	1.184	0.16371	0.00272	11.67636	0.24942	0.51651	0.00712	0.14349	0.00283	2494.1	27.8	2578.8	20.1	2684.4	30.3	2710.2	50.0	2494.1	27.8					
Sample: BX-S-1																								
BXS-1-1	2.283	0.04980	0.00123	0.22938	0.00617	0.03336	0.00050	0.01034	0.00021	187.1	57.4	209.7	5.1	211.6	3.1	208.0	4.1	211.6	3.1					
BXS-1-2	2.601	0.05118	0.00136	0.23638	0.00696	0.03348	0.00050	0.01084	0.00031	255.6	61.1	215.5	5.7	212.3	3.1	218.0	6.2	212.3	3.1					
BXS-1-3	1.930	0.05144	0.00219	0.23881	0.00940	0.03375	0.00051	0.01102	0.00033	261.2	93.5	217.4	7.7	214.0	3.2	221.6	6.6	214.0	3.2					
BXS-1-4	2.193	0.05286	0.00198	0.24638	0.00891	0.03381	0.00046	0.01133	0.00030	324.1	85.2	223.6	7.3	214.4	2.9	227.8	6.0	214.4	2.9					
BXS-1-5	3.757	0.04912	0.00172	0.23086	0.00845	0.03408	0.00052	0.01079	0.00037	153.8	78.7	210.9	7.0	216.0	3.2	216.8	7.4	216.0	3.2					
BXS-1-6	2.118	0.05025	0.00144	0.24000	0.00751	0.03468	0.00053	0.01109	0.00027	205.6	66.7	218.4	6.2	219.7	3.3	222.9	5.5	219.7	3.3					
BXS-1-7	2.171	0.04903	0.00159	0.23524	0.00820	0.03481	0.00051	0.01085	0.00026	150.1	77.8	214.5	6.7	220.6	3.2	218.2	5.2	220.6	3.2					
BXS-1-8	1.836	0.05076	0.00149	0.25373	0.00842	0.03596	0.00058	0.01124	0.00026	231.6	68.5	229.6	6.8	227.8	3.6	225.8	5.3	227.8	3.6					
BXS-1-9	1.611	0.05122	0.00144	0.27059	0.00806	0.03835	0.00053	0.01203	0.00025	250.1	69.4	243.2	6.4	242.6	3.3	241.7	5.0	242.6	3.3					
BXS-1-10	3.243	0.04811	0.00181	0.25700	0.01018	0.03874	0.00084	0.01252	0.00037	105.6	88.9	232.2	8.2	245.0	5.2	251.6	7.4	245.0	5.2					
BXS-1-11	1.359	0.05854	0.00397	0.33008	0.01868	0.03904	0.00070	0.01287	0.00042	550.0	152.8	289.6	14.3	246.9	4.3	258.4	8.4	246.9	4.3					
BXS-1-12	1.511	0.05302	0.00239	0.28710	0.01393	0.03919	0.00077	0.01241	0.00041	331.5	97.2	256.3	11.0	247.8	4.8	249.2	8.2	247.8	4.8					
BXS-1-13	2.014	0.05140	0.00228	0.29029	0.01316	0.04073	0.00062	0.01355	0.00038	257.5	106.5	258.8	10.4	257.4	3.8	272.1	7.6	257.4	3.8					
BXS-1-14	1.626	0.05175	0.00170	0.29235	0.00998	0.04102	0.00060	0.01259	0.00026	276.0	74.1	260.4	7.8	259.2	3.7	252.9	5.2	259.2	3.7					
BXS-1-15	2.000	0.05126	0.00145	0.29197	0.00816	0.04151	0.00078	0.01343	0.00035	253.8	64.8	260.1	6.4	262.2	4.8	269.6	6.9	262.2	4.8					
BXS-1-16	2.809	0.05067	0.00183	0.31133	0.01237	0.04445	0.00070	0.01334	0.00037	233.4	85.2	275.2	9.6	280.3	4.3	267.8	7.4	280.3	4.3					
BXS-1-17	1.967	0.05347	0.00147	0.36356	0.01049	0.04912	0.00067	0.01533	0.00042	350.1	61.1	314.9	7.8	309.1	4.1	307.5	8.3	309.1	4.1					
BXS-1-18	0.717	0.05134	0.00140	0.36460	0.01006	0.05114	0.00070	0.01575	0.00035	257.5	63.0	315.6	7.5	321.5	4.3	315.9	6.9	321.5	4.3					
BXS-1-19	5.491	0.05211	0.00140	0.37084	0.01186	0.05133	0.00072	0.01846	0.00086	300.1	61.1	320.3	8.8	322.7	4.4	369.8	17.0	322.7	4.4					
BXS-1-20	1.203	0.05030	0.00173	0.37418	0.01427	0.05327	0.00081	0.01696	0.00040	209.3	79.6	322.7	10.5	334.6	5.0	340.0	8.0	334.6	5.0					
BXS-1-21	2.977	0.05289	0.00187	0.41293	0.01462	0.05670	0.00075	0.01778	0.00044	324.1	112.0	351.0	10.5	355.5	4.6	356.3	8.7	355.5	4.6					
BXS-1-22	1.034	0.05821	0.00228	0.48229	0.01964	0.05975	0.00094	0.01985	0.00048	538.9	85.2	399.6	13.5	374.1	5.7	397.3	9.5	374.1	5.7					
BXS-1-23	1.107	0.05374	0.00171	0.49659	0.01667	0.06724	0.00092	0.02025	0.00044	361.2	72.2	409.4	11.3	419.5	5.6	405.2	8.7	419.5	5.6					
BXS-1-24	1.355	0.05609	0.00169	0.52413	0.01625	0.06780	0.00098	0.02090	0.00044	457.5	66.7	427.9	10.8	422.9	5.9	418.0	8.6	422.9	5.9					
BXS-1-25	5.252	0.05611	0.00111	0.52971	0.01210	0.06834	0.00102	0.02315	0.00052	457.5	42.6	431.6	8.0	426.2	6.1	462.6	10.3	426.2	6.1					
BXS-1-26	1.740	0.05275	0.00129	0.50562	0.01409	0.06918	0.00094	0.02122	0.00046	316.7	55.6	415.5	9.5	431.2	5.7	424.4	9.1	431.2	5.7					
BXS-1-27	1.375	0.05604	0.00143	0.54355	0.01501	0.07024	0.00089	0.02234	0.00040	453.8	55.6	440.8	9.9	437.6	5.4	446.6	7.9	437.6	5.4					
BXS-1-28	2.680	0.05670	0.00152	0.55645	0.01538	0.07074	0.00090	0.02210	0.00043	479.7	59.3	449.2	10.0	440.6	5.4	441.8	8.4	440.6	5.4					
BXS-1-29	3.252	0.05863	0.00131	0.57641	0.01476	0.07090	0.00080	0.02123	0.00046	553.7	54.6	462.2	9.5	441.6	4.8	424.6	9.1	441.6	4.8					
BXS-1-30	1.521	0.05432	0.00230	0.53389	0.02193	0.07120	0.00093	0.02237	0.00055	383.4	94.4	434.4	14.5	443.4	5.6	447.1	11.0	443.4	5.6					
BXS-1-31	2.064	0.05382	0.00133	0.53352	0.01478	0.07137	0.00114	0.02260	0.00052	364.9	55.6	434.1	9.8	444.4	6.9	451.7	10.3	444.4	6.9					
BXS-1-32	1.129	0.05783	0.00127	0.57053	0.01395	0.07154	0.00097	0.02236	0.00040	524.1	48.1	458.4	9.0	445.4	5.8	447.0	7.9	445.4	5.8					
BXS-1-33	1.342	0.05344	0.00145	0.																				

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
BXS-1-35	1.290	0.05473	0.00152	0.57682	0.01742	0.07655	0.00148	0.02657	0.00079	466.7	61.1	462.4	11.2	475.5	8.8	530.0	15.5	475.5	8.8			
BXS-1-36	1.021	0.05913	0.00166	0.62450	0.01821	0.07657	0.00115	0.02388	0.00058	572.3	61.1	492.7	11.4	475.6	6.9	476.9	11.4	475.6	6.9			
BXS-1-37	1.104	0.05915	0.00242	0.67389	0.02882	0.08289	0.00132	0.02563	0.00064	572.3	89.6	523.1	17.5	513.4	7.8	511.6	12.5	513.4	7.8			
BXS-1-38	2.491	0.05835	0.00120	0.68923	0.01595	0.08505	0.00114	0.02669	0.00048	542.6	44.4	532.3	9.6	526.2	6.8	532.4	9.5	526.2	6.8			
BXS-1-39	2.545	0.05717	0.00113	0.67969	0.01583	0.08577	0.00124	0.02781	0.00059	498.2	44.4	526.6	9.6	530.5	7.3	554.5	11.5	530.5	7.3			
BXS-1-40	1.689	0.06035	0.00172	0.80232	0.03071	0.09438	0.00221	0.03000	0.00088	616.7	61.1	598.1	17.3	581.4	13.0	597.4	17.2	581.4	13.0			
BXS-1-41	1.871	0.06268	0.00118	0.84851	0.01794	0.09797	0.00137	0.03087	0.00061	698.2	39.7	623.8	9.9	602.5	8.0	614.5	11.9	602.5	8.0			
BXS-1-42	2.019	0.05930	0.00178	0.82018	0.03227	0.09998	0.00225	0.03108	0.00089	588.9	60.2	608.1	18.0	614.3	13.2	618.6	17.4	614.3	13.2			
BXS-1-43	1.346	0.07187	0.00199	1.08807	0.03115	0.11015	0.00220	0.03681	0.00072	983.3	57.4	747.6	15.2	673.6	12.8	730.6	14.0	673.7	7.9			
BXS-1-44	1.392	0.06397	0.00131	1.00667	0.02290	0.11361	0.00137	0.03563	0.00066	740.4	42.6	707.2	11.6	693.7	7.9	707.6	13.0	693.7	7.9			
BXS-1-45	1.296	0.06357	0.00212	1.04810	0.03227	0.11998	0.00175	0.03733	0.00078	727.8	72.2	727.9	16.0	730.4	10.1	740.8	15.3	730.4	10.1			
BXS-1-46	2.945	0.05984	0.00150	1.02161	0.02800	0.12399	0.00175	0.03807	0.00086	598.2	53.7	714.7	14.1	753.5	10.1	755.1	16.7	753.5	10.1			
BXS-1-47	1.921	0.06566	0.00293	1.13099	0.05055	0.12491	0.00209	0.03914	0.00098	794.4	94.4	768.2	24.1	758.8	12.0	776.0	19.1	758.8	12.0			
BXS-1-48	0.813	0.06263	0.00135	1.11005	0.02641	0.12802	0.00198	0.03733	0.00070	694.5	46.3	758.2	12.7	776.6	11.3	740.7	13.6	776.6	11.3			
BXS-1-49	1.266	0.06331	0.00353	1.11489	0.06132	0.12847	0.00232	0.03999	0.00114	720.4	119.3	760.5	29.4	779.1	13.3	792.6	22.2	779.1	13.3			
BXS-1-50	0.431	0.06476	0.00168	1.15381	0.03151	0.12869	0.00175	0.03888	0.00083	766.4	54.8	779.0	14.9	780.4	10.0	771.0	16.1	780.4	10.0			
BXS-1-51	0.684	0.06482	0.00171	1.16634	0.03294	0.12977	0.00176	0.03931	0.00086	768.5	55.6	784.9	15.4	786.6	10.0	779.3	16.7	786.6	10.0			
BXS-1-52	0.861	0.06111	0.00193	1.10563	0.03629	0.13108	0.00178	0.03887	0.00089	642.6	68.5	756.1	17.5	794.0	10.1	770.8	17.4	794.0	10.1			
BXS-1-53	1.891	0.06547	0.00150	1.24484	0.03039	0.13788	0.00168	0.04036	0.00084	790.7	47.1	821.1	13.8	832.6	9.6	799.8	16.3	832.6	9.6			
BXS-1-54	2.578	0.06517	0.00136	1.26776	0.03000	0.14127	0.00207	0.04280	0.00094	788.9	44.4	831.4	13.4	851.9	11.7	847.0	18.2	851.9	11.7			
BXS-1-55	1.752	0.08373	0.00374	1.65926	0.07560	0.14426	0.00255	0.05314	0.00226	1287.0	87.0	993.1	28.9	868.7	14.4	1046.5	43.3	868.7	14.4			
BXS-1-56	1.945	0.07628	0.00138	1.60232	0.05525	0.14970	0.00403	0.05502	0.00144	1101.9	36.6	971.1	21.6	899.3	22.6	1082.6	27.5	899.3	22.6			
BXS-1-57	3.564	0.06820	0.00165	1.42445	0.03983	0.15084	0.00278	0.04918	0.00127	875.9	45.4	899.2	16.7	905.7	15.6	970.4	24.5	905.7	15.6			
BXS-1-58	2.130	0.07009	0.00184	1.47948	0.04179	0.15275	0.00219	0.04719	0.00101	931.5	53.7	922.0	17.1	916.3	12.2	932.0	19.5	916.3	12.2			
BXS-1-59	0.960	0.06900	0.00148	1.45538	0.03189	0.15325	0.00179	0.04578	0.00081	898.2	44.4	912.1	13.2	919.2	10.0	904.7	15.6	919.2	10.0			
BXS-1-60	1.362	0.07139	0.00285	1.53170	0.06117	0.15598	0.00251	0.04882	0.00142	968.5	81.5	943.2	24.5	934.4	14.0	963.5	27.5	934.4	14.0			
BXS-1-61	2.985	0.07052	0.00157	1.53075	0.04598	0.15655	0.00286	0.04620	0.00124	942.6	45.2	942.8	18.5	937.6	16.0	912.8	24.0	937.6	16.0			
BXS-1-62	1.592	0.06973	0.00188	1.57811	0.04598	0.16334	0.00227	0.04871	0.00103	920.4	55.6	961.6	18.1	975.3	12.6	961.4	19.8	975.3	12.6			
BXS-1-63	5.345	0.07046	0.00131	1.62755	0.03495	0.16678	0.00251	0.05482	0.00135	942.6	42.7	980.9	13.5	994.3	13.9	1078.7	25.8	994.3	13.9			
BXS-1-64	1.417	0.06825	0.00151	1.58189	0.04067	0.16803	0.00245	0.05050	0.00116	875.9	45.5	963.1	16.0	1001.3	13.5	995.8	22.3	875.9	45.5			
BXS-1-65	4.866	0.07621	0.00183	1.84220	0.07993	0.16881	0.00571	0.05775	0.00111	1101.9	48.1	1060.6	28.6	1005.6	31.5	1134.8	21.2	1101.9	48.1			
BXS-1-66	1.048	0.07030	0.00179	1.68302	0.04972	0.17331	0.00273	0.05191	0.00114	938.9	52.6	1002.1	18.8	1030.3	15.0	1023.0	21.9	938.9	52.6			
BXS-1-67	2.853	0.07116	0.00165	1.73771	0.05454	0.17631	0.00363	0.05012	0.00110	961.1	43.5	1022.6	20.2	1046.8	19.9	988.5	21.3	961.1	43.5			
BXS-1-68	1.484	0.07533	0.00188	2.04098	0.06319	0.19609	0.00369	0.06586	0.00193	1077.5	50.0	1129.3	21.1	1154.3	19.9	1289.1	36.6	1077.5	50.0			
BXS-1-69	1.592	0.07632	0.00165	2.13147	0.05300	0.20134	0.00304	0.05973	0.00125	1103.4	42.6	1159.1	17.2	1182.5	16.3	1172.6	23.9	1103.4	42.6			
BXS-1-70	0.554	0.08155	0.00428	2.27337	0.10094	0.20550	0.00342	0.06175	0.00163	1235.2	136.1	1204.1	31.3	1204.8	18.3	1211.2	31.1	1235.2	136.1			
BXS-1-71	1.470	0.08047	0.00175	2.29126	0.05630	0.20565	0.00262	0.06244	0.00135	1209.3	43.1	1209.6	17.4	1205.6	14.1	1224.2	25.7	1209.3	43.1			
BXS-1-72	0.971	0.07905	0.00153	2.44165	0.04678	0.22236	0.00257	0.06505	0.00125	1173.2	34.3	1255.0	13.8	1294.3	13.6	1273.8	23.8	1173.2	34.3			
BXS-1-73	1.216	0.10940	0.00255	4.12439	0.10459	0.27383	0.00390	0.08851	0.00216	1790.7	42.3	1659.1	20.8	1560.2	19.8	1714.1	40.2	1790.7	42.3			
BXS-1-74	1.621	0.09651	0.00181	3.65651	0.07985	0.27541	0.00458	0.07932	0.00177	1557.7	35.2	1561.9	17.4	1568.2	23.2	1542.7	33.2	1557.7	35.2			
BXS-1-75	1.847	0.10777	0.00205	4.17279	0.08714	0.28142	0.00373	0.08414	0.00195	1762.0	35.2	1668.7	17.1	1598.5	18.8	1633.0	36.4	1762.0	35.2			
BXS-1-76	1.335	0.09970	0.00209	4.17005	0.09646	0.30138	0.00382	0.09055	0.00170	1620.4	34.3	1668.2	19.0	1698.2	18.9	1752.1	31.4	1620.4	34.3			
BXS-1-77	1.896	0.11373	0.00206	4.84591	0.09480	0.30792	0.00389	0.08737	0.00188	1861.1	32.3	1792.9	16.5	1730.5	19.2	1693.1	34.9	1861.1	32.3			
BXS-1-78	23.156	0.11343	0.00190	5.00016	0.12980	0.31699	0.00575	0.08757	0.00172	1855.3	30.3	1819.3	22.0	1775.0	28.2	1696.7	32.0	1855.3	30.3			
BXS-1-79	4.673	0.11097	0.00181	4.87604	0.09425	0.31746	0.00405	0.09024	0.00152	1816.7	34.3	1798.1	16.3	1777.3	19.9	1746.2	28.1	1816.7	34.3			
BXS-1-80	2.000	0.11108	0.00198	4.88332	0.09992	0.31																

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
BXS-1-83	1.110	0.11494	0.00199	5.17707	0.10751	0.32536	0.00428	0.09217	0.00162	1879.6	31.2	1848.9	17.7	1815.9	20.8	1782.0	30.0	1879.6	31.2			
BXS-1-84	0.894	0.11661	0.00347	5.28700	0.18070	0.32641	0.00446	0.09889	0.00231	1905.6	53.7	1866.8	29.2	1820.9	21.7	1906.0	42.6	1905.6	53.7			
BXS-1-85	1.789	0.11444	0.00272	5.15964	0.13413	0.32670	0.00412	0.09448	0.00203	1872.2	42.9	1846.0	22.1	1822.4	20.0	1824.7	37.6	1872.2	42.9			
BXS-1-86	2.466	0.11202	0.00232	5.13844	0.12046	0.33057	0.00486	0.10340	0.00270	1832.4	37.7	1842.5	20.0	1841.1	23.6	1988.9	49.4	1832.4	37.7			
BXS-1-87	1.875	0.10672	0.00177	4.94273	0.09388	0.33520	0.00358	0.09558	0.00157	1744.1	31.3	1809.6	16.1	1863.6	17.3	1845.0	28.9	1744.1	31.3			
BXS-1-88	4.724	0.11009	0.00192	5.11924	0.09904	0.33681	0.00352	0.09612	0.00176	1811.1	31.8	1839.3	16.5	1871.3	17.0	1855.0	32.4	1811.1	31.8			
BXS-1-89	1.972	0.11640	0.00241	5.45981	0.15332	0.33765	0.00552	0.09697	0.00232	1901.5	37.0	1894.3	24.1	1875.3	26.6	1870.7	42.7	1901.5	37.0			
BXS-1-90	1.185	0.11532	0.00226	5.39373	0.12417	0.33779	0.00443	0.09586	0.00184	1884.9	35.2	1883.9	19.8	1876.0	21.4	1850.3	33.9	1884.9	35.2			
BXS-1-91	5.614	0.10981	0.00186	5.14757	0.10250	0.33905	0.00410	0.09023	0.00241	1796.0	31.3	1844.0	17.0	1882.1	19.8	1746.0	44.8	1796.0	31.3			
BXS-1-92	6.379	0.11250	0.00198	5.32390	0.11100	0.34167	0.00476	0.09906	0.00200	1840.4	31.5	1872.7	17.9	1894.7	22.9	1909.1	36.8	1840.4	31.5			
BXS-1-93	2.523	0.11147	0.00231	5.30589	0.12114	0.34351	0.00509	0.10258	0.00265	1833.3	37.0	1869.8	19.5	1903.5	24.5	1973.8	48.6	1833.3	37.0			
BXS-1-94	2.808	0.11120	0.00177	5.27120	0.10200	0.34355	0.00410	0.09959	0.00181	1820.4	28.6	1864.2	16.6	1903.7	19.7	1918.9	33.3	1820.4	28.6			
BXS-1-95	18.943	0.11230	0.00184	5.36687	0.10304	0.34534	0.00449	0.09912	0.00315	1836.7	29.6	1879.6	16.5	1912.3	21.5	1910.2	57.9	1836.7	29.6			
BXS-1-96	1.088	0.10925	0.00189	5.22585	0.11274	0.34561	0.00472	0.10127	0.00201	1786.7	31.5	1856.8	18.4	1913.6	22.7	1949.8	37.0	1786.7	31.5			
BXS-1-97	1.909	0.11381	0.00216	5.45270	0.11050	0.34656	0.00378	0.09635	0.00165	1860.8	33.5	1893.2	17.4	1918.1	18.1	1859.2	30.5	1860.8	33.5			
BXS-1-98	2.592	0.11289	0.00178	5.43779	0.10616	0.34777	0.00500	0.10091	0.00208	1846.6	29.2	1890.8	16.8	1924.0	24.0	1943.1	38.2	1846.6	29.2			
BXS-1-99	1.136	0.11803	0.00230	5.73811	0.12308	0.35199	0.00480	0.10087	0.00195	1927.8	35.2	1937.1	18.6	1944.1	22.9	1942.5	35.8	1927.8	35.2			
BXS-1-10	3.259	0.10995	0.00213	5.41524	0.12545	0.35519	0.00541	0.10224	0.00240	1798.5	36.3	1887.3	19.9	1959.3	25.8	1967.6	43.9	1798.5	36.3			
BXS-1-10	1.033	0.11117	0.00237	5.65755	0.13087	0.36714	0.00486	0.10591	0.00235	1820.4	34.3	1924.9	20.0	2015.9	23.0	2034.8	43.0	1820.4	34.3			
BXS-1-10'	4.839	0.13488	0.00324	7.13304	0.31309	0.36966	0.00931	0.12356	0.00349	2162.7	42.6	2128.2	39.1	2027.8	43.8	2354.8	62.8	2162.7	42.6			
BXS-1-10'	7.234	0.11319	0.00184	5.88489	0.14098	0.37483	0.00672	0.11744	0.00260	1851.6	29.3	1959.0	20.8	2052.1	31.5	2244.4	46.9	1851.6	29.3			
BXS-1-10'	2.136	0.13111	0.00243	6.87997	0.14064	0.37966	0.00482	0.10791	0.00223	2112.7	33.2	2096.1	18.2	2074.7	22.6	2071.2	40.6	2112.7	33.2			
BXS-1-10'	1.732	0.12280	0.00219	6.76279	0.14601	0.39644	0.00622	0.11763	0.00245	1998.2	31.8	2080.9	19.2	2152.6	28.7	2247.8	44.2	1998.2	31.8			
BXS-1-10'	1.429	0.14512	0.00228	8.00693	0.19715	0.39889	0.00782	0.09055	0.00219	2300.0	26.9	2231.8	22.3	2163.9	36.0	1752.1	40.5	2300.0	26.9			
BXS-1-10'	5.244	0.14831	0.00240	8.36272	0.18063	0.40743	0.00618	0.11565	0.00207	2327.8	27.8	2271.1	19.6	2203.2	28.3	2212.0	37.6	2327.8	27.8			
BXS-1-10'	1.890	0.13715	0.00233	7.75899	0.15382	0.40849	0.00520	0.11430	0.00230	2191.7	29.3	2203.5	17.9	2208.0	23.8	2187.6	41.8	2191.7	29.3			
BXS-1-10'	2.029	0.16222	0.00269	9.20009	0.17605	0.41107	0.00481	0.12939	0.00267	2478.7	27.8	2358.1	17.6	2219.8	22.0	2459.3	47.9	2478.7	27.8			
BXS-1-11	1.850	0.15649	0.00256	9.17693	0.17060	0.42315	0.00525	0.11878	0.00196	2418.2	27.8	2355.8	17.1	2274.8	23.8	2268.5	35.5	2418.2	27.8			
BXS-1-11	1.178	0.12477	0.00294	7.36665	0.25823	0.42530	0.01232	0.10500	0.00193	2025.6	47.4	2156.9	31.4	2284.5	55.7	2018.0	35.3	2025.6	47.4			
BXS-1-11	2.013	0.14199	0.00298	8.79939	0.21735	0.44909	0.00621	0.12511	0.00280	2251.6	35.3	2317.4	22.6	2391.2	27.7	2382.7	50.3	2251.6	35.3			
BXS-1-11	3.130	0.16386	0.00241	10.22615	0.19373	0.45152	0.00567	0.13085	0.00257	2496.0	24.2	2455.4	17.6	2402.0	25.2	2485.5	45.9	2496.0	24.2			
BXS-1-11	1.467	0.15871	0.00275	10.02531	0.20626	0.45750	0.00600	0.12954	0.00275	2441.7	30.1	2437.1	19.1	2428.5	26.6	2462.1	49.3	2441.7	30.1			
BXS-1-11	0.627	0.15571	0.00260	10.08312	0.22001	0.46812	0.00660	0.13155	0.00221	2409.6	28.9	2442.4	20.2	2475.3	29.0	2498.0	39.5	2409.6	28.9			
BXS-1-11	5.708	0.16230	0.00280	10.83879	0.23459	0.48417	0.00728	0.13388	0.00315	2479.9	29.0	2509.4	20.2	2545.4	31.7	2539.6	56.2	2479.9	29.0			
BXS-1-11'	1.172	0.15345	0.00312	10.26903	0.24164	0.48447	0.00653	0.13175	0.00271	2384.9	35.3	2459.3	21.8	2546.7	28.4	2501.5	48.4	2384.9	35.3			
BXS-1-11'	1.503	0.15806	0.00277	10.75799	0.22418	0.49192	0.00692	0.13683	0.00280	2434.9	29.6	2502.4	19.4	2579.0	29.9	2592.1	49.8	2434.9	29.6			
BXS-1-11'	1.892	0.20150	0.00318	14.31594	0.25373	0.51348	0.00554	0.13411	0.00210	2838.6	25.6	2770.9	16.9	2671.5	23.6	2543.7	37.5	2838.6	25.6			

Table S3

	Ratios									Ages									Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma	
GD-1-9	1.360	0.05068	0.00287	0.24105	0.01458	0.03442	0.00052	0.01250	0.00043	226.0	112.0	219.0	12.0	218.0	3.0	251.0	9.0	218.0	3.0	
GD-1-10	2.140	0.04948	0.00098	0.24131	0.00591	0.03502	0.00026	0.01202	0.00014	171.0	43.0	219.0	5.0	222.0	2.0	242.0	3.0	222.0	2.0	
GD-1-11	2.620	0.05000	0.00186	0.24513	0.00853	0.03557	0.00038	0.01206	0.00020	195.0	61.0	223.0	7.0	225.0	2.0	242.0	4.0	225.0	2.0	
GD-1-12	1.310	0.05234	0.00131	0.26970	0.00763	0.03746	0.00037	0.01257	0.00017	300.0	47.0	242.0	6.0	237.0	2.0	252.0	3.0	237.0	2.0	
GD-1-13	2.930	0.05160	0.00196	0.28444	0.01146	0.03803	0.00047	0.01559	0.00055	268.0	70.0	254.0	9.0	241.0	3.0	313.0	11.0	241.0	3.0	
GD-1-14	1.240	0.05240	0.00220	0.28445	0.01493	0.03822	0.00042	0.01294	0.00028	303.0	100.0	254.0	12.0	242.0	3.0	260.0	6.0	242.0	3.0	
GD-1-15	1.470	0.04857	0.00130	0.26354	0.00741	0.03860	0.00032	0.01342	0.00017	127.0	50.0	238.0	6.0	244.0	2.0	269.0	3.0	244.0	2.0	
GD-1-16	3.640	0.04924	0.00124	0.26995	0.00748	0.03903	0.00033	0.01275	0.00028	159.0	49.0	243.0	6.0	247.0	2.0	256.0	6.0	247.0	2.0	
GD-1-17	1.090	0.04742	0.00165	0.25713	0.00867	0.03963	0.00034	0.01334	0.00015	70.0	60.0	232.0	7.0	251.0	2.0	268.0	3.0	251.0	2.0	
GD-1-18	1.040	0.05189	0.00181	0.29175	0.01123	0.03975	0.00048	0.01327	0.00018	281.0	66.0	260.0	9.0	251.0	3.0	266.0	3.0	251.0	3.0	
GD-1-19	3.150	0.05025	0.00292	0.29942	0.02033	0.04051	0.00055	0.01234	0.00050	207.0	130.0	266.0	16.0	256.0	3.0	248.0	10.0	256.0	3.0	
GD-1-20	1.640	0.05328	0.00206	0.29289	0.01195	0.04082	0.00069	0.01356	0.00047	341.0	62.0	261.0	9.0	258.0	4.0	272.0	9.0	258.0	4.0	
GD-1-21	0.570	0.04985	0.00384	0.29656	0.02630	0.04173	0.00075	0.01369	0.00030	188.0	166.0	264.0	21.0	264.0	5.0	275.0	6.0	264.0	5.0	
GD-1-22	1.310	0.04970	0.00178	0.28416	0.01191	0.04182	0.00044	0.01459	0.00049	181.0	78.0	254.0	9.0	264.0	3.0	293.0	10.0	264.0	3.0	
GD-1-23	3.260	0.05294	0.00227	0.29720	0.01323	0.04176	0.00052	0.01418	0.00044	326.0	78.0	264.0	10.0	264.0	3.0	285.0	9.0	264.0	3.0	
GD-1-24	1.240	0.04833	0.00223	0.29468	0.01680	0.04244	0.00051	0.01528	0.00035	115.0	106.0	262.0	13.0	268.0	3.0	307.0	7.0	268.0	3.0	
GD-1-25	1.240	0.05249	0.00260	0.31557	0.01808	0.04261	0.00050	0.01429	0.00026	307.0	110.0	278.0	14.0	269.0	3.0	287.0	5.0	269.0	3.0	
GD-1-26	1.860	0.04917	0.00225	0.29075	0.01422	0.04276	0.00044	0.01502	0.00033	156.0	93.0	259.0	11.0	270.0	3.0	301.0	7.0	270.0	3.0	
GD-1-27	2.260	0.05166	0.00119	0.31100	0.00902	0.04317	0.00051	0.01414	0.00025	270.0	45.0	275.0	7.0	272.0	3.0	284.0	5.0	272.0	3.0	
GD-1-28	3.300	0.05206	0.00119	0.32571	0.00853	0.04499	0.00036	0.01535	0.00021	288.0	45.0	286.0	7.0	284.0	2.0	308.0	4.0	284.0	2.0	
GD-1-29	2.350	0.05347	0.00207	0.32542	0.01194	0.04524	0.00043	0.01476	0.00036	349.0	66.0	286.0	9.0	285.0	3.0	296.0	7.0	285.0	3.0	
GD-1-30	1.600	0.05478	0.00171	0.35422	0.01321	0.04534	0.00045	0.01625	0.00031	403.0	66.0	308.0	10.0	286.0	3.0	326.0	6.0	286.0	3.0	
GD-1-31	1.520	0.05229	0.00425	0.33029	0.02665	0.04554	0.00087	0.01631	0.00066	298.0	148.0	290.0	20.0	287.0	5.0	327.0	13.0	287.0	5.0	
GD-1-32	1.370	0.05043	0.00228	0.31769	0.01503	0.04626	0.00055	0.01534	0.00030	215.0	88.0	280.0	12.0	291.0	3.0	308.0	6.0	291.0	3.0	
GD-1-33	1.890	0.05399	0.00190	0.37308	0.01698	0.04735	0.00047	0.01812	0.00030	371.0	85.0	322.0	13.0	298.0	3.0	363.0	6.0	298.0	3.0	
GD-1-34	1.000	0.04963	0.00135	0.32812	0.01004	0.04851	0.00040	0.01658	0.00021	178.0	56.0	288.0	8.0	305.0	2.0	332.0	4.0	305.0	2.0	
GD-1-35	2.360	0.05263	0.00162	0.38130	0.01376	0.05051	0.00043	0.01786	0.00032	313.0	67.0	328.0	10.0	318.0	3.0	358.0	6.0	318.0	3.0	
GD-1-36	2.370	0.04884	0.00172	0.35261	0.01597	0.05065	0.00042	0.01712	0.00040	140.0	89.0	307.0	12.0	319.0	3.0	343.0	8.0	319.0	3.0	
GD-1-37	2.050	0.05060	0.00310	0.40370	0.03375	0.05196	0.00068	0.01728	0.00040	223.0	165.0	344.0	24.0	327.0	4.0	346.0	8.0	327.0	4.0	
GD-1-38	2.560	0.05540	0.00126	0.41514	0.01054	0.05426	0.00046	0.02094	0.00035	428.0	41.0	353.0	8.0	341.0	3.0	419.0	7.0	341.0	3.0	
GD-1-39	2.210	0.05248	0.00197	0.42016	0.02017	0.05623	0.00058	0.01885	0.00046	306.0	91.0	356.0	14.0	353.0	4.0	377.0	9.0	353.0	4.0	
GD-1-40	1.610	0.05097	0.00169	0.44454	0.02067	0.05848	0.00058	0.01979	0.00041	239.0	89.0	373.0	15.0	366.0	4.0	396.0	8.0	366.0	4.0	
GD-1-41	1.690	0.05936	0.00150	0.51501	0.01550	0.06293	0.00060	0.02219	0.00033	580.0	49.0	422.0	10.0	393.0	4.0	444.0	6.0	393.0	4.0	
GD-1-42	6.170	0.05120	0.00160	0.46355	0.01761	0.06363	0.00067	0.02131	0.00069	250.0	68.0	387.0	12.0	398.0	4.0	426.0	14.0	398.0	4.0	
GD-1-43	2.820	0.05147	0.00114	0.45297	0.01450	0.06455	0.00049	0.02165	0.00037	262.0	60.0	379.0	10.0	403.0	3.0	433.0	7.0	403.0	3.0	
GD-1-44	2.560	0.05258	0.00099	0.48215	0.01176	0.06758	0.00067	0.02255	0.00035	311.0	37.0	400.0	8.0	422.0	4.0	451.0	7.0	422.0	4.0	
GD-1-45	1.960	0.05820	0.00190	0.56171	0.02303	0.06840	0.00073	0.02368	0.00047	537.0	71.0	453.0	15.0	426.0	4.0	473.0	9.0	426.0	4.0	
GD-1-46	0.760	0.05688	0.00158	0.54903	0.01812	0.06855	0.00051	0.02212	0.00021	487.0	60.0	444.0	12.0	427.0	3.0	442.0	4.0	427.0	3.0	
GD-1-47	1.360	0.05370	0.00172	0.51524	0.02123	0.06862	0.00063	0.02285	0.00038	358.0	77.0	422.0	14.0	428.0	4.0	457.0	7.0	428.0	4.0	
GD-1-48	1.230	0.05596	0.00190	0.54187	0.02487	0.06865	0.00100	0.02324	0.00042	451.0	76.0	440.0	16.0	428.0	6.0	464.0	8.0	428.0	6.0	
GD-1-49	2.940	0.05512	0.00235	0.52337	0.02690	0.06872	0.00071	0.02377	0.00058	417.0	97.0	427.0	18.0	428.0	4.0	475.0	12.0	428.0	4.0	
GD-1-50	0.960	0.06085	0.00234	0.63855	0.03116	0.07093	0.00105	0.02437	0.00048	634.0	80.0	501.0	19.0	442.0	6.0	487.0	9.0	442.0	6.0	
GD-1-51	2.300	0.05496	0.00086	0.56413	0.01083	0.07114	0.00065	0.02478	0.00037	411.0	27.0	454.0	7.0	443.0	4.0	495.0	7.0	443.0	4.0	
GD-1-52	2.790	0.05550	0.00076	0.56174	0.01095	0.07149	0.00058	0.02551	0.00027	432.0	29.0	453.0	7.0	445.0	3.0	509.0	5.0	445.0	3.0	
GD-1-53	1.350	0.05547	0.00138	0.56454	0.01660	0.07243	0.00050	0.02479	0.00039	431.0	53.0	454.0	11.0	451.0	3.0	495.0	8.0	451.0	3.0	
GD-1-54	1.720	0.05509	0.00128	0.57067	0.01381	0.07303	0.00092	0.02420	0.00041	416.0	32.0	458.0	9.0	454.0	6.0	483.0	8.0	454.0	6.0	
GD-1-55	2.720	0.05310	0.00133	0.55600	0.01790	0.07339	0.00070	0.02545	0.00044	333.0	56.0	449.0	12.0	457.0	4.0	508.0	9.0	457.0	4.0	
GD-1-56	3.450	0.05278	0.00194	0.52928	0.01990	0.07376	0.00077	0.02498	0.00060	319.0	67.0	431.0	13.0	459.0	5.0	499.0	12.0	459.0	5.0	

Table S3

	Ratios										Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma	
GD-1-57	2.880	0.05577	0.00163	0.56886	0.01883	0.07399	0.00058	0.02526	0.00045	443.0	60.0	457.0	12.0	460.0	3.0	504.0	9.0	460.0	3.0	
GD-1-58	2.620	0.05382	0.00159	0.58319	0.02076	0.07397	0.00072	0.02494	0.00048	364.0	63.0	467.0	13.0	460.0	4.0	498.0	10.0	460.0	4.0	
GD-1-59	2.020	0.05782	0.00282	0.63640	0.04054	0.07419	0.00090	0.02450	0.00054	523.0	120.0	500.0	25.0	461.0	5.0	489.0	11.0	461.0	5.0	
GD-1-60	1.730	0.05584	0.00168	0.58024	0.01735	0.07445	0.00060	0.02515	0.00034	446.0	52.0	465.0	11.0	463.0	4.0	502.0	7.0	463.0	4.0	
GD-1-61	1.750	0.05563	0.00206	0.60931	0.02711	0.07494	0.00073	0.02478	0.00037	438.0	82.0	483.0	17.0	466.0	4.0	495.0	7.0	466.0	4.0	
GD-1-62	1.860	0.05555	0.00148	0.61232	0.02008	0.07843	0.00063	0.02622	0.00043	434.0	59.0	485.0	13.0	487.0	4.0	523.0	9.0	487.0	4.0	
GD-1-63	1.300	0.05613	0.00242	0.61201	0.03697	0.07872	0.00080	0.02851	0.00066	458.0	117.0	485.0	23.0	488.0	5.0	568.0	13.0	488.0	5.0	
GD-1-64	1.560	0.05536	0.00125	0.59864	0.01820	0.08057	0.00081	0.02670	0.00034	427.0	50.0	476.0	12.0	500.0	5.0	533.0	7.0	500.0	5.0	
GD-1-65	1.970	0.06010	0.00130	0.72807	0.02621	0.08160	0.00079	0.03020	0.00067	607.0	61.0	555.0	15.0	506.0	5.0	601.0	13.0	506.0	5.0	
GD-1-66	1.340	0.05788	0.00226	0.68044	0.03525	0.08273	0.00084	0.02751	0.00047	525.0	97.0	527.0	21.0	512.0	5.0	549.0	9.0	512.0	5.0	
GD-1-67	1.610	0.05867	0.00175	0.66466	0.02386	0.08260	0.00071	0.02975	0.00041	555.0	63.0	517.0	15.0	512.0	4.0	593.0	8.0	512.0	4.0	
GD-1-68	2.670	0.05753	0.00075	0.70258	0.01230	0.08532	0.00057	0.02858	0.00027	512.0	27.0	540.0	7.0	528.0	3.0	570.0	5.0	528.0	3.0	
GD-1-69	1.570	0.05909	0.00242	0.76328	0.05831	0.08804	0.00118	0.03148	0.00060	570.0	145.0	576.0	34.0	544.0	7.0	626.0	12.0	544.0	7.0	
GD-1-70	1.120	0.06050	0.00140	0.75498	0.01804	0.09053	0.00073	0.03087	0.00037	622.0	37.0	571.0	10.0	559.0	4.0	615.0	7.0	559.0	4.0	
GD-1-71	0.600	0.06386	0.00392	0.92978	0.11055	0.09264	0.00137	0.03527	0.00071	737.0	234.0	668.0	58.0	571.0	8.0	701.0	14.0	571.0	8.0	
GD-1-72	0.610	0.05907	0.00188	0.82821	0.03536	0.09494	0.00099	0.03341	0.00036	570.0	75.0	613.0	20.0	585.0	6.0	664.0	7.0	585.0	6.0	
GD-1-73	1.740	0.05868	0.00085	0.79105	0.01661	0.09640	0.00075	0.03245	0.00033	555.0	32.0	592.0	9.0	593.0	4.0	645.0	6.0	593.0	4.0	
GD-1-74	1.070	0.06363	0.00215	0.94128	0.05064	0.10578	0.00157	0.03433	0.00070	729.0	89.0	674.0	26.0	648.0	9.0	682.0	14.0	648.0	9.0	
GD-1-75	0.670	0.06134	0.00114	0.92691	0.02901	0.10647	0.00084	0.03756	0.00050	651.0	54.0	666.0	15.0	652.0	5.0	745.0	10.0	652.0	5.0	
GD-1-76	11.900	0.06656	0.00093	1.13670	0.02205	0.12500	0.00086	0.04645	0.00087	824.0	29.0	771.0	10.0	759.0	5.0	918.0	17.0	759.0	5.0	
GD-1-77	0.910	0.06624	0.00252	1.22149	0.05704	0.12847	0.00128	0.04181	0.00061	814.0	81.0	810.0	26.0	779.0	7.0	828.0	12.0	779.0	7.0	
GD-1-78	0.670	0.06479	0.00365	1.34593	0.09745	0.13109	0.00197	0.04305	0.00086	768.0	128.0	866.0	42.0	794.0	11.0	852.0	17.0	794.0	11.0	
GD-1-79	3.070	0.06533	0.00088	1.24339	0.02934	0.13576	0.00083	0.04611	0.00047	785.0	39.0	820.0	13.0	821.0	5.0	911.0	9.0	821.0	5.0	
GD-1-80	1.200	0.06458	0.00127	1.25055	0.04252	0.13706	0.00136	0.04469	0.00062	761.0	55.0	824.0	19.0	828.0	8.0	884.0	12.0	828.0	8.0	
GD-1-81	0.760	0.06527	0.00268	1.38569	0.09104	0.13786	0.00179	0.04599	0.00075	783.0	117.0	883.0	39.0	833.0	10.0	909.0	15.0	833.0	10.0	
GD-1-82	2.720	0.06696	0.00111	1.37182	0.02895	0.14517	0.00155	0.04909	0.00065	837.0	26.0	877.0	12.0	874.0	9.0	969.0	13.0	874.0	9.0	
GD-1-83	8.200	0.06713	0.00100	1.35478	0.02561	0.14533	0.00119	0.05281	0.00115	842.0	26.0	870.0	11.0	875.0	7.0	1040.0	22.0	875.0	7.0	
GD-1-84	3.700	0.06913	0.00122	1.40201	0.03547	0.14709	0.00134	0.04787	0.00076	903.0	37.0	890.0	15.0	885.0	8.0	945.0	15.0	885.0	8.0	
GD-1-85	0.680	0.06546	0.00128	1.39955	0.03779	0.14812	0.00120	0.04930	0.00053	789.0	43.0	889.0	16.0	890.0	7.0	973.0	10.0	890.0	7.0	
GD-1-86	1.960	0.08184	0.00444	1.71937	0.08923	0.15237	0.00241	0.04545	0.00058	1242.0	109.0	1016.0	33.0	914.0	13.0	898.0	11.0	914.0	13.0	
GD-1-87	4.130	0.06960	0.00111	1.50884	0.03651	0.15800	0.00090	0.05217	0.00100	917.0	40.0	934.0	15.0	946.0	5.0	1028.0	19.0	946.0	5.0	
GD-1-88	1.420	0.07034	0.00082	1.63300	0.03674	0.16274	0.00093	0.05139	0.00046	938.0	37.0	983.0	14.0	972.0	5.0	1013.0	9.0	972.0	5.0	
GD-1-89	6.020	0.06851	0.00116	1.57634	0.03878	0.16333	0.00111	0.05113	0.00083	884.0	40.0	961.0	15.0	975.0	6.0	1008.0	16.0	975.0	6.0	
GD-1-90	1.710	0.06857	0.00091	1.59788	0.03180	0.16495	0.00125	0.05240	0.00045	886.0	28.0	969.0	12.0	984.0	7.0	1032.0	9.0	984.0	7.0	
GD-1-91	2.160	0.07724	0.00090	1.78576	0.03071	0.16633	0.00091	0.06358	0.00078	1127.0	25.0	1040.0	11.0	992.0	5.0	1246.0	15.0	992.0	5.0	
GD-1-92	6.410	0.07076	0.00112	1.67466	0.03333	0.16760	0.00114	0.05615	0.00097	950.0	30.0	999.0	13.0	999.0	6.0	1104.0	19.0	999.0	6.0	
GD-1-93	5.850	0.07117	0.00119	1.64941	0.04189	0.16840	0.00120	0.05679	0.00136	962.0	40.0	989.0	16.0	1003.0	7.0	1116.0	26.0	962.0	40.0	
GD-1-94	1.550	0.07376	0.00125	1.78924	0.03829	0.17438	0.00143	0.05472	0.00054	1035.0	30.0	1042.0	14.0	1036.0	8.0	1077.0	10.0	1035.0	30.0	
GD-1-95	5.880	0.07518	0.00096	1.84788	0.04306	0.17576	0.00104	0.05763	0.00112	1073.0	37.0	1063.0	15.0	1044.0	6.0	1133.0	21.0	1073.0	37.0	
GD-1-96	2.330	0.07844	0.00073	2.21002	0.03580	0.20005	0.00134	0.06555	0.00052	1158.0	21.0	1184.0	11.0	1176.0	7.0	1283.0	10.0	1158.0	21.0	
GD-1-97	1.560	0.09095	0.00246	3.02508	0.07735	0.24123	0.00210	0.07115	0.00052	1446.0	53.0	1414.0	20.0	1393.0	11.0	1389.0	10.0	1446.0	53.0	
GD-1-98	1.360	0.09727	0.00874	3.50228	0.31288	0.26113	0.00252	0.07647	0.00043	1572.0	174.0	1528.0	71.0	1496.0	13.0	1489.0	8.0	1572.0	174.0	
GD-1-99	1.530	0.10292	0.00122	4.43332	0.09576	0.29190	0.00239	0.08495	0.00091	1677.0	28.0	1719.0	18.0	1651.0	12.0	1648.0	17.0	1677.0	28.0	
GD-1-100	2.210	0.10021	0.00109	4.23310	0.11514	0.29543	0.00216	0.09290	0.00124	1628.0	40.0	1680.0	22.0	1669.0	11.0	1796.0	23.0	1628.0	40.0	
GD-1-101	0.570	0.10487	0.00244	4.50345	0.21526	0.29648	0.00255	0.09881	0.00101	1712.0	76.0	1732.0	40.0	1674.0	13.0	1905.0	19.0	1712.0	76.0	
GD-1-102	1.180	0.10564	0.00374	4.41901	0.15167	0.30339	0.00262	0.08810	0.00057	1725.0	67.0	1716.0	28.0	1708.0	13.0	1707.0	11.0	1725.0	67.0	
GD-1-103	0.940	0.10504	0.00276	5.26691	0.36289	0.31496	0.00359	0.10223	0.00129	1715.0	111.0	1864.0	59.0	1765.0	18.0	1967.0	24.0	1715.0	111.0	
GD-1-104	2.110	0.11520	0.00315	5.03679	0.13397	0.31711	0.00207													

Table S3

	Ratios										Ages										Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
GD-1-105	12.200	0.11367	0.00206	5.08214	0.08433	0.32425	0.00235	0.09345	0.00066	1859.0	33.0	1833.0	14.0	1810.0	11.0	1806.0	12.0	1859.0	33.0			
GD-1-106	1.320	0.11014	0.00155	5.15402	0.17472	0.32602	0.00251	0.10017	0.00104	1802.0	51.0	1845.0	29.0	1819.0	12.0	1930.0	19.0	1802.0	51.0			
GD-1-107	2.940	0.11074	0.00083	5.27601	0.07492	0.33231	0.00263	0.10765	0.00068	1812.0	15.0	1865.0	12.0	1850.0	13.0	2067.0	12.0	1812.0	15.0			
GD-1-108	1.870	0.11130	0.00131	5.17464	0.10453	0.33580	0.00262	0.10136	0.00088	1821.0	25.0	1848.0	17.0	1866.0	13.0	1951.0	16.0	1821.0	25.0			
GD-1-109	1.620	0.11239	0.00119	5.25016	0.09450	0.33646	0.00246	0.09584	0.00089	1838.0	22.0	1861.0	15.0	1870.0	12.0	1850.0	16.0	1838.0	22.0			
GD-1-110	1.620	0.11531	0.00279	5.35527	0.12345	0.33684	0.00244	0.09694	0.00059	1885.0	45.0	1878.0	20.0	1871.0	12.0	1870.0	11.0	1885.0	45.0			
GD-1-111	1.580	0.11021	0.00182	5.72114	0.22141	0.34736	0.00240	0.10939	0.00135	1803.0	61.0	1935.0	33.0	1922.0	11.0	2098.0	25.0	1803.0	61.0			
GD-1-112	2.410	0.11299	0.00080	5.48997	0.11803	0.35040	0.00263	0.10921	0.00174	1848.0	28.0	1899.0	18.0	1937.0	13.0	2095.0	32.0	1848.0	28.0			
GD-1-113	2.050	0.11058	0.00108	5.34003	0.14471	0.35074	0.00281	0.11038	0.00096	1809.0	38.0	1875.0	23.0	1938.0	13.0	2116.0	17.0	1809.0	38.0			
GD-1-114	1.020	0.11087	0.00123	5.76751	0.17418	0.35080	0.00281	0.10527	0.00084	1814.0	43.0	1942.0	26.0	1938.0	13.0	2023.0	15.0	1814.0	43.0			
GD-1-115	3.570	0.11460	0.00116	5.69528	0.09967	0.35376	0.00212	0.12449	0.00293	1874.0	23.0	1931.0	15.0	1953.0	10.0	2371.0	53.0	1874.0	23.0			
GD-1-116	2.170	0.11536	0.00115	5.55022	0.13987	0.35414	0.00241	0.11354	0.00151	1886.0	36.0	1908.0	22.0	1954.0	11.0	2174.0	27.0	1886.0	36.0			
GD-1-117	2.130	0.11422	0.00093	5.79162	0.11294	0.35778	0.00243	0.11148	0.00099	1868.0	25.0	1945.0	17.0	1972.0	12.0	2136.0	18.0	1868.0	25.0			
GD-1-118	4.590	0.12992	0.00581	6.52290	0.27849	0.36415	0.00485	0.10355	0.00115	2097.0	81.0	2049.0	38.0	2002.0	23.0	1992.0	21.0	2097.0	81.0			
GD-1-119	1.050	0.10759	0.00198	6.11308	0.34050	0.36466	0.00325	0.11223	0.00117	1759.0	90.0	1992.0	49.0	2004.0	15.0	2150.0	21.0	1759.0	90.0			
GD-1-120	1.350	0.11933	0.00185	6.42981	0.18839	0.38434	0.00292	0.12219	0.00110	1946.0	42.0	2036.0	26.0	2097.0	14.0	2330.0	20.0	1946.0	42.0			
GD-1-121	2.340	0.12529	0.00144	7.19920	0.15622	0.40261	0.00362	0.11765	0.00121	2033.0	26.0	2136.0	19.0	2181.0	17.0	2248.0	22.0	2033.0	26.0			
GD-1-122	6.710	0.13509	0.00089	7.81339	0.12814	0.40910	0.00200	0.12066	0.00141	2165.0	22.0	2210.0	15.0	2211.0	9.0	2303.0	25.0	2165.0	22.0			
GD-1-123	1.630	0.15202	0.00116	9.66383	0.22034	0.44815	0.00300	0.13253	0.00101	2369.0	30.0	2403.0	21.0	2387.0	13.0	2515.0	18.0	2369.0	30.0			
GD-1-124	1.520	0.15858	0.00295	9.88908	0.17377	0.45228	0.00279	0.12612	0.00067	2441.0	32.0	2424.0	16.0	2405.0	12.0	2401.0	12.0	2441.0	32.0			
GD-1-125	2.070	0.14718	0.00115	9.31826	0.19009	0.45563	0.00255	0.14290	0.00113	2313.0	27.0	2370.0	19.0	2420.0	11.0	2700.0	20.0	2313.0	27.0			
GD-1-126	1.950	0.15202	0.00119	10.12920	0.16612	0.47427	0.00360	0.12992	0.00070	2369.0	18.0	2447.0	15.0	2502.0	16.0	2469.0	13.0	2369.0	18.0			
GD-1-127	2.620	0.16894	0.00112	12.33027	0.26140	0.50487	0.00369	0.14927	0.00151	2547.0	26.0	2630.0	20.0	2635.0	16.0	2812.0	27.0	2547.0	26.0			
GD-1-128	1.410	0.17545	0.00121	12.91822	0.35267	0.52603	0.00358	0.15085	0.00134	2610.0	36.0	2674.0	26.0	2725.0	15.0	2840.0	24.0	2610.0	36.0			
GD-1-129	1.590	0.18338	0.00095	13.63085	0.15539	0.53015	0.00323	0.15816	0.00098	2684.0	11.0	2724.0	11.0	2742.0	14.0	2968.0	17.0	2684.0	11.0			
GD-1-130	2.890	0.18238	0.00129	14.24969	0.26504	0.54288	0.00309	0.15846	0.00114	2675.0	23.0	2766.0	18.0	2795.0	13.0	2973.0	20.0	2675.0	23.0			
GD-1-131	1.930	0.18133	0.00141	14.33270	0.45291	0.54533	0.00404	0.16228	0.00169	2665.0	43.0	2772.0	30.0	2806.0	17.0	3040.0	29.0	2665.0	43.0			
GD-1-132	2.610	0.17129	0.00307	16.10047	1.46031	0.57527	0.00702	0.17765	0.00364	2570.0	138.0	2883.0	87.0	2929.0	29.0	3305.0	63.0	2570.0	138.0			

Sample: GD-4

GD-4-1	2.280	0.04898	0.00280	0.11901	0.00720	0.01677	0.00020	0.00622	0.00024	147.0	115.0	114.0	7.0	107.0	1.0	125.0	5.0	107.0	1.0		
GD-4-2	2.920	0.05019	0.00074	0.24505	0.00358	0.03225	0.00017	0.01214	0.00013	204.0	24.0	223.0	3.0	205.0	1.0	244.0	3.0	205.0	1.0		
GD-4-3	2.000	0.05109	0.00259	0.23096	0.01149	0.03279	0.00032	0.01032	0.00007	245.0	119.0	211.0	9.0	208.0	2.0	208.0	1.0	208.0	2.0		
GD-4-4	1.780	0.05017	0.00179	0.24894	0.01013	0.03424	0.00032	0.01144	0.00022	203.0	78.0	226.0	8.0	217.0	2.0	230.0	4.0	217.0	2.0		
GD-4-5	1.790	0.05155	0.00234	0.25320	0.01339	0.03455	0.00034	0.01211	0.00029	266.0	104.0	229.0	11.0	219.0	2.0	243.0	6.0	219.0	2.0		
GD-4-6	4.170	0.05051	0.00070	0.27008	0.00381	0.03531	0.00023	0.01378	0.00019	219.0	21.0	243.0	3.0	224.0	1.0	277.0	4.0	224.0	1.0		
GD-4-7	1.650	0.05472	0.00270	0.27627	0.01426	0.03625	0.00036	0.01266	0.00026	401.0	99.0	248.0	11.0	230.0	2.0	254.0	5.0	230.0	2.0		
GD-4-8	0.710	0.05499	0.00419	0.30416	0.02792	0.03647	0.00074	0.01357	0.00038	412.0	171.0	270.0	22.0	231.0	5.0	272.0	8.0	231.0	5.0		
GD-4-9	1.060	0.05360	0.00167	0.27674	0.00861	0.03772	0.00035	0.01280	0.00019	354.0	54.0	248.0	7.0	239.0	2.0	257.0	4.0	239.0	2.0		
GD-4-10	1.390	0.04972	0.00209	0.25949	0.01009	0.03810	0.00038	0.01235	0.00024	182.0	72.0	234.0	8.0	241.0	2.0	248.0	5.0	241.0	2.0		
GD-4-11	1.670	0.05246	0.00098	0.30114	0.00608	0.04078	0.00025	0.01404	0.00019	306.0	35.0	267.0	5.0	258.0	2.0	282.0	4.0	258.0	2.0		
GD-4-12	2.750	0.05205	0.00135	0.30648	0.00794	0.04151	0.00037	0.01632	0.00027	288.0	43.0	271.0	6.0	262.0	2.0	327.0	5.0	262.0	2.0		
GD-4-13	1.400	0.05629	0.00215	0.35728	0.01515	0.04351	0.00065	0.01538	0.00030	464.0	67.0	310.0	11.0	275.0	4.0	308.0	6.0	275.0	4.0		
GD-4-14	1.330	0.05337	0.00146	0.33762	0.01036	0.04385	0.00033	0.01529	0.00024	345.0	56.0	295.0	8.0	277.0	2.0	307.0	5.0	277.0	2.0		
GD-4-15	1.640	0.05030	0.00135	0.31427	0.00965	0.04411	0.00036	0.01546	0.00021	209.0	56.0	277.0	7.0	278.0	2.0	310.0	4.0	278.			

Table S3

	Ratios												Ages								Best Age		
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma				
GD-4-18	1.760	0.05096	0.00186	0.33537	0.01335	0.04654	0.00083	0.01764	0.00036	239.0	59.0	294.0	10.0	293.0	5.0	353.0	7.0	293.0	5.0				
GD-4-19	1.080	0.05358	0.00167	0.35335	0.01399	0.04654	0.00055	0.01615	0.00037	353.0	68.0	307.0	10.0	293.0	3.0	324.0	7.0	293.0	3.0				
GD-4-20	1.060	0.05153	0.00112	0.33448	0.00900	0.04678	0.00031	0.01567	0.00021	265.0	50.0	293.0	7.0	295.0	2.0	314.0	4.0	295.0	2.0				
GD-4-21	2.090	0.05084	0.00110	0.33073	0.00847	0.04697	0.00028	0.01695	0.00019	234.0	48.0	290.0	6.0	296.0	2.0	340.0	4.0	296.0	2.0				
GD-4-22	1.820	0.05711	0.00184	0.37256	0.01211	0.04890	0.00050	0.01773	0.00035	496.0	54.0	322.0	9.0	308.0	3.0	355.0	7.0	308.0	3.0				
GD-4-23	1.930	0.05468	0.00170	0.39217	0.01247	0.05042	0.00046	0.01725	0.00032	399.0	55.0	336.0	9.0	317.0	3.0	346.0	6.0	317.0	3.0				
GD-4-24	0.980	0.04935	0.00413	0.43943	0.05620	0.05294	0.00127	0.01727	0.00052	164.0	240.0	370.0	40.0	333.0	8.0	346.0	10.0	333.0	8.0				
GD-4-25	2.670	0.05858	0.00190	0.43994	0.01892	0.05411	0.00050	0.02143	0.00051	552.0	78.0	370.0	13.0	340.0	3.0	429.0	10.0	340.0	3.0				
GD-4-26	0.570	0.05774	0.00363	0.45966	0.03250	0.05539	0.0101	0.01902	0.00036	520.0	124.0	384.0	23.0	348.0	6.0	381.0	7.0	348.0	6.0				
GD-4-27	2.580	0.05243	0.00175	0.41057	0.01741	0.05539	0.00051	0.01868	0.00046	304.0	80.0	349.0	13.0	348.0	3.0	374.0	9.0	348.0	3.0				
GD-4-28	0.940	0.05809	0.00201	0.46584	0.01826	0.05961	0.00051	0.02032	0.00026	533.0	71.0	388.0	13.0	373.0	3.0	407.0	5.0	373.0	3.0				
GD-4-29	1.090	0.05436	0.00222	0.45489	0.01790	0.06069	0.00066	0.01896	0.00016	386.0	94.0	381.0	12.0	380.0	4.0	380.0	3.0	380.0	4.0				
GD-4-30	7.140	0.05858	0.00098	0.49386	0.00803	0.06114	0.00026	0.01893	0.00011	552.0	38.0	408.0	5.0	383.0	2.0	379.0	2.0	383.0	2.0				
GD-4-31	2.650	0.05427	0.00131	0.50672	0.01520	0.06665	0.00040	0.02380	0.00040	382.0	57.0	416.0	10.0	416.0	2.0	475.0	8.0	416.0	2.0				
GD-4-32	4.000	0.05771	0.00181	0.55290	0.01694	0.06949	0.00045	0.02156	0.00010	519.0	70.0	447.0	11.0	433.0	3.0	431.0	2.0	433.0	3.0				
GD-4-34	0.830	0.05766	0.00200	0.60119	0.02862	0.07048	0.00075	0.02303	0.00029	517.0	86.0	478.0	18.0	439.0	4.0	460.0	6.0	439.0	4.0				
GD-4-35	1.720	0.05408	0.00137	0.53609	0.01689	0.07234	0.00063	0.02469	0.00042	374.0	55.0	436.0	11.0	450.0	4.0	493.0	8.0	450.0	4.0				
GD-4-36	1.450	0.05495	0.00137	0.56253	0.01946	0.07324	0.00062	0.02451	0.00035	410.0	62.0	453.0	13.0	456.0	4.0	489.0	7.0	456.0	4.0				
GD-4-37	1.730	0.05564	0.00124	0.60826	0.01989	0.07676	0.00045	0.02637	0.00035	438.0	63.0	482.0	13.0	477.0	3.0	526.0	7.0	477.0	3.0				
GD-4-38	1.560	0.05817	0.00090	0.70249	0.01482	0.08617	0.00055	0.03035	0.00036	536.0	35.0	540.0	9.0	533.0	3.0	604.0	7.0	533.0	3.0				
GD-4-39	1.310	0.06310	0.00651	0.75053	0.07640	0.08627	0.00149	0.02649	0.00027	711.0	229.0	569.0	44.0	533.0	9.0	528.0	5.0	533.0	9.0				
GD-4-40	0.960	0.05800	0.00077	0.71151	0.01487	0.08656	0.00052	0.02756	0.00021	530.0	35.0	546.0	9.0	535.0	3.0	550.0	4.0	535.0	3.0				
GD-4-41	2.010	0.05404	0.00143	0.64900	0.01908	0.08712	0.00091	0.03035	0.00047	373.0	47.0	508.0	12.0	538.0	5.0	604.0	9.0	538.0	5.0				
GD-4-42	1.820	0.05787	0.00089	0.74182	0.01706	0.08962	0.00047	0.03026	0.00027	525.0	41.0	563.0	10.0	553.0	3.0	603.0	5.0	553.0	3.0				
GD-4-43	2.610	0.05998	0.00110	0.84387	0.01941	0.10142	0.00053	0.03504	0.00041	603.0	41.0	621.0	11.0	623.0	3.0	696.0	8.0	623.0	3.0				
GD-4-44	0.370	0.06212	0.00226	0.92682	0.03319	0.10820	0.00064	0.03328	0.00011	678.0	79.0	666.0	17.0	662.0	4.0	662.0	2.0	662.0	4.0				
GD-4-45	0.430	0.06682	0.00125	1.19584	0.03588	0.12353	0.00103	0.04545	0.00049	832.0	49.0	799.0	17.0	751.0	6.0	898.0	9.0	751.0	6.0				
GD-4-46	1.690	0.06474	0.00118	1.15854	0.02804	0.12412	0.00073	0.04273	0.00053	766.0	41.0	781.0	13.0	754.0	4.0	846.0	10.0	754.0	4.0				
GD-4-47	5.180	0.06541	0.00125	1.14086	0.02096	0.12650	0.00068	0.03868	0.00017	788.0	41.0	773.0	10.0	768.0	4.0	767.0	3.0	768.0	4.0				
GD-4-48	0.730	0.06600	0.00141	1.20729	0.04020	0.13187	0.00104	0.04451	0.00045	806.0	57.0	804.0	18.0	799.0	6.0	880.0	9.0	799.0	6.0				
GD-4-49	1.370	0.07049	0.00118	1.34422	0.03898	0.13327	0.00107	0.04736	0.00073	943.0	46.0	865.0	17.0	806.0	6.0	935.0	14.0	806.0	6.0				
GD-4-50	1.760	0.06566	0.00139	1.29939	0.04288	0.13375	0.00091	0.04764	0.00056	796.0	58.0	845.0	19.0	809.0	5.0	941.0	11.0	809.0	5.0				
GD-4-51	1.500	0.06617	0.00115	1.22667	0.03226	0.13470	0.00108	0.04384	0.00050	812.0	42.0	813.0	15.0	815.0	6.0	867.0	10.0	815.0	6.0				
GD-4-52	0.840	0.06516	0.00137	1.19020	0.03059	0.13477	0.00088	0.04433	0.00039	780.0	43.0	796.0	14.0	815.0	5.0	877.0	7.0	815.0	5.0				
GD-4-53	0.770	0.06092	0.00149	1.19883	0.03632	0.13517	0.00116	0.04537	0.00053	636.0	50.0	800.0	17.0	817.0	7.0	897.0	10.0	817.0	7.0				
GD-4-54	1.480	0.06997	0.00243	1.45929	0.08654	0.13873	0.00158	0.05163	0.00134	927.0	104.0	914.0	36.0	837.0	9.0	1018.0	26.0	837.0	9.0				
GD-4-55	5.350	0.06776	0.00139	1.31641	0.02272	0.14090	0.00155	0.04291	0.00048	861.0	43.0	853.0	10.0	850.0	9.0	849.0	9.0	850.0	9.0				
GD-4-56	2.120	0.06990	0.00275	1.39085	0.05334	0.14431	0.00123	0.04379	0.00026	926.0	83.0	885.0	23.0	869.0	7.0	866.0	5.0	869.0	7.0				
GD-4-57	5.150	0.07007	0.00078	1.51321	0.02905	0.15387	0.00089	0.05098	0.00060	930.0	30.0	936.0	12.0	923.0	5.0	1005.0	12.0	923.0	5.0				
GD-4-58	7.940	0.06654	0.00122	1.43697	0.03808	0.15630	0.00111	0.05305	0.00100	823.0	43.0	904.0	16.0	936.0	6.0	1045.0	19.0	936.0	6.0				
GD-4-59	1.410	0.07596	0.00510	1.50112	0.14411	0.15703	0.00520	0.04934	0.00204	1094.0	140.0	931.0	59.0	940.0	29.0	973.0	39.0	940.0	29.0				
GD-4-60	4.370	0.06909	0.00078	1.56667	0.03102	0.15914	0.00088	0.05243	0.00068	901.0	32.0	957.0	12.0	952.0	5.0	1033.0	13.0	952.0	5.0				
GD-4-61	4.440	0.06964	0.00127	1.64130	0.06122	0.15944	0.00108	0.05014	0.00101	918.0	66.0	986.0	24.0	954.0	6.0	989.0	19.0	954.0	6.0				
GD-4-62	3.500	0.07298	0.00092	1.71433	0.02966	0.16819	0.00101	0.05586	0.00056	1013.0	25.0	1014.0	11.0	10									

Table S3

	Ratios												Ages										Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma					
GD-4-67	1.710	0.07703	0.00167	2.55684	0.10074	0.21686	0.00200	0.06914	0.00135	1122.0	64.0	1288.0	29.0	1265.0	11.0	1351.0	25.0	1122.0	64.0					
GD-4-68	2.730	0.08450	0.00111	2.64682	0.05929	0.22396	0.00168	0.08211	0.00081	1304.0	32.0	1314.0	17.0	1303.0	9.0	1595.0	15.0	1304.0	32.0					
GD-4-69	1.160	0.08858	0.00081	3.02111	0.06012	0.24638	0.00128	0.07694	0.00063	1395.0	30.0	1413.0	15.0	1420.0	7.0	1498.0	12.0	1395.0	30.0					
GD-4-70	1.060	0.09159	0.00117	3.46853	0.10406	0.26052	0.00112	0.08546	0.00056	1459.0	51.0	1520.0	24.0	1492.0	6.0	1657.0	11.0	1459.0	51.0					
GD-4-71	2.250	0.08944	0.00119	3.31237	0.09904	0.26402	0.00206	0.08203	0.00148	1414.0	45.0	1484.0	23.0	1510.0	11.0	1594.0	28.0	1414.0	45.0					
GD-4-72	2.000	0.10863	0.00142	4.63287	0.05839	0.30930	0.00105	0.08956	0.00027	1777.0	24.0	1755.0	11.0	1737.0	5.0	1734.0	5.0	1777.0	24.0					
GD-4-73	1.470	0.11108	0.00061	4.80880	0.07790	0.31300	0.00138	0.09876	0.00056	1817.0	23.0	1786.0	14.0	1755.0	7.0	1904.0	10.0	1817.0	23.0					
GD-4-74	4.480	0.11281	0.00215	4.94079	0.09133	0.31765	0.00145	0.09162	0.00037	1845.0	35.0	1809.0	16.0	1778.0	7.0	1772.0	7.0	1845.0	35.0					
GD-4-75	4.830	0.11490	0.00205	5.03586	0.08509	0.31786	0.00183	0.09151	0.00049	1878.0	33.0	1825.0	14.0	1779.0	9.0	1770.0	9.0	1878.0	33.0					
GD-4-76	3.980	0.11264	0.00212	5.08677	0.09076	0.32752	0.00199	0.09448	0.00050	1843.0	35.0	1834.0	15.0	1826.0	10.0	1825.0	9.0	1843.0	35.0					
GD-4-77	2.240	0.11533	0.00219	5.36764	0.09919	0.33755	0.00144	0.09714	0.00032	1885.0	35.0	1880.0	16.0	1875.0	7.0	1874.0	6.0	1885.0	35.0					
GD-4-78	6.540	0.11207	0.00071	5.25657	0.08148	0.33775	0.00128	0.10772	0.00107	1833.0	23.0	1862.0	13.0	1876.0	6.0	2068.0	19.0	1833.0	23.0					
GD-4-79	3.250	0.11582	0.00307	5.43791	0.14215	0.34052	0.00147	0.09796	0.00040	1893.0	49.0	1891.0	22.0	1889.0	7.0	1889.0	7.0	1893.0	49.0					
GD-4-80	3.020	0.11305	0.00071	5.37305	0.06824	0.34265	0.00154	0.10859	0.00073	1849.0	16.0	1881.0	11.0	1899.0	7.0	2084.0	13.0	1849.0	16.0					
GD-4-81	3.030	0.11213	0.00072	5.41402	0.07634	0.34302	0.00178	0.10571	0.00073	1834.0	18.0	1887.0	12.0	1901.0	9.0	2031.0	13.0	1834.0	18.0					
GD-4-82	10.750	0.11552	0.00073	5.68205	0.10398	0.34405	0.00138	0.11193	0.00163	1888.0	27.0	1929.0	16.0	1906.0	7.0	2144.0	30.0	1888.0	27.0					
GD-4-83	3.030	0.11273	0.00085	5.42444	0.10469	0.34534	0.00159	0.10345	0.00091	1844.0	28.0	1889.0	17.0	1912.0	8.0	1990.0	17.0	1844.0	28.0					
GD-4-84	8.060	0.11396	0.00072	5.63324	0.08844	0.34689	0.00163	0.14064	0.00207	1864.0	22.0	1921.0	14.0	1920.0	8.0	2660.0	37.0	1864.0	22.0					
GD-4-85	3.920	0.11197	0.00069	5.54269	0.07981	0.34771	0.00177	0.09976	0.00097	1832.0	19.0	1907.0	12.0	1924.0	8.0	1922.0	18.0	1832.0	19.0					
GD-4-86	1.830	0.12410	0.00068	6.33023	0.07216	0.35116	0.00260	0.10058	0.00074	2016.0	10.0	2023.0	10.0	1940.0	12.0	1937.0	14.0	2016.0	10.0					
GD-4-87	4.070	0.11347	0.00071	5.70723	0.08732	0.35189	0.00204	0.11359	0.00102	1856.0	19.0	1932.0	13.0	1944.0	10.0	2175.0	19.0	1856.0	19.0					
GD-4-88	1.790	0.11151	0.00137	5.58237	0.17529	0.35256	0.00208	0.11935	0.00111	1824.0	49.0	1913.0	27.0	1947.0	10.0	2279.0	20.0	1824.0	49.0					
GD-4-89	2.420	0.11226	0.00076	5.49219	0.07634	0.35314	0.00166	0.11140	0.00081	1836.0	18.0	1899.0	12.0	1950.0	8.0	2135.0	15.0	1836.0	18.0					
GD-4-90	2.940	0.11074	0.00103	5.50733	0.10849	0.35472	0.00167	0.10751	0.00101	1812.0	29.0	1902.0	17.0	1957.0	8.0	2064.0	18.0	1812.0	29.0					
GD-4-91	2.390	0.11331	0.00101	5.83351	0.12717	0.35833	0.00186	0.11349	0.00085	1853.0	32.0	1951.0	19.0	1974.0	9.0	2173.0	15.0	1853.0	32.0					
GD-4-92	2.560	0.12334	0.00265	6.12776	0.10681	0.36032	0.00451	0.10300	0.00126	2005.0	39.0	1994.0	15.0	1984.0	21.0	1981.0	23.0	2005.0	39.0					
GD-4-93	2.540	0.11604	0.00073	6.10168	0.09946	0.36677	0.00172	0.11441	0.00071	1896.0	23.0	1990.0	14.0	2014.0	8.0	2189.0	13.0	1896.0	23.0					
GD-4-94	1.390	0.11801	0.00150	6.45246	0.20003	0.37157	0.00234	0.12161	0.00147	1926.0	47.0	2039.0	27.0	2037.0	11.0	2320.0	27.0	1926.0	47.0					
GD-4-95	2.590	0.12894	0.00085	7.11217	0.11451	0.39557	0.00233	0.12343	0.00111	2084.0	20.0	2126.0	14.0	2149.0	11.0	2352.0	20.0	2084.0	20.0					
GD-4-96	2.650	0.14463	0.00255	7.97906	0.12385	0.40013	0.00335	0.11259	0.00090	2283.0	31.0	2229.0	14.0	2170.0	15.0	2156.0	16.0	2283.0	31.0					
GD-4-97	2.770	0.13252	0.00105	7.46946	0.19645	0.40747	0.00220	0.10427	0.00123	2132.0	39.0	2169.0	24.0	2203.0	10.0	2005.0	23.0	2132.0	39.0					
GD-4-98	2.290	0.12914	0.00133	7.99157	0.27491	0.43317	0.00321	0.13890	0.00144	2086.0	50.0	2230.0	31.0	2320.0	14.0	2629.0	26.0	2086.0	50.0					
GD-4-99	2.510	0.16400	0.00213	10.13759	0.12521	0.44831	0.00182	0.12461	0.00046	2497.0	22.0	2447.0	11.0	2388.0	8.0	2374.0	8.0	2497.0	22.0					
GD-4-100	1.630	0.12702	0.00146	8.58318	0.27552	0.45010	0.00306	0.11504	0.00144	2057.0	47.0	2295.0	29.0	2396.0	14.0	2201.0	26.0	2057.0	47.0					
GD-4-101	1.860	0.16366	0.00442	10.16203	0.26407	0.45033	0.00336	0.12520	0.00079	2494.0	47.0	2450.0	24.0	2397.0	15.0	2384.0	14.0	2494.0	47.0					
GD-4-102	1.100	0.15892	0.00508	9.89352	0.30952	0.45152	0.00296	0.12589	0.00063	2444.0	55.0	2425.0	29.0	2402.0	13.0	2397.0	11.0	2444.0	55.0					
GD-4-103	2.300	0.14192	0.00241	10.37379	0.59649	0.45274	0.00344	0.12653	0.00230	2251.0	90.0	2469.0	53.0	2407.0	15.0	2408.0	41.0	2251.0	90.0					
GD-4-104	1.750	0.15695	0.00310	9.80271	0.18490	0.45299	0.00264	0.12645	0.00064	2423.0	34.0	2416.0	17.0	2409.0	12.0	2407.0	12.0	2423.0	34.0					
GD-4-105	1.690	0.15326	0.00090	9.73936	0.16167	0.45367	0.00209	0.13947	0.00106	2383.0	22.0	2410.0	15.0	2412.0	9.0	2639.0	19.0	2383.0	22.0					
GD-4-106	1.440	0.16418	0.00574	10.53949	0.36312	0.46558	0.00275	0.12940	0.00076	2499.0	60.0	2483.0	32.0	2464.0	12.0	2459.0	14.0	2499.0	60.0					
GD-4-107	5.950	0.16073	0.00117	11.15076	0.27431	0.48110	0.00361	0.12285	0.00333	2463.0	31.0	2536.0	23.0	2532.0	16.0	2342.0	60.0	2463.0	31.0					
GD-4-108	2.360	0.16381	0.00126	11.18389	0.24828	0.49570	0.00278	0.15934	0.00159	2495.0	30.0	2539.0	21.0	2595.0	12.0	2988.0	28.0	2495.0	30.0					
GD-4-109	2.040	0.16693	0.00147	12.17003	0.32494	0.50350	0.00352	0.15035	0.00119	2527.0	35.0	2618.0	25.0	2629.0	15.0	2831.0	21.0	2527.0	35.0					
GD-4-110	1.																							

Table S3

	Ratios												Ages												Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma							
	GD-4-115	2.430	0.24563	0.00236	23.61019	1.12857	0.64655	0.00478	0.19416	0.00283	3157.0	67.0	3252.0	47.0	3215.0	19.0	3587.0	48.0	3157.0	67.0						
Sample: GR-4																										
GR-4-1	1.95	0.04949	0.00098	0.23948	0.00503	0.03386	0.00027	0.01261	0.00014	171	34	218	4	215	2	253	3	215	2							
GR-4-2	1.59	0.04656	0.00147	0.23024	0.00831	0.03552	0.0003	0.01249	0.00019	27	61	210	7	225	2	251	4	225	2							
GR-4-3	1.57	0.0482	0.00184	0.25764	0.01105	0.03819	0.0004	0.01288	0.00027	109	78	233	9	242	2	259	5	242	2							
GR-4-4	1.49	0.05123	0.00098	0.28139	0.00597	0.03889	0.00028	0.01384	0.00015	251	35	252	5	246	2	278	3	246	2							
GR-4-5	1.69	0.05299	0.00269	0.28501	0.01432	0.03901	0.00031	0.01223	0.00006	329	118	255	11	247	2	246	1	247	2							
GR-4-6	1.94	0.05143	0.00136	0.28686	0.00803	0.03979	0.00034	0.01376	0.00021	260	48	256	6	252	2	276	4	252	2							
GR-4-7	0.66	0.05676	0.0022	0.31262	0.01422	0.04014	0.00047	0.01088	0.00022	482	80	276	11	254	3	219	4	254	3							
GR-4-8	2.64	0.04804	0.00171	0.27103	0.01073	0.04019	0.0004	0.01358	0.00027	101	71	244	9	254	2	273	5	254	2							
GR-4-9	2.11	0.05067	0.00183	0.28547	0.01119	0.04032	0.00037	0.01365	0.00036	226	74	255	9	255	2	274	7	255	2							
GR-4-10	2.03	0.05696	0.00099	0.33637	0.00767	0.04059	0.00028	0.01505	0.00019	490	38	294	6	257	2	302	4	257	2							
GR-4-11	3.13	0.05128	0.00154	0.30293	0.01194	0.04091	0.00032	0.01479	0.00029	253	76	269	9	258	2	297	6	258	2							
GR-4-12	2.74	0.05028	0.00092	0.28867	0.00635	0.04083	0.00031	0.01417	0.00015	208	37	258	5	258	2	284	3	258	2							
GR-4-13	1.83	0.0521	0.00353	0.31657	0.02457	0.04163	0.00045	0.01504	0.00046	290	157	279	19	263	3	302	9	263	3							
GR-4-14	2.84	0.05292	0.00106	0.30615	0.00667	0.04175	0.0002	0.01464	0.00021	325	41	271	5	264	1	294	4	264	1							
GR-4-15	1.69	0.04883	0.00148	0.28928	0.0096	0.04284	0.00033	0.01455	0.00025	140	64	258	8	270	2	292	5	270	2							
GR-4-16	2.19	0.05721	0.00192	0.35778	0.01635	0.04275	0.00041	0.01631	0.00033	500	84	311	12	270	3	327	7	270	3							
GR-4-17	1.37	0.05137	0.00256	0.3149	0.0194	0.04291	0.00056	0.01621	0.00058	257	118	278	15	271	3	325	11	271	3							
GR-4-18	1.89	0.05328	0.00108	0.32934	0.00883	0.04378	0.00038	0.01582	0.00018	341	45	289	7	276	2	317	4	276	2							
GR-4-19	0.97	0.05168	0.00109	0.32286	0.00817	0.04505	0.00037	0.01557	0.00017	271	43	284	6	284	2	312	3	284	2							
GR-4-20	1.87	0.05311	0.00306	0.36678	0.02428	0.05096	0.00061	0.01859	0.00053	333	130	317	18	320	4	372	10	320	4							
GR-4-21	1.56	0.05734	0.00178	0.42196	0.01519	0.05303	0.00038	0.01762	0.00024	505	67	357	11	333	2	353	5	333	2							
GR-4-22	1.18	0.05542	0.00143	0.53355	0.01937	0.06377	0.00054	0.02178	0.00035	429	66	434	13	399	3	435	7	399	3							
GR-4-23	5.21	0.05775	0.00109	0.51224	0.00931	0.06433	0.00032	0.01996	0.00012	520	42	420	6	402	2	399	2	402	2							
GR-4-24	1.32	0.05361	0.00117	0.49357	0.01308	0.06633	0.00048	0.02186	0.00025	355	47	407	9	414	3	437	5	414	3							
GR-4-25	1.54	0.0541	0.00151	0.52863	0.01993	0.06726	0.0005	0.02387	0.00035	375	72	431	13	420	3	477	7	420	3							
GR-4-26	5.21	0.05899	0.00097	0.56279	0.01323	0.06886	0.00053	0.01819	0.00041	567	38	453	9	429	3	364	8	429	3							
GR-4-27	1.18	0.05499	0.00103	0.52668	0.01032	0.06983	0.00042	0.02384	0.00019	412	33	430	7	435	3	476	4	435	3							
GR-4-28	1.13	0.05158	0.00177	0.50347	0.01974	0.0698	0.00073	0.02428	0.00032	267	71	414	13	435	4	485	6	435	4							
GR-4-29	1.42	0.05828	0.00121	0.56386	0.01477	0.06995	0.0005	0.02387	0.00029	540	45	454	10	436	3	477	6	436	3							
GR-4-30	7.63	0.05512	0.00132	0.54151	0.01625	0.0704	0.00044	0.02481	0.00067	417	56	439	11	439	3	495	13	439	3							
GR-4-31	1.59	0.05917	0.00105	0.58221	0.01362	0.07049	0.00046	0.02462	0.00025	573	40	466	9	439	3	492	5	439	3							
GR-4-32	1.26	0.05972	0.00217	0.62278	0.02628	0.07178	0.00071	0.02419	0.0004	593	75	492	16	447	4	483	8	447	4							
GR-4-33	1.25	0.05541	0.0013	0.55372	0.01456	0.07181	0.00055	0.02463	0.0003	429	45	447	10	447	3	492	6	447	3							
GR-4-34	2.11	0.05414	0.00153	0.5687	0.0199	0.07217	0.00061	0.02395	0.00046	377	64	457	13	449	4	478	9	449	4							
GR-4-35	1.06	0.05753	0.00108	0.58003	0.01276	0.07225	0.00042	0.02369	0.00023	512	38	464	8	450	3	473	5	450	3							
GR-4-36	1.51	0.05406	0.00122	0.53849	0.01659	0.07224	0.00059	0.0252	0.00025	374	55	437	11	450	4	503	5	450	4							
GR-4-37	1.58	0.05723	0.00167	0.58517	0.02124	0.07259	0.00058	0.02545	0.00036	500	66	468	14	452	3	508	7	452	3							
GR-4-38	1.34	0.0561	0.00132	0.58628	0.01847	0.07409	0.00055	0.02531	0.00039	456	57	468	12	461	3	505	8	461	3							
GR-4-39	28.57	0.06921	0.00079	0.71812	0.00671	0.07526	0.00048	0.02286	0.00018	905	24	550	4	468	3	457	4	468	3							
GR-4-40	2.44	0.05779	0.00125	0.634	0.01851	0.07776	0.0006	0.028	0.00037	522	51	499	12	483	4	558	7	483	4							
GR-4-41	7.69	0.06342	0.00153	0.68066	0.01947	0.07802	0.00111	0.02946	0.00311	722	37	527	12	484	7	587	61	484	7							
GR-4-42	1.68	0.05817	0.00145	0.68335	0.02228	0.08425	0.0008	0.02921	0.00042	536	55	529	13	521	5	582	8	521	5							
GR-4-43	1.43	0.0595	0.00121	0.7262	0.01656	0.08853	0.00089	0.03147	0.0004	585	32	554	10	547	5	626	8	547	5							
GR-4-44	1.4	0.06317	0.00246	0.82145	0.03033	0.09432	0.00117	0.02896	0.0003	714	85	609	17	581	7	577	6	581	7							

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb} / ^{206}\text{Pb}$	1sigma	$^{207}\text{Pb} / ^{235}\text{U}$	1sigma	$^{206}\text{Pb} / ^{238}\text{U}$	1sigma	$^{208}\text{Pb} / ^{232}\text{Th}$	1sigma	$^{207}\text{Pb} / ^{206}\text{Pb}$	1sigma	$^{207}\text{Pb} / ^{235}\text{U}$	1sigma	$^{206}\text{Pb} / ^{238}\text{U}$	1sigma	$^{208}\text{Pb} / ^{232}\text{Th}$	1sigma	(Ma)	1sigma			
GR-4-45	1.63	0.05783	0.00139	0.79212	0.02733	0.09502	0.00082	0.03169	0.00048	523	61	592	15	585	5	631	9	585	5			
GR-4-46	0.65	0.05983	0.00165	0.84967	0.0305	0.09747	0.00082	0.03127	0.00037	597	63	624	17	600	5	622	7	600	5			
GR-4-47	1.37	0.06399	0.00084	1.04765	0.01666	0.11753	0.00068	0.03785	0.0003	741	24	728	8	716	4	751	6	716	4			
GR-4-48	33.33	0.07353	0.00083	1.19176	0.01175	0.11755	0.00064	0.03547	0.00019	1029	23	797	5	716	4	705	4	716	4			
GR-4-49	1.52	0.0638	0.00164	1.14389	0.04038	0.12061	0.00103	0.04675	0.00064	735	60	774	19	734	6	923	12	734	6			
GR-4-50	1.34	0.07462	0.00078	1.4223	0.02219	0.13439	0.00095	0.03471	0.00064	1058	20	898	9	813	5	690	12	813	5			
GR-4-51	3.33	0.07179	0.00259	1.40029	0.04359	0.14146	0.00258	0.0428	0.00074	980	75	889	18	853	15	847	14	853	15			
GR-4-52	1.71	0.06295	0.00096	1.2514	0.0234	0.14256	0.00076	0.04852	0.00037	707	31	824	11	859	4	958	7	859	4			
GR-4-53	4.83	0.07108	0.00152	1.4612	0.02808	0.14909	0.0014	0.04516	0.00039	960	45	915	12	896	8	893	8	896	8			
GR-4-54	12.66	0.06795	0.00069	1.38547	0.0205	0.15005	0.00086	0.05385	0.00099	867	21	883	9	901	5	1060	19	901	5			
GR-4-55	1.9	0.06903	0.00075	1.45934	0.02422	0.15144	0.00083	0.05066	0.0004	900	25	914	10	909	5	999	8	909	5			
GR-4-56	14.71	0.07612	0.00138	1.62939	0.02313	0.15524	0.00175	0.04667	0.00053	1098	37	982	9	930	10	922	10	930	10			
GR-4-57	1.35	0.073	0.00193	1.64208	0.05271	0.15707	0.00152	0.05142	0.00081	1014	49	987	20	940	8	1013	16	940	8			
GR-4-58	2.63	0.06881	0.00097	1.51663	0.03655	0.15701	0.00155	0.04971	0.0006	893	33	937	15	940	9	981	12	940	9			
GR-4-59	2.31	0.07119	0.00095	1.53834	0.04584	0.15918	0.0017	0.06042	0.00134	963	43	946	18	952	9	1186	25	952	9			
GR-4-60	1.24	0.06642	0.00151	1.4993	0.04783	0.15958	0.00145	0.05299	0.00083	820	51	930	19	954	8	1044	16	954	8			
GR-4-61	2	0.06884	0.00241	1.84099	0.12648	0.16055	0.00185	0.06486	0.0019	894	124	1060	45	960	10	1270	36	960	10			
GR-4-62	2.92	0.0696	0.00113	1.586	0.04488	0.16233	0.00093	0.05277	0.00071	917	49	965	18	970	5	1039	14	970	5			
GR-4-63	5.46	0.07292	0.00102	1.65453	0.03458	0.16355	0.00123	0.05485	0.00073	1012	30	991	13	977	7	1079	14	977	7			
GR-4-64	4.57	0.07403	0.00067	1.72484	0.02398	0.16462	0.00079	0.04303	0.00057	1042	20	1018	9	982	4	852	11	982	4			
GR-4-65	1.28	0.07478	0.00093	1.73256	0.0272	0.16745	0.00122	0.0595	0.00048	1063	20	1021	10	998	7	1168	9	1063	20			
GR-4-66	1.93	0.07123	0.00104	1.68311	0.0377	0.17249	0.00116	0.05553	0.00063	964	35	1002	14	1026	6	1092	12	964	35			
GR-4-67	1.58	0.07478	0.00179	1.79268	0.0416	0.17386	0.00105	0.05237	0.00024	1063	49	1043	15	1033	6	1032	5	1063	49			
GR-4-68	2.68	0.07433	0.00119	1.83106	0.0531	0.17422	0.00172	0.06124	0.0007	1050	42	1057	19	1035	9	1201	13	1050	42			
GR-4-69	2.91	0.07789	0.0029	1.87827	0.06903	0.1749	0.0011	0.05245	0.00022	1144	76	1073	24	1039	6	1033	4	1144	76			
GR-4-70	6.62	0.07671	0.00154	1.85523	0.03517	0.1754	0.00116	0.05269	0.00029	1114	41	1065	13	1042	6	1038	6	1114	41			
GR-4-71	4.15	0.07602	0.00186	1.84403	0.04412	0.17594	0.00093	0.0529	0.00021	1096	50	1061	16	1045	5	1042	4	1096	50			
GR-4-72	18.52	0.07837	0.00144	1.95708	0.033	0.18111	0.00132	0.05428	0.00037	1156	37	1101	11	1073	7	1068	7	1156	37			
GR-4-73	0.99	0.07253	0.00155	1.94678	0.08722	0.18435	0.00135	0.06008	0.00064	1001	80	1097	30	1091	7	1179	12	1001	80			
GR-4-74	1.17	0.07732	0.00066	2.15256	0.03466	0.18772	0.00173	0.06459	0.0007	1129	18	1166	11	1109	9	1265	13	1129	18			
GR-4-75	1.3	0.07643	0.00129	2.03009	0.04872	0.18802	0.0012	0.05854	0.00053	1106	38	1126	16	1111	7	1150	10	1106	38			
GR-4-76	1.54	0.07775	0.00104	2.11131	0.04434	0.19213	0.00127	0.06327	0.00046	1140	31	1153	14	1133	7	1240	9	1140	31			
GR-4-77	0.68	0.08102	0.00234	2.15771	0.05942	0.19315	0.00169	0.05767	0.0004	1222	58	1168	19	1138	9	1133	8	1222	58			
GR-4-78	0.93	0.07778	0.00104	2.228	0.0655	0.19343	0.00124	0.06356	0.00056	1141	48	1190	21	1140	7	1246	11	1141	48			
GR-4-79	0.95	0.08127	0.00576	2.20939	0.15516	0.19717	0.0019	0.05886	0.00031	1228	143	1184	49	1160	10	1156	6	1228	143			
GR-4-80	5.24	0.08313	0.0006	2.45367	0.03435	0.21124	0.0015	0.07882	0.00077	1272	16	1259	10	1235	8	1533	14	1272	16			
GR-4-81	1.29	0.08196	0.00115	2.66452	0.077	0.22177	0.0014	0.0722	0.00072	1245	47	1319	21	1291	7	1409	14	1245	47			
GR-4-82	1.69	0.08688	0.00104	2.91846	0.06654	0.22847	0.00155	0.07963	0.00127	1358	33	1387	17	1326	8	1549	24	1358	33			
GR-4-83	1.53	0.08389	0.00125	2.91594	0.10118	0.23407	0.00162	0.07519	0.00072	1290	57	1386	26	1356	8	1465	14	1290	57			
GR-4-84	1.79	0.08237	0.00155	2.85642	0.09141	0.23778	0.00183	0.08208	0.00095	1254	51	1371	24	1375	10	1594	18	1254	51			
GR-4-85	7.25	0.10477	0.00081	4.46248	0.06381	0.27537	0.0014	0.08095	0.00172	1710	19	1724	12	1568	7	1573	32	1710	19			
GR-4-86	0.79	0.10288	0.00351	4.03394	0.13506	0.28439	0.00184	0.0828	0.00037	1677	65	1641	27	1613	9	1608	7	1677	65			
GR-4-87	1.66	0.1038	0.00386	4.23844	0.15317	0.29613	0.00261	0.08614	0.00057	1693	70	1681	30	1672	13	1670	11	1693	70			
GR-4-88	1.92	0.11374	0.00169	4.69147	0.06216	0.29914	0.00201	0.08621	0.00057	1860	27	1766	11	1687	10	1671	11	1860	27			
GR-4-89	1.26	0.10546	0.00302	4.35925	0.11711	0.2998	0.003	0.08707	0.00075	1722	54	1705	22	1690	15	1687	14	1722	54			
GR-4-90	6.25	0.11219	0.00122	4.76373	0.08098	0.30057	0.00261	0.07601	0.00135	1835	18	1779	14	1694	13	1481	25	1835	18			
GR-4-91	2.59	0.10654	0.00197	4.56924	0.07991	0.31106	0.0019	0.09025	0.00048	1741	35	1744	15	1746	9	1741	35	1831	28			
GR-4-92	3.41	0.11196	0.00171	4.95842	0.0704	0.32121	0.00178	0.09272	0.00046	1831	28	1812	12	1796	9	1792	9	1831	28			

Table S3

	Ratios										Ages								Best Age		
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma		
GR-4-93	1.37	0.11163	0.0009	5.28198	0.10987	0.34036	0.00163	0.10598	0.00073	1826	31	1866	18	1888	8	2036	13	1826	31		
GR-4-94	2.61	0.11321	0.00086	5.29477	0.07942	0.34136	0.00212	0.10686	0.00112	1852	18	1868	13	1893	10	2052	20	1852	18		
GR-4-95	10.53	0.11032	0.00101	5.25989	0.08416	0.34231	0.00377	0.1139	0.00131	1805	14	1862	14	1898	18	2180	24	1805	14		
GR-4-96	5.38	0.12193	0.00192	5.84897	0.08814	0.3479	0.00159	0.09956	0.00053	1985	29	1954	13	1925	8	1918	10	1985	29		
GR-4-97	1.85	0.12683	0.00071	6.45511	0.07746	0.36603	0.00242	0.12772	0.00169	2054	12	2040	11	2011	11	2429	30	2054	12		
GR-4-98	1.89	0.11066	0.00097	5.90841	0.14357	0.36729	0.00298	0.11965	0.00136	1810	32	1962	21	2017	14	2284	25	1810	32		
GR-4-99	3.37	0.12217	0.00062	6.35684	0.082	0.36881	0.00254	0.11086	0.00068	1988	13	2026	11	2024	12	2125	12	1988	13		
GR-4-100	4.15	0.1414	0.00262	7.94319	0.14178	0.40741	0.00202	0.11489	0.00047	2244	33	2225	16	2203	9	2198	9	2244	33		
GR-4-101	2.4	0.12945	0.00144	8.08303	0.28937	0.40821	0.00274	0.12923	0.00155	2091	54	2240	32	2207	13	2457	28	2091	54		
GR-4-102	0.73	0.16215	0.00128	10.07155	0.26186	0.44643	0.00232	0.1397	0.00087	2478	37	2441	24	2379	10	2643	15	2478	37		
GR-4-103	4.02	0.16508	0.00293	10.50745	0.17234	0.46165	0.00314	0.12824	0.00081	2508	31	2481	15	2447	14	2439	15	2508	31		
GR-4-104	1.14	0.16892	0.00553	10.88521	0.35022	0.46737	0.00288	0.12954	0.00059	2547	56	2513	30	2472	13	2462	11	2547	56		
GR-4-105	1.24	0.19135	0.01107	12.33358	0.69993	0.46747	0.0053	0.12803	0.00106	2754	98	2630	53	2472	23	2435	19	2754	98		
GR-4-106	1.4	0.1599	0.00141	11.24743	0.57812	0.47175	0.00297	0.14449	0.00152	2455	79	2544	48	2491	13	2728	27	2455	79		
GR-4-107	3.38	0.1639	0.0012	10.94932	0.20913	0.47758	0.0021	0.14621	0.00161	2496	26	2519	18	2517	9	2758	28	2496	26		
GR-4-108	1.96	0.16468	0.00082	11.24315	0.20013	0.48344	0.00203	0.14766	0.00095	2504	24	2544	17	2542	9	2784	17	2504	24		
GR-4-109	1.95	0.21098	0.02083	14.07622	1.38222	0.48389	0.00504	0.13131	0.00077	2913	166	2755	93	2544	22	2494	14	2913	166		
GR-4-110	1.4	0.16821	0.00193	11.18603	0.38144	0.49444	0.00282	0.14486	0.00151	2540	50	2539	32	2590	12	2734	27	2540	50		
GR-4-111	1.72	0.16466	0.00188	12.22679	0.45239	0.50136	0.00296	0.1486	0.0015	2504	55	2622	35	2620	13	2800	26	2504	55		
GR-4-112	1.72	0.1955	0.00135	15.20087	0.40434	0.55867	0.00352	0.16978	0.00149	2789	35	2828	25	2861	15	3170	26	2789	35		
Sample: GR-7																					
GR-7-1	0.84	0.04605	0.00205	0.04258	0.00179	0.00671	0.0001	0.0022	0.00005	45	95	42	2	43.1	0.6	44	1	43.1	0.6		
GR-7-2	3.33	0.04759	0.00112	0.05055	0.00113	0.0077	0.00005	0.00245	0.00001	79	55	50	1	49.5	0.3	49.4	0.3	49.5	0.3		
GR-7-3	2.27	0.04995	0.00146	0.21333	0.00607	0.03097	0.00021	0.00978	0.00005	193	70	196	5	197	1	197	1	197	1		
GR-7-4	3.29	0.05074	0.00086	0.25182	0.00463	0.03283	0.00025	0.01288	0.00016	229	29	228	4	208	2	259	3	208	2		
GR-7-5	1.77	0.05139	0.00137	0.26507	0.01055	0.03578	0.00028	0.01261	0.00021	258	78	239	8	227	2	253	4	227	2		
GR-7-6	1.97	0.05223	0.00138	0.27345	0.00793	0.03749	0.00028	0.0129	0.0002	295	53	245	6	237	2	259	4	237	2		
GR-7-7	1.75	0.04988	0.00134	0.26659	0.00725	0.0377	0.00029	0.01329	0.00002	189	49	240	6	239	2	267	4	239	2		
GR-7-8	4.13	0.05138	0.00141	0.28572	0.01051	0.0389	0.00035	0.01286	0.00029	258	68	255	8	246	2	258	6	246	2		
GR-7-9	2.65	0.05631	0.00136	0.31572	0.00928	0.03955	0.00024	0.01483	0.00028	465	55	279	7	250	1	298	6	250	1		
GR-7-10	4.42	0.04835	0.00112	0.26918	0.00767	0.03965	0.00033	0.01391	0.00029	116	51	242	6	251	2	279	6	251	2		
GR-7-11	1.3	0.05127	0.00166	0.2946	0.01146	0.04007	0.00034	0.01398	0.00019	253	74	262	9	253	2	281	4	253	2		
GR-7-12	1.97	0.04631	0.00171	0.2665	0.01263	0.04028	0.00041	0.01465	0.00027	14	82	240	10	255	3	294	5	255	3		
GR-7-13	1.96	0.05591	0.00174	0.35565	0.01191	0.0444	0.00031	0.01551	0.00029	449	62	309	9	280	2	311	6	280	2		
GR-7-14	1.75	0.05345	0.00162	0.36436	0.01428	0.04712	0.00042	0.01653	0.00031	348	73	315	11	297	3	331	6	297	3		
GR-7-15	1.59	0.05481	0.0016	0.38444	0.01538	0.04966	0.0005	0.0174	0.00029	404	72	330	11	312	3	349	6	312	3		
GR-7-16	1.33	0.04646	0.00289	0.35017	0.02227	0.05171	0.00073	0.01837	0.00044	22	111	305	17	325	5	368	9	325	5		
GR-7-17	1.79	0.05382	0.00403	0.38518	0.02848	0.05191	0.00064	0.01624	0.00013	363	172	331	21	326	4	326	3	326	4		
GR-7-18	1.94	0.05285	0.00189	0.44454	0.01974	0.05793	0.00064	0.01988	0.00035	322	81	373	14	363	4	398	7	363	4		
GR-7-19	0.97	0.06045	0.00114	0.52389	0.01315	0.06134	0.0004	0.02054	0.00017	620	43	428	9	384	2	411	3	384	2		
GR-7-20	1.84	0.05681	0.00194	0.48218	0.02073	0.06132	0.00058	0.02223	0.00036	484	79	400	14	384	4	444	7	384	4		
GR-7-21	2.24	0.05641	0.00097	0.52314	0.01104	0.06507	0.00054	0.02331	0.00029	469	32	427	7	406	3	466	6	406	3		
GR-7-22	1.78	0.05343	0.00114	0.50543	0.01466	0.06657	0.00049	0.02211	0.00032	347	52	415	10	415	3	442	6	415	3		
GR-7-23	1.51	0.05802	0.00136	0.53099	0.01466	0.06704	0.00051	0.02329	0.00041	531	47	432	10	418	3	465	8	418	3		
GR-7-24	2.14	0.05564	0.00078	0.54229	0.01063	0.06917	0.00042	0.02345	0.00031	438	33	440	7	431	3	469	6	431	3		
GR-7-25	5.49	0.05635	0.0017	0.54156	0.01579	0.0697	0.00055	0.02168	0.00013	466	68	439	10	434	3	434	3	434	3		
GR-7-26	2.4	0.05511	0.00123	0.53489	0.01236	0.07077	0.00054	0.02399	0.00037	417	38	435	8	441	3	479	7	441	3		

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
GR-7-27	2.33	0.05673	0.00151	0.59038	0.02716	0.07099	0.00063	0.02463	0.00048	481	86	471	17	442	4	492	10	442	4			
GR-7-28	1.45	0.05644	0.00157	0.5942	0.02038	0.07478	0.00043	0.02716	0.00038	470	66	474	13	465	3	542	7	465	3			
GR-7-29	3.65	0.05981	0.00281	0.72148	0.05058	0.07733	0.00098	0.03378	0.001	597	131	552	30	480	6	671	20	480	6			
GR-7-30	0.6	0.05621	0.00213	0.66326	0.02812	0.08249	0.00068	0.02888	0.0004	461	80	517	17	511	4	575	8	511	4			
GR-7-31	0.69	0.05699	0.00115	0.65847	0.01962	0.0826	0.00063	0.02876	0.00023	491	52	514	12	512	4	573	5	512	4			
GR-7-32	1.45	0.05804	0.00086	0.70466	0.01177	0.08321	0.00057	0.02888	0.00028	531	24	542	7	515	3	575	5	515	3			
GR-7-33	0.29	0.05849	0.00088	0.74019	0.01429	0.08966	0.00049	0.02816	0.00014	548	33	563	8	554	3	561	3	554	3			
GR-7-34	2.48	0.05969	0.00137	0.76096	0.01659	0.09246	0.00068	0.02857	0.00017	592	51	575	10	570	4	569	3	570	4			
GR-7-35	10.31	0.05846	0.00067	0.82822	0.01176	0.09709	0.00061	0.02733	0.00051	547	20	613	7	597	4	545	10	597	4			
GR-7-36	1.98	0.05584	0.00238	0.88642	0.07189	0.09911	0.00131	0.03409	0.0011	446	159	644	39	609	8	678	21	609	8			
GR-7-37	55.56	0.06239	0.00158	0.97217	0.03179	0.10668	0.00084	0.03684	0.00303	688	56	690	16	653	5	731	59	653	5			
GR-7-38	1.82	0.06377	0.00061	1.04366	0.01649	0.11685	0.0006	0.03966	0.00029	734	25	726	8	712	3	786	6	712	3			
GR-7-39	3.13	0.06514	0.00097	1.10131	0.02621	0.1176	0.00092	0.0547	0.00223	779	37	754	13	717	5	1076	43	717	5			
GR-7-40	3.23	0.06381	0.00063	1.07302	0.0147	0.11947	0.00073	0.03673	0.00062	735	19	740	7	728	4	729	12	728	4			
GR-7-41	1.06	0.0708	0.00148	1.24351	0.03917	0.12261	0.00093	0.04391	0.00107	952	52	820	18	746	5	869	21	746	5			
GR-7-42	1.33	0.06505	0.00049	1.19247	0.01646	0.12312	0.00074	0.04072	0.00026	776	19	797	8	748	4	807	5	748	4			
GR-7-43	1.11	0.06606	0.00063	1.20941	0.01572	0.12727	0.00107	0.0428	0.0005	808	14	805	7	772	6	847	10	772	6			
GR-7-44	1.89	0.06541	0.00152	1.25499	0.0389	0.1335	0.00091	0.04659	0.00071	788	54	826	18	808	5	920	14	808	5			
GR-7-45	0.6	0.06574	0.00249	1.55681	0.14494	0.1416	0.00159	0.04713	0.00061	798	180	953	58	854	9	931	12	854	9			
GR-7-46	2.39	0.06788	0.00113	1.3287	0.02107	0.14197	0.00072	0.04323	0.00018	865	35	858	9	856	4	855	4	856	4			
GR-7-47	1.25	0.07508	0.00086	1.54008	0.03927	0.14211	0.00273	0.05005	0.00091	1071	24	947	16	857	15	987	17	857	15			
GR-7-48	1.98	0.06901	0.00072	1.45625	0.02578	0.15388	0.00092	0.05125	0.00053	899	27	912	11	923	5	1010	10	923	5			
GR-7-49	1.44	0.07602	0.0013	1.62498	0.04014	0.15509	0.00079	0.04188	0.00073	1096	41	980	16	929	4	829	14	929	4			
GR-7-50	9.62	0.07103	0.00067	1.56712	0.02241	0.16108	0.00077	0.05498	0.00175	958	21	957	9	963	4	1082	33	963	4			
GR-7-51	2.16	0.06942	0.00155	1.67341	0.05991	0.1625	0.00119	0.05298	0.00087	911	62	998	23	971	7	1043	17	971	7			
GR-7-52	2.94	0.07093	0.00082	1.63217	0.02758	0.16335	0.00098	0.05476	0.00057	955	25	983	11	975	5	1078	11	975	5			
GR-7-53	2.46	0.07115	0.00087	1.65645	0.04042	0.16423	0.00092	0.05481	0.0005	962	41	992	15	980	5	1079	10	980	5			
GR-7-54	15.63	0.07231	0.00067	1.65618	0.02931	0.16504	0.00109	0.07739	0.00198	995	25	992	11	985	6	1507	37	985	6			
GR-7-55	2.95	0.06955	0.00083	1.59845	0.03341	0.16524	0.00106	0.0552	0.0006	915	32	970	13	986	6	1086	12	986	6			
GR-7-56	1.1	0.073	0.00072	1.72006	0.03148	0.16681	0.00082	0.0572	0.00037	1014	29	1016	12	994	5	1124	7	1014	29			
GR-7-57	2.06	0.07371	0.00086	1.75263	0.0319	0.17017	0.00129	0.05908	0.00099	1034	24	1028	12	1013	7	1160	19	1034	24			
GR-7-58	5.92	0.07317	0.00077	1.73737	0.0304	0.17158	0.00124	0.05629	0.0007	1019	24	1022	11	1021	7	1107	13	1019	24			
GR-7-59	7.09	0.07479	0.00145	1.77433	0.03314	0.17206	0.00091	0.05183	0.00023	1063	40	1036	12	1023	5	1021	4	1063	40			
GR-7-60	2.32	0.07337	0.00348	1.74168	0.08156	0.17216	0.00135	0.05197	0.00026	1024	99	1024	30	1024	7	1024	5	1024	99			
GR-7-61	2.09	0.07605	0.00066	2.02919	0.04322	0.17428	0.00152	0.06837	0.00026	1096	29	1125	14	1036	8	1337	43	1096	29			
GR-7-62	2.27	0.07528	0.00078	1.90901	0.04276	0.18179	0.00085	0.05992	0.0007	1076	38	1084	15	1077	5	1176	13	1076	38			
GR-7-63	1.82	0.07841	0.00184	2.12732	0.11636	0.18235	0.00164	0.07268	0.00165	1157	95	1158	38	1080	9	1418	31	1157	95			
GR-7-64	1.01	0.07732	0.00251	2.31455	0.26872	0.18273	0.00238	0.05818	0.00097	1129	217	1217	82	1082	13	1143	18	1129	217			
GR-7-65	1.05	0.08251	0.00632	2.08671	0.15701	0.18343	0.00263	0.05467	0.00051	1258	154	1144	52	1086	14	1076	10	1258	154			
GR-7-66	2.15	0.0742	0.00079	1.89734	0.03529	0.18402	0.00098	0.06132	0.00052	1047	29	1080	12	1089	5	1203	10	1047	29			
GR-7-67	6.45	0.07911	0.00231	2.02238	0.05338	0.18541	0.00234	0.05551	0.00064	1175	59	1123	18	1096	13	1092	12	1175	59			
GR-7-68	2.95	0.07541	0.0008	2.0154	0.03668	0.18538	0.00117	0.06129	0.00055	1079	26	1121	12	1096	6	1202	10	1079	26			
GR-7-69	2.14	0.07492	0.00094	2.03942	0.05302	0.18725	0.00094	0.0612	0.00057	1066	44	1129	18	1106	5	1201	11	1066	44			
GR-7-70	0.86	0.07455	0.00129	1.98352	0.04721	0.18903	0.00121	0.06211	0.0006	1056	38	1110	16	1116	7	1218	11	1056	38			
GR-7-71	2.93	0.09281	0.00541	2.48359	0.14334	0.19408	0.00162	0.05712	0.00028	1484	113	1267	42	1143	9	1123	5	1484	113			
GR-7-72	0.88	0.07898	0.00164	2.33466	0.07378	0.19445	0.00142	0.06537	0.00067	1172	51	1223	22	1145	8	1280	13	1172	51			
GR-7-73	2.02	0.08113	0.00053	2.2617	0.02691	0.19611	0.00126	0.075	0.00044	1225	14	1200	8	1154	7	1462	8	1225	14			
GR-7-74	1.01	0.07638	0.00107	2.14485	0.03711	0.19897	0.00123	0.06488	0.00036	1105	25	1163	12	1170	7	1271	7	1105	25			

Table S3

	Ratios												Ages								Best Age	
	$^{238}\text{U}/^{232}\text{Th}$	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{208}\text{Pb}/^{232}\text{Th}$	1sigma	(Ma)	1sigma			
GR-7-75	0.93	0.07895	0.00081	2.23274	0.03907	0.20351	0.00118	0.06691	0.00046	1171	25	1191	12	1194	6	1309	9	1171	25			
GR-7-76	1.34	0.08856	0.00052	2.83077	0.04501	0.22764	0.00198	0.07703	0.00049	1395	17	1364	12	1322	10	1500	9	1395	17			
GR-7-77	2.01	0.08698	0.0031	2.74842	0.09451	0.22917	0.00211	0.06791	0.00049	1360	70	1342	26	1330	11	1328	9	1360	70			
GR-7-78	1.36	0.08804	0.00102	2.86137	0.0598	0.23483	0.00169	0.07615	0.00065	1383	29	1372	16	1360	9	1483	12	1383	29			
GR-7-79	1.12	0.08912	0.00078	3.03821	0.0553	0.24179	0.00152	0.07765	0.00053	1407	25	1417	14	1396	8	1512	10	1407	25			
GR-7-80	2.76	0.08959	0.00152	3.0096	0.04785	0.24365	0.00141	0.07197	0.00037	1417	33	1410	12	1406	7	1405	7	1417	33			
GR-7-81	1.79	0.09089	0.00075	3.28314	0.05516	0.25617	0.00138	0.08524	0.00054	1444	24	1477	13	1470	7	1653	10	1444	24			
GR-7-82	1.71	0.09734	0.00234	3.53412	0.08146	0.26332	0.00184	0.07711	0.00045	1574	46	1535	18	1507	9	1501	8	1574	46			
GR-7-83	2	0.09546	0.00292	3.46648	0.10379	0.26337	0.00161	0.07728	0.00033	1537	59	1520	24	1507	8	1505	6	1537	59			
GR-7-84	1.81	0.09596	0.00068	3.75002	0.0495	0.27858	0.00164	0.08943	0.00067	1547	16	1582	11	1584	8	1731	12	1547	16			
GR-7-85	1.91	0.09827	0.00176	3.81202	0.066	0.28135	0.00133	0.08231	0.00032	1591	34	1595	14	1598	7	1599	6	1591	34			
GR-7-86	1.39	0.09909	0.00089	4.04196	0.07761	0.28768	0.00175	0.09196	0.00071	1607	27	1643	16	1630	9	1778	13	1607	27			
GR-7-87	1.29	0.10221	0.00156	4.44299	0.13729	0.29257	0.00208	0.098	0.0009	1665	47	1720	26	1654	10	1890	17	1665	47			
GR-7-88	11.49	0.11066	0.00185	4.52121	0.06988	0.29631	0.00192	0.08563	0.00054	1810	31	1735	13	1673	10	1661	10	1810	31			
GR-7-89	0.85	0.10022	0.00144	4.18995	0.13575	0.30022	0.00234	0.09607	0.00086	1628	49	1672	27	1692	12	1854	16	1628	49			
GR-7-90	1.83	0.11249	0.00182	4.71183	0.06956	0.30378	0.00199	0.08764	0.00052	1840	30	1769	12	1710	10	1698	10	1840	30			
GR-7-91	2.24	0.10953	0.00317	4.76251	0.1347	0.31535	0.00192	0.09123	0.00041	1792	54	1778	24	1767	9	1765	8	1792	54			
GR-7-92	0.91	0.11756	0.00156	6.01409	0.47632	0.31701	0.0039	0.06947	0.00182	1919	126	1978	69	1775	19	1358	34	1919	126			
GR-7-93	1.54	0.11035	0.00205	4.84208	0.08568	0.31823	0.00181	0.09199	0.00045	1805	35	1792	15	1781	9	1779	8	1805	35			
GR-7-94	2.55	0.11175	0.00106	4.94368	0.10827	0.32243	0.00174	0.09904	0.00067	1828	32	1810	18	1802	8	1909	12	1828	32			
GR-7-95	9.62	0.12681	0.00234	5.64891	0.10002	0.32308	0.00164	0.09209	0.00043	2054	33	1924	15	1805	8	1781	8	2054	33			
GR-7-96	1.95	0.10902	0.00089	5.09653	0.13455	0.32413	0.00207	0.10298	0.0009	1783	39	1836	22	1810	10	1981	16	1783	39			
GR-7-97	2.24	0.10778	0.001	4.95676	0.08342	0.32458	0.00188	0.10319	0.00118	1762	22	1814	14	1812	9	1985	22	1762	22			
GR-7-98	0.99	0.11077	0.00222	5.25931	0.23457	0.32604	0.00254	0.10519	0.00144	1812	70	1862	38	1819	12	2022	26	1812	70			
GR-7-99	3.05	0.11362	0.00083	5.38596	0.09641	0.33386	0.0015	0.10515	0.00077	1858	26	1883	15	1857	7	2021	14	1858	26			
GR-7-100	5.56	0.12321	0.00149	5.97933	0.0631	0.35197	0.00207	0.10062	0.00061	2003	22	1973	9	1944	10	1938	11	2003	22			
GR-7-101	2.67	0.14939	0.01229	7.72804	0.63297	0.3752	0.0291	0.10524	0.00046	2339	145	2200	74	2054	14	2022	8	2339	145			
GR-7-102	1.46	0.13671	0.0039	7.07742	0.19168	0.37548	0.00338	0.10624	0.00085	2186	51	2121	24	2055	16	2041	16	2186	51			
GR-7-103	1.36	0.13461	0.0057	7.12118	0.29673	0.38368	0.00288	0.10872	0.00055	2159	76	2127	37	2093	13	2086	10	2159	76			
GR-7-104	1.38	0.14411	0.00418	7.68303	0.21984	0.38667	0.00176	0.10884	0.00034	2277	51	2195	26	2107	8	2088	6	2277	51			
GR-7-105	1.62	0.13549	0.00275	7.35603	0.14209	0.39378	0.00243	0.11151	0.00059	2170	36	2156	17	2140	11	2137	11	2170	36			
GR-7-106	1.75	0.14811	0.00201	8.13509	0.10024	0.39836	0.00226	0.11183	0.00061	2324	24	2246	11	2162	10	2143	11	2324	24			
GR-7-107	5.46	0.15834	0.00176	8.89246	0.08793	0.40731	0.00206	0.1136	0.00058	2438	19	2327	9	2203	9	2175	10	2438	19			
GR-7-108	3.16	0.13178	0.00071	8.0284	0.13969	0.4195	0.00298	0.13255	0.00127	2122	21	2234	16	2258	14	2516	23	2122	21			
GR-7-109	2.5	0.17035	0.00338	9.90742	0.18774	0.4218	0.00244	0.11681	0.00059	2561	34	2426	17	2269	11	2233	11	2561	34			
GR-7-110	2.64	0.15059	0.00271	9.04884	0.15451	0.4358	0.00252	0.12214	0.00063	2353	32	2343	16	2332	11	2329	11	2353	32			
GR-7-111	2.39	0.16324	0.00359	10.12272	0.2028	0.44974	0.0041	0.12506	0.00106	2490	38	2446	19	2394	18	2382	19	2490	38			
GR-7-112	2.17	0.16139	0.00317	10.12196	0.19013	0.45486	0.00265	0.12663	0.00063	2470	34	2446	17	2417	12	2410	11	2470	34			
GR-7-113	1.52	0.15975	0.00126	10.56181	0.25771	0.46213	0.00282	0.1407	0.00118	2453	33	2485	23	2449	12	2661	21	2453	33			
GR-7-114	3.15	0.16482	0.00107	10.8956	0.26585	0.46374	0.00246	0.1201	0.00104	2506	34	2514	23	2456	11	2292	19	2506	34			
GR-7-115	1.64	0.16302	0.00373	10.48728	0.22236	0.46657	0.00403	0.12976	0.00102	2487	39	2479	20	2469	18	2466	18	2487	39			
GR-7-116	2.02	0.17017	0.00214	12.49537	0.71474	0.4698	0.0034	0.12906	0.00183	2559	87	2642	54	2483	15	2453	33	2559	87			
GR-7-117	1.95	0.18016	0.00557	11.86726	0.35227	0.47775	0.00412	0.1316	0.00096	2654	52	2594	28	2517	18	2499	17	2654	52			
GR-7-118	0.96	0.15848	0.00193	12.08117	0.50137	0.49838	0.00374	0.15871	0.00183	2440	61	2611	39	2607	16	2977	32	2440	61			
GR-7-119	2.15	0.18315	0.0031	12.74716	0.20404	0.5048	0.00275	0.13883	0.00068	2682	29	2661	15	2634	12	2628	12	2682	29			
GR-7-120	2.69	0.18107	0.00132	13.59806	0.35627	0.52818	0.00285	0.16302	0.00129	2663	36	2722	25	2734	12	3052	22	2663	36			
GR-7-121	2.59	0.21545	0.00419	16.31505	0.30302	0.54922	0.00319	0.14875	0.00085	2947	32	2895	18	2822	13	2803	15	2947	32			
GR-7-122	3.95	0.3008	0.00208	31.48533	1.09884	0.74433	0.00543	0.21669	0.00368	3474	45	3534	34	3587	20	3964	61	3474	45			