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Supplemental Material

Supplemental Material 1. (A) Summary of sample locations, lithologies, and zircon U-Pb ages of the magmatic rocks in the south-north transect along the BNSZ, Tibet. (B) Zircon cathodoluminescence images and concordia plots of the studied samples. (C) Plots of SiO₂ versus MgO (a; McCarron and Smellie, 1998), Sr/Y versus Y (b; Defant and Drummond, 1990), P₂O₅ versus SiO₂ (c), and Th versus Rb (d; Chappell, 1999) for the studied magmatic rocks in the Baingoin and Amdo areas, Tibet. Chondrite-normalized REE and primitive-mantle-normalized trace element patterns for the studied magmatic rocks in the Baingoin and Amdo areas, Tibet. Some of rocks with irregular trace element distribution are not plotted in the following Fig. 9.

Supplemental Material 2. (A) Methods of zircon U-Pb dating. (B) Methods of zircon Lu-Hf isotopic analyses. (C) Methods of whole-rock geochemical analyses.

Table S1. U-Pb isotopic data of zircons from the studied samples across the Bangong-Nujiang suture zone.

Table S2. Zircon Hf isotopic data of the studied samples across the Bangong-Nujiang suture zone.

Table S3. (A) A brief checklist of the geochemical samples; (B) Whole-rock major (wt%) and trace (ppm) element data of the Cretaceous rocks sampled across the Bangong-Nujiang suture zone.

Table S4. Summary of zircon U-Pb ages for regional Jurassic-Cretaceous rocks.

Table S5. Zircon Lu-Hf isotopic data of the Jurassic magmatic rocks.

Table S6. Whole-rock major (wt%) and trace (ppm) element data of the regional Jurassic-Cretaceous rocks.

Supplemental Material 1

Part A

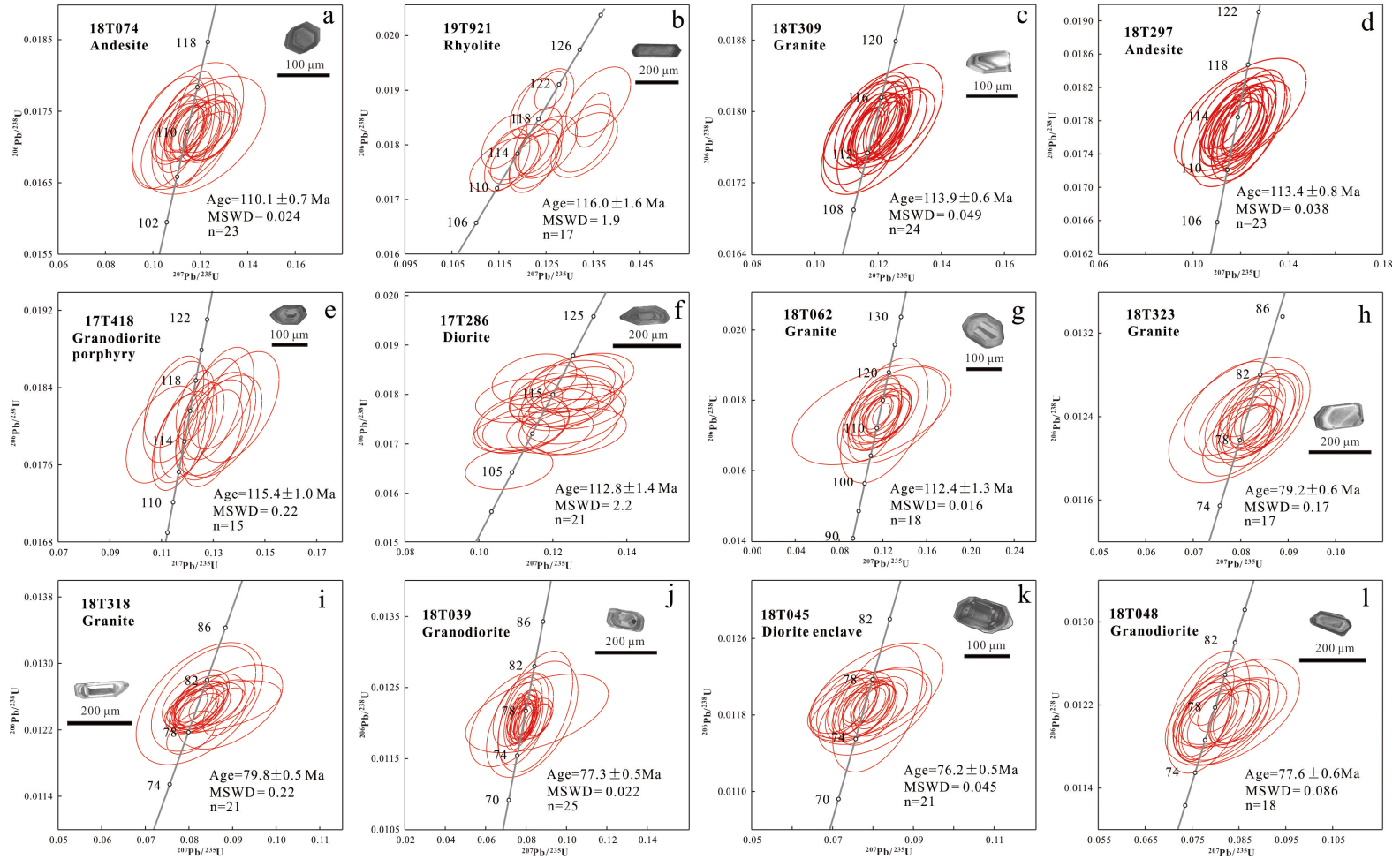
Summary of sample locations, lithologies, and zircon U-Pb ages of the magmatic rocks in the south-north transect along the BNSZ, Tibet

Sample	Location	GPS	Lithology	Age $\pm 2\sigma$ (Ma)	Petrographic observation
18T074	Tarenben	N32.1815°, E89.6554°	Andesite	110 \pm 1	Porphyritic texture; phenocrysts of plagioclase and K-feldspar
19T921	Tarenben	N32.1790°, E89.6548°	Rhyolite	116 \pm 2	Porphyritic texture; phenocrysts of quartz
18T309	Maqian	N31.8088°, E90.1298°	Granite	114 \pm 1	Granitic texture; Quartz, plagioclase, and orthoclase
18T297	Maqian	N31.7895°, E90.1473°	Andesite	113 \pm 1	Porphyritic texture; phenocrysts of plagioclase
17T418	Maqian	N31.6678°, E90.0061°	Granodiorite porphyry	116 \pm 1	Hypidiomorphic granular texture; Quartz, plagioclase, orthoclase, and amphibole
17T286	Daru Tso	N31.5891°, E90.8110°	Diorite	113 \pm 1	Euhedral granular textures; plagioclase, amphibole, and pyroxene
17T008	Beila	N31.4106°, E91.0744°	Andesite	113 \pm 1*	Porphyritic texture; phenocrysts of plagioclase
18T062	Baingoin	N31.4307°, E89.8032°	Granite	112 \pm 1	Granitic texture; Quartz, plagioclase, and biotite
18T323	Baingoin	N31.2357°, E89.7764°	Granite	79 \pm 1	Granitic texture; Quartz, plagioclase, orthoclase, and biotite
18T318	Baingoin	N31.2292°, E89.7809°	Granite	80 \pm 1	Granitic texture; Quartz, plagioclase, orthoclase, and biotite
18T039	Yongzhu	N31.1895°, E89.3258°	Granodiorite	77 \pm 1	Hypidiomorphic granular texture; Quartz, plagioclase, and biotite
18T045	Yongzhu	N31.1895°, E89.3258°	Diorite enclave	76 \pm 1	Hypidiomorphic granular texture; Plagioclase, amphibole, and biotite
18T048	Yongzhu	N31.3236°, E89.2591°	Granodiorite	78 \pm 1	Hypidiomorphic granular texture; Quartz, plagioclase, and biotite

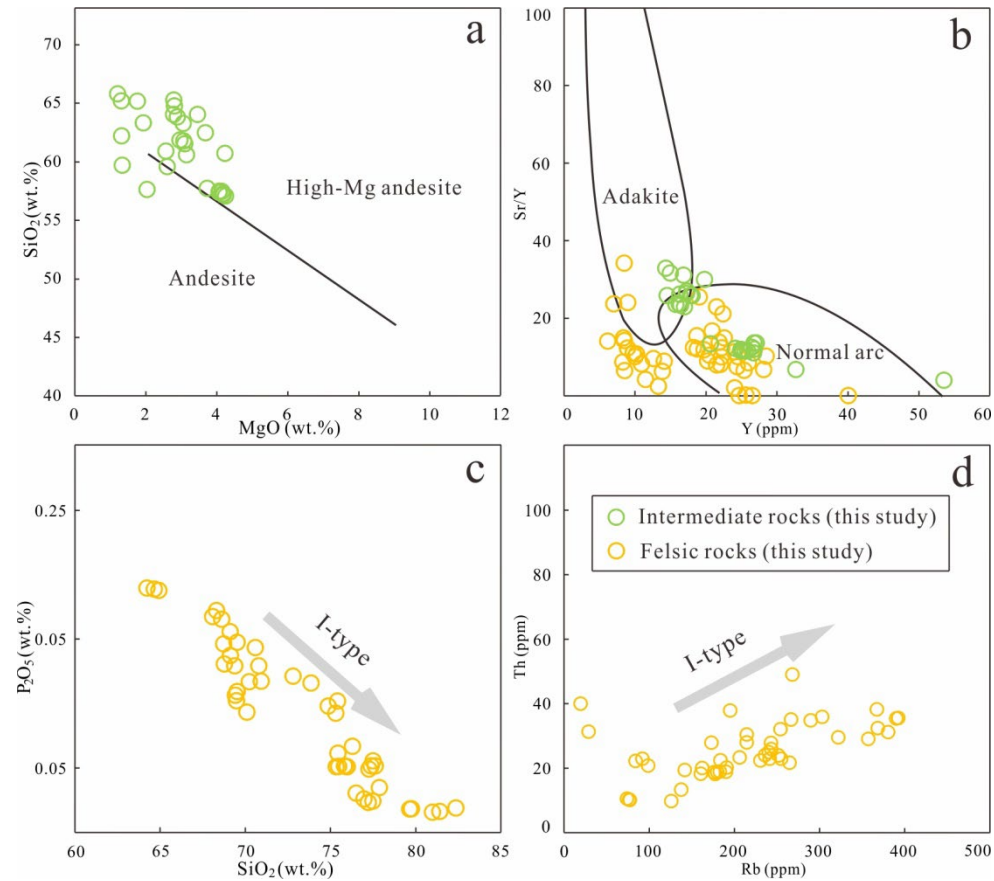
The age result marked by * is from [Zhu et al., \(2019\)](#).

Part B

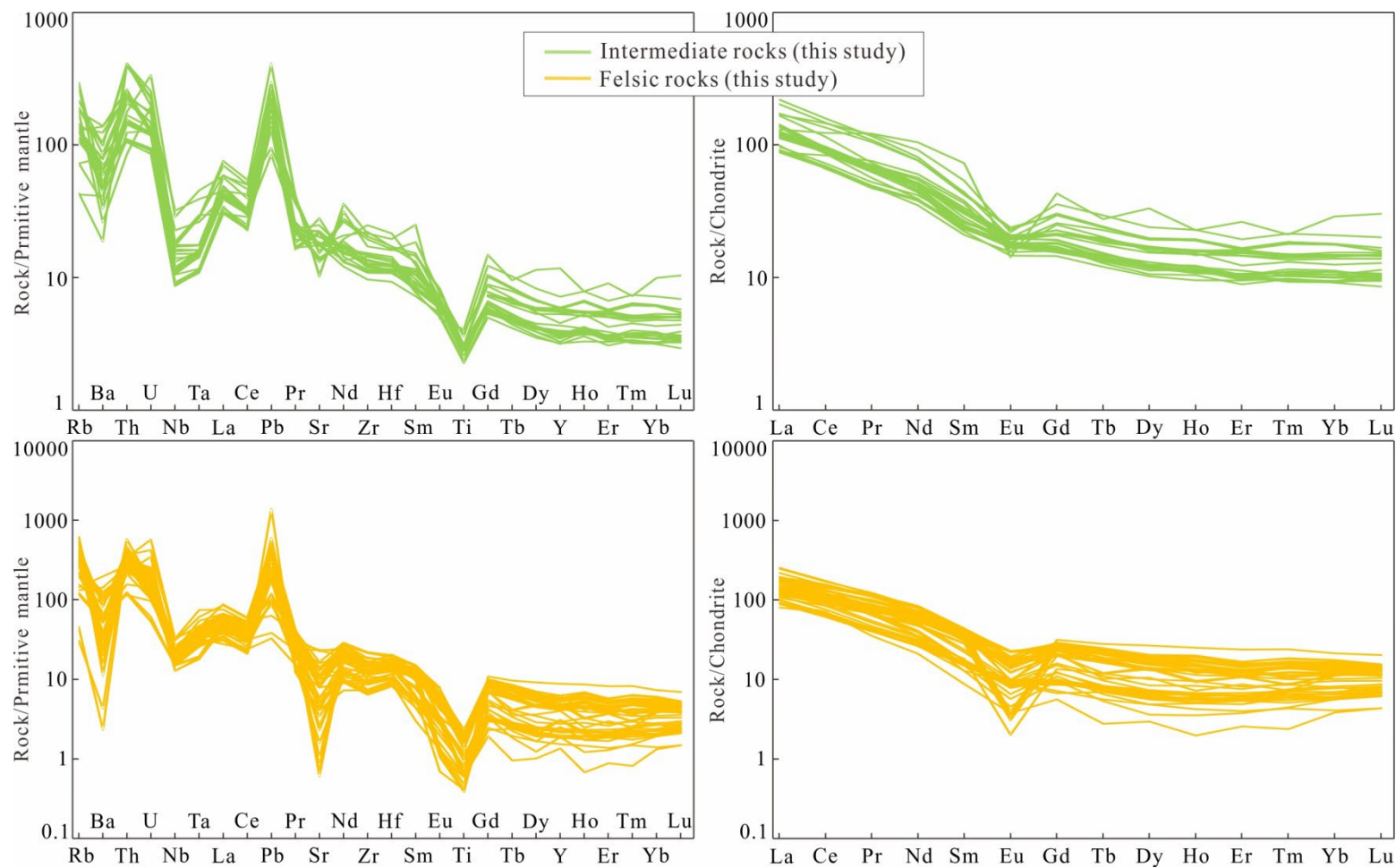
Zircon cathodoluminescence images and concordia plots of the studied samples



Part C



Plots of SiO₂ versus MgO (a; [McCarron and Smellie, 1998](#)), Sr/Y versus Y (b; [Defant and Drummond, 1990](#)), P₂O₅ versus SiO₂ (c;), and Th versus Rb (d; [Chappell, 1999](#)) for the studied magmatic rocks in the Baingoin and Amdo areas, Tibet.



Chondrite-normalized REE and primitive-mantle-normalized trace element patterns for the studied magmatic rocks in the Baingoin and Amdo areas, Tibet. Some of rocks with irregular trace element distribution are not plotted in the following Fig. 9.

Reference:

- Zhu, Z.C., Zhai, Q.G., Hu, P.Y., Chung, S.L., Tang, Y., Wang, H.T., Wu, H., Wang, W., Huang, Z.Q., Lee, H.Y., 2019. Closure of the Bangong–Nujiang Tethyan Ocean in the central Tibet: Results from the provenance of the Duoni Formation. *Journal of Sedimentary Research* 89, 1039–1054.
- McCarron, J.J., Smellie, J.L., 1998. Tectonic implications of fore-arc magmatism and generation of high-magnesian andesites: alexander Island, Antarctica. *Journal of Geological Society* 155 (2), 269-280.
- Defant, M., Drummond, M.S., 1990. Derivation of some modern arc magmas by melting of young subducted lithosphere. *Nature* 347, 662–665.
- Chappell, B. W., 1999. Aluminum saturation in I- and S-type granites and the characterization of fractionated hapogranites. *Lithos*, 46, 531–551.

Supplemental Material 2

Part A (Methods of zircon U-Pb dating)

Zircon was separated at the Special Laboratory of the Geological Team of Hebei Province, Langfang, China. Cathodoluminescence (CL) images were undertaken using a HITACH S-3000 N scanning electron microscope connected with a Gatan Chroma CL imaging system at the Institute of Geology, Chinese Academy of Geological Sciences, Beijing, China. Zircon LA-ICP-MS (Laser ablation-inductively coupled plasma-mass spectrometry) U-Pb analysis was performed at the Beijing Createch Test Technology Co. Ltd, Beijing, China. The analysis used an ESI NWR 193 nm laser ablation system, coupled to an AnalytikJena PQMS Elite ICP-MS instrument receiving ion-signal intensities. The laser-ablation system has a beam diameter of 25 μm , a repetition rate of 8 Hz, and a beam energy density of 6.25 J/cm². Detailed analytical processes are given in Hou et al. (2009). *ICPMSDataCal* was used to conduct off-line raw data correction and quantitative calibration. Weighted-mean ages and concordia diagrams were calculated and plotted by Isoplot/Ex (version 3.0; Ludwig, 2003).

Part B (Methods of zircon Lu-Hf isotopic analyses)

Zircon Hf isotopic analyses were performed on the same location or within the same domain as U-Pb analyses. Zircon on 17 T series of samples were analyzed using Neptune Multi-Collector Inductively Coupled Plasma Mass Spectrometry (MC-ICP-MS), connected by a Geolas-193 laser ablation system at the Institute of Geology and Geophysics, Chinese Academy of Sciences, China. A beam of 45 μm

diameters, 8 Hz laser repetition rate, and laser energy of 10 J/cm² were involved in analyses. Zircon standard Mud Tank was used to check the stability of the equipments. Detailed analytical procedures were provided in Wu et al. (2006). The analyses on 18 T and 19 T series of samples were performed at the Beijing Createch Test Technology Co. Ltd., China. A Neptune Plus multi-collector-ICP-MS (MC-ICP-MS), coupled to a NWR 213 nm laser ablation system, was used in analyses. The analytical beam diameter was 45 µm, with repetition rate of 10 Hz and laser energy of 10-11 J/cm². Zircon standard GJ-1 was used for external calibration. Details of the instrumental conditions and procedures are after Hou et al. (2007).

Part C (Methods of whole-rock geochemical analyses)

Whole-rock major and trace element analyses on 18 T and 19 T series of samples were detected at the Beijing Createch Test Technology Co. Ltd., China. Major element compositions were measured by X-ray fluorescence (SHIMADZU XRF-1800), and analytical accuracy is better than 1%. Trace element compositions were analyzed by inductively coupled plasma mass spectrometry (ICP-MS; Agilent 7500). Analytical uncertainties were better than 6% for most elements. Detailed operating procedures are described in Wang et al. (2021).

References:

Hou, K.J., Li, Y.H., Tian, Y.Y., 2009. In situ U-Pb zircon dating using laser ablation-multiion coupling-ICP-MS. *Mineral Deposits* 28, 481–492 (in Chinese with English abstract).

Hou, K.J., Li, Y.H., Zou, T.R., Qu, X.M., Shi, Y.R., Xie, G.Q., 2007. LA-MC-ICP-MS

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Wu, F.Y., Yang, Y.H., Xie, L.W., Yang, J.H., Xu, P., 2006. Hf isotopic compositions of the standard zircons and baddeleyites used in U-Pb geochronology. *Chemical Geology* 234, 105–126.

Wang, W., Zhai, Q.G., Hu, P.Y., Chung, S.L., Tang, Y., Wang, H.T., Zhu, Z.C., Wu, H., Huang, Z.Q., 2021. Simultaneous growth and reworking of the Lhasa basement: A case study from Early Cretaceous magmatism in the north-central Tibet. *Lithos* 380-381, 105863.

Supplemental Table S1

U-Pb isotopic data of zircons from the studied samples across the Bangong-Nujiang suture zone

Spots	Th	U	Th	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err	
	(ppm)	(ppm)	/U	$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	corr	
18T074																	
01	175	183	0.96	0.052922	0.003065	0.124817	0.007203	0.017218	0.000268	324.1	131.5	119.4	6.5	110.0	1.7	91%	
02	353	451	0.78	0.047074	0.001884	0.111989	0.004658	0.017260	0.000311	53.8	92.6	107.8	4.3	110.3	2.0	97%	
03	651	455	1.43	0.048025	0.002305	0.113656	0.005189	0.017268	0.000207	101.9	107.4	109.3	4.7	110.4	1.3	99%	
04	202	169	1.19	0.046960	0.003190	0.110886	0.007686	0.017237	0.000316	55.7	155.5	106.8	7.0	110.2	2.0	96%	
05	303	223	1.36	0.046334	0.004986	0.107214	0.010583	0.017204	0.000518	16.8	237.0	103.4	9.7	110.0	3.3	93%	
06	393	300	1.31	0.048518	0.004314	0.114983	0.010151	0.017202	0.000505	124.2	196.3	110.5	9.2	109.9	3.2	99%	
07	1776	893	1.99	0.051949	0.002338	0.124160	0.006558	0.017156	0.000222	283.4	103.7	118.8	5.9	109.7	1.4	91%	
08	295	225	1.31	0.051895	0.003358	0.124343	0.008558	0.017250	0.000309	279.7	154.6	119.0	7.7	110.3	2.0	92%	
09	416	298	1.40	0.049127	0.002681	0.115644	0.005987	0.017246	0.000211	153.8	127.8	111.1	5.4	110.2	1.3	99%	
10	210	182	1.16	0.048294	0.003110	0.113794	0.007249	0.017298	0.000245	122.3	135.2	109.4	6.6	110.6	1.6	98%	
11	540	339	1.59	0.048151	0.002271	0.113394	0.005182	0.017199	0.000243	105.6	107.4	109.1	4.7	109.9	1.5	99%	
12	517	311	1.66	0.051954	0.003528	0.122588	0.007713	0.017287	0.000240	283.4	155.5	117.4	7.0	110.5	1.5	93%	
13	150	178	0.84	0.051203	0.003602	0.120189	0.008040	0.017256	0.000311	250.1	162.9	115.2	7.3	110.3	2.0	95%	
14	236	306	0.77	0.051310	0.002481	0.120817	0.005348	0.017247	0.000254	253.8	111.1	115.8	4.8	110.2	1.6	95%	
15	177	189	0.94	0.051109	0.003694	0.119577	0.008227	0.017235	0.000283	255.6	163.9	114.7	7.5	110.2	1.8	95%	
16	451	321	1.41	0.048874	0.007960	0.114787	0.015471	0.017293	0.000586	142.7	340.7	110.3	14.1	110.5	3.7	99%	
17	665	452	1.47	0.049139	0.003202	0.116566	0.007708	0.017208	0.000273	153.8	148.1	112.0	7.0	110.0	1.7	98%	
18	495	345	1.43	0.047439	0.003126	0.111191	0.007019	0.017208	0.000264	77.9	142.6	107.1	6.4	110.0	1.7	97%	
19	372	266	1.40	0.047541	0.003336	0.112496	0.007445	0.017267	0.000411	76.0	159.2	108.2	6.8	110.4	2.6	98%	
20	164	152	1.08	0.049783	0.006579	0.121239	0.017260	0.017164	0.000545	183.4	281.4	116.2	15.6	109.7	3.5	94%	

Spots	Th (ppm)	U (ppm)	Th /U	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err corr
				$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	
21	738	487	1.51	0.049367	0.002934	0.116837	0.006268	0.017261	0.000528	164.9	138.9	112.2	5.7	110.3	3.3	98%
22	304	226	1.35	0.050400	0.004136	0.119247	0.010303	0.017165	0.000482	213.0	190.7	114.4	9.3	109.7	3.1	95%
23	577	453	1.27	0.051132	0.002169	0.120563	0.005168	0.017159	0.000201	255.6	98.1	115.6	4.7	109.7	1.3	94%
19T921																
1	516	1489	0.35	0.048112	0.000983	0.124898	0.003979	0.018771	0.000411	105.6	48.1	119.5	3.6	119.9	2.6	99%
2	574	1730	0.33	0.047537	0.000929	0.122279	0.003230	0.018670	0.000365	76.0	46.3	117.1	2.9	119.2	2.3	98%
3	367	1212	0.30	0.052477	0.001299	0.136099	0.004539	0.018788	0.000421	305.6	52.8	129.6	4.1	120.0	2.7	92%
4	362	604	0.60	0.047744	0.001752	0.116302	0.004964	0.017640	0.000329	87.1	85.2	111.7	4.5	112.7	2.1	99%
5	241	921	0.26	0.048060	0.001262	0.116751	0.003185	0.017724	0.000376	101.9	63.0	112.1	2.9	113.3	2.4	98%
6	813	2080	0.39	0.053826	0.001486	0.135021	0.002490	0.018456	0.000330	364.9	65.7	128.6	2.2	117.9	2.1	91%
7	934	884	1.06	0.053268	0.001194	0.133179	0.004075	0.018121	0.000409	338.9	51.8	127.0	3.7	115.8	2.6	90%
8	316	1025	0.31	0.050364	0.001301	0.122784	0.003651	0.017703	0.000329	213.0	91.7	117.6	3.3	113.1	2.1	96%
9	390	504	0.78	0.048247	0.001486	0.119086	0.004245	0.017865	0.000335	122.3	74.1	114.2	3.9	114.2	2.1	99%
10	1702	3193	0.53	0.048056	0.000731	0.125989	0.002258	0.018993	0.000236	101.9	67.6	120.5	2.0	121.3	1.5	99%
11	534	1711	0.31	0.049546	0.001034	0.123303	0.003369	0.018080	0.000400	172.3	48.1	118.1	3.0	115.5	2.5	97%
12	206	605	0.34	0.050904	0.001668	0.125103	0.004325	0.017961	0.000378	235.3	71.3	119.7	3.9	114.8	2.4	95%
13	306	1120	0.27	0.046854	0.001252	0.116106	0.003162	0.018060	0.000321	42.7	63.0	111.5	2.9	115.4	2.0	96%
14	504	1736	0.29	0.050121	0.000965	0.123887	0.003095	0.017944	0.000342	211.2	50.9	118.6	2.8	114.6	2.2	96%
15	398	890	0.45	0.048539	0.001363	0.118317	0.003378	0.017739	0.000300	124.2	66.7	113.5	3.1	113.3	1.9	99%
16	600	1833	0.33	0.053327	0.001224	0.133133	0.004669	0.017996	0.000391	342.7	47.2	126.9	4.2	115.0	2.5	90%
17	479	1446	0.33	0.050207	0.001117	0.122426	0.003508	0.017708	0.000383	211.2	50.0	117.3	3.2	113.2	2.4	96%
18T309																
1	432	479	0.90	0.048085	0.002575	0.117516	0.005799	0.017864	0.000232	101.9	131.5	112.8	5.3	114.1	1.5	98%
2	296	309	0.96	0.050866	0.002491	0.124419	0.006010	0.017924	0.000307	235.3	112.9	119.1	5.4	114.5	1.9	96%

Spots	Th (ppm)	U (ppm)	Th /U	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err corr
				$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	
3	663	602	1.10	0.048585	0.004315	0.121234	0.012706	0.017805	0.000486	127.9	196.3	116.2	11.5	113.8	3.1	97%
4	454	422	1.07	0.054325	0.003327	0.133965	0.007829	0.018021	0.000354	383.4	138.9	127.7	7.0	115.1	2.2	89%
5	313	398	0.79	0.047722	0.003957	0.116811	0.009329	0.017811	0.000417	87.1	185.2	112.2	8.5	113.8	2.6	98%
6	570	655	0.87	0.047882	0.001776	0.117063	0.003977	0.017835	0.000237	100.1	-105.5	112.4	3.6	114.0	1.5	98%
7	1357	1037	1.31	0.048762	0.001902	0.120208	0.004967	0.017830	0.000250	200.1	95.4	115.3	4.5	113.9	1.6	98%
8	204	307	0.66	0.047189	0.003559	0.115638	0.008510	0.017841	0.000321	57.5	170.3	111.1	7.7	114.0	2.0	97%
9	638	832	0.77	0.047884	0.001578	0.117557	0.003967	0.017809	0.000227	100.1	77.8	112.9	3.6	113.8	1.4	99%
10	365	410	0.89	0.049054	0.002645	0.120271	0.006371	0.017810	0.000253	150.1	125.9	115.3	5.8	113.8	1.6	98%
11	1996	1324	1.51	0.050165	0.001227	0.122904	0.002878	0.017836	0.000234	211.2	55.5	117.7	2.6	114.0	1.5	96%
12	244	347	0.70	0.048751	0.002378	0.119531	0.006078	0.017780	0.000219	200.1	119.4	114.6	5.5	113.6	1.4	99%
13	803	1026	0.78	0.049266	0.001287	0.121497	0.003517	0.017846	0.000205	161.2	61.1	116.4	3.2	114.0	1.3	97%
14	685	587	1.17	0.051831	0.001830	0.127874	0.004946	0.017846	0.000263	279.7	86.1	122.2	4.5	114.0	1.7	93%
15	1010	1322	0.76	0.047664	0.001297	0.117031	0.003385	0.017788	0.000172	83.4	64.8	112.4	3.1	113.7	1.1	98%
16	316	645	0.49	0.047562	0.002853	0.116026	0.006508	0.017863	0.000317	76.0	137.0	111.5	5.9	114.1	2.0	97%
17	939	1287	0.73	0.050595	0.001250	0.124806	0.003357	0.017885	0.000186	233.4	57.4	119.4	3.0	114.3	1.2	95%
18	303	385	0.79	0.048516	0.002977	0.119195	0.007200	0.017866	0.000310	124.2	137.0	114.3	6.5	114.2	2.0	99%
19	741	999	0.74	0.049954	0.001305	0.122494	0.003315	0.017824	0.000193	194.5	61.1	117.3	3.0	113.9	1.2	97%
20	463	926	0.50	0.047919	0.002443	0.118406	0.007515	0.017748	0.000431	94.5	118.5	113.6	6.8	113.4	2.7	99%
21	751	992	0.76	0.047676	0.001322	0.116047	0.003217	0.017708	0.000221	83.4	64.8	111.5	2.9	113.2	1.4	98%
22	585	590	0.99	0.049495	0.002025	0.121184	0.005369	0.017731	0.000290	172.3	96.3	116.1	4.9	113.3	1.8	97%
23	240	278	0.86	0.050009	0.003765	0.123261	0.009670	0.017816	0.000296	194.5	175.9	118.0	8.7	113.8	1.9	96%
24	393	395	0.99	0.049661	0.002594	0.121509	0.006228	0.017855	0.000288	189.0	122.2	116.4	5.6	114.1	1.8	97%
18T297																
1	611	415	1.47	0.049425	0.002229	0.120873	0.005619	0.017830	0.000265	168.6	137.9	115.9	5.1	113.9	1.7	98%

Spots	Th (ppm)	U (ppm)	Th /U	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err corr
				$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	
2	828	498	1.66	0.049860	0.002394	0.122010	0.006513	0.017700	0.000361	187.1	112.9	116.9	5.9	113.1	2.3	96%
3	189	166	1.14	0.050447	0.006103	0.119560	0.013241	0.017679	0.000443	216.7	255.5	114.7	12.0	113.0	2.8	98%
4	383	231	1.66	0.048047	0.002840	0.117092	0.007072	0.017710	0.000245	101.9	133.3	112.4	6.4	113.2	1.5	99%
5	675	419	1.61	0.047516	0.002189	0.115914	0.005351	0.017718	0.000212	76.0	113.0	111.4	4.9	113.2	1.3	98%
6	203	200	1.02	0.046240	0.002693	0.113973	0.007059	0.017720	0.000304	9.4	137.0	109.6	6.4	113.2	1.9	96%
7	586	371	1.58	0.047557	0.003409	0.116464	0.008346	0.017779	0.000276	76.0	162.9	111.9	7.6	113.6	1.7	98%
8	454	280	1.62	0.086286	0.004689	0.208349	0.009958	0.017724	0.000296	1346.3	109.7	192.2	8.4	113.3	1.9	48%
9	254	203	1.25	0.050322	0.004026	0.123208	0.010260	0.017744	0.000441	209.3	187.0	118.0	9.3	113.4	2.8	96%
10	249	200	1.24	0.048449	0.007527	0.119919	0.018358	0.017875	0.000445	120.5	329.6	115.0	16.6	114.2	2.8	99%
11	293	233	1.25	0.048452	0.003116	0.118065	0.007609	0.017814	0.000334	120.5	144.4	113.3	6.9	113.8	2.1	99%
12	272	186	1.46	0.050366	0.004714	0.122909	0.012008	0.017791	0.000320	213.0	203.7	117.7	10.9	113.7	2.0	96%
13	334	266	1.26	0.049459	0.003246	0.120780	0.008260	0.017686	0.000325	168.6	153.7	115.8	7.5	113.0	2.1	97%
14	149	150	0.99	0.046446	0.003017	0.113268	0.007153	0.017859	0.000263	20.5	148.1	109.0	6.5	114.1	1.7	95%
15	393	259	1.52	0.048291	0.002599	0.117980	0.006396	0.017796	0.000222	122.3	112.9	113.2	5.8	113.7	1.4	99%
16	218	185	1.18	0.047739	0.003716	0.116345	0.009106	0.017690	0.000290	87.1	174.0	111.8	8.3	113.0	1.8	98%
17	212	180	1.18	0.048646	0.004424	0.118961	0.010675	0.017716	0.000407	131.6	200.0	114.1	9.7	113.2	2.6	99%
18	243	201	1.21	0.047442	0.005402	0.114971	0.013109	0.017780	0.000432	77.9	242.6	110.5	11.9	113.6	2.7	97%
19	300	242	1.24	0.051192	0.003119	0.123847	0.007397	0.017778	0.000277	250.1	140.7	118.6	6.7	113.6	1.8	95%
20	219	186	1.17	0.063201	0.007899	0.161433	0.025395	0.017770	0.000359	716.7	263.9	152.0	22.2	113.5	2.3	71%
21	346	251	1.38	0.048699	0.003196	0.118874	0.007903	0.017663	0.000237	131.6	148.1	114.1	7.2	112.9	1.5	98%
22	504	295	1.71	0.049396	0.002371	0.120751	0.006079	0.017707	0.000220	164.9	112.9	115.8	5.5	113.2	1.4	97%
23	301	226	1.33	0.049978	0.002973	0.121037	0.007231	0.017720	0.000328	194.5	136.1	116.0	6.5	113.2	2.1	97%
17T418																
1	150	195	0.77	0.049088	0.003031	0.120418	0.007308	0.017978	0.000340	153.8	-50.0	115.5	6.6	114.9	2.2	99%

Spots	Th (ppm)	U (ppm)	Th /U	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err corr
				$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	
2	138	217	0.64	0.052462	0.003006	0.129680	0.007646	0.017874	0.000330	305.6	131.5	123.8	6.9	114.2	2.1	91%
3	400	569	0.70	0.050936	0.002492	0.125469	0.005791	0.018055	0.000263	239.0	112.9	120.0	5.2	115.3	1.7	96%
4	132	195	0.68	0.054096	0.003981	0.133362	0.010242	0.018001	0.000349	376.0	160.2	127.1	9.2	115.0	2.2	90%
5	177	205	0.87	0.045282	0.003792	0.110159	0.009135	0.017914	0.000332			106.1	8.4	114.5	2.1	92%
6	121	176	0.69	0.053732	0.004084	0.130944	0.010234	0.018024	0.000353	361.2	167.6	124.9	9.2	115.2	2.2	91%
7	143	186	0.77	0.052709	0.003269	0.129757	0.007432	0.018176	0.000346	316.7	140.7	123.9	6.7	116.1	2.2	93%
8	112	233	0.48	0.047438	0.002887	0.118391	0.007525	0.017888	0.000312	77.9	131.5	113.6	6.8	114.3	2.0	99%
9	182	236	0.77	0.045179	0.002821	0.114867	0.007603	0.018255	0.000312			110.4	6.9	116.6	2.0	94%
10	198	560	0.35	0.049036	0.002053	0.122955	0.004839	0.018218	0.000238	150.1	100.0	117.7	4.4	116.4	1.5	98%
11	196	231	0.85	0.052759	0.003252	0.133069	0.008319	0.018291	0.000348	316.7	140.7	126.9	7.5	116.8	2.2	91%
12	116	182	0.64	0.056075	0.004236	0.139780	0.010377	0.018201	0.000378	453.8	167.4	132.8	9.2	116.3	2.4	86%
13	175	179	0.98	0.052408	0.003703	0.129897	0.009523	0.017962	0.000343	301.9	128.7	124.0	8.6	114.8	2.2	92%
14	230	306	0.75	0.047557	0.002698	0.116681	0.006819	0.017836	0.000330	76.0	129.6	112.1	6.2	114.0	2.1	98%
15	203	256	0.79	0.046599	0.003458	0.115582	0.008370	0.018148	0.000346	27.9	170.4	111.1	7.6	115.9	2.2	95%
17T286																
1	86	138	0.62	0.047774	0.003678	0.108204	0.007828	0.016508	0.000284	87.1	174.0	104.3	7.2	105.5	1.8	98%
2	83	129	0.64	0.046692	0.004005	0.111547	0.008455	0.017409	0.000401	35.3	192.6	107.4	7.7	111.3	2.5	96%
3	104	205	0.51	0.050293	0.004108	0.121998	0.009115	0.017856	0.000330	209.3	190.7	116.9	8.2	114.1	2.1	97%
4	288	316	0.91	0.044917	0.002693	0.108759	0.006881	0.017193	0.000244	error		104.8	6.3	109.9	1.5	95%
5	138	249	0.55	0.047729	0.003365	0.112143	0.007342	0.017294	0.000295	87.1	168.5	107.9	6.7	110.5	1.9	97%
6	120	220	0.55	0.050459	0.003403	0.126611	0.008482	0.018225	0.000382	216.7	155.5	121.0	7.6	116.4	2.4	96%
7	129	223	0.58	0.052946	0.004033	0.125358	0.009054	0.017571	0.000379	327.8	178.7	119.9	8.2	112.3	2.4	93%
8	108	202	0.54	0.048628	0.003214	0.119560	0.007375	0.017913	0.000343	131.6	148.1	114.7	6.7	114.5	2.2	99%
9	131	206	0.64	0.045075	0.003282	0.110888	0.007778	0.017872	0.000292	error		106.8	7.1	114.2	1.9	93%

Spots	Th (ppm)	U (ppm)	Th /U	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err corr
				$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	
10	86	138	0.62	0.047774	0.003678	0.108204	0.007828	0.016508	0.000284	87.1	174.0	104.3	7.2	105.5	1.8	98%
11	176	289	0.61	0.051984	0.003052	0.127877	0.007206	0.018056	0.000330	283.4	133.3	122.2	6.5	115.4	2.1	94%
12	356	403	0.88	0.049609	0.002839	0.121641	0.007093	0.017687	0.000277	176.0	133.3	116.6	6.4	113.0	1.8	96%
13	144	262	0.55	0.051571	0.003221	0.129827	0.007983	0.018363	0.000310	264.9	175.0	123.9	7.2	117.3	2.0	94%
14	162	194	0.83	0.050762	0.003411	0.124084	0.008292	0.017863	0.000346	231.6	155.5	118.8	7.5	114.1	2.2	96%
15	105	159	0.66	0.052369	0.003741	0.124120	0.008743	0.017342	0.000373	301.9	162.9	118.8	7.9	110.8	2.4	93%
16	159	258	0.61	0.050495	0.003325	0.119281	0.007728	0.017269	0.000302	216.7	153.7	114.4	7.0	110.4	1.9	96%
17	166	221	0.75	0.047160	0.003415	0.112050	0.008235	0.017405	0.000357	57.5	162.9	107.8	7.5	111.2	2.3	96%
18	147	237	0.62	0.046421	0.003135	0.115021	0.007542	0.018303	0.000340	20.5	155.5	110.5	6.9	116.9	2.2	94%
19	148	183	0.81	0.049688	0.003102	0.124851	0.007937	0.018159	0.000350	189.0	146.3	119.5	7.2	116.0	2.2	97%
20	180	261	0.69	0.051851	0.003684	0.126709	0.008683	0.017754	0.000298	279.7	164.8	121.1	7.8	113.4	1.9	93%
21	237	267	0.89	0.047314	0.002788	0.118915	0.007032	0.018110	0.000316	64.9	133.3	114.1	6.4	115.7	2.0	98%
18T062																
1	81	156	0.52	0.049689	0.006342	0.117264	0.013101	0.017612	0.000675	189.0	264.8	112.6	11.9	112.5	4.3	99%
2	71	121	0.59	0.049550	0.009116	0.117821	0.022930	0.017651	0.000701	172.3	381.4	113.1	20.8	112.8	4.4	99%
3	114	230	0.50	0.052112	0.005763	0.125966	0.013432	0.017626	0.000472	300.1	253.7	120.5	12.1	112.6	3.0	93%
4	274	521	0.53	0.047529	0.003244	0.115660	0.008273	0.017638	0.000359	76.0	155.5	111.1	7.5	112.7	2.3	98%
5	93	310	0.30	0.047709	0.004032	0.115489	0.009368	0.017639	0.000304	83.4	188.9	111.0	8.5	112.7	1.9	98%
6	69	139	0.49	0.050523	0.008447	0.118553	0.018404	0.017564	0.000515	220.4	344.4	113.8	16.7	112.2	3.3	98%
7	256	480	0.53	0.049192	0.002263	0.118704	0.005364	0.017608	0.000204	166.8	102.8	113.9	4.9	112.5	1.3	98%
8	96	142	0.68	0.051652	0.007124	0.122051	0.015876	0.017535	0.000482	333.4	233.3	116.9	14.4	112.1	3.1	95%
9	77	150	0.51	0.054410	0.013933	0.128126	0.032689	0.017577	0.000908	387.1	492.5	122.4	29.4	112.3	5.7	91%
10	136	356	0.38	0.047937	0.006288	0.113590	0.014157	0.017543	0.000602	94.5	294.4	109.2	12.9	112.1	3.8	97%
11	73	130	0.56	0.045876	0.007306	0.111369	0.017893	0.017649	0.000440			107.2	16.3	112.8	2.8	94%

Spots	Th (ppm)	U (ppm)	Th /U	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err corr
				$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	
12	115	354	0.32	0.049273	0.004778	0.118506	0.011069	0.017571	0.000397	161.2	211.1	113.7	10.0	112.3	2.5	98%
13	74	118	0.63	0.048041	0.007485	0.112773	0.016263	0.017496	0.000811	101.9	333.3	108.5	14.8	111.8	5.1	96%
14	70	142	0.50	0.051136	0.012643	0.121341	0.026532	0.017424	0.001174	255.6	488.8	116.3	24.0	111.4	7.4	95%
15	64	114	0.56	0.049010	0.007649	0.116662	0.018306	0.017515	0.000629	150.1	329.6	112.0	16.6	111.9	4.0	99%
16	93	134	0.69	0.050587	0.004583	0.120717	0.010762	0.017556	0.000365	220.4	200.0	115.7	9.8	112.2	2.3	96%
17	114	188	0.61	0.047717	0.022066	0.109928	0.047993	0.017587	0.000938	83.4	838.5	105.9	43.9	112.4	5.9	94%
18	150	217	0.69	0.048155	0.007391	0.116538	0.018751	0.017445	0.000461	105.6	329.6	111.9	17.1	111.5	2.9	99%
18T323																
1	371	337	1.10	0.047908	0.003907	0.081240	0.006648	0.012373	0.000273	94.5	181.5	79.3	6.2	79.3	1.7	99%
2	331	359	0.92	0.048297	0.002683	0.082124	0.004521	0.012354	0.000167	122.3	116.6	80.1	4.2	79.1	1.1	98%
3	364	847	0.43	0.048116	0.002199	0.081658	0.004067	0.012269	0.000163	105.6	103.7	79.7	3.8	78.6	1.0	98%
4	675	1185	0.57	0.049923	0.001622	0.084683	0.002812	0.012374	0.000205	190.8	71.3	82.5	2.6	79.3	1.3	95%
5	1145	765	1.50	0.049772	0.004063	0.083720	0.005771	0.012386	0.000308	183.4	181.5	81.6	5.4	79.4	2.0	97%
6	387	411	0.94	0.047127	0.005536	0.079718	0.009825	0.012368	0.000398	57.5	264.8	77.9	9.2	79.2	2.5	98%
7	382	785	0.49	0.047154	0.002247	0.080054	0.003970	0.012316	0.000176	57.5	111.1	78.2	3.7	78.9	1.1	99%
8	554	645	0.86	0.048839	0.004199	0.082020	0.006319	0.012401	0.000273	139.0	192.6	80.0	5.9	79.4	1.7	99%
9	1059	1533	0.69	0.045577	0.003969	0.078135	0.006651	0.012478	0.000297			76.4	6.3	79.9	1.9	95%
10	611	857	0.71	0.051117	0.002988	0.086541	0.004327	0.012460	0.000234	255.6	135.2	84.3	4.0	79.8	1.5	94%
11	712	893	0.80	0.047289	0.002020	0.081022	0.003594	0.012457	0.000165	64.9	96.3	79.1	3.4	79.8	1.1	99%
12	1023	971	1.05	0.048704	0.001648	0.082950	0.002827	0.012425	0.000171	200.1	79.6	80.9	2.7	79.6	1.1	98%
13	1028	1090	0.94	0.048882	0.001790	0.082330	0.002916	0.012310	0.000144	142.7	89.8	80.3	2.7	78.9	0.9	98%
14	565	837	0.68	0.049138	0.002600	0.082434	0.004075	0.012255	0.000166	153.8	119.4	80.4	3.8	78.5	1.1	97%
15	332	471	0.70	0.047826	0.002772	0.079262	0.004779	0.012170	0.000224	100.1	133.3	77.5	4.5	78.0	1.4	99%
16	1663	1605	1.04	0.048605	0.002071	0.082335	0.003464	0.012431	0.000197	127.9	100.0	80.3	3.2	79.6	1.3	99%

Spots	Th	U	Th	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err	
	(ppm)	(ppm)	/U	$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	corr	
17	566	978	0.58	0.049488	0.002210	0.083434	0.003984	0.012412	0.000222	172.3	103.7	81.4	3.7	79.5	1.4	97%	
18T318																	
1	816	941	0.87	0.046604	0.001884	0.079611	0.003081	0.012476	0.000143	27.9	96.3	77.8	2.9	79.9	0.9	97%	
2	692	1315	0.53	0.047904	0.001705	0.082303	0.003032	0.012468	0.000157	94.5	83.3	80.3	2.8	79.9	1.0	99%	
3	863	827	1.04	0.047307	0.002063	0.081063	0.003537	0.012487	0.000175	64.9	100.0	79.1	3.3	80.0	1.1	98%	
4	938	467	2.01	0.051529	0.003206	0.087631	0.005018	0.012535	0.000178	264.9	172.2	85.3	4.7	80.3	1.1	93%	
5	955	939	1.02	0.048297	0.002266	0.082380	0.003749	0.012421	0.000143	122.3	98.1	80.4	3.5	79.6	0.9	99%	
6	669	542	1.23	0.051907	0.004041	0.089479	0.007947	0.012477	0.000335	279.7	175.0	87.0	7.4	79.9	2.1	91%	
7	1001	1299	0.77	0.051817	0.001993	0.088194	0.003294	0.012418	0.000190	276.0	88.9	85.8	3.1	79.6	1.2	92%	
8	641	930	0.69	0.047826	0.002009	0.081486	0.003389	0.012384	0.000142	100.1	87.0	79.5	3.2	79.3	0.9	99%	
9	422	628	0.67	0.047906	0.002384	0.082490	0.004207	0.012529	0.000215	94.5	114.8	80.5	3.9	80.3	1.4	99%	
10	673	833	0.81	0.049747	0.003488	0.084776	0.005325	0.012518	0.000234	183.4	164.8	82.6	5.0	80.2	1.5	97%	
11	870	960	0.91	0.048088	0.002636	0.081727	0.004129	0.012433	0.000176	101.9	125.9	79.8	3.9	79.7	1.1	99%	
12	408	604	0.67	0.052460	0.005495	0.087746	0.008838	0.012486	0.000203	305.6	236.1	85.4	8.3	80.0	1.3	93%	
13	930	710	1.31	0.049051	0.003023	0.084255	0.005342	0.012490	0.000187	150.1	137.0	82.1	5.0	80.0	1.2	97%	
14	545	875	0.62	0.048463	0.002505	0.082964	0.004013	0.012520	0.000179	120.5	118.5	80.9	3.8	80.2	1.1	99%	
15	1181	1385	0.85	0.046944	0.002779	0.081583	0.005078	0.012571	0.000231	55.7	133.3	79.6	4.8	80.5	1.5	98%	
16	589	544	1.08	0.048114	0.005820	0.082448	0.009600	0.012517	0.000485	105.6	262.9	80.4	9.0	80.2	3.1	99%	
17	754	1068	0.71	0.046913	0.001653	0.081120	0.002921	0.012538	0.000161	55.7	72.2	79.2	2.7	80.3	1.0	98%	
18	370	726	0.51	0.047771	0.002211	0.082356	0.003832	0.012515	0.000176	87.1	107.4	80.4	3.6	80.2	1.1	99%	
19	520	572	0.91	0.048066	0.002844	0.082111	0.004913	0.012443	0.000191	101.9	133.3	80.1	4.6	79.7	1.2	99%	
20	591	749	0.79	0.047823	0.002166	0.080621	0.003776	0.012169	0.000172	100.1	94.4	78.7	3.5	78.0	1.1	99%	
21	937	943	0.99	0.047737	0.003382	0.083368	0.007901	0.012576	0.000417	87.1	168.5	81.3	7.4	80.6	2.7	99%	
18T039																	

Spots	Th (ppm)	U (ppm)	Th /U	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err corr
				$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	
1	297	630	0.47	0.047312	0.002301	0.078685	0.003790	0.012059	0.000148	64.9	111.1	76.9	3.6	77.3	0.9	99%
2	201	203	0.99	0.049519	0.013371	0.085377	0.023332	0.012137	0.000365	172.3	533.3	83.2	21.8	77.8	2.3	93%
3	651	743	0.88	0.045222	0.001859	0.074993	0.002948	0.012094	0.000171			73.4	2.8	77.5	1.1	94%
4	445	934	0.48	0.047957	0.003384	0.079885	0.005591	0.012033	0.000283	98.2	159.2	78.0	5.3	77.1	1.8	98%
5	713	815	0.87	0.045203	0.005262	0.075838	0.008046	0.012160	0.000321			74.2	7.6	77.9	2.0	95%
6	623	970	0.64	0.047539	0.001830	0.078555	0.002880	0.011996	0.000164	76.0	88.9	76.8	2.7	76.9	1.0	99%
7	518	766	0.68	0.046649	0.002794	0.077182	0.004289	0.012033	0.000164	31.6	137.0	75.5	4.0	77.1	1.0	97%
8	564	672	0.84	0.047074	0.002483	0.079109	0.004654	0.012094	0.000246	53.8	122.2	77.3	4.4	77.5	1.6	99%
9	175	304	0.58	0.049930	0.008879	0.083040	0.014925	0.012055	0.000539	190.8	370.3	81.0	14.0	77.2	3.4	95%
10	306	435	0.70	0.047161	0.005266	0.078620	0.008298	0.012049	0.000420	57.5	248.1	76.8	7.8	77.2	2.7	99%
11	466	663	0.70	0.048564	0.002661	0.080973	0.004044	0.012078	0.000201	127.9	122.2	79.1	3.8	77.4	1.3	97%
12	652	788	0.83	0.050085	0.007196	0.084663	0.012165	0.012162	0.000561	198.2	303.7	82.5	11.4	77.9	3.6	94%
13	444	558	0.80	0.048400	0.002076	0.080543	0.003246	0.012053	0.000148	120.5	101.8	78.7	3.1	77.2	0.9	98%
14	321	472	0.68	0.046645	0.003016	0.077532	0.004933	0.012060	0.000233	31.6	157.4	75.8	4.6	77.3	1.5	98%
15	572	658	0.87	0.047173	0.002512	0.079050	0.004568	0.012050	0.000226	57.5	131.5	77.3	4.3	77.2	1.4	99%
16	297	431	0.69	0.051207	0.002605	0.085602	0.004546	0.012030	0.000161	250.1	118.5	83.4	4.3	77.1	1.0	92%
17	400	531	0.75	0.044222	0.010048	0.072792	0.013688	0.012050	0.000438			71.3	13.0	77.2	2.8	92%
18	528	671	0.79	0.045636	0.001446	0.075788	0.002432	0.012050	0.000241			74.2	2.3	77.2	1.5	95%
19	485	725	0.67	0.048565	0.002000	0.080158	0.002879	0.012103	0.000242	127.9	93.5	78.3	2.7	77.6	1.5	99%
20	301	424	0.71	0.049753	0.003621	0.083672	0.006387	0.012058	0.000194	183.4	-26.9	81.6	6.0	77.3	1.2	94%
21	473	543	0.87	0.046961	0.002238	0.077912	0.003674	0.012061	0.000189	55.7	111.1	76.2	3.5	77.3	1.2	98%
22	588	636	0.93	0.046492	0.003255	0.077182	0.005306	0.012095	0.000311	33.4	150.0	75.5	5.0	77.5	2.0	97%
23	752	1066	0.71	0.048650	0.001754	0.080827	0.002873	0.012053	0.000177	131.6	85.2	78.9	2.7	77.2	1.1	97%
24	402	594	0.68	0.051630	0.002272	0.086303	0.004084	0.012040	0.000147	333.4	101.8	84.1	3.8	77.1	0.9	91%

Spots	Th	U	Th	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err
	(ppm)	(ppm)	/U	$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	corr
25	504	547	0.92	0.047457	0.001836	0.078654	0.003195	0.012042	0.000194	72.3	88.9	76.9	3.0	77.2	1.2	99%
18T045																
1	115	292	0.39	0.047246	0.005030	0.076532	0.007887	0.011845	0.000208	61.2	237.0	74.9	7.4	75.9	1.3	98%
2	476	1270	0.37	0.047836	0.002527	0.078215	0.003767	0.011925	0.000140	100.1	112.9	76.5	3.5	76.4	0.9	99%
3	687	1165	0.59	0.048276	0.001567	0.079236	0.002580	0.011905	0.000121	122.3	75.9	77.4	2.4	76.3	0.8	98%
4	108	300	0.36	0.048979	0.005395	0.080543	0.009247	0.011840	0.000303	146.4	240.7	78.7	8.7	75.9	1.9	96%
5	293	400	0.73	0.049337	0.004049	0.081174	0.007338	0.011862	0.000435	164.9	181.5	79.2	6.9	76.0	2.8	95%
6	2116	1070	1.98	0.048863	0.001755	0.080431	0.003445	0.011888	0.000153	142.7	89.8	78.5	3.2	76.2	1.0	96%
7	2695	1408	1.91	0.045689	0.001808	0.074412	0.002987	0.011813	0.000147			72.9	2.8	75.7	0.9	96%
8	349	359	0.97	0.048228	0.002749	0.078872	0.004719	0.011807	0.000214	109.4	129.6	77.1	4.4	75.7	1.4	98%
9	1403	733	1.91	0.044961	0.002006	0.073584	0.003196	0.011900	0.000191			72.1	3.0	76.3	1.2	94%
10	1371	840	1.63	0.048338	0.002606	0.078414	0.003859	0.011870	0.000198	122.3	116.6	76.7	3.6	76.1	1.3	99%
11	1324	802	1.65	0.046276	0.002327	0.075482	0.003515	0.011896	0.000192	13.1	114.8	73.9	3.3	76.2	1.2	96%
12	711	1264	0.56	0.046965	0.001860	0.076736	0.002859	0.011887	0.000135	55.7	83.3	75.1	2.7	76.2	0.9	98%
13	1189	819	1.45	0.049260	0.001710	0.081000	0.002896	0.011921	0.000130	166.8	81.5	79.1	2.7	76.4	0.8	96%
14	2015	1123	1.79	0.044785	0.002875	0.073830	0.005128	0.011912	0.000236			72.3	4.8	76.3	1.5	94%
15	586	468	1.25	0.044609	0.003731	0.072695	0.005554	0.011936	0.000216			71.3	5.3	76.5	1.4	92%
16	916	690	1.33	0.048133	0.003101	0.078465	0.004648	0.011889	0.000199	105.6	144.4	76.7	4.4	76.2	1.3	99%
17	960	696	1.38	0.049868	0.002745	0.081638	0.004601	0.011889	0.000205	187.1	134.2	79.7	4.3	76.2	1.3	95%
18	393	507	0.78	0.046615	0.003305	0.076619	0.005550	0.011887	0.000240	27.9	162.9	75.0	5.2	76.2	1.5	98%
19	4039	1855	2.18	0.048299	0.002040	0.079300	0.003203	0.011924	0.000153	122.3	100.0	77.5	3.0	76.4	1.0	98%
20	105	257	0.41	0.049797	0.007025	0.080964	0.010819	0.012023	0.000350	187.1	296.3	79.1	10.2	77.0	2.2	97%
21	102	306	0.33	0.048509	0.006447	0.078530	0.009697	0.011917	0.000238	124.2	285.2	76.8	9.1	76.4	1.5	99%
18T048																

Spots	Th (ppm)	U (ppm)	Th /U	Common-Pb-corrected isotopic ratios ($\pm 1\sigma$)						Common-Pb-corrected isotopic ages (Ma)						err corr
				$^{207}\text{Pb}^*/^{206}\text{Pb}^*$	1σ	$^{207}\text{Pb}^*/^{235}\text{U}$	1σ	$^{206}\text{Pb}^*/^{238}\text{U}$	1σ	$^{207}\text{Pb}/^{206}\text{Pb}$	1σ	$^{207}\text{Pb}/^{235}\text{U}$	1σ	$^{206}\text{Pb}/^{238}\text{U}$	1σ	
1	218	319	0.68	0.049117	0.005092	0.083618	0.009468	0.012130	0.000338	153.8	235.2	81.5	8.9	77.7	2.2	95%
2	828	986	0.84	0.046455	0.002192	0.077356	0.003759	0.012037	0.000251	20.5	111.1	75.7	3.5	77.1	1.6	98%
3	654	770	0.85	0.047230	0.002270	0.077824	0.003744	0.012075	0.000266	61.2	111.1	76.1	3.5	77.4	1.7	98%
4	427	614	0.69	0.049391	0.004283	0.082493	0.007202	0.012103	0.000315	164.9	201.8	80.5	6.8	77.6	2.0	96%
5	383	616	0.62	0.046305	0.002467	0.077509	0.004261	0.012060	0.000236	13.1	187.0	75.8	4.0	77.3	1.5	98%
6	335	562	0.60	0.046768	0.001863	0.079148	0.003192	0.012307	0.000201	39.0	92.6	77.3	3.0	78.9	1.3	98%
7	972	1198	0.81	0.051209	0.002699	0.085153	0.004278	0.012120	0.000217	250.1	122.2	83.0	4.0	77.7	1.4	93%
8	590	1048	0.56	0.048132	0.001716	0.080579	0.002903	0.012147	0.000136	105.6	83.3	78.7	2.7	77.8	0.9	98%
9	478	972	0.49	0.050523	0.001856	0.084654	0.003402	0.012122	0.000187	220.4	85.2	82.5	3.2	77.7	1.2	93%
10	321	598	0.54	0.050556	0.001949	0.083625	0.003066	0.012083	0.000165	220.4	88.9	81.5	2.9	77.4	1.0	94%
11	326	421	0.77	0.049738	0.003731	0.082131	0.006196	0.012054	0.000255	183.4	166.6	80.1	5.8	77.2	1.6	96%
12	476	646	0.74	0.047839	0.002645	0.079847	0.004702	0.012137	0.000225	100.1	116.7	78.0	4.4	77.8	1.4	99%
13	406	518	0.78	0.048512	0.003362	0.080861	0.005625	0.012087	0.000177	124.2	155.5	79.0	5.3	77.5	1.1	98%
14	901	946	0.95	0.050721	0.002206	0.083996	0.003693	0.012107	0.000193	227.8	100.0	81.9	3.5	77.6	1.2	94%
15	217	417	0.52	0.049355	0.004706	0.081173	0.006756	0.012147	0.000328	164.9	207.4	79.2	6.3	77.8	2.1	98%
16	546	656	0.83	0.048012	0.002216	0.079293	0.003488	0.012045	0.000175	98.2	107.4	77.5	3.3	77.2	1.1	99%
17	894	936	0.96	0.046573	0.002665	0.078475	0.005774	0.012132	0.000389	33.4	133.3	76.7	5.4	77.7	2.5	98%
18	567	559	1.01	0.049477	0.004642	0.083051	0.008025	0.012127	0.000220	172.3	203.7	81.0	7.5	77.7	1.4	95%

Supplemental Table S2

Zircon Hf isotopic data of the studied samples across the Bangong-Nujiang suture zone

Sample	$^{176}\text{Yb}/^{177}\text{Hf}$	2σ	$^{176}\text{Lu}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}_i$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	2σ	T_{DM} (Ma)	T_{DM}^{C} (Ma)	$f_{\text{Lu/Hf}}$
18T074													
18T074-1	0.032361	0.000529	0.001094	0.000011	0.282681	0.000026	0.282678	-3.2	-0.9	0.9	812	1227	-0.97
18T074-2	0.034196	0.000246	0.001254	0.000014	0.282627	0.000021	0.282624	-5.1	-2.8	0.7	892	1349	-0.96
18T074-3	0.043361	0.001958	0.001447	0.000054	0.282709	0.000023	0.282706	-2.2	0.1	0.8	779	1163	-0.96
18T074-4	0.029741	0.000222	0.001007	0.000006	0.282713	0.000023	0.282711	-2.1	0.3	0.8	764	1153	-0.97
18T074-5	0.031233	0.000647	0.001089	0.000033	0.282705	0.000024	0.282703	-2.4	0.0	0.9	777	1171	-0.97
18T074-6	0.036189	0.000802	0.001221	0.000021	0.282679	0.000024	0.282676	-3.3	-1.0	0.8	818	1231	-0.96
18T074-7	0.094294	0.001058	0.003341	0.000073	0.282712	0.000030	0.282705	-2.1	0.0	1.1	817	1167	-0.90
18T074-8	0.041297	0.000825	0.001373	0.000034	0.282701	0.000020	0.282698	-2.5	-0.2	0.7	790	1182	-0.96
18T074-9	0.050531	0.000193	0.001710	0.000012	0.282785	0.000024	0.282781	0.4	2.7	0.8	676	995	-0.95
18T074-10	0.021504	0.000225	0.000755	0.000006	0.282614	0.000024	0.282613	-5.6	-3.2	0.9	898	1375	-0.98
18T074-11	0.033803	0.000492	0.001178	0.000013	0.282740	0.000025	0.282738	-1.1	1.2	0.9	729	1092	-0.96
18T074-12	0.041135	0.000489	0.001393	0.000007	0.282730	0.000024	0.282727	-1.5	0.8	0.9	748	1117	-0.96
18T074-13	0.027639	0.000371	0.001013	0.000019	0.282715	0.000025	0.282713	-2.0	0.3	0.9	761	1148	-0.97
18T074-14	0.051886	0.000493	0.001944	0.000019	0.282727	0.000030	0.282723	-1.6	0.7	1.0	764	1127	-0.94
18T074-15	0.033702	0.000324	0.001169	0.000010	0.282748	0.000022	0.282746	-0.8	1.5	0.8	718	1074	-0.96
19T921													
19T921-1	0.058976	0.000318	0.001985	0.000005	0.282621	0.000019	0.282616	-5.4	-3.0	0.7	919	1362	-0.94
19T921-2	0.055221	0.001356	0.001845	0.000047	0.282740	0.000015	0.282736	-1.1	1.3	0.5	742	1092	-0.94
19T921-3	0.050030	0.000546	0.001618	0.000013	0.282662	0.000016	0.282659	-3.9	-1.5	0.6	850	1266	-0.95
19T921-4	0.100120	0.002428	0.003426	0.000096	0.282745	0.000018	0.282738	-0.9	1.3	0.6	768	1088	-0.90
19T921-5	0.071802	0.001531	0.002302	0.000048	0.282722	0.000017	0.282717	-1.8	0.6	0.6	778	1134	-0.93

Sample	$^{176}\text{Yb}/^{177}\text{Hf}$	2 σ	$^{176}\text{Lu}/^{177}\text{Hf}$	2 σ	$^{176}\text{Hf}/^{177}\text{Hf}$	2 σ	$^{176}\text{Hf}/^{177}\text{Hf}$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	2 σ	T _{DM} (Ma)	T _{DM} ^C (Ma)	f _{Lu/Hf}
19T921-6	0.031063	0.000437	0.001023	0.000016	0.282687	0.000017	0.282685	-3.0	-0.5	0.6	802	1208	-0.97
19T921-7	0.063968	0.004598	0.001728	0.000098	0.282711	0.000019	0.282707	-2.2	0.2	0.7	783	1158	-0.95
19T921-8	0.049966	0.000823	0.001614	0.000018	0.282647	0.000017	0.282643	-4.4	-2.0	0.6	872	1302	-0.95
19T921-9	0.068278	0.002311	0.002214	0.000063	0.282687	0.000020	0.282682	-3.0	-0.6	0.7	828	1214	-0.93
19T921-10	0.069504	0.001290	0.002007	0.000033	0.282702	0.000014	0.282698	-2.5	-0.1	0.5	801	1179	-0.94
19T921-11	0.074534	0.000694	0.002415	0.000022	0.282708	0.000017	0.282703	-2.3	0.1	0.6	801	1167	-0.93
18T309													
18T309-1	0.053176	0.000294	0.001766	0.000006	0.282695	0.000021	0.282691	-2.7	-0.4	0.7	806	1195	-0.95
18T309-2	0.036809	0.001100	0.001259	0.000033	0.282646	0.000021	0.282643	-4.5	-2.1	0.7	865	1303	-0.96
18T309-3	0.042709	0.000842	0.001427	0.000031	0.282674	0.000025	0.282671	-3.5	-1.1	0.9	830	1241	-0.96
18T309-4	0.033343	0.000592	0.001190	0.000032	0.282646	0.000020	0.282643	-4.5	-2.1	0.7	864	1303	-0.96
18T309-5	0.029503	0.000211	0.001017	0.000008	0.282654	0.000020	0.282652	-4.2	-1.8	0.7	848	1284	-0.97
18T309-6	0.035717	0.000605	0.001212	0.000026	0.282599	0.000021	0.282597	-6.1	-3.7	0.7	930	1407	-0.96
18T309-7	0.061537	0.002170	0.002069	0.000088	0.282606	0.000020	0.282602	-5.9	-3.5	0.7	941	1395	-0.94
18T309-8	0.027818	0.000236	0.000957	0.000009	0.282663	0.000019	0.282661	-3.9	-1.4	0.7	834	1263	-0.97
18T309-9	0.047540	0.002339	0.001397	0.000052	0.282669	0.000017	0.282666	-3.6	-1.2	0.6	835	1252	-0.96
18T309-10	0.038471	0.000473	0.001324	0.000016	0.282609	0.000018	0.282606	-5.8	-3.4	0.6	919	1387	-0.96
18T309-11	0.139149	0.002828	0.005116	0.000106	0.282662	0.000031	0.282651	-3.9	-1.8	1.1	939	1285	-0.85
18T309-12	0.036491	0.002660	0.001200	0.000077	0.282665	0.000023	0.282663	-3.8	-1.4	0.8	836	1259	-0.96
18T309-13	0.059004	0.001547	0.001780	0.000044	0.282645	0.000021	0.282641	-4.5	-2.1	0.7	879	1307	-0.95
18T309-14	0.049394	0.001003	0.001708	0.000049	0.282679	0.000024	0.282676	-3.3	-0.9	0.9	827	1229	-0.95
18T309-15	0.042668	0.000529	0.001419	0.000026	0.282636	0.000015	0.282633	-4.8	-2.4	0.5	883	1327	-0.96
18T297													
18T297-1	0.031659	0.000446	0.001057	0.000015	0.282409	0.000018	0.282407	-12.8	-10.4	0.6	1194	1834	-0.97
18T297-2	0.049695	0.001039	0.001605	0.000030	0.282506	0.000020	0.282503	-9.4	-7.1	0.7	1073	1619	-0.95

Sample	$^{176}\text{Yb}/^{177}\text{Hf}$	2σ	$^{176}\text{Lu}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}_i$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	2σ	T_{DM} (Ma)	T_{DM}^{C} (Ma)	$f_{\text{Lu/Hf}}$
18T297-3	0.031087	0.000282	0.001019	0.000009	0.282459	0.000020	0.282457	-11.1	-8.7	0.7	1122	1721	-0.97
18T297-4	0.027404	0.000580	0.000902	0.000015	0.282424	0.000017	0.282422	-12.3	-9.9	0.6	1168	1800	-0.97
18T297-5	0.039334	0.000979	0.001300	0.000030	0.282470	0.000020	0.282467	-10.7	-8.3	0.7	1115	1698	-0.96
18T297-6	0.023895	0.000717	0.000820	0.000027	0.282480	0.000019	0.282478	-10.3	-7.9	0.7	1088	1674	-0.98
18T297-7	0.029291	0.000270	0.001001	0.000009	0.282425	0.000023	0.282423	-12.3	-9.9	0.8	1169	1797	-0.97
18T297-8	0.034845	0.000328	0.001145	0.000010	0.282484	0.000021	0.282481	-10.2	-7.8	0.8	1092	1667	-0.97
18T297-9	0.028231	0.000931	0.000959	0.000030	0.282401	0.000019	0.282399	-13.1	-10.7	0.7	1202	1850	-0.97
18T297-10	0.019567	0.000044	0.000681	0.000001	0.282452	0.000018	0.282450	-11.3	-8.9	0.6	1123	1737	-0.98
18T297-11	0.026856	0.000247	0.000923	0.000008	0.282466	0.000019	0.282464	-10.8	-8.4	0.7	1109	1705	-0.97
18T297-12	0.029696	0.001226	0.001009	0.000042	0.282427	0.000020	0.282425	-12.2	-9.8	0.7	1168	1793	-0.97
18T297-13	0.028852	0.000357	0.000986	0.000008	0.282455	0.000019	0.282453	-11.2	-8.8	0.7	1128	1731	-0.97
18T297-14	0.023090	0.000270	0.000821	0.000008	0.282453	0.000017	0.282451	-11.3	-8.9	0.6	1125	1734	-0.98
18T297-15	0.030254	0.000790	0.001026	0.000023	0.282456	0.000017	0.282454	-11.2	-8.8	0.6	1127	1728	-0.97
17T418													
17T418-1	0.035270	0.000908	0.001163	0.000045	0.282558	0.000026	0.282556	-7.6	-5.1	0.9	987	1498	-0.96
17T418-2	0.035413	0.000532	0.001098	0.000012	0.282605	0.000021	0.282603	-5.9	-3.4	0.8	919	1392	-0.97
17T418-3	0.028675	0.000541	0.000851	0.000017	0.282521	0.000019	0.282519	-8.9	-6.4	0.7	1032	1581	-0.97
17T418-4	0.035787	0.000630	0.001014	0.000014	0.282567	0.000020	0.282565	-7.3	-4.8	0.7	971	1478	-0.97
17T418-5	0.019923	0.000233	0.000573	0.000010	0.282610	0.000018	0.282608	-5.7	-3.2	0.6	900	1380	-0.98
17T418-6	0.028692	0.000418	0.000776	0.000015	0.282508	0.000016	0.282506	-9.3	-6.9	0.6	1047	1609	-0.98
17T418-7	0.034289	0.000224	0.001027	0.000009	0.282684	0.000018	0.282681	-3.1	-0.7	0.6	807	1216	-0.97
17T418-8	0.018645	0.000221	0.000465	0.000007	0.282650	0.000016	0.282649	-4.3	-1.8	0.6	842	1290	-0.99
17T418-9	0.046746	0.000940	0.001524	0.000051	0.282574	0.000022	0.282571	-7.0	-4.6	0.8	973	1463	-0.95
17T418-10	0.042712	0.000587	0.001338	0.000040	0.282583	0.000020	0.282580	-6.7	-4.3	0.7	957	1444	-0.96
17T418-11	0.020717	0.001103	0.000671	0.000045	0.282664	0.000017	0.282662	-3.8	-1.3	0.6	827	1259	-0.98

Sample	$^{176}\text{Yb}/^{177}\text{Hf}$	2σ	$^{176}\text{Lu}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}_i$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	2σ	$T_{\text{DM}} \text{ (Ma)}$	$T_{\text{DM}}^{\text{C}} \text{ (Ma)}$	$f_{\text{Lu/Hf}}$
17T418-12	0.032833	0.000849	0.000966	0.000020	0.282564	0.000019	0.282562	-7.3	-4.9	0.7	973	1483	-0.97
17T418-13	0.039555	0.000373	0.001158	0.000010	0.282652	0.000020	0.282649	-4.3	-1.8	0.7	855	1289	-0.97
17T418-14	0.044386	0.001552	0.001297	0.000039	0.282616	0.000023	0.282614	-5.5	-3.1	0.8	908	1368	-0.96
17T418-15	0.033553	0.001165	0.001008	0.000030	0.282602	0.000019	0.282599	-6.0	-3.6	0.7	922	1400	-0.97
17T286													
17T286-1	0.036137	0.000388	0.001195	0.000006	0.282712	0.000016	0.282710	-2.1	0.3	0.6	770	1154	-0.96
17T286-2	0.021909	0.000087	0.000684	0.000002	0.282645	0.000015	0.282644	-4.5	-2.0	0.5	853	1302	-0.98
17T286-3	0.028602	0.001235	0.000995	0.000053	0.282672	0.000024	0.282670	-3.5	-1.1	0.8	822	1243	-0.97
17T286-4	0.025470	0.000600	0.000801	0.000018	0.282678	0.000018	0.282676	-3.3	-0.9	0.6	810	1230	-0.98
17T286-5	0.039619	0.000412	0.001315	0.000029	0.282620	0.000021	0.282617	-5.4	-3.0	0.7	903	1361	-0.96
17T286-6	0.035669	0.000451	0.001174	0.000026	0.282591	0.000015	0.282588	-6.4	-4.0	0.5	941	1427	-0.96
17T286-7	0.043599	0.001016	0.001384	0.000041	0.282549	0.000018	0.282546	-7.9	-5.5	0.7	1005	1521	-0.96
17T286-8	0.035700	0.000254	0.001127	0.000007	0.282602	0.000018	0.282599	-6.0	-3.6	0.6	925	1403	-0.97
17T286-9	0.034383	0.000310	0.001106	0.000008	0.282603	0.000020	0.282601	-6.0	-3.6	0.7	922	1398	-0.97
17T286-10	0.038349	0.000228	0.001212	0.000009	0.282594	0.000018	0.282591	-6.3	-3.9	0.6	938	1421	-0.96
17T286-11	0.035546	0.000122	0.001134	0.000007	0.282567	0.000016	0.282565	-7.3	-4.9	0.6	974	1480	-0.97
17T286-12	0.046515	0.000319	0.001737	0.000011	0.282601	0.000020	0.282597	-6.0	-3.7	0.7	941	1406	-0.95
17T286-13	0.031049	0.000261	0.000990	0.000009	0.282670	0.000020	0.282668	-3.6	-1.2	0.7	825	1248	-0.97
17T286-14	0.031337	0.001157	0.001019	0.000044	0.282571	0.000022	0.282569	-7.1	-4.7	0.8	965	1470	-0.97
18T062													
18T062-1	0.020247	0.000113	0.000570	0.000003	0.282740	0.000023	0.282739	-1.1	1.3	0.8	718	1089	-0.98
18T062-2	0.053949	0.001069	0.001458	0.000033	0.282832	0.000026	0.282829	2.1	4.5	0.9	603	885	-0.96
18T062-3	0.019514	0.000227	0.000556	0.000001	0.282703	0.000024	0.282701	-2.5	0.0	0.8	770	1173	-0.98
18T062-4	0.011362	0.000400	0.000289	0.000016	0.282678	0.000019	0.282678	-3.3	-0.9	0.7	798	1227	-0.99
18T062-5	0.026436	0.000782	0.000775	0.000026	0.282682	0.000023	0.282680	-3.2	-0.8	0.8	804	1222	-0.98

Sample	$^{176}\text{Yb}/^{177}\text{Hf}$	2 σ	$^{176}\text{Lu}/^{177}\text{Hf}$	2 σ	$^{176}\text{Hf}/^{177}\text{Hf}$	2 σ	$^{176}\text{Hf}/^{177}\text{Hf}_i$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	2 σ	T _{DM} (Ma)	T _{DM} ^C (Ma)	f _{Lu/Hf}
18T062-6	0.027282	0.000183	0.000757	0.000003	0.282780	0.000028	0.282778	0.3	2.7	1.0	666	1000	-0.98
18T062-7	0.021541	0.000266	0.000531	0.000007	0.282710	0.000027	0.282709	-2.2	0.2	1.0	759	1156	-0.98
18T062-8	0.022969	0.000075	0.000621	0.000004	0.282708	0.000024	0.282707	-2.3	0.2	0.8	763	1161	-0.98
18T062-9	0.018532	0.000133	0.000574	0.000001	0.282793	0.000023	0.282792	0.7	3.2	0.8	644	970	-0.98
18T062-10	0.034205	0.000273	0.000907	0.000010	0.282608	0.000027	0.282606	-5.8	-3.4	1.0	911	1388	-0.97
18T062-11	0.038412	0.000885	0.000965	0.000020	0.282637	0.000027	0.282635	-4.8	-2.4	0.9	870	1322	-0.97
18T062-12	0.027681	0.000170	0.000658	0.000002	0.282723	0.000028	0.282722	-1.7	0.7	1.0	743	1127	-0.98
18T062-13	0.029662	0.000194	0.000757	0.000003	0.282813	0.000037	0.282811	1.4	3.8	1.3	619	926	-0.98
18T062-14	0.022942	0.000161	0.000605	0.000002	0.282690	0.000031	0.282689	-2.9	-0.5	1.1	789	1202	-0.98
18T062-15	0.021522	0.000074	0.000574	0.000003	0.282668	0.000028	0.282667	-3.7	-1.3	1.0	819	1251	-0.98
18T323													
18T323-1	0.024872	0.000213	0.000883	0.000008	0.282746	0.000020	0.282745	-0.9	0.8	0.7	716	1097	-0.97
18T323-2	0.023116	0.000264	0.000789	0.000006	0.282764	0.000027	0.282763	-0.3	1.4	0.9	688	1055	-0.98
18T323-3	0.021412	0.000755	0.000769	0.000022	0.282723	0.000019	0.282721	-1.7	-0.1	0.7	746	1149	-0.98
18T323-4	0.022967	0.000625	0.000899	0.000016	0.282768	0.000024	0.282766	-0.2	1.5	0.8	685	1048	-0.97
18T323-5	0.049295	0.001616	0.001519	0.000050	0.282712	0.000025	0.282709	-2.1	-0.5	0.9	777	1176	-0.95
18T323-6	0.016352	0.000626	0.000533	0.000018	0.282482	0.000030	0.282482	-10.2	-8.5	1.1	1076	1688	-0.98
18T323-7	0.023138	0.000124	0.000807	0.000004	0.282730	0.000024	0.282728	-1.5	0.2	0.9	737	1133	-0.98
18T323-8	0.035794	0.000973	0.001163	0.000025	0.282738	0.000028	0.282737	-1.2	0.5	1.0	732	1115	-0.96
18T323-9	0.040373	0.000633	0.001234	0.000017	0.282761	0.000028	0.282759	-0.4	1.3	1.0	701	1064	-0.96
18T323-10	0.029103	0.000531	0.000915	0.000010	0.282682	0.000030	0.282681	-3.2	-1.5	1.1	806	1241	-0.97
18T323-11	0.043972	0.000520	0.001286	0.000009	0.282770	0.000029	0.282768	-0.1	1.6	1.0	689	1043	-0.96
18T323-12	0.082023	0.001087	0.002186	0.000021	0.282831	0.000031	0.282827	2.1	3.7	1.1	617	910	-0.93
18T323-13	0.041409	0.001301	0.001299	0.000045	0.282737	0.000028	0.282735	-1.3	0.4	1.0	737	1119	-0.96
18T323-14	0.033282	0.000347	0.001001	0.000007	0.282710	0.000027	0.282708	-2.2	-0.5	0.9	769	1178	-0.97

Sample	$^{176}\text{Yb}/^{177}\text{Hf}$	2 σ	$^{176}\text{Lu}/^{177}\text{Hf}$	2 σ	$^{176}\text{Hf}/^{177}\text{Hf}$	2 σ	$^{176}\text{Hf}/^{177}\text{Hf}_i$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	2 σ	T _{DM} (Ma)	T _{DM} ^C (Ma)	f _{Lu/Hf}
18T323-15	0.049922	0.001201	0.001495	0.000032	0.282708	0.000025	0.282706	-2.3	-0.6	0.9	781	1184	-0.95
18T318													
18T318-1	0.027769	0.000152	0.001087	0.000010	0.282732	0.000019	0.282730	-1.4	0.3	0.7	739	1129	-0.97
18T318-2	0.022017	0.000172	0.000836	0.000004	0.282724	0.000022	0.282723	-1.7	0.0	0.8	745	1145	-0.97
18T318-3	0.056715	0.000264	0.001813	0.000012	0.282745	0.000028	0.282742	-1.0	0.7	1.0	735	1102	-0.95
18T318-4	0.062877	0.000626	0.002014	0.000024	0.282772	0.000027	0.282769	0.0	1.7	1.0	699	1040	-0.94
18T318-5	0.039247	0.000600	0.001323	0.000015	0.282766	0.000023	0.282764	-0.2	1.5	0.8	696	1053	-0.96
18T318-6	0.060360	0.003195	0.001936	0.000080	0.282769	0.000025	0.282766	-0.1	1.5	0.9	703	1048	-0.94
18T318-7	0.044055	0.000995	0.001406	0.000018	0.282747	0.000023	0.282745	-0.9	0.8	0.8	724	1095	-0.96
18T318-8	0.039356	0.000433	0.001239	0.000016	0.282699	0.000022	0.282697	-2.6	-0.9	0.8	789	1203	-0.96
18T318-9	0.038583	0.000555	0.001215	0.000022	0.282728	0.000028	0.282727	-1.5	0.1	1.0	747	1137	-0.96
18T318-10	0.033929	0.000778	0.001141	0.000014	0.282728	0.000024	0.282727	-1.5	0.2	0.8	745	1137	-0.97
18T318-11	0.023324	0.000507	0.000787	0.000013	0.282745	0.000019	0.282743	-1.0	0.7	0.7	716	1099	-0.98
18T318-12	0.017512	0.000376	0.000638	0.000007	0.282739	0.000021	0.282738	-1.2	0.6	0.7	720	1110	-0.98
18T318-13	0.044637	0.001197	0.001380	0.000028	0.282775	0.000026	0.282773	0.1	1.8	0.9	684	1033	-0.96
18T318-14	0.027960	0.000438	0.001097	0.000016	0.282734	0.000025	0.282732	-1.3	0.3	0.9	737	1124	-0.97
18T318-15	0.032705	0.000740	0.001020	0.000018	0.282723	0.000020	0.282722	-1.7	0.0	0.7	750	1148	-0.97
18T039													
18T039-1	0.024788	0.000334	0.000755	0.000008	0.282757	0.000021	0.282756	-0.5	1.1	0.8	697	1072	-0.98
18T039-2	0.020284	0.001217	0.000583	0.000027	0.282716	0.000024	0.282715	-2.0	-0.3	0.8	752	1165	-0.98
18T039-3	0.035684	0.001066	0.001111	0.000027	0.282744	0.000023	0.282743	-1.0	0.7	0.8	722	1102	-0.97
18T039-4	0.033782	0.000498	0.001083	0.000022	0.282695	0.000023	0.282693	-2.7	-1.1	0.8	792	1215	-0.97
18T039-5	0.034082	0.000371	0.001077	0.000013	0.282780	0.000021	0.282779	0.3	1.9	0.8	671	1021	-0.97
18T039-6	0.032104	0.000429	0.001010	0.000006	0.282750	0.000021	0.282748	-0.8	0.8	0.8	713	1090	-0.97
18T039-7	0.030690	0.000454	0.000934	0.000004	0.282688	0.000019	0.282687	-3.0	-1.3	0.7	798	1228	-0.97

Sample	$^{176}\text{Yb}/^{177}\text{Hf}$	2σ	$^{176}\text{Lu}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}_i$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	2σ	T_{DM} (Ma)	T_{DM}^{C} (Ma)	$f_{\text{Lu/Hf}}$
18T039-8	0.032956	0.000144	0.001017	0.000012	0.282745	0.000021	0.282744	-1.0	0.7	0.7	719	1100	-0.97
18T039-9	0.020141	0.000353	0.000647	0.000010	0.282771	0.000018	0.282770	0.0	1.6	0.6	676	1041	-0.98
18T039-10	0.028129	0.000425	0.000864	0.000005	0.282686	0.000022	0.282685	-3.0	-1.4	0.8	800	1234	-0.97
18T039-11	0.025005	0.000151	0.000785	0.000013	0.282726	0.000021	0.282725	-1.6	0.0	0.7	741	1142	-0.98
18T039-12	0.032088	0.000772	0.001002	0.000014	0.282757	0.000021	0.282755	-0.5	1.1	0.7	703	1074	-0.97
18T039-13	0.046317	0.000461	0.001416	0.000023	0.282769	0.000019	0.282766	-0.1	1.5	0.7	694	1049	-0.96
18T039-14	0.031644	0.000365	0.001005	0.000018	0.282762	0.000023	0.282760	-0.4	1.3	0.8	696	1063	-0.97
18T039-15	0.038054	0.000394	0.001208	0.000005	0.282778	0.000022	0.282776	0.2	1.8	0.8	677	1027	-0.96
18T045													
18T045-1	0.027399	0.000973	0.000831	0.000036	0.282766	0.000021	0.282764	-0.2	1.4	0.7	687	1054	-0.97
18T045-2	0.056259	0.001702	0.001709	0.000059	0.282765	0.000019	0.282762	-0.3	1.3	0.7	705	1059	-0.95
18T045-3	0.027399	0.002288	0.000803	0.000053	0.282721	0.000020	0.282720	-1.8	-0.2	0.7	750	1155	-0.98
18T045-4	0.046198	0.002488	0.001412	0.000087	0.282774	0.000022	0.282772	0.1	1.7	0.8	686	1038	-0.96
18T045-5	0.024513	0.001314	0.000772	0.000036	0.282776	0.000018	0.282775	0.2	1.8	0.6	671	1030	-0.98
18T045-6	0.026322	0.000855	0.000986	0.000037	0.282684	0.000030	0.282682	-3.1	-1.5	1.1	806	1239	-0.97
18T045-7	0.059561	0.002197	0.001702	0.000038	0.282829	0.000024	0.282826	2.0	3.6	0.8	612	914	-0.95
18T045-8	0.050615	0.001757	0.001514	0.000063	0.282758	0.000027	0.282755	-0.5	1.1	0.9	711	1074	-0.95
18T045-9	0.013507	0.000370	0.000436	0.000008	0.282686	0.000024	0.282685	-3.0	-1.4	0.8	791	1232	-0.99
18T045-10	0.028061	0.001415	0.000936	0.000047	0.282782	0.000023	0.282781	0.4	2.0	0.8	666	1017	-0.97
18T045-11	0.044338	0.001057	0.001557	0.000014	0.282773	0.000035	0.282770	0.0	1.6	1.2	690	1040	-0.95
18T045-12	0.028224	0.000246	0.000848	0.000012	0.282763	0.000024	0.282762	-0.3	1.3	0.8	690	1059	-0.97
18T045-13	0.032876	0.000788	0.001027	0.000030	0.282780	0.000023	0.282779	0.3	1.9	0.8	670	1022	-0.97
18T045-14	0.028819	0.000926	0.000929	0.000025	0.282724	0.000024	0.282723	-1.7	-0.1	0.8	747	1148	-0.97
18T048													
18T048-1	0.046746	0.000445	0.001306	0.000015	0.282754	0.000022	0.282752	-0.6	1.0	0.8	712	1081	-0.96

Sample	$^{176}\text{Yb}/^{177}\text{Hf}$	2σ	$^{176}\text{Lu}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}$	2σ	$^{176}\text{Hf}/^{177}\text{Hf}$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	2σ	$T_{\text{DM}} \text{ (Ma)}$	$T_{\text{DM}}^{\text{C}} \text{ (Ma)}$	$f_{\text{Lu/Hf}}$
18T048-2	0.030727	0.000196	0.000896	0.000009	0.282748	0.000021	0.282747	-0.8	0.8	0.7	712	1092	-0.97
18T048-3	0.042168	0.000805	0.001261	0.000019	0.282782	0.000021	0.282780	0.3	2.0	0.8	672	1018	-0.96
18T048-4	0.038922	0.000453	0.001110	0.000004	0.282774	0.000024	0.282773	0.1	1.7	0.9	680	1034	-0.97
18T048-5	0.027877	0.000282	0.000803	0.000003	0.282766	0.000020	0.282765	-0.2	1.5	0.7	686	1052	-0.98
18T048-6	0.051191	0.001039	0.001442	0.000028	0.282763	0.000019	0.282761	-0.3	1.3	0.7	702	1061	-0.96
18T048-7	0.029111	0.000530	0.000891	0.000012	0.282764	0.000018	0.282763	-0.3	1.4	0.6	690	1056	-0.97
18T048-8	0.041639	0.000483	0.001230	0.000014	0.282738	0.000022	0.282736	-1.2	0.4	0.8	734	1116	-0.96
18T048-9	0.039446	0.000360	0.001092	0.000004	0.282726	0.000025	0.282724	-1.6	0.0	0.9	748	1143	-0.97
18T048-10	0.044193	0.000705	0.001200	0.000013	0.282725	0.000023	0.282723	-1.7	0.0	0.8	752	1146	-0.96
18T048-11	0.038509	0.000645	0.001096	0.000008	0.282766	0.000022	0.282764	-0.2	1.4	0.8	692	1054	-0.97
18T048-12	0.027558	0.000349	0.000844	0.000007	0.282743	0.000021	0.282741	-1.0	0.6	0.7	719	1105	-0.97
18T048-13	0.034668	0.000533	0.000947	0.000009	0.282768	0.000024	0.282767	-0.1	1.5	0.9	685	1047	-0.97
18T048-14	0.067761	0.001515	0.001723	0.000023	0.282825	0.000029	0.282822	1.9	3.5	1.0	618	922	-0.95
18T048-15	0.064861	0.000304	0.001825	0.000021	0.282763	0.000025	0.282760	-0.3	1.3	0.9	709	1062	-0.95

Supplemental Table S3

Part A

A brief checklist of the geochemical samples

Location	GPS	Lithology	Geochemical sample
Tarenben	N32.1815°, E89.6554°	Andesite	18T074-080; 19T931-932
Tarenben	N32.1790°, E89.6548°	Rhyolite	19T921-930
Maqian	N31.8088°, E90.1298°	Granite	18T309-314
Maqian	N31.7895°, E90.1473°	Andesite	18T297-300
Maqian	N31.6678°, E90.0061°	Granodiorite porphyry	19T016-018
Daru Tso	N31.5891°, E90.8110°	Diorite	19T008-015
Beila	N31.4106°, E91.0744°	Andesite	19T163-167
Baingoin	N31.4307°, E89.8032°	Granite	18T062-067
Baingoin	N31.2357°, E89.7764°	Granite	18T318-322
Baingoin	N31.2292°, E89.7809°	Granite	18T323-328
Yongzhu	N31.3359°, E89.2150°	Granodiorite	18T039-044
Yongzhu	N31.3359°, E89.2150°	Diorite enclave	18T045-047
Yongzhu	N31.3125°, E89.2700°	Granodiorite	18T048-051

Part B

Whole-rock major (wt. %) and trace (ppm) element data of the Cretaceous rocks sampled across the Bangong-Nujiang suture zone

Sample	18T074	18T075	18T076	18T077	18T078	18T079	18T080	19T931	19T932
SiO ₂	59.69	63.59	52.54	64.19	60.64	58.98	56.24	58.15	62.81
TiO ₂	0.49	0.63	0.54	0.63	0.62	0.57	0.61	0.66	0.53
Al ₂ O ₃	13.26	16.71	14.01	16.82	16.53	15.04	15.74	17.20	16.61
Fe ₂ O ₃ T	5.56	4.72	5.12	4.39	4.80	5.31	5.41	5.42	4.47
MnO	0.14	0.04	0.19	0.03	0.07	0.09	0.10	0.09	0.06
MgO	3.22	1.28	1.86	1.18	1.85	1.25	1.26	2.45	1.70
CaO	6.51	3.74	11.60	3.54	4.45	7.47	8.48	4.88	2.90
Na ₂ O	2.47	4.43	2.97	4.44	4.56	3.29	3.73	3.52	4.16
K ₂ O	1.72	2.17	2.19	2.13	2.03	2.62	2.43	2.90	2.98
P ₂ O ₅	0.13	0.19	0.17	0.20	0.19	0.18	0.20	0.21	0.16
LOI	7.40	3.07	9.64	2.89	4.52	5.42	6.23	3.72	2.87
Li	16.53	22.63	21.67	21.64	24.48	15.19	16.07	31.80	34.00
Be	1.06	1.59	1.31	1.62	1.60	1.40	1.36	1.94	1.70
Sc	16.60	12.79	12.54	12.46	13.89	12.81	13.62	12.01	9.82
Ti	2947	3704	3219	3895	4039	3484	3713	3878	2956
V	109.7	97.5	94.8	140.0	140.9	103.1	103.4	125.4	93.2
Cr	206.88	30.95	30.76	35.71	35.98	32.00	32.64	31.79	49.29
Mn	1106	305	1563	250	545	713	851	678	453
Co	18.98	16.77	18.98	18.14	19.02	17.43	17.66	16.43	9.33
Ni	46.01	17.14	21.43	20.61	21.29	18.98	18.03	18.55	24.79
Cu	42.96	27.25	25.60	29.25	28.39	23.19	25.37	17.35	15.96
Zn	48.29	48.56	48.38	48.24	47.58	50.50	49.88	51.73	49.21
Ga	14.45	16.93	16.08	17.82	18.23	17.23	17.73	16.86	14.54
Rb	46.05	85.73	67.81	91.12	82.09	82.19	81.13	121.86	113.45
Sr	372	472	384	473	524	389	427	385	375
Y	15.77	14.36	16.44	14.97	16.87	16.98	16.30	16.22	14.53
Zr	108	153	136	167	171	153	149	163	161
Nb	7.51	11.59	10.02	12.20	12.53	10.73	11.25	9.36	8.55
Sn	1.45	1.17	1.22	1.22	1.22	1.53	0.98	1.63	1.48
Cs	1.26	3.32	2.10	3.66	4.22	2.68	2.81	3.43	3.31
Ba	561	867	442	748	965	554	547	601	976
La	23.60	32.62	32.65	33.43	33.76	30.24	33.17	39.44	29.33
Ce	40.38	52.83	55.10	56.48	58.45	52.96	56.97	70.45	52.78
Pr	4.64	6.01	6.26	6.27	6.50	5.94	6.57	6.98	5.37
Nd	16.41	20.43	21.46	21.33	22.24	20.64	22.53	23.88	18.35
Sm	3.21	3.52	3.75	3.63	3.93	3.78	4.06	4.31	3.41
Eu	0.90	1.03	1.01	1.04	1.17	1.05	1.14	1.08	0.85
Gd	3.26	3.45	3.69	3.53	3.91	3.77	3.96	3.43	2.98
Tb	0.49	0.48	0.53	0.50	0.56	0.54	0.57	0.53	0.45
Dy	2.88	2.69	3.07	2.87	3.19	3.16	3.18	3.05	2.60
Ho	0.65	0.59	0.66	0.64	0.70	0.69	0.68	0.61	0.54
Er	1.63	1.47	1.68	1.59	1.72	1.73	1.71	1.77	1.57
Tm	0.27	0.25	0.28	0.27	0.29	0.28	0.28	0.28	0.25
Yb	1.80	1.55	1.87	1.80	1.91	1.87	1.79	1.79	1.59
Lu	0.24	0.22	0.26	0.26	0.26	0.27	0.25	0.29	0.27
Hf	2.88	3.82	3.44	4.24	4.42	3.75	3.81	4.08	4.06
Ta	0.48	0.66	0.59	0.72	0.72	0.62	0.66	0.65	0.64
Pb	12.62	14.30	12.31	13.83	12.38	14.22	14.44	14.83	20.20
Th	12.32	20.25	17.72	21.56	22.37	19.10	20.41	20.10	18.85
U	2.67	2.64	3.13	2.75	2.54	3.75	3.60	2.54	3.10

Sample	19T921	19T922	19T923	19T924	19T925	19T926	19T927	19T928	19T929
SiO ₂	74.65	74.47	73.95	73.97	73.71	75.41	73.48	75.42	73.28
TiO ₂	0.15	0.15	0.16	0.15	0.15	0.15	0.14	0.15	0.25
Al ₂ O ₃	12.95	12.40	13.02	12.94	13.02	12.09	12.04	12.10	13.11
Fe ₂ O ₃ T	1.45	1.93	1.92	1.94	1.94	2.16	1.70	1.90	2.70
MnO	0.02	0.07	0.05	0.05	0.05	0.06	0.05	0.04	0.05
MgO	1.23	1.06	1.61	1.17	1.83	0.55	1.74	2.11	0.93
CaO	0.35	0.44	0.29	0.38	0.29	1.05	1.35	0.34	0.88
Na ₂ O	2.50	2.68	2.30	2.56	2.41	2.82	1.98	2.04	2.87
K ₂ O	4.93	4.74	4.61	4.97	4.24	4.23	4.37	2.99	3.13
P ₂ O ₅	0.05	0.05	0.05	0.05	0.06	0.03	0.05	0.05	0.09
LOI	1.55	1.30	1.65	1.31	1.80	0.68	2.76	2.55	1.98
Li	37.43	33.24	45.93	35.46	48.25	26.25	46.90	54.44	32.78
Be	1.87	1.92	2.04	1.93	1.94	2.00	1.08	2.01	1.53
Sc	2.46	2.44	2.60	2.62	2.70	2.06	2.05	2.34	2.32
Ti	773	808	868	826	861	818	782	821	1460
V	8.1	10.4	8.1	7.7	12.7	24.4	8.1	11.5	22.3
Cr	5.89	13.30	7.69	10.41	8.01	12.49	17.39	165.40	14.11
Mn	131	497	361	386	349	414	394	333	415
Co	2.72	2.90	2.98	3.10	2.95	2.28	3.95	4.79	3.35
Ni	28.31	30.57	33.45	29.30	34.48	30.71	89.78	143.11	13.27
Cu	2.18	8.11	5.33	6.84	6.49	17.66	11.23	13.35	5.39
Zn	11.88	11.84	14.07	12.29	23.93	14.99	8.38	18.71	27.59
Ga	10.91	9.88	11.67	11.23	11.89	10.38	10.21	10.58	9.23
Rb	190.32	162.38	176.14	179.85	141.89	183.07	160.76	98.76	92.00
Sr	121	101	110	125	107	166	110	72	216
Y	8.50	10.04	10.24	8.39	9.76	7.01	8.96	8.28	8.98
Zr	110	84	96	100	76	72	78	101	164
Nb	11.59	11.63	11.79	11.55	11.89	10.63	10.91	11.10	9.12
Sn	1.81	2.21	2.06	2.01	1.95	2.06	1.99	2.15	1.23
Cs	7.45	5.04	6.67	7.28	5.26	7.37	6.66	4.07	2.14
Ba	822	680	754	823	693	743	881	612	1377
La	21.87	23.59	21.95	21.11	23.80	23.63	21.46	26.66	30.94
Ce	37.98	39.07	37.53	37.41	41.58	39.96	37.65	46.31	54.97
Pr	3.82	4.23	3.83	3.82	4.13	4.02	3.85	4.46	5.20
Nd	12.77	13.38	12.73	12.22	13.69	12.38	12.72	14.62	16.49
Sm	2.26	2.42	2.32	2.29	2.45	1.96	2.29	2.50	2.70
Eu	0.51	0.50	0.54	0.49	0.58	0.53	0.47	0.55	0.45
Gd	1.38	2.01	1.84	1.76	2.01	1.47	1.95	1.96	2.06
Tb	0.26	0.31	0.31	0.30	0.30	0.21	0.29	0.28	0.27
Dy	1.42	1.74	1.86	1.62	1.79	1.23	1.62	1.52	1.58
Ho	0.29	0.35	0.38	0.32	0.36	0.24	0.32	0.31	0.32
Er	0.89	1.05	1.12	0.93	1.05	0.66	0.92	0.91	0.99
Tm	0.15	0.16	0.18	0.16	0.17	0.11	0.15	0.14	0.15
Yb	1.00	1.12	1.17	1.02	1.10	0.69	0.95	0.99	1.03
Lu	0.17	0.18	0.19	0.17	0.18	0.11	0.17	0.16	0.18
Hf	3.60	2.99	3.12	3.15	2.65	2.53	2.62	3.15	4.15
Ta	1.23	1.13	1.23	1.17	1.19	1.06	1.09	1.10	0.77
Pb	17.25	12.94	15.34	17.38	13.41	27.71	14.21	6.93	12.35
Th	18.81	20.01	18.72	18.78	19.37	18.94	18.19	20.75	22.87
U	7.33	4.60	3.30	4.64	3.73	4.03	5.40	3.67	3.60

Sample	19T930	18T309	18T310	18T311	18T312	18T313	18T314	18T297	18T298
SiO ₂	74.02	76.78	79.74	81.19	80.68	82.11	79.45	63.05	64.50
TiO ₂	0.27	0.13	0.12	0.12	0.11	0.11	0.12	0.64	0.66
Al ₂ O ₃	13.24	13.08	11.97	11.42	11.50	10.79	12.12	15.59	15.89
Fe ₂ O ₃ T	2.35	1.08	0.48	0.40	0.35	0.35	0.40	4.98	3.07
MnO	0.05	0.01	0.01	0.01	0.01	0.00	0.01	0.06	0.04
MgO	0.46	0.20	0.14	0.10	0.08	0.14	0.14	2.86	2.75
CaO	1.85	0.43	0.16	0.50	0.72	0.24	0.17	4.53	5.20
Na ₂ O	3.19	2.73	2.29	5.36	5.71	1.51	2.34	3.42	5.95
K ₂ O	2.61	4.95	5.05	0.60	0.44	4.40	4.96	3.50	0.57
P ₂ O ₅	0.10	0.02	0.02	0.02	0.02	0.02	0.02	0.15	0.15
LOI	1.04	1.50	1.00	0.85	1.02	1.25	1.12	1.33	1.59
Li	22.26	4.54	6.53	9.63	11.30	14.24	5.37	22.05	10.58
Be	2.06	1.99	1.25	1.37	1.28	1.28	1.26	2.17	2.33
Sc	1.90	4.9	3.7	2.1	4.4	2.2	3.6	14.6	12.4
Ti	1538	769	616	537	505	533	618	3964	3974
V	29.8	8.8	11.1	8.78	4.55	11.7	10.6	120	120
Cr	13.41	11.8	5.19	4.47	3.90	8.77	5.55	18.11	20.27
Mn	387	73.3	56.6	27.1	37.0	15.7	24.4	483	338
Co	2.99	0.53	0.54	0.83	0.82	0.41	0.49	14.12	11.23
Ni	9.94	4.64	1.44	1.36	1.02	2.62	1.72	9.22	15.54
Cu	8.42	2.63	13.45	6.99	11.71	5.83	2.57	11.99	5.87
Zn	28.24	21.78	8.07	4.06	3.22	9.44	7.16	33.14	19.77
Ga	11.69	15.1	12.3	8.8	12.9	10.5	12.5	19.1	19.1
Rb	84.04	268	214	29	20	195	215	118	27.62
Sr	290	21	14	34	52	17	13	322	368
Y	8.48	40.0	26.5	13.3	24.0	25.6	24.7	26.8	27.1
Zr	122	183	159	143	138	136	143	218	246
Nb	9.19	22.9	14.8	13.4	12.4	12.8	14.3	12.9	13.2
Sn	1.72	4.10	2.88	5.44	4.49	2.78	2.85	2.45	5.26
Cs	2.66	2.63	2.69	0.88	0.69	2.87	2.87	2.34	1.74
Ba	993	144	199	16	30	129	154	694	131
La	30.19	45.9	40.9	19.0	28.3	31.8	36.1	48.2	20.8
Ce	51.44	95.8	81.5	42.5	56.0	68.6	74.4	90.0	50.9
Pr	4.92	10.74	9.13	4.18	6.43	7.11	8.23	10.37	7.20
Nd	15.54	36.7	30.8	14.3	22.0	24.7	28.1	35.9	28.2
Sm	2.43	6.58	5.78	2.77	4.29	4.87	5.34	6.44	5.81
Eu	0.52	0.18	0.23	0.12	0.18	0.20	0.21	1.39	1.06
Gd	1.86	6.49	5.35	2.78	4.11	4.78	4.95	6.08	5.29
Tb	0.27	1.04	0.84	0.44	0.67	0.80	0.77	0.89	0.85
Dy	1.50	6.75	4.91	2.55	4.11	4.83	4.57	4.97	4.89
Ho	0.29	1.41	1.10	0.54	0.95	1.08	1.00	1.10	1.08
Er	0.89	3.93	2.77	1.34	2.39	2.62	2.55	2.76	2.75
Tm	0.13	0.61	0.47	0.22	0.42	0.42	0.43	0.47	0.47
Yb	0.96	3.62	2.98	1.37	2.78	2.53	2.64	3.05	3.06
Lu	0.16	0.52	0.39	0.17	0.38	0.33	0.36	0.41	0.43
Hf	3.23	6.29	5.77	5.19	5.07	4.68	4.87	5.79	6.37
Ta	0.74	1.93	1.63	1.32	1.29	1.21	1.33	1.16	1.21
Pb	14.48	4.48	7.27	2.32	2.73	6.13	13.28	9.72	5.99
Th	22.19	49.02	30.42	31.29	39.96	37.88	27.96	33.47	34.74
U	3.86	3.49	4.24	3.47	3.22	3.07	2.94	4.71	4.17

Sample	18T299	18T300	19T016	19T017	19T018	19T008	19T009	19T010	19T011
SiO ₂	64.00	63.45	64.69	64.75	64.03	56.45	56.52	56.15	56.52
TiO ₂	0.65	0.62	0.63	0.64	0.62	0.81	0.81	0.82	0.81
Al ₂ O ₃	15.74	15.54	16.64	16.65	16.36	17.09	16.93	16.89	16.90
Fe ₂ O ₃ T	3.65	4.92	5.19	5.23	4.93	7.95	7.82	7.82	7.90
MnO	0.05	0.06	0.05	0.05	0.05	0.12	0.12	0.12	0.12
MgO	2.78	2.76	1.98	1.99	1.91	4.14	4.01	3.98	4.01
CaO	5.36	4.89	2.58	2.81	3.47	7.49	7.35	7.35	7.36
Na ₂ O	5.36	2.97	3.75	3.78	3.74	2.67	2.70	2.68	2.71
K ₂ O	1.05	3.72	2.12	2.04	2.03	1.86	1.92	1.91	1.91
P ₂ O ₅	0.16	0.15	0.19	0.19	0.19	0.16	0.16	0.16	0.16
LOI	1.69	1.12	1.80	2.01	2.36	1.36	1.41	1.47	1.39
Li	8.85	9.04	29.4	27.9	23.2	18.1	17.2	17.3	17.0
Be	2.26	2.12	2.03	2.28	2.07	1.65	1.76	1.67	1.60
Sc	13.98	14.52	10.3	10.5	10.3	23.9	23.1	23.0	22.7
Ti	3867	3857							
V	123	124	96.3	97.6	93.0	202	203	200	199
Cr	16.26	20.27	16.6	16.9	16.7	9.8	9.6	10.0	9.6
Mn	385	437							
Co	14.02	15.12	5.88	6.99	6.19	20.8	20.3	19.9	20.0
Ni	10.66	9.94	8.65	8.94	8.78	3.09	3.59	3.22	3.68
Cu	4.83	11.51	13.50	14.55	11.89	10.3	10.7	10.5	10.3
Zn	18.67	22.62	40.05	43.13	43.47	74.3	75.8	72.9	72.8
Ga	18.66	19.29	20.6	20.8	20.4	19.1	19.2	18.5	18.6
Rb	46.34	140	77	76	74	84.0	87.0	85.6	84.9
Sr	364	336	476	495	487	298	298	291	288
Y	26.77	26.84	22.4	21.5	19.1	24.9	25.9	25.2	24.9
Zr	232	229	167	162	164	140	143	142	140
Nb	12.97	12.70	10.8	11.0	10.6	7.7	8.2	8.0	7.9
Sn	2.56	2.68	1.25	1.12	1.16	1.88	2.02	1.96	1.89
Cs	1.92	4.12	4.80	5.73	4.35	4.07	4.39	4.29	4.18
Ba	258	710	399	386	370	327	339	325	328
La	40.8	49.5	40.5	36.8	30.7	27.6	28.6	28.1	27.9
Ce	82.8	93.8	79.9	73.0	60.4	56.1	58.7	56.4	56.5
Pr	10.0	10.6	8.91	8.25	6.75	6.31	6.58	6.39	6.28
Nd	35.7	36.5	33.8	31.4	26.0	24.0	24.0	24.2	23.7
Sm	6.75	6.56	6.50	5.97	5.10	4.85	5.11	4.82	4.92
Eu	1.16	1.35	1.33	1.28	1.31	1.18	1.21	1.15	1.14
Gd	6.05	6.31	5.18	4.79	4.21	4.36	4.35	4.41	4.39
Tb	0.89	0.90	0.70	0.71	0.61	0.75	0.74	0.72	0.72
Dy	5.02	4.97	3.86	3.93	3.49	4.18	4.26	4.30	4.31
Ho	1.10	1.08	0.76	0.76	0.64	0.90	0.91	0.89	0.83
Er	2.68	2.74	2.12	2.02	1.81	2.53	2.60	2.58	2.54
Tm	0.46	0.47	0.29	0.28	0.26	0.37	0.38	0.37	0.37
Yb	3.00	3.01	1.97	1.93	1.72	2.44	2.52	2.47	2.53
Lu	0.40	0.40	0.30	0.28	0.26	0.38	0.37	0.37	0.37
Hf	6.09	6.05	4.51	4.28	4.24	3.74	3.83	3.86	3.76
Ta	1.17	1.14	0.77	0.80	0.79	0.61	0.63	0.62	0.64
Pb	6.74	10.22	8.25	8.48	6.60	17.01	16.91	16.62	17.00
Th	34.77	35.70	10.11	10.21	10.53	12.28	13.23	12.68	12.52
U	4.84	5.46	1.12	1.13	1.28	2.53	2.60	2.59	2.61

Sample	19T012	19T013	19T014	19T015	19T163	19T164	19T165	19T166	19T167
SiO ₂	56.34	56.39	56.32	56.65	60.46	60.45	60.38	57.21	58.91
TiO ₂	0.81	0.80	0.79	0.83	0.70	0.70	0.70	0.75	0.71
Al ₂ O ₃	16.85	17.03	17.18	16.66	16.29	16.29	16.51	17.38	16.32
Fe ₂ O ₃ T	7.84	7.89	7.95	7.81	5.95	6.09	6.00	6.22	6.12
MnO	0.12	0.12	0.12	0.14	0.07	0.07	0.07	0.11	0.10
MgO	4.06	4.11	4.20	3.66	2.90	3.00	3.04	2.50	3.06
CaO	7.31	7.46	7.52	7.55	4.55	4.56	4.71	5.96	6.18
Na ₂ O	2.66	2.67	2.65	2.65	4.48	4.56	4.30	5.03	3.52
K ₂ O	1.89	1.87	1.82	2.02	2.19	1.97	2.28	0.72	2.16
P ₂ O ₅	0.16	0.16	0.15	0.17	0.15	0.15	0.15	0.16	0.15
LOI	1.53	1.33	1.29	1.98	1.88	1.91	1.85	4.07	2.44
Li	16.8	16.8	16.5	20.6	18.7	20.7	19.7	31.7	22.2
Be	1.45	1.71	1.57	1.67	1.19	1.17	1.13	1.36	1.20
Sc	22.9	24.1	22.7	22.6	16.8	17.5	16.9	18.1	17.0
Ti									
V	199	198	197	198	136	138	135	141	141
Cr	10.1	10.0	10.3	11.8	126	126	124	132	128
Mn									
Co	20.4	20.7	20.6	19.4	16.6	17.8	16.8	19.2	20.0
Ni	3.44	3.49	3.21	4.07	46.0	46.8	45.3	53.0	53.5
Cu	10.4	10.5	10.2	13.8	21.9	20.9	20.0	21.4	18.4
Zn	73.4	75.7	73.4	77.7	53.6	57.5	54.2	72.5	59.6
Ga	18.7	18.9	18.6	19.0	16.6	16.8	16.7	19.0	18.1
Rb	85.0	83.5	80.8	92.5	79.7	74.2	81.1	26.9	82.3
Sr	294	297	295	294	460	468	454	593	467
Y	25.5	25.2	24.1	26.7	17.8	18.3	17.3	19.8	18.1
Zr	141	138	133	151	125	128	125	128	122
Nb	8.0	7.9	7.6	8.5	6.18	6.49	6.24	6.55	6.16
Sn	1.94	1.91	1.81	1.86	1.10	1.02	1.02	1.02	0.97
Cs	4.28	4.26	4.03	4.41	1.06	1.01	1.30	3.74	2.08
Ba	329	328	313	348	451	421	475	289	497
La	28.0	27.6	26.7	30.0	21.3	21.8	20.9	23.0	21.8
Ce	56.3	55.4	53.9	59.5	41.2	43.4	40.9	44.3	42.3
Pr	6.24	6.16	5.99	6.62	4.63	4.81	4.50	4.99	4.69
Nd	24.0	23.6	22.8	25.5	17.7	18.5	17.8	19.5	18.0
Sm	5.11	4.80	4.62	5.14	3.56	3.65	3.60	4.10	3.76
Eu	1.18	1.12	1.12	1.16	1.03	1.02	0.98	1.05	1.00
Gd	4.65	4.42	4.29	4.66	3.33	3.16	3.25	3.43	3.30
Tb	0.69	0.70	0.66	0.72	0.51	0.53	0.52	0.55	0.51
Dy	4.25	4.17	3.91	4.36	2.98	3.22	3.03	3.32	3.11
Ho	0.89	0.89	0.85	0.90	0.62	0.64	0.63	0.68	0.64
Er	2.53	2.43	2.41	2.68	1.69	1.70	1.71	1.86	1.70
Tm	0.37	0.36	0.35	0.38	0.25	0.24	0.24	0.27	0.26
Yb	2.46	2.44	2.36	2.63	1.60	1.58	1.60	1.72	1.70
Lu	0.37	0.37	0.35	0.39	0.25	0.24	0.24	0.27	0.25
Hf	3.80	3.54	3.58	3.90	3.47	3.48	3.41	3.55	3.33
Ta	0.62	0.58	0.59	0.66	0.47	0.46	0.44	0.47	0.46
Pb	16.97	16.81	15.89	16.18	9.51	9.54	9.55	15.6	11.7
Th	12.60	12.39	12.15	14.30	9.44	9.20	9.10	9.39	8.89
U	2.58	2.55	2.48	2.85	1.99	2.10	1.91	1.89	1.80

Sample	18T062	18T063	18T064	18T065	18T066	18T067	18T318	18T319	18T320
SiO ₂	69.06	69.16	69.02	68.93	68.94	69.91	76.25	77.87	77.27
TiO ₂	0.36	0.34	0.40	0.39	0.37	0.36	0.23	0.16	0.19
Al ₂ O ₃	15.31	15.58	15.40	15.12	15.33	15.27	12.66	12.26	12.42
Fe ₂ O ₃ T	3.13	2.93	3.46	3.36	3.34	3.35	1.15	0.92	0.94
MnO	0.06	0.05	0.06	0.06	0.06	0.05	0.02	0.02	0.02
MgO	1.28	1.27	1.42	1.43	1.45	1.27	0.37	0.16	0.25
CaO	3.17	3.23	3.20	3.05	2.83	3.01	0.86	0.52	0.61
Na ₂ O	2.76	2.90	2.82	2.67	2.92	2.92	3.12	3.15	3.01
K ₂ O	4.06	3.90	3.53	4.20	3.88	3.48	5.21	4.90	5.26
P ₂ O ₅	0.15	0.11	0.11	0.13	0.10	0.09	0.07	0.03	0.05
LOI	1.10	0.94	1.12	1.10	1.36	1.03	0.57	0.67	0.61
Li	32.44	41.37	38.55	38.27	42.08	41.70	38.51	12.75	20.22
Be	2.27	2.17	2.15	2.25	2.17	2.09	5.28	5.32	4.74
Sc	10.8	17.4	11.8	21.9	11.2	11.5	7.04	4.84	5.71
Ti	2122	1946	2330	2583	2143	2105	1323	817	1027
V	67.9	62.7	75.0	79.7	66.3	67.9	17.1	15.6	16.2
Cr	11.1	10.7	14.2	16.2	12.9	10.0	9.7	9.7	10.1
Mn	453.7	413.2	488.2	527.8	440.7	402.2	129.1	125.6	167.9
Co	9.57	8.86	10.34	11.23	10.17	9.79	2.46	1.31	1.48
Ni	6.36	5.77	11.43	6.32	8.18	6.97	4.27	3.09	3.72
Cu	5.48	5.77	10.72	5.17	21.30	5.32	1.66	1.54	1.53
Zn	45.35	53.26	61.64	57.56	54.95	54.85	18.78	15.05	9.90
Ga	18.8	18.6	19.4	15.4	19.2	19.9	17.1	15.1	16.8
Rb	241	231	236	178	242	255	390	368	393
Sr	185	182	176	189	246	166	89	55	87
Y	24.4	22.0	21.5	28.1	24.5	25.4	10.9	8.6	13.9
Zr	112	131	138	148	127	161	133	101	130
Nb	15.7	15.0	12.1	17.8	16.4	16.3	16.7	15.5	16.9
Sn	2.65	2.38	2.73	2.25	1.94	2.04	2.06	1.44	2.64
Cs	10.19	11.21	12.10	17.90	10.91	14.74	15.02	10.51	10.36
Ba	261	235	231	257	240	235	140	102	168
La	32.0	27.8	28.9	29.3	27.1	29.9	42.1	44.7	42.6
Ce	64.2	55.5	59.6	58.5	55.7	62.9	82.7	71.0	72.9
Pr	7.99	6.90	7.32	7.31	6.89	7.51	7.38	6.23	6.74
Nd	29.3	25.3	27.4	27.7	25.3	27.2	22.3	16.5	19.1
Sm	6.34	5.46	5.92	6.34	5.63	5.93	3.36	1.95	2.62
Eu	0.86	0.85	0.82	0.55	0.80	0.82	0.52	0.26	0.38
Gd	5.83	5.13	5.31	5.41	5.28	5.55	3.09	1.98	2.51
Tb	0.89	0.78	0.80	0.61	0.85	0.87	0.36	0.20	0.30
Dy	4.79	4.32	4.27	4.63	4.61	4.92	1.85	0.91	1.48
Ho	0.99	0.89	0.88	0.68	0.96	1.00	0.38	0.20	0.34
Er	2.38	2.12	2.06	2.21	2.35	2.47	1.03	0.62	0.94
Tm	0.39	0.35	0.35	0.26	0.40	0.42	0.19	0.11	0.18
Yb	2.51	2.23	2.15	2.30	2.62	2.64	1.39	0.95	1.37
Lu	0.34	0.30	0.30	0.35	0.36	0.36	0.22	0.16	0.22
Hf	3.55	3.89	4.10	4.28	3.88	4.74	4.07	3.64	4.15
Ta	1.33	1.27	1.38	1.45	1.48	1.41	1.73	1.56	1.89
Pb	26.19	24.71	16.49	22.39	17.94	19.78	34.43	32.93	34.25
Th	24.91	22.31	23.98	18.12	22.90	22.86	35.38	32.41	35.56
U	3.17	2.68	2.79	2.15	3.90	2.20	3.67	3.69	4.22

Sample	18T321	18T322	18T323	18T324	18T325	18T326	18T327	18T328	18T039
SiO ₂	77.57	77.28	77.96	77.12	74.20	68.71	73.08	75.13	68.07
TiO ₂	0.14	0.20	0.21	0.16	0.34	0.44	0.36	0.29	0.48
Al ₂ O ₃	12.51	12.10	11.91	12.12	13.40	15.81	13.93	12.99	15.20
Fe ₂ O ₃ T	0.68	1.10	1.16	0.96	1.92	2.66	2.01	1.74	3.41
MnO	0.02	0.02	0.02	0.02	0.05	0.06	0.05	0.04	0.06
MgO	0.15	0.33	0.31	0.19	0.68	0.96	0.72	0.57	1.67
CaO	0.64	0.80	0.97	0.62	1.63	2.41	1.66	1.41	3.27
Na ₂ O	3.38	3.08	2.98	2.67	3.58	4.02	3.63	3.34	3.94
K ₂ O	4.99	4.89	5.01	6.29	4.54	4.89	4.79	4.73	3.37
P ₂ O ₅	0.02	0.05	0.06	0.03	0.12	0.17	0.12	0.10	0.17
LOI	0.45	0.49	0.25	0.36	0.40	0.48	0.43	0.36	0.61
Li	21.67	45.43	35.61	31.92	53.11	47.44	48.27	38.41	42.3
Be	5.56	4.47	3.49	2.55	5.15	3.81	5.60	6.69	3.25
Sc	6.10	8.35	5.62	4.93	10.83	12.14	9.47	8.30	14.8
Ti	796	1055	1203	879	2413	2636	2201	1717	2795
V	20.2	19.6	18.5	12.6	33.2	43.7	29.4	24.0	57.3
Cr	79.2	7.5	4.7	7.6	20.0	15.1	10.5	11.5	22.4
Mn	174.5	109.3	186.2	141.1	414.8	431.3	427.2	324.9	476.8
Co	3.28	2.80	2.39	1.61	5.71	7.39	5.62	4.39	15.69
Ni	44.60	2.85	1.79	2.19	8.59	6.67	4.23	4.34	18.24
Cu	54.99	1.35	1.68	0.87	4.09	4.02	2.75	2.92	7.25
Zn	18.58	22.16	14.35	18.01	32.91	42.55	38.55	26.57	51.19
Ga	11.1	16.3	15.4	15.3	16.2	21.6	21.8	19.1	19.1
Rb	265	367	322	290	243	303	381	357	173
Sr	87	48	121	125	226	349	213	181	289
Y	6.2	11.5	12.6	14.1	18.2	20.9	20.5	20.3	18.7
Zr	82	105	131	82	208	246	183	168	211
Nb	15.4	12.8	13.5	12.5	18.6	16.6	21.9	23.1	12.2
Sn	1.81	2.30	2.47	2.29	3.92	4.22	3.87	3.36	3.65
Cs	15.21	10.84	10.79	11.55	15.29	10.76	11.74	10.86	11.73
Ba	102	78	164	187	265	567	243	253	397
La	21.6	42.5	39.1	33.6	60.1	44.9	58.5	52.0	34.7
Ce	43.5	72.1	73.6	64.7	106.5	91.1	103.5	93.6	68.0
Pr	3.36	6.54	7.49	6.04	11.32	11.13	11.63	10.42	7.92
Nd	9.9	18.3	23.6	18.2	36.5	39.2	37.9	33.8	27.2
Sm	1.34	2.28	3.61	2.65	5.47	6.69	5.88	5.34	4.68
Eu	0.22	0.33	0.57	0.54	0.57	1.28	0.89	0.79	1.04
Gd	1.15	2.26	3.26	2.49	4.35	5.78	5.26	4.68	4.28
Tb	0.10	0.24	0.41	0.31	0.38	0.77	0.67	0.63	0.60
Dy	0.75	1.23	2.13	1.65	2.67	3.96	3.51	3.37	3.31
Ho	0.11	0.28	0.47	0.36	0.41	0.82	0.74	0.74	0.72
Er	0.42	0.81	1.25	1.01	1.43	2.08	1.97	1.99	1.80
Tm	0.06	0.15	0.23	0.18	0.19	0.35	0.35	0.37	0.31
Yb	0.65	1.19	1.62	1.31	1.88	2.23	2.51	2.63	2.09
Lu	0.11	0.20	0.24	0.20	0.33	0.32	0.37	0.39	0.30
Hf	2.78	3.30	3.92	2.85	5.57	6.24	5.23	5.20	5.19
Ta	1.67	1.20	1.53	1.50	1.85	1.59	2.50	3.05	1.16
Pb	98.43	32.02	31.15	42.28	30.46	34.79	35.02	31.99	26.11
Th	21.65	38.20	29.52	34.80	27.80	35.91	31.16	29.04	27.85
U	2.53	4.02	3.83	3.40	4.91	4.55	8.84	11.96	5.30

Sample	18T040	18T041	18T042	18T043	18T044	18T045	18T046	18T047	18T048
SiO ₂	69.10	69.11	67.81	68.43	68.48	62.83	60.23	61.77	70.60
TiO ₂	0.50	0.43	0.49	0.41	0.48	0.83	0.78	0.77	0.41
Al ₂ O ₃	14.68	15.55	15.22	15.55	15.38	16.00	15.60	15.14	14.52
Fe ₂ O ₃ T	3.32	2.68	3.51	2.83	2.98	5.15	6.29	5.20	2.33
MnO	0.06	0.05	0.06	0.05	0.05	0.10	0.16	0.13	0.05
MgO	1.70	1.36	1.66	1.42	1.47	3.03	4.20	3.64	1.21
CaO	2.88	3.08	3.13	3.01	3.00	4.80	5.30	4.76	2.47
Na ₂ O	3.60	3.89	3.69	3.94	3.84	4.40	4.58	3.93	3.58
K ₂ O	3.97	3.69	3.86	3.73	3.79	1.79	1.81	3.31	4.42
P ₂ O ₅	0.16	0.14	0.17	0.13	0.15	0.36	0.27	0.25	0.13
LOI	0.60	0.65	0.54	0.57	0.50	0.61	0.97	0.82	0.52
Li	44.1	42.6	40.4	43.9	39.9	62.1	61.4	46.0	49.2
Be	2.99	3.37	2.94	3.91	3.04	4.34	6.69	3.81	3.57
Sc	14.8	12.1	16.4	13.7	11.4	16.4	22.0	15.0	12.1
Ti	3033	2822	3001	2785	2799	5019	5284	4666	2425
V	60.7	51.5	60.6	57.9	48.8	96	108	93.7	42.9
Cr	21.3	17.6	24.1	23.3	21.7	44.4	123	68.3	18.7
Mn	479.1	387.8	459.7	418.7	398.4	818	1351	992	354.1
Co	13.13	12.15	13.48	11.65	11.19	16.9	21.2	17.4	9.64
Ni	18.23	17.17	19.01	19.23	17.63	26.9	61.2	46.7	15.34
Cu	10.29	11.23	15.17	11.17	9.40	35.5	56.8	44.9	15.44
Zn	64.09	51.63	75.59	51.65	55.08	87.3	125.4	92.4	39.67
Ga	18.6	15.4	19.6	15.7	18.6	22.2	19.1	19.9	18.4
Rb	206	126	191	138	184	178	113	188	267
Sr	272	337	292	302	275	277	215	221	221
Y	24.0	22.6	28.5	21.9	22.2	20.6	53.5	32.7	22.2
Zr	178	159	240	165	189	278	241	193	165
Nb	14.5	17.8	14.7	17.0	13.3	16.2	22.8	20.5	14.4
Sn	4.00	3.99	5.01	4.06	4.08	5.38	9.23	6.97	6.52
Cs	12.53	10.38	11.05	15.51	11.32	14.48	15.89	10.93	16.79
Ba	437	479	434	445	402	231	183	355	374
La	40.1	27.6	44.4	36.4	33.5	27.8	31.0	40.2	41.3
Ce	78.4	55.2	86.9	70.7	67.8	54.4	75.4	89.1	80.9
Pr	9.55	6.84	10.45	8.29	8.36	6.69	11.57	11.38	9.40
Nd	33.2	25.5	36.7	29.4	29.8	26.4	48.9	42.7	31.7
Sm	5.90	4.96	6.60	5.27	5.39	5.55	11.13	8.23	5.61
Eu	1.08	0.72	1.13	0.70	1.01	0.92	0.82	1.28	0.95
Gd	5.37	4.13	5.97	4.18	4.80	5.15	8.86	7.34	5.10
Tb	0.77	0.45	0.92	0.45	0.70	0.76	1.03	1.10	0.76
Dy	4.32	3.59	5.18	3.40	3.96	4.03	8.43	6.10	4.04
Ho	0.94	0.54	1.13	0.52	0.86	0.87	1.29	1.29	0.86
Er	2.33	1.79	2.74	1.77	2.19	2.04	4.35	3.21	2.20
Tm	0.40	0.22	0.46	0.22	0.37	0.33	0.54	0.55	0.36
Yb	2.51	1.97	2.92	1.94	2.46	2.13	4.90	3.55	2.36
Lu	0.35	0.29	0.39	0.29	0.33	0.33	0.77	0.51	0.32
Hf	4.44	3.95	5.90	4.16	4.77	6.64	6.04	4.97	4.47
Ta	1.55	1.33	1.56	1.37	1.50	1.07	1.60	1.86	1.78
Pb	27.27	29.06	29.16	31.11	28.84	19.86	21.18	29.13	28.83
Th	23.27	9.75	20.14	13.33	22.39	10.55	7.28	15.16	35.08
U	3.68	2.03	4.01	2.98	3.70	2.70	4.13	7.09	3.02

Sample	18T049	18T050	18T051	AGV-2	AGV-2
SiO ₂	70.97	70.25	70.35		
TiO ₂	0.36	0.36	0.44		
Al ₂ O ₃	14.66	15.15	14.38		
Fe ₂ O ₃ T	2.38	2.21	2.65		
MnO	0.04	0.04	0.05		
MgO	1.11	1.12	1.27		
CaO	2.42	2.60	2.53		
Na ₂ O	3.68	3.90	3.68		
K ₂ O	4.30	4.26	4.17		
P ₂ O ₅	0.12	0.12	0.14		
LOI	0.59	0.58	0.60		
Li	49.0	38.6	47.0	11.2	10.85
Be	3.32	4.05	3.69	2.14	2.24
Sc	10.5	10.3	12.0	13.7	13.19
Ti	2148	2123	2680	5859	6238
V	45.4	39.9	46.0	118	117
Cr	20.5	15.9	20.8	17.7	20.0
Mn	356.5	298.8	355.3		
Co	8.94	8.07	10.19	15.9	15.6
Ni	15.33	12.94	16.75	18.3	19.0
Cu	11.79	12.09	12.48		
Zn	40.26	49.68	40.97		
Ga	18.2	18.7	19.0	22.3	20.3
Rb	243	252	254	64.9	66.6
Sr	227	235	221	664	655
Y	18.8	19.8	26.0	18.8	19.2
Zr	172	140	204	226	226
Nb	12.4	13.1	16.5	13.2	13.8
Sn	4.68	9.32	8.19		
Cs	14.61	16.63	16.90	1.21	1.22
Ba	396	376	360	1095	1138
La	25.3	30.8	46.1	36.3	37.9
Ce	51.4	60.4	90.6	65.3	69.0
Pr	6.37	7.19	10.69	8.23	7.86
Nd	22.9	25.3	37.1	30.8	29.6
Sm	4.38	4.78	6.65	5.65	5.59
Eu	0.89	0.92	1.01	1.70	1.58
Gd	4.02	4.32	5.95	5.08	4.61
Tb	0.61	0.65	0.87	0.70	0.64
Dy	3.41	3.54	4.73	3.71	3.51
Ho	0.72	0.75	1.01	0.74	0.67
Er	1.81	1.87	2.49	1.78	1.80
Tm	0.31	0.32	0.43	0.28	0.26
Yb	2.01	2.06	2.74	1.70	1.62
Lu	0.28	0.29	0.38	0.23	0.25
Hf	4.48	3.82	5.52	5.00	5.07
Ta	1.52	1.67	2.23	0.86	0.77
Pb	32.00	26.53	30.93	13.4	12.8
Th	25.85	23.92	32.08	6.74	5.61
U	2.28	2.94	2.79	1.97	1.90

Note: AGV-2 is measured values of standards for 18T and 19T series of samples. Analysis of these international standards is in good agreement with recommended values.