

Xiaoping Long, Jin Luo, Min Sun, Xuan-ce Wang, Yujing Wang, Chao Yuan, and Yingde Jiang, 2019, Detrital zircon U-Pb ages and whole-rock geochemistry of early Paleozoic metasedimentary rocks in the Mongolian Altai: Insights into the tectonic affinity of the whole Altai-Mongolian terrane: GSA Bulletin, <https://doi.org/10.1130/B35257.1>.

Data Repository

Table DR1. Geochemical compositions of the metasedimentary rocks from the Mongolian Altai.

Table DR2. U-Pb isotopic data of the detrital zircons from the metasedimentary samples in the Mongolian Altai.

Table DR3. Hf isotopic data of zircons from the metasedimentary rocks in the Mongolian Altai.

Figure DR1. Representative photos for the early Paleozoic sedimentary sequence in outcrops and typical rock textures for the samples collected from the Mongolian Altai. All images are under cross-polarized light.

Figure DR2. CL images of representative zircons from the Mongolian Altai. The Laser-ablation ICP-MS analysis positions and ages (Ma) are marked. The concordant $^{206}\text{Pb}/^{238}\text{U}$ ages are used for <1000 Ma zircons and $^{207}\text{Pb}/^{206}\text{Pb}$ ages for >1000 Ma zircons.

Figure DR3. U-Pb age - $\epsilon_{\text{Hf}}(t)$ diagrams for the detrital zircons of the Altai-Mongolian terrane, comparing with Tarim Craton (A) and Siberia craton (B). Data sources: AMT (Mongolian Altai, this study; Chinese Altai (Long et al., 2007, 2010, Jiang et al., 2011, Dong et al., 2018); Russian Altai (Chen et al., 2015, 2016); Siberia Craton (Priyatkina et al., 2017; Paquette et al., 2017); Tarim Craton (He et al., 2014a, 2014b).

APPENDIX

Analytical Methods

Whole-rock geochemistry analysis

The whole-rock geochemistry measurement was carried out at the Key Laboratory of Isotope Geochronology and Geochemistry, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences (SKLIG GIGCAS). Fifteen fresh samples that chosen for whole-rock major and trace elements analysis were crushed, ultrasonically cleaned in distilled water, and then dried and powdered to less than 0.074 mm. Major elements oxides were determined by Rigaku ZSX100e X-ray fluorescence (XRF) spectrometer. The analytical deviation is better than 5%, estimated as ca. 1% for SiO₂, ca. 5% for MnO and P₂O₅ and ca. 2% for other major oxides. Trace elements were analyzed using a Perkin-Elmer Sciex ELAN 6000 inductively coupled plasma mass spectrometer (ICP-MS). The powdered samples (50 mg) were digested by HNO₃ and HF acid mixture in high pressure Teflon-coated steel bombs in order to dissolve the refractory minerals completely. Rh was used as an internal standard to detect signal drift during the testing process. The USGS rock standards G-2, W-2, MRG-1, AGV-1, and the Chinese national rock standards GSD-12, GSR-1, GSR-2 and GSR-3 were used to calibrate the elemental concentrations of the measured samples. The analytical error was generally better than 5% for all trace elements.

Zircon U-Pb dating and Hf-in-zircon isotopic analysis

Five samples were prepared for zircon U-Pb dating and Hf in-situ analysis. Firstly, these samples were milled into powder, and then the convention heavy liquid and magnetic techniques were used to separate heavy minerals. Subsequently, the zircon grains were picked by hand under a binocular microscope. These selected zircon grains were mounted on adhesive tapes, enclosed in epoxy resins and polished until their interiors were exposed. In next step, cathodoluminescence (CL) images were captured by using a JXA-8100 Electron Probe Microanalyzer with a Mono CL3 Cathodoluminescence System in the Guangzhou Institute of Geochemistry in order to reveal the internal structure of polished zircons. These images are helpful to investigate the origin of zircons and select suitable grains for isotope analysis.

Zircon U-Pb isotopic dating

U-Th-Pb dating was conducted by using a LA-ICP-MS at the same laboratory. The analytical description is the same as that depicted by Li et al. (2011). Zircon targets were placed in a sample cell and flushed with Ar and He. Laser ablation was carried out by using a pulsed Resonetic 193 nm ArF excimer laser, which operated at a constant 80 mJ energy, with 8 Hz laser repetition rate, and 31 μm spot diameter. For obtaining exact U-Pb isotopic data, we should avoid the cracks in the zircons when analyzing. The Standard zircon 91500 (Harvard University) was used as external a standard to calibrate U-Pb isotopic, its reference ²⁰⁶Pb/²³⁸U value is 1065.4 ± 0.6 Ma (Wiedenbeck et al., 1995); The NIST 610 was used as an external standard for elemental concentration analysis and ²⁹Si was used as an internal standard for calibrating U, Th and Pb

concentrations. The common Pb correction was carried out by using the Excel program ComPbCorr#3 (Andersen, 2002). Isotope ratios ($^{207}\text{Pb}/^{206}\text{Pb}$, $^{206}\text{Pb}/^{238}\text{U}$, $^{207}\text{Pb}/^{235}\text{U}$ and $^{208}\text{Pb}/^{232}\text{Th}$) and element concentrations were calculated by using the GLITTER 4.0 program (Macquarie University). Concordia plots and weighted mean calculations were processed by using the Isoplot (version 4.4; Ludwig, 2003).

Lu–Hf isotope analyses

In-situ zircon Hf isotopic analysis was counted by using a Neptune Plus MC-CP-MS, coupled to the Resonetics RESOlution M-50-LR Excimer Laser Ablation System that installed in the SKLIG GIGCAS. Hf isotopic analysis was carried out by a 45 μm diameter beam, and the repetition rate was 8 Hz at 80 MJ. Helium was used as a carrier gas to transport the ablated material with mirror nitrogen. Data acquisition for each analysis consists of 30s gas background collection and 30s signal collection. The interference of ^{176}Yb on ^{176}Hf was corrected by a recommended $^{176}\text{Yb}/^{172}\text{Yb}$ ratio of 0.5886 (Chu et al., 2002) and $^{176}\text{Lu}/^{175}\text{Lu}$ ratio of 0.02655 (Machado and Simonetti, 2001). Standard zircons 91500 and GJ were used as external standards and were analyzed twice before and after every 10 analysis. Here we used the ^{176}Lu decay constant of $1.867 \times 10^{-11}\text{a}^{-1}$ reported by Söderlund et al. (2004) to calculate initial $^{176}\text{Hf}/^{177}\text{Hf}$ ratios. Chondritic values of $^{176}\text{Hf}/^{177}\text{Hf} = 0.0336$ and $^{176}\text{Lu}/^{177}\text{Hf} = 0.282785$ reported by Bouvier et al. (2008) were used for the calculation of $\varepsilon_{\text{Hf}}(t)$ values. The present-day depleted mantle $^{176}\text{Hf}/^{177}\text{Hf}$ ratio is 0.28325 which similar to that of average MORB, and $^{176}\text{Lu}/^{177}\text{Hf}$ ratio of 0.0384 were used to calculate the Single-stage model ages (T_{DM}^1) (Griffin et al., 2004). Two-stage model ages (T_{DM}^2), or “crustal” model ages were calculated by using $^{176}\text{Lu}/^{177}\text{Hf}$ ratio of 0.015 for the average continental crust (Rudnick and Gao, 2003).

REFERENCES CITED

- Andersen, T., 2002, Correction of common lead in U-Pb analyses that do not report ^{204}Pb : Chemical Geology, v. 192, p. 59–79, [https://doi.org/10.1016/S0009-2541\(02\)00195-X](https://doi.org/10.1016/S0009-2541(02)00195-X).
- Bouvier, A., Vervoort, J.D., and Patchett, P.J., 2008, The Lu–Hf and Sm–Nd isotopic composition of CHUR: constraints from unequilibrated chondrites and implications for the bulk composition of terrestrial planets: Earth and Planetary Science Letters, v. 273, p. 48–57, <https://doi.org/10.1016/j.epsl.2008.06.010>.
- Chu, N.C., Taylor, R., Nesbitt, R., Rose, M.B., Andrew, M.J., German, C., Bayon, G., and Burton, K., 2002, Hf isotope ratio analysis using multi-collector inductively coupled plasma mass spectrometry: An evaluation of isobaric: Journal of Analytical Atomic Spectrometry, v. 17, p. 1567–1574, <https://doi.org/10.1039/b206707b>.
- Griffin, W.L., Belousova, E.A., Shee, S.R., Pearson, N.J., and O'Reilly, S.Y., 2004, Archean crustal evolution in the northern Yilgarn craton: U–Pb and Hf-isotope evidence from detrital zircons: Precambrian Research, v. 131, p. 231–282, <https://doi.org/10.1016/j.precamres.2003.12.011>.

- He, J.W., Zhu, W.B., and Ge, R.F., 2014a, New age constraints on Neoproterozoic diamictites in Kuruktag, NW China and Precambrian crustal evolution of the Tarim Craton: Precambrian Research, v. 241, p. 44–60, <https://doi.org/10.1016/j.precamres.2013.11.005>.
- He, J.W., Zhu, W.B., Ge, R.F., Zheng, B.H., and Wu, H.L., 2014b, Detrital zircon U–Pb ages and Hf isotopes of Neoproterozoic strata in the Aksu area, northwestern Tarim Craton: implications for supercontinent reconstruction and crustal evolution: Precambrian Research, v. 254, p. 194–209, <https://doi.org/10.1016/j.precamres.2014.08.016>.
- Li, L.M., Sun, M., Wang, Y.J., Xing, G.F., Zhao, G.C., He, Y.H., He, K.J., and Zhang, A.M., 2011, U–Pb and Hf isotopic study of detrital zircons from the meta-sedimentary rocks in central Jiangxi province, South China: implications for the Neoproterozoic tectonic evolution of South China block: Journal of Asian Earth Sciences, v. 41, p. 44–55, <https://doi.org/10.1016/j.jseas.2010.12.004>.
- Long, X.P., Yuan, C., Sun, M., Zhao, G.C., Xiao, W.J., Wang, Y.J., Yang, Y.H., and Hu, A.Q., 2010, Archean crustal evolution of the northern Tarim craton, NW China: zircon U–Pb and Hf isotopic constraints: Precambrian Research, v. 180, p. 272–284, <https://doi.org/10.1016/j.precamres.2010.05.001>.
- Ludwig, K.R., 2003. User's manual for Isoplot 3.00: A geochronological toolkit for microsoft excel. Berkeley Geochronology Center, Special Publications, p. 1–71.
- Machado, N., and Simonetti, A., 2001, U-Pb dating and Hf isotopic composition of zircon by laser ablation-MC-ICP-MS, in Sylvester, P.J., ed., Laser-ablation-ICPMS in the Earth Sciences; Principles and Applications: MAC Short Course Handbook, v. 29, p. 121–146.
- Paquette, J.L., Ionov, D.A., Agashev, A.M., Gannoun, A., and Nikolenko, E.I., 2017, Age, provenance and Precambrian evolution of the Anabar shield from U-Pb and Lu-Hf isotope data on detrital zircons, and the history of the northern and central Siberian craton: Precambrian Research, v. 301, p. 134–144, <https://doi.org/10.1016/j.precamres.2017.09.008>.
- Rudnick, R.L., and Gao, S., 2003, 3.01-composition of the continental crust, in Treatise on Geochemistry. Oxford: Pergamon, p. 1–64, <https://doi.org/10.1016/B0-08-043751-6/03016-4>.
- Söderlund, U., Patchett, P.J., Vervoort, J.D., and Isachsen, C.E., 2004, The ^{176}Lu decay constant determined by Lu–Hf and U–Pb isotope systematics of Precambrian mafic intrusions: Earth and Planetary Science Letters, v. 219, p. 311–324, [https://doi.org/10.1016/S0012-821X\(04\)00012-3](https://doi.org/10.1016/S0012-821X(04)00012-3).
- Wiedenbeck, M., Allé, P., Corfu, F., Griffin, W.L., Meier, M., Oberli, F., Quadt, A.V., Roddick, J.C., and Spiegel, W., 1995, Three natural zircon standards for U-Th-Pb, Lu-Hf, trace element and REE analyses: Geostandards Newsletter, v. 19, p. 1–23, <https://doi.org/10.1111/j.1751-908X.1995.tb00147.x>.

Table DR1. Geochemical compositions of the metasedimentary rocks from the Mongolian Altai.

Sample	MK06-2	MK06-3	MK11-2	MK15-2	MK15-3	MK15-4	MK11-3	MK14-2	MK14-3	MK14-4	MK14-5	MK16-2	MK16-3	MK16-4	MK16-5
Siltstone samples							Sandstone samples								
Major element (wt%)															
SiO ₂	51.41	48.65	58.60	63.93	61.48	60.67	71.65	73.14	72.43	72.48	75.40	79.20	73.28	74.68	72.30
TiO ₂	1.93	1.73	0.93	0.72	0.82	0.84	0.59	0.60	0.64	0.54	0.53	0.55	0.72	0.62	0.70
Al ₂ O ₃	13.09	16.74	18.76	14.70	15.90	16.52	12.70	11.18	11.16	12.26	11.17	8.80	12.11	11.01	11.96
Fe ₂ O ₃	13.88	14.44	7.86	6.49	7.35	7.46	5.06	4.20	4.63	4.02	3.62	4.09	4.42	4.38	5.19
MnO	0.24	0.14	0.09	0.10	0.09	0.09	0.06	0.09	0.08	0.08	0.06	0.02	0.03	0.01	0.02
MgO	5.90	5.65	4.42	3.57	4.15	4.13	2.93	2.13	2.21	2.07	1.68	1.88	2.01	1.36	2.34
CaO	5.98	3.12	0.93	1.70	1.09	1.07	0.68	1.87	1.60	1.29	0.70	0.42	0.52	0.69	0.51
Na ₂ O	3.51	4.93	1.94	2.30	3.30	2.34	1.79	4.06	4.06	4.37	4.57	2.19	3.51	4.55	4.23
K ₂ O	1.87	1.35	3.99	2.39	2.11	2.98	2.26	0.36	0.46	0.66	0.28	0.73	1.19	0.85	0.44
P ₂ O ₅	0.19	0.23	0.18	0.15	0.19	0.17	0.13	0.12	0.12	0.13	0.10	0.15	0.14	0.11	0.13
L.O.I	1.55	2.61	1.87	3.66	3.16	3.42	1.73	1.80	2.19	1.66	1.43	1.53	1.63	1.31	1.74
Total	99.56	99.60	99.57	99.73	99.64	99.70	99.60	99.57	99.57	99.55	99.55	99.56	99.56	99.57	99.56
Trace elements (ppm)															
Sc	44.84	10.43	22.21	18.77	20.58	20.49	14.28	12.80	12.75	12.34	6.70	10.28	13.40	11.45	11.06
V	325	84.01	145	108	126	127	92.20	88.06	85.89	74.97	63.90	68.35	76.42	70.26	68.54
Cr	172	32.27	184	94.22	124	121	129	166	182	124	157	153	168	185	158
Co	39.10	14.88	19.16	16.68	16.44	18.83	12.93	10.60	11.20	10.84	8.79	7.05	5.59	7.43	6.13
Ni	44.35	23.96	100	63.27	69.81	75.16	66.29	35.76	38.81	37.01	36.49	33.34	29.59	24.32	33.21
Cu	78.53	11.37	33.76	21.26	33.57	31.30	14.96	17.16	33.44	13.15	10.22	7.47	7.32	11.44	8.10
Zn	114	55.98	97.57	81.40	93.43	92.03	65.09	53.46	50.35	53.41	37.65	12.93	14.68	12.78	13.46
Rb	46.78	18.73	145.4	91.67	80.81	112	87.44	11.42	18.73	20.30	10.39	24.98	47.03	40.49	15.27
Sr	233	277	98.0	132	138	110	94.87	235	93.43	180	111	42.92	59.06	85.22	60.87
Y	37.97	25.48	35.48	25.47	28.46	28.09	25.09	20.20	17.44	20.51	7.05	17.89	18.26	21.83	11.09
Zr	113	83.67	250	149	173	163	155	179	171	143	118	165	192	176	169
Nb	5.13	3.42	11.49	7.53	8.63	8.62	7.99	4.95	5.09	4.69	4.44	4.46	5.86	5.01	5.37

Cs	1.13	0.52	8.30	5.38	4.90	6.66	4.37	0.76	1.00	1.20	0.73	1.17	1.97	2.64	0.95	
Ba	819	85.93	962	276	261	327	481	117	55.86	292	36.21	117	151	180	67.46	
La	10.52	14.94	37.76	23.88	24.70	26.62	21.99	20.90	23.21	23.11	13.21	30.33	23.38	29.51	14.19	
Ce	25.39	31.25	73.91	49.23	49.29	55.54	44.07	43.72	47.61	45.89	27.21	60.92	48.80	57.59	28.64	
Pr	3.70	3.68	9.32	6.24	6.51	7.01	5.85	5.29	5.83	5.65	3.13	7.88	6.21	7.13	3.76	
Nd	17.79	16.23	36.30	24.69	25.79	27.56	23.87	20.67	22.41	22.17	11.91	31.33	24.58	27.69	14.96	
Sm	4.91	3.65	7.15	5.02	5.34	5.50	5.22	4.03	4.09	4.23	2.18	6.11	4.73	5.31	2.95	
Eu	1.66	0.89	1.45	1.11	1.16	1.23	0.98	0.96	0.96	1.04	0.57	1.23	0.97	1.68	0.67	
Gd	5.61	3.96	6.83	4.69	5.14	5.24	4.87	3.83	3.72	3.86	1.92	5.13	4.15	4.97	2.51	
Tb	1.04	0.68	1.09	0.76	0.84	0.86	0.80	0.60	0.56	0.61	0.29	0.68	0.60	0.74	0.36	
Dy	6.87	4.33	6.42	4.58	5.21	5.13	4.91	3.59	3.25	3.56	1.65	3.36	3.43	4.10	1.98	
Ho	1.52	0.95	1.37	0.98	1.10	1.09	1.03	0.77	0.67	0.76	0.34	0.67	0.70	0.83	0.42	
Er	4.14	2.65	3.78	2.75	3.07	3.06	2.83	2.19	1.88	2.17	0.96	1.94	2.06	2.31	1.38	
Tm	0.61	0.39	0.57	0.42	0.48	0.47	0.41	0.33	0.29	0.32	0.14	0.30	0.32	0.34	0.23	
Yb	3.88	2.50	3.73	2.77	3.19	3.08	2.56	2.16	1.97	2.13	0.96	2.03	2.20	2.28	1.77	
Lu	0.59	0.38	0.57	0.43	0.49	0.48	0.37	0.34	0.30	0.33	0.13	0.33	0.37	0.35	0.32	
Hf	3.17	2.23	6.88	4.21	4.79	4.59	4.39	4.83	4.60	3.86	3.22	4.47	5.14	4.76	4.55	
Ta	0.36	0.28	0.99	0.62	0.71	0.71	0.66	0.42	0.43	0.40	0.36	0.39	0.51	0.44	0.47	
Pb	10.16	6.51	21.83	7.56	5.00	4.58	29.33	8.72	3.18	7.91	3.10	3.31	2.10	3.12	2.33	
Th	1.94	2.20	12.47	8.36	9.43	9.47	9.57	7.22	6.80	6.32	4.40	6.95	7.87	7.95	7.54	
U	0.63	0.86	3.01	1.95	2.39	2.17	2.30	1.62	1.10	1.33	0.90	1.64	2.28	1.69	1.97	
CIA	39.88	52.52	74.71	63.74	64.75	69.60	71.01	51.64	52.64	54.76	55.29	64.69	61.67	53.60	59.29	
PIA	41.17	52.29	67.07	60.79	62.12	64.64	65.67	51.58	52.52	54.45	55.13	63.02	60.17	53.28	58.85	
ICV	2.55	1.87	1.07	1.18	1.19	1.14	1.05	1.19	1.23	1.06	1.02	1.12	1.02	1.13	1.12	
A/NK	1.68	1.75	2.49	2.30	2.06	2.33	2.35	1.58	1.55	1.55	1.43	2.00	1.71	1.31	1.61	
A/CNK	0.70	1.10	2.04	1.55	1.64	1.83	1.91	1.07	1.11	1.20	1.23	1.70	1.51	1.14	1.43	
La _N /Yb _N	1.94	4.29	7.26	6.18	5.56	6.20	6.15	6.96	8.44	7.80	9.90	10.74	7.62	9.30	5.76	
Gd _N /Yb _N	1.20	1.31	1.51	1.40	1.33	1.41	1.57	1.47	1.56	1.50	1.66	2.10	1.56	1.81	1.17	
Eu/Eu*	0.97	0.72	0.64	0.71	0.68	0.71	0.60	0.75	0.76	0.79	0.86	0.67	0.67	1.01	0.76	
Σ REE	87.63	86.11	189.67	127.12	131.81	142.39	119.39	109.04	116.45	115.49	64.46	151.91	122.12	144.48	73.82	

Table DR2. U-Pb isotopic data of the detrital zircons from the metasedimentary samples in the Mongolian Altai.

Sample	Th/U	Ratio						Age (Ma)						Concordance (%)
		$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	$^{207}\text{Pb}/^{206}\text{Pb}$	1sigma	$^{207}\text{Pb}/^{235}\text{U}$	1sigma	$^{206}\text{Pb}/^{238}\text{U}$	1sigma	
Sample MK06 (Siltstone, collected at 47°51'17.8''N; 91°14'17.38''E)														
MK06-1	0.29	0.056870	0.001590	0.635800	0.017500	0.081160	0.000970	486	40	500	11	503	6	99
MK06-2	0.89	0.059070	0.002610	0.654310	0.028430	0.080400	0.001130	570	70	511	17	499	7	98
MK06-3	0.51	0.059220	0.003280	0.604060	0.032810	0.074040	0.001160	575	91	480	21	460	7	96
MK06-4	0.4	0.062760	0.004890	0.996700	0.076350	0.115280	0.002160	700	132	702	39	703	12	100
MK06-5	0.92	0.065210	0.002400	1.217210	0.044050	0.135490	0.001800	781	54	808	20	819	10	99
MK06-6	0.36	0.090750	0.002510	3.139650	0.084980	0.251150	0.003310	1441	32	1442	21	1444	17	100
MK06-7	0.41	0.057350	0.002020	0.655680	0.022650	0.083000	0.001070	505	53	512	14	514	6	100
MK06-8	0.99	0.056280	0.003310	0.555210	0.032040	0.071620	0.001150	463	100	448	21	446	7	100
MK06-9	0.56	0.056880	0.003290	0.556100	0.031630	0.070980	0.001120	487	98	449	21	442	7	98
MK06-10	0.52	0.056060	0.002850	0.558000	0.027880	0.072260	0.001080	455	84	450	18	450	6	100
MK06-11	0.66	0.056980	0.002600	0.568410	0.025460	0.072410	0.001030	491	74	457	16	451	6	99
MK06-12	0.89	0.059740	0.003170	0.640270	0.033250	0.077800	0.001220	594	85	502	21	483	7	96
MK06-13	0.62	0.054990	0.003290	0.553550	0.032520	0.073070	0.001180	412	103	447	21	455	7	98
MK06-14	0.54	0.057170	0.002200	0.653750	0.024730	0.083020	0.001110	498	60	511	15	514	7	99
MK06-15	0.83	0.055350	0.004040	0.627720	0.045020	0.082330	0.001500	426	128	495	28	510	9	97
MK06-16	0.66	0.056380	0.002020	0.580900	0.020370	0.074800	0.000980	467	54	465	13	465	6	100
K06-17	0.5	0.055490	0.002180	0.635970	0.024530	0.083200	0.001110	432	62	500	15	515	7	97
MK06-18	0.96	0.054770	0.003800	0.563170	0.038290	0.074650	0.001340	403	121	454	25	464	8	98
MK06-19	0.75	0.056320	0.003650	0.625560	0.039840	0.080630	0.001370	465	111	493	25	500	8	99
MK06-20	0.36	0.055540	0.001610	0.638620	0.018230	0.083480	0.001010	434	42	501	11	517	6	97
MK06-21	0.69	0.060660	0.005840	0.673400	0.063860	0.080590	0.001650	627	171	523	39	500	10	95
MK06-22	0.6	0.058490	0.002100	0.661700	0.023350	0.082130	0.001070	548	54	516	14	509	6	99
MK06-23	0.44	0.057260	0.001980	0.652430	0.022140	0.082720	0.001060	502	52	510	14	512	6	100
MK06-24	0.54	0.055500	0.004140	0.526400	0.038570	0.068850	0.001260	432	131	429	26	429	8	100
MK06-25	1.09	0.056540	0.006960	0.610240	0.073750	0.078370	0.002160	474	221	484	47	486	13	100

MK06-26	0.8	0.058160	0.004840	0.658220	0.054140	0.082160	0.001390	536	152	514	33	509	8	99
MK06-27	0.31	0.060660	0.003200	0.583710	0.030010	0.069860	0.001130	627	83	467	19	435	7	93
MK06-28	0.87	0.056670	0.002530	0.589920	0.025810	0.075580	0.001070	479	72	471	16	470	6	100
MK06-29	1.38	0.055090	0.002570	0.525560	0.024060	0.069270	0.001000	416	76	429	16	432	6	99
MK06-30	0.7	0.057430	0.003060	0.629360	0.032880	0.079570	0.001230	508	88	496	20	494	7	100
MK06-31	0.41	0.058530	0.001720	0.656100	0.018930	0.081390	0.001000	550	42	512	12	504	6	98
MK06-32	0.24	0.057250	0.001380	0.593790	0.014070	0.075300	0.000870	501	32	473	9	468	5	99
MK06-33	0.47	0.058150	0.003320	0.659640	0.036960	0.082360	0.001300	535	95	514	23	510	8	99
MK06-34	0.86	0.065220	0.001780	1.121970	0.029980	0.124900	0.001520	781	36	764	14	759	9	99
MK06-35	0.36	0.107950	0.001870	4.695610	0.080370	0.315820	0.003630	1765	16	1766	14	1769	18	100
MK06-36	0.56	0.056240	0.003630	0.568340	0.035900	0.073380	0.001270	462	110	457	23	456	8	100
MK06-37	0.55	0.117330	0.002640	5.580320	0.122920	0.345340	0.004390	1916	22	1913	19	1912	21	100
MK06-38	0.92	0.055850	0.002760	0.533620	0.025860	0.069370	0.001010	446	82	434	17	432	6	100
MK06-39	0.53	0.056480	0.003680	0.578850	0.036950	0.074420	0.001300	471	111	464	24	463	8	100
MK06-40	0.23	0.070010	0.002750	1.452620	0.055820	0.150660	0.002180	929	55	911	23	905	12	99
MK06-41	0.41	0.056420	0.004930	0.536610	0.046150	0.069070	0.001330	469	158	436	30	431	8	99
MK06-42	0.36	0.056710	0.002550	0.607550	0.026790	0.077800	0.001130	480	72	482	17	483	7	100
MK06-43	0.44	0.055420	0.003440	0.527680	0.032150	0.069140	0.001120	429	107	430	21	431	7	100
MK06-44	0.73	0.059940	0.003350	0.675280	0.037000	0.081800	0.001280	601	92	524	22	507	8	97
MK06-45	0.34	0.058690	0.002300	0.667450	0.025650	0.082580	0.001120	556	60	519	16	512	7	99
MK06-46	0.36	0.055280	0.002690	0.618510	0.029540	0.081250	0.001180	424	81	489	19	504	7	97
MK06-47	0.3	0.162540	0.002360	10.511020	0.151110	0.469600	0.005320	2482	11	2481	13	2482	23	100
MK06-48	0.86	0.117800	0.002810	5.603790	0.130250	0.345440	0.004500	1923	24	1917	20	1913	22	100
MK06-49	0.47	0.056370	0.001820	0.636330	0.020170	0.081980	0.001020	467	48	500	13	508	6	98
MK06-50	0.71	0.057630	0.003350	0.652320	0.037140	0.082190	0.001350	516	96	510	23	509	8	100
MK06-51	0.42	0.060800	0.009800	0.685760	0.109500	0.081910	0.002070	632	310	530	66	508	12	96
MK06-52	0.41	0.059820	0.001810	0.649740	0.019350	0.078880	0.000960	597	43	508	12	489	6	96
MK06-53	1.03	0.060270	0.002050	0.694950	0.023190	0.083730	0.001080	613	50	536	14	518	6	97
MK06-54	0.43	0.057450	0.004010	0.592830	0.040390	0.074930	0.001450	509	116	473	26	466	9	99
MK06-55	0.59	0.054500	0.005310	0.521260	0.050120	0.069450	0.001400	392	181	426	33	433	8	98
MK06-56	0.71	0.056070	0.002220	0.578140	0.022480	0.074880	0.001000	455	62	463	14	465	6	100

MK06-57	0.79	0.253860	0.004100	22.233010	0.353560	0.636040	0.007990	3209	12	3194	15	3173	31	99
MK06-58	0.32	0.058470	0.001740	0.714160	0.020830	0.088710	0.001090	547	42	547	12	548	6	100
MK06-59	0.44	0.075670	0.002100	1.834760	0.049750	0.176090	0.002220	1086	34	1058	18	1046	12	99
MK06-60	0.49	0.066430	0.008090	1.176280	0.140050	0.128590	0.003920	820	201	790	65	780	22	99
MK06-61	0.79	0.055790	0.003530	0.552330	0.034360	0.071900	0.001180	444	109	447	22	448	7	100
MK06-62	1.15	0.065870	0.005710	1.211580	0.103250	0.133590	0.002780	802	145	806	47	808	16	100
MK06-63	0.61	0.064150	0.006530	0.781580	0.078630	0.088480	0.001720	747	183	586	45	547	10	93
MK06-64	0.44	0.101020	0.003030	1.300440	0.037730	0.093500	0.001260	1643	34	846	17	576	7	53
MK06-65	0.39	0.083130	0.001940	0.742040	0.016900	0.064830	0.000770	1272	26	564	10	405	5	61
MK06-66	0.43	0.056940	0.002250	0.675350	0.026120	0.086140	0.001160	489	61	524	16	533	7	98
MK06-67	0.61	0.056030	0.003480	0.582780	0.035550	0.075540	0.001240	454	107	466	23	469	7	99
MK06-68	0.36	0.057630	0.001720	0.638390	0.018700	0.080450	0.000980	516	43	501	12	499	6	100
MK06-69	0.36	0.059330	0.003800	0.689810	0.043500	0.084440	0.001360	579	109	533	26	523	8	98
MK06-70	0.67	0.056940	0.003430	0.610010	0.035890	0.077820	0.001340	489	99	484	23	483	8	100

Sample MK11 (Schist, collected at 47°19'35.0''N; 91°14'17.30''E)

MK11-1	0.59	0.058390	0.002480	0.679050	0.028320	0.084290	0.001170	544	67	526	17	522	7	99
MK11-2	0.44	0.084070	0.003250	2.607520	0.098470	0.224810	0.003350	1294	50	1303	28	1307	18	100
MK11-3	0.36	0.064330	0.002730	0.939400	0.039060	0.105840	0.001490	752	64	673	20	649	9	96
MK11-4	0.93	0.062170	0.002700	0.797890	0.033870	0.093020	0.001350	680	66	596	19	573	8	96
MK11-5	1.12	0.066800	0.005380	1.240840	0.098260	0.134650	0.002680	832	133	819	45	814	15	999
MK11-6	0.67	0.055720	0.003550	0.638370	0.040070	0.083050	0.001280	441	113	501	25	514	8	97
MK11-7	0.43	0.059930	0.002730	0.710050	0.031680	0.085880	0.001230	601	72	545	19	531	7	97
MK11-8	0.83	0.059250	0.003810	0.714340	0.045060	0.087400	0.001520	576	107	547	27	540	9	99
MK11-9	0.58	0.058510	0.003500	0.699370	0.041040	0.086650	0.001400	549	100	538	25	536	8	100
MK11-10	0.66	0.137620	0.006690	7.069440	0.332000	0.372390	0.007960	2197	52	2120	42	2041	37	96
MK11-11	0.25	0.108080	0.003300	4.485840	0.133620	0.300920	0.004260	1767	34	1728	25	1696	21	98
MK11-12	0.58	0.105410	0.002930	3.982990	0.107750	0.273950	0.003700	1721	30	1631	22	1561	19	96
MK11-13	0.56	0.059270	0.002500	0.744660	0.030750	0.091090	0.001270	577	65	565	18	562	8	99
MK11-14	0.33	0.057970	0.001760	0.701120	0.020910	0.087700	0.001070	529	44	539	12	542	6	99
MK11-15	0.49	0.083640	0.002050	2.513170	0.060280	0.217870	0.002640	1284	28	1276	17	1271	14	100
MK11-16	0.46	0.079850	0.003470	2.241190	0.095150	0.203510	0.003170	1193	59	1194	30	1194	17	100

MK11-17	0.4	0.068510	0.003480	0.699390	0.034590	0.074020	0.001200	884	75	538	21	460	7	8
MK11-18	0.35	0.082130	0.005870	2.286930	0.159260	0.201910	0.004530	1249	101	1208	49	1186	24	98
MK11-19	0.18	0.070130	0.002150	1.615860	0.048630	0.167080	0.002120	932	41	976	19	996	12	98
MK11-20	0.02	0.065260	0.001020	0.940240	0.014640	0.104470	0.001110	783	16	673	8	641	6	95
MK11-21	0.56	0.115240	0.004590	3.920150	0.150620	0.246690	0.004190	1884	45	1618	31	1421	22	86
MK11-22	0.36	0.062180	0.001940	0.773750	0.023670	0.090250	0.001130	680	44	582	14	557	7	96
MK11-23	0.5	0.060450	0.002770	0.743960	0.033480	0.089250	0.001280	620	72	565	19	551	8	97
MK11-24	0.69	0.056650	0.002380	0.652770	0.026890	0.083570	0.001140	478	67	510	17	517	7	99
MK11-25	0.34	0.181170	0.002460	12.505400	0.169040	0.500620	0.005530	2664	10	2643	13	2616	24	99
MK11-26	0.74	0.061210	0.003370	0.783200	0.042270	0.092810	0.001490	647	88	587	24	572	9	97
MK11-27	0.56	0.105810	0.002950	4.450550	0.120870	0.305080	0.004120	1728	30	1722	23	1716	20	100
MK11-28	0.68	0.063870	0.001800	0.785220	0.021720	0.089170	0.001080	737	38	588	12	551	6	93
MK11-29	0.34	0.069370	0.002420	1.576910	0.053750	0.164900	0.002230	910	48	961	21	984	12	98
MK11-30	0.63	0.059460	0.004000	0.731820	0.048280	0.089280	0.001560	584	113	558	28	551	9	99
MK11-31	0.28	0.057150	0.001280	0.556610	0.012290	0.070660	0.000790	497	29	449	8	440	5	98
MK11-32	1.15	0.066900	0.001690	1.236370	0.030590	0.134070	0.001580	835	32	817	14	811	9	99
MK11-33	0.6	0.058200	0.002470	0.693840	0.028910	0.086490	0.001190	537	67	535	17	535	7	100
MK11-34	0.47	0.062380	0.002270	0.703410	0.025090	0.081810	0.001070	687	54	541	15	507	6	93
MK11-35	0.51	0.178800	0.005020	12.231800	0.332890	0.496290	0.007930	2642	25	2622	26	2598	34	99
MK11-36	0.45	0.079470	0.004110	2.282610	0.115560	0.208400	0.003490	1184	73	1207	36	1220	19	99
MK11-37	0.9	0.059170	0.004210	0.701920	0.049020	0.086070	0.001540	573	121	540	29	532	9	99
MK11-38	0.72	0.057810	0.002370	0.691010	0.027820	0.086730	0.001190	523	64	533	17	536	7	99
MK11-39	0.52	0.061380	0.003380	0.690690	0.037230	0.081640	0.001300	653	88	533	22	506	8	95
MK11-40	0.62	0.063340	0.004710	0.891010	0.064810	0.102080	0.002080	720	120	647	35	627	12	97
MK11-41	0.94	0.059600	0.002770	0.731850	0.033330	0.089100	0.001300	589	73	558	20	550	8	99
MK11-42	0.38	0.058810	0.002470	0.713030	0.029340	0.087980	0.001210	560	66	547	17	544	7	99
MK11-43	0.85	0.058550	0.001670	0.700430	0.019630	0.086810	0.001040	550	40	539	12	537	6	100
MK11-44	0.81	0.056630	0.003000	0.619420	0.032150	0.079380	0.001200	477	88	489	20	492	7	99
MK11-45	0.79	0.061230	0.002060	0.735310	0.024210	0.087150	0.001110	647	49	560	14	539	7	96
MK11-46	1.19	0.057600	0.001610	0.657760	0.018000	0.082880	0.000990	515	39	513	11	513	6	100
MK11-47	0.55	0.101800	0.003970	4.030100	0.152960	0.287290	0.004580	1657	47	1640	31	1628	23	99

MK11-48	0.7	0.070360	0.005770	1.379470	0.110810	0.142300	0.003050	939	130	880	47	858	17	97
MK11-49	0.35	0.057320	0.001090	0.614670	0.011570	0.077830	0.000850	504	23	487	7	483	5	99
MK11-50	0.55	0.059110	0.002210	0.718800	0.026340	0.088260	0.001160	571	57	550	16	545	7	99
MK11-51	0.47	0.096330	0.005610	3.707090	0.209710	0.279320	0.005940	1554	74	1573	45	1588	30	99
MK11-52	0.48	0.058650	0.002210	0.679100	0.025120	0.084050	0.001110	554	58	526	15	520	7	99
MK11-53	0.24	0.072910	0.002450	1.704910	0.055930	0.169750	0.002260	1011	45	1010	21	1011	12	100
MK11-54	0.59	0.064630	0.002470	0.924890	0.034570	0.103880	0.001420	762	56	665	18	637	8	96
MK11-55	0.33	0.057010	0.001780	0.677090	0.020690	0.086210	0.001060	492	46	525	13	533	6	99
MK11-56	0.6	0.058080	0.002270	0.708020	0.027120	0.088500	0.001180	533	60	544	16	547	7	99
MK11-57	0.8	0.056910	0.001950	0.660750	0.022210	0.084280	0.001060	488	52	515	14	522	6	99
MK11-58	0.65	0.057760	0.005730	0.669230	0.065420	0.084110	0.001800	521	179	520	40	521	11	100
MK11-59	0.42	0.062120	0.011350	0.732120	0.131260	0.085560	0.003370	678	326	558	77	529	20	95
MK11-60	0.58	0.063190	0.001530	1.160130	0.027630	0.133300	0.001540	715	31	782	13	807	9	97
MK11-61	0.45	0.058730	0.001870	0.722400	0.022590	0.089310	0.001110	557	46	552	13	551	7	100
MK11-62	0.73	0.059870	0.008630	0.728130	0.103630	0.088300	0.002410	599	267	555	61	545	14	98
MK11-63	0.57	0.056790	0.003030	0.660670	0.034550	0.084470	0.001320	483	88	515	21	523	8	98
MK11-64	0.37	0.060110	0.001800	0.672170	0.019710	0.081200	0.000990	608	42	522	12	503	6	96
MK11-65	0.56	0.055590	0.002900	0.703150	0.036000	0.091850	0.001400	436	87	541	21	566	8	96
MK11-66	0.61	0.060160	0.003070	0.736750	0.036760	0.088920	0.001360	609	81	561	21	549	8	98
MK11-67	0.36	0.058670	0.004510	0.721340	0.054400	0.089280	0.001710	555	132	551	32	551	10	100
MK11-68	0.58	0.058530	0.002930	0.709720	0.034810	0.088050	0.001310	550	81	545	21	544	8	100
MK11-69	1.62	0.065670	0.003460	1.160570	0.059860	0.128330	0.002050	796	81	782	28	778	12	99

Sample MK14 (Sandstone, collected at 47°38'12.6''N; 90°59'9.7''E)

MK14-1	0.35	0.056850	0.001380	0.662440	0.015850	0.084540	0.000960	486	33	516	10	523	6	99
MK14-2	1.37	0.059190	0.001300	0.676870	0.014670	0.082970	0.000930	574	28	525	9	514	6	98
MK14-3	0.51	0.059820	0.003050	0.674330	0.033850	0.081790	0.001190	597	84	523	21	507	7	97
MK14-4	0.36	0.088900	0.002240	2.960080	0.072820	0.241570	0.003010	1402	28	1397	19	1395	16	100
MK14-5	0.63	0.068720	0.002340	1.137510	0.038040	0.120090	0.001530	890	48	771	18	731	9	95
MK14-6	0.49	0.057460	0.001680	0.624910	0.017930	0.078900	0.000950	509	42	493	11	490	6	99
MK14-7	0.33	0.089970	0.002140	2.978450	0.069260	0.240160	0.002940	1425	26	1402	18	1388	15	99
MK14-8	0.45	0.058150	0.002310	0.640640	0.025020	0.079920	0.001060	535	62	503	15	496	6	99

MK14-9	0.41	0.057530	0.001560	0.703430	0.018740	0.088700	0.001040	512	38	541	11	548	6	99
MK14-10	0.68	0.059700	0.003990	0.633440	0.041770	0.076980	0.001220	593	116	498	26	478	7	96
MK14-11	0.32	0.065620	0.001390	1.229720	0.025590	0.135940	0.001530	794	25	814	12	822	9	99
MK14-12	0.51	0.077400	0.001800	2.059790	0.046960	0.193040	0.002270	1132	27	1136	16	1138	12	100
MK14-13	0.14	0.060070	0.002500	0.773310	0.031510	0.093380	0.001290	606	64	582	18	575	8	99
MK14-14	0.87	0.053460	0.004360	0.544510	0.043970	0.073880	0.001190	348	154	441	29	459	7	96
MK14-15	0.63	0.057070	0.003180	0.655110	0.035830	0.083270	0.001270	494	94	512	22	516	8	99
MK14-16	0.95	0.062390	0.003690	0.735740	0.042760	0.085540	0.001360	688	97	560	25	529	8	94
MK14-17	1.16	0.055440	0.003430	0.545750	0.033260	0.071400	0.001120	430	108	442	22	445	7	99
MK14-18	0.85	0.064890	0.002650	1.101150	0.044000	0.123090	0.001710	771	61	754	21	748	10	99
MK14-19	0.42	0.055540	0.002100	0.608830	0.022630	0.079510	0.001020	434	60	483	14	493	6	98
MK14-20	1.05	0.059170	0.001270	0.779830	0.016430	0.095590	0.001060	573	27	585	9	589	6	99
MK14-21	0.34	0.057620	0.001560	0.714040	0.018950	0.089890	0.001050	515	38	547	11	555	6	99
MK14-22	0.59	0.057260	0.002050	0.626170	0.021970	0.079320	0.001010	502	55	494	14	492	6	100
MK14-23	0.44	0.056120	0.001840	0.610330	0.019590	0.078870	0.000980	457	49	484	12	489	6	99
MK14-24	0.61	0.055570	0.006620	0.605400	0.071090	0.079010	0.001860	435	221	481	45	490	11	98
MK14-25	0.7	0.058280	0.001760	0.717430	0.021300	0.089280	0.001080	540	44	549	13	551	6	100
MK14-26	0.89	0.056830	0.005410	0.551860	0.051700	0.070430	0.001460	485	172	446	34	439	9	98
MK14-27	0.47	0.057450	0.001590	0.650430	0.017700	0.082110	0.000970	509	39	509	11	509	6	100
MK14-28	0.59	0.061110	0.001930	0.704570	0.021880	0.083620	0.001030	643	45	542	13	518	6	95
MK14-29	0.69	0.060080	0.002120	0.614740	0.021210	0.074210	0.000950	606	52	487	13	461	6	94
MK14-30	0.46	0.057100	0.005020	0.628390	0.054420	0.079810	0.001580	495	157	495	34	495	9	100
MK14-31	0.63	0.057310	0.002310	0.685550	0.027110	0.086740	0.001130	503	64	530	16	536	7	99
MK14-32	0.26	0.058420	0.002090	0.686320	0.024110	0.085190	0.001080	546	54	531	15	527	6	99
MK14-33	0.86	0.055080	0.006020	0.586970	0.063470	0.077280	0.001570	415	207	469	41	480	9	98
MK14-34	0.66	0.059070	0.003300	0.712270	0.039030	0.087440	0.001390	570	92	546	23	540	8	99
MK14-35	0.64	0.055730	0.003930	0.542860	0.037730	0.070640	0.001160	442	126	440	25	440	7	100
MK14-36	0.36	0.060980	0.003390	0.717700	0.039290	0.085340	0.001260	639	92	549	23	528	7	96
MK14-37	0.55	0.059820	0.004080	0.615240	0.041430	0.074580	0.001150	597	120	487	26	464	7	95
MK14-38	0.48	0.057980	0.001290	0.597070	0.013060	0.074670	0.000830	529	29	475	8	464	5	98
MK14-39	0.62	0.055810	0.006370	0.630090	0.071010	0.081860	0.001780	445	214	496	44	507	11	98

MK14-40	0.7	0.059990	0.002840	0.709570	0.033030	0.085760	0.001200	603	76	544	20	530	7	97
MK14-41	0.71	0.056860	0.004230	0.598790	0.043820	0.076360	0.001330	486	132	476	28	474	8	100
MK14-42	0.39	0.061590	0.001890	0.693700	0.020880	0.081660	0.000990	660	44	535	13	506	6	94
MK14-43	0.6	0.066710	0.002780	1.123550	0.045820	0.122110	0.001690	829	62	765	22	743	10	97
MK14-44	0.69	0.057970	0.004580	0.646910	0.050370	0.080910	0.001440	529	141	507	31	502	9	99
MK14-45	0.74	0.056780	0.002330	0.641000	0.025830	0.081860	0.001080	483	66	503	16	507	6	99
MK14-46	0.55	0.090070	0.001920	2.801600	0.058400	0.225510	0.002640	1427	22	1356	16	1311	14	97
MK14-47	0.34	0.076710	0.003110	2.042450	0.080900	0.193030	0.002790	1114	56	1130	27	1138	15	99
MK14-48	0.24	0.071760	0.001820	1.587260	0.039390	0.160360	0.001890	979	31	965	15	959	10	99
MK14-49	0.57	0.058110	0.001520	0.667690	0.017190	0.083310	0.000960	534	36	519	10	516	6	99
MK14-50	0.46	0.065320	0.001830	0.763840	0.021000	0.084780	0.001010	785	38	576	12	525	6	90
MK14-51	0.97	0.054800	0.002240	0.588990	0.023620	0.077910	0.001010	404	66	470	15	484	6	97
MK14-52	0.48	0.091650	0.002330	3.288780	0.081700	0.260140	0.003240	1460	29	1478	19	1491	17	99
MK14-53	0.91	0.058360	0.003630	0.565370	0.034770	0.070230	0.001020	543	110	455	23	438	6	96
MK14-54	0.56	0.055990	0.004390	0.547980	0.042380	0.070950	0.001240	452	142	444	28	442	7	100
MK14-55	0.66	0.056590	0.002700	0.550220	0.025840	0.070480	0.000960	476	80	445	17	439	6	99
MK14-56	0.71	0.056230	0.002300	0.605570	0.024290	0.078060	0.001030	461	65	481	15	485	6	99
MK14-57	0.56	0.057200	0.004910	0.611500	0.051820	0.077490	0.001410	499	156	485	33	481	8	99
MK14-58	0.5	0.110080	0.001410	4.808160	0.060910	0.316630	0.003310	1801	10	1786	11	1773	16	99
MK14-59	0.57	0.060860	0.001440	0.690830	0.016010	0.082280	0.000930	634	31	533	10	510	6	95
MK14-60	0.28	0.056070	0.001410	0.654650	0.016180	0.084630	0.000960	455	35	511	10	524	6	98
MK14-61	0.32	0.090820	0.001900	2.964870	0.060550	0.236620	0.002740	1443	22	1399	16	1369	14	98
MK14-62	1.18	0.058610	0.002480	0.574000	0.023810	0.070990	0.000970	553	67	461	15	442	6	96
MK14-63	0.64	0.058460	0.002280	0.650860	0.024870	0.080690	0.001060	547	60	509	15	500	6	98
MK14-64	0.45	0.058130	0.007310	0.711030	0.088210	0.088660	0.002190	535	232	545	52	548	13	99
MK14-65	0.45	0.062180	0.002320	0.697500	0.025530	0.081300	0.001050	680	56	537	15	504	6	93
MK14-66	0.19	0.064450	0.001650	1.098380	0.027580	0.123510	0.001440	756	33	753	13	751	8	100
MK14-67	0.42	0.068980	0.001440	1.408880	0.028930	0.148030	0.001650	898	24	893	12	890	9	100
MK14-68	0.45	0.075600	0.001990	1.810750	0.046520	0.173590	0.002100	1084	32	1049	17	1032	12	98
MK14-69	0.46	0.061550	0.003020	0.634890	0.030660	0.074760	0.001050	659	79	499	19	465	6	93
MK14-70	0.34	0.123950	0.003210	6.113910	0.153820	0.357480	0.004790	2014	26	1992	22	1970	23	99

Sample MK15 (Siltstone, collected at 47°39'51.9''N; 90°53'43.6''E)

MK15-1	0.78	0.062010	0.006470	0.696300	0.071830	0.081590	0.001520	674	192	537	43	506	9	94
MK15-2	0.45	0.119980	0.003870	5.565380	0.172750	0.337030	0.004780	1956	35	1911	27	1872	23	98
MK15-3	0.93	0.056430	0.002640	0.625580	0.028660	0.080540	0.001060	469	78	493	18	499	6	99
MK15-4	1.14	0.058410	0.003660	0.597330	0.036780	0.074300	0.001060	545	110	476	23	462	6	97
MK15-5	0.8	0.059430	0.003600	0.659610	0.039230	0.080640	0.001160	583	105	514	24	500	7	97
MK15-6	0.49	0.061350	0.004700	0.695230	0.052470	0.082330	0.001340	652	135	536	31	510	8	95
MK15-7	0.72	0.055450	0.038850	0.541380	0.374990	0.070920	0.008040	430	1031	439	247	442	48	99
MK15-8	0.42	0.058260	0.003290	0.665350	0.036680	0.082960	0.001300	540	93	518	22	514	8	99
MK15-9	0.71	0.057270	0.006680	0.576970	0.066290	0.073180	0.001700	502	216	463	43	455	10	98
MK15-10	0.53	0.054610	0.014640	0.562120	0.149700	0.074770	0.002500	396	453	453	97	465	15	97
MK15-11	0.74	0.057700	0.004500	0.689490	0.052700	0.086780	0.001650	518	135	532	32	536	10	99
MK15-12	0.53	0.068760	0.018110	1.355670	0.350530	0.143190	0.008370	892	461	870	151	863	47	99
MK15-13	0.29	0.060550	0.002020	0.658730	0.021310	0.079000	0.000930	623	49	514	13	490	6	95
MK15-14	0.89	0.063040	0.003770	0.733060	0.042670	0.084450	0.001400	710	96	558	25	523	8	93
MK15-15	0.83	0.058720	0.003680	0.695820	0.042550	0.086050	0.001440	557	104	536	25	532	9	99
MK15-16	0.2	0.062190	0.003190	0.886270	0.044240	0.103490	0.001590	681	80	644	24	635	9	99
MK15-17	0.6	0.116610	0.004660	5.414400	0.209010	0.337150	0.005570	1905	46	1887	33	1873	27	99
MK15-18	0.57	0.058380	0.005910	0.706580	0.070020	0.087880	0.002080	544	177	543	42	543	12	100
MK15-19	1	0.057870	0.011960	0.611620	0.124430	0.076750	0.003130	525	372	485	78	477	19	98
MK15-20	0.6	0.054060	0.003200	0.586670	0.034130	0.078800	0.001150	374	105	469	22	489	7	96
MK15-21	0.39	0.058030	0.005220	0.663560	0.058660	0.083020	0.001610	531	161	517	36	514	10	99.42
MK15-22	0.93	0.056280	0.005380	0.609590	0.057150	0.078640	0.001700	463	171	483	36	488	10	99
MK15-23	0.47	0.079040	0.002070	2.149470	0.054320	0.197440	0.002270	1173	32	1165	18	1162	12	100
MK15-24	0.5	0.056530	0.009460	0.578160	0.095690	0.074250	0.002110	473	316	463	62	462	13	100
MK15-25	0.74	0.064080	0.009500	1.097980	0.160250	0.124390	0.003760	744	265	752	78	756	22	99
MK15-26	0.37	0.066630	0.002280	1.161480	0.038640	0.126540	0.001540	826	49	783	18	768	9	98
MK15-27	0.88	0.160270	0.004030	10.418220	0.251350	0.471860	0.006490	2459	23	2473	22	2492	28	99
MK15-28	0.51	0.071430	0.002100	1.567350	0.044540	0.159280	0.001880	970	39	957	18	953	10	100
MK15-29	0.64	0.066450	0.006000	0.617070	0.054070	0.067400	0.001660	821	143	488	34	420	10	84
MK15-30	0.55	0.056670	0.010990	0.628410	0.120300	0.080490	0.002830	479	356	495	75	499	17	99

MK15-31	0.84	0.113760	0.002700	5.246540	0.119480	0.334700	0.004040	1860	24	1860	19	1861	20	100
MK15-32	0.63	0.056920	0.007230	0.636880	0.079500	0.081200	0.002140	488	232	500	49	503	13	99
MK15-33	0.67	0.054550	0.014510	0.656800	0.173000	0.087380	0.003620	394	435	513	106	540	21	95
MK15-34	0.45	0.070160	0.003270	1.554270	0.070540	0.160770	0.002420	933	68	952	28	961	13	99
MK15-35	0.72	0.058320	0.005700	0.652570	0.062730	0.081190	0.001660	542	177	510	39	503	10	99
MK15-36	0.83	0.115210	0.006380	5.383290	0.288640	0.339070	0.007210	1883	66	1882	46	1882	35	100
MK15-37	0.54	0.057430	0.011820	0.648450	0.132040	0.081930	0.002770	508	374	508	81	508	17	100
MK15-38	0.19	0.064950	0.002310	1.133340	0.039100	0.126610	0.001610	773	51	769	19	768	9	100
MK15-39	0.68	0.070640	0.002970	1.457760	0.059580	0.149750	0.002090	947	61	913	25	900	12	99
MK15-40	1.14	0.058230	0.004500	0.661420	0.049980	0.082420	0.001600	538	132	515	31	511	10	99
MK15-41	0.81	0.056890	0.017720	0.656910	0.203450	0.083780	0.003090	487	533	513	125	519	18	99
MK15-42	0.69	0.062930	0.006530	1.289620	0.131440	0.148680	0.003600	706	178	841	58	894	20	94
MK15-43	0.96	0.053710	0.006040	0.574750	0.063810	0.077630	0.001630	359	213	461	41	482	10	96
MK15-44	0.79	0.056110	0.005480	0.608840	0.058210	0.078720	0.001790	457	173	483	37	488	11	99
MK15-45	0.64	0.064230	0.002830	1.390440	0.059600	0.157050	0.002220	749	67	885	25	940	12	94
MK15-46	0.53	0.057070	0.008150	0.634980	0.089140	0.080710	0.002390	494	260	499	55	500	14	100
MK15-47	0.56	0.066620	0.017190	1.351200	0.342410	0.147120	0.008400	826	453	868	148	885	47	98
MK15-48	0.77	0.057720	0.003980	0.639190	0.043060	0.080330	0.001450	519	117	502	27	498	9	99
MK15-49	0.62	0.053250	0.003070	0.580010	0.032650	0.079010	0.001240	339	99	464	21	490	7	95
MK15-50	0.46	0.053260	0.009020	0.576430	0.096210	0.078510	0.002490	340	311	462	62	487	15	95
MK15-51	0.57	0.057290	0.005020	0.621660	0.053320	0.078700	0.001650	503	153	491	33	488	10	99
MK15-52	0.11	0.066580	0.002050	1.371920	0.040970	0.149450	0.001770	825	42	877	18	898	10	98
MK15-53	0.57	0.056110	0.002820	0.619330	0.030370	0.080050	0.001180	457	83	489	19	496	7	99
MK15-54	0.35	0.053920	0.003560	0.573190	0.037080	0.077100	0.001250	368	117	460	24	479	7	96
MK15-55	0.29	0.068850	0.003290	1.471040	0.068410	0.154960	0.002390	894	70	919	28	929	13	99
MK15-56	0.19	0.059510	0.003280	1.037320	0.055820	0.126420	0.002030	586	89	723	28	767	12	94
MK15-57	0.82	0.055150	0.007800	0.542970	0.075730	0.071400	0.001920	418	264	440	50	445	12	99
MK15-58	0.51	0.056600	0.007080	0.589850	0.072470	0.075570	0.001980	476	228	471	46	470	12	100
MK15-59	0.78	0.054300	0.004400	0.552390	0.043900	0.073770	0.001410	384	145	447	29	459	8	98
MK15-60	0.71	0.061930	0.016180	0.668770	0.173950	0.078300	0.002150	672	492	520	106	486	13	93
MK15-61	0.55	0.055710	0.006300	0.578430	0.064170	0.075290	0.001870	441	204	463	41	468	11	99

MK15-62	0.78	0.059510	0.005900	0.639340	0.062610	0.077900	0.001430	586	184	502	39	484	9	96
MK15-63	0.65	0.055540	0.002300	0.619940	0.025010	0.080940	0.001060	434	66	490	16	502	6	98
MK15-64	1.05	0.057920	0.005520	0.668100	0.062220	0.083640	0.001970	527	164	520	38	518	12	100
MK15-65	0.67	0.064010	0.014100	0.774300	0.168740	0.087700	0.003140	742	414	582	97	542	19	93
Sample MK16 (Sandstone, collected at 47°41'19.3''N; 90°47'27.0''E)														
MK16-1	0.89	0.057190	0.008570	0.660320	0.097640	0.083740	0.002270	499	283	515	60	518	14	99
MK16-2	0.98	0.191690	0.006400	13.934060	0.447450	0.527250	0.009550	2757	30	2745	30	2730	40	99
MK16-3	0.81	0.095310	0.004380	3.446190	0.153350	0.262280	0.004450	1534	58	1515	35	1501	23	99
MK16-4	0.48	0.059520	0.011180	0.759210	0.140600	0.092530	0.003330	586	345	574	81	570	20	99
MK16-5	0.07	0.063490	0.005170	1.037430	0.082340	0.118530	0.002590	725	132	723	41	722	15	100
MK16-6	0.48	0.058770	0.004230	0.630230	0.044500	0.077790	0.001320	559	125	496	28	483	8	97
MK16-7	0.25	0.055050	0.004140	0.609170	0.044950	0.080270	0.001420	414	134	483	28	498	8	97
MK16-8	0.47	0.055210	0.003420	0.581210	0.035230	0.076370	0.001230	421	107	465	23	474	7	98
MK16-9	0.48	0.057600	0.004490	0.677960	0.051810	0.085390	0.001600	515	136	526	31	528	10	100
MK16-10	0.38	0.057220	0.009770	0.633770	0.106720	0.080350	0.002540	500	316	498	66	498	15	100
MK16-11	0.72	0.067120	0.004580	1.162840	0.077560	0.125680	0.002310	841	108	783	36	763	13	97
MK16-12	0.6	0.059100	0.009090	0.710030	0.107440	0.087150	0.002740	571	280	545	64	539	16	99
MK16-13	0.65	0.092100	0.007010	3.046480	0.226380	0.239960	0.005460	1469	107	1419	57	1386	28	98
MK16-14	0.59	0.056890	0.002810	0.633370	0.030480	0.080770	0.001150	487	81	498	19	501	7	99
MK16-15	0.34	0.058870	0.006540	0.691940	0.075470	0.085270	0.002080	562	198	534	45	528	12	99
MK16-16	0.53	0.056930	0.006560	0.663130	0.075140	0.084510	0.002070	489	210	517	46	523	12	99
MK16-17	0.36	0.055060	0.002630	0.625880	0.029210	0.082480	0.001140	415	80	494	18	511	7	97
MK16-18	0.81	0.058810	0.005630	0.684050	0.064380	0.084400	0.001720	560	172	529	39	522	10	99
MK16-19	0.49	0.057050	0.005490	0.588990	0.055500	0.074910	0.001690	493	170	470	35	466	10	99
MK16-20	0.45	0.058630	0.003510	0.674920	0.039630	0.083520	0.001270	553	102	524	24	517	8	99
MK16-21	0.53	0.057110	0.005260	0.598280	0.054140	0.076010	0.001500	496	167	476	34	472	9	99
MK16-22	0.89	0.056420	0.003600	0.639470	0.039870	0.082240	0.001380	469	109	502	25	509	8	99
MK16-23	0.6	0.058890	0.006120	0.644050	0.065650	0.079350	0.001840	563	184	505	41	492	11	97
MK16-24	0.13	0.192920	0.004990	14.038300	0.348160	0.528010	0.007870	2767	22	2752	24	2733	33	99
MK16-25	0.64	0.061540	0.003980	0.687080	0.043460	0.081020	0.001370	658	107	531	26	502	8	94
MK16-26	0.4	0.053900	0.003300	0.556270	0.033380	0.074890	0.001120	367	109	449	22	466	7	96

MK16-27	0.49	0.057400	0.004590	0.677470	0.053130	0.085640	0.001630	507	140	525	32	530	10	99
MK16-28	0.55	0.056530	0.003700	0.662800	0.042420	0.085090	0.001420	473	112	516	26	526	8	98
MK16-29	0.55	0.053970	0.008130	0.571030	0.085190	0.076790	0.001810	370	290	459	55	477	11	96
MK16-30	0.75	0.057590	0.003570	0.616030	0.037390	0.077630	0.001240	514	106	487	23	482	7	99
MK16-31	0.42	0.057160	0.011380	0.616030	0.121190	0.078210	0.002680	498	366	487	76	485	16	100
MK16-32	0.34	0.055140	0.023300	0.581700	0.244180	0.076570	0.004010	418	687	466	157	476	24	98
MK16-33	0.58	0.058210	0.004290	0.692230	0.049830	0.086310	0.001620	538	125	534	30	534	10	100
MK16-34	0.35	0.057810	0.004470	0.652570	0.049390	0.081930	0.001560	523	133	510	30	508	9	100
MK16-35	0.71	0.055660	0.003420	0.552410	0.033200	0.072040	0.001160	439	105	447	22	448	7	100
MK16-36	0.09	0.070500	0.007810	1.445580	0.156590	0.148840	0.004210	943	178	908	65	894	24	98
MK16-37	0.37	0.056170	0.002140	0.599960	0.022240	0.077530	0.000960	459	60	477	14	481	6	99
MK16-38	0.47	0.057000	0.010720	0.633570	0.117900	0.080690	0.002510	492	355	498	73	500	15	100
MK16-39	0.57	0.055680	0.010630	0.579980	0.109890	0.075610	0.001960	440	359	464	71	470	12	99
MK16-40	0.41	0.053090	0.004140	0.530730	0.040580	0.072570	0.001340	333	140	432	27	452	8	96
MK16-41	0.49	0.055930	0.006660	0.601820	0.070590	0.078120	0.001840	450	220	478	45	485	11	99
MK16-42	0.18	0.121950	0.008870	3.162460	0.220000	0.188270	0.005140	1985	85	1448	54	1112	28	70
MK16-43	0.94	0.089800	0.006950	3.056110	0.229930	0.247080	0.006260	1421	105	1422	58	1423	32	100
MK16-44	0.36	0.064690	0.001440	1.147200	0.024680	0.128750	0.001320	764	28	776	12	781	8	99
MK16-45	0.48	0.055700	0.004480	0.575350	0.045380	0.075000	0.001440	440	142	461	29	466	9	99
MK16-46	0.76	0.097430	0.003090	3.816260	0.117050	0.284410	0.003830	1576	37	1596	25	1614	19	99
MK16-47	0.58	0.058790	0.004750	0.739450	0.058380	0.091330	0.001870	559	137	562	34	563	11	100
MK16-48	0.75	0.055890	0.002760	0.630800	0.030450	0.081960	0.001130	448	83	497	19	508	7	98
MK16-49	0.69	0.067630	0.007830	1.351560	0.154160	0.145120	0.003640	857	199	868	67	874	20	99
MK16-50	0.13	0.062370	0.002890	1.304080	0.059080	0.151850	0.002180	687	72	848	26	911	12	93
MK16-51	1.11	0.055530	0.003130	0.639220	0.035260	0.083590	0.001290	434	95	502	22	518	8	97
MK16-52	0.7	0.055580	0.003210	0.577130	0.032570	0.075410	0.001170	436	98	463	21	469	7	99
MK16-53	0.52	0.055960	0.002670	0.579870	0.026960	0.075250	0.001060	451	78	464	17	468	6	99
MK16-54	0.18	0.068030	0.002880	1.409890	0.058100	0.150520	0.002110	869	62	893	24	904	12	99
MK16-55	0.66	0.106180	0.003200	4.571000	0.133320	0.312670	0.004210	1735	34	1744	24	1754	21	99
MK16-56	0.18	0.085820	0.004490	2.626100	0.133270	0.222250	0.004100	1334	69	1308	37	1294	22	99
MK16-57	1.14	0.055120	0.003550	0.637170	0.040230	0.083960	0.001340	417	113	501	25	520	8	96

MK16-58	0.55	0.056910	0.007820	0.603600	0.081570	0.077040	0.002160	488	252	480	52	478	13	100
MK16-59	1.08	0.172880	0.003080	11.695010	0.201120	0.491380	0.005440	2586	15	2580	16	2577	24	100
MK16-60	0.52	0.058420	0.003840	0.737200	0.047320	0.091670	0.001640	546	109	561	28	565	10	99
MK16-61	0.35	0.057290	0.002460	0.668580	0.027930	0.084780	0.001150	503	68	520	17	525	7	99
MK16-62	0.13	0.060390	0.002330	0.972230	0.036500	0.116970	0.001510	618	59	690	19	713	9	97
MK16-63	0.36	0.057520	0.003570	0.666170	0.040390	0.084140	0.001420	512	104	518	25	521	8	99
MK16-64	0.62	0.057590	0.003850	0.678060	0.044380	0.085540	0.001490	514	114	526	27	529	9	99
MK16-65	0.97	0.055540	0.005460	0.667020	0.064570	0.087260	0.001840	434	180	519	39	539	11	96
MK16-66	0.77	0.069350	0.005380	1.414050	0.107070	0.148160	0.003190	909	121	895	45	891	18	100
MK16-67	0.53	0.056540	0.004440	0.591620	0.045480	0.076040	0.001500	474	136	472	29	472	9	100
MK16-68	0.57	0.058360	0.004410	0.722750	0.053380	0.089990	0.001740	543	128	552	31	555	10	99
MK16-69	0.39	0.058450	0.010570	0.751870	0.133870	0.093470	0.003320	547	330	569	78	576	20	99

Table DR3. Hf isotopic data of zircons from the metasedimentary rocks in the Mongolian Altai.

Sample	Age (Ma)	$^{176}\text{Lu}/^{177}\text{Hf}$	$^{176}\text{Hf}/^{177}\text{Hf}$	2σ	$(^{176}\text{Hf}/^{177}\text{Hf})_i$	$\varepsilon_{\text{Hf}}(0)$	$\varepsilon_{\text{Hf}}(t)$	$f(\text{Lu/Hf})$	$T_{\text{DM}} (\text{Ga})$	$T_{\text{DM},2} (\text{Ga})$
MK06-1	503	0.000614	0.2822860	0.000017	0.2823	-17.17	-6.31	-0.98	1.35	1.87
MK06-2	499	0.001569	0.2824778	0.000015	0.2825	-10.40	0.07	-0.95	1.11	1.46
MK06-3	460	0.001107	0.2824741	0.000198	0.2825	-10.53	-0.75	-0.97	1.10	1.48
MK06-4	703	0.001576	0.2820395	0.000018	0.282	-25.90	-11.15	-0.95	1.73	2.32
MK06-5	819	0.001256	0.2825216	0.000016	0.2825	-8.85	8.57	-0.96	1.04	1.17
MK06-6	1441	0.000650	0.2821049	0.000017	0.2821	-23.59	7.82	-0.98	1.60	1.70
MK06-7	514	0.000481	0.2824316	0.000018	0.2824	-12.04	-0.88	-0.99	1.15	1.53
MK06-8	446	0.001387	0.2825206	0.000018	0.2825	-8.89	0.52	-0.96	1.05	1.39
MK06-9	442	0.001467	0.2827572	0.000014	0.2827	-0.52	8.79	-0.96	0.71	0.86
MK06-11	451	0.002166	0.2827169	0.000014	0.2827	-1.95	7.34	-0.93	0.78	0.96
MK06-12	483	0.001065	0.2822880	0.000017	0.2823	-17.12	-6.83	-0.97	1.36	1.88
MK06-13	455	0.000890	0.2826017	0.000012	0.2826	-6.02	3.73	-0.97	0.92	1.20
MK06-14	514	0.000367	0.2823599	0.000015	0.2824	-14.57	-3.38	-0.99	1.24	1.69
MK06-15	510	0.001159	0.2822904	0.000016	0.2823	-17.03	-6.20	-0.97	1.36	1.86
MK06-16	465	0.004314	0.2826474	0.000028	0.2826	-4.41	4.50	-0.87	0.94	1.15
MK06-17	515	0.000819	0.2825101	0.000012	0.2825	-9.26	1.80	-0.98	1.05	1.36
MK06-18	464	0.001992	0.2826913	0.000013	0.2827	-2.85	6.75	-0.94	0.82	1.01
MK06-19	500	0.001069	0.2823174	0.000016	0.2823	-16.08	-5.42	-0.97	1.32	1.81
MK06-20	517	0.000494	0.2824885	0.000014	0.2825	-10.03	1.19	-0.99	1.07	1.40
MK06-21	500	0.000315	0.2826414	0.000015	0.2826	-4.62	6.29	-0.99	0.85	1.07
MK06-22	509	0.001622	0.2824676	0.000014	0.2825	-10.76	-0.10	-0.95	1.13	1.48
MK06-23	512	0.000557	0.2824403	0.000015	0.2824	-11.73	-0.64	-0.98	1.14	1.52
MK06-24	429	0.000776	0.2827336	0.0000167	0.2825	-1.36	7.87	-0.98	0.73	0.91
MK06-25	486	0.001027	0.2827126	0.000019	0.2827	-2.10	8.28	-0.97	0.77	0.93
MK06-26	509	0.001502	0.2824355	0.000028	0.2824	-11.90	-1.20	-0.95	1.17	1.55
MK06-27	435	0.001635	0.2826264	0.000018	0.2826	-5.15	3.96	-0.95	0.90	1.17
MK06-28	470	0.001387	0.2827545	0.000017	0.2827	-0.62	9.31	-0.96	0.71	0.85
MK06-29	432	0.001114	0.2827276	0.000015	0.2827	-1.57	7.62	-0.97	0.75	0.93

MK06-30	494	0.000879	0.2828103	0.000009	0.2828	1.35	11.96	-0.97	0.63	0.70
MK06-31	504	0.000642	0.2824347	0.000018	0.2824	-11.93	-1.04	-0.98	1.15	1.54
MK06-32	468	0.000623	0.2823834	0.000011	0.2824	-13.66	-3.56	-0.98	1.21	1.67
MK06-33	510	0.000538	0.2823856	0.000014	0.2825	-10.69	0.36	-0.98	1.09	1.45
MK06-34	759	0.001765	0.2824697	0.000014	0.2824	-13.74	2.13	-0.95	1.25	1.53
MK06-35	1765	0.000499	0.2816757	0.000014	0.2817	-38.77	-0.03	-0.99	2.18	2.44
MK06-36	456	0.001180	0.2827615	0.000013	0.2828	-0.37	9.32	-0.96	0.70	0.84
MK06-37	1916	0.000439	0.2815342	0.000022	0.2815	-43.77	-1.58	-0.99	2.37	2.65
MK06-38	432	0.001050	0.2826321	0.000017	0.2826	-4.95	4.26	-0.97	0.88	1.14
MK06-39	463	0.001367	0.2827732	0.000027	0.2828	0.04	9.83	-0.96	0.69	0.81
MK06-40	905	0.000198	0.2820273	0.000016	0.282	-26.34	-6.46	-0.99	1.69	2.18
MK06-41	431	0.000841	0.2826223	0.000032	0.2826	-5.29	3.96	-0.97	0.89	1.16
MK06-42	483	0.001550	0.2825468	0.000021	0.2825	-7.96	2.18	-0.95	1.01	1.32
MK06-43	431	0.000923	0.2827172	0.000017	0.2827	-1.94	7.29	-0.97	0.76	0.95
MK06-44	507	0.000735	0.2824616	0.000017	0.2825	-10.98	-0.06	-0.98	1.11	1.48
MK06-45	512	0.000481	0.2822654	0.000011	0.2823	-17.92	-6.81	-0.99	1.38	1.90
MK06-46	504	0.000939	0.2826111	0.000014	0.2826	-5.69	5.10	-0.97	0.91	1.15
MK06-47	2482	0.000565	0.2815219	0.000026	0.2811	-57.98	-3.26	-0.98	2.92	3.19
MK06-48	1923	0.000379	0.2811324	0.000021	0.2815	-44.21	-1.79	-0.99	2.38	2.67
MK06-49	508	0.000966	0.2822604	0.000021	0.2823	-18.09	-7.24	-0.97	1.40	1.93
MK06-50	509	0.001017	0.2824102	0.000021	0.2824	-12.80	-1.93	-0.97	1.19	1.59
MK06-51	508	0.000626	0.2828123	0.000016	0.2828	1.42	12.42	-0.98	0.62	0.68
MK06-53	518	0.000953	0.2825867	0.000016	0.2826	-6.55	4.53	-0.97	0.94	1.19
MK06-54	466	0.001112	0.2825782	0.000027	0.2826	-6.86	3.06	-0.97	0.96	1.25
MK06-55	433	0.000865	0.2826353	0.000023	0.2826	-4.84	4.45	-0.97	0.87	1.13
MK06-56	465	0.001469	0.2825414	0.000031	0.2825	-8.16	1.63	-0.96	1.02	1.34
MK06-57	3209	0.000233	0.2806932	0.000011	0.2807	-73.52	-1.54	-0.99	3.48	3.64
MK06-58	548	0.000616	0.2821611	0.000022	0.2822	-21.60	-9.76	-0.98	1.52	2.12
MK06-59	1086	0.000281	0.2819866	0.00002	0.282	-27.77	-3.94	-0.99	1.75	2.16
MK06-60	780	0.000342	0.2818489	0.000018	0.2818	-32.64	-15.63	-0.99	1.94	2.66
MK06-62	808	0.001080	0.2819349	0.000022	0.2819	-29.60	-12.36	-0.97	1.86	2.47
MK06-63	547	0.000596	0.2824344	0.000015	0.2824	-11.94	-0.10	-0.98	1.15	1.51

MK06-66	533	0.001343	0.2824991	0.000021	0.2825	-9.65	1.62	-0.96	1.08	1.39
MK06-67	469	0.001544	0.2825708	0.000019	0.2826	-7.11	2.73	-0.95	0.98	1.27
MK06-68	499	0.001192	0.2822878	0.000014	0.2823	-17.12	-6.54	-0.96	1.37	1.88
MK06-69	523	0.000863	0.2827920	0.000018	0.2828	0.71	11.94	-0.97	0.65	0.73
MK06-70	483	0.001075	0.2826302	0.000023	0.2826	-5.01	5.28	-0.97	0.88	1.12
MK11-1	522	0.000750	0.2824296	0.000019	0.2824	-12.11	-0.87	-0.98	1.16	1.54
MK11-2	1294	0.003237	0.2820252	0.000025	0.2819	-26.41	-0.50	-0.90	1.84	2.11
MK11-3	649	0.000803	0.2818509	0.000024	0.2818	-32.57	-18.63	-0.98	1.96	2.75
MK11-5	814	0.000918	0.2818623	0.000015	0.2818	-32.17	-14.72	-0.97	1.95	2.63
MK11-7	531	0.001133	0.2824536	0.00002	0.2824	-11.26	0.04	-0.97	1.13	1.49
MK11-8	540	0.001537	0.2822560	0.000016	0.2822	-18.25	-6.91	-0.95	1.43	1.93
MK11-9	536	0.001039	0.2821990	0.000015	0.2822	-20.26	-8.83	-0.97	1.49	2.05
MK11-12	1721	0.001832	0.2818819	0.000017	0.2818	-33.03	3.21	-0.94	2.03	2.20
MK11-13	562	0.000947	0.2818381	0.000026	0.2822	-20.81	-8.79	-0.97	1.51	2.07
MK11-14	542	0.001057	0.2821834	0.000018	0.2823	-17.92	-6.36	-0.97	1.40	1.90
MK11-15	1284	0.001486	0.2822653	0.000019	0.282	-26.73	0.48	-0.96	1.76	2.04
MK11-16	1193	0.000701	0.2820160	0.000026	0.2822	-19.16	6.74	-0.98	1.43	1.58
MK11-18	1249	0.000695	0.2822302	0.00002	0.2821	-23.03	4.10	-0.98	1.58	1.78
MK11-19	996	0.001178	0.2820908	0.000018	0.2821	-24.09	-2.84	-0.96	1.64	2.02
MK11-23	551	0.001115	0.2823603	0.00002	0.2823	-14.56	-2.83	-0.97	1.27	1.68
MK11-24	517	0.001136	0.2822100	0.000015	0.2822	-19.87	-8.89	-0.97	1.48	2.04
MK11-25	2664	0.000672	0.2808861	0.000016	0.2809	-66.69	-8.08	-0.98	3.26	3.62
MK11-26	572	0.000660	0.2825844	0.000012	0.2826	-6.63	5.73	-0.98	0.94	1.16
MK11-27	1728	0.000827	0.2817142	0.000028	0.2817	-37.41	0.13	-0.98	2.15	2.40
MK11-29	984	0.000801	0.2821640	0.000024	0.2821	-21.50	-0.26	-0.98	1.53	1.85
MK11-30	551	0.001038	0.2823348	0.00002	0.2823	-15.46	-3.71	-0.97	1.30	1.74
MK11-31	440	0.001014	0.2823556	0.00002	0.2823	-14.73	-5.34	-0.97	1.27	1.76
MK11-32	811	0.003349	0.2818724	0.000029	0.2818	-31.81	-15.74	-0.90	2.07	2.69
MK11-33	535	0.000753	0.2821372	0.000022	0.2821	-22.45	-10.94	-0.98	1.56	2.18
MK11-35	2642	0.001019	0.2810773	0.000014	0.281	-59.93	-2.40	-0.97	3.03	3.26
MK11-36	1184	0.000862	0.2821048	0.000021	0.2821	-23.59	1.97	-0.97	1.61	1.87
MK11-37	532	0.001750	0.2828411	0.000019	0.2828	2.44	13.56	-0.95	0.60	0.63

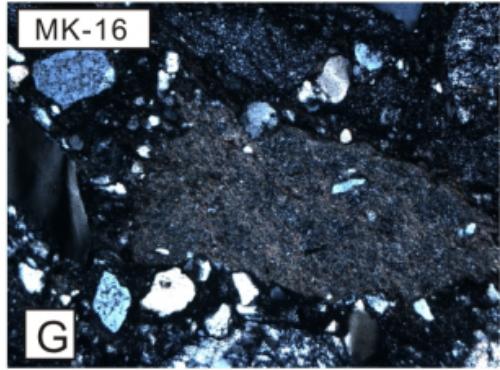
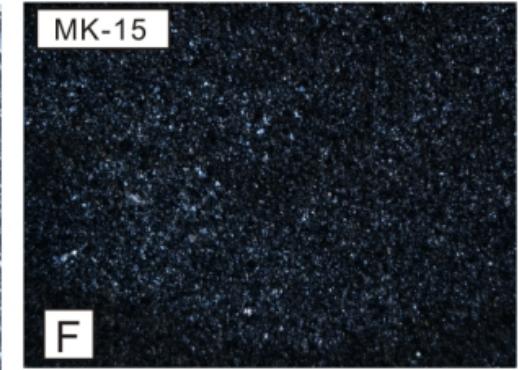
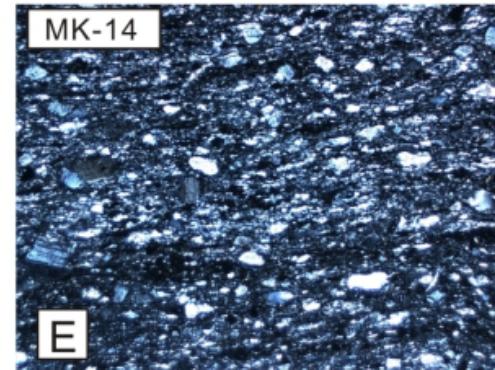
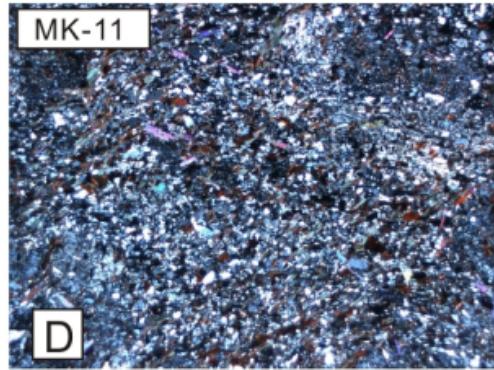
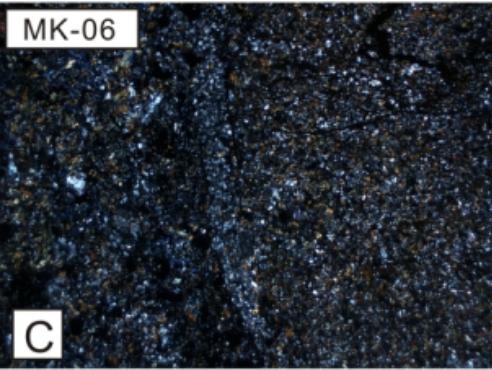
MK11-38	536	0.001867	0.2825806	0.000014	0.2826	-6.77	4.38	-0.94	0.97	1.22
MK11-40	627	0.001338	0.2819153	0.000012	0.2819	-30.30	-17.05	-0.96	1.90	2.63
MK11-41	550	0.001128	0.2822041	0.000027	0.2822	-20.08	-8.39	-0.97	1.48	2.03
MK11-42	544	0.001255	0.2825013	0.000023	0.2825	-9.57	1.96	-0.96	1.07	1.38
MK11-43	537	0.001148	0.2821494	0.000026	0.2821	-22.02	-10.61	-0.97	1.56	2.16
MK11-44	492	0.001157	0.2824176	0.000016	0.2824	-12.53	-2.08	-0.97	1.19	1.59
MK11-46	513	0.001953	0.2825529	0.00003	0.2825	-7.75	2.89	-0.94	1.02	1.29
MK11-47	1657	0.000853	0.2819145	0.000021	0.2819	-30.32	5.64	-0.97	1.87	2.00
MK11-48	858	0.000602	0.2824064	0.000027	0.2824	-12.93	5.70	-0.98	1.18	1.38
MK11-50	483	0.002315	0.2823272	0.000029	0.2823	-15.73	-5.84	-0.93	1.35	1.82
MK11-51	545	0.001277	0.2823196	0.000027	0.2823	-16.00	-4.46	-0.96	1.33	1.78
MK11-52	1554	0.001729	0.2820691	0.000026	0.282	-24.86	7.93	-0.95	1.70	1.78
MK11-53	520	0.000684	0.2825026	0.000016	0.2825	-9.53	1.69	-0.98	1.05	1.37
MK11-54	1011	0.000652	0.2821780	0.000025	0.2822	-21.01	0.93	-0.98	1.50	1.80
MK11-56	533	0.001112	0.2824523	0.000018	0.2824	-11.30	0.04	-0.97	1.14	1.49
MK11-57	547	0.001194	0.2822853	0.000022	0.2823	-17.21	-5.60	-0.96	1.37	1.85
MK11-58	522	0.001075	0.2826202	0.000013	0.2826	-5.37	5.76	-0.97	0.90	1.12
MK11-59	521	0.000892	0.2823108	0.000019	0.2823	-16.31	-5.15	-0.97	1.33	1.81
MK11-61	807	0.001567	0.2823308	0.000014	0.2823	-15.60	1.38	-0.95	1.32	1.61
MK11-62	551	0.000879	0.2822910	0.00002	0.2823	-17.01	-5.20	-0.97	1.35	1.83
MK11-63	545	0.000615	0.2823683	0.000031	0.2824	-14.28	-2.49	-0.98	1.24	1.66
MK11-64	523	0.001062	0.2824404	0.000016	0.2824	-11.73	-0.58	-0.97	1.15	1.52
MK11-67	549	0.001294	0.2822424	0.000032	0.2822	-18.73	-7.11	-0.96	1.44	1.95
MK11-68	551	0.000585	0.2825082	0.000022	0.2825	-9.33	2.60	-0.98	1.04	1.34
MK11-69	544	0.001144	0.2823719	0.000015	0.2824	-14.15	-2.58	-0.97	1.25	1.66
MK11-70	778	0.002053	0.2821345	0.000017	0.2821	-22.55	-6.44	-0.94	1.62	2.08
MK14-1	523	0.000544	0.2823169	0.000014	0.2823	-16.09	-4.77	-0.98	1.31	1.78
MK14-2	514	0.001220	0.2823505	0.000019	0.2823	-14.90	-4.00	-0.96	1.28	1.73
MK14-3	507	0.000443	0.2823691	0.00002	0.2824	-14.25	-3.23	-0.99	1.23	1.68
MK14-4	1402	0.000740	0.2821335	0.000016	0.2821	-22.58	7.89	-0.98	1.57	1.67
MK14-5	731	0.001151	0.2824792	0.000017	0.2825	-10.36	5.23	-0.97	1.10	1.31
MK14-6	490	0.001471	0.2826025	0.000028	0.2826	-6.00	4.32	-0.96	0.93	1.19

MK14-7	1425	0.000625	0.2819481	0.000014	0.2819	-29.14	1.93	-0.98	1.82	2.06
MK14-8	496	0.000739	0.2825249	0.000023	0.2825	-8.74	1.94	-0.98	1.02	1.34
MK14-9	548	0.000503	0.2824173	0.000024	0.2824	-12.54	-0.65	-0.98	1.17	1.54
MK14-10	478	0.000488	0.2826746	0.000027	0.2827	-3.45	6.93	-0.99	0.81	1.01
MK14-11	822	0.000837	0.2822782	0.000014	0.2823	-17.46	0.24	-0.97	1.37	1.70
MK14-12	1132	0.000790	0.2823172	0.000015	0.2823	-16.08	8.42	-0.98	1.31	1.42
MK14-13	575	0.000668	0.2824802	0.000015	0.2825	-10.32	2.10	-0.98	1.08	1.39
MK14-14	459	0.000562	0.2827037	0.000016	0.2827	-2.42	7.52	-0.98	0.77	0.96
MK14-15	516	0.000637	0.2820184	0.000019	0.282	-26.65	-15.52	-0.98	1.72	2.45
MK14-16	529	0.001590	0.2822735	0.00002	0.2823	-17.63	-6.54	-0.95	1.40	1.90
MK14-17	445	0.002344	0.2823979	0.000012	0.2824	-13.23	-4.13	-0.93	1.25	1.68
MK14-18	748	0.000744	0.2822500	0.000013	0.2822	-18.46	-2.32	-0.98	1.41	1.80
MK14-19	493	0.000716	0.2824934	0.000011	0.2825	-9.85	0.77	-0.98	1.07	1.41
MK14-20	589	0.001193	0.2825232	0.000018	0.2825	-8.80	3.72	-0.96	1.04	1.30
MK14-21	555	0.000883	0.2822439	0.000016	0.2822	-18.68	-6.78	-0.97	1.42	1.93
MK14-22	492	0.000528	0.2823498	0.000043	0.2823	-14.93	-4.27	-0.98	1.26	1.73
MK14-23	489	0.001140	0.2827287	0.000023	0.2827	-1.53	8.88	-0.97	0.75	0.90
MK14-24	490	0.000588	0.2826721	0.000017	0.2827	-3.53	7.07	-0.98	0.81	1.01
MK14-25	551	0.000912	0.2822947	0.000017	0.2823	-16.88	-5.08	-0.97	1.35	1.82
MK14-26	439	0.000826	0.2827096	0.000013	0.2827	-2.21	7.22	-0.98	0.77	0.96
MK14-27	509	0.000759	0.2825030	0.000016	0.2825	-9.51	1.44	-0.98	1.05	1.38
MK14-28	518	0.000426	0.2822458	0.000017	0.2822	-18.61	-7.35	-0.99	1.40	1.94
MK14-29	461	0.000863	0.2827052	0.000017	0.2827	-2.36	7.53	-0.97	0.77	0.96
MK14-30	495	0.000497	0.2827056	0.000022	0.2827	-2.35	8.40	-0.99	0.77	0.93
MK14-31	536	0.001521	0.2821185	0.000019	0.2821	-23.11	-11.86	-0.95	1.62	2.24
MK14-32	527	0.000504	0.2823078	0.000013	0.2823	-16.42	-4.99	-0.98	1.32	1.80
MK14-33	480	0.000554	0.2828197	0.000018	0.2828	1.69	12.09	-0.98	0.61	0.68
MK14-34	540	0.000894	0.2823598	0.000014	0.2824	-14.58	-3.01	-0.97	1.26	1.69
MK14-35	440	0.000804	0.2827039	0.000024	0.2827	-2.41	7.05	-0.98	0.77	0.97
MK14-36	528	0.000494	0.2824844	0.000017	0.2825	-10.17	1.29	-0.99	1.07	1.41
MK14-37	464	0.000801	0.2826889	0.000027	0.2827	-2.94	7.04	-0.98	0.79	0.99
MK14-38	464	0.001413	0.2824854	0.000021	0.2825	-10.14	-0.36	-0.96	1.10	1.46

MK14-39	507	0.000670	0.2826549	0.000013	0.2826	-4.14	6.81	-0.98	0.84	1.04
MK14-40	530	0.000439	0.2828040	0.000018	0.2828	1.13	12.67	-0.99	0.63	0.69
MK14-41	474	0.000578	0.2826984	0.000021	0.2827	-2.60	7.66	-0.98	0.78	0.96
MK14-42	506	0.000518	0.2824027	0.000019	0.2824	-13.06	-2.09	-0.98	1.19	1.60
MK14-43	743	0.001647	0.2826000	0.000024	0.2826	-6.08	9.52	-0.95	0.94	1.05
MK14-44	502	0.000387	0.2826771	0.000016	0.2827	-3.36	7.58	-0.99	0.80	0.99
MK14-45	507	0.001238	0.2824642	0.000016	0.2825	-10.89	-0.14	-0.96	1.12	1.48
MK14-46	1427	0.002400	0.2818993	0.000023	0.2818	-30.86	-1.46	-0.93	1.98	2.27
MK14-47	1114	0.001054	0.2823279	0.000026	0.2823	-15.71	8.21	-0.97	1.31	1.42
MK14-48	959	0.000742	0.2821313	0.00001	0.2821	-22.66	-1.92	-0.98	1.57	1.94
MK14-49	516	0.001311	0.2824120	0.00002	0.2824	-12.73	-1.82	-0.96	1.20	1.59
MK14-50	525	0.001934	0.2823158	0.000015	0.2823	-16.13	-5.25	-0.94	1.36	1.82
MK14-51	484	0.000735	0.2826399	0.000015	0.2826	-4.67	5.76	-0.98	0.86	1.09
MK14-53	438	0.000599	0.2827344	0.000015	0.282	-28.59	-19.14	-0.98	1.79	2.62
MK14-54	442	0.000549	0.2827270	0.00002	0.2827	-1.59	7.99	-0.98	0.74	0.92
MK14-55	439	0.000948	0.2826890	0.000016	0.2827	-2.93	6.46	-0.97	0.80	1.01
MK14-56	485	0.001966	0.2826143	0.000025	0.2826	-5.58	4.48	-0.94	0.93	1.17
MK14-57	481	0.001630	0.2828273	0.000016	0.2828	1.96	12.04	-0.95	0.61	0.69
MK14-58	1801	0.001546	0.2817009	0.000019	0.2816	-37.88	0.40	-0.95	2.21	2.44
MK14-59	510	0.001205	0.2824184	0.000022	0.2824	-12.51	-1.68	-0.96	1.19	1.58
MK14-60	524	0.000501	0.2823421	0.000013	0.2823	-15.20	-3.84	-0.98	1.27	1.73
MK14-61	1443	0.000518	0.2820194	0.000016	0.282	-26.62	4.96	-0.98	1.71	1.88
MK14-62	442	0.000601	0.2823542	0.000017	0.2823	-14.77	-5.23	-0.98	1.26	1.75
MK14-63	500	0.001696	0.2827162	0.000015	0.2827	-1.97	8.49	-0.95	0.77	0.93
MK14-64	548	0.000688	0.2827065	0.000016	0.2827	-2.31	9.52	-0.98	0.77	0.90
MK14-65	504	0.000592	0.2825004	0.000019	0.2825	-9.60	1.30	-0.98	1.05	1.39
MK14-66	751	0.001375	0.2823294	0.00002	0.2823	-15.65	0.24	-0.96	1.32	1.64
MK14-67	890	0.001250	0.2822999	0.000015	0.2823	-16.70	2.24	-0.96	1.35	1.62
MK14-68	1084	0.001559	0.2821309	0.000013	0.2821	-22.67	0.20	-0.95	1.61	1.90
MK14-69	465	0.002842	0.2828001	0.000021	0.2828	0.99	10.36	-0.91	0.67	0.78
MK14-70	2014	0.000463	0.2811948	0.000022	0.2812	-55.78	-11.47	-0.99	2.83	3.33
MK15-1	506	0.002287	0.2829356	0.000023	0.2829	5.79	16.18	-0.93	0.47	0.44

MK15-2	1956	0.000295	0.2816253	0.000015	0.2816	-40.55	2.74	-0.99	2.24	2.42
MK15-3	499	0.000493	0.2823633	0.000013	0.2827	-1.78	9.06	-0.99	0.74	0.89
MK15-4	462	0.002234	0.2827216	0.000019	0.2829	3.45	12.95	-0.93	0.56	0.61
MK15-5	500	0.000518	0.2828697	0.000022	0.2824	-14.45	-3.62	-0.98	1.24	1.69
MK15-6	510	0.000625	0.2824402	0.000023	0.2824	-11.73	-0.71	-0.98	1.14	1.52
MK15-8	514	0.001400	0.2825945	0.00002	0.2826	-6.28	4.57	-0.96	0.94	1.19
MK15-9	455	0.000723	0.2827416	0.000021	0.2827	-1.08	8.73	-0.98	0.72	0.88
MK15-10	465	0.000473	0.2826563	0.000017	0.2827	-4.09	6.01	-0.99	0.83	1.06
MK15-11	536	0.000892	0.2826278	0.000014	0.2826	-5.10	6.40	-0.97	0.88	1.09
MK15-13	490	0.000993	0.2825662	0.000013	0.2826	-7.28	3.19	-0.97	0.97	1.26
MK15-14	523	0.000767	0.2823492	0.000013	0.2823	-14.95	-3.70	-0.98	1.27	1.72
MK15-15	532	0.000672	0.2822480	0.000014	0.2822	-18.53	-7.06	-0.98	1.41	1.93
MK15-16	635	0.000900	0.2821871	0.000014	0.2822	-20.68	-7.07	-0.97	1.50	2.01
MK15-17	1905	0.000303	0.2810823	0.000019	0.2811	-59.76	-17.71	-0.99	2.97	3.63
MK15-18	543	0.001325	0.2828078	0.000017	0.2828	1.26	12.77	-0.96	0.64	0.69
MK15-19	477	0.000717	0.2821999	0.000021	0.2822	-20.23	-9.97	-0.98	1.47	2.08
MK15-20	489	0.000808	0.2821839	0.000008	0.2822	-20.80	-10.30	-0.98	1.50	2.11
MK15-21	514	0.000438	0.2823615	0.000017	0.2824	-14.52	-3.35	-0.99	1.24	1.69
MK15-22	488	0.000719	0.2825992	0.000019	0.2826	-6.11	4.41	-0.98	0.92	1.18
MK15-23	1173	0.000637	0.2819748	0.000024	0.282	-28.19	-2.70	-0.98	1.78	2.15
MK15-24	462	0.000670	0.2826596	0.000018	0.2827	-3.98	6.00	-0.98	0.83	1.06
MK15-25	756	0.000480	0.2817240	0.000012	0.2817	-37.06	-20.65	-0.99	2.12	2.95
MK15-26	768	0.000831	0.2823065	0.000018	0.2823	-16.46	0.07	-0.98	1.33	1.67
MK15-27	2459	0.000312	0.2811781	0.000026	0.2812	-56.37	-1.74	-0.99	2.84	3.08
MK15-28	953	0.001679	0.2821927	0.000024	0.2822	-20.49	-0.48	-0.95	1.52	1.84
MK15-29	420	0.001849	0.2827066	0.000025	0.2827	-2.31	6.42	-0.94	0.79	1.00
MK15-30	499	0.001388	0.2828181	0.000024	0.2828	1.63	12.17	-0.96	0.62	0.69
MK15-31	1860	0.000670	0.2815293	0.000033	0.2815	-43.95	-3.31	-0.98	2.39	2.71
MK15-32	503	0.000623	0.2826555	0.000016	0.2826	-4.12	6.76	-0.98	0.84	1.04
MK15-33	540	0.000685	0.2826720	0.000015	0.2827	-3.54	8.13	-0.98	0.82	0.98
MK15-34	961	0.000615	0.2821176	0.000021	0.2821	-23.14	-2.29	-0.98	1.58	1.96
MK15-35	503	0.000959	0.2823412	0.000017	0.2823	-15.23	-4.48	-0.97	1.29	1.75

MK15-36	1883	0.000119	0.2813575	0.000021	0.2814	-50.02	-8.20	-1.00	2.59	3.03
MK15-37	508	0.000340	0.2825716	0.000017	0.2826	-7.09	3.99	-0.99	0.95	1.22
MK15-38	768	0.000999	0.2823677	0.000015	0.2824	-14.30	2.15	-0.97	1.25	1.54
MK15-39	900	0.001018	0.2821642	0.000012	0.2821	-21.49	-2.21	-0.97	1.54	1.91
MK15-40	511	0.000792	0.2825873	0.000031	0.2826	-6.53	4.46	-0.98	0.94	1.19
MK15-41	519	0.000592	0.2827127	0.000022	0.2827	-2.10	9.14	-0.98	0.76	0.90
MK15-42	894	0.000525	0.2821525	0.000022	0.2821	-21.91	-2.46	-0.98	1.53	1.92
MK15-43	482	0.000809	0.2826536	0.00001	0.2826	-4.19	6.18	-0.98	0.84	1.06
MK15-44	488	0.001073	0.2827590	0.000015	0.2827	-0.46	9.95	-0.97	0.70	0.83
MK15-45	940	0.001037	0.2824213	0.000019	0.2824	-12.40	7.75	-0.97	1.18	1.32
MK15-46	500	0.000691	0.2826952	0.000013	0.2827	-2.71	8.08	-0.98	0.78	0.95
MK15-48	498	0.001113	0.2825920	0.000027	0.2826	-6.37	4.24	-0.97	0.94	1.20
MK15-49	490	0.001765	0.2825937	0.000023	0.2826	-6.31	3.91	-0.95	0.95	1.21
MK15-50	487	0.000646	0.2825747	0.000016	0.2826	-6.98	3.54	-0.98	0.95	1.23
MK15-51	488	0.000637	0.2826993	0.000031	0.2827	-2.57	7.98	-0.98	0.78	0.95
MK15-52	898	0.000774	0.2823435	0.000018	0.2823	-15.16	4.24	-0.98	1.28	1.50
MK15-53	496	0.000870	0.2823346	0.000027	0.2823	-15.47	-4.84	-0.97	1.29	1.77
MK15-54	479	0.000508	0.2823497	0.00002	0.2823	-14.94	-4.56	-0.98	1.26	1.74
MK15-55	929	0.000914	0.2821115	0.000017	0.2821	-23.36	-3.39	-0.97	1.60	2.01
MK15-56	767	0.000888	0.2821838	0.000012	0.2822	-20.80	-4.33	-0.97	1.50	1.94
MK15-57	445	0.000777	0.2826876	0.000021	0.2827	-2.99	6.59	-0.98	0.80	1.01
MK15-58	470	0.000916	0.2826769	0.000018	0.2827	-3.36	6.71	-0.97	0.81	1.02
MK15-59	459	0.002960	0.2823865	0.000025	0.2824	-13.63	-4.44	-0.91	1.29	1.71
MK15-60	486	0.000747	0.2825983	0.00002	0.2826	-6.14	4.32	-0.98	0.92	1.18
MK15-61	468	0.000691	0.2826843	0.000017	0.2827	-3.10	6.99	-0.98	0.80	1.00
MK15-62	484	0.001109	0.2826607	0.000023	0.2827	-3.94	6.37	-0.97	0.84	1.05
MK15-63	502	0.001431	0.2824493	0.00002	0.2824	-11.41	-0.84	-0.96	1.15	1.52
MK15-65	542	0.001014	0.2825019	0.000014	0.2825	-9.55	2.03	-0.97	1.06	1.37



C

D

E

F

G

Paleozoic Detrital zircons

50µm



Precambrian Detrital zircons



