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Data Repository

DR 1. ANALYTICAL TECHNIQUES

1. EBSD techniques

XZ sections (paralleling to lineation and normal to foliation) are cut from the samples and polished using Buehler Mastermet colloidal silica and Buehler grinder-polisher. The LPO data acquisition was finished on a Hitachi S-3400N-II scanning electron microscope mounted with Nordlys EBSD Model NL-II detector with the sections surface inclined at 70º to the incidental beam. The new technique can provide fast data acquisition of mineral grains or part of mineral grains of interest, with 0.1 μm spatial resolution and 0.5º angular resolution. Acceleration voltage of 15 kV is applied and working distance is 23 mm. EBSP analysis is finished using the HKL Channel 5 software package.

LPO measurements were done on quartz grains using interactive mode due to the very large grain sizes of quartz in the rocks. Several representative windows (8–9) of 500 μm by 300 μm in size are chosen for LPO data acquisition. Most of such windows contain representative quartz grains. The data for all the windows are merged to form the data set for the sample. The interactive mode is a reliable way of collecting EBSP data from representative grains or subgrain within the field of view. All the LPO data are presented using equal area, lower hemisphere projection in a structural frame of foliation // XY plane and lineation // X direction.

2. Whole rock chemistry

After petrographic examinations, fresh samples were selected for geochemical analysis. The samples were crushed in a hardened jaw crusher and then powdered in an agate mill to <200 mesh (75μm). Chemical analyses were carried out at the IGG. Major element oxides were analyzed on fused glass disks employing a Pillips PW 1500 X-ray fluorescence spectrometer. The precision accuracy of the major-element data as determined on the Chinese whole-rock basalt standard GSR-3 (Xie et al., 1989) is ≤3% and ca. 5% (2σ), respectively. The FeO concentration was determined using a conventional titration procedure.

3. LA-ICP-MS zircon U-Pb geochronology

All zircon grains were separated from whole-rock samples using conventional techniques. After crushing and sieving of the samples, heavy minerals were concentrated by panning and then by magnetic separation. The zircon grains were hand picked and then mounted on an epoxy disc with chips of standard zircons of 91500 zircon age standards (91500–1063 ± 6Ma, Wiedenbeck et al., 1995) for the LA-ICP-MS analyses. These zircons were then carefully polished until their cores were exposed. Cathodoluminescent (CL) images of the zircons combined with reflected and transmitted light images were used to morphologically target distinct areas on the zircons for the LA-ICP-MS analyses. The CL images were obtained by a Mini CL attached to a scanning electron microscope (LEO1450VP) at the Electron Microprobe Laboratory at the Institute of Geology and

Geophysics (IGG), Chinese Academy of Sciences, Beijing. The LA-ICP-MS analyses were finished at the same Institution. The analyses were conducted using an Agilent ICP-MS equipped with a 193 nm laser ablation. The zircon standard 91500 was used as the external calibration standard. The collected data were then adjusted by GLITTER, a data reduction software package for LA-ICP-MS. The zircon U-Pb concordia plots and weighted ages were calculated by the Isoplot program. The detailed analytical procedure, identical to those described by Yuan et al. (2008), can also be found in Xie et al. (2008).

4. Isotopes

Samples for isotope analysis were dissolved in Teflon bombs after being spiked with ^{84}Sr, ^{87}Sr, ^{150}Nd and ^{147}Sm tracers before $HF+HNO_3$ (with a ratio of 2:1) dissolution. Rb, Sr, Sm and Nd were separated using conventional ion exchange procedures as described by Yang et al. (2004). Sr-Nd isotopic data were measured on a MAT 262 mass spectrometer. The Sr and Nd isotope ratios were respectively normalized to $^{86}Sr/^{88}Sr = 0.1194$ and $^{146}Nd/^{144}Nd = 0.7219$. Typical within-run precision (2σ) for Sr and Nd was estimated to be ± 0.000015. The BCR-2 Nd standards and NBS-987 Sr standard were $^{143}Nd/^{144}Nd = 0.512630 \pm 12$ (2σ, n = 2) and $^{87}Sr/^{86}Sr = 0.710252 \pm 11$ (2σ, n = 1). The initial $^{87}Sr/^{86}Sr$ and $^{143}Nd/^{144}Nd$ ratios were calculated using their Zircon U-Pb LA-ICP-MS ages.

In situ zircon Hf isotopic analyses were conducted using a Neptune MC-ICP-MS, equipped with a 193 nm laser, at the IGG. The spot sizes were either 32 or 63 μm. Detailed analytical technique was described in Wu et al. (2006). Initial $^{176}Hf/^{177}Hf$ ratios εHf(t) are calculated with reference to the chondritic reservoir (CHUR) of Blichert-Toft and Albarede (1997) at the time of zircon growth from the magma. The single-stage Hf model age (tDM1) is calculated relative to the depleted mantle with present-day $^{176}Hf/^{177}Hf = 0.28325$ and $^{176}Lu/^{177}Hf = 0.0384$ (e.g., Griffin et al. 2000). Two-stage model ages (tDMC) are calculated for the source rock of the magma by assuming a mean $^{176}Lu/^{177}Hf$ value of 0.015 for the average continental crust (Griffin et al. 2002).

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DR 2 Whole rock chemistry, Sr-Nd-Hf isotopes of the leucocratic dykes along the ASRR shear zone

Serial	Sample No	Rock type	SiO_2	Al_2O_3	TFe_2O_3	MgO	CaO	Na_2O	K_2O	TiO_2	P_2O_5	MnO	Age (Ma)	$^{87}Sr/^{86}Sr(i)$	$\varepsilon_{Nd}(t)$	$\varepsilon_{Hf}(t)$
Pre-Kinematic dykes																
1	AL0623-3-2	Granodiorite	61.32	16.59	6.3	1.48	6.22	5.18	0.93	0.91	0.4	0.19	33.3±1.2	0.70707	-4.81	-3.6~+3.2
2	AL08138-2	Monzogranite	70.44	15.83	1.35	0.41	1.32	3.54	5.3	0.2	0.063	0.034	33.8±1.3	0.70915	-5.69	-7.9~+4.3
3	AL08149-1	Granite	72.38	15.1	1.24	0.35	1.08	3.67	5.11	0.18	0.1	0.027	30.9±0.7	N/A	N/A	-2.4~+5.7
4	AL08153-2	Two-mica granite	77.3	13.82	0.47	0.19	2.24	4.49	1.14	0.059	0.029	0.01	30.42±0.72	0.70981	-7.11	-0.4~+3.9
5	DC08-2-a	Monzonite	61.91	16.02	5.02	1.89	3.73	4.49	5.31	0.62	0.4	0.11	33.5±1.8	0.70686	-3.31	-1.9~+2.8
6	DC0835-2	Granite	N/A										33.4±1.7	N/A		-2.7~+4.8
7	DC0623-1	POR monzogranite	N/A										30.95±0.61	0.70840	-7.98	N/A
Syn- Kinematic dykes																
8	AL0623-3-1	Granite	70.43	15.47	1.29	0.25	2.07	3.35	6.43	0.15	0.088	0.034	25.65±0.46	0.70710	-5.83	-1.9~1.9
9	AL0814-2	Granite	67.57	15.44	2.29	0.52	2.09	3.78	7.11	0.35	0.18	0.056	25.9±1.6	0.70698	-6.81	-5.0~-1.1
10	DC08-2-1	PEG	N/A										25.49±0.41	N/A		-3.0~+0.6
11	DC0822-1	Two-mica granite	73.08	14	1.6	0.41	1.28	3.94	4.64	0.25	0.1	0.031	26.95±0.34	0.70860	-8.06	-7.5~-2.1
12	AL06135-3	Granite	75.36	13.55	1.14	0.19	2.21	3.45	3.23	0.24	0.075	0.02	26.78±0.62	0.72560	-9.76	+2.8~+7.6
13	DC0835-1	Granite	80.24	10.67	0.44	0.08	0.56	3.05	4.08	0.035	0.005	0.005	25.31±0.18	0.70869	-7.89	-6.4~-2.0
14	Al06103-2	PEG	N/A										25.45±0.54	0.72167	-12.12	-12.0~-7.4
15	AL06175-5	Garnet granite	69.77	16.48	1.02	0.07	1.27	4.06	6.91	0.049	0.007	0.01	23.59±0.83	0.70866	-7.11	-4.6~-+0.7
Post- Kinematic dykes																
16	DC08-8(5)	MUS PEG	N/A										22.91±0.19	0.72057	-7.90	-3.6~-1.2
17	AL0814-1	POR granite	65.67	12.47	1.7	0.87	10.48	2.6	2.37	0.28	0.17	0.071	21.92±0.70	0.7127	-9.27	-10.2~+0.2
18	AL0841-4	Pegmatitic granite	N/A										23.05 ±0.41	N/A		-4.5~-1.4
19	AL0841-8	Biotite granite	75.32	13.36	0.6	0.13	0.61	3.23	6.2	0.065	0.038	0.016	21.8±1.0	0.71121	-7.09	+0.5~+4.8
20	DC0810-2	Pegmatitic granite	N/A										20.37±0.43	0.73116	-2.39	+2.1~+6.8

PEG-pegmatite; POR-Porphyritic; MUS-Muscovite; N/A-Data not available (not analyzed).

DR 3 Zircon LA-ICP-MS U-Pb Dating results

Spot number	Content		Th/U	Isotopic ration						Age (Ma)			
	Th	U		$^{207}Pb/^{206}Pb$	1σ	$^{207}Pb/^{235}U$	1σ	$^{206}Pb/^{238}U$	1σ	$^{207}Pb/^{235}U$	1σ	$^{206}Pb/^{238}U$	1σ
AL0623-3-1													
AL0623-3-1 01	24.23	2817.18	0.01	0.0416	0.0019	0.0222	0.0009	0.0039	0.0001	22.3	0.9	24.9	0.7
AL0623-3-1 02	147.90	4561.20	0.03	0.0420	0.0015	0.0221	0.0008	0.0038	0.0001	22.2	0.7	24.6	0.7
AL0623-3-1 03	24.80	1623.66	0.02	0.0422	0.0024	0.0229	0.0013	0.0039	0.0001	23.0	1.0	25.3	0.8
AL0623-3-1 04	36.19	4930.19	0.01	0.0461	0.0013	0.0252	0.0006	0.0040	0.0001	25.3	0.6	25.5	0.6
AL0623-3-1 07	19.33	2664.51	0.01	0.0430	0.0019	0.0224	0.0009	0.0038	0.0001	22.5	0.9	24.3	0.7
AL0623-3-1 10	35.03	2219.69	0.02	0.0460	0.0018	0.0248	0.0009	0.0039	0.0001	24.8	0.9	25.2	0.7
AL0623-3-1 12	24.13	2996.61	0.01	0.0425	0.0014	0.0228	0.0007	0.0039	0.0001	22.9	0.7	25.1	0.6
AL0623-3-1 13	43.30	1698.49	0.03	0.0460	0.0019	0.0255	0.0010	0.0040	0.0001	25.6	1.0	25.9	0.7
AL0623-3-1 14	25.03	4120.27	0.01	0.0424	0.0013	0.0219	0.0007	0.0037	0.0001	22.0	0.6	24.1	0.6
AL0623-3-1 16	44.31	5079.97	0.01	0.0437	0.0011	0.0243	0.0006	0.0040	0.0001	24.4	0.6	26.0	0.6
AL0623-3-1 17	138.96	14480.98	0.01	0.0440	0.0008	0.0231	0.0004	0.0038	0.0001	23.2	0.4	24.5	0.6
AL06175-5													
AL06175-5 14	1649.27	12302.38	0.13	0.0461	0.0019	0.0237	0.0007	0.0037	0.0001	23.8	0.7	24.1	0.7
AL06175-5 18	25280.98	23084.42	1.10	0.0483	0.0009	0.0257	0.0005	0.0039	0.0001	25.8	0.4	24.8	0.6
AL06175-5 28	164.86	4272.13	0.04	0.0461	0.0019	0.0234	0.0007	0.0037	0.0001	23.5	0.7	23.8	0.7
AL06175-5 02	1573.59	7379.89	0.21	0.0453	0.0010	0.0242	0.0005	0.0039	0.0001	24.3	0.5	25.0	0.6
AL06175-5 03	201.26	9331.15	0.02	0.0486	0.0010	0.0244	0.0005	0.0036	0.0001	24.5	0.4	23.4	0.6
AL06175-5 05	1148.97	11808.00	0.10	0.0439	0.0009	0.0230	0.0005	0.0038	0.0001	23.1	0.5	24.5	0.6

AL06175-5 07	210.07	5431.01	0.04	0.0497	0.0014	0.0265	0.0007	0.0039	0.0001	26.6	0.7	24.9	0.6
AL06175-5 08	441.95	5867.95	0.08	0.0478	0.0021	0.0254	0.0010	0.0039	0.0001	25.5	1.0	24.8	0.8
AL06175-5 21	5352.11	21647.18	0.25	0.0475	0.0011	0.0229	0.0005	0.0035	0.0001	22.9	0.5	22.4	0.6
AL0814-1													
AL0814-1 03	114.89	2096.05	0.05	0.0461	0.0021	0.0229	0.0007	0.0036	0.0001	23.0	0.7	23.2	0.7
AL0814-1 05	98.93	2380.86	0.04	0.0461	0.0017	0.0220	0.0006	0.0035	0.0001	22.1	0.6	22.3	0.6
AL0814-1 06	426.78	4137.00	0.10	0.0448	0.0014	0.0201	0.0006	0.0033	0.0001	20.2	0.6	21.0	0.5
AL0814-1 09	173.20	2329.79	0.07	0.0467	0.0019	0.0231	0.0009	0.0036	0.0001	23.2	0.9	23.1	0.6
AL0814-1 17	501.82	5314.41	0.09	0.0460	0.0012	0.0208	0.0005	0.0033	0.0001	20.9	0.5	21.1	0.5
AL0814-1 20	481.39	3640.23	0.13	0.0466	0.0015	0.0222	0.0007	0.0035	0.0001	22.3	0.7	22.2	0.6
AL0814-1 23	94.85	1779.45	0.05	0.0459	0.0021	0.0228	0.0010	0.0036	0.0001	22.8	1.0	23.1	0.6
AL0814-1 25	3752.30	21288.70	0.18	0.0488	0.0008	0.0242	0.0004	0.0036	0.0001	24.3	0.4	23.2	0.5
AL0814-1 26	356.47	5458.17	0.07	0.0487	0.0032	0.0229	0.0013	0.0034	0.0001	23.0	1.0	21.9	0.6
AL06135-3													
AL06135-3 21	141.69	927.88	0.15	0.0461	0.0028	0.0277	0.0014	0.0044	0.0001	28.0	1.0	28.1	0.8
AL06135-3 39	1213.79	4724.90	0.26	0.0521	0.0016	0.0304	0.0009	0.0042	0.0001	30.4	0.8	27.2	0.4
AL06135-3 40	677.88	3097.79	0.22	0.0486	0.0022	0.0271	0.0011	0.0041	0.0001	27.0	1.0	26.0	0.4
AL06135-3 01	484.07	1788.90	0.27	0.0481	0.0027	0.0289	0.0015	0.0044	0.0001	29.0	1.0	28.1	0.7
AL06135-3 02	878.46	4588.13	0.19	0.0518	0.0018	0.0308	0.0010	0.0043	0.0001	30.8	1.0	27.8	0.5
AL06135-3 05	700.33	2929.86	0.24	0.0512	0.0016	0.0299	0.0009	0.0042	0.0001	29.9	0.8	27.3	0.5
AL06135-3 14	1030.80	3443.99	0.30	0.0461	0.0017	0.0270	0.0009	0.0043	0.0001	27.1	0.8	27.4	0.5
AL06135-3 16	794.72	2281.25	0.35	0.0481	0.0030	0.0273	0.0016	0.0041	0.0001	27.0	2.0	26.5	0.5
AL0623-3-2													
AL0623-3-2 02	65.04	455.49	0.14	0.0461	0.0022	0.0344	0.0013	0.0054	0.0002	34.0	1.0	35.0	1.0
AL0623-3-2 04	483.04	1350.21	0.36	0.0551	0.0083	0.0394	0.0057	0.0052	0.0002	39.0	6.0	33.0	1.0

AL0623-3-2 14	2235.94	2131.38	1.05	0.0461	0.0021	0.0329	0.0011	0.0052	0.0002	33.0	1.0	33.0	1.0
AL0623-3-2 16	275.96	1327.62	0.21	0.0506	0.0044	0.0379	0.0031	0.0054	0.0002	38.0	3.0	35.0	1.0
AL0623-3-2 18	197.54	740.16	0.27	0.0561	0.0046	0.0408	0.0031	0.0053	0.0002	41.0	3.0	34.0	1.0
AL0623-3-2 22	22.40	65.10	0.34	0.0531	0.0077	0.0370	0.0051	0.0051	0.0002	37.0	5.0	32.0	1.0
AL0623-3-2 23	88.11	180.94	0.49	0.0510	0.0035	0.0336	0.0021	0.0048	0.0002	34.0	2.0	31.0	1.0
AL0623-3-2 27	1249.32	1425.60	0.88	0.0461	0.0042	0.0340	0.0023	0.0054	0.0003	34.0	2.0	34.0	2.0
AL08138-2													
AL08138-2 01	1369.17	3480.28	0.39	0.0473	0.0054	0.0345	0.0038	0.0053	0.0002	34.0	4.0	34.0	1.0
AL08138-2 04	1165.35	6468.10	0.18	0.0499	0.0051	0.0383	0.0037	0.0056	0.0002	38.0	4.0	36.0	1.0
AL08138-2 16	299.28	5679.25	0.05	0.0464	0.0024	0.0321	0.0016	0.0050	0.0001	32.0	2.0	32.2	0.8
AL08138-2 17	651.04	2458.01	0.26	0.0535	0.0056	0.0396	0.0041	0.0054	0.0002	39.0	4.0	35.0	1.0
AL08138-2 18	1050.61	4443.31	0.24	0.0461	0.0020	0.0345	0.0013	0.0054	0.0001	34.0	1.0	34.9	0.8
AL08138-2 24	1178.98	6791.19	0.17	0.0461	0.0027	0.0320	0.0017	0.0050	0.0001	32.0	2.0	32.4	0.8
AL08138-2 27	1214.23	6461.49	0.19	0.0493	0.0039	0.0352	0.0027	0.0052	0.0001	35.0	3.0	33.3	0.9
AL08153-2													
AL08153-2 02	1160.61	18566.77	0.06	0.0446	0.0007	0.0301	0.0005	0.0049	0.0001	30.1	0.4	31.4	0.7
AL08153-2 03	773.08	12075.33	0.06	0.0441	0.0010	0.0295	0.0006	0.0048	0.0001	29.5	0.6	31.1	0.8
AL08153-2 04	1398.18	16793.04	0.08	0.0443	0.0007	0.0295	0.0005	0.0048	0.0001	29.6	0.5	31.1	0.7
AL08153-2 07	158.94	5972.39	0.03	0.0462	0.0010	0.0298	0.0006	0.0047	0.0001	29.8	0.6	30.1	0.7
AL08153-2 10	377.61	7838.13	0.05	0.0475	0.0011	0.0295	0.0006	0.0045	0.0001	29.5	0.6	28.9	0.7
AL08153-2 12	196.81	4052.79	0.05	0.0480	0.0014	0.0331	0.0009	0.0050	0.0001	33.0	0.9	32.2	0.8
AL08153-2 14	448.59	7455.33	0.06	0.0454	0.0013	0.0315	0.0009	0.0050	0.0001	31.5	0.8	32.3	0.8
AL08153-2 15	173.87	5153.65	0.03	0.0479	0.0019	0.0307	0.0011	0.0046	0.0001	31.0	1.0	29.8	0.8
AL08153-2 18	914.66	14768.34	0.06	0.0483	0.0012	0.0310	0.0007	0.0047	0.0001	31.0	0.7	29.9	0.7
AL08153-2 19	715.68	6141.96	0.12	0.0463	0.0012	0.0321	0.0008	0.0050	0.0001	32.1	0.8	32.3	0.8

AL08153-2 23	507.18	8872.34	0.06	0.0485	0.0011	0.0304	0.0007	0.0045	0.0001	30.4	0.7	29.2	0.7
AL08153-2 24	1006.06	14360.69	0.07	0.0474	0.0011	0.0297	0.0007	0.0045	0.0001	29.7	0.7	29.2	0.7
AL08153-2 25	908.94	14173.22	0.06	0.0479	0.0013	0.0297	0.0007	0.0045	0.0001	29.7	0.7	28.9	0.7
AL08153-2 26	1130.15	15145.18	0.07	0.0463	0.0017	0.0306	0.0009	0.0048	0.0001	30.6	0.8	30.9	0.8
DC08-2-a													
DC08-2-a 02	122.93	201.68	0.6095	0.04965	0.01781	0.03161	0.01119	0.00462	0.00027	32	11	30	2
DC08-2-a 03	674.98	525.09	1.2855	0.04234	0.01225	0.02785	0.0079	0.00477	0.00028	28	8	31	2
DC08-2-a 05	183.82	330.89	0.5555	0.04471	0.00983	0.02981	0.00636	0.00484	0.00026	30	6	31	2
DC08-2-a 07	553.15	612.96	0.9024	0.04764	0.00555	0.03085	0.00347	0.0047	0.00015	31	3	30.2	1
DC08-2-a 10	79.63	158.69	0.5018	0.04605	0.00282	0.03057	0.00144	0.00482	0.00019	31	1	31	1
DC08-2-a 11	86.34	136.59	0.6321	0.04694	0.01649	0.03225	0.01113	0.00499	0.00033	32	11	32	2
DC08-2-a 13	97.91	158.26	0.6187	0.04605	0.00376	0.03289	0.00216	0.00518	0.00025	33	2	33	2
DC08-2-a 17	324.41	402.45	0.8061	0.04093	0.00668	0.03136	0.00498	0.00557	0.00022	31	5	36	1
DC08-2-a 23	149.87	376.73	0.3978	0.05345	0.00635	0.04041	0.00461	0.0055	0.00019	40	4	35	1
DC08-2-a 25	164.95	238.03	0.693	0.04521	0.0112	0.03349	0.0081	0.00539	0.0003	33	8	35	2

DR 4. Analyzed Samples with ages and collected age data

1) Analyzed Samples with ages

	Sample Number	Age (Ma)	Reference
Pre-kinematic dykes			
	AL08153-2	30.42±0.72	This Study
	AL08138-2	33.8±1.3	This Study
	AL0623-3-2	33.3±1.2	This Study
	AL08149-1	30.9±0.7	Tang et al., 2013
	DC08-2-a	33.5±1.8	This Study
	DC0835-2	33.4±1.7	Cao et al., 2010b
	DC0623-1	30.95±0.61	Cao et al., 2012
Syn-kinematic dykes			
	AL0623-3-1	25.03±0.39	This Study
	AL0814-2	25.9±1.6	Tang et al., 2013
	DC08-2-1	25.49±0.41	Cao et al., 2010b
	DC0822-1	26.95±0.34	Cao et al., 2010b
	AL06135-3	27.09±0.61	This Study
	AL06175-5	24.17±0.69	This Study
	AL06103-2	25.45±0.54	Liu et al., 2015b
	DC0835-1	25.31±0.18	Cao et al., 2010b
	DC08-8(5)	22.91±0.19	Cao et al., 2010b
Post-kinematic dykes			
	AL0814-1	22.25±0.70	This Study
	AL0841-4	23.05 ±0.41	Liu et al., 2015b
	AL0841-8	21.8±1	Tang et al., 2013
	DC0810-2	20.37±0.43	Cao et al., 2010

2) Collected age data

Serial	Sample number	Rock type	Age result	Reference
1	11ML-9A	Granitic gneiss	41.0±0.5	Guo, 2017
2	10HH-69G	Granitic gneiss	38.9±1.2	Guo, 2017
3	AOHH-66	Granitic gneiss	38.7±2.0	Guo, 2017
4	Al-4	Granitic gneiss	37.5±0.67	Li et al., 2014
5	15G23-1	Granitic gneiss	36.7±0.5	Ji et al., 2017
6	AL09213-1	Granitic mylonite	36.6±0.1	Tang et al., 2013
7	10HH-80B	Migmatite vein	36.5±1.4	Guo, 2017
8	AL09106-1	Amphibole-bearing granitic mylonite	36.0±0.3	Liu et al., 2015b
9	AL09209-1	Amphibole-bearing granitic mylonite	35.72±0.35	Liu et al., 2015b

10	15G16-1	Granitic gneiss	35.4±0.6	Ji et al., 2017
11	SH-126	Potassic alkaline rock	35.4±0.4	Liang et al., 2007
12	10HH-30B	Syenite	35.1±1.2	Guo, 2017
13	Y81-78	Potassic alkaline rock	35.1±0.3	Liang et al., 2007
14	AL08138-2	Pre-kinematic dykes	33.8±1.3	This study
15	EH1	Granitic leucosomes	33.7±0.3	Liu et al., 2015a
16	DC08-2-a	Pre-kinematic dykes	33.5±1.8	This study
17	DC0835-2	Pre-kinematic dykes	33.4±1.7	Cao et al., 2010b
18	AL0623-3-2	Pre-kinematic dykes	33.3±1.2	This study
19	ES2	Granitic leucosomes	33.2±0.2	Liu et al., 2015a
20	15G12-1	Granitic gneiss	33.0±0.4	Ji et al., 2017
21	ES1	Granitic leucosomes	32.7±0.2	Liu et al., 2015a
22	15YN-66A	Granitic gneiss	32.5±1.1	Guo, 2017
23	11AL09-1	Granitic gneiss	31.2±2.3	Wang et al., 2013a
24	DC0623-1	Pre-kinematic dykes	30.95±0.61	Cao et al., 2012
25	AL08149-1	Granitic mylonite	30.9±0.7	Tang et al., 2013
26	EB2	Granitic leucosomes	30.9±0.3	Liu et al., 2015a
27	11ML-27A	Migmatite vein	30.8±0.4	Guo, 2017
28	SM07-3	Leucogranitic dikes	30.8±0.3	Li et al., 2014
29	AL08153-2	Pre-kinematic dykes	30.42±0.72	This study

30	15G41-1	Granitic mylonite	28.6±0.6	Ji et al., 2017
31	EB3	Granitic leucosomes	27.8±0.2	Liu et al., 2015a
32	AL0866-2	Biotite monzogranitic dyke	27.7±1.0	Liu et al., 2015b
33	11AL17-1	Granitic gneiss	27.4±1.2	Wang et al., 2013a
34	AL09146-3	Granitic dyke	27.2±0.2	Tang et al., 2013
35	AL06135-3	Early syn-kinematic dykes	27.09±0.61	This study
36	ALYJ1615-4-1	Granitic mylonite	27.09±0.48	Chen et al., 2018
37	DC0822-1	Early syn-kinematic dykes	26.95±0.34	Cao et al., 2010b
38	YS-58	Qz-monzonite	26.3±0.3	Schärer et al., 1994
39	AL07-24A	Mylonitic biotite-k-feldspar orthogneiss	26.2±0.3	Searle et al., 2010
40	YS-59	Qz-monzosyenite	26.1±0.3	Schärer et al., 1994
41	AL0814-2	Mylonitic monzogranitic	25.9±1.6	Tang et al., 2013
42	15G37-1	Granitic gneiss	25.74±0.65	Ji et al., 2017
43	YS-53	Layered granite	25.8±0.2	Zhang and Schärer, 1999
44	DC08-2-1	Syn-kinematic dykes	25.49±0.41	Cao et al., 2010b

45	AL06103-2	Syn-kinematic dykes	25.45±0.54	Liu et al., 2015b
46	DC0835-1	Syn-kinematic dykes	25.31±0.18	Cao et al., 2010b
47	ALYJ1615-3	Syn-kinematic dykes	25.17±0.23	Chen et al., 2018
48	ALYJ1615-5	Syn-kinematic dykes	25.16±0.50	Chen et al., 2018
49	AL0623-3-1	Syn-kinematic dykes	25.03±0.39	This study
50	AL09106-3	Felsic dykes	24.86±0.3	Liu et al., 2015b
51	15G29-1	Granitic mylonite	24.5±0.3	Ji et al., 2017
52	AL06175-5	Syn-kinematic dykes	24.17±0.69	This study
53	YS-54	Pegmatite	24.1±0.2 3	Schärer et al., 1994
54	YS-11	Garnet leucogranitic layer	23.0±0.2	Schärer et al., 1994
55	DC08-8(5)	Syn-kinematic dykes	22.91±0.19	Cao et al., 2010b
56	YS-9	Garnet leucogranitic layer	22.8±0.6	Schärer et al., 1994
57	YS-60	Pegmatite	22.4±0.2	Schärer et al., 1994
58	AL0814-1	Post-kinematic dykes	22.25±0.70	This study
59	AL0841-4	Granitic pegmatite dyke	23.05±0.41	Liu et al., 2015b
60	AL0841-8	Granitic dyke	21.8±1	Tang et al., 2013
61	10HH-152B	Granitic gneiss	21.7±1.6	Guo, 2017
62	10HH-150B	Migmatite vein	20.9±0.4	Guo, 2017
63	DC0810-2	Post-kinematic dykes	20.37±0.43	Cao et al., 2010a
64	10HH-149B	Granitic gneiss	19.6±1.3	Guo et al., 2017

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es of the leucocratic dykes along the ASRR shear zone

	t(Ma)	Rb (ppm)	Sr (ppm)	$^{87}Rb/^{86}Sr$	$^{87}Sr/^{86}Sr$	2σ	$^{87}Sr/^{86}Sr(i)$	Sm (ppm)	Nd (ppm)	$^{147}Sm/^{144}Nd$	$^{143}Nd/^{144}Nd$	2σ	T_{DM1}	T_{DM2}	$\varepsilon_{Nd}(0)$	$\varepsilon_{Nd}(t)$	$f_{Sm/Nd}$
							Pre-Kinematic dykes										
e	33	9.88	1023.40	0.0280	0.707081	7	0.70707	21.40	95.52	0.1354	0.512378	2	1501			-4.81	-0.31142
e	34	240.52	320.20	2.1750	0.710159	3	0.70915	2.88	17.12	0.1017	0.512326	4	1121			-5.69	-0.48284
	31								N/A								
ite	30	32.23	330.84	0.2821	0.709934	4	0.70981	0.88	3.97	0.1348	0.512261	5	1713			-7.11	-0.31464
	34	147.60	1607.60	0.2659	0.706984	2	0.70686	7.89	37.58	0.1269	0.512453	2	1223			-3.31	-0.35471
	33								N/A								
nite	31	272.81	277.51	2.8466	0.709647	7	0.70840	4.35	27.96	0.0940	0.512208	3	1199			-7.98	-0.52211
							Syn- Kinematic dykes										
	26	155.84	1095.40	0.4120	0.707251	13	0.70710	8.77	37.66	0.1408	0.51233	2	1709			-5.83	-0.28442
	26	153.57	105.80	4.2029	0.708587	6	0.70698	4.13	19.25	0.1296	0.512277	2	1579			-6.81	-0.1549
	26								N/A								
ite	27	266.00	307.40	2.5056	0.709539	9	0.70860	4.15	25.50	0.0985	0.512208	2	1245			-8.06	-0.49932
	27	137.72	82.88	4.8116	0.727420	5	0.72560	4.31	18.56	0.1403	0.51233	2	1709			-9.76	-0.28685
	25	234.60	53.24	12.7593	0.713304	9	0.70869	0.76	3.04	0.1522	0.512226	5	2281			-7.89	-0.22616
	24	90.70	196.06	1.3395	0.722138	7	0.72167	2.04	7.59	0.1625	0.512011	4	3366			-12.12	-0.17370
te	24	195.32	495.60	1.1412	0.709030	4	0.70866	0.50	1.47	0.2059	0.512275	4	16224 ?			-7.11	0.04669
							Post- Kinematic dykes										
	23	363.40	27.18	38.7145	0.733802	7	0.72057	6.55	14.94	0.2652	0.512244	4	-2716 ?			-7.90	0.34808
:	22	75.56	315.11	0.6944	0.712887	6	0.7127	8.17	29.72	0.1662	0.512158	2	3163			-9.27	-0.1549
S	23								N/A								
te	22	293.35	105.70	8.0358	0.713718	6	0.71121	1.86	7.47	0.1501	0.512268	4	2104			-7.09	-0.23716
)	20	264.60	49.24	15.5600	0.735770	15	0.73116	0.85	3.02	0.1697	0.512512	13	2199			-2.39	-0.13751

tic; MUS-Muscovite; N/A-Data not available (not analyzed).

$$b/^{86}Sr)\times\left(e^{\lambda T}-1\right)$$

$$d/^{144}Nd)_{CHUR}(t)-1)\times 10000$$

$$d)_s-\left(^{147}Sm/^{144}Nd\right)_s\times\left(e^{\lambda t}-1\right)$$

$$56$$

$$8-0.1967\times\left(e^{\lambda t}-1\right)$$

$$/^{144}Nd)_s-0.51315)/\left(\left(^{147}Sm/^{144}Nd\right)_s-0.2137\right)))$$

DR 5 Whole rock Sr-Nd isotopes of the leucocratic dykes along the ASRR shear zone

NO	Sample No	Rock type	t(Ma)	Rb (ppm)	Sr (ppm)	$^{87}Rb/^{86}Sr$	$^{87}Sr/^{86}Sr$	2σ	$^{87}Sr/^{86}Sr(i)$	Sm (ppm)	Nd (ppm)	$^{147}Sm/^{144}Nd$	$^{143}Nd/^{144}Nd$	2σ	T_{DM1}	T_{DM2}	$\varepsilon_{Nd}(0)$	$\varepsilon_{Nd}(t)$	$f_{Sm/Nd}$
Pre-Kinematic dykes																			
1	AL0623-3-2	Granodiorite	33	9.88	1023.40	0.0280	0.707081	7	0.70707	21.40	95.52	0.1354	0.512378	2	1501			-4.81	-0.31142
2	AL08138-2	Monzogranite	34	240.52	320.20	2.1750	0.710159	3	0.70915	2.88	17.12	0.1017	0.512326	4	1121			-5.69	-0.48284
3	AL08149-1	Granite	31	N/A															
4	AL08153-2	Two-mica granite	30	32.23	330.84	0.2821	0.709934	4	0.70981	0.88	3.97	0.1348	0.512261	5	1713			-7.11	-0.31464
5	DC08-2-a	Monzonite	34	147.60	1607.60	0.2659	0.706984	2	0.70686	7.89	37.58	0.1269	0.512453	2	1223			-3.31	-0.35471
6	DC0835-2	Granite	33	N/A															
7	DC0623-1	POR monzogranite	31	272.81	277.51	2.8466	0.709647	7	0.70840	4.35	27.96	0.0940	0.512208	3	1199			-7.98	-0.52211
Syn- Kinematic dykes																			
8	AL0623-3-1	Granite	26	155.84	1095.40	0.4120	0.707251	13	0.70710	8.77	37.66	0.1408	0.51233	2	1709			-5.83	-0.28442
9	AL0814-2	Granite	26	153.57	105.80	4.2029	0.708587	6	0.70698	4.13	19.25	0.1296	0.512277	2	1579			-6.81	-0.1549
10	DC08-2-1	PEG	26	N/A															
11	DC0822-1	Two-mica granite	27	266.00	307.40	2.5056	0.709539	9	0.70860	4.15	25.50	0.0985	0.512208	2	1245			-8.06	-0.49932
12	AL06135-3	Granite	27	137.72	82.88	4.8116	0.727420	5	0.72560	4.31	18.56	0.1403	0.51233	2	1709			-9.76	-0.28685
13	DC0835-1	Granite	25	234.60	53.24	12.7593	0.713304	9	0.70869	0.76	3.04	0.1522	0.512226	5	2281			-7.89	-0.22616
14	Al06103-2	PEG	24	90.70	196.06	1.3395	0.722138	7	0.72167	2.04	7.59	0.1625	0.512011	4	3366			-12.12	-0.17370
15	AL06175-5	Garnet granite	24	195.32	495.60	1.1412	0.709030	4	0.70866	0.50	1.47	0.2059	0.512275	4	16224 ?			-7.11	0.04669
Post- Kinematic dykes																			
16	DC08-8(5)	MUS PEG	23	363.40	27.18	38.7145	0.733802	7	0.72057	6.55	14.94	0.2652	0.512244	4	-2716 ?			-7.90	0.34808
17	AL0814-1	POR granite	22	75.56	315.11	0.6944	0.712887	6	0.7127	8.17	29.72	0.1662	0.512158	2	3163			-9.27	-0.1549
18	AL0841-4	Granitic PEG	23	N/A															
19	AL0841-8	Biotite granite	22	293.35	105.70	8.0358	0.713718	6	0.71121	1.86	7.47	0.1501	0.512268	4	2104			-7.09	-0.23716
20	DC0810-2	Granite (PEG)	20	264.60	49.24	15.5600	0.735770	15	0.73116	0.85	3.02	0.1697	0.512512	13	2199			-2.39	-0.13751

PEG-pegmatite; POR-Porphyritic; MUS-Muscovite; N/A-Data not available (not analyzed).

$$^{87}Sr/^{86}Sr_{(i)} = \left(^{87}Sr/^{86}Sr\right)_s - \left(^{87}Rb/^{86}Sr\right)\times\left(e^{\lambda T}-1\right)$$

$$^{87}Rb/^{86}Sr = \left(Rb/Sr\right)\times 2.8956$$

$$\varepsilon_{Nd(t)} = \left(\left(^{143}Nd/^{144}Nd\right)_s(t)/\left(^{143}Nd/^{144}Nd\right)_{CHUR}(t)-1\right)\times 10000$$

$$\left(^{143}Nd/^{144}Nd\right)_s(t) = \left(^{143}Nd/^{144}Nd\right)_s - \left(^{147}Sm/^{144}Nd\right)_s\times\left(e^{\lambda t}-1\right)$$

$$^{147}Sm/^{144}Nd = \left(Sm/Nd\right)\times 0.60456$$

$$\left(^{143}Nd/^{144}Nd\right)_{CHUR}(t) = 0.512638 - 0.1967\times\left(e^{\lambda t}-1\right)$$

$$T_{DM}-Nd = 1/\lambda\times\ln\left(1+\left(\left(\left(^{143}Nd/^{144}Nd\right)_s-0.51315\right)/\left(\left(^{147}Sm/^{144}Nd\right)_s-0.2137\right)\right)\right)$$

DR 6 ZIRCON LU-HF ISOTOPE COMPOSITIONS

* All the data with yellow color are from inherited zircons that are not plotted on the Figure 9

Sample	age	176Yb/177Hf(corr)	176Lu/177Hf(corr)	176Hf/177Hf(corr)	2σ	176Hf/177Hfi	eHf(0)	eHf(t)	TDM (Ma)	TDMC (Ma)	fLu/Hf		(176Hf/177Hf) DM,t
AL0814-1													
AL0814-1 60u 8h 01	20	0.0092631	0.0004595	0.2826712	1.528E-05	0.282671	-3.6	-3.1	812	1298	-0.99	Post-Shearing	0.283236
AL0814-1 60u 8h 02	27.5	0.0092143	0.0003409	0.2824819	1.37E-05	0.282482	-10.3	-9.7	1071	1716	-0.99	Post-Shearing	0.283230
AL0814-1 60u 8h 03	23.2	0.0127672	0.0005034	0.2825926	1.467E-05	0.282592	-6.3	-5.8	922	1472	-0.98	Post-Shearing	0.283233
AL0814-1 60u 8h 04	20.4	0.0199842	0.0008632	0.282716	1.532E-05	0.282716	-2.0	-1.5	757	1198	-0.97	Post-Shearing	0.283235
AL0814-1 60u 8h 05	22.3	0.0157803	0.0006523	0.2825864	1.345E-05	0.282586	-6.6	-6.1	934	1487	-0.98	Post-Shearing	0.283234
AL0814-1 60u 8h 06	21	0.0050333	0.0002193	0.2826926	1.379E-05	0.282692	-2.8	-2.4	777	1250	-0.99	Post-Shearing	0.283235
AL0814-1 60u 8h 07	28.8	0.0062146	0.0003206	0.2825903	1.213E-05	0.282590	-6.4	-5.8	921	1474	-0.99	Post-Shearing	0.283229
AL0814-1 60u 8h 08	26.7	0.0162447	0.0007258	0.2826364	1.496E-05	0.282636	-4.8	-4.2	866	1373	-0.98	Post-Shearing	0.283231
AL0814-1 60u 8h 09	23.1	0.0210395	0.0008763	0.282647	1.655E-05	0.282647	-4.4	-3.9	855	1351	-0.97	Post-Shearing	0.283233
AL0814-1 60u 8h 10	24.2	0.0210167	0.0008148	0.2824958	1.272E-05	0.282495	-9.8	-9.3	1065	1688	-0.98	Post-Shearing	0.283233
AL0814-1 60u 8h 11	23.9	0.0299544	0.0011974	0.2825449	1.361E-05	0.282544	-8.0	-7.5	1007	1579	-0.96	Post-Shearing	0.283233
AL0814-1 60u 8h 12	25.6	0.0351374	0.0013066	0.2826031	1.322E-05	0.282603	-6.0	-5.4	927	1448	-0.96	Post-Shearing	0.283232
AL0814-1 60u 8h 13	30	0.0110556	0.0004494	0.282272	1.612E-05	0.282272	-17.7	-17.0	1364	2179	-0.99		0.283229
AL0814-1 60u 8h 14	25.7	0.0079201	0.0003006	0.2825026	1.261E-05	0.282502	-9.5	-9.0	1042	1671	-0.99	Post-Shearing	0.283232
AL0814-1 60u 8h 15	21.2	0.0187001	0.0008567	0.2826039	1.63E-05	0.282604	-5.9	-5.5	915	1449	-0.97	Post-Shearing	0.283235
AL0814-1 60u 8h 16	20.1	0.0253653	0.0011273	0.2825877	1.303E-05	0.282587	-6.5	-6.1	944	1485	-0.97	Post-Shearing	0.283236
AL0814-1 60u 8h 17	21.1	0.0057367	0.0002423	0.282702	1.082E-05	0.282702	-2.5	-2.0	765	1229	-0.99	Post-Shearing	0.283235
AL0814-1 60u 8h 18	27.1	0.0102139	0.0003698	0.2824733	1.331E-05	0.282473	-10.6	-10.0	1084	1735	-0.99	Post-Shearing	0.283231
AL0814-1 60u 8h 19	26.2	0.0370664	0.0014043	0.2826107	1.758E-05	0.282610	-5.7	-5.2	919	1431	-0.96	Post-Shearing	0.283231
AL0814-1 60u 8h 20	22.2	0.029594	0.0014331	0.2827182	1.799E-05	0.282718	-1.9	-1.4	766	1193	-0.96	Post-Shearing	0.283234
AL0814-1 60u 8h 21	27.6	0.0135191	0.0005067	0.2824659	1.421E-05	0.282466	-10.8	-10.2	1098	1751	-0.98	Post-Shearing	0.283230
AL0814-1 60u 8h 22	80	0.0100001	0.0003886	0.2824333	1.483E-05	0.282433	-12.0	-10.2	1140	1794	-0.99		0.283193
AL0814-1 60u 8h 23	23.1	0.0116464	0.0004918	0.282667	1.299E-05	0.282667	-3.7	-3.2	818	1306	-0.99	Post-Shearing	0.283233
AL0814-1 60u 8h 24	26.8	0.0164195	0.0006919	0.2827609	1.394E-05	0.282761	-0.4	0.2	691	1094	-0.98	Post-Shearing	0.283231
AL0814-1 60u 8h 25	23.2	0.0294443	0.0011537	0.2825352	1.515E-05	0.282535	-8.4	-7.9	1019	1601	-0.97	Post-Shearing	0.283233
AL0814-1 60u 8h 26	21.9	0.0292979	0.0011289	0.2825849	1.616E-05	0.282584	-6.6	-6.2	948	1491	-0.97	Post-Shearing	0.283234

AL0814-1 60u 8h 27	**352**	0.023139	0.0009479	0.2823292	1.619E-05	**0.282323**	-15.7	**-8.2**	1302	**1875**	-0.97		0.282997
AL0814-1 60u 8h 28	**898**	0.0200391	0.000727	0.2820998	1.461E-05	**0.282088**	-23.8	**-4.4**	1613	**2063**	-0.98		0.282601
AL0814-1 60u 8h 29	**26**	0.0180092	0.0006962	0.282615	1.698E-05	**0.282615**	-5.6	**-5.0**	896	**1421**	-0.98	Post-Shearing	0.283231
~~AL0814-1 60u 8h 30~~	~~**1922**~~	~~0.0144188~~	~~0.0005679~~	~~0.2809287~~	~~1.938E-05~~	~~**0.280908**~~	~~-65.2~~	~~**-23.2**~~	~~3193~~	~~**4035**~~	~~-0.98~~	—	~~0.281849~~
AL0841-4													
AL0841-4 60u 8h 01	**23.2**	0.0360185	0.0013601	0.2826473	1.389E-05	**0.282647**	-4.4	**-3.9**	865	**1351**	-0.96	Post-Shearing	0.283233
AL0841-4 60u 8h 02	**23.9**	0.0322906	0.0012343	0.2826459	1.5E-05	**0.282645**	-4.5	**-4.0**	865	**1354**	-0.96	Post-Shearing	0.283233
AL0841-4 60u 8h 03	**23.4**	0.028625	0.0010878	0.2826838	1.426E-05	**0.282683**	-3.1	**-2.6**	808	**1269**	-0.97	Post-Shearing	0.283233
AL0841-4 60u 8h 04	**23.7**	0.034345	0.0012971	0.2826245	1.542E-05	**0.282624**	-5.2	**-4.7**	896	**1402**	-0.96	Post-Shearing	0.283233
AL0841-4 60u 8h 05	**23.3**	0.043479	0.0016634	0.2826364	1.46E-05	**0.282636**	-4.8	**-4.3**	888	**1376**	-0.95	Post-Shearing	0.283233
AL0841-4 60u 8h 06	**24**	0.0235604	0.0009033	0.2826352	1.59E-05	**0.282635**	-4.8	**-4.3**	872	**1377**	-0.97	Post-Shearing	0.283233
AL0841-4 60u 8h 07	**24.7**	0.0253159	0.0009693	0.2826292	1.55E-05	**0.282629**	-5.0	**-4.5**	882	**1390**	-0.97	Post-Shearing	0.283232
AL0841-4 60u 8h 08	**20.7**	0.0756896	0.0028363	0.2826999	2.034E-05	**0.282699**	-2.5	**-2.1**	823	**1236**	-0.91	Post-Shearing	0.283235
AL0841-4 60u 8h 09	**21.6**	0.0272772	0.001039	0.2826565	1.433E-05	**0.282656**	-4.1	**-3.6**	845	**1331**	-0.97	Post-Shearing	0.283235
AL0841-4 60u 8h 10	**22.1**	0.0575212	0.0021661	0.2826779	1.948E-05	**0.282677**	-3.3	**-2.9**	840	**1284**	-0.93	Post-Shearing	0.283234
AL0841-4 60u 8h 11	**22.7**	0.0223778	0.0008478	0.2826894	1.497E-05	**0.282689**	-2.9	**-2.4**	795	**1257**	-0.97	Post-Shearing	0.283234
AL0841-4 60u 8h 12	**23.8**	0.037479	0.0015099	0.282711	1.584E-05	**0.282710**	-2.2	**-1.7**	778	**1208**	-0.95	Post-Shearing	0.283233
AL0841-4 60u 8h 13	**23.4**	0.0625234	0.0024947	0.2826811	1.08E-05	**0.282680**	-3.2	**-2.7**	843	**1276**	-0.92	Post-Shearing	0.283233
AL0841-4 60u 8h 14	**23.5**	0.0568947	0.0021233	0.2826497	1.398E-05	**0.282649**	-4.3	**-3.8**	880	**1346**	-0.94	Post-Shearing	0.283233
AL0841-4 60u 8h 15	**21**	0.0237311	0.0009056	0.2826765	1.446E-05	**0.282676**	-3.4	**-2.9**	814	**1286**	-0.97	Post-Shearing	0.283235
AL0841-4 60u 8h 16	**94**	0.0268177	0.0010302	0.2826394	1.992E-05	**0.282638**	-4.7	**-2.7**	869	**1329**	-0.97		0.283183
AL0841-4 60u 8h 17	**22.3**	0.0337681	0.0012988	0.28272	1.605E-05	**0.282719**	-1.8	**-1.4**	760	**1189**	-0.96	Post-Shearing	0.283234
AL0841-4 60u 8h 18	**22.3**	0.0523891	0.002031	0.2826857	1.454E-05	**0.282685**	-3.1	**-2.6**	826	**1266**	-0.94	Post-Shearing	0.283234
AL0841-4 60u 8h 19	**24.1**	0.0360625	0.001361	0.2826876	2.179E-05	**0.282687**	-3.0	**-2.5**	808	**1260**	-0.96	Post-Shearing	0.283233
AL0841-4 60u 8h 20	**22.2**	0.0408391	0.0016268	0.282659	1.649E-05	**0.282658**	-4.0	**-3.5**	855	**1326**	-0.95	Post-Shearing	0.283234
AL0841-4 60u 8h 21	**287**	0.0312031	0.0012388	0.2825222	2.256E-05	**0.282516**	-8.8	**-2.8**	1040	**1484**	-0.96		0.283044
AL0841-4 60u 8h 22	**464**	0.044925	0.0017468	0.2825916	2.161E-05	**0.282576**	-6.4	**3.3**	955	**1237**	-0.95		0.282916
AL0841-4 60u 8h 23	**464**	0.0162653	0.0006614	0.2825185	1.626E-05	**0.282513**	-9.0	**1.0**	1029	**1381**	-0.98		0.282916
AL0841-4 60u 8h 24	**31**	0.0313074	0.0012243	0.2825315	1.853E-05	**0.282531**	-8.5	**-7.9**	1026	**1605**	-0.96		0.283228
AL0841-4 60u 8h 25	**505**	0.0407764	0.0015793	0.2823427	1.925E-05	**0.282328**	-15.2	**-4.6**	1305	**1770**	-0.95		0.282887
DC0810-2													

DC0810-2 60u 8h 01 **20.4**	0.1124854	0.0058367	0.2828677	1.566E-05	**0.282865**	3.4	**3.8**	626	**861**	-0.82	Post-Shearing	0.283235
DC0810-2 60u 8h 02 **22.8**	0.0274065	0.0011444	0.2828465	8.945E-06	**0.282846**	2.6	**3.1**	578	**904**	-0.97	Post-Shearing	0.283234
DC0810-2 60u 8h 03 **20.7**	0.0310321	0.0014322	0.2828229	1.303E-05	**0.282822**	1.8	**2.2**	616	**958**	-0.96	Post-Shearing	0.283235
DC0810-2 60u 8h 04 **20**	0.123736	0.0058291	0.2829475	1.317E-05	**0.282945**	6.2	**6.6**	496	**681**	-0.82	Post-Shearing	0.283236
DC0810-2 60u 8h 05 **21.1**	0.0644921	0.0034506	0.2829307	1.094E-05	**0.282929**	5.6	**6.0**	488	**717**	-0.90	Post-Shearing	0.283235
DC0810-2 60u 8h 06 **230.7**	0.0607109	0.0024338	0.2828004	2.289E-05	**0.282790**	1.0	**5.7**	666	**901**	-0.93		0.283084
DC0810-2 60u 8h 07 **211.4**	0.0425153	0.0018338	0.2829372	1.972E-05	**0.282930**	5.8	**10.2**	457	**596**	-0.94		0.283098
DC0810-2 60u 8h 08 **185.5**	0.039418	0.0016066	0.2828424	2.31E-05	**0.282837**	2.5	**6.4**	591	**824**	-0.95		0.283117
DC0810-2 60u 8h 09 **184.2**	0.0338991	0.001361	0.2828063	2.175E-05	**0.282802**	1.2	**5.1**	638	**904**	-0.96		0.283118
DC0810-2 60u 8h 10 **198.8**	0.0535258	0.002128	0.282771	2.448E-05	**0.282763**	0.0	**4.0**	704	**982**	-0.94		0.283107
DC0810-2 60u 8h 11 **193.3**	0.0328215	0.001388	0.2828678	2.514E-05	**0.282863**	3.4	**7.5**	551	**760**	-0.96		0.283111
DC0810-2 60u 8h 12 **163.7**	0.0475292	0.0020544	0.2827619	2.225E-05	**0.282756**	-0.4	**3.0**	715	**1021**	-0.94		0.283133
DC0810-2 60u 8h 13 **21.9**	0.0347671	0.0016365	0.2829479	2.414E-05	**0.282947**	6.2	**6.7**	439	**676**	-0.95	Post-Shearing	0.283234
DC0810-2 60u 8h 14 **21.3**	0.0296325	0.0012548	0.2828725	1.793E-05	**0.282872**	3.6	**4.0**	542	**846**	-0.96	Post-Shearing	0.283235
DC0810-2 60u 8h 15 **21.3**	0.0373097	0.0017536	0.2829046	1.732E-05	**0.282904**	4.7	**5.1**	503	**774**	-0.95	Post-Shearing	0.283235
DC0810-2 60u 8h 16 **20.2**	0.0326461	0.0013862	0.2828405	1.301E-05	**0.282840**	2.4	**2.8**	590	**919**	-0.96	Post-Shearing	0.283236
DC0810-2 60u 8h 17 **20.8**	0.0491794	0.0026724	0.2828653	1.264E-05	**0.282864**	3.3	**3.7**	574	**864**	-0.92	Post-Shearing	0.283235
DC0810-2 60u 6h 18 **19.9**	0.0388282	0.0016962	0.2828402	1.311E-05	**0.282840**	2.4	**2.8**	595	**920**	-0.95	Post-Shearing	0.283236
DC0810-2 60u 6h 19 **22.6**	0.0517652	0.003049	0.2828279	1.138E-05	**0.282827**	2.0	**2.4**	636	**948**	-0.91	Post-Shearing	0.283234
DC0810-2 60u 6h 20 **24.6**	0.1431933	0.0079968	0.2828366	2.053E-05	**0.282833**	2.3	**2.7**	724	**932**	-0.76	Post-Shearing	0.283232
DC0810-2 60u 6h 21 **156.1**	0.0417001	0.0017063	0.282818	2.107E-05	**0.282813**	1.6	**4.9**	628	**896**	-0.95		0.283138
DC0810-2 60u 6h 22 **34.5**	0.0685843	0.0039669	0.2828671	1.444E-05	**0.282865**	3.4	**4.0**	593	**855**	-0.88		0.283225
DC0810-2 60u 6h 23 **22.1**	0.0301692	0.0012676	0.2828318	9.582E-06	**0.282831**	2.1	**2.6**	601	**937**	-0.96	Post-Shearing	0.283234
DC0810-2 60u 6h 24 **20.8**	0.0352214	0.0014996	0.2828296	1.175E-05	**0.282829**	2.0	**2.5**	607	**943**	-0.95	Post-Shearing	0.283235
DC0810-2 60u 6h 25 **20.3**	0.028913	0.001408	0.2828701	1.681E-05	**0.282870**	3.5	**3.9**	548	**852**	-0.96	Post-Shearing	0.283235
DC0810-2 60u 6h 26 **26.7**	0.100983	0.0051237	0.2828529	1.412E-05	**0.282850**	2.9	**3.4**	636	**892**	-0.85	Post-Shearing	0.283231
DC0810-2 60u 6h 27 **20.2**	0.0640413	0.0028829	0.2829347	1.611E-05	**0.282934**	5.8	**6.2**	474	**708**	-0.91	Post-Shearing	0.283236
DC0810-2 60u 6h 28 **20.2**	0.0932493	0.0051587	0.2828514	1.532E-05	**0.282849**	2.8	**3.2**	639	**898**	-0.84	Post-Shearing	0.283236
DC0810-2 60u 6h 29 **18.8**	0.0497169	0.0021288	0.2828528	1.141E-05	**0.282852**	2.9	**3.2**	584	**893**	-0.94	Post-Shearing	0.283237
DC0810-2 60u 6h 30 **21.9**	0.0300401	0.0012035	0.2828386	1.226E-05	**0.282838**	2.4	**2.8**	590	**922**	-0.96	Post-Shearing	0.283234
DC0810-2 60u 6h 31 **21.3**	0.055128	0.0025984	0.2829513	1.756E-05	**0.282950**	6.3	**6.8**	446	**669**	-0.92	Post-Shearing	0.283235

DC0810-2 60u 6h 32	**22.7**	0.0414706	0.0017163	0.2828175	1.077E-05	**0.282817**	1.6	**2.1**	628	**970**	-0.95	Post-Shearing	0.283234
DC0810-2 60u 6h 33	**20.9**	0.0416824	0.0020208	0.2828594	1.222E-05	**0.282859**	3.1	**3.5**	573	**877**	-0.94	Post-Shearing	0.283235
DC0810-2 60u 6h 34	**139.6**	0.0578233	0.0022975	0.2828656	2.006E-05	**0.282860**	3.3	**6.2**	568	**801**	-0.93		0.283150
DC0810-2 60u 6h 35	**21.6**	0.0507385	0.0024033	0.2828602	1.504E-05	**0.282859**	3.1	**3.6**	577	**875**	-0.93	Post-Shearing	0.283235
AL0841-8													
AL0841-8 60u 8h 01	**23**	0.0713186	0.0029187	0.2828657	1.623E-05	**0.282864**	3.3	**3.8**	578	**862**	-0.91	Post-Shearing	0.283234
AL0841-8 60u 8h 02	**21.7**	0.1062434	0.0043495	0.2827893	1.335E-05	**0.282788**	0.6	**1.0**	721	**1036**	-0.87	Post-Shearing	0.283234
AL0841-8 60u 8h 03	**22.1**	0.0771643	0.003252	0.2828522	1.623E-05	**0.282851**	2.8	**3.3**	604	**893**	-0.90	Post-Shearing	0.283234
AL0841-8 60u 8h 04	**178**	0.0337406	0.0012524	0.2827649	1.807E-05	**0.282761**	-0.3	**3.5**	696	**1000**	-0.96		0.283122
AL0841-8 60u 8h 05	**66**	0.0227931	0.0008688	0.2827448	1.862E-05	**0.282744**	-1.0	**0.4**	717	**1108**	-0.97		0.283203
AL0841-8 60u 6h 06	**22.3**	0.0573401	0.002362	0.2828389	1.73E-05	**0.282838**	2.4	**2.8**	608	**922**	-0.93	Post-Shearing	0.283234
AL0841-8 60u 8h 07	**22.2**	0.1123143	0.0046206	0.2828044	1.534E-05	**0.282802**	1.1	**1.6**	703	**1002**	-0.86	Post-Shearing	0.283234
AL0841-8 60u 6h 08	**22.2**	0.1218032	0.0049962	0.2828379	1.984E-05	**0.282836**	2.3	**2.7**	657	**927**	-0.85	Post-Shearing	0.283234
AL0841-8 60u 6h 09	**24.6**	0.0949717	0.0037612	0.2828312	1.559E-05	**0.282830**	2.1	**2.6**	644	**940**	-0.89		0.283232
AL0841-8 60u 6h 10	**22.5**	0.0994192	0.004063	0.2827736	1.575E-05	**0.282772**	0.1	**0.5**	739	**1071**	-0.88	Post-Shearing	0.283234
AL0841-8 60u 6h 11	**22.3**	0.056958	0.0023536	0.282838	1.873E-05	**0.282837**	2.3	**2.8**	609	**924**	-0.93	Post-Shearing	0.283234
AL0841-8 60u 6h 12	**22.3**	0.0794877	0.0033403	0.2828682	2.052E-05	**0.282867**	3.4	**3.8**	581	**857**	-0.90	Post-Shearing	0.283234
AL0841-8 60u 6h 13	**23.3**	0.1021064	0.0042591	0.2828775	2.144E-05	**0.282876**	3.7	**4.2**	582	**837**	-0.87	Post-Shearing	0.283233
AL0841-8 60u 6h 14	**21.2**	0.118248	0.0047963	0.2828424	1.777E-05	**0.282841**	2.5	**2.9**	646	**917**	-0.86	Post-Shearing	0.283235
AL0841-8 60u 6h 15	**20.7**	0.1040921	0.004264	0.2828351	1.571E-05	**0.282833**	2.2	**2.6**	648	**933**	-0.87	Post-Shearing	0.283235
AL0841-8 60u 6h 16	**20.5**	0.0992137	0.0040654	0.2828302	1.465E-05	**0.282829**	2.1	**2.5**	652	**944**	-0.88	Post-Shearing	0.283235
AL0841-8 60u 6h 17	**22.9**	0.0622498	0.0025867	0.282855	1.522E-05	**0.282854**	2.9	**3.4**	588	**886**	-0.92	Post-Shearing	0.283234
AL0841-8 60u 6h 18	**19.6**	0.1350119	0.0055281	0.2828154	2.276E-05	**0.282813**	1.5	**1.9**	704	**979**	-0.83	Post-Shearing	0.283236
AL0841-8 60u 6h 19	**168**	0.0532465	0.0021112	0.2821622	2.279E-05	**0.282156**	-21.6	**-18.1**	1584	**2354**	-0.94		0.283129
AL0841-8 60u 6h 20	**703**	0.0273946	0.0012551	0.2822349	1.839E-05	**0.282218**	-19.0	**-4.1**	1446	**1892**	-0.96		0.282743
AL0841-8 60u 6h 21	**22.9**	0.1102172	0.0046173	0.2828949	2.059E-05	**0.282893**	4.3	**4.8**	561	**798**	-0.86	Post-Shearing	0.283234
AL0841-8 60u 6h 22	**451**	0.0278327	0.0012246	0.2821913	1.888E-05	**0.282181**	-20.5	**-11.0**	1506	**2131**	-0.96		0.282926
AL0841-8 60u 6h 23	**723**	0.0168283	0.0008807	0.282536	2.003E-05	**0.282524**	-8.3	**7.2**	1011	**1190**	-0.97		0.282729
AL0841-8 60u 6h 24	**395**	0.0236143	0.001	0.2823513	1.724E-05	**0.282344**	-14.9	**-6.5**	1273	**1802**	-0.97		0.282966
AL0841-8 60u 6h 25	**638**	0.0493703	0.0018414	0.2822171	2.134E-05	**0.282195**	-19.6	**-6.4**	1494	**1985**	-0.94		0.282790
DC08-8(5)													

DC08-8(5) 60u 8h 01 **25.3**	0.0048016	0.0001234	0.2826683	9.029E-06	**0.282668**	-3.7	**-3.1**	809	**1302**	-1.00	Syn-Shearing	0.283232
DC08-8(5) 60u 8h 02 **25.4**	0.0065571	0.000159	0.2826815	9.255E-06	**0.282681**	-3.2	**-2.6**	791	**1272**	-1.00	Syn-Shearing	0.283232
DC08-8(5) 60u 8h 03 **25.2**	0.0072774	0.0002089	0.2826816	9.58E-06	**0.282682**	-3.2	**-2.6**	792	**1272**	-0.99	Syn-Shearing	0.283232
DC08-8(5) 60u 8h 04 **25**	0.0067335	0.0001721	0.2826989	8.963E-06	**0.282699**	-2.6	**-2.0**	768	**1233**	-0.99	Syn-Shearing	0.283232
DC08-8(5) 60u 8h 05 **24.4**	0.0050876	0.0001129	0.2826807	7.971E-06	**0.282681**	-3.2	**-2.7**	791	**1274**	-1.00	Syn-Shearing	0.283233
DC08-8(5) 60u 8h 06 **24.8**	0.0078192	0.0002115	0.2826865	7.393E-06	**0.282686**	-3.0	**-2.5**	785	**1261**	-0.99	Syn-Shearing	0.283232
DC08-8(5) 60u 8h 07 **23.8**	0.0189427	0.0005882	0.2827176	9.463E-06	**0.282717**	-1.9	**-1.4**	750	**1192**	-0.98	Syn-Shearing	0.283233
DC08-8(5) 60u 8h 08 **24.2**	0.0060625	0.0001525	0.2826856	1.018E-05	**0.282685**	-3.1	**-2.5**	786	**1264**	-1.00	Syn-Shearing	0.283233
DC08-8(5) 60u 8h 09 **25.3**	0.003253	8.106E-05	0.2827102	1.412E-05	**0.282710**	-2.2	**-1.6**	750	**1208**	-1.00	Syn-Shearing	0.283232
DC08-8(5) 60u 8h 10 **23.2**	0.0041422	0.0001026	0.2826917	8.347E-06	**0.282692**	-2.8	**-2.3**	776	**1250**	-1.00	Syn-Shearing	0.283233
DC08-8(5) 60u 8h 11 **24.2**	0.0049822	0.0001229	0.2826872	8.767E-06	**0.282687**	-3.0	**-2.5**	783	**1260**	-1.00	Syn-Shearing	0.283233
DC08-8(5) 60u 8h 13 **24.1**	0.0059286	0.0001374	0.2826808	9.38E-06	**0.282681**	-3.2	**-2.7**	792	**1274**	-1.00	Syn-Shearing	0.283233
DC08-8(5) 60u 6h 14 **24.1**	0.0035811	9.064E-05	0.2826978	1.051E-05	**0.282698**	-2.6	**-2.1**	767	**1236**	-1.00	Syn-Shearing	0.283233
DC08-8(5) 60u 6h 15 **24.1**	0.0114266	0.0003719	0.2826846	1E-05	**0.282684**	-3.1	**-2.6**	791	**1266**	-0.99	Syn-Shearing	0.283233
DC08-8(5) 60u 6h 16 **24.6**	0.0041169	0.0001037	0.2826703	9.374E-06	**0.282670**	-3.6	**-3.1**	806	**1297**	-1.00	Syn-Shearing	0.283232
DC08-8(5) 60u 6h 17 **22.7**	0.0059908	0.0001463	0.282685	9.815E-06	**0.282685**	-3.1	**-2.6**	786	**1266**	-1.00	Syn-Shearing	0.283234
DC08-8(5) 60u 6h 18 **23.3**	0.0078969	0.0001975	0.2826973	1.222E-05	**0.282697**	-2.6	**-2.1**	770	**1238**	-0.99	Syn-Shearing	0.283233
DC08-8(5) 60u 6h 19 **25**	0.0045234	0.0001206	0.2826883	1.05E-05	**0.282688**	-3.0	**-2.4**	781	**1257**	-1.00	Syn-Shearing	0.283232
DC08-8(5) 60u 6h 20 **23.1**	0.0128258	0.000453	0.2827226	1.253E-05	**0.282722**	-1.7	**-1.2**	740	**1182**	-0.99	Syn-Shearing	0.283233
DC08-8(5) 60u 6h 21 **24.1**	0.0079607	0.000203	0.2826831	1.09E-05	**0.282683**	-3.1	**-2.6**	790	**1269**	-0.99	Syn-Shearing	0.283233
DC08-8(5) 60u 6h 22 **24.6**	0.0058295	0.00014	0.282705	1.419E-05	**0.282705**	-2.4	**-1.8**	758	**1220**	-1.00	Syn-Shearing	0.283232
DC08-8(5) 60u 6h 23 **23.2**	0.0050999	0.0001285	0.2826842	1.183E-05	**0.282684**	-3.1	**-2.6**	787	**1267**	-1.00	Syn-Shearing	0.283233
DC08-8(5) 60u 6h 24 **22.1**	0.0078477	0.0001889	0.2827041	1.581E-05	**0.282704**	-2.4	**-1.9**	761	**1223**	-0.99	Syn-Shearing	0.283234
DC08-8(5) 60u 6h 25 **24.5**	0.0108431	0.0003521	0.2827036	1.247E-05	**0.282703**	-2.4	**-1.9**	765	**1223**	-0.99	Syn-Shearing	0.283232

$(^{176}Lu/^{177}Hf)_s$ and $(^{176}Hf/^{177}Hf)_s$ are the measured values of samples, $(^{176}Lu/^{177}Hf)$CHUR=0.0332 and $(^{176}Hf/^{177}Hf)$CHUR, 0=0.282772(Blichert-Toft and Albarede, 1997); $(^{176}Lu/^{177}Hf)$DM=0.0384 and $(^{176}Hf/^{177}Hf)$DM=0.28325(Griffin et al., 2000); $\lambda = 1.867\times10^{-11}a^{-1}$, $(^{176}Lu/^{177}Hf)$c=0.015, t=crystallization time of zircon.

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