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1. 300170

2. 210016

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2014 03 27 2014 06 08 .

It is of significant importance to understand the Precambrian tectonic evolution and reconstruction of the Neoproterozoic supercontinent of Tarim block in northwestern China by the study of the timing and tectonic background of the Aksu blueschist and the mafic dyke swarms intruding it. In this study we carry out U-Pb dating and Hf isotope analysis on zircons from both the meta-clastic rocks of the Aksu blueschist and the mafic dyke neadi f T t k

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Liou

1989 Nakajima 1990 1993

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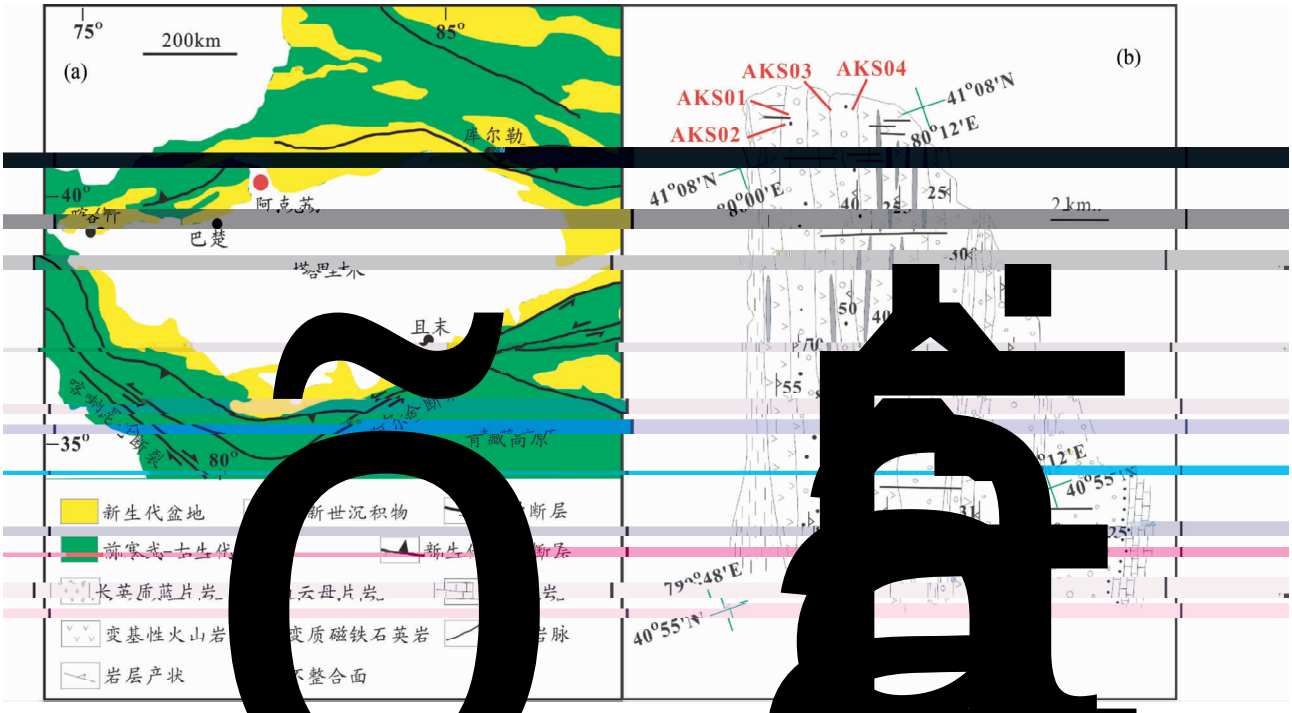
1986 1989 Liou 1989 Nakajima



1 a Z 1999

Fig. 1 The geological and tecto ap of the Aksu area on the north-w margin block Xinjiang China 20 showing the sampling sites a modified from Zhu 2009 b after Zhang

U-

Pb

Hf

2

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1985 Xu 01 à

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2 U-Pb Lu-Hf

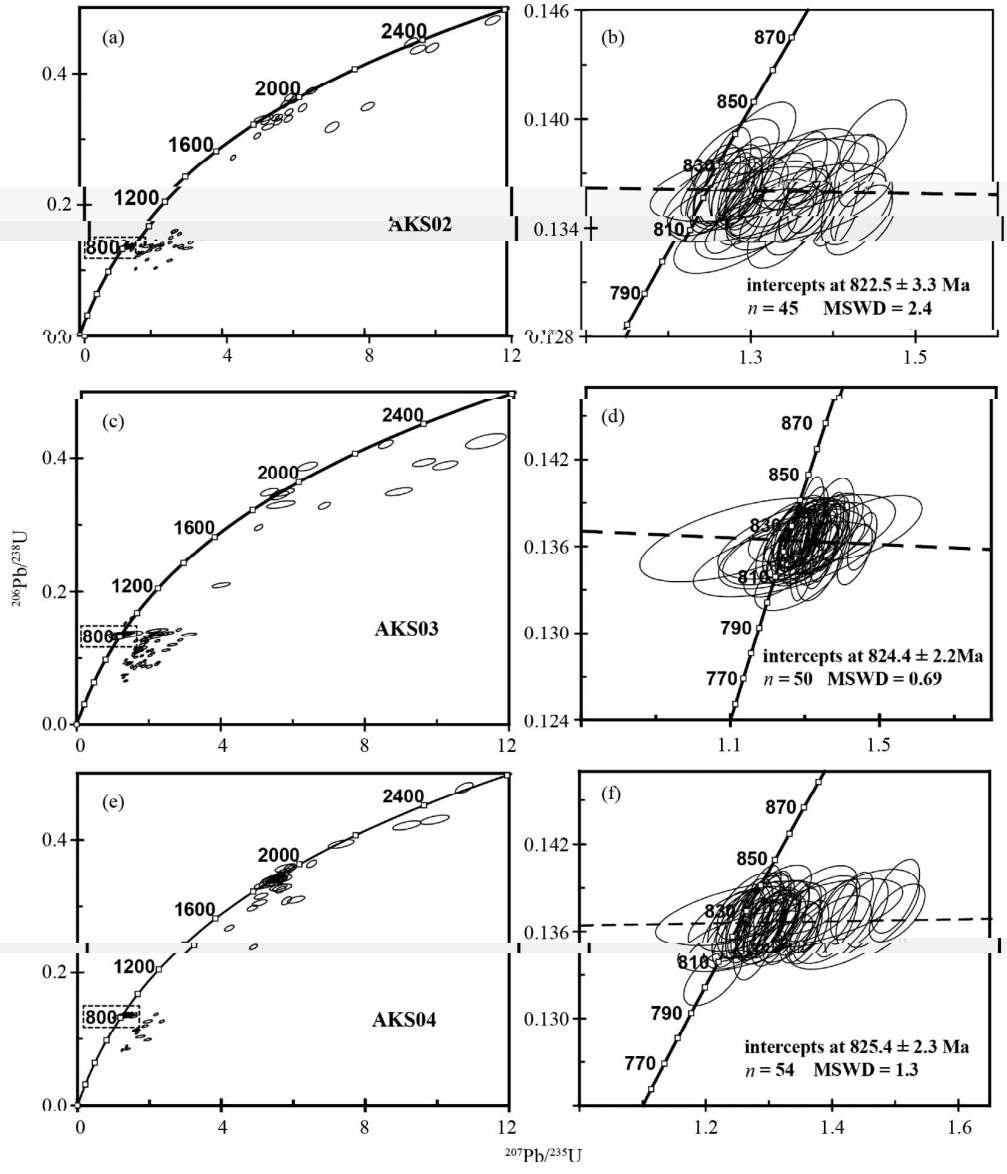
Table 2 Geographical position and petrographical characteristics of samples for U-Pb and Lu-Hf isotope analysis

AKS01	U-Pb	41°11′09″ 80°04′24″
AKS02	U-Pb Lu-Hf	41°11′04″ 80°04′19″
AKS03	U-Pb Lu-Hf	41°10′49″ 80°05′55″
AKS04	U-Pb Lu-Hf	41°09′49″ 80°06′36″

3 AKS02 AKS03
AKS04 1000 AKS01
200

CL image
BSE U-Pb
Lu-Hf 193nm
New Wave
MC-ICP-MS Neptune
U-Pb 2010
GJ-1 U Th Pb
NIST610 U Th Pb
^{208}Pb Andersen 2002
ICPMSDataCal Liu 2010 Isoplot Ludwig
2003 Lu-Hf
Wu 2006 2011
Hf

U-Pb Hf

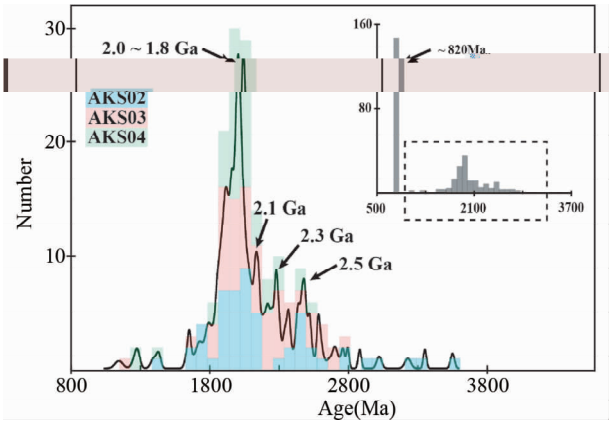


3 U-Pb

Fig. 3 U-Pb concordia diagrams of zircons from the Aksu blueschists

4.2 U-Pb

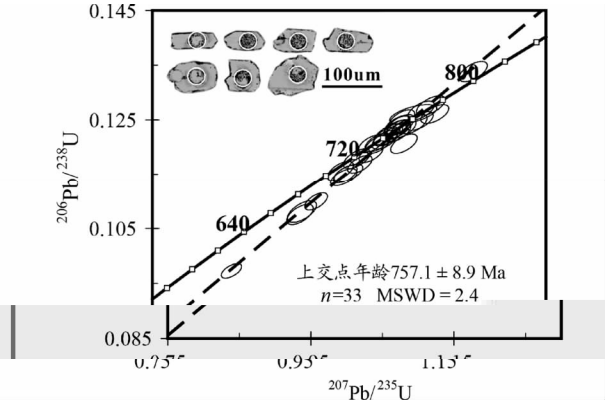
AKS01



4 U-Pb

Fig. 4 U-Pb age spectra of detrital zircons from the Aksu blueschists

2. 2 ~ 2. 3Ga 2. 6Ga 3. 2 ~ 3. 3Ga 6b



5 AKS01 BSE U-Pb

Fig. 5 BSE photo and U-Pb concordia diagram of zircons from the mafic dyke AKS01 intruding the Aksu blueschists

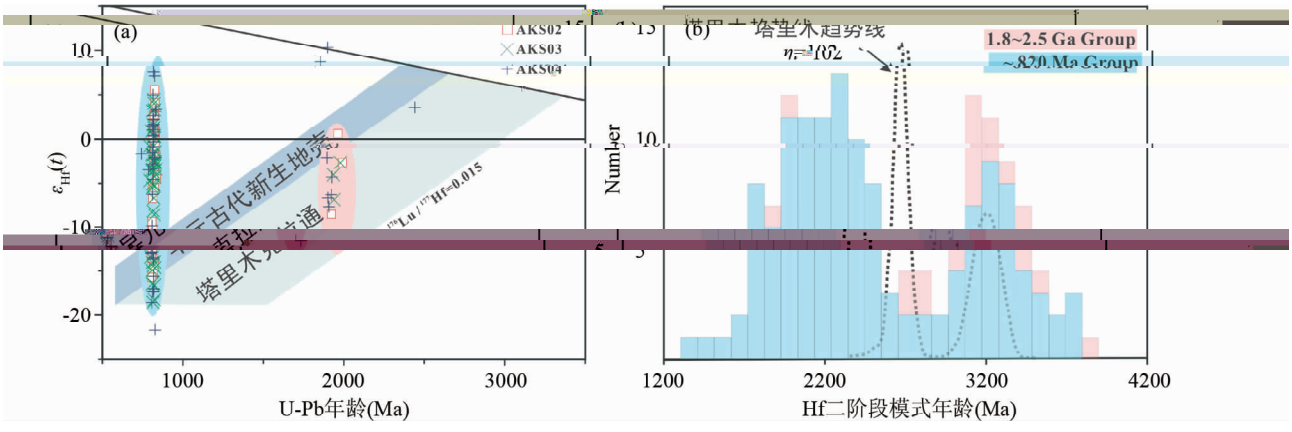
~820Ma 2. 0 ~ 1. 8Ga Zhu 2011 He 2012 Ma 2013

5

5. 1

- Liou 1996 Zhu 2011 Liou 1996 Zhu AKS02 2011 AKS03 AKS04 336 3 ~820Ma 820 ~2500Ma 3 Th/U 0. 4 0. 3 ~4 1

2. 5 ~1. 8Ga 2. 0 ~1. 8Ga 2. 1Ga 2. 3Ga 2. 5Ga 830 Th/U



6 Lu-Hf b Long 2010 Zhang 2013

Fig. 6 Lu-Hf isotope characteristics of detrital zircons from the Aksu blueschists

Tarim Craton basement trend in Fig. 6b after Long 2010 Zhang 2013

2.5 ~ 1.8Ga ~820Ma 820Ma

2 U-Pb

~760Ma

820 ~ 760Ma

“ ”

3 Lu-Hf

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63 3 273 – 284

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. 29 3 338 – 344

. 2010. U-Pb

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26 7 2131 – 2140

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. 26 2 547 – 558

. 2007. Lu-Hf

. 23 2 185 – 220

. 1986. .

4 4 33 – 50

. 2012.

. 58 5 923 – 936

1 AKS02 AKS03 AKS04 U-Pb

Appendix Table 1 U-Pb dating results of detrital zircon samples AKS02 AKS03 and AKS04

Spot No.	×10⁻⁶		Th/U	Ma											
	Pb	U		$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ	$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ
AKS02.1	80	200	0.62	0.3529	0.0024	5.7589	0.0452	0.1184	0.0008	1948	13	1940	15	1932	12
AKS02.2	48	240	0.85	0.1559	0.0009	2.5288	0.0222	0.1176	0.0009	934	6	1280	11	1920	14
AKS02.3	99	641	1.55	0.1342	0.0008	1.5067	0.0125	0.0814	0.0006	812	5	933	8	1232	15
AKS02.4	31	229	2.33	0.1034	0.0007	2.1323	0.0191	0.1495	0.0014	635	4	1159	10	2340	17
AKS02.5	108	763	0.37	0.1373	0.0008	1.3694	0.0121	0.0723	0.0007	829	5	876	8	996	19
AKS02.6	40	226	1.55	0.1353	0.0008	2.0800	0.0277	0.1115	0.0014	818	5	1142	15	1825	23
AKS02.7	119	766	0.94	0.1372	0.0008	1.4339	0.0112	0.0758	0.0005	829	5	903	7	1090	14
AKS02.8	72	219	0.42	0.3052	0.0019	4.9888	0.0372	0.1185	0.0008	1717	10	1817	14	1934	12
AKS02.9	45	496	0.03	0.0973	0.0007	0.8059	0.0074	0.0601	0.0005	598	4	600	5	606	17
AKS02.10	74	356	1.39	0.1590	0.0010	2.3524	0.0191	0.1073	0.0008	951	6	1228	10	1754	13
AKS02.11	163	1024	0.81	0.1376	0.0009	1.7130	0.0133	0.0903	0.0007	831	5	1013	8	1432	16
AKS02.12	107	803	1.46	0.1022	0.0008	1.5725	0.0112	0.1115	0.0009	628	5	959	7	1825	15
AKS02.13	132	848	0.77	0.1387	0.0008	1.5099	0.0110	0.0790	0.0005	837	5	934	7	1172	13
AKS02.14	40	279	0.36	0.1390	0.0008	1.3170	0.0178	0.0687	0.0009	839	5	853	12	891	27
AKS02.15	79	482	0.52	0.1445	0.0009	1.8512	0.0162	0.0929	0.0007	870	5	1064	9	1486	14
AKS02.16	166	937	1.02	0.1367	0.0008	2.6733	0.0180	0.1419	0.0009	826	5	1321	9	2250	11
AKS02.17	49	314	0.74	0.1362	0.0008	1.2856	0.0104	0.0685	0.0005	823	5	839	7	882	16
AKS02.18	40	287	0.32	0.1364	0.0009	1.2616	0.0129	0.0671	0.0006	824	6	829	8	841	19
AKS02.19	. 2	▮	9	0.1362	0008	20	6	0.0112	K 02.019		0. 8	9	62.0	86	0.0685		0

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Continued Appendix Table 1

Spot No.	×10⁻⁶		Th/U	Ma											
	Pb	U		$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ	$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ
AKS02.55	17	116	1.05	0.1265	0.0008	1.7197	0.0274	0.0986	0.0015	768	5	1016	16	1598	28
AKS02.56	60	357	1.15	0.1352	0.0008	1.3653	0.0152	0.0732	0.0008	818	5	874	10	1020	22
AKS02.57	122	218	0.60	0.4805	0.0029	11.6016	0.0861	0.1751	0.0012	2530	15	2573	19	2607	11
AKS02.58	179	293	1.38	0.4393	0.0029	9.9045	0.0756	0.1635	0.0011	2348	16	2426	19	2492	12
AKS02.59	45	220	1.21	0.1499	0.0010	2.2856	0.0237	0.1106	0.0010	901	6	1208	13	1808	17
AKS02.60	224	660	0.79	0.1812	0.0013	7.6975	0.0886	0.3081	0.0026	1074	8	2196	25	3511	13
AKS02.61	243	1235	0.91	0.1310	0.0009	3.5936	0.0384	0.1990	0.0017	793	5	1548	17	2818	14
AKS02.62	123	844	1.00	0.1263	0.0007	1.6304	0.0171	0.0936	0.0010	767	5	982	10	1501	19
AKS02.63	92	549	1.10	0.1327	0.0008	1.9951	0.0195	0.1090	0.0010	803	5	1114	11	1783	16
AKS02.64	46	112	1.05	0.3284	0.0024	5.2257	0.0533	0.1154	0.0009	1831	13	1857	19	1886	15
AKS02.65	149	357	1.11	0.3264	0.0020	5.5663	0.0465	0.1237	0.0009	1821	11	1911	16	2010	13
AKS02.66	69	374	1.12	0.1379	0.0008	2.0141	0.0220	0.1059	0.0012	833	5	1120	12	1730	21
AKS02.67	16	91	1.11	0.1313	0.0009	2.2084	0.0350	0.1220	0.0020	795	5	1184	19	1986	28
AKS02.68	100	589	0.84	0.1373	0.0008	2.1613	0.0234	0.1141	0.0012	830	5	1169	13	1866	20
AKS02.69	40	243	1.86	0.1335	0.0008	1.3537	0.0150	0.0735	0.0008	808	5	869	10	1028	22
AKS02.70	51	304	2.31	0.1358	0.0008	1.3899	0.0157	0.0742	0.0008	821	5	885	10	1048	21
AKS02.71	126	346	0.57	0.3330	0.0020	5.5004	0.0419	0.1198	0.0009	1853	11	1901	14	1953	13
AKS02.72	43	313	0.41	0.1357	0.0008	1.2504	0.0121	0.0668	0.0006	821	5	824	8	832	20
AKS02.73	48	241	1.24	0.1332	0.0008	3.0227	0.0598	0.1646	0.0034	806	5	1413	28	2503	35
AKS02.74	50	356	1.33	0.1161	0.0008	1.8916	0.0212	0.1182	0.0011	708	5	1078	12	1928	16
AKS02.75	32	199	1.78	0.1307	0.0008	1.4574	0.0189	0.0809	0.0010	792	5	913	12	1218	25
AKS02.76	13	87	0.78	0.1355	0.0009	1.5689	0.0644	0.0840	0.0034	819	5	958	39	1292	78
AKS02.77	49	343	0.65	0.1350	0.0008	1.4318	0.0165	0.0769	0.0009	816	5	902	10	1119	22
AKS02.78	33	198	2.46	0.1256	0.0008	1.7567	0.0374	0.1014	0.0021	763	5	1030	22	1650	37
AKS02.79	69	153	1.90	0.3413	0.0020	5.8794	0.0476	0.1249	0.0010	1893	11	1958	16	2028	14
AKS02.80	102	546	2.68	0.1238	0.0009	3.7073	0.0415	0.2172	0.0018	752	6	1573	18	2960	13
AKS02.81	111	753	0.82	0.1360	0.0008	1.2782	0.0109	0.0682	0.0005	822	5	836	7	874	16
AKS02.82	95	660	0.86	0.1344	0.0008	1.4343	0.0154	0.0774	0.0008	813	5	903	10	1131	19
AKS02.83	106	708	0.91	0.1292	0.0008	1.9467	0.0296	0.1093	0.0017	783	5	1097	17	1788	28
AKS02.84	45	315	0.65	0.1364	0.0009	1.2860	0.0137	0.0684	0.0007	824	5	840	9	880	21
AKS02.85	72	438	2.11	0.1400	0.0010	2.2961	0.0246	0.1190	0.0010	845	6	1211	13	1941	16
AKS02.86	11	76	0.43	0.1366	0.0009	1.8966	0.0594	0.1007	0.0031	825	6	1080	34	1637	56
AKS02.87	23	150	1.23	0.1359	0.0008	1.2872	0.0262	0.0687	0.0014	822	5	840	17	889	41
AKS02.88	38	257	1.03	0.1340	0.0009	1.3456	0.0179	0.0728	0.0011	811	6	866	12	1009	31
AKS02.89	51	331	1.25	0.1391	0.0008	1.4545	0.0166	0.0758	0.0008	839	5	912	10	1091	22
AKS02.90	44	103	0.97	0.3735	0.0022	6.5082	0.0649	0.1264	0.0012	2046	12	2047	20	2048	17
AKS02.91	52	110	0.43	0.4366	0.0027	9.5049	0.0895	0.1579	0.0014	2336	14	2388	22	2433	15
AKS02.92	20	140	0.59	0.1375	0.0008	1.3655	0.0276	0.0720	0.0014	830	5	874	18	987	39
AKS02.93	23	162	0.71	0.1347	0.0008	1.3306	0.0204	0.0716	0.0011	815	5	859	13	976	30
AKS02.94	32	225	0.56	0.1380	0.0008	1.2872	0.0218	0.0676	0.0011	834	5	840	14	857	34
AKS02.95	7	48	0.83	0.1361	0.0010	1.2770	0.0729	0.0681	0.0038	822	6	836	48	871	115
AKS02.96	21	125	1.90	0.1335	0.0008	1.2816	0.0282	0.0696	0.0015	808	5	838	18	918	44
AKS02.97	41	181	0.98	0.1550	0.0009	5.1418	0.0726	0.2406	0.0032	929	6	1843	26	3124	21
AKS02.98	34	235	0.65	0.1369	0.0008	1.3635	0.0200	0.0722	0.0010	827	5	873	13	992	29
AKS02.99	10	62	1.11	0.1366	0.0009	1.3135	0.0555	0.0697	0.0029	826	6	852	36	920	85
AKS02.100	25	137	0.77	0.1602	0.0011	2.3909	0.0380	0.1082	0.0015	958	6	1240	20	1770	26
AKS02.101	9	24	1.06	0.3314	0.0021	5.1812	0.1102	0.1134	0.0024	1845	12	1850	39	1854	38
AKS02.102	25	66	1.35	0.3189	0.0019	5.2873	0.0678	0.1202	0.0015	1784	11	1867	24	1960	22
AKS02.103	6	37	0.84	0.1360	0.0018	1.3213	0.2566	0.0705	0.0135	822	11	855	166	942	393
AKS02.104	38	265	0.85	0.1371	0.0008	1.3867	0.0343	0.0734	0.0017	828	5	883	22	1025	46
AKS02.105	34	245	0.52	0.1361	0.0008	1.3337	0.0196	0.0711	0.0010	823	5	861	13	959	29
AKS02.106	60	370	0.71	0.1376	0.0009	2.2877	0.0323	0.1206	0.0017	831	5	1208	17	1965	25
AKS03.1	64	437	0.60	0.1372	0.0009	1.3824	0.0151	0.0731	0.0007	829	5	881	10	1016	21
AKS03.2	113	909	1.86	0.0964	0.0006	1.8923	0.0180	0.1424	0.0013	593	3	1078	10	2257	16

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Continued Appendix Table 1

Spot No.	×10⁻⁶		Th/U	$^{206}Pb/^{238}U$	1σ	$^{207}Pb/^{235}U$	1σ	$^{207}Pb/^{206}Pb$	1σ	Ma					
	Pb	U								$^{206}Pb/^{238}U$	1σ	$^{207}Pb/^{235}U$	1σ	$^{207}Pb/^{206}Pb$	1σ
AKS03.3	21	235	0.64	0.0660	0.0006	1.3618	0.0223	0.1496	0.0022	412	4	873	14	2342	25
AKS03.4	37	223	1.27	0.1363	0.0008	1.2800	0.0204	0.0681	0.0010	824	5	837	13	872	32
AKS03.5	40	258	0.85	0.1253	0.0008	2.2447	0.0274	0.1299	0.0015	761	5	1195	15	2096	20
AKS03.6	56	357	0.86	0.1369	0.0009	1.2934	0.0155	0.0685	0.0008	827	5	843	10	885	24
AKS03.7	137	952	0.39	0.1238	0.0008	1.9431	0.0202	0.1139	0.0013	752	5	1096	11	1862	21
AKS03.8	188	1283	1.40	0.0934	0.0006	2.2684	0.0223	0.1761	0.0017	576	4	1203	12	2616	16
AKS03.9	14	70	2.63	0.1295	0.0009	1.1656	0.0695	0.0653	0.0038	785	6	785	47	784	123
AKS03.10	51	337	0.62	0.1380	0.0009	1.3193	0.0175	0.0694	0.0009	833	5	854	11	909	27
AKS03.11	62	370	1.14	0.1365	0.0008	1.3063	0.0145	0.0694	0.0007	825	5	849	9	911	22
AKS03.12	106	804	0.92	0.1139	0.0008	1.6289	0.0164	0.1037	0.0012	695	5	981	10	1692	20
AKS03.13	136	391	1.00	0.2960	0.0017	5.0536	0.0468	0.1238	0.0011	1671	10	1828	17	2012	16
AKS03.14	65	127	0.94	0.4209	0.0025	8.5836	0.0831	0.1479	0.0014	2264	14	2295	22	2322	16
AKS03.15	50	311	0.96	0.1363	0.0008	1.4533	0.0162	0.0773	0.0008	824	5	911	10	1129	21
AKS03.16	20	136	0.61	0.1356	0.0008	1.2607	0.0260	0.0674	0.0014	820	5	828	17	851	43
AKS03.17	33	227	0.59	0.1369	0.0008	1.2997	0.0238	0.0689	0.0012	827	5	846	15	895	37
AKS03.18	56	439	0.42	0.0914	0.0010	2.2317	0.0247	0.1771	0.0028	564	6	1191	13	2626	26
AKS03.19	35	270	0.06	0.1366	0.0008	1.2945	0.0172	0.0687	0.0009	825	5	843	11	891	27
AKS03.20	96	610	0.86	0.1259	0.0008	1.9303	0.0193	0.1112	0.0011	764	5	1092	11	1820	17
AKS03.21	20	140	0.73	0.1105	0.0009	1.7296	0.0514	0.1135	0.0029	676	5	1020	30	1856	47
AKS03.22	56	386	0.60	0.1253	0.0008	1.6468	0.0227	0.0953	0.0013	761	5	988	14	1534	26
AKS03.23	51	349	0.49	0.1377	0.0008	1.3692	0.0152	0.0721	0.0008	832	5	876	10	989	22
AKS03.24	74	604	0.65	0.0913	0.0009	1.4204	0.0196	0.1129	0.0020	563	5	898	12	1846	33
AKS03.25	21	136	0.65	0.1360	0.0009	1.2530	0.0272	0.0668	0.0014	822	5	825	18	833	44
AKS03.26	103	623	0.88	0.1350	0.0009	2.0665	0.0218	0.1111	0.0012	816	5	1138	12	1817	19
AKS03.27	31	197	0.86	0.1366	0.0009	1.2757	0.0206	0.0678	0.0011	825	5	835	14	861	33
AKS03.28	24	140	1.07	0.1362	0.0010	1.2516	0.0264	0.0666	0.0013	823	6	824	17	826	41
AKS03.29	20	125	0.30	0.1606	0.0010	1.5455	0.0266	0.0698	0.0011	960	6	949	16	922	34
AKS03.30	58	362	0.83	0.1365	0.0009	1.2705	0.0160	0.0675	0.0009	825	6	833	10	853	28
AKS03.31	98	648	0.61	0.1354	0.0009	1.4333	0.0192	0.0768	0.0010	819	5	903	12	1115	26
AKS03.32	68	444	0.64	0.1364	0.0009	1.3268	0.0142	0.0706	0.0008	824	6	858	9	944	22
AKS03.33	46	298	1.09	0.1039	0.0008	2.0418	0.0249	0.1425	0.0017	637	5	1130	14	225	2 14
	AKS03.15	.	32	12	0	137	1				7		3		

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Continued Appendix Table 1

Spot No.	$\times 10^{-6}$		Th/U	Ma											
	Pb	U		$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ	$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ
AKS03.57	66	452	0.56	0.1364	0.0008	1.2770	0.0137	0.0679	0.0007	824	5	836	9	866	21
AKS03.58	89	679	1.17	0.0969	0.0006	1.3700	0.0147	0.1025	0.0011	596	4	876	9	1670	20
AKS03.59	126	719	0.64	0.1377	0.0008	2.1615	0.0390	0.1138	0.0021	832	5	1169	21	1862	34
AKS03.60	65	434	0.45	0.1366	0.0010	1.3622	0.0170	0.0723	0.0009	826	6	873	11	995	25
AKS03.61	98	684	0.50	0.1117	0.0007	2.0865	0.0195	0.1355	0.0013	683	4	1144	11	2170	16
AKS03.62	127	852	0.66	0.1192	0.0009	1.8173	0.0344	0.1106	0.0016	726	6	1052	20	1809	27
AKS03.63	98	642	0.92	0.1137	0.0007	1.6877	0.0230	0.1076	0.0014	694	4	1004	14	1760	23
AKS03.64	94	571	0.80	0.1353	0.0008	1.2783	0.0138	0.0685	0.0007	818	5	836	9	884	21
AKS03.65	104	578	0.89	0.1366	0.0009	2.4621	0.0340	0.1307	0.0020	825	5	1261	17	2108	27
AKS03.66	86	800	0.80	0.0871	0.0009	1.5374	0.0169	0.1280	0.0013	538	5	945	10	2071	18
AKS03.67	60	417	0.39	0.1366	0.0008	1.3001	0.0142	0.0690	0.0007	826	5	846	9	899	22
AKS03.68	34	249	1.13	0.1013	0.0006	1.6437	0.0222	0.1177	0.0017	622	4	987	13	1922	25
AKS03.69	74	563	0.25	0.1358	0.0011	1.3429	0.0176	0.0717	0.0007	821	7	864	11	978	21
AKS03.70	69	554	0.65	0.1054	0.0012	1.5815	0.0194	0.1088	0.0019	646	8	963	12	1780	32
AKS03.71	44	329	0.68	0.1127	0.0012	1.7672	0.0253	0.1137	0.0014	688	7	1034	15	1860	22
AKS03.72	7	48	0.75	0.1364	0.0012	1.1225	0.1083	0.0597	0.0056	824	7	764	74	592	205
AKS03.73	18	44	0.92	0.3486	0.0023	5.3496	0.0978	0.1113	0.0019	1928	13	1877	34	1821	31
AKS03.74	11	64	0.94	0.1369	0.0011	2.2394	0.0565	0.1186	0.0029	827	6	1193	30	1936	43
AKS03.75	46	97	0.79	0.3936	0.0024	9.6436	0.1322	0.1777	0.0023	2140	13	2401	33	2631	22
AKS03.76	20	33	1.38	0.4254	0.0046	11.3608	0.2308	0.1937	0.0031	2285	25	2553	52	2774	27
AKS03.77	64	151	0.55	0.3492	0.0024	8.9460	0.1532	0.1858	0.0030	1931	13	2333	40	2705	27
AKS03.78	17	114	0.45	0.1363	0.0012	1.2681	0.0407	0.0675	0.0022	823	7	832	27	853	67
AKS03.79	11	55	1.06	0.1413	0.0013	2.2310	0.1254	0.1145	0.0064	852	8	1191	67	1872	101
AKS03.80	14	57	0.45	0.2094	0.0015	4.0102	0.1024	0.1389	0.0035	1225	9	1636	42	2214	43
AKS03.81	16	85	0.89	0.1355	0.0010	3.1222	0.0853	0.1671	0.0043	819	6	1438	39	2528	43
AKS03.82	34	81	0.50	0.3878	0.0027	6.4111	0.1134	0.1199	0.0020	2113	15	2034	36	1955	30
AKS03.83	6	38	1.11	0.1366	0.0012	1.3044	0.0973	0.0692	0.0051	826	7	848	63	906	153
AKS03.84	2	16	0.53	0.1352	0.0023	1.3724	0.1916	0.0736	0.0105	817	14	877	122	1031	288
AKS03.85	17	106	0.98	0.1365	0.0010	1.3412	0.0565	0.0713	0.0029	825	6	864	36	965	84
AKS03.86	8	70	0.79	0.0927	0.0008	1.4286	0.0543	0.1117	0.0040	572	5	901	34	1828	66
AKS03.87	7	51	0.52	0.1358	0.0011	1.2645	0.0802	0.0675	0.0043	821	7	830	53	854	131
AKS03.88	22	57	0.82	0.3482	0.0023	5.7493	0.1221	0.1197	0.0025	1926	13	1939	41	1952	37
AKS03.89	40	107	0.81	0.3437	0.0026	5.6256	0.1080	0.1187	0.0021	1904	14	1920	37	1937	32
AKS03.90	20	131	0.53	0.1415	0.0010	2.1651	0.0694	0.1110	0.0037	853	6	1170	37	1815	61
AKS03.91	25	169	1.48	0.1197	0.0008	2.6552	0.0547	0.1609	0.0029	729	5	1316	27	2465	30
AKS03.92	9	82	0.56	0.0908	0.0012	1.7798	0.0564	0.1421	0.0043	561	7	1038	33	2253	52
AKS03.93	11	79	0.40	0.1368	0.0009	1.3159	0.0519	0.0697	0.0025	827	6	853	34	921	75
AKS03.94	27	190	0.77	0.1320	0.0009	2.2119	0.0579	0.1215	0.0024	800	6	1185	31	1978	36
AKS03.95	46	141	0.31	0.3301	0.0023	5.6720	0.1619	0.1246	0.0026	1839	13	1927	55	2023	37
AKS03.96	28	210	0.56	0.1284	0.0009	1.9433	0.0621	0.1098	0.0028	779	5	1096	35	1796	46
AKS03.97	31	233	0.55	0.1372	0.0010	1.3587	0.0396	0.0718	0.0016	829	6	871	25	981	46
AKS03.98	26	191	0.60	0.1373	0.0009	1.4632	0.0615	0.0773	0.0029	829	5	915	38	1129	74
AKS03.99	20	136	0.95	0.1376	0.0009	2.5304	0.0682	0.1334	0.0029	831	6	1281	35	2143	37
AKS03.100	13	158	0.44	0.0752	0.0005	1.3439	0.0386	0.1297	0.0031	467	3	865	25	2094	42
AKS03.101	34	257	0.34	0.1372	0.0009	1.2817	0.0298	0.0677	0.0013	829	6	838	19	860	39
AKS03.102	15	115	0.31	0.1364	0.0012	1.3155	0.0388	0.0700	0.0019	824	7	853	25	927	54
AKS03.103	31	227	0.66	0.1369	0.0010	1.2957	0.0275	0.0687	0.0013	827	6	844	18	889	38
AKS03.104	14	108	0.66	0.1354	0.0009	1.2997	0.0415	0.0696	0.0021	819	5	846	27	917	62
AKS03.105	29	259	0.26	0.1080	0.0009	1.6395	0.0365	0.1101	0.0022	661	6	986	22	1801	36
AKS03.106	32	322	0.72	0.0877	0.0007	1.8653	0.0342	0.1542	0.0025	542	4	1069	20	2394	28
AKS03.107	19	143	0.51	0.1365	0.0012	1.3026	0.0385	0.0692	0.0019	825	7	847	25	905	57
AKS03.108	31	247	0.89	0.1149	0.0010	1.8617	0.0370	0.1176	0.0021	701	6	1068	21	1920	32
AKS03.109	25	170	1.20	0.1367	0.0009	1.3148	0.0411	0.0698	0.0021	826	5	852	27	921	62
AKS03.110	24	185	0.53	0.1234	0.0010	1.8801	0.0384	0.1105	0.0022	750	6	1074	22	1808	36

U-Pb Hf

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Continued Appendix Table 1

Spot No.	$\times 10^{-6}$		Th/U							Ma					
	Pb	U		$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ	$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ
AKS03.111	12	93	0.16	0.1355	0.0009	1.2488	0.0488	0.0668	0.0026	819	5	823	32	833	80
AKS03.112	10	73	0.76	0.1358	0.0010	1.2495	0.0695	0.0668	0.0036	821	6	823	46	830	112
AKS03.113	34	325	1.00	0.0917	0.0008	1.4661	0.0286	0.1159	0.0023	566	5	917	18	1894	36
AKS03.114	33	235	0.85	0.1324	0.0008	1.9603	0.0407	0.1074	0.0022	802	5	1102	23	1755	38
AKS03.115	35	336	1.25	0.0873	0.0010	2.0180	0.0344	0.1676	0.0025	540	6	1122	19	2534	25
AKS03.116	18	120	1.23	0.1339	0.0010	1.2834	0.0484	0.0695	0.0025	810	6	838	32	914	74
AKS03.117	11	80	0.80	0.1351	0.0011	1.2452	0.0999	0.0668	0.0054	817	6	821	66	833	168
AKS03.118	34	253	0.89	0.1347	0.0009	1.2372	0.0413	0.0666	0.0021	815	5	818	27	826	66
AKS03.119	27	196	0.72	0.1364	0.0009	1.3422	0.0311	0.0714	0.0016	824	6	864	20	968	44
AKS03.120	56	409	1.74	0.1116	0.0007	2.4823	0.0470	0.1614	0.0028	682	4	1267	24	2470	29
AKS03.121	11	83	0.72	0.1371	0.0009	1.2669	0.0484	0.0670	0.0025	828	6	831	32	838	77
AKS04.1	72	452	0.78	0.1363	0.0015	1.2839	0.0163	0.0683	0.0007	823	9	839	11	879	21
AKS04.2	102	272	0.86	0.3425	0.0023	5.5138	0.0544	0.1168	0.0010	1899	13	1903	19	1907	15
AKS04.3	30	147	1.81	0.1378	0.0009	1.2684	0.0207	0.0668	0.0011	832	6	832	14	831	33
AKS04.4	72	182	0.72	0.3357	0.0031	5.2043	0.0587	0.1124	0.0010	1866	17	1853	21	1839	16
AKS04.5	42	296	0.38	0.1368	0.0011	1.2785	0.0187	0.0678	0.0009	826	6	836	12	862	27
AKS04.6	72	441	0.96	0.1365	0.0011	1.2671	0.0144	0.0673	0.0006	825	7	831	9	848	19
AKS04.7	52	343	0.61	0.1367	0.0011	1.2891	0.0158	0.0684	0.0008	826	7	841	10	880	25
AKS04.8	27	152	1.18	0.1365	0.0010	1.2588	0.0263	0.0669	0.0012	825	6	827	17	835	39
AKS04.9	64	451	0.36	0.1370	0.0011	1.2686	0.0151	0.0671	0.0007	828	6	832	10	842	22
AKS04.10	76	504	0.65	0.1361	0.0010	1.4004	0.0253	0.0746	0.0011	823	6	889	16	1058	31
AKS04.11	53	330	0.79	0.1366	0.0009	1.2389	0.0147	0.0658	0.0007	826	5	818	10	799	23
AKS04.12	199	558	0.74	0.3084	0.0024	5.8099	0.0559	0.1366	0.0011	1733	14	1948	19	2185	14
AKS04.13	43	273	0.71	0.1365	0.0010	1.2554	0.0161	0.0667	0.0008	825	6	826	11	828	24
AKS04.14	73	490	0.69	0.1364	0.0009	1.2980	0.0133	0.0690	0.0006	824	6	845	9	899	18
AKS04.15	58	390	0.66	0.1361	0.0010	1.3249	0.0139	0.0706	0.0007	823	6	857	9	946	21
AKS04.16	46	293	0.67	0.1375	0.0010	1.2949	0.0186	0.0683	0.0009	830	6	843	12	878	27
AKS04.17	68	443	0.65	0.1359	0.0009	1.3079	0.0142	0.0698	0.0007	821	6	849	9	923	21
AKS04.18	73	499	0.45	0.1367	0.0009	1.3462	0.0143	0.0714	0.0007	826	6	866	9	970	21
AKS04.19	67	825	0.06	0.0831	0.0008	1.2452	0.0122	0.1087	0.0011	515	5	821	8	1777	18
AKS04.20	274	498	0.48	0.4778	0.0034	10.7479	0.1001	0.1632	0.0013	2517	18	2502	23	2489	13
AKS04.21	51	328	0.79	0.1362	0.0008	1.2895	0.0147	0.0687	0.0008	823	5	841	10	889	23
AKS04.22	94	488	1.52	0.1362	0.0008	1.2789	0.0118	0.0681	0.0006	823	5	836	8	872	18
AKS04.23	57	354	0.87	0.1360	0.0008	1.2854	0.0168	0.0685	0.0009	822	5	839	11	885	26
AKS04.24	26	168	0.76	0.1353	0.0009	1.2628	0.0437	0.0677	0.0023	818	5	829	29	859	71
AKS04.25	42	311	0.53	0.1031	0.0008	1.7461	0.0544	0.1228	0.0032	633	5	1026	32	1997	47
AKS04.26	61	364	0.86	0.1373	0.0008	1.5032	0.0180	0.0794	0.0009	829	5	932	11	1183	23
AKS04.27	60	373	0.97	0.1328	0.0008	1.2113	0.0188	0.0662	0.0010	804	5	806	13	811	32
AKS04.28	44	289	0.38	0.1378	0.0009	1.6026	0.0209	0.0844	0.0011	832	5	971	13	1301	26
AKS04.29	75	435	1.07	0.1360	0.0009	1.3318	0.0201	0.0710	0.0012	822	5	860	13	959	33
AKS04.30	52	288	0.65	0.1612	0.0012	1.6771	0.0203	0.0755	0.0008	963	7	1000	12	1081	20
AKS04.31	82	561	0.92	0.1200	0.0008	1.3659	0.0150	0.0826	0.0008	730	5	874	10	1259	18
AKS04.32	105	225	1.32	0.3487	0.0023	5.7712	0.0533	0.1200	0.0010	1928	13	1942	18	1957	15
AKS04.33	70	431	0.88	0.1366	0.0008	1.3107	0.0147	0.0696	0.0007	825	5	850	10	917	22
AKS04.34	26	171	0.70	0.1367	0.0009	1.3054	0.0176	0.0693	0.0009	826	5	848	11	906	27
AKS04.35	58	346	1.61	0.1295	0.0008	1.3340	0.0181	0.0747	0.0010	785	5	861	12	1061	27
AKS04.36	28	140	2.15	0.1376	0.0009	1.3800	0.0263	0.0728	0.0013	831	6	880	17	1007	37
AKS04.37	61	430	0.30	0.1384	0.0010	1.5008	0.0155	0.0786	0.0007	836	6	931	10	1163	18
AKS04.38	106	653	1.20	0.1378	0.0010	1.4318	0.0139	0.0754	0.0006	832	6	902	9	1078	17
AKS04.39	70	405	1.40	0.1372	0.0009	1.3283	0.0147	0.0702	0.0007	829	6	858	10	935	22
AKS04.40	29	182	0.95	0.1368	0.0014	1.4319	0.0435	0.0759	0.0023	827	9	902	27	1092	60
AKS04.41	86	582	1.01	0.1359	0.0009	1.3631	0.0130	0.0727	0.0006	822	5	873	8	1006	18
AKS04.42	26	167	0.92	0.1382	0.0010	1.3757	0.0262	0.0722	0.0014	835	6	879	17	991	38
AKS04.43	33	210	1.02	0.1370	0.0010	1.3099	0.0218	0.0694	0.0010	827	6	850	14	910	31

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Continued Appendix Table 1

Spot No.	$\times 10^{-6}$		Th/U	$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ	Ma					
	Pb	U								$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ
AKS04.44	33	212	0.95	0.1385	0.0009	1.3119	0.0228	0.0687	0.0011	836	5	851	15	890	34
AKS04.45	85	540	1.14	0.1367	0.0010	1.4068	0.0137	0.0746	0.0007	826	6	892	9	1058	18
AKS04.46	59	329	1.12	0.1374	0.0009	2.1791	0.0249	0.1150	0.0013	830	5	1174	13	1880	20
AKS04.47	54	340	1.21	0.1364	0.0010	1.2583	0.0138	0.0669	0.0006	824	6	827	9	834	20
AKS04.48	24	145	1.33	0.1357	0.0010	1.2607	0.0262	0.0674	0.0013	820	6	828	17	849	41
AKS04.49	79	187	1.30	0.3455	0.0025	5.6263	0.0557	0.1181	0.0010	1913	14	1920	19	1928	15
AKS04.50	71	450	1.02	0.1369	0.0010	1.3498	0.0137	0.0715	0.0007	827	6	867	9	971	19
AKS04.51	92	593	1.44	0.1373	0.0009	1.4086	0.0129	0.0744	0.0007	830	5	893	8	1052	18
AKS04.52	80	529	0.78	0.1380	0.0009	1.3055	0.0121	0.0686	0.0006	833	5	848	8	888	18
AKS04.53	58	391	0.71	0.1363	0.0010	1.2984	0.0185	0.0691	0.0008	824	6	845	12	902	25
AKS04.54	64	420	0.94	0.1358	0.0009	1.2415	0.0127	0.0663	0.0006	821	6	820	8	816	19
AKS04.55	53	294	1.44	0.1269	0.0008	2.3413	0.0280	0.1338	0.0015	770	5	1225	15	2148	19
AKS04.56	55	371	0.62	0.1373	0.0010	1.4477	0.0168	0.0765	0.0008	829	6	909	11	1108	20
AKS04.57	46	264	1.51	0.1367	0.0009	1.3050	0.0187	0.0692	0.0009	826	6	848	12	905	27
AKS04.58	89	565	1.01	0.1382	0.0010	1.2894	0.0121	0.0677	0.0006	834	6	841	8	858	19
AKS04.59	58	395	1.08	0.1088	0.0008	1.6496	0.0171	0.1100	0.0012	666	5	989	10	1799	20
AKS04.60	40	250	1.00	0.1379	0.0009	1.2932	0.0158	0.0680	0.0008	833	5	843	10	869	24
AKS04.61	125	891	1.23	0.1200	0.0007	1.8736	0.0342	0.1132	0.0019	731	4.61				

1

Continued Appendix Table 1

Spot No.	$\times 10^{-6}$		Th/U							Ma					
	Pb	U		$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ	$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ
AKS04.98	51	144	0.76	0.3359	0.0022	5.4826	0.1154	0.1184	0.0024	1867	12	1898	40	1932	36
AKS04.99	41	98	0.64	0.3940	0.0026	7.3259	0.1475	0.1349	0.0026	2141	14	2152	43	2162	34
AKS04.100	13	95	0.63	0.1369	0.0009	1.2545	0.0336	0.0665	0.0017	827	6	825	22	821	54
AKS04.101	20	173	1.09	0.0985	0.0007	1.9502	0.0411	0.1435	0.0028	606	5	1098	23	2270	34
AKS04.102	30	85	0.23	0.3581	0.0023	5.7447	0.1040	0.1164	0.0020	1973	13	1938	35	1901	31
AKS04.103	41	105	1.34	0.3286	0.0020	5.5827	0.0998	0.1232	0.0021	1832	11	1913	34	2003	31
AKS04.104	140	324	0.15	0.4213	0.0028	9.1485	0.1590	0.1575	0.0026	2267	15	2353	41	2429	28
AKS04.105	24	70	0.56	0.3278	0.0023	5.6860	0.1101	0.1258	0.0023	1828	13	1929	37	2040	33
AKS04.106	7	43	1.27	0.1345	0.0013	1.2821	0.1269	0.0691	0.0067	814	8	838	83	903	200
AKS04.107	12	85	0.71	0.1343	0.0009	1.5497	0.0455	0.0837	0.0024	812	5	950	28	1286	55
AKS04.108	20	156	1.13	0.1139	0.0007	1.6212	0.0357	0.1032	0.0022	696	4	978	22	1682	39
AKS04.109	6	45	0.85	0.1265	0.0009	1.2202	0.0552	0.0699	0.0031	768	5	810	37	927	91

1σ

2 AKS01 U-Pb

Appendix Table 2 U-Pb dating results of zircon sample AKS01 from mafic dyke

Spot No.	$\times 10^{-6}$		Th/U							Ma					
	Pb	U		$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ	$\frac{^{206}Pb}{^{238}U}$	1σ	$\frac{^{207}Pb}{^{235}U}$	1σ	$\frac{^{207}Pb}{^{206}Pb}$	1σ
AKS01.1	377	2290	5.20	0.0973	0.0005	0.8605	0.0058	0.0642	0.0004	598	3	630	4	747	14
AKS01.2	797	3430	6.95	0.1205	0.0007	1.0650	0.0072	0.0641	0.0004	734	4	736	5	744	14
AKS01.3	762	3809	300 9m	9											

3 AKS02 AKS03 AKS04 Lu-Hf

Appendix Table 3 Lu-Hf isotope results of detrital zircon samples AKS02 AKS03 and AKS04

Spot No.	Age Ma	$^{176}Yb/^{177}Hf$	$^{176}Lu/^{177}Hf$	$^{176}Hf/^{177}Hf$	2s	$^{176}Hf/^{177}Hf_i$	ε_{Hf} 0	ε_{Hf}	^{DM} Ma	$^{DM^C}$ Ma	Lu/Hf
AKS02-1. 1	823	0. 0180	0. 0006	0. 28218	0. 000021	0. 28217	-20. 9	-3. 1	1496	2359	-0. 98
AKS02-1. 2	820	0. 0253	0. 0007	0. 28221	0. 000025	0. 28220	-20. 0	-2. 3	1462	2283	-0. 98
AKS02-1. 3	826	0. 0164	0. 0004	0. 28237	0. 000021	0. 28236	-14. 2	3. 8	1228	1749	-0. 99
AKS02-1. 4	822	0. 0513	0. 0014	0. 28222	0. 000021	0. 28220	-19. 4	-2. 0	1464	2259	-0. 96
AKS02-1. 5	827	0. 0175	0. 0005	0. 28229	0. 000025	0. 28228	-17. 1	0. 9	1340	2003	-0. 99
AKS02-1. 6	832	0. 0284	0. 0010	0. 28222	0. 000022	0. 28220	-19. 5	-1. 7	1457	2244	-0. 97
AKS02-1. 7	823	0. 0369	0. 0008	0. 28223	0. 000026	0. 28222	-19. 2	-1. 5	1436	2214	-0. 98
AKS02-1. 8	815	0. 0385	0. 0009	0. 28235	0. 000028	0. 28234	-14. 9	2. 6	1273	1851	-0. 97
AKS02-1. 9	819	0. 0350	0. 0009	0. 28231	0. 000027	0. 28229	-16. 4	1. 1	1333	1982	-0. 97
AKS02-1. 10	812	0. 0701	0. 0021	0. 28215	0. 000031	0. 28212	-21. 9	-5. 1	1596	2532	-0. 94
AKS02-1. 11	820	0. 0231	0. 0006	0. 28224	0. 000024	0. 28223	-18. 9	-1. 1	1416	2181	-0. 98
AKS02-1. 12	809	0. 0600	0. 0014	0. 28190	0. 000028	0. 28188	-30. 7	-13. 6	1914	3280	-0. 96
AKS02-1. 13	815	0. 0657	0. 0015	0. 28185	0. 000027	0. 28183	-32. 5	-15. 3	1991	3438	-0. 95
AKS02-1. 14	813	0. 0314	0. 0008	0. 28209	0. 000024	0. 28208	-24. 2	-6. 7	1632	2675	-0. 98
AKS02-1. 15	818	0. 0769	0. 0019	0. 28190	0. 000027	0. 28187	-30. 8	-13. 9	1949	3309	-0. 94
AKS02-1. 16	824	0. 0297	0. 0007	0. 28224	0. 000023	0. 28223	-18. 9	-1. 2	1424	2189	-0. 98
AKS02-1. 17	823	0. 0420	0. 0010	0. 28230	0. 000023	0. 28228	-16. 8	0. 8	1350	2014	-0. 97
AKS02-1. 18	818	0. 0330	0. 0009	0. 28220	0. 000021	0. 28219	-20. 1	-2. 6	1476	2309	-0. 97
AKS02-1. 19	828	0. 0477	0. 0013	0. 28239	0. 000023	0. 28237	-13. 5	4. 1	1226	1720	-0. 96
AKS02-1. 20	817	0. 0533	0. 0014	0. 28195	0. 000023	0. 28192	-29. 2	-12. 0	1859	3145	-0. 96
AKS02-1. 21	822	0. 0722	0. 0021	0. 28189	0. 000028	0. 28185	-31. 3	-14. 4	1977	3357	-0. 94
AKS02-1. 22	822	0. 0513	0. 0013	0. 28236	0. 000023	0. 28234	-14. 6	2. 8	1275	1836	-0. 96
AKS02-1. 23	815	0. 0513	0. 0013	0. 28194	0. 000023	0. 28192	-29. 3	-12. 0	1856	3146	-0. 96
AKS02-1. 24	825	0. 0329	0. 0010	0. 28243	0. 000020	0. 28241	-12. 1	5. 6	1163	1589	-0. 97
AKS02-1. 25	819	0. 0156	0. 0004	0. 28226	0. 000022	0. 28226	-18. 0	-0. 2	1376	2096	-0. 99
AKS02-1. 26	813	0. 0537	0. 0014	0. 28192	0. 000028	0. 28190	-30. 2	-13. 1	1898	3238	-0. 96
AKS02-1. 27	808	0. 0469	0. 0013	0. 28200	0. 000024	0. 28198	-27. 2	-10. 1	1774	2972	-0. 96
AKS02-1. 28	822	0. 0254	0. 0008	0. 28212	0. 000019	0. 28210	-23. 2	-5. 5	1593	2574	-0. 98
AKS02-1. 29	810	0. 0569	0. 0015	0. 28193	0. 000030	0. 28191	-29. 8	-12. 7	1884	3204	-0. 95
AKS02-1. 30	827	0. 0343	0. 0010	0. 28220	0. 000021	0. 28219	-20. 1	-2. 4	1479	2299	-0. 97
AKS02-1. 31	827	0. 0345	0. 0010	0. 28227	0. 000019	0. 28225	-17. 9	-0. 2	1392	2104	-0. 97
AKS02-1. 32	836	0. 0356	0. 0010	0. 28214	0. 000023	0. 28212	-22. 4	-4. 5	1571	2497	-0. 97
AKS02-1. 33	813	0. 0573	0. 0017	0. 28200	0. 000025	0. 28198	-27. 2	-10. 2	1790	2982	-0. 95
AKS02-1. 34	808	0. 0998	0. 0026	0. 28204	0. 000025	0. 28200	-25. 8	-9. 4	1779	2910	-0. 92
AKS02-1. 35	828	0. 0123	0. 0004	0. 28217	0. 000020	0. 28217	-21. 2	-3. 1	1499	2367	-0. 99
AKS02-1. 36	827	0. 0472	0. 0017	0. 28227	0. 000024	0. 28224	-17. 8	-0. 5	1416	2133	-0. 95
AKS02-1. 37	814	0. 0456	0. 0015	0. 28229	0. 000021	0. 28227	-17. 0	0. 2	1375	2065	-0. 96
AKS02-1. 38	805	0. 0611	0. 0017	0. 28191	0. 000023	0. 28189	-30. 4	-13. 5	1916	3273	-0. 95
AKS02-1. 39	804	0. 0300	0. 0008	0. 28198	0. 000022	0. 28197	-28. 0	-10. 7	1780	3024	-0. 98
AKS02-1. 40	1924	0. 0139	0. 0003	0. 28133	0. 000024	0. 28132	-51. 0	-8. 6	2638	3567	-0. 99
AKS02-1. 41	1991	0. 0073	0. 0001	0. 28145	0. 000034	0. 28144	-46. 9	-2. 7	2470	3099	-1. 00
AKS02-1. 42	806	0. 0297	0. 0007	0. 28184	0. 000042	0. 28183	-33. 1	-15. 7	1974	3468	-0. 98
AKS02-1. 43	1964	0. 0342	0. 0007	0. 28157	0. 000037	0. 28155	-42. 4	0. 6	2330	2799	-0. 98
AKS03-1. 1	811	0. 0335	0. 0011	0. 28219	0. 000026	0. 28217	-20. 7	-3. 4	1508	2382	-0. 97
AKS03-1. 2	1935	0. 0244	0. 0007	0. 28146	0. 000024	0. 28144	-46. 3	-4. 1	2482	3182	-0. 98
AKS03-1. 3	808	0. 0803	0. 0020	0. 28225	0. 000036	0. 28222	-18. 5	-1. 7	1454	2230	-0. 94
AKS03-1. 4	821	0. 0325	0. 0011	0. 28197	0. 000028	0. 28195	-28. 5	-11. 0	1813	3059	-0. 97
AKS03-1. 5	806	0. 0409	0. 0014	0. 28219	0. 000034	0. 28217	-20. 5	-3. 5	1513	2387	-0. 96

U-Pb Hf

3

Continued Appendix Table 3

Spot No.	Age Ma	$^{176}Yb/^{177}Hf$	$^{176}Lu/^{177}Hf$	$^{176}Hf/^{177}Hf$	2s	$^{176}Hf/^{177}Hf_i$	ε_{Hf} 0	ε_{Hf}	^{DM} Ma	$^{DM^C}$ Ma	Lu/Hf
AKS03-1. 6	812	0. 0374	0. 0010	0. 28195	0. 000032	0. 28194	-29. 0	-11. 6	1827	3108	-0. 97
AKS03-1. 7	819	0. 0166	0. 0005	0. 28194	0. 000029	0. 28193	-29. 5	-11. 7	1823	3120	-0. 99
AKS03-1. 8	813	0. 0520	0. 0015	0. 28195	0. 000033	0. 28193	-29. 1	-12. 0	1856	3139	-0. 96
AKS03-1. 9	815	0. 0358	0. 0010	0. 28187	0. 000029	0. 28186	-31. 8	-14. 4	1941	3359	-0. 97
AKS03-1. 10	811	0. 0247	0. 0007	0. 28212	0. 000029	0. 28211	-23. 0	-5. 5	1583	2567	-0. 98
AKS03-1. 11	819	0. 0482	0. 0015	0. 28241	0. 000028	0. 28239	-12. 8	4. 4	1209	1689	-0. 95
AKS03-1. 12	825	0. 0746	0. 0020	0. 28188	0. 000042	0. 28184	-31. 7	-14. 6	1989	3383	-0. 94
AKS03-1. 13	825	0. 0095	0. 0003	0. 28214	0. 000027	0. 28214	-22. 3	-4. 3	1538	2467	-0. 99
AKS03-1. 14	1939	0. 0253	0. 0007	0. 28138	0. 000030	0. 28136	-49. 2	-6. 9	2593	3430	-0. 98
AKS03-1. 15	823	0. 0291	0. 0008	0. 28188	0. 000030	0. 28186	-31. 7	-13. 9	1923	3322	-0. 98
AKS03-1. 16	809	0. 0287	0. 0007	0. 28182	0. 000026	0. 28180	-33. 8	-16. 4	2005	3531	-0. 98
AKS03-1. 17	824	0. 0570	0. 0017	0. 28238	0. 000029	0. 28235	-13. 9	3. 3	1259	1789	-0. 95
AKS03-1. 18	823	0. 0434	0. 0013	0. 28181	0. 000032	0. 28179	-34. 0	-16. 6	2040	3553	-0. 96
AKS03-1. 19	817	0. 0252	0. 0007	0. 28225	0. 000023	0. 28224	-18. 4	-0. 8	1403	2150	-0. 98
AKS03-1. 20	819	0. 0229	0. 0007	0. 28208	0. 000028	0. 28207	-24. 4	-6. 7	1633	2675	-0. 98
AKS03-1. 21	833	0. 0383	0. 0012	0. 28217	0. 000035	0. 28216	-21. 1	-3. 4	1528	2396	-0. 96
AKS03-1. 22	820	0. 0177	0. 0005	0. 28230	0. 000030	0. 28230	-16. 5	1. 3	1320	1967	-0. 99
AKS03-1. 23	822	0. 0167	0. 0005	0. 28220	0. 000024	0. 28220	-20. 1	-2. 3	1462	2286	-0. 98
AKS03-1. 24	822	0. 0372	0. 0012	0. 28221	0. 000028	0. 28219	-20. 0	-2. 5	1484	2310	-0. 96
AKS03-1. 25	813	0. 0214	0. 0007	0. 28213	0. 000025	0. 28212	-22. 6	-5. 0	1566	2526	-0. 98
AKS03-1. 26	820	0. 0175	0. 0006	0. 28212	0. 000021	0. 28211	-22. 9	-5. 2	1574	2541	-0. 98
AKS03-1. 27	810	0. 0550	0. 0017	0. 28190	0. 000029	0. 28187	-31. 0	-14. 0	1941	3321	-0. 95
AKS03-1. 28	815	0. 0742	0. 0024	0. 28207	0. 000039	0. 28203	-24. 8	-8. 2	1730	2805	-0. 93
AKS03-1. 29	821	0. 0112	0. 0004	0. 28212	0. 000022	0. 28211	-23. 2	-5. 3	1576	2556	-0. 99
AKS03-1. 30	822	0. 0552	0. 0020	0. 28205	0. 000035	0. 28202	-25. 7	-8. 6	1743	2850	-0. 94
AKS03-1. 31	820	0. 0679	0. 0022	0. 28230	0. 000026	0. 28227	-16. 6	0. 3	1384	2055	-0. 93
AKS03-1. 32	825	0. 0406	0. 0011	0. 28219	0. 000025	0. 28217	-20. 7	-3. 1	1506	2359	-0. 97
AKS03-1. 33	821	0. 0271	0. 0009	0. 28239	0. 000024	0. 28237	-13. 6	4. 1	1218	1721	-0. 97
AKS03-1. 34	828	0. 0371	0. 0013	0. 28224	0. 000032	0. 28222	-19. 0	-1. 4	1446	2215	-0. 96
AKS03-1. 35	827	0. 0492	0. 0015	0. 28221	0. 000024	0. 28218	-20. 0	-2. 6	1493	2315	-0. 96
AKS03-1. 36	806	0. 0638	0. 0019	0. 28232	0. 000023	0. 28229	-15. 9	0. 9	1345	1996	-0. 94
AKS03-1. 37	814	0. 0951	0. 0032	0. 28179	0. 000031	0. 28174	-34. 7	-18. 5	2180	3719	-0. 90
AKS03-1. 38	813	0. 0413	0. 0011	0. 28218	0. 000028	0. 28216	-21. 0	-3. 7	1519	2405	-0. 97
AKS03-1. 39	816	0. 0520	0. 0014	0. 28223	0. 000025	0. 28221	-19. 1	-1. 8	1453	2241	-0. 96
AKS03-1. 40	822	0. 0666	0. 0020	0. 28178	0. 000026	0. 28174	-35. 2	-18. 2	2130	3697	-0. 94
AKS03-1. 41	801	0. 0896	0. 0027	0. 28193	0. 000026	0. 28189	-29. 6	-13. 4	1938	3258	-0. 92
AKS03-1. 42	823	0. 0197	0. 0005	0. 28228	0. 000024	0. 28227	-17. 5	0. 4	1361	2053	-0. 98
AKS03-1. 43	827	0. 0688	0. 0018	0. 28221	0. 000026	0. 28218	-20. 0	-2. 7	1508	2332	-0. 94
AKS03-1. 44	795	0. 0508	0. 0014	0. 28227	0. 000027	0. 28225	-17. 6	-0. 8	1395	2138	-0. 96
AKS03-1. 45	1978	0. 0255	0. 0007	0. 28147	0. 000032	0. 28145	-45. 9	-2. 7	2466	3091	-0. 98
AKS03-1. 46	813	0. 1142	0. 0033	0. 28241	0. 000042	0. 28236	-13. 0	3. 2	1274	1791	-0. 90
AKS03-1. 47	810	0. 0333	0. 0009	0. 28186	0. 000028	0. 28184	-32. 3	-15. 0	1954	3402	-0. 97
AKS03-1. 48	816	0. 0637	0. 0019	0. 28234	0. 000030	0. 28231	-15. 4	1. 6	1323	1936	-0. 94
AKS03-1. 49	795	0. 0144	0. 0004	0. 28215	0. 000025	0. 28214	-22. 0	-4. 7	1531	2484	-0. 99
AKS04-1. 1	817	0. 0385	0. 0010	0. 28232	0. 000028	0. 28231	-15. 9	1. 6	1313	1938	-0. 97
AKS04-1. 2	819	0. 0127	0. 0003	0. 28217	0. 000039	0. 28217	-21. 2	-3. 3	1497	2380	-0. 99
AKS04-1. 3	817	0. 0346	0. 0006	0. 28249	0. 000101	0. 28248	-10. 1	7. 6	1073	1401	-0. 98
AKS04-1. 4	817	0. 0527	0. 0014	0. 28197	0. 000042	0. 28194	-28. 5	-11. 3	1830	3080	-0. 96

3

Continued Appendix Table 3

Spot No.	Age Ma	$^{176}Yb/^{177}Hf$	$^{176}Lu/^{177}Hf$	$^{176}Hf/^{177}Hf$	2s	$^{176}Hf/^{177}Hf_i$	ε_{Hf} 0	ε_{Hf}	^{DM} Ma	$^{DM^C}$ Ma	Lu/Hf
AKS04-1. 5	816	0. 0541	0. 0013	0. 28190	0. 000040	0. 28188	-30. 8	-13. 5	1913	3276	-0. 96
AKS04-1. 6	812	0. 0377	0. 0009	0. 28232	0. 000027	0. 28231	-16. 0	1. 5	1313	1947	-0. 97
AKS04-1. 7	818	0. 0374	0. 0010	0. 28184	0. 000029	0. 28182	-33. 1	-15. 6	1988	3465	-0. 97
AKS04-1. 8	818	0. 0261	0. 0006	0. 28233	0. 000030	0. 28232	-15. 5	2. 2	1285	1885	-0. 98
AKS04-1. 9	814	0. 0286	0. 0006	0. 28225	0. 000037	0. 28224	-18. 4	-0. 8	1400	2151	-0. 98
AKS04-1. 10	809	0. 0678	0. 0016	0. 28201	0. 000027	0. 28199	-26. 9	-9. 9	1772	2953	-0. 95
AKS04-1. 11	812	0. 0493	0. 0012	0. 28180	0. 000022	0. 28178	-34. 5	-17. 3	2055	3608	-0. 96
AKS04-1. 12	804	0. 0465	0. 0011	0. 28192	0. 000023	0. 28190	-30. 2	-13. 0	1879	3229	-0. 97
AKS04-1. 13	806	0. 0571	0. 0013	0. 28177	0. 000019	0. 28175	-35. 6	-18. 6	2105	3717	-0. 96
AKS04-1. 14	817	0. 0324	0. 0009	0. 28179	0. 000021	0. 28177	-34. 9	-17. 3	2051	3616	-0. 97
AKS04-1. 15	802	0. 0512	0. 0013	0. 28193	0. 000023	0. 28191	-29. 9	-12. 9	1878	3218	-0. 96
AKS04-1. 16	1926	0. 0229	0. 0005	0. 28146	0. 000016	0. 28144	-46. 5	-4. 3	2482	3198	-0. 98
AKS04-1. 17	828	0. 0080	0. 0003	0. 28220	0. 000020	0. 28219	-20. 3	-2. 2	1463	2288	-0. 99
AKS04-1. 18	835	0. 0335	0. 0010	0. 28236	0. 000021	0. 28235	-14. 5	3. 4	1259	1793	-0. 97
AKS04-1. 19	818	0. 0281	0. 0008	0. 28228	0. 000015	0. 28227	-17. 3	0. 3	1362	2053	-0. 97
AKS04-1. 20	811	0. 0171	0. 0005	0. 28219	0. 000016	0. 28219	-20. 4	-2. 8	1474	2328	-0. 98
AKS04-1. 21	811	0. 0317	0. 0009	0. 28194	0. 000019	0. 28192	-29. 6	-12. 1	1844	3155	-0. 97
AKS04-1. 22	814	0. 0300	0. 0009	0. 28215	0. 000015	0. 28214	-22. 0	-4. 6	1551	2484	-0. 97
AKS04-1. 23	811	0. 0455	0. 0012	0. 28224	0. 000018	0. 28222	-18. 7	-1. 5	1434	2209	-0. 96
AKS04-1. 24	817	0. 0407	0. 0014	0. 28230	0. 000028	0. 28227	-16. 8	0. 4	1365	2042	-0. 96
AKS04-1. 25	814	0. 0582	0. 0017	0. 28237	0. 000017	0. 28234	-14. 4	2. 7	1277	1840	-0. 95
AKS04-1. 26	814	0. 0148	0. 0004	0. 28230	0. 000017	0. 28229	-16. 7	1. 0	1325	1988	-0. 99
AKS04-1. 27	815	0. 0508	0. 0014	0. 28190	0. 000020	0. 28188	-30. 8	-13. 7	1923	3290	-0. 96
AKS04-1. 28	814	0. 0376	0. 0010	0. 28224	0. 000020	0. 28223	-18. 7	-1. 3	1425	2193	-0. 97
AKS04-1. 29	829	0. 0105	0. 0003	0. 28235	0. 000018	0. 28234	-15. 0	3. 2	1254	1807	-0. 99
AKS04-1. 30	820	0. 0291	0. 0009	0. 28232	0. 000020	0. 28231	-15. 9	1. 7	1311	1931	-0. 97
AKS04-1. 31	818	0. 0313	0. 0009	0. 28189	0. 000020	0. 28188	-31. 2	-13. 6	1907	3289	-0. 97
AKS04-1. 32	825	0. 0509	0. 0014	0. 28248	0. 000023	0. 28246	-10. 3	7. 2	1103	1445	-0. 96
AKS04-1. 33	821	0. 0151	0. 0005	0. 28179	0. 000017	0. 28178	-34. 8	-17. 0	2029	3587	-0. 99
AKS04-1. 34	822	0. 0234	0. 0007	0. 28221	0. 000020	0. 28220	-19. 8	-2. 1	1458	2270	-0. 98
AKS04-1. 35	818	0. 0193	0. 0006	0. 28226	0. 000019	0. 28225	-18. 0	-0. 3	1383	2108	-0. 98
AKS04-1. 36	812	0. 0589	0. 0017	0. 28193	0. 000017	0. 28190	-29. 9	-12. 9	1896	3219	-0. 95
AKS04-1. 37	814	0. 0521	0. 0017	0. 28243	0. 000016	0. 28240	-12. 1	5. 0	1184	1635	-0. 95
AKS04-1. 38	827	0. 0275	0. 0008	0. 28229	0. 000017	0. 28228	-17. 0	0. 8	1350	2017	-0. 98
AKS04-1. 39	1908	0. 0132	0. 0003	0. 28137	0. 000018	0. 28135	-49. 7	-7. 7	2591	3479	-0. 99
AKS04-1. 40	1901	0. 0097	0. 0002	0. 28140	0. 000017	0. 28139	-48. 7	-6. 6	2545	3385	-0. 99
AKS04-1. 41	1987	0. 0918	0. 0025	0. 28129	0. 000021	0. 28119	-52. 5	-11. 5	2852	3865	-0. 93
AKS04-1. 42	744	0. 0799	0. 0024	0. 28230	0. 000022	0. 28226	-16. 9	-1. 7	1405	2181	-0. 93
AKS04-1. 43	812	0. 1290	0. 0035	0. 28214	0. 000027	0. 28209	-22. 3	-6. 3	1676	2635	-0. 90
AKS04-1. 44	1922	0. 0198	0. 0005	0. 28140	0. 000019	0. 28138	-48. 4	-6. 3	2554	3368	-0. 98
AKS04-1. 45	1896	0. 0040	0. 0001	0. 28152	0. 000022	0. 28152	-44. 2	-2. 1	2368	2987	-1. 00
AKS04-1. 46	817	0. 0500	0. 0011	0. 28234	0. 000020	0. 28233	-15. 2	2. 2	1289	1882	-0. 97
AKS04-1. 47	2441	0. 0273	0. 0007	0. 28136	0. 000023	0. 28133	-49. 9	3. 6	2624	2857	-0. 98
AKS04-1. 48	1899	0. 0315	0. 0009	0. 28190	0. 000020	0. 28187	-30. 9	10. 3	1898	1896	-0. 97
AKS04-1. 49	787	0. 0759	0. 0021	0. 28221	0. 000024	0. 28218	-19. 8	-3. 5	1510	2373	-0. 94
AKS04-1. 50	1822	0. 01077	0. 0004	0. 28188	0. 000016	0. 28187	-31. 4	8. 8	1890	1979	-0. 99
AKS04-1. 51	827	0. 00702	0. 0002	0. 28165	0. 000015	0. 28165	-39. 7	-21. 6	2202	3999	-0. 99