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1. 300170

2. 210016

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2014 03 27 2014 06 08

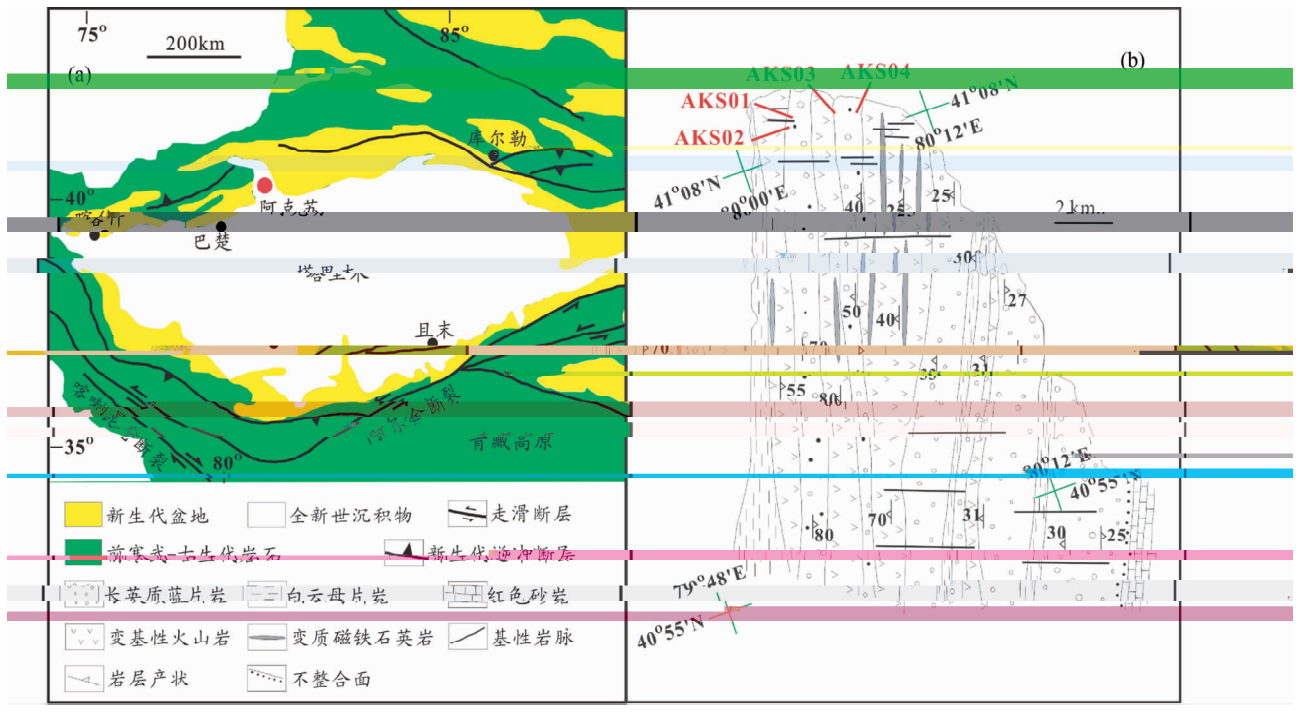
It is of significant importance to understand the Precambrian tectonic evolution and reconstruction of the Neoproterozoic supercontinent of Tarim block in northwestern China by the study of the timing and tectonic background of the Aksu blueschist and the mafic dyke swarms intruding it. In this study 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 s c 2 g

1

1989 Nakajima 1990 1993 Liou

1

1986 1989 Liou 1989 Nakajima



1 a Zhu 2009 b Zhang 1999
 Fig. 1 The geological and tectonic sketch map of the Aksu area on the north-western margin of the Tarim block Xinjiang China showing the sampling sites a modified from Zhu 2009 b after Zhang 1999

U-

Pb
 Hf

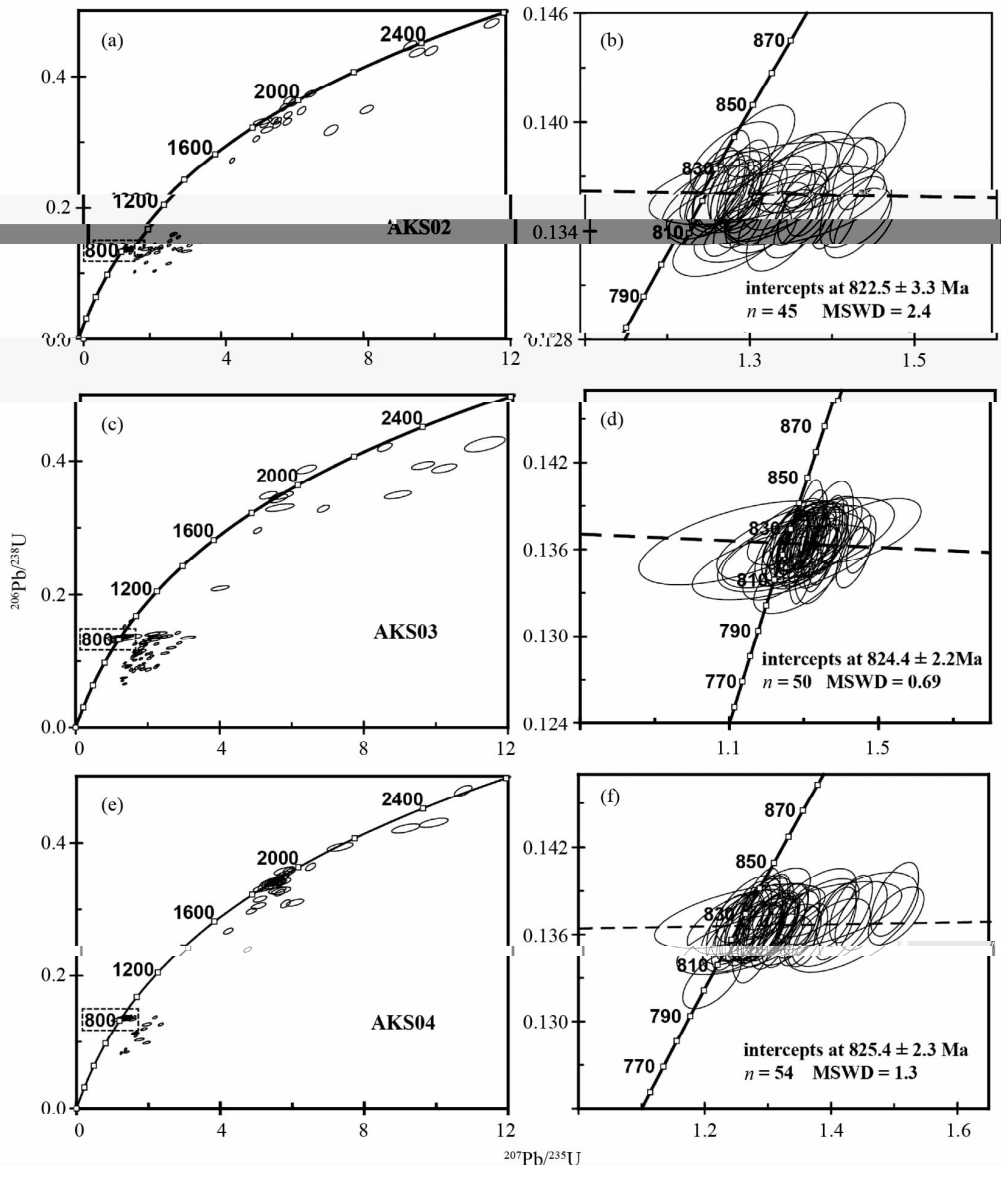
2

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"

AKS04 3 AKS02 AKS03
 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
²⁰⁸Pb Andersen 2002
 ICPMSDataCal Liu 2010 Isoplot Ludwig
 2003 Lu-Hf
 Wu 2006 2011
 Hf
 U-Pb Hf

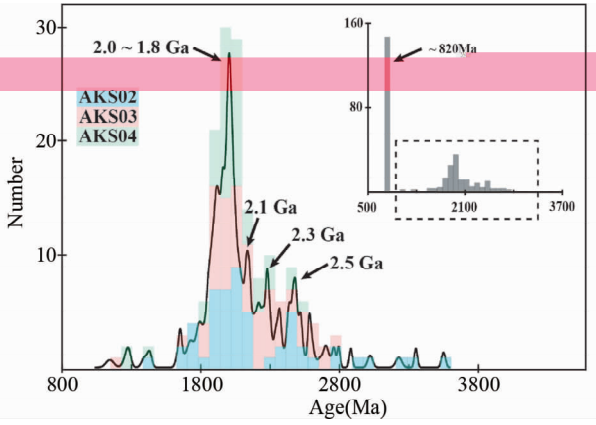


3 U-Pb

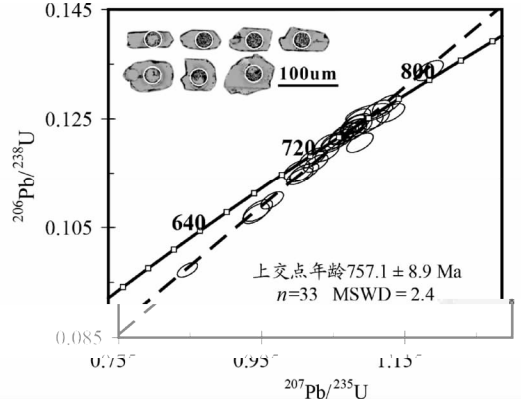
Fig. 3 U-Pb concordia diagrams of zircons from the Aksu blueschists

4.2 U-Pb
AKS01

B



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



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

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

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

5

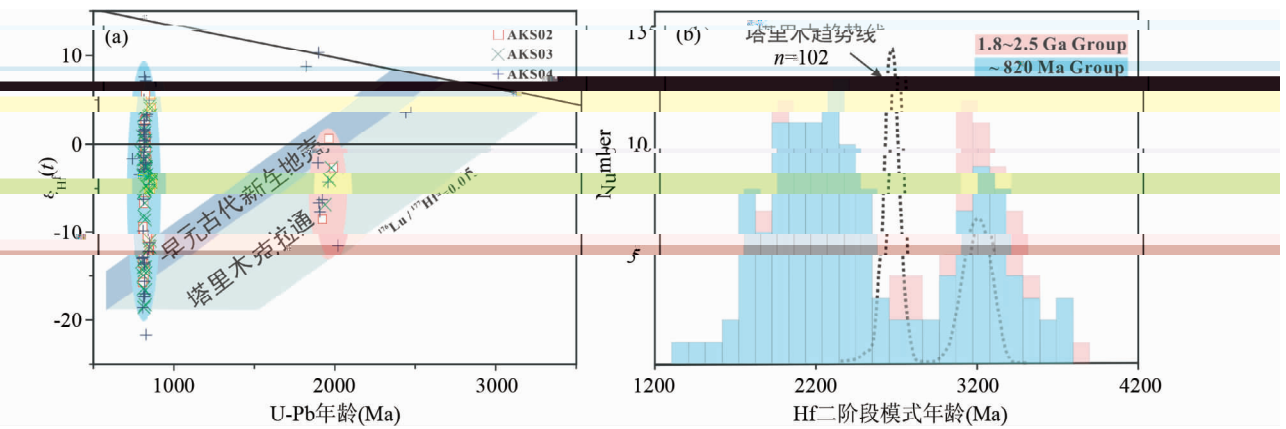
5. 1

- Liou 1996 Zhu 2011
Liou 1996 Zhu

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

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

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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- 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

Continued Appendix Table 1

Spot No.	$\times 10^{-6}$		Th/U							Ma					
	Pb	U		$\frac{^{206}\text{Pb}}{^{238}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{235}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	1σ	$\frac{^{206}\text{Pb}}{^{238}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{235}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	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
AKS03.34	1	9544	0.83	0.29	0.0009	823	6	84	3	17	983	5	14	0	9
AKS03.35	264	0.0017	576	5	3	1	0	4	0	14	0	9	7	2	0

Continued Appendix Table 1

Spot No.	$\times 10^{-6}$		Th/U							Ma					
	Pb	U		$\frac{^{206}\text{Pb}}{^{238}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{235}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	1σ	$\frac{^{206}\text{Pb}}{^{238}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{235}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	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	852.80	18	K395	1.23

Continued Appendix Table 1

Spot No.	$\times 10^{-6}$		Th/U							Ma					
	Pb	U		$\frac{^{206}\text{Pb}}{^{238}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{235}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	1σ	$\frac{^{206}\text{Pb}}{^{238}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{235}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	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		$\frac{^{206}\text{Pb}}{^{238}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{235}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	1σ	$\frac{^{206}\text{Pb}}{^{238}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{235}\text{U}}$	1σ	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}}$	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	365	0.0036	0.0007	10980	0.0082	0.064	10.0004	810	5	806	5	774	14

AKS01. 3 8

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	$\frac{^{176}\text{Yb}}{^{177}\text{Hf}}$	$\frac{^{176}\text{Lu}}{^{177}\text{Hf}}$	$\frac{^{176}\text{Hf}}{^{177}\text{Hf}}$	2s	$\frac{^{176}\text{Hf}}{^{177}\text{Hf}_i}$	$\varepsilon_{\text{Hf}}^0$	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

Continued Appendix Table 3

Spot No.	Age Ma	$\frac{^{176}\text{Yb}}{^{177}\text{Hf}}$	$\frac{^{176}\text{Lu}}{^{177}\text{Hf}}$	$\frac{^{176}\text{Hf}}{^{177}\text{Hf}}$	2s	$\frac{^{176}\text{Hf}}{^{177}\text{Hf}_i}$	$\varepsilon_{\text{Hf}}^0$	ε_{Hf}	DM Ma	DM ^C Ma	La/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

Continued Appendix Table 3

Spot No.	Age Ma	$\frac{^{176}\text{Yb}}{^{177}\text{Hf}}$	$\frac{^{176}\text{Lu}}{^{177}\text{Hf}}$	$\frac{^{176}\text{Hf}}{^{177}\text{Hf}}$	2s	$\frac{^{176}\text{Hf}}{^{177}\text{Hf}_i}$	$\varepsilon_{\text{Hf}}^0$	ε_{Hf}	DM Ma	DM ^C Ma	La/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