2013 - 12 - 02 2014

1968 -

825~800 Ma 780~760 Ma 735Ma 650~615 Ma 2 735Ma [4,7 - 11] 650~615Ma [10,12]

[7,12] 630Ma U - Pb Hf 650~615Ma Rodinia 740Ma Rodinia —

[13]

1

1.8Ga[5,7] TTG [14] 1 - a Zhu [10] 650~ 630Ma

[12]

1 - b

20~30m 2~3m 100~150m^2

35% 2%~5%

35% 10%~15% 1%~5% 1%~5% 2 - b

2

2009KR015 2009KR016 N41°49′15″ E86°12′15 N41°49′33″ E86°11′ 34″ , , (1000) 200 ,

LA - ICP - MS 2 Pb Hf [15 - 16] Hf U - Pb

3

3.1

1 a 650~615Ma
b c [10]

Fig. 1 Distribution of Precambrian strata in Tarim Basin (a), 650~615Ma basic dykes and granitic intrusive rocks with sampling sites (b) and composite columnar section of Neoproterozoic strata in Quruqtagh area c

Hb— Pl— Mc— Or— Q— Mt—

1 U−Th−Pb

Table 1 U−Th−Pb isotopic data of zircons form Neoproterozoic K−feldspar granite and granodiorite in Quruqtagh area

	Th /10^{-6}	U /10^{-6}	Th/U	^{206}Pb/^{238}U	/%	^{207}Pb/^{235}U	/%	^{206}Pb/^{238}U /Ma	1σ	^{207}Pb/^{235}U /Ma	1σ	^{207}Pb/^{206}Pb /Ma	1σ
2009KR015													
1	413	427	0.97	0.1031	0.44	0.8624	1.08	632	3	631	7	628	22
2	331	418	0.79	0.1016	0.43	0.8450	1.56	624	3	622	10	615	34
3	127	219	0.58	0.1028	0.48	0.8510	1.60	631	3	625	10	605	34
4	355	359	0.99	0.1030	0.63	0.8714	1.38	632	4	636	9	652	29
5	154	168	0.91	0.1029	0.70	0.8553	2.16	632	4	628	14	612	45
6	377	386	0.98	0.1030	0.72	0.8709	1.31	632	5	636	8	650	27
7	312	357	0.87	0.1026	0.76	0.8689	1.41	629	5	635	9	653	28
8	147	169	0.87	0.1025	0.82	0.8425	2.09	629	5	621	13	588	45
9	167	193	0.87	0.1024	0.85	0.8662	2.43	628	5	634	15	652	48
10	198	263	0.75	0.1023	0.89	0.8635	1.49	628	6	632	9	646	30
11	194	208	0.93	0.1028	0.66	0.8720	1.76	631	4	637	11	657	36
12	388	416	0.93	0.1025	0.54	0.8695	1.10	629	3	635	7	658	23
13	289	325	0.89	0.1021	0.74	0.8646	1.28	626	5	633	8	655	27
14	251	309	0.81	0.1024	0.76	0.8735	1.37	629	5	637	9	669	28
15	136	194	0.70	0.1033	0.57	0.8577	1.58	634	4	629	10	611	34
16	320	348	0.92	0.1035	0.54	0.8729	1.11	635	3	637	7	646	23
17	117	168	0.70	0.1032	0.56	0.8730	2.01	633	4	637	13	651	42
18	242	303	0.80	0.1038	0.59	0.8763	1.12	636	4	639	7	648	23
19	304	368	0.83	0.1028	0.62	0.8721	1.18	631	4	637	8	658	25
20	408	428	0.95	0.1030	0.49	0.8674	1.07	632	3	634	7	643	23
21	995	1404	0.71	0.1022	0.63	0.8704	0.92	627	4	636	6	667	19
22	258	256	1.01	0.1019	0.56	0.8631	2.50	626	4	632	16	654	52
23	272	304	0.90	0.1021	0.54	0.8609	2.51	627	3	631	16	644	53
2009KR016													
1	310	411	0.76	0.1020	0.65	0.8616	1.04	626	4	631	7	649	25
2	172	190	0.91	0.1032	0.65	0.8703	1.87	633	4	636	12	644	38
3	750	834	0.90	0.1028	0.74	0.8779	0.88	631	5	640	6	671	17
4	287	357	0.80	0.1030	0.60	0.8785	1.02	632	4	640	7	669	21
5	434	585	0.74	0.1038	0.56	0.8771	0.88	636	4	639	6	650	18
6	845	788	1.07	0.1030	0.60	0.8795	0.84	632	4	641	5	671	17
7	102	752	1.36	0.1033	0.60	0.8732	0.86	634	4	637	5	651	17
8	702	638	1.10	0.1028	0.69	0.8642	0.89	631	4	632	6	638	17
9	969	849	1.14	0.1031	0.52	0.8707	0.85	633	3	636	5	647	17
10	782	825	0.95	0.1030	0.48	0.8624	0.82	632	3	631	5	630	17
11	687	718	0.96	0.1027	0.45	0.8619	0.86	630	3	631	5	634	18
12	1061	1016	1.04	0.1029	0.40	0.8647	0.80	631	3	633	5	638	17
13	451	641	0.70	0.1028	0.47	0.8638	0.88	631	3	632	6	637	18
14	107	154	0.69	0.1024	0.52	0.8669	2.14	628	3	634	14	654	44
15	287	321	0.89	0.1026	0.54	0.8731	1.35	630	3	637	9	664	27
16	528	573	0.92	0.1027	0.49	0.8653	0.92	630	3	633	6	644	19
17	717	609	1.18	0.1024	0.39	0.8640	0.95	629	2	632	6	645	20
18	392	558	0.70	0.1025	0.39	0.8621	1.02	629	2	631	6	640	22
19	2273	1709	1.33	0.1026	0.40	0.8671	0.80	630	3	634	5	649	16
20	925	902	1.02	0.1025	0.39	0.8660	0.85	629	2	633	5	649	18
21	600	578	1.04	0.1028	0.46	0.8725	0.95	631	3	637	6	658	19
	4081	2256	1.81	0.1027	0.45	0.8680	0.78	630	3	634	5	650	16
		989	0.95	0.0975	0.46	0.8093	0.82	600	3	602	5	611	17
24			1.03	0.1029	0.49	0.8680	1.00	631	3	635	6	646	21

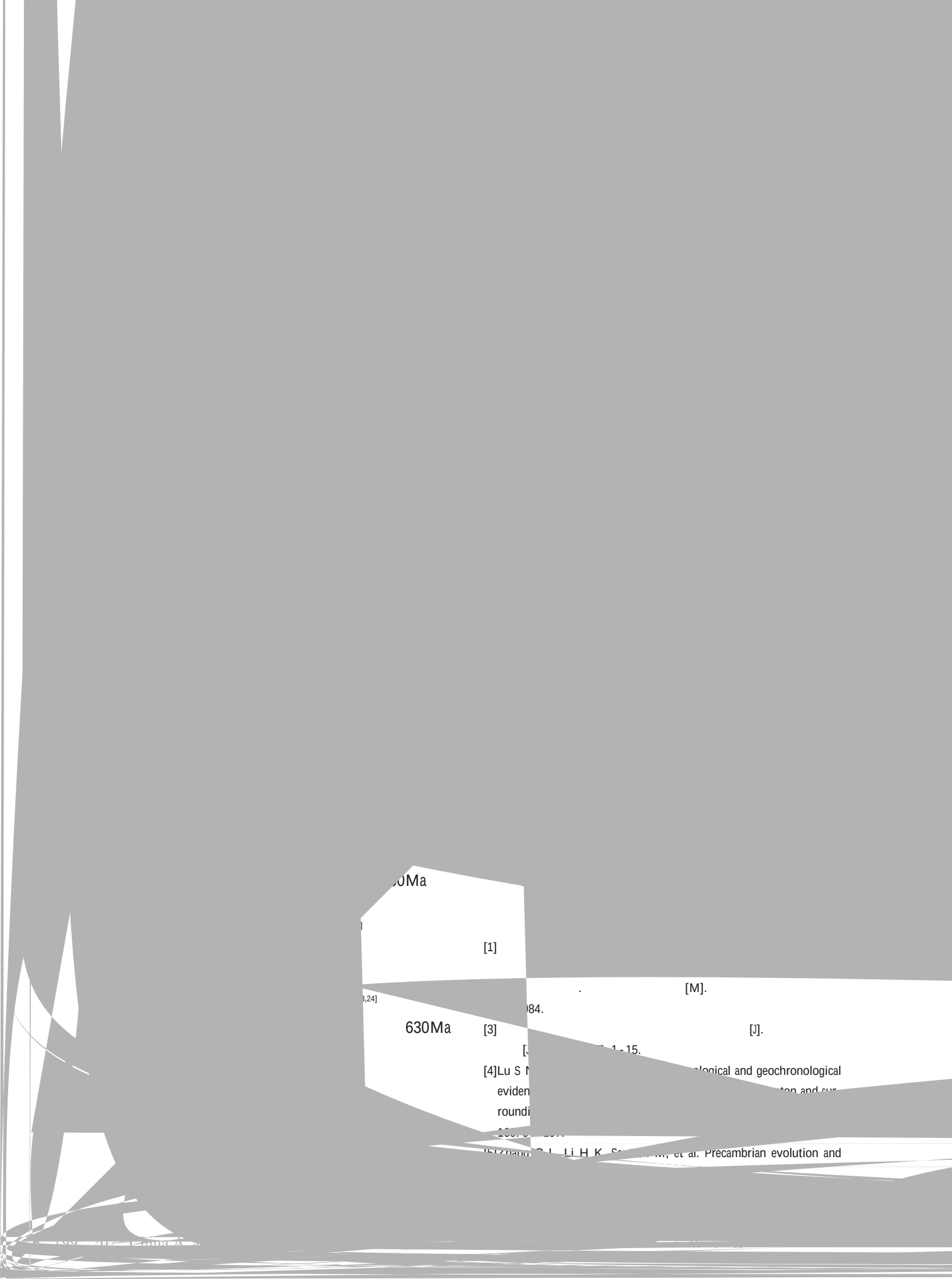
2 Hf

Table 2 Hf isotopic compositon of Neoproterozoic K−feldspar granite and granodiorite in Quruqtagh area

	$^{176}Yb/^{177}Hf$	$^{176}Lu/^{177}Hf$	$^{176}Hf/^{177}Hf$	2 σ	$^{176}Hf/^{177}Hf_i$	$\varepsilon_{Hf}(0)$	$\varepsilon_{Hf}(t)$	T_{DM}/Ma	T_{DM}^{C}/Ma	$f_{Lu/Hf}$
2009KR015										
1	0.0815	0.0020	0.282228	0.000021	0.282205	-19.2	-6.2	1484	2509	-0.94
2	0.0501	0.0015	0.282277	0.000020	0.282258	-17.5	-4.3	1398	2340	-0.95
3	0.0418	0.0014	0.282220	0.000016	0.282204	-19.5	-6.2	1470	2511	-0.96
4	0.0381	0.0012	0.282238	0.000016	0.282223	-18.9	-5.5	1440	2450	-0.96
5	0.0468	0.0014	0.282247	0.000017	0.282230	-18.6	-5.3	1436	2430	-0.96
6	0.0542	0.0020	0.282223	0.000014	0.282200	-19.4	-6.4	1490	2524	-0.94
7	0.0696	0.0021	0.282213	0.000022	0.282188	-19.8	-6.8	1511	2561	-0.94
8	0.0350	0.0011	0.282235	0.000018	0.282222	-19.0	-5.6	1439	2454	-0.97
9	0.0502	0.0014	0.282230	0.000019	0.282213	-19.2	-5.9	1460	2484	-0.96
10	0.0342	0.0010	0.282259	0.000020	0.282248	-18.1	-4.7	1402	2374	-0.97
11	0.0555	0.0017	0.282279	0.000020	0.282259	-17.4	-4.3	1400	2337	-0.95
12	0.0378	0.0011	0.282253	0.000020	0.282241	-18.3	-4.9	1413	2396	-0.97
13	0.0647	0.0018	0.282205	0.000021	0.282184	-20.0	-6.9	1509	2574	-0.95
14	0.0265	0.0008	0.282218	0.000018	0.282209	-19.6	-6.0	1450	2494	-0.98
15	0.0787	0.0022	0.282275	0.000020	0.282248	-17.6	-4.7	1427	2372	-0.93
16	0.0442	0.0010	0.282268	0.000019	0.282257	-17.8	-4.4	1389	2345	-0.97
17	0.0661	0.0015	0.282180	0.000023	0.282162	-20.9	-7.7	1533	2643	-0.95
18	0.0402	0.0011	0.282240	0.000025	0.282228	-18.8	-5.4	1430	2436	-0.97
19	0.0614	0.0016	0.282229	0.000024	0.282210	-19.2	-6.0	1468	2492	-0.95
20	0.0453	0.0012	0.282243	0.000022	0.282229	-18.7	-5.3	1431	2432	-0.96
21	0.0610	0.0012	0.282252	0.000020	0.282237	-18.4	-5.0	1421	2407	-0.96
22	0.1971	0.0049	0.282187	0.000023	0.282129	-20.7	-8.9	1674	2746	-0.85
23	0.0505	0.0013	0.282275	0.000021	0.282260	-17.6	-4.2	1389	2334	-0.96
24	0.0531	0.0013	0.282247	0.000020	0.282232	-18.6	-5.2	1429	2422	-0.96
2009KR016										
1	0.1286	0.0031	0.282279	0.000021	0.282242	-17.4	-4.9	1457	2392	-0.91
2	0.0289	0.0008	0.282270	0.000016	0.282260	-17.7	-4.2	1380	2333	-0.97
3	0.0989	0.0027	0.282263	0.000019	0.282231	-18.0	-5.3	1463	2426	-0.92
4	0.0294	0.0008	0.282263	0.000015	0.282253	-18.0	-4.5	1391	2357	-0.97
5	0.0359	0.0010	0.282286	0.000016	0.282274	-17.2	-3.7	1364	2289	-0.97
6	0.0243	0.0007	0.282310	0.000015	0.282302	-16.3	-2.8	1320	2203	-0.98
7	0.0412	0.0012	0.282312	0.000015	0.282299	-16.3	-2.9	1333	2212	-0.97
8	0.0400	0.0010	0.282267	0.000016	0.282254	-17.9	-4.4	1393	2353	-0.97
9	0.0512	0.0013	0.282280	0.000017	0.282265	-17.4	-4.1	1384	2320	-0.96
10	0.0574	0.0016	0.282274	0.000015	0.282255	-17.6	-4.4	1403	2350	-0.95
	0.0233	0.0007	0.282281	0.000016	0.282273	-17.4	-3.8	1360	2294	-0.98
	0.0391	0.0011	0.282252	0.000015	0.282239	-18.4	-5.0	1415	2401	-0.97
	0.0145	0.0004	0.282283	0.000015	0.282278	-17.3	-3.6	1348	2279	-0.99
	0.0640	0.0016	0.282310	0.000018	0.282291	-16.3	-3.1	1351	2236	-0.95
	0.0467	0.0012	0.282295	0.000016	0.282282	-16.9	-3.5	1357	2267	-0.97
	0.0947	0.0024	0.282304	0.000020	0.282276	-16.5	-3.7	1390	2284	-0.93
	0.0253	0.0007	0.282281	0.000016	0.282273	-17.4	-3.8	1360	2293	-0.98
	0.0642	0.0017	0.282277	0.000018	0.282257	-17.5	-4.3	1402	2344	-0.95
	0.0740	0.0019	0.282230	0.000019	0.282207	-19.2	-6.1	1479	2502	-0.94
	.1164	0.0032	0.282274	0.000018	0.282236	-17.6	-5.1	1467	2410	-0.90
	0286	0.0008	0.282272	0.000017	0.282263	-17.7	-4.1	1375	2325	-0.98
	0334	0.0008	0.282260	0.000018	0.282250	-18.1	-4.6	1395	2366	-0.97
	248	0.0007	0.282263	0.000016	0.282255	-18.0	-4.4	1385	2351	-0.98
	19	0.0015	0.282313	0.000017	0.282295	-16.2	-3.0	1345	2223	-0.95
25	7	0.0014	0.282308	0.000023	0.282291	-16.4	-3.1	1349	2237	-0.96
26		0.0016	0.282267	0.000017	0.282249	-17.8	-4.6	1412	2370	-0.95

735

Fig. 3 ε н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