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Precise U-Pb and Pb-Pb dating of Phanerozoic baddeleyite by SIMS with oxygen flooding technique

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Appendix Table 1 Baddeleyite Pb isotopic ratios determined by multi-collector SIMS mode

Sample spot #	$^{206}Pb^{\#}/^{204}Pb_m$	±1σ (%)	$^{207}Pb^{\#}/^{206}Pb_m$	±1σ (%)	$^{207}Pb^{\&}/^{206}Pb_c$	±1σ (%)	$t_{207/206}$ (Ma)	±1σ	^{207}Pb (cps)	U ppm
FC46										
FC46@1	1.7E+06	48	0.07609	0.14	0.07608	0.14	1097	3	2357	948
FC46@2	6.9E+05	30	0.07630	0.14	0.07628	0.15	1102	3	2120	853
FC46@3	7.7E+05	38	0.07625	0.17	0.07623	0.17	1101	3	1667	669
FC46@4	2.6E+06	56	0.07627	0.13	0.07626	0.13	1102	3	2673	1078
FC46@5	1.8E+06	38	0.07612	0.11	0.07611	0.11	1098	2	3907	1572
FC46@6	5.1E+05	38	0.07592	0.21	0.07589	0.21	1092	4	1053	425
FC46@7	4.1E+05	29	0.07609	0.18	0.07606	0.18	1097	4	1383	556
FC46@8	8.6E+05	32	0.07618	0.14	0.07616	0.14	1099	3	2332	941
FC46@9	1.3E+06	35	0.07617	0.14	0.07616	0.14	1099	3	3399	1366
FC46@10	4.0E+05	38	0.07612	0.26	0.07608	0.26	1097	5	847	340
FC46@11	4.0E+05	38	0.07630	0.18	0.07626	0.18	1102	4	1358	544
FC46@12	1.2E+06	33	0.07607	0.11	0.07606	0.11	1097	2	3660	1462
FC46@13	4.0E+05	27	0.07603	0.16	0.07599	0.16	1095	3	1651	662
FC46@14	1.2E+06	48	0.07604	0.18	0.07603	0.18	1096	4	1635	657
FC46@15	2.6E+05	27	0.07623	0.21	0.07618	0.21	1100	4	1073	424
FC46@16	3.7E+05	28	0.07618	0.18	0.07614	0.18	1099	4	1378	546
FC46@17	2.6E+05	26	0.07584	0.19	0.07579	0.20	1090	4	1170	464
FC46@18	4.9E+05	24	0.07617	0.14	0.07614	0.14	1099	3	2331	918
FC46@19	1.0E+06	38	0.07577	0.15	0.07576	0.15	1089	3	2067	821
FC46@20	3.4E+05	29	0.07639	0.20	0.07635	0.20	1104	4	1361	536
FC46@21	3.8E+05	24	0.07631	0.17	0.07627	0.17	1102	3	1610	637
FC46@22	3.5E+05	30	0.07626	0.20	0.07622	0.21	1101	4	1080	426
FC46@23	3.7E+05	29	0.07623	0.19	0.07619	0.19	1100	4	1247	494
FC46@24	1.8E+06	48	0.07610	0.14	0.07609	0.14	1097	3	2488	985
FC46@25	3.7E+05	31	0.07631	0.19	0.07627	0.19	1102	4	1236	490
08JX02-2										
08JX02-2@1	1.1E+05	32	0.06629	0.46	0.06616	0.46	811	10	210	133
08JX02-2@2	3.9E+04	35	0.06610	0.83	0.06573	0.85	798	18	65	41

08JX02-2@3	4.2E+04	33	0.06646	0.69	0.06612	0.72	810	15	92	58
08JX02-2@4	1.2E+05	42	0.06612	0.68	0.06600	0.68	807	14	96	61
08JX02-2@5	8.2E+05	49	0.06624	0.28	0.06622	0.28	813	6	671	424
08JX02-2@6	2.9E+05	35	0.06639	0.31	0.06634	0.31	817	6	473	298
08JX02-2@7	4.2E+05	48	0.06613	0.39	0.06610	0.39	810	8	341	216
08JX02-2@8	1.0E+04	12	0.06792	0.37	0.06648	0.46	822	10	319	196
08JX02-2@9	6.2E+04	35	0.06591	0.69	0.06568	0.70	796	15	101	64
08JX02-2@10	4.9E+04	24	0.06717	0.56	0.06688	0.57	834	12	175	108
08JX02-2@11	3.4E+04	35	0.06668	0.83	0.06626	0.87	815	18	64	40
08JX02-2@12	2.1E+05	35	0.06654	0.36	0.06647	0.36	821	7	349	217
08JX02-2@13	3.9E+05	38	0.06647	0.37	0.06643	0.37	820	8	319	199
08JX02-2@14	1.4E+05	33	0.06668	0.38	0.06658	0.38	825	8	304	190
08JX02-2@15	2.4E+04	14	0.06724	0.38	0.06664	0.40	826	8	308	190
08JX02-2@16	2.0E+05	35	0.06573	0.55	0.06566	0.55	796	12	163	103
08JX02-2@17	8.0E+04	27	0.06664	0.45	0.06646	0.46	821	10	217	136
08JX02-2@18	8.0E+04	33	0.06606	0.50	0.06588	0.51	802	11	174	110
08JX02-2@19	6.5E+04	29	0.06673	0.51	0.06651	0.53	822	11	166	104
08JX02-2@20	1.8E+05	33	0.06595	0.55	0.06587	0.56	802	12	144	91
08JX02-2@21	4.2E+05	42	0.06623	0.31	0.06620	0.31	813	6	464	294
08JX02-2@22	4.5E+04	32	0.06600	0.71	0.06568	0.73	796	15	87	56
08JX02-2@23	1.0E+05	28	0.06619	0.30	0.06605	0.31	808	8	276	245
08JX02-2@24	2.8E+05	43	0.06633	0.36	0.06628	0.36	815	9	230	201
08JX02-2@25	2.3E+05	41	0.06623	0.36	0.06617	0.36	812	10	190	169
Kovdor										
KOVDOR@1	3.1E+04	35	0.05518	0.94	0.05471	1.00	400	22	48	81
KOVDOR@2	7.8E+04	48	0.05442	0.93	0.05423	0.95	381	21	50	85
KOVDOR@3	2.3E+05	48	0.05428	0.56	0.05421	0.56	380	13	151	256
KOVDOR@4	6.9E+04	48	0.05443	0.99	0.05422	1.01	380	23	45	75
KOVDOR@5	3.9E+04	48	0.05575	1.30	0.05537	1.35	427	30	26	43
KOVDOR@6	4.1E+04	48	0.05422	1.31	0.05387	1.35	366	30	26	44
KOVDOR@7	4.9E+04	32	0.05463	0.75	0.05433	0.77	385	17	78	133
KOVDOR@8	6.5E+04	29	0.05419	0.57	0.05397	0.59	370	13	131	226
KOVDOR@9	1.3E+04	31	0.05491	1.29	0.05375	1.49	361	33	26	44
KOVDOR@10	2.2E+04	26	0.05499	0.90	0.05433	0.96	385	22	54	91
KOVDOR@11	2.5E+04	35	0.05515	1.05	0.05457	1.13	395	25	40	67
KOVDOR@12	1.2E+04	24	0.05443	1.12	0.05321	1.27	338	29	35	59
KOVDOR@13	2.2E+04	32	0.05407	1.11	0.05341	1.19	346	27	36	62
KOVDOR@14	2.0E+04	30	0.05534	1.05	0.05462	1.13	397	25	39	67
KOVDOR@15	5.5E+04	18	0.05425	0.35	0.05399	0.36	371	8	360	622
KOVDOR@16	3.1E+04	35	0.05424	0.96	0.05377	1.02	361	23	47	82
KOVDOR@17	1.5E+04	32	0.05513	1.29	0.05412	1.45	376	32	26	44
KOVDOR@18	4.7E+04	35	0.05466	0.77	0.05434	0.80	385	18	73	125
KOVDOR@19	1.2E+05	32	0.05500	0.47	0.05489	0.47	408	11	201	341

KOVDOR@20	1.3E+04	30	0.05637	1.36	0.05527	1.51	423	34	25	42
LGXL-01										
LGXL01@1	8.3E+05	36	0.04988	0.19	0.04986	0.19	189	4	747	2549
LGXL01@2	1.0E+07	100	0.05003	0.19	0.05003	0.19	196	4	714	2436
LGXL01@3	1.0E+07	100	0.05011	0.32	0.05011	0.32	200	7	242	826
LGXL01@4	1.7E+06	36	0.05002	0.13	0.05001	0.13	195	3	1479	5085
LGXL01@5	3.4E+05	57	0.04974	0.42	0.04970	0.42	181	10	138	479
LGXL01@6	1.0E+07	100	0.05013	0.34	0.05013	0.34	201	8	210	727
LGXL01@7	1.1E+04	9	0.05146	0.38	0.05012	0.46	201	11	166	561
LGXL01@8	1.8E+04	10	0.05096	0.38	0.05014	0.42	201	10	196	682
LGXL01@9	5.7E+05	36	0.05022	0.22	0.05019	0.22	204	5	530	1890
LGXL01@10	3.3E+05	49	0.05005	0.37	0.05001	0.37	196	9	182	657
LGXL01@11	6.4E+04	26	0.05010	0.48	0.04987	0.49	189	11	107	389
LGXL01@12	8.6E+04	29	0.05019	0.47	0.05002	0.48	196	11	110	405
LGXL01@13	9.4E+04	26	0.05009	0.40	0.04993	0.41	192	9	155	579
LGXL01@14	7.9E+04	26	0.05015	0.45	0.04996	0.46	193	11	122	462
LGXL01@15	8.2E+04	26	0.05014	0.40	0.04996	0.41	193	10	152	583
LGXL01@16	1.0E+07	100	0.04964	0.35	0.04964	0.35	178	8	220	862
LGXL01@17	3.4E+05	19	0.05008	0.18	0.05004	0.18	197	4	878	3443
LGXL01@18	8.9E+04	25	0.05011	0.41	0.04994	0.42	192	10	147	581
LGXL01@19	1.0E+07	100	0.05030	0.46	0.05030	0.46	209	10	118	470
LGXL01@20	1.0E+07	100	0.05006	0.46	0.05006	0.46	198	11	117	482
LGXL01@21	1.0E+07	100	0.05004	0.45	0.05004	0.45	197	10	122	507
LGXL01@22	1.4E+05	26	0.05012	0.34	0.05002	0.34	196	8	215	896
LGXL01@23	6.4E+04	17	0.05019	0.35	0.04996	0.37	193	8	195	819
LGXL01@24	7.5E+04	26	0.05048	0.43	0.05028	0.44	208	10	133	579
LGXL01@25	3.2E+04	18	0.05060	0.47	0.05014	0.51	202	12	113	508

$^{204}Pb/^{206}Pb_m$ and $^{207}Pb/^{206}Pb_m$ are the measured values.

& $^{207}Pb/^{206}Pb_c$ is the calculated value after common-lead correction

Table 2 Baddeleyite U-Th-Pb data by mono-collector mode

Sample spot #	U (ppm)	Th (ppm)	Th/U	f_{206}[&] (%)	$^{207}Pb/^{206}Pb$	±1σ (%)	$^{207}Pb/^{235}U$	±1σ (%)	$^{206}Pb/^{238}U$	±1σ (%)	$t_{207/206}$ (Ma)	±1σ	$t_{207/235}$ (Ma)	±1σ	$t_{206/238}$ (Ma)	±1σ
Session 1																
FC4b																
FC4b@1	796	9	0.011	0.00	0.07640	0.5	2.096	2.3	0.1989	2.3	1105	10	1147	16	1170	24
FC4b@2	750	11	0.014	0.01	0.07601	0.5	1.871	2.3	0.1785	2.3	1095	10	1071	15	1059	22
FC4b@3	1098	11	0.010	0.00	0.07611	0.4	1.982	2.3	0.1888	2.3	1098	8	1109	16	1115	23
FC4b@4	457	4	0.008	0.00	0.07571	0.6	2.023	2.3	0.1938	2.3	1088	11	1123	16	1142	24
FC4b@5	425	3	0.007	0.00	0.07578	0.6	2.035	2.3	0.1948	2.3	1089	12	1127	16	1147	24
FC4b@6	390	4	0.011	0.00	0.07573	0.7	2.041	2.4	0.1955	2.3	1088	14	1129	16	1151	24
FC4b@7	1545	10	0.007	0.00	0.07641	0.3	1.995	2.3	0.1893	2.3	1106	7	1114	16	1118	23
FC4b@8	880	10	0.011	0.00	0.07648	0.4	2.032	2.3	0.1927	2.3	1108	9	1126	16	1136	24
FC4b@9	476	4	0.009	0.00	0.07649	0.6	2.085	2.3	0.1977	2.3	1108	11	1144	16	1163	24
FC4b@10	888	8	0.009	0.01	0.07630	0.5	1.973	2.3	0.1876	2.3	1103	9	1106	16	1108	23
FC4b@11	861	7	0.009	0.00	0.07582	0.4	1.949	2.3	0.1864	2.3	1090	9	1098	16	1102	23
FC4b@12	756	6	0.008	0.01	0.07649	0.7	1.898	2.4	0.1800	2.3	1108	14	1080	16	1067	22
08JX02-2																
08JX02-2@1	141	5	0.039	0.54	0.06646	2.0	1.279	3.1	0.1396	2.4	821	41	836	18	842	19
08JX02-2@2	69	2	0.024	0.00	0.06678	1.9	1.256	3.0	0.1364	2.3	831	40	826	17	824	18
08JX02-2@3	682	17	0.025	0.00	0.06731	0.8	1.326	2.4	0.1429	2.3	847	16	857	14	861	18
08JX02-2@4	78	2	0.028	0.00	0.06672	1.9	1.208	3.0	0.1313	2.3	829	39	804	17	795	17
08JX02-2@5	42	1	0.032	0.06	0.06668	2.3	1.165	3.2	0.1267	2.3	828	48	784	18	769	16
08JX02-2@6	86	2	0.019	0.15	0.06757	2.1	1.202	3.1	0.1290	2.3	855	42	802	17	782	17
08JX02-2@7	60	2	0.028	0.16	0.06639	2.2	1.193	3.2	0.1303	2.3	819	45	797	18	790	17
08JX02-2@8	301	7	0.024	0.07	0.06647	0.9	1.213	2.4	0.1323	2.3	821	19	807	14	801	17
08JX02-2@9	286	6	0.022	0.01	0.06682	0.9	1.202	2.4	0.1304	2.3	832	18	801	14	790	17
08JX02-2@10	190	5	0.029	0.18	0.06451	1.5	1.164	2.7	0.1309	2.3	758	32	784	15	793	17
08JX02-2@11	164	4	0.025	0.19	0.06438	1.5	1.180	2.7	0.1329	2.3	754	32	791	15	804	17

08JX02-2@12	267	6	0.023	0.04	0.06557	1.1	1.160	2.5	0.1283	2.3	793	22	782	14	778	17
08JX02-2@13	186	3	0.018	0.02	0.06746	1.1	1.186	2.5	0.1275	2.3	852	23	794	14	774	17
08JX02-2@14	311	7	0.023	0.21	0.06655	1.2	1.176	2.6	0.1281	2.3	824	25	789	14	777	17
08JX02-2@15	225	7	0.032	0.08	0.06619	1.3	1.229	2.6	0.1347	2.3	812	27	814	15	815	17
08JX02-2@16	113	3	0.023	0.00	0.06490	1.6	1.182	2.8	0.1321	2.3	771	33	792	15	800	17
08JX02-2@17	1639	65	0.040	0.18	0.06646	0.6	1.3801	2.3	0.1506	2.3	821	13	880	14	904	19
KOVDOR																
KOVDOR@1	204	12	0.057	0.00	0.05328	1.8	0.4783	2.9	0.06511	2.3	341	41	396.9	9.6	406.7	8.9
KOVDOR@2	38	1	0.036	0.00	0.05449	4.4	0.4510	5.0	0.06003	2.3	391	96	378.0	16	375.8	8.3
KOVDOR@3	31	1	0.035	0.38	0.05598	4.9	0.4753	5.4	0.06159	2.3	452	105	394.9	18	385.3	8.6
KOVDOR@4	188	8	0.043	0.11	0.05396	2.1	0.4606	3.1	0.06191	2.3	369	47	384.7	10	387.2	8.5
KOVDOR@5	26	1	0.034	0.00	0.05431	8.9	0.4576	9.1	0.06111	2.3	384	187	382.6	30	382.4	8.6
KOVDOR@6	194	11	0.055	0.14	0.05620	2.2	0.4729	3.2	0.06102	2.3	460	49	393.2	10	381.8	8.4
KOVDOR@7	125	7	0.056	0.23	0.05341	3.1	0.4611	3.9	0.06262	2.3	346	69	385.1	12	391.6	8.7
KOVDOR@8	202	12	0.057	0.00	0.05479	2.0	0.4651	3.0	0.06157	2.3	404	44	387.8	9.8	385.1	8.5
KOVDOR@9	37	1	0.030	0.00	0.05235	5.0	0.4287	5.5	0.05939	2.3	301	109	362.3	17	371.9	8.2
KOVDOR@10	39	1	0.031	0.00	0.05584	4.6	0.4659	5.1	0.06051	2.3	446	98	388.3	17	378.8	8.3
KOVDOR@11	22	1	0.023	0.64	0.05824	6.5	0.4582	6.8	0.05706	2.3	539	135	383.0	22	357.7	7.9
KOVDOR@12	161	6	0.036	0.15	0.05559	3.3	0.4580	4.0	0.05976	2.3	436	72	382.9	13	374.2	8.2
KOVDOR@13	27	1	0.023	0.00	0.05332	6.7	0.4522	7.1	0.06151	2.3	342	145	378.8	23	384.8	8.5
KOVDOR@14	326	10	0.030	0.00	0.05454	1.9	0.4436	3.0	0.05899	2.3	393	43	372.8	9.3	369.5	8.1
Session 2																
SK10-2																
SK10-2@1	452	8	0.018	0.00	0.05030	3.3	0.03483	4.9	0.005021	3.6	-	-	34.8	1.7	32.3	1.2
SK10-2@2	578	11	0.019	0.33	0.04299	4.8	0.03152	6.0	0.005318	3.6	-	-	31.5	1.9	34.2	1.2
SK10-2@3	227	11	0.047	0.34	0.05309	5.9	0.03676	7.0	0.005021	3.6	-	-	36.7	2.5	32.3	1.2
SK10-2@4	966	27	0.028	0.07	0.04636	2.9	0.03320	4.6	0.005195	3.6	-	-	33.2	1.5	33.4	1.2
SK10-2@5	268	6	0.021	0.25	0.04867	5.1	0.03457	6.3	0.005152	3.6	-	-	34.5	2.1	33.1	1.2
SK10-2@6	935	44	0.047	0.00	0.04573	2.8	0.03396	4.5	0.005386	3.6	-	-	33.9	1.5	34.6	1.2

SK10-2@7	117	3	0.022	0.59	0.04551	10	0.03219	11	0.005129	3.9	-	-	32.2	3.4	33.0	1.3
SK10-2@8	1094	77	0.071	0.07	0.04737	2.4	0.03583	4.3	0.005486	3.6	-	-	35.7	1.5	35.3	1.3
SK10-2@9	128	2	0.014	1.54	0.04791	28	0.03347	29	0.005067	3.8	-	-	33.4	9.5	32.6	1.2
SK10-2@10	267	4	0.014	0.71	0.04700	7.1	0.03162	8.0	0.004879	3.6	-	-	31.6	2.5	31.4	1.1
SK10-2@11	142	2	0.016	0.82	0.04262	12	0.02997	12	0.005099	3.8	-	-	30.0	3.6	32.8	1.2
SK10-2@12	25	3	0.109	0.92	0.05321	21	0.03706	22	0.005051	4.4	-	-	36.9	7.9	32.5	1.4
SK10-2@13	126	2	0.019	0.92	0.03993	13	0.02755	13	0.005003	3.7	-	-	27.6	3.6	32.2	1.2
SK10-2@14	495	19	0.038	0.00	0.04934	3.2	0.03638	4.9	0.005347	3.7	-	-	36.3	1.8	34.4	1.3
SK10-2@15	209	4	0.018	0.29	0.04530	9.2	0.03273	9.9	0.005240	3.8	-	-	32.7	3.2	33.7	1.3
SK10-2@16	376	5	0.014	0.20	0.04847	4.4	0.03316	5.8	0.004962	3.7	-	-	33.1	1.9	31.9	1.2
SK10-2@17	126	2	0.017	0.53	0.04461	12	0.03123	12	0.005078	3.7	-	-	31.2	3.8	32.7	1.2
SK10-2@18	285	5	0.018	0.00	0.04918	4.3	0.03464	5.7	0.005109	3.7	-	-	34.6	1.9	32.8	1.2
SK10-2@19	3724	302	0.081	0.02	0.04723	1.3	0.03945	3.8	0.006058	3.6	-	-	39.3	1.5	38.9	1.4
SK10-2@20	158	3	0.021	0.50	0.04208	10	0.02834	11	0.004884	3.8	-	-	28.4	3.1	31.4	1.2
SK10-2@21	209	4	0.017	0.00	0.04189	5.1	0.02859	6.3	0.004951	3.7	-	-	28.6	1.8	31.8	1.2
SK10-2@22	163	7	0.044	0.00	0.04769	5.1	0.03495	6.3	0.005315	3.7	-	-	34.9	2.2	34.2	1.3
SK10-2@23	534	18	0.033	0.15	0.04606	4.2	0.03394	5.6	0.005344	3.6	-	-	33.9	1.9	34.4	1.2
SK10-2@24	421	7	0.016	0.00	0.04648	3.7	0.03322	5.2	0.005184	3.6	-	-	33.2	1.7	33.3	1.2
SK10-2@25	161	3	0.018	0.00	0.04696	6.3	0.03200	7.3	0.004943	3.6	-	-	32.0	2.3	31.8	1.2
SK10-2@26	254	6	0.022	0.63	0.04342	8.3	0.02909	9.1	0.004859	3.7	-	-	29.1	2.6	31.2	1.1
Session 3																
LGXL-01																
LGXL01@1	2911	201	0.069	0.00	0.05123	0.9	0.2625	3.2	0.03716	3.1	251	20	236.6	6.9	235.2	7.2
LGXL01@2	546	8	0.015	0.06	0.04950	1.6	0.2261	3.5	0.03313	3.1	171	38	207.0	6.6	210.1	6.5
LGXL01@3	489	4	0.008	0.00	0.04928	2.0	0.2177	3.7	0.03204	3.1	161	46	200.0	6.7	203.3	6.3
LGXL01@4	2597	296	0.114	0.02	0.04928	0.8	0.2610	3.2	0.03841	3.1	161	17	235.4	6.8	243.0	7.5
LGXL01@5	676	9	0.013	0.00	0.05104	1.4	0.2230	3.4	0.03169	3.1	243	32	204.4	6.4	201.1	6.2
LGXL01@6	217	2	0.007	0.00	0.05046	2.5	0.2127	4.0	0.03057	3.1	216	57	195.8	7.1	194.1	6.0
LGXL01@7	2429	23	0.009	0.00	0.04997	0.9	0.2274	3.2	0.03300	3.1	194	20	208.0	6.1	209.3	6.4
LGXL01@8	392	5	0.012	0.00	0.04987	2.0	0.2139	3.7	0.03111	3.1	189	46	196.8	6.7	197.5	6.1

LGXL01@9	1195	77	0.065	0.00	0.04978	1.2	0.2570	3.3	0.03744	3.1	185	27	232.2	7.0	236.9	7.3
LGXL01@10	292	3	0.009	0.00	0.05033	2.1	0.2024	3.7	0.02917	3.1	210	47	187.2	6.4	185.4	5.7
LGXL01@11	1350	20	0.014	0.01	0.04932	1.2	0.2340	3.4	0.03440	3.1	163	29	213.5	6.5	218.0	6.7
LGXL01@12	412	4	0.010	0.00	0.05146	1.8	0.2182	3.6	0.03074	3.1	262	40	200.4	6.6	195.2	6.0
LGXL01@13	283	3	0.010	0.00	0.04950	2.4	0.2273	3.9	0.03330	3.1	172	54	207.9	7.4	211.2	6.5
LGXL01@14	268	3	0.011	0.00	0.04943	2.2	0.2030	3.8	0.02978	3.2	168	50	187.6	6.6	189.2	5.9
LGXL01@15	671	4	0.006	0.03	0.04910	1.8	0.2133	3.6	0.03151	3.1	152	41	196.3	6.4	200.0	6.2
LGXL01@16	264	2	0.009	0.00	0.04948	2.6	0.1979	4.1	0.02901	3.2	171	60	183.4	6.9	184.4	5.7
LGXL01@17	452	4	0.008	0.00	0.04829	2.3	0.2038	3.9	0.03061	3.1	113	53	188.3	6.7	194.3	6.0
LGXL01@18	198	2	0.011	0.00	0.04946	2.6	0.2012	4.1	0.02950	3.2	170	59	186.1	7.0	187.4	5.9

[&] f_{206} is the percentage of common ^{206}Pb in total ^{206}Pb.

Table 3 Zircon U-Pb data of LGXL-01 by mono-collector mode

Sample spot #	U (ppm)	Th (ppm)	Th/U	f_{206}[&] (%)	$^{207}Pb/^{206}Pb$	±1σ (%)	$^{207}Pb/^{235}U$	±1σ (%)	$^{206}Pb/^{238}U$	±1σ (%)	$t_{207/206}$ (Ma)	±1σ	$t_{207/235}$ (Ma)	±1σ	$t_{206/238}$ (Ma)	±1σ
LGXL-01@1	160	138	0.86	0.00	0.05022	2.7	0.2126	3.1	0.03069	1.5	206	61	195.7	5.5	194.9	2.9
LGXL-01@2	160	322	2.01	0.00	0.04827	2.4	0.2058	2.9	0.03091	1.5	113	57	190.0	5.0	196.2	2.9
LGXL-01@3	301	540	1.79	0.09	0.04887	1.8	0.2029	2.5	0.03011	1.5	141	46	187.6	4.3	191.2	2.9
LGXL-01@4	403	388	0.96	0.11	0.05046	1.5	0.2118	2.3	0.03045	1.6	216	39	195.1	4.2	193.4	3.1
LGXL-01@5	276	250	0.90	0.07	0.04983	2.4	0.2091	2.9	0.03043	1.6	187	57	192.8	5.2	193.3	3.0
LGXL-01@6	94	135	1.43	0.20	0.05161	3.1	0.2131	4.1	0.02995	1.5	268	86	196.2	7.4	190.3	2.9
LGXL-01@7	184	209	1.14	0.24	0.04832	3.5	0.2036	4.3	0.03057	1.5	114	93	188.2	7.5	194.1	2.9
LGXL-01@8	70	56	0.79	0.15	0.04965	3.6	0.2095	4.3	0.03061	1.6	178	91	193.1	7.6	194.3	3.0
LGXL-01@9	125	132	1.05	0.08	0.05026	2.7	0.2124	3.3	0.03065	1.5	207	66	195.6	5.9	194.6	2.9
LGXL-01@10	212	209	0.99	0.05	0.04997	2.1	0.2071	2.7	0.03007	1.6	193	51	191.1	4.8	191.0	2.9
LGXL-01@11	93	80	0.87	0.18	0.05011	4.1	0.2167	4.9	0.03138	1.5	200	104	199.2	8.9	199.1	3.0
LGXL-01@12	67	58	0.87	0.15	0.04977	3.6	0.2094	4.3	0.03051	1.6	184	91	193.0	7.7	193.7	3.1
LGXL-01@13	131	134	1.03	0.00	0.04936	2.6	0.2119	3.1	0.03112	1.6	166	60	195.1	5.4	197.6	3.1
LGXL-01@14	238	385	1.62	0.14	0.05024	1.9	0.2089	2.7	0.03016	1.5	206	52	192.6	4.8	191.6	2.9
LGXL-01@15	63	77	1.22	0.00	0.05058	3.7	0.2172	4.0	0.03114	1.5	222	83	199.6	7.2	197.7	3.0
LGXL-01@16	558	2216	3.97	0.03	0.04983	1.2	0.2153	2.0	0.03134	1.5	187	29	198.0	3.5	198.9	2.9
LGXL-01@17	106	76	0.72	0.04	0.04875	2.8	0.2093	3.3	0.03114	1.6	136	66	192.9	5.8	197.6	3.1
LGXL-01@18	131	147	1.12	0.05	0.05038	2.5	0.2183	3.0	0.03144	1.5	212	60	200.5	5.5	199.5	3.0

[&] f_{206} is the percentage of common ^{206}Pb in total ^{206}Pb.

Supplementary Material (ESI) for Journal of Analytical Atomic Spectrometry

Fig. 1 Enhancment of Pb^+ ion yield by using oxygen flooding technique

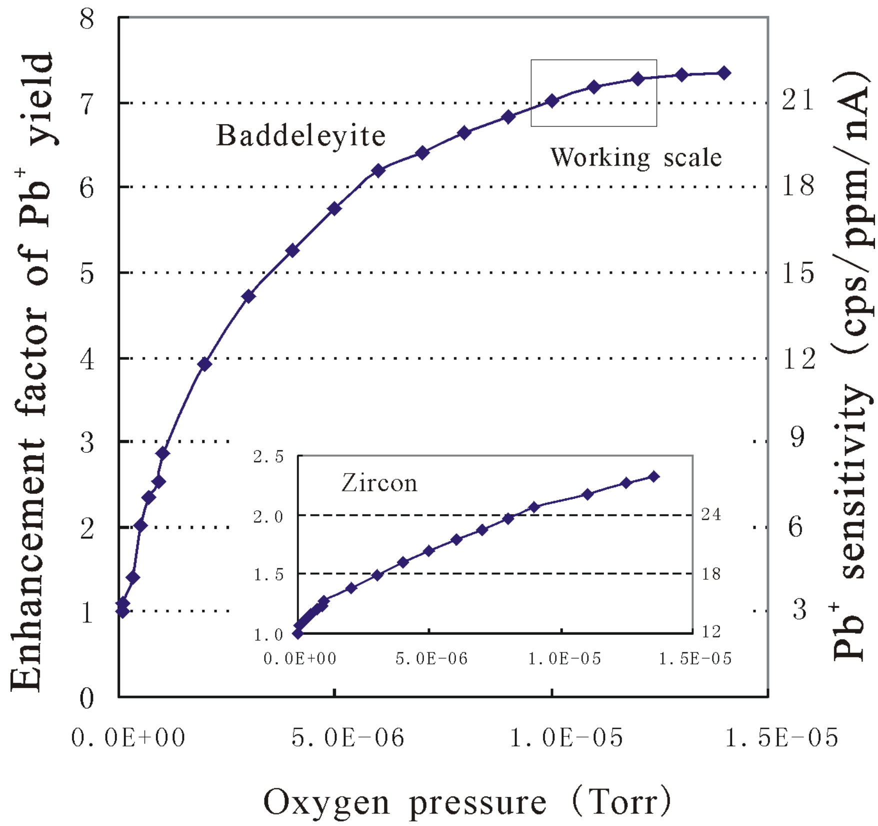

Fig. 2 (A) Pb-Pb dating results of FC 4b baddeleyite by multi-collection mode and single-collection mode; (B) U-Pb dating results of FC-4b baddeleyite. Error bars, error ellipses and weighted average ages are at 2SE level.

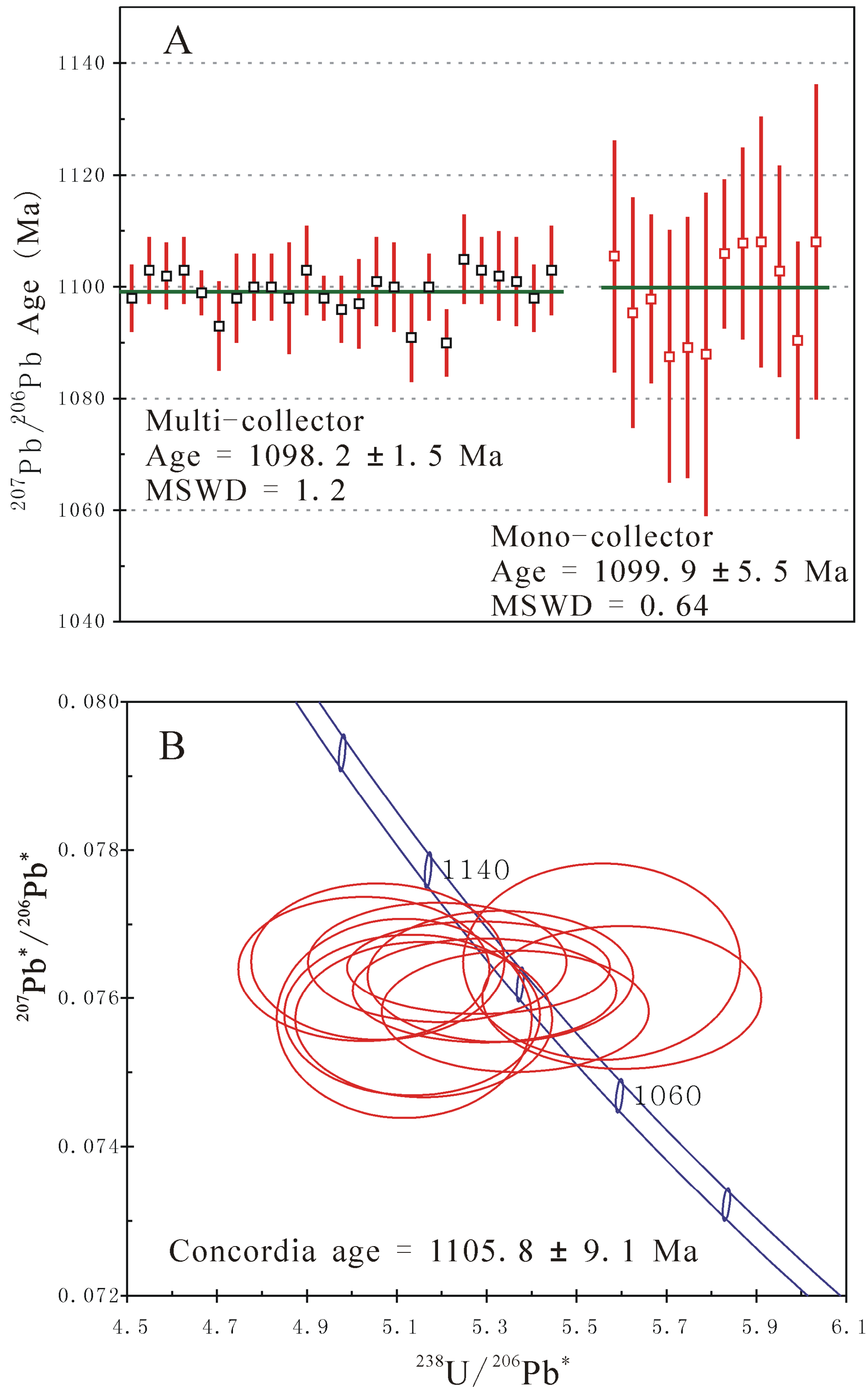

Fig. 3 (A) Pb-Pb dating results of 05JX02 baddeleyite by multi-collection mode and single-collection mode; (B) U-Pb dating results of 05JX02 baddeleyite. Error bars, error ellipses and weighted average ages are at 2SE level.

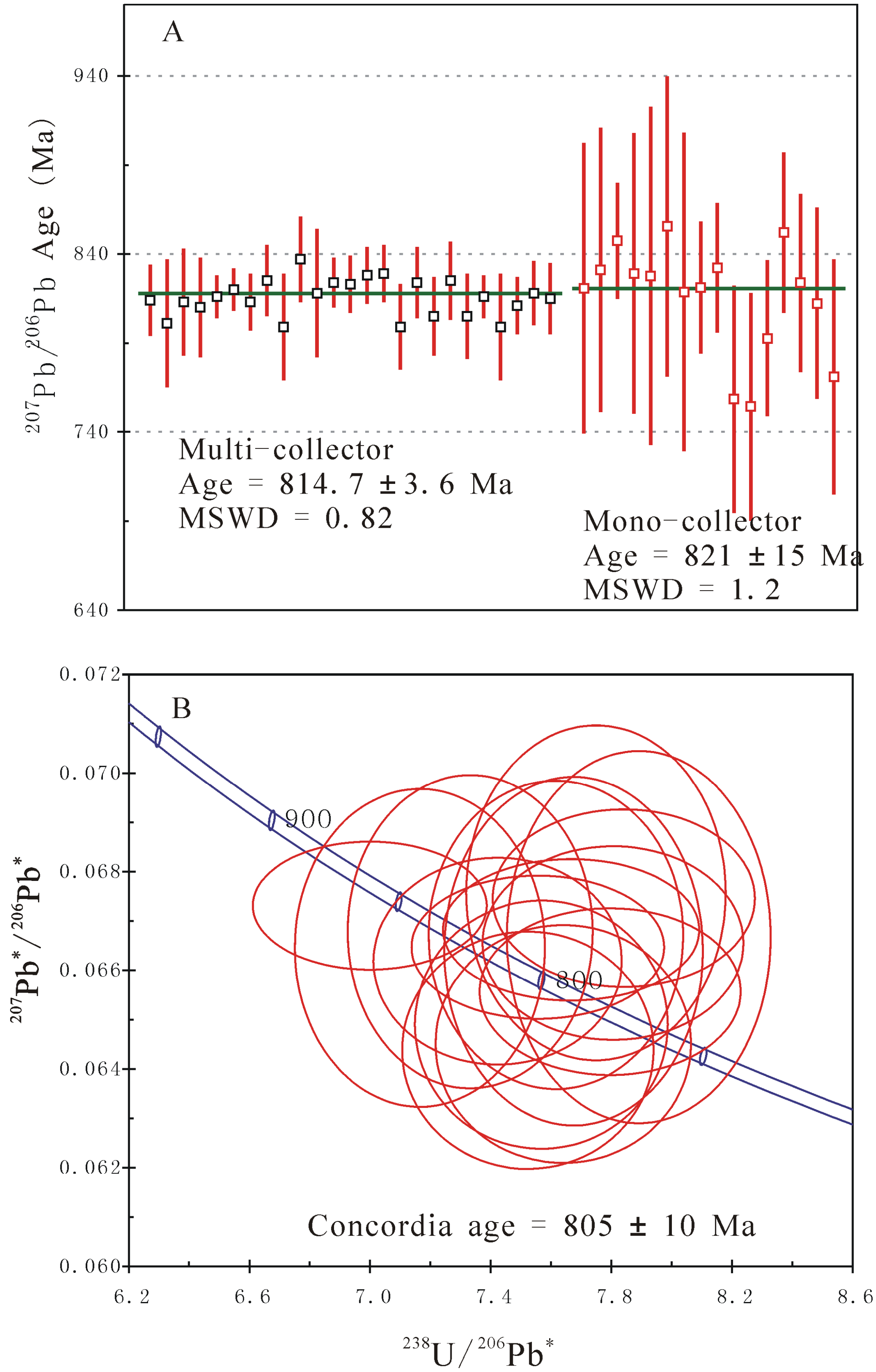

Fig. 4 (A) Pb-Pb dating results of Kovdor baddeleyite by multi-collection mode and single-collection mode; (B) U-Pb dating results of Kovdor baddeleyite. Error bars, error ellipses and weighted average ages are at 2SE level.

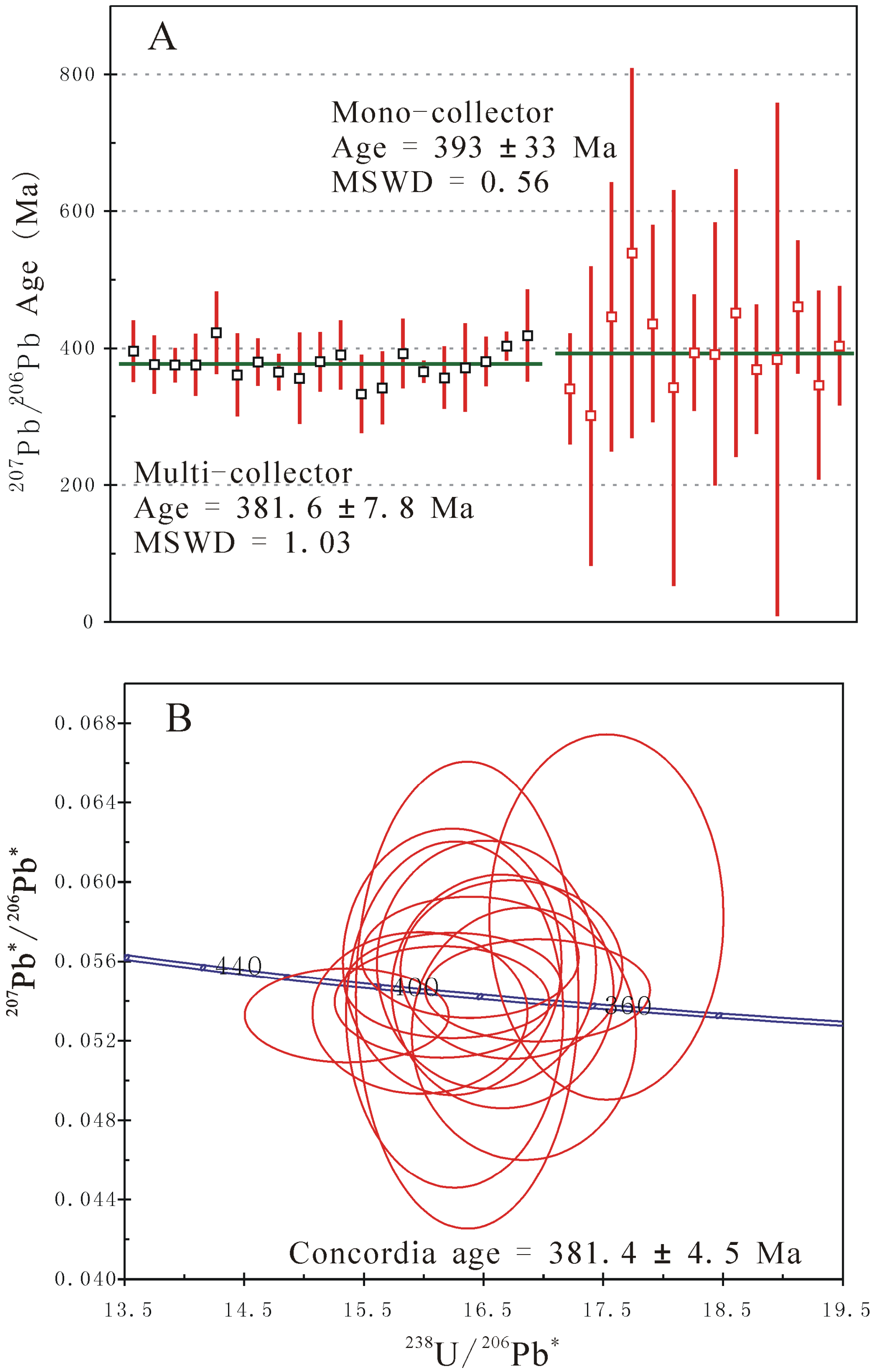

Fig. 5 U-Pb dating results of LGXL-01 zircon. Error ellipses and weighted average ages are at 2SE level.

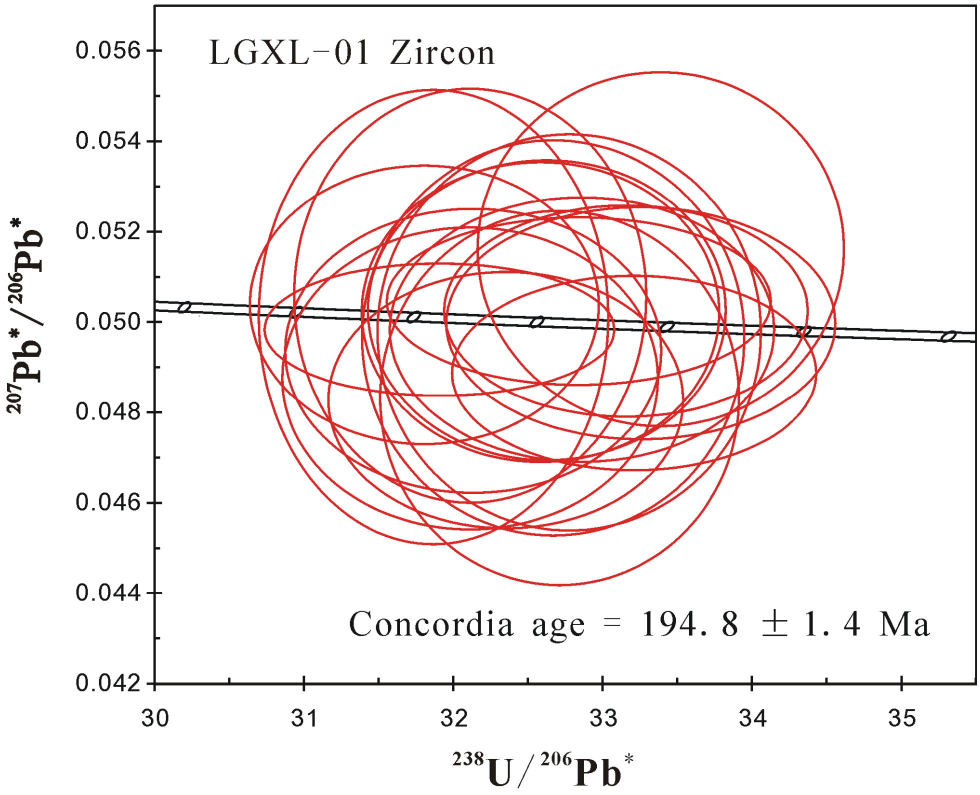

Fig. 6 U-Pb dating results of SK10-2 baddeleyite. Error ellipses and weighted average ages are at 2SE level.