Data repository #2005070. U-Th-Pb data for all SHRIMP analyses of zircon from the Maksyutov Complex.

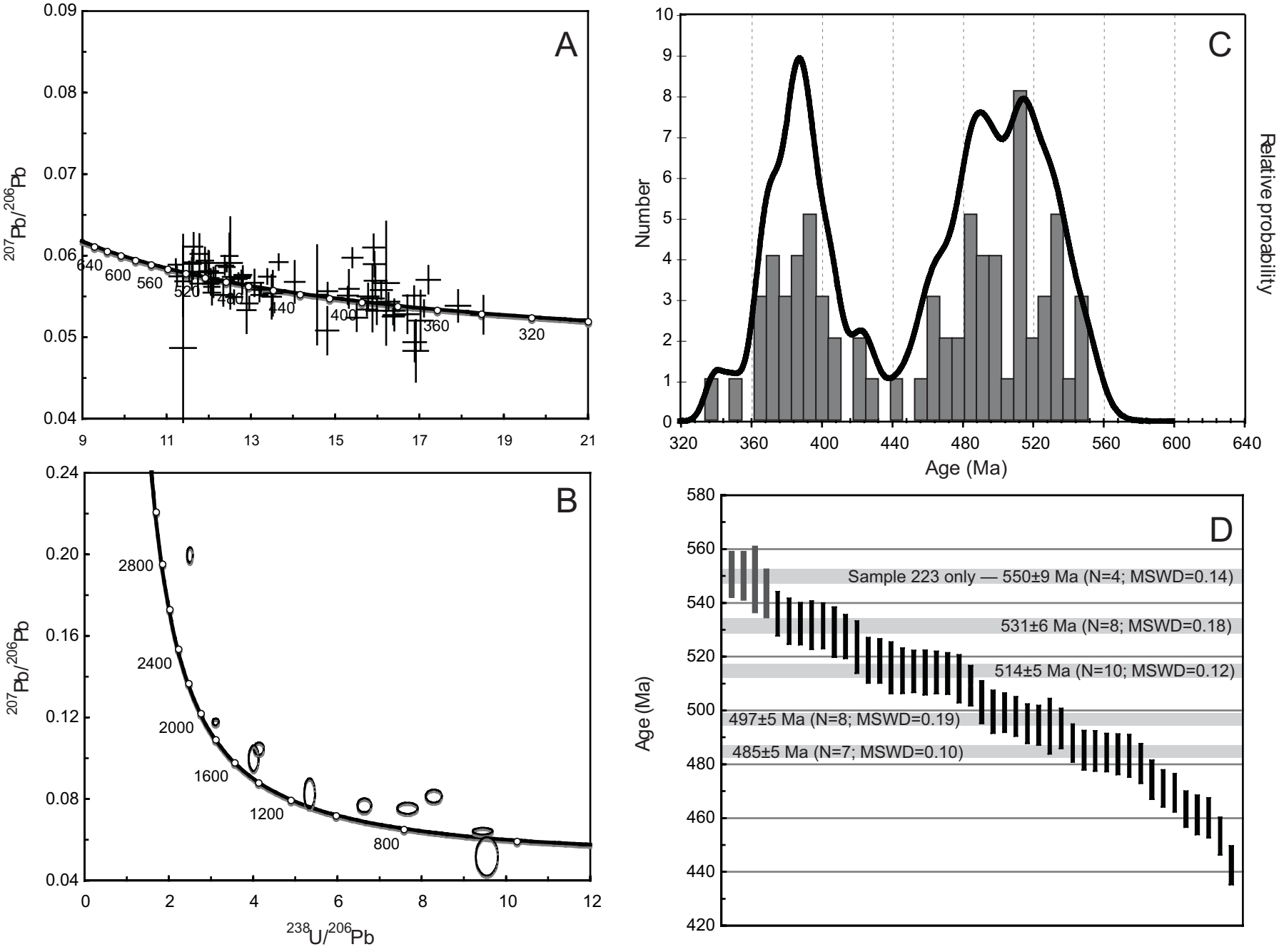
Spot	U (ppm)	Th (ppm)	Th/U	$^{204}Pb/^{206}Pb$	Common ^{206}Pb (%)	$^{238}U/^{206}Pb^*$	$^{207}Pb/^{206}Pb^*$	$^{207}Pb/^{235}U^*$	$^{206}Pb/^{238}U$ Age† (Ma)
6a-2a	359	6	0.02	0.0006	1.06	14.8111 ± 1.8015	0.0508 ± 5.7067	0.4730 ± 5.9843	423.4 ± 7.5
6a-2d	1048	22	0.02	0.0000	0.05	15.4098 ± 1.5412	0.0597 ± 1.9853	0.5345 ± 2.5133	402.9 ± 6.1
6a-2e	602	10	0.02	0.0002	0.45	15.7805 ± 1.5799	0.0550 ± 2.8305	0.4805 ± 3.2416	395.9 ± 6.1
6a-3b	748	142	0.19	0.0004	0.77	8.2875 ± 1.5184	0.0814 ± 2.5749	1.3543 ± 2.9893	718.7 ± 10.6
6a-5a2	448	15	0.03	0.0003	0.62	18.5168 ± 1.5860	0.0527 ± 4.4011	0.3927 ± 4.6782	339.3 ± 5.2
6a-5b	628	93	0.15	0.0001	0.11	14.8228 ± 1.5427	0.0557 ± 1.8233	0.5177 ± 2.3884	420.6 ± 6.4
6a-6a	273	210	0.79	0.0002	0.38	6.6388 ± 1.6288	0.0769 ± 2.9562	1.5974 ± 3.3752	896.0 ± 14.2
6a-7a	1518	721	0.49	0.0000	0.05	12.4275 ± 1.4971	0.0586 ± 0.9144	0.6503 ± 1.7543	498.0 ± 7.3
6a-7c	658	41	0.06	0.0007	1.29	10.8217 ± 1.5318	0.0677 ± 3.4553	0.8625 ± 3.7796	563.8 ± 8.4
6a-7g	902	168	0.19	0.0003	0.46	14.8710 ± 1.5449	0.0696 ± 2.5301	0.6456 ± 2.9645	412.2 ± 6.2
6a-8a	727	41	0.06	0.0005	0.86	14.2672 ± 1.5576	0.0692 ± 4.4113	0.6683 ± 4.6782	429.5 ± 6.7
6a-10b2	331	3	0.01	0.0003	0.49	17.0271 ± 1.6900	0.0520 ± 7.0197	0.4214 ± 7.2202	368.7 ± 6.0
6a-11a	820	117	0.15	0.0003	0.56	12.6703 ± 1.5376	0.0886 ± 1.9906	0.9642 ± 2.5153	470.9 ± 7.1
6a-11b1	595	42	0.07	0.0001	0.19	13.2570 ± 1.5406	0.0659 ± 1.4253	0.6851 ± 2.0988	463.4 ± 7.0
6a-11b2	491	22	0.05	0.0001	0.13	17.2089 ± 1.6250	0.0571 ± 2.9879	0.4571 ± 3.4012	362.7 ± 5.8
6a-11c	537	17	0.03	0.0003	0.62	16.8853 ± 1.5965	0.0494 ± 4.8061	0.4034 ± 5.0643	373.0 ± 5.8
6a-11d	580	6	0.01	0.0001	0.17	16.0953 ± 1.5670	0.0558 ± 2.0226	0.4780 ± 2.5586	387.9 ± 6.0
6a-12a	522	325	0.64	0.0000	0.09	10.3873 ± 1.5577	0.0621 ± 1.4558	0.8247 ± 2.1321	590.8 ± 9.0
7a-1	626	10	0.02	0.0006	1.02	16.7121 ± 1.5970	0.0528 ± 4.3969	0.4358 ± 4.6780	375.2 ± 5.8
7a-2	747	511	0.71	0.0002	0.40	12.0490 ± 1.5353	0.0565 ± 2.3410	0.6470 ± 2.7995	514.6 ± 7.7
7a-3	573	108	0.19	0.0006	1.11	23.7347 ± 1.6679	0.0566 ± 5.7708	0.3290 ± 6.0070	264.4 ± 4.3
7a-4	343	124	0.37	0.0017	3.13	14.5737 ± 1.7343	0.0552 ± 11.0285	0.5223 ± 11.1640	427.9 ± 6.9
7a-5	248	37	0.15	0.0007	1.18	16.9127 ± 1.7406	0.0483 ± 7.8634	0.3940 ± 8.0538	372.9 ± 6.2
7a-7	608	6	0.01	0.0001	0.13	16.8713 ± 1.5549	0.0551 ± 2.0709	0.4505 ± 2.5897	370.7 ± 5.7
7a-8	313	23	0.07	0.0007	1.27	15.8839 ± 1.6867	0.0547 ± 7.3464	0.4752 ± 7.5376	393.5 ± 6.4
7a-9	869	326	0.39	0.0002	0.30	12.7758 ± 1.5236	0.0572 ± 1.6116	0.6177 ± 2.2178	485.6 ± 7.2
7a-12	67	66	1.02	0.0006	1.16	12.5144 ± 2.1751	0.0591 ± 9.5083	0.6512 ± 9.7539	494.4 ± 10.2
7a-13	17	8	0.47	0.0045	8.18	13.0465 ± 3.7639	0.0193 ± 88.8898	0.2041 ± 88.9694	497.6 ± 16.3
7a-14	623	9	0.01	0.0003	0.45	15.9116 ± 1.5615	0.0610 ± 2.6488	0.5286 ± 3.0748	389.8 ± 6.0
7a-15	536	343	0.66	0.0001	0.22	11.5377 ± 1.5552	0.0580 ± 2.1490	0.6936 ± 2.6527	535.9 ± 8.1
7a-16	822	6	0.01	0.0001	0.11	17.1096 ± 1.5384	0.0535 ± 1.8584	0.4314 ± 2.4125	366.3 ± 5.5
7a-17	295	201	0.70	0.0004	0.79	13.5179 ± 1.6579	0.0554 ± 4.9681	0.5651 ± 5.2375	460.5 ± 7.4
7a-18	926	377	0.42	0.0004	0.78	12.4914 ± 1.5329	0.0599 ± 4.6290	0.6617 ± 4.8762	494.8 ± 7.4
7a-19	489	77	0.16	0.0002	0.36	15.3003 ± 1.5624	0.0551 ± 1.8996	0.4967 ± 2.4596	408.0 ± 6.3
7a-20	150	137	0.94	0.0003	0.51	12.1101 ± 1.7450	0.0567 ± 3.1843	0.6460 ± 3.6311	512.0 ± 8.8
7a-21	589	206	0.36	0.0001	0.20	13.6591 ± 1.5576	0.0592 ± 1.6105	0.5977 ± 2.2405	453.7 ± 6.9
7a-23	562	125	0.23	0.0003	0.52	13.0856 ± 1.5583	0.0567 ± 2.8663	0.5971 ± 3.2625	474.7 ± 7.2
7a-24	635	6	0.01	0.0002	0.40	15.9903 ± 1.5616	0.0532 ± 3.0327	0.4590 ± 3.4112	391.6 ± 6.0
7a-25	310	136	0.45	0.0001	0.23	11.9355 ± 1.6131	0.0580 ± 2.0851	0.6697 ± 2.6362	518.5 ± 8.2
7a-28	98	71	0.75	0.0005	0.87	11.9939 ± 1.8888	0.0581 ± 4.2778	0.6680 ± 4.6762	515.9 ± 9.6
7a-29	730	7	0.01	0.0001	0.12	16.2675 ± 1.5508	0.0544 ± 1.9365	0.4607 ± 2.4809	384.6 ± 5.9
7a-30	484	5	0.01	0.0001	0.26	15.9320 ± 1.5963	0.0590 ± 2.5606	0.5103 ± 3.0174	390.3 ± 6.1
7a-32	728	8	0.01	0.0003	0.61	16.4007 ± 1.5515	0.0527 ± 3.6373	0.4433 ± 3.9544	382.2 ± 5.8
7a-34	2176	98	0.05	0.0000	0.05	11.6237 ± 1.4827	0.0576 ± 0.7561	0.6829 ± 1.6644	532.3 ± 7.7
7a-35	338	101	0.31	0.0001	0.09	11.6187 ± 1.6043	0.0592 ± 1.9974	0.7024 ± 2.5619	531.5 ± 8.3
7a-37	285	147	0.53	0.0000	0.00	12.3810 ± 1.6195	0.0588 ± 1.9717	0.6548 ± 2.5516	499.8 ± 7.9
7a-38	794	182	0.24	0.0001	0.23	13.2393 ± 1.5520	0.0558 ± 1.3038	0.5812 ± 2.0041	469.8 ± 7.0
7a-39	493	64	0.13	0.0002	0.42	11.7463 ± 1.5627	0.0566 ± 2.4750	0.6639 ± 2.9271	527.6 ± 8.0
7a-40	603	632	1.08	0.0001	0.14	12.6029 ± 1.5440	0.0549 ± 1.5256	0.6007 ± 2.1706	493.5 ± 7.5
7a-41	1572	619	0.41	0.0001	0.23	12.1577 ± 1.4899	0.0579 ± 1.3576	0.6566 ± 2.0156	509.3 ± 7.4
7a-42	313	307	1.01	0.0002	0.39	11.6008 ± 1.6265	0.0578 ± 3.3660	0.6866 ± 3.7384	533.2 ± 8.4
7a-43	339	107	0.32	0.0002	0.36	12.3485 ± 1.6074	0.0552 ± 2.4047	0.6161 ± 2.8925	503.3 ± 7.9
7a-44	418	37	0.09	0.0002	0.38	15.9571 ± 1.6100	0.0569 ± 3.1036	0.4918 ± 3.4963	390.7 ± 6.2
7a-45	909	11	0.01	0.0001	0.11	16.4041 ± 1.5274	0.0533 ± 1.4759	0.4476 ± 2.1240	381.9 ± 5.7
7a-46	536	287	0.55	0.0001	0.13	12.0493 ± 1.5621	0.0573 ± 1.8860	0.6552 ± 2.4489	514.2 ± 7.9
7a-47	249	142	0.59	0.0001	0.16	11.9092 ± 1.6494	0.0594 ± 2.7070	0.6877 ± 3.1700	518.7 ± 8.4
7a-48	682	3	0.00	0.0001	0.11	16.3773 ± 1.5460	0.0526 ± 1.8974	0.4424 ± 2.4475	382.9 ± 5.8
7a-49	59	30	0.52	0.0024	4.37	11.3907 ± 2.7030	0.0487 ± 28.5994	0.5891 ± 28.7268	548.8 ± 11.9
7a-50	387	99	0.26	0.0000	0.05	3.1111 ± 1.5382	0.1178 ± 0.9306	5.2217 ± 1.7977	1777.7 ± 27.4
7a-50b	566	5	0.01	0.0002	0.30	15.5105 ± 1.5994	0.0524 ± 3.1843	0.4658 ± 3.5634	403.9 ± 6.3

7a-51	364	5	0.01	0.0003	0.62	17.9148 ± 1.6477	0.0538 ± 3.6225	0.4144 ± 3.9796	350.0 ± 5.7
7a-52	1082	7	0.01	0.0001	0.21	15.7554 ± 1.5404	0.0534 ± 1.4073	0.4672 ± 2.0864	397.3 ± 6.0
7a-53	209	218	1.08	0.0001	0.16	11.6158 ± 1.7146	0.0590 ± 2.8836	0.7001 ± 3.3549	531.8 ± 8.9
43a-1	892	264	0.31	0.0001	0.17	12.0729 ± 1.5297	0.0562 ± 1.4042	0.6414 ± 2.0764	513.9 ± 7.7
43a-3	4123	144	0.36	0.0004	0.76	13.4936 ± 1.6191	0.0550 ± 4.8731	0.5616 ± 5.1350	461.6 ± 7.2
43a-4	820	254	0.32	0.0001	0.19	12.9599 ± 1.5362	0.0542 ± 1.5189	0.5761 ± 2.1603	480.6 ± 7.2
43a-5	3655	1089	0.31	0.0003	0.48	12.7075 ± 1.4772	0.0572 ± 1.2477	0.6202 ± 1.9336	488.2 ± 7.0
43a-6	3066	971	0.33	0.0004	0.76	13.3877 ± 1.4813	0.0574 ± 1.5801	0.5916 ± 2.1359	463.7 ± 6.7
43a-7a	346	170	0.51	0.0014	2.51	16.2084 ± 1.8943	0.0566 ± 13.3461	0.4818 ± 13.4798	384.9 ± 6.3
43a-7b	10	42	4.33	0.0219	39.52	45.8927 ± 29.2794	—	—	193.6 ± 16.5
43a-8	3411	1067	0.32	0.0000	0.02	12.4183 ± 1.4834	0.0570 ± 0.6499	0.6326 ± 1.6195	499.4 ± 7.2
43a-10	518	171	0.34	0.0001	0.15	12.7952 ± 1.5644	0.0566 ± 2.1761	0.6094 ± 2.6801	485.3 ± 7.4
43a-8	3411	1067	0.32	0.0000	0.02	12.4183 ± 1.4834	0.0570 ± 0.6499	0.6326 ± 1.6195	499.4 ± 7.2
43a-11	252	71	0.29	0.0003	0.55	12.8971 ± 1.6890	0.0533 ± 5.2820	0.5699 ± 5.5454	483.4 ± 7.9
43a-12	3276	1059	0.33	0.0001	0.12	12.7985 ± 1.4792	0.0574 ± 0.8897	0.6188 ± 1.7261	484.6 ± 7.0
43a-13	2506	898	0.37	0.0002	0.36	13.2032 ± 1.4868	0.0552 ± 1.4385	0.5763 ± 2.0688	471.4 ± 6.9
43a-14a	1799	487	0.28	0.0001	0.23	12.5184 ± 1.4995	0.0574 ± 1.3551	0.6322 ± 2.0211	495.2 ± 7.3
43a-14b	3129	1437	0.47	0.0009	1.55	15.3264 ± 1.5076	0.0559 ± 4.1728	0.5032 ± 4.4368	406.9 ± 5.9
223-1a	282	209	0.76	0.0000	0.00	9.4463 ± 1.6185	0.0642 ± 1.7364	0.9372 ± 2.3737	646.4 ± 10.2
223-1b	218	157	0.74	0.0009	1.70	9.5456 ± 1.8154	0.0519 ± 11.9950	0.7493 ± 12.1316	649.4 ± 10.8
223-1c	322	106	0.34	0.0004	0.67	14.0411 ± 1.6694	0.0568 ± 4.5242	0.5576 ± 4.8223	443.0 ± 7.2
223-1d	439	270	0.63	0.0000	0.08	12.8107 ± 1.5747	0.0577 ± 1.8142	0.6206 ± 2.4023	484.0 ± 7.5
223-2a	46	27	0.60	0.0000	0.00	12.3251 ± 2.1345	0.0672 ± 4.1522	0.7516 ± 4.6687	496.9 ± 10.5
223-2b	215	311	1.50	0.0001	0.24	12.0729 ± 1.6310	0.0555 ± 2.6253	0.6335 ± 3.0907	514.3 ± 8.2
223-3a	99	89	0.93	0.0002	0.30	11.7819 ± 1.8638	0.0602 ± 4.0723	0.7045 ± 4.4786	523.7 ± 9.6
223-3b	466	117	0.26	0.0002	0.34	5.3386 ± 1.5793	0.0827 ± 5.8963	2.1355 ± 6.1041	1098.3 ± 18.0
223-5	402	81	0.21	0.0002	0.33	7.6632 ± 2.0685	0.0754 ± 2.4132	1.3575 ± 3.1784	781.1 ± 15.7
223-6a	99	54	0.57	0.0005	0.95	2.5005 ± 1.8135	0.1997 ± 1.2225	11.0127 ± 2.1871	1970.4 ± 36.7
223-6b	174	166	0.98	0.0001	0.17	13.1694 ± 1.7287	0.0781 ± 5.1774	0.8177 ± 5.4584	459.4 ± 8.0
223-8	162	204	1.30	0.0000	0.00	11.6427 ± 1.7793	0.0611 ± 2.7352	0.7238 ± 3.2630	529.2 ± 9.3
223-9	1153	134	0.12	0.0001	0.11	11.2161 ± 1.5021	0.0589 ± 1.1481	0.7241 ± 1.8906	550.3 ± 8.1
223-10	239	37	0.16	0.0004	0.63	12.0041 ± 1.6589	0.0591 ± 2.3376	0.6790 ± 2.8664	514.9 ± 8.4
223-12a	351	451	1.32	0.0001	0.16	11.2436 ± 1.5937	0.0575 ± 2.0399	0.7048 ± 2.5887	550.0 ± 8.6
223-12b	386	145	0.39	0.0007	1.27	11.3923 ± 1.6242	0.0569 ± 7.4818	0.6884 ± 7.6561	543.3 ± 8.7
223-15a	80	63	0.81	0.0000	0.00	4.1374 ± 1.8686	0.1048 ± 1.9003	3.4908 ± 2.6651	1367.3 ± 25.1
223-15b	82	33	0.41	0.0006	1.16	4.0126 ± 1.9067	0.1000 ± 4.1742	3.4364 ± 4.5890	1417.1 ± 25.7
223-20	38	36	0.98	0.0007	1.30	11.1734 ± 2.3499	0.0671 ± 6.5294	0.8286 ± 6.9394	546.8 ± 12.8

Note: 1σ error unless noted otherwise.
*Corrected for ^{204}Pb; error given as percentage.
†Corrected for ^{207}Pb

Sample preparation and analytical technique

A total of 98 zircon U-Pb SHRIMP analyses were completed for three quartzofeldspathic gneisses from the Kairakli unit and one mica schist from the Karamola unit (sample #223). Zircons were separated and mounted using standard sample-preparation methods for ion-microprobe analysis (Williams, 1998), and U-Pb SHRIMP analyses, data reduction using *Squid*, and plotting using *Isoplot* followed standard techniques (Williams, 1998; Ludwig, 1999, 2001). No morphologic or color differentiation was made during handpicking for the sample mount. Separated zircons include rounded, slightly irregular-shaped grains that display dark rims under cathodoluminescence (CL) imaging; some grains show zoned, sometimes euhedral, cores within thin rims. SHRIMP analyses targeted rims that appeared to be metamorphic based on CL imaging (i.e., lack of zoning, rounded grain morphology). Analysis of zircon mantles and cores was done for age comparison with metamorphic rims and to establish different growth domains within the zircons; zircons that yielded Cambrian ages have much higher Th/U ratios (~0.5-1.5) and distinctive oscillatory zoning indicating an inherited igneous component. Pb/U ratios were calibrated with reference standard R33 (419 Ma; Black et al., 2003), which was analyzed after about every fourth unknown analysis. Zircons were analyzed using the SHRIMP-RG (-reverse geometry) at the Stanford-USGS Microanalysis Center. U-Th-Pb data for each ~30 μm spot were collected in five scans.



Data repository #2005070: U-Pb SHRIMP dating of zircons from the Maksyutov Complex. A: Tera-Wasserburg concordia diagram showing summary of U-Pb data for all four samples (refer to table in Data repository #2005070). B: Tera-Wasserburg concordia diagram showing Precambrian data. C: Probability density plot and histogram showing the distribution of ages seen in concordia plot A. D: Plot showing age distribution with error bars for Cambrian through Early Carboniferous dates; age plateaux are included to describe peak periods of zircon crystallization. All plots show combined data for both the Kairakli and Karamola units because all data are contemporaneous except for the Devonian metamorphic history. Error crosses/ellipses are 2σ, data in A and B are uncorrected for common Pb, and analyses high in common Pb were excluded from all data shown here.