Supplemental Online Material

McKinney et al., REE mineralization in the MVR.

Appendix A – EPMA data collection methods

Electron probe microanalyzer (EPMA) elemental x-ray mapping was performed using a Cameca SX-100 Electron Microprobe. Monazite was mapped for the following elements (with the corresponding large-crystal wavelength spectrometer noted in parenthesis): Y Lα (LPET), Ce Lα (LLiF), Nd Lα (LPET), Th Mα (LPET) and U Mβ (LPET). Xenotime was mapped for Ce Lα (LPET), Nd Lα (LPET), Dy Lα (LLiF), Th Mα (LPET) and U Mβ (LPET). Analytical conditions included a beam current of 200 nA, accelerating voltage of 20 keV, dwell time of 40-100 msec and a spot size of 1-3 μm (with the latter two settings dependent on individual crystal size).

Appendix B – Laser Ablation Quadrupole ICPMS data collection methods

Select major, trace and rare earth elements in monazite, allanite and apatite were measured by Laser Ablation Quadrupole Inductively Coupled Plasma Mass Spectrometry. The system consists of a Photon Machines 4-ns pulse duration 193-nm wavelength ArF excimer laser attached to an Agilent 7700S quadrupole ICP-MS. The Agilent is equipped with a second Edwards E2M 18 rotary interface pump in order to increase sensitivity (the second interface increases sensitivity by about 2x for elements heavier than Mg). Analytical conditions of the laser were a spot diameter of 15 μm, laser energy of 3 mJ, firing frequency of 4 Hz, and 120 shots per analysis.

The instrument was tuned so that CeO^+ and ThO^+ were less than 0.5% and doubly-charged species (e.g. Ba^{2+}) less than 2%. Analyses were made in time resolved mode taking 60 seconds/sample (30 seconds for ablation, 15 seconds for washout and 15 seconds for a gas blank between each spot). Dwell times were 5 milliseconds for Si, P, Ca; 10 milliseconds for Y, La, Ce, Nd, Sm, Gd, Dy, Er, Yb; and 20 milliseconds for the other elements with a sweep time of 0.8 seconds. Monitored masses include: ^{29}Si, ^{31}P, ^{42}Ca, ^{43}Ca, ^{44}Ca, ^{89}Y, ^{90}Zr, ^{139}La, ^{140}Ce, ^{141}Pr, ^{146}Nd, ^{147}Sm, ^{153}Eu, ^{157}Gd, ^{159}Tb, ^{163}Dy, ^{165}Ho, ^{166}Er, ^{169}Tm, ^{172}Yb, ^{175}Lu, ^{232}Th, and ^{248}ThO. The pulse-counting/analog detection mode was allowed to switch automatically for all elements. In addition to utilizing an internal standard (P for monazite and apatite and Ca for allanite), data were normalized to matrix-matched reference materials: Bananeira monazite, Madagascar apatite and Daibosatsu allanite.

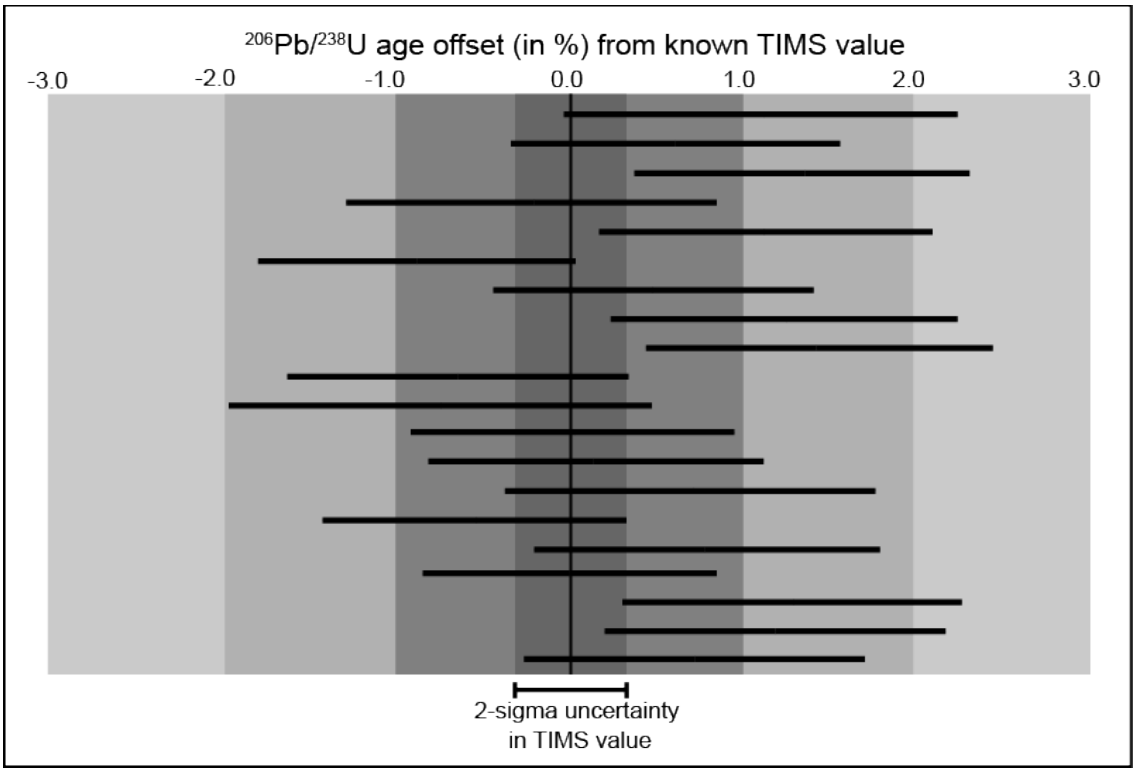

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Figure DR1: Analyses of "FC-1" xenotime normalized to "44069" monazite for 19 separate analytical sessions. Each bar is the arithmetic mean and 2 SE of at least 10 measurements in that session. The data are plotted relative to the known value of FC-1 xenotime (determined by ID-TIMS analysis). The plot demonstrates that the data are accurate to within 1-2% (mean difference across all sessions is 0.8%) justifying the use of a primary RM monazite to normalize the xenotime data in this study.

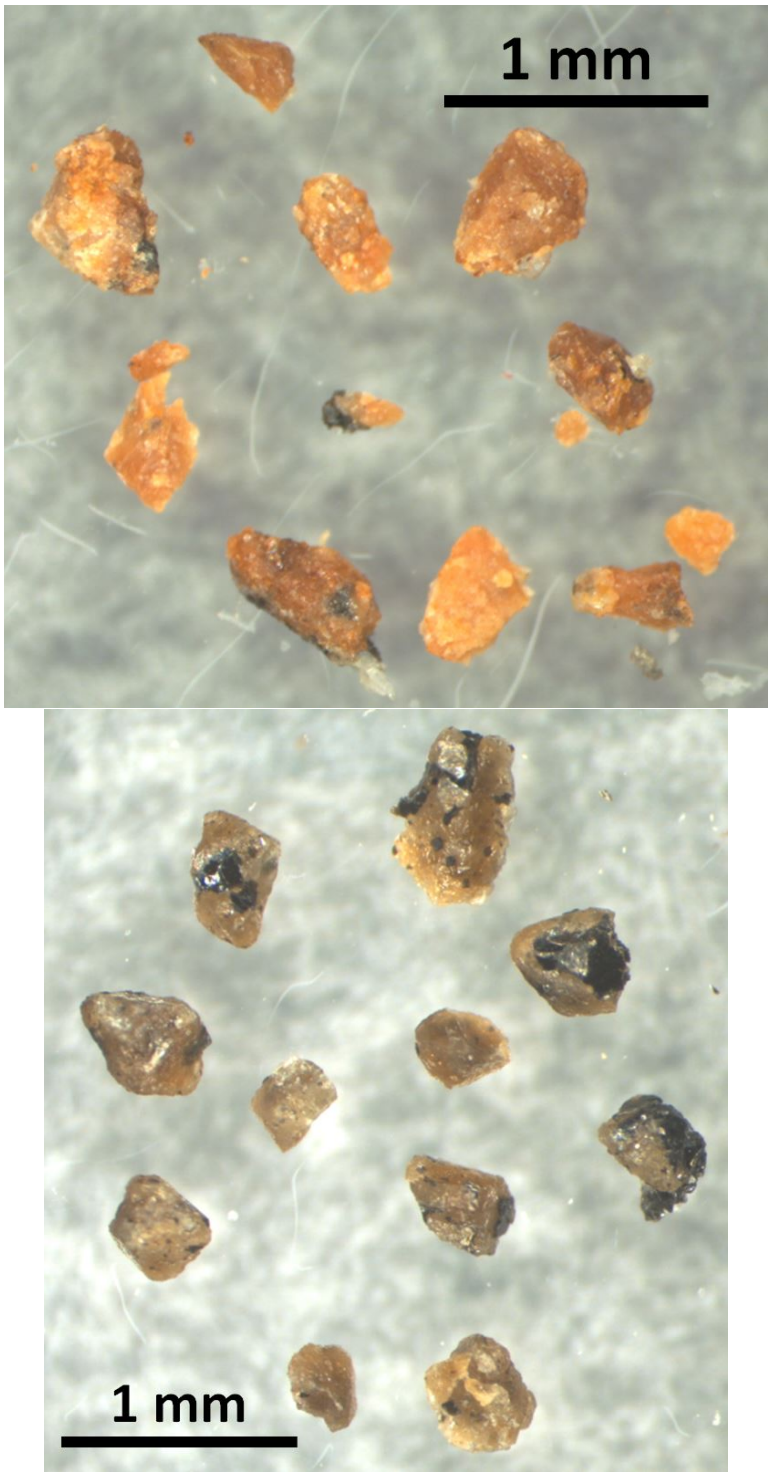

Figure DR2: Representative plane light images of ore-forming monazite (top) and xenotime (bottom) from the Pinto Gneiss.

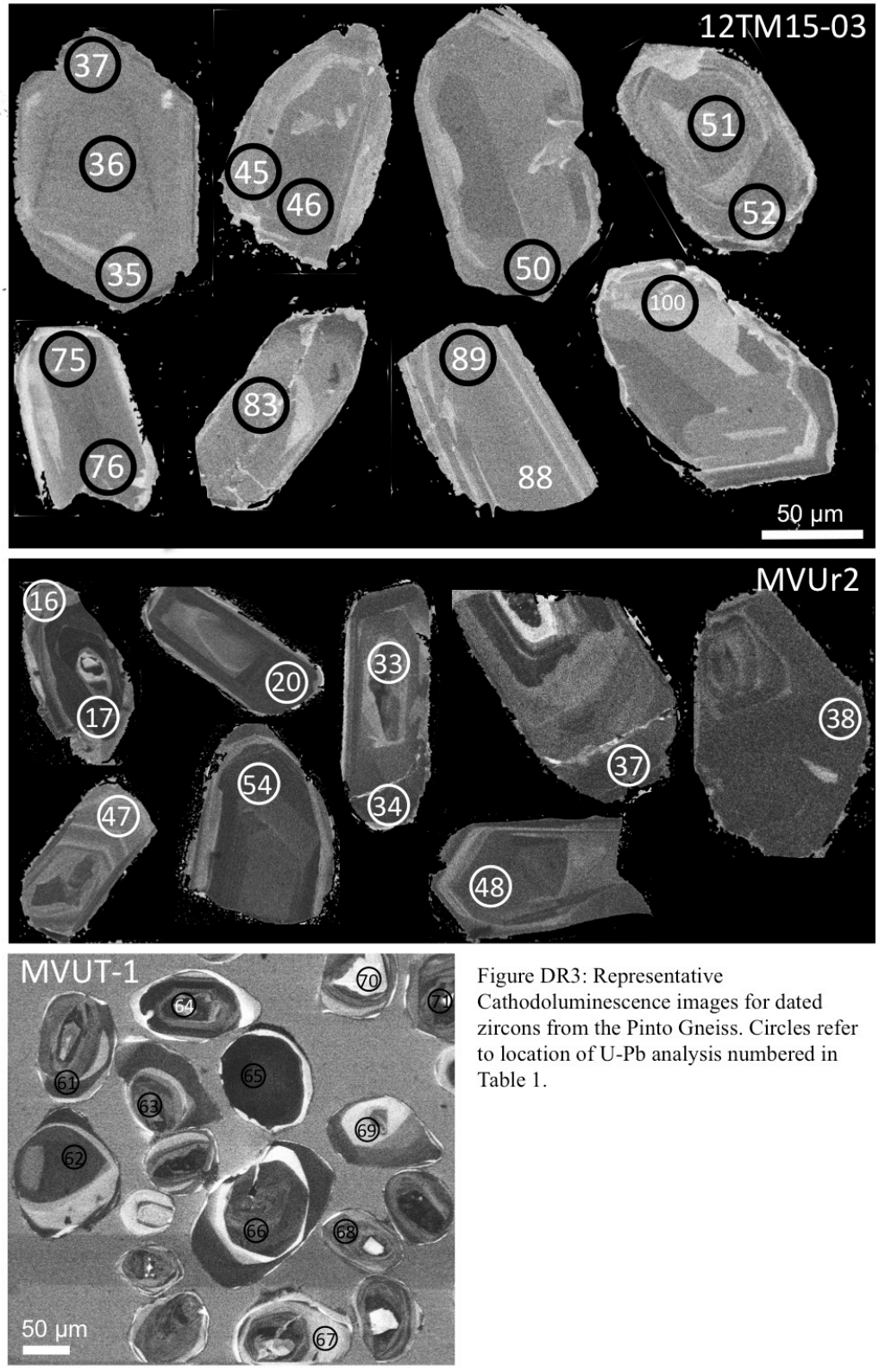

Figure DR3: Representative Cathodoluminescence images for dated zircons from the Pinto Gneiss. Circles refer to location of U-Pb analysis numbered in Table 1.

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TABLE 1. LA-Q-ICPMS TRACE ELEMENT DATA

	Monazite breakdown reaction in sample 12TM15-06					
	monazite		apatite		allanite	
element (ppm)	average (n = 30)	2RSD%	average (n = 30)	2RSD%	average (n = 30)	2RSD%
Si	73,571	26	10,355	48	241,800	11
P	131,754	6	286,621	9	1293	26
Ca	5084	6	74,7483	6	98,203	10
Sr	13	12	372	7	769	13
Y	15,766	5	7073	5	4244	9
La	58,343	6	4579	13	51,827	10
Ce	120,236	5	8913	13	93,190	11
Pr	13,523	5	1201	11	10,435	10
Nd	50,532	5	5164	9	38,140	10
Sm	7069	5	1300	8	6057	10
Eu	92	5	39	8	139	10
Gd	6291	5	1646	7	3976	10
Tb	674	5	245	6	383	9
Dy	2455	5	1410	5	1456	9
Ho	381	5	288	5	199	8
Er	618	5	685	5	341	8
Tm	47.1	5	80.6	5	32.7	8
Yb	163	5	464	5	184	9
Lu	11.9	5	62.2	6	21.7	8

TABLE 2. U-Th/Pb GEOCHRONOLOGIC AND RARE EARTH ELEMENT DATA

12TM15-03 zircon (spot size: 7 µm, frequency: 3 Hz, 80 shot count, laser energy: 3 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES (Ma)			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	249	1443	322	0.22	0.10493	0.922	4.194	1.838	0.2893	1.590	0.87	2.08	1713	16	1638	23
spot 2	130	1129	172	0.15	0.10413	0.961	4.078	1.948	0.2832	1.695	0.87	2.61	1699	16	1607	24
spot 3	66	552	85	0.15	0.10520	0.970	4.320	2.059	0.2973	1.816	0.88	1.13	1718	17	1677	27
spot 4	98	994	123	0.12	0.10315	0.949	4.105	1.972	0.2892	1.729	0.88	1.34	1681	16	1637	25
spot 5	60	514	76	0.15	0.10256	0.970	4.130	2.280	0.2907	2.064	0.91	0.91	1671	16	1644	30
spot 6	113	1094	139	0.13	0.10338	0.925	4.069	1.951	0.2853	1.717	0.88	1.79	1686	16	1618	25
spot 7	117	908	128	0.14	0.10372	0.940	3.995	1.928	0.2791	1.684	0.87	2.90	1692	16	1586	23
spot 8	103	101	119	1.19	0.10428	1.195	4.320	1.977	0.2984	1.575	0.80	0.77	1701	21	1683	23
spot 9	108	108	130	1.21	0.10308	1.082	4.159	2.478	0.2916	2.229	0.90	1.09	1680	19	1649	32
spot 10	113	976	136	0.14	0.10452	0.939	4.119	1.899	0.2848	1.650	0.87	2.47	1706	16	1619	23
spot 11	119	1122	142	0.13	0.10485	0.931	4.199	2.143	0.2901	1.930	0.90	1.89	1712	16	1641	28
spot 12	135	1032	157	0.15	0.10508	0.931	4.305	2.097	0.2980	1.879	0.90	0.89	1716	16	1680	28
spot 13	143	1116	181	0.16	0.10410	0.934	3.971	2.137	0.2757	1.922	0.90	3.70	1698	16	1569	27
spot 14	76	227	91	0.40	0.10086	0.992	3.942	2.082	0.2841	1.830	0.88	0.74	1640	17	1612	26
spot 15	105	928	120	0.13	0.10542	0.947	4.279	2.157	0.2941	1.938	0.90	1.63	1722	16	1661	28
spot 16	140	849	124	0.15	0.10580	0.931	4.397	2.021	0.3010	1.794	0.89	0.83	1728	16	1696	27
spot 17	100	981	138	0.14	0.09116	0.935	2.975	1.859	0.2364	1.607	0.86	2.41	1450	14	1368	20
spot 18	82	888	98	0.11	0.10485	0.920	4.183	2.145	0.2890	1.938	0.90	2.02	1712	16	1636	28
spot 19	136	207	165	0.80	0.10469	1.121	4.270	2.459	0.2970	2.189	0.89	0.84	1708	20	1675	33
spot 20	132	1055	169	0.16	0.10519	0.933	4.072	2.076	0.2804	1.854	0.89	3.58	1718	16	1593	26
spot 21	149	1051	187	0.18	0.10462	0.929	4.080	1.845	0.2822	1.595	0.86	2.93	1708	16	1602	23
spot 22	85	916	103	0.11	0.10468	0.945	4.138	2.192	0.2882	1.978	0.90	2.21	1709	16	1632	29
spot 23	138	1043	178	0.17	0.10515	0.941	4.041	2.359	0.2774	2.163	0.92	3.99	1717	16	1578	30
spot 24	152	1027	190	0.19	0.10469	0.922	4.172	2.268	0.2896	2.072	0.91	2.01	1709	16	1639	30
spot 25	117	837	145	0.17	0.10433	0.927	4.188	2.357	0.2907	2.167	0.92	1.70	1702	16	1644	32
spot 26	137	872	172	0.20	0.10472	0.936	4.188	2.337	0.2896	2.141	0.92	1.89	1709	16	1639	31
spot 27	123	1010	156	0.15	0.10515	0.924	4.192	2.197	0.2910	1.993	0.91	1.70	1717	16	1646	29
spot 28	128	1238	171	0.14	0.10194	0.935	3.890	2.236	0.2757	2.031	0.91	2.61	1660	16	1569	28
spot 29	68	763	90	0.12	0.10386	0.972	4.149	2.378	0.2903	2.170	0.91	1.46	1694	17	1642	31
spot 30	84	858	107	0.13	0.10407	0.934	4.148	2.093	0.2883	1.873	0.89	1.78	1698	16	1633	27
spot 31	111	1143	162	0.14	0.09788	0.951	3.489	2.233	0.2573	2.021	0.90	3.18	1584	15	1476	27
spot 32	112	954	157	0.16	0.09510	1.111	3.386	2.414	0.2566	2.143	0.89	1.56	1529	18	1476	29
spot 33	145	1030	186	0.18	0.10483	0.944	4.296	2.233	0.2965	2.024	0.91	1.08	1711	16	1673	30
spot 34	96	997	122	0.12	0.10510	0.939	4.358	2.268	0.3003	2.065	0.91	0.77	1717	16	1692	31
spot 35	137	969	176	0.18	0.10499	0.920	4.304	2.284	0.2965	2.091	0.92	1.14	1714	16	1673	31
spot 36	130	1232	167	0.14	0.10478	0.922	4.202	2.390	0.2902	2.205	0.92	1.95	1710	16	1641	32
spot 37	123	1062	169	0.16	0.10452	0.939	3.999	2.466	0.2763	2.280	0.92	3.49	1706	16	1577	31
spot 38	104	913	135	0.15	0.10497	0.947	4.190	2.219	0.2891	2.006	0.90	2.08	1714	16	1636	29
spot 39	134	860	169	0.20	0.10527	0.944	4.273	2.001	0.2947	1.765	0.88	1.32	1719	16	1665	26
spot 40	76	582	92	0.16	0.10511	0.997	4.306	2.107	0.2963	1.856	0.88	1.26	1716	17	1672	28
spot 41	105	1016	127	0.12	0.10513	0.924	4.172	2.349	0.2871	2.160	0.92	2.52	1717	16	1626	31
spot 42	79	239	99	0.42	0.10360	1.035	3.934	2.382	0.2750	2.145	0.90	3.83	1689	18	1565	30
spot 43	114	1084	139	0.13	0.10395	0.942	4.037	2.270	0.2809	2.065	0.91	2.82	1696	16	1595	29
spot 44	109	1022	128	0.13	0.10523	0.924	4.305	2.197	0.2960	1.993	0.91	1.07	1718	16	1675	30
spot 45	69	238	85	0.36	0.10473	1.019	4.220	2.569	0.2926	2.358	0.92	1.27	1709	18	1654	34
spot 46	64	419	79	0.19	0.10233	0.981	3.976	2.117	0.2825	1.876	0.89	1.56	1667	17	1603	27
spot 47	107	982	133	0.14	0.10437	0.945	4.104	2.368	0.2856	2.171	0.92	2.29	1703	16	1619	31
spot 48	79	940	97	0.10	0.10456	0.948	4.149	2.518	0.2872	2.333	0.93	2.21	1707	16	1626	34
spot 49	129	1175	164	0.14	0.10420	0.927	4.084	2.118	0.2835	1.905	0.90	2.61	1700	16	1608	27
spot 50	228	1322	282	0.21	0.10498	0.926	4.257	2.279	0.2930	2.082	0.91	1.81	1714	16	1656	31
spot 51	127	987	154	0.16	0.10500	0.931	4.243	2.409	0.2925	2.222	0.92	1.69	1714	16	1653	32
spot 52	132	656	196	0.30	0.08923	0.939	2.978	2.391	0.2411	2.198	0.92	0.65	1409	14	1392	28
spot 53	88	309	103	0.33	0.10381	0.958	4.130	2.909	0.2876	2.747	0.94	2.03	1693	16	1628	39
spot 54	88	942	107	0.11	0.10483	0.934	4.277	2.333	0.2946	2.138	0.92	1.56	1711	16	1664	31
spot 55	140	1211	176	0.15	0.10328	0.937	4.110	2.902	0.2876	2.747	0.95	1.60	1684	16	1628	40
spot 56	209	1511	253	0.17	0.10451	0.931	4.280	2.695	0.2965	2.530	0.94	1.08	1706	16	1672	37
spot 57	38	426	46	0.11	0.10445	0.954	4.260	2.533	0.2941	2.346	0.93	1.32	1705	16	1661	34
spot 58	94	952	121	0.13	0.10354	0.934	4.056	2.134	0.2815	1.918	0.90	2.88	1689	16	1598	27
spot 59	238	1390	299	0.22	0.10464	0.929	4.178	2.413	0.2874	2.227	0.92	2.46	1708	16	1628	32
spot 60	136	1234	166	0.13	0.10457	0.922	4.238	2.475	0.2917	2.297	0.93	1.82	1707	16	1649	33
spot 61	51	708	67	0.09	0.09427	0.948	3.329	2.581	0.2541	2.401	0.93	1.92	1513	15	1458	31
spot 62	150	1061	193	0.18	0.10335	0.937	3.935	2.663	0.2728	2.493	0.94	4.18	1685	16	1554	35
spot 63	109	445	138	0.31	0.10212	0.960	4.083	2.502	0.2856	2.311	0.92	1.92	1664	16	1618	33
spot 64	81	409	105	0.26	0.09880	1.097	3.749	2.453	0.2735	2.194	0.89	1.41	1601	19	1558	30
spot 65	92	895	116	0.13	0.10178	1.035	4.014	2.591	0.2820	2.376	0.92	2.19	1657	18	1600	33
spot 66	135	1273	161	0.13	0.10410	0.939	4.300	2.604	0.2964	2.429	0.93	1.08	1698	16	1672	36
spot 67	104	1051	123	0.12	0.10352	0.929	4.231	2.346	0.2924	2.155	0.92	1.51	1690	16	1653	32
spot 68	146	1129	194	0.17	0.10258	0.930	3.951	2.234	0.2757	2.031	0.91	3.63	1671	16	1569	28
spot 69	92	939	111	0.12	0.10277	0.940	4.217	2.462	0.2945	2.275	0.92	0.72	1675	16	1663	33
spot 70	71	839	94	0.11	0.10368	0.948	3.910	2.984	0.2722	2.829	0.95	4.51	1691	16	1551	39
spot 71	189	1377	234	0.17	0.10369	0.929	4.118	2.363	0.2854	2.172	0.92	2.35	1692	16	1618	31
spot 72	127	1276	154	0.12	0.10408	0.922	4.250	2.714	0.2938	2.553	0.94	1.63	1698	16	1659	38
spot 73	144	1078	189	0.18	0.10395	0.922	4.050	2.655	0.2812	2.489	0.94	3.26	1696	16	1596	35
spot 74	163	1392	200	0.14	0.10399	0.918	4.240	2.683	0.2935	2.521	0.94	1.33	1696	16	1658	37
spot 75	122	1024	149	0.15	0.10367	0.929	4.300	2.710	0.2985	2.546	0.94	0.48	1691	16	1683	38

spot 76	62	646	80	0.12	0.10217	0.960	4.090	3.040	0.2877	2.885	0.95	1.23	1664	16	1629	42
spot 77	88	443	117	0.26	0.10218	0.978	4.010	2.667	0.2821	2.481	0.93	2.12	1664	17	1601	35
spot 78	109	860	147	0.17	0.10366	0.940	4.081	2.573	0.2839	2.395	0.93	2.36	1691	16	1610	34
spot 79	98	993	124	0.12	0.10284	0.930	4.090	2.899	0.2877	2.746	0.95	1.72	1676	16	1629	39
spot 80	60	185	89	0.48	0.09522	1.064	3.430	3.509	0.2602	3.344	0.95	1.21	1532	18	1489	44
spot 81	104	746	133	0.18	0.10384	0.922	4.230	2.905	0.2941	2.754	0.95	1.27	1694	16	1660	40
spot 82	85	821	115	0.14	0.10307	0.935	3.990	2.738	0.2798	2.573	0.94	2.83	1680	16	1589	36
spot 83	112	1066	146	0.14	0.10210	0.944	4.050	2.643	0.2876	2.469	0.93	1.23	1663	16	1628	35
spot 84	94	964	119	0.12	0.10293	0.949	4.137	2.157	0.2891	1.937	0.90	0.91	1677	16	1645	28
spot 85	100	840	133	0.16	0.10330	0.937	4.080	2.633	0.2845	2.460	0.93	2.11	1684	16	1613	35
spot 86	189	224	237	1.06	0.10315	1.093	4.279	2.544	0.3003	2.298	0.90	0.30	1681	19	1692	34
spot 87	141	992	172	0.17	0.10444	0.936	4.310	2.844	0.2979	2.685	0.94	1.07	1705	16	1679	40
spot 88	125	1126	155	0.14	0.10296	0.932	4.170	2.593	0.2934	2.420	0.93	0.12	1678	16	1671	36
spot 89	83	122	103	0.85	0.10246	1.224	4.190	2.784	0.2960	2.500	0.90	0.00	1668	21	1670	37
spot 90	110	1071	139	0.13	0.10424	0.927	4.190	2.570	0.2920	2.397	0.93	1.15	1701	16	1651	35
spot 91	83	918	106	0.12	0.10263	0.943	4.020	2.728	0.2852	2.560	0.94	1.61	1672	16	1616	37
spot 92	109	929	129	0.14	0.10449	0.945	4.240	2.814	0.2943	2.650	0.94	1.02	1705	16	1662	39
spot 93	114	1084	137	0.13	0.10302	0.930	4.182	2.455	0.2949	2.272	0.93	0.24	1679	16	1665	33
spot 94	132	1013	157	0.15	0.10381	0.922	4.200	3.095	0.2945	2.954	0.95	0.54	1693	16	1662	43
spot 95	72	728	82	0.11	0.10355	0.958	4.130	2.501	0.2900	2.310	0.92	1.40	1689	16	1641	33
spot 96	128	939	132	0.14	0.10433	0.936	4.390	2.928	0.3064	2.774	0.95	0.58	1702	16	1721	42
spot 97	221	1534	282	0.18	0.10366	0.925	4.004	2.321	0.2818	2.129	0.92	2.06	1691	16	1600	30
spot 98	136	1099	161	0.15	0.10396	0.925	3.980	2.982	0.2787	2.835	0.95	2.97	1696	16	1583	40
spot 99	116	1268	140	0.11	0.10108	0.933	2.535	2.884	0.1832	2.729	0.95	18.08	1644	15	1084	27

MVUr2 zircon (spot size: 19 µm, frequency: 4 Hz, 80 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES (Ma)			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	183	1014	189	0.19	0.10597	2.417	4.322	3.018	0.2947	1.807	0.60	2.10	1732	42	1664	28
spot 2	213	1008	216	0.21	0.10558	2.422	4.361	2.974	0.2990	1.727	0.58	1.16	1724	42	1686	28
spot 3	165	886	159	0.18	0.10623	2.421	4.482	3.006	0.3035	1.782	0.59	0.88	1736	42	1713	29
spot 4	256	1482	262	0.18	0.10464	2.413	4.269	2.922	0.2959	1.649	0.56	1.01	1708	41	1671	26
spot 5	201	1017	204	0.20	0.10552	2.412	4.363	2.953	0.2995	1.704	0.58	0.86	1723	42	1690	27
spot 6	256	1482	270	0.18	0.10587	2.411	4.312	2.909	0.2954	1.629	0.56	1.62	1729	42	1668	26
spot 7	362	1689	398	0.24	0.10573	2.413	4.128	2.879	0.2833	1.571	0.55	3.19	1727	42	1609	24
spot 8	167	978	177	0.18	0.10615	2.424	4.373	2.990	0.2987	1.750	0.59	1.31	1734	42	1684	28
spot 9	199	992	213	0.21	0.10585	2.424	4.267	2.985	0.2930	1.743	0.58	1.81	1729	42	1656	27
spot 10	32	948	17	0.02	0.10645	2.425	4.344	2.957	0.2951	1.693	0.57	1.92	1739	42	1669	27
spot 11	202	1060	226	0.21	0.10589	2.418	4.245	2.942	0.2926	1.677	0.57	1.77	1730	42	1654	26
spot 12	162	956	187	0.20	0.10369	2.426	4.052	2.975	0.2838	1.721	0.58	2.11	1692	41	1610	26
spot 13	110	739	120	0.16	0.10610	2.424	4.341	2.994	0.2959	1.758	0.59	1.80	1733	42	1670	28
spot 14	153	1545	181	0.12	0.10606	2.414	4.103	2.872	0.2809	1.556	0.54	3.72	1733	42	1596	24
spot 15	179	954	199	0.21	0.10669	2.420	4.353	2.965	0.2958	1.713	0.58	1.96	1743	42	1670	27
spot 16	313	1504	346	0.23	0.10804	2.419	4.399	2.989	0.2965	1.756	0.59	2.33	1767	43	1674	28
spot 17	92	602	98	0.16	0.10535	2.439	4.206	2.977	0.2893	1.707	0.57	2.26	1720	42	1637	27
spot 18	197	1121	232	0.21	0.10442	2.422	4.035	2.914	0.2795	1.620	0.56	3.31	1704	41	1589	25
spot 19	113	1000	126	0.13	0.10695	2.415	4.335	2.915	0.2939	1.632	0.56	2.25	1748	42	1663	26
spot 20	120	969	144	0.15	0.10645	2.426	4.110	2.916	0.2808	1.617	0.55	3.88	1739	42	1595	25
spot 21	496	2475	591	0.24	0.10678	2.408	4.343	2.897	0.2949	1.610	0.56	2.23	1745	42	1666	26
spot 22	243	1778	281	0.16	0.10626	2.413	4.251	2.981	0.2904	1.750	0.59	2.43	1736	42	1643	27
spot 23	200	1075	228	0.21	0.10588	2.418	4.237	2.972	0.2898	1.728	0.58	2.44	1730	42	1640	27
spot 24	132	953	159	0.17	0.10528	2.420	4.102	2.959	0.2823	1.702	0.58	3.26	1719	42	1603	26
spot 25	80	1381	99	0.07	0.10506	2.426	4.151	2.956	0.2871	1.690	0.57	2.50	1715	42	1627	27
spot 26	330	1748	394	0.23	0.10535	2.409	4.260	2.877	0.2938	1.573	0.55	1.52	1720	41	1660	25
spot 27	275	1331	339	0.25	0.10540	2.417	4.203	2.921	0.2899	1.640	0.56	2.09	1722	42	1641	26
spot 28	192	1048	232	0.22	0.10517	2.420	4.233	2.969	0.2930	1.720	0.58	1.50	1717	42	1656	27
spot 29	263	1385	340	0.25	0.10391	2.418	4.030	3.044	0.2816	1.848	0.61	2.50	1695	41	1601	28
spot 30	180	1087	237	0.22	0.10394	2.429	3.959	3.001	0.2772	1.763	0.59	3.04	1695	41	1577	26
spot 31	83	515	100	0.19	0.10456	2.438	4.287	2.977	0.2978	1.708	0.57	0.60	1706	42	1680	27
spot 32	65	1598	84	0.05	0.10318	2.415	4.054	2.924	0.2860	1.649	0.56	1.33	1683	41	1623	25
spot 33	146	761	180	0.24	0.10459	2.423	4.276	3.004	0.2975	1.776	0.59	0.42	1707	41	1681	28
spot 34	151	1014	186	0.18	0.10474	2.424	4.196	2.914	0.2918	1.616	0.55	1.38	1710	42	1650	26
spot 35	124	689	151	0.22	0.10428	2.432	4.308	2.968	0.3005	1.702	0.57	0.01	1701	41	1694	28
spot 36	123	828	154	0.19	0.10502	2.432	4.230	3.017	0.2937	1.787	0.59	1.21	1714	42	1659	28
spot 37	96	170	130	0.76	0.09869	2.511	3.651	3.129	0.2688	1.866	0.60	1.69	1599	41	1534	27
spot 38	238	1153	290	0.25	0.10400	2.418	4.239	2.938	0.2968	1.668	0.57	0.35	1697	41	1675	27
spot 39	287	1767	374	0.21	0.10381	2.414	4.092	2.959	0.2874	1.712	0.58	1.47	1693	41	1628	27
spot 40	306	2166	367	0.17	0.10419	2.415	4.223	2.914	0.2950	1.630	0.56	0.78	1700	41	1666	26
spot 41	156	805	193	0.24	0.10301	2.424	4.202	3.005	0.2972	1.777	0.59	0.24	1679	41	1677	28
spot 42	206	1272	263	0.21	0.10331	2.419	4.138	2.984	0.2909	1.748	0.59	1.06	1685	41	1645	27
spot 43	186	1004	240	0.24	0.10318	2.425	4.146	2.976	0.2908	1.726	0.58	1.06	1682	41	1645	27
spot 44	82	698	108	0.16	0.10207	2.430	4.016	3.092	0.2856	1.911	0.62	1.17	1662	41	1619	29
spot 45	264	1312	336	0.26	0.10319	2.416	4.166	2.954	0.2924	1.699	0.58	0.82	1682	41	1653	27
spot 46	283	1963	339	0.17	0.10426	2.412	4.362	2.962	0.3024	1.719	0.58	0.08	1701	41	1703	28
spot 47	78	452	99	0.22	0.10242	2.438	4.069	2.955	0.2862	1.670	0.57	1.57	1668	41	1622	26
spot 48	124	697	162	0.23	0.10377	2.426	4.204	2.987	0.2929	1.743	0.58	1.09	1692	41	1656	27
spot 49	209	1226	256	0.21	0.10483	2.419	4.396	3.005	0.3032	1.783	0.59	0.23	1711	41	1707	29
spot 50	260	1313	339	0.26	0.10390	2.425	4.157	2.931	0.2873	1.646	0.56	2.29	1695	41	1630	26
spot 51	132	866	169	0.19	0.10280	2.421	4.212	2.929	0.2959	1.649	0.56	0.41	1675	41	1670	26
spot 52	225	1941	292	0.15	0.10359	2.409	4.199	2.934	0.2930	1.676	0.57	1.03	1690	41	1656	27

spot 53	353	1755	441	0.25	0.10423	2.408	4.320	2.914	0.2996	1.641	0.56	0.44	1701	41	1689	27
spot 54	217	1056	267	0.25	0.10385	2.418	4.378	3.014	0.3058	1.798	0.60	0.70	1694	41	1719	29
spot 55	68	914	75	0.08	0.10396	2.423	4.380	3.019	0.3049	1.801	0.60	0.41	1696	41	1715	29
spot 56	132	891	165	0.19	0.10276	2.428	4.170	2.925	0.2945	1.631	0.56	0.28	1675	41	1664	26
spot 57	207	1134	263	0.23	0.10330	2.421	4.230	2.976	0.2975	1.731	0.58	0.14	1684	41	1678	28
spot 58	119	687	157	0.23	0.10067	2.430	3.930	3.033	0.2840	1.816	0.60	0.50	1637	40	1611	28
spot 59	308	1847	386	0.21	0.10444	2.414	4.255	2.984	0.2969	1.755	0.59	0.48	1704	41	1676	28
spot 60	272	1798	342	0.19	0.10430	2.417	4.339	2.977	0.3033	1.738	0.58	0.41	1702	41	1707	28
spot 61	145	777	185	0.24	0.10433	2.425	4.295	2.894	0.3007	1.580	0.55	0.18	1702	41	1695	26
spot 62	176	1092	226	0.21	0.10417	2.420	4.236	2.975	0.2976	1.731	0.58	0.07	1700	41	1679	28
spot 63	160	856	199	0.23	0.10423	2.418	4.229	2.937	0.2971	1.667	0.57	0.13	1701	41	1677	27
spot 64	214	1055	265	0.25	0.10430	2.423	4.318	2.995	0.3032	1.761	0.59	0.76	1702	41	1709	29
spot 65	124	907	160	0.18	0.10266	2.418	4.039	3.013	0.2898	1.798	0.60	0.18	1673	41	1640	28
spot 66	329	1280	396	0.31	0.10506	2.420	4.335	2.956	0.3025	1.697	0.57	0.34	1715	42	1705	27
spot 67	140	762	171	0.22	0.10442	2.435	4.232	2.916	0.2977	1.605	0.55	0.02	1704	42	1680	26
spot 68	186	921	224	0.24	0.10421	2.425	4.292	3.015	0.2999	1.792	0.59	0.06	1701	41	1690	28
spot 69	187	987	241	0.24	0.10201	2.423	3.969	2.932	0.2848	1.651	0.56	0.84	1661	40	1615	26
spot 70	280	1278	340	0.27	0.10375	2.422	4.185	2.995	0.2945	1.761	0.59	0.44	1692	41	1663	28
spot 71	131	802	172	0.21	0.10381	2.432	3.994	2.932	0.2815	1.637	0.56	2.09	1693	41	1599	25
spot 72	453	2712	552	0.20	0.10582	2.409	4.345	2.925	0.3005	1.660	0.57	0.43	1729	42	1694	27
spot 73	193	1654	238	0.14	0.10486	2.409	4.265	2.883	0.2983	1.584	0.55	0.30	1712	41	1682	25
spot 74	405	1618	483	0.30	0.10599	2.416	4.366	2.918	0.3018	1.636	0.56	0.31	1731	42	1700	27
spot 75	126	841	158	0.19	0.10432	2.429	4.167	2.865	0.2929	1.519	0.53	0.74	1704	41	1656	25
spot 76	160	902	207	0.23	0.10539	2.419	4.080	2.893	0.2859	1.587	0.55	1.84	1721	42	1621	25
spot 77	100	762	130	0.17	0.10460	2.442	4.149	2.952	0.2907	1.660	0.56	1.12	1707	42	1645	26
spot 78	212	1101	265	0.24	0.10516	2.426	4.325	2.874	0.3016	1.542	0.54	0.08	1718	42	1699	25
spot 79	211	1614	263	0.16	0.10622	2.414	4.430	2.936	0.3054	1.670	0.57	0.02	1735	42	1718	27
spot 80	199	1227	258	0.21	0.10513	2.418	4.220	2.941	0.2938	1.674	0.57	1.10	1717	42	1660	27
spot 81	476	1927	602	0.31	0.10577	2.408	4.406	2.858	0.3040	1.538	0.54	0.12	1728	42	1711	25
spot 82	390	1615	489	0.30	0.10550	2.412	4.378	2.881	0.3029	1.576	0.55	0.09	1723	42	1706	26
spot 83	172	932	221	0.24	0.10507	2.429	4.287	2.879	0.2985	1.546	0.54	0.39	1715	42	1684	25
spot 84	147	985	195	0.20	0.10396	2.426	4.204	2.902	0.2940	1.592	0.55	0.85	1696	41	1661	26
spot 85	191	995	262	0.26	0.10335	2.428	3.954	2.919	0.2793	1.620	0.56	2.35	1685	41	1588	24
spot 86	165	866	207	0.24	0.10474	2.429	4.320	2.887	0.3005	1.562	0.54	0.14	1710	42	1694	26
spot 87	290	1176	356	0.30	0.10463	2.423	4.114	2.943	0.2861	1.670	0.57	2.11	1708	41	1622	26
spot 88	263	1417	338	0.24	0.10382	2.417	4.247	2.891	0.2974	1.586	0.55	0.42	1693	41	1678	25
spot 89	156	801	216	0.27	0.10260	2.427	3.882	2.912	0.2742	1.609	0.55	3.03	1671	41	1562	24
spot 90	321	1384	429	0.31	0.10306	2.416	4.120	2.888	0.2886	1.582	0.55	1.39	1680	41	1636	25
spot 91	301	1473	380	0.26	0.10346	2.414	4.277	2.840	0.2981	1.495	0.53	0.44	1688	41	1682	24
spot 92	182	922	236	0.26	0.10244	2.433	4.106	2.960	0.2886	1.686	0.57	1.28	1669	41	1634	26
spot 93	174	897	227	0.25	0.10309	2.438	4.161	2.987	0.2907	1.726	0.58	1.41	1681	41	1645	27
spot 94	175	922	230	0.25	0.10293	2.428	4.101	2.948	0.2857	1.671	0.57	1.97	1677	41	1622	26
spot 95	189	965	239	0.25	0.10220	2.424	4.214	2.942	0.2968	1.668	0.57	0.06	1664	40	1675	26
spot 96	90	581	115	0.20	0.10149	2.452	4.047	2.954	0.2869	1.647	0.56	1.13	1652	41	1626	26
spot 97	87	678	114	0.17	0.10240	2.443	4.003	2.965	0.2821	1.680	0.57	2.08	1668	41	1602	26
spot 98	325	1557	387	0.25	0.10393	2.414	4.347	2.865	0.3011	1.543	0.54	0.35	1695	41	1696	25

MVUT-1 zircon (spot size: 19 µm, frequency: 4 Hz, 80 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	6	1042	8	0.01	0.10177	1.139	3.756	1.573	0.2683	1.085	0.69	3.33	1656	19	1532	15
spot 2	56	525	83	0.16	0.09813	1.173	3.483	1.682	0.2567	1.205	0.72	3.37	1588	19	1473	17
spot 3	11	576	17	0.03	0.09730	1.201	3.263	1.733	0.2432	1.249	0.72	4.85	1572	20	1403	16
spot 4	40	263	67	0.26	0.09195	1.232	2.739	1.677	0.2138	1.137	0.68	7.18	1466	20	1249	13
spot 5	92	909	139	0.15	0.09843	1.144	3.498	1.595	0.2573	1.111	0.70	3.40	1594	19	1476	15
spot 6	58	483	66	0.14	0.11051	1.200	4.632	1.653	0.3040	1.137	0.69	2.53	1809	22	1711	18
spot 7	34	1248	29	0.02	0.10292	1.149	3.894	1.570	0.2745	1.071	0.68	3.13	1678	19	1564	16
spot 8	15	547	22	0.04	0.09592	1.180	3.211	1.565	0.2422	1.028	0.66	4.37	1546	19	1398	14
spot 9	53	1111	62	0.06	0.10694	1.140	4.253	1.542	0.2900	1.039	0.67	2.78	1748	20	1642	16
spot 10	55	587	79	0.13	0.10038	1.170	3.624	1.566	0.2626	1.041	0.66	3.53	1631	19	1503	15
spot 11	9	871	12	0.01	0.10021	1.133	3.703	1.531	0.2678	1.030	0.67	2.79	1628	19	1530	15
spot 12	152	1173	198	0.17	0.10575	1.129	4.102	1.546	0.2818	1.055	0.68	3.26	1727	20	1602	16
spot 13	3	850	3	0.00	0.10107	1.153	3.642	1.486	0.2616	0.937	0.63	4.05	1644	19	1498	13
spot 14	39	474	52	0.11	0.09859	1.398	3.654	1.720	0.2688	1.002	0.58	1.71	1596	24	1534	14
spot 15	22	783	25	0.03	0.10156	1.159	3.745	1.531	0.2692	1.001	0.65	2.88	1653	19	1536	15
spot 16	42	356	51	0.14	0.09951	1.231	3.820	1.642	0.2798	1.086	0.66	0.48	1614	20	1590	16
spot 17	10	704	13	0.02	0.10204	1.189	3.945	1.627	0.2808	1.111	0.68	1.72	1661	20	1595	16
spot 18	389	1674	489	0.29	0.11202	1.121	4.342	1.522	0.2814	1.030	0.68	6.45	1832	21	1598	15
spot 19	22	613	32	0.05	0.09748	1.164	3.234	1.556	0.2400	1.033	0.66	5.64	1576	19	1387	13
spot 20	6	1575	10	0.01	0.10067	1.118	3.675	1.506	0.2652	1.009	0.67	3.30	1636	18	1516	14
spot 21	12	687	16	0.02	0.10155	1.142	3.617	1.656	0.2585	1.200	0.72	4.76	1653	19	1482	17
spot 22	64	286	92	0.32	0.09741	1.261	3.612	1.802	0.2699	1.288	0.71	0.71	1575	21	1540	19
spot 23	27	487	39	0.08	0.09652	1.191	3.169	1.692	0.2369	1.203	0.71	5.85	1560	19	1370	15
spot 24	192	712	220	0.31	0.10830	1.163	4.478	1.597	0.3000	1.095	0.69	2.09	1771	21	1691	18
spot 25	12	980	16	0.02	0.09907	1.194	3.649	1.561	0.2668	1.006	0.64	2.32	1606	20	1524	15
spot 26	7	681	7	0.01	0.10265	1.152	3.911	1.535	0.2754	1.016	0.66	2.96	1672	19	1569	15
spot 27	37	641	42	0.07	0.10317	1.154	3.993	1.604	0.2796	1.114	0.69	2.73	1683	20	1589	16
spot 28	150	700	147	0.21	0.10286	1.164	4.067	1.566	0.2854	1.048	0.67	1.87	1677	20	1618	16
spot 29	19	1291	23	0.02	0.10351	1.133	3.965	1.556	0.2766	1.066	0.69	3.33	1688	19	1574	16
spot 30	30	370	41	0.11	0.10548	1.183	4.214	1.610	0.2894	1.092	0.68	2.40	1724	21	1638	17

spot 31	21	678	23	0.03	0.10431	1.156	4.049	1.603	0.2810	1.111	0.69	2.98	1702	20	1596	17
spot 32	23	586	31	0.05	0.10203	1.165	3.836	1.624	0.2725	1.131	0.70	2.94	1662	20	1554	16
spot 33	40	453	57	0.13	0.09422	1.199	3.069	1.677	0.2359	1.172	0.70	4.34	1512	19	1365	15
spot 34	29	1020	44	0.04	0.09822	1.134	3.346	1.584	0.2478	1.106	0.70	4.58	1591	18	1427	15
spot 35	26	1187	37	0.03	0.09986	1.138	3.456	1.485	0.2512	0.954	0.64	5.00	1622	19	1445	13
spot 36	17	510	19	0.04	0.10125	1.202	3.805	1.690	0.2729	1.188	0.70	2.46	1647	20	1555	17
spot 37	250	1018	300	0.29	0.10986	1.136	4.625	1.603	0.3068	1.131	0.71	1.64	1797	20	1725	18
spot 38	23	1094	34	0.03	0.10301	1.122	3.736	1.651	0.2652	1.210	0.73	4.12	1679	19	1516	17
spot 39	9	467	12	0.03	0.09904	1.215	3.527	1.585	0.2603	1.018	0.64	2.80	1607	20	1491	14
spot 40	20	1015	27	0.03	0.10002	1.130	3.611	1.537	0.2626	1.041	0.68	3.22	1624	19	1503	15
spot 41	326	1357	416	0.31	0.10613	1.186	4.142	1.740	0.2839	1.273	0.73	2.98	1734	21	1613	19
spot 42	30	515	50	0.10	0.08861	1.173	2.678	1.644	0.2204	1.152	0.70	2.95	1395	17	1284	14
spot 43	11	986	18	0.02	0.10395	1.137	3.988	1.650	0.2808	1.195	0.72	2.33	1696	19	1595	17
spot 44	10	734	14	0.02	0.10049	1.130	3.729	1.623	0.2706	1.165	0.72	2.22	1633	19	1544	17
spot 45	166	809	191	0.24	0.10485	1.139	4.217	1.628	0.2932	1.163	0.71	1.19	1712	20	1657	18
spot 46	110	324	139	0.43	0.11125	1.185	4.725	1.614	0.3118	1.095	0.68	1.15	1820	22	1751	18
spot 47	60	838	86	0.10	0.10149	1.139	3.721	1.536	0.2679	1.030	0.67	2.97	1651	19	1530	15
spot 48	68	223	106	0.48	0.09568	1.310	3.247	1.781	0.2461	1.206	0.68	3.37	1544	21	1420	16
spot 49	30	499	51	0.10	0.09421	1.175	2.698	1.791	0.2087	1.351	0.75	8.60	1512	18	1222	16
spot 50	67	378	131	0.35	0.09293	1.287	2.506	1.945	0.1963	1.458	0.75	10.20	1487	21	1157	16
spot 51	12	718	18	0.03	0.09887	1.159	3.600	1.677	0.2644	1.213	0.72	2.50	1604	19	1512	17
spot 52	62	1127	86	0.08	0.10714	1.123	4.132	1.582	0.2792	1.115	0.70	4.61	1751	20	1587	16
spot 53	21	1010	33	0.03	0.09851	1.144	3.389	1.729	0.2490	1.296	0.75	4.83	1596	19	1433	17
spot 54	7	717	16	0.02	0.09714	1.164	3.085	1.746	0.2292	1.301	0.75	7.32	1570	19	1331	16
spot 55	38	460	47	0.10	0.10309	1.183	4.078	1.775	0.2867	1.323	0.75	1.48	1680	20	1625	20
spot 56	76	277	109	0.40	0.09762	1.291	3.548	1.817	0.2634	1.278	0.70	1.99	1578	22	1507	18
spot 57	72	174	82	0.47	0.10664	1.258	4.549	1.837	0.3081	1.340	0.73	0.40	1742	22	1733	21
spot 58	120	1250	120	0.10	0.10538	1.170	4.119	1.631	0.2820	1.136	0.70	3.39	1721	20	1603	17
spot 59	8	948	11	0.01	0.10346	1.138	3.999	1.592	0.2794	1.114	0.70	2.87	1687	19	1588	16
spot 60	48	922	69	0.08	0.10257	1.152	3.905	1.715	0.2753	1.270	0.74	2.93	1671	19	1568	18
spot 61	744	1317	908	0.69	0.10773	1.132	4.367	1.585	0.2935	1.109	0.70	2.80	1761	20	1659	18
spot 62	55	593	75	0.13	0.09974	1.201	3.236	1.613	0.2347	1.077	0.67	7.81	1619	20	1359	14
spot 63	45	788	60	0.08	0.10731	1.145	4.305	1.599	0.2900	1.117	0.70	3.22	1754	20	1641	17
spot 64	4	780	8	0.01	0.10298	1.173	3.324	1.767	0.2334	1.321	0.75	9.91	1678	20	1352	17
spot 65	33	986	41	0.04	0.10505	1.147	4.062	1.700	0.2801	1.255	0.74	3.46	1715	20	1591	19
spot 66	230	1157	294	0.25	0.10682	1.162	4.171	1.644	0.2821	1.163	0.71	4.17	1747	20	1602	17
spot 67	402	1481	510	0.34	0.10660	1.123	4.228	1.630	0.2861	1.181	0.72	3.51	1742	20	1622	17
spot 68	303	1650	409	0.25	0.10482	1.124	4.101	1.618	0.2817	1.164	0.72	3.38	1711	19	1600	17
spot 69	186	389	217	0.56	0.10705	1.156	4.750	1.685	0.3199	1.227	0.73	0.69	1750	20	1789	20
spot 70	71	300	109	0.36	0.09462	1.216	3.367	1.910	0.2556	1.473	0.77	1.98	1521	19	1467	20
spot 71	48	446	68	0.15	0.09696	1.198	3.412	1.754	0.2531	1.281	0.73	3.58	1566	19	1454	17
spot 72	8	768	11	0.01	0.10132	1.144	3.925	1.683	0.2774	1.234	0.73	2.54	1648	19	1578	18
spot 73	18	645	26	0.04	0.09508	1.163	3.167	1.719	0.2388	1.265	0.74	5.04	1529	18	1380	16
spot 74	8	832	12	0.01	0.10168	1.156	3.861	1.703	0.2717	1.251	0.73	3.68	1655	19	1549	18
spot 75	252	664	303	0.46	0.10598	1.141	4.499	1.727	0.3042	1.297	0.75	1.13	1732	20	1712	20
spot 76	13	740	18	0.02	0.10120	1.150	3.947	1.704	0.2794	1.258	0.74	2.27	1646	19	1588	19
spot 77	59	219	92	0.42	0.09028	1.291	3.016	1.760	0.2391	1.196	0.68	2.19	1434	20	1382	16
spot 78	169	1147	191	0.17	0.11761	1.142	4.376	1.617	0.2673	1.145	0.71	11.81	1920	22	1527	16
spot 79	53	229	79	0.35	0.09830	1.316	3.700	1.950	0.2715	1.440	0.74	1.42	1591	22	1548	20
spot 80	41	482	59	0.12	0.09722	1.174	3.544	1.590	0.2617	1.071	0.67	2.59	1571	19	1499	15
spot 81	54	468	69	0.15	0.10360	1.183	4.278	1.670	0.2976	1.179	0.71	0.57	1690	20	1679	18

12TM13-01 monazite (spot size: 7 µm, frequency: 3 Hz, 75 shot count, laser energy: 3 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	5740	1721	43300	25.16	0.10409	1.225	4.640	0.160	0.3212	3.233	0.83	1.84	1699	21	1792	52
spot 2	6700	1896	52800	27.85	0.10147	1.258	4.360	0.140	0.3104	2.954	0.79	2.12	1650	21	1745	46
spot 3	3650	1820	59700	32.80	0.09728	1.309	2.879	0.089	0.2137	2.819	0.77	10.02	1571	22	1247	33
spot 4	7390	3080	62600	20.32	0.10207	1.204	4.092	0.127	0.2907	2.866	0.79	0.61	1663	20	1643	43
spot 5	9330	4430	81300	18.35	0.10410	1.159	4.302	0.113	0.2969	2.358	0.69	0.54	1698	20	1682	37
spot 6	8420	3930	73000	18.58	0.10345	1.173	4.280	0.110	0.2985	2.299	0.68	0.18	1687	20	1686	36
spot 7	8790	4410	78000	17.69	0.10250	1.181	4.108	0.122	0.2903	2.724	0.77	0.55	1669	20	1645	42
spot 8	9340	3820	82300	21.54	0.10359	1.176	4.279	0.126	0.2995	2.693	0.76	0.18	1689	20	1695	42
spot 9	11260	7350	133800	18.20	0.09015	1.146	2.881	0.076	0.2315	2.387	0.70	2.61	1428	17	1341	31
spot 10	12010	7390	142400	19.27	0.09029	1.146	2.934	0.073	0.2362	2.200	0.65	1.68	1431	17	1366	29
spot 11	11210	6950	128900	18.55	0.09067	1.143	2.971	0.080	0.2381	2.446	0.72	1.60	1439	17	1379	32
spot 12	9920	6320	127700	20.21	0.08968	1.164	2.715	0.067	0.2197	2.188	0.64	4.06	1419	17	1280	27
spot 13	10290	6290	124700	19.83	0.09020	1.140	2.805	0.073	0.2265	2.351	0.69	3.12	1430	17	1315	29
spot 14	7910	4380	117200	26.76	0.08866	1.177	2.785	0.074	0.2278	2.377	0.70	1.89	1397	17	1325	30
spot 15	9410	4680	119400	25.51	0.10027	1.163	3.064	0.085	0.2218	2.523	0.73	10.31	1630	19	1290	31
spot 16	7880	3911	121500	31.07	0.09882	1.207	2.254	0.060	0.1649	2.358	0.69	21.54	1601	20	984	23
spot 17	13370	3298	134600	40.81	0.10148	1.156	4.068	0.116	0.2910	2.606	0.75	0.30	1652	19	1645	40
spot 18	15300	4070	143900	35.36	0.10516	1.152	4.483	0.118	0.3070	2.362	0.69	0.23	1719	20	1724	38
spot 19	15970	5820	155900	26.79	0.10489	1.152	4.298	0.116	0.2951	2.446	0.71	1.56	1712	20	1668	38
spot 20	16850	5950	166000	27.90	0.10475	1.142	4.286	0.113	0.2943	2.370	0.70	1.38	1710	20	1665	36
spot 21	16200	5990	164400	27.45	0.10430	1.135	4.088	0.108	0.2821	2.377	0.70	2.93	1702	19	1604	35
spot 22	11390	6970	173600	24.91	0.10056	1.160	2.592	0.067	0.1853	2.328	0.68	18.40	1635	19	1098	24
spot 23	13760	9160	240900	26.30	0.09991	1.208	2.219	0.070	0.1600	2.915	0.79	24.16	1622	20	956	26
spot 24	1699	6730	154000	22.88	0.04864	1.894	0.180	0.006	0.0265	2.715	0.68	0.53	129	34	169	5
spot 25	1534	7590	139800	18.42	0.04956	1.666	0.180	0.006	0.0266	2.615	0.69	0.41	171	28	169	4

spot 26	1639	8150	149100	18.29	0.04796	1.697	0.176	0.006	0.0262	2.801	0.72	1.26	98	28	167	5
spot 27	1679	8760	153200	17.49	0.05182	1.611	0.199	0.006	0.0278	2.779	0.73	4.30	278	27	177	5
spot 28	1646	8430	151800	18.01	0.04899	1.631	0.178	0.006	0.0264	2.660	0.70	0.95	144	27	168	4
spot 29	1549	6590	145300	22.05	0.05587	1.806	0.229	0.008	0.0298	2.900	0.73	10.40	447	31	189	5
spot 30	1298	5750	118900	20.68	0.04851	1.766	0.179	0.006	0.0266	2.680	0.69	1.36	123	30	169	4
spot 31	1425	5740	129400	22.54	0.04846	1.799	0.179	0.006	0.0262	2.735	0.70	0.18	121	31	167	4
spot 32	12940	4050	138700	34.25	0.09740	1.157	3.528	0.095	0.2641	2.445	0.71	1.52	1575	19	1509	34
spot 33	14110	4220	143500	34.00	0.10158	1.172	3.997	0.123	0.2864	2.838	0.78	0.37	1653	20	1626	43
spot 34	13500	3910	134200	34.32	0.10353	1.160	4.162	0.117	0.2946	2.557	0.74	0.12	1688	20	1663	39
spot 35	13020	3940	129100	32.77	0.10249	1.158	3.978	0.107	0.2833	2.426	0.71	1.43	1669	20	1606	36
spot 36	8360	4020	129500	32.21	0.08840	1.198	2.432	0.077	0.1995	2.921	0.79	6.11	1391	18	1179	32
spot 37	11670	3326	119200	35.84	0.10332	1.163	3.973	0.114	0.2802	2.614	0.75	2.39	1685	20	1591	38
spot 38	12660	3670	131400	35.80	0.09984	1.149	3.689	0.099	0.2704	2.439	0.71	1.48	1621	19	1551	35
spot 39	10410	3780	120200	31.80	0.10017	1.145	3.299	0.098	0.2409	2.732	0.77	6.26	1627	19	1390	36
spot 40	11380	3544	117900	33.27	0.10350	1.157	4.038	0.110	0.2859	2.467	0.72	1.23	1688	20	1623	37
spot 41	11860	3660	121600	33.22	0.10414	1.162	3.909	0.119	0.2741	2.806	0.78	3.46	1699	20	1560	40
spot 42	5980	3900	70200	18.00	0.10485	1.155	3.830	0.121	0.2653	2.937	0.80	5.13	1711	20	1519	41
spot 43	8780	5820	80100	13.76	0.10780	1.147	4.428	0.127	0.2976	2.622	0.75	2.21	1762	20	1677	41
spot 44	10350	3503	113400	32.37	0.10271	1.174	3.735	0.108	0.2615	2.646	0.75	5.13	1673	20	1500	38
spot 45	11350	4280	116300	27.17	0.10415	1.150	4.080	0.128	0.2830	2.923	0.80	2.36	1700	20	1613	43
spot 46	8350	4440	110700	24.93	0.10305	1.154	3.443	0.100	0.2426	2.650	0.76	8.43	1680	20	1399	34
spot 47	978	4640	75300	16.23	0.06895	1.674	0.351	0.011	0.0366	2.653	0.70	31.72	896	28	231	6
spot 48	951	5770	80200	13.90	0.05918	1.730	0.253	0.009	0.0310	2.987	0.75	16.17	571	30	197	6
spot 49	17930	10240	194600	19.00	0.10687	1.138	4.050	0.140	0.2763	3.261	0.84	4.78	1747	20	1570	47
spot 50	14850	8040	189200	23.53	0.10503	1.155	3.747	0.114	0.2599	2.818	0.78	6.39	1715	20	1487	39
spot 51	18570	9530	203400	21.34	0.10649	1.138	3.908	0.108	0.2710	2.524	0.73	5.12	1741	20	1544	36
spot 52	2229	9170	192800	21.03	0.04906	1.738	0.180	0.006	0.0274	2.625	0.68	3.67	148	30	174	5
spot 53	9010	7780	188500	24.23	0.10034	1.208	2.059	0.068	0.1536	3.062	0.81	23.26	1630	20	920	27
spot 54	13820	4890	135100	27.63	0.10253	1.048	3.887	2.146	0.2705	1.873	0.87	4.54	1671	18	1542	26
spot 55	16660	6020	158300	26.30	0.10297	1.058	4.132	2.216	0.2861	1.947	0.88	2.34	1679	18	1621	29
spot 56	17920	9860	192800	19.55	0.10505	1.023	3.875	1.933	0.2622	1.639	0.85	6.99	1716	18	1502	22
spot 57	5920	3550	142700	40.20	0.10048	1.169	2.550	2.628	0.1801	2.354	0.90	20.34	1632	20	1067	24
spot 58	12580	6260	148400	23.71	0.10287	1.047	3.313	2.203	0.2279	1.938	0.88	12.08	1676	18	1325	23
spot 59	7030	6600	110600	16.76	0.09614	1.095	2.218	1.976	0.1632	1.645	0.83	21.97	1550	18	974	15
spot 60	6790	6740	100300	14.88	0.09750	1.088	2.408	2.114	0.1754	1.813	0.86	19.40	1576	18	1041	18
spot 61	5950	2392	53100	22.20	0.10493	1.149	4.350	2.868	0.2971	2.627	0.92	1.91	1713	20	1674	39
spot 62	6330	2455	57200	23.30	0.10495	1.159	4.370	2.797	0.2992	2.545	0.91	1.42	1712	20	1685	37
spot 63	4760	3330	64400	19.34	0.09951	1.084	2.574	2.874	0.1851	2.662	0.93	17.50	1615	18	1097	28
spot 64	4660	2947	58500	19.85	0.10229	1.118	3.186	3.079	0.2246	2.868	0.93	10.44	1665	19	1312	34
spot 65	5770	3139	65500	20.87	0.10373	1.092	3.528	2.555	0.2466	2.310	0.90	7.89	1692	19	1420	29
spot 66	6750	2421	67400	27.84	0.10323	1.154	3.940	2.723	0.2801	2.466	0.91	2.26	1682	20	1590	35
spot 67	5800	2407	72600	30.16	0.10161	1.110	3.233	3.271	0.2320	3.076	0.94	8.98	1654	19	1347	37
spot 68	4830	4030	80500	19.98	0.09623	1.119	2.150	2.845	0.1650	2.615	0.92	18.70	1551	18	984	24
spot 69	3371	3074	75300	24.50	0.09421	1.180	1.929	3.037	0.1500	2.798	0.92	20.71	1515	19	903	24
spot 70	8370	4340	87300	20.12	0.10603	1.047	4.120	2.679	0.2885	2.466	0.92	1.22	1733	18	1636	36
spot 71	1020	3720	89500	24.06	0.06190	1.713	0.274	3.540	0.0329	3.098	0.88	17.66	666	31	209	6
spot 72	7850	2917	80800	27.70	0.10494	1.041	4.157	2.453	0.2900	2.221	0.91	1.59	1714	18	1640	33
spot 73	8240	3037	81900	26.97	0.10454	1.070	4.140	2.728	0.2873	2.509	0.92	1.47	1708	19	1634	36
spot 74	7340	2860	83900	29.34	0.10278	1.047	3.692	2.290	0.2621	2.036	0.89	4.73	1675	18	1500	28
spot 75	7310	3770	70200	18.62	0.10643	1.043	4.224	2.219	0.2897	1.958	0.88	2.44	1739	18	1639	29
spot 76	7000	2379	69000	29.00	0.10276	1.058	4.109	2.551	0.2899	2.321	0.91	1.03	1674	18	1644	34
spot 77	5630	3310	52400	15.83	0.10674	1.039	4.410	2.447	0.3001	2.215	0.91	1.36	1744	18	1694	33
spot 78	9090	2595	91700	35.34	0.10407	1.033	4.253	2.237	0.2961	1.984	0.89	0.78	1698	18	1674	30
spot 79	9480	3440	94800	27.56	0.10588	1.028	4.291	2.396	0.2934	2.164	0.90	1.99	1729	18	1657	32
spot 80	8270	2579	91400	35.44	0.10386	1.053	3.845	2.652	0.2671	2.434	0.92	4.85	1695	18	1527	33
spot 81	8850	3355	88900	26.50	0.10565	1.038	4.254	2.319	0.2921	2.074	0.89	1.87	1725	18	1657	31
spot 82	8950	2872	91900	32.00	0.10511	1.048	4.160	2.970	0.2874	2.780	0.94	2.02	1716	18	1630	39
spot 83	9170	2903	91700	31.59	0.10558	1.035	4.320	2.594	0.2954	2.379	0.92	1.50	1724	18	1667	35
spot 84	8610	2909	92400	31.76	0.10331	1.065	3.857	2.562	0.2709	2.330	0.91	3.95	1684	18	1544	32
spot 85	8930	2073	89200	43.03	0.10424	1.075	4.290	2.907	0.3000	2.701	0.93	0.30	1701	19	1688	40
spot 86	8760	2471	88900	35.98	0.10545	1.041	4.107	2.523	0.2839	2.299	0.91	2.92	1723	18	1610	32
spot 87	8580	2776	86200	31.05	0.10522	1.058	4.230	2.817	0.2913	2.610	0.93	2.07	1719	18	1646	38
spot 88	7770	2209	76800	34.77	0.10438	1.052	4.210	2.659	0.2915	2.442	0.92	1.64	1703	18	1647	35
spot 89	9120	3047	90200	29.60	0.10593	1.047	4.320	3.103	0.2938	2.921	0.94	2.11	1730	18	1658	43
spot 90	9100	2610	89900	34.44	0.10447	1.056	4.271	2.382	0.2976	2.136	0.90	0.83	1706	18	1678	32
spot 91	9150	2474	88000	35.57	0.10572	1.044	4.450	2.783	0.3029	2.580	0.93	0.94	1727	18	1707	38
spot 92	9300	1894	91800	48.47	0.10396	1.071	4.370	2.829	0.3021	2.618	0.93	0.12	1696	18	1703	40
spot 93	9890	2168	98200	45.30	0.10468	1.052	4.310	2.873	0.2955	2.674	0.93	1.62	1708	18	1666	39
spot 94	9410	1979	92000	46.49	0.10444	1.042	4.410	2.670	0.3020	2.458	0.92	0.47	1705	18	1703	37
spot 95	6430	3960	76400	19.29	0.10209	1.055	3.023	3.070	0.2128	2.883	0.94	13.73	1663	18	1245	32
spot 96	8800	3330	86400	25.95	0.10162	1.071	3.780	3.003	0.2664	2.805	0.93	4.13	1653	18	1524	38
spot 97	8010	3270	78600	24.04	0.10227	1.066	3.860	3.096	0.2708	2.906	0.94	4.02	1666	18	1542	40
spot 98	8310	3710	82700	22.29	0.10608	1.053	4.048	2.693	0.2745	2.478	0.92	5.44	1733	18	1562	34
spot 99	9190	3840	84000	21.88	0.10729	1.036	4.440	2.995	0.2951	2.810	0.94	2.94	1754	18	1668	41
spot 100	8430	3960	90000	22.73	0.10569	1.041	3.824	2.641	0.2593	2.428	0.92	7.68	1726	18	1485	33

12TM15-16 monazite (spot size: 6 µm, frequency: 3 Hz, 75 shot count, laser energy: 4 mJ at 56%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	14030	4260	149400	35.07	0.10282	1.080	3.981	2.526	0.2831	2.284	0.90	1.49	1676	18	1606	34

spot 2	16070	5340	170000	31.84	0.10365	1.062	4.051	2.496	0.2874	2.259	0.90	1.11	1690	18	1627	34
spot 3	14870	5260	164100	31.20	0.10069	1.072	3.754	2.464	0.2733	2.219	0.90	1.60	1637	18	1563	33
spot 4	14950	6620	172700	26.09	0.10476	1.070	3.849	2.785	0.2682	2.572	0.92	4.22	1710	19	1542	35
spot 5	17770	7180	189800	26.43	0.10325	1.059	3.935	2.521	0.2772	2.288	0.91	2.79	1683	18	1576	33
spot 6	15710	5370	159900	29.78	0.10422	1.064	4.117	2.412	0.2886	2.165	0.90	1.47	1701	18	1633	33
spot 7	18080	6890	186700	27.10	0.10506	1.048	4.146	2.461	0.2880	2.226	0.90	1.71	1715	18	1637	33
spot 8	14490	6080	151400	24.90	0.10167	1.068	3.840	2.236	0.2765	1.964	0.88	1.65	1655	18	1573	29
spot 9	10570	5880	133600	22.72	0.08954	1.109	2.595	2.767	0.2105	2.535	0.92	5.69	1415	17	1231	29
spot 10	11440	6210	137000	22.06	0.08925	1.087	2.800	2.789	0.2290	2.568	0.92	2.18	1409	16	1328	31
spot 11	15740	5140	153000	29.77	0.10414	1.064	4.121	2.494	0.2881	2.255	0.90	1.59	1699	18	1631	33
spot 12	17760	5990	173100	28.90	0.10417	1.058	4.132	2.604	0.2871	2.380	0.91	2.40	1700	18	1626	35
spot 13	15480	6000	165100	27.52	0.10156	1.172	3.599	2.734	0.2594	2.470	0.90	4.03	1653	20	1488	33
spot 14	14470	4850	140500	28.97	0.10405	1.068	4.143	2.682	0.2886	2.461	0.92	1.53	1697	18	1636	36
spot 15	11300	4960	122700	24.74	0.10353	1.053	3.546	2.766	0.2479	2.558	0.92	7.57	1688	18	1426	34
spot 16	17270	7130	176400	24.74	0.10478	1.051	3.939	2.783	0.2719	2.577	0.93	4.71	1710	18	1549	36
spot 17	18310	4810	181300	37.69	0.10416	1.058	4.133	2.316	0.2867	2.060	0.89	2.15	1700	18	1628	32
spot 18	12990	4900	130300	26.59	0.10392	1.065	3.955	2.628	0.2738	2.403	0.91	3.91	1695	18	1562	34
spot 19	16650	7830	185500	23.69	0.10228	1.057	3.507	2.511	0.2480	2.277	0.91	6.94	1666	18	1427	30
spot 20	15830	5850	148200	25.33	0.10489	1.046	4.172	2.649	0.2880	2.434	0.92	2.20	1712	18	1633	37
spot 21	17720	8830	203100	23.00	0.10264	1.047	3.418	2.521	0.2405	2.293	0.91	8.65	1673	18	1388	29
spot 22	17930	8720	199800	22.91	0.10348	1.039	3.664	2.832	0.2558	2.635	0.93	6.27	1687	18	1467	36
spot 23	18370	8950	200000	22.35	0.10430	1.043	3.773	2.665	0.2618	2.453	0.92	6.01	1702	18	1498	34
spot 24	16340	6710	167400	24.95	0.10083	1.052	3.854	2.538	0.2787	2.310	0.91	1.52	1639	17	1584	33
spot 25	17510	6930	170600	24.62	0.10406	1.052	4.133	2.691	0.2862	2.476	0.92	2.22	1698	18	1621	37
spot 26	14500	4980	137700	27.65	0.10422	1.061	4.234	2.438	0.2939	2.195	0.90	1.02	1700	18	1667	34
spot 27	13960	4850	132500	27.32	0.10393	1.075	4.191	2.535	0.2912	2.296	0.91	1.64	1695	18	1646	34
spot 28	15140	8850	144500	16.33	0.10551	1.037	4.176	2.388	0.2857	2.151	0.90	3.09	1724	18	1619	32
spot 29	17340	9150	171700	18.77	0.10544	1.040	4.174	2.444	0.2852	2.212	0.91	2.90	1722	18	1619	33
spot 30	11700	7540	128100	16.99	0.10326	1.095	3.583	2.986	0.2514	2.778	0.93	6.79	1683	19	1444	36
spot 31	19560	9740	218500	22.43	0.10515	1.063	3.830	2.665	0.2631	2.443	0.92	6.25	1717	18	1504	33
spot 32	14910	9340	154400	16.53	0.10539	1.030	3.983	2.453	0.2719	2.227	0.91	5.23	1722	18	1549	32
spot 33	12910	5790	139000	24.01	0.10256	1.070	3.670	2.736	0.2575	2.518	0.92	5.76	1673	18	1476	34
spot 34	12860	7350	153800	20.93	0.08911	1.066	2.834	2.461	0.2305	2.218	0.90	2.10	1406	16	1336	28
spot 35	12660	6980	149800	21.46	0.08903	1.063	2.865	2.831	0.2357	2.624	0.93	0.95	1405	16	1363	33
spot 36	9190	6640	172500	25.98	0.10012	1.077	2.430	2.638	0.1772	2.408	0.91	19.07	1626	18	1054	25
spot 37	15080	5450	143700	26.37	0.10416	1.068	4.131	2.612	0.2913	2.384	0.91	1.15	1701	18	1647	36
spot 38	15270	5430	144900	26.69	0.10431	1.058	4.210	2.838	0.2944	2.633	0.93	0.90	1702	18	1662	40
spot 39	13330	6560	123700	18.86	0.10544	1.060	4.220	3.022	0.2926	2.830	0.94	1.39	1722	18	1652	43
spot 40	13740	7340	145300	19.80	0.10455	1.040	3.764	2.803	0.2641	2.603	0.93	5.09	1706	18	1513	36
spot 41	14570	7370	138600	18.81	0.10557	1.045	4.214	2.785	0.2931	2.582	0.93	1.21	1725	18	1655	39
spot 42	13360	7050	128800	18.27	0.10541	1.057	4.080	3.340	0.2830	3.169	0.95	2.74	1722	18	1604	46
spot 43	11400	4250	137200	32.28	0.09950	1.124	3.084	3.379	0.2270	3.186	0.94	7.95	1616	19	1321	38
spot 44	11860	4350	141300	32.48	0.09946	1.110	3.174	3.009	0.2336	2.796	0.93	7.17	1613	18	1352	35
spot 45	17240	10400	169100	16.26	0.10633	1.039	4.109	2.740	0.2821	2.535	0.93	3.06	1738	18	1603	36
spot 46	15960	10050	167700	16.69	0.10569	1.050	3.944	2.694	0.2717	2.481	0.92	5.04	1727	18	1548	35
spot 47	15520	9470	155600	16.43	0.10573	1.039	4.051	2.669	0.2797	2.458	0.92	3.59	1727	18	1588	36
spot 48	14670	9410	159900	16.99	0.10369	1.052	3.518	2.704	0.2474	2.491	0.92	7.30	1691	18	1424	33
spot 49	10180	8760	152200	17.37	0.09895	1.071	2.417	2.668	0.1785	2.444	0.92	17.53	1604	18	1061	25
spot 50	10170	9160	146000	15.94	0.09956	1.063	2.521	2.784	0.1845	2.573	0.92	16.83	1616	17	1093	27
spot 51	20200	9850	229900	23.34	0.10458	1.067	4.034	2.326	0.2793	2.067	0.89	3.14	1707	18	1590	31
spot 52	18510	13390	212100	15.84	0.10541	1.048	3.982	2.269	0.2723	2.013	0.89	5.02	1721	18	1554	29
spot 53	17520	11260	229300	20.36	0.10469	1.071	3.694	2.406	0.2570	2.155	0.90	6.65	1709	19	1474	29
spot 54	20080	10540	223100	21.17	0.10517	1.054	4.119	2.281	0.2824	2.023	0.89	3.31	1717	18	1603	30
spot 55	20140	10300	230000	22.33	0.10534	1.060	4.056	2.505	0.2802	2.270	0.91	3.71	1720	18	1591	33
spot 56	20880	10410	222500	21.37	0.10490	1.081	4.077	2.413	0.2845	2.157	0.89	2.29	1712	19	1616	32
spot 57	18650	11740	212500	18.10	0.10573	1.045	4.093	2.038	0.2827	1.750	0.86	2.80	1727	18	1607	27
spot 58	21960	12700	232300	18.29	0.10584	1.056	4.197	2.278	0.2896	2.018	0.89	1.83	1729	18	1641	31
spot 59	20240	9130	209500	22.95	0.10481	1.054	4.236	2.322	0.2967	2.069	0.89	0.30	1711	18	1677	32
spot 60	20670	9300	217000	23.33	0.10491	1.043	4.175	2.310	0.2924	2.061	0.89	1.03	1712	18	1652	31
spot 61	15200	7140	194200	27.20	0.10475	1.067	4.085	2.372	0.2863	2.119	0.89	1.85	1710	18	1622	32
spot 62	19190	9440	206700	21.90	0.10391	1.055	4.046	2.268	0.2858	2.008	0.89	1.36	1695	18	1619	30
spot 63	18570	9070	194800	21.48	0.10510	1.057	4.101	2.358	0.2886	2.108	0.89	1.22	1716	18	1634	32
spot 64	18890	11160	193500	17.34	0.10523	1.057	4.114	2.281	0.2889	2.022	0.89	1.53	1719	18	1635	31
spot 65	12110	6610	132900	20.11	0.10210	1.101	3.623	2.452	0.2618	2.191	0.89	3.40	1662	19	1501	30
spot 66	13530	6060	135800	22.41	0.10406	1.058	4.105	2.554	0.2914	2.324	0.91	0.55	1697	18	1647	35
spot 67	13740	5860	136900	23.36	0.10406	1.068	4.110	2.253	0.2911	1.984	0.88	0.49	1698	18	1646	30
spot 68	13860	5750	136700	23.77	0.10391	1.072	4.117	2.483	0.2908	2.240	0.90	0.67	1695	18	1644	33
spot 69	12480	5670	123600	21.80	0.10426	1.097	4.078	2.456	0.2879	2.197	0.89	1.29	1702	19	1630	33
spot 70	14170	5490	140800	25.65	0.10397	1.065	4.112	2.539	0.2897	2.305	0.91	0.98	1696	18	1639	34
spot 71	13650	5060	134000	26.48	0.10405	1.071	4.126	2.508	0.2911	2.267	0.90	0.49	1697	18	1649	34
spot 72	15900	8080	188500	23.33	0.08841	1.052	2.792	2.387	0.2310	2.142	0.90	0.97	1391	15	1339	26
spot 73	25200	8930	254000	28.44	0.10404	1.041	4.119	2.405	0.2880	2.168	0.90	1.66	1697	18	1630	33
spot 74	13610	7340	172400	23.49	0.08845	1.132	2.598	2.536	0.2129	2.269	0.89	4.33	1392	17	1247	26
spot 75	19880	7690	199700	25.97	0.10383	1.058	4.065	2.329	0.2837	2.074	0.89	2.30	1693	18	1612	31
spot 76	23650	6320	241400	38.20	0.10369	1.075	4.079	2.697	0.2866	2.474	0.92	1.60	1691	18	1623	37
spot 77	19030	6290	188500	29.97	0.10413	1.052	4.122	2.443	0.2865	2.205	0.90	2.09	1699	18	1625	33
spot 78	19450	7930	208100	26.24	0.10448	1.043	3.819	2.337	0.2627	2.091	0.89	5.98	1705	18	1506	29
spot 79	19040	5590	186000	33.27	0.10368	1.047	4.170	2.381	0.2881	2.139	0.90	1.96	1691	18	1634	33
spot 80	16340	5270	163600	31.04	0.10242	1.051	3.896	2.540	0.2731	2.313	0.91	3.79	1669	18	1555	33
spot 81	11750	4560	196900	43.18	0.09466	1.107	2.172	2.585	0.1647	2.336	0.90	19.14	1523	18	982	22

spot 82	18080	4210	190900	45.34	0.10254	1.084	3.820	2.993	0.2660	2.790	0.93	4.79	1670	18	1524	38
spot 83	14420	6530	144400	22.11	0.10376	1.041	3.963	2.446	0.2743	2.213	0.90	4.04	1692	18	1561	32
spot 84	16680	4360	174400	40.00	0.10245	1.113	3.836	2.888	0.2689	2.665	0.92	4.30	1669	19	1534	37
spot 85	18410	5990	201400	33.62	0.10045	1.056	3.488	2.591	0.2501	2.366	0.91	5.84	1632	18	1438	31
spot 86	15630	5920	189800	32.06	0.08865	1.059	2.736	2.441	0.2225	2.199	0.90	3.40	1396	15	1294	27
spot 87	20850	4250	202400	47.62	0.10381	1.062	4.163	2.595	0.2891	2.367	0.91	1.77	1693	18	1636	36
spot 88	19810	6840	240600	35.18	0.08966	1.066	2.836	2.369	0.2295	2.116	0.89	2.63	1418	16	1331	26
spot 89	19520	6810	238400	35.01	0.08984	1.069	2.851	2.845	0.2300	2.637	0.93	2.40	1422	16	1333	32
spot 90	17590	6730	219700	32.64	0.08997	1.054	2.702	2.760	0.2177	2.551	0.92	5.21	1426	16	1268	30
spot 91	16680	6330	200600	31.69	0.08927	1.059	2.839	2.844	0.2297	2.639	0.93	2.25	1410	16	1332	32
spot 92	16710	4660	166900	35.82	0.10409	1.089	4.012	2.458	0.2814	2.203	0.90	2.57	1698	19	1597	32
spot 93	16100	4620	168700	36.52	0.10406	1.065	3.848	2.652	0.2699	2.429	0.92	4.35	1698	18	1539	34
spot 94	14370	4530	160400	35.41	0.10198	1.089	3.450	2.692	0.2466	2.462	0.91	6.54	1662	18	1423	33
spot 95	12710	4650	162000	34.84	0.10277	1.066	3.657	2.919	0.2584	2.717	0.93	5.06	1675	18	1483	37

12TM17-04 monazite (spot size: 6 µm, frequency: 3 Hz, 75 shot count, laser energy: 4 mJ at 56%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	3326	4870	32200	6.61	0.10336	1.362	3.901	2.820	0.2699	2.469	0.88	4.87	1685	23	1540	36
spot 2	4900	9280	45900	4.95	0.10619	1.346	4.279	2.808	0.2882	2.464	0.88	3.43	1735	23	1631	38
spot 3	3520	6000	31020	5.17	0.10516	1.355	4.207	2.654	0.2866	2.283	0.86	3.26	1717	23	1624	35
spot 4	499	4870	36400	7.47	0.06680	2.098	0.327	3.190	0.0352	2.403	0.75	28.91	835	34	223	5
spot 5	207	3640	16060	4.41	0.04980	2.738	0.181	4.181	0.0262	3.160	0.76	1.02	180	54	167	5
spot 6	171	2152	12040	5.59	0.05160	3.542	0.195	4.802	0.0275	3.242	0.68	3.21	277	71	175	6
spot 7	1487	2498	11220	4.49	0.10455	1.395	4.360	3.286	0.2992	2.975	0.91	0.89	1706	24	1689	46
spot 8	311	5400	27370	5.07	0.05145	2.087	0.181	3.293	0.0254	2.547	0.77	4.08	253	37	162	4
spot 9	285	4847	27580	5.69	0.05774	2.016	0.201	3.169	0.0252	2.445	0.77	16.09	519	34	160	4
spot 10	3062	3980	27140	6.82	0.10306	1.365	4.058	2.848	0.2859	2.499	0.88	1.54	1681	23	1620	38
spot 11	3014	4230	26710	6.31	0.10375	1.356	4.000	2.806	0.2785	2.456	0.88	3.22	1692	23	1583	37
spot 12	2898	3480	25290	7.27	0.10317	1.359	3.949	2.906	0.2767	2.568	0.88	2.99	1682	23	1574	39
spot 13	2454	3196	24830	7.77	0.10405	1.345	3.878	2.725	0.2691	2.370	0.87	4.62	1697	23	1536	35
spot 14	2145	2635	18180	6.90	0.10595	1.371	4.220	3.158	0.2898	2.845	0.90	2.50	1732	24	1639	44
spot 15	1843	1924	16460	8.56	0.10513	1.391	4.010	3.346	0.2772	3.043	0.91	3.75	1716	24	1575	45
spot 16	1680	1946	17530	9.01	0.10504	1.381	3.758	3.115	0.2620	2.792	0.90	5.74	1715	24	1499	39
spot 17	1833	2006	15650	7.80	0.10447	1.403	3.910	3.351	0.2731	3.043	0.91	3.72	1708	24	1559	44
spot 18	1201	1965	9770	4.97	0.10482	1.395	4.000	3.742	0.2767	3.473	0.93	3.30	1711	24	1577	51
spot 19	220	868	19710	22.71	0.05040	4.936	0.160	6.052	0.0234	3.502	0.58	0.94	222	96	149	5
spot 20	234	1052	21260	20.21	0.04890	4.487	0.155	5.499	0.0230	3.178	0.58	0.20	139	86	147	5
spot 21	2703	6290	21880	3.48	0.10593	1.349	3.838	2.943	0.2623	2.616	0.89	6.30	1731	23	1507	37
spot 22	2713	5950	21890	3.68	0.10526	1.340	3.845	3.322	0.2655	3.040	0.92	5.94	1719	23	1516	42
spot 23	3730	8150	33000	4.05	0.10686	1.336	3.682	3.033	0.2492	2.723	0.90	9.42	1748	23	1433	37
spot 24	3890	7870	32100	4.08	0.10653	1.348	3.993	3.191	0.2692	2.893	0.91	6.19	1741	24	1535	41
spot 25	3131	6280	26800	4.27	0.10551	1.346	3.883	3.060	0.2643	2.748	0.90	6.69	1723	23	1510	39
spot 26	3213	6010	27520	4.58	0.10518	1.347	3.917	2.939	0.2682	2.612	0.89	5.75	1717	23	1530	37
spot 27	425	3090	32500	10.52	0.06050	2.372	0.253	3.965	0.0302	3.178	0.80	20.31	611	43	192	6
spot 28	3220	3750	29420	7.85	0.09728	1.439	3.614	2.971	0.2653	2.600	0.87	2.51	1572	24	1516	37
spot 29	379	2579	26420	10.24	0.06560	3.036	0.359	5.470	0.0381	4.550	0.83	28.63	795	61	241	11
spot 30	298	3740	24560	6.57	0.04864	2.178	0.177	3.856	0.0263	3.182	0.83	1.01	125	38	168	5
spot 31	299	2142	22830	10.66	0.05580	2.214	0.225	3.719	0.0293	2.988	0.80	10.37	432	41	186	6
spot 32	2322	2810	18410	6.55	0.10164	1.353	4.120	3.368	0.2953	3.084	0.92	0.00	1654	23	1670	46
spot 33	2623	3090	20930	6.77	0.10325	1.362	4.360	3.290	0.3045	2.995	0.91	0.29	1683	23	1711	48
spot 34	2354	2590	19260	7.44	0.10178	1.390	4.110	3.447	0.2934	3.154	0.92	0.36	1656	23	1660	48
spot 35	2307	3500	19120	5.46	0.10162	1.364	4.020	3.409	0.2859	3.124	0.92	0.86	1653	23	1619	47
spot 36	271	2770	21840	7.88	0.04893	2.170	0.174	3.815	0.0261	3.138	0.82	1.87	144	39	166	5
spot 37	292	2528	23220	9.19	0.05530	2.376	0.203	3.731	0.0267	2.877	0.77	10.36	419	42	170	5
spot 38	567	978	22620	23.13	0.09300	1.758	1.470	4.087	0.1139	3.690	0.90	31.85	1484	30	697	24
spot 39	417	2039	26000	12.75	0.07170	1.907	0.398	3.569	0.0407	3.017	0.85	32.02	971	32	257	8
spot 40	375	1733	24600	14.20	0.06860	2.179	0.357	3.839	0.0380	3.160	0.82	28.98	885	37	240	7
spot 41	2801	3140	24390	7.77	0.10304	1.351	3.970	3.309	0.2803	3.020	0.91	1.88	1679	23	1595	44
spot 42	2640	2649	28360	10.71	0.10638	1.359	4.075	3.137	0.2792	2.827	0.90	4.16	1739	24	1586	42
spot 43	3237	2715	27530	10.14	0.10482	1.340	4.190	3.281	0.2921	2.995	0.91	1.52	1711	23	1650	45
spot 44	3550	3040	30000	9.87	0.10510	1.349	4.120	3.126	0.2849	2.820	0.90	2.48	1717	23	1614	43
spot 45	3470	2810	30400	10.82	0.10436	1.350	4.032	3.251	0.2811	2.957	0.91	2.57	1703	23	1595	43
spot 46	4570	2575	39500	15.34	0.10545	1.337	4.305	3.050	0.2985	2.742	0.90	0.77	1722	23	1682	43
spot 47	4324	2418	38100	15.76	0.10566	1.342	4.230	3.363	0.2914	3.084	0.92	2.00	1726	23	1646	47
spot 48	2909	2007	29490	14.69	0.10554	1.360	4.213	3.132	0.2936	2.822	0.90	1.45	1723	24	1657	43
spot 49	3156	1496	33200	22.19	0.10803	1.380	4.330	3.240	0.2934	2.931	0.90	2.78	1766	24	1656	45
spot 50	3720	1960	34900	17.81	0.10343	1.343	3.895	3.364	0.2757	3.084	0.92	2.48	1686	23	1572	45
spot 51	2817	1850	30000	16.22	0.08943	1.368	2.880	3.442	0.2358	3.158	0.92	1.17	1414	20	1363	41
spot 52	2300	1165	28540	24.50	0.09706	1.391	3.031	3.451	0.2282	3.158	0.92	6.56	1568	22	1327	39
spot 53	3341	1373	31800	23.16	0.09862	1.371	3.630	3.619	0.2662	3.349	0.93	1.44	1598	22	1533	47
spot 54	3380	1300	31000	23.85	0.09840	1.375	3.679	3.422	0.2731	3.134	0.92	0.90	1595	22	1555	45
spot 55	3018	2095	30800	14.70	0.08993	1.357	2.915	3.602	0.2358	3.337	0.93	1.32	1424	20	1366	43

12TM13-01 xenotime (spot size: 7 µm, frequency: 3 Hz, 75 shot count, laser energy: 3 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	793	11340	6750	0.60	0.11120	0.742	3.949	2.353	0.2553	2.233	0.95	11.00	1818	13	1464	29
spot 2	453	6440	3950	0.61	0.10294	0.671	3.510	2.854	0.2487	2.774	0.97	7.07	1677	12	1429	35
spot 3	417	5410	3560	0.66	0.10477	1.019	3.870	2.858	0.2659	2.670	0.93	5.45	1708	18	1522	36
spot 4	943	7250	7910	1.09	0.11297	0.698	4.100	2.791	0.2627	2.703	0.97	9.63	1847	13	1506	37

spot 5	475	5860	7070	1.21	0.09099	0.624	1.989	2.970	0.1584	2.904	0.98	17.76	1447	10	946	26
spot 6	537	2932	5170	1.76	0.09626	0.670	3.246	2.906	0.2440	2.828	0.97	4.06	1552	11	1405	36
spot 7	27	1516	813	0.54	0.06650	1.585	0.482	3.932	0.0528	3.598	0.92	20.24	820	31	331	11
spot 8	263	5360	7240	1.35	0.08460	0.774	0.976	2.849	0.0839	2.741	0.96	33.14	1305	13	519	14
spot 9	1458	9890	13450	1.36	0.10809	0.848	3.520	3.229	0.2375	3.116	0.96	11.20	1768	16	1375	39
spot 10	1085	7520	10220	1.36	0.10633	0.719	3.469	2.566	0.2355	2.463	0.96	11.38	1737	13	1362	30
spot 11	1323	9030	11660	1.29	0.11566	0.696	3.990	2.692	0.2500	2.600	0.97	13.75	1890	13	1440	33
spot 12	796	7440	9490	1.28	0.09937	0.746	2.523	2.562	0.1836	2.451	0.96	17.40	1613	13	1086	25
spot 13	24	3910	1801	0.46	0.05224	1.776	0.175	3.220	0.0238	2.686	0.83	7.64	286	38	152	4
spot 14	12	1472	775	0.53	0.05160	2.379	0.193	4.011	0.0276	3.229	0.81	2.63	261	52	175	6
spot 15	11	1721	873	0.51	0.05020	2.442	0.190	3.615	0.0270	2.666	0.74	2.79	195	53	172	5
spot 16	22	3112	1520	0.49	0.05210	2.357	0.216	4.053	0.0300	3.298	0.81	4.14	285	52	191	6
spot 17	14	2350	1205	0.51	0.04940	2.480	0.181	3.829	0.0264	2.918	0.76	0.71	168	55	168	5
spot 18	41	6500	3340	0.51	0.05047	1.308	0.174	2.655	0.0251	2.311	0.87	2.07	213	28	160	4
spot 19	84	14080	7060	0.50	0.04948	1.020	0.172	2.760	0.0250	2.564	0.93	2.08	168	21	159	4
spot 20	126	13720	11120	0.81	0.04924	0.989	0.169	2.641	0.0249	2.449	0.93	0.13	159	20	159	4
spot 21	62	13330	5210	0.39	0.04961	1.089	0.173	2.510	0.0252	2.261	0.90	1.06	174	22	160	4
spot 22	95	13250	7860	0.59	0.04862	0.998	0.171	2.456	0.0254	2.244	0.91	1.18	129	20	162	4
spot 23	627	6700	6060	0.90	0.09423	0.677	3.056	2.433	0.2354	2.336	0.96	4.34	1512	12	1361	28
spot 24	729	7070	6740	0.95	0.10176	0.708	3.487	2.326	0.2482	2.216	0.95	6.57	1657	12	1431	29
spot 25	581	10760	5510	0.51	0.09806	0.620	3.113	2.869	0.2285	2.801	0.98	8.15	1588	11	1325	33
spot 26	733	12860	7280	0.57	0.09332	0.606	2.882	3.033	0.2221	2.972	0.98	5.62	1494	10	1299	35
spot 27	1017	10860	9510	0.88	0.09873	0.771	3.300	2.884	0.2411	2.779	0.96	6.17	1601	14	1394	34
spot 28	912	9770	8640	0.88	0.09973	0.708	3.288	2.654	0.2385	2.558	0.96	6.97	1619	13	1377	32
spot 29	931	11930	9730	0.82	0.09317	0.619	2.742	2.426	0.2132	2.345	0.97	7.21	1491	10	1248	27
spot 30	912	13260	9170	0.69	0.09422	0.599	2.915	2.438	0.2243	2.363	0.97	6.22	1512	10	1303	28
spot 31	912	9920	8330	0.84	0.09888	0.663	3.350	3.042	0.2459	2.969	0.98	5.16	1603	11	1415	38
spot 32	113	9470	7770	0.82	0.05603	1.102	0.232	3.252	0.0304	3.059	0.94	9.84	456	21	193	6
spot 33	27	2847	1855	0.65	0.05470	1.895	0.225	3.163	0.0300	2.532	0.80	7.97	392	42	191	5
spot 34	25	3083	2170	0.70	0.04985	1.990	0.178	3.384	0.0263	2.738	0.81	0.78	183	42	167	5
spot 35	10	1382	684	0.49	0.05100	3.759	0.200	5.097	0.0282	3.442	0.68	3.74	227	80	179	6
spot 36	23	2480	1668	0.67	0.05120	2.396	0.204	4.249	0.0285	3.509	0.83	3.53	239	53	181	6
spot 37	9	970	605	0.62	0.05160	7.188	0.201	9.038	0.0292	5.479	0.61	0.54	270	150	186	10
spot 38	9	1077	788	0.73	0.04940	3.477	0.176	4.921	0.0259	3.482	0.71	0.36	169	74	164	6
spot 39	18	2244	1582	0.70	0.04920	2.490	0.174	3.899	0.0260	3.000	0.77	1.87	154	51	166	5
spot 40	10	1519	898	0.59	0.05020	2.833	0.176	3.933	0.0253	2.728	0.69	1.74	188	61	161	4
spot 41	15	1821	1160	0.64	0.05070	2.226	0.187	3.772	0.0273	3.045	0.81	0.40	223	47	173	5
spot 42	582	4270	5760	1.35	0.09348	0.651	3.002	3.049	0.2350	2.979	0.98	3.46	1497	11	1358	36
spot 43	461	3585	4550	1.27	0.09095	0.638	2.858	2.855	0.2300	2.783	0.97	2.40	1445	10	1336	33
spot 44	477	3101	4930	1.59	0.09264	0.768	2.770	4.084	0.2219	4.011	0.98	5.12	1481	13	1290	47
spot 45	438	3960	4500	1.14	0.09406	0.714	2.862	3.132	0.2230	3.049	0.97	5.31	1510	12	1300	37
spot 46	456	3750	4520	1.21	0.09502	0.640	3.025	3.281	0.2331	3.218	0.98	4.82	1528	11	1348	39
spot 47	527	4070	5190	1.28	0.09405	0.623	2.964	2.806	0.2303	2.736	0.98	4.65	1509	10	1334	33
spot 48	8	930	370	0.40	0.05930	3.243	0.271	5.130	0.0327	3.976	0.77	17.28	551	73	207	8
spot 49	11	1499	863	0.58	0.05030	3.024	0.179	4.635	0.0262	3.513	0.76	0.18	203	64	167	6
spot 50	480	7750	4350	0.56	0.10885	0.699	3.324	2.403	0.2215	2.299	0.96	15.52	1781	13	1289	28
spot 51	473	5970	4590	0.77	0.09902	0.583	2.882	2.329	0.2117	2.255	0.97	11.13	1606	10	1240	26
spot 52	644	8960	5790	0.65	0.10872	0.657	3.269	2.259	0.2201	2.161	0.96	15.38	1779	12	1281	26
spot 53	451	5910	4273	0.72	0.09917	0.626	2.970	2.598	0.2176	2.521	0.97	10.17	1608	11	1268	30
spot 54	404	6290	3746	0.60	0.10041	0.618	3.012	2.853	0.2192	2.785	0.98	10.58	1631	11	1276	33
spot 55	671	7640	6040	0.79	0.10594	0.598	3.302	2.236	0.2270	2.154	0.96	12.44	1731	11	1318	26
spot 56	905	8140	8110	1.00	0.10879	0.712	3.470	2.374	0.2319	2.265	0.95	12.78	1779	13	1346	28
spot 57	1157	10200	9490	0.93	0.11851	0.725	3.930	2.455	0.2407	2.346	0.96	16.59	1933	13	1392	31
spot 58	1114	9030	9150	1.01	0.11683	0.730	3.985	2.257	0.2478	2.136	0.95	14.51	1909	14	1427	29
spot 59	1123	9210	9360	1.02	0.11603	0.657	3.874	2.320	0.2436	2.225	0.96	14.14	1896	12	1407	29
spot 60	1214	11770	11620	0.99	0.10505	0.609	3.103	2.171	0.2150	2.083	0.96	14.02	1715	11	1255	25
spot 61	1534	14390	14200	0.99	0.11203	0.660	3.368	2.310	0.2177	2.213	0.96	18.28	1834	12	1269	27
spot 62	1525	14350	13610	0.95	0.11704	0.711	3.695	2.495	0.2291	2.392	0.96	18.21	1911	13	1329	30
spot 63	1308	13180	12800	0.97	0.10430	0.674	3.055	2.317	0.2116	2.217	0.96	14.34	1702	12	1241	26
spot 64	689	8800	6040	0.69	0.10976	0.721	3.666	2.467	0.2438	2.359	0.96	11.74	1796	13	1405	31
spot 65	992	13240	9210	0.70	0.11020	0.648	3.385	2.384	0.2221	2.295	0.96	16.18	1803	12	1292	28
spot 66	813	9850	7060	0.72	0.11208	0.633	3.775	2.540	0.2442	2.460	0.97	12.72	1833	12	1407	32
spot 67	760	7260	7130	0.98	0.10548	0.906	3.395	2.771	0.2331	2.619	0.95	11.33	1723	17	1350	33
spot 68	416	5030	4720	0.94	0.09372	0.658	2.626	2.923	0.2052	2.848	0.97	9.15	1503	11	1202	32
spot 69	429	4189	4004	0.96	0.10387	0.688	3.492	2.445	0.2457	2.347	0.96	7.84	1694	12	1415	31
spot 70	458	4202	4198	1.00	0.10353	0.676	3.605	2.794	0.2522	2.711	0.97	6.69	1688	12	1451	35
spot 71	1307	14230	12950	0.91	0.10625	0.651	3.117	2.472	0.2151	2.385	0.96	14.90	1736	11	1255	28
spot 72	683	9020	6550	0.73	0.10095	0.628	3.092	2.595	0.2226	2.518	0.97	10.28	1641	11	1294	30
spot 73	1297	12820	12390	0.97	0.11364	0.734	3.564	2.400	0.2288	2.285	0.95	16.20	1858	13	1327	28
spot 74	1739	17370	15870	0.91	0.11595	0.817	3.602	2.144	0.2272	1.982	0.92	17.56	1896	15	1321	25
spot 75	1529	14820	13070	0.88	0.11807	0.835	3.956	2.405	0.2442	2.255	0.94	15.42	1926	16	1407	29
spot 76	674	6470	6790	1.05	0.09473	0.556	2.896	2.287	0.2225	2.219	0.97	6.47	1523	9	1299	27
spot 77	965	14000	11450	0.82	0.09922	0.768	2.443	2.599	0.1796	2.483	0.96	17.86	1609	14	1064	25
spot 78	1478	18090	13710	0.76	0.10777	0.735	3.274	2.249	0.2201	2.125	0.95	15.37	1762	13	1282	25
spot 79	1492	17100	13460	0.79	0.11118	0.668	3.517	2.313	0.2287	2.214	0.96	15.30	1818	12	1327	27
spot 80	923	15450	10050	0.65	0.09903	0.690	2.596	2.612	0.1900	2.519	0.96	15.70	1606	12	1121	26
spot 81	1250	16510	12230	0.74	0.10184	0.615	2.909	2.372	0.2067	2.291	0.97	14.29	1658	11	1211	26
spot 82	1569	21460	16490	0.77	0.10209	0.735	2.703	2.436	0.1922	2.323	0.95	17.56	1662	13	1133	25
spot 83	20	3425	1512	0.44	0.04964	1.147	0.181	2.756	0.0266	2.506	0.91	0.41	175	24	169	4
spot 84	8	1674	698	0.42	0.04923	1.800	0.170	3.465	0.0252	2.960	0.85	0.62	157	38	160	5

spot 85	16	2765	1344	0.49	0.05062	1.218	0.175	2.644	0.0251	2.347	0.89	2.69	220	25	160	4
spot 86	13	2083	1025	0.49	0.04989	1.568	0.178	3.013	0.0257	2.573	0.85	2.08	189	34	163	4
spot 87	7	2029	601	0.30	0.04824	1.597	0.167	3.059	0.0252	2.610	0.85	2.55	108	33	161	4
spot 88	48	7130	4270	0.60	0.04937	0.940	0.164	2.746	0.0242	2.580	0.94	0.06	163	18	154	4
spot 89	9	2137	716	0.34	0.04904	1.690	0.173	3.448	0.0258	3.006	0.87	1.76	152	36	165	5
spot 90	10	1859	848	0.46	0.04942	1.659	0.171	3.072	0.0251	2.585	0.84	0.13	165	35	160	4
spot 91	13	2415	1154	0.48	0.04838	1.456	0.168	3.029	0.0255	2.656	0.88	2.65	117	30	162	4
spot 92	50	15280	4300	0.28	0.04951	0.718	0.173	2.956	0.0254	2.868	0.97	0.12	172	12	162	5
spot 93	52	12790	4451	0.35	0.04963	0.731	0.172	2.709	0.0252	2.608	0.96	0.50	178	12	161	4
spot 94	18	12070	1541	0.13	0.04930	0.794	0.176	2.813	0.0258	2.699	0.96	0.06	161	14	164	4
spot 95	20	14250	1684	0.12	0.04969	0.760	0.176	2.709	0.0258	2.600	0.96	0.24	181	13	164	4
spot 96	11	6650	892	0.13	0.04936	0.841	0.178	2.842	0.0260	2.715	0.96	0.24	163	16	166	4
spot 97	18	13070	1545	0.12	0.04964	0.760	0.178	2.889	0.0260	2.787	0.96	0.30	178	14	165	5
spot 98	55	13340	5150	0.39	0.05004	0.850	0.179	2.889	0.0259	2.761	0.96	1.34	200	16	165	4
spot 99	81	20210	6850	0.34	0.04985	0.674	0.173	2.553	0.0253	2.463	0.96	0.43	187	11	161	4
spot 100	45	12460	3737	0.30	0.04921	0.779	0.175	2.629	0.0256	2.511	0.96	0.37	160	13	163	4
spot 101	55	14940	4630	0.31	0.04942	0.664	0.174	2.938	0.0255	2.862	0.97	0.31	167	10	162	5

12TM15-16 xenotime (spot size: 6 µm, frequency: 3 Hz, 75 shot count, laser energy: 4 mJ at 56%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	1006	10400	8970	0.86	0.10447	1.749	3.740	4.602	0.2567	4.256	0.92	7.11	1705	30	1476	59
spot 2	868	11630	9040	0.78	0.09590	1.761	2.922	4.397	0.2206	4.029	0.92	8.00	1546	28	1287	50
spot 3	1626	16770	13080	0.78	0.11495	1.735	4.400	4.367	0.2771	4.007	0.92	8.36	1879	33	1579	59
spot 4	560	5730	5870	1.02	0.09274	1.780	2.947	4.474	0.2295	4.104	0.92	4.66	1482	27	1330	52
spot 5	1234	19850	12010	0.61	0.09984	1.726	3.183	4.275	0.2335	3.911	0.91	7.31	1621	28	1355	50
spot 6	940	8390	7820	0.93	0.10682	1.741	4.040	4.450	0.2763	4.095	0.92	4.65	1746	30	1571	61
spot 7	563	7840	4840	0.62	0.09947	1.814	3.520	4.828	0.2548	4.475	0.93	5.13	1615	30	1461	62
spot 8	475	4310	3800	0.88	0.10012	1.796	3.760	4.781	0.2740	4.430	0.93	1.73	1626	30	1558	65
spot 9	249	4230	2167	0.51	0.09289	1.807	3.080	5.187	0.2409	4.862	0.94	2.31	1486	28	1388	63
spot 10	353	4370	2950	0.68	0.09667	1.813	3.350	5.319	0.2502	5.001	0.94	3.40	1560	29	1443	68
spot 11	151	3670	1663	0.45	0.09386	1.902	2.320	5.546	0.1786	5.210	0.94	15.33	1504	30	1057	52
spot 12	1517	16760	16970	1.01	0.09351	1.750	2.791	4.455	0.2183	4.097	0.92	6.60	1498	27	1272	49
spot 13	696	10770	7860	0.73	0.09104	1.759	2.719	4.499	0.2159	4.141	0.92	5.71	1447	26	1262	49
spot 14	657	9740	6480	0.67	0.09561	1.798	3.200	4.478	0.2423	4.101	0.92	4.01	1540	28	1397	54
spot 15	689	10300	7180	0.70	0.09332	1.756	2.959	4.303	0.2299	3.928	0.91	4.49	1494	27	1337	50
spot 16	1020	7070	9620	1.36	0.10051	1.798	3.648	4.259	0.2645	3.861	0.91	3.37	1633	30	1512	55
spot 17	735	7010	6620	0.94	0.10356	1.735	3.917	4.378	0.2745	4.020	0.92	3.39	1689	29	1565	59
spot 18	683	6660	6830	1.03	0.09820	1.813	3.291	4.497	0.2440	4.115	0.92	5.19	1589	30	1406	55
spot 19	701	5950	7300	1.23	0.09633	1.845	3.090	4.852	0.2335	4.487	0.92	5.85	1553	29	1350	57
spot 20	781	9230	7910	0.86	0.09382	1.753	2.889	4.330	0.2239	3.960	0.91	5.67	1504	27	1304	49
spot 21	781	9170	7240	0.79	0.09696	1.789	3.270	4.595	0.2453	4.232	0.92	4.04	1566	28	1412	57
spot 22	783	6720	6940	1.03	0.09713	1.827	3.380	4.675	0.2571	4.303	0.92	1.63	1569	30	1473	59
spot 23	840	13380	8420	0.63	0.09074	1.741	2.750	4.668	0.2210	4.331	0.93	4.28	1441	26	1286	53
spot 24	571	5560	5810	1.04	0.09154	1.789	2.758	4.801	0.2205	4.455	0.93	4.04	1458	27	1286	55
spot 25	627	5740	6120	1.07	0.09086	1.774	2.826	4.461	0.2272	4.093	0.92	3.03	1443	26	1322	51
spot 26	683	10480	6420	0.61	0.09398	1.769	3.043	4.580	0.2388	4.225	0.92	2.54	1507	27	1379	55
spot 27	704	10510	6440	0.61	0.09367	1.779	3.024	4.547	0.2371	4.184	0.92	2.99	1502	27	1370	54
spot 28	620	9630	6510	0.68	0.08977	1.737	2.555	4.691	0.2109	4.357	0.93	4.30	1420	25	1232	51
spot 29	635	8380	5960	0.71	0.09308	1.764	2.958	4.439	0.2345	4.073	0.92	2.43	1489	27	1360	53
spot 30	734	10230	6690	0.65	0.09818	1.912	3.320	4.718	0.2485	4.313	0.91	3.35	1588	31	1433	58
spot 31	595	9600	5730	0.60	0.09305	1.759	2.841	4.411	0.2266	4.045	0.92	3.65	1488	27	1315	51
spot 32	702	10320	6630	0.64	0.09508	1.756	3.000	4.756	0.2347	4.420	0.93	3.46	1529	27	1357	56
spot 33	296	4010	9340	2.33	0.09332	1.904	2.145	4.820	0.1693	4.429	0.92	15.25	1492	30	1010	42
spot 34	318	4420	3910	0.88	0.08872	1.762	2.218	4.816	0.1846	4.482	0.93	8.71	1398	25	1091	47
spot 35	241	16900	63200	3.74	0.09170	2.081	0.224	6.484	0.0182	6.141	0.95	76.88	1460	33	116	7
spot 36	514	5720	4390	0.77	0.10117	1.782	3.650	4.907	0.2654	4.572	0.93	2.71	1646	30	1514	65
spot 37	569	5180	5070	0.98	0.09964	1.790	3.510	4.564	0.2581	4.199	0.92	3.38	1618	29	1478	59
spot 38	497	6330	4960	0.78	0.09110	1.759	2.803	4.741	0.2265	4.402	0.93	3.27	1450	26	1314	54

12TM17-04 xenotime (spot size: 6 µm, frequency: 3 Hz, 75 shot count, laser energy: 4 mJ at 56%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	31	1796	674	0.38	0.08030	1.667	1.073	5.789	0.0974	5.544	0.96	23.24	1205	28	598	32
spot 2	335	8370	4051	0.48	0.09017	1.030	2.447	2.910	0.1984	2.722	0.94	8.04	1430	16	1169	30
spot 3	219	5510	2394	0.43	0.09020	1.073	2.690	4.083	0.2183	3.940	0.96	4.17	1430	17	1270	45
spot 4	224	4960	2214	0.45	0.09176	1.055	2.858	3.478	0.2263	3.314	0.95	4.65	1462	16	1312	39
spot 5	156	3230	1645	0.51	0.08956	1.131	2.895	3.356	0.2342	3.160	0.94	1.48	1418	18	1354	38
spot 6	29	9010	3010	0.33	0.04991	1.727	0.162	3.997	0.0239	3.604	0.90	0.26	186	33	152	5
spot 7	201	5240	2256	0.43	0.09067	1.104	2.560	3.851	0.2060	3.689	0.96	6.98	1440	18	1204	41
spot 8	212	5250	2333	0.44	0.09057	1.062	2.632	3.298	0.2114	3.122	0.95	6.56	1438	16	1234	35
spot 9	133	3720	1228	0.33	0.09117	1.131	2.800	4.509	0.2245	4.365	0.97	3.83	1449	18	1306	51
spot 10	223	7290	2149	0.29	0.09455	1.131	2.910	3.839	0.2208	3.668	0.96	7.25	1518	19	1283	42
spot 11	214	6100	1723	0.28	0.10207	1.144	3.650	3.352	0.2571	3.151	0.94	6.05	1661	20	1472	42
spot 12	59	5040	526	0.10	0.09552	1.075	3.170	3.321	0.2387	3.142	0.95	4.93	1538	17	1378	39
spot 13	141	8040	1184	0.15	0.10348	1.057	3.660	3.323	0.2539	3.151	0.95	6.64	1689	18	1461	42
spot 14	96	7510	858	0.11	0.10114	1.085	3.390	3.145	0.2405	2.952	0.94	7.47	1646	18	1392	37
spot 15	97	7760	882	0.11	0.10107	1.085	3.366	2.851	0.2390	2.636	0.92	8.33	1643	18	1380	33
spot 16	294	4320	2696	0.62	0.09526	1.101	3.090	3.997	0.2342	3.843	0.96	5.40	1534	18	1353	47
spot 17	165	4840	1417	0.29	0.09788	1.148	3.430	3.728	0.2537	3.547	0.95	3.15	1585	19	1459	46
spot 18	289	8360	3240	0.39	0.09064	1.043	2.515	3.233	0.2026	3.060	0.95	7.50	1440	16	1187	33

spot 19	301	9410	3190	0.34	0.09232	1.027	2.645	3.065	0.2078	2.887	0.94	7.46	1474	16	1220	33
spot 20	137	4310	1457	0.34	0.09011	1.117	2.650	4.384	0.2123	4.239	0.97	5.79	1429	17	1244	49
spot 21	157	5500	1692	0.31	0.09157	1.080	2.650	4.213	0.2112	4.072	0.97	7.22	1458	17	1232	46
spot 22	154	4500	1764	0.39	0.09765	1.131	2.723	3.710	0.2038	3.533	0.95	11.82	1579	19	1193	38
spot 23	151	5290	1645	0.31	0.09580	1.132	2.500	4.379	0.1915	4.230	0.97	12.17	1543	18	1126	43
spot 24	268	7180	2890	0.40	0.09046	1.078	2.550	3.831	0.2067	3.677	0.96	6.29	1435	17	1208	41
spot 25	224	5920	2040	0.34	0.10394	1.159	3.530	4.211	0.2470	4.049	0.96	7.51	1695	20	1424	54
spot 26	268	7220	2500	0.35	0.09798	1.098	3.070	4.227	0.2303	4.082	0.97	6.68	1588	19	1332	49
spot 27	232	5570	1978	0.36	0.09856	1.180	3.270	4.660	0.2440	4.508	0.97	4.90	1599	20	1407	55
spot 28	301	7380	2410	0.33	0.10527	1.160	3.650	4.901	0.2520	4.762	0.97	7.51	1719	20	1451	62
spot 29	117	2290	1117	0.49	0.09199	1.245	3.000	6.013	0.2380	5.882	0.98	2.12	1466	20	1366	70
spot 30	284	7490	2560	0.34	0.09707	1.076	3.053	3.217	0.2309	3.032	0.94	5.66	1568	18	1342	37
spot 31	36	1910	515	0.27	0.09011	1.403	1.520	6.908	0.1227	6.764	0.98	25.61	1428	23	742	48
spot 32	530	8590	3930	0.46	0.11394	1.086	4.450	3.697	0.2830	3.534	0.96	7.23	1863	20	1604	52
spot 33	320	7860	2742	0.35	0.10420	1.234	3.710	3.681	0.2537	3.469	0.94	7.91	1702	21	1454	45
spot 34	312	6990	2630	0.38	0.10420	1.180	3.640	4.066	0.2570	3.891	0.96	6.20	1699	21	1468	52
spot 35	223	6750	2128	0.32	0.09746	1.167	3.020	4.226	0.2265	4.062	0.96	7.62	1575	20	1312	48
spot 36	272	5320	2634	0.50	0.09652	1.171	3.030	4.154	0.2283	3.986	0.96	6.81	1557	20	1322	48
spot 37	200	3900	1726	0.44	0.10112	1.080	3.540	3.809	0.2546	3.653	0.96	4.73	1644	18	1458	48
spot 38	205	3860	2045	0.53	0.09210	1.111	2.854	3.355	0.2243	3.165	0.94	4.99	1470	18	1302	37
spot 39	206	4640	1845	0.40	0.10059	1.143	3.390	3.375	0.2456	3.176	0.94	6.23	1634	20	1413	40
spot 40	185	4600	1951	0.42	0.09138	1.046	2.664	3.600	0.2119	3.445	0.96	5.88	1454	16	1242	40
spot 41	577	5230	5560	1.06	0.09384	1.041	3.004	3.314	0.2320	3.147	0.95	4.31	1504	16	1347	38
spot 42	519	5950	4090	0.69	0.10952	1.101	4.130	3.825	0.2730	3.663	0.96	6.58	1791	20	1550	52
spot 43	507	5300	3880	0.73	0.11039	1.137	4.250	4.103	0.2790	3.943	0.96	6.14	1808	20	1580	53
spot 44	215	3340	1732	0.52	0.10540	1.112	3.890	3.813	0.2660	3.647	0.96	5.98	1722	19	1523	49
spot 45	262	4100	2039	0.50	0.10693	1.055	4.020	4.179	0.2720	4.044	0.97	5.17	1748	19	1548	54

12TM13-06 zircon (spot size: 24 µm, frequency: 4 Hz, 100 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	83	681	93	0.14	0.10672	1.332	4.165	2.398	0.2840	1.994	0.83	3.29	1744	23	1613	29
spot 2	309	920	342	0.37	0.10996	1.336	4.510	2.106	0.2974	1.628	0.77	3.27	1799	24	1680	24
spot 3	128	1284	166	0.13	0.10463	1.327	3.856	2.147	0.2662	1.688	0.79	5.33	1708	23	1521	23
spot 4	32	527	49	0.09	0.10482	1.375	3.156	2.238	0.2168	1.766	0.79	14.13	1712	24	1267	20
spot 5	520	1236	559	0.45	0.11308	1.336	4.983	2.164	0.3202	1.702	0.79	1.51	1849	25	1789	27
spot 6	483	1219	570	0.47	0.11107	1.324	4.551	1.980	0.2975	1.472	0.74	3.64	1817	24	1678	22
spot 7	382	1350	427	0.32	0.11119	1.322	4.644	1.983	0.3038	1.477	0.74	2.75	1819	24	1709	22
spot 8	78	677	74	0.11	0.10607	1.356	4.257	2.024	0.2904	1.502	0.74	2.43	1733	24	1643	22
spot 9	160	1128	202	0.18	0.10917	1.337	4.453	2.040	0.2960	1.541	0.76	2.99	1786	24	1671	23
spot 10	351	1327	404	0.30	0.11170	1.351	4.548	2.222	0.2953	1.764	0.79	4.25	1827	25	1670	26
spot 11	59	1142	68	0.06	0.10886	1.331	4.359	2.030	0.2907	1.533	0.76	3.71	1780	24	1644	22
spot 12	35	659	37	0.06	0.10678	1.336	4.270	2.157	0.2904	1.694	0.79	2.68	1746	23	1643	25
spot 13	275	882	357	0.40	0.11021	1.321	4.421	2.070	0.2913	1.593	0.77	4.07	1803	24	1647	23
spot 14	527	1373	644	0.47	0.11222	1.350	4.559	1.896	0.2946	1.331	0.70	4.57	1835	25	1664	21
spot 15	56	451	67	0.15	0.10691	1.364	4.343	2.037	0.2951	1.513	0.74	2.04	1748	24	1666	23
spot 16	58	934	76	0.08	0.10777	1.326	4.301	1.893	0.2891	1.351	0.71	3.42	1762	23	1636	21
spot 17	76	1221	101	0.08	0.10734	1.322	4.194	1.931	0.2828	1.407	0.73	3.98	1755	23	1607	20
spot 18	88	2066	117	0.06	0.10972	1.321	4.160	1.932	0.2746	1.409	0.73	6.65	1795	24	1563	20
spot 19	61	1109	88	0.08	0.10461	1.331	3.807	2.105	0.2638	1.631	0.77	5.50	1707	23	1509	23
spot 20	71	706	98	0.14	0.10409	1.348	3.884	2.224	0.2704	1.769	0.80	4.34	1698	23	1544	24
spot 21	269	1048	323	0.31	0.10957	1.329	4.464	2.037	0.2951	1.545	0.76	3.48	1792	24	1666	23
spot 22	275	1393	352	0.25	0.10898	1.333	4.144	2.112	0.2755	1.638	0.78	5.66	1782	24	1572	23
spot 23	123	1415	180	0.13	0.10771	1.345	3.780	2.244	0.2540	1.796	0.80	8.92	1761	24	1458	24
spot 24	149	658	180	0.27	0.10724	1.387	4.257	2.148	0.2882	1.640	0.76	3.06	1753	25	1634	24
spot 25	644	1590	739	0.46	0.11262	1.331	4.686	1.996	0.3013	1.487	0.75	3.89	1842	24	1697	22
spot 26	367	1015	393	0.39	0.11126	1.333	4.754	2.106	0.3102	1.630	0.77	2.01	1821	24	1741	25
spot 27	46	1360	53	0.04	0.10923	1.333	4.237	2.222	0.2809	1.778	0.80	5.06	1786	24	1600	25
spot 28	37	1202	46	0.04	0.10818	1.327	4.053	2.017	0.2723	1.519	0.75	6.12	1769	24	1552	21
spot 29	217	3058	242	0.08	0.11307	1.362	4.393	1.900	0.2796	1.324	0.70	7.54	1849	25	1591	19
spot 30	677	1815	747	0.41	0.11225	1.358	4.467	2.034	0.2877	1.514	0.74	5.63	1836	25	1634	21
spot 31	114	1429	141	0.10	0.10780	1.326	4.080	1.989	0.2729	1.483	0.75	6.05	1762	23	1555	21
spot 32	197	1468	237	0.16	0.10695	1.330	3.907	1.918	0.2651	1.382	0.72	6.60	1748	23	1515	19
spot 33	181	1408	214	0.15	0.10622	1.341	3.840	2.088	0.2628	1.601	0.77	6.31	1735	23	1506	22
spot 34	395	1229	413	0.34	0.11066	1.352	4.552	2.068	0.2975	1.565	0.76	3.69	1810	24	1678	23
spot 35	307	793	324	0.41	0.11005	1.334	4.582	1.888	0.3016	1.336	0.71	2.89	1801	24	1698	21
spot 36	464	1485	483	0.32	0.10935	1.323	4.317	1.902	0.2853	1.366	0.72	4.94	1788	24	1618	20
spot 37	555	1633	588	0.36	0.11092	1.326	4.490	1.926	0.2932	1.397	0.73	4.28	1814	24	1659	21
spot 38	625	1851	695	0.38	0.11168	1.342	4.537	1.847	0.2949	1.270	0.69	4.44	1827	24	1665	19
spot 39	94	1332	113	0.08	0.10602	1.328	3.920	2.038	0.2668	1.546	0.76	6.04	1732	23	1524	21
spot 40	161	1969	195	0.10	0.10735	1.338	3.909	1.930	0.2630	1.391	0.72	7.31	1755	24	1504	19
spot 41	317	1231	344	0.28	0.10957	1.329	4.341	1.951	0.2853	1.429	0.73	5.26	1793	24	1617	20
spot 42	127	1948	209	0.11	0.10654	1.358	3.485	2.215	0.2373	1.750	0.79	11.08	1741	24	1372	22
spot 43	80	1553	101	0.07	0.10476	1.327	3.676	1.876	0.2537	1.326	0.71	7.55	1710	23	1457	17
spot 44	50	872	53	0.06	0.10625	1.330	4.202	1.973	0.2861	1.457	0.74	3.21	1736	23	1621	21
spot 45	73	1461	88	0.06	0.10633	1.343	3.921	2.019	0.2676	1.507	0.75	5.89	1737	23	1528	21
spot 46	672	2020	714	0.35	0.11288	1.345	4.740	2.116	0.3029	1.633	0.77	4.05	1846	25	1705	25
spot 47	65	1453	77	0.05	0.10591	1.329	3.988	2.042	0.2726	1.551	0.76	4.96	1730	23	1553	22
spot 48	321	1548	379	0.24	0.10838	1.329	3.765	2.017	0.2513	1.517	0.75	9.76	1772	24	1444	20
spot 49	185	1595	218	0.14	0.10896	1.346	4.309	2.110	0.2847	1.625	0.77	4.96	1782	24	1614	24

spot 50	163	1258	187	0.15	0.10763	1.347	4.184	1.976	0.2813	1.446	0.73	4.63	1759	24	1597	21
spot 51	593	1554	636	0.41	0.11114	1.338	4.620	2.121	0.3002	1.646	0.78	3.55	1818	24	1692	25
spot 52	207	2686	255	0.09	0.10894	1.356	3.961	2.101	0.2620	1.605	0.76	8.40	1781	24	1500	22
spot 53	153	1312	188	0.14	0.10559	1.327	3.880	2.151	0.2654	1.692	0.79	5.93	1724	23	1517	23
spot 54	415	1777	506	0.28	0.11159	1.356	4.098	2.085	0.2661	1.584	0.76	8.82	1825	25	1520	22
spot 55	859	1775	934	0.53	0.11340	1.322	4.784	1.848	0.3058	1.292	0.70	3.74	1855	25	1719	20
spot 56	140	1196	163	0.14	0.10477	1.327	3.547	2.220	0.2447	1.780	0.80	9.01	1710	23	1410	23
spot 57	506	1265	574	0.45	0.11045	1.338	4.496	2.046	0.2945	1.547	0.76	3.97	1807	24	1663	23
spot 58	668	1560	736	0.47	0.11278	1.329	4.762	2.005	0.3050	1.502	0.75	3.62	1844	24	1715	23
spot 59	617	1467	692	0.47	0.11280	1.350	4.724	1.981	0.3030	1.450	0.73	3.57	1846	25	1710	22
spot 60	418	1137	463	0.41	0.11182	1.333	4.806	1.993	0.3102	1.481	0.74	2.47	1829	24	1741	23
spot 61	419	1223	494	0.40	0.10899	1.346	4.405	2.083	0.2920	1.590	0.76	3.76	1782	24	1651	24
spot 62	234	995	284	0.29	0.10857	1.337	4.143	2.013	0.2753	1.505	0.75	6.13	1775	24	1567	21
spot 63	474	1235	541	0.44	0.11186	1.326	4.721	2.002	0.3053	1.501	0.75	3.20	1830	24	1717	23
spot 64	207	1557	258	0.17	0.10993	1.371	4.253	1.905	0.2801	1.322	0.69	5.78	1798	25	1592	19
spot 65	481	1235	541	0.44	0.11235	1.327	4.741	2.027	0.3049	1.533	0.76	3.32	1838	24	1718	24
spot 66	76	1606	91	0.06	0.10856	1.322	4.226	2.086	0.2805	1.613	0.77	5.27	1775	23	1593	23
spot 67	45	1098	58	0.05	0.10328	1.343	3.697	2.105	0.2590	1.621	0.77	5.73	1684	23	1484	22
spot 68	837	2214	950	0.43	0.11548	1.343	4.774	1.990	0.2984	1.469	0.74	5.70	1887	25	1683	22
spot 69	491	1773	599	0.34	0.11221	1.346	4.361	1.946	0.2831	1.406	0.72	6.04	1836	25	1606	20
spot 70	724	1676	759	0.45	0.11361	1.328	4.857	2.083	0.3091	1.605	0.77	3.34	1858	25	1735	24

12TM14-10 zircon (spot size: 24 µm, frequency: 4 Hz, 100 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	418	1151	459	0.40	0.11086	0.381	4.749	1.461	0.3104	1.411	0.97	1.84	1814	7	1742	22
spot 2	596	1444	677	0.47	0.11232	0.379	4.748	1.533	0.3076	1.485	0.97	2.84	1837	7	1728	23
spot 3	125	1231	157	0.13	0.10482	0.415	3.875	1.668	0.2683	1.616	0.97	5.03	1711	7	1531	22
spot 4	681	1649	766	0.46	0.11266	0.401	4.731	1.520	0.3048	1.466	0.96	3.20	1843	7	1717	22
spot 5	136	1216	171	0.14	0.10454	0.415	3.944	1.640	0.2735	1.587	0.97	3.97	1706	7	1560	22
spot 6	1112	1859	1250	0.67	0.11324	0.400	4.832	1.533	0.3088	1.480	0.97	3.23	1852	7	1734	22
spot 7	785	1883	871	0.46	0.11365	0.436	4.833	1.552	0.3067	1.489	0.96	3.83	1858	8	1723	22
spot 8	260	2564	311	0.12	0.11103	0.435	4.286	1.511	0.2804	1.447	0.96	6.14	1816	8	1595	20
spot 9	37	1121	45	0.04	0.10622	0.406	4.023	1.393	0.2753	1.333	0.96	4.72	1736	7	1567	19
spot 10	85	1054	84	0.08	0.10813	0.396	4.402	1.627	0.2947	1.578	0.97	2.76	1768	7	1664	24
spot 11	371	1140	427	0.37	0.10958	0.516	4.525	1.486	0.2996	1.394	0.94	2.54	1793	9	1691	21
spot 12	35	944	40	0.04	0.10673	0.431	4.272	1.535	0.2892	1.473	0.96	3.05	1744	8	1637	21
spot 13	563	1442	623	0.43	0.11228	0.446	4.734	1.681	0.3055	1.621	0.96	3.08	1836	8	1720	24
spot 14	678	2544	912	0.36	0.11242	0.414	4.443	1.479	0.2863	1.420	0.96	5.98	1839	8	1622	20
spot 15	49	780	64	0.08	0.10337	0.411	3.844	1.521	0.2698	1.464	0.96	4.16	1685	7	1539	20
spot 16	378	1378	423	0.31	0.10960	0.371	4.473	1.429	0.2952	1.380	0.97	3.54	1793	7	1667	20
spot 17	742	1837	818	0.45	0.11184	0.397	4.633	1.062	0.2997	0.986	0.93	3.87	1829	7	1689	15
spot 18	222	1346	439	0.33	0.10671	0.424	3.994	1.061	0.2706	0.973	0.92	5.71	1744	8	1544	13
spot 19	803	2230	950	0.43	0.11136	0.593	4.401	1.243	0.2853	1.092	0.88	5.65	1822	11	1620	15
spot 20	72	1175	88	0.07	0.10634	0.418	4.093	1.067	0.2790	0.981	0.92	4.17	1738	7	1586	14
spot 21	551	1617	591	0.37	0.11162	0.380	4.693	1.127	0.3052	1.061	0.94	2.86	1826	7	1718	16
spot 22	225	766	263	0.34	0.10664	0.405	4.384	1.217	0.2974	1.148	0.94	1.81	1743	7	1678	17
spot 23	204	837	227	0.27	0.10912	0.426	4.799	1.190	0.3182	1.112	0.93	0.15	1786	8	1781	18
spot 24	735	2007	808	0.40	0.11296	0.425	4.683	1.099	0.3006	1.014	0.92	4.10	1848	8	1694	16
spot 25	377	1156	423	0.37	0.11057	0.393	4.575	1.061	0.2996	0.986	0.93	3.43	1809	7	1689	16
spot 26	394	1326	430	0.32	0.10945	0.466	4.381	1.261	0.2905	1.172	0.93	4.00	1790	8	1643	17
spot 27	79	487	57	0.12	0.10645	0.511	4.619	1.541	0.3147	1.454	0.94	0.68	1739	9	1763	23
spot 28	829	2685	930	0.35	0.11339	0.383	4.673	1.179	0.2979	1.115	0.95	4.65	1855	7	1683	17
spot 29	112	765	115	0.15	0.10536	0.420	4.314	1.169	0.2956	1.091	0.93	1.56	1720	7	1669	16
spot 30	109	998	200	0.20	0.10739	0.386	4.145	1.145	0.2796	1.078	0.94	4.63	1755	7	1589	15
spot 31	134	1196	416	0.35	0.10589	0.388	3.982	1.267	0.2723	1.207	0.95	4.99	1730	7	1552	16
spot 32	288	1416	343	0.24	0.10886	0.372	4.239	1.133	0.2820	1.070	0.94	5.05	1781	7	1601	15
spot 33	324	1097	385	0.35	0.10927	0.407	4.464	1.194	0.2954	1.123	0.94	3.32	1787	7	1668	16
spot 34	22	803	27	0.03	0.10458	0.402	3.951	1.136	0.2744	1.062	0.94	3.86	1708	7	1563	15
spot 35	637	1517	722	0.48	0.11097	0.375	4.688	1.211	0.3057	1.151	0.95	2.62	1815	7	1719	17
spot 36	49	1094	57	0.05	0.10620	0.453	4.026	1.253	0.2732	1.169	0.93	5.29	1735	8	1556	16
spot 37	196	1082	270	0.25	0.10394	0.403	3.839	1.096	0.2668	1.019	0.93	5.00	1696	7	1524	14
spot 38	1119	2507	1306	0.52	0.11403	0.455	4.756	1.137	0.3015	1.042	0.92	4.61	1864	8	1699	16
spot 39	536	1465	651	0.44	0.11013	0.366	4.493	1.123	0.2947	1.062	0.95	3.96	1802	7	1664	16
spot 40	532	1446	652	0.45	0.10986	0.394	4.512	1.068	0.2972	0.993	0.93	3.30	1798	7	1677	15
spot 41	217	2187	280	0.13	0.10816	0.368	4.188	1.198	0.2809	1.140	0.95	4.82	1769	7	1597	16
spot 42	136	1758	171	0.10	0.10713	0.398	4.039	1.271	0.2721	1.207	0.95	5.67	1751	7	1555	17
spot 43	504	1338	625	0.47	0.11104	0.381	4.627	1.139	0.3013	1.073	0.94	3.38	1816	7	1697	16
spot 44	558	1459	694	0.48	0.11043	0.399	4.444	1.292	0.2926	1.229	0.95	3.93	1806	7	1654	18
spot 45	214	660	260	0.39	0.10764	0.485	4.355	1.436	0.2942	1.352	0.94	2.53	1760	9	1662	20
spot 46	620	1453	768	0.53	0.11171	0.374	4.628	1.261	0.2994	1.204	0.95	4.03	1827	7	1688	18
spot 47	757	1663	859	0.52	0.11251	0.445	4.865	1.241	0.3127	1.159	0.93	2.40	1840	8	1753	18
spot 48	459	986	554	0.56	0.11053	0.387	4.688	1.236	0.3081	1.174	0.95	1.96	1808	7	1731	18
spot 49	1015	2372	1201	0.51	0.11460	0.454	4.892	1.257	0.3087	1.172	0.93	3.68	1873	8	1738	17
spot 50	732	1646	914	0.56	0.11161	0.380	4.614	1.260	0.3002	1.201	0.95	3.61	1826	7	1692	18
spot 51	261	852	308	0.36	0.10981	0.425	4.568	1.509	0.3019	1.448	0.96	2.47	1796	8	1703	22
spot 52	99	729	140	0.19	0.10209	0.413	3.850	1.302	0.2739	1.235	0.95	2.72	1664	7	1560	17
spot 53	413	1134	509	0.45	0.10821	0.384	4.429	1.364	0.2969	1.309	0.96	2.69	1769	7	1675	19
spot 54	226	1683	286	0.17	0.10757	0.391	4.271	1.247	0.2870	1.185	0.95	3.69	1759	7	1626	17
spot 55	98	970	522	0.54	0.10469	0.402	3.888	1.283	0.2693	1.219	0.95	4.91	1709	7	1537	17

spot 56	46	654	55	0.08	0.10734	0.450	4.642	1.382	0.3134	1.307	0.95	0.06	1755	8	1757	20
spot 57	553	1351	654	0.48	0.11154	0.380	4.707	1.213	0.3054	1.152	0.95	2.94	1825	7	1717	17
spot 58	576	1411	672	0.48	0.11130	0.397	4.663	1.312	0.3038	1.251	0.95	2.98	1821	7	1710	19
spot 59	738	1553	824	0.53	0.11247	0.401	4.768	1.300	0.3077	1.236	0.95	2.89	1840	7	1729	19
spot 60	111	1235	148	0.12	0.10341	0.445	3.788	1.245	0.2657	1.162	0.93	4.68	1686	8	1518	16
spot 61	150	1687	188	0.11	0.10533	0.377	3.899	1.351	0.2674	1.297	0.96	5.73	1720	7	1527	18
spot 62	411	1391	532	0.38	0.10968	0.394	4.598	1.377	0.3022	1.320	0.96	2.34	1795	7	1707	20
spot 63	179	2759	250	0.09	0.10352	0.438	3.454	1.340	0.2414	1.266	0.95	8.90	1689	8	1393	16
spot 64	1034	2124	1156	0.54	0.11382	0.423	4.772	1.537	0.3022	1.478	0.96	4.53	1861	8	1701	22
spot 65	862	1842	964	0.52	0.11303	0.444	4.745	1.121	0.3059	1.029	0.92	3.28	1850	8	1720	16
spot 66	222	3095	291	0.09	0.11064	0.463	3.965	1.310	0.2589	1.226	0.94	9.57	1810	8	1484	16
spot 67	607	1379	699	0.51	0.10828	0.441	4.329	1.415	0.2883	1.344	0.95	4.10	1771	8	1633	20
spot 68	89	1286	116	0.09	0.10437	0.378	3.807	1.437	0.2636	1.387	0.96	5.77	1703	7	1508	19
spot 69	183	1369	220	0.16	0.10640	0.375	4.175	1.285	0.2839	1.229	0.96	3.69	1739	7	1611	17
spot 70	178	1844	208	0.11	0.10819	0.462	4.150	1.499	0.2776	1.426	0.95	5.38	1769	8	1579	20
spot 71	113	1840	140	0.08	0.10765	0.391	4.006	1.243	0.2704	1.179	0.95	6.00	1761	7	1543	16
spot 72	133	1171	287	0.25	0.10670	0.418	4.017	1.372	0.2732	1.307	0.95	5.21	1744	7	1556	18
spot 73	224	2193	260	0.12	0.10958	0.459	4.218	1.394	0.2791	1.316	0.94	5.74	1792	8	1586	19
spot 74	258	2202	307	0.14	0.11020	0.393	4.207	1.322	0.2757	1.262	0.95	6.76	1803	7	1569	18
spot 75	693	1839	811	0.44	0.11271	0.378	4.679	1.321	0.2998	1.266	0.96	4.26	1844	7	1690	19
spot 76	602	1631	739	0.45	0.11120	0.518	4.424	1.599	0.2878	1.513	0.95	5.28	1819	9	1630	22
spot 77	730	1586	914	0.58	0.11202	0.414	4.749	1.486	0.3065	1.427	0.96	3.02	1832	8	1723	22
spot 78	65	935	51	0.05	0.10694	0.404	4.197	1.485	0.2844	1.428	0.96	3.66	1748	7	1613	21
spot 79	108	1367	125	0.09	0.10620	0.406	4.100	1.441	0.2796	1.382	0.96	4.03	1735	7	1589	19
spot 80	91	1395	121	0.09	0.10693	0.386	4.029	1.428	0.2737	1.375	0.96	5.20	1748	7	1559	19
spot 81	276	854	332	0.39	0.11045	0.381	4.674	1.450	0.3058	1.399	0.96	2.32	1807	7	1722	21
spot 82	205	630	242	0.38	0.10770	0.485	4.373	1.624	0.2939	1.550	0.95	2.71	1760	9	1660	23
spot 83	392	1112	465	0.42	0.11145	0.386	4.715	1.300	0.3063	1.242	0.95	2.73	1824	7	1722	19
spot 84	491	1675	599	0.36	0.11209	0.363	4.672	1.369	0.3020	1.320	0.96	3.53	1833	7	1701	20
spot 85	75	695	85	0.12	0.10739	0.450	4.446	1.313	0.3000	1.233	0.94	1.83	1755	8	1691	18

12TM13-03 zircon (spot size: 24 µm, frequency: 4 Hz, 80 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	32	136	45	0.33	0.09866	0.570	3.638	1.000	0.2678	0.822	0.82	1.86	1600	10	1529	11
spot 2	29	188	40	0.21	0.10091	0.545	3.794	0.887	0.2715	0.700	0.79	2.87	1642	9	1548	10
spot 3	24	163	37	0.23	0.08825	0.555	2.897	0.840	0.2380	0.630	0.75	0.34	1388	9	1376	8
spot 4	21	124	31	0.25	0.08840	0.585	2.979	0.880	0.2433	0.658	0.75	0.13	1391	10	1404	8
spot 5	107	498	151	0.30	0.09991	0.534	3.677	0.922	0.2663	0.751	0.81	2.90	1622	9	1522	10
spot 6	384	301	468	1.55	0.10113	0.503	4.053	0.969	0.2898	0.828	0.85	0.27	1645	9	1640	12
spot 7	43	238	57	0.24	0.10172	0.492	3.839	0.821	0.2739	0.657	0.80	2.59	1656	8	1560	9
spot 8	54	225	67	0.30	0.10372	0.533	4.210	0.836	0.2947	0.645	0.77	0.64	1692	9	1665	9
spot 9	27	162	43	0.27	0.08882	0.576	2.780	0.909	0.2273	0.704	0.77	2.26	1400	10	1320	8
spot 10	86	280	110	0.39	0.10477	0.531	4.210	0.892	0.2930	0.717	0.80	1.18	1710	9	1656	11
spot 11	31	145	40	0.28	0.10299	0.579	4.005	1.086	0.2828	0.919	0.85	1.85	1678	10	1605	13
spot 12	19	115	31	0.27	0.08906	0.683	2.841	1.101	0.2317	0.863	0.78	1.72	1405	12	1343	10
spot 13	59	295	77	0.26	0.10423	0.499	4.096	0.830	0.2864	0.663	0.80	1.83	1701	9	1624	10
spot 14	20	189	52	0.27	0.08568	0.691	1.699	0.979	0.1441	0.694	0.71	16.14	1330	12	868	6
spot 15	53	165	77	0.47	0.09669	0.604	3.428	1.079	0.2574	0.894	0.83	2.33	1561	10	1476	12
spot 16	38	205	49	0.24	0.10218	0.542	3.990	1.001	0.2851	0.842	0.84	0.97	1665	9	1617	12
spot 17	22	182	35	0.19	0.08935	0.545	2.889	0.874	0.2340	0.684	0.78	1.73	1411	9	1355	8
spot 18	21	156	31	0.20	0.08936	0.574	2.988	0.940	0.2420	0.744	0.79	0.51	1412	10	1397	9
spot 19	77	410	117	0.28	0.09386	0.492	3.072	0.869	0.2371	0.717	0.82	3.93	1505	8	1371	9
spot 20	48	286	61	0.21	0.10160	0.487	4.067	0.874	0.2895	0.725	0.83	0.57	1653	8	1639	10
spot 21	28	154	48	0.31	0.08906	0.575	2.612	0.989	0.2113	0.805	0.81	5.58	1405	10	1236	9
spot 22	27	221	44	0.20	0.08878	0.553	2.778	0.831	0.2260	0.619	0.75	2.73	1399	9	1314	7
spot 23	25	205	38	0.19	0.08887	0.525	2.950	0.850	0.2394	0.668	0.79	0.85	1401	8	1384	8
spot 24	35	147	49	0.33	0.09552	0.631	3.413	1.188	0.2583	1.007	0.85	1.76	1538	11	1481	13
spot 25	19	159	40	0.25	0.08678	0.658	2.164	1.195	0.1805	0.997	0.83	9.35	1355	11	1069	10
spot 26	52	223	66	0.30	0.10294	0.511	4.158	0.939	0.2922	0.787	0.84	0.82	1678	9	1652	11
spot 27	33	180	42	0.24	0.10248	0.529	4.125	0.921	0.2921	0.753	0.82	0.42	1669	9	1652	11
spot 28	24	179	37	0.21	0.08966	0.597	2.861	1.084	0.2321	0.905	0.83	2.03	1418	10	1345	11
spot 29	25	134	43	0.32	0.08963	0.672	2.557	1.059	0.2076	0.819	0.77	5.95	1417	12	1216	9
spot 30	95	263	147	0.56	0.09146	0.568	2.661	0.947	0.2113	0.757	0.80	6.52	1457	10	1237	8
spot 31	31	204	58	0.28	0.09046	0.594	2.459	1.088	0.1976	0.911	0.84	8.38	1435	10	1162	10
spot 32	29	113	37	0.32	0.10239	0.594	4.133	1.039	0.2934	0.852	0.82	0.14	1668	10	1658	13
spot 33	33	221	53	0.24	0.08812	0.507	2.676	1.040	0.2203	0.908	0.87	2.99	1385	8	1284	11
spot 34	20	97	28	0.30	0.09302	0.825	3.284	1.366	0.2572	1.089	0.80	0.20	1487	14	1475	14
spot 35	23	170	43	0.25	0.08879	0.650	2.520	1.127	0.2064	0.921	0.82	5.73	1399	11	1209	10
spot 36	25	179	36	0.20	0.08813	0.563	2.971	0.893	0.2453	0.693	0.78	0.88	1386	9	1414	9
spot 37	23	166	36	0.21	0.08834	0.547	2.874	0.935	0.2373	0.759	0.81	0.18	1390	9	1372	9
spot 38	60	317	97	0.31	0.08818	0.513	2.753	1.056	0.2276	0.923	0.87	1.55	1386	8	1322	11
spot 39	46	236	59	0.25	0.10049	0.527	3.956	0.904	0.2857	0.735	0.81	0.30	1633	9	1620	11
spot 40	27	199	52	0.26	0.08701	0.558	2.320	1.038	0.1943	0.875	0.84	6.44	1360	9	1144	9
spot 41	19	159	27	0.17	0.08870	0.600	2.960	1.019	0.2428	0.824	0.81	0.28	1397	10	1401	10
spot 42	38	175	49	0.28	0.10173	0.556	4.011	1.033	0.2870	0.871	0.84	0.62	1656	10	1626	13
spot 43	25	127	34	0.27	0.09616	0.710	3.513	1.177	0.2664	0.938	0.80	0.59	1550	13	1522	13
spot 44	15	140	25	0.18	0.08855	0.592	2.711	1.267	0.2232	1.120	0.88	2.53	1394	10	1299	13
spot 45	19	118	27	0.23	0.10083	0.613	3.515	1.123	0.2551	0.941	0.84	4.52	1639	11	1464	13
spot 46	41	260	55	0.21	0.10173	0.549	3.834	0.972	0.2742	0.802	0.83	2.39	1656	10	1562	11

spot 47	20	197	32	0.16	0.08897	0.553	2.927	1.110	0.2389	0.963	0.87	0.61	1403	9	1381	12
spot 48	26	124	32	0.26	0.10248	0.615	4.178	1.070	0.2968	0.876	0.82	0.35	1669	11	1675	13
spot 49	20	132	27	0.21	0.09845	0.599	3.601	1.051	0.2661	0.864	0.82	1.92	1595	11	1521	12
spot 50	20	126	30	0.23	0.09019	0.750	3.007	1.241	0.2427	0.989	0.80	0.64	1429	13	1401	13
spot 51	28	167	39	0.24	0.09654	0.562	3.397	0.993	0.2563	0.819	0.82	2.19	1558	10	1471	11
spot 52	276	472	325	0.69	0.10238	0.472	3.972	0.972	0.2826	0.849	0.87	1.50	1668	8	1604	12
spot 53	22	152	33	0.22	0.09574	0.592	3.281	1.134	0.2481	0.967	0.85	3.36	1542	10	1428	12
spot 54	703	949	1024	1.08	0.09260	0.467	2.988	0.898	0.2346	0.767	0.85	3.35	1480	7	1359	9

12TM15-14 zircon (spot size: 19 µm, frequency: 4 Hz, 80 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	67	621	93	0.15	0.10211	0.980	3.876	1.406	0.2759	1.008	0.72	2.43	1663	16	1570	15
spot 2	26	154	34	0.22	0.10459	1.081	4.223	1.688	0.2934	1.296	0.77	1.45	1707	19	1658	20
spot 3	24	335	46	0.14	0.09051	1.039	2.536	1.534	0.2033	1.129	0.74	7.47	1437	16	1193	13
spot 4	13	141	21	0.15	0.08879	1.107	2.829	1.547	0.2310	1.080	0.70	1.72	1399	17	1340	14
spot 5	20	254	33	0.13	0.08847	1.086	2.740	1.545	0.2244	1.099	0.71	2.62	1394	16	1305	13
spot 6	23	219	36	0.17	0.09293	1.039	3.003	1.644	0.2348	1.274	0.77	3.59	1486	16	1359	16
spot 7	58	367	90	0.24	0.08883	1.010	2.879	1.495	0.2352	1.101	0.74	1.04	1400	15	1362	14
spot 8	1001	458	1245	2.72	0.10623	0.998	4.482	1.468	0.3054	1.077	0.73	0.54	1736	17	1718	17
spot 9	22	241	43	0.18	0.08782	1.094	2.510	1.538	0.2063	1.081	0.70	5.45	1378	17	1209	12
spot 10	27	219	35	0.16	0.10069	1.072	3.928	1.808	0.2821	1.456	0.81	1.12	1637	18	1602	21
spot 11	42	1170	66	0.06	0.09716	1.002	3.183	1.533	0.2378	1.160	0.76	5.64	1570	16	1375	15
spot 12	10	122	19	0.15	0.09024	1.108	2.491	1.677	0.2007	1.259	0.75	7.63	1430	18	1179	14
spot 13	109	2281	160	0.07	0.10045	0.972	3.352	1.478	0.2423	1.114	0.75	6.79	1632	16	1398	15
spot 14	18	330	53	0.16	0.08065	1.086	1.495	1.708	0.1344	1.317	0.77	14.15	1214	15	813	10
spot 15	42	1694	68	0.04	0.09983	0.975	3.295	1.439	0.2394	1.058	0.74	6.85	1621	16	1385	14
spot 16	30	149	37	0.25	0.10452	1.068	4.261	1.651	0.2962	1.259	0.76	0.87	1706	18	1672	19
spot 17	489	577	640	1.11	0.10254	1.004	3.869	1.505	0.2737	1.122	0.75	3.14	1670	17	1559	16
spot 18	302	306	403	1.32	0.10208	1.010	3.777	1.497	0.2689	1.105	0.74	3.49	1662	17	1535	16
spot 19	440	945	632	0.67	0.10407	0.987	3.789	1.447	0.2645	1.058	0.73	5.10	1698	17	1513	15
spot 20	13	162	21	0.13	0.09632	1.101	3.241	1.562	0.2448	1.107	0.71	3.94	1553	18	1412	15
spot 21	20	226	28	0.12	0.09729	1.022	3.527	1.454	0.2624	1.035	0.71	2.06	1573	16	1502	15
spot 22	45	613	64	0.10	0.10256	0.982	3.749	1.421	0.2658	1.028	0.72	4.17	1671	16	1519	15
spot 23	20	164	26	0.16	0.10297	1.063	4.183	1.586	0.2957	1.178	0.74	0.08	1679	18	1670	18
spot 24	59	659	78	0.12	0.10317	0.986	3.957	1.485	0.2782	1.111	0.75	2.72	1682	17	1582	16
spot 25	7	115	9	0.08	0.09870	1.136	3.642	1.695	0.2680	1.258	0.74	1.90	1600	19	1530	18
spot 26	25	380	41	0.11	0.10372	1.050	3.668	1.594	0.2567	1.199	0.75	6.17	1691	18	1473	17
spot 27	11	181	17	0.09	0.10093	1.063	3.724	1.624	0.2674	1.229	0.76	3.28	1641	18	1527	18
spot 28	7	96	9	0.10	0.10173	1.142	4.027	1.723	0.2861	1.290	0.75	1.04	1655	19	1622	19
spot 29	40	421	55	0.13	0.10213	1.007	3.790	1.473	0.2693	1.076	0.73	3.54	1663	17	1537	15
spot 30	15	271	21	0.08	0.10051	1.015	3.959	1.577	0.2845	1.208	0.77	0.76	1633	17	1614	18
spot 31	41	246	59	0.24	0.09652	1.046	3.401	1.547	0.2557	1.140	0.74	2.47	1558	17	1468	16
spot 32	16	152	25	0.17	0.09376	1.125	3.041	1.698	0.2355	1.272	0.75	3.98	1506	18	1363	16
spot 33	359	748	557	0.74	0.09756	0.994	3.201	1.552	0.2383	1.192	0.77	5.81	1578	16	1377	15
spot 34	19	226	43	0.19	0.08847	1.097	2.160	1.805	0.1760	1.433	0.79	11.73	1392	17	1045	14
spot 35	19	783	26	0.03	0.10130	0.986	3.770	1.501	0.2699	1.132	0.75	2.98	1648	16	1540	16
spot 36	10	143	13	0.09	0.10165	1.066	3.829	1.704	0.2742	1.330	0.78	2.41	1654	18	1562	19
spot 37	36	146	48	0.33	0.10236	1.125	4.020	1.652	0.2837	1.210	0.73	1.59	1667	19	1612	18
spot 38	24	290	34	0.12	0.10046	1.028	3.692	1.625	0.2677	1.259	0.77	2.68	1632	17	1529	18
spot 39	308	1325	423	0.32	0.10021	0.977	3.431	1.425	0.2483	1.037	0.73	5.72	1628	16	1430	14
spot 40	53	741	88	0.12	0.09705	0.989	3.165	1.609	0.2361	1.269	0.79	5.85	1568	16	1368	16
spot 41	47	435	69	0.16	0.10092	0.997	3.651	1.643	0.2630	1.306	0.80	3.67	1641	17	1505	18
spot 42	35	372	59	0.16	0.08867	1.018	2.593	1.523	0.2131	1.134	0.74	4.44	1397	15	1245	13
spot 43	36	153	49	0.32	0.10243	1.064	3.920	1.760	0.2798	1.402	0.80	1.70	1668	18	1590	20
spot 44	16	264	23	0.09	0.10209	1.023	3.736	1.581	0.2650	1.205	0.76	4.26	1662	17	1515	17
spot 45	51	820	106	0.13	0.08795	1.001	2.205	1.444	0.1818	1.041	0.72	9.80	1381	14	1077	11
spot 46	28	242	46	0.19	0.08877	1.047	2.764	1.641	0.2280	1.264	0.77	1.62	1399	16	1324	16
spot 47	12	89	16	0.18	0.10015	1.255	3.590	1.841	0.2608	1.347	0.73	3.48	1626	22	1494	18
spot 48	29	173	43	0.25	0.09886	1.071	3.866	1.592	0.2850	1.178	0.74	0.62	1602	18	1616	18
spot 49	35	285	48	0.17	0.10189	1.016	3.697	1.534	0.2634	1.149	0.75	4.27	1659	17	1507	16
spot 50	57	278	75	0.27	0.10072	1.051	3.828	1.714	0.2760	1.354	0.79	1.59	1637	18	1573	19
spot 51	80	128	115	0.90	0.09237	1.113	3.177	2.011	0.2498	1.675	0.83	0.69	1475	18	1440	22
spot 52	29	481	51	0.11	0.09024	1.023	2.676	1.665	0.2159	1.314	0.79	4.95	1430	15	1260	16
spot 53	23	175	34	0.19	0.09564	1.083	3.291	1.658	0.2495	1.255	0.76	3.03	1542	18	1436	16
spot 54	50	679	92	0.14	0.08913	1.000	2.349	1.575	0.1909	1.217	0.77	8.97	1407	15	1126	13
spot 55	12	309	23	0.07	0.08780	1.044	2.479	1.686	0.2048	1.323	0.79	5.35	1378	15	1201	15

13TM-05 zircon (spot size: 24 µm, frequency: 4 Hz, 100 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	17	1142	174	0.15	0.05222	1.905	0.270	2.268	0.0374	1.230	0.54	2.32	302	24	237	3
spot 2	21	1120	197	0.18	0.05240	1.807	0.269	2.062	0.0373	0.993	0.48	2.46	305	20	236	2
spot 3	37	1876	361	0.19	0.06366	1.762	0.427	2.291	0.0485	1.465	0.64	18.19	730	20	305	4
spot 4	10	503	13	0.02	0.09157	1.653	3.038	1.868	0.2415	0.870	0.47	1.69	1458	25	1394	11
spot 5	263	488	339	0.69	0.10867	1.630	4.613	1.988	0.3078	1.137	0.57	1.24	1777	29	1729	17
spot 6	32	1439	289	0.20	0.06674	1.748	0.505	2.050	0.0551	1.071	0.52	20.08	828	20	346	4
spot 7	23	681	24	0.04	0.09973	1.630	3.651	1.900	0.2663	0.976	0.51	2.56	1619	27	1522	13
spot 8	81	458	112	0.24	0.10339	1.640	4.138	2.186	0.2904	1.446	0.66	1.03	1686	28	1643	21
spot 9	35	2100	367	0.17	0.05090	1.734	0.244	1.991	0.0347	0.979	0.49	0.95	235	15	220	2
spot 10	121	4629	1229	0.27	0.05192	1.671	0.253	2.004	0.0352	1.107	0.55	2.60	281	12	223	2

spot 11	194	380	251	0.66	0.10780	1.636	4.709	1.941	0.3164	1.043	0.54	0.24	1762	29	1772	16
spot 12	42	2891	400	0.14	0.05184	1.760	0.254	2.030	0.0356	1.013	0.50	1.95	278	18	225	2
spot 13	240	484	318	0.66	0.10585	1.636	4.398	1.915	0.3013	0.996	0.52	0.77	1729	28	1698	15
spot 14	51	58	71	1.22	0.10240	1.983	4.170	2.591	0.2940	1.667	0.64	0.48	1667	34	1660	24
spot 15	68	72	96	1.32	0.10320	1.871	4.216	2.249	0.2965	1.248	0.55	0.24	1685	33	1673	18
spot 16	44	2050	435	0.21	0.05239	1.741	0.264	2.055	0.0366	1.092	0.53	2.41	304	17	232	3
spot 17	39	1875	431	0.23	0.05066	1.735	0.242	2.021	0.0347	1.037	0.51	0.09	225	16	220	2
spot 18	695	1873	985	0.53	0.10758	1.609	4.063	1.867	0.2742	0.948	0.51	5.45	1759	28	1562	13
spot 19	42	1640	433	0.26	0.05051	1.728	0.248	2.125	0.0356	1.236	0.58	0.13	219	16	225	3
spot 20	39	97	59	0.61	0.09091	1.790	3.046	2.196	0.2437	1.272	0.58	0.85	1443	28	1406	16
spot 21	9	512	89	0.17	0.05069	2.038	0.260	2.283	0.0370	1.028	0.45	0.17	228	30	234	2
spot 22	20	598	206	0.34	0.05016	1.928	0.245	2.310	0.0354	1.271	0.55	0.67	202	25	224	3
spot 23	56	2156	531	0.25	0.05066	1.759	0.252	2.173	0.0361	1.276	0.59	0.13	225	17	228	3
spot 24	18	1512	164	0.11	0.05045	1.752	0.251	2.167	0.0361	1.276	0.59	0.18	215	17	228	3
spot 25	28	1641	260	0.16	0.05110	1.756	0.262	2.379	0.0374	1.605	0.67	0.08	245	16	237	4
spot 26	66	73	89	1.23	0.10211	1.846	4.029	2.564	0.2865	1.780	0.69	0.99	1671	32	1623	26
spot 27	6	542	10	0.02	0.10169	1.650	3.851	2.063	0.2744	1.239	0.60	2.56	1655	28	1563	17
spot 28	70	557	94	0.17	0.10300	1.636	3.953	1.882	0.2795	0.930	0.49	2.25	1679	28	1588	13
spot 29	24	1056	224	0.21	0.05742	1.847	0.326	2.281	0.0411	1.338	0.59	10.24	507	23	260	3
spot 30	44	400	65	0.16	0.09318	1.662	3.116	2.044	0.2437	1.190	0.58	2.28	1491	25	1405	15
spot 31	56	2373	548	0.23	0.05161	1.709	0.256	2.054	0.0360	1.140	0.55	1.58	267	15	228	3
spot 32	30	824	304	0.37	0.05107	1.897	0.248	2.155	0.0352	1.023	0.47	0.81	242	24	223	2
spot 33	39	222	70	0.32	0.09202	1.811	2.431	2.259	0.1926	1.350	0.60	10.31	1469	28	1135	14
spot 34	84	2877	832	0.29	0.05092	1.726	0.252	2.024	0.0360	1.057	0.52	0.18	237	15	228	2
spot 35	13	179	22	0.12	0.08921	1.736	2.857	2.264	0.2339	1.454	0.64	1.33	1407	26	1354	18
spot 36	216	4347	2072	0.48	0.05110	1.673	0.253	2.038	0.0361	1.163	0.57	0.26	245	12	229	3
spot 37	128	880	181	0.21	0.10139	1.625	3.891	2.056	0.2778	1.260	0.61	2.03	1649	27	1580	17
spot 38	158	1204	209	0.17	0.10508	1.622	4.161	2.072	0.2869	1.290	0.62	2.46	1716	28	1626	18
spot 39	175	1084	234	0.22	0.09707	1.616	3.399	1.934	0.2543	1.062	0.55	3.03	1568	25	1460	14
spot 40	44	994	62	0.06	0.10200	1.625	3.748	1.977	0.2666	1.125	0.57	3.78	1661	27	1523	15
spot 41	47	799	64	0.08	0.10111	1.627	3.751	1.949	0.2704	1.072	0.55	2.63	1645	27	1542	15
spot 42	409	743	513	0.69	0.10847	1.621	4.461	1.978	0.2999	1.134	0.57	2.01	1774	29	1690	17
spot 43	137	372	197	0.53	0.09752	1.687	3.646	2.057	0.2716	1.178	0.57	0.65	1576	27	1549	16
spot 44	61	2388	591	0.25	0.05059	1.687	0.248	1.927	0.0354	0.931	0.48	0.09	222	13	224	2
spot 45	84	2887	798	0.28	0.05154	1.661	0.255	1.997	0.0361	1.108	0.55	0.87	264	11	229	3
spot 46	46	2146	410	0.19	0.05259	1.705	0.264	2.045	0.0363	1.129	0.55	3.57	310	15	230	3
spot 47	48	395	64	0.16	0.09966	1.689	3.799	2.152	0.2776	1.333	0.62	0.76	1618	28	1579	19
spot 48	48	2366	487	0.21	0.05077	1.699	0.245	2.099	0.0349	1.232	0.59	0.41	229	14	221	3
spot 49	385	819	502	0.61	0.10492	1.622	4.087	1.920	0.2825	1.027	0.53	2.91	1713	28	1604	14
spot 50	96	742	130	0.17	0.09724	1.640	3.345	2.154	0.2505	1.397	0.65	3.54	1572	26	1441	18
spot 51	44	2015	418	0.21	0.05107	1.733	0.247	2.025	0.0353	1.047	0.52	0.09	242	15	224	2
spot 52	386	1017	483	0.47	0.10749	1.618	4.336	1.862	0.2931	0.921	0.49	2.56	1758	28	1657	13
spot 53	57	2243	534	0.24	0.05105	1.711	0.249	1.988	0.0356	1.012	0.51	0.13	242	15	226	2
spot 54	36	1833	347	0.19	0.05078	1.742	0.244	2.067	0.0351	1.112	0.54	0.09	229	16	222	2
spot 55	28	178	34	0.19	0.10417	1.751	3.304	2.229	0.2318	1.381	0.62	10.03	1698	30	1346	16
spot 56	503	800	637	0.80	0.10407	1.619	4.060	1.973	0.2837	1.128	0.57	2.19	1698	28	1610	16
spot 57	2	325	17	0.05	0.05176	2.349	0.250	2.612	0.0350	1.143	0.44	2.17	278	40	222	3
spot 58	163	476	224	0.47	0.10202	1.641	3.753	1.987	0.2675	1.121	0.56	3.68	1662	27	1527	15
spot 59	78	282	104	0.37	0.10260	1.662	3.964	1.995	0.2810	1.103	0.55	1.88	1671	28	1596	16
spot 60	42	1738	399	0.23	0.05125	1.740	0.251	2.069	0.0357	1.120	0.54	0.44	250	16	226	3
spot 61	22	210	31	0.15	0.09348	1.708	3.345	2.128	0.2600	1.269	0.60	0.20	1498	26	1489	17
spot 62	48	2553	461	0.18	0.05162	1.723	0.254	1.928	0.0358	0.866	0.45	1.59	269	16	227	2
spot 63	35	1127	417	0.37	0.05125	1.905	0.267	2.220	0.0377	1.140	0.51	0.50	249	24	239	3
spot 64	42	2123	414	0.20	0.05194	1.744	0.251	1.997	0.0350	0.973	0.49	2.48	283	16	221	2
spot 65	37	2035	372	0.18	0.05168	1.753	0.247	2.065	0.0348	1.091	0.53	1.27	271	18	221	2
spot 66	21	1271	203	0.16	0.05156	1.778	0.253	2.071	0.0358	1.062	0.51	1.02	263	18	227	2
spot 67	16	936	162	0.17	0.05095	1.964	0.250	2.375	0.0359	1.336	0.56	0.44	239	26	228	3
spot 68	22	1298	202	0.16	0.05174	1.761	0.255	2.135	0.0356	1.208	0.57	2.22	278	18	226	3
spot 69	24	1641	230	0.14	0.05143	1.796	0.262	2.018	0.0370	0.920	0.46	0.94	260	19	234	2
spot 70	34	345	46	0.13	0.09731	1.697	3.475	2.099	0.2589	1.236	0.59	2.43	1574	27	1484	17
spot 71	41	1804	404	0.22	0.05171	1.730	0.247	2.032	0.0347	1.065	0.52	1.73	273	16	220	2

13TM-01 zircon (spot size: 24 µm, frequency: 4 Hz, 100 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	127	5700	1563	0.27	0.05081	1.222	0.187	1.518	0.0266	0.901	0.59	2.71	231	12	170	2
spot 2	110	4929	1287	0.26	0.04998	1.234	0.182	1.411	0.0264	0.683	0.48	1.31	194	13	168	1
spot 3	146	6950	1676	0.24	0.05090	1.297	0.184	1.547	0.0261	0.842	0.54	2.89	234	16	166	1
spot 4	210	10180	2451	0.24	0.05033	1.163	0.181	1.460	0.0261	0.883	0.60	1.93	210	9	166	2
spot 5	153	7810	1672	0.21	0.05132	1.167	0.186	1.393	0.0263	0.761	0.55	3.89	254	10	167	1
spot 6	263	12110	3188	0.26	0.05017	1.140	0.180	1.398	0.0259	0.810	0.58	1.64	203	7	165	1
spot 7	56	2895	718	0.25	0.04992	1.273	0.188	1.570	0.0272	0.919	0.59	0.87	191	15	173	2
spot 8	273	9450	3333	0.35	0.05040	1.163	0.182	1.436	0.0261	0.842	0.59	2.17	213	9	166	1
spot 9	157	7270	1938	0.27	0.05007	1.170	0.181	1.443	0.0261	0.845	0.59	1.75	198	10	166	1
spot 10	197	8250	2499	0.30	0.05002	1.164	0.180	1.485	0.0260	0.923	0.62	1.39	195	9	166	2
spot 11	184	9744	2321	0.24	0.05007	1.145	0.181	1.516	0.0262	0.992	0.65	1.50	198	8	167	2
spot 12	258	9420	3273	0.35	0.05033	1.145	0.181	1.539	0.0262	1.029	0.67	1.20	210	8	167	2
spot 13	27	1824	337	0.18	0.04958	1.465	0.180	1.686	0.0264	0.834	0.49	0.06	174	23	168	1
spot 14	39	2940	488	0.17	0.04970	1.255	0.182	1.485	0.0264	0.794	0.53	1.01	181	14	168	1
spot 15	13	1013	173	0.17	0.04983	1.691	0.176	1.879	0.0257	0.819	0.44	0.98	180	29	163	1

spot 16	124	6540	1613	0.25	0.05006	1.170	0.181	1.534	0.0262	0.992	0.65	1.32	198	10	167	2
spot 17	108	5510	1407	0.26	0.04994	1.200	0.180	1.512	0.0261	0.920	0.61	1.08	193	11	166	2
spot 18	53	4662	689	0.15	0.04979	1.226	0.182	1.572	0.0264	0.983	0.63	0.77	187	12	168	2
spot 19	104	5340	1380	0.26	0.04998	1.178	0.180	1.448	0.0261	0.843	0.58	1.08	193	10	166	1
spot 20	94	5180	1243	0.24	0.04992	1.200	0.180	1.466	0.0261	0.842	0.57	1.08	193	11	166	1
spot 21	124	6109	1660	0.27	0.04976	1.171	0.179	1.589	0.0261	1.074	0.68	0.84	183	10	166	2
spot 22	89	4276	1106	0.26	0.05070	1.222	0.190	1.597	0.0272	1.028	0.64	2.08	228	12	173	2
spot 23	51	2185	686	0.31	0.05004	1.408	0.179	1.643	0.0260	0.846	0.52	1.21	196	21	165	1
spot 24	297	12750	4024	0.32	0.05035	1.151	0.180	1.430	0.0259	0.850	0.59	2.00	211	8	165	1
spot 25	277	11310	3650	0.32	0.05028	1.151	0.180	1.430	0.0259	0.848	0.59	1.94	208	8	165	1
spot 26	58	13400	754	0.06	0.05038	1.145	0.180	1.629	0.0259	1.159	0.71	2.06	212	8	165	2
spot 27	164	8270	2177	0.26	0.04998	1.171	0.180	1.564	0.0260	1.037	0.66	1.15	194	9	166	2
spot 28	187	8460	2451	0.29	0.04996	1.178	0.180	1.593	0.0261	1.073	0.67	1.08	194	10	166	2
spot 29	155	7190	2012	0.28	0.05000	1.151	0.180	1.577	0.0260	1.077	0.68	1.45	195	8	166	2
spot 30	99	11000	1307	0.12	0.05034	1.145	0.180	1.547	0.0259	1.041	0.67	1.76	210	8	165	2
spot 31	223	16740	2802	0.17	0.05060	1.139	0.182	1.486	0.0262	0.954	0.64	2.16	222	7	167	2
spot 32	96	5500	1234	0.22	0.04991	1.217	0.179	1.529	0.0260	0.925	0.61	1.09	191	12	165	2
spot 33	89	6320	1131	0.18	0.04985	1.209	0.178	1.546	0.0260	0.963	0.62	0.54	187	12	165	2
spot 34	24	1334	314	0.24	0.04980	1.463	0.177	1.776	0.0258	1.007	0.57	0.85	183	22	164	2
spot 35	34	1519	406	0.27	0.04942	1.441	0.177	1.672	0.0259	0.849	0.51	0.36	165	22	165	1
spot 36	18	1094	231	0.21	0.04997	1.556	0.174	2.024	0.0255	1.294	0.64	0.12	190	25	162	2
spot 37	94	4910	1208	0.25	0.05000	1.192	0.178	1.608	0.0259	1.079	0.67	0.73	195	11	165	2
spot 38	51	4291	681	0.16	0.05009	1.234	0.178	1.697	0.0258	1.165	0.69	1.16	198	13	164	2
spot 39	20	1164	276	0.24	0.05028	1.551	0.179	1.873	0.0257	1.049	0.56	2.01	207	25	164	2
spot 40	178	7310	2316	0.32	0.04976	1.164	0.178	1.462	0.0260	0.885	0.60	0.36	183	9	165	2
spot 41	181	7550	2283	0.30	0.05005	1.164	0.181	1.528	0.0262	0.991	0.65	0.84	197	9	167	2
spot 42	165	7080	2074	0.29	0.05001	1.177	0.179	1.451	0.0259	0.848	0.58	1.39	196	10	165	1
spot 43	28	1494	357	0.24	0.04947	1.480	0.176	1.836	0.0258	1.087	0.59	0.30	167	23	164	2
spot 44	180	9160	2263	0.25	0.05012	1.163	0.179	1.536	0.0259	1.003	0.65	1.09	201	9	165	2
spot 45	21	1444	282	0.20	0.05014	1.471	0.176	1.933	0.0255	1.254	0.65	1.23	201	23	163	2
spot 46	34	1707	438	0.26	0.04964	1.478	0.175	1.915	0.0255	1.217	0.64	0.93	175	23	162	2
spot 47	20	1085	248	0.23	0.04936	1.731	0.176	2.067	0.0257	1.129	0.55	0.73	163	30	164	2
spot 48	13	881	153	0.17	0.05029	1.759	0.184	2.149	0.0267	1.236	0.58	0.88	199	32	170	2
spot 49	25	1508	312	0.21	0.04939	1.428	0.173	1.729	0.0257	0.975	0.56	0.80	166	21	163	2
spot 50	128	14050	1612	0.11	0.05048	1.130	0.179	1.464	0.0258	0.931	0.64	1.95	218	7	164	2
spot 51	102	4358	1270	0.29	0.05005	1.208	0.178	1.647	0.0259	1.120	0.68	1.03	196	12	165	2
spot 52	15	473	183	0.39	0.05007	2.006	0.184	2.283	0.0266	1.091	0.48	1.24	202	39	169	2
spot 53	168	506	218	0.43	0.10223	1.158	3.664	1.504	0.2606	0.959	0.64	4.66	1666	19	1493	13
spot 54	48	2118	628	0.30	0.04938	1.378	0.173	1.784	0.0256	1.132	0.63	0.37	166	20	163	2
spot 55	41	1996	548	0.27	0.04964	1.364	0.175	1.679	0.0255	0.980	0.58	0.80	178	19	162	2
spot 56	16	1020	214	0.21	0.04957	1.666	0.176	2.033	0.0257	1.166	0.57	0.49	174	29	164	2
spot 57	51	2305	679	0.29	0.04997	1.273	0.175	1.538	0.0255	0.863	0.56	0.86	192	15	162	1
spot 58	51	2041	702	0.34	0.04953	1.389	0.174	1.698	0.0256	0.977	0.58	0.25	170	19	163	2
spot 59	19	586	255	0.44	0.04941	1.810	0.181	2.339	0.0263	1.481	0.63	0.90	165	32	168	3
spot 60	200	334	303	0.91	0.10421	1.193	3.669	1.591	0.2564	1.053	0.66	6.23	1701	21	1473	14
spot 61	365	485	528	1.09	0.10380	1.156	3.920	1.618	0.2738	1.132	0.70	3.65	1694	20	1560	16
spot 62	27	1459	385	0.26	0.05253	1.480	0.192	1.928	0.0267	1.235	0.64	4.94	311	22	170	2
spot 63	52	3712	723	0.19	0.05035	1.261	0.181	1.580	0.0262	0.953	0.60	0.96	211	15	167	2
spot 64	219	9950	2952	0.30	0.05011	1.164	0.179	1.484	0.0261	0.921	0.62	1.02	200	9	166	2
spot 65	302	11590	4170	0.36	0.05032	1.151	0.179	1.553	0.0259	1.043	0.67	1.46	209	8	165	2
spot 66	39	1814	519	0.29	0.04991	1.422	0.176	1.662	0.0256	0.860	0.52	0.80	188	21	163	1
spot 67	296	10260	3981	0.39	0.05019	1.170	0.179	1.516	0.0259	0.965	0.64	1.21	203	9	165	2
spot 68	101	4940	1284	0.26	0.05014	1.225	0.179	1.682	0.0260	1.153	0.69	1.15	200	12	166	2
spot 69	148	7110	1873	0.26	0.05000	1.200	0.177	1.409	0.0257	0.739	0.52	0.98	194	11	164	1
spot 70	199	7250	2456	0.34	0.04969	1.193	0.177	1.468	0.0257	0.855	0.58	0.79	180	11	164	1
spot 71	171	8260	2125	0.26	0.05023	1.177	0.178	1.524	0.0258	0.969	0.64	1.16	205	10	164	2
spot 72	200	8670	2522	0.29	0.05014	1.145	0.179	1.521	0.0260	1.001	0.66	0.85	202	8	165	2

12TM13-04 zircon (spot size: 12 µm, frequency: 4 Hz, 100 shot count, laser energy: 3 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	42	3051	569	0.19	0.04891	1.653	0.177	1.910	0.0261	0.957	0.50	0.48	145	16	166	2
spot 2	29	2128	385	0.18	0.04905	1.698	0.179	1.929	0.0262	0.916	0.47	0.06	149	19	167	2
spot 3	54	3507	737	0.21	0.04880	1.585	0.176	2.968	0.0259	2.510	0.85	0.36	140	12	165	4
spot 4	23	1599	298	0.19	0.04879	1.690	0.179	2.965	0.0263	2.436	0.82	0.00	137	18	167	4
spot 5	38	1993	369	0.19	0.05424	2.003	0.197	2.925	0.0263	2.132	0.73	9.15	382	30	167	4
spot 6	39	2926	533	0.18	0.04891	1.662	0.176	2.780	0.0260	2.228	0.80	0.54	143	17	166	4
spot 7	114	2466	143	0.06	0.10347	1.510	4.083	2.910	0.2854	2.488	0.85	1.98	1687	26	1617	35
spot 8	180	1171	292	0.25	0.09366	1.538	3.045	2.757	0.2360	2.288	0.83	3.81	1501	23	1365	28
spot 9	84	1458	116	0.08	0.10029	1.516	3.950	2.978	0.2848	2.563	0.86	0.43	1630	25	1614	37
spot 10	23	767	61	0.08	0.10074	1.544	3.869	2.683	0.2780	2.194	0.82	1.77	1638	26	1580	31
spot 11	114	638	212	0.33	0.08890	1.537	2.515	2.370	0.2052	1.803	0.76	5.99	1402	22	1203	20
spot 12	33	2466	444	0.18	0.04908	1.636	0.177	1.977	0.0261	1.111	0.56	0.54	153	15	166	2
spot 13	56	8980	756	0.08	0.04939	1.530	0.180	1.903	0.0265	1.131	0.59	0.36	167	8	169	2
spot 14	24	1897	330	0.17	0.04931	1.686	0.178	2.204	0.0261	1.420	0.64	0.24	162	18	166	2
spot 15	23	2075	317	0.15	0.04932	1.686	0.176	2.188	0.0258	1.394	0.64	0.12	162	18	164	2
spot 16	23	1801	304	0.17	0.05051	1.831	0.179	2.324	0.0259	1.431	0.62	1.64	216	24	165	2
spot 17	37	200	56	0.28	0.09483	1.604	3.363	2.312	0.2583	1.665	0.72	0.95	1524	25	1481	22
spot 18	32	160	41	0.25	0.10442	1.651	4.288	2.297	0.3006	1.597	0.70	0.24	1704	29	1694	24
spot 19	334	395	468	1.18	0.10178	1.546	3.743	2.328	0.2701	1.740	0.75	2.66	1657	26	1541	24

spot 20	29	119	39	0.33	0.10339	1.692	3.953	2.188	0.2811	1.387	0.63	1.69	1685	29	1597	20
spot 21	17	65	20	0.30	0.10450	1.889	4.290	2.877	0.2995	2.170	0.75	0.06	1704	34	1688	32
spot 22	46	197	70	0.35	0.10539	1.591	3.735	2.633	0.2575	2.097	0.80	6.84	1721	28	1476	28
spot 23	1579	1672	2199	1.32	0.10346	1.515	3.752	2.450	0.2649	1.925	0.79	4.43	1687	26	1514	26
spot 24	470	444	579	1.30	0.10272	1.552	4.096	2.447	0.2908	1.891	0.77	0.43	1674	26	1645	28
spot 25	79	119	115	0.96	0.10170	1.727	3.406	2.271	0.2440	1.475	0.65	6.97	1655	30	1407	18
spot 26	41	195	60	0.31	0.08915	1.673	3.033	2.386	0.2468	1.702	0.71	0.49	1407	25	1422	22
spot 27	48	326	67	0.21	0.09922	1.570	3.489	2.359	0.2555	1.761	0.75	3.96	1609	26	1466	23
spot 28	281	2246	3640	1.62	0.04949	1.633	0.177	2.374	0.0261	1.722	0.73	0.60	175	16	166	3
spot 29	48	136	45	0.33	0.09933	1.727	4.049	2.426	0.2994	1.703	0.70	2.73	1611	29	1688	25
spot 30	14	115	20	0.17	0.09315	1.808	3.035	2.415	0.2374	1.601	0.66	3.28	1493	29	1373	20
spot 31	11	563	90	0.16	0.06477	1.993	0.336	3.540	0.0376	2.926	0.83	24.11	775	32	238	7
spot 32	44	185	63	0.34	0.10386	1.633	3.461	2.631	0.2424	2.063	0.78	8.43	1694	28	1399	26
spot 33	45	13040	590	0.05	0.04945	1.523	0.179	1.977	0.0262	1.261	0.64	0.18	170	7	166	2
spot 34	41	11720	527	0.04	0.04927	1.531	0.179	2.156	0.0263	1.519	0.70	0.12	161	7	168	3
spot 35	51	12360	568	0.05	0.04974	1.538	0.181	2.139	0.0263	1.486	0.69	1.08	184	8	167	3
spot 36	85	1660	118	0.07	0.09884	1.514	3.629	2.082	0.2658	1.430	0.69	2.37	1602	24	1519	19
spot 37	70	1443	96	0.07	0.09870	1.539	3.727	2.387	0.2740	1.825	0.76	1.09	1600	25	1561	25
spot 38	27	2029	359	0.18	0.04932	1.725	0.178	2.314	0.0259	1.542	0.67	0.67	162	20	165	3
spot 39	35	2586	471	0.18	0.04964	1.641	0.178	2.299	0.0261	1.611	0.70	0.24	180	15	166	3
spot 40	33	1020	92	0.09	0.08766	1.547	2.044	2.177	0.1697	1.532	0.70	11.88	1375	22	1010	14
spot 41	12	1052	158	0.15	0.04884	2.118	0.173	2.968	0.0260	2.080	0.70	1.88	138	35	165	3
spot 42	11	977	152	0.16	0.04931	1.970	0.176	2.572	0.0260	1.653	0.64	0.66	164	30	166	3
spot 43	65	1478	83	0.06	0.10385	1.516	4.187	2.329	0.2942	1.768	0.76	0.18	1695	26	1667	27
spot 44	91	1870	128	0.07	0.10536	1.508	4.154	2.339	0.2907	1.789	0.76	1.46	1721	26	1644	26
spot 45	86	1206	127	0.11	0.09781	1.522	3.432	2.469	0.2572	1.944	0.79	2.58	1583	24	1475	26
spot 46	37	1142	47	0.04	0.09787	1.662	3.750	2.536	0.2819	1.916	0.76	1.12	1583	27	1604	28
spot 47	52	913	82	0.09	0.10283	1.518	3.309	2.538	0.2360	2.034	0.80	8.57	1676	26	1365	25
spot 48	6	533	9	0.02	0.10134	1.549	3.869	2.358	0.2812	1.778	0.75	0.56	1649	26	1597	25
spot 49	30	1056	43	0.04	0.09461	1.525	3.264	2.176	0.2512	1.553	0.71	1.94	1520	23	1444	20
spot 50	104	1413	142	0.10	0.10163	1.514	3.576	2.533	0.2561	2.030	0.80	5.04	1654	25	1469	27
spot 51	80	553	123	0.22	0.09007	1.530	2.994	2.405	0.2424	1.856	0.77	0.64	1427	22	1399	23
spot 52	138	1735	187	0.11	0.10178	1.515	3.611	2.443	0.2557	1.916	0.78	5.66	1657	25	1467	25
spot 53	85	2867	1126	0.39	0.04929	1.687	0.175	2.563	0.0259	1.930	0.75	0.55	160	18	165	3
spot 54	81	2706	1085	0.40	0.04927	1.627	0.173	2.388	0.0257	1.748	0.73	0.85	163	15	164	3
spot 55	91	2472	144	0.06	0.08869	1.510	2.899	2.461	0.2367	1.943	0.79	0.80	1398	21	1369	24
spot 56	114	2359	154	0.07	0.10177	1.515	3.885	2.197	0.2766	1.591	0.72	2.41	1657	25	1574	22
spot 57	36	1055	45	0.04	0.09918	1.528	3.902	2.225	0.2844	1.617	0.73	0.00	1609	25	1613	23
spot 58	134	1748	190	0.11	0.10272	1.514	4.041	2.486	0.2839	1.973	0.79	1.93	1674	25	1610	28
spot 59	71	1088	113	0.10	0.09777	1.535	2.982	2.513	0.2211	1.990	0.79	8.94	1582	24	1287	23
spot 60	19	1444	247	0.17	0.04856	1.774	0.180	2.639	0.0266	1.953	0.74	0.95	125	22	169	3
spot 61	48	3473	638	0.18	0.04925	1.643	0.178	2.306	0.0260	1.618	0.70	0.48	159	16	165	3
spot 62	20	1602	273	0.17	0.04903	1.748	0.175	2.365	0.0257	1.593	0.67	0.00	148	21	164	3
spot 63	103	2053	132	0.06	0.10309	1.511	4.178	2.417	0.2916	1.886	0.78	1.15	1680	25	1649	28
spot 64	103	2413	137	0.06	0.10393	1.510	4.080	2.247	0.2824	1.664	0.74	2.87	1695	26	1603	23
spot 65	33	2484	440	0.18	0.04904	1.628	0.177	2.290	0.0261	1.610	0.70	0.12	149	15	166	3
spot 66	88	1425	148	0.10	0.09016	1.520	2.852	2.876	0.2293	2.442	0.85	2.78	1430	22	1330	29
spot 67	84	531	130	0.25	0.09647	1.546	3.319	3.231	0.2502	2.838	0.88	3.13	1558	24	1438	36
spot 68	57	8500	780	0.09	0.05048	1.551	0.181	2.261	0.0261	1.645	0.73	1.50	217	10	166	3
spot 69	112	2599	133	0.05	0.10490	1.015	4.336	2.251	0.3036	2.009	0.89	0.53	1712.5	17	1708	30
spot 70	186	3488	230	0.07	0.10603	1.016	4.233	1.811	0.2935	1.499	0.83	1.27	1732.2	18	1659	22
spot 71	19	1762	239	0.14	0.04985	1.489	0.178	2.251	0.0261	1.688	0.75	0.36	194	24	165.8	3
spot 72	11	1050	142	0.13	0.04920	1.772	0.174	2.857	0.0259	2.241	0.78	1.09	155	34	164.7	4
spot 73	159	3870	194	0.05	0.10559	1.032	4.350	2.019	0.2997	1.735	0.86	0.71	1725.3	18	1689	26
spot 74	157	3212	199	0.06	0.10582	1.013	4.437	1.895	0.3059	1.602	0.85	0.12	1728.6	18	1720	24
spot 75	187	3600	236	0.07	0.10552	1.013	4.490	2.304	0.3092	2.070	0.90	0.75	1723.3	17	1741	30
spot 76	20	1619	280	0.17	0.04951	1.603	0.177	2.473	0.0260	1.883	0.76	0.06	170	29	165.6	3
spot 77	198	3750	258	0.07	0.10611	1.014	4.510	2.529	0.3108	2.317	0.92	0.57	1733.5	18	1744	36
spot 78	30	2334	417	0.18	0.04918	1.397	0.175	2.291	0.0259	1.815	0.79	0.49	155	23	164.8	3
spot 79	31	2397	413	0.17	0.05020	1.254	0.180	2.481	0.0262	2.141	0.86	0.72	203	17	166.5	4
spot 80	138	3344	173	0.05	0.10469	1.030	4.168	2.061	0.2913	1.785	0.87	1.09	1708.8	18	1648	26
spot 81	7	676	92	0.14	0.04979	1.644	0.179	3.095	0.0259	2.622	0.85	1.15	182	30	165	4
spot 82	9	915	135	0.15	0.04995	1.787	0.178	2.722	0.0258	2.053	0.75	0.97	189	34	164.3	3
spot 83	132	1550	180	0.12	0.10208	1.042	4.120	2.962	0.2922	2.772	0.94	0.30	1662.1	18	1651	41
spot 84	25	2172	352	0.16	0.04885	1.461	0.179	2.587	0.0262	2.135	0.83	0.18	139	25	166.9	4
spot 85	149	3760	190	0.05	0.10470	1.013	4.434	2.355	0.3057	2.126	0.90	0.12	1709	17	1719	32
spot 86	163	4160	210	0.05	0.10376	1.013	3.549	2.737	0.2478	2.542	0.93	7.71	1693	17	1426	33
spot 87	158	2522	188	0.07	0.10493	1.015	4.323	2.250	0.2988	2.008	0.89	0.65	1713	17	1685	30
spot 88	34	10840	438	0.04	0.04941	1.064	0.182	2.387	0.0267	2.136	0.90	0.06	167.2	9	169.7	4
spot 89	40	847	78	0.09	0.09532	1.065	2.423	3.866	0.1830	3.716	0.96	15.90	1534.2	17	1082	37
spot 90	102	1330	140	0.11	0.09931	1.034	3.950	3.694	0.2820	3.546	0.96	1.06	1611	17	1601	52
spot 91	24	2437	313	0.13	0.04889	1.195	0.177	3.179	0.0258	2.946	0.93	0.43	142	15	164.2	5

12TM15-12 zircon (spot size: 15 µm, frequency: 4 Hz, 100 shot count, laser energy: 3 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	67	8000	839	0.10	0.04974	1.446	0.178	1.975	0.0260	1.345	0.68	0.18	183	9	166	2
spot 2	48	6920	641	0.09	0.04901	1.453	0.174	1.930	0.0260	1.271	0.66	1.27	148	9	165	2
spot 3	28	5320	366	0.07	0.04928	1.447	0.176	1.848	0.0261	1.150	0.62	0.78	162	9	166	2
spot 4	27	5850	369	0.06	0.04918	1.458	0.174	1.935	0.0259	1.273	0.66	1.09	156	10	165	2

spot 5	78	7270	1053	0.14	0.04919	1.442	0.177	1.989	0.0263	1.370	0.69	0.84	157	8	167	2
spot 6	99	8930	1330	0.15	0.04930	1.433	0.179	1.978	0.0264	1.363	0.69	0.42	163	7	168	2
spot 7	8	84	13	0.15	0.08880	1.869	2.870	2.531	0.2345	1.706	0.67	1.10	1402	32	1358	21
spot 8	10	75	12	0.16	0.09995	1.633	3.683	2.633	0.2662	2.066	0.78	2.96	1622	28	1521	28
spot 9	49	338	65	0.19	0.10279	1.464	4.415	2.077	0.3122	1.473	0.71	2.00	1675	25	1751	23
spot 10	39	253	53	0.21	0.09396	1.487	3.415	2.479	0.2621	1.984	0.80	0.40	1509	23	1500	26
spot 11	35	1222	40	0.03	0.10281	1.441	3.938	2.034	0.2785	1.436	0.71	2.40	1675	24	1583	20
spot 12	37	1257	50	0.04	0.09893	1.423	3.469	2.198	0.2566	1.676	0.76	3.33	1604	23	1472	22
spot 13	15	5010	185	0.04	0.04932	1.476	0.178	1.966	0.0262	1.299	0.66	0.24	163	11	167	2
spot 14	18	5380	225	0.04	0.04923	1.482	0.176	2.082	0.0260	1.462	0.70	0.54	158	12	165	2
spot 15	24	5830	312	0.05	0.04937	1.496	0.177	2.200	0.0260	1.613	0.73	0.12	167	12	166	3
spot 16	21	5630	264	0.05	0.04947	1.452	0.175	2.068	0.0258	1.472	0.71	0.37	170	9	164	2
spot 17	58	7510	694	0.09	0.04998	1.446	0.180	1.993	0.0262	1.372	0.69	0.54	194	9	167	2
spot 18	114	1328	149	0.11	0.10438	1.411	3.963	2.154	0.2765	1.627	0.76	3.37	1703	24	1573	23
spot 19	189	2041	255	0.12	0.10278	1.412	3.873	2.004	0.2743	1.422	0.71	2.88	1675	24	1562	20
spot 20	99	1200	128	0.11	0.10284	1.416	3.965	2.198	0.2796	1.681	0.76	2.14	1676	24	1592	23
spot 21	93	1216	124	0.10	0.10064	1.429	3.796	2.152	0.2735	1.609	0.75	2.12	1636	24	1558	22
spot 22	142	1961	181	0.09	0.10376	1.413	3.970	1.965	0.2784	1.365	0.69	2.78	1692	24	1583	19
spot 23	155	2270	217	0.10	0.10230	1.409	3.626	2.247	0.2571	1.750	0.78	5.36	1666	24	1475	23
spot 24	135	1833	178	0.10	0.10268	1.413	3.901	1.853	0.2755	1.198	0.65	3.00	1674	24	1568	17
spot 25	98	1372	127	0.09	0.10137	1.418	3.880	2.319	0.2779	1.835	0.79	1.90	1651	23	1580	26
spot 26	90	1247	117	0.09	0.10015	1.416	3.752	2.382	0.2714	1.916	0.80	2.39	1627	23	1547	26
spot 27	95	1218	123	0.10	0.10025	1.424	3.794	2.010	0.2748	1.419	0.71	1.79	1629	23	1565	20
spot 28	110	1438	142	0.10	0.10091	1.414	3.884	2.122	0.2781	1.582	0.75	1.77	1641	23	1581	22
spot 29	85	1151	111	0.10	0.10043	1.414	3.765	2.231	0.2723	1.726	0.77	2.26	1633	23	1552	24
spot 30	88	1203	121	0.10	0.09813	1.423	3.680	2.182	0.2721	1.654	0.76	0.97	1589	23	1551	23
spot 31	98	1328	136	0.10	0.09902	1.413	3.641	2.231	0.2664	1.727	0.77	2.03	1606	23	1526	24
spot 32	101	1314	133	0.10	0.09957	1.414	3.829	2.313	0.2787	1.830	0.79	0.88	1616	23	1584	26
spot 33	140	257	164	0.64	0.10602	1.477	4.514	2.329	0.3110	1.801	0.77	0.57	1732	26	1745	28
spot 34	124	281	150	0.53	0.10578	1.445	4.561	2.441	0.3152	1.967	0.81	1.42	1728	25	1766	30
spot 35	36	5880	460	0.08	0.04959	1.457	0.177	2.263	0.0260	1.732	0.77	0.00	176	10	165	3
spot 36	21	5720	278	0.05	0.04972	1.462	0.177	2.197	0.0262	1.640	0.75	0.66	182	10	167	3
spot 37	18	6080	238	0.04	0.04930	1.458	0.176	2.377	0.0261	1.877	0.79	1.02	163	10	166	3
spot 38	23	5620	301	0.05	0.04945	1.452	0.177	2.197	0.0261	1.649	0.75	0.30	169	9	166	3
spot 39	18	5730	232	0.04	0.04936	1.452	0.177	2.106	0.0262	1.526	0.72	0.84	165	9	167	3
spot 40	25	5730	324	0.06	0.04910	1.470	0.177	2.195	0.0264	1.631	0.74	1.49	152	10	168	3
spot 41	21	5470	279	0.05	0.04918	1.447	0.176	2.334	0.0262	1.831	0.78	1.14	156	9	167	3
spot 42	27	6030	360	0.06	0.04929	1.442	0.177	2.186	0.0262	1.643	0.75	0.48	162	8	167	3
spot 43	381	335	470	1.40	0.10350	1.487	3.627	2.696	0.2535	2.249	0.83	6.94	1688	25	1456	29
spot 44	205	195	262	1.35	0.10477	1.499	4.203	2.584	0.2897	2.106	0.81	1.95	1710	26	1644	30
spot 45	219	451	271	0.60	0.10570	1.448	4.560	2.567	0.3113	2.120	0.83	0.34	1726	25	1746	32
spot 46	151	508	183	0.36	0.10613	1.432	4.698	2.280	0.3213	1.774	0.78	1.50	1734	25	1795	28
spot 47	13	5000	167	0.03	0.04907	1.490	0.175	2.410	0.0259	1.895	0.79	0.49	151	12	165	3
spot 48	15	4780	194	0.04	0.04957	1.463	0.179	2.263	0.0261	1.726	0.76	0.48	175	10	166	3
spot 49	22	5410	282	0.05	0.04910	1.464	0.175	2.130	0.0259	1.547	0.73	0.18	152	10	165	3
spot 50	18	6200	233	0.04	0.04924	1.482	0.178	2.212	0.0262	1.641	0.74	0.54	159	11	167	3
spot 51	19	5930	244	0.04	0.04936	1.457	0.179	2.028	0.0262	1.411	0.70	0.30	165	10	167	2
spot 52	22	5668	277	0.05	0.04929	1.469	0.177	2.238	0.0261	1.688	0.75	0.30	161	10	166	3
spot 53	20	5920	251	0.04	0.04943	1.447	0.177	2.345	0.0260	1.845	0.79	0.06	168	9	166	3
spot 54	128	482	152	0.32	0.10359	1.434	4.108	2.582	0.2888	2.147	0.83	1.16	1689	24	1635	31
spot 55	710	747	861	1.15	0.10366	1.422	4.290	2.786	0.3006	2.395	0.86	0.24	1691	24	1693	36
spot 56	58	59	69	1.18	0.10460	1.810	4.193	2.699	0.2897	2.002	0.74	2.14	1705	32	1639	29
spot 57	14	4000	176	0.04	0.05055	1.478	0.179	2.725	0.0258	2.289	0.84	1.89	220	11	164	4

13TM-06 zircon (spot size: 31 µm, frequency: 4 Hz, 100 shot count, laser energy: 4 mJ at 75%)

					ISOTOPIC RATIOS								APPARENT AGES			
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.*	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs
spot 1	14	101	176	1.75	0.04964	1.249	0.178	1.718	0.0260	1.180	0.69	0.18	175	28	166	2
spot 2	13	112	164	1.47	0.04956	1.170	0.179	1.807	0.0261	1.376	0.76	0.54	175	27	166	2
spot 3	11	91	137	1.50	0.05004	1.459	0.181	2.047	0.0261	1.437	0.70	1.93	193	34	166	2
spot 4	11	87	132	1.51	0.04971	1.408	0.177	1.876	0.0257	1.240	0.66	0.73	181	32	164	2
spot 5	18	98	235	2.39	0.05221	1.283	0.185	1.801	0.0259	1.264	0.70	4.67	296	29	165	2
spot 6	26	175	315	1.80	0.05005	1.099	0.178	1.577	0.0259	1.131	0.72	0.85	194	25	165	2
spot 7	25	174	308	1.77	0.04907	0.999	0.174	1.656	0.0259	1.321	0.80	1.09	149	23	165	2
spot 8	26	174	316	1.82	0.04952	0.989	0.176	1.630	0.0258	1.296	0.79	0.37	170	23	164	2
spot 9	22	154	276	1.80	0.04949	0.970	0.175	1.670	0.0256	1.360	0.81	0.12	168	22	163	2
spot 10	21	149	268	1.80	0.04942	1.093	0.175	1.815	0.0257	1.449	0.80	0.00	162	25	164	2
spot 11	35	169	449	2.66	0.04930	0.913	0.176	1.562	0.0258	1.267	0.81	0.24	157	21	164	2
spot 12	31	158	402	2.54	0.04999	0.960	0.177	1.737	0.0258	1.447	0.83	0.85	192	22	164	2
spot 13	24	125	302	2.42	0.05082	1.141	0.181	1.727	0.0258	1.296	0.75	2.86	228	26	164	2
spot 14	35	1140	439	0.39	0.04992	0.361	0.180	1.285	0.0260	1.233	0.96	1.33	191	8	166	2
spot 15	21	153	249	1.63	0.05088	0.884	0.181	1.593	0.0258	1.325	0.83	3.11	240	20	164	2
spot 16	19	151	231	1.53	0.05252	1.066	0.188	1.748	0.0258	1.385	0.79	6.58	313	24	164	2
spot 17	21	159	264	1.66	0.05070	1.006	0.182	1.639	0.0259	1.294	0.79	3.16	231	24	165	2
spot 18	23	176	286	1.62	0.05038	0.774	0.180	1.559	0.0259	1.353	0.87	2.31	210	18	165	2
spot 19	8	58	91	1.57	0.05126	1.853	0.183	2.309	0.0260	1.377	0.60	3.32	248	42	166	2
spot 20	60	390	740	1.90	0.04950	0.646	0.177	1.499	0.0259	1.352	0.90	0.36	173	15	165	2
spot 21	65	418	802	1.92	0.04950	0.626	0.177	1.363	0.0258	1.211	0.89	0.85	172	15	164	2
spot 22	63	412	790	1.92	0.04955	0.565	0.178	1.463	0.0260	1.349	0.92	0.48	172	13	165	2
spot 23	69	437	884	2.02	0.04959	0.665	0.179	1.421	0.0262	1.256	0.88	0.36	176	15	167	2

spot 24	49	397	591	1.49	0.04941	0.668	0.178	1.560	0.0260	1.410	0.90	0.42	165	16	165	2
spot 25	85	595	1061	1.78	0.04960	0.464	0.178	1.400	0.0259	1.321	0.94	0.61	175	11	165	2
spot 26	107	689	1308	1.90	0.04961	0.403	0.178	1.379	0.0260	1.319	0.96	0.36	178	9	165	2
spot 27	40	244	499	2.04	0.04954	0.828	0.182	1.597	0.0264	1.366	0.86	0.95	175	20	168	2
spot 28	64	374	815	2.18	0.04945	0.566	0.178	1.408	0.0260	1.289	0.92	0.48	170	13	166	2
spot 29	196	739	2641	3.57	0.04995	0.460	0.180	1.033	0.0261	0.925	0.90	0.98	193	11	166	1
spot 30	97	465	1173	2.52	0.04956	0.504	0.180	1.060	0.0263	0.933	0.88	0.17	174	12	167	1
spot 31	36	255	446	1.75	0.04939	0.891	0.178	1.282	0.0260	0.921	0.72	0.31	164	21	166	1
spot 32	15	103	180	1.75	0.05269	1.366	0.191	1.689	0.0263	0.992	0.59	6.33	312	32	167	2
spot 33	46	266	570	2.14	0.04964	0.745	0.178	1.199	0.0260	0.939	0.78	0.48	180	17	165	1
spot 34	58	2704	704	0.26	0.05029	0.278	0.181	0.935	0.0261	0.892	0.95	1.70	208	7	166	1
spot 35	22	133	254	1.91	0.04936	1.297	0.177	1.612	0.0261	0.958	0.59	0.30	155	30	166	2
spot 36	36	170	427	2.52	0.05019	1.016	0.180	1.383	0.0261	0.938	0.68	1.27	202	24	166	1
spot 37	32	316	362	1.15	0.05007	0.719	0.182	1.179	0.0263	0.935	0.79	1.39	200	17	167	1
spot 38	39	335	463	1.38	0.04956	0.646	0.181	1.140	0.0265	0.939	0.82	0.29	175	15	168	2
spot 39	21	135	259	1.91	0.04941	0.911	0.178	1.334	0.0262	0.974	0.73	0.41	167	21	167	2
spot 40	84	371	989	2.67	0.04948	0.627	0.180	1.119	0.0264	0.927	0.83	0.15	173	15	168	1
spot 41	24	116	278	2.39	0.05037	1.231	0.181	1.571	0.0260	0.976	0.62	1.75	207	28	166	2
spot 42	32	185	395	2.13	0.04963	0.887	0.178	1.289	0.0260	0.936	0.73	0.72	179	21	165	1
spot 43	16	118	190	1.61	0.04984	1.184	0.178	1.534	0.0261	0.975	0.64	0.22	186	28	166	2
spot 44	18	124	208	1.69	0.04925	1.218	0.177	1.561	0.0261	0.975	0.62	0.42	157	28	166	2
spot 45	73	563	876	1.56	0.04972	0.523	0.179	1.060	0.0261	0.922	0.87	0.53	181	12	166	1
spot 46	14	122	167	1.37	0.04946	1.173	0.177	1.515	0.0259	0.959	0.63	0.21	169	27	165	2
spot 47	14	116	169	1.46	0.04960	1.089	0.178	1.463	0.0259	0.977	0.67	0.90	170	25	165	2
spot 48	212	709	2671	3.77	0.04971	0.422	0.178	1.012	0.0260	0.920	0.91	0.60	180	10	165	1
spot 49	177	665	2320	3.49	0.04975	0.462	0.177	1.051	0.0258	0.943	0.90	1.02	183	11	164	1
spot 50	8	168	96	0.57	0.05154	0.776	0.184	1.262	0.0259	0.996	0.79	3.98	265	18	165	2
spot 51	363	3628	4660	1.28	0.05099	0.314	0.181	0.993	0.0257	0.942	0.95	3.27	240	7	164	1
spot 52	179	729	2219	3.04	0.04950	0.404	0.177	1.410	0.0259	1.351	0.96	0.30	171	9	165	2
spot 53	176	724	2146	2.96	0.04952	0.485	0.177	1.382	0.0258	1.294	0.94	0.55	171	11	164	2
spot 54	166	682	2034	2.98	0.04940	0.466	0.176	1.404	0.0258	1.325	0.94	0.00	166	11	164	2
spot 55	141	604	1690	2.80	0.04944	0.526	0.178	1.585	0.0262	1.495	0.94	0.30	169	12	167	2
spot 56	192	795	2255	2.84	0.04962	0.464	0.178	1.516	0.0259	1.444	0.95	0.85	177	11	165	2
spot 57	53	329	627	1.90	0.05047	0.753	0.182	1.549	0.0258	1.354	0.87	3.10	217	18	164	2
spot 58	105	526	1260	2.40	0.04936	0.608	0.177	1.718	0.0258	1.607	0.94	0.61	165	14	164	3
spot 59	117	567	1400	2.47	0.04984	0.522	0.177	1.601	0.0257	1.514	0.95	1.28	188	12	164	2
spot 60	57	351	673	1.92	0.05021	0.717	0.179	1.613	0.0258	1.445	0.90	1.64	207	17	164	2

Table 3. U-Th/Pb Geochronologic and Rare Earth Element data

	CONCENTRATION (PPM)				ISOTOPIC RATIOS								APPARENT AGES (Ma)				CONCENTRATION (PPM)														
	Pb	U	Th	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	% disc.	$^{207}Pb/^{206}Pb$	2σ abs	$^{206}Pb/^{238}U$	2σ abs	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Y	Er	Tm	Yb	Lu
12TM3-01 monazite (M18) (spot size: 7 µm, frequency: 3 Hz, 75 shot count, laser energy: 3 mJ at 75%)																															
spot 1	17930	10240	194600	19.00	0.10687	1.138	4.050	0.140	0.2763	3.261	0.84	4.8	1747	20	1570	47	34000	75700	9600	33200	7070	27	6140	717	3540	559	12400	717	39	70	9
spot 2	14850	8040	189200	23.53	0.10503	1.155	3.747	0.114	0.2599	2.818	0.78	6.4	1715	20	1487	39	34900	77300	9600	39600	7060	30	6460	688	3480	587	12700	698	33	84	10
spot 3	18570	9530	203400	21.34	0.10649	1.138	3.908	0.108	0.2710	2.524	0.73	5.1	1741	20	1544	36	31100	79500	9620	36300	7160	27	5950	705	3610	539	11990	744	37	81	9
spot 4	2229	9170	192800	21.03	0.04906	1.738	0.180	0.006	0.0274	2.625	0.68	3.7	148	30	174	5	34900	78000	10340	37600	8750	76	8380	930	4140	520	10400	613	23	46	4
spot 5	9010	7780	188500	24.23	0.10034	1.208	2.059	0.068	0.1536	3.062	0.81	23.3	1630	20	920	27	36600	85100	10200	42100	7580	37	6490	707	3360	463	11000	690	32	77	9
12TM3-01 xenotime (X27) (spot size: 7 µm, frequency: 3 Hz, 75 shot count, laser energy: 3 mJ at 75%)																															
spot 1	582	4270	5760	1.35	0.09348	0.651	3.002	3.049	0.2350	2.979	0.98	3.5	1497	11	1358	36	34	249	104	1037	1200	23	4220	960	9700	2410	73500	5360	435	1410	229
spot 2	461	3585	4550	1.27	0.09095	0.638	2.858	2.855	0.2300	2.783	0.97	2.4	1445	10	1336	33	33	306	114	1090	1076	28	4230	1010	10320	2410	80800	5340	446	1420	213
spot 3	477	3101	4930	1.59	0.09264	0.768	2.770	4.084	0.2219	4.011	0.98	5.1	1481	13	1290	47	37	286	108	1130	1192	27	4180	970	10200	2200	77900	5310	431	1570	215
spot 4	438	3960	4500	1.14	0.09406	0.714	2.862	3.132	0.2230	3.049	0.97	5.3	1510	12	1300	37	36	287	119	1262	1250	18	4890	1080	10220	2750	76600	6010	459	1580	207
spot 5	456	3750	4520	1.21	0.09502	0.640	3.025	3.281	0.2331	3.218	0.98	4.8	1528	11	1348	39	35	295	116	1170	1250	26	4710	1020	10800	2590	87800	5600	530	1434	225
spot 6	527	4070	5190	1.28	0.09405	0.623	2.964	2.806	0.2303	2.736	0.98	4.6	1509	10	1334	33	35	292	124	1190	1110	22	4130	1000	9670	2410	79800	5590	528	1510	221
spot 7	8	930	370	0.40	0.05930	3.243	0.271	5.130	0.0327	3.976	0.77	17.3	551	73	207	8	1	32	40	758	1068	24	4480	997	9980	2450	76600	5290	515	1410	219
spot 8	11	1499	863	0.58	0.05030	3.024	0.179	4.635	0.0262	3.513	0.76	0.2	203	64	167	6	1	39	49	770	1160	22	3970	900	9000	2440	79000	4650	455	1270	175

TABLE 4. U-Th/Pb GEOCHRONOLOGIC AND RARE EARTH ELEMENT DATA

12TM14-11 allanite (spot size: 7 µm, frequency: 3 Hz, 80 shot count, laser energy: 3 mJ at 75%)

					ISOTOPIC RATIOS							APPARENT AGES (Ma)	
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	$^{*206}Pb/^{238}U$	2σ abs
spot 1	8514	246	11040	44.91	0.13270	2.110	0.716	4.410	0.0391	3.118	0.87	154	4
spot 2	7330	206	8990	43.66	0.15060	2.656	0.931	5.489	0.0448	3.881	0.93	153	5
spot 3	8930	288	11740	40.79	0.12660	2.054	0.681	3.337	0.0390	2.360	0.78	160	3
spot 4	8220	239	10610	44.37	0.12390	2.583	0.679	4.481	0.0398	3.168	0.83	167	4
spot 5	9000	287	11760	40.98	0.12360	2.589	0.645	3.962	0.0378	2.802	0.77	159	3
spot 6	7920	205	9540	46.63	0.13490	2.076	0.765	3.162	0.0411	2.236	0.73	159	4
spot 7	8440	223	10590	47.51	0.13680	2.778	0.757	4.861	0.0401	3.438	0.74	153	4
spot 8	8391	224	10230	45.59	0.13350	2.097	0.749	4.657	0.0407	3.293	0.85	159	4
spot 9	8279	223	10580	47.55	0.13930	2.297	0.808	4.838	0.0421	3.421	0.88	157	4
spot 10	8550	239	10990	45.98	0.13240	3.625	0.749	6.407	0.0411	4.530	0.92	162	5
spot 11	7830	213	9280	43.67	0.14850	2.694	0.905	4.541	0.0442	3.211	0.82	153	5
spot 12	8330	219	10320	47.21	0.13270	2.110	0.738	4.070	0.0403	2.878	0.84	158	4
spot 13	8650	244	11330	46.47	0.12870	2.020	0.681	4.052	0.0384	2.865	0.84	155	3
spot 14	8453	226	10380	45.93	0.14430	2.079	0.839	3.218	0.0422	2.275	0.79	151	4
spot 15	9690	233	11200	47.99	0.15770	2.917	1.107	6.114	0.0509	4.323	0.85	163	6
spot 16	8120	225	9330	41.49	0.17070	2.695	1.200	5.546	0.0510	3.922	0.80	144	6
spot 17	9400	228	11150	49.01	0.14380	2.364	0.873	5.140	0.0440	3.635	0.83	159	5
spot 18	10540	225	13190	58.57	0.13640	2.346	0.826	5.670	0.0439	4.009	0.85	168	5
spot 19	10690	250	12810	51.26	0.13970	2.434	0.843	3.813	0.0438	2.696	0.84	163	4
spot 20	9230	344	11210	32.57	0.13260	3.017	0.740	5.312	0.0405	3.756	0.83	159	5

12TM15-06 allanite (spot size: 7 µm, frequency: 3 Hz, 80 shot count, laser energy: 3 mJ at 75%)

					ISOTOPIC RATIOS							APPARENT AGES (Ma)	
	Pb (ppm)	U (ppm)	Th (ppm)	Th/U	$^{207}Pb/^{206}Pb$	2σ %	$^{207}Pb/^{235}U$	2σ %	$^{206}Pb/^{238}U$	2σ %	Rho	$^{*206}Pb/^{238}U$	2σ abs
spot 1	8560	222	9940	44.82	0.14260	2.525	0.864	5.532	0.0440	3.912	0.83	160	5
spot 2	8780	212	10150	47.79	0.13860	2.165	0.843	5.128	0.0441	3.626	0.84	166	5

*$^{206}Pb/^{238}U$ age corrected using $^{207}Pb/^{206}Pb$ value defined by upper intercept of data.