

Table S-2 U-Pb analytical results of ilmenite sample HG79 calibrated by rutile RMJG in most probable ablation settings.

Sample No.		Analysis mode	207Pb/235U		206Pb/238U			Note
			Ratio	2σ	Ratio	2σ	rho	
44μm-4J-10Hz	spot							
44×1μm10Hz	line scan							
2023515A6	79-44-10-01	spot	11.2474	4.4108	0.1239	0.0278	0.57	
2023515A7	79-44-10-02	spot	4.3716	1.6036	0.0689	0.0184	0.73	
2023515A8	79-44-10-03	spot	0.9692	0.9199	0.0404	0.0123	0.32	
2023515A9	79-44-10-04	spot	9.8091	2.2740	0.1250	0.0223	0.77	
2023515A10	79-44-10-05	spot	2.5612	0.9037	0.0590	0.0167	0.80	
2023515A11	79-44-10-06	spot	7.1142	3.4328	0.0946	0.0395	0.86	
2023515A12	79-44-10-07	spot	18.6079	4.2481	0.2124	0.0430	0.89	
2023515A13	79-44-10-08	spot	9.1098	2.0206	0.1117	0.0203	0.82	
2023515A14	79-44-10-09	spot	14.1042	8.7605	0.1453	0.0646	0.72	
2023515A15	79-44-10-10	spot	12.2062	4.6701	0.1403	0.0367	0.68	
2023515A17	79-44-10-12	spot	10.4538	2.3442	0.1125	0.0294	0.99	
2023515A18	79-44-10-13	spot	8.4424	1.5926	0.1072	0.0220	0.99	
2023515A19	79-44-10-14	spot	10.6232	6.6614	0.1329	0.0849	0.99	
2023515A20	79-44-10-15	spot	10.3788	2.9734	0.1323	0.0288	0.76	
2023515A26	79-44-10-16	spot	6.8595	2.3048	0.0900	0.0199	0.66	
2023515A27	79-44-10-17	spot	11.3213	3.2407	0.1330	0.0335	0.88	
2023515A28	79-44-10-18	spot	13.1602	7.6987	0.1419	0.0737	0.89	
2023515A29	79-44-10-19	spot	11.9366	4.8031	0.1324	0.0385	0.72	
2023515A30	79-44-10-20	spot	17.6779	4.5243	0.2086	0.0677	0.99	
2023515A31	79-44-10-21	spot	3.8544	2.0720	0.0675	0.0158	0.44	
2023515A32	79-44-10-22	spot	4.0964	1.7368	0.0646	0.0176	0.64	
2023515A33	79-44-10-23	spot	2.2662	0.7501	0.0510	0.0096	0.57	
2023515A34	79-44-10-24	spot	35.2096	8.1786	0.3556	0.0703	0.85	
2023515A35	79-44-10-25	spot	20.9405	12.0513	0.2371	0.1583	0.99	
2023515A36	79-44-10-26	spot	7.3843	1.9824	0.0970	0.0189	0.72	
2023515A38	79-44-10-28	spot	2.4246	0.7164	0.0526	0.0121	0.78	
2023515A39	79-44-10-29	spot	2.9740	1.2836	0.0553	0.0123	0.52	
2023515A46	79-44-10-31	spot	15.9049	9.4040	0.1776	0.1312	0.99	
2023515A47	79-44-10-32	spot	0.6959	0.5769	0.0390	0.0072	0.22	
2023515A48	79-44-10-33	spot	2.6120	0.7538	0.0547	0.0151	0.95	
2023515A49	79-44-10-34	spot	1.5543	0.5725	0.0431	0.0085	0.54	
2023515A50	79-44-10-35	spot	16.7843	3.2458	0.1819	0.0375	0.99	
2023515A51	79-44-10-36	Line scan	6.5998	1.1062	0.0881	0.0124	0.84	
2023515A52	79-44-10-37	Line scan	29.8137	14.8815	0.2448	0.1173	0.96	
2023515A53	79-44-10-38	Line scan	2.0868	0.4636	0.0498	0.0085	0.76	
2023515A54	79-44-10-39	Line scan	1.5029	0.4401	0.0435	0.0055	0.43	
2023515A16	79-44-10-11	spot	37.0297	12.9539	0.4647	0.1518	0.93	delete
2023515A37	79-44-10-27	spot	21.3055	22.6353	0.1845	0.0481	0.25	delete
2023515A40	79-44-10-30	spot	4.6472	0.2506	0.3138	0.0140	0.81	delete
60μm-4J-6Hz	spot							
60×1μm6Hz	line scan							
2023517a6	79-60-6-01	spot	33.8461	5.3244	0.3368	0.0505	0.95	
2023517a7	79-60-6-02	spot	6.9483	1.6790	0.0956	0.0167	0.72	
2023517a8	79-60-6-03	spot	1.8477	0.6062	0.0449	0.0082	0.55	
2023517a9	79-60-6-04	spot	4.1005	0.9246	0.0683	0.0114	0.74	
2023517a10	79-60-6-05	spot	2.9603	0.6882	0.0544	0.0082	0.65	
2023517a11	79-60-6-06	spot	5.4345	0.8896	0.0853	0.0112	0.80	
2023517a12	79-60-6-07	spot	3.5281	0.7313	0.0599	0.0096	0.77	
2023517a13	79-60-6-08	spot	2.9117	0.7491	0.0579	0.0097	0.65	
2023517a14	79-60-6-09	spot	5.2503	1.4368	0.0777	0.0159	0.75	
2023517a15	79-60-6-10	spot	3.3412	1.0356	0.0654	0.0124	0.61	
2023517a16	79-60-6-11	spot	2.2192	0.4813	0.0538	0.0085	0.73	
2023517a17	79-60-6-12	spot	16.1437	2.3674	0.1729	0.0243	0.96	
2023517a18	79-60-6-13	spot	3.2986	0.8962	0.0601	0.0105	0.64	
2023517a19	79-60-6-14	spot	5.8674	1.3813	0.0871	0.0156	0.76	
2023517a20	79-60-6-15	spot	1.6191	0.5959	0.0461	0.0066	0.39	
2023517a26	79-60-6-16	spot	1.6934	0.3116	0.0442	0.0042	0.51	

2023517a27	79-60-6-17	spot	5.0480	1.1609	0.0762	0.0127	0.72	
2023517a28	79-60-6-18	spot	1.1969	0.4167	0.0422	0.0059	0.40	
2023517a29	79-60-6-19	spot	2.0896	0.5418	0.0489	0.0074	0.58	
2023517a30	79-60-6-20	spot	2.3012	0.5215	0.0502	0.0065	0.57	
2023517a31	79-60-6-21	spot	2.8339	1.1167	0.0551	0.0113	0.52	
2023517a32	79-60-6-22	spot	2.6254	0.7845	0.0575	0.0189	0.99	
2023517a33	79-60-6-23	spot	8.8831	1.7189	0.1132	0.0169	0.77	
2023517a34	79-60-6-24	spot	2.1141	0.6708	0.0482	0.0084	0.55	
2023517a35	79-60-6-25	spot	3.8901	0.8767	0.0669	0.0093	0.62	
2023517a36	79-60-6-26	spot	0.9005	0.4124	0.0409	0.0073	0.39	
2023517a37	79-60-6-27	spot	7.5468	1.4520	0.0993	0.0166	0.87	
2023517a38	79-60-6-28	spot	2.9851	0.7569	0.0578	0.0127	0.87	
2023517a39	79-60-6-29	spot	0.9663	0.3422	0.0404	0.0055	0.38	
2023517a40	79-60-6-30	spot	12.4513	2.0000	0.1467	0.0204	0.86	
2023517a47	79-60-6-32	Line scan	1.8082	0.4645	0.0433	0.0067	0.60	
2023517a48	79-60-6-33	Line scan	4.6998	0.9257	0.0744	0.0129	0.88	
2023517a49	79-60-6-34	Line scan	2.5051	0.5821	0.0541	0.0092	0.73	
2023517a50	79-60-6-35	Line scan	2.5924	0.9793	0.0521	0.0136	0.69	
2023517a51	79-60-6-36	Line scan	1.1892	0.3681	0.0414	0.0060	0.47	
2023517a52	79-60-6-37	Line scan	6.0779	1.3374	0.0876	0.0147	0.76	
2023517a46	79-60-6-31	Line scan	46.9560	5.9316	0.4998	0.0681	0.99	delete
60μm-4J-10Hz	spot							
60×1μm10Hz	line scan							
2023515b6	79-60-10-01	spot	7.0844	1.0690	0.0935	0.0122	0.86	
2023515b7	79-60-10-02	spot	18.7056	3.0254	0.1908	0.0358	0.99	
2023515b9	79-60-10-04	spot	14.6798	2.0136	0.1657	0.0197	0.86	
2023515b10	79-60-10-05	spot	2.5747	0.9513	0.0520	0.0117	0.61	
2023515b11	79-60-10-06	spot	1.3435	0.4579	0.0434	0.0077	0.52	
2023515b12	79-60-10-07	spot	3.6892	1.1482	0.0626	0.0112	0.57	
2023515b13	79-60-10-08	spot	3.3655	0.7312	0.0598	0.0109	0.84	
2023515b14	79-60-10-09	spot	6.8668	2.7501	0.0939	0.0304	0.81	
2023515b15	79-60-10-10	spot	1.4369	0.6106	0.0427	0.0084	0.46	
2023515b16	79-60-10-11	spot	1.2291	0.5695	0.0461	0.0087	0.41	
2023515b17	79-60-10-12	spot	2.4394	0.5790	0.0520	0.0085	0.69	
2023515b18	79-60-10-13	spot	2.5898	1.1034	0.0543	0.0142	0.61	
2023515b20	79-60-10-15	spot	2.4978	0.8526	0.0535	0.0120	0.66	
2023515b21	79-60-10-16	spot	2.5778	0.6840	0.0557	0.0079	0.53	
2023515b27	79-60-10-17	spot	5.4931	0.9842	0.0784	0.0125	0.89	
2023515b29	79-60-10-19	spot	5.6241	1.8800	0.0816	0.0123	0.45	
2023515b31	79-60-10-21	spot	12.4992	1.9633	0.1445	0.0190	0.84	
2023515b32	79-60-10-22	spot	9.5383	1.8020	0.1181	0.0231	0.99	
2023515b33	79-60-10-23	spot	5.4880	0.9460	0.0774	0.0148	0.99	
2023515b34	79-60-10-24	spot	40.6313	4.4001	0.3710	0.0401	1.00	
2023515b36	79-60-10-26	spot	2.5665	0.5937	0.0558	0.0099	0.77	
2023515b37	79-60-10-27	spot	19.8471	2.6059	0.2060	0.0314	0.99	
2023515b38	79-60-10-28	spot	3.8897	1.3741	0.0665	0.0159	0.68	
2023515b39	79-60-10-29	spot	1.3970	1.7766	0.0493	0.0180	0.29	
2023515b46	79-60-10-31	spot	3.8340	0.9222	0.0661	0.0107	0.67	
2023515b47	79-60-10-32	spot	3.1954	0.8979	0.0604	0.0140	0.82	
2023515b48	79-60-10-33	spot	1.4183	0.8634	0.0461	0.0122	0.43	
2023515b49	79-60-10-34	spot	7.8704	1.7305	0.1021	0.0246	0.99	
2023515b51	79-60-10-36	Line scan	1.3781	0.4151	0.0484	0.0084	0.57	
2023515b52	79-60-10-37	Line scan	4.1351	0.8355	0.0694	0.0105	0.74	
2023515b53	79-60-10-38	Line scan	6.8207	1.5180	0.0932	0.0235	0.99	
2023515b55	79-60-10-40	Line scan	2.4580	0.5597	0.0548	0.0089	0.72	
2023515b19	79-60-10-14	spot	53.7407	14.2612	0.5778	0.3107	2.03	delete
2023515b8	79-60-10-03	spot	66.5895	14.7367	0.5638	0.0964	0.77	delete
2023515b28	79-60-10-18	spot	32.2912	3.7630	0.3364	0.0338	0.86	delete
2023515b40	79-60-10-30	spot	21.1195	2.3720	0.2296	0.0267	1.03	delete
2023515b30	79-60-10-20	spot	15.0567	6.6378	0.1573	0.0208	0.30	delete
2023515b35	79-60-10-25	spot	10.8771	2.9671	0.1373	0.0299	0.80	delete
2023515b54	79-60-10-39	Line scan	9.6906	2.4120	0.1260	0.0284	0.91	delete

2023515b50	79-60-10-35	spot	9.4519	3.0483	0.1230	0.0366	0.92	delete
90μm-4J-6Hz	spot							
90×1μm6Hz	line scan							
2023516a6	79-90-10-01	spot	2.4469	0.3774	0.0535	0.0053	0.63	
2023516a7	79-90-10-02	spot	2.1521	0.2625	0.0516	0.0040	0.62	
2023516a8	79-90-10-03	spot	1.3825	0.2279	0.0430	0.0039	0.55	
2023516a9	79-90-10-04	spot	1.0870	0.2667	0.0399	0.0034	0.35	
2023516a10	79-90-10-05	spot	1.0787	0.2776	0.0390	0.0040	0.40	
2023516a11	79-90-10-06	spot	1.1296	0.2261	0.0396	0.0035	0.43	
2023516a12	79-90-10-07	spot	2.9649	0.4493	0.0597	0.0062	0.68	
2023516a13	79-90-10-08	spot	1.2206	0.2003	0.0400	0.0035	0.54	
2023516a14	79-90-10-09	spot	3.0405	0.3210	0.0576	0.0047	0.76	
2023516a15	79-90-10-10	spot	1.5916	0.3314	0.0464	0.0050	0.51	
2023516a16	79-90-10-11	spot	2.1004	0.3485	0.0455	0.0045	0.60	
2023516a17	79-90-10-12	spot	4.7611	0.8110	0.0727	0.0068	0.55	
2023516a18	79-90-10-13	spot	2.8313	0.4390	0.0549	0.0059	0.69	
2023516a19	79-90-10-14	spot	0.6200	0.2214	0.0381	0.0056	0.41	
2023516a20	79-90-10-15	spot	2.6295	0.3839	0.0547	0.0065	0.81	
2023516a26	79-90-10-16	spot	2.7620	0.7769	0.0501	0.0084	0.59	
2023516a27	79-90-10-17	spot	2.7447	0.4146	0.0507	0.0063	0.82	
2023516a28	79-90-10-18	spot	20.8322	2.9369	0.2127	0.0262	0.87	
2023516a29	79-90-10-19	spot	21.1539	3.4501	0.2225	0.0345	0.95	
2023516a31	79-90-10-21	spot	4.3219	1.0433	0.0677	0.0138	0.84	
2023516a34	79-90-10-24	spot	0.4941	0.1332	0.0382	0.0032	0.30	
2023516a35	79-90-10-25	spot	1.0027	0.1785	0.0377	0.0036	0.54	
2023516a36	79-90-10-26	spot	0.7230	0.1967	0.0370	0.0038	0.38	
2023516a37	79-90-10-27	Line scan	0.4115	0.1227	0.0347	0.0037	0.36	
2023516a38	79-90-10-28	Line scan	2.1113	0.4833	0.0475	0.0070	0.64	
2023516a39	79-90-10-29	Line scan	1.0030	0.2293	0.0394	0.0042	0.46	
2023516a40	79-90-10-30	Line scan	2.4606	0.4228	0.0538	0.0117	0.99	
2023516a33	79-90-10-23	spot	9.1788	1.3247	0.1960	0.0906	0.99	delete
2023516a30	79-90-10-20	spot	12.8515	2.2793	0.1151	0.0238	0.99	delete
2023516a32	79-90-10-22	spot	6.0801	1.1430	0.1105	0.0190	0.91	delete
120μm-3J-5Hz	spot							
120×1μm5Hz	line scan							
2023522a5	79-120-3-5-01	spot	1.1220	0.3565	0.0409	0.0060	0.46	
2023522a6	79-120-3-5-02	spot	2.1292	0.5985	0.0452	0.0080	0.63	
2023522a8	79-120-3-5-04	spot	0.7009	0.2478	0.0310	0.0044	0.40	
2023522a9	79-120-3-5-05	spot	4.3679	0.4752	0.0675	0.0059	0.80	
2023522a10	79-120-3-5-06	spot	2.1902	0.3338	0.0494	0.0051	0.68	
2023522a11	79-120-3-5-07	spot	10.0142	1.4534	0.1202	0.0169	0.97	
2023522a12	79-120-3-5-08	spot	16.7975	2.8271	0.1840	0.0272	0.88	
2023522a13	79-120-3-5-09	spot	18.3815	5.7611	0.1880	0.0442	0.75	
2023522a14	79-120-3-5-10	spot	1.3912	0.3294	0.0363	0.0057	0.66	
2023522a15	79-120-3-5-11	spot	5.7443	1.3974	0.0775	0.0170	0.90	
2023522a16	79-120-3-5-12	spot	2.0094	0.7427	0.0441	0.0130	0.80	
2023522a17	79-120-3-5-13	spot	5.6653	1.3307	0.0771	0.0139	0.77	
2023522a18	79-120-3-5-14	spot	9.6791	1.7380	0.1044	0.0144	0.77	
2023522a19	79-120-3-5-15	spot	0.8576	0.2063	0.0290	0.0032	0.45	
2023522a20	79-120-3-5-16	spot	4.2271	0.4719	0.0589	0.0068	0.99	
2023522a21	79-120-3-5-17	spot	10.2093	1.3215	0.1162	0.0135	0.90	
2023522a26	79-120-3-5-16	spot	12.0211	1.2802	0.1335	0.0141	0.99	
2023522a27	79-120-3-5-17	spot	2.2232	0.5349	0.0433	0.0077	0.74	
2023522a28	79-120-3-5-18	spot	1.7794	0.3525	0.0363	0.0050	0.69	
2023522a29	79-120-3-5-19	spot	4.3008	1.0211	0.0632	0.0125	0.83	
2023522a30	79-120-3-5-20	spot	112.4904	18.6123	1.0790	0.1639	0.92	
2023522a31	79-120-3-5-21	spot	244.7544	39.1460	2.2917	0.3460	0.94	
2023522a32	79-120-3-5-22	spot	1.6653	0.5819	0.0388	0.0071	0.52	
2023522a33	79-120-3-5-23	spot	3.6096	0.5534	0.0568	0.0071	0.82	
2023522a34	79-120-3-5-24	spot	3.5031	0.5526	0.0569	0.0078	0.87	
2023522a35	79-120-3-5-25	spot	1.7293	0.5095	0.0385	0.0076	0.67	

2023522a36	79-120-3-5-26	spot	1.0915	0.2256	0.0360	0.0046	0.61	
2023522a37	79-120-3-5-27	spot	1.6072	0.3721	0.0425	0.0065	0.66	
2023522a38	79-120-3-5-28	spot	0.8854	0.2051	0.0347	0.0039	0.49	
2023522a39	79-120-3-5-29	spot	1.2208	0.3628	0.0373	0.0079	0.72	
2023522a40	79-120-3-5-30	spot	2.7006	0.5463	0.0539	0.0073	0.66	
2023522a44	79-120-3-5-31	Line scan	3.2672	0.8070	0.0598	0.0117	0.79	
2023522a45	79-120-3-5-32	Line scan	3.3339	1.5705	0.0592	0.0293	0.99	
2023522a46	79-120-3-5-33	Line scan	2.3726	0.8168	0.0485	0.0111	0.66	
2023522a47	79-120-3-5-34	Line scan	1.8070	0.4679	0.0468	0.0089	0.73	
2023522a48	79-120-3-5-35	Line scan	1.2333	0.4916	0.0409	0.0084	0.52	
2023522a7	79-120-3-5-03	spot	8.9708	0.9196	0.1206	0.0126	0.99	delete