

Data Table S1. Analytical results of U-Pb dating of a TEMORA 2 zircon using 91500 as the reference.^a

Ratios	²⁰⁷ Pb/ ²³⁵ U	1SD	²⁰⁶ Pb/ ²³⁸ U	1SD	Error	²⁰⁷ Pb/ ²³⁵ U	1SD	²⁰⁶ Pb/ ²³⁸ U	1SD	²⁰⁷ Pb/ ²⁰⁶ Pb	1SD
Samples	ratio		ratio		correlation	(Ma)	(Ma)	(Ma)	(Ma)	(Ma)	(Ma)
Day-1_1	0.50215	0.02690	0.06531	0.00188	0.537	413.2	26.9	407.8	12.1	443.1	20.0
Day-1_2	0.50255	0.03088	0.06577	0.00232	0.575	413.4	30.9	410.6	14.9	429.2	21.6
Day-1_3	0.50235	0.03394	0.06577	0.00310	0.697	413.3	33.9	410.6	19.9	428.1	20.7
Day-1_4	0.49734	0.03131	0.06558	0.00199	0.482	409.9	31.3	409.4	12.8	412.5	22.8
Day-1_5	0.48714	0.03225	0.06558	0.00252	0.579	403.0	32.2	409.5	16.2	365.8	19.7
Day-1_6	0.51088	0.03242	0.06535	0.00200	0.482	419.0	32.4	408.1	12.9	480.0	26.7
Day-1_7	0.49917	0.03467	0.06554	0.00170	0.373	411.1	34.6	409.2	10.9	421.9	27.2
Day-1_8	0.49539	0.02811	0.06495	0.00187	0.506	408.6	28.2	405.7	12.0	425.0	20.8
Day-1_9	0.49012	0.03990	0.06486	0.00207	0.393	405.0	39.7	405.1	13.4	404.4	30.3
Day-1_10	0.50534	0.02958	0.06619	0.00157	0.406	415.3	29.6	413.2	10.1	427.3	22.9
Day-2_1	0.49114	0.04631	0.06658	0.00236	0.375	405.7	46.0	415.5	15.2	350.0	30.6
Day-2_2	0.51803	0.03709	0.06752	0.00232	0.480	423.8	37.0	421.2	15.0	438.2	27.5
Day-2_3	0.51647	0.03561	0.06786	0.00222	0.475	422.8	35.5	423.3	14.3	420.2	25.5
Day-2_4	0.51104	0.03808	0.06767	0.00233	0.463	419.1	37.9	422.1	15.0	403.0	26.6
Day-2_5	0.50981	0.04247	0.06681	0.00234	0.421	418.3	42.2	416.9	15.1	426.1	32.2
Day-2_6	0.51529	0.03829	0.06771	0.00220	0.438	422.0	38.2	422.4	14.2	420.1	28.1
Day-2_7	0.54553	0.07719	0.06926	0.00256	0.261	442.1	75.5	431.7	16.5	496.4	67.8
Day-2_8	0.52126	0.04607	0.06891	0.00239	0.392	426.0	45.7	429.6	15.4	406.4	33.0
Day-2_9	0.52321	0.03412	0.06891	0.00221	0.491	427.3	34.1	429.6	14.2	414.8	23.6
Day-2_10	0.52265	0.04180	0.06902	0.00248	0.450	426.9	41.6	430.3	16.0	408.9	29.2
Avg / 1SD	0.50834	0.01408	0.06676	0.00148	0.464	417.3	9.4	416.6	9.0	421.1	31.9

^a Avg: average; 1SD: 1-standard deviation

Data Table S2. Analytical result of element analysis of a BHVO-2G basalt glass using GSD-1G as the reference.^a

Element	BHVO-2G_1	BHVO-2G_2	BHVO-2G_3	BHVO-2G_4	BHVO-2G_5	BHVO-2G_6	BHVO-2G_7	BHVO-2G_8	BHVO-2G_9	BHVO-2G_10	BHVO-2G_11	BHVO-2G_12	BHVO-2G_13	BHVO-2G_14	BHVO-2G_15	AVG	1SD%	Reference	RD%	GSD-1G	Unit
SiO ₂	48.15	50.50	49.27	48.03	48.90	48.59	49.20	49.54	48.30	49.52	49.69	49.47	47.49	47.25	47.63	48.77	1.9	49.88	-2.2	53.86	wt.%
TiO ₂	3.09	2.97	2.97	3.02	3.09	2.59	2.66	2.64	2.66	2.55	2.83	2.65	2.96	3.06	2.94	2.85	7.0	2.76	3.0	1.26	wt.%
Al ₂ O ₃	13.24	12.06	12.90	12.79	12.53	13.94	13.64	13.00	13.54	13.59	12.62	13.04	13.00	13.36	13.37	13.11	3.7	13.76	-4.8	13.57	wt.%
FeO	12.54	12.29	12.02	12.84	12.56	12.09	11.95	12.12	12.30	11.65	11.96	12.24	13.40	12.84	12.74	12.37	3.7	11.43	8.2	13.47	wt.%
MnO	0.20	0.18	0.20	0.19	0.20	0.20	0.19	0.19	0.19	0.18	0.18	0.18	0.19	0.19	0.20	0.19	4.4	0.17	10.6	0.03	wt.%
MgO	7.23	7.11	7.41	7.27	7.25	8.00	7.79	7.66	8.05	8.11	7.28	7.45	7.92	8.23	7.74	7.63	4.9	7.21	5.8	3.64	wt.%
CaO	13.15	12.40	12.31	13.02	12.80	12.19	11.98	12.38	12.45	11.79	12.86	12.26	12.36	12.33	12.60	12.46	3.0	11.53	8.0	7.29	wt.%
Na ₂ O	1.52	1.57	1.95	1.90	1.70	1.69	1.87	1.74	1.81	1.90	1.87	1.98	1.97	2.00	1.99	1.83	8.4	2.43	-24.6	3.64	wt.%
K ₂ O	0.47	0.47	0.51	0.55	0.53	0.47	0.48	0.49	0.45	0.48	0.47	0.48	0.50	0.51	0.54	0.49	5.7	0.52	-4.6	3.04	wt.%
P ₂ O ₅	0.42	0.45	0.46	0.40	0.44	0.24	0.24	0.23	0.24	0.24	0.24	0.24	0.21	0.23	0.25	0.30	32.4	0.29	2.3	0.20	wt.%
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	0.0	100.00	0.0	100.00	wt.%
CF	1.727	1.612	0.826	0.868	0.863	1.139	1.141	1.141	1.152	1.136	1.14	1.15	1.17	1.20	1.18	1.16	20.8				
Sc	36.88	34.50	31.25	35.84	36.48	35.07	36.32	33.07	36.48	32.32	38.17	35.64	33.33	38.47	36.65	35.37	5.9	33.00	7.2	52.00	ppm
V	390	363	335	345	348	338	358	327	348	315	373	323	337	341	351	346.20	5.6	308.00	12.4	44.00	ppm
Cr	353.08	292.48	337.68	313.61	369.33	333.47	299.01	285.55	297.05	275.69	336.24	301.69	323.16	326.99	338.19	318.88	8.3	280.00	13.9	42.00	ppm
Co	55.05	43.72	52.59	54.46	55.22	48.57	48.93	44.85	45.63	43.47	45.26	46.75	46.53	46.35	48.03	48.36	8.4	43.00	12.5	40.00	ppm
Ni	104.86	73.78	178.97	128.90	178.93	159.43	118.42	103.11	109.70	119.34	123.30	125.95	137.26	129.18	127.13	127.88	21.8	112.00	14.2	58.00	ppm
Cu	132.14	118.37	130.85	131.61	134.52	122.67	119.80	113.19	117.47	113.25	140.79	120.69	121.85	125.43	126.77	124.63	6.5	120.00	3.9	42.00	ppm
Zn	138	114	115	114	128	104	111	106	109	113	112	109	118	114	114	114.70	7.3	103.00	11.4	54.00	ppm
Ga	24.09	16.19	19.44	21.21	24.20	20.79	21.55	19.22	19.11	20.70	22.08	22.26	22.81	22.39	22.12	21.21	9.9	22.00	-3.6	54.00	ppm
Rb	11.92	9.08	9.71	9.72	11.21	9.35	9.50	9.10	9.07	9.10	10.23	8.90	9.09	9.52	9.50	9.67	8.8	9.20	5.1	37.30	ppm
Sr	444	401	401	454	465	399	439	423	427	425	446	447	421	436	441	431.30	4.6	396.00	8.9	69.40	ppm
Y	23.77	23.16	24.20	23.24	25.80	24.45	25.60	26.46	24.65	25.70	28.16	25.65	26.22	26.70	29.14	25.53	6.7	26.00	-1.8	42.00	ppm
Zr	180	172	162	178	182	168	174	172	168	176	185	174	179	184	195	176.55	4.6	170.00	3.9	42.00	ppm
Nb	19.28	18.94	15.91	20.06	19.26	18.47	18.82	18.59	18.91	18.19	18.68	18.33	18.51	18.75	19.57	18.69	4.9	18.30	2.1	42.00	ppm
Ba	170	145	145	153	149	132	135	137	129	143	144	131	147	141	149	143.41	7.2	131.00	9.5	67.00	ppm
La	17.20	16.72	15.33	15.66	16.68	15.48	15.80	14.99	14.98	16.34	17.96	17.18	17.37	16.95	18.25	16.46	6.4	15.20	8.3	39.10	ppm
Ce	42.28	39.68	38.10	42.71	43.75	40.67	39.22	40.88	37.03	40.45	43.15	42.21	44.12	42.52	44.81	41.44	5.4	37.60	10.2	41.40	ppm
Pr	5.84	5.63	5.64	6.26	5.97	5.30	5.43	5.19	5.39	4.87	6.51	5.43	6.06	5.47	6.49	5.70	8.4	5.35	6.5	45.00	ppm
Nd	26.12	22.63	24.71	26.75	25.44	25.57	25.95	25.86	26.20	25.12	24.95	25.91	31.67	26.42	28.27	26.10	7.5	24.50	6.6	44.70	ppm
Sm	6.71	4.67	6.38	5.86	5.85	6.39	6.16	6.51	6.52	5.92	6.24	6.46	7.17	6.88	7.42	6.34	10.2	6.10	4.0	47.80	ppm
Eu	1.90	1.97	2.21	2.34	2.18	1.97	1.96	2.03	2.28	2.36	2.17	2.42	2.27	1.95	2.36	2.16	8.3	2.07	4.3	41.00	ppm
Gd	4.42	6.13	6.91	5.82	7.00	5.84	6.26	6.09	6.50	6.31	6.13	7.26	8.16	6.96	5.94	6.38	13.1	6.16	3.6	50.70	ppm
Tb	0.77	0.64	0.82	0.77	0.73	0.91	0.75	1.04	0.96	0.90	0.89	0.83	1.02	0.83	0.94	0.85	13.1	0.92	-7.2	47.00	ppm
Dy	5.98	4.44	5.82	5.16	5.14	5.36	6.23	6.10	5.93	6.00	6.11	5.55	5.78	5.39	5.93	5.66	8.6	5.28	7.2	51.20	ppm
Ho	1.02	0.87	0.81	0.95	0.98	0.98	1.02	1.24	0.98	0.99	0.88	1.01	1.22	1.32	1.03	1.02	13.8	0.98	4.1	49.00	ppm
Er	3.12	2.28	2.59	2.69	2.98	2.87	2.78	2.41	2.37	2.55	2.80	3.24	2.53	3.01	2.83	2.74	10.4	2.56	6.9	40.10	ppm
Tm	0.35	0.23	0.32	0.25	0.43	0.24	0.30	0.26	0.38	0.33	0.38	0.35	0.43	0.35	0.39	0.33	19.6	0.34	-2.0	49.00	ppm
Yb	2.40	1.57	1.62	2.22	1.90	1.62	2.04	2.55	2.21	2.14	1.89	2.55	2.29	2.36	2.47	2.12	15.9	2.01	5.6	50.90	ppm
Lu	0.25	0.25	0.22	0.29	0.26	0.17	0.36	0.31	0.32	0.25	0.34	0.27	0.29	0.23	0.26	0.27	18.2	0.28	-3.2	51.50	ppm
Hf	4.70	5.12	4.09	4.94	4.87	4.44	4.48	4.53	4.08	4.53	4.66	4.42	5.02	4.64	5.40	4.66	7.8	4.32	7.9	39.00	ppm
Ta	1.05	1.00	1.06	1.01	1.18	1.14	1.14	1.12	1.33	1.18	1.01	0.96	1.15	1.24	1.23	1.12	9.3	1.15	-2.6	40.00	ppm
Pb	2.04	1.59	1.62	1.25	1.74	1.54	1.67	1.90	1.76	1.49	1.51	1.71	1.28	1.67	1.70	1.63	12.6	1.70	-4.1	50.00	ppm
Th	1.53	1.16	1.27	1.13	1.35	1.21	1.12	1.30	1.29	1.17	1.20	1.06	1.32	1.04	1.23	1.22	10.3	1.22	0.4	41.00	ppm
U	0.50	0.36	0.43	0.56	0.53	0.48	0.43	0.49	0.44	0.45	0.44	0.44	0.36	0.46	0.41	0.45	12.0	0.40	12.6	41.00	ppm

^a AVG: average; 1SD%: 1-standard deviation error in %; Reference: Reference value of BHVO-2G; RD%: percent relative deviation; CF: ablation efficiency correction factor