

Table 1. U-Pb Isotope Dilution Analyses, West-Central Madagascar.

FRACTIONS		CONCENTRATIONS					ATOMIC RATIOS					AGE [Ma]			
No.	Properties	Wt. [ $\mu$ g]	Pb rad [ppm]	U [ppm]	Pb com [ $\mu$ g]	Th/U	$\frac{^{206}\text{Pb}}{^{204}\text{Pb}}$	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm$	$\frac{^{207}\text{Pb}}{^{235}\text{U}} \pm$	$\frac{^{206}\text{Pb}}{^{238}\text{U}} \pm$	$\frac{^{207}\text{Pb}}{^{206}\text{Pb}} \pm$				
(1)	(1)	(2)	(2)	(2)	(3)	(4)	(5)	(6)	(6)	(6)	(6)	(6)			
<b>1. MH-96f-46 Itaka Granite</b>															
1	cl,c,fr	8	49.5	388	3.1	0.284	8,061	0.06537	5	1.1586	17	0.12854	19	779.5	1.1
2	5 gr,pr	6	7.79	63.5	1.6	0.310	1,904	0.06494	23	1.0985	44	0.12268	26	746.0	1.5
3	4 gr,f,t-p	11	45.6	376	4.4	0.275	7,401	0.06463	4	1.0903	15	0.12236	16	744.1	0.9
4	cl,c,st,pr	11	20.5	171	2.4	0.275	5,699	0.06458	9	1.0761	21	0.12085	21	735.5	1.2
5	cl,st	8	15.7	146	5.9	0.262	1,333	0.06295	12	0.9473	22	0.10914	18	667.8	1.0
6 "	5 gr,cl,t-p	5	46.8	359	4.7	0.281	3,232	0.06824	9	1.2307	28	0.13079	27	792.4	1.6
7 "	cl,st,pr	13	10.1	59.8	3.6	0.322	2,229	0.09434	12	2.1107	39	0.16226	26	969.3	1.0
8 "	cl,st,pr	6	68.9	432	2.8	0.344	9,418	0.09055	6	1.9084	28	0.15286	22	917.0	1.2
<b>2. MH-95R-3 Ranomandy Gabbro</b>															
9	cl,c,sk,f,fr	71	26.7	172	2.6	1.015	39,780	0.06546	4	1.1746	25	0.13014	28	788.7	1.6
10	cl,c,sk,f,fr	72	24.1	151	2.8	1.137	32,429	0.06550	4	1.1744	20	0.13004	22	788.1	1.2
11	cl,c,sk,f,fr	96	23.6	156	3.3	0.893	37,208	0.06549	3	1.1733	16	0.12994	17	787.5	1.0
12	cl,c,sk,f,fr	63	35.7	226	6.7	1.084	17,821	0.06550	3	1.1741	19	0.13000	21	787.9	1.2
<b>3. MH-96R-6B Ranomandy Granite</b>															
13	cl,c,t-p	17	31.9	230	1.5	0.540	21,804	0.06552	4	1.1762	15	0.13019	16	789.0	0.9
14	cl,t-p	21	26.8	195	2.8	0.517	11,902	0.06557	4	1.1756	18	0.13003	20	788.1	1.1
15	cl,c,t-p	10	28.8	208	4.7	0.545	3,959	0.06561	8	1.1758	20	0.12998	18	787.8	1.0
<b>4. MH-95f-20 Itindro Gabbro</b>															
16	2 gr,pb,fr	6	253	1900	2.3	0.399	40,054	0.06552	3	1.1725	19	0.12979	21	786.7	1.2
17	3 gr,pb	7	122	805	2.1	0.899	23,349	0.06552	4	1.1739	17	0.12994	19	787.5	1.1
18	1 gr,db,fr	5	155	1110	2.1	0.584	23,711	0.06545	4	1.1731	19	0.12999	20	787.8	1.2
19	1 gr,dp,fr	7	605	3770	2.9	1.157	79,259	0.06548	3	1.1731	19	0.12993	21	787.4	1.2
20	4 gr,dp,fr	20	85.4	703	6.5	0.082	17,998	0.06547	3	1.1683	18	0.12943	20	784.6	1.1
21 "	3 gr,db,fr	4	272	1780	2.8	0.812	24,433	0.06546	4	1.2222	21	0.13542	23	818.7	1.3
<b>5. MH-95A-17 Ambohitsaony Gabbro</b>															
22	3 gr,cl,ch	110	15.3	111	3.4	0.505	29,739	0.06552	4	1.1761	21	0.13018	24	788.9	1.3
23	3 gr,cl,ch	76	17.4	128	2.0	0.466	39,391	0.06561	3	1.1777	23	0.13018	26	788.9	1.5
24	3 gr,cl,ch	145	16.5	121	2.8	0.497	52,238	0.06558	7	1.1683	37	0.12920	42	783.3	2.4
25	3 gr,cl,ch	108	12.1	91.4	2.8	0.528	28,536	0.06560	6	1.1266	98	0.12455	109	756.7	6.2
<b>6. MH-95A-16 Ambohitsaony Granite</b>															
26	cl,c,st,pr	37	38.9	283	2.6	0.495	33,433	0.06556	4	1.1790	21	0.13043	23	790.3	1.3
27	cl,c,st,pr	16	42.9	320	2.7	0.438	15,085	0.06556	4	1.1700	18	0.12943	19	784.6	1.1
<b>7. MH-96f-64B East Imorona Biotite Granite (with QSC Xenolith)</b>															
28	cl,t-p	32	20.2	150	2.2	0.438	18,236	0.06552	4	1.1765	17	0.13023	19	789.2	1.1
29	cl,t-p	37	23.9	176	2.0	0.466	26,264	0.06554	3	1.1766	19	0.13019	21	789.0	1.2
30	cl,t-p	26	26.2	192	6.3	0.482	6,646	0.06552	5	1.1750	23	0.13007	25	788.3	1.4
31	cl,t-p	37	25.4	188	2.3	0.440	25,193	0.06553	4	1.1746	15	0.13000	17	787.9	1.0
32 "	cl,t-p	23	20.9	154	2.5	0.449	11,652	0.06599	4	1.1881	17	0.13059	18	791.2	1.0
<b>8. MH-95A-106 Ifasina Gabbro</b>															
33	cl,c,pr,fr	232	14.2	104	4.0	0.502	50,288	0.06554	3	1.1758	17	0.13011	19	788.5	1.1
34	cl,c,pr,fr	270	14.5	105	3.9	0.516	61,755	0.06553	2	1.1763	22	0.13019	24	789.0	1.4
35	cl,c,pr,fr	226	15.3	112	4.9	0.514	42,939	0.06550	3	1.1748	19	0.13008	21	788.3	1.2
36	cl,c,pr,fr	120	26.6	167	1.7	1.135	97,812	0.06548	3	1.1739	18	0.13003	19	788.1	1.1
37	cl,c,pr,fr	104	15.3	112	3.2	0.475	30,855	0.06559	5	1.1779	19	0.13024	21	789.3	1.2
38 "	cl,c,pr	7	15.3	109	2.3	0.576	2,743	0.06527	18	1.1733	38	0.13037	22	790.0	1.3

39 "	cl,c,pr	18	22.3	160	4.5	0.463	5,574	0.06866	5	1.2570	19	0.13278	19	803.7	1.1
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#### 9. RC-136 Ranofotsy Granite Gneiss

40	5 gr,cl,t-p	2	31.5	231	2.3	0.445	1,769	0.06571	28	1.1915	54	0.13151	36	796.5	2.1
41	cl,c,st,pr	15	5.90	41.5	17.7	0.604	323	0.06600	38	1.1957	77	0.13140	33	795.8	1.9
42	5 gr,cl,t-p	2	29.5	221	2.0	0.390	2,227	0.06599	24	1.1880	53	0.13057	35	791.1	2.0
43	23 gr,cl,c,st,s-p	5	28.5	212	3.1	0.544	3,059	0.06566	10	1.1461	20	0.12660	13	768.5	0.7
44 "	5 gr,cl,t-p	5	14.1	65.3	1.4	0.410	3,208	0.10020	21	2.8112	81	0.20348	48	1194	2.6
45 "	26 gr,cl,c,s-p	7	46.3	254	2.5	0.380	7,700	0.09720	6	2.1921	48	0.16357	34	976.6	1.9

#### 10. MH-95A-108 West Iremo Biotite Granite

46	t-p	25	8.24	61.0	2.5	0.482	5,270	0.06539	9	1.1627	27	0.12896	25	781.9	1.4
47	t-p	19	10.2	76.3	1.8	0.467	6,463	0.06538	9	1.1559	24	0.12822	23	777.7	1.3
48	cl,st,t-p	29	10.6	80.1	1.7	0.431	11,445	0.06531	5	1.1490	17	0.12758	17	774.1	1.0
49	t-p	22	12.3	93.2	1.9	0.453	8,940	0.06530	7	1.1444	21	0.12709	21	771.3	1.2
50 "	t-p	13	8.95	66.3	2.4	0.460	2,909	0.06569	19	1.1741	40	0.12962	36	785.7	2.0
51 "	t-p	13	6.91	51.1	1.3	0.458	4,066	0.06628	14	1.1859	30	0.12976	27	786.5	1.6

#### 11. MH-95A-109 West Iremo Quartz Leptynite

52	cl,c,s-p	4	70.3	532	5.2	0.409	3,692	0.06515	9	1.1553	23	0.12861	25	780.0	1.4
53	cl,c,s-p	9	76.3	588	4.1	0.362	9,992	0.06520	5	1.1487	19	0.12778	22	775.2	1.2
54	cl,st,t-p	29	11.8	89.4	2.1	0.432	9,900	0.06522	6	1.1438	20	0.12720	20	771.9	1.2
55 "	cl,st,t-p	35	12.9	94.6	3.2	0.495	8,669	0.06592	5	1.1787	17	0.12968	18	786.1	1.0

#### Notes:

<sup>†</sup>Zircons contain inherited age component and were not used in age calculation.

(1) Cardinal number indicates the number of zircon grains analyzed (e.g. 3 grains); all grains were selected from non-paramagnetic separates at 0° tilt at full magnetic field in Frantz Magnetic Separator; c = colorless; cl = clear; ch = chunks; st = stubby; f = faceted; fr = fragment of larger prism; pb = pale brown; db = deep brown; sk = skeletal; pr = prismatic; s-p = short prismatic; t-p = tips from prisms. All zircon grains were abraded following Krogh (1982).

(2) Concentrations are known to  $\pm 30\%$  for sample weights of about 20  $\mu\text{g}$  and  $\pm 50\%$  for samples  $\leq 5 \mu\text{g}$ .

(3) Corrected for 0.0215 mole fraction common-Pb in the <sup>205</sup>Pb-<sup>235</sup>U spike.

(4) Calculated Th/U ratio assuming all <sup>208</sup>Pb in excess of blank, common-Pb, and spike is radiogenic ( $\lambda^{232}\text{Th} = 4.9475 \times 10^{-11} \text{yr}^{-1}$ ).

(5) Measured, uncorrected ratio.

(6) Ratio corrected for fractionation, spike, blank, and initial common-Pb (at the determined age from Stacey and Kramers (1975,  $\pm 5\%$ )). Pb fractionation correction = 0.094%/amu ( $\pm 0.025\% 1\sigma$ ); U fractionation correction = 0.111%/amu ( $\pm 0.02\% 1\sigma$ ). U blank = 0.2 pg; Pb blank  $\leq 10$  pg. Absolute uncertainties ( $1\sigma$ ) in the Pb/U and <sup>207</sup>Pb/<sup>206</sup>Pb ratios calculated following Ludwig (1980). The last column lists the <sup>207</sup>Pb/<sup>206</sup>Pb age ( $\pm 1\sigma$  absolute); age error include all random sources of uncertainty not including uncertainty in the U isotope decay constant). U and Pb half-lives and isotopic abundance ratios from Jaffey *et al.* (1971).

#### References:

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