

Comin-Chiaromonti et al., GSA book: Plates, Plumes, and Planetary Processes

Ar/Ar isotopic data of selected samples (mineral separates and whole-rocks) of Paraguay alkaline magmatism**Berkeley Geochronology Center data**

Laser (W)	Ar ⁴⁰ Moles	⁴⁰ Ar/ ³⁹ Ar	³⁸ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	³⁶ Ar/ ³⁹ Ar	⁴⁰ *Ar/ ³⁹ Ar	% ⁴⁰ *Ar	Age (Ma)	± (W/O J Err)
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NORTHERN PARAGUAY**Stock I****RP44 (biotite)** J=0.003138086±0.000001060185

0.51	1.79E-13	56.78	2.56E-02	0.50	5.74E-02	39.88	70.2	212.30	1.31
0.71	4.01E-13	47.80	1.71E-02	1.21	1.05E-02	44.85	93.7	237.06	0.79
0.90	6.63E-13	46.48	1.74E-02	2.05	4.60E-03	45.35	97.4	239.56	0.70
1.10	7.72E-13	46.41	1.80E-02	2.30	4.34E-03	45.39	97.6	239.75	0.63
1.30	6.83E-13	46.63	1.76E-02	2.36	3.68E-03	45.81	98.1	241.85	0.64
1.49	6.14E-13	46.54	1.79E-02	2.32	3.76E-03	45.70	98	241.26	0.68
1.73	5.54E-13	46.74	1.79E-02	2.13	5.17E-03	45.46	97.1	240.10	0.59
1.88	5.45E-13	46.47	1.66E-02	1.99	3.42E-03	45.68	98.2	241.20	0.67
2.00	1.93E-13	46.54	1.57E-02	1.55	3.94E-03	45.55	97.8	240.56	0.97
2.12	2.80E-13	46.52	1.62E-02	1.71	3.87E-03	45.58	97.8	240.68	0.73
2.20	4.92E-14	47.69	1.59E-02	1.51	7.31E-03	45.70	95.7	241.30	2.94

Siete Cabezas**RP-56 (biotite)** J=0.003131287±0.000001060185

0.51	3.65E-13	110.38	5.78E-02	2.31	2.14E-01	47.41	42.9	249.73	2.62
0.71	3.74E-13	56.42	2.26E-02	2.56	3.42E-02	46.60	82.4	245.71	1.12
0.79	5.32E-13	49.72	1.88E-02	2.35	1.38E-02	45.90	92.2	242.29	0.66
0.90	4.42E-13	48.73	1.78E-02	2.45	1.03E-02	45.97	94.2	242.62	0.70
0.98	2.17E-13	47.64	1.69E-02	2.46	8.24E-03	45.48	95.3	240.22	1.03
1.10	3.07E-13	48.46	1.73E-02	2.64	1.00E-02	45.80	94.3	241.77	0.93
1.22	8.77E-14	47.19	1.60E-02	2.68	6.77E-03	45.50	96.2	240.28	1.70
1.30	7.07E-13	47.36	1.65E-02	2.53	5.43E-03	46.05	97	243.00	0.59
1.41	4.64E-13	46.84	1.63E-02	2.44	4.44E-03	45.81	97.6	241.83	0.63
1.49	5.86E-13	46.87	1.63E-02	2.43	4.26E-03	45.89	97.7	242.24	0.67
1.61	4.65E-13	46.52	1.62E-02	2.41	3.55E-03	45.74	98.2	241.50	0.63
1.65	5.55E-14	46.20	1.62E-02	2.41	4.27E-03	45.22	97.7	238.90	2.52
1.81	1.71E-13	46.49	1.59E-02	2.25	4.28E-03	45.48	97.7	240.20	0.97
1.92	5.23E-14	46.35	1.62E-02	2.28	4.65E-03	45.23	97.4	238.97	2.76
2.00	1.21E-14	46.26	1.62E-02	2.38	7.65E-03	44.27	95.5	234.21	11.17

Amambay Chirguelo (biot J = 0.0036253± 0.00000266)

0.15	1.14E-15	19.82	9.80E-03	0.00	2.29E-02	13.04	65.8	83.31	3.37
0.20	2.59E-15	23.99	1.73E-02	0.00	1.10E-02	20.73	86.4	130.75	2.10
0.23	4.24E-15	22.88	1.45E-02	0.00	2.51E-03	22.14	96.8	139.28	1.14
0.35	1.48E-14	22.18	1.43E-02	0.00	4.53E-04	22.05	99.4	138.71	0.58
0.40	1.98E-14	22.15	1.48E-02	0.00	9.16E-04	21.88	98.8	137.70	0.55
0.50	2.14E-14	22.09	1.47E-02	0.00	4.47E-06	22.09	100.0	138.96	0.39
0.60	2.79E-14	22.02	1.55E-02	0.00	2.20E-04	21.95	99.7	138.14	0.35
0.70	6.03E-14	22.07	1.49E-02	0.00	2.02E-04	22.01	99.7	138.49	0.29
0.80	3.66E-14	22.02	1.47E-02	0.00	1.17E-04	21.99	99.8	138.38	0.39
2.99	1.35E-14	22.13	1.42E-02	0.00	1.50E-04	22.08	99.8	138.93	0.60

CENTRAL PROVINCE**Aguapety Porton****PS-183 (biotite)** J=0.003138086 +/- 0.000002043801

0.27	1.93E-14	34.04	1.91E-02	1.40	3.69E-02	23.26	68.3	127.11	0.94
0.39	1.47E-14	26.23	1.35E-02	0.42	9.08E-03	23.58	89.9	128.81	0.84
0.51	2.37E-14	24.71	1.37E-02	0.03	5.14E-03	23.19	93.9	126.73	0.79
0.59	4.00E-14	24.05	1.33E-02	0.01	3.09E-03	23.14	96.2	126.45	0.38
0.71	4.80E-14	23.78	1.31E-02	0.00	2.00E-03	23.19	97.5	126.74	0.36
0.82	5.48E-14	23.49	1.28E-02	0.00	1.11E-03	23.16	98.6	126.57	0.36
0.90	5.50E-14	23.48	1.19E-02	0.01	1.23E-03	23.12	98.5	126.36	0.34
1.02	5.60E-14	23.34	1.42E-02	0.00	8.96E-04	23.08	98.9	126.14	0.33
1.10	5.34E-14	23.36	1.24E-02	0.00	6.71E-04	23.16	99.2	126.58	0.36
1.22	5.57E-14	23.26	1.25E-02	0.01	6.73E-04	23.07	99.1	126.07	0.32
1.33	5.84E-14	23.20	1.24E-02	0.01	4.90E-04	23.06	99.4	126.05	0.38
1.37	6.10E-14	23.29	1.22E-02	0.01	5.15E-04	23.14	99.4	126.44	0.43
1.49	6.60E-14	23.31	1.23E-02	0.02	7.81E-04	23.08	99	126.16	0.32
1.57	6.49E-14	23.22	1.27E-02	0.02	5.99E-04	23.05	99.2	125.99	0.33
1.73	6.44E-14	23.25	1.25E-02	0.02	8.41E-04	23.01	98.9	125.76	0.32

Laser (W)	Ar ⁴⁰ Moles	⁴⁰ Ar/ ³⁹ Ar	³⁸ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	³⁶ Ar/ ³⁹ Ar	⁴⁰ *Ar/ ³⁹ Ar	% ⁴⁰ *Ar	Age (Ma)	± (W/O J Err)
1.80	6.58E-14	23.22	1.26E-02	0.02	6.70E-04	23.02	99.2	125.83	0.31
2.00	1.31E-13	23.22	1.26E-02	0.02	6.55E-04	23.03	99.2	125.87	0.32
2.20	2.24E-13	23.30	1.24E-02	0.01	5.65E-04	23.13	99.3	126.43	0.33
2.39	2.80E-13	23.29	1.24E-02	0.01	6.89E-04	23.08	99.1	126.16	0.28
2.63	1.75E-13	23.25	1.24E-02	0.00	7.91E-04	23.01	99	125.80	0.28
Cerro Santa Elena									
Ps-530 (biotite) J=0.003138086 +/- 0.000002043801									
0.31	1.22E-14	25.06	1.34E-02	0.01	7.86E-03	22.73	90.7	124.32	0.85
0.39	8.60E-15	24.29	1.32E-02	0.00	4.78E-03	22.88	94.2	125.10	1.21
0.51	1.33E-14	23.61	1.32E-02	0.00	1.90E-03	23.05	97.6	126.01	0.99
0.63	2.51E-14	23.36	1.22E-02	0.00	8.56E-04	23.11	98.9	126.29	0.71
0.71	2.82E-14	23.27	1.25E-02	0.00	8.23E-04	23.03	99	125.87	0.53
0.82	2.30E-14	23.30	1.27E-02	0.00	1.19E-03	22.95	98.5	125.46	0.66
0.90	2.04E-14	23.33	1.26E-02	0.00	1.13E-03	22.99	98.6	125.69	0.52
1.02	1.96E-14	23.27	1.24E-02	0.00	8.76E-04	23.01	98.9	125.80	0.52
1.10	1.85E-14	23.68	1.26E-02	0.00	2.38E-03	22.98	97	125.60	0.68
1.18	2.03E-14	23.32	1.21E-02	0.00	1.34E-03	22.93	98.3	125.35	0.75
1.33	2.48E-14	23.30	1.25E-02	0.00	1.15E-03	22.96	98.5	125.53	0.55
1.41	3.49E-14	23.20	1.24E-02	0.00	7.46E-04	22.98	99	125.60	0.42
1.49	4.55E-14	23.26	1.22E-02	0.00	1.06E-03	22.95	98.6	125.46	0.38
1.57	4.25E-14	23.27	1.23E-02	0.00	9.43E-04	22.99	98.8	125.66	0.38
1.73	5.30E-14	23.24	1.25E-02	0.00	9.96E-04	22.94	98.7	125.42	0.39
1.80	6.85E-14	23.20	1.27E-02	0.00	5.93E-04	23.02	99.2	125.84	0.33
2.00	5.37E-14	23.32	1.25E-02	0.00	1.08E-03	23.00	98.6	125.74	0.40
2.16	1.03E-14	23.67	1.26E-02	0.00	2.66E-03	22.89	96.7	125.12	0.99
2.43	1.54E-15	23.07	1.40E-02	0.00	7.69E-04	22.84	99	124.91	7.62
2.63	4.18E-16	23.79	6.31E-03	0.00	-1.15E-02	27.19	114.3	147.70	20.54
Sapucai									
PS264 (biotite) J=0.003138086 +/- 0.000002043801									
0.31	8.09E-15	24.29	1.35E-02	0.05	3.96E-03	23.13	95.2	126.39	1.37
0.39	5.13E-15	23.50	1.09E-02	0.01	1.14E-03	23.17	98.6	126.60	1.97
0.51	5.38E-15	22.90	1.21E-02	0.00	-8.78E-04	23.16	101.1	126.56	2.08
0.63	6.65E-15	23.82	1.24E-02	0.02	2.19E-03	23.17	97.3	126.64	1.34
0.70	-2.42E-18	81.36	-4.62E-01	2.98	3.17E-01	-12.23	-15	-70.62	1469.63
0.71	5.63E-15	23.31	1.19E-02	0.02	1.81E-04	23.26	99.8	127.10	1.51
0.82	6.32E-15	24.01	1.33E-02	0.03	3.10E-03	23.10	96.2	126.24	1.42
0.90	6.60E-15	23.82	1.21E-02	0.02	1.87E-03	23.27	97.7	127.16	1.35
0.98	8.35E-15	23.64	1.14E-02	0.04	1.26E-03	23.27	98.4	127.16	1.10
1.10	7.30E-15	23.47	1.25E-02	0.03	1.39E-03	23.06	98.3	126.05	1.44
1.22	1.27E-14	23.80	1.27E-02	0.03	2.28E-03	23.13	97.2	126.39	0.87
1.29	3.46E-14	23.69	1.22E-02	0.02	2.08E-03	23.08	97.4	126.15	0.46
1.41	2.95E-14	23.51	1.24E-02	0.01	1.28E-03	23.13	98.4	126.42	0.47
1.49	3.15E-14	23.43	1.24E-02	0.00	1.14E-03	23.09	98.6	126.23	0.45
1.61	2.48E-14	23.40	1.20E-02	0.00	1.03E-03	23.10	98.7	126.24	0.56
1.69	1.79E-14	23.22	1.25E-02	0.00	1.08E-03	22.90	98.6	125.17	0.66
1.76	1.55E-14	23.22	1.19E-02	0.00	8.07E-04	22.98	99	125.61	0.73
2.00	1.91E-14	23.41	1.21E-02	0.00	9.55E-04	23.13	98.8	126.39	0.64
2.20	2.75E-15	22.91	1.11E-02	0.00	-6.60E-04	23.10	100.9	126.26	2.94
2.39	1.27E-15	23.00	4.35E-03	0.00	-4.12E-03	24.21	105.3	132.13	6.26
2.59	2.14E-15	22.94	1.10E-02	0.00	1.23E-06	22.94	100	125.42	3.73
Cerro Canada									
PS245 (biotite) J=0.003138086 +/- 0.000002043801									
0.31	1.97E-14	24.79	1.36E-02	0.01	5.22E-03	23.25	93.8	127.03	0.67
0.39	1.67E-14	23.65	1.28E-02	0.00	1.40E-03	23.24	98.3	126.97	0.75
0.51	1.83E-14	23.59	1.27E-02	0.00	1.51E-03	23.14	98.1	126.48	0.57
0.59	1.97E-14	23.66	1.26E-02	0.00	1.96E-03	23.08	97.5	126.16	0.53
0.71	2.14E-14	23.72	1.29E-02	0.00	1.91E-03	23.16	97.6	126.55	0.56
0.82	2.25E-14	23.67	1.26E-02	0.00	2.01E-03	23.08	97.5	126.13	0.55
0.90	2.13E-14	23.66	1.27E-02	0.00	1.75E-03	23.14	97.8	126.47	0.59
0.98	2.03E-14	23.44	1.30E-02	0.00	1.16E-03	23.10	98.5	126.24	0.63
1.10	1.48E-14	23.48	1.28E-02	0.00	1.20E-03	23.12	98.5	126.38	0.78
1.22	1.87E-14	23.52	1.28E-02	0.00	1.36E-03	23.11	98.3	126.33	0.69
1.29	2.32E-14	23.46	1.25E-02	0.00	9.49E-04	23.18	98.8	126.67	0.57
1.41	1.89E-14	23.43	1.23E-02	0.01	7.57E-04	23.21	99	126.82	0.61
1.49	1.99E-14	23.55	1.21E-02	0.02	1.29E-03	23.17	98.4	126.61	0.63

Laser (W)	Ar ⁴⁰ Moles	⁴⁰ Ar/ ³⁹ Ar	³⁸ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	³⁶ Ar/ ³⁹ Ar	⁴⁰ *Ar/ ³⁹ Ar	% ⁴⁰ *Ar	Age (Ma)	± (W/O J Err)
1.61	2.34E-14	23.41	1.26E-02	0.01	8.42E-04	23.16	98.9	126.57	0.56
1.73	2.77E-14	23.32	1.22E-02	0.01	8.19E-04	23.08	99	126.17	0.50
1.80	2.90E-14	23.47	1.24E-02	0.01	1.32E-03	23.08	98.3	126.17	0.52
2.00	5.82E-14	23.41	1.27E-02	0.02	1.30E-03	23.02	98.4	125.85	0.38
2.20	5.31E-14	23.52	1.22E-02	0.00	1.82E-03	22.99	97.7	125.66	0.38
2.39	2.71E-14	23.39	1.24E-02	0.00	1.36E-03	22.99	98.3	125.68	0.47
2.59	2.60E-14	23.29	1.23E-02	0.00	9.36E-04	23.01	98.8	125.80	0.51
2.82	2.81E-14	23.46	1.24E-02	0.00	9.77E-04	23.17	98.8	126.63	0.54
2.98	9.55E-15	23.46	1.15E-02	0.00	4.41E-04	23.33	99.4	127.47	1.18

São Paulo University data

Laser (W)	Ar ⁴⁰ moles	⁴⁰ Ar/ ³⁹ Ar	³⁸ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	³⁶ Ar/ ³⁹ Ar	⁴⁰ *Ar/ ³⁹ Ar	% ⁴⁰ *Ar	Age (Ma)	± (W/O J Err)
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CENTRAL PROVINCE**Cerro Santo Tomas (biotite)**

J = 0.003749 ± 0.000001697

0.60	7.79E-16	23.80	-5.86E-03	0.00	-2.24E-02	30.42	127.8	194.83	7.69
1.20	6.74E-15	20.89	1.13E-02	0.00	3.13E-03	19.97	95.6	130.23	1.64
1.80	1.40E-14	20.85	1.15E-02	0.00	4.96E-03	19.38	93.0	126.53	0.72
2.40	1.57E-14	20.35	1.14E-02	0.00	1.67E-03	19.86	97.6	129.54	1.03
3.01	2.43E-14	20.05	1.07E-02	0.00	2.63E-03	19.28	96.1	125.88	0.76
4.01	2.30E-14	20.14	1.13E-02	0.00	1.76E-03	19.62	97.4	128.07	0.58
4.52	7.87E-14	20.04	1.12E-02	0.01	1.97E-03	19.46	97.1	127.03	0.50
5.00	4.77E-16	19.95	1.72E-02	0.24	-5.75E-04	20.14	100.9	131.34	10.24

Cerro Benito (biotite)

J = 0.003749 ± 0.000001697

0.60	2.35E-15	27.00	2.18E-02	0.14	3.04E-02	18.03	66.7	117.97	3.24
1.11	1.09E-14	21.81	1.13E-02	0.00	4.80E-03	20.39	93.5	132.92	0.97
1.60	1.13E-14	19.86	9.72E-03	0.00	6.21E-05	19.84	99.9	129.41	0.75
2.39	1.98E-14	20.30	1.13E-02	0.02	3.14E-03	19.37	95.4	126.49	0.63
3.01	1.96E-14	20.04	1.12E-02	0.05	1.95E-03	19.47	97.1	127.08	0.79
3.82	2.00E-14	20.12	1.15E-02	0.02	1.86E-03	19.57	97.3	127.73	0.46
4.52	1.73E-14	19.93	1.13E-02	0.00	1.12E-03	19.60	98.3	127.92	0.49
5.00	4.37E-14	19.79	1.18E-02	0.00	9.83E-04	19.50	98.5	127.29	0.43
5.01	8.57E-16	19.49	2.77E-02	0.05	6.77E-03	17.49	89.7	114.60	4.67

Cerro Verde, Sapucaí (biotite)

J = 0.003806 ± 0.000007612

0.50	1.84E-15	20.68	1.87E-02	0.06	1.21E-02	17.11	82.8	113.85	2.73
1.20	9.38E-15	19.55	1.25E-02	0.02	2.66E-03	18.77	96.0	124.46	0.66
2.01	8.90E-15	19.49	1.12E-02	0.00	3.02E-03	18.59	95.4	123.36	0.99
2.80	9.76E-15	19.53	9.96E-03	0.00	1.37E-03	19.13	97.9	126.78	1.17
3.61	1.04E-14	19.52	1.09E-02	0.00	2.63E-03	18.74	96.0	124.28	0.68
4.41	1.26E-14	19.39	1.08E-02	0.00	-1.76E-04	19.44	100.3	128.76	2.78
5.00	1.85E-15	19.16	4.10E-03	0.00	-3.87E-03	20.31	106.0	134.30	2.35
5.01	2.61E-15	19.85	1.07E-02	0.00	-1.15E-03	20.18	101.7	133.52	3.82

Cerro Canada (biotite)

J = 0.005401 ± 0.000003

0.30	4.28E-16	14.00	2.77E-03	0.00	8.71E-04	13.74	98.2	129.18	8.53
0.60	1.61E-15	14.35	1.11E-02	0.01	2.07E-03	13.74	95.7	129.14	2.37
0.90	2.53E-15	13.59	1.07E-02	0.00	1.95E-03	13.01	95.8	122.55	1.69
1.30	2.69E-15	13.54	1.18E-02	0.00	1.10E-03	13.22	97.6	124.38	1.53
1.60	2.68E-15	13.90	9.85E-03	0.00	3.89E-04	13.78	99.2	129.53	1.56
1.90	3.32E-15	14.04	1.23E-02	0.03	2.44E-03	13.33	94.9	125.38	1.57
2.31	5.60E-15	13.78	1.20E-02	0.00	1.75E-03	13.26	96.3	124.83	0.84
2.80	5.12E-15	13.61	1.10E-02	0.00	2.41E-04	13.54	99.5	127.36	0.89
3.81	4.12E-16	13.80	-1.13E-02	0.00	-1.02E-02	16.80	121.8	156.71	8.64
5.00	1.33E-15	13.59	4.77E-03	0.00	-2.74E-03	14.40	105.9	135.10	2.81

Acahay (whole-rock)

J = 0.005401 ± 0.000003

0.30	6.32E-15	28.89	2.06E-02	0.35	5.25E-02	13.42	46.4	126.26	2.70
0.55	6.03E-15	23.75	1.56E-02	0.41	3.50E-02	13.45	56.6	126.52	2.55
0.80	9.90E-15	15.42	1.26E-02	0.39	6.91E-03	13.41	87.0	126.14	0.89
1.10	1.77E-14	14.24	1.14E-02	0.32	2.78E-03	13.44	94.4	126.46	0.45
1.40	2.19E-14	14.05	1.11E-02	0.30	1.90E-03	13.51	96.2	127.10	0.35
1.80	2.26E-14	13.90	1.17E-02	0.29	1.42E-03	13.51	97.1	127.05	0.36
2.21	1.39E-14	13.85	1.08E-02	0.34	1.20E-03	13.52	97.6	127.15	0.54
2.80	1.23E-14	13.98	1.13E-02	0.27	1.62E-03	13.53	96.7	127.21	0.47
3.81	1.69E-14	13.98	1.18E-02	0.36	2.07E-03	13.40	95.8	126.04	0.44
5.07	7.25E-14	14.10	1.07E-02	1.28	2.24E-03	13.55	96.0	127.44	0.29

Laser (W)	Ar ⁴⁰ Moles	⁴⁰ Ar/ ³⁹ Ar	³⁸ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	³⁶ Ar/ ³⁹ Ar	⁴⁰ *Ar/ ³⁹ Ar	% ⁴⁰ *Ar	Age (Ma)	± (W/O J Err)
Arrua-ì (whole-rock)									
J = 0.005401 ± 0.000003									
0.30	1.63E-15	152.99	9.10E-02	1.73	1.96E-01	95.42	62.3	749.87	38.24
0.60	9.68E-15	39.88	1.89E-02	0.44	2.81E-02	31.61	79.2	284.35	2.62
0.90	1.41E-14	17.98	1.28E-02	0.22	4.58E-03	16.64	92.6	155.28	0.69
1.20	2.20E-14	14.25	1.17E-02	0.17	1.01E-03	13.96	98.0	131.16	0.33
1.60	3.64E-14	13.93	1.15E-02	0.16	6.28E-04	13.76	98.8	129.31	0.27
2.01	3.18E-14	13.80	1.14E-02	0.13	3.77E-04	13.70	99.3	128.80	0.26
2.50	2.31E-14	13.80	1.11E-02	0.13	6.14E-04	13.63	98.8	128.15	0.33
3.20	1.48E-14	14.01	1.25E-02	0.12	1.09E-03	13.70	97.8	128.77	0.36
4.32	1.11E-14	14.12	1.25E-02	0.13	1.22E-03	13.77	97.5	129.45	0.61
5.00	5.23E-14	15.48	1.16E-02	0.31	1.94E-03	14.93	96.5	139.95	0.30
MISSIONES									
GSR-06B (whole-rock)									
J = 0.0054457 ± 0.00000289									
0.30	1.23E-14	56.29	4.52E-02	0.08	1.75E-01	4.44	7.9	43.09	7.92
0.55	2.58E-14	21.56	1.80E-02	0.02	3.28E-02	11.88	55.1	113.09	1.02
0.80	3.33E-14	14.16	1.31E-02	0.01	4.98E-03	12.69	89.6	120.51	0.43
1.10	4.55E-14	13.12	1.34E-02	0.01	2.26E-03	12.45	94.9	118.36	0.29
1.40	3.60E-14	12.97	1.38E-02	0.01	1.55E-03	12.52	96.5	118.95	0.27
1.80	3.11E-14	13.00	1.69E-02	0.01	2.06E-03	12.40	95.3	117.84	0.31
2.31	2.82E-14	13.11	1.75E-02	0.03	2.90E-03	12.26	93.5	116.56	0.38
2.90	2.95E-14	13.55	1.67E-02	0.07	4.28E-03	12.29	90.7	116.86	0.38
3.81	3.21E-14	14.10	1.57E-02	0.11	6.18E-03	12.28	87.1	116.80	0.35
5.00	1.36E-13	13.78	1.28E-02	0.08	5.28E-03	12.22	88.7	116.24	0.27
GSR1F (whole-rock)									
J = 0.0054457 ± 0.00000289									
0.25	1.95E-15	11.48	1.36E-02	0.00	3.85E-03	10.34	90.1	98.82	2.13
0.45	9.39E-15	12.40	1.10E-02	0.00	1.14E-03	12.06	97.3	114.76	0.52
0.70	1.02E-14	12.54	1.17E-02	0.10	1.50E-03	12.10	96.5	115.13	0.50
1.00	8.94E-15	12.93	1.20E-02	0.05	2.20E-03	12.28	95.0	116.79	0.56
1.40	5.55E-15	12.61	1.14E-02	0.00	1.29E-03	12.23	97.0	116.28	0.76
1.91	1.58E-15	10.42	1.07E-02	0.00	1.81E-03	9.88	94.9	94.57	2.07
2.50	5.74E-16	10.28	9.45E-03	0.00	-7.99E-05	10.30	100.2	98.50	4.94
3.00	2.85E-16	11.17	7.57E-03	0.00	5.42E-03	9.57	85.7	91.68	10.93
4.41	8.35E-16	11.34	1.08E-02	0.00	1.66E-03	10.85	95.7	103.56	4.10
5.20	2.32E-15	11.18	1.48E-02	3.69	1.01E-02	8.51	75.9	81.71	1.76
GSR05A (whole-rock)									
J = 0.0054457 ± 0.00000289									
0.30	1.78E-15	20.93	3.41E-02	0.28	5.18E-02	5.64	26.9	54.56	4.36
0.60	2.16E-14	13.29	1.27E-02	0.00	3.06E-03	12.39	93.2	117.78	0.39
0.90	2.20E-14	12.69	1.46E-02	0.00	8.20E-04	12.45	98.1	118.37	0.33
1.20	8.45E-15	12.59	1.97E-02	0.04	2.27E-03	11.92	94.7	113.46	0.54
1.50	7.39E-15	12.61	1.83E-02	0.00	1.54E-03	12.16	96.4	115.63	0.64
1.90	9.79E-15	12.73	1.59E-02	0.00	1.75E-03	12.21	95.9	116.17	0.52
2.39	1.17E-14	12.68	1.42E-02	0.00	2.30E-03	12.00	94.6	114.23	0.61
3.01	1.12E-14	12.56	1.25E-02	0.00	1.46E-03	12.12	96.6	115.33	0.47
3.70	1.23E-14	12.61	1.17E-02	0.00	1.33E-03	12.21	96.9	116.16	0.60
4.41	6.43E-15	12.74	1.14E-02	0.00	1.60E-03	12.27	96.3	116.69	0.66
5.09	2.56E-15	13.22	8.31E-03	0.00	-2.01E-04	13.28	100.4	125.93	1.55
ASUNCION PROVINCE									
Cerrito (whole-rock)									
J = 0.003806 ± 0.00000761									
0.30	1.38E-15	8.95	6.12E-03	0.08	5.81E-04	8.78	98.1	59.32	1.39
0.70	3.27E-15	15.48	2.06E-02	0.83	2.33E-02	8.67	56.0	58.60	1.65
1.11	3.20E-15	12.06	1.34E-02	0.70	1.31E-02	8.25	68.4	55.79	1.39
1.60	4.14E-15	11.37	1.33E-02	0.51	1.08E-02	8.22	72.3	55.60	0.97
2.21	3.73E-15	10.45	1.47E-02	0.68	6.91E-03	8.47	81.0	57.21	0.87
3.20	3.11E-15	9.94	1.31E-02	1.24	7.11E-03	7.95	79.8	53.77	0.91
4.21	3.20E-15	10.20	1.54E-02	4.61	9.86E-03	7.69	74.9	52.02	0.93
5.00	5.36E-15	10.25	1.54E-02	10.58	9.34E-03	8.43	80.9	57.01	1.57
5.00	1.87E-15	10.66	1.42E-02	11.78	9.93E-03	8.78	80.9	59.29	1.84
Nemby (whole-rock)									
J = 0.003806 ± 0.00000761									
0.40	6.83E-18	11.76	1.54E-01	0.00	2.36E-01	-57.91	-	-	-
0.80	3.38E-15	10.11	8.00E-03	0.09	3.48E-03	9.09	89.9	61.35	0.77
1.40	9.51E-15	9.76	1.05E-02	0.14	2.27E-03	9.10	93.2	61.46	1.01
2.21	5.56E-15	9.61	1.03E-02	0.17	2.07E-03	9.01	93.8	60.83	0.52

Laser (W)	Ar ⁴⁰ Moles	⁴⁰ Ar/ ³⁹ Ar	³⁸ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	³⁶ Ar/ ³⁹ Ar	⁴⁰ *Ar/ ³⁹ Ar	% ⁴⁰ *Ar	Age (Ma)	± (W/O J Err)
3.01	2.98E-15	8.89	9.55E-03	0.46	6.39E-04	8.74	98.3	59.03	0.80
3.81	8.46E-16	8.30	1.27E-02	1.75	3.26E-03	7.49	90.0	50.69	2.18
4.51	1.89E-15	9.10	1.87E-02	14.19	7.68E-03	8.09	86.9	54.71	1.37
5.01	8.28E-16	9.08	2.85E-02	30.46	1.34E-02	7.79	81.8	52.74	2.41
Tacumbù (whole-rock)		J = 0.0054457 ± 0.00000289							
0.25	1.19E-15	29.44	2.70E-02	1.48	8.55E-02	4.30	14.6	41.73	9.02
0.50	3.46E-15	21.03	2.19E-02	0.62	5.00E-02	6.31	30.0	60.94	3.27
0.75	2.33E-15	13.17	1.40E-02	0.46	2.40E-02	6.13	46.5	59.25	2.40
1.00	1.58E-15	10.06	1.52E-02	0.34	1.40E-02	5.94	59.0	57.43	2.01
1.30	1.23E-15	9.01	1.47E-02	0.34	9.20E-03	6.32	70.1	61.07	2.10
1.60	8.58E-16	8.37	1.42E-02	0.46	6.77E-03	6.40	76.5	61.83	2.84
1.90	7.51E-16	7.98	1.68E-02	0.74	1.05E-02	4.93	61.8	47.83	3.30
2.31	8.72E-16	8.19	1.04E-02	1.69	5.20E-03	6.79	82.8	65.50	2.76
2.80	3.31E-16	9.01	6.28E-03	4.77	9.01E-03	6.74	74.6	65.03	7.59
3.41	1.37E-16	10.39	1.88E-02	7.97	5.03E-04	10.92	104.5	104.20	21.28
4.42	5.15E-16	9.63	2.43E-02	14.81	1.88E-02	5.28	54.4	51.19	5.78
5.00	2.52E-15	9.91	2.22E-02	30.71	2.20E-02	5.92	58.5	57.20	2.01