

APPENDIX

Data are corrected for spallogenic ^{36}Ar assuming $^{38}\text{Ar}/^{36}\text{Ar} = 1.54$.

A1. Ar-Ar stepped heating data for lunar mare meteorite, **Asuka A (plagioclase)** (1σ errors). Amounts are in $\times 10^{-12}$ cm³ STP.
 nd – not determined

Step	^{36}Ar	^{37}Ar	^{38}Ar	^{39}Ar	^{40}Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>Asuka A (plagioclase) sample wt 5.24 mg $J = 0.009415 \pm 0.000131$; $\alpha = 0.739067 \pm 0.072616$; $\beta = 7.099285 \pm 0.390244$</i>									
1	0.015±0.017	1.831±7.323	0.002±0.012	nd	1.777±0.416	nd	0.001±0.003	nd	nd
2	nd	nd	0.001±0.011	0.007±0.011	nd	0.017±0.030	nd	nd	nd
3	0.016±0.019	9.978±10.094	0.039±0.013	0.007±0.018	2.737±0.880	0.020±0.053	0.004±0.004	21.67±25.60	2.78±3.74
4	nd	nd	0.021±0.009	0.024±0.010	11.0540.715	0.050±0.024	nd	nd	3.50±0.87
5	nd	nd	0.003±0.010	0.018±0.008	10.687±0.725	0.042±0.015	nd	nd	3.75±0.83
6	nd	nd	0.012±0.009	0.018±0.006	17.827±0.989	0.045±0.010	nd	nd	4.44±0.60
7	nd	nd	0.010±0.010	0.024±0.008	17.530±1.020	0.061±0.018	nd	nd	3.93±0.60
8	nd	nd	0.015±0.010	0.020±0.010	13.508±1.048	0.048±0.025	nd	nd	3.90±0.96
9	nd	nd	0.021±0.010	0.010±0.006	11.169±0.795	0.027±0.009	nd	nd	4.51±1.00
10	0.012±0.018	5.035±7.845	0.012±0.010	nd	10.802±0.732	nd	0.002±0.003	12.26±30.61	nd
11	0.009±0.015	25.292±7.926	0.046±0.014	0.038±0.011	46.462±2.395	0.109±0.032	0.010±0.003	10.53±6.37	4.57±0.47
12	0.558±0.037	1039.783±65.116	1.255±0.066	2.288±0.118	1604.860±80.288	6.612±0.354	0.407±0.048	6.70±0.73	3.66±0.03
13	0.063±0.017	171.816±11.986	0.149±0.017	0.525±0.027	360.650±18.229	1.518±0.081	0.067±0.008	4.83±0.98	3.63±0.03
14	0.019±0.016	58.719±8.245	0.075±0.011	0.182±0.014	113.433±5.743	0.526±0.040	0.023±0.004	7.33±2.33	3.48±0.09
15	0.032±0.014	43.993±7.411	0.041±0.012	0.128±0.010	79.261±4.039	0.370±0.029	0.017±0.003	4.86±3.01	3.46±0.10
16	0.103±0.015	190.237±12.708	0.165±0.014	0.464±0.025	323.461±16.218	1.341±0.074	0.074±0.009	4.65±0.83	3.65±0.04
17	0.082±0.016	171.598±13.180	0.220±0.015	0.410±0.023	297.286±14.873	1.184±0.068	0.067±0.008	7.23±1.09	3.71±0.04
18	0.063±0.016	109.633±10.185	0.101±0.011	0.267±0.018	185.490±9.307	0.771±0.052	0.043±0.006	4.92±1.21	3.65±0.07
19	0.231±0.020	499.318±27.617	0.403±0.027	1.172±0.061	847.395±42.382	3.386±0.183	0.195±0.022	4.36±0.54	3.71±0.03
20	0.122±0.017	226.071±14.875	0.204±0.017	0.567±0.032	389.316±19.701	1.637±0.095	0.088±0.011	4.85±0.79	3.63±0.05
21	nd	nd	0.087±0.011	0.298±0.015	179.907±8.996	0.862±0.046	nd	nd	3.43±0.02
22	0.019±0.018	55.593±8.023	0.051±0.012	0.130±0.011	93.777±4.747	0.377±0.031	0.022±0.004	5.14±2.41	3.70±0.11
23	0.026±0.015	26.390±7.740	0.018±0.010	0.041±0.008	36.730±2.006	0.117±0.023	0.010±0.003	3.10±4.43	4.06±0.30

A2. Ar-Ar stepped heating data for lunar mare meteorite, **Asuka B (pyroxene)** (1σ errors). Amounts are in $\times 10^{-12}$ cm³ STP.
 nd – not determined.

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>Asuka B (pyroxene/glass) sample wt 3.11 mg $J = 0.009415 \pm 0.000131$; $\alpha = 0.739067 \pm 0.072616$; $\beta = 7.099285 \pm 0.390244$</i>									
1	0.004±0.007	1.552±1.651	0.003±0.001	0.0003±0.0021	0.476±0.324	0.01±0.10	0.01±0.01	8.69±16.43	4.96±11.77
2	0.009±0.007	3.051±1.791	0.026±0.003	0.081±0.003	37.856±0.531	3.92±0.17	0.02±0.01	37.78±23.94	3.05±0.07
3	0.013±0.007	2.891±1.889	0.036±0.003	0.323±0.005	222.235±1.656	15.71±0.31	0.02±0.01	56.63±38.46	3.63±0.03
4	0.015±0.007	2.271±1.719	0.031±0.003	0.394±0.011	290.092±2.446	19.18±0.60	0.01±0.01	61.00±48.03	3.74±0.05
5	nd	0.783±2.134	0.014±0.002	0.202±0.004	145.470±4.547	9.81±0.26	0.01±0.01	80.53±221.48	3.71±0.06
6	nd	nd	0.031±0.003	0.214±0.003	161.952±0.611	10.43±0.20	nd	nd	3.78±0.03
7	nd	nd	0.009±0.003	0.088±0.002	64.108±1.323	4.27±0.13	nd	nd	3.72±0.06
8	0.002±0.007	1.217±1.855	0.005±0.003	0.056±0.004	39.717±2.741	2.71±0.21	0.01±0.01	17.36±34.72	3.69±0.17
9	nd	0.884±1.744	0.014±0.003	0.046±0.002	35.942±0.585	2.25±0.11	0.01±0.01	70.34±141.57	3.82±0.08
10	0.005±0.007	2.278±1.748	0.055±0.004	0.073±0.003	49.472±0.684	3.57±0.14	0.02±0.01	108.29±84.65	3.60±0.06
11	0.010±0.007	6.074±1.749	0.081±0.003	0.061±0.002	41.364±0.324	2.98±0.10	0.04±0.01	60.36±18.87	3.60±0.06
12	0.011±0.007	3.869±1.829	0.028±0.003	0.023±0.002	16.199±0.391	1.12±0.09	0.03±0.01	32.61±17.12	3.67±0.13
13	0.010±0.009	8.141±2.194	0.087±0.003	0.039±0.003	19.230±0.415	1.91±0.17	0.05±0.02	48.18±14.20	3.12±0.13
14	0.008±0.008	10.979±1.869	0.095±0.002	0.043±0.002	17.456±0.500	2.09±0.11	0.07±0.01	39.22±8.02	2.84±0.08
15	0.019±0.008	28.350±2.234	0.099±0.021	0.055±0.003	23.642±1.050	2.67±0.16	0.19±0.02	15.80±3.05	2.92±0.11
16	0.012±0.007	23.530±2.155	0.038±0.003	0.023±0.004	11.665±0.387	1.13±0.19	0.16±0.02	7.28±1.49	3.15±0.26
17	0.322±0.023	616.314±29.331	0.726±0.032	0.197±0.020	69.617±2.200	9.58±1.01	4.06±0.45	5.32±0.60	2.64±0.15
18	0.064±0.010	117.387±7.013	0.123±0.006	0.025±0.008	7.645±0.754	1.19±0.40	0.77±0.09	4.74±0.63	2.47±0.47
19	0.023±0.007	24.104±2.057	0.020±0.002	0.003±0.003	1.595±0.419	0.14±0.14	0.16±0.02	3.82±1.09	3.30±1.62

**A3. Ar-Ar stepped heating data for lunar mare meteorite, Asuka C (bulk) (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
nd – not determined**

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
Asuka C (bulk) sample wt 3.10 mg $J = 0.009415 \pm 0.000131$; $\alpha = 0.739067 \pm 0.072616$; $\beta = 7.099285 \pm 0.390244$									
1	0.004±0.002	1.94±1.21	0.086±0.006	0.210±0.003	137.04±2.23	10.24±0.21	0.013±0.008	206.41±131.99	3.55±0.04
2	nd	0.37±1.10	0.025±0.002	0.080±0.004	53.16±0.46	3.93±0.18	0.002±0.007	323.05±962.84	3.57±0.07
3	0.003±0.002	1.32±1.06	0.044±0.003	0.074±0.002	53.24±0.35	3.61±0.10	0.009±0.007	154.45±126.86	3.70±0.05
4	nd	0.79±0.78	0.020±0.001	0.045±0.002	31.25±0.50	2.18±0.12	0.005±0.005	116.36±117.94	3.66±0.09
5	nd	-0.09±1.11	0.010±0.001	0.051±0.003	30.58±0.61	2.50±0.15	nd	nd	3.41±0.10
6	0.002±0.002	0.52±0.96	0.011±0.001	0.044±0.002	31.50±0.29	2.17±0.08	0.003±0.006	97.90±183.09	3.68±0.06
7	nd	0.59±0.99	0.017±0.002	0.069±0.002	45.03±1.24	3.35±0.13	0.004±0.007	134.01±228.83	3.56±0.07
8	0.007±0.002	1.90±0.95	0.052±0.002	0.081±0.001	61.30±0.35	3.94±0.09	0.013±0.006	127.46±65.80	3.79±0.04
9	0.003±0.002	4.14±0.66	0.028±0.001	0.111±0.002	81.49±0.50	5.42±0.13	0.027±0.005	31.25±7.16	3.73±0.04
10	0.142±0.003	276.21±4.44	1.350±0.011	2.350±0.026	1702.47±10.56	114.80±2.03	1.826±0.184	22.84±2.30	3.71±0.03
11	0.020±0.003	29.01±1.49	0.180±0.007	0.561±0.008	440.21±1.14	27.42±0.55	0.192±0.021	28.96±3.51	3.84±0.03
12	0.020±0.002	30.72±0.93	0.138±0.003	0.497±0.007	362.43±0.85	24.29±0.49	0.203±0.021	20.92±2.31	3.72±0.03
13	0.020±0.002	35.62±1.48	0.123±0.002	0.550±0.005	405.30±1.03	26.86±0.46	0.236±0.025	16.19±1.86	3.74±0.03
14	0.013±0.002	29.87±1.48	0.077±0.002	0.470±0.005	338.01±1.36	22.96±0.41	0.197±0.022	12.12±1.54	3.70±0.03
15	0.010±0.003	7.69±0.78	0.022±0.002	0.128±0.002	96.41±0.16	6.23±0.13	0.051±0.007	13.52±3.15	3.78±0.03
16	0.008±0.002	8.32±0.91	0.012±0.001	0.093±0.002	75.59±0.05	4.53±0.10	0.055±0.008	6.52±2.42	3.90±0.04
17	0.005±0.003	4.79±0.83	0.008±0.001	0.084±0.002	61.64±0.61	4.11±0.12	0.032±0.006	7.86±4.10	3.73±0.05
18	nd	nd	nd	0.016±0.004	17.17±2.53	0.80±0.22	nd	nd	5.68±0.50
19	0.052±0.010	23.48±4.15	0.042±0.007	0.256±0.010	201.14±6.61	12.51±0.50	0.155±0.031	8.44±2.49	3.84±0.08
20	0.037±0.003	73.28±1.53	0.127±0.004	0.452±0.004	330.18±1.24	22.07±0.38	0.484±0.049	8.10±0.92	3.72±0.03
21	0.042±0.002	68.10±1.14	0.102±0.001	0.897±0.007	673.03±1.90	43.81±0.70	0.450±0.045	6.98±0.75	3.77±0.03
22	0.010±0.002	14.93±0.86	0.023±0.001	0.309±0.004	225.77±0.92	15.09±0.28	0.099±0.011	7.21±1.46	3.72±0.03
23	nd	2.24±0.90	0.009±0.001	0.078±0.002	56.66±0.84	3.83±0.11	0.015±0.006	18.55±9.88	3.71±0.05
24	nd	2.71±0.85	0.004±0.002	0.055±0.001	40.60±0.17	2.70±0.08	0.018±0.006	6.99±8.02	3.73±0.05
25	0.004±0.003	3.62±0.70	0.004±0.002	0.070±0.003	52.89±0.26	3.43±0.14	0.024±0.005	5.11±6.48	3.77±0.07
26	nd	nd	nd	0.049±0.002	34.70±0.39	2.38±0.12	nd	nd	3.70±0.08
27	nd	nd	0.001±0.002	0.024±0.001	16.80±0.28	1.19±0.06	nd	nd	3.64±0.08
28	0.003±0.003	1.60±0.95	0.002±0.001	0.029±0.004	20.62±0.32	1.43±0.17	0.011±0.006	6.05±11.12	3.66±0.19
29	0.001±0.002	2.03±0.74	0.001±0.002	0.028±0.002	22.92±0.39	1.39±0.08	0.013±0.005	2.35±10.84	3.88±0.10
30	0.0002±0.0012	0.58±0.82	0.005±0.001	0.048±0.002	35.24±0.17	2.35±0.10	0.004±0.005	38.07±61.42	3.728±0.07
31	nd	0.59±1.74	0.005±0.003	0.043±0.002	30.12±0.16	2.12±0.12	0.004±0.012	41.32±126.91	3.64±0.09

**A4. Ar-Ar stepped heating data for lunar mare meteorite, Yamato A (plagioclase) (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
nd – not determined**

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>Yamato A (plagioclase) sample wt 1.699 mg $J = 0.009415 \pm 0.000131$; $\alpha = 0.739067 \pm 0.072616$; $\beta = 7.099285 \pm 0.390244$</i>									
1	0.191±0.024	83.813±7.664	0.400±0.043	2.500±0.024	66.933±1.686	22.28±0.38	0.10±0.01	25.05±5.39	0.41±0.01
2	0.080±0.025	61.953±7.161	0.333±0.019	1.277±0.026	39.889±0.807	11.39±0.28	0.07±0.01	28.18±5.71	0.46±0.01
3	0.100±0.019	48.146±6.460	0.325±0.012	1.016±0.010	48.142±0.676	9.06±0.16	0.06±0.01	35.43±7.10	0.67±0.01
4	0.184±0.024	105.311±15.355	0.441±0.027	2.176±0.029	60.255±1.402	19.40±0.38	0.13±0.02	21.96±4.69	0.42±0.01
5	0.065±0.037	39.029±17.501	0.237±0.019	0.659±0.029	51.397±2.672	5.87±0.27	0.05±0.02	31.89±15.87	0.99±0.05
6	0.097±0.025	67.201±9.541	0.203±0.018	0.568±0.037	56.006±0.735	5.06±0.34	0.08±0.01	15.84±4.42	1.18±0.06
7	4.087±0.102	2037.057±39.049	7.590±0.060	12.200±0.050	1993.053±5.640	108.73±1.58	2.46±0.25	19.54±1.99	1.68±0.02
8	0.300±0.030	159.695±13.976	0.649±0.021	0.687±0.021	342.892±3.096	6.12±0.20	0.19±0.03	21.31±3.23	3.14±0.05
9	0.182±0.024	80.476±10.314	0.309±0.015	0.236±0.024	150.540±1.574	2.10±0.22	0.10±0.02	20.12±4.23	3.51±0.16
10	0.068±0.019	36.055±10.196	0.163±0.011	0.162±0.016	68.679±1.101	1.44±0.14	0.04±0.01	23.74±8.65	2.90±0.15
11	0.117±0.025	58.495±4.405	0.203±0.015	0.194±0.017	102.523±0.517	1.73±0.16	0.07±0.01	18.20±4.34	3.23±0.14
12	0.167±0.023	78.445±11.844	0.201±0.011	0.206±0.020	127.693±1.778	1.84±0.18	0.09±0.02	13.42±3.40	3.47±0.16
13	1.178±0.031	500.897±32.077	1.948±0.027	1.379±0.038	1061.928±5.213	12.29±0.38	0.60±0.07	20.40±2.47	3.81±0.05
14	0.203±0.023	78.784±7.435	0.289±0.014	0.211±0.017	143.528±3.236	1.88±0.15	0.10±0.01	19.23±3.70	3.61±0.13
15	0.140±0.023	69.111±13.122	0.120±0.017	0.061±0.016	59.972±1.275	0.55±0.14	0.08±0.02	9.08±3.98	4.19±0.43
16	0.027±0.018	nd	0.014±0.014	0.080±0.019	25.321±0.799	0.71±0.17	nd	nd	2.49±0.32

A5. Ar-Ar stepped heating data for lunar mare meteorite, Yamato B (pyroxene/glass) (1σ errors)*. Amounts are in $\times 10^{-11}$ cm³ STP.
 nd – not determined

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>Yamato B (pyroxene/glass) sample wt 3.39 mg $J = 0.009415 \pm 0.000131$; $\alpha = 0.739067 \pm 0.072616$; $\beta = 7.099285 \pm 0.390244$</i>									
1	nd	nd	nd	0.720±0.019	97.850±2.081	3.35±0.12	nd	nd	1.445±0.060
2	nd	nd	nd	0.640±0.011	64.470±0.536	2.83±0.08	0.01±0.01	205.9±368.6	1.212±0.066
3	nd	nd	nd	2.268±0.009	78.229±1.807	10.06±0.15	0.01±0.01	167.6±111.2	0.510±0.028
4	nd	nd	nd	1.255±0.016	27.125±0.685	5.56±0.11	0.01±0.01	87.5±83.7	0.337±0.051
5	nd	nd	nd	3.044±0.043	64.987±0.873	13.63±0.27	nd	nd	0.330±0.022
6	nd	21.423±6.019	2.006±0.035	9.469±0.091	176.576±2.849	42.10±0.71	0.05±0.01	94.5±16.6	0.293±0.009
7	nd	nd	nd	2.448±0.048	30.944±3.253	10.95±0.27	0.00±0.01	nd	0.203±0.034
8	nd	115.577±13.779	1.600±0.157	5.133±0.092	116.274±2.159	22.73±0.52	0.11±0.02	35.0±5.7	0.352±0.015
9	nd	nd	nd	1.447±0.018	39.998±1.032	6.33±0.13	0.03±0.01	37.3±11.7	0.425±0.043
10	nd	nd	nd	1.122±0.019	38.439±1.686	4.96±0.12	0.01±0.01	82.3±69.8	0.509±0.055
11	nd	nd	nd	1.292±0.044	32.030±1.823	5.67±0.22	0.02±0.01	59.7±30.1	0.384±0.053
12	nd	nd	nd	1.168±0.034	34.820±0.743	5.17±0.20	0.01±0.02	89.5±180.0	0.450±0.053
13	1.766±0.046	1151.992±25.996	7.419±0.074	12.439±0.051	787.905±1.238	55.36±0.80	0.74±0.08	26.8±2.8	0.846±0.011
14	nd	194.680±10.278	2.202±0.027	3.319±0.050	233.131±2.490	14.63±0.30	0.16±0.02	34.8±4.1	0.925±0.022
15	nd	95.154±13.549	1.484±0.037	2.277±0.033	176.791±4.248	9.97±0.20	0.10±0.01	36.2±5.6	1.005±0.031
16	nd	61.953±8.745	1.092±0.109	1.402±0.020	118.495±3.466	6.06±0.13	0.08±0.01	31.8±5.8	1.082±0.042
17	nd	nd	nd	0.705±0.025	58.056±1.276	3.04±0.13	0.02±0.01	47.1±17.9	1.064±0.071
18	nd	nd	nd	0.507±0.019	40.979±3.784	2.13±0.10	0.03±0.01	24.0±9.1	1.071±0.120
19	nd	nd	nd	0.602±0.010	31.904±0.894	2.63±0.07	0.01±0.01	66.2±46.8	0.743±0.087
20	nd	51.869±11.862	1.125±0.033	1.721±0.024	119.760±3.132	7.49±0.15	0.07±0.01	35.7±6.4	0.928±0.036
21	0.866±0.085	707.833±21.753	6.177±0.095	8.846±0.590	464.983±5.235	39.31±2.69	0.47±0.05	34.9±3.7	0.728±0.042
22	0.116±0.028	388.523±23.159	3.451±0.050	4.251±0.034	317.981±1.625	18.79±0.30	0.28±0.03	32.4±3.8	0.970±0.016
23	nd	85.481±7.263	1.054±0.021	1.157±0.022	96.262±3.409	4.97±0.12	0.09±0.01	25.7±3.7	1.075±0.051
24	nd	nd	nd	0.540±0.022	44.629±0.656	2.27±0.11	0.03±0.01	36.2±11.2	1.089±0.091
25	nd	nd	nd	0.216±0.031	25.458±4.716	1.05±0.15	nd	nd	0.979±0.261

A6. Ar-Ar stepped heating data for lunar mare meteorite, **Yamato C (bulk)** (1 σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
 nd – not determined

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>Yamato C (bulk) sample wt 5.05 mg $J = 0.009415 \pm 0.000131$; $\alpha = 0.739067 \pm 0.072616$; $\beta = 7.099285 \pm 0.390244$</i>									
400	1.438 \pm 0.167	43.921 \pm 13.753	3.828 \pm 0.182	11.060 \pm 0.050	451.764 \pm 0.378	331.61 \pm 4.85	0.18 \pm 0.06	408.09 \pm 137.04	0.59 \pm 0.01
500	0.070 \pm 0.168	28.156 \pm 9.099	0.361 \pm 0.181	1.585 \pm 0.034	37.629 \pm 0.200	47.52 \pm 1.20	0.11 \pm 0.04	59.99 \pm 48.05	0.36 \pm 0.01
600	0.744 \pm 0.172	31.186 \pm 12.155	0.429 \pm 0.139	2.167 \pm 0.019	236.436 \pm 0.249	64.98 \pm 1.08	0.13 \pm 0.05	64.43 \pm 47.26	1.28 \pm 0.02
700	0.072 \pm 0.056	19.207 \pm 11.322	0.373 \pm 0.061	1.988 \pm 0.012	70.905 \pm 0.175	59.62 \pm 0.91	0.08 \pm 0.05	90.84 \pm 65.74	0.52 \pm 0.01
800	nd	65.882 \pm 10.072	0.495 \pm 0.067	2.082 \pm 0.039	66.701 \pm 0.133	62.42 \pm 1.46	0.27 \pm 0.05	35.16 \pm 12.78	0.48 \pm 0.01
900	0.117 \pm 0.059	163.363 \pm 11.322	1.156 \pm 0.065	4.193 \pm 0.035	232.358 \pm 0.224	125.72 \pm 2.05	0.66 \pm 0.08	33.14 \pm 6.00	0.76 \pm 0.01
1000	0.366 \pm 0.064	352.679 \pm 67.376	1.462 \pm 0.071	3.166 \pm 0.066	541.609 \pm 0.428	94.92 \pm 2.39	1.43 \pm 0.31	19.41 \pm 4.72	1.73 \pm 0.029
1100	0.747 \pm 0.210	387.857 \pm 13.198	1.599 \pm 0.218	2.069 \pm 0.021	734.198 \pm 0.568	62.05 \pm 1.07	1.57 \pm 0.17	19.30 \pm 4.10	2.65 \pm 0.02
1200	0.902 \pm 0.156	453.326 \pm 17.365	1.858 \pm 0.162	2.388 \pm 0.051	1261.511 \pm 1.006	71.60 \pm 1.83	1.84 \pm 0.20	19.19 \pm 3.33	3.22 \pm 0.04
1250	0.085 \pm 0.157	193.657 \pm 7.722	0.755 \pm 0.172	0.824 \pm 0.042	293.957 \pm 0.971	24.72 \pm 1.31	0.79 \pm 0.08	18.27 \pm 6.42	2.66 \pm 0.07
1300	0.126 \pm 0.035	256.450 \pm 8.077	0.934 \pm 0.045	1.108 \pm 0.017	591.915 \pm 0.500	33.23 \pm 0.70	1.04 \pm 0.11	17.05 \pm 2.95	3.24 \pm 0.03
1400	0.529 \pm 0.510	354.229 \pm 12.186	1.521 \pm 0.541	1.373 \pm 0.049	981.921 \pm 0.800	41.17 \pm 1.57	1.44 \pm 0.15	20.11 \pm 6.43	3.69 \pm 0.06
1500	nd	70.677 \pm 7.793	0.072 \pm 0.227	0.178 \pm 0.049	nd	5.33 \pm 1.46	0.29 \pm 0.04	4.78 \pm 30.00	nd

A7. Ar-Ar stepped heating data for lunar mare meteorite, La Paz 02205,12 (bulk) (1 σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
 nd – not determined

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>LLAP 02205,12 (bulk) sample wt 2.36 mg $J = 0.017626 \pm 0.000097$; $\alpha = 0.550048 \pm 0.000186$; $\beta = 7.715213 \pm 0.076842$</i>									
1	0.355±0.004	61.394±0.476	0.831±0.020	10.462±0.082	2618.428±20.507	365.97±3.50	0.3826±0.0036	88.73±1.69	3.05±0.01
2	0.005±0.001	0.679±0.009	0.012±0.002	0.231±0.004	57.969±0.449	14.74±0.14	0.0042±0.0001	118.06±46.60	3.05±0.02
3	0.012±0.001	1.194±0.012	0.023±0.003	0.459±0.005	116.045±0.891	29.27±0.19	0.0074±0.0001	122.88±30.04	3.06±0.01
4	0.013±0.001	2.247±0.019	0.027±0.003	0.580±0.006	141.63±1.342	36.92±0.23	0.0140±0.0001	78.67±17.04	3.01±0.02
5	0.032±0.002	5.686±0.047	0.073±0.002	0.655±0.006	153.639±1.175	41.73±0.23	0.0354±0.0004	84.20±5.49	2.95±0.01
6	0.060±0.002	10.927±0.084	0.131±0.004	0.587±0.006	131.23±1.006	37.41±0.24	0.0681±0.0006	77.93±4.03	2.88±0.01
7	0.003±0.002	1.412±0.013	0.013±0.002	0.096±0.002	23.412±0.182	6.10±0.06	0.0088±0.0001	65.34±23.23	3.01±0.03
8	0.010±0.001	2.032±0.018	0.020±0.003	0.117±0.001	26.318±0.399	7.44±0.05	0.0127±0.0001	64.83±17.34	2.89±0.02
9	0.008±0.001	1.782±0.014	0.021±0.002	0.087±0.001	19.414±0.166	5.54±0.05	0.0111±0.0001	76.63±16.12	2.88±0.02
10	0.060±0.001	12.249±0.174	0.111±0.002	0.263±0.003	58.210±0.454	16.75±0.13	0.0763±0.0012	57.94±2.52	2.87±0.02
11	0.009±0.001	2.272±0.019	0.013±0.003	0.073±0.002	17.163±0.141	4.64±0.07	0.0142±0.0001	36.32±16.49	2.96±0.04
12	0.005±0.001	1.710±0.015	0.017±0.002	0.069±0.001	17.024±0.131	4.38±0.05	0.0107±0.0001	66.73±19.58	3.03±0.03
13	0.014±0.002	3.401±0.027	0.029±0.002	0.115±0.002	26.348±0.212	7.33±0.06	0.0212±0.0002	55.12±9.38	2.92±0.02
14	0.120±0.002	22.636±0.177	0.253±0.007	0.548±0.006	110.455±0.958	34.90±0.25	0.1411±0.0013	72.60±2.67	2.73±0.02
15	0.059±0.002	11.333±0.089	0.159±0.003	0.279±0.002	60.424±0.468	17.76±0.10	0.0706±0.0007	92.77±3.58	2.84±0.01
16	0.149±0.002	29.278±0.229	0.290±0.004	0.527±0.006	117.426±1.064	33.59±0.23	0.1825±0.0017	63.91±1.56	2.88±0.02
17	0.121±0.014	25.436±0.196	0.208±0.003	0.416±0.006	93.085±0.817	26.47±0.23	0.1585±0.0015	51.97±1.78	2.88±0.02
18	0.010±0.001	3.101±0.027	0.022±0.001	0.068±0.002	15.644±0.293	4.34±0.09	0.0193±0.0002	46.18±6.44	2.92±0.06
19	0.028±0.001	6.897±0.089	0.050±0.002	0.127±0.003	28.466±0.295	8.06±0.10	0.0430±0.0006	46.31±4.32	2.89±0.03
20	0.126±0.003	26.423±0.869	0.298±0.004	0.543±0.005	110.457±1.030	34.62±0.21	0.1647±0.0055	73.94±3.27	2.75±0.01
21	0.181±0.006	36.612±0.451	0.308±0.005	0.624±0.006	142.399±1.112	39.74±0.25	0.2282±0.0031	53.33±1.53	2.91±0.01
22	0.046±0.002	9.500±0.075	0.074±0.002	0.139±0.002	32.431±0.262	8.84±0.09	0.0592±0.0006	48.71±3.40	2.95±0.03
23	0.077±0.002	15.882±0.131	0.133±0.004	0.203±0.004	48.486±0.371	12.90±0.14	0.0990±0.0010	53.15±2.61	2.98±0.03
24	0.034±0.001	6.183±0.051	0.051±0.002	0.093±0.001	22.921±0.182	5.95±0.05	0.0385±0.0004	51.29±5.36	3.02±0.02
25	0.284±0.004	59.363±0.465	0.397±0.008	0.647±0.006	147.443±1.226	41.20±0.24	0.3700±0.0035	41.24±1.06	2.91±0.01
26	0.151±0.003	32.034±0.247	0.238±0.004	0.346±0.003	82.260±0.633	22.06±0.13	0.1996±0.0019	46.69±1.34	2.97±0.01
27	0.088±0.003	19.116±0.160	0.138±0.003	0.209±0.004	49.125±0.376	13.33±0.13	0.1191±0.0012	45.21±2.02	2.95±0.02
28	0.050±0.002	10.374±0.087	0.077±0.003	0.109±0.003	26.333±0.449	6.92±0.11	0.0647±0.0007	46.51±3.60	3.00±0.05
29	0.180±0.002	39.382±0.316	0.211±0.007	0.337±0.007	77.677±0.892	21.45±0.25	0.2454±0.0024	32.13±1.50	2.93±0.03
30	0.053±0.002	12.086±0.094	0.078±0.002	0.109±0.001	25.993±0.209	6.97±0.05	0.0753±0.0007	39.85±2.73	2.97±0.02
31	0.753±0.006	166.368±1.284	1.106±0.012	1.388±0.013	324.844±2.691	88.43±0.52	1.0369±0.0098	41.32±0.47	2.95±0.01
32	0.012±0.001	2.063±0.018	0.014±0.001	0.024±0.001	6.407±0.059	1.56±0.05	0.0129±0.0001	38.86±10.32	3.11±0.08
33	0.010±0.001	1.946±0.018	0.015±0.005	0.013±0.002	2.325±0.129	0.81±0.07	0.0121±0.0001	47.02±25.48	2.60±0.22
34	0.020±0.002	4.049±0.035	0.027±0.002	0.032±0.001	6.412±0.105	2.03±0.05	0.0252±0.0003	40.59±7.81	2.73±0.06

A8. Ar-Ar stepped heating data for lunar mare meteorite, **La Paz 02205 (basalt)** (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
 nd – not determined

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
LAP 02205,12 (basalt) <i>sample wt 0.26 mg</i> $J = 0.017626 \pm 0.000097$; $\alpha = 0.550048 \pm 0.000186$; $\beta = 7.715213 \pm 0.076842$									
1	0.014±0.003	nd	0.075±0.008	0.935±0.011	216.237±1.672	296.84±3.97	nd	nd	2.93±0.017
2	0.000±0.001	nd	0.006±0.003	0.039±0.007	10.018±0.085	12.22±2.30	nd	nd	3.10±0.279
3	0.004±0.002	nd	0.017±0.004	0.054±0.006	12.604±0.112	17.16±1.85	nd	nd	2.94±0.156
4	0.033±0.002	1.774±4.400	0.086±0.004	0.131±0.004	22.737±0.220	41.61±1.33	0.10±0.25	320.96±796.33	2.53±0.043
5	0.010±0.002	nd	0.015±0.002	0.037±0.004	8.895±0.078	11.63±1.26	nd	nd	3.00±0.158
6	0.006±0.002	nd	0.011±0.002	0.018±0.008	3.047±0.039	5.80±2.62	nd	nd	2.47±0.610
7	0.009±0.002	nd	0.013±0.003	0.000±0.000	3.825±0.103	nd	nd	nd	nd
8	0.021±0.003	nd	0.042±0.003	0.096±0.002	23.792±0.191	30.39±0.67	nd	nd	3.04±0.031
9	0.017±0.003	7.744±2.390	0.028±0.002	0.081±0.007	15.860±0.151	25.87±2.12	0.44±0.14	22.95±7.79	2.69±0.114
10	0.020±0.002	9.504±3.630	0.033±0.003	0.046±0.006	10.058±0.088	14.74±1.86	0.54±0.21	21.84±9.07	2.84±0.181
11	0.005±0.003	0.336±2.720	0.007±0.003	0.005±0.002	2.517±0.025	1.54±0.50	0.02±0.15	137.83±1120.47	4.18±0.525
12	0.014±0.003	11.248±3.997	0.026±0.003	0.050±0.002	6.896±0.069	15.83±0.70	0.64±0.23	14.53±5.86	2.23±0.057
13	0.001±0.002	0.346±4.340	0.006±0.002	0.018±0.004	0.411±0.019	5.69±1.37	0.02±0.25	110.45±1389.19	0.61±0.128
14	0.015±0.003	1.214±3.341	0.020±0.003	0.016±0.006	5.950±0.051	5.12±2.00	0.07±0.19	98.90±273.34	3.64±0.610

A9. Ar-Ar stepped heating data for lunar mare meteorite, La Paz 02205 (vein) (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
 nd – not determined

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>LAP 02205,12 (vein) sample wt 0.32 mg $J = 0.017626 \pm 0.000097$; $\alpha = 0.550048 \pm 0.000186$; $\beta = 7.715213 \pm 0.076842$</i>									
1	0.016±0.002	nd	0.039±0.003	0.430±0.021	99.628±1.747	110.97±5.45	0.09±0.10	4.3216.75	2.93±0.07
2	0.002±0.003	2.507±2.884	0.002±0.003	0.067±0.006	14.173±0.135	17.32±1.47	0.06±0.15	39.83±107.42	2.80±0.12
3	0.002±0.002	1.574±4.175	0.007±0.002	0.124±0.006	30.731±0.244	31.91±1.47	0.44±0.14	25.53±8.76	3.04±0.07
4	0.020±0.003	12.140±3.985	0.038±0.002	0.380±0.012	86.257±0.679	97.94±3.10	0.09±0.15	101.98±172.14	2.91±0.04
5	0.016±0.003	2.410±4.049	0.030±0.003	0.113±0.006	24.251±0.202	29.28±1.48	0.15±0.10	152.22±105.98	2.82±0.07
6	0.038±0.002	4.169±2.887	0.077±0.004	0.179±0.009	37.071±0.371	46.19±2.44	0.13±0.17	16.57±23.25	2.77±0.07
7	0.004±0.003	3.677±4.727	0.007±0.002	0.016±0.005	2.509±0.031	4.17±1.17	0.16±0.07	51.28±23.28	2.38±0.37
8	0.012±0.002	4.513±1.970	0.028±0.001	0.039±0.005	6.607±0.085	10.06±1.36	0.42±0.14	67.72±22.80	2.49±0.18
9	0.050±0.004	11.461±3.801	0.095±0.004	0.117±0.006	22.128±0.173	30.08±1.44	0.48±0.18	38.54±15.06	2.65±0.07
10	0.042±0.003	13.320±5.103	0.065±0.003	0.076±0.009	14.712±0.125	19.59±2.21	0.21±0.13	64.42±41.95	2.68±0.16
11	0.027±0.002	5.747±3.692	0.046±0.003	0.067±0.003	17.063±0.135	17.19±0.67	0.30±0.11	47.60±17.92	3.08±0.06
12	0.029±0.003	8.368±3.013	0.049±0.003	0.073±0.004	18.900±0.152	18.89±0.97	0.06±0.19	nd	3.09±0.08
13	nd	1.667±5.218	nd	nd	0.316±0.029	nd	0.09±0.10	4.32±16.75	nd

A10. Ar-Ar stepped heating data for lunar mare meteorite, **Elephant Moraine 96008 (bulk)** (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
nd – not determined

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>EET96008 (bulk) sample wt 4.42 mg $J = 0.017626 \pm 0.000097$; $\alpha = 0.550048 \pm 0.000186$; $\beta = 7.715213 \pm 0.076842$</i>									
1	0.004±0.002	4.188±0.033	0.055±0.002	0.031±0.002	1.126±0.035	0.58±0.03	0.0301±0.0003	97.58±7.16	0.90±0.05
2	0.011±0.002	9.053±0.071	0.041±0.003	0.073±0.002	2.320±0.066	1.37±0.03	0.0186±0.0002	32.27±3.53	0.80±0.02
3	0.006±0.001	5.595±0.044	0.019±0.003	0.056±0.002	1.734±0.101	1.05±0.05	0.0600±0.0006	24.46±6.31	0.78±0.05
4	0.015±0.002	18.031±0.142	0.035±0.002	0.145±0.002	3.456±0.058	2.72±0.04	0.0863±0.0008	13.38±1.51	0.63±0.01
5	0.013±0.003	25.935±0.203	0.036±0.003	0.218±0.004	6.163±0.167	4.08±0.08	0.1161±0.0011	9.56±1.29	0.73±0.02
6	0.024±0.002	34.899±0.271	0.059±0.002	0.331±0.004	14.907±0.123	6.19±0.08	0.0539±0.0005	11.80±0.80	1.05±0.01
7	0.018±0.002	16.206±0.130	0.037±0.005	0.187±0.004	16.250±0.165	3.49±0.07	0.0770±0.0007	15.47±2.56	1.68±0.02
8	0.031±0.002	23.154±0.179	0.062±0.004	0.223±0.003	36.811±0.285	4.16±0.07	0.0531±0.0005	18.21±1.67	2.46±0.02
9	0.026±0.001	15.971±0.126	0.035±0.001	0.141±0.003	30.533±0.243	2.64±0.05	0.0138±0.0001	14.43±1.33	2.83±0.03
10	0.009±0.001	4.153±0.037	0.011±0.002	0.053±0.003	10.663±0.085	0.99±0.06	0.0423±0.0004	17.76±7.21	2.74±0.09
11	0.019±0.001	12.721±0.099	0.025±0.004	0.117±0.002	27.163±0.211	2.19±0.04	0.0810±0.0008	12.75±3.12	2.93±0.03
12	0.042±0.002	24.352±0.187	0.057±0.003	0.190±0.002	50.192±0.414	3.55±0.05	0.0448±0.0004	15.03±1.42	3.12±0.02
13	0.033±0.002	13.465±0.104	0.047±0.002	0.146±0.002	40.345±0.310	2.73±0.04	0.3009±0.0030	22.93±2.01	3.19±0.02
14	0.156±0.003	90.423±0.739	0.20±0.004	0.572±0.006	148.389±1.506	10.69±0.13	0.0879±0.0009	14.51±0.40	3.10±0.02
15	0.046±0.002	26.408±0.211	0.066±0.004	0.188±0.004	49.844±0.505	3.51±0.08	0.4485±0.0043	16.39±1.48	3.13±0.03
16	0.209±0.003	134.792±1.040	0.250±0.004	0.714±0.007	194.139±1.502	13.34±0.15	0.2079±0.0020	11.73±0.29	3.17±0.01
17	0.075±0.001	62.481±0.478	0.097±0.001	0.277±0.002	78.109±0.600	5.16±0.05	0.0802±0.0008	9.92±0.24	3.23±0.01
18	0.034±0.002	24.100±0.186	0.040±0.001	0.124±0.002	38.716±0.304	2.32±0.04	0.0480±0.0005	10.53±0.86	3.38±0.02
19	0.022±0.002	14.434±0.113	0.024±0.004	0.077±0.001	23.476±0.186	1.44±0.03	0.1006±0.0010	10.08±2.71	3.34±0.02
20	0.037±0.003	30.228±0.247	0.041±0.002	0.112±0.002	31.528±0.365	2.08±0.05	0.0518±0.0005	8.37±0.96	3.23±0.04
21	0.020±0.002	15.557±0.120	0.022±0.001	0.070±0.001	20.379±0.159	1.31±0.02	0.0314±0.0003	8.71±1.16	3.27±0.02
22	0.016±0.002	9.428±0.072	0.016±0.003	0.055±0.002	17.033±0.159	1.03±0.04	0.0873±0.0008	10.74±3.55	3.36±0.07
23	0.030±0.002	26.240±0.210	0.042±0.002	0.137±0.002	40.185±0.310	2.56±0.05	0.0410±0.0004	10.37±1.10	3.28±0.03
24	0.017±0.002	12.330±0.097	0.022±0.004	0.069±0.002	20.289±0.157	1.28±0.03	0.092±0.0009	11.23±3.11	3.30±0.04
25	0.038±0.001	27.791±0.215	0.045±0.004	0.123±0.002	36.367±0.769	2.29±0.04	0.0847±0.0009	10.26±1.33	3.300±0.04
26	0.033±0.001	25.466±0.219	0.043±0.004	0.111±0.003	37.802±0.333	2.07±0.06	0.4528±0.0043	10.71±1.45	3.51±0.04
27	0.171±0.003	136.065±1.040	0.207±0.003	0.654±0.006	200.689±1.533	12.21±0.14	0.2266±0.0172	9.64±0.21	3.35±0.01
28	0.149±0.012	68.108±5.144	0.241±0.026	0.456±0.008	125.261±2.100	8.52±0.16	0.0251±0.0004	23.44±2.29	3.18±0.04
29	0.014±0.003	7.546±0.107	0.016±0.002	0.048±0.001	12.608±0.101	0.90±0.02	0.0125±0.0001	13.51±3.85	3.11±0.03
30	0.010±0.002	3.762±0.033	0.011±0.002	0.025±0.003	10.258±0.263	0.58±0.03	0.0301±0.0003	19.04±7.88	3.77±0.202

A11. Ar-Ar stepped heating data for lunar mare meteorite, **Elephant Moraine 96008,45 (Basalt)** (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
 nd – not determined

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>EET 96008,45 (coarse-grained region) sample wt 0.75 mg $J = 0.017626 \pm 0.000097; \alpha = 0.550048 \pm 0.000186; \beta = 7.715213 \pm 0.076842$</i>									
1	0.010±0.002	14.888±4.887	0.033±0.003	0.180±0.007	6.243±0.083	19.40±0.72	0.29±0.10	15.73±5.59	0.86±0.03
2	0.007±0.002	nd	0.004±0.002	0.035±0.004	3.961±0.041	3.77±0.43	nd	nd	1.98±0.14
3	0.023±0.003	20.957±3.418	0.037±0.004	0.129±0.009	22.485±0.190	13.95±0.97	0.41±0.07	11.53±2.67	2.53±0.09
4	0.028±0.002	8.249±2.949	0.025±0.007	0.090±0.005	21.158±0.188	9.70±0.53	0.16±0.06	17.85±8.90	2.96±0.08
5	0.011±0.003	11.339±3.941	0.011±0.002	0.042±0.004	7.374±0.065	4.49±0.41	0.22±0.08	5.81±3.35	2.56±0.12
6	0.008±0.002	7.149±2.558	0.012±0.002	0.043±0.005	7.273±0.066	4.68±0.51	0.14±0.05	10.60±5.68	2.48±0.15
7	0.010±0.004	14.110±4.701	0.020±0.002	0.051±0.003	9.811±0.105	5.49±0.32	0.2±0.09	9.73±3.82	2.67±0.08
8	0.016±0.004	25.883±5.098	0.026±0.002	0.052±0.003	9.140±0.077	5.59±0.30	0.51±0.10	6.61±1.77	2.55±0.07

A12. Ar-Ar stepped heating data for lunar mare meteorite, **Elephant Moraine 96008,45 (Breccia)** (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
 nd – not determined

Step	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>EET 96008,45 (fine-grained region) sample wt 0.34 mg $J = 0.017626 \pm 0.000097$; $\alpha = 0.550048 \pm 0.000186$; $\beta = 7.715213 \pm 0.076842$</i>									
1	0.005±0.003	7.825±5.854	0.010±0.002	0.021±0.005	0.724±0.147	0.34±0.25	0.3385±0.2532	8.69±7.27	0.848±0.199
2	0.081±0.004	nd	0.028±0.004	0.044±0.015	5.759±0.131	nd	nd	nd	2.170±0.199
3	0.221±0.007	0.974±6.806	0.052±0.004	0.023±0.012	8.518±0.148	0.0±0.29	0.0421±0.2944	85.15±596.36	3.639±0.424
4	0.191±0.004	10.675±2.555	0.060±0.004	0.035±0.004	9.617±0.125	0.46±0.11	0.4618±0.1105	16.88±5.35	3.180±0.837
5	0.443±0.015	6.815±3.278	0.103±0.003	0.042±0.005	17.301±0.142	0.29±0.14	0.2948±0.1418	22.17±12.17	3.824±0.190
6	0.254±0.007	2.535±4.718	0.072±0.004	0.025±0.009	13.551±0.120	0.11±0.20	0.1097±0.2041	71.94±134.81	4.249±0.189
7	0.027±0.002	8.395±6.233	0.009±0.007	0.007±0.007	7.203±0.072	0.36±0.27	0.3632±0.2696	3.38±6.51	5.369±0.570
8	0.548±0.006	18.355±5.091	0.141±0.008	0.074±0.013	25.659±0.220	0.79±0.22	0.7940±0.2203	15.66±5.29	3.539±1.751
9	nd	nd	nd	0.0133±0.0001	nd	nd	nd	nd	nd

A13. Ar-Ar stepped heating data for lunar mare meteorite, **Northwest Africa 479 (bulk)** (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
 nd – not determined

Step (°C)	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>NWA479 (bulk) sample wt 5.90 mg $J = 0.09248 \pm 0.000128$; $\alpha = 0.5327 \pm 0.0001$; $\beta = 6.6902 \pm 0.0137$</i>									
300	0.227±0.174	3.424±0.108	0.201±0.164	0.256±0.023	70.189±0.286	6.68±0.60	0.0168±0.0006	182.4±271.8	2.280±0.119
400	0.113±0.174	0.436±0.074	0.435±0.189	0.190±0.021	40.338±0.293	4.96±0.56	0.0021±0.0004	3100.6±2184.0	1.960±0.134
500	0.353±0.272	2.319±0.086	1.067±0.290	0.535±0.025	119.211±0.300	13.99±0.67	0.0114±0.0005	1430.8±499.1	2.017±0.059
600	0.439±0.272	3.157±0.111	0.814±0.278	1.468±0.044	460.598±0.488	38.37±1.27	0.0155±0.0006	802.1±365.4	2.456±0.045
650	0.318±0.274	8.526±0.063	0.556±0.276	1.557±0.024	577.224±0.853	40.68±0.84	0.0418±0.0007	202.9±134.7	2.684±0.029
700	0.641±0.173	9.931±0.217	0.523±0.158	1.854±0.022	896.868±1.212	48.44±0.88	0.0487±0.0013	163.7±92.9	3.067±0.027
750	0.942±0.175	15.010±0.216	0.973±0.163	2.147±0.017	1142.000±1.604	56.11±0.89	0.0736±0.0015	201.6±61.1	3.208±0.024
800	1.161±0.173	15.330±0.085	1.310±0.178	2.172±0.026	1056.575±0.737	56.75±1.05	0.0752±0.0011	265.7±61.9	3.075±0.027
850	1.192±0.174	13.759±0.172	1.561±0.171	1.966±0.038	859.665±1.388	51.38±1.23	0.0675±0.0013	352.7±67.3	2.919±0.035
900	1.969±0.244	31.313±0.055	3.285±0.246	2.840±0.034	1050.669±1.057	74.20±1.35	0.1536±0.0021	326.3±35.0	2.682±0.026
950	1.320±0.247	25.737±0.057	2.446±0.249	1.384±0.017	401.379±0.430	36.16±0.67	0.1263±0.0018	295.5±42.5	2.352±0.025
1000	3.562±0.096	55.244±0.083	4.858±0.079	1.992±0.063	742.340±1.331	52.04±1.79	0.2710±0.0038	273.4±11.9	2.692±0.048
1050	3.139±0.083	47.541±0.091	4.349±0.087	1.556±0.034	491.596±0.214	40.65±1.05	0.2333±0.0033	284.5±14.3	2.465±0.035
1100	5.845±0.559	85.920±0.056	7.971±0.551	2.401±0.020	899.025±1.283	62.74±1.01	0.4215±0.0058	288.5±19.6	2.698±0.023
1200	52.772±0.418	938.199±0.883	82.283±0.423	13.263±0.028	4589.701±4.673	346.54±4.85	4.6031±0.0639	272.7±4.1	2.589±0.019
1400	6.543±0.058	125.199±0.221	10.875±0.066	0.724±0.030	61.512±0.154	18.92±0.83	0.6143±0.0086	270.1±5.9	1.046±0.034
1600					LOST				

A14. Ar-Ar stepped heating data for lunar mare meteorite, **Miller Range 05035 (bulk-1)** (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP.
nd – not determined

Step (°C)	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>MIL05035 (bulk) sample wt 10.0 mg $J = 0.016404 \pm 0.000088$; $\alpha = 0.451 \pm 0.002$; $\beta = 4.169 \pm 0.062$</i>									
400	0.096±0.025	3.424±0.108	0.201±0.164	0.256±0.023	70.189±0.286	2.47±0.32	0.0083±0.0037	47.55±204.46	1.918±0.169
600	0.243±0.048	0.436±0.074	0.435±0.189	0.190±0.021	40.338±0.293	6.61±0.23	0.0142±0.0034	276.34±131.30	1.638±0.049
700	0.166±0.034	2.319±0.086	1.067±0.290	0.535±0.025	119.211±0.300	8.53±0.26	0.0056±0.0033	466.64±412.18	1.852±0.042
800	0.100±0.032	3.157±0.111	0.814±0.278	1.468±0.044	460.598±0.488	34.70±0.69	0.0117±0.0038	483.91±256.42	3.155±0.030
860	0.111±0.044	8.526±0.063	0.556±0.276	1.557±0.024	577.224±0.853	50.17±0.38	0.0278±0.0030	155.55±77.02	3.563±0.012
920	0.260±0.028	9.931±0.217	0.523±0.158	1.854±0.022	896.868±1.212	60.61±0.84	0.0487±0.0055	54.31±41.57	3.730±0.022
960	0.064±0.028	15.010±0.216	0.973±0.163	2.147±0.017	1142.000±1.604	24.89±0.49	0.0278±0.0040	46.37±49.45	3.877±0.032
1100	0.135±0.031	15.330±0.085	1.310±0.178	2.172±0.026	1056.575±0.737	14.94±0.29	0.1120±0.0059	21.05±14.47	3.625±0.031
1250	1.256±0.046	13.759±0.172	1.561±0.171	1.966±0.038	859.665±1.388	55.55±0.87	1.6983±0.0123	14.57±1.37	4.095±0.025
1350	0.616±0.055	31.313±0.055	3.285±0.246	2.840±0.034	1050.669±1.057	45.76±0.42	4.1817±0.0303	7.60±0.36	4.131±0.015
1500	0.461±0.062	25.737±0.057	2.446±0.249	1.384±0.017	401.379±0.430	44.59±0.52	3.3706±0.0245	2.95±0.54	4.228±0.019
1650	0.499±0.051	55.244±0.083	4.858±0.079	1.992±0.063	742.340±1.331	58.69±0.45	3.6419±0.0263	2.10±0.44	4.306±0.012
1800	0.706±0.054	47.541±0.091	4.349±0.087	1.556±0.034	491.596±0.214	21.01±0.35	1.1833±0.0090	1.55±1.47	4.269±0.028

A15. Ar-Ar stepped heating data for lunar mare meteorite, **Miller Range 05035 (bulk-2)** (1σ errors). Amounts are in $\times 10^{-11}$ cm³ STP. Measurements done at the Berkeley Geochronology Center. nd – not determined.

Step (A)	³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	K (ppm)	Ca (wt%)	Exposure age (Ma)	Age (Ga)
<i>MIL05035 (bulk) sample wt 3.85 mg $J = 0.0264489 \pm 0.000105$; $\alpha = 0.430 \pm 0.001$; $\beta = 5.5427 \pm 0.036$</i>									
0.57	nd	nd	nd	nd	0.308±0.012	nd	nd	nd	nd
0.61	nd	nd	nd	nd	0.298±0.015	nd	nd	nd	nd
0.70	0.001±0.0004	0.309±0.147	0.0005±0.0002	0.002±0.001	0.432±0.018	0.02689±0.00007	0.0010±0.0005	11.35±3291.01	3.498±0.554
0.74	0.004±0.0005	0.864±0.156	0.0239±0.004	0.054±0.001	13.600±0.021	0.74917±0.00009	0.0028±0.0005	235.88±1512.92	3.687±0.026
0.79	0.003±0.0004	1.208±0.161	0.0183±0.0003	0.090±0.001	25.061±0.028	1.26329±0.00009	0.0039±0.0005	129.91±1017.53	3.828±0.017
0.87	0.005±0.001	2.657±0.181	0.0652±0.005	0.380±0.001	110.496±0.141	5.3268±0.0001	0.0087±0.0006	213.26±584.87	3.899±0.008
0.96	0.009±0.001	2.614±0.159	0.0615±0.009	0.649±0.003	192.218±0.196	9.0930±0.0003	0.0085±0.0005	201.68±640.04	3.929±0.009
1.05	0.012±0.001	3.576±0.168	0.0702±0.012	0.954±0.004	279.827±0.259	13.3559±0.0004	0.0116±0.0006	167.34±522.90	3.915±0.009
1.13	0.006±0.001	4.183±0.176	0.0452±0.006	1.232±0.004	361.022±0.321	17.2434±0.0005	0.0136±0.0006	92.72±408.97	3.914±0.009
1.22	0.006±0.001	4.441±0.181	0.0247±0.006	1.538±0.005	441.769±0.391	21.5330±0.0005	0.0145±0.0006	46.58±375.88	3.881±0.008
1.31	0.002±0.001	4.778±0.217	0.0119±0.002	1.539±0.013	426.935±0.379	21.540±0.001	0.0156±0.0007	21.38±355.57	3.826±0.015
1.4	0.004±0.001	3.429±0.162	0.0072±0.004	1.093±0.004	307.440±0.305	15.2992±0.0004	0.0112±0.0005	16.39±458.12	3.848±0.009
1.48	0.001±0.001	2.109±0.168	0.0046±0.001	0.713±0.003	197.584±0.206	9.9808±0.0003	0.0069±0.0005	18.17±695.41	3.824±0.009
1.57	0.003±0.001	4.018±0.197	0.0069±0.003	1.012±0.004	280.385±0.273	14.1715±0.0004	0.0131±0.0006	13.79±380.25	3.823±0.009
1.66	0.003±0.001	4.900±0.213	0.0054±0.003	0.873±0.002	233.232±0.234	12.2184±0.0002	0.0160±0.0007	8.62±291.44	3.767±0.008
1.75	0.009±0.001	4.046±0.176	0.0065±0.009	0.765±0.003	205.599±0.227	10.7153±0.0003	0.0132±0.0006	10.43±363.31	3.775±0.009
1.92	0.004±0.001	7.160±0.200	0.0057±0.004	0.737±0.005	189.391±0.205	10.3170±0.0005	0.0233±0.0007	6.24±194.50	3.705±0.013