

Table S8. Argon isotopic data for 40Ar/39Ar age dating

F39	Laser Power [mW]	Volume [ccSTP]					Age [Ma]
		³⁶ Ar	³⁷ Ar	³⁸ Ar	³⁹ Ar	⁴⁰ Ar	
11UMT17A (mc35-a28a) Biotite (J=0.00393559) Total gas age = 26.77 ± 0.79 Ma (34.5352816667° N, 92.7533433333° E)							
0.001	100	0.160 ± 0.073	0.806 ± 0.213	0.505 ± 0.085	0.581 ± 0.091	48.744 ± 0.448	18.44 ± 261.17
0.001	150	0.019 ± 0.070	0.522 ± 0.215	0.451 ± 0.082	0.800 ± 0.094	34.574 ± 0.594	239.41 ± 163.64
0.002	200	0.079 ± 0.074	0.610 ± 0.253	0.399 ± 0.061	0.784 ± 0.076	26.840 ± 0.464	30.55 ± 195.40
0.003	250	0.041 ± 0.065	0.403 ± 0.220	0.535 ± 0.059	1.227 ± 0.093	26.755 ± 0.370	82.70 ± 106.05
0.005	300	0.097 ± 0.063	0.347 ± 0.210	0.866 ± 0.042	1.326 ± 0.095	42.027 ± 0.415	70.43 ± 96.75
0.007	400	0.068 ± 0.067	0.936 ± 0.265	1.717 ± 0.070	2.152 ± 0.100	33.847 ± 0.394	44.84 ± 64.21
0.010	500	0.089 ± 0.067	0.657 ± 0.272	2.344 ± 0.070	2.942 ± 0.082	49.369 ± 0.559	55.05 ± 46.11
0.014	600	-0.014 ± 0.069	0.759 ± 0.136	2.770 ± 0.080	3.774 ± 0.073	43.104 ± 0.739	86.50 ± 36.50
0.025	800	0.174 ± 0.073	1.533 ± 0.194	4.674 ± 0.103	11.160 ± 0.173	99.391 ± 0.645	30.18 ± 13.55
0.048	1000	0.366 ± 0.115	1.460 ± 0.193	4.479 ± 0.076	22.926 ± 0.110	163.687 ± 0.642	17.12 ± 10.46
0.083	1200	0.478 ± 0.109	1.433 ± 0.221	3.410 ± 0.088	35.552 ± 0.185	241.498 ± 0.784	19.94 ± 6.38
0.177	1600	1.239 ± 0.108	3.803 ± 0.233	5.403 ± 0.162	92.917 ± 0.304	686.727 ± 0.863	24.34 ± 2.40
0.305	2000	1.906 ± 0.118	4.416 ± 0.398	4.757 ± 0.147	127.862 ± 0.382	994.362 ± 1.658	23.78 ± 1.92
0.496	2600	1.339 ± 0.159	7.264 ± 0.374	5.494 ± 0.083	191.275 ± 0.343	1110.730 ± 1.090	26.34 ± 1.72
0.706	3200	0.860 ± 0.099	12.020 ± 0.394	5.638 ± 0.101	209.555 ± 0.468	1058.245 ± 1.328	27.04 ± 0.98
1.000	4000	1.607 ± 0.124	26.721 ± 0.579	8.434 ± 0.183	292.934 ± 0.428	1573.979 ± 1.661	26.45 ± 0.87
11UMT17A (mc35-a28b) Biotite (J=0.00393559) Total gas age = 26.248 ± 0.272 Ma (34.5352816667° N, 92.7533433333° E)							
0.002	200	1.336 ± 0.078	3.744 ± 0.246	2.262 ± 0.081	5.315 ± 0.125	401.392 ± 1.182	8.69 ± 30.68
0.007	400	0.584 ± 0.075	3.262 ± 0.230	3.241 ± 0.104	13.191 ± 0.137	198.980 ± 1.201	14.23 ± 11.92
0.025	600	1.038 ± 0.073	9.389 ± 0.377	3.396 ± 0.115	43.009 ± 0.289	418.854 ± 1.073	18.43 ± 3.54
0.064	800	0.725 ± 0.098	3.686 ± 0.199	3.807 ± 0.096	99.143 ± 0.331	630.881 ± 1.916	29.60 ± 2.06
0.122	1000	0.807 ± 0.089	2.944 ± 0.207	4.267 ± 0.117	144.175 ± 0.526	769.212 ± 1.170	25.96 ± 1.29
0.186	1200	0.841 ± 0.115	2.459 ± 0.296	4.327 ± 0.115	159.525 ± 0.517	837.408 ± 1.104	26.03 ± 1.49
0.308	1600	1.831 ± 0.095	6.680 ± 0.486	7.498 ± 0.145	304.239 ± 0.986	1680.433 ± 1.147	26.40 ± 0.66
0.464	2000	1.380 ± 0.090	9.448 ± 0.299	9.717 ± 0.198	387.251 ± 0.960	1839.557 ± 3.099	26.06 ± 0.49
0.596	2400	0.866 ± 0.097	10.050 ± 0.251	7.867 ± 0.189	330.281 ± 0.786	1525.982 ± 2.322	27.10 ± 0.62
0.746	2800	0.918 ± 0.074	28.255 ± 0.586	9.786 ± 0.100	374.346 ± 0.710	1678.680 ± 3.981	26.50 ± 0.42
0.891	3200	0.910 ± 0.095	22.454 ± 0.283	8.512 ± 0.163	359.393 ± 0.703	1631.781 ± 2.084	26.73 ± 0.55
0.957	3600	0.472 ± 0.075	6.594 ± 0.382	4.028 ± 0.095	164.550 ± 0.363	745.100 ± 1.605	25.94 ± 0.95
1.000	4000	0.597 ± 0.086	11.395 ± 0.236	2.881 ± 0.114	108.103 ± 0.178	558.972 ± 0.889	24.96 ± 1.64
11UMT17B (mc35-a29a) Biotite (J=0.00393655) Total gas age = 25.757 ± 0.57 Ma (34.5352816667° N, 92.7533433333° E)							
0.001	100	0.172 ± 0.107	0.977 ± 0.174	0.607 ± 0.086	1.036 ± 0.076	88.589 ± 0.899	241.79 ± 190.41
0.002	150	0.151 ± 0.105	0.331 ± 0.225	0.730 ± 0.039	0.814 ± 0.057	56.381 ± 0.872	99.89 ± 256.90
0.002	200	0.315 ± 0.100	0.576 ± 0.274	1.165 ± 0.051	0.846 ± 0.097	62.100 ± 0.683	-280.94 ± 291.40
0.003	250	0.057 ± 0.103	0.233 ± 0.191	1.435 ± 0.095	1.123 ± 0.049	44.077 ± 0.694	164.61 ± 175.55
0.004	300	0.366 ± 0.074	0.716 ± 0.219	1.617 ± 0.085	1.234 ± 0.077	64.411 ± 0.788	-271.30 ± 148.33
0.007	400	0.348 ± 0.066	1.025 ± 0.237	3.039 ± 0.102	3.017 ± 0.083	81.315 ± 0.847	-51.65 ± 47.08
0.011	500	0.239 ± 0.071	1.511 ± 0.252	4.005 ± 0.134	5.302 ± 0.177	77.810 ± 0.658	9.69 ± 28.00
0.018	600	0.166 ± 0.061	1.226 ± 0.318	4.461 ± 0.113	8.674 ± 0.123	71.235 ± 0.812	18.00 ± 14.70
0.043	800	0.465 ± 0.084	2.202 ± 0.270	8.565 ± 0.115	29.289 ± 0.343	191.855 ± 0.973	13.18 ± 6.01
0.096	1000	0.300 ± 0.074	2.782 ± 0.311	13.057 ± 0.217	64.926 ± 0.160	363.717 ± 1.310	29.84 ± 2.36
0.169	1200	0.350 ± 0.052	3.171 ± 0.270	14.266 ± 0.245	87.860 ± 0.309	456.970 ± 0.708	28.36 ± 1.23
0.345	1600	1.016 ± 0.063	8.032 ± 0.377	28.077 ± 0.178	212.491 ± 0.668	1094.207 ± 1.592	26.34 ± 0.62
0.498	2000	0.689 ± 0.070	15.632 ± 0.356	19.299 ± 0.224	184.531 ± 0.741	908.299 ± 0.697	26.92 ± 0.79
0.665	2600	0.529 ± 0.068	26.307 ± 0.349	12.948 ± 0.122	201.264 ± 0.403	951.965 ± 1.158	27.86 ± 0.70
0.844	3200	0.730 ± 0.082	20.006 ± 0.569	8.921 ± 0.249	215.557 ± 0.685	978.118 ± 4.229	24.94 ± 0.80
1.000	4000	0.754 ± 0.107	22.466 ± 0.542	6.485 ± 0.174	188.221 ± 0.694	878.969 ± 2.063	24.59 ± 1.19

Table S8 continued. Argon isotopic data for $^{40}\text{Ar}/^{39}\text{Ar}$ age dating

F39	Laser Power [mW]	Volume [ccSTP]					Age [Ma]
		^{36}Ar	^{37}Ar	^{38}Ar	^{39}Ar	^{40}Ar	
11UMT17B (mc35-a29b) Biotite (J=0.00393655) Total gas age = 27.369 ± 0.104 Ma (34.5352816667° N, 92.7533433333° E)							
0.003	200	5.171 ± 0.125	28.970 ± 0.555	20.786 ± 0.090	31.554 ± 0.197	1510.368 ± 1.447	-3.96 ± 8.37
0.011	400	3.750 ± 0.120	51.124 ± 0.771	59.960 ± 0.303	65.250 ± 0.394	1378.777 ± 1.621	29.23 ± 3.80
0.033	600	4.084 ± 0.086	51.585 ± 0.523	89.829 ± 0.487	199.435 ± 0.890	2003.148 ± 2.486	28.14 ± 0.90
0.080	800	4.782 ± 0.115	60.542 ± 0.559	100.054 ± 0.391	431.948 ± 1.199	3153.996 ± 2.412	28.40 ± 0.56
0.152	1000	6.363 ± 0.131	31.336 ± 0.320	96.934 ± 0.325	650.436 ± 0.906	4420.776 ± 2.671	27.53 ± 0.42
0.237	1200	5.583 ± 0.077	30.863 ± 0.421	81.036 ± 0.262	781.139 ± 1.427	4682.364 ± 5.312	27.36 ± 0.22
0.313	1600	4.162 ± 0.115	79.207 ± 0.740	28.762 ± 0.282	690.700 ± 1.290	4016.783 ± 3.039	28.43 ± 0.35
0.681	2400	14.582 ± 0.158	539.349 ± 0.945	188.640 ± 0.493	3345.978 ± 2.615	17320.046 ± 14.154	27.41 ± 0.10
0.873	2800	4.804 ± 0.099	433.832 ± 1.157	66.260 ± 0.421	1743.262 ± 1.968	8162.424 ± 6.695	27.26 ± 0.13
0.926	3200	0.806 ± 0.082	105.497 ± 0.812	17.837 ± 0.218	486.661 ± 1.112	2104.898 ± 2.854	27.04 ± 0.36
0.975	3600	0.806 ± 0.086	134.216 ± 0.988	12.509 ± 0.219	444.537 ± 0.926	1910.244 ± 3.361	26.52 ± 0.41
1.000	4000	0.243 ± 0.094	47.890 ± 0.603	5.460 ± 0.135	226.288 ± 0.553	954.185 ± 3.005	27.49 ± 0.87
12FGS10 (mc40-r0a) Biotite (J=0.00236596) Total gas age = 33.482 ± 0.254 Ma (34.3995° N, 92.068583° E)							
0.001	200	2.563 ± 0.116	0.480 ± 0.114	0.967 ± 0.084	3.065 ± 0.087	750.365 ± 1.143	-9.72 ± 48.20
0.011	400	1.434 ± 0.098	0.545 ± 0.170	4.285 ± 0.087	29.720 ± 0.259	662.740 ± 0.907	34.01 ± 4.09
0.043	600	1.128 ± 0.122	0.512 ± 0.171	12.445 ± 0.184	93.280 ± 0.220	1022.656 ± 1.550	31.27 ± 1.63
0.083	800	0.850 ± 0.117	0.487 ± 0.332	15.368 ± 0.172	115.088 ± 0.584	1108.927 ± 1.343	31.53 ± 1.27
0.142	1000	0.631 ± 0.116	0.393 ± 0.124	23.551 ± 0.166	174.785 ± 0.711	1549.381 ± 2.050	32.98 ± 0.84
0.233	1200	0.545 ± 0.122	0.669 ± 0.250	34.793 ± 0.255	263.046 ± 0.702	2231.719 ± 2.248	33.29 ± 0.58
0.369	1600	0.505 ± 0.072	0.877 ± 0.271	52.353 ± 0.249	397.836 ± 0.800	3482.546 ± 3.456	35.41 ± 0.24
0.450	2000	0.181 ± 0.070	0.895 ± 0.281	32.198 ± 0.194	236.721 ± 0.605	1933.819 ± 2.062	33.59 ± 0.38
0.541	2400	0.174 ± 0.074	3.482 ± 0.280	36.104 ± 0.241	266.732 ± 0.569	2158.516 ± 1.885	33.41 ± 0.35
0.764	2800	0.410 ± 0.101	48.929 ± 0.379	91.056 ± 0.466	651.543 ± 0.627	5292.526 ± 4.953	33.56 ± 0.20
0.910	3200	0.297 ± 0.058	2.272 ± 0.330	55.523 ± 0.319	423.666 ± 1.446	3429.351 ± 2.821	33.36 ± 0.21
0.987	3600	0.230 ± 0.057	0.318 ± 0.176	29.587 ± 0.224	225.279 ± 1.106	1853.454 ± 2.336	33.52 ± 0.36
1.000	4000	0.211 ± 0.090	-0.044 ± 0.188	4.835 ± 0.121	38.884 ± 0.317	346.201 ± 1.236	30.90 ± 2.88
12FGS10 (mc40-r0b) Biotite (J=0.00236596) Total gas age = 33.69 ± 0.27 Ma (34.3995° N, 92.068583° E)							
0.003	200	1.649 ± 0.056	0.703 ± 0.267	1.149 ± 0.071	6.545 ± 0.087	544.634 ± 1.280	37.00 ± 10.65
0.034	400	1.178 ± 0.075	0.919 ± 0.185	8.068 ± 0.129	59.951 ± 0.464	840.500 ± 1.750	34.72 ± 1.58
0.091	600	0.868 ± 0.058	0.256 ± 0.170	15.512 ± 0.166	112.880 ± 0.354	1135.400 ± 1.157	32.93 ± 0.64
0.165	800	0.576 ± 0.046	0.262 ± 0.185	19.831 ± 0.242	145.345 ± 0.415	1306.937 ± 2.019	33.08 ± 0.41
0.268	1000	0.506 ± 0.073	0.009 ± 0.238	27.262 ± 0.268	202.817 ± 0.780	1767.704 ± 1.898	33.74 ± 0.47
0.400	1200	0.499 ± 0.105	-0.177 ± 0.274	35.343 ± 0.310	261.430 ± 0.399	2221.416 ± 2.266	33.55 ± 0.50
0.697	1600	0.969 ± 0.057	0.680 ± 0.261	78.804 ± 0.345	584.039 ± 1.665	4911.841 ± 6.483	33.49 ± 0.16
0.879	2000	0.440 ± 0.069	5.247 ± 0.340	48.742 ± 0.273	359.294 ± 1.026	2970.701 ± 2.410	33.44 ± 0.26
0.940	2400	0.193 ± 0.100	1.816 ± 0.275	16.417 ± 0.113	119.733 ± 0.452	999.325 ± 1.210	33.28 ± 1.04
0.973	2800	0.065 ± 0.073	1.010 ± 0.247	8.900 ± 0.132	64.030 ± 0.250	544.535 ± 0.676	34.69 ± 1.41
0.979	3200	-0.056 ± 0.071	-0.121 ± 0.129	1.648 ± 0.079	12.502 ± 0.090	100.508 ± 1.034	39.50 ± 7.00
0.996	3600	-0.136 ± 0.100	-0.001 ± 0.170	4.809 ± 0.070	34.632 ± 0.332	282.636 ± 1.076	39.35 ± 3.58
1.000	4000	-0.042 ± 0.065	-0.115 ± 0.148	0.802 ± 0.055	6.897 ± 0.164	52.292 ± 0.713	39.60 ± 11.60