Data Repository item 2005023

Table DR1. Ar-Ar isotopic data for samples from the Forth metamorphic complex

Temp.* (˚C)	^{36}Ar (mol)	^{37}Ar (mol)	^{39}Ar (mol)	^{40}Ar (mol)	^{40}Ar* (%)	^{40}Ar*/^{39}Ar$_k$	Cumulative ^{39}Ar (%)	Calculated age** (Ma)	Error in age (± 1 s.d.)
U1 muscovite: J = 0.01188									
600	1.89E-16	3.63E-16	6.22E-15	2.21E-13	74.7	26.51	1.92	496.4	6.8
700	1.17E-16	1.01E-15	2.04E-14	6.00E-13	94.2	27.78	8.21	517.1	0.7
750	4.73E-17	5.48E-16	3.04E-14	8.40E-13	98.3	27.16	17.6	507.1	1.0
780	1.27E-17	4.12E-18	4.08E-14	1.12E-12	99.6	27.32	30.2	509.7	2.4
810	3.23E-17	8.89E-17	5.87E-14	1.61E-12	99.3	27.18	48.32	507.5	1.5
840	1.91E-17	3.81E-16	5.68E-14	1.55E-12	99.6	27.19	65.86	507.6	1.5
870	3.02E-18	4.12E-18	3.14E-14	8.61E-13	99.8	27.34	75.56	510.0	2.2
900	1.99E-17	5.85E-17	2.81E-14	7.68E-13	99.2	27.13	84.23	506.6	1.1
1000	1.75E-17	3.30E-16	2.47E-14	6.72E-13	99.2	27.04	91.85	505.1	1.4
1050	3.34E-17	4.72E-16	1.80E-14	4.65E-13	97.8	25.30	97.39	476.6	2.2
1100	5.56E-18	3.12E-17	3.07E-15	8.45E-14	98	26.96	98.34	503.2	2.3
1150	4.70E-18	9.79E-18	1.76E-15	4.87E-14	97.1	26.92	98.88	503.2	2.0
1450	3.16E-17	1.19E-16	3.62E-15	1.12E-13	91.6	28.48	100	528.5	2.5
Total	5.33E-16	3.42E-15	3.24E-13	8.95E-12		27.13		506.6	1.7
U2 muscovite; J = 0.01238									
450	3.53E-17	3.54E-15	1.96E-15	3.14E-14	68	10.98	0.15	231.3	2.9
500	1.25E-17	3.18E-17	1.51E-15	3.32E-14	88.8	19.45	0.27	391.5	1.8
550	2.36E-17	2.14E-15	2.67E-15	7.60E-14	91.1	26.03	0.47	506.9	3.0
600	3.67E-17	6.88E-15	6.14E-15	1.85E-13	94.5	28.47	0.95	547.8	4.6
650	3.59E-17	1.87E-14	9.42E-15	2.77E-13	96.9	28.67	1.67	551.1	5.5
700	1.00E-16	9.13E-14	1.96E-14	5.77E-13	96.7	28.82	3.17	553.5	3.4
750	8.30E-17	6.78E-14	4.92E-14	1.34E-12	98.7	27.05	6.97	524.1	1.6
800	1.24E-16	2.12E-15	1.04E-13	2.74E-12	98.6	25.95	15.05	505.5	1.7
850	1.50E-16	3.24E-15	3.91E-13	1.02E-11	99.5	25.99	45.33	506.2	0.9
900	8.29E-17	3.12E-13	1.81E-13	4.76E-12	100.2	26.54	59.25	515.5	3.9
950	1.29E-16	2.16E-15	1.41E-13	3.68E-12	98.9	25.79	70.18	502.8	2.1
1050	2.59E-16	1.34E-12	2.00E-13	5.21E-12	101.5	26.96	85.37	522.6	2.0
1450	1.04E-15	1.37E-12	1.92E-13	4.99E-12	97	25.65	100	500.3	5.4
Total	2.11E-15	3.22E-12	1.30E-12	3.41E-11		26.22		510.1	2.4
U3 muscovite; J = 0.001990									
550	3.44E-16	1.38E-18	2.71E-15	3.63E-13	72.5	97.2	3.8	321.3	2.2
650	2.15E-16	5.10E-18	4.38E-15	8.33E-13	92.5	176.0	10.0	545.7	2.7
700	3.67E-17	5.28E-18	4.44E-15	8.02E-13	98.8	178.7	16.3	552.9	2.7
750	1.77E-17	5.94E-18	5.42E-15	9.49E-13	99.5	174.5	24.0	541.7	2.6
780	1.54E-17	4.80E-18	5.04E-15	8.59E-13	99.6	169.9	31.1	529.2	2.6
810	1.31E-17	6.00E-18	6.14E-15	1.03E-12	99.7	167.7	39.8	523.2	2.6
840	1.21E-17	4.80E-18	7.50E-15	1.25E-12	99.8	166.5	50.4	520.0	2.5
870	1.12E-17	4.08E-18	7.69E-15	1.28E-12	99.8	166.3	61.3	519.4	2.5
900	1.54E-17	3.72E-18	6.90E-15	1.16E-12	99.7	167.2	71.1	521.8	2.5
950	1.01E-17	4.68E-18	4.91E-15	8.24E-13	99.7	167.3	78.1	522.3	2.5
975	1.28E-17	2.58E-18	6.18E-15	1.04E-12	99.7	167.7	86.9	523.1	2.6
1000	9.36E-18	3.60E-18	4.47E-15	7.49E-13	99.8	167.2	93.2	521.9	2.6
1025	5.82E-18	1.14E-18	2.73E-15	4.54E-13	99.8	166.3	97.1	519.4	2.5
1100	6.54E-18	2.04E-18	1.02E-15	1.72E-13	99.5	167.0	98.5	521.4	2.5
1400	1.28E-17	2.16E-18	1.07E-15	1.85E-13	98.7	170.5	100	530.8	2.6
Total	7.25E-16	5.51E-17	6.95E-14	1.18E-11				519.5	2.7
U4 muscovite, J=0.001983									
530	4.24E-17	1.44E-18	2.62E-16	5.22E-14	94.5	149.3	2.3	471.3	2.4
600	6.42E-18	1.44E-18	4.82E-16	7.54E-14	98.9	153.0	6.5	481.4	2.6
650	1.13E-17	1.44E-18	5.18E-16	8.65E-14	97.4	161.2	11.0	503.9	2.5
700	7.98E-18	1.62E-18	7.03E-16	1.19E-13	98.9	166.2	17.1	517.5	2.6
750	4.14E-18	1.86E-18	9.54E-16	1.59E-13	99.9	165.7	25.4	516.3	2.5
780	4.14E-18	1.50E-18	8.08E-16	1.34E-13	99.9	164.6	32.4	513.1	2.5
810	3.42E-18	1.92E-18	8.03E-16	1.32E-13	100.0	163.0	39.4	508.8	2.5
830	3.60E-18	1.92E-18	6.95E-16	1.14E-13	100.0	162.6	45.4	507.8	2.5
850	3.42E-18	1.74E-18	6.56E-16	1.07E-13	100.0	162.3	51.1	507.0	2.5
870	3.06E-18	1.80E-18	6.07E-16	9.97E-14	100.0	162.9	56.4	508.7	2.5
900	3.30E-18	1.44E-18	6.54E-16	1.08E-13	100.0	164.1	62.1	511.8	2.5
950	3.60E-18	1.68E-18	1.01E-15	1.66E-13	100.0	163.3	70.9	509.6	2.5
1050	4.92E-18	1.20E-18	2.63E-15	4.30E-13	99.9	163.1	93.7	509.1	2.5
1200	5.70E-18	1.80E-18	6.89E-16	1.13E-13	99.6	161.8	99.7	505.7	2.5
1400	1.16E-17	1.80E-18	4.99E-17	1.93E-14	88.7	320.9	100	894.9	4.1
Total	1.07E-16	2.28E-17	1.15E-14	1.89E-12				509.7	2.5
U5 muscovite; J = 0.01241									
20*	1.00E-20	4.90E-19	2.83E-17	2.01E-15	99.8	71.11	0.08	1147.8	6.9
30	6.86E-18	4.90E-19	5.49E-17	3.05E-15	33.6	18.68	0.24	378.7	54.4
40	6.70E-18	4.90E-19	1.03E-16	4.27E-15	53.7	22.19	0.54	441.9	24.4
50	1.00E-20	4.90E-19	2.22E-16	8.10E-15	99.9	36.39	1.18	676.6	4.9
60	7.22E-18	6.87E-17	5.78E-16	1.71E-14	87.5	25.87	2.85	505.7	5.3
70	6.42E-18	2.60E-17	8.69E-16	2.48E-14	92.3	26.28	5.36	512.6	3.9
80	7.27E-18	7.73E-17	2.07E-15	5.65E-14	96.2	26.21	11.34	511.6	2.0
90	9.04E-18	1.90E-16	4.09E-15	1.10E-13	97.5	26.21	23.14	511.5	2.1
100	4.55E-18	5.52E-17	3.77E-15	1.00E-13	98.6	26.17	34.03	510.9	1.1
110	1.47E-17	3.84E-16	8.86E-15	2.34E-13	98.1	25.88	59.6	505.9	1.4
120	3.37E-18	8.92E-17	1.82E-15	4.79E-14	97.9	25.80	64.85	504.5	2.5
150	8.73E-18	1.56E-17	5.31E-15	1.40E-13	98.1	25.83	80.2	505.0	1.2
180	5.24E-18	1.25E-16	3.60E-15	9.47E-14	98.3	25.89	90.58	506.0	1.2
700	7.07E-18	1.87E-16	3.26E-15	8.86E-14	97.6	26.52	100	516.7	1.9
Total	8.72E-17	1.22E-15	3.46E-14	9.30E-13		26.11		509.8	1.8

Temp. (˚C)	^{36}Ar (mol)	^{37}Ar (mol)	^{39}Ar (mol)	^{40}Ar (mol)	$^{40}Ar^*$ (%)	$^{40}Ar^*/^{39}Ar_k$	Cumulative ^{39}Ar (%)	Calculated age (Ma)	Error in age (± 1 s.d.)
U6 muscovite; J = 0.002002									
650	8.00E-17	9.60E-19	2.27E-15	3.69E-13	93.9	152.7	4.1	484.72	2.4
700	5.82E-18	1.02E-18	2.73E-15	4.43E-13	99.8	162.2	9.0	510.96	2.5
750	7.98E-18	4.62E-18	3.96E-15	6.39E-13	99.8	160.9	16.2	507.39	2.5
800	9.54E-18	5.46E-18	4.72E-15	7.61E-13	99.8	160.9	24.7	507.26	2.5
830	9.36E-18	4.92E-18	3.95E-15	6.36E-13	99.7	160.5	31.8	506.30	2.5
860	1.07E-17	2.88E-18	4.07E-15	6.56E-13	99.7	160.8	39.1	507.00	2.6
880	9.18E-18	3.90E-18	3.80E-15	6.14E-13	99.7	161.2	46.0	508.10	2.5
895	7.98E-18	4.44E-18	3.27E-15	5.30E-13	99.7	161.5	51.9	508.95	2.5
910	6.36E-18	1.44E-18	3.13E-15	5.07E-13	99.8	161.6	57.6	509.34	2.5
930	9.06E-18	4.07E-18	3.29E-15	5.33E-13	99.7	161.3	63.5	508.40	2.5
955	8.70E-18	3.42E-18	3.86E-15	6.23E-13	99.7	161.1	70.5	507.97	2.5
1000	1.31E-17	4.80E-18	6.34E-15	1.02E-12	99.7	161.1	81.9	507.88	2.5
1050	8.88E-18	2.88E-18	6.60E-15	1.07E-12	99.8	162.1	93.8	510.68	2.5
1200	5.76E-18	1.80E-18	1.81E-15	2.95E-13	99.8	162.6	97.1	512.16	2.5
1400	7.80E-18	1.26E-18	1.55E-15	2.56E-13	99.6	163.5	100	514.43	2.5
Total	1.92E-16	4.66E-17	5.38E-14	8.70E-12				507.68	2.6
U7 muscovite; J = 0.01241									
20*	3.53E-18	3.48E-17	4.44E-16	5.06E-15	79.3	9.03	0.2	192.8	7.7
30	5.12E-18	1.15E-17	1.31E-15	2.38E-14	93.6	17.04	0.78	348.2	1.5
40	1.95E-18	5.52E-19	1.93E-15	4.58E-14	98.7	23.36	1.63	461.8	1.4
50	5.78E-18	1.50E-16	6.29E-15	1.63E-13	98.9	25.55	4.42	499.7	1.8
60	4.76E-18	6.13E-16	9.32E-15	2.48E-13	99.4	26.44	8.55	514.8	1.1
70	1.40E-18	9.56E-16	2.48E-14	6.65E-13	99.9	26.80	19.54	521.0	1.3
80	2.32E-18	1.40E-16	1.47E-14	3.95E-13	99.8	26.75	26.06	520.0	2.2
90	1.23E-17	7.96E-16	2.10E-14	5.66E-13	99.3	26.76	35.38	520.2	2.1
100	1.58E-17	9.65E-16	3.37E-14	9.10E-13	99.4	26.82	50.33	521.4	1.3
110	5.92E-18	6.42E-16	2.15E-14	5.81E-13	99.7	26.95	59.85	523.4	1.3
130	8.06E-18	6.85E-16	3.08E-14	8.43E-13	99.7	27.29	73.49	529.2	2.0
150	3.88E-17	1.19E-14	5.04E-14	1.37E-12	99.2	27.05	95.82	525.1	1.5
170	2.18E-19	2.65E-16	5.26E-15	1.48E-13	99.9	28.06	98.15	542.1	1.8
700	5.80E-18	4.31E-17	4.17E-15	1.17E-13	98.5	27.69	100	535.9	2.6
Total	1.12E-16	1.72E-14	2.26E-13	6.08E-12		26.81		521.0	1.6

*Samples heated by laser step heating with laser power in W x 100

**Ages for samples U1, U2, U5, and U7 calculated with GA1550 at 98.5 Ma, and include error in J.
Ages for samples U3, U4, and U6 calculated with FCT at 28.1 Ma, and include error in J.