

Data Repository Item C – $^{40}\text{Ar}/^{39}\text{Ar}$ analytical methods and results from volcanic and intrusive rocks and detrital amphiboles.

⁴⁰Ar/³⁹Ar Analysis Methods

For ⁴⁰Ar/³⁹Ar analysis, 5 lava, 2 intrusion, one feldspar dike, and a detrital hornblende rich sandstone sample were submitted to the Geochronology laboratory at UAF where they it crushed, sieved, washed and hand-picked for pure feldspar and hornblende mineral phase separates and phenocryst free ground mass (whole rock) chips (~500 microns). The monitor mineral MMhb-1 (Samson and Alexander, 1987) with an age of 523.5 Ma (Renne et al., 1994) was used to monitor neutron flux (and calculate the irradiation parameter, J). The samples and standards were wrapped in aluminum foil and loaded into aluminum cans of 2.5 cm diameter and 6 cm height. The samples were irradiated in position 5c of the uranium enriched research reactor of McMaster University in Hamilton, Ontario, Canada for 20 megawatt-hours.

Upon their return from the reactor, the sample and monitors were loaded into 2 mm diameter holes in a copper tray that was then loaded in an ultra-high vacuum extraction line. The monitors were fused, and samples heated, using a 6-watt argon-ion laser following the technique described in York et al. (1981), Layer et al. (1987) and Layer (2000). Argon purification was achieved using a liquid nitrogen cold trap and a SAES Zr-Al getter at 400C. The samples were analyzed in a VG-3600 mass spectrometer at the Geophysical Institute, University of Alaska Fairbanks. The lava, intrusion, and feldspar dike samples were step-heated via incremental heating (e.g. Benowitz et al., 2014). The detrital hornblende grains from the sandstone sample were analyzed using the single grain fusion technique (e.g. Broussard et al., 2018). The argon isotopes measured were corrected for system blank and mass discrimination, as well as calcium, potassium and chlorine interference reactions following procedures outlined in McDougall and Harrison (1999). Typical full-system 8 min laser blank values (in moles) were generally 2×10^{-16} mol ⁴⁰Ar, 3×10^{-16} mol ³⁹Ar, 9×10^{-18} mol ³⁸Ar and 2×10^{-18} mol ³⁶Ar, which are 10–50 times smaller than the sample/standard volume fractions. Correction factors for nucleogenic interferences during irradiation were determined from irradiated CaF₂ and K₂SO₄ as follows: (³⁹Ar/³⁷Ar)Ca = 7.06×10^{-4} , (³⁶Ar/³⁷Ar)Ca = 2.79×10^{-4} and (⁴⁰Ar/³⁹Ar)K = 0.0297. Mass discrimination was monitored by running calibrated air shots. The mass discrimination during these experiments was 1.3 % per mass unit. While doing our experiments, calibration measurements were made on a weekly to monthly basis to check for changes in mass discrimination with no significant variation seen during these intervals.

A summary of all the ⁴⁰Ar/³⁹Ar results is given in Table 1, with all ages quoted to the ± 1 sigma level and calculated using the constants of Renne et al. (2010). The integrated age is the age given by the total gas measured and is equivalent to a potassium-argon (K-Ar) age. The spectrum provides a plateau age if three or more consecutive gas fractions represent at least 50% of the total gas release and are within two standard deviations of each other (Mean Square Weighted Deviation less than or equal to 2.5).

Benowitz, J., Layer, P. W., VanLaningham, S., 2014, Persistent Long-Term (~24 Ma) Exhumation in the Eastern Alaska Range Constrained by Stacked Thermochronology, Geological Society of London Special Volume, ⁴⁰Ar/³⁹Ar Dating: from Geochronology to Thermochronology, from Archaeology to Planetary Sciences.

- Broussard, D. R., Trop, J. M., Benowitz, J. A., Daeschler, E. B., Chamberlain Jr, J. A. and Chamberlain, R.B., 2018, Depositional setting, taphonomy and geochronology of new fossil sites in the Catskill Formation (Upper Devonian) of north-central Pennsylvania, USA, including a new early tetrapod Fossil: *Palaeogeography, Palaeoclimatology, Palaeoecology*, 511, 168-187.
- Layer, P. W., Hall, C. M. and York, D., 1987, The derivation of $^{40}\text{Ar}/^{39}\text{Ar}$ age spectra of single grains of hornblende and biotite by laser step heating, *Geophys. Res. Lett.*, 14, 757-760.
- McDougall, I. and Harrison, T. M., 1999, *Geochronology and Thermochronology by the $^{40}\text{Ar}/^{39}\text{Ar}$ method*-2nd ed, Oxford University Press, New York, 269 pp.
- Renne, P. R., Mundil, R., Balco, G., Min, K., and Ludwig, K. R., 2010. Joint determination of 40K decay constants and $^{40}\text{Ar}^*/^{40}\text{K}$ for the Fish Canyon sanidine standard, and improved accuracy for $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology. *Geochimica et Cosmochimica Acta*, 74(18), 5349.
- Renne, P. R., Deino, A. L., Walter, R. C., Turrin, B. D., Swisher, C. C., Becker, T. A., Curtis, G.H., Sharp. W.D., and Jaouni, A. R., 1994, Intercalibration of astronomical and radioisotopic time. *Geology*, 22(9), 783-786.
- Samson S. D., and Alexander E. C., 1987, Calibration of the interlaboratory $^{40}\text{Ar}/^{39}\text{Ar}$ dating standard, MMhb1. *Chem. Geol.* 66, 27-34.
- Steiger, R.H. and Jaeger, E., 1977, Subcommittee on geochronology: Convention on the use of decay constants in geo and cosmochronology, *Earth and Planet Science Letters*, 36, 359-362.
- York, D., Hall, C.M., Yanase, Y., Hanes, J.A. and Kenyon, W.J., 1981, $^{40}\text{Ar}/^{39}\text{Ar}$ dating of terrestrial minerals with a continuous laser, *Geophys. Res. Lett.*, 8, 1136-1138.

Data Repository Item DRB - ⁴⁰Ar/³⁹Ar laser step=heat data for lavas, intrusions, and detrital amphiboles

Whole-rock lava sample CH1-1232 at Bonanza Creek

CH1-1232 HO#L1

Weighted average of J from standards = 2.516e-03 +/- 2.817e-05

Laser Power (mW)	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)
250	0.0014	277.51065	40.48584	3.17329	0.53386	1.35168	0.24952	143.85163	16.48534	5.83563	0.98397	0.11504	0.0428	-121.9533	49.02968	-660.36	320.71
500	0.0039	303.94886	22.30694	12.78267	0.95233	1.18835	0.10967	115.19641	6.6083	23.66809	1.77938	0.08461	0.01755	-46.60558	20.50194	-224.77	105.31
750	0.0062	266.96265	29.72735	38.21665	4.25962	1.2245	0.15522	134.37367	8.28277	72.06733	8.25543	0.1209	0.02309	-94.3	25.10887	-488.06	149.26
1000	0.0085	153.15424	11.56522	54.68501	4.1373	0.72897	0.08927	137.73245	13.5738	104.37017	8.21352	0.07099	0.01494	-60.09906	22.12351	-295.44	118.18
1250	0.0106	165.54944	14.20005	8.57005	0.76169	0.85035	0.11929	151.3841	16.85872	15.82062	1.41467	0.08812	0.0213	-85.56881	29.02513	-436.9	167.71
1500	0.0151	68.78646	2.64701	8.0493	0.31493	0.29671	0.05284	126.55518	22.18085	14.8538	0.58448	0.12997	0.00908	-18.36291	15.35353	-85.24	72.99
1750	0.0302	48.04363	0.81497	7.91322	0.13866	0.06334	0.0131	37.62081	8.03801	14.60127	0.2573	0.14383	0.00354	30.11912	3.91617	131.64	16.51
2000	0.1158	27.93945	0.0962	7.3386	0.02735	0.00156	0.00223	-0.51317	2.36454	13.53547	0.0507	0.13406	0.00079	28.19928	0.67053	123.53	2.84
2500	0.331	27.87916	0.08655	7.48949	0.02426	0.0047	0.00062	2.76679	0.66055	13.81525	0.04499	0.12152	0.00056	27.22307	0.20359	119.39	0.86
3000	0.7082	28.41416	0.06624	7.86321	0.0188	0.00751	0.00059	5.53629	0.61296	14.50847	0.03489	0.09936	0.00038	26.96289	0.18608	118.28	0.79
3500	0.8509	28.15247	0.1236	7.884	0.04101	0.0078	0.00092	5.88278	0.9697	14.54705	0.0761	0.13131	0.00075	26.61672	0.29876	116.81	1.27
4000	0.9422	28.88268	0.16434	8.59576	0.0518	0.00814	0.00268	5.87601	2.74597	15.86836	0.09621	0.15405	0.00113	27.32361	0.81288	119.81	3.45
5000	0.973	30.24011	0.40737	8.96844	0.13113	0.00992	0.00603	7.25728	5.90155	16.56074	0.24367	0.15279	0.00267	28.19672	1.83557	123.51	7.77
9000	1	36.01108	0.47064	8.91536	0.12352	0.02914	0.00537	21.88713	4.39982	16.46211	0.22953	0.17072	0.00252	28.28432	1.6411	123.89	6.95
Integrated		31.18775	0.05058	8.05874	0.01383	0.02047	0.00071	17.28514	0.67188	14.87131	0.02566	0.12098	0.0003	25.92	0.21495	113.85	1.54

Whole-rock lava sample CH1-1438 at Bonanza Creek

CH1-1438 WR#L1

Weighted average of J from standards = 2.516e-03 +/- 2.817e-05

Laser Power (mW)	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)
300	0.017	116.63042	1.07884	3.04818	0.03643	0.34128	0.00573	86.27485	1.28864	5.60506	0.06713	0.01198	0.00135	16.03816	1.52671	71.29	6.65
600	0.0796	63.74842	0.26131	3.05069	0.01535	0.11545	0.00156	53.14778	0.69786	5.60969	0.02828	0.0038	0.00023	29.91812	0.46702	130.79	1.97
900	0.2175	58.70877	0.14262	3.75515	0.01004	0.09268	0.00088	46.1453	0.42865	6.90851	0.01853	0.00112	0.00021	31.6855	0.26418	138.23	1.11
1200	0.4131	45.18753	0.07282	3.49535	0.00728	0.05598	0.00076	35.99627	0.49336	6.42935	0.01342	0.00106	0.00019	28.97426	0.22935	126.8	0.97
1500	0.566	37.06831	0.12908	3.09833	0.01151	0.03232	0.00091	25.09757	0.71798	5.69747	0.0212	0.00247	0.00031	27.8037	0.28495	121.85	1.21
2000	0.7326	33.84054	0.09826	2.8025	0.00892	0.02169	0.00061	18.26926	0.52727	5.15239	0.01642	0.00501	0.00022	27.6887	0.19637	121.36	0.83
2500	0.8531	31.3775	0.12668	3.60406	0.02168	0.01294	0.00219	11.24911	2.06732	6.62983	0.03999	0.01243	0.00062	27.89251	0.65955	122.23	2.79
3000	0.8878	32.59784	0.90653	7.89606	0.23059	-0.00333	0.02731	-5.02389	24.77558	14.56943	0.42786	0.02058	0.00541	34.39631	8.17085	149.57	34.1
4000	0.9146	34.10563	0.50441	9.79035	0.13505	0.05792	0.03239	47.85421	28.08497	18.08901	0.25126	0.01108	0.00466	17.89298	9.6428	79.36	41.84
5000	0.9425	31.98851	0.3047	11.1918	0.10583	0.01355	0.00908	9.64223	8.39153	20.69901	0.19729	0.01929	0.00096	29.10754	2.71821	127.37	11.48
9000	1	31.89398	0.25329	10.93479	0.09481	0.01532	0.00435	11.37546	4.03008	20.21998	0.17668	0.01893	0.00046	28.45955	1.31541	124.63	5.57
Integrated		42.7616	0.06595	4.30086	0.00851	0.04956	0.00139	33.44268	0.96225	7.91552	0.01572	0.00615	0.00025	28.52791	0.41501	124.92	2.22

Whole-rock lava sample 16JT02LA at Beaver Lake

16JT02LA WR#L1

Weighted average of J from standards = 4.945e-03 +/- 1.594e-05

Laser Power (mW)	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)
500	0.0161	368.85024	2.36381	1.26562	0.01081	1.14781	0.01441	91.93492	0.99762	2.32431	0.01987	0.00796	0.00083	29.77229	3.68917	247.49	28.65
1000	0.0557	45.81397	0.13622	1.56909	0.01681	0.10878	0.00193	69.92421	1.22883	2.88225	0.03092	0.00284	0.00019	13.78527	0.56544	118.83	4.72
1500	0.1535	24.10583	0.0821	2.4808	0.01855	0.03615	0.00048	43.51583	0.5653	4.55991	0.03415	0.00121	0.00009	13.6231	0.14466	117.47	1.21
2000	0.3363	16.66647	0.05229	1.00173	0.00729	0.00976	0.00022	16.83659	0.39236	1.83934	0.01339	0.00121	0.00005	13.84551	0.0788	119.33	0.66
2500	0.5177	15.34963	0.05104	0.50242	0.00311	0.00478	0.00018	8.94951	0.35087	0.92221	0.00571	0.00366	0.00006	13.95383	0.07145	120.23	0.6
3000	0.6456	15.2289	0.03942	0.57689	0.00421	0.0045	0.0002	8.44231	0.38699	1.05895	0.00773	0.00767	0.00009	13.92172	0.06917	119.97	0.58
5000	0.8869	15.16836	0.04014	0.61026	0.00469	0.00538	0.00015	10.16153	0.29919	1.12023	0.00861	0.00818	0.00007	13.60622	0.05814	117.33	0.49
9000	1	15.91953	0.05606	0.65533	0.00644	0.00861	0.0003	15.6722	0.54899	1.20299	0.01183	0.00644	0.00011	13.40576	0.09946	115.66	0.83
Integrated		23.35747	0.02845	0.8948	0.00278	0.03185	0.00023	40.02392	0.29361	1.64287	0.00511	0.00493	0.00003	13.99994	0.07081	120.62	0.7

Whole-rock lava sample 16JT07LA at Beaver Lake

16JT07LA WR#L1

Weighted average of J from standards = 4.945e-03 +/- 1.594e-05

Laser Power (mW)	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)
500	0.0183	158.72838	0.80466	1.38813	0.01103	0.48092	0.00635	89.47594	1.10108	2.54953	0.02028	0.00821	0.00048	16.71793	1.75292	143.13	14.43
1000	0.0684	43.34693	0.22272	1.06161	0.00819	0.09958	0.00167	67.72797	1.08915	1.94937	0.01505	0.00456	0.00017	13.98984	0.47928	120.53	3.99
1500	0.1949	23.32685	0.07983	0.92945	0.00815	0.02993	0.00051	37.62995	0.63237	1.70653	0.01497	0.00149	0.00007	14.54	0.15668	125.11	1.3
2000	0.3657	15.97229	0.07108	0.33953	0.00332	0.00729	0.00018	13.33049	0.32419	0.62314	0.0061	0.00189	0.00003	13.82068	0.08093	119.12	0.67
2500	0.5048	15.41962	0.06302	0.25353	0.0031	0.00596	0.00018	11.30941	0.33765	0.46527	0.00569	0.00517	0.00007	13.65186	0.07654	117.71	0.64
3000	0.6151	14.95496	0.0581	0.37966	0.00328	0.00474	0.00016	9.16584	0.31765	0.69682	0.00602	0.00777	0.00009	13.56087	0.07127	116.96	0.6
5000	0.8409	15.21477	0.05374	0.425	0.00302	0.00605	0.00014	11.53318	0.26286	0.78004	0.00554	0.00764	0.00006	13.43779	0.0626	115.93	0.52
9000	1	15.16727	0.04517	0.2845	0.00224	0.00631	0.00011	12.16434	0.21015	0.52212	0.00411	0.0046	0.00007	13.29886	0.0515	114.77	0.43
Integrated		20.39728	0.03017	0.47256	0.00158	0.02254	0.00016	32.50634	0.22948	0.86738	0.0029	0.00492	0.00003	13.75142	0.0513	118.55	0.57

Whole-rock lava sample 16JT16LA at Beaver Lake

16JT16LA WR#L1

Weighted average of J from standards = 4.945e-03 +/- 1.594e-05

Laser Power (mW)	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)
500	0.064	163.15888	0.9844	2.26666	0.0167	0.4984	0.00647	90.16856	1.0416	4.16567	0.03073	0.01244	0.00033	16.06367	1.70532	137.73	14.08
750	0.1528	38.08843	0.14523	1.95588	0.01546	0.08288	0.00181	63.92501	1.38395	3.59373	0.02845	0.00177	0.0002	13.74869	0.53064	118.52	4.43
1000	0.292	31.29128	0.09728	2.19307	0.0136	0.05841	0.00065	54.63669	0.59616	4.03022	0.02503	0.00114	0.00014	14.20331	0.19291	122.31	1.61
1250	0.441	30.20406	0.10838	3.6119	0.02367	0.05568	0.00093	53.54479	0.89258	6.64429	0.04365	0.00119	0.00011	14.05345	0.27493	121.06	2.29
1500	0.5256	38.15878	0.17814	11.86837	0.0912	0.08727	0.00159	65.06815	1.19445	21.96089	0.17018	0.00234	0.00025	13.43186	0.46406	115.88	3.88
3000	0.6377	61.9811	0.29539	26.20472	0.2002	0.16897	0.00218	77.10859	0.96692	48.98864	0.38132	0.01697	0.00028	14.44907	0.61505	124.36	5.11
4000	0.7434	37.38699	0.15979	3.56945	0.02473	0.08226	0.00108	64.27844	0.80946	6.56601	0.0456	0.06759	0.00042	13.37836	0.3089	115.43	2.58

5000	0.8637	30.07428	0.105	5.29791	0.0326	0.0616	0.00088	59.13007	0.84901	9.75745	0.06027	0.05546	0.00032	12.32536	0.26068	106.61	2.19
6000	0.9104	40.46402	0.14573	6.86003	0.03963	0.09526	0.0022	68.21562	1.58513	12.64849	0.07343	0.04352	0.0006	12.91441	0.64589	111.55	5.41
9000	1	46.90902	0.19028	8.34676	0.05952	0.11567	0.00205	71.44465	1.26006	15.40598	0.1105	0.0476	0.00054	13.46598	0.59695	116.16	4.99
Integrated		46.53647	0.06106	7.22503	0.02225	0.113	0.00058	70.51576	0.35953	13.32493	0.04124	0.0235	0.00009	13.78254	0.16923	118.81	1.46

Whole-rock intrusion sample 16JT09LA at Beaver Lake

16JT09LA WR#L1

Weighted average of J from standards = 4.945e-03 +/- 1.594e-05

Laser Power (mW)	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)
500	0.0306	77.51841	0.23038	0.47079	0.00299	0.21838	0.00184	83.22758	0.66777	0.86412	0.00549	0.00206	0.00017	13.00106	0.52064	112.27	4.36
1000	0.1623	23.57086	0.07293	0.36914	0.00315	0.03425	0.00058	42.86224	0.7169	0.67751	0.00579	0.00053	0.00006	13.4544	0.17464	116.07	1.46
1500	0.3133	19.58875	0.0721	0.59852	0.00446	0.01857	0.00031	27.80736	0.4561	1.09866	0.00819	0.00025	0.00006	14.12617	0.10407	121.67	0.87
2000	0.3934	16.4981	0.06175	1.02935	0.00897	0.01032	0.00029	18.01125	0.51081	1.89009	0.01648	0.00033	0.00006	13.51208	0.09875	116.55	0.82
2500	0.4545	15.88039	0.07249	0.66134	0.00615	0.00808	0.0004	14.71168	0.74805	1.21404	0.0113	0.00062	0.00007	13.52511	0.13403	116.66	1.12
3000	0.5211	15.0764	0.05776	0.31322	0.00176	0.0053	0.00028	10.24492	0.54699	0.57484	0.00323	0.00091	0.00005	13.50817	0.09742	116.51	0.81
5000	0.8583	16.55047	0.04581	0.59119	0.00401	0.01018	0.00023	17.91279	0.41314	1.0852	0.00737	0.0019	0.00002	13.56712	0.07846	117.01	0.66
9000	1	26.49803	0.1051	1.92275	0.01679	0.04283	0.00086	47.21772	0.9474	3.53278	0.03088	0.00341	0.00009	13.9896	0.25785	120.53	2.15
Integrated		21.06634	0.02889	0.76917	0.00287	0.02517	0.00018	35.06147	0.25364	1.4121	0.00526	0.00142	0.00002	13.66832	0.05688	117.85	0.6

Whole-rock intrusion sample 16JT25LA at Beaver Lake

16JT25LA WR#L1

Weighted average of J from standards = 4.945e-03 +/- 1.594e-05

Laser Power (mW)	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)
500	0.071	35.29187	0.10274	0.46032	0.00309	0.08119	0.00109	67.92941	0.89195	0.8449	0.00567	0.0013	0.00039	11.31247	0.31679	98.08	2.67
1000	0.3372	20.19481	0.07233	0.6862	0.00551	0.02111	0.00033	30.65114	0.47681	1.2597	0.01013	0.00045	0.00011	13.99106	0.10909	120.54	0.91
1500	0.5541	18.0062	0.04075	2.4431	0.0199	0.01344	0.00027	20.96564	0.43538	4.4905	0.03664	0.00035	0.00013	14.23221	0.08526	122.55	0.71
2000	0.6119	19.92538	0.03697	1.93262	0.01321	0.02148	0.00113	31.09799	1.67284	3.55095	0.0243	0.00094	0.00047	13.72729	0.33438	118.34	2.79
2500	0.6475	18.70293	0.07648	0.78311	0.01117	0.0178	0.00104	27.81515	1.63711	1.43769	0.02053	0.00163	0.00076	13.48672	0.31135	116.34	2.6
3000	0.7006	16.3233	0.06891	0.63658	0.0058	0.00904	0.00073	16.07917	1.32652	1.16857	0.01066	0.00173	0.00051	13.67989	0.22431	117.95	1.87
5000	0.904	17.18803	0.04596	0.76644	0.00484	0.01278	0.00032	21.64884	0.5419	1.40707	0.00889	0.00211	0.00015	13.45104	0.10023	116.04	0.84
9000	1	25.88184	0.10774	1.60063	0.01316	0.04155	0.00063	46.98359	0.69524	2.94025	0.0242	0.00982	0.00034	13.72141	0.18913	118.3	1.58
Integrated		20.45057	0.02678	1.22852	0.00494	0.02324	0.00018	33.12738	0.25527	2.25612	0.00908	0.00186	0.00008	13.66784	0.05538	117.85	0.59

Feldspars from dike sample 01TOT along Totshunda fault

01TOT FS#11

Weighted average of J from standards = 4.311e-03 +/- 2.840e-05

Laser Power (mW)	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)
400	0.0042	294.24242	4.1907	0.01898	0.00297	0.9383	0.01482	94.23998	1.04762	0.03483	0.00546	0.01877	0.0007	16.94694	3.14957	127.08	22.8
600	0.0129	47.6304	0.84794	0.02043	0.00097	0.11561	0.0021	71.76764	1.39456	0.03748	0.00178	0.00289	0.00014	13.439	0.81576	101.5	5.99
800	0.0242	28.22641	0.53484	0.05545	0.00159	0.04654	0.00104	48.75964	1.0298	0.10175	0.00291	0.00177	0.00019	14.44866	0.46999	108.9	3.44
1000	0.0377	21.18803	0.39582	0.12667	0.00243	0.02257	0.0006	31.4716	0.80672	0.23245	0.00447	0.00157	0.00012	14.50076	0.36135	109.28	2.64
1300	0.0602	20.11825	0.39024	0.04871	0.00089	0.01763	0.00036	25.91621	0.50646	0.08937	0.00164	0.00009	0.00009	14.88287	0.34775	112.07	2.54
1600	0.0816	18.91943	0.34491	0.01323	0.00041	0.01463	0.0004	22.87691	0.63678	0.02427	0.00075	0.0005	0.00008	14.56848	0.32749	109.77	2.39
2000	0.105	16.61168	0.32791	0.01189	0.00049	0.0064	0.00027	11.3929	0.48113	0.02182	0.00089	0.00041	0.00007	14.69294	0.31625	110.68	2.31
2500	0.1373	16.6532	0.32785	0.01043	0.00031	0.00693	0.00024	12.30696	0.4226	0.01914	0.00057	0.00056	0.00007	14.57776	0.31416	109.84	2.3
3000	0.1776	16.42056	0.32417	0.01056	0.0004	0.00516	0.00024	9.30334	0.44078	0.01938	0.00074	0.00048	0.00006	14.86608	0.31735	111.95	2.32
4000	0.2782	16.91129	0.25203	0.00975	0.00019	0.00628	0.00011	10.99507	0.1486	0.0179	0.00034	0.00067	0.00005	15.02555	0.23045	113.11	1.68
5000	0.3805	16.67432	0.24554	0.00656	0.00016	0.00529	0.00011	9.39143	0.15174	0.01204	0.0003	0.00061	0.00005	15.08152	0.22795	113.52	1.66
6000	0.4617	17.16052	0.25233	0.00693	0.00019	0.0067	0.00016	11.54759	0.24085	0.01272	0.00034	0.00058	0.00006	15.1527	0.23205	114.04	1.69
9000	0.4984	16.88583	0.33831	0.0084	0.00027	0.00676	0.00022	11.84291	0.38381	0.01541	0.00049	0.00059	0.00006	14.85996	0.32322	111.9	2.36
9001	1	17.46899	0.23995	0.00527	0.0001	0.00721	0.00011	12.21871	0.13872	0.00968	0.00018	0.00057	0.00005	15.30849	0.21784	115.17	1.59
Integrated		18.89469	0.13908	0.01018	0.00009	0.01269	0.0001	19.87009	0.11147	0.01869	0.00016	0.00072	0.00003	15.11661	0.11843	113.77	1.13

Amphiboles from sandstone sample WP87 at Euchre Mountain

UAF180-18 EUCHER HO#DETRITAL 1-121 10-13A16 LOST ARC

Weighted average of J from standards = 4.263e-03 +/- 1.092e-05

Amphibole grain number	Cumulative 39Ar	40Ar/39Ar meas.	+/-	37Ar/39Ar meas.	+/-	36Ar/39Ar meas.	+/-	% Atm. 40Ar	+/-	Ca/K	+/-	Cl/K	+/-	40*/39K	+/-	Age (Ma)	+/- (Ma)	% error (Ma)
1	0.5668	17.51334	0.08862	0.33428	0.00283	0.0087	0.00027	14.53942	0.46444	0.6135	0.00519	0.00395	0.00006	14.94516	0.11559	111.31	0.83	0.75
2	0.8958	16.72951	0.10779	6.92554	0.04657	0.00289	0.0014	1.70277	2.4803	12.76988	0.0863	0.0369	0.00056	16.49628	0.42982	122.48	3.09	2.52
3	0.6499	18.39467	0.09113	7.02899	0.05232	0.014	0.00152	19.37191	2.44032	12.96157	0.09696	0.04309	0.00048	14.88132	0.45705	110.85	3.3	2.98
4	0.7823	17.64095	0.11002	8.90478	0.06119	0.00445	0.002	3.29899	3.36179	16.44244	0.11371	0.06148	0.00069	17.13821	0.60567	127.08	4.34	3.42
5	0.9788	16.29099	0.07377	3.76757	0.02947	0.00621	0.00248	9.36865	4.50511	6.93142	0.05437	0.14156	0.00168	14.77722	0.73791	110.1	5.33	4.84
6	0.7182	22.4462	0.1565	61.08818	0.49705	0.04226	0.00417	33.2406	5.48314	117.14208	0.99611	0.00675	0.00093	15.64074	1.29041	116.33	9.29	7.99
7	0.8313	31.23936	0.3747	7.4583	0.1111	0.05087	0.00475	46.19608	4.46266	13.75741	0.20601	0.11104	0.00215	16.88102	1.41572	125.24	10.15	8.10

Note: errors are 1 sigma