Supplemental File 5: Summary of new $^{40}Ar/^{39}Ar$ age data, analytical methods, and instrumentation

This supplemental material contains the data tables and corresponding plots for all the new $^{40}Ar/^{39}Ar$ analyses conducted as part of this study. Samples are organized similar to that of Table 1 within the manuscript. Notes at the end contain additional information regarding sample preparation and irradiation, age calculations, instrumentation, and analytical parameters.

K-bearing phenocrysts (sanidine, biotite, and hornblende) were dated when present, but in the absence of these phases groundmass was concentrated. Single-crystal laser-fusion of sanidine commonly yielded the highest-precision ages in the data set. Single crystals of sanidine from some dikes and thick sills were step-heated to examine and identify thermal histories. Mica and hornblende usually yielded moderate to high-precision plateau ages (i.e., a weighted mean of 3 or more contiguous steps that overlap at 2σ and comprise > 50% of the Ar released; Fleck et al., 1977) or well-defined arrays on an inverse isochron. Step-heated groundmass concentrates tended to yield spectra with more discordance, but many samples yielded plateau ages. Samples displayed a wide variety of complexity related to near-ubiquitous, albeit variable, groundmass alteration, neutron induced ^{39}Ar recoil, secondary volatiles and carbonate (samples were cleaned in 15% HCl to remove as much carbonate as possible prior to dating), and the presence of excess ^{40}Ar, in which case the ages were calculated using an inverse isochron. Because of the common discordance of the groundmass samples, some age estimates were determined by calculating a weighted mean of contiguous steps that did not completely overlap at 2σ or comprised less than %50 of the Ar released (i.e., a forced plateau). Likewise, some inverse isochron age calculations included steps that indicate scatter beyond that predicted by analytical uncertainties (i.e., a MSWD >>1 for a given n). Although some samples display large uncertainties or excess scatter, few of our interpretations hinge on a single sample or are sensitive to minor age discordance.

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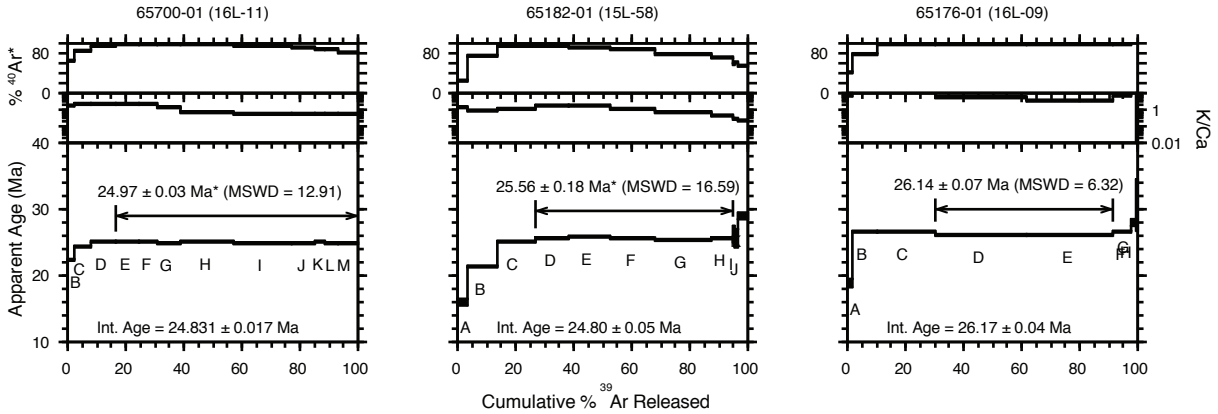
[59 pages follow]

Step-heat $^{40}Ar/^{39}Ar$ analytical data for D5-6 dikes

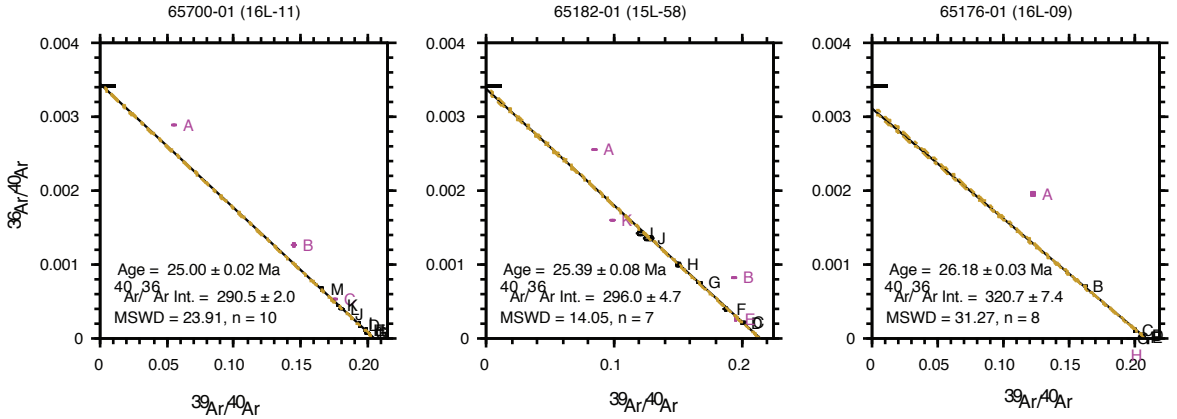
ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
16L-11, GroundmassConcentrate, 7.84 mg, J=0.002813±0.03%, IC(J)=1.01462±0.00104, NM-290K, Lab#=65700-01										
Xi A	0.5	17.92	0.5971	51.63	0.519	0.85	15.1	0.4	13.86	0.25
Xi B	0.8	6.868	0.3096	8.627	2.68	1.6	63.2	2.5	22.19	0.06
Xi C	1.2	5.668	0.2492	3.074	7.12	2.0	84.3	8.2	24.40	0.02
X D	1.5	5.160	0.2265	0.8958	10.69	2.3	95.2	16.7	25.09	0.01
E	1.7	5.036	0.2187	0.5324	10.05	2.3	97.2	24.7	25.00	0.01
F	1.9	4.977	0.2304	0.3487	8.16	2.2	98.3	31.2	24.98	0.01
G	2.2	5.006	0.3358	0.4775	9.94	1.5	97.7	39.1	24.98	0.01
H	3.0	5.059	0.6522	0.7350	22.8	0.78	96.7	57.3	25.00	0.01
I	4.0	5.160	0.8932	1.197	25.2	0.57	94.5	77.4	24.92	0.01
J	5.0	5.398	0.8405	2.021	9.81	0.61	90.2	85.2	24.87	0.02
K	7.0	5.612	0.8755	2.697	4.44	0.58	87.0	88.8	24.96	0.03
L	10.0	5.526	0.9169	2.421	6.01	0.56	88.4	93.6	24.95	0.02
M	15.0	6.031	0.8220	4.106	8.10	0.62	81.0	100.0	24.95	0.02
Integrated age ± 2σ			n=13		125.6	0.86	K2O=2.19%		24.83	0.02
Plateau ± 2σ		steps E-M	n=9	MSWD=12.91	104.6	1.0 ±1.5		83.3	24.97	0.03
Isochron±2σ		steps D-M	n=10	MSWD=23.91		$^{40}Ar/^{36}Ar$=	290.5±2.0		25.00	0.02
15L-58, GroundmassConcentrate, 4.59 mg, J=0.0029934±0.03%, IC(F)=0.99847±0.00045, NM-285A, Lab#=65182-01										
Xi A	0.5	11.70	0.3361	29.84	3.3	1.5	24.8	3.8	15.84	0.23
Xi B	0.8	5.134	0.5505	4.311	8.7	0.93	76.0	13.8	21.23	0.07
X C	1.3	4.936	0.4508	1.158	11.7	1.1	93.8	27.3	25.15	0.04
D	1.6	4.983	0.3027	1.012	9.7	1.7	94.5	38.5	25.58	0.05
i E	1.9	5.120	0.3111	1.350	12.4	1.6	92.7	52.9	25.78	0.04
F	2.2	5.308	0.4197	2.146	13.2	1.2	88.6	68.0	25.57	0.04
G	3.0	5.953	0.6531	4.578	16.9	0.78	78.1	87.6	25.28	0.04
H	5.0	6.605	1.077	6.739	6.4	0.47	71.1	94.9	25.53	0.10
X I	7.0	8.257	1.874	12.18	0.8	0.27	58.1	95.9	26.12	0.57
X J	10.0	7.801	1.894	11.03	0.7	0.27	60.0	96.7	25.49	0.66
Xi K	15.0	10.04	2.082	16.52	2.8	0.25	52.9	100.0	28.92	0.23
Integrated age ± 2σ			n=11		86.7	0.88	K2O=2.42%		24.80	0.05
Plateau ± 2σ		steps D-H	n=5	MSWD=16.59	58.7	1.2 ±1.1		67.6	25.56	0.18
Isochron±2σ		steps C-J	n=7	MSWD=14.05		$^{40}Ar/^{36}Ar$=	296.0±4.7		25.39	0.08

16L-09, Biotite, 1.12 mg, J=0.0029996±0.03%, IC(F)=0.99847±0.00045, NM-285A, Lab#=65176-01

Xi	A	0.5	8.133	0.0741	15.90	2.1	6.9	42.2	2.2	18.75	0.25
X	B	0.8	6.153	0.0204	4.319	7.6	25.0	79.3	10.4	26.55	0.08
X	C	1.3	5.010	0.0168	0.4681	18.7	30.3	97.3	30.5	26.52	0.03
	D	1.8	4.848	0.0964	0.2024	29.1	5.3	98.9	61.8	26.11	0.02
	E	2.2	4.837	0.1478	0.1385	27.7	3.5	99.4	91.5	26.17	0.02
X	F	3.0	4.879	0.0786	0.0890	5.9	6.5	99.6	97.9	26.44	0.08
X	G	5.0	5.105	0.0344	-0.0260	1.8	14.8	100.2	99.8	27.83	0.27
Xi	H	7.0	5.269	0.0435	-1.1593	0.2	11.7	106.6	100.0	30.53	1.96
X	I	10.0	4.253	-2.3869	-28.8160	0.0	-	297.0	100.0	67.86	116.22
X	J	15.0	-0.7416	-0.1143	6.529	-0.039	-	359.1	100.0	-14.83	8.13
	Integrated age ± 2σ			n=10		93.1	5.9	K2O=10.65%		26.17	0.04
	Plateau ± 2σ		steps D-E	n=2	MSWD=6.32	56.8	4.4	±2.6	61.0	26.14	0.07
	Isochron±2σ		steps B-J	n=8	MSWD=31.27		$^{40}Ar/^{36}Ar$=	320.7±7.4		26.18	0.03



Age Spectra for D5-6 dikes. Data at 2-sigma. Results at 2-sigma



Inverse isochron for D5-6 dikes. Data at 1-sigma. Results at 2-sigma.

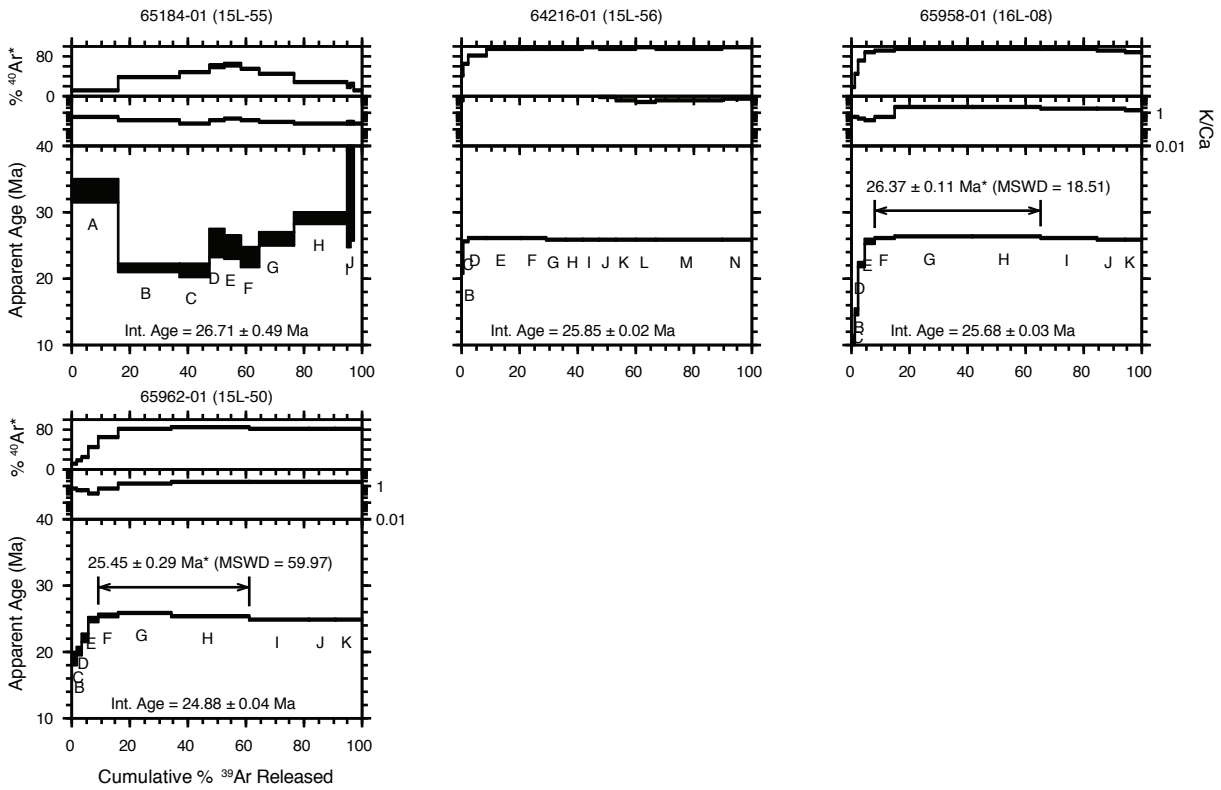
Step-heat $^{40}Ar/^{39}Ar$ analytical data for D4 dikes

ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
15L-55, GroundmassConcentrate, 3.95 mg, J=0.0029903±0.03%, IC(F)=0.99847±0.00045, NM-285A, Lab#=65184-01										
X A	0.5	60.87	1.001	185.6	1.4	0.51	10.0	16.1	33.17	0.91
Xi B	0.8	10.49	1.358	22.49	1.9	0.38	37.6	37.3	21.46	0.33
Xi C	1.3	8.565	2.332	16.40	0.9	0.22	45.5	47.9	21.22	0.50
X D	1.6	8.116	1.498	12.17	0.4	0.34	57.1	52.6	25.18	1.07
X E	1.9	7.383	1.337	9.966	0.5	0.38	61.5	58.5	24.67	0.86
Xi F	2.2	7.889	1.357	12.64	0.6	0.38	53.9	65.0	23.15	0.75
X G	3.0	10.91	1.749	21.34	1.0	0.29	43.4	76.6	25.76	0.50
X H	5.0	18.47	2.308	45.01	1.6	0.22	28.9	94.9	29.07	0.45
X I	7.0	38.07	2.218	107.1	0.1	0.23	17.3	96.1	35.66	5.53
X J	10.0	27.98	2.167	73.99	0.1	0.24	22.4	97.6	34.06	4.20
X K	15.0	99.65	2.616	307.3	0.2	0.20	9.1	100.0	48.94	4.27
Integrated age ± 2σ			n=11		9.0	0.30	K2O=0.29%		26.71	0.49
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ		steps A-K	n=8	MSWD=4.35		$^{40}Ar/^{36}Ar$=	305.3±2.0		25.47	0.76
15L-56, Biotite, 3.3 mg, J=0.0039249±0.03%, IC(F)=1.04199±0.00273, NM-283C, Lab#=64216-01										
Xi A	0.5	15.04	0.1676	44.55	1.2	3.0	12.5	0.2	13.46	0.59
Xi B	0.8	7.225	0.0869	14.44	4.4	5.9	41.0	1.0	21.13	0.19
Xi C	1.0	5.615	0.0415	6.914	7.1	12.3	63.6	2.3	25.46	0.10
Xi D	1.5	4.466	0.0132	2.716	37.2	38.8	82.0	9.1	26.09	0.03
X E	1.9	3.919	0.0081	0.8697	63.6	63.2	93.4	20.7	26.07	0.01
X F	2.1	3.815	0.0107	0.5653	46.9	47.8	95.6	29.2	25.98	0.01
X G	2.3	3.792	0.0152	0.5202	38.1	33.6	96.0	36.1	25.91	0.01
X H	2.5	3.771	0.0237	0.4552	31.7	21.5	96.5	41.9	25.90	0.01
X I	2.8	3.762	0.0429	0.4386	32.8	11.9	96.6	47.9	25.89	0.01
X J	3.1	3.759	0.0614	0.4543	30.7	8.3	96.6	53.5	25.84	0.02
X K	3.5	3.754	0.0866	0.4603	36.7	5.9	96.6	60.2	25.81	0.01
X L	4.0	3.748	0.1052	0.4411	38.0	4.9	96.7	67.1	25.82	0.01
X M	7.0	3.779	0.1017	0.5154	124.6	5.0	96.2	89.8	25.88	0.01
X N	15.0	3.765	0.0689	0.4429	56.1	7.4	96.7	100.0	25.92	0.01
Integrated age ± 2σ			n=14		549.1	9.1	K2O=16.28%		25.85	0.02
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ		steps E-N	n=10	MSWD=7.00		$^{40}Ar/^{36}Ar$=	368.9±10.6		25.64	0.04
16L-08, GroundmassConcentrate, 5.5 mg, J=0.0019014±0.01%, IC(F)=1.00662±0.00025, NM-293B, Lab#=65958-01										
X A	0.8	51.52	1.242	169.6	0.3	0.41	2.9	0.3	5.18	1.14
Xi B	1.3	15.42	1.023	42.73	0.9	0.50	18.7	1.3	9.99	0.37
Xi C	1.6	9.547	0.9202	18.00	1.5	0.55	45.1	2.8	14.91	0.22
Xi D	1.9	8.820	1.126	8.706	2.3	0.45	71.9	5.1	21.93	0.16
X E	2.2	8.512	1.460	4.249	3.0	0.35	86.7	8.1	25.51	0.14
F	3.0	8.168	0.8603	2.325	7.1	0.59	92.5	15.2	26.09	0.06
G	5.0	7.925	0.2394	0.9856	27.1	2.1	96.6	42.2	26.42	0.02
H	6.5	8.013	0.2455	1.373	23.5	2.1	95.2	65.6	26.34	0.02
X I	8.0	8.086	0.2813	1.922	19.4	1.8	93.3	85.0	26.04	0.03
X J	10.0	8.306	0.3138	2.919	9.8	1.6	89.9	94.7	25.79	0.05
X K	15.0	8.618	0.3586	4.001	5.3	1.4	86.6	100.0	25.78	0.08
Integrated age ± 2σ			n=11		100.3	1.3	K2O=3.69%		25.68	0.03

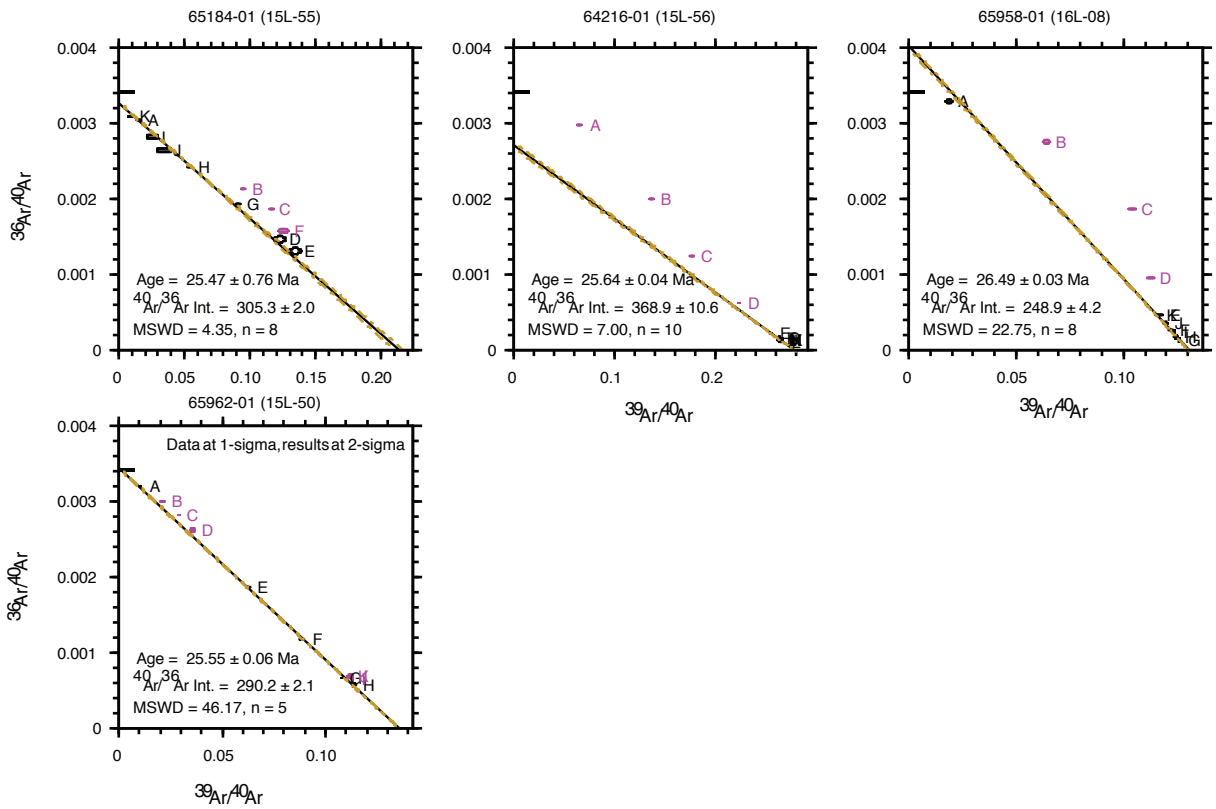
Plateau ± 2σ	steps F-H	n=3	MSWD=18.51	57.722	1.921±1.747	57.5	26.37	0.11
Isochron±2σ	steps A-K	n=8	MSWD=22.75		$^{40}Ar/^{36}Ar$=	248.9±4.2	26.49	0.03

15L-50, GroundmassConcentrate, 6.2 mg, J=0.0019044±0.01%, IC(F)=1.00662±0.00025, NM-293B, Lab#=65962-01

X	A	0.8	93.80	0.7834	299.6	0.5	0.65	5.7	0.5	18.47	1.20
Xi	B	1.3	45.99	0.8064	137.5	1.3	0.63	11.8	1.8	18.84	0.51
Xi	C	1.6	34.13	0.8982	96.19	1.9	0.57	16.9	3.8	20.04	0.34
Xi	D	1.9	27.34	0.8719	71.32	2.4	0.59	23.2	6.2	21.94	0.28
X	E	2.2	15.92	1.585	30.13	3.0	0.32	44.9	9.3	24.74	0.18
	F	3.0	11.21	0.7470	13.32	7.0	0.68	65.4	16.3	25.38	0.08
	G	5.0	9.245	0.3850	6.201	18.0	1.3	80.5	34.4	25.75	0.03
	H	6.5	8.762	0.2568	4.970	27.0	2.0	83.5	61.5	25.30	0.02
Xi	I	8.0	8.831	0.2775	5.603	20.3	1.8	81.5	82.0	24.90	0.03
Xi	J	10.0	8.877	0.3238	6.017	9.4	1.6	80.3	91.4	24.65	0.05
Xi	K	15.0	8.948	0.3089	6.117	8.5	1.7	80.1	100.0	24.79	0.06
Integrated age ± 2σ				n=11		99.3	1.3	K2O=3.23%		24.88	0.04
Plateau ± 2σ		steps F-H		n=3	MSWD=59.97	51.900	1.583±1.304		52.3	25.45	0.29
Isochron±2σ		steps A-H		n=5	MSWD=46.17		$^{40}Ar/^{36}Ar$=	290.2±2.1		25.55	0.06



Age Spectra for D4 dikes. Data at 2-sigma. Results at 2-sigma.



Inverse isochrons for D4 dikes. Data at 1-sigma. Results at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for D3 dikes

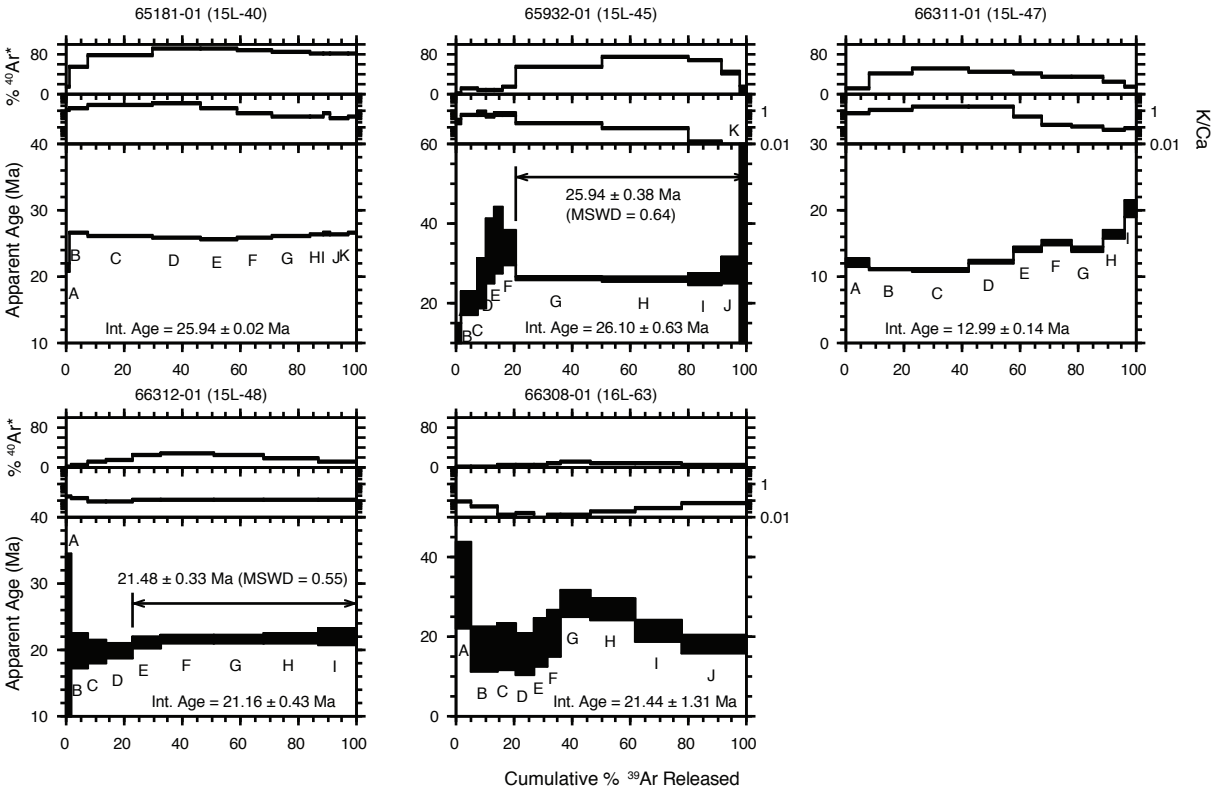
ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
15L-40, GroundmassConcentrate, 5.34 mg, J=0.0029948±0.03%, IC(F)=0.99847±0.00045, NM-285A, Lab#=65181-01										
Xi A	0.5	27.72	0.4748	80.70	0.4	1.1	14.1	1.2	21.27	0.30
X B	0.8	8.940	0.3575	13.78	2.2	1.4	54.7	7.7	26.60	0.06
X C	1.3	6.219	0.2393	4.893	7.6	2.1	77.0	30.2	26.04	0.02
X D	1.6	5.152	0.1819	1.412	5.4	2.8	92.2	46.3	25.81	0.01
Xi E	1.9	5.175	0.3610	1.626	4.3	1.4	91.2	59.2	25.67	0.02
X F	2.2	5.340	0.6647	2.227	4.0	0.77	88.6	70.9	25.74	0.02
X G	3.0	5.663	1.167	3.291	4.5	0.44	84.4	84.3	26.00	0.02
Xi H	5.0	5.825	1.089	3.718	1.6	0.47	82.6	89.1	26.16	0.05
Xi I	7.0	5.897	0.8054	3.731	0.6	0.63	82.3	90.9	26.41	0.09
Xi J	10.0	5.892	1.325	3.937	2.2	0.38	82.0	97.4	26.28	0.04
Xi K	15.0	5.979	1.113	4.006	0.9	0.46	81.6	100.0	26.54	0.07
Integrated age ± 2σ			n=11		33.7	0.89	K2O=0.81%		25.94	0.02
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ		steps B-G	n=5	MSWD=14.70		$^{40}Ar/^{36}Ar$=	308.3±1.6		25.70	0.03
15L-45, Amphibole, 7 mg, J=0.0019051±0.01%, IC(F)=1.00662±0.00025, NM-293A, Lab#=65932-01										
X A	0.8	209.0	2.517	701.1	0.1	0.20	1.0	2.0	7.18	3.85
Xi B	1.3	58.51	1.045	179.1	0.3	0.49	9.7	7.8	19.71	1.45
X C	1.6	123.9	0.7873	395.3	0.2	0.65	5.8	11.2	24.89	3.08
X D	1.9	147.1	1.090	465.6	0.2	0.47	6.5	14.1	33.05	4.05
X E	2.2	124.9	0.8566	388.0	0.1	0.60	8.2	16.9	35.46	4.18
Xi F	3.0	72.96	0.9095	214.2	0.3	0.56	13.4	21.7	33.68	2.25
G	5.0	13.86	2.952	22.36	1.6	0.17	54.1	52.1	26.02	0.29
H	6.5	9.968	6.246	10.39	1.6	0.082	74.5	82.5	25.81	0.28
I	8.0	10.87	35.61	22.30	0.6	0.014	67.1	94.4	25.93	0.68
J	10.0	15.37	266.5	106.2	0.3	0.002	42.2	99.7	28.13	1.73
X K	15.0	17.39	######	371.4	0.0	0.000	5.5	100.0	20.38	25.78
Integrated age ± 2σ			n=11		5.2	0.012	K2O=0.15%		26.10	0.63
Plateau ± 2σ		steps G-J	n=4	MSWD=0.64	4.1	0.10 ±0.16		78.0	25.94	0.38
Isochron±2σ		steps A-K	n=9	MSWD=3.84		$^{40}Ar/^{36}Ar$=	295.7±2.4		25.97	0.41
15L-47, GroundmassConcentrate, 6.71 mg, J=0.0037537±0.01%, IC(F)=1.05751±0.00089, NM-294M, Lab#=66311-01, Argus VI										
Xi A	1.3	14.05	0.7414	41.81	4.4	0.69	12.5	8.2	12.02	0.36
Xi B	2.2	3.847	0.4378	7.686	8.0	1.2	41.8	23.4	11.00	0.11
Xi C	3.0	3.122	0.3018	5.266	10.2	1.7	50.9	42.7	10.85	0.09
Xi D	4.0	4.003	0.3161	7.649	8.1	1.6	44.1	58.0	12.07	0.10
Xi E	5.0	5.138	1.082	10.71	5.1	0.47	40.1	67.6	14.08	0.17
Xi F	7.0	6.168	3.740	14.55	5.7	0.14	35.3	78.3	14.94	0.17
Xi G	8.5	5.895	4.194	14.23	5.7	0.12	34.6	89.1	13.99	0.18
Xi H	10.0	9.556	7.353	26.39	3.7	0.069	24.8	96.0	16.32	0.32
Xi I	15.0	22.39	5.616	67.42	2.1	0.091	13.1	100.0	20.18	0.64
Integrated age ± 2σ			n=9		52.9	0.26	K2O=0.81%		12.99	0.12
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ		no isochron	n=0	MSWD=3.84		$^{40}Ar/^{36}Ar$=	0.0±0.0		0.00	0.00

15L-48, GroundmassConcentrate, 6.71 mg, J=0.0037532±0.02%, IC(F)=1.05437±0.00089, NM-294M, Lab#=66312-01

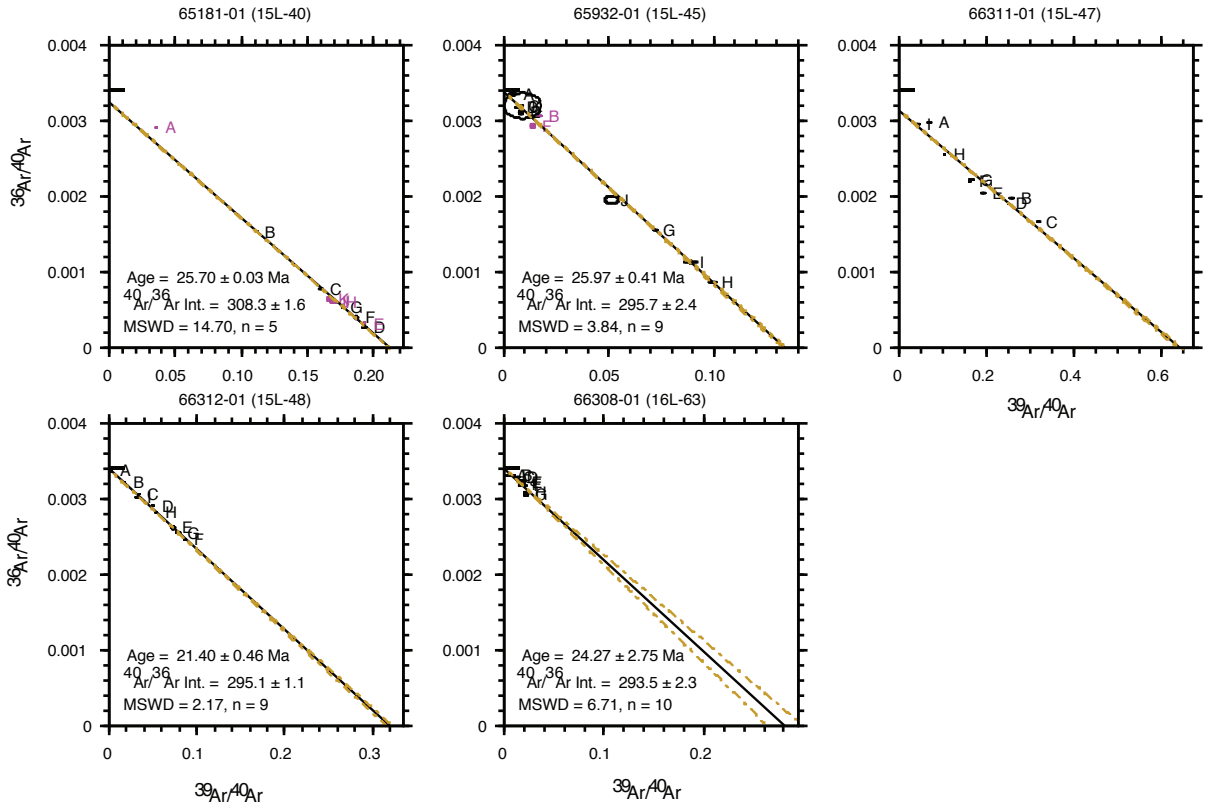
X	A	1.3	384.1	3.253	1289.7	0.5	0.16	0.8	2.1	22.04	6.13
X	B	2.2	55.72	3.702	179.8	1.3	0.14	5.2	7.5	19.81	1.32
X	C	3.0	28.65	5.470	88.82	1.6	0.093	10.0	14.0	19.59	0.86
X	D	4.0	19.87	5.506	59.02	2.3	0.093	14.5	23.2	19.82	0.54
	E	5.0	13.52	4.938	36.80	2.4	0.10	22.6	32.9	20.96	0.46
	F	7.0	11.50	4.518	29.58	4.4	0.11	27.3	50.9	21.51	0.29
	G	8.5	12.49	4.315	32.92	4.3	0.12	25.0	68.4	21.41	0.31
	H	10.0	18.49	4.293	53.06	4.7	0.12	17.1	87.4	21.70	0.37
	I	15.0	29.35	4.736	89.84	3.1	0.11	10.9	100.0	21.91	0.62
	Integrated age ± 2σ			n=9		24.6	0.11	K2O=0.37%		21.16	0.43
	Plateau ± 2σ		steps E-I	n=5	MSWD=0.55	18.9	0.11 ±0.01		76.8	21.48	0.33
	Isochron±2σ		steps A-I	n=9	MSWD=2.17		$^{40}Ar/^{36}Ar$=	295.1±1.1		21.40	0.46

16L-63, GroundmassConcentrate, 7.8 mg, J=0.0037436±0.02%, IC(F)=1.05819±0.00106, NM-294M, Lab#=66308-01

X	A	0.8	209.9	5.738	695.6	0.4	0.089	2.3	5.3	32.81	5.38
X	B	1.3	100.2	11.89	334.1	0.6	0.043	2.4	14.7	16.66	2.71
X	C	1.6	80.25	34.84	273.2	0.4	0.015	3.1	20.9	17.24	2.84
X	D	1.9	66.33	30.50	225.7	0.4	0.017	3.3	27.2	15.43	2.69
X	E	2.2	50.58	57.16	178.8	0.3	0.009	5.1	31.5	18.34	2.97
X	F	3.0	53.75	37.01	182.5	0.3	0.014	5.5	36.1	20.54	2.89
X	G	5.0	42.11	40.90	140.6	0.7	0.012	9.5	46.4	28.09	1.72
X	H	7.0	42.72	26.13	138.9	1.0	0.020	9.0	61.6	26.82	1.32
X	I	8.5	46.28	15.67	150.7	1.1	0.033	6.6	77.6	21.17	1.34
X	J	15.0	56.94	7.728	186.1	1.5	0.066	4.6	100.0	17.86	1.21
	Integrated age ± 2σ			n=10		6.7	0.023	K2O=0.09%		21.44	1.31
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
	Isochron±2σ		steps A-J	n=10	MSWD=6.71		$^{40}Ar/^{36}Ar$=	293.5±2.3		24.27	2.75



Age Spectra for D3 dikes. Data at 2-sigma. Results at 2-sigma.



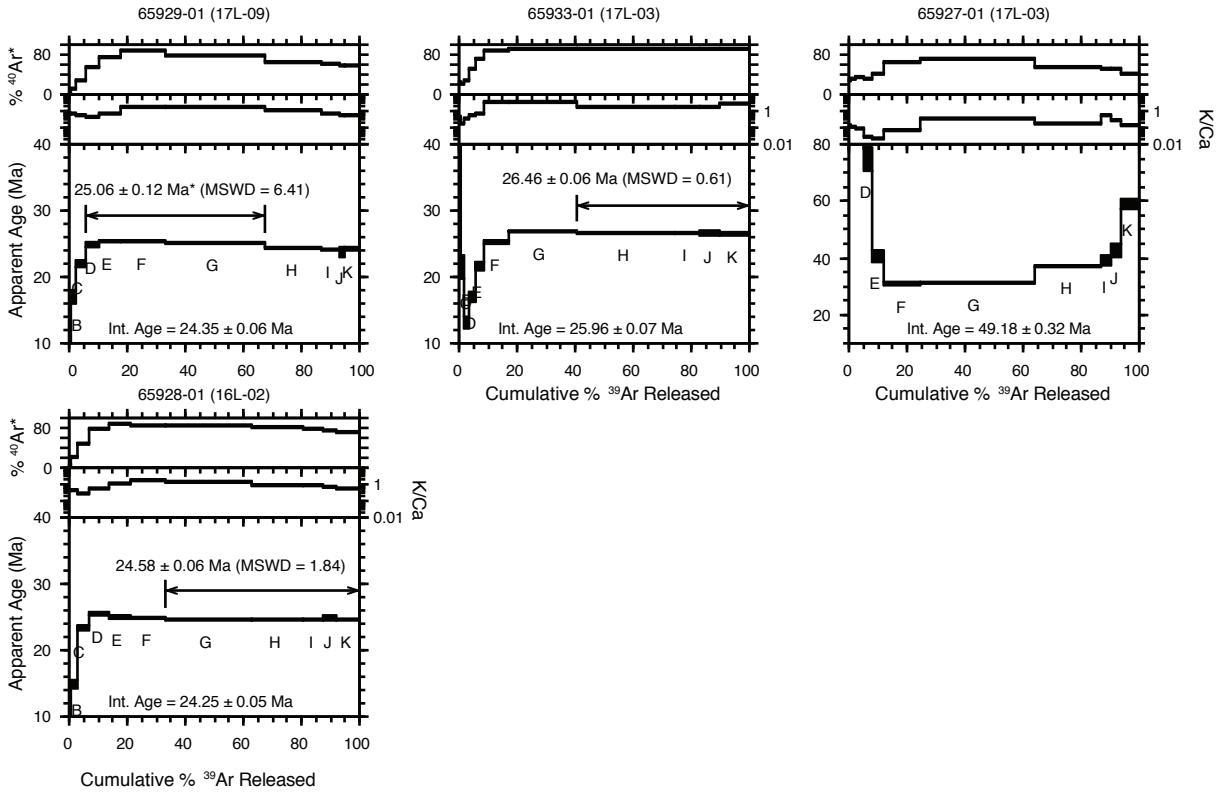
Inverse isochrons for D3 dikes. Data at 1-sigma. Results at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for D2B dikes.

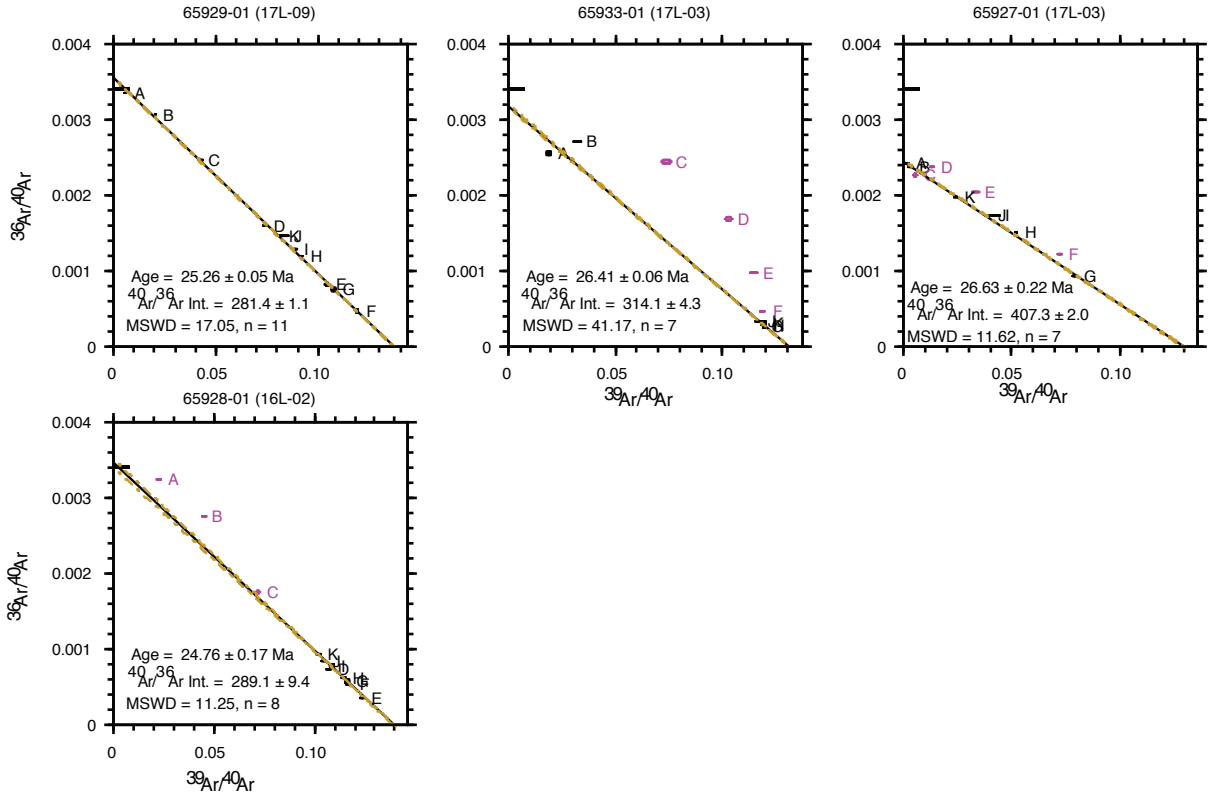
	ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
	17L-09, GroundmassConcentrate, 6.8 mg, J=0.0019015±0.01%, IC(F)=1.00393±0.00034, NM-293A, Lab#=65929-01										
X	A	0.8	169.0	0.6937	566.0	0.7	0.74	1.1	0.9	6.22	1.48
X	B	1.3	48.68	0.8052	148.5	1.3	0.63	10.0	2.7	16.86	0.52
X	C	1.6	23.27	0.9576	57.59	2.3	0.53	27.2	6.0	21.91	0.27
	D	1.9	13.51	1.243	21.88	3.5	0.41	52.9	10.8	24.70	0.16
	E	2.2	9.561	0.7061	7.875	5.2	0.72	76.3	18.0	25.19	0.09
	F	3.0	8.405	0.2615	3.841	11.1	2.0	86.7	33.4	25.18	0.04
	G	5.0	9.254	0.2679	6.893	24.7	1.9	78.2	67.5	25.00	0.03
X	H	6.5	10.86	0.4860	13.06	14.3	1.0	64.8	87.4	24.33	0.05
X	I	8.0	11.20	0.7366	14.61	4.6	0.69	62.0	93.7	23.99	0.11
X	J	10.0	11.90	0.8462	17.44	1.1	0.60	57.3	95.2	23.56	0.36
X	K	15.0	12.29	0.8690	18.21	3.5	0.59	56.8	100.0	24.13	0.15
	Integrated age ± 2σ			n=11		72.2	1.0	K2O=2.15%		24.35	0.06
	Plateau ± 2σ		steps D-G	n=4	MSWD=6.41	44.471	1.661±1.593		61.6	25.06	0.12
	Isochron±2σ		steps A-K	n=11	MSWD=17.05		$^{40}Ar/^{36}Ar$=	281.4±1.1		25.26	0.05
	17L-03, Mica, 1.7 mg, J=0.001901±0.02%, IC(F)=1.00662±0.00023, NM-293A, Lab#=65933-01										
X	A	0.8	51.75	1.233	132.6	0.4	0.41	24.5	1.0	43.62	1.54
X	B	1.3	30.38	2.921	82.70	0.5	0.17	20.3	2.2	21.41	0.87
Xi	C	1.6	13.45	1.633	33.24	0.7	0.31	28.0	3.8	13.05	0.44
Xi	D	1.9	9.690	0.9599	16.57	1.0	0.53	50.3	6.1	16.87	0.32
Xi	E	2.2	8.715	0.8119	8.645	1.3	0.63	71.4	9.0	21.53	0.28
Xi	F	3.0	8.408	0.1501	3.929	3.6	3.4	86.3	17.3	25.06	0.11
X	G	5.0	8.382	0.1625	2.141	10.1	3.1	92.6	40.9	26.79	0.04
	H	6.5	8.351	0.3051	2.401	14.3	1.7	91.8	74.4	26.46	0.03
	I	8.0	8.355	0.3179	2.360	3.7	1.6	92.0	83.1	26.52	0.11
	J	10.0	8.503	0.2688	2.884	3.0	1.9	90.2	90.1	26.49	0.13
	K	15.0	8.352	0.1676	2.480	4.2	3.0	91.4	100.0	26.35	0.10
	Integrated age ± 2σ			n=11		42.8	1.5	K2O=5.08%		25.96	0.07
	Plateau ± 2σ		steps H-K	n=4	MSWD=0.61	25.3	1.9 ±1.3		59.1	26.46	0.06
	Isochron±2σ		steps A-K	n=7	MSWD=41.17		$^{40}Ar/^{36}Ar$=	314.1±4.3		26.41	0.06
	17L-03, GroundmassConcentrate, 5.6 mg, J=0.0018956±0.02%, IC(F)=1.00393±0.00034, NM-293A, Lab#=65927-01										
X	A	0.8	492.2	3.906	1193.2	0.1	0.13	28.4	0.9	431.69	37.30
X	B	1.3	276.8	5.110	655.5	0.3	0.100	30.2	2.7	269.90	11.39
Xi	C	1.6	164.7	6.283	371.7	0.4	0.081	33.6	5.4	183.67	5.67
Xi	D	1.9	72.32	17.51	176.5	0.5	0.029	29.9	8.5	74.50	2.13
Xi	E	2.2	28.86	25.10	65.94	0.6	0.020	39.8	12.1	40.20	1.02
Xi	F	3.0	13.74	7.670	18.82	2.1	0.067	64.2	24.6	30.50	0.25
X	G	5.0	12.51	1.595	11.97	6.5	0.32	72.8	64.1	31.32	0.09
X	H	6.5	19.19	2.625	29.64	3.8	0.19	55.5	87.0	36.62	0.18
X	I	8.0	23.06	1.009	39.98	0.6	0.51	49.1	90.7	38.91	0.97
X	J	10.0	25.04	1.984	43.42	0.6	0.26	49.4	94.1	42.48	1.18
X	K	15.0	41.35	3.563	82.77	1.0	0.14	41.6	100.0	58.83	0.90
	Integrated age ± 2σ			n=11		16.4	0.12	K2O=0.59%		49.18	0.32
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
	Isochron±2σ		steps A-K	n=7	MSWD=11.62		$^{40}Ar/^{36}Ar$=	407.3±2.0		26.63	0.22

16L-02, GroundmassConcentrate, 6.7 mg, J=0.0018974±0.02%, IC(F)=1.00393±0.00034, NM-293A, Lab#=65928-01

Xi	A	0.8	44.10	1.173	142.8	0.5	0.43	4.5	0.8	6.92	0.87
Xi	B	1.3	22.07	1.106	60.62	1.4	0.46	19.2	2.9	14.68	0.34
Xi	C	1.6	13.76	1.682	24.34	2.9	0.30	48.7	7.4	23.17	0.18
X	D	1.9	9.328	1.020	7.010	4.2	0.50	78.7	13.8	25.31	0.11
X	E	2.2	8.064	0.4777	2.983	4.8	1.1	89.6	21.2	24.90	0.08
X	F	3.0	8.491	0.3165	4.541	8.0	1.6	84.5	33.5	24.73	0.06
	G	5.0	8.555	0.3832	4.891	19.1	1.3	83.5	62.9	24.62	0.03
	H	6.5	8.702	0.5372	5.540	11.6	0.95	81.7	80.7	24.51	0.04
	I	8.0	9.153	0.5801	7.092	4.7	0.88	77.6	87.8	24.50	0.09
	J	10.0	9.502	0.7488	8.077	3.0	0.68	75.5	92.4	24.75	0.14
	K	15.0	9.772	0.9270	9.312	5.0	0.55	72.6	100.0	24.48	0.09
	Integrated age ± 2σ			n=11		65.0	0.85	K2O=1.97%		24.25	0.05
	Plateau ± 2σ		steps G-K	n=5	MSWD=1.84	43.3	1.0 ±0.6		66.5	24.58	0.06
	Isochron±2σ		steps D-K	n=8	MSWD=11.25		$^{40}Ar/^{36}Ar$=	289.1±9.4		24.76	0.17



Age Spectra for D2B dikes. Data at 2-sigma. Results at 2-sigma.



Inverse isochrons for D2B dikes. Data at 1-sigma. Results at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for D2A dikes.

ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
16L-60, GroundmassConcentrate, 7.2 mg, J=0.0018971±0.02%, IC(F)=1.00393±0.00034, NM-293A, Lab#=65926-01										
X A	0.8	29.63	1.574	79.80	1.6	0.32	20.8	6.6	21.34	0.38
X B	1.3	13.30	1.452	26.47	1.2	0.35	42.1	11.3	19.32	0.32
X C	1.6	9.254	1.711	12.41	1.4	0.30	61.9	17.0	19.79	0.24
Xi D	1.9	9.198	2.892	11.71	1.3	0.18	65.0	22.0	20.67	0.28
Xi E	2.2	9.005	3.232	11.34	1.2	0.16	65.8	27.1	20.49	0.28
X F	3.0	7.664	2.854	7.860	2.1	0.18	72.8	35.5	19.30	0.17
X G	5.0	7.477	2.245	6.845	4.4	0.23	75.5	53.3	19.50	0.08
X H	6.5	7.656	1.409	7.534	6.6	0.36	72.4	79.7	19.16	0.07
X I	8.0	9.808	1.662	14.40	3.1	0.31	58.0	92.1	19.66	0.13
Xi J	10.0	14.45	2.272	28.42	0.5	0.22	43.2	94.1	21.57	0.72
Xi K	15.0	15.68	2.181	32.39	1.5	0.23	40.1	100.0	21.71	0.31
Integrated age ± 2σ			n=11		24.9	0.26	K2O=0.70%		19.82	0.11
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ		steps A-I	n=7	MSWD=3.55		$^{40}Ar/^{36}Ar$=	303.4±2.9		19.14	0.13
16L-62, GroundmassConcentrate, 7.61 mg, J=0.00281±0.03%, IC(J)=1.01462±0.00104, NM-290K, Lab#=65701-01										
X A	0.5	63.65	0.5612	203.6	0.529	0.91	5.5	1.6	18.07	0.75
Xi B	0.8	11.06	0.5860	26.49	1.86	0.87	29.6	7.3	16.73	0.13
Xi C	1.2	7.082	1.075	12.46	2.47	0.47	49.2	14.8	17.81	0.08
X D	1.5	5.879	1.252	7.974	2.46	0.41	61.6	22.3	18.52	0.06
X E	1.7	5.550	1.212	6.712	1.96	0.42	66.0	28.3	18.73	0.06
X F	1.9	5.481	1.125	6.434	1.549	0.45	66.9	33.1	18.75	0.07
Xi G	2.2	5.500	1.067	6.243	1.96	0.48	68.0	39.1	19.12	0.07
X H	3.0	5.521	1.093	6.547	4.51	0.47	66.5	52.9	18.77	0.04
X I	4.0	5.510	1.253	6.720	6.71	0.41	65.7	73.4	18.53	0.03
X J	5.0	5.868	1.685	8.142	4.77	0.30	61.3	88.0	18.39	0.04
X K	7.0	7.320	2.486	13.01	2.23	0.21	50.2	94.8	18.80	0.08
X L	10.0	7.967	3.113	15.10	0.867	0.16	47.1	97.4	19.21	0.16
Xi M	15.0	9.469	4.296	19.24	0.846	0.12	43.5	100.0	21.13	0.14
Integrated age ± 2σ			n=13		32.7	0.36	K2O=0.59%		18.54	0.04
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ		steps A-L	n=9	MSWD=11.78		$^{40}Ar/^{36}Ar$=	295.6±1.4		18.61	0.06
16L-62, GroundmassConcentrate, 7 mg, J=0.00281±0.03%, IC(F)=1.01532±0.00114, NM-290K, Lab#=65701-02										
Xi A	1.3	6.214	0.9702	9.411	4.3	0.53	56.4	11.2	17.94	0.13
Xi B	1.9	5.007	1.123	5.132	2.9	0.45	71.5	18.7	18.30	0.14
X C	2.2	5.086	1.072	4.859	2.7	0.48	73.4	25.7	19.09	0.15
X D	2.6	5.079	1.077	4.727	3.1	0.47	74.2	33.6	19.26	0.14
X E	3.0	5.066	1.096	4.674	3.4	0.47	74.4	42.3	19.28	0.13
Xi F	3.5	5.200	1.132	5.055	4.2	0.45	73.0	53.3	19.41	0.09
X G	4.0	5.196	1.172	5.559	4.9	0.44	70.2	65.9	18.64	0.10
Xi H	6.0	5.538	1.443	6.928	8.1	0.35	65.1	86.9	18.44	0.07
X I	10.0	7.629	2.717	13.80	3.5	0.19	49.4	95.8	19.28	0.17
Xi J	15.0	8.442	3.540	14.79	1.6	0.14	51.5	100.0	22.27	0.28
Integrated age ± 2σ			n=10		38.8	0.36	K2O=0.76%		18.92	0.08
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

Isochron±2σ	steps C-I	n=5	MSWD=8.02		$^{40}Ar/^{36}Ar$=	300.4±8.4		18.88	0.27

16L-66, GroundmassConcentrate, 7.09 mg, J=0.0028019±0.02%, IC(J)=1.01462±0.00104, NM-290L, Lab#=65707-01

Xi A	0.5	175.6	0.0679	248.1	1.248	7.5	58.3	2.7	461.47	0.64
Xi B	0.8	61.66	0.0729	90.96	6.70	7.0	56.4	17.4	170.19	0.18
Xi C	1.2	24.03	0.0737	34.44	8.11	6.9	57.7	35.2	69.71	0.08
Xi D	1.5	7.520	0.0284	6.594	1.007	18.0	74.1	37.4	28.32	0.10
Xi E	1.7	9.482	0.0378	9.336	1.88	13.5	70.9	41.6	34.13	0.08
Xi F	1.9	8.641	0.0392	8.988	2.11	13.0	69.3	46.2	30.41	0.07
Xi G	2.2	9.577	0.0417	11.00	2.87	12.2	66.1	52.5	32.13	0.07
Xi H	3.0	12.30	0.0623	16.25	6.60	8.2	61.0	67.0	38.06	0.06
Xi I	4.0	14.68	0.0629	19.43	5.13	8.1	60.9	78.2	45.24	0.07
Xi J	5.0	14.65	0.0569	19.91	1.65	9.0	59.9	81.8	44.42	0.12
Xi K	7.0	17.53	0.0667	23.75	1.310	7.6	60.0	84.7	53.13	0.15
Xi L	10.0	37.72	0.1418	41.43	1.81	3.6	67.6	88.7	126.24	0.17
Xi M	15.0	42.31	0.1341	46.10	5.16	3.8	67.8	100.0	141.57	0.12
Integrated age ± 2σ			n=13		45.6	7.0	K2O=0.88%		92.12	0.09
Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ	no isochron		n=0	MSWD=19.30		$^{40}Ar/^{36}Ar$=	0.0±0.0		0.00	0.00

16L-67, GroundmassConcentrate, 7.55 mg, J=0.0028023±0.02%, IC(J)=1.01462±0.00104, NM-290L, Lab#=65706-01

X A	0.5	50.40	2.336	130.3	0.372	0.22	24.0	1.2	61.00	0.62
Xi B	0.8	28.83	3.678	56.32	0.739	0.14	43.3	3.5	63.08	0.31
Xi C	1.2	14.14	3.361	21.72	1.536	0.15	56.5	8.4	40.58	0.13
Xi D	1.5	8.103	2.668	10.37	2.41	0.19	64.8	16.0	26.75	0.07
Xi E	1.7	5.741	2.455	5.732	2.65	0.21	73.9	24.4	21.64	0.05
Xi F	1.9	5.440	2.109	4.976	2.17	0.24	76.1	31.2	21.10	0.05
Xi G	2.2	5.133	1.545	4.156	2.72	0.33	78.5	39.9	20.53	0.05
X H	3.0	5.429	1.254	5.240	6.56	0.41	73.3	60.6	20.28	0.03
X I	4.0	6.139	1.417	7.363	7.63	0.36	66.4	84.8	20.77	0.03
X J	5.0	7.070	1.768	10.07	1.359	0.29	59.9	89.1	21.58	0.10
X K	7.0	7.836	2.107	12.41	0.828	0.24	55.3	91.7	22.11	0.13
X L	10.0	8.754	3.989	14.75	1.415	0.13	53.8	96.2	24.06	0.10
Xi M	15.0	8.388	7.816	12.55	1.207	0.065	63.3	100.0	27.14	0.12
Integrated age ± 2σ			n=13		31.6	0.23	K2O=0.57%		24.11	0.04
Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ	steps A-L		n=6	MSWD=19.30		$^{40}Ar/^{36}Ar$=	361.8±2.1		18.56	0.09

17L-05, GroundmassConcentrate, 5.8 mg, J=0.0019001±0.01%, IC(F)=1.00662±0.00025, NM-293B, Lab#=65959-01

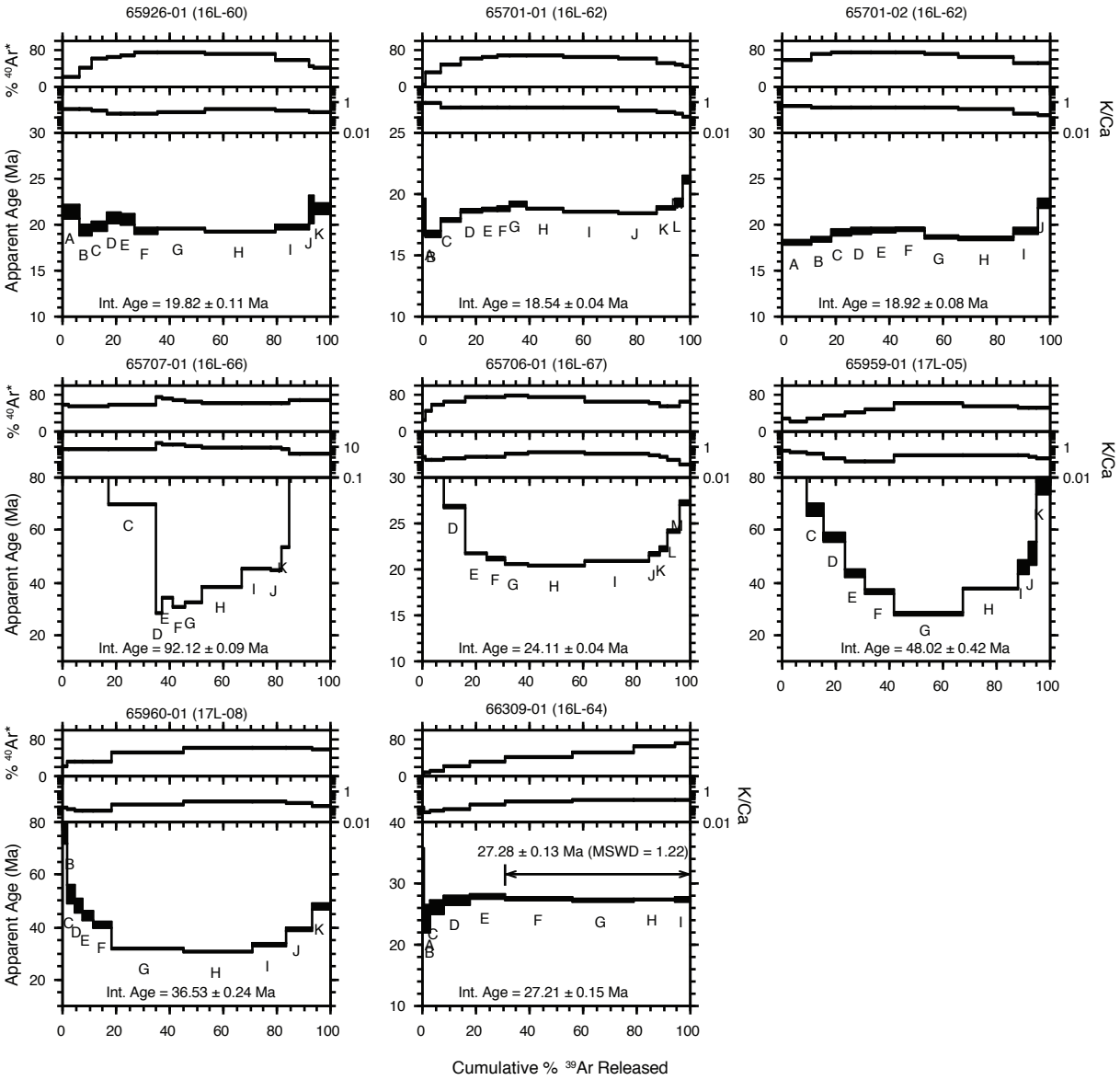
Xi A	0.8	149.8	0.9388	364.6	0.4	0.54	28.1	3.4	141.17	4.91
Xi B	1.3	118.3	1.271	313.7	0.7	0.40	21.7	9.2	87.46	1.83
Xi C	1.6	68.01	1.620	163.9	0.8	0.32	29.0	15.9	67.34	1.25
Xi D	1.9	48.33	2.809	108.1	1.0	0.18	34.4	23.6	56.99	0.94
Xi E	2.2	30.28	4.944	61.37	0.9	0.10	41.5	30.9	43.32	0.76
Xi F	3.0	22.49	4.916	41.89	1.4	0.10	46.8	42.2	36.36	0.43
Xi G	5.0	13.20	2.046	17.99	3.2	0.25	61.0	67.8	27.81	0.17
Xi H	6.5	20.51	1.860	33.15	2.6	0.27	53.0	88.3	37.47	0.26
Xi I	8.0	25.77	1.895	42.83	0.5	0.27	51.5	92.3	45.64	1.37
Xi J	10.0	29.59	2.486	50.65	0.3	0.21	50.1	95.0	50.96	2.17
Xi K	15.0	43.99	2.856	73.42	0.6	0.18	51.2	100.0	76.88	1.75
Integrated age ± 2σ			n=11		12.5	0.20	K2O=0.43%		48.02	0.42
Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ	no isochron		n=0	MSWD=26.91		$^{40}Ar/^{36}Ar$=	0.0±0.0		0.00	0.00

17L-08, GroundmassConcentrate, 6.1 mg, J=0.0019005±0.01%, IC(F)=1.00662±0.00025, NM-293B, Lab#=65960-01

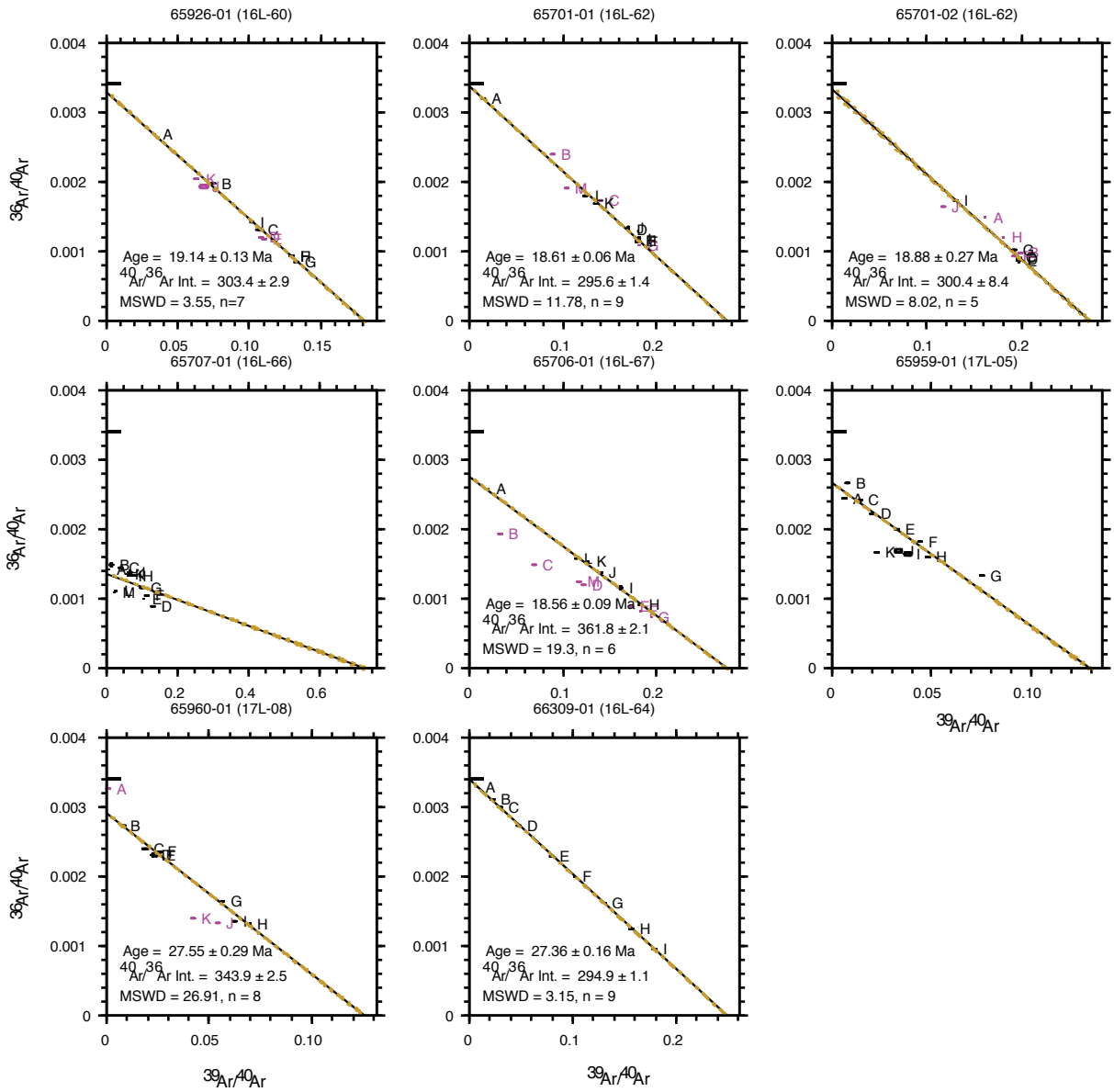
Xi	A	0.8	813.6	5.402	2652.5	0.1	0.094	3.7	0.5	102.51	17.07
X	B	1.3	119.5	5.732	327.5	0.3	0.089	19.4	2.1	79.29	3.88
X	C	1.6	51.30	7.755	124.4	0.5	0.066	29.6	4.7	52.40	1.69
X	D	1.9	43.75	9.611	103.7	0.6	0.053	31.8	7.8	48.08	1.31
X	E	2.2	40.17	8.527	95.21	0.7	0.060	31.7	11.7	44.10	0.97
X	F	3.0	38.26	8.357	92.07	1.3	0.061	30.7	18.6	40.69	0.61
X	G	5.0	17.62	3.573	29.91	4.9	0.14	51.5	45.5	31.40	0.14
X	H	6.5	14.28	2.286	19.05	4.7	0.22	61.9	70.9	30.53	0.13
X	I	8.0	15.94	2.333	22.06	2.4	0.22	60.3	84.0	33.19	0.24
Xi	J	10.0	18.36	3.124	24.98	1.8	0.16	61.2	93.5	38.77	0.35
Xi	K	15.0	23.39	4.176	33.46	1.2	0.12	59.2	100.0	47.71	0.61
	Integrated age ± 2σ			n=11		18.3	0.13	K2O=0.61%		36.53	0.24
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
	Isochron±2σ		steps B-I	n=8	MSWD=26.91		$^{40}Ar/^{36}Ar$=	343.9±2.5		27.55	0.29

16L-64, GroundmassConcentrate, 7.03 mg, J=0.0037469±0.02%, IC(F)=1.05908±0.00095, NM-294M, Lab#=66309-01

X	A	1.3	126.7	5.504	415.7	0.6	0.093	3.4	0.8	29.38	3.14
X	B	2.2	42.22	12.65	134.6	1.5	0.040	8.3	2.9	24.13	1.13
X	C	3.0	32.04	9.732	98.40	3.7	0.052	11.8	8.3	25.91	0.58
X	D	4.0	20.27	6.865	57.12	6.7	0.074	19.6	17.8	27.11	0.34
X	E	5.0	12.51	3.922	29.67	9.2	0.13	32.5	30.9	27.76	0.20
	F	7.0	9.789	2.426	20.18	17.6	0.21	41.1	56.0	27.45	0.12
	G	8.5	7.603	1.914	12.78	16.5	0.27	52.4	79.4	27.15	0.11
	H	10.0	6.330	1.876	8.404	10.8	0.27	63.2	94.8	27.25	0.11
	I	15.0	5.556	1.934	5.778	3.7	0.26	72.2	100.0	27.30	0.18
	Integrated age ± 2σ			n=9		70.4	0.15	K2O=1.03%		27.21	0.15
	Plateau ± 2σ		steps F-I	n=4	MSWD=1.22	48.6	0.25 ±0.06		69.1	27.28	0.13
	Isochron±2σ		steps A-I	n=9	MSWD=3.15		$^{40}Ar/^{36}Ar$=	294.9±1.1		27.36	0.16



Age Spectra for D2A dikes. Data at 2-sigma. Results at 2-sigma.



Inverse isochron for D2A dikes. Data at 1-sigma. Results at 2-sigma

Step-heat $^{40}Ar/^{39}Ar$ analytical data for D1 dikes.

ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
15L-37, GroundmassConcentrate, 7.09 mg, J=0.0028003±0.02%, IC(J)=1.014612±0.00104, NM-290L, Lab#=65708-01										
Xi A	0.5	19.50	1.809	57.71	0.432	0.28	13.3	0.7	13.24	0.34
Xi B	0.8	8.963	1.771	17.91	1.64	0.29	42.5	3.2	19.42	0.11
X C	1.2	6.763	3.086	6.619	2.96	0.17	74.7	7.8	25.75	0.05
D	1.5	5.893	1.868	2.707	4.26	0.27	89.0	14.5	26.67	0.03
E	1.7	5.539	0.8680	1.161	5.22	0.59	95.1	22.6	26.77	0.02
F	1.9	5.528	0.6368	1.064	4.44	0.80	95.2	29.6	26.76	0.02
G	2.2	5.663	0.6172	1.434	5.15	0.83	93.4	37.6	26.88	0.02
H	3.0	5.657	0.6514	1.545	10.68	0.78	92.8	54.3	26.70	0.01
X I	4.0	5.573	0.7087	1.469	14.32	0.72	93.2	76.6	26.41	0.01
X J	5.0	5.572	0.7664	1.608	4.77	0.67	92.6	84.0	26.22	0.02
X K	7.0	5.624	0.7586	1.862	3.09	0.67	91.3	88.9	26.11	0.03
X L	10.0	5.861	1.155	2.754	2.89	0.44	87.7	93.4	26.14	0.04
X M	15.0	6.322	1.510	4.305	4.25	0.34	81.8	100.0	26.30	0.04
Integrated age ± 2σ			n=13		64.1	0.51	K2O=1.24%		26.22	0.02
Plateau ± 2σ		steps D-H	n=5	MSWD=15.88	29.747	0.686±0.466		46.4	26.75	0.07
Isochron±2σ		steps C-M	n=11	MSWD=150.82		$^{40}Ar/^{36}Ar$=	269.8±3.1		26.73	0.03
15L-36, GroundmassConcentrate, 7.42 mg, J=0.002808±0.02%, IC(J)=1.014612±0.00104, NM-290K, Lab#=65703-01										
X A	0.5	330.3	1.806	1091.8	0.215	0.28	2.4	1.7	39.60	2.67
X B	0.8	43.44	1.845	129.0	0.678	0.28	12.5	7.2	27.80	0.52
Xi C	1.2	14.91	2.472	33.33	0.921	0.21	35.2	14.5	26.84	0.20
Xi D	1.5	9.905	2.144	16.43	0.850	0.24	52.7	21.4	26.65	0.14
Xi E	1.7	9.348	1.908	14.23	0.696	0.27	56.6	26.9	27.02	0.15
X F	1.9	9.035	1.736	12.63	0.611	0.29	60.2	31.8	27.76	0.17
X G	2.2	8.747	1.800	11.78	0.759	0.28	61.8	37.9	27.59	0.14
X H	3.0	9.056	1.966	12.91	1.82	0.26	59.6	52.5	27.54	0.10
X I	4.0	11.82	2.310	22.19	2.72	0.22	46.0	74.4	27.78	0.09
Xi J	5.0	20.04	3.177	50.76	2.00	0.16	26.4	90.4	27.06	0.17
X K	7.0	26.21	3.801	71.44	0.391	0.13	20.6	93.5	27.59	0.45
X L	10.0	30.64	3.797	85.76	0.290	0.13	18.3	95.8	28.62	0.53
Xi M	15.0	54.53	3.930	160.2	0.520	0.13	13.8	100.0	38.25	0.58
Integrated age ± 2σ			n=13		12.48	0.21	K2O=0.23%		28.09	0.15
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.00	0.00 ±0.00		0.0	0.00	0.00
Isochron±2σ		steps A-L	n=8	MSWD=1.24		$^{40}Ar/^{36}Ar$=	297.3±0.8		27.51	0.14
16L-23, GroundmassConcentrate, 6.86 mg, J=0.0028079±0.02%, IC(J)=1.014612±0.00104, NM-290K, Lab#=65702-01										
Xi A	0.5	32.57	2.013	97.97	0.288	0.25	11.6	1.2	19.33	0.59
X B	0.8	15.31	1.873	35.30	1.104	0.27	32.8	5.6	25.66	0.22
X C	1.2	8.408	2.397	11.32	1.97	0.21	62.5	13.4	26.81	0.08
D	1.5	6.379	2.064	4.037	2.10	0.25	83.9	21.8	27.30	0.05
E	1.7	6.134	1.797	3.083	1.74	0.28	87.5	28.8	27.38	0.05
F	1.9	6.140	1.605	2.937	1.476	0.32	88.0	34.7	27.54	0.06
G	2.2	6.232	1.598	3.257	1.92	0.32	86.6	42.4	27.53	0.06
H	3.0	6.389	1.777	4.088	4.48	0.29	83.3	60.3	27.15	0.03
X I	4.0	6.587	2.083	5.104	5.60	0.24	79.6	82.7	26.76	0.03
Xi J	5.0	6.795	2.146	6.298	0.607	0.24	75.1	85.1	26.06	0.14
Xi K	7.0	6.946	2.299	6.693	0.582	0.22	74.2	87.4	26.30	0.14

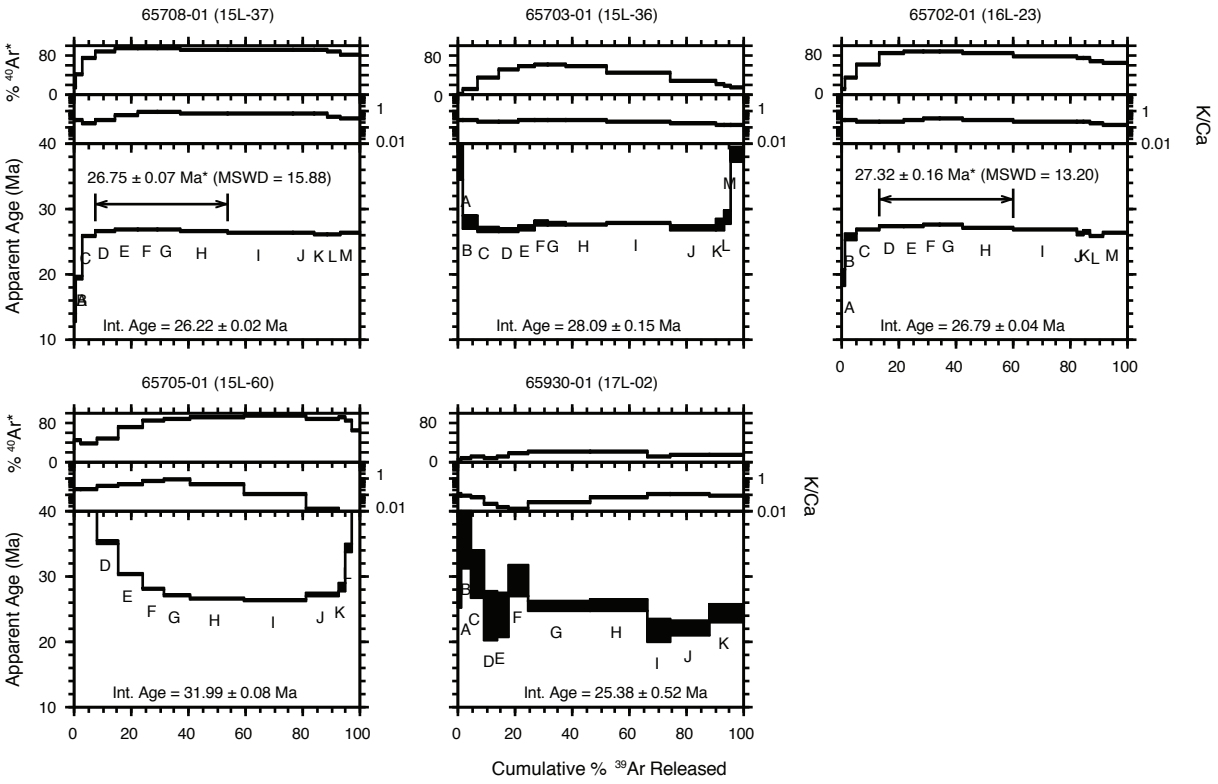
Xi	L	10.0	7.402	3.158	8.821	1.118	0.16	68.2	91.9	25.79	0.10
X	M	15.0	8.145	3.954	11.20	2.03	0.13	63.3	100.0	26.34	0.07
Integrated age ± 2σ				n=13		25.0	0.24	K2O=0.50%		26.79	0.04
Plateau ± 2σ			steps D-H	n=5	MSWD=13.20	11.722	0.289±0.059		46.9	27.32	0.16
Isochron±2σ			steps B-M	n=9	MSWD=31.70		$^{40}Ar/^{36}Ar$=	280.8±2.0		27.42	0.06

15L-60, GroundmassConcentrate, 7 mg, J=0.0028131±0.02%, IC(F)=1.014612±0.00104, NM-290K, Lab#=65705-01

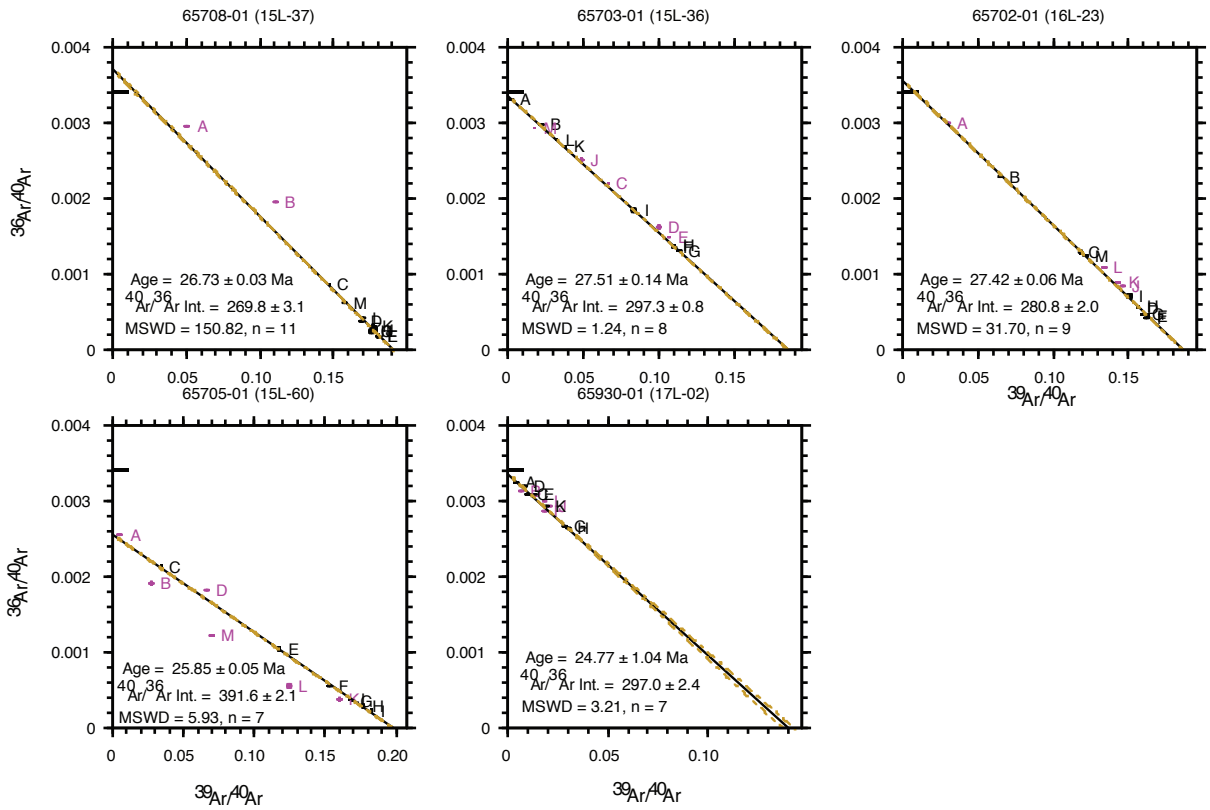
Xi	A	0.5	171.3	3.400	436.8	0.087	0.15	24.8	0.5	207.16	3.48
Xi	B	0.8	35.29	2.294	67.31	0.395	0.22	44.2	2.6	78.64	0.48
X	C	1.2	28.90	2.487	61.79	1.019	0.21	37.5	8.2	55.03	0.27
Xi	D	1.5	14.78	1.456	27.07	1.432	0.35	46.7	16.1	35.20	0.15
X	E	1.7	8.484	1.048	8.977	1.528	0.49	69.7	24.5	30.19	0.08
X	F	1.9	6.512	0.7505	3.745	1.372	0.68	83.9	32.1	27.90	0.07
X	G	2.2	5.898	0.5856	2.251	1.67	0.87	89.5	41.3	26.96	0.05
X	H	3.0	5.658	1.112	1.856	3.50	0.46	91.9	60.5	26.56	0.03
X	I	4.0	5.460	4.963	2.449	3.96	0.10	94.1	82.3	26.31	0.03
X	J	5.0	5.834	33.71	11.34	2.07	0.015	89.1	93.7	27.18	0.09
Xi	K	7.0	5.909	67.00	20.39	0.397	0.008	89.3	95.9	28.32	0.28
Xi	L	10.0	7.636	64.61	21.82	0.324	0.008	83.7	97.7	34.17	0.32
Xi	M	15.0	11.88	216.1	73.14	0.426	0.002	64.5	100.0	46.25	0.62
Integrated age ± 2σ				n=13		18.2	0.036	K2O=0.35%		31.99	0.08
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ			steps C-J	n=7	MSWD=5.93		$^{40}Ar/^{36}Ar$=	391.6±2.1		25.85	0.05

17L-02, GroundmassConcentrate, 6.8 mg, J=0.0019054±0.01%, IC(F)=1.00662±0.00025, NM-293A, Lab#=65930-01, Argus VI

X	A	0.8	218.3	6.171	705.3	0.1	0.083	4.8	1.6	36.22	5.50
Xi	B	1.3	133.3	6.838	417.3	0.3	0.075	7.9	4.9	36.57	2.67
X	C	1.6	93.69	8.439	290.1	0.4	0.060	9.3	9.4	30.22	1.82
X	D	1.9	114.1	18.11	368.2	0.4	0.028	6.0	13.8	23.89	1.83
X	E	2.2	72.87	32.91	233.0	0.3	0.016	9.3	18.1	24.10	1.68
Xi	F	3.0	51.65	41.81	159.0	0.5	0.012	15.8	24.5	29.23	1.16
X	G	5.0	34.24	15.04	95.54	1.7	0.034	21.2	46.6	25.46	0.39
X	H	6.5	32.61	7.172	87.67	1.6	0.071	22.4	66.3	25.41	0.42
Xi	I	8.0	53.83	4.967	162.6	0.6	0.10	11.5	74.2	21.57	0.88
Xi	J	10.0	46.97	5.079	139.0	1.1	0.10	13.4	88.1	21.97	0.58
X	K	15.0	50.45	5.392	148.7	0.9	0.095	13.8	100.0	24.16	0.70
Integrated age ± 2σ				n=11		7.9	0.042	K2O=0.23%		25.38	0.52
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ			steps A-K	n=7	MSWD=3.21		$^{40}Ar/^{36}Ar$=	297.0±2.4		24.77	1.04



Age Spectra for D1 dikes. Data at 2-sigma. Results at 2-sigma.



Inverse isochrons for D1 dikes. Data at 1-sigma. Results at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for PD dikes.

	ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
	15L-33, Sanidine, J=0.0039008±0.11%, IC(J)=1.02521±0.00126, NM-283H, Lab#=65014-02										
X	A	0.3	6.699	0.0116	9.867	3.39	44.1	56.4	8.0	26.77	0.08
	B	0.4	4.408	0.0105	2.262	10.03	48.7	84.8	31.7	26.46	0.02
	C	0.8	3.923	0.0074	0.6223	26.3	68.8	95.3	93.9	26.46	0.01
	D	1.0	3.977	0.0075	0.8435	1.480	67.9	93.7	97.4	26.38	0.06
	E	1.5	3.878	0.0061	0.4605	0.648	83.4	96.5	98.9	26.47	0.12
	F	2.0	3.918	0.0055	0.4696	0.219	92.7	96.5	99.4	26.74	0.35
	G	3.0	4.044	0.0064	0.9501	0.239	79.3	93.1	100.0	26.62	0.32
	Integrated age ± 2σ			n=7		42.3	60.4			26.49	0.06
	Plateau ± 2σ		steps B-G	n=6	MSWD=0.52	38.9	64.0	±30.6	92.0	26.46	0.06
	Isochron±2σ		steps A-G	n=7	MSWD=1.19		$^{40}Ar/^{36}Ar$=	299.2±2.2		26.44	0.06
	15L-61, Biotite, 2.8 mg, J=0.0039247±0.02%, IC(F)=1.04199±0.00273, NM-283C, Lab#=64217-01										
Xi	A	0.5	158.3	0.0679	530.3	0.7	7.5	1.0	0.1	11.83	3.69
Xi	B	0.8	15.57	0.0318	44.23	2.3	16.0	16.0	0.6	17.85	0.47
Xi	C	1.0	6.507	0.0107	10.06	5.0	47.9	54.3	1.6	25.19	0.14
Xi	D	1.5	4.403	0.0081	2.106	26.0	62.8	85.9	7.1	26.92	0.03
X	E	1.9	3.933	0.0044	0.4843	46.9	115.9	96.4	16.8	26.98	0.01
X	F	2.1	3.864	0.0040	0.2766	45.4	127.5	97.9	26.2	26.93	0.01
X	G	2.3	3.848	0.0071	0.2356	48.4	71.8	98.2	36.3	26.90	0.01
X	H	2.5	3.842	0.0130	0.2278	43.2	39.2	98.3	45.2	26.88	0.01
X	I	2.8	3.844	0.0321	0.2520	46.4	15.9	98.1	54.9	26.85	0.01
X	J	3.1	3.838	0.0493	0.2350	47.3	10.4	98.3	64.7	26.86	0.01
X	K	3.5	3.837	0.0667	0.2341	56.2	7.7	98.3	76.3	26.86	0.01
X	L	4.0	3.829	0.0658	0.2131	45.3	7.8	98.5	85.8	26.85	0.01
X	M	7.0	3.840	0.0589	0.2237	64.5	8.7	98.4	99.1	26.90	0.01
X	N	15.0	3.898	0.0279	0.4181	4.2	18.3	96.9	100.0	26.89	0.08
	Integrated age ± 2σ			n=14		481.8	15.2	K2O=16.84%		26.81	0.02
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.0	0.0	±0.0	0.0	0.00	0.00
	Isochron±2σ		steps E-N	n=10	MSWD=3.64		$^{40}Ar/^{36}Ar$=	357.9±15.2		26.78	0.03
	16L-54, Sanidine, J=0.0027874±0.02%, IC(J)=1.00580±0.00094, NM-290M, Lab#=65721-01										
X	A	0.5	5.227	0.0095	0.0284	20.2	54.0	99.9	32.1	26.40	0.00
	B	1.0	5.250	0.0076	0.0518	26.9	67.3	99.7	74.7	26.48	0.00
	C	2.0	5.247	0.0079	0.0311	15.59	64.5	99.8	99.5	26.49	0.01
	D	4.0	5.397	0.0398	0.4859	0.341	12.8	97.4	100.0	26.58	0.15
	Integrated age ± 2σ			n=4		63.0	60.5			26.46	0.01
	Plateau ± 2σ		steps B-D	n=3	MSWD=3.39	42.8	65.8	±61.3	67.9	26.48	0.02
	16L-54, Lab#=65721-02										
X	A	0.4	5.417	0.0120	0.5722	2.81	42.6	96.9	2.4	26.54	0.02
X	B	1.0	5.246	0.0079	0.0388	64.5	64.4	99.8	56.5	26.47	0.00
X	C	2.0	5.250	0.0081	0.0168	48.3	63.4	99.9	97.1	26.53	0.00
X	D	4.0	5.258	0.0052	0.0769	3.49	98.7	99.6	100.0	26.48	0.02
	Integrated age ± 2σ			n=4		119.1	63.8			26.50	0.01
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000	±0.000	0.0	0.00	0.00

16L-54, Lab#=65721-03

X	A	0.4	5.288	0.0076	0.2049	4.04	67.1	98.9	5.3	26.44	0.02
X	B	1.0	5.224	0.0078	0.0350	59.9	65.0	99.8	83.2	26.37	0.00
X	C	2.0	5.225	0.0075	0.0126	11.37	67.8	99.9	98.0	26.41	0.01
X	D	4.0	5.265	0.0119	0.1048	1.554	42.9	99.4	100.0	26.47	0.03
	Integrated age ± 2σ			n=4		76.9	64.8			26.38	0.01
	Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-54, Lab#=65721-04

X	A	0.5	5.248	0.0090	0.0849	19.8	56.7	99.5	36.4	26.42	0.00
	B	1.0	5.239	0.0074	0.0216	23.7	68.5	99.9	79.9	26.46	0.00
	C	2.0	5.238	0.0081	0.0183	9.62	63.3	99.9	97.6	26.47	0.01
	D	4.0	5.263	0.0041	0.0635	1.328	124.6	99.6	100.0	26.52	0.04
	Integrated age ± 2σ			n=4		54.4	63.5			26.45	0.01
	Plateau ± 2σ	steps B-D		n=3	MSWD=1.39	34.6	69.2 ±68.0		63.6	26.46	0.02

16L-54, Lab#=65721-05

X	A	0.5	5.289	0.0084	0.2533	17.8	60.6	98.6	26.9	26.37	0.01
X	B	1.0	5.232	0.0078	0.0239	23.5	65.2	99.9	62.3	26.43	0.00
X	C	2.0	5.239	0.0077	0.0178	23.8	66.7	99.9	98.3	26.47	0.00
X	D	4.0	5.566	0.0138	1.115	1.101	36.9	94.1	100.0	26.49	0.05
	Integrated age ± 2σ			n=4		66.3	63.6			26.43	0.01
	Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-54, Lab#=65721-06

X	A	0.5	10.63	-0.1152	16.83	0.064	-	53.1	0.1	28.54	0.63
	B	1.0	5.258	0.0068	0.0942	1.69	75.4	99.5	3.4	26.45	0.02
	C	4.5	5.257	0.0079	0.1062	50.3	64.6	99.4	100.0	26.43	0.00
	Integrated age ± 2σ			n=3		52.0	66.2			26.43	0.02
	Plateau ± 2σ	steps B-C		n=2	MSWD=1.11	51.965	64.946±15.33		99.9	26.43	0.02

16L-54, Lab#=65721-07

X	A	0.5	12.37	-0.4931	6.287	0.005	-	84.7	0.0	52.64	11.49
X	B	1.0	5.308	0.0086	0.1481	0.383	59.4	99.2	1.3	26.63	0.09
X	C	4.5	5.236	0.0075	0.0609	29.4	68.4	99.7	100.0	26.39	0.00
	Integrated age ± 2σ			n=3		29.7	69.0			26.40	0.02
	Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-54, Lab#=65721-08

X	A	0.5	9.387	-0.7114	8.378	0.007	-	73.0	0.0	34.61	5.68
X	B	0.8	5.485	0.0053	0.7156	0.245	96.8	96.1	1.1	26.67	0.15
X	C	0.9	5.271	0.0134	0.2288	0.675	38.2	98.7	3.9	26.32	0.07
X	D	1.2	5.222	0.0080	0.0304	7.97	63.9	99.8	37.8	26.37	0.01
	E	1.5	5.243	0.0054	0.0165	3.53	94.7	99.9	52.9	26.49	0.01
	F	4.5	5.242	0.0078	0.0274	9.53	65.8	99.9	93.4	26.47	0.01
	G	0.9	5.239	0.0075	0.0392	1.387	67.7	99.8	99.3	26.44	0.03
	H	1.5	5.286	0.0198	0.3984	0.147	25.7	97.8	99.9	26.15	0.23
	I	4.5	10.05	-0.1675	17.61	0.016	-	48.0	100.0	24.44	2.06
	Integrated age ± 2σ			n=9		23.5	69.6			26.43	0.02
	Plateau ± 2σ	steps E-I		n=5	MSWD=1.82	14.6	72.5 ±50.9		62.2	26.47	0.02

16L-69, Sanidine, J=0.0027849±0.03%, IC(J)=1.00580±0.00094, NM-290M, Lab#=65725-01

X	A	0.5	5.343	0.0099	0.3609	9.39	51.6	98.0	10.8	26.46	0.01
X	B	1.0	5.287	0.0077	0.1716	52.9	66.2	99.1	71.8	26.46	0.00
X	C	2.0	5.311	0.0089	0.2344	20.9	57.0	98.7	96.0	26.49	0.01
X	D	4.5	5.327	0.0085	0.2376	3.49	60.1	98.7	100.0	26.56	0.02
	Integrated age ± 2σ			n=4		86.6	61.7			26.47	0.01
	Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-69, Lab#=65725-02

X	A	0.5	5.553	0.0111	1.087	6.08	46.0	94.2	6.5	26.44	0.02
X	B	1.0	5.257	0.0079	0.0907	60.2	64.4	99.5	71.3	26.43	0.00
X	C	2.0	5.252	0.0082	0.0539	24.1	62.6	99.7	97.3	26.46	0.00
X	D	4.5	5.365	0.0090	0.4005	2.50	56.8	97.8	100.0	26.51	0.02
	Integrated age ± 2σ			n=4		92.9	62.1			26.44	0.01
	Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-69, Lab#=65725-03

X	A	0.5	9.638	0.0107	14.83	21.2	47.6	54.5	38.7	26.56	0.04
X	B	1.0	5.286	0.0100	0.2079	24.5	51.2	98.9	83.3	26.40	0.01
X	C	2.0	5.344	0.0100	0.4011	8.71	50.9	97.8	99.2	26.40	0.01
X	D	4.5	5.851	0.0202	1.936	0.439	25.2	90.2	100.0	26.68	0.13
	Integrated age ± 2σ			n=4		54.9	49.3			26.46	0.03
	Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-69, Lab#=65725-04

X	A	0.5	5.294	0.0081	0.2315	5.24	63.1	98.7	7.0	26.41	0.01
X	B	1.0	5.243	0.0080	0.0286	32.5	63.7	99.9	50.6	26.45	0.00
X	C	2.0	5.250	0.0081	0.0225	34.7	62.9	99.9	97.1	26.50	0.00
X	D	4.5	5.256	0.0108	0.0575	2.18	47.3	99.7	100.0	26.47	0.02
	Integrated age ± 2σ			n=4		74.7	62.7			26.47	0.01
	Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-69, Lab#=65725-05

X	A	0.5	5.426	0.0083	0.6404	21.5	61.1	96.5	36.2	26.46	0.01
X	B	1.0	5.317	0.0079	0.2471	27.5	64.3	98.6	82.5	26.50	0.01
X	C	2.0	5.331	0.0075	0.2533	8.91	68.4	98.6	97.5	26.56	0.01
X	D	4.5	5.429	0.0033	0.5813	1.484	156.4	96.8	100.0	26.56	0.04
	Integrated age ± 2σ			n=4		59.4	64.6			26.50	0.02
	Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-69,Lab#=65725-06

X	A	0.5	5.290	0.0072	0.2340	13.98	70.5	98.7	40.5	26.38	0.01
	B	0.8	5.291	0.0077	0.2231	10.47	66.1	98.8	70.9	26.40	0.01
	C	0.9	5.307	0.0072	0.2678	7.79	71.3	98.5	93.4	26.42	0.01
	D	1.0	5.294	0.0054	0.2038	1.97	94.9	98.9	99.2	26.45	0.02
	E	4.5	6.847	-0.0019	5.454	0.289	-	76.4	100.0	26.45	0.14
	Integrated age ± 2σ			n=5		34.5	71.0			26.40	0.02
	Plateau ± 2σ	steps B-E		n=4	MSWD=2.38	20.5	69.9 ±26.6		59.5	26.41	0.02

16L-69, Lab#=65725-07

X	A	0.5	5.284	0.0112	0.1993	2.97	45.5	98.9	16.2	26.40	0.01
	B	0.8	5.239	0.0085	0.0837	5.97	60.0	99.5	48.8	26.35	0.01
	C	0.9	5.237	0.0098	0.0659	4.65	51.9	99.6	74.1	26.37	0.01

	D	1.0	5.234	0.0074	0.0436	2.69	68.7	99.8	88.8	26.38	0.01
X	E	4.5	5.266	0.0059	0.0689	2.05	86.9	99.6	100.0	26.51	0.02
	Integrated age ± 2σ			n=5		18.3	57.8			26.39	0.02
	Plateau ± 2σ		steps B-D	n=3	MSWD=2.36	13.30	58.9	±16.8	72.6	26.36	0.02

16L-69, Lab#=65725-08

	A	0.5	5.479	0.0082	0.8623	9.84	62.2	95.4	38.6	26.40	0.01
	B	0.8	5.275	0.0086	0.1558	7.91	59.6	99.1	69.6	26.42	0.01
	C	0.9	5.264	0.0077	0.1202	5.18	66.2	99.3	89.9	26.42	0.01
	D	1.0	5.266	0.0062	0.1097	2.01	82.5	99.4	97.8	26.44	0.02
	E	4.5	5.284	0.0076	0.1105	0.564	66.7	99.4	100.0	26.53	0.06
	Integrated age ± 2σ			n=5		25.5	63.5			26.42	0.02
	Plateau ± 2σ		steps A-E	n=5	MSWD=3.12	25.5	63.9	±17.8	100.0	26.42	0.02

17L-13, Sanidine, J=0.001896±0.02%, IC(J)=1.00432±0.00035, NM-293D, Lab#=65982-01

X	A	0.3	8.861	0.0118	4.135	8.70	43.3	86.2	36.1	26.30	0.02
X	B	0.4	8.737	0.0104	3.532	2.90	48.8	88.1	48.1	26.48	0.03
X	C	0.5	8.065	0.0062	1.168	4.69	82.7	95.7	67.5	26.57	0.01
X	D	0.7	8.006	0.0082	1.000	5.08	62.2	96.3	88.6	26.54	0.01
X	E	0.8	8.069	0.0066	1.186	1.98	77.7	95.7	96.8	26.57	0.03
X	F	2.3	8.354	0.0101	2.021	0.767	50.5	92.9	100.0	26.70	0.05
	Integrated age ± 2σ			n=6		24.1	54.9			26.46	0.02
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.00	0.0	±0.0	0.0	0.00	0.00

17L-13, Lab#=65982-02

X	A	0.3	8.361	0.0082	2.671	12.81	62.0	90.6	40.3	26.07	0.01
	B	0.7	8.813	0.0080	3.776	16.4	64.1	87.3	92.0	26.49	0.01
	C	2.3	8.839	0.0070	3.811	2.56	72.4	87.3	100.0	26.55	0.03
	Integrated age ± 2σ			n=3		31.8	63.9			26.32	0.02
	Plateau ± 2σ		steps B-C	n=2	MSWD=3.38	18.986	65.254	±11.76(	59.7	26.50	0.04

17L-13, Lab#=65982-03

X	A	0.3	9.356	0.0089	5.957	11.51	57.0	81.2	37.6	26.15	0.01
X	B	0.7	8.577	0.0073	2.999	15.93	70.0	89.7	89.7	26.47	0.01
X	C	2.3	8.285	0.0059	1.928	3.15	86.7	93.1	100.0	26.55	0.02
	Integrated age ± 2σ			n=3		30.6	65.7			26.36	0.02
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000	±0.000	0.0	0.00	0.00

17L-13, Lab#=65982-04

X	A	0.3	9.364	0.0072	5.988	2.87	71.3	81.1	39.2	26.14	0.03
	B	0.7	8.487	0.0089	2.700	3.62	57.3	90.6	88.8	26.47	0.02
	C	2.3	8.234	0.0071	1.763	0.819	72.0	93.7	100.0	26.55	0.05
	Integrated age ± 2σ			n=3		7.31	63.7			26.35	0.04
	Plateau ± 2σ		steps B-C	n=2	MSWD=2.38	4.444	60.033	±20.69(	60.8	26.48	0.06

17L-13, Lab#=65982-05

X	A	0.3	8.892	0.0092	4.264	8.74	55.4	85.8	22.9	26.27	0.02
X	B	0.7	8.253	0.0083	1.864	17.7	61.5	93.3	69.4	26.51	0.01
X	C	2.3	7.897	0.0079	0.6196	11.69	64.4	97.7	100.0	26.55	0.01
	Integrated age ± 2σ			n=3		38.1	60.8			26.47	0.02
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000	±0.000	0.0	0.00	0.00

17L-13, Lab#=65982-06

X	A	0.3	10.13	0.0095	8.735	9.01	53.8	74.5	40.9	25.98	0.02
X	B	0.7	8.850	0.0079	3.960	11.01	64.5	86.8	91.0	26.43	0.01
X	C	2.3	8.521	0.0080	2.675	1.99	64.1	90.7	100.0	26.61	0.03
	Integrated age ± 2σ			n=3		22.0	59.6			26.27	0.03
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

17L-13, Lab#=65982-07

X	A	0.3	8.817	0.0073	3.996	13.41	70.2	86.6	43.3	26.28	0.01
	B	0.7	8.069	0.0071	1.229	13.31	72.0	95.5	86.3	26.52	0.01
	C	2.3	7.897	0.0068	0.6448	4.25	74.5	97.6	100.0	26.52	0.01
	Integrated age ± 2σ			n=3		31.0	71.6			26.42	0.02
	Plateau ± 2σ		steps B-C	n=2	MSWD=0.01	17.560	72.627±3.542		56.7	26.52	0.02

17L-13, Lab#=65982-08

X	A	0.3	8.516	0.0076	2.942	8.41	66.8	89.8	41.8	26.32	0.01
	B	0.7	7.975	0.0069	0.8731	5.61	74.1	96.8	69.7	26.56	0.01
	C	2.3	8.255	0.0066	1.801	6.09	77.8	93.6	100.0	26.58	0.01
	Integrated age ± 2σ			n=3		20.1	71.9			26.47	0.02
	Plateau ± 2σ		steps B-C	n=2	MSWD=1.45	11.707	76.018±5.121		58.2	26.57	0.02

17L-13, Lab#=65982-09I

X	A	0.3	8.200	0.0092	2.294	9.62	55.3	91.7	37.0	25.90	0.01
X	B	0.7	8.395	0.0082	2.420	13.28	62.1	91.5	88.1	26.43	0.01
X	C	2.3	8.492	0.0068	2.605	3.10	75.2	90.9	100.0	26.58	0.02
	Integrated age ± 2σ			n=3		26.0	60.6			26.25	0.02
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

17L-13, Lab#=65982-10

X	A	0.3	8.951	0.0102	4.761	7.91	50.2	84.3	19.4	25.97	0.02
X	B	0.7	9.001	0.0082	4.510	26.4	62.5	85.2	84.4	26.40	0.01
X	C	2.3	8.347	0.0066	2.141	6.35	76.9	92.4	100.0	26.55	0.02
	Integrated age ± 2σ			n=3		40.7	61.4			26.34	0.02
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

17L-13, Lab#=65982-11

X	A	0.3	8.358	0.0120	2.521	10.27	42.4	91.1	43.7	26.21	0.01
X	B	0.7	8.452	0.0087	2.526	11.82	58.8	91.2	93.9	26.52	0.01
X	C	2.3	8.457	0.0076	2.441	1.442	66.8	91.5	100.0	26.62	0.04
	Integrated age ± 2σ			n=3		23.5	50.6			26.39	0.02
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

17L-13, Lab#=65982-12

X	A	0.3	7.942	0.0078	0.8454	9.87	65.3	96.9	49.0	26.48	0.01
X	B	0.7	7.871	0.0074	0.4779	6.28	68.8	98.2	80.1	26.60	0.01
X	C	2.3	7.835	0.0064	0.2905	4.01	80.2	98.9	100.0	26.67	0.01
	Integrated age ± 2σ			n=3		20.1	68.9			26.56	0.02
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

17L-13, Lab#=65982-13

X	A	0.3	10.66	0.0107	10.91	4.68	47.8	69.7	8.8	25.60	0.04
X	B	0.7	8.238	0.0105	1.876	34.7	48.6	93.3	74.5	26.45	0.01

X	C	2.3	8.221	0.0089	1.710	13.48	57.4	93.9	100.0	26.56	0.01
	Integrated age ± 2σ			n=3		52.9	50.5			26.40	0.02
	Plateau ± 2σ		steps B-C	n=2	MSWD=110.2	48.195	51.108±12.43		91.2	26.48	0.10

17L-13, Lab#=65982-14

X	A	0.3	8.547	0.0094	3.159	4.04	54.3	89.1	45.0	26.21	0.02
	B	0.7	8.561	0.0081	2.894	2.99	62.9	90.0	78.3	26.52	0.02
	C	2.3	8.701	0.0075	3.285	1.95	68.2	88.8	100.0	26.61	0.03
	Integrated age ± 2σ			n=3		8.98	59.7			26.40	0.03
	Plateau ± 2σ		steps B-C	n=2	MSWD=4.33	4.942	64.966±7.507		55.0	26.55	0.08

17L-13, Lab#=65982-15

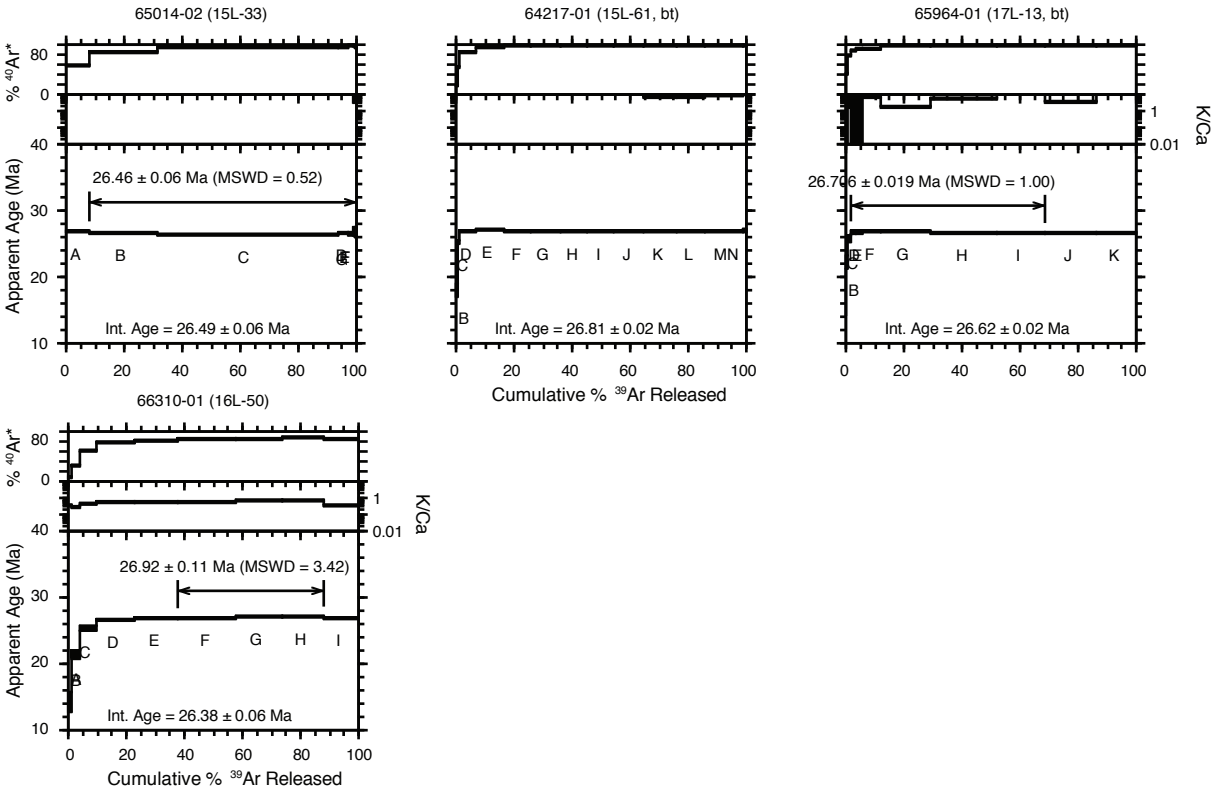
X	A	0.3	8.045	0.0125	1.259	3.53	40.9	95.4	42.8	26.41	0.02
	B	0.7	8.060	0.0085	1.155	2.84	60.0	95.8	77.2	26.57	0.02
	C	2.3	8.051	0.0091	1.059	1.88	56.0	96.1	100.0	26.63	0.02
	Integrated age ± 2σ			n=3		8.25	49.4			26.52	0.03
	Plateau ± 2σ		steps B-C	n=2	MSWD=4.49	4.723	58.413±5.636		57.2	26.59	0.06

17L-13, Biotite, 3.61 mg, J=0.0019053±0.01%, IC(F)=1.01046±0.00063, NM-293B, Lab#=65964-01

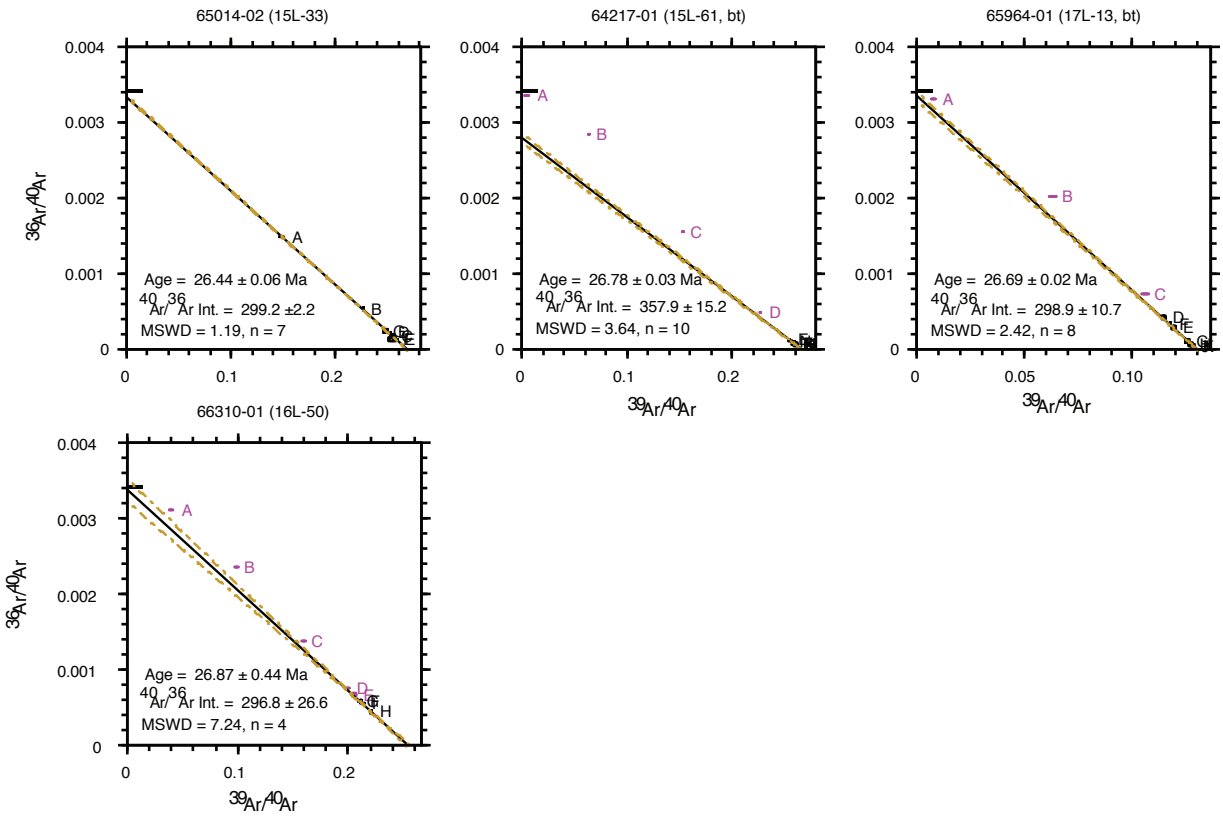
Xi	A	0.8	122.0	0.0422	402.6	0.3	12.1	2.5	0.2	10.50	1.87
Xi	B	1.3	15.77	-0.0242	31.71	0.8	-	40.5	0.8	22.13	0.49
Xi	C	1.6	9.405	0.0204	6.811	1.7	25.0	78.6	1.9	25.58	0.23
	D	1.9	8.733	0.0063	3.498	2.6	81.1	88.2	3.7	26.63	0.16
	E	2.2	8.366	-0.0037	2.244	3.5	-	92.1	6.0	26.64	0.11
	F	3.0	8.503	0.0812	2.693	8.9	6.3	90.7	12.1	26.68	0.05
	G	5.0	7.942	0.2621	0.8015	25.5	1.9	97.3	29.4	26.73	0.02
	H	6.5	7.843	0.0886	0.4309	33.5	5.8	98.5	52.2	26.71	0.01
	I	8.0	7.792	0.0420	0.2791	24.4	12.2	99.0	68.8	26.68	0.02
X	J	10.0	7.805	0.1415	0.3858	26.1	3.6	98.7	86.6	26.64	0.02
X	K	15.0	7.788	0.0219	0.2587	19.7	23.3	99.0	100.0	26.68	0.02
	Integrated age ± 2σ			n=11		147.0	4.8	K2O=8.21%		26.62	0.02
	Plateau ± 2σ		steps D-I	n=6	MSWD=1.00	98.3	8.4 ±61.2		66.9	26.71	0.02
	Isochron±2σ		steps D-K	n=8	MSWD=2.42		$^{40}Ar/^{36}Ar$=	298.9±10.7		26.69	0.02

16L-50, GroundmassConcentrate, 7.03 mg, J=0.0037511±0.01%, IC(F)=1.05846 ± 0.00104, NM-294M, Lab#=66310-01

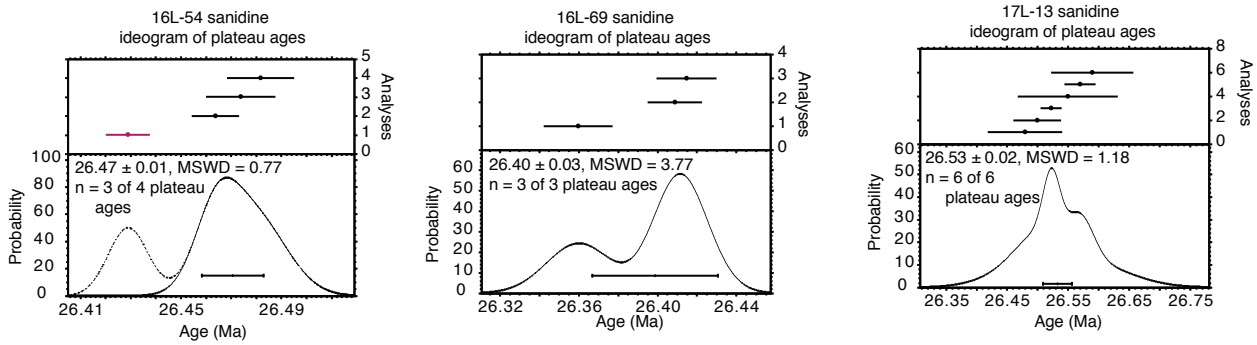
Xi	A	1.3	24.39	1.525	76.00	1.5	0.33	8.4	1.4	14.08	0.78
Xi	B	2.2	10.07	1.717	23.98	2.7	0.30	31.0	4.0	21.31	0.34
Xi	C	3.0	6.227	1.282	8.904	6.1	0.40	59.4	9.9	25.23	0.15
Xi	D	4.0	4.997	0.8540	3.983	13.6	0.60	77.9	23.0	26.50	0.07
Xi	E	5.0	4.841	0.9544	3.393	15.6	0.53	80.9	38.0	26.68	0.06
	F	7.0	4.718	0.8474	2.867	20.9	0.60	83.5	58.1	26.84	0.05
	G	8.5	4.765	0.7189	2.896	16.6	0.71	83.3	74.0	27.02	0.05
	H	10.0	4.526	0.7593	2.144	14.8	0.67	87.4	88.2	26.93	0.06
X	I	15.0	4.668	1.352	2.908	12.2	0.38	84.0	100.0	26.72	0.07
	Integrated age ± 2σ			n=9		104.2	0.54	K2O=1.52%		26.38	0.06
	Plateau ± 2σ		steps F-H	n=3	MSWD=3.42	52.3	0.66 ±0.11		50.2	26.92	0.11
	Isochron±2σ		steps F-I	n=4	MSWD=7.24		$^{40}Ar/^{36}Ar$=	296.8±26.6		26.87	0.44



Age Spectra for PD dikes. Data at 2-sigma. Results at 2-sigma.



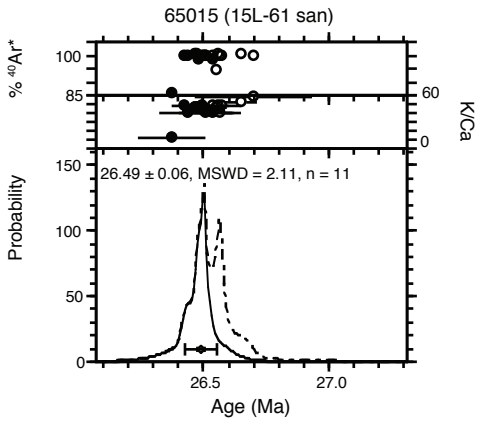
Inverse isochron for PD dikes. Data at 1-sigma. Results at 2-sigma.



Ideogram of sanidine bearing, step-heated PD dikes that yielded plateau ages. Data at 1-sigma. Results at 2-sigma.

SCLF $^{40}Ar/^{39}Ar$ analytical data for PD dikes.

	ID	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	Age (Ma)	±1σ (Ma)
	15L-61, Sanidine, J=0.0039005±0.12%, IC(J)=1.02521±0.00126, NM-283H, Lab#=65015								
	01	4.347	2.450	2.775	0.968	0.21	85.6	26.38	0.10
	17	3.749	0.0071	0.0463	4.568	72.0	99.6	26.43	0.02
	12	3.766	0.0088	0.0977	0.920	57.9	99.3	26.45	0.08
	14	3.755	0.0072	0.0432	3.513	70.6	99.7	26.47	0.02
	16	3.753	0.0071	0.0378	6.425	72.0	99.7	26.48	0.01
	13	3.812	0.0072	0.2299	10.171	70.6	98.2	26.49	0.01
	03	3.766	0.0069	0.0698	16.586	74.1	99.5	26.50	0.01
	16B	3.766	0.0084	0.0651	1.266	60.9	99.5	26.51	0.06
	15B	3.772	0.0088	0.0819	1.007	57.8	99.4	26.52	0.07
	15	3.771	0.0078	0.0791	6.332	65.8	99.4	26.52	0.01
	17B	3.828	0.0086	0.2620	0.847	59.4	98.0	26.54	0.09
X	13B	3.777	0.0070	0.0872	3.338	73.2	99.3	26.54	0.02
X	04	3.989	0.0071	0.7967	9.201	71.6	94.1	26.56	0.02
X	09	3.759	0.0071	0.0137	8.957	72.1	99.9	26.57	0.01
X	02	3.788	0.0086	0.1098	2.887	59.2	99.2	26.57	0.03
X	14B	3.779	0.0069	0.0765	1.501	73.4	99.4	26.57	0.05
X	10	3.779	0.0061	0.0373	2.280	83.0	99.7	26.66	0.03
X	11	3.803	0.0053	0.0950	0.374	95.5	99.3	26.71	0.20
	Mean age ± 2σ	n=11		MSWD=2.11		60.1 ±41.6		26.49	0.06

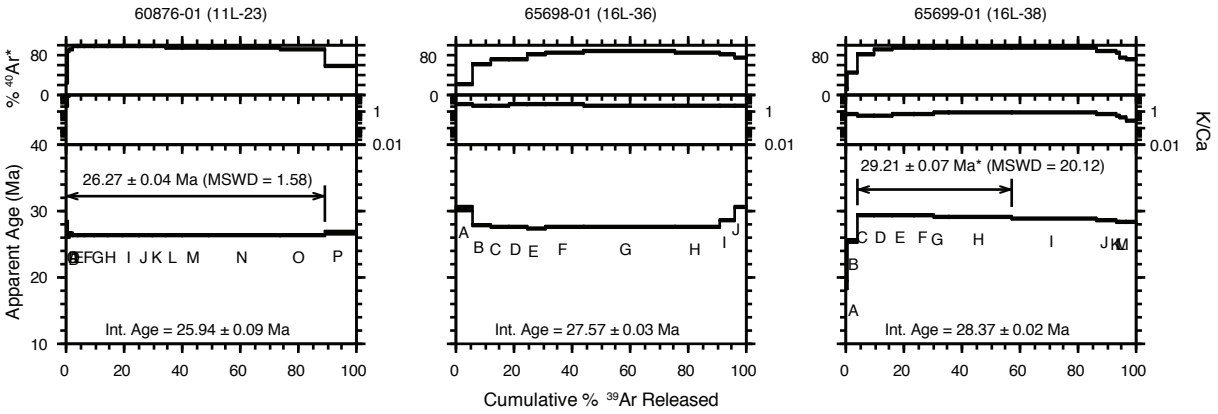


Ideogram of PD dikes. Data at 1-sigma. Results at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for PP dikes

	ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
	11L-23, Kspar, 14.78 mg, J=0.0024842±0.03%, D(MAP)=1.00485±0.00096, NM-246D, Lab#=60876-01										
	A	680.0	24.75	0.2589	63.34	7.75	2.0	24.4	0.9	27.29	0.60
	B	730.0	6.757	0.0662	3.136	7.06	7.7	86.3	1.6	26.30	0.17
	C	780.0	6.332	0.0203	1.622	10.25	25.2	92.4	2.8	26.39	0.11
	D	830.0	6.049	0.0138	0.7569	14.87	37.1	96.3	4.4	26.26	0.08
	E	880.0	5.932	0.0123	0.4243	21.5	41.4	97.9	6.8	26.18	0.07
	F	930.0	5.910	0.0105	0.3532	30.1	48.8	98.2	10.1	26.17	0.06
	G	980.0	5.913	0.0097	0.3248	38.9	52.7	98.4	14.4	26.22	0.05
	H	1030.0	5.912	0.0093	0.3440	47.5	54.7	98.3	19.6	26.19	0.05
	I	1080.0	5.949	0.0089	0.3898	55.3	57.3	98.1	25.7	26.30	0.04
	J	1105.0	5.984	0.0096	0.4877	41.4	53.2	97.6	30.2	26.32	0.05
	K	1130.0	6.061	0.0097	0.7299	41.1	52.6	96.4	34.7	26.35	0.06
	L	1155.0	6.110	0.0092	0.9230	49.2	55.5	95.5	40.1	26.31	0.05
	M	1180.0	6.121	0.0082	1.042	84.9	62.0	95.0	49.5	26.20	0.05
	N	1230.0	6.067	0.0080	0.8105	221.0	64.0	96.1	73.8	26.27	0.04
	O	1330.0	6.373	0.0083	1.773	140.6	61.3	91.8	89.3	26.37	0.05
X	P	1730.0	9.949	0.0080	13.71	97.5	64.1	59.3	100.0	26.59	0.12
	Integrated age ± 2σ			n=16		909.1	44.5	K2O=9.51%		25.94	0.09
	Plateau ± 2σ		steps A-O	n=15	MSWD=1.58	811.5	56.9	±38.5	89.3	26.27	0.04
	Isochron±2σ		steps A-P	n=16	MSWD=1.18		$^{40}Ar/^{36}Ar$=	300.6±2.9		26.25	0.04
	16L-36, GroundmassConcentrate, 8 mg, J=0.0028152±0.02%, IC(J)=1.014617±0.00104, NM-290K, Lab#=65698-01										
X	A	1.0	27.37	0.2010	72.61	8.24	2.5	21.6	5.7	30.27	0.16
X	B	1.3	9.050	0.2241	12.24	9.80	2.3	60.2	12.6	27.84	0.05
X	C	1.6	7.672	0.2056	7.761	8.53	2.5	70.3	18.5	27.55	0.04
X	D	1.9	7.476	0.1800	7.099	9.35	2.8	72.1	25.0	27.54	0.03
Xi	E	2.2	6.452	0.1676	3.750	8.92	3.0	83.0	31.2	27.36	0.03
X	F	3.0	6.260	0.1726	3.026	18.6	3.0	85.9	44.2	27.47	0.02
X	G	5.0	6.217	0.2059	2.845	45.4	2.5	86.7	75.8	27.54	0.01
Xi	H	7.0	6.298	0.2317	3.018	22.2	2.2	86.1	91.2	27.70	0.02
Xi	I	10.0	6.788	0.2212	4.162	7.67	2.3	82.1	96.5	28.47	0.03
Xi	J	15.0	7.856	0.2421	6.455	5.00	2.1	75.9	100.0	30.46	0.04
	Integrated age ± 2σ			n=10		143.7	2.5	K2O=2.45%		27.47	0.03
	Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
	Isochron±2σ		steps A-G	n=6	MSWD=10.92		$^{40}Ar/^{36}Ar$=	302.3±0.8		27.41	0.03
	16L-38, GroundmassConcentrate, 7.45 mg, J=0.0028151±0.03%, IC(J)=1.01462±0.00104, NM-290K, Lab#=65699-01										
X	A	0.5	29.28	0.6793	86.86	0.738	0.75	12.5	1.0	18.77	0.34
X	B	0.8	10.96	0.8038	20.56	2.45	0.63	45.1	4.5	25.30	0.11
	C	1.2	6.891	0.9485	4.247	3.80	0.54	82.9	9.8	29.18	0.04
	D	1.5	6.256	0.8577	2.002	4.80	0.59	91.6	16.5	29.28	0.02
	E	1.7	6.055	0.7375	1.228	5.11	0.69	95.0	23.7	29.37	0.02
	F	1.9	6.000	0.6624	1.115	4.83	0.77	95.4	30.5	29.23	0.02
	G	2.2	6.017	0.5701	1.200	3.84	0.89	94.9	35.9	29.15	0.02
	H	3.0	6.027	0.6162	1.241	15.20	0.83	94.7	57.2	29.16	0.01
X	I	4.0	6.064	0.5899	1.494	21.0	0.86	93.5	86.7	28.95	0.01
X	J	5.0	6.223	0.7257	2.361	4.70	0.70	89.7	93.3	28.52	0.03
X	K	7.0	6.454	0.9781	3.397	1.003	0.52	85.6	94.7	28.24	0.08

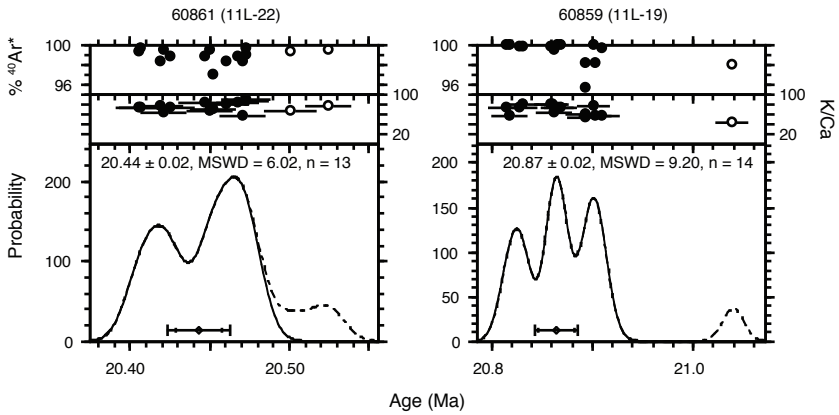
X	L	10.0	7.386	1.263		6.655	1.549	0.40	74.7	96.8	28.21	0.08
X	M	15.0	7.660	1.629		7.677	2.25	0.31	72.1	100.0	28.23	0.06
	Integrated age ± 2σ			n=13			71.3	0.71	K2O=1.31%		28.37	0.02
	Plateau ± 2σ		steps C-H	n=6	MSWD=20.12		37.573	0.750±0.275		52.7	29.21	0.07
	Isochron±2σ		steps A-M	n=13	MSWD=111.10			$^{40}Ar/^{36}Ar$=	267.6±1.1		29.27	0.02



Age Spectra for PP dikes and intrusions. Data at 2-sigma. Results at 2-sigma.

SCLF $^{40}Ar/^{39}Ar$ analytical data for PP dikes and intrusions.

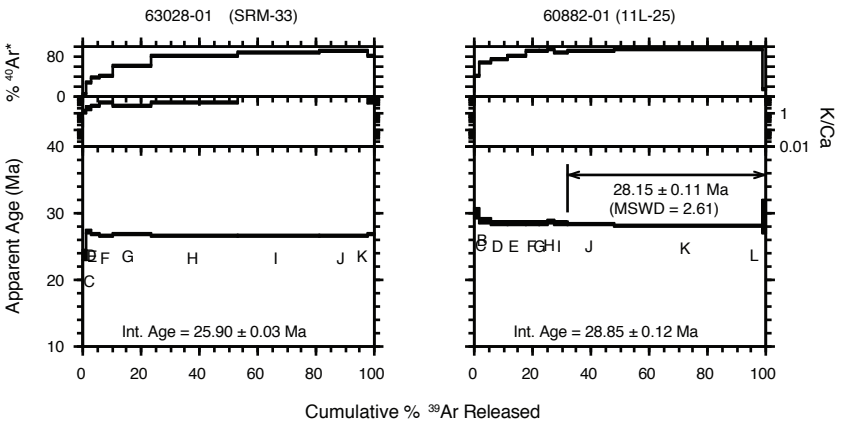
	ID	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	Age (Ma)	±1σ (Ma)
	11L-22, Sanidine, J=0.0025117±0.03%, IC=1.033858±0.0009506, NM-246B, Lab#=60861, Argus VI								
	06	4.509	0.0072	0.1218	58.672	70.8	99.2	20.41	0.01
	09	4.490	0.0072	0.0592	75.196	70.5	99.6	20.41	0.01
	03	4.557	0.0068	0.2748	46.273	75.5	98.2	20.42	0.01
	14	4.499	0.0082	0.0783	53.171	62.0	99.5	20.42	0.01
	11	4.538	0.0071	0.2050	49.975	72.0	98.7	20.43	0.01
	05	4.539	0.0061	0.1921	27.659	83.0	98.8	20.45	0.01
	01	4.512	0.0078	0.0997	60.736	65.6	99.4	20.45	0.01
	10	4.628	0.0073	0.4921	56.439	69.4	96.9	20.45	0.01
	08	4.567	0.0065	0.2784	53.090	78.2	98.2	20.46	0.01
	04	4.544	0.0064	0.1958	53.846	80.3	98.7	20.47	0.01
	15	4.566	0.0094	0.2673	49.063	54.3	98.3	20.47	0.01
	13	4.535	0.0060	0.1601	37.964	85.3	99.0	20.47	0.01
	02	4.510	0.0058	0.0741	41.496	88.0	99.5	20.47	0.01
X	12	4.531	0.0077	0.1284	28.895	65.9	99.2	20.50	0.01
X	07	4.524	0.0067	0.0851	45.604	76.2	99.5	20.52	0.01
	Mean age ± 2σ	n=13		MSWD=6.02		73.5 ±19.2		20.44	0.02
	11L-19, Sanidine, J=0.0025203±0.03%, IC=1.033858±0.0009506, NM-246B, Lab#=60859, Argus VI								
	03	4.550	0.0073	0.0076	44.683	70.3	100.0	20.82	0.01
	13	4.550	0.0090	0.0084	36.186	56.8	100.0	20.82	0.01
	10	4.562	0.0071	0.0394	55.779	72.1	99.8	20.83	0.01
	09	4.562	0.0065	0.0387	50.830	78.1	99.8	20.83	0.01
	15	4.566	0.0064	0.0312	45.160	79.2	99.8	20.86	0.01
	11	4.572	0.0064	0.0490	50.313	80.1	99.7	20.86	0.01
	05	4.584	0.0083	0.0894	44.487	61.6	99.4	20.86	0.01
	08	4.563	0.0071	0.0147	52.512	71.5	99.9	20.87	0.01
	12	4.567	0.0070	0.0271	48.497	73.0	99.8	20.87	0.01
	14	4.657	0.0096	0.3141	34.275	53.2	98.0	20.89	0.01
	02	4.777	0.0087	0.7195	38.152	58.8	95.6	20.90	0.01
	06	4.569	0.0067	0.0098	45.473	76.4	99.9	20.90	0.01
	04	4.656	0.0091	0.3029	54.134	56.3	98.1	20.90	0.01
	07	4.589	0.0090	0.0712	41.329	56.9	99.6	20.91	0.01
X	01	4.691	0.0125	0.3224	41.338	40.8	98.0	21.04	0.01
	Mean age ± 2σ	n=14		MSWD=9.20		67.5 ±19.4		20.87	0.02



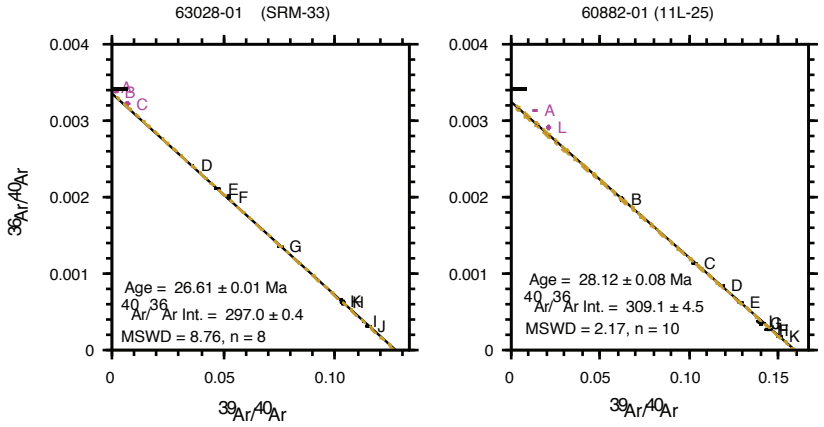
Sanidine SCLF ideograms of PP dikes and intrusion. Data at 1-sigma. Results at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for Platoro proximal and intracaldera intrusions

ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
SRM-33, Biotite, 3.98 mg, J=0.0018564±0.02%, IC(O)=1.02143±0.00029, NM-268H, Lab#=63028-01										
Xi A	0.5	12999.3	4.849	44597.9	0.057	0.11	-1.4	0.0	-742.15	36.72
Xi B	0.8	466.2	0.6654	1571.4	0.302	0.77	0.4	0.3	6.43	1.43
Xi C	1.3	134.3	0.4518	431.0	1.249	1.1	5.2	1.4	23.61	0.34
X D	1.6	27.91	0.2791	67.30	2.30	1.8	28.8	3.3	27.12	0.10
X E	1.9	20.92	0.1927	43.95	3.34	2.6	38.0	6.1	26.80	0.06
X F	2.2	18.96	0.1361	37.57	5.05	3.7	41.5	10.3	26.53	0.05
X G	3.0	13.18	0.2038	17.81	15.68	2.5	60.2	23.5	26.75	0.02
X H	5.0	9.637	0.1148	5.888	35.9	4.4	82.1	53.7	26.66	0.01
X I	7.0	8.864	0.0396	3.297	33.3	12.9	89.1	81.6	26.61	0.01
X J	10.0	8.666	0.0287	2.618	19.19	17.8	91.1	97.8	26.62	0.01
X K	15.0	9.726	0.0680	6.123	2.66	7.5	81.5	100.0	26.71	0.03
Integrated age ± 2σ			n=11		119.0	4.9	K2O=6.18%		25.90	0.03
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ		steps D-K	n=8	MSWD=8.76		$^{40}Ar/^{36}Ar$=	297.0±0.4		26.61	0.01
11L-25, Biotite, 6.2 mg, J=0.0024636±0.05%, D(MAP)=1.00485±0.00096, NM-246E, Lab#=60882-01										
Xi A	650.0	72.14	0.0674	224.8	1.935	7.6	7.9	0.5	25.68	1.97
X B	750.0	16.02	0.0091	31.60	6.40	55.8	41.7	2.1	29.87	0.43
X C	800.0	9.658	0.0041	10.88	15.96	125.2	66.7	6.1	28.79	0.15
X D	850.0	8.423	0.0028	6.985	22.1	180.3	75.5	11.6	28.42	0.12
X E	900.0	7.745	0.0059	4.682	24.7	87.1	82.1	17.8	28.43	0.10
X F	950.0	6.872	0.0091	1.801	19.38	56.3	92.3	22.7	28.33	0.09
X G	1000.0	7.094	0.0208	2.524	11.31	24.5	89.5	25.5	28.37	0.14
X H	1050.0	6.918	0.0340	1.750	9.72	15.0	92.6	28.0	28.61	0.13
X I	1100.0	7.141	0.0254	2.632	17.37	20.1	89.1	32.3	28.44	0.10
J	1150.0	7.033	0.0057	2.411	63.2	89.7	89.9	48.2	28.25	0.06
K	1250.0	6.617	0.0007	1.109	202.7	689.9	95.1	99.0	28.10	0.04
i L	1700.0	46.57	0.0056	135.3	3.82	90.8	14.1	100.0	29.45	1.27
Integrated age ± 2σ			n=12		398.6	93.5	K2O=10.02%		27.85	0.12
Plateau ± 2σ		steps J-L	n=3	MSWD=2.61	269.7	540.7	±692.4	67.7	28.15	0.11
Isochron±2σ		steps B-K	n=10	MSWD=2.17		$^{40}Ar/^{36}Ar$=	309.1±4.5		28.12	0.08



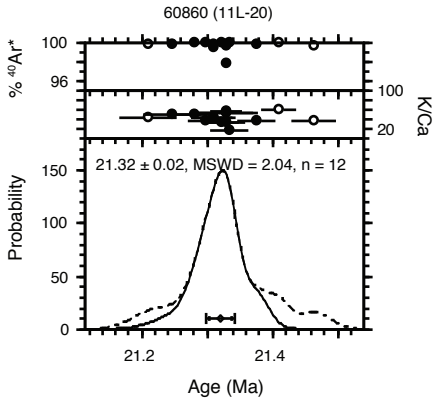
Age Spectra for Platoro proximal and intracaldera intrusions. Data at 2-sigma. Results at 2-sigma.



Inverse isochrons for Platoro proximal and intracaldera intrusions. Data at 1-sigma. Results at 2-sigma.

SCLF $^{40}Ar/^{39}Ar$ analytical data for Platoro postcaldera lavas

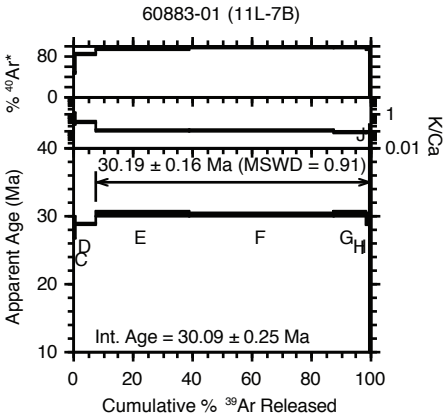
	ID	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	Age (Ma)	±1σ (Ma)
	11L-20, Sanidine, J=0.0025167±0.03%, IC(O)=1.03386 ± 0.00095, NM-246B, Lab#=60860								
X	07	4.651	0.0119	0.0374	4.200	43.0	99.8	21.21	0.03
	06	4.664	0.0107	0.0536	3.249	47.6	99.7	21.25	0.03
	09	4.662	0.0108	0.0186	8.505	47.4	99.9	21.28	0.02
	15	4.665	0.0141	0.0205	10.094	36.2	99.9	21.30	0.02
	13	4.674	0.0123	0.0384	6.647	41.6	99.8	21.31	0.02
	08	4.693	0.0123	0.1037	9.821	41.4	99.4	21.31	0.02
	12	4.673	0.0161	0.0305	7.689	31.6	99.8	21.32	0.02
	10	4.776	0.0163	0.3711	7.006	31.3	97.7	21.33	0.02
	05	4.687	0.0099	0.0701	2.752	51.6	99.6	21.33	0.04
	01	5.471	0.0096	2.723	4.496	53.3	85.3	21.33	0.03
	11	4.680	0.0090	0.0430	10.438	56.5	99.7	21.33	0.01
	04	4.675	0.0293	0.0315	5.803	17.4	99.9	21.34	0.02
	14	4.692	0.0149	0.0530	7.466	34.3	99.7	21.38	0.02
X	03	4.688	0.0085	0.0111	7.767	60.0	99.9	21.41	0.02
X	02	4.714	0.0144	0.0609	4.804	35.5	99.6	21.47	0.02
	Mean age ± 2σ	n=12		MSWD=2.04		40.9 ±22.5		21.32	0.02



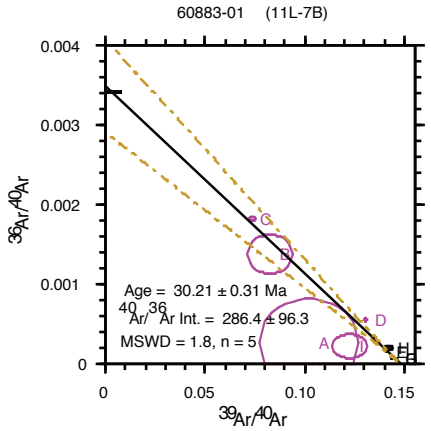
Ideogram of Platoro postcaldera lavas. Data at 1-sigma. Results at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for ignimbrites of the Treasure Mountain Group

	ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
	11L-7B, Hornblende, 5.06 mg, J=0.0024624±0.06%, IC(O)=1.01824 ± 0.00125, NM-246E, Lab#=60883-01										
Xi	A	1.7	9.688	10.51	5.352	0.000	0.049	92.5	0.0	40.19	11.94
Xi	B	2.0	11.90	11.77	19.55	0.000	0.043	59.8	0.1	32.03	5.77
Xi	C	2.3	13.52	0.7919	24.62	0.000	0.64	46.7	0.7	28.22	0.83
Xi	D	2.6	7.648	1.397	4.480	0.001	0.37	84.2	7.5	28.79	0.09
	E	3.0	7.064	5.069	2.468	0.007	0.10	95.6	39.4	30.27	0.14
	F	5.0	6.861	4.714	1.753	0.010	0.11	98.2	87.7	30.17	0.13
	G	7.0	6.838	5.398	1.851	0.002	0.095	98.6	98.8	30.20	0.15
	H	10.0	6.995	6.075	3.070	0.000	0.084	94.3	99.8	29.57	0.41
i	I	12.0	8.100	4.421	2.923	0.000	0.12	93.9	100.0	34.03	2.83
	J	15.0	23.58	-83.3488	229.9	0.000	-	-216.7	100.0	-231.49	800.23
	Integrated age ± 2σ			n=10		0.021	0.11	K2O=0.00%		30.09	0.25
	Plateau ± 2σ		steps E-J	n=6	MSWD=0.91	0.019	0.10 ±0.02		92.5	30.19	0.16
	Isochron±2σ		steps E-J	n=5	MSWD=1.80		$^{40}Ar/^{36}Ar$=	286.4±96.3		30.21	0.31



Age Spectra for ignimbrites of the Treasure Mountain Group. Data at 2-sigma. Results at 2-sigma.



Inverse isochron for ignimbrites of the Treasure Mountain Group. Data at 1-sigma. Results at 2-sigma.

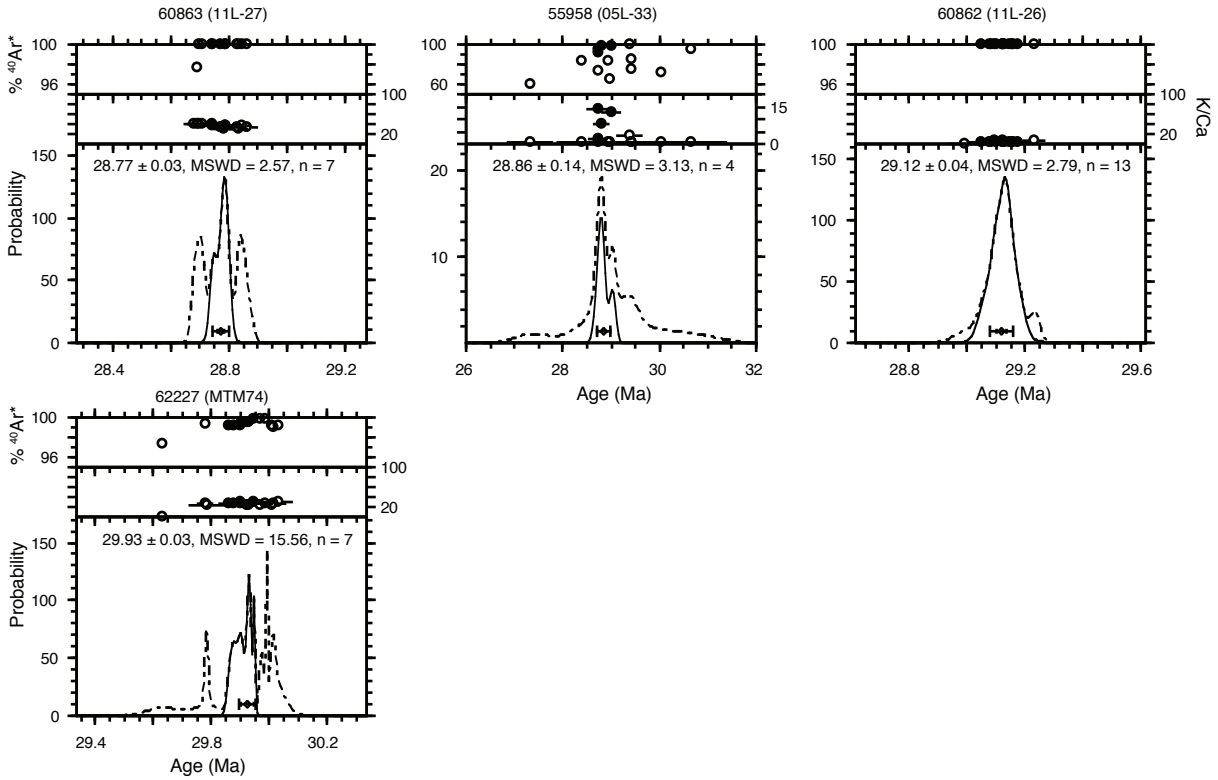
SCLF $^{40}Ar/^{39}Ar$ analytical data for Ignimbrites of the Treasure Mountain Group

	ID	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	Age (Ma)	±1σ (Ma)
	11L-27, Sanidine, J=0.0024876±0.05%, IC(O)=1.03182 ± 0.00127, NM-246C, Lab#=60863								
X	11	6.358	0.0129	0.0014	50.805	39.4	100.0	28.68	0.01
X	10	6.519	0.0136	0.5381	22.580	37.6	97.6	28.69	0.02
X	08	6.364	0.0136	0.0062	39.450	37.4	100.0	28.70	0.01
X	07	6.371	0.0131	0.0233	50.798	38.9	99.9	28.71	0.01
	02	6.374	0.0136	0.0076	53.363	37.6	100.0	28.75	0.01
	05	6.375	0.0137	0.0087	32.091	37.3	100.0	28.75	0.01
	15	6.380	0.0155	0.0066	41.594	33.0	100.0	28.78	0.01
	01	6.380	0.0159	0.0031	25.826	32.1	100.0	28.78	0.02
	14	6.381	0.0178	0.0047	49.991	28.6	100.0	28.79	0.01
	13	6.384	0.0145	0.0076	34.069	35.1	100.0	28.79	0.01
	06	6.384	0.0142	0.0056	22.216	36.0	100.0	28.79	0.01
X	09	6.392	0.0158	0.0052	47.597	32.2	100.0	28.83	0.01
X	04	6.394	0.0174	0.0080	51.002	29.4	100.0	28.84	0.01
X	12	6.402	0.0137	0.0225	52.614	37.2	99.9	28.85	0.01
X	03	6.410	0.0161	0.0397	31.081	31.7	99.8	28.87	0.01
	Mean age ± 2σ	n=7		MSWD=2.57		34.2 ±6.5		28.77	0.03
	05L-33, Sanidine, J=0.0007434±0.08%, D(MAP)=1.00300±0.00100, NM-192E, Lab#=55958								
X	13	34.55	2.459	49.22	0.625	0.21	58.5	27.34	0.37
X	03	25.36	1.463	15.11	0.461	0.35	82.9	28.41	0.40
	15	22.76	0.2826	5.023	3.913	1.8	93.6	28.77	0.08
X	05	29.04	1.351	26.60	0.682	0.38	73.3	28.77	0.31
	08	23.28	0.0365	6.684	2.378	14.0	91.5	28.77	0.10
	14	21.94	0.0685	2.051	4.714	7.5	97.3	28.81	0.06
X	10	26.20	1.788	16.68	0.434	0.29	81.8	28.95	0.41
X	02	33.67	1.740	41.79	1.008	0.29	63.8	29.01	0.27
	07	22.18	0.0414	2.296	4.817	12.3	97.0	29.03	0.07
X	11	22.02	0.1735	0.8648	1.130	2.9	98.9	29.41	0.16
X	06	29.40	1.335	26.09	0.373	0.38	74.2	29.46	0.48
X	12	25.81	1.673	14.03	0.194	0.30	84.5	29.46	0.80
X	09	31.47	1.406	31.56	0.224	0.36	70.7	30.08	0.79
X	04	24.25	1.534	5.653	0.282	0.33	93.6	30.67	0.62
	Mean age ± 2σ	n=4		MSWD=3.13		8.9 ±11.0		28.86	0.14
	11L-26, Sanidine, J=0.0024914±0.06%, IC(O)=1.03182 ± 0.00127, NM-246C, Lab#=60862								
X	04	8.006	0.7350	5.589	6.333	0.69	80.1	29.00	0.04
	06	6.433	0.2736	0.0856	10.709	1.9	100.0	29.05	0.02
	12	6.440	0.3739	0.1198	8.500	1.4	99.9	29.08	0.03
	09	6.440	0.2544	0.0786	9.921	2.0	100.0	29.09	0.02
	03	6.445	0.0790	0.0347	21.769	6.5	99.9	29.10	0.01
	11	6.447	0.3358	0.1154	11.001	1.5	99.9	29.10	0.02
	01	6.448	0.1192	0.0365	12.281	4.3	100.0	29.13	0.02
	08	6.449	0.0877	0.0298	18.349	5.8	100.0	29.13	0.01
	14	6.451	0.1863	0.0654	15.823	2.7	99.9	29.13	0.02
	07	6.450	0.2227	0.0684	14.929	2.3	100.0	29.13	0.02
	13	6.461	0.2283	0.0928	21.451	2.2	99.9	29.15	0.02
	15	6.460	0.3631	0.1245	5.000	1.4	99.9	29.16	0.04

	05	6.460	0.4086	0.1344	9.432	1.2	99.9	29.16	0.03
	02	6.464	0.1422	0.0592	11.321	3.6	99.9	29.18	0.02
X	10	6.473	0.0931	0.0334	12.991	5.5	100.0	29.23	0.02
	Mean age ± 2σ	n=13	MSWD=2.79			2.8 ±3.4		29.12	0.04

MTM74, Sanidine, J=0.0014166±0.03%, IC(J)=1.03230 ± 0.00487, NM-263A, Lab#=62227

X	15	11.84	1.570	1.510	0.831	0.32	97.3	29.64	0.06
X	06	11.68	0.0211	0.3269	18.242	24.2	99.2	29.78	0.01
X	05	15.09	0.0212	11.86	8.194	24.1	76.8	29.79	0.04
	11	11.72	0.0210	0.3602	6.777	24.3	99.1	29.87	0.01
	07	11.72	0.0188	0.3405	6.377	27.1	99.2	29.88	0.01
	13	11.73	0.0170	0.3357	4.087	30.1	99.2	29.90	0.01
	09	11.72	0.0211	0.2967	5.962	24.2	99.3	29.90	0.01
	03	11.71	0.0217	0.2296	7.265	23.5	99.4	29.93	0.01
	02	11.71	0.0213	0.2093	9.504	23.9	99.5	29.93	0.00
	04	11.68	0.0186	0.1146	12.806	27.4	99.7	29.95	0.00
X	10	11.69	0.0231	0.0985	8.922	22.1	99.8	29.97	0.01
X	01	11.69	0.0200	0.0964	31.168	25.5	99.8	29.99	0.00
X	12	11.79	0.0238	0.4002	8.854	21.4	99.0	30.01	0.01
X	08	11.81	0.0204	0.4457	2.112	25.0	98.9	30.02	0.02
X	14	11.78	0.0171	0.3396	1.557	29.9	99.2	30.03	0.03
	Mean age ± 2σ	n=7	MSWD=15.56			25.8 ±4.9		29.93	0.03



Ideograms for Ignimbrites of the Treasure Mountain Group. Data at 1-sigma. Data at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for Conejos Formation dikes.

ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
16L-22, GroundmassConcentrate, 6 mg, J=0.0019023±0.01%, IC(F)=1.00662±0.00025, NM-293B, Lab#=65961-01										
Xi A	0.8	158.0	1.198	515.2	0.2	0.43	3.7	0.4	20.27	2.42
Xi B	1.3	43.23	1.057	116.2	1.0	0.48	20.7	2.0	30.99	0.63
X C	1.6	19.60	1.100	36.66	1.5	0.46	45.2	4.3	30.59	0.38
X D	1.9	14.94	1.273	21.36	2.4	0.40	58.5	8.1	30.18	0.22
X E	2.2	12.33	1.411	12.82	3.2	0.36	70.2	13.2	29.91	0.17
X F	3.0	10.81	1.365	7.888	7.6	0.37	79.5	25.3	29.68	0.08
X G	5.0	9.268	1.054	2.890	16.5	0.48	91.7	51.6	29.37	0.03
X H	6.5	8.875	0.7330	1.587	13.1	0.70	95.4	72.4	29.24	0.04
X I	8.0	8.849	0.6842	1.587	7.3	0.75	95.4	83.9	29.13	0.06
X J	10.0	8.848	0.7982	1.603	4.5	0.64	95.4	91.1	29.15	0.10
X K	15.0	9.136	2.025	2.773	5.6	0.25	92.9	100.0	29.33	0.08
Integrated age ± 2σ			n=11		63.0	0.47	K2O=2.12%		29.41	0.06
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.0	0.00 ±0.00		0.0	0.00	0.00
Isochron±2σ		steps C-K	n=9	MSWD=1.58		$^{40}Ar/^{36}Ar$=	311.0±3.8		29.18	0.06
16L-01, GroundmassConcentrate, 7.87 mg, J=0.0028101±0.02%, IC(J)=1.01462 ± 0.00104, NM-290K, Lab#=65704-01										
X A	0.5	48.65	0.6822	157.1	0.537	0.75	4.7	0.5	11.63	0.57
Xi B	0.8	13.38	0.7286	30.15	2.33	0.70	33.8	2.6	23.14	0.13
X C	1.2	8.090	0.9504	7.448	5.64	0.54	73.7	7.8	30.41	0.04
Xi D	1.5	6.707	0.8196	1.943	7.98	0.62	92.4	15.2	31.58	0.02
X E	1.7	6.296	0.5377	0.7982	8.08	0.95	96.9	22.6	31.10	0.01
X F	1.9	6.243	0.4130	0.7343	7.03	1.2	97.1	29.0	30.87	0.02
X G	2.2	6.303	0.3261	0.9288	8.69	1.6	96.1	37.0	30.84	0.01
X H	3.0	6.439	0.2611	1.431	20.9	2.0	93.8	56.3	30.76	0.01
X I	4.0	6.535	0.3749	1.959	27.4	1.4	91.6	81.4	30.50	0.01
J	5.0	6.696	0.6658	2.778	9.10	0.77	88.5	89.8	30.22	0.02
K	7.0	6.771	0.7903	3.071	2.70	0.65	87.5	92.3	30.21	0.04
L	10.0	6.835	0.8461	3.340	2.78	0.60	86.5	94.8	30.16	0.05
M	15.0	7.073	1.145	4.293	5.62	0.45	83.3	100.0	30.06	0.03
Integrated age ± 2σ			n=13		108.8	0.98	K2O=1.89%		30.41	0.02
Plateau ± 2σ		steps J-M	n=4	MSWD=6.93	20.200	0.638±0.265		18.6	30.17	0.08
Isochron±2σ		steps A-M	n=11	MSWD=181.92		$^{40}Ar/^{36}Ar$=	267.6±1.0		30.91	0.02

16L-32, Hornblende, 6.45 mg, J=0.003±0.03%, IC(F)=0.99847 ± 0.00045, NM-285A, Lab#=65178-01

Xi	A	0.5	106.0	1.890	349.9	0.1	0.27	2.6	0.1	15.00	5.34
X	B	0.8	31.28	2.794	81.73	0.1	0.18	23.4	0.2	39.90	6.05
X	C	1.3	11.80	3.440	21.38	0.4	0.15	48.7	0.7	31.32	1.51
X	D	1.6	6.593	5.533	4.085	6.7	0.092	88.2	8.7	31.73	0.09
X	E	1.9	5.946	5.615	2.103	18.1	0.091	96.8	30.5	31.43	0.04
X	F	2.2	5.814	5.628	1.800	20.0	0.091	98.3	54.6	31.20	0.03
X	G	3.0	5.826	5.624	1.745	29.9	0.091	98.6	90.6	31.35	0.02
X	H	5.0	5.778	5.652	1.688	6.1	0.090	98.9	98.0	31.20	0.09
Xi	I	7.0	5.495	5.373	1.881	0.5	0.095	97.4	98.6	29.23	0.97
X	J	10.0	5.638	5.311	1.880	0.5	0.096	97.4	99.2	29.98	0.89
Xi	K	15.0	5.789	5.364	2.333	0.7	0.095	95.2	100.0	30.10	0.70
Integrated age ± 2σ				n=11		83.0	0.091	K2O=1.65%		30.86	0.05
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.0	0.000±0.000		0.0	0.00	0.00
Isochron±2σ			steps B-J	n=8	MSWD=3.99		$^{40}Ar/^{36}Ar$=	322.5±11.7		31.27	0.05

16L-32, Biotite, 1.09 mg, J=0.0030002±0.03%, IC(F)=0.99847 ± 0.00045, NM-285A, Lab#=65177-01

Xi	A	0.5	55.11	0.0977	169.5	0.1	5.2	9.1	0.5	27.37	1.37
Xi	B	0.8	7.490	0.0168	5.255	1.1	30.3	79.3	5.1	32.29	0.11
X	C	1.3	6.149	0.0090	0.8849	4.4	56.5	95.8	23.7	32.02	0.03
X	D	1.6	5.999	0.0127	0.4428	4.2	40.0	97.8	41.5	31.91	0.03
X	E	1.9	5.944	0.0352	0.3740	4.3	14.5	98.2	59.5	31.73	0.03
X	F	2.2	5.873	0.0602	0.3599	4.0	8.5	98.3	76.3	31.39	0.03
Xi	G	3.0	5.843	0.0318	0.3713	5.3	16.1	98.2	98.5	31.19	0.02
Xi	H	5.0	5.827	0.1006	0.5317	0.3	5.1	97.4	99.8	30.88	0.33
X	I	7.0	5.831	0.1140	0.4438	0.0	4.5	97.9	99.9	31.04	2.26
Xi	J	10.0	6.279	0.0236	-0.0104	0.0	21.6	100.1	100.0	34.14	7.63
Xi	K	15.0	9.024	-0.4322	6.008	0.0	-	79.6	100.0	39.00	102.13
Integrated age ± 2σ				n=11		23.9	16.9	K2O=2.80%		31.18	0.04
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.0	0.0 ±0.0		0.0	0.00	0.00
Isochron±2σ			steps C-I	n=5	MSWD=34.88		$^{40}Ar/^{36}Ar$=	464.4±28.8		31.31	0.08

16L-35, Hornblende, 6.71 mg, J=0.0029974±0.03%, IC(F)=0.99847 ± 0.00045, NM-285A, Lab#=65180-01

Xi	A	0.5	74.78	0.8586	228.1	0.3	0.59	10.0	0.3	40.44	2.90
Xi	B	0.8	31.00	0.9084	80.70	0.7	0.56	23.3	1.1	39.16	1.15
X	C	1.3	26.74	2.438	29.83	1.3	0.21	67.7	2.7	96.93	1.12
X	D	1.6	9.090	5.937	7.170	8.8	0.086	81.7	13.7	40.44	0.09
X	E	1.9	6.621	6.415	2.903	19.2	0.080	94.5	37.7	34.13	0.04
X	F	2.2	6.085	6.289	2.454	18.6	0.081	96.1	60.9	31.89	0.04
X	G	3.0	6.103	6.279	2.135	20.7	0.081	97.6	86.7	32.49	0.03
X	H	5.0	5.788	6.084	1.858	8.0	0.084	98.6	96.7	31.15	0.07
X	I	7.0	5.707	5.807	1.893	1.4	0.088	98.0	98.4	30.53	0.36
X	J	10.0	5.872	6.577	2.429	0.8	0.078	96.4	99.4	30.90	0.63
X	K	15.0	6.145	6.716	2.735	0.5	0.076	95.3	100.0	31.95	1.07
Integrated age ± 2σ				n=11		80.2	0.083	K2O=1.53%		34.55	0.06
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ			steps C-K	n=9	MSWD=69.86		$^{40}Ar/^{36}Ar$=	674.0±8.9		30.99	0.09

16L-51, Hornblende, 7.59 mg, J=0.0027974±0.02%, IC(J)=1.01462 ± 0.00104, NM-290L, Lab#=65710-01

Xi	A	2.0	119.3	2.714	244.0	0.277	0.19	39.7	0.8	228.39	1.30
X	B	3.0	6.776	5.504	2.785	10.67	0.093	94.4	33.0	32.55	0.02
X	C	3.5	6.181	5.562	1.799	9.66	0.092	98.7	62.1	31.04	0.02
X	D	4.0	6.149	5.595	1.695	5.38	0.091	99.2	78.3	31.05	0.02

X	E	4.5	6.089	5.725	1.662	2.79	0.089	99.5	86.6	30.85	0.03
Xi	F	5.0	6.613	5.919	1.848	0.187	0.086	99.0	87.2	33.30	0.28
X	G	5.5	6.284	6.922	2.760	0.096	0.074	95.9	87.5	30.72	0.53
X	H	6.0	6.151	5.847	2.480	0.099	0.087	95.7	87.8	30.00	0.49
Xi	I	6.5	6.299	7.184	3.941	0.053	0.071	90.7	88.0	29.14	0.99
Xi	J	7.0	6.770	12.37	7.210	0.015	0.041	83.3	88.0	28.86	3.33
X	K	10.0	6.409	8.775	3.176	0.132	0.058	96.4	88.4	31.53	0.41
X	L	15.0	6.397	5.893	2.166	3.85	0.087	97.4	100.0	31.73	0.03
Integrated age ± 2σ				n=12		33.2	0.091	K2O=0.60%		32.86	0.03
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.0	0.000±0.000		0.0	0.00	0.00
Isochron±2σ			steps B-L	n=8	MSWD=6.20		$^{40}Ar/^{36}Ar$=	582.8±16.0		30.72	0.06

16KA-02, Hornblende, 6.8 mg, J=0.0027984±0.02%, IC(J)=1.01462 ± 0.00104, NM-290L, Lab#=65709-01

X	A	0.5	496.7	4.292	1644.3	0.012	0.12	2.2	0.0	56.18	13.64
Xi	B	0.8	169.1	2.483	452.4	0.034	0.21	21.0	0.1	174.08	6.90
X	C	1.2	23.32	1.406	57.66	0.059	0.36	27.4	0.3	32.44	1.36
Xi	D	1.5	26.06	1.236	62.61	0.064	0.41	29.4	0.5	38.79	1.31
X	E	1.7	14.07	1.427	26.66	0.058	0.36	44.8	0.6	32.00	1.18
Xi	F	1.9	30.95	2.503	75.59	0.078	0.20	28.5	0.8	44.64	1.23
Xi	G	2.2	8.088	5.025	4.640	0.871	0.10	88.0	3.2	36.21	0.10
Xi	H	3.0	6.869	5.486	3.254	9.45	0.093	92.4	29.1	32.33	0.02
X	I	4.0	6.282	5.613	2.021	14.45	0.091	97.7	68.7	31.25	0.02
X	J	5.0	6.150	5.645	1.804	5.82	0.090	98.7	84.6	30.92	0.02
X	K	7.0	6.235	5.922	1.985	4.79	0.086	98.2	97.7	31.20	0.02
X	L	8.0	6.219	5.874	1.696	0.320	0.087	99.6	98.6	31.53	0.18
X	M	9.0	6.541	6.071	2.162	0.067	0.084	97.7	98.8	32.55	0.81
X	N	10.0	6.444	6.027	1.521	0.082	0.085	100.6	99.0	33.00	0.66
X	O	15.0	6.278	6.084	2.533	0.369	0.084	95.9	100.0	30.67	0.17
Integrated age ± 2σ				n=15		36.5	0.091	K2O=0.74%		31.33	0.03
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ			steps A-O	n=10	MSWD=19.93		$^{40}Ar/^{36}Ar$=	300.5±3.0		31.14	0.03

16L-55, Sanidine, J=0.0027851±0.02%, IC(J)=1.00580 ± 0.00094, NM-290M, Lab#=65723-01

Xi	A	0.5	6.034	0.0229	0.1572	53.76	22.3	99.3	26.4	30.24	0.01
Xi	B	1.0	6.030	0.0237	0.1069	124.1	21.5	99.5	87.4	30.29	0.00
Xi	C	2.0	6.036	0.0254	0.0454	20.04	20.1	99.8	97.2	30.42	0.02
Xi	D	4.5	6.065	0.0246	0.0860	5.657	20.7	99.6	100.0	30.50	0.05
Integrated age ± 2σ				n=4		203.6	21.5			30.30	0.02
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-55, Sanidine, Lab#=65723-02

Xi	A	0.5	6.051	0.0188	0.1401	29.41	27.1	99.3	9.1	30.35	0.01
Xi	B	1.0	6.014	0.0181	0.0378	133.3	28.2	99.8	50.3	30.31	0.00
Xi	C	2.0	6.029	0.0183	0.0524	153.3	28.0	99.8	97.7	30.37	0.00
Xi	D	4.5	6.060	0.0159	0.1454	7.296	32.1	99.3	100.0	30.38	0.04
Integrated age ± 2σ				n=4		323.3	28.1			30.34	0.02
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00

16L-55, Sanidine, Lab#=65723-03

Xi	A	0.5	6.012	0.0210	0.0363	61.99	24.3	99.8	34.8	30.31	0.01
	B	1.0	6.014	0.0206	0.0119	103.1	24.8	100.0	92.6	30.35	0.00
	C	2.0	6.016	0.0207	0.0235	11.80	24.7	99.9	99.2	30.35	0.02
	D	4.5	6.363	0.0299	1.191	1.382	17.1	94.5	100.0	30.36	0.20
Integrated age ± 2σ				n=4		178.2	24.6			30.34	0.02

Plateau ± 2σ	steps A-C	n=3	MSWD=14.35	176.8	24.6	±0.5	99.2	30.34	0.03

16L-55, Sanidine, Lab#=65723-04

Xi A	0.5	6.000	0.0166	0.0275	54.33	30.7	99.9	28.6	30.26	0.01
Xi B	1.0	6.008	0.0154	0.0067	128.9	33.2	100.0	96.3	30.33	0.00
Xi C	2.0	6.028	0.0133	-0.0298	4.883	38.4	100.2	98.9	30.48	0.05
Xi D	4.5	6.089	0.0040	0.1541	2.093	#####	99.3	100.0	30.51	0.13
Integrated age ± 2σ			n=4		190.2	32.9			30.31	0.02
Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000	±0.000	0.0	0.00	0.00

16L-55, Sanidine, Lab#=65723-05

Xi A	0.5	5.999	0.0251	0.0548	73.34	20.4	99.8	30.4	30.22	0.01
Xi B	1.0	5.997	0.0237	0.0127	102.8	21.5	100.0	72.9	30.27	0.00
Xi C	2.0	6.021	0.0261	0.0239	60.86	19.5	99.9	98.1	30.37	0.01
Xi D	4.5	6.385	0.0302	1.115	4.614	16.9	94.9	100.0	30.58	0.07
Integrated age ± 2σ			n=4		241.6	20.5			30.28	0.02
Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000	±0.000	0.0	0.00	0.00

16L-55, Sanidine, Lab#=65723-06

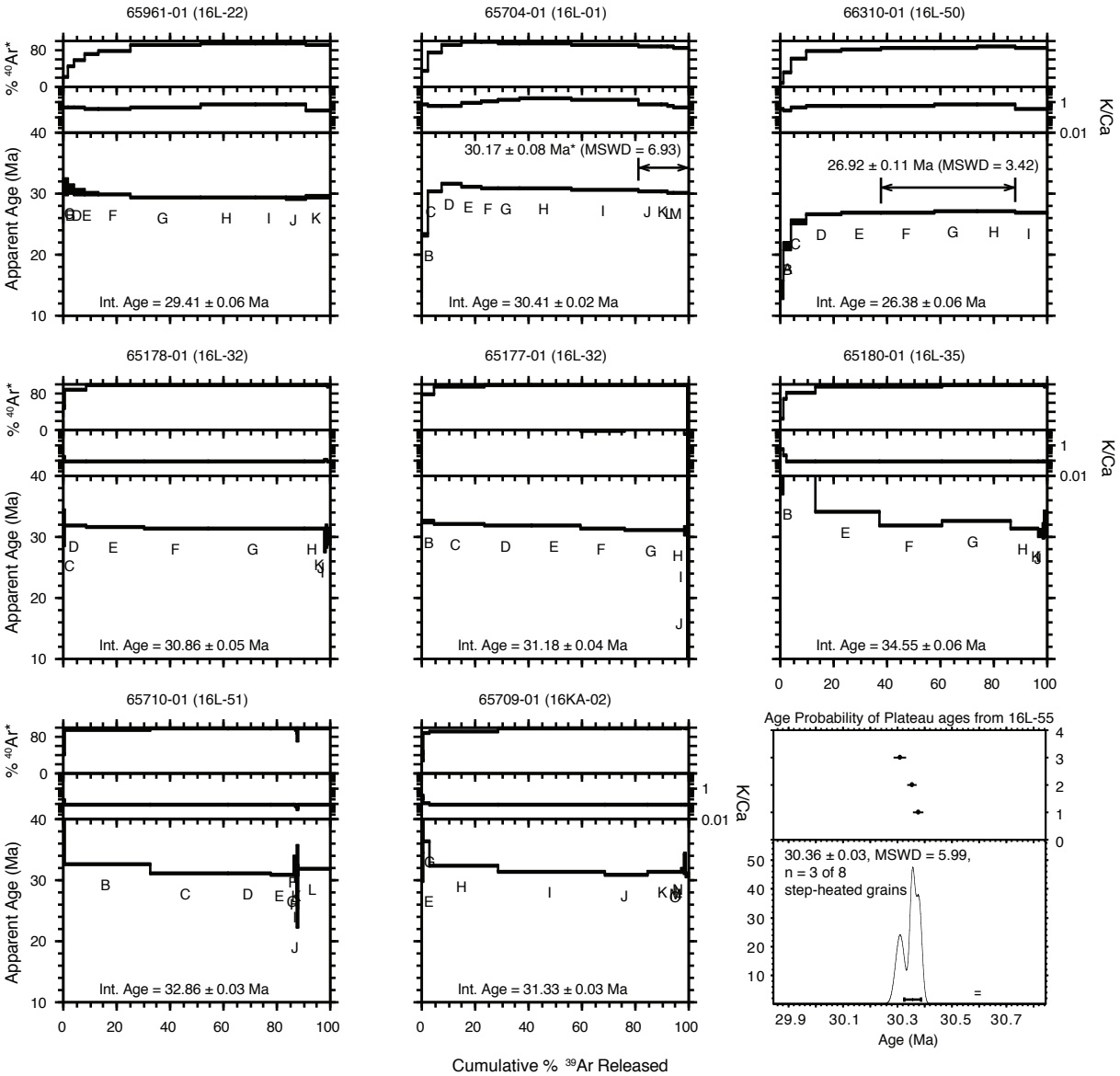
Xi A	0.5	6.026	0.0214	0.1485	67.23	23.8	99.3	45.3	30.21	0.01
Xi B	0.8	6.062	0.0204	0.1937	26.77	25.0	99.1	63.4	30.33	0.01
Xi C	0.9	6.024	0.0205	0.0408	39.49	24.8	99.8	90.0	30.36	0.01
Xi D	1.0	6.048	0.0218	0.0911	14.29	23.4	99.6	99.6	30.40	0.01
Xi E	4.5	6.511	0.1128	0.9166	0.574	4.5	96.0	100.0	31.54	0.34
Integrated age ± 2σ			n=5		148.4	23.9			30.30	0.02
Plateau ± 2σ	no plateau		n=0	MSWD=0.00	0.000	0.000	±0.000	0.0	0.00	0.00

16L-55, Sanidine, Lab#=65723-07

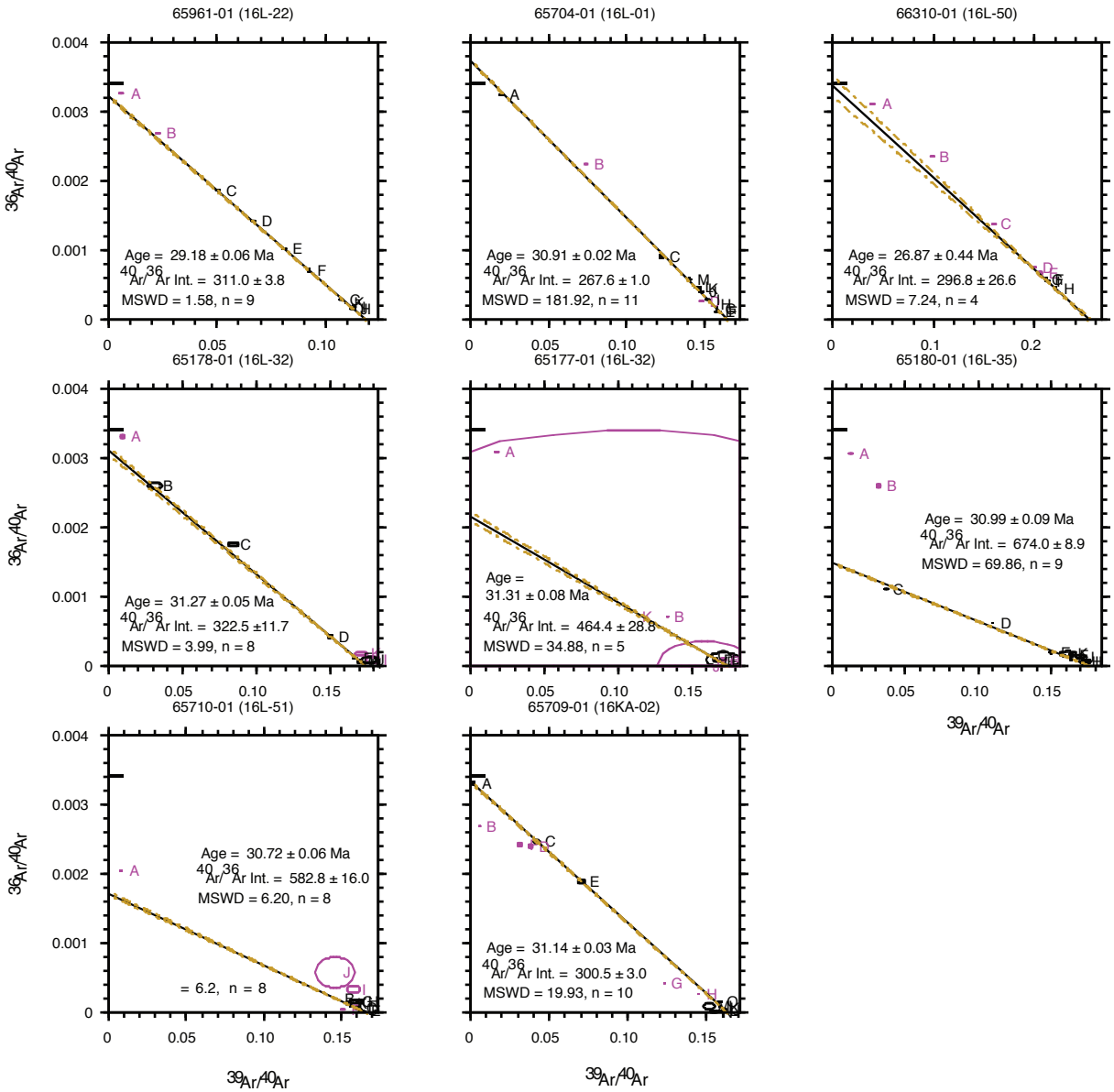
Xi A	0.5	5.984	0.0168	-0.0572	57.06	30.3	100.3	39.6	30.31	0.01
B	0.8	5.977	0.0164	-0.1376	31.96	31.1	100.7	61.8	30.39	0.01
C	0.9	5.976	0.0179	-0.1334	34.60	28.6	100.7	85.8	30.38	0.01
D	1.0	5.940	0.0180	-0.2475	18.20	28.4	101.3	98.4	30.36	0.01
E	4.5	5.418	0.0185	-2.0570	2.319	27.6	111.3	100.0	30.43	0.10
Integrated age ± 2σ			n=5		144.1	29.7			30.35	0.02
Plateau ± 2σ	steps B-E		n=4	MSWD=0.87	87.1	29.4	±3.0	60.4	30.38	0.02

16L-55, Sanidine, Lab#=65723-08

Xi A	0.5	5.957	0.0240	-0.0835	47.18	21.3	100.4	36.9	30.21	0.01
B	0.8	5.987	0.0240	-0.0465	53.93	21.2	100.3	79.1	30.31	0.01
C	0.9	5.947	0.0258	-0.1970	21.98	19.8	101.0	96.3	30.33	0.01
D	1.0	5.387	0.0236	-2.1834	2.264	21.6	112.0	98.1	30.46	0.11
E	4.5	5.607	0.0203	-1.4402	2.448	25.1	107.6	100.0	30.46	0.10
Integrated age ± 2σ			n=5		127.8	21.1			30.28	0.02
Plateau ± 2σ	steps B-E		n=4	MSWD=2.31	80.6	21.0	±4.5	63.1	30.31	0.02



Age Spectra for Conejos Formation dikes. Data at 2-sigma. Results at 2-sigma.



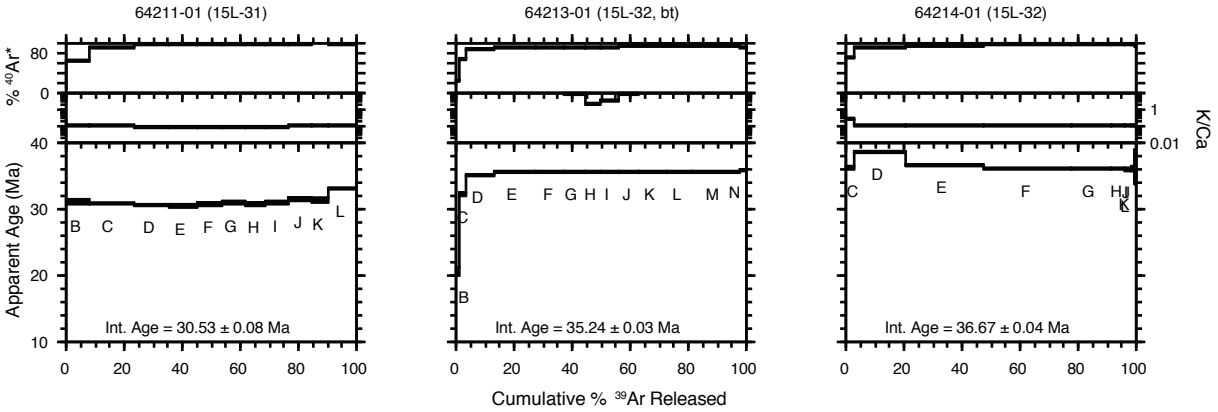
Inverse isochrons for Conejos Formation dikes, excluding sanidine step-heat.. Data at 1-sigma. Results at 2-sigma.

Step-heat $^{40}Ar/^{39}Ar$ analytical data for Conejos Formtion lavas and volcaniclastic units

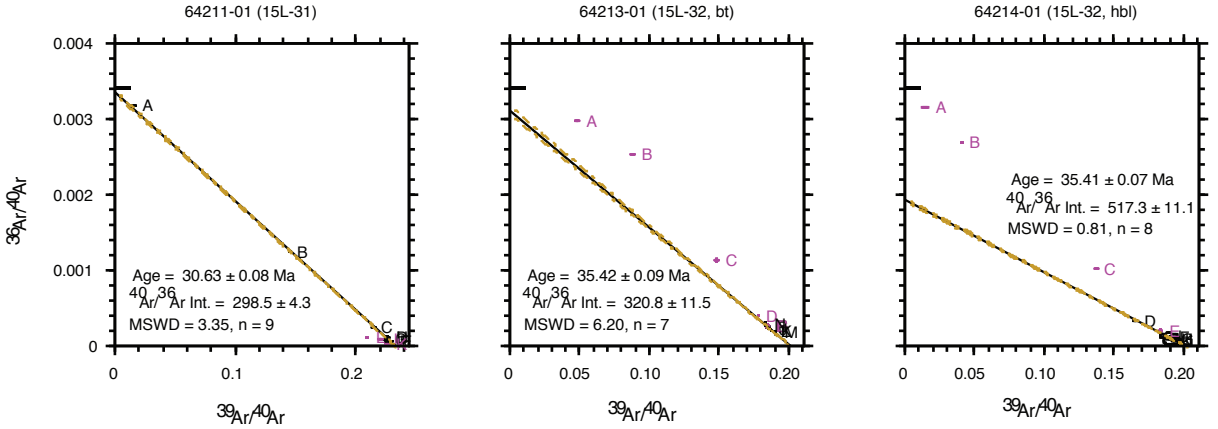
ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-15} mol)	K/Ca	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±1σ (Ma)
15L-31, Plagioclase, 6.18 mg, J=0.0039221±0.02%, IC(F)=1.05102±0.00248, NM-283C, Lab#=64211-01										
X A	1.0	62.89	1.753	199.1	0.2	0.29	6.7	0.4	29.84	3.86
X B	2.0	6.878	4.617	9.777	3.3	0.11	63.3	8.0	31.07	0.19
X C	3.0	4.637	5.095	2.508	6.7	0.10	92.8	23.7	30.69	0.08
X D	4.0	4.405	5.194	1.814	5.2	0.098	97.2	35.9	30.56	0.08
X E	5.0	4.336	5.191	1.691	4.2	0.098	98.0	45.6	30.33	0.10
X F	6.0	4.363	5.223	1.689	3.7	0.098	98.1	54.2	30.54	0.11
X G	7.0	4.429	5.216	1.775	3.4	0.098	97.6	62.0	30.82	0.12
X H	8.0	4.417	5.170	1.792	3.0	0.099	97.4	69.0	30.67	0.13
X I	10.0	4.394	5.145	1.583	3.4	0.099	98.7	77.1	30.93	0.12
Xi J	12.0	4.510	5.035	1.755	3.3	0.10	97.4	84.8	31.34	0.12
Xi K	15.0	4.405	5.128	1.471	2.5	0.099	99.4	90.6	31.24	0.15
Xi L	20.0	4.768	5.010	1.832	4.0	0.10	97.0	100.0	32.98	0.11
Integrated age ± 2σ			n=12		42.6	0.10	K2O=0.68%		30.53	0.08
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.0	0.00 ±0.00		0.0	0.00	0.00
Isochron±2σ		steps A-I	n=9	MSWD=3.35		$^{40}Ar/^{36}Ar$=	298.5±4.3		30.63	0.08
15L-32, Biotite, 2.51 mg, J=0.0039237±0.03%, IC(F)=1.04199±0.00273, NM-283C, Lab#=64213-01										
Xi A	0.5	20.50	0.0261	60.72	0.9	19.6	12.5	0.2	18.26	0.82
Xi B	0.8	11.28	0.0169	28.44	5.7	30.2	25.5	1.6	20.50	0.25
Xi C	1.0	6.723	0.0078	7.492	8.3	65.1	67.1	3.6	32.06	0.11
Xi D	1.5	5.615	0.0046	2.238	39.7	111.0	88.2	13.2	35.19	0.03
X E	1.9	5.419	0.0049	1.337	60.8	103.8	92.7	27.8	35.69	0.02
X F	2.1	5.392	0.0069	1.246	39.0	74.4	93.2	37.3	35.68	0.02
Xi G	2.3	5.406	0.0575	1.371	30.6	8.9	92.6	44.6	35.56	0.02
Xi H	2.5	5.412	0.2058	1.474	22.8	2.5	92.3	50.2	35.47	0.03
Xi I	2.8	5.416	0.1330	1.468	24.8	3.8	92.2	56.1	35.47	0.03
X J	3.1	5.349	0.0583	1.193	28.1	8.8	93.5	62.9	35.53	0.02
X K	3.5	5.322	0.0399	1.066	40.1	12.8	94.1	72.6	35.59	0.02
X L	4.0	5.315	0.0277	1.055	37.0	18.4	94.2	81.5	35.55	0.02
X M	7.0	5.259	0.0315	0.8466	67.6	16.2	95.3	97.8	35.59	0.01
X N	15.0	5.457	0.0153	1.487	9.0	33.4	92.0	100.0	35.65	0.06
Integrated age ± 2σ			n=14		414.4	12.3	K2O=16.16%		35.24	0.03
Plateau ± 2σ		no plateau	n=0	MSWD=0.00	0.000	0.000±0.000		0.0	0.00	0.00
Isochron±2σ		steps E-N	n=7	MSWD=6.20		$^{40}Ar/^{36}Ar$=	320.8±11.5		35.42	0.09

15L-32, Hornblende, 6.18 mg, J=0.0039245±0.03%, IC(F)=1.04199±0.00273, NM-283C, Lab#=64214-01

Xi	A	0.5	64.13	0.6159	201.5	0.2	0.83	7.2	0.1	32.95	3.20
Xi	B	1.0	24.37	0.4685	65.35	0.8	1.1	20.9	0.6	36.19	0.97
Xi	C	2.2	7.246	2.038	7.892	5.0	0.25	70.1	3.3	36.13	0.14
X	D	3.0	6.004	4.286	3.159	32.2	0.12	90.2	21.0	38.54	0.03
Xi	E	3.5	5.431	4.369	2.172	48.4	0.12	94.6	47.5	36.61	0.02
X	F	4.0	5.225	4.368	1.685	55.6	0.12	97.2	78.0	36.16	0.02
X	G	4.5	5.187	4.298	1.564	25.1	0.12	97.7	91.8	36.11	0.03
X	H	5.0	5.176	4.427	1.625	8.3	0.12	97.6	96.4	35.99	0.06
X	I	6.0	5.144	4.394	1.547	4.0	0.12	98.0	98.5	35.91	0.11
X	J	7.0	5.121	4.387	1.463	2.0	0.12	98.4	99.7	35.91	0.21
X	K	8.0	5.198	4.377	1.520	0.3	0.12	98.1	99.8	36.33	1.23
X	L	15.0	5.250	4.393	1.812	0.3	0.12	96.5	100.0	36.10	1.18
Integrated age ± 2σ				n=12		182.2	0.12	K2O=2.89%		36.67	0.04
Plateau ± 2σ			no plateau	n=0	MSWD=0.00	0.0	0.00 ±0.00		0.0	0.00	0.00
Isochron±2σ			steps D-L	n=8	MSWD=0.81		$^{40}Ar/^{36}Ar$=	517.3±11.1		35.41	0.07



Age Spectra for Conejos Formation lavas and volcaniclastic units. Data at 2-sigma. Results at 2-sigma.



Inverse isocron for Conejos Formation lavas and volcaniclastic units. Data at 1-sigma. Results at 2-sigma.

Notes:

X preceding sample ID denotes analyses excluded from plateau or weighted mean age calculations.

i preceding sample ID denotes analyses excluded from isochron age calculations.

Isotopic ratios corrected for blank, radioactive decay, mass discrimination (MAP 215-50 data) and detector intercalibration data (ARGUS VI and Helix data).

Errors quoted for individual analyses includes analytical errors, interfering reactions, and J uncertainties.

Age calculations:

Ages calculated relative to neutron flux monitor Fish Canyon Tuff Sanidine (FC-2). Assigned age = 28.201 Ma (Kuiper et al., 2008)

^{40}K Decay Constant (LambdaK total) = 5.463e-10/a (Min et al., 2000)

Integrated age calculated by summing isotopic measurements of all steps.

Integrated age error calculated by quadratically combining errors of isotopic measurements of all steps.

Plateau age is inverse-variance-weighted mean of selected steps.

Plateau age error is inverse-variance-weighted mean error (Taylor, 1982) times root MSWD where MSWD>1.

Plateau error is weighted error of Taylor (1982).

Mean age is weighted mean age of Taylor (1982). Mean age error is weighted error of the mean multiplied by the root of the MSWD where MSWD >1 , and also incorporates uncertainty in J factors and irradiation correction uncertainties.

MSWD values are calculated for n-1 degrees of freedom for plateau age.

Isochron ages, 40Ar/36Ar and MSWD values calculated from regression results obtained by the methods of York (1969).

Isotopic abundances after Steiger and Jäger (1977).

Weight percent K_2O calculated from ^{39}Ar signal, sample weight, and instrument sensitivity.

Mean age errors reported at 2-sigma. All other errors at 1-sigma.

Detector intercalibration (IC = measured 40Ar/36Ar divided by 295.5) and Discrimination (D) determined using atmospheric air

IC(J) is IC for spectrometer Jan (Argus VI). IC(O) is IC for spectrometer Obama. IC(F) is IC for spectrometer Felix (Helix MC Plus).

D(MAP) is D for spectrometer MAP 215-50.

Sample preparation and irradiation:

Concentrated groundmass and mineral separates prepared from bulk samples using crushing, grinding, Frantz magnetic separation, acid washing (7% HCl to remove $CaCO_3$ and 7% HF to remove glass), heavy density liquid techniques, and hand-picking.

Samples were loaded into machined Al discs and irradiated in the NM-192, 246, 263, 283, 285, 290, 293, and 294 positions at the Triga Reactor along with the neutron flux monitor Fish Canyon Tuff sanidine FC-2.

Instrumentation:

Isotopic ratios determined with ARGUS VI (Jan and Obama), Helix MC Plus (Felix), or MAP 215-50.

Single crystals of sanidine were fused using a focused CO2 laser.

Single crystals of sanidine (15L-33,16L-54, 55, 69, 17L-13) were step-heated with a defocused CO2 laser.

Groundmass, biotite, hornblende, and plagioclase were step heated (one minute per step) with a 75 W Photon Machines 810 nm diode laser or a defocused CO2 laser.

Samples 11L-23 and 11L-25 were step-heated using a Mo double-vacuum resistance furnace (heating duration ~10 minutes/step).

All mass spectrometers were on line with an automated all-metal extraction system

Reactive gases removed by reaction with 1 SAES GP-50, D-50, and/or NP-10 getter(s).

Gas (except from sanidine) also exposed to cold finger operated at -140°C.

Thermo-Fisher Scientific Helix MC Plus mass spectrometer

System = Felix

Multi-collector configuration: 40Ar-H2, 39Ar-H1, 38Ar-AX, 37Ar-L1, 36Ar-L2

Amplification (all irradiations): H2 and L1 1E12 Ohm Faraday, H1 and Ax 1E13 Ohm Faraday, L2 CDD ion counter, deadtime 20ns

Thermo-Fisher Scientific ARGUS VI mass spectrometer

System = Obama

Multi-collector configuration: 40Ar-H1, 39Ar-Ax, 38Ar-L1, 37Ar-L2, 36Ar-L3

Amplification (all irradiations): H1, L1, L2 1E12 Ohm Faraday, AX 1E13 ohm Faraday, L3 - CDD ion counter, dead time 14 nS.

Thermo-Fisher Scientific ARGUS VI mass spectrometer

System = Jan

Multi-collector configuration: 40Ar-H1, 39Ar-Ax, 38Ar-L1, 37Ar-L2, 36Ar-L3

Amplification (NM 283, 290, 293): H1, Ax, L2 1E13 Ohm Faraday, L1 1E14 ohm Faraday, L3 - CDD ion counter, dead time 14 nS.

Amplification (NM 263): H1, L1, L2 1E12 Ohm Faraday, Ax 1E13 ohm Faraday, L3 - CDD ion counter, dead time 14 nS.

Analytical Parameters:

Felix (Helix MC Plus) Mass Spectrometer sensitivity = 4E-16 mol/fA

Total system blank and background: 16.0, 0.6, 0.14, 0.46, and 0.092 x 10-17 moles for masses 40,39, 38, 37, and 36, respectively.

Obama (ARGUS VI) Mass Spectrometer sensitivity = 1E-16 mol/fA

Total system blank and background: 14.1, 0.2, 0.065, 0.12, and 0.057 x 10-17 moles for masses 40,39, 38, 37, and 36, respectively.

Jan (ARGUS VI) Mass Spectrometer sensitivity = 8E-17 mol/fA

Total system blank and background: 4.7, 0.07, 0.07, 0.2, and 0.022 x 10-17 moles for masses 40,39, 38, 37, and 36, respectively.

MAP 215-50 Mass Spectrometer sensitivity = 5E-17 mol/pA

Total system blank and background: 62.7, 0.57, 0.13, 0.42, and 0.43 x 10-17 moles for masses 40,39, 38, 37, and 36, respectively.

J-factors determined to a precision of 0.01 to 0.03% by CO2 laser fusion of typically 6 FC-2 crystals from multiple radial positions

Correction factors for interfering nuclear reactions were determined using K-glass and CaF_2.

See following compilation table for a summary of irradiation times and correction factors

Correction Factors for Irradiations used in the Platoro-Dulce Dikes study

Irradation	**Hours**	**($^{39}Ar/^{37}Ar$)Ca**	**($^{36}Ar/^{37}Ar$)Ca**	**($^{38}Ar/^{39}Ar$)K**	**($^{40}Ar/^{39}Ar$)K**
NM-192	8.85	2.8e-4 ± 2e-5	6.8e-4 ± 5e-5	1.077e-2 ± 0e0	0 ± 4e-4
NM-246	10	7e-4 ± 2e-6	2.8e-4 ± 2e-5	1.3e-2 ± 0e0	1e-2 ± 2e-3
NM-263	6	6.530e-4 ± 3.6e-7	2.633e-4 ± 3.4e-7	1.077e-2 ±0e0	7.529 ± 2.37e-4
NM-268	8	6.601e-4 ± 3.03e-6	2.649e-4 ± 5e-7	1.3e-2 ± 0±0	6.01e-3 ± 3.8e-4
NM-283	16	6.928e-4 ± 5.3e-6	2.702e-4 ± 5e-7	1.261e-2 ±2e-5	7.439e-3 ± 1.46e-4
NM-285	12	6.946e-4 ± 1.65e-5	2.606e-4 ± 5e-7	1.261e-2 ± 2e-5	7.531e-3 ± 1.05e-4
NM-290	12	7.3e-4 ± 2e-5	2.725e-4 ± 9e-7	1.2e-2 ± 2e-5	8.8e-3 ± 4e-4
NM-293	8	7.580e-4 ± 7e-6	2.860e-4 ± 5e-7	1.3e-2 ± 0e0	8.73e-3 ± 1.7e-4
NM-294	16	7.580e-4 ± 7e-6	2.86e-4 ± 5e-7	1.271e-2 ± 4e-5	7.87e-3 ± 5.8e-4