

**Table 1. Summary of <sup>40</sup>Ar/<sup>39</sup>Ar results and analytical methods**

Sample	Lab #	Irradiation	mineral	age analysis	age assignment	steps	Age	±2σ	MSWD	comments
10NP6	60006	240	biotite	laser step-heat		8	33.14	0.38		weighted mean from 2 spectra
Tu-1316	59760	236	biotite	furnace step-heat	integrated age	12	33.35	0.46	-	disturbed age spectrum, possible recoil
C-106	59732	236	K-feldspar	laser step-heat	plateau	3	34.08	0.21	3.54	
C-342	59763	236	hornblende	laser step-heat	plateau	4	34.75	0.18	2.67	
08GD-28	59501	231	groundmass concentrate	laser step-heat	plateau	7	34.38	0.76	66.92	somewhat disturbed, possible recoil
Tu-1470	59758	236	groundmass concentrate	furnace step-heat	isochron	6	34.9	1.4	3.12	disturbed age spectrum, possible recoil
08CAT	59507	231	biotite	furnace step-heat	plateau	7	36.21	0.30	8.05	
09GD07	59500	231	groundmass concentrate	laser step-heat	plateau	4	36.41	0.41	10.43	
09GD08	59506	231	biotite	furnace step-heat	integrated age	11	36.90	0.51	-	disturbed age spectrum, possible recoil
Kitting Spring	59508	231	hornblende	furnace step-heat	plateau	10	37.17	0.33	2.55	
08GD-40B	58748	221	groundmass concentrate	furnace step-heat	plateau	4	37.95	0.91	2.29	
CM4	59506	231	biotite	furnace step-heat	plateau	6	38.07	0.64	56.05	

**Sample preparation and irradiation:**

Minerals separated with standard heavy liquid, Franz Magnetic and hand-picking techniques.

Samples in NM-221 irradiated in a machined Aluminum tray for 7 hours in D-3 position, Nuclear Science Center, College Station, TX.

Samples in NM-231 irradiated in a machined Aluminum tray for 10 hours in C.T. position, USGS TRIGA, Denver, Colorado.

Samples in NM-236 irradiated in a machined Aluminum tray for 7 hours in C.T. position, USGS TRIGA, Denver, Colorado.

Samples in NM-240 irradiated in a machined Aluminum tray for 10 hours in C.T. position, USGS TRIGA, Denver, Colorado.

Neutron flux monitor Fish Canyon Tuff sanidine (FC-2). Assigned age = 28.02 Ma (Renne et al., 1998).

**Instrumentation:**

Analyses performed on a Mass Analyzer Products 215-50 mass spectrometer on line with automated all-metal extraction system.

Groundmass, hornblende and biotite step-heated using a 50 watt Synrad CO<sub>2</sub> laser or using a Mo double-vacuum resistance furnace.

Flux monitors and sanidine fused by a 50 watt Synrad CO<sub>2</sub> laser.

**Analytical parameters:**

Electron multiplier sensitivity was ~5.0 e-17 moles/pA for laser analyses.

Electron multiplier sensitivity averaged 1.13e-16 moles/pA for furnace analyses.

Total system blank and background averaged 1380, 18.2, 3.8, 11.2, 13.5 x 10<sup>-18</sup> moles at masses 40, 39, 38, 37 and 36, respectively for the furnace analyses.

Total system blank and background averaged 1920, 235, 4.8, 1.6, 12.5 x 10<sup>-18</sup> moles at masses 40, 39, 38, 37 and 36, respectively for the laser analyses.

J-factors determined by CO<sub>2</sub> laser-fusion of 6 single crystals from each of 6 radial positions around the irradiation tray.

Decay constants and isotopic abundances after Steiger and Jäger (1977).

**Table 2.  $^{40}\text{Ar}/^{39}\text{Ar}$  analytical data.**

ID	Power (Watts/degrees C)	$^{40}\text{Ar}/^{39}\text{Ar}$	$^{37}\text{Ar}/^{39}\text{Ar}$	$^{36}\text{Ar}/^{39}\text{Ar}$ ( $\times 10^{-3}$ )	$^{39}\text{Ar}_K$ ( $\times 10^{-15}$ mol)	K/Ca	$^{40}\text{Ar}^*$ (%)	$^{39}\text{Ar}$ (%)	Age (Ma)	$\pm 1\sigma$ (Ma)
<b>10NP6</b> , Biotite, J=0.0022911 $\pm$ 0.06%, D=1.002 $\pm$ 0.001, NM-240J, Lab#=60006-01										
Xi A	1	42.90	0.4209	139.7	0.133	1.2	3.8	0.4	6.80	4.01
Xi B	1	17.82	0.4839	40.01	0.352	1.1	33.8	1.5	24.75	1.18
Xi C	1	9.700	0.0512	3.997	0.664	10.0	87.9	3.5	34.85	0.66
D	2	9.010	0.0210	3.024	1.57	24.3	90.1	8.4	33.21	0.27
E	2	8.528	0.0759	1.599	6.54	6.7	94.5	28.6	32.98	0.10
F	3	8.336	0.0361	0.8811	14.3	14.1	96.9	72.8	33.05	0.08
G	3	8.421	0.0184	1.069	8.82	27.7	96.3	100.0	33.16	0.09
<b>Integrated age <math>\pm 2\sigma</math></b>			n=7		32.4	11.2			32.91	0.14
<b>Plateau <math>\pm 2\sigma</math> steps D-G</b>			n=4	<b>MSWD=0.72</b>	<b>31.2</b>	<b>16.9 <math>\pm</math>19.2</b>		<b>96.5</b>	<b>33.07</b>	<b>0.11</b>
<b>Isochron<math>\pm 2\sigma</math> steps D-G</b>			n=4	MSWD=1.06			$^{40}\text{Ar}/^{36}\text{Ar}=296.2\pm 56.3$		33.07	0.29
<b>10NP6</b> , Biotite, J=0.0022911 $\pm$ 0.06%, D=1.002 $\pm$ 0.001, NM-240J, Lab#=60006-03										
Xi A	1	42.21	0.4068	120.4	0.127	1.3	15.8	0.7	27.36	4.30
Xi B	1	15.39	0.3583	31.01	0.281	1.4	40.6	2.1	25.64	1.67
Xi C	1	9.575	0.0749	3.566	0.856	6.8	89.0	6.5	34.87	0.53
D	2	8.675	0.0460	2.202	1.176	11.1	92.5	12.4	32.84	0.41
E	2	8.578	0.2083	1.336	4.90	2.4	95.6	35.5	33.54	0.13
F	3	8.342	0.1710	0.7509	14.3	3.0	97.5	92.9	33.28	0.08
G	3	8.402	0.1148	0.9782	2.04	4.4	96.7	100.0	33.23	0.22
<b>Integrated age <math>\pm 2\sigma</math></b>			n=7		23.7	3.0			33.24	0.16
<b>Plateau <math>\pm 2\sigma</math> steps D-G</b>			n=4	<b>MSWD=1.54</b>	<b>22.4</b>	<b>3.4 <math>\pm</math>8.0</b>		<b>94.7</b>	<b>33.32</b>	<b>0.16</b>
<b>Isochron<math>\pm 2\sigma</math> steps D-G</b>			n=4	MSWD=1.77			$^{40}\text{Ar}/^{36}\text{Ar}=53.2\pm 118.2$		33.11	0.43
<b>Tu-1316</b> , Bt, 2.75 mg, J=0.001629 $\pm$ 0.10%, D=1.002 $\pm$ 0.001, NM-236F, Lab#=59760-01										
X A	650	237.7	0.8313	792.3	2.02	0.61	1.5	4.7	10.7	3.4
X B	750	48.57	2.619	125.8	1.198	0.19	23.9	7.4	33.8	1.3
X C	800	28.62	0.3949	60.34	0.920	1.3	37.8	9.5	31.51	0.90
X D	850	19.89	0.0451	25.11	1.96	11.3	62.7	13.9	36.28	0.49
X F	900	15.14	0.8891	10.53	2.59	0.57	79.9	19.5	35.21	0.30
X G	950	14.66	0.0451	7.470	4.17	11.3	85.0	28.3	36.22	0.20
X H	1025	14.45	0.1416	6.781	6.49	3.6	86.2	41.2	36.22	0.15
X I	1075	14.36	0.1170	7.249	5.82	4.4	85.1	52.2	35.55	0.18
X J	1150	14.95	0.2785	11.36	7.75	1.8	77.7	65.8	33.80	0.16
X K	1250	14.66	0.3274	9.903	19.0	1.6	80.2	95.5	34.22	0.12
X L	1700	51.24	4.988	145.7	3.19	0.10	16.8	100.0	25.19	0.90
<b>Integrated age <math>\pm 2\sigma</math></b>			n=12		<b>55.1</b>	<b>0.84</b>		<b>K2O=4.73</b>	<b>33.35</b>	<b>0.46</b>
<b>Isochron<math>\pm 2\sigma</math> steps A-L</b>			n=12	MSWD=25.22			$^{40}\text{Ar}/^{36}\text{Ar}=281\pm 11$		35.42	0.80

ID	Power (Watts/degrees C)	<sup>40</sup> Ar/ <sup>39</sup> Ar	<sup>37</sup> Ar/ <sup>39</sup> Ar	<sup>36</sup> Ar/ <sup>39</sup> Ar (x 10 <sup>-3</sup> )	<sup>39</sup> Ar <sub>K</sub> (x 10 <sup>-15</sup> mol)	K/Ca	<sup>40</sup> Ar* (%)	<sup>39</sup> Ar (%)	Age (Ma)	±1σ (Ma)
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**C-342**, hbl, 15.21 mg, J=0.0016294±0.08%, D=1.001±0.001, NM-236F, Lab#=59763-01

Xi A	2	162.1	2.327	513.9	0.397	0.22	6.4	0.4	30.4	3.4
X B	3	18.10	0.1777	19.39	3.38	2.9	68.4	3.4	36.04	0.21
X C	4	14.04	0.2004	6.271	8.22	2.5	86.9	10.9	35.50	0.12
D	5	12.69	2.767	3.152	20.4	0.18	94.5	29.4	34.931	0.091
E	6	12.79	3.156	4.053	32.0	0.16	92.7	58.3	34.559	0.095
F	7	12.34	4.156	2.600	30.1	0.12	96.6	85.6	34.76	0.14
G	8	12.78	4.797	4.296	13.8	0.11	93.2	98.1	34.76	0.12
X H	9	14.19	5.238	8.146	1.67	0.097	86.1	99.7	35.67	0.26
Xi I	10	55.01	15.52	115.6	0.050	0.033	40.2	99.7	64.6	6.6
Xi J	12	93.83	27.79	207.0	0.028	0.018	37.2	99.7	101.8	12.4
Xi K	14	30.82	34.95	65.11	0.297	0.015	46.9	100.0	43.1	1.5
<b>Integrated age ± 2σ</b>			n=11		110.4	0.15	K2O=1.71		34.88	0.19
<b>Plateau ± 2σ steps D-G</b>			n=4	<b>MSWD=2.67</b>	<b>96.4</b>	<b>0.15 ± 0.07</b>	<b>87.3</b>	<b>34.75</b>	<b>0.18</b>	
<b>Isochron±2σ steps B-H</b>			n=7	MSWD=6.21		<sup>40</sup> Ar/ <sup>36</sup> Ar= 327±23		34.56	0.35	

**08GD-28**, wr, 13.08 mg, J=0.0023421±0.07%, D=1.005±0.001, NM-231E, Lab#=59501-01

Xi A	3	124.7	4.590	409.4	2.16	0.11	3.3	1.4	17.20	2.49
Xi B	4	65.59	2.128	214.6	2.98	0.24	3.6	3.3	9.84	1.27
Xi C	5	26.63	0.8892	74.32	3.47	0.57	17.8	5.5	19.91	0.59
Xi D	6	14.15	0.5812	24.37	5.91	0.88	49.4	9.3	29.31	0.31
E	8	12.14	0.6448	13.13	7.73	0.79	68.5	14.2	34.76	0.20
F	8	10.52	0.6897	7.953	4.68	0.74	78.2	17.2	34.40	0.22
G	10	10.67	0.7856	8.128	7.76	0.65	78.1	22.2	34.87	0.17
H	13	10.34	0.7027	6.471	14.8	0.73	82.1	31.8	35.50	0.12
I	16	9.815	0.5080	4.936	18.7	1.0	85.6	44.0	35.12	0.10
J	18	9.295	0.4345	3.823	15.5	1.2	88.2	54.2	34.30	0.10
K	30	9.087	2.119	4.737	50.6	0.24	86.5	88.0	32.94	0.09
Xi L	35	9.077	2.647	6.824	17.7	0.19	80.2	100.0	30.52	0.12
<b>Integrated age ± 2σ</b>			n=12		152.0	0.36	K2O=1.91%		32.44	0.26
<b>Plateau ± 2σ steps E-K</b>			n=7	<b>MSWD=66.92</b>	<b>119.758</b>	<b>0.622±0.586</b>	<b>78.8</b>	<b>34.38</b>	<b>0.76</b>	
<b>Isochron±2σ steps E-K</b>			n=7	MSWD=67.71		<sup>40</sup> Ar/ <sup>36</sup> Ar= 366.9±98.7		32.70	2.20	

**TU-1470**, wr, 27.5 mg, J=0.0016207±0.07%, D=1.002±0.001, NM-236E, Lab#=59758-01

Xi A	550	1389.8	4.291	4684.2	3.09	0.12	0.4	3.5	17.9	16.7
Xi B	625	148.5	2.140	480.2	5.98	0.24	4.6	10.1	19.7	1.9
X C	700	87.17	1.412	260.7	2.92	0.36	11.8	13.2	29.8	1.3
X D	750	66.02	1.514	184.3	2.55	0.34	17.7	15.9	33.9	1.2
X E	800	63.95	1.384	174.9	2.61	0.37	19.3	18.7	35.8	1.1
X F	875	52.42	1.080	139.6	5.09	0.47	21.5	23.9	32.63	0.82
X G	975	33.97	0.8820	74.83	10.50	0.58	35.1	34.3	34.54	0.42
X H	1075	26.80	0.7314	50.85	20.1	0.70	44.2	52.8	34.28	0.26
Xi I	1250	30.32	3.663	66.92	49.7	0.14	35.8	92.0	31.52	0.29
Xi J	1700	42.70	4.648	108.9	11.56	0.11	25.5	100.0	31.70	0.51
<b>Integrated age ± 2σ</b>			n=10		114.1	0.19	K2O=0.98		31.5	1.6
<b>Isochron±2σ steps C-H</b>			n=6	<b>MSWD=3.12</b>		<sup>40</sup> Ar/ <sup>36</sup> Ar=92.0±5.5		<b>34.9</b>	<b>1.4</b>	

ID	Power (Watts/degrees C)	<sup>40</sup> Ar/ <sup>39</sup> Ar	<sup>37</sup> Ar/ <sup>39</sup> Ar	<sup>36</sup> Ar/ <sup>39</sup> Ar (x 10 <sup>-3</sup> )	<sup>39</sup> Ar <sub>K</sub> (x 10 <sup>-15</sup> mol)	K/Ca	<sup>40</sup> Ar* (%)	<sup>39</sup> Ar (%)	Age (Ma)	±1σ (Ma)
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**08CAT**, Biotite, 4.79 mg, J=0.0023683±0.06%, D=1.005±0.001, NM-231F, Lab#=59507-01

Xi A	650	40.40	0.1533	130.1	8.51	3.3	4.8	5.1	8.34	0.87
Xi B	750	18.92	0.1143	47.22	8.37	4.5	26.2	10.2	21.08	0.42
Xi C	800	13.51	0.0718	23.12	6.20	7.1	49.4	13.9	28.29	0.31
Xi D	850	13.08	0.0462	16.95	12.1	11.0	61.7	21.2	34.12	0.23
E	900	11.89	0.0313	11.39	16.2	16.3	71.7	30.9	36.04	0.15
F	950	11.41	0.0404	9.059	17.5	12.6	76.6	41.4	36.92	0.15
G	1025	12.45	0.1275	13.09	18.9	4.0	69.0	52.8	36.30	0.16
H	1075	11.05	0.1524	8.684	13.6	3.3	76.9	61.0	35.91	0.15
I	1150	10.71	0.2965	7.835	16.1	1.7	78.6	70.6	35.58	0.14
J	1250	9.736	0.2023	3.925	40.9	2.5	88.3	95.2	36.31	0.09
K	1700	20.67	0.1814	40.70	7.94	2.8	41.9	100.0	36.58	0.42
<b>Integrated age ± 2σ</b>			n=11		166.2	3.6	K2O=5.63%		33.61	0.28
<b>Plateau ± 2σ</b>	steps E-K		n=7	MSWD=8.05	131.063	5.786±11.585	78.8		36.21	0.30
<b>Isochron±2σ</b>	steps E-K		n=7	MSWD=9.47		<sup>40</sup> Ar/ <sup>36</sup> Ar= 297.0±15.1			36.16	0.62

**09GD07**, wr, 14.3 mg, J=0.0023444±0.06%, D=1.005±0.001, NM-231E, Lab#=59500-01

Xi A	3	131.4	1.815	426.0	0.643	0.28	4.3	0.5	23.78	4.15
Xi B	4	64.12	2.054	194.7	0.628	0.25	10.5	0.9	28.38	2.60
Xi C	5	28.20	1.946	73.28	0.713	0.26	23.8	1.5	28.16	1.50
Xi D	6	20.40	2.908	47.81	1.28	0.18	31.9	2.4	27.35	0.94
Xi E	8	18.05	4.348	37.66	1.51	0.12	40.3	3.6	30.57	0.73
Xi F	10	19.35	6.494	40.81	2.03	0.079	40.4	5.1	32.92	0.64
Xi G	13	18.70	9.213	38.14	3.58	0.055	43.8	7.7	34.49	0.49
H	16	16.18	10.20	28.30	5.68	0.050	53.5	12.0	36.50	0.59
I	18	13.75	6.075	18.46	8.65	0.084	63.9	18.4	36.93	0.25
J	30	10.72	1.122	6.881	69.1	0.45	81.9	69.9	36.72	0.09
K	35	10.62	0.6928	6.992	40.3	0.74	81.1	100.0	36.04	0.09
<b>Integrated age ± 2σ</b>			n=11		134.1	0.25	K2O=1.54%		36.10	0.25
<b>Plateau ± 2σ</b>	steps H-K		n=4	MSWD=10.43	123.7	0.50 ±0.65	92.3		36.41	0.41
<b>Isochron±2σ</b>	steps H-K		n=4	MSWD=15.38		<sup>40</sup> Ar/ <sup>36</sup> Ar= 304.2±33.3			36.15	1.20

**09GD8**, Biotite, 6.35 mg, J=0.0023716±0.06%, D=1.002±0.001, NM-231F, Lab#=59505-02

X A	650	43.81	0.2590	130.9	10.72	2.0	11.7	7.4	21.84	0.81
X B	750	43.27	2.160	127.9	21.0	0.24	13.0	21.9	24.00	0.76
X C	800	19.21	1.716	39.73	11.24	0.30	39.6	29.6	32.30	0.39
X D	850	13.79	0.0506	18.89	18.8	10.1	59.5	42.6	34.78	0.20
E	900	14.77	0.0996	15.77	22.1	5.1	68.5	57.8	42.78	0.19
F	950	14.40	0.2128	13.86	13.8	2.4	71.7	67.3	43.61	0.20
G	1025	14.19	0.0819	15.42	14.1	6.2	67.9	77.0	40.77	0.22
H	1075	12.44	0.1821	6.746	15.8	2.8	84.1	87.9	44.20	0.15
I	1150	11.95	0.6536	5.588	7.28	0.78	86.7	92.9	43.76	0.23
J	1250	11.51	0.8883	4.903	8.77	0.57	88.2	99.0	42.87	0.20
X K	1700	46.68	2.480	114.4	1.50	0.21	28.0	100.0	55.2	1.3
<b>Integrated age ± 2σ</b>			n=11		145.0	0.79	K2O=3.70%		36.90	0.51
<b>Plateau ± 2σ</b>	steps E-J		n=6	MSWD=37.58	81.772	3.534±4.576	56.4		43.20	1.000

ID	Power (Watts/degrees C)	<sup>40</sup> Ar/ <sup>39</sup> Ar	<sup>37</sup> Ar/ <sup>39</sup> Ar	<sup>36</sup> Ar/ <sup>39</sup> Ar (x 10 <sup>-3</sup> )	<sup>39</sup> Ar <sub>K</sub> (x 10 <sup>-15</sup> mol)	K/Ca	<sup>40</sup> Ar* (%)	<sup>39</sup> Ar (%)	Age (Ma)	±1σ (Ma)
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**Kitting Spring**, hlb, 15.3 mg, J=0.0023669±0.05%, D=1.005±0.001, NM-231F, Lab#=59508-01

A	800	424.3	11.49	1419.5	1.23	0.044	1.4	1.4	24.64	8.88
B	900	69.50	5.747	207.1	0.450	0.089	12.7	1.9	37.40	3.89
C	1025	17.07	5.627	29.55	2.80	0.091	51.7	5.1	37.39	0.61
D	1060	11.21	5.467	10.55	9.05	0.093	76.3	15.4	36.25	0.27
E	1100	10.47	5.290	7.081	44.4	0.096	84.3	64.0	37.37	0.17
F	1130	9.467	5.249	3.761	25.4	0.097	92.9	90.4	37.27	0.17
G	1160	14.73	5.386	22.27	3.09	0.095	58.4	93.6	36.46	0.55
H	1200	16.71	5.949	27.80	4.29	0.086	53.9	98.0	38.17	0.54
I	1260	33.59	5.631	86.63	1.27	0.091	25.2	99.3	35.92	1.72
J	1650	117.9	3.878	364.9	0.702	0.13	8.8	100.0	43.76	4.50

<b>Integrated age ± 2σ</b>		n=10			92.6	0.094	K2O=0.98%		37.10	0.51
<b>Plateau ± 2σ</b>	<b>steps A-J</b>	<b>n=10</b>	<b>MSWD=2.55</b>	<b>92.6</b>	<b>0.10 ±0.04</b>	<b>100.0</b>			<b>37.17</b>	<b>0.33</b>
<b>Isochron±2σ</b>	steps A-J	n=10	MSWD=3.51		<sup>40</sup> Ar/ <sup>36</sup> Ar= 294.6±4.3				37.26	0.28

**08GD-40B**, Hornblende, 29.37 mg, J=0.00085±1.18%, D=1.004±0.001, NM-221O, Lab#=58748-01

X A	900	#####	-2.7024	44149.3	0.008	-	2.1	0.0	392.65	177.40
X B	1050	1809.7	10.10	6024.1	0.191	0.051	1.7	0.3	46.43	15.63
X C	1090	94.11	7.224	277.5	0.130	0.071	13.5	0.5	19.47	4.15
D	1150	133.0	5.358	381.9	0.107	0.095	15.5	0.7	31.37	5.32
E	1200	37.37	3.154	43.41	2.55	0.16	66.4	4.9	37.72	0.37
F	1250	28.56	3.973	12.81	9.5	0.13	87.9	20.5	38.20	0.13
G	1350	26.45	3.737	6.332	43.1	0.14	94.1	91.4	37.87	0.08
Xi H	1450	27.29	3.304	15.59	3.98	0.15	84.1	97.9	34.94	0.19
Xi I	1650	21.83	8.810	52.39	1.26	0.058	32.4	100.0	10.89	0.52

<b>Integrated age ± 2σ</b>		n=9			60.8	0.13	K2O=0.94		37.19	0.90
<b>Plateau ± 2σ</b>	<b>steps D-G</b>	<b>n=4</b>	<b>MSWD=2.29</b>	<b>55.2</b>	<b>0.14 ±0.05</b>	<b>90.8</b>			<b>37.95</b>	<b>0.91</b>
<b>Isochron±2σ</b>	steps A-G	n=7	MSWD=6.19		<sup>40</sup> Ar/ <sup>36</sup> Ar= 297.0±7.0				37.9	7.0

**CM4**, Biotite, 6.2 mg, J=0.0023699±0.06%, D=1.005±0.001, NM-231F, Lab#=59506-01

Xi A	650	32.41	0.6213	107.3	5.29	0.82	2.3	2.7	3.20	0.78
Xi B	750	48.21	1.488	141.4	5.01	0.34	13.6	5.2	27.75	1.05
Xi C	800	14.62	1.041	26.19	4.05	0.49	47.6	7.3	29.54	0.40
Xi D	850	10.28	0.4406	7.174	12.7	1.2	79.7	13.7	34.69	0.16
E	900	9.929	0.1657	3.504	18.4	3.1	89.7	23.0	37.66	0.11
F	950	9.876	0.0758	3.335	19.8	6.7	90.1	33.0	37.61	0.10
G	1025	9.951	0.0902	2.662	31.8	5.7	92.2	49.1	38.76	0.08
H	1075	10.41	0.1448	3.921	22.3	3.5	89.0	60.4	39.16	0.12
I	1150	10.44	0.2413	5.310	39.2	2.1	85.2	80.3	37.61	0.10
J	1250	12.53	1.011	13.24	37.2	0.50	69.5	99.1	36.82	0.16
Xi K	1700	56.64	2.052	168.1	1.82	0.25	12.6	100.0	30.35	1.86

<b>Integrated age ± 2σ</b>		n=11			197.6	1.2	K2O=5.16%		36.24	0.23
<b>Plateau ± 2σ</b>	<b>steps E-J</b>	<b>n=6</b>	<b>MSWD=56.05</b>	<b>168.738</b>	<b>3.260±4.572</b>	<b>85.4</b>			<b>38.07</b>	<b>0.64</b>
<b>Isochron±2σ</b>	steps E-J	n=6	MSWD=50.83		<sup>40</sup> Ar/ <sup>36</sup> Ar= 261.7±51.3				38.68	0.16

ID	Power (Watts/degrees C)	$^{40}\text{Ar}/^{39}\text{Ar}$	$^{37}\text{Ar}/^{39}\text{Ar}$	$^{36}\text{Ar}/^{39}\text{Ar}$ (x 10 <sup>-3</sup> )	$^{39}\text{Ar}_K$ (x 10 <sup>-15</sup> mol)	K/Ca	$^{40}\text{Ar}^*$ (%)	$^{39}\text{Ar}$ (%)	Age (Ma)	$\pm 1\sigma$ (Ma)
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**Notes:**

Isotopic ratios corrected for blank, radioactive decay, and mass discrimination, not corrected for interfering reactions.

Errors quoted for individual analyses include analytical error only, without interfering reaction or J uncertainties.

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).

Decay constants and isotopic abundances after Steiger and Jäger (1977).

X symbol preceding sample ID denotes analyses excluded from plateau age calculations.

Weight percent K<sub>2</sub>O calculated from  $^{39}\text{Ar}$  signal, sample weight, and instrument sensitivity.

Ages calculated relative to FC-2 Fish Canyon Tuff sanidine interlaboratory standard at 28.02 Ma

Decay Constant (LambdaK (total)) = 5.543e-10/a

Correction factors:

$$(^{39}\text{Ar}/^{37}\text{Ar})_{Ca} = 0.0007 \pm 5e-05$$

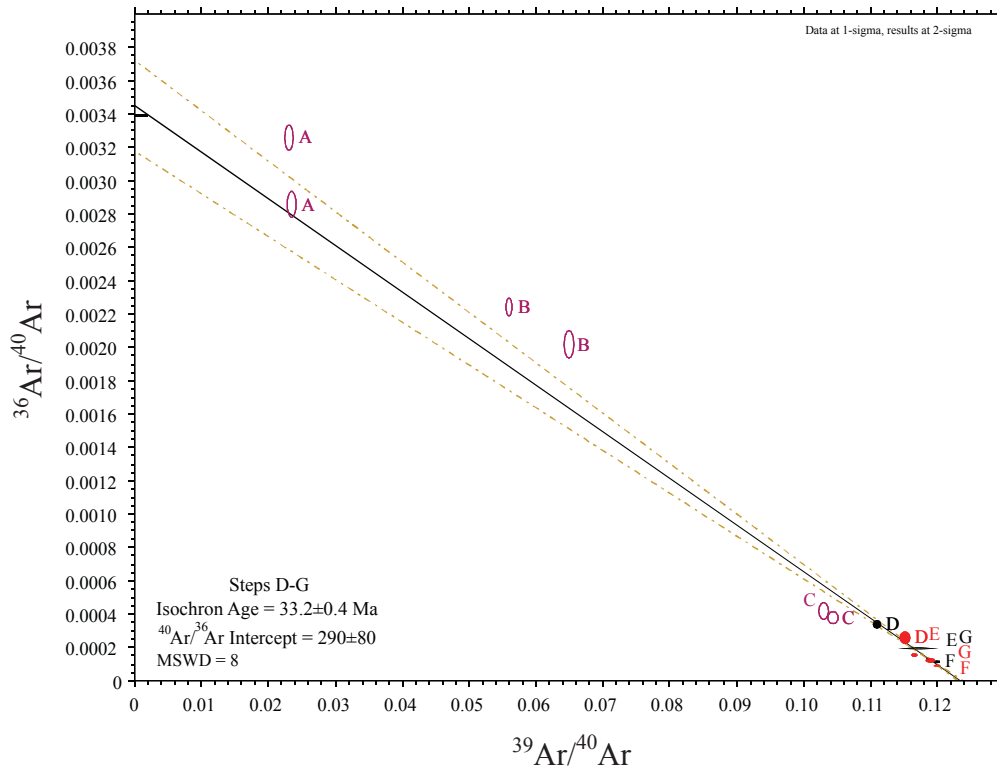
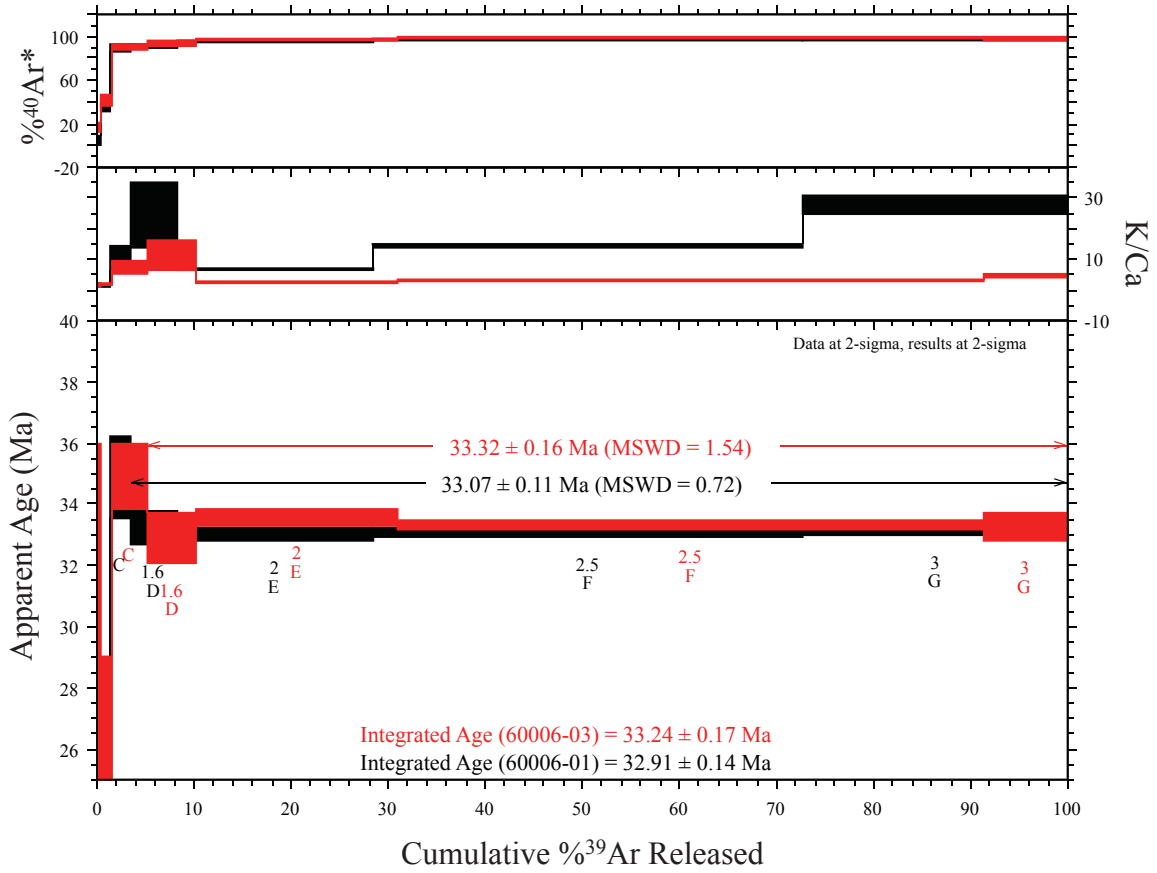
$$(^{36}\text{Ar}/^{37}\text{Ar})_{Ca} = 0.00028 \pm 2e-05$$

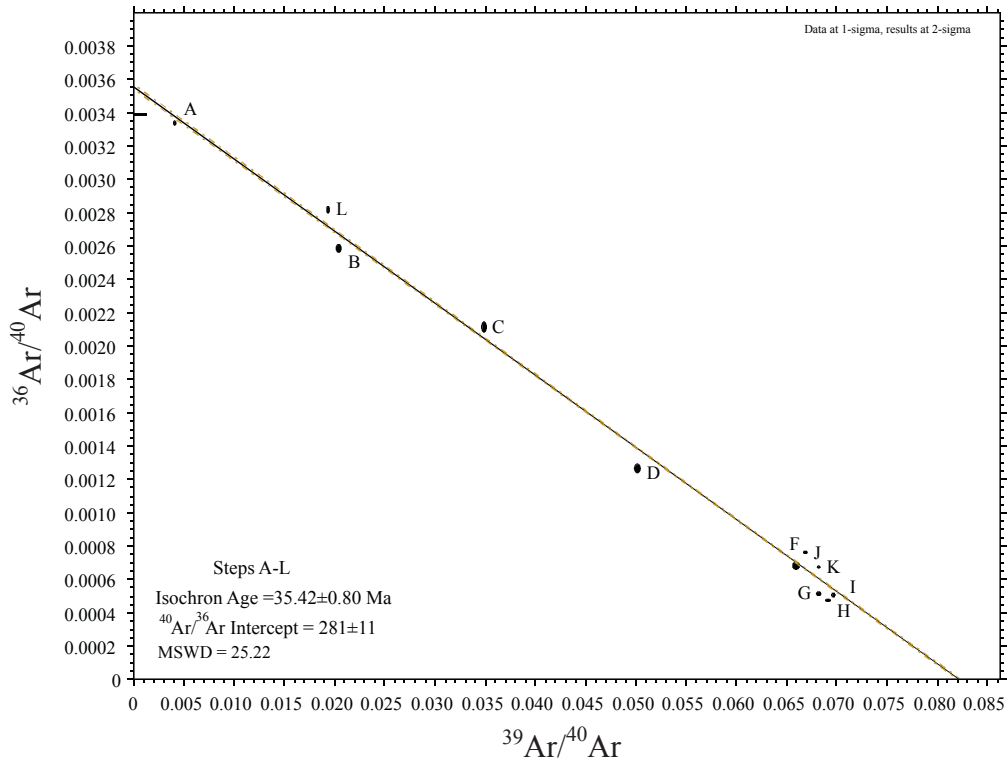
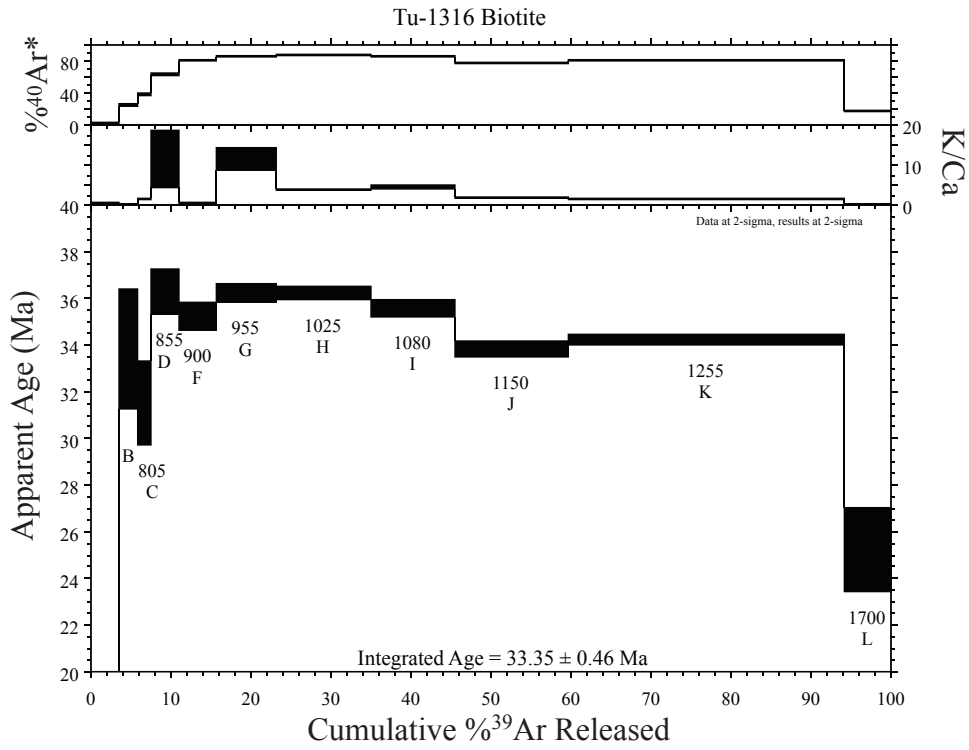
$$(^{38}\text{Ar}/^{39}\text{Ar})_K = 0.013$$

$$(^{40}\text{Ar}/^{39}\text{Ar})_K = 0.01 \pm 0.002$$


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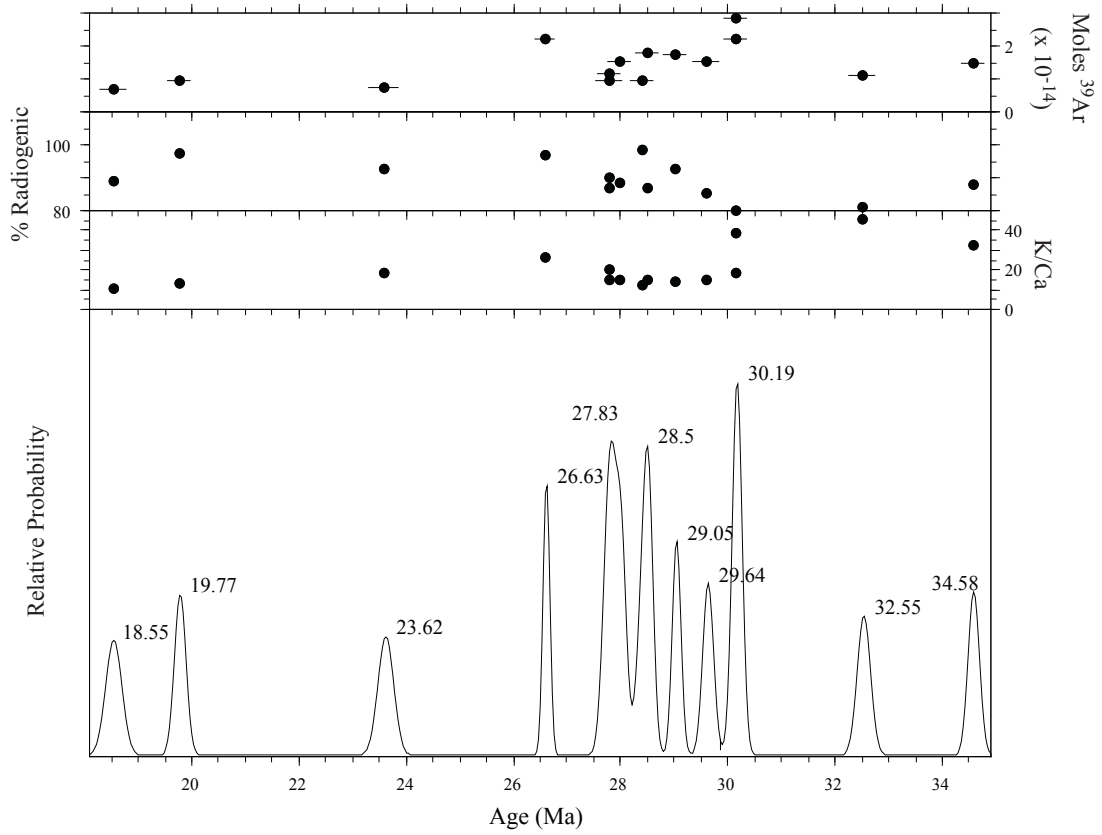
# 10NP6 Biotite



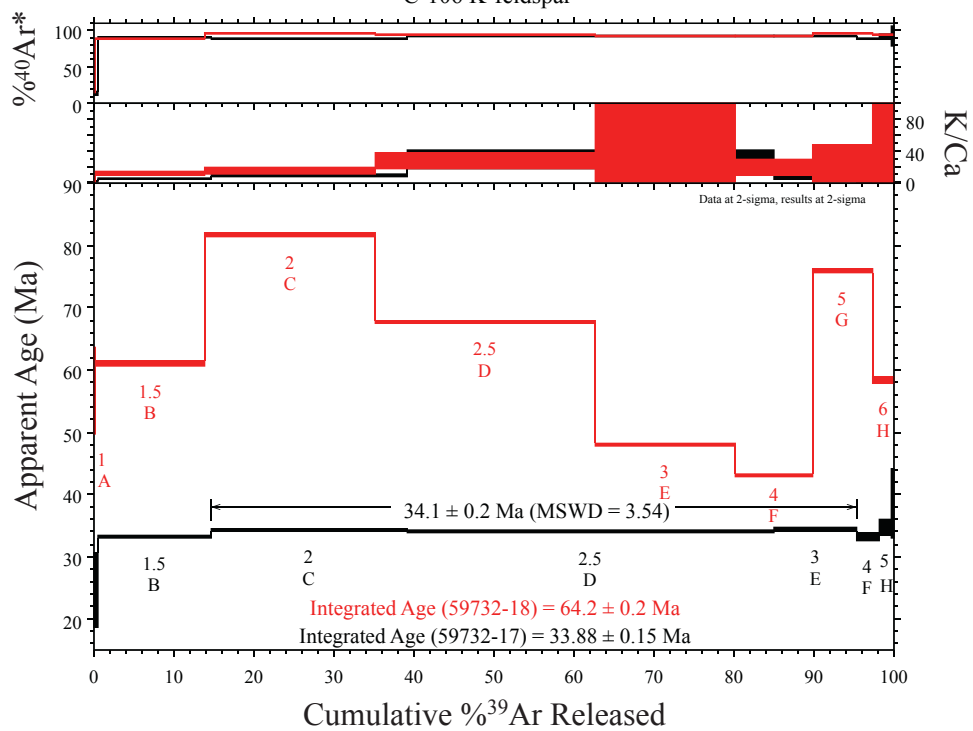




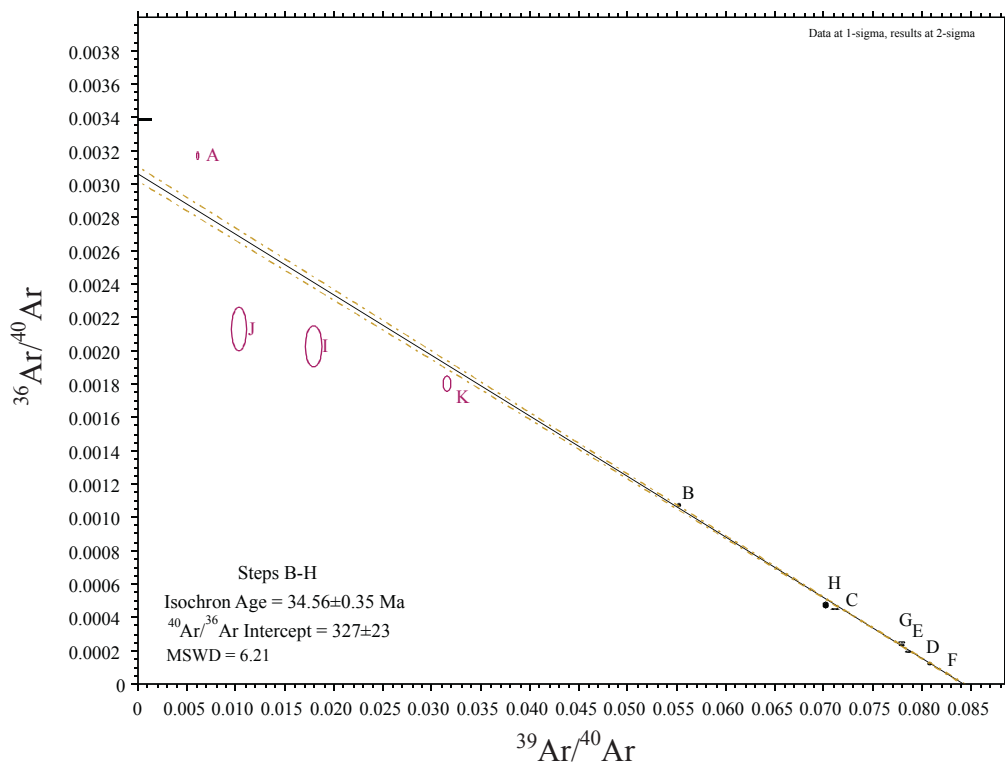
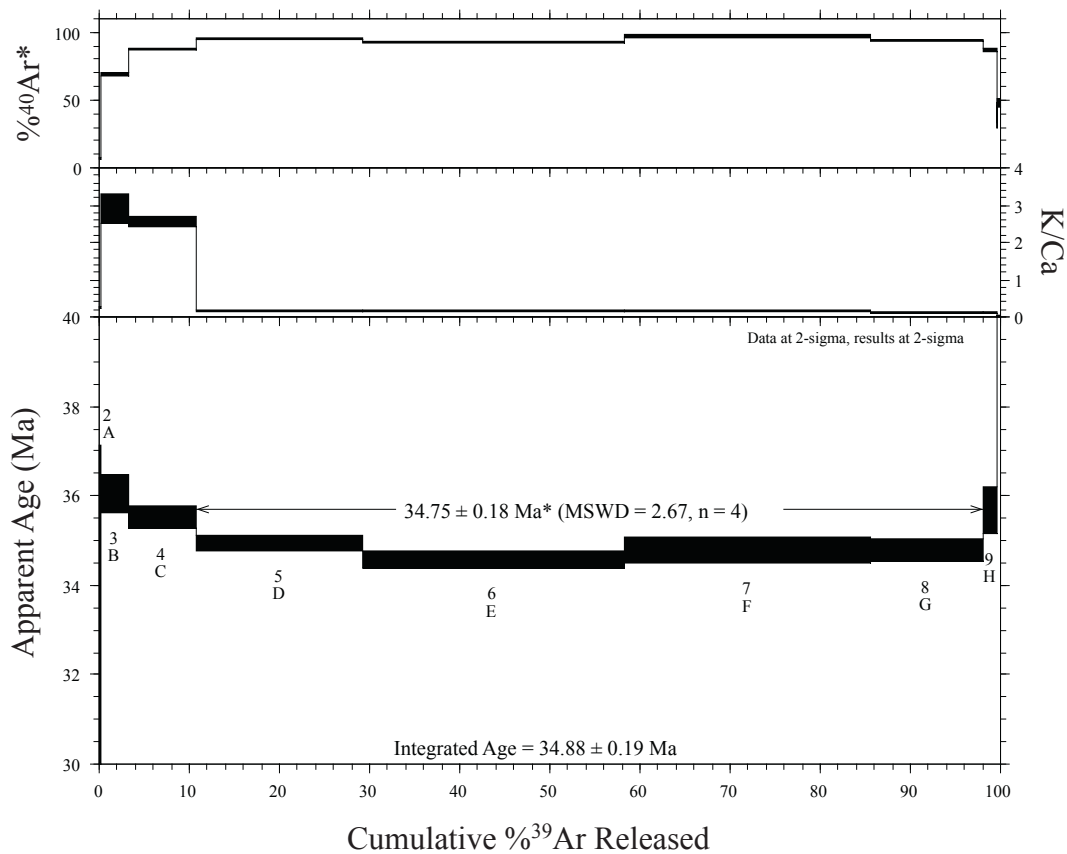
# C-106 Single Crystal Fusion



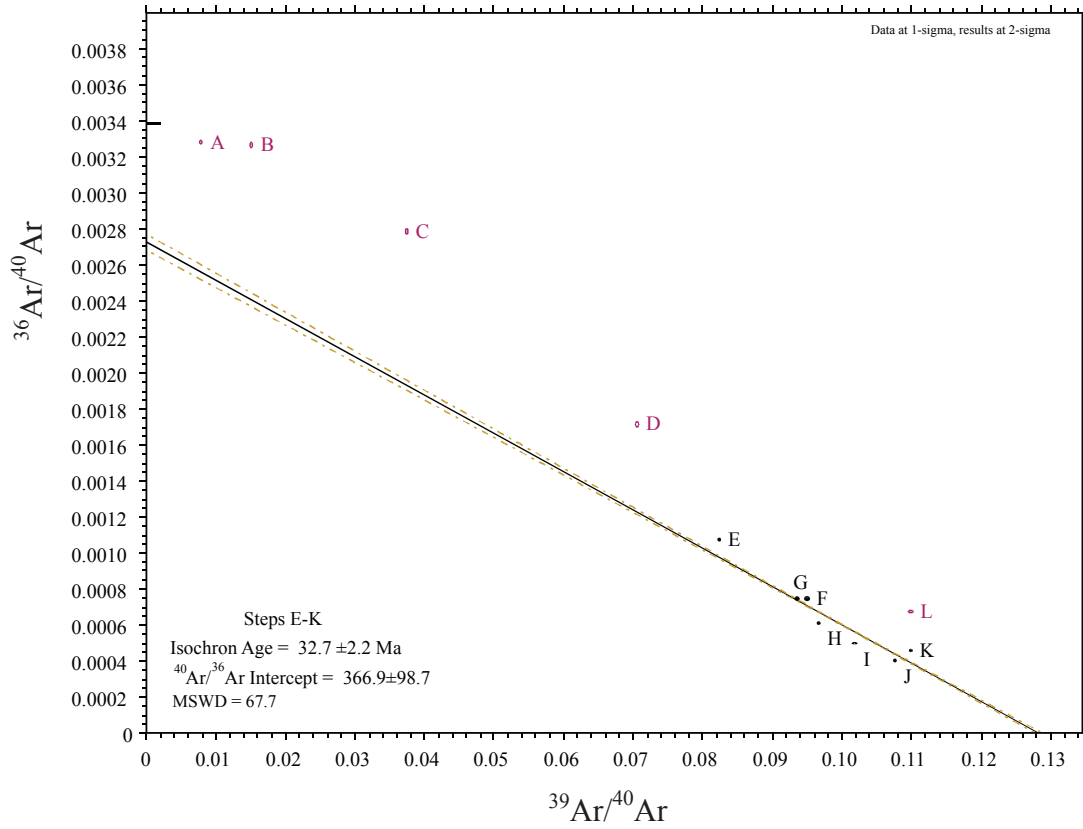
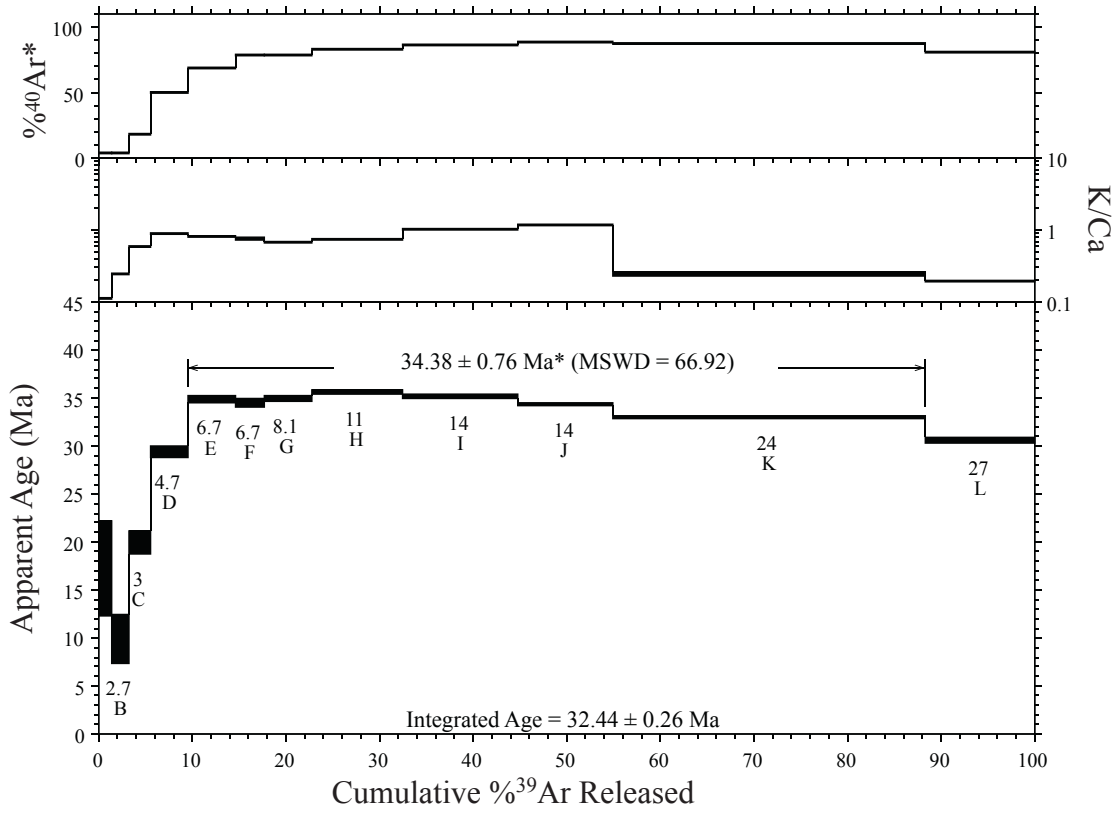
C-106 K-feldspar

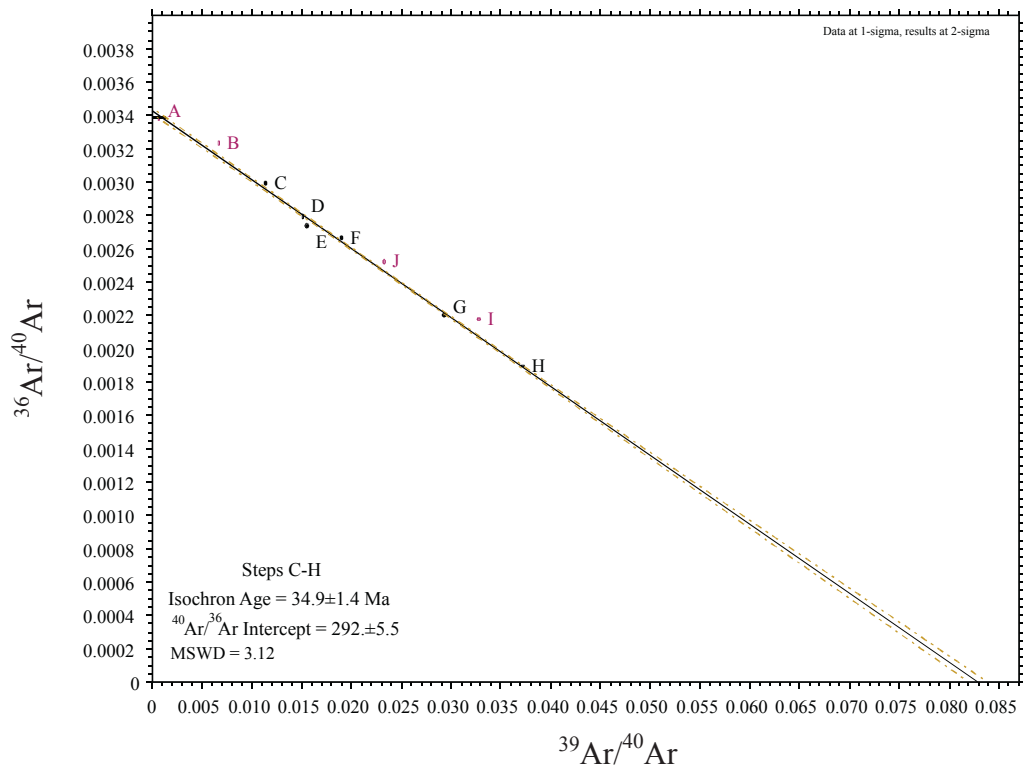
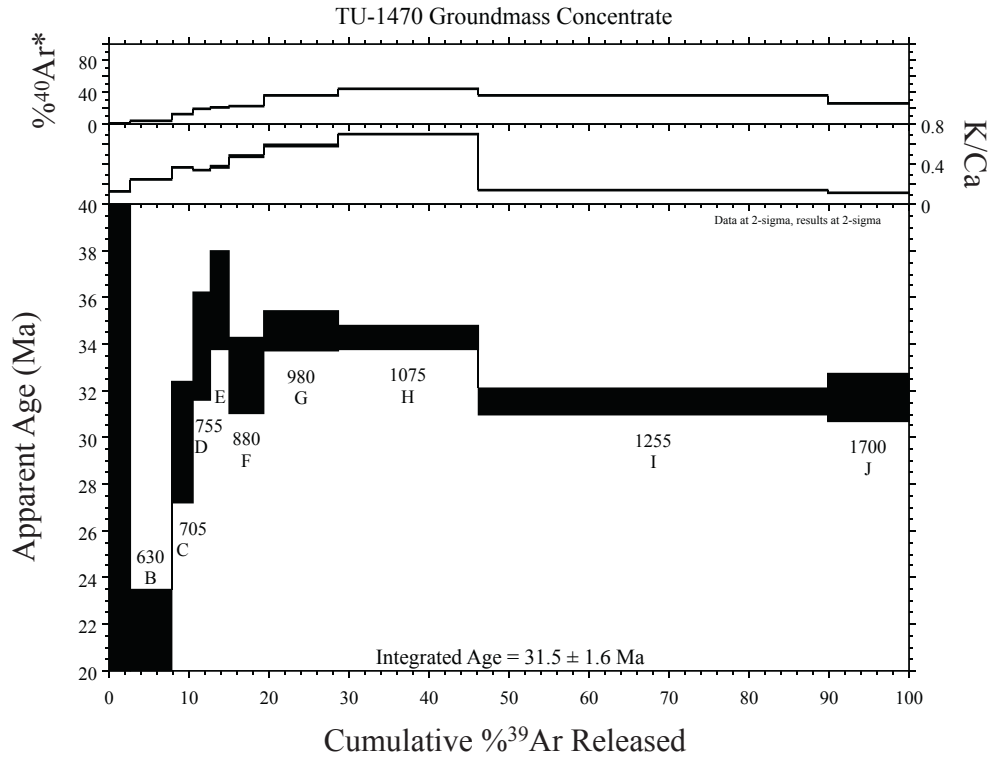


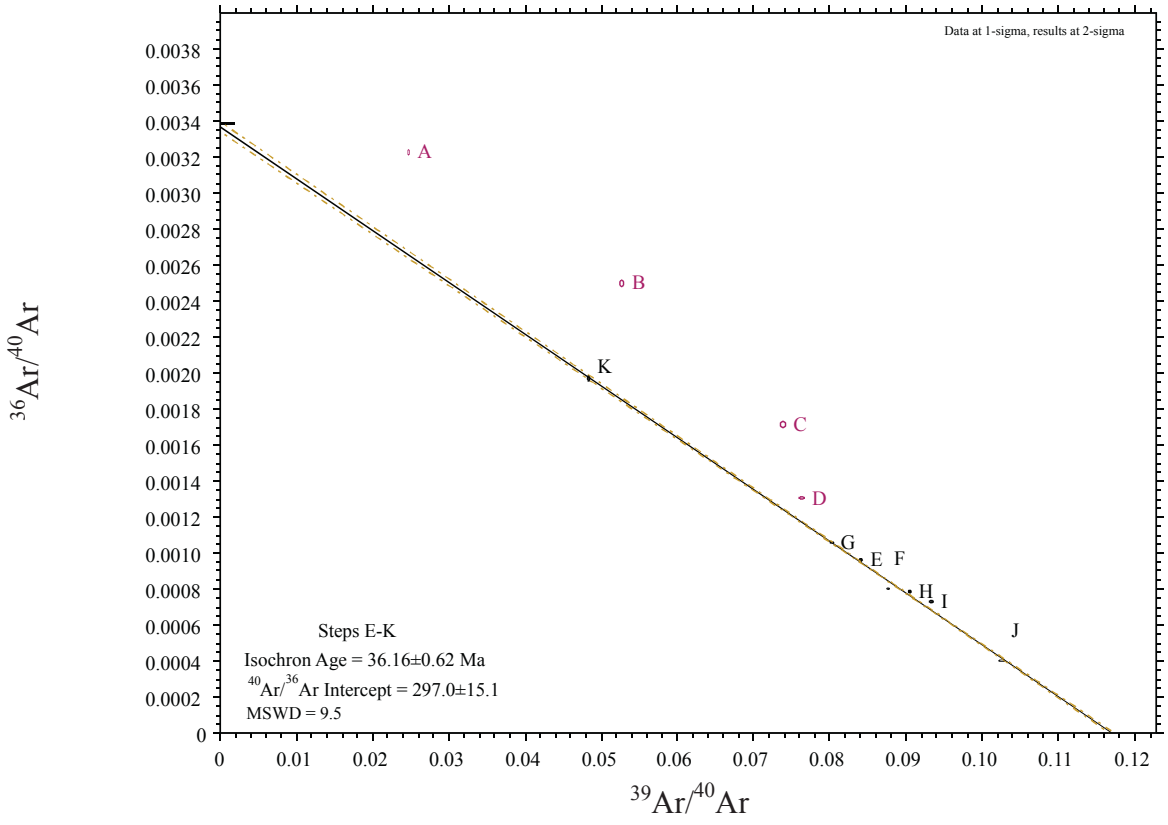
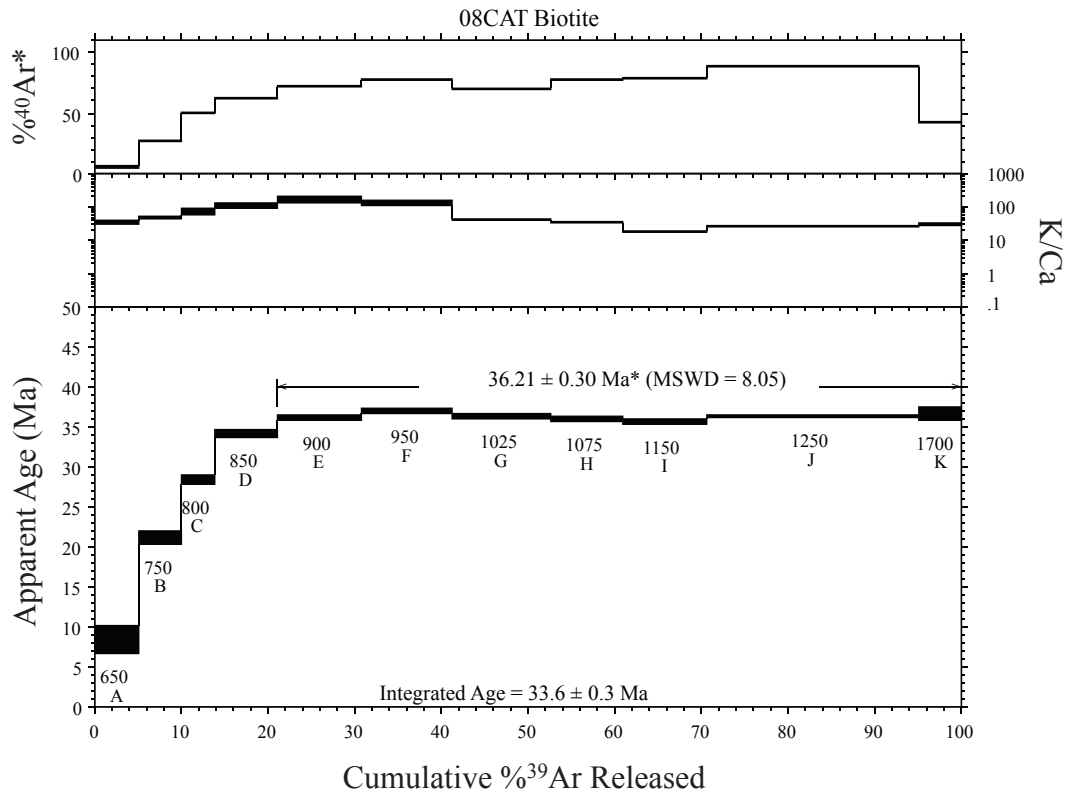
### C-342 Hornblende



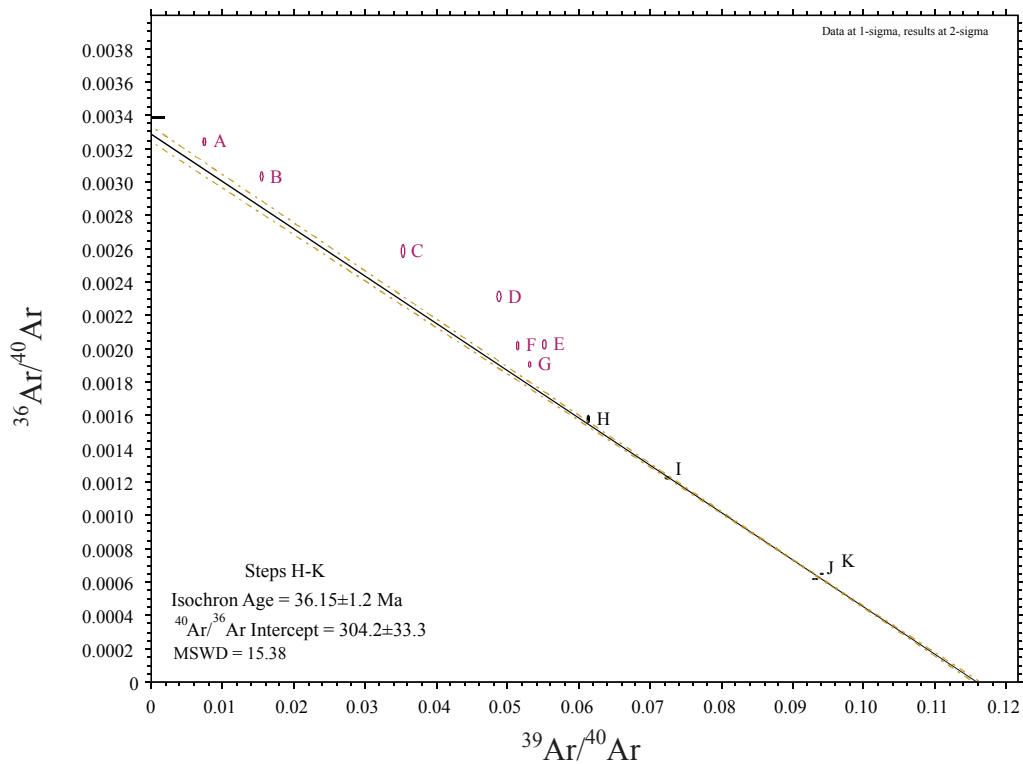
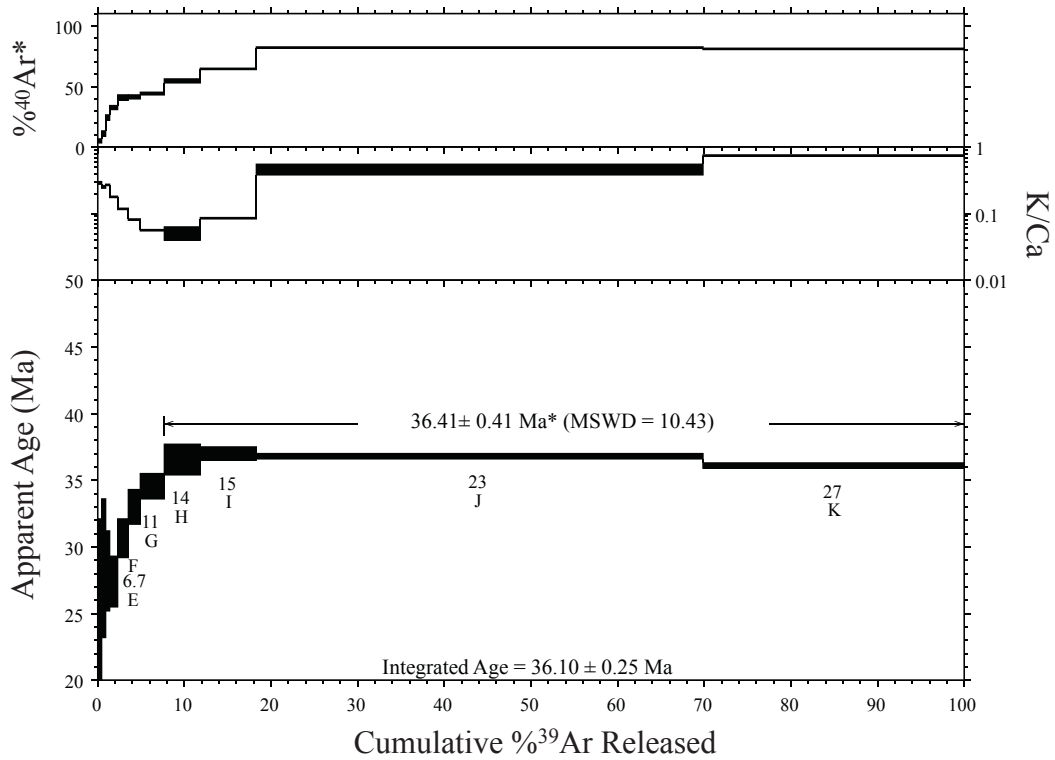
08GD-28 Groundmass Concentrate

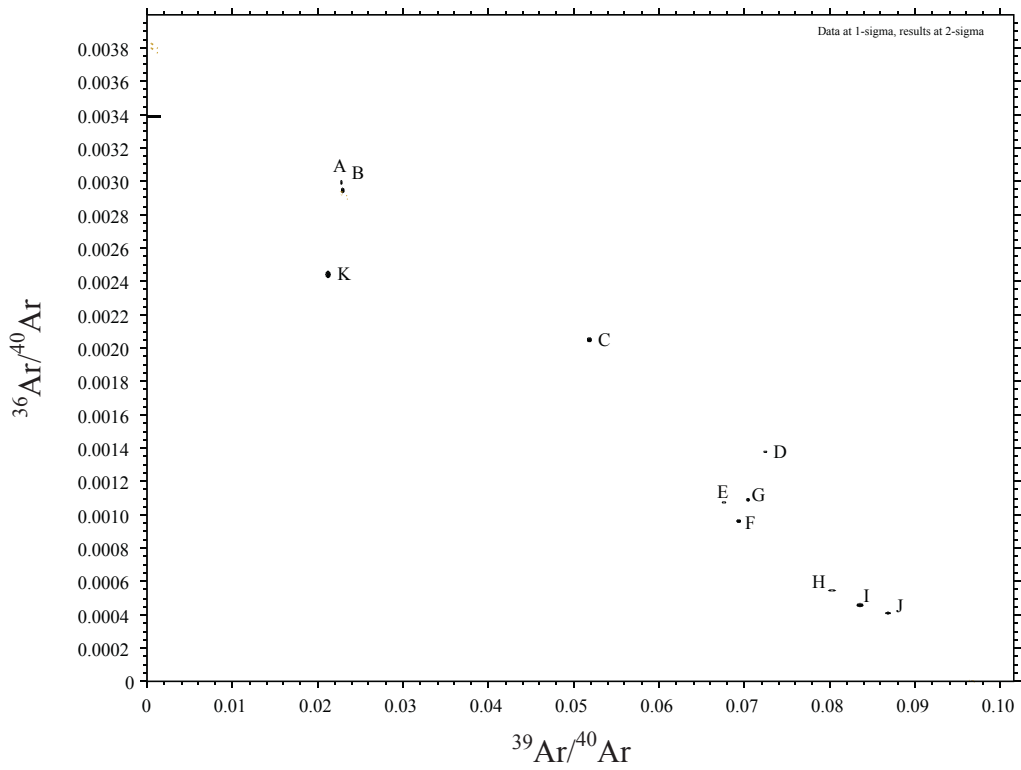
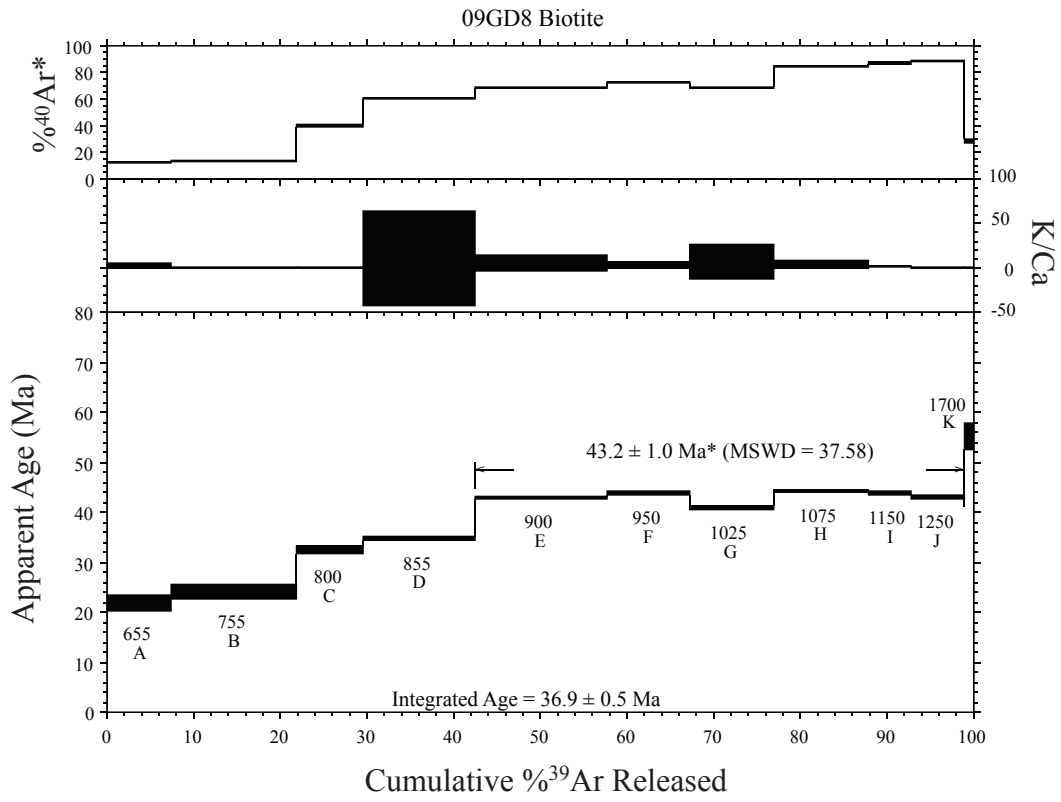




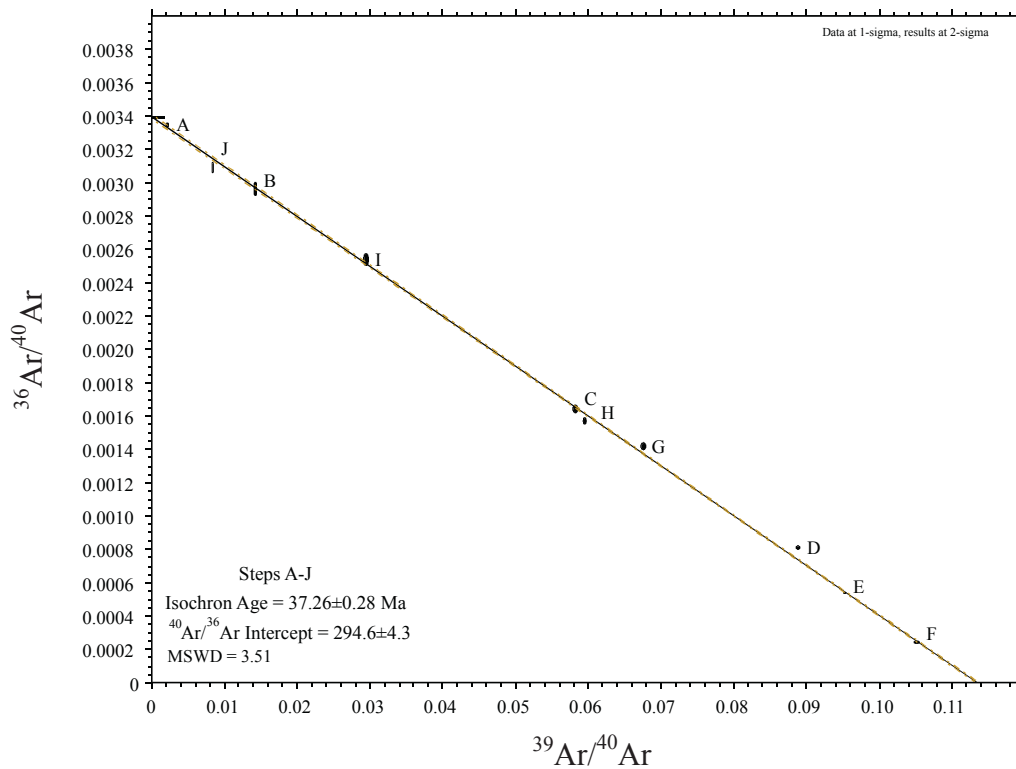
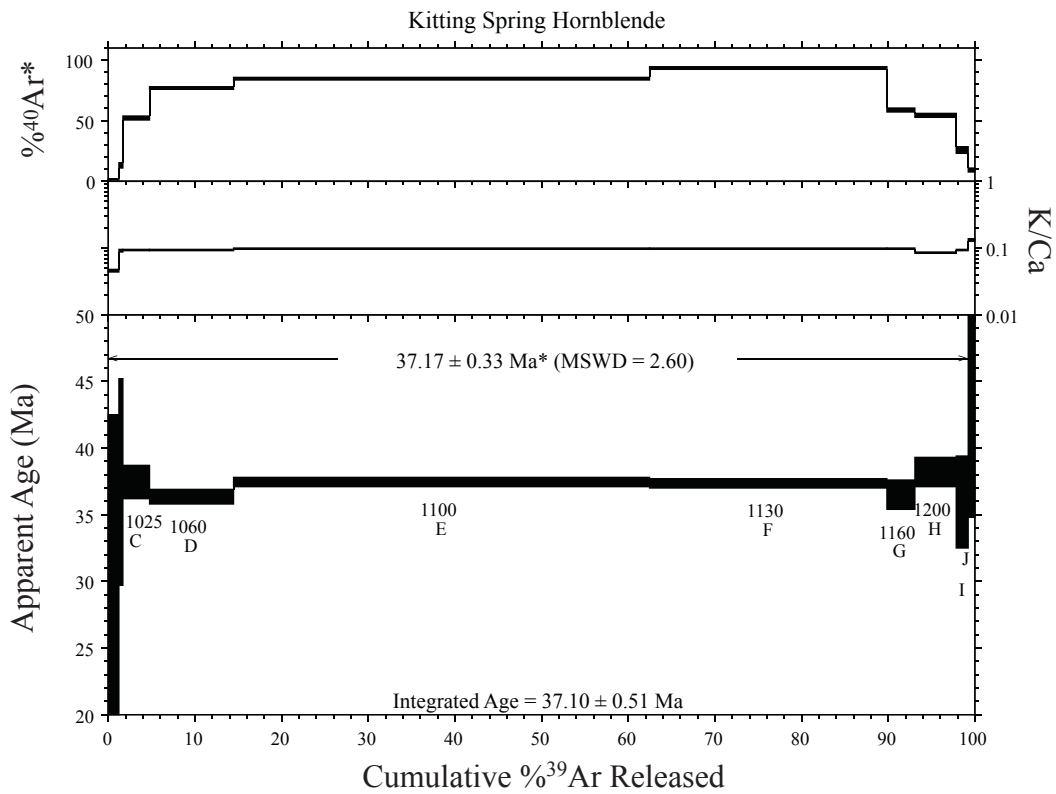


09GD07 Groundmass Concentrate









# 08GD-40B Hornblende

