Supplementary Material for:

Dynamic topography of the western Great Plains: geomorphic and $^{40}Ar/^{39}Ar$ evidence for mantle-driven uplift associated with the Jemez lineament of NE New Mexico and SE Colorado

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Table DR1 40Ar/39Ar Ages from Olmsted and McIntosh (2004)

Sample	Geographic Location	Longitude	Latitude	Elevation (m)	Age (Ma)	± Error (2σ) (Ma)
OCA-001	Maxson Crater	104.8575	35.8783	2300	1.58	0.16
OCA-002	Guadalupita Canyon	105.2364	36.2419	2890	4.45	0.02
OCA-003	La Mesa	105.1557	36.0417	2590	4.45	0.05
OCA-004-1	Maxson Crater	104.3864	35.7284	1600	1.56	0.06
OCA-004-2	Maxson Crater	104.3864	35.7284	1600	1.64	0.05
OCA-005	Maxson Crater	104.3864	35.7294	1610	1.59	0.15
OCA-006	Maxson Crater	104.3869	35.7390	1620	1.57	0.06
OCA-007	Maxson Crater	104.3867	35.7385	1630	1.54	0.07
PW-OCA-007	Maxson Crater	104.8936	35.8615	2280	1.56	0.02
OCA-008-1	Charette Mesa	104.7138	36.0044	2160	2.98	0.05
OCA-008-2	Charette Mesa	104.7138	36.0044	2160	3.01	0.04
OCA-009	Charette Mesa	104.7126	36.0142	2170	2.90	0.04
OCA-010	Ocate Creek area	105.1147	36.2376	2770	2.51	0.09
OCA-011	Laguna Salada Mesa	105.1831	36.2921	3270	5.67	0.03
OCA-012	Cerro Pelon	105.0538	36.1617	2510	2.98	0.03
OCA-013	Cerro Vista Mesa	105.4483	36.1349	3380	5.65	0.03
OCA-014	Las Mesas del Conjelon	104.6466	35.9886	2300	6.03	0.03
OCA-016	Charette Mesa	104.8155	36.2085	2300	3.20	0.04
OCA-019	Apache Mesa	104.9056	36.1846	2510	4.59	0.02
OCA-020	Cerrito Pelon	104.9100	36.1875	2460	2.28	0.03
OCA-022	Cerro Negro Area	104.8855	36.1189	2500	2.36	0.14
OCA-023	Cerro Negro Area	104.8707	36.1148	2470	1.80	0.02
OCA-024	Cooks Peak	105.0438	36.2414	3010	4.40	0.03
OCA-025	Gallinas Mesa	105.0544	36.2244	2990	7.04	0.04
OCA-026	Apache Mesa (West)	104.9989	36.2260	2770	5.71	0.04
OCA-027	Apache Mesa (West)	105.0018	36.2355	2930	5.73	0.02
OCA-028	Rivera Mesas	105.0018	36.2573	2790	4.37	0.02
OCA-029	El Cerro Colorado	105.2763	36.0646	2610	4.44	0.03
OCA-030	Palo Flechado Mesa	105.3736	36.4071	3380	20.89	0.08
OCA-030L1	Palo Flechado Mesa	105.3736	36.4071	3380	21.14	0.14
OCA-030L2	Palo Flechado Mesa	105.3736	36.4071	3380	21.11	0.10
OCA-031	Maxson Crater	104.8914	35.9016	2560	1.57	0.04
OCA-032	Black Mesa	105.0849	35.9734	2610	4.59	0.03
OCA-033	Black Mesa Area	105.0800	35.9746	2560	2.31	0.05
OCA-034	Cerro Pelon	105.0388	35.9606	2410	2.27	0.03
OCA-035	El Cerro Colorado	105.2356	36.0451	2770	4.43	0.03
OCA-036	Urraca Mesa	104.9941	36.4127	2840	4.51	0.06
OCA-036L	Urraca Mesa	104.9941	36.4127	2840	4.50	0.08
OCA-037	Rayado Mesa	104.9038	36.2936	2540	4.46	0.04
OCA-038	Rivera Mesas Area	104.9254	36.2646	2540	4.42	0.02
OCA-039	Rivera Mesas Area	104.9184	36.2499	2440	3.47	0.05
OCA-040	Rivera Mesas Area	104.9221	36.2681	2460	3.53	0.04
OCA-041	Rivera Mesas Area	104.9239	36.2748	2500	3.51	0.02
OCA-042	Ortega Mesa	104.9282	36.2765	2540	4.42	0.09
OCA-043	Le Febres Mesa	105.1039	36.1724	2640	3.01	0.04
OCA-044	Le Febres Mesa	105.0781	36.2075	2610	3.01	0.03
OCA-045	Le Febres Mesa	105.1355	36.1888	3010	3.05	0.04
OCA-046	La Mesa	105.2123	36.2393	3440	4.64	0.07
OCA-047	Ocate Mesa	105.2035	36.2672	3430	8.16	0.03
OCA-048	Guadalupita Canyon	105.2298	36.1867	2730	4.48	0.02
OCA-051	Agua Fria Peak	105.2066	36.3587	3850	4.98	0.04
OCA-052	Agua Fria Area	105.2443	36.3725	3580	4.99	0.03
OCA-053	Moreno Valley	105.2617	36.1459	3020	6.57	0.04
OCA-054	La Grulla Ridge	105.1406	36.3335	3450	8.17	0.04

Table DR1 40Ar/39Ar Ages from Olmsted and McIntosh (2004)

Sample	Geographic Location	Longitude	Latitude	Elevation (m)	Age (Ma)	± Error (2σ) (Ma)
OCA-055	Le Febres Mesa	105.1591	36.1511	2920	3.00	0.03
OCA-057	Charette Mesa Area	104.7035	36.0450	2170	2.20	0.02
OCA-059	Las Mesas del Conjelon	104.7474	36.0092	2370	6.03	0.02
OCA-061	Maxson Crater area	104.7216	35.9331	2170	2.28	0.03
OCA-062	Laguna Salada Mesa	105.1395	36.2733	3240	6.43	0.03
OCA-063	Cerro Negro	104.9331	36.1113	2620	1.97	0.03
OCA-064	Encinosa Mesa	104.9413	36.1169	2620	6.40	0.08
OCA-066	Fowler Mesa	105.0564	36.3958	3200	4.47	0.06
OCA-067	Fowler Mesa	105.0564	36.3958	3200	4.48	0.03
OCA-068	Las Mesas del Conjelon	104.6959	36.0005	2340	6.07	0.02
OCA-069	Cerrito Pelon	105.0114	36.1943	2550	2.35	0.02
OCA-070	Ortega Mesa	105.0564	36.3079	3020	4.68	0.03
OCA-071	White Peak	105.0197	36.2980	3060	3.53	0.08
OCA-073-01	Rivera Mesa	105.0226	36.2443	2780	3.50	0.06
OCA-073-02	Rivera Mesa	105.0226	36.2443	2780	3.52	0.07
OCA-073L	Rivera Mesa	105.0226	36.2443	2780	3.54	0.12
OCA-075	Encinosa Mesa	104.9714	36.1209	2700	6.39	0.06
OCA-077	Cerro Negro Area	104.9526	36.1159	2650	1.96	0.03
OCA-077L	Cerro Negro Area	104.9526	36.1159	2650	1.97	0.04
OCA-078	Las Mesas del Conjelon	104.7316	36.0082	2370	6.02	0.04
OCA-079	Cerro Pelon	105.1037	36.0408	2600	2.18	0.04
OCA-079L1	Cerro Pelon	105.1037	36.0408	2600	2.13	0.05
OCA-019L2	Cerro Pelon	105.1037	36.4808	2600	2.11	0.02
OCA-080	Cerro Montoso area	105.1435	36.0754	2670	3.31	0.05
OCA-081	Laguna Salada Mesa	105.1462	36.2819	3290	5.09	0.04
OCA-082	Agua Fria area	105.2038	36.2851	3260	4.48	0.03
Cerro Mont.	Cerro Montoso	105.1813	36.1335	3160	3.07	0.10

Table DR 2: Calculations of Denudation Rates Through Time at Four Locations

Sample	Location	Age (Ma)	2-Sigma Error (Ma)	Elevation (m)	Elev. above AVF (m)	Den. Rate (m/Ma)
Raton Area						
JS-95-20	Barela Mesa	9.04	0.04	2510	389	
JS-95-13	Johnson Mesa	7.73	0.03	2516	395	-4.580152672
JS-95-1	Bartlett Mesa	3.37	0.1	2451	330	14.90825688
JS-95-21	Yankee Mesa	1.14	0.16	2252	131	89.23766816
--	AFV	0	0	2121	0	114.9122807
Mesa Larga Area						
JS-95-15	Mesa Larga	6.12	0.1	2277	245	
JS-95-56	Kiowa Mesa	6.86	0.2	2271	239	-8.108108108
JS-95-68	Blosser Mesa	0.73	0.06	2090	58	29.5269168
--	AVF	0	0	2032	0	79.45205479
Charette Lakes Area						
OCA-019	Apache Mesa	4.59	0.02	2248	322	
OCA-037	Rayado Mesa	4.46	0.04	2208	282	307.6923077
OCA-041	Ortega Mesa	3.51	0.02	2175	249	34.73684211
OCA-039	Rivera Mesa	3.47	0.05	2107	181	1700
OCA-016	Charette Mesa	3.2	0.04	2043	117	237.037037
--	AVF	0	0	1926	0	36.5625
Wagon Mound Area						
OCA-068	The Wagon Mound	6.07	0.02	2028	153	
OCA-014	Las Mesas del Conjelon West	6.03	0.03	2050	175	-550
OCA--078	Santa Clara Mesa	6.02	0.04	2097	222	-4700
OCA-008-2	Wagon Mound Flow over I-25	3.01	0.04	1923	48	57.80730897
OCA-057	Salt Lake North	2.2	0.02	1894	19	35.80246914
--	AVF	0	0	1875	0	8.636363636

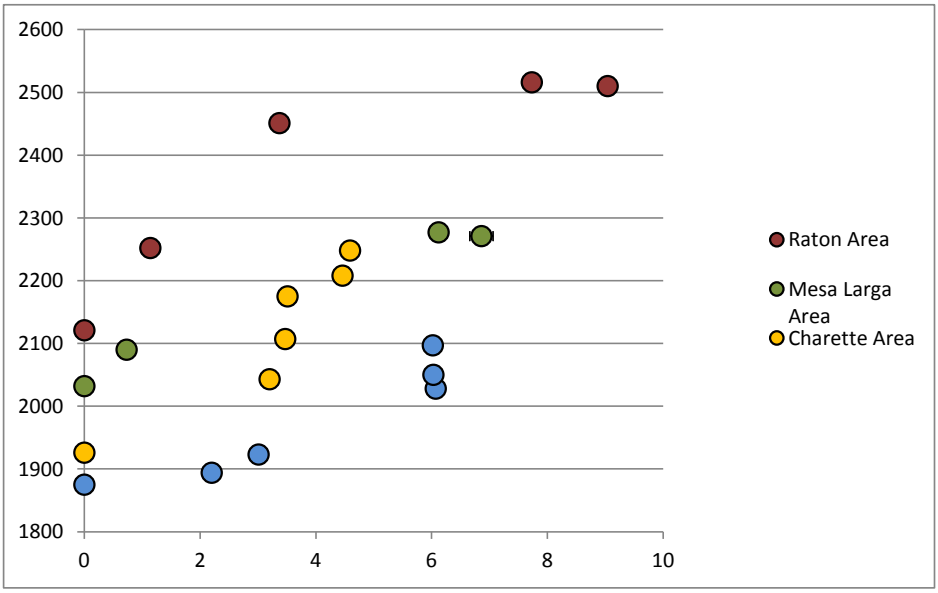


Table DR3: User-Defined Parameters in Channel Steepness (ksn) Analysis

Ksn analysis was completed on 90m DEMs downloaded from the National Elevation Dataset (NED). Processing and analysis was completed using the Profile Toolbar (available from geomorphtools.org) according to the guidelines provided by Whipple et al. (2007) using the "Auto KS Import" function. User-defined parameters include:

Reference Concavity (Theta Ref) = 0.45

Remove Spikes? = Yes

Step Remover? = No

Smooth Profile? = Yes

Smoothing Window = 500 m

Contour Sampling Interval = 20 m

Auto k_sn Window (km) = 0.5

Search Distance = 10

Minimum Accumulation = 10

Table DR4: Calculations of Rates of Tilting on the 3.4 Ma Composite Paleosurface (and comparison to other published tilt rates)

radians to degrees= 57.2958

Age of surface (Ma)	Max tilt (km)	Over distance measured (km)	Total Angular Tilt	Angular Tilt/Ma	(in words)	
Nereson et al. 2012						
3.4	0.65	171	0.217789926	0.064055861	64 millidegrees/Ma	
3.4	0.35	171	0.1172719	0.034491735	34 millidegrees/Ma	tectonic (tilt)
3.4	0.7195	171	0.241076433	0.070904833	71 millidegrees/Ma	maximum tilt (excluding Bartlett Mesa)
3.4	0.592	171	0.198356526	0.058340155	58 millidegrees/Ma	minimum tilt (excluding Barela Mesa)
McMillan et al. 2002						
17.5	0.68	250	0.155844136	0.008905379	9 millidegrees/Ma	
Leonard et al. 2002						
18	0.6	223	0.154158676	0.008564371	9 millidegrees/Ma	
House et al. 2002						
28	1.09	100	0.624499265	0.022303545	22 millidegrees/Ma	
Lazear et al. 2010						
10	0.3	114	0.150778019	0.015077802	15 millidegrees/Ma	

Method for Propagating Uncertainties associated with Long-term Average Surface Lowering Rates

The two variables that determine surface lowering rate are:

(*E*) The Elevation difference between the basalt-capped paleosurface and the base of the mesa

(*A*) The Ar-Ar age of a basalt flow

The error associated with *E* is set to be +/- 10m in most cases. This allows for the error in the repeatability of laser range-finder measurements and for cases where the exact basal flow contact was difficult to discern in outcrop. There was an exception, however for flows that exhibited no erosional relief (surface lowering magnitude = 0) and were thus assigned a surface lowering rate error of zero (0).

The error associated with *A* was simply the 2-sigma age error from the Ar-Ar geochronology (listed in Tables 1 and 2).

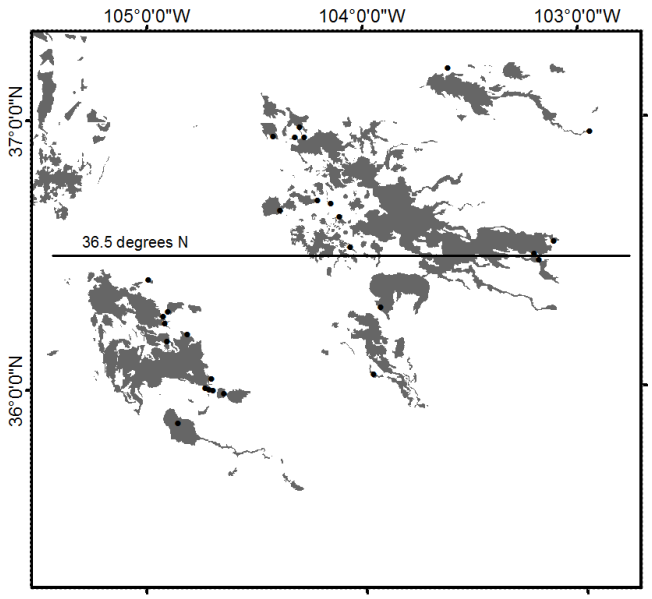
The equation used for the propagation of uncertainties was:

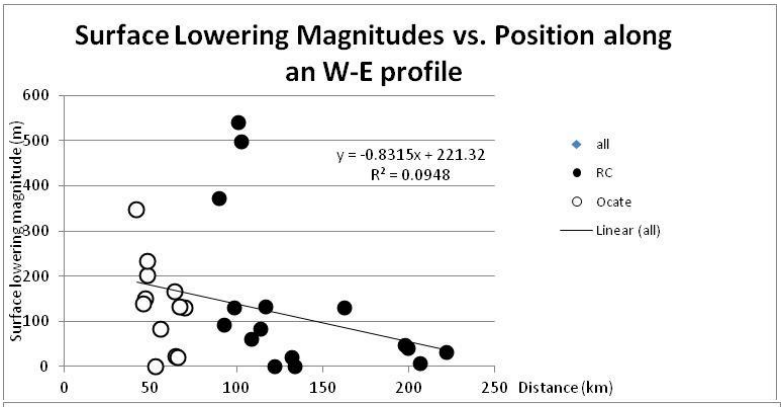
$$\delta R = R\sqrt{\left(\frac{\delta E}{E}\right)^2 + \left(\frac{\delta A}{A}\right)^2}$$

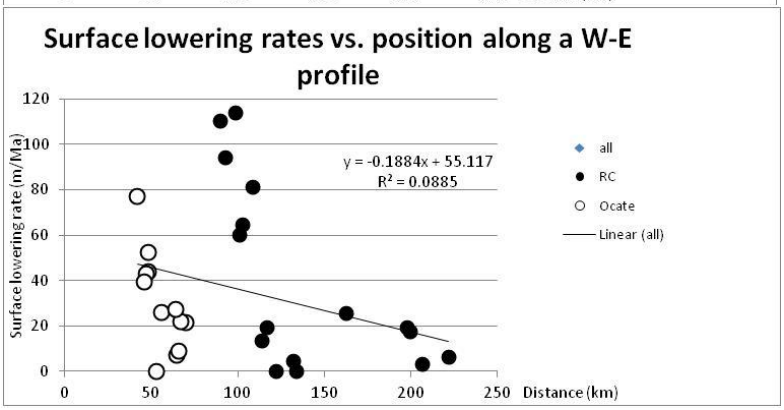
Where *R* is the calculated surface lowering rate and a δ signifies the error associated with a given variable.

Figure DR 1: Land surface lowering rates/magnitudes projected into a W-E profile along 36.5N.

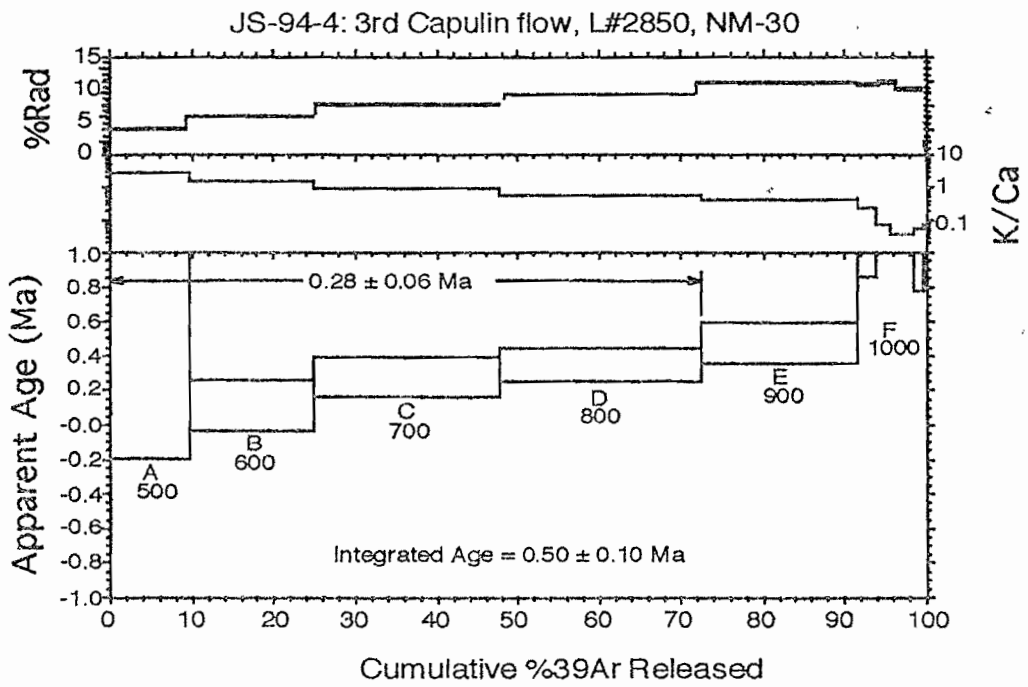
These data are intended to show that the spatial pattern of surface lowering depicted in NW-SE transects in Figs. 7b and 7c is not as well developed in transects that are oriented in different directions. These profiles shows that, whle there is some relationship between surface lowering and flow position from west –to-east *within* each volcanic field (particularly in the Ocate field), there is only a weak trend of surface lowering towards the east.

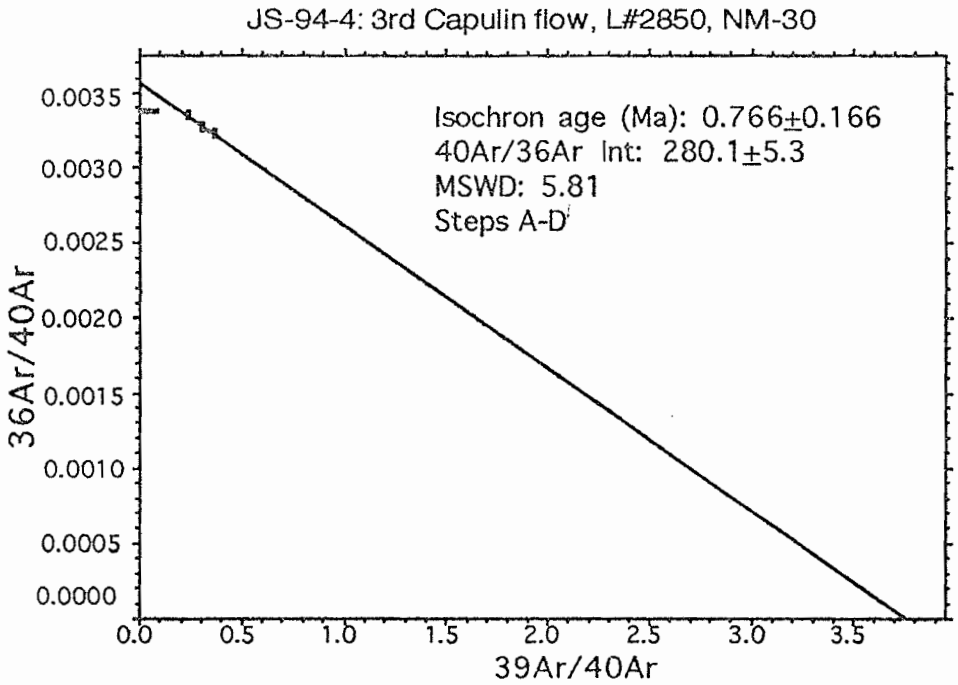


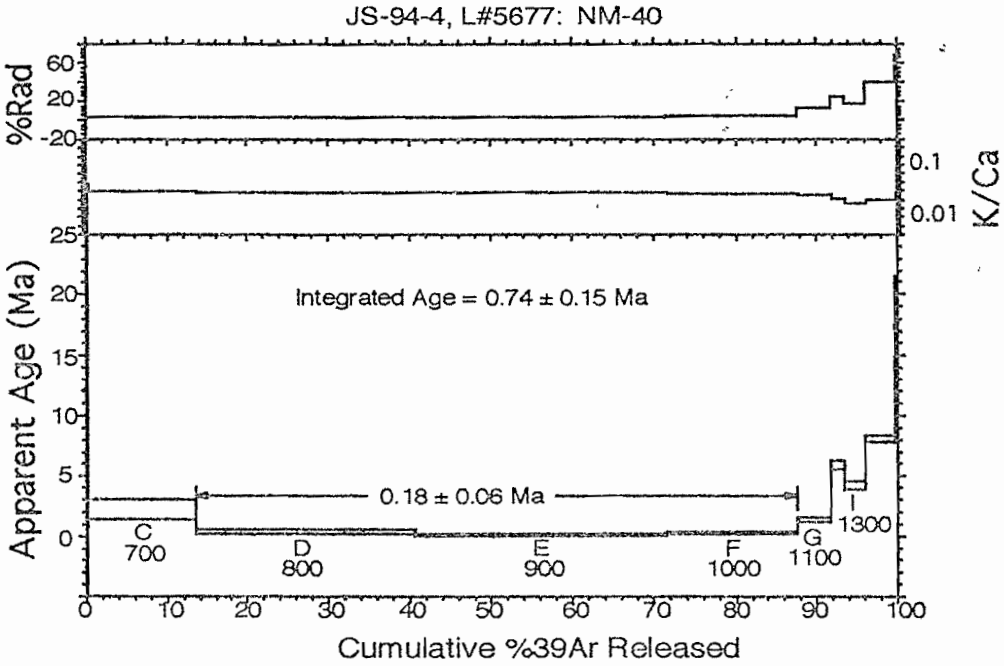


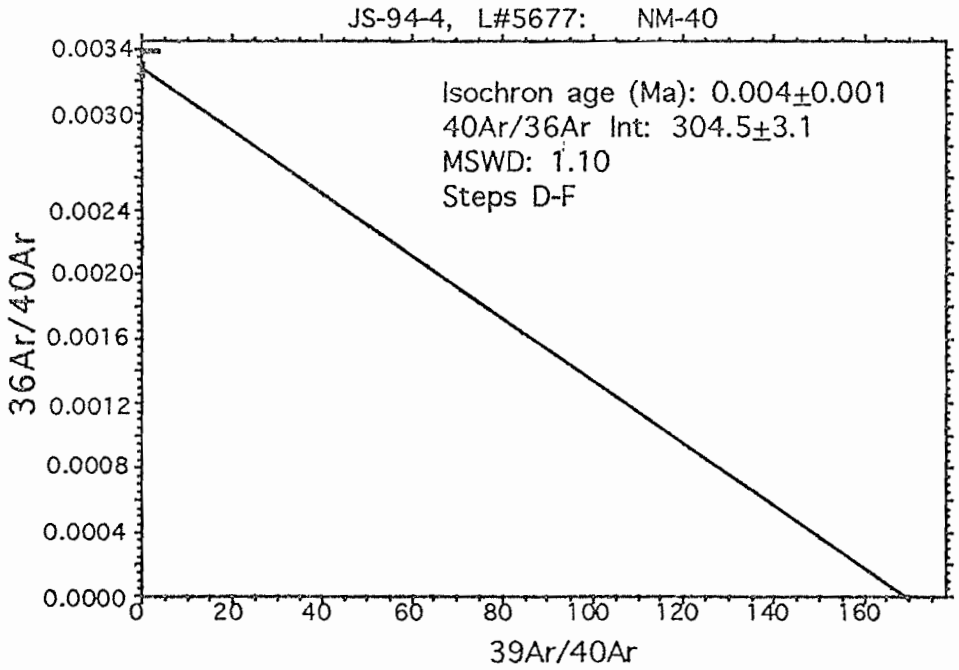


B-1


JS-94-4: 3rd Capulin flow, L#2850, NM-30
%Rad
K/Ca
Apparent Age (Ma)
0.28 ± 0.06 Ma
A 500
B 600
C 700
D 800
E 900
F 1000
Integrated Age = 0.50 ± 0.10 Ma
Cumulative %39Ar Released

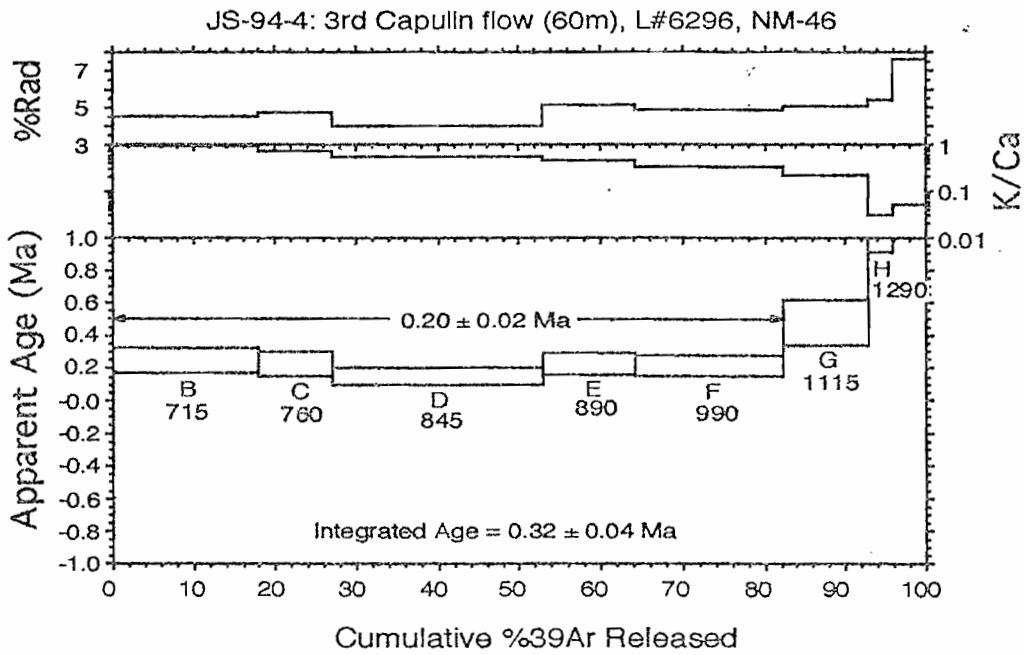

JS-94-4: 3rd Capulin flow, L#2850, NM-30
Isochron age (Ma): 0.766±0.166
40Ar/36Ar Int: 280.1±5.3
MSWD: 5.81
Steps A-D
36Ar/40Ar
39Ar/40Ar

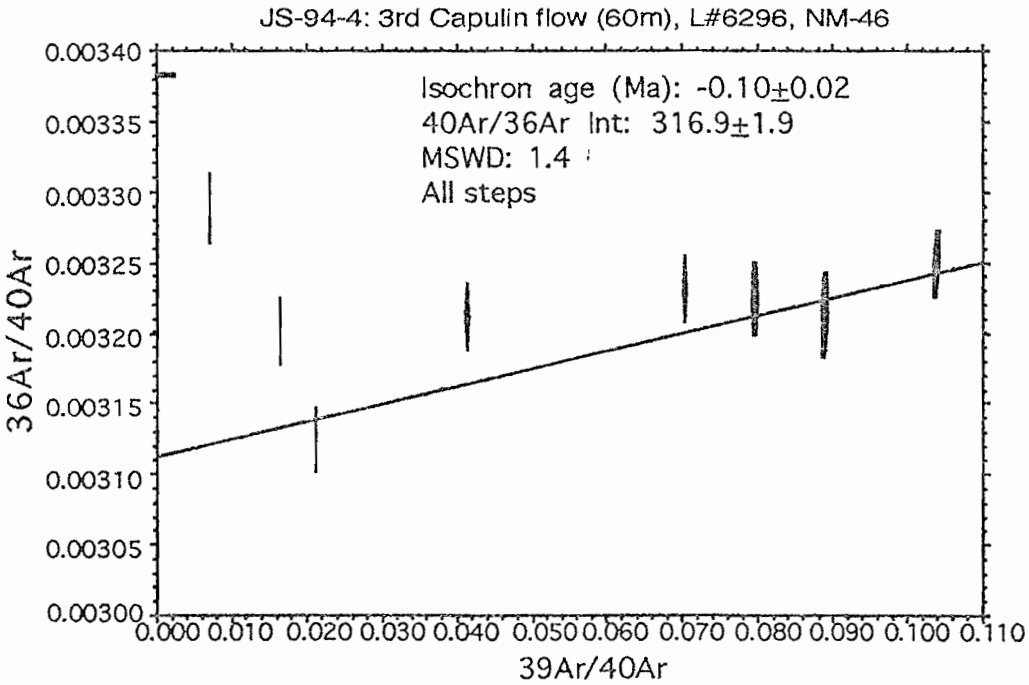

JS-94-4, L#5677: NM-40
%Rad
60
20
-20
0.1
0.01
K/Ca
25
Apparent Age (Ma)
20
15
10
5
0
Integrated Age = 0.74 ± 0.15 Ma
0.18 ± 0.06 Ma
C
700
D
800
E
900
F
1000
G
1100
I
1300
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released


JS-94-4, L#5677: NM-40
Isochron age (Ma): 0.004±0.001
40Ar/36Ar Int: 304.5±3.1
MSWD: 1.10
Steps D-F
36Ar/40Ar
0.0034
0.0030
0.0024
0.0020
0.0016
0.0012
0.0008
0.0004
0.0000
0
20
40
60
80
100
120
140
160
39Ar/40Ar

SOCORRO, NM

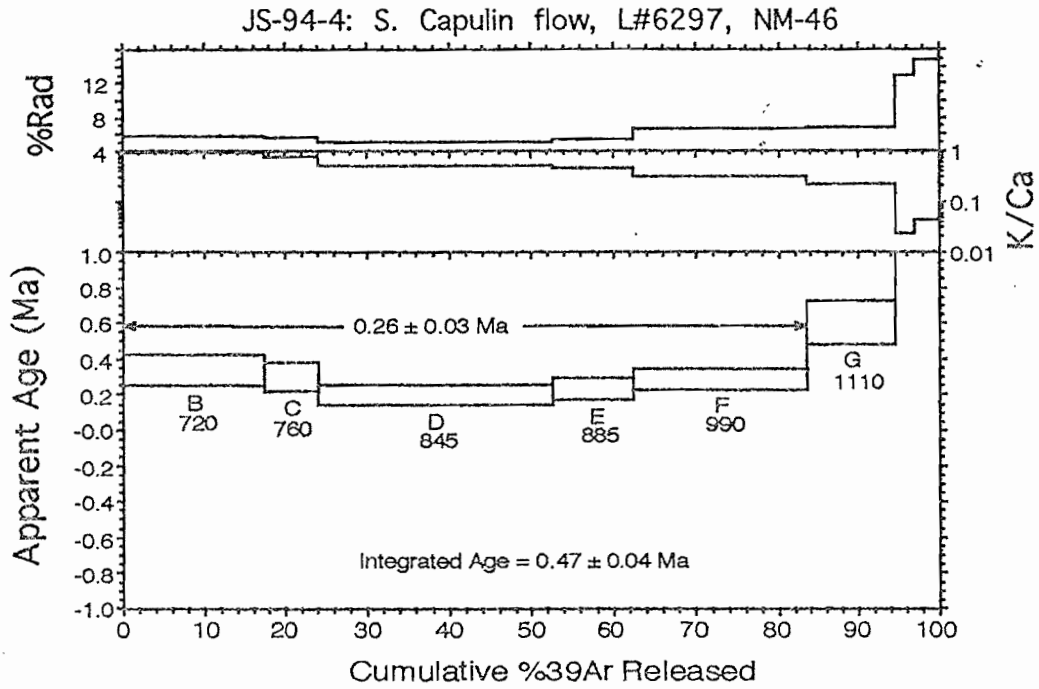
B-3

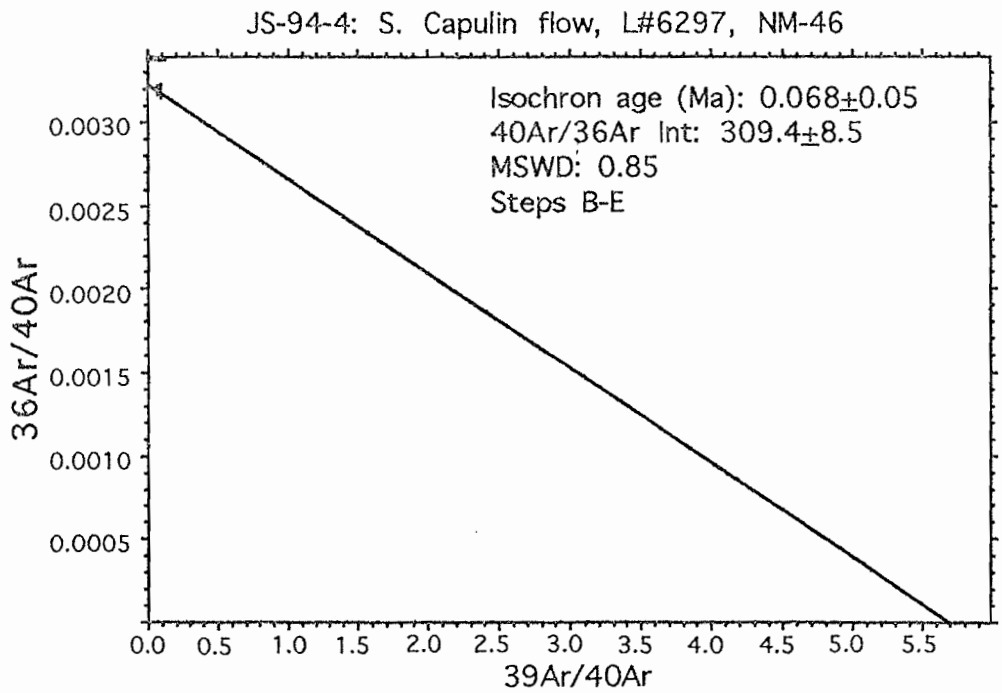




SOUTHWEST, INC

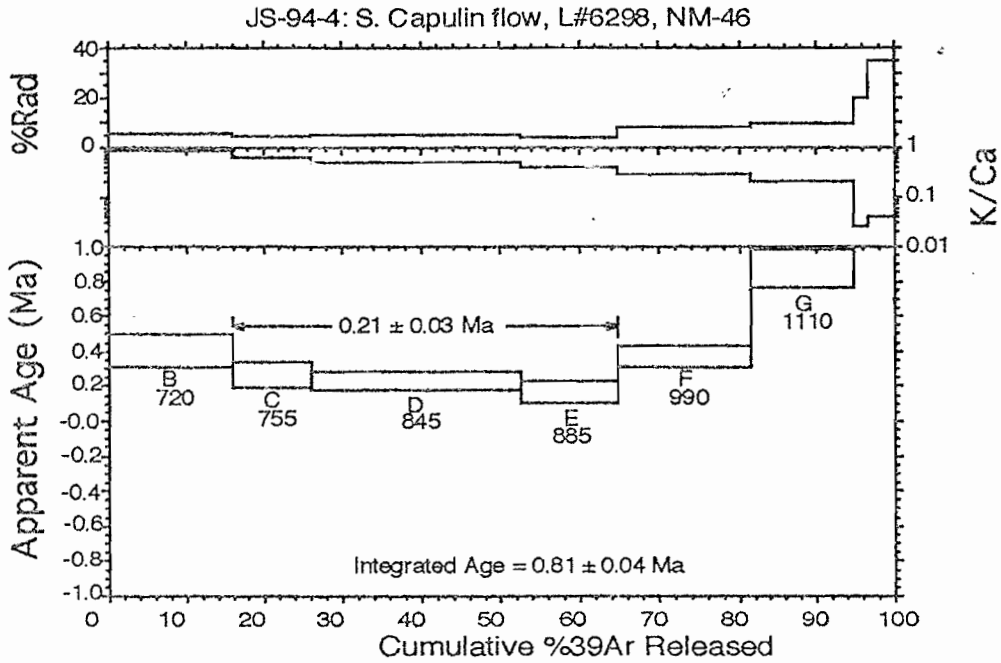
B-4

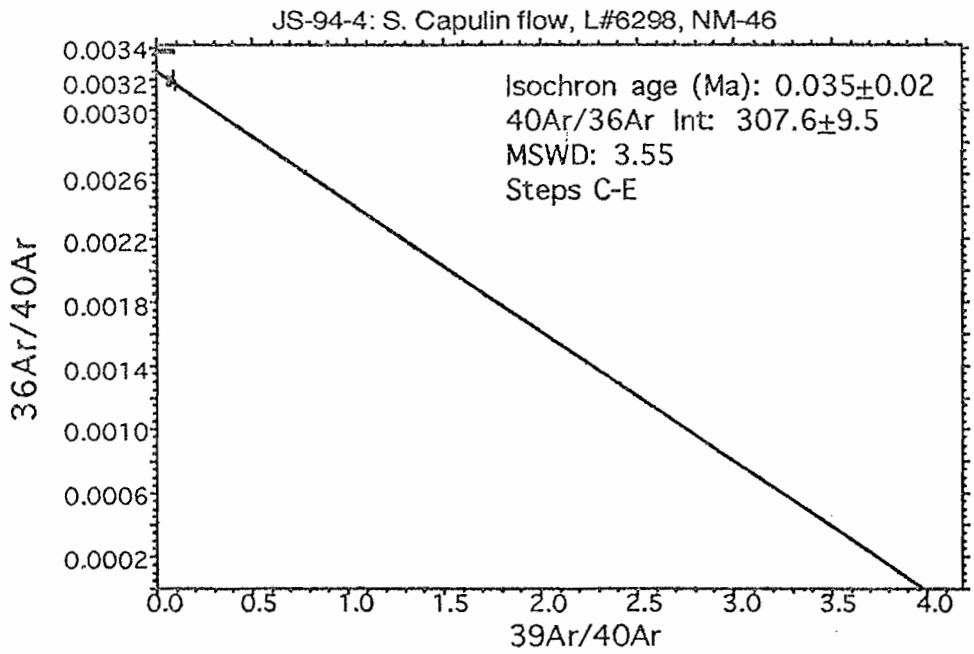




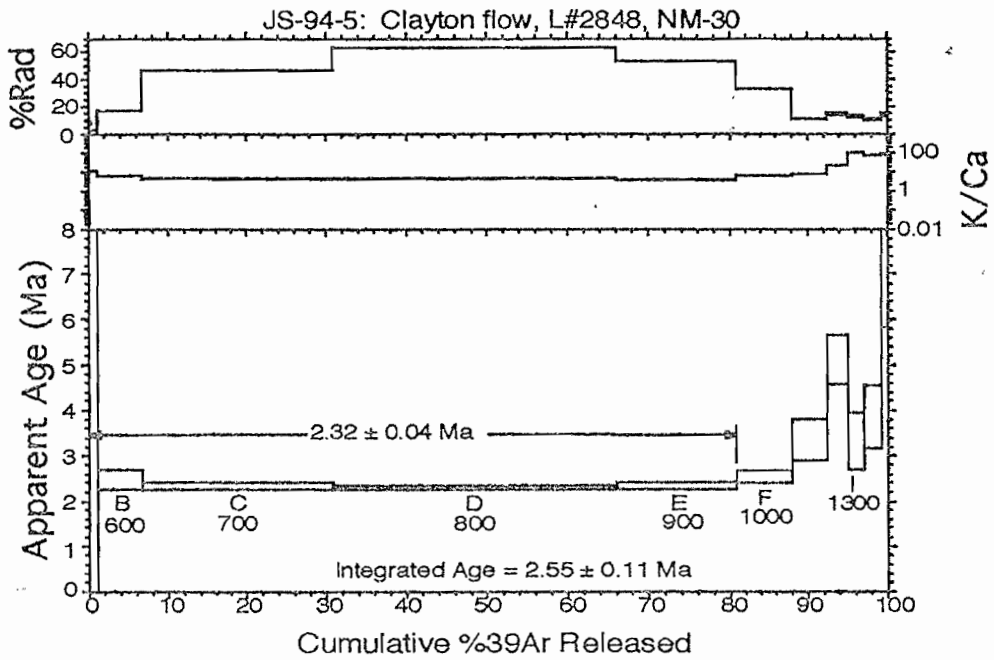
SOLUTIONS, INC

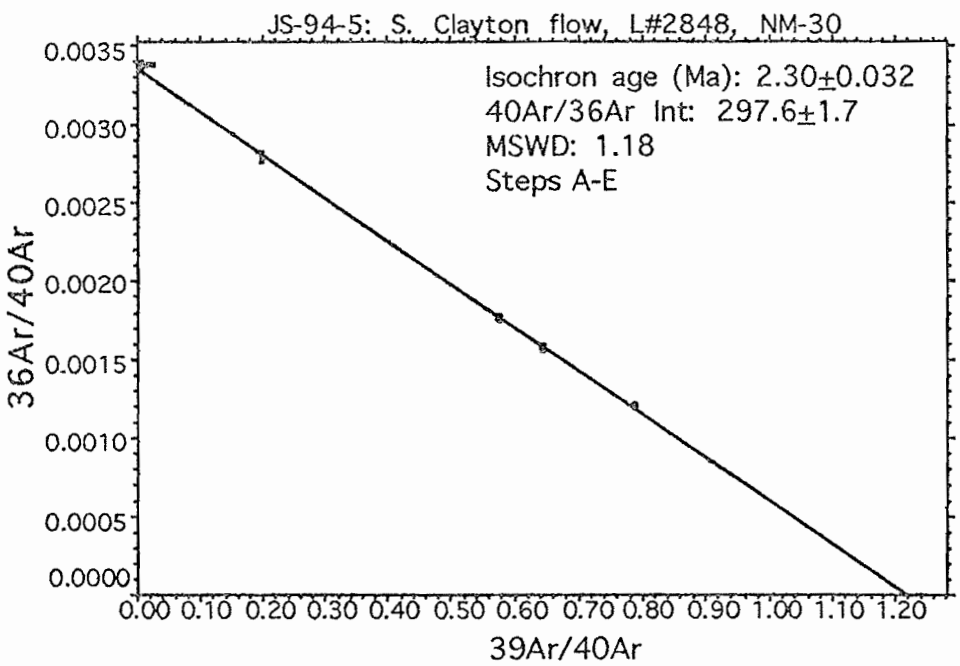
B-5

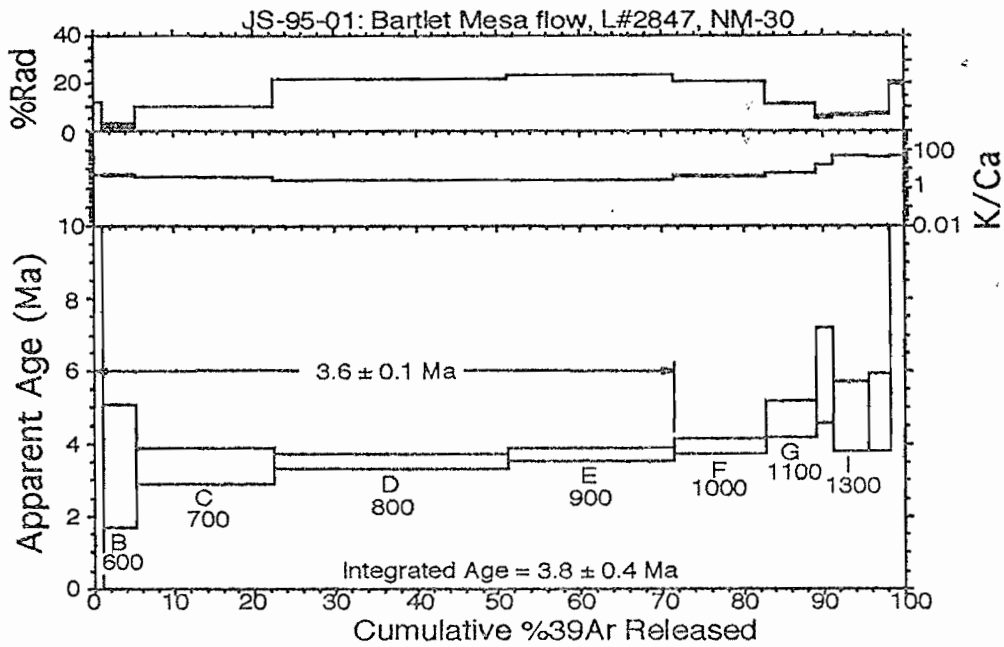

JS-94-4: S. Capulin flow, L#6298, NM-46
%Rad
K/Ca
Apparent Age (Ma)
0.21 ± 0.03 Ma
B 720
C 755
D 845
E 885
F 990
G 1110
Integrated Age = 0.81 ± 0.04 Ma
Cumulative %39Ar Released

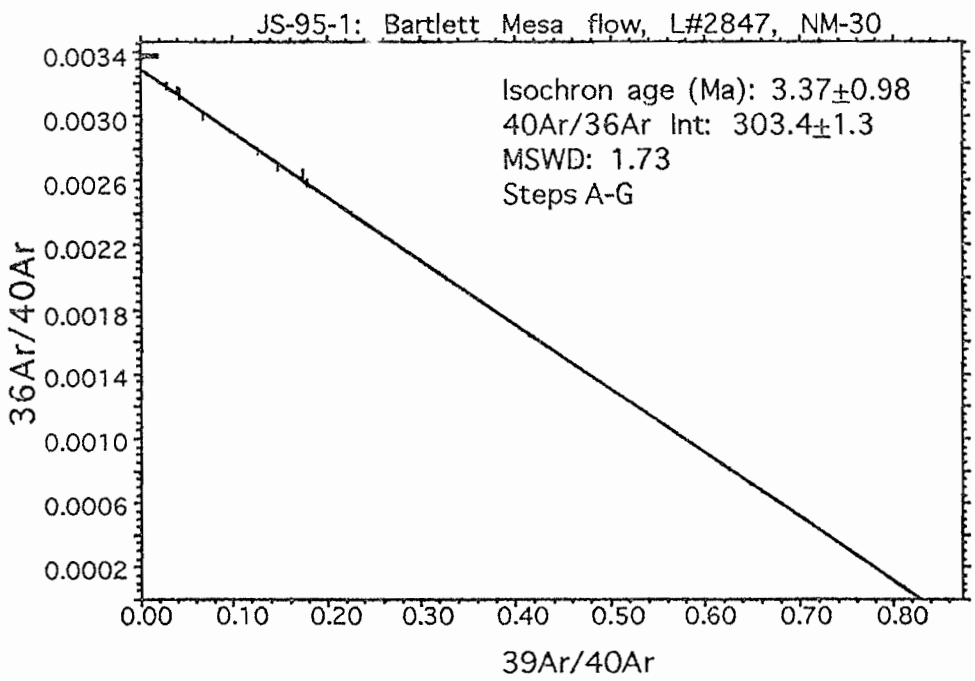

JS-94-4: S. Capulin flow, L#6298, NM-46
Isochron age (Ma): 0.035±0.02
40Ar/36Ar Int: 307.6±9.5
MSWD: 3.55
Steps C-E
36Ar/40Ar
39Ar/40Ar

B-6

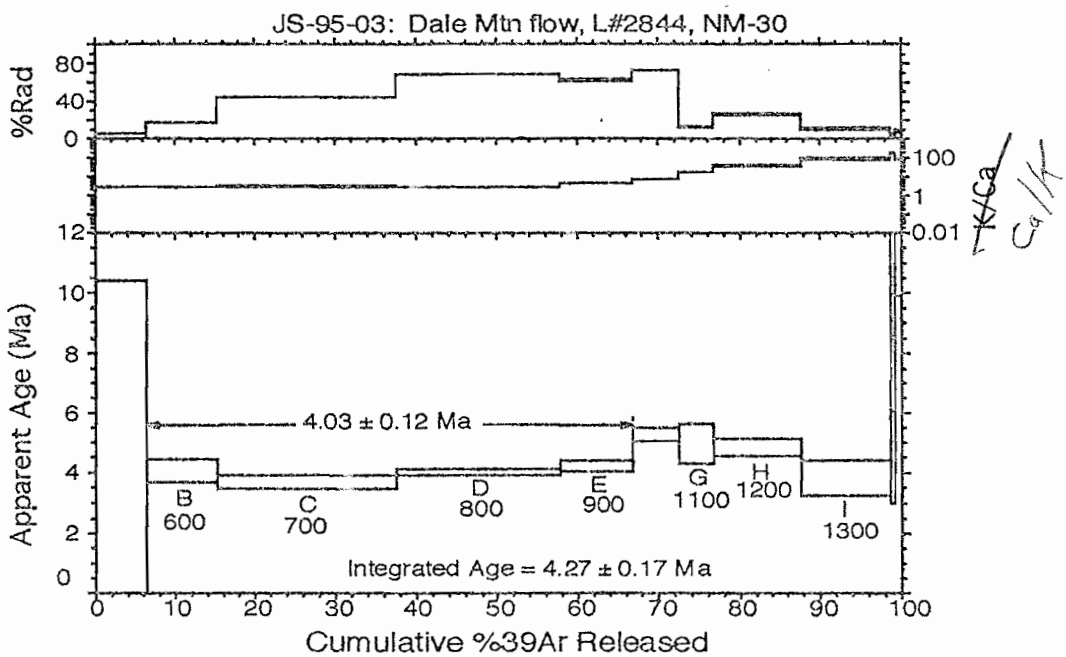

JS-94-5: Clayton flow, L#2848, NM-30
%Rad
K/Ca
Apparent Age (Ma)
2.32 ± 0.04 Ma
B 600
C 700
D 800
E 900
F 1000
1300
Integrated Age = 2.55 ± 0.11 Ma
Cumulative %39Ar Released

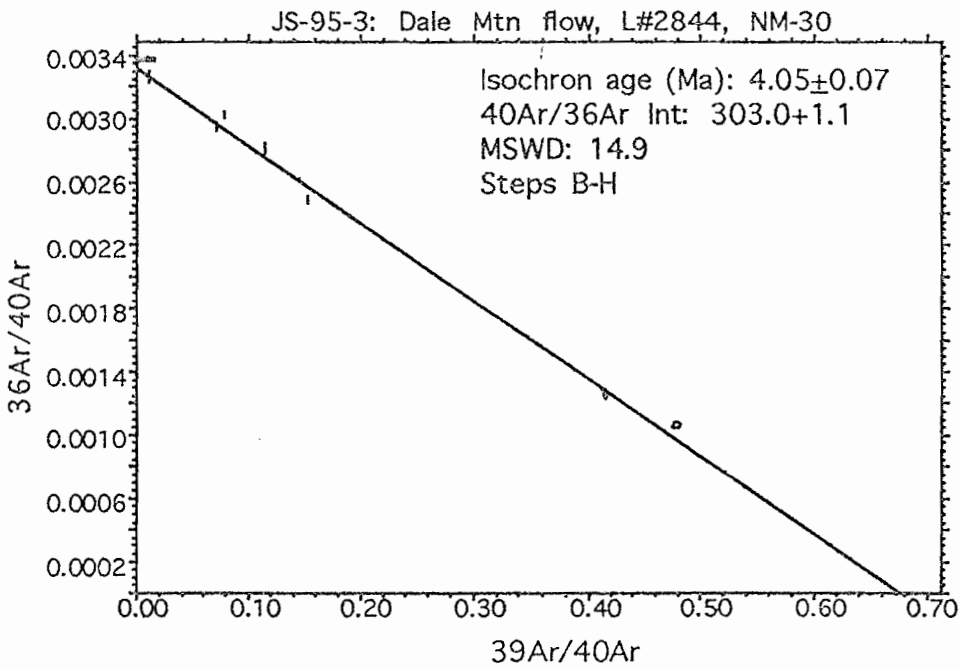

JS-94-5: S. Clayton flow, L#2848, NM-30
Isochron age (Ma): 2.30±0.032
40Ar/36Ar Int: 297.6±1.7
MSWD: 1.18
Steps A-E
36Ar/40Ar
39Ar/40Ar


JS-95-01: Bartlet Mesa flow, L#2847, NM-30
%Rad
K/Ca
Apparent Age (Ma)
3.6 ± 0.1 Ma
B 600
C 700
D 800
E 900
F 1000
G 1100
I 1300
Integrated Age = 3.8 ± 0.4 Ma
Cumulative %39Ar Released

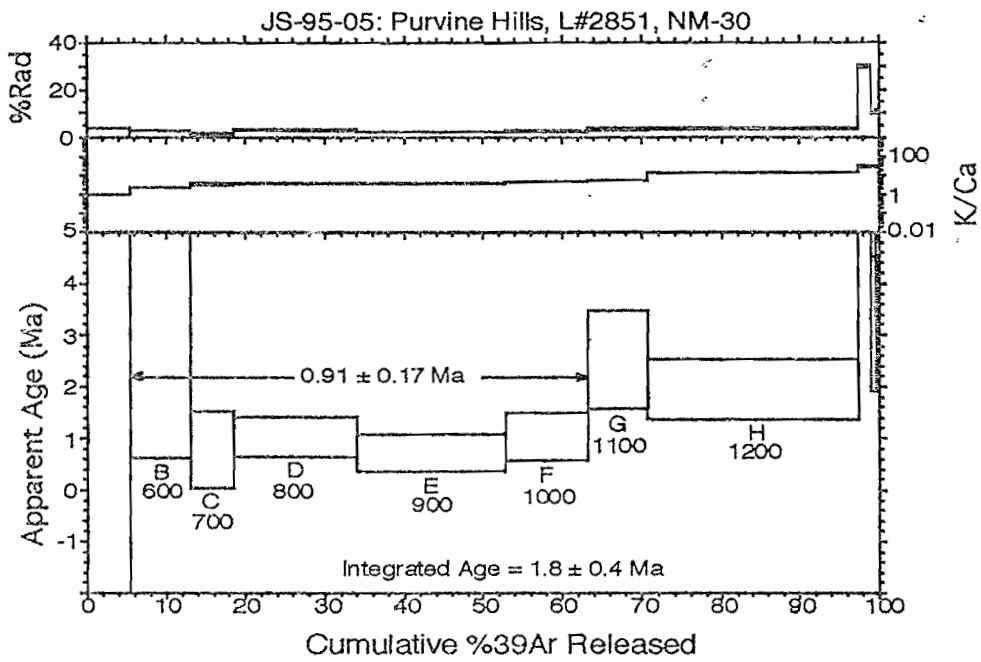

JS-95-1: Bartlett Mesa flow, L#2847, NM-30
Isochron age (Ma): 3.37±0.98
40Ar/36Ar Int: 303.4±1.3
MSWD: 1.73
Steps A-G
36Ar/40Ar
39Ar/40Ar

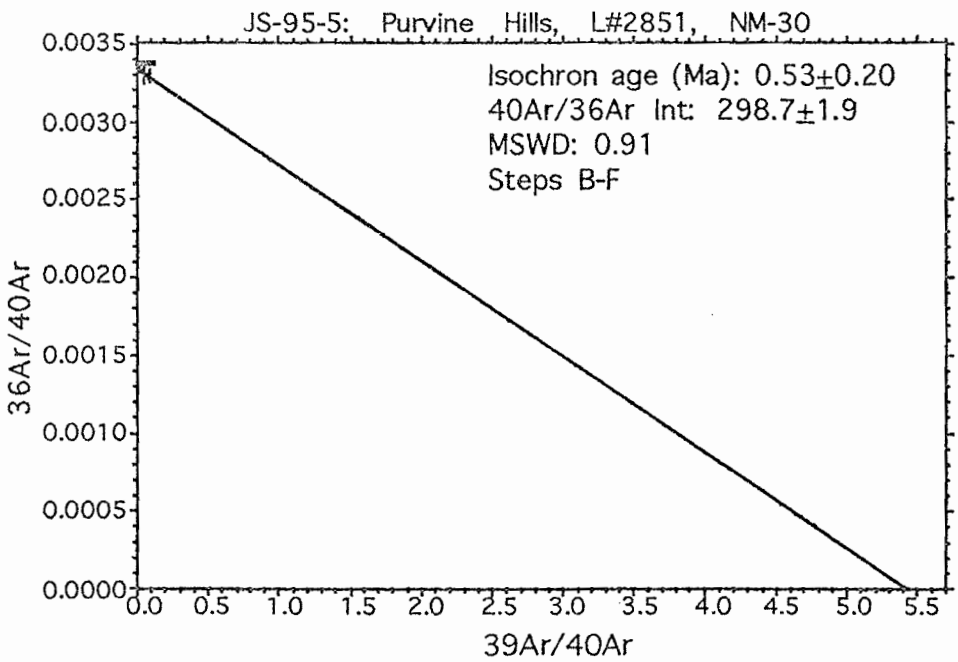
B -8


JS-95-03: Dale Mtn flow, L#2844, NM-30
%Rad
80
40
0
100
1
0.01
K/Ca
Ca/K
12
10
8
6
4
2
0
Apparent Age (Ma)
4.03 ± 0.12 Ma
B 600
C 700
D 800
E 900
G 1100
H 1200
I 1300
Integrated Age = 4.27 ± 0.17 Ma
0 10 20 30 40 50 60 70 80 90 100
Cumulative %39Ar Released

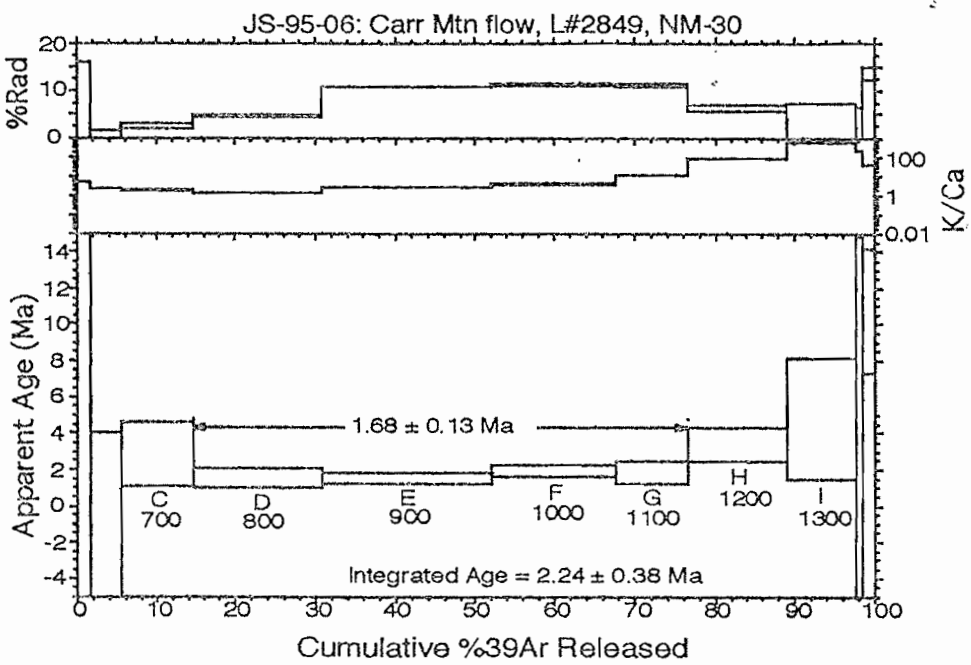

JS-95-3: Dale Mtn flow, L#2844, NM-30
Isochron age (Ma): 4.05±0.07
40Ar/36Ar Int: 303.0+1.1
MSWD: 14.9
Steps B-H
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
36Ar/40Ar
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70
39Ar/40Ar

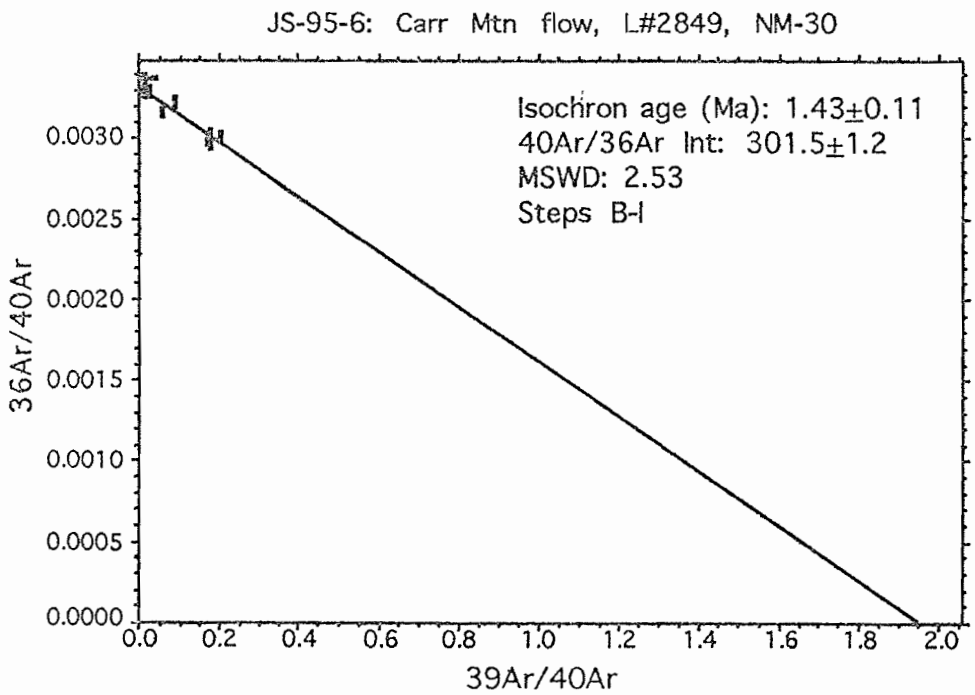
B-9


JS-95-05: Purvine Hills, L#2851, NM-30
%Rad
K/Ca
Apparent Age (Ma)
0.91 ± 0.17 Ma
B 600
C 700
D 800
E 900
F 1000
G 1100
H 1200
Integrated Age = 1.8 ± 0.4 Ma
Cumulative %39Ar Released

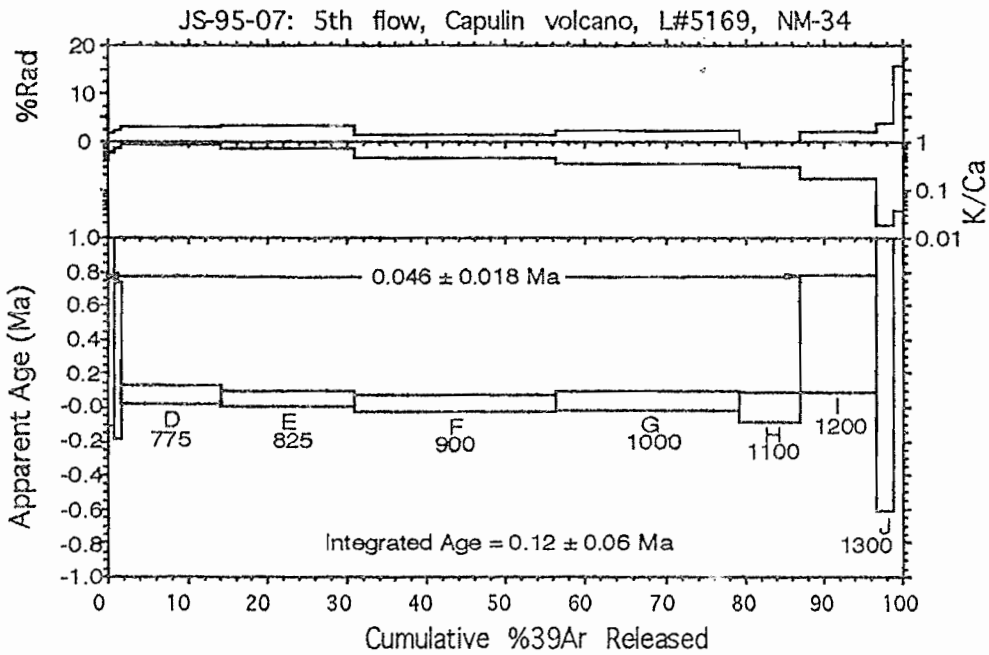

JS-95-5: Purvine Hills, L#2851, NM-30
Isochron age (Ma): 0.53±0.20
40Ar/36Ar Int: 298.7±1.9
MSWD: 0.91
Steps B-F
36Ar/40Ar
39Ar/40Ar

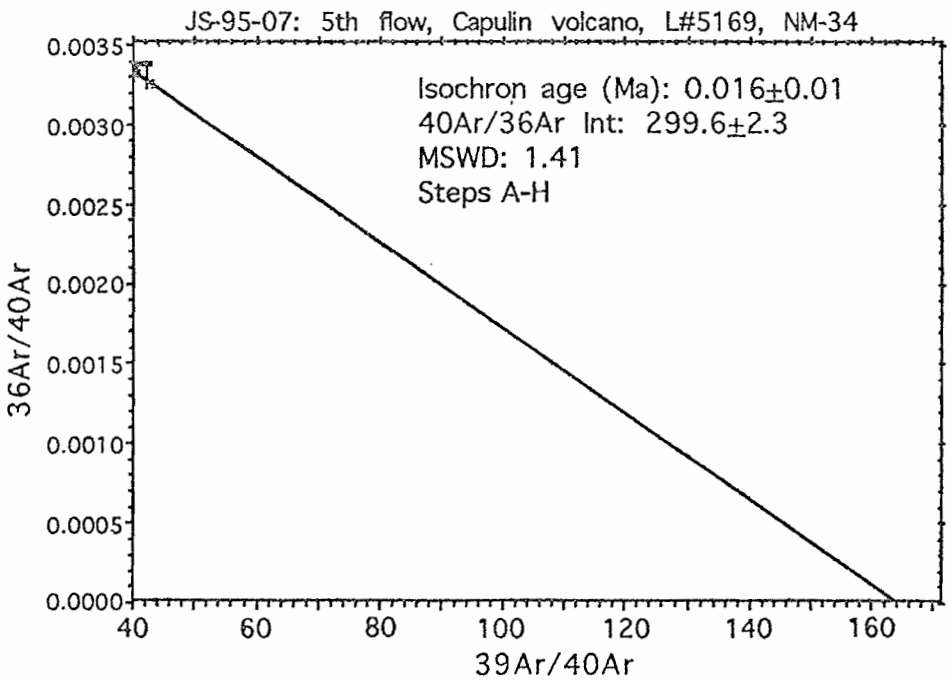
B-10


JS-95-06: Carr Mtn flow, L#2849, NM-30
%Rad
K/Ca
Apparent Age (Ma)
1.68 ± 0.13 Ma
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
Integrated Age = 2.24 ± 0.38 Ma
Cumulative %39Ar Released

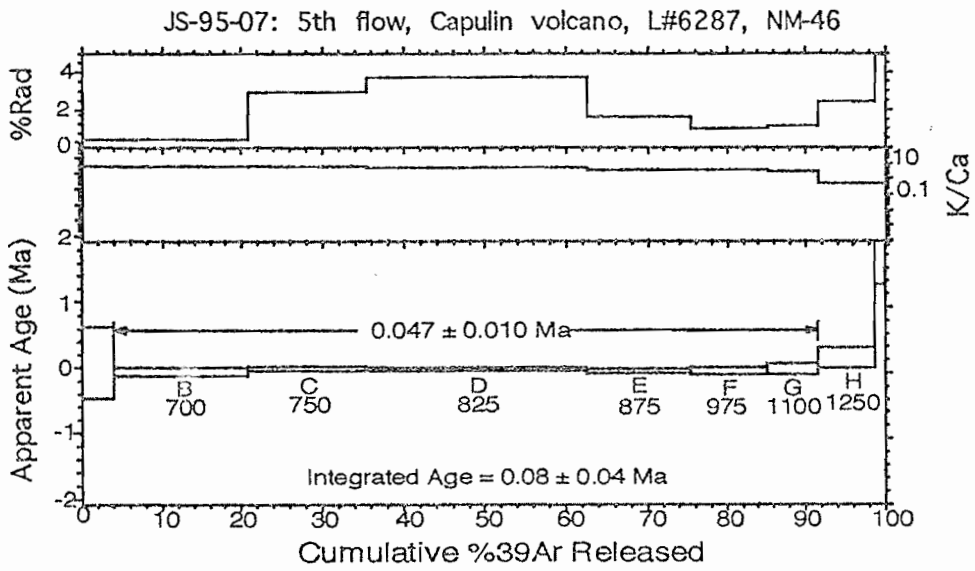

JS-95-6: Carr Mtn flow, L#2849, NM-30
Isochron age (Ma): 1.43±0.11
40Ar/36Ar Int: 301.5±1.2
MSWD: 2.53
Steps B-I
36Ar/40Ar
39Ar/40Ar

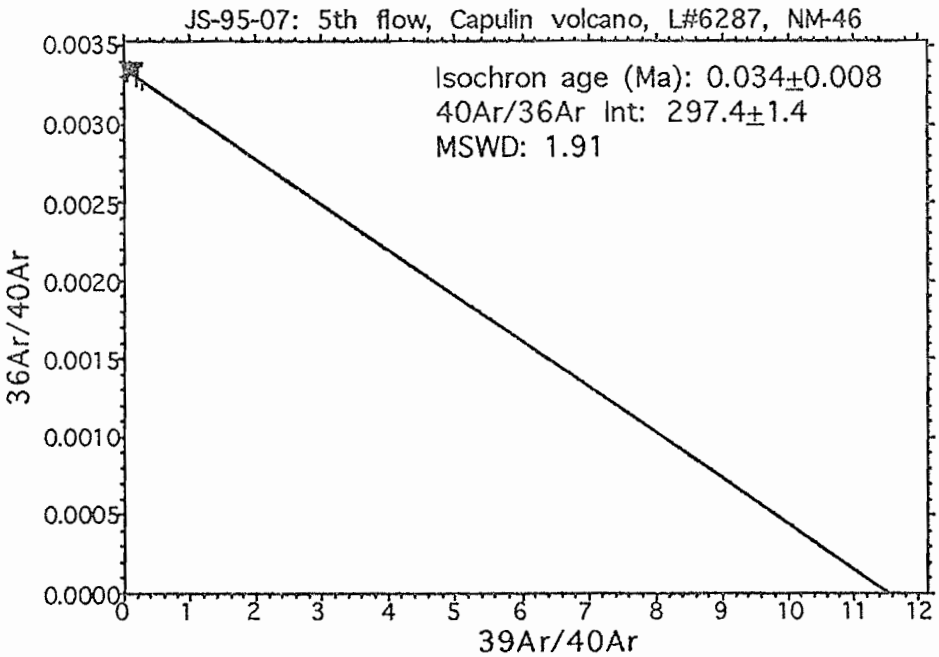
B-11


JS-95-07: 5th flow, Capulin volcano, L#5169, NM-34
%Rad
K/Ca
Apparent Age (Ma)
0.046 ± 0.018 Ma
D 775
E 825
F 900
G 1000
H 1100
I 1200
J 1300
Integrated Age = 0.12 ± 0.06 Ma
Cumulative %39Ar Released

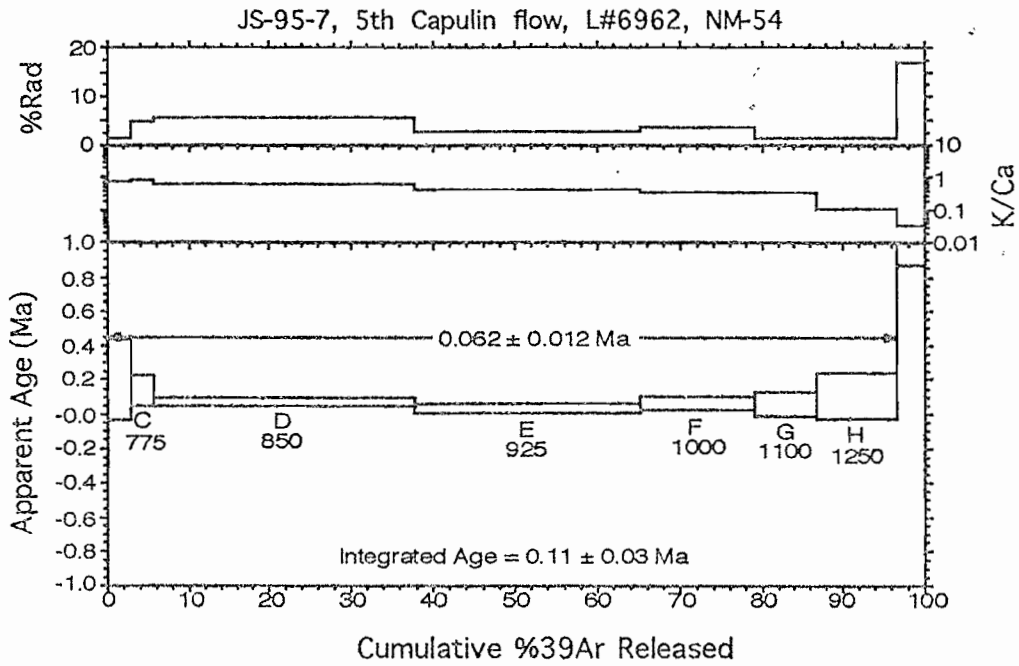

JS-95-07: 5th flow, Capulin volcano, L#5169, NM-34
Isochron age (Ma): 0.016±0.01
40Ar/36Ar Int: 299.6±2.3
MSWD: 1.41
Steps A-H
36Ar/40Ar
39Ar/40Ar

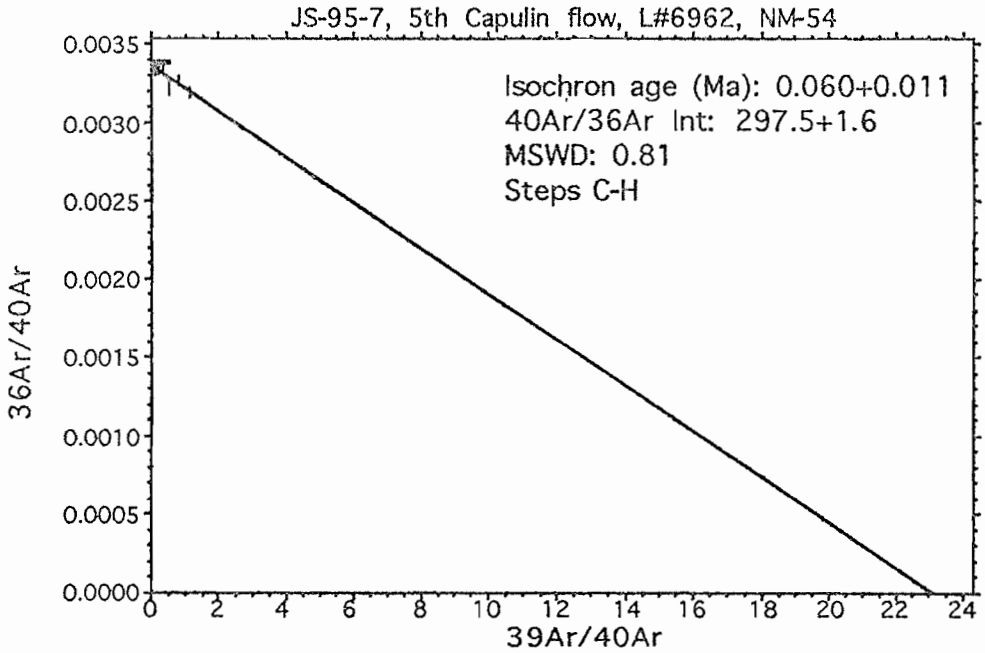
B-12


JS-95-07: 5th flow, Capulin volcano, L#6287, NM-46
%Rad
K/Ca
Apparent Age (Ma)
0.047 ± 0.010 Ma
B 700
C 750
D 825
E 875
F 975
G 1100
H 1250
Integrated Age = 0.08 ± 0.04 Ma
Cumulative %39Ar Released

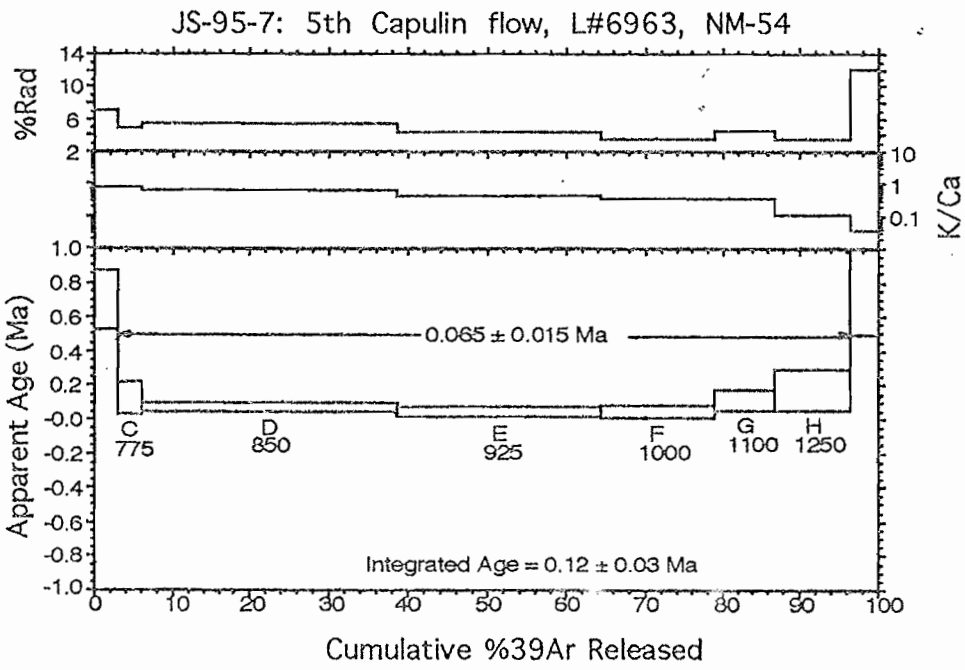

JS-95-07: 5th flow, Capulin volcano, L#6287, NM-46
Isochron age (Ma): 0.034±0.008
40Ar/36Ar Int: 297.4±1.4
MSWD: 1.91
36Ar/40Ar
39Ar/40Ar

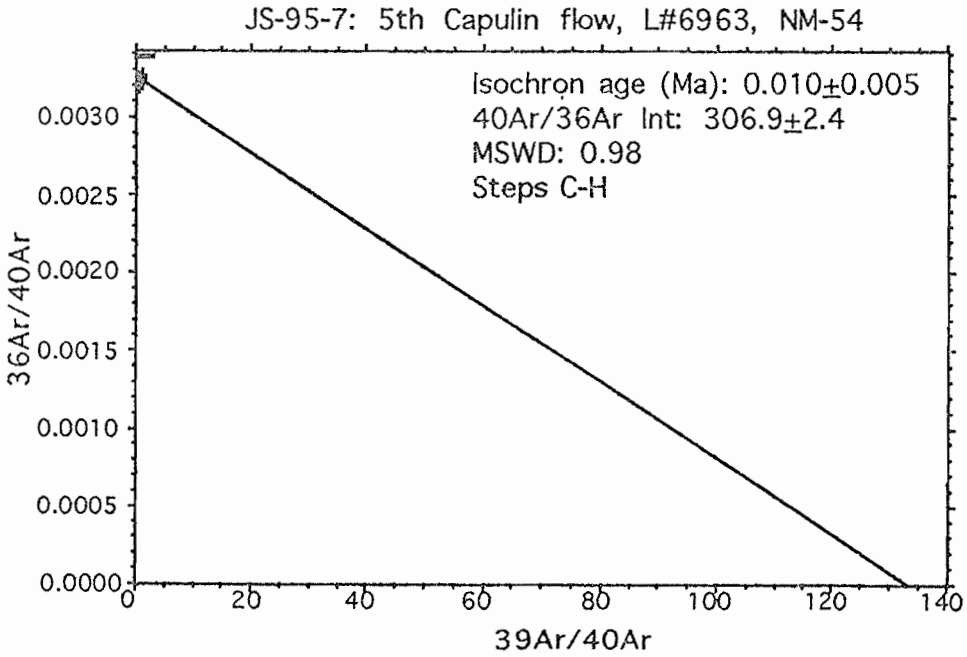
B-13


JS-95-7, 5th Capulin flow, L#6962, NM-54
%Rad
K/Ca
Apparent Age (Ma)
0.062 ± 0.012 Ma
C 775
D 850
E 925
F 1000
G 1100
H 1250
Integrated Age = 0.11 ± 0.03 Ma
Cumulative %39Ar Released

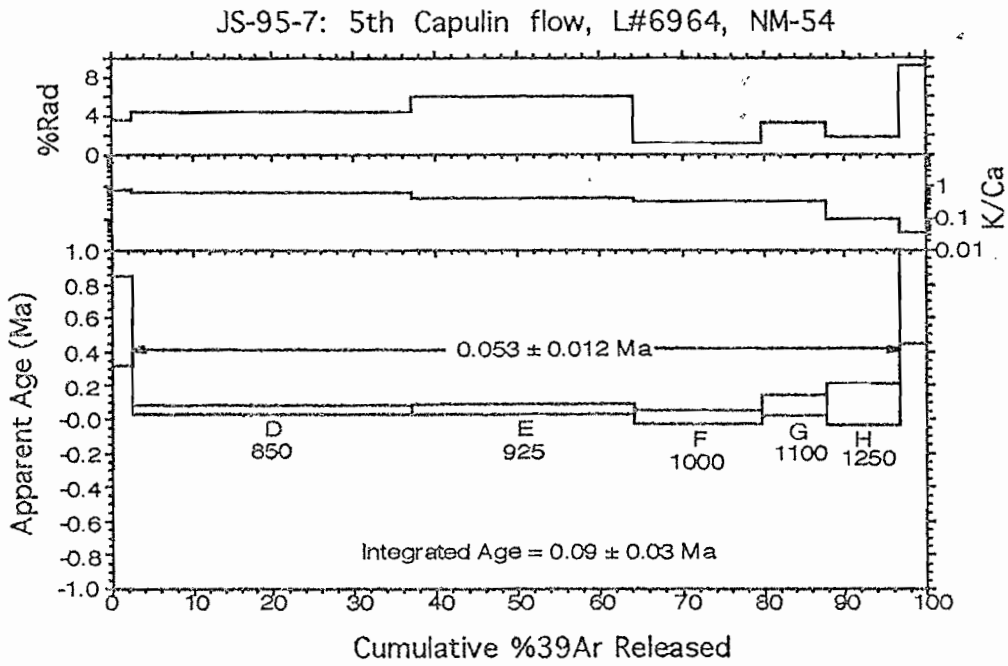

JS-95-7, 5th Capulin flow, L#6962, NM-54
Isochron age (Ma): 0.060+0.011
40Ar/36Ar Int: 297.5+1.6
MSWD: 0.81
Steps C-H
36Ar/40Ar
39Ar/40Ar

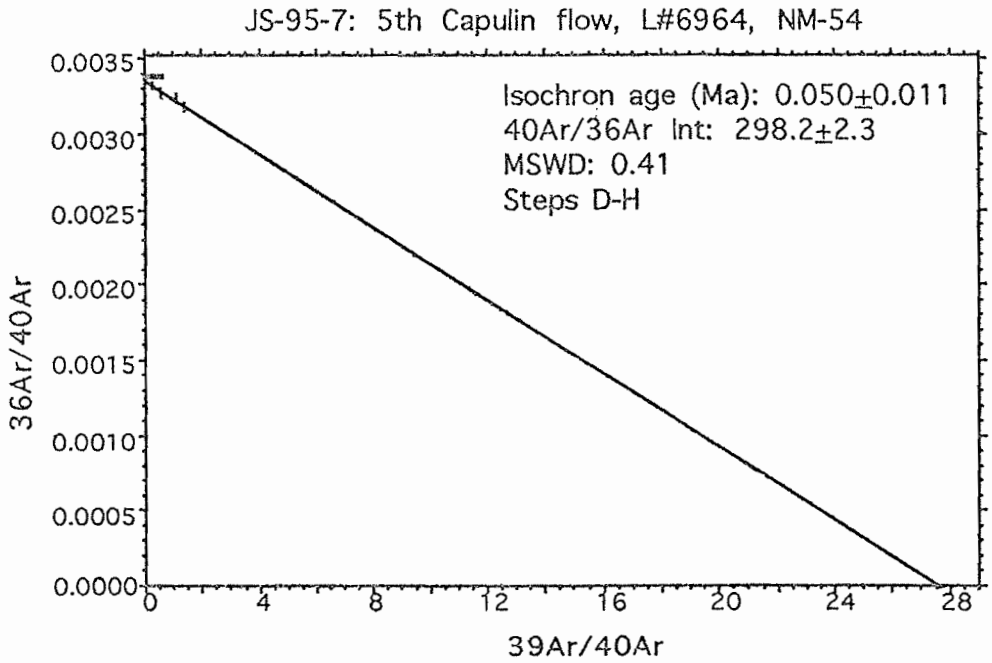
B-14


JS-95-7: 5th Capulin flow, L#6963, NM-54
%Rad
K/Ca
Apparent Age (Ma)
0.065 ± 0.015 Ma
C 775
D 850
E 925
F 1000
G 1100
H 1250
Integrated Age = 0.12 ± 0.03 Ma
Cumulative %39Ar Released

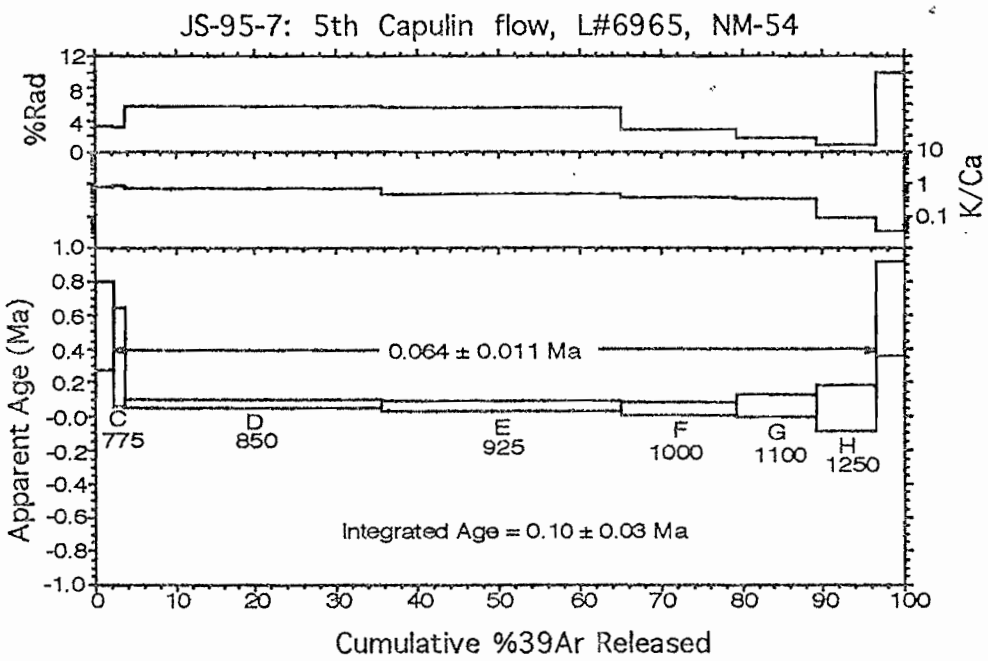

JS-95-7: 5th Capulin flow, L#6963, NM-54
Isochron age (Ma): 0.010±0.005
40Ar/36Ar Int: 306.9±2.4
MSWD: 0.98
Steps C-H
36Ar/40Ar
39Ar/40Ar

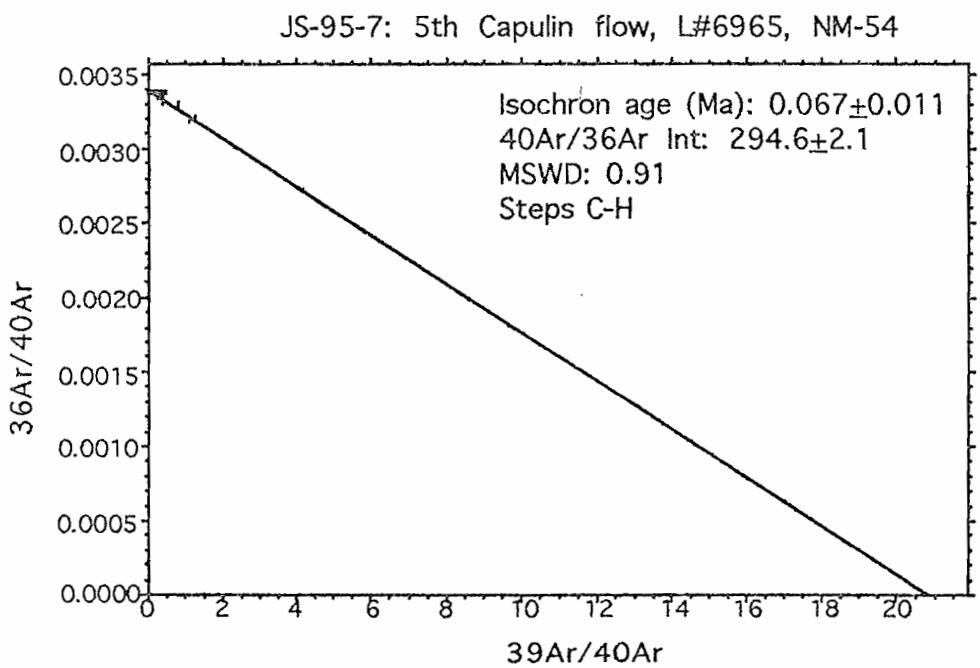
B-15


JS-95-7: 5th Capulin flow, L#6964, NM-54
%Rad
K/Ca
Apparent Age (Ma)
0.053 ± 0.012 Ma
D 850
E 925
F 1000
G 1100
H 1250
Integrated Age = 0.09 ± 0.03 Ma
Cumulative %39Ar Released

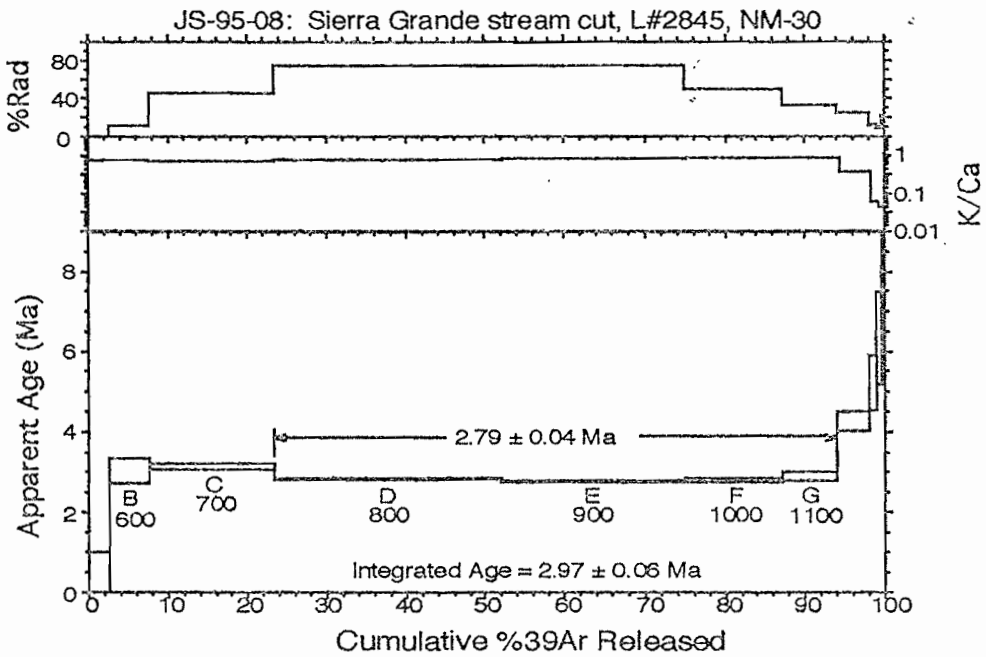

JS-95-7: 5th Capulin flow, L#6964, NM-54
Isochron age (Ma): 0.050±0.011
40Ar/36Ar Int: 298.2±2.3
MSWD: 0.41
Steps D-H
36Ar/40Ar
39Ar/40Ar

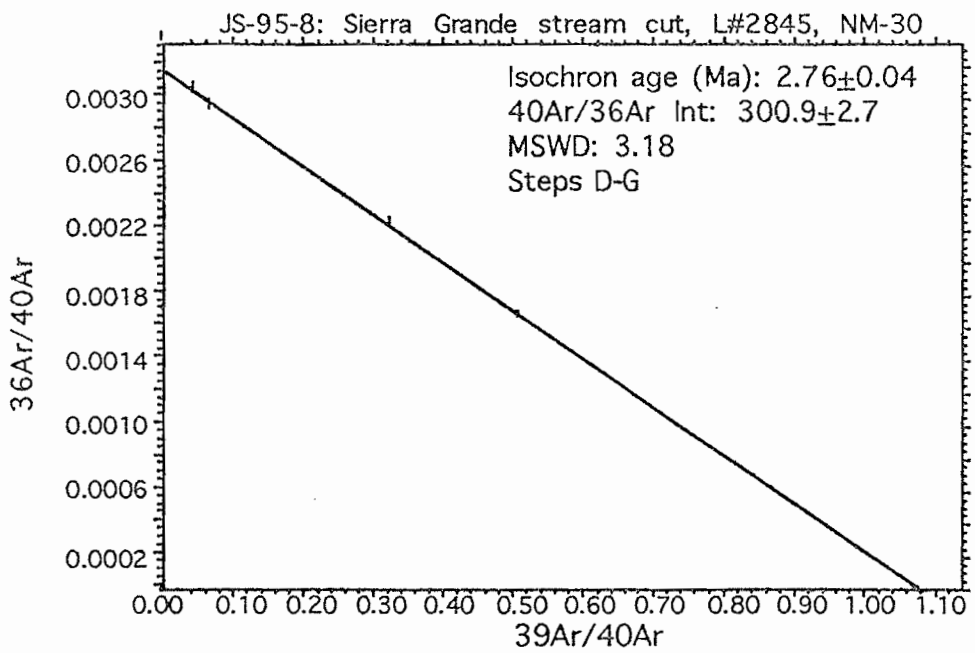
B-16


JS-95-7: 5th Capulin flow, L#6965, NM-54
%Rad
K/Ca
Apparent Age (Ma)
0.064 ± 0.011 Ma
C 775
D 850
E 925
F 1000
G 1100
H 1250
Integrated Age = 0.10 ± 0.03 Ma
Cumulative %39Ar Released

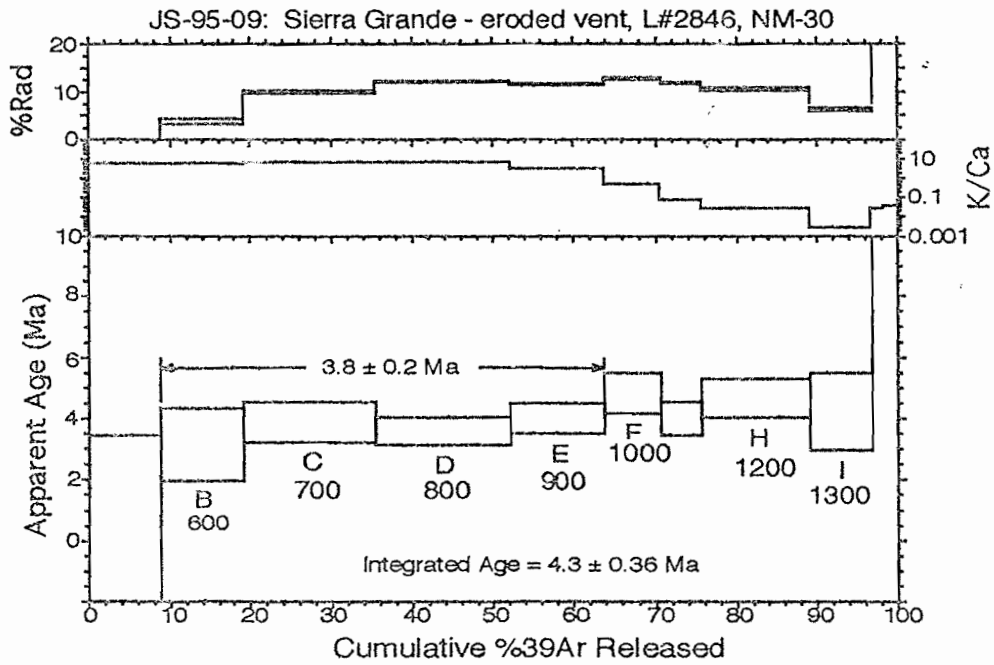

JS-95-7: 5th Capulin flow, L#6965, NM-54
Isochron age (Ma): 0.067±0.011
40Ar/36Ar Int: 294.6±2.1
MSWD: 0.91
Steps C-H
36Ar/40Ar
39Ar/40Ar

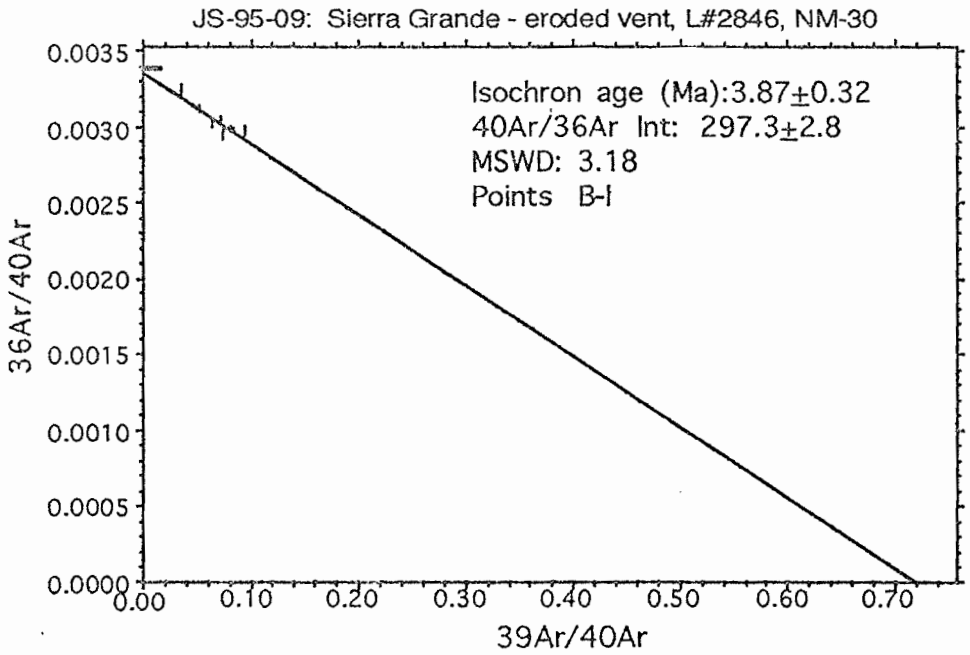
B-17


JS-95-08: Sierra Grande stream cut, L#2845, NM-30
%Rad
80
40
0
1
0.1
0.01
K/Ca
Apparent Age (Ma)
8
6
4
2
0
2.79 ± 0.04 Ma
B 600
C 700
D 800
E 900
F 1000
G 1100
Integrated Age = 2.97 ± 0.06 Ma
0 10 20 30 40 50 60 70 80 90 100
Cumulative %39Ar Released

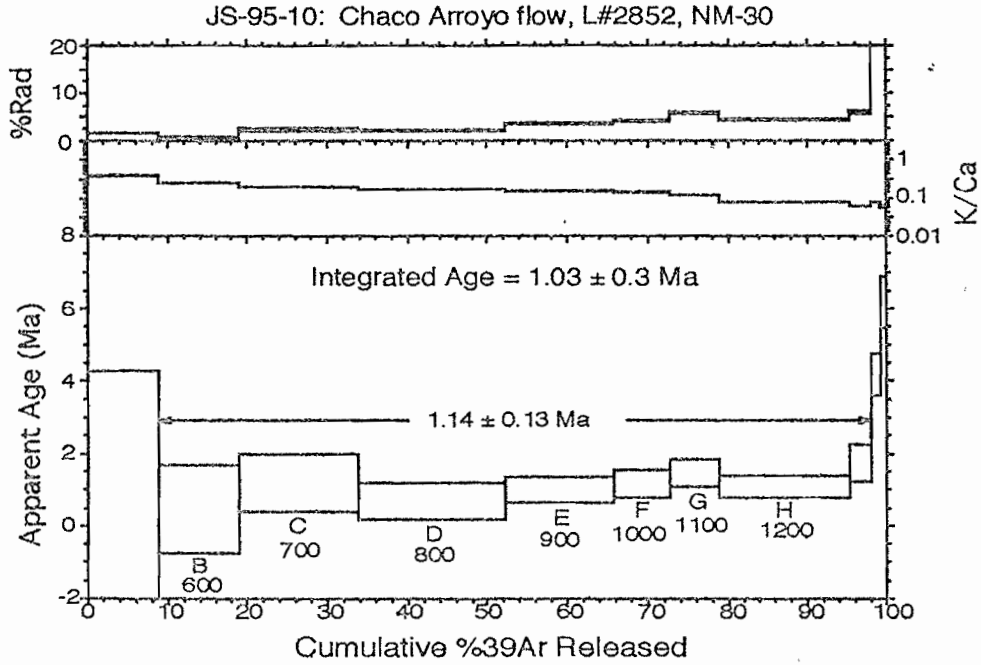

JS-95-8: Sierra Grande stream cut, L#2845, NM-30
Isochron age (Ma): 2.76±0.04
40Ar/36Ar Int: 300.9±2.7
MSWD: 3.18
Steps D-G
36Ar/40Ar
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.00 1.10
39Ar/40Ar

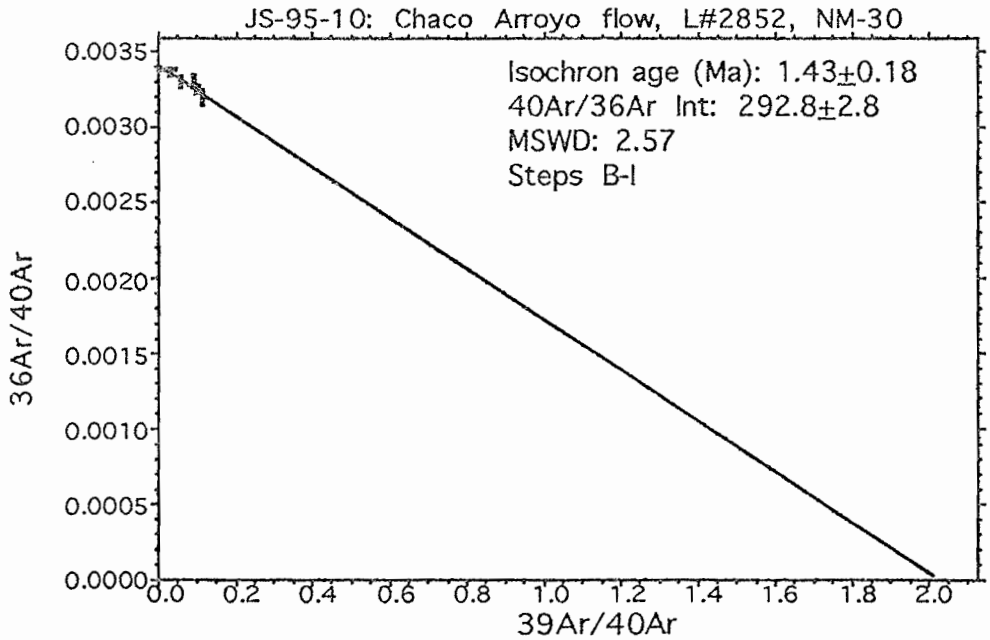
B-18


JS-95-09: Sierra Grande - eroded vent, L#2846, NM-30
%Rad
K/Ca
Apparent Age (Ma)
3.8 ± 0.2 Ma
B 600
C 700
D 800
E 900
F 1000
H 1200
I 1300
Integrated Age = 4.3 ± 0.36 Ma
Cumulative %39Ar Released

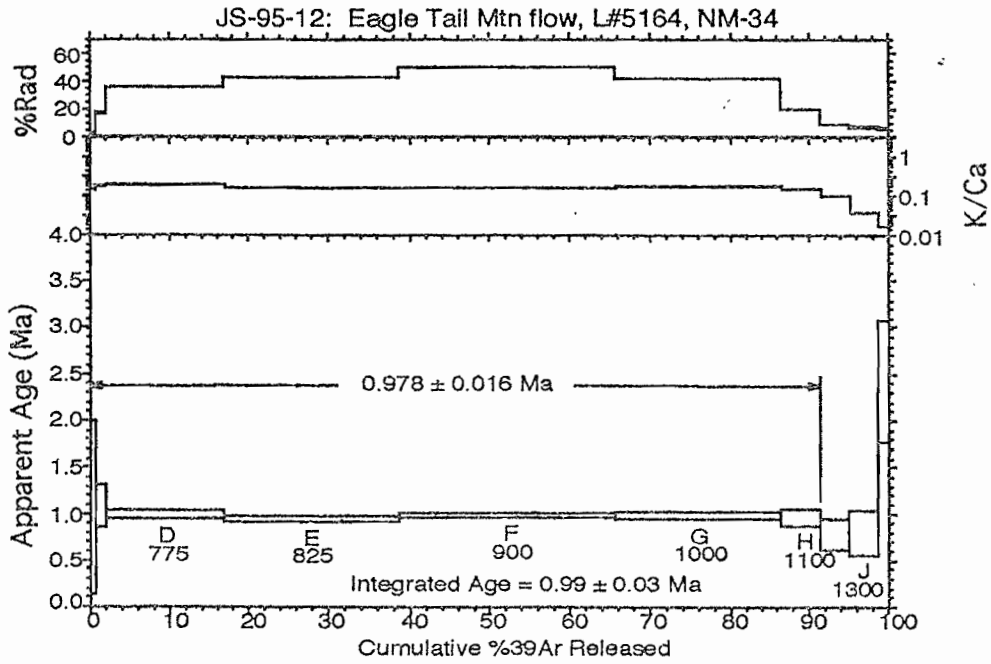

JS-95-09: Sierra Grande - eroded vent, L#2846, NM-30
Isochron age (Ma):3.87±0.32
40Ar/36Ar Int: 297.3±2.8
MSWD: 3.18
Points B-I
36Ar/40Ar
39Ar/40Ar

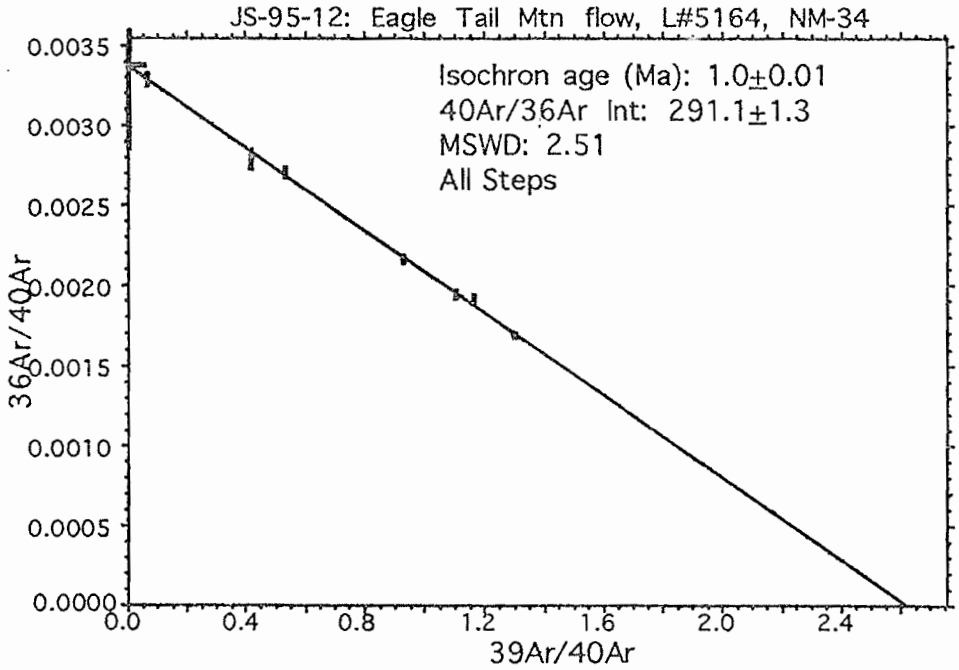
B-19


JS-95-10: Chaco Arroyo flow, L#2852, NM-30
%Rad
K/Ca
Integrated Age = 1.03 ± 0.3 Ma
1.14 ± 0.13 Ma
Apparent Age (Ma)
B 600
C 700
D 800
E 900
F 1000
G 1100
H 1200
Cumulative %39Ar Released

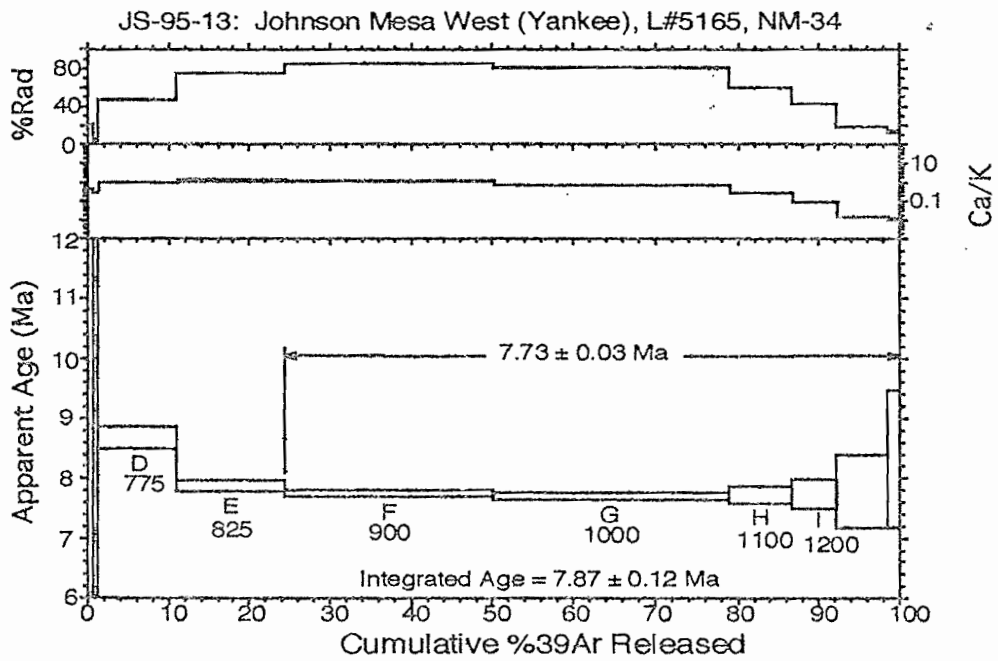

JS-95-10: Chaco Arroyo flow, L#2852, NM-30
Isochron age (Ma): 1.43±0.18
40Ar/36Ar Int: 292.8±2.8
MSWD: 2.57
Steps B-I
36Ar/40Ar
39Ar/40Ar

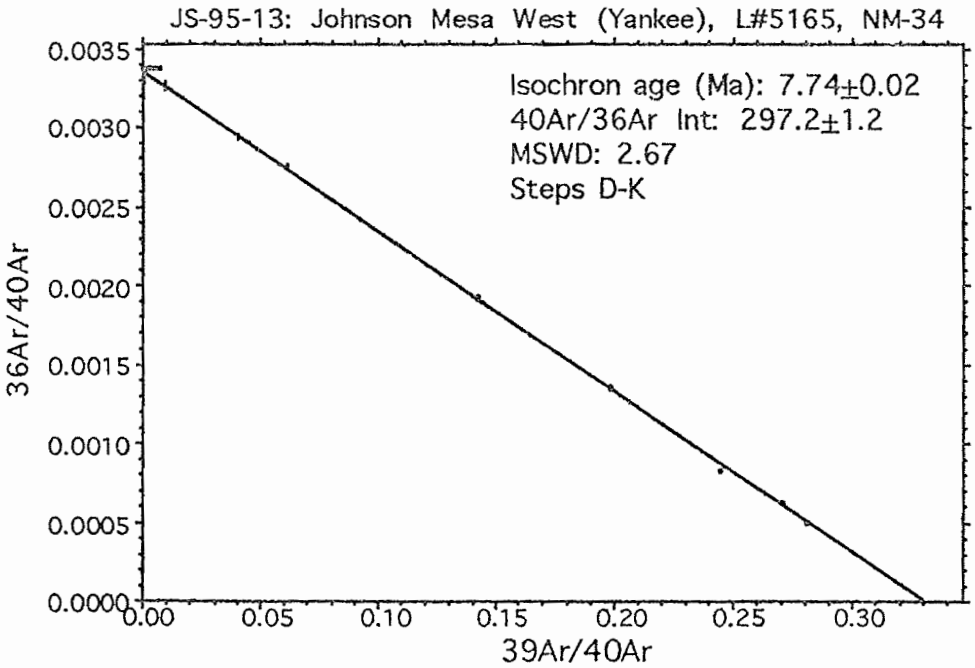
B-20


JS-95-12: Eagle Tail Mtn flow, L#5164, NM-34
%Rad
K/Ca
Apparent Age (Ma)
0.978 ± 0.016 Ma
D 775
E 825
F 900
G 1000
H 1100
J 1300
Integrated Age = 0.99 ± 0.03 Ma
Cumulative %39Ar Released

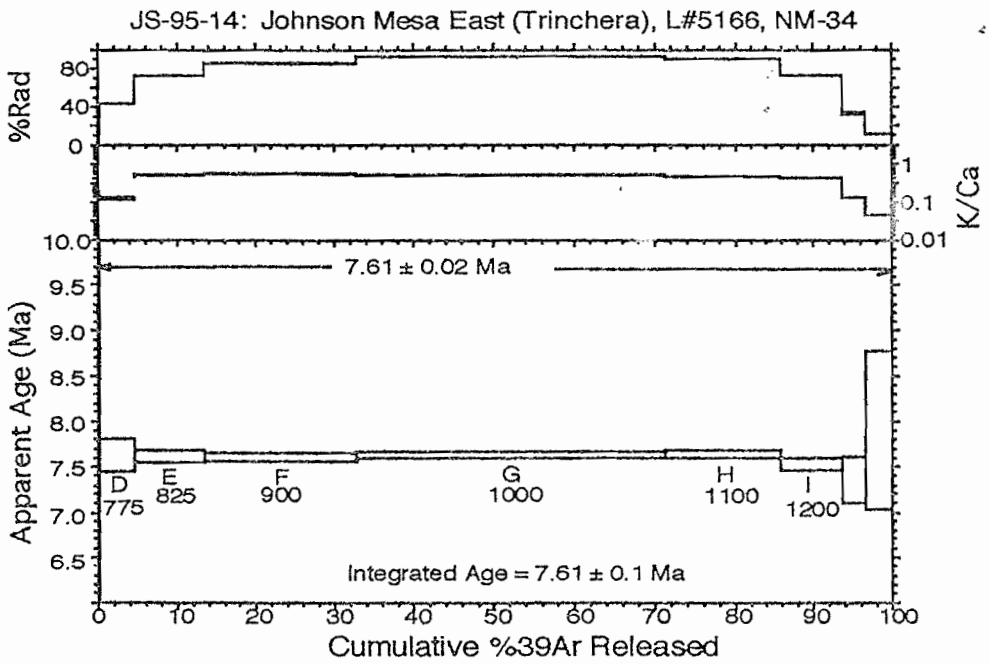

JS-95-12: Eagle Tail Mtn flow, L#5164, NM-34
Isochron age (Ma): 1.0±0.01
40Ar/36Ar Int: 291.1±1.3
MSWD: 2.51
All Steps
36Ar/40Ar
39Ar/40Ar

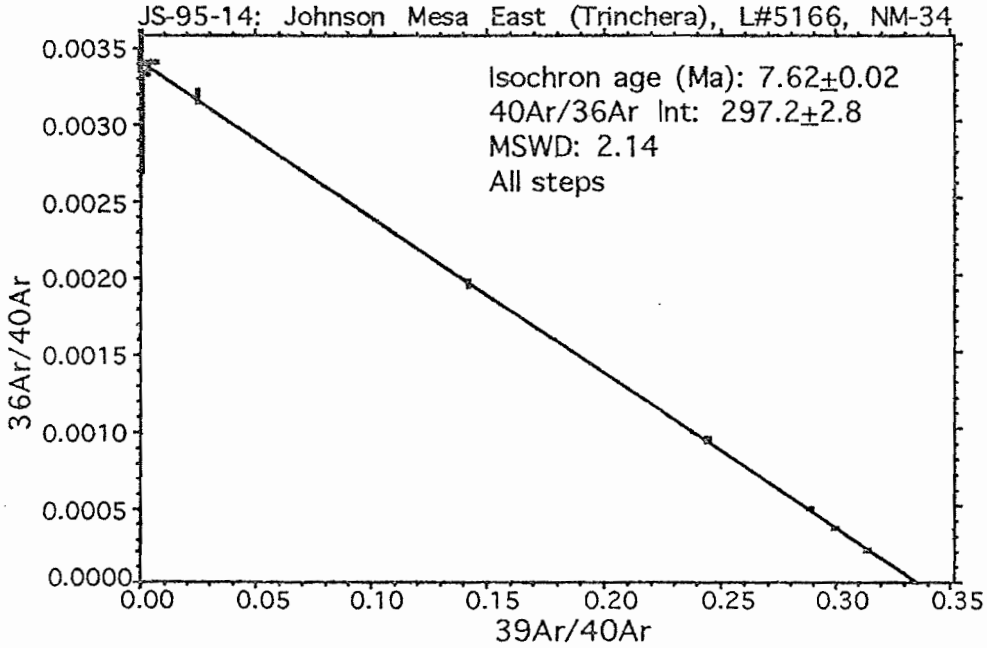
B-21


JS-95-13: Johnson Mesa West (Yankee), L#5165, NM-34
%Rad
80
40
0
10
0.1
Ca/K
Apparent Age (Ma)
12
11
10
9
8
7
6
7.73 ± 0.03 Ma
D
775
E
825
F
900
G
1000
H
1100
I
1200
Integrated Age = 7.87 ± 0.12 Ma
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

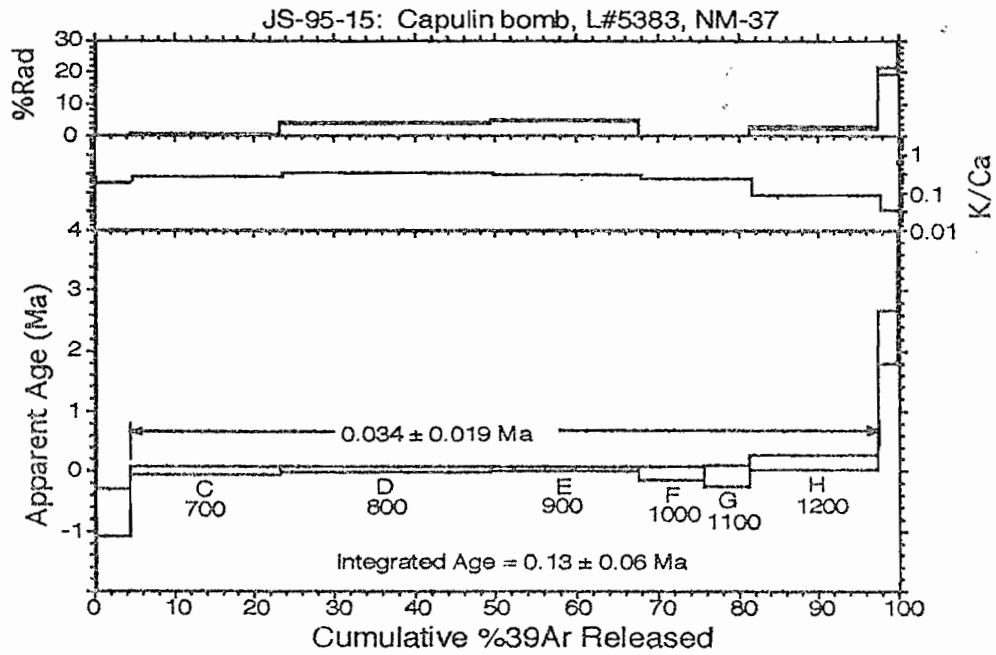

JS-95-13: Johnson Mesa West (Yankee), L#5165, NM-34
Isochron age (Ma): 7.74±0.02
40Ar/36Ar Int: 297.2±1.2
MSWD: 2.67
Steps D-K
36Ar/40Ar
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0.00
0.05
0.10
0.15
0.20
0.25
0.30
39Ar/40Ar

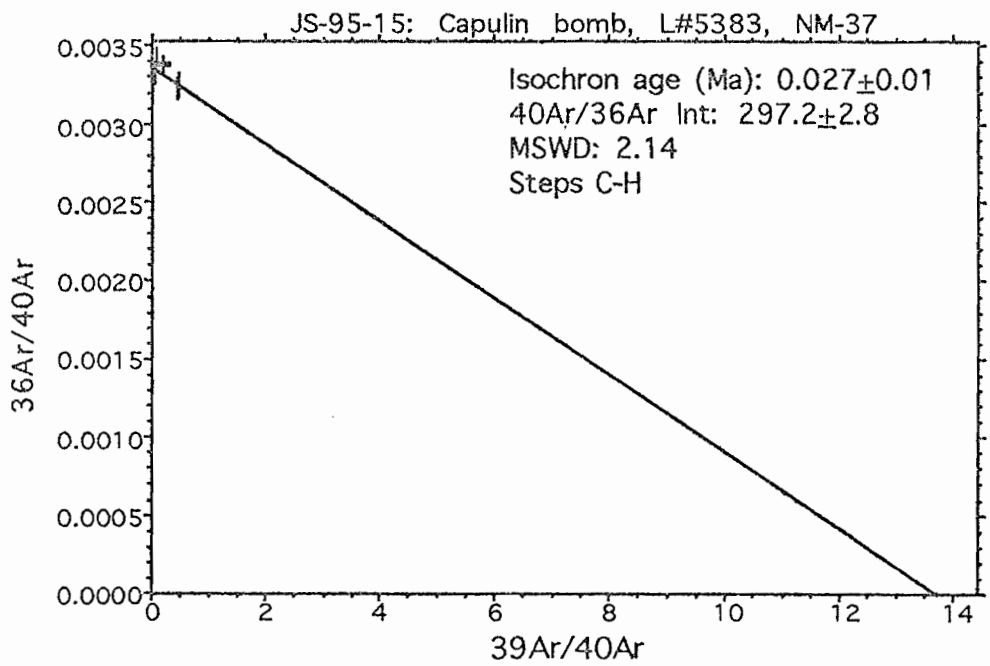
B-22


JS-95-14: Johnson Mesa East (Trinchera), L#5166, NM-34
%Rad
80
40
0
K/Ca
1
0.1
0.01
10.0
7.61 ± 0.02 Ma
Apparent Age (Ma)
9.5
9.0
8.5
8.0
7.5
7.0
6.5
D 775
E 825
F 900
G 1000
H 1100
I 1200
Integrated Age = 7.61 ± 0.1 Ma
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

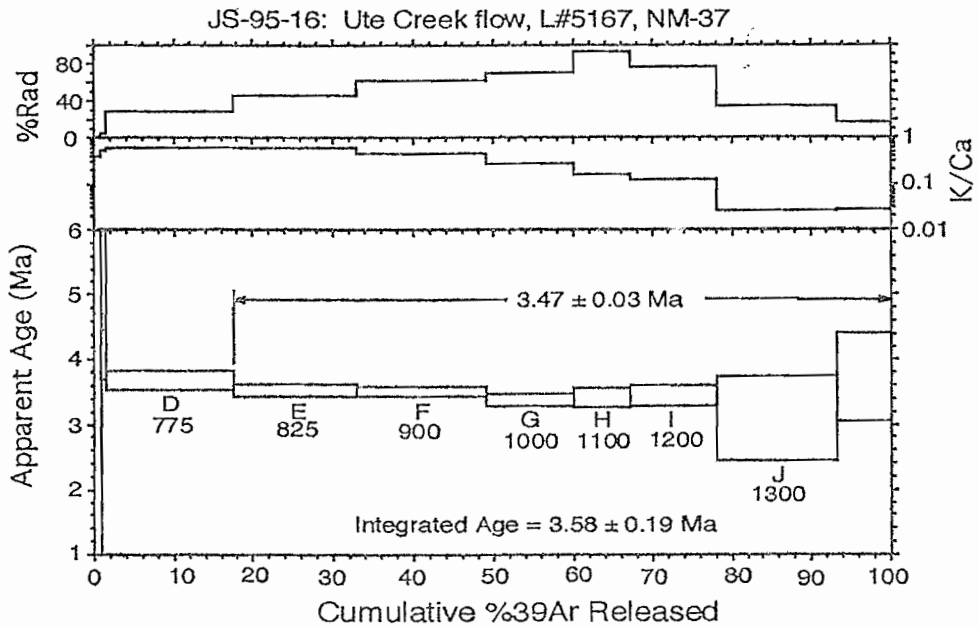

JS-95-14: Johnson Mesa East (Trinchera), L#5166, NM-34
Isochron age (Ma): 7.62±0.02
40Ar/36Ar Int: 297.2±2.8
MSWD: 2.14
All steps
36Ar/40Ar
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
39Ar/40Ar

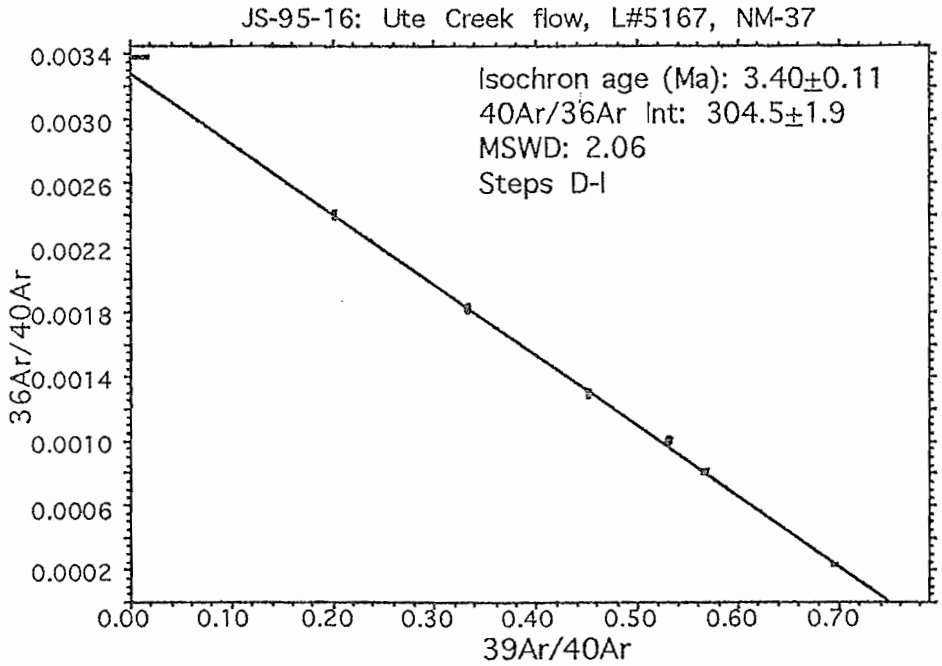
B-23


JS-95-15: Capulin bomb, L#5383, NM-37
%Rad
K/Ca
Apparent Age (Ma)
0.034 ± 0.019 Ma
C 700
D 800
E 900
F 1000
G 1100
H 1200
Integrated Age = 0.13 ± 0.06 Ma
Cumulative %39Ar Released

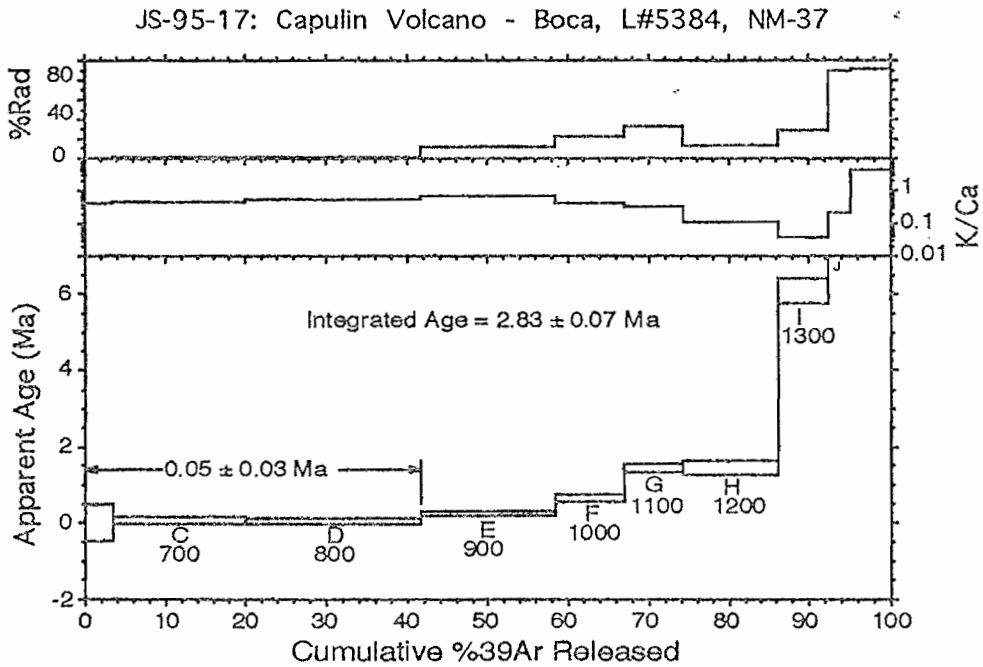

JS-95-15: Capulin bomb, L#5383, NM-37
Isochron age (Ma): 0.027±0.01
40Ar/36Ar Int: 297.2±2.8
MSWD: 2.14
Steps C-H
36Ar/40Ar
39Ar/40Ar

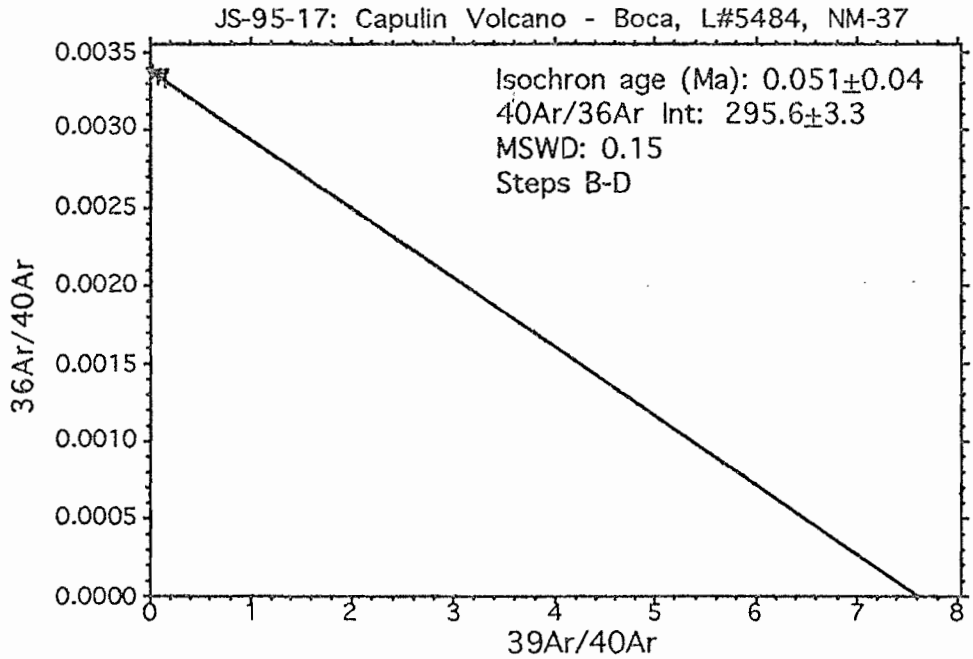
B-25


JS-95-16: Ute Creek flow, L#5167, NM-37
%Rad
80
40
0
1
0.1
0.01
K/Ca
Apparent Age (Ma)
6
5
4
3
2
1
3.47 ± 0.03 Ma
D
775
E
825
F
900
G
1000
H
1100
I
1200
J
1300
Integrated Age = 3.58 ± 0.19 Ma
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

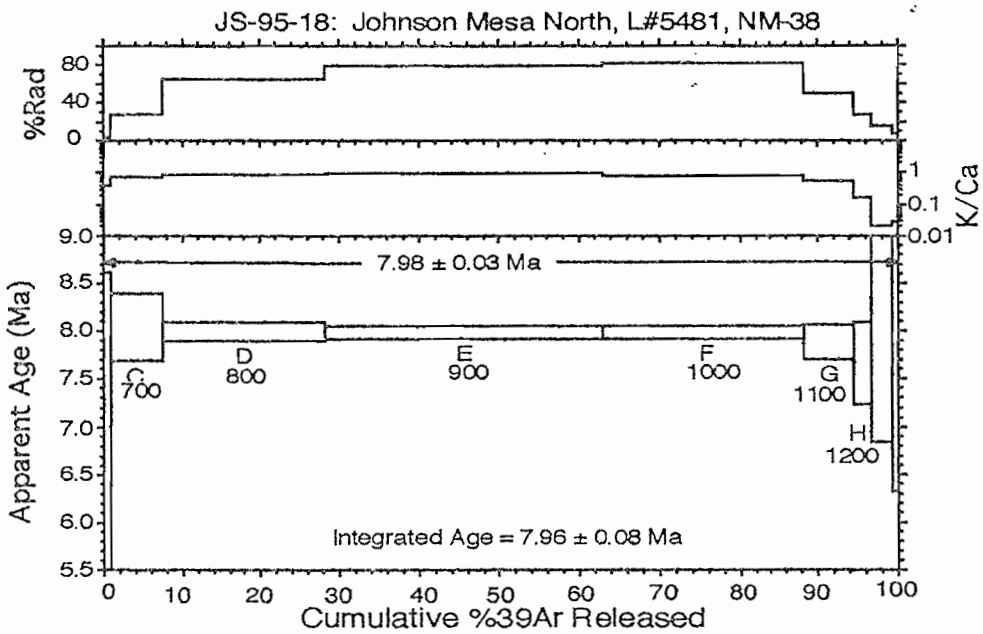

JS-95-16: Ute Creek flow, L#5167, NM-37
Isochron age (Ma): 3.40±0.11
40Ar/36Ar Int: 304.5±1.9
MSWD: 2.06
Steps D-I
36Ar/40Ar
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
39Ar/40Ar

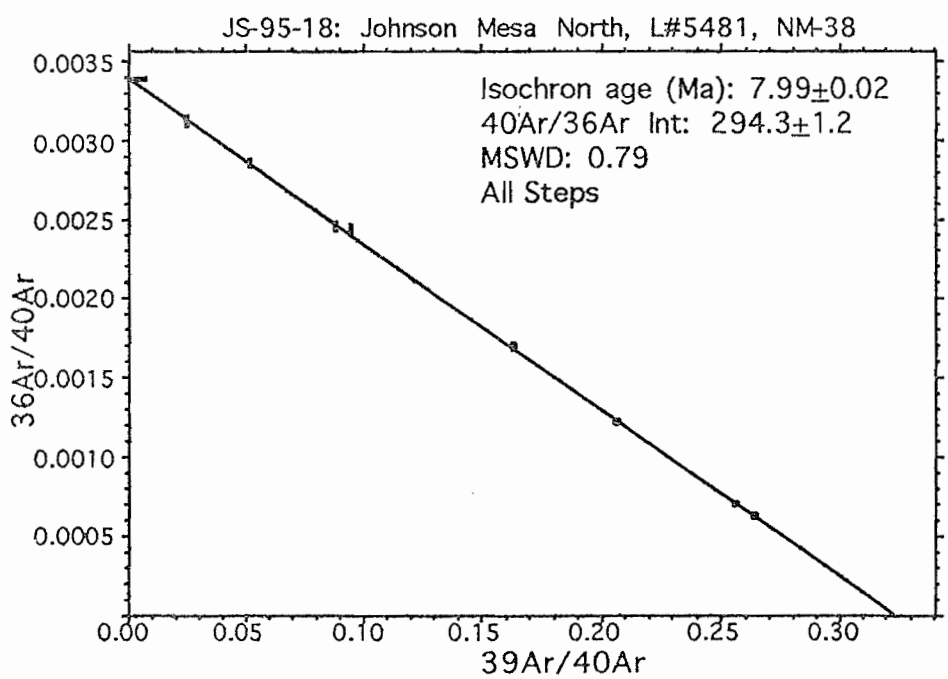
B-26


JS-95-17: Capulin Volcano - Boca, L#5384, NM-37
%Rad
80
40
0
K/Ca
1
0.1
0.01
Apparent Age (Ma)
6
4
2
0
-2
Integrated Age = 2.83 ± 0.07 Ma
0.05 ± 0.03 Ma
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
J
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

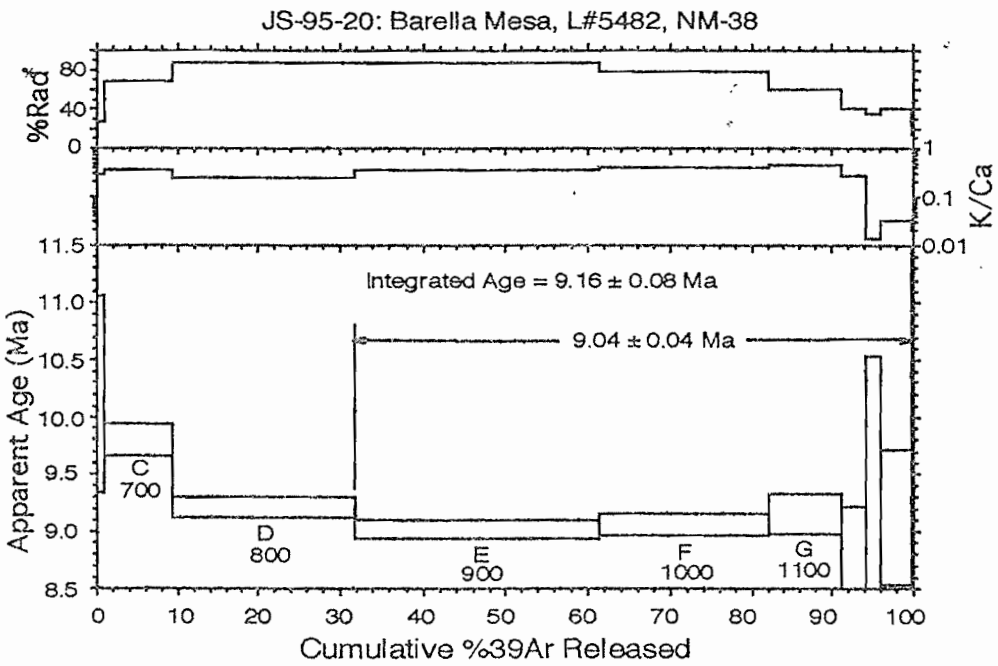

JS-95-17: Capulin Volcano - Boca, L#5484, NM-37
Isochron age (Ma): 0.051±0.04
40Ar/36Ar Int: 295.6±3.3
MSWD: 0.15
Steps B-D
36Ar/40Ar
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0
1
2
3
4
5
6
7
8
39Ar/40Ar

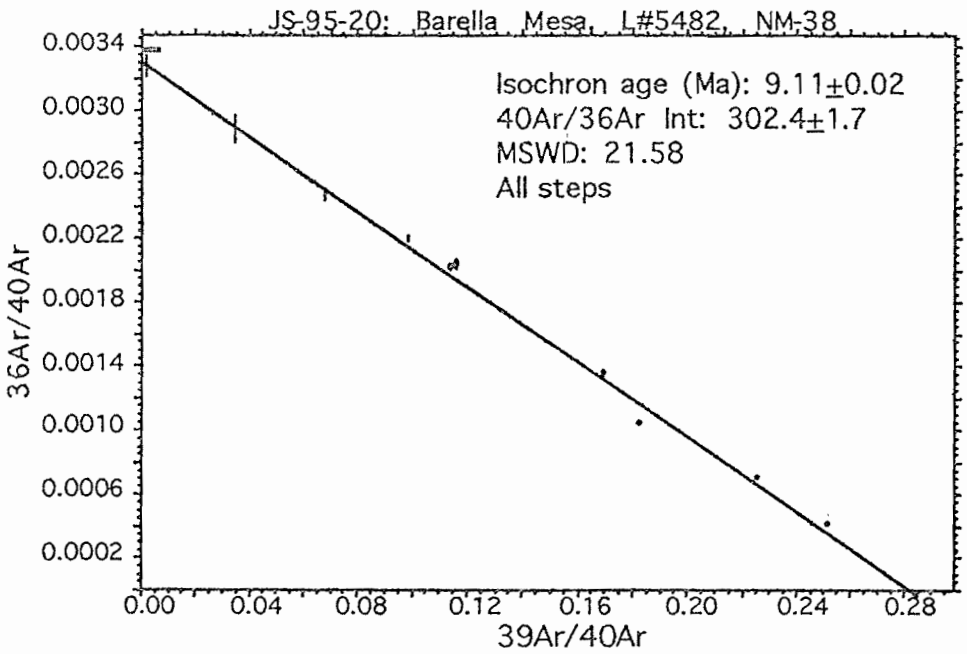
B-28


JS-95-18: Johnson Mesa North, L#5481, NM-38
%Rad
80
40
0
K/Ca
1
0.1
0.01
9.0
7.98 ± 0.03 Ma
Apparent Age (Ma)
8.5
8.0
7.5
7.0
6.5
6.0
5.5
C 700
D 800
E 900
F 1000
G 1100
H 1200
Integrated Age = 7.96 ± 0.08 Ma
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

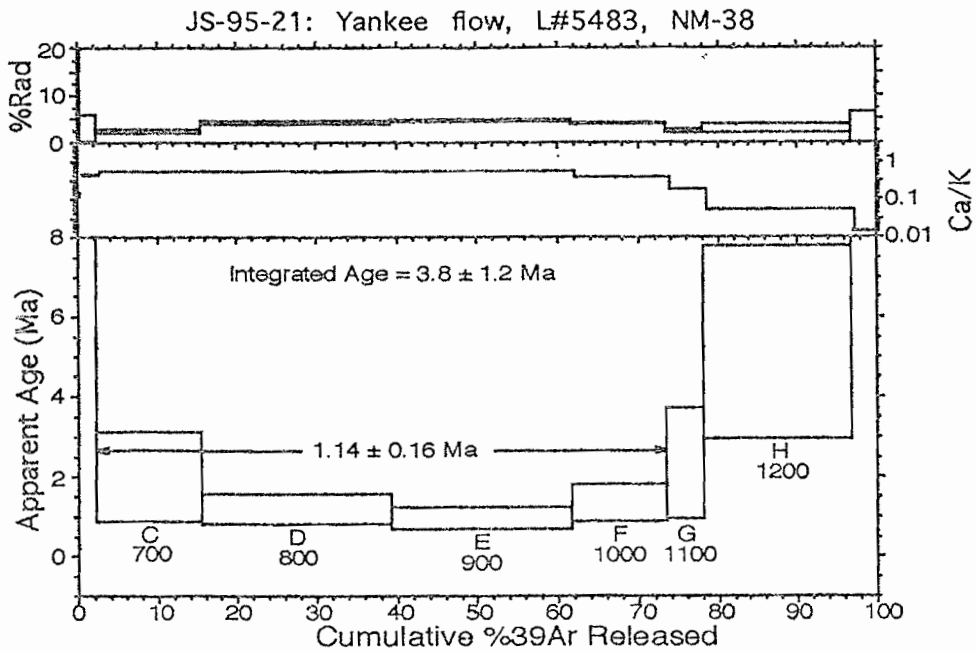

JS-95-18: Johnson Mesa North, L#5481, NM-38
Isochron age (Ma): 7.99±0.02
40Ar/36Ar Int: 294.3±1.2
MSWD: 0.79
All Steps
36Ar/40Ar
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.00
0.05
0.10
0.15
0.20
0.25
0.30
39Ar/40Ar

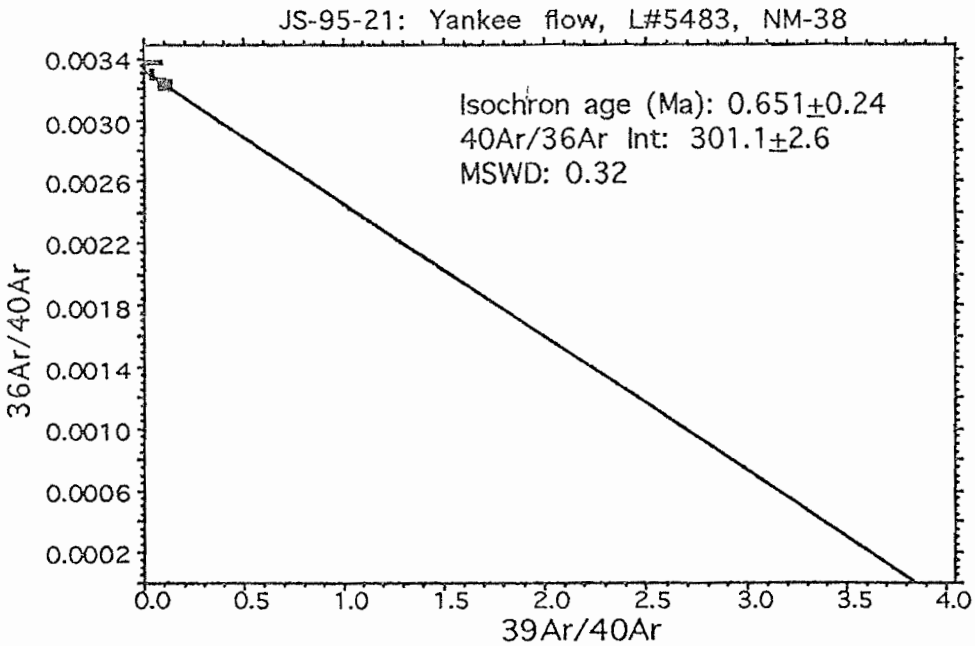
B-29


JS-95-20: Barella Mesa, L#5482, NM-38
%Rad
80
40
0
1
0.1
0.01
K/Ca
11.5
Integrated Age = 9.16 ± 0.08 Ma
9.04 ± 0.04 Ma
Apparent Age (Ma)
11.0
10.5
10.0
9.5
9.0
8.5
C
700
D
800
E
900
F
1000
G
1100
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

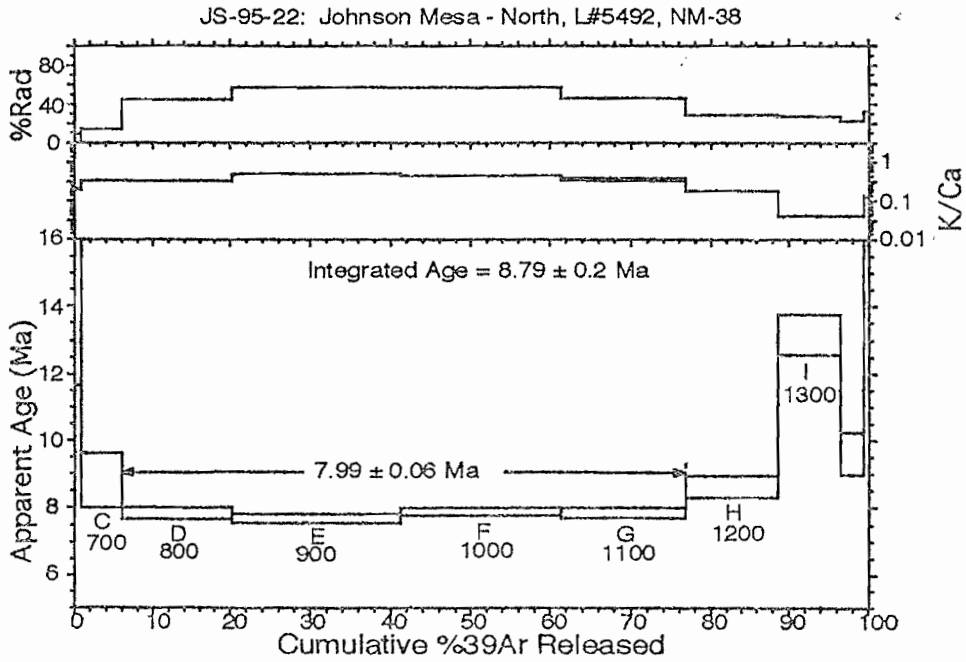

JS-95-20: Barella Mesa, L#5482, NM-38
Isochron age (Ma): 9.11±0.02
40Ar/36Ar Int: 302.4±1.7
MSWD: 21.58
All steps
36Ar/40Ar
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
0.00
0.04
0.08
0.12
0.16
0.20
0.24
0.28
39Ar/40Ar

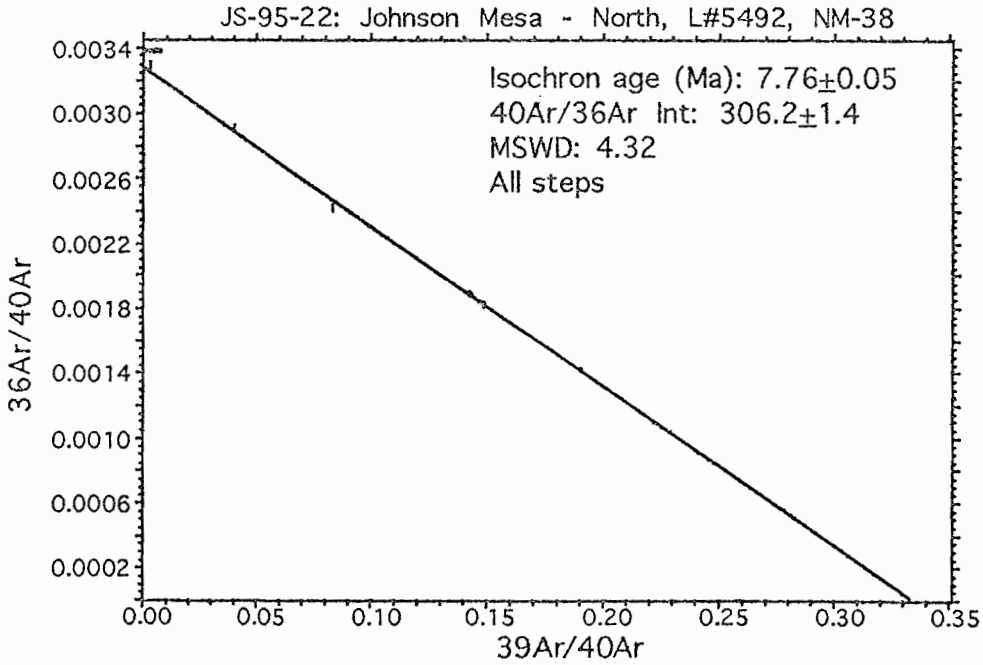
B-30

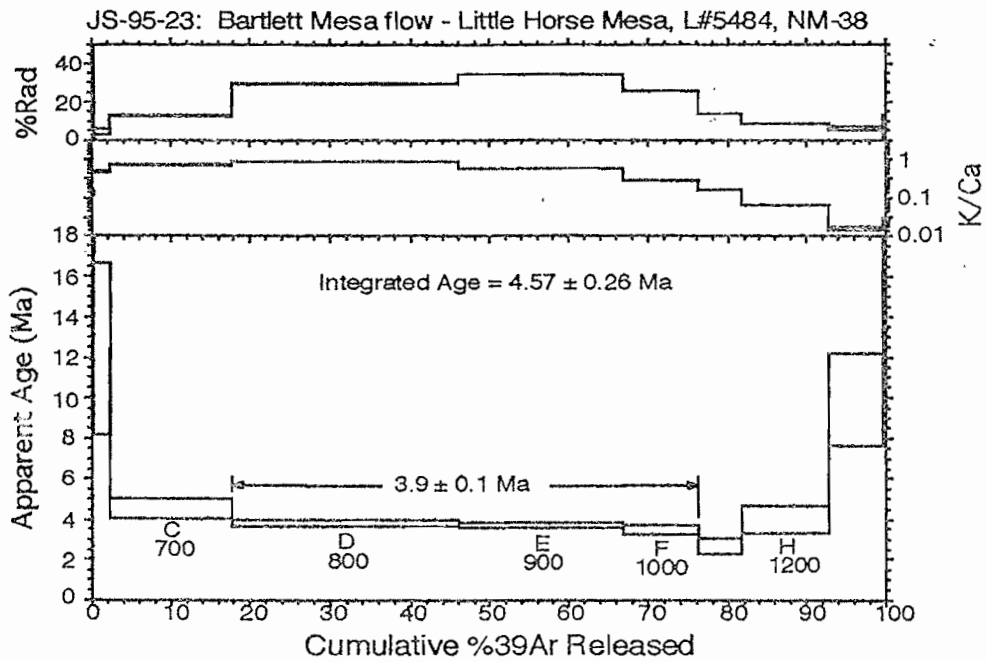

JS-95-21: Yankee flow, L#5483, NM-38
%Rad
Ca/K
Integrated Age = 3.8 ± 1.2 Ma
1.14 ± 0.16 Ma
Apparent Age (Ma)
C 700
D 800
E 900
F 1000
G 1100
H 1200
Cumulative %39Ar Released

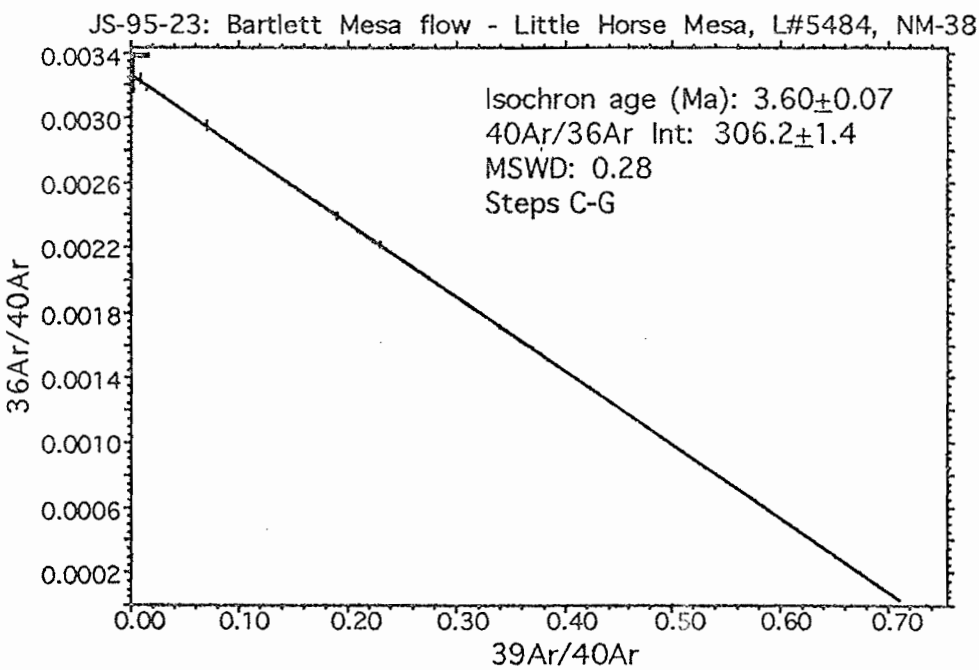

JS-95-21: Yankee flow, L#5483, NM-38
Isochron age (Ma): 0.651±0.24
40Ar/36Ar Int: 301.1±2.6
MSWD: 0.32
36Ar/40Ar
39Ar/40Ar

B-31

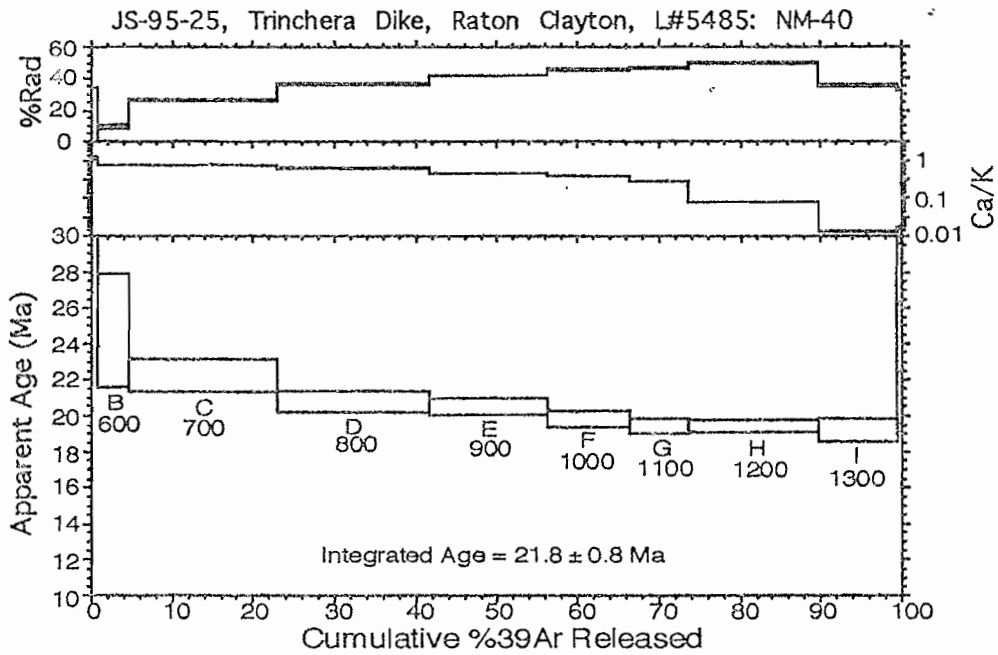

JS-95-22: Johnson Mesa - North, L#5492, NM-38
%Rad
80
40
0
1
0.1
0.01
K/Ca
16
Integrated Age = 8.79 ± 0.2 Ma
14
12
10
8
6
Apparent Age (Ma)
7.99 ± 0.06 Ma
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

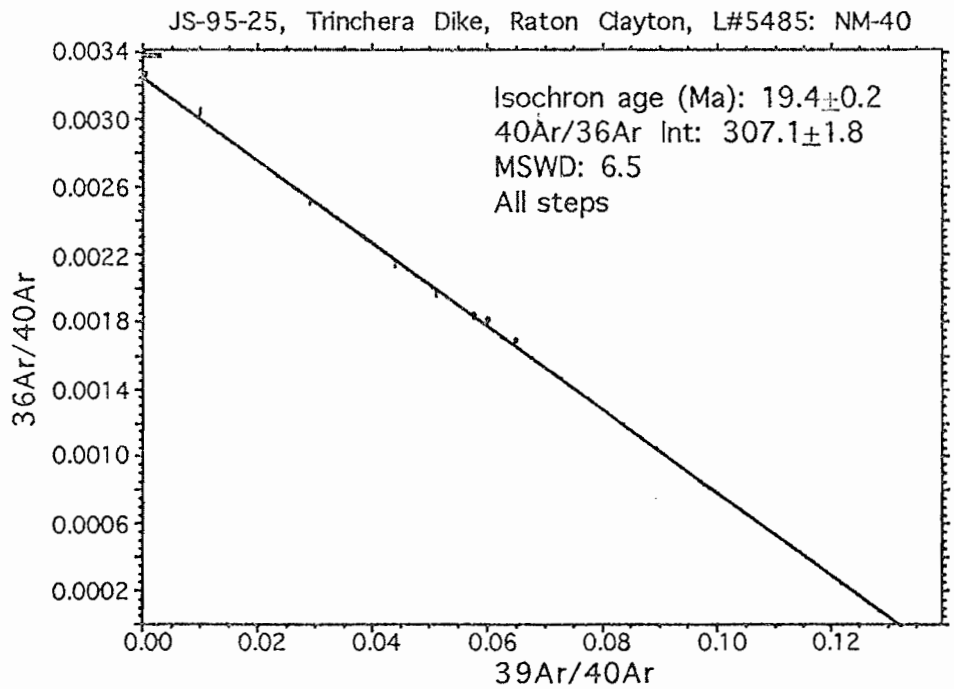

JS-95-22: Johnson Mesa - North, L#5492, NM-38
Isochron age (Ma): 7.76±0.05
40Ar/36Ar Int: 306.2±1.4
MSWD: 4.32
All steps
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
36Ar/40Ar
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0.35
39Ar/40Ar

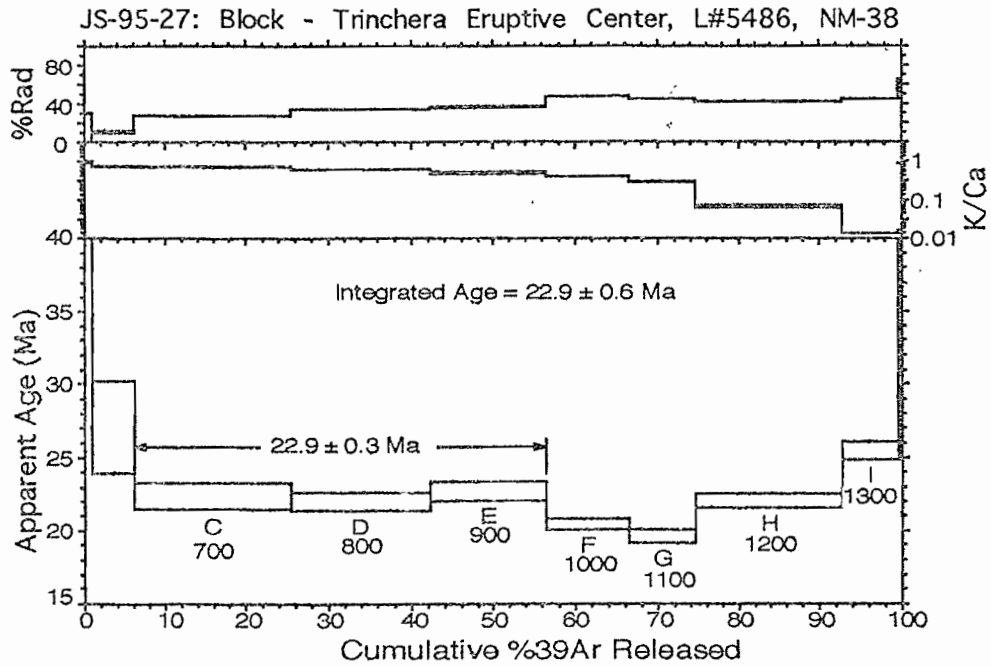

JS-95-23: Bartlett Mesa flow - Little Horse Mesa, L#5484, NM-38
%Rad
K/Ca
Integrated Age = 4.57 ± 0.26 Ma
Apparent Age (Ma)
3.9 ± 0.1 Ma
C 700
D 800
E 900
F 1000
H 1200
Cumulative %39Ar Released

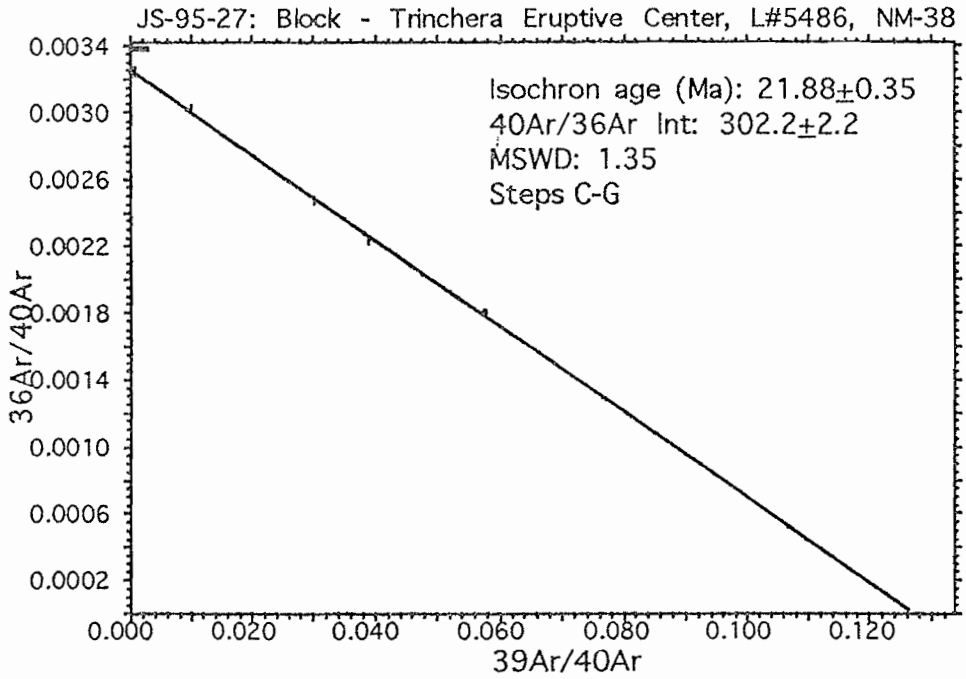

JS-95-23: Bartlett Mesa flow - Little Horse Mesa, L#5484, NM-38
Isochron age (Ma): 3.60±0.07
40Ar/36Ar Int: 306.2±1.4
MSWD: 0.28
Steps C-G
36Ar/40Ar
39Ar/40Ar

B-33

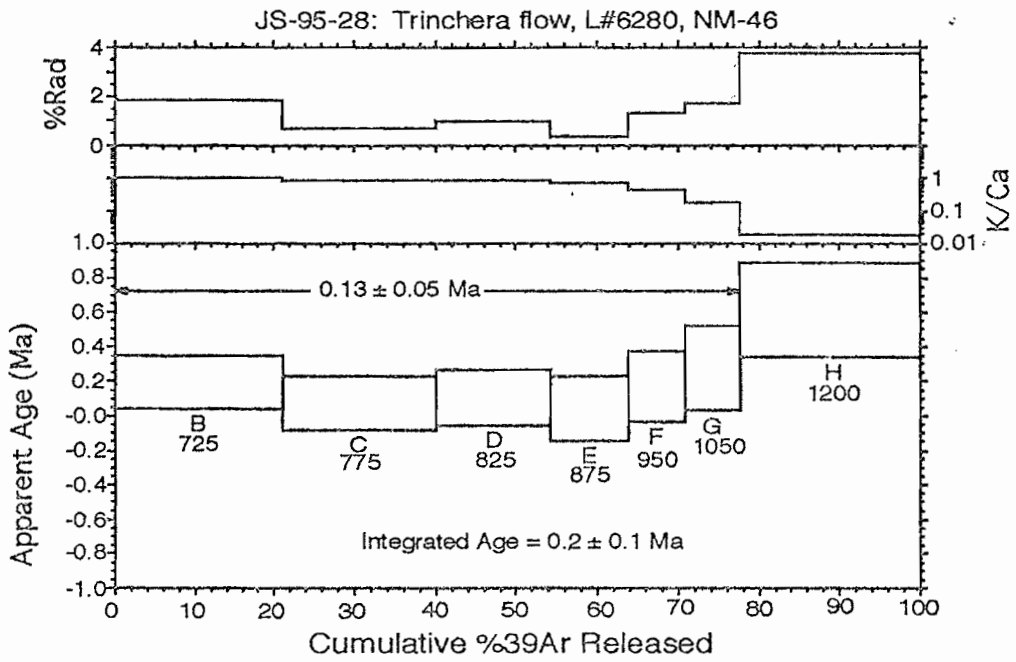

JS-95-25, Trinchera Dike, Raton Clayton, L#5485: NM-40
%Rad
Ca/K
Apparent Age (Ma)
B 600
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
Integrated Age = 21.8 ± 0.8 Ma
Cumulative %39Ar Released

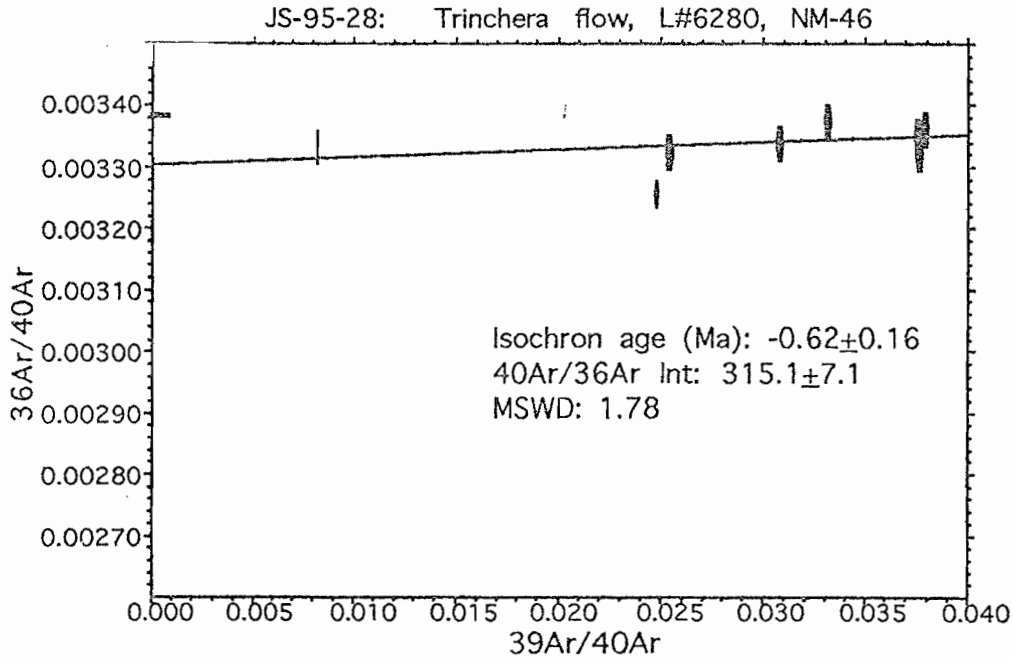

JS-95-25, Trinchera Dike, Raton Clayton, L#5485: NM-40
Isochron age (Ma): 19.4±0.2
40Ar/36Ar Int: 307.1±1.8
MSWD: 6.5
All steps
36Ar/40Ar
39Ar/40Ar


JS-95-27: Block - Trinchera Eruptive Center, L#5486, NM-38
%Rad
80
40
0
1
0.1
0.01
K/Ca
40
35
30
25
20
15
Apparent Age (Ma)
Integrated Age = 22.9 ± 0.6 Ma
22.9 ± 0.3 Ma
C
700
D
800
E
900
F
1000
G
1100
H
1200
I
1300
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

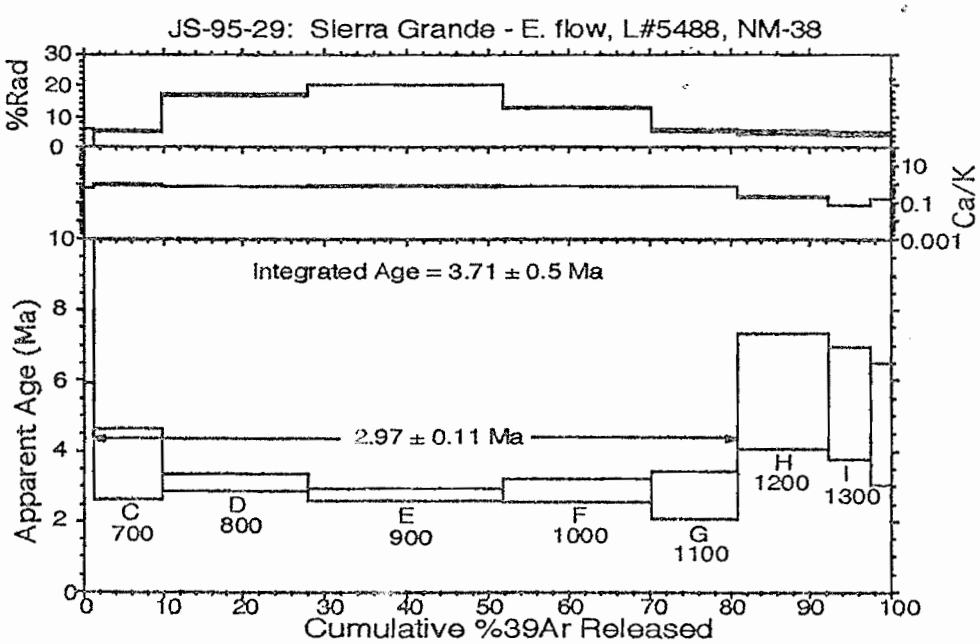

JS-95-27: Block - Trinchera Eruptive Center, L#5486, NM-38
Isochron age (Ma): 21.88±0.35
40Ar/36Ar Int: 302.2±2.2
MSWD: 1.35
Steps C-G
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
36Ar/40Ar
0.000
0.020
0.040
0.060
0.080
0.100
0.120
39Ar/40Ar

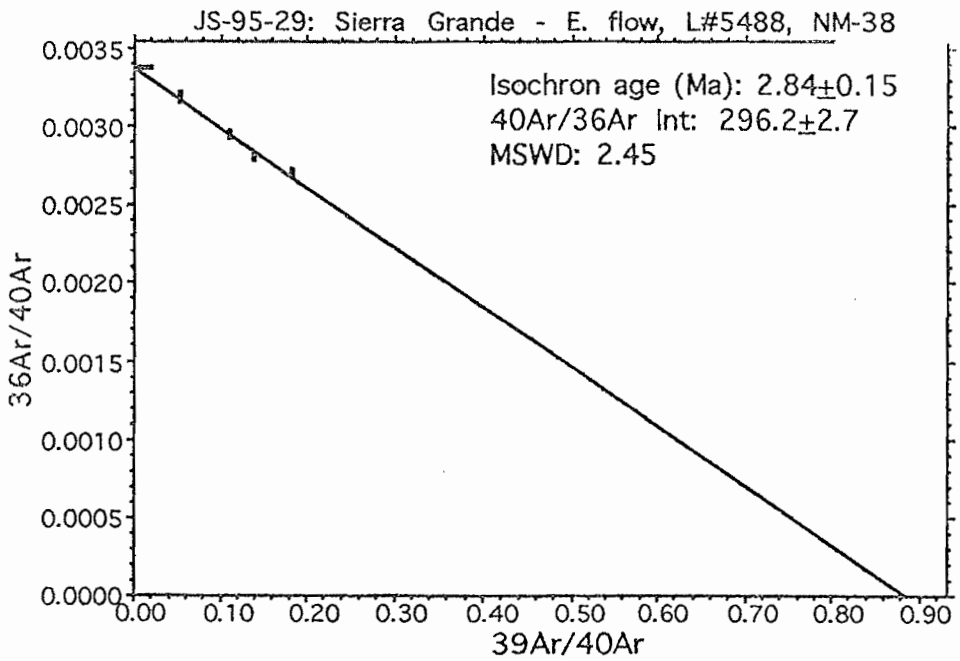
B-36


JS-95-28: Trinchera flow, L#6280, NM-46
%Rad
K/Ca
0.13 ± 0.05 Ma
Apparent Age (Ma)
B 725
C 775
D 825
E 875
F 950
G 1050
H 1200
Integrated Age = 0.2 ± 0.1 Ma
Cumulative %39Ar Released

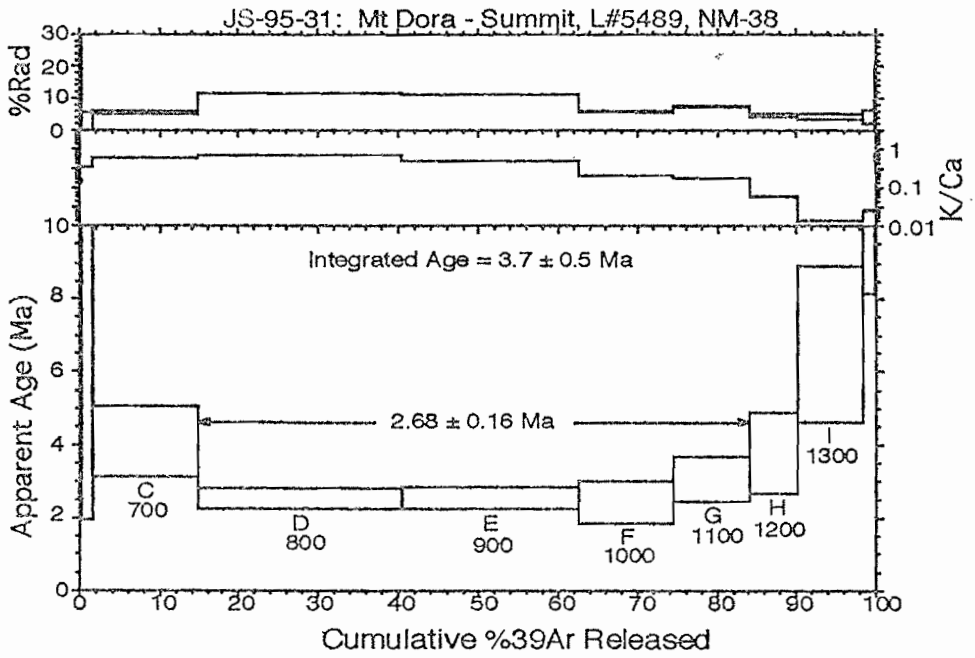

JS-95-28: Trinchera flow, L#6280, NM-46
36Ar/40Ar
Isochron age (Ma): -0.62±0.16
40Ar/36Ar Int: 315.1±7.1
MSWD: 1.78
39Ar/40Ar

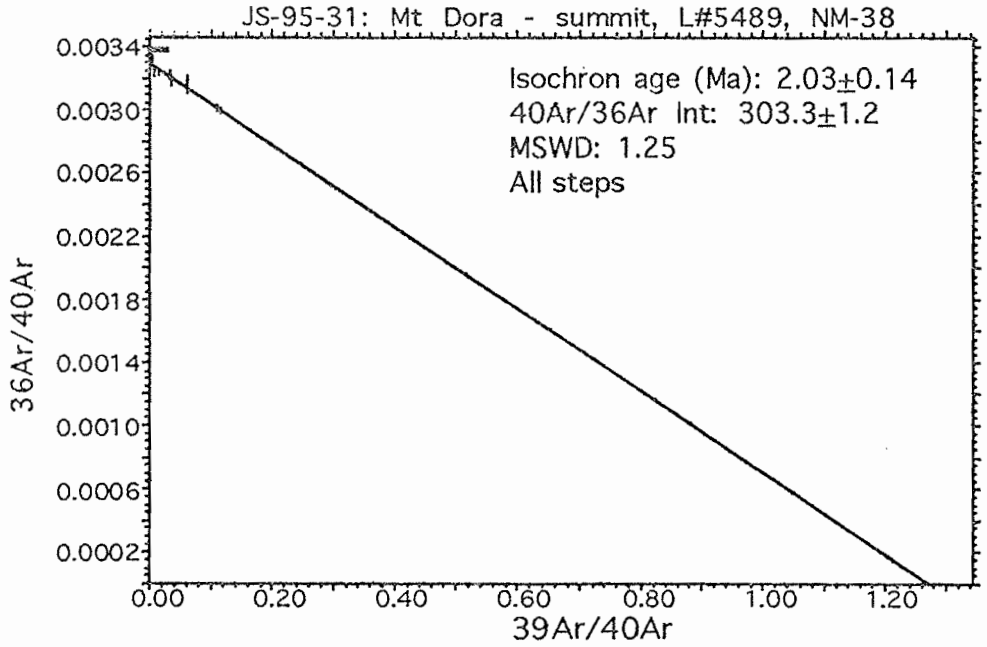
B-37


JS-95-29: Sierra Grande - E. flow, L#5488, NM-38
%Rad
Ca/K
Integrated Age = 3.71 ± 0.5 Ma
Apparent Age (Ma)
2.97 ± 0.11 Ma
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
Cumulative %39Ar Released

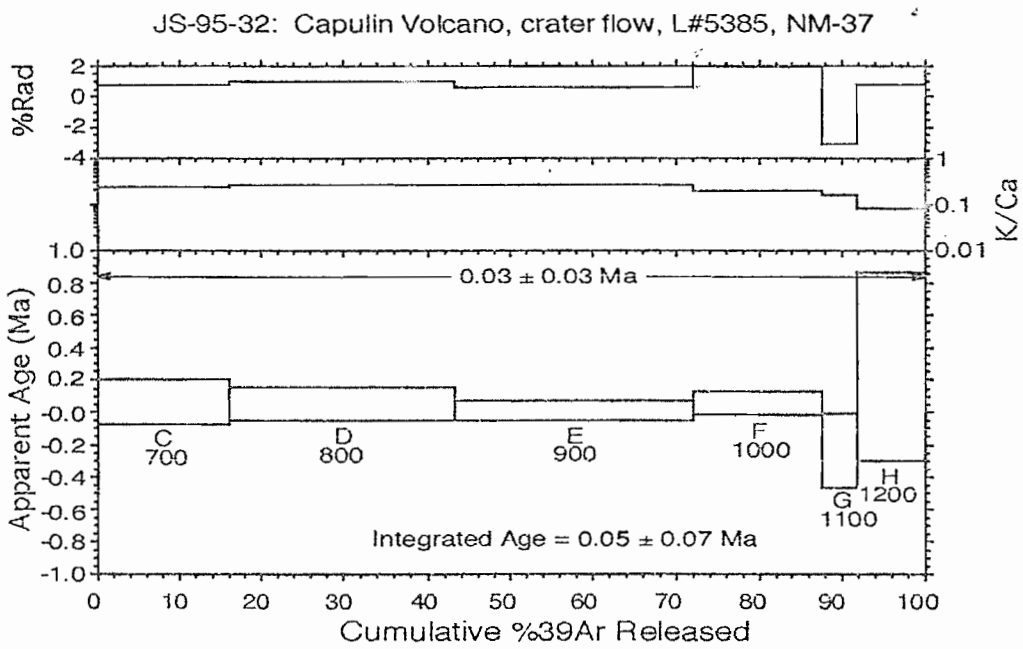

JS-95-29: Sierra Grande - E. flow, L#5488, NM-38
Isochron age (Ma): 2.84±0.15
40Ar/36Ar Int: 296.2±2.7
MSWD: 2.45
36Ar/40Ar
39Ar/40Ar

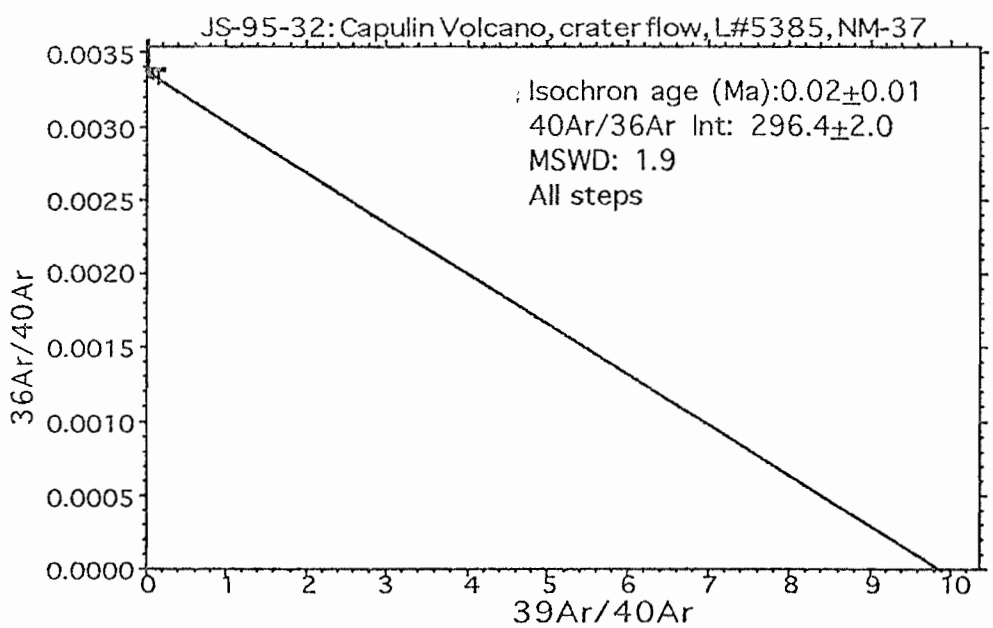
B-38


JS-95-31: Mt Dora - Summit, L#5489, NM-38
%Rad
K/Ca
Integrated Age = 3.7 ± 0.5 Ma
2.68 ± 0.16 Ma
Apparent Age (Ma)
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
Cumulative %39Ar Released

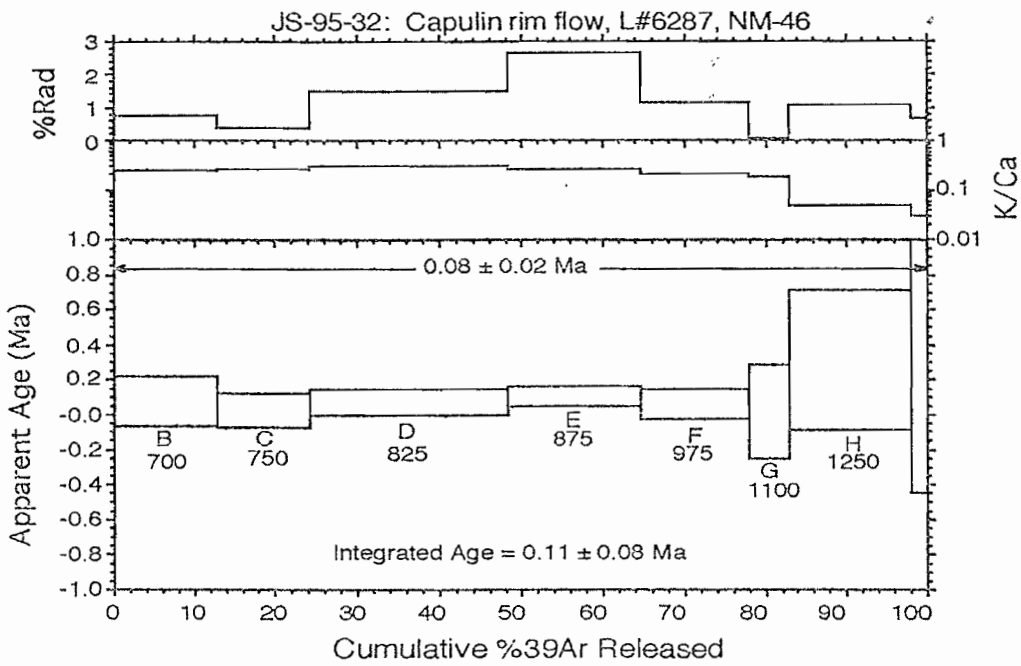

JS-95-31: Mt Dora - summit, L#5489, NM-38
Isochron age (Ma): 2.03±0.14
40Ar/36Ar Int: 303.3±1.2
MSWD: 1.25
All steps
36Ar/40Ar
39Ar/40Ar

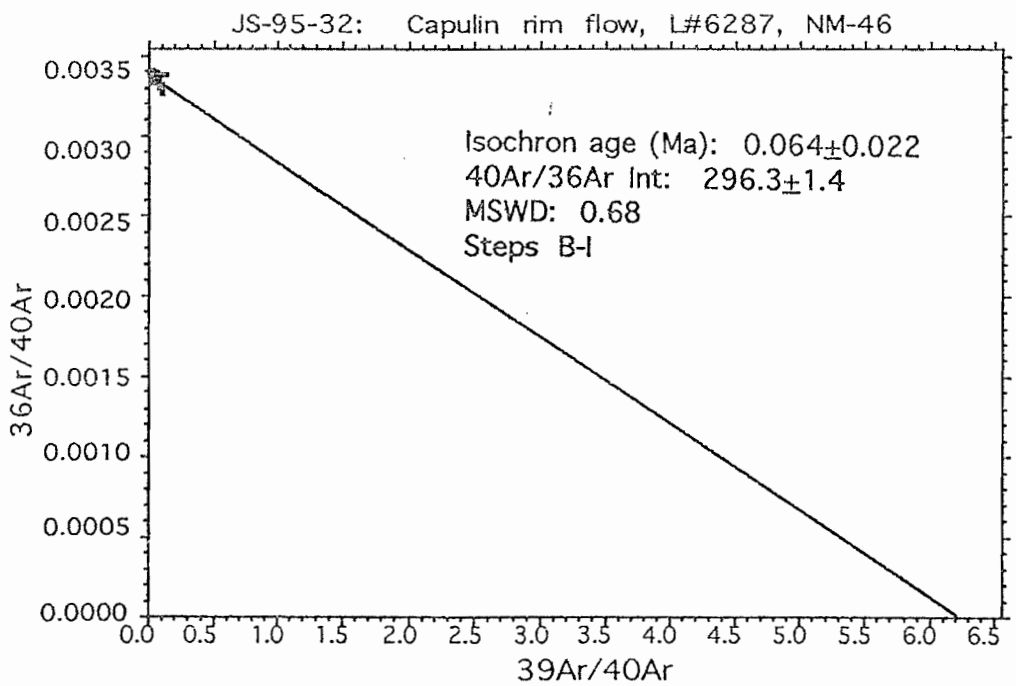
B-39


JS-95-32: Capulin Volcano, crater flow, L#5385, NM-37
%Rad
K/Ca
0.03 ± 0.03 Ma
Apparent Age (Ma)
C 700
D 800
E 900
F 1000
G 1100
H 1200
Integrated Age = 0.05 ± 0.07 Ma
Cumulative %39Ar Released

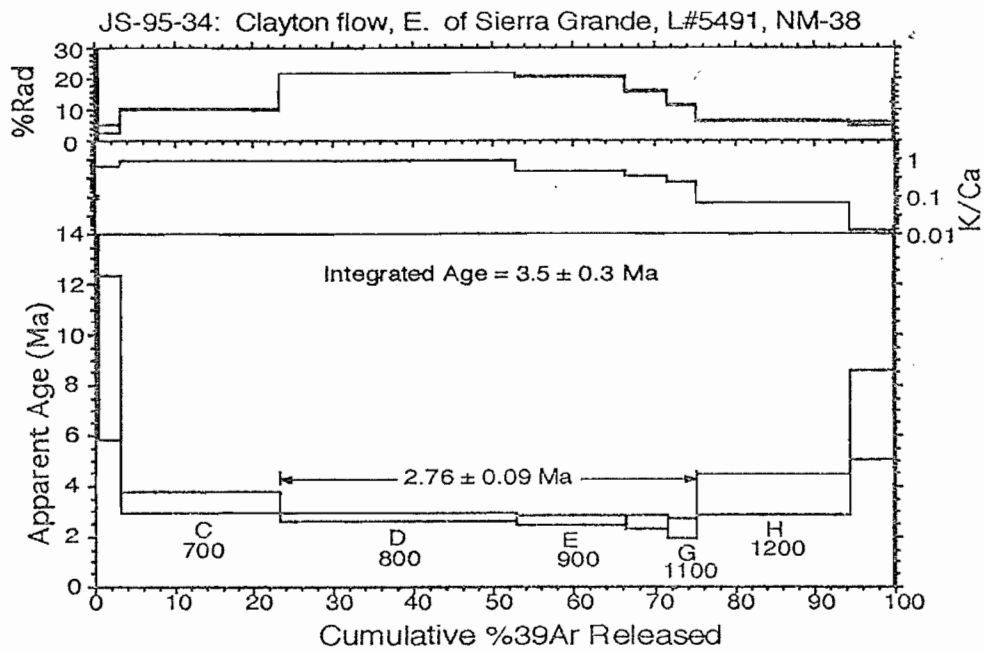

JS-95-32: Capulin Volcano, crater flow, L#5385, NM-37
Isochron age (Ma):0.02±0.01
40Ar/36Ar Int: 296.4±2.0
MSWD: 1.9
All steps
36Ar/40Ar
39Ar/40Ar

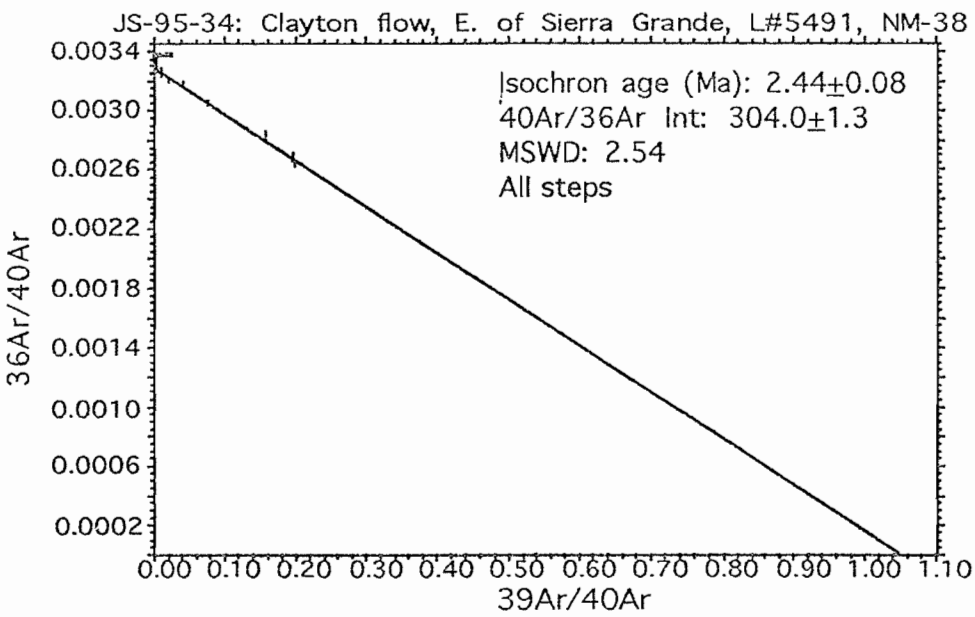
B-40

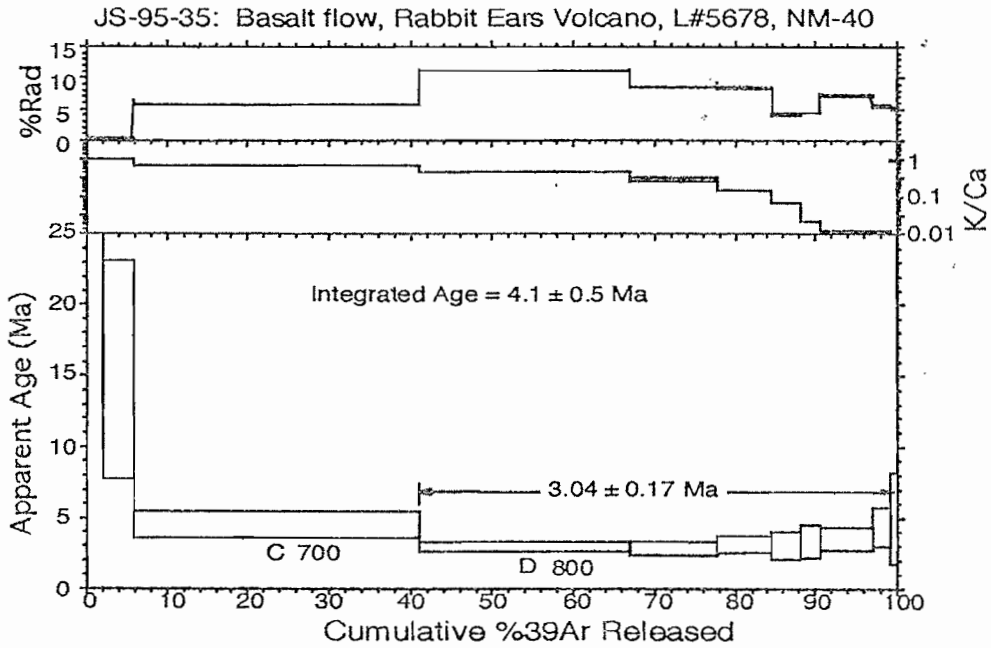

JS-95-32: Capulin rim flow, L#6287, NM-46
%Rad
K/Ca
0.08 ± 0.02 Ma
Apparent Age (Ma)
B 700
C 750
D 825
E 875
F 975
G 1100
H 1250
Integrated Age = 0.11 ± 0.08 Ma
Cumulative %39Ar Released

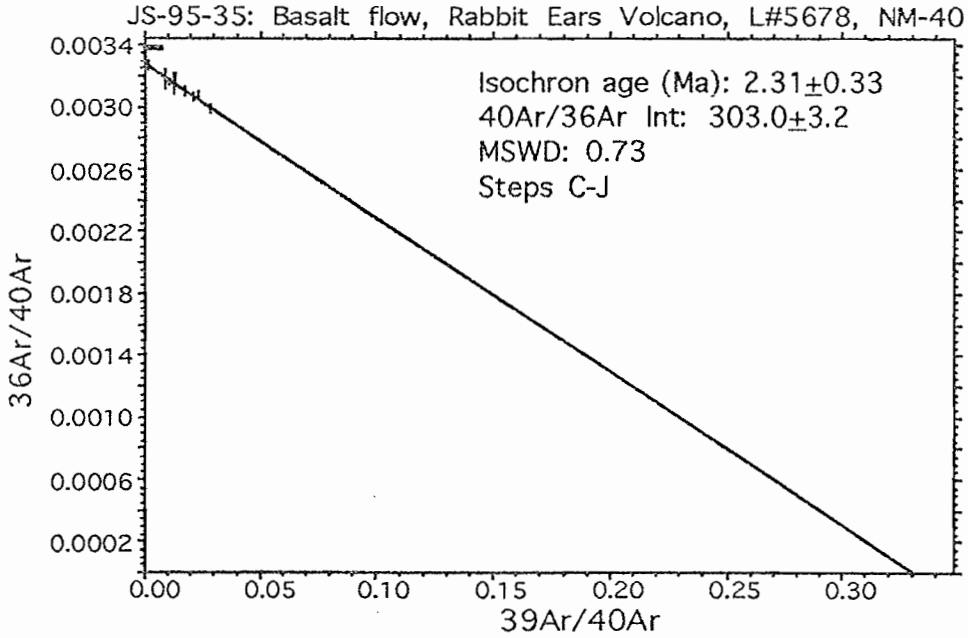

JS-95-32: Capulin rim flow, L#6287, NM-46
Isochron age (Ma): 0.064±0.022
40Ar/36Ar Int: 296.3±1.4
MSWD: 0.68
Steps B-I
36Ar/40Ar
39Ar/40Ar

B-41

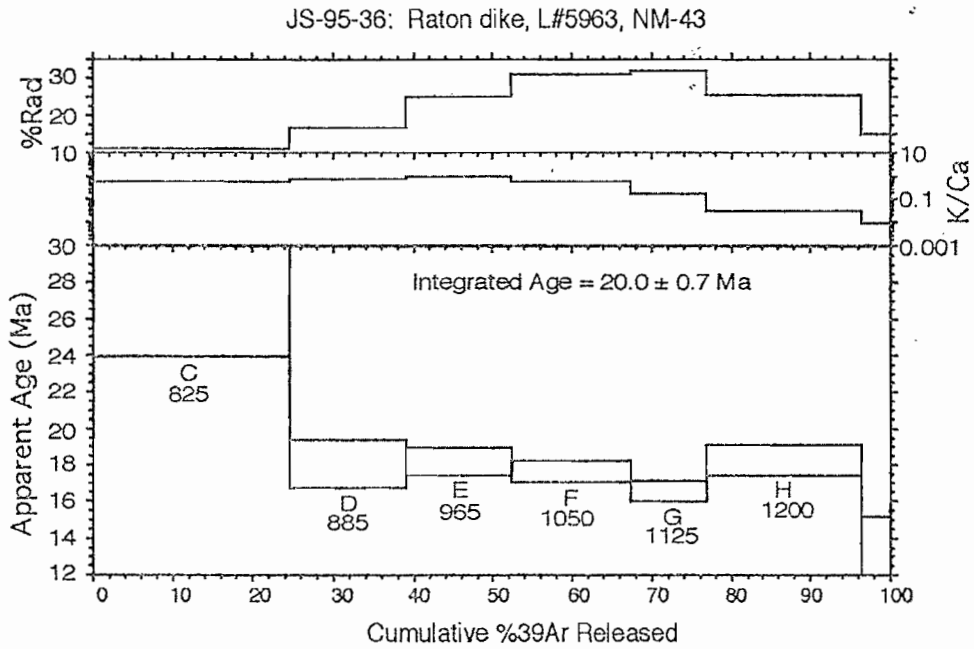

JS-95-34: Clayton flow, E. of Sierra Grande, L#5491, NM-38
%Rad
K/Ca
Integrated Age = 3.5 ± 0.3 Ma
Apparent Age (Ma)
2.76 ± 0.09 Ma
C 700
D 800
E 900
G 1100
H 1200
Cumulative %39Ar Released

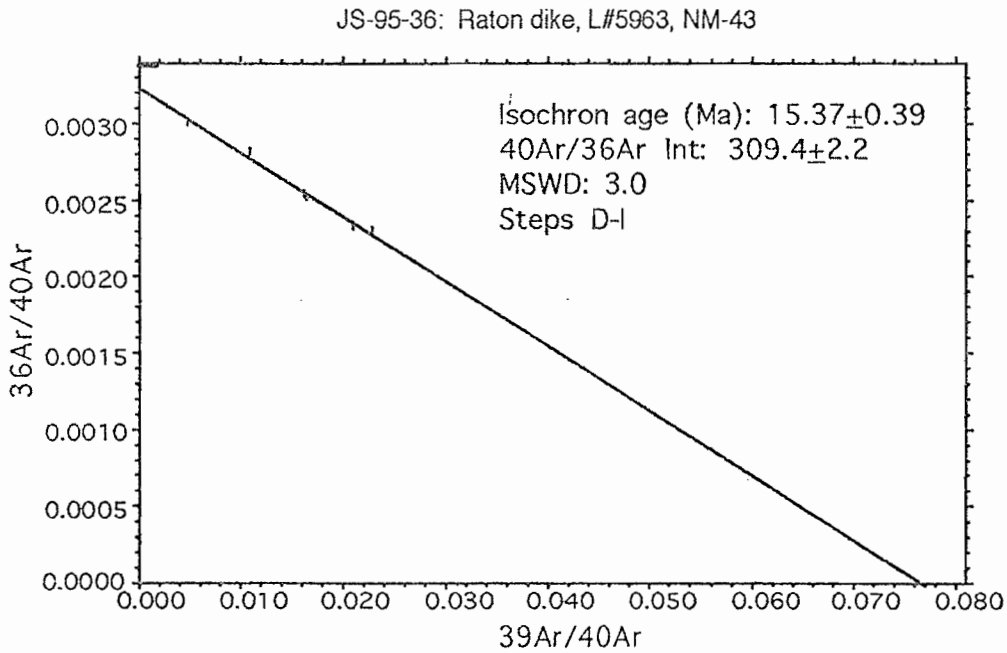

JS-95-34: Clayton flow, E. of Sierra Grande, L#5491, NM-38
Isochron age (Ma): 2.44±0.08
40Ar/36Ar Int: 304.0±1.3
MSWD: 2.54
All steps
36Ar/40Ar
39Ar/40Ar


JS-95-35: Basalt flow, Rabbit Ears Volcano, L#5678, NM-40
%Rad
K/Ca
Apparent Age (Ma)
Integrated Age = 4.1 ± 0.5 Ma
3.04 ± 0.17 Ma
C 700
D 800
Cumulative %39Ar Released

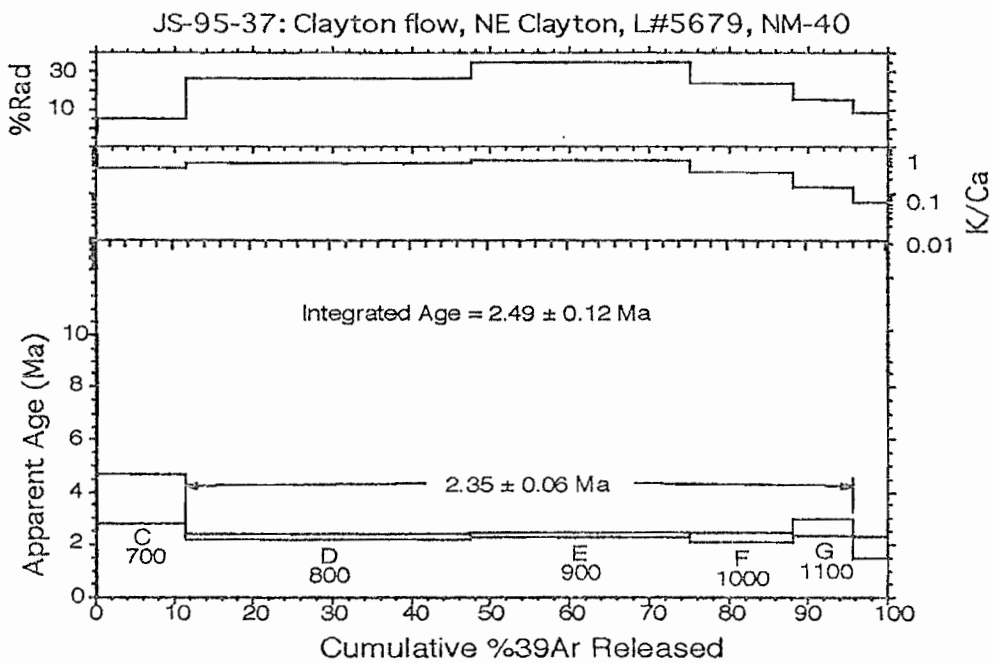

JS-95-35: Basalt flow, Rabbit Ears Volcano, L#5678, NM-40
Isochron age (Ma): 2.31±0.33
40Ar/36Ar Int: 303.0±3.2
MSWD: 0.73
Steps C-J
36Ar/40Ar
39Ar/40Ar

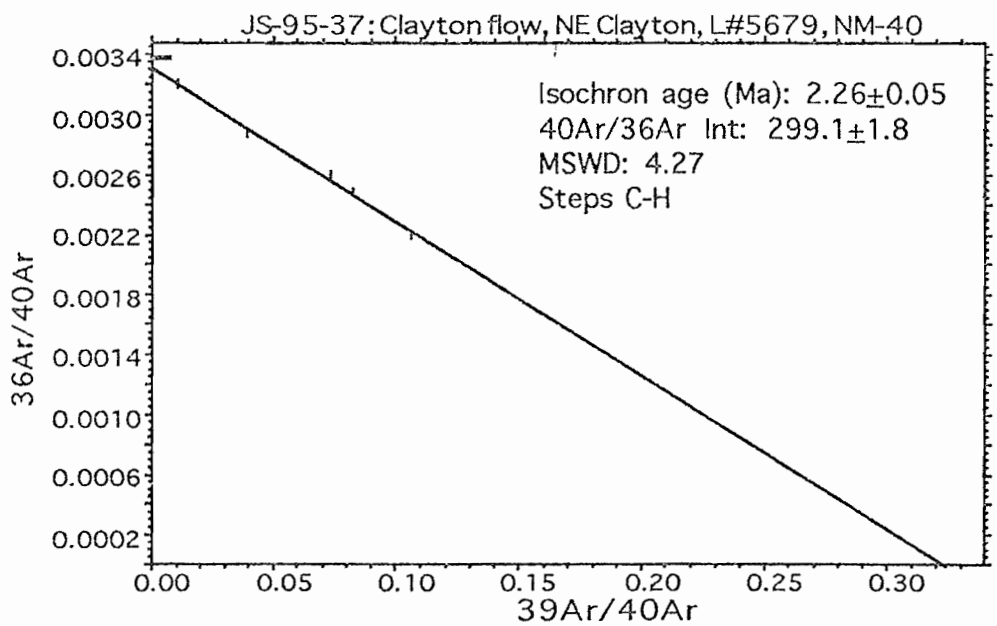
B-43


JS-95-36: Raton dike, L#5963, NM-43
%Rad
K/Ca
Integrated Age = 20.0 ± 0.7 Ma
Apparent Age (Ma)
C
625
D
885
E
965
F
1050
G
1125
H
1200
Cumulative %39Ar Released

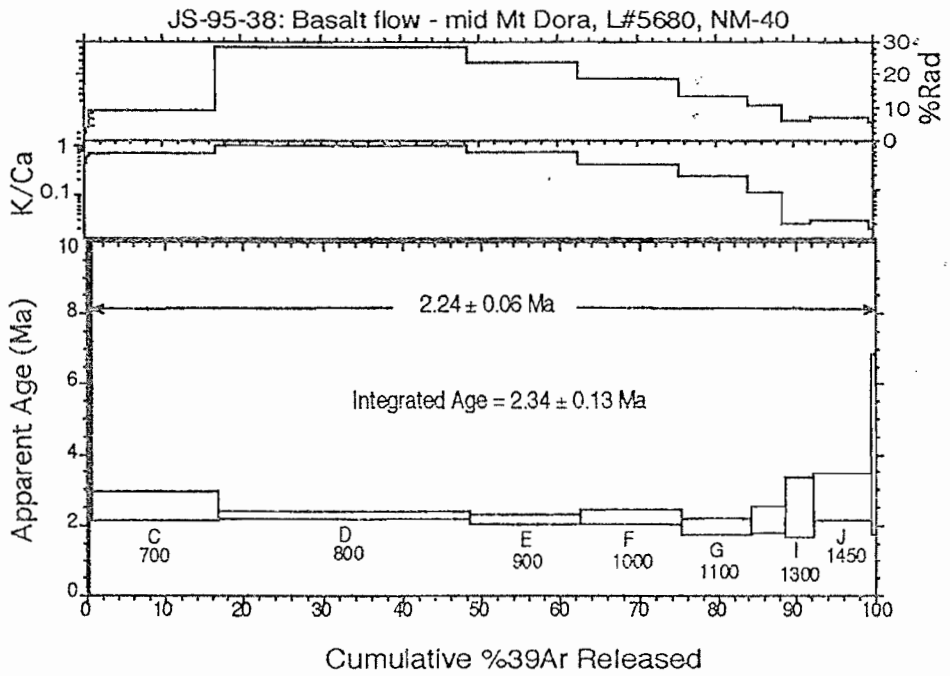

JS-95-36: Raton dike, L#5963, NM-43
Isochron age (Ma): 15.37±0.39
40Ar/36Ar Int: 309.4±2.2
MSWD: 3.0
Steps D-I
36Ar/40Ar
39Ar/40Ar

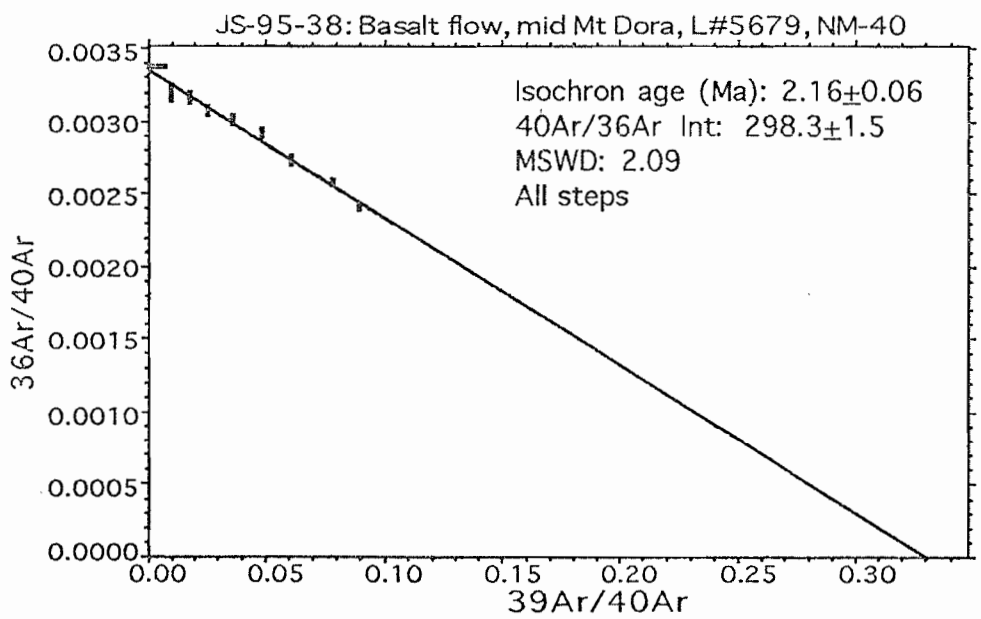
B-44


JS-95-37: Clayton flow, NE Clayton, L#5679, NM-40
%Rad
30
10
1
0.1
0.01
K/Ca
Integrated Age = 2.49 ± 0.12 Ma
Apparent Age (Ma)
10
8
6
4
2
0
2.35 ± 0.06 Ma
C 700
D 800
E 900
F 1000
G 1100
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

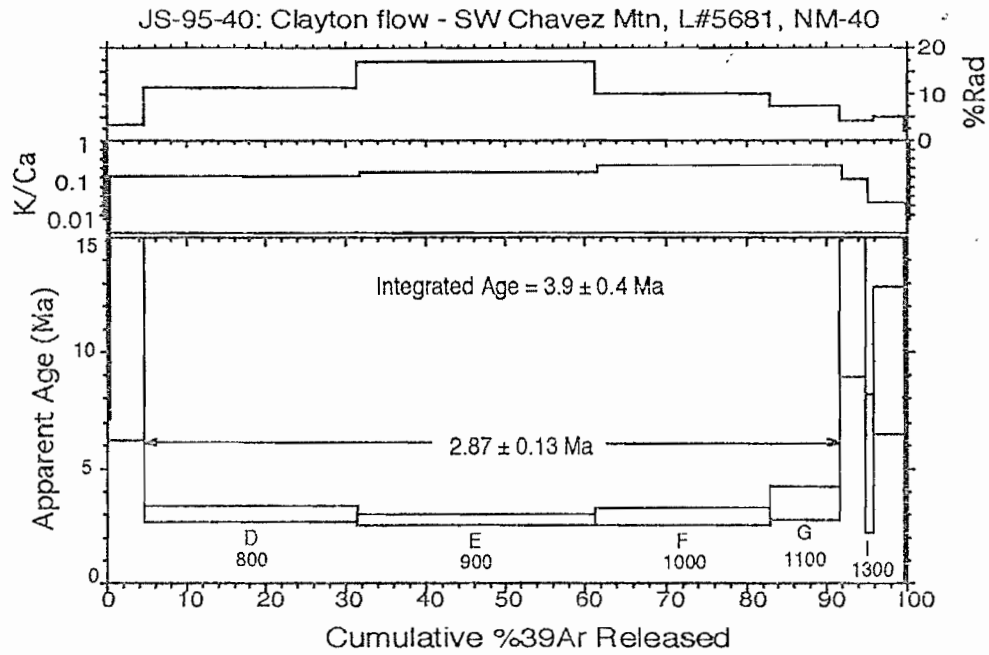

JS-95-37: Clayton flow, NE Clayton, L#5679, NM-40
Isochron age (Ma): 2.26±0.05
40Ar/36Ar Int: 299.1±1.8
MSWD: 4.27
Steps C-H
36Ar/40Ar
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
0.00
0.05
0.10
0.15
0.20
0.25
0.30
39Ar/40Ar

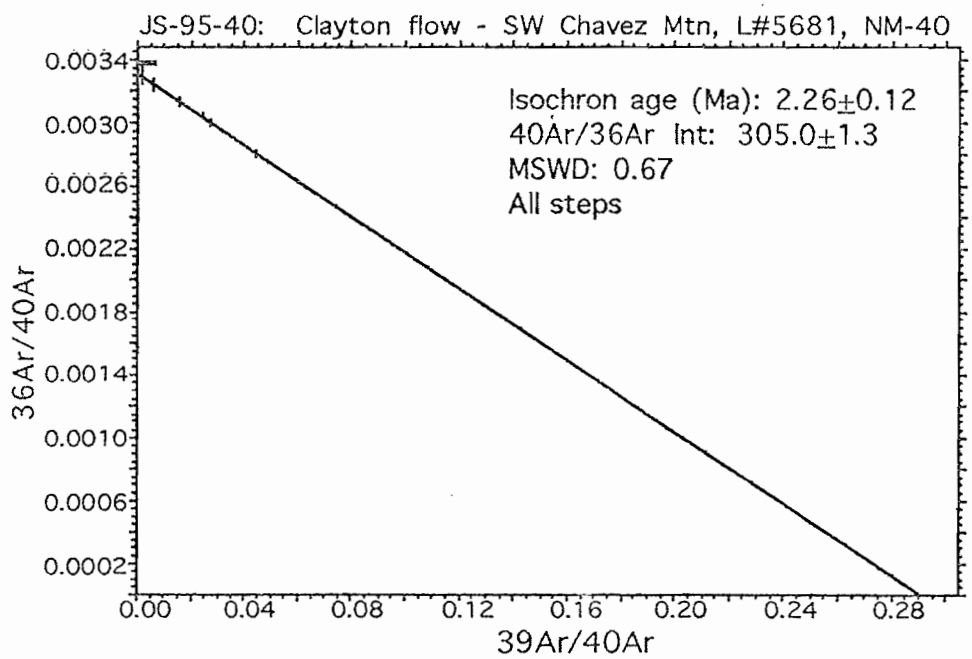
B-45


JS-95-38: Basalt flow - mid Mt Dora, L#5680, NM-40
%Rad
K/Ca
Apparent Age (Ma)
2.24 ± 0.06 Ma
Integrated Age = 2.34 ± 0.13 Ma
C 700
D 800
E 900
F 1000
G 1100
I 1300
J 1450
Cumulative %39Ar Released

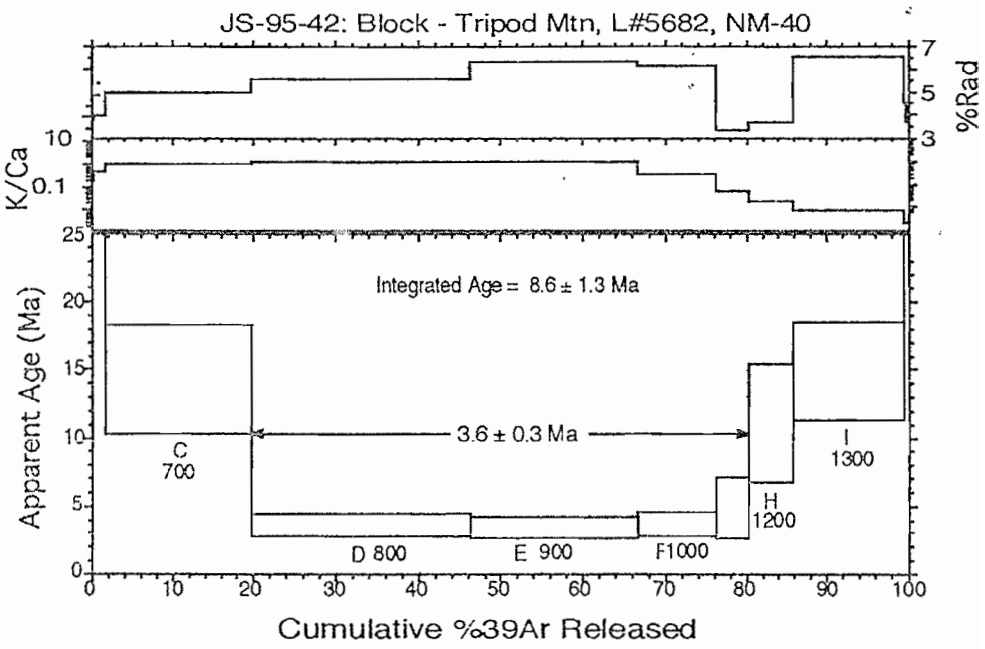

JS-95-38: Basalt flow, mid Mt Dora, L#5679, NM-40
Isochron age (Ma): 2.16±0.06
40Ar/36Ar Int: 298.3±1.5
MSWD: 2.09
All steps
36Ar/40Ar
39Ar/40Ar

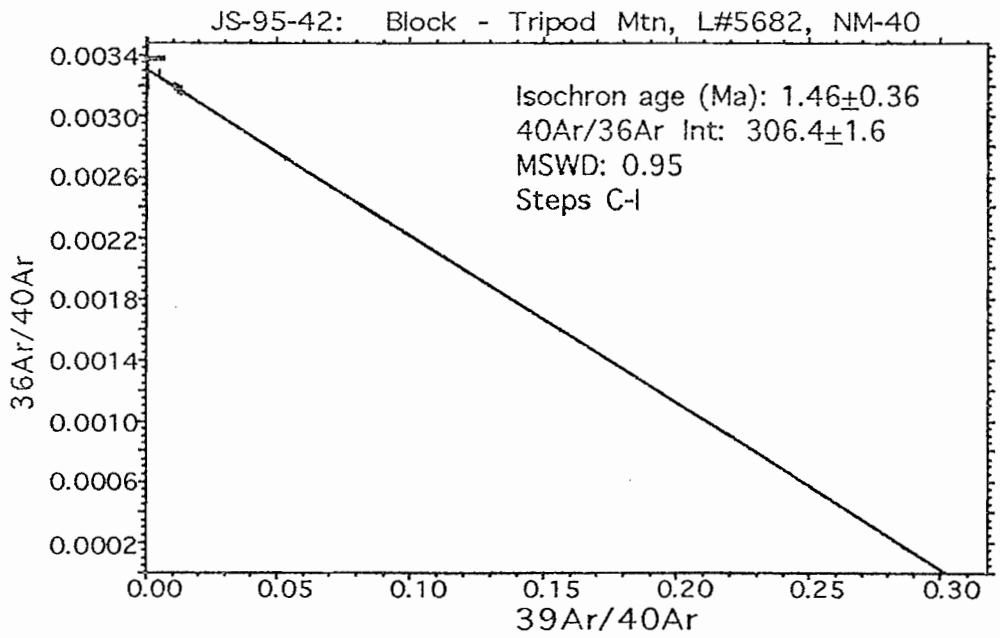
B-46


JS-95-40: Clayton flow - SW Chavez Mtn, L#5681, NM-40
%Rad
K/Ca
Apparent Age (Ma)
Integrated Age = 3.9 ± 0.4 Ma
2.87 ± 0.13 Ma
D 800
E 900
F 1000
G 1100
I 1300
Cumulative %39Ar Released

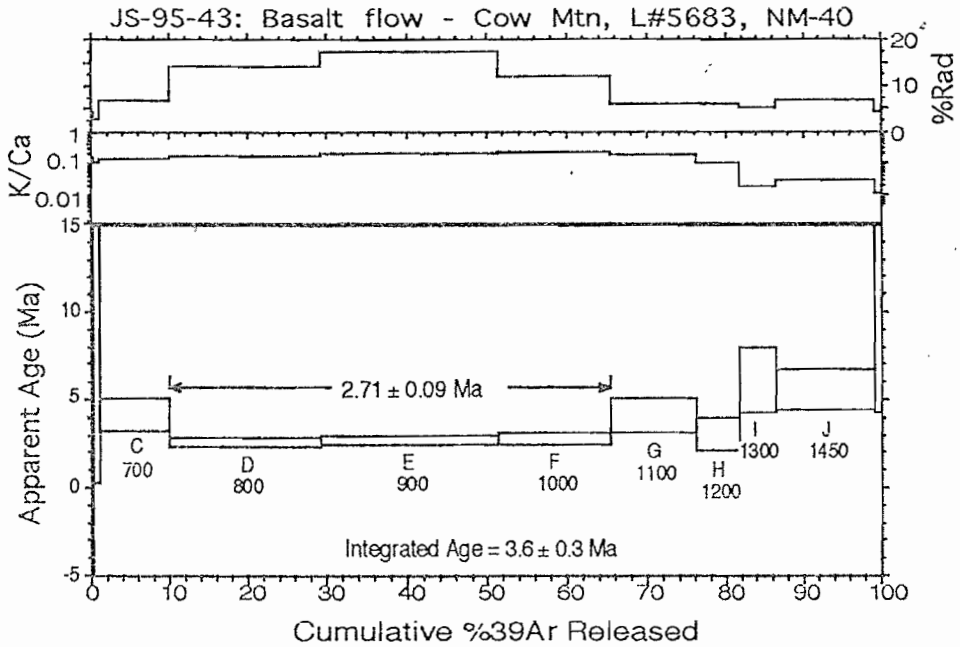

JS-95-40: Clayton flow - SW Chavez Mtn, L#5681, NM-40
Isochron age (Ma): 2.26±0.12
40Ar/36Ar Int: 305.0±1.3
MSWD: 0.67
All steps
36Ar/40Ar
39Ar/40Ar

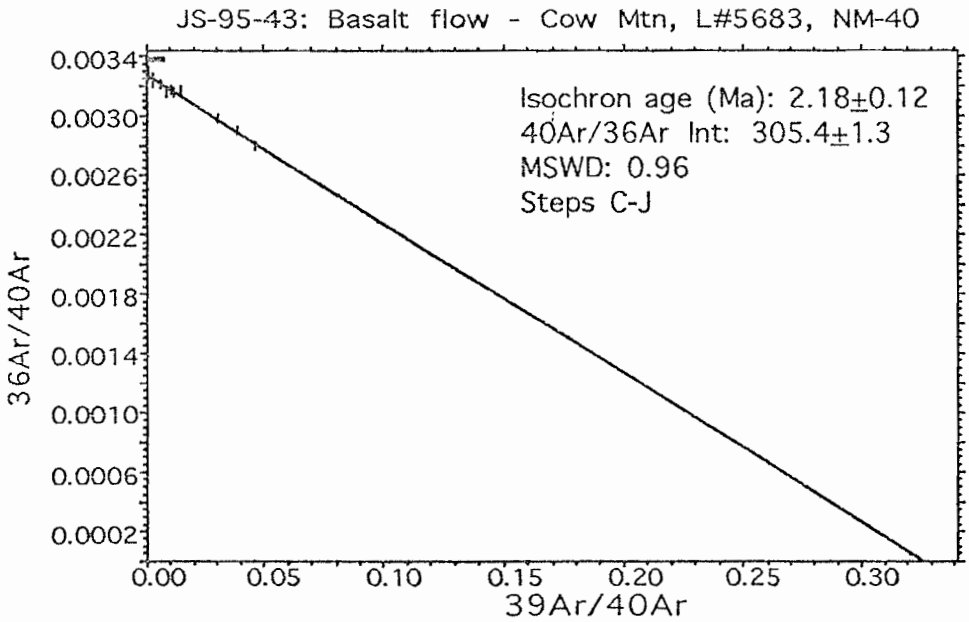
B-47


JS-95-42: Block - Tripod Mtn, L#5682, NM-40
%Rad
K/Ca
Apparent Age (Ma)
Integrated Age = 8.6 ± 1.3 Ma
3.6 ± 0.3 Ma
C 700
D 800
E 900
F1000
H 1200
I 1300
Cumulative %39Ar Released

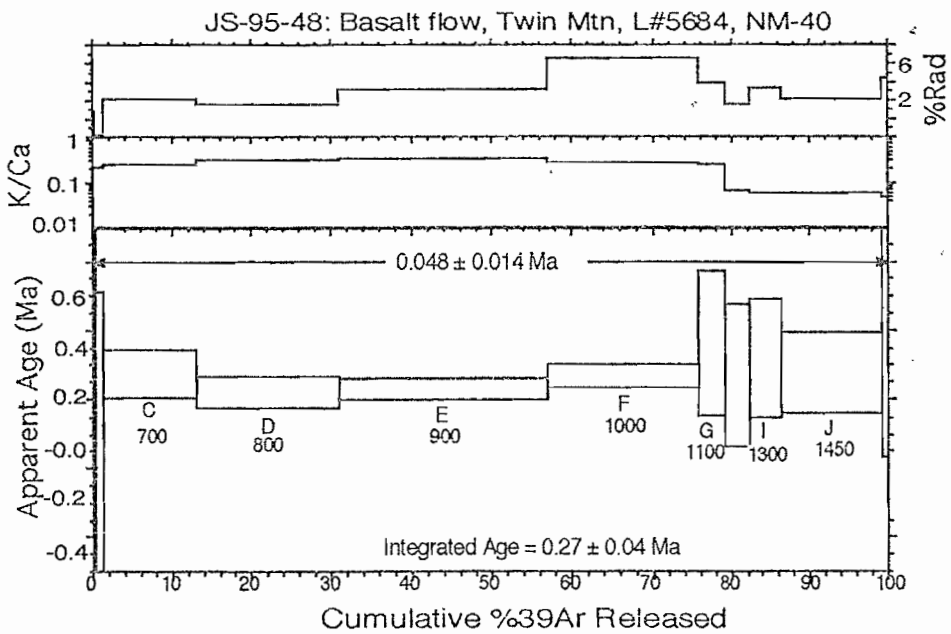

JS-95-42: Block - Tripod Mtn, L#5682, NM-40
Isochron age (Ma): 1.46±0.36
40Ar/36Ar Int: 306.4±1.6
MSWD: 0.95
Steps C-I
36Ar/40Ar
39Ar/40Ar

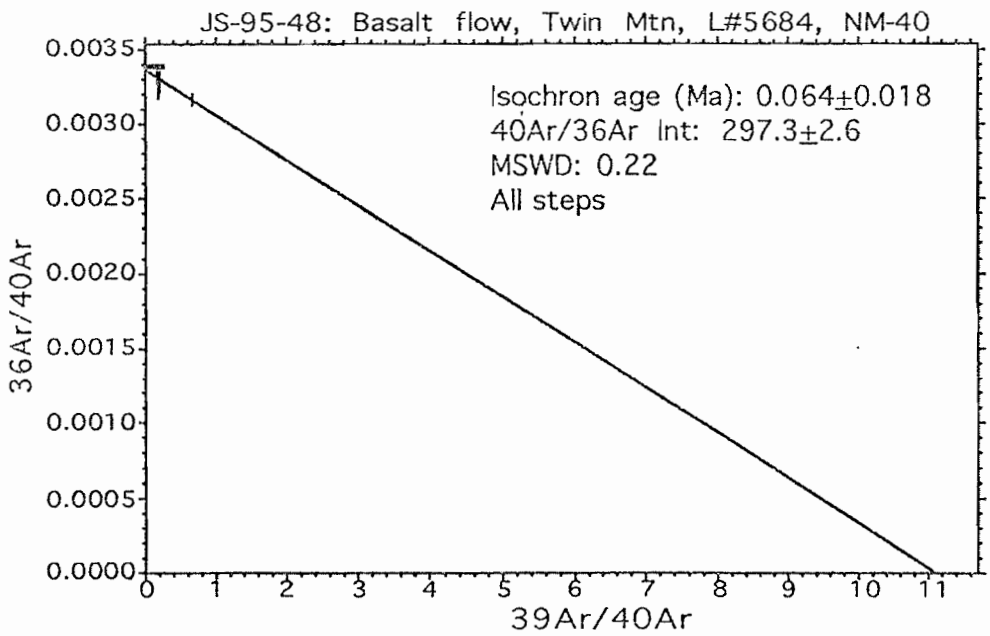
B-48


JS-95-43: Basalt flow - Cow Mtn, L#5683, NM-40
%Rad
K/Ca
Apparent Age (Ma)
2.71 ± 0.09 Ma
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
J 1450
Integrated Age = 3.6 ± 0.3 Ma
Cumulative %39Ar Released

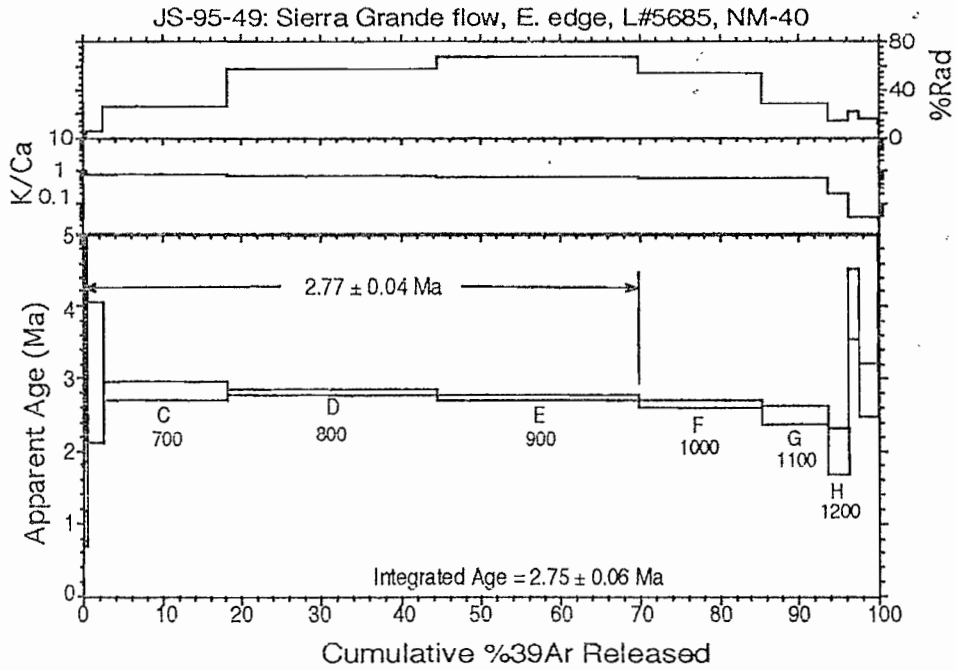

JS-95-43: Basalt flow - Cow Mtn, L#5683, NM-40
Isochron age (Ma): 2.18±0.12
40Ar/36Ar Int: 305.4±1.3
MSWD: 0.96
Steps C-J
36Ar/40Ar
39Ar/40Ar

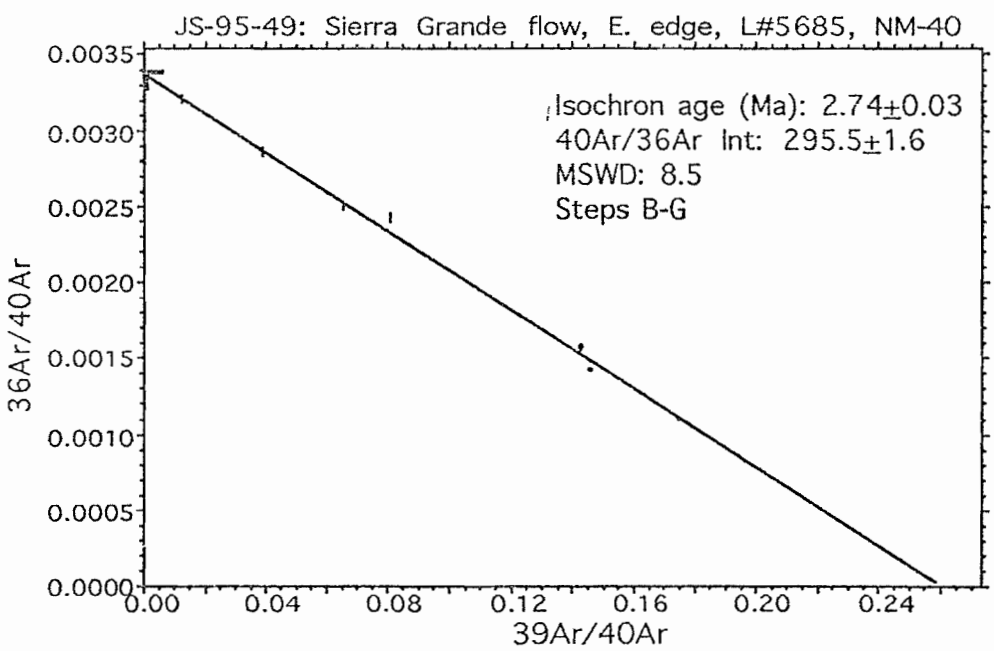
B-49


JS-95-48: Basalt flow, Twin Mtn, L#5684, NM-40
%Rad
K/Ca
0.048 ± 0.014 Ma
Apparent Age (Ma)
C 700
D 800
E 900
F 1000
G 1100
I 1300
J 1450
Integrated Age = 0.27 ± 0.04 Ma
Cumulative %39Ar Released

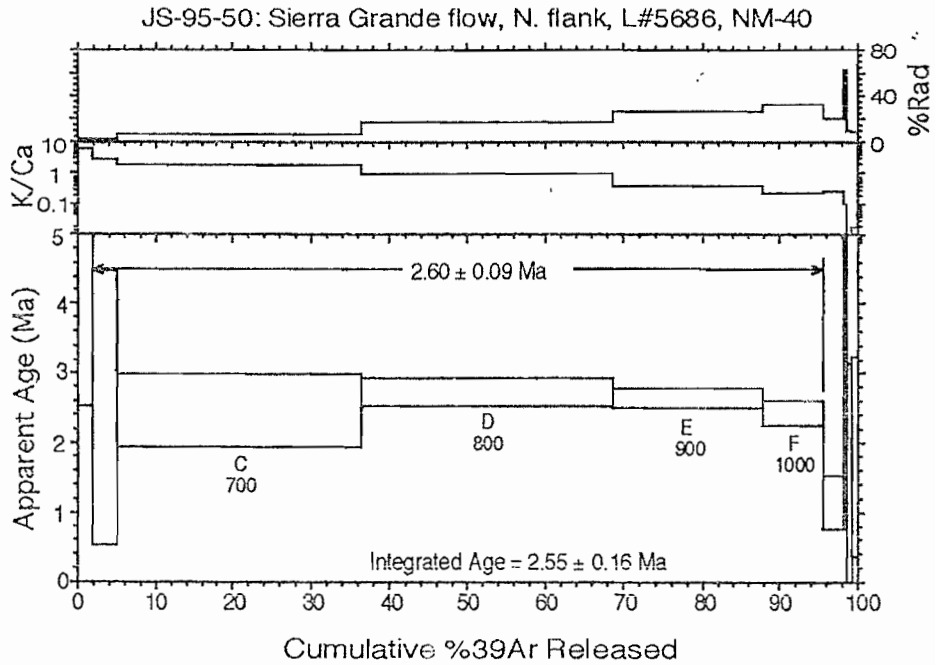

JS-95-48: Basalt flow, Twin Mtn, L#5684, NM-40
Isochron age (Ma): 0.064±0.018
40Ar/36Ar Int: 297.3±2.6
MSWD: 0.22
All steps
36Ar/40Ar
39Ar/40Ar

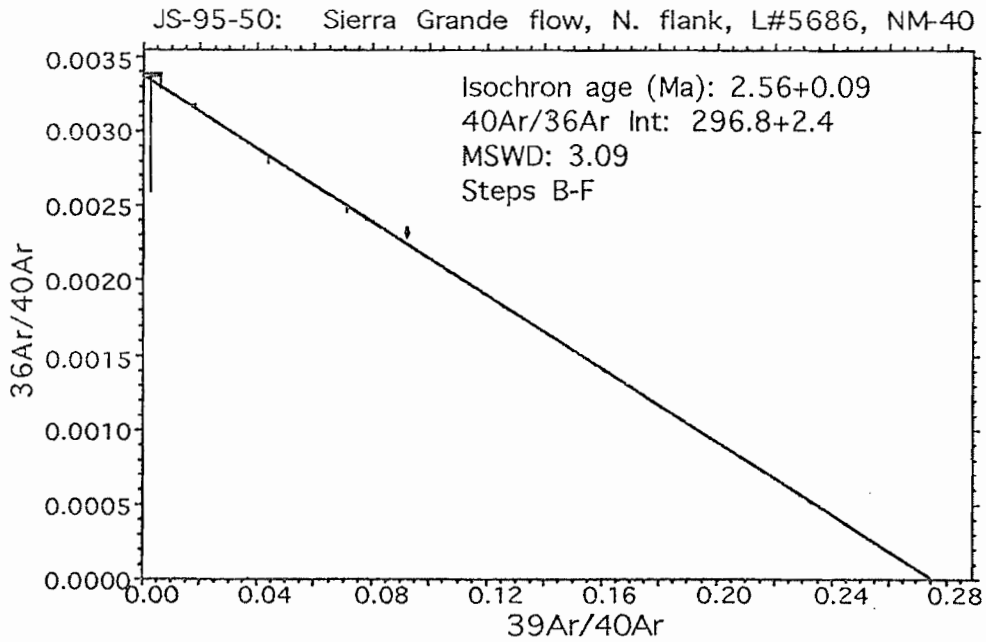
B-51

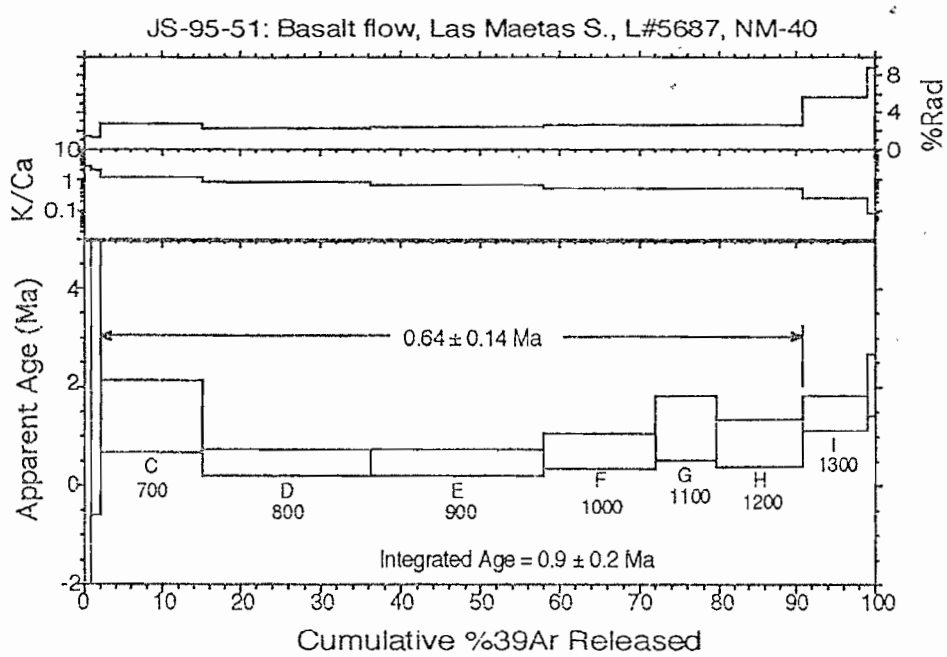

JS-95-49: Sierra Grande flow, E. edge, L#5685, NM-40
%Rad
80
40
0
K/Ca
10
1
0.1
5
2.77 ± 0.04 Ma
Apparent Age (Ma)
C
700
D
800
E
900
F
1000
G
1100
H
1200
Integrated Age = 2.75 ± 0.06 Ma
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

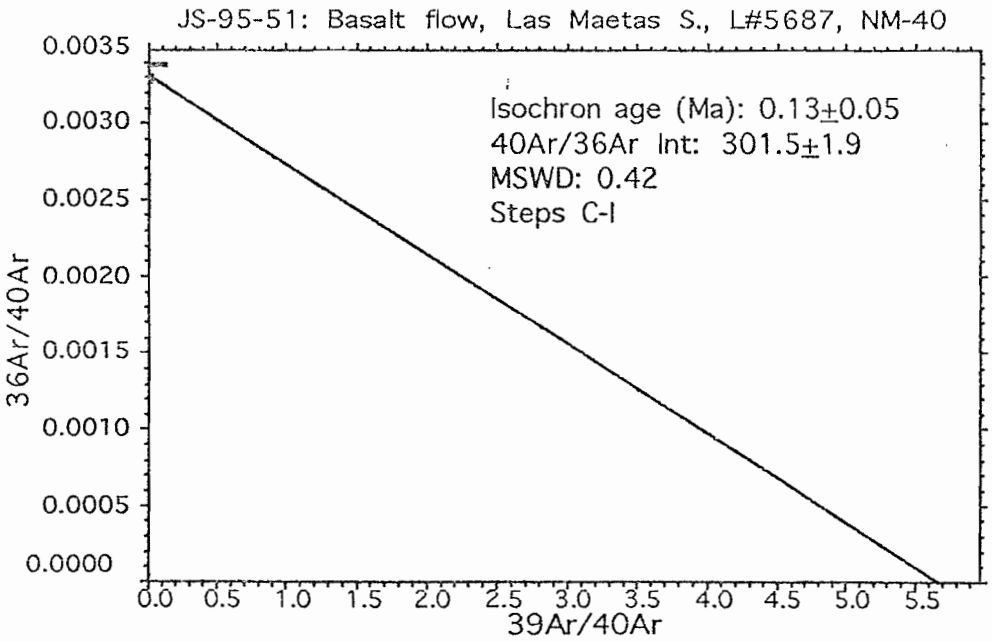

JS-95-49: Sierra Grande flow, E. edge, L#5685, NM-40
Isochron age (Ma): 2.74±0.03
40Ar/36Ar Int: 295.5±1.6
MSWD: 8.5
Steps B-G
36Ar/40Ar
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0.00
0.04
0.08
0.12
0.16
0.20
0.24
39Ar/40Ar

B-52

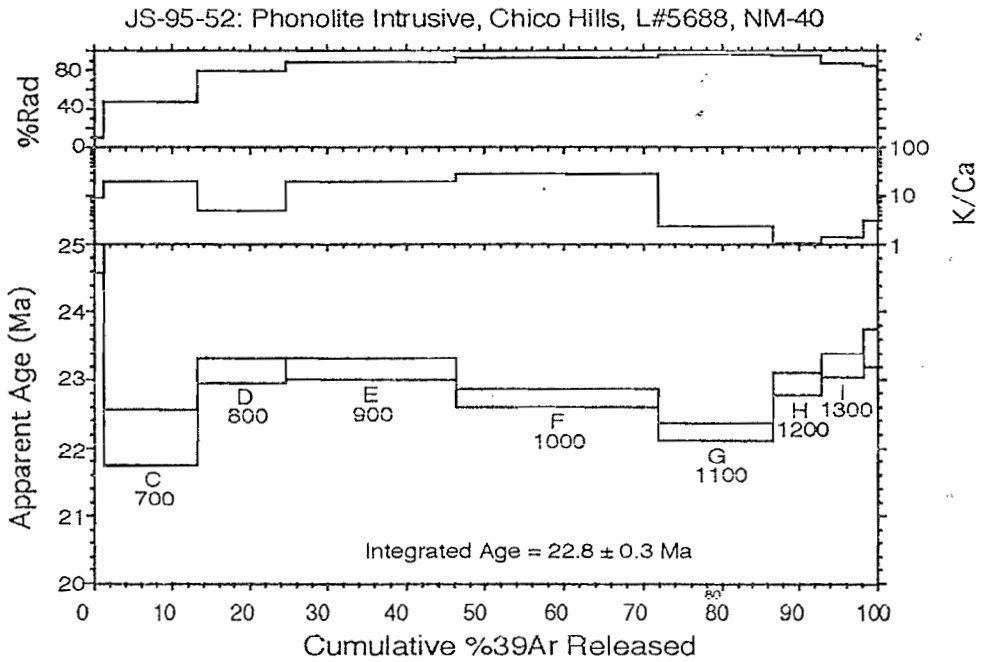

JS-95-50: Sierra Grande flow, N. flank, L#5686, NM-40
K/Ca
%Rad
Apparent Age (Ma)
2.60 ± 0.09 Ma
C
700
D
800
E
900
F
1000
Integrated Age = 2.55 ± 0.16 Ma
Cumulative %39Ar Released

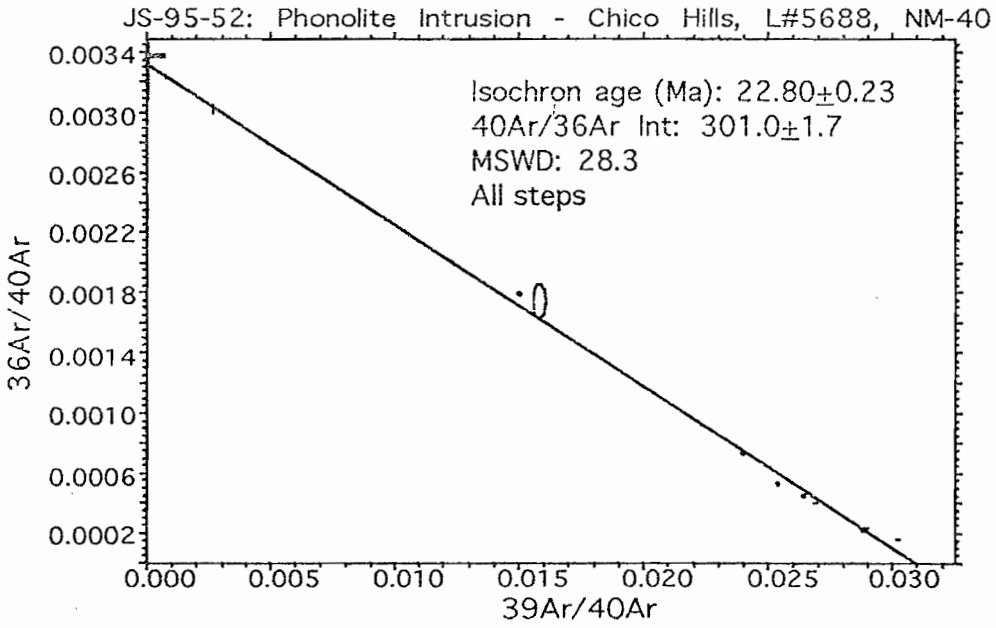

JS-95-50: Sierra Grande flow, N. flank, L#5686, NM-40
Isochron age (Ma): 2.56+0.09
40Ar/36Ar Int: 296.8+2.4
MSWD: 3.09
Steps B-F
36Ar/40Ar
39Ar/40Ar

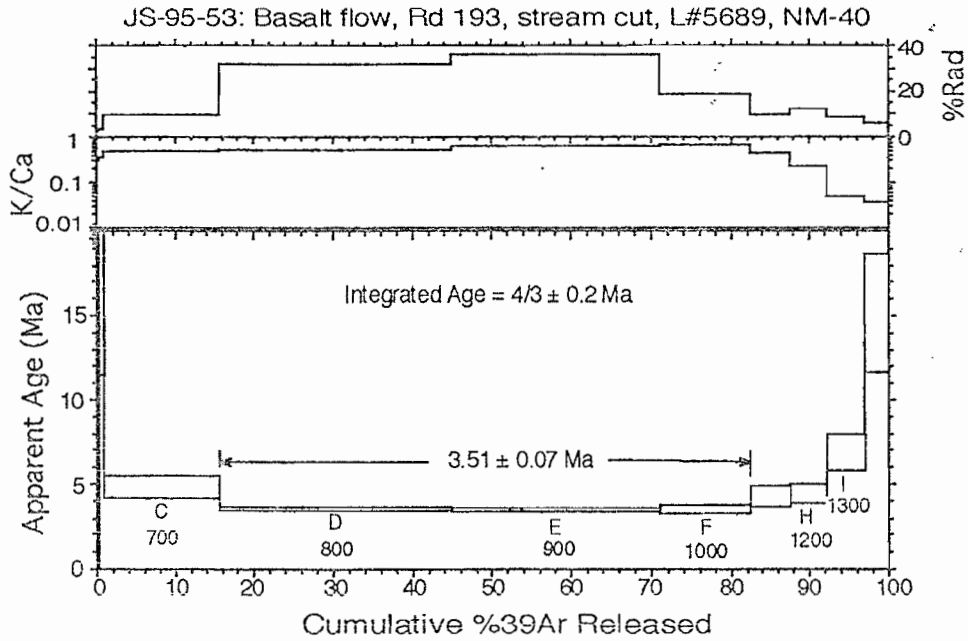

JS-95-51: Basalt flow, Las Maetas S., L#5687, NM-40
K/Ca
%Rad
Apparent Age (Ma)
0.64 ± 0.14 Ma
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
Integrated Age = 0.9 ± 0.2 Ma
Cumulative %39Ar Released

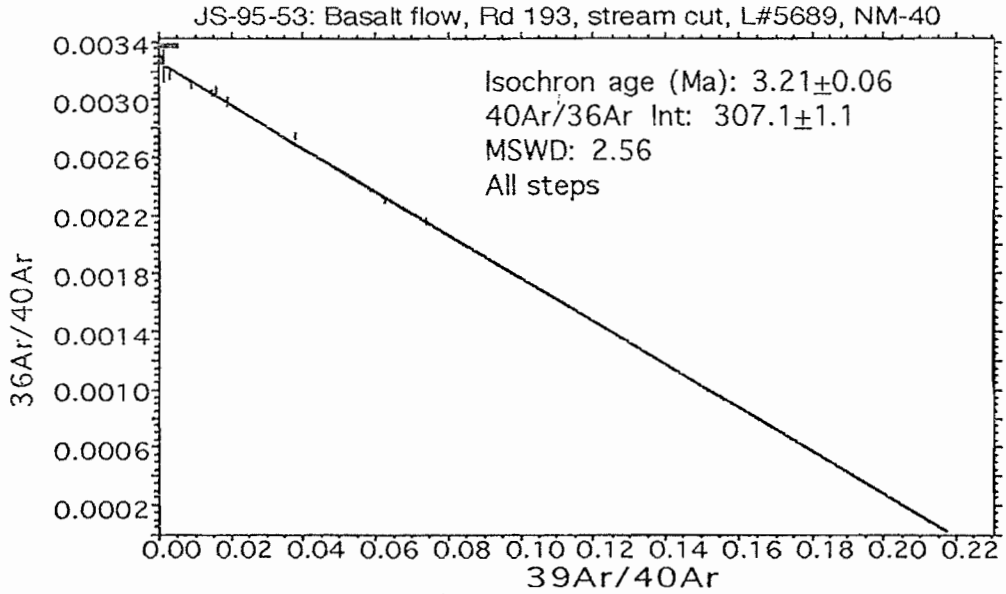

JS-95-51: Basalt flow, Las Maetas S., L#5687, NM-40
Isochron age (Ma): 0.13±0.05
40Ar/36Ar Int: 301.5±1.9
MSWD: 0.42
Steps C-I
36Ar/40Ar
39Ar/40Ar

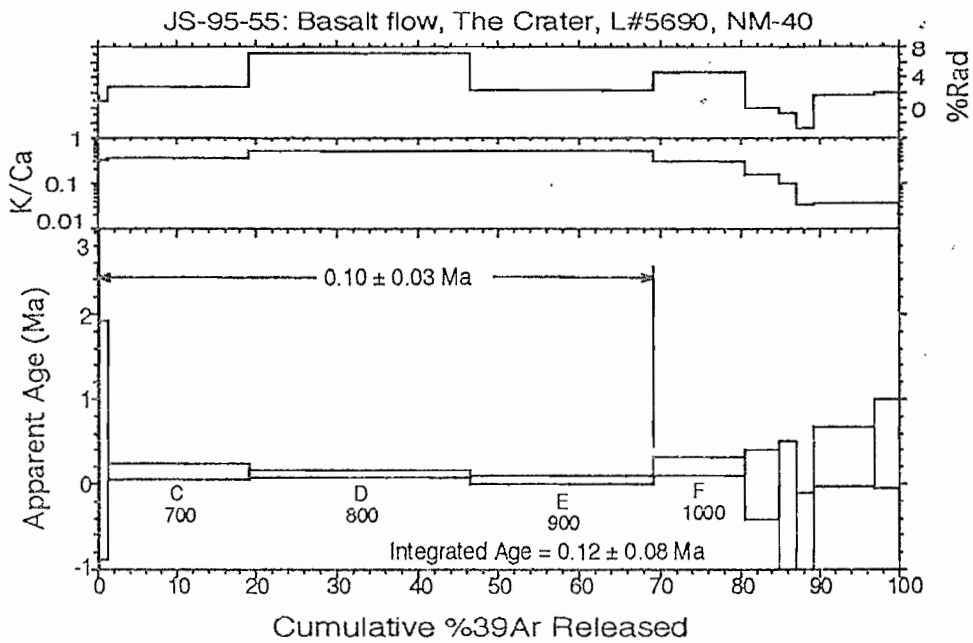
B-54

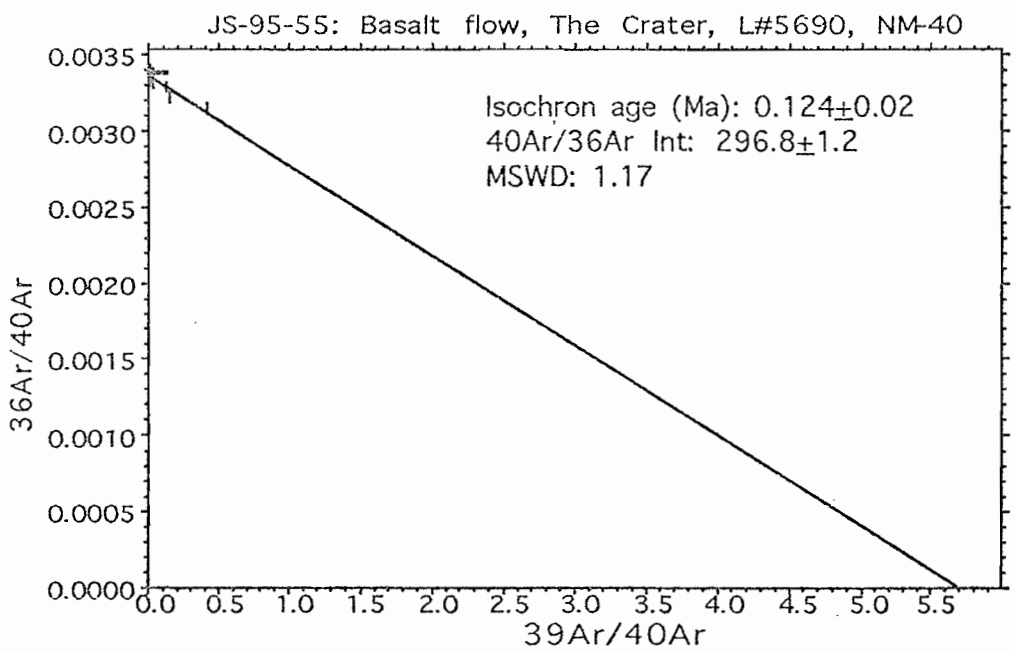

JS-95-52: Phonolite Intrusive, Chico Hills, L#5688, NM-40
%Rad
K/Ca
Apparent Age (Ma)
C 700
D 800
E 900
F 1000
G 1100
H 1200
I 1300
Integrated Age = 22.8 ± 0.3 Ma
Cumulative %39Ar Released

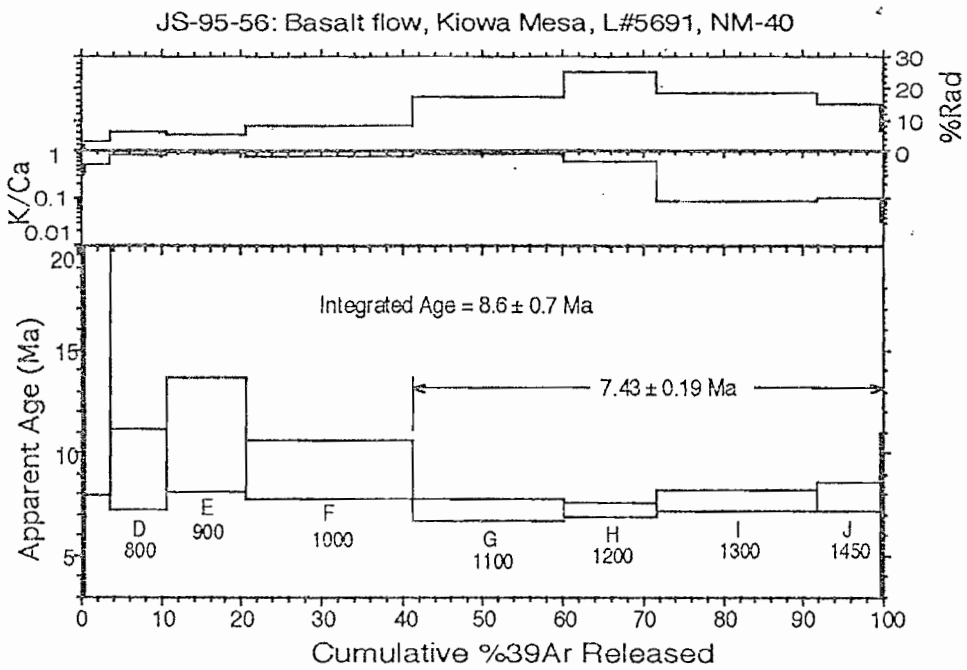

JS-95-52: Phonolite Intrusion - Chico Hills, L#5688, NM-40
Isochron age (Ma): 22.80±0.23
40Ar/36Ar Int: 301.0±1.7
MSWD: 28.3
All steps
36Ar/40Ar
39Ar/40Ar

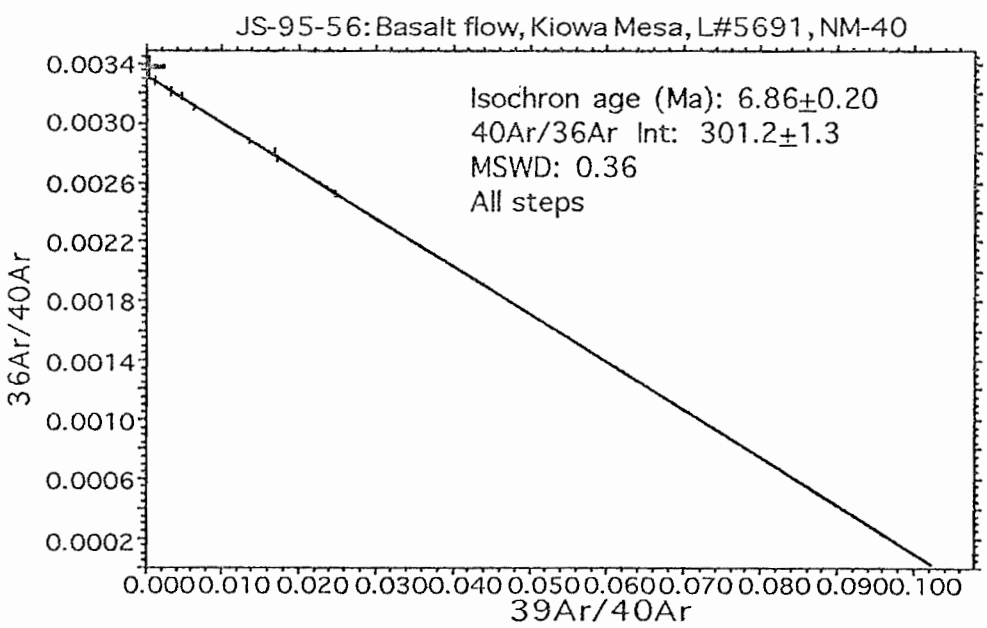

JS-95-53: Basalt flow, Rd 193, stream cut, L#5689, NM-40
%Rad
K/Ca
Apparent Age (Ma)
Integrated Age = 4/3 ± 0.2 Ma
3.51 ± 0.07 Ma
C
700
D
800
E
900
F
1000
H
1200
I
1300
Cumulative %39Ar Released

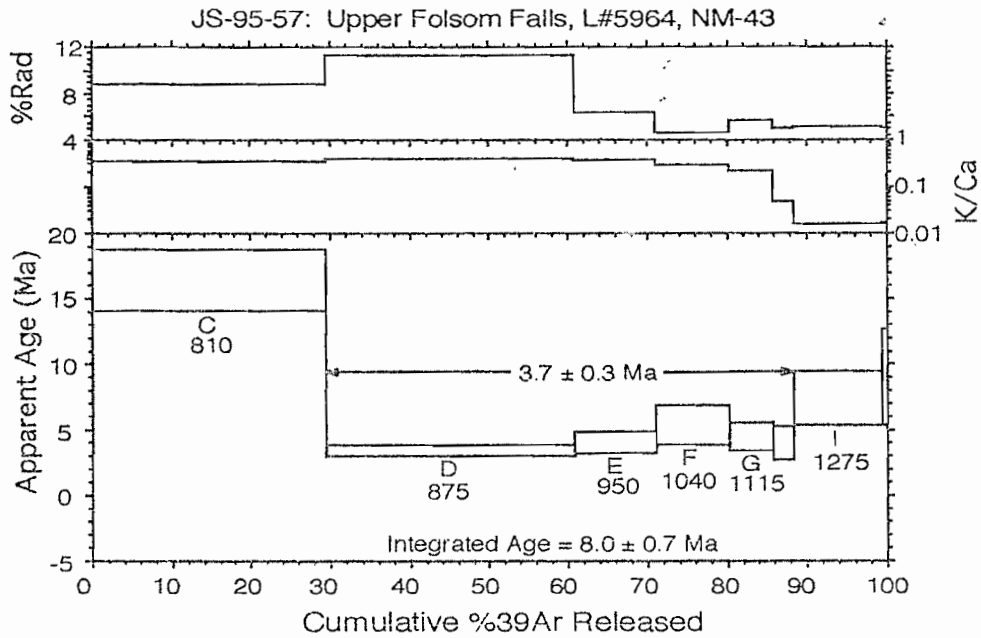

JS-95-53: Basalt flow, Rd 193, stream cut, L#5689, NM-40
Isochron age (Ma): 3.21±0.06
40Ar/36Ar Int: 307.1±1.1
MSWD: 2.56
All steps
36Ar/40Ar
39Ar/40Ar

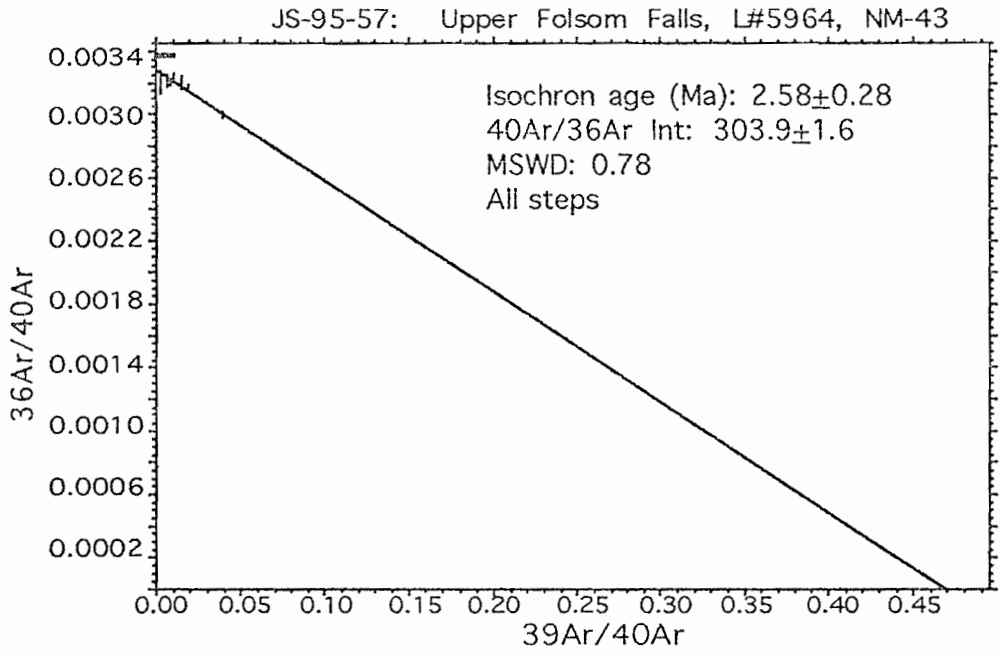

JS-95-55: Basalt flow, The Crater, L#5690, NM-40
%Rad
K/Ca
Apparent Age (Ma)
0.10 ± 0.03 Ma
C
700
D
800
E
900
F
1000
Integrated Age = 0.12 ± 0.08 Ma
Cumulative %39Ar Released

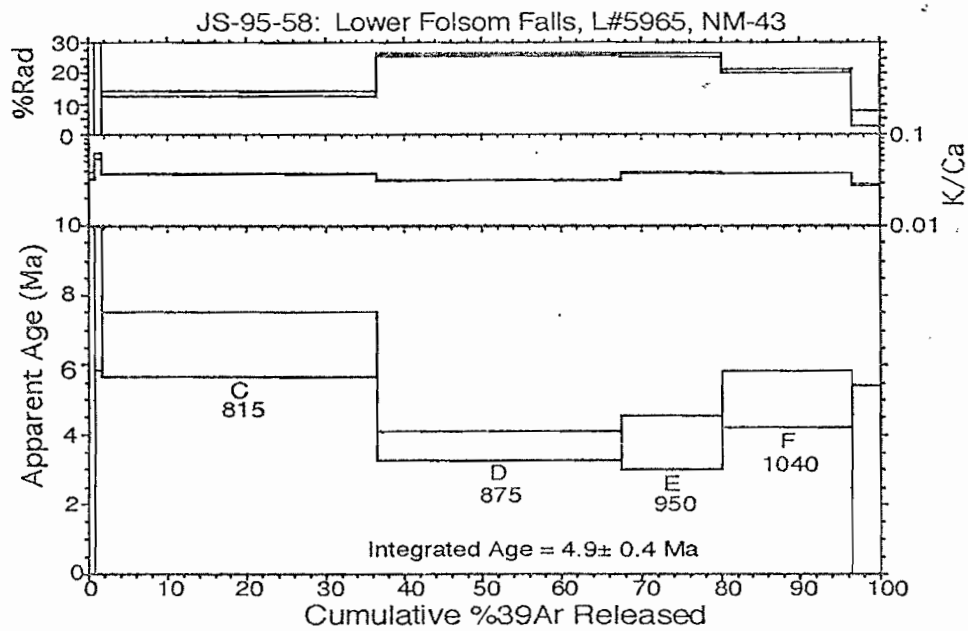

JS-95-55: Basalt flow, The Crater, L#5690, NM-40
Isochron age (Ma): 0.124±0.02
40Ar/36Ar Int: 296.8±1.2
MSWD: 1.17
36Ar/40Ar
39Ar/40Ar

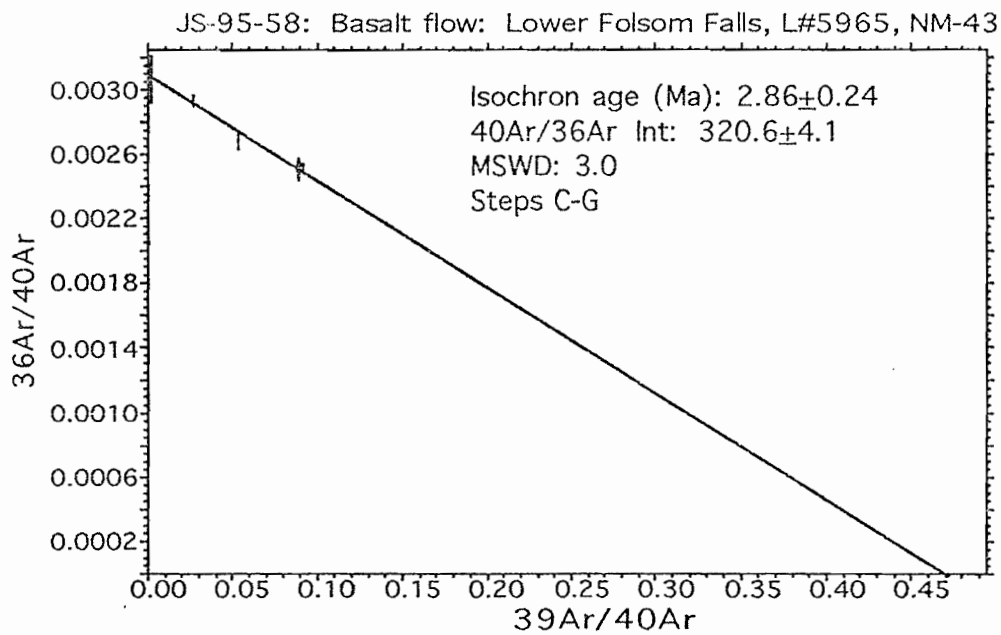

JS-95-56: Basalt flow, Kiowa Mesa, L#5691, NM-40
%Rad
30
20
10
0
K/Ca
1
0.1
0.01
Apparent Age (Ma)
20
15
10
5
Integrated Age = 8.6 ± 0.7 Ma
7.43 ± 0.19 Ma
D 800
E 900
F 1000
G 1100
H 1200
I 1300
J 1450
0 10 20 30 40 50 60 70 80 90 100
Cumulative %39Ar Released


JS-95-56: Basalt flow, Kiowa Mesa, L#5691, NM-40
Isochron age (Ma): 6.86±0.20
40Ar/36Ar Int: 301.2±1.3
MSWD: 0.36
All steps
36Ar/40Ar
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
0.000 0.010 0.020 0.030 0.040 0.050 0.060 0.070 0.080 0.090 0.100
39Ar/40Ar

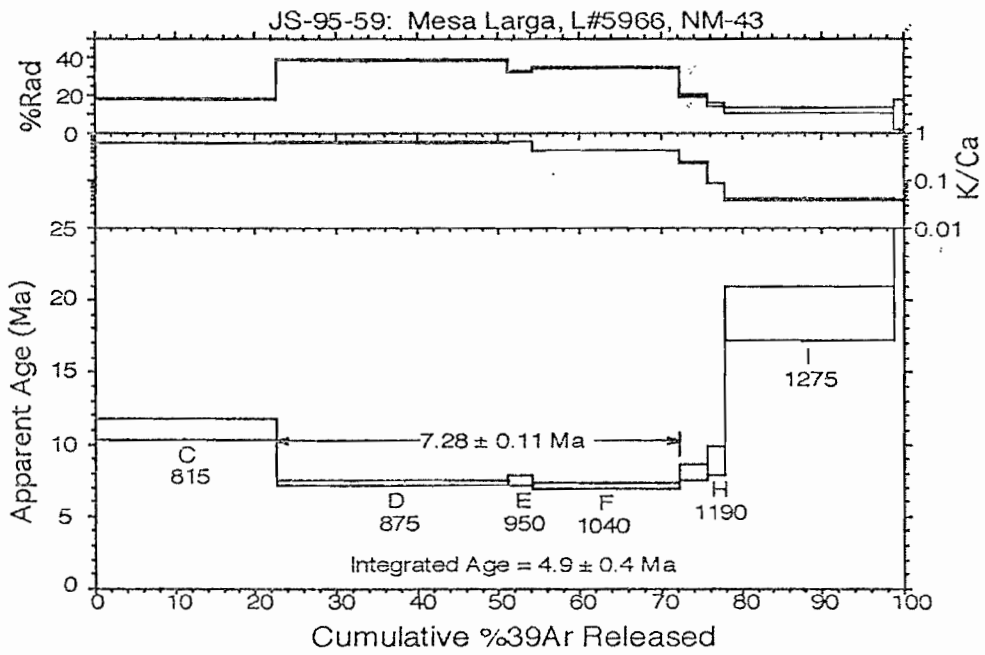

JS-95-57: Upper Folsom Falls, L#5964, NM-43
%Rad
K/Ca
Apparent Age (Ma)
C
810
3.7 ± 0.3 Ma
D
875
E
950
F
1040
G
1115
I
1275
Integrated Age = 8.0 ± 0.7 Ma
Cumulative %39Ar Released

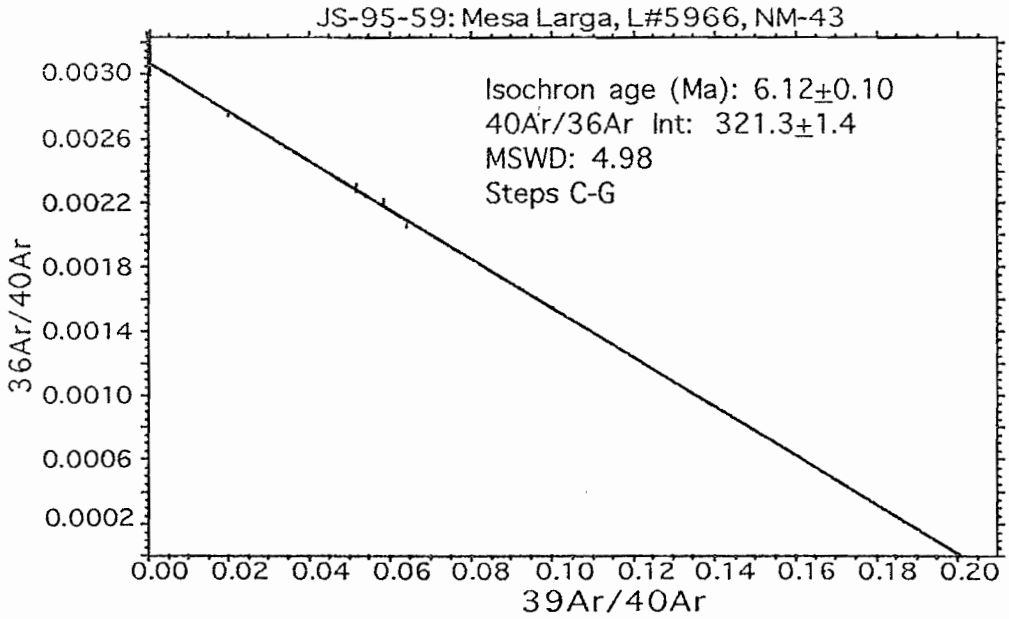

JS-95-57: Upper Folsom Falls, L#5964, NM-43
Isochron age (Ma): 2.58±0.28
40Ar/36Ar Int: 303.9±1.6
MSWD: 0.78
All steps
36Ar/40Ar
39Ar/40Ar


JS-95-58: Lower Folsom Falls, L#5965, NM-43
%Rad
K/Ca
Apparent Age (Ma)
C
815
D
875
E
950
F
1040
Integrated Age = 4.9± 0.4 Ma
Cumulative %39Ar Released

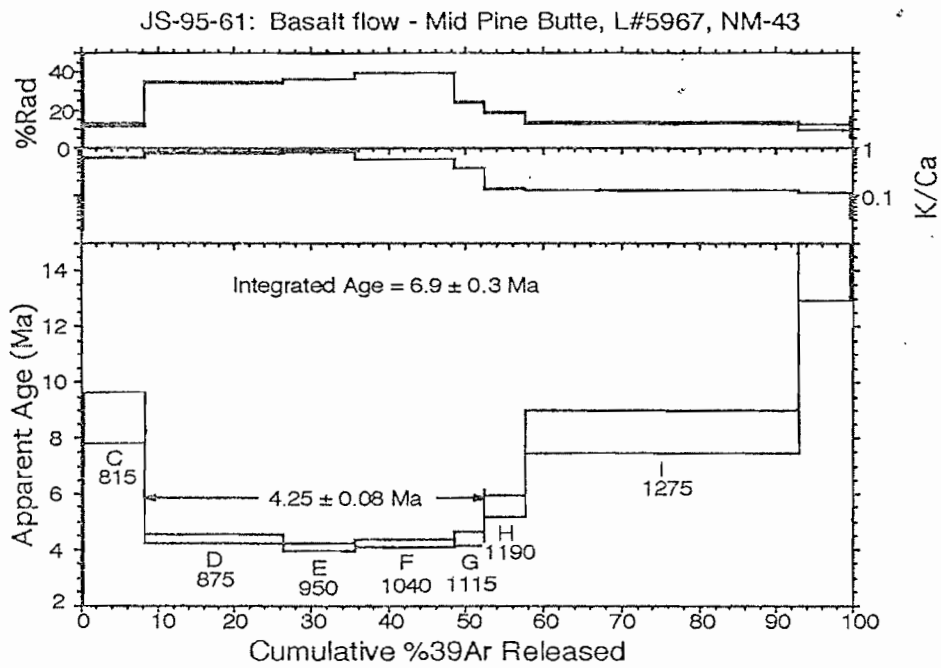

JS-95-58: Basalt flow: Lower Folsom Falls, L#5965, NM-43
Isochron age (Ma): 2.86±0.24
40Ar/36Ar Int: 320.6±4.1
MSWD: 3.0
Steps C-G
36Ar/40Ar
39Ar/40Ar

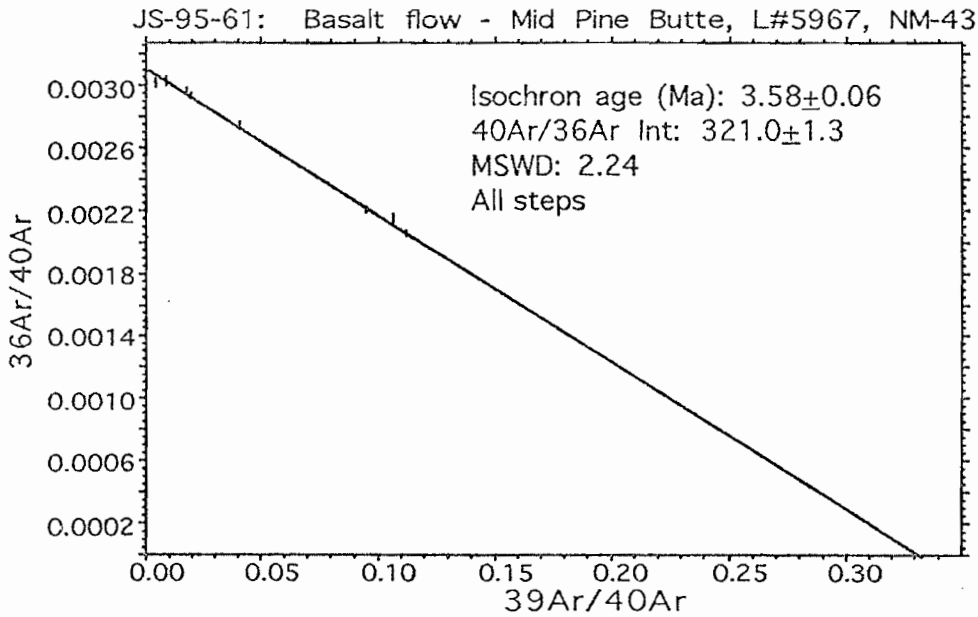
B-60

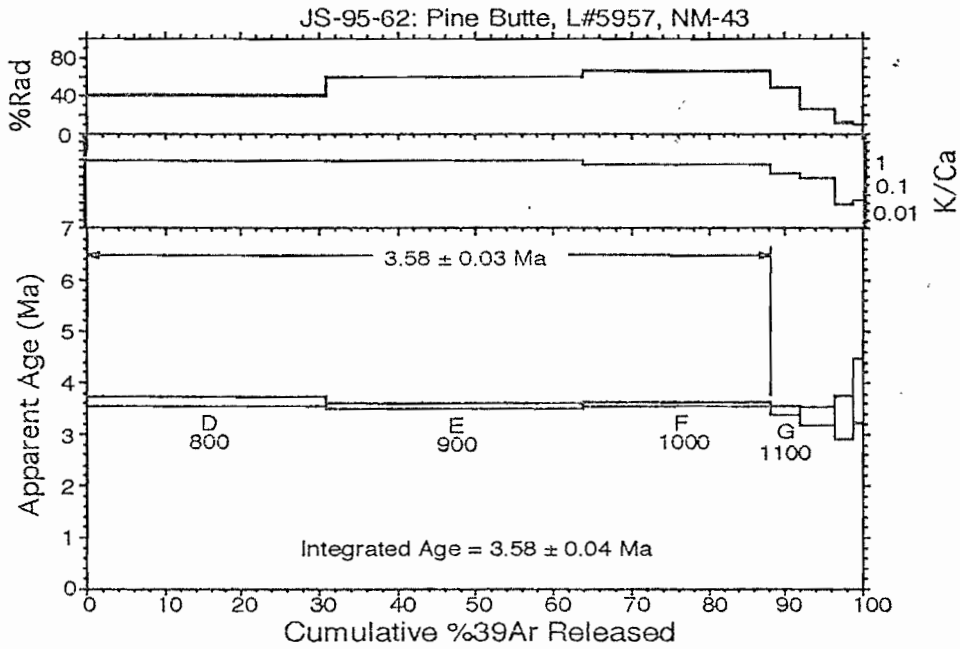

JS-95-59: Mesa Larga, L#5966, NM-43
%Rad
K/Ca
Apparent Age (Ma)
7.28 ± 0.11 Ma
C
815
D
875
E
950
F
1040
H
1190
I
1275
Integrated Age = 4.9 ± 0.4 Ma
Cumulative %39Ar Released

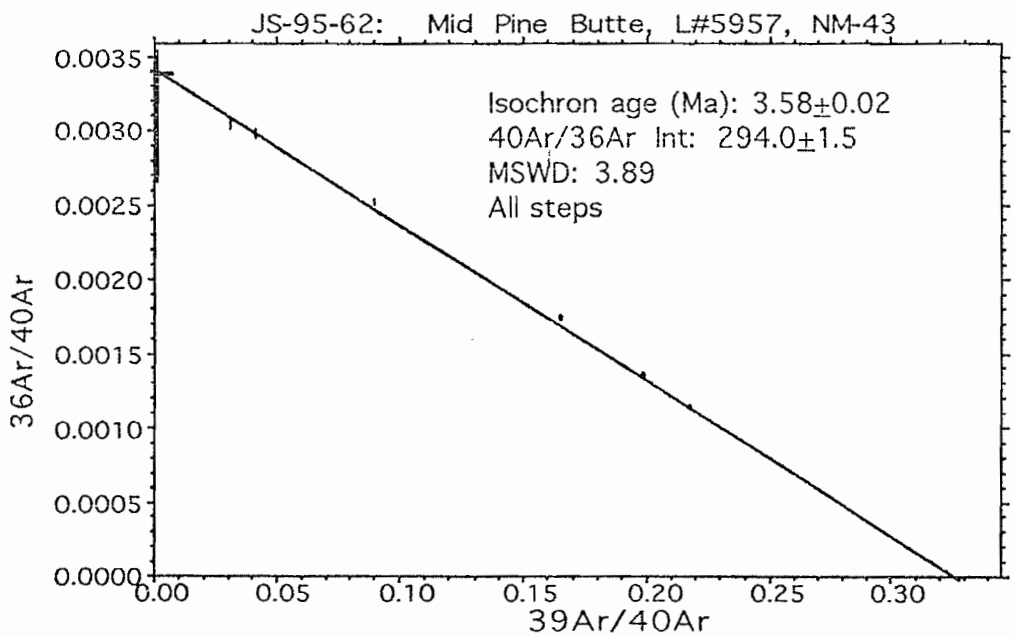

JS-95-59: Mesa Larga, L#5966, NM-43
Isochron age (Ma): 6.12±0.10
40Ar/36Ar Int: 321.3±1.4
MSWD: 4.98
Steps C-G
36Ar/40Ar
39Ar/40Ar

B-61

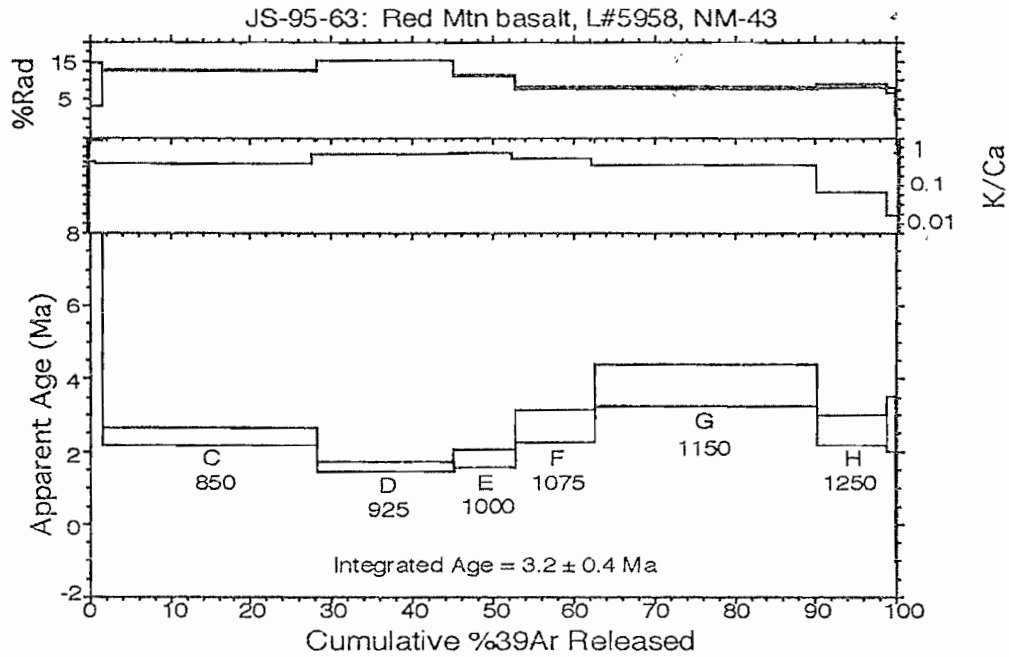

JS-95-61: Basalt flow - Mid Pine Butte, L#5967, NM-43
%Rad
K/Ca
Integrated Age = 6.9 ± 0.3 Ma
Apparent Age (Ma)
4.25 ± 0.08 Ma
C 815
D 875
E 950
F 1040
G 1115
H 1190
I 1275
Cumulative %39Ar Released

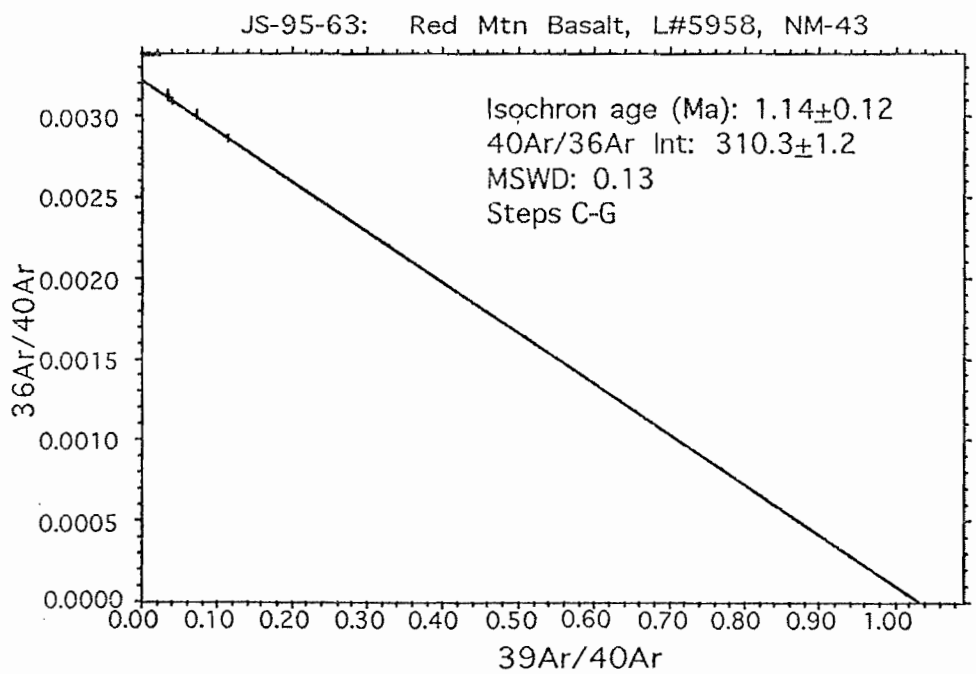

JS-95-61: Basalt flow - Mid Pine Butte, L#5967, NM-43
Isochron age (Ma): 3.58±0.06
40Ar/36Ar Int: 321.0±1.3
MSWD: 2.24
All steps
36Ar/40Ar
39Ar/40Ar


JS-95-62: Pine Butte, L#5957, NM-43
%Rad
80
40
0
K/Ca
1
0.1
0.01
Apparent Age (Ma)
3.58 ± 0.03 Ma
D
800
E
900
F
1000
G
1100
Integrated Age = 3.58 ± 0.04 Ma
Cumulative %39Ar Released

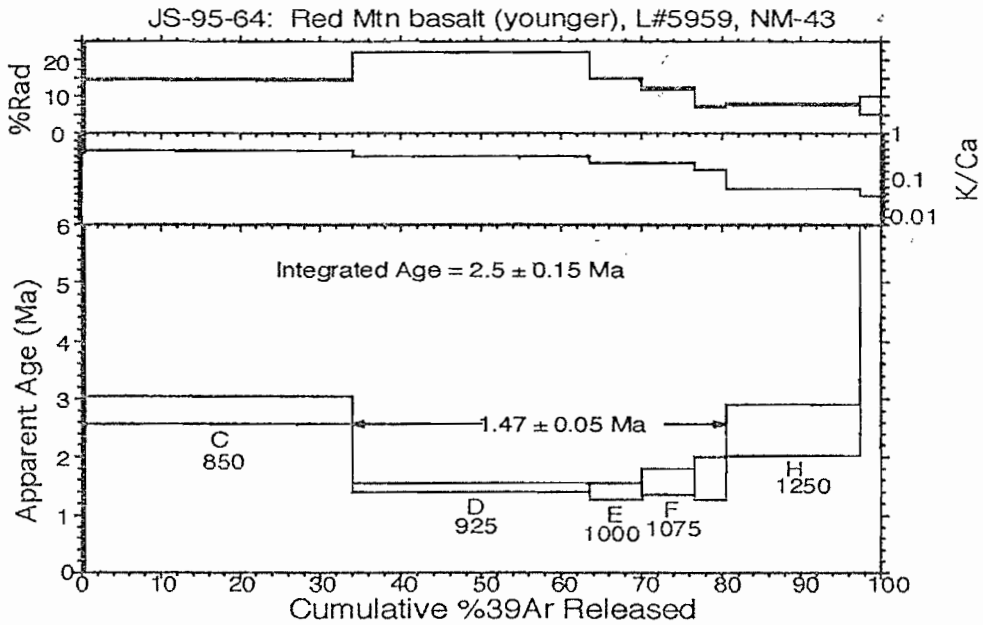

JS-95-62: Mid Pine Butte, L#5957, NM-43
Isochron age (Ma): 3.58±0.02
40Ar/36Ar Int: 294.0±1.5
MSWD: 3.89
All steps
36Ar/40Ar
39Ar/40Ar

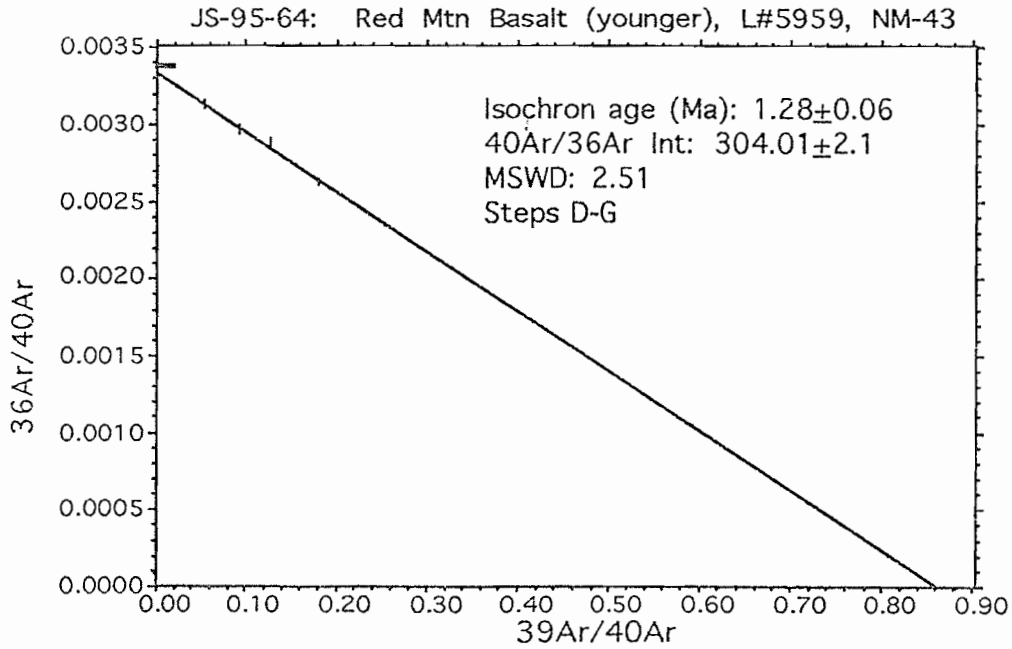
B-63

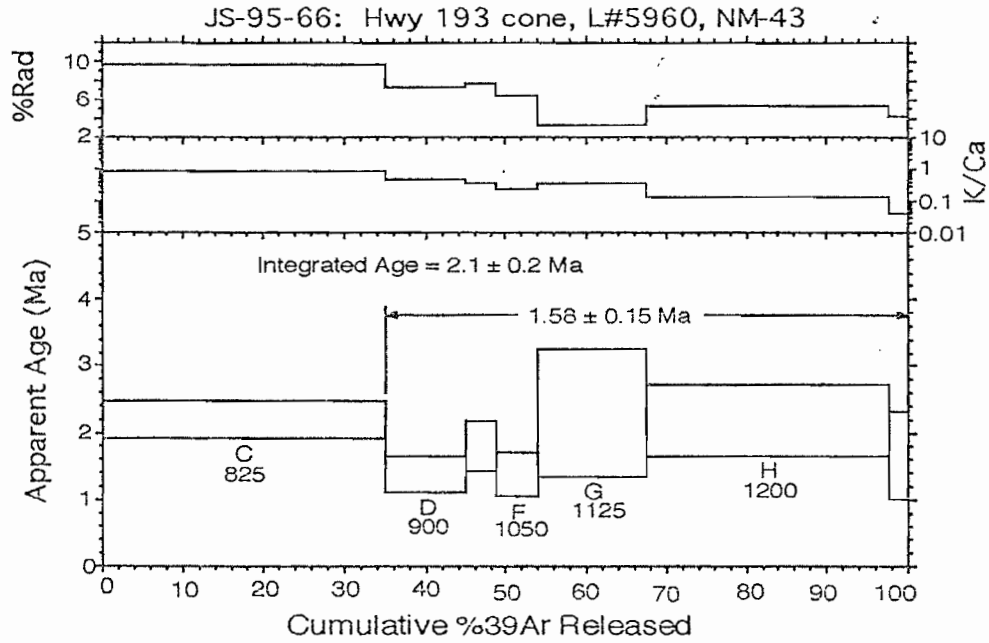

JS-95-63: Red Mtn basalt, L#5958, NM-43
%Rad
15
5
1
0.1
0.01
K/Ca
8
6
4
2
0
-2
Apparent Age (Ma)
C
850
D
925
E
1000
F
1075
G
1150
H
1250
Integrated Age = 3.2 ± 0.4 Ma
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

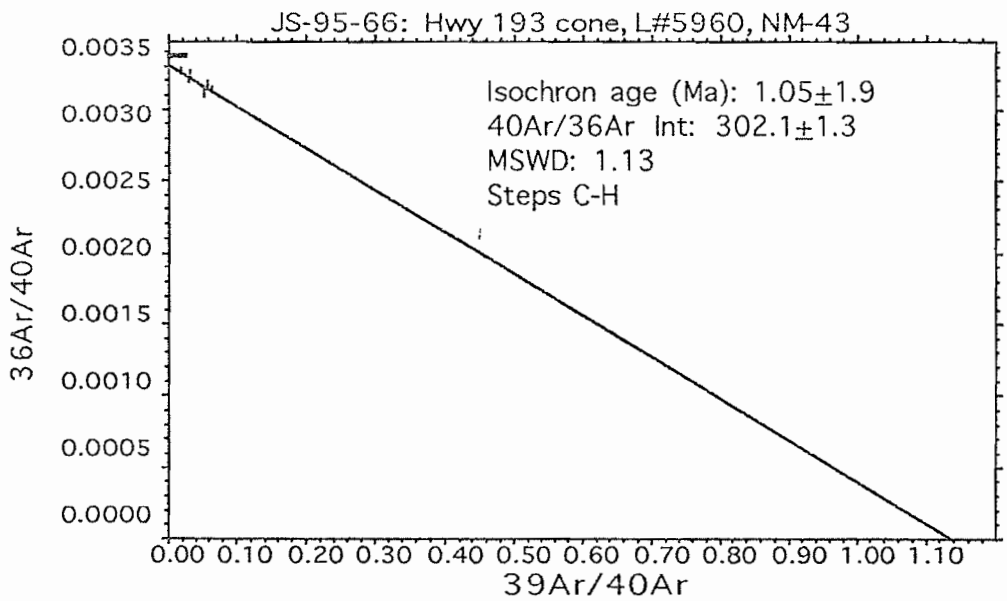

JS-95-63: Red Mtn Basalt, L#5958, NM-43
Isochron age (Ma): 1.14±0.12
40Ar/36Ar Int: 310.3±1.2
MSWD: 0.13
Steps C-G
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
36Ar/40Ar
0.00
0.10
0.20
0.30
0.40
0.50
0.60
0.70
0.80
0.90
1.00
39Ar/40Ar

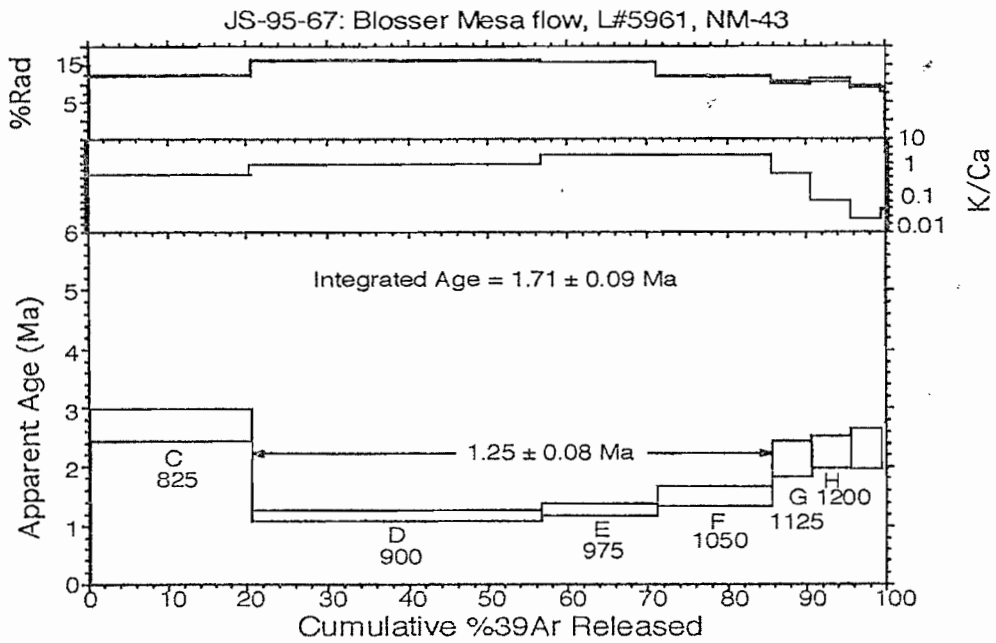
B-64

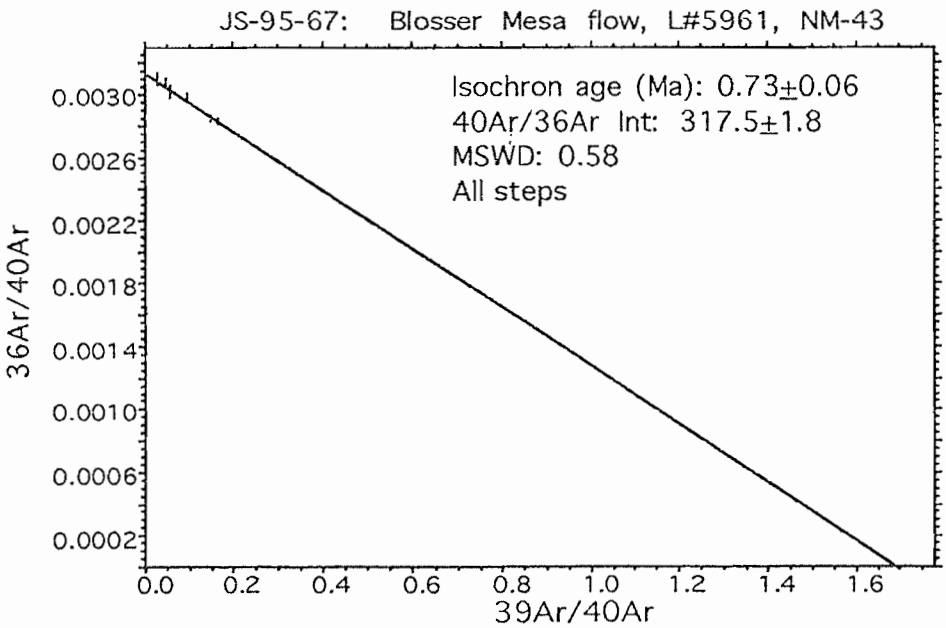

JS-95-64: Red Mtn basalt (younger), L#5959, NM-43
%Rad
K/Ca
Integrated Age = 2.5 ± 0.15 Ma
1.47 ± 0.05 Ma
Apparent Age (Ma)
C
850
D
925
E
1000
F
1075
H
1250
Cumulative %39Ar Released

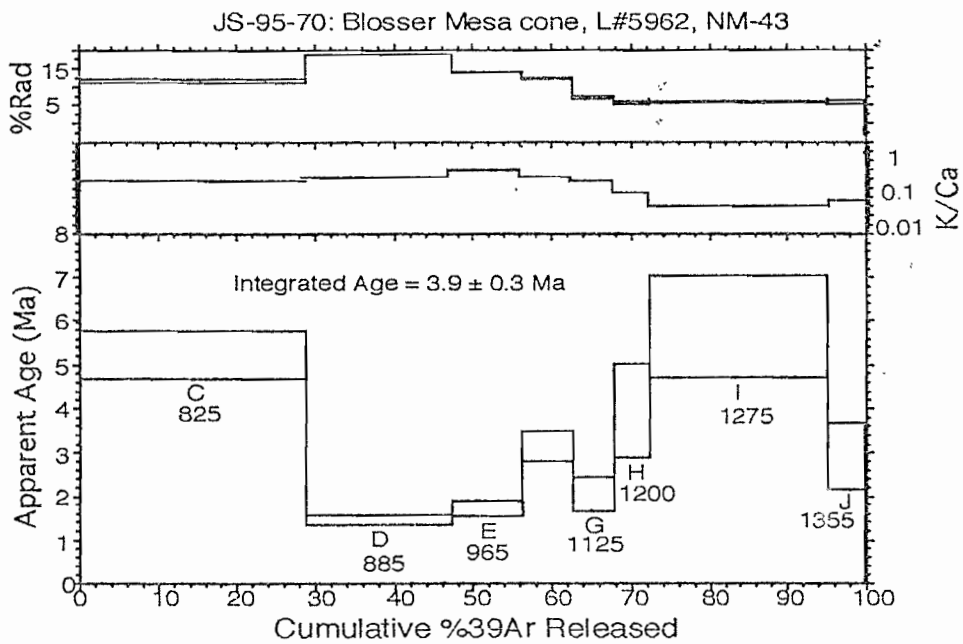

JS-95-64: Red Mtn Basalt (younger), L#5959, NM-43
Isochron age (Ma): 1.28±0.06
40Ar/36Ar Int: 304.01±2.1
MSWD: 2.51
Steps D-G
36Ar/40Ar
39Ar/40Ar

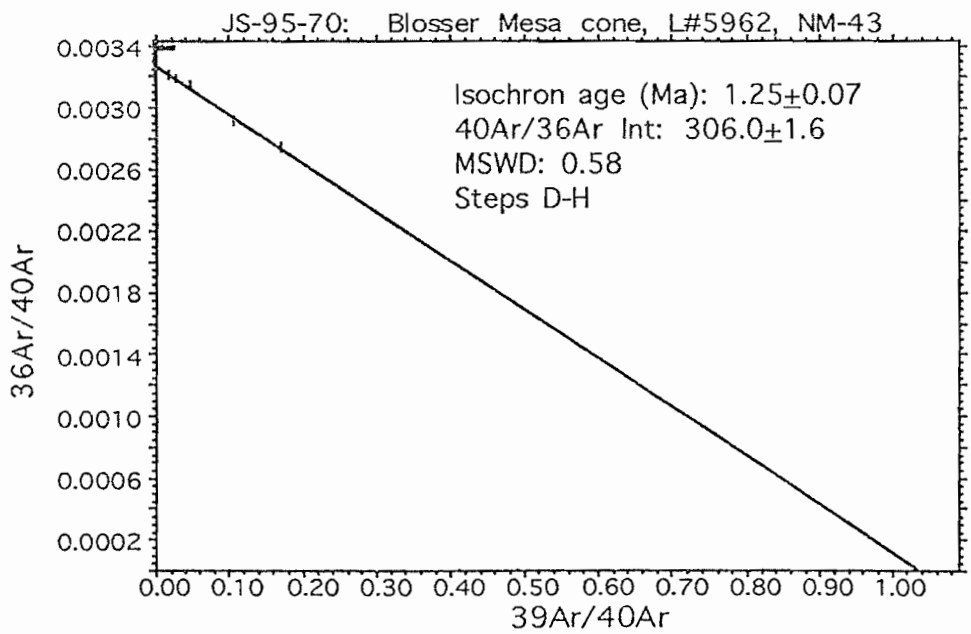

JS-95-66: Hwy 193 cone, L#5960, NM-43
%Rad
K/Ca
Integrated Age = 2.1 ± 0.2 Ma
1.56 ± 0.15 Ma
Apparent Age (Ma)
C
825
D
900
F
1050
G
1125
H
1200
Cumulative %39Ar Released


JS-95-66: Hwy 193 cone, L#5960, NM-43
Isochron age (Ma): 1.05±1.9
40Ar/36Ar Int: 302.1±1.3
MSWD: 1.13
Steps C-H
36Ar/40Ar
39Ar/40Ar

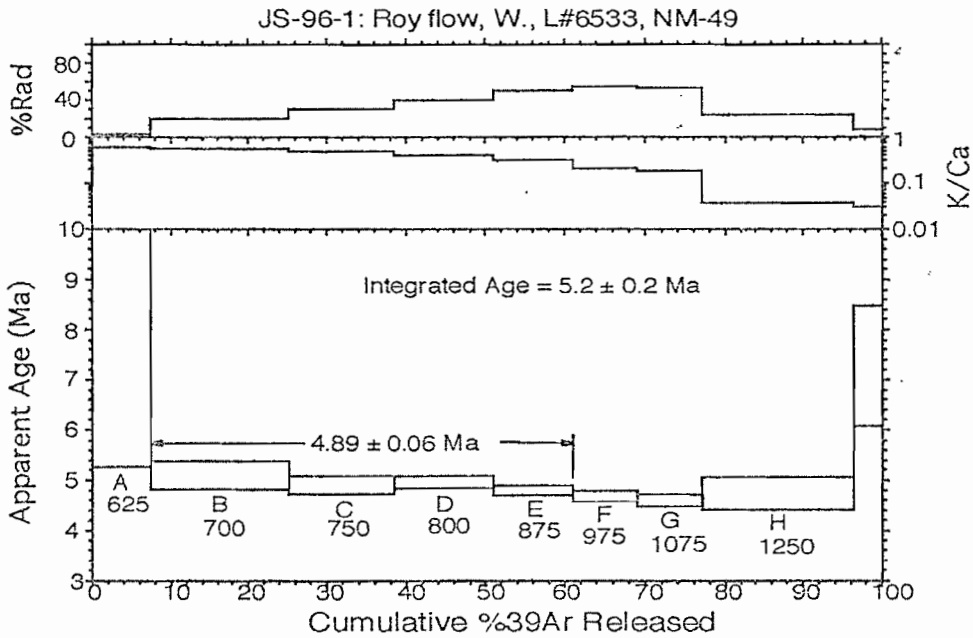

JS-95-67: Blosser Mesa flow, L#5961, NM-43
%Rad
K/Ca
Integrated Age = 1.71 ± 0.09 Ma
Apparent Age (Ma)
1.25 ± 0.08 Ma
C 825
D 900
E 975
F 1050
G 1200
H 1125
Cumulative %39Ar Released

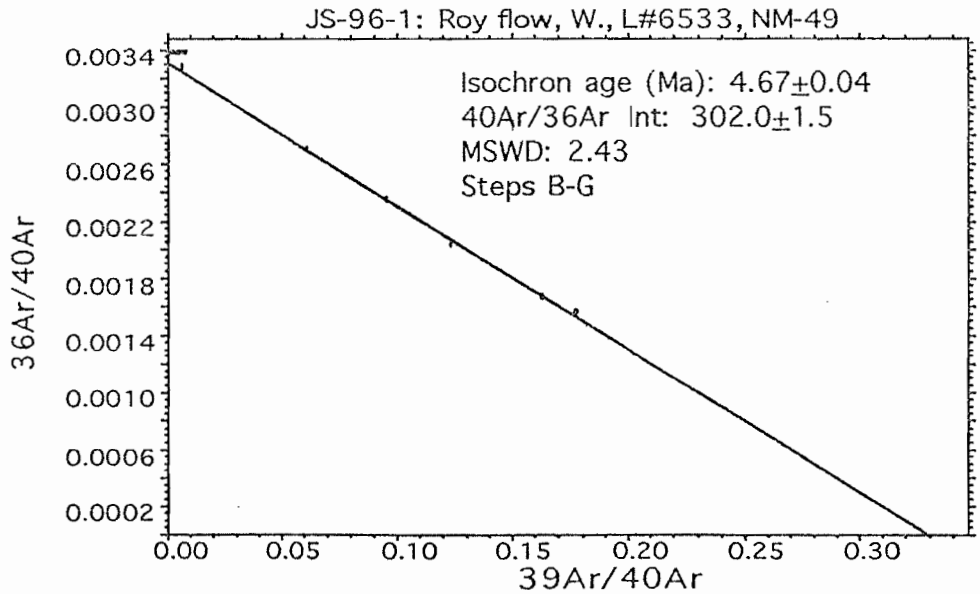

JS-95-67: Blosser Mesa flow, L#5961, NM-43
Isochron age (Ma): 0.73±0.06
40Ar/36Ar Int: 317.5±1.8
MSWD: 0.58
All steps
36Ar/40Ar
39Ar/40Ar


JS-95-70: Blosser Mesa cone, L#5962, NM-43
%Rad
K/Ca
Integrated Age = 3.9 ± 0.3 Ma
Apparent Age (Ma)
C
825
D
885
E
965
G
1125
H
1200
I
1275
J
1355
Cumulative %39Ar Released

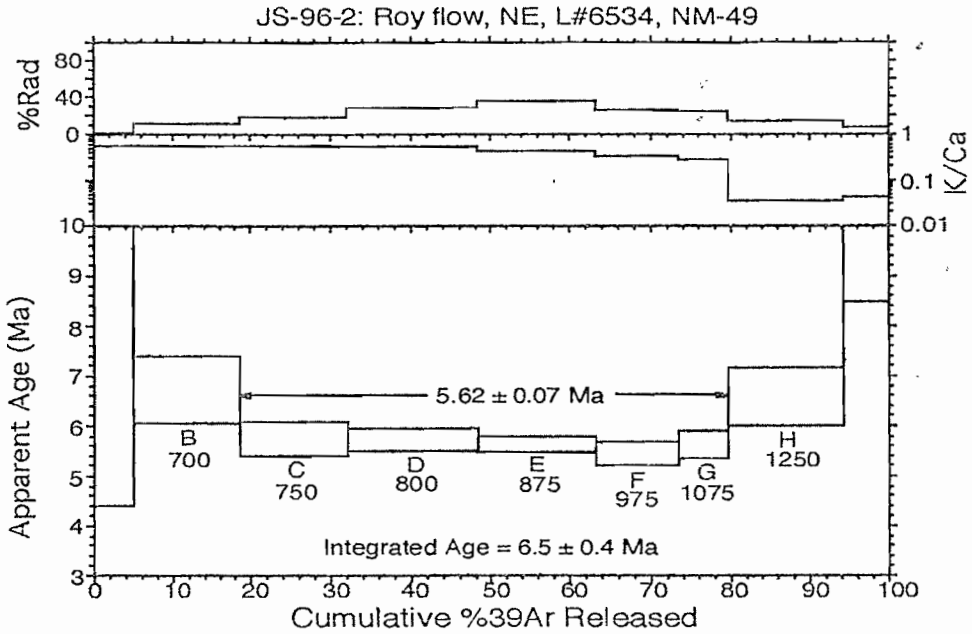

JS-95-70: Blosser Mesa cone, L#5962, NM-43
Isochron age (Ma): 1.25±0.07
40Ar/36Ar Int: 306.0±1.6
MSWD: 0.58
Steps D-H
36Ar/40Ar
39Ar/40Ar

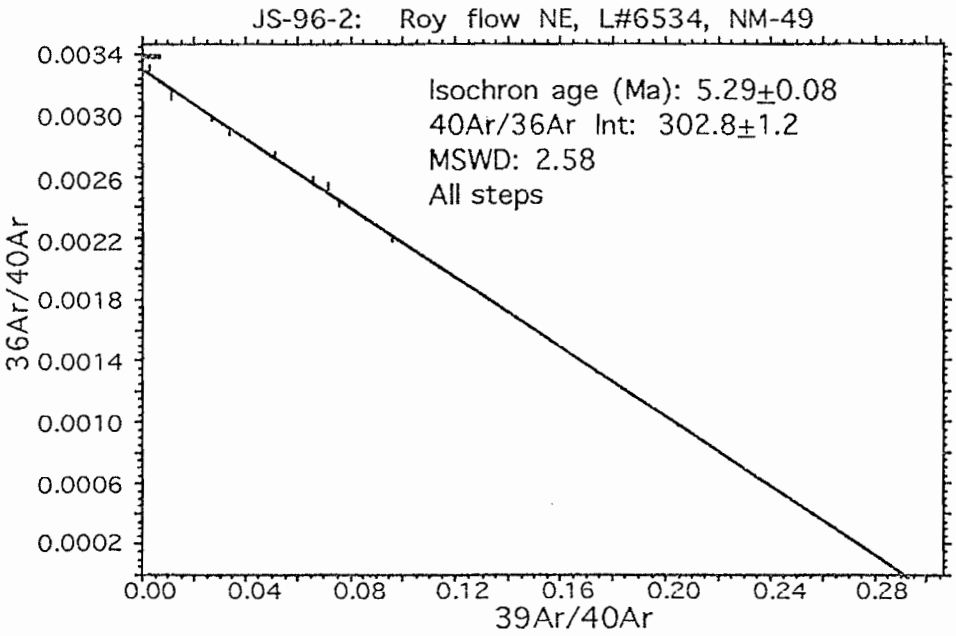
B-68

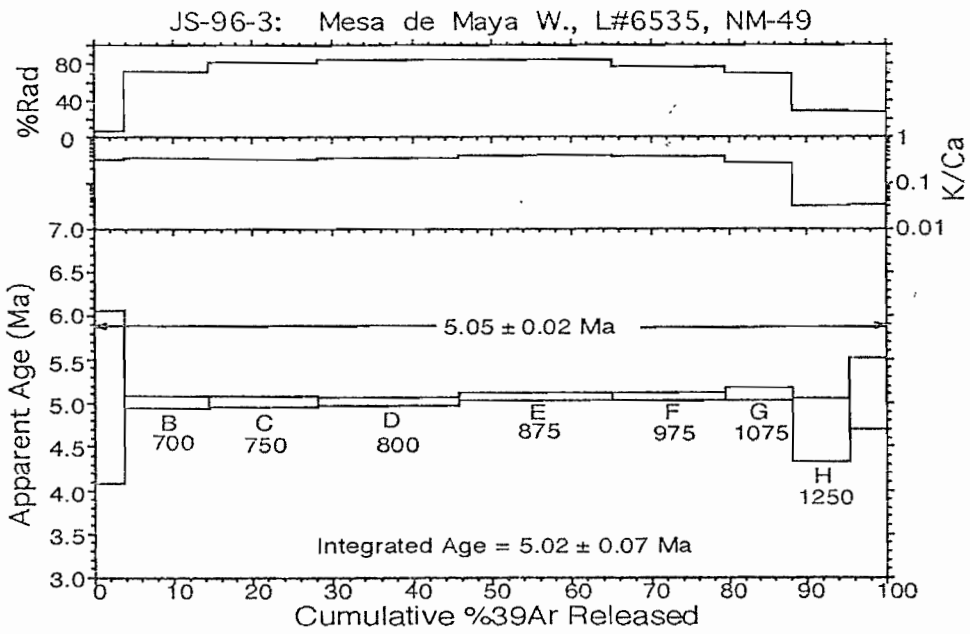

JS-96-1: Roy flow, W., L#6533, NM-49
%Rad
80
40
0
1
0.1
0.01
K/Ca
10
9
8
7
6
5
4
3
Apparent Age (Ma)
Integrated Age = 5.2 ± 0.2 Ma
4.89 ± 0.06 Ma
A 625
B 700
C 750
D 800
E 875
F 975
G 1075
H 1250
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

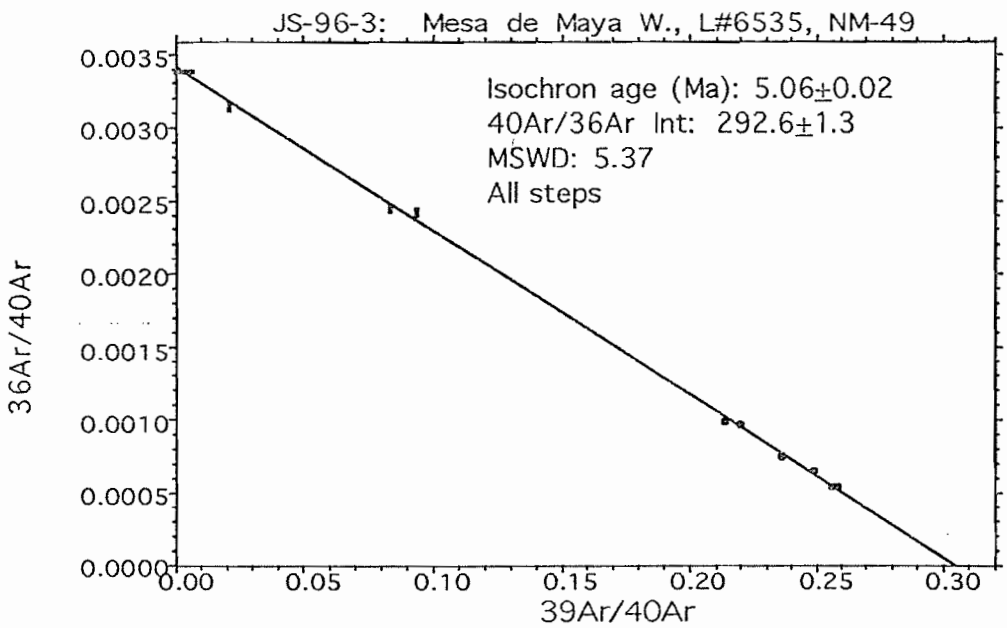

JS-96-1: Roy flow, W., L#6533, NM-49
Isochron age (Ma): 4.67±0.04
40Ar/36Ar Int: 302.0±1.5
MSWD: 2.43
Steps B-G
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
36Ar/40Ar
0.00
0.05
0.10
0.15
0.20
0.25
0.30
39Ar/40Ar

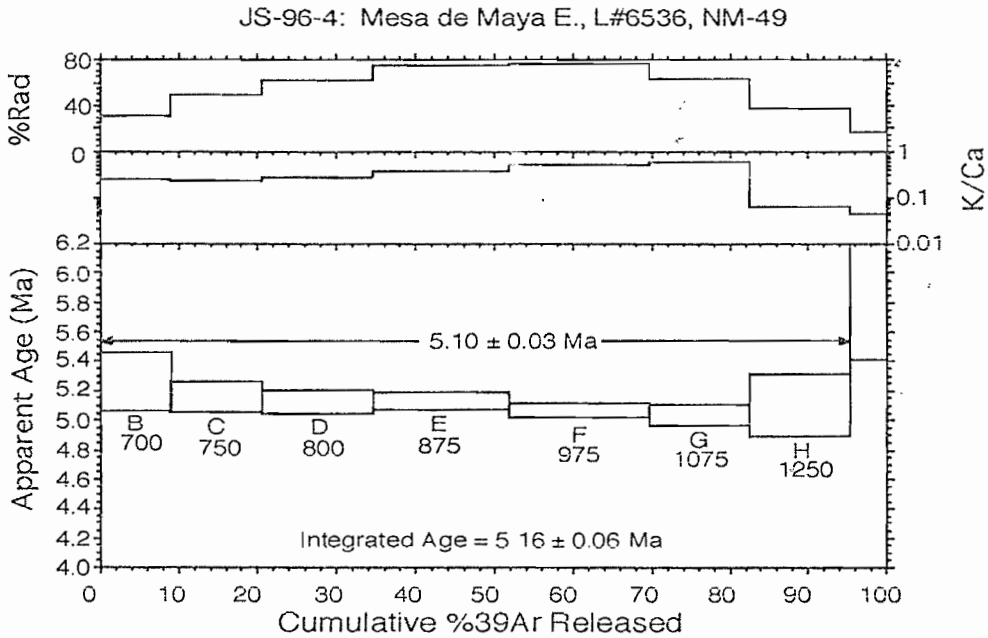
B-69

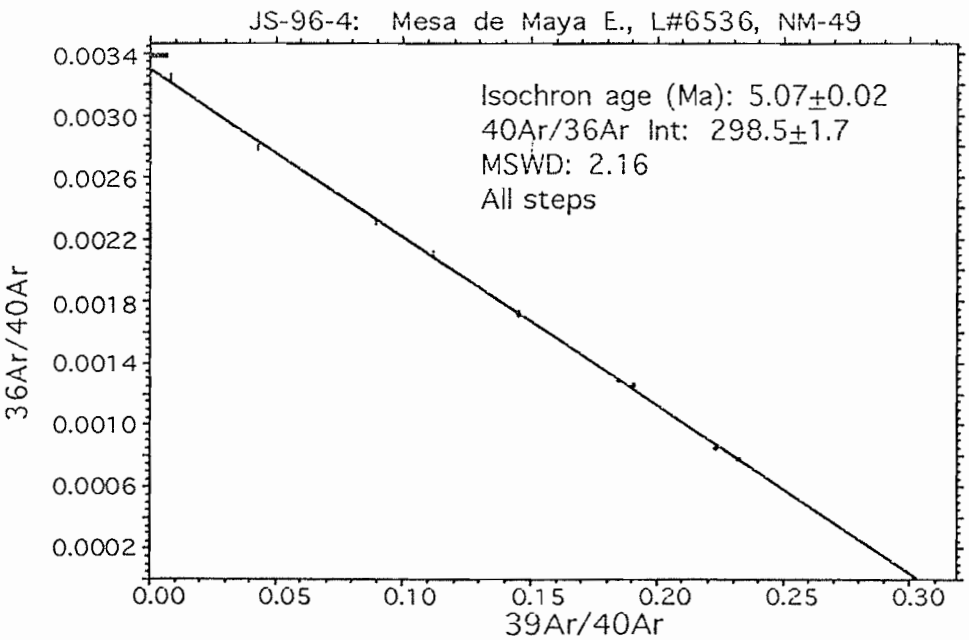

JS-96-2: Roy flow, NE, L#6534, NM-49
%Rad
80
40
0
K/Ca
1
0.1
0.01
Apparent Age (Ma)
10
9
8
7
6
5
4
3
5.62 ± 0.07 Ma
B
700
C
750
D
800
E
875
F
975
G
1075
H
1250
Integrated Age = 6.5 ± 0.4 Ma
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

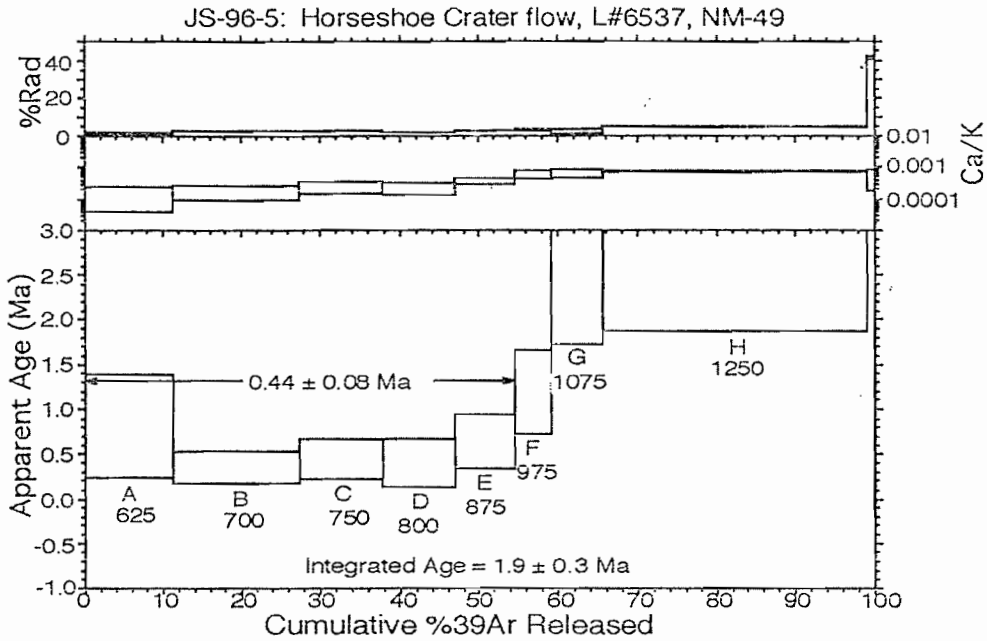

JS-96-2: Roy flow NE, L#6534, NM-49
Isochron age (Ma): 5.29±0.08
40Ar/36Ar Int: 302.8±1.2
MSWD: 2.58
All steps
36Ar/40Ar
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
0.00
0.04
0.08
0.12
0.16
0.20
0.24
0.28
39Ar/40Ar

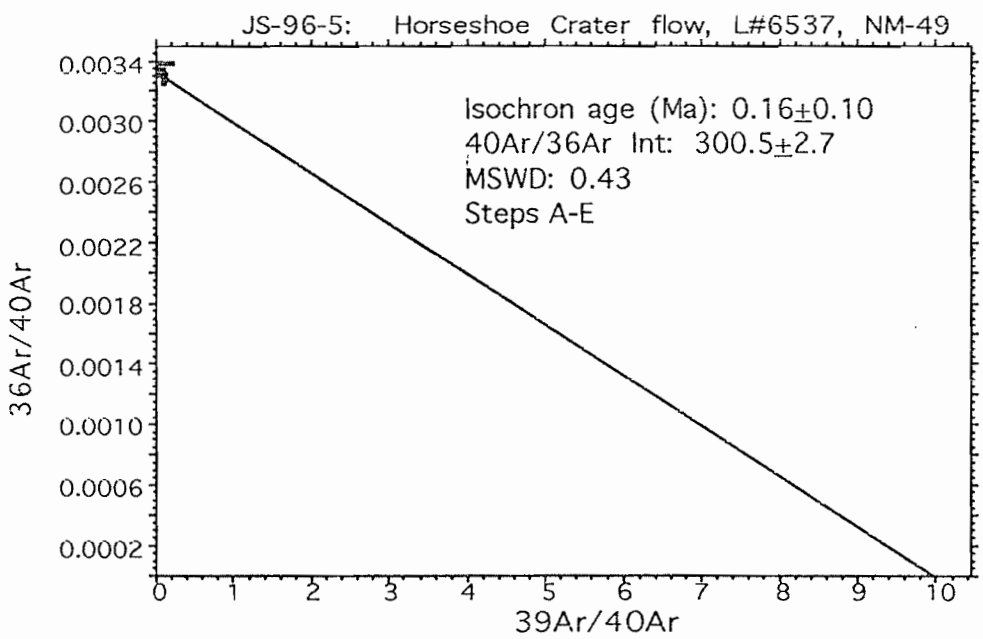

JS-96-3: Mesa de Maya W., L#6535, NM-49
%Rad
80
40
0
1
0.1
0.01
K/Ca
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
Apparent Age (Ma)
5.05 ± 0.02 Ma
B 700
C 750
D 800
E 875
F 975
G 1075
H 1250
Integrated Age = 5.02 ± 0.07 Ma
0 10 20 30 40 50 60 70 80 90 100
Cumulative %39Ar Released

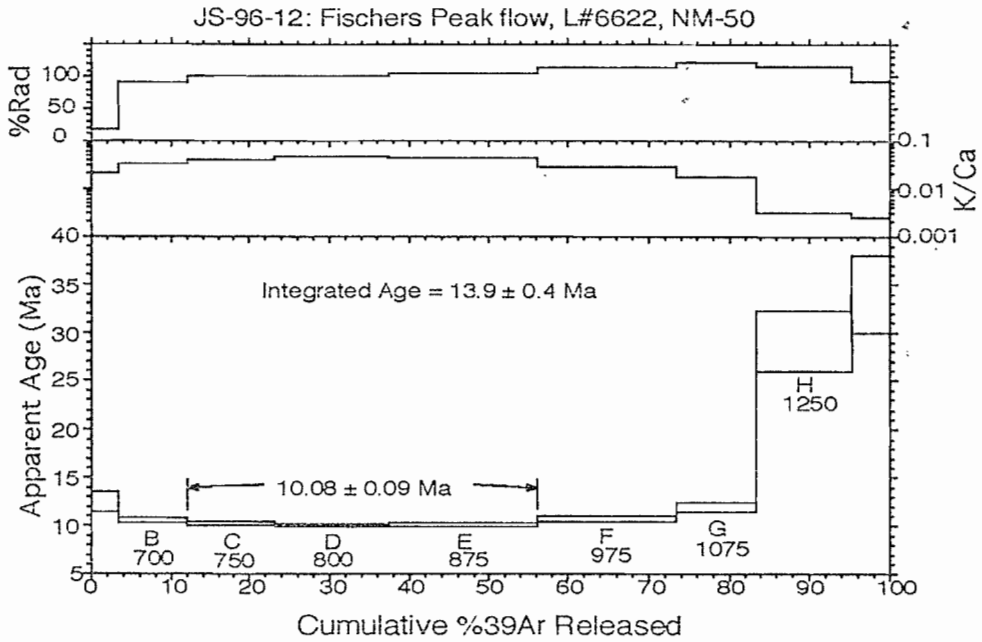

JS-96-3: Mesa de Maya W., L#6535, NM-49
Isochron age (Ma): 5.06±0.02
40Ar/36Ar Int: 292.6±1.3
MSWD: 5.37
All steps
36Ar/40Ar
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0.00 0.05 0.10 0.15 0.20 0.25 0.30
39Ar/40Ar

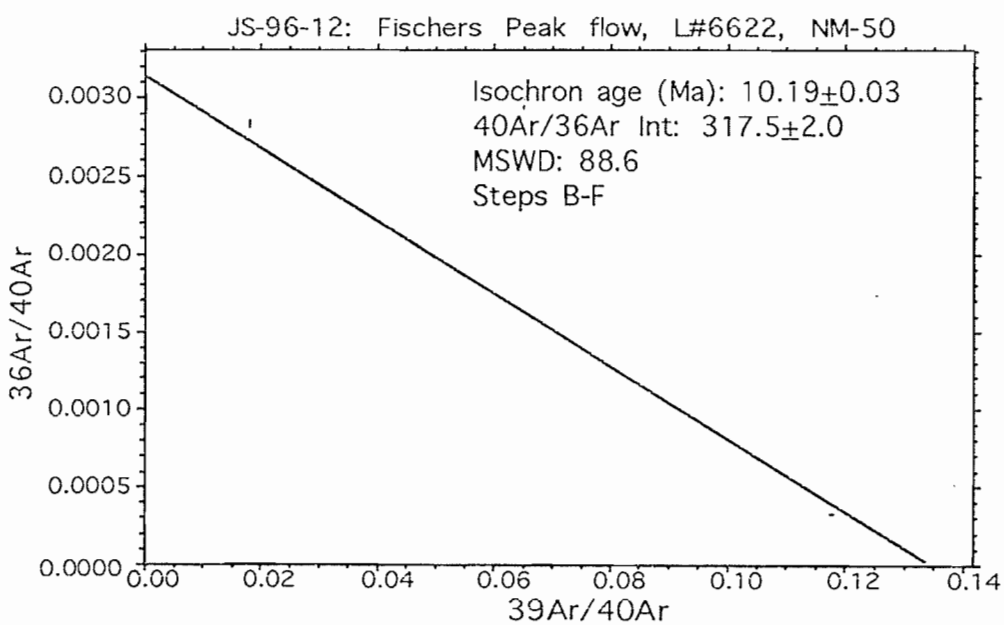

JS-96-4: Mesa de Maya E., L#6536, NM-49
%Rad
K/Ca
Apparent Age (Ma)
5.10 ± 0.03 Ma
B 700
C 750
D 800
E 875
F 975
G 1075
H 1250
Integrated Age = 5 16 ± 0.06 Ma
Cumulative %39Ar Released

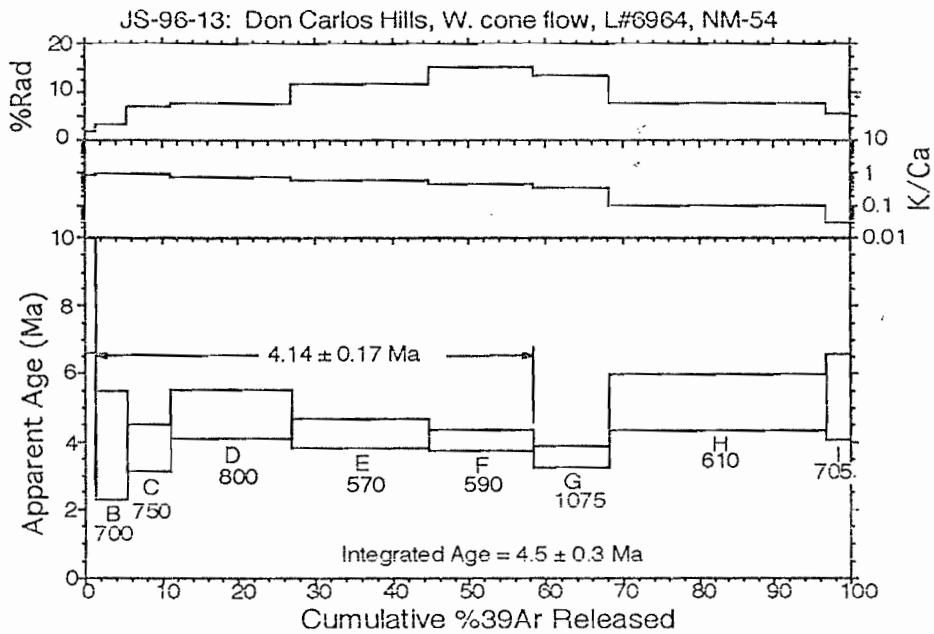

JS-96-4: Mesa de Maya E., L#6536, NM-49
Isochron age (Ma): 5.07±0.02
40Ar/36Ar Int: 298.5±1.7
MSWD: 2.16
All steps
36Ar/40Ar
39Ar/40Ar

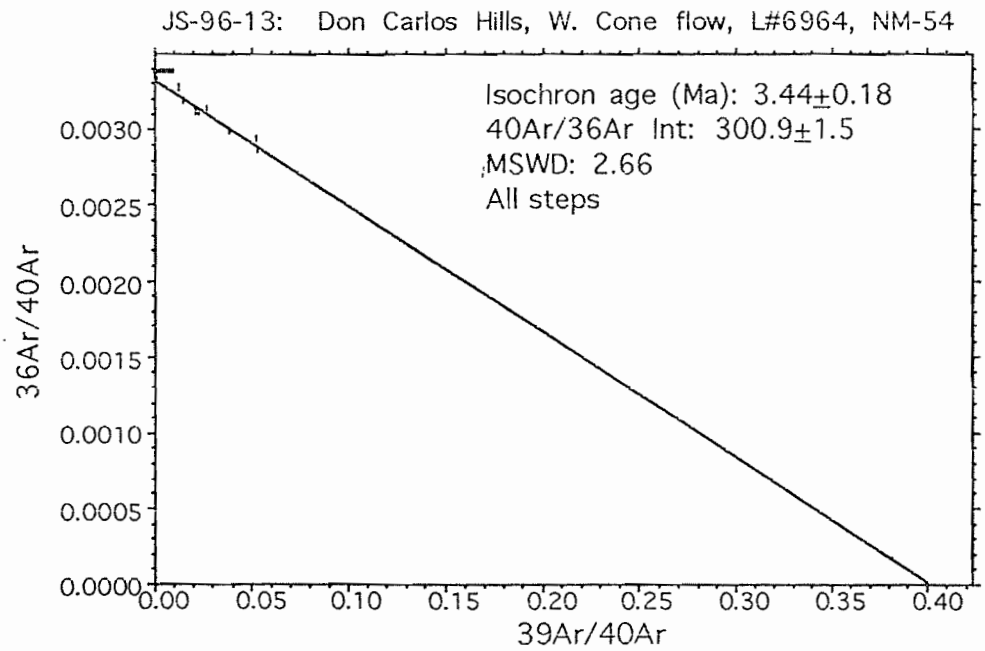

JS-96-5: Horseshoe Crater flow, L#6537, NM-49
%Rad
40
20
0
0.01
0.001
0.0001
Ca/K
Apparent Age (Ma)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
0.44 ± 0.08 Ma
A
625
B
700
C
750
D
800
E
875
F
975
G
1075
H
1250
Integrated Age = 1.9 ± 0.3 Ma
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released

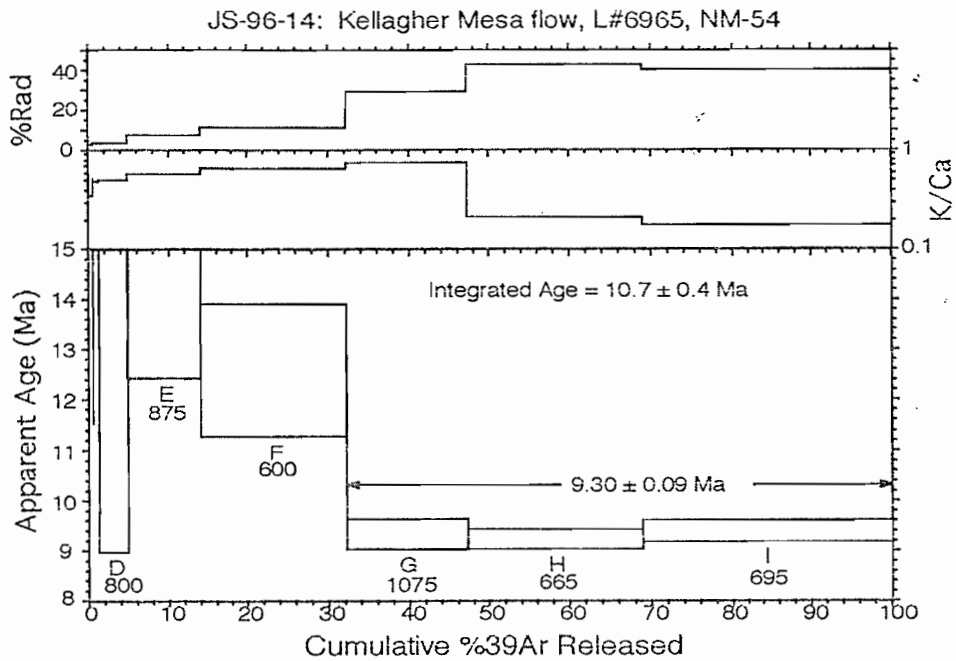

JS-96-5: Horseshoe Crater flow, L#6537, NM-49
Isochron age (Ma): 0.16±0.10
40Ar/36Ar Int: 300.5±2.7
MSWD: 0.43
Steps A-E
36Ar/40Ar
0.0034
0.0030
0.0026
0.0022
0.0018
0.0014
0.0010
0.0006
0.0002
0
1
2
3
4
5
6
7
8
9
10
39Ar/40Ar

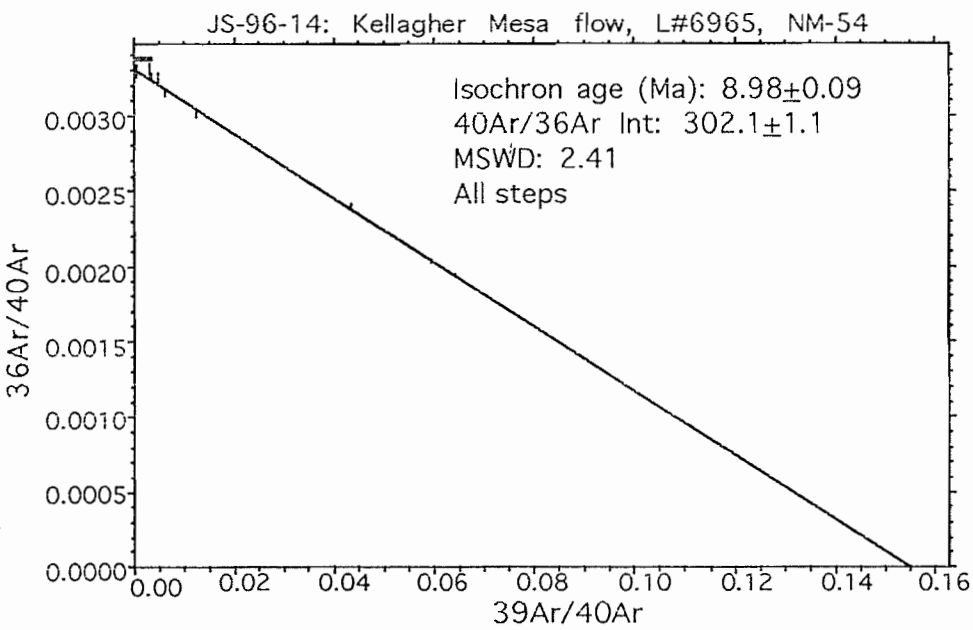

JS-96-12: Fischers Peak flow, L#6622, NM-50
%Rad
100
50
0
0.1
0.01
0.001
K/Ca
40
35
30
25
20
15
10
5
Apparent Age (Ma)
Integrated Age = 13.9 ± 0.4 Ma
10.08 ± 0.09 Ma
B 700
C 750
D 800
E 875
F 975
G 1075
H 1250
0
10
20
30
40
50
60
70
80
90
100
Cumulative %39Ar Released


JS-96-12: Fischers Peak flow, L#6622, NM-50
Isochron age (Ma): 10.19±0.03
40Ar/36Ar Int: 317.5±2.0
MSWD: 88.6
Steps B-F
36Ar/40Ar
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
39Ar/40Ar


JS-96-13: Don Carlos Hills, W. cone flow, L#6964, NM-54
%Rad
K/Ca
Apparent Age (Ma)
4.14 ± 0.17 Ma
B 700
C 750
D 800
E 570
F 590
G 1075
H 610
I 705
Integrated Age = 4.5 ± 0.3 Ma
Cumulative %39Ar Released


JS-96-13: Don Carlos Hills, W. Cone flow, L#6964, NM-54
Isochron age (Ma): 3.44±0.18
40Ar/36Ar Int: 300.9±1.5
MSWD: 2.66
All steps
36Ar/40Ar
39Ar/40Ar


JS-96-14: Kellagher Mesa flow, L#6965, NM-54
%Rad
K/Ca
Apparent Age (Ma)
Integrated Age = 10.7 ± 0.4 Ma
9.30 ± 0.09 Ma
D 800
E 875
F 600
G 1075
H 665
I 695
Cumulative %39Ar Released


JS-96-14: Kellagher Mesa flow, L#6965, NM-54
Isochron age (Ma): 8.98±0.09
40Ar/36Ar Int: 302.1±1.1
MSWD: 2.41
All steps
36Ar/40Ar
39Ar/40Ar

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