DATA REPOSITORY ITEM

TABLE 2. RESULTS OF $^{40}Ar/^{39}Ar$ LASER STEP-HEATING ANALYSES

Run ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-16} mol)	K/Ca†	Cl/K§ (x 10^{-3})	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±2σ (Ma)
BT-MT; Bishop Tuff Plinian, minimally treated, step-heated Qtz; J=0.000154254±0.12%, D#=1.00531±0.00097											
50401-04A	1	1708.29	0.0478	5757.10	0.252	10.7	27.3	0.4	1.1	1.96	54.98
50401-04B	3	337.36	0.0349	1112.89	2.723	14.6	21.6	2.5	13.4	2.36	1.66
50401-04C	5	34.66	0.0379	96.84	6.356	13.5	24.0	17.4	42.1	1.68	0.11
50401-04D	7	12.93	0.0377	21.01	7.194	13.5	22.9	51.8	74.5	1.86	0.07
50401-04E	9	12.94	0.0357	19.15	3.535	14.3	23.4	56.1	90.4	2.02	0.13
50401-04F	10	15.23	0.0319	25.41	0.981	16.0	23.6	50.5	94.8	2.14	0.47
50401-04G	12	17.22	0.0324	32.52	0.650	15.7	26.3	44.1	97.8	2.11	0.71
50401-04H	13	18.14	0.0444	36.60	0.207	11.5	26.0	40.3	98.7	2.03	2.24
50401-04I	15	16.10	0.0649	22.40	0.177	7.9	31.5	58.7	99.5	2.63	2.63
50401-04J	15	13.55	0.1008	23.10	0.113	5.1	33.7	49.5	100.0	1.87	4.12
total-gas age			**n=10		22.188	13.8				1.90	1.00
BT-MG; Bishop Tuff Plinian, 1 hr mill grinder, step-heated Qtz; J=0.000148751±0.12%, D=1.00977±0.00095											
50584-01A	1	8.86	0.0000	360.50	0.001	-	-	-	0.0	-26.41	329.05
50584-01B	3	15.59	0.0000	-	0.004	-	-	-	0.0	26.71	100.19
50584-01C	5	549.40	0.0000	1752.55	0.077	-	-	5.7	0.5	8.43	21.02
50584-01D	6	432.73	0.0393	1425.68	0.607	13.0	16.9	2.6	4.1	3.06	3.39
50584-01E	7	98.30	0.0490	301.74	1.927	10.4	20.7	9.3	15.7	2.45	0.39
50584-01F	8	26.58	0.0355	60.68	3.721	14.4	22.6	32.4	38.1	2.31	0.12
50584-01G	9	16.52	0.0388	24.93	7.831	13.1	23.0	55.3	85.3	2.45	0.05
50584-01H	12	25.06	0.0219	45.89	2.083	23.3	22.5	45.8	97.8	3.08	0.18
50584-01I	14	46.37	0.0000	119.16	0.262	-	18.9	24.0	99.4	2.98	1.35
50584-01J	15	83.36	0.0000	214.02	0.104	-	7.1	24.1	100.0	5.38	3.66
total-gas age			n=10		16.617	14.1				2.58	0.43
BT-HF; Bishop Tuff Plinian 1 hr hydrofluoric acid, step-heated Qtz; J=0.000152447±0.12%, D=1.00977±0.00095											
50582-01A	1	23.56	0.1483	96.85	0.044	3.4	5.2	-	1.2	-1.40	6.21
50582-01B	3	26.10	0.4929	101.59	0.032	1.0	-	-	2.1	-1.07	8.33
50582-01C	5	40.65	0.7016	145.22	0.040	0.7	20.1	-	3.3	-0.62	7.32
50582-01D	6	210.59	0.0000	649.70	0.265	-	4.1	8.8	10.7	5.10	4.92
50582-01E	7	17.71	0.0503	14.88	0.878	10.2	20.3	75.1	35.2	3.65	0.28
50582-01F	8	15.68	0.0556	10.09	0.829	9.2	20.7	80.9	58.4	3.48	0.29
50582-01G	9	16.01	0.0468	6.25	0.686	10.9	25.3	88.3	77.6	3.89	0.34
50582-01H	12	19.76	0.0493	17.99	0.565	10.4	24.3	73.0	93.4	3.96	0.42
50582-01I	14	22.49	0.0798	27.59	0.141	6.4	21.9	63.7	97.3	3.93	1.67
50582-01J	15	87.39	0.1616	235.86	0.096	3.2	12.0	20.2	100.0	4.86	4.12
total-gas age			n=10		3.576	9.4				3.70	1.00

DATA REPOSITORY ITEM

TABLE 2. RESULTS OF $^{40}Ar/^{39}Ar$ LASER STEP-HEATING ANALYSES

Run ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-16} mol)	K/Ca†	Cl/K§ (x 10^{-3})	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±2σ (Ma)
UBT-MT; Upper Bandelier Tuff Plinian, minimally treated, step-heated Qtz; J=0.000116717±0.15%, D=1.00531±0.00097											
50402-01A	1	1342.85	0.0311	4557.66	0.225	16.4	36.4	-	0.7	-0.84	36.05
50402-01B	3	235.68	0.0325	738.12	3.458	15.7	109.7	7.4	11.6	3.69	0.86
50402-01C	5	85.87	0.0288	224.60	11.432	17.7	118.5	22.7	47.5	4.10	0.14
50402-01D	7	32.30	0.0291	35.28	11.446	17.5	118.8	67.7	83.4	4.60	0.04
50402-01E	9	37.62	0.0267	35.17	3.511	19.1	114.1	72.3	94.4	5.72	0.12
50402-01F	10	43.20	0.0184	40.68	0.662	27.7	105.6	72.1	96.5	6.55	0.56
50402-01G	12	46.40	0.0132	33.46	0.548	38.7	114.1	78.6	98.2	7.67	0.68
50402-01H	13	43.84	0.0000	37.16	0.220	-	120.2	74.9	98.9	6.90	1.65
50402-01I	15	42.23	0.0000	22.64	0.233	-	108.7	84.1	99.7	7.46	1.53
50402-01J	15	40.78	0.0000	13.75	0.107	-	95.6	90.0	100.0	7.71	3.28
total-gas age			n=10		31.843	17.8				4.54	0.48
UBT-MG; Upper Bandelier Tuff Plinian, 1 hr mill grinder, step-heated Qtz; J=0.000132426±0.14%, D=1.01049±0.00145											
50601-01A	1	19.60	0.0000	-	0.008	-	-	-	0.1	17.46	40.05
50601-01B	3	22.03	0.0000	-	0.004	-	238.6	-	0.2	15.30	70.39
50601-01C	5	982.31	0.1659	3037.94	0.034	3.1	47.6	8.6	0.8	20.10	60.86
50601-01D	6	447.06	0.0345	1370.61	0.578	14.8	93.7	9.4	11.0	10.01	3.07
50601-01E	7	79.87	0.0348	147.45	1.854	14.7	110.6	45.4	43.8	8.65	0.27
50601-01F	8	48.91	0.0240	58.78	2.122	21.3	111.4	64.4	81.3	7.51	0.18
50601-01G	9	59.57	0.0143	58.53	0.606	35.6	109.3	70.9	92.0	10.07	0.55
50601-01H	12	69.21	0.0257	101.95	0.363	19.8	103.3	56.4	98.4	9.31	0.92
50601-01I	14	96.95	0.1278	203.51	0.064	4.0	99.1	38.0	99.5	8.77	5.39
50601-01J	15	91.11	0.2754	134.77	0.028	1.9	80.2	56.3	100.0	12.21	12.04
total-gas age			n=10		5.662	19.5				8.70	1.20
UBT-HF; Upper Bandelier Tuff Plinian 1 hr hydrofluoric acid, step-heated Qtz; J=0.000128187±0.14%, D=1.00977±0.00095											
50600-01A	1	4.17	0.0000	-	0.006	-	168.8	-	0.2	26.62	52.31
50600-01B	3	-	0.0000	-	0.005	-	-	-	0.4	24.79	58.77
50600-01C	5	89.81	0.0000	248.28	0.015	-	-	18.3	0.9	3.79	20.29
50600-01D	6	117.42	0.0422	114.81	0.144	12.1	49.7	71.1	5.7	19.20	2.41
50600-01E	7	50.21	0.0012	4.05	0.849	428.1	102.5	97.6	34.0	11.29	0.27
50600-01F	8	51.09	0.0028	2.93	1.038	181.0	103.1	98.3	68.6	11.57	0.23
50600-01G	9	49.36	0.0000	6.79	0.471	-	102.3	95.9	84.3	10.91	0.48
50600-01H	12	53.87	0.0379	9.53	0.282	13.5	104.2	94.7	93.7	11.76	0.81
50600-01I	14	43.61	0.0457	26.44	0.128	11.2	67.3	82.0	98.0	8.25	1.67
50600-01J	15	41.71	0.0000	48.64	0.060	-	18.6	65.5	100.0	6.31	3.59
total-gas age			n=10		2.997	188.2				11.54	0.87

DATA REPOSITORY ITEM

TABLE 2. RESULTS OF $^{40}Ar/^{39}Ar$ LASER STEP-HEATING ANALYSES

Run ID	Power (Watts)	$^{40}Ar/^{39}Ar$	$^{37}Ar/^{39}Ar$	$^{36}Ar/^{39}Ar$ (x 10^{-3})	$^{39}Ar_K$ (x 10^{-16} mol)	K/Ca†	Cl/K§ (x 10^{-3})	$^{40}Ar^*$ (%)	^{39}Ar (%)	Age (Ma)	±2σ (Ma)
LBT-MT; Lower Bandelier Tuff Plinian, minimally treated, step-heated Qtz; J=0.000118166±0.15%, D=1.00531±0.00097											
50400-01A	1	1979.63	0.0381	6751.27	0.382	13.4	26.3	-	1.3	-3.29	41.66
50400-01B	3	424.18	0.0321	1392.56	3.180	15.9	66.3	3.0	12.4	2.70	1.69
50400-01C	5	51.75	0.0278	91.49	7.278	18.3	86.6	47.7	37.7	5.26	0.09
50400-01D	7	39.25	0.0267	25.80	11.048	19.1	90.1	80.5	76.0	6.73	0.05
50400-01E	9	43.70	0.0274	27.94	4.898	18.6	86.8	81.1	93.0	7.54	0.09
50400-01F	10	43.49	0.0190	24.41	1.238	26.9	80.0	83.4	97.3	7.71	0.30
50400-01G	12	52.54	0.0050	38.60	0.415	101.7	83.8	78.2	98.8	8.74	0.90
50400-01H	13	49.22	0.0348	30.74	0.154	14.7	81.7	81.5	99.3	8.53	2.37
50400-01I	15	67.41	0.0014	59.08	0.135	372.8	88.5	74.1	99.8	10.61	2.92
50400-01J	15	78.37	0.0000	107.95	0.061	-	65.5	59.3	100.0	9.87	6.93
total-gas age			n=10		28.789	21.5				6.02	0.86
LBT-MG; Lower Bandelier Tuff Plinian, 1 hr mill grinder, step-heated Qtz; J=0.000135605±0.13%, D=1.00977±0.00095											
50593-01A	1	24.68	0.0000	-	0.010	-	6.5	-	0.2	6.13	29.53
50593-01B	3	13.11	0.2823	12.84	0.009	1.8	0.4	71.0	0.3	2.28	31.87
50593-01C	5	746.06	0.0000	2396.60	0.076	-	7.8	5.1	1.6	9.23	25.83
50593-01D	6	432.20	0.0653	1318.92	0.777	7.8	67.8	9.8	14.8	10.35	2.87
50593-01E	7	89.01	0.0338	136.75	2.266	15.1	83.4	54.6	53.3	11.85	0.23
50593-01F	8	68.90	0.0236	72.72	1.805	21.6	81.5	68.8	83.9	11.56	0.22
50593-01G	9	87.76	0.0000	105.64	0.460	-	73.3	64.4	91.7	13.77	0.79
50593-01H	12	98.46	0.0000	133.01	0.374	-	66.1	60.1	98.0	14.41	0.99
50593-01I	14	142.54	0.0000	280.11	0.079	-	59.6	41.9	99.4	14.56	4.92
50593-01J	15	207.46	0.0000	421.77	0.038	-	41.9	39.9	100.0	20.14	12.69
total-gas age			n=10		5.893	13.7				11.90	1.20
LBT-HF; Lower Bandelier Tuff Plinian 1 hr hydrofluoric acid, step-heated Qtz; J=0.000128352±0.14%, D=1.00977±0.00095											
50591-01A	1	28.59	0.0000	-	0.005	-	176.0	-	0.2	23.52	54.91
50591-01B	3	20.47	0.0000	-	0.006	-	-	-	0.5	11.47	36.65
50591-01C	5	185.76	0.0000	577.05	0.032	-	2.6	8.2	2.1	3.52	18.38
50591-01D	6	122.48	0.1015	338.08	0.173	5.0	6.2	18.4	10.7	5.22	2.68
50591-01E	7	66.44	0.0264	8.28	0.594	19.3	65.6	96.3	40.4	14.75	0.44
50591-01F	8	73.37	0.0051	2.97	0.755	99.3	75.6	98.8	78.0	16.70	0.35
50591-01G	9	73.08	0.0061	7.87	0.209	83.3	61.9	96.8	88.4	16.30	1.17
50591-01H	12	69.35	0.0000	10.65	0.136	-	52.4	95.4	95.1	15.26	1.77
50591-01I	14	59.41	0.0000	7.80	0.072	-	62.4	96.1	98.8	13.17	3.07
50591-01J	15	79.56	0.0000	142.13	0.025	-	38.4	47.2	100.0	8.67	10.64
total-gas age			n=10		2.007	53.3				14.60	1.50

Notes:

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

Individual analyses show analytical error only; mean age errors also include error in J and irradiation parameters.

J-factors determined to a precision of ± 0.10% by CO_2 laser-fusion of 4 single crystals from each of 4 or 6 radial positions around the irradiation tray.

Correction factors for interfering nuclear reactions were determined using K-glass and CaF_2 and are as follows:

$(^{39}Ar/^{37}Ar)_{Ca}$ = 0.00070±0.00005

$(^{36}Ar/^{37}Ar)_{Ca}$ = 0.00026±0.00002

$(^{38}Ar/^{39}Ar)_K$ = 0.0119

$(^{40}Ar/^{39}Ar)_K$ = 0.0250±0.0050.

Total system blank values: 2.9 x 10^{-16}, 4.8 x 10^{-18}, 7.0 x 10^{-19}, 2.1 x 10^{-18}, 2.7 x 10^{-18} at masses 40, 39, 38, 37, and 36 respectively.

*Radiogenically produced.

†K/Ca=molar ratio calculated from reactor produced $^{39}Ar_K$ and $^{37}Ar_{Ca}$

§Cl/K=molar ratio calculated from reactor produced $^{39}Ar_K$ and $^{38}Ar_{Cl}$

#D=Discrimination.

**n=Number of analyses used for age calculations.