Open File Report OF-AR-21



New Mexico Bureau of Geology and Mineral Resources A division of New Mexico Institute of Mining and Technology

Data Repository for ⁴⁰Ar/³⁹Ar Dating of the Eruptive History of Mount Erebus, Antarctica: Summit Flows, Tephra and Caldera Collapse

Prepared By:

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Temp			³⁶ Ar/ ³⁹ Ar	³⁹ Ar _K		Cl/K	⁴⁰ Ar*	³⁹ Ar	Age	±2s
(°C)	⁴⁰ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	(x 10 ⁻³)	(x 10 ⁻¹⁶ mol)	K/Ca	$(x \ 10^{-3})$	(%)	(%)	(ka)	(ka)
(0)			()	, ,	12.04	· /	(/0)	(, 0)	(114)	(1111)
E97004	(1 #50(11) 41	1.2 mg I_	0 0000793 + 0 1	00/ Dica -1 00	1CO I D DODO	02 NM 112 ;	madiation			
550**	(L#30011), 41	0.3351	1026 2	1 15	400±0.0003	130.8		0.1	83	1816
550 650**	215.7	0.5551	727.9	1.15	0.99	56	0.0	0.1	87	257
700**	11.16	0.4941	36.19	17.9	1.0	2.1	43	2.2	67	32
800	3 821	0.4793	12.80	233.3	11	0.45	1.3	18.1	7	6
900	1 225	0 4684	3 934	237.4	1.1	0.24	61	34.3	10	3
1000	0 7970	0.4578	2.528	566.4	11	0.21	7.8	73.0	8	2
1100**	1.842	0.4433	5.802	257.1	1.2	0.76	7.5	90.5	19	4
1200**	7.084	0.4369	22.10	59.5	1.2	22.2	8.0	94.6	80	13
1350**	5.317	0.4480	16.19	76.1	1.1	4.6	10.3	99.8	77	10
1500**	60.50	0.5473	207.0	0.924	0.93	17.4	-1.1	99.8	-93	399
1750**	152.5	0.9440	514.5	2.21	0.54	6.0	0.3	100.0	67	306
total gas	age		n=11	1464.6	1.1				18	9
plateau	MSWD -	= 0.62	n=3	1037.1	1.1			70.8	9	2
E97017	(1 #50(14) 41	22 I_I	0 00007/0 10 1	00/ Dine -1 00	469 10 0000	NN 110 :				
E0/UI/	(L#50014), 41	2.5 mg, J-	0.0000/08±0.1	070, DISC1.00	400±0.000>	1 7		20.5	0	275
700**	17.07	0.0498	58 10	308.0	0.79	0.50	0.0	20.5	113	10
800	17.37	0.5609	12 90	362.7	0.88	0.39	13.3	44.J	80	19
900	2 523	0.50776	6 801	162.4	0.90	0.58	21.3	76.3	74	5
1000	3 221	0.5697	9 1 2 5	161.9	0.00	0.84	17.0	86.0	75	5
1100**	7.058	0.5891	21.74	82.4	0.90	17	93	91.0	91	11
1200**	14 99	0.6537	47 54	23.2	0.78	51.2	6.5	92.4	136	30
1350**	4.487	0.8834	12.46	119.2	0.58	7.9	19.0	99.6	118	7
1500**	73.48	4.321	239.6	2.11	0.12	97.1	4.1	99.7	415	265
1750**	128.8	15.91	436.0	4.17	0.032	173.0	0.9	100.0	171	229
total gas	age		n=10	1655.1	0.84				77	65
plateau	MSWD :	= 1.59	n=3	687.0	0.89			41.5	76	4
E87020a	n (L#9867), 40	7.3 mg, J=	0.0000825±0.1	0%, Disc.=1.00	361±0.0015	57, NM-99 ir	radiation			
550**	904.9	-0.4437	2963.0	0.098	-	88.8	3.2	0.0	4354	5926
700**	1504.9	0.3584	5027.0	2.62	1.4	79.8	1.3	0.2	2888	2903
800**	187.3	0.2498	653.2	0.367	2.0	40.9	-3.1	0.2	-858	1768
900	2.485	0.4750	8.131	518.0	1.1	0.50	3.8	34.9	14	5
1000	1.087	0.4647	3.398	365.5	1.1	0.37	8.8	59.4	14	3
1100	1.215	0.4678	4.048	258.7	1.1	0.33	2.5	76.8	4	4
1200	1.438	0.4689	4.775	172.5	1.1	0.91	2.7	88.3	6	5
1350**	5.903	0.4734	19.12	84.8	1.1	13.1	4.5	94.0	40	14
1550**	81.62	0.4988	276.2	70.9	1.0	2.4	0.0	98.8	3	155
1700**	1268.3	0.4454	4372.8	18.4	1.1	1.6	-1.9	100.0	-3556	2568
total gas	age	()(*	n=10	1491.9	1.1 1.1			88.1	-27	50
plateau	MSWD-	- 0.20	11 7	1514.7	1.1			00.1	10	0
E87021	(L#9866), 390	.4 mg, J=0.	.0000829±0.10	%, Disc.=1.003	61±0.00157	7, NM-99 irr	adiation			
550**	-434.2505	-0.3696	-1824.4662	0.021	-	65.8	-24.1	0.0	15615	30433
700**	7198.1	1.806	24380.1	1.16	0.28	115.9	-0.1	0.1	-917	14506
800**	297.2	1.749	1034.3	1.09	0.29	30.0	-2.8	0.2	-1241	768
900**	16.17	1.073	42.87	469.3	0.48	2.9	22.0	48.9	533	91
975**	23.71	1.025	74.92	142.9	0.50	1.4	6.8	63.7	243	50
1100	30.00	1.182	100.2	107.9	0.43	0.97	1.5	74.9	69	58
1200	47.16	1.185	158.3	80.0	0.43	5.8	1.0	83.2	69	92
1350	1.8/3	1.165	25.13	111.0	0.44	8.0	6.5	94.7	11	16
1550	43.25	1.407	146.8	39.2	0.36	2.3	-0.1	98.8	-6	87
1/00**	255.7	1.360	/95.5	11.8	0.38	2.6	0.3	100.0	115	460
nlateau	MOWD	-117	n=10 n=4	904.4 338 1	0.40			35.1	73	90 23
r	1413 W D -	1.1/		220.1				50.1	, 5	

Table 1 - ${}^{40}\text{Ar}/{}^{39}\text{Ar}$ furnace step-heating data.

Temp			³⁶ Ar/ ³⁹ Ar	$^{39}Ar_{K}$		Cl/K	40Ar*	³⁹ Ar	Age	±2s
(°C)	$^{40}Ar/^{39}Ar$	³⁷ Ar/ ³⁹ Ar	$(x \ 10^{-3})$	(x 10 ⁻¹⁶ mol)	K/Ca	$(x \ 10^{-3})$	(%)	(%)	(ka)	(ka)
(C)	711, 711	7117 711	(A 10)	(x to mon)	K/Cd	(10)	(70)	(70)	(Ka)	(Ka)
E87026	(L#50617), 39	9.8 mg, J=0	.000075±0.10	%, Disc.=1.0040	68±0.00093	, NM-112 irı	adiation			
550**	915.3	0.9120	3086.5	13.6	0.56	13.1	0.4	2.1	453	958
650**	29.95	1.380	95.82	43.3	0.37	1.0	5.7	8.8	233	36
700**	10.12	1.333	29.66	52.9	0.38	1.0	14.2	17.0	194	16
800**	10.66	1.308	32.94	36.1	0.39	1.3	9.4	22.6	136	20
900**	6.270	1.328	16.58	181.1	0.38	0.86	23.2	50.6	196	7
1000**	3.742	1.391	9.371	62.6	0.37	1.2	28.4	60.2	143	10
1100**	6.807	1.361	19.28	57.2	0.37	2.3	17.5	69.1	161	12
1200**	13.43	1.344	35.58	30.7	0.38	42.3	22.4	73.8	407	22
1350**	2.846	1.276	7.914	109.3	0.40	2.8	20.6	90.7	79	6
1750**	6.385	1.575	19.59	60.1	0.32	1.7	10.9	100.0	94	11
total gas	age		n=10	646.8	0.38				173	32
plateau	MSWD	= n.a.	n=0	n.a.	n.a.			0.0	n.a.	n.a.
F87030a	(1 #9865) 41	0.8 mg I=0	0000817+0 10)% Disc =1 00?	361+0.0015	7 NM_99 im	adiation			
550**	1254.4	0.3800	4276 9	1 26	1.3	159 3	-0 7	0.1	-1385	2458
700**	533.4	0.4892	1819.9	2.24	1.0	57.1	-0.8	0.2	-640	1089
800**	-46 4361	0 2384	-236 6287	0.079	2.1	11.3	-50.5	0.2	3460	5868
900	2 010	0 4288	6 704	535.2	1 2	0.65	19	38.5	5	5000
975	1 0000	0.4230	3 109	170.9	1.2	0.52	9.0	50.7	13	4
1100	1.0000	0.4154	3 580	169.3	1.2	0.32	10.0	84.3	17	
1200**	2 750	0.4140	8 726	409.5 87.1	1.2	1.1	6.6	90.5	26	9
1350**	7 832	0.4140	25.82	111.1	1.2	10.6	0.0	98.4	31	16
1550**	73.52	0.4237	252.1	11.1	1.2	4.0	1.3	00.7	1/1	157
1700**	128.9	0.4332	252.1 469 1	10.5	1.2	4.0	-1.5	100.0	-141	295
total gas	130.0	0.4300	400.1	1308.0	1.2	1.9	0.5	100.0	11	205
nlateau	MSWD -	- 7 57*	n=10 n=3	1175.4	1.2			84.0	14	6
plateau	WI3WD-	- 1.52	11.5	1175.1	1.2			01.0	11	
E87033 ((L#50615), 41	0.0 mg, J=0	.000075±0.109	%, Disc.=1.0040	68±0.00093	, NM-112 irı	adiation			
550**	1421.9	0.5953	4770.2	14.2	0.86	14.9	0.9	0.9	1669	1498
650**	232.3	0.4226	782.2	113.9	1.2	2.2	0.5	8.1	166	238
700	51.37	0.4907	171.6	142.0	1.0	1.0	1.3	17.0	92	54
800	29.21	0.4889	96.71	502.1	1.0	0.68	2.2	48.6	88	32
900	3.389	0.4481	9.223	248.6	1.1	0.37	20.0	64.3	91	5
1000	3.941	0.4547	11.10	206.4	1.1	0.51	17.2	77.2	91	5
1100**	4.959	0.4734	14.10	130.6	1.1	1.4	16.3	85.5	109	7
1200**	12.71	0.5200	39.30	44.9	0.98	29.7	8.8	88.3	151	22
1350**	3.309	0.6186	8.414	176.9	0.82	3.6	25.8	99.4	114	5
1500**	104.1	1.736	332.5	1.91	0.29	34.1	5.7	99.6	808	345
1750**	85.66	12.49	288.1	7.10	0.041	115.0	1.7	100.0	200	153
total gas	age		n=11	1588.6	1.0				117	50
plateau	MSWD =	= 0.01	n=4	1099.1	1.1			69.2	91	4
E87034 ((L#842), 97.4	mg, J=0.000	00809±0.10%,	D=1.0107±0.00)15, NM-10) irradiation				
700	13.09	0.5050	44.08	0.416	1.0	0.53	0.6	10.7	12	26
750	5.643	0.5022	18.62	0.289	1.0	0.55	2.8	18.1	23	17
850	3.277	0.4924	10.63	0.304	1.0	0.53	4.6	26.0	22	15
900	1.997	0.4942	6.601	0.233	1.0	0.43	3.1	32.0	9	10
950	2.069	0.4965	7.005	0.147	1.0	0.39	0.7	35.8	2	13
1050	1.796	0.4979	5.900	0.237	1.0	0.32	3.9	41.8	10	10
1150**	1.718	0.4977	5.147	0.249	1.0	0.46	12.6	48.3	31	9
1300**	2,515	0.4962	7.700	0.345	1.0	0.69	10.2	57.1	37	9
1450**	3.430	0.5153	10.13	0.492	0.99	1.6	13.4	69.8	66	9
1650**	0,7307	0.5105	1.957	0.902	1.00	0.65	24.0	93.0	25	3
1650**	7,304	0.4950	24 13	0.272	1.0	0.84	2.6	100.0	28	19
total oas	,	5.1750	n=11	3 89	1.0	0.07	2.0	100.0	20	11
plateau	MSWD	=1.22	n=6	1.63	1.0			41.8	11	8

Temp			³⁶ Ar/ ³⁹ Ar	$^{39}Ar_{\rm K}$		Cl/K	40Ar*	³⁹ Ar	Age	±2s
(°C)	40Ar/39Ar	³⁷ Ar/ ³⁹ Ar	(x 10 ⁻³)	(x 10 ⁻¹⁶ mol)	K/Ca	(x 10 ⁻³)	(%)	(%)	(ka)	(ka)
E87035 (L#50612), 40	6.6 mg, J=0	.0000762±0.1	0%, Disc.=1.004	468±0.0009	3, NM-112 in	radiation			
550**	-742.4003	-3.0456	-3781.3342	0.069	-	-228.808	-50.5	0.0	50684	37164
650**	464.0	0.5492	1565.6	14.2	0.93	36.0	0.3	1.3	191	498
700	3.891	0.5069	13.13	389.1	1.0	1.0	0.6	37.9	3	5
800	2.660	0.4993	8.873	193.2	1.0	0.64	1.9	56.0	7	4
900	1.624	0.5080	5.184	113.3	1.0	0.30	6.7	66.7	15	6
1000	1.534	0.4999	4.892	192.0	1.0	0.58	6.8	84.7	14	4
1100	3.095	0.4891	10.19	116.8	1.0	1.3	3.2	95.7	13	7
1200**	11.41	0.4836	36.68	22.0	1.1	51.8	5.2	97.7	81	25
1350**	8.444	0.5262	25.96	23.3	0.97	16.6	9.4	99.9	108	21
1500**	63.64	0.5612	224.8	0.457	0.91	39.8	-4.3	100.0	-379	581
1750**	236.0	0.7994	821.7	0.461	0.64	21.6	-2.9	100.0	-936	807
total gas	age		n=11	1064.8	1.0				17	15
plateau	MSWD =	= 4.16*	n=5	1004.3	1.0			94.3	10	5
E87039 (L#9864), 408	.5 mg, J=0.0	0000795±0.10	%, Disc.=1.003(61±0.00157	, NM-99 irra	diation			
550**	316.5	0.3887	1104.0	0.283	1.3	242.9	-3.1	0.0	-1393	1699
700**	23.37	0.6854	75.99	70.1	0.74	3.4	4.0	6.1	135	44
800	3.820	0.6366	11.24	32.3	0.80	1.3	13.8	8.9	75	17
900	2.005	0.6148	4.657	417.4	0.83	0.45	32.9	45.2	93	4
975	2.389	0.6078	5.713	110.2	0.84	0.57	30.6	54.7	104	6
1100**	3.162	0.6081	7.758	129.0	0.84	1.2	28.4	65.9	128	7
1200**	6.977	0.6190	19.33	53.6	0.82	18.9	18.5	70.6	185	15
1350**	2.435	0.5944	5.607	304.0	0.86	1.4	33.2	97.0	115	4
1550**	32.34	0.7069	107.0	24.0	0.72	2.5	2.3	99.0	107	63
1700**	79.48	0.7674	270.8	11.0	0.66	3.0	-0.7	100.0	-74	161
total gas	age		n=10	1151.8	0.83				109	11
plateau	MSWD =	= 7.24*	n=3	559.8	0.83			48.6	95	9
E87040 (L#8855), 314	.77 mg, J=0	.0000896±0.1	0%, Disc.=1.002	258±0.0011	4, NM-85 irr	adiation			
550**	895.1	0.1479	3015.2	4.48	3.5	26.9	0.5	0.4	661	1437
700**	9.902	0.4717	33.01	115.8	1.1	1.4	1.6	9.7	26	17
800	2.552	0.4708	8.702	422.1	1.1	0.42	-0.3	43.6	-1	5
900	2.278	0.4772	7.777	269.8	1.1	0.28	-0.4	65.3	-1	5
1000	2.427	0.4745	8.133	207.2	1.1	0.52	1.5	81.9	6	5
1100	4.235	0.4668	14.18	93.7	1.1	0.91	1.3	89.5	9	10
1200**	9.788	0.4850	31.50	56.2	1.1	14.6	5.0	94.0	80	19
1300**	7.393	0.5229	22.15	48.2	0.98	6.5	11.7	97.9	140	15
1400**	5.547	0.5408	15.66	13.8	0.94	2.2	16.9	99.0	151	20
1500**	8.851	0.5754	27.82	3.60	0.89	3.0	7.4	99.3	105	57
1600**	14.84	0.7363	48.27	5.24	0.69	4.1	4.1	99.7	99	52
1700**	26.55	0.6650	84.41	3.82	0.77	2.5	6.1	100.0	263	87
total gas	age		n=12	1244.0	1.1				18	13
plateau	MSWD :	= 2.60	n=4	992.9	1.1			79.8	1	5

Temp			³⁶ Ar/ ³⁹ Ar	³⁹ Ar _K		Cl/K	⁴⁰ Ar*	³⁹ Ar	Age	±2s
(°C)	⁴⁰ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	(x 10 ⁻³)	(x 10 ⁻¹⁶ mol)	K/Ca	(x 10 ⁻³)	(%)	(%)	(ka)	(ka)
<u> </u>				<u> </u>		. ,	(1)	(19)		(
E87045 ((L#50616), 37	1.9 mg, J=0).0000767±0.1()%, Disc.=1.004	468±0.0009	3, NM-112 ir	radiation			
550**	1189.0	1.955	4056.1	59.6	0.26	2.2	-0.8	7.3	-1306	1521
650	13.16	1.778	38.18	151.5	0.29	0.72	15.1	25.7	276	15
700	12.78	1.770	37.52	73.3	0.29	0.65	14.2	34.7	250	17
800**	8.001	1.827	19.90	109.4	0.28	0.73	28.0	48.0	310	11
900**	6.651	1.864	13.22	123.4	0.27	0.54	43.2	63.0	397	8
1000**	6.833	1.879	13.12	119.6	0.27	0.49	45.2	77.6	426	8
1100**	13.69	1.829	20.92	85.1	0.28	0.59	55.8	88.0	1056	12
1200**	29.24	1.851	61.60	31.6	0.28	0.84	38.2	91.8	1545	31
1300**	78.54	1.857	36.04	25.2	0.27	1.0	86.6	94.9	9402	47
1500**	24.91	1.984	41.51	34.2	0.26	0.95	51.3	99.1	1770	25
1650**	45.10	2.005	134.9	7.65	0.25	-0.195	11.9	100.0	742	80
total gas	age		n=11	820.6	0.28				680	124
plateau	MSWD =	4.60*	n=2	224.8	0.29			27.4	264	28
E87051 ((L#8860), 332	.53 mg, J=0	0000875±0.10)%, Disc.=1.002	:58±0.0011	4, NM-85 irr	adiation			
550**	614.8	0.0737	2060.9	0.400	6.9	44.5	0.9	0.0	908	1459
700	10.03	0.4353	34.01	49.9	1.2	1.5	-0.1	4.8	-2	19
800	1.632	0.4267	5.239	20.5	1.2	1.3	5.7	6.8	15	12
900	1.5/4	0.4094	5.277	415.6	1.2	0.41	1.4	46.6	3	3
1000	2.078	0.4152	6.993	266.8	1.2	0.37	0.9	/2.1	3	4
1200**	2.460	0.4195	8.210	120.0	1.2	0.70	1./	83.0	25	0
1200**	3.922	0.4132	19.34	91.5	1.2	0.0 6.6	2.0	92.4	25	1/
1550**	4.937	0.4361	10.00	05.2	1.1	6.1	4.5	96.0	20	10
1700**	21.05	0.5514	74.51	9.08	0.93	0.1	4.7	100.0	29 7	130
total gas	21.95	0.0203	74.51 n=10	1044.3	1.2	5.1	-0.2	100.0	-/	150
nlateau	MSWD =	= 1.20	n=5	872.8	1.2			83.6	4	3
	MOWE	1.20								-
E87054 ((L#8857), 416	.07 mg, J=0).0000907±0.1()%, Disc.=1.002	258±0.0011	4, NM-85 irr	adiation			
550**	2121.8	0.5394	7225.4	0.477	0.95	228.2	-0.6	0.0	-2169	5067
700**	29.91	0.4824	103.4	36.0	1.1	2.7	-2.1	2.8	-104	69
800	1.918	0.4383	6.417	228.1	1.2	0.39	1.6	20.4	5	7
900	0.9810	0.4257	3.234	553.8	1.2	0.37	35	(2.2		3
1000	1.014			555.0	1.2	0.57	5.5	63.2	5	5
1100	1.014	0.4154	3.110	131.8	1.2	0.63	10.3	63.2 73.4	5 17	7
1200**	1.649	0.4154 0.4264	3.110 5.219	131.8 243.3	1.2 1.2 1.2	0.63 0.73	10.3 7.1	63.2 73.4 92.2	5 17 19	7 6
1200	1.649 6.778	0.4154 0.4264 0.4183	3.110 5.219 21.69	131.8 243.3 52.6	1.2 1.2 1.2 1.2	0.63 0.73 21.0	10.3 7.1 5.6	63.2 73.4 92.2 96.2	5 17 19 62	7 6 29
1350**	1.649 6.778 6.177	0.4154 0.4264 0.4183 0.5707	3.110 5.219 21.69 19.73	131.8 243.3 52.6 44.8	1.2 1.2 1.2 1.2 0.89	0.63 0.73 21.0 17.5	10.3 7.1 5.6 6.0	63.2 73.4 92.2 96.2 99.7	5 17 19 62 60	7 6 29 26
1350** 1550**	1.649 6.778 6.177 10.10	0.4154 0.4264 0.4183 0.5707 1.571	3.110 5.219 21.69 19.73 30.60	131.8 243.3 52.6 44.8 2.86	1.2 1.2 1.2 1.2 0.89 0.32	0.63 0.73 21.0 17.5 18.2	10.3 7.1 5.6 6.0 11.4	63.2 73.4 92.2 96.2 99.7 99.9	5 17 19 62 60 188	7 6 29 26 148
1350** 1550** 1700**	1.649 6.778 6.177 10.10 134.6	0.4154 0.4264 0.4183 0.5707 1.571 3.194	3.110 5.219 21.69 19.73 30.60 461.0	131.8 243.3 52.6 44.8 2.86 0.932	1.2 1.2 1.2 1.2 0.89 0.32 0.16	0.63 0.73 21.0 17.5 18.2 30.7	10.3 7.1 5.6 6.0 11.4 -1.0	63.2 73.4 92.2 96.2 99.7 99.9 100.0	5 17 19 62 60 188 -224	7 6 29 26 148 762
1350** 1550** 1700** total gas	1.014 1.649 6.778 6.177 10.10 134.6 age	0.4154 0.4264 0.4183 0.5707 1.571 3.194	3.110 5.219 21.69 19.73 30.60 461.0 n=10	131.8 243.3 52.6 44.8 2.86 0.932 1294.5	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2	0.63 0.73 21.0 17.5 18.2 30.7	10.3 7.1 5.6 6.0 11.4 -1.0	63.2 73.4 92.2 96.2 99.7 99.9 100.0	5 17 19 62 60 188 -224 10	7 6 29 26 148 762 11
1350** 1350** 1550** 1700** total gas plateau	1.014 1.649 6.778 6.177 10.10 134.6 age MSWD =	0.4154 0.4264 0.4183 0.5707 1.571 3.194 : 7.71*	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2	0.63 0.73 21.0 17.5 18.2 30.7	10.3 7.1 5.6 6.0 11.4 -1.0	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4	5 17 19 62 60 188 -224 10 9	7 6 29 26 148 762 11 7
1200 1350** 1550** 1700** total gas plateau	1.014 1.649 6.778 6.177 10.10 134.6 age <u>MSWD</u> =	0.4154 0.4264 0.4183 0.5707 1.571 3.194 : <u>7.71*</u>	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2	0.63 0.73 21.0 17.5 18.2 30.7	10.3 7.1 5.6 6.0 11.4 -1.0	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4	5 17 19 62 60 188 -224 10 9	7 6 29 26 148 762 11 7
1350** 1350** 1550** 1700** total gas plateau E87061 (1.014 1.649 6.778 6.177 10.10 134.6 * age MSWD = (L#50613), 36	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J= 0	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 (8±0.00093	0.63 0.73 21.0 17.5 18.2 30.7	10.3 7.1 5.6 6.0 11.4 -1.0 adiation	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4	5 17 19 62 60 188 -224 10 9	7 6 29 26 148 762 11 7
1350** 1350** 1550** 1700** total gas plateau E87061 (550**	1.014 1.649 6.778 6.177 10.10 134.6 * age MSWD = (L#50613), 36 968.7 24.02	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 (8±0.00093 1.6	0.63 0.73 21.0 17.5 18.2 30.7 , NM-112 irr -8.253	10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4	5 17 19 62 60 188 -224 10 9	7 6 29 26 148 762 11 7 1280
1350** 1350** 1550** 1700** total gas plateau E87061 (550** 650	1.014 1.649 6.778 6.177 10.10 134.6 * age MSWD = (L#50613), 36 968.7 24.03 2.850	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.2017	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 .000073±0.10 3376.0 81.21	333.8 131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 201.0	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 (8±0.00093 1.6 1.5	0.63 0.73 21.0 17.5 18.2 30.7 , NM-112 irr -8.253 0.25	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4	5 17 19 62 60 188 -224 10 9 -3806 4 21	7 6 29 26 148 762 11 7 1280 29
1350** 1350** 1550** 1700** total gas plateau E87061 (550** 650 700	1.014 1.649 6.778 6.177 10.10 134.6 * age MSWD = (L#50613), 36 968.7 24.03 3.850 2.009	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.3217 0.2149	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 0.000073±0.10 3376.0 81.21 12.48 0.027	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 i8±0.00093 1.6 1.5 1.6 1.6	0.63 0.63 0.73 21.0 17.5 18.2 30.7 NM-112 irr -8.253 0.25 0.37 0.42	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7	5 17 19 62 60 188 -224 10 9 -3806 4 21 21	7 6 29 26 148 762 11 7 1280 29 5
1350** 1350** 1550** 1700** total gas plateau E87061 (550** 650 700 800 900	1.014 1.649 6.778 6.177 10.10 134.6 : age MSWD = (L#50613), 36 968.7 24.03 3.850 3.098 3.200	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.3217 0.3148 0.2102	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 0.000073±0.10 3376.0 81.21 12.48 9.936 10.07	333.8 131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1 300.2	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 i8±0.00093 1.6 1.5 1.6 1.6 1.6 1.6	0.63 0.73 21.0 17.5 18.2 30.7 , NM-112 irr -8.253 0.25 0.37 0.42 0.32	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2 4.7	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7 41.7 71.5	5 17 19 62 60 188 -224 10 9 -3806 4 21 21	7 6 29 26 148 762 11 7 1280 29 5 5
1350** 1350** 1550** 1700** total gas plateau E87061 (550** 650 700 800 900 1000**	1.014 1.649 6.778 6.177 10.10 134.6 : age MSWD = (L#50613), 36 968.7 24.03 3.850 3.098 3.399 4.102	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.3217 0.3148 0.3103 0.2174	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 0.000073±0.10 3376.0 81.21 12.48 9.936 10.97 13.08	335.0 131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1 399.2 223.8	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 1.2 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	0.63 0.73 21.0 17.5 18.2 30.7 NM-112 irr -8.253 0.25 0.37 0.42 0.33 0.21	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2 4.7 5.8	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7 41.7 71.5 88.2	5 17 19 62 60 188 -224 10 9 -3806 4 21 21 21	7 6 29 26 148 762 11 7 1280 29 5 5 4
1300*** 1350** 1550** 1700** total gas plateau E87061 550** 650 700 800 900 1000** 1100**	1.014 1.649 6.778 6.177 10.10 134.6 * age MSWD = (L#50613), 36 968.7 24.03 3.850 3.098 3.399 4.102 8.500	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.3217 0.3148 0.3103 0.3174 0.3203	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 0.000073±0.10 3376.0 81.21 12.48 9.936 10.97 13.08 28.10	335.0 131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1 399.2 223.8 89.2	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 1.2 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	0.63 0.73 21.0 17.5 18.2 30.7 NM-112 irr -8.253 0.25 0.37 0.42 0.33 0.31 0.64	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2 4.7 5.8 2.4	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7 41.7 71.5 88.3 94.9	5 17 19 62 60 188 -224 10 9 -3806 4 21 21 21 31 27	7 6 29 26 148 762 11 7 1280 29 5 5 4 6 6 1280 1280 129 1280 1280 129 1280 129 1280 129 1280 129 1280 129 1280 129
1350** 1350** 1550** 1700** total gas plateau E87061 (550** 650 700 800 900 1000** 1100** 1200*	1.014 1.649 6.778 6.177 10.10 134.6 age MSWD = (L#50613), 36 968.7 24.03 3.850 3.098 3.399 4.102 8.509 23.41	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.3217 0.3148 0.3103 0.3174 0.3203 0.3245	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 0.000073±0.10 3376.0 81.21 12.48 9.936 10.97 13.08 28.10 76.18	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1 399.2 223.8 89.2 30.8	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 1.2 (8±0.00093 1.6 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	0.63 0.73 21.0 17.5 18.2 30.7 NM-112 irr -8.253 0.25 0.37 0.42 0.33 0.31 0.64 11	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2 4.7 5.8 2.4 3.8	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7 41.7 71.5 88.3 94.9 97.2	5 17 19 62 60 188 -224 10 9 -3806 4 21 21 21 31 27 119	7 6 29 26 148 762 11 7 1280 29 5 5 4 6 13 35
1300** 1350** 1550** 1700** total gas plateau E87061 550** 650 700 800 900 1000** 1100** 1200**	1.014 1.649 6.778 6.177 10.10 134.6 age MSWD = (L#50613), 36 968.7 24.03 3.850 3.098 3.399 4.102 8.509 23.41 12.28	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.3217 0.3148 0.3103 0.3174 0.3203 0.3245 0.3457	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 0.000073±0.10 3376.0 81.21 12.48 9.936 10.97 13.08 28.10 76.18 35.99	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1 399.2 223.8 89.2 30.8 25 1	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 1.2 (8±0.00093 1.6 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	0.63 0.73 21.0 17.5 18.2 30.7 NM-112 irr -8.253 0.25 0.37 0.42 0.33 0.31 0.64 1.1 1.4	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2 4.7 5.8 2.4 3.8 13.5	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7 41.7 71.5 88.3 94.9 97.2 90 1	5 17 19 62 60 188 -224 10 9 -3806 4 21 21 21 31 27 119 217	7 6 29 26 148 762 11 7 1280 29 5 5 4 6 13 35 20
1300** 1350** 1550** 1700** total gas plateau E87061 550** 650 700 800 900 1000** 1100** 1200** 1300**	1.014 1.649 6.778 6.177 10.10 134.6 age MSWD = (L#50613), 36 968.7 24.03 3.850 3.098 3.399 4.102 8.509 23.41 12.28 9.109	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.3217 0.3148 0.3103 0.3174 0.3203 0.3245 0.3457 1.079	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 0.000073±0.10 3376.0 81.21 12.48 9.936 10.97 13.08 28.10 76.18 35.99 23.49	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1 399.2 223.8 89.2 30.8 25.1 9.35	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 i8±0.00093 1.6 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.5 0.47	0.63 0.73 21.0 17.5 18.2 30.7 NM-112 irr -8.253 0.25 0.37 0.42 0.33 0.31 0.64 1.1 1.4 1.5	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2 4.7 5.8 2.4 3.8 13.5 24 5	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7 41.7 71.5 88.3 94.9 97.2 99.1 90.8	5 17 19 62 60 188 -224 10 9 -3806 4 21 21 21 31 27 119 217 293	7 6 29 26 148 762 11 7 1280 29 5 5 4 6 13 35 29 61
1300** 1350** 1550** 1700** total gas plateau E87061 550** 650 700 800 900 1000** 1000** 1200** 1300** 1500* 1500* 10	1.014 1.649 6.778 6.177 10.10 134.6 age MSWD = (L#50613), 36 968.7 24.03 3.850 3.098 3.399 4.102 8.509 23.41 12.28 9.109 74.98	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3364 0.3217 0.3148 0.3103 0.3174 0.3203 0.3174 0.3203 0.3245 0.3457 1.079 1.114	3.110 5.219 21.69 19.73 30.60 461.0 n=10 n=4 0.000073±0.10 3376.0 81.21 12.48 9.936 10.97 13.08 28.10 76.18 35.99 23.49 249 5	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1 399.2 223.8 89.2 30.8 25.1 9.35 2 35	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 38 ± 0.00093 1.6 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	0.63 0.63 0.73 21.0 17.5 18.2 30.7 NM-112 irr -8.253 0.25 0.37 0.42 0.33 0.31 0.64 1.1 1.4 1.5 -0 989	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2 4.7 5.8 2.4 3.8 13.5 24.5 17	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7 41.7 71.5 88.3 94.9 97.2 99.1 99.8 100.0	5 17 19 62 60 188 -224 10 9 -3806 4 21 21 21 21 31 27 119 217 293 171	7 6 29 26 148 762 11 7 1280 29 5 5 4 6 13 35 29 61 347
1300** 1350** 1550** 1700** total gas plateau E87061 (550** 650 700 800 900 1000** 1000*	1.014 1.649 6.778 6.177 10.10 134.6 age MSWD = (L#50613), 36 968.7 24.03 3.850 3.098 3.399 4.102 8.509 23.41 12.28 9.109 74.98 age	0.4154 0.4264 0.4183 0.5707 1.571 3.194 = 7.71* 8.3 mg, J=0 0.3201 0.3201 0.3364 0.3217 0.3148 0.3103 0.3174 0.3203 0.3245 0.3457 1.079 1.114	3.110 5.219 21.69 19.73 30.60 461.0 $n=10$ $n=4$ 1000073 ± 0.10^{6} 3376.0 81.21 12.48 9.936 10.97 13.08 28.10 76.18 35.99 23.49 249.5 $n=11$	131.8 243.3 52.6 44.8 2.86 0.932 1294.5 1156.9 %, Disc.=1.0046 0.874 54.9 301.0 201.1 399.2 223.8 89.2 30.8 25.1 9.35 2.35 1337.6	1.2 1.2 1.2 1.2 0.89 0.32 0.16 1.2 1.2 38 ± 0.00093 1.6 1.5 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	0.63 0.63 0.73 21.0 17.5 18.2 30.7 . NM-112 irr -8.253 0.25 0.37 0.42 0.33 0.31 0.64 1.1 1.4 1.5 -0.989	3.3 10.3 7.1 5.6 6.0 11.4 -1.0 adiation -3.0 0.1 4.2 5.2 4.7 5.8 2.4 3.8 13.5 24.5 1.7	63.2 73.4 92.2 96.2 99.7 99.9 100.0 89.4 0.1 4.2 26.7 41.7 71.5 88.3 94.9 97.2 99.1 99.8 100.0	5 17 19 62 60 188 -224 10 9 -3806 4 21 21 21 21 21 31 27 119 217 293 171 28	7 6 29 26 148 762 11 7 1280 29 5 5 4 6 13 35 29 61 347 9

Temp			³⁶ Ar/ ³⁹ Ar	$^{39}Ar_{\rm K}$		Cl/K	⁴⁰ Ar*	³⁹ Ar	Age	±2s
(°C)	40Ar/39Ar	³⁷ Ar/ ³⁹ Ar	(x 10 ⁻³)	(x 10 ⁻¹⁶ mol)	K/Ca	(x 10 ⁻³)	(%)	(%)	(ka)	(ka)
E87062a	ı (L#9870), 40	7.9 mg, J=0	.0000837±0.1	0%, Disc.=1.003	861±0.0015	57, NM-99 ir	radiation			
550**	1217.2	0.5790	4193.1	0.696	0.88	74.3	-1.8	0.0	-3299	2723
700**	14.17	0.3869	46.63	113.7	1.3	1.0	2.8	7.7	60	29
800	3.088	0.3621	9.695	52.9	1.4	0.66	7.4	11.3	34	11
900	1.282	0.3483	3.716	598.1	1.5	0.33	14.8	51.5	28	3
975	1.298	0.3475	3.811	267.0	1.5	0.28	13.6	69.5	26	4
1100	1.578	0.3453	4.703	254.6	1.5	0.47	12.2	86.6	29	4
1200	4.015	0.3458	13.22	88.5	1.5	9.4	2.8	92.6	17	10
1350**	7.867	0.3563	24.92	78.4	1.4	4.7	6.5	97.9	76	17
1550**	40.35	0.4107	137.5	23.0	1.2	4.1	-0.7	99.4	-43	85
1700**	1121.5	0.3686	3780.9	8.76	1.4	3.1	0.4	100.0	635	2284
total gas	age		n=10	1485.7	1.4				33	23
plateau	MSWD =	= 1.72	n=5	1261.0	1.5			84.9	27	3
E87066	(L#9869), 418	.3 mg. J=0.0	0000835±0.10	%, Disc.=1.0036	51±0.00157	7. NM-99 irr:	adiation			
550**	1376.1	0.8232	4696.4	0.932	0.62	105.7	-0.8	0.1	-1764	2914
700**	98.92	0.6011	337.4	60.5	0.85	1.8	-0.8	4 1	-112	192
800**	4 366	0.5131	14.03	33.9	0.99	1.0	5.4	6.4	35	18
900	1 939	0.4663	6 381	648 3	11	0.36	3.4	49.6	10	4
1000	1.757	0.4660	4 674	267.9	1.1	0.38	8.7	47.0 67.5	10	
1100	1.476	0.4600	5 794	212.8	1.1	0.50	79	81.7	22	
1200**	3 788	0.4645	11.95	85.2	1.1	10.8	7.)	873	40	10
1250**	3 753	0.4045	12.06	172.7	1.1	3.2	5.4	98.8	30	8
1550**	13.60	0.4065	147.6	12.7	1.1	9.2	0.0	00.7	1	102
1700**	43.00	0.4905	147.0	5 10	1.0	9.0	0.0	99.7 100.0	-1	105
total gas	400.9	0.3990	n=10	1400 5	1.5	0.7	1.2	100.0	009	907
nlatoau	Mewn -	- 0 21*	n=3	1499.5	1.1			75 3	13	19
plateau	MSWD-	- 8.31	11-5	1127.0	1.1			15.5	17	0
E87083	(L#8851), 348	.84 mg, J=0	.0000921±0.1	0%, Disc.=1.002	258±0.001	14, NM-85 ir	radiation			
550**	304.9	0.4081	1039.5	4.30	1.3	37.9	-0.7	0.3	-367	554
700	1.549	0.3880	5.106	604.4	1.3	0.36	3.0	35.7	7	3
800	1.125	0.3871	3.724	244.5	1.3	0.23	2.7	50.1	5	3
900	1.447	0.3871	4.799	317.8	1.3	0.22	2.4	68.7	6	3
1000	1.641	0.3876	5.441	248.1	1.3	0.24	2.3	83.2	6	4
1100	2.202	0.3885	7.273	127.1	1.3	1.00	2.6	90.7	10	6
1200**	5.745	0.3959	18.87	73.0	1.3	16.2	3.1	95.0	29	12
1300**	2.850	0.4210	8.494	75.1	1.2	1.8	12.3	99.4	58	7
1400**	1.878	0.4502	5.579	4.53	1.1	2.8	12.9	99.7	40	40
1500**	7.283	0.5501	23.20	1.87	0.93	5.0	6.2	99.8	74	106
1600**	8.578	0.6784	28.51	2.21	0.75	7.3	2.1	99.9	30	90
1700**	25.87	0.6643	84.06	1.84	0.77	3.9	4.1	100.0	176	140
total gas	age		n=12	1704.6	1.3				9	6
total gas age plateau MSWD = 0.68		n=5	1541.8	1.3			90.5	6	2	

Temp			³⁶ Ar/ ³⁹ Ar	$^{39}Ar_{\rm K}$		Cl/K	40Ar*	³⁹ Ar	Age	±2s
(°C)	⁴⁰ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	(x 10 ⁻³)	(x 10 ⁻¹⁶ mol)	K/Ca	(x 10 ⁻³)	(%)	(%)	(ka)	(ka)
									~ /	
E93013 (L#2646), 110	.9 mg. J=0.0	0000755±0.109	%. D=1.0075±0.	0023. NM-	-28 irradiati	on			
550**	204.3	0.4630	720.0	1.91	1.1	19.9	-4.2	0.4	-1158	645
700	7.675	0.5156	23.68	49.4	0.99	0.62	9.1	11.0	94	22
800	6.447	0.5037	19.26	50.4	1.0	0.63	12.0	21.8	105	18
900	4.876	0.5076	14.53	54.8	1.0	0.083	12.3	33.6	81	15
1000	3.583	0.5134	9.859	50.0	0.99	0.47	19.2	44.3	93	13
1100	4.360	0.5172	13.14	52.1	0.99	0.87	11.3	55.5	67	14
1200**	9.499	0.5155	29.13	31.3	0.99	11.9	9.6	62.2	124	28
1300**	3.584	0.5037	8.273	70.6	1.0	1.2	32.4	77.3	157	10
1400**	1.786	0.5171	3.601	39.7	0.99	0.67	41.8	85.8	100	8
1550**	3.500	0.5262	9.288	26.6	0.97	0.85	22.2	91.5	105	16
1750**	27.26	0.5270	87.75	32.1	0.97	0.99	5.0	98.4	184	73
1750**	79.12	0.5153	257.4	7.35	0.99	0.99	3.9	100.0	419	221
total gas	age		n=12	466.1	1.00				109	25
plateau	MSWD =	= 3.45*	n=5	256.6	1.00			55.1	86	15
FRT 2 ((#8857) 136	70 mg I-0	0000077+0 10	% Dise -1 0024	58±0.0011/	NM 85 irr	adiation			
550**	1192.0	0 8261	4091 A	0.482	0.62	170.3	-1 /	0.1	_2820	2474
700	46.05	1.002	153.2	6.20	0.02	83	-1.4	1.4	140	113
840	3 857	0.5535	11.68	69.8	0.92	1.2	11.0	16.4	71	9
960	1 672	0.5355	4 259	204.1	0.92	0.60	26.0	60.3	71	4
1100**	3 1 10	0.5024	7 292	105.2	1.0	0.56	31.4	82.9	161	6
1200**	10.94	0.6709	26.91	44.4	0.76	14.6	27.6	92.2	502	18
1300**	12.24	0.6023	15.66	26.3	0.85	63	62.5	98.0	1270	18
1400**	6.080	0.7317	14 97	7 47	0.00	3.4	27.9	99.6	281	33
1500**	19 77	1 148	27.66	0.558	0.44	12.4	59.1	99.8	1941	340
1600**	66.92	1.000	196.4	0.493	0.51	3.5	13.4	99.9	1487	431
1700**	104.3	0.8458	326.2	0.633	0.60	47	7.6	100.0	1325	392
total gas	age	0.0.00	n=11	465.7	0.94	•••	7.0	100.0	207	13
plateau	MSWD =	= 0.74	n=3	280.2	0.96			60.2	71	5
	(T #9954) 222	21	0000000101	00/ Di1 002	50 10 0011	4 NIM 05 :				
ED1-42	(L#0054), 522	1 607	694 5	21.0	0 20	20.2	radiation 5.5	1.4	1022	221
700**	12.60	0.5085	32 30	21.9	0.30	1.8	25.0	1.4	510	25
700 800**	12.09	0.5985	6 747	308.2	1.00	0.85	23.0 58.5	35.1	451	23
000**	4.731	0.3118	4 000	402.0	1.00	0.63	75.1	60.6	566	2 2
1000**	5.512	0.5081	5 207	280.0	1.0	0.05	72.2	78.4	640	5
1100**	9.223	0.5081	11.16	280.0	0.03	1.2	64.6	/0.4 85.6	049	10
1200**	9.225	1.060	32.54	108.2	0.95	1.2	60.0	03.0 02.5	2/4	22
1300**	24.45	0 7607	16 50	103.0	0.40	Δ1	70.1	92.3 QQ ()	2458	17
1400**	17 /1	1 582	20.51	10.5.0	0.30	10.6	65.8	00 7	1876	17
1500**	65 79	7 808	101.2	2 25	0.52	62.2	55.4	99.8	5998	160
1600**	163.1	5 763	370.1	1.98	0.089	45.5	33.7	99.9	8891	338
1700**	138.9	3 950	339.2	1.09	0.13	31.2	28.1	100.0	6395	381
total gas	age	5.750	n=12	1575 7	0.15	21.4	20.1	100.0	918	17
plateau	MSWD	= n.a.	n=0	n.a.	n.a.			0.0	n.a.	n.a.

Temp			³⁶ Ar/ ³⁹ Ar	$^{39}Ar_{\rm K}$		Cl/K	40Ar*	³⁹ Ar	Age	±2s
(°C)	40Ar/39Ar	³⁷ Ar/ ³⁹ Ar	(x 10 ⁻³)	(x 10 ⁻¹⁶ mol)	K/Ca	(x 10 ⁻³)	(%)	(%)	(ka)	(ka)
									~ /	
EBT-53	(1.#8853), 421	59 mgI=	0 0000918+0 1	0%. Disc =1 00	258+0.0011	14. NM-85 ir	radiation			
550**	945 9	1 622	3217.9	1 91	0.31	120.2	-0.5	0.1	-816	1584
625**	103.7	0.9515	312.1	2.78	0.54	6.9	11.1	0.3	1909	240
700**	0.5808	0.6672	-4.2297	1.44	0.76	4.0	334.2	0.4	308	160
775**	4.432	0.5949	12.59	195.4	0.86	0.99	16.6	13.1	121	7
850	1.671	0.5603	3.906	255.1	0.91	0.37	32.5	29.7	89	4
925	1.504	0.5516	3.417	410.2	0.92	0.37	34.6	56.4	85	3
1000**	1.771	0.5267	3.991	332.0	0.97	0.40	34.8	77.9	101	3
1100**	2.907	0.5504	7 190	158.9	0.93	1.0	27.7	88.3	133	5
1200**	8 551	0.6335	19 47	114.5	0.81	13.3	33.1	95.7	468	18
1300**	14 87	1 575	23.80	53.0	0.32	19.0	53.5	99.2	1316	25
1400**	15.60	2 431	28.06	9.27	0.21	25.1	48.0	99.8	1239	59
1500**	44 77	35 31	115.9	1 59	0.014	325.5	29.6	99.9	2246	353
1600**	106.2	27.68	310.5	1.18	0.011	248.4	15.6	99.9	2794	620
1700**	186.8	9.939	527.9	0.924	0.051	81.5	16.9	100.0	5249	720
total gas	100.0	7.757	n=14	1538.3	0.89	01.5	10.9	100.0	186	10
plateau	MSWD =	= 2 54	n=2	665.3	0.92			43.3	86	4
-	1110 11 12	2.51								
BIT-272	(L#8428), 14	4.5 mg, J=0	.0001199±0.10	0%, D=1.0126±0	0.00085, NI	M-78 irradia	tion			
550**	1475.9	-0.4577	5025.5	0.014	-	-14.885	-0.6	0.0	-1994	69702
700	1.417	0.3940	4.226	24.0	1.3	0.77	14.0	6.8	43	41
800	0.5902	0.3802	1.415	13.5	1.3	0.71	34.1	10.6	44	80
900	0.4097	0.3787	0.8942	155.7	1.3	0.50	42.6	54.9	38	7
1000	0.4674	0.3619	1.048	106.4	1.4	0.50	39.7	85.1	40	10
1100	1.125	0.3512	3.000	28.9	1.5	0.72	23.6	93.4	57	35
1250**	5.405	0.3756	16.47	15.8	1.4	0.85	10.5	97.9	123	64
1350**	7.706	0.4374	23.76	4.82	1.2	0.51	9.3	99.2	156	206
1425**	34.67	0.3571	106.6	0.146	1.4	0.36	9.2	99.3	690	6064
1500**	15.67	0.0476	51.58	0.955	10.7	-0.882	2.7	99.5	92	1010
1750**	51.33	0.1759	165.5	0.599	2.9	-0.545	4.7	99.7	525	1642
1800**	36.07	0.0382	117.9	1.02	13.3	1.5	3.4	100.0	267	978
total gas	age		n=12	351.8	1.4				48	34
plateau	MSWD =	= 0.33	n=5	328.5	1.4			93.4	39	6
EBT-63	(L#50618), 40)5.1 mg, J=	0.0000719±0.1	0%, Disc.=1.00	468±0.0009	93, NM-112 i	rradiation			
550**	1960.2	0.2747	6647.3	0.729	1.9	228.6	-0.2	0.1	-522	2198
650**	1674.6	0.4807	5678.1	21.7	1.1	12.2	-0.2	1.8	-423	1691
700**	38.40	0.4532	115.1	9.20	1.1	4.3	11.4	2.6	570	86
800**	26.80	0.5655	88.96	64.0	0.90	1.9	2.0	7.8	69	30
900	4.581	0.5438	15.16	580.7	0.94	0.39	2.6	54.9	15	5
1000	7.086	0.5404	23.65	304.7	0.94	0.46	1.6	79.6	15	8
1100**	19.71	0.5211	64.87	146.8	0.98	1.4	2.8	91.5	72	21
1200**	29.27	0.5292	91.46	42.2	0.96	30.0	7.7	95.0	293	33
1350**	10.20	0.6017	28 71	56.8	0.85	99	17.1	99.6	226	14
1750**	71 53	0.8073	160.1	5 38	0.63	21.6	33.9	100.0	3144	124
total gas	, 1.00	0.0075	n=10	1232.4	0.05	21.0	55.7	100.0	54	42
plateau	MSWD	= 0.01	n=2	885.5	0.94			71.9	15	4
	110 11 D	0.01								

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.

Correction factors:

(39Ar/37Ar)Ca = 0.00070±0.00005

(36Ar/37Ar)Ca = 0.00026±0.00002

(38Ar/39Ar)K = 0.0119 (0.0108 for NM-10, NM-28 and NM-78)

(40 Ar/39 Ar)K = 0.0250±0.0050 (0.0220±0.0010 for NM-10; 0.0002±0.0003 for NM-78)

*Not within 95% tolerance, Mahon (1996) error calculation method used

**Step not used to calculate plateau age.

Table	$2 - {}^{40}\text{Ar}/{}^{3}$	³⁹ Ar lase	step-he	ating data						
Temp	40 • 79 •	37 . 39 .	$^{36}Ar/^{39}Ar$	$^{39}Ar_{\rm K}$	K/Ca	Cl/K	40Ar*	³⁹ Ar	Age	±2s
(°C)	Af/*Af	Ar/~Ar	(X 10 ⁻)	(x 10 mol)		(x 10°)	(%)	(%)	(ka)	(ka)
E87020b	(L#9873), 10	1.86 mg. J=	0.0000848±0	.10%. D=1.00	754±0.001	523. NM-99) irradia	tion		
1.0**	109.5	2.075	355.6	19.1	0.25	3.4	4.2	1.3	703	599
2 5**	5 718	0.6035	18.42	216.8	0.85	0.17	5.2	15.8	45	19
3.8	1.422	0.5105	4.703	283.2	1.00	0.27	3.4	34.8	7	4
5.7	1.086	0.4725	3.430	315.8	1.1	0.27	7.9	56.0	13	3
7.0**	1.086	0.4550	3.117	210.8	1.1	0.28	16.5	70.1	27	4
8.0**	1.128	0.3945	3.144	124.9	1.3	0.30	18.6	78.5	31	5
9.0**	0.9634	0.3820	2.763	86.1	1.3	0.60	16.2	84.3	23	6
12.0**	1.230	0.3782	3.480	71.8	1.3	0.60	17.1	89.1	32	7
15.0**	0.9861	0.3885	2.640	32.4	1.3	0.47	22.0	91.2	32	16
25.0**	1.493	0.3325	3.991	23.5	1.5	0.35	21.4	92.8	48	22
45.0**	0.5867	0.4458	1.284	107.0	1.1	0.45	38.6	100.0	33	5
total gas	age		n=11	1491.5	1.1				33	15
plateau	MSWD =	4.58*	n=2	599.0	1.0			40.2	11	6
E87030b	(L#9872), 19	9.23 mg, J=	0.0000849±0	.10%, D=1.00	754±0.001	523, NM-9) irradia	tion		
1.0**	137.8	0.9945	466.0	11.5	0.51	4.3	0.1	0.8	26	367
1.5	28.56	0.6091	95.84	27.3	0.84	1.5	0.9	2.6	40	59
2.0	5.401	0.3909	17.85	61.5	1.3	0.42	2.5	6.6	20	14
2.5	2.304	0.3678	7.417	92.4	1.4	0.52	5.1	12.7	18	7
3.0	1.265	0.3881	3.915	103.5	1.3	0.34	9.1	19.6	17	5
4.5	0.8599	0.3944	2.685	298.8	1.3	0.32	8.6	39.4	11	3
6.0	0.6947	0.4044	2.121	279.2	1.3	0.24	11.1	57.8	11	3
7.0	0.6985	0.3932	2.013	180.3	1.3	0.51	16.2	69.7	17	3
8.0	0.7713	0.3820	2.249	133.5	1.3	0.43	14.9	78.6	17	4
9.0	0.8432	0.3796	2.471	94.7	1.3	0.50	14.4	84.8	18	4
10.0**	0.9298	0.3695	2.686	66.9	1.4	0.42	15.4	89.3	21	6
12.0**	1.010	0.4122	2.961	48.0	1.2	0.77	14.4	92.4	22	8
15.0**	1.099	0.4173	3.363	27.5	1.2	0.61	10.5	94.3	17	12
25.0**	1.939	0.4715	6.347	20.2	1.1	0.61	3.9	95.6	11	17
45.0**	0.7000	0.4409	1.757	66.6	1.2	0.57	28.2	100.0	29	5
total gas	age		n=15	1511.8	1.3				16	8
plateau	MSWD =	= 2.63*	n=9	1271.2	1.3			84.1	14	2
E87030c	(L#9879), 203	3.35 mg, J=().0000839±0	.10%, D=1.00	754±0.001	523, NM-99) irradiat	tion		
1.0**	187.5	2.377	616.6	15.1	0.21	2.6	2.9	0.9	823	763
3.0**	5.684	0.4917	18.16	282.6	1.0	0.29	5.8	18.4	50	27
4.5	1.152	0.4083	3.732	341.3	1.2	0.28	5.0	39.6	9	4
6.0	0.9772	0.3822	3.064	314.9	1.3	0.31	8.0	59.0	12	3
7.0**	0.9805	0.3650	2.819	216.2	1.4	0.25	15.8	72.4	23	4
8.0**	1.101	0.3303	3.002	146.6	1.5	0.61	19.9	81.5	32	5
9.0**	1.093	0.3467	3.115	90.5	1.5	0.65	16.4	87.1	26	6
12.0**	1.433	0.2850	3.805	61.1	1.8	0.47	21.7	90.9	46	8
15.0**	1.232	0.2876	3.458	29.7	1.8	0.49	17.2	92.7	31	15
25.0**	2.542	0.3478	7.048	24.7	1.5	1.0	18.3	94.3	70	18
45.0**	0.7164	0.4196	1.792	92.8	1.2	0.63	28.1	100.0	29	5
total gas	age		n=11	1615.4	1.5				33	16
plateau	MSWD =	= 0.00	n=2	1615.4	1.5			100.0	10	4

Table 2 - 40^{40} Ar/ 39^{39} Ar	laser step-heatin	g data.
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Temp			³⁶ Ar/ ³⁹ Ar	$^{39}Ar_{\rm K}$	K/Ca	Cl/K	⁴⁰ Ar*	³⁹ Ar	Age	±2s
(°C)	⁴⁰ Ar/ ³⁹ Ar	³⁷ Ar/ ³⁹ Ar	(x 10 ⁻³)	(x 10 ⁻¹⁶ mol)		(x 10 ⁻³)	(%)	(%)	(ka)	(ka)
E87062b	(L#9878), 63.	24 mg, J=0.	0000833±0.1	10%, D=1.0095	58±0.0015	23, NM-99	irradiati	on		
6	11.64	0.3764	38.72	154.6	1.4	0.51	1.7	30.0	30	22
9	1.358	0.3502	3.684	242.1	1.5	0.17	20.3	76.9	41	3
12***	1.311	0.3810	3.107	27.58	1.3	0.52	30.9	82.3	60	12
15***	0.5804	0.0823	0.5063	12.53	6.2	0.27	74.2	84.7	62	25
25***	0.7049	0.2813	1.079	29.59	1.8	0.65	56.3	90.4	58	11
45***	0.5723	0.3368	0.6407	33.78	1.5	0.74	70.2	97.0	58	10
45***	1.506	0.3414	2.702	15.56	1.5	0.71	47.9	100.0	107	17
total gas a	age		n=7	515.7	1.6				43	11
plateau	MSWD = 0	0.23	n=2	396.7	1.4			76.9	40	5
E87085 (I	L#9874), 196.	19 mg, J=0.	000083±0.10)%, D=1.00754	±0.00152	3, NM-99 ir	radiatio	n		
1.0**	248.9	0.9152	843.9	18.4	0.56	1.1	-0.2	1.3	-64	474
1.5**	19.57	0.5153	65.07	61.3	0.99	0.52	1.8	5.6	53	38
2.0	4.852	0.4095	16.34	106.1	1.2	0.32	0.6	13.1	4	11
2.5	2.197	0.3705	7.112	125.6	1.4	0.41	4.6	22.0	15	6
3.0	1.595	0.3752	5.204	128.5	1.4	0.37	3.9	31.0	9	5
4.5	1.283	0.3995	4.089	292.2	1.3	0.21	6.4	51.7	12	3
6.0	1.235	0.3838	3.880	251.7	1.3	0.24	7.7	69.4	14	3
7**	1.375	0.3960	4.172	152.7	1.3	0.59	11.0	80.2	22	4
8**	1.474	0.3758	4.437	102.4	1.4	0.59	11.5	87.4	25	5
9.0**	1.414	0.3705	4.173	61.0	1.4	0.44	13.3	91.7	28	6
10.0**	1.361	0.3403	3.970	36.2	1.5	0.61	14.2	94.3	28	8
12.0**	1.704	0.3608	4.918	25.6	1.4	0.69	15.1	96.1	38	11
15.0**	1.984	0.3740	5.649	15.6	1.4	0.98	16.3	97.2	48	20
25.0**	3.663	0.4931	11.27	10.9	1.0	1.3	9.5	97.9	52	30
45.0**	4.575	0.5156	13.02	29.1	0.99	0.98	16.3	100.0	111	16
total gas a	age		n=15	1417.2	1.3				19	13
plateau	MSWD =	= 1.40	n=5	904.0	1.3			63.8	12	3

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. Analyses in italics are excluded excluded from mean age calculations.

Correction factors:

 $(39Ar/37Ar)Ca = 0.00070 \pm 0.00005$

(36Ar/37Ar)Ca = 0.00026±0.00002

(38Ar/39Ar)K = 0.0119

 $(40Ar/39Ar)K = 0.0250 \pm 0.0050$

*Not within 95% tolerance, Mahon (1996) error calculation method used

**Step not used to calculate plateau age.

Isochron Plots

from

⁴⁰Ar/³⁹Ar Dating of the Eruptive History of Mount Erebus, Antarctica: Summit Flows, Tephra and Caldera Collapse

by

Christoper J. Harpel, Philip R. Kyle, Richard P. Esser, William C. McIntosh and Dave A. Caldwell

Isochron Plots (Sample Number)

E87004 E87017 E87020a E87021 E87026 E87030a E87033 E87034 E87035 E87039 E87040 E87045 E87051 E87054 E87061 E87062 E87066 E87083 E93013 EBT-2 **EBT-42 EBT-53 BIT-272 EBT-63**



Inverse isochron diagram for the E87004 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (9±2 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87017 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equiva lent to the heating steps used to calculate the spectrum weighted mean age (76±4 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87020a anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (10±6 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87021 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (73±23 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87026 anorthoclase feldspar sample. This sample yielded no spectrum weighted mean age or isochron age.



Inverse isochron diagram for the E87030a anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (14±6 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87033 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (91±4 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



L# 842: E87034, 97.4 mg anorthoclase feldspar

Inverse isochron diagram for the E87034 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (11±8 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are twosigma.



Inverse isochron diagram for the E87035 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (10±5 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87039 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (95±9 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



L# 8855: E87040, 314.77 mg anorthoclase feldspar

Inverse isochron diagram for the E87040 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (1±5 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87045 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (264±28 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87051 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (4±3 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87054 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (9±7 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87061 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (21±4 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87062 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (27±3 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87066 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (17±8 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.



Inverse isochron diagram for the E87083 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (6±2 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.

Inverse isochron diagram for the E93013 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (86±15 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.

Inverse isochron diagram for the EBT-2 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (71±5 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.

Inverse isochron diagram for the EBT-42 anorthoclase feldspar sample. This sample yielded no spectrum weighted mean age or isochron age.

Inverse isochron diagram for the EBT-53 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (86±4 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.

Inverse isochron diagram for the BIT-272 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and ${}^{40}\text{Ar}/{}^{36}\text{Ar}$ intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (39±6 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.

Inverse isochron diagram for the EBT-63 anorthoclase feldspar sample. Analyses shown as green ellipses are used to determine the isochron age and 40 Ar/ 36 Ar intercept and are equivalent to the heating steps used to calculate the spectrum weighted mean age (15±4 ka). The red ellipses are excluded from both the isochron and age spectrum calculations. All errors are two-sigma.