

## Supplementary file 7. $^{40}\text{Ar}/^{39}\text{Ar}$ Geochronology data

### Sample AB 10 06 Picrobasalt

#### Laser step-heating experiments on groundmass concentrate

Pwr	$^{39}\text{Ar} \times 10^{-6}$	F $^{39}\text{Ar}$	$^{40}\text{Ar}^*/^{39}\text{Ar}_K$	1 $\sigma$	Age in Ma	1 $\sigma$					% $^{40}\text{Ar}^*$	$^{40}\text{Ar}/^{36}\text{Ar}$	$^{37}\text{Ar}_{\text{Ca}}/^{39}\text{Ar}_K$
0.40	2.529	0.0095	16.77	3.48	99.24	20.02	a	†	‡	§	24.94	393.71	2.99
1.00	12.065	0.0450	16.10	0.69	95.42	4.01	b	†	‡	§	61.39	765.26	19.85
1.60	16.447	0.0613	16.17	0.61	95.83	3.49	c	†	‡	§	78.10	1349.39	18.93
2.20	28.114	0.1060	16.33	0.22	96.73	1.26	d	†	‡		91.59	3514.60	1.24
3.00	37.318	0.1408	18.02	0.16	106.47	0.93	e	†	‡		96.29	7966.98	0.76
4.00	40.470	0.1526	18.95	0.16	111.77	0.91	f	†	‡		98.41	18545.60	0.86
4.60	26.556	0.1002	17.95	0.23	106.04	1.34	g	†	‡		98.92	27258.69	0.91
5.40	18.173	0.0685	15.38	0.27	91.26	1.58	h			§	99.10	32748.60	2.08
6.50	33.853	0.1272	14.86	0.21	88.21	1.23	i			§	97.81	13488.50	6.12
8.00	50.447	0.1889	17.46	0.18	103.24	1.04	j	†	‡		95.09	6015.09	12.02
0.30	5.046	0.0067	15.20	2.06	90.20	11.94	k		‡	§	19.63	367.67	2.657
0.90	26.592	0.0351	14.44	0.31	85.81	1.82	l		‡	§	56.04	672.20	2.105
1.50	53.741	0.0710	13.50	0.20	80.32	1.14	m				78.50	1374.26	1.921
2.00	78.473	0.1037	14.72	0.15	87.44	0.84	n				88.03	2468.67	1.260
2.50	63.945	0.0845	17.82	0.14	105.28	0.82	o		‡		95.22	6177.01	0.569
3.50	115.493	0.1526	18.39	0.08	108.55	0.46	p		‡		97.04	9991.25	0.560
4.50	86.878	0.1148	19.34	0.11	114.00	0.62	q				97.93	14293.83	1.084
6.00	147.126	0.1938	15.53	0.07	92.10	0.40	r			§	96.97	9748.19	5.505
9.00	180.879	0.2379	15.41	0.07	91.43	0.39	s			§	94.12	5024.53	7.925

#### Integrated results

$^{39}\text{Ar} \times 10^{-6}$	$^{40}\text{Ar}^*/^{39}\text{Ar}_K$	$1\sigma$	Age in Ma	$1\sigma$	% $^{40}\text{Ar}^*$	$^{40}\text{Ar}/^{36}\text{Ar}$	$^{37}\text{Ar}_{\text{Ca}}/^{39}\text{Ar}_K$
265.0	17.08	0.09	101.03	0.63	90.66	3163.30	5.73
756.4	16.30	0.05	96.56	0.42	89.99	2951.81	3.57

$$J = 0.003373 \pm 0.000012$$

$$\dagger \quad t_c = 105.80 \pm 2.24 \text{ Ma}, (^{40}\text{Ar}/^{36}\text{Ar})_i = 282 \pm 65, \text{MSWD} = 20 \text{ for } n = 8$$

$$\ddagger \quad t_c = 108.57 \pm 1.50 \text{ Ma}, (^{40}\text{Ar}/^{36}\text{Ar})_i = 251 \pm 30, \text{MSWD} = 32 \text{ for } n = 13$$

$$\S \quad t_c = 91.67 \pm 0.55 \text{ Ma}, (^{40}\text{Ar}/^{36}\text{Ar})_i = 287 \pm 10, \text{MSWD} = 3 \text{ for } n = 9$$

# Sample AB 11 46

## Porphyritic metabasalt

### Laser step-heating experiments on groundmass concentrate

Pwr	$^{39}\text{Ar} \times 10^{-6}$	F $^{39}\text{Ar}$	$^{40}\text{Ar}^*/^{39}\text{Ar}_K$	1 $\sigma$	Age in Ma	1 $\sigma$		% $^{40}\text{Ar}^*$	$^{40}\text{Ar}/^{36}\text{Ar}$	$^{37}\text{Ar}_{Ca}/^{39}\text{Ar}_K$
0.40	13.923	0.0108	5.37	0.59	32.38	3.54	a ‡	21.19	374.98	0.457
0.80	37.337	0.0290	6.25	0.18	37.65	1.09	b ‡	66.35	878.08	0.700
1.20	68.032	0.0528	8.68	0.10	52.06	0.61	c ‡	89.37	2780.33	0.716
1.60	63.931	0.0496	9.32	0.09	55.84	0.51	d	92.77	4086.50	0.942
2.00	59.698	0.0464	9.43	0.10	56.47	0.61	e	94.91	5803.53	0.289
2.44	99.028	0.0769	9.22	0.08	55.27	0.48	f	93.98	4907.14	0.303
3.00	138.189	0.1073	9.28	0.06	55.62	0.33	g	96.51	8477.86	0.792
3.60	187.610	0.1456	9.33	0.05	55.92	0.28	h	96.33	8057.18	1.803
4.50	224.491	0.1742	9.66	0.03	57.85	0.20	i	94.61	5486.10	2.234
6.00	245.700	0.1907	9.64	0.05	57.69	0.27	j	93.48	4532.80	1.209
8.00	49.418	0.0382	12.71	0.15	75.74	0.90	k ‡	95.78	6998.43	5.795
10.00	101.385	0.0784	12.94	0.09	77.06	0.52	l ‡	91.48	3467.47	6.657

### Integrated results

$^{39}\text{Ar} \times 10^{-6}$	$^{40}\text{Ar}^*/^{39}\text{Ar}_K$	1 $\sigma$	Age in Ma	1 $\sigma$	% $^{40}\text{Ar}^*$	$^{40}\text{Ar}/^{36}\text{Ar}$	$^{37}\text{Ar}_{Ca}/^{39}\text{Ar}_K$
1287	9.68	0.02	57.98	0.25	91.54	3492.65	1.857

$$J = 0.003373 \pm 0.000012$$

the plateau age was calculated with the weighted mean of fractions d to h

$t_p = 55.78 \pm 0.15$  Ma, 42.58% of  $^{39}\text{Ar}$  released in 5 consecutive fractions, MSWD = 0.7

**$t_c = 52.58 \pm 2.00$  Ma**,  $(^{40}\text{Ar}/^{36}\text{Ar})_i = 717 \pm 189$ , MSWD = 3.2 for  $n = 7$

‡ fraction ignored in the isochron given in the figure