

Table S1d: Step-degassing Ne analyses of Pit 3 samples.

Sample name	Aliquot	Aliquot weight (g)	Heating temperature (deg C)	Heating time (hr)	Total ^{20}Ne released ¹ (10^8 atoms)	Total ^{21}Ne released ² (10^8 atoms)	Total ^{22}Ne released ³ (10^8 atoms)	$^{21}\text{Ne} / ^{20}\text{Ne}^4$ (10^3)	$^{22}\text{Ne} / ^{20}\text{Ne}^4$ (10^3)	Cosmogenic $^{21}\text{Ne}^5$ This heating step (10^8 atoms g^{-1})	Cosmogenic ^{21}Ne as % of ^{21}Ne released in this heating step	Percent of total cosmogenic ^{21}Ne released in this step	Total cosmogenic ^{21}Ne (10^8 atoms g^{-1})
OV03-0-3	a	0.1359	400	0.25	1.616 +/- 0.041	28.975 +/- 0.649	186.698 +/- 4.232	18.049 +/- 0.434	116.6 +/- 3.1	178.68 +/- 4.87	84	72	246.9 +/- 5.5
			850	0.25	0.742 +/- 0.024	10.988 +/- 0.316	83.760 +/- 3.485	14.883 +/- 0.512	114.2 +/- 5.4	64.94 +/- 2.39	80	26	
			1100	0.25	0.093 +/- 0.026	0.721 +/- 0.085	10.347 +/- 2.695	7.830 +/- 2.357	112.6 +/- 42.8	3.30 +/- 0.84	62	1	
OV03-0-3	b	0.16	400	0.25	1.009 +/- 0.034	30.405 +/- 0.535	126.743 +/- 5.149	30.082 +/- 0.960	125.9 +/- 6.1	172.02 +/- 3.42	91	69	250.3 +/- 4.1
			850	0.25	0.745 +/- 0.047	14.153 +/- 0.323	99.576 +/- 4.116	18.949 +/- 1.184	134.6 +/- 9.7	74.95 +/- 2.20	85	30	
			1100	0.25	0.209 +/- 0.019	1.150 +/- 0.077	20.389 +/- 2.688	5.557 +/- 0.613	98.7 +/- 15.7	3.34 +/- 0.60	46	1	
OV03-4-9	a	0.1452	400	0.25	1.310 +/- 0.035	31.523 +/- 0.67	163.116 +/- 4.186	24.229 +/- 0.800	125.7 +/- 3.9	191.11 +/- 4.69	88	77	247.6 +/- 5.1
			850	0.25	0.650 +/- 0.024	9.806 +/- 0.271	72.397 +/- 3.213	15.198 +/- 0.593	112.6 +/- 6.0	54.49 +/- 1.94	81	22	
			1100	0.25	0.068 +/- 0.027	0.497 +/- 0.073	7.478 +/- 2.704	7.326 +/- 3.111	110.5 +/- 59.5	2.04 +/- 0.75	60	1	
OV03-4-9	b	0.1711	400	0.25	0.973 +/- 0.027	35.969 +/- 0.577	137.830 +/- 5.074	36.904 +/- 0.940	141.9 +/- 5.9	194.12 +/- 3.42	92	75	257.3 +/- 4.0
			850	0.25	0.694 +/- 0.020	12.433 +/- 0.339	83.068 +/- 3.312	17.898 +/- 0.565	120.6 +/- 5.3	60.89 +/- 2.02	84	24	
			1100	0.25	0.126 +/- 0.020	0.770 +/- 0.047	14.639 +/- 2.534	6.163 +/- 1.028	117.4 +/- 27.3	2.33 +/- 0.44	52	1	
OV03-27-31A	a	0.1576	400	0.25	1.618 +/- 0.035	18.911 +/- 0.461	180.072 +/- 4.606	11.768 +/- 0.268	112.4 +/- 3.0	89.94 +/- 3.01	75	42	211.8 +/- 4.8
			850	0.25	1.660 +/- 0.031	23.289 +/- 0.615	191.797 +/- 4.789	14.137 +/- 0.285	116.9 +/- 2.4	118.17 +/- 3.72	80	56	
			1100	0.25	0.243 +/- 0.020	1.303 +/- 0.101	26.203 +/- 2.457	5.388 +/- 0.800	108.5 +/- 13.5	3.72 +/- 0.75	45	2	
OV03-27-31A	b	0.1612	400	0.25	1.148 +/- 0.029	17.343 +/- 0.458	131.911 +/- 4.933	15.083 +/- 0.458	115.1 +/- 4.6	86.84 +/- 2.90	81	41	209.8 +/- 4.4
			850	0.25	1.536 +/- 0.040	23.357 +/- 0.508	179.869 +/- 4.422	15.200 +/- 0.375	117.9 +/- 3.5	117.14 +/- 3.25	81	56	
			1100	0.25	0.328 +/- 0.019	1.908 +/- 0.09	35.696 +/- 2.500	5.874 +/- 0.432	110.0 +/- 10.0	5.84 +/- 0.66	49	3	
OV03-27-32B	a	0.1389	400	0.25	1.231 +/- 0.035	28.648 +/- 0.615	152.355 +/- 4.240	23.442 +/- 0.834	125.0 +/- 4.3	180.70 +/- 4.51	88	79	228.3 +/- 4.9
			850	0.25	0.607 +/- 0.022	8.271 +/- 0.25	66.398 +/- 3.352	13.737 +/- 0.541	110.7 +/- 6.3	46.79 +/- 1.87	79	20	
			1100	0.25	0.054 +/- 0.021	0.272 +/- 0.074	3.427 +/- 2.373	5.061 +/- 2.362	63.9 +/- 50.5	0.81 +/- 0.69	41	0	
OV03-27-32B	b	0.1533	400	0.25	1.208 +/- 0.031	33.514 +/- 0.595	153.972 +/- 4.544	27.690 +/- 0.872	127.7 +/- 4.3	196.02 +/- 3.95	90	82	240.0 +/- 4.3
			850	0.25	0.675 +/- 0.022	8.422 +/- 0.229	75.143 +/- 3.309	12.452 +/- 0.435	112.0 +/- 5.7	42.07 +/- 1.56	77	18	
			1100	0.25	0.069 +/- 0.017	0.489 +/- 0.052	5.213 +/- 2.418	7.172 +/- 1.894	76.5 +/- 40.1	1.87 +/- 0.47	59	1	
OV03-41-44	a	0.1565	400	0.25	0.829 +/- 0.030	19.103 +/- 0.473	95.750 +/- 3.602	23.142 +/- 0.851	117.0 +/- 5.7	106.79 +/- 3.08	87	72	147.8 +/- 3.6
			850	0.25	0.660 +/- 0.024	8.189 +/- 0.252	68.973 +/- 2.955	12.695 +/- 0.527	107.3 +/- 5.6	40.18 +/- 1.68	77	27	
			1100	0.25	0.075 +/- 0.020	0.346 +/- 0.078	4.486 +/- 2.351	4.660 +/- 1.625	60.5 +/- 35.6	0.80 +/- 0.63	36	1	
OV03-41-44	b	0.1744	400	0.25	0.696 +/- 0.032	23.195 +/- 0.528	93.277 +/- 4.087	33.250 +/- 1.552	134.5 +/- 8.1	121.64 +/- 3.09	91	79	153.7 +/- 3.3
			850	0.25	0.599 +/- 0.026	7.053 +/- 0.186	66.198 +/- 3.268	11.752 +/- 0.515	111.2 +/- 6.9	30.39 +/- 1.16	75	20	
			1100	0.25	0.085 +/- 0.016	0.549 +/- 0.054	8.161 +/- 2.429	6.513 +/- 1.382	97.0 +/- 34.2	1.71 +/- 0.41	54	1	
OV03-63-67	a	0.135	400	0.25	0.466 +/- 0.027	14.040 +/- 0.344	60.264 +/- 3.281	30.227 +/- 1.746	130.8 +/- 10.1	94.12 +/- 2.63	91	77	122.3 +/- 3.0
			850	0.25	0.439 +/- 0.025	5.093 +/- 0.186	46.329 +/- 3.035	11.685 +/- 0.728	106.7 +/- 8.9	28.20 +/- 1.49	75	23	
			1100	0.25	0.040 +/- 0.026	0.183 +/- 0.067	3.978 +/- 2.299	4.566 +/- 3.338	99.1 +/- 84.9	0.00 +/- 0.00	0	0	
OV03-63-67	b	0.1508	400	0.25	0.386 +/- 0.033	14.142 +/- 0.344	49.800 +/- 3.546	36.600 +/- 3.140	129.6 +/- 14.1	86.54 +/- 2.38	92	69	125.6 +/- 2.9
			850	0.25	0.457 +/- 0.024	7.004 +/- 0.207	52.348 +/- 2.994	15.292 +/- 0.824	115.1 +/- 8.5	37.61 +/- 1.45	81	30	
			1100	0.25	0.087 +/- 0.021	0.469 +/- 0.076	7.900 +/- 2.328	7.900 +/- 2.328	5.478 +/- 1.594	92.3 +/- 35.2	1.42 +/- 0.65	46	

¹ Computed by comparison to ^{20}Ne signal in air pipettes. 1-sigma uncertainty includes measurement uncertainty of ^{20}Ne signal in this analysis and the reproducibility of the air pipette signal

² Computed by comparison to ^{21}Ne signal in air pipettes. 1-sigma uncertainty includes measurement uncertainty of ^{21}Ne signal in this analysis and the reproducibility of the air pipette signal

³ Computed by comparison to ^{22}Ne signal in air pipettes. 1-sigma uncertainty includes measurement uncertainty of ^{22}Ne signal in this analysis and the reproducibility of the air pipette signal

⁴ Isotope ratio measured internally during each analysis; does not involve normalization to the Ne isotope signals in the air pipettes.

⁵ Computed by comparison of ^{20}Ne or ^{22}Ne signal to air pipettes, whichever is more precise. Assumes that Ne in sample is a binary mixture of atmospheric and cosmogenic Ne.