

Table S1c: Step-degassing Ne analyses of Pit 2 samples.

Sample name	Aliquot	Aliquot weight (g)	Heating temperature (deg C)	Heating time (hr)	Total ^{20}Ne released ¹ (10^6 atoms)	Total ^{21}Ne released ² (10^6 atoms)	Total ^{22}Ne released ³ (10^6 atoms)	$^{21}\text{Ne} / ^{20}\text{Ne}^4$ (10^3)	$^{22}\text{Ne} / ^{20}\text{Ne}^4$ (10^3)	Cosmogenic $^{22}\text{Ne}^5$ This heating step (10^6 atoms g^{-1})	Cosmogenic ^{22}Ne as % of ^{21}Ne released in this heating step	Percent of total cosmogenic ^{22}Ne released in this step	Total cosmogenic ^{22}Ne (10^6 atoms g^{-1})
OV02-1-4	a	0.1542	400	0.25	1.388 +/- 0.035	24.616 +/- 0.494	158.665 +/- 4.227	17.626 +/- 0.458	115.0 +/- 3.7	133.50 +/- 3.29	84	69	193.3 +/- 3.9
			850	0.25	1.031 +/- 0.025	12.130 +/- 0.3	112.381 +/- 3.099	11.748 +/- 0.366	110.0 +/- 3.8	59.10 +/- 2.01	75	31	
			1100	0.25	0.096 +/- 0.017	0.396 +/- 0.076	10.337 +/- 2.333	4.118 +/- 1.056	108.5 +/- 30.8	0.72 +/- 0.59	28	0	
OV02-1-4	b	0.1605	850	0.25	2.197 +/- 0.037	39.063 +/- 0.756	255.606 +/- 4.213	17.750 +/- 0.284	117.0 +/- 2.0	203.62 +/- 4.78	84	100	204.6 +/- 4.8
			1100	0.25	0.142 +/- 0.021	0.579 +/- 0.078	10.840 +/- 2.379	4.055 +/- 0.805	77.0 +/- 20.3	1.00 +/- 0.62	28	0	
OV02-24-28	a	0.1707	400	0.25	1.268 +/- 0.033	27.496 +/- 0.5	148.266 +/- 3.730	21.549 +/- 0.552	117.6 +/- 3.7	139.62 +/- 3.00	87	78	178.0 +/- 3.4
			850	0.25	0.788 +/- 0.024	8.594 +/- 0.26	85.026 +/- 2.701	10.885 +/- 0.441	108.8 +/- 4.6	36.81 +/- 1.59	73	21	
			1100	0.25	0.102 +/- 0.021	0.558 +/- 0.072	7.702 +/- 2.361	5.503 +/- 1.325	76.6 +/- 28.2	1.52 +/- 0.55	46	1	
OV02-24-28	b	0.171	400	0.25	2.356 +/- 0.054	32.006 +/- 0.596	262.083 +/- 4.903	13.520 +/- 0.279	111.4 +/- 2.4	146.94 +/- 3.62	79	78	187.5 +/- 4.0
			850	0.25	0.762 +/- 0.024	8.856 +/- 0.271	86.641 +/- 3.304	11.580 +/- 0.431	114.4 +/- 5.2	38.75 +/- 1.64	75	21	
			1100	0.25	0.146 +/- 0.021	0.736 +/- 0.074	13.400 +/- 3.259	5.057 +/- 0.863	92.4 +/- 25.9	1.78 +/- 0.56	41	1	
OV02-48-53.5	a	0.1432	400	0.25	0.353 +/- 0.031	11.870 +/- 0.254	44.819 +/- 3.104	33.396 +/- 2.913	127.6 +/- 14.0	75.88 +/- 1.89	92	80	95.4 +/- 2.2
			850	0.25	0.367 +/- 0.023	3.731 +/- 0.122	39.651 +/- 2.423	10.171 +/- 0.889	109.2 +/- 9.4	18.54 +/- 0.97	71	19	
			1100	0.25	0.026 +/- 0.018	0.219 +/- 0.065	3.712 +/- 2.374	8.413 +/- 6.254	143.6 +/- 134.2	0.99 +/- 0.59	65	1	
OV02-48-53.5	b	0.1502	400	0.25	1.031 +/- 0.040	15.506 +/- 0.336	117.276 +/- 3.697	14.964 +/- 0.588	113.9 +/- 5.2	83.22 +/- 2.38	81	75	110.4 +/- 2.7
			850	0.25	0.446 +/- 0.031	5.382 +/- 0.179	47.522 +/- 3.136	10.722 +/- 0.869	107.2 +/- 9.9	27.14 +/- 1.34	76	25	
			1100	0.25	0.094 +/- 0.023	0.335 +/- 0.065	7.766 +/- 3.240	3.560 +/- 1.108	82.8 +/- 40.0	0.00 +/- 0.00	0	0	
OV02-66-69	a	0.1344	400	0.25	0.690 +/- 0.033	8.850 +/- 0.241	72.590 +/- 3.332	12.746 +/- 0.658	105.8 +/- 6.8	50.85 +/- 1.94	77	65	78.2 +/- 2.8
			850	0.25	0.864 +/- 0.033	6.097 +/- 0.227	91.748 +/- 2.615	7.059 +/- 0.360	107.3 +/- 4.9	26.45 +/- 1.85	58	34	
			1100	0.25	0.094 +/- 0.018	0.405 +/- 0.066	8.923 +/- 2.324	4.304 +/- 1.061	95.5 +/- 30.5	0.94 +/- 0.63	31	1	
OV02-66-69b	b	0.1547	400	0.25	1.287 +/- 0.042	12.736 +/- 0.343	135.694 +/- 4.429	9.850 +/- 0.360	105.6 +/- 4.4	57.92 +/- 2.37	70	67	86.8 +/- 2.8
			850	0.25	0.885 +/- 0.025	7.075 +/- 0.22	94.029 +/- 3.318	7.971 +/- 0.279	107.0 +/- 4.3	28.92 +/- 1.51	63	33	
			1100	0.25	0.172 +/- 0.025	0.612 +/- 0.084	16.077 +/- 2.854	3.589 +/- 0.715	94.5 +/- 21.7	0.00 +/- 0.00	0	0	
OV02-74-80	a	0.152	400	0.25	2.923 +/- 0.048	15.202 +/- 0.378	305.782 +/- 5.563	5.169 +/- 0.119	105.2 +/- 1.8	42.66 +/- 2.40	43	43	98.4 +/- 3.3
			850	0.25	4.059 +/- 0.039	19.913 +/- 0.402	421.276 +/- 5.828	4.906 +/- 0.074	104.8 +/- 1.0	52.19 +/- 2.05	40	53	
			1100	0.25	0.747 +/- 0.027	2.727 +/- 0.134	74.950 +/- 2.634	3.675 +/- 0.206	101.3 +/- 4.6	3.53 +/- 1.02	20	4	
OV02-74-80	b	0.1715	400	0.25	4.581 +/- 0.082	22.382 +/- 0.509	479.089 +/- 7.991	4.863 +/- 0.096	104.7 +/- 1.4	51.05 +/- 2.74	39	47	108.0 +/- 3.7
			850	0.25	4.347 +/- 0.075	22.066 +/- 0.503	457.157 +/- 6.574	5.062 +/- 0.084	105.9 +/- 1.0	53.49 +/- 2.34	42	50	
			1100	0.25	1.022 +/- 0.027	3.579 +/- 0.147	104.993 +/- 3.332	3.529 +/- 0.160	103.7 +/- 4.1	3.41 +/- 0.96	16	3	
OV-02-75-83l	a	0.1489	400	0.25	2.639 +/- 0.053	12.717 +/- 0.293	268.245 +/- 5.884	4.794 +/- 0.116	102.4 +/- 2.5	32.63 +/- 2.16	38	38	85.1 +/- 3.0
			850	0.25	5.338 +/- 0.051	22.737 +/- 0.4	548.206 +/- 7.167	4.261 +/- 0.049	103.7 +/- 0.9	46.84 +/- 1.82	31	55	
			1100	0.25	0.999 +/- 0.025	3.765 +/- 0.143	104.316 +/- 2.901	3.792 +/- 0.147	105.4 +/- 3.3	5.61 +/- 1.00	22	7	
OV02-75-83l	b	0.1754	400	0.25	6.403 +/- 0.119	25.912 +/- 0.454	669.265 +/- 10.961	4.046 +/- 0.062	104.7 +/- 1.2	39.84 +/- 2.38	27	43	93.1 +/- 3.1
			850	0.25	7.162 +/- 0.123	29.483 +/- 0.527	740.083 +/- 10.411	4.106 +/- 0.035	104.1 +/- 0.9	47.01 +/- 1.64	28	50	
			1100	0.25	1.469 +/- 0.034	5.406 +/- 0.188	149.955 +/- 3.021	3.707 +/- 0.139	103.0 +/- 3.0	6.29 +/- 1.18	20	7	

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 ^{21}Ne signal to air pipettes, whichever is more precise. Assumes that Ne in sample is a binary mixture of atmospheric and cosmogenic Ne.