

Table S1f: Step-degassing Ne analyses of Pit 11 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})
OV11-0-2	a	0.1596	400	0.25	1.538 +/- 0.034	7.933 +/- 0.25	157.897 +/- 4.280	5.183 +/- 0.149	103.9 +/- 2.8	21.51 +/- 1.52	43	65	32.9 +/- 1.9
			850	0.25	1.051 +/- 0.026	4.916 +/- 0.166	112.841 +/- 2.961	4.674 +/- 0.161	108.0 +/- 3.1	11.34 +/- 1.10	37	35	
			1100	0.25	0.099 +/- 0.018	0.323 +/- 0.07	8.779 +/- 2.073	3.287 +/- 0.918	89.4 +/- 26.4	0.00 +/- 0.00	0	0	
OV11-0-2	b	0.1563	400	0.25	2.058 +/- 0.032	9.306 +/- 0.266	213.739 +/- 4.887	4.593 +/- 0.100	104.5 +/- 2.6	21.59 +/- 1.37	36	66	32.8 +/- 2.7
			850	0.25	1.395 +/- 0.096	5.760 +/- 0.2	124.817 +/- 10.598	4.199 +/- 0.317	90.4 +/- 9.9	10.49 +/- 2.23	28	32	
			1100	0.25	0.132 +/- 0.026	0.499 +/- 0.066	11.419 +/- 4.200	3.902 +/- 0.918	87.5 +/- 36.4	0.71 +/- 0.65	22	2	
OV11-15-18	a	0.1551	400	0.25	0.574 +/- 0.026	2.821 +/- 0.176	56.466 +/- 3.154	4.939 +/- 0.361	99.6 +/- 6.8	7.27 +/- 1.25	40	50	14.6 +/- 1.7
			850	0.25	0.835 +/- 0.025	3.495 +/- 0.141	85.841 +/- 2.808	4.184 +/- 0.186	103.4 +/- 4.0	6.62 +/- 1.04	29	45	
			1100	0.25	0.088 +/- 0.019	0.365 +/- 0.068	7.260 +/- 1.910	4.194 +/- 1.186	83.6 +/- 28.3	0.68 +/- 0.57	29	5	
OV11-15-18	b	0.1437	400	0.25	0.928 +/- 0.032	3.984 +/- 0.166	91.361 +/- 4.103	4.410 +/- 0.230	99.1 +/- 5.5	8.65 +/- 1.34	31	70	12.3 +/- 1.8
			850	0.25	0.854 +/- 0.032	3.053 +/- 0.143	81.556 +/- 5.641	3.635 +/- 0.209	96.5 +/- 7.5	3.68 +/- 1.19	17	30	
			1100	0.25	0.150 +/- 0.025	0.483 +/- 0.069	10.479 +/- 3.939	3.302 +/- 0.723	70.2 +/- 28.9	0.00 +/- 0.00	0	0	
OV11-30-33	a	0.1498	400	0.25	1.962 +/- 0.040	6.602 +/- 0.24	201.792 +/- 5.034	3.381 +/- 0.111	104.1 +/- 2.4	5.55 +/- 1.46	13	27	20.6 +/- 2.2
			850	0.25	2.693 +/- 0.053	9.913 +/- 0.226	271.806 +/- 5.317	3.682 +/- 0.067	101.5 +/- 1.8	13.04 +/- 1.23	20	63	
			1100	0.25	0.330 +/- 0.045	1.275 +/- 0.109	36.691 +/- 2.170	3.897 +/- 0.617	112.3 +/- 16.4	2.01 +/- 1.15	24	10	
OV11-30-33	b	0.1467	400	0.25	2.297 +/- 0.039	7.320 +/- 0.226	232.675 +/- 4.789	3.241 +/- 0.099	101.9 +/- 2.4	4.42 +/- 1.55	9	26	16.9 +/- 2.6
			850	0.25	2.610 +/- 0.048	9.396 +/- 0.293	253.334 +/- 9.049	3.659 +/- 0.119	98.0 +/- 3.9	12.50 +/- 2.13	20	74	
			1100	0.25	0.326 +/- 0.024	1.008 +/- 0.114	31.743 +/- 3.537	3.172 +/- 0.427	97.9 +/- 13.1	0.00 +/- 0.00	0	0	
OV11-43-46	a	0.1544	400	0.25	1.375 +/- 0.037	4.265 +/- 0.139	137.825 +/- 3.474	3.130 +/- 0.103	101.3 +/- 2.9	1.53 +/- 0.92	6	32	4.8 +/- 1.3
			850	0.25	0.586 +/- 0.026	2.243 +/- 0.121	56.356 +/- 3.298	3.884 +/- 0.251	97.0 +/- 6.8	3.30 +/- 0.93	23	68	
			1100	0.25	0.089 +/- 0.027	0.365 +/- 0.066	7.571 +/- 2.873	4.191 +/- 1.467	86.3 +/- 41.8	0.00 +/- 0.00	0	0	
OV11-43-46	b	0.1633	400	0.25	0.584 +/- 0.029	2.439 +/- 0.12	58.733 +/- 3.914	4.252 +/- 0.285	101.2 +/- 8.3	4.37 +/- 0.90	29	46	9.5 +/- 1.4
			850	0.25	0.572 +/- 0.024	2.374 +/- 0.132	56.929 +/- 4.792	4.220 +/- 0.284	100.5 +/- 9.4	4.19 +/- 0.92	29	44	
			1100	0.25	0.071 +/- 0.025	0.357 +/- 0.077	4.352 +/- 2.977	5.163 +/- 2.162	61.7 +/- 47.7	0.90 +/- 0.66	41	10	
OV11-46-50l	a	0.1496	400	0.25	4.771 +/- 0.092	14.395 +/- 0.395	476.628 +/- 8.847	3.045 +/- 0.063	101.0 +/- 1.4	2.76 +/- 2.00	3	45	6.1 +/- 2.5
			850	0.25	3.554 +/- 0.063	10.850 +/- 0.304	348.927 +/- 6.843	3.100 +/- 0.065	99.1 +/- 1.5	3.37 +/- 1.55	5	55	
			1100	0.25	0.627 +/- 0.026	1.932 +/- 0.111	62.974 +/- 2.653	3.143 +/- 0.211	101.6 +/- 5.7	0.00 +/- 0.00	0	0	
OV11-46-50l	b	0.1513	400	0.25	2.499 +/- 0.037	7.846 +/- 0.226	250.456 +/- 5.604	3.201 +/- 0.086	100.9 +/- 2.4	4.02 +/- 1.43	8	30	13.5 +/- 2.2
			850	0.25	3.294 +/- 0.045	10.999 +/- 0.268	323.219 +/- 8.969	3.394 +/- 0.077	99.0 +/- 3.0	9.50 +/- 1.69	13	70	
			1100	0.25	0.281 +/- 0.025	0.871 +/- 0.098	28.693 +/- 2.972	3.179 +/- 0.456	102.6 +/- 14.0	0.00 +/- 0.00	0	0	

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.