Supplementary data for Balco and Shuster, "Production rate of cosmogenic ^{21}Ne in quartz estimated from ^{10}Be, ^{26}Al, and ^{21}Ne concentrations in slowly eroding Antarctic bedrock surfaces."

Table S1: Ne measurements.

Sample name	Aliquot	Aliquot weight (g)	Heating temperature (deg C)	Heating time (hr)	Heating system (F/L)[1]	Total ^{20}Ne released[2] (10^8 atoms)	Total ^{21}Ne released[3] (10^6 atoms)	^{21}Ne / ^{20}Ne[4] (10^{-3})	^{22}Ne / ^{20}Ne[4] (10^{-3})	Cosmogenic ^{21}Ne[5] This heating step (10^6 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 (10^6 atoms g^{-1})
05-EG-118-BR	d	0.1506	400	0.3	L	0.863 ± 0.018	17.71 ± 0.74	20.65 ± 0.71	119.8 ± 3.1	101.8 ± 4.6	87	75	135.8 ± 5.2
			700	0.3	L	1.093 ± 0.023	7.76 ± 0.36	7.16 ± 0.29	111.6 ± 2.7	30.6 ± 2.2	59	23	
			1100	0.3	L	0.195 ± 0.012	1.08 ± 0.11	5.60 ± 0.65	108.6 ± 9.1	3.38 ± 0.78	47	2	
	e	0.1451	400	0.3	L	0.741 ± 0.021	15.50 ± 0.50	20.78 ± 0.65	128.7 ± 4.9	92.1 ± 3.5	86	69	132.5 ± 4.1
			700	0.3	L	1.186 ± 0.023	9.17 ± 0.34	7.71 ± 0.22	108.5 ± 2.7	39.0 ± 2.0	62	29	
			1100	0.3	L	0.223 ± 0.018	0.87 ± 0.14	3.90 ± 0.68	98.0 ± 12.3	1.5 ± 1.0	24	1	
05-EG-119-BR	g	0.0574	700	0.3	L	0.771 ± 0.016	6.87 ± 0.34	8.88 ± 0.33	111.5 ± 2.6	79.8 ± 4.8	67	93	85.8 ± 5.1
			1100	0.3	L	0.101 ± 0.012	0.65 ± 0.10	6.38 ± 1.23	114.9 ± 19.9	6.1 ± 1.9	54	7	
	h	0.0495	700	0.3	L	0.578 ± 0.013	5.46 ± 0.28	9.42 ± 0.39	118.0 ± 3.7	75.7 ± 4.9	69	100	75.7 ± 4.9
			1100	0.3	L	0.094 ± 0.017	0.09 ± 0.12	0.91 ± 1.30	113.5 ± 25.4	--			
	l	0.1408	400	0.3	L	0.622 ± 0.019	10.03 ± 0.40	16.01 ± 0.66	125.2 ± 4.9	58.4 ± 2.9	82	76	76.5 ± 3.2
			750	0.3	L	1.122 ± 0.027	5.89 ± 0.22	5.23 ± 0.17	104.0 ± 3.5	18.2 ± 1.4	43	24	
			1100	0.3	L	0.166 ± 0.016	0.43 ± 0.12	2.56 ± 0.77	107.2 ± 15.7	--			
04-AV-001-BR	d	0.1289	400	0.3	L	1.473 ± 0.016	8.59 ± 0.40	5.76 ± 0.17	103.9 ± 1.5	32.1 ± 2.0	48	81	39.6 ± 2.7
			700	0.3	L	3.072 ± 0.027	10.20 ± 0.41	3.27 ± 0.07	101.6 ± 1.0	7.5 ± 1.7	9	19	
			100	0.3	L	0.324 ± 0.010	0.97 ± 0.11	2.94 ± 0.34	113.9 ± 5.5	--			
	e	0.1382	400	0.3	L	1.516 ± 0.032	8.61 ± 0.35	5.67 ± 0.20	106.2 ± 2.4	29.9 ± 2.3	48	86	34.9 ± 3.2
			750	0.3	L	3.829 ± 0.061	12.04 ± 0.43	3.14 ± 0.08	104.2 ± 1.3	5.0 ± 2.2	6	14	
			1100	0.2	L	0.472 ± 0.017	1.50 ± 0.15	3.15 ± 0.31	109.7 ± 5.3	--			
	f	0.1294	400	0.3	L	2.005 ± 0.043	11.05 ± 0.71	5.41 ± 0.34	104.5 ± 2.5	38.1 ± 5.3	45	91	42.1 ± 6.0
			750	0.3	L	3.495 ± 0.043	11.13 ± 0.44	3.11 ± 0.10	101.2 ± 1.0	4.0 ± 2.8	5	9	
			1100	0.3	L	0.108 ± 0.016	0.31 ± 0.12	2.75 ± 1.19	110.2 ± 23.5	--			
04-AV-005-BR	h	0.1476	400	0.3	L	0.507 ± 0.014	26.52 ± 0.77	52.18 ± 1.48	171.3 ± 5.7	170.1 ± 5.3	95	94	181.5 ± 5.4
			700	0.3	L	0.612 ± 0.016	3.35 ± 0.18	5.49 ± 0.28	111.3 ± 3.7	10.4 ± 1.2	46	6	
			1100	0.3	L	0.090 ± 0.014	0.41 ± 0.09	4.60 ± 1.24	124.2 ± 22.6	0.99 ± 0.68	36	1	
	l	0.0519	400	0.3	L	0.195 ± 0.011	8.71 ± 0.33	44.57 ± 2.68	169.7 ± 11.5	157.2 ± 6	94	91	172.9 ± 6.8
			700	0.3	L	0.203 ± 0.013	1.42 ± 0.12	7.00 ± 0.72	127.2 ± 10.9	15.8 ± 2.4	58	9	
			1100	0.3	L	0.034 ± 0.012	0.17 ± 0.11	4.91 ± 3.71	116.2 ± 54.9	--			
	j	0.0252	400	0.3	L	0.116 ± 0.012	4.45 ± 0.21	38.20 ± 4.17	155.5 ± 20.0	163.6 ± 8.5	93	94	173.2 ± 9.4
			700	0.3	L	0.081 ± 0.009	0.48 ± 0.10	5.97 ± 1.40	141.0 ± 23.8	9.6 ± 4.1	50	6	
			1100	0.3	L	0.017 ± 0.010	-0.29 ± 0.09	-17.64 ± 12.33	178.6 ± 138.1	--			
	g	0.0491	1100	0.33	L	0.372 ± 0.018	9.32 ± 0.37	24.61 ± 1.30	126.9 ± 6.9	168.1 ± 7.6	89	98	171.3 ± 7.9
			1100	0.33	L	0.012 ± 0.009	0.19 ± 0.08	15.71 ± 13.92	266.9 ± 227.7	3.2 ± 1.8	82	2	
04-AV-006-BR	e	0.1293	400	0.3	L	0.361 ± 0.014	12.80 ± 0.54	35.01 ± 1.57	147.0 ± 7.7	91.1 ± 4.2	92	90	101.4 ± 4.4
			700	0.3	L	0.668 ± 0.017	3.37 ± 0.19	4.96 ± 0.25	107.0 ± 3.8	10.4 ± 1.3	78	10	
			1100	0.3	L	0.023 ± 0.011	0.01 ± 0.13	0.47 ± 5.47	344.0 ± 177.4	--			
	Fa	0.2527	1100	0.4	F	1.864 ± 0.039	29.33 ± 1.19	15.18 ± 0.29	115.6 ± 1.7	90.5 ± 2.9	78	98	92.1 ± 2.9
			1500	0.2	F	0.027 ± 0.014	0.48 ± 0.13	17.57 ± 10.38	30.9 ± 48.2	1.60 ± 0.54	84	2	
	f	0.1393	400	0.3	L	0.577 ± 0.017	13.40 ± 0.55	23.19 ± 0.94	121.2 ± 4.7	84.3 ± 4.0	88	94	89.4 ± 4.2
			750	0.3	L	0.827 ± 0.018	3.17 ± 0.21	3.82 ± 0.24	102.4 ± 3.2	5.1 ± 1.4	23	6	
			1100	0.3	L	0.059 ± 0.015	-0.20 ± 0.14	-3.41 ± 2.51	113.2 ± 44.5	--			

Table S1, continued.

04-AV-010-BR	d	0.1424	400	0.3	L	0.614 ± 0.011	9.47 ± 0.40	15.19 ± 0.46	119.1 ± 3.6	53.0 ± 2.2	80	54	99.0 ± 3.1
			700	0.3	L	1.591 ± 0.021	10.82 ± 0.44	6.70 ± 0.17	106.3 ± 1.9	41.9 ± 2.0	55	42	
			1100	0.3	L	0.177 ± 0.010	1.11 ± 0.12	6.17 ± 0.74	109.1 ± 10.1	4.13 ± 0.89	53	4	
	e	0.1327	400	0.3	L	0.578 ± 0.016	8.72 ± 0.36	14.87 ± 0.62	124.2 ± 4.4	53.0 ± 2.7	81	56	94.9 ± 3.3
			700	0.3	L	1.725 ± 0.020	10.49 ± 0.33	6.00 ± 0.12	107.1 ± 1.7	39.6 ± 1.7	50	42	
			1100	0.3	L	0.183 ± 0.010	0.84 ± 0.12	4.56 ± 0.68	102.3 ± 9.2	2.28 ± 0.92	36	2	
	Fa	0.2894	300	0.3	F	0.803 ± 0.019	15.32 ± 0.54	18.43 ± 0.50	119.6 ± 3.4	43.1 ± 1.7	81	46	92.8 ± 2.5
			600	0.3	F	2.900 ± 0.060	22.40 ± 0.92	7.46 ± 0.14	106.2 ± 1.2	45.3 ± 1.7	59	49	
			1100	0.3	F	0.727 ± 0.019	3.56 ± 0.25	4.73 ± 0.29	105.9 ± 2.7	4.48 ± 0.73	36	5	
			1500	0.2	F	0.013 ± 0.014	0.79 ± 0.11	58.74 ± 62.92	203.1 ± 229.5	--			
	e	0.1412	400	0.3	L	0.911 ± 0.019	10.65 ± 0.40	11.66 ± 0.37	106.1 ± 3.1	56.4 ± 2.6	75	60	93.8 ± 3.5
			750	0.3	L	1.544 ± 0.029	9.62 ± 0.35	6.22 ± 0.18	109.3 ± 2.1	35.8 ± 2.1	53	38	
			1100	0.3	L	0.140 ± 0.015	0.65 ± 0.12	4.67 ± 1.00	81.8 ± 15.6	1.71 ± 0.93	37	2	
04-AV-018-BR	f	0.1505	400	0.3	L	1.324 ± 0.020	20.41 ± 0.73	15.52 ± 0.36	116.8 ± 1.9	111.0 ± 3.6	82	67	165.1 ± 4.3
			700	0.3	L	1.485 ± 0.026	11.79 ± 0.43	7.99 ± 0.20	109.1 ± 2.2	49.8 ± 2.2	64	30	
			1100	0.3	L	0.256 ± 0.012	1.40 ± 0.14	5.53 ± 0.58	126.5 ± 7.7	4.32 ± 0.96	46	3	
	Fa	0.2632	500	0.3	F	2.054 ± 0.044	41.21 ± 1.52	19.45 ± 0.49	116.8 ± 2.5	129.1 ± 4.7	82	75	171.8 ± 5.1
			1100	0.3	F	2.751 ± 0.065	19.93 ± 0.86	7.03 ± 0.15	106.9 ± 1.0	42.7 ± 1.9	56	25	
			1500	0.2	F	-0.051 ± 0.021	0.56 ± 0.11	-10.70 ± 4.87	-46.0 ± 27.4	--			
	g	0.1326	400	0.3	L	1.176 ± 0.029	17.52 ± 0.64	14.88 ± 0.50	118.1 ± 3.5	106.3 ± 4.9	80	63	169.9 ± 5.7
			750	0.3	L	1.698 ± 0.027	12.89 ± 0.47	7.58 ± 0.20	109.4 ± 1.7	59.4 ± 2.8	61	35	
			1100	0.3	L	0.124 ± 0.015	0.93 ± 0.12	7.46 ± 1.31	93.3 ± 19.4	4.25 ± 0.98	61	3	
05-EG-137-BR	f	0.1377	400	0.3	L	0.551 ± 0.014	48.72 ± 1.59	88.93 ± 2.31	209.5 ± 5.3	343.4 ± 11.6	97	89	384.9 ± 11.8
			700	0.3	L	0.836 ± 0.018	7.89 ± 0.32	9.50 ± 0.32	114.0 ± 3.1	40 ± 2.1	70	10	
			1100	0.3	L	0.123 ± 0.014	0.59 ± 0.10	4.80 ± 0.95	107.3 ± 17.8	1.63 ± 0.76	38	0.4	
	Fa	0.2203	1100	0.5	F	2.384 ± 0.058	86.03 ± 3.23	35.01 ± 0.40	137.1 ± 1.9	348.1 ± 9.4	89	100	348.1 ± 9.4
			1500	0.2	F	-0.013 ± 0.018	0.35 ± 0.09	-26.43 ± 37.06	43.3 ± 98.0	--			
	g	0.1380	400	0.3	L	0.563 ± 0.014	48.08 ± 1.55	84.72 ± 2.20	198.0 ± 6.2	337.5 ± 11.3	97	92	367.9 ± 11.5
			750	0.3	L	0.928 ± 0.022	6.84 ± 0.28	7.30 ± 0.25	104.2 ± 3.3	29.3 ± 1.9	59	8	
			1100	0.3	L	0.041 ± 0.015	0.27 ± 0.12	6.49 ± 3.71	150.9 ± 71.2	1.08 ± 0.9	56	0.3	
05-EG-140-BR	d	0.1315	400	0.3	L	0.555 ± 0.016	36.69 ± 1.16	66.54 ± 1.90	178.5 ± 5.9	267.5 ± 8.9	96	87	308.9 ± 9.2
			700	0.3	L	1.150 ± 0.021	8.42 ± 0.39	7.37 ± 0.25	103.4 ± 1.7	38.8 ± 2.3	61	13	
			1100	0.3	L	0.100 ± 0.016	0.64 ± 0.10	6.44 ± 1.41	109.1 ± 23.9	2.62 ± 0.82	54	0.8	
	Fa	0.1980	500	0.3	F	1.739 ± 0.029	63.63 ± 2.14	35.54 ± 0.61	139.0 ± 2.2	287.1 ± 7.2	89	98	293.0 ± 7.2
			1100	0.3	F	0.503 ± 0.016	2.73 ± 0.16	5.27 ± 0.30	115.0 ± 4.3	5.90 ± 0.79	43	2	
			1500	0.2	F	-0.026 ± 0.017	0.11 ± 0.11	-4.27 ± 4.94	15.0 ± 40.1	--			
	e	0.1246	400	0.3	L	0.550 ± 0.015	32.82 ± 1.14	59.14 ± 1.86	167.1 ± 5.6	251.3 ± 9.2	95	84	299.5 ± 9.6
			750	0.3	L	1.110 ± 0.019	9.14 ± 0.38	8.15 ± 0.26	109.4 ± 2.9	46.4 ± 2.5	63	16	
			1100	0.3	L	0.091 ± 0.011	0.49 ± 0.12	5.25 ± 1.39	91.3 ± 21.0	1.74 ± 0.97	45	0.6	

Table S1, continued.

CRONUS-A	a	0.0558	1100	0.33	L	1.269 ± 0.021	22.99 ± 0.74	17.76 ± 0.33	113.4 ± 2.7	337.7 ± 9.4	82	100	337.7 ± 9.4
			1100	0.3	L	0.028 ± 0.012	0.17 ± 0.09	5.82 ± 3.89	61.4 ± 53.1	--			
	b	0.0692	1100	0.3	L	1.028 ± 0.020	25.68 ± 0.89	24.51 ± 0.60	125.6 ± 2.9	321.4 ± 10.9	87	100	321.4 ± 10.9
			1100	0.33	L	0.019 ± 0.008	0.03 ± 0.08	1.50 ± 4.38	104.2 ± 86.4	--			
	c	0.1084	700	0.3	L	1.246 ± 0.022	40.29 ± 1.51	32.32 ± 0.54	137.6 ± 2.2	338.8 ± 8.7	91	98	346.5 ± 8.8
			1100	0.3	L	0.180 ± 0.013	1.38 ± 0.12	7.62 ± 0.82	108.3 ± 10.8	7.8 ± 1.2	61	2	
	d	0.1522	700	0.3	L	1.828 ± 0.044	53.65 ± 2.26	29.31 ± 0.34	127.9 ± 1.2	317.8 ± 8.7	90	97	328.3 ± 8.8
			1100	0.3	L	0.193 ± 0.015	2.16 ± 0.14	11.20 ± 1.08	110.5 ± 11.1	10.49 ± 0.99	74	3	
	e	0.1416	400	0.3	L	0.502 ± 0.013	33.62 ± 1.23	65.98 ± 1.97	167.2 ± 5.5	227.9 ± 8.8	96	67	340.8 ± 9.2
			700	0.3	L	1.281 ± 0.016	18.89 ± 0.70	14.52 ± 0.27	118.7 ± 2.2	104.9 ± 2.8	79	31	
			1100	0.3	L	0.077 ± 0.012	1.35 ± 0.14	17.24 ± 3.16	219.6 ± 38.5	7.98 ± 0.99	83	2	
	Fb	0.2654	400	0.3	F	0.282 ± 0.013	33.53 ± 0.94	114.98 ± 5.43	252.9 ± 12.5	123.6 ± 3.6	98	37	333.0 ± 5.2
			750	0.3	F	2.696 ± 0.033	62.63 ± 1.64	22.47 ± 0.26	127.6 ± 1.6	198.9 ± 3.6	84	60	
			1100	0.3	F	0.281 ± 0.031	2.98 ± 0.18	10.25 ± 1.26	130.5 ± 15.6	8.13 ± 0.76	72	2	
			1500	0.2	F	0.049 ± 0.016	0.76 ± 0.11	15.10 ± 5.45	212.1 ± 73.5	2.34 ± 0.46	81	0.7	
	Fc	0.3239	1100	0.5	F	4.558 ± 0.099	121.65 ± 4.90	25.72 ± 0.40	130.7 ± 1.5	321.5 ± 9.0	86	99.5	322.9 ± 9.0
			1500	0.2	F	0.023 ± 0.018	0.55 ± 0.11	23.32 ± 18.77	176.6 ± 144.2	1.49 ± 0.37	88	0.5	
	f	0.1350	1100	0.4	L	2.751 ± 0.048	52.82 ± 1.66	19.08 ± 0.40	122.6 ± 1.8	329.6 ± 9.9	84	100	329.6 ± 9.9
	g	0.1385	400	0.3	L	0.678 ± 0.016	31.90 ± 1.03	46.65 ± 1.16	151.0 ± 5.2	216.6 ± 7.5	94	66	325.7 ± 8.5
			750	0.3	L	1.244 ± 0.020	18.30 ± 0.70	14.57 ± 0.38	119.3 ± 2.7	104.7 ± 3.8	79	32	
			1100	0.3	L	0.055 ± 0.046	0.77 ± 0.14	13.91 ± 11.92	171.6 ± 147.9	4.4 ± 1.4	79	1	

Notes:

[1] L, 75W diode laser; F, resistance furnace

[2] 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 (0.8%)

[3] 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 (2%)

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

[5] Analyses where cosmogenic ^{21}Ne was not distinguishable from zero at 1 sigma are not shown. Cosmogenic ^{21}Ne concentrations were calculated by normalization to either the ^{20}Ne or ^{21}Ne signal in the air pipettes, depending on which method yielded better precision.