

Table S1b: Step-degassing Ne analyses of Pit 13 quartz 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 ^{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}) |
|----------------|---------|--------------------|-----------------------------|-------------------|--|--|--|--|--|---|--|--|--|
| MC-PIT13-0-0 | a | 0.1534 | 400 | 0.25 | 2.372 +/- 0.024 | 12.854 +/- 0.257 | 252.776 +/- 3.244 | 5.460 +/- 0.085 | 106.6 +/- 1.0 | 38.82 +/- 1.37 | 46 | 44 | 88.2 +/- 2.3 |
| | | | 850 | 0.25 | 4.654 +/- 0.040 | 20.845 +/- 0.391 | 483.106 +/- 6.086 | 4.474 +/- 0.057 | 103.5 +/- 0.7 | 46.13 +/- 1.79 | 34 | 52 | |
| | | | 1100 | 0.2 | 0.329 +/- 0.008 | 1.466 +/- 0.072 | 35.562 +/- 0.971 | 4.439 +/- 0.237 | 108.0 +/- 3.9 | 3.23 +/- 0.50 | 34 | 4 | |
| | b | 0.1547 | 400 | 0.25 | 2.534 +/- 0.022 | 13.332 +/- 0.242 | 265.151 +/- 2.133 | 5.266 +/- 0.089 | 103.9 +/- 1.0 | 37.93 +/- 1.50 | 44 | 42 | |
| | | | 850 | 0.25 | 4.864 +/- 0.017 | 21.765 +/- 0.359 | 505.388 +/- 3.276 | 4.478 +/- 0.062 | 103.0 +/- 0.6 | 47.93 +/- 1.97 | 34 | 54 | |
| | | | 1100 | 0.2 | 0.252 +/- 0.007 | 1.280 +/- 0.076 | 27.769 +/- 0.946 | 5.076 +/- 0.324 | 109.3 +/- 4.7 | 3.47 +/- 0.51 | 42 | 4 | |
| MC-PIT13-4-8 | a | 0.1301 | 400 | 0.25 | 0.586 +/- 0.010 | 8.968 +/- 0.166 | 67.875 +/- 1.390 | 15.418 +/- 0.305 | 115.9 +/- 2.7 | 55.81 +/- 1.30 | 81 | 39 | 144.6 +/- 2.9 |
| | | | 850 | 0.25 | 2.916 +/- 0.021 | 19.469 +/- 0.392 | 310.763 +/- 3.884 | 6.674 +/- 0.110 | 106.4 +/- 0.8 | 83.58 +/- 2.55 | 56 | 58 | |
| | | | 1100 | 0.2 | 0.263 +/- 0.011 | 1.449 +/- 0.086 | 30.083 +/- 1.028 | 5.465 +/- 0.389 | 113.9 +/- 6.1 | 5.18 +/- 0.71 | 47 | 4 | |
| | b | 0.1474 | 400 | 0.25 | 0.692 +/- 0.009 | 10.787 +/- 0.223 | 86.383 +/- 1.575 | 15.605 +/- 0.340 | 124.0 +/- 2.6 | 59.51 +/- 1.53 | 81 | 43 | |
| | | | 850 | 0.25 | 2.808 +/- 0.020 | 19.479 +/- 0.371 | 298.698 +/- 1.858 | 6.920 +/- 0.125 | 105.6 +/- 0.9 | 75.74 +/- 2.45 | 57 | 54 | |
| | | | 1100 | 0.2 | 0.225 +/- 0.008 | 1.325 +/- 0.079 | 23.285 +/- 0.916 | 5.900 +/- 0.408 | 102.9 +/- 5.5 | 4.50 +/- 0.56 | 50 | 3 | |
| MC-PIT13-17-20 | a | 0.1477 | 400 | 0.25 | 0.808 +/- 0.011 | 9.432 +/- 0.232 | 91.593 +/- 1.247 | 11.553 +/- 0.288 | 112.7 +/- 2.0 | 47.84 +/- 1.59 | 75 | 31 | 153.5 +/- 3.3 |
| | | | 850 | 0.25 | 3.222 +/- 0.036 | 24.264 +/- 0.431 | 343.242 +/- 2.882 | 7.476 +/- 0.118 | 106.1 +/- 1.2 | 98.91 +/- 2.82 | 60 | 64 | |
| | | | 1100 | 0.2 | 0.291 +/- 0.010 | 1.857 +/- 0.103 | 32.384 +/- 1.133 | 6.387 +/- 0.403 | 110.9 +/- 5.2 | 6.76 +/- 0.72 | 54 | 4 | |
| | b | 0.1656 | 400 | 0.25 | 0.934 +/- 0.012 | 11.213 +/- 0.258 | 107.353 +/- 1.778 | 12.018 +/- 0.287 | 114.1 +/- 2.2 | 51.21 +/- 1.58 | 76 | 33 | |
| | | | 850 | 0.25 | 3.769 +/- 0.021 | 27.136 +/- 0.364 | 402.513 +/- 2.697 | 7.182 +/- 0.080 | 106.0 +/- 0.8 | 96.47 +/- 1.89 | 59 | 63 | |
| | | | 1100 | 0.2 | 0.341 +/- 0.009 | 2.053 +/- 0.094 | 37.472 +/- 1.012 | 6.027 +/- 0.313 | 109.1 +/- 4.1 | 6.34 +/- 0.59 | 51 | 4 | |

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.