

Table DR1. Cosmogenic ^{26}Al and ^{10}Be for samples UL and UF.

| Sample Name | $[^{26}\text{Al}]^*$ (10^3 at/g) | $[^{10}\text{Be}]^*$ (10^3 at/g) | Burial age (Ma) |
|-------------|--|--|--------------------|
| UL | 5332 ± 406 | 967 ± 2 | 0.23 ± 0.15 |
| UF | 3332 ± 325 | 626 ± 3 | 0.37 ± 0.19 |

*[^{26}Al] and [^{10}Be] measured by accelerator mass spectrometry (AMS) at PRIME Lab, Purdue University, against standards prepared by K. Nishiizumi. Assumed [^{10}Be] mean life of 2.005 My and [^{26}Al] mean life of 1.02 m.y. Burial calculations used a ^{10}Be production rate of 5 at/g/yr.

Table DR2. Cosmogenic nuclide data for isochron burial dating.

| Sample Name | $[^{26}\text{Al}]^*$ (10^3 at/g) | $[^{10}\text{Be}]^*$ (10^3 at/g) | $[^{10}\text{Be}]$ linearization factor | $N_{10,\text{inh}}$ (10^4 at/g) |
|-------------|--|--|---|---------------------------------------|
| JV-A | 655 ± 70 | 119 ± 4.3 | 0.989 | 11.5 ± 0.44 |
| JV-B | 530 ± 69 | 71 ± 5.2 | 0.994 | 6.17 ± 0.52 |
| JV-C | 594 ± 231 | 1135 ± 26 | 0.891 | 127.0 ± 2.60 |
| JV-D | 1124 ± 96 | 181 ± 9.6 | 0.982 | 18.6 ± 0.96 |
| JV-E | 168 ± 94 | 24 ± 6.8 | 0.999 | 0.721 ± 0.68 |
| JV-F | 1051 ± 112 | 202 ± 6.4 | 0.98 | 20.9 ± 0.64 |
| JV-I | 2697 ± 189 | 341 ± 8.8 | 0.966 | 36.7 ± 0.88 |
| CL-A | 336 ± 41 | 50 ± 2.9 | 0.977 | 23.9 ± 0.85 |
| CL-B | 566 ± 45 | 210 ± 8 | 0.953 | 51.0 ± 1.4 |
| CL-C | 391 ± 64 | 110 ± 4 | 0.989 | 11.4 ± 1.4 |
| CL-D | 458 ± 54 | 259 ± 7.2 | 0.918 | 92.2 ± 2.8 |
| CL-E | 356 ± 59 | 55 ± 2.6 | 1.000 | 0 ± 0.30 |
| CL-F | 386 ± 29 | 190 ± 8.2 | 0.928 | 80.0 ± 2.8 |
| CL-G | 428 ± 33 | 178 ± 7.6 | 0.946 | 59.1 ± 2.2 |
| LL-A | 3051 ± 120 | 770 ± 38 | 0.891 | 127.1 ± 3.76 |
| LL-B | 1649 ± 669 | 319 ± 6.9 | 0.956 | 47.3 ± 0.69 |
| LL-C | 2528 ± 109 | 715 ± 29 | 0.899 | 117.3 ± 2.85 |
| LL-D | 1538 ± 227 | 394 ± 15 | 0.945 | 60.4 ± 1.5 |
| LL-E | 2078 ± 97 | 634 ± 33 | 0.91 | 103.0 ± 3.31 |
| LL-F | 1851 ± 203 | 501 ± 30 | 0.929 | 79.4 ± 3.0 |
| LL-G | 1751 ± 161 | 396 ± 8.6 | 0.945 | 60.8 ± 0.86 |
| BRW-A | 204 ± 36 | 51 ± 5.3 | 0.995 | 5.09 ± 0.53 |

| | | | | |
|-------|----------|-----------|-------|---------------|
| BRW-B | 459 ± 35 | 101 ± 12 | 0.986 | 15.0 ± 1.2 |
| BRW-D | 442 ± 41 | 109 ± 6.4 | 0.984 | 16.5 ± 0.64 |
| BRW-E | 325 ± 52 | 451 ± 2.4 | 0.996 | 3.96 ± 0.24 |
| BRW-F | 739 ± 62 | 298 ± 22 | 0.951 | 54.0 ± 2.2 |
| BRW-G | 579 ± 50 | 144 ± 5.7 | 0.978 | 23.5 ± 0.57 |
| BRW-H | 436 ± 63 | 101 ± 4.0 | 0.986 | 15.0 ± 0.40 |
| RRC-A | 34 ± 37 | 46 ± 3.4 | 0.995 | 5.09 ± 0.34 |
| RRC-B | 288 ± 35 | 135 ± 4.1 | 0.955 | 48.8 ± 0.41 |
| RRC-C | 272 ± 41 | 43 ± 3.3 | 0.997 | 3.63 ± 0.33 |
| RRC-D | 155 ± 52 | 71 ± 5.8 | 0.984 | 17.1 ± 0.58 |
| RRC-E | 569 ± 62 | 61 ± 4.2 | 0.988 | 12.4 ± 0.42 |
| RRC-F | 409 ± 50 | 55 ± 3.7 | 0.991 | 9.44 ± 0.37 |
| RRC-G | 266 ± 63 | 108 ± 8.5 | 0.967 | 35.7 ± 0.85 |
| | | | 0.891 | |
| UK-B | 336 ± 41 | 50 ± 2.9 | | 0 ± 0.29 |
| UK-D | 566 ± 45 | 210 ± 8 | 0.956 | 121.1 ± 0.795 |
| UK-E | 391 ± 64 | 110 ± 4 | 0.899 | 45.2 ± 0.41 |
| UK-F | 458 ± 54 | 259 ± 7.2 | 0.945 | 158.6 ± 0.721 |
| UK-G | 356 ± 59 | 55 ± 2.6 | 0.91 | 3.68 ± 0.26 |
| UK-H | 386 ± 29 | 190 ± 8.2 | 0.929 | 106.5 ± 0.817 |
| UK-I | 428 ± 33 | 178 ± 7.6 | 0.945 | 97.1 ± 0.76 |
| KCS-A | 124 ± 51 | 30 ± 2.7 | -- | -- |
| KCS-C | 182 ± 21 | 45 ± 2.4 | -- | -- |
| KCS-D | 108 ± 27 | 28 ± 1.7 | -- | -- |
| KCS-G | 283 ± 94 | 34 ± 13 | -- | -- |
| KCS-H | 214 ± 38 | 28 ± 2.3 | -- | -- |
| KCS-I | 117 ± 89 | 49 ± 3.6 | -- | -- |
| KCS-N | 94 ± 63 | 29 ± 4.7 | -- | -- |
| GRW-A | 213 ± 67 | 41 ± 2.7 | 0.987 | 14.1 ± 0.27 |
| GRW-B | 196 ± 43 | 43 ± 3.1 | 0.985 | 15.7 ± 0.31 |
| GRW-C | 243 ± 68 | 78 ± 3.1 | 0.959 | 44.8 ± 0.31 |
| GRW-D | 211 ± 28 | 39 ± 2.4 | 0.988 | 12.6 ± 0.24 |
| GRW-E | 231 ± 29 | 114 ± 11 | 0.932 | 75.5 ± 0.52 |
| GRW-F | 342 ± 61 | 201 ± 2.1 | 0.876 | 147.5 ± 1.1 |
| GRW-G | 152 ± 34 | 31 ± 2.1 | 0.995 | 5.62 ± 0.21 |

*[²⁶Al] and [¹⁰Be] measured by accelerator mass spectrometry (AMS) at PRIME Lab, Purdue University, against standards prepared by K. Nishiizumi.