Supplementary Table 1: U-Th and OSL dating results used in this study. U-Th dating results are sorted stratigraphically from the youngest part of the specimen to the oldest within individual samples. U-Th errors are 2σ errors. References for published ages are given.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sample Number** | **Age (ka)** | **error** | **Dating type** | **Reference** |
| **Staircase Cave** |  |  |  |  |
| 46321-A | EQ |  | U-Th (tufa) | this study |
| 46321-B | EQ |  | U-Th (tufa) | this study |
| 46321-C | EQ |  | U-Th (tufa) | this study |
| 46321-D | EQ |  | U-Th (tufa) | this study |
| 46322-A | 214.1 | 2.8 | U-Th (spel) | Braun et al. (2019) |
| 46322-A1 | 206.2 | 2.1 | U-Th (spel) | Braun et al. (2019) |
| 46322-A2 | 214.0 | 5.7 | U-Th (spel) | Braun et al. (2019) |
| 46322-A3 | 223.2 | 3.4 | U-Th (spel) | Braun et al. (2019) |
| 46322-A4 | 236.2 | 5.8 | U-Th (spel) | Braun et al. (2019) |
| 46322-A5 | 225.7 | 3.4 | U-Th (spel) | Braun et al. (2019) |
| 46322-B5 | 251.5 | 4.4 | U-Th (spel) | Braun et al. (2019) |
| 46322-B4 | 251.0 | 5.9 | U-Th (spel) | Braun et al. (2019) |
| 46322-B3 | 271.4 | 5.5 | U-Th (spel) | Braun et al. (2019) |
| 46322-B2 | 274.9 | 7.2 | U-Th (spel) | Braun et al. (2019) |
| 46322-B1 | 396.7 | 22.9 | U-Th (spel) | Braun et al. (2019) |
| 46322-B | 328.5 | 8.0 | U-Th (spel) | Braun et al. (2019) |
| 46323-A-C | 338.1 | 26.9 | U-Th (spel) | this study |
| 46323-A-B | 457.3 | 60.5 | U-Th (spel) | this study |
| 46323-A-A | 490.8 | 95.1 | U-Th (spel) | this study |
| 46324-A-D | EQ |  | U-Th (tufa) | this study |
| 46324-A-C | EQ |  | U-Th (tufa) | this study |
| 46324-A-B | EQ |  | U-Th (tufa) | this study |
| 46324-A-A | EQ |  | U-Th (tufa) | this study |
| 46324-B-A | EQ |  | U-Th (spel) | this study |
| 46324-B-B | EQ |  | U-Th (spel) | this study |
| 46324-B-C | 554.0 | 84.9 | U-Th (spel) | this study |
| 46325-B | 320.6 | 11.3 | U-Th (spel) | this study |
| 46325-A | EQ |  | U-Th (spel) | this study |
| 46326-B | 164.6 | 2.1 | U-Th (spel) | this study |
| 46326-A1 | 281.9 | 7.7 | U-Th (spel) | this study |
| 46326-A | 292.9 | 10.2 | U-Th (spel) | this study |
| 46327-B | EQ |  | U-Th (spel) | this study |
| 46327-A | EQ |  | U-Th (spel) | this study |
| 46330-c1 | EQ |  | U-Th (spel) | this study |
| 46330-A | 210.3 | 9.4 | U-Th (spel) | Braun et al. (2019) |
| 46330-B | 210.6 | 5.1 | U-Th (spel) | Braun et al. (2019) |
| 46330-B7 | 211.1 | 4.2 | U-Th (spel) | Braun et al. (2019) |
| 46330-B6 | 212.2 | 5.5 | U-Th (spel) | Braun et al. (2019) |
| 46330-B5 | 107.9 | 6.4 | U-Th (spel) | Braun et al. (2019) |
| 46330-B4 | 213.0 | 2.8 | U-Th (spel) | Braun et al. (2019) |
| 46330-B3 | 212.8 | 4.3 | U-Th (spel) | Braun et al. (2019) |
| 46330-B2 | 211.9 | 4.2 | U-Th (spel) | Braun et al. (2019) |
| 46330-B1 | 211.8 | 5.9 | U-Th (spel) | Braun et al. (2019) |
| 46330-a | 220.0 | 5.3 | U-Th (spel) | Braun et al. (2019) |
| 46330-A4 | 209.6 | 4.2 | U-Th (spel) | Braun et al. (2019) |
| 46330-A3 | 212.8 | 3.0 | U-Th (spel) | Braun et al. (2019) |
| 46330-A2 | 210.0 | 5.6 | U-Th (spel) | Braun et al. (2019) |
| 46330-A1 | 219.9 | 4.6 | U-Th (spel) | Braun et al. (2019) |
| 46330-D | 197.4 | 8.9 | U-Th (spel) | this study |
| 46330-E | 175.7 | 5.9 | U-Th (spel) | Braun et al. (2019) |
| 46330-F | 190.8 | 10.2 | U-Th (spel) | Braun et al. (2019) |
| 46330-G | 192.7 | 2.9 | U-Th (spel) | Braun et al. (2019) |
| 46330-H | 202.7 | 2.2 | U-Th (spel) | Braun et al. (2019) |
| 46331-A' | 156.7 | 1.3 | U-Th (spel) | this study |
| 46331-A | 211.6 | 3.1 | U-Th (spel) | this study |
| 46331-B' | 213.8 | 2.7 | U-Th (spel) | this study |
| 46331-C' | 214.2 | 3.4 | U-Th (spel) | this study |
| 46331-B | 219.2 | 3.5 | U-Th (spel) | this study |
| 46331-C | 232.4 | 5.5 | U-Th (spel) | this study |
| 46332-A | 335.0 | 13.4 | U-Th (spel) | this study |
| 46332-B | 437.9 | 22.4 | U-Th (spel) | this study |
| 46440-B | EQ |  | U-Th (spel) | this study |
| 46441-B | 321.1 | 7.8 | U-Th (spel) | this study |
| 46442-A | EQ |  | U-Th (spel) | this study |
| 46442-B | 646.6 | 12410 | U-Th (spel) | this study |
| 46861-A | 183.6 | 4.1 | U-Th (spel) | Braun et al. (2019) |
| 46861-A1 | 188.7 | 2.9 | U-Th (spel) | Braun et al. (2019) |
| 46861-A2 | 207.7 | 7.2 | U-Th (spel) | Braun et al. (2019) |
| 46861-AA3 | 204.1 | 2.5 | U-Th (spel) | Braun et al. (2019) |
| 46861-AA4 | 205.3 | 4.2 | U-Th (spel) | Braun et al. (2019) |
| 46861-B | 214.7 | 4.8 | U-Th (spel) | Braun et al. (2019) |
| 46861-B1 | 212.4 | 8.5 | U-Th (spel) | Braun et al. (2019) |
| 46861-B2 | 231.8 | 12.6 | U-Th (spel) | Braun et al. (2019) |
| 46861-B3 | 272.8 | 10.4 | U-Th (spel) | Braun et al. (2019) |
| 46861-C | 282.7 | 4.7 | U-Th (spel) | Braun et al. (2019) |
| 46861-C1 | 304.8 | 17.2 | U-Th (spel) | Braun et al. (2019) |
| 50100-3 | 194.6 | 2.2 | U-Th (spel) | Braun et al. (2019) |
| 50100-A | 195.4 | 2.5 | U-Th (spel) | Braun et al. (2019) |
| 50100-B | 199.6 | 4.1 | U-Th (spel) | Braun et al. (2019) |
| 50100-C | 211.4 | 5.4 | U-Th (spel) | Braun et al. (2019) |
| 50100-2 | 219.2 | 2.8 | U-Th (spel) | Braun et al. (2019) |
| 50100-D | 224.7 | 5.4 | U-Th (spel) | Braun et al. (2019) |
| 50100-1 | 239.1 | 3.7 | U-Th (spel) | Braun et al. (2019) |
| 142819-A | 129.9 | 1.1 | U-Th (spel) | Braun et al. (2019) |
| 142819-A0 | 131.3 | 0.9 | U-Th (spel) | Braun et al. (2019) |
| 142819-A1 | 141.2 | 0.9 | U-Th (spel) | Braun et al. (2019) |
| 142819-A1A | 185.4 | 1.6 | U-Th (spel) | Braun et al. (2019) |
| 142819-A2 | 197.2 | 2.7 | U-Th (spel) | Braun et al. (2019) |
| 142819-A3 | 210.6 | 2.6 | U-Th (spel) | Braun et al. (2019) |
| 142819-A4 | 221.1 | 2.5 | U-Th (spel) | Braun et al. (2019) |
| 142819-B | 185.5 | 3.6 | U-Th (spel) | Braun et al. (2019) |
| 142819-C | 233.8 | 6.5 | U-Th (spel) | Braun et al. (2019) |
| 142819-C0 | 281.6 | 4.3 | U-Th (spel) | Braun et al. (2019) |
| 142819-C1 | 313.6 | 6.3 | U-Th (spel) | Braun et al. (2019) |
| 142819-C2 | 303.1 | 6.1 | U-Th (spel) | Braun et al. (2019) |
| 142819-D | 303.9 | 9.8 | U-Th (spel) | Braun et al. (2019) |
| 142820-1 | 167.1 | 2.7 | U-Th (spel) | Braun et al. (2019) |
| 142820-G | 189.7 | 2.7 | U-Th (spel) | Braun et al. (2019) |
| 142820-F | 208.9 | 2.3 | U-Th (spel) | Braun et al. (2019) |
| 142820-E | 214.3 | 2.3 | U-Th (spel) | Braun et al. (2019) |
| 142820-D | 216.1 | 3.3 | U-Th (spel) | Braun et al. (2019) |
| 142820-C | 244.3 | 3.2 | U-Th (spel) | Braun et al. (2019) |
| 142820-B | 244.3 | 2.8 | U-Th (spel) | Braun et al. (2019) |
| 142820-A | 322.5 | 6.5 | U-Th (spel) | Braun et al. (2019) |
| 142820-B-A | 146.3 | 1.5 | U-Th (spel) | this study |
| 142820-B-B | 188.2 | 2.0 | U-Th (spel) | this study |
| 142820-B-C | 193.8 | 9.8 | U-Th (spel) | this study |
| 142820-B-D | 215.7 | 3.0 | U-Th (spel) | this study |
| 142820-B-E | 242.7 | 3.7 | U-Th (spel) | this study |
| 142821-A-A | 207.8 | 3.7 | U-Th (spel) | this study |
| 142821-B-A | 311.4 | 6.2 | U-Th (spel) | this study |
| 142821-C-A | 317.1 | 10.7 | U-Th (spel) | this study |
| 142834-A | EQ |  | U-Th (spel) | this study |
| 142834-B | EQ |  | U-Th (spel) | this study |
| 142834-C | EQ |  | U-Th (spel) | this study |
| **Crevice Cave** |  |  |  |  |
| 32206-C1 | 2.4 | 0.0 | U-Th (tufa) | this study |
| 32206-2 | 66.1 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-1 | 59.0 | 0.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-3 | 66.1 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-4 | 66.5 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-6 | 67.8 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-7 | 67.9 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-5 | 66.7 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-8 | 67.7 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-9 | 69.4 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-10 | 69.7 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-11 | 75.2 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-12 | 73.8 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-13 | 76.5 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32206-14 | 84.6 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-1 | 1.6 | 0.0 | U-Th (tufa) | Bar-Matthews et al. (2010) |
| 32207-2 | 61.3 | 0.3 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-3 | 62.2 | 1.3 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-4 | 65.5 | 1.3 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-5 | 71.8 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-6 | 75.3 | 1.1 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-7 | 75.7 | 0.6 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-8 | 80.0 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-9 | 83.9 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32207-10 | 91.1 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32208-1 | 73.1 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32208-2 | 53.3 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 32209-top | 24.9 | 0.3 | U-Th (tufa) | this study |
| 46453A | 91.1 | 1.1 | U-Th (tufa) | this study |
| 46453B | 92.3 | 1.2 | U-Th (tufa) | this study |
| 46606-A1-C | 1.0 | 0.0 | U-Th (tufa) | this study |
| 46606-A2-C | -2.7 | 0.0 | U-Th (tufa) | this study |
| 46606-A3-B | 1.1 | 0.0 | U-Th (tufa) | this study |
| 46606-A4-A | -0.1 | 0.0 | U-Th (tufa) | this study |
| 46606-B1-G | -1.3 | 0.0 | U-Th (tufa) | this study |
| 46606-B2-F | 2.0 | 0.0 | U-Th (tufa) | this study |
| 46606-B3-F | 3.0 | 0.2 | U-Th (tufa) | this study |
| 46606-B4-E | 1.7 | 0.0 | U-Th (tufa) | this study |
| 46606-B5-E | 2.6 | 0.1 | U-Th (tufa) | this study |
| 46606-B6-D | 2.1 | 0.0 | U-Th (tufa) | this study |
| 46607-1 | 53.4 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46607-2 | 67.6 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46607-3 | 81.4 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46619-C | 45.4 | 0.5 | U-Th (spel) | this study |
| 46619-2 | 58.9 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46619-1 | 68.8 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46620-G | 132.4 | 1.9 | U-Th (tufa) | this study |
| 46620-G` | 106.8 | 1.1 | U-Th (tufa) | this study |
| 46620-F | 121.5 | 1.7 | U-Th (tufa) | this study |
| 46620-F` | 117.1 | 1.9 | U-Th (tufa) | this study |
| 46620-E | 129.8 | 1.8 | U-Th (tufa) | this study |
| 46620-E` | 114.2 | 1.7 | U-Th (tufa) | this study |
| 46620-D | 124.7 | 1.3 | U-Th (tufa) | this study |
| 46620-C | 129.5 | 1.7 | U-Th (tufa) | this study |
| 46620-C` | 120.8 | 1.8 | U-Th (tufa) | this study |
| 46620-B | 123.2 | 1.7 | U-Th (tufa) | this study |
| 46620-B` | 122.0 | 1.5 | U-Th (tufa) | this study |
| 46620-A | 135.0 | 2.1 | U-Th (tufa) | this study |
| 46620-POWDER | 114.8 | 0.7 | U-Th (tufa) | this study |
| 46621-1 | 75.0 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46621-2 | 84.8 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-1 | 80.9 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-2 | 83.3 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-3 | 83.9 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-4 | 85.0 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-5 | 85.3 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-6 | 89.1 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-7 | 92.7 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-8 | 94.0 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-9 | 94.8 | 1.3 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-10 | 81.1 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-11 | 81.0 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46623-12 | 82.0 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-1-U1' | 5.9 | 0.1 | U-Th (tufa) | this study |
| 46624-1-U1 | 5.9 | 0.0 | U-Th (tufa) | this study |
| 46624-1-U2 | 5.9 | 0.1 | U-Th (tufa) | this study |
| 46624-1-U3 | 6.9 | 0.1 | U-Th (tufa) | this study |
| 46624-9 | 87.6 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-17 | 88.2 | 2.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-10 | 86.7 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-19 | 90.5 | 1.2 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-13 | 87.3 | 1.3 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-14 | 87.0 | 1.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-1-L7 | 88.4 | 1.8 | U-Th (spel) | this study |
| 46624-1-L8 | 91.4 | 1.1 | U-Th (spel) | this study |
| 46624-1-L9 | 92.9 | 1.0 | U-Th (spel) | this study |
| 46624-1-L10 | 100.8 | 1.1 | U-Th (spel) | this study |
| 46624-1-La | 90.2 | 0.7 | U-Th (spel) | this study |
| 46624-1-Lb | 82.4 | 0.6 | U-Th (spel) | this study |
| 46624-2-up-U1' | 5.0 | 0.1 | U-Th (tufa) | this study |
| 46624-2-up-U1 | 6.0 | 0.0 | U-Th (tufa) | this study |
| 46624-2-up-U2 | 6.3 | 0.0 | U-Th (tufa) | this study |
| 46624-2-UP-U3 | 6.9 | 0.0 | U-Th (tufa) | this study |
| 46624-2-UP-U4 | 6.9 | 0.0 | U-Th (tufa) | this study |
| 46624-2-UP-L1 | 14.5 | 0.1 | U-Th (spel) | this study |
| 46624-2-UP-L2 | 90.3 | 0.9 | U-Th (spel) | this study |
| 46624-2-LOW-L4 | 82.8 | 0.9 | U-Th (spel) | this study |
| 46624-2-LOW-L7 | 91.2 | 1.3 | U-Th (spel) | this study |
| 46624-2-LOW-L6 | 89.4 | 4.7 | U-Th (spel) | this study |
| 46624-2-LOW-L5 | 95.5 | 8.0 | U-Th (spel) | this study |
| 46624-2-LOW-L8 | 92.0 | 0.5 | U-Th (spel) | this study |
| 46624-2-LOW-L9 | 99.5 | 1.1 | U-Th (spel) | this study |
| 46624.3-L10 | 22.7 | 0.3 | U-Th (spel) | this study |
| 46624-3-L1 | 82.5 | 0.9 | U-Th (spel) | this study |
| 46624-3-L2 | 83.4 | 0.9 | U-Th (spel) | this study |
| 46624.3-L3 | 76.5 | 1.0 | U-Th (spel) | this study |
| 46624.3-L4 | 84.2 | 0.9 | U-Th (spel) | this study |
| 46624.3-L5 | 86.1 | 1.0 | U-Th (spel) | this study |
| 46624.3-L6 | 85.2 | 1.4 | U-Th (spel) | this study |
| 46624.3-L7 | 83.5 | 1.0 | U-Th (spel) | this study |
| 46624.3-L8 | 84.5 | 0.9 | U-Th (spel) | this study |
| 46624.3-L9 | 83.1 | 0.6 | U-Th (spel) | this study |
| 46624-1 | 51.1 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-4 | 70.5 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-3 | 71.6 | 0.6 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-5 | 72.8 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-2 | 75.4 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-6 | 78.9 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-8 | 83.0 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-11 | 87.1 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-4-L9 | 87.9 | 1.0 | U-Th (spel) | this study |
| 46624-15 | 88.0 | 0.6 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-16 | 88.2 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-21 | 92.3 | 1.2 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-12 | 86.6 | 1.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-7 | 88.3 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-20 | 89.9 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46624-18 | 89.3 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46854 1A2-2 | 67.6 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46854 1A2-1 | 88.2 | 0.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46854 1A2-3 | 68.1 | 1.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46854 1A2-4 | 74.3 | 24.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46854 1A2-5 | 78.9 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46855 1B-1 | 65.6 | 1.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46855 1B-2 | 70.2 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46855 1B-3 | 70.1 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46855 1B-4 | 70.6 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46855-1B-C | 69.9 | 1.1 | U-Th (spel) | this study |
| 46855 1B-6 | 70.9 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46855 1B-7 | 71.2 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-IC2 l | 45.4 | 0.7 | U-Th (tufa) | this study |
| 46856-IC2-m | 66.2 | 1.7 | U-Th (tufa) | this study |
| 46856 1C2-3 | 69.2 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-4 | 69.3 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-11 | 79.0 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-7 | 70.0 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-8 | 71.8 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-9 | 71.6 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-10 | 72.2 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-1 | 71.4 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-5 | 69.3 | 0.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-6 | 69.5 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C2-2 | 67.0 | 1.6 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-9 | 14.8 | 0.3 | U-Th (tufa) | this study |
| 46856-1C3-10 | 10.9 | 0.1 | U-Th (tufa) | this study |
| 46856-1C3-11 | 68.8 | 0.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C3-4 | 67.1 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-10 (M7) | 67.5 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-8 | 68.0 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-9 | 67.6 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-2 | 63.2 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-5 | 67.3 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-6 | 67.1 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-7 | 67.2 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-3 | 63.8 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856-1C3-1 | 59.4 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C4-2-tufa | 16.8 | 0.3 | U-Th (tufa) | this study |
| 46856 1C4-1-tufa | 24.1 | 0.5 | U-Th (tufa) | this study |
| 46856 1C4-5 | 65.7 | 0.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C4-6 | 68.0 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C4-2 | 65.8 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C4-3 | 66.2 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C4-1 | 65.2 | 1.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C5-1 | 69.9 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C5-2 | 71.2 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C5-3 | 71.6 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46856 1C5-4 | 74.5 | 1.2 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46857 SA-3-1 | 54.0 | 0.6 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46857 SA-3-2 | 62.2 | 1.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46857 SA-3-3 | 76.2 | 1.3 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46859 SA-4-1 | 72.3 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46859 SA-4-5 | 81.6 | 0.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46859 SA-4-2 | 73.0 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46859 SA-4-3 | 73.9 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 46859 SA-4-4 | 76.9 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-1 | 64.0 | 0.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-2 | 67.0 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-3 | 69.1 | 0.4 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-4 | 71.4 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-5 | 75.3 | 0.6 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-7 | 73.9 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-8 | 76.0 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-9 | 78.7 | 0.6 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-10 | 78.7 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-11 | 80.3 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-12 | 80.9 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-13 | 82.5 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-14 | 84.9 | 0.6 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-15 | 86.5 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-16 | 83.2 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-17 | 88.3 | 0.9 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 50103-1A | 104.1 | 2.7 | U-Th (tufa) | this study |
| 110617-5 | 67.2 | 0.7 | U-Th (spel) | this study |
| 110617-4 | 68.5 | 0.7 | U-Th (spel) | this study |
| 110617-3 | 73.7 | 0.8 | U-Th (spel) | this study |
| 110617-2 | 77.6 | 0.8 | U-Th (spel) | this study |
| 110617-1 | 77.3 | 0.8 | U-Th (spel) | this study |
| 110617-A | 70.3 | 0.8 | U-Th (spel) | this study |
| 110620-22 | 5.8 | 0.1 | U-Th (tufa) | this study |
| 110620-1 | 5.8 | 0.1 | U-Th (tufa) | this study |
| 110620-2 | 7.2 | 0.1 | U-Th (tufa) | this study |
| 110620-3 | 7.3 | 0.1 | U-Th (tufa) | this study |
| 110620-4 | 7.1 | 0.1 | U-Th (tufa) | this study |
| 110620-5 | 7.3 | 0.0 | U-Th (tufa) | this study |
| 110620-6 | 7.5 | 0.1 | U-Th (tufa) | this study |
| 110620-7 | 7.4 | 0.1 | U-Th (spel) | this study |
| 110620-1 (8) | 62.0 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-7 (9) | 65.5 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-8 (10) | 65.5 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-9 (11) | 66.0 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-10 (12) | 65.6 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-11 (13) | 66.1 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-12 (14) | 66.1 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-3 (15) | 64.9 | 0.8 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-4 (16) | 65.4 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-6 (17) | 65.4 | 0.7 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-2 (18) | 63.6 | 1.3 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-13 (19) | 65.7 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-14 (20) | 65.6 | 0.5 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 110620-5 (21) | 65.0 | 1.0 | U-Th (spel) | Bar-Matthews et al. (2010) |
| 20702 | 94 | 6 | OSL | Bar-Matthews et al. (2010) |
| 46606 | 127 | 5 | OSL | Bar-Matthews et al. (2010) |
| 46608 | 88 | 3 | OSL | Bar-Matthews et al. (2010) |
| 46617 | 124 | 5 | OSL | Bar-Matthews et al. (2010) |
| 46618 | 144 | 7 | OSL | Bar-Matthews et al. (2010) |
| 46619 | 145 | 6 | OSL | Bar-Matthews et al. (2010) |
| 46621 | 127 | 6 | OSL | Bar-Matthews et al. (2010) |
| 50103A | 126 | 8 | OSL | Bar-Matthews et al. (2010) |
| 50103B | 130 | 7 | OSL | Bar-Matthews et al. (2010) |
| **PP29** |  |  |  |  |
| 46744-A | 53.8 | 0.7 | U-Th (spel) | this study |
| 46744-B | 104.4 | 1.3 | U-Th (spel) | this study |
| 46745-A | 105.0 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 46745-A1 | 111.6 | 1.8 | U-Th (spel) | Braun et al. (2019) |
| 46745-A2 | 109.3 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 46745-A3 | 85.8 | 0.6 | U-Th (spel) | Braun et al. (2019) |
| 46745-B | 71.7 | 0.8 | U-Th (spel) | Braun et al. (2019) |
| 46746-A | 87.1 | 0.6 | U-Th (spel) | Braun et al. (2019) |
| 46746-A1 | 93.0 | 0.8 | U-Th (spel) | Braun et al. (2019) |
| 46746-A2 | 94.8 | 0.6 | U-Th (spel) | Braun et al. (2019) |
| 46746-A3 | 105.0 | 0.8 | U-Th (spel) | Braun et al. (2019) |
| 46746-B | 99.3 | 2.0 | U-Th (spel) | Braun et al. (2019) |
| 46746-D | 46.4 | 0.3 | U-Th (spel) | Braun et al. (2019) |
| 46746-C | 75.1 | 0.8 | U-Th (spel) | Braun et al. (2019) |
| 46746-B4 | 81.2 | 0.4 | U-Th (spel) | Braun et al. (2019) |
| 46746-B3 | 84.4 | 0.5 | U-Th (spel) | Braun et al. (2019) |
| 46746-B2 | 100.8 | 0.5 | U-Th (spel) | Braun et al. (2019) |
| 46746-B1 | 98.7 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 46747-A | 41.4 | 2.1 | U-Th (spel) | Braun et al. (2019) |
| 46747-C | 61.2 | 1.6 | U-Th (spel) | Braun et al. (2019) |
| 46747-B | 143.1 | 8.7 | U-Th (spel) | Braun et al. (2019) |
| 138862.1-A | 61.1 | 0.5 | U-Th (spel) | Braun et al. (2019) |
| 138862.1-A1 | 73.2 | 0.4 | U-Th (spel) | Braun et al. (2019) |
| 138862.1-A2 | 76.6 | 0.5 | U-Th (spel) | Braun et al. (2019) |
| 138862.1-A3 | 86.3 | 0.5 | U-Th (spel) | Braun et al. (2019) |
| 138862.1-A4 | 88.4 | 0.6 | U-Th (spel) | Braun et al. (2019) |
| 138862.1-B | 89.0 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 138862.1-C | 110.2 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 138862.2-A | 84.9 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 138862.2-A1 | 89.9 | 0.6 | U-Th (spel) | Braun et al. (2019) |
| 138862.2-B1 | 87.0 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 138862-2-B | 87.1 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 138862.2-C | 103.2 | 1.3 | U-Th (spel) | Braun et al. (2019) |
| 138862.2-C1 | 106.5 | 0.6 | U-Th (spel) | Braun et al. (2019) |
| 138862.2-D1 | 110.3 | 0.8 | U-Th (spel) | Braun et al. (2019) |
| 138862.2-D | 109.1 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 142828-A | 50.9 | 0.5 | U-Th (spel) | Braun et al. (2019) |
| 142828-A1 | 58.4 | 0.4 | U-Th (spel) | Braun et al. (2019) |
| 142828-C | 95.8 | 0.6 | U-Th (spel) | Braun et al. (2019) |
| 142828-A2 | 97.9 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 142828-A3 | 104.8 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 142828-A4 | 103.4 | 1.6 | U-Th (spel) | Braun et al. (2019) |
| 142828-A5 | 109.7 | 0.9 | U-Th (spel) | Braun et al. (2019) |
| 142828-D | 107.5 | 1.2 | U-Th (spel) | Braun et al. (2019) |
| 142828-B | 105.3 | 0.7 | U-Th (spel) | Braun et al. (2019) |
| 46744 | 110.8 | 6.8 | OSL | this study |
| 142824 | 85.0 | 5.2 | OSL | this study |
| 142825 | 91.8 | 7.3 | OSL | this study |
| 142826 | 73.4 | 5.5 | OSL | this study |
|  | 44.0 | 2.8 |  |  |
| 353068 |  |  | OSL | this study |
|  | 40.3 | 2.3 |  |  |