

Supplementary Table 3: Long depth profile from sample JAB286B

| Analysis | Approximate depth (μm) | Ages (Ma) | | | | | | % radiogenic ²⁰⁶ Pb | Corrected isotope ratios | | | | | | Correlation of ellipses | Th/U | U (ppm) |
|------------------|------------------------|--|--|---|-------------------|-------------------|-------------------|--------------------------------|---|---|---|-------------------|-------------------|-------------------|-------------------------|-------|---------|
| | | ²⁰⁶ Pb/ ²³⁸ U ± (1σ) | ²⁰⁷ Pb/ ²³⁵ U ± (1σ) | ²⁰⁷ Pb/ ²⁰⁶ Pb ± (1σ) | ²⁰⁶ Pb | ²⁰⁶ Pb | ²⁰⁶ Pb | | ²⁰⁶ Pb*/ ²³⁸ U ± (1σ) | ²⁰⁷ Pb*/ ²³⁵ U ± (1σ) | ²⁰⁷ Pb*/ ²⁰⁶ Pb* ± (1σ) | ²⁰⁶ Pb | ²⁰⁶ Pb | ²⁰⁶ Pb | | | |
| JAB286B_GMIMdp_2 | 0.00 | 477.0 | 21.7 | 450.0 | 127.0 | 314.6 | 742.0 | 95.7 | 0.0768 | 0.0036 | 0.5577 | 0.1941 | 0.0527 | 0.0172 | 0.5158 | 0.023 | 348 |
| Block 2 | 0.08 | 471.9 | 20.2 | 370.6 | 115.0 | b.d. | b.d. | 96.6 | 0.0759 | 0.0034 | 0.4405 | 0.1638 | 0.0421 | 0.0149 | 0.4713 | 0.014 | 387 |
| Block 3 | 0.15 | 450.8 | 16.9 | 473.7 | 36.2 | 586.2 | 195.0 | 99.8 | 0.0724 | 0.0028 | 0.5945 | 0.0568 | 0.0595 | 0.0053 | 0.3449 | 0.018 | 409 |
| Block 4 | 0.23 | 424.9 | 15.8 | 420.0 | 46.1 | 393.5 | 283.0 | 99.4 | 0.0681 | 0.0026 | 0.5124 | 0.0687 | 0.0545 | 0.0069 | 0.3425 | 0.010 | 419 |
| Block 5 | 0.30 | 445.2 | 16.4 | 488.1 | 26.0 | 694.9 | 136.0 | 100 | 0.0715 | 0.0027 | 0.6172 | 0.0414 | 0.0626 | 0.0040 | 0.3623 | 0.018 | 445 |
| Block 6 | 0.38 | 475.3 | 18.1 | 466.2 | 26.7 | 421.5 | 152.0 | 100 | 0.0765 | 0.0030 | 0.5827 | 0.0416 | 0.0552 | 0.0038 | 0.3536 | 0.019 | 379 |
| Block 7 | 0.45 | 494.5 | 19.3 | 472.5 | 27.5 | 367.1 | 157.0 | 100 | 0.0797 | 0.0032 | 0.5926 | 0.0431 | 0.0539 | 0.0038 | 0.3551 | 0.020 | 366 |
| Block 8 | 0.53 | 494.2 | 19.6 | 498.1 | 28.6 | 516.2 | 152.0 | 100 | 0.0797 | 0.0033 | 0.6333 | 0.0460 | 0.0576 | 0.0040 | 0.3625 | 0.018 | 355 |
| Block 9 | 0.60 | 520.2 | 21.0 | 518.8 | 29.7 | 513.0 | 153.0 | 100 | 0.0840 | 0.0035 | 0.6669 | 0.0488 | 0.0576 | 0.0040 | 0.3728 | 0.015 | 347 |
| Block 10 | 0.68 | 501.7 | 25.1 | 458.4 | 30.1 | 246.8 | 165.6 | 100 | 0.0809 | 0.0042 | 0.5706 | 0.0465 | 0.0511 | 0.0037 | 0.4929 | 0.018 | 347 |
| Block 11 | 0.75 | 484.1 | 24.5 | 464.2 | 29.9 | 367.0 | 156.0 | 100 | 0.0780 | 0.0041 | 0.5796 | 0.0464 | 0.0539 | 0.0037 | 0.5211 | 0.017 | 386 |
| Block 12 | 0.83 | 491.8 | 24.8 | 493.1 | 30.3 | 499.4 | 145.4 | 100 | 0.0793 | 0.0042 | 0.6252 | 0.0486 | 0.0572 | 0.0038 | 0.5427 | 0.013 | 426 |
| Block 13 | 0.90 | 512.5 | 26.2 | 501.5 | 30.6 | 451.5 | 143.3 | 100 | 0.0828 | 0.0044 | 0.6387 | 0.0494 | 0.0560 | 0.0036 | 0.5651 | 0.018 | 459 |
| Block 14 | 0.98 | 479.4 | 23.4 | 478.7 | 28.4 | 475.4 | 137.8 | 100 | 0.0772 | 0.0039 | 0.6024 | 0.0448 | 0.0566 | 0.0035 | 0.5588 | 0.013 | 483 |
| Block 15 | 1.05 | 468.5 | 22.1 | 450.8 | 34.3 | 361.8 | 188.0 | 99.8 | 0.0754 | 0.0037 | 0.5589 | 0.0527 | 0.0538 | 0.0045 | 0.4711 | 0.013 | 503 |
| Block 16 | 1.13 | 496.6 | 24.4 | 453.0 | 44.1 | 237.5 | 249.8 | 99.5 | 0.0801 | 0.0041 | 0.5623 | 0.0679 | 0.0509 | 0.0055 | 0.4436 | 0.019 | 537 |
| Block 17 | 1.20 | 507.0 | 24.2 | 511.0 | 27.8 | 528.9 | 121.4 | 100 | 0.0818 | 0.0041 | 0.6540 | 0.0452 | 0.0580 | 0.0032 | 0.6088 | 0.018 | 620 |
| Block 18 | 1.28 | 525.5 | 24.5 | 498.4 | 26.8 | 375.9 | 122.4 | 100 | 0.0849 | 0.0041 | 0.6337 | 0.0431 | 0.0541 | 0.0029 | 0.6089 | 0.020 | 645 |
| Block 19 | 1.35 | 523.7 | 24.2 | 521.0 | 26.9 | 509.1 | 114.4 | 100 | 0.0846 | 0.0041 | 0.6705 | 0.0442 | 0.0575 | 0.0030 | 0.6240 | 0.024 | 633 |
| Block 20 | 1.43 | 537.9 | 24.9 | 565.0 | 27.9 | 675.6 | 106.9 | 100 | 0.0870 | 0.0042 | 0.7444 | 0.0479 | 0.0620 | 0.0031 | 0.6393 | 0.040 | 625 |
| Block 21 | 1.50 | 546.0 | 15.0 | 543.9 | 22.0 | 534.9 | 111.0 | 100 | 0.0884 | 0.0025 | 0.7085 | 0.0370 | 0.0581 | 0.0029 | 0.3241 | 0.050 | 633 |
| Block 22 | 1.58 | 576.3 | 16.3 | 596.2 | 23.2 | 672.7 | 107.0 | 100 | 0.0935 | 0.0028 | 0.7990 | 0.0411 | 0.0620 | 0.0031 | 0.3407 | 0.083 | 576 |
| Block 23 | 1.65 | 634.2 | 18.4 | 616.7 | 24.2 | 553.2 | 110.0 | 100 | 0.1034 | 0.0031 | 0.8356 | 0.0438 | 0.0586 | 0.0030 | 0.3488 | 0.097 | 558 |
| Block 24 | 1.73 | 680.5 | 20.6 | 739.5 | 26.4 | 922.4 | 99.1 | 100 | 0.1113 | 0.0035 | 1.0710 | 0.0540 | 0.0698 | 0.0034 | 0.3818 | 0.097 | 464 |
| Block 25 | 1.80 | 708.7 | 21.7 | 709.0 | 26.8 | 709.8 | 107.0 | 100 | 0.1162 | 0.0038 | 1.0100 | 0.0530 | 0.0631 | 0.0032 | 0.3755 | 0.099 | 446 |
| Block 26 | 1.88 | 781.8 | 24.5 | 834.1 | 33.8 | 976.2 | 113.0 | 99.9 | 0.1289 | 0.0043 | 1.2740 | 0.0757 | 0.0717 | 0.0040 | 0.3905 | 0.101 | 478 |
| Block 27 | 1.95 | 796.6 | 25.0 | 771.2 | 44.8 | 698.0 | 165.0 | 99.5 | 0.1315 | 0.0044 | 1.1370 | 0.0944 | 0.0627 | 0.0049 | 0.3618 | 0.084 | 449 |
| Block 28 | 2.03 | 817.0 | 25.0 | 813.7 | 39.5 | 804.5 | 138.0 | 99.7 | 0.1351 | 0.0044 | 1.2290 | 0.0866 | 0.0659 | 0.0043 | 0.3736 | 0.078 | 492 |
| Block 29 | 2.10 | 799.8 | 23.6 | 837.3 | 27.3 | 937.9 | 92.9 | 100 | 0.1321 | 0.0041 | 1.2810 | 0.0614 | 0.0703 | 0.0032 | 0.4090 | 0.066 | 512 |
| Block 30 | 2.18 | 788.0 | 22.5 | 842.4 | 26.5 | 988.8 | 89.1 | 100 | 0.1300 | 0.0039 | 1.2930 | 0.0599 | 0.0721 | 0.0032 | 0.4100 | 0.047 | 532 |
| Block 31 | 2.25 | 806.5 | 22.2 | 873.6 | 25.7 | 1048 | 84 | 100 | 0.1333 | 0.0039 | 1.3640 | 0.0599 | 0.0742 | 0.0031 | 0.4173 | 0.050 | 587 |
| Block 32 | 2.33 | 776.4 | 21.0 | 798.0 | 24.5 | 858.8 | 87.5 | 100 | 0.1280 | 0.0037 | 1.1940 | 0.0531 | 0.0677 | 0.0029 | 0.3990 | 0.034 | 607 |
| Block 33 | 2.40 | 781.3 | 20.4 | 813.1 | 23.9 | 901.0 | 83.4 | 100 | 0.1289 | 0.0036 | 1.2270 | 0.0523 | 0.0691 | 0.0028 | 0.4026 | 0.032 | 623 |
| Block 34 | 2.48 | 802.9 | 20.6 | 789.4 | 23.4 | 751.3 | 85.4 | 100 | 0.1326 | 0.0036 | 1.1760 | 0.0501 | 0.0643 | 0.0026 | 0.3978 | 0.017 | 650 |
| Block 35 | 2.55 | 810.8 | 20.3 | 869.4 | 23.3 | 1022 | 76 | 100 | 0.1340 | 0.0036 | 1.3540 | 0.0540 | 0.0733 | 0.0028 | 0.4160 | 0.025 | 715 |
| Block 36 | 2.63 | 782.2 | 15.0 | 797.0 | 20.2 | 838.6 | 79.4 | 100 | 0.1290 | 0.0026 | 1.1920 | 0.0437 | 0.0670 | 0.0026 | 0.2038 | 0.014 | 681 |
| Block 37 | 2.70 | 782.0 | 14.9 | 818.1 | 20.1 | 917.5 | 76.8 | 100 | 0.1290 | 0.0026 | 1.2380 | 0.0444 | 0.0696 | 0.0026 | 0.2062 | 0.017 | 661 |
| Block 38 | 2.78 | 821.4 | 15.7 | 852.6 | 20.3 | 934.6 | 75.4 | 100 | 0.1359 | 0.0028 | 1.3160 | 0.0464 | 0.0702 | 0.0026 | 0.2152 | 0.010 | 634 |
| Block 39 | 2.85 | 858.7 | 16.4 | 902.5 | 20.6 | 1011 | 73 | 100 | 0.1425 | 0.0029 | 1.4320 | 0.0493 | 0.0729 | 0.0026 | 0.2227 | 0.011 | 683 |
| Block 40 | 2.93 | 875.1 | 17.2 | 883.4 | 20.8 | 904.4 | 75.6 | 100 | 0.1454 | 0.0031 | 1.3870 | 0.0489 | 0.0692 | 0.0025 | 0.2282 | 0.020 | 626 |
| Block 41 | 3.00 | 926.5 | 17.7 | 950.0 | 21.0 | 1005 | 72 | 100 | 0.1546 | 0.0032 | 1.5490 | 0.0527 | 0.0727 | 0.0026 | 0.2275 | 0.010 | 640 |
| Block 42 | 3.08 | 922.0 | 17.9 | 950.0 | 21.2 | 1015 | 73 | 100 | 0.1538 | 0.0032 | 1.5490 | 0.0533 | 0.0731 | 0.0026 | 0.2295 | 0.011 | 658 |
| Block 43 | 3.15 | 934.8 | 18.7 | 957.5 | 21.7 | 1010 | 74 | 100 | 0.1561 | 0.0034 | 1.5680 | 0.0548 | 0.0729 | 0.0027 | 0.2371 | 0.008 | 584 |
| Block 44 | 3.23 | 920.3 | 18.5 | 932.1 | 21.8 | 960.3 | 76.2 | 100 | 0.1535 | 0.0033 | 1.5040 | 0.0539 | 0.0711 | 0.0027 | 0.2308 | 0.012 | 580 |
| Block 45 | 3.30 | 895.0 | 17.8 | 914.5 | 21.8 | 961.9 | 76.9 | 100 | 0.1489 | 0.0032 | 1.4610 | 0.0527 | 0.0712 | 0.0027 | 0.2212 | 0.013 | 613 |
| Block 46 | 3.38 | 878.3 | 18.0 | 908.6 | 22.0 | 982.8 | 77.8 | 100 | 0.1460 | 0.0032 | 1.4470 | 0.0530 | 0.0719 | 0.0027 | 0.2280 | 0.011 | 567 |
| Block 47 | 3.45 | 879.6 | 18.1 | 901.8 | 22.1 | 956.6 | 78.9 | 100 | 0.1462 | 0.0032 | 1.4310 | 0.0530 | 0.0710 | 0.0027 | 0.2261 | 0.008 | 567 |
| Block 48 | 3.53 | 906.0 | 19.0 | 922.9 | 22.4 | 963.5 | 78.7 | 100 | 0.1509 | 0.0034 | 1.4820 | 0.0548 | 0.0712 | 0.0027 | 0.2331 | 0.011 | 541 |
| Block 49 | 3.60 | 890.6 | 18.7 | 923.5 | 22.4 | 1003 | 78 | 100 | 0.1482 | 0.0033 | 1.4830 | 0.0548 | 0.0726 | 0.0028 | 0.2340 | 0.015 | 536 |
| Block 50 | 3.68 | 885.5 | 18.5 | 904.5 | 22.4 | 951.4 | 79.9 | 100 | 0.1472 | 0.0033 | 1.4370 | 0.0538 | 0.0708 | 0.0028 | 0.2265 | 0.009 | 547 |
| Block 51 | 3.75 | 902.4 | 18.7 | 902.3 | 25.0 | 901.8 | 87.6 | 99.9 | 0.1503 | 0.0033 | 1.4320 | 0.0598 | 0.0691 | 0.0029 | 0.2336 | 0.010 | 559 |
| Block 52 | 3.83 | 945.0 | 20.1 | 988.3 | 28.7 | 1086 | 91 | 99.8 | 0.1579 | 0.0036 | 1.6470 | 0.0748 | 0.0756 | 0.0034 | 0.2586 | 0.014 | 528 |
| Block 53 | 3.90 | 951.1 | 20.2 | 955.3 | 22.9 | 965.0 | 78.7 | 100 | 0.1590 | 0.0036 | 1.5620 | 0.0578 | 0.0713 | 0.0027 | 0.2387 | 0.013 | 526 |

| | | | | | | | | | | | | | | | | | |
|----------|------|-------|------|-------|------|-------|------|-----|--------|--------|--------|--------|--------|--------|--------|-------|-----|
| Block 54 | 3.98 | 945.0 | 20.4 | 959.4 | 23.1 | 992.8 | 78.7 | 100 | 0.1579 | 0.0037 | 1.5730 | 0.0584 | 0.0722 | 0.0028 | 0.2450 | 0.018 | 487 |
| Block 55 | 4.05 | 957.8 | 20.2 | 973.9 | 23.0 | 1010 | 78 | 100 | 0.1602 | 0.0036 | 1.6100 | 0.0592 | 0.0729 | 0.0028 | 0.2385 | 0.010 | 501 |
| Block 56 | 4.13 | 955.1 | 21.5 | 989.3 | 23.8 | 1066 | 79 | 100 | 0.1597 | 0.0039 | 1.6490 | 0.0621 | 0.0749 | 0.0029 | 0.2551 | 0.013 | 471 |
| Block 57 | 4.20 | 943.1 | 20.5 | 953.8 | 23.3 | 978.6 | 80.1 | 100 | 0.1575 | 0.0037 | 1.5580 | 0.0588 | 0.0717 | 0.0028 | 0.2402 | 0.011 | 493 |
| Block 58 | 4.28 | 957.5 | 21.1 | 894.6 | 23.5 | 742.3 | 86.7 | 100 | 0.1601 | 0.0038 | 1.4130 | 0.0558 | 0.0640 | 0.0026 | 0.2353 | 0.010 | 454 |
| Block 59 | 4.35 | 983.1 | 21.8 | 1012 | 24 | 1075 | 78 | 100 | 0.1647 | 0.0039 | 1.7090 | 0.0637 | 0.0752 | 0.0029 | 0.2525 | 0.011 | 451 |
| Block 60 | 4.43 | 972.7 | 22.1 | 976.9 | 24.1 | 986.2 | 81.4 | 100 | 0.1629 | 0.0040 | 1.6170 | 0.0622 | 0.0720 | 0.0029 | 0.2536 | 0.011 | 454 |
| Block 61 | 4.50 | 962.1 | 21.1 | 965.1 | 23.7 | 971.9 | 80.8 | 100 | 0.1610 | 0.0038 | 1.5870 | 0.0604 | 0.0715 | 0.0028 | 0.2414 | 0.006 | 523 |
| Block 62 | 4.58 | 998.5 | 22.6 | 995.8 | 24.4 | 989.8 | 81.3 | 100 | 0.1675 | 0.0041 | 1.6660 | 0.0639 | 0.0721 | 0.0029 | 0.2528 | 0.011 | 472 |
| Block 63 | 4.65 | 992.8 | 22.7 | 964.9 | 24.2 | 901.7 | 83.4 | 100 | 0.1665 | 0.0041 | 1.5860 | 0.0617 | 0.0691 | 0.0028 | 0.2536 | 0.007 | 457 |
| Block 64 | 4.73 | 1003 | 23 | 1011 | 25 | 1029 | 82 | 100 | 0.1683 | 0.0042 | 1.7070 | 0.0660 | 0.0735 | 0.0030 | 0.2528 | 0.007 | 453 |
| Block 65 | 4.80 | 1015 | 24 | 1037 | 26 | 1082 | 82 | 100 | 0.1705 | 0.0044 | 1.7750 | 0.0700 | 0.0755 | 0.0031 | 0.2630 | 0.013 | 402 |
| Block 66 | 4.88 | 1008 | 25 | 980.6 | 25.8 | 918.7 | 87.8 | 100 | 0.1693 | 0.0044 | 1.6270 | 0.0668 | 0.0697 | 0.0030 | 0.2562 | 0.013 | 385 |
| Block 67 | 4.95 | 1013 | 25 | 993.9 | 26.6 | 953.1 | 89.2 | 100 | 0.1701 | 0.0046 | 1.6610 | 0.0696 | 0.0709 | 0.0031 | 0.2582 | 0.011 | 357 |
| Block 68 | 5.03 | 1032 | 27 | 994.3 | 27.3 | 912.4 | 92.2 | 100 | 0.1736 | 0.0048 | 1.6630 | 0.0717 | 0.0695 | 0.0031 | 0.2622 | 0.012 | 337 |
| Block 69 | 5.10 | 1095 | 29 | 1065 | 29 | 1005 | 92 | 100 | 0.1851 | 0.0054 | 1.8550 | 0.0808 | 0.0727 | 0.0033 | 0.2711 | 0.013 | 320 |

b.d. indicates analyses where radiogenic $^{207}\text{Pb}^*$ is below detection