**Table S3**. LA-ICP-MS zircon U-Pb age data of the late Jurassic low-Sr and high-Yb A-type granites from Xianghualing, South China

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Spot** | **Contents（ppm）** | | | Th/U | **Isotopic ratios** | | | | | | **Age（Ma）** | | | | | | |
| Pb | Th | U | 207Pb/206Pb | σ | 207Pb/235U | σ | 206Pb/238U | σ | 207Pb/206Pb | σ | 207Pb/235U | σ | 206Pb/238U | σ | |
| **ZK57** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 01 | 199 | 4505 | 6771 | 0.7 | 0.0543 | 0.0012 | 0.1751 | 0.0038 | 0.0233 | 0.0002 | 383.4 | 43.5 | 163.8 | 3.3 | 148.3 | 1.5 |
| 02 | 54 | 631 | 1970 | 0.3 | 0.0540 | 0.0020 | 0.1728 | 0.0059 | 0.0231 | 0.0003 | 368.6 | 81.5 | 161.9 | 5.1 | 147.4 | 1.8 |
| 03 | 52 | 844 | 1793 | 0.5 | 0.0478 | 0.0015 | 0.1580 | 0.0049 | 0.0239 | 0.0002 | 100.1 | 74.1 | 148.9 | 4.3 | 152.2 | 1.5 |
| 04 | 63 | 603 | 2331 | 0.3 | 0.0496 | 0.0013 | 0.1641 | 0.0044 | 0.0239 | 0.0002 | 176.0 | 58.3 | 154.3 | 3.8 | 152.3 | 1.5 |
| 05 | 4 | 70 | 155 | 0.5 | 0.0500 | 0.0044 | 0.1755 | 0.0136 | 0.0240 | 0.0006 | 194.5 | 192.6 | 164.2 | 11.7 | 153.1 | 3.5 |
| 06 | 24 | 535 | 848 | 0.6 | 0.0528 | 0.0029 | 0.1740 | 0.0102 | 0.0241 | 0.0005 | 316.7 | 125.9 | 162.8 | 8.8 | 153.2 | 3.1 |
| 07 | 13 | 331 | 415 | 0.8 | 0.0498 | 0.0032 | 0.1648 | 0.0099 | 0.0242 | 0.0004 | 187.1 | 148.1 | 154.9 | 8.7 | 153.9 | 2.6 |
| 08 | 21 | 338 | 748 | 0.5 | 0.0485 | 0.0023 | 0.1609 | 0.0082 | 0.0240 | 0.0005 | 127.9 | 113.0 | 151.5 | 7.1 | 152.9 | 2.9 |
| 09 | 80 | 1539 | 2750 | 0.6 | 0.0485 | 0.0012 | 0.1615 | 0.0039 | 0.0241 | 0.0003 | 124.2 | 62.0 | 152.0 | 3.4 | 153.5 | 2.2 |
| 10 | 27 | 317 | 1015 | 0.3 | 0.0493 | 0.0020 | 0.1655 | 0.0074 | 0.0240 | 0.0004 | 164.9 | 88.0 | 155.5 | 6.5 | 153.1 | 2.5 |
| 11 | 10 | 195 | 348 | 0.6 | 0.0528 | 0.0028 | 0.1769 | 0.0094 | 0.0243 | 0.0003 | 316.7 | 120.4 | 165.4 | 8.1 | 154.5 | 2.0 |
| 12 | 79 | 1216 | 1931 | 0.6 | 0.0484 | 0.0012 | 0.1637 | 0.0044 | 0.0245 | 0.0003 | 120.5 | 65.7 | 153.9 | 3.9 | 155.8 | 1.9 |
| 13 | 74 | 1217 | 1735 | 0.7 | 0.0491 | 0.0012 | 0.1613 | 0.0039 | 0.0239 | 0.0003 | 150.1 | 55.6 | 151.8 | 3.4 | 152.0 | 1.7 |
| 14 | 81 | 1393 | 1763 | 0.8 | 0.0498 | 0.0014 | 0.1624 | 0.0045 | 0.0237 | 0.0003 | 187.1 | 64.8 | 152.8 | 3.9 | 151.0 | 1.8 |
| 15 | 153 | 2599 | 4164 | 0.6 | 0.0496 | 0.0010 | 0.1626 | 0.0043 | 0.0237 | 0.0004 | 189.0 | 52.8 | 153.0 | 3.7 | 151.1 | 2.3 | |
| **ZK65** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |
| 01 | 269 | 3316 | 14727 | 0.2 | 0.0509 | 0.0013 | 0.1170 | 0.0028 | 0.0165 | 0.0002 | 239.0 | 52.8 | 112.4 | 2.6 | 105.4 | 1.1 | |
| 02 | 99 | 1311 | 3925 | 0.3 | 0.0481 | 0.0017 | 0.1479 | 0.0051 | 0.0221 | 0.0003 | 105.7 | 83.3 | 140.1 | 4.5 | 141.0 | 2.0 | |
| 03 | 269 | 2096 | 10398 | 0.2 | 0.0546 | 0.0015 | 0.1696 | 0.0043 | 0.0224 | 0.0003 | 394.5 | 63.0 | 159.1 | 3.7 | 142.6 | 1.9 | |
| 04 | 199 | 1000 | 7673 | 0.1 | 0.0517 | 0.0015 | 0.1700 | 0.0054 | 0.0236 | 0.0004 | 272.3 | 69.4 | 159.4 | 4.7 | 150.4 | 2.3 | |
| 05 | 48 | 752 | 1732 | 0.4 | 0.0485 | 0.0015 | 0.1620 | 0.0049 | 0.0241 | 0.0003 | 120.5 | 67.6 | 152.4 | 4.3 | 153.2 | 1.8 | |
| 06 | 247 | 2102 | 9329 | 0.2 | 0.0489 | 0.0011 | 0.1632 | 0.0037 | 0.0240 | 0.0003 | 142.7 | 55.6 | 153.5 | 3.3 | 152.7 | 2.0 | |
| 07 | 168 | 1153 | 6526 | 0.2 | 0.0493 | 0.0013 | 0.1653 | 0.0046 | 0.0241 | 0.0004 | 161.2 | 61.1 | 155.4 | 4.0 | 153.3 | 2.4 | |
| 08 | 208 | 1735 | 7755 | 0.2 | 0.0495 | 0.0011 | 0.1665 | 0.0037 | 0.0241 | 0.0002 | 172.3 | 56.5 | 156.4 | 3.3 | 153.4 | 1.5 | |
| 09 | 269 | 3316 | 14727 | 0.2 | 0.0493 | 0.0009 | 0.1606 | 0.0039 | 0.0239 | 0.0004 | 161.2 | 44.4 | 151.2 | 3.4 | 152.5 | 2.5 | |
| 10 | 99 | 1311 | 3925 | 0.3 | 0.0510 | 0.0008 | 0.1685 | 0.0030 | 0.0240 | 0.0004 | 242.7 | 34.3 | 158.1 | 2.6 | 152.7 | 2.3 | |
| 11 | 269 | 2096 | 10398 | 0.2 | 0.0481 | 0.0012 | 0.1585 | 0.0039 | 0.0239 | 0.0003 | 105.7 | 61.1 | 149.4 | 3.4 | 152.6 | 1.8 | |
| 12 | 90 | 1449 | 4198 | 0.4 | 0.0473 | 0.0008 | 0.1544 | 0.0032 | 0.0239 | 0.0003 | 64.9 | 36.1 | 145.8 | 2.8 | 152.4 | 2.0 | |
| 13 | 90 | 1449 | 4198 | 0.4 | 0.0477 | 0.0007 | 0.1614 | 0.0027 | 0.0246 | 0.0003 | 87.1 | 33.3 | 151.9 | 2.4 | 156.4 | 2.0 | |
| 14 | 98 | 1378 | 3876 | 0.4 | 0.0487 | 0.0007 | 0.1563 | 0.0027 | 0.0233 | 0.0003 | 131.6 | 35.2 | 147.5 | 2.3 | 148.5 | 1.7 | |
| 15 | 155 | 2597 | 4051 | 0.6 | 0.0488 | 0.0009 | 0.1536 | 0.0031 | 0.0228 | 0.0003 | 139.0 | 44.4 | 145.1 | 2.8 | 145.0 | 1.6 | |