**Supplement 1:** Single grain Pb/Pb evaporation ages, in case of repreated measurements
not shown: repeated measurements on the same zircon, grains with 204Pb/206Pb > 0.002
and measurements with errors > 20 Ma

| sample/zircon grain | $^{204}Pb/^{206}Pb$ | $^{207}Pb/^{206}Pb$ (corr.) | error (2σ, abs.) | number of scans | age [Ma] | error (2σ, abs.) | |
|---|---|---|---|---|---|---|---|
| **a) biotite bearing granites of Koenigshain** | | | | | | | |
| **BGK1** | | | | | | | |
| 2 | 0.000141 | 0.054445 | 0.000143 | 90 | **311.0** | **11.2** | |
| 3 | 0.000112 | 0.054117 | 0.000039 | 76 | **315.4** | **6.6** | |
| 4 | 0.000053 | 0.053312 | 0.000094 | 88 | **317.2** | **8.7** | |
| 5 | 0.000048 | 0.053245 | 0.000046 | 89 | **317.6** | **6.7** | |
| 6 | 0.000044 | 0.053201 | 0.000103 | 61 | **317.9** | **9.2** | |
| 7 | 0.000115 | 0.054246 | 0.000046 | 90 | **318.6** | **6.9** | |
| 9 | 0.000039 | 0.053160 | 0.000054 | 88 | **319.0** | **7.4** | |
| 10 | 0.000085 | 0.053828 | 0.000034 | 89 | **319.4** | **6.4** | |
| 11 | 0.000037 | 0.053146 | 0.000034 | 89 | **319.8** | **6.3** | |
| 12 | 0.000183 | 0.055254 | 0.000097 | 89 | **320.5** | **6.9** | |
| 13 | 0.000031 | 0.053105 | 0.000039 | 89 | **321.7** | **6.7** | |
| 17 | 0.000121 | 0.054498 | 0.000049 | 90 | **326.1** | **7.1** | |
| | | | | **weighted mean** | **319.2** | **2.0** | |
| | | | | | **n=12** | **MSWD=0.78** | |
| **BGK2** | | | | | | | |
| 1 | 0.000079 | 0.053584 | 0.000229 | 29 | **312.8** | **>5** | 5 |
| 2 | 0.000077 | 0.053657 | 0.000200 | 90 | **316.9** | **>5** | 5 |
| 3 | 0.000172 | 0.055071 | 0.000100 | 90 | **318.8** | **>5** | 5 |
| 4 | 0.000017 | 0.052910 | 0.000062 | 90 | **322.4** | **>5** | 5 |
| 5 | 0.000010 | 0.052846 | 0.000131 | 89 | **322.8** | **>5** | 5 |
| 6 | 0.000138 | 0.054662 | 0.000112 | 89 | **322.8** | **>5** | 5 |
| 8 | 0.000044 | 0.053347 | 0.000140 | 87 | **324.4** | **>5** | 5 |
| | | | | **weighted mean** | **320.1** | **3.8** | |
| | | | | | **n=7** | **MSWD=2.8** | |
| **BGK3** | | | | | | | |
| 5 | 0.000103 | 0.054129 | 0.000121 | 90 | **321.6** | **10.3** | |
| 6 | 0.000139 | 0.054723 | 0.000003 | 90 | **324.5** | **6.4** | |
| 7 | 0.000042 | 0.053338 | 0.000028 | 90 | **325.1** | **6.2** | |
| | | | | **weighted mean** | **324.3** | **4.0** | |
| | | | | | **n=3** | **MSWD=0.2** | |
| **BGK4** | | | | | | | |
| 2 | 0.000040 | 0.053080 | 0.000051 | 89 | **315.3** | **7.1** | |
| 4 | 0.000085 | 0.053800 | 0.000052 | 90 | **318.1** | **7.2** | |
| 7 | 0.000172 | 0.055074 | 0.000071 | 90 | **318.8** | **7.8** | |
| 8 | 0.000032 | 0.053218 | 0.000086 | 90 | **326.1** | **8.5** | |
| 9 | 0.000070 | 0.053942 | 0.000057 | 90 | 334.0 | 7.4 | |
| | | | | **weighted mean** | **319.1** | **6.9** | |
| | | | | | **n=4** | **MSWD=1.3** | |
| **b) biotite-bearing granites of Stolpen** | | | | | | | |
| **BGSt11** | | | | | | | |
| 1 | 0.000094 | 0.052402 | 0.000045 | 89 | **303** | **1.9** | |
| 2 | 0.000181 | 0.052719 | 0.000045 | 85 | **316.7** | **2** | |
| 3 | 0.000073 | 0.052340 | 0.000165 | 90 | **300.2** | **7.2** | |
| 4 | 0.000058 | 0.052473 | 0.000050 | 90 | **306** | **2.2** | |
| 5 | 0.000060 | 0.052381 | 0.000088 | 90 | **302** | **3.8** | |
| 6 | 0.000052 | 0.052563 | 0.000110 | 90 | **309.9** | **4.8** | |
| 10 | 0.000084 | 0.052399 | 0.000071 | 90 | **302.8** | **3.1** | |
| 11 | 0.000063 | 0.052032 | 0.000117 | 80 | 286.8 | 7.5 | |
| 12 | 0.000044 | 0.052535 | 0.000067 | 89 | **308.7** | **2.9** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | weighted mean | **307.5** | **4.9** |
| | | | | | **n=8** | **MSWD=19** |
| **BGSt13** | | | | | | |
| 1 | 0.000056 | 0.052428 | 0.002050 | 90 | **304.1** | **8.9** |
| 2 | 0.000133 | 0.052409 | 0.000062 | 90 | **303.3** | **2.7** |
| 10 | 0.000169 | 0.052546 | 0.000068 | 89 | **309.2** | **2.9** |
| 18 | 0.000112 | 0.052481 | 0.000054 | 87 | **306.4** | **2.3** |
| | | | | weighted mean | **306.1** | **4.1** |
| | | | | | **n=4** | **MSWD=3.0** |
| **BGSt14** | | | | | | |
| 1 | 0.0000627 | 0.052402 | 0.0000958 | 90 | **302.9** | **4.2** |
| 4 | 0.0000988 | 0.052479 | 0.0000684 | 90 | **306.3** | **3** |
| 5 | 0.000104 | 0.052445 | 0.0000637 | 90 | **304.8** | **2.8** |
| 6 | 0.000057 | 0.052401 | 0.0000603 | 90 | **302.9** | **2.6** |
| 7 | 0.000161 | 0.052517 | 0.0000835 | 90 | **307.9** | **3.6** |
| 8 | 0.0000352 | 0.052473 | 0.0000573 | 90 | **306** | **2.5** |
| 10 | 0.00000675 | 0.052949 | 0.000226 | 42 | 326.5 | 9.7 |
| 11 | 0.000112 | 0.05234 | 0.0000623 | 84 | **300.2** | **2.7** |
| 12 | 0.0000947 | 0.052375 | 0.0000659 | 85 | **301.8** | **2.8** |
| | | | | weighted mean | **303.9** | **2.1** |
| | | | | | **n=8** | **MSWD=3.0** |
| **c) ampbibole bearing granites** | | | | | | |
| **AG59** | | | | | | |
| 1 | 0.000023 | 0.053020 | 0.000153 | 90 | **329.6** | **6.6** |
| 5 | 0.000163 | 0.052777 | 0.000037 | 90 | **319.2** | **1.5** |
| 6 | 0.000177 | 0.053182 | 0.000068 | 90 | 336.5 | 2.9 |
| 11 | 0.000154 | 0.053381 | 0.000050 | 89 | 345.0 | 2.1 |
| 12 | 0.000081 | 0.052803 | 0.000054 | 87 | **320.3** | **2.3** |
| 13 | 0.000111 | 0.052852 | 0.000051 | 90 | **322.4** | **2.2** |
| 14 | 0.000085 | 0.053027 | 0.000068 | 89 | **329.9** | **2.9** |
| | | | | weighted mean | **321.6** | **5** |
| | | | | | **n=5** | **MSWD=13** |
| **AG61** | | | | | | |
| 1 | 0.000113 | 0.058165 | 0.000063 | 90 | 535.9 | 2.4 |
| 2 | 0.000061 | 0.052979 | 0.000109 | 90 | **327.8** | **4.7** |
| 3 | 0.000114 | 0.053081 | 0.000050 | 90 | **332.2** | **2.1** |
| 4 | 0.000144 | 0.056177 | 0.000041 | 90 | 459.3 | 1.6 |
| 5 | 0.000046 | 0.058503 | 0.000045 | 90 | 548.6 | 1.7 |
| 6 | 0.000050 | 0.058227 | 0.000150 | 90 | 538.3 | 5.7 |
| 7 | 0.000063 | 0.058389 | 0.000140 | 90 | 544.3 | 5.3 |
| 13 | 0.000010 | 0.052702 | 0.000197 | 88 | **316.0** | **8.5** |
| 15 | 0.000004 | 0.058268 | 0.000191 | 88 | 539.8 | 7.2 |
| 16 | 0.000084 | 0.052813 | 0.000140 | 88 | **320.7** | **6.0** |
| 18 | 0.000067 | 0.052727 | 0.000173 | 90 | **317.0** | **7.5** |
| 19 | 0.000113 | 0.058546 | 0.000109 | 89 | 550.2 | 4.1 |
| 23 | 0.000017 | 0.056999 | 0.000062 | 90 | 491.5 | 2.5 |
| 24 | 0.000023 | 0.058019 | 0.000079 | 90 | 530.4 | 3.0 |
| 25 | 0.000029 | 0.058249 | 0.000120 | 90 | 539.1 | 4.5 |
| 27 | 0.000092 | 0.052761 | 0.000072 | 90 | **318.5** | **3.1** |
| 29 | 0.000048 | 0.052720 | 0.000198 | 90 | **316.7** | **8.6** |
| 30 | 0.000170 | 0.054608 | 0.000237 | 90 | 396.1 | 9.8 |
| 31 | 0.000074 | 0.053628 | 0.001620 | 18 | 355.4 | 68.4 |
| 32 | 0.000033 | 0.052513 | 0.000166 | 90 | **307.8** | **7.2** |
| 33 | 0.000055 | 0.053149 | 0.000025 | 90 | **335.1** | **1.1** |
| | | | | weighted mean | **325.4** | **5.2** |
| | | | | | **n=9** | **MSWD=27** |
| **AG65** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 16 | 0.000030 | 0.052452 | 0.000396 | 90 | **305.2** | **17.2** |
| 10 | 0.000036 | 0.052732 | 0.000336 | 90 | **317.3** | **14.5** |
| 5 | 0.000109 | 0.052733 | 0.000037 | 88 | **317.3** | **1.6** |
| 6 | 0.000138 | 0.052733 | 0.000054 | 90 | **317.3** | **2.4** |
| 2 | 0.000091 | 0.052901 | 0.000056 | 90 | **324.5** | **2.4** |
| 9 | 0.000034 | 0.052969 | 0.000191 | 90 | **327.5** | **8.2** |
| 4 | 0.000111 | 0.053027 | 0.000123 | 90 | **329.9** | **5.3** |
| 7 | 0.000199 | 0.053102 | 0.000047 | 87 | **333.1** | **2** |
| 11 | 0.000049 | 0.053124 | 0.000138 | 90 | 334.1 | 5.9 |
| 8 | 0.000089 | 0.053338 | 0.000871 | 87 | 343.2 | 36.9 |
| 14 | 0.000078 | 0.053393 | 0.000219 | 90 | 345.5 | 9.3 |
| 13 | 0.000050 | 0.053509 | 0.000113 | 90 | 350.4 | 4.8 |
| 12 | 0.000139 | 0.053811 | 0.000453 | 90 | 363.2 | 19.0 |
| | | | | | **322.8** | **6.0** |
| | | | | | **n=8** | **MSWD=27** |

**d) volcanic rocks in dykes**

**VR03**

| | | | | | | |
|---|---|---|---|---|---|---|
| 15 | 0.000191 | 0.052066 | 0.000095 | 75 | **288.3** | **4.2** |
| 4 | 0.000146 | 0.052093 | 0.000243 | 71 | **289.5** | **10.7** |
| 8 | 0.000168 | 0.052425 | 0.000109 | 87 | **304.0** | **4.7** |
| 6 | 0.000006 | 0.052482 | 0.000076 | 52 | **306.4** | **3.3** |
| 9 | 0.000115 | 0.053005 | 0.000179 | 90 | 329.0 | 7.7 |
| 12 | 0.000103 | 0.053426 | 0.000208 | 90 | 346.9 | 8.8 |
| 3 | 0.000084 | 0.052573 | 0.001413 | 90 | 310.4 | 59.5 |
| 5 | 0.000065 | 0.052884 | 0.000299 | 90 | 323.8 | 12.7 |
| 6 | 0.000121 | 0.053621 | 0.000128 | 90 | 355.2 | 5.7 |
| 4 | 0.000184 | 0.054481 | 0.000292 | 90 | 391.0 | 12.1 |
| | | | **weighted mean** | | **300.0** | **15** |
| | | | | | **n=4** | **MSWD=18** |

**VR09**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.000034 | 0.052600 | 0.000152 | 42 | **311.5** | **6.6** |
| 2 | 0.000024 | 0.052445 | 0.000050 | 90 | **304.8** | **2.2** |
| 3 | 0.000188 | 0.051904 | 0.000143 | 26 | 281.1 | 6.3 |
| 3 | 0.000018 | 0.052378 | 0.000038 | 88 | **301.9** | **1.6** |
| 4 | 0.000015 | 0.052463 | 0.000105 | 90 | **305.6** | **4.5** |
| 5 | 0.000167 | 0.050281 | 0.000257 | 90 | 208 | 11.8 |
| 6 | 0.000055 | 0.051873 | 0.000445 | 26 | **279.8** | **19.6** |
| 7 | 0.000079 | 0.052611 | 0.000131 | 61 | **312** | **5.7** |
| 8 | 0.000044 | 0.052292 | 0.000050 | 90 | **298.2** | **2.1** |
| 9 | 0.000023 | 0.052408 | 0.000077 | 86 | **303.2** | **3.3** |
| 11 | 0.000090 | 0.052199 | 0.000141 | 66 | **294.1** | **6.2** |
| 14 | 0.000027 | 0.052494 | 0.000048 | 90 | **306.9** | **2.1** |
| 15 | 0.000022 | 0.052323 | 0.000058 | 68 | **299.5** | **2.5** |
| | | | **weighted mean** | | **302.7** | **2.6** |
| | | | | | **n=11** | **MSWD=7.8** |

**VR10**

| | | | | | | |
|---|---|---|---|---|---|---|
| 12 | 0.000027 | 0.052306 | 0.000033 | 87 | **298.8** | **1.4** |
| 7 | 0.000076 | 0.052312 | 0.000155 | 90 | **299** | **6.7** |
| 14 | 0.000042 | 0.052382 | 0.000044 | 85 | **302.1** | **1.9** |
| 18 | 0.000035 | 0.052441 | 0.00011 | 42 | **304.6** | **4.8** |
| 15 | 0.000027 | 0.052473 | 0.00007 | 88 | **306** | **3** |
| 19 | 0.000051 | 0.052496 | 0.000066 | 88 | **307** | **2.8** |
| 13 | 0.000032 | 0.052501 | 0.000049 | 90 | **307.3** | **2.1** |
| 16 | 0.000048 | 0.052522 | 0.000036 | 90 | **308.2** | **1.6** |
| | | | **weighted mean** | | **303.8** | **3.5** |
| | | | | | **n=8** | **MSWD=15** |

**VR11**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.000108 | 0.052063 | 0.000051 | 90 | **288.1** | **2.3** |
| 2 | 0.000097 | 0.052406 | 0.000247 | 90 | **303.1** | **10.8** |
| 5 | 0.000059 | 0.052574 | 0.000094 | 90 | **310.4** | **4.1** |
| 6 | 0.000037 | 0.052480 | 0.000353 | 9 | **306.3** | **15.4** |
| 7 | 0.000050 | 0.052405 | 0.000192 | 51 | **303.1** | **8.3** |
| 8 | 0.000158 | 0.052039 | 0.000204 | 89 | **287.1** | **9** |
| 9 | 0.000104 | 0.051912 | 0.000086 | 90 | 281.5 | 3.8 |
| 10 | 0.000084 | 0.052056 | 0.000225 | 11 | **287.8** | **9.8** |
| 11 | 0.000120 | 0.523420 | 0.000073 | 89 | **300.3** | **3.1** |
| 12 | 0.000041 | 0.052386 | 0.000191 | 90 | **302.3** | **8.3** |
| 13 | 0.000094 | 0.052368 | 0.000266 | 89 | **301.5** | **11.6** |
| 15 | 0.000132 | 0.052125 | 0.000132 | 90 | **290.9** | **5.7** |
| | | | | **weighted mean** | **295.6** | **5.8** |
| | | | | | **n=11** | **MSWD=12** |

**VR15**

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | 0.000114 | 0.053006 | 0.000049 | 86 | **329** | **2.1** |
| 4 | 0.000057 | 0.052228 | 0.000171 | 90 | 295.3 | 7.5 |
| 6 | 0.000092 | 0.052935 | 0.000049 | 90 | **326** | **2.1** |
| 7 | 0.000098 | 0.052865 | 0.000142 | 90 | **322.9** | **6.1** |
| 8 | 0.000068 | 0.052824 | 0.000078 | 89 | **321.2** | **3.4** |
| 9 | 0.000013 | 0.052903 | 0.000045 | 89 | **324.6** | **1.9** |
| | | | | **weighted mean** | **325.8** | **3.3** |
| | | | | | **n=5** | **MSWD=4.8** |

**VR20**

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | 0.000147 | 0.052434 | 0.000061 | 89 | **304.3** | **2.7** |
| 3 | 0.000080 | 0.052358 | 0.000070 | 89 | **301** | **3** |
| 5 | 0.000091 | 0.052501 | 0.000045 | 90 | **307.2** | **1.9** |
| 6 | 0.000183 | 0.052445 | 0.000175 | 90 | **304.8** | **7.6** |
| 8 | 0.000144 | 0.052404 | 0.000034 | 90 | **303** | **1.5** |
| 9 | 0.000187 | 0.051704 | 0.000098 | 89 | 272.3 | 4.3 |
| 10 | 0.000068 | 0.052291 | 0.000050 | 90 | **298.1** | **2.2** |
| 12 | 0.000074 | 0.052329 | 0.000055 | 90 | **299.8** | **2.4** |
| 13 | 0.000127 | 0.052249 | 0.000086 | 90 | **296.3** | **3.8** |
| 14 | 0.000069 | 0.052392 | 0.000088 | 90 | **302.5** | **3.8** |
| 15 | 0.000022 | 0.052938 | 0.000268 | 89 | 326.1 | 11.5 |
| 17 | 0.000142 | 0.052431 | 0.000057 | 89 | **304.2** | **2.5** |
| 18 | 0.000093 | 0.052504 | 0.000031 | 90 | **307.4** | **1.3** |
| 19 | 0.000159 | 0.052504 | 0.000048 | 89 | **307.4** | **2.1** |
| 20 | 0.000071 | 0.052397 | 0.000209 | 70 | **302.7** | **9.1** |
| | | | | **weighted mean** | **304.2** | **2.1** |
| | | | | | **n=13** | **MSWD=9.4** |

**VR34**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.000092 | 0.050685 | 0.000098 | 89 | 225.7 | 4.3 |
| 2 | 0.000086 | 0.05223 | 0.000037 | 90 | **295.4** | **1.7** |
| 3 | 0.000141 | 0.045655 | 0.000811 | 89 | 0 | 11 |
| 5 | 0.000035 | 0.04701 | 0.000167 | 89 | 48.3 | 8.1 |
| 5 | 0.000115 | 0.052229 | 0.000071 | 89 | **295.9** | **2.9** |
| 6 | 0.000056 | 0.05231 | 0.000104 | 89 | **299.6** | **4.3** |
| 7 | 0.000122 | 0.052013 | 0.000058 | 90 | **285.9** | **2.5** |
| 9 | 0.00008 | 0.052224 | 0.000043 | 90 | **295.2** | **1.8** |
| 10 | 0.000126 | 0.052294 | 0.000109 | 89 | **299.2** | **4.4** |
| 11 | 0.000124 | 0.052725 | 0.000078 | 90 | **316.9** | **3.3** |
| 15 | 0.000141 | 0.052871 | 0.000096 | 90 | **323.2** | **4.2** |
| 16 | 0.000119 | 0.052856 | 0.000124 | 90 | **322.6** | **5.4** |
| | | | | **weighted mean** | **298.2** | **8** |
| | | | | | **n=9** | **MSWD=59** |

**e) volcanic rocks of the Weissig Basin**

**VR65**

| | | | | | | |
|---|---|---|---|---|---|---|
| 7 | 0.000117 | 0.052306 | 0.000108 | 50 | **298.7** | **4.7** |
| 5 | 0.000089 | 0.052394 | 0.000043 | 90 | **302.6** | **1.8** |
| 2 | 0.000075 | 0.052400 | 0.000050 | 90 | **302.8** | **2.1** |
| 9 | 0.000114 | 0.052412 | 0.000143 | 90 | **303.4** | **6.2** |
| 12 | 0.000074 | 0.052497 | 0.000058 | 90 | **307.1** | **2.5** |
| 1 | 0.000052 | 0.052512 | 0.000041 | 90 | **307.7** | **1.8** |
| 8 | 0.000069 | 0.052593 | 0.000038 | 90 | **311.2** | **1.7** |
| 6 | 0.000170 | 0.053081 | 0.000047 | 18 | 332.2 | 20.3 |
| 3 | 0.000104 | 0.053335 | 0.000102 | 90 | 343 | 4.3 |
| | | | **weighted mean** | | **306.2** | **3.6** |
| | | | | | **n=7** | **MSWD=13** |

**VR67**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.000009 | 0.052696 | 0.000203 | 53 | **315.7** | **8.8** |
| 2 | 0.000005 | 0.052755 | 0.000250 | 59 | **318.2** | **10.8** |
| 5 | 0.000023 | 0.052713 | 0.000254 | 56 | **316.4** | **11** |
| 8 | 0.000016 | 0.052493 | 0.000106 | 90 | **306.9** | **4.6** |
| 9 | 0.000071 | 0.052285 | 0.000141 | 21 | **297.8** | **6.1** |
| 10 | 0.000090 | 0.052498 | 0.000158 | 88 | **307.1** | **6.8** |
| 14 | 0.000025 | 0.052682 | 0.000069 | 90 | **315.1** | **3** |
| 15 | 0.000040 | 0.052778 | 0.000144 | 89 | **319.2** | **6.2** |
| 16 | 0.000055 | 0.053006 | 0.000105 | 90 | 329 | 4.5 |
| 17 | 0.000044 | 0.052321 | 0.000038 | 90 | **299.4** | **1.7** |
| 18 | 0.000198 | 0.051957 | 0.000118 | 50 | 283.4 | 5.2 |
| 20 | 0.000029 | 0.052364 | 0.000076 | 90 | **301.3** | **3.3** |
| 22 | 0.000061 | 0.052234 | 0.000089 | 89 | **295.6** | **3.9** |
| 24 | 0.000031 | 0.052457 | 0.000088 | 90 | **305.4** | **3.8** |
| 26 | 0.000087 | 0.051872 | 0.000055 | 90 | 279.7 | 2.5 |
| 28 | 0.000094 | 0.051922 | 0.000171 | 31 | 281.9 | 7.5 |
| 29 | 0.000079 | 0.052303 | 0.000151 | 90 | **298.6** | **6.6** |
| | | | **weighted mean** | | **303.6** | **4.3** |
| | | | | | **n=13** | **MSWD=13** |

**f) standards**

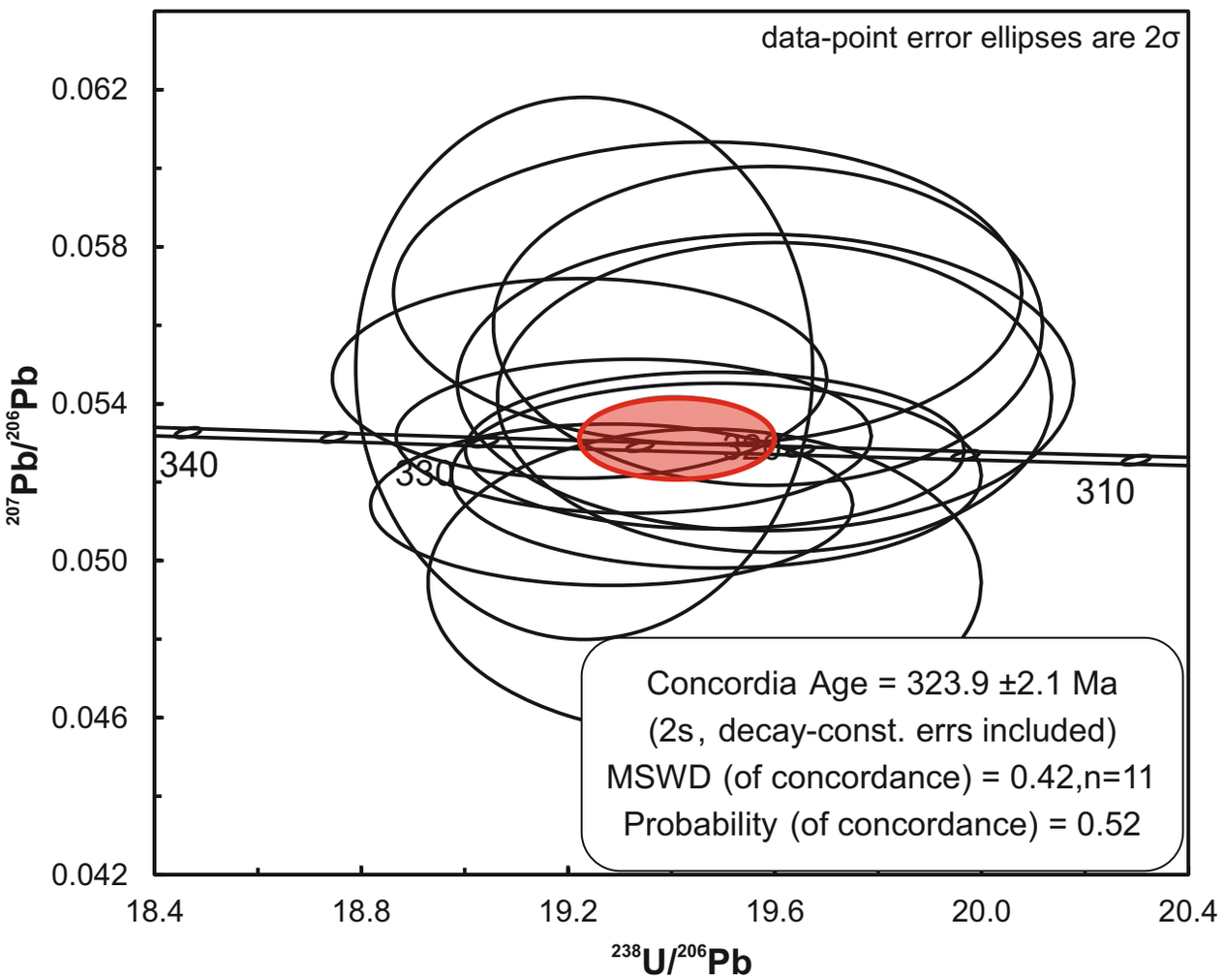
**91500 (primary standard)**

| | | | | | | |
|---|---|---|---|---|---|---|
| 30 | 0.000036 | 0.075136 | 0.000146 | 90 | **1072.1** | **8.5** |
| 31 | 0.000053 | 0.075066 | 0.000267 | 81 | **1070.2** | **11.8** |
| 32 | 0.000087 | 0.074891 | 0.000060 | 90 | **1065.5** | **6.2** |
| 33 | 0.000083 | 0.074750 | 0.000076 | 90 | **1061.7** | **6.5** |
| 34 | 0.000022 | 0.074817 | 0.000056 | 90 | **1063.5** | **6.0** |
| 35 | 0.000061 | 0.074911 | 0.000062 | 89 | **1066.1** | **6.0** |
| 36 | 0.000034 | 0.075021 | 0.000054 | 90 | **1069.0** | **5.8** |
| | | | **weighted mean** | | **1066.1** | **2.5** |
| | | | | | **n=7** | **MSWD=1.02** |

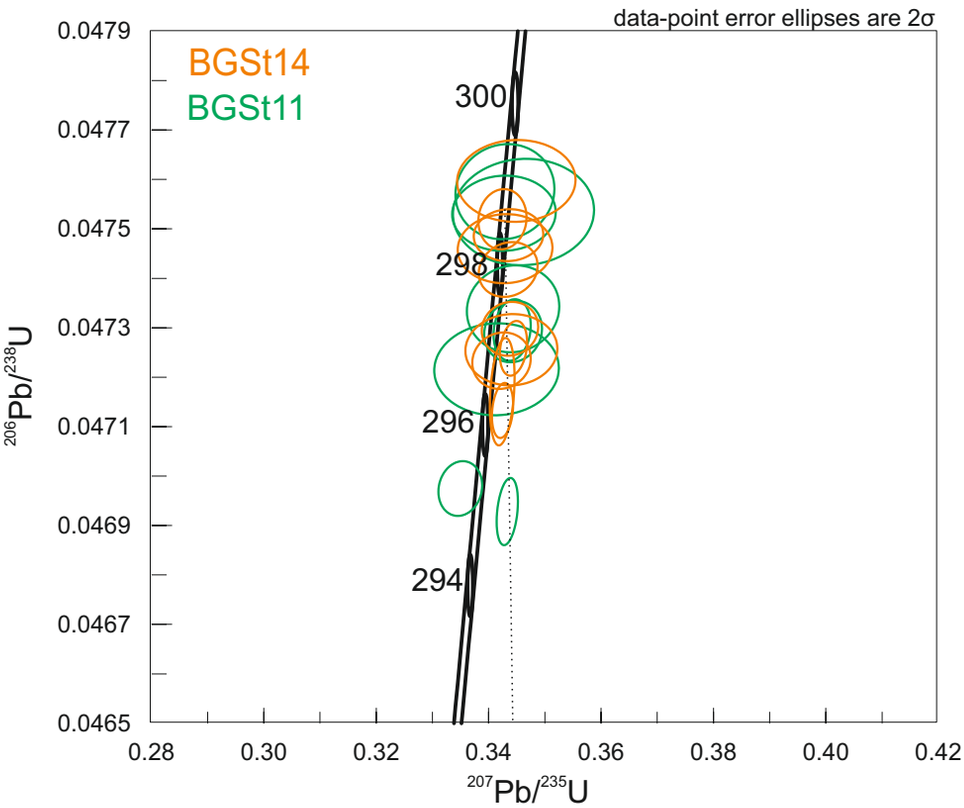
**Temora 2 (secondary standard)**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | 0.000048 | 0.055064 | 0.000103 | 90 | **414.8** | **9.2** |
| 2 | 0.000117 | 0.055327 | 0.000075 | 45 | **425.4** | **8.0** |
| 3 | 0.000044 | 0.055268 | 0.000090 | 90 | **423.0** | **8.7** |
| 4 | 0.000055 | 0.055096 | 0.000117 | 80 | **416.1** | **9.7** |
| 5 | 0.000015 | 0.054893 | 0.000107 | 87 | **407.8** | **9.4** |
| 6 | 0.000011 | 0.054942 | 0.000089 | 90 | **409.8** | **8.7** |
| 7 | 0.000203 | 0.055162 | 0.000103 | 61 | **418.8** | **9.2** |
| 8 | 0.000039 | 0.055150 | 0.000049 | 71 | **418.3** | **6.8** |
| 9 | 0.000070 | 0.055145 | 0.000127 | 89 | **418.0** | **9.7** |
| 10 | 0.000004 | 0.055273 | 0.000046 | 90 | **423.2** | **6.7** |

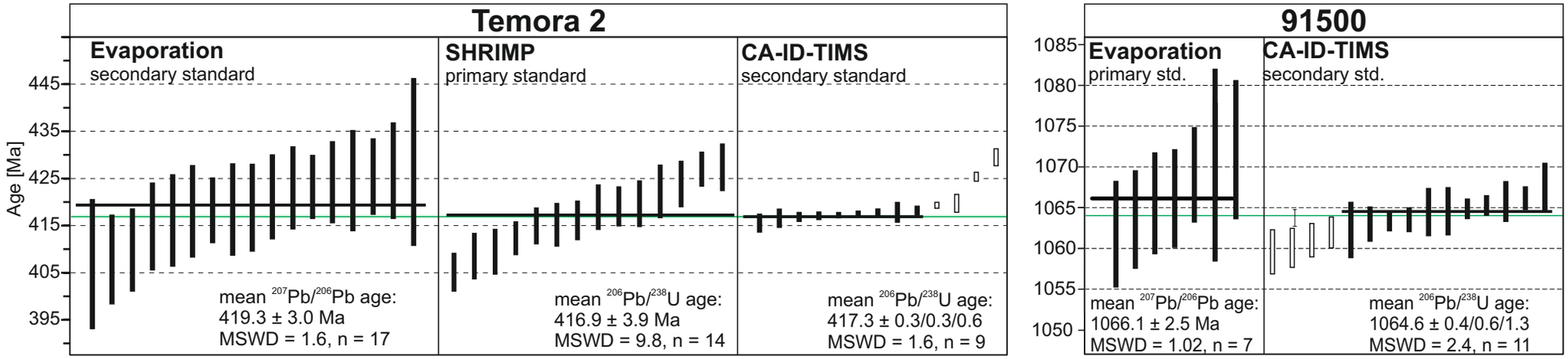
| | | | | | | |
|---|---|---|---|---|---|---|
| 11 | 0.000033 | 0.055296 | 0.000091 | 90 | **424.2** | **8.6** |
| 12 | 0.000399 | 0.055303 | 0.000208 | 90 | **424.5** | **10.6** |
| 13 | 0.000152 | 0.055356 | 0.000191 | 90 | **426.6** | **10.1** |
| 14 | 0.000116 | 0.054867 | 0.000183 | 90 | **406.8** | **13.7** |
| 15 | 0.000035 | 0.055404 | 0.000326 | 90 | **428.5** | **17.7** |
| 16 | 0.000196 | 0.055153 | 0.000134 | 90 | **418.4** | **9.7** |
| 17 | 0.000066 | 0.055219 | 0.000102 | 90 | **421.1** | **8.9** |
| | | | | **weighted mean** | **419.3** | **3** |
| | | | | | **n=17** | **MSWD=1.6** |




Supplement 2: Results of zircon U-Pb SHRIMP analysis if sample BGK1 in a Concordia (Tera-Wasserburg) diagram. Each analysis is represented by an ellipse with its 1σ analytical uncertainty. MSWD (mean square of weighted deviates) is given for equivalence and concordance.




Supplement 3: Zircon U-Pb CA-ID-TIMS analyses of the two samples from the granite of Stolpen in Concordia (Wetherill) diagrams corrected for common Pb by Stacey and Kramers (1975). Each analysis is represented by an ellipse with its 2σ analytical uncertainty. A fictional Discordia is added as stippled line.




Supplement 4: Compilation of standard data of two different reference materials acquired with the three different zircon dating methods used during this study. Each vertical bar represents a single measurement including 2σ error. Unfilled bars are considered to be outliers and were not used for the weighted mean age calculation. MSWD = mean squared weighted deviation. Horizontal black bars represent the calculated mean ages, dark green bars represent published reference ages with their standard deviation (light green) for each of the two standards according to Black et al. (2003) and von Quadt et al. (2016) for Temora 2, and Schoene et al. (2006) for 91500. The SHRIMP data were first presented by Tichomirowa et al. (2019a).