

GSA Data Repository Item # 8817

Title of article K-Ar and $^{40}\text{Ar}/^{39}\text{Ar}$ whole-rock ages of slate/phyllite from allochthonous basement and cover in the tectonic windows of Finnmark, Norway: Evaluating the extent and timing of Caledonian tectonothermal activity

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see Bulletin v. 100, p. 1493 - 1501

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Table A. $^{40}\text{Ar}/^{39}\text{Ar}$ analytical data for incremental heating experiments on whole-rock slate/phyllite from the Komagfjord tectonic window, Finnmark, Norway.

| Release temp (°C) | $(^{40}\text{Ar}/^{39}\text{Ar})^*$ | $(^{36}\text{Ar}/^{39}\text{Ar})^*$ | $(^{37}\text{Ar}/^{39}\text{Ar})^c$ | ^{39}Ar % of total | ^{40}Ar % non-atmos.† | $^{36}\text{Ar}/\text{Ca}$ % | Apparent Age (Ma)** |
|-------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------------|-----------------------------------|---------------------------------|---------------------|
| <u>Porsa Group</u> | | | | | | | |
| Sample 1A; J = 0.009112 | | | | | | | |
| 450 | 48.95 | 0.07143 | 0.031 | 0.27 | 56.86 | 0.01 | 407.6 ± 16.9 |
| 500 | 29.78 | 0.00593 | 0.024 | 1.58 | 94.11 | 0.11 | 410.2 ± 3.0 |
| 550 | 28.87 | 0.00102 | 0.002 | 10.55 | 98.93 | 0.06 | 417.2 ± 2.2 |
| 575 | 29.26 | 0.00068 | 0.003 | 8.94 | 99.29 | 0.12 | 423.6 ± 1.8 |
| 600 | 29.58 | 0.00062 | 0.002 | 13.94 | 99.36 | 0.07 | 428.0 ± 1.5 |
| 625 | 30.62 | 0.00126 | 0.002 | 9.52 | 98.77 | 0.05 | 438.9 ± 1.5 |
| 675 | 32.49 | 0.00140 | 0.006 | 10.68 | 98.71 | 0.12 | 462.4 ± 1.4 |
| 725 | 33.89 | 0.00082 | 0.003 | 18.32 | 99.27 | 0.11 | 482.3 ± 1.1 |
| 775 | 33.97 | 0.00044 | 0.003 | 19.86 | 99.58 | 0.17 | 485.6 ± 1.2 |
| Fusion | 36.00 | 0.00267 | 0.025 | 6.35 | 97.80 | 0.25 | 501.8 ± 1.6 |
| Total | 31.67 | 0.00122 | 0.004 | 100.00 | 98.91 | 0.10 | 452.5 ± 1.5 |
| Sample 1B; J = 0.009242 | | | | | | | |
| 425 | 36.84 | 0.04083 | 0.071 | 0.34 | 67.25 | 0.05 | 372.0 ± 8.6 |
| 475 | 28.32 | 0.00353 | 0.018 | 2.40 | 96.30 | 0.14 | 405.5 ± 1.6 |
| 500 | 28.41 | 0.00158 | 0.008 | 5.34 | 98.33 | 0.14 | 414.3 ± 2.0 |
| 525 | 28.45 | 0.00127 | 0.006 | 5.18 | 98.66 | 0.12 | 416.1 ± 1.8 |
| 550 | 28.48 | 0.00058 | 0.000 | 11.44 | 99.38 | 0.01 | 419.2 ± 2.1 |
| 600 | 28.73 | 0.00039 | 0.005 | 16.28 | 99.58 | 0.36 | 423.2 ± 2.1 |
| 625 | 29.51 | 0.00088 | 0.001 | 10.45 | 99.10 | 0.03 | 431.7 ± 1.0 |
| 675 | 31.08 | 0.00119 | 0.003 | 9.19 | 98.85 | 0.06 | 450.9 ± 2.1 |
| 725 | 31.95 | 0.00095 | 0.002 | 11.62 | 99.10 | 0.05 | 463.0 ± 2.5 |
| 775 | 33.23 | 0.00079 | 0.005 | 13.13 | 99.23 | 0.18 | 467.9 ± 3.4 |
| Fusion | 35.01 | 0.00274 | 0.001 | 14.64 | 97.67 | 0.01 | 495.5 ± 1.7 |
| Total | 30.61 | 0.00132 | 0.001 | 100.00 | 98.76 | -0.06 | 444.0 ± 2.2 |

Table A. Continued (page 2).

Sample 2; J = 0.008885

| | | | | | | | |
|--------|--------|---------|-------|--------|-------|------|--------------|
| 450 | 47.68 | 0.06294 | 0.013 | 0.49 | 60.99 | 0.01 | 414.6 ± 10.4 |
| 500 | 20.16 | 0.00940 | 0.006 | 3.94 | 86.19 | 0.02 | 259.0 ± 1.5 |
| 525 | 42.81 | 0.00282 | 0.021 | 9.03 | 98.03 | 0.20 | 571.7 ± 2.0 |
| 550 | 50.06 | 0.00289 | 0.015 | 10.94 | 98.28 | 0.14 | 654.2 ± 1.5 |
| 575 | 58.09 | 0.00098 | 0.044 | 14.46 | 99.50 | 1.21 | 474.7 ± 3.0 |
| 600 | 68.28 | 0.00020 | 0.018 | 18.18 | 99.90 | 2.47 | 854.8 ± 4.3 |
| 625 | 82.65 | 0.00042 | 0.075 | 14.18 | 99.84 | 4.86 | 992.1 ± 3.4 |
| 650 | 94.08 | 0.00082 | 0.025 | 5.84 | 99.73 | 0.83 | 1093.8 ± 3.4 |
| 700 | 109.22 | 0.00158 | 0.069 | 10.25 | 99.56 | 1.19 | 1219.7 ± 5.8 |
| Fusion | 143.95 | 0.00154 | 0.033 | 12.67 | 99.68 | 0.58 | 1482.7 ± 4.8 |
| Total | 76.96 | 0.00205 | 0.021 | 100.00 | 98.63 | 1.22 | 909.3 ± 3.5 |

Sample 3; J = 0.008782

| | | | | | | | |
|------------------------------------|-------|---------|-------|--------|-------|------|-------------|
| 400 | 32.77 | 0.05358 | 0.060 | 0.73 | 51.67 | 0.03 | 250.1 ± 3.2 |
| 425 | 25.17 | 0.01497 | 0.010 | 1.40 | 82.40 | 0.02 | 301.8 ± 3.4 |
| 450 | 26.38 | 0.00340 | 0.011 | 4.00 | 96.17 | 0.09 | 362.7 ± 2.3 |
| 475 | 30.49 | 0.00157 | 0.010 | 6.93 | 98.46 | 0.17 | 422.1 ± 1.9 |
| 500 | 30.30 | 0.00095 | 0.011 | 17.07 | 99.05 | 0.30 | 422.0 ± 1.7 |
| 525 | 30.21 | 0.00055 | 0.013 | 29.79 | 99.45 | 0.65 | 422.3 ± 1.4 |
| 550 | 30.51 | 0.00029 | 0.014 | 36.93 | 99.71 | 1.29 | 427.2 ± 1.6 |
| Fusion | 62.71 | 0.06173 | 0.495 | 3.15 | 78.42 | 2.11 | 583.7 ± 4.6 |
| Total | 30.32 | 0.00129 | 0.023 | 100.00 | 97.70 | 1.10 | 420.8 ± 2.0 |
| Total without 400-450°C and Fusion | | | | 90.72 | | | 424.3 ± 1.6 |

Sample 5; J = 0.010793

| | | | | | | | |
|--------|-------|---------|-------|--------|-------|------|-------------|
| 425 | 26.08 | 0.03379 | 0.016 | 0.55 | 61.69 | 0.01 | 288.8 ± 5.3 |
| 450 | 20.48 | 0.00631 | 0.007 | 1.22 | 90.88 | 0.03 | 330.2 ± 6.2 |
| 475 | 23.95 | 0.00183 | 0.004 | 3.44 | 97.72 | 0.06 | 406.2 ± 3.6 |
| 500 | 25.31 | 0.00101 | 0.005 | 4.82 | 98.80 | 0.14 | 431.0 ± 3.8 |
| 525 | 24.66 | 0.00071 | 0.004 | 9.82 | 99.12 | 0.15 | 422.4 ± 2.9 |
| 550 | 24.98 | 0.00050 | 0.003 | 17.60 | 99.38 | 0.17 | 428.2 ± 1.9 |
| 600 | 25.87 | 0.00032 | 0.003 | 31.95 | 99.61 | 0.24 | 442.8 ± 2.1 |
| 675 | 28.49 | 0.00049 | 0.004 | 23.56 | 99.47 | 0.20 | 481.5 ± 3.4 |
| 750 | 37.83 | 0.00199 | 0.006 | 5.38 | 98.43 | 0.08 | 609.4 ± 2.3 |
| Fusion | 56.63 | 0.01392 | 0.012 | 1.65 | 92.73 | 0.02 | 810.0 ± 5.2 |
| Total | 27.21 | 0.00109 | 0.004 | 100.00 | 98.89 | 0.18 | 458.3 ± 2.8 |

Table A. Continued (page 3).

Sample 6; J = 0.009031

| | | | | | | | |
|--------|--------|---------|-------|--------|-------|------|--------------|
| 450 | 38.41 | 0.03356 | 0.021 | 0.77 | 74.17 | 0.02 | 413.0 ± 6.8 |
| 500 | 56.93 | 0.00554 | 0.008 | 3.89 | 97.11 | 0.04 | 730.6 ± 2.2 |
| 525 | 73.49 | 0.00188 | 0.004 | 9.12 | 99.24 | 0.05 | 912.7 ± 1.0 |
| 550 | 76.16 | 0.00092 | 0.005 | 18.40 | 99.64 | 0.15 | 941.5 ± 1.1 |
| 565 | 82.62 | 0.00082 | 0.003 | 10.98 | 99.70 | 0.08 | 1003.2 ± 1.2 |
| 575 | 93.98 | 0.00153 | 0.007 | 14.37 | 99.51 | 0.13 | 1104.4 ± 2.0 |
| 585 | 104.64 | 0.00105 | 0.001 | 7.18 | 99.70 | 0.01 | 1197.4 ± 1.3 |
| 600 | 115.60 | 0.00176 | 0.000 | 6.37 | 99.55 | 0.01 | 1285.4 ± 1.6 |
| 625 | 127.52 | 0.00254 | 0.002 | 6.92 | 99.41 | 0.02 | 1376.4 ± 1.4 |
| 650 | 140.99 | 0.00220 | 0.007 | 5.02 | 99.54 | 0.09 | 1476.7 ± 1.3 |
| 675 | 152.15 | 0.00214 | 0.007 | 3.91 | 99.58 | 0.09 | 1555.2 ± 1.9 |
| 700 | 165.91 | 0.00226 | 0.008 | 5.45 | 99.59 | 0.10 | 1647.3 ± 4.0 |
| 750 | 183.51 | 0.00184 | 0.008 | 3.71 | 99.70 | 0.12 | 1759.6 ± 3.0 |
| 800 | 191.41 | 0.00493 | 0.046 | 2.30 | 99.14 | 0.25 | 1802.1 ± 2.1 |
| Fusion | 250.14 | 0.02661 | 1.637 | 1.63 | 96.91 | 1.67 | 2093.3 ± 4.6 |
| Total | 106.33 | 0.00242 | 0.032 | 100.00 | 99.22 | 0.12 | 1182.2 ± 1.7 |

Sample 7; J = 0.009243

| | | | | | | | |
|--------|--------|---------|-------|--------|-------|------|--------------|
| 450 | 41.93 | 0.01402 | 0.063 | 2.34 | 90.12 | 0.12 | 540.4 ± 2.0 |
| 500 | 64.22 | 0.00284 | 0.012 | 7.80 | 98.69 | 0.11 | 831.8 ± 1.0 |
| 525 | 89.00 | 0.00056 | 0.020 | 16.79 | 99.81 | 0.98 | 1081.3 ± 2.3 |
| 550 | 102.60 | 0.00045 | 0.023 | 13.73 | 99.87 | 0.38 | 1202.1 ± 3.4 |
| 575 | 109.90 | 0.00090 | 0.006 | 4.08 | 99.75 | 0.17 | 1262.4 ± 2.6 |
| 600 | 115.93 | 0.00039 | 0.050 | 7.57 | 99.90 | 3.50 | 1313.0 ± 4.6 |
| 625 | 123.43 | 0.00081 | 0.013 | 8.69 | 99.80 | 0.42 | 1371.3 ± 4.8 |
| 675 | 133.86 | 0.00044 | 0.032 | 12.88 | 99.90 | 1.93 | 1431.7 ± 3.4 |
| 725 | 149.85 | 0.00059 | 0.004 | 10.73 | 99.88 | 0.17 | 1566.8 ± 5.8 |
| 775 | 167.75 | 0.00114 | 0.046 | 8.34 | 99.80 | 1.10 | 1686.9 ± 3.9 |
| Fusion | 207.16 | 0.00706 | 0.821 | 7.06 | 99.02 | 3.16 | 1918.9 ± 3.9 |
| Total | 120.92 | 0.00156 | 0.078 | 100.00 | 99.47 | 1.17 | 1325.2 ± 3.5 |

Sample 8; J = 0.008761

| | | | | | | | |
|--------|-------|---------|-------|--------|-------|------|--------------|
| 425 | 30.09 | 0.02966 | 0.011 | 1.98 | 70.86 | 0.01 | 308.9 ± 8.2 |
| 450 | 21.29 | 0.00661 | 0.017 | 7.68 | 90.81 | 0.07 | 282.3 ± 3.9 |
| 500 | 33.99 | 0.00189 | 0.030 | 28.33 | 98.34 | 0.44 | 463.4 ± 4.4 |
| 550 | 34.87 | 0.00096 | 0.029 | 39.41 | 99.18 | 0.82 | 477.5 ± 3.8 |
| 600 | 37.71 | 0.00146 | 0.024 | 12.76 | 98.85 | 0.45 | 509.8 ± 2.2 |
| 650 | 45.78 | 0.00306 | 0.023 | 3.49 | 98.02 | 0.21 | 598.1 ± 4.0 |
| 700 | 50.86 | 0.02101 | 0.053 | 0.95 | 87.79 | 0.07 | 595.5 ± 13.8 |
| 775 | 42.84 | 0.00571 | 0.029 | 4.34 | 96.05 | 0.14 | 555.3 ± 4.1 |
| Fusion | 60.76 | 0.05938 | 0.441 | 1.06 | 71.17 | 0.20 | 579.6 ± 14.2 |
| Total | 35.00 | 0.00338 | 0.032 | 100.00 | 97.12 | 0.53 | 469.1 ± 4.1 |

Table A. Continued (page 4).

Saltvatn Group

Sample 10; J = 0.010705

| | | | | | | | |
|--------|--------|---------|-------|--------|-------|------|---------------|
| 450 | 114.44 | 0.03857 | 0.018 | 0.43 | 90.04 | 0.01 | 1341.1 ± 16.5 |
| 475 | 64.16 | 0.0476 | 0.017 | 3.10 | 97.80 | 0.09 | 927.0 ± 6.4 |
| 500 | 70.09 | 0.00977 | 0.016 | 1.71 | 95.87 | 0.05 | 977.7 ± 7.6 |
| 550 | 67.63 | 0.00163 | 0.012 | 8.01 | 99.28 | 0.20 | 977.1 ± 6.4 |
| 600 | 87.45 | 0.00082 | 0.014 | 22.29 | 99.72 | 0.45 | 1189.4 ± 6.5 |
| 650 | 120.36 | 0.00098 | 0.017 | 4.29 | 99.76 | 0.47 | 1491.0 ± 10.8 |
| 700 | 138.06 | 0.00126 | 0.018 | 25.82 | 99.73 | 0.39 | 1634.1 ± 7.2 |
| 750 | 145.09 | 0.00142 | 0.025 | 19.30 | 99.71 | 0.48 | 1687.8 ± 8.7 |
| 800 | 156.60 | 0.00183 | 0.029 | 13.26 | 99.65 | 0.43 | 1772.1 ± 9.0 |
| 875 | 370.03 | 0.03194 | 0.267 | 1.00 | 97.45 | 0.23 | 2852.6 ± 40.1 |
| Fusion | 356.09 | 0.07155 | 0.129 | 0.79 | 94.06 | 0.05 | 2747.5 ± 36.2 |
| Total | 124.66 | 0.00256 | 0.023 | 100.00 | 99.44 | 0.39 | 1491.4 ± 8.2 |

Sample 11; J = 0.008783

| | | | | | | | |
|--------|--------|---------|-------|--------|-------|------|--------------|
| 400 | 134.31 | 0.35178 | 0.490 | 0.05 | 22.63 | 0.04 | 426.9 ± 8.3 |
| 425 | 57.85 | 0.07632 | 0.213 | 0.17 | 61.03 | 0.08 | 487.3 ± 10.5 |
| 450 | 59.81 | 0.06353 | 0.720 | 0.33 | 68.70 | 0.31 | 556.1 ± 7.6 |
| 475 | 81.42 | 0.02265 | 0.206 | 0.65 | 97.79 | 0.25 | 910.5 ± 7.1 |
| 500 | 94.15 | 0.01176 | 0.098 | 1.44 | 96.31 | 0.23 | 1056.8 ± 7.7 |
| 525 | 101.76 | 0.01224 | 0.098 | 1.18 | 96.45 | 0.22 | 1121.5 ± 6.9 |
| 550 | 107.65 | 0.00625 | 0.072 | 1.79 | 98.29 | 0.32 | 1185.5 ± 6.4 |
| 575 | 115.29 | 0.00700 | 0.074 | 2.55 | 98.21 | 0.29 | 1245.4 ± 5.9 |
| 625 | 125.15 | 0.00250 | 0.021 | 5.37 | 99.41 | 0.23 | 1332.2 ± 5.6 |
| 675 | 139.39 | 0.00170 | 0.086 | 7.38 | 99.64 | 1.39 | 1438.6 ± 7.6 |
| 725 | 154.25 | 0.00172 | 0.030 | 8.12 | 99.67 | 0.47 | 1541.6 ± 7.5 |
| 775 | 170.93 | 0.00092 | 0.109 | 18.07 | 99.84 | 3.23 | 1652.3 ± 7.6 |
| Fusion | 184.03 | 0.00201 | 0.276 | 52.89 | 99.69 | 3.74 | 1731.7 ± 7.9 |
| Total | 166.08 | 0.00290 | 0.186 | 100.00 | 99.29 | 2.74 | 1607.7 ± 7.6 |

* measured.

^c corrected for post-irradiation decay of ³⁷Ar (35.1 day half-life).+ [⁴⁰Ar_{tot.} - (³⁶Ar_{atmos.}) (295.5)] / ⁴⁰Ar_{tot.}.

** calculated using correction factors of Dalrymple et al. (1981); two sigma, intralaboratory errors.

Table B. $^{40}\text{Ar}/^{39}\text{Ar}$ analytical data for incremental heating experiments on whole-rock slate/phyllite from cover sequences (Lomvatn Formation) immediately beneath the Kalak Thrust in northern portions of the Komagfjord window, Finnmark, north Norway.

| Release temp ($^{\circ}\text{C}$) | $(^{40}\text{Ar}/^{39}\text{Ar})^{\#}$ | $(^{36}\text{Ar}/^{39}\text{Ar})^{\#}$ | $(^{37}\text{Ar}/^{39}\text{Ar})^{\text{c}}$ | ^{39}Ar % of total | % ^{40}Ar non-atmos.+ | $^{36}\text{Ar}/\text{Ca}$ % | Apparent Age (Ma)** |
|--|--|--|--|--------------------------------|-----------------------------------|---------------------------------|---------------------|
| <u>Location 4</u> | | | | | | | |
| Sample 4A; J = 0.009583 | | | | | | | |
| 425 | 29.26 | 0.05803 | 0.003 | 1.95 | 41.38 | 0.00 | 198.0 \pm 1.5 |
| 475 | 26.62 | 0.00941 | 0.001 | 8.24 | 89.53 | 0.00 | 371.1 \pm 0.5 |
| 500 | 29.26 | 0.00991 | 0.001 | 11.76 | 89.97 | 0.00 | 405.8 \pm 0.7 |
| 525 | 28.82 | 0.00826 | 0.002 | 9.93 | 91.51 | 0.01 | 406.5 \pm 0.4 |
| 550 | 31.50 | 0.01663 | 0.003 | 5.85 | 84.38 | 0.01 | 409.3 \pm 0.7 |
| 600 | 27.90 | 0.00568 | 0.003 | 14.90 | 93.96 | 0.01 | 404.4 \pm 1.8 |
| 625 | 28.94 | 0.00810 | 0.002 | 10.28 | 91.71 | 0.01 | 408.8 \pm 0.5 |
| 650 | 28.59 | 0.00681 | 0.002 | 12.00 | 92.94 | 0.01 | 409.3 \pm 0.4 |
| 675 | 29.84 | 0.00935 | 0.003 | 9.39 | 90.72 | 0.01 | 416.0 \pm 0.4 |
| 725 | 32.96 | 0.01781 | 0.000 | 4.78 | 84.01 | 0.00 | 424.6 \pm 0.8 |
| 750 | 33.69 | 0.01720 | 0.001 | 4.31 | 84.90 | 0.00 | 437.0 \pm 0.8 |
| 800 | 38.82 | 0.02785 | 0.004 | 3.44 | 78.79 | 0.00 | 463.7 \pm 1.2 |
| 850 | 46.17 | 0.04476 | 0.003 | 1.84 | 71.34 | 0.00 | 494.9 \pm 2.3 |
| Fusion | 66.99 | 0.10212 | 0.015 | 0.79 | 54.95 | 0.00 | 545.1 \pm 4.4 |
| Total | 30.70 | 0.01336 | 0.001 | 100.00 | 88.34 | 0.01 | 410.7 \pm 0.9 |
| Total without 425, 475, 650 $^{\circ}\text{C}$ -Fusion | | | | 64.72 | | | 407.0 \pm 0.8 |
| Sample 4B; J = 0.009482 | | | | | | | |
| 425 | 31.16 | 0.05626 | 0.002 | 1.71 | 46.63 | 0.00 | 232.8 \pm 2.3 |
| 475 | 28.59 | 0.01269 | 0.002 | 4.99 | 86.87 | 0.01 | 381.4 \pm 0.5 |
| 500 | 29.45 | 0.01110 | 0.004 | 8.68 | 88.84 | 0.01 | 399.7 \pm 0.9 |
| 525 | 29.42 | 0.01052 | 0.003 | 6.47 | 89.41 | 0.01 | 401.7 \pm 0.7 |
| 550 | 27.82 | 0.00432 | 0.003 | 25.27 | 95.39 | 0.02 | 404.9 \pm 0.6 |
| 575 | 28.25 | 0.00444 | 0.003 | 23.61 | 95.34 | 0.02 | 410.2 \pm 0.5 |
| 600 | 29.61 | 0.00868 | 0.003 | 8.82 | 91.31 | 0.01 | 411.7 \pm 0.5 |
| 625 | 30.48 | 0.00973 | 0.002 | 7.21 | 90.55 | 0.01 | 419.3 \pm 0.5 |
| 650 | 31.89 | 0.01327 | 0.000 | 1.27 | 87.69 | 0.00 | 424.1 \pm 1.7 |
| 675 | 33.51 | 0.01653 | 0.001 | 2.11 | 85.40 | 0.00 | 433.0 \pm 1.0 |
| 725 | 35.36 | 0.01815 | 0.001 | 7.33 | 84.81 | 0.00 | 451.4 \pm 1.2 |
| 800 | 49.19 | 0.03576 | 0.012 | 2.02 | 78.51 | 0.00 | 562.8 \pm 1.1 |
| Fusion | 132.02 | 0.16963 | 0.089 | 0.51 | 62.03 | 0.00 | 1036.4 \pm 5.3 |
| Total | 30.30 | 0.01029 | 0.003 | 100.00 | 90.86 | 0.01 | 413.7 \pm 0.7 |
| Total without 425, 475, 625 $^{\circ}\text{C}$ -Fusion | | | | 72.84 | | | 406.5 \pm 0.6 |

Table B. Continued (page 2).

Sample 4C; J = 0.009348

| | | | | | | | |
|--------------------------------------|-------|---------|-------|--------|-------|------|-------------|
| 425 | 28.11 | 0.03618 | 0.006 | 1.36 | 61.94 | 0.00 | 272.0 ± 3.8 |
| 475 | 25.26 | 0.00562 | 0.005 | 1.92 | 93.40 | 0.02 | 359.5 ± 1.4 |
| 500 | 26.83 | 0.00208 | 0.003 | 4.35 | 97.69 | 0.03 | 395.3 ± 0.7 |
| 525 | 27.06 | 0.00125 | 0.002 | 6.48 | 98.61 | 0.05 | 401.7 ± 0.5 |
| 550 | 26.92 | 0.00177 | 0.001 | 12.86 | 98.04 | 0.02 | 397.8 ± 0.3 |
| 575 | 27.02 | 0.00146 | 0.002 | 16.55 | 98.38 | 0.04 | 400.4 ± 0.4 |
| 600 | 27.42 | 0.00045 | 0.004 | 14.86 | 99.49 | 0.25 | 409.7 ± 0.3 |
| 625 | 28.09 | 0.00103 | 0.000 | 5.10 | 98.90 | 0.01 | 416.5 ± 1.7 |
| 650 | 28.25 | 0.00069 | 0.001 | 5.12 | 99.25 | 0.05 | 419.9 ± 1.2 |
| 675 | 28.68 | 0.00070 | 0.005 | 5.05 | 99.26 | 0.18 | 425.7 ± 1.1 |
| 725 | 29.16 | 0.00090 | 0.000 | 7.77 | 99.07 | 0.00 | 431.2 ± 1.0 |
| 800 | 31.40 | 0.00111 | 0.001 | 9.88 | 98.94 | 0.04 | 460.0 ± 1.1 |
| Fusion | 46.19 | 0.00646 | 0.002 | 8.72 | 95.85 | 0.01 | 624.8 ± 2.7 |
| Total | 29.51 | 0.00217 | 0.001 | 100.00 | 97.90 | 0.03 | 429.7 ± 0.9 |
| Total without 425, 475, 600°C-Fusion | | | | 40.23 | | | 399.2 ± 0.4 |

Location 9

Sample 9A; J = 0.009268

| | | | | | | | |
|-------------------------------------|--------|---------|-------|--------|-------|------|--------------|
| 425 | 86.99 | 0.22263 | 0.016 | 2.76 | 24.37 | 0.00 | 323.5 ± 8.9 |
| 475 | 33.09 | 0.01566 | 0.008 | 9.01 | 86.00 | 0.01 | 422.3 ± 1.3 |
| 500 | 32.52 | 0.01678 | 0.012 | 8.72 | 84.74 | 0.02 | 410.3 ± 1.7 |
| 525 | 36.13 | 0.02896 | 0.011 | 4.55 | 76.30 | 0.01 | 410.5 ± 2.2 |
| 550 | 32.28 | 0.01454 | 0.013 | 7.70 | 86.67 | 0.02 | 416.0 ± 1.6 |
| 575 | 31.00 | 0.00893 | 0.006 | 14.16 | 91.47 | 0.02 | 420.9 ± 1.2 |
| 725 | 38.53 | 0.03362 | 0.001 | 8.20 | 74.20 | 0.00 | 424.0 ± 1.5 |
| 750 | 40.06 | 0.03878 | 0.003 | 8.32 | 71.38 | 0.00 | 424.0 ± 1.1 |
| 775 | 38.45 | 0.03272 | 0.003 | 7.88 | 74.83 | 0.00 | 426.4 ± 1.5 |
| 800 | 42.25 | 0.04415 | 0.003 | 5.69 | 69.11 | 0.00 | 432.0 ± 1.7 |
| 850 | 36.88 | 0.02347 | 0.011 | 9.34 | 81.18 | 0.01 | 441.7 ± 0.9 |
| 900 | 42.39 | 0.03468 | 0.053 | 7.08 | 75.82 | 0.04 | 470.4 ± 1.1 |
| Fusion | 138.05 | 0.04862 | 0.502 | 6.59 | 89.62 | 0.28 | 1378.4 ± 1.8 |
| Total | 44.20 | 0.03165 | 0.042 | 100.00 | 79.62 | 0.03 | 486.7 ± 1.6 |
| Total without 425-550, 800°C-Fusion | | | | 38.56 | | | 423.3 ± 1.3 |

Table B. Continued (page 3).

Sample 9B; J = 0.009393

| | | | | | | | |
|--------|-------|---------|-------|--------|-------|------|-------------|
| 425 | 63.13 | 0.11284 | 0.007 | 1.81 | 47.17 | 0.00 | 444.9 ± 2.8 |
| 475 | 34.44 | 0.01504 | 0.003 | 7.72 | 87.08 | 0.01 | 447.7 ± 0.5 |
| 500 | 32.30 | 0.01757 | 0.000 | 8.41 | 83.90 | 0.00 | 409.1 ± 0.6 |
| 525 | 37.00 | 0.03196 | 0.006 | 4.05 | 74.46 | 0.00 | 415.2 ± 0.5 |
| 550 | 39.31 | 0.03936 | 0.001 | 3.23 | 70.40 | 0.00 | 416.8 ± 1.5 |
| 575 | 37.10 | 0.03096 | 0.001 | 8.38 | 75.32 | 0.00 | 420.4 ± 0.4 |
| 625 | 32.12 | 0.01315 | 0.002 | 21.02 | 87.88 | 0.00 | 424.3 ± 0.4 |
| 675 | 31.72 | 0.00910 | 0.002 | 16.54 | 91.50 | 0.01 | 434.9 ± 0.4 |
| 725 | 36.96 | 0.02061 | 0.001 | 6.18 | 83.50 | 0.00 | 459.3 ± 0.9 |
| 775 | 41.21 | 0.02162 | 0.007 | 5.34 | 84.48 | 0.01 | 510.4 ± 1.1 |
| 825 | 52.82 | 0.03509 | 0.013 | 3.50 | 80.36 | 0.01 | 605.3 ± 1.1 |
| 875 | 53.53 | 0.03631 | 0.009 | 3.48 | 79.94 | 0.01 | 609.5 ± 1.5 |
| Fusion | 56.81 | 0.01488 | 0.003 | 10.32 | 92.25 | 0.01 | 722.1 ± 0.9 |
| Total | 38.46 | 0.02057 | 0.001 | 100.00 | 84.64 | 0.00 | 476.3 ± 0.7 |

Sample 9C; J = 0.009511

| | | | | | | | |
|--------------------------------------|-------|---------|-------|--------|-------|------|-------------|
| 425 | 70.89 | 0.16079 | 0.002 | 1.47 | 32.97 | 0.00 | 362.1 ± 2.9 |
| 475 | 41.10 | 0.03429 | 0.001 | 4.40 | 75.33 | 0.00 | 465.5 ± 1.8 |
| 500 | 38.67 | 0.03462 | 0.004 | 6.97 | 73.53 | 0.00 | 431.8 ± 1.0 |
| 525 | 39.54 | 0.03927 | 0.006 | 4.31 | 70.63 | 0.00 | 424.9 ± 1.5 |
| 550 | 42.97 | 0.05074 | 0.004 | 2.97 | 65.09 | 0.00 | 425.5 ± 2.2 |
| 575 | 30.69 | 0.00913 | 0.003 | 18.93 | 91.19 | 0.01 | 425.7 ± 0.5 |
| 600 | 31.02 | 0.00954 | 0.001 | 17.12 | 90.90 | 0.00 | 428.6 ± 0.7 |
| 625 | 33.67 | 0.01643 | 0.001 | 14.14 | 85.56 | 0.00 | 436.8 ± 0.5 |
| 650 | 38.66 | 0.03095 | 0.001 | 4.94 | 76.33 | 0.00 | 446.2 ± 1.3 |
| 675 | 38.91 | 0.02604 | 0.003 | 5.30 | 80.21 | 0.00 | 468.8 ± 2.0 |
| 725 | 44.96 | 0.03587 | 0.002 | 4.08 | 76.41 | 0.00 | 510.0 ± 1.1 |
| 750 | 52.82 | 0.04805 | 0.010 | 2.34 | 73.11 | 0.01 | 564.3 ± 1.4 |
| 800 | 62.53 | 0.07127 | 0.018 | 2.25 | 66.31 | 0.01 | 599.7 ± 2.4 |
| 850 | 56.24 | 0.04435 | 0.019 | 3.61 | 76.69 | 0.01 | 620.1 ± 0.9 |
| Fusion | 59.33 | 0.02570 | 0.063 | 7.17 | 87.19 | 0.19 | 721.7 ± 1.3 |
| Total | 39.14 | 0.02572 | 0.000 | 100.00 | 82.18 | 0.02 | 471.1 ± 1.0 |
| Total without 425, 475, 625°C-Fusion | | | | 50.29 | | | 427.4 ± 0.8 |

* measured.

° corrected for post-irradiation decay of ^{37}Ar (35.1 day half-life).+ $[\ ^{40}\text{Ar}_{\text{tot.}} - (^{36}\text{Ar}_{\text{atmos.}}) (295.5)] / ^{40}\text{Ar}_{\text{tot.}}$.

** calculated using correction factors of Dalrymple et al. (1981); two sigma, intralaboratory errors.

Table A. ⁴⁰Ar/³⁹Ar analytical data for incremental heating experiments on whole-rock slate/phyllite from the Raipas Supergroup, Alta-Kvaenangen tectonic window, Finnmark, Norway.

| Release temp (°C) | (⁴⁰ Ar/ ³⁹ Ar)* | (³⁶ Ar/ ³⁹ Ar)* | (³⁷ Ar/ ³⁹ Ar) ^c | ³⁹ Ar % of total | % ⁴⁰ Ar non-atmos.† | ³⁶ Ar/Ca % | Apparent Age (Ma)** |
|-------------------------|--|--|--|-----------------------------|--------------------------------|-----------------------|---------------------|
| Sample 12; J = 0.008720 | | | | | | | |
| 450 | 34.93 | 0.01153 | 0.017 | 1.89 | 90.23 | 0.04 | 438.1 ± 3.4 |
| 475 | 41.60 | 0.00593 | 0.012 | 4.35 | 95.78 | 0.06 | 537.9 ± 3.1 |
| 500 | 67.71 | 0.00263 | 0.016 | 8.13 | 98.85 | 0.17 | 829.3 ± 4.2 |
| 525 | 71.39 | 0.00195 | 0.018 | 5.36 | 99.19 | 0.25 | 867.5 ± 2.4 |
| 550 | 75.20 | 0.00135 | 0.024 | 11.20 | 99.46 | 0.49 | 905.8 ± 1.8 |
| 575 | 82.60 | 0.00103 | 0.021 | 13.97 | 99.63 | 0.55 | 975.8 ± 2.8 |
| 600 | 91.76 | 0.00067 | 0.023 | 15.59 | 99.78 | 0.93 | 1058.7 ± 4.8 |
| 625 | 102.09 | 0.00112 | 0.021 | 10.16 | 99.67 | 0.52 | 1145.8 ± 3.8 |
| 675 | 110.70 | 0.00126 | 0.029 | 12.75 | 99.66 | 0.63 | 1215.8 ± 5.9 |
| Fusion | 148.51 | 0.00701 | 0.056 | 16.62 | 98.49 | 0.20 | 1483.2 ± 7.7 |
| Total | 95.43 | 0.00289 | 0.028 | 100.00 | 98.98 | 0.47 | 1068.1 ± 4.4 |
| Sample 13; J = 0.008537 | | | | | | | |
| 450 | 38.19 | 0.01600 | 0.004 | 1.14 | 87.61 | 0.01 | 453.2 ± 5.4 |
| 475 | 83.42 | 0.00170 | 0.012 | 3.86 | 99.39 | 0.19 | 965.6 ± 2.8 |
| 500 | 109.30 | 0.00165 | 0.022 | 7.57 | 99.55 | 0.37 | 1185.1 ± 3.5 |
| 525 | 126.31 | 0.00057 | 0.021 | 11.54 | 99.86 | 1.00 | 1318.5 ± 4.1 |
| 550 | 148.67 | 0.00058 | 0.025 | 19.53 | 99.88 | 1.16 | 1477.1 ± 4.9 |
| 575 | 166.38 | 0.00033 | 0.030 | 13.86 | 99.94 | 2.40 | 1593.9 ± 5.4 |
| 600 | 175.56 | 0.00185 | 0.028 | 14.68 | 99.69 | 0.42 | 1648.7 ± 5.6 |
| 625 | 181.04 | 0.00087 | 0.032 | 11.49 | 99.86 | 0.99 | 1684.1 ± 6.4 |
| 675 | 186.43 | 0.00027 | 0.014 | 8.59 | 99.95 | 1.44 | 1717.4 ± 6.9 |
| 725 | 184.11 | 0.00269 | 0.022 | 5.01 | 99.57 | 0.22 | 1699.3 ± 5.8 |
| Fusion | 183.77 | 0.02361 | 0.033 | 2.73 | 96.20 | 0.04 | 1659.6 ± 5.4 |
| Total | 155.42 | 0.00177 | 0.024 | 100.00 | 99.56 | 1.02 | 1507.1 ± 5.3 |

* measured.

^c corrected for post-irradiation decay of ³⁷Ar (35.1 day half-life).

* [⁴⁰Ar_{tot} - (³⁶Ar_{atmos.}) (295.5)] / ⁴⁰Ar_{tot}.

** calculated using correction factors of Dalrymple et al. (1981); two-sigma, intralaboratory errors.

Table C → file