|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Site, County, NGR & River** | **Lab****Code** | **Overburden****(m)** | **Grain size****(μm)** | **Moisture content (%)**  | **NaI γ-spectrometry** **(*in situ*) γ Dr** **(Gy.ka-1)** | Ge γ-spectrometry (*ex situ*) | **α Dr**(Gy.ka-1) | **β Dr**(Gy.ka-1) | **Cosmic Dr****(Gy.ka-1)** | 226Ra/238U | Total Dr(Gy.ka-1) | Preheat(°C for 10s) | Low Dose Repeat Ratio | High Dose Repeat Ratio | Post-IR OSL Ratio | De(Gy) | Age (ka) | **cal. bc/AD date(1σ, 68.2%)** |
|  |  |  |  |  |  | **K (%)** | **Th (ppm)** | **U (ppm)** |  |  |  |  |  |  |  |  |  |  |  |  |
| Broadwas, Worcestershire,SO 375466,254599, Teme | GL17008 | 0.90 | 125-180 | 13 ± 3 | 0.90 ± 0.11 | 1.61 ± 0.10 | 9.32 ± 0.57 | 1.88 ± 0.14 | - | 1.39 ± 0.14 | 0.18 ± 0.02 | 1.01 ± 0.14 | 2.47 ± 0.17 | 260 | 0.97 ± 0.02 | 1.00 ± 0.01 | 0.96 ± 0.02 | 1.6 ± 0.1 | 0.67 ± 0.06  | cal. ad 1290 – 1410 |
| GL17007 | 1.50 | 125-180 | 14 ± 4 | 0.88 ± 0.11 | 1.63 ± 0.10 | 9.39 ± 0.57 | 1.77 ± 0.14 | - | 1.36 ± 0.15 | 0.16 ± 0.02 | 0.88 ± 0.13 | 2.40 ± 0.18 | 220 | 0.97 ± 0.03 | 1.03 ± 0.02 | 0.94 ± 0.03 | 3.0 ± 0.3 | 1.25 ± 0.16  | cal. ad 610 – 930 |
| GL17006 | 1.95 | 125-180 | 16 ± 4 | 0.86 ± 0.11 | 1.67 ± 0.10 | 9.35 ± 0.57 | 1.77 ± 0.14 | - | 1.35 ± 0.15 | 0.15 ± 0.01 | 1.23 ± 0.19 | 2.36 ± 0.19 | 260 | 0.98 ± 0.03 | 1.00 ± 0.02 | 0.97 ± 0.03 | 2.6 ± 0.1 | 1.09 ± 0.11  | cal. ad 820 – 1030 |
| GL17005 | 2.28 | 125-180 | 16 ± 4 | 0.81 ± 0.10 | 1.36 ± 0.09 | 9.22 ± 0.56 | 1.83 ± 0.14 | - | 1.17 ± 0.13 | 0.14 ± 0.01 | 0.84 ± 0.11 | 2.12 ± 0.17 | 280 | 0.95 ± 0.04 | 1.00 ± 0.03 | 0.93 ± 0.04 | 2.7 ± 0.2 | 1.29 ± 0.13  | cal. ad 590 – 860 |
| GL17004 | 2.70 | 5-15 | 20 ± 5 | 0.85 ± 0.08 | 1.56 ± 0.10 | 10.16 ± 0.60 | 2.01 ± 0.15 | 0.39 ± 0.04 | 1.37 ± 0.14 | 0.13 ± 0.01 | 1.13 ± 0.17 | 2.75 ± 0.17 | 240 | 0.99 ± 0.08 | 0.99 ± 0.06 | 0.95 ± 0.08 | 5.4 ± 0.2 | 1.95 ± 0.14  | 80 cal. bc – cal. ad 200. |
| GL17003 | 3.55 | 125-180 | 19 ± 5 | 0.85 ± 0.11 | 1.67 ± 0.11 | 9.40 ± 0.59 | 1.96 ± 0.14 | - | 1.32 ± 0.16 | 0.12 ± 0.01 | 0.95 ± 0.12 | 2.28 ± 0.21 | 260 | 1.02 ± 0.02 | 1.02 ± 0.01 | 1.00 ± 0.02 | 4.3 ± 0.2 | 1.89 ± 0.19  | 50 cal. bc – cal. ad 320 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Buildwas, Shropshire,SJ 363945,238488, Severn | GL16094 | 0.82 | 180-250 | 15 ± 4 | 0.60 ± 0.09 | 1.35 ± 0.09 | 5.78 ± 0.44 | 1.03 ± 0.12 | - | 1.01 ± 0.12 | 0.18 ± 0.02 | 0.64 ± 0.11 | 1.80 ± 0.14 | 220 | 0.95 ± 0.05 | 1.00 ± 0.04 | 0.93 ± 0.05 | 1.8 ± 0.4 | 1.0 ± 0.2 | cal. ad 800 – 1250 |
| GL16093 | 1.40 | 180-250 | 19 ± 5 | 0.72 ± 0.10 | 1.63 ± 0.10 | 7.72 ± 0.50 | 1.37 ± 0.13 | - | 1.16 ± 0.14 | 0.17 ± 0.02 | 0.71 ± 0.11 | 2.05 ± 0.19 | 240 | 1.02 ± 0.07 | 1.00 ± 0.04 | 0.95 ± 0.06 | 2.8 ± 0.4 | 1.4 ± 0.2 | cal. ad 400 – 890. |
| GL16092 | 2.16 | 180-250 | 20 ± 5 | 0.84 ± 0.11 | 1.79 ± 0.11 | 9.19 ± 0.57 | 1.77 ± 0.14 | - | 1.31 ± 0.16 | 0.15 ± 0.01 | 1.10 ± 0.16 | 2.29 ± 0.21 | 260 | 1.13 ± 0.06 | 1.07 ± 0.04 | 1.10 ± 0.06 | 7.0 ± 0.8 | 3.1 ± 0.5 | 1510 – 610 cal. bc |
| GL16091 | 2.85 | 180-250 | 18 ± 4 | 0.74 ± 0.11 | 1.67 ± 0.11 | 7.27 ± 0.50 | 1.50 ± 0.13 | - | 1.22 ± 0.14 | 0.13 ± 0.01 | 0.83 ± 0.12 | 2.09 ± 0.18 | 240 | 1.01 ± 0.04 | 0.98 ± 0.03 | 0.97 ± 0.04 | 3.9 ± 0.4 | 1.9 ± 0.3 | 120 cal. bc – cal. ad 380 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Retherwas, Herefordshire,SO 353864,238488, Wye | GL16142 | 0.80 | 125-180 | 19 ± 5 | 0.86 ± 0.11 | 1.48 ± 0.10 | 10.54 ± 0.61 | 2.03 ± 0.14 | - | 0.86 ± 0.11 | 0.18 ± 0.02 | 0.93 ± 0.12 | 2.27 ± 0.20 | 260 | 0.96 ± 0.02 | 1.01 ± 0.01 | 0.96 ± 0.02 | 2.8 ± 0.3 | 1.23 ± 0.18 | cal. ad 610 - 970 |
| GL16141 | 1.25 | 5-15 | 22 ± 5 | 0.91 ± 0.09 | 1.74 ± 0.11 | 10.96 ± 0.63 | 2.29 ± 0.15 | 0.41 ± 0.05 | 1.47 ± 0.16 | 0.17 ± 0.02 | 0.87 ± 0.11 | 2.96 ± 0.19 | 260 | 0.97 ± 0.06 | 1.01 ± 0.05 | 0.96 ± 0.06 | 3.2 ± 0.1 | 1.07 ± 0.08 | cal. ad 860 – 1030 |
| GL16140 | 2.15 | 180-250 | 15 ± 4 | 0.94 ± 0.11 | 1.49 ± 0.10 | 11.66 ± 0.64 | 1.90 ± 0.14 | - | 0.94 ± 0.11 | 0.15 ± 0.01 | 0.95 ± 0.14 | 2.37 ± 0.18 | 260 | 0.96 ± 0.03 | 1.02 ± 0.02 | 0.95 ± 0.03 | 3.8 ± 0.3 | 1.59 ± 0.17 | cal. ad 250 – 600 |
| GL16139 | 2.70 | 180-250 | 17 ± 4 | 0.88 ± 0.11 | 1.57 ± 0.10 | 9.87 ± 0.59 | 2.00 ± 0.14 | - | 0.88 ± 0.11 | 0.13 ± 0.01 | 1.01 ± 0.13 | 2.28 ± 0.19 | 240 | 0.98 ± 0.02 | 0.99 ± 0.02 | 0.97 ± 0.02 | 7.3 ± 0.3 | 3.20 ± 0.29 | 1470 – 890 cal. bc |
| GL16138 | 3.00 | 180-250 | 17 ± 4 | 0.83 ± 0.10 | 1.38 ± 0.09 | 9.99 ± 0.60 | 1.89 ± 0.14 | - | 0.83 ± 0.10 | 0.13 ± 0.01 | 0.73 ± 0.10 | 2.11 ± 0.18 | 260 | 0.98 ± 0.03 | 1.00 ± 0.03 | 0.78 ± 0.03 | 5.8 ± 0.2 | 2.77 ± 0.26 | 1010 – 490 cal. bc |

*Table S1: Dr, De and Age data. Age estimates expressed relative to 2016 for Buildwas and Rotherwas and 2017 for Broadwas. Uncertainties in age are quoted at 1σ confidence and reflect combined systematic and experimental variability. Blue text denotes rejected age estimate, owing to poor repeat dose ratios. Red text indicates sample age should be considered a minimum estimate, owing to significant feldspar contamination.*