

# RIDGE CROSS, STOCKLAND, EAST DEVON (AA165)

## *Radiocarbon Result*

by **Michael J. Allen, PhD, MIFA, FLS, FSA**

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for:-

*Phil Clarke, Arrowhead Archaeology*

**AEA: Allen Environmental Archaeology**

Redroof, Green Road, Codford St. Peter, WARMINSTER, Wiltshire, BA12 0NW (Tel: 07828 103454)



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## RIDGE CROSS, STOCKLAND, EAST DEVON (AA165): *Radiocarbon Result*

*Michael J. Allen*

A single sample from undated subcircular pit 2 was processed by flotation, and charred plant remains assessed (Allen 2013), and charcoal identified and selected for AMS radiocarbon dating.

The pit was reported to be artefact-free and the sides showed signs of extensive burning, and the 'impression' is that there was burning inside the pit which was then cleaned out and backfilled with burnt material' (Clarke pers. comm. 20/6/13). A sample from context 4, described as very dark grey to black sandy silty clay with a high proportion of charcoal, mainly as ash', on examination it was a brown (7.5YR 4/4) firm, partially cemented silty clay loam matrix with common to abundant charcoal and some small and medium stones. The quality of charcoal (with no other charred plant remains), indicates the disposal of fire-waste, or even burning within the pit (though no reddened soil was noted in the samples). The majority of this is large woody fragments, rather than twigs and smaller branchwood indicating fire of selected larger timbers for the fuel. However, although the majority is oak (*Quercus*) heartwood, a few of shorter-lived fragment (including oak c. 12+ rings) and *Salicaceae* branchwood (probably >15 rings) were present (ident Dr. A.J. Clapham) and the *Salicaceae* was selected for AMS radiocarbon dating.

The sample was submitted for AMS radiocarbon dating at the Scottish Universities Environmental Research Centre. The aim of dating was to determine the overall date of this burning event and thus the use of the feature and its associated activity.

The samples were processed at SUERC following a modified version of the pre-treatment method outlined by Longin (1971), graphitisation as described in Slota *et al.* (1987), and measurement by AMS as described by Xu *et al.* (2004).

The identified sample was dated by AMS radiocarbon dating and the result is given in table 1 and quoted in accordance with the international standard known as the Trodheim convention (Stuiver & Kra 1986). They are conventional radiocarbon ages (Stuiver & Polach 1977). Calibration of the results has been performed using the data set published by Riemer *et al.* (2004) and performed using the programme OxCal v4.2.3 ([www.flaha.ox.ac.uk/](http://www.flaha.ox.ac.uk/)). Details of the algorithms employed by this program are available from the on-line manual or in Bronk Ramsey (1995; 1998; 2001). The calibrated date ranges in text are cited are those with 95% confidence and have been rounded out to the nearest 10 years (Mook 1986). The radiocarbon probability distribution is given in figure 1, and the certificate and data presented in the Appendix.

## Result

The result (table 1) indicates the burning activity represented by the discarded short-lived charcoal sample in pit 2 occurs in the Romano-British period at cal AD 80-240 (95%), but probably between cal AD 130 and 220 (68%)

Feature	Context	Material	Lab no	Result BP	δ‰	Cal
Pit 2	4	Salicaceae charcoal	SUERC-48710	1838±26	-27.0	AD 80-250

Table 1. Radiocarbon result

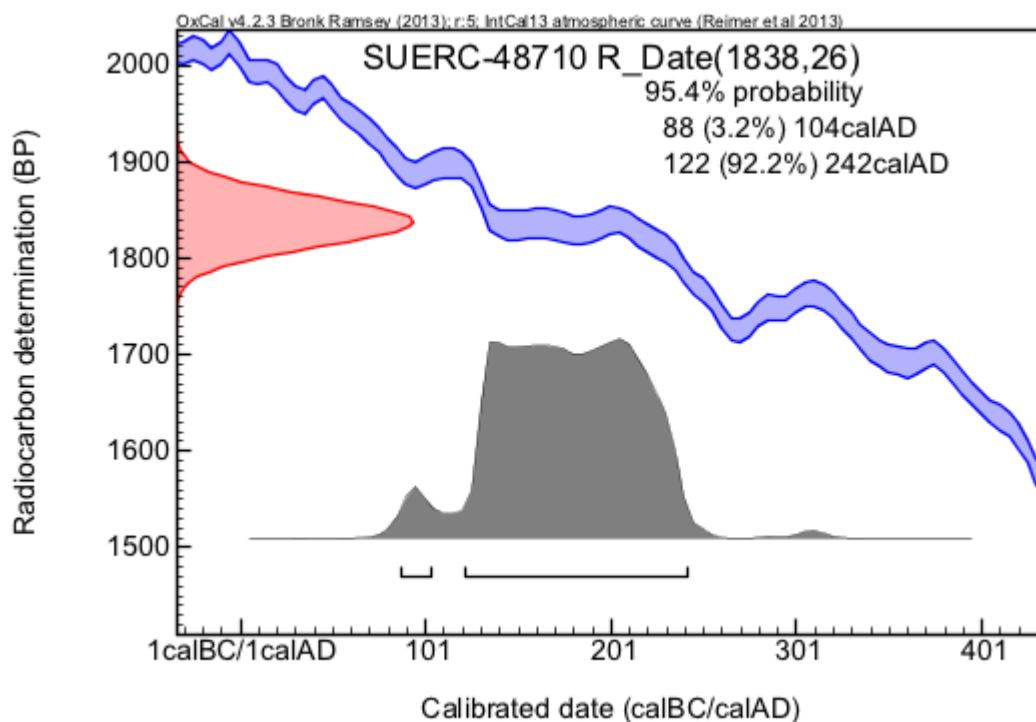


Figure 1. Radiocarbon probability distribution

## Bibliography

Allen, M.J. 2013. Ridge Cross, Stockland, Palaeo-environmental (charred plants and charcoal remains) assessment and radiocarbon assessment. Unpubl. Report AEA 213.01 dated 28 July 2013

Bronk Ramsey, C. 1995. Radiocarbon calibration and analysis of stratigraphy: The OxCal program, *Radiocarbon* 37, 425-430

Bronk Ramsey, C. 1998. Probability and dating, *Radiocarbon* 40, 461-474

Bronk Ramsey, C, 2001. Development of the radiocarbon calibration program OxCal, *Radiocarbon* 43, 355-363

- Longin, R. 1971. New method of collagen extraction for radiocarbon dating. *Nature* 230, 241–2
- Mook, W.G. 1986. Business meeting: recommendations/resolutions adopted by the twelfth International Radiocarbon Conference. *Radiocarbon* 28, 799
- Reimer, P.J, MGL Baillie, M.G.L., Bard, E., Bayliss, A., Beck, J.W., Bertrand, C.J.H., Blackwell, P.G., Buck, C.E., Burr, G.S., Cutler, K.B., Damon, P.E., Edwards, R.L., Fairbanks, R.G., Friedrich, M., Guilderson, T.P., Hogg, A.G., Hughen, K.A., Kromer, B., McCormac, G., Manning, S., Bronk Ramsey, C., Reimer, R.W., Remmele, S., Southon, J.R., Stuiver, M., Talamo, S., Taylor, F.W., van der Plicht J. & Weyhenmeyer, C.E. 2004, IntCal04 terrestrial radiocarbon age calibration, 0-26 cal kyr BP, *Radiocarbon*, 46 (3) 1029-1058
- Slota Jr, P.J., Jull A.J.T., Linick, T.W. and Toolin, L.J. 1987. Preparation of small samples for  $^{14}\text{C}$  accelerator targets by catalytic reduction of CO *Radiocarbon* 29(2), 303–6
- Stuiver, M. & Kra, R.S. 1986 Editorial comment, *Radiocarbon* 28(2B), ii
- Stuiver, M. & Polach, H.A. 1977 Reporting of  $^{14}\text{C}$  data, *Radiocarbon* 19, 355–63
- Xu, S., Anderson, R., Bryant, C., Cook, G.T., Dougans, A., Freeman, S., Naysmith, P., Schnabel, C. and Scott, E.M. 2004. Capabilities of the new SUERC 5MV AMS facility for  $^{14}\text{C}$  dating. *Radiocarbon* 46, 59–64



## APPENDICES



### Scottish Universities Environmental Research Centre

Director: Professor R. M. Ellam  
Rankine Avenue, Scottish Enterprise Technology Park,  
East Kilbride, Glasgow G75 0QF, Scotland, UK  
Tel: +44 (0)1355 223332 Fax: +44 (0)1355 229898 www.glasgow.ac.uk/suerc

### RADIOCARBON DATING CERTIFICATE

04 November 2013

**Laboratory Code** SUERC-48710 (GU31690)

**Submitter** Mike Allen  
Allen Environmental Archaeology  
Redroof, Green Road  
Codford  
Wiltshire, BA12 0NW

**Site Reference** Ridge Cross, Stockland, Devon

**Context Reference** 4

**Sample Reference** AEA 213 (AA165)

**Material** Charcoal : Salicacea round wood

**$\delta^{13}\text{C}$  relative to VPDB** -27.0 ‰

**Radiocarbon Age BP** 1838  $\pm$  26

**N.B.** The above  $^{14}\text{C}$  age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature. Any questions directed to the Radiocarbon Laboratory should also quote the GU coding given in parentheses after the SUERC code. The contact details for the laboratory are email [g.cook@suerc.gla.ac.uk](mailto:g.cook@suerc.gla.ac.uk) or telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :-

Date :-

Checked and signed off by :-

Date :-



The University of Glasgow, charity number SC008541



The University of Edinburgh is a charitable body registered in Scotland, with registration number SC002933

## Calibration details

OxCal v4.2.3 Bronk Ramsey (2013); r:5  
IntCal13 atmospheric curve (Reimer et al 2013)  
SUERC-48710 R\_Date(1838,26)  
68.2% probability  
134AD (68.2%) 214AD  
95.4% probability  
88AD (3.2%) 104AD  
122AD (92.2%) 242AD