Scottish Universities Environmental Research Centre

Director: Professor A B MacKenzie Director of Research: Professor R M Ellam

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RADIOCARBON DATING CERTIFICATE

02 July 2012

Laboratory Code	SUERC-40389 (GU27295)
Submitter	Scott Timpany Headland Archaeology 13 Jane Street Edinburgh EH6 5HE
Site Reference	EGPG11, Grangemouth
Context Reference	C116
Sample Reference	S005
Material	Fruit Stones : Charred Prunus domestica
$\delta^{13}C$ relative to VPDB	-26.6 ‰
Radiocarbon Age BP	400 ± 35

N.B. The above ^{14}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 standards, background standards and the random machine error.

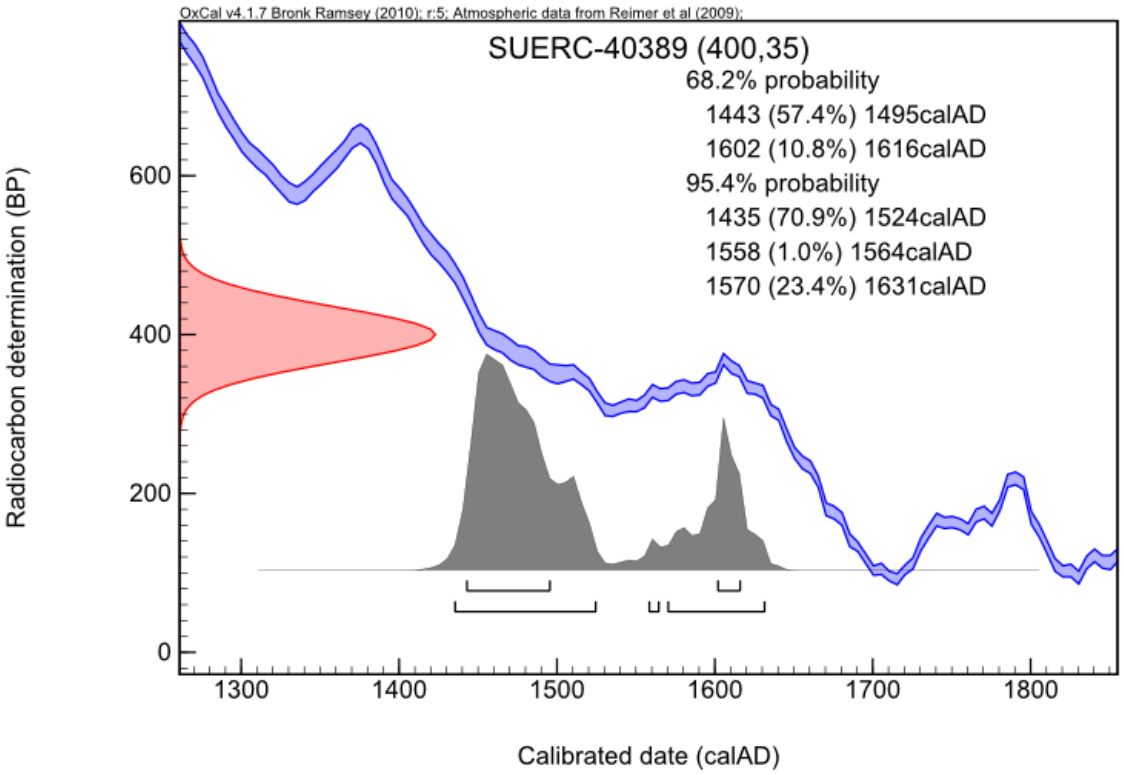
The calibrated age ranges are determined using the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.1 (Bronk Ramsey 2009). Terrestrial samples are calibrated using the IntCal09 curve while marine samples are calibrated using the Marine09 curve.

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 or Telephone 01355 270136 direct line.

Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

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Laboratory Code	SUERC-40390 (GU27296)
Submitter	Scott Timpany Headland Archaeology 13 Jane Street Edinburgh EH6 5HE
Site Reference	EGPG11, Grangemouth
Context Reference	C128
Sample Reference	S006
Material	Fruit Stones : Uncharred Prunus domestica
$\delta^{13}C$ relative to VPDB	-23.2 ‰
Radiocarbon Age BP	775 ± 35

N.B. The above ^{14}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 standards, background standards and the random machine error.

The calibrated age ranges are determined using the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.1 (Bronk Ramsey 2009). Terrestrial samples are calibrated using the IntCal09 curve while marine samples are calibrated using the Marine09 curve.

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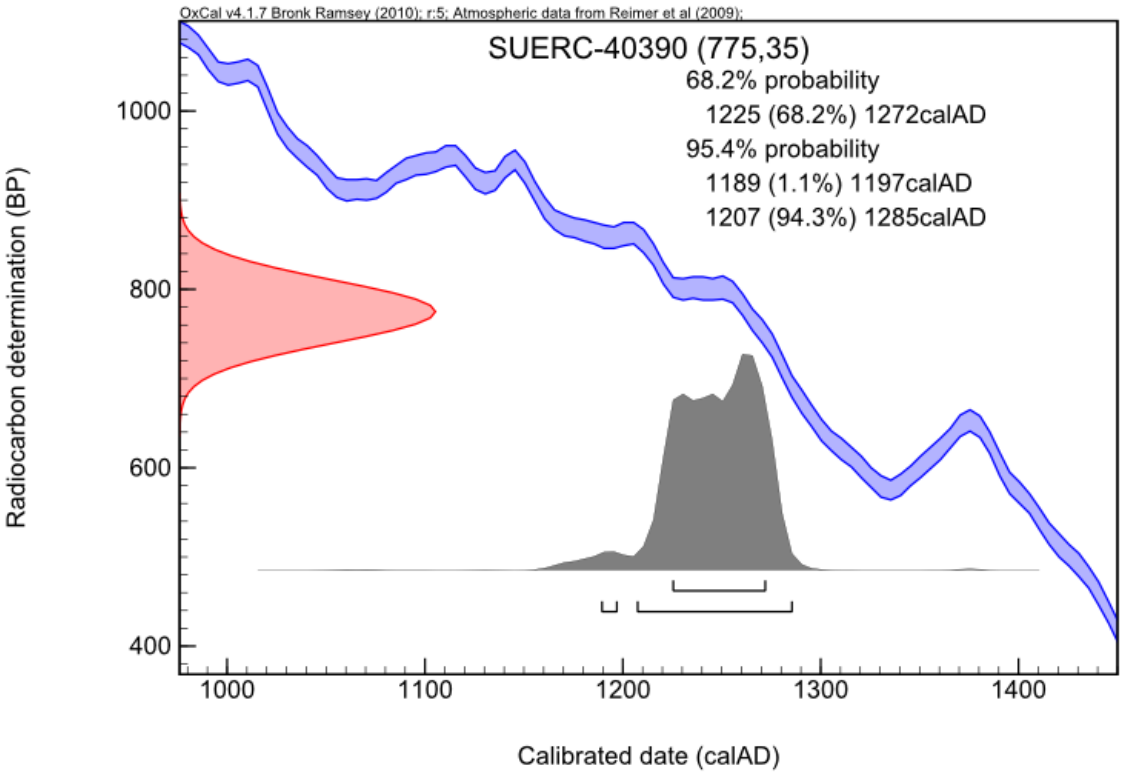
Conventional age and calibration age ranges calculated by :- Date :-

Checked and signed off by :- Date :-

Calibration Plot



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RADIOCARBON DATING CERTIFICATE

02 July 2012

Laboratory Code	SUERC-40391 (GU27297)
Submitter	Scott Timpany Headland Archaeology 13 Jane Street Edinburgh EH6 5HE
Site Reference	EGPG11, Grangemouth
Context Reference	C133
Sample Reference	S013
Material	Fruit Stones : Charred Prunus domestica
$\delta^{13}C$ relative to VPDB	-24.3 ‰
Radiocarbon Age BP	745 ± 35

N.B. The above ^{14}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 standards, background standards and the random machine error.

The calibrated age ranges are determined using the University of Oxford Radiocarbon Accelerator Unit calibration program OxCal 4.1 (Bronk Ramsey 2009). Terrestrial samples are calibrated using the IntCal09 curve while marine samples are calibrated using the Marine09 curve.

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Conventional age and calibration age ranges calculated by :- Date :-

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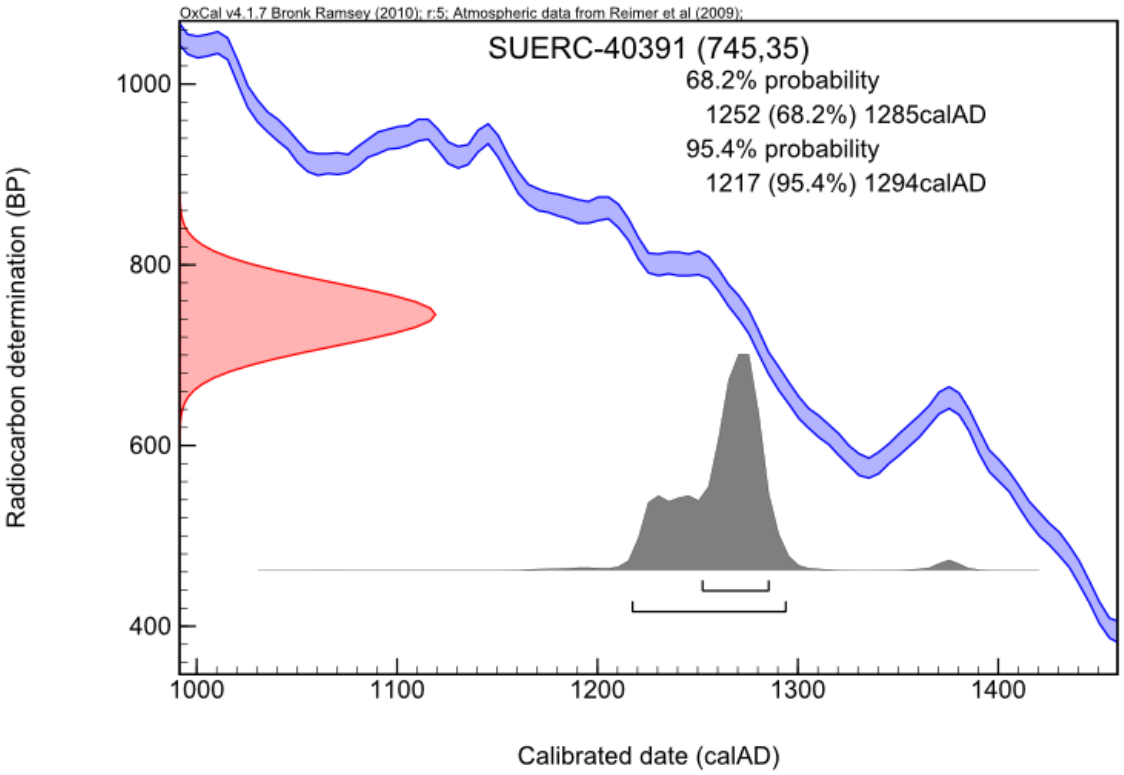
Calibration Plot



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RADIOCARBON DATING CERTIFICATE

02 July 2012

Laboratory Code	SUERC-40418 (GU27345)
Submitter	Scott Timpany Headland Archaeology 13 Jane Street Edinburgh EH6 5HE
Site Reference	LPOE11 - Loch Boisdale, South Uist, Outer Hebrides
Context Reference	Core 21
Sample Reference	12-13cm
Material	Peat : N/A
$\delta^{13}C$ relative to VPDB	-29.4 ‰
Fraction Modern Fm	1.0043 ± 0.0043

N.B. 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 or Telephone 01355 270136 direct line.

Conventional age calculated by :- Date :-

Checked and signed off by :- Date :-