



Washington State University

Department of Anthropology

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Archeologist —

RECEIVED
JUL 05 1994
BANDELIER NM

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July 1, 1994

Robert P. Powers
National Park Service
P.O. Box 728
Santa Fe, NM 87504-0728

Dear Bob—

I am enclosing the results of ^{14}C dating of two samples of wood from LA 3852. As you can see, both come back with ages greater than we would expect: in one case, the calibrated age in calendar years is A.D. 998–1036; in the other, A.D. 935–980. You may remember that we also had a tree-ring date of 1085+vv from a piece of firewood in the kiva hearth. It appears that we have a serious old wood problem here, as we might expect in a pioneer occupation, but it could also be that LA3852 is somewhat older than we have been thinking. Neither of these ^{14}C samples was large enough to do what we did at LA3840, where we got such good results: there I was able to take large chunks of wood with the rings visible and peel off just the outer rings from a single sample. By contrast, these LA 3852 samples were composed of several small fragments, probably from different trees, all inferred, by their position in the structures, to have been used in roof construction.

If you have any other ideas for dating 3852 please let me know.

Best wishes,

Tim Kohler

cc:

Charisse Sydoriak
Matt Root

PS - these two ages are significantly different
at $\alpha = .05$



Quaternary Isotope Laboratory
AK-60
University of Washington
Seattle, Washington 98195

June 28 1994

Dr Timothy A. Kohler
Washington State University
Department of Anthropology
Pullman WA 99164-4910

Dear Dr Kohler

The Bandelier samples have been dated with the following results:

QL-4755 (sample LA 3852, FS 118)	1000 $\pm$ 30 ^{14}C yr BP.
QL-4756 (sample LA 3852, FS 109)	1140 $\pm$ 30 „

When converted to calibrated ages (as per 1993 calibration issue of Radiocarbon) these dates will produce A.D. dates slightly older than those mentioned in your letter.

Sincerely yours,

Minze Stuiver

Enclosed: Invoice

UNIVERSITY OF WASHINGTON
QUATERNARY ISOTOPE LAB
RADIOCARBON CALIBRATION PROGRAM REV 3.0.3A
MAC TEST VERSION #6

Stuiver, M. and Reimer, P.J., 1993, Radiocarbon, 35, p. 215-230.

Calibration file(s): UWTEN93.14C

Listing file: c14fil.TXT

QL-4755 3852.118

Rm 6 NE Quad Fill above Surface 1, 5.1 g Juniperus charcoal

Radiocarbon Age BP 1000 $\pm$ 30

Reference(s)

Calibrated age(s) cal AD 1023

(Stuiver and Becker, 1993)

cal BP 927

cal AD/BC (cal BP) age ranges obtained from intercepts (Method A):

one Sigma** cal AD 1000 - 1013 (950 - 937)

cal AD 1016 - 1032 (934 - 918)

cal AD 1143 - 1147 (807 - 803)

two Sigma** cal AD 989 - 1064 (961 - 886)

cal AD 1087 - 1125 (863 - 825)

cal AD 1138 - 1153 (812 - 797)

Summary of above:

minimum of cal age ranges (cal ages) maximum of cal age ranges:

1 sigma cal AD 1000 (1023) 1147

cal BP 950 (927) 803

2 sigma cal AD 989 (1023) 1153

cal BP 961 (927) 797

cal AD/BC & cal BP age ranges (cal ages as above)

from probability distribution (Method B):

% area enclosed	cal AD (cal BP) age ranges	relative contribution to probabilities
68.3 (1 sigma)	cal AD 998 - 1036 (952 - 914)	.65
	1095 - 1116 (855 - 834)	.24
	1142 - 1149 (808 - 801)	.11
95.4 (2 sigma)	cal AD 986 - 1068 (964 - 882)	.63
	1085 - 1128 (865 - 822)	.26
	1136 - 1154 (814 - 796)	.12

QL-4756 3852.109

Kiva 1 Seg 5 Surface 1, 7.8 g Juniperus charcoal

Radiocarbon Age BP 1140 $\pm$ 30

Reference(s)

Calibrated age(s) cal AD 897, 922, 943

(Stuiver and Becker, 1993)

cal BP 1053, 1028, 1007

cal AD/BC (cal BP) age ranges obtained from intercepts (Method A):

one Sigma** cal AD 885 - 903 (1065 - 1047)

cal AD 909 - 981 (1041 - 969)

two Sigma** cal AD 782 - 789 (1168 - 1161)

cal AD 806 - 846 (1144 - 1104)

cal AD 864 - 992 (1086 - 958)

Summary of above:

minimum of cal age ranges (cal ages) maximum of cal age ranges:

1 sigma cal AD 885 (897, 922, 943) 981

cal BP 1065 (1053, 1028, 1007) 969

2 sigma cal AD 782 (897, 922, 943) 992

cal BP 1168 (1053, 1028, 1007) 958

cal AD/BC & cal BP age ranges (cal ages as above)
from probability distribution (Method B):

% area enclosed	cal AD (cal BP) age ranges	relative contribution to probabilities
68.3 (1 sigma)	cal AD 887 - 902 (1063 - 1048)	.19
	911 - 935 (1039 - 1015)	.27
	935 - 980 (1015 - 970)	.54
95.4 (2 sigma)	cal AD 782 - 788 (1168 - 1162)	.02
	807 - 825 (1143 - 1125)	.04
	825 - 845 (1125 - 1105)	.04
	865 - 990 (1085 - 960)	.90

References for datasets used:

Stuiver, M and Becker, B, 1993, Radiocarbon, 35, 35-65.

Comments:

†This standard deviation (error) includes a lab error multiplier.

** 1 sigma = square root of (sample std. dev.² + curve std. dev.²)

2 sigma = 2 x square root of (sample std. dev.² + curve std. dev.²)

0* represents a "negative" age BP

1955* denotes influence of bomb C-14

For cal yrs between 5500-5190 BC an offset of 25 years is possible.

NOTE: Cal ages and ranges are rounded to the nearest year which may be too precise in many instances. Users are advised to round results to the nearest 10 yr for samples with standard deviation in the radiocarbon age greater than 50 yr.