

BETA ANALYTIC INC.
RADIOCARBON DATING LAB
CALIBRATED C-14 DATING RESULTS

Calibrations of radiocarbon age determinations are applied to convert results to calendar years. The short term difference between the two is caused by fluctuations in the heliomagnetic modulation of the galactic cosmic radiation and, recently, the advent of large scale burning of fossil fuels and nuclear devices testing. Geomagnetic variations are the probable cause of medium term differences, up to 10,000 BP.

Radiocarbon dating laboratories have analyzed hundreds of samples obtained from known-age tree rings of oak, sequoia, and fir up to 10,000 BP. Longer term differences, up to 22,000 BP, as well as all marine samples, have calibrations that have been inferred from other evidence, but are less sure. Curves generated from the results depicting the atmospheric carbon content at specific time periods have been incorporated in computer programs. The result of the calibration analysis applicable to your research follows.

DEVIATION
ADJUSTMENT

(Caveat: the calibrations up to 10,000 BP assume that the material dated was living for 20 years like branches, some shells, small plants, a collection of individual tree rings, etc.. For other materials, the "Old Wood Effect" would produce uncertainties; both the maximum and minimum ranges of age possibilities could be overstated by that error source. Also, but less likely, in extreme cases they might even turn out to be understated.)

Beta-66584
Radiocarbon Age BP 820 ± 70
Calibrated age(s) cal AD 1229
cal AD/BC age ranges obtained from intercepts (Method A):
one Sigma** cal AD 1168 - 1282
two Sigma** cal AD 1036 - 1298

Summary of above:

minimum of cal age ranges (cal ages) maximum of cal age ranges:
1σ cal AD 1168 (1229) 1282
2σ cal AD 1036 (1229) 1298

Reference for dataset used:
Stuiver, M and Pearson, GW, 1993, Radiocarbon, 35, 1-23.

** 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)

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