[RADIOCARBON, VOL. 40, No. 3, 1998, P. 1127–1151]

HIGH-PRECISION RADIOCARBON AGE CALIBRATION FOR TERRESTRIAL AND MARINE SAMPLES

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ABSTRACT. Single-year and decadal radiocarbon tree-ring ages are tabulated and discussed in terms of ^{14}C age calibration. The single-year data form the basis of a detailed ^{14}C age calibration curve for the cal AD 1510–1954 interval ("cal" denotes calibrated). The Seattle decadal data set (back to 11,617 cal BP, with 0 BP = AD 1950) is a component of the integrated decadal INTCAL98 ^{14}C age curve (Stuiver *et al.* 1998). Atmospheric ^{14}C ages can be transformed into ^{14}C ages of the global ocean using a carbon reservoir model. INTCAL98 ^{14}C ages, used for these calculations, yield global ocean ^{14}C ages differing slightly from previously published ones (Stuiver and Braziunas 1993b). We include discussions of offsets, error multipliers, regional ^{14}C age differences and marine ^{14}C age response to oceanic and atmospheric forcing.

INTRODUCTION

Radiocarbon ages of dendrochronologically dated wood samples, mostly 10-yr segments, were previously reported for the interval 6000 cal BC–cal AD 1950. These ^{14}C measurements have now been extended back to 9668 cal BC. We also applied some minor corrections to a portion of the ^{14}C ages reported for decadal samples (Stuiver and Becker 1993), multiple-year samples (Stuiver and Reimer 1993) and single-year samples (Stuiver 1993; Stuiver and Braziunas 1993a). Our additional data (9668–6000 cal BC) are given here, together with corrected (when applicable) decadal and single-year ^{14}C ages for the intervals 6000 cal BC–cal AD 1950 and cal AD 1510–1954, respectively. The decadal data (Table 1, Appendix) altogether incorporate the 11,617–0 cal BP interval. Single-year data are given in Table 2 (Appendix) for the cal AD 1510–1954 interval.

As reported in the 1993 Calibration Issue (Stuiver, Long and Kra 1993), the measured ^{14}C activities of the samples dated between 1977 and 1987 were corrected for small amounts of radon (Stuiver and Becker 1993). The original ages, calculated without applying a radon correction, were reported in Stuiver and Kra (1986). Additional information, discussed in the next section, reduces the radon correction to one half the 1993 value. The 1993 ^{14}C age correction of ~10 to 20 ^{14}C yr for samples measured between 1977 and 1987 evidently was too large. For the 1998 calculations we halved the original radon correction to ~5 to 10 ^{14}C yr. The latest "correction of the 1993 correction" is small and its influence is usually limited to ~10 ^{14}C yr.

Adjustments of the German oak and pine chronologies have been included. Both chronologies were extensively reevaluated at the University of Stuttgart-Hohenheim (Spurk *et al.* 1998). Whereas the German oak series yields absolute cal AD/BC dates (through a continuous count from the present to the past), the latest part of the pine series is ^{14}C-matched with the earliest portion of the oak chronology. This yields a cal BP scale with a margin of error of about two decades (Kromer and Spurk 1998; Spurk *et al.* 1998).

The materials used here for the AD interval are mainly derived from U.S. Pacific Northwestern, Californian and Canadian trees. A few Northern German oak samples were used as well. The trees are described in Table 2 of Stuiver and Becker (1986).

For the BC portion a limited number of samples from the Irish oak chronology (Pilcher *et al.* 1984) were used near 500 cal BC. California trees overlap with the oak series from Southern Germany between cal AD 45 and 145 cal BC. The Seattle German Main-Donau oak and German pine samples cover the intervals 7748 cal BC–cal AD 45 and 9668–8007 cal BC, respectively. Cellulose (Stuiver, Burk and Quay 1984) was isolated from all decadal wood samples older than 150 cal BC.

After studying ring thickness patterns of individual tree sections, the Hohenheim group rejected the earlier absolute dating (relative to the master chronology) of some of these sections (*e.g.*, where beetle-induced damage was evident). Our previously measured ^{14}C ages of the rejected sections had to be withdrawn. Replacement wood will be used for new measurements, but in the meantime Seattle ^{14}C ages are missing for midpoints 7566–7498, 7876–7758, and 8827–8757 cal BC. An additional gap due to a 41-yr shift in the master chronology concerns the midpoints 5256–5215 cal BC. In some instances we did not receive wood (sections 6166–6053, 6386–6356, 7316–7206, 7996–7886, 9057–9027, 9258–9242 and 9358–9332 cal BC).

Offsets, "Error Multiplier" and Radon Correction

The most recent Seattle (S), Belfast (B) and Heidelberg (H) results are reported in this issue. Belfast results, adjusted for the shifts in German oak chronology (McCormac, personal communication) are based on Pearson and Qua (1993) and Pearson, Becker and Qua (1993). Pretoria/Groningen (P/G) results were reported previously (Vogel and van der Plicht 1993). Average offsets between the ^{14}C ages of the different laboratories are relatively small for the complete date sets, with S − B = −13 ± 1 yr (n = 866), S − H = −25 ± 2 yr (n = 230) and S − P/G = −17 ± 2 yr (n = 194). The ± equals one standard deviation (σ) and n is the number of comparisons. Offsets for millennia are given in Table 3.

TABLE 3. Average and millennia offsets (in ^{14}C yr) between Seattle (S), Belfast (B), Heidelberg (H) and Pretoria/Groningen (P/G). σ_1 is the predicted average standard deviation in ^{14}C age differences. The variance beyond σ_1 is represented by σ_E (see text). Comparisons are based on decadal samples (see Stuiver *et al.* 1998).

	Offsets			σ_1	σ_E	σ_1	σ_E	σ_1	σ_E
Age AD/BC	S−B	S−H	S−P/G	S−B		S−H		S−(P/G)	
10–9 ka BC		−12 ± 5				34	17		
9–8 ka BC		−18 ± 4				32	24		
8–7 ka BC	10 ± 5	−26 ± 6		34	47	36	39		
7–6 ka BC	−17 ± 3	−34 ± 5		31	31	36	36		
6–5 ka BC	−34 ± 3	−56 ± 9		29	31	35	56		
5–4 ka BC	−11 ± 3	−28 ± 5		28	24	31	41		
4–3 ka BC	−17 ± 3		−18 ± 2	27	17			20	19
3–2 ka BC	−17 ± 2		−16 ± 3	25	27			23	13
2–1 ka BC	−1 ± 3		4 ± 9	26	21			23	8
1–0 ka BC	−6 ± 2			25	13				
AD 0–1 ka	−12 ± 3			27	11				
AD 1–2 ka	−15 ± 2			19	15				
10 ka BC–AD 2 ka	**−13 ± 1 yr**	**−25 ± 2 yr**	**−17 ± 2 yr**	**27**	**24**	**34**	**35**	**22**	**13**

For Seattle (S) we usually report a σ derived from the near-Gaussian counting statistics of the accumulated number of counts for the sample and standards. Additional information on the σ in the ^{14}C age is derived from the reproducibility of ^{14}C age determinations in the Seattle laboratory, and interlaboratory comparisons that provide information on the sum total of uncertainty tied to the processes of wood allocation, dendro-age determination, sample pretreatment, laboratory ^{14}C determination, regional ^{14}C differences and individual tree ^{14}C differences.

The reported age error can be used to predict the statistical variance in ^{14}C age differences when results of two laboratories are available for samples with the same cal age. The ^{14}C age differences of samples of identical cal age yield an offset (the average of the differences) and a (scatter) standard deviation σ_2. The σ_2 is compared to the standard deviation σ_1 predicted from the ^{14}C age errors reported by both laboratories. The increase in variance (excess variance) σ_E is derived from $\sigma_E^2 = \sigma_2^2 - \sigma_1^2$. The ratio σ_2/σ_1 yields the "error multiplier" k (Stuiver 1982).

The above statistical considerations are valid for comparisons of ^{14}C determinations of identical samples. However, the samples to be compared here are rarely fully identical in that the time over which the sample is averaged (*e.g.*, 10-yr *vs.* 3-yr samples) differs. Furthermore, the differences in cal age (time-midpoints) of the samples is usually variable. Different selection criteria (*e.g.*, should two samples be compared if one is a 20-yr and the other a 3-yr sample, and the difference in midpoints is 10 yr?) yield different σ_E (and k) estimates. Given these uncertainties, the following σ_E calculations (based on decadal sample files; see the INTCAL98 calibration (Stuiver *et al.* 1998) for the construction of the decades) are "order of magnitude" only.

The comparison of the S ^{14}C ages to those of B, H and P/G yields the σ_1 and σ_E values given in Table 3. For S–B (n = 859) and S–H (n = 230) comparisons, the σ_E and σ_1 are of the same order of magnitude; for S–P/G (n = 194), the σ_E is more like half σ_1. Expressed differently, average k values are in the 1.3–1.4 range. Other estimates yielded k = 0.7 (n = 44) when comparing S ^{14}C ages of single-year Pacific Northwest wood with S determinations of single-year Kodiak Island wood (Stuiver and Braziunas 1998), and k = 1.2 from evaluating counting stability in the Seattle laboratory over 4 years (Stuiver and Becker 1993).

Previously we discussed in much detail a small radon correction that had to be applied to measurements made between 1977 and 1987 (Stuiver and Becker 1993). An average count-rate difference of 0.279 ± 0.045 counts per minute (cpm) was used for this correction. Since 1987 we have remeasured many samples for which newly determined ^{14}C ages can be compared to 1977–1987 ones. The enlarged data set suggests a smaller radon correction, with a count-rate difference of 0.051 ± 0.023 cpm. The 1993 paper also reported first day *vs.* fourth day count-rate differences that were compatible with a radon contribution of 0.276 ± 0.016 cpm. When adding similar first day–fourth day baseline information for 1992–1996,the 0.276 ± 0.016 cpm radon excess estimate is lowered to 0.213 ± 0.016 cpm.

The radon corrections (0.051 and 0.213 cpm) suggested by the above calculations differ significantly (at the 5.8σ level). There is no obvious explanation for the difference but both methods suggest a smaller radon correction. The adjusted average count-rate difference (unweighted) for the two comparisons is 0.132 cpm, or 48% of the 1993 value. For the calculation of the ^{14}C ages listed in Tables 1 and 2 we used counting rate corrections of individual counters that average 0.132 cpm for samples measured between 1977 and 1987. This effectively halves the radon correction previously (Stuiver, Long and Kra 1993) applied to tree-ring ^{14}C determinations made in Seattle between 1977 and 1987.

Most of the cal age midpoints in Table 1 represent the midpoint of decadal (10 ring) wood samples. Occasional departures from 10-yr rings are noted in Table 1.

Regional Offsets

Regional offsets, relative to Washington (W), were reported previously (Stuiver and Braziunas 1998). Trees grown in Alaska (A), Russia (R), Tasmania (T) and South Chile (C) were used (details can be found in Stuiver and Braziunas 1998). The reported offsets are A – W = 14 ± 3 yr (AD 1884–1932), R – W = –6 ± 6 yr (AD 1545–1615) and 2 ± 6 yr (AD 1615–1715), T – W = 25 ± 7 yr (estimated for the 19th century) and C – W = 38 ± 5 yr (AD 1670–1722) and 21 ± 5 yr (19th century). The 19th century "Southern Hemispheric" (Chile and Tasmania) offset is 23 ± 4 ^{14}C yr (reported incorrectly in Stuiver and Braziunas 1998 as 23 ± 9 yr).

The above regional offsets, which are not necessarily constant with time, are for "natural" conditions. During the first half of the twentieth century the ^{14}C levels were modified by fossil fuel CO_2 releases that depressed atmospheric ^{14}C levels to a greater extent in the Northern Hemisphere (Northern Hemispheric fossil fuel CO_2 emissions are much larger than Southern Hemispheric ones). Whereas 19th century Chile/Tasmania ^{14}C ages are *ca.* 23 ^{14}C yr older than those of Washington, this offset is reduced during the first half of the 20th century. There is even a switch to younger Southern Hemispheric ages *ca.* AD 1940 (Stuiver and Braziunas 1998; McCormac *et al.* 1998a,b).

Laboratory Offsets in Pine and Bristlecone Pine Data

The measurements of two laboratories, Seattle and Heidelberg, are now available for German pine samples (both this issue). In Figure 1 we compare the S and H ^{14}C dates of the German pine chronology. The cal ages reflect the latest reevaluation by the University of Stuttgart-Hohenheim tree-ring laboratory (Spurk *et al.* 1998). There is substantial agreement, with an S-H offset of −16 ± 3 yr (n = 101) and an error multiplier k = 1.20.

For the older samples, the German and Irish oak chronologies are of crucial importance. ^{14}C results of the independent bristlecone pine chronology (Linick *et al.* 1986), as established at Tucson, Arizona (A), cover the 6554–5350 cal BC interval. When comparing these data to Belfast and Heidelberg oak results (Pearson, Becker and Qua 1993; Stuiver *et al.* 1998; Kromer and Spurk 1998), the bristlecone pine ^{14}C ages are, respectively, 19 ± 4 (n = 75) and 17 ± 8 (n = 24) yr older. When comparing Seattle (Stuiver and Reimer 1993) measured bristlecone pine ^{14}C ages (1998 radon corrected) to bristlecone pine measured in Arizona (Linick *et al.* 1986), the offset is 25 ± 8 yr (n = 15) toward older Arizona ages. These offsets, on the order of one or two decades, fall within the range expected from laboratory measuring errors, cal age differences in midpoint and tree-ring length of the wood samples, and nonidentical regional ^{14}C.

The bristlecone pine ^{14}C age offset with Seattle oak ^{14}C ages (with minor offset corrections, see Stuiver *et al.* 1998) is a surprisingly large 48 ± 3 yr (n = 80). The reason for this "anomalous" result is, at present, unknown.

Single-Year Age Calibration

In the 1993 calibration issue, and also in Stuiver and Braziunas 1993a, a set of single-year ^{14}C results was reported for wood from the Pacific Northwest (Washington State). The data in Table 2 and Figure 2 are based on these ^{14}C results with two modifications: 1) adjustment of the ^{14}C determinations made between 1977 and 1987 for the minor change in radon correction, as discussed previously, and 2) the incorporation of single-year results from a Kodiak Island, Alaska, Sitka spruce tree.

The Alaskan Sitka spruce (58°N, 153°W) covers the cal AD 1884–1932 interval. Its ^{14}C ages are, on average, 14 ± 3 ^{14}C yr older than Washington State results (Stuiver and Braziunas 1998). To obtain a reduced standard deviation, the Alaskan and Washington ^{14}C data were averaged after normalizing on Washington State (by reducing the Alaskan results by 14 yr). As noted previously (Stuiver 1993),

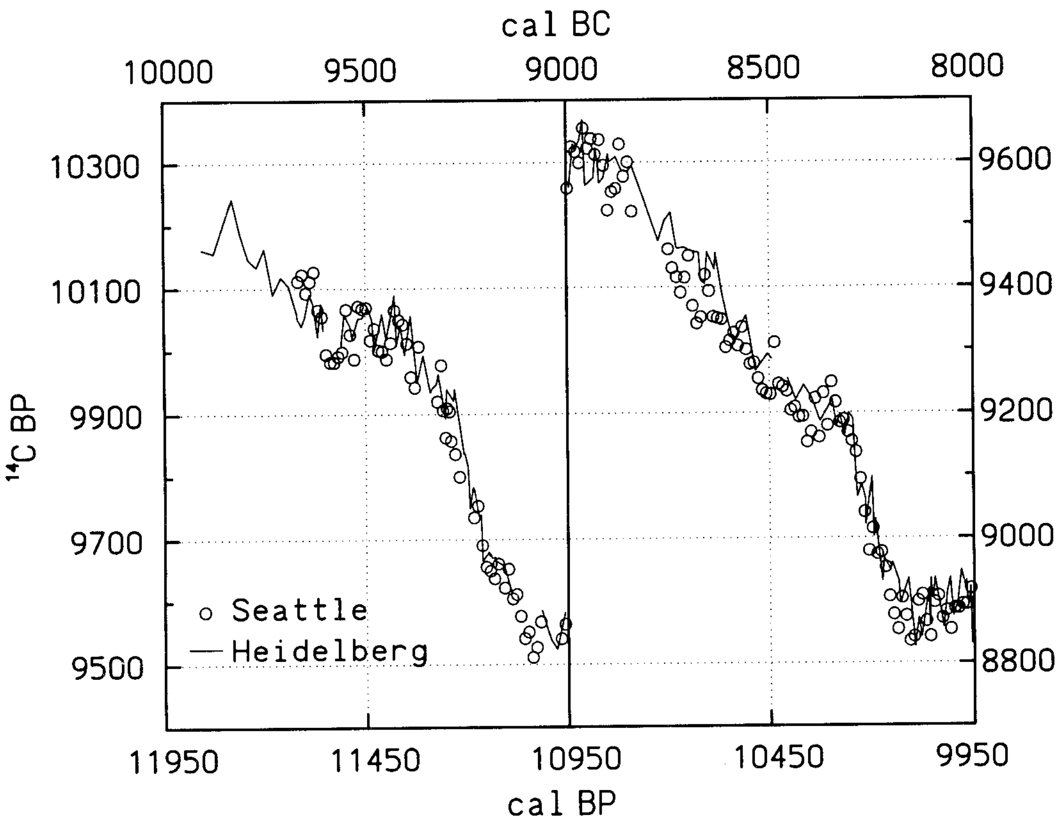

Fig. 1. A comparison of Heidelberg and Seattle German pine measurements. The solid line connects the Heidelberg points; the average standard deviation in a single measurement is 24 and 23 ^{14}C yr for, respectively, Heidelberg and Seattle.

the average standard deviation (for a 1.0 error multiplier) in the single-year calibration curve of 1993 was 12.8 ^{14}C yr. Adding Kodiak Island data reduces the average single-year standard deviation of the cal AD 1884–1932 interval to 10.2 ^{14}C yr.

MARINE ^{14}C AGE CALIBRATION

With INTCAL 98 based on decadal averages, we no longer provide a separate (terrestrial) decadal Seattle curve. A model calculated marine curve, however, is still relevant. Extensive discussion of marine age calibration was presented in Stuiver, Pearson and Braziunas 1986, and Stuiver and Braziunas 1993b.

The 19th century reservoir age $R_g(t)$ (t = time) of the global ocean, relative to the atmosphere, is usually estimated at 400 ^{14}C yr (its value prior to the industrial effect, or *ca.* AD 1850). Marine reservoir age $R_g(t)$ varies over time as a result of geomagnetic and solar-related changes in ^{14}C production rates. $R_g(t)$ calculations suggests changes on the order of ±100 ^{14}C yr for solar-mediated production rate change (Stuiver, Pearson and Braziunas 1986: Fig. 9A; Bard 1988).

The simple box diffusion global carbon cycle model employed here reproduces the expected history of global $R_g(t)$ in response to atmospheric ^{14}C production driven by solar and geomagnetic modulation of the ^{14}C production rate. To determine the variation in ^{14}C production rate required to produce

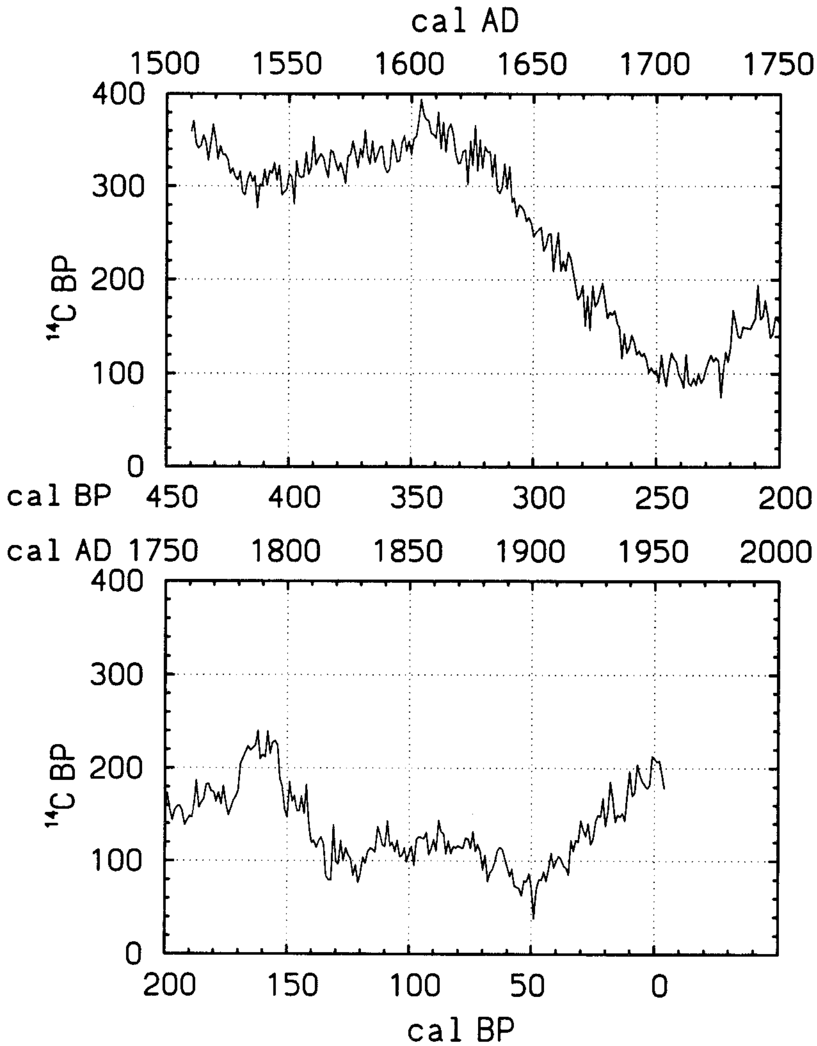

Fig. 2. ^{14}C age *vs.* cal age for single-year samples

the observed atmospheric record the model uses 1) the observed ^{14}C record from tree-rings; 2) a set of simple fixed parameters for ocean circulation, air-sea exchange, and atmosphere/terrestrial biosphere CO_2 fluxes; 3) a reservoir age R_g(AD 1850) = 400 ^{14}C yr; and 4) ^{14}C information derived from corals to fix the initial ^{14}C level at the start of the Holocene. Model parameterization is discussed in Stuiver and Braziunas (1993b: 140).

Ocean circulation may also have affected the ^{14}C partitioning between atmosphere and global ocean, resulting in R_g(t) change. Our R_g(t) model response to oceanic, or production rate, forcing is depicted in Figure 3A. Starting with an approximately 200-yr-long plateau (~9100–8900 cal BC) in atmospheric ^{14}C ages (dashed curve, constructed from a 200-yr moving average) we find substantial oceanic plateau smoothing ("surface ocean - 1" in Fig. 3A) for atmospheric forcing. However, when the ocean forces the atmosphere, both have similar plateau lengths ("surface ocean - 2" in Fig. 3A). Thus the presence or absence of ^{14}C age plateaus in marine sediment chronologies can be tied to the causative factors responsible for atmospheric ^{14}C change.

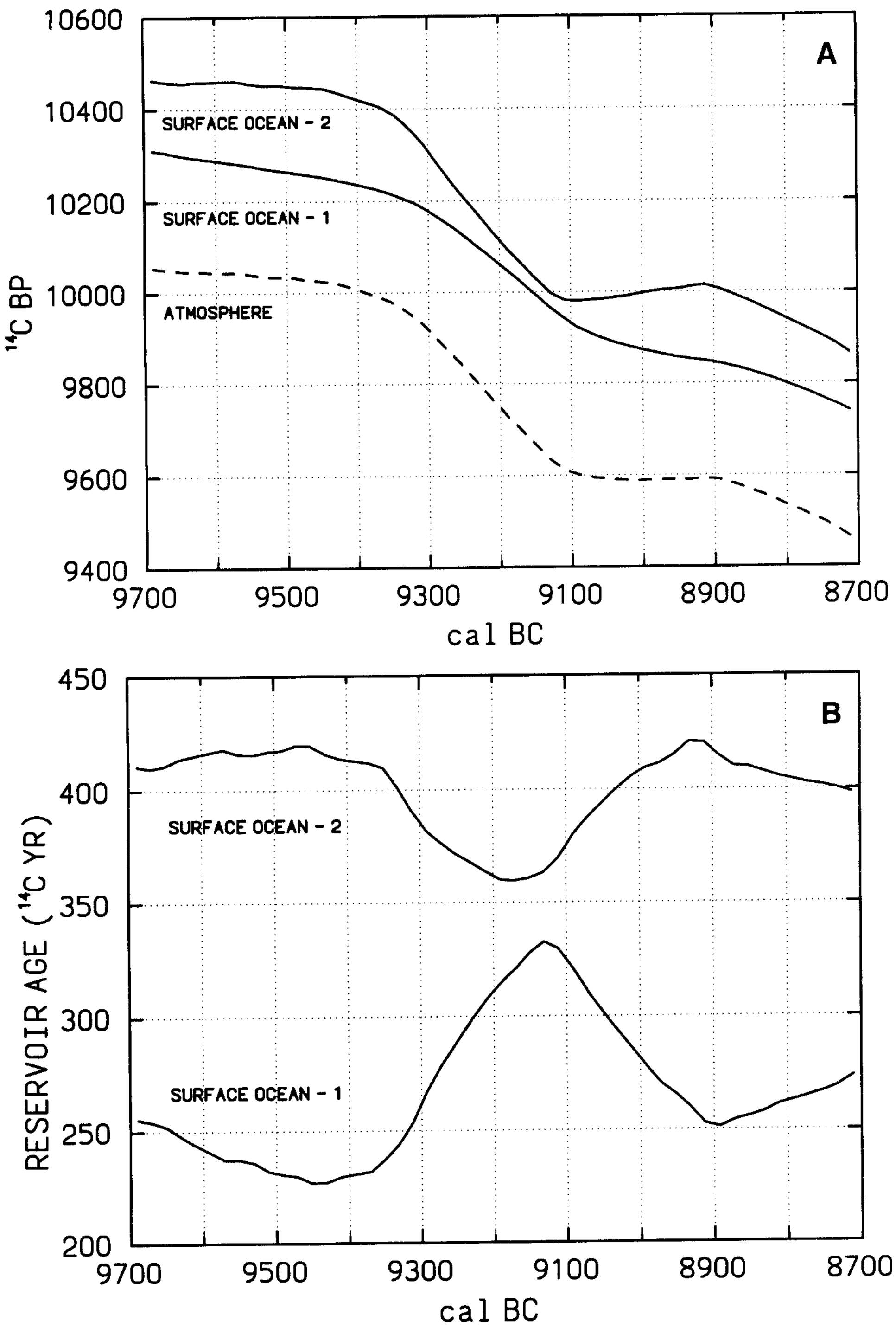

Fig. 3. **A**. Smoothed (200-yr moving average) ^{14}C age profiles for the atmosphere and surface ocean. Curve 1 was calculated from a carbon reservoir model assuming atmospheric ^{14}C production rate change to be responsible for the observed atmospheric ^{14}C change; curve 2 was calculated with ocean circulation change as the causal agent. **B**. Reservoir ages of the model ocean (mixed layer) for ^{14}C age plateaus generated by production rate change (curve 1) or oceanic circulation change (curve 2).

Surface ocean reservoir ages differ substantially between scenarios based on production rate *vs.* oceanic circulation (Fig. 3B). Production-related atmospheric ^{14}C supply to the surface ocean results in concurrent fluxes to the deep ocean, whereas the atmosphere, when forced by the ocean, does not sustain such major losses to other reservoirs. As a result, the change in reservoir age is larger for the production rate scenario. Reservoir age perturbations also are opposite in sign because the ocean lags the atmosphere for the production-rate scenario, whereas the atmosphere lags the ocean for a postulated oceanic increase.

The possibility of oceanic-induced $R_g(t)$ change, on a century time scale, cannot be excluded. But nonhypothetical calculations of oceanic-induced Rg(t) change are not possible because detailed information on century time scale oceanic circulation change is lacking. The simple box-diffusion global carbon cycle calculations used to generate the solid line in Figure 4 assume, of necessity, that Holocene century-scale atmospheric ^{14}C variations are production rate related.

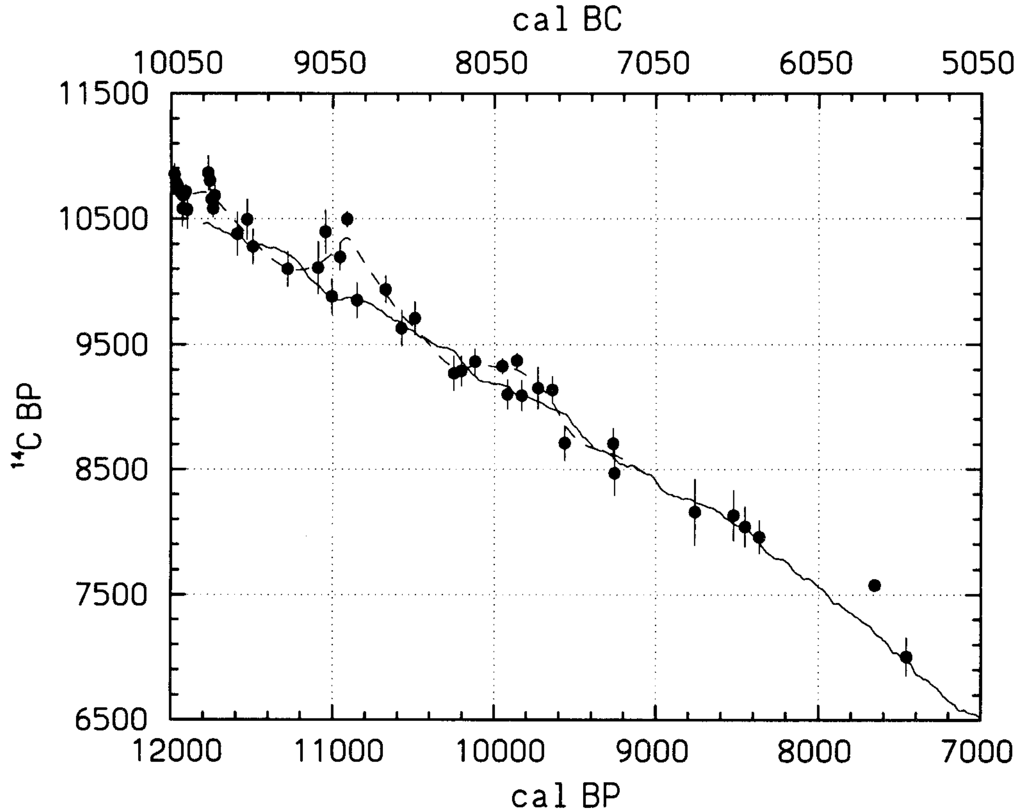

Fig. 4. A comparison of marine ^{14}C ages (solid line) derived from a carbon reservoir model (see text) and coral ^{14}C ages (Bard *et al.* 1998; Burr *et al.* 1998; Edwards *et al.* 1993; Stuiver *et al.* 1998: Fig. 2).

World ocean reservoir ages $R_g(t)$ increase (with a delayed response) when atmospheric ^{14}C increases and, conversely, are reduced when atmospheric ^{14}C levels drop. The reservoir ages $R_g(t)$ calculated for the world ocean are global averages only. Marine reservoir ages (R(t,s), with s = space) of the 19th century differ by up to 1000 ^{14}C yr from one oceanic region to another. The difference between regional reservoir age and the global average, R(t,s) – Rg(t), equals ΔR(s) (as defined in Stuiver and

Braziunas 1993b). Implied in this definition is the notion that the time-dependent changes of the local environment parallel those of the global ocean, thus yielding a time-independent $\Delta R(s)$. Our approach has been to supply a model-derived $R_g(t)$, and estimate $\Delta R(s)$ from the measured reservoir ages of 19th century shells (*e.g.*, $\Delta R(s) = R(\text{AD}1850,s) - R_g(\text{AD}1850)$). The measured ^{14}C age must be reduced by $\Delta R(s)$ when using the model-calculated marine calibration curves. We specifically note that the reservoir age $R(t,s)$ should not be subtracted but only $\Delta R(s)$ ($\Delta R(s) = 0$ when $R(\text{AD}1850,s) = 400$ yr). A short summary of regional ΔR can be found in Stuiver and Braziunas (1993). Recent ΔR determinations (partial list only) are those of Berkman and Forman (1996), Forman and Polyak (1997), Goodfriend and Flessa (1997), Heier-Nielsen *et al.* (1995), Higham and Hogg (1995), Ingram (1998), Ingram and Southon (1997), Kennett *et al.* (1997), Little (1993) and Southon, Rodman and True (1995).

Because the INTCAL98 tree-ring data for the 7000–0 cal BP interval are nearly identical to the data used previously, the 1993 marine calibration curves are still applicable (Stuiver and Braziunas 1993: Figs. 17A–N). Figure 4 compares the marine ^{14}C ages calculated from the INTCAL98 tree-ring record to those measured for INTCAL 98 corals (Bard *et al.* 1998; Burr *et al.* 1998; Edwards *et al.* 1993).

There is evidence for a marine ^{14}C reservoir deficiency change from 400 to 500 ^{14}C yr over the 12,000–10,000 cal BP interval (Stuiver *et al.* 1998: Fig. 2). This change, tied to ocean circulation change, is not simulated in the carbon reservoir model, where the ocean circulation parameters are fixed. This lack of ocean circulation change may have resulted in the slightly younger model-calculated ^{14}C ages of the 12,000–10,000 cal BP interval (Fig. 4).

The number of coral data points between 9500 and 7000 cal BP is limited, but the overall agreement is good for this interval. For the INTCAL 98 marine age calibration curve (see Stuiver *et al.* 1998) we used 1) a spline of coral and marine varve ^{14}C ages between 24,000 and 8800 cal BP and 2) a linear connection of ^{14}C ages derived from the tree-ring record *via* carbon reservoir modeling (8800–0 cal BP).

The latest 1998 version of the CALIB program (Stuiver and Reimer 1993) incorporates the single-year data given here (and also the decadal INTCAL98 data set for marine and terrestrial environments). The data sets can be downloaded from the Quaternary Isotope Laboratory World Wide Web site <http://depts.washington.edu/qil/>.

ACKNOWLEDGMENTS

The late Bernd Becker of the University of Stuttgart-Hohenheim, Germany, provided the samples from the German oak and pine chronology. M. Spurk and coworkers of the same university provided much needed information on the improved oak master chronology. B. Kromer and coworkers at the University of Heidelberg determined the pine-oak ^{14}C offset so that ring numbers of the floating pine chronology could be tied to cal BC dates. P. J. Wilkinson of the University of Washington provided crucial technical and analytical support. The National Science Foundation supported the ^{14}C investigations of the Quaternary Isotope Laboratory through grant ATM-9310121.

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APPENDIX: TABLES 1 AND 2

TABLE 1. ^{14}C age determinations made at the University of Washington Quaternary Isotope Lab (Seattle). The cal AD/BC ages (or cal BP) represent midpoints to the nearest year of wood sections (10 yr unless given in parentheses with the cal AD/BC age). Overlapping decadal samples with midpoints less than 1 yr apart were averaged. Single-year data were averaged with decadal data for the AD 1515–1935 interval. Single-year data only were used for the AD 1945 data point. Results of the few 20-yr samples were taken as two decadal samples (*) with the same ^{14}C age and with the standard deviation in the age and $\Delta^{14}C$ (defined in Stuiver and Polach 1977) increased by 1.4 times. No error multiplier has been included in the standard deviations.

TABLE 1. Decadal Measurements

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
AD 1945	−22.8 ± 0.5	190 ± 4	5
AD 1935	−17.4 ± 0.5	156 ± 4	15
AD 1925	−14.0 ± 0.4	138 ± 3	25
AD 1915	−9.2 ± 0.3	108 ± 3	35
AD 1905	−4.2 ± 0.4	78 ± 3	45
AD 1895	−2.8 ± 0.4	76 ± 3	55
AD 1885	−4.5 ± 0.4	100 ± 3	65
AD 1875	−5.2 ± 0.4	115 ± 4	75
AD 1865	−4.2 ± 0.5	117 ± 4	85
AD 1855	−3.5 ± 0.5	120 ± 4	95
AD 1845	−1.6 ± 0.5	115 ± 4	105
AD 1835	−0.5 ± 0.4	116 ± 3	115
AD 1825	2.8 ± 0.4	99 ± 3	125
AD 1815	3.2 ± 0.5	106 ± 4	135
AD 1805	−2.3 ± 0.5	159 ± 4	145
AD 1795	−6.2 ± 0.5	201 ± 4	155
AD 1785	−6.9 ± 0.6	216 ± 5	165
AD 1775	0.4 ± 0.4	167 ± 4	175
AD 1765	1.4 ± 0.5	169 ± 4	185
AD 1755	4.1 ± 0.4	156 ± 3	195
AD 1745	4.6 ± 0.5	163 ± 4	205
AD 1735	7.0 ± 0.5	153 ± 4	215
AD 1725	13.2 ± 0.4	114 ± 3	225
AD 1715	16.8 ± 0.3	95 ± 3	235
AD 1705	16.7 ± 0.3	105 ± 3	245
AD 1695	16.6 ± 0.3	115 ± 2	255
AD 1685	14.9 ± 0.4	139 ± 3	265

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
AD 1675	12.0 ± 0.5	172 ± 4	275
AD 1665	8.5 ± 0.5	209 ± 4	285
AD 1655	5.7 ± 0.5	241 ± 4	295
AD 1645	3.5 ± 0.5	268 ± 4	305
AD 1635	−0.2 ± 0.5	308 ± 4	315
AD 1625	−2.2 ± 0.5	333 ± 4	325
AD 1615	−3.2 ± 0.5	351 ± 4	335
AD 1605	−3.7 ± 0.5	365 ± 4	345
AD 1595	0.7 ± 0.5	340 ± 4	355
AD 1585	2.7 ± 0.5	333 ± 4	365
AD 1575	4.4 ± 0.6	329 ± 5	375
AD 1565	6.0 ± 0.5	326 ± 4	385
AD 1555	8.3 ± 0.6	319 ± 5	395
AD 1545	10.6 ± 0.5	309 ± 4	405
AD 1535	12.8 ± 0.4	301 ± 3	415
AD 1525	11.3 ± 0.5	322 ± 4	425
AD 1515	9.2 ± 0.6	349 ± 5	435
AD 1505	10.5 ± 1.0	349 ± 8	445
AD 1495	11.2 ± 1.3	353 ± 10	455
AD 1485	9.0 ± 1.7	380 ± 13	465
AD 1475	9.0 ± 1.8	390 ± 14	475
AD 1465	9.6 ± 1.8	395 ± 14	485
AD 1455	11.5 ± 1.2	390 ± 10	495
AD 1445	9.2 ± 1.5	418 ± 12	505
AD 1435	4.1 ± 1.8	468 ± 14	515
AD 1425	1.4 ± 1.7	500 ± 13	525
AD 1415	0.0 ± 1.7	520 ± 14	535

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
AD 1405	−4.3 ± 1.6	565 ± 13	545
AD 1395	−4.3 ± 1.8	575 ± 14	555
AD 1385	−10.3 ± 1.3	633 ± 11	565
AD 1375	−11.6 ± 1.4	653 ± 11	575
AD 1365	−4.4 ± 1.3	604 ± 11	585
AD 1355	−4.8 ± 1.4	617 ± 12	595
AD 1345	0.8 ± 1.4	582 ± 12	605
AD 1335	4.7 ± 1.2	560 ± 10	615
AD 1325	−0.6 ± 1.3	613 ± 11	625
AD 1315	−0.8 ± 1.2	625 ± 10	635
AD 1305	0.0 ± 1.0	627 ± 8	645
AD 1295	−3.0 ± 1.8	661 ± 15	655
AD 1285	−8.2 ± 1.7	713 ± 14	665
AD 1275	−13.7 ± 1.8	767 ± 15	675
AD 1265	−11.0 ± 1.8	755 ± 15	685
AD 1255	−16.7 ± 1.7	811 ± 14	695
AD 1245	−14.6 ± 1.8	803 ± 14	705
AD 1235	−13.4 ± 1.8	804 ± 14	715
AD 1225	−11.1 ± 1.2	795 ± 10	725
AD 1215	−14.5 ± 1.7	832 ± 14	735
AD 1205	−17.6 ± 1.7	867 ± 14	745
AD 1195	−15.2 ± 1.7	857 ± 14	755
AD 1185	−17.7 ± 1.6	887 ± 13	765
AD 1175	−15.7 ± 1.7	881 ± 14	775
AD 1165	−11.6 ± 1.2	857 ± 10	785
AD 1155	−16.5 ± 1.8	907 ± 15	795
AD 1145	−22.7 ± 1.2	967 ± 10	805
AD 1136	−12.9 ± 1.8	896 ± 15	814
AD 1135	−14.7 ± 2.0	911 ± 17	815
AD 1125	−13.9 ± 1.8	915 ± 15	825
AD 1116	−17.4 ± 1.8	952 ± 15	834
AD 1115	−15.5 ± 1.9	937 ± 16	835
AD 1106	−15.1 ± 1.7	943 ± 14	844
AD 1105	−15.8 ± 1.7	949 ± 14	845
AD 1096	−13.8 ± 1.9	942 ± 15	854
AD 1095	−13.4 ± 1.8	940 ± 15	855
AD 1086	−9.9 ± 1.8	920 ± 14	864
AD 1085	−9.2 ± 1.1	916 ± 9	865
AD 1076	−7.0 ± 1.1	907 ± 9	874
AD 1075	−5.7 ± 1.8	897 ± 15	875
AD 1066	−8.4 ± 1.4	928 ± 11	884
AD 1065	−6.7 ± 1.7	915 ± 14	885
AD 1056	−6.0 ± 1.4	918 ± 12	894
AD 1055	−8.2 ± 1.8	936 ± 15	895
AD 1046	−6.4 ± 1.8	931 ± 15	904
AD 1045	−4.7 ± 1.8	918 ± 14	905
AD 1036	−6.6 ± 1.7	942 ± 14	914
AD 1035	−8.2 ± 1.8	956 ± 15	915
AD 1025	−9.3 ± 1.8	974 ± 14	925
AD 1015	−14.8 ± 1.8	1029 ± 15	935
AD 1005	−10.3 ± 1.8	1002 ± 15	945
AD 995	−14.7 ± 1.6	1047 ± 13	955
AD 985	−15.8 ± 1.6	1066 ± 13	965
AD 975	−21.5 ± 1.8	1123 ± 15	975
AD 965	−19.5 ± 1.8	1116 ± 15	985
AD 955	−18.9 ± 1.9	1121 ± 16	995
AD 945	−17.5 ± 1.9	1119 ± 15	1005
AD 935	−19.7 ± 1.6	1147 ± 13	1015
AD 925	−18.1 ± 1.5	1143 ± 12	1025
AD 915	−10.9 ± 1.3	1094 ± 11	1035

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
AD 905	−9.4 ± 1.3	1091 ± 11	1045
AD 895	−14.5 ± 1.5	1143 ± 13	1055
AD 885	−16.3 ± 1.6	1167 ± 13	1065
AD 875	−17.3 ± 1.4	1186 ± 12	1075
AD 865	−17.1 ± 1.5	1194 ± 12	1085
AD 855	−16.9 ± 1.1	1201 ± 10	1095
AD 845	−15.5 ± 1.4	1200 ± 12	1105
AD 835	−12.2 ± 1.4	1183 ± 12	1115
AD 825	−12.8 ± 1.4	1197 ± 12	1125
AD 815	−10.6 ± 1.5	1189 ± 12	1135
AD 805	−10.3 ± 1.6	1197 ± 13	1145
AD 795	−11.2 ± 0.9	1213 ± 8	1155
AD 785	−4.4 ± 1.2	1168 ± 10	1165
AD 775	−12.9 ± 1.3	1247 ± 11	1175
AD 765	−16.0 ± 1.3	1282 ± 10	1185
AD 755	−16.5 ± 1.0	1296 ± 8	1195
AD 745	−11.4 ± 1.3	1263 ± 11	1205
AD 735	−8.2 ± 1.2	1248 ± 10	1215
AD 725	−7.8 ± 1.6	1254 ± 13	1225
AD 715	−9.0 ± 1.7	1273 ± 13	1235
AD 705	−10.4 ± 1.8	1294 ± 15	1245
AD 695	−5.2 ± 2.0	1262 ± 16	1255
AD 685	−12.5 ± 2.2	1331 ± 18	1265
AD 675	−10.5 ± 2.1	1324 ± 17	1275
AD 665	−11.5 ± 2.1	1342 ± 17	1285
AD 655	−13.9 ± 1.9	1371 ± 16	1295
AD 645	−15.9 ± 2.1	1397 ± 17	1305
AD 635	−22.4 ± 1.4	1460 ± 12	1315
AD 625	−19.2 ± 1.9	1444 ± 16	1325
AD 615	−17.8 ± 3.9	1442 ± 32	1335
AD 605	−17.8 ± 1.8	1452 ± 15	1345
AD 595	−21.2 ± 2.0	1489 ± 17	1355
AD 585	−18.3 ± 1.9	1475 ± 16	1365
AD 575	−19.7 ± 2.1	1497 ± 17	1375
AD 565	−17.8 ± 2.0	1491 ± 16	1385
AD 555	−18.8 ± 2.0	1509 ± 17	1395
AD 545	−16.3 ± 1.4	1497 ± 11	1405
AD 535	−22.6 ± 2.0	1559 ± 16	1415
AD 525	−25.3 ± 1.2	1591 ± 10	1425
AD 515	−21.9 ± 1.7	1573 ± 14	1435
AD 505	−21.5 ± 1.8	1580 ± 15	1445
AD 495	−18.1 ± 1.6	1561 ± 13	1455
AD 485	−16.9 ± 2.0	1561 ± 17	1465
AD 475	−15.5 ± 1.9	1560 ± 15	1475
AD 465	−16.6 ± 2.0	1578 ± 17	1485
AD 455	−15.6 ± 2.0	1580 ± 17	1495
AD 445	−11.5 ± 2.0	1556 ± 16	1505
AD 435	−10.8 ± 2.0	1560 ± 16	1515
AD 425	−16.8 ± 1.5	1618 ± 13	1525
AD 415	−18.1 ± 2.0	1639 ± 16	1535
AD 405	−20.2 ± 1.8	1666 ± 15	1545
AD 395	−19.0 ± 1.5	1666 ± 13	1555
AD 385	−19.7 ± 1.4	1681 ± 11	1565
AD 375	−22.0 ± 1.1	1710 ± 9	1575
AD 365	−16.5 ± 1.8	1675 ± 15	1585
AD 355	−18.4 ± 2.0	1699 ± 17	1595
AD 345	−17.0 ± 1.8	1698 ± 15	1605
AD 335	−19.6 ± 2.0	1729 ± 16	1615
AD 325	−17.6 ± 2.0	1723 ± 17	1625
AD 315	−22.9 ± 2.0	1775 ± 16	1635

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	Δ^{14}C (‰)	^{14}C BP	cal BP
AD 305	−21.4 ± 1.9	1773 ± 16	1645
AD 295	−14.5 ± 1.9	1726 ± 15	1655
AD 285	−17.7 ± 1.9	1762 ± 16	1665
AD 275	−10.5 ± 1.9	1713 ± 15	1675
AD 265	−8.1 ± 1.4	1703 ± 11	1685
AD 255	−15.3 ± 1.1	1773 ± 9	1695
AD 245	−14.5 ± 1.0	1774 ± 9	1705
AD 235	−18.0 ± 1.4	1813 ± 12	1715
AD 225	−17.6 ± 2.0	1819 ± 17	1725
AD 215	−18.1 ± 2.0	1834 ± 17	1735
AD 205	−19.0 ± 1.4	1852 ± 12	1745
AD 195	−14.1 ± 2.0	1820 ± 17	1755
AD 185	−11.4 ± 1.8	1808 ± 15	1765
AD 175	−13.0 ± 2.0	1831 ± 16	1775
AD 165	−13.1 ± 2.2	1841 ± 18	1785
AD 155	−11.9 ± 1.9	1841 ± 15	1795
AD 145	−10.2 ± 2.0	1837 ± 17	1805
AD 135	−8.6 ± 1.3	1833 ± 11	1815
AD 125	−15.7 ± 1.1	1901 ± 9	1825
AD 115	−14.6 ± 2.2	1902 ± 18	1835
AD 105	−13.4 ± 2.1	1902 ± 17	1845
AD 95	−8.9 ± 1.2	1874 ± 10	1855
AD 85	−9.3 ± 2.0	1888 ± 16	1865
AD 75	−11.4 ± 1.4	1915 ± 11	1875
AD 65	−12.9 ± 1.4	1936 ± 11	1885
AD 55	−13.4 ± 1.2	1951 ± 9	1895
AD 45	−16.8 ± 1.0	1988 ± 8	1905
AD 35	−9.8 ± 1.5	1940 ± 13	1915
AD 25	−13.9 ± 1.4	1983 ± 11	1925
AD 15	−14.6 ± 1.1	2000 ± 9	1935
AD 5	−11.3 ± 1.0	1982 ± 8	1945
5 BC	−18.0 ± 1.4	2046 ± 12	1954
6 BC	−18.3 ± 2.0	2049 ± 16	1955
15 BC	−11.1 ± 1.2	1999 ± 10	1964
16 BC	−11.5 ± 2.0	2003 ± 16	1965
25 BC	−12.7 ± 2.0	2022 ± 16	1974
26 BC	−14.2 ± 1.8	2035 ± 15	1975
35 BC	−10.4 ± 1.1	2012 ± 10	1984
36 BC	−8.7 ± 1.0	2000 ± 8	1985
45 BC	−14.6 ± 1.2	2056 ± 10	1994
46 BC	−9.9 ± 2.0	2019 ± 16	1995
55 BC	−13.7 ± 1.3	2057 ± 11	2004
56 BC	−17.3 ± 1.3	2089 ± 11	2005
65 BC	−15.7 ± 1.4	2085 ± 12	2014
66 BC	−16.0 ± 1.8	2088 ± 15	2015
75 BC	−14.5 ± 2.0	2085 ± 17	2024
76 BC	−13.1 ± 2.0	2075 ± 17	2025
85 BC	−8.9 ± 1.4	2049 ± 11	2034
86 BC	−13.1 ± 2.0	2084 ± 16	2035
95 BC	−13.5 ± 1.9	2096 ± 15	2044
96 BC	−12.6 ± 2.0	2090 ± 16	2045
105 BC	−8.6 ± 2.0	2066 ± 16	2054
106 BC	−12.3 ± 1.6	2097 ± 13	2055
115 BC	−8.2 ± 2.0	2073 ± 17	2064
116 BC	−13.0 ± 1.5	2113 ± 12	2065
125 BC	−10.1 ± 2.1	2097 ± 17	2074
126 BC	−13.8 ± 1.5	2129 ± 12	2075
135 BC	−7.1 ± 2.1	2083 ± 17	2084
136 BC	−9.4 ± 2.0	2102 ± 16	2085
145 BC	−5.6 ± 1.6	2080 ± 13	2094

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	Δ^{14}C (‰)	^{14}C BP	cal BP
146 BC	−9.6 ± 1.9	2114 ± 16	2095
156 BC	−5.4 ± 2.1	2090 ± 17	2105
166 BC	−6.0 ± 1.3	2104 ± 11	2115
176 BC	−11.8 ± 2.1	2161 ± 17	2125
186 BC	−10.4 ± 2.0	2159 ± 17	2135
196 BC	−5.4 ± 1.4	2128 ± 11	2145
206 BC	−10.2 ± 1.9	2177 ± 15	2155
216 BC	−15.4 ± 1.1	2229 ± 9	2165
226 BC	−7.8 ± 1.5	2177 ± 12	2175
236 BC	−14.7 ± 1.2	2243 ± 9	2185
246 BC	−12.3 ± 1.5	2233 ± 12	2195
256 BC	−9.3 ± 2.0	2218 ± 16	2205
266 BC	−13.6 ± 1.9	2263 ± 16	2215
276 BC	−7.7 ± 1.4	2225 ± 11	2225
286 BC	−8.6 ± 1.8	2242 ± 15	2235
296 BC	−3.9 ± 1.4	2212 ± 11	2245
306 BC	−0.1 ± 1.9	2192 ± 16	2255
316 BC	0.2 ± 1.9	2200 ± 16	2265
326 BC	5.2 ± 1.4	2169 ± 11	2275
336 BC	7.3 ± 1.9	2162 ± 16	2285
346 BC	6.9 ± 1.4	2176 ± 11	2295
356 BC	1.4 ± 1.4	2229 ± 11	2305
366 BC	−1.8 ± 1.4	2265 ± 11	2315
376 BC	0.1 ± 1.4	2260 ± 11	2325
386 BC	−1.0 ± 2.0	2278 ± 16	2335
396 BC	−5.7 ± 1.4	2324 ± 12	2345
406 BC	−10.8 ± 1.1	2377 ± 9	2355
416 BC	−16.8 ± 2.0	2434 ± 16	2365
426 BC	−13.6 ± 2.1	2418 ± 17	2375
436 BC	−16.5 ± 2.0	2452 ± 16	2385
446 BC	−15.7 ± 3.3	2455 ± 27	2395
456 BC	−19.1 ± 2.3	2493 ± 18	2405
466 BC	−11.8 ± 2.5	2443 ± 20	2415
476 BC	−6.1 ± 1.4	2406 ± 12	2425
486 BC	−8.5 ± 2.0	2435 ± 17	2435
496 BC	−6.3 ± 1.5	2428 ± 12	2445
506 BC	−5.7 ± 2.0	2432 ± 17	2455
516 BC	−4.7 ± 1.6	2433 ± 12	2465
526 BC	−8.6 ± 1.7	2475 ± 13	2475
536 BC	−2.5 ± 1.3	2436 ± 11	2485
546 BC	−6.7 ± 1.5	2479 ± 12	2495
556 BC	−5.9 ± 1.8	2482 ± 14	2505
566 BC	−5.8 ± 2.3	2491 ± 18	2515
576 BC	−4.3 ± 2.2	2489 ± 18	2525
586 BC	1.0 ± 2.2	2456 ± 18	2535
596 BC	−4.9 ± 1.7	2513 ± 14	2545
606 BC	−3.9 ± 1.8	2515 ± 15	2555
607 BC	−1.8 ± 2.1	2499 ± 17	2556
616 BC	0.1 ± 1.6	2492 ± 13	2565
617 BC	1.6 ± 1.5	2482 ± 12	2566
626 BC	−0.8 ± 1.7	2509 ± 14	2575
627 BC*	4.6 ± 2.9	2467 ± 23	2576
636 BC	2.9 ± 2.1	2489 ± 17	2585
637 BC*	5.8 ± 2.9	2467 ± 23	2586
646 BC	4.9 ± 2.0	2483 ± 16	2595
647 BC	6.3 ± 2.1	2472 ± 17	2596
656 BC	7.0 ± 1.4	2475 ± 11	2605
657 BC*	13.0 ± 2.8	2429 ± 22	2606
667 BC	14.2 ± 2.8	2429 ± 22	2616
697 BC	14.7 ± 3.3	2455 ± 26	2646

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	Δ^{14}C (‰)	^{14}C BP	cal BP
707 BC	15.5 ± 3.4	2458 ± 27	2656
717 BC	15.9 ± 3.4	2464 ± 27	2666
727 BC*	19.6 ± 2.0	2445 ± 16	2676
737 BC*	20.8 ± 2.0	2445 ± 16	2686
747 BC*	21.3 ± 3.0	2451 ± 23	2696
757 BC*	22.5 ± 3.0	2451 ± 23	2706
767 BC*	11.3 ± 2.8	2550 ± 22	2716
777 BC*	12.5 ± 2.8	2550 ± 22	2726
787 BC	14.0 ± 1.6	2548 ± 12	2736
797 BC	7.6 ± 1.5	2608 ± 12	2746
807 BC	4.0 ± 1.6	2647 ± 13	2756
817 BC	2.2 ± 2.1	2670 ± 17	2766
827 BC	3.1 ± 1.6	2673 ± 13	2776
837 BC	−3.6 ± 1.6	2737 ± 13	2786
847 BC	−3.9 ± 1.6	2749 ± 13	2796
857 BC	−2.6 ± 2.1	2748 ± 17	2806
867 BC	−0.3 ± 2.0	2740 ± 16	2816
877 BC	1.1 ± 2.1	2738 ± 17	2826
887 BC	6.0 ± 2.1	2708 ± 17	2836
897 BC	3.2 ± 2.1	2741 ± 17	2846
907 BC	−0.3 ± 2.0	2778 ± 16	2856
917 BC	0.6 ± 2.1	2781 ± 17	2866
927 BC	0.5 ± 2.1	2791 ± 17	2876
937 BC	0.2 ± 1.6	2804 ± 13	2886
947 BC	−1.6 ± 1.5	2827 ± 12	2896
957 BC	0.1 ± 1.7	2824 ± 13	2906
967 BC	9.2 ± 2.1	2761 ± 17	2916
977 BC	0.0 ± 1.5	2844 ± 12	2926
987 BC	2.5 ± 2.0	2834 ± 16	2936
997 BC	5.6 ± 2.0	2818 ± 16	2946
1007 BC	4.7 ± 2.1	2836 ± 17	2956
1017 BC	1.4 ± 2.0	2871 ± 16	2966
1027 BC	0.4 ± 2.2	2889 ± 18	2976
1037 BC	2.8 ± 2.1	2880 ± 17	2986
1047 BC	7.7 ± 2.2	2850 ± 17	2996
1057 BC	−0.5 ± 2.0	2926 ± 16	3006
1067 BC	7.0 ± 2.3	2876 ± 18	3016
1077 BC	6.5 ± 2.2	2889 ± 18	3026
1087 BC	4.5 ± 2.2	2915 ± 18	3036
1097 BC	5.1 ± 1.4	2919 ± 12	3046
1107 BC	7.6 ± 1.5	2909 ± 12	3056
1117 BC	2.0 ± 2.4	2964 ± 19	3066
1127 BC	10.1 ± 2.1	2909 ± 17	3076
1137 BC	−0.3 ± 1.4	3002 ± 11	3086
1147 BC	11.8 ± 2.1	2915 ± 17	3096
1157 BC	8.9 ± 2.2	2947 ± 17	3106
1167 BC	10.3 ± 2.1	2946 ± 17	3116
1177 BC	11.2 ± 2.6	2949 ± 21	3126
1187 BC	18.5 ± 2.2	2901 ± 17	3136
1197 BC	6.6 ± 2.0	3005 ± 16	3146
1207 BC	18.7 ± 2.2	2918 ± 18	3156
1217 BC	10.4 ± 1.2	2992 ± 9	3166
1227 BC	10.6 ± 2.1	3002 ± 17	3176
1237 BC	16.5 ± 2.3	2965 ± 18	3186
1247 BC	14.5 ± 2.2	2990 ± 17	3196
1257 BC	16.4 ± 1.7	2985 ± 14	3206
1267 BC	11.0 ± 2.2	3038 ± 18	3216
1277 BC	13.0 ± 2.1	3032 ± 17	3226
1287 BC	18.9 ± 2.2	2994 ± 18	3236
1297 BC	15.1 ± 2.2	3035 ± 17	3246

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	Δ^{14}C (‰)	^{14}C BP	cal BP
1307 BC	17.3 ± 2.3	3027 ± 18	3256
1317 BC	16.8 ± 2.2	3040 ± 18	3266
1327 BC	10.2 ± 1.9	3102 ± 15	3276
1337 BC	17.0 ± 2.2	3059 ± 17	3286
1347 BC	20.2 ± 2.2	3043 ± 18	3296
1357 BC	17.8 ± 2.2	3071 ± 17	3306
1367 BC	24.2 ± 2.1	3030 ± 16	3316
1377 BC	18.3 ± 2.0	3087 ± 16	3326
1387 BC	19.0 ± 2.1	3091 ± 16	3336
1397 BC	16.9 ± 1.5	3117 ± 12	3346
1407 BC	20.4 ± 2.0	3099 ± 16	3356
1417 BC	12.9 ± 2.0	3168 ± 16	3366
1427 BC	20.4 ± 2.2	3118 ± 17	3376
1437 BC	14.3 ± 1.5	3177 ± 12	3386
1447 BC	15.6 ± 1.5	3177 ± 12	3396
1457 BC	13.8 ± 1.4	3203 ± 11	3406
1467 BC	12.5 ± 1.5	3222 ± 12	3416
1477 BC	14.6 ± 1.5	3213 ± 12	3426
1487 BC	19.4 ± 1.7	3185 ± 13	3436
1497 BC	14.8 ± 2.3	3231 ± 18	3446
1507 BC	13.9 ± 2.0	3248 ± 16	3456
1517 BC	14.7 ± 2.2	3251 ± 17	3466
1527 BC	13.2 ± 2.0	3273 ± 16	3476
1537 BC	10.0 ± 2.1	3308 ± 17	3486
1547 BC	11.7 ± 2.2	3304 ± 17	3496
1557 BC	12.9 ± 2.1	3304 ± 17	3506
1567 BC	12.9 ± 3.6	3314 ± 29	3516
1577 BC	17.3 ± 3.6	3289 ± 29	3526
1587 BC	16.9 ± 2.2	3302 ± 18	3536
1597 BC	21.4 ± 1.7	3276 ± 14	3546
1607 BC	16.4 ± 1.6	3326 ± 13	3556
1617 BC	17.5 ± 1.7	3327 ± 14	3566
1627 BC	15.7 ± 1.7	3350 ± 13	3576
1637 BC	16.3 ± 2.2	3355 ± 18	3586
1647 BC	13.5 ± 1.3	3387 ± 10	3596
1657 BC	20.1 ± 1.7	3344 ± 13	3606
1667 BC	13.5 ± 2.3	3406 ± 18	3616
1677 BC	25.8 ± 2.2	3320 ± 17	3626
1687 BC	21.9 ± 2.2	3360 ± 17	3636
1697 BC	13.7 ± 1.5	3434 ± 12	3646
1707 BC	15.9 ± 2.2	3427 ± 18	3656
1717 BC	20.8 ± 2.2	3398 ± 17	3666
1727 BC	20.8 ± 2.2	3407 ± 17	3676
1737 BC	19.1 ± 2.2	3430 ± 17	3686
1747 BC	15.4 ± 2.2	3469 ± 18	3696
1757 BC	14.6 ± 1.6	3485 ± 13	3706
1767 BC	19.1 ± 1.7	3459 ± 14	3716
1777 BC	15.4 ± 1.7	3498 ± 13	3726
1787 BC	14.7 ± 1.5	3515 ± 12	3736
1797 BC	17.4 ± 1.5	3501 ± 12	3746
1807 BC	21.9 ± 1.5	3478 ± 12	3756
1817 BC	19.0 ± 1.5	3509 ± 12	3766
1827 BC	22.5 ± 2.2	3491 ± 18	3776
1837 BC	15.9 ± 2.1	3553 ± 17	3786
1847 BC	25.5 ± 2.2	3487 ± 18	3796
1857 BC	27.5 ± 2.2	3481 ± 18	3806
1867 BC	26.2 ± 2.2	3501 ± 18	3816
1877 BC	27.1 ± 1.6	3503 ± 12	3826
1887 BC	21.4 ± 2.1	3558 ± 17	3836
1897 BC	19.9 ± 2.2	3580 ± 18	3846

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1907 BC	24.2 ± 2.2	3555 ± 17	3856
1917 BC	25.2 ± 2.2	3557 ± 17	3866
1927 BC	21.1 ± 1.7	3599 ± 14	3876
1937 BC	22.9 ± 2.0	3595 ± 16	3886
1947 BC	22.4 ± 2.3	3609 ± 18	3896
1957 BC	23.2 ± 2.2	3612 ± 18	3906
1967 BC	23.5 ± 2.2	3619 ± 18	3916
1977 BC	22.3 ± 2.2	3638 ± 17	3926
1987 BC	19.5 ± 2.2	3670 ± 17	3936
1997 BC	28.8 ± 2.2	3607 ± 17	3946
2007 BC	32.1 ± 2.3	3591 ± 18	3956
2017 BC	26.4 ± 2.2	3645 ± 17	3966
2027 BC	28.8 ± 2.2	3636 ± 17	3976
2037 BC	24.3 ± 1.4	3681 ± 11	3986
2047 BC	22.6 ± 1.6	3704 ± 12	3996
2057 BC	22.1 ± 1.6	3717 ± 13	4006
2067 BC	28.4 ± 2.2	3678 ± 17	4016
2077 BC	21.5 ± 1.6	3742 ± 12	4026
2087 BC	32.4 ± 2.2	3666 ± 17	4036
2097 BC	30.2 ± 2.2	3693 ± 17	4046
2107 BC	35.2 ± 1.6	3664 ± 12	4056
2117 BC	32.2 ± 2.2	3697 ± 17	4066
2127 BC	35.1 ± 2.2	3684 ± 17	4076
2137 BC	32.2 ± 2.2	3716 ± 17	4086
2147 BC	27.5 ± 1.4	3762 ± 11	4096
2157 BC	29.6 ± 1.4	3756 ± 11	4106
2167 BC	32.6 ± 2.3	3743 ± 18	4116
2177 BC	34.7 ± 1.5	3736 ± 12	4126
2187 BC	36.6 ± 1.3	3730 ± 10	4136
2197 BC	36.0 ± 1.3	3745 ± 10	4146
2207 BC	30.2 ± 1.9	3800 ± 15	4156
2217 BC	30.2 ± 1.6	3811 ± 12	4166
2227 BC	34.3 ± 1.3	3787 ± 11	4176
2237 BC	28.9 ± 2.5	3839 ± 19	4186
2247 BC	31.3 ± 1.7	3830 ± 13	4196
2257 BC	37.2 ± 1.6	3793 ± 12	4206
2267 BC	40.0 ± 2.2	3782 ± 17	4216
2277 BC	36.4 ± 2.7	3820 ± 21	4226
2287 BC	37.7 ± 1.9	3820 ± 15	4236
2297 BC	34.7 ± 1.7	3852 ± 13	4246
2307 BC	38.4 ± 2.5	3833 ± 19	4256
2317 BC	35.7 ± 2.3	3865 ± 18	4266
2327 BC	39.3 ± 1.6	3846 ± 12	4276
2337 BC	38.9 ± 2.3	3859 ± 17	4286
2347 BC	38.0 ± 1.6	3876 ± 13	4296
2357 BC	36.5 ± 2.3	3897 ± 18	4306
2367 BC	37.5 ± 1.6	3899 ± 13	4316
2377 BC	39.1 ± 2.3	3896 ± 18	4326
2387 BC	44.8 ± 1.7	3864 ± 13	4336
2397 BC	50.1 ± 2.5	3832 ± 20	4346
2407 BC	42.4 ± 1.7	3900 ± 13	4356
2417 BC	41.8 ± 1.8	3914 ± 14	4366
2427 BC	47.3 ± 2.2	3882 ± 17	4376
2437 BC	46.3 ± 1.2	3900 ± 9	4386
2447 BC	48.4 ± 2.4	3893 ± 18	4396
2467 BC	47.9 ± 2.3	3916 ± 18	4416
2477 BC	37.2 ± 1.6	4009 ± 13	4426
2487 BC	41.2 ± 1.7	3987 ± 13	4436
2497 BC	35.8 ± 2.4	4039 ± 19	4446
2507 BC	33.3 ± 1.7	4067 ± 13	4456

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
2517 BC	40.9 ± 1.7	4018 ± 13	4466
2527 BC	44.6 ± 1.2	4000 ± 9	4476
2537 BC	48.1 ± 1.6	3983 ± 12	4486
2547 BC	48.6 ± 1.6	3988 ± 12	4496
2557 BC	47.9 ± 1.5	4003 ± 12	4506
2567 BC	46.4 ± 1.4	4024 ± 11	4516
2577 BC	43.9 ± 1.7	4053 ± 13	4526
2587 BC	40.8 ± 1.4	4088 ± 11	4536
2597 BC	47.1 ± 1.6	4049 ± 12	4546
2607 BC	40.3 ± 2.4	4110 ± 19	4556
2617 BC	49.8 ± 1.6	4047 ± 12	4566
2627 BC	45.5 ± 1.7	4089 ± 13	4576
2637 BC	44.3 ± 1.4	4108 ± 11	4586
2647 BC	39.1 ± 2.3	4159 ± 18	4596
2655 BC	50.6 ± 2.4	4078 ± 18	4604
2665 BC	49.9 ± 1.6	4093 ± 12	4614
2675 BC	47.8 ± 1.6	4119 ± 12	4624
2685 BC	48.7 ± 1.6	4122 ± 12	4634
2695 BC	48.2 ± 2.4	4136 ± 18	4644
2705 BC	47.5 ± 1.3	4150 ± 10	4654
2715 BC	45.4 ± 2.4	4177 ± 19	4664
2725 BC	51.9 ± 2.4	4137 ± 19	4674
2735 BC	49.9 ± 2.0	4161 ± 15	4684
2745 BC	54.1 ± 2.4	4139 ± 18	4694
2755 BC	54.5 ± 2.4	4145 ± 18	4704
2765 BC	47.4 ± 2.6	4210 ± 20	4714
2775 BC	54.4 ± 2.1	4166 ± 16	4724
2785 BC	57.4 ± 1.7	4153 ± 13	4734
2795 BC	55.6 ± 1.7	4176 ± 13	4744
2805 BC	53.7 ± 2.3	4201 ± 17	4754
2815 BC	66.5 ± 1.7	4114 ± 13	4764
2825 BC	72.3 ± 2.6	4079 ± 19	4774
2835 BC	67.6 ± 2.3	4124 ± 17	4784
2845 BC	65.1 ± 2.2	4153 ± 17	4794
2855 BC	66.7 ± 2.3	4151 ± 18	4804
2865 BC	66.3 ± 2.2	4163 ± 16	4814
2875 BC	65.1 ± 1.6	4182 ± 12	4824
2885 BC	61.3 ± 2.3	4220 ± 17	4834
2895 BC	55.1 ± 2.3	4277 ± 18	4844
2905 BC	54.5 ± 2.3	4292 ± 18	4854
2915 BC	53.4 ± 2.2	4310 ± 17	4864
2925 BC	47.9 ± 2.3	4361 ± 18	4874
2935 BC	46.9 ± 2.6	4379 ± 20	4884
2945 BC	45.3 ± 2.2	4401 ± 17	4894
2955 BC	52.7 ± 1.6	4355 ± 12	4904
2965 BC	52.2 ± 2.2	4367 ± 17	4914
2975 BC	50.2 ± 2.3	4392 ± 18	4924
2985 BC	56.8 ± 1.6	4352 ± 12	4934
2995 BC	59.7 ± 2.4	4339 ± 18	4944
3005 BC	58.4 ± 2.4	4359 ± 18	4954
3015 BC	57.5 ± 2.3	4376 ± 18	4964
3025 BC	59.2 ± 2.3	4372 ± 18	4974
3035 BC	59.2 ± 2.4	4382 ± 18	4984
3045 BC	55.7 ± 1.5	4418 ± 12	4994
3055 BC	54.8 ± 1.6	4435 ± 12	5004
3065 BC	56.5 ± 2.4	4432 ± 18	5014
3075 BC	63.2 ± 1.2	4390 ± 9	5024
3085 BC	58.8 ± 2.4	4434 ± 18	5034
3095 BC	60.8 ± 2.4	4428 ± 18	5044
3105 BC	52.3 ± 2.4	4503 ± 18	5054

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
3115 BC	56.5 ± 1.7	4481 ± 13	5064
3125 BC	53.7 ± 2.3	4512 ± 18	5074
3135 BC	55.1 ± 2.3	4510 ± 17	5084
3145 BC	51.9 ± 2.3	4544 ± 18	5094
3155 BC	58.9 ± 2.4	4501 ± 18	5104
3165 BC	64.7 ± 1.7	4467 ± 13	5114
3175 BC	58.9 ± 2.4	4520 ± 18	5124
3185 BC	63.0 ± 1.7	4500 ± 13	5134
3195 BC	61.5 ± 1.7	4520 ± 12	5144
3205 BC	61.7 ± 2.4	4528 ± 18	5154
3215 BC	67.0 ± 1.5	4497 ± 11	5164
3225 BC	68.7 ± 2.4	4495 ± 18	5174
3235 BC	74.5 ± 2.4	4461 ± 18	5184
3245 BC	79.3 ± 2.4	4435 ± 18	5194
3255 BC	77.9 ± 2.4	4455 ± 18	5204
3265 BC	75.1 ± 2.1	4486 ± 16	5214
3275 BC	77.2 ± 2.6	4480 ± 19	5224
3285 BC	80.0 ± 2.4	4469 ± 18	5234
3295 BC	81.4 ± 2.4	4468 ± 18	5244
3305 BC	81.0 ± 2.5	4480 ± 18	5254
3315 BC	78.4 ± 1.8	4511 ± 13	5264
3325 BC	84.2 ± 1.7	4476 ± 13	5274
3335 BC	78.9 ± 1.6	4525 ± 12	5284
3345 BC	78.8 ± 1.6	4535 ± 12	5294
3355 BC	74.9 ± 2.5	4575 ± 19	5304
3365 BC	72.0 ± 2.4	4606 ± 18	5314
3375 BC	68.2 ± 2.4	4644 ± 18	5324
3385 BC	63.7 ± 2.4	4688 ± 18	5334
3395 BC	60.8 ± 1.8	4718 ± 14	5344
3405 BC	66.8 ± 2.4	4684 ± 18	5354
3415 BC	65.6 ± 2.7	4703 ± 20	5364
3425 BC	70.9 ± 2.0	4673 ± 15	5374
3435 BC	73.4 ± 1.7	4664 ± 13	5384
3445 BC	73.8 ± 2.9	4670 ± 22	5394
3455 BC	74.0 ± 2.7	4679 ± 20	5404
3465 BC	80.0 ± 1.7	4643 ± 13	5414
3475 BC	86.6 ± 1.7	4604 ± 13	5424
3485 BC	87.1 ± 1.7	4611 ± 13	5434
3495 BC	86.1 ± 1.8	4628 ± 13	5444
3505 BC	79.9 ± 1.8	4684 ± 13	5454
3515 BC	76.3 ± 1.7	4720 ± 13	5464
3525 BC	77.2 ± 1.8	4723 ± 13	5474
3535 BC	78.4 ± 1.7	4725 ± 13	5484
3545 BC	73.1 ± 1.7	4773 ± 13	5494
3555 BC	74.9 ± 1.8	4769 ± 13	5504
3565 BC	79.7 ± 1.8	4743 ± 13	5514
3575 BC	79.5 ± 1.8	4755 ± 13	5524
3585 BC	82.7 ± 1.8	4741 ± 13	5534
3595 BC	85.0 ± 1.4	4734 ± 10	5544
3605 BC	88.1 ± 1.6	4719 ± 12	5554
3615 BC	91.3 ± 1.4	4706 ± 10	5564
3625 BC	89.4 ± 2.5	4730 ± 19	5574
3635 BC	82.5 ± 1.7	4790 ± 13	5584
3645 BC	77.4 ± 1.8	4837 ± 13	5594
3655 BC	73.4 ± 1.7	4878 ± 13	5604
3665 BC	75.2 ± 1.7	4874 ± 13	5614
3675 BC	69.7 ± 1.4	4925 ± 11	5624
3685 BC	75.0 ± 1.7	4895 ± 13	5634
3695 BC	77.3 ± 1.7	4888 ± 13	5644
3705 BC	74.8 ± 1.7	4916 ± 13	5654

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
3715 BC	71.4 ± 1.7	4951 ± 13	5664
3725 BC	71.4 ± 2.7	4961 ± 20	5674
3735 BC	75.9 ± 1.8	4937 ± 13	5684
3745 BC	76.0 ± 1.5	4946 ± 12	5694
3755 BC	76.9 ± 1.7	4949 ± 13	5704
3765 BC	72.8 ± 1.7	4989 ± 13	5714
3775 BC	73.2 ± 1.8	4995 ± 13	5724
3785 BC	74.9 ± 1.4	4992 ± 11	5734
3795 BC	75.8 ± 1.8	4996 ± 14	5744
3805 BC	65.4 ± 1.7	5083 ± 13	5754
3815 BC	65.5 ± 2.3	5092 ± 17	5764
3825 BC	71.4 ± 2.3	5058 ± 17	5774
3835 BC	73.1 ± 2.4	5055 ± 18	5784
3845 BC	71.5 ± 2.4	5077 ± 18	5794
3855 BC	71.9 ± 1.4	5084 ± 10	5804
3865 BC	78.1 ± 1.2	5046 ± 10	5814
3875 BC	73.9 ± 1.3	5088 ± 10	5824
3885 BC	87.1 ± 1.6	4999 ± 12	5834
3895 BC	82.5 ± 2.1	5044 ± 15	5844
3905 BC	82.6 ± 1.7	5052 ± 12	5854
3915 BC	81.9 ± 1.7	5067 ± 12	5864
3925 BC	84.0 ± 2.1	5062 ± 16	5874
3935 BC	85.1 ± 2.0	5063 ± 15	5884
3945 BC	81.1 ± 1.7	5102 ± 13	5894
3955 BC	82.0 ± 1.9	5105 ± 15	5904
3965 BC	76.1 ± 1.2	5159 ± 9	5914
3975 BC	74.5 ± 1.2	5181 ± 9	5924
3985 BC	70.3 ± 1.6	5221 ± 12	5934
3995 BC	69.5 ± 1.7	5237 ± 13	5944
4005 BC	69.0 ± 1.8	5251 ± 13	5954
4015 BC	72.1 ± 2.4	5237 ± 18	5964
4025 BC	77.2 ± 1.4	5209 ± 11	5974
4035 BC	78.5 ± 1.2	5209 ± 9	5984
4045 BC	73.7 ± 1.8	5255 ± 13	5994
4085 BC	73.0 ± 2.1	5298 ± 15	6034
4095 BC	74.6 ± 1.7	5296 ± 13	6044
4105 BC	78.4 ± 2.5	5278 ± 18	6054
4115 BC	69.5 ± 1.7	5354 ± 13	6064
4125 BC	80.2 ± 2.5	5284 ± 19	6074
4135 BC	82.0 ± 1.8	5280 ± 13	6084
4155 BC	85.6 ± 2.5	5273 ± 19	6104
4165 BC	80.1 ± 2.5	5323 ± 18	6114
4175 BC	75.3 ± 2.6	5369 ± 19	6124
4185 BC	81.4 ± 2.5	5333 ± 19	6134
4195 BC	84.8 ± 1.8	5318 ± 13	6144
4205 BC	92.6 ± 2.4	5270 ± 18	6154
4215 BC	94.1 ± 2.6	5269 ± 19	6164
4225 BC	81.5 ± 1.8	5372 ± 13	6174
4235 BC	81.5 ± 1.8	5381 ± 13	6184
4245 BC	86.3 ± 1.8	5355 ± 13	6194
4255 BC	79.0 ± 2.9	5419 ± 22	6204
4265 BC	74.8 ± 1.9	5460 ± 14	6214
4275 BC	79.7 ± 3.0	5433 ± 22	6224
4285 BC	81.2 ± 1.8	5433 ± 13	6234
4295 BC	85.5 ± 2.6	5409 ± 20	6244
4305 BC	91.6 ± 2.5	5374 ± 19	6254
4315 BC	92.1 ± 2.6	5380 ± 19	6264
4325 BC	86.7 ± 2.6	5430 ± 19	6274
4335 BC	80.7 ± 1.8	5484 ± 13	6284
4345 BC	78.2 ± 1.8	5513 ± 13	6294

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
4355 BC	74.0 ± 2.6	5553 ± 19	6304
4365 BC	73.8 ± 2.5	5564 ± 19	6314
4375 BC	73.4 ± 1.8	5575 ± 13	6324
4385 BC	78.7 ± 2.6	5547 ± 20	6334
4395 BC	75.4 ± 2.6	5582 ± 20	6344
4405 BC	77.7 ± 2.6	5574 ± 19	6354
4415 BC	73.4 ± 2.6	5616 ± 19	6364
4425 BC	84.7 ± 2.7	5542 ± 20	6374
4435 BC	87.9 ± 2.7	5527 ± 20	6384
4445 BC	83.6 ± 2.6	5569 ± 19	6394
4455 BC	79.7 ± 2.7	5608 ± 20	6404
4465 BC	71.5 ± 1.8	5679 ± 13	6414
4475 BC	73.4 ± 2.6	5675 ± 19	6424
4485 BC	76.3 ± 2.7	5663 ± 20	6434
4495 BC	75.5 ± 2.6	5678 ± 19	6444
4505 BC	76.5 ± 2.5	5681 ± 19	6454
4515 BC	77.3 ± 2.6	5684 ± 19	6464
4525 BC	78.7 ± 2.8	5684 ± 21	6474
4535 BC	79.1 ± 2.6	5690 ± 19	6484
4545 BC	72.6 ± 2.7	5748 ± 21	6494
4555 BC	72.9 ± 2.6	5756 ± 19	6504
4565 BC	72.7 ± 1.9	5767 ± 14	6514
4575 BC	76.0 ± 1.8	5753 ± 13	6524
4585 BC	77.2 ± 1.8	5753 ± 13	6534
4595 BC	76.5 ± 2.6	5768 ± 19	6544
4605 BC	78.0 ± 2.5	5767 ± 19	6554
4615 BC	79.7 ± 2.8	5764 ± 21	6564
4625 BC	74.8 ± 1.6	5810 ± 12	6574
4635 BC	79.0 ± 2.2	5788 ± 16	6584
4645 BC	82.0 ± 1.3	5775 ± 10	6594
4655 BC	82.2 ± 1.8	5784 ± 13	6604
4665 BC	87.5 ± 2.6	5754 ± 19	6614
4675 BC	87.4 ± 2.8	5764 ± 21	6624
4685 BC	86.3 ± 1.5	5782 ± 11	6634
4695 BC	80.3 ± 1.9	5837 ± 14	6644
4705 BC	83.7 ± 1.8	5822 ± 13	6654
4715 BC	79.9 ± 2.5	5859 ± 19	6664
4725 BC	78.5 ± 2.6	5879 ± 19	6674
4735 BC	80.1 ± 2.5	5877 ± 19	6684
4895 BC	86.6 ± 1.9	5985 ± 14	6844
4905 BC	88.1 ± 1.5	5984 ± 11	6854
4915 BC	85.1 ± 2.1	6015 ± 15	6864
4925 BC	83.9 ± 2.6	6033 ± 20	6874
4935 BC	90.0 ± 1.9	5999 ± 14	6884
4945 BC	84.5 ± 1.4	6048 ± 10	6894
4955 BC	86.6 ± 1.8	6042 ± 14	6904
4965 BC	84.9 ± 1.9	6066 ± 14	6914
4975 BC	87.8 ± 1.8	6053 ± 13	6924
4985 BC	88.5 ± 2.0	6058 ± 14	6934
4995 BC	85.2 ± 2.6	6092 ± 19	6944
5005 BC	83.4 ± 2.6	6115 ± 19	6954
5015 BC	88.5 ± 2.7	6087 ± 20	6964
5025 BC	85.8 ± 2.6	6117 ± 19	6974
5035 BC	87.3 ± 2.7	6115 ± 20	6984
5045 BC	85.5 ± 2.7	6138 ± 20	6994
5055 BC	89.4 ± 2.7	6119 ± 20	7004
5065 BC	83.5 ± 2.6	6172 ± 19	7014
5075 BC	82.5 ± 2.7	6189 ± 20	7024
5085 BC	80.4 ± 2.6	6215 ± 19	7034
5095 BC	87.0 ± 1.9	6176 ± 14	7044

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
5105 BC	83.0 ± 2.6	6215 ± 19	7054
5115 BC	92.7 ± 2.5	6153 ± 19	7064
5125 BC	85.1 ± 2.6	6219 ± 19	7074
5135 BC	94.9 ± 2.5	6157 ± 18	7084
5145 BC	95.7 ± 1.9	6160 ± 14	7094
5165 BC	92.7 ± 2.6	6202 ± 19	7114
5175 BC	99.1 ± 2.6	6164 ± 19	7124
5185 BC	106.8 ± 1.9	6119 ± 14	7134
5195 BC	106.7 ± 2.6	6128 ± 19	7144
5205 BC	109.0 ± 2.8	6122 ± 20	7154
5266 BC	95.2 ± 2.8	6281 ± 21	7215
5276 BC	103.6 ± 2.7	6230 ± 20	7225
5286 BC	101.5 ± 1.9	6255 ± 14	7235
5296 BC	102.7 ± 1.9	6256 ± 14	7245
5306 BC	97.9 ± 2.6	6300 ± 19	7255
5316 BC	96.4 ± 1.7	6321 ± 13	7265
5326 BC	88.5 ± 1.8	6389 ± 13	7275
5336 BC	94.9 ± 2.7	6352 ± 20	7285
5346 BC	92.2 ± 2.8	6381 ± 20	7295
5356 BC	96.2 ± 1.9	6361 ± 14	7305
5366 BC	94.8 ± 1.9	6383 ± 14	7315
5376 BC	90.6 ± 2.6	6422 ± 19	7325
5386 BC	91.2 ± 1.9	6427 ± 15	7335
5396 BC	88.0 ± 1.9	6462 ± 15	7345
5406 BC	96.5 ± 2.7	6408 ± 20	7355
5416 BC	100.3 ± 2.9	6390 ± 21	7365
5426 BC	98.7 ± 3.1	6412 ± 23	7375
5436 BC	101.5 ± 2.7	6400 ± 20	7385
5446 BC	100.7 ± 2.7	6416 ± 20	7395
5456 BC	106.5 ± 1.9	6384 ± 14	7405
5466 BC	105.4 ± 2.1	6402 ± 15	7415
5476 BC	95.2 ± 2.6	6485 ± 19	7425
5486 BC	85.4 ± 2.0	6568 ± 15	7435
5496 BC	87.2 ± 2.7	6564 ± 20	7445
5506 BC	92.6 ± 1.9	6534 ± 14	7455
5516 BC	89.2 ± 2.8	6568 ± 20	7465
5526 BC	92.5 ± 2.8	6554 ± 21	7475
5536 BC	88.5 ± 2.8	6593 ± 20	7485
5546 BC	87.3 ± 2.8	6612 ± 21	7495
5556 BC	92.5 ± 2.8	6583 ± 20	7505
5566 BC	81.0 ± 2.7	6678 ± 20	7515
5576 BC	84.9 ± 2.8	6659 ± 21	7525
5586 BC	83.3 ± 2.8	6680 ± 21	7535
5596 BC	98.3 ± 2.8	6580 ± 21	7545
5606 BC	97.4 ± 2.8	6596 ± 21	7555
5616 BC	90.6 ± 1.9	6654 ± 14	7565
5626 BC	82.9 ± 2.7	6722 ± 20	7575
5636 BC	81.0 ± 2.9	6746 ± 22	7585
5646 BC	78.2 ± 1.8	6777 ± 13	7595
5656 BC	85.7 ± 1.8	6731 ± 14	7605
5666 BC	79.4 ± 2.8	6787 ± 21	7615
5676 BC	78.3 ± 1.8	6805 ± 13	7625
5686 BC	81.6 ± 2.6	6790 ± 19	7635
5696 BC	84.0 ± 2.9	6782 ± 21	7645
5706 BC	85.1 ± 1.9	6784 ± 14	7655
5716 BC	82.6 ± 2.9	6812 ± 21	7665
5726 BC	78.7 ± 4.2	6850 ± 32	7675
5736 BC	74.4 ± 2.7	6892 ± 20	7685
5746 BC	74.0 ± 1.9	6905 ± 14	7695
5756 BC	73.6 ± 2.8	6917 ± 21	7705

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
5766 BC	76.9 ± 2.5	6903 ± 19	7715
5776 BC	76.3 ± 2.4	6917 ± 18	7725
5786 BC	77.5 ± 2.5	6918 ± 19	7735
5796 BC	77.4 ± 2.8	6928 ± 21	7745
5806 BC	80.0 ± 2.0	6918 ± 15	7755
5816 BC	76.5 ± 2.8	6955 ± 21	7765
5826 BC	81.7 ± 1.9	6926 ± 14	7775
5836 BC	85.5 ± 2.0	6906 ± 15	7785
5846 BC	77.7 ± 2.8	6975 ± 21	7795
5856 BC	78.3 ± 2.0	6980 ± 15	7805
5866 BC	82.5 ± 1.9	6958 ± 14	7815
5876 BC	82.5 ± 1.9	6968 ± 14	7825
5886 BC	83.6 ± 1.9	6969 ± 15	7835
5896 BC	76.1 ± 3.0	7035 ± 22	7845
5906 BC	81.5 ± 2.4	7005 ± 18	7855
5916 BC	81.8 ± 2.7	7012 ± 20	7865
5926 BC	74.4 ± 2.7	7077 ± 20	7875
5936 BC	73.4 ± 2.9	7094 ± 22	7885
5946 BC	80.3 ± 1.9	7053 ± 15	7895
5956 BC	90.5 ± 2.1	6987 ± 16	7905
5966 BC	92.5 ± 1.9	6982 ± 15	7915
5976 BC	87.0 ± 3.3	7032 ± 25	7925
5986 BC	80.8 ± 2.7	7088 ± 20	7935
5996 BC	80.8 ± 2.6	7097 ± 19	7945
6006 BC	79.3 ± 2.8	7118 ± 21	7955
6016 BC	75.7 ± 3.2	7155 ± 24	7965
6023 BC	70.8 ± 2.8	7198 ± 21	7972
6026 BC	74.8 ± 2.3	7171 ± 17	7975
6036 BC	70.6 ± 2.8	7212 ± 21	7985
6043 BC	81.1 ± 1.9	7142 ± 15	7992
6176 BC	82.5 ± 1.8	7259 ± 13	8125
6186 BC	80.4 ± 2.7	7285 ± 20	8135
6196 BC	86.6 ± 2.1	7248 ± 16	8145
6206 BC	84.0 ± 2.2	7278 ± 16	8155
6216 BC	82.4 ± 3.6	7299 ± 27	8165
6226 BC	79.5 ± 2.8	7331 ± 21	8175
6236 BC	67.1 ± 3.7	7433 ± 28	8185
6246 BC	74.3 ± 2.8	7389 ± 21	8195
6256 BC	70.6 ± 3.6	7426 ± 27	8205
6266 BC	73.7 ± 2.9	7412 ± 22	8215
6276 BC	66.7 ± 3.8	7475 ± 29	8225
6286 BC	79.1 ± 3.0	7392 ± 23	8235
6296 BC	77.7 ± 2.2	7412 ± 16	8245
6306 BC	74.9 ± 2.0	7442 ± 15	8255
6316 BC	83.6 ± 2.3	7388 ± 17	8265
6326 BC	84.4 ± 2.2	7391 ± 16	8275
6336 BC	85.0 ± 2.8	7397 ± 21	8285
6346 BC	83.4 ± 2.0	7418 ± 15	8295
6396 BC	80.4 ± 3.5	7489 ± 26	8345
6406 BC	79.9 ± 2.1	7501 ± 15	8355
6416 BC	81.5 ± 2.0	7500 ± 15	8365
6426 BC	80.2 ± 1.8	7520 ± 14	8375
6436 BC	75.6 ± 3.0	7564 ± 22	8385
6446 BC	75.2 ± 2.0	7576 ± 16	8395
6456 BC	75.2 ± 2.1	7586 ± 16	8405
6466 BC	70.7 ± 2.0	7629 ± 15	8415
6476 BC	68.7 ± 1.7	7655 ± 13	8425
6486 BC	63.5 ± 3.0	7703 ± 23	8435
6496 BC	70.1 ± 3.1	7663 ± 24	8445
(4) 6499 BC	68.3 ± 2.3	7679 ± 17	8448
6506 BC	71.6 ± 2.9	7662 ± 22	8455
(5) 6514 BC	60.4 ± 2.2	7753 ± 17	8463
6516 BC	68.7 ± 2.0	7693 ± 15	8465
6526 BC	70.5 ± 2.0	7690 ± 16	8475
6536 BC	65.5 ± 2.8	7736 ± 21	8485
(8) 6538 BC	61.8 ± 3.2	7766 ± 24	8487
6546 BC	73.4 ± 2.2	7687 ± 16	8495
(8) 6555 BC	75.8 ± 2.2	7677 ± 16	8504
6556 BC	73.1 ± 2.1	7699 ± 16	8505
6566 BC	76.8 ± 3.1	7681 ± 23	8515
6576 BC	69.6 ± 1.7	7745 ± 13	8525
6586 BC	79.7 ± 1.8	7679 ± 13	8535
6596 BC	72.3 ± 2.8	7743 ± 21	8545
(4) 6600 BC	68.2 ± 3.2	7778 ± 24	8549
6606 BC	70.4 ± 1.9	7767 ± 15	8555
6616 BC	68.2 ± 2.1	7792 ± 16	8565
6626 BC	76.5 ± 2.2	7742 ± 16	8575
6629 BC	65.5 ± 2.8	7826 ± 21	8578
6636 BC	74.9 ± 2.1	7763 ± 16	8585
6646 BC	67.2 ± 1.5	7830 ± 11	8595
6656 BC	64.6 ± 3.3	7860 ± 25	8605
(6) 6662 BC	60.0 ± 3.3	7900 ± 25	8611
6666 BC	68.0 ± 3.3	7844 ± 25	8615
6676 BC	69.8 ± 1.8	7841 ± 14	8625
6686 BC	69.3 ± 3.1	7854 ± 23	8635
(11) 6693 BC	62.7 ± 3.1	7910 ± 24	8642
6696 BC	69.8 ± 3.5	7859 ± 26	8645
(5) 6701 BC	60.5 ± 3.0	7934 ± 23	8650
6706 BC	64.4 ± 3.1	7910 ± 23	8655
6716 BC	64.2 ± 2.3	7921 ± 18	8665
(5) 6721 BC	63.5 ± 3.2	7932 ± 24	8670
6726 BC	71.5 ± 2.8	7876 ± 21	8675
6736 BC	67.6 ± 3.2	7915 ± 24	8685
(5) 6741 BC	68.8 ± 3.0	7911 ± 23	8690
6746 BC	72.6 ± 1.9	7886 ± 14	8695
6756 BC	69.2 ± 1.9	7922 ± 15	8705
(5) 6761 BC	69.3 ± 3.0	7927 ± 23	8710
6766 BC	73.1 ± 1.8	7903 ± 14	8715
(3) 6767 BC	67.6 ± 3.3	7945 ± 25	8716
6776 BC	71.4 ± 3.1	7925 ± 23	8725
6786 BC	71.1 ± 2.2	7937 ± 16	8735
(3) 6787 BC	70.3 ± 3.4	7944 ± 26	8736
6796 BC	74.4 ± 3.6	7922 ± 27	8745
(3) 6804 BC	73.2 ± 3.4	7939 ± 26	8753
6806 BC	75.7 ± 3.0	7922 ± 22	8755
6816 BC	76.2 ± 2.1	7927 ± 16	8765
6826 BC	74.9 ± 2.3	7948 ± 18	8775
(4) 6831 BC	64.8 ± 3.4	8028 ± 26	8780
6836 BC	77.5 ± 3.6	7938 ± 27	8785
6846 BC	69.4 ± 2.9	8009 ± 22	8795
(4) 6853 BC	68.3 ± 3.4	8023 ± 26	8802
6856 BC	80.4 ± 3.6	7936 ± 27	8805
6866 BC	69.6 ± 2.8	8026 ± 21	8815
(5) 6871 BC	66.8 ± 3.2	8052 ± 25	8820
6876 BC	75.5 ± 2.1	7992 ± 16	8825
6886 BC	81.6 ± 3.0	7956 ± 22	8835
6896 BC	83.5 ± 2.1	7952 ± 16	8845
(5) 6901 BC	78.6 ± 3.2	7993 ± 24	8850
6906 BC	86.8 ± 3.0	7937 ± 22	8855
6916 BC	88.3 ± 3.7	7936 ± 27	8865

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
(5) 6921 BC	82.0 ± 3.2	7988 ± 24	8870
6926 BC	78.7 ± 1.6	8016 ± 12	8875
(11) 6933 BC	86.3 ± 4.8	7967 ± 36	8882
6936 BC	89.6 ± 2.8	7946 ± 21	8885
(6) 6940 BC	87.6 ± 3.3	7964 ± 24	8889
6946 BC	93.1 ± 2.9	7930 ± 21	8895
6956 BC	86.9 ± 2.7	7984 ± 20	8905
(5) 6961 BC	88.8 ± 3.5	7976 ± 26	8910
6963 BC	85.9 ± 3.3	7999 ± 24	8912
6966 BC	90.5 ± 2.3	7969 ± 17	8915
6976 BC	97.6 ± 3.7	7925 ± 27	8925
6986 BC	91.7 ± 2.3	7978 ± 17	8935
6996 BC	98.2 ± 3.3	7941 ± 24	8945
(5) 7001 BC	95.7 ± 4.4	7964 ± 32	8950
7006 BC	94.6 ± 1.9	7976 ± 14	8955
(11) 7013 BC	93.8 ± 1.8	7989 ± 13	8962
7016 BC	99.5 ± 2.2	7950 ± 16	8965
7026 BC	96.8 ± 2.3	7981 ± 17	8975
(5) 7031 BC	88.3 ± 3.3	8048 ± 24	8980
7036 BC	94.4 ± 3.2	8007 ± 24	8985
7046 BC	98.4 ± 3.1	7988 ± 23	8995
(5) 7051 BC	91.8 ± 3.2	8041 ± 24	9000
7056 BC	98.6 ± 3.1	7996 ± 22	9005
(5) 7061 BC	83.4 ± 3.2	8113 ± 24	9010
7066 BC	84.1 ± 2.3	8113 ± 17	9015
7076 BC	86.7 ± 2.1	8103 ± 16	9025
7086 BC	79.2 ± 2.2	8168 ± 16	9035
7096 BC	81.4 ± 3.8	8162 ± 29	9045
7106 BC	90.3 ± 2.9	8105 ± 21	9055
(5) 7111 BC	78.7 ± 3.2	8196 ± 24	9060
7116 BC	91.8 ± 2.8	8104 ± 21	9065
7126 BC	86.9 ± 4.0	8150 ± 30	9075
7136 BC	90.4 ± 2.3	8134 ± 17	9085
7146 BC	84.1 ± 2.1	8191 ± 16	9095
7156 BC	96.4 ± 3.0	8109 ± 22	9105
7166 BC	90.9 ± 2.2	8159 ± 16	9115
7176 BC	92.0 ± 2.2	8161 ± 16	9125
7186 BC	83.8 ± 2.1	8232 ± 16	9135
(4) 7190 BC	88.5 ± 3.3	8200 ± 24	9139
7196 BC	84.2 ± 1.8	8238 ± 14	9145
(2) 7200 BC	79.6 ± 5.5	8275 ± 41	9149
7326 BC	96.7 ± 3.4	8272 ± 25	9275
7336 BC	95.5 ± 4.3	8291 ± 32	9285
7346 BC	97.1 ± 3.0	8289 ± 22	9295
7356 BC	93.6 ± 3.0	8324 ± 22	9305
7378 BC	97.7 ± 3.1	8315 ± 22	9327
7388 BC	89.5 ± 2.7	8385 ± 20	9337
7398 BC	104.0 ± 3.3	8289 ± 24	9347
7408 BC	96.2 ± 4.7	8356 ± 34	9357
7418 BC	111.0 ± 3.3	8258 ± 24	9367
7428 BC	97.4 ± 3.7	8366 ± 27	9377
7438 BC	106.3 ± 3.5	8311 ± 25	9387
7448 BC	118.8 ± 3.9	8230 ± 28	9397
7458 BC	95.7 ± 2.3	8408 ± 17	9407
7468 BC	108.6 ± 3.1	8324 ± 23	9417
7478 BC	109.3 ± 3.0	8328 ± 22	9427
7488 BC	101.9 ± 3.1	8392 ± 23	9437
7576 BC	98.2 ± 3.4	8504 ± 25	9525
7586 BC	94.3 ± 3.1	8543 ± 23	9535
7588 BC	85.9 ± 3.3	8607 ± 25	9537

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
7598 BC	88.5 ± 3.2	8597 ± 24	9547
7608 BC	81.0 ± 3.0	8663 ± 22	9557
7618 BC	73.6 ± 3.0	8727 ± 22	9567
7628 BC	88.7 ± 3.2	8625 ± 24	9577
7638 BC	82.1 ± 3.4	8683 ± 25	9587
7648 BC	88.9 ± 3.4	8643 ± 25	9597
7658 BC	83.5 ± 3.3	8692 ± 25	9607
7678 BC	97.4 ± 4.6	8609 ± 34	9627
7688 BC	81.1 ± 2.8	8739 ± 21	9637
7698 BC	86.0 ± 3.4	8712 ± 25	9647
7708 BC	89.8 ± 5.1	8694 ± 38	9657
7718 BC	86.6 ± 4.2	8728 ± 31	9667
7728 BC	89.4 ± 4.2	8716 ± 31	9677
7738 BC	82.9 ± 4.2	8774 ± 31	9687
7748 BC	97.4 ± 4.5	8677 ± 33	9697
8007 BC	99.0 ± 2.2	8917 ± 16	9956
8017 BC*	103.7 ± 3.1	8893 ± 23	9966
8027 BC*	105.0 ± 3.1	8893 ± 23	9976
8037 BC*	107.3 ± 4.4	8886 ± 32	9986
8047 BC*	108.6 ± 4.4	8886 ± 32	9996
8057 BC	114.6 ± 3.1	8853 ± 23	10006
8067 BC	111.9 ± 2.9	8883 ± 21	10016
8077 BC	114.8 ± 3.2	8871 ± 23	10026
8087 BC	111.2 ± 2.1	8906 ± 15	10036
8097 BC	114.0 ± 3.3	8896 ± 24	10046
8107 BC	122.9 ± 3.1	8842 ± 22	10056
8117 BC	120.9 ± 3.0	8866 ± 22	10066
8127 BC	116.4 ± 3.7	8908 ± 27	10076
8137 BC	119.1 ± 3.7	8898 ± 27	10086
8147 BC	128.4 ± 3.3	8841 ± 24	10096
8157 BC	130.6 ± 2.6	8835 ± 18	10106
8167 BC	126.5 ± 3.3	8874 ± 24	10116
8177 BC	123.8 ± 3.2	8903 ± 23	10126
8187 BC	132.1 ± 3.3	8854 ± 23	10136
8197 BC	130.2 ± 3.3	8877 ± 24	10146
8207 BC	127.6 ± 3.5	8905 ± 25	10156
8217 BC	122.4 ± 3.4	8952 ± 24	10166
8227 BC	120.3 ± 3.4	8977 ± 24	10176
8237 BC	122.1 ± 2.8	8974 ± 20	10186
8247 BC	117.7 ± 2.8	9015 ± 20	10196
8257 BC	124.1 ± 2.5	8978 ± 18	10206
8267 BC	116.9 ± 2.3	9041 ± 17	10216
8277 BC	110.8 ± 2.0	9094 ± 14	10226
8287 BC	106.2 ± 3.5	9137 ± 26	10236
8297 BC	105.1 ± 3.4	9155 ± 25	10246
8307 BC	104.4 ± 2.3	9170 ± 17	10256
8317 BC	103.2 ± 2.3	9189 ± 17	10266
8327 BC	104.9 ± 3.4	9185 ± 25	10276
8337 BC	101.9 ± 4.0	9216 ± 29	10286
8347 BC	98.9 ± 2.0	9247 ± 15	10296
8357 BC	109.7 ± 3.9	9180 ± 29	10306
8367 BC	104.0 ± 3.3	9231 ± 24	10316
8377 BC	115.0 ± 3.2	9161 ± 23	10326
8387 BC	107.9 ± 3.2	9222 ± 23	10336
8397 BC	116.5 ± 3.4	9169 ± 25	10346
8407 BC	120.1 ± 3.2	9153 ± 23	10356
8417 BC	115.7 ± 3.2	9194 ± 23	10366
8427 BC	117.2 ± 3.2	9194 ± 23	10376
8437 BC	116.4 ± 3.4	9209 ± 25	10386
8447 BC	118.4 ± 3.2	9204 ± 23	10396

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
8457 BC	115.6 ± 3.2	9234 ± 23	10406
8467 BC	116.0 ± 3.4	9241 ± 24	10416
8477 BC	116.8 ± 3.2	9245 ± 23	10426
8487 BC	109.0 ± 2.4	9311 ± 17	10436
8497 BC	121.8 ± 3.1	9229 ± 22	10446
8507 BC	122.9 ± 3.4	9230 ± 24	10456
8517 BC	123.6 ± 3.2	9235 ± 23	10466
8527 BC	122.3 ± 2.4	9254 ± 17	10476
8537 BC	120.1 ± 2.4	9280 ± 18	10486
8547 BC	121.8 ± 3.3	9277 ± 24	10496
8557 BC	119.9 ± 3.1	9300 ± 22	10506
8567 BC	116.3 ± 3.2	9336 ± 23	10516
8577 BC	121.8 ± 2.5	9306 ± 18	10526
8587 BC	120.3 ± 3.2	9327 ± 23	10536
8597 BC	123.4 ± 2.5	9314 ± 18	10546
8607 BC	126.2 ± 3.9	9304 ± 28	10556
8617 BC	121.3 ± 3.7	9349 ± 27	10566
8627 BC	122.4 ± 3.5	9350 ± 25	10576
8637 BC	123.5 ± 3.3	9352 ± 24	10586
8647 BC	119.1 ± 2.4	9394 ± 17	10596
8657 BC	116.9 ± 5.1	9419 ± 37	10606
8667 BC	127.6 ± 3.2	9352 ± 23	10616
8677 BC	130.4 ± 3.4	9342 ± 24	10626
8687 BC	127.8 ± 2.3	9371 ± 16	10636
8697 BC	118.0 ± 3.4	9450 ± 24	10646
8707 BC	124.3 ± 3.3	9415 ± 24	10656
8717 BC	128.9 ± 3.4	9391 ± 25	10666
8727 BC	126.9 ± 3.3	9416 ± 23	10676
8737 BC	126.1 ± 2.5	9430 ± 18	10686
8747 BC	123.3 ± 3.4	9460 ± 25	10696
8837 BC	126.9 ± 3.2	9522 ± 23	10786
8847 BC	117.4 ± 3.4	9600 ± 25	10796
8857 BC	121.9 ± 3.3	9578 ± 23	10806
8867 BC	116.1 ± 3.5	9629 ± 25	10816
8877 BC	127.3 ± 3.3	9559 ± 23	10826
8887 BC	129.2 ± 2.4	9553 ± 17	10836
8897 BC	134.9 ± 2.3	9525 ± 17	10846
8907 BC	126.2 ± 3.8	9595 ± 27	10856
8917 BC	121.8 ± 3.5	9636 ± 25	10866
8927 BC	126.5 ± 3.5	9613 ± 25	10876
8937 BC	124.3 ± 3.5	9638 ± 25	10886
8947 BC	127.8 ± 3.5	9623 ± 25	10896
8957 BC	124.7 ± 3.4	9655 ± 24	10906
8967 BC	133.8 ± 3.2	9599 ± 23	10916
8977 BC	132.7 ± 3.5	9617 ± 25	10926
8987 BC	132.9 ± 3.5	9625 ± 25	10936
8997 BC	143.6 ± 3.1	9560 ± 22	10946
9007 BC	144.4 ± 2.5	9564 ± 17	10956
9017 BC	149.1 ± 2.7	9541 ± 19	10966
9067 BC	152.2 ± 3.3	9568 ± 23	11016
9077 BC	159.3 ± 2.5	9528 ± 17	11026
9087 BC	163.1 ± 3.3	9511 ± 23	11036
9097 BC	158.7 ± 3.5	9552 ± 24	11046

TABLE 1. Decadal Measurements *(Continued)*

cal AD/BC	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
9107 BC	161.6 ± 3.3	9541 ± 23	11056
9117 BC	157.8 ± 3.5	9577 ± 24	11066
9127 BC	154.3 ± 3.3	9611 ± 23	11076
9137 BC	156.7 ± 3.5	9604 ± 24	11086
9147 BC	151.2 ± 3.3	9652 ± 23	11096
9157 BC	157.1 ± 2.4	9622 ± 17	11106
9172 BC	153.5 ± 3.2	9660 ± 23	11121
9182 BC	158.3 ± 3.6	9637 ± 25	11131
9192 BC	157.9 ± 3.4	9649 ± 24	11141
9202 BC	158.4 ± 3.5	9655 ± 25	11151
9212 BC	154.8 ± 3.4	9690 ± 24	11161
9222 BC	147.1 ± 3.4	9753 ± 24	11171
9232 BC	151.2 ± 3.3	9735 ± 23	11181
9268 BC	146.9 ± 3.6	9800 ± 25	11217
9278 BC	143.1 ± 3.4	9836 ± 24	11227
9288 BC	141.5 ± 3.6	9857 ± 25	11237
9292 BC	135.4 ± 3.6	9904 ± 26	11241
9298 BC	135.5 ± 3.4	9909 ± 24	11247
9302 BC	142.6 ± 2.5	9863 ± 17	11251
9308 BC	137.3 ± 2.1	9906 ± 15	11257
9312 BC	127.8 ± 3.5	9977 ± 25	11261
9322 BC	137.4 ± 3.6	9920 ± 26	11271
9368 BC	131.3 ± 2.4	10007 ± 17	11317
9378 BC	141.9 ± 3.5	9942 ± 25	11327
9388 BC	140.9 ± 3.5	9959 ± 24	11337
9398 BC	134.8 ± 2.3	10011 ± 17	11347
9408 BC	131.8 ± 3.6	10042 ± 25	11357
9418 BC	132.2 ± 3.5	10049 ± 25	11367
9428 BC	131.4 ± 3.3	10065 ± 24	11377
9438 BC	140.1 ± 2.7	10013 ± 19	11387
9448 BC	145.2 ± 3.2	9987 ± 22	11397
9458 BC	144.8 ± 3.2	9999 ± 22	11407
9468 BC	145.9 ± 3.1	10001 ± 22	11417
9478 BC	142.4 ± 4.0	10036 ± 28	11427
9488 BC	146.4 ± 3.6	10017 ± 25	11437
9498 BC	140.3 ± 4.1	10069 ± 29	11447
9508 BC	142.0 ± 3.2	10068 ± 22	11457
9518 BC	142.8 ± 2.8	10072 ± 20	11467
9528 BC	156.3 ± 3.5	9987 ± 25	11477
9538 BC	152.0 ± 3.5	10027 ± 25	11487
9548 BC	147.7 ± 3.4	10066 ± 24	11497
9558 BC	158.8 ± 3.6	9999 ± 25	11507
9568 BC	161.2 ± 3.5	9992 ± 24	11517
9578 BC	164.0 ± 3.5	9982 ± 25	11527
9588 BC	165.4 ± 3.5	9982 ± 24	11537
9598 BC	165.0 ± 3.5	9995 ± 24	11547
9608 BC	157.7 ± 3.4	10055 ± 23	11557
9618 BC	157.5 ± 2.7	10066 ± 19	11567
9628 BC	150.2 ± 3.8	10126 ± 26	11577
9638 BC	153.8 ± 3.8	10111 ± 27	11587
9648 BC	157.8 ± 2.2	10093 ± 16	11597
9658 BC	155.0 ± 3.5	10122 ± 24	11607
9668 BC	157.9 ± 3.4	10112 ± 23	11617

TABLE 2. ^{14}C age determinations made at the University of Washington Quaternary Isotope Lab (Seattle). The cal AD (or cal BP) ages represent determinations on single-year wood sections from one or more North American trees, with the exception that from AD 1890–1914 the ^{14}C ages were constructed from the average of single-year determinations on an Alaskan tree and 2- and 3-yr samples of a Pacific Northwest tree. For the latter tree the same ^{14}C age was used for each single year of the 2–3 yr sample, with the standard deviation in the age increased by 1.4 or 1.7 times. $\Delta^{14}C$ was calculated as defined in Stuiver and Polach (1977). No error multiplier has been included in the standard deviations.

TABLE 2. Single-Year Data

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1954	−22.5 ± 2.7	179 ± 23	−4
1953	−24.1 ± 1.8	193 ± 15	−3
1952	−25.8 ± 1.6	208 ± 14	−2
1951	−25.5 ± 1.7	207 ± 14	−1
1950	−25.8 ± 1.7	210 ± 14	0
1949	−26.0 ± 1.7	213 ± 14	1
1948	−22.1 ± 1.8	182 ± 15	2
1947	−21.6 ± 1.6	178 ± 13	3
1945	−22.4 ± 1.9	187 ± 16	5
1944	−23.1 ± 1.3	193 ± 10	6
1943	−24.3 ± 1.2	204 ± 10	7
1942	−20.4 ± 1.2	174 ± 10	8
1941	−19.9 ± 1.9	170 ± 16	9
1940	−23.0 ± 2.0	197 ± 16	10
1939	−20.1 ± 1.8	174 ± 15	11
1938	−16.2 ± 1.2	143 ± 10	12
1937	−17.2 ± 1.6	152 ± 13	13
1936	−16.5 ± 1.7	147 ± 14	14
1935	−16.7 ± 1.9	150 ± 15	15
1934	−15.6 ± 1.8	142 ± 15	16
1933	−18.6 ± 1.8	167 ± 14	17
1932	−20.7 ± 1.2	186 ± 10	18
1931	−16.6 ± 1.8	153 ± 15	19
1930	−14.5 ± 1.2	137 ± 10	20
1929	−18.2 ± 1.0	168 ± 8	21
1928	−15.5 ± 1.2	147 ± 10	22
1927	−15.7 ± 1.1	149 ± 9	23
1926	−14.7 ± 1.2	143 ± 9	24
1925	−12.3 ± 1.2	124 ± 9	25
1924	−11.4 ± 1.2	117 ± 10	26
1923	−14.1 ± 1.0	140 ± 8	27
1922	−12.2 ± 1.2	126 ± 10	28
1921	−12.9 ± 1.2	133 ± 10	29
1920	−14.1 ± 1.3	144 ± 10	30
1919	−11.1 ± 1.2	120 ± 10	31
1918	−11.3 ± 1.0	122 ± 8	32
1917	−9.7 ± 1.0	110 ± 8	33
1916	−11.0 ± 1.2	122 ± 10	34
1915	−6.3 ± 1.7	85 ± 14	35
1914	−7.1 ± 1.0	92 ± 8	36
1913	−7.3 ± 0.9	95 ± 7	37

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1912	−8.1 ± 1.1	101 ± 9	38
1911	−8.3 ± 1.2	105 ± 10	39
1910	−7.5 ± 1.2	99 ± 10	40
1909	−6.5 ± 1.3	92 ± 11	41
1908	−8.4 ± 1.4	108 ± 12	42
1907	−6.2 ± 1.3	92 ± 10	43
1906	−4.4 ± 1.2	78 ± 10	44
1905	−5.5 ± 1.4	88 ± 11	45
1904	−4.3 ± 1.4	79 ± 11	46
1903	−4.2 ± 1.3	80 ± 11	47
1902	−2.9 ± 1.1	70 ± 9	48
1901	1.2 ± 1.1	38 ± 9	49
1900	−2.9 ± 1.5	72 ± 12	50
1899	−4.5 ± 1.3	86 ± 11	51
1898	−3.4 ± 1.5	78 ± 12	52
1897	−3.4 ± 1.4	79 ± 11	53
1896	−1.3 ± 1.2	63 ± 10	54
1895	−2.1 ± 1.2	71 ± 10	55
1894	−2.2 ± 1.2	72 ± 10	56
1893	−2.2 ± 1.3	73 ± 10	57
1892	−4.4 ± 1.3	92 ± 10	58
1891	−3.2 ± 1.4	83 ± 11	59
1890	−4.3 ± 1.4	93 ± 11	60
1889	−5.4 ± 1.1	103 ± 9	61
1888	−6.5 ± 1.8	113 ± 15	62
1887	−6.6 ± 1.1	115 ± 9	63
1886	−6.1 ± 1.1	111 ± 9	64
1885	−4.5 ± 1.2	100 ± 9	65
1884	−3.3 ± 1.7	91 ± 14	66
1883	−2.7 ± 1.2	87 ± 10	67
1882	−1.5 ± 1.2	78 ± 9	68
1881	−4.9 ± 1.6	107 ± 13	69
1880	−2.7 ± 1.6	90 ± 13	70
1879	−5.1 ± 1.5	110 ± 12	71
1878	−5.9 ± 1.1	118 ± 9	72
1877	−4.9 ± 1.5	110 ± 12	73
1876	−7.4 ± 1.7	132 ± 14	74
1875	−5.0 ± 1.1	113 ± 9	75
1874	−6.1 ± 1.8	123 ± 14	76
1873	−6.2 ± 1.2	124 ± 10	77
1872	−4.7 ± 1.1	114 ± 9	78

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1871	−4.6 ± 1.4	114 ± 11	79
1870	−4.8 ± 1.3	116 ± 11	80
1869	−4.3 ± 1.3	114 ± 10	81
1868	−4.4 ± 1.3	115 ± 11	82
1867	−3.3 ± 1.0	108 ± 8	83
1866	−5.0 ± 1.8	122 ± 15	84
1865	−3.1 ± 1.5	107 ± 12	85
1864	−5.6 ± 1.6	129 ± 13	86
1863	−5.8 ± 1.7	131 ± 14	87
1862	−7.2 ± 2.0	144 ± 16	88
1861	−3.0 ± 1.7	110 ± 13	89
1860	−4.4 ± 1.7	123 ± 13	90
1859	−3.1 ± 1.8	113 ± 15	91
1858	−2.1 ± 1.9	106 ± 15	92
1857	−5.0 ± 1.6	131 ± 13	93
1856	−4.0 ± 1.2	124 ± 10	94
1855	−4.0 ± 1.6	125 ± 13	95
1854	−4.1 ± 2.6	126 ± 21	96
1853	−3.6 ± 1.3	123 ± 11	97
1852	0.1 ± 2.5	95 ± 20	98
1851	−2.5 ± 2.5	116 ± 20	99
1850	−1.4 ± 2.5	109 ± 20	100
1849	−0.5 ± 1.5	99 ± 15	101
1848	−1.9 ± 1.8	114 ± 15	102
1847	−0.7 ± 1.7	106 ± 14	103
1846	−0.4 ± 1.7	104 ± 14	104
1845	−2.5 ± 2.5	122 ± 20	105
1844	−0.8 ± 1.2	109 ± 10	106
1843	−2.0 ± 1.0	120 ± 8	107
1842	−1.3 ± 1.4	116 ± 11	108
1841	−4.7 ± 1.7	143 ± 14	109
1840	−1.0 ± 1.7	115 ± 14	110
1839	−1.2 ± 1.7	117 ± 14	111
1838	−2.5 ± 0.9	129 ± 8	112
1837	−3.4 ± 1.2	137 ± 10	113
1836	0.2 ± 1.2	109 ± 10	114
1835	0.0 ± 1.6	112 ± 13	115
1834	−0.1 ± 1.9	114 ± 16	116
1833	0.5 ± 1.4	110 ± 11	117
1832	2.2 ± 1.4	97 ± 11	118
1831	1.4 ± 1.2	104 ± 10	119
1830	3.8 ± 1.6	86 ± 13	120
1829	5.2 ± 1.6	76 ± 13	121
1828	2.8 ± 1.0	96 ± 8	122
1827	4.4 ± 1.2	84 ± 9	123
1826	2.2 ± 1.6	103 ± 13	124
1825	1.9 ± 1.6	107 ± 13	125
1824	1.0 ± 1.2	114 ± 10	126
1823	3.0 ± 1.7	100 ± 14	127
1822	0.3 ± 1.2	122 ± 10	128
1821	3.6 ± 1.0	96 ± 8	129
1820	3.4 ± 1.0	99 ± 8	130
1819	−1.4 ± 2.0	139 ± 16	131

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1818	6.1 ± 1.3	79 ± 10	132
1817	6.2 ± 1.9	80 ± 16	133
1816	5.8 ± 1.8	84 ± 14	134
1815	1.7 ± 1.8	118 ± 14	135
1814	0.8 ± 2.0	126 ± 16	136
1813	1.5 ± 1.2	121 ± 10	137
1812	2.5 ± 2.0	114 ± 16	138
1811	1.6 ± 2.0	122 ± 16	139
1810	2.1 ± 1.9	119 ± 15	140
1809	−0.1 ± 1.8	138 ± 15	141
1808	−5.5 ± 1.8	183 ± 14	142
1807	−1.4 ± 1.3	150 ± 11	143
1806	−3.7 ± 1.8	170 ± 14	144
1805	−1.6 ± 1.7	154 ± 14	145
1804	−1.5 ± 1.7	154 ± 14	146
1803	−3.4 ± 1.7	170 ± 14	147
1802	−2.5 ± 1.3	164 ± 10	148
1801	−5.0 ± 1.2	185 ± 10	149
1800	−0.1 ± 1.7	147 ± 14	150
1799	−1.0 ± 1.7	155 ± 14	151
1798	−4.1 ± 1.2	181 ± 10	152
1797	−5.0 ± 1.7	189 ± 14	153
1796	−9.3 ± 1.8	225 ± 14	154
1795	−9.7 ± 2.0	229 ± 16	155
1794	−9.4 ± 1.7	228 ± 14	156
1793	−7.8 ± 1.7	215 ± 14	157
1792	−10.7 ± 1.8	240 ± 15	158
1791	−7.1 ± 1.8	212 ± 15	159
1790	−7.3 ± 1.7	214 ± 14	160
1789	−6.6 ± 1.8	209 ± 14	161
1788	−10.2 ± 1.8	240 ± 15	162
1787	−8.2 ± 1.7	224 ± 14	163
1786	−7.8 ± 2.3	222 ± 19	164
1785	−7.2 ± 1.4	219 ± 12	165
1784	−7.7 ± 1.7	224 ± 14	166
1781	−5.1 ± 1.2	205 ± 10	169
1780	−1.4 ± 1.2	176 ± 10	170
1779	−0.4 ± 1.7	170 ± 14	171
1778	0.2 ± 1.7	165 ± 14	172
1777	1.4 ± 1.3	157 ± 10	173
1776	2.5 ± 1.2	149 ± 10	174
1775	1.1 ± 1.7	162 ± 14	175
1774	−1.3 ± 1.7	181 ± 13	176
1773	1.4 ± 1.2	161 ± 10	177
1772	−0.1 ± 1.3	174 ± 11	178
1771	1.3 ± 1.7	164 ± 14	179
1770	0.0 ± 1.7	175 ± 14	180
1769	0.1 ± 1.7	175 ± 14	181
1768	−0.8 ± 1.7	183 ± 14	182
1767	−0.6 ± 1.7	183 ± 14	183
1766	1.5 ± 1.7	167 ± 14	184
1765	2.1 ± 1.7	163 ± 14	185
1764	2.9 ± 1.7	157 ± 14	186

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1763	−0.7 ± 1.7	187 ± 13	187
1762	2.6 ± 1.7	162 ± 14	188
1761	4.6 ± 1.2	147 ± 10	189
1760	4.6 ± 1.3	148 ± 10	190
1759	5.3 ± 1.3	143 ± 10	191
1758	6.0 ± 1.0	138 ± 8	192
1757	4.3 ± 1.3	153 ± 11	193
1756	3.6 ± 1.1	160 ± 9	194
1755	3.8 ± 1.2	159 ± 10	195
1754	4.5 ± 1.8	155 ± 14	196
1753	6.0 ± 1.1	143 ± 9	197
1752	4.7 ± 1.7	155 ± 14	198
1751	2.5 ± 1.3	174 ± 11	199
1750	5.1 ± 1.2	154 ± 10	200
1748	4.5 ± 1.7	160 ± 14	202
1747	6.9 ± 1.7	142 ± 14	203
1746	7.4 ± 1.2	139 ± 10	204
1745	4.6 ± 1.3	162 ± 10	205
1744	2.8 ± 1.7	178 ± 14	206
1743	5.0 ± 1.1	161 ± 9	207
1742	5.5 ± 1.8	158 ± 14	208
1741	1.1 ± 1.3	195 ± 10	209
1740	5.6 ± 1.7	159 ± 14	210
1739	6.4 ± 1.3	154 ± 10	211
1738	7.2 ± 1.7	148 ± 14	212
1737	7.3 ± 2.0	149 ± 16	213
1736	7.4 ± 2.0	149 ± 16	214
1735	7.3 ± 1.8	150 ± 15	215
1734	8.9 ± 2.3	139 ± 18	216
1733	8.9 ± 1.8	140 ± 15	217
1732	7.1 ± 1.4	155 ± 12	218
1731	5.6 ± 1.4	168 ± 11	219
1730	10.6 ± 1.8	129 ± 15	220
1729	12.8 ± 1.8	113 ± 14	221
1728	11.6 ± 1.8	123 ± 15	222
1727	14.2 ± 1.8	103 ± 15	223
1726	18.0 ± 1.5	75 ± 12	224
1725	13.1 ± 1.1	114 ± 9	225
1724	12.8 ± 1.0	117 ± 8	226
1723	13.5 ± 1.3	113 ± 10	227
1722	12.7 ± 1.2	120 ± 9	228
1721	13.7 ± 1.2	114 ± 10	229
1720	14.8 ± 1.0	105 ± 8	230
1719	16.3 ± 1.0	94 ± 8	231
1718	17.0 ± 0.8	90 ± 7	232
1717	15.8 ± 1.0	101 ± 8	233
1716	17.5 ± 1.3	88 ± 10	234
1715	16.7 ± 1.2	95 ± 10	235
1714	17.9 ± 1.2	87 ± 10	236
1713	17.6 ± 1.2	90 ± 10	237
1712	13.9 ± 1.2	121 ± 10	238
1711	18.5 ± 0.9	85 ± 7	239
1710	17.5 ± 1.0	94 ± 8	240

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1709	16.9 ± 1.3	100 ± 10	241
1708	15.4 ± 1.2	113 ± 9	242
1707	15.0 ± 0.8	116 ± 7	243
1706	14.4 ± 1.3	122 ± 10	244
1705	16.5 ± 1.3	107 ± 10	245
1704	19.1 ± 0.9	87 ± 7	246
1703	17.7 ± 0.9	99 ± 7	247
1702	15.2 ± 0.8	120 ± 6	248
1701	19.0 ± 1.0	91 ± 8	249
1700	17.5 ± 0.9	104 ± 7	250
1699	18.0 ± 1.1	101 ± 8	251
1698	17.4 ± 1.1	107 ± 8	252
1697	18.2 ± 1.1	101 ± 8	253
1696	16.6 ± 1.0	115 ± 8	254
1695	15.8 ± 0.8	122 ± 6	255
1694	16.3 ± 0.9	119 ± 7	256
1693	15.7 ± 1.0	125 ± 8	257
1692	16.3 ± 1.0	121 ± 8	258
1691	14.7 ± 1.0	134 ± 8	259
1690	13.9 ± 0.9	142 ± 7	260
1689	15.7 ± 1.3	128 ± 11	261
1688	16.6 ± 1.3	122 ± 10	262
1687	14.1 ± 1.1	143 ± 9	263
1686	17.6 ± 0.9	116 ± 8	264
1685	13.5 ± 2.4	150 ± 19	265
1684	13.2 ± 1.8	154 ± 14	266
1683	11.5 ± 1.8	167 ± 14	267
1682	12.2 ± 1.9	163 ± 15	268
1681	12.0 ± 1.8	166 ± 14	269
1680	12.9 ± 1.7	159 ± 13	270
1678	8.5 ± 1.8	197 ± 14	272
1677	9.9 ± 1.2	186 ± 9	273
1676	11.3 ± 1.2	176 ± 10	274
1675	12.0 ± 1.7	172 ± 14	275
1674	9.3 ± 1.4	194 ± 11	276
1673	15.4 ± 1.3	147 ± 10	277
1672	10.9 ± 1.8	183 ± 14	278
1671	15.1 ± 1.3	151 ± 11	279
1670	9.8 ± 1.8	194 ± 14	280
1669	11.2 ± 1.9	184 ± 15	281
1668	12.0 ± 2.0	179 ± 16	282
1667	10.2 ± 1.9	194 ± 15	283
1666	8.3 ± 1.8	209 ± 14	284
1665	6.7 ± 1.4	223 ± 11	285
1664	6.1 ± 1.1	229 ± 9	286
1663	8.7 ± 1.9	209 ± 15	287
1662	7.5 ± 1.8	220 ± 15	288
1661	9.0 ± 1.9	209 ± 15	289
1660	3.9 ± 1.3	250 ± 10	290
1659	6.2 ± 1.9	233 ± 16	291
1658	9.4 ± 1.9	209 ± 15	292
1657	4.4 ± 1.5	249 ± 12	293
1656	4.6 ± 1.6	249 ± 13	294

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1655	6.3 ± 1.6	236 ± 13	295
1654	7.1 ± 1.3	231 ± 10	296
1653	4.0 ± 1.9	256 ± 15	297
1651	4.9 ± 1.9	251 ± 15	299
1650	5.7 ± 1.3	246 ± 10	300
1649	4.0 ± 1.3	260 ± 10	301
1648	3.3 ± 1.8	267 ± 14	302
1647	4.0 ± 1.9	263 ± 16	303
1646	2.6 ± 1.8	275 ± 14	304
1645	2.2 ± 1.7	279 ± 14	305
1644	2.2 ± 1.0	280 ± 8	306
1643	3.8 ± 1.8	268 ± 15	307
1642	1.5 ± 1.8	288 ± 14	308
1641	2.1 ± 2.2	283 ± 17	309
1640	−2.5 ± 1.3	321 ± 11	310
1639	0.6 ± 1.1	298 ± 9	311
1638	−2.6 ± 1.7	324 ± 14	312
1637	0.6 ± 2.2	299 ± 17	313
1636	1.5 ± 1.3	293 ± 10	314
1635	1.3 ± 1.2	295 ± 10	315
1634	−3.4 ± 1.8	334 ± 15	316
1633	−0.2 ± 1.8	310 ± 15	317
1632	−3.6 ± 1.8	338 ± 15	318
1631	−3.3 ± 1.8	337 ± 15	319
1630	−4.0 ± 1.8	343 ± 15	320
1629	−1.0 ± 1.2	319 ± 10	321
1628	−4.7 ± 1.8	351 ± 15	322
1627	−0.4 ± 1.8	317 ± 15	323
1626	−6.4 ± 1.8	366 ± 15	324
1625	−0.8 ± 1.1	322 ± 9	325
1624	−4.0 ± 1.4	349 ± 11	326
1623	2.0 ± 2.0	302 ± 16	327
1622	−2.6 ± 1.3	339 ± 10	328
1621	−2.3 ± 1.8	338 ± 14	329
1620	−0.6 ± 1.3	325 ± 10	330
1619	−0.3 ± 1.8	324 ± 14	331
1618	−1.5 ± 1.7	335 ± 14	332
1617	−4.1 ± 1.8	357 ± 15	333
1616	−5.4 ± 1.7	368 ± 14	334
1615	−4.5 ± 1.3	362 ± 10	335
1614	−1.3 ± 1.8	337 ± 15	336
1613	−5.2 ± 1.7	369 ± 14	337
1612	−1.5 ± 1.8	340 ± 15	338
1611	−6.4 ± 1.3	381 ± 11	339
1610	−2.7 ± 1.8	352 ± 15	340
1609	−3.1 ± 1.6	356 ± 13	341
1608	−3.1 ± 1.4	357 ± 12	342
1607	−4.8 ± 2.0	372 ± 16	343
1606	−4.7 ± 1.1	372 ± 9	344
1605	−5.3 ± 1.4	378 ± 11	345
1604	−7.2 ± 1.3	394 ± 10	346
1603	−4.3 ± 1.9	372 ± 15	347
1602	−2.0 ± 1.8	354 ± 15	348

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1601	−1.5 ± 1.3	351 ± 11	349
1600	0.8 ± 1.2	334 ± 10	350
1599	−1.0 ± 1.8	349 ± 14	351
1598	0.5 ± 1.7	338 ± 14	352
1597	−1.5 ± 1.8	355 ± 15	353
1596	−0.4 ± 1.7	347 ± 14	354
1595	2.2 ± 1.7	327 ± 14	355
1594	2.5 ± 1.8	326 ± 14	356
1593	0.5 ± 1.7	343 ± 13	357
1592	−0.3 ± 2.0	351 ± 16	358
1591	3.7 ± 1.7	319 ± 14	359
1590	4.4 ± 1.8	314 ± 14	360
1589	3.7 ± 1.7	321 ± 14	361
1588	1.1 ± 1.8	343 ± 14	362
1587	1.3 ± 1.7	342 ± 14	363
1586	2.5 ± 1.7	334 ± 14	364
1585	3.7 ± 1.8	325 ± 15	365
1584	0.8 ± 1.8	349 ± 14	366
1583	4.1 ± 1.7	324 ± 13	367
1582	3.1 ± 1.7	333 ± 14	368
1581	−0.2 ± 1.8	361 ± 14	369
1580	3.6 ± 1.7	331 ± 14	370
1579	2.5 ± 1.7	341 ± 14	371
1578	5.2 ± 1.7	320 ± 14	372
1577	3.4 ± 1.8	336 ± 15	373
1576	1.8 ± 1.8	349 ± 14	374
1575	3.9 ± 1.7	334 ± 14	375
1574	4.1 ± 1.8	333 ± 14	376
1573	7.9 ± 1.9	303 ± 15	377
1572	6.3 ± 1.8	317 ± 14	378
1571	5.4 ± 1.9	325 ± 15	379
1570	6.6 ± 1.8	317 ± 15	380
1569	5.6 ± 1.7	325 ± 14	381
1568	4.4 ± 1.8	336 ± 15	382
1567	4.1 ± 1.3	339 ± 10	383
1566	8.0 ± 1.2	309 ± 10	384
1565	7.0 ± 1.9	318 ± 15	385
1564	5.5 ± 1.9	331 ± 16	386
1563	5.1 ± 1.8	335 ± 14	387
1562	5.9 ± 1.7	330 ± 14	388
1561	6.9 ± 1.8	323 ± 15	389
1560	3.2 ± 1.8	354 ± 15	390
1559	7.6 ± 1.8	320 ± 14	391
1558	8.5 ± 1.7	313 ± 14	392
1557	5.7 ± 1.8	337 ± 15	393
1556	9.1 ± 1.8	310 ± 15	394
1555	9.3 ± 1.7	309 ± 13	395
1554	9.2 ± 1.8	311 ± 14	396
1553	7.3 ± 1.8	327 ± 14	397
1552	13.2 ± 2.1	281 ± 16	398
1551	9.7 ± 2.0	310 ± 16	399
1550	9.4 ± 1.1	314 ± 9	400
1549	11.6 ± 2.1	297 ± 17	401

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1548	12.1 ± 1.8	294 ± 14	402
1547	12.6 ± 1.8	291 ± 14	403
1546	8.8 ± 1.8	323 ± 15	404
1545	10.9 ± 1.8	306 ± 14	405
1544	8.6 ± 1.7	325 ± 14	406
1543	10.2 ± 1.6	314 ± 13	407
1542	10.0 ± 1.2	317 ± 10	408
1541	12.1 ± 1.2	301 ± 9	409
1540	10.0 ± 1.2	318 ± 10	410
1539	12.5 ± 1.3	300 ± 10	411
1538	12.3 ± 1.3	302 ± 10	412
1537	15.6 ± 1.2	277 ± 10	413
1536	11.4 ± 1.3	311 ± 10	414
1535	12.4 ± 1.2	305 ± 10	415
1534	11.1 ± 1.3	315 ± 10	416
1533	12.3 ± 1.2	307 ± 10	417
1532	14.5 ± 1.3	291 ± 10	418
1531	14.3 ± 1.7	293 ± 13	419
1530	11.5 ± 1.8	316 ± 14	420

TABLE 2. Single-Year Data *(Continued)*

cal AD	$\Delta^{14}C$ (‰)	^{14}C BP	cal BP
1529	12.8 ± 1.8	307 ± 14	421
1528	12.6 ± 1.6	310 ± 13	422
1527	11.5 ± 1.8	319 ± 14	423
1526	12.4 ± 1.8	313 ± 14	424
1525	10.6 ± 1.3	328 ± 10	425
1524	10.0 ± 1.8	334 ± 14	426
1523	10.2 ± 1.7	334 ± 14	427
1522	9.1 ± 2.0	344 ± 16	428
1521	11.0 ± 2.0	329 ± 16	429
1520	8.5 ± 1.8	350 ± 14	430
1519	6.4 ± 1.9	367 ± 16	431
1517	11.6 ± 1.8	328 ± 14	433
1516	9.2 ± 1.7	348 ± 14	434
1515	8.5 ± 1.6	355 ± 13	435
1514	10.0 ± 1.8	344 ± 14	436
1513	10.5 ± 1.8	341 ± 14	437
1512	10.0 ± 1.8	346 ± 14	438
1511	6.9 ± 1.7	371 ± 13	439
1510	8.5 ± 1.8	359 ± 14	440