

## Measurements of Time Variation of Cosmogenic $^{14}\text{C}$ from 2500-Year-Old Tree Rings

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Although a few reports about the time variations of the  $^{14}\text{C}$  content in tree rings have been given for the 11-year periodicity of solar activity during the 18th-19th centuries, there are no data related to the 11-year cycle for more distant times (i.e. > 1000 years ago). To address this, we have started to measure, at single year intervals, the concentrations of  $^{14}\text{C}$  in old tree rings of wood buried ca. 2500 years ago by a volcanic eruption. Our highly accurate  $^{14}\text{C}$  measuring system is composed of a benzene synthesizer capable of producing a large quantity (10 g) of benzene and a Quantulus 1220<sup>TM</sup> liquid scintillation counting system. The accuracy is < 0.2% for measurements of the  $^{14}\text{C}$  concentration for single-year tree rings. To estimate the calendar age of the wood, we carried out  $^{14}\text{C}$  dating for five tree rings from the wood, sequentially separated by 40 years, 60 years, 60 years, and 45 years. From the results, the wood most probably dates from 430 B.C., using Stuiver's calibration data. We will describe our  $^{14}\text{C}$  concentration data from 22 tree rings, and the age of the wood in detail.