VARIATION OF RADIOCARBON CONTENT IN TREE RINGS DURING THE MAUNDER MINIMUM OF SOLAR ACTIVITY

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We discuss the results of high-precision measurements of radiocarbon abundance in annual tree rings during the time interval including the Maunder minimum. The following conclusions are made:

- 1. During the Maunder minimum, radiocarbon abundance in annual tree rings changed in time, which means that the Sun modulates intensity of cosmic rays even during conditions of extra-low sunspot number.
- 2. We show that during the Maunder minimum, the periods in the time interval, 17-26 years, are more pronounced.
- 3. When the Sun enters the deep minimum and emerges from it, a change of heliomagnetic modulation of the cosmic-ray flux occurs, namely, periods of more than 11 years become more important.

A TANDEM TIME-OF-FLIGHT HIGH-SENSITIVITY MASS SPECTROMETER FOR COSMOGENIC ISOTOPE MEASUREMENTS

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We describe the tandem mass spectrometric setup, TRACE, which includes two steps. The first is a multichangeable ion laser source combined with a high-sensitivity time-of-flight mass spectrometer. The second is a charge-exchange chamber for interaction of ions with energy of about 1 KeV/nucleon passing through thin foils (100 A), and a mass spectrometer for negative single-charged ion analysis. In the first step, molecular ions are eliminated by selection ions with a charge of $Q \ge + 3$. In the next step, isobars are separated by the negative ion instability of interfering elements ¹⁴N, ²⁶Mg and ¹²⁹Xe. We discuss the results of experiments and calculations. The advantages of our TRACE setup are compared with other AMS units.

THE INTERNATIONAL RADIOCARBON DATA BASE AND THE SOUTHEAST MEDITERRANEAN PILOT PROJECT

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One of several pilot projects that emerged from the First American Workshop on the International Radiocarbon Data Base (IRDB) (Kra 1988) is entitled "Paleoenvironment and Human History in the Southeast Mediterranean." Work has begun on data entry, using the software program,