THE VOSTOK $^{10}$Be SPIKES AND AN INTERSTELLAR SHOCK WAVE?

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$^{10}$Be in the Vostok ice core discloses two prominent increases not accompanied by corresponding $^{18}$O enhancements. Raisbeck et al (1987) attribute these to cosmic-ray (CR) increases from geomagnetic field reversals or excursions. Sonett et al (1987) alternatively propose CR increases from propagating supernova shells. A possible source is the North Polar Spur (NPS) (Davelaar et al 1980). The recent uranium/thorium dating of Barbados corals implies radiocarbon ages that are too young (Bard et al 1990). This is in accord qualitatively with a $^{14}$C burst. We review whether the atmosphere inventory memory is consistent with reasonable ocean-atmosphere transfer rates.

REFERENCES


ACCURACY, PRECISION AND THROUGHPUT OF $^{14}$C MEASUREMENTS AT THE CENTER FOR ACCELERATOR MASS SPECTROMETRY (AMS)

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The AMS facility at Lawrence Livermore National Laboratory (LLNL) has been making $^{14}$C measurements for over one year. During that year, measurement precision, specified as the deviation among multiple measures on single samples, varied between 1% and 5%. Accuracy has remained within the stated precision during most tests, indicating that the errors are seldom systematic. The sources of the imprecisions are being discovered and successively eliminated. The stability of the accelerator has been a limiting factor, which improves as the accelerator is conditioned to higher voltages and better control is implemented. The output of the multisample, high-intensity ion source and its emittance have been improved through replacement of the ionizer and modification of the source geometry. Further modifications are planned to better couple the ion source to the isotope injection optics. $^{14}$C count rates have been in excess of 250 cps for modern material. Less than a minute is required to make individual measurements to 1% counting precision for contemporary samples. We introduced an efficient program for collecting multiparameter data on a Macintosh II CX, which stores summarized data directly into a spreadsheet format for rapid summation and analysis. Over 500 unknown samples for archaeology, atmospheric science, biomedicine, geology and oceanography have been measured in the first year of operation.