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№ 19113

COSMOGENIC ^{26}AL CHRONOLOGY OF THE LATE WISCONSINAN GLACIAL MAXIMUM IN NORTH-CENTRAL NEW JERSEY.

LARSEN, Patrick L., BIERMAN, Paul R., University of Vermont, Geology Dept., Burlington, VT 05405; CAFFEE, Marc, Lawrence Livermore National Laboratory, Livermore, CA 94550.

Concentrations of cosmogenically produced ^{26}Al, measured by accelerator mass spectrometry in samples collected from the terminal moraine of the Laurentide ice sheet, have been used to calculate exposure ages, assuming no erosion and no inheritance. Sixteen samples were collected from gneiss and quartzite glacial erratics as well as glacially striated outcrops, from which a purified quartz fraction (< 150 ppm Al, Fe) was isolated and analyzed at Lawrence Livermore National Laboratory. The samples were taken from several locations on and behind the terminal moraine (40°N geographic latitude) of the Laurentide ice sheet in north-central New Jersey.

Calculated exposure ages depend on assumed production rates. Nishiizumi et al, 1989, calculated production rates based on an assumed exposure age of 11 cal ky for glacially polished surfaces in the Sierra Nevada; however, recently published data suggest that Nishiizumi et al.'s calibration sites were exposed 13-14 cal ky (Clark, 1994).

	Sierra Nev 11 cal ky PR 36.8 atoms g^{-1} yr^{-1} (sea level, >60°)	Sierra Nev PR Assuming 14 cal ky exposure age 28.9 atoms g^{-1} yr^{-1} (sea level, >60°)
Sample	^{26}Al Age (ky)*	^{26}Al Age (ky)*
SWR-B-8	18.1±1.2	23.2±1.5
SMH-B-9	15.8±1.1	20.2±1.4
SAF-B-10	16.8±1.7	21.6±2.2
SAF-O-13	17.1±1.2	21.9±1.6

Numerous independent age estimates suggest an exposure age for the Laurentide terminal moraine of 21,000 calendar years (18.5 ^{14}C ky). Our data can be interpreted in several ways: 1) Nishiizumi et al.'s 11 ky production rates are in error. 2) The sampled surfaces have eroded. 3) The independent age estimates are inaccurate.

Clark, D., 1994, GSA Abstracts with Programs, V.26, No.7, p A-447; Nishiizumi et al, 1989, JGR, V.94, No. B12, p. 17907-17915. * Age error reflects only uncertainty in ^{26}Al abundance. We thank B. Stone (USGS) for assistance.

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