The Elusive Chronology: Ar/Ar on Mono Craters Ashes

Susan Zimmerman, DEES, herrzim@ldeo.columbia.edu

Abstract

Since the discovery less than 15 years ago of extremely rapid, large-amplitude changes in Greenland air temperature during Marine Isotope Stage 3 (MIS 3), there has been an intensive search for correlatives and causal mechanisms. This has been complicated by the inability to distinguish relative timing of climate events recorded in different places and archives. Mono Lake, CA is located in the eastern rain shadow of the Sierra Nevada, in the currently-arid Great Basin, where high-resolution climate records show both Milankovitch and millennial variations. However, despite the large number of dating methods which have been applied, no one system has emerged as reliable and routinely applicable. I have recently completed a record of paleomagnetic intensity in the late Pleistocene lake sediments of the Mono Basin which can be correlated with 1-2 kyr precision to the GISP2 age model. In the context of those results, I propose to revisit the application of $^{40}Ar/^{39}Ar$ dating of sanidines from volcanic ashes derived from the nearby Mono Craters.