Geophysical Research Abstracts
Vol. 14, EGU2012-6694-1, 2012
EGU General Assembly 2012

Geomagnetic Excursions in Alaskan Loess

M. E. Evans, B.J. Jensen, V.A. Kravchinsky, and D.G. Froese
University of Alberta, Edmonton, Canada (tedevans.evans403@gmail.com)

Palaeomagnetic and mineral magnetic investigations indicate that Alaskan loess is an excellent geomagnetic recorder. Most samples possess a strong, stable primary remanence, with MAD values typically being about 2 degrees. Hysteresis loops and IRM acquisition curves suggest that the NRM is carried by magnetite. Our earlier studies indicate that the Bruhnes-Matuyama boundary and the Kamikatsura excursion are convincingly recorded at Gold Hill (near Fairbanks, Alaska). Higher up in the section, two directional perturbations occur that may correlate to the Laschamp and Skalamaelifell excursions, and a third that is chronologically poorly constrained. At Halfway House (35 km west of Fairbanks), a directional perturbation occurs 4-5 m above the Old Crow Tephra (a regional chronostratigraphic marker dated at 124+/-10ka). Corresponding VGPs fall in North Africa, close to published results from lavas in Iceland. We suggest that this feature represents the Skalamaelifell excursion (recently dated at 94.1+/-7.8 ka). This is supported by the occurrence at Halfway House of a newly-dated, 106+/-10ka, tephra just below the geomagnetic perturbation. These promising preliminary results indicate that more detailed, closely-spaced, sampling might help elucidate the field behaviour at times of geomagnetic instability during the Brunhes chron.