



Possible record of the Laschamp Excursion in lacustrine sediments in the Searles Valley, California

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The Pleistocene history of Searles Lake, California, is known in detail from field work and cores recovered during industrial exploration of Searles Valley, in which the lake formed (Smith et al., 1979; Liddicoat et al., 1980). Exposed siltstone assigned the age about 34,000 to 46,000 calendar years B.P. (eight AMS 14-Carbon dates on gastropods and mollusks from fine- to medium-grain sand units that bracket the siltstone) records reverse palaeomagnetic polarity following thermal demagnetization to 600° C at two localities 3 km apart. For 12 samples (six pairs from six horizons, three pairs from each locality), the mean palaeomagnetic directions are Incl = - 37.5°, Decl = 180.2°, alpha 95 = 19.5° and the mean Virtual Geomagnetic Pole (VGP) is 73.6° S, 231.8° E, Alpha 95 = 20.6°. The reverse polarity is not part of the Mono Lake Excursion (Denham and Cox, 1971) that never has a VGP in the Southern Hemisphere (Liddicoat and Coe, 1979). Other samples from the two Searles Valley localities do not reach a definite reverse direction but contain a component of magnetization that approaches reverse polarity above 400° C. The reverse polarity in Searles Lake sediments offers an opportunity to model the geomagnetic field for two excursions (Laschamp and Mono Lake) in western North America at localities separated by about 300 km.