



## **Matuyama/Brunhes Polarity Transition in Owens Lake, CA, Sediment**

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The complexity of the Matuyama/Brunhes (M/B) polarity transition is becoming better understood from investigations of volcanic rocks (Coe et al., 2004), loess (Jin et al., 2012; Evans et al., 2011; Kravchinsky, 2013), and marine (Clement and Opdyke, 1982; Hartl and Tauxe, 1996; Macri et al., 2010) and lacustrine (Valet et al., 1988; Sagnotti et al., 2013) sediments. The transition appears to include a brief interval of normal polarity prior to the entry into the Brunhes Normal Chron (Coe et al., 2004; Jin et al., 2012; Evans et al., 2011), and the transition has Virtual Geomagnetic Poles rapidly moving from the Southern Hemisphere to the Northern Hemisphere (Coe et al., 2004; Jin et al., 2012; Evans et al., 2011; Sagnotti et al., 2013).

The M/B polarity transition is recorded in exposed Pleistocene lake sediments near Bishop, CA, where the brief interval of normal polarity noted above is present and the change from full reverse to full normal polarity occurs rapidly. The brief interval of normal polarity is recorded at two sites separated laterally by about 150 m and is in single hand samples measured at vertical spacing of 2.0-2.5 cm using six samples per measured level and alternating field demagnetization at 20 mT (Liddicoat, 1993, Table 1 and Fig. 8). The siltstone is unweathered glacial flour from the Sierra Nevada that borders the western side of Owens Valley where the sediments were deposited in Owens Lake. In the siltstone, the majority of the samples have a percentage of about 60 percent where the grain diameter is less than 63 micrometres, and in those samples there is about a five percent fraction when the diameter is two micrometres or less. The Total Inorganic Carbon in most samples is about 0.25 percent (Bergeron, 2013), and magnetite is the dominant carrier of the magnetization (Liddicoat, 1993). The palaeomagnetic directions recording the terminus of the full M/B transition, which occurs before the field intensity is completely recovered, spans no more than 35 cm of siltstone at each of two localities about a km apart. We will present the results of a continuing palaeomagnetic investigation of the M/B transition at this locality.