

ABSTRACT

The data reported here is part of a study of Pliocene-Pleistocene lavas in Kenya to document the paleosecular variation and time-averaged geomagnetic field direction near to the Equator. We sampled 32 sites (10 oriented cores each) in lavas to the south and the northeast of Loiyangalani that are mapped and dated as Plio-Pleistocene in age (less than ~ 5 Ma) and associated with Mt. Kulal and the Longipi eruption centers. The samples from this collection were returned to the US, sliced into samples and progressively demagnetized using alternating field demagnetization. The Loiyangalani sites yielded excellent results and are seemingly unaffected by lightning, which seems to be infrequent at this latitude, in this arid environment; all but one site gave acceptable data with an α_{95} of 10° or less. There are 17 reverse sites (Dec = 183.4° , Inc = 0.9° , α_{95} = 6.7°) and 15 normal sites (Dec = 358.4° , Inc = -1.2° , α_{95} = 4.7°). The reversal test is positive suggesting that the normal and reverse polarity populations both represent a reasonable time average. The site means were combined yielding an overall mean direction of Dec = 1.1° , Inc = -1.1° , α_{95} = 4.1° . The inclination is shallower than expected for a geocentric axial dipole field ($\delta I = -6^\circ$); accordingly, the site VGPs give a mean pole position at Lon = 205.1° E, Lat = 86.8° N, α_{95} = 3° , which is significantly far-sided with respect to the geographic axis. The angular standard deviation of the VGPs is 9.3° , which is a relatively low angular dispersion compared to most PSVL models such as Model G.