

LTD-DHT Shaw paleointensities across the Reunion subchron from basaltic lava sequence of Ethiopian Afar

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LTD-DHT Shaw paleointensities across the Reunion subchron from basaltic lava sequence of Ethiopian Afar

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We had reported new paleomagnetic results and K-Ar ages derived from 28 successive lava flows of Dobi section, Ethiopian Afar (11.8°N, 41.7°E), which recorded a succession of four geomagnetic polarity chrons contained the Reunion subchron and the lower Olduvai subchron with the K-Ar ages of 2.12 +/- 0.09 Ma and 2.21 +/- 0.07 Ma, and 1.93 +/- 0.07 Ma respectively.

For a further understanding of geomagnetic field characteristics of around the Reunion subchron, The low temperature demagnetization (LTD)-double heating test (DHT) Shaw paleointensity experiments (Tsunakawa and Shaw, 1994; Yamamoto et al., 2003) have been conducted with the IZZI Thellier experiments with pTRM checks (e.g., Tauxe and Staudigel, 2004) for comparison.

At present, Successful paleointensities for 42 specimens from 15 flows are determined by the LTD-DHT Shaw method, given five site-mean paleointensities with a good within-site consistency, while the other paleointensities for nine selected sister specimens from four flows are yielded using the Thellier method. The pair of paleointensities between the LTD-DHT Shaw and Thellier experiments apparently agree well, but the values of Thellier paleointensities tend to be a little bit higher than the LTD-DHT Shaw values, as described by previous studies (Yamamoto et al., 2003; Yamamoto, 2006; Yamamoto and Hoshi, 2008). The site-mean VDMs determined from the LTD-DHT Shaw method mostly have lower values of the range of $2.92\text{-}6.72 \times 10^{22}$ Am² than the mean of the Thellier data for the last 5 Myr selected from the latest paleointensity database, as well as the present geomagnetic dipole moment. We will report our interpretation of the paleomagnetic field, as well as the details of the results of the paleointensity experiments and their interpretations.

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