

NEW PALEOMAGNETIC AND PALEOINTENSITY RESULTS FROM LATE PLIOCENE VOLCANIC SEQUENCES FROM SOUTHERN GEORGIA (CAUCASUS)

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Paleomagnetic and rock-magnetic experiments were carried out on 21 basaltic lava flows belonging to four different sequences of late Pliocene age from southern Georgia (Caucasus): Dmanisi (11 flows), Diliska (5 flows), Kvemo Orozmani (5 flows), and Zemo Karabulaki (3 flows). Paleomagnetic analysis generally showed the presence of a single component (mainly in the Dmanisi sequence) but also two more or less superimposed components in several other cases. All sites except one clearly displayed a normal-polarity characteristic component. Rock-magnetic experiments included measurement of thermomagnetic curves and hysteresis parameters. Susceptibility-versus-temperature curves measured in argon atmosphere on whole-rock powdered samples yielded low-Ti titanomagnetite as main carrier of remanence, although a lower T_C -component was also observed in several cases. Both reversible and non-reversible k-T curves were measured.

A pilot paleointensity study was performed with the Coe (1967) method on two samples of each of those sites considered suitable after interpretation of rock-magnetic and paleomagnetic data from all sites. The pilot study showed that reliable paleointensity results were mainly obtained from sites of the Dmanisi sequence. This thick sequence of basaltic lava flows records the upper end of the normal-polarity Olduvai subchron, a fact confirmed by $^{40}\text{Ar}/^{39}\text{Ar}$ dating of the uppermost lava flow and overlying volcanogenic ashes, which yields ages of 1.8 to 1.85 My. A second paleointensity experiment was carried out only on samples belonging to the Dmanisi sequence. Preliminary results show that paleointensities often are low, their values lying between 10 and 20 μT in many cases. For comparison, present day field is 47 μT . The Dmanisi sequence of lava flows directly underlies the Dmanisi paleoanthropologic site, in which the end of the Olduvai subchron is recorded.

Paleointensity, late Pliocene, Caucasus

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