



Full vector record of the Earth's Magnetic Field from Upper Pleistocene to prehistoric Holocene lava-flows in La Palma (Canary Islands, Spain)

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La Palma, located in the westernmost part of the Canarian Archipelago, is one of the youngest islands in the archipelago. In this study, we present a paleomagnetic and paleointensity study performed in lava-flows from Upper Pleistocene and Holocene prehistoric eruptions from Cumbre Vieja volcano, in the southern part of La Palma Island. Thirteen different sites, each one with a different isotopic age date (Guillou et al., 1998; 2001), have been sampled including basalts, tephrites and phonolites. These rocks represent most of the Upper Pleistocene and prehistoric Holocene dated lava flows in the island.

The aim of this study is to obtain a full-vector record of the Earth's Magnetic Field in the island during a period comprised between 56 to 1 ka BP. This has been accomplished using alternating field and thermal stepwise demagnetizations to retrieve paleomagnetic directions. For absolute paleointensity determinations, a multi-method approach has been conducted using both Thellier-Coe with pTRM checks and Tsunakawa-Shaw methods, obtaining several consistent results. The agreement of the results with different paleointensity methods provides an additional paleointensity reliability check. In addition, different rock magnetic experiments have been performed, such as magnetization versus temperature curves, isothermal remanent magnetization (IRM) curves, hysteresis loops, backfield and FORCs, showing low coercitivity and variable Curie temperatures, displaying magnetite with different cation substitutions as the main magnetic mineral carriers. All these experiments have been carried out at the University of Burgos, the CENIEH research centre in Burgos (Spain) and the Marine Core Research Institute in Kochi University (Japan) Paleomagnetic Laboratories.

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