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Phil. Trans. R. Soc. Lond. A 1973 **274**, 163

doi: 10.1098/rsta.1973.0036

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Palaeomagnetism of Mount Etna

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Palaeomagnetic work on Etna was begun by the late Professor R. Chevallier (1925). His purpose was to determine the history of the geomagnetic field direction at Etna during the past several centuries, using lavas of known date which had become permanently magnetized at the time of cooling. During the decade 1960 to 1970, Tanguy (Aitken, Fleming, Doell & Tanguy 1968; Tanguy 1970) re-examined the lavas that Chevallier had worked on, plus certain additional lavas. His researches reach in continuous fashion back to the lava of 1381. In the

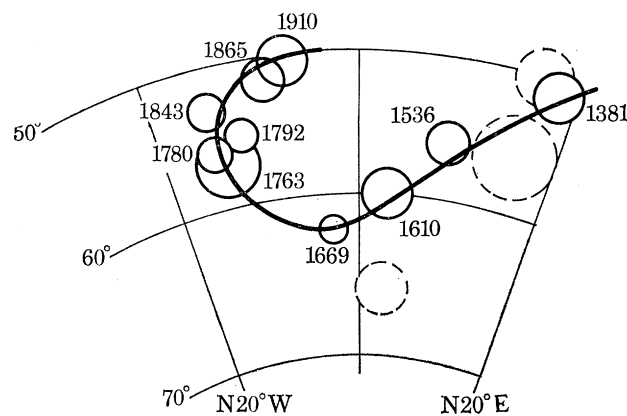


FIGURE 1. Diagram showing the geomagnetic variation at Mt Etna.

main, Professor Chevallier's discoveries are supported by Tanguy's work. More modern techniques of specimen orientation and magnetic measurement have permitted Tanguy to reduce the 95 % error levels down to 1° or 2°. Certain of the lavas presumed to be of known age by Chevallier, have been found to be of uncertain age. These results are indicated by dashed circles in figure 1. The ages of the known lavas are printed beside each solid 95 % error circle. The thick black line indicates the trend of the archaeomagnetic variation over the past 600 years, which agrees well with results from observatories in Rome and London, and with results from Paris.

The possibility of reaching further into the past is limited by the lack of accurate historical records relating to individual lava flows, and by the failure of presently available thermoluminescence methods to date these lavas.

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