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Magnetostratigraphy of a Plio/Pleistocene section of fluviatile sediments on Cyprus

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The uplift history of Cyprus as an island starts in the early Miocene. Thick debris fans cover the slopes of the uplifted Troodos Ophiolite Complex (TOC). Its northern slope exhibits a thick stack of superimposed fluviatile series forming a high river terraces plateau slightly descending towards the sea and cut by at least two younger conspicuous cut and fill terraces. Here we present the results of a detailed paleo- and rock magnetic study of a 45 m section formed by numerous fluviatile series each starting with gravel continuing with sandy to silty flood deposits and capped by a fossil soil. From the fine grained parts of these series a total of 480 samples has been collected during two field trips using a portable coring device. Average vertical distance between individual samples was about 8 cm. Detailed Alternating Field demagnetization (AF) of specimens revealed rather simple properties of natural remanent magnetization in almost all specimens studied. Maximum peak fields of about 15 mT are sufficient to remove a secondary overprint of viscous origin. Above this field a characteristic remanent magnetization (ChRM) is identified which is directed either to the north and downward (Dec: 4.0°, Inc: 50.6°, α_{95}: 6.0, k: 22.3, N: 27) or to the south and upward (Dec: 179.2°, Inc: -49.4°, α_{95}: 2.6, k: 28.8, N: 108). The ChRM is carried by (titano-)magnetite and (titano-)maghemite originating from the nearby TOC. The reversal test is positive suggesting the primary character of this magnetization. Thus we can establish a preliminary magnetostratigraphy from bottom to top with a reversed-normal-reversed main polarity pattern. Given the rough age estimate of the section as Pliocene/Lower Pleistocene, the sediments seem to have been deposited mainly during the Matuyama chron with the normal polarity zone representing the

Jaramillo subchron (0.99 - 1.07 Ma). Transitional directions just below the normal polarity zone define a VGP-path to the east of the Americas. A few successive normal polarity samples detected in the lower third part of the section might be correlated to the Cobb-Mountain-Event.