



High-resolution magnetostratigraphy of the astronomically dated Tortonian GSSP at Monte dei Corvi, northern Italy

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Global Stratotype Sections and Points (GSSPs) are defined for chronostratigraphic series and stage boundaries and provide clarity in the Neogene Chronostratigraphic Scale. They provide “golden spikes” that pinpoint boundaries in reference sections for global correlation purpose. The base and the top of the Neogene, the base of the Pliocene Series and Stages (Gelasian, Piacenzian and Zanclean), and the Messinian Stage, have already been defined. Recently, the proposal to define the Tortonian GSSP in the sapropel of basic cycle 76 in the Monte dei Corvi section located in northern Italy has been formally accepted. A preliminary magnetostratigraphy for Monte dei Corvi was presented by Hilgen et al. (2003), along with astronomical tuning of the cyclic sedimentary record, but unfortunately a reliable magnetostratigraphic record was lacking for the Serravallian-Tortonian boundary interval. Here, we present a high-resolution magnetostratigraphy for Monte dei Corvi with assigned astronomical ages for reversal boundaries, indicating that the Tortonian GSSP must be placed at the base of subchron C5r.2n. Although Monte dei Corvi is very weakly magnetized, thermal demagnetization reveals characteristic remanence magnetizations of dual polarity carried by an uncommon low-temperature component ($T < 260^{\circ}\text{C}$). Various rock magnetic techniques have been performed to investigate the nature of this “mysterious” magnetic component. In addition existing minor tuning problems were solved by thoroughly checking the cyclostratigraphy in detail and modifying the tidal dissipation and/or dynamical ellipticity terms in the astronomical solution used for the tuning. The new results strengthen the selection of the Monte dei Corvi for accommodating the Tortonian GSSP.