

## Matuyama-Brunhes magnetic polarity transition from a sequence of the Kokumoto Formation drilled at Tabuchi, Ichihara

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A detailed Matuyama-Brunhes transition was revealed from a 54-m oriented core of the Kokumoto Formation drilled at Tabuchi, Ichihara, Chiba Prefecture, central Japan. The core mainly consists of silts except the lowermost part intercalated with thin sand layers. For magnetic analyses, we prepared one meter long u-channel samples from 3 to 52 m depth, and discrete samples of 10 cc cube at 10 cm to 1 m intervals. Magnetizations were measured every 1 cm using a 2G cryogenic magnetometer for u-channel samples and subjected to alternating field demagnetizations (AFD), while both AFD and thermal demagnetizations were used for discrete samples. Preliminary oxygen isotope data on planktonic foraminifera (*Globorotalia inflata*) suggest that the main MB polarity boundary, just underlain by the Byakubi-E tephra layer, lies between the sea-level highstand of marine isotope stage (MIS) 19.3 and the MIS 19.2 lowstand. Characteristic remanent magnetizations of u-channel samples calculated by principal component analysis reveal a rapid reversal interval (RRI), a very important feature characteristic of the final stage of the MB transition, which lies between depths correlated with the MIS 19.3 highstand and MIS 19.2 lowstand. The RRI spans about 1.7 m in depth, during which the virtual geomagnetic pole crossed the geographic equator 11 times. A preliminary astronomical age model suggests that the RRI was ca. 2 kyr in duration, predating 776 ka and postdating 779 ka. The RRI can be correlated with similar intervals observed in the Osaka Group, Chinese loess-paleosols, and deep-sea sediments. The RRI incorporates both the MB boundary and the Byakubi-E tephra in the Chiba section. This has important implications for the definition of the Early-Middle Pleistocene boundary. Other MB transition features, including paleointensity variation, will be discussed together with the results from discrete samples.

Keywords: Matuyama-Brunhes polarity transition, Kokumoto Formation, Early-Middle Pleistocene boundary, Chiba Section, GSSP