

Revised Matuyama-Brunhes polarity transition record from a marine succession at the Chiba composite section

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We report revised paleomagnetic records of the Matuyama-Brunhes (M-B) polarity transition from a continuous marine succession at the Chiba section of the Kokumoto Formation, Kazusa Group. The Chiba section is the one of the candidate sites for the Lower-Middle Pleistocene Boundary GSSP. An age model for the section, provided by newly obtained oxygen isotopes of benthic foraminifera from a 100 meters succession across the M-B boundary, indicates that the boundary is situated in the interglacial period of MIS19. We have taken 130 oriented mini-cores from a 13 meters succession across the Byk-E tephra bed at the Chiba section and the Yanagawa section. Thermal magnetic experiments suggest that the samples include iron sulfides, magnetites but no hematite. Measurements of magnetic hysteresis indicate that the magnetic domain state is PSD. Progressive alternating field (AF) demagnetization indicate a reversed to normal polarity transition boundary is at around 1.5 meter below the Byk-E bed as well as previous studies, however the transition boundary is observed at around 1 meter above the Byk-E bed in thermal demagnetization results. Therefore, the reversed to normal polarity transition boundary seen below the Byk-E bed is thought to be overprint. This overprints, which might be carried by iron sulfide, are particularly observed in a transitional interval. The virtual geomagnetic pole (VGP) latitudes and preliminary derived paleointensities using thermal demagnetizations from the Chiba section quite match well with the U1308 records. We will show globally comparable VGP and paleointensity records during the M-B polarity transition at the Chiba section.

Keywords: Chiba section, M-L Pleistocene boundary GSSP, Paleomagnetism, Matuyama-Brunhes boundary