北大西洋IODP Site U1314海底堆積物コアに記録された2〜3Maの地磁気エクスカーション

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Geomagnetic excursions between 2 and 3 Ma recorded in a sediment core at IODP Site U1314 in the North Atlantic

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A geomagnetic excursion is a short-term large directional change often associated with low paleointensity. In the Brunhes Chron, many geomagnetic excursions have been reported; Laj and Channell (2007) listed 12 excursions in the Brunhes Chron, including seven that were considered to be well documented. Prior to the Brunhes Chron, the number of reported excursions decreases with age. In the Matuyama Chron, Laj and Channell (2007) listed 10 excursions and only two of them are prior to the Reunion Subchron. They reported that there are no well documented excursions in the Gauss Chron. Recently, from a sediment core at IODP Site U1314, Ohno et al. (2012) has reported 8 excursions between 2.1 and 2.75 Ma, four of which are in the Gauss Chron. The ability of the U1314 paleomagnetic record to resolve excursions is attributed to the higher sedimentation rate at this site relative to previously studied sedimentary sections in this period.

In this paper we report the result of paleomagnetic study of U1314 between 2.75 and 3 Ma. Characteristic remanent magnetization directions were well resolved by stepwise alternating field demagnetization. As a proxy of relative paleointensity, natural remanent magnetization (NRM) normalized by anhysteretic remanent magnetization (ARM) was used after testing that the influence of magnetic interaction in ARM is negligible. We discuss the age of an excursion found in this interval on the basis of calcareous nannofossil assemblages.