

High resolution paleomagnetism, magnetic susceptibility, and core color reflectance data from Site U1443 –preliminary results

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International Ocean Discovery Program Site U1443 is located at Ninety East Ridge in the southeastern Indian Ocean. At Site U1443, the recovered cores date to ~25 Ma. A high resolution chronostratigraphy from this Site is needed to achieve better understanding of long-term climate evolution over the Indian Ocean and subcontinent. Shipboard paleomagnetic measurements revealed reasonable polarity patterns throughout the last ~25 Ma; however limited demagnetization steps have left ambiguity in the age assignment of the interval between ~13 to ~25 Ma. Shipboard rock magnetic data showed promising variability that could be related to paleoenvironmental change. To build on these findings, u-channel and discrete samples were taken for detailed measurements. Paleomagnetic measurements were successful in recovering polarity patterns consistent with the shipboard measurements. Magnetic susceptibility and color reflectance data revealed subtle but correlated changes, including the observation of ~20-30 cm cycles that were not identified from shipboard measurements. On the basis of sedimentation rate estimates (~0.8 cm/kyr), the observed cycles may be driven by the ~41 kyr obliquity cycle. Rock magnetic measurements on discrete samples indicate a mostly homogeneous magnetic mineralogy of oxidized titanomagnetite. Thus, the cyclicity is likely to reflect changes in the concentration of this mineral magnetic component. Integration of the magnetic stratigraphy with the cyclicity will provide a high resolution chronostratigraphy.

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