

Figure F1. Locations of IODP Expedition 353 Site U1444 (Clemens et al., 2016) and Expedition 354 transect Sites U1449–U1455 (France-Lanord et al., 2016b). Green circle = Site U1451. Modified after France-Lanord et al. (2016a).

Figure F2. A, B. Locations of discrete samples measured on board and at the Oregon State University Paleomagnetic and Environmental Magnetic Research Laboratory, Cores 354-U1451A-23H and 24H. IW = interstitial water sample, MBio = microbiology sample, PAL = biostratigraphy sample.

Figure F3. Discrete sample magnetic results, Cores 354-U1451A-23H and 24H. All onboard data are from France-Lanord et al. (2016c) and are edited to remove core gaps, section edges, and fall-in or flow-in intervals. A. Shipboard L^* measurements indicate high variance and anticorrelation with magnetic susceptibility (k), suggesting similar lithology to late Pleistocene hemipelagic deposits that are better characterized on the Lower Bengal Fan (e.g., Weber et al., 2018). B. Ratio of anhysteretic susceptibility (k_{ARM}) to k . Assuming that magnetite is the dominant mineralogy, higher k_{ARM}/k values reflect higher relative concentration of fine magnetic minerals. C. Discrete sample k (open circles) compared with shipboard whole-round data (dark blue line). D. ARM before demagnetization (open circles) and after the 20 mT AF step (solid circles). E. Discrete sample NRM before demagnetization (open circles) and after the 20 mT step (solid circles) compared with shipboard NRM data measured on the archive halves before demagnetization (dark blue line) and after the 20 mT step (light blue line). F. Discrete sample

ChRM (black circles) with 1σ uncertainty (red line) compared with shipboard inclination after the 20 mT AF step (light blue line). Solid circles = onboard discrete sample ChRM inclination. G. Discrete sample ChRM declination (see F for details). Relative declination values are arbitrarily rotated for Cores 23H and 24H by -60° and $+120^\circ$, respectively, to better visualize the data. These declination values do not necessarily reflect actual polarity because the absolute orientations of the cores are not known.

Figure F4. Zijderveld plots (Zijderveld, 1967) illustrating AF demagnetization behavior of the NRM and subsequent remanent magnetizations. Every third sample is plotted to show examples of both well resolved (lower MAD values) and poorly resolved (higher MAD values) directions. Steps used to isolate the characteristic remanent magnetization in principal component analysis are indicated in darker colors. I = inclination. D = declination.

Figure F5. A, B. PDFs of ChRM directions (see text for discussion of estimating confidence intervals) for discrete samples (solid lines) and the mean of discrete samples (shaded areas), Cores 354-U1451A-23H and 24H. Declinations are arbitrarily rotated in each core for plotting purposes and do not necessarily reflect polarity. PDFs of samples from the upper 40 cm of each core are not plotted. Vertical gray bars = Pliocene and Pleistocene GAD-predicted direction range. Dashed lines = predicted direction distribution for a normal polarity sample at 8°N from the TK03 paleosecular variation model (Tauxe and Kent, 2004).