Figure F1. Bathymetry and track chart, Site U1455. Projection is UTM Zone 45N. Multibeam bathymetry was acquired during R/V *Sonne* Cruises SO125 and SO188. Blue line = seismic Line SO125-GeoB97-027 with common depth point annotation. Contour interval is 20 m. Portions of seismic data are shown in Figures **F2** and **F3**.

Figure F2. Seismic Line SO125-GeoB97-020, Site U1455, showing upper portion of the sedimentary section.

Figure F3. Seismic Line SO125-GeoB97-020_2 across Site U1455, showing complete sedimentary section cored. A 0.5 s long AGC algorithm was applied to equalize amplitudes throughout the seismic section.

Figure F4. Lithostratigraphic summary, Hole U1455C. For legend, see Figure **F5** in the Expedition 354 methods chapter (France-Lanord et al., 2016a).

Figure F5. Lithostratigraphic summary for cored intervals, Hole U1455C. A. 0–122 m CSF-A. B. 360–432 m CSF-A. For legend, see Figure **F5** in the Expedition 354 methods chapter (France-Lanord et al., 2016a). (Continued on next page.)

Figure F5 (continued). C. 774–948 m CSF-A.

Figure F6. Hole U1455C features. A. Volcanic ash (at top) and calcareous clay (1H-5, 0–30 cm). B. Homogeneous fine sand (3H-3, 33–63 cm). C. Succession of mud turbidites (5F-3, 58–88 cm). D. Bioturbated, mottled nannofossil-rich calcareous clay (34F-1, 24–54 cm). E. Claystone interbedded with parallel-laminated silt (47R-1, 53–83 cm). F. Bioturbated, mottled claystone (52R-3, 80–110 cm).

Figure F7. Representative examples of major lithologies in smear slides, Hole U1455C. A. Silty sand (6F-2, 100 cm; 35.05 m CSF-A). B. Sandy siltstone (56R-1, 80 cm; 901.1 m CSF-A). C. Clay (20F-1, 53 cm; 99.23 m CSF-A). D. Calcareous clay (30F-1, 34 cm; 376.24 m CSF-A; parallel nicols).

Figure F8. Maximum grain size, Hole U1455C.

Figure F9. NRM decay (left) and AF demagnetization vector (right) diagrams of discrete samples, Site U1455. Points on demagnetization vector diagrams = projected endpoints of the remanent magnetization vector measured for each sample in core coordinates (azimuth not oriented). A. Sample with ChRM vector that deviates from the origin. Deviation of remanence vector toward *Y*-direction indicates acquisition of remanence (likely GRM) during AF treatment. Demagnetization behavior is consistent with magnetite or titanomagnetite as the principal NRM carrier. B. Sample with large drilling overprint removed by 10 mT AF demagnetization. C. Sample with negative polarity interpreted as reversed magnetization.

Figure F10. NRM of archive section halves and discrete samples before and after 15 (Cores 1H–3H) or 20 mT AF demagnetization, Hole U1455C. Gray dots = before demagnetization. Dark gray circles = intervals that do not meet quality criteria (see **Paleomagnetism** in the Expedition 354 methods chapter [France-Lanord et al., 2016a]). Blue dots = calcareous clay, black dots = other lithology. Inclination and declination: dark green dots = principal component directions from discrete samples. Inclination: gray lines either side of 0° = expected inclinations from GAD. Declination: yellow = oriented cores. Declinations are in a geographic reference frame only where orientation data are available. Intensity: intensity of magnetization before and after demagnetization. Large light green dots = before demagnetization, dark green dots = after demagnetization. Magnetic susceptibility (MS) = point measurements on archive section halves.

Figure F11. Polarity interpretation, Cores 354-U1455C-16F and 17F. Circles = measurements that do not pass quality control criteria (see **Paleomagnetism** in the Expedition 354 methods chapter [France-Lanord et al., 2016a]). Blue dots = calcareous clay, red dots = volcanic ash, black dots = other lithology, green dots = measurements on discrete samples. Declination is rotated and illustrates magnetostratigraphic interpretation. A single vertical axis rotation was applied to the entire core so that points interpreted as normal polarity plot near the 0° line. Intensity = intensity of magnetization after 20 mT AF demagnetization. Magnetic susceptibility (MS) = point measurements on archive section halves. Polarity: black = normal, white = reversed, gray = uncertain. Geomagnetic polarity timescale (GPTS) of Gradstein et al. (2012).

Figure F12. Variations of salinity, bromide, sulfate, phosphate, ammonium, alkalinity, magnesium, calcium, sodium, potassium, and silicon concentrations in interstitial waters, Site U1455.

Figure F13. TIC content expressed as $CaCO_3$, Sites U1455 and 218.

Figure F14. Whisker plot of calcium carbonate content of hemipelagic, mixed, and turbiditic sediments from all Expedition 354 sites. Vertical lines = maximum and minimum values, box = second and third quartiles, horizontal red line = median. Mixed lithologies are defined as bearing characteristics of both hemipelagic and turbiditic sediments (e.g., bioturbated Subunit E3 of the Bouma sequence). Many mixed and hemipelagic lithologies are geochemically indistinguishable from turbiditic lithologies based on their carbonate content.

Figure F15. TOC content, Sites U1455 and 218.

Figure F16. Relationship between TOC content and Al/Si ratio of Pleistocene turbiditic sediments from all from all Expedition 354 sites.

Figure F17. Fe/Si and K/Si plotted vs. Al/Si, Sites U1454 and U1455.

Figure F18. Physical property measurements, Site U1455.

Figure F19. Moisture and density results, Hole U1455B. Density and porosity data were not available for the lowermost part of the hole when this section was compiled.

Figure F20. APCT-3 temperature-time series, Hole U1455C.

Figure F21. Heat flow calculations, Hole U1453C. A. Sediment temperatures. B. Thermal conductivity data from Hole U1453C (circles and dashed line) with calculated thermal resistance (solid line) and average thermal conductivity (blue dashed line). C. Bullard plot of heat flow calculated from a linear fit of the temperature data.

Figure F22. Heat flow data compilation in the Bay of Bengal and surrounding areas (Hasterok et al., 2011), including values obtained for all Expedition 354 sites. Inset shows APCT-3 temperature profiles and heat flow values for the expedition. Bathymetric profile extracted from the ETOPO-1 bathymetry grid.

Figure F23. Seismic Line SO125-GeoB97-027, upper 350 ms TWT of cored interval, Site U1455. Seismically identified units/features: L = levee, IS = interlevee, C = channel/fill. NGR data are from core logging. For lithologic legend, see Figure **F5** in the Expedition 354 methods chapter (France-Lanord et al., 2016a). For a larger version of this figure, see STRATSYNTH in **Supplementary material**.

Figure F24. Seismic Line SO125-GeoB97-027, upper 1.1 s TWT of seismic section, Site U1455. Because an automatic gain control was applied to enhance deeper amplitudes, they can not be directly compared. NGR is shown from 360 to 430 m CSF-A; colored boxes indicate different average levels. *P*-wave velocity from core values is shown from 770 to 940 m CSF-A; two layers of higher values represent increased lithification (stippled lines). For lithologic legend, see Figure **F5** in the Expedition 354 methods chapter (France-Lanord et al., 2016a). For a larger version of this figure, see STRATSYNTH in **Supplementary material**.

Figure F25. Compilation of biostratigraphic and chronostratigraphic markers, Site U1455. Calcareous nannofossil and foraminiferal biozones follow Gradstein et al. (2012; based on Martini [1971], Okada and Bukry [1980]) and Wade et al., (2011), respectively. Biomarkers are calculated as midpoints (Table **T6**). Midpoint calculations from drilled intervals were not used for zonations. Paleomagnetic reversals follow the chronostratigraphic scheme of Gradstein et al. (2012); boundaries are the lower depth of the identified reversal (Table **T9**).

Figure F26. Age-depth plot, Hole U1455C. Interpreted lithology proposes the most probable lithologies in intervals of nonrecovery. Nannofossil and foraminiferal biomarkers are plotted as midpoints; error bars = uncertainty in depth. For magnetic reversals, see Table **T9**.

Figure F27. Age-depth plot, 0–2 Ma, Hole U1455C. Interpreted lithology proposes the most probable lithologies in intervals of nonrecovery. Nannofossil and foraminiferal biomarkers are plotted as midpoints; error bars = uncertainty in depth. For biomarkers: right arrow = first occurrence, left arrow = last occurrence (Table **T6**). For magnetic reversals, see Table **T9**. Dashed lines = ash layers. Cross = youngest Toba ash. No age is assigned to the older ash layer, but it occurs shortly before the Brunhes/Matuyama magnetic reversal. Black arrows = selected accumulation rates.