Figure F1. Site U1533 on Seismic Line TH86003B (Yamaguchi et al., 1988) at the lowermost western flank of Resolution Drift. Seismic horizons at the bases of the Pleistocene and Pliocene were preliminarily identified from the core records. Estimated age of the horizon at the base of Unit ASR-II is from Uenzelmann-Neben and Gohl (2012). CDP = common depth point.

Figure F2. Distribution of Holes U1533A–U1533D. See Figure F1 in the Expedition 379 summary chapter (Gohl et al., 2020b) for regional location map.

Figure F3. Free-fall reentry system deployed in Hole U1533B.

Figure F4. Water column temperature data collected with the APCT-3 attached to the camera system used during the second reentry in Hole U1533B. These data are not in the IODP Laboratory Information Management System (LIMS) database; they are included in APCT-3 in Supplementary material.

Figure F5. Composite lithostratigraphic summary, Holes U1533A–U1533D. Major lithologies are divided based on changes in facies assemblages. MS = magnetic susceptibility.

Figure F6. Facies F1–F7 and Subfacies F1.1, F2.1, and F2.2, Holes U1533B–U1533D. A. Silty clay to clay, commonly color banded (Facies F1; 379-U1533D-3H-2A, 42–52 cm). B. Silty clay to clay with laminated to thinly bedded silt or sand, commonly color banded (Subfacies F1.1; 379-U1533D-4H-6A, 66–76 cm). C. Thinly laminated silty clay to clay (Facies F2; 379-U1533B-20F-1A, 82–92 cm). D. Silty clay to clay with laminated to thinly bedded silt (Subfacies F2.1; 379-U1533B-10H-6A, 95–105 cm). E. Silty clay to clay with thinly bedded sand (Subfacies F2.2; 379-U1533B-10H-2A, 40–50 cm). F. Massive to thinly laminated and/or bioturbated (sandy) silt to (silty) clay (Facies F3; 379-U1533B-4H-6A, 65–75 cm). G. Sandy mud with dispersed clasts to clast-poor to clast-rich muddy diamict (Facies F4; 379-U1533B-14H-1A, 78–88 cm). H. Muddy granule conglomerate to clast-rich sandy diamict (Facies F5; 379-U1533B-25X-CC, 6–16 cm). I. Biosilica-rich mud to biosiliceous ooze (Facies F6; 379-U1533C-1H-4A, 134–144 cm). J. Foraminifer ooze (Facies F7; 379-U1533C-1H-1A, 76–86 cm).

Figure F7. Sedimentary structures indicative of downslope transport, Hole U1533B. A. Normal grading from sand through silt to clay (2H-5A, 110–128 cm). B. Reverse grading from silty clay through sand and coarse sand to muddy gravel (6H-5A, 37–41 cm).

Figure F8. X-radiograph and core images of representative facies associations in Subunits IA and IB, Hole U1533B. A. Thin sand bed in Subunit IA with faint color bands that gradually transitions into massive silt/silty clay sharply overlain by color-banded clay (Subfacies F1.1 and Facies F3 and F1; 3H-5A, 28–62 cm). B. Clast-poor to clast-rich muddy diamict in Subunit IB with sharp upper boundary overlain by thinly laminated silty clay with very thin sand beds (Facies F4 and F2 and Subfacies F2.2; 14H-1A, 65–97 cm). C. Thinly laminated silty clay (Facies F2) in Subunit IB overlain by clast-rich sandy diamict (Facies F5) with a sharp boundary at 110 cm (26X-1A, 96–129 cm). D. Gradual upward transition in Subunit IB from muddy diatom ooze (Facies F6) to thinly laminated biosilica-bearing mud (Facies F2) (10H-1A, 89–123 cm).

Figure F9. Facies associations in (A) Subunit IA (379-U1533A-2H) and (B) Subunit IB (379-U1533B-14H). Downcore facies changes often correspond with changes in MS.

Figure F10. Rock types in fall-in represented by large pebble and cobble-sized clasts, Hole U1533B. Clasts range in size from 2.2 to 8 cm. A. K-feldspar granites; second granite from top may be chloritized (26X-1, 1–14 cm). B. K-feldspar granites (upper clasts) and felsic porphyry (29X-1, 0–18 cm). C. Gray granite, metadiorite, and rhyolite (2 fragments) (39R-1, 0–18 cm). D. Fine-grained quartzose gneiss (upper clast) and green orthoquartzite (41R-1, 2–22 cm).

Figure F11. Adapted QKF ternary diagram summarizing the rock (mineral) type abundances determined from selected intervals that contain abundant granules and clasts, Hole U1533B. Coarse fractions were counted in section halves (5H-1A, 86–90 cm, and 26X-1A, 70–105 cm) and core catcher residues (25X-CC). For each interval, >250 grains with long axes >1.0 mm were identified by type and counted. K′ = K-feldspar fragments and granite and metamorphic grains, Q = milky, gray, and transparent quartz, F = diorite, mafic volcanic, and Fe oxide/ferrohydroxide grains.

Figure F12. Volcanic components, Hole U1533B. A. Interval containing a bed of volcanic ash (2H-4, 145–150 cm). Ash abundance gradually decreases upward into the overlying silty mud. B. Dominant vitric grains (volcanic ash) with accessory silicate and opaque grains (2H-4, 150 cm; 5× magnification, plane-polarized light). C. Clast-rich interval that contains volcanic fragments, including glassy tephra (v; visible without the aid of magnification), pumice fragments, and vitric grains (13H-1, 61–66 cm). In the example, the dark tephra occurs within a clast cluster. D. Scanning electron microscope (SEM) image of pumice fragments extracted from a washed, sieved portion of a core catcher sample (13H-CC).

Figure F13. Selected semiquantitative geochemical data obtained from pXRF measurements, Holes U1533A and U1533B. Light element content decreases in relative abundance downcore. Si, K, and Rb contents exhibit consistent downcore trends, which might be attributable to the relative increases in clay and illite content. Rb/Sr ratios indicate changes in grain size and differences in rock types (sediment provenance), and higher Si/Al ratios might be related to biogenic Si contents. Dashed lines indicate sample depths where flow-in core disturbance was observed.

Figure F14. Physical properties, clay mineral percentage, and illite chemistry (Esquevin index; Esquevin, 1969), Site U1533. No clay mineral data were obtained from the low/no recovery interval between ~280 and 340 m.

Figure F15. Relative abundance of microfossils, Site U1533. Definitions of abundance codes for each fossil group are provided in Biostratigraphy in the Expedition 379 methods chapter (Gohl et al., 2020a).

Figure F16. Paleomagnetic data, Holes U1533A and U1533B. Inclination data for Holes U1533C and U1533D are presented in Stratigraphic correlation. Inclination: gray dots = NRM values, red line = values after 20 mT AF demagnetization and after "cleaning" for disturbed sediment intervals, green circles = values obtained from discrete sample analysis. Polarity: black = normal, white = reversed, gray = unidentified. For reasons of clarity, not all correlation lines between the magnetic polarity zones of Site U1533 and the GTS2012 (Gradstein et al., 2012) are shown here. They are listed in Table T14.

Figure F17. Inclination values of NRM and after 20 mT AF demagnetization from pass-through paleomagnetic measurements of sediments, Site U1533. Vertical dashed lines = inclination according to a GAD at Site U1533.

Figure F18. Vector endpoint demagnetization diagrams (Zijderveld, 1967) and equal area projection of NRM directions and AF demagnetization behavior for two representative discrete samples, Hole U1533B. Blue lines = components fitted by PCA (Kirschvink, 1980) to the selected data points (red squares). Data are presented by using PuffinPlot software (Lurcock and Wilson, 2012).

Figure F19. Summary of AMS data for discrete samples, Site U1533. Mean directions: square = κ_{max}, triangle = κ_{int}, circle = κ_{min}. Plots show the degree of anisotropy ($\kappa_{max}/\kappa_{min}$) versus mean (bulk) magnetic susceptibility (K_m) and the corresponding lineation ($\kappa_{max}/\kappa_{int}$) versus foliation ($\kappa_{int}/\kappa_{min}$) data from each hole.

Figure F20. Normalized IRM versus applied DC field for six representative samples, Site U1533.

Figure F21. Distribution of core mean declinations and corrected mean declinations of APC cores, Holes U1533A, U1533B, and U1533D. The expected corrected declination is 0°; however, a bias to (south)westerly directions is still visible after correction by the Icefield MI-5 core orientation tool data. Hatched pattern = data collected by the Icefield MI-5 Instrument 2052, light blue = data collected by Icefield MI-5 Instruments 2007 and 2043.

Figure F22. Age-depth model for Site U1533 based on integrated biomagnetostratigraphy. Paleomagnetic inclination values were obtained from cryogenic magnetometer analysis of archive halves after 20 mT AF demagnetization and cleaning for disturbed sediment intervals. Orange circles = inclination values from discrete sample analysis. Polarity: black = normal, white = reversed, and gray = indeterminate (because of lack of recovery, major sediment disturbance, or other limitations). Blue arrows = tie points for diatom biostratigraphic datums, maroon arrows = radiolarian biostratigraphic datums, red crosses = magnetostratigraphic datums. Open arrows = ”younger than” or ”older than” biostratigraphic age constraints, solid arrows = true first or last appearance datums. Linear sedimentation rates (green line) are calculated between tie points. Gray numbers = calculated sedimentation rates between each tie point. See Table T8 for biostratigraphic datums (blue and maroon ID codes) and Table T14 for polarity reversal events (red ID codes). (This figure is also available in an **oversized format**.)

Figure F23. Interstitial water salinity, Cl, and Na, Holes U1533A and U1533B.

Figure F24. Interstitial water sulfate, alkalinity, ammonium, and phosphate, Holes U1533A and U1533B.

Figure F25. Interstitial water Ca, Mg, and K, Holes U1533A and U1533B.

Figure F26. Interstitial water Sr, Li, Mn, Fe, B, Ba, and silica, Holes U1533A and U1533B.

Figure F27. Methane, Holes U1533A and U1533B. No other hydrocarbons were detected at this site.

Figure F28. Carbon, nitrogen, sulfur, and TOC/TN, Site U1533.

Figure F29. PFT concentrations, Site U1533. No samples from APC cores between 37 and 185 m were collected.

Figure F30. Whole-round physical properties, Holes U1533B and U1533D. Dashed lines with dots indicate values beyond the scale of the axis.

Figure F31. Whole-round physical properties, Holes U1533A and U1533C. The sawtooth pattern observed in the upper 15 m is also seen in Hole U1533D. Dashed line with dot indicates value beyond the scale of the axis.

Figure F32. Comparison of WRMSL (black solid line) and point SHMSL (colored dots) MS, Holes U1533B and U1533D. Dashed lines with dots indicate values beyond the scale of the axis.

Figure F33. Mass-normalization of WRMSL MS data using GRA bulk density, Holes U1533B and U1533D. Dashed lines with dots indicate values beyond the scale of the axis.

Figure F34. Mass-normalization of whole-round NGR data using GRA bulk density, Holes U1533B and U1533D. Dashed lines with dots indicate values beyond the scale of the axis.

Figure F35. Comparison of WRMSL GRA bulk density (colored lines) to discrete sample MAD measurements, Holes U1533B and U1533D. Dashed lines with dots indicate values beyond the scale of the axis.

Figure F36. MAD data, Site U1533.

Figure F37. *P*-wave velocity, Holes U1533B and U1533D. Dots = WRMSL PWL.

Figure F39. SHMSL color reflectance, Holes U1533B and U1533D.

Figure F38. Thermal conductivity, Site U1533. Horizontal bars represent ±1σ. When bars are not visible, this indicates that the uncertainty is about the same as the length of the point.

Figure F40. Composite splice framework for the uppermost sediment sequence recovered at Site U1533. A. Core positions showing in-splice (dark) and out-of-splice (light) intervals. B. Whole-round MS data offset according to hole: Hole U1533A = +0, Hole U1533B = +100, Hole U1533C = +200, Hole U1533D = +300. C. Stacked whole-round MS data. D. Paleomagnetic inclination data and polarity/chron interpretations. Black circles = discrete samples. (This figure is also available in an **oversized format**.)