

Figure F1. Location map of Site U1479 with main surface currents (arrows) in the southwest Indian Ocean and atmospheric circulation over southern Africa during austral summer (December, January, February) with approximate position of the Intertropical Convergence Zone (ITCZ) and Congo Air Boundary (CAB) (dashed lines; adapted from Reason et al., 2006). AC = Agulhas Current, SEC = South Equatorial Current, SEMC = South East Madagascar Current, NEMC = North East Madagascar Current, EACC = East Africa Coastal Current, TB = Transkei Basin, ARC = Agulhas Return Current, AL = Agulhas leakage. Purple shading = Zambezi Catchment, green shading = Limpopo Catchment, gray double-headed arrows = main pathways of moisture supply to the African continent from the northwest Atlantic (through Congo) and the northwest and southwest Indian Ocean.

Figure F2. Geomorphologic and oceanographic features around Site U1479. Dashed red arrows = bottom water currents, solid yellow arrows = main surface currents. NADW = North Atlantic Deep Water.

Figure F3. Example sea-surface temperature (SST) for the Site U1479 area overlaid with geostrophic current vectors. Satellite products used are the daily Odyssea SST analysis provided by CERSAT and the Ssalto/Duacs absolute geostrophic velocities. Flow speeds <30 cm/s have not been plotted. Image courtesy of Marjolaine Krug (CSIR-NRE).

Figure F4. Temperature-salinity plot from an apparent dipole vortex in the southeastern Atlantic Ocean (22–23 December 1996) adapted from Whittle et al. (2008). Blue points = values measured in the cyclone, red points = values in the anticyclonic eddy. Green = modified upwelled water, purple = water in the cold filament. AAIW = Antarctic Intermediate Water, RSIW = Red Sea Intermediate Water.

Figure F5. Seismic Line GeoB08-236 showing a long transect from the shelf downslope to approximate Site U1479 position. Note Site U1479 is located on parallel seismic Line GeoB08-240 ~1.5 nm to the south (see Figure F7). SP = shot point.

Figure F6. Conrad seismic line across Deep Sea Drilling Project (DSDP) Site 360, Cape Basin, during Leg 40 (The Shipboard Scientific Party, 1978).

Figure F7. Bathymetry and parasound survey tracks, Site U1479. In the vicinity of the plateau near Site U1479, morphology is smooth, whereas slump scars and channel erosion are found to the north as well as upslope and downslope.

Figure F8. Detail interpretation of seismic Line GeoB08-240 across Site U1479 (see Figure F7). Selected reflectors are marked to indicate lateral changes and outline continuity of reflectors.

Figure F9. Parasound profile along seismic Line GeoB08-240 across Site U1479 (see Figure F7). The high noise level derives from bad weather conditions. Penetration reaches ~60 ms TWT, but details can only be recognized to ~30 ms TWT.

Figure F10. Core recovery, Holes U1479A–U1479I.

Figure F11. Lithostratigraphic summary with selected physical properties and geochemical data. Holes U1479A, U1479F, and U1479G are composed of only one core and are presented in the visual core descriptions (see **Core descriptions**). Bioturbation intensity: 1 = slight, 2 = moderate, 3 = strong. A. Hole U1479B. (Continued on next three pages.)

Figure F11 (continued). B. Hole U1479C. (Continued on next page.)

Figure F11 (continued). C. Hole U1479D. D. Hole U1479E. (Continued on next page.)

Figure F11 (continued). E. Hole U1479H. F. Hole U1479I.

Figure F12. A–F. Representative lithologies per interval, Site U1479. Section-half (left) surfaces and smear slide photomicrographs taken under plane-polarized (middle) and cross-polarized (right) light. Scale bars = 100 µm.

Figure F13. A–E. Sediment deformations and disturbances, Site U1479.

Figure F14. A–C. Relative percentages of major compositions of sediment determined by smear slide observation, Holes U1479A–U1479C.

Figure F15. Comparison of CaCO₃ content determined using measurements on discrete samples and biogenic carbonate proportions estimated in smear slides, Hole U1479B.

Figure F16. Color reflectance, Hole U1479B. Parameters were filtered to remove outliers.

Figure F17. Comparison of cyclic changes in NGR, L*, a*, and bulk density between 210 and 250 m CSF-A, Hole U1479B. L* and a* are plotted on a reversed scale.

Figure F18. SHIL RGB color data, Hole U1479B.

Figure F19. NGR and magnetic susceptibility, Hole U1479B. Black lines = WRMSL measurements, red circles = SHMSL measurements.

Figure F20. P-wave velocity and bulk density, Hole U1479B. Black lines = WRMSL measurements, red circles = MAD measurements.

Figure F21. Porosity, grain density, and thermal conductivity, Hole U1479B.

Figure F22. Biochronology at Site U1479 with the locations of significant planktonic foraminifer, calcareous nannofossil, and diatom events. Upward arrows indicate the base (B), base reentrance (Br), base of acme (Ba), and base common (Bc) occurrence events for nannofossils and B events for planktonic foraminifers and diatoms. Downward arrows indicate the top (T) and top common (Tc) occurrence events for nannofossils and T events for planktonic foraminifers and diatoms. Biochronology is based largely on sampling in Hole U1479B.

Figure F23. Calcareous nannofossils, Hole U1479B. Scale bars = 5 µm.
 1. *Amaurolithus primus* (20H-CC; 187.15 m CSF-A). 2. *Amaurolithus* sp. (31H-2, 75 cm; 283.95 m CSF-A). 3. *Discoaster brouweri* (12H-3, 75 cm; 104.95 m CSF-A). 4. *Calcidiscus leptoporus* (12H-3, 75 cm; 104.95 m CSF-A). 5. *Calcidiscus macintyrei* (12H-3, 75 cm; 104.95 m CSF-A). 6. *Coccilithus pelagicus* (4H-2, 75 cm; 27.45 m CSF-A). 7. *Gephyrocapsa caribbeanica* (5H-3, 75 cm; 38.45 m CSF-A). 8. Small *Gephyrocapsa* sp. (<4 µm) (2H-1, 75 cm; 6.28 m CSF-A). 9. Large *Gephyrocapsa* spp. (>5.5 µm) (1H-1, 75 cm; 0.75 m CSF-A). 10. *Helicosphaera sellii* (7H-2, 75 cm; 55.95 m CSF-A). 11. *Helicosphaera* sp. (2H-1, 75 cm; 6.28 m CSF-A). 12. *Pontosphaera* sp. (5H-3, 75 cm; 38.45 m CSF-A). 13. *Pseudoemiliania lacunosa* (16H-6, 75 cm; 147.45 m CSF-A). 14. *Reticulofenestra asanoi* (5H-3, 75 cm; 38.45 m CSF-A). 15. *Reticulofenestra* spp. (3–5 µm) (4H-4, 75 cm; 30.45 m CSF-A). 16. Small *Reticulofenestra* (<3 µm) (4H-4, 75 cm; 30.45 m CSF-A).

Figure F24. Representative foraminifers, Hole U1479B. Scale bars = 100 µm.
 1–3. *Globorotalia pliozea* (28H-5, 70–72 cm). 4–6. *Globorotalia crassula* (11H-CC). 7–9. *Globorotalia sphericomicoza* (10H-CC). 10–12. *Globorotalia conomicoza* (22H-1, 70–72 cm). 13. *Globigerinella obesa* (28H-5, 70–72 cm). 14–16. *Neogloboquadrina pachyderma* (sinistral) (26H-5, 70–72 cm). 17, 18. *Globorotalia inflata* (10H-CC). 19–21. *Globorotalia truncatulinoides* (2H-CC). 22–24. *Globigerina falconensis* (28H-5, 70–72 cm). 25. *Globigerinoides ruber* (2H-CC). 26. *Globigerinoides sacculifer* (2H-CC). 27–29. *Globorotalia menardii* (2H-CC).

Figure F25. (A) S-ratio, (B) HIRM, and (C) SIRM measured on discrete samples compared to (D) WRMSL magnetic susceptibility (gray line) and 51-point running average (black line) and (E) dissolved Fe and (F) sulfate concentrations, Hole U1479B.

Figure F26. A, B. Downhole inclination, corrected declination, and NRM intensity, Site U1479. Gray lines = data, red and green circles = data without the last and first sections of each core (prone to drilling disturbance), black squares = discrete sample data, blue circles = orientation-corrected declinations.

Figure F27. Spliced inclination record, Site U1479. Polarity chron ages after Gradstein et al. (2012).

Figure F28. RGB green values, Site U1479. Scale applies to all offset data from individual holes.

Figure F29. Composite spliced records of RGB green values and NGR, Site U1479.

Figure F30. Concentration profiles, Hole U1479B.

Figure F31. Dissolved magnesium, potassium, sodium, and chloride profiles, Hole U1479B.

Figure F32. Alkalinity, dissolved phosphate, and pH profiles, Hole U1479B.

Figure F33. Dissolved iron, manganese, sulfate, and barium profiles, Hole U1479B. Samples with values below the detection limit are plotted as zeros.

Figure F34. Dissolved calcium and strontium profiles, Hole U1479B.

Figure F35. Dissolved silicon, lithium, and boron profiles, Hole U1479B.

Figure F36. Calcium carbonate and TOC, Hole U1479B.

Figure F37. Age-depth relationships based on planktonic foraminifers, calcareous nannofossils, diatoms, and magnetostratigraphy, Hole U1479B. Line segment fits are interpretive, with the younger two based primarily on foraminifer datums, and the older one based on all chronostratigraphic data combined.