

**Figure F1.** Bathymetric map of the southwest Indian Ocean with the location of the study area and current systems. Hole U1474A (31°13.00'S, 31°32.71'E) is located in the path of the upstream Agulhas Current. The position of the Sub-tropical Front is marked after Orsi et al. (1995). Map created using Ocean Data View software version 5.6.3 (Schlitzer 2022).

**Figure F2.** Stratigraphic ranges of planktic foraminifera, Hole U1474A.

**Plate P1.** *Candeina nitida*, *Beella praedigitata*, *Beella digitata*, and *Dentoglobigerina venezuelana*, Hole U1474A. 1–3. *Candeina nitida* d'Orbigny (10H-2, 77–79 cm; 1. Spiral view; 2. Sutural apertures; 3. Surface ultrastructure). 4–8. *Beella praedigitata* Parker (20H-1, 83–85 cm; 4–7. Umbilical view; 8. Surface ultrastructure). 9–13. *Beella digitata* Brady (2H-4, 62–64 cm; 9–11. Umbilical view; 12. Spiral view; 13. Surface ultrastructure). 14–17. *Dentoglobigerina venezuelana* Hedberg (18H-3, 27–29 cm; 14, 16. Umbilical view; 15. Spiral view; 17. Surface ultrastructure). Scale bar = 100 µm unless otherwise mentioned.

**Plate P2.** *Dentoglobigerina altispira* and *Globigerina bulloides*, Hole U1474A. 1–14. *Dentoglobigerina altispira* Cushman and Jarvis (1, 2. 19H-6, 133–135 cm [side view]; 3–6, 10, 14. 15H-3, 89–91 cm [3–6. Umbilical view; 10. Axial view; 14. Side view showing high spire]; 7–9, 11–13. 14H-6, 117–119 cm [7–9. Umbilical view; 11–13. Spiral view]. 15–20. *Globigerina bulloides* d'Orbigny (15, 16. 13H-3, 131–133 cm [umbilical view]; 17–20. 1H-2, 106–108 cm [17, 18. Umbilical view; 19, 20. Spiral view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P3.** *Globigerina bulloides*, *Globigerina falconensis*, and *Globigerinella calida*, Hole U1474A. 1–4. *Globigerina bulloides* d'Orbigny (1. 1H-1, 0–2 cm [umbilical view]; 2. 1H-1, 96–98 cm [axial view]; 3. 13H-3, 131–133 cm [enlarged view of the aperture]; 4. 1H-2, 106–108 cm [surface ultrastructure]). 5–10. *Globigerina falconensis* Blow (5. 1H-2, 106–108 cm [spiral view]; 6, 9, 10. 1H-1, 32–34 cm [6. Spiral view; 9. Axial view; 10. Surface ultrastructure]; 7, 8. 12H-7, 23–25 cm [umbilical view]). 11–17. *Globigerinella calida* Parker (11. 14H-3, 21–23 cm [umbilical view]; 13, 14, 17. 3H-4, 64–66 cm [13, 14. Umbilical view; 17. Surface ultrastructure]; 12, 15, 16. 5H-1, 12–14 cm [12, 15. Spiral view; 16. Axial view]. Scale bar = 100 µm unless otherwise mentioned.

**Plate P4.** *Globigerinella obesa*, *Globigerinella siphonifera*, and *Globigerinoides conglobatus*, Hole U1474A. 1–9. *Globigerinella obesa* Bolli (1–3. 5H-6, 129–131 cm [1–3. Umbilical view; 5–7. Spiral view]; 4. 4H-4, 8–10 cm [umbilical view]; 8, 9. 5H-1, 76–78 cm [8. Axial view; 9. Enlarged view of the aperture]). 10–14. *Globigerinella siphonifera* Brady (1H-2, 106–108 cm [10–12. Equatorial view; 13. Axial view; 14. Surface ultrastructure]). 15–18. *Globigerinoides conglobatus* Brady (15, 16. 4H-2, 84–86 cm [umbilical view]; 17. 19H-2, 123–125 cm [umbilical view]; 18. 2H-1, 0–2 cm [spiral view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P5.** *Globigerinoides conglobatus*, *Globigerinoides extremus*, and *Globigerinoides obliquus*, Hole U1474A. 1–3. *Globigerinoides conglobatus* Brady (1. 4H-2, 84–86 cm [spiral view]; 2, 3. 2H-1, 0–2 cm [2. Axial view; 3. Surface ultrastructure]; 4–10. *Globigerinoides extremus* Bolli (4, 5. 21H-1, 83–85 cm [umbilical view]; 6–8. 9H-2, 121–123 cm [6. Umbilical view; 7, 8. Spiral view]; 9, 10. 10H-5, 139–141 cm [9. Axial view; 10. Surface ultrastructure]). 11–18. *Globigerinoides obliquus* Bolli (11, 16–18. 15H-1, 69–71 cm [11. Umbilical view; 16, 17. Spiral view; 18. Surface ultrastructure]; 12–15. 21H-5, 113–115 cm [12–14. Umbilical view; 15. Spiral view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P6.** *Globigerinoides ruber*, *Globigerinoides tenellus*, and *Globigerinoidesella fistulosa*, Hole U1474A. 1–10. *Globigerinoides ruber* d'Orbigny (1–3, 7, 10. 1H-3, 52–54 cm [1–3. Umbilical view; 7. Spiral view; 10. Surface ultrastructure]; 4–6. 13H-32, 121–123 cm [umbilical view]; 8–9. 16H-7, 19–21 cm [spiral view]). The various morphotypes designated by Numberger et al. (2009) are also displayed: type-a (normal) represented by figures 1, 3, 6, 7 and 8; type-b (platys) shown by figure 4; type-c (elongate) shown by figures 5 and 9; and type-d (twin) represented by figure 2. 11–14. *Globigerinoides tenellus* Parker (2H-4, 94–96 cm [11, 12. Spiral view; 13. Umbilical view; 14. Aperture]). 15–20. *Globigerinoidesella fistulosa* Schubert (8H-3, 11–13 cm [15. Spiral view; 16–18. Umbilical view; 19. Surface ultrastructure; 20. Fistulose protuberance]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P7.** *Globoquadrina dehiscens*, *Globorotaloides hexagonus*, and *Globoturborotalita apertura*, Hole U1474A. 1–6. *Globoquadrina dehiscens* Chapman, Parr and Collins (1–3. 23H-7, 54–56 cm [umbilical view]; 4–6. 23H-7, 22–24 cm [4, 5. Umbilical view; 6. Axial view]). 7–12. *Globorotaloides hexagonus* Natland (11H-5, 81–83 cm [7, 8. Spiral view; 9, 10. Umbilical view; 11. Axial view; 12. Surface ultrastructure]). 13–20. *Globoturborotalita apertura* Cushman (13–16. 20H-3, 39–41 cm [umbilical view]; 17–20. 19H-3, 135–137 cm [17–19. Umbilical view; 20. Axial view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P8.** *Globoturborotalita decoraerta*, *Globoturborotalita druryi*, *Globoturborotalita nepenthes*, and *Globoturborotalita rubescens*, Hole U1474A. 1–4. *Globoturborotalita decoraerta* Takayanagi and Saito (22H-2, 10–12 cm [1. Umbilical view; 2. Spiral view; 3. Axial view; 4. Surface ultrastructure]). 5–8. *Globoturborotalita druryi* Akers (5–7. 23H-6, 82–84 cm; 8. 19H-4, 145–147 cm [5, 6, 8. Umbilical view; 7. Axial view]). 9–16. *Globoturborotalita nepenthes* Todd (9, 10. 23H-6, 146–148 cm [umbilical view]; 11–13, 16. 21H-1, 115–117 cm [11, 12. Umbilical view; 13, 16. Side view]). 17–20. *Globoturborotalita rubescens* Hofker (17–19. 7H-6, 33–35 cm [umbilical view]; 20. 1H-2, 42–44 cm [umbilical view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P9.** *Globoturborotalita rubescens*, *Globoturborotalita woodi*, *Orbulina suturalis*, and *Orbulina universa*, Hole U1474A. 1–5. *Globoturborotalita rubescens* Hofker (1, 5. 1H-2, 42–44 cm [1. Umbilical view; 5. Surface ultrastructure]; 2–4. 7H-6, 33–35 cm [2, 3. Spiral view; 4. Axial view]). 6–12. *Globoturborotalita woodi* Jenkins (6, 7, 11, 12. 20H-6, 69–71 cm [6, 7. Umbilical view; 11. Aperture; 12. Surface ultrastructure]; 8–10. 10H-2, 141–143 cm [8. Umbilical view; 9. Spiral view; 10. Axial view]). 13, 14. *Orbulina suturalis* Brönnimann (21H-3, 39–41 cm). 15–17. *Orbulina universa* d'Orbigny (5H-6, 126–128 cm [15. Final chamber enveloping the rest of the chambers; 16. Broken test showing the globigerine chambers; 17. Surface ultrastructure]. Scale bar = 100 µm unless otherwise mentioned.

**Plate P10.** *Orbulina universa*, *Sphaeroidinella dehiscens*, and *Sphaeroidinellopsis kochi*, Hole U1474A. 1, 2. *Orbulina universa* d'Orbigny (25H-5, 113–115 cm; test with second terminal spherical chamber, previously referred to as *Orbulina bilobata* or *Biorbulina bilobata*, an aberrant form of *O. universa*). 3–11. *Sphaeroidinella dehiscens* Parker and Jones (3–5. 18H-2, 17–19 cm [spiral view showing the minute secondary aperture formed in the early phase of evolution]; 6–8, 10. 2H-2, 42–44 cm [6–8. Spiral view; 10. Side view]; 9, 11. 16H-5, 108–110 cm [9. Umbilical view; 11. Aperture]). 12–19. *Sphaeroidinellopsis kochi* Caudri (12. 23H-1, 62–64 cm [umbilical view]; 13–15, 18, 19. 20H-3, 105–107 cm [13–15. Umbilical view; 18, 19. Spiral view]; 16, 17. 17H-6, 85–87 cm [umbilical view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P11.** *Sphaeroidinellopsis kochi*, *Sphaeroidinellopsis paenedehiscens*, and *Sphaeroidinellopsis seminulina*, Hole U1474A. 1–5. *Sphaeroidinellopsis kochi* Caudri (1, 2. 17H-6, 85–87 cm [umbilical view]; 3–5. 23H-1, 62–64 cm [3, 4. Umbilical view; 5. Surface ultrastructure]). 6–8. *Sphaeroidinellopsis paenedehiscens* Blow (21H-7, 5–7 cm; umbilical view). 9–18. *Sphaeroidinellopsis seminulina* Schwager (9, 10, 17. 17H-7, 33–35 cm [9, 10. Umbilical view; 17. Spines]; 11–16, 18. 17H-1, 3–5 cm [11, 12, 14, 15. Umbilical view; 13. Spiral view; 16. Aperture; 18. Surface ultrastructure]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P12.** *Trilobatus quadrilobatus*, *Trilobatus sacculifer*, and *Trilobatus trilobus*, Hole U1474A. 1–4. *Trilobatus quadrilobatus* d'Orbigny (4H-3, 94–96 cm [1, 2. Umbilical view; 3. Spiral view; 4. Axial ultrastructure]). 5–14. *Trilobatus sacculifer* Brady (5, 12–14. 8H-7, 11–13 cm [5. Spiral view; 12. Axial view; 13. Supplementary aperture; 14. Surface ultrastructure]; 6, 7. 12H-4, 89–91 cm [umbilical view]; 8, 10, 11. 15H-2, 111–113 cm [8. Spiral view; 10, 11. Umbilical view]; 9. 4H-1, 138–140 cm [umbilical view]). 15–18. *Trilobatus trilobus* Reuss (4H-1, 138–140 cm [15. Spiral view; 16. Umbilical view; 17. Axial view; 18. Surface ultrastructure]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P13.** *Turborotalita quinqueloba*, *Turborotalita humilis*, and *Globigerinita glutinata*, Hole U1474A. 1–7. *Turborotalita quinqueloba* Natland (1, 2, 5–7. 10H-6, 117–119 cm [1, 2. Umbilical view; 5. Axial view; 6. Apertural lip; 7. Surface ultrastructure]; 3, 4. 2H-6, 106–108 cm [umbilical view]). 8. *Turborotalita humilis* Brady (2H-1, 32–34 cm). 9–19. *Globigerinita glutinata* Egger (9. 18H-7, 67–69 cm [umbilical view with bulla]; 10, 11, 13, 15, 16, 19. 1H-1, 96–98 cm [10, 11, 13. Umbilical

view with bulla; 15, 16. Umbilical view without bulla; 19. Aperture covered with bulla, showing infralaminar supplementary apertures; 12, 14, 17, 18. 7H-2, 57–59 cm [12. Umbilical view without bulla; 14. Spiral view; 17, 18. Spiral view with secondary aperture]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P14.** *Globoconella conomiozea* and *Globoconella inflata*, Hole U1474A. 1–10. *Globoconella conomiozea* Kennett (1. 23H-3, 78–80 cm [1. Axial view; 7, 8. Spiral view]; 2, 3, 5, 9. 22H-1, 0–2 cm [2, 3. Umbilical view; 5, 9. Axial view]; 4, 6, 10. 18H-7, 35–37 cm [4. Axial view; 6, 10. Umbilical view]). 11–20. *Globoconella inflata* d'Orbigny (11, 12. 2H-1, 136–138 cm [umbilical view]; 13, 14, 19, 20. 16H-2, 79–81 cm [13, 14. Umbilical view; 19, 20. Axial view]; 15–18. 12H-3, 91–93 cm [spiral view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P15.** *Globoconella inflata*, *Globoconella miotumida*, and *Globoconella puncticulata*, Hole U1474A. 1–7. *Globoconella inflata* d'Orbigny (1, 2, 5–7. 12H-3, 91–93 cm [1, 2. Axial view; 5, 6. Surface of the cortex; 7. Surface ultrastructure]; 3, 4. 2H-1, 136–138 cm [3. Axial view; 4. Aperture]). 8–12. *Globoconella miotumida* Jenkins (8. 22H-2, 10–12 cm [axial view]; 9–11. 17H-2, 45–47 cm [9, 10. Spiral view; 11. Axial view]; 12. 23H-3, 78–80 cm [umbilical view]). 13–17. *Globoconella puncticulata* Deshayes (13–15. 20H-5, 59–61 cm [umbilical view]; 16. 14H-4, 196.5–198.5 cm [umbilical view]; 17. 1H-1, 64–66 cm [spiral view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P16.** *Globoconella puncticulata*, *Globorotalia merotumida*, and *Globorotalia plesiotumida*, Hole U1474A. 1–8. *Globoconella puncticulata* Deshayes (1, 5, 6. 14H-4, 196.5–198.5 cm [axial view]; 2. 1H-1, 64–66 cm [axial view]; 3, 4, 7, 8. 20H-5, 59–61 cm [3, 4. Axial view; 7. Aperture; 8. Surface ultrastructure]). 9–14. *Globorotalia merotumida* Blow and Banner (9, 10, 14. 21H-5, 17–19 cm [9, 10. Umbilical view; 14. Spiral view]; 11, 13. 16H-3, 57–59 cm [umbilical view]). 15–18. *Globorotalia plesiotumida* Blow and Banner (15, 16. 19H-4, 81–83 cm [spiral view]; 17, 18. 21H-1, 83–85 cm [umbilical view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P17.** *Globorotalia plesiotumida*, *Globorotalia tumida*, and *Globorotalia unguata*, Hole U1474A. 1, 2. *Globorotalia plesiotumida* Blow and Banner (19H-4, 81–83 cm [umbilical view]). 3–11. *Globorotalia tumida* Brady (3, 4, 6, 11. 13H-3, 67–69 cm [3. Axial view; 4–6. Umbilical view; 11. Surface ultrastructure]; 7–10. 7H-4, 45–47 cm [7–9. Axial view; 10. Spiral view]). 12–19. *Globorotalia unguata* Bermúdez (12–14, 17, 19. 1H-1, 96–98 cm [12, 13. Spiral view; 14. Axial view; 17. Cord-like keel; 19. Surface ultrastructure]; 15, 16, 18. 2H-6, 106–108 cm [15, 16. Umbilical view; 18. Side view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P18.** *Globorotalia (H.) bermudezi*, *Globorotalia (H.) eastropacia*, and *Globorotalia (H.) hirsuta*, Hole U1474A. 1–5. *Globorotalia (H.) bermudezi* Rögl and Bolli (6H-3, 131–133 cm [1. Spiral view; 2, 3. Umbilical view; 4, 5. Axial view]). 6–11. *Globorotalia (H.) eastropacia* Fleisher (6, 7. 15H-5, 13–15 cm [spiral view]; 8–11. 6H-2, 89–91 cm [8–10. Umbilical view; 11. Peripheral keel]). 12–19. *Globorotalia (H.) hirsuta* d'Orbigny (12–14, 17–19. 1H-1, 96–98 cm [12–14. Axial view; 17–19. Spiral view]; 15, 16. 2H-6, 42–44 cm [umbilical view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P19.** *Globorotalia (H.) margaritae* and *Globorotalia (H.) scitula*, Hole U1474A. 1–14. *Globorotalia (H.) margaritae* Bolli and Bermúdez (1–3. 20H-2, 29–31 cm [umbilical view]; 4–10. 19H-1, 115–117 cm [4–6. Umbilical view; 7–10. Spiral view]; 11–14. 17H-5, 13–15 cm [axial view]). 15–22. *Globorotalia (H.) scitula* Brady (15–17, 21, 22. 3H-3, 54–56 cm [15–17. Spiral view; 21, 22. Umbilical view]; 18–20. 7H-1, 15–17 cm [18. Axial view; 19, 20. Umbilical view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P20.** *Globorotalia (H.) scitula*, *Globorotalia (M.) limbata*, and *Globorotalia (M.) menardii*, Hole U1474A. 1–3. *Globorotalia (H.) scitula* Brady (3H-3, 54–56 cm [1, 2. Aperture; 3. Surface ultrastructure]). 4, 5. *Globorotalia (M.) limbata* Fornasini (18H-7, 3–5 cm [4. Spiral view; 5. Umbilical view; 6. Axial view]). 7–18. *Globorotalia (M.) menardii* Parker, Jones and Brady (7–11, 16, 18. 1H-CC, 3–5 cm [7–11. Spiral view; 16. Axial view; 18. Wall texture]; 12–15, 17. 10H-2, 77–79 cm [12–14. Umbilical view; 15. Axial view; 17. Keel]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P21.** *Globorotalia (M.) miocenica*, *Globorotalia (M.) multicamerata*, *Globorotalia (T.) crassaformis*, Hole U1474A. 1–3. *Globorotalia (M.) miocenica* Palmer (15H-6, 23–25 cm [1. Umbilical view; 2. Spiral view; 3. Axial view]). 4–8. *Globorotalia (M.) multicamerata* Cushman and Jarvis (4–7. 14H-2, 139–141 cm [4. Umbilical view; 5–7. Spiral view]; 8. 13H-1, 141–143 cm [umbilical view]). 9–21. *Globorotalia (T.) crassaformis* Galloway and Wissler (9–11, 15, 16, 21. 13H-6, 1–3 cm [9–11. Spiral view; 15, 16. Umbilical view; 21. Surface ultrastructure]; 12–14. 4H-4, 8–10 cm [umbilical view]; 18–20. 3H-1, 2–4 cm [axial view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P22.** *Globorotalia (T.) tosaensis* and *Globorotalia (T.) truncatulinoides*, Hole U1474A. 1–9. *Globorotalia (T.) tosaensis* Takayanagi and Saito (1–3. 4H-2, 20–22 cm [spiral view]; 4, 5, 7. 6H-2, 121–123 cm [4, 5. Umbilical view; 7. Axial view]; 6, 8, 9. 11H-2, 51–53 cm [6. Umbilical view; 8, 9. Axial view]). 10–20. *Globorotalia (T.) truncatulinoides* d'Orbigny (10, 11. 7H-2, 25–27 cm [umbilical view]; 12–15, 18, 19. 5H-6, 126–128 cm [12–15. Umbilical view; 18, 19. Axial view]; 16, 17, 20. 1H-1, 0–2 cm [16, 17. Spiral view; 20. Peripheral keel]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P23.** *Neogloboquadrina acostaensis*, *Neogloboquadrina humerosa*, and *Neogloboquadrina incompta*, Hole U1474A. 1–11. *Neogloboquadrina acostaensis* Blow (1, 2, 5. 21H-6, 59–61 cm [1, 2. Spiral view; 5. Umbilical view]; 3, 6–8, 10. 18H-1, 39–41 cm [3. Spiral view; 6–8. Umbilical view; 10. Axial view]; 9, 11. 14H-4, 129–131 cm [9. Umbilical view; 11. Surface ultrastructure]). 12–14. *Neogloboquadrina humerosa* Takayangi and Saito (15H-2, 15–17 cm [12. Umbilical view; 13. Axial view; 14. Aperture]). 15–18. *Neogloboquadrina incompta* Cifelli (15, 16. 7H-2, 89–91 cm [umbilical view]; 17, 18. 1H-1, 32–34 cm [17. Umbilical view; 18. Spiral view]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P24.** *Neogloboquadrina incompta* and *Neogloboquadrina dutertrei*, Hole U1474A. 1–3. *Neogloboquadrina incompta* Cifelli (7H-2, 89–91 cm [1, 2. Spiral view; 3. Surface ultrastructure]). 4–15. *Neogloboquadrina dutertrei* d'Orbigny (4–6, 9, 10, 13, 14. 10H-4, 97–99 cm [4–6. Umbilical view; 9, 10. Spiral view; 13, 14. Axial view]; 7, 8, 12. 3H-5, 10–12 cm [7, 8. Umbilical view; 12. Axial view]; 11, 15. 1H-1, 0–2 cm [11. Spiral view; 15. Surface ultrastructure]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P25.** *Pulleniatina obliquiloculata* and *Pulleniatina primalis*, Hole U1474A. 1–6. *Pulleniatina obliquiloculata* Parker and Jones (1, 2, 5, 6. 5H-5, 20–22 cm [1, 2. Spiral view; 5. Aperture; 6. Cortex]; 3, 4. 2H-3, 148–150 cm [apertural view]). 7–16. *Pulleniatina primalis* Banner and Blow (7–9, 11, 12. 24H-5, 2–4 cm [7–9. Spiral view; 11, 12. Umbilical view]; 10, 16. 20H-1, 51–53 cm [10. Axial view; 16. Cortex surface]; 13–15. 16H-2, 47–49 cm [13, 14. Umbilical view; 15. Aperture]). Scale bar = 100 µm unless otherwise mentioned.

**Plate P26.** *Hastigerina pelagica* d'Orbigny, Hole U1474A (1H-1, 96–98 cm). 1, 2. Umbilical view; 3, 4. Spiral view; 5. Axial view; 6. Surface; 7, 8. Triradial spines. Scale bar = 100 µm unless otherwise mentioned.