

Figure F1. Site map, Expedition 386. Bathymetric overview map of the Japan Trench (modified after Kioka et al., 2019) between the Daiichi Seamount in the south and the Erimo Seamount in the north.

Figure F2. Sites M0084 and M0085. Left: high-resolution bathymetric map with 5 m contours, site locations, and track lines and locations of previously acquired high-resolution subbottom profiles and short cores during the site survey cruise (Strasser et al., 2019). Right: site survey subbottom profiles showing depths (assuming 1500 m/s *P*-wave velocities) of the 20 and 40 m GPC barrels used to recover cores. Exact hole positions and depths are given in Table T1, Hydro-acoustics, and Table T1 in the Expedition 386 methods chapter (Strasser et al., 2023a). SP = shotpoint.

Figure F3. Bathymetry and grid of subbottom profiler lines acquired at Sites M0084 and M0085 in Basin N3. Contour interval = 5 m.

Figure F4. Trench-perpendicular Line 386-Underway_083, toward the north of the basin, showing the acoustic character of Basin N3. SP = shotpoint.

Figure F5. Trench-perpendicular Line 386-Underway_037, which lies in the center of basin and bounds Site M0084, showing the acoustic character of Basin N3. SP = shotpoint.

Figure F6. Trench-perpendicular Line 386-Underway_041, in the southern part of the basin, showing the acoustic character of Basin N3. SP = shotpoint.

Figure F7. Trench-perpendicular Line 386-Underway_046, the southernmost line in the basin, showing the acoustic character of Basin N3. SP = shotpoint.

Figure F8. Subbottom profiles around Site M0084.

Figure F9. Trench-perpendicular Line 386-Underway_038, which lies immediately south of Site M0084, showing the acoustic character at Site M0084. SP = shotpoint.

Figure F10. Trench-parallel Line 386-Underway_029, which intersects Sites M0084 and M0085, showing the acoustic character along the strike of the trench and comparing the full section at Site M0084 with the condensed section at Site M0085. SP = shotpoint.

Figure F11. Subbottom profiles around Site M0085.

Figure F12. Trench-perpendicular Line 386-Underway_033, which intersects Site M0085, showing the acoustic character at Site M0085. SP = shotpoint.

Figure F13. Lithostratigraphic summary, Holes M0084A and M0084B. XCT = X-ray CT, MS = magnetic susceptibility, cps = counts per second.

Figure F14. Ternary diagrams of major components and grain size, Site M0084.

Figure F15. Smear slide summaries, Holes M0084A and M0084B. The most abundant lithogenics (clay, quartz, feldspar, and pyrite) are in a brown color gradient, the volcanoclastics/vitrics are pink, and the biogenics are in a blue gradient for the siliceous biogenics (diatoms, sponge spicules, and radiolaria) and are green for the calcareous microfossils. See legend in Figure F14 in the Expedition 386 methods chapter (Strasser et al., 2023a). XCT = X-ray CT.

Figure F16. Lithologic and biogenic components, Sites M0084 and M0085.

Figure F17. Lithostratigraphic summary, Holes M0084C and M0084D. XCT = X-ray CT, MS = magnetic susceptibility, cps = counts per second. (Continued on next page.)

Figure F18. Smear slide summaries, Holes M0084C and M0084D. The most abundant lithogenics (clay, quartz, feldspar and pyrite) are in a brown color gradient, the volcanoclastics/vitrics are pink, and the biogenics are in a blue gradient for the siliceous biogenics (diatoms, sponge spicules, and radiolaria) and are green for the calcareous microfossils. See legend in Figure F14 in the Expedition

386 methods chapter (Strasser et al., 2023a). XCT = X-ray CT. (Continued on next page.)

Figure F19. A–K. Sedimentary structures, Sites M0084 and M0085.

Figure F20. Lithostratigraphic summary, Holes M0084E and M0084F. XCT = X-ray CT, MS = magnetic susceptibility, cps = counts per second. (Continued on next page.)

Figure F21. Smear slide summaries, Holes M0084E and M0084F. The most abundant lithogenics (clay, quartz, feldspar and pyrite) are in a brown color gradient, the volcanoclastics/vitrics are pink, and the biogenics are in a blue gradient for the siliceous biogenics (diatoms, sponge spicules, and radiolaria) and are green for the calcareous microfossils. See legend in Figure F14 in the Expedition 386 methods chapter (Strasser et al., 2023a). XCT = X-ray CT. (Continued on next page.)

Figure F22. Lithostratigraphic summary, Holes M0085A and M0085B. XCT = X-ray CT, MS = magnetic susceptibility, cps = counts per second.

Figure F23. Ternary diagrams of major components and grain size, Site M0085.

Figure F24. Smear slide summaries, Holes M0085A and M0085B. The most abundant lithogenics (clay, quartz, feldspar and pyrite) are in a brown color gradient, the volcanoclastics/vitrics are pink, and the biogenics are in a blue gradient for the siliceous biogenics (diatoms, sponge spicules, and radiolaria) and are green for the calcareous microfossils. See legend in Figure F14 in the Expedition 386 methods chapter (Strasser et al., 2023a). XCT = X-ray CT.

Figure F25. Lithostratigraphic summary, Holes M0085C and M0085D. XCT = X-ray CT, MS = magnetic susceptibility, cps = counts per second. (Continued on next page.)

Figure F26. Smear slide summaries, Holes M0085C and M0085D. The most abundant lithogenics (clay, quartz, feldspar and pyrite) are in a brown color gradient, the volcanoclastics/vitrics are pink, and the biogenics are in a blue gradient for the siliceous biogenics (diatoms, sponge spicules, and radiolaria) and are green for the calcareous microfossils. See legend in Figure F14 in the Expedition 386 methods chapter (Strasser et al., 2023a). XCT = X-ray CT. (Continued on next page.)

Figure F27. XRD mineralogy summary plots, Holes M0084F and M0085D.

Figure F28. A–E. Tephra within intervals (brackets) in Basin N3, Sites M0084 and M0085.

Figure F29. Tephra. A. 386-M0084F-1H-22, 75 cm. B. 386-M0085D-1H-15, 89.5 cm. C. 386-M0085B-1H-15, 85 cm. D. 386-M0085D-1H-33, 65 cm. E. 386-M0085D-1H-34, 33 cm.

Figure F30. SiO₂ versus oxides in volcanic glass shards (386-M0085D-1H-33, 108.5 cm) analyzed by SEM-EDS. Glass shards in this sample are divided into three groups according to K₂O content. Colored symbols depict separation of groups; no interpretation available.

Figure F31. Abundance changes of radiolarian species *L. setosa*, *C. davisiana*, and the *Tetrapyle* group and their probable correlation between Holes M0084D and M0085D. See Micropaleontology in the Expedition 386 methods chapter (Strasser et al., 2023a) for explanations of radiolarian zonation and events.

Figure F32. Parallel laminations where Sample 386-M0085D-1H-28, 98.5–101.5 cm, was taken for foraminifera (marked by white plug).

Figure F33. IW salinity, total alkalinity, and ammonium (NH₄⁺) concentrations, Site M0084.

Figure F34. IW salinity, total alkalinity, and ammonium (NH₄⁺) concentrations, Site M0085.

Figure F35. IW V, Mo, and U concentrations, Site M0084.

Figure F36. IW V, Mo, and U concentrations, Site M0085.

Figure F37. IW Li, B, Si, Mn, Fe, Sr, and Ba concentrations, Site M0084.

Figure F38. IW Li, B, Si, Mn, Fe, Sr, and Ba concentrations, Site M0085.

Figure F39. IW Cl^- , Br^- , and SO_4^{2-} concentrations, Site M0084.

Figure F40. IW Cl^- , Br^- , and SO_4^{2-} concentrations, Site M0085.

Figure F41. Methane, ethane, and methane to ethane (C_1/C_2) ratio (red diamonds), Holes M0084F and M0084E.

Figure F42. Methane, ethane, and methane to ethane (C_1/C_2) ratio (red diamonds), Holes M0085D and M0085C.

Figure F43. Solid-phase X-ray fluorescence contents of Al, Ca, Fe, Mn, and Si, Site M0084.

Figure F44. Solid-phase X-ray fluorescence contents of Al, Ca, Fe, Mn, and Si, Site M0085.

Figure F45. Solid-phase contents of TC, TOC, TIC, and TS, Site M0084.

Figure F46. Solid-phase contents of TC, TOC, TIC, and TS, Site M0085.

Figure F47. Physical properties summary, Holes M0084A (orange) and M0084B (black). Blue dots = MAD measurement, red dots = P -wave velocity. Error bars = ± 50 m/s. MS = magnetic susceptibility, cps = counts per second.

Figure F48. Physical properties summary, Holes M0084C (orange) and M0084D (black). Blue dots = MAD measurement, red dots = P -wave velocity. MS = magnetic susceptibility, cps = counts per second.

Figure F49. Physical properties summary, Holes M0084E (orange) and M0084F (black). Blue dots = MAD measurement, red dots = P -wave velocity. MS = magnetic susceptibility, cps = counts per second.

Figure F50. Physical properties summary, Holes M0085A (orange) and M0085B (black). Blue dots = MAD measurement, red dots = P -wave velocity. MS = magnetic susceptibility, cps = counts per second.

Figure F51. Physical properties summary, Holes M0085C (orange) and M0085D (black). Blue dots = MAD measurement, red dots = P -wave velocity. MS = magnetic susceptibility, cps = counts per second.

Figure F52. Undrained shear strength from fall cone and AVS, Site M0084.

Figure F53. Undrained shear strength from fall cone and AVS, Site M0085.

Figure F54. MAD summary, Holes M0084A (orange) and M0084B (black).

Figure F55. MAD summary, Holes M0084C (orange) and M0084D (black).

Figure F56. MAD summary, Holes M0084E (orange) and M0084F (black).

Figure F57. MAD summary, Holes M0085A (orange) and M0085B (black).

Figure F58. MAD summary, Holes M0085C (orange) and M0085D (black).

Figure F59. Color data summary, Holes M0084A (dashed curves) and M0084B (solid curves).

Figure F60. Color data summary, Holes M0084C (dashed curves) and M0084D (solid curves).

Figure F61. Color data summary. Holes M0084E (dashed curves) and M0084F (solid curves).

Figure F62. Color data summary, Holes M0085A (dashed curves) and M0085B (solid curves).

Figure F63. Color data summary, Holes M0085C (dashed curves) and M0085D (solid curves).

Figure F64. Intensity, inclination, and declination, Holes M0084A, M0084C, M0084E, M0085A, and M0085C.

Figure F65. Intensity, Holes M0084B, M0084D, M0084F, M0085B, and M0085D.

Figure F66. Declination, Holes M0084B, M0084D, M0084F, M0085B, and M0085D.

Figure F67. Corrected declination, Holes M0084B, M0084D, M0084F, M0085B, and M0085D.

Figure F68. Inclination, Holes M0084B, M0084D, M0084F, M0085B, and M0085D.