Figure F1. Site location 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. R/V *Kaimei*.

Figure F3. GPC deployment sequence, Expedition 386. (1) The GPC system is lowered by winch toward the seafloor, with a transponder mounted 50 m above the system for precise positioning and a small trigger corer suspended below the piston coring system. (2) The trigger corer hits the seafloor, triggering the release of the lever arm and the main coring system. The piston coring system is driven into the seafloor sediments by the weight of the weight head and the main coring barrel. (3) As the piston corer barrel enters the sediment, a piston inside the piston corer barrel moves up on top of the sediment being cored by the main coring barrel, preventing disturbance of the sediment layers. (4) After penetration is completed, the entire system is recovered to the surface. On the ship, the core barrel sections are opened and the core sections are cut, recorded, and moved into the laboratory for measurement and storage.

Figure F4. Azimuth-inclinometer, Expedition 386. A. Details of measurements. B. Position on the GPC.

Figure F5. Azimuth-inclinometer measurements, Expedition 386. Arrows = direction of rotation at seabed.

Figure F6. Winch log, Expedition 386. Example of winch log data for the first GPC deployment (20 m barrel) in Holes M0081A and M0081B on 20 April 2021. Spud-in commenced at 11:40:42 and ended at 11:40:45 − 3 s. Recovery commenced, and the cable tension rose to 2665 kgf at 11:40:46 before dropping to 1175 kgf, indicating the sediment at the base sheared off. Cable tension rose to a maximum of 7172 kgf at 11:42:01 and dropped to 4825 kgf at 11:42:06, indicating the corer was clear of the seabed.

Figure F7. Depth scales, Expedition 386. Dashed lines = equivalent horizons. Red arrows = tie points aligning specific, easily recognized features.

Figure F8. Core processing and measurement flow during offshore, OSP, and PSP phases, Expedition 386. SP = Science Party, SBP = subbottom profiler, WR = whole round, DIC = dissolved inorganic carbon, MS = magnetic susceptibility, PWV = *P*-wave velocity, CHN (S) = carbon, hydrogen, nitrogen, sulfur.

Figure F9. XBT profiles by basin, Expedition 386. One XBT was taken between Basins CN3 and N1 and is not directly linked to any profiles.

Figure F10. Bathymetric data acquired in all basins, Expedition 386.

Figure F11. Example of acoustic facies interpretation of a subbottom profile line, Expedition 386. SP = shotpoint, TWT = two-way traveltime.

Figure F12. Hand drawn VCD template, Expedition 386.

Figure F13. Example of a lithostratigraphic summary produced by uploading information from the DIS, Expedition 386. See legend in Figure F14. XCT = X-ray CT, MS = magnetic susceptibility, cps = counts per second.

Figure F14. Lithostratigraphic summary, 3 m barrel sheet, and smear slide summary plot legend, Expedition 386. A. Graphic patterns and key symbols. B. Smear slide summary plot legend.

Figure F15. Ternary diagram used to plot different sediment textures (Shepard, 1954), Expedition 386.

Figure F16. Semiquantitative visual scale used to describe the intensity of the presence of iron monosulfide in cores, Expedition 386. Vertical bar on the right shows the relative increase upward.

Figure F17. Nomenclature used to classify the degree of bioturbation (modified from Droser and Bottjer, 1991), Expedition 386. On the barrel sheets, the intensity of bioturbation is coded from 1 (no bioturbation) to 5 (homogenized by bioturbation).

Figure F18. Sigma plot ternary diagrams summarizing the texture (left) and composition (right) of sediment observed in smear slide samples, Holes M0091A–M0091D.

Figure F19. Example smear slide summary, Hole M0091D. The most abundant lithogenics (clay, quartz, feldspar, and pyrite) are given in a brown gradient, the volcaniclastics/vitrics are pink, and the biogenics are in a blue gradient for the siliceous biogenics (diatoms, sponge spicules, and radiolaria) and green for the calcareous microfossils. See legend in Figure F14. XCT = X-ray CT.

Figure F20. Event bed (6 m thick; Sections 386-M0091D-1H-9 through 1H-14). The sharp basal surface is overlain by a fining-upward sedimentary succession from medium to fine sand to structureless clay. The top is slightly bioturbated.

Figure F21. Structures of tephra layers and thickness criteria used to define tephra intervals, Expedition 386.

Figure F22. Volcanic glass shard shape types, Expedition 386.

Figure F23. Relative abundance for *Cycladophora davisiana*, the *Tetrapyle circularis/fruticosa* group, and *Lithomelissa setosa,* used as the main radiolarian zonal scheme, Expedition 386. *C. davisiana* Zones *'a* and *'b* almost correspond to the Holocene and late Pleistocene, respectively, based on a North Pacific standard curve of Morley et al. (1982).

Figure F24. Map of sea-surface temperature and main currents flowing around Japanese islands. The study area of Expedition 386 (dashed square) is located in a polar frontal zone between the warm Kuroshio and cold Oyashio currents.

Figure F25. U-channel sampling, Expedition 386. Left: inserting U-channel into a split section. Right: cutting the U-channel from the section using fishing line.

Figure F26. Paleomagnetism coordinate systems, Expedition 386.

Figure F27. Bottom water sampling system, Expedition 386.

Figure F28. Massively parallel single-cell genome amplification using SAG-gel approach, Expedition 386.

Figure F29. Microbiology OSP sediment sampling, Expedition 386. Sediment was taken from the (1) event deposit and (2) above and below, as well as (3) the section bottom adjacent to sampling locations taken offshore.

Figure F30. X-ray CT and linescan images of different types of tie points used for first-order stratigraphic correlation, Expedition 386. TP5 at Site M0090 and TP3 at Site M0085 are tie points defined by silt lamina and sand layers. TP3 and TP4 at Site M0081 and TP5 at Site M0085 are tie points defined by bioturbation pattern, radiodensity change, and sediment color. TP2 at Site M0091 and TP4 at Site M0087 are tie points defined by tephra layers. (Continued on next page.)