

Figure F1. NanTroSEIZE transect map. Transect Lines a and b refer to composite seismic depth section of Figure F2A and Line ODKM-B of Figure F2B, respectively. Solid dots = Expedition 358 sites, open dots = previous NanTroSEIZE sites.

Figure F2. A. Regional seismic reflection depth-processed imaging for Sites C0002 and C0024 and other previously drilled NanTroSEIZE sites. BSR = bottom-simulating reflector, PTZ = protothrust zone. B. Japan Agency for Marine-Earth Science and Technology Seismic Reflection Line ODKM-B showing location of Site C0025. Blue circles = interpreted boundary between Kumano fore-arc basin sediments and underlying inner accretionary prism, white circles = interpreted depths of splay fault branching from plate boundary.

Figure F3. Seismic cross sections near Site C0002. VE = vertical exaggeration. A. In-line (IL). B. Cross-line (XL).

Figure F4. Schematic diagrams (not to scale). Horizontal black line between blue and white bands = seafloor. A. Holes C0002F/C0002N/C0002P drilled during previous expeditions. WH = wellhead. BRT = below rotary table, MSL = from mean sea level. TD = total depth. B. Expedition 358 drilling and casing plan, building downward from preexisting Hole C0002P. LWD = logging while drilling. C. Actual holes drilled during Expedition 358. Note the change in relative scale compared to A and B.

Figure F5. Summary of (A) all holes drilled at Site C0002 from 2007 through 2019 and (B) sidetrack holes and depth ranges drilled at Site C0002 during Expedition 358 (see Figure F4C for their connections to each other and relative geometry). Numbers are specific depths in meters below seafloor of the top and bottom of each sidetrack hole. VE = vertical exaggeration. LWD = logging while drilling.

Figure F6. A, B. Summary of results, Site C0002. Proportion of lithology is shown next to the cuttings composite section image. GR = gamma ray. VE = vertical exaggeration. LWD = logging while drilling. (Continued on next page.)

Figure F6 (continued).

Figure F7. Interpreted seismic depth section of In-line (IL) 2437 in the frontal thrust region with locations of Sites C0024, C0006, and C0007. XL = cross-line. mbsl = meters below sea level. Colored shading = seismic stratigraphic packages, red = faults (bold for major faults), yellow = Site C0006, C0007, and C0024 logging-while-drilling and coring holes.

Figure F8. Summary of results, Site C0024. A. Core-based results. (Continued on next page.)

Figure F8 (continued). B. Logging data. RAB = resistivity-at-the-bit tool.

Figure F9. Logging data from plate boundary fault zone, Site C0024. UHRI = ultrahigh-resolution image, GR = gamma ray, Res = resistivity, BIT = bit, BX = extradeep button, BD = deep button, BM = medium button, BS = shallow button.

Figure F10. Seismic cross section near Site C0025. Thick section represents cored interval.

Figure F11. Summary of results, Site C0025. Triangles on chlorinity (blue) and boron (red) plot indicate seawater values.

Figure F12. (A) Photo image logger (MSCL-I) and (B) X-ray computed tomography (CT) images parallel to split core surface (358-C0025A-19R-3, 40–64.5 cm) illustrating sediment-filled veins (green arrows), cohesive healed faults (purple arrows), and a normal fault (red arrows). On X-ray CT images, cohesive healed faults are brighter than surrounding matrix and correspond to higher CT number and density. Normal fault displaces array vein structures (X-ray CT images). Sediment-filled vein structures are generally resolved on X-ray CT images and occur as bright features filled with higher density material. Thinner sediment-filled vein structures by MSCL are not resolved by X-ray CT.