

Proceedings of the International Ocean Discovery Program

Volume 358

NanTroSEIZE Plate Boundary Deep Riser 4: Nankai Seismogenic/Slow Slip Megathrust

Expedition 358 of the D/V *Chikyu*

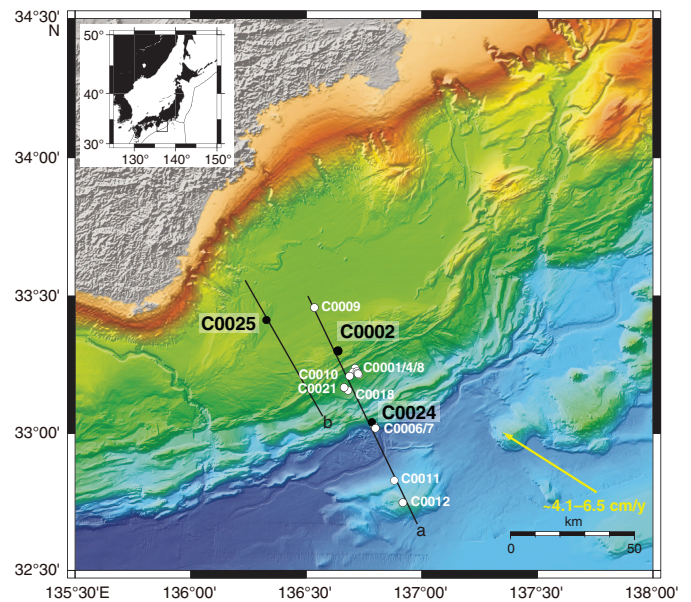
from and to Shimizu, Japan

Sites C0002, C0024, and C0025

7 October 2018–31 March 2019

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Publisher's notes

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Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the participating agencies, TAMU, or Texas A&M Research Foundation.

Shipboard-collected data from this expedition are accessible at <http://sio7.jamstec.go.jp>.

Supplemental data were provided by the authors and may not conform to IODP publication formats.

Some core photographs have been tonally enhanced to better illustrate particular features of interest. High-resolution images are available upon request.

Cover photograph shows the view of Mount Fuji from the D/V *Chikyu* helideck while offshore in Suruga Bay at the end of IODP Expedition 358. Copyright JAMSTEC.

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Core descriptions

Visual core descriptions (VCDs) are presented in PDF files for each site. Smear slides and/or thin sections are presented in PDF and/or CSV files for each site and/or hole (CSV files are available in the CORES directory). The entire set of core images in PDF is available in the IMAGES directory.

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[Site C0025](#)

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Dedication

Congratulations to Captain Yukio Dowaki on his retirement after so many years of service supporting the Nankai Trough Seismogenic Zone Experiment (NanTroSEIZE) project on board the D/V *Chikyu*.

Supplementary material

Supplementary material for the Volume 358 expedition reports includes cuttings/bit sample images in JPG format and information in Microsoft Excel format; event bed and mud gas data in Microsoft Excel format; daily morning and geomechanics reports and scanned visual core description sheets in PDF; smear slide and thin section images and descriptions in JPG, TIF, Microsoft Excel, and PowerPoint formats and PDF; and scanned structural geology sheets and data in PDF and Microsoft Excel format. A full list of directories can be found in SUPP_MAT in the volume zip folder or on the [Supplementary material for Volume 358 expedition reports](#) web page.

Expedition research results

Data reports

Titles are available in [HTML](#).

Syntheses

Titles are available in [HTML](#).

Drilling location maps

A site map showing the drilling locations for this expedition and maps showing the drilling locations of all International Ocean Discovery Program (IODP) expeditions, produced using QGIS (<http://www.qgis.org>), and all Integrated Ocean Drilling Program, Ocean Drilling Program (ODP), and Deep Sea Drilling Project (DSDP) expeditions, produced using Generic Mapping Tools (GMT) of Paul Wessel and Walter H.F. Smith (<http://gmt.soest.hawaii.edu>), are available in PDF.

[IODP Expedition 358 site map](#)

[IODP map](#) (Expeditions 349–372, 374–376, and 380–381)

[Integrated Ocean Drilling Program map](#) (Expeditions 301–348)

[ODP map](#) (Legs 100–210)

[DSDP map](#) (Legs 1–96)

Foreword

The International Ocean Discovery Program (IODP) represents the latest incarnation of almost five decades of scientific ocean drilling excellence and is generally accepted as the most successful international collaboration in the history of the Earth sciences. IODP builds seamlessly on the accomplishments of previous phases: the Deep Sea Drilling Project, Ocean Drilling Program, and Integrated Ocean Drilling Program. The 2013–2023 IODP Science Plan (*Illuminating Earth's Past, Present, and Future*) defines four themes and thirteen challenges for this decade of scientific ocean drilling that are both of fundamental importance in understanding how the Earth works and of significant relevance to society as the Earth changes, at least in part in response to anthropogenic forcing. This phase of IODP represents an intense level of international collaboration in bringing diverse drilling platforms and strategies to increasing our understanding of climate and ocean change, the deep biosphere and evolution of ecosystems, connections between Earth's deep processes and surface manifestations, and geologically induced hazards on human timeframes.

The *Proceedings of the International Ocean Discovery Program* presents the scientific and engineering results of IODP drilling projects, expedition by expedition. As in the preceding Integrated Ocean Drilling Program, expeditions in the current IODP phase are conducted by three implementing organizations, each providing a different drilling capability. These are the US Implementing Organization (USIO; through September 2014) and the *JOIDES Resolution* Science Operator (JRSO; as of October 2014), providing the leased commercial vessel *JOIDES Resolution* for riserless drilling operations; JAMSTEC's Institute for Marine-Earth Exploration and Engineering (MarE3), providing the drillship *Chikyu* for riser and occasional riserless operations; and the European Consortium for Ocean Research Drilling (ECORD) Science Operator (ESO), providing "mission-specific" platforms (MSPs) for expeditions that extend the IODP operational range where neither drillship is suitable, for example, in polar environments and in shallow waters. Scheduling decisions for each capability are made by three independent Facility Boards, each of which includes scientists, operators, and platform funding partners: the *JOIDES Resolution* Facility Board (JRFB), *Chikyu* IODP Board (CIB), and ECORD Facility Board (EFB). At the beginning of the current IODP, the three Facility Boards agreed to utilize Publication Services at the USIO and now the JRSO for production of all expedition *Proceedings* volumes and reports.

The current IODP differs from prior scientific ocean drilling programs in that it has neither a central management organization nor commingled funding for program-wide activities. Yet this phase of IODP retains a fundamental integrative structural element: a "bottom-up" evaluation of all proposals for drilling expeditions by a single advisory structure composed of scientists representing all international program partners. International scientists may submit drilling proposals to the Science Support Office; all submitted proposals are then evaluated by a Science Evaluation Panel in the context of the Science Plan.

The current IODP also has a second internationally integrative level for high-level discussion and consensus-building: the IODP Forum. The Forum is not only charged with assessing program-wide progress toward achieving the current Science Plan, but also with overseeing approaches toward a new bright future of scientific ocean drilling post 2023. At present, IODP involves 26 international financial partners, including the United States, Japan, an Australia/New Zealand consortium (ANZIC), Brazil, China, India, South Korea, and the eighteen members of ECORD (Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the United Kingdom). This enhanced membership in the current IODP represents a remarkable level of international collaboration that remains one of the greatest ongoing strengths of scientific ocean drilling.

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Chair, IODP Forum

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Preliminary Report

Tobin, H., Hirose, T., Ikari, M., Kanagawa, K., Kimura, G., Kinoshita, M., Kitajima, H., Saffer, D., Yamaguchi, A., Eguchi, N., Maeda, L., Toczko, S., and the Expedition 358 Scientists, 2019. *Expedition 358 Preliminary Report: NanTroSEIZE Plate Boundary Deep Riser 4: Nankai Seismogenic/Slow Slip Megathrust*. International Ocean Discovery Program. <https://doi.org/10.14379/iodp.pr.358.2019>

Proceedings volume

Tobin, H., Hirose, T., Ikari, M., Kanagawa, K., Kimura, G., Kinoshita, M., Kitajima, H., Saffer, D., Yamaguchi, A., Eguchi, N., Maeda, L., Toczko, S., and the Expedition 358 Scientists, 2020. *NanTroSEIZE Plate Boundary Deep Riser 4: Nankai Seismogenic/Slow Slip Megathrust*. Proceedings of the International Ocean Discovery Program, 358: College Station, TX (International Ocean Discovery Program). <https://doi.org/10.14379/iodp.proc.358.2020>

Expedition reports

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Supplementary material

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