Proceedings of the Integrated Ocean Drilling Program

Volume 314/315/316 Expedition Reports

NanTroSEIZE Stage 1: Investigations of Seismogenesis, Nankai Trough, Japan

Expeditions 314, 315, and 316 of the riser drilling platform from and to Shingu, Japan
Sites C0001–C0006
21 September–15 November 2007
and
Sites C0001 and C0002
16 November–18 December 2007
and
Sites C0004 and C0006–C0008
19 December 2007–5 February 2008

Volume authorship
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Published by
Integrated Ocean Drilling Program Management International, Inc.,
for the Integrated Ocean Drilling Program

Prepared by
Japanese Implementing Organization, Center for Deep Earth Exploration (CDEX) at the Japan Agency for Marine-Earth Science and Technology (JAMSTEC), and
U.S. Implementing Organization Science Services, Texas A&M University

Publisher's notes

Funding for the program was provided by the following agencies at the time of this expedition:

National Science Foundation (NSF), United States

Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan

European Consortium for Ocean Research Drilling (ECORD)

Ministry of Science and Technology (MOST), People's Republic of China

Korea Institute of Geoscience and Mineral Resources (KIGAM)

Australian Research Council (ARC) and New Zealand Institute for Geological and Nuclear Sciences (GNS), Australian/New Zealand Consortium

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, IODP Management International, Inc., or Japan Agency for Marine-Earth Science and Technology.

Examples of how to cite this volume or part of this volume are available at **publications.iodp.org/proceedings/314_315_316/314315316bib.htm**.

Abbreviations for names of organizations and publications in IODP reference lists follow the style given in *Chemical Abstracts Service Source Index* (published by American Chemical Society).

The bulk of the shipboard-collected core data from this expedition is accessible at **sio7.jamstec.go.jp/**.

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

Cover photograph shows sunrise from the *Chikyu*. Photo © JAMSTEC.

ISSN
DVD:1930-1022; World Wide Web: 1930-1014

Foreword

By Integrated Ocean Drilling Program Management International, Inc.

The Integrated Ocean Drilling Program (IODP) is the most ambitious ocean exploration and drilling program ever undertaken. With multiple platforms and multiple partners, our research spans the globe and truly represents international collaboration and diplomacy among scientists and nations interested in attaining scientific goals.

The *Proceedings* present the scientific and engineering results of IODP drilling projects, each an important component of an international program designed to better understand Earth, its environmental changes and processes, the deep biosphere, and climate change.

The collective effort required to conduct each IODP expedition is colossal. Beginning with scientists who submit ocean drilling research proposals, there are others who evaluate, rank, and prioritize proposals. Scientists also schedule the science operations, select science party members from scores of international scientists qualified to participate, plan platform operations, ready the drillship, and choose borehole locations. There are onboard logistics to manage and critical communications to coordinate among various academic institutions, governments, and national science organizations. And the resulting data must be managed and made accessible to scientists, particularly those who will prepare future proposals. Every aspect of planning an IODP expedition takes a village—or several. There are many participants and many more stakeholders.

Ocean-drilling achievements, however complex, help us understand extraordinary linkages and interpret relationships as they exist in various parts of the Earth system. Achievements in two legacy drilling programs (the Ocean Drilling Program and Deep Sea Drilling Project) have validated the scientific concepts behind plate tectonics, contributed to the understanding of ocean circulation changes, and extended our knowledge of long- and short-term climate change—scientific information at the foundation of our current drilling program.

IODP drilling platform operations are conducted by three Implementing Organizations (IOs). Riserless platform operations are conducted by the U.S. Implementing Organization, comprising the Consortium for Ocean Leadership, Texas A&M University through the Texas A&M Research Foundation, and Lamont-Doherty Earth Observatory of Columbia University. Riser platform operations are conducted by the Japan Agency for Marine-Earth Science and Technology through Japan's Center for Deep Earth Exploration in cooperation with the Center for Advanced Marine Core Research at Kochi University. Mission-specific platform operations are conducted by the European Consortium for Ocean Research Drilling, Science Operator, comprising the British Geological Survey, Bremen University, and the European Petrophysics Consortium. The European IO currently represents the ocean-drilling efforts of 16 nations in Europe, plus Canada. At the start of this drilling project, IODP involved 20 nations.

The discoveries discovered in this volume build upon layers of knowledge and science developed over roughly the last fifty years. Expedition *Proceedings* are published by IODP Management International for IODP under the sponsorship of the U.S. National Science Foundation (NSF), Japan's Ministry of Culture, Education, Sports, Science and Technology, and other IODP members. The material is based upon research supported under Contract OCE-0432224 from NSF.

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Data reports

Titles are available in **HTML** pending completion of the volume.

Syntheses

Titles are available in **HTML** pending completion of the volume.

Supplementary material

Expedition 315

Supplementary material includes coring summaries and physical property data in Microsoft Excel format, structural geology data in Excel, EPS and PDF, and visual core description scans in PDF (see **315_README.TXT**) or see the **Directory structure** for the names of the main subdirectories.

Expedition 316

Supplementary material includes coring summaries in Microsoft Excel format, photomicrographs in TIFF and JPEG formats, structural geology data in Excel and PDF, visual core description scans in PDF, and X-ray computed tomography scans in PDF and JPEG formats (see **316_README.TXT**) or see the **Directory structure** for the names of the main subdirectories.

Drilling location maps

A site map showing the drilling locations for this expedition and maps showing the drilling locations of all Integrated Ocean Drilling Program (IODP), Ocean Drilling Program (ODP), and Deep Sea Drilling Project (DSDP) drilling sites are available in PDF. These maps were produced using Generic Mapping Tools (GMT) of Paul Wessel and Walter H.F. Smith (**gmt.soest.hawaii.edu**).

IODP Expedition 314/315/316 site map

IODP map (Expeditions 301–312, 314–316)

ODP map (Legs 100–210)

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