



**VOLUME
209
INITIAL
REPORTS**

**DRILLING MANTLE
PERIDOTITE ALONG
THE MID-ATLANTIC
RIDGE FROM
14° TO 16°N
SITES 1268–1275**

**PROCEEDINGS OF THE
OCEAN DRILLING PROGRAM**

Prepared by the
OCEAN DRILLING PROGRAM,
TEXAS A&M UNIVERSITY,
in cooperation with the
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and
JOINT OCEANOGRAPHIC INSTITUTIONS, INC.

PROCEEDINGS OF THE OCEAN DRILLING PROGRAM

Volume 209

Initial Reports

Drilling Mantle Peridotite along the Mid-Atlantic Ridge
from 14° to 16°N

Covering Leg 209 of the cruises of the Drilling Vessel *JOIDES Resolution*
Rio de Janeiro, Brazil, to St. George, Bermuda

Sites 1268–1275

6 May–6 July 2003

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

The bulk of the shipboard-collected data from this leg is available on the World Wide Web and is accessible at www-odp.tamu.edu/database. If you cannot access this site or need additional data, please contact the Data Librarian, Integrated Ocean Drilling Program, Texas A&M University, College Station TX 77845-9547, USA. E-mail: database@iodp.tamu.edu.

Some close-up core photographs and/or thin section photomicrographs have been tonally enhanced to better illustrate particular features of interest.

Supplemental data on the volume CD-ROM were provided by the authors and may not conform to ODP publication standards.

A site map showing the drilling locations for this leg and maps showing the drilling locations of all Ocean Drilling Program (ODP) and Deep Sea Drilling Project (DSDP) drilling sites are available on the volume CD-ROM in PDF format. These maps were produced using Generic Mapping Tools (GMT) of Paul Wessel and Walter H.F. Smith (gmt.soest.hawaii.edu).

The cover photograph is of dunite with a light green-gray groundmass hosting abundant transgranular black serpentine-magnetite veins oriented mainly parallel to the long axis of the core (interval 209-1271A-1R-1, 68–83 cm). Photograph taken by ODP Photographer Cindi Prince.

FOREWORD

BY JOINT OCEANOGRAPHIC INSTITUTIONS, INC.

This volume presents scientific and engineering results from the Ocean Drilling Program (ODP). These results address the scientific and technical goals of the program, which are focused on the study of the dynamics of Earth's interior and environment, the evolution of oceanic crust, the fluctuations of climate, and the study of the Earth's deep biosphere.

Although ODP ended operations in 2003, science results from ODP's expeditions on the *JOIDES Resolution* continue to emerge. The results represent the contributions of scientists and research institutions from 22 ODP member countries. International oversight and coordination of the program was provided by the ODP Council, which was made up of representatives from the member countries. Scientific and management guidance was provided by representatives from the Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES).

Joint Oceanographic Institutions, Inc. (JOI), a nonprofit consortium of 20 U.S. oceanographic institutions, serves as the National Science Foundation's prime contractor for ODP. JOI implemented scientific objectives, plans, and recommendations of the JOIDES committees through subcontracts to Texas A&M University (TAMU) for science operations and to Lamont-Doherty Earth Observatory (LDEO) of Columbia University for geochemical and geophysical well-logging services.

JOI, TAMU, and LDEO worked together successfully for many years to manage the Ocean Drilling Program. We look forward to many exciting discoveries and continued international collaboration on the Integrated Ocean Drilling Program as we further our scientific mission.

Steven R. Bohlen

President of the Joint Oceanographic Institutions and Executive Director of the Ocean Drilling Programs
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Visual core descriptions (VCDs), thin section data tables, and digital images are included in this section. VCDs and thin sections are combined into one PDF file for each site.

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CD-ROM CONTENTS: ASCII TABLES

This CD-ROM contains **ASCII** versions of all data tables from the “Explanatory Notes” and the site chapters. A complete listing of the ASCII tables can be found below.

You can access these data directly from the PDF files. Depending on your computer platform, the following information applies.

PC COMPUTERS

By default, double-clicking on a filename with a .TXT extension will launch the Notepad application. You can configure your computer’s operating system so that files on this CD with .TXT extensions automatically open in other software, such as Microsoft Excel. Follow these steps from the pull-down menu: Windows 95 and NT operating systems: View > Options > File Types; and Windows 98, 2000, ME, and XP systems: View > Folder Options > File Types.

MACINTOSH COMPUTERS

All table files with .TXT extensions will automatically open into Excel. If you do not have Excel installed on your computer, you may view these files through other spreadsheet or text-editor programs. Open the application of your choice, select File > Open, and open the ASCII file.

UNIX COMPUTERS

You can open files with .TXT extensions in any text editor or spreadsheet program, but not directly from PDF files.

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CD-ROM CONTENTS: SUPPLEMENTARY MATERIAL

The *Initial Reports* CD-ROM contains supplementary material data files presented as Excel 97/98 spreadsheets and MacDiff raw data files. The files present expanded coring summary tables; igneous petrology, metamorphic petrology, structural geology, and photomicrograph logs; structural geology visual core descriptions; and paleomagnetism, geochemistry, and X-ray diffraction data. Supplementary material files are located in the SUPP_MAT directory.

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CHM_1274.XLS
CHM_1275.XLS

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1270DSDV.XLS
1270DVCD.XLS

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ECS_1275.XLS

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IGN_1273

1273_VCD.XLS

IGN_1274

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IGN_1275

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1275DVCD.XLS

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STD_D01Q.UDF
STD_D03Q.UDF

README.TXT

CD-ROM CONTENTS: DRILLING LOCATION MAPS

A site map showing the drilling locations for this leg and maps showing the drilling locations of all Ocean Drilling Program (ODP) and Deep Sea Drilling Project (DSDP) drilling sites are available in PDF.

[ODP Leg 209 Site](#)

[ODP Map](#) (Legs 100–209)

[DSDP Map](#) (Legs 1–96)

RELATED LEG DATA

DOWNHOLE LOGGING AND CORE DATA

A CD-ROM containing processed logging data and a subset of core data is included with the printed version of this volume. However, a more complete set of the logging data collected by ODP Logging Services is available online at www.ldeo.columbia.edu/BRG/ODP/DATABASE/DATA/search.html. If you have problems downloading the data, wish to receive additional logging data, or have questions regarding the data, please contact: Data Services Manager, IODP Logging Services, Borehole Research Group, Lamont-Doherty Earth Observatory of Columbia University, PO Box 1000, 61 Route 9W, Palisades NY 10964, USA; Tel: (845) 365-8343; Fax: (845) 365-3182; E-mail: logdb@ldeo.columbia.edu.

The majority of the core data on the CD are available on the Web at www-odp.tamu.edu/database. If you cannot access the IODP database or need additional data, please contact: Data Librarian, Integrated Ocean Drilling Program, Texas A&M University, 1000 Discovery Drive, College Station TX 77845-9547, USA; Tel: (979) 845-8495; Fax: (979) 458-1617; E-mail: database@iodp.tamu.edu.

COMPILED ELECTRONIC INDEX

The Compiled Electronic Index of the *Proceedings of the Ocean Drilling Program* included on the volume CD-ROM contains individual indexes of Volumes 101–178, 180, 181, 183, and 186. The indexes are contained in the directory titled ODPINDEX and are named ###NDX.PDF (### = the leg number). These indexes can be searched individually or collectively. For information on using the Acrobat search function, see [“Searching a PDF Document”](#) in README.PDF.

CD-ROM DIRECTORY STRUCTURE

209IR.PDF

(Preliminary pages and table of contents)

README.PDF

(Information about the volume CD-ROM)

README.TXT

(ASCII version of information about the volume CD-ROM)

ACROREAD

(Acrobat Reader installation software and instructions for different platforms)

MAC

WINDOWS

UNIX

README.TXT

MAPS

(Drilling location maps)

209_MAP.PDF

(Leg 209 site map)

ODPMAP.PDF

(ODP map, Legs 100 through 209)

DSDPMAP.PDF

(DSDP map, Legs 1 through 96)

VOLUME

(Leg 209 *Initial Reports* volume)

CHAPTERS

(Volume chapters)

IR209_01.PDF (Leg 209 Summary)

IR209_02.PDF (Explanatory Notes)

IR209_03.PDF (Site 1268)

IR209_04.PDF (Site 1269)

IR209_05.PDF (Site 1270)

IR209_06.PDF (Site 1271)

IR209_07.PDF (Site 1272)

IR209_08.PDF (Site 1273)

IR209_09.PDF (Site 1274)

IR209_10.PDF (Site 1275)

CORES

(Visual core descriptions, thin section data tables, and digital core images)

COR_1268.PDF (Site 1268)

COR_1269.PDF (Site 1269)

COR_1270.PDF (Site 1270)

COR_1271.PDF (Site 1271)

COR_1272.PDF (Site 1272)

COR_1273.PDF (Site 1273)

COR_1274.PDF (Site 1274)

COR_1275.PDF (Site 1275)

IMAGES (PDF files of core images)

TABLES

(Data tables in ASCII format)

IR209_02 (Explanatory Notes files)

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COR_SUMM

(Expanded coring summary tables in Excel)

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(Igneous petrology logs in Excel)

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(Paleomagnetism logs in Excel)

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STR_VCD
(Raw visual core descriptions as TIFF files)

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(X-ray diffraction raw instrument data in MacDiff)

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