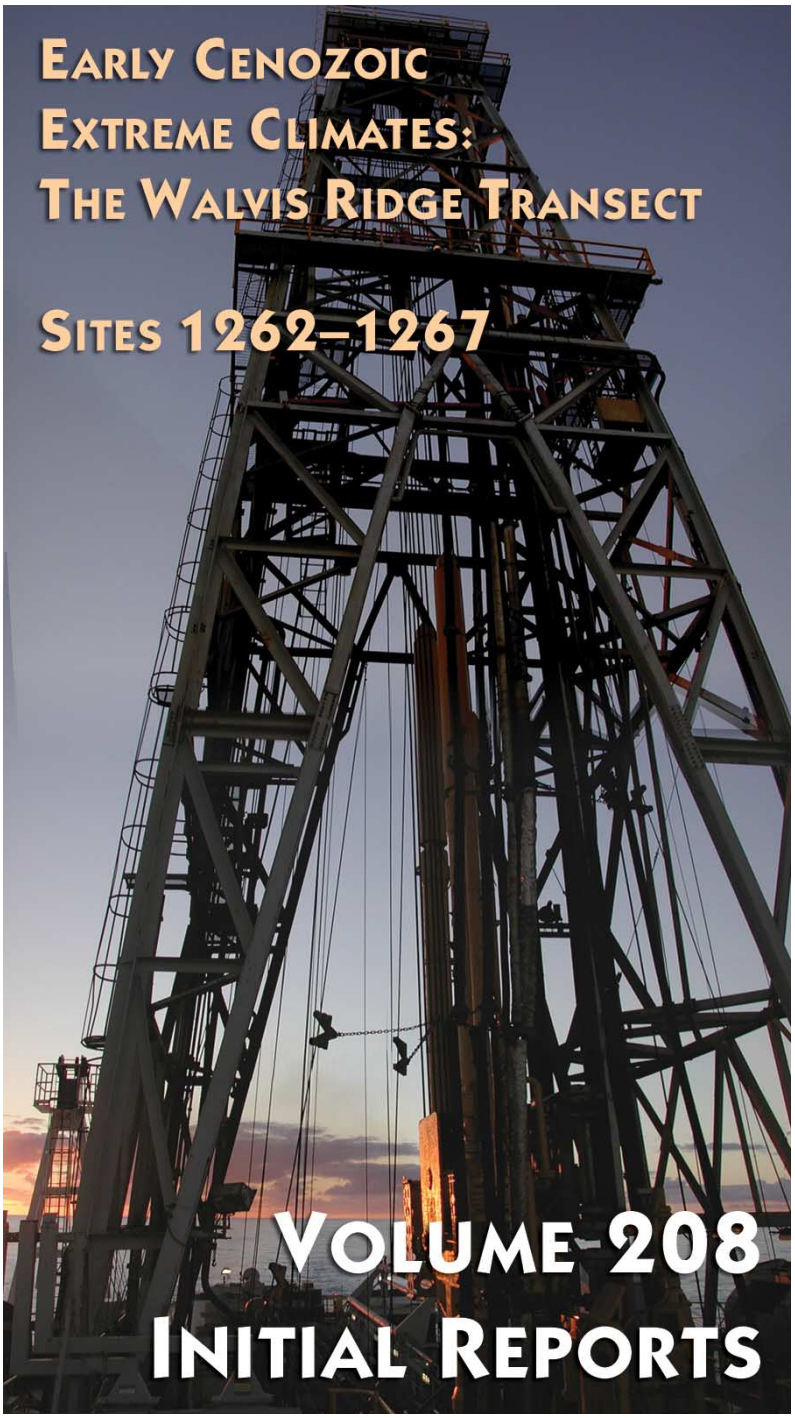

Proceedings of the Ocean Drilling Program

Prepared by the
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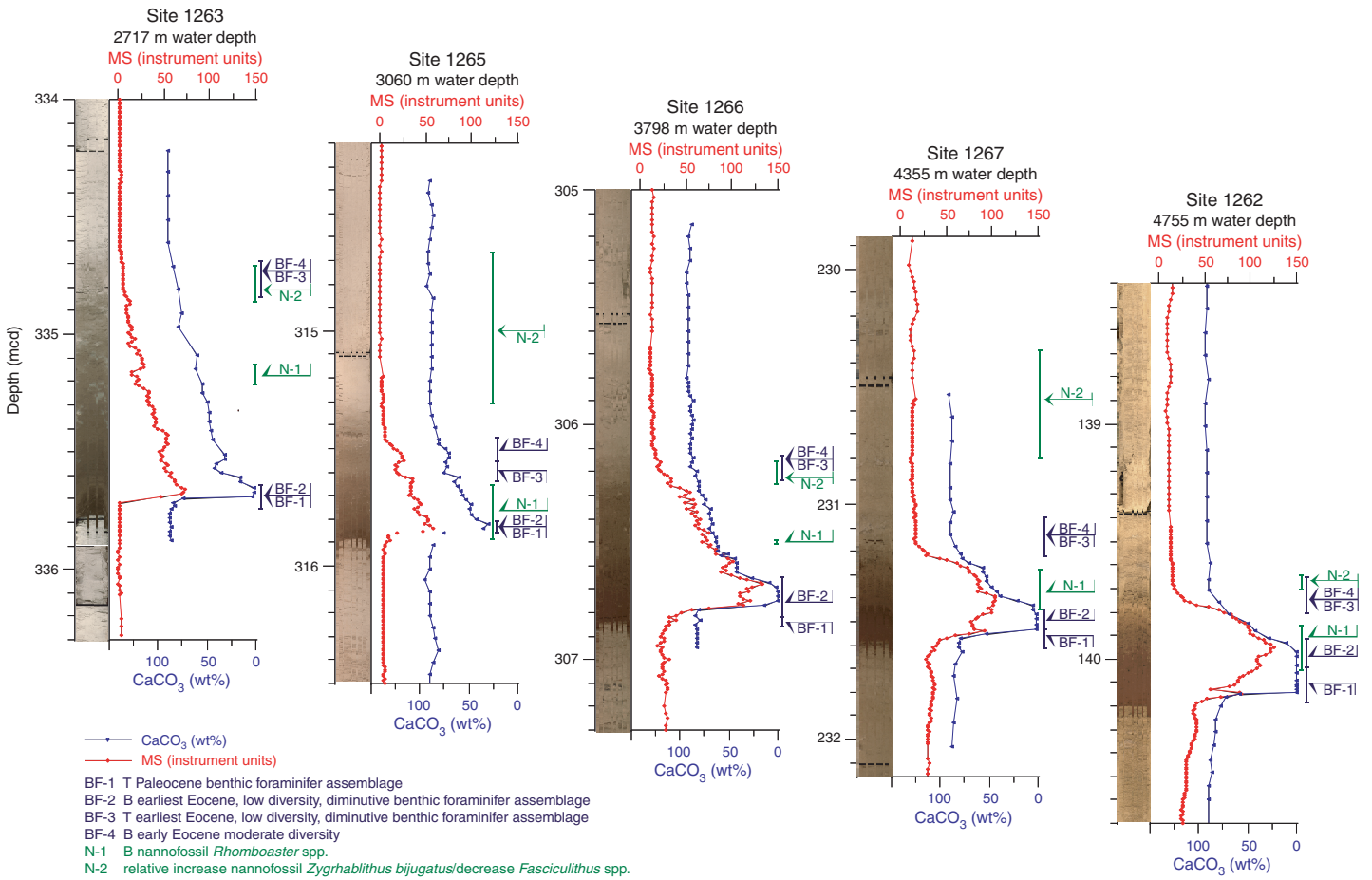
TEXAS A&M UNIVERSITY,
in cooperation with the
NATIONAL SCIENCE FOUNDATION
and
JOINT OCEANOGRAPHIC INSTITUTIONS, INC.



Frontispiece. Composite digital images, magnetic susceptibility (MS), and $CaCO_3$ through the Paleocene–Eocene transition at the shallow to deep transect. The MS graphs represent both point magnetic susceptibility (PMS) data measured on the split core and loop sensor (MSL) data measured on the whole core. For correlation of these two methods, 1-cm resolution PMS data were linearly interpolated at 2.5-cm resolution, after which a linear expansion formula was calculated and PMS values were normalized to MSL values: MSL = 2.0683 × PMS + 7.8257 (r^2 = 0.9885). For Site 1263, MS data from Hole 1263C are spliced with data from Hole 1263D at 335.88 meters composite depth (mcd). Sample depths for Hole 1263D were normalized to Hole 1263C mcd using a linear expansion based on PMS correlation through the P/E transition: Hole 1263C mcd = Hole 1263D mcd × 1.383 – 128.45. For Site 1262, sample depths of $CaCO_3$ data from Hole 1262A (Core 208-1262A-13H) were normalized to Hole 1262B mcd using a linear expansion based on PMS correlation through the lower part of the P/E transition: Hole 1262B mcd = Hole 1262A mcd × 1.1343 – 18.785 (r^2 = 0.996; only for data below 139.95 mcd). At Site 1266, $CaCO_3$ data from Hole 1266B (Section 208-1266B-6H-7) give way to Hole 1266C values at 306.56 mcd. T = top (last occurrence), B = bottom (first occurrence).

Proceedings of the Ocean Drilling Program

Volume 208
Initial Reports
Early Cenozoic Extreme Climates: The Walvis Ridge Transect

Covering Leg 208 of the cruises of the Drilling Vessel *JOIDES Resolution*
Rio de Janeiro, Brazil, to Rio de Janeiro, Brazil
Sites 1262–1267
6 March–6 May 2003

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This publication was prepared by the Ocean Drilling Program, Texas A&M University, as an account of work performed under the international Ocean Drilling Program, which is managed by Joint Oceanographic Institutions, Inc., under contract with the National Science Foundation. Funding for the program was provided by the following agencies at the time of this cruise:

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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 National Science Foundation, the participating agencies, Joint Oceanographic Institutions, Inc., Texas A&M University, or Texas A&M Research Foundation.

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 ODP Data Librarian, Ocean Drilling Program, Texas A&M University, College Station TX 77845-9547, USA. E-mail: **database@odpemail.tamu.edu**.

Some close-up core photographs 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**).

Cover photograph of the *JOIDES Resolution* rig at sunrise was taken by Co-Chief Scientist Jim Zachos.

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, and the fluctuations of climate. In addition, study of the Earth's deep biosphere is an emergent research objective.

ODP, an international partnership of scientists and research institutions from 22 countries, operates the drillship *JOIDES Resolution*. This state-of-the-art research vessel contains eight levels of laboratories and other scientific facilities required for carrying out the program's objectives.

The management of ODP involves a partnership of scientists and governments. International oversight and coordination are provided by the ODP Council, which is made up of representatives from the member countries. Overall scientific and management guidance is provided by representatives from the Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES).

Joint Oceanographic Institutions, Inc. (JOI), a nonprofit consortium of 18 U.S. oceanographic institutions, serves as the National Science Foundation's prime contractor for ODP. JOI implements scientific objectives, plans, and recommendations of the JOIDES committees through major 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 have worked together successfully for many years to manage the Ocean Drilling Program. We look forward to many exciting discoveries and continued international collaboration as we further our scientific mission, especially the planning for the future of ocean drilling beyond 2003.

Steven R. Bohlen
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Oregon State University, College of Oceanic and Atmospheric Sciences

Pennsylvania State University, College of Earth and Mineral Sciences

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University of Rhode Island, Graduate School of Oceanography

University of South Florida, College of Marine Science

University of Texas at Austin, Institute for Geophysics

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The ODP shipboard technical staff provided essential scientific support and kept the laboratories functioning smoothly. Special thanks to Gar Esmay, curator, and Debbie Partain, yeoperson, who maintained calm and cheerful demeanors under often taxing conditions.

The cruise would not have been possible without the contributions of Volkhard Speiβ, Rainer Zahn, and colleagues who organized and undertook a survey of Walvis Ridge in the Winter of 2001 and provided a detailed analysis of potential site locations. We are particularly grateful to Sebastian Krastel, who was responsible for processing the seismic data and for providing critical support before and during the cruise.

Finally, we thank all the members of the JOIDES Extreme Climates Program Planning Group, in particular Gerald Dickens, who selflessly provided the scientific vision and support that led to the conception, design, and implementation of this leg.

CD-ROM Contents: Chapters

CD-ROM Contents: Core Descriptions

Visual core descriptions (VCDs), smear slide data tables, and digital images are included in this section. VCDs and smear slide data tables are combined into one PDF file for each site. ASCII versions of smear slide data tables are also available (see **"ASCII Tables"**).

Site 1262

Visual Core Descriptions · Smear Slides

Site 1263

Visual Core Descriptions · Smear Slides

Site 1264

Visual Core Descriptions · Smear Slides

Site 1265

Visual Core Descriptions · Smear Slides

Site 1266

Visual Core Descriptions · Smear Slides

Site 1267

Visual Core Descriptions · Smear Slides

CD-ROM Contents: ASCII Tables

This CD-ROM contains **ASCII** versions of edited age model, mass accumulation rate, and splice tie data tables from the site chapters, an age control point table from the "Leg 208 Summary" chapter, and all of the **smear slide data tables** presented under "Core Descriptions." 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.

Chapter 1, Leg 208 Summary
Table T3. Calcareous nannofossil and planktonic foraminiferal datum levels in the Eocene–Oligocene transition interval.

Chapter 3, Site 1262
Table T3. Splice tie points, Site 1262.
Table T15. Age-depth control points, Site 1262.
Table T16. Age model, linear sedimentation rates, and mass accumulation rates, Site 1262.

Chapter 4, Site 1263
Table T3. Splice tie points, Site 1263.
Table T15. Age-depth control points, Site 1263.
Table T16. Age model, linear sedimentation rates, and mass accumulation rates, Site 1263.

Chapter 5, Site 1264
Table T3. Splice tie points, Site 1264.
Table T15. Age-depth control points, Site 1264.
Table T16. Age model, linear sedimentation rates, and mass accumulation rates, Site 1264.

Chapter 6, Site 1265
Table T3. Splice tie points, Site 1265.
Table T17. Age-depth control points, Site 1265.
Table T18. Age model, linear sedimentation rates, and mass accumulation rates, Site 1265.

Chapter 7, Site 1266
Table T3. Splice tie points, Site 1266.
Table T13. Age-depth control points, Site 1266.
Table T14. Age model, linear sedimentation rates, and mass accumulation rates, Site 1266.

Chapter 8, Site 1267
Table T3. Splice tie points, Site 1267.
Table T13. Age-depth control points, Site 1267.
Table T14. Age model, linear sedimentation rates, and mass accumulation rates, Site 1267.

Smear Slide Data Tables

CD-ROM Contents: Supplementary Material

The *Initial Reports* CD-ROM contains supplementary material data files presented as Excel 97/98 spreadsheets. The files present calcareous nannofossil and planktonic and benthic foraminifer paleontological data. Supplementary material files are located in the SUPP_MAT directory.

PALEONTL

1262_PAL
BENTHIC
03_T09.XLS
CALC_NAN
03_T05.XLS
03_T07.XLS
PLANKTIC
03_T06.XLS
03_T08.XLS

1263_PAL
BENTHIC
04_T09.XLS
CALC_NAN
04_T05.XLS
04_T06.XLS
PLANKTIC
04_T07.XLS
04_T08.XLS

1264_PAL
BENTHIC
05_T09.XLS
CALC_NAN
05_T05.XLS
05_T07.XLS
PLANKTIC
05_T06.XLS
05_T08.XLS

1265_PAL
BENTHIC
06_T09.XLS
CALC_NAN
06_T05.XLS
06_T06.XLS
PLANKTIC
06_T07.XLS
06_T08.XLS

1266_PAL
BENTHIC
07_T09.XLS
CALC_NAN
07_T05.XLS
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PLANKTIC
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1267_PAL
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CALC_NAN
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08_T06.XLS
PLANKTIC
08_T07.XLS
08_T08.XLS

README.TXT

CD-ROM Contents: Drilling Location Maps

Two site maps 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 208 Site Map A

ODP Leg 208 Site Map B

ODP Map (Legs 100–208)

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, ODP 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 ODP database or need additional data, please contact: ODP Data Librarian, 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@odpemail.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

- **208IR.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)
  - **208_MAPA.PDF** (Leg 208 site map)
  - **208_MAPB.PDF** (Leg 208 site map, continued)
  - **ODPMAP.PDF** (ODP map, Legs 100 through 208)
  - **DSDPMAP.PDF** (DSDP map, Legs 1 through 96)
- **VOLUME** (Leg 208 *Initial Reports* volume)
  - **CHAPTERS** (Volume chapters)
    - **IR208_01.PDF** (Leg 208 Summary)
    - **IR208_02.PDF** (Explanatory Notes)
    - **IR208_03.PDF** (Site 1262)
    - **IR208_04.PDF** (Site 1263)
    - **IR208_05.PDF** (Site 1264)
    - **IR208_06.PDF** (Site 1265)
    - **IR208_07.PDF** (Site 1266)
    - **IR208_08.PDF** (Site 1267)
  - **CORES** (Visual core descriptions, smear slide data tables, and digital core images)
    - **COR_1262.PDF** (Site 1262)
    - **COR_1263.PDF** (Site 1263)
    - **COR_1264.PDF** (Site 1264)
    - **COR_1265.PDF** (Site 1265)
    - **COR_1266.PDF** (Site 1266)
    - **COR_1267.PDF** (Site 1267)
    - **IMAGES** (PDF files of core images)
  - **TABLES** (ASCII versions of age control point, age model, mass accumulation rate, splice tie point, and smear slide data tables)
    - **IR208_01** (Leg 208 Summary file)
    - **IR208_03** (Site 1262 files)
    - **IR208_04** (Site 1263 files)
    - **IR208_05** (Site 1264 files)
    - **IR208_06** (Site 1265 files)
    - **IR208_07** (Site 1266 files)
    - **IR208_08** (Site 1267 files)
    - **S_SLIDES** (Sites 1262 through 1267)
    - **README.TXT**
  - **OVERSIZE** (Large-format tables)
    - **IR208_04** (Site 1263 files)
    - **IR208_05** (Site 1264 files)
    - **IR208_06** (Site 1265 files)
    - **IR208_07** (Site 1266 files)
    - **IR208_08** (Site 1267 files)

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CD-ROM Directory Structure (continued)