JULY 2000
Site Survey Package 4C to ODP Site Survey Panel

Site Surveys for ODP Leg 201
from the NEMO-3 Cruise
in support of Proposal 465-ADD1:
Southeast Pacific Paleoceanographic Transects
Volume 2
Seismic Reflection and Chirp Subbottom Profiles
Part A. CAR-2 and CAR-1 surveys

Mitchell Lyle
Lee Liberty
Center for Geophysical Investigation of the Shallow Subsurface (CGISS)
Boise State University, Boise, Idaho 83725

Alan Mix
Nicklas Pisias
Chris Goldfinger
College of Ocean and Atmospheric Science
Oregon State University, Corvallis, Oregon 97331

David Hulett
Center for Geophysical Investigation of the Shallow Subsurface (CGISS)
Boise State University, Boise, Idaho 83725

Aleksandra Janik
Rosenstiel School of Marine and Atmospheric Science
University of Miami, Miami, Florida 33149

BSU CGISS Technical Report 2000-06
1 July 2000
CAR-2 Survey:
SE Flank of Carnegie Ridge

Seismic Reflection
(2x150 c.i. GI gun source, bandpass filter)

2-7 kHz “Chirp”
Subbottom profiler
(Knudsen 320/B)
Data File SBfixavg.2000may29.1200-1800
NW

11 min. of data lost

Line 1

3 km

speed 10 knots

CAR-2 - Line 1
Bandpass
Carnegie Ridge 2
Survey
JD150

SE
CAR-2 - Line 2
Bandpass
Carnegie Ridge 2 Survey
JD150

change of speed at 18.00 from 10 to 8 knots
CAR-2C Drillsite

Cores 25MC, 27JC, 26HC

X CAR-2 line 6

3 km

X CAR-2 line 6

Cores 25MC, 27JC, 26HC

X CAR-2 line 6

CAR-2 - Line 3
Bandpass
Carnegie Ridge 2
Survey
JD150
CAR-2 - Line 3
Bandpass Carnegie Ridge 2 Survey
JD150, 151

Two-way Travel Time (ms)

3 km
CAR-2 - Line 4
Bandpass
Carnegie Ridge 2
Survey
JD151

change of speed at 05.52 from 8 to 10 knots
CAR-2 - Line 6
Bandpass Carnegie Ridge 2 Survey JD151

3 km change of speed at 10.06 from 10 to 8 knots

CAR-2C Drillsite

End Line 5  SW  Start Line 6  ~ Line 6  NE
Data File SBfixavg.2000may31.0600-1200
Data File SBfixavg.2000may29.0000-0600
Two-way Travel Time (ms)

Speed 13 Knots
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Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drill sites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 150

6 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 150

6 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 150

6 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 150
Canegie Ridge 2 Survey

Change speed to 10 knots at 11:30

Start CAR2 Survey Line 1

6 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 150
Canegie Ridge 2 Survey

6 km
Line 1

NEMO-3 Chirp JD 150 Carnegie Ridge 2 Survey

Two-way Travel Time (ms)

Time (ms)

6 km
Data File SBfixavg.2000may29.1800-2400

CAR2
Line 2
start

Line 3

0955
0000
0015
2300
0955
0000
0015
2300

83° 00'W
82° 55'W
82° 50'W
82° 45'W

1° 30'S
1° 35'S
1° 40'S
1° 45'S
1° 50'S
1° 55'S
2° 00'S
Two-way Travel Time (ms)

NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

DELT

DELAY

End Line 1
Start Line 2
Line 2
X Turn btwn Line 3,4

JD 150
Canegie Ridge 2 Survey

Speed change to 8 knots at 17:57
Two-way Travel Time (ms)

1 km

NEMO-3 Chirp
JD 150
Canegie Ridge 2 Survey
Two-way Travel Time (ms)
NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 150
Canegie Ridge 2 Survey

1 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 151
Carnegie Ridge 2 Survey

1 km

Speed 8 knots
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 151
Carnegie Ridge 2 Survey
NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 151
Carnegie Ridge 2
Survey

1 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 151
Carnegie Ridge 2
Survey

Speed change to 10 knots at 5:52

1 km
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NEMO-3 Chirp JD 151

1 km
NEMO-3 Site Surveys CGISS Technical Report 2000-06

Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

62

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 151
Carnegie Ridge 2
Survey
NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 151
Carnegie Ridge 2 Survey

1 km
Slight course change and turn 9°

Line 5

X Line 2 CAR2

End Line 5

JD 151

Carnegie Ridge 2

NEMO-3 Chirp

Survey
Two-way Travel Time (ms)

Speed change to 8 knots at 10:06

NEMO-3 Chirp
JD 151
Carnegie Ridge 2 Survey
Two-way Travel Time (ms)

- NEMO-3 Chirp
- JD 151
- Carnegie Ridge 2 Survey

1 km
Two-way Travel Time (ms)

Speed 12 knots

NEMO-3 Chirp JD 151 Carnegie Ridge 2 Survey

2 km

Start Line 7

Line 7
Two-way Travel Time (ms)
Two-way Travel Time (ms)

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JD 151
NEMO-3 Chirp
JD 151
Carnegie Ridge 2 Survey

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 151
Carnegie Ridge 2 Survey

Speed change to 13 knots at 22:15
Slight course change

NEMO-3 Chirp
JD 151
Carnegie Ridge 2
Survey

2 km
Data File SBfixavg.2000may31.0000-0600
Two-way Travel Time (ms)

Core site GC28

NEMO-3 Chirp
JD 152
Carnegie Ridge-2 Survey

Speed 13 knots

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 152
Carnegie Ridge-2 Survey

Slight course change

2 km

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 152
Carnegie Ridge-2 Survey

Slight course change

Line 9

2 km
Two-way Travel Time (ms)

NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

NEMO-3 Chirp JD 152 Carnegie Ridge-2 Survey

End Line 9 Turn 6

2 km
Speed change to 4 knots from 7:17 to 7:30 to deploy seismic
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 152
Carnegie Ridge-2
Survey

Line 10

Speed Change to 10 knots at 7:33

2 km
Slight course change

NEMO-3 Chirp
JD 152
Carnegie Ridge-2
Survey

2 km
### NEMO-3 Site Surveys CGISS Technical Report 2000-06

Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

#### Line 10

| JD152 | Carnegie Ridge-2 Survey |

Two-way Travel Time (ms) vs. Depth (m) for Line 10.

- **2 km**
- **NEMO-3 Chirp JD 152**

#### Data Table

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#### Diagram Notes

- **NW**
- **SE**

### Start Line 1 CAR1 Survey

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NEMO-3 Chirp JD 152 Carnegie Ridge-1 Survey

**Speed change to 11 knots at 13:27**
CAR-1 Survey:
Crest of Carnegie Ridge

Seismic Reflection
(2x150 c.i. GI gun source, bandpass filter)

2-7 kHz “Chirp”
Subbottom profiler
(Knudsen 320/B)
CAR-1 - Line 1
Bandpass Carnegie Ridge 1 Survey JD152

speed 11 knots
Car-1 - Line 1
Bandpass
Carnegie Ridge 1
Survey
JD152

Two-way Travel Time (ms)

3 km
Data File SBfixavg.2000may31.1800-2400
CAR-1 - Line 1
Bandpass
Carnegie Ridge 1
Survey
JD152

Two-way Travel Time (ms)

3 km
Two-way Travel Time (ms)

CAR-1 - Line 1
Bandpass
Carnegie Ridge 1 Survey
JD152

3 km
Projected location of Cores 29MC, 31JC, 30NB
X CAR-1 line 5
X CAR-1 line 6
X CAR-1 line 7

NW

3 km

CAR-1 - Line 2
Bandpass
Carnegie Ridge 1
Survey
JD152

Line 2

SE
CAR-1 - Line 2
Bandpass Carnegie Ridge 1 Survey JD152

Two-way Travel Time (ms)
Data File SBfixavg.2000jun01.0000-0600
CAR-1 - Line 3
Bandpass
Carnegie Ridge 1
Survey
JD153

Two-way Travel Time (ms)

Turn
Start Line 3
JD152 | JD153

3 km
CAR-1 - Line 4
Bandpass
Carnegie Ridge 1
Survey
JD153
Cores 29MC, 31JC, 30NB
X CAR-1 line 13
X CAR-1 line 2
X CAR-1 line 3
CAR-1 - Line 5
Bandpass
Carnegie Ridge 1
Survey
JD153

Two-way Travel Time (ms)
Data File SBfixavg.2000jun01.0600-1200
CAR-1C Drillsite

CAR-1 - Line 6
Bandpass
Carnegie Ridge 1 Survey
JD153

3 km

Two-way Travel Time (ms)

X CAR-1 line 12
X CAR-1 Chirp
X CAR-1 turn after Line 13
X CAR-1 line 2
NW  Line 8  SE

CAR-1 - Line 8
Bandpass
Carnegie Ridge 1
Survey
JD153

3 km
CAR-1 - Line 9 Bandpass Carnegie Ridge 1 Survey JD153
Car-1 - Line 10
Bandpass Carnegie Ridge 1 Survey
JD153

Two-way Travel Time (ms)
SW

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Cores 29MC, 31JC, 30NB
X CAR-1 line 5
X CAR-1 line 2
X CAR-1 line 6

3 km

Two-way Travel Time (ms)

CAR-1 - Line 13
Bandpass
Carnegie Ridge 1 Survey
JD153
Two-way Travel Time (ms)

- NEMO-3 Chirp
- JD 152
- Carnegie Ridge-1 Survey

2 km
NEMO-3 Site Surveys CGISS Technical Report 2000-06

Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

138

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 152
Carnegie Ridge-1 Survey

2 km
NEMO-3 Chirp JD 152
Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 152
Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp JD 152 Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp JD 152 Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp JD 152 Carnegie Ridge-1 Survey

Line 1

2 km
Data File SBfixavg.2000may31.1800-2400
NEMO-3 Site Surveys CGISS Technical Report 2000-06

Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

NEMO-3 Chirp JD 152 Carnegie Ridge-1 Survey

2 km
NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 152
Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)

NE SW

180

Carnegie Ridge-1 Survey

NEMO-3 Chirp JD 152

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 152
Carnegie Ridge-1 Survey

X Line 5 CAR1
X Line 13 CAR1
X Line 6 CAR1

Line 2

2 km

154
Two-way Travel Time (ms)
Speed change to 10 knots at 23:43
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey
NEMO-3 Site Surveys CGISS Technical Report 2000-06

Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

161

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

Change speed to 11 knots at 3:45

Line 4

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1
Survey

2 km
Line 5
2 km
NeMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
NE MO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

CAR-1C Drillsite
Line 6

Start Line 6
X Line 12 CAR1

2 km

D I L A V

1688

1688

0 4 8 12 16 21 25 29

M N

HR

SW

NE
Two-way Travel Time (ms)

NEMO-3 Chirp JD 153 Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
NEMO-3 Site Surveys CGISS Technical Report 2000-06

Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

182

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

JD 153

2 km
NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp JD 153 Carnegie Ridge-1 Survey

2 km

Line 7
Data File SBfixavg.2000jun01.1200-1800

Line 8
Line 9
Line 10
Line 11
Line 12
Line 13
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NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillites from NEMO-3
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 153
Carnegie Ridge-1 Survey

2 km
Change speed to 13 knots at 3:30
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 154
Carnegie-1 Ridge Survey

3 km
NEMO-3 Site Surveys CGISS Technical Report 2000-06
Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

Two-way Travel Time (ms)

NEMO-3 Chirp
JD 154
Carnegie-1 Ridge Survey

3 km
Two-way Travel Time (ms)
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 154
Carnegie-1 Ridge Survey

Line 19

3 km
Two-way Travel Time (ms)

NEMO-3 Chirp
JD 154
Panama Basin-3
Transit

Line 1 Transit to PAN3

X Line 14 CAR1

6 km

Speed 12 knots
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Volume 2: Seismic Reflection and Chirp Subbottom Profiles for Drillsites from NEMO-3

Line 1

Two-way Travel Time (ms) vs. Time (ms)

NEMO-3 Chirp
JD 154
Panama Basin-3
Transit

6 km