

Cruise Information EW0203

Multi-scale Seismic Imaging of the Mariana Subduction Factory, Part 2

The MARGINS programs in the US and Japan (of NSF and MEXT) have funded an integrated seismic study (marine multi-channel seismic reflection, controlled-source wide-angle reflection/refraction, and passive recording of local and teleseismic earthquakes) to provide a comprehensive velocity, attenuation, structural and stratigraphic image of the Mariana island-arc system, from the subducting Pacific Plate to the backarc, at 14°-20°N, 141°-149°E. This cruise deployed Ocean Bottom Seismographs (OBSs) and shot MCS lines over them.

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Co-chief Scientist:	Andrew Goodliffe, University of Hawaii
Data Originating Institution:	University of Hawaii
Funding Agency:	National Science Foundation, Award #OCE-0001798, "U.S.-Japan Collaborative Research: Multi-scale Seismic Imaging of the Mariana Subduction Factory"

Cruise Details

Platform:	R/V Maurice Ewing
Beginning date:	March 28, 2002
Ending date:	April 25, 2002
Start Port:	Apra, Guam
End Port:	Apra, Guam

Publications

Seismic Acquisition Parameters

Source Volume	10,810 cu in
Source Number	20
Source Type	Bolt 1500 airguns
Source pressure	2000 psi
Navigation type	P-code GPS
Shot interval	variable ~200-250m
Antenna to source	55.3 m
Source depth	8 m
Streamer depth	8 m
Recording system	
Number of channels	240
Channel Length	25 m
Source to near channel	161.5 m

Seismic Processing Sequence

Processing system: ProMAX onboard Ewing

Read SEG-D tape

Anti-alias filter and resample from 2 ms to 8 ms

Load Geometry (12.5 m CDP bins)

Bandpass Filter 4-6-60-70 Hz

Edit bad traces/shots

Velocity Analysis

NMO

Inside Mute

Top Mute

Stack

Stolt F-K migration