

Cruise Information EW0113

Geophysical Investigation of the Exmouth and Cuvier Margins

Our geophysical investigation of the Exmouth and Cuvier margins was designed to test alternate models for continental margin development, and when these results are integrated with those from other margin studies, will lead to a better overall understanding and appreciation of:

- the strain partitioning across margins between the brittle upper crust and the ductile lower crust and lithospheric mantle (e.g., the upper plate paradox)
- the interplay between extensional style (rift architecture), magmatism and detachments
- the continent-ocean transition, and the origin of magnetic anomalies observed off the Exmouth and Cuvier margin,
- the formation of seaward-dipping reflectors along the continent-ocean boundaries and the importance of faults in their formation.

Chief Scientist:	Neal Driscoll
Data Originating Institution:	University of Hawaii
Funding Agency:	NSF-OCE 9911962

Cruise Details

Platform:	<i>R/V Maurice Ewing</i>
Beginning date:	27 October, 2001
Ending date:	02 December, 2001
Start Port:	Freemantle, Australia
End Port:	Freemantle, Australia

Publications

Seismic Acquisition Parameters

Source Volume	8445 cu in
Source Number	20
Source Type	Bolt 1500 airguns
Source pressure	2000 psi
Navigation type	P-code GPS
Shot interval	50 m
Antenna to source	55.3 m
Source depth	6 m
Streamer depth	6 m
Recording system	Syntrak
Number of channels	480
Channel Length	12.5
Source to near channel	154 m

Seismic Processing Sequence

Processing system: ProMAX at University of Hawaii

Read SEG-D tape

Anti-alias filter and resample from 2 ms to 4 ms

Load Geometry (6.25 m bins), straight line geometry

Trace kills

True amplitude recovery

Spike and noise burst edit

Bandpass filter 4-8-55-65 Hz

Radon velocity filter to attenuate multiples

Velocity analysis

NMO

Top and bottom mutes

Stack

F-K migration