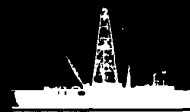


# NEWS RELEASE

## Ocean Drilling Program



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September 12, 1988

ODP Leg 123.1

COLLEGE STATION -- Scientists for the Ocean Drilling Program (ODP) are continuing a two-cruise drilling expedition off the Northwest Australian continental margin to study geologic processes that separated continents, formed ocean basins and consumed an ancient sea.

Australia's northwest continental shelf and adjacent marine environment represent what geologists call a passive margin which develops when continents drift apart and an ocean basin forms.

Passive margins provide especially good clues to Earth's ancient land configurations. As continents separate and growing ocean basins fill the intervening space, the torn edges of these separated land masses sometimes retain their shape at the time of their initial separation. These edges are like giant pieces of a puzzle. When hypothetically reassembled, they show scientists what the face of the Earth looked like millions of years ago.

Because northwest Australia was joined to India before separation, its conjugate or opposing margin is the eastern Indian coast bordering the Bay of Bengal.

More than 220 million years ago, when Earth's continents were

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amassed into one megacontinent, a widening ancient sea, the Tethys, separated the drifting land masses. The continental land mass of the Southern Hemisphere contained South America, Africa, Antarctica, Australia and India, each of which began its own migration toward a present-day global location.

When continent and adjacent ocean occupy the same lithospheric plate, they move as a single unit. Thus the oldest part of the ocean crust remains fused to the nearest continental mass as a widening ocean basin separates the two land masses. A submerged part of the northwest Australian continent, for instance, is part of the original Tethys crust. This region, called the Exmouth Plateau, lies beneath 1 to 2 kilometers of water, a remnant of the ancient Australian continental margin bounded by the Tethys Sea. The plateau remains one of the few places in the world where scientists can examine the unaltered characteristics of an old continent and its adjacent sea.

Drilling on the plateau will give scientists invaluable information about the nature of ancestral oceans and continents, their sea life and their climates.

At an adjacent site, the Argo Abyssal Plain, a relatively thin sediment layer covers the ocean floor. The thin sediment layer will enable scientists to recover and date a sequence of geological material dating as far as 170 million years in Earth's history.

This slice of time will enable scientists to track the evolution of a juvenile Indian Ocean from its birth to its present state and the breakup of India from Australia, precipitating India's long flight to the Asian continent.

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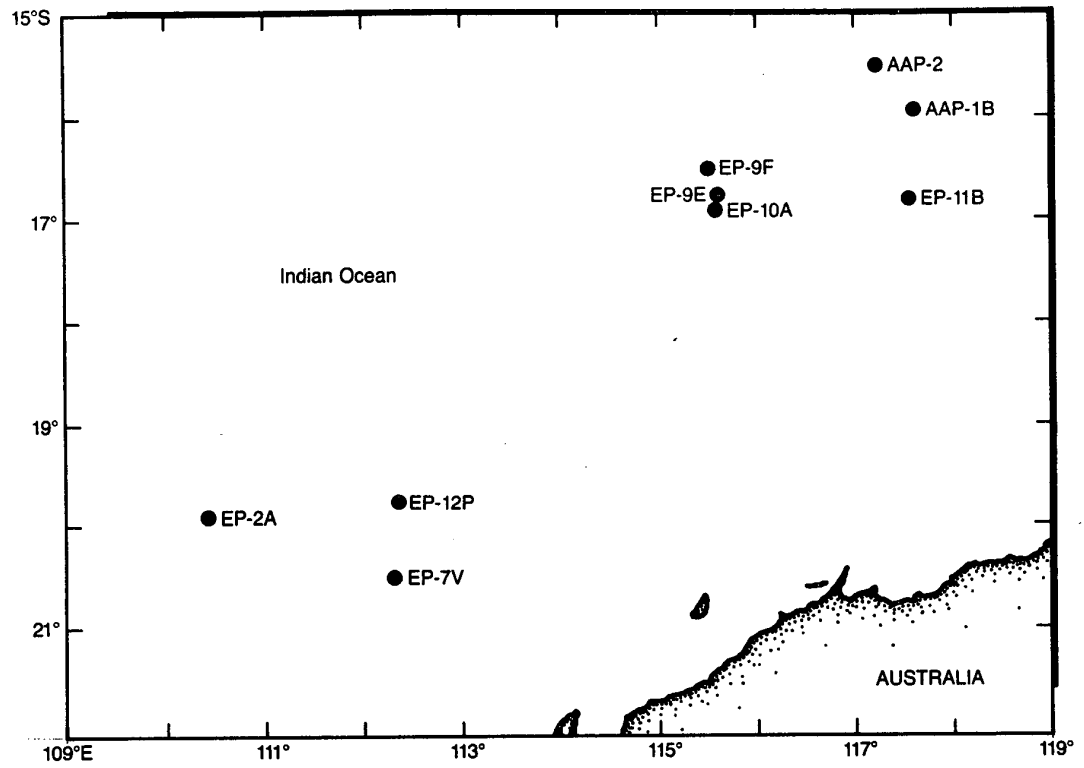
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Co-chief scientists for Leg 123 are Dr. Felix Gradstein, Bedford Institute of Oceanography, Dartmouth, Nova Scotia, Canada, and Dr. John Ludden, University of Montreal, Quebec, Canada. Dr. Andrew C. Adamson, Texas A&M University, College Station, is the ODP staff scientist.

JOIDES Resolution, registered as SEDCO/BP 471, is the research vessel for ODP which is funded by the United States National Science Foundation, Canada, the European Science Foundation Consortium for the Ocean Drilling Program, France, Japan, West Germany and the United Kingdom.

The Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES), an international group of scientists, provides scientific planning and program advice. Joint Oceanographic Institutions (JOI, Inc.), a nonprofit consortium of 10 major U.S. oceanographic institutions, manages the program.

"The Ocean Drilling Program completes its 18-month campaign in the Indian Ocean at the end of 1988," said Dr. Philip D. Rabinowitz, director. "We will explore the western and central Pacific regions through 1990," he said.



**Sites for ODP Legs 122-123**  
**Exmouth Plateau and Argo Basin**  
**July-October 1988**