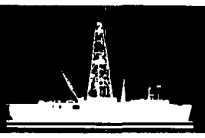
NEWS RELEASE
Ocean Drilling Program



For information:
Karen Riedel
Ocean Drilling Program
Texas A&M University
College Station, TX 77840
(409) 845-9322

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Leg 121.2

COLLEGE STATION, TX -- In the eastern Indian Ocean, west of Australia, lies a mysterious underwater mountain range named Broken Ridge. The ridge was once a long, narrow island before sinking below the sea surface, burying with it the secrets of its origin, the record of ancient shell-littered beaches and evidence of the mass extinction of plant and animal life that occurred more than 60 million years ago.

In the same region is a second linear subterranean mountain range named Ninetyeast Ridge. This ridge records part of the Indian Ocean's tectonic history by showing how India moved from its original attachment to Antarctica to its present Southern Asian location.

During May and June, scientists on board JOIDES Resolution, drill ship for the Ocean Drilling Program (ODP), recovered from these two ridges cores totaling more than a mile of sediment and basalt, material that will enable them to reconstruct this region's geologic history.

Ninetyeast Ridge extends for 5,000 kilometers along the 90th meridian from the Bay of Bengal to a latitude equal to Australia's southern coast, a distance greater than that between Boston and

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Seattle. It terminates at the east-west trending submerged mass of Broken Ridge.

Cores of sediment and rock from Broken Ridge revealed that about 45 million years ago, geologic forces associated with rifting lifted the range above the sea surface, forming a long, narrow island. Scientists knew that Broken Ridge once had been part of Kerguelen Plateau, a giant underwater formation now lying southwest. They did not know, however, what type of rifting forces separated the ridge from the plateau. Rifting could have been either active or passive. If active, molten rock rising from deep within Earth separated the ridge and plateau. But if forces pulled the weakened crust apart, it would be an instance of passive rifting.

Drilling results clearly show that the rifting was passive. Samples retrieved from the sedimentary cover of Broken Ridge reveal that about 45 million years ago a portion of the Kerguelen Plateau split away to the south along a deep fault or chasm in the seafloor causing the opposite end of the plate, bearing Broken Ridge, to upturn. When the plateau slumped, it created a see-saw effect, lifting the opposite edge bearing Broken Ridge above sea level. Since that time, the eroded crest of Broken Ridge has been sinking slowly back into the sea; it now lies 3000 feet beneath the sea surface.

By drilling on the edge of this once-exposed island, the scientists recovered evidence of an old beach littered with the shells of ancient mollusks. These fossils mark the resubmergence of Broken Ridge after the rifting event. The cores retrieved from this ridge also show that hundreds of species of plankton (organisms that drift

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with the water) suddenly died out on Broken Ridge at the end of the Cretaceous period (about 66 million years ago), part of a worldwide mass extinction.

Evidence from this site is particularly valuable because the sediment at Broken Ridge accumulated rapidly, giving scientists an expanded record of how species evolve in response to newly created ecological niches.

At the Ninetyeast Ridge scientists cored through an extensive sequence of sediments, lava flows and thick piles of volcanic ash. These lava flows were erupted from and represent the volcanic trail of a hot spot located near Kerguelen Island. Hot spots originating deep below Earth's mantle puncture melt their way to the surface allowing hot magma to well up and form volcanoes. As a crustal plate such as the one carrying India passes over a hot spot, it takes the volcano's cone with it, thus leaving a trail of extinct volcanoes in its wake. Scientists on Leg 121 will be able to date the Indian plate's movements studying samples from the recovered lava flows.

The northernmost site drilled on Ninetyeast Ridge lies in the Bay of Bengal, a huge fan of accumulated sediments carried from the Himalayas to the ocean by the Ganges and Brahmaputra rivers. Samples from this site contain two important environmental records. Scientists can study these sediments to learn how the Indian and Asian monsoon patterns have changed through time and how the eroded material from the Himalayas responded to worldwide glaciation.

Evidence of the Indian Ocean's ancient climates will help scientists better understand the history of wind patterns, ocean

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circulation and cycles of glaciation in the Southern Hemisphere and how they compare with the climate history of the Northern Hemisphere.

Co-chief scientists for the cruise were Dr. John Peirce of Petro Canada, Calgary, Alberta, and Dr. Jeff Weissel of Lamont-Doherty Geological Observatory of Columbia University, Palisades, New York. Dr. Elliott Taylor, Texas A&M University, College Station, was 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 470-foot-long drill ship's derrick towers 200 feet above the waterline. A seven-story laboratory stack provides facilities for on board examination of sediment and hard-rock cores. Laboratories contain space and equipment for studies in chemical, gas and physical properties, paleontology, petrology, paleomagnetics and sedimentology. Marine geophysics research is conducted while the ship is under way.

Texas A&M University, as science operator, operates and staffs the drill ship and retrieves cores from strategic sites around the world. The science operator also ensures that adequate scientific analyses are performed on the cores. To do this, Texas A&M maintains shipboard scientific labs and provides logistical and technical support for shipboard scientific teams. On shore, in the Texas A&M University Research Park, the science operator manages post-cruise activities, curates the cores and publishes the scientific results.

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Lamont-Doherty Geological Observatory of Columbia University is responsible for downhole logging.

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 of the ODP.

"We will be exploring the western Pacific region through 1990," he said.

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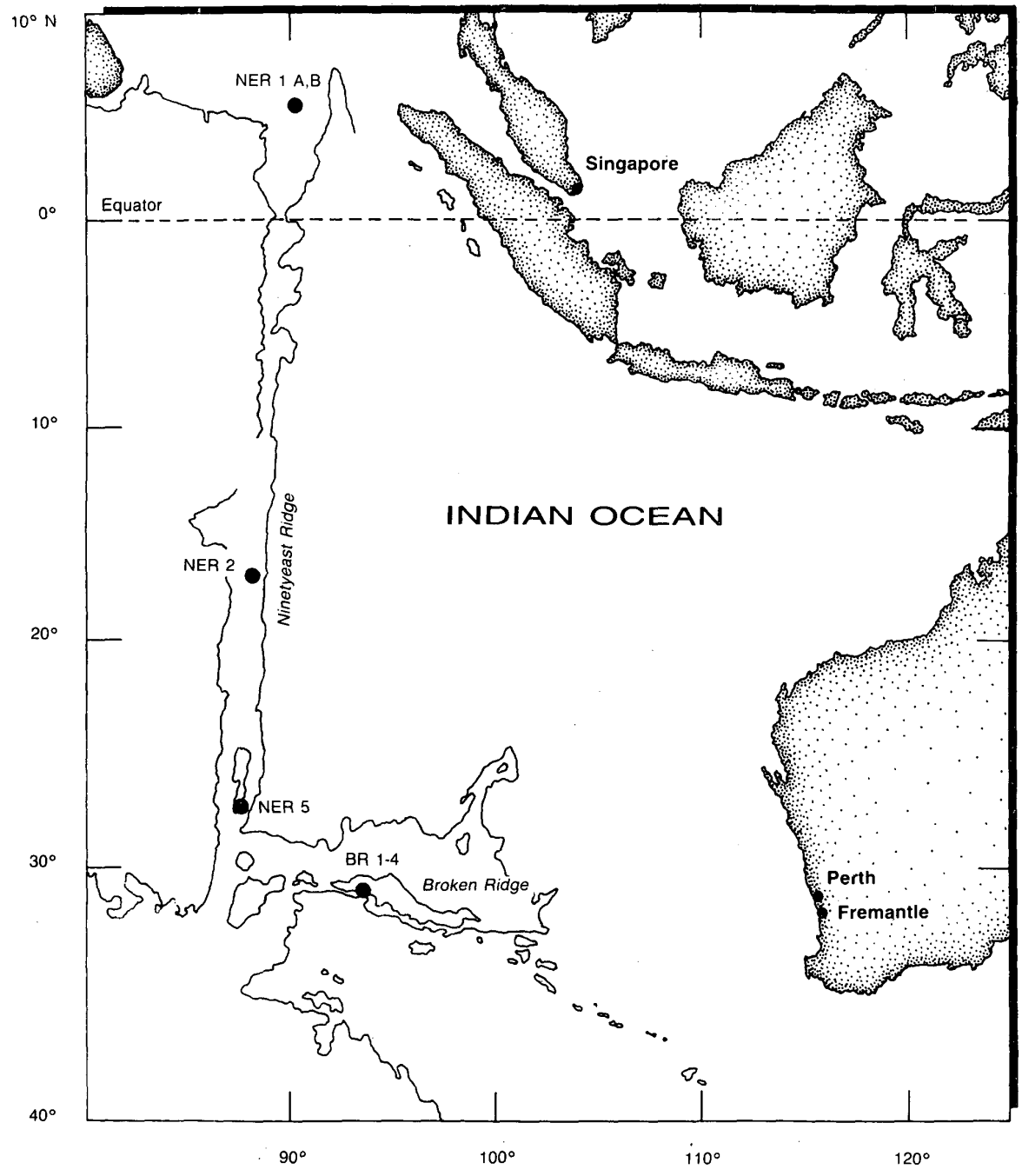
(Note: JOIDES institutions are: University of California at San Diego, Scripps Institution of Oceanography; Columbia University, Lamont-Doherty Geological Observatory; University of Hawaii, Hawaii Institute of Geophysics; University of Miami, Rosenstiel School of Marine and Atmospheric Science; Oregon State University, College of Oceanography; University of Rhode Island, Graduate School of Oceanography; Texas A&M University, Department of Oceanography; University of Texas at Austin, Institute of Geophysics; University of Washington, College of Ocean and Fishery Sciences; and Woods Hole Oceanographic Institution.

Non-U.S. members are Department of Energy, Mines, and Resources, Earth Sciences Sector, Canada; European Science Foundation Consortium for the Ocean Drilling Program, Belgium, Denmark, Finland, Iceland, Italy, Greece, the Netherlands, Norway, Spain, Sweden, Switzerland and Turkey; Bundesanstalt fur Geowissenschaften und Rohstoffe, Federal Republic of Germany; Institut Francais de Recherche pour l'Exploitation de la Mer, France; University of Tokyo, Ocean Research Institute, Japan; and Natural Environment Research Council, United Kingdom.)

Members of the scientific party for ODP Leg 121 were: John Peirce, Petro Canada, Calgary, Alberta, Canada, and Jeff Weissel, Lamont-Doherty Geological Observatory (L-DGO) of Columbia University, Palisades, N.Y., co-chief scientists; Elliott Taylor, ODP staff scientist, Texas A&M University, College Station; Jonathan Dehn, Ruhr-Universitat Bochum, Federal Republic of Germany; Neal W. Driscoll, L-DGO; John Farrell, Brown University, Providence, R.I.; Fred Frey, Massachusetts Institute of Technology, Cambridge; Paul D. Gamson, Open University, Milton Keynes, United Kingdom; Jeffrey S. Gee, University of California at San Diego; Ian L. Gibson, University of Waterloo, Canada; Elisabeth Fourtanier, Ecole Normale Superieure, Fontenay-aux-Roses, France; Tom Janacek, Piermont, N.Y.; Christian Klootwijk, Bureau of Mineral Resources, Geology and Geophysics, Canberra, Australia; James R. Lawrence, University of Houston, Texas; Ralf Littke, Institute for Petroleum and Organic Geochemistry, Julich, Federal Republic of Germany; Jerry S. Newman, University of Texas, Austin; Ritsuo Nomura, Shimane University, Matsue, Japan; Robert M. Owen, University of Michigan, Ann Arbor; James J. Pospichal, Florida State University, Tallahassee; David Rea, University of Michigan; Purtyasti Resiwati, University of Nebraska, Lincoln; Andrew D. Saunders, University of Leicester, United Kingdom; Jan Smit, Institute of Earth Sciences, Amsterdam, the Netherlands; Guy M. Smith, St. Louis University, Mo.; Kensaku Tamaki, University of Tokyo, Japan; Dominique Weis, Universite Libre de Bruxelles, Brussels, Belgium; and Craig Wilkinsen, L-DGO.



PROPOSED SITES FOR OCEAN DRILLING PROGRAM LEG 121
Indian Ocean: Broken Ridge and Ninetyeast Ridge
May and June 1988