



News Release

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FOR IMMEDIATE RELEASE

Mediterranean Sea Provides Clues to Collisional Process of the European and African Continents

ODP Legs 160 and 161 Also Examine Unique Sapropel Formation in the Mediterranean Sea

College Station, Tx, March 9 – The Ocean Drilling Program is beginning a four-month expedition in the Mediterranean Sea investigating the collisional and accretionary processes associated with the convergent boundary between African and Eurasian plates. The distance between Europe and Africa continues to decrease approximately one centimeter a year.

The research will be separated into two different cruises with the first science team sailing March 12 through May 3 in the Eastern Mediterranean. Dr. Kay-Christian Emeis (Institut für Ostseeforschung Warnemuende of Germany) and Dr. Alastair Robertson (University of Edinburgh of the U.K.) will be the co-chief scientists for ODP Leg 160. Dr. Carl Richter (ODP) will be the staff scientist.

The scientists aboard the drill ship *JOIDES Resolution* will first investigate the Eratosthenes Seamount that is currently colliding with the Cyprus margin in the eastern section of the Mediterranean. The research team will also drill into an active mud volcano, an odd feature that frequently accompanies accretionary prisms.

Other objectives include studying the origin and paleoceanographic significance of sapropels, thin organic-rich layers of sediment intercalated in organic-lean muds and ooze.

“Studying the sea basins of the Mediterranean is important to further our understanding of plate tectonic related processes, such as collision and accretion on converging plate margins,” says Dr. Richter. “We also need to examine the evolution of this sea during the past 10 million years and to study the conditions that are necessary for the formation and preservation of organic-rich layers.”

Deep coring techniques are required to assess the global tectonic and environmental processes. The Ocean Drilling Program is the only project that applies such advanced technology with scientific objectives to better understand the history and evolution of the Earth’s processes.

Leg 161 begins May 8 following a brief port call in Naples and continues through July 4 in the western section of the Mediterranean. Scientists aboard this cruise include co-chiefs Dr. Maria Comas (Instituto Andaluz de Ciencias de la Tierra of Spain) and Dr. Rainer Zahn (GEOMAR of Germany). The ODP staff scientist is Dr. Adam Klaus.

This expedition will be investigating the history of Mediterranean water mass circulation and the influence of monsoon-driven atmospheric forcing on Mediterranean climate. Scientists will be mapping the oceanic and climatic conditions throughout the Mediterranean during the last 15 million years. They will also have the opportunity to document the hydrographic variability as a function of climate change and atmospheric forces dating back about 20 million years.

“We are studying the complex interaction of various natural phenomena that, when combined,

create unique climatic and oceanographic conditions," says Dr. Klaus. "The tectonic collision of Africa and Europe has created sills, such as the Straits of Gibraltar, which are restricting flow of various water masses. This, combined with various water masses being driven by climatic forces, has resulted in the formation of unique organic-rich deposits now resting on the sea floor."

By retrieving core samples, scientists can reevaluate the traditional model of sapropel formation and address issues relating to increased marine productivity in the Mediterranean during this time period.

"The data we collect can be used as a natural laboratory to investigate how tectonics, climate, ocean circulation and biological productivity interact to produce the organic-rich sapropel layers on the seafloor," explains Dr. Klaus.

The Ocean Drilling Program is funded by the U.S. National Science Foundation, Canada, Australia, the European Science Foundation Consortium, Germany, France, Japan, and the United Kingdom to investigate such topics as earth's history and evolution, climate change and the formation of the ocean crust.

Texas A&M University, science operator, operates and staffs the drill ship and retrieves core samples from strategic sites around the world. Lamont-Doherty Earth 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, Inc., a nonprofit consortium of 10 major U.S. oceanographic institutions, manages the program.

Note: U.S. members of JOIDES are: University of California at San Diego, Columbia University; University of Hawaii, University of Miami; Oregon State University; University of Rhode Island, Texas A&M University, University of Texas at Austin; University of Washington, and Woods Hole Oceanographic Institution. The European Science Foundation Consortium consists of Belgium, Denmark, Finland, Iceland, Italy, Greece, The Netherlands, Norway, Spain, Sweden, Switzerland and Turkey.

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