Leg 162

Compuserve Forum: A Direct Link to the Arctic Ocean

July 10, 1995 COLLEGE STATION, TX A twelve-year-old in Europe is spending a summer evening asking a scientist what it's like to spend two months at sea looking at seafloor sediments. A professor in the U.S. inquires about the direct influences on global environment conditions resulting from permanent and seasonal ice-cover formations in the Arctic Ocean. Through the global links of CompuServe, and a joint venture between *U.S. News & World Report* and the Ocean Drilling Program (ODP), science enthusiasts will have a unique opportunity to converse with researchers in the Arctic Ocean during a two-week period of a 54-day expedition. Sailing aboard the largest scientific drill ship, *JOIDES Resolution*, scientists representing seven different countries will be responding to questions posted by users on a CompuServe Forum beginning July 31 through August 13. Access to the forum is open to anyone with a CompuServe account. The science party will be studying the Arctic's effects on the transfer of sensible and latent heat to the atmosphere and deep-water formation and ventilation which control or influence both oceanic and atmospheric carbon chemistry. "The Nordic sea water masses are sometimes referred to as the "lungs" of the present world oceans because they contribute significantly to the ventilation of global ocean water," explains Dr. Peter Blum, a staff scientist with ODP. "Continuous sections of sediment cores from the deep ocean floor will allow us to reconstruct physical and chemical changes of these deep water masses with time, at scales of tens to millions of years, through analysis of biogenic, geochemical and lithological records." Seafloor sediments, containing minerals and skeletons of Arctic marine organisms, are a natural archive that records the environmental conditions of the Arctic Ocean and surrounding continents. In times past, Arctic waters were warmer and free of ice. The dramatic changes in climate that brought frigid conditions to both poles left a signature deep in the ocean floor that can be reached only by scientific drilling. "Knowledge of the amplitude and timescale of

natural climate variations is important because we need to assess whether these variations observed during the last century are natural occurrences or anthropogenically-induced," explains Dr. Maureen Raymo, a co-chief scientist for the ODP expedition and researcher at the Massachusetts Institute of Technology. "These historic variations also help us predict how the climate system may respond to the even larger increases in greenhouse gases expected over the next century." Last summer CompuServe and *U.S. News & World Report* conducted a similar forum with a scientific party aboard the U.S. Coast Guard ice breaker Polar Sea, the world's largest non-nuclear ice breaker. Commander Michael Powers help lead the expedition which was the first entity ever to use the Internet from the top of the world. Users simply will post questions on the forum and a selected scientist aboard the ship will respond to a specific question. All questions and answers will remain posted on the forum during the two-week period allowing people to follow discussions if they choose not to directly participate. 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 formation of the ocean crust. Joint Oceanographic Institutions, Inc., a nonprofit consortium of 10 major U.S. oceanographic institutions, manages the program. Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES), an international group of scientists, provides scientific planning and program advice. Texas A&M University, science operator, operates and staffs the drill ship that retrieves core samples from strategic sites in the world's oceans. Lamont-Doherty Earth Observatory of Columbia University is responsible for downhole logging. 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.