

## **Two Milestones For Argo Ocean 'Robots' : Global Array 2/3 Complete, 55,000th Profile Near**

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The free-floating Argo "robot oceanographers," a successful observation program that began in 2000 and is part of the global observing system to monitor Earth's oceans, reached two milestones: two-thirds completion of the international global array and the collection of nearly 55,000 profiles by the U.S. floats.

Argo is an internationally coordinated, broad-scale global array of temperature and salinity profiling floats, and a major component of the global ocean observing system. The program will eventually deploy 3,000 temperature and salinity profiling floats. As of October 12, there are 2,057 floats around the world.

"Argo data are being used by researchers and operational centers in many countries," said Argo Project Director John Gould of UCSD's Scripps Institution of Oceanography. "The data have allowed us to address problems that were previously hampered by lack of data. In particular, Argo has made an enormous difference in the remote Southern Hemisphere oceans. New results from operational centers and other researchers will be showcased at the Second Argo Science Workshop in Venice, Italy in March 2006."

"Argo's global coverage has increased our understanding of interrelated oceanic processes. These increases in knowledge will continue as more floats are added and more data points are collected over time," said retired Navy Vice Admiral Conrad C. Lautenbacher, Jr., Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

The 54,447th Argo profile was transmitted Oct. 5 on the Global Telecommunications System (GTS) for use by the international oceanographic community. The National Oceanic and Atmospheric Administration's Atlantic Oceanographic and Meteorological Laboratory in Miami, Fla., manages the real-time U.S. Argo data. NOAA's Pacific Marine Environmental Laboratory in Seattle, also participates in the Argo program.

"We have seen immediate uses for the information, such as forecasting and monitoring of El Niño events, as well as our regular seasonal forecasts," Lautenbacher said. "The floats also contribute to a Global Earth Observation System of Systems, which helps us fill knowledge gaps in climate and ocean science."

The floats are deployed from research vessels, volunteer merchant ships, and aircraft. Upon release, the floats sink to a prescribed depth (typically 1000 or 2000m), remain submerged from 10 to 14 days, and then obtain temperature and salinity profiles of the water column on their return to the surface. Once on the surface, the floats transmit their data to satellites then repeat their data collecting cycle.

The developments leading to Argo's ability to operate globally were made in the early 1990s by Scripps scientist Russ Davis. Twenty-five percent of the floats in the Argo array are built at Scripps. Each float is designed for a four-year lifespan, or approximately 150 cycles. Some have lasted longer.

In the United States, a consortium of academic and federal laboratories is supported by the National Oceanographic Partnership Program (NOPP) to produce and deploy Argo floats, provide quality control, and

transmit Argo data on the GTS. Argo data are transmitted on the GTS to the international operational and research communities within 24 hours (defined as the real-time access requirement) by National Data Assembly Centers.

NOAA's National Center for Environmental Prediction uses Argo data for seasonal atmospheric forecasting.

The international Argo program is supported by 18 nations and the European Commission.

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