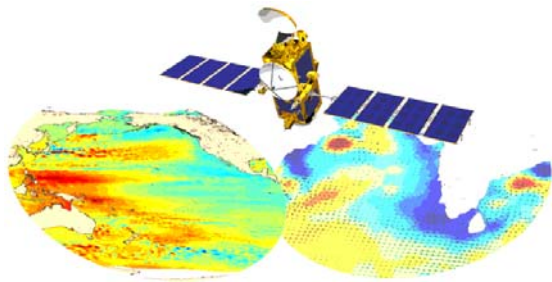


## Jason-1 satellite celebrates 10 years of observation



On December 7, 2001, Jason-1 was launched into orbit by Cnes and Nasa and soon after began to demonstrate an exceptional level of performance. More than a breakthrough in ocean observation, Jason opened a new pathway for radar altimetry, nine years after its predecessor mission Topex-Poseidon. Measuring ocean circulation and its

variations; measuring of the elevation of mean sea level reflecting the changes in temperature and salinity; the study of tides; are just a few of the many fundamental contributions that Jason-1 has made in the past 10 years.

Jason-1, the first in a series of three mini-satellites, has provided since its commissioning all the prerequisites necessary for a high-precision mission. Measurements of sea level provided by the satellite are used to exhaustively examine the characteristics of the entire water column, and thus to quantify the sea surface deformations sometimes indicative of climatic anomalies such as the El Nino of 2002, or to observe extreme events like Hurricane Katrina in 2005. In June 2008, Jason-2 was in turn launched, to ensure better spatial and temporal coverage of the oceans, through a tandem flight formation of the two satellites. At a time when the rise in mean sea level has reached 3.4 millimeters per year, some coastal areas housing a large proportion of the global population could soon be faced with numerous problems, along with island chains. The sustainability of the type of observations made by the Jason satellites is more than necessary in order to better anticipate the possible consequences of rising sea level. The advances made by the Jason satellites were made possible by unmatched real-time mission performance, and by the technological precision provided by the best altimeters, radiometers, and orbit analysis systems. In addition, the Doris receiver provides centimeter-level onboard location accuracy. The suite of onboard instruments provides a multitude of measurements used for many applications, including climate and ocean forecasting, marine meteorology, and geophysics.

The success of Jason has also encouraged the many interested partners to ensure mission continuity. Cnes, alongside its meteorological partners in Europe (EUMETSAT) and in the U.S. (NOAA) are now working on Jason-3, to be launched in 2014. In addition, Cnes is conducting numerous studies to continually improve Jason measurement accuracy. Finally, Cnes and Nasa are currently studying an ambitious high-resolution altimetry mission, SWOT, with support from the Future Investments Program set up by the French government in 2011. Its aim is to map all continental and oceanic waters at very fine scales, helping to improve our knowledge of the Earth's water balance, an essential step for better water management. This very innovative mission is the future of high-precision altimetry. It should be launched by the end of the decade.

Source Cnes/JPL.