

Aerospace Careers: Ocean Mapping

A career in Oceanography with NASA

Introduction

Part of NASA's mission is to develop an understanding of the total Earth system and the effects of natural and human-induced changes on the global environment. Our oceans play a major role in influencing changes in the world's climate and weather. Collecting and analyzing long-term ocean data from satellites is a relatively new field of exploration. The analysis of remotely-sensed ocean data makes it possible to understand the ocean in new and exciting ways.



The advent of ocean-observing satellites has launched a new era of marine discovery. Remotely sensed satellite data and modeling techniques enable the global mapping of seasonal changes in ocean surface topography, currents, waves, winds, phytoplankton content, sea-ice extent, rainfall, sunlight reaching the sea, and sea surface temperature. Studying these patterns at a global scale helps forecast and mitigate the disastrous effects of floods and drought. Images generated by ocean observing satellite missions tell us volumes about the most fundamental climate changes. During the last decade, forecasting models have benefited from satellite data as they have improved the ability to predict events such as El Niño and other global and regional climate cycles. These models will become more sophisticated as scientists and forecasters further develop the ability to simulate certain ocean phenomena and thus better predict when they will occur.

NASA has been observing the oceans from space for more than 20 years. NASA launched Seasat, the first civilian oceanographic satellite, on June 28, 1978. The satellite carried five complementary sensors designed to monitor the oceans from space. These sensors included:

- a radar altimeter to measure spacecraft height above the ocean surface
- a microwave scatterometer to measure wind speed and direction
- a scanning multichannel microwave radiometer to measure sea surface temperature
- a visible and infrared radiometer to identify cloud, land and water features
- a synthetic aperture radar to monitor the global surface wave field and polar sea ice conditions

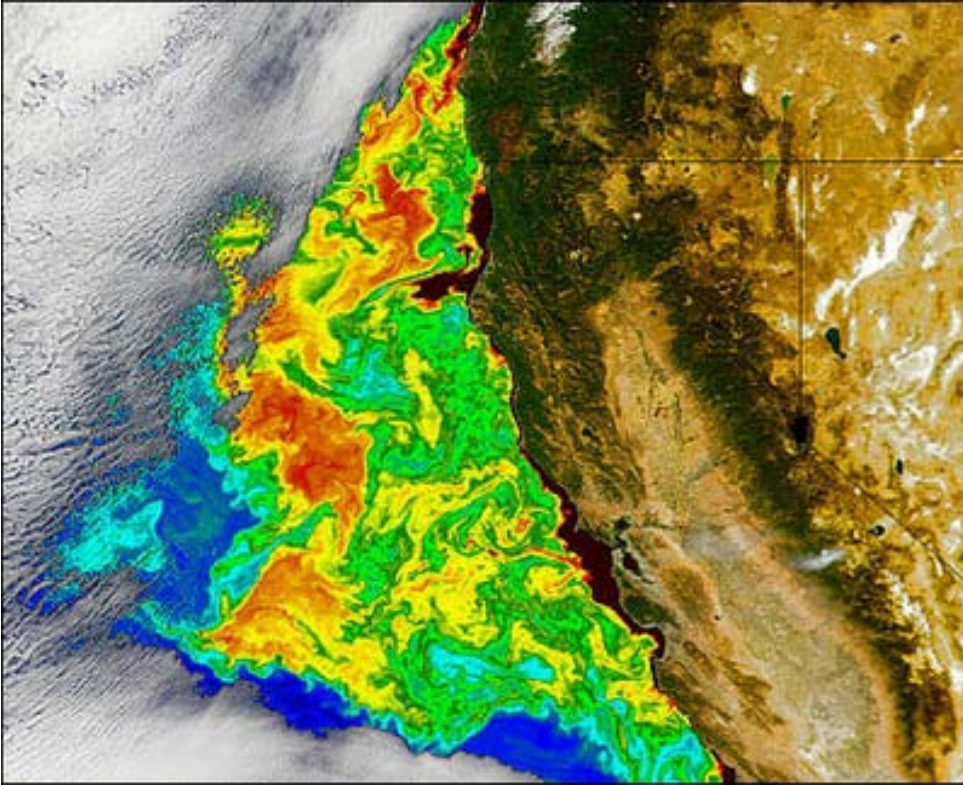
NASA is the exploration agency of the Federal Government. NASA Earth observing satellites often open up new vistas for Earth science research. All are meant to explore the envelope of what is known and understood about the physical, chemical and biological processes of the planet. [Learn more about Ocean Exploration at NASA.](#)

Education requirement for NASA Oceanographer:

Completion of a bachelor's degree with a major study of at least 24 semester hours in oceanography or a related discipline such as physics, meteorology, geophysics, mathematics, chemistry, engineering, geology, or biology, plus 20 additional semester hours in any combination of oceanography, physics, geophysics, chemistry, mathematics, meteorology, computer science, and engineering sciences.



At Civil Air Patrol, the volunteer auxiliary of the U.S. Air Force, we're helping develop tomorrow's aerospace workforce.



NASA: Chlorophyll Concentrations – California Coast 2002

Links to Oceanographer Job Information click below:

<http://geologyonlinecourses.com/degree-in-oceanography-and-marine-geology/>

Links to more Information click below:

<http://science.nasa.gov/earth-science/oceanography/living-ocean/remote-sensing/>

NASA Remote Sensing Tutorial

<http://rst.gsfc.nasa.gov/Front/overview.html>

Courtesy: [NASA, geologyonlinecourses.com]