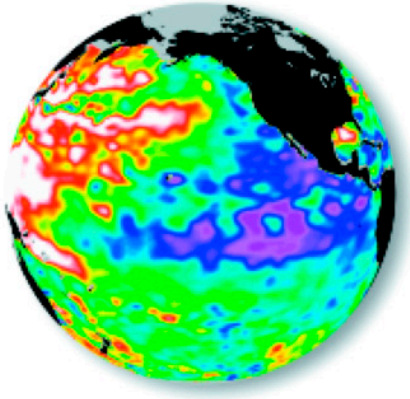
THE PACIFIC DECADAL OSCILLATION (PDO)
EL NINO AND LA NINA FROM SPACE

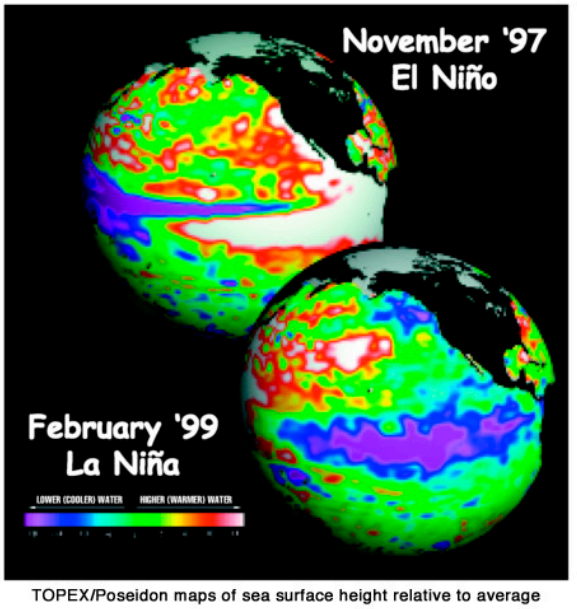


What are TOPEX/Poseidon and Jason-1 seeing now?

Many scientists agree that we are seeing a "switch" or oscillation in normal water temperatures, with warmer-than-average water in the mid-latitude western Pacific and cooler-than-average water in the equatorial and northeast Pacific. In 1996, this climate pattern was named the Pacific Decadal Oscillation (PDO) because these changes appear to persist for several decades. In the 20th century, PDO events lasted 20 to 30 years, with the last warm phase occurring from 1977 through 1998. Scientists are only just beginning to understand the PDO's behavior.

What about El Niño and La Niña?

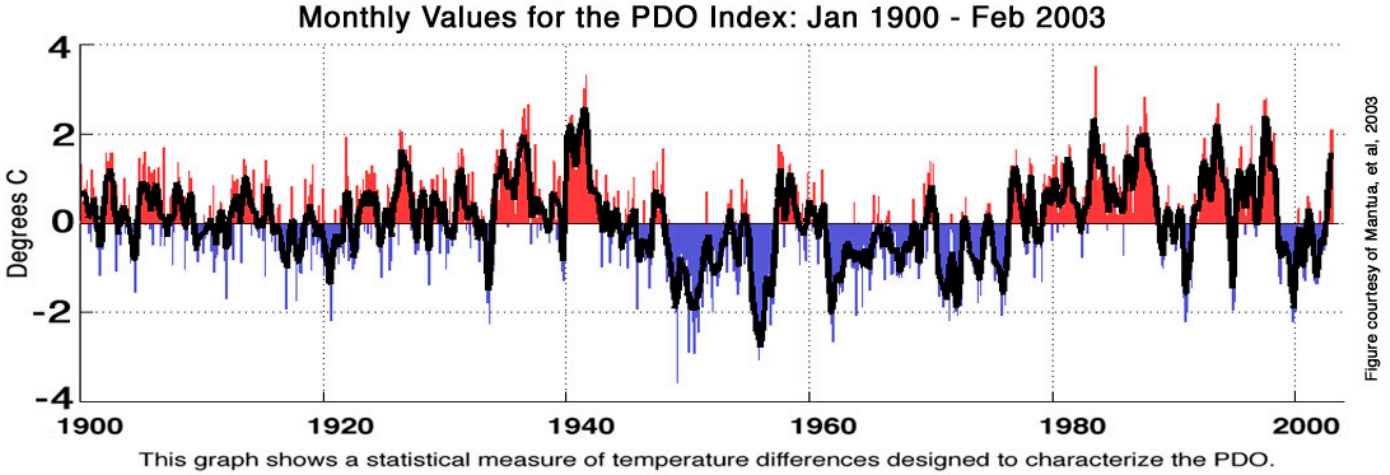
El Niño - Warm water at the equator and along the west coasts of North and South America; usually a one- to three-year climate fluctuation; most recently occurred: extra-large 1997-1998 and modest 2002-2003.
La Niña - Cold water at the equator and along the west coasts of North and South America; usually a one- to two-year climate fluctuation: most recently occurred: 1998-2001 and, perhaps in 2003.
El Niño and La Niña, which are relatively short-term events that alter the climate, can occur during both phases of the PDO.



TOPEX/Poseidon maps of sea surface height relative to average

Pacific Decadal Oscillation (PDO)

Q. Who gave the name "PDO" to the long-term changes in water temperatures?
A. The term PDO was coined in about 1996 by Steven Hare and his colleagues at the University of Washington.



This graph shows a statistical measure of temperature differences designed to characterize the PDO.