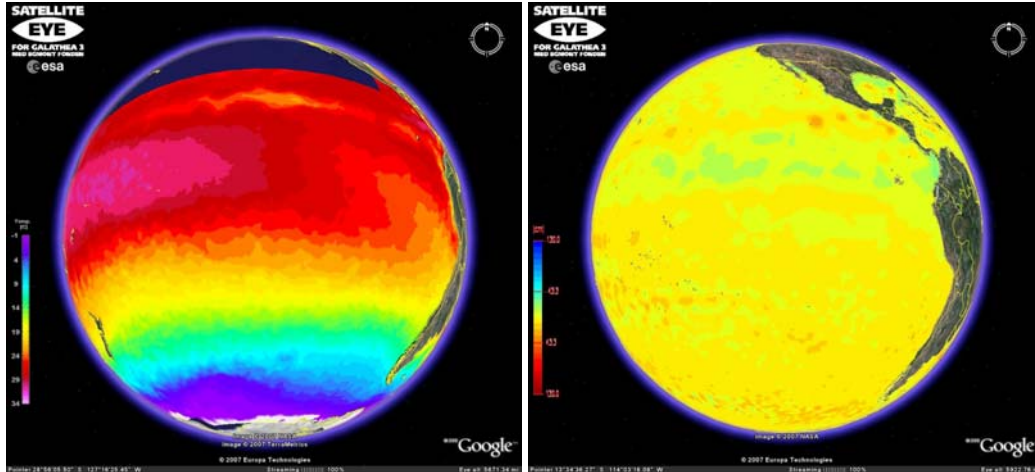


El Niño



Ocean sea surface temperature (left) and ocean height anomalies (right) in the Pacific Ocean shown from satellite images on 27 February 2007 indicate a moderate El Niño situation.

The El Niño phenomenon consists of a coupling between ocean and atmosphere. In the years 2006/2007 there has been a moderate El Niño with around 1°C higher sea surface temperatures in the equatorial Pacific than normal. There have been positive ENSO indices (anomalies) from April 2006 and up to now, February 2007. The maximum anomalies appeared in November 2006 and it was around 1.2 °C. Currently the anomalies are around 0.4°C.

The satellite image to the left shows the sea surface temperature in the Pacific Ocean observed from satellite. It is seen that the warmest water is in the western Pacific (purple and magenta colors) but also relatively warm water (red colors) is in the eastern Pacific near Peru in South America.

The satellite image to the right shows the ocean height anomalies, i.e. the height of the ocean surface minus the average ocean surface. The anomalies are measured in centimeter. In case of a strong El Niño the ocean height anomalies show positive values. In the images is seen that the anomalies are around zero (yellow and green colors), and El Niño is moderate (and decreasing).

The El Niño phenomenon *very shortly* described is given by very warm ocean water in the western Pacific that very slowly moves towards the East. This takes several months and when the warm surface water reaches the coast of South America much water is evaporated and much precipitation will subsequently fall in e.g. Peru in South America. The reason for the movement of the warm water towards the East can be explained. Normally, the trade wind that nearly always blows strongly and steadily from east to west ensures that the warm surface water is pushed ('kept') in the



western part of the Pacific. In case the trade wind weakens the ocean starts the large movement of warm water towards the east, and when this happens the ocean near South America can reach several degrees above normal. El Niño can be viewed as animation at NOAA <http://www.pmel.noaa.gov/tao/elnino/nino-home.html>

Technical information

The sea surface temperature is mapped from satellites using both thermal infrared and passive microwave observations. This is described at http://galathea.oersted.dtu.dk/SST_satellite.html where also several small animations of sea surface temperature can be viewed. A larger animation is available in Google Earth at http://galathea.oersted.dtu.dk/GE_animation.html

The ocean surface height anomalies are mapped from altimeter (radar) observed through a few days and from several satellites. The image is continuously updated everywhere on the globe.

Both the sea surface temperature map and the ocean height anomalies map are produced at DMI.

Further information on sea surface temperature is given at 'Sea temperature' http://galathea3.emu.dk/satelliteeye/projekter/index_uk.html

Information on El Niño is found at DMI http://www.dmi.dk/dmi/index/viden/fk-introduktion/el_nino_forside.htm and EMU http://galathea3.emu.dk/biologi/kredslob/el_nino.html