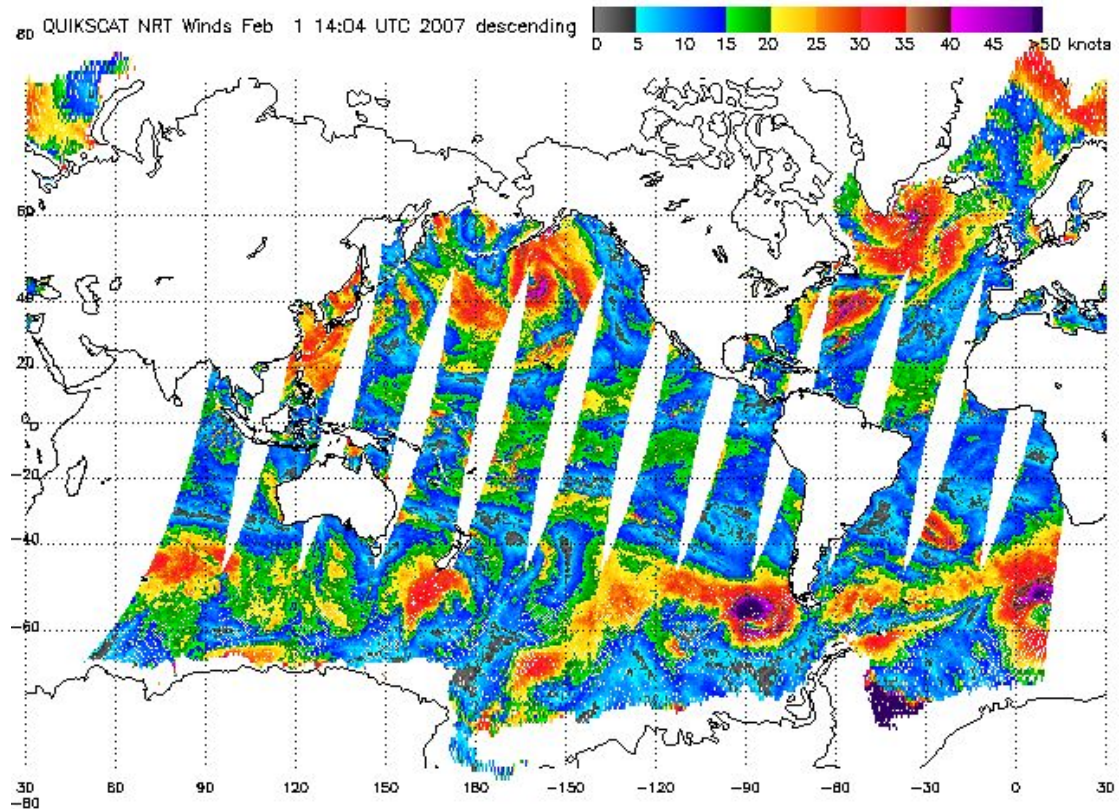


Weekly image: Week 6, 2007

Storm at Cape Horn



Wind speed over the ocean for the entire world observed 1 February 2007 from the QuikSCAT satellite. A severe storm is seen west of Cape Horn- the southernmost point in Latin America. The storm is shown in purple and black colors. This means wind speeds at 40 to more than 50 knots corresponding to 20 m/s to more than 25 m/s. Source: <http://manati.orbit.nesdis.noaa.gov/quikscat/>.

The ship Vædderen was on its way from Antarctica towards Cape Horn when this very strong storm was forecasted. The satellite image (click into the large image file) shows how the storm is circulating clock-wise around the low pressure in the lower left corner of the image. At the same time the low pressure moved towards the East hence directly towards Cape Horn.

The captain on Vædderen chose to avoid the most severe storm and sailed through the Magellan Strait at the coast of Argentina instead of north along the coast of Chile near Cape Horn. In Google Earth at Satellite Eye http://galathea.oersted.dtu.dk/GE_e.html you can click into 'Route with data' and see that Vædderen on 31 January was in nice weather between Antarctica and Cape Horn. The wind was 6 m/s from the northeast. Half a day later Vædderen was in Chile in the Magellan Strait and the ship observations shows winds of 30 m/s from the west. Hence it was a good decision to



sail in lee for the storm through Argentina even though this meant that the research (e.g. observing winds onboard) for the 15 hours it took to pass Argentine waters was not possible as no permission for research in this area was achieved.

Technical information

The wind map is recorded by the QuikSCAT scatterometer. Scatterometry is an active radar technology by which the instrument emits microwave radiation. The part of the microwave radiation that is returned from the surface of the Earth back to the satellite is observed by the antenna. On the surface of the ocean the wind continuously generates small waves comparable in size to the microwave radiation, i.e. around 5 cm wavelengths. The more wind, the more small and steep waves are formed. From these small waves the radiation is backscattered. When it is calm the image appears black because all the radiation is mirrored away from the instrument. At higher wind speeds the image is brighter because a large amount of radiation is backscattered to the instrument from the small waves. Microwave-radiation is penetrating through clouds and rain. Therefore wind maps are produced in all weather conditions, day and night.

The image is downloaded by Risø – DTU from <http://manati.orbit.nesdis.noaa.gov/quikscat/>

Read more about the topic at Satellite Eye for Galathea 3 project "Wind over ocean" http://galathea3.emu.dk/satelliteeye/projekter/wind/index_uk.html