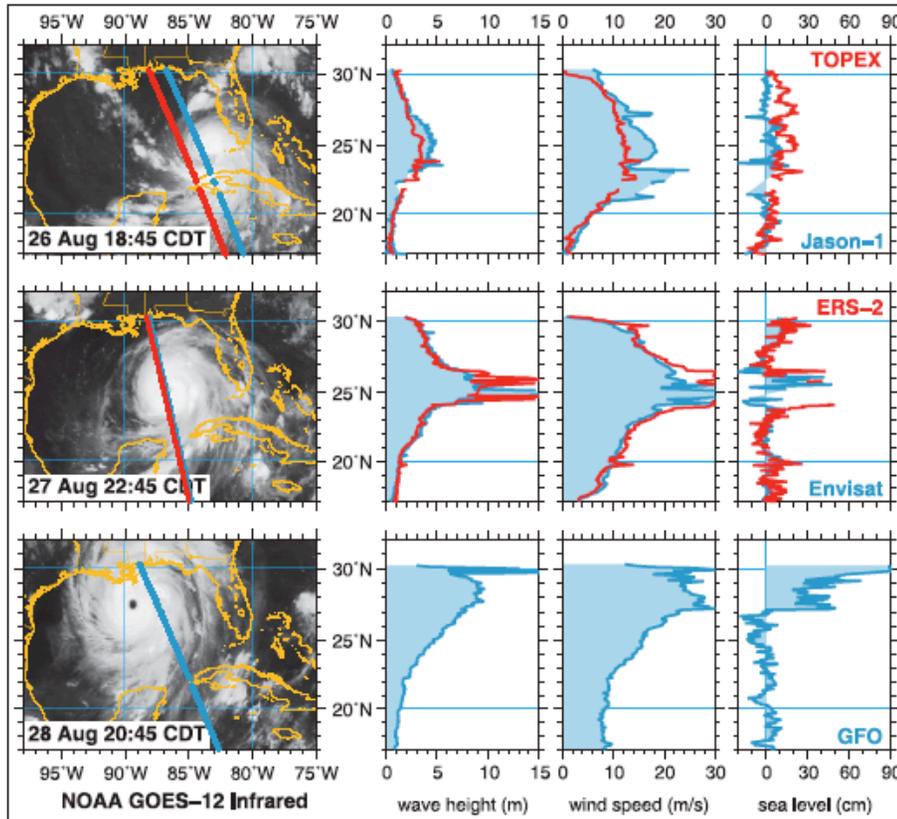




Hurricane storm surge seen with altimetry



Credit: NOAA

The left column shows a comparison of GOES 12 infrared images and altimeter data collected by (top) Jason 1 and TOPEX, (middle) Envisat and ERS-2, and (bottom) GFO during near-coincident overflights of Hurricane Katrina on 26, 27, and 28 August 2005. The three columns on the right show the altimeter measurements of wave height, wind speed, and sea level anomaly, respectively, as a function of latitude along the altimeter tracks shown on the infrared images.

(R. Scharroo, W. Smith, J. Lillibridge)

For the first time, a hurricane storm surge has been observed by an ocean altimeter. The panels here depict significant wave height, wind speed and the residual sea level anomaly during Hurricane Katrina in late August 2005. The bottom rightmost panel from the Geosat Follow-On (GFO) altimeter shows sea level windward of the hurricane eye rising toward the shoreline and reaching 90 cm at the coast. This, apparently, is the wind driven storm surge.

Satellite altimeters play an important role in forecasting ocean conditions that can intensify a tropical storm and can observe the storm conditions at the sea surface. Altimeter data also indicate that Katrina intensified over areas of anomalously high dynamic topography rather than areas of unusually warm surface waters.

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