Spin Cycle

Hurricane Energetics

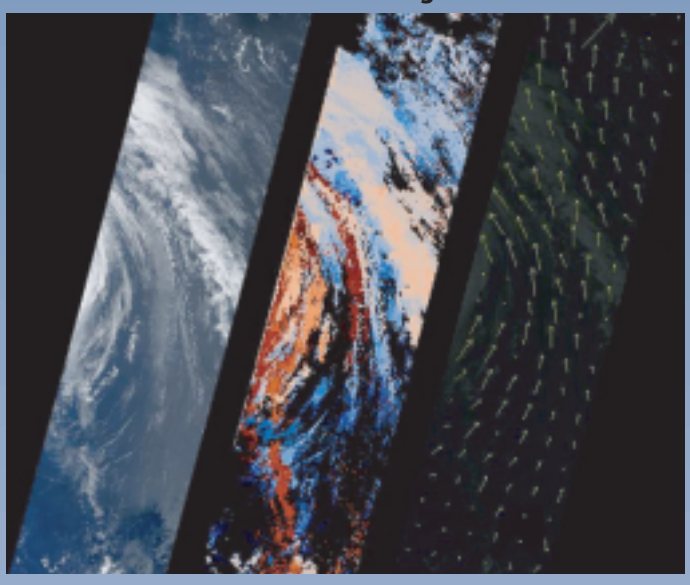
Recent EOSDIS products improve our knowledge of the components affecting the energy in tropical cyclones.

Wind — Cloud Top and Sea Surface Wind Vectors

Terra/MISR and QuikSCAT/SeaWinds Overpasses of Hurricane Debby on August 21, 2000

MISR

Visible Radiances | Cloud Top Heights | Cloud Top Winds



Images courtesy of NASA/GSFC/LaRC/JPL MISR Team

SeaWinds

Sea Surface Wind Vectors

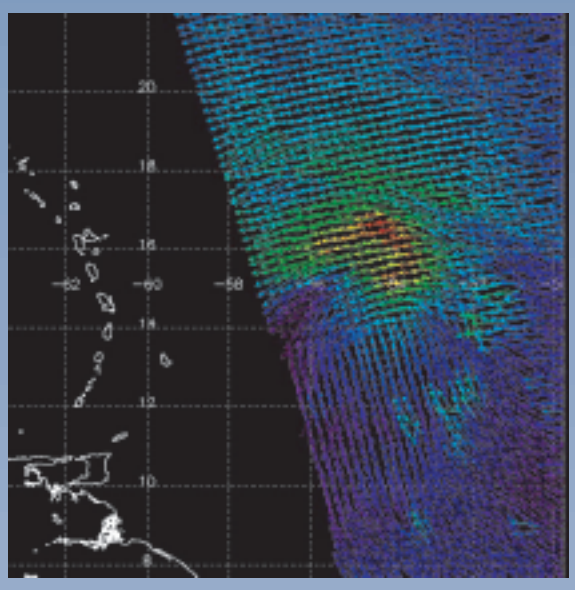


Image courtesy of the SeaWinds on QuickSCAT Project, JPL/NASA

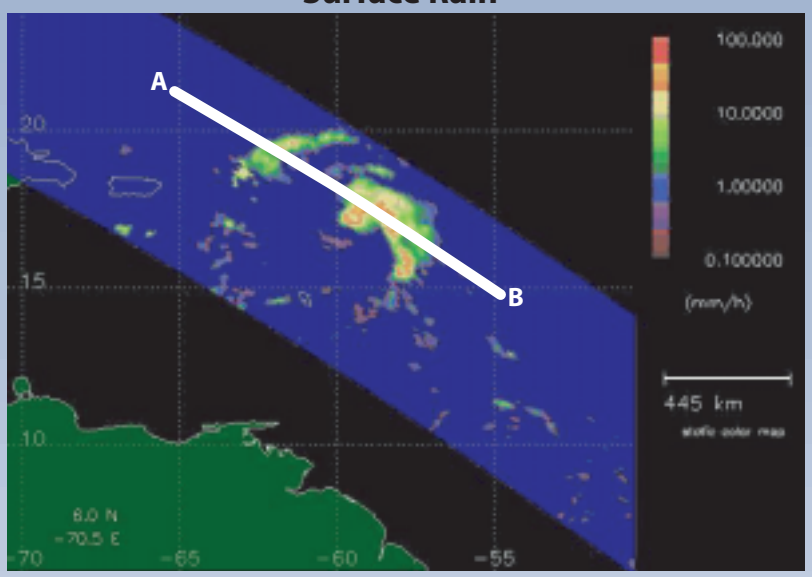
Cloud top heights and winds from MISR can be combined with sea surface wind vectors from SeaWinds to produce a multilayer view of horizontal wind fields.

Precipitation — Surface and Vertical Profiles

TRMM Microwave Imager (TMI) views of Hurricane Debby on August 22, 2000

TMI-derived precipitation rates and vertical profiles of ice and liquid water can be tied to the transfer and release of energy within storms.

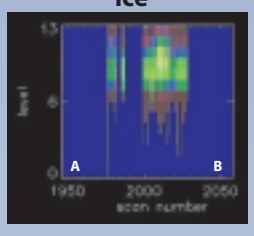
Surface Rain



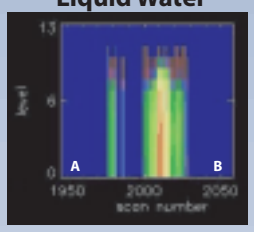
The white line locates the vertical profiles.

Vertical Profiles

Ice



Liquid Water

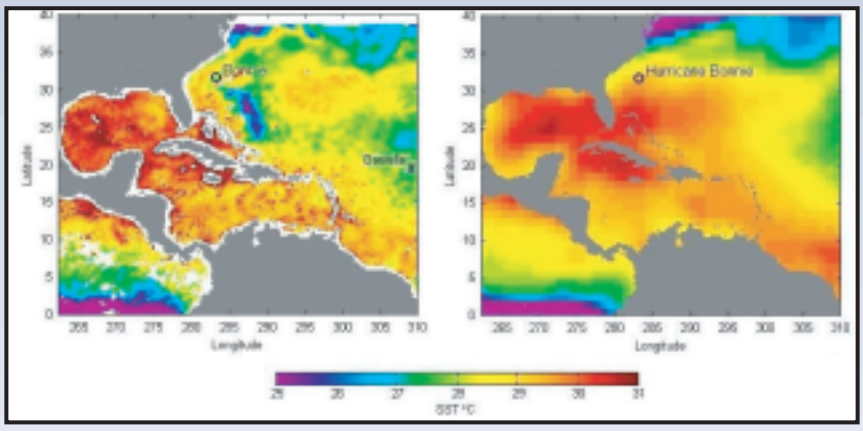


Images created with the TSDIS Orbit Viewer

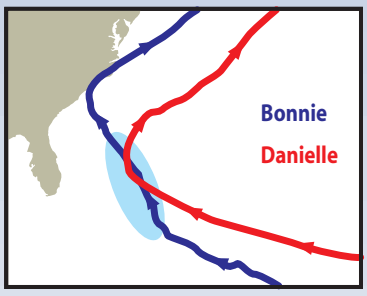
Temperature — Sea Surface

TMI vs. Reynolds views of Hurricanes Bonnie and Danielle in late August 1998

Images courtesy of Remote Sensing Systems



Through cloud cover, TMI detects the cooler water in Bonnie's wake (left image) that was missed by AVHRR IR used in Reynolds Weekly SST (right image).



Hurricane Danielle weakened when it hit the cooler water (shown in blue) upwelling in Bonnie's wake.

National Aeronautics and Space Administration

NorW020383 Hurricane Poster