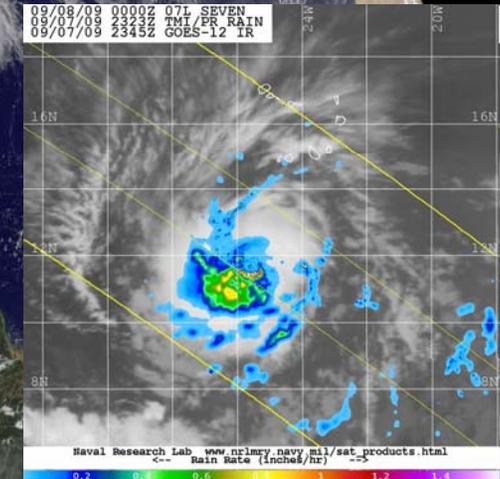
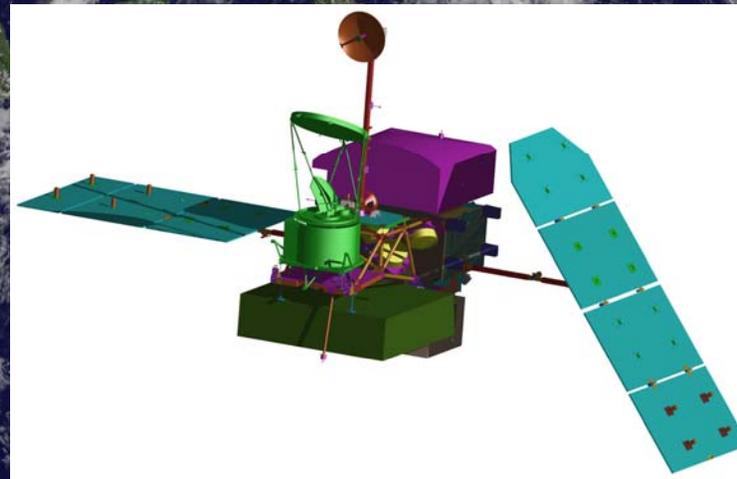
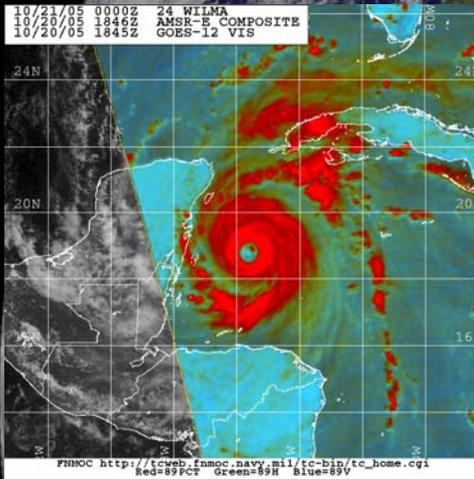




NATIONAL CENTERS FOR ENVIRONMENTAL PREDICTION



# Use of GPM Data in National Hurricane Center Operations



Jack Beven

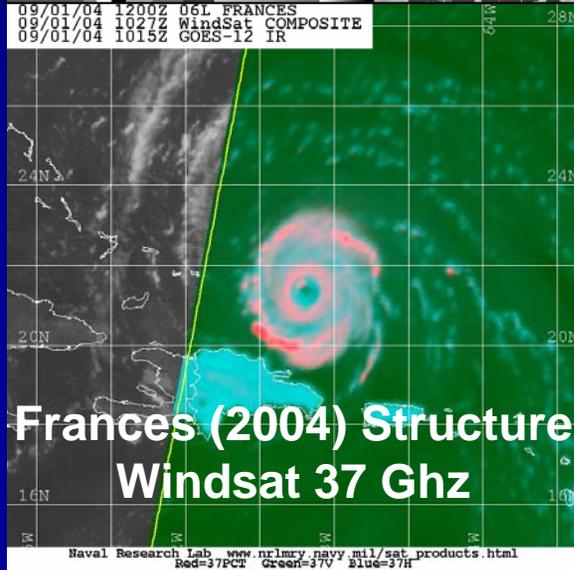
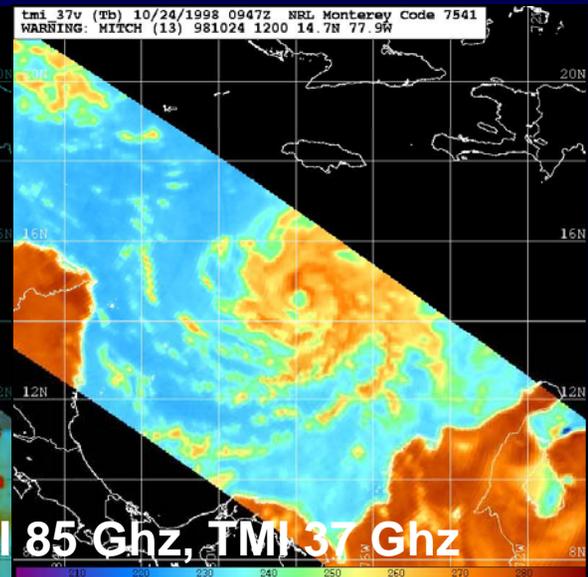
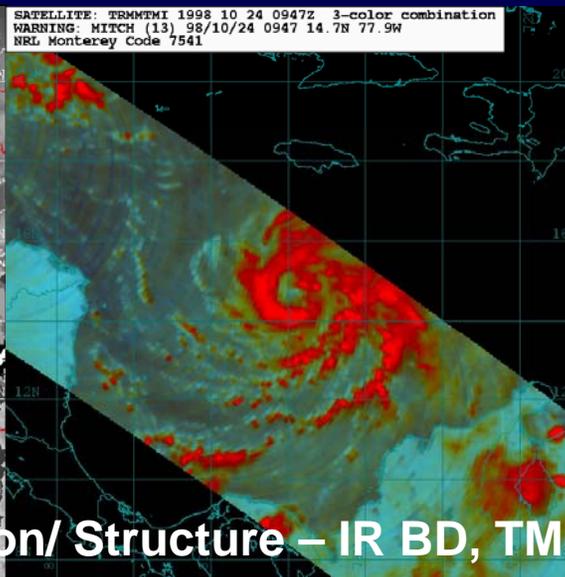
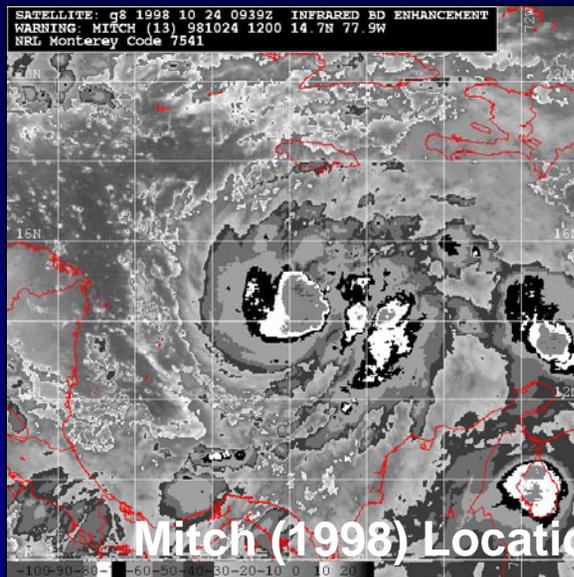
## NATIONAL HURRICANE CENTER

WHERE AMERICA'S CLIMATE AND WEATHER SERVICES BEGIN

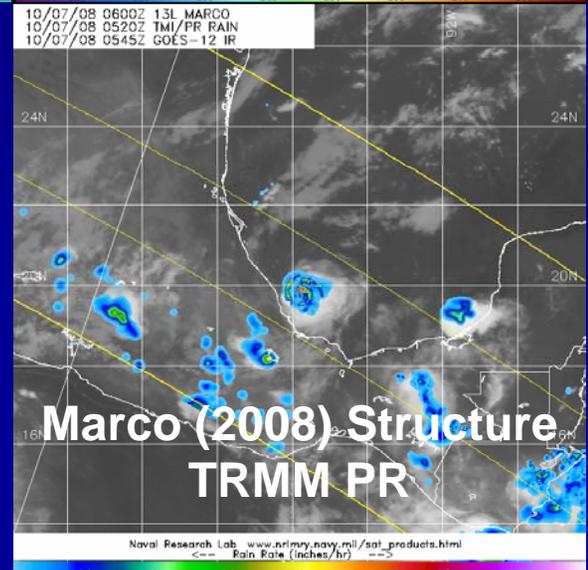
# Use of Microwave Data at NHC

- The NHC has used microwave imagery operationally for 15+ years (SSM/I, SSM/IS, TMI, AMSR-E, AMSU, WindSat)
- The main data source is the Naval Research Laboratory's Tropical Cyclone Web Page ([www.nrlmry.navy.mil/tc\\_pages/tc\\_home.html](http://www.nrlmry.navy.mil/tc_pages/tc_home.html))
- Microwave imagery helps the NHC determine center location and cyclone structure, revealing features that are not readily apparent in conventional visible/ infrared imagery
- TRMM data has a special importance due to its high spatial resolution and availability at times not normally covered by sun-synchronous polar-orbiting satellites

# Examples of Microwave Imagery of Tropical Cyclones



The NHC uses many types of microwave imagery for both real-time operations and post-analysis.



# Bertha Eyewall Replacement (TRMM)

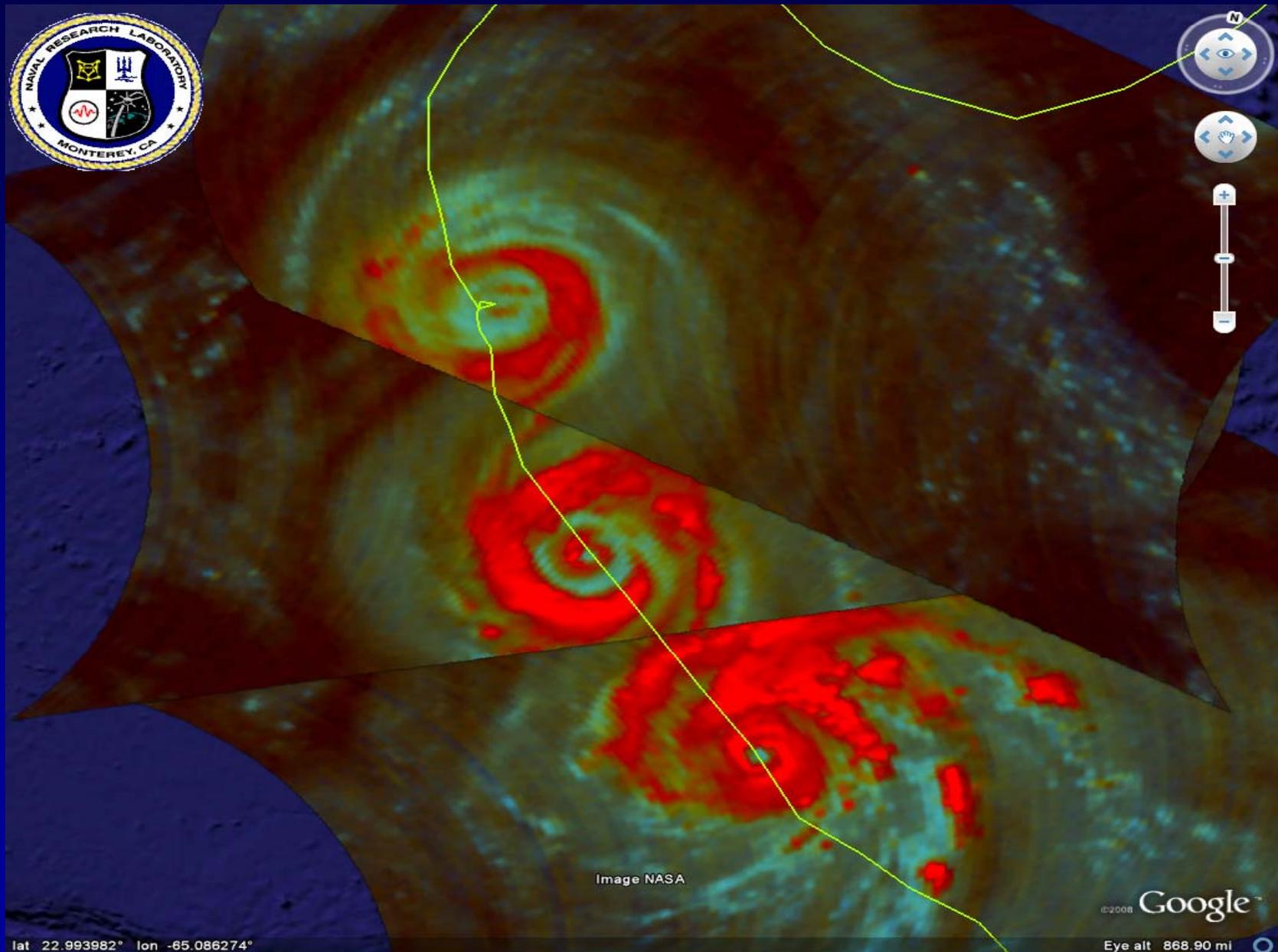


Image NASA

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lat 22.993982° lon -65.086274°

Eye alt 868.90 mi

# 0430 UTC 27 August 2004 GOES-10 IR TS Georgette

08/27/04 0000Z 10E GEORGETTE  
08/27/04 0411Z SSMI F-15 COMPOSITE  
08/27/04 0245Z GOES-10 IR

**0600 UTC Classification**  
**“Really an embedded center but**  
**constrained to not use it”**  
 **$3.5/3.5 = 55$  kt**

acts.html

# Use of GPM data at the NHC

- GPM data (imager and radar) will continue the current qualitative use of microwave imagery at the NHC
- Planned GPM satellite orbits (40/65 deg inclinations) will continue coverage at times not normally covered by sun-synchronous polar-orbiting satellites
- Assimilation of GPM data into numerical weather prediction models should help improve NHC forecasts