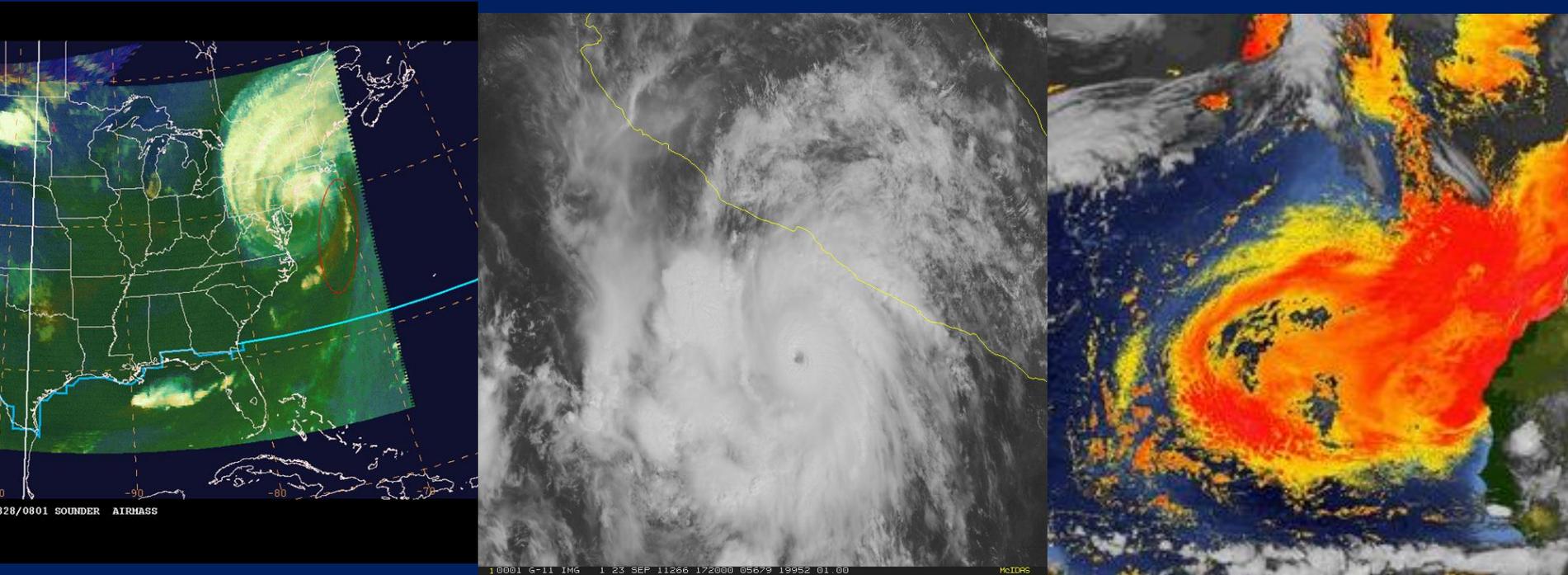


GOES-R Proving Ground Activities at the National Hurricane Center in 2011



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²NOAA/NESDIS, Fort Collins, CO

³CIMSS/UW, Madison, WI

Note: We have a lot of other collaborators on this!



Overview of GOES-R

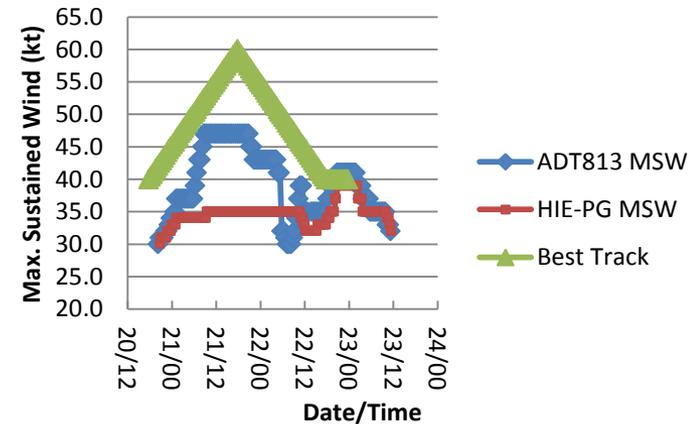
- Next generation of GOES satellites
- Planned launch in late 2015
 - Advanced Baseline Imager (ABI)
 - 16 channels, improved spatial and temporal resolution
 - Geostationary Lightning Mapper
 - Near continuous monitoring of total lightning
 - Space Weather Instruments
 - Communications capabilities



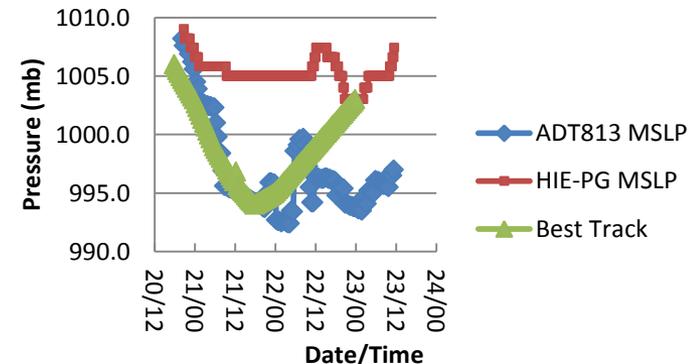
2010 GOES-R Products Evaluated (ongoing)

- Official GOES-R Baseline product
 - Hurricane Intensity Estimate (HIE) [CIMSS]
- GOES-R Decision Aids/Imagery Products
 - Red-Green-Blue (RGB) Air Mass Product [CIRA/RAMMB]
 - RGB Dust Product [CIRA/RAMMB]
 - Saharan Air Layer (SAL) Product [HRD + CIMSS]
 - Super Rapid Scan Imagery [CIRA + NHC + CIMSS] (Don, Nate, Hilary)
 - Lightning-based Rapid Intensity Index (RII) [CIRA/RAMMB]

Cindy Max. Sustained Winds

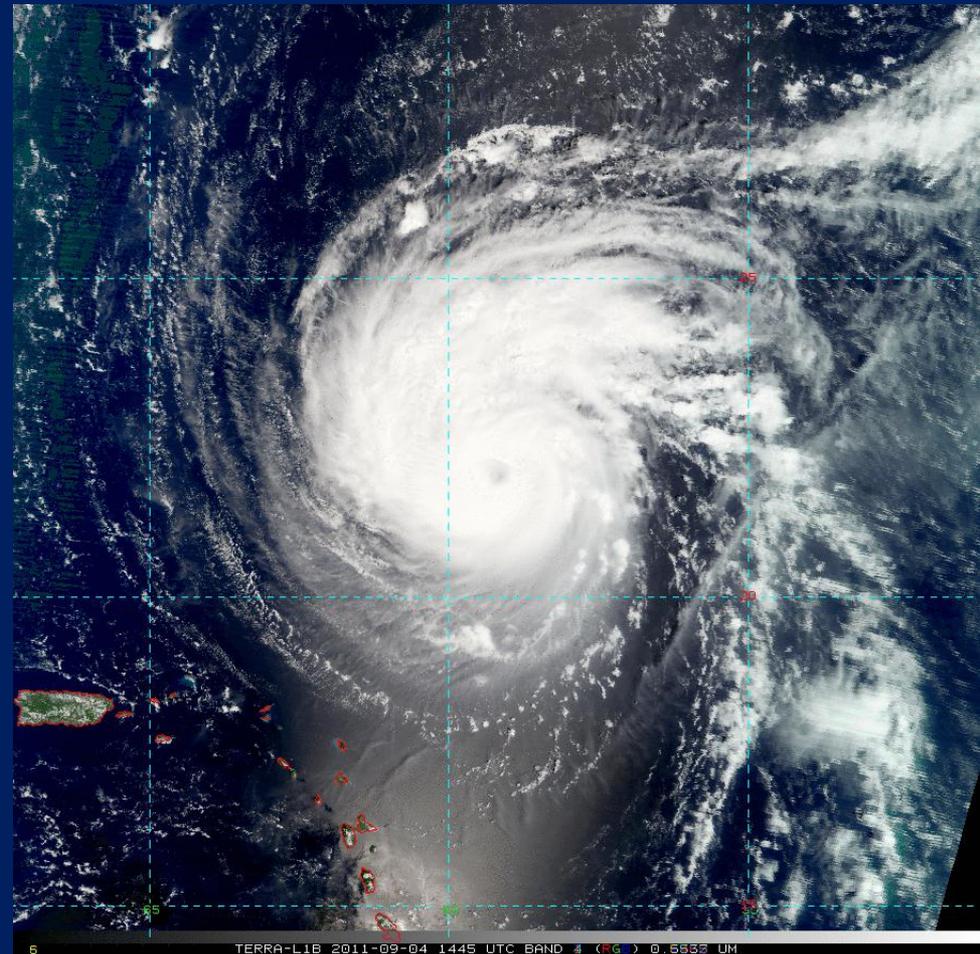


Cindy Min. Sea Level Pressure



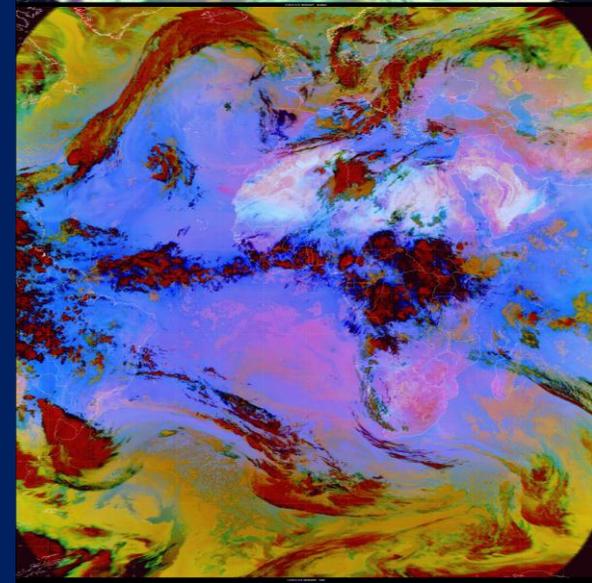
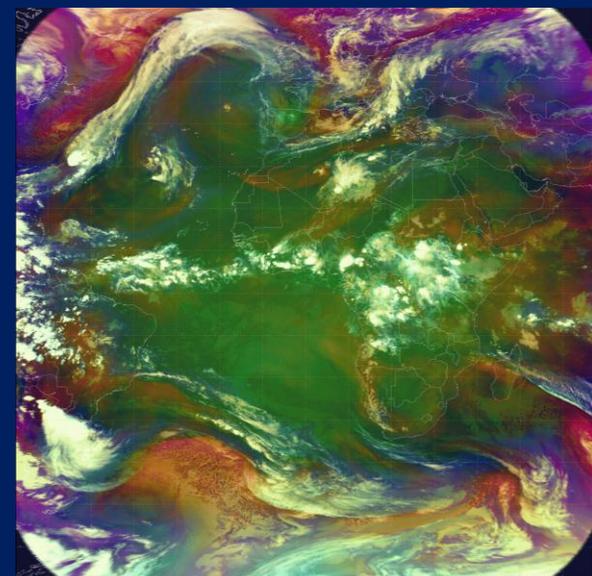
New Proving Ground Products at NHC in 2011

- Tropical Overshooting Top Detection
- GOES-R Natural Color Imagery (from MODIS)
- Pseudo Natural Color Imagery (from METEOSAT)



Comments and Observations from the 2011 Hurricane Season (so far)

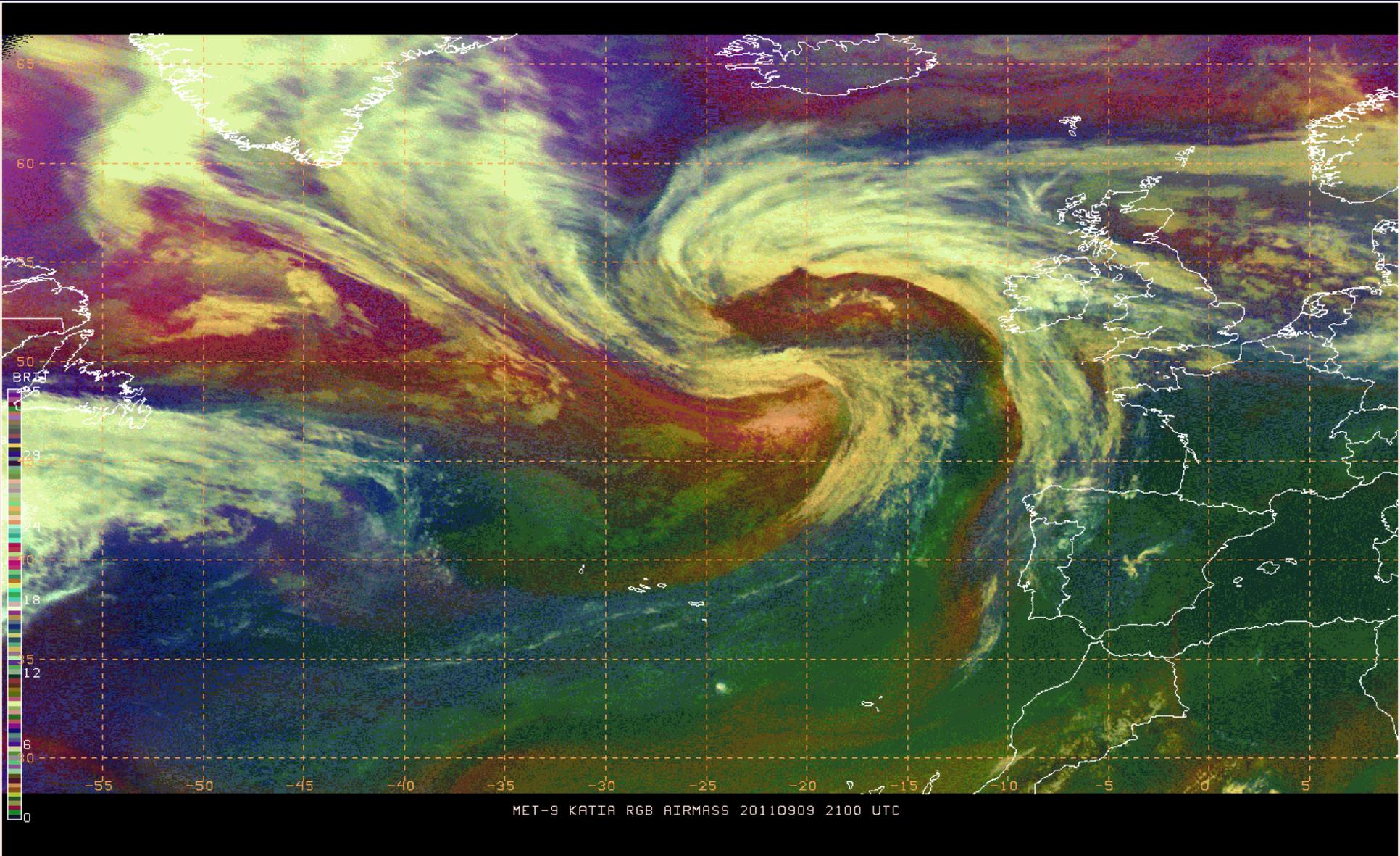
- NHC now ingesting N-AWIPS compatible versions of the RGB airmass/dust products provided by SPoRT
- RGB products very useful in evaluating the environment around eastern Atlantic disturbances – one non-developing disturbance had dry air to the west and dust to the east!
- RGB products helped evaluate extratropical transition of several cyclones
- RGB dust product proved capable of showing dust all the way to the image limb
- Pseudo natural color imagery proved useful in differentiating between convection and low clouds, as well as showing dust outbreaks

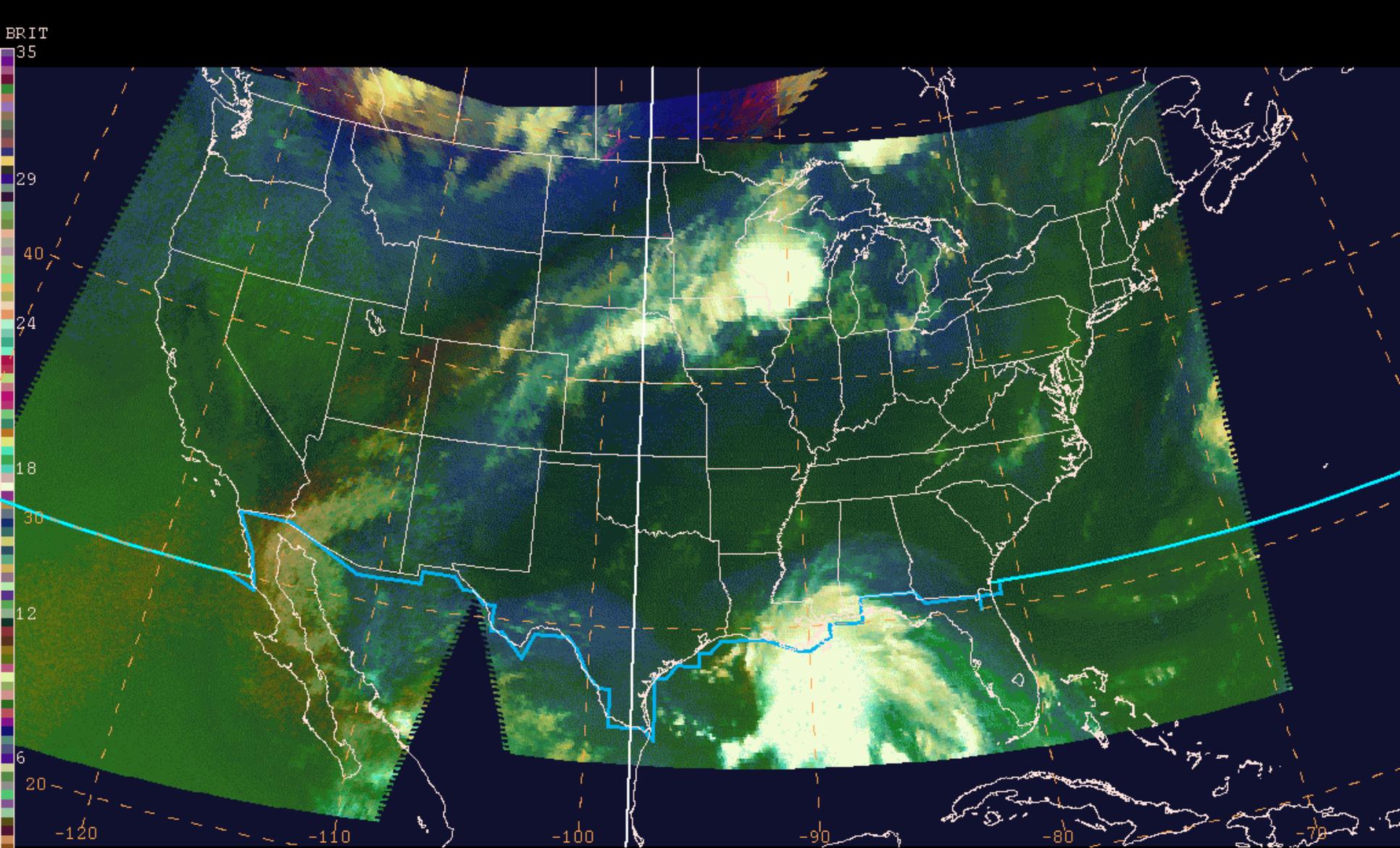


Comments and Observations from the 2011 Hurricane Season (so far)

- Not a lot of cases to test out rapid intensification algorithms
- HIE evaluation just beginning and will be complete sometime next year. Preliminary indications is that the higher temporal sampling may make the HIE more responsive to short-term changes than the operational ADT.
- Super rapid scan imagery was very useful near sunrise for center location and aircraft go/no go decisions

Extratropical Transition of Katia in RGB Airmass Product

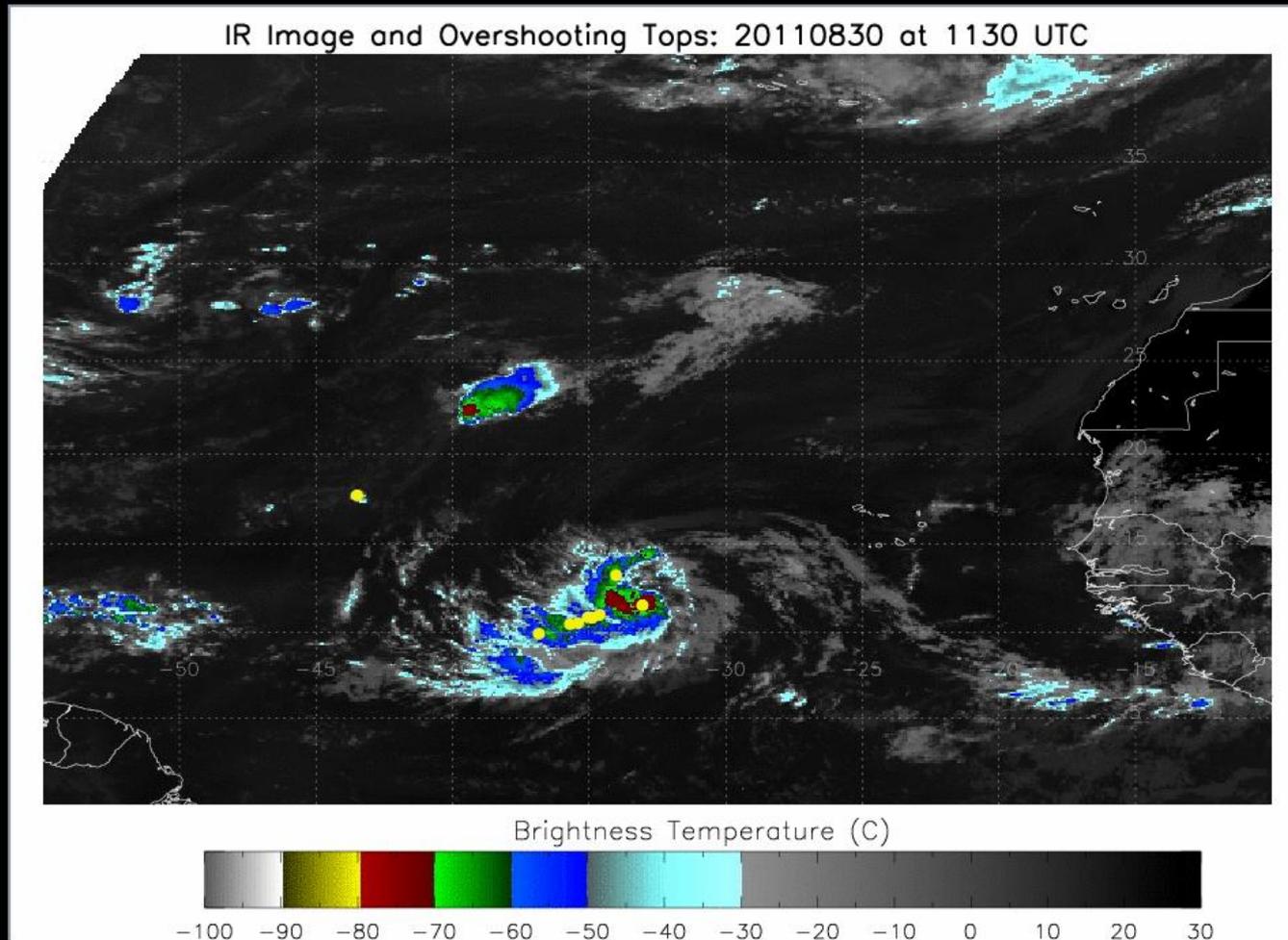




110902/1401 SOUNDER AIRMASS

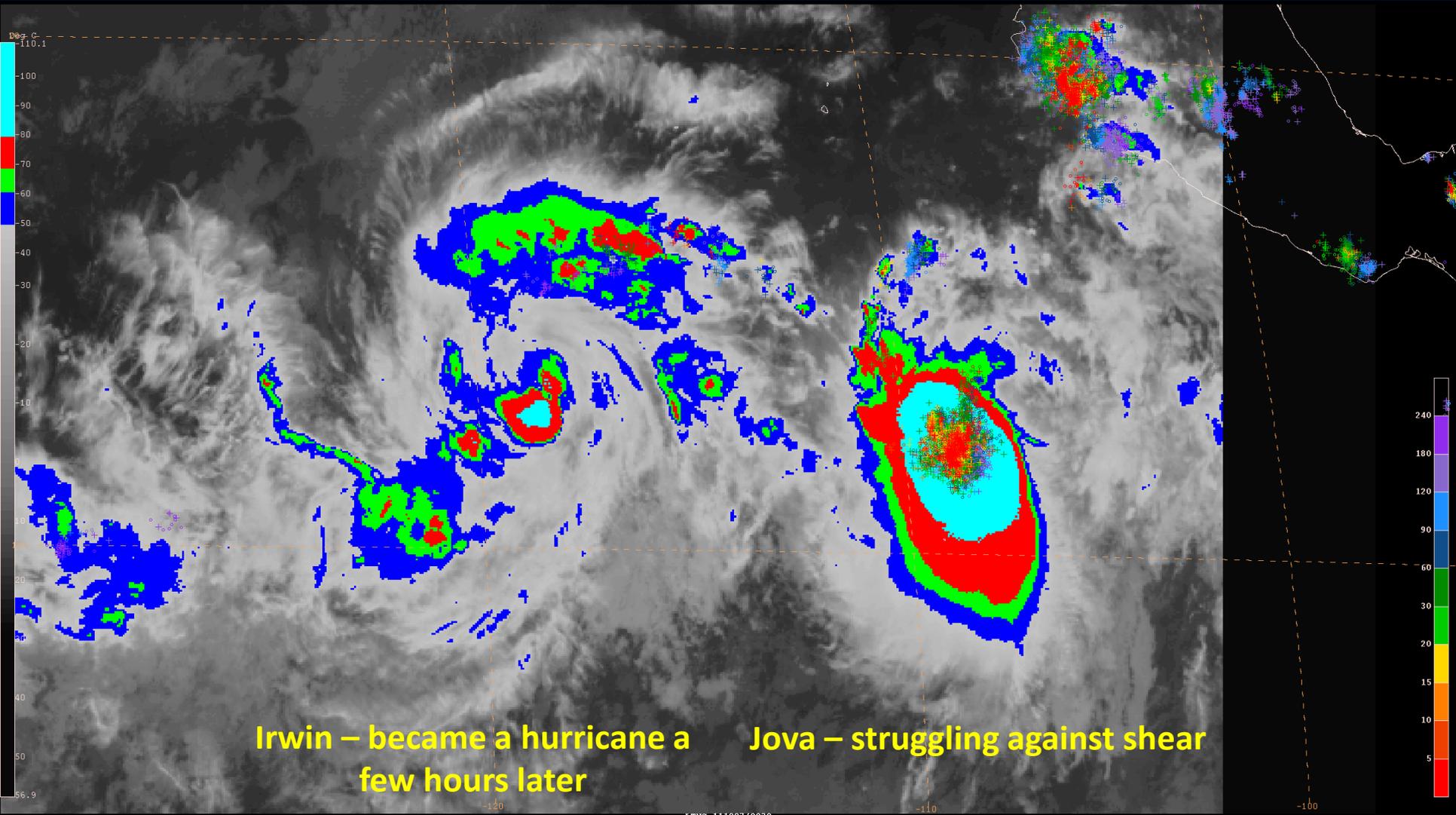
GOES Sounder Version of the RGB Airmass Product (evolution of Tropical Storm Lee)

Overshooting Top Detection



Early stages of Katia – NHC needs more experience with this product

A Recent Example of Lightning in Eastern Pacific Tropical Cyclones



Conclusions

- **2011 GOES-R Proving Ground was again a learning experience. More experience is needed, especially with the lightning and overshooting tops products/algorithms.**
- **Useful feedback obtained on many of the image products and algorithms.**
- **Forecaster availability, data display systems, and time constraints continue to limit the number of products that can be tested per season.**
- **Other GOES-R products have potential utility, and new products likely to be added in 2012**