

DANGER AT SEA: DIAGNOSING AND COMMUNICATING THE THREAT FOR STRONG MARITIME THUNDERSTORMS

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Satellite Liaison at OPC/SAB/TAFB/WPC

Contributions from:

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**94th AMS Annual Meeting
02/05/14**



OPC Forecast Functions



Atlantic High Seas
Atlantic Offshore

Pacific High Seas
Pacific Offshore

Outlook (Medium Range)

Special Project Support

- Antarctica NMFS
- USCG Arctic (with AR)
- Japan

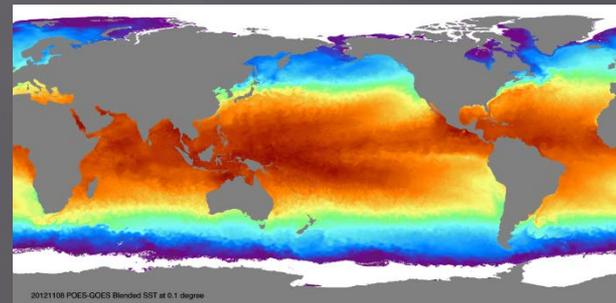
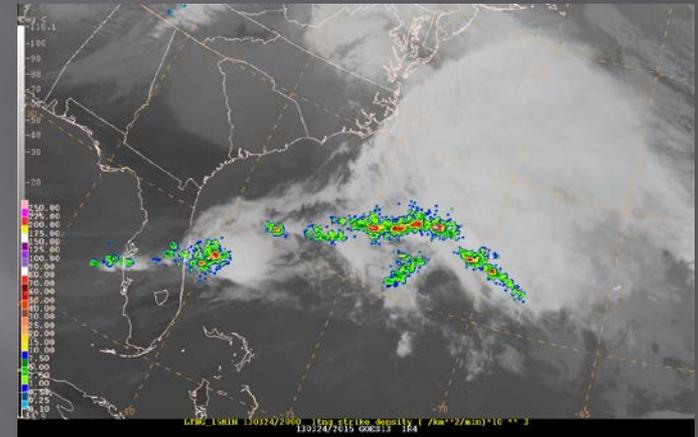
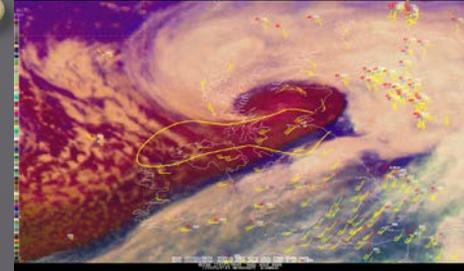
Tropical Analysis and Forecast Branch (TAFB)

- Year round (24/7/365) products
 - Marine forecasts (graphical and text) and discussions (MIM)
 - Surface analyses and discussions (TWD)
 - Aviation forecasts and warnings (backup responsibilities) ***
 - Satellite-derived rainfall estimates
- **Hurricane Season**
 - Tropical cyclone intensity estimates using Dvorak technique
 - Media support to NHC (English, Spanish, French)
 - Radar tracking of tropical cyclones
 - Forecast support to Hurricane Specialists (Marine)

OPC and TAFB Activities

Satellite Readiness

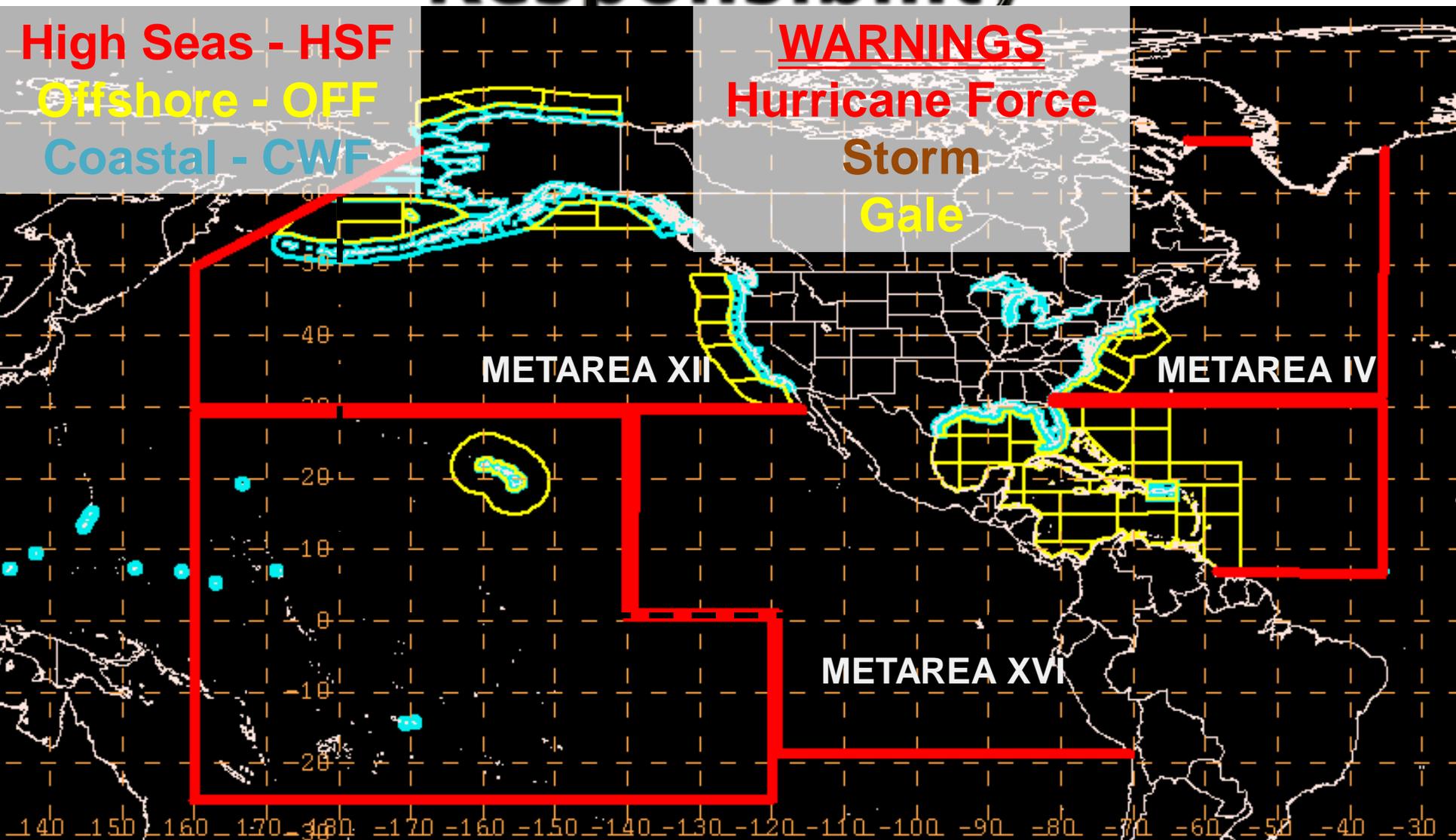
- Explosive Cyclogenesis
- Offshore Convection
 - Lightning Strike Density
- Low clouds and fog
- Oceanographic products



NOAA/NWS Marine Responsibility

High Seas - HSF
Offshore - OFF
Coastal - CWF

WARNINGS
Hurricane Force
Storm
Gale



METAREA XII

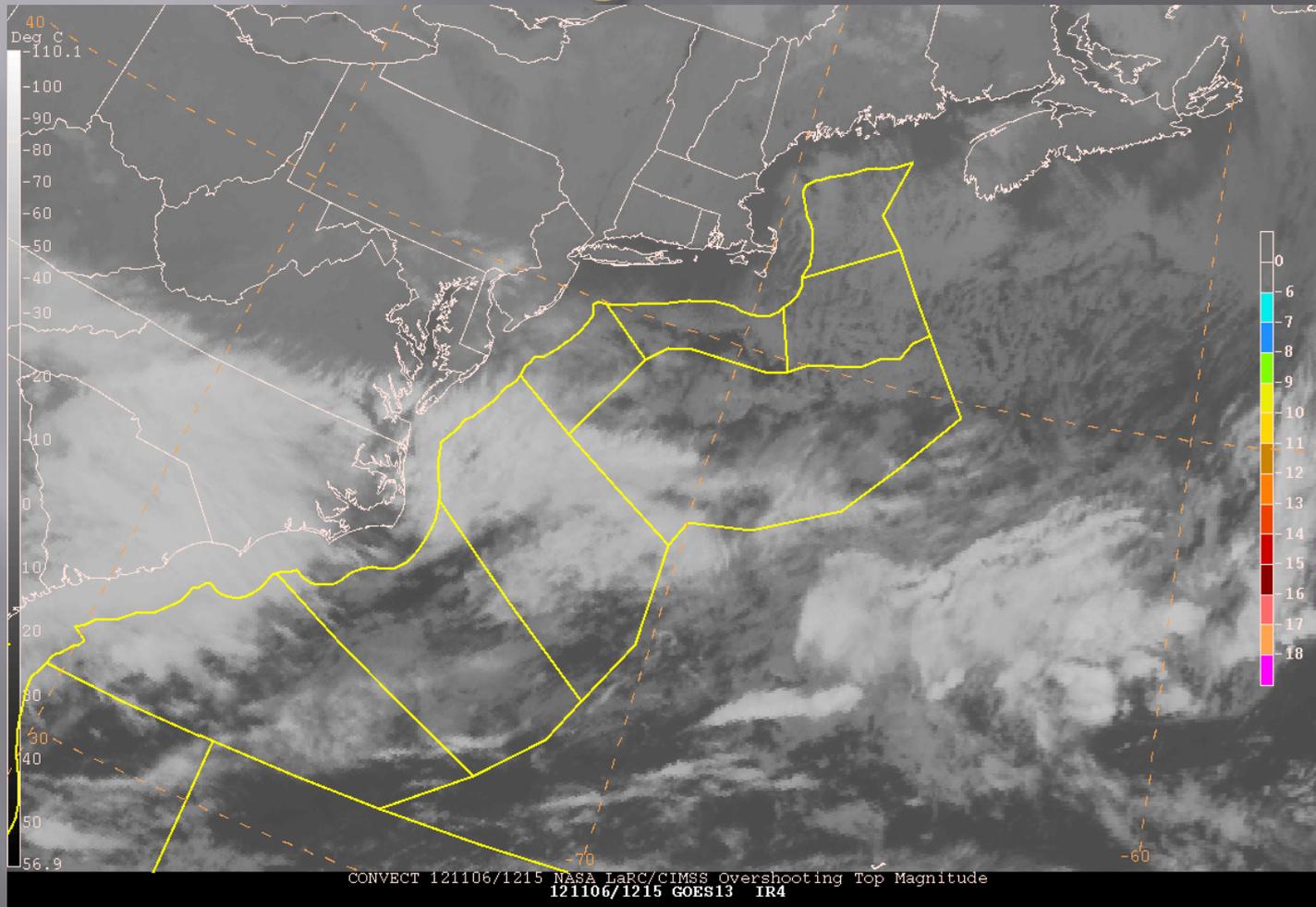
METAREA IV

METAREA XVI

VGF High_Seas_boundaries.vgf

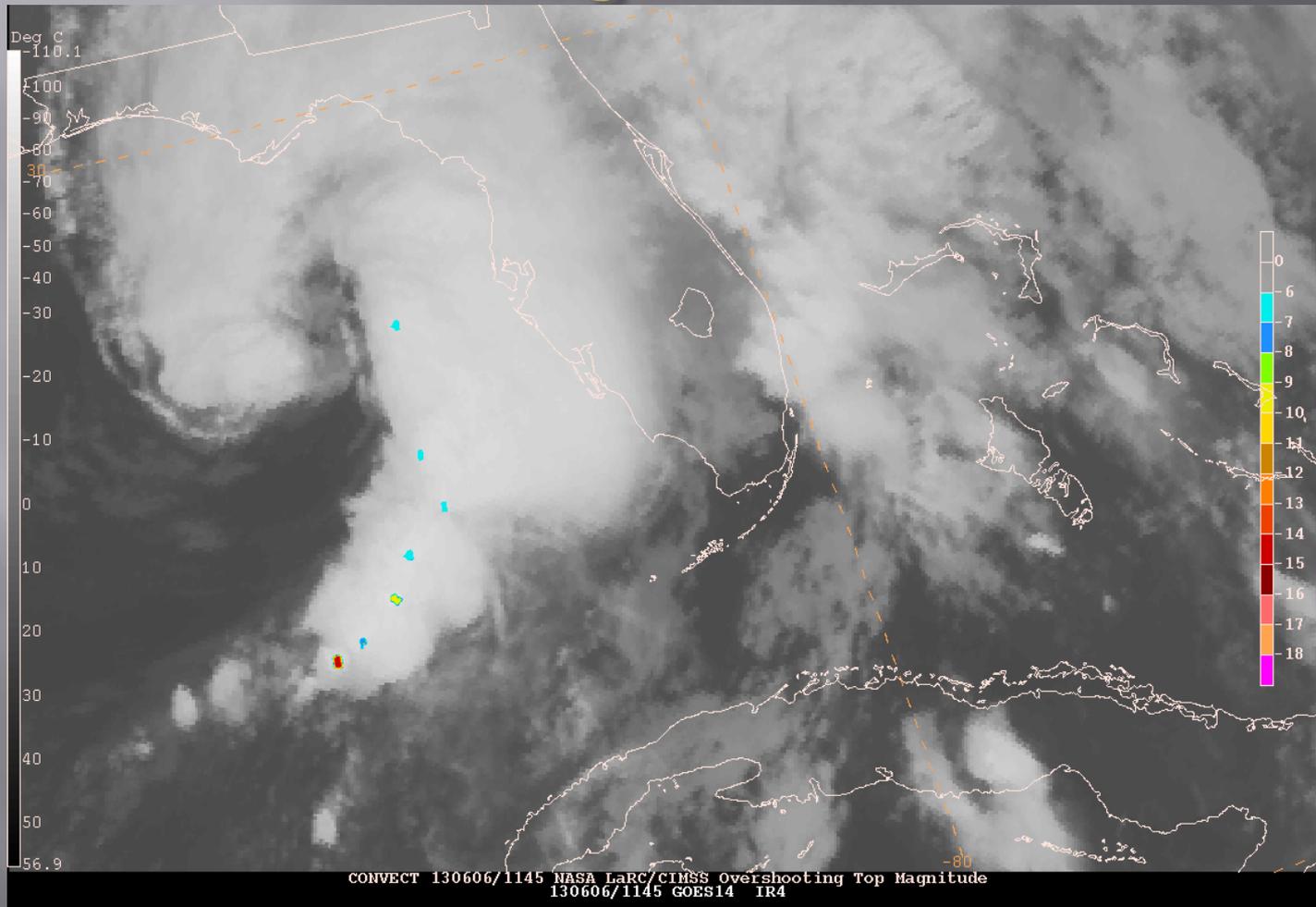
November 7, 2012 Nor'easter

GOES-13 Infrared overlaid with OT Magnitude



Tropical Storm Andrea (2013)

GOES-13 Infrared overlaid with OT Magnitude



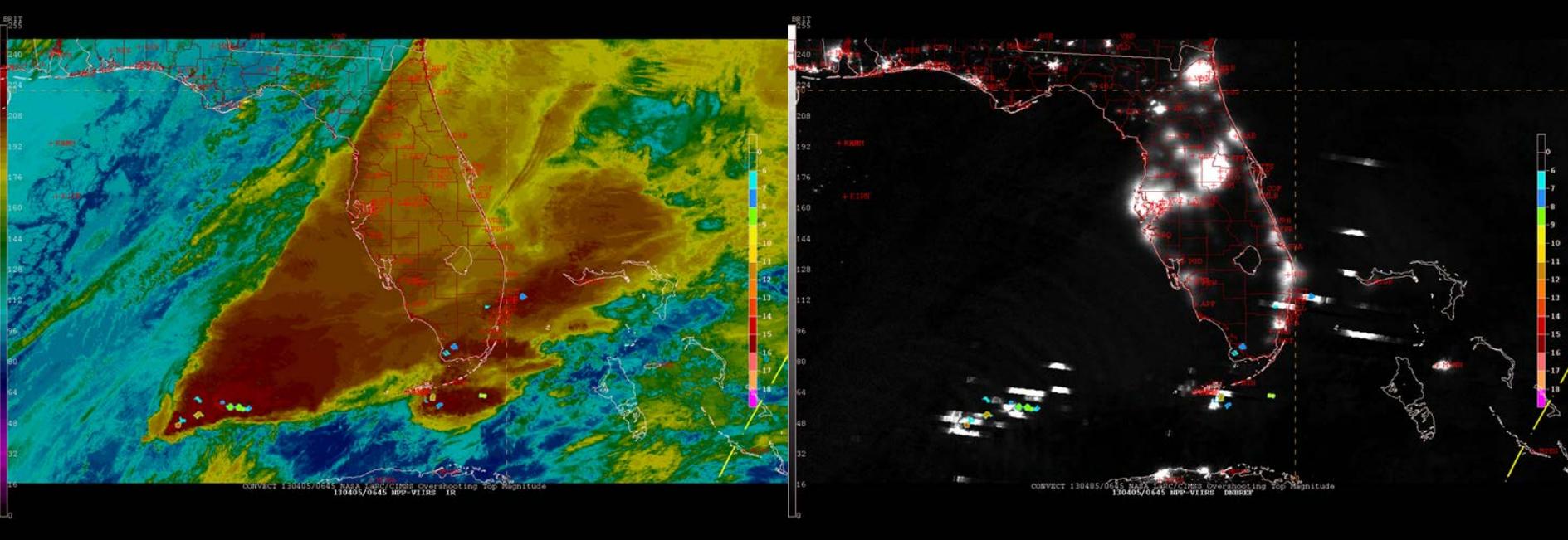
Day-Night Band

Unique use at WPC and SAB

Coupled with the Overshooting Top Detection (Bedka)

VIIRS LWIR AND OTD

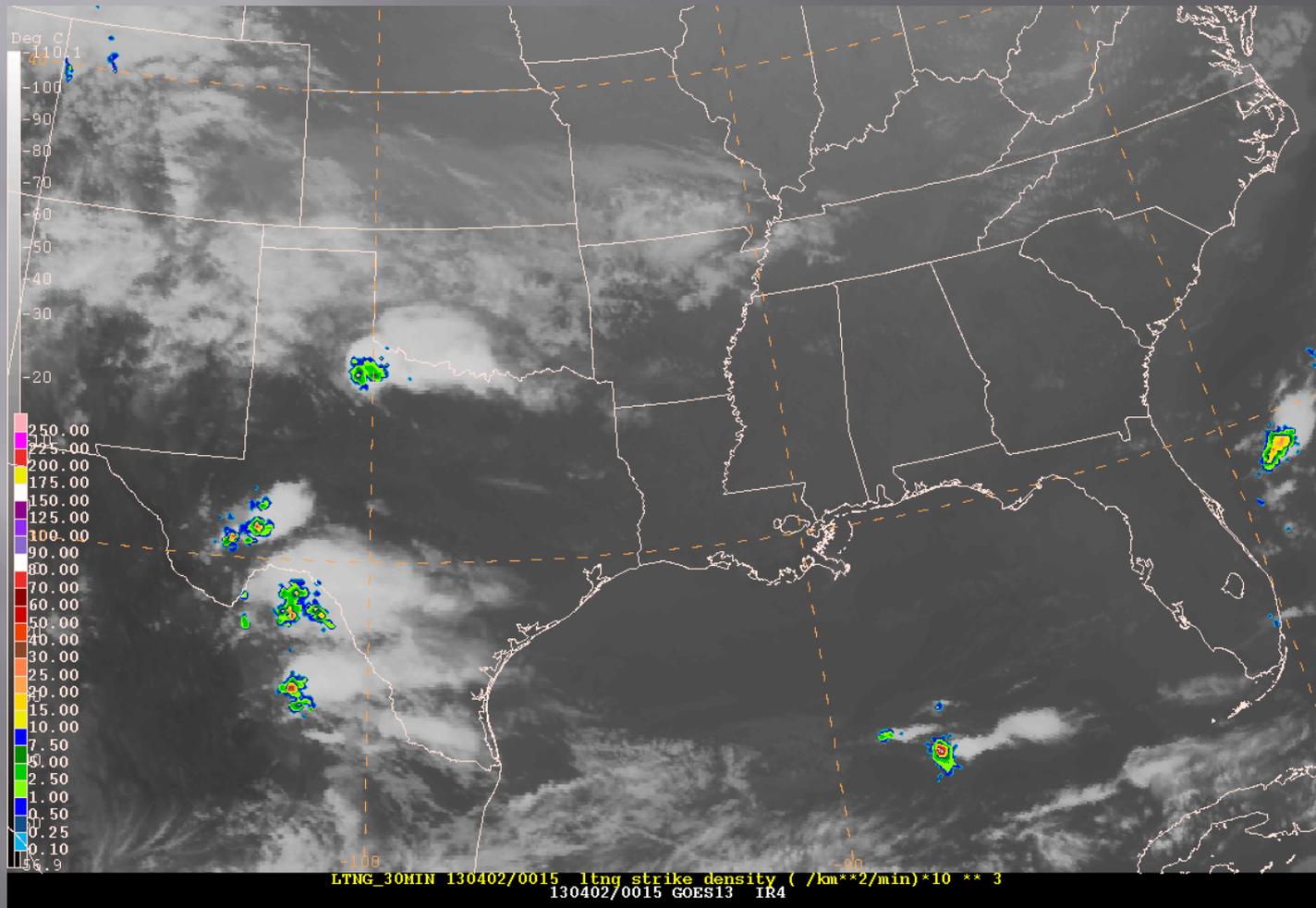
VIIRS DNB AND OTD



Courtesy of CIMSS and NASA SPoRT

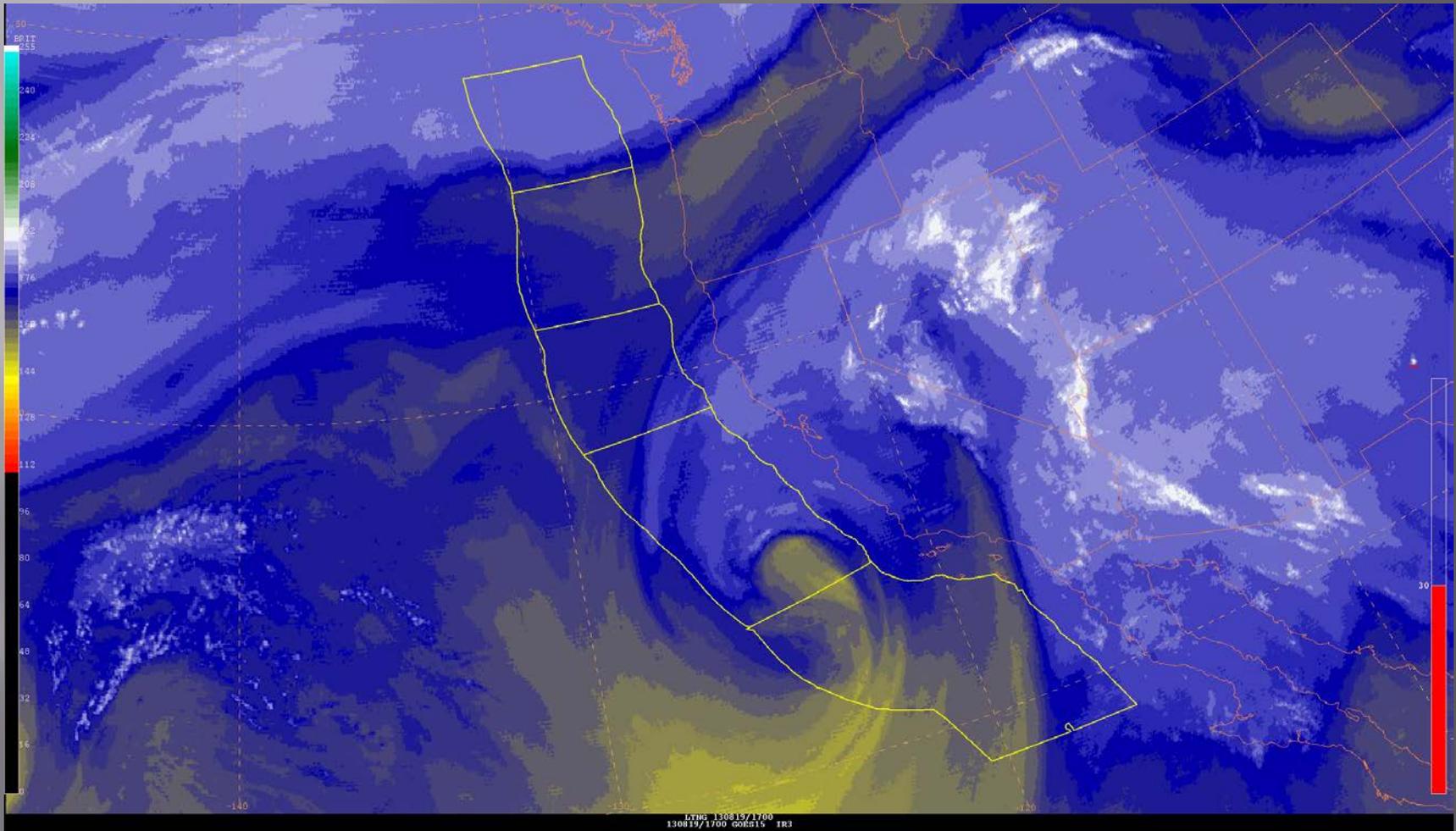
Large MCC (04/02 - 04/04)

GOES-13 Infrared overlaid with (Vaisala) GLD-360 Lightning Density



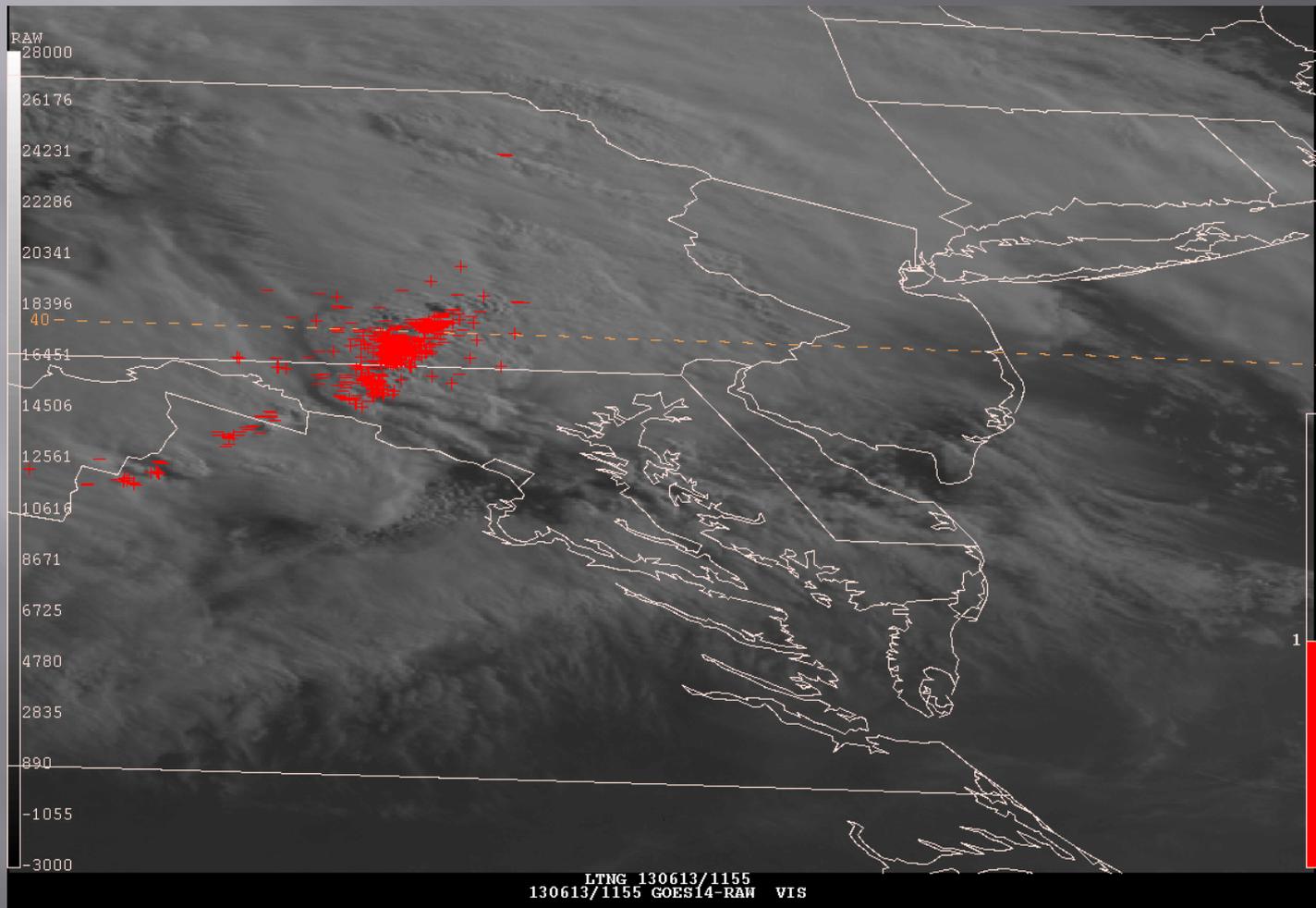
Unusual Pacific Offshore Event

GOES-15 WV overlaid with (Vaisala) GLD-360 Lightning Strikes



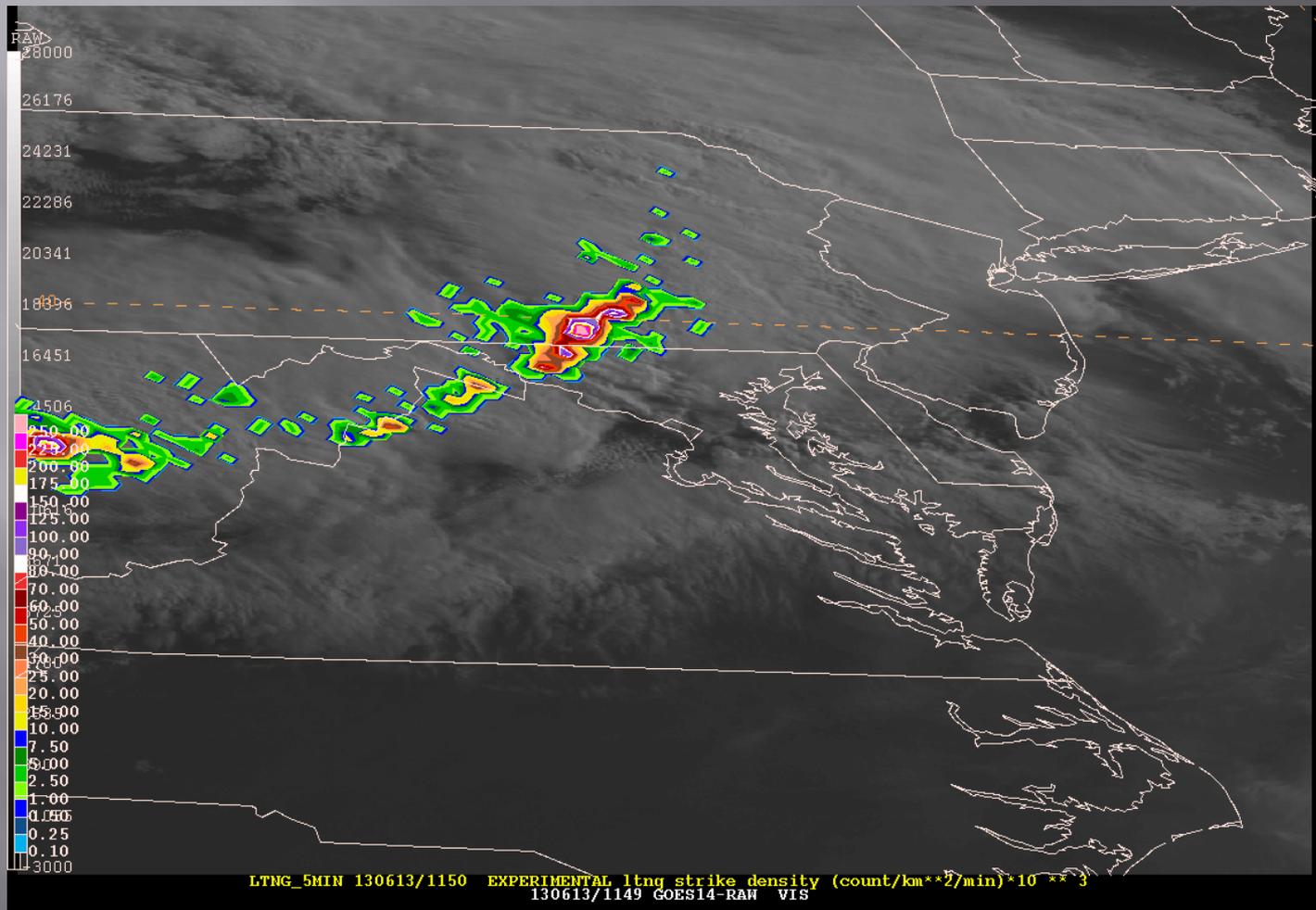
June 12-13, 2013 "Derechoes"

GOES-14 SRSOR 1-min Visible overlaid with (Vaisala) GLD-360 Lightning Strikes



June 12-13, 2013 "Derechoes"

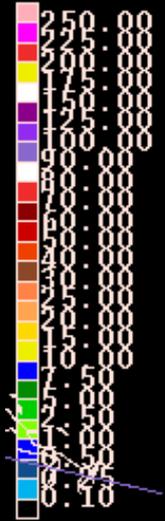
GOES-14 SRSOR 5-min Visible overlaid with (Vaisala) GLD-360 Lightning Density



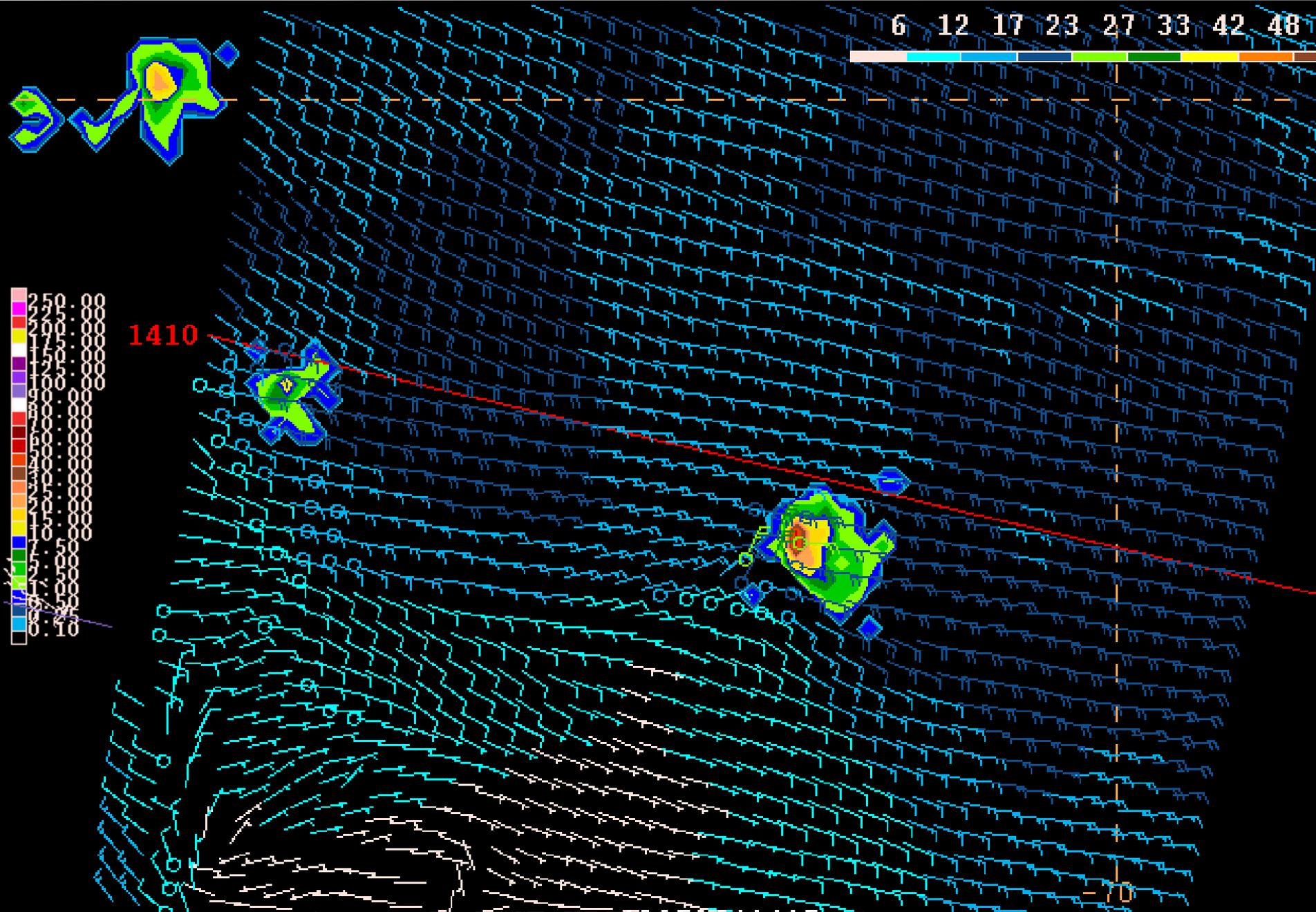
June 13, 2013 “Derecho” Ocean Perspective



6 12 17 23 27 33 42 48



1410



-70

LTNG_15MIN 130506/1415 ASCT_HI T30506/1415 ltng strike density (/km**2/min)*10 ** 3

6 12 17 23 27 33 42 48

250 00
225 00
200 00
175 00
150 00
125 00
100 00
75 00
50 00
25 00
0 00
-25 00
-50 00
-75 00
-100 00

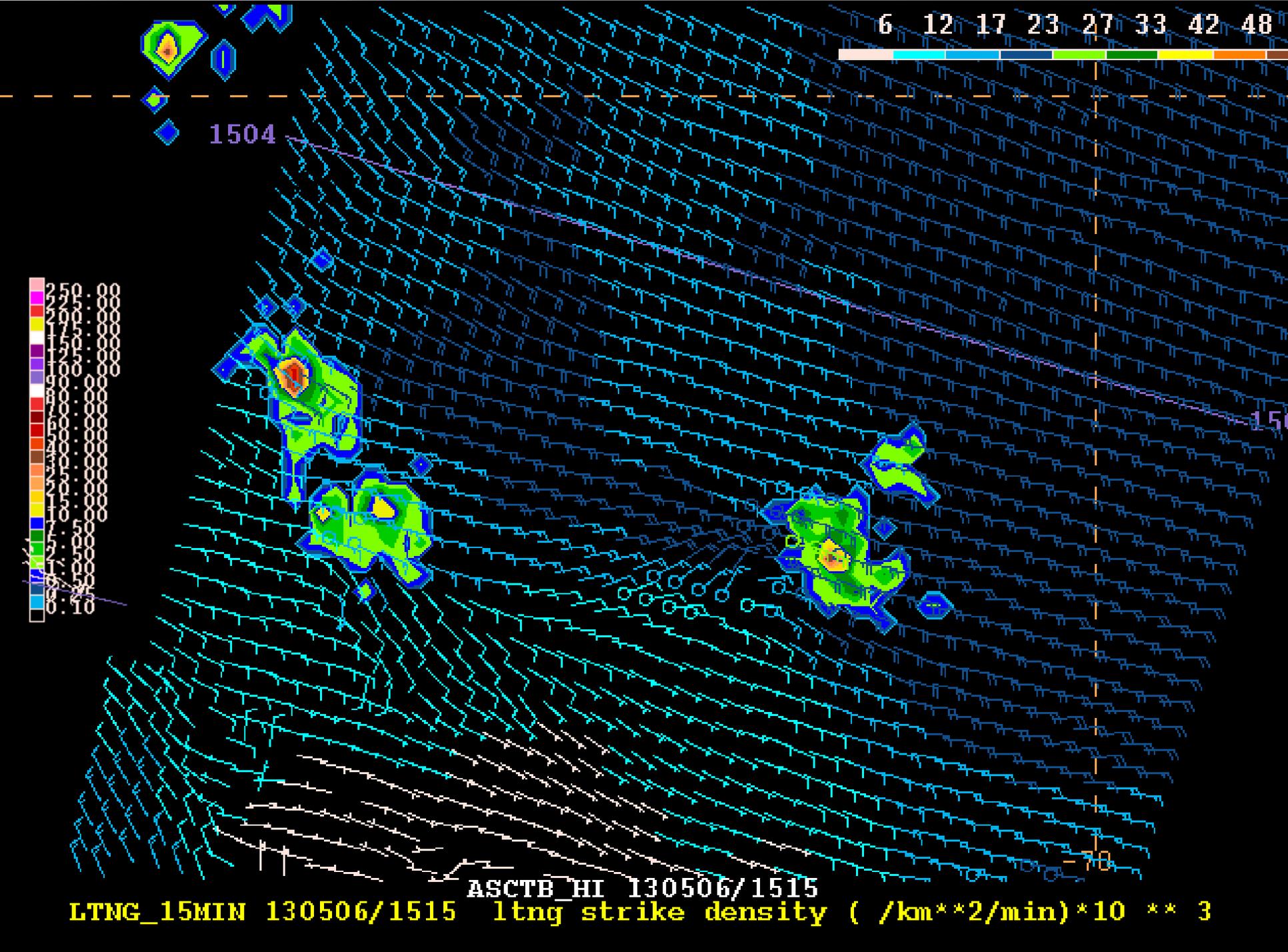
1504

150

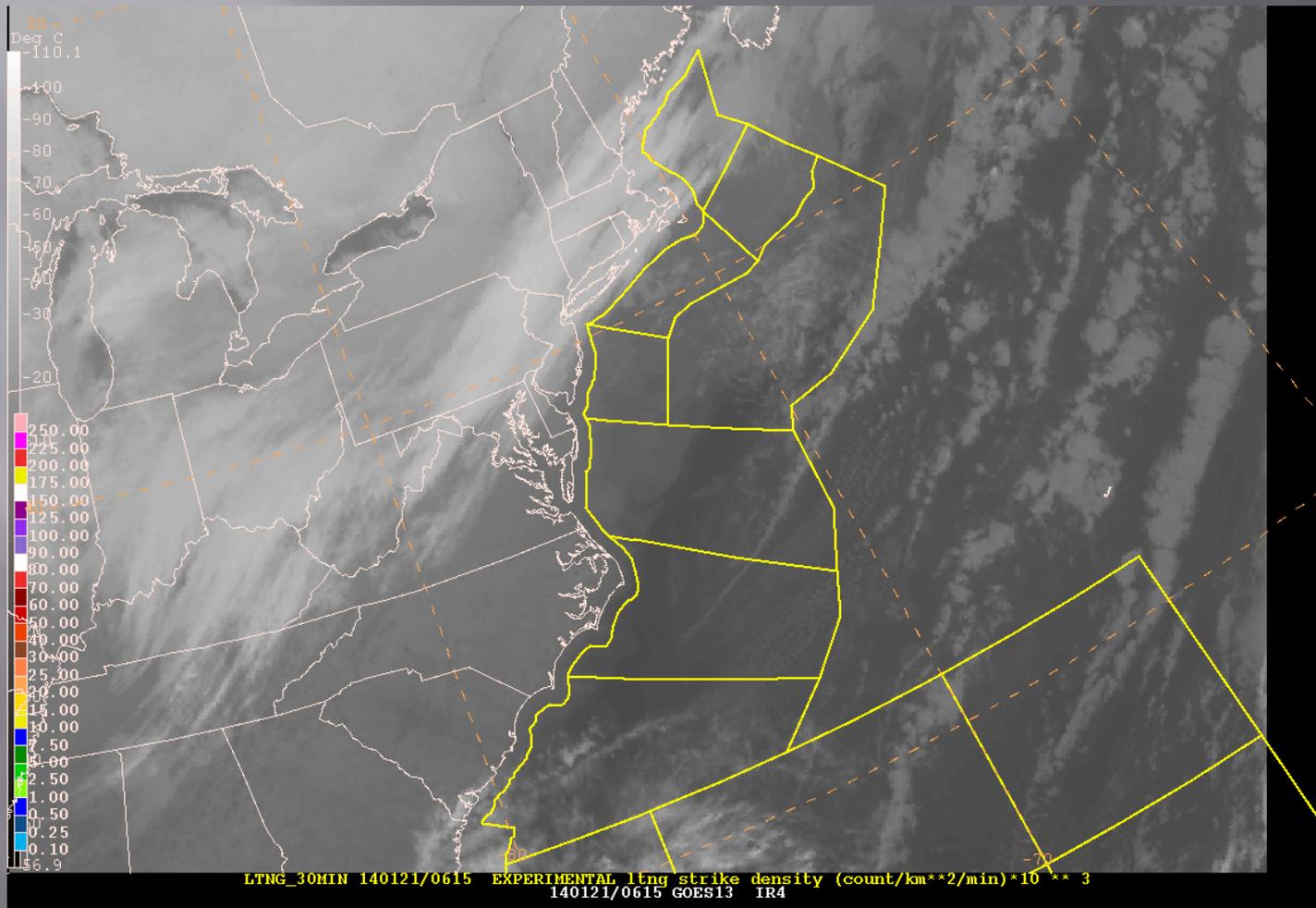
-70

ASCTB_HI 130506/1515

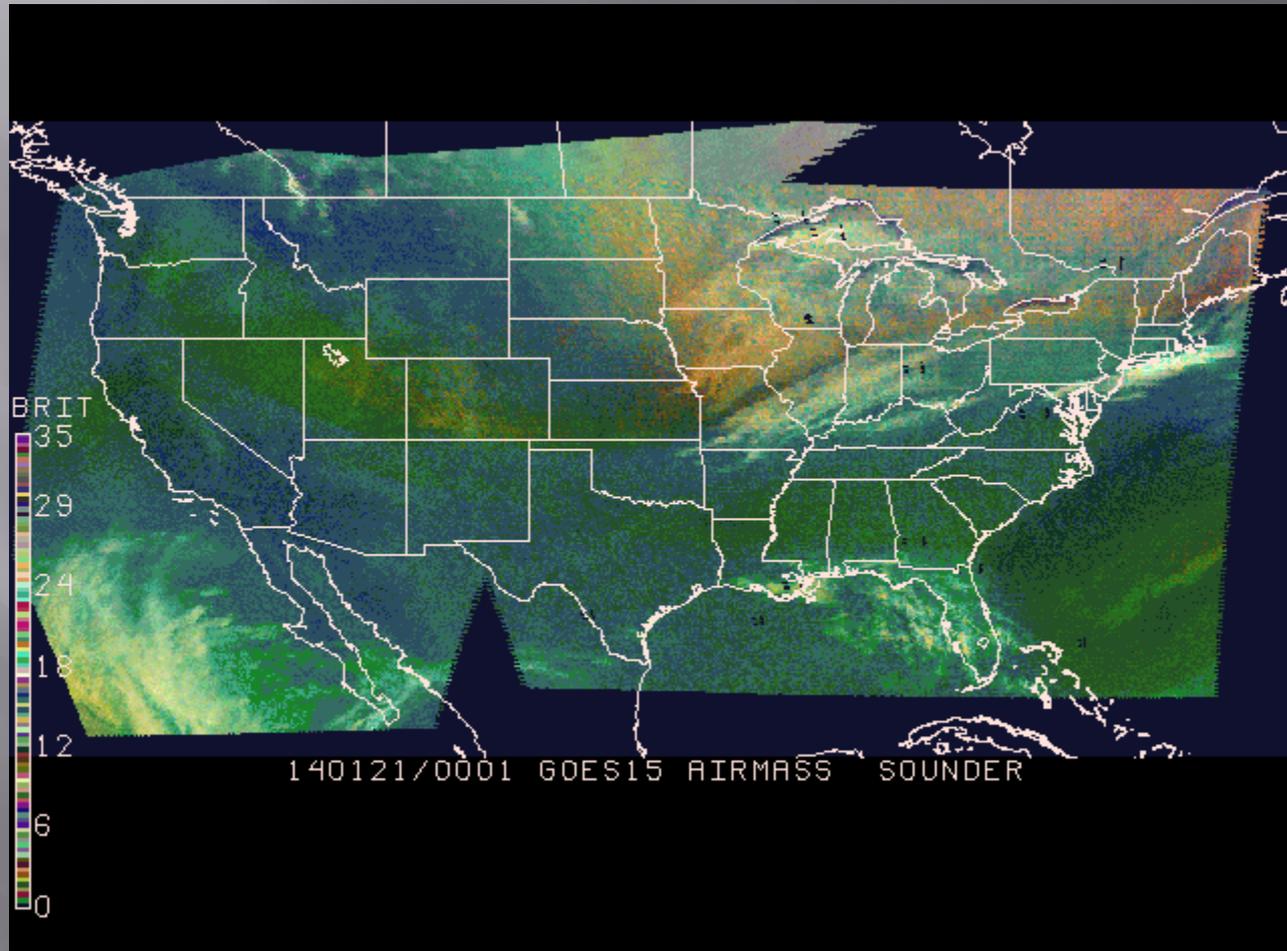
LTNG_15MIN 130506/1515 ltng strike density (/km**2/min)*10 ** 3



January 21-22, 2014 Clipper/Nor'easter



January 21-22, 2014 Clipper/Nor'easter



Conclusion

- ▣ The WPC, OPC, and SAB have progressed from using basic satellite channels to new satellite techniques with help from the Satellite Proving Ground.
- ▣ The main uses of satellite imagery at these centers is to compare current conditions with NWP initialization and current conditions.
- ▣ New GOES-R and JPSS satellite products are assisting current operations, well ahead of launch time.
- ▣ Future direction: Continue to explore new satellite techniques that will enhance operations and lessen forecast errors.

Proving Ground for Marine, Precipitation, and Satellite Analysis

OPC Facebook Page

NOAA NWS Ocean Prediction Center

5,551 likes · 193 talking about this

Government Organization
Facebook posts do not always reflect the most current information. For current official info, visit:
<http://www.opc.ncep.noaa.gov/> or <http://weather.gov/>

5,551 Likes

GOES-R and JPSS National Centers Perspective

The Future of Weather Satellites!

ABOUT THE GOES-R/JPSS NATIONAL CENTERS PERSPECTIVE BLOG

Posted by [fcomcasten](#) on February 15, 2013

Meteor Impact Using RGBs

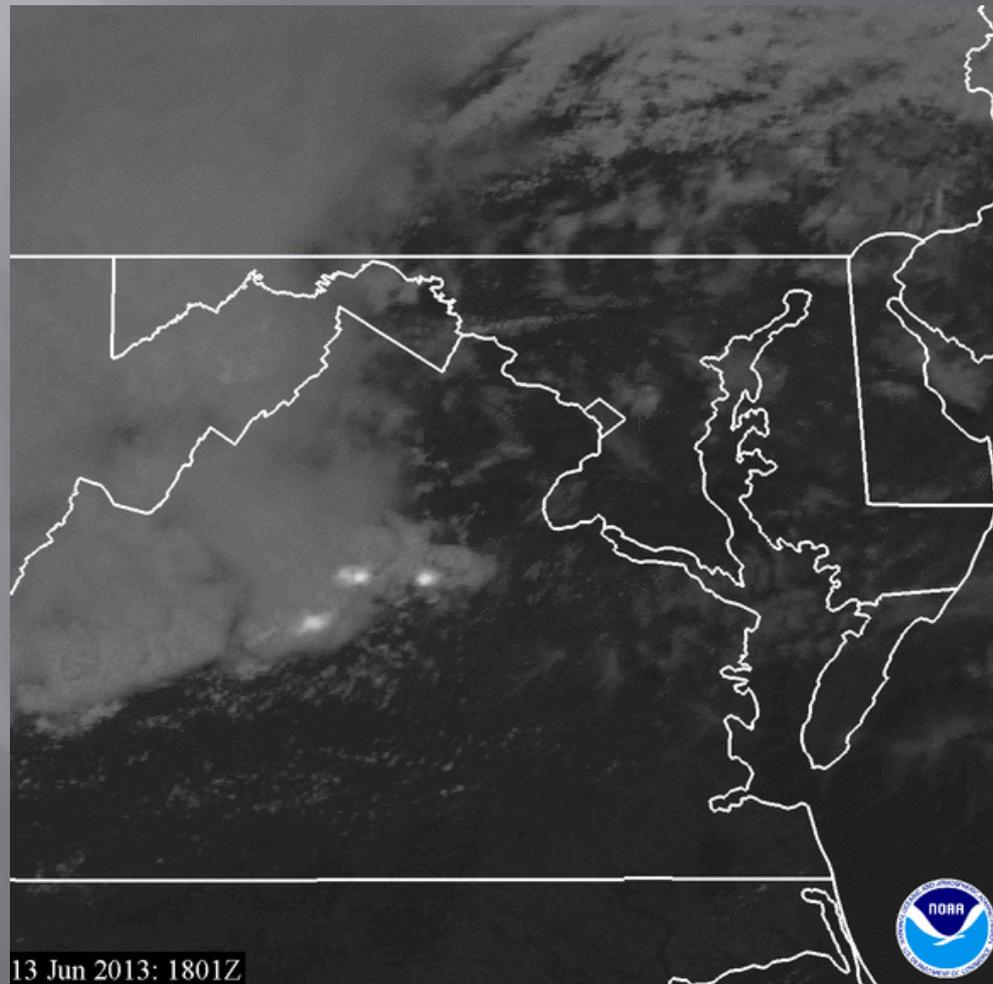
Posted in [RGB](#), [3 comments](#)

As I'm sure many of you are aware, a meteor entered Earth's atmosphere early this morning in southern Russia which has led to ~1000 injuries and widespread window and building damage due to the shockwave. This shockwave was caused by the meteor exploding upon entering the Earth's lower atmosphere due to intense friction and the high velocity of the meteor. A couple of the RGB products that we use in the GOES-R Proving Ground captured this event near the northeast limb of the Meteosat-10 satellite.

- Recent Posts
 - Meteor Impact Using RGBs
 - An Active North Atlantic
 - Powerful West Pacific Storm
 - Massive Ocean Storm - 12/1/2012
 - A Tale of Two Storms
- Archives
 - February 2013
 - January 2013
 - December 2012
 - November 2012
 - October 2012
 - September 2012
 - August 2012
- Categories
 - ATRS
 - Day-Night Band
 - Microwave
 - MVICs
 - RGB
 - Super Rapid Scan
 - Uncategorized

GOES-R/JPSS National Centers Perspective Blog

Questions?



Courtesy of Scott Rudlosky (NESDIS/STAR) and Pat Meyers (CICS)