



Using Legacy and “Future” Satellite Products within National Weather Service Forecast Operations

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2013 NOAA Satellite Conference – 11 April 2013

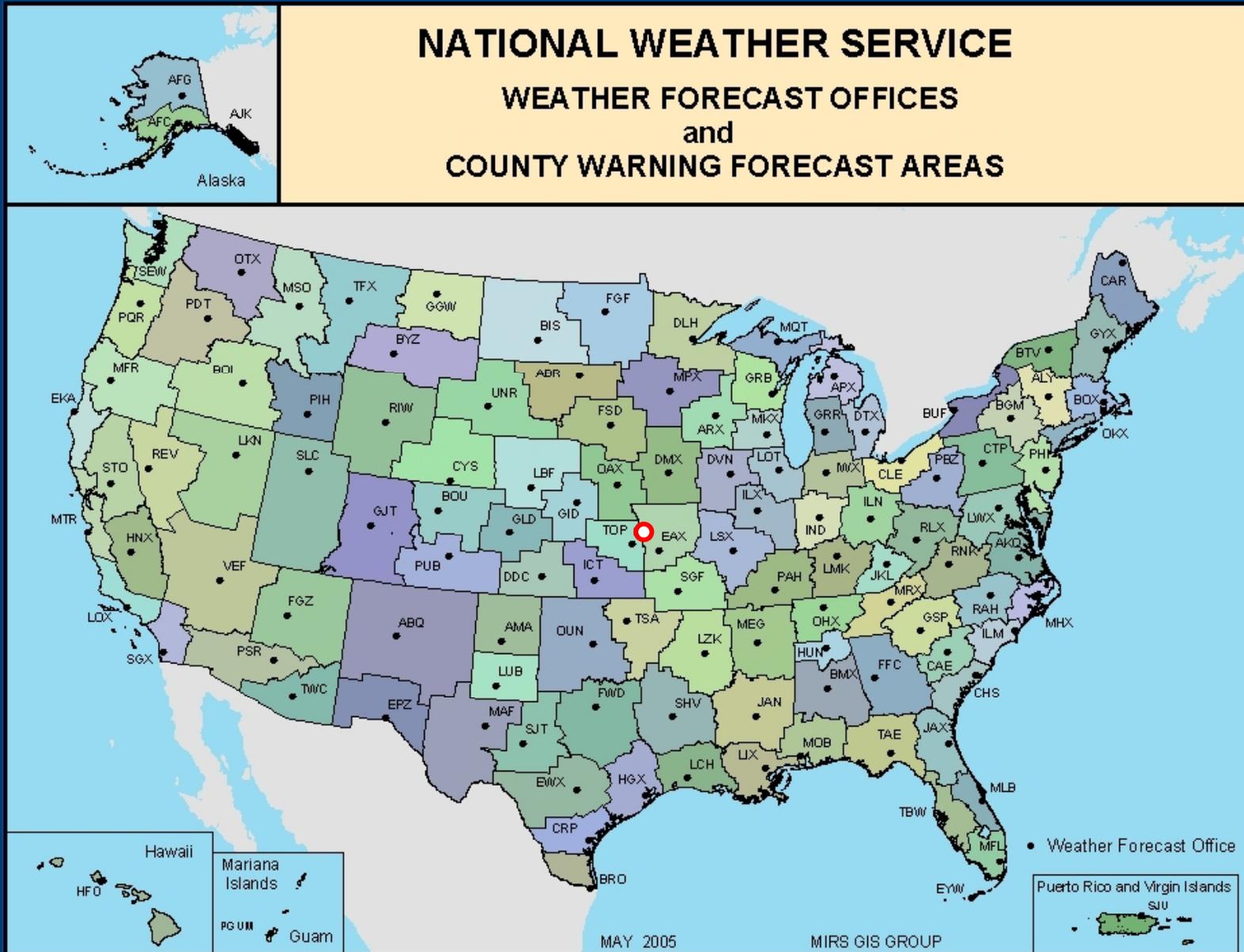


NWS Operations Proving Ground Satellite Liaison

- Bridge between the Cooperative Institutes (CIRA, CIMSS, NASA SPoRT) and NWS Regional HQs and Forecast Offices.
- Assist Forecast Offices with GOES-R product training and evaluations.
- Assist CIs with gathering feedback from GOES-R product demonstrations.
- Document GOES-R Forecast Office formal evaluations for the GOES-R Program Office.

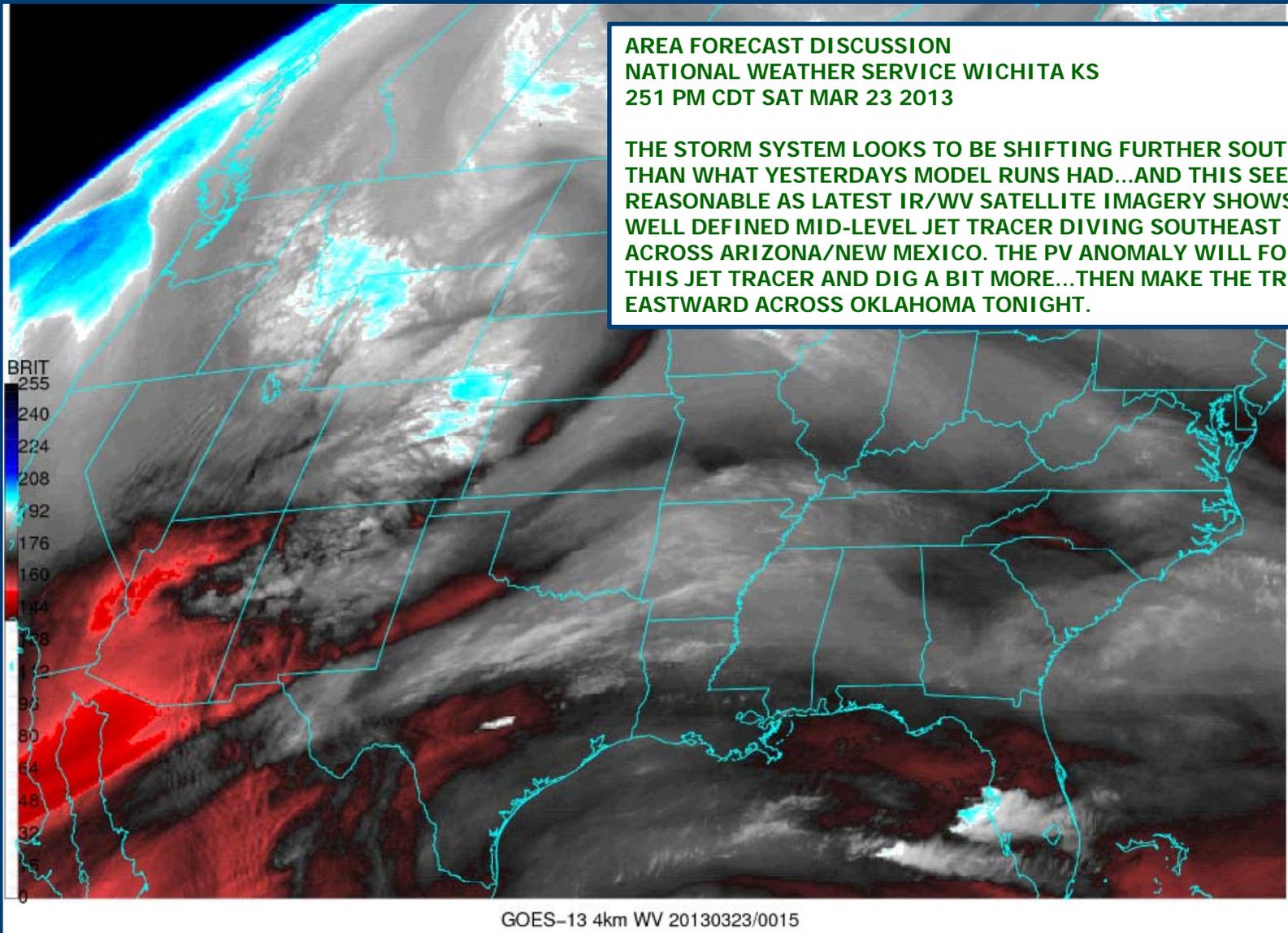


National Weather Service Forecast Offices



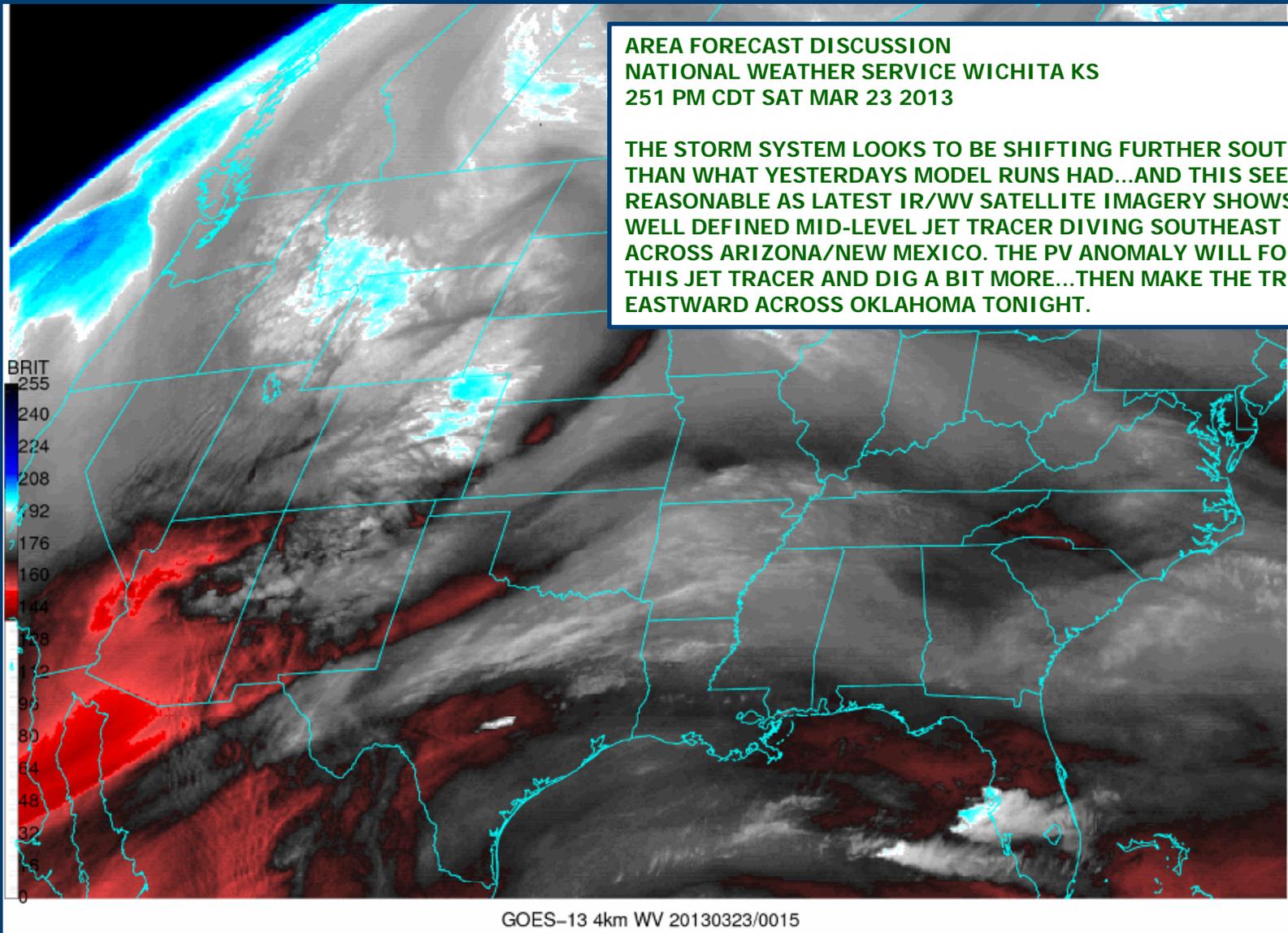


Synoptic-Scale Analysis – 23-24 March 2013



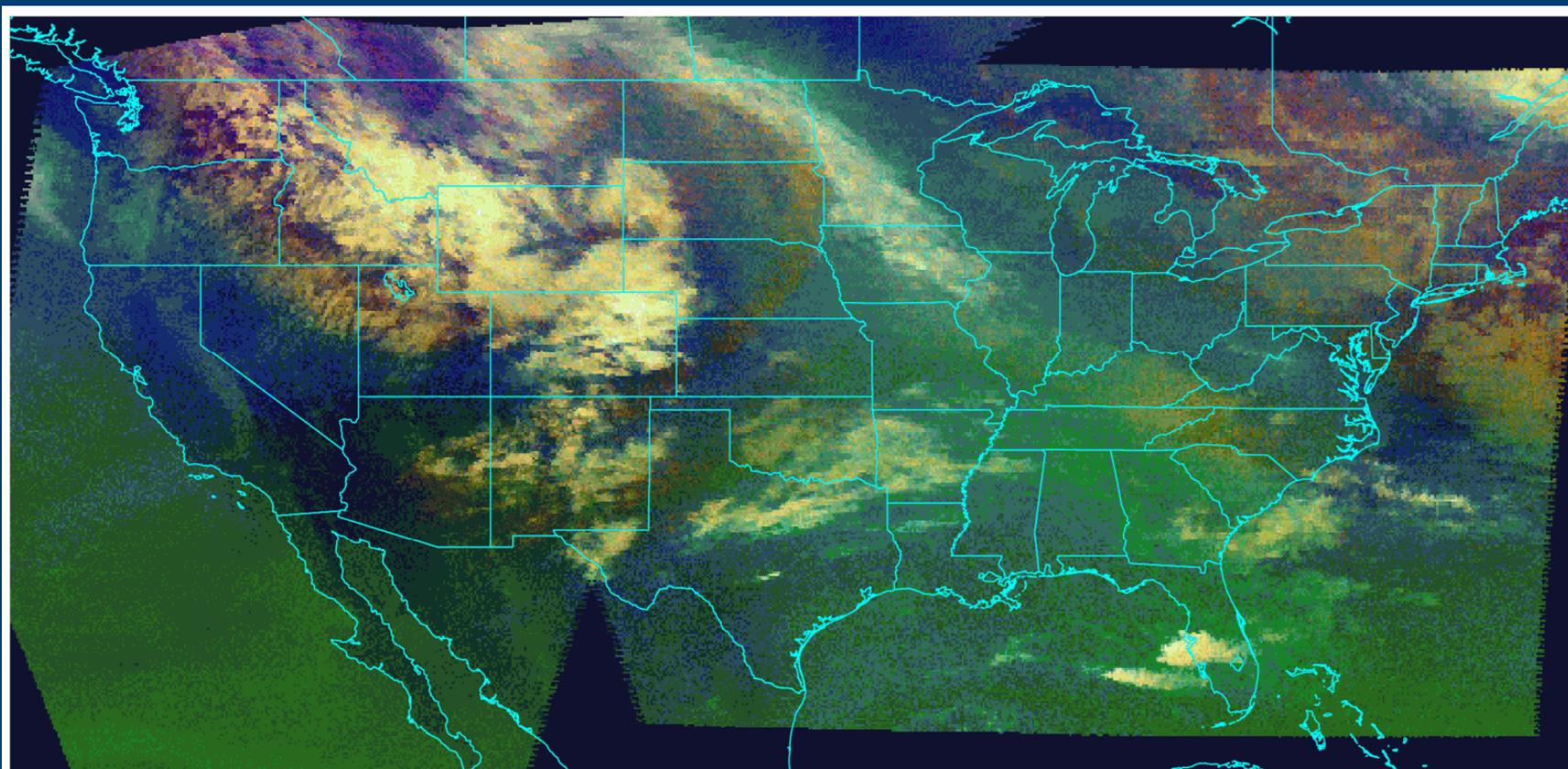


Synoptic-Scale Analysis – 23-24 March 2013





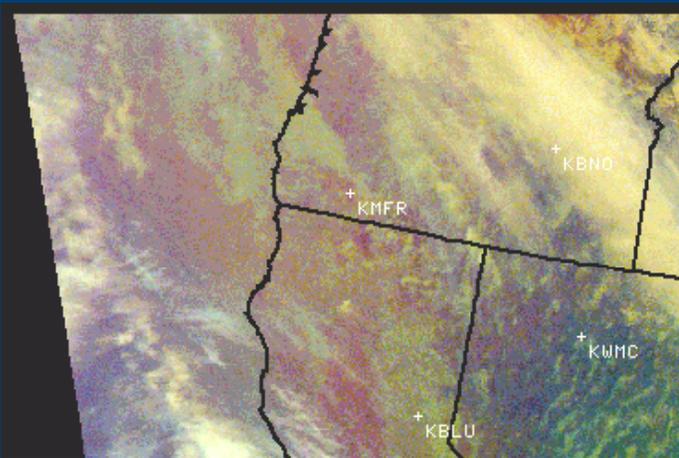
Synoptic-Scale Analysis – 23-24 March 2013



GOES-SOUNDER RGB AIRMASS 20130323/0001



Synoptic-Scale Analysis – 23-24 March 2013



**AREA FORECAST DISCUSSION...UPDATED
NATIONAL WEATHER SERVICE MIDLAND/ODESSA TX
657 PM CDT SAT MAR 23 2013**

SATELLITE ALSO SHOWS AN EXTENSIVE AREA OF BLOWING DUST FROM CENTRAL NEW MEXICO SOUTH INTO NORTHERN MEXICO...MOVING EAST INTO SOUTHEASTERN NEW MEXICO AND WEST TEXAS. HAVE EXTENDED BLOWING DUST IN THE GRIDS TO COVER ALL BUT THE BIG BEND IN OUR CWA FOR TONIGHT. VISIBILITIES FURTHER NORTH...WHERE WINDS HAVE BEEN STRONGER...HAVE BEEN REPORTED AT LESS THAN A MILE.

Significant Blowing Dust across Eastern NM

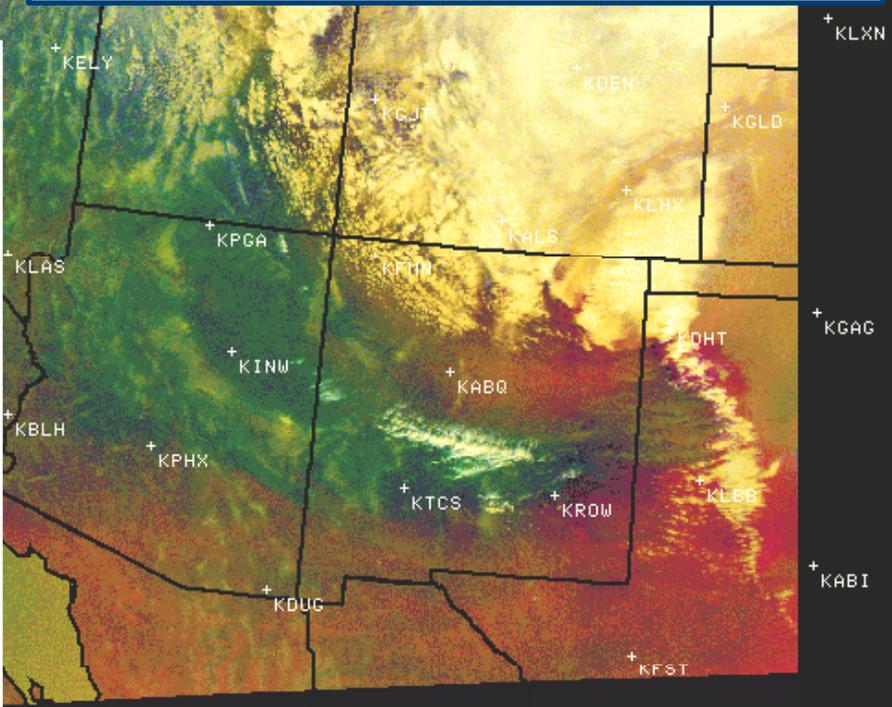
Areas in magenta are where satellite is detecting significant blowing dust.

A recent report from near Portales shows blowing dust with a visibility reduced to near 100 yards.

Motorists should exercise extreme caution traveling over this area into early this evening.

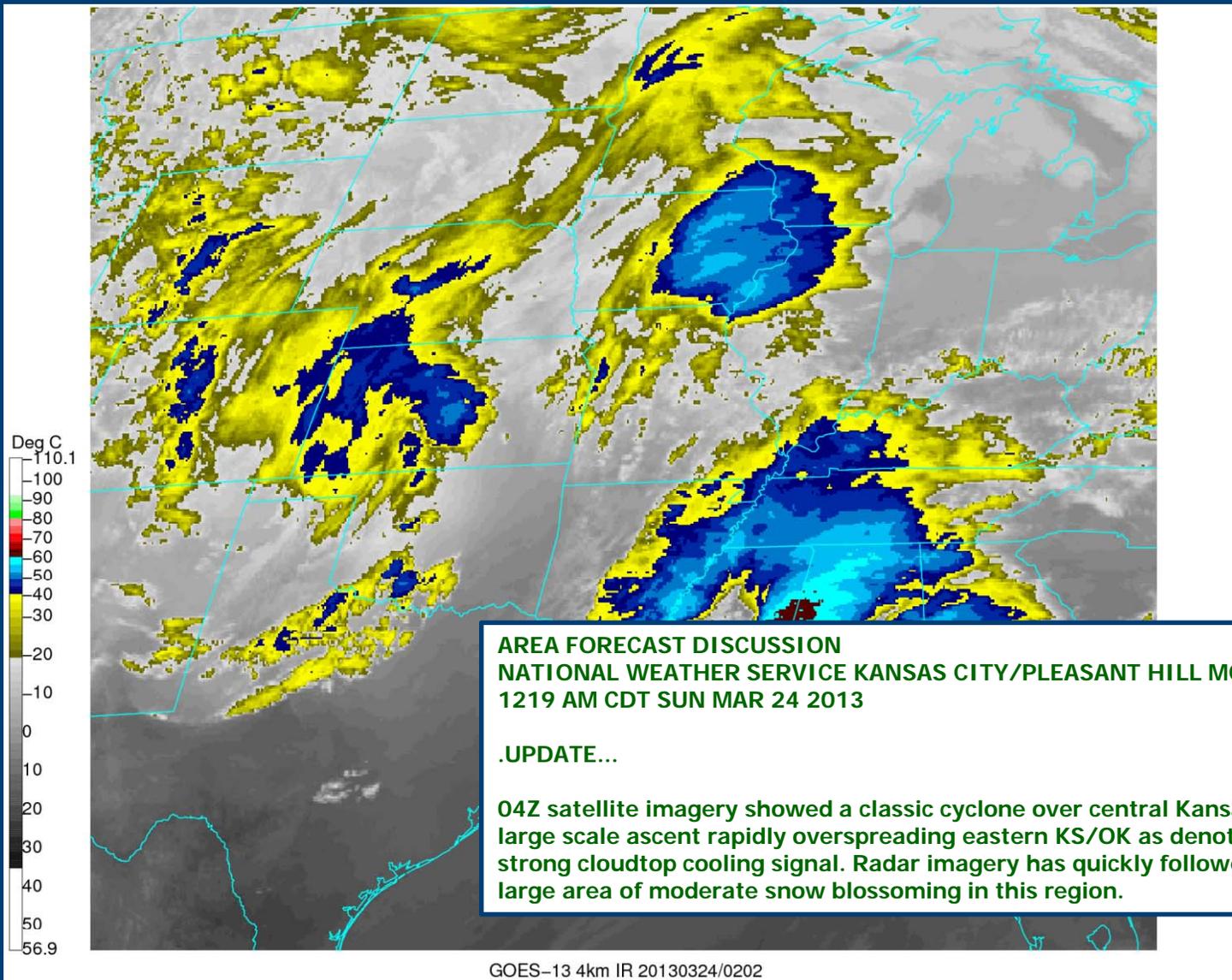
**MODIS/VIIRS Satellite Dust Detection
240pm March 23, 2013**

NWS ABO



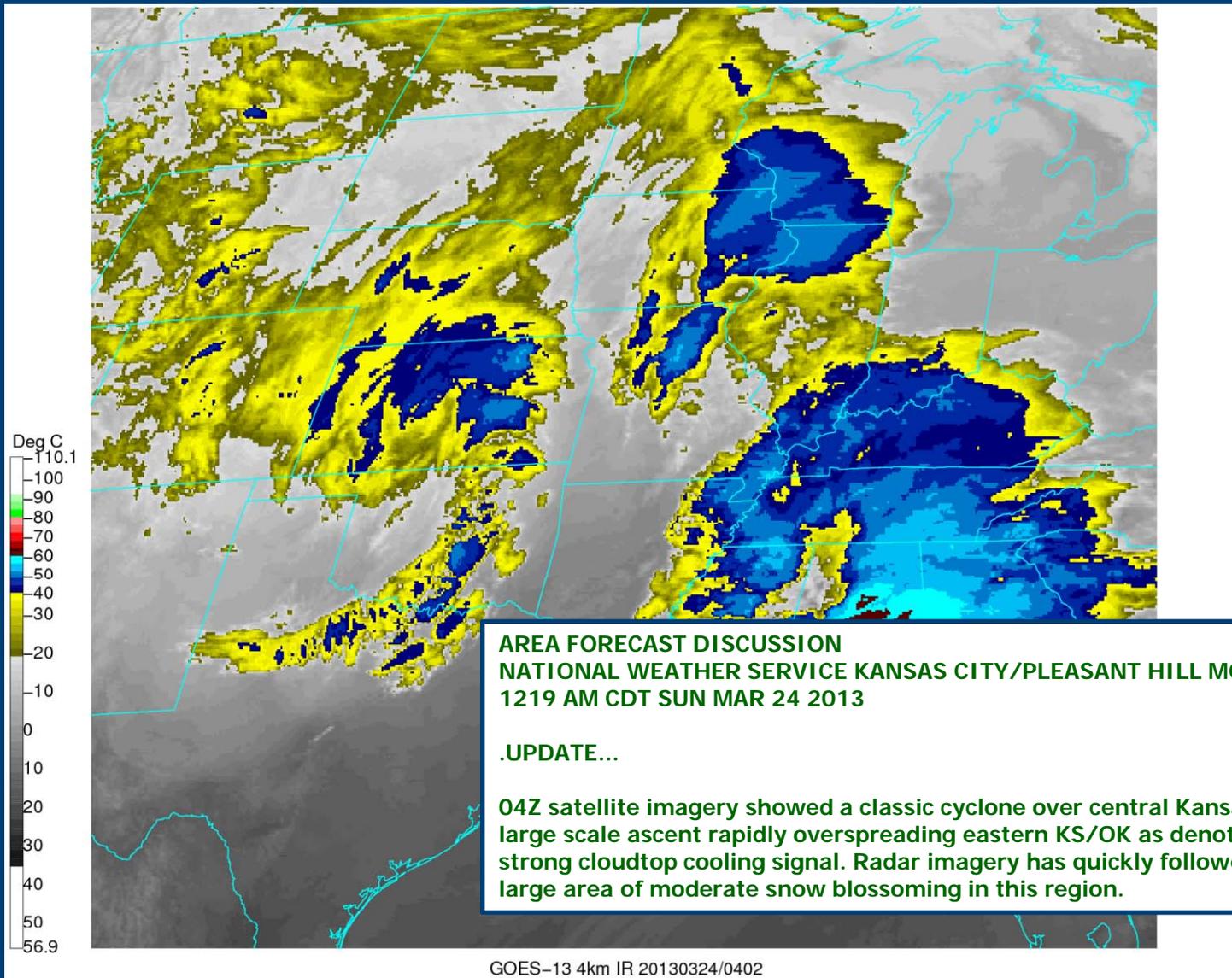


Synoptic-Scale Analysis – 23-24 March 2013



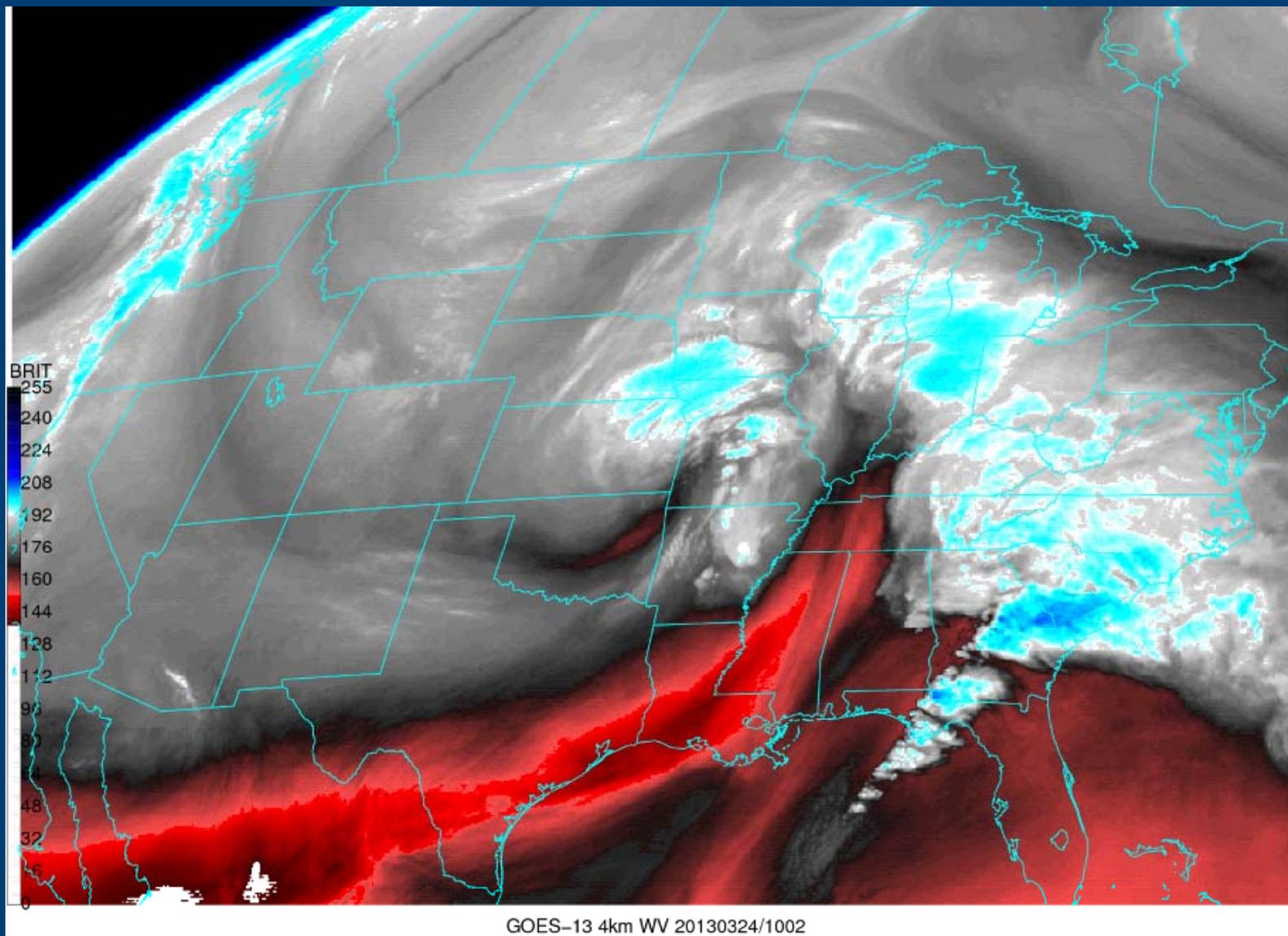


Synoptic-Scale Analysis – 23-24 March 2013



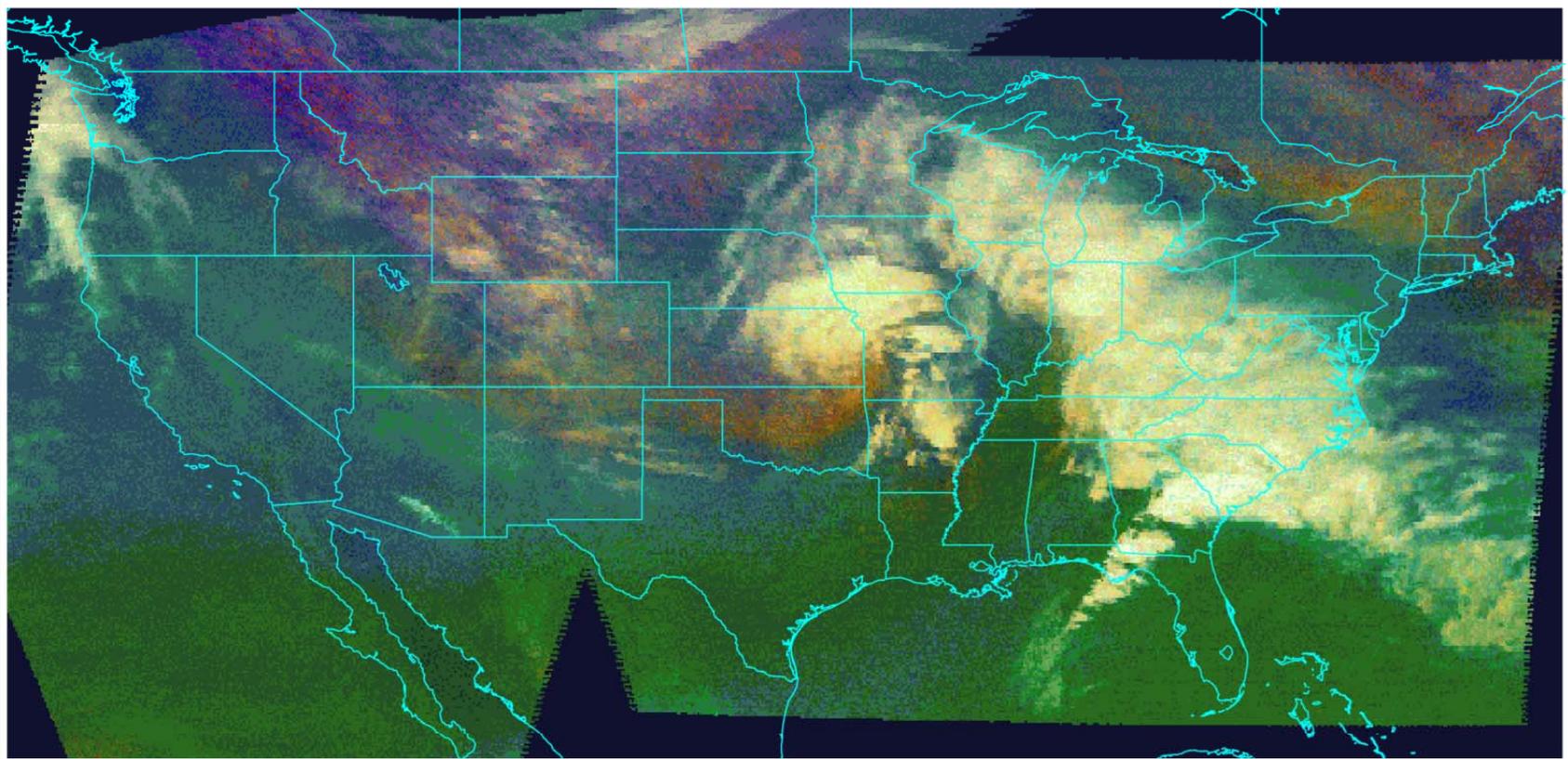


Synoptic-Scale Analysis – 23-24 March 2013





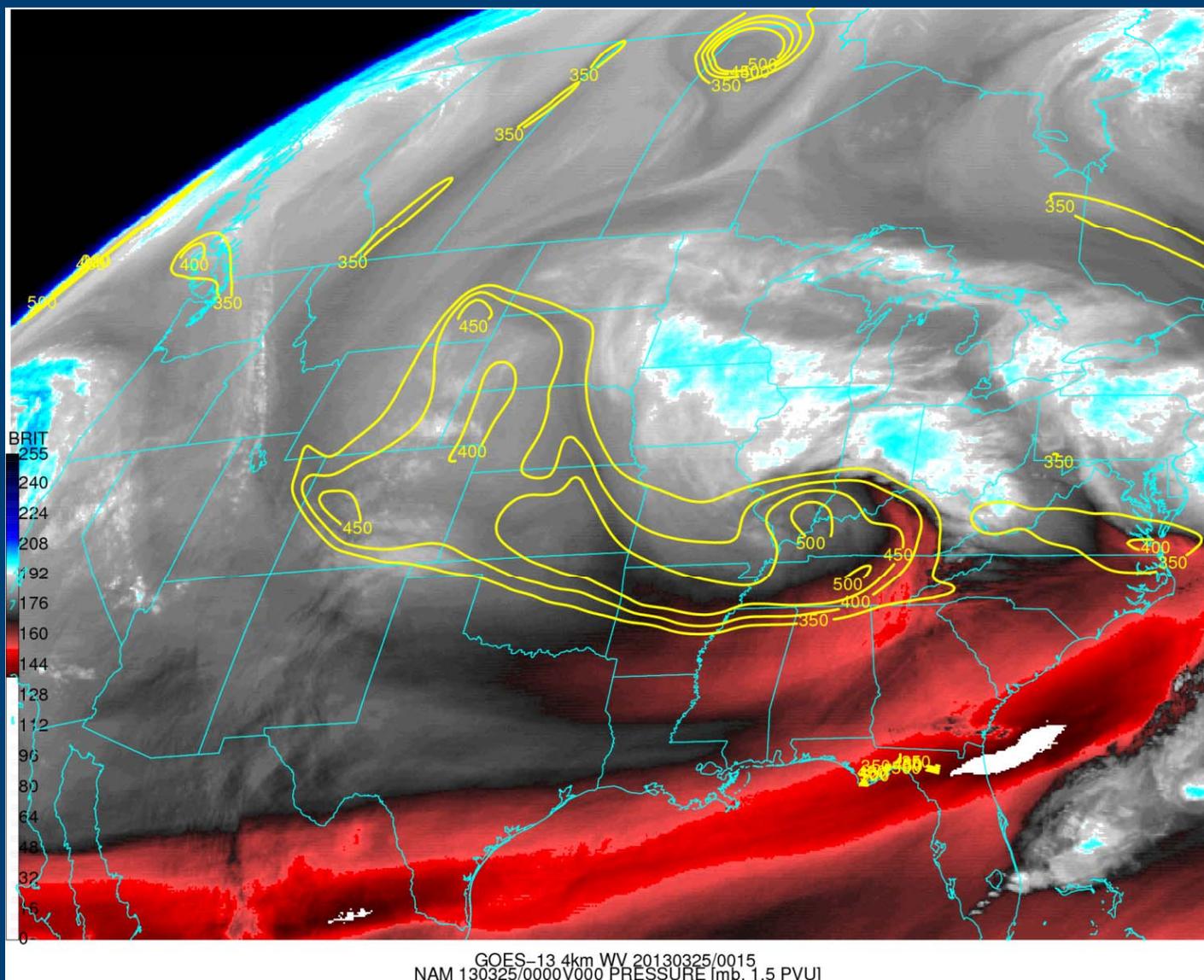
Synoptic-Scale Analysis – 23-24 March 2013



GOES-SOUNDER RGB AIRMASS 20130324/1001

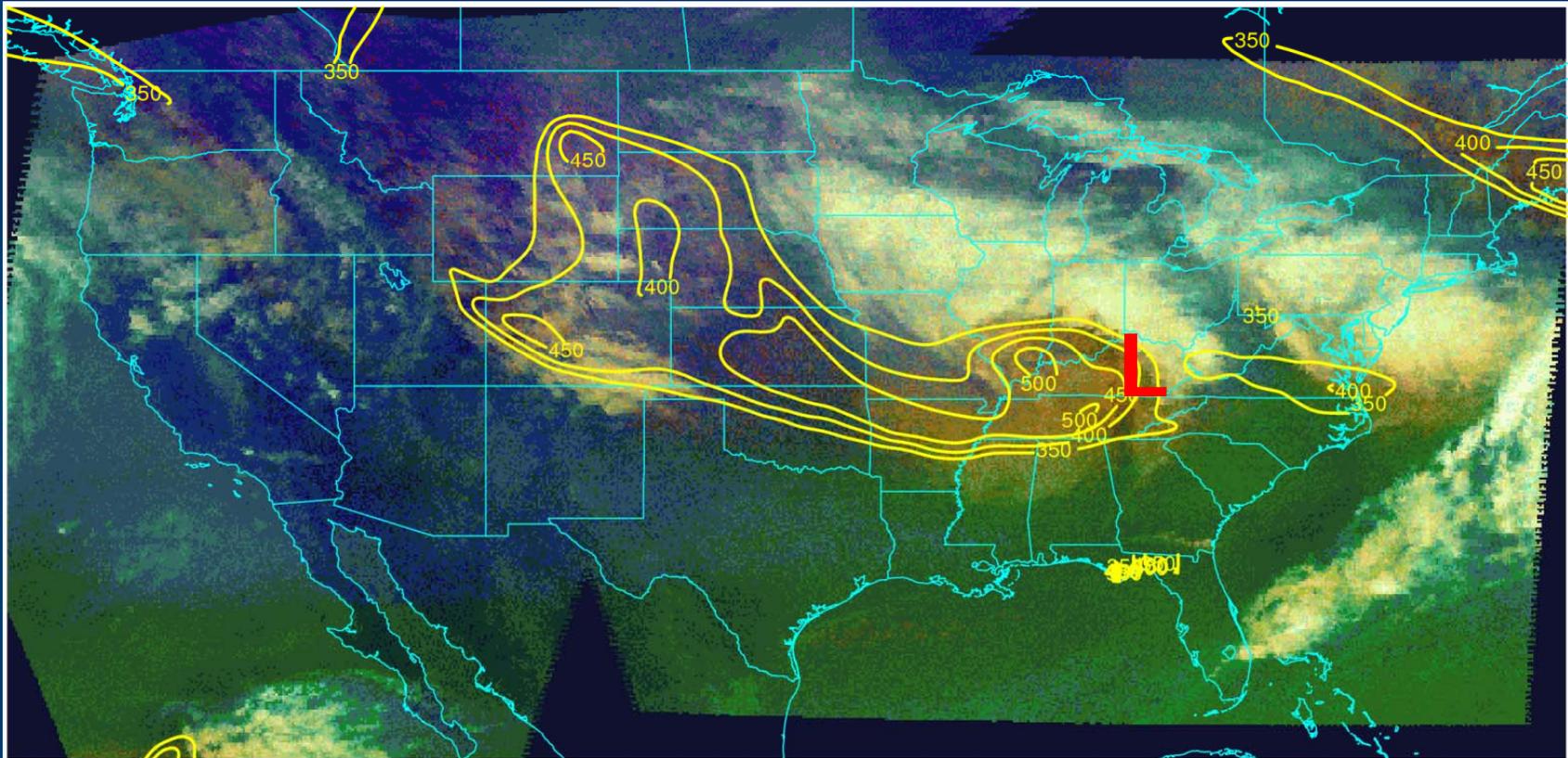


Synoptic-Scale Analysis – 23-24 March 2013





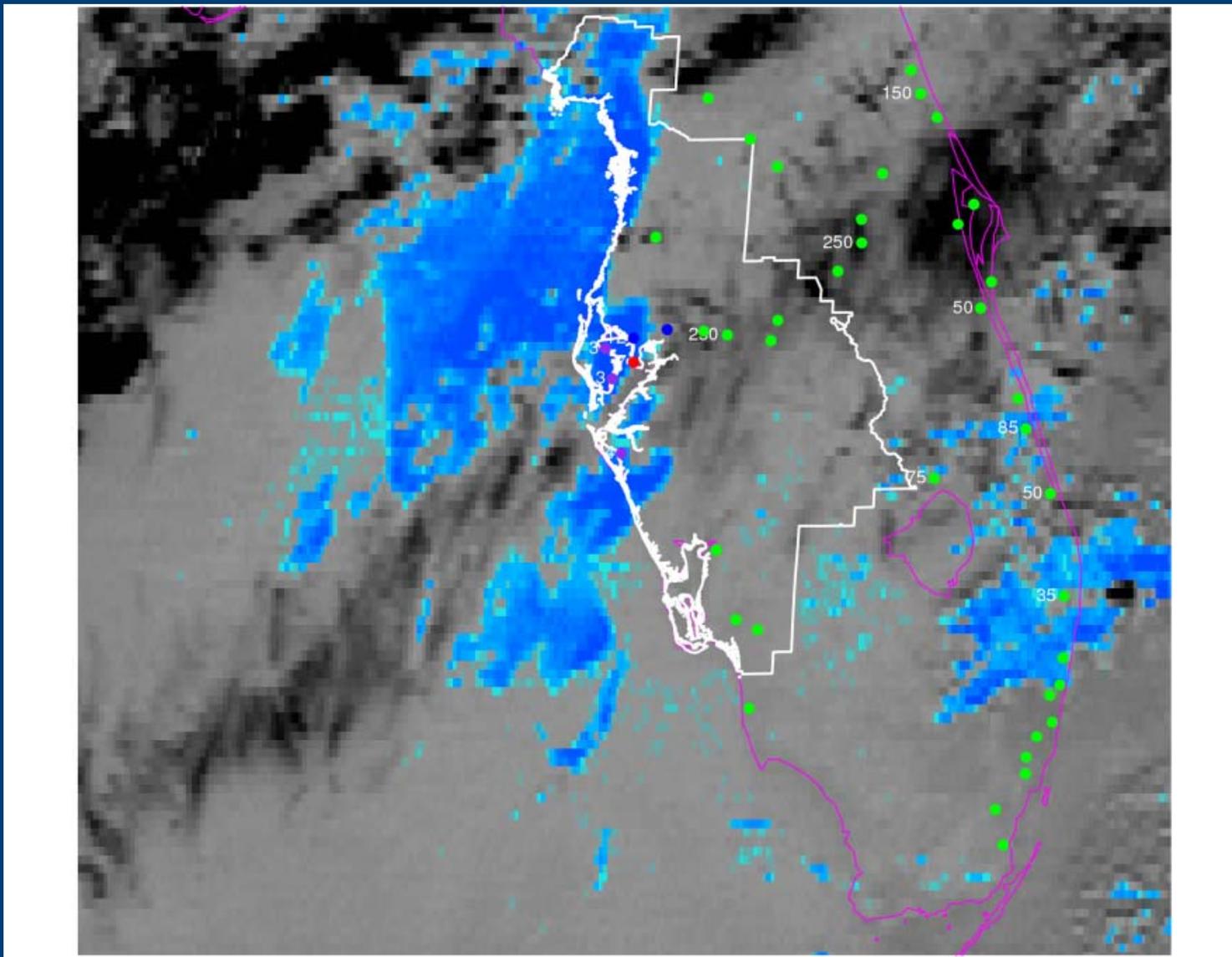
Synoptic-Scale Analysis – 23-24 March 2013



GOES-SOUNDER RGB AIRMASS 20130325/0001
NAM 130325/0000V000 PRESSURE [mb, 1.5 PVU]



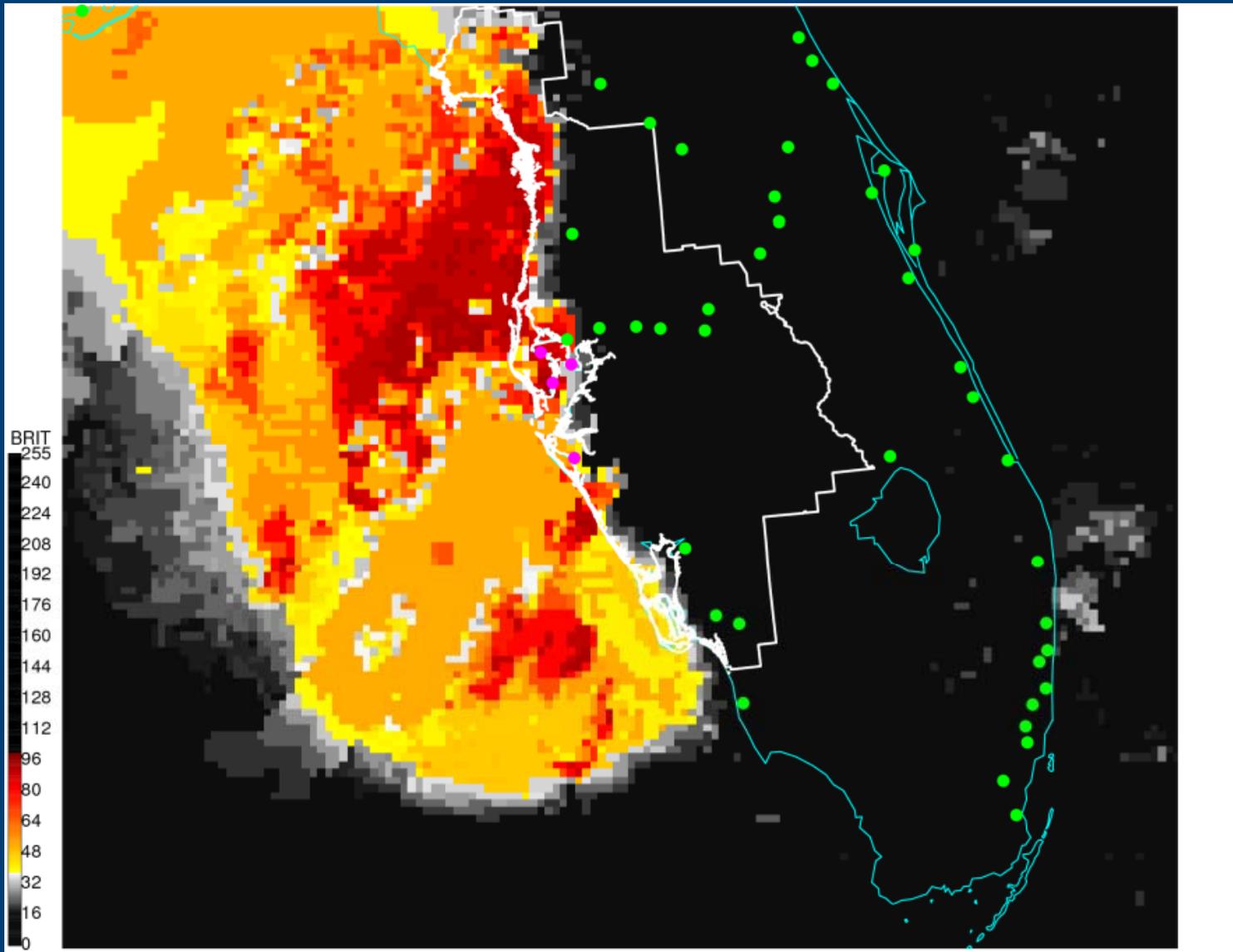
Fog and Low Stratus Detection – 0015 UTC 24 February 2013



GOES-13 11.0-3.9 μm Legacy Fog Channel Difference



Fog and Low Stratus Detection – 0015 UTC 24 February 2013



GOES-R IFR (500-1000 ft ceilings and/or 1-3 mi vis) Probability (%)



Fog and Low Stratus Detection – 0153 UTC 24 February 2013

FXUS62 KTBW 240153
AFDTBW

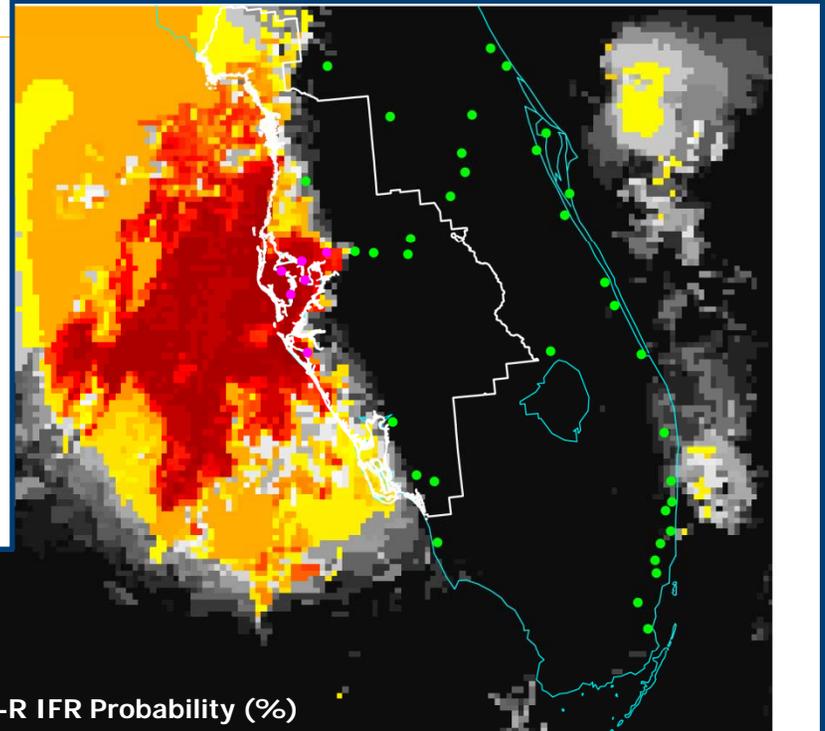
AREA FORECAST DISCUSSION
NATIONAL WEATHER SERVICE TAMPA BAY RUSKIN FL
853 PM EST SAT FEB 23 2013

.UPDATE...MAIN ISSUE OVERNIGHT WILL BE THE LOW CLOUDS AND FOG...ESPECIALLY THE SEA FOG WHICH IS MOVING IN ALONG THE COAST. **GOES-R IFR PROBABILITIES SHOW HIGHEST CONCENTRATION/MOST LIKELY AREAS OF FOG TO BE OVER THE GULF BETWEEN HERNANDO COUNTY AND MANATEE COUNTY.** SURFACE OBSERVATIONS AND REPORTS FROM THE COAST GUARD AND TAMPA BAY PILOTS CONFIRM THAT DENSE FOG /VISIBILITY 1 MILE OR LESS OVER THE GULF WATERS/ IS OCCURRING OVER THE BAY AND EVEN EGMONT KEY...BUT VISIBILITIES HAVE REMAINED ABOVE DENSE FOG CRITERIA / ONE QUARTER MILE / OVER LAND.

A LINE OF SHOWERS WITH A FEW THUNDERSTORMS IS ADVANCING TOWARD LEVY COUNTY SHOULD GET THERE BETWEEN 930 AND 10 PM...THEN CONTINUE SLOWLY SOUTHEAST THROUGH CITRUS AND PERHAPS HERNANDO COUNTY BY SUNRISE. MOST OF THE STORMS HAVE WEAKENED FROM EARLIER...BUT ONE OR TWO STILL SHOW SIGNIFICANT LIGHTNING ACTIVITY. WILL LEAVE THE SLIGHT CHANCE OF THUNDER IN THE FORECAST OVERNIGHT THERE.

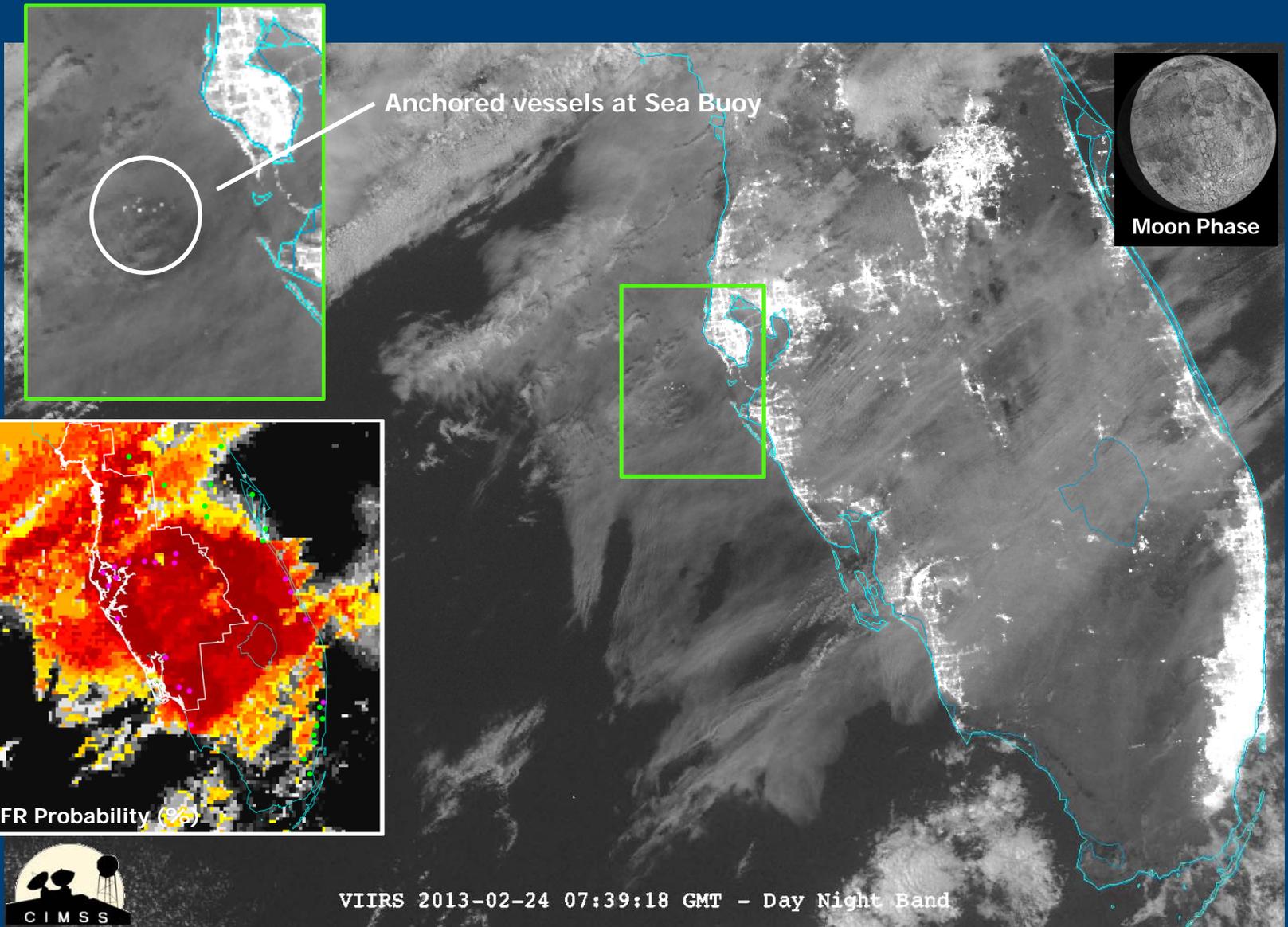
VERY FEW CHANGES WERE MADE BEYOND THE OVERNIGHT PERIOD.

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Fog and Low Stratus Detection – 0739 UTC 24 February 2013



Anchored vessels at Sea Buoy

Moon Phase

GOES-R IFR Probability (%)

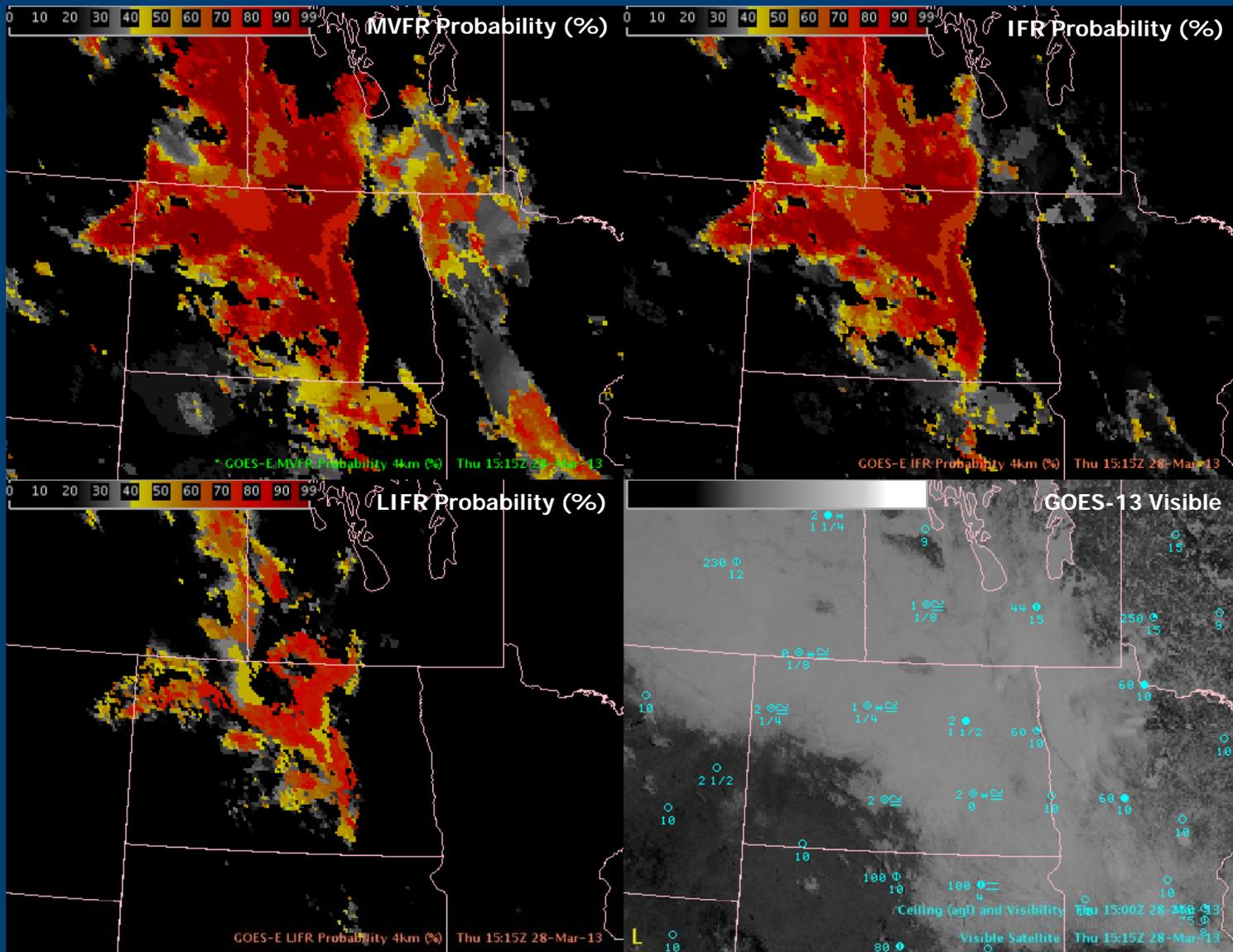
VIIRS 2013-02-24 07:39:18 GMT - Day Night Band



Suomi NPP DNB Image courtesy of William Straka, CIMSS



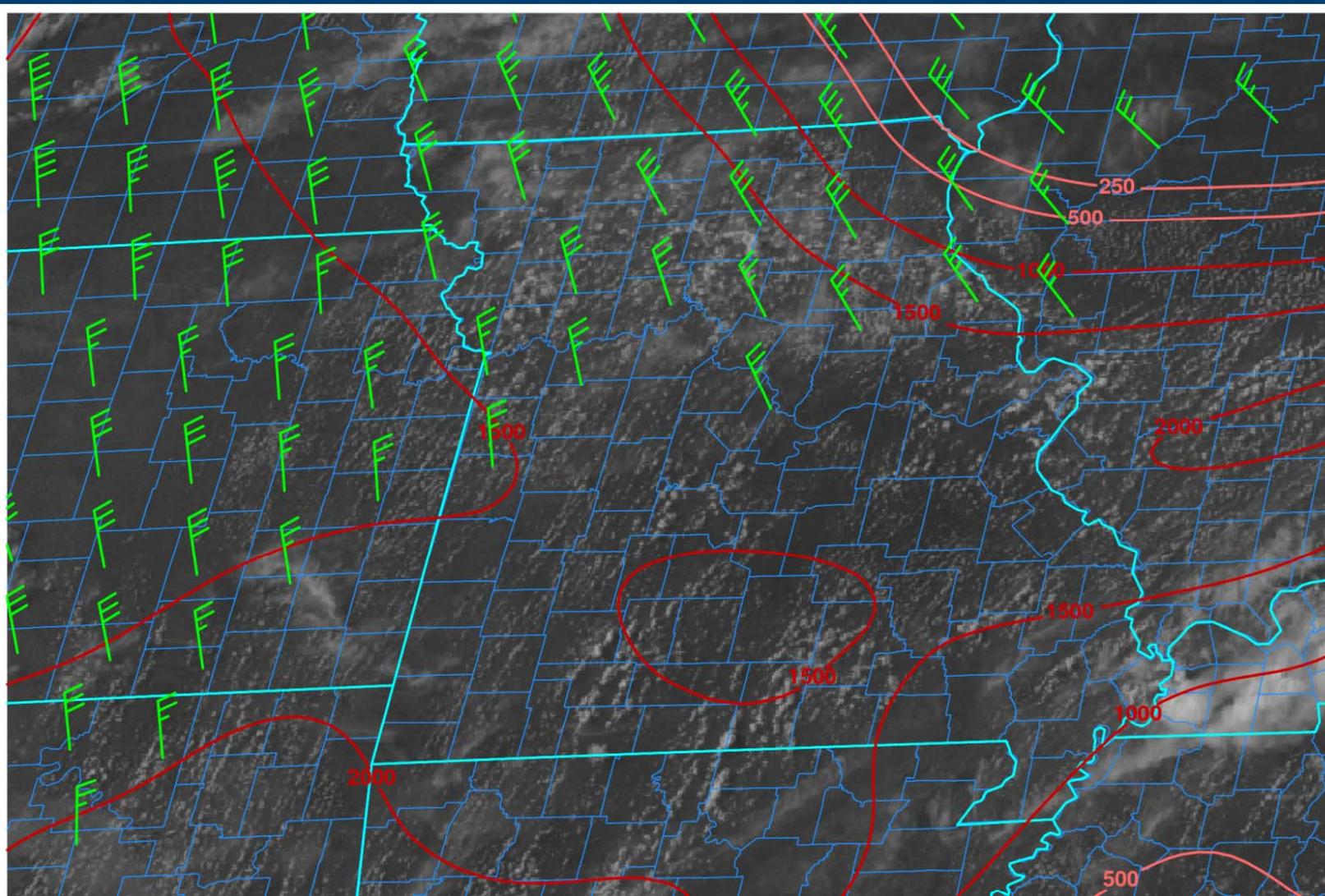
Fog and Low Stratus Detection – 1515 UTC 28 March 2013



GOES-R IFR Probability (%) and Snow Cover



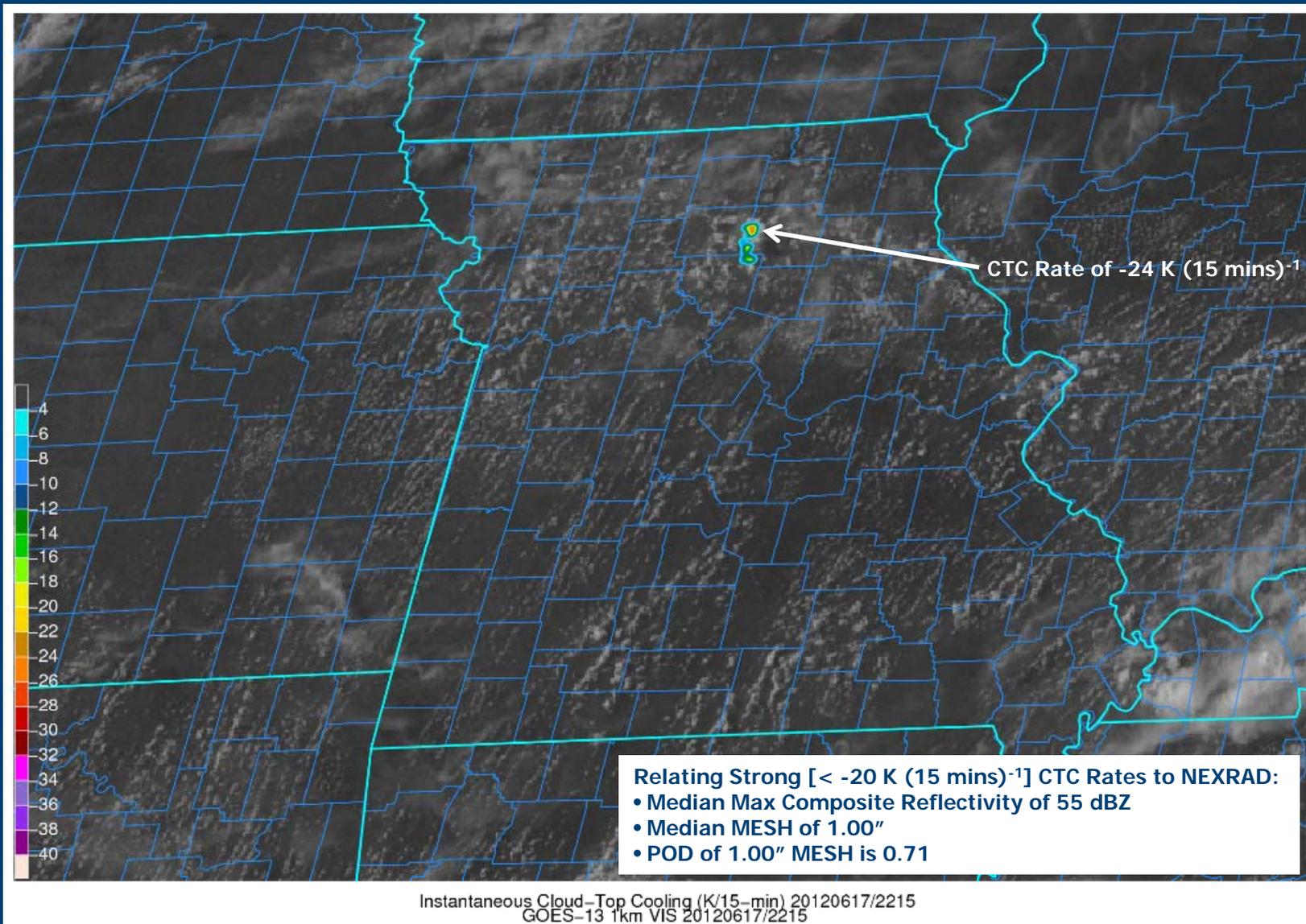
Convective Cloud-Top Cooling – 2202 UTC 17 June 2012



GOES-13 1km VIS 20120617/2202
NARR ML CAPE and EFF SHEAR 20130617/2100



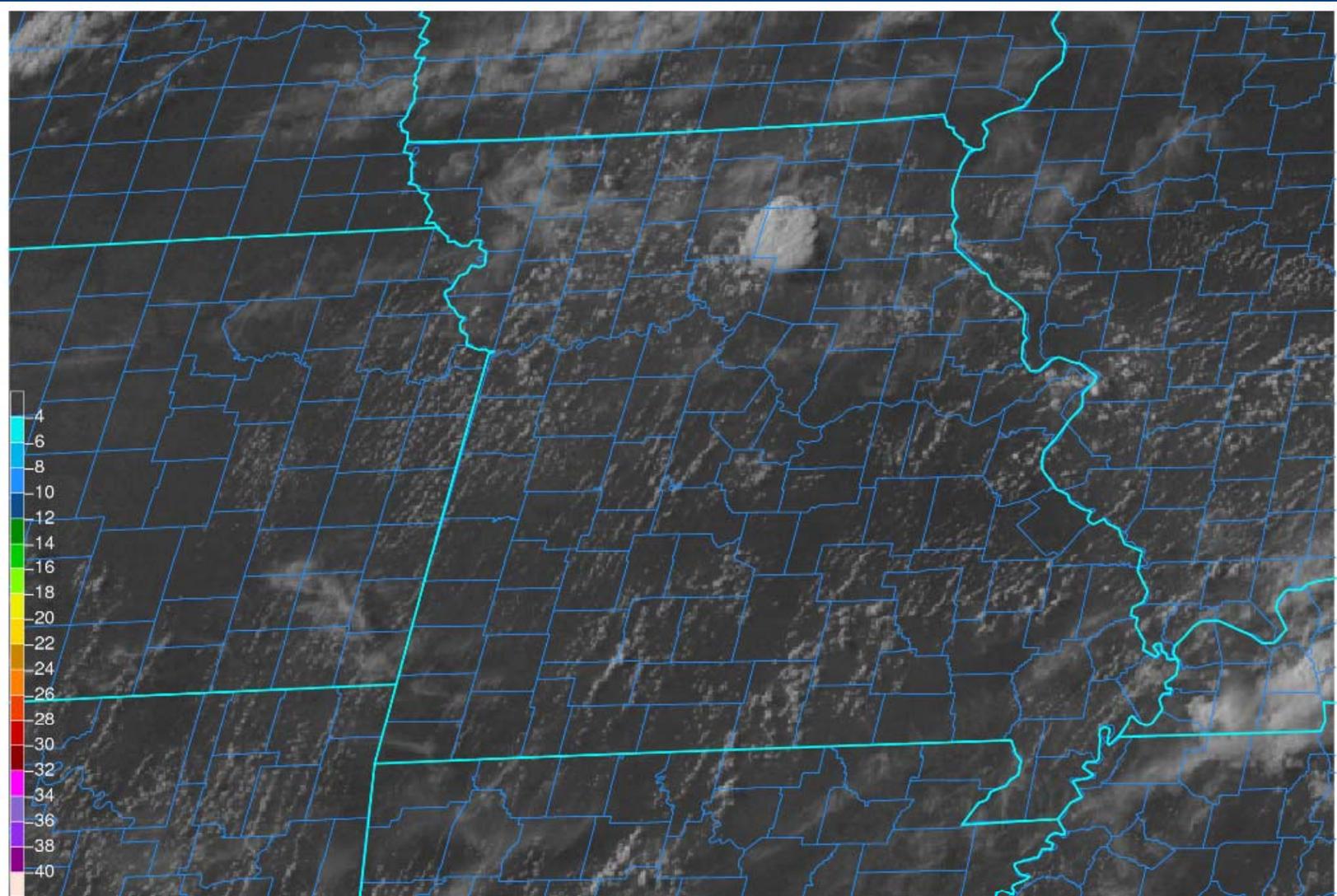
Convective Cloud-Top Cooling – 2215 UTC 17 June 2012



**Cloud-Top Cooling – Decision Aid and 1 of 5 Satellite Predictors
in GOES-R Convective Initiation**



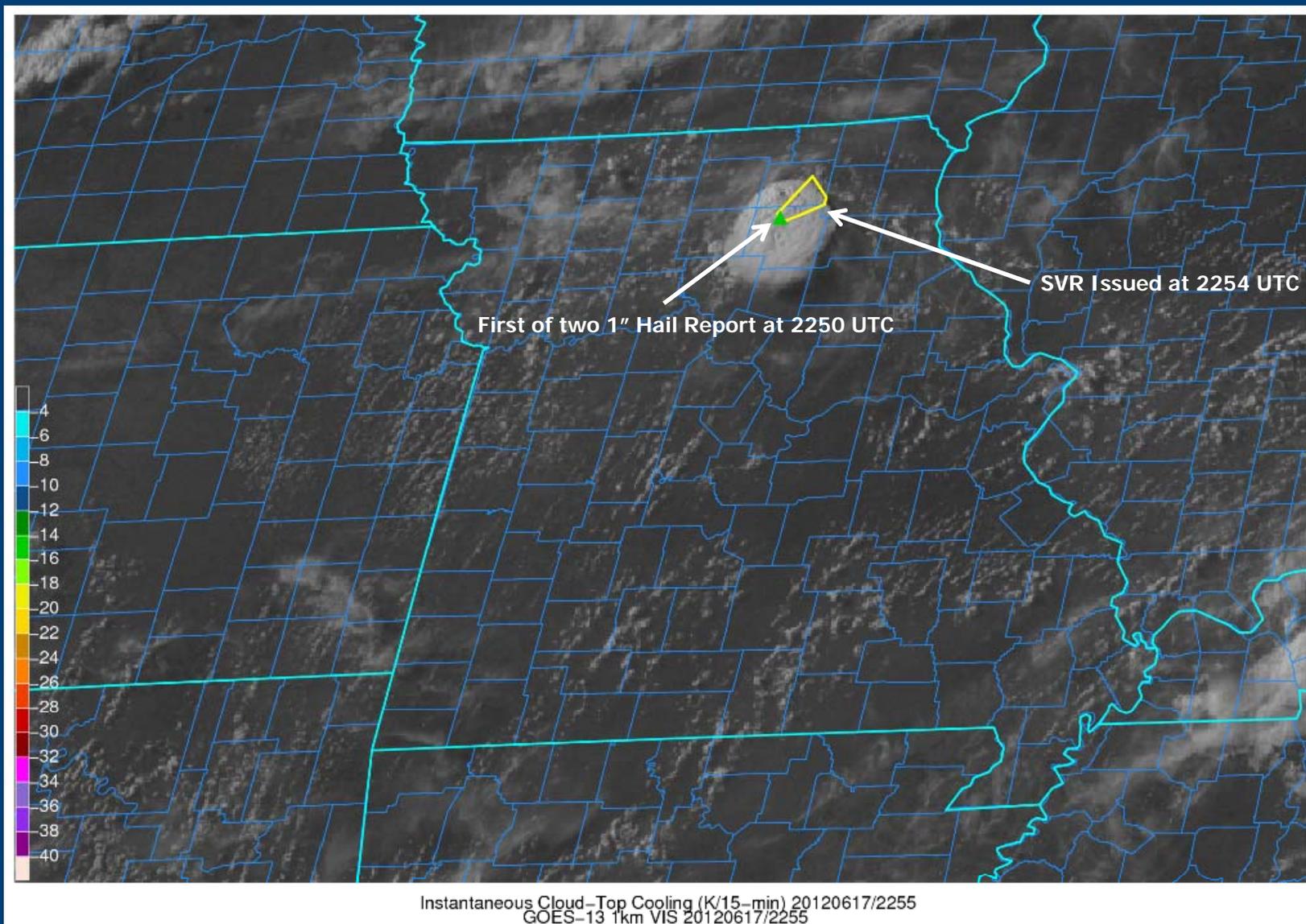
Convective Cloud-Top Cooling – 2240 UTC 17 June 2012



Instantaneous Cloud-Top Cooling (K/15-min) 20120617/2240
GOES-13 1km VIS 20120617/2240



Convective Cloud-Top Cooling – 2255 UTC 17 June 2012





Conclusions/Takeaways

- NWS forecasters utilize legacy and demonstration (future) satellite products within real-time operations.
- Continue to introduce and show/train forecasters in the field on the utility of satellite imagery and derived products.

Questions or Comments?

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