THE 2013 WINTER EXPERIMENT
AT THE AVIATION WEATHER CENTER

AMANDA TERBORG

2013 OCONUS MEETING

JUNE 20TH

LOGISTICS

Winter Experiment 2013

Training
Logistics

- Pre-Experiment dry runs
  - Forecaster participation
- GOES-R product quick guide packet
  - Sent out pre-experiment
  - Available at each desk with the AWT binders
- Daily availability of the GOES-R liaison and various product PIs
- Lunch seminar and in depth discussion on training and the research to operations effort overall

Daily Schedule

Logistics

- Assessment of previous day's forecast (model and human)
- Analysis of current weather, identify target areas
- Weather Briefing
- Forecasts:
  - FA
  - Global Graphics
  - NAM
- Lunch seminars (NTSB, Lockheed Martin, NCAR, etc.)
- Collaborative briefing with HWP (wk 1)
- After forecasts/updates/amendments
- Assessment and daily debrief
- Surveys


STRUCTURE
Winter Experiment 2013
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
AWC
AVIATION WEATHER CENTER

Workstation setup:

- N-AWIPS monitors
- G-AIRMET and FA product packages
- Three desks – ceiling and visibility, icing, turbulence

Forecasting Concerns:

- Short-term, 3-hour graphical AIRMET/SIGMET forecasts for inflight/cruising altitude hazards
- Includes icing, turbulence, freezing level, low-level wind shear, and ceilings and visibility
- Area forecast discussions
- Issued for the east, west, and central parts of the the CONUS

Domestic Operations

Structure

Workstation setup:

- N-AWIPS monitors
- Global Graphics North product package

Forecasting Concerns:

- 24 AIRMET/SIGMET forecasts for jets, tropopause heights, turbulence, icing, and convection
- Broad scale forecast mean to be used in the flight planning stage, particularly for oceanic and international flights
- Issued for the North and South Hemisphere and a Tropical domain

International Operations

Structure

Workstation setup:

- Two N-AWIPS monitors
- AWIPS-2 monitor
- Windows monitor

Forecasting Concerns:

- Near term hazards that are expected to affect major hubs and jet routes within the next 0-4 hours
- These forecasts will eventually be output within the Aviation Weather Statements (AWS)
- Issued for use by traffic flow managers

National Aviation Meteorologist

Structure

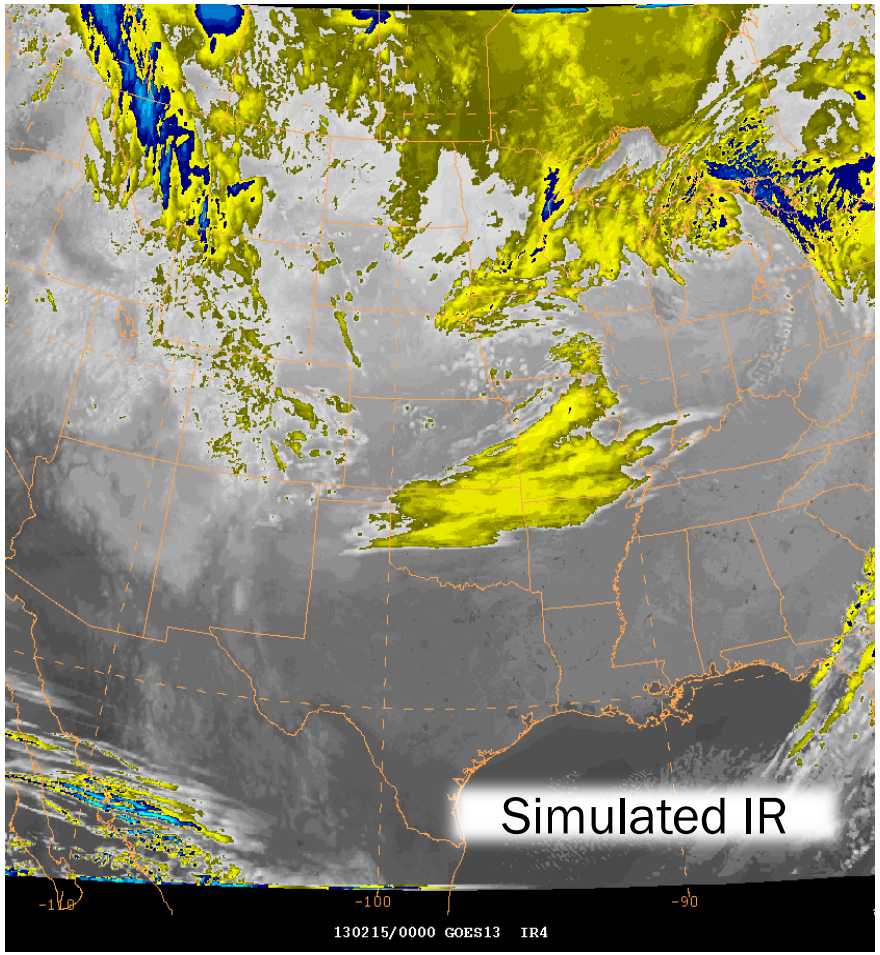
THE GOES-R PROVING GROUND

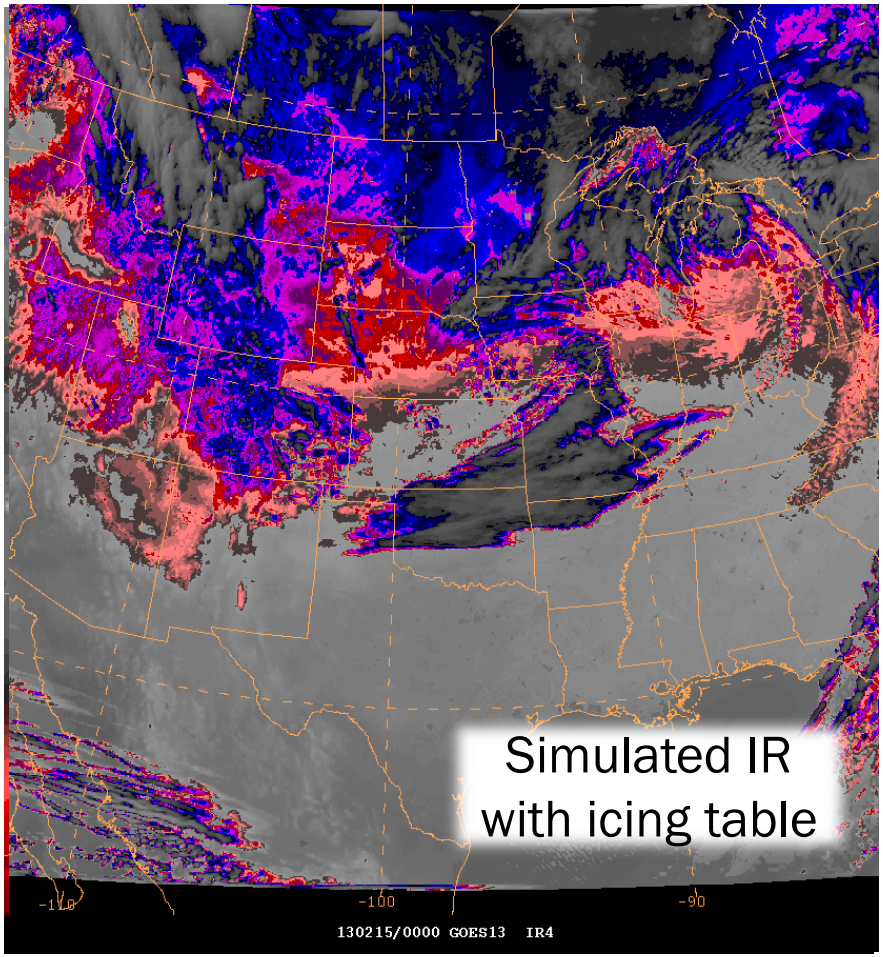
Winter Experiment 2013

Product	Domain
Simulated Satellite Imagery • WRF-ARW bands 8-16 • NAM Nest band 9, 13 • Fog Band difference	WRF and NAM Nest domains – CONUS view
Flight Icing Threat • Single & multi-layer • Supercooled liquid drops (SLD) • Icing tops and bottoms	East CONUS
Fog and Low Stratus • IFR and LIFR probability • Cloud phase	East and West CONUS

Available products

GOES-R Proving Ground

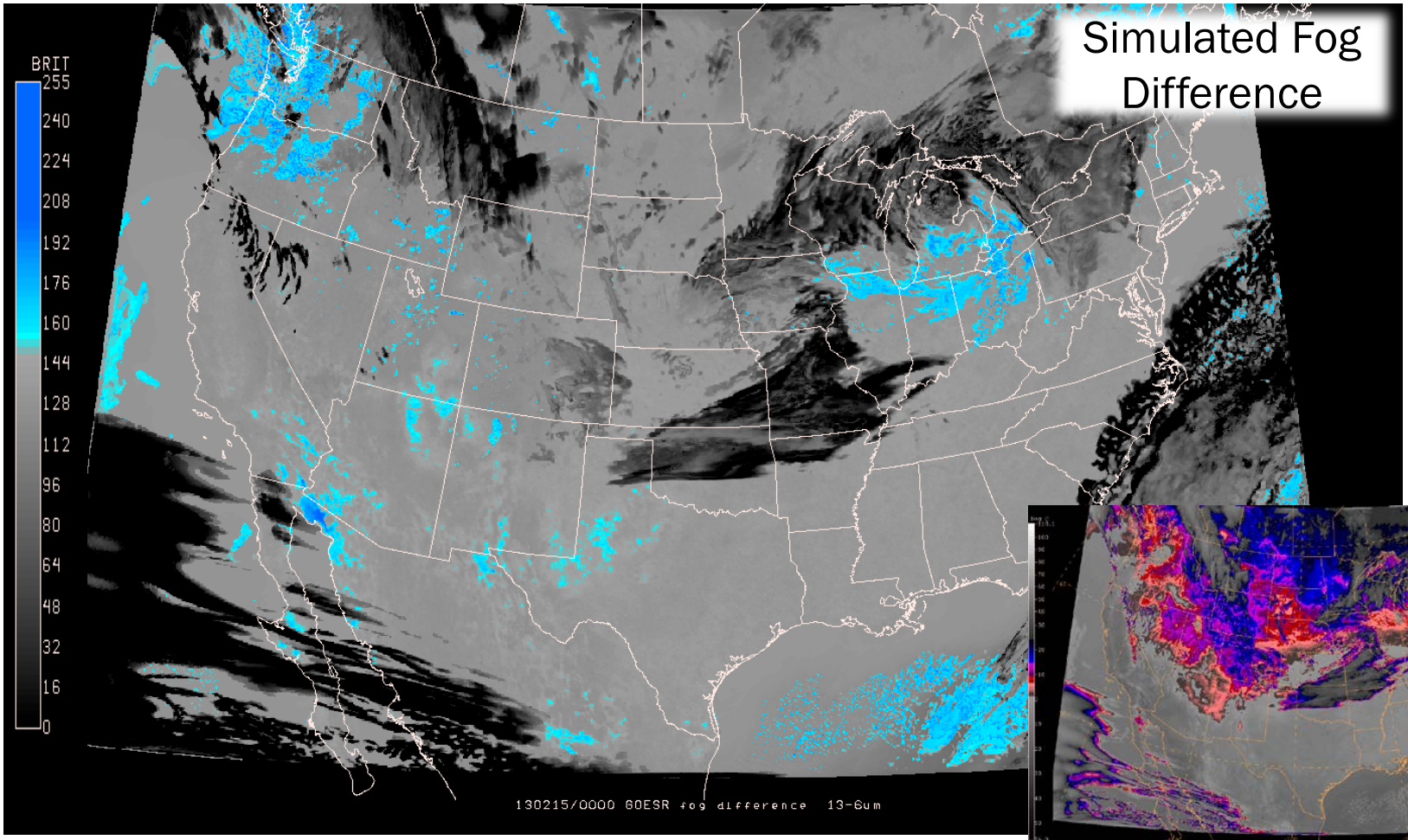




Simulated Satellite Imagery

GOES-R Proving Ground

Icing



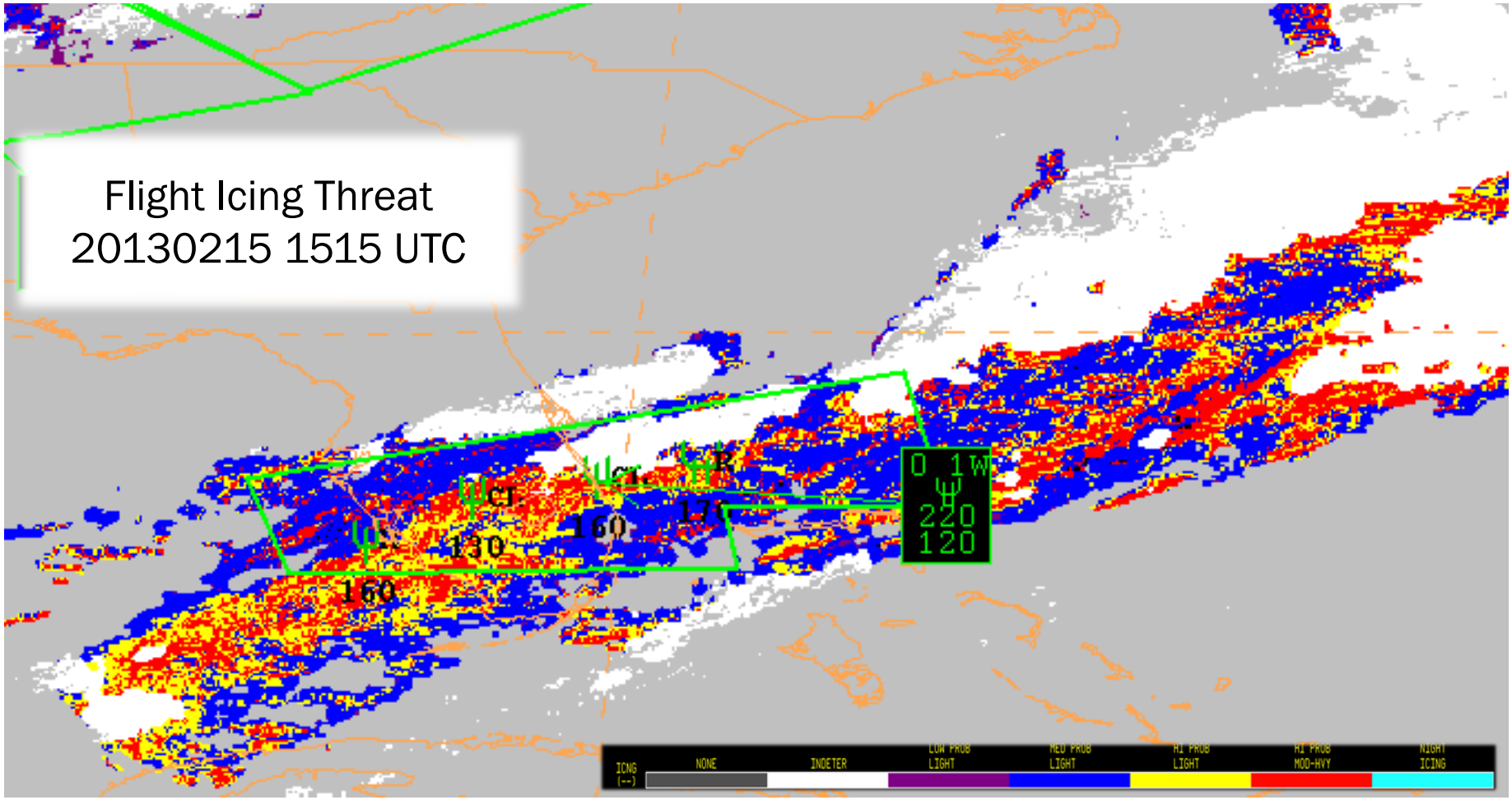
Simulated Satellite Imagery

GOES-R Proving Ground

Icing

Simulated Imagery:

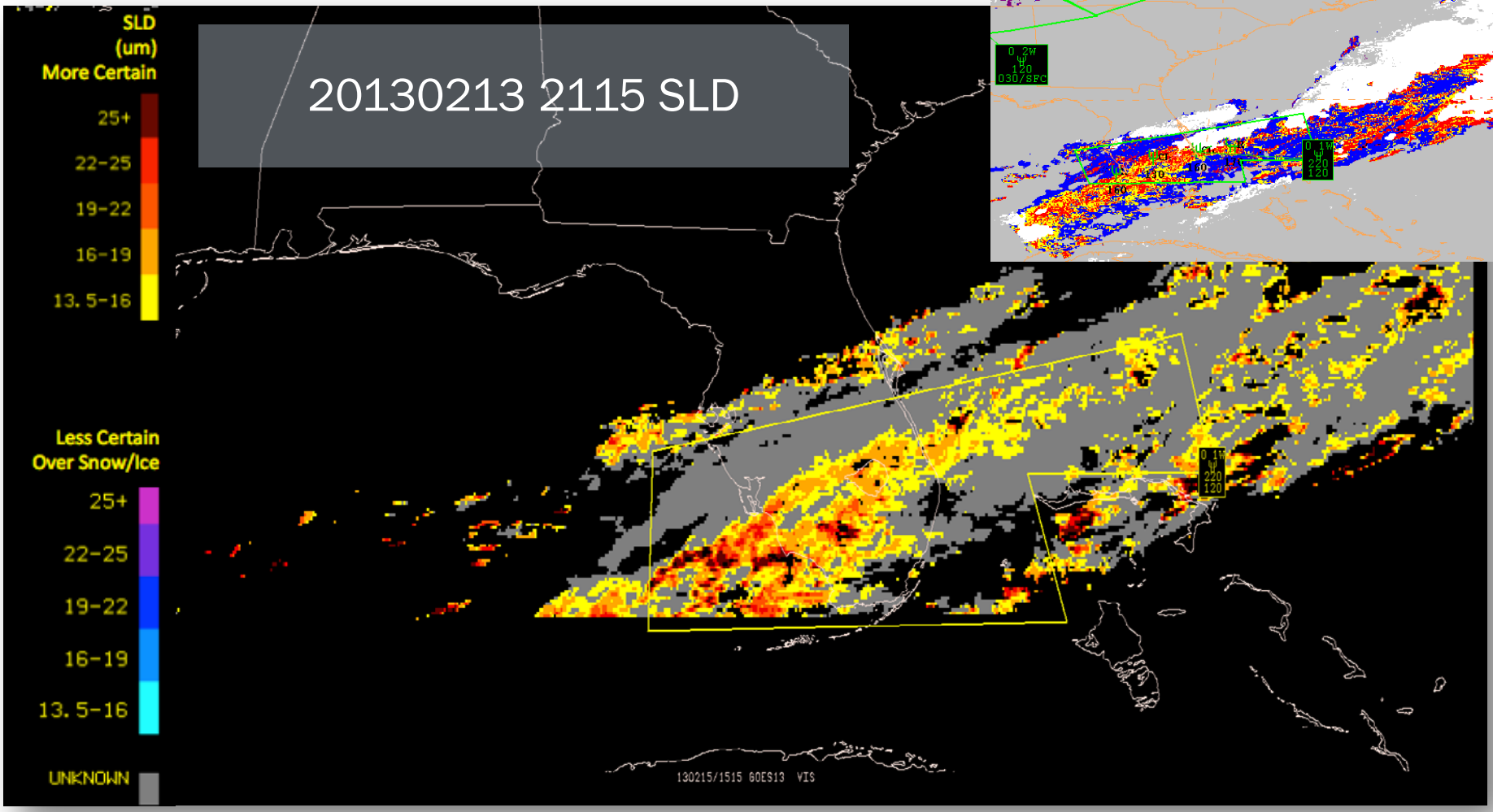
1. Turbulence forecasting
   - 'Helpful in determining signatures associated with the MOG events'
   - 'It was easy to use, intuitive.'
   - 'Had a lot of success in turbulence fore-casting.'
2. Icing Forecasting
   - 'Was helpful when used with the icing enhancement table, though it did occasionally pick up below freezing surface temperatures.'
   - 'The simulated band difference was useful as a tool to compare, but often low-level clouds were obscured.'



Flight Icing Threat

GOES-R Proving Ground

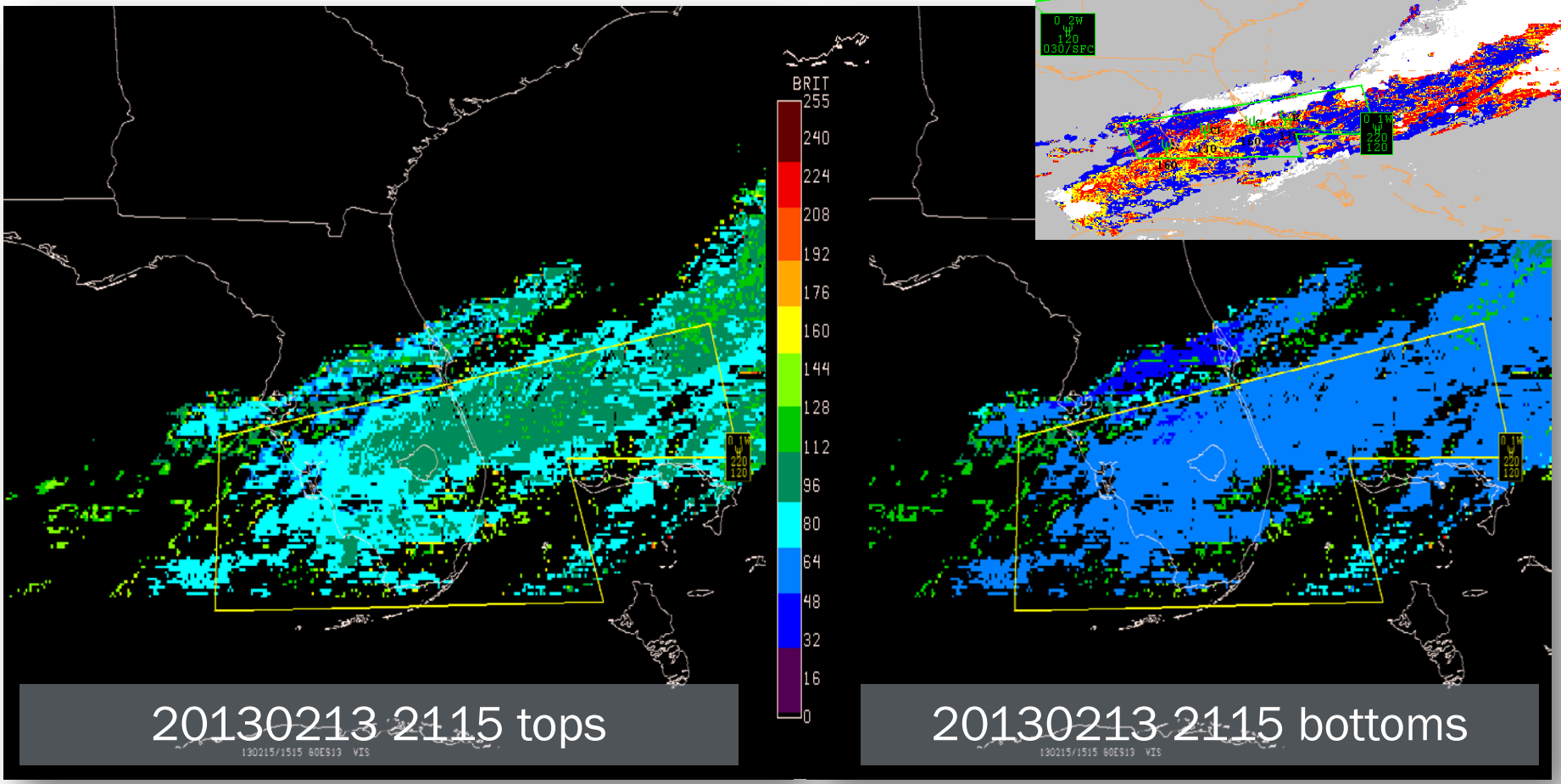
Icing



Satellite Icing Tools - SLD

GOES-R Proving Ground

Icing



Icing

Satellite Icing Tools – Tops and Bottoms

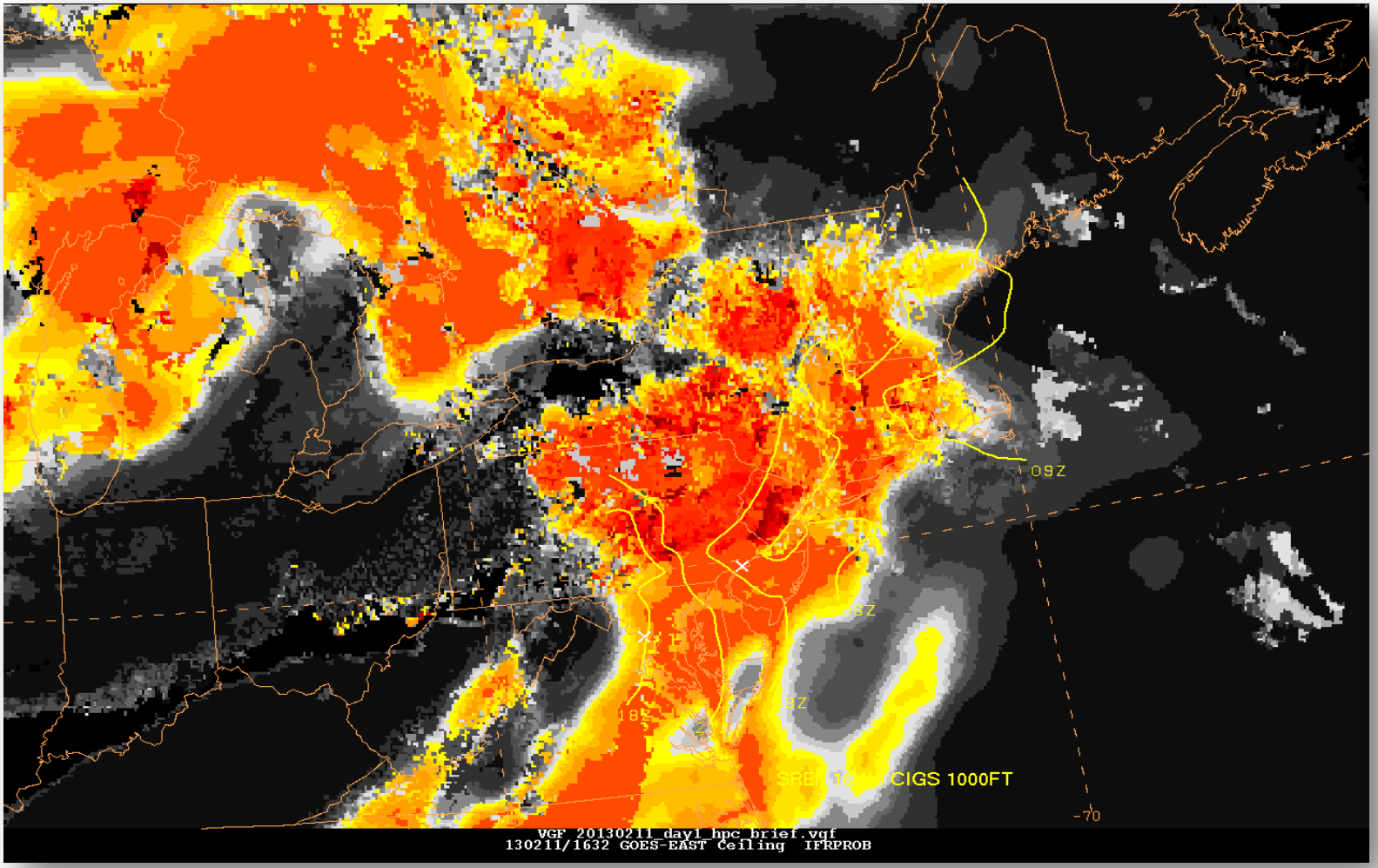
GOES-R Proving Ground

FIT and Icing Tools:

1. Flight Icing Threat
   - 'It was a good situational awareness tool to use at the beginning of shift.'
   - 'It was noisy. There was too much detail for the broad scale AIRMETS at the AWC.'

1. SLD
   - 'It was a really neat tool.'
   - 'Good for situational awareness use, to get an idea of where icing is currently occurring and where it might occur later.'

1. Icing Tops and Bottoms
   - 'It was a really neat tool.'
   - 'It tended to underestimate the tops and bottoms of the icing layer.'
   - 'Using both tops and bottoms was helpful in determining the thickness of the icing layer.'



Fog and Low Stratus

GOES-R Proving Ground

Low Ceilings

CONCLUSION

Winter Experiment 2013

1. **Focus:** winter weather aviation hazards
2. **Structure:** AWC Operations
   - FA… icing, turbulence, and C&V
   - International… global graphics northern hemisphere
   - National Aviation Meteorologist… short-term impacts
3. **GOES-R Proving Ground:** Three main products
   - Simulated Satellite Imagery… turbulence and icing
   - Flight Icing Threat and other icing tools… SLD, tops/bottoms
   - Fog and Low Stratus… IFR/LIFR probability

In Summary

Winter Experiment 2013

1. **Focus:** summer season aviation hazards
2. **Structure:** AWC Operations
   - Domestic… CSIG and CCFP
   - International… global graphics
   - National Aviation Meteorologist… short-term impacts
3. **GOES-R Proving Ground:**
   - Simulated Satellite Imagery… NAM Nest and NSSL-WRF
   - Convective Initiation… CTC, CI and OT/EV
   - Lightning… PGLM and GLD360
   - Nearcasting Model… PW and theta-e diffs
   - Cloud Height Algorithms… Cloud-top heights and temps

In Summary

Preview: Summer Experiment 2013


QUESTIONS?
Winter Experiment 2013
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
AWC
AVIATION WEATHER CENTER