GOES-R Program

CIMSS/ASPB Participation

GOES-R Proving Ground Status

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November 7, 2011

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GOES-R Proving Ground @ CIMSS/ASPB

- Demonstration of GOES-R AWG applications at National Center Testbeds
- AWIPS Weather Event Simulator (WES) for the ABI.
- AWIPS-2 status
- NWA/GUC participation
- GOES-15 Update

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GOES-R Proving Ground @ CIMSS

The following list of products offers opportunity for near-real time Warning Related utility. Now Available – Orange, Near Future - Blue

Baseline Products:

- Volcanic Ash: detection & Height - Alaska, Pacific, and AWC
- Cloud Top Phase/Cloud Type – Alaska, AWC, and OPC/HPC
- Cloud and Moisture Imagery – All testbeds
- Hurricane Intensity – NHC
- Total Precipitable Water - Pacific
- Fire/Hot Spot Characterization – HWT (Hydrologic and Fire, WRH)

Post Option 2 Products:

- Aircraft Icing Threat – NASA LaRC, Bill Smith Jr
- Turbulence - AWC
- Convective Initiation (UWCI used where SATCAST not automated yet)
- Enhanced "V" / Overshooting Top Detection – HWT and HPC
- Low Cloud and Fog – AWC and Alaska
- SO_2 Detection – Alaska, AWC, and Pacific
- R3 Products:
  Nearcasting – AWC, HWT, HPC

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GOES-R PG HWT Testbed

- WRF simulated radiances, Nearcasting, UWCI evaluation took place in May-June 2011, planning on 2012 participation
  - SFOV GOES Sounder TPW
  - CTC within thin cirrus
- Distributed GOES-R Fire hotspot and intensity proxy products (GOES imager based) to SPC for fire weather testbed, now AWIPS/N-AWIPS
- AIRS/CrIS stability
  - Ready to hand off to polar proving

GOES-R PG AWC/NWSTC Testbed Progress

- AWC GOES-R Research to Operations position advertised again
- NWSTC position -> Chad Gravelle will start in MSN on 14th Nov. for initial training then stationed in Kansas City in mid-Dec
- UWCI, OTTC, fog/low cloud, and cloud top phase/cloud type are available within N-AWIPS for evaluation
- Volcanic ash and SO_2 pending until GOES-R R to O expert in place, we will work with Chad as a possible solution in mean time
- UW-CIMSS satellite applications “boot camp” delayed until spring 2012, more to come

GOES-R PG Alaska/AAWU Testbed

- Volcanic ash, SO_2, fog/low cloud, cloud top phase/cloud type have been available in AWIPS at all WFO's in AK and the AAWU since January 2011
- Live training sessions were conducted and a volcanic ash VISITview module is now available (VISIT training for fog and cloud phase will be made available in the next month or so)
- A volcanic ash WES case is nearly complete
- UAF will be gathering formal feedback on all products/Alaska WES

GOES-R PG Pacific Testbed

- Coordinating with Mark DeMaria and Steve Businger
- U of Hawaii will hire post-doc, integration with commence once hire is in place
- CIMSS/ASPB Scientist/research transitions will occur in spring 2012
- UWCI now working in Hawaii domain ready for AWIPS integration
- Jordan is available in Jan/Feb?
- Volcanic ash and SO_2 (from MODIS) were added to the plan
- CIMSS Morph TPW is available in AWIPS/GOES SFOV Sounder next year

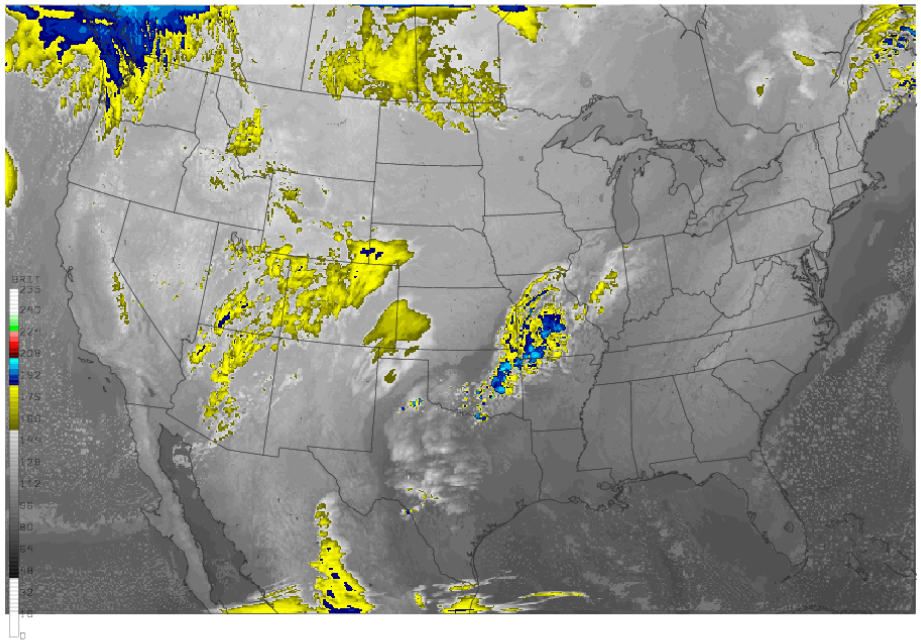
GOES-R PG Hydromet Prediction Center Testbed

- Simulated ABI Imagery (bands 8-16) over the CONUS
- Hourly ABI IR Bands using NSSL WRF
- Request for nearcasting product for evaluation

GOES-R PG OPC/SAB Testbed

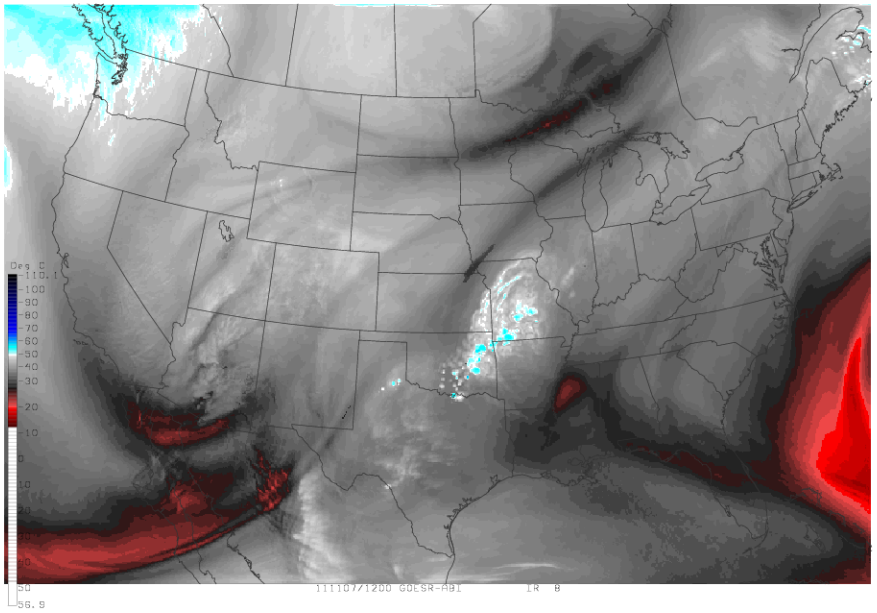
- Simulated ABI Imagery (bands 8-16) over the CONUS, follow HPC/SPC methodology for delivery, N-AWIPS preferred, SAB wanted McIDAS formatted, sent ADDE server info to Jamie K.
- UW-CIMSS providing overshooting-top/enhanced-V data (same methods as SPC delivery), training now available via VISITview and available for GOES-W, OPC LDM should be available today
- Cloud top height and cloud top phase from GOES will be made available
- Volcanic ash due for integration on Nov 14th
- Derived stability indexes (GOES Sounder SFOV), delayed until 2012

Simulated ABI IR and WV Bands



Band 15: Infrared

Band 8: Water Vapor



Credit: Michael Folmer

GOES-R PG Hurricane Center Testbed

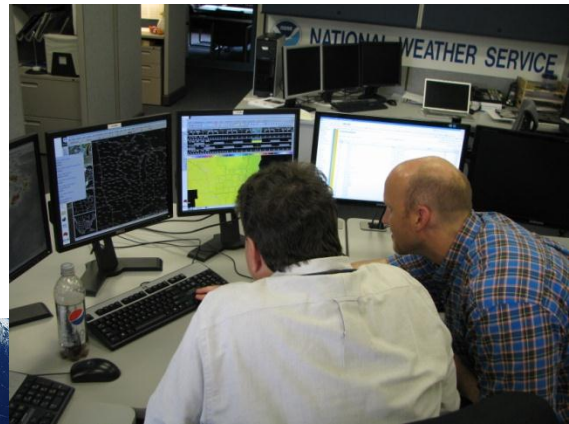
- Overshooting Tops (OTs)
  - OTs were tracked within 200 km of 5 tropical cyclones (TCs) centers during the 2011 season
    - 4 TCs featured 15-minute temporal resolution and were confined to east of 55° W.
    - 1 TC featured 30-minute temporal resolution
  - METEOSAT imagery with 15-minute temporal resolution became available beginning June 1
  - On October 11, full Atlantic Basin imagery became available at 30-minute temporal resolution
    - METEOSAT and GOES CONUS imagery available at 15-minute data

WES CASES

- April 27, 2011 WES example
- Working on Alaska Volcanic WES case

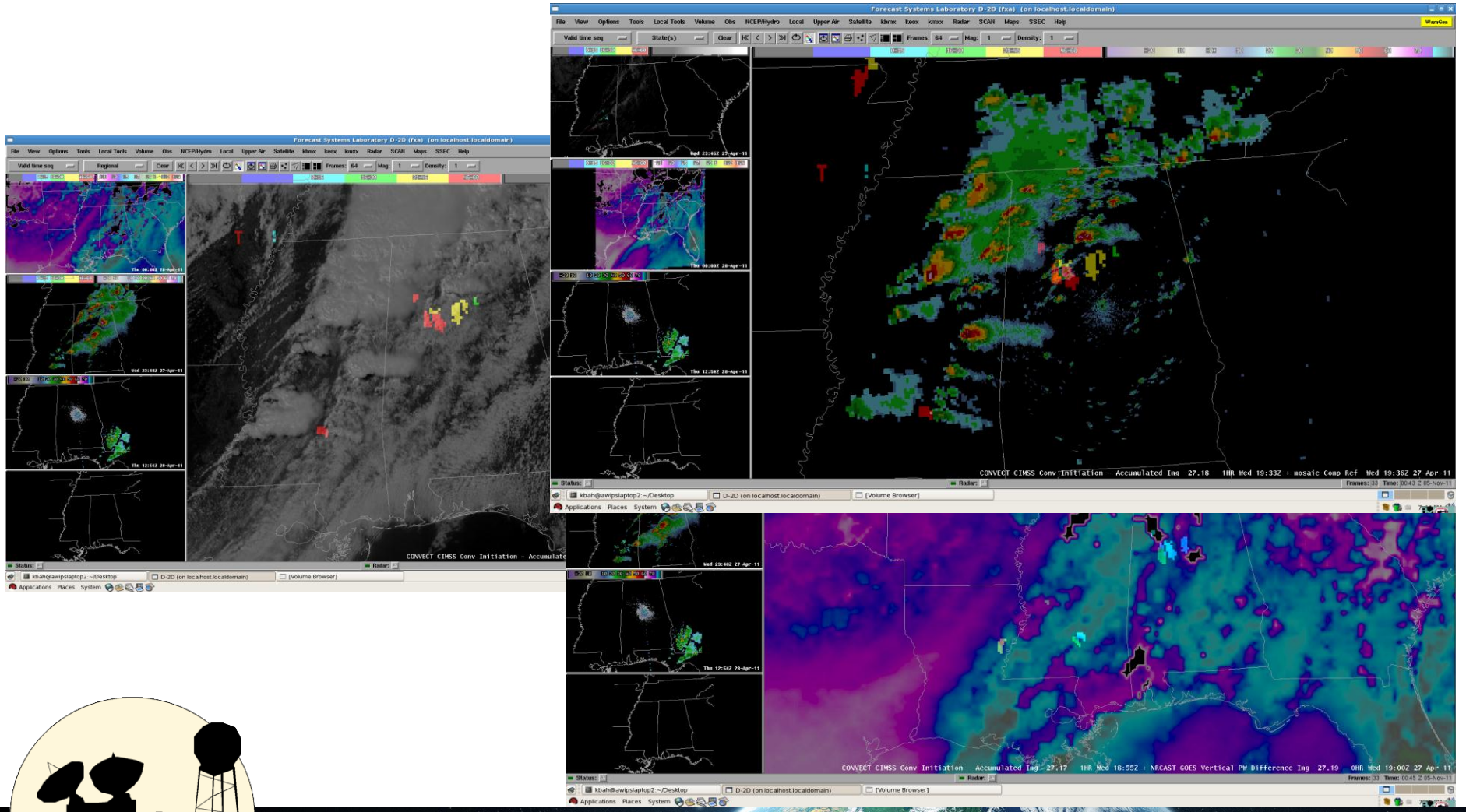
2011 CIMSS MKX GOES R Proving Ground

- August to October 2011
- Emphasis was on GOES Low Cloud/Fog probabilities and Synthetic GOES R imagery
- Developers trained on how the products are derived and how they should be used
- Products viewed on AWIPS and on-line
- Forecaster feedback: blog entries

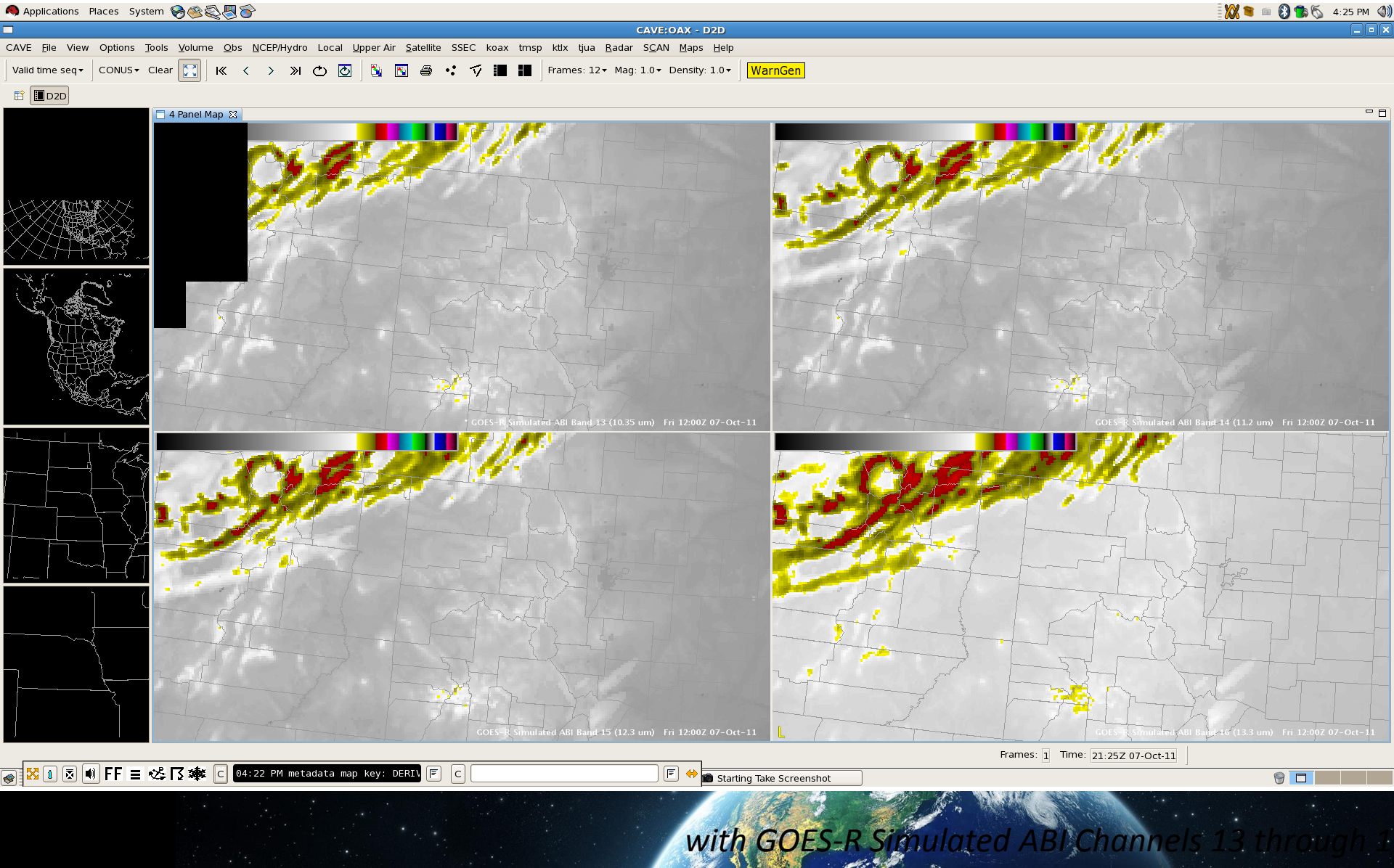


GOES-R Proving Ground @ CIMSS

April 27, 2011 WES example



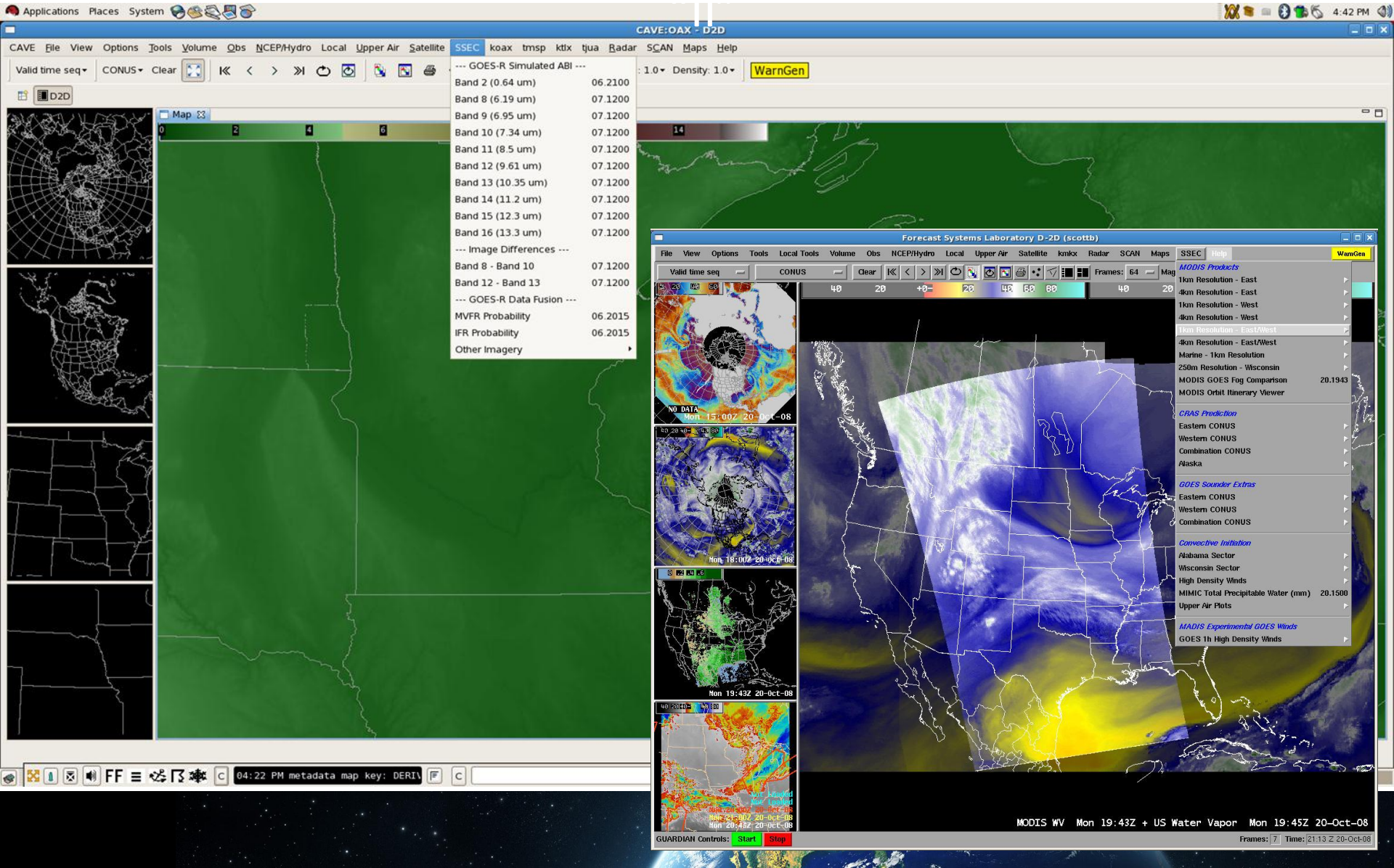
Panning and Zooming in AWIPS II



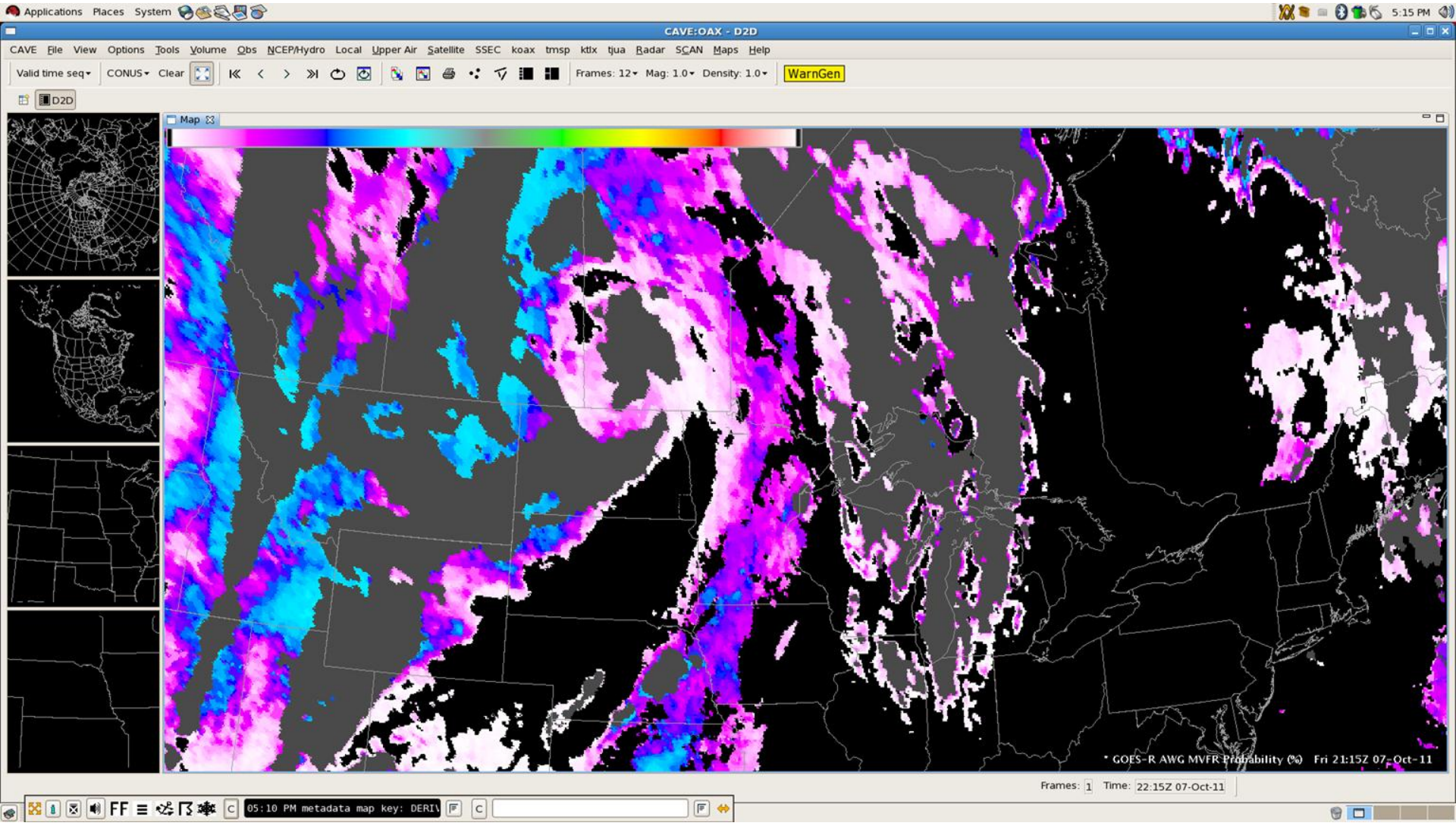
with GOES-R Simulated ABI Channels 13 through 1

The Challenge:

Assuring CIMSS products are available in AWIPS "II"

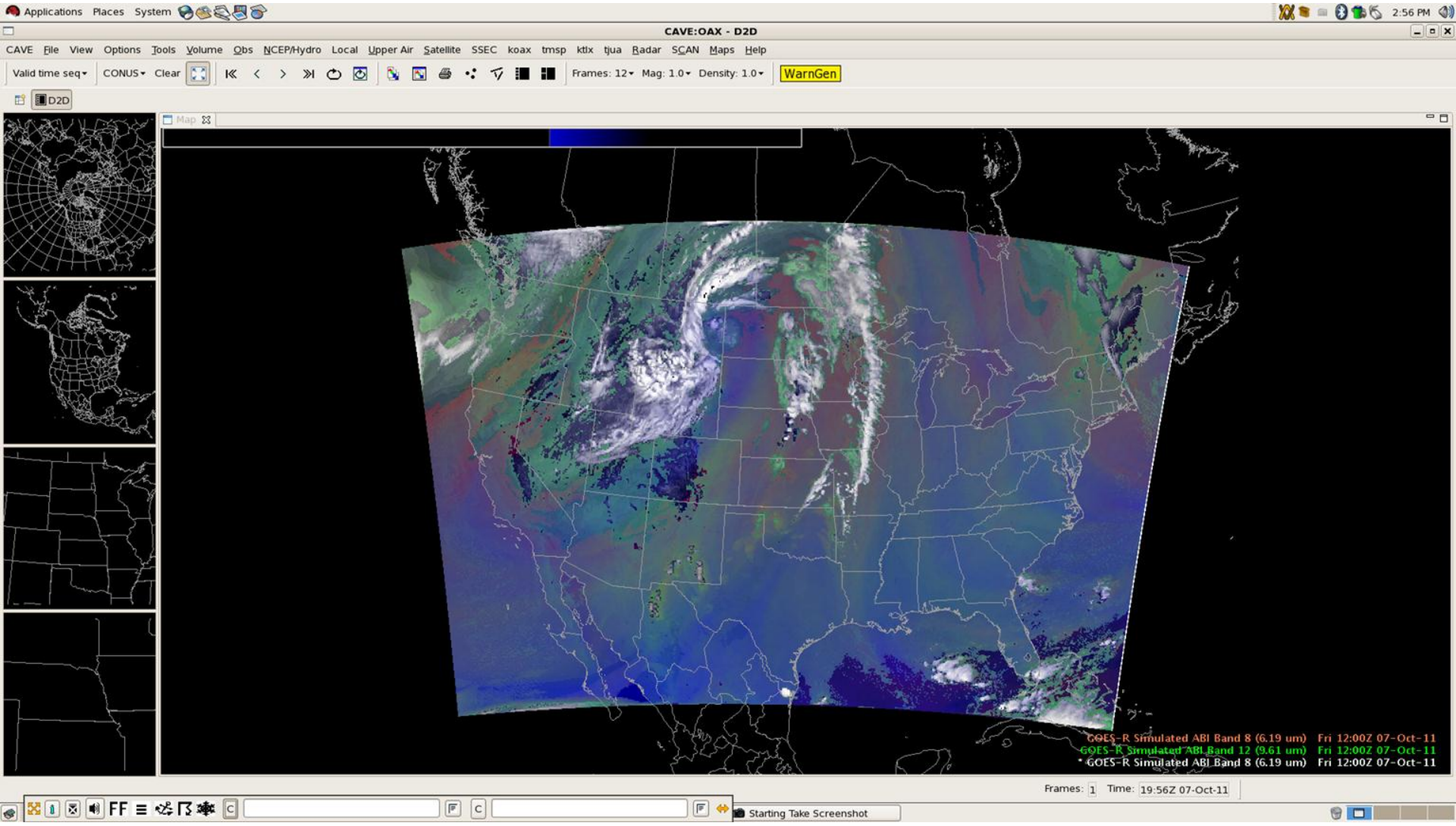


Example: AWG MVFR Probability (Day)



The ***probability of MVFR*** product reports the probability that the cloud ceiling is < 3000 feet, **regardless of surface visibility.**

Building an RGB: Composite



Composite clearly indicates trough over western United States, dry slot, and differential tropospheric moisture

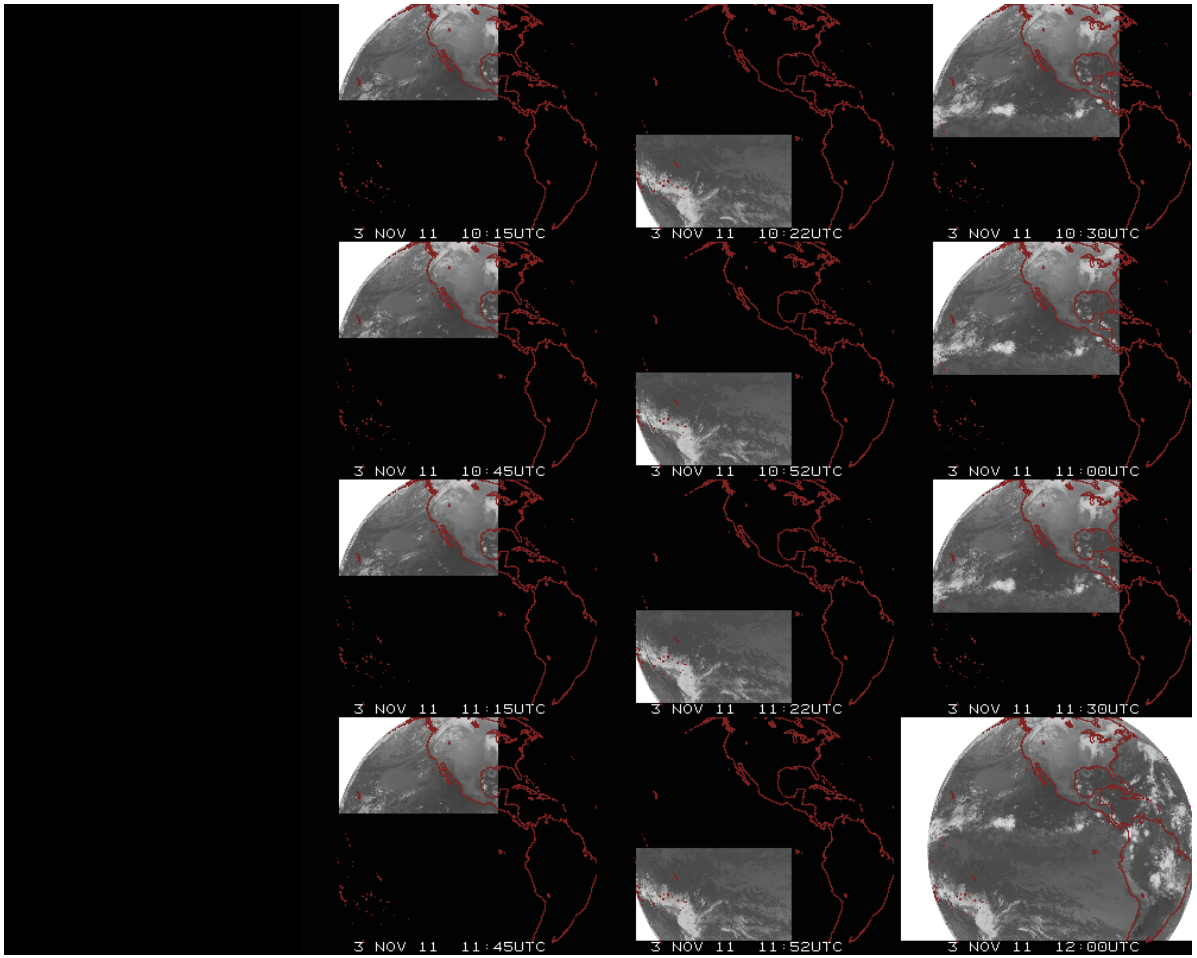
NWA/GUC

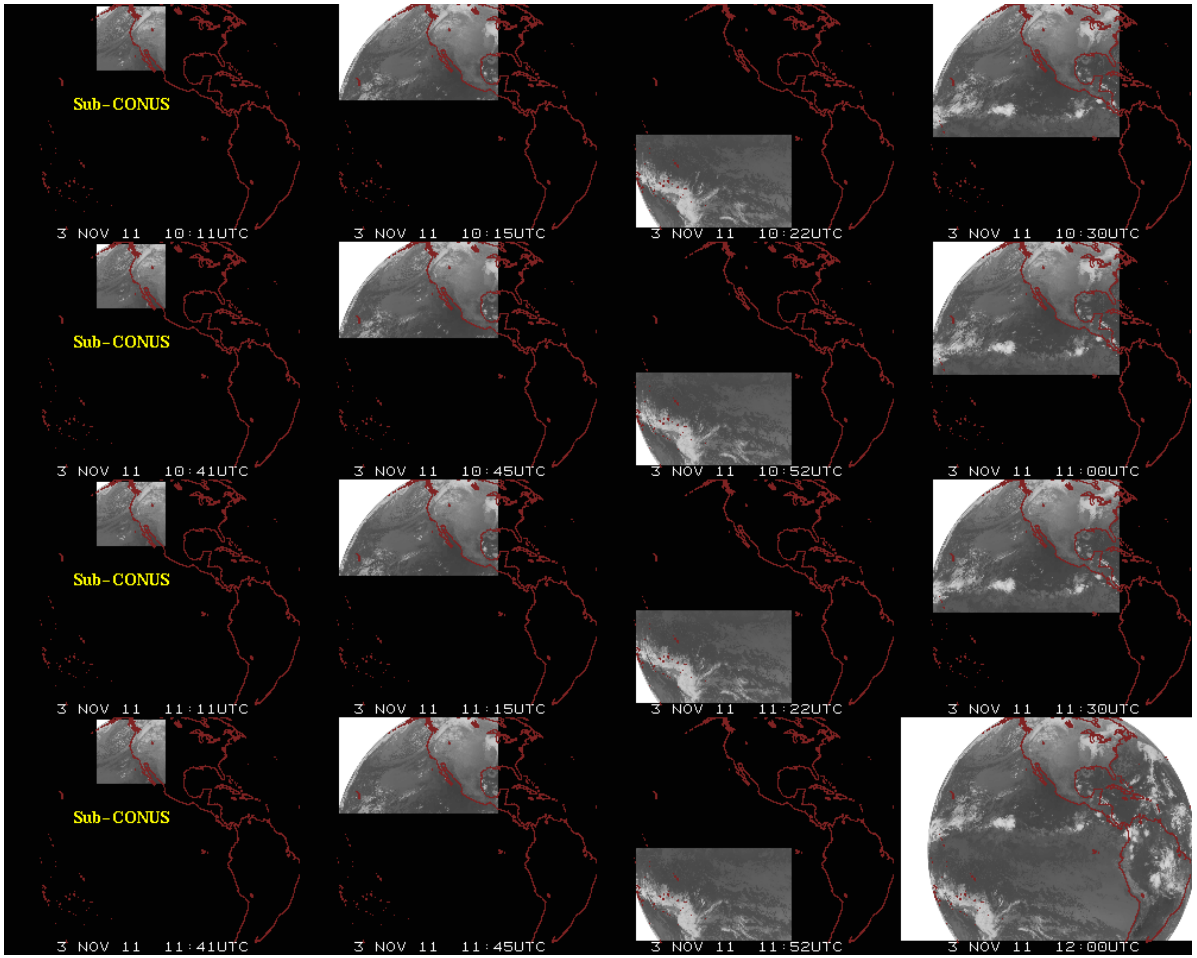
- http://www.goes-r.gov/users/past-GUC7.html
- J. Gerth and J. Li each gave an oral presentation on using satellite observations for weather forecasting during the plenary sessions targeted to the operational meteorology community.
- K. Bah and L. Cronce presented posters in a joint session with the 7th Geostationary Operational Environmental Satellite (GOES) Users' Conference.
- CIMSS also had a booth to showcase their role in the GOES-R Proving Ground and demonstrate the coming capabilities of the GOES-R atmospheric instruments.
- The 2012 NWA annual meeting will be held in Madison, Wisconsin, with substantial CIMSS participation on the program committee.

Guess who won an award?

GOES-15: New Sub-CONUS sectors

Recall, GOES-15 will go operational on December 6th.



GOES-15: New Sub-CONUS sectors

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