



Recommendations from the 4th GOES-R Users' Conference:

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Recurring Messages from Past Conferences:

– Users must be ready on day 1

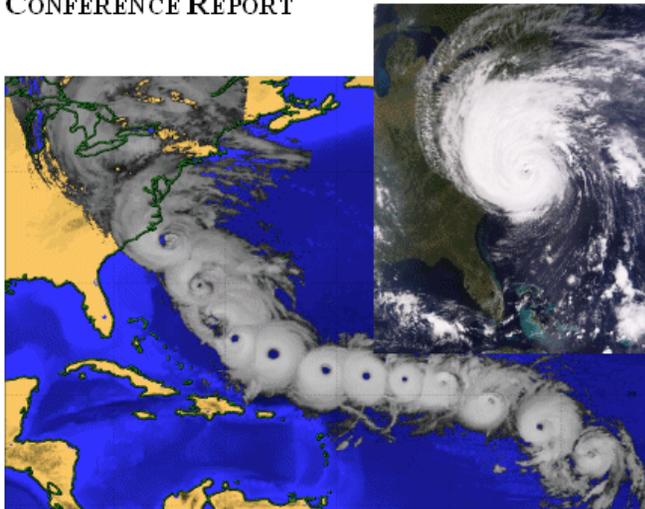
- Use proxy and simulated data sets to test and validate data processing and distribution systems;
- Provide test data sets well in advance of operations;
- Leverage NPP/ NPOESS synergy and experiences;
- Need to utilize GOES-R data in mesoscale analysis and forecast models
- Develop and validate new or improved products including decision-aids before launch;
- Multiple recommendations on data archiving



Recurring Messages from Past Conferences:

3RD GOES-R USERS CONFERENCE
May 10–13, 2004
Broomfield, Colorado

CONFERENCE REPORT



U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Environmental Satellite, Data, and Information Service

Users must be ready on day 1

- **Re-package products to support multiple levels of users;**
- **User education is critical**
- **User input is critical**
- **GOES-R System should be tested end-to-end before launch**
- **Use proving ground/ testbed approach**



Recommendations from GUC-4:

- **Use proxy and simulated data sets to test and validate data processing and distribution systems;**
 - MODIS
 - AIRS
 - IASI
 - SEVIRI
 - NAST-I
 - NPP/ VIIRS/ CrIS
 - Computer Simulated atmospheres

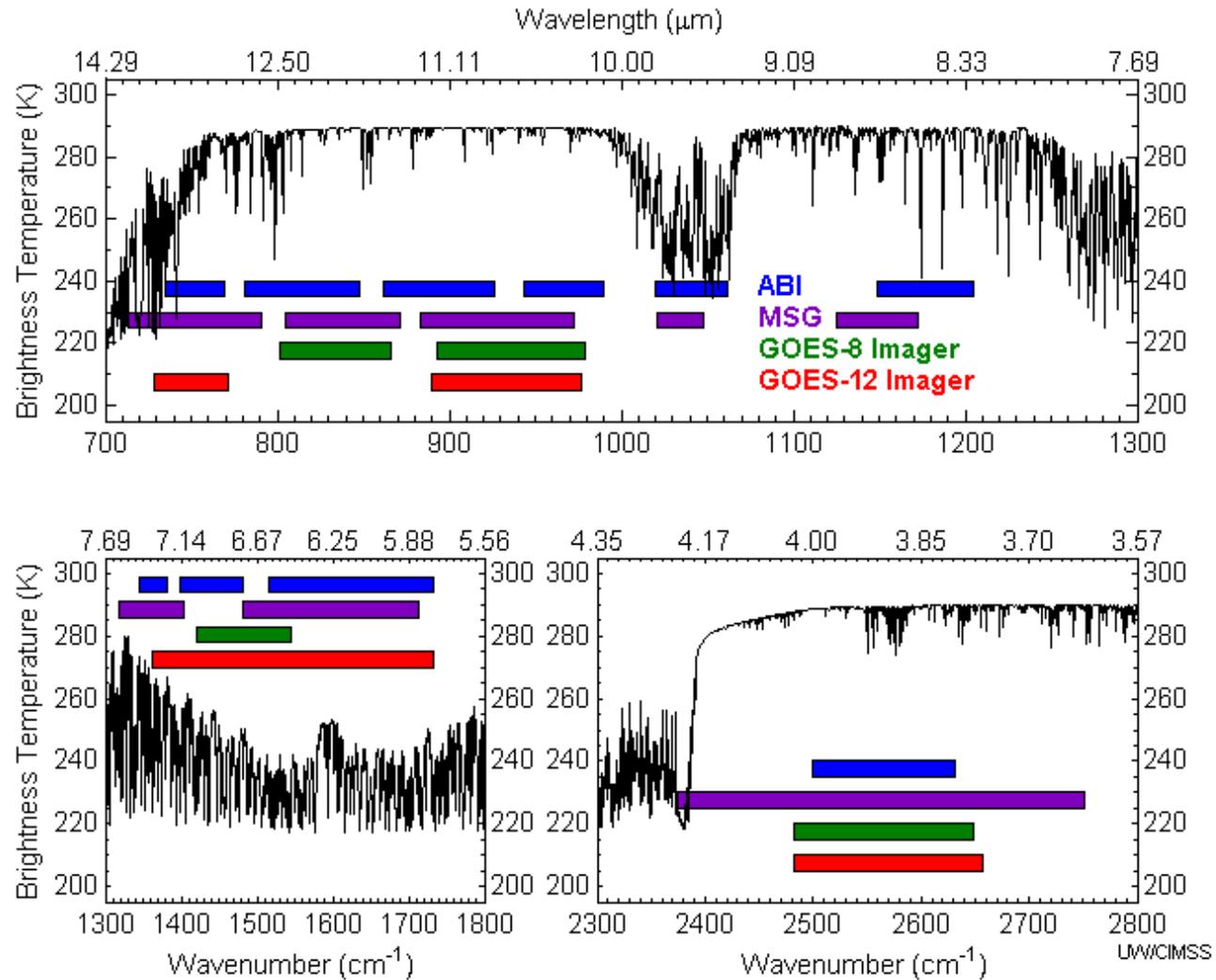


Recommendations from GUC-4:

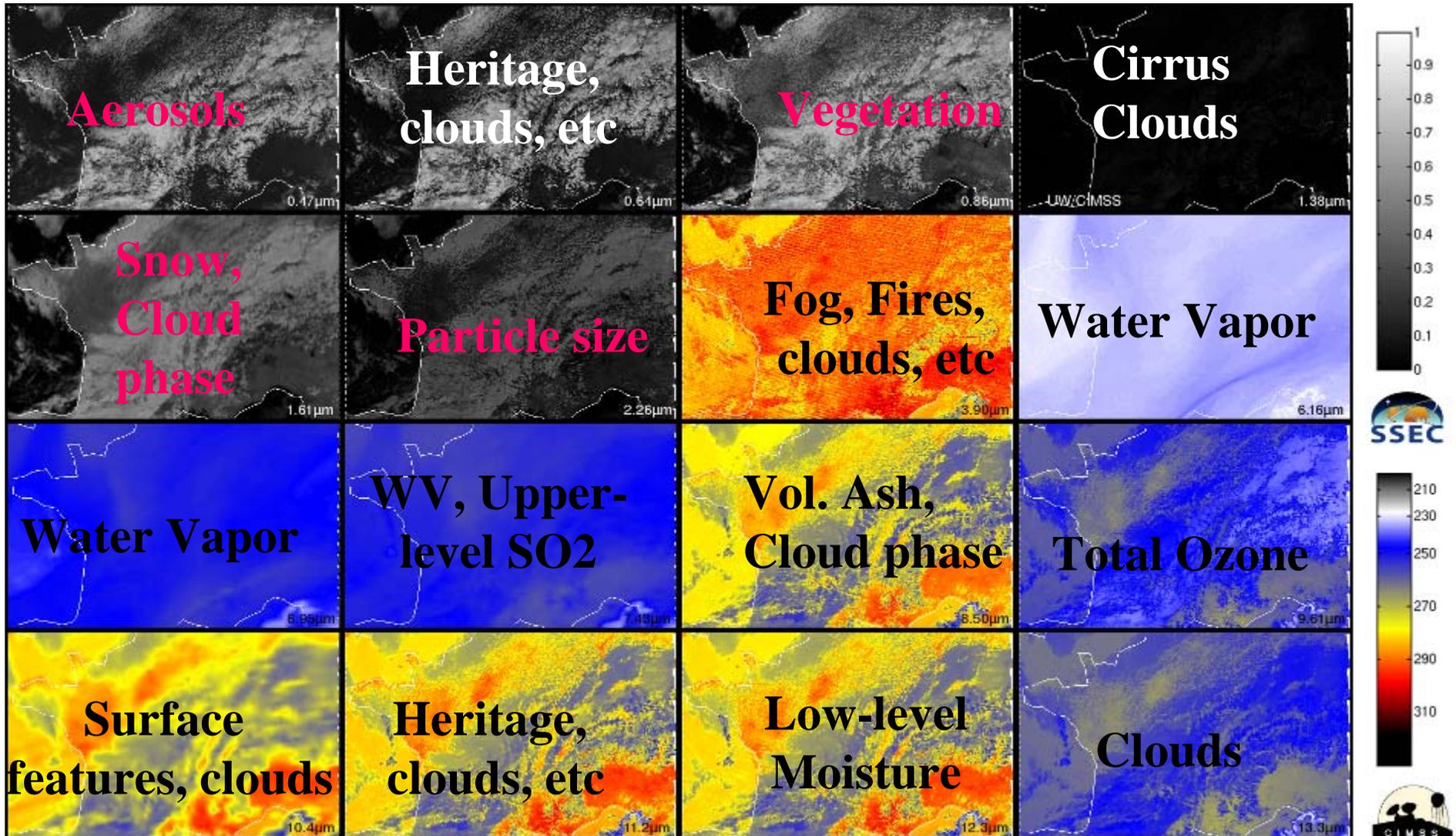
- **Progress on proxy and simulated GOES-R data sets**
 - **Algorithm Working Group (AWG) has a team dedicated to developing proxy GOES-R data**
 - **CIMSS and CIRA developing proxy GOES-R datasets from MODIS/ SEVIRI**
 - **CIMSS and SPoRT providing MODIS to WFOs**
 - **CIMSS and CIRA developing computer simulated atmospheres/ imagery with ABI data attributes**
 - **CIMSS demonstrating synergy between high spectral resolution AIRS and high temporal resolution ABI**



Spectral Coverage: GOES and MSG

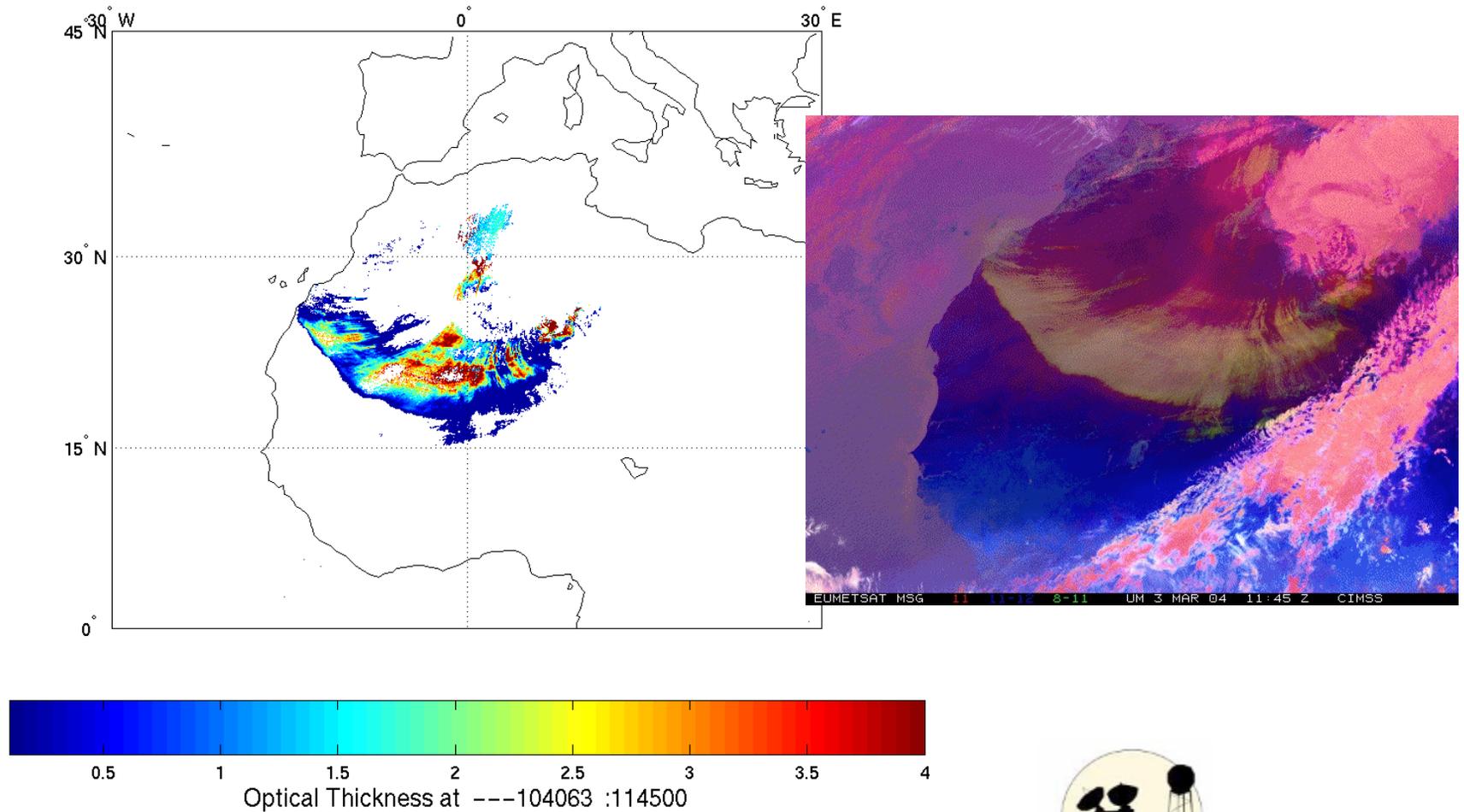


“ABI” Data from current satellites

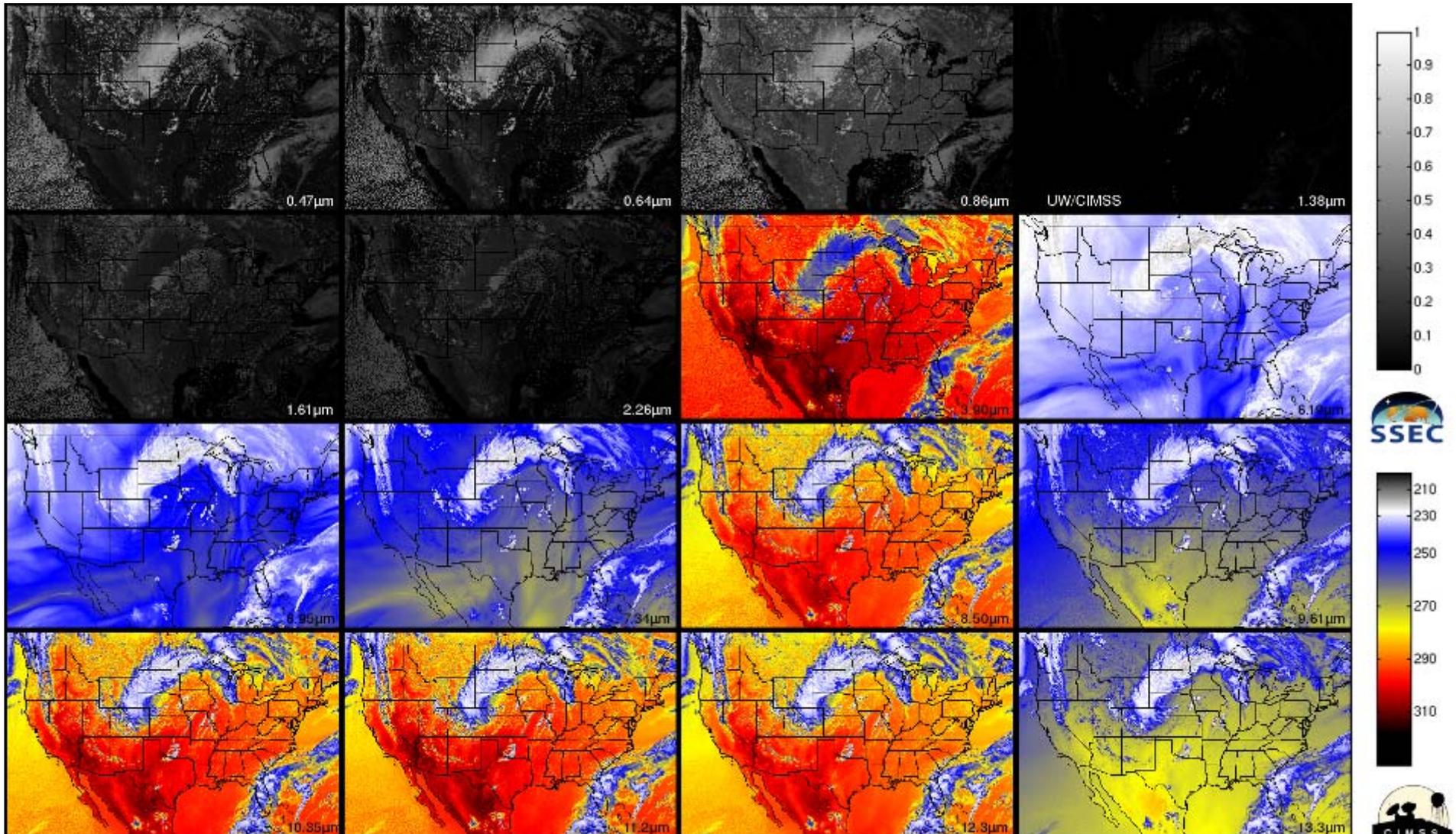


ABI Simulated from MODIS, MSG, and AIRS on 2004 April 11

Aerosol/Dust Optical Thickness Retrieval Results from SEVIRI@EUMETSAT



ABI 16-panel from NWP simulation
(from CIMSS AWG Proxy Data Team)



ABI band data for 2005 June 04 22:00 UTC

Recommendations from GUC-4:

- **Work needed to optimize use of high spatial and temporal resolution in NWP**
 - **Need to utilize GOES-R data in mesoscale analysis and forecast models**
 - **Need mesoscale models that can more accurately handle non-linearity**
 - **Linearizing equations to assimilate non-linear properties (e.g. clouds) hurts the retrievals**
 - **Physics are non-linear and represented as such in retrievals**
 - **Current variational analysis schemes cannot capture the mesoscale detail and non-linear processes**
 - **New creative (e.g. hybrid) approaches are needed to deal with mesoscale non-linearity**
 - **Better understanding of how to use data over land and in the lower troposphere (e.g. surface emissivity, skin temp)**



Recommendations from GUC-4:

– Need for Decision Aids

- **Volume of data and products will mandate use of decision aids to focus user attention**
- **NEXRAD provides good model: alerts for critical values of VIL, Gate to Gate Shear, TVS;**
- **Satellite candidates: Enhanced V; Fog formation; Rapid changes in stability; Mismatch between model forecasts and satellite observation (cloud cover, water vapor, winds, precipitation, lightning, rate of fog formation or dissipation)**



Recommendations from GUC-4:

– Recommendations on Data Archiving

- **Archive all level zero data**
 - With ABI re-gridding cannot go back to level zero from 1b for re-processing
- **Need a process to determine products to be archived vs produced on the fly**
- **After product re-processing...not necessary to archive all previous versions**
- **As much metadata as possible should be archived and accessible**
 - Metadata should be easily and efficiently searchable
- **CLASS should provide the capability to subset data to generate climatology, not actually do the climatology**



Education and Training :

- **Primary Goal: Ensure that all data are fully utilized immediately following start of operations**
 - Major education and training venues:
 - COMET, VISIT, schools, universities, workshops, conferences, online;
 - Key to success: Trainers fully integrated with developers, evaluators, users, and program managers
 - Need for training tailored for unique user needs such as NWS forecasters
 - Prepare NOAA users for new products within new operations
 - Environmental event simulators: key tool
 - Interactivity increases knowledge retention



Proving Ground Concept for GOES-R

- Fund 1 extra person at 3 nearby NWS forecast offices
- FY 08 – 16
- Candidate Locations:
 - Ft. Collins (CIRA)/BOU and CYS
 - Madison (CIMSS)/LaCrosse, Sullivan WFOs
 - Leverage existing Testbeds – Norman, Boulder, Huntsville (SPoRT)



Recommendations from GUC-4:

– Proving Ground/ Testbed Concept

- **Proving Ground is ultimate tool to ensure user readiness**
 - **Use proxy and simulated data sets to test and validate processing and distribution systems**
 - **Validate new or improved products**
 - **Validate/ optimize decision aids**
 - **Optimize product display techniques**
 - **Environmental event simulator for user education**
- **Venue for direct user input**
- **Proven successful in NEXRAD program**



Recommendations from GUC-4

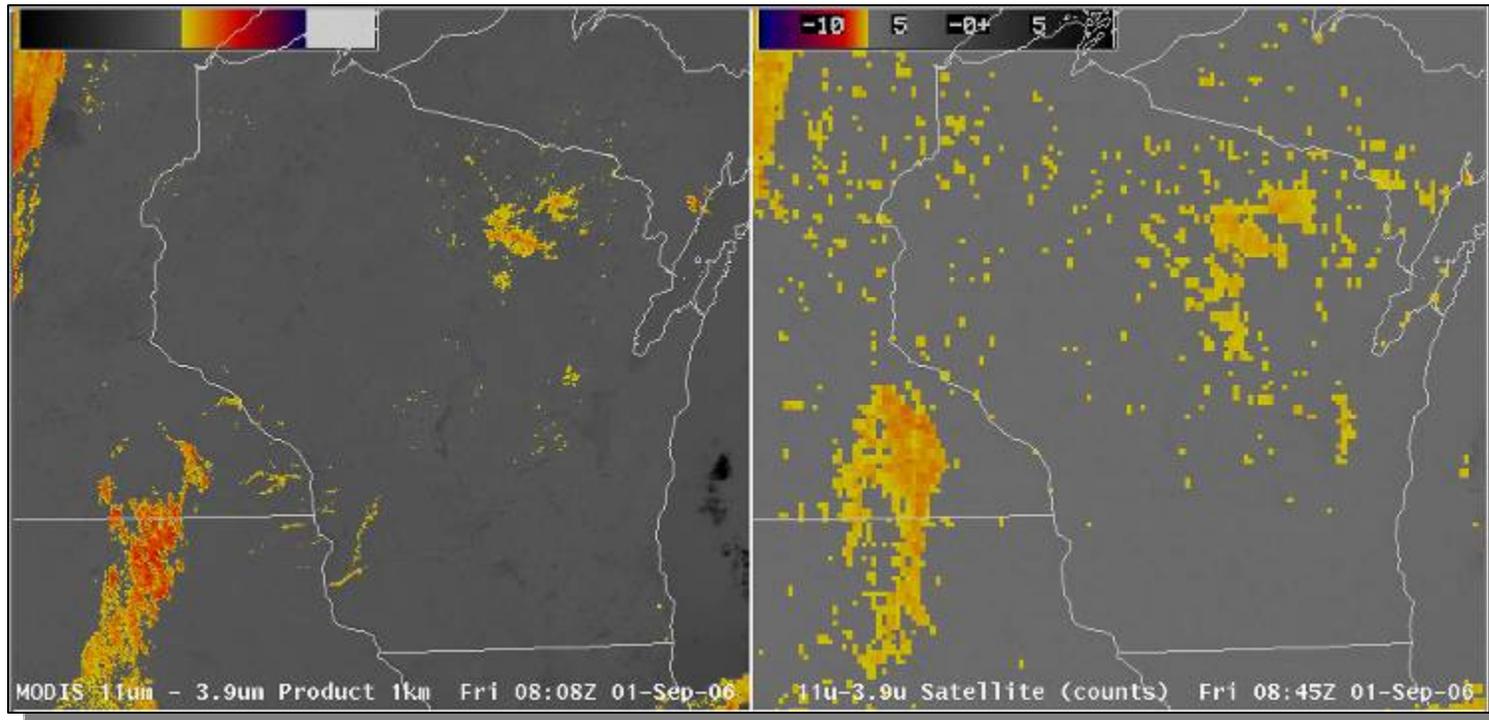
- **What suggestions or feedback do you have on the proving ground concept to help ensure it will contribute to a successful beginning of operations for GOES-R?**
 - Cross representation between AWG and proving ground
 - Need good communication for work at each of 3 centers
 - Mission objectives of proving ground need to be communicated
 - Working level users involved early
 - Get forecasters involved at conceptual level
 - Need to gain broad support within disciplines of NOAA
 - Use lessons learned from Aqua/Terra, GOES I-M
 - Include an RFC/National Center at one of the proving grounds

Path Forward: Plans for 2008

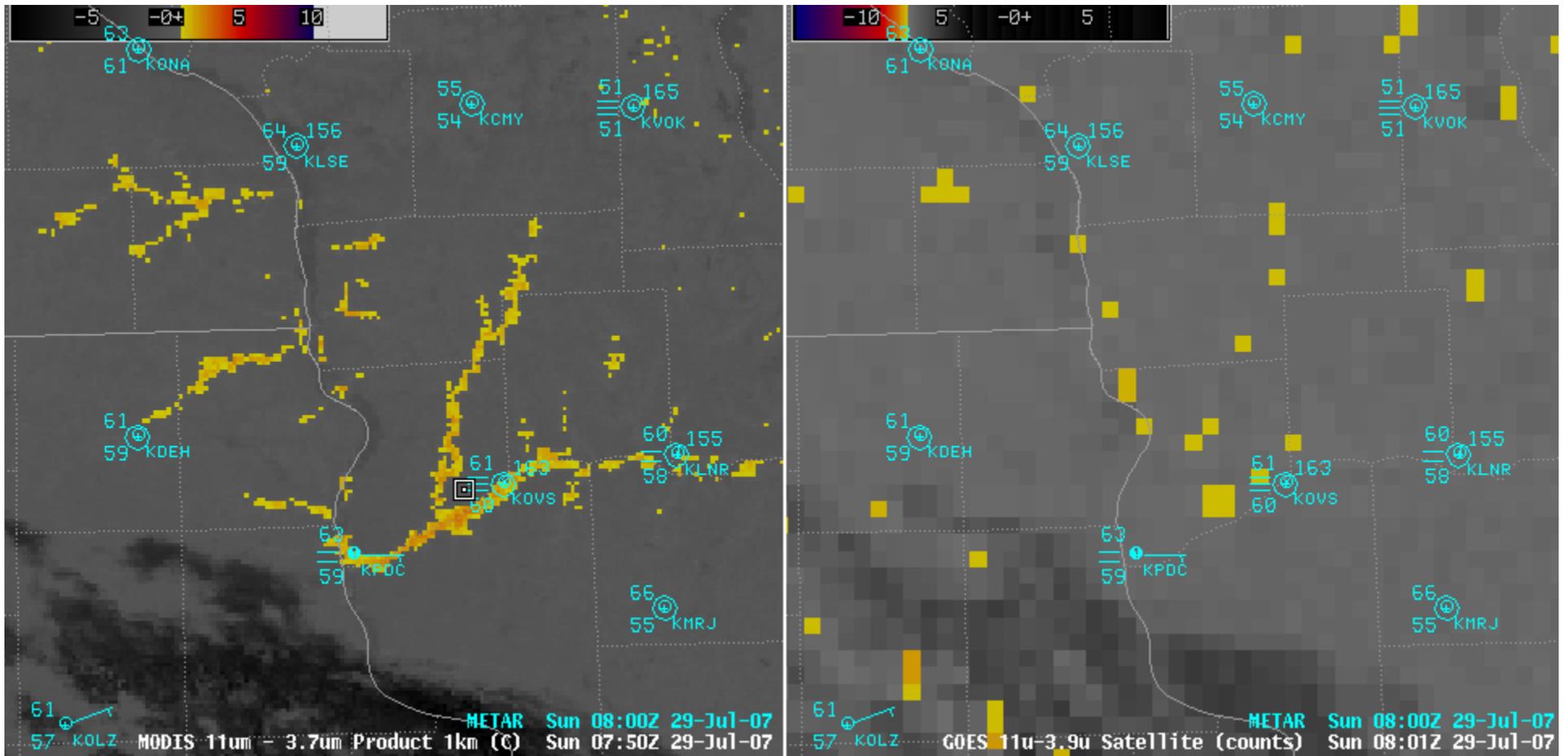
- Planning workshop: May 2008, Boulder
 - GOES-R Program Office
 - GOES-R Ground System Project
 - AWG
 - CIMSS
 - CIRA
 - SPoRT
 - NWS
- Draft Plans 2008-2018 (end of FY 2008)

Area Forecast Discussion

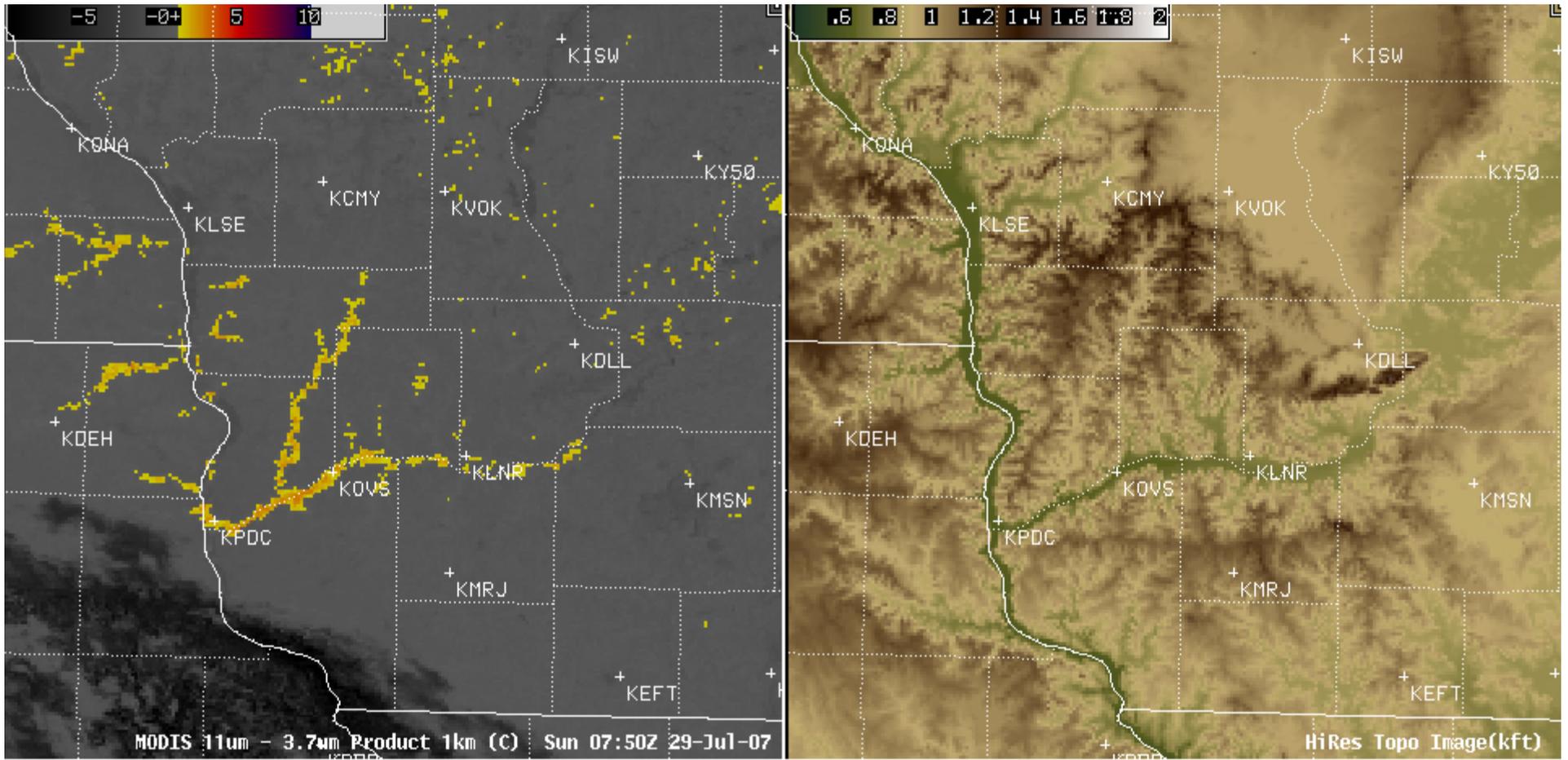
MAIN SHORT TERM FORECAST PROBLEM IS EAST FLOW AND MARINE LAYER INFLUENCE OVER EASTERN WISCONSIN...AND DENSE FOG POTENTIAL IN THE WEST. THINK MOST OF THE DENSE FOG WOULD BE IN THE RIVER VALLEYS...WITH A TENDENCY FOR PATCHY FOG AND SOME STRATUS AGAIN IN THE EAST WITH MORE OF A GRADIENT. MODIS 1 KM IMAGERY LAST NIGHT SHOWED THE DENSE FOG IN LONE ROCK AND BOSCOBEL WAS CONFINED TO THE IMMEDIATE WISCONSIN RIVER VALLEY...IMPORTANT INFORMATION. THE LOCAL RIVER VALLEY DENSE FOG IS NOT SEEN IN THE NORMAL 2 KM [4 km] GOES.
(HENTZ/MKX)



AWIPS



AWIPS



GOES Users' Conference Impacts

- Before GOES-R User Conferences, notional baseline:
 - 8 channel imager
 - 15 minute full disk imager coverage
 - No lightning mapper
 - No onboard vis calibration

- May 2004 notional baseline:
 - 16 channels imager
 - Imager capable of producing 5 min. full disk
 - Lightning mapper
 - Vis calibration



GOES Users' Conference Impacts

- Ensure User Readiness:
 - Proving Ground Concept: work has begun and will continue (15 NWS sites receiving MODIS products from CIMSS)
 - Synergy with NPP and NPOESS: GOES-R partnering with NPOESS in COMET curriculum development workshops
 - Need for user education: Planning for GOES-R COMET modules underway
 - Keep the users informed: Planning for GOES-R information in COMET's Environmental Satellite Resource Center
 - Use Proxy and simulated data sets to prepare for GOES-R: AWG, CIRA and CIMSS have developed and continue to develop data sets; COMET will use SEVIRI products for proxy of ABI in upcoming modules.



Conclusions

- Recommendations from past conferences have impacted GOES-R baseline instruments and plans for user readiness
- NOAA and the GOES-R Program Office committed to keeping lines of communication open with the user communities
- One stop shopping GOES-R web site coming soon
 - www.GOES-R.gov (pending final approval)
 - Until new site ready...see:
www.osd.noaa.gov/announcement/index.htm
- Look for the Final report from GUC-4 on the web site
- GOES Users' Conferences will continue
- Next Conference tentatively planned for September 2009

