



GOES-R Proving Ground CIRA / RAMMB Progress Report

***PG All-Hands Meeting
10 September 2012***



Outline

- **Selected User Interactions**
- **Selected Product Examples**
- **Systems Report**
- **Conferences and Meetings**

Selected User Interactions

- **WFO Boulder: Feedback on Synthetic and GeoColor Imagery**
 - “SYNTHETIC SATELLITE IMAGERY SHOWS SCATTERED LOW CLOUDS ALONG THE FOOTHILLS LATE TONIGHT INTO TOMORROW MORNING.” (AFD , 15 Aug 2012)
 - “THE LATEST WRF SIMULATED IMAGERY SHOWING SOME STORMS DEVELOPING ON FAR NE PLAINS AND THRU LINCOLN COUNTY.” (AFD, 22 Aug 2012)
 - “The geocolor product was very helpful in delineating areas of low clouds this morning. ... made the patchy low clouds in the mountains show up better and also made it clear that there were low clouds underlying the blotchy high clouds moving across the plains.” (E-LOG, 12 May 2012)
- **WFO Des Moines: (participating in the PG fog/low cloud experiment)**
 - “HRRR MODEL AND GOES-R WRF FORECAST BOTH HANDLING THE DEVELOPMENT OF THIS STRATUS WELL AND HAVE TAILORED SKY GRIDS TOWARD THE MODEL/SATELLITE PRODUCT TRENDS.” (AFD, 10 Aug 2012)



Selected User Interactions

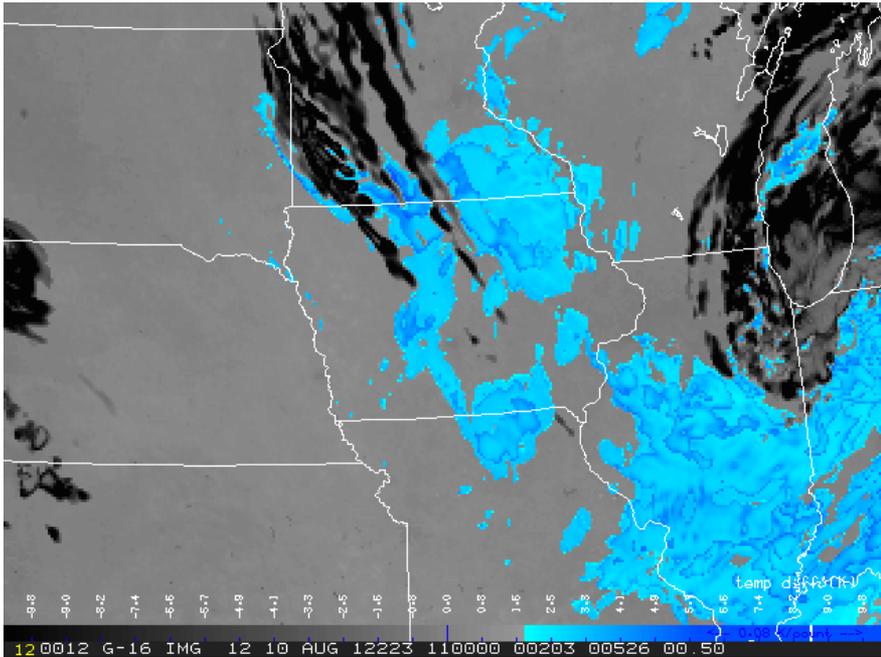
- **WFO Monterey: (synthetic imagery and low cloud/fog enhancement imagery)**
 - Warren Blier, SOO at WFO MRY: (...) the forecasters are paying increasing attention to this product in developing their low cloud coverage forecasts...just wish that we had a GFE smartinit for it so we could use the output directly in our Sky Cover forecast grids, and also that the resolution was high enough to resolve more of the structure of the key coastal valleys (e.g., the Salinas Valley). But we're really happy to have it available -- thanks
 - Dan Lindsey reply: we're working on the GFE issue and that they definitely need to be using our color table.
- **WFO Cheyenne:**
 - Will participate in upcoming telecons with CIRA and SPoRT. Date still being determined.



Selected Product Examples

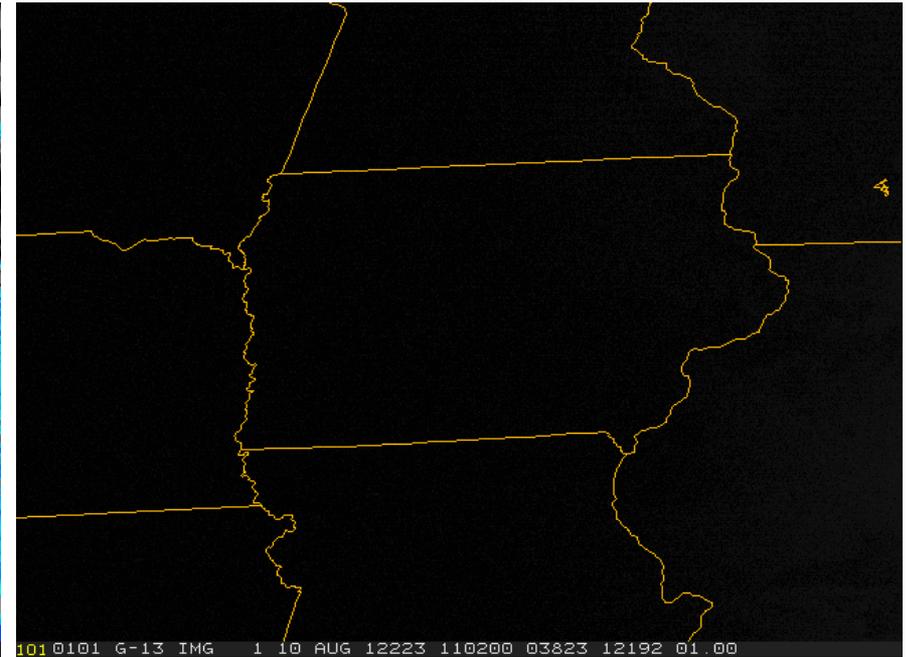
- **ABI Synthetic Imagery (from WRF):**
 - 10.35-3.9 μm Low Cloud Enhancement Imagery
- **Fire Detection Demonstrations in AWIPS**
 - Coordination with CIMSS (Feltz) on demonstration of fire detection algorithms at Boulder WFO
 - WF-ABBA (CIMSS) and MODIS (CIIRA/NRL)
- **VIIRS-Proxy ABI Imagery
(progression from MODIS)**

Simulated WRF 10.35-3.9 μm 11- to 17- hour forecast



- WFO Des Moines (DMX) is participating in Chad Gravelle's Fog/Low Cloud Demonstration
- DMX recently began ingesting CIRA's WRF 10.35-3.9 μm synthetic imagery product (low clouds in blue)

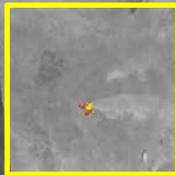
Observed GOES-13 Visible 1100 to 1700 UTC



DMX Morning Area Forecast Discussion – 10 Aug. 2012

...HRRR MODEL AND GOES-R WRF FORECAST BOTH HANDLING THE DEVELOPMENT OF THIS STRATUS WELL AND HAVE TAILORED SKY GRIDS TOWARD THE MODEL/SATELLITE PRODUCT TRENDS...

Difficult to pick out
hot-spot features at
WestConus scale



Red pixels = hot spots
Yellow pixels = very hot spots



Spatial resolution reveals details of
the fire line (correlates with areas
of most intense smoke production)

MODIS Fire Detection : Colorado High Park Fire



Case Study:

19 June was a tough day for firefighters as strong winds and hot and dry conditions flared up the High Park Wildfire west of Fort Collins.

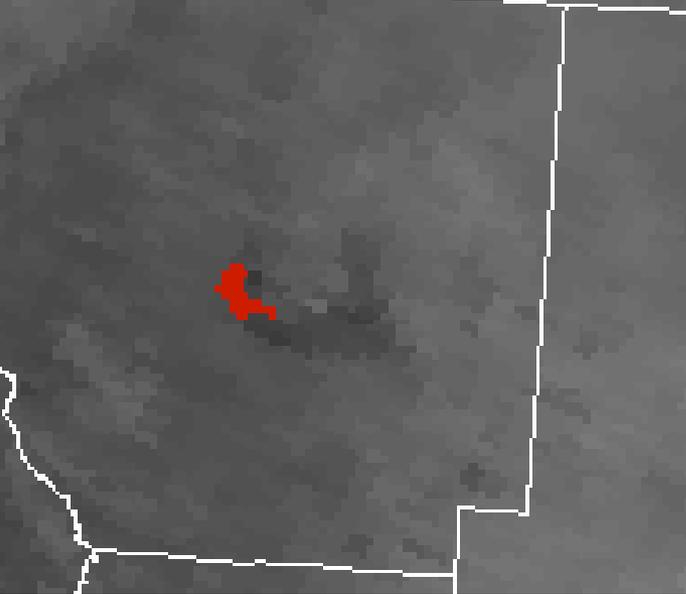
MODIS Fire Detection product shows this increase during the afternoon of 19 June into the evening.

A frontal passage shifted winds to an easterly upslope with cooler temperatures and higher humidity.

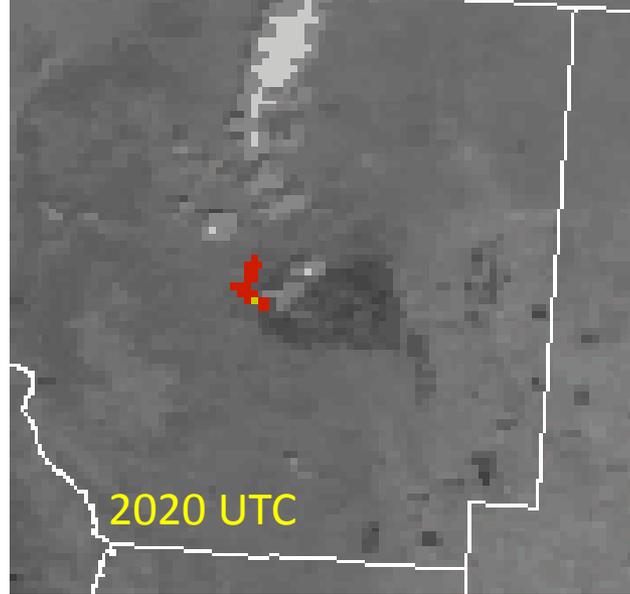
The change in the fire intensity is evident in the last image of the sequence.



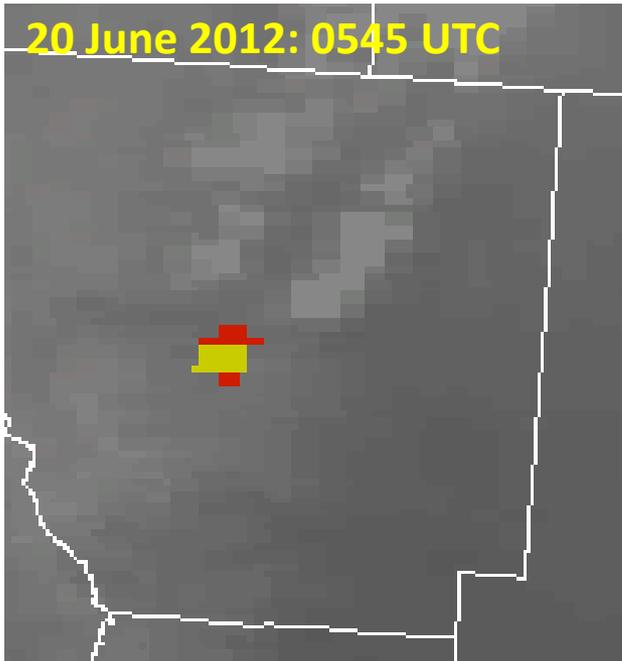
19 June 2012: 1837 UTC



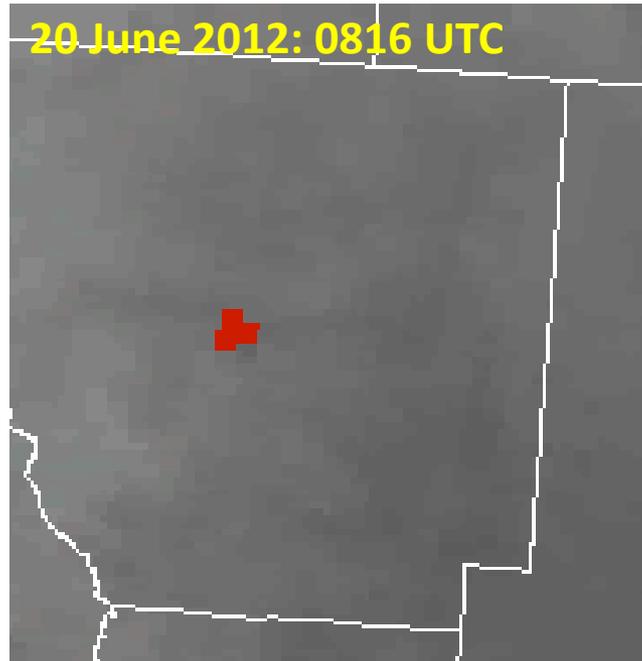
19 June 2012: 2020 UTC

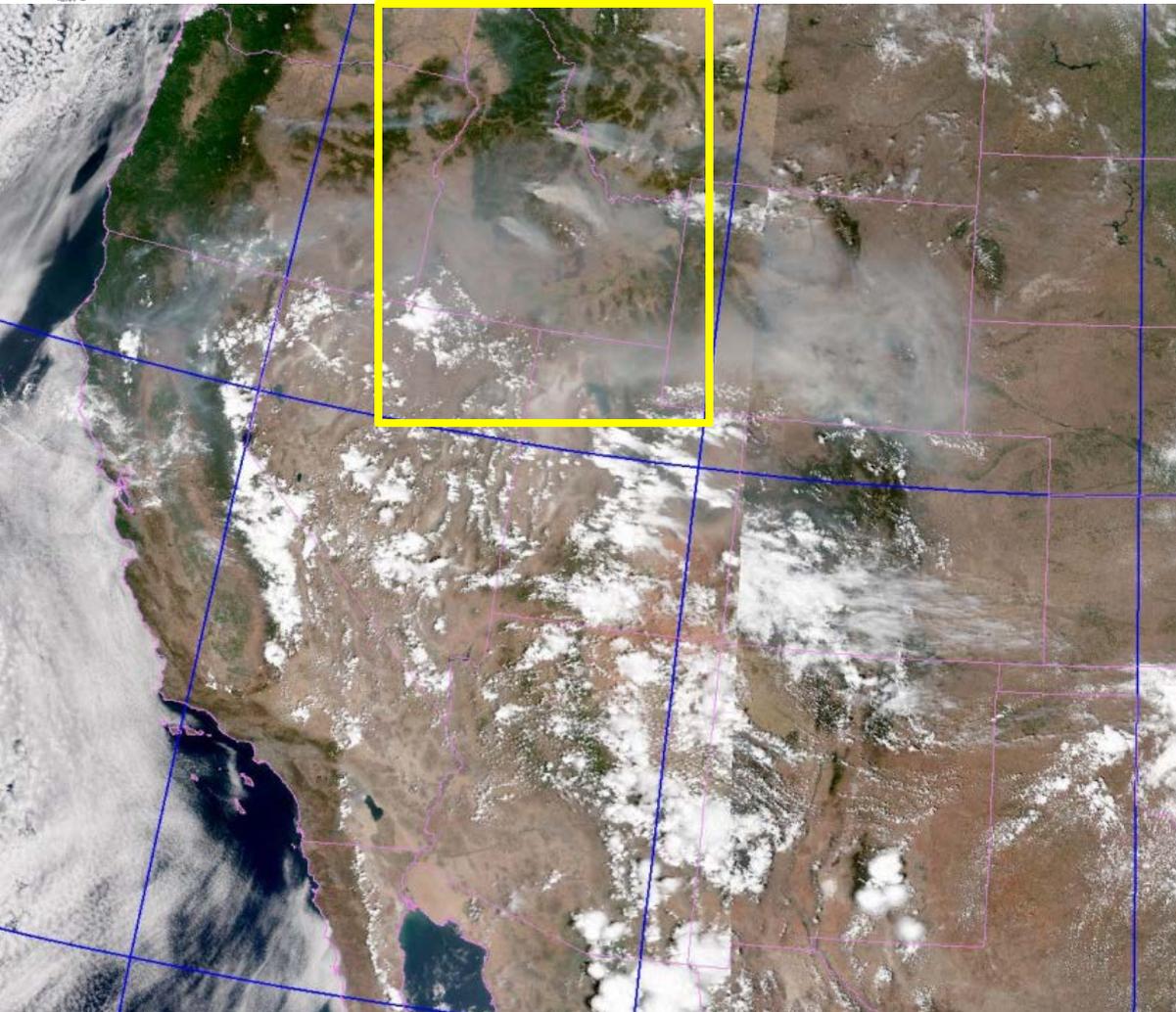


20 June 2012: 0545 UTC



20 June 2012: 0816 UTC



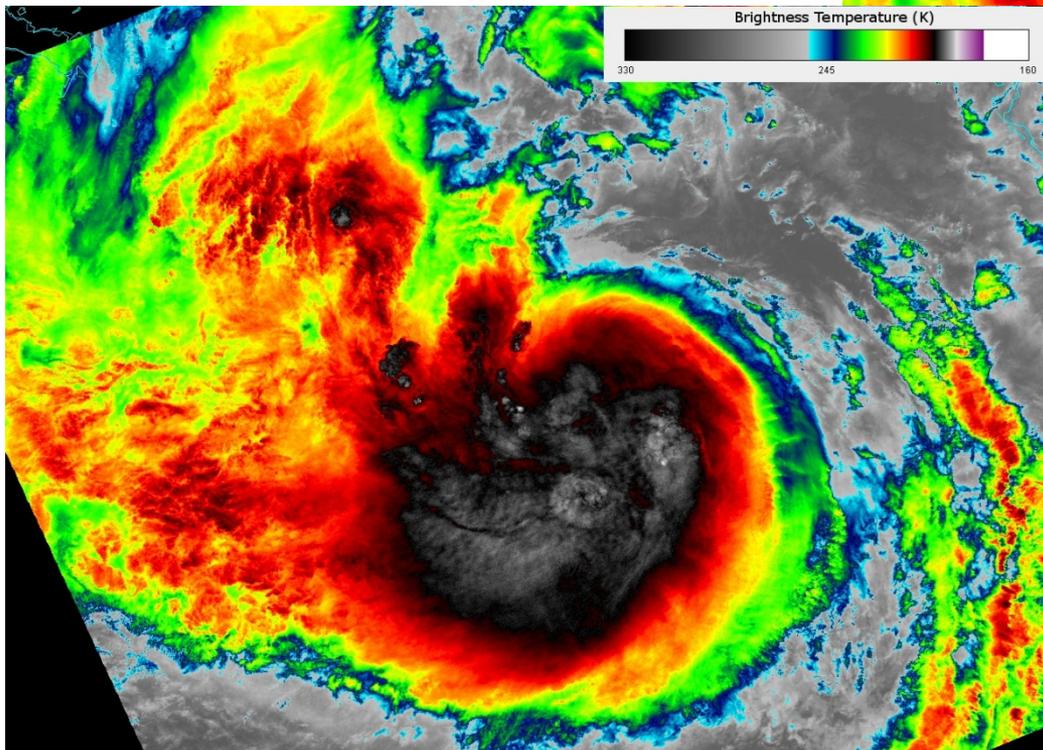
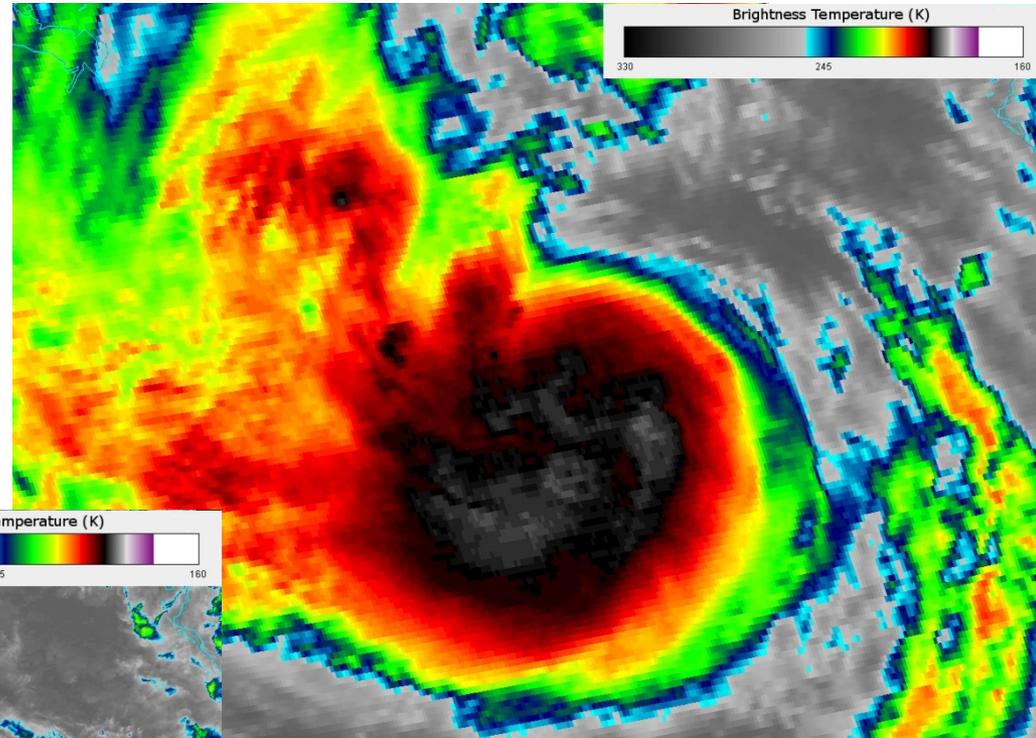


ANOTHER ISSUE IS THE SMOKE. THE FIRES IN IDAHO SENT OUT ANOTHER GOOD BATCH OF SMOKE TUESDAY AFTERNOON. (...) PERHAPS OF MORE CONCERN IS THAT THERE WAS SIGNIFICANT POOLING OF SMOKE OVER LOWER LEVELS IN EASTERN WYOMING YESTERDAY WITH DOUGLAS AND CASPER REPORTING LIMITED VISIBILITIES AND 5000 FOOT CEILINGS MOST OF THE NIGHT. (AFD, BOU WFO, 15 Aug 2012)

Tropical Storm Isaac

27 August 2012

Using CIMSS-developed color table for IR enhancement provides remarkable detail in the cloud-top structure.

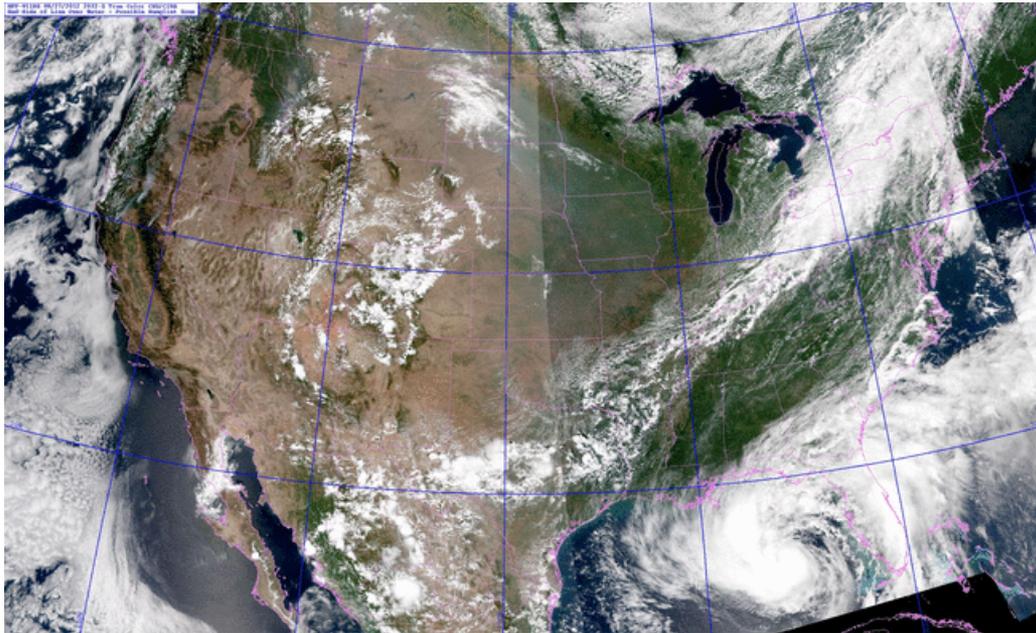


GOES Imager
channel 4 (10.7 μm)
taken at 18:45 UTC

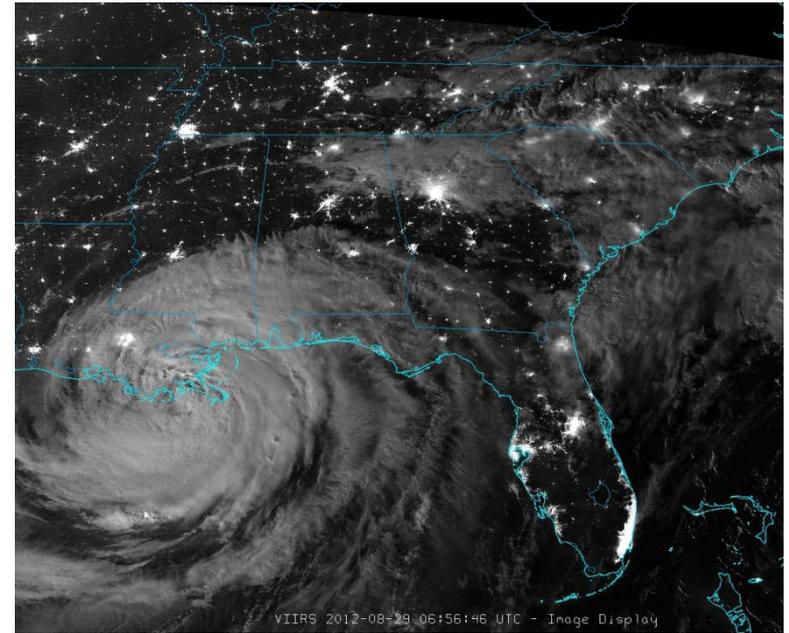
VIIRS Imager
channel I-05 (11.45 μm)
taken at 18:50 UTC

More VIIRS Coverage of Isaac

VIIRS Natural Color Imagery Documents
Isaac's "Round-About" Track



VIIRS Day/Night Band Documents
Nocturnal Landfall via Moonlight





Systems Report - AWIPS II Development

- Currently running 12.8.1 standalone. Alertviz does not work, but does not seem to impact EDEX or CAVE
 - Will begin exploring 32 bit color techniques demonstrated at the National Centers AWIPS2 testbed in College Park.
 - New Java programmer has been hired to assist w/ RGB development efforts
 - Will discuss details of collaboration with SPoRT during their October visit to CIRA

- All CIRA AWIPS I products + color tables are available in AWIPS II D2D using Raytheon McIDAS satellite plugin*
 - Includes RGB Airmass & GeoColor
 - A1 -> A2 product conversion can be as simple as a Mercator remap of existing McIDAS products or a multi-step conversion of netCDF3 -> McIDAS Mercator

- Real-time data transmission of AWIPS II SIMWRF via LDM is ongoing. Working with OAX to test bundle installation to simplify SIMWRF product ingest configuration at OAX
 - Once the details of bundle installation are worked out, can start sending products to other 5 AWIPS2 sites

* Many thanks to Darrel Kingfield of SPC for his assistance

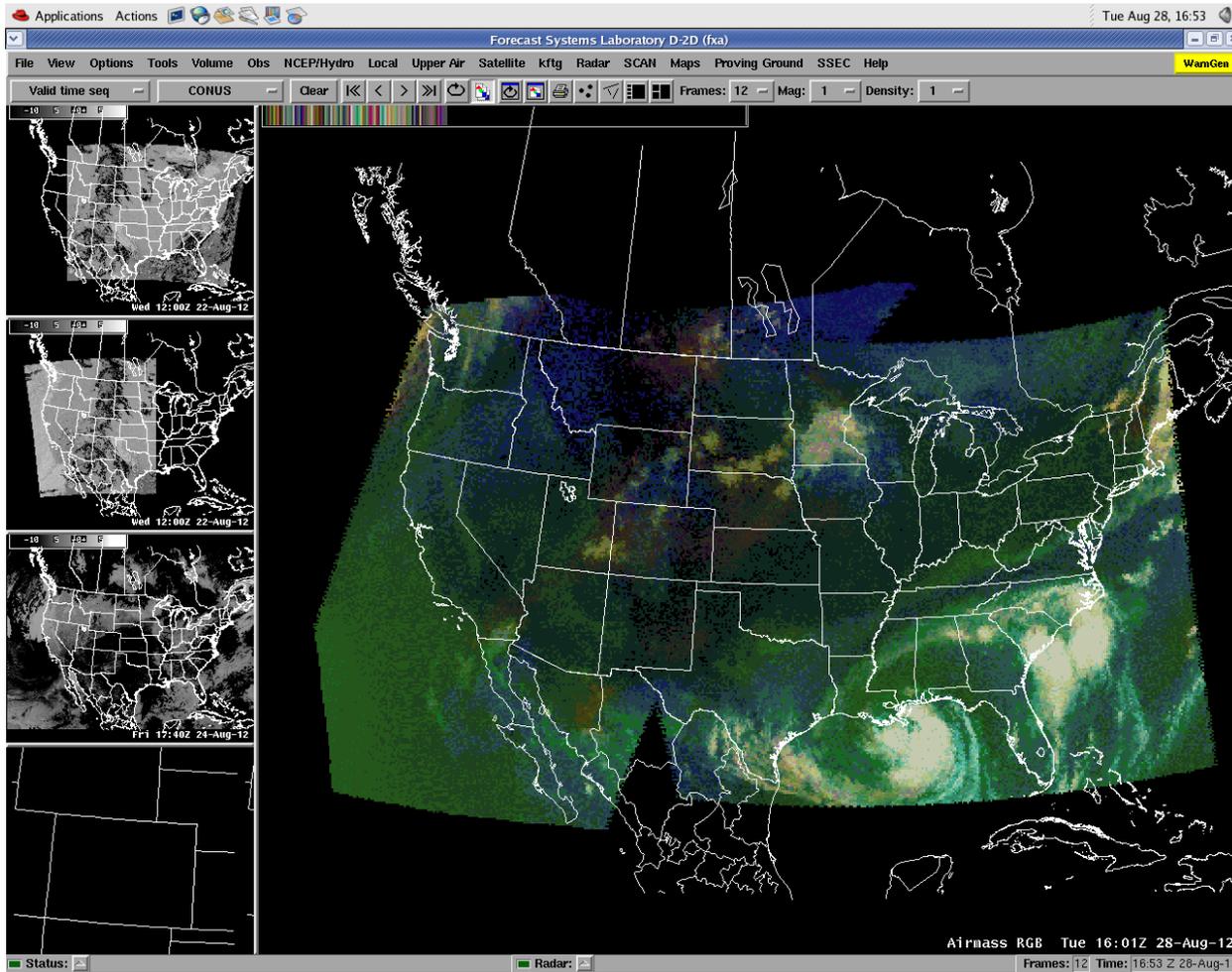
Systems Report - AWIPS II Development

- New NOAAPORT ingestor is operational
 - Working with NOAAPORT vendor to be sure we can receive the data channel that will be used to transmit NDE NPP data. Also sitting in on NDE-NPP telecons.

- Configuration of additional AWIP2 development workstations is going slowly
 - Have developed a phased upgrade & testing approach so as to not clobber existing functionality. Requires more workstations, but worth it in the long run.
 - Will keep more current with installation of latest builds as upgrade problems seem fewer from one build to the next; compounded with multi-build upgrade leaps.

Systems Report - AWIPS I Development

- Configuration of new AWIPS1 & WES workstations is underway
- Still adding new AWIPS 1 sites, particularly for SIMWRF product distribution



- MODIS Fire and GOES Sounder RGB Air Mass products are currently displayed in AWIPS at CIRA.
- Plans to distribute these products in LDM are underway.
- The installation instruction for field sites are being developed.
- ORI - Hawaii is being set up in AWIPS



Conferences / Meetings

Recent:

- **Note: Ed Szoke joined the CIRA Training Team will support VISIT and SHyMet activities in addition to being CIRA's WFO-Proving Ground liaison**
- **August 14: Ed Szoke visited COMET**
- **August 29: Visit to Boulder WFO by Steve Goodman and a GOES-R Education and Media team**

Upcoming:

- **Sep 10-14: Mark DeMaria and Andrea Schumacher at NHC**
- **Sep 10-12: Louie Grasso at SPC, NSSL**
- **Sep 17-19: Renate Brummer at EUMETSAT RGB Workshop in Seeheim, Germany**
- **October 8-11: NWA Annual Meeting in Madison (Ed Szoke, Dan Lindsey, Dan Bikos)**
- **Early October: Steve Miller at University of Alaska / Fairbanks**
- **End of October: SPoRT visit to CIRA (Visiting Scientist Program)**

Thanks!

Questions..?