



The NASA Short-term Prediction Research and Transition (SPoRT) Center

GOES-R Proving Ground Update

1 July 2013

Contributions from:

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General Outline - SPoRT Status Report:

Total Lightning

- Pseudo GLM and Tracking Tool at HWT
- Operations Proving Ground
- AWC Summer Experiment
- Other Lightning Activities

RGB Imagery

- Tropical Proving Ground Support
- Other Activities

AWG Support

- QPE (NESDIS) & Layer PW (CIRA) Transition/Evaluation
- GOES-R CI Support

AWIPS II

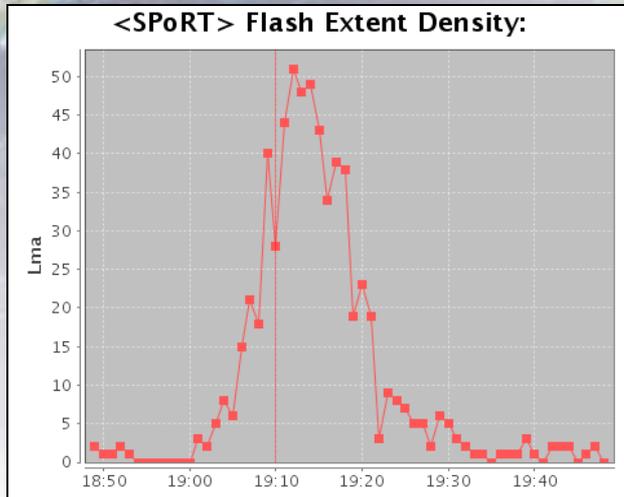
- EPDT, Plugins, Alaska

JPSS

- VIIRS Night-time Imagery Assessment
- DNB imagery for smoke plumes

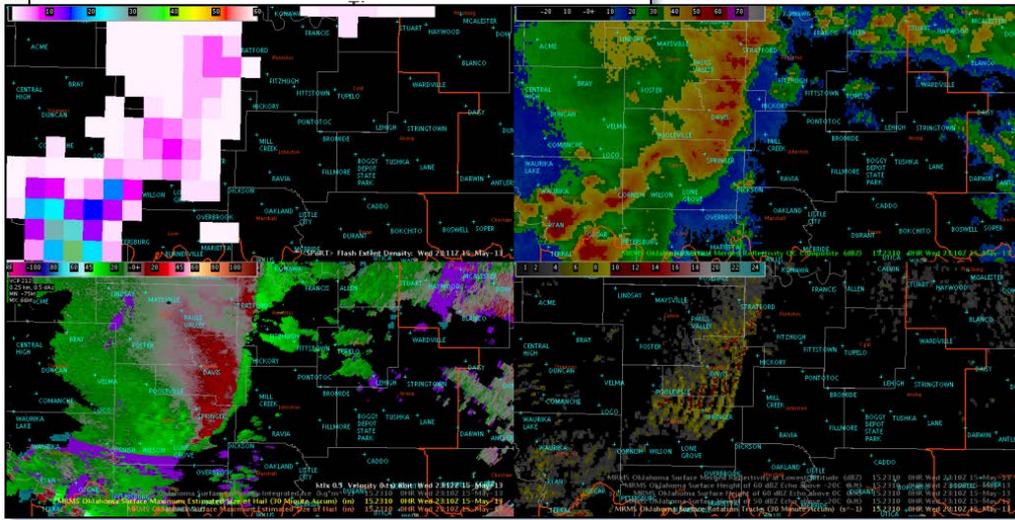


Pseudo GLM and Tracking Tool at HWT



Example lightning jump as shown by the tracking tool

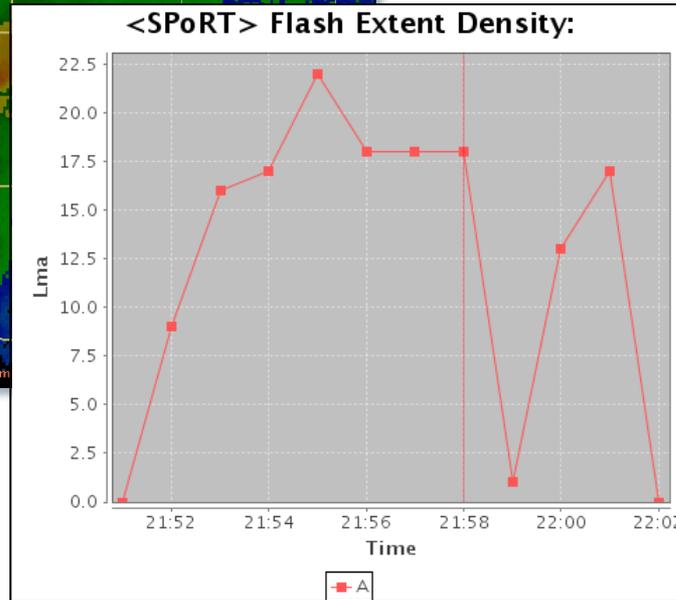
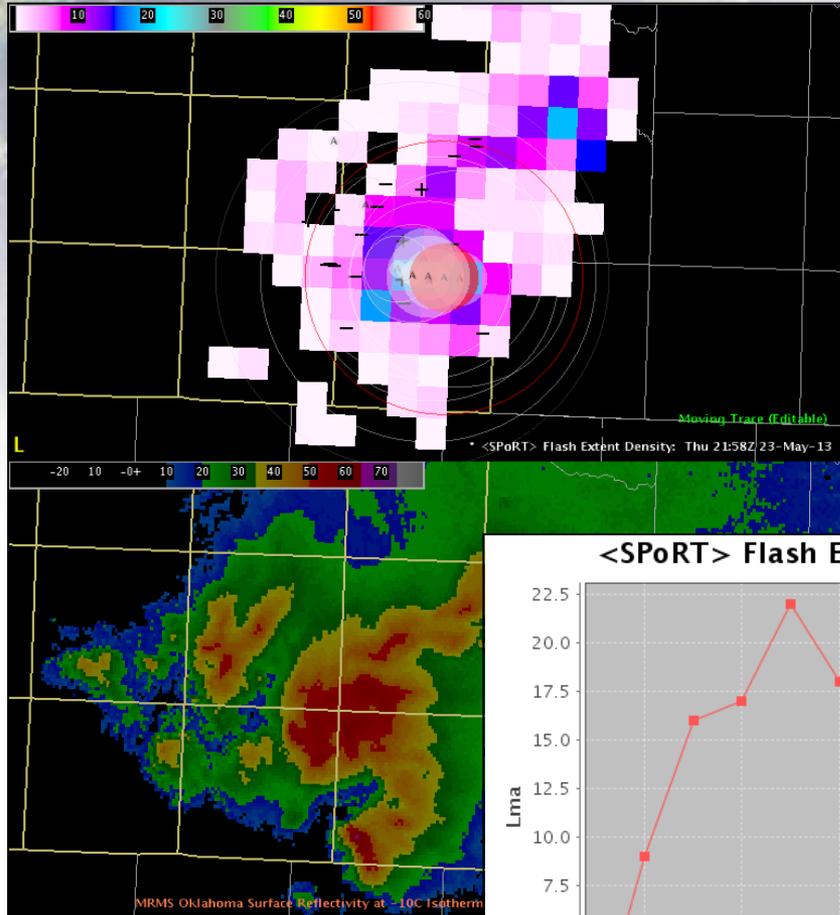
- SPoRT produced PGLM used at 2013 HWT
- Used SPoRT AWIPS II LMA plug-in and total lightning tracking tool in collaboration with MDL
- Very good feedback from forecasters
- PGLM rated a 4 out of 5 on average
- Great interest in tracking tool
- Provided feedback on improvements to tool



PGLM (upper left) in AWIPS II from 2013 HWT



Operations Proving Ground

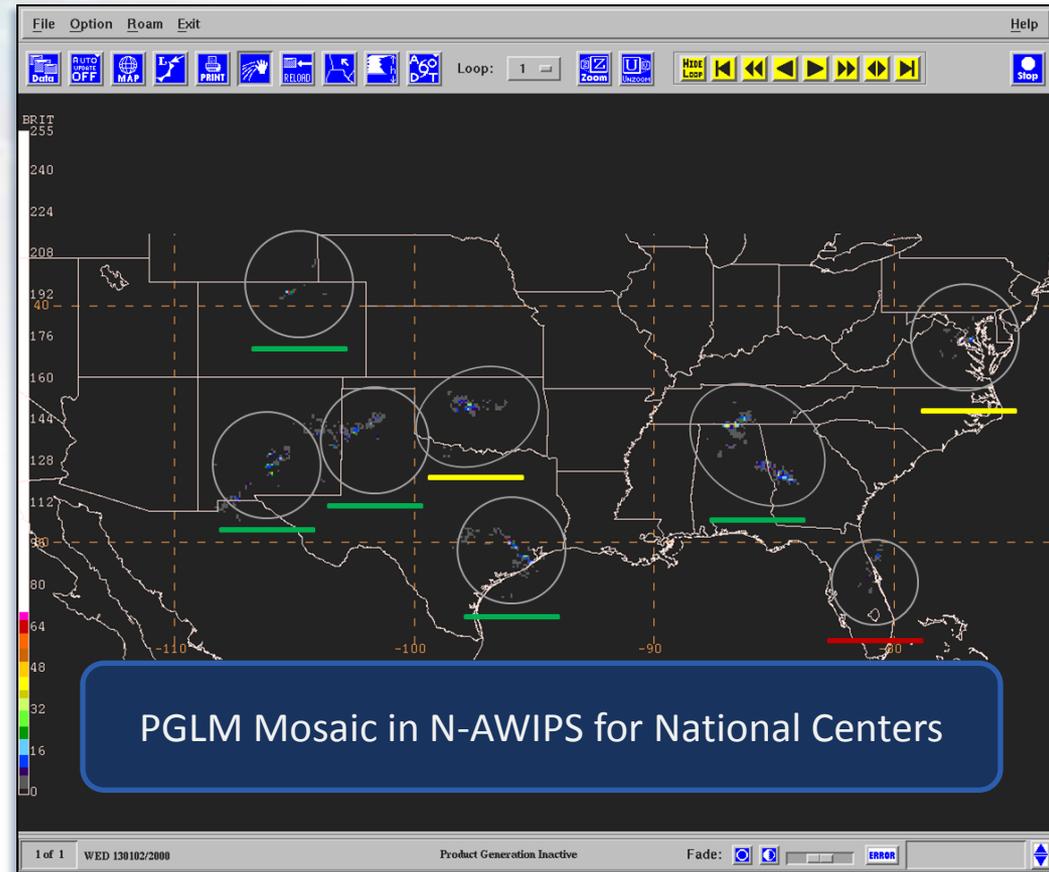


- 2013 HWT provided valuable feedback on the total lightning tracking tool
- Will use feedback to update and improve the tracking tool
- Updated version will be ready for the OPG assessment later this summer / fall



AWC Summer Experiment

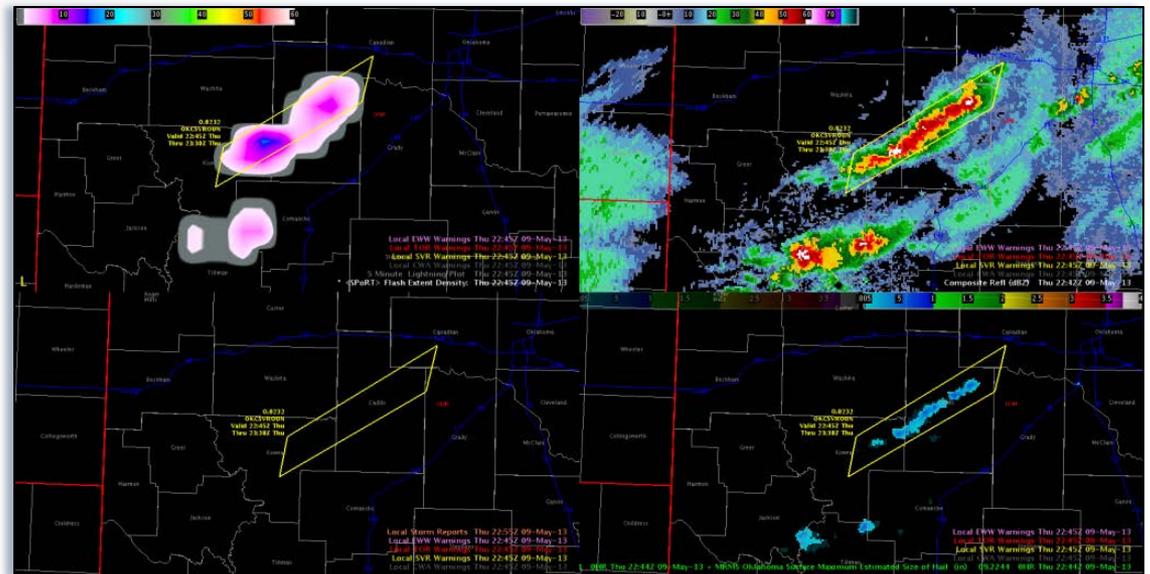
- Coordinating with AWC satellite champion Amanda Terborg
- Implementing network status bars now
- Preparing training for the 2013 Summer Experiment
- Training will focus on PGLM mosaic and the GLM
- Will include brief comparison between PGLM and other observations systems
 - e.g. GLD360 density product, NLDN



Other Lightning Activities

- Continuing to support GOES-R Visiting Scientist work with the Colorado LMA
- Fixing ingest issue for Cheyenne
- Awaiting AWIPS II evaluation period to end to transition to WFO Boulder
- Coordinating to collaborate with more networks
 - Central Florida
 - Langmuir Lab, NM

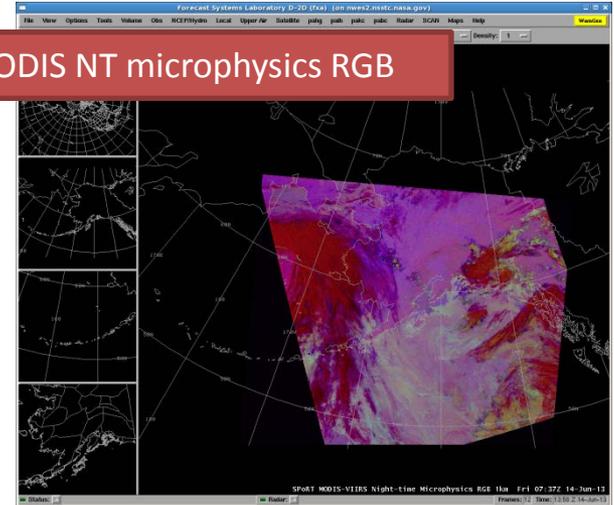
PGLM from 2013 HWT



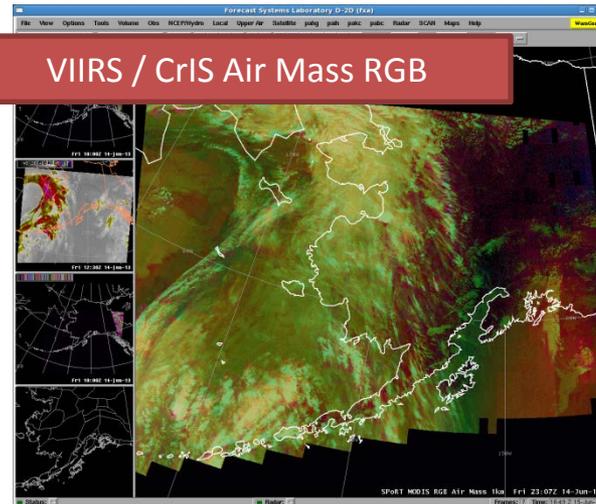
RGB Imagery

- Tropical Proving Ground
 - Have data available via ftp or LDM for NHC when they are ready
 - Post seminar at NHC: working to complete Quick Guides for new RGBs
- Other domains
 - MODIS and VIIRS RGBs available via LDM to Alaska WFOs
 - Working on other OCONUS domains for RGBs (Pacific, Gulf/W. Atlantic)

MODIS NT microphysics RGB

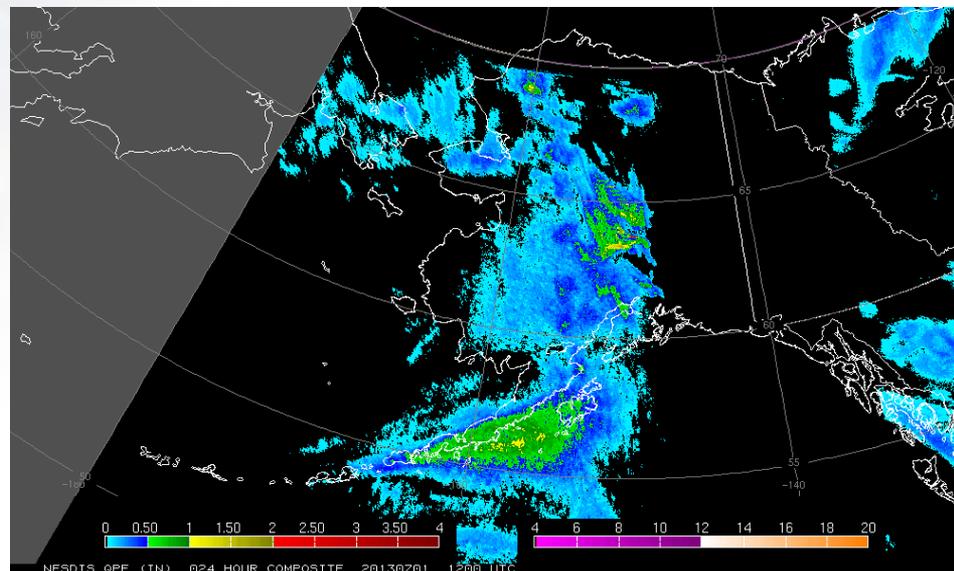


VIIRS / CrIS Air Mass RGB



NESDIS Quantitative Precipitation Estimate (QPE) AWG Support by SPoRT

- Assessment of QPE at high latitude (Alaska) July 15 – September 15
- QPE Suite: 15 minute and 1, 3, 6, 24, 72, 168 hr products
 - Will include the CIRA Layered PW suite as a complimentary product
- Anchorage, Juneau, Fairbanks have suite in AWIPS
- Users reviewing feedback questions
- Working with AK SSD to complete GOES-R Assessment Agreement with users
- In the process of adding SPoRT menu suite to San Juan, PR which will include QPE – may add them to assessment
- Draft report from West Coast QPE Assessment complete (in review)



QPE 24 hour composite - July 1, 2013



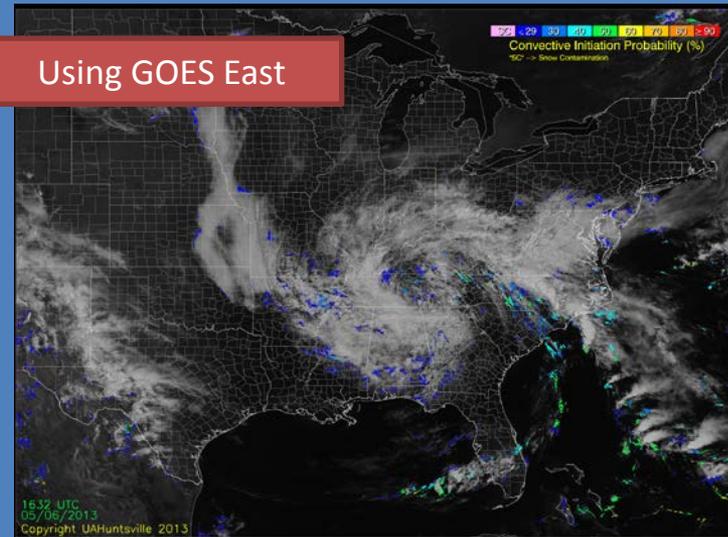
UAH GOES-R CI Nowcasting Algorithm

- Latest version uses RAP model data and satellite interest fields in a logistical regression framework to produce true probabilities of CI.
 - Coverage over CONUS
 - Includes a snow mask
 - To be evaluated at HWT-2013
- Ongoing 2013 Activities include the addition of a lightning initiation component
- Planned evaluation of current product at AWC, OPG, and SPoRT WFOs – Summer/Fall
- Ongoing activities to support ESRL
 - Assimilate into experimental RAP model

Using GOES West

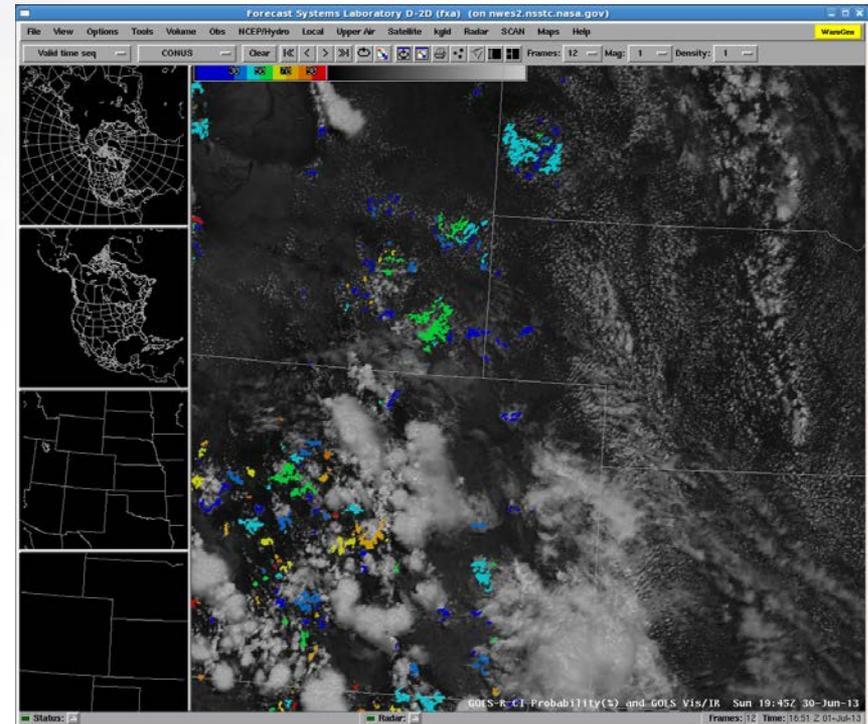


Using GOES East



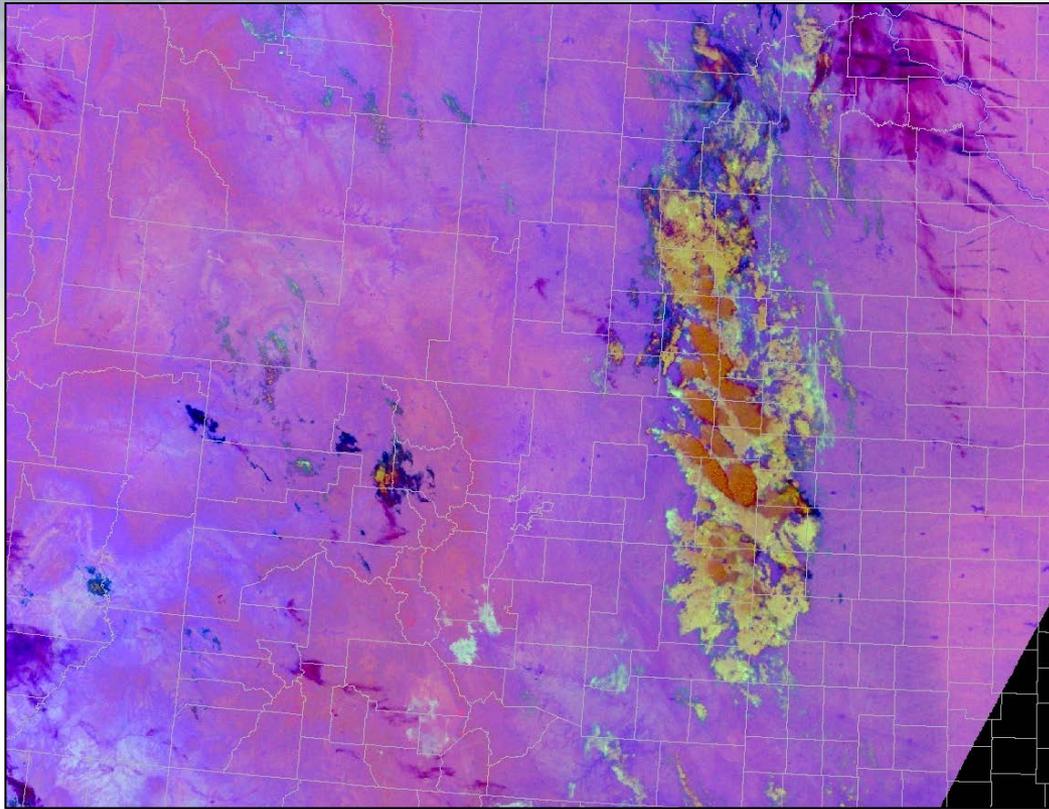
SPoRT support for GOES-R CI in OPG

- Created new domains for Central Region
- Updated instructions and configuration files for AWIPS
- Placed example files for CR WFOs on an ftp and sent information to Chad G.



JPSS Proving Ground Activities

VIIRS Nighttime Assessment



VIIRS Nighttime Microphysics – via
“Front Range” center domain on web

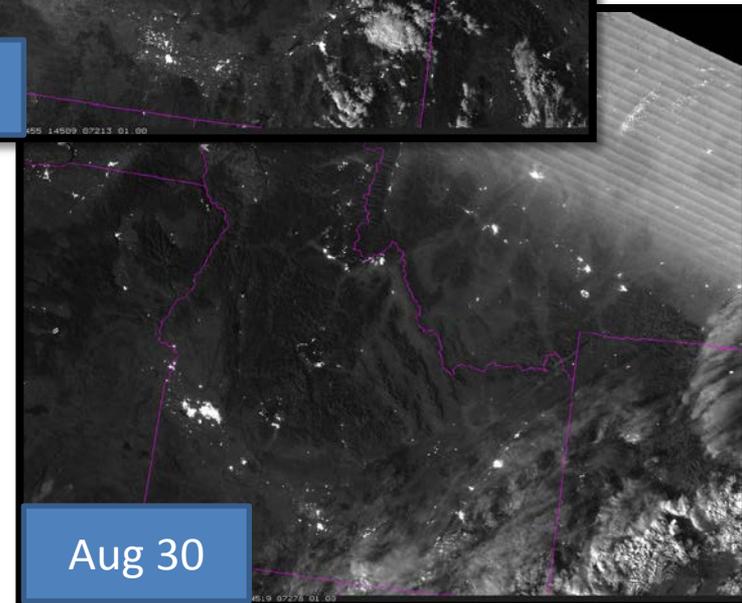
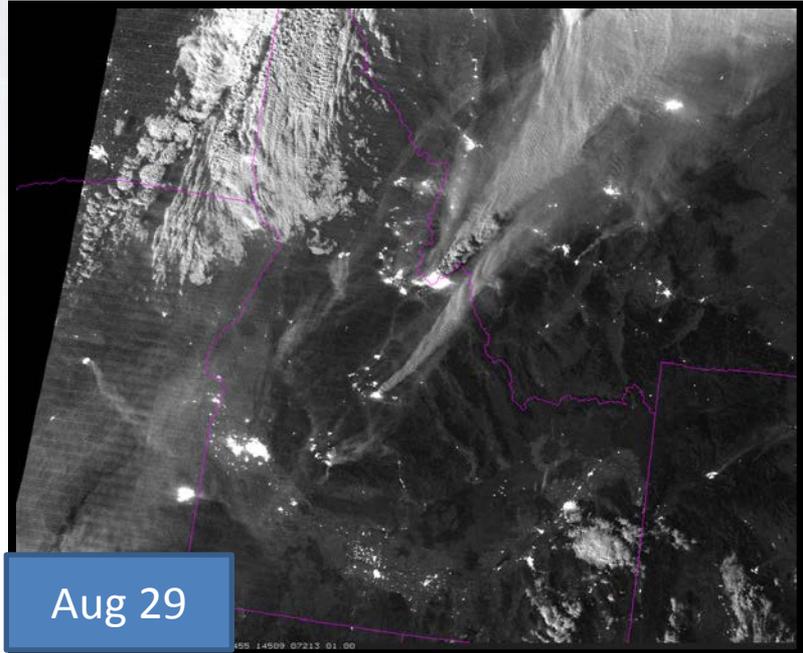
- July 1 – August 31
- Primarily for the JPSS PG
 - DNB Radiance and Reflectance and associated RGB versions
 - VIIRS Long and Short wave IR
- However, evaluation covers two GOES-R related RGBs
 - Nighttime microphysics
 - Dust
- Collaborative effort
 - SPoRT and CIRA
 - “Front Range” WFOs
 - Albuquerque, Boulder, Cheyenne, Great Falls



JPSS Proving Ground Activities

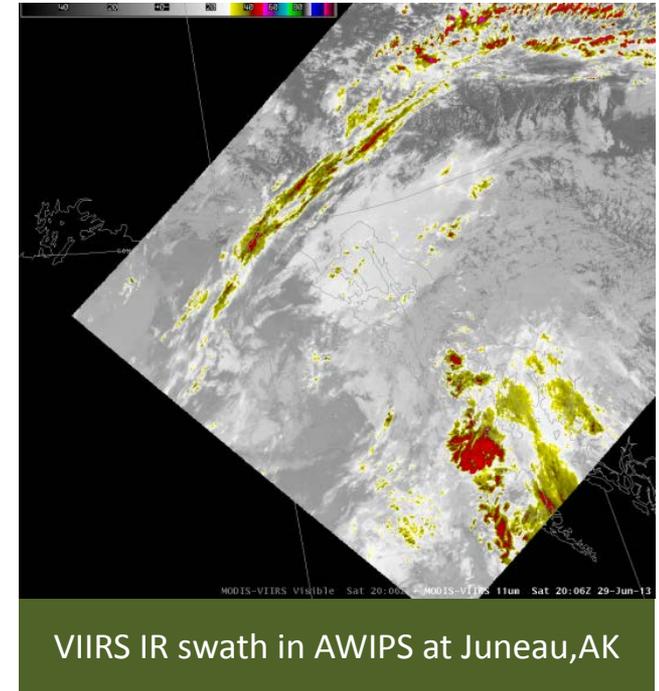
DNB Imagery for Smoke Plumes

- August 29, 2012 case showed smoke well for large and small fires. But ... did not see similar smoke features in others fires.
- Examined large fires of 2012 looking for smoke plume in DNB
 - Very few cases where smoke was easily seen
 - Used inciweb.org to obtain acres burned per day
 - Used online moon phase/angle
- Results: Best chance to see smoke in DNB when
 - Full moon is low in the sky
 - Moon and Suomi NPP angled for forward scattering to occur
 - Use Reflectance when near full moon; otherwise stray light can be problem in summer months
 - Use Radiance near quarter moon phases until Reflectance not affected by stray light



JPSS Proving Ground Activities

- Gary Jedlovec trip to OCONUS Meeting in Anchorage/Fairbanks
- Matt Smith & Kevin Fuell planning follow-up visit in August
- VIIRS data in forecasters' hands
 - Swath RGBs (including DNB) and POES/GOES Hybrid
 - Alaska WFOs added (AFC, AJK, AFG)
 - All partner WFOs have data via LDM and new menu



AWIPS II Activities

- EPDT (Experimental Products Development Team)
 - Follow-up meeting in Huntsville planned for the Fall
 - Bi-weekly telecons continue -focusing on developer issues and training
- Plugins
 - McIDAS plug-in ATAN in process
 - Partners (HUN, HGX) awaiting freezes/test periods
 - HUN again using the total lightning plugin (LMA)
- Alaska
 - Several AWIPS II systems running – discussing possible products for testing



A satellite image of Earth's coastline, showing the Gulf of Mexico and the Florida peninsula. The image is faded and serves as a background for the text.

End of Slides
- Questions

