



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

GOES-R Proving Ground Update

6 January 2014

Contributions from:

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# Outline – 6 January 2014 SPoRT Status Report:

## **RGB Imagery**

- RGB Evaluation for Aviation and Cloud Analysis (NTmicro, DNB products)
  - Alaska, Southern and Western Region WFOs
  - User Feedback
- Training module for Alaska users

## **AWG Support**

- Assessment reports in progress and to start

## **JPSS**

- Collaborations and data processing with UAF/GINA
- VSP with Pacific Region

## **AWIPS II**

- AWIPS II software teletraining (EPDT)
- Future workshops/code sprints

## **Total Lightning**

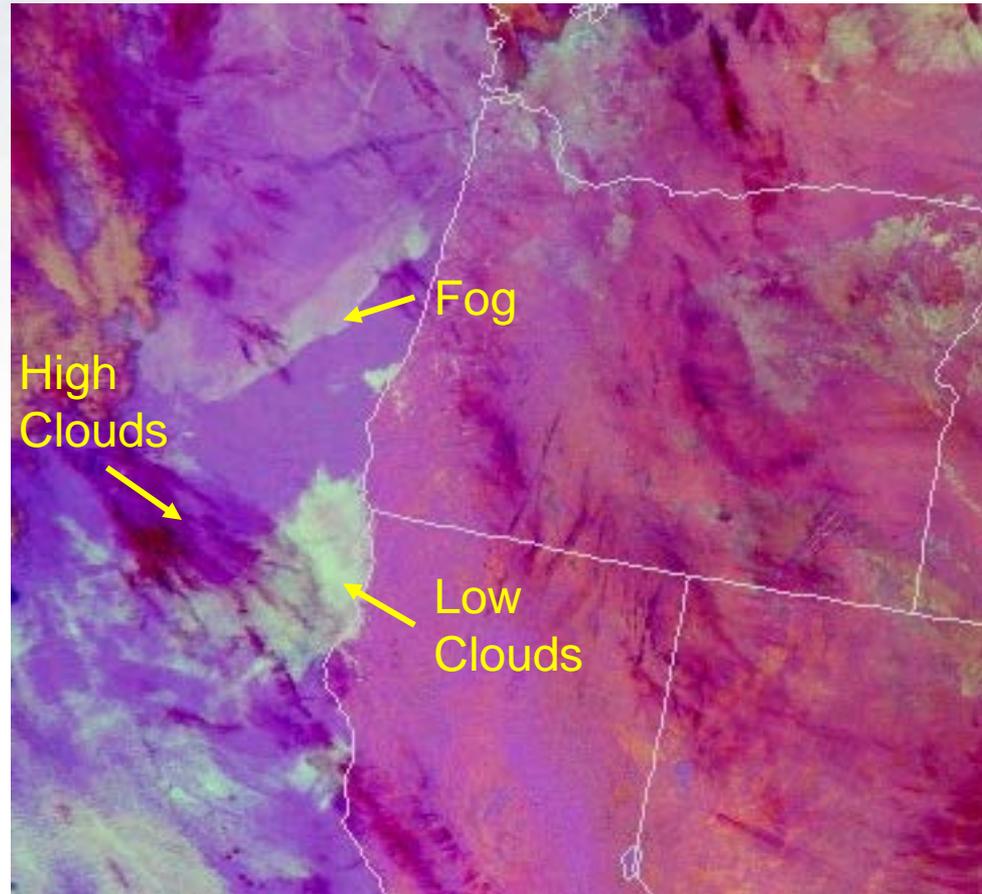
- CO LMA
- SPC Collaborations
- 2014 Evaluation planning



# RGB Evaluation for Aviation and Cloud Analysis

## Assessment

- RGB Products
  - Nighttime Microphysics
  - VIIRS Day-Night Band RGB Radiance and Reflectance
  - Comparing to SPoRT Hybrid 11-3.9 and other products
- AK WFOs: Anchorage, Fairbanks, Juneau, (AAWU: tentatively)
- WR WFOs: Medford, Eureka
- SR WFOs: 6 coastal WFOs
- Feedback started early December
  - AK/WR: 22 user feedback forms
  - SR coastal: 6 user feedback forms and some blog posts
  - SR coastal: Will end after Jan.



**MODIS NTmicro RGB – 1/1/2014 at 0545UTC**



# RGB Imagery Assessment: AK/WR User Feedback

- 1/1/14
  - The RGB nighttime microphysics imagery show low clouds/fog underneath thin layers of high clouds, which is something we haven't been able to see with traditional fog imagery products. It's a great tool for situational awareness and knowing where low clouds/fog are offshore.
- 12/29/13
  - Tonight, was able to discern the low clouds from the fog using the RGB imagery. This also allowed me to narrow my area for the dense fog advisory for this morning.
- 12/28/13
  - Helped with the issuance of dense fog advisory.
- 12/26/13
  - The night time micro RGB was by far the easiest to analyze. It's a huge improvement over the legacy products.



# RGB Imagery Assessment: SR Coastal User Feedback

- 12/25/13
  - I was able to use the VIIRS Nighttime microphysics 12/25 736 UTC image to see the low strato cu cloud cover that was developing on the edge and under mid/high level clouds. It gave me confidence on the 9Z taf update to increase the 4 kft cloud cover in the HOU and IAH TAFS.
- 12/10/13
  - Still getting used to the RGB Day/Night microphysics and Reflectance/Radiance products. There is a considerable amount of detail present with respect to cloud thickness, cloud top temperature. Still having some trouble seeing the difference between stratus and fog.
- 12/11/13
  - I find little, if any utility in a product that is so rarely available. In fact, there are times that we don't get a new image on my entire shift. (processing issue)
- 11/27/13
  - Wish the RGB Nighttime, Radiance and Reflectance imagery were available from a geostationary satellite. Still, the limited data provided excellent spatial coverage.



# RGB Training Module for AK users

- AK-centric examples
  - Similar to SR micro-lesson on same topic
- MODIS and VIIRS case in McCarthy, AK
- Nighttime Microphysics and Day-Night Band
- 15 minutes of audio
- User interaction to identify features in RGBs
- Reviewed by Eric Stevens of GINA

module\_RGB\_Fog\_20131115\_NASA\_SPoRT (10:27 / 15:14) ATTACHMENTS

**SPORT**

Kevin Fuell  
Meteorologist

Outline Thumbnails Notes Search

1. Welcome
2. Forecast Issue and Solution
3. Night-time Microphysics RGB
4. NTmicro: Fog vs Low Clouds
- ▼ 5. McCarthy Example: 11-15-13
5. Hybrid Conceptual Diagram
7. Hybrid 11-3.9um loop
8. MODIS 0635 UTC
9. MODIS 0813 UTC
10. VIIRS 1006 UTC
11. VIIRS 1145 UTC
12. Question: NTmicro Interpretation
13. Answer: VIIRS 1325 UTC
14. VIIRS DNB Radiance
15. VIIRS Reflectance
16. Summary / Resources

McCarthy, AK Example:  
VIIRS 1145 UTC

11-3.9um from VIIRS at 1145 UTC for November 15, 2013

Night-time Microphysics from VIIRS at 1145 UTC for November 15, 2013

**SPORT** Transitioning Unique Data and Research Technologies to Operations  
<http://weather.msfc.nasa.gov/sport>

SPoRT Audio Player  
SLIDE 11 OF 16 PAUSED 00:50 / 00:54



# Assessment Reports

- In progress
  - Quantitative Precipitation Estimate (QPE) with AK and San Juan
    - Has been reviewed by users, developers and internally
    - Second version is being edited
  - VIIRS Front Range Night-time Applications
    - First draft has been reviewed and edits being made
  - GOES-R Convective Initiation
    - Summary being written of testbed user experiences with new version
- Starting
  - RGB Imagery for Aviation and Cloud Analysis with Southern Region Inland WFOs



# AMS Activities Related to Sat. Proving Ground

~8 Presentations and ~3 Posters

topics:

- AWIPS II, Lightning Tracking Tool
- Total Lightning case study: Moore OK Supercell
- Hybrid in AK as proxy to ABI
- RGB Dust – new capability
- RGBs compared to Hyperspectral IR retrievals
- Assimilation of Hyperspectral IR retrievals into WRF
- Transition of AIRS Ozone to Operations
- VIIRS Front Range Nighttime Imagery Assessment
- Assessment Methodology and Experiences



# JPSS PG / OCONUS

- VIIRS included in Assessment of RGB imagery suite
  - Nighttime Microphysics, Day-Night-Band
  - RGBs very popular w/ users
- Satellite Liaison meeting held at SPoRT Nov 12-14
  - All liaisons in attendance
  - Established bi-monthly coordination call
  - Set SPoRT focal point for each liaison
- Hawaii VSP proposal funded
  - Planning w/ Bill Ward has begun for data access and potential local processing in future
- Processing on GINA Virtual Machines
  - Hardware causing some processing latency
  - SPoRT RGBs & Hybrids via LDM from GINA to WFOs
  - Ongoing telecons with GINA and AK WFOs



# AWIPS II

## Experimental Products Development Team

- Teletraining sessions on bi-weekly basis continue (topics: data access framework, review of subgroup projects)

Future:

-Spring2014: March/April/May (?) Huntsville, AL

Group A (same attendees): Advanced training

Group B (new attendees): Basic training

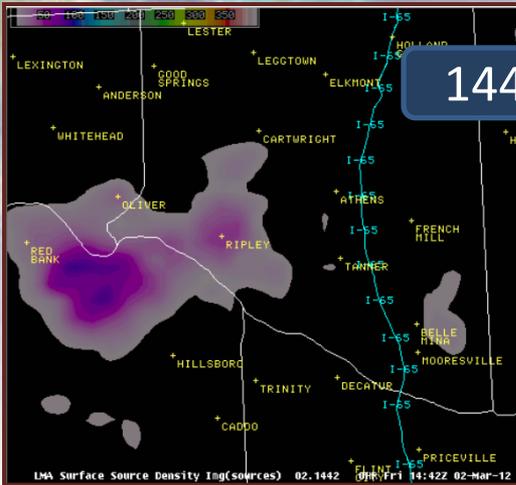
-Fall2014:

Code Sprint

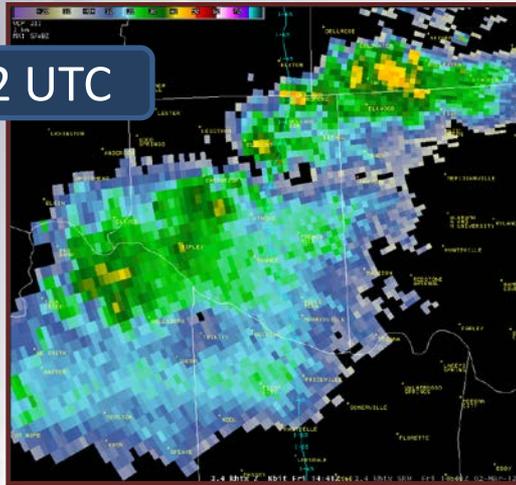


# Total Lightning Update

- AWIPS II performance evaluation complete
- WFO Boulder now added to the LMA plug-in ATAN
- Transition Colorado LMA to WFO Boulder in AWIPS II soon
- Working to move PGLM mosaic into operations at SPC
- Preparing for 2014 evaluations
- New VSP accepted
  - Collaborations with Albuquerque, Boulder, Cheyenne, and SMG
  - Aviation collaborations
    - CWSU Albuquerque, Denver, and Houston

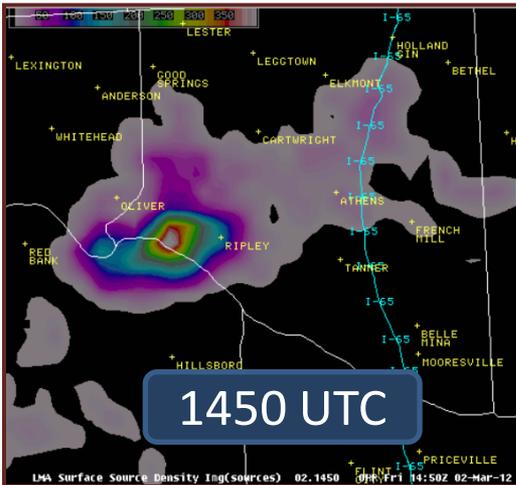


1442 UTC

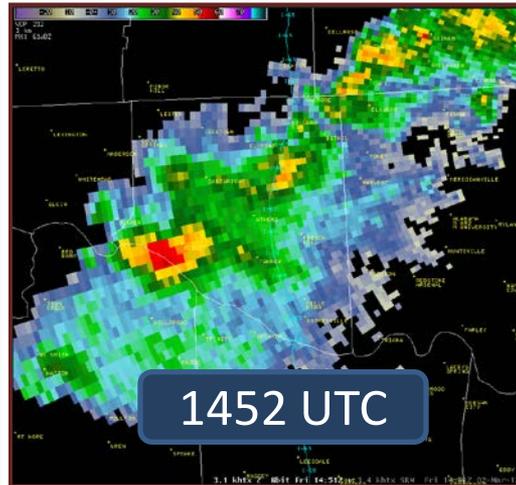


Total Lightning

3.4° Reflectivity, ~20 kft



1450 UTC



1452 UTC

A satellite view of Earth's surface, showing the Western Hemisphere. The United States, Mexico, and the Caribbean Sea are visible. The image is faded and serves as a background for the text.

# END OF JANUARY 2014 UPDATE QUESTIONS?

