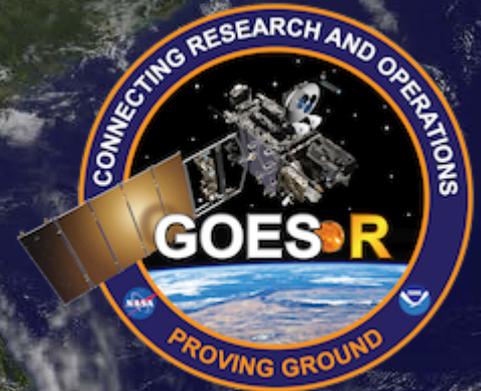


GOES-R/JPSS Program



CIMSS/ASPB Participation GOES-R/JPSS Proving Ground Status

Wayne Feltz, Mike Pavolonis, Tim Schmit, Andy Heidinger, Jordan Gerth, Scott Bachmeier, Scott Lindstrom, Justin Sieglaff, Lee Counce, Robert Aune, Gary Wade, Brad Pierce, Kaba Bah, Will Straka, Jason Otkin, Sarah Monette, Chris Velden, Ralph Petersen, Russ Dengel and Chris Schmidt

November 4, 2013





- Demonstration of Satellite PG applications at National Center Testbeds / Demonstrations and NWS WFO
- AWIPS II status
- Training
- Geostationary viewing of Chelyabinsk meteor tail
- Upcoming meetings/conferences



Satellite Liaison: Bill Line

- **HWT 2013 Final report now available**

<http://www.goes-r.gov/users/pg-activities-01.html>

- Simulated Cloud and Moisture Imagery (Otkin/Sieglaff/Lindsey – CIMSS/CIRA)
- NearCast Model (Petersen/Line - CIMSS)
- Cloud Top Cooling (Sieglaff/Feltz – CIMSS)

- **Product demonstrations in SPC have begun. CIMSS Products currently in operations as experimental:**

- NearCast Model, Cloud Top Cooling and Overshooting Top Detection

- **Continue streamlining formats for AWIPS-2**

- **Conference presentations (Bill Line):**

- EUMETSAT poster: NearCast Model (presented by Ralph Petersen)
- NWA oral: Highlighted SPC product demonstrations (including NearCast Model, CTC, OTD)

- **Future planning will be coordinated with Bill Line**

- HWT 2014 Spring Experiment plans
 - Hope to have a GOES-R presence in the EFP this year
 - Planning for EFP has recently begun, EWP planning to begin shortly.
- Hydrological/Fire Testbed in future? – No new information, nothing set in stone
- Satellite product demonstrations in SPC operations will continue year-round



2) AWC Testbed Satellite Proving Ground



Satellite Liaison: Amanda Terborg

- **Aviation Weather Testbed Summer Demo: August 12 – 23, 2013**
 - Final report now available
- **NWA 2014 conference presentation**
- **AWC 2014 Testbed planning**





3) NWS Operations PG and WFO Interactions



Satellite Liaison: Chad Gravelle

- **NWA 2013 Conference Presentation: Using GOES-R Demonstration Products to Bridge the Gap Between Severe Weather Watches and Warnings**
- **Coordination between Bill Line (SPC Liaison) and Lance VandenBoogart (WDTB Liaison) on developing best practices for GOES-R convective products for use in WFOs.**
- **Convective Cloud-Top Cooling (part of “convective-initiation toolbox”) evaluation with CR (12 WFOs) and ER (2 WFOs) ended in October.**
- **Continued coordination of GOES-R Fog/Low Stratus products into operations (West Coast evaluation ended in September with SEW, EKA, LOX, and MTR).**
- **Streamlining AWIPS I and AWIPS II product configuration/installation directions for WFOs.**
- **Working with NWS Operations Proving Ground regarding GOES-R products and how they relate to ongoing GOES-R PG activities.**





4) Alaska/AAWU/High Latitude Testbed



- **Automated ash cloud alerts from AVHRR and MODIS will be provided to the VAAC and CWSU soon (training needs to be updated first).**
- **VIIRS NetCDF files verified to be AWIPSII compatible**
- **VIIRS VISIT NWS training module under development**
- **Polar2grid tool being expanded for GEOCAT AK products**





5) Pacific Region/Hawaii Demonstrations



- No satellite liaison
- Maintenance of current activities supported by CIMSS/PRH collaboration
- Future activities pending final operations plan
- Prospective visits of CIMSS personnel to HFO/PRH in December and/or January
- Hawaii Direct Broadcast Workshop web page (labs, photos, etc.):
<http://cimss.ssec.wisc.edu/dbs/Hawaii2013/>
- Honolulu is suggested host of potential JPSS-supported OCONUS PG demonstrations meeting in summer 2014
- TS Flossie VIIRS DNB image will appear in final storm summary; report not yet released





6) Satellite Proving Ground for Marine, Precipitation, and Hazardous Weather Applications



Satellite Liaison: Michael Folmer

- UW-CIMSS providing Overshooting-Top/Enhanced-V products (same methods as SPC delivery), N-AWIPS displayed at OPC, WPC, and SAB.
- Cloud top height and temperature from GOES imager are in progress for display within N-AWIPS and AWIPS
- The Washington VAAC is now receiving SEVIRI based GOES-R volcanic ash products via a McIDAS ADDE server and automated alerts will soon be distributed
- Coordinated CIMSS GOES-R PG collaborations with 2013-2014 Satellite Proving Ground for Marine, Precipitation, and Hazardous Weather Applications demonstrations
- Other GOES-R PG decision support products requested within plan available once approved by NOAT governance process





7) NHC Proving Ground



UW-CIMSS Participants: C. Velden, S. Monette

- UW-CIMSS is providing real-time observations from updated versions of the Hurricane Intensity Estimate (HIE) and Tropical Overshooting Tops (TOTs) products to NHC for evaluation and feedback.
- Also, these two products plus Cloud Top Height (CTH) estimates derived from the GOES-R AWG algorithm were used to support the NASA HS-3 tropical field campaign this summer (Global Hawks>>hurricane recon).
- 2013 PG ends Nov. 30; awaiting NHC product evaluation

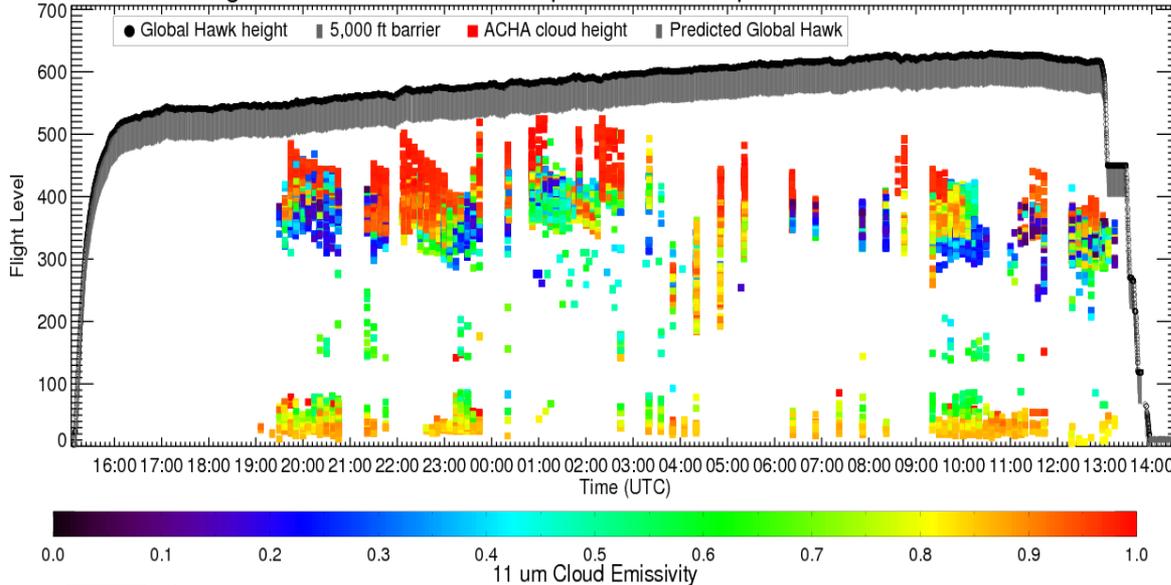


Real-time hazard avoidance guidance for Global Hawk missions flying over and around tropical cyclones

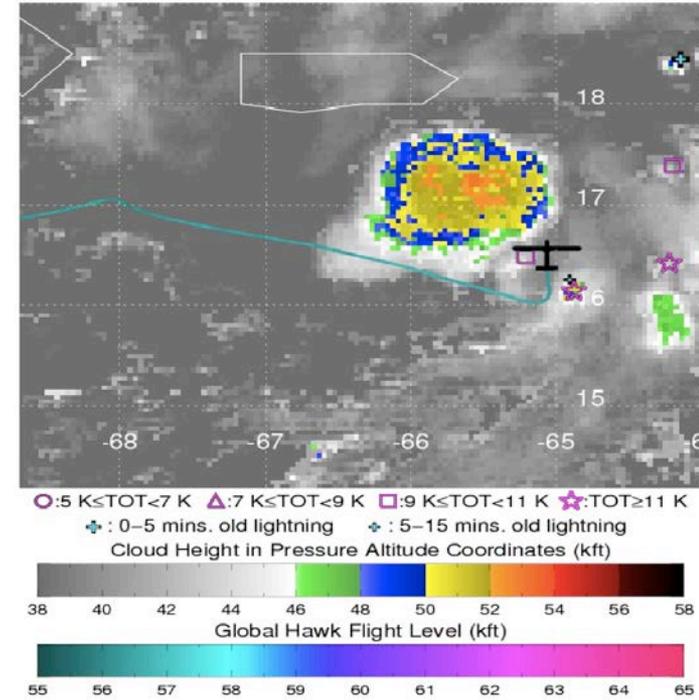
-- Flight Rules: Global Hawks must clear "active" cloud tops with a 5,000 foot flyover cushion.

- ❖ GOES-R Proxy Cloud Top Heights and emissivity along the Global Hawk current and predicted path were provided in real-time to NASA mission scientists and GH

ACHA cloud height and AV-6 altitude comparison: Last updated at 1514 UTC on 20130905



Lightning & Global Hawk on 20130904 at 2152 UTC
ACHA CTH & TOTs on 20130904 at 2140 UTC



- ❖ Real-time CTH, TOTs and lightning overlay displays were updated every 2 mins and used to identify potential hazards.

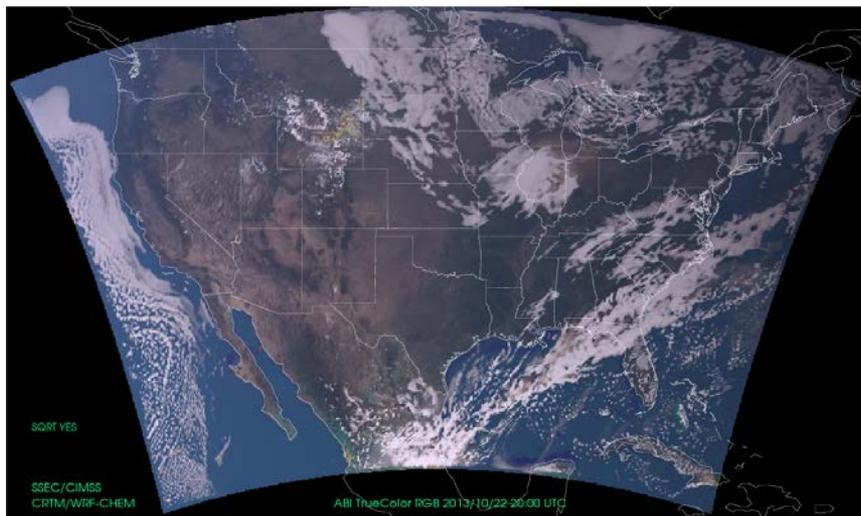


2013 GOES-R PG Real-time Proxy activities (November 2013)

1. **Developing tools to use WRF-CHEM cloud, moisture and thermodynamic fields as “truth” to validate ABI AWG Real-time Proxy Cloud, and Sounding retrievals during 2013 Oklahoma tornado and Hurricane Sandy events.**
2. **Continuing to prepare data for a WES case focusing on 2013 Oklahoma tornado events: 6 products, including the RGB air-mass and true color products, and the synthetic radiance/reflectance imagery, for the period of 20-29 May, 2013.**
3. **Beginning development of proxy data base for “ABI centric” red, green, and blue band to provide to CIRA for regression based synthetic green band for ABI RGB true color imagery. WRF-CHEM/CRTM based using synthetic ABI red and blue bands combined with synthetic MODIS green band with ABI viewing geometry.**



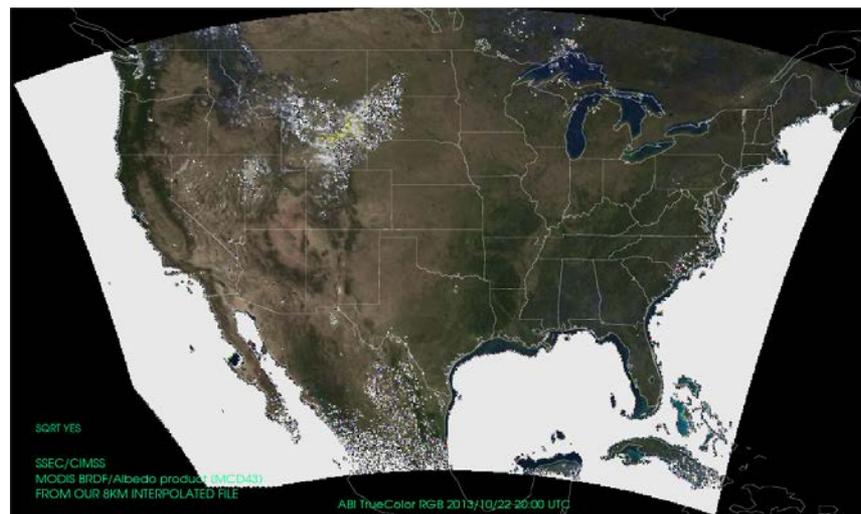
Oct 22, 2013 WRF-CHEM/CRTM True Color TOA (ABI+MODIS Green Band)



MODIS (Aqua) 2013 10 22



Oct 22, 2013 WRF-CHEM/CRTM True Color Surface (ABI+MODIS Green Band)

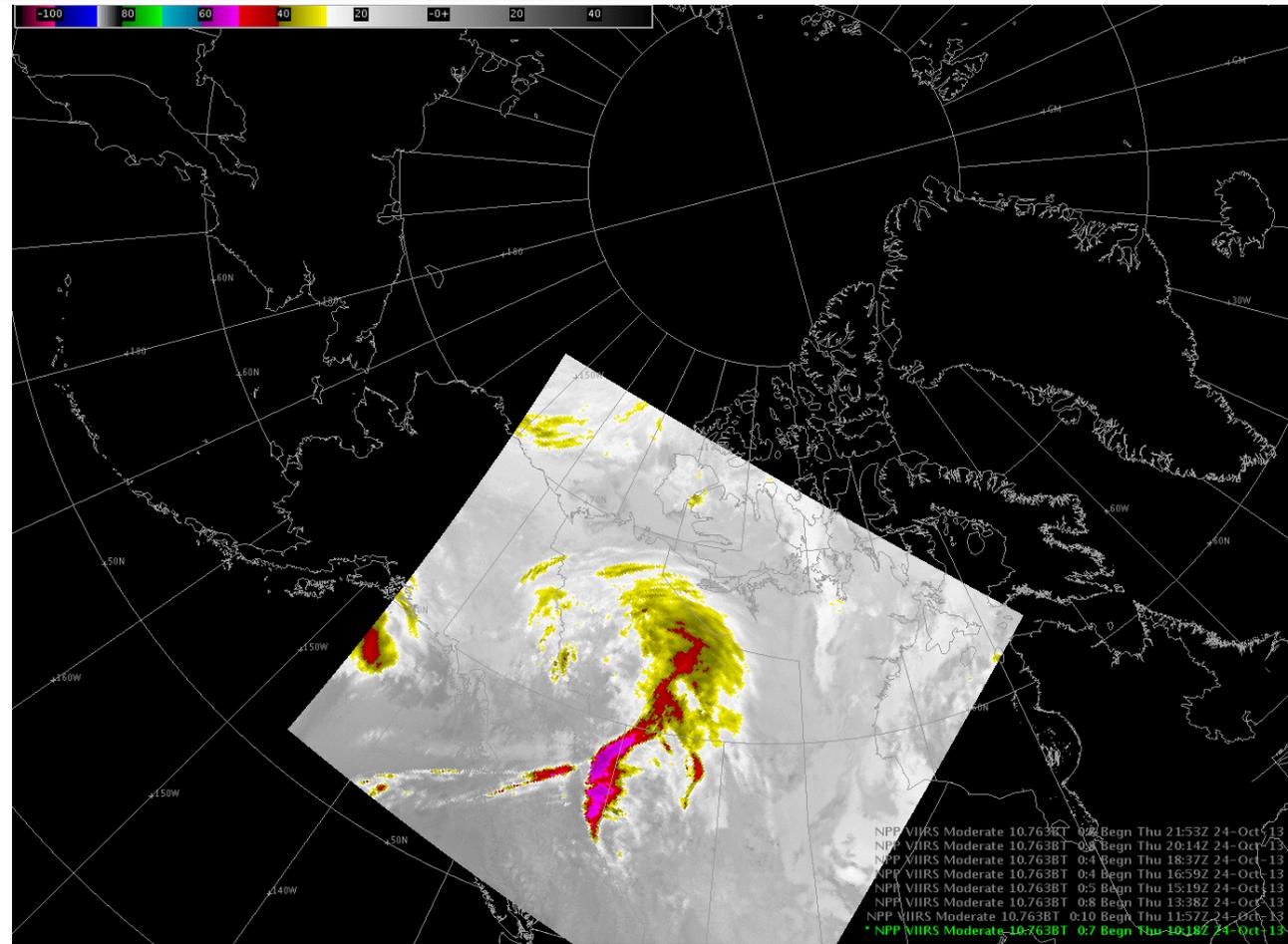


Oct 22, 2013 MODIS True Color TOA

- ABI true color image (upper left) shows some coastal artifacts along Gulf Coast, Yucatan, and Baja
- Have verified that input MODIS BRDF based land and coastal surface reflectance (lower left) is not causing artifacts.
- Plan to deliver to CIRA for ABI synthetic green band regression development in FY14

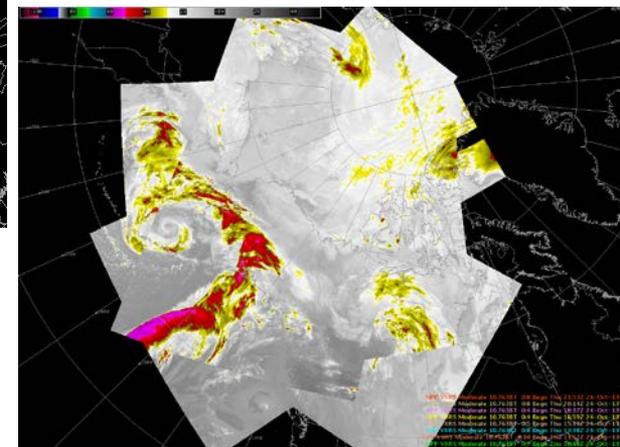


- CIMSS actively attending AWIPS II developers' forum conference calls and remote/in-person meetings of the EPDT
- Testing of locally-produced netCDF4 files containing VIIRS imagery ongoing
- Investigating performance of regionalsat plug-in
 - Impacts legacy PG products
 - Memory issue reappeared in OB13.5
- Issue with single-digit minute GRIB2 valid times still exists
 - Impacts cloud top cooling
 - Working to submit bug fix
- Development of other small fixes/enhancements in progress
- Providing assistance to Alaska Region and Pacific Region
- Operational use of AWIPS II at NWS Milwaukee expected to begin on November 14th



AWIPS II supports pass compositing

Data provided by GINA in Alaska



Direct broadcast VIIRS converted to AWIPS-II compatible format using the NOAA Community Satellite Processing Package (CSPP) – allowing full resolution multi-granule display

- Many PG-relevant CIMSS Satellite Blog posts:
 - <http://cimss.ssec.wisc.edu/goes/blog/>
- GOES-R Fog Product Examples (‘Fused Fog’ Blog) at new site:
 - <http://fusedfog.ssec.wisc.edu>
- VISITview sessions currently being offered on the VISIT training calendar:
 - VIIRS Imagery in AWIPS; FLS Products; OT/Enhanced-V/Thermal Couplet Detection; CTC Rate; NearCast
 - http://rammb.cira.colostate.edu/training/visit/training_sessions/
- Short Articulate Presenter modules (on CTC Rate and NearCast Model) developed for HWT:
 - http://www.ssec.wisc.edu/~scottl/NearCast_HWT_Training_2013/player.html
 - http://www.ssec.wisc.edu/~scottl/UWCTC_HWT_Training_2013/player.html

Fused Fog Blog: 183 total posts

- 1200 hits/day (Sept); 1360 hits/day (October)
- Emails to SOOs when case is posted in WFO

IFR Conditions over North Dakota today

Inbox x



Scott Lindstrom - NOAA Affiliate <scott.lindstrom@noaa.gov>

Oct 22 (9 days ago)



to Chad, Brian, Michael, Anthony, Joshua, Bradley, scottl, Corey

I have made a blog post about the IFR conditions over western NoDak this morning, and how the IFR Probability fields were able to distinguish between stratus over the Red River valley (the brightness temperature fields equally).

<http://fusedfog.ssec.wisc.edu/?p=661>

If you have any questions, please contact me or Mike Pa

regards,

Scott

IFR Probability Fields

Inbox x



Patrick Ayd - NOAA Federal <patrick.ayd@noaa.gov>

Oct 23 (8 days ago)



to me

Scott,
I saw your blog about the IFR probability fields over North Dakota. Can we get these and similar products into our AWIPS?

Thanks,
-Patrick Ayd
NWS Bismarck, ND

Case over North Dakota: The next day, they asked how to get the data into AWIPS



Joshua Schaefer

to me

days ago



Images are not displayed.

[Display images below](#) - Always display images from josh

Thanks, Scott!



Chad Gravelle - NOAA Affiliate

Oct 28 (3 days ago)



to me, Patrick, Michael, Jordan, Scott

Thanks for fwding Scott.

Patrick...the following link has the LDM and AWIPS configuration directions:

<http://www.ssec.wisc.edu/~jordang/awips/geocat-ec/>

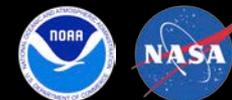
Please let me know if you have any difficulty in setting this up. I would suggest to register for one of the Fog and Low Stratus training times on the VISIT website during November: <http://rammb.cira.colostate.edu/training/visit/calendar.asp>

If these dates/times do not work for you, we can coordinate with Scott in setting up some training for the office.

Thanks.

Chad





Subject: Fog Event this morning (10-15-2013)

From: Scott Lindstrom
Date: 10/15/2013 11:21 AM
To: paul.sisson@noaa.gov, Michael Pavolo
Cc: Chad Gravelle, Brian Motta, Tony Moste

http://fusedfog.ssec.wisc.edu/?p=638

I've written a very short blog post on the fog ov
performed.

Sent examples to BOX, BTV in Aug/Sept/Oct
On Training Calendar for November

Fog event of Cape/Islands on Aug 28

- Scott Lindstrom - NOAA Affiliate
Hello -- I've been blogging about the GOES-R IFF
Joe Dellicarpini
Hi Scott, Thanks for sharing the case and keep the
Scott Lindstrom - NOAA Affiliate
Another one today . http://fusedfog.ssec.wisc.edu/?
Joe Dellicarpini <joseph.dellicarpini@noaa.gov>
to me

Excellent! Thanks again for sharing.

Calendar grid showing dates from 3 to 26 with event details like '8am Suomi/NPP Satellite D', '9:30am Synthetic Imagery', and '11am GOES-R Fog / low str'.

GOES-R Fog / low stratus products 18:00 UTC:
BOX; BTV

When Thu, November 7, 11am - 12pm
Description Signup instructions:

Please sign up for the training session by emailing
us at visit@comet.ucar.edu.

- In your email, please specify:
1. Your office (site ID)
2. Training session title
3. The session date
4. Contact person's phone
number

The objectives of this session are:

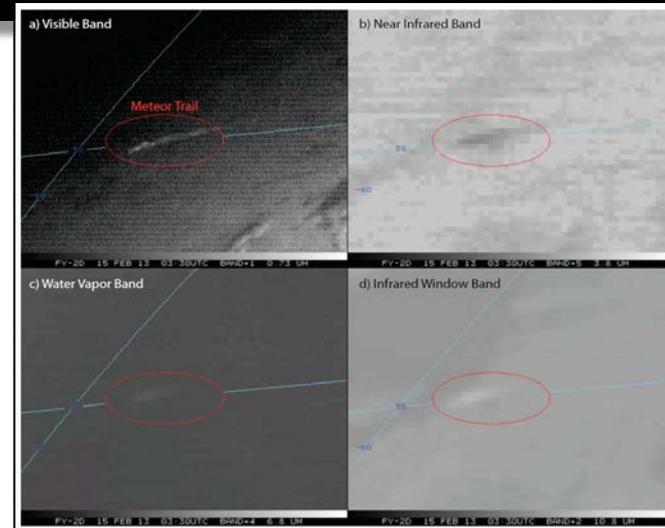
- (1) Learn how the GOES-R Fog/Low Stratus
product improves upon the traditional brightness
temperature difference (BTD) product
(2) Understand how the GOES-R FLS product is
created
(3) See examples of how the product should be
used in different geographic regions.
Outline:
(1) GOES-R ABI Introduction
(2) Fog / Low Stratus description and definition
(3) Traditional Fog Detection Methods and
problems with them
(4) The GOES-R FLS Product and how it improves
on traditional methods
(5) Examples
This is an experimental GOES-R Proving Ground
Product designed to foster GOES-R readiness.

Student guide page:
http://rammb.cira.colostate.edu/training/visi
/training_sessions/forecaster_training_for_t
he_goes-r_fog_low_stratus_products/

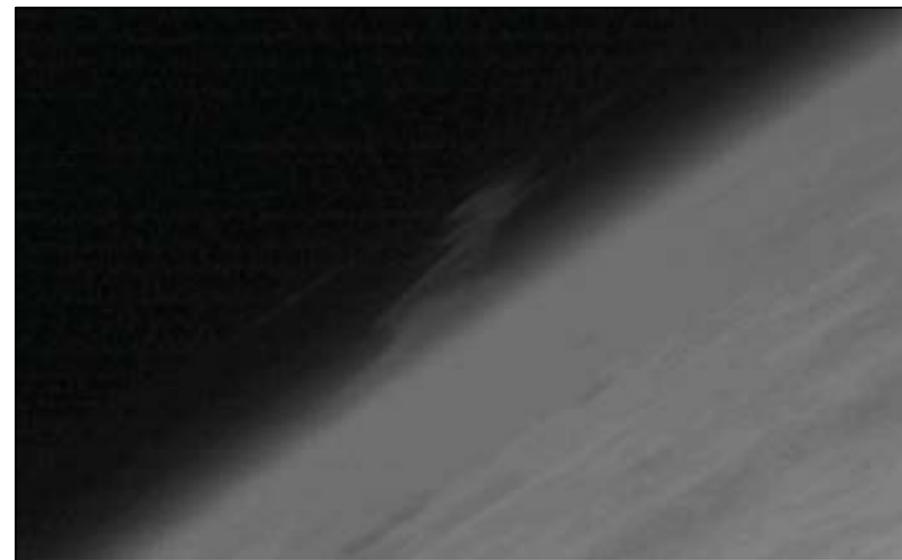
more details> copy to my calendar>



- A paper was published in the *Proceedings of the National Academy of Sciences* (PNAS) regarding using weather satellites to study atmospheric bolides (large meteors), in this case over Russia in February of 2013.
- S. D. Miller, W. C. Straka III, A. S. Bachmeier, T. J. Schmit, P. T. Partain, and Y. Noh, 2013: Earth-viewing satellite perspectives on the Chelyabinsk meteor event PNAS October 2013; doi:10.1073/pnas.1307965110.
- <http://www.pnas.org/content/early/2013/10/15/1307965110.full.pdf+html>
- <http://www.news.colostate.edu/Release/7044> (CSU press release).
- <http://www.csmonitor.com/Science/2013/1021/Meteor-that-bombed-Russia-left-telltale-tracks-seen-from-space> (Christian Science Monitor).



FY-2D imagery of the Chelyabinsk meteor trail (0330 UTC).



MTSAT visible at an oblique view angle (0501 UTC).

This is an example of using 'weather' satellite for other uses.





Other Conferences/Meetings



2013

- AGU
- Happy Holidays!

2014

- | | | |
|------------------------------------|-----------------|---------------------|
| • AMS Annual Meeting | 2-6 February | Atlanta, GA |
| • “Virtual” Satellite Science Week | 11-15 March | Madison, WI |
| • EUMETSAT Satellite Conference | 22-26 September | Geneva, Switzerland |
| • AMS Severe Local Storms | 3-7 November | Madison, WI |



- AMS annual meetings

Recommended for PG participants

Second Symposium on Prediction of the Madden-Julian Oscillation: Impacts on Weather and Climate Extremes
Second Symposium on the Joint Center for Satellite Data Assimilation
Superstorm Sandy and the Built Environment: New Perspectives, Opportunities, and Tools
Stanley A. Changnon Symposium
Edward S. Epstein Symposium
Donald R. Johnson Symposium
30th Conference on Environmental Information Processing Technologies
28th Conference on Hydrology
26th Conference on Climate Variability and Change
26th Conference on Weather Analysis and Forecasting / 22nd Conference on Numerical Weather Prediction
23rd Symposium on Education
22nd Conference on Probability and Statistics in the Atmospheric Sciences
18th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA
18th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS)
16th Conference on Atmospheric Chemistry
13th Annual Student Conference
12th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences
12th History Symposium
12th Symposium on the Coastal Environment
11th Conference on Space Weather
11th Symposium on the Urban Environment
Tenth Annual Symposium on New Generation Operational Environmental Satellite Systems
Ninth Symposium on Policy and Socio-Economic Research
Seventh Annual CCM Forum: Certified Consulting Meteorologists
Sixth Symposium on Aerosol-Cloud-Climate Interactions
Fifth Conference on Weather, Climate, and the New Energy Economy
Fifth Conference on Environment and Health
Fourth Aviation, Range, and Aerospace Meteorology Special Symposium
Fourth Conference on Transition of Research to Operations
Fourth Symposium on Advances in Modeling and Analysis Using Python
Second Symposium on the Weather and Climate Enterprise
Second Symposium on Building a Weather-Ready Nation: Enhancing Our Nation's Readiness, Responsiveness, and Resilience to High Impact Weather Events
Major Weather Events and Societal Impacts of 2013
Special Symposium on Severe Local Storms: The Current State of the Science and Understanding Impacts