

NOAA Satellite Proving Ground Training and User Engagement

Tony Mostek and Brian Motta (NWS)
Wendy Abshire (COMET)

Update September 2012



VISIT



COMET

SPORT



RAMMB
Regional and Mesoscale
Meteorology Branch

VISIT

VISIT Training Sessions in 2012

TROWAL Identification (winter weather satellite application)

Morphed Total Precipitable Water Detection (MIMIC)

Basic Satellite Principles

Interpreting Satellite Signatures

Satellite Interpretation of Orographic Clouds

Utilizing GOES Imagery to Forecast Winter Storms – Part 1, 2

CIMSS Regional Assimilation System – Forecast Satellite Imagery in AWIPS

Cyclogenesis: Analysis Using Geostationary Satellite Imagery

POES and AVHRR Data in AWIPS

Basic Satellite Interpretation in the Tropics

UW Convective Initiation Products (GOES-based CI Algorithm)

UW Nearcasting Product (for severe weather)

Convective Downbursts

GOES Imagery for Forecasting Severe Weather

Water Vapor Imagery Analysis for Severe Weather

Mesoscale Convective Vortices

GOES Fog Low Stratus (FLS) Algorithm Products

- National Training is Ready
- Available on NWS Learning Center
- Coordinated with Chad, Amanda, and others in KC
- Including other regions
- Goal: Replace Old IR Difference Product on AWIPS
- “Blazing” AWIPS2 path with SEC and FOTE Sites

FLS Users Guide

The logo for VISIT (Video In Situ Training) is displayed in a stylized, bold, red font with a slight shadow effect.

Forecaster Training for the GOES-R Fog/low stratus (FLS) Products

Mike Pavolonis and Corey Calvert

- [VISIT Home](#)
- [Training Sessions](#)
- [Training Calendar](#)
- [Blog Sites](#)
- [VISIT Satellite Chat](#)
- [The VISIT Program](#)
- [VISIT Contributors](#)
- [VISIT FAQ](#)
- [Links / Tutorials](#)
- [RAMSDIS Online](#)
- [VISIT Training DVD](#)

Introduction

Objectives:

- (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:

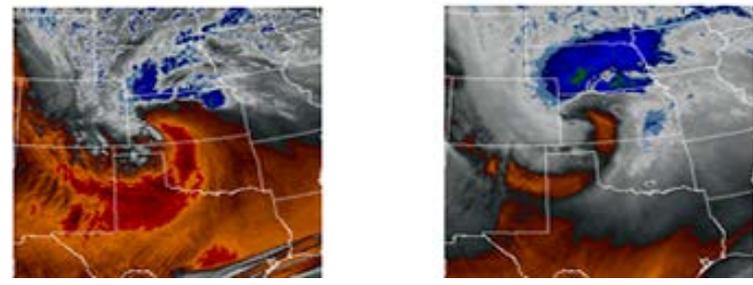
- (1) GOES-R ABI Introduction
- (2) Fog / Low Stratus description and definition
- (3) Traditional Fog Detection Methods and problems with them
- (4) The GOES-R FLS Product and how it improves on traditional methods
- (5) Examples

This is an experimental [GOES-R Proving Ground](#) Product designed to foster GOES-R readiness.

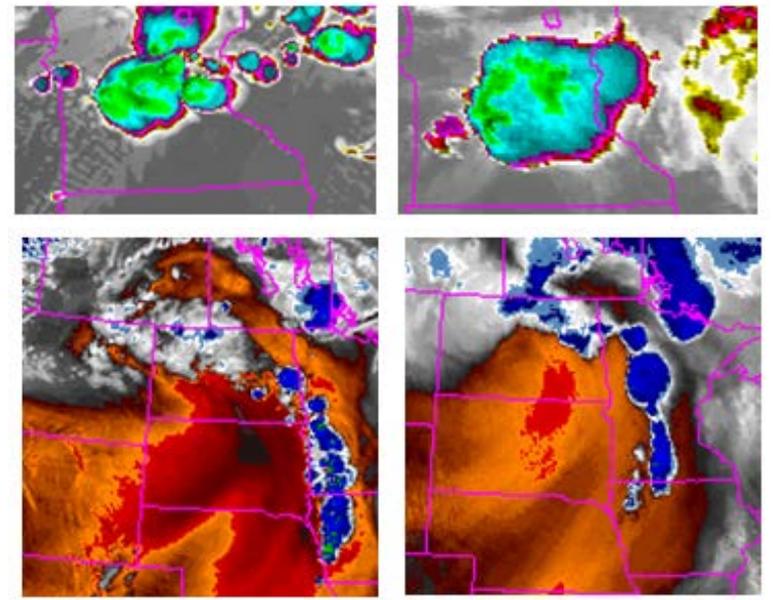
GOES Synthetic Imagery Training

CIRA has developed the following training sessions on synthetic satellite imagery from the NSSL WRF-ARW model:

Utilizing Synthetic Imagery from the NSSL 4-km WRF-ARW model in Forecasting Cyclogenesis



Synthetic Imagery in Forecasting Severe Weather



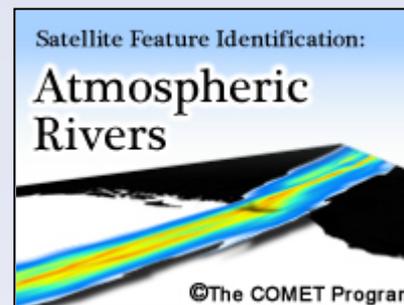
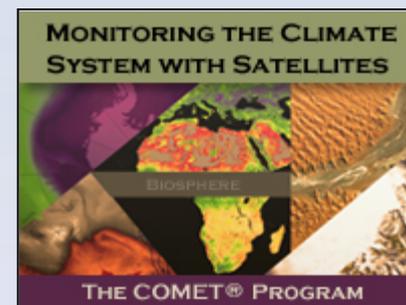
CIRA is currently working on the development of an additional training session titled “General Applications of Synthetic Satellite Imagery from the NSSL WRF-ARW Model”.

User Feedback from GOES Proving Ground, NWS Forecaster:

“In my 30 years in the NWS, these synthetic satellite images are in my list of most exciting/useful innovations to help with operational forecasting.”

Training Modules from COMET that are Relevant to GOES and GOES-R+

- Atmospheric Dust **(NEW)**
- Creating Meteorological Products from Satellite Data
- Forecasting Dust Storms, Version 2
- Satellite Meteorology: GOES Channel Selection, Version 2 **(NEW) (Also in Spanish)**
 - ❖ See next slide
- GOES-R: Benefits of Next-Generation Environmental Monitoring **(Now in Spanish too!)**
- Introduction to Tropical Meteorology, 2nd Ed: Tropical Remote Sensing Applications Chapter
- Monitoring the Climate System with Satellites **(NEW)**
- Multispectral Satellite Applications: Monitoring the Wildland Fire Cycle
- Multispectral Satellite Applications: RGB Products Explained
- Recognition and Impact of Vorticity Maxima and Minima in Satellite Imagery
- Remote Sensing Using Satellites, 2nd Ed. **(High School Audience, Coming Soon)**
- Satellite Feature Identification: Atmospheric Rivers **(NEW)**
- Satellite Feature Identification: Blocking Patterns
- Satellite Feature Identification: Cyclogenesis **(NEW)**
- Satellite Feature Identification: Deformation Zone Analysis
- Satellite Feature Identification: Deformation Zone Diagnosis
- Satellite Feature Identification: Deformation Zone Distribution
- Satellite Feature Identification: Ring of Fire
- Satellite Meteorology: Introduction to Using the GOES Sounder



All available on demand at:
<http://meted.ucar.edu/topics/modules/satellite>

GOES Channel Selection, 2nd Ed.

Most Popular GOES-related Module

GOES Channel Selection v2
Produced by The COMET® Program

- Introduction
- Visible
- Shortwave Infrared
- Water Vapor (GOES 12-15)
- Longwave Infrared
- "Dirty" Window (12 μm on GOES 8-11)
- Carbon Dioxide (GOES 12-15)
- GOES-13, 14, 15 Improvements
- No Spring and Fall Eclipse Outages
- Pixel Geolocation
- Radiometric Image Quality
- CO₂/13.3 μm Channel Resolution (GOES-14,15)
- Summary
- Module Summary
- Cloud Type Table
- Channels Concept Map

Switch to Text

HOME

No Spring and Fall Eclipse Outages

GOES-13 Imaging During Eclipse: 10.7 μm Channel
15-min Imagery 0315 UTC to 0730 UTC 12 Sep 2006

30-minute gap

30-minute gap

NOAA / CIRA

1:17 1:53

PREVIOUS NEXT

COMET's Other New or Satellite Training Modules in Progress

Recently published **(and coming soon in Spanish)**:

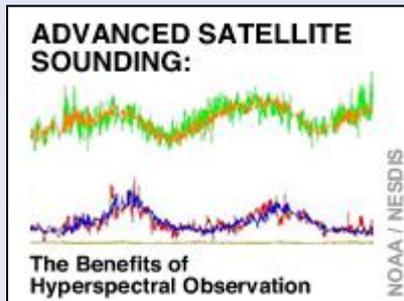
- Suomi NPP: A New Generation of Environmental Monitoring Satellites

Projects under development:

- GOES-R ABI: Satellite Imaging for the Next Generation **(Coming soon)**
- How Satellite Data inform NWP
- Nighttime Polar-Orbiting Applications (DNB)
- Satellite Feature ID: Three Dimensionality of Water Vapor

And updates in FY13 to:

- Advanced Satellite Sounding: The Benefits of Hyperspectral Observation
- Multispectral Satellite Applications: Monitoring the Wildland Fire Cycle
- Imaging with VIIRS... **3rd, Ed.** (will contain new imagery)



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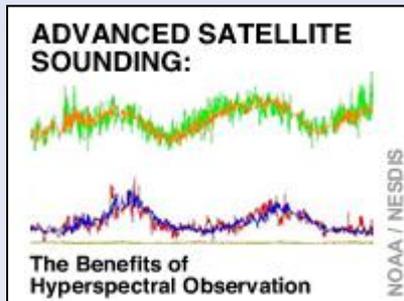


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- **Monitoring Atmospheric Composition with Satellites (Coming soon)**
- **How Satellite Data inform NWP**
- **Nighttime Polar-Orbiting Applications (DNB)**
- **Satellite Feature ID: Three Dimensionality of Water Vapor**

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Coming Soon

- WMO and EUMETSAT host RGB Imagery Workshop September 17-19
 - US participants: NWS, NRL, SSEC, SPoRT
- NESDIS Blended Polar Precip. Rate available
- NWA Conference in Madison
- Eastern Region Virtual Workshop – Oct 30
- NPP Data for AWIPS
- Satellite Science Week – Virtual – March 2013

NPP Products



University of Wisconsin-Madison / Space Science and Engineering Center

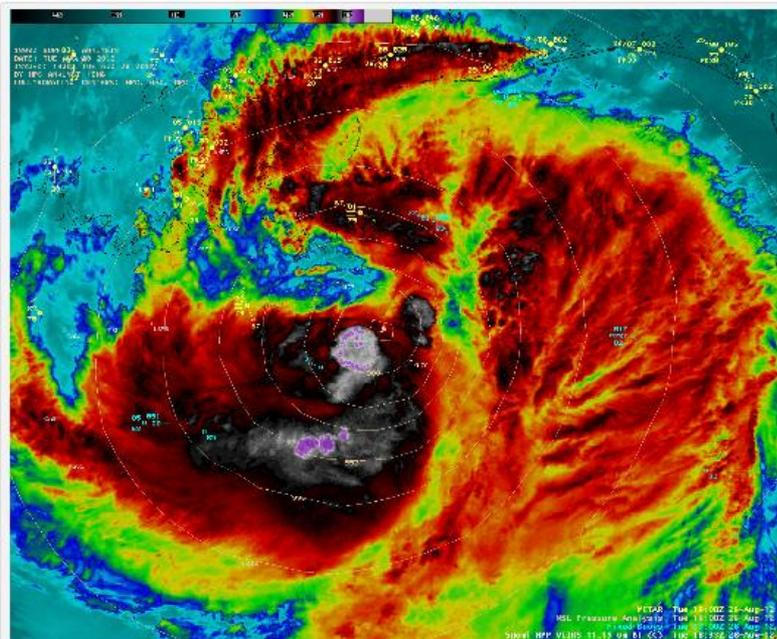
CIMSS Satellite Blog

/ CIMSS / CIMSS Satellite Blog /

Hurricane Isaac

August 28th, 2012

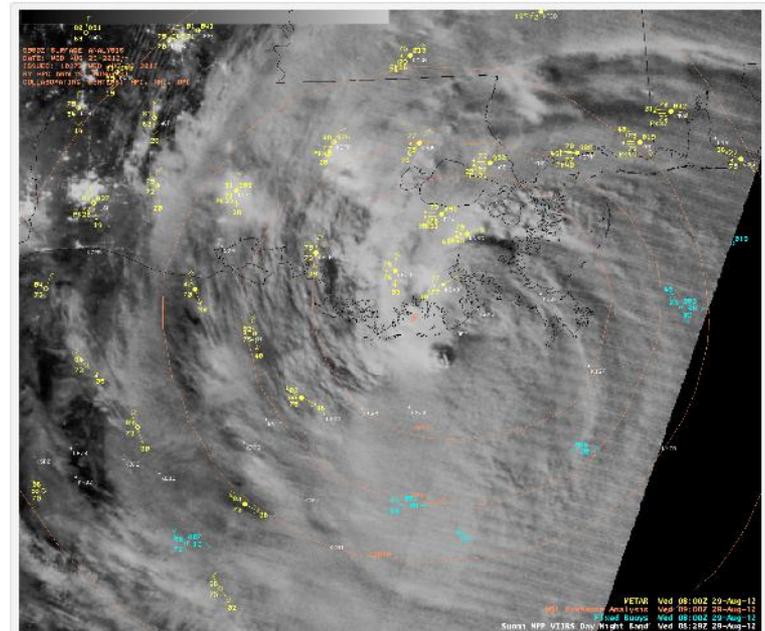
[Isaac](#) reached Category 1 hurricane intensity mid-day on **28 August 2012**. AWIPS images of 1-km resolution visible and IR data from the VIIRS, AVHRR, and MODIS instruments ([below](#)) showed curved banding features and convective bursts with overshooting tops, along with cloud top IR brightness temperatures as cold as -86°C .



Suomi NPP VIIRS 0.64 μm visible and 11.45 μm IR images at 18:33 UTC

===== 29 August Update =====

A comparison of night-time AWIPS images of Suomi NPP VIIRS 0.8 μm Day/Night Band data with the corresponding 11.45 μm IR data ([below](#)) at 08:29 UTC (3:29 AM local time) showed some spiral banding structure within the eastern semicircle of Isaac, along with an isolated area of deep convection immediately offshore (the minimum IR brightness temperature associated with this feature was -88°C). City lights could be seen in the northwestern portion of the image, where there were breaks in the clouds or only a thin veil of high clouds covered the area.



Suomi NPP VIIRS 0.8 μm Day/Night Band and 11.45 μm IR channel images