NOAA Satellite Proving Ground

Training and User Engagement
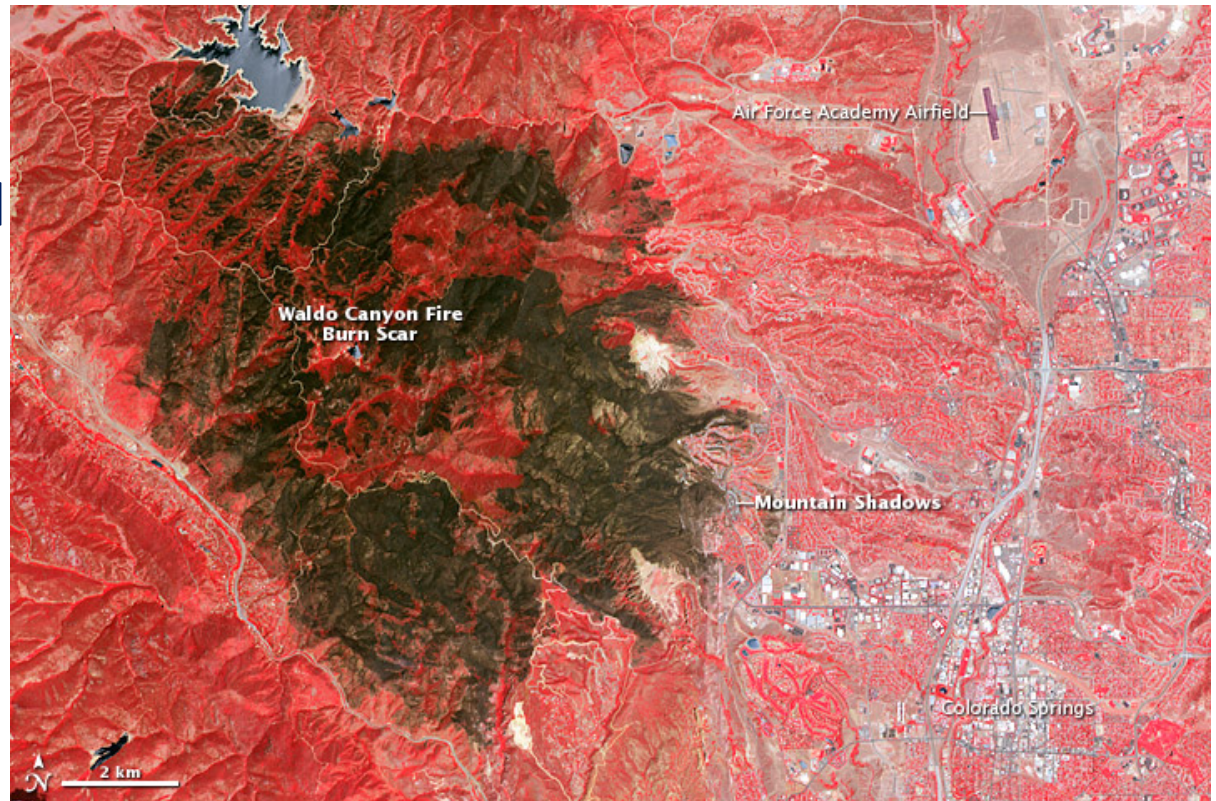
Update July 2012

Tactical – Wildfires

- WFOs called RSOs for major Colorado wildfires

- Used 3.9um and LW difference imagery for detection of new starts

- Satellite became key detection observation when aviation operations suspended

- Thunderstorm out-flow boundary induced wildfire run near Colorado Springs

Tactical – Before and After

- Derecho Blackout Suomi NPP DNB (Image: NASA Earth Observatory)
- http://earthobservatory.nasa.gov/IOTD/view.php?src=eoa-
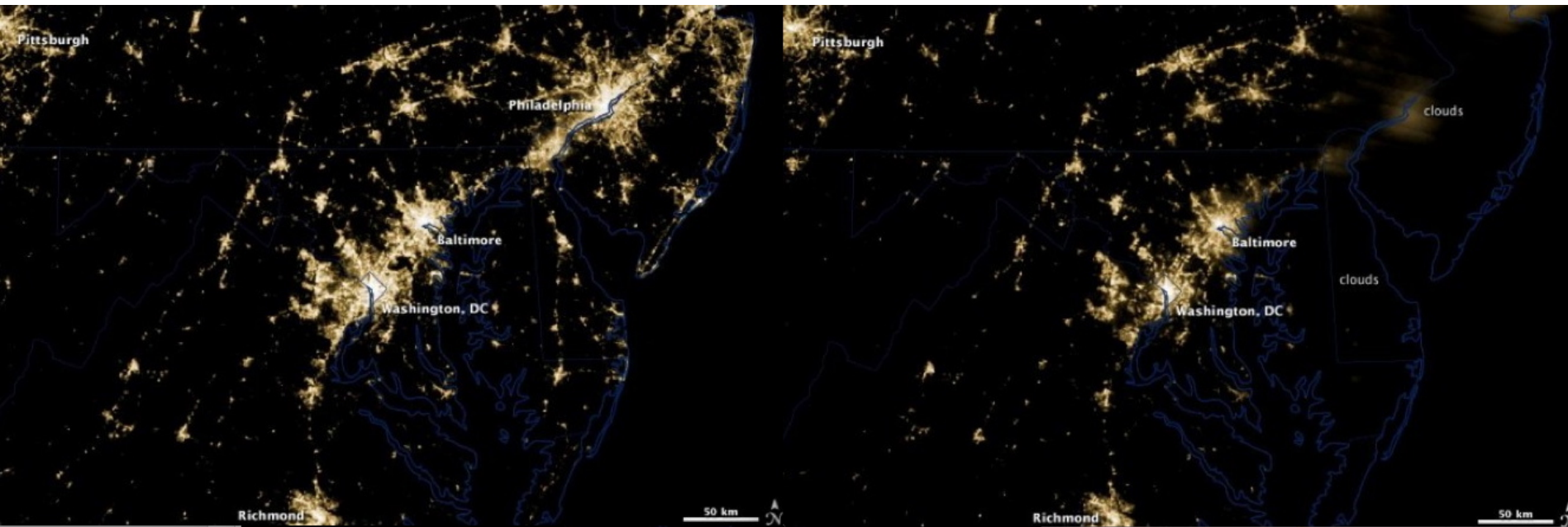
GOES FLS Algorithm Products

- GOES FLS Products Training Reviewed

- Will replace existing IR AWIPS Difference Product

- Implementation likely in AWIPS 1 and 2

- "Blazing" AWIPS2 path with SEC and FOTE Sites

- VISIT team working with Mike Pavolonis to develop national training

- Need to coordinate activities with Chad, Amanda, and others at CR in KC

- Need to include other regions

- Defining path to national test/ops, ATAN, OSIP, SREC

Coming Soon

- NWS TD working NOAA SSW and OCWWS tasker for national satellite training analysis

- WMO and EUMETSAT will be hosting an RGB Imagery Workshop in September
  - US participants expected: NWS, NRL, SSEC, SPoRT

- Review and final versions of HWT SE '12 training
  - Need to capture training completions in NOAA CLC

- NESDIS Blended Polar Precip. Rate available soon
  - Target date was end of July, working on data flow to NWS

- NOAA NDE Team (NWS and NESDIS) produced test package for RT NPP data to flow on AWIPS in October

Coming Soon

- Tracking GOES Incident Report for GOES-East pixel offset

- AWIPS 1 mod. for displaying full-resolution WV imagery from GOES-West

- Global Geo Rainrate from NESDIS – needs operational support/demand

- Hazard Services (Next Generation Warning Tool) Development Continues
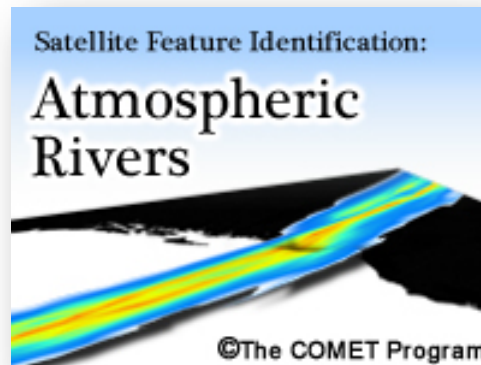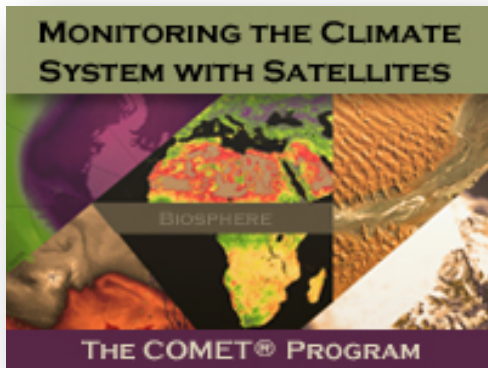
GOES Training Update
Recap FY2011/2012 for GOES PO
User Engagement at Mission CDR

6-21-2012

Brian Motta

NWS Forecast Decision Training Branch

COMET/VISIT/SHyMet/SPoRT

FY12 Satellite-specific Training Modules by COMET with complete or partial NESDIS funding

Funding also supports conference participation to promote the materials and interact with experts

- **GOES-R ABI, summer 2012**
- ***Monitoring the Climate System with Satellites**** (with EUMETSAT)**
- ***Satellite Feature Identification: Atmospheric Rivers**** (with MSC)**
- ***Atmospheric Dust***
- ***Microwave Remote Sensing: Overview, 2nd Edition***
- **Remote Sensing Using Satellites, 2nd Edition, summer 2012**
- **Polar-Orbiting Nighttime Applications, work underway**
- **Monitoring Atmospheric Composition with Satellites (with EUMETSAT) summer 2012**
- ***Imaging with VIIRS: A Convergence of Technologies and Experience, 2nd Edition***
- ***Suomi NPP: A New Generation of Environmental Monitoring Satellites***
- **The Environmental Satellite Resource Center Website**

Other COMET Modules Infused with Satellite Data and Products (includes new Spanish Translations)

Anticipating Hazardous Weather and Community Risk - 2nd Edition
Arctic Meteorology and Oceanography Monitoring
Gridded Forecast Verification and Bias Correction
Introduction to Tropical Meteorology Textbook (redo of the Mesoscale Convective Systems section)
Review of Aeronautical Meteorology DL Course
RUC to RAP Model Implementation Video
Satellite Feature Identification: Cyclogenesis
Satellite Interpretation in the Tropics
Space Weather Impacts on Aviation
Tropical Synoptic Meteorology Unit 2: Tropical Disturbances, Online Course: MJO/Indian Ocean Case
Introduction to Tropical Meteorology 2nd edition, Chapter 3, Global Circulation
Tsunami Strike! Caribbean Edition
Volcanic Ash: Observation Tools and Dispersion Models
Writing Effective TAFs in the Caribbean
Introducción a la meteorología tropical, versión 2
Cenizas volcánicas: Herramientas de observación y modelos de dispersion
Tsunamis: preparación de la comunidad, 2a edición
Meteorología satelital: Selección de canales del GOES, vers. 2
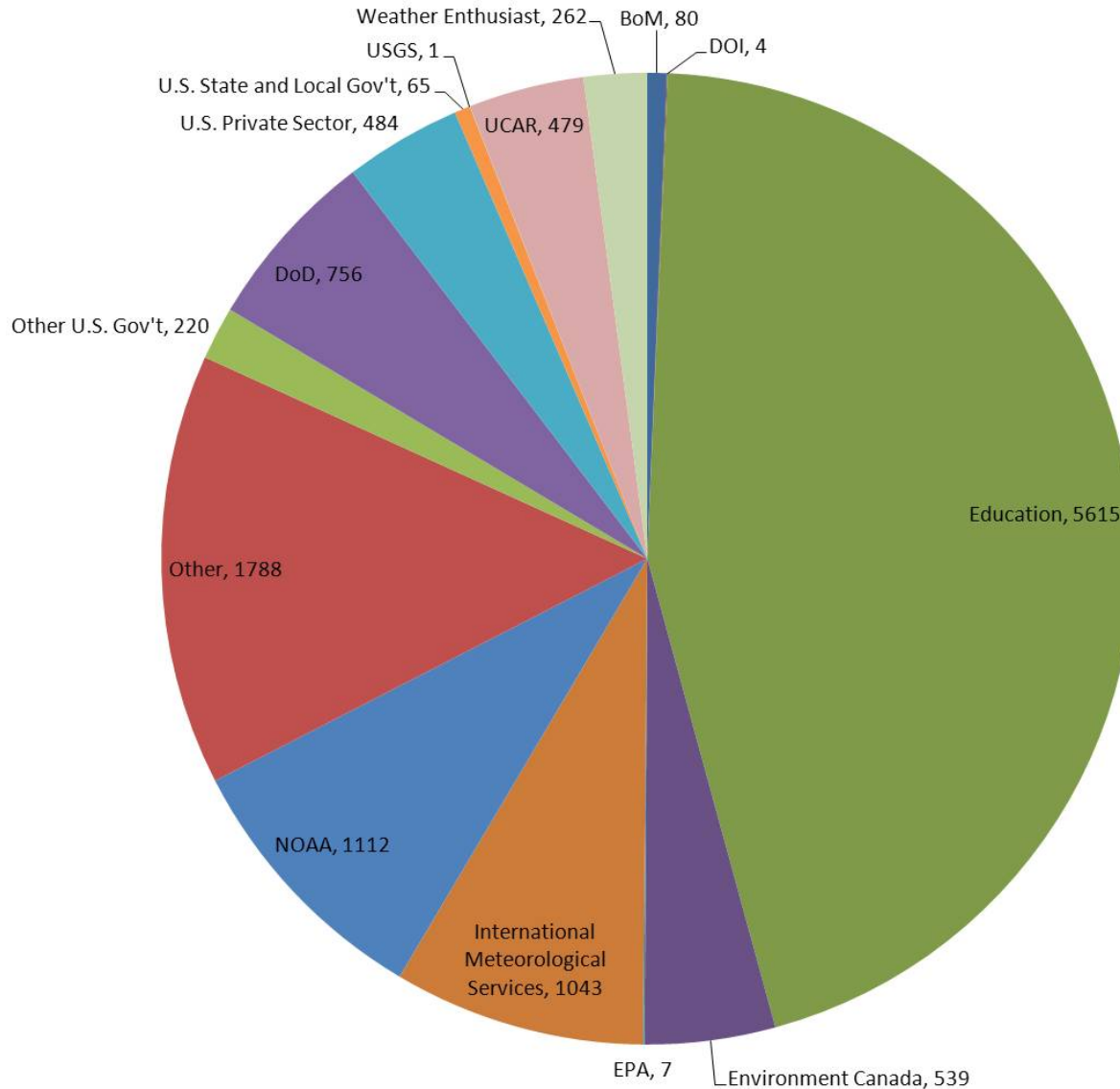**GOES-R: beneficios de la observación ambiental de próxima generación**
¡Tsunami a la vista! Edición del Caribe
Suomi NPP: Una nueva generación de satélites de observación ambiental
Impactos del tiempo espacial en la aviación (tentative)

Satellite-Focused COMET Module Usage via MetEd Site

FY11 Sessions by Affiliation

Total=12,455

Weather Enthusiast, 262
BoM, 80
USGS, 1
DOI, 4
U.S. State and Local Gov't, 65
U.S. Private Sector, 484
UCAR, 479
DoD, 756
Other U.S. Gov't, 220
Education, 5615
Other, 1788
NOAA, 1112
International Meteorological Services, 1043
EPA, 7
Environment Canada, 539

VISIT

Virtual Institute for Satellite Integration Training

FY11-12 Live Training Sessions (develop/revise date)

[Synthetic Imagery in Forecasting Orographic Cirrus](#) (January 2011)

[Synthetic Imagery in Forecasting Severe Weather](#) (February 2011)

[Objective Satellite-Based Overshooting Top and Enhanced-V Anvil Thermal Couplet Signature Detection](#) (February 2011)

[Volcanoes and Volcanic Ash Part 2](#) (March 2011)

[GOES-15 Becomes GOES-West](#) (December 2011)

[VISIT Satellite Chats](#) (short, interactive discussions, Q&A, monthly since February 2012)

> Topics:
> Fog and Low-Cloud Detection from Satellite (2-22-2012)
> Water Vapor Imagery (3-21-2012)
> Satellite Related Severe Weather Products (4-25-2012)
> Fire Weather Imagery and Products (5-23-2012)
> Mesoscale Convective Vortices (6-27-2012)

[Synthetic Imagery in Forecasting Low Clouds and Fog](#) (April 2012)

Pseudo GOES Lightning Mapper (May 2012)

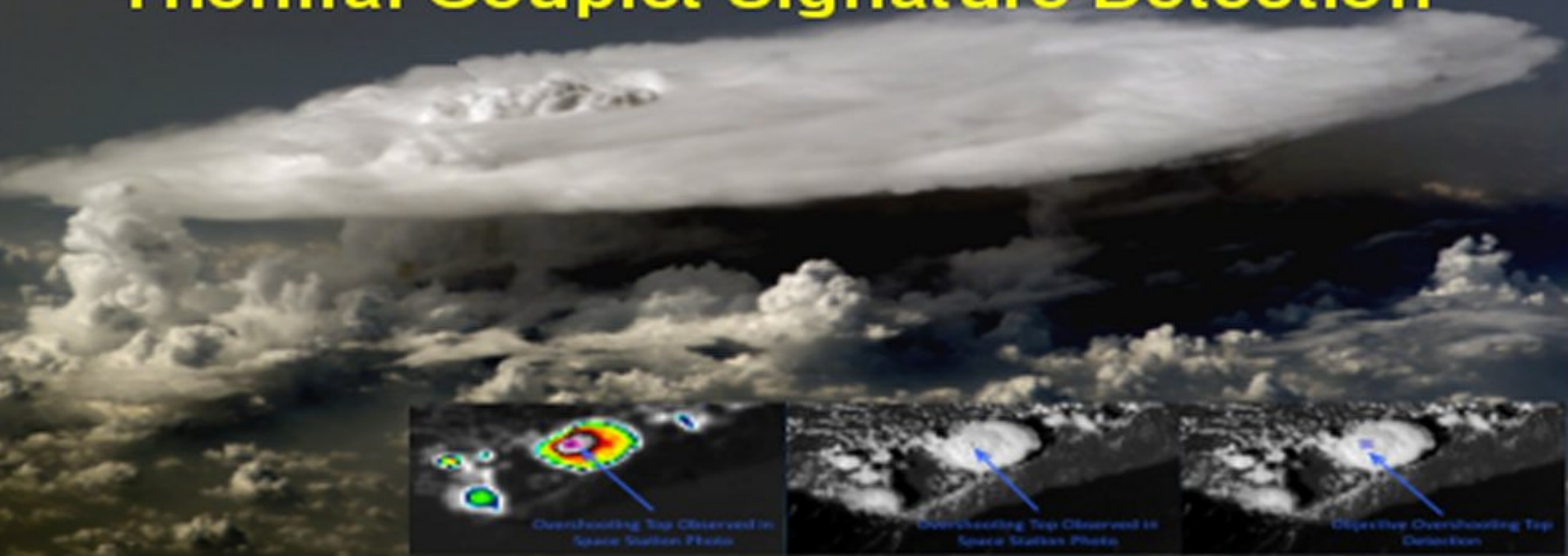Tropical Cyclone Intensity Model Guidance Used by NHC (June 2012, updated)

Tropical Cyclone Track Model Guidance Used by NHC (June 2012, updated)

Convective Cloud Top Cooling and UW Convective Initiation Algorithm (July 2012)

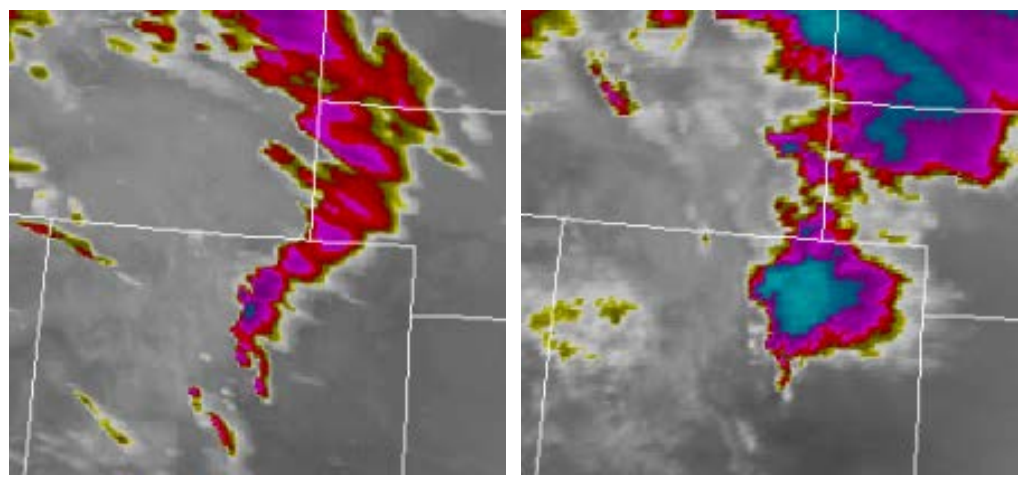# GOES Convective Initiation and Severe Weather Detection Training

GOES Synthetic Imagery Training

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

Synthetic Imagery in Forecasting Orographic Cirrus

Synthetic Imagery in Forecasting Severe Weather
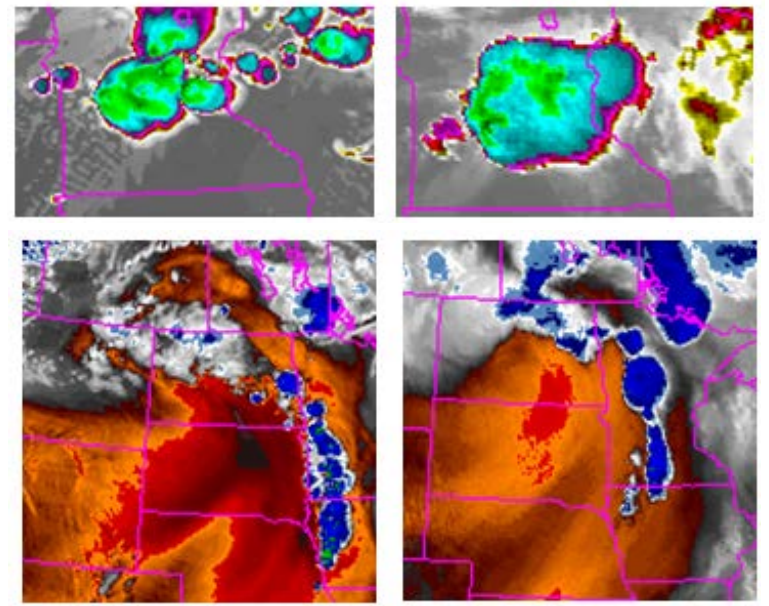
CIRA is currently working on the development of an additional training session titled "General Applications of Synthetic Satellite Imagery from the NSSL WRF-ARW Model".

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. "

VISIT

Virtual Institute for Satellite Integration Training

Additional Live VISIT Training Sessions in 2011, 2012

TROWAL Identification (winter weather satellite application)
UW Nearcasting Product (for severe weather)
Morphed Total Precipitable Water Detection (MIMIC)
POES and AVHRR Data in AWIPS
UW Convective Initiation Products (GOES-based CI Algorithm)
Convective Downbursts
GOES Imagery for Forecasting Severe Weather
Water Vapor Imagery Analysis for Severe Weather
Mesoscale Convective Vortices
Basic Satellite Interpretation in the Tropics
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

GOES Training at NOAA Testbeds Hazardous Weather Testbed

• Converted all but on-the-job training to distance learning for delivery and completion prior to the EWP experiment

• Increased experimental forecasting time by 20% over last year when training was done on Day1 at HWT

• Provided awareness-level training to field personnel and managers on the analysis techniques, data assimilation, and algorithm products under review and consideration in EWP. (Tales from HWT)

Building a Weather-Ready Nation

Western Region
Central Region
Eastern Region

NCEP Central Operations
NWS Headquarters
Climate Prediction Center
Hydrometeorological Prediction Center
Environmental Modeling Center
Ocean Prediction Center

Space Weather Prediction Center
Aviation Weather Center
Storm Prediction Center

Southern Region

Tropical Predicton Center

Alaska Region

Guam
Pacific Region

Hawaii

Puerto Rico

- ✚ NWS Headquarters
- ◆ Regional Headquarters (6)
- △ NCEP Center (9)
- ■ River Forecast Center (13)
- ● Weather Forecast Office (122)
- ✴ Center Weather Service Unit (21)
- ✩ Weather Service Office (21)
- ✩ Tsunami Warning Center (2)
- ✩ Data Collection Office (2)
- ✳ Other National Centers (8)

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