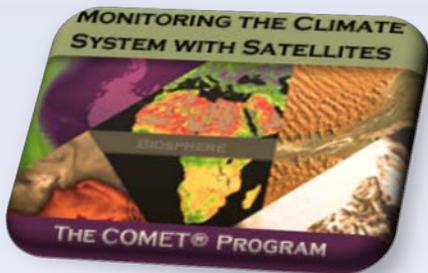




New and Updated Satellite Meteorology Education Resources from COMET

Wendy Schreiber-Abshire, P. Dills, and M. Weingroff
UCAR's COMET Program

9 January 2013 Austin, Texas
Ninth Annual Symposium on Future Operational Environmental Satellite Systems



- **Number of Satellite-specific modules on MetEd website = 75**
 - (45 English, 20 Spanish, 10 French)

- **20,000+ meaningful English Satellite Module User Sessions in FY12**

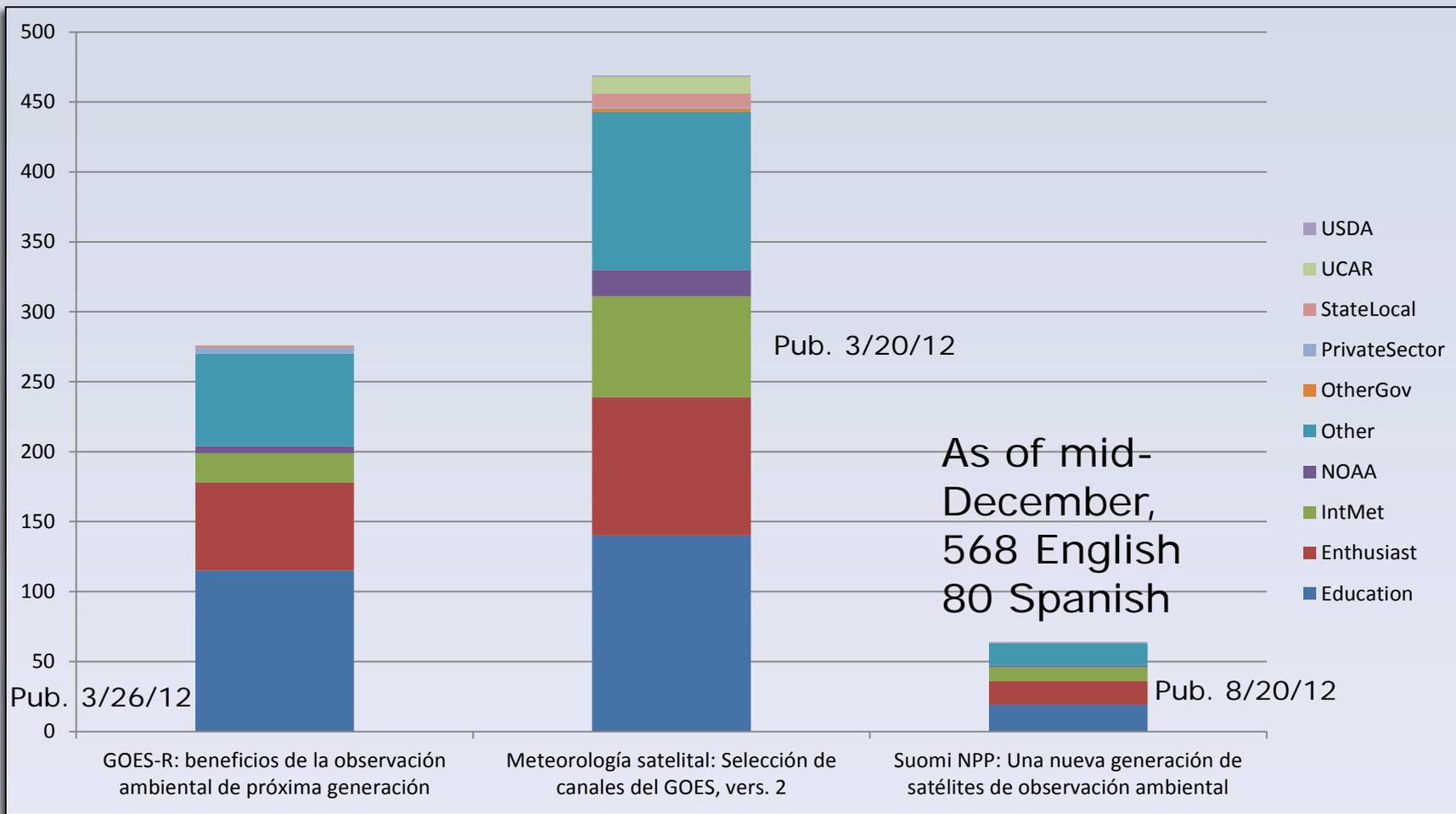
- **Total number of hours of satellite training available = ~62 hours, plus the ESRC**

- **Numbers of other COMET modules that satellite data and products are strategically infused into per year = 20**

- **NESDIS satellite training activities with COMET Program attract additional funding and training development specifically in the satellite topic area from both EUMETSAT and the Meteorological Service of Canada**

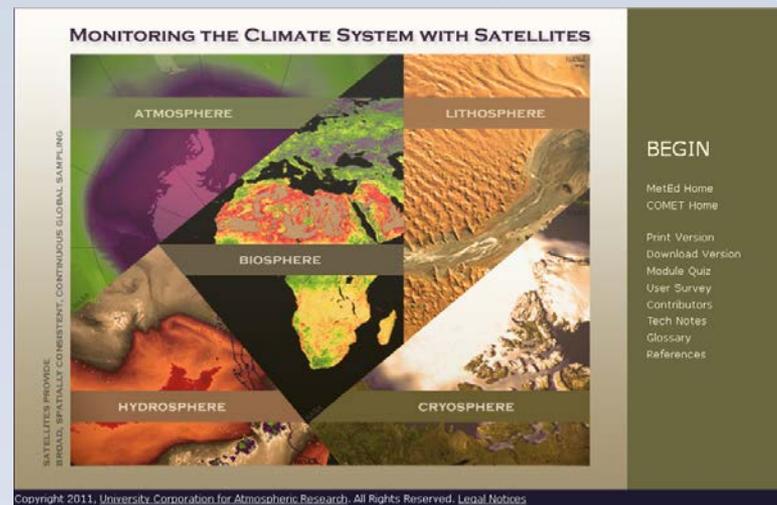
- **African Satellite Meteorology Education & Training (ASMET)**
 - 3 modules, Satellite Precipitation for Hydro Management in S. Africa, Flooding in West Africa, and Drought in East Africa
- **Atmospheric Dust**
- **GOES-R: Benefits of Next-Generation Environmental Monitoring, Spanish version**
- **Imaging with VIIRS: A Convergence of Technologies and Experience, 2nd Ed.**
- **Microwave Remote Sensing: Overview, 2nd Ed.**
- **Monitoring the Climate System with Satellites**
- **Remote Sensing Using Satellites, 2nd Ed.**
- **Satellite Feature Identification: Atmospheric Rivers**
- **Satellite Feature Identification: Cyclogenesis**
- **Satellite Meteorology: GOES Channel Selection, Version 2, Spanish version**
- **Satellite Monitoring of Atmospheric Composition (*published Oct. 2012*)**
- **Suomi NPP: A New Generation of Environmental Monitoring Satellites, (Tom showed) and a Spanish version too!**

User Sessions for Select Recently Published Spanish Satellite Modules (through 1 Nov)



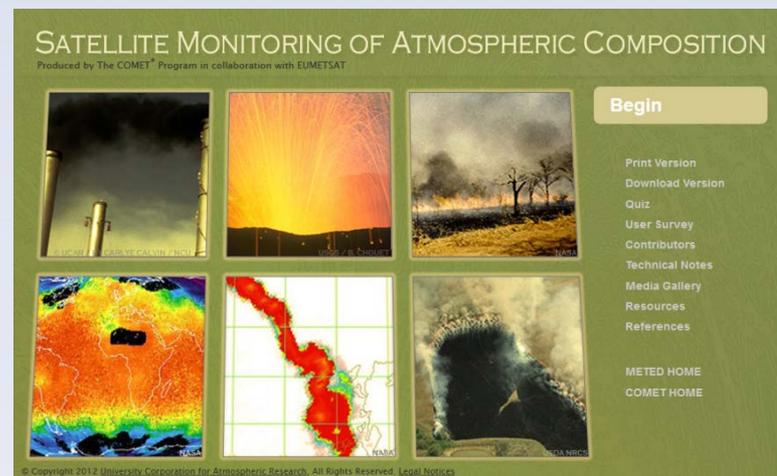
Monitoring the Climate System with Satellites (Jan. 2012)

- Satellite role in observing key atmospheric elements and features
- Monitoring Essential Climate Variables (ESVs)
- Explores events and climate cycles at different scales (seasonal to long-term)
- Satellite contributions to improving understanding, monitoring, and prediction capability

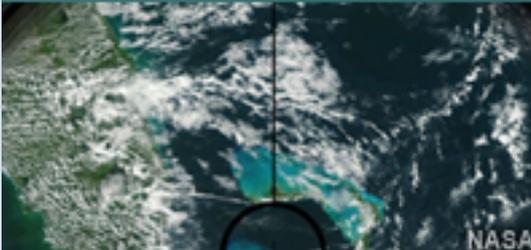


Satellite Monitoring of Atmospheric Composition (Nov. 2012)

- Measurement techniques used and development of operational services
- History of European and U.S. satellite missions
- Future missions planned

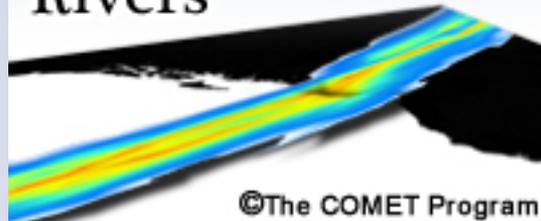


**IMAGING WITH VIIRS:
A CONVERGENCE OF TECHNOLOGY
AND EXPERIENCE, 2nd Edition**



NASA

Satellite Feature Identification:
**Atmospheric
Rivers**



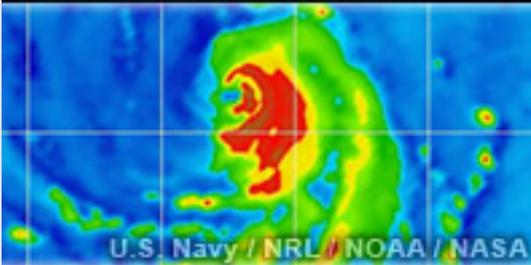
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Satellite Feature Identification:
Cyclogenesis



©The COMET Program

Microwave Remote Sensing:
Overview, 2nd Edition



U.S. Navy / NRL / NOAA / NASA

ATMOSPHERIC DUST
PRODUCED BY THE COMET PROGRAM



NASA



**Volcanic Ash:
OBSERVATION TOOLS
AND DISPERSION MODELS**

NASA

Example of Satellite Infusion: Volcanic Ash: Observation Tools & Dispersion Models Module

- Example of satellite training *embedded* in other training modules
- Module includes tools and techniques for identifying and forecasting volcanic ash transport
 - Strengths & weaknesses
- Use satellite, radar, observations, and model output to identify and help forecast ash transport, and produce forecast products

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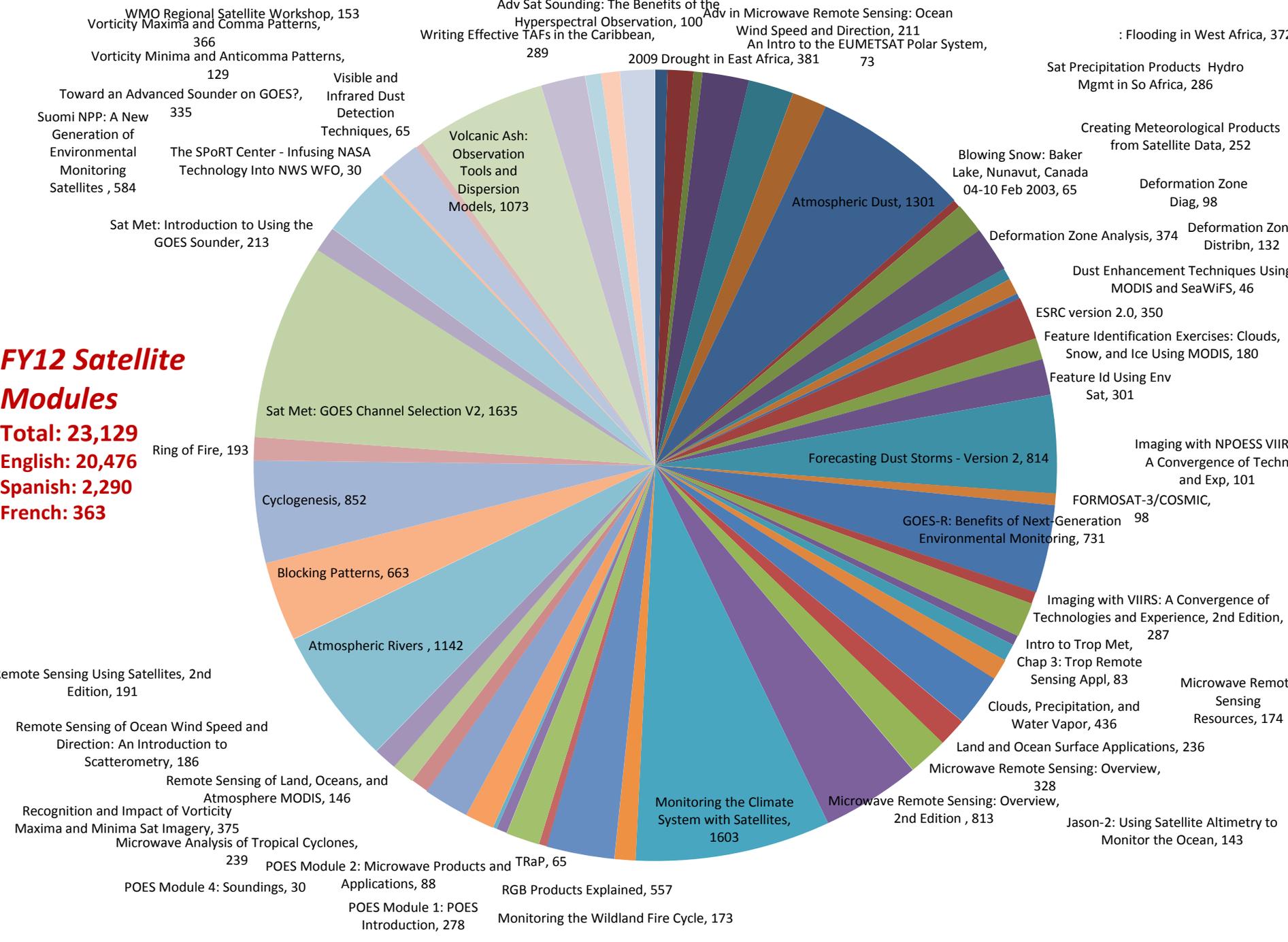
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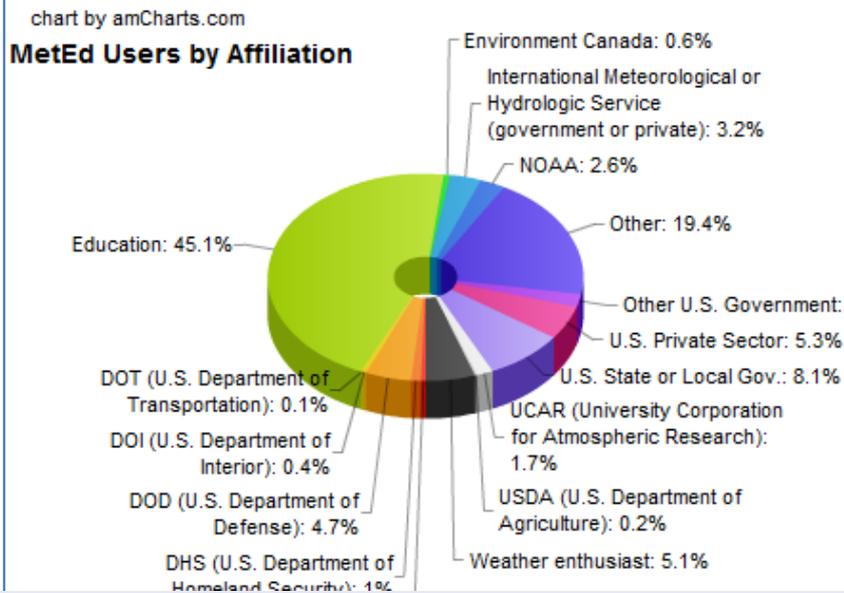
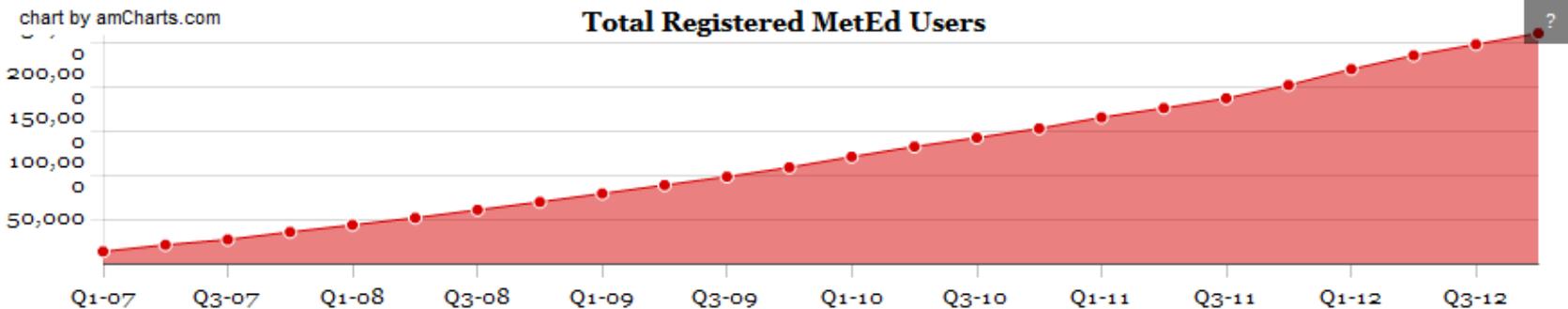
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- Visible imagery
- Thermal IR imagery
- Shortwave IR imagery
- False-color imagery
- Split-window imagery
- Principal component imagery
- SW IR Reflectance product
- SO₂ product

**FY12 Satellite
Modules**
Total: 23,129
English: 20,476
Spanish: 2,290
French: 363

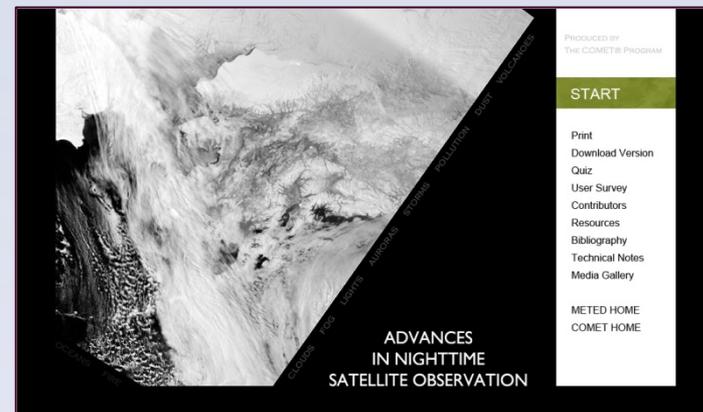


Whose doing all this training?



In Progress and Coming Soon

- GOES-R ABI: Satellite Imaging for the Next Generation **COMING SOON!** (Tom previewed)
- Applications of the VIIRS Day-Night Band **COMING SOON too!** (Tom previewed)
- and, How Satellite Data Inform NWP



Also:

- Support for first virtual Satellite Science Week conducted at a distance in 2013, and
- The Environmental Satellite Resource Center...



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The Environmental Satellite Resource Center provides...

easy access to a wide range of useful information, education, and training about low-earth orbit and geostationary satellites from trusted sources.

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Satellite Meteorology

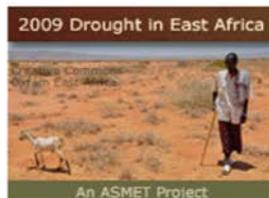
Topics: Languages:

In this topic area, find out how current and future satellites and their sensors work, how to interpret what they tell us, and how to make forecasts and other weather products from their data.

Sort by:



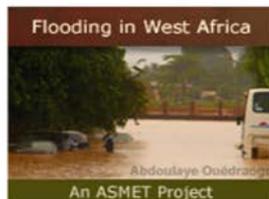
1 - 40 out of 54 results



ASMET: 2009 Drought in East Africa

Languages: English
 Publish Date: 2012-01-17
 Skill Level: 2
 Completion Time: 1.00 - 1.25 h
 Topics: Climate, Hydrology/Flooding, Satellite Meteorology, Tropical/Hurricanes

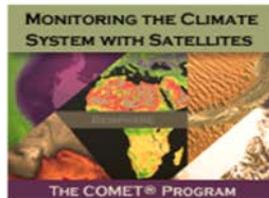
The module examines the 2009 drought in the Greater Horn of Africa (GHA), focusing on conditions in Kenya. The module begins by reviewing drought conditions in the years leading up to 2009. From there, it examines the seasonal climate forecast for the beginning of 2009 and ... [Read more >](#)



ASMET: Flooding in West Africa

Languages: English
 Publish Date: 2012-01-10
 Skill Level: 2
 Completion Time: .75 - 1.00 h
 Topics: Hydrology/Flooding, Satellite Meteorology, Tropical/Hurricanes

The rainy season in Sahelian West Africa extends from June to September and is tied to the position of the intertropical front. During this period, mesoscale convective systems (MCSs) often produce significant rainfall that can lead to flooding. This module examines an ... [Read more >](#)



Monitoring the Climate System with Satellites

Languages: English
 Publish Date: 2012-01-10
 Skill Level: 1
 Completion Time: 1.50 - 2.00 h
 Topics: Climate, Satellite Meteorology

The international science community has identified a set of Essential Climate Variables (ECVs) that should be monitored for measuring the climate system, how it is changing, and its likely impact on future climate. Environmental satellites play an important role in this ... [Read more >](#)

Special Interest

[More on Satellite Meteorology](#)



The Environmental Satellite Resource Center (ESRC) provides easy access to a wide range of useful information, education, and training about low-earth orbit and geostationary satellites from trusted sources.

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About Our Training

Our training consists of modules and courses. A **module** is targeted toward one focused subject, whereas a **course** is a collection of modules that pertain to a broader subject area. You can receive certificates of completion for both modules and courses. Courses are entirely self-paced and available for open enrollment.

Virtual Classroom

The COMET® Program's virtual classroom provides access to material in support of our **residence** and **virtual courses**. These courses are generally available by invitation only and are hosted at our UCAR facility in beautiful Boulder, Colorado.

Questions

abshire@ucar.edu



URLs:

- <http://meted.ucar.edu>
- <http://meted.ucar.edu/topics/modules/satellite>
- <http://meted.ucar.edu/esrc>