COMET's Environmental Satellite Education Resources for Anticipating and Monitoring Meteorological Hazards

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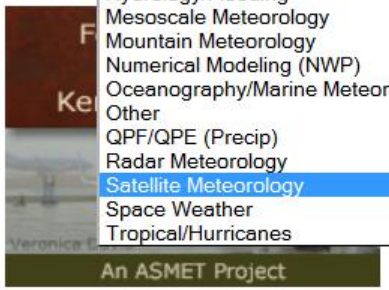
Topics: All Topic Areas

Languages: English

All Topic Areas
Aviation Weather
Climate
Coastal Weather
Convective Weather
Emergency Management
Environment and Society
Fire Weather
Fog and Low Stratus
Hydrology/Flooding
Mesoscale Meteorology
Mountain Meteorology
Numerical Modeling (NWP)
Oceanography/Marine Meteorology
Other
QPF/QPE (Precip)
Radar Meteorology
Satellite Meteorology
Space Weather
Tropical/Hurricanes

Sort by: Date (Newest to Oldest)

1 - 40 out



7: Forecasting Fog
on: Kenya Case

s: English
ite: 2013-11-05

Completion Time: .75 - 1.00 h
Topics:

This lesson aims to improve aviation forecasts of fog in the African airspace by teaching forecasters to make more accurate forecasts using satellite imagery, numerical weather prediction, and other available data. A process for diagnosing and forecasting fog is presented ... Read more »

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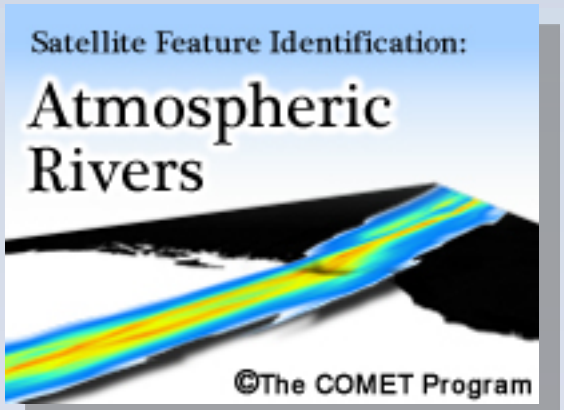
About Our Training

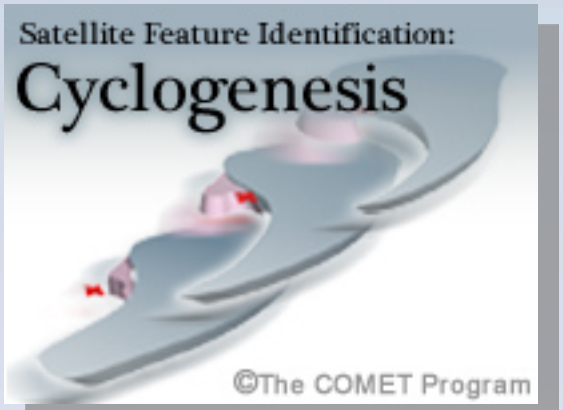
Our training consists of modules and courses. A **module** is targeted toward one focused subject, whereas a **course** is a collection of modules that pertain to a broader subject area. You can receive certificates of completion for both modules and courses. Courses are entirely self-paced and available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

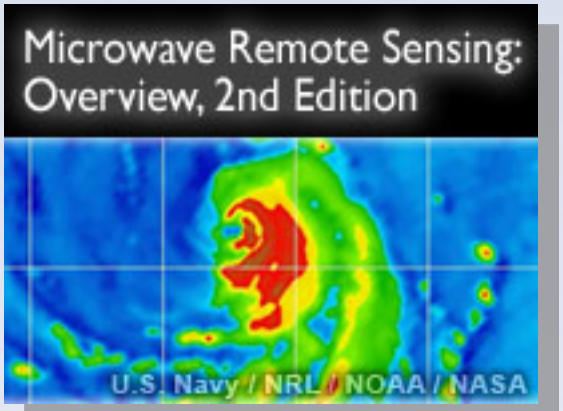
Fast Facts

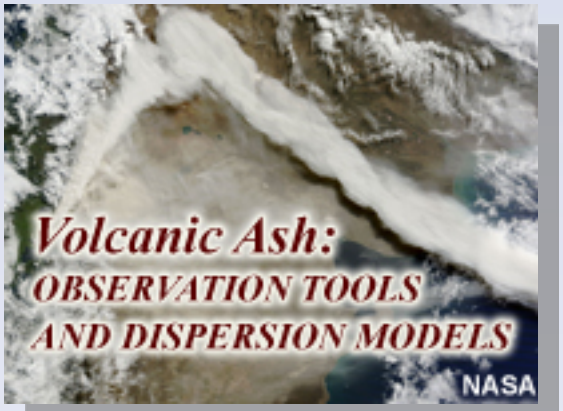
- **Number of Satellite-specific modules on MetEd website = 81**
  - **(63 English, 21 Spanish, 15 French,** as of Jan. 2014**)**
- **~27,000+ meaningful English Satellite Module User Sessions FY13**
- **Total number of hours of satellite training available = ~75 hrs, plus the ESRC**
- **Numbers of other COMET modules that satellite data and products are strategically infused into per year = 15**
- **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**

Relevant Lesson Examples









- Examples of many lessons on topics of interest to the Natural Hazards Community!

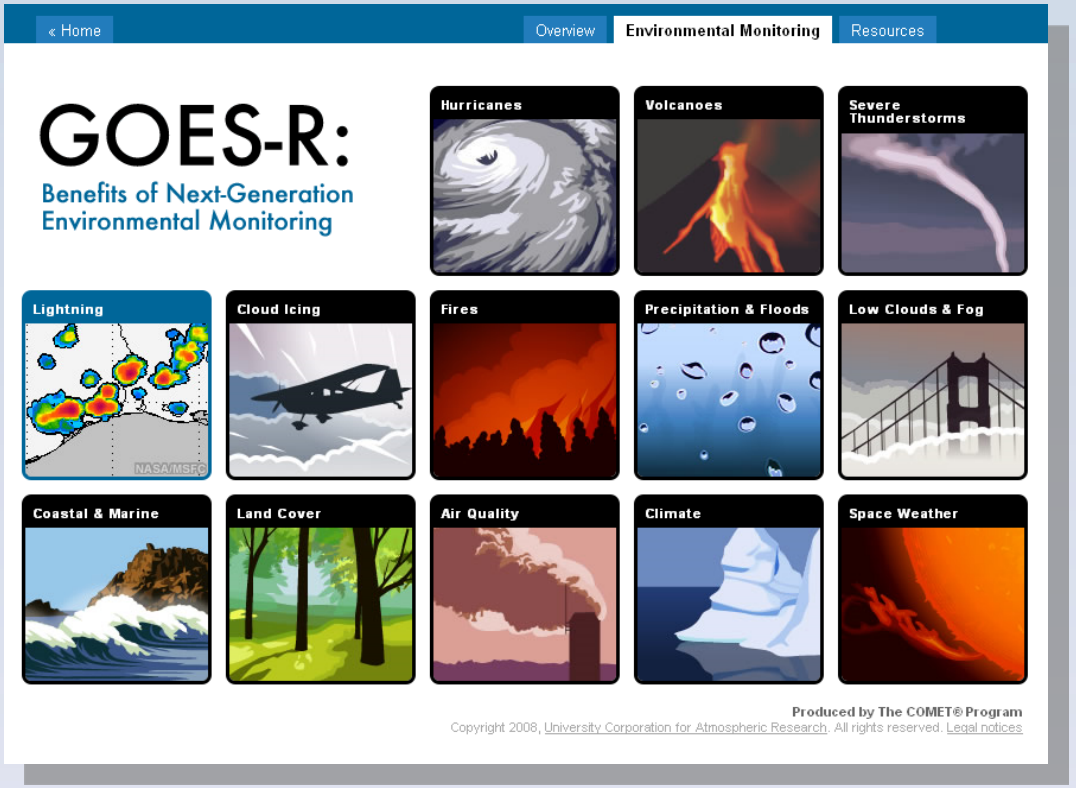
GOES-R Benefits!

- Includes 3 sections: *Overview, Environmental Monitoring, & Resources*
- GOES-R benefits and the ability to monitor 13 unique hazards and phenomena

Each mini-movie includes:

- Background and Needs (general public)
- Capabilities and Benefits (decision makers)
- Technical Improvements (forecasters)

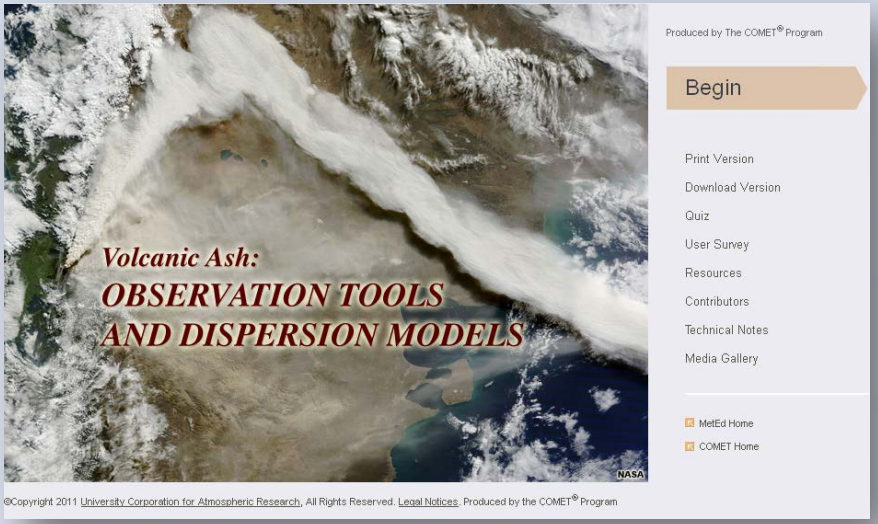
- Published Dec. 2008, 1 hr long (Launch 2015)



- Available in English and Spanish!
- Recently updated to tablet friendly format!

Volcanic Ash: Observation Tools & Dispersion Models

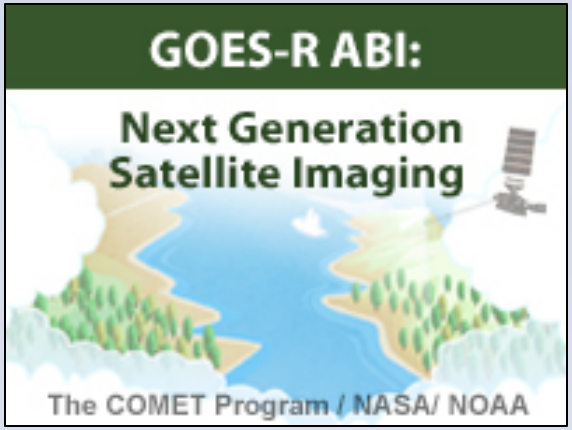
- Example of satellite training *embedded* in other training modules
- Module includes tools and techniques for identifying and forecasting volcanic ash transport
  - Strengths & weaknesses
- Use satellite, radar, observations, and model output to identify and help forecast ash transport, and produce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

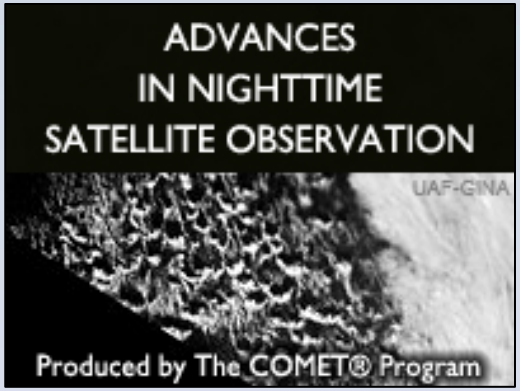


- Visible imagery
- Thermal IR imagery
- Shortwave IR imagery
- False-color imagery
- Split-window imagery
- Principal component imagery
- SW IR Reflectance product
- SO_2 product

NEW & Coming Soon

in Spanish too!



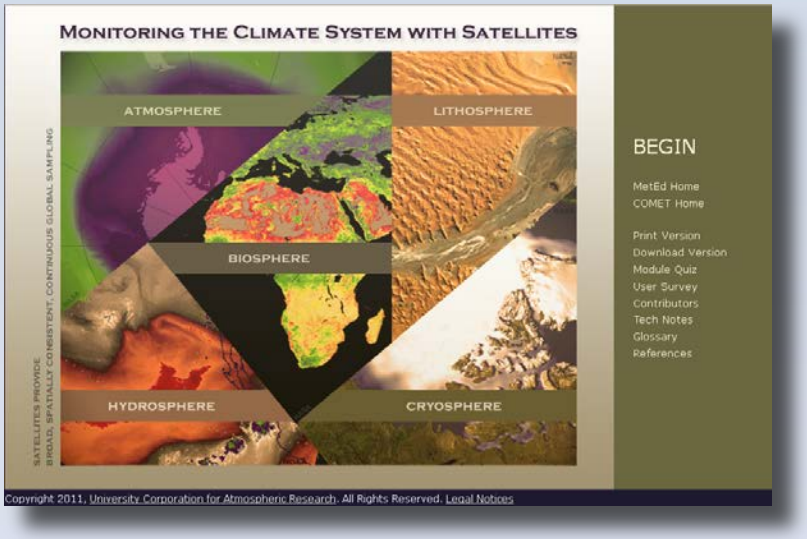


- **Suomi NPP: A New Generation of Environmental Monitoring Sat., pub. May 2012**
- **Imaging with VIIRS, 2nd Edition, pub. April 2012**
- **GOES-R ABI: Satellite Imaging for the Next Generation, pub. Feb. 2013**
- **Advances in Nighttime Satellite Observation, (DNB), pub. April 2013**
- **A lesson, How satellite data impact NWP analyses & forecasts, FY14**
- **GOES-R GLM module, FY14**
- **COSMIC-2 underway, and PCW lesson, hopefully starting soon**

EUMETSAT Partnership

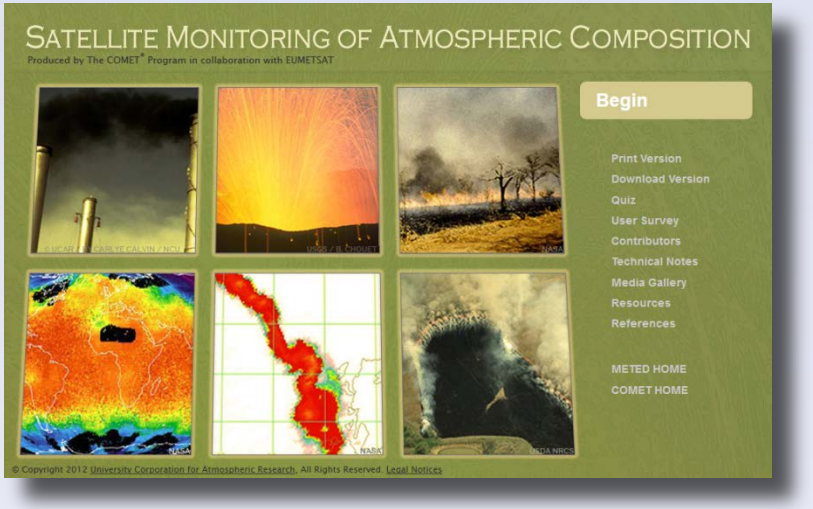
Monitoring the Climate System with Satellites *(Jan. 2012)*

- 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



MetaData on each Lesson

Introduction to VIIRS Imaging and Applications

Languages: English
Publish Date: 2013-09-30
Skill Level: 1
Completion Time: .75 - 1.00 h
Includes Audio: no
Required Plugins: AdobeReader
Topics:
Satellite Meteorology

Reviews:
(0 reviews)
Read or add reviews

BEGIN MODULE

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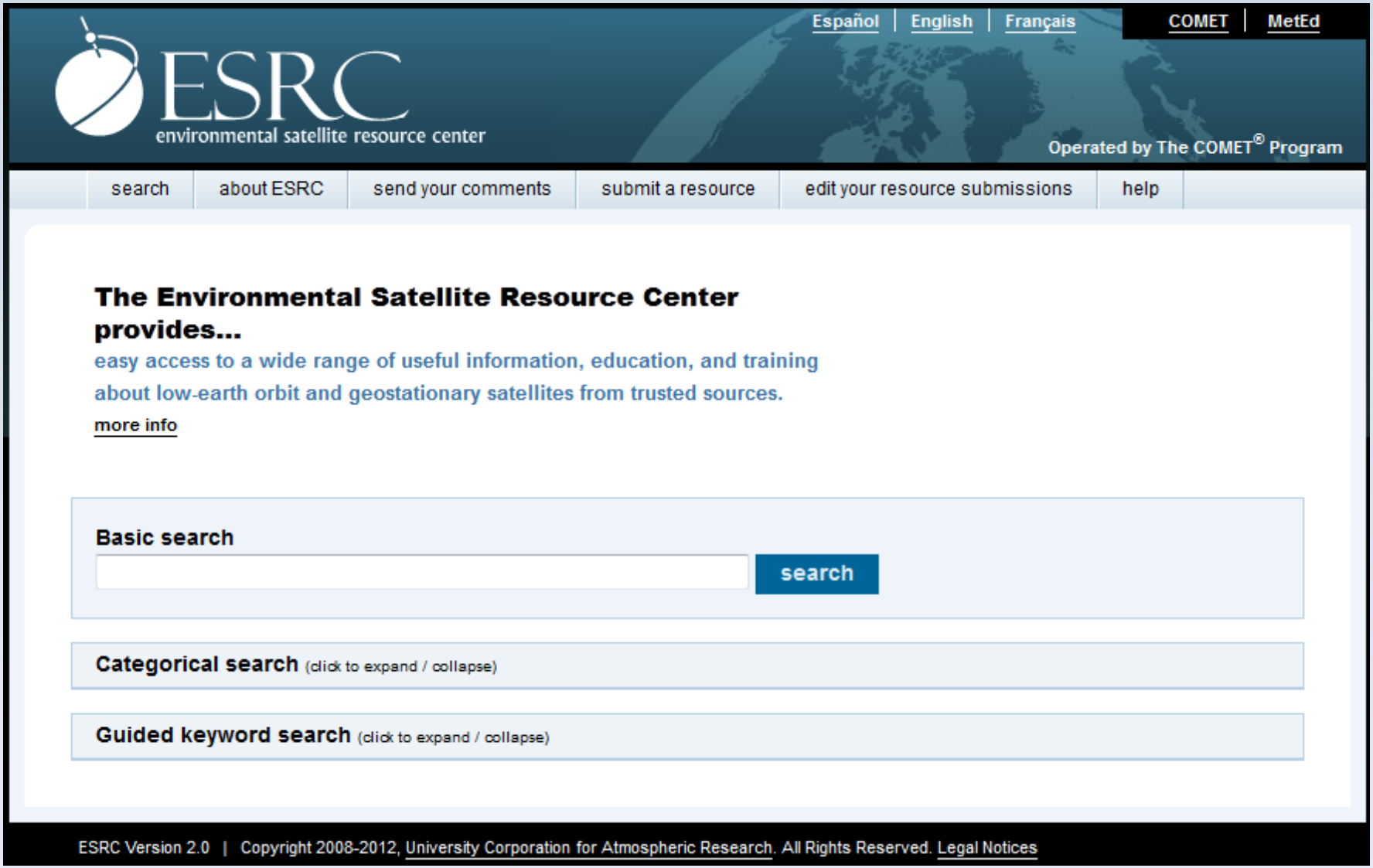
Description | Objectives | Keywords | Media Gallery | Reviews

This lesson introduces the VIIRS imager that operates on the current U.S. Suomi NPP satellite and is planned for future JPSS environmental satellites. VIIRS has many advanced features that improve both spectral and spatial resolution and enable the delivery of consistent, high quality, and high resolution data to users worldwide. The lesson covers the enhanced capabilities of VIIRS and highlights some of its applications. These include single channel and multispectral products used to monitor dust, volcanic ash, convection, fog and low clouds, sea surface temperature, tropical cyclones, contrails, and ocean color. A special feature on VIIRS, the Day Night Band low-light visible channel, is also introduced. For more information on the channel and its capabilities, users are referred to the COMET lesson "Advances in Space-Based Nighttime Visible Observation."

The ESRC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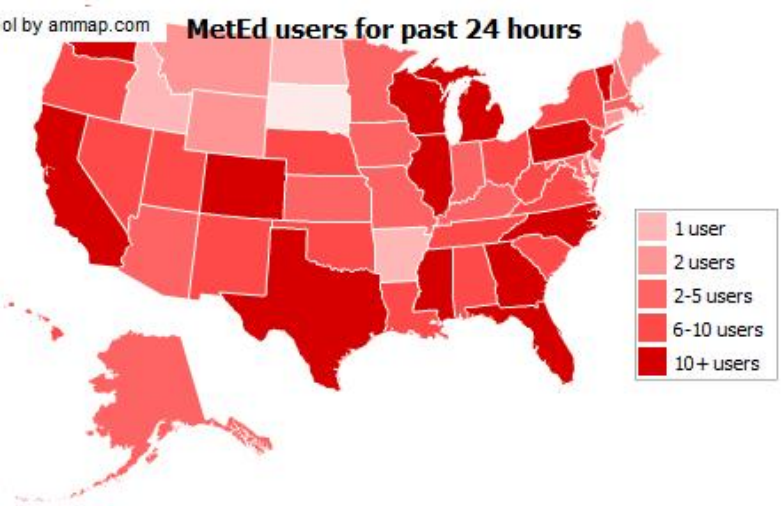
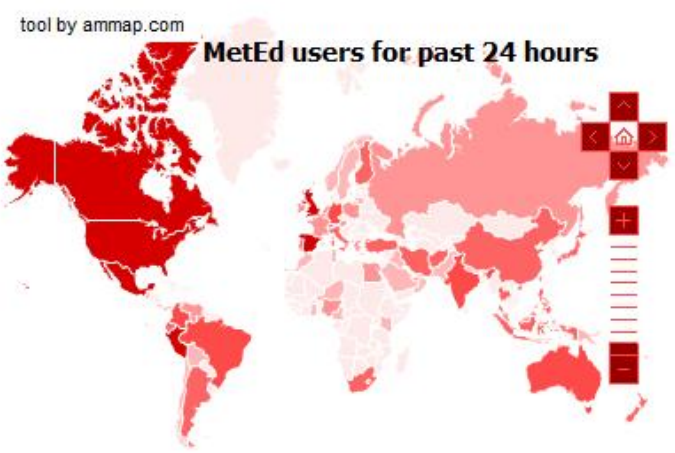
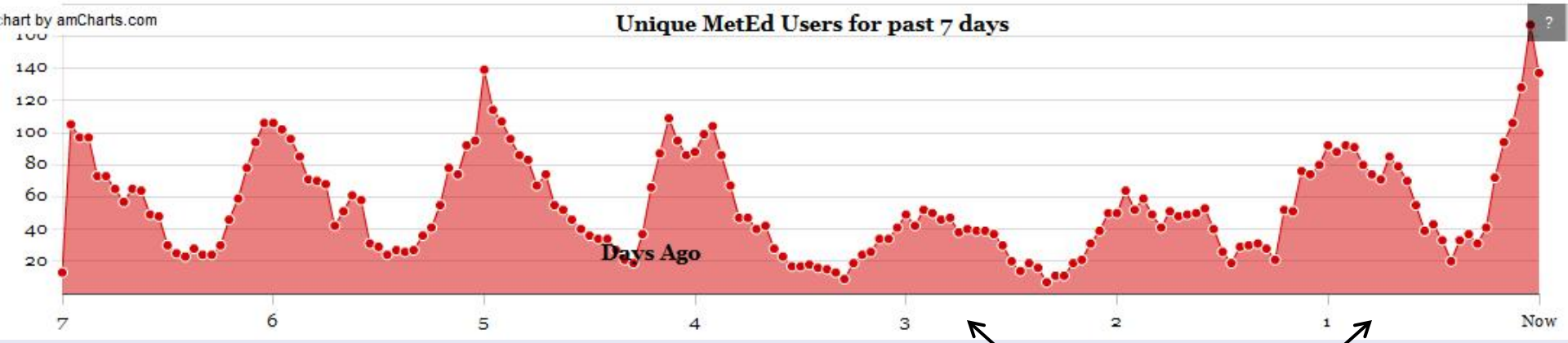
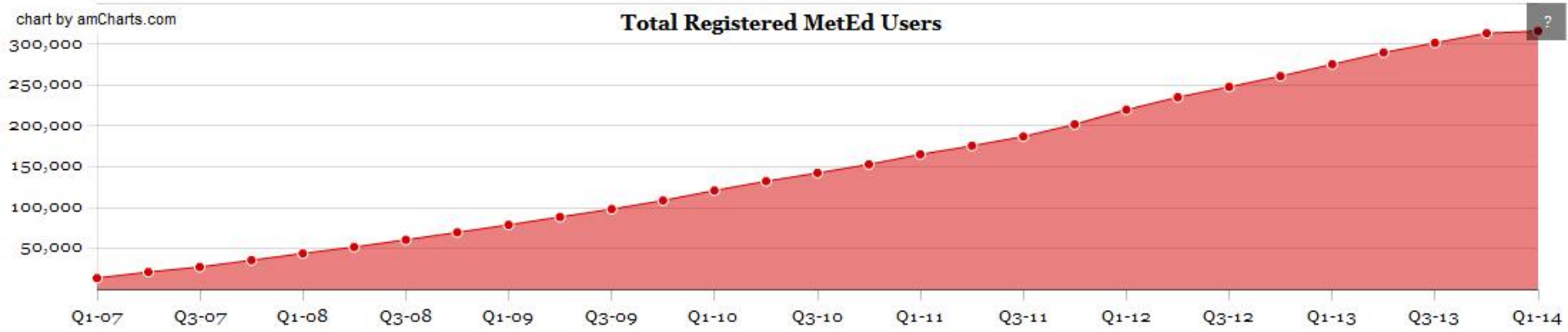






MLK weekend

Users!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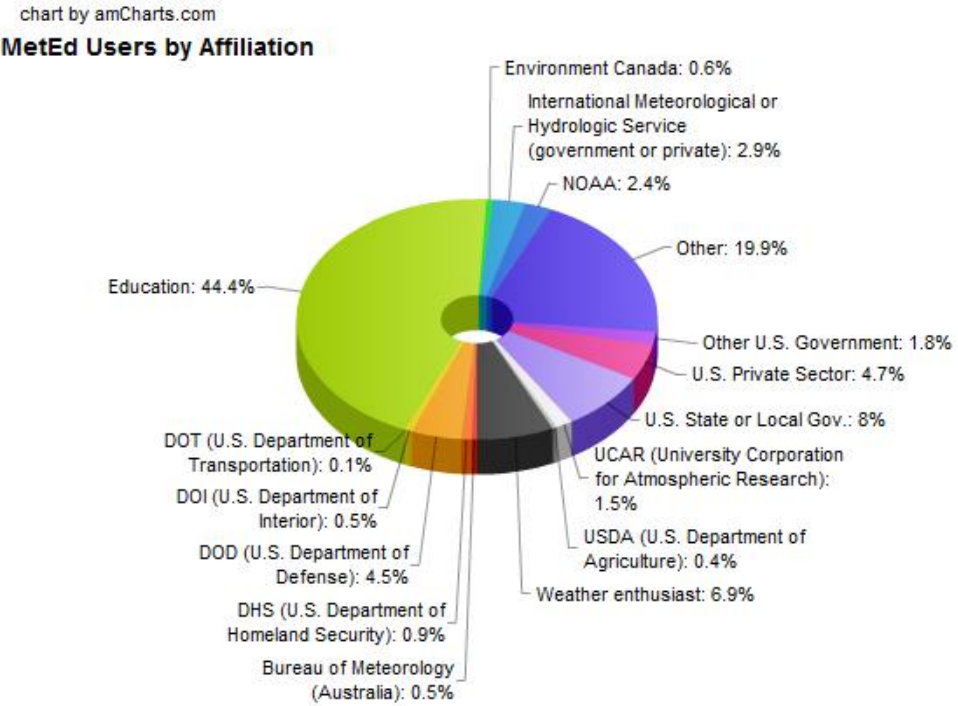
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MetEd Users by Affiliation
Environment Canada: 0.6%
International Meteorological or Hydrologic Service (government or private): 2.9%
NOAA: 2.4%
Other: 19.9%
Other U.S. Government: 1.8%
U.S. Private Sector: 4.7%
U.S. State or Local Gov.: 8%
UCAR (University Corporation for Atmospheric Research): 1.5%
USDA (U.S. Department of Agriculture): 0.4%
Weather enthusiast: 6.9%
Bureau of Meteorology (Australia): 0.5%
DHS (U.S. Department of Homeland Security): 0.9%
DOD (U.S. Department of Defense): 4.5%
DOI (U.S. Department of Interior): 0.5%
DOT (U.S. Department of Transportation): 0.1%
Education: 44.4%

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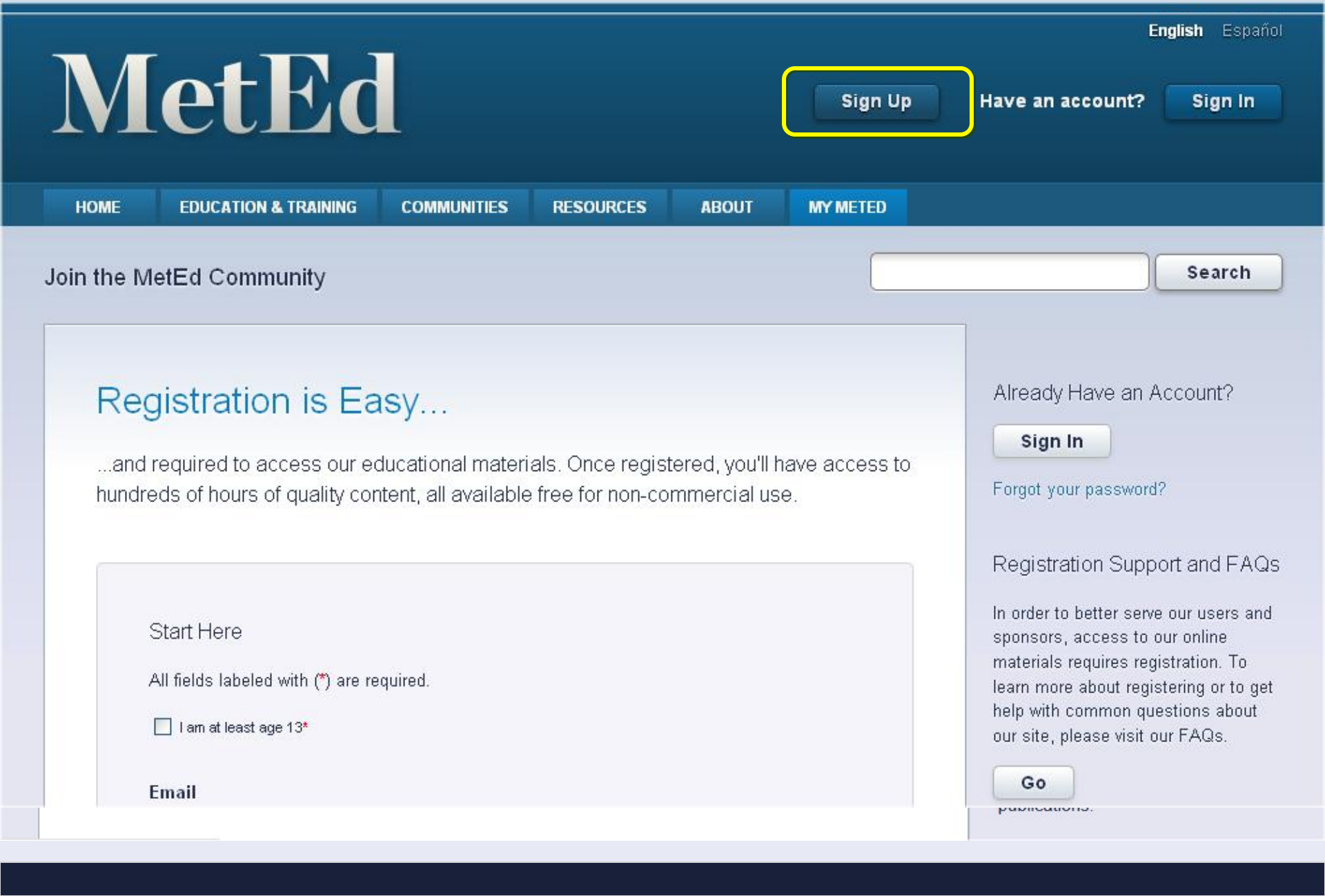

Alternative Delivery Methods

- MetEd established in 1998! Yet we evolve…
- We know that MetEd mobile/tablet usage is growing (from 6 weeks of data in Sept./Oct 2013):
  - 8.5% iPad, followed closely by the iPhone
- COMET YouTube Channel (same period):
  - ~3500 minutes of videos watched
  - ~11% usage is on mobile
  - 6% tablets,
  - 5% phones

Questions?

abshire@ucar.edu

http://meted.ucar.edu