



# Preparing User Communities for the Next Generation of LEO and GEO Environmental Satellites

Thomas F. Lee and Arunas Kuciauskas  
Naval Research Laboratory  
Monterey CA

Patrick Dills  
COMET Program, Boulder CO

Jordan Gerth, Chad Gravelle, Scott Bachmeier  
Cooperative Institute  
for Meteorological Satellite Studies (CIMSS)  
Madison WI

James Gurka  
NOAA/NESDIS, Office of Systems Development, Silver Spring MD

Anthony Mostek  
National Weather Service, Boulder CO

Tim Schmit  
NOAA/NESDIS, Office of Research and  
Applications, Advanced Satellite Products Team, Madison WI

Gary McWilliams and John Furgerson  
JPSS Program Office

# Training/Demo Activities

- GOES-R Proving Ground
- Proving Ground Partners
- CIMSS Outreach
- Latest from COMET
- NRL VIIRS Page

# Proving Ground Mission Statement

Bridge the gap between research and operations by simulations, AWIPS demos, and feedback.

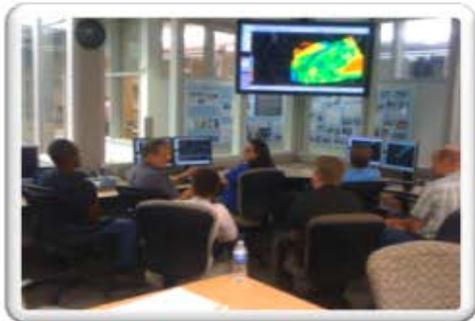
Collaboration between: GOES-R Program Office, NOAA/ NASA Cooperative Institutes, NWS forecast offices, NCEP National Centers, JCSDA, and NOAA Testbeds.

Goal: Pre-operational demonstrations for NWS of next generation GOES.

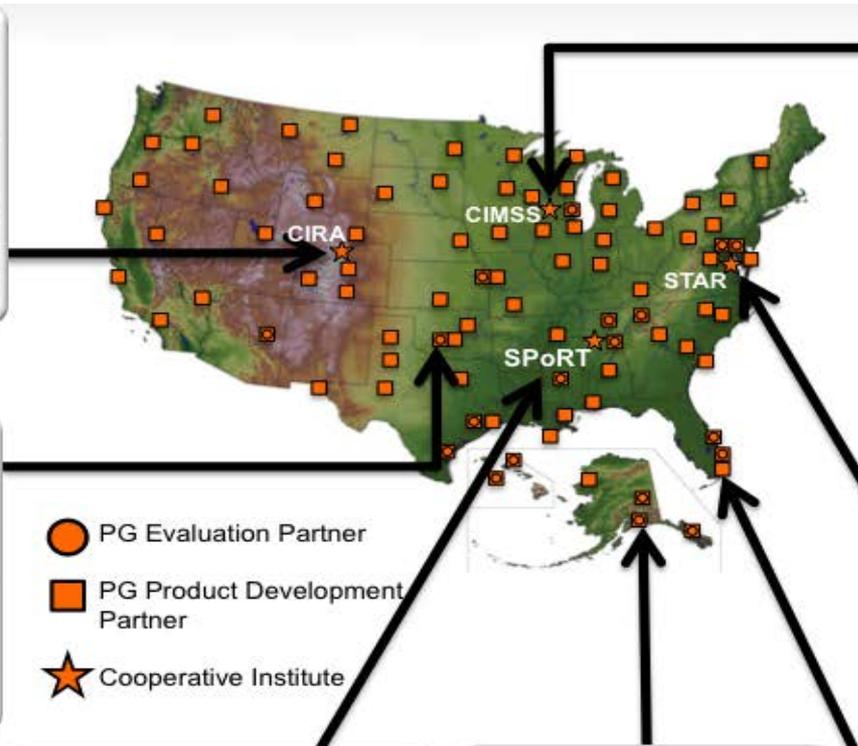
# GOES-R Proving Ground Partners



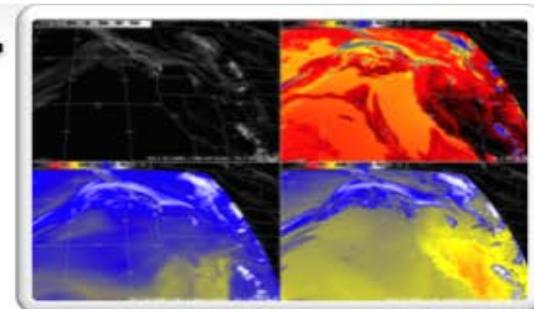
**CIRA - Ft. Collins, CO**  
ABI Simulated Natural Color



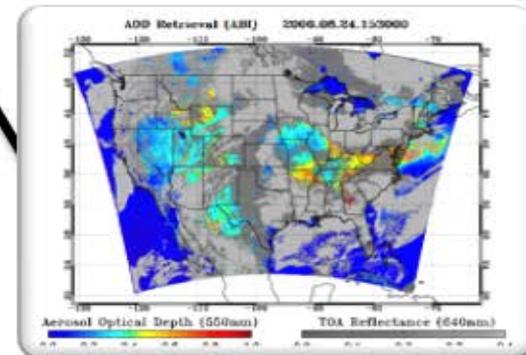
**SPC - Norman, OK**  
Nearcast Training at the Hazardous Weather Testbed



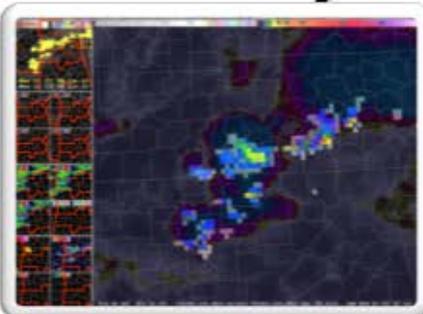
-  PG Evaluation Partner
-  PG Product Development Partner
-  Cooperative Institute



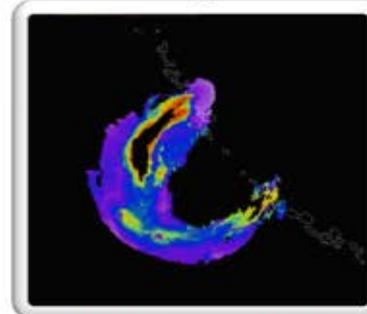
**CIMSS - Madison, WI**  
Simulated ABI Bands



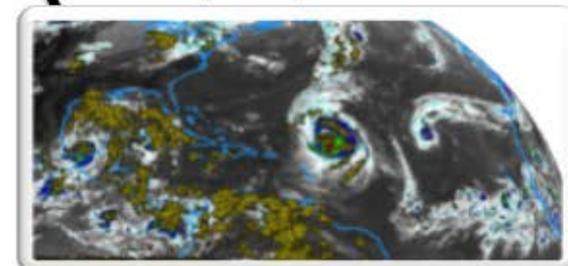
**STAR - Camp Springs, MD**  
Aerosol Optical Depth Product



**SPoRT - Huntsville, AL**  
GLM Lightning Flash Density



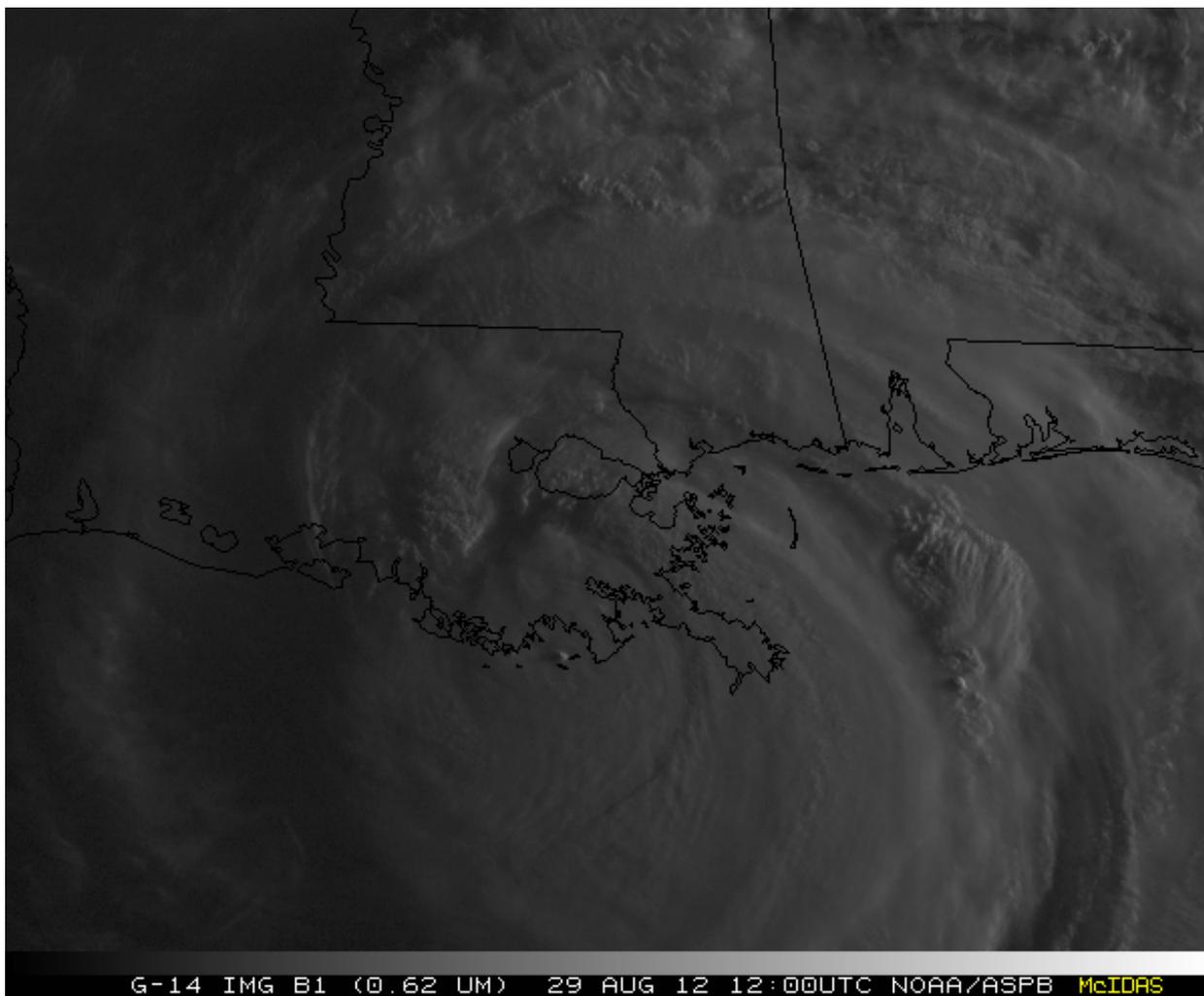
**AFC - Anchorage, AK**  
Volcanic Ash Product



**NHC - Miami, FL** Rapid Intensification Index

# GOES-14: Special Rapid Scanning offers glimpse of the ABI

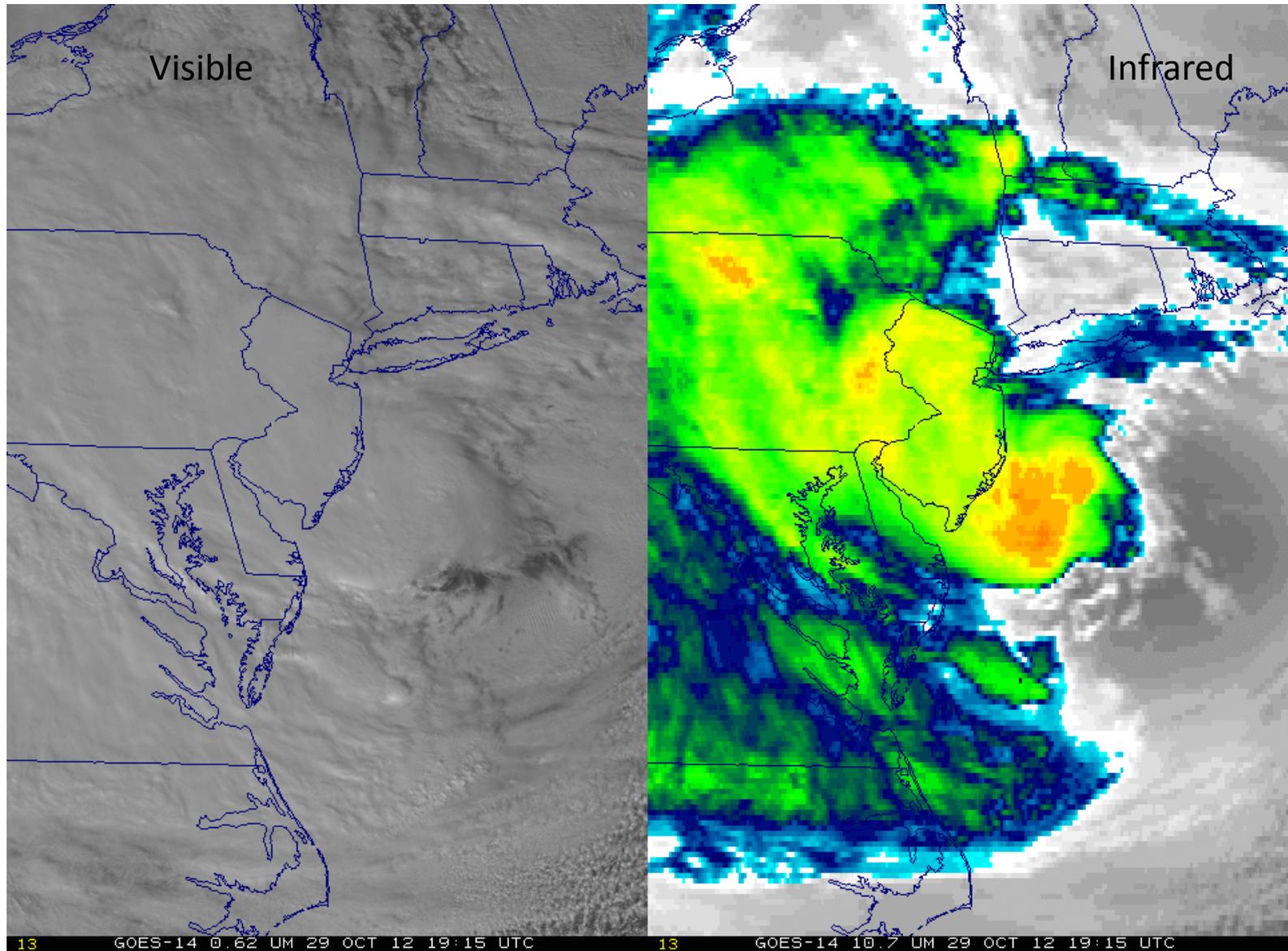
- SRSOR (Super Rapid Scan Operations for GOES-R) from GOES-14 imager.
- Decided on daily location for scanning between mid-August, mid-September, and late October, 2012
- Posting many animations
- [http://cimss.ssec.wisc.edu/goes/srsor/GOES-14\\_SRSOR.html](http://cimss.ssec.wisc.edu/goes/srsor/GOES-14_SRSOR.html)
- Many phenomena: convection, hurricanes, fires, smoke, etc.,
- Data to many groups HPC, OPC, AWC, SPC, web, YouTube, broadcasters, etc.



*Animation from GOES-14 Imager visible image at 1-min time resolution.*

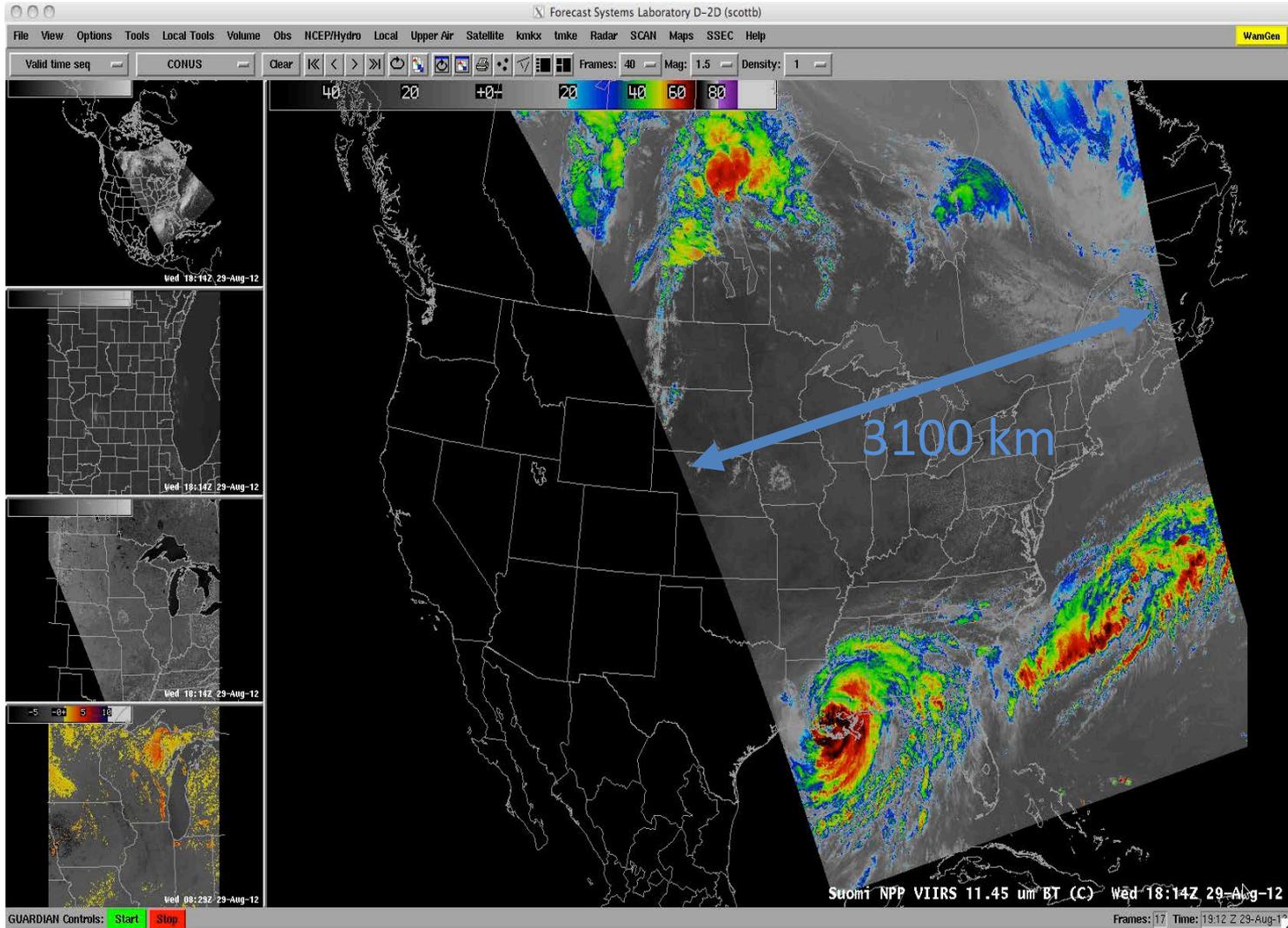
**SRSOR provided unique information and offers a glimpse into the possibilities that will be provided at even higher resolutions by the ABI on GOES-R.**

# GOES-14 SRSOR



**Hurricane Sandy as seen with special 1-min interval imagery.**

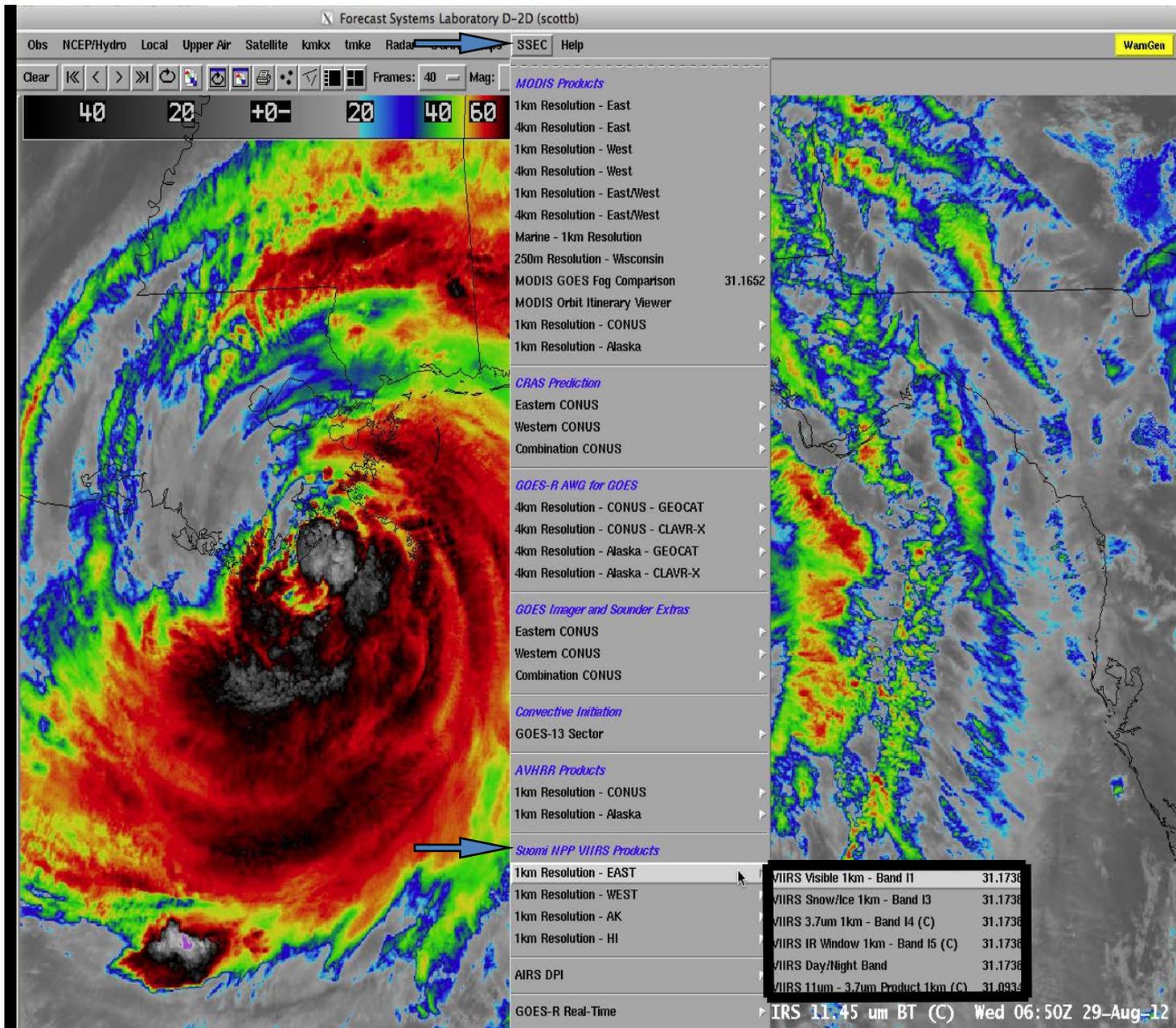
# VIIRS Imagery in AWIPS



Scott Bachmeier, Scott Lindstrom, Kathy Strabala, William Straka  
Cooperative Institute for Meteorological Satellite Studies (CIMSS)  
University of Wisconsin - Madison



# VIIRS Imagery in AWIPS



# CIMSS Satellite Blog



University of Wisconsin-Madison / Space Science and Engineering Center

## CIMSS Satellite Blog

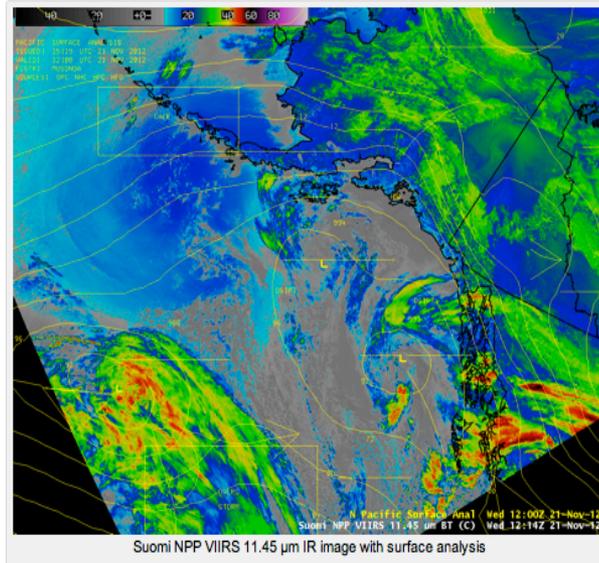


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Search for: VIIRS

### Using VIIRS imagery to help diagnose complex Gulf of Alaska circulations

November 21st, 2012



The National Weather Service forecast office at [Juneau, Alaska](#) mentioned their use of Suomi NPP VIIRS imagery:

SOUTHEAST ALASKA FORECAST DISCUSSION  
NATIONAL WEATHER SERVICE JUNEAU AK  
553 AM AKST WED NOV 21 2012

.SHORT TERM...SOMEWHAT COMPLICATED PATTERN IN THE GULF AND NORTHEAST PACIFIC THIS MORNING. THERE ARE AROUND 4 SEPARATE CIRCULATION CENTERS VISIBLE ON IR AND VIIRS NIGHTTIME VISIBLE IMAGES. THE STRONGEST IS WEST OF DIXON ENTRANCE CURRENTLY AND IS SLOWLY WEAKENING AS IT REMAINS NEARLY STATIONARY. A SECOND LOW IS JUST SE OF KODIAK ISLAND, A THIRD IS AROUND 50N 140W, AND THE FOURTH IS A VERY WEAK ONE OVER HAIDA GWAIL.

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- » VISIT / SHyMet Training Top

#### November 2012

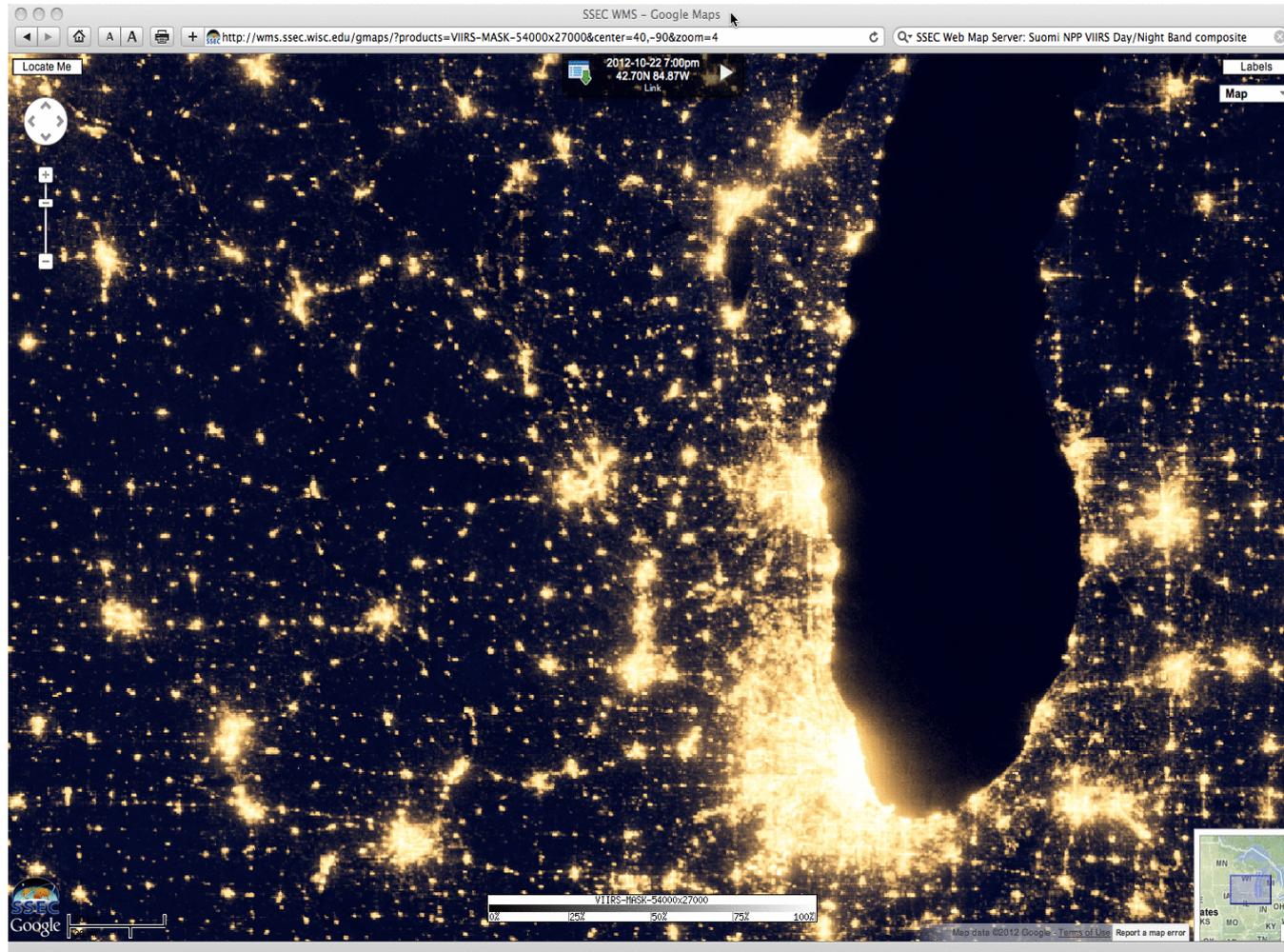
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« Oct

#### Categories

- » Air quality
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- » Cloud-Top Cooling
- » Convective Initiation
- » Fire detection
- » Fog detection
- » General Interpretation
- » GOES sounder
- » GOES-10
- » GOES-11
- » GOES-12
- » GOES-13
- » GOES-14
- » GOES-15
- » GOES-R

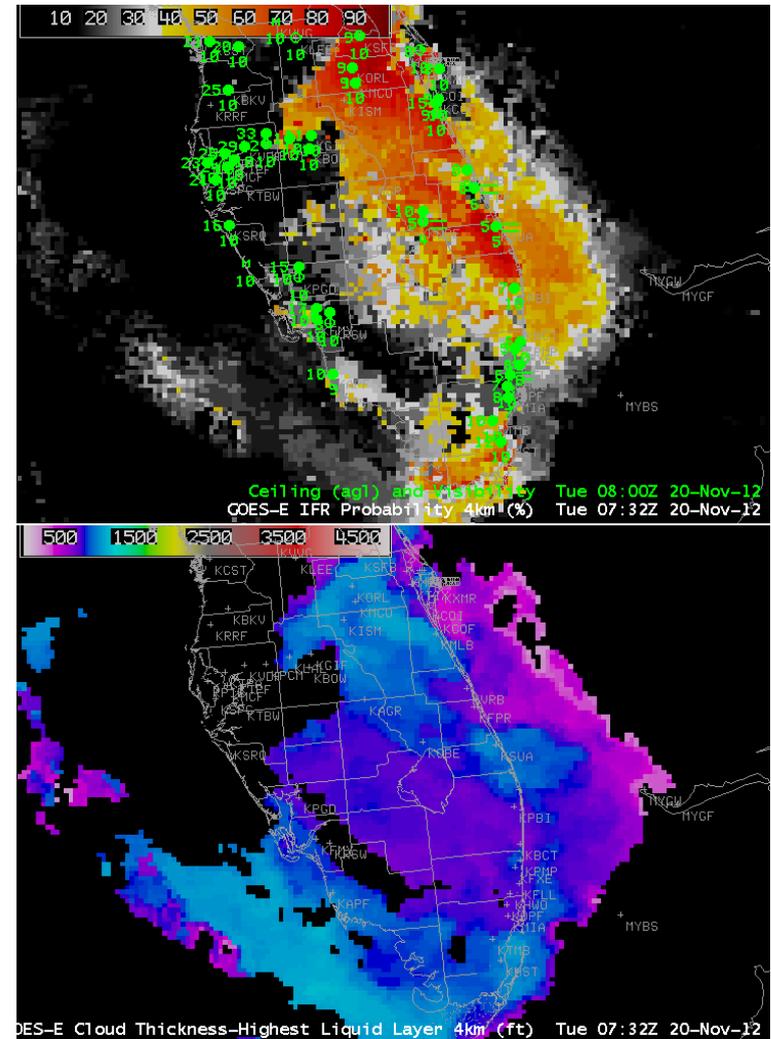
# CIMSS Satellite Blog



Discussion of new "Black Marble" Data Base based on VIIRS DNB

# NWS Forecast Offices – GOES-R Fog and Low Stratus (FLS) Products

- Championed by Chad Gravelle, the NWS Forecast Office GOES-R Liaison (through UW-CIMSS).
- Fog Blog (<http://fusedfog.blogspot.com>)
- Products:
  - Cloud Phase
  - Cloud Thickness
  - IFR and LIFR Probabilities
- NWS Offices currently evaluating and providing formal feedback:
  - DMX, EAX, HNX, IND, JKL, LMK, LSX,
  - MKX, MQT, RIW, and TBW



Developed by UW-CIMSS FLS algorithm developers.

# Recent and Ongoing COMET Module Activities

- **GOES-R ABI**

ABI Home Introduction Explore the ABI Spectrum Applications Resources

## GOES-R ABI: Next Generation Satellite Imaging

**BEGIN »**

- Print Version
- Download Version
- Quiz
- User Survey
- Contributors
- Technical Notes
- Media Gallery
- GOES-R Benefits Module

MetEd Home  
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- **Suomi NPP**

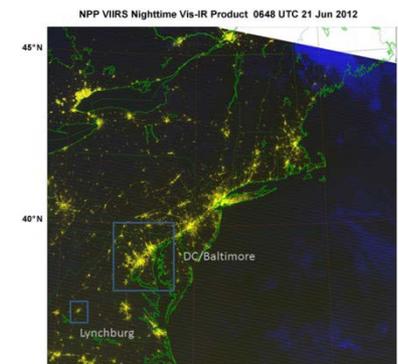
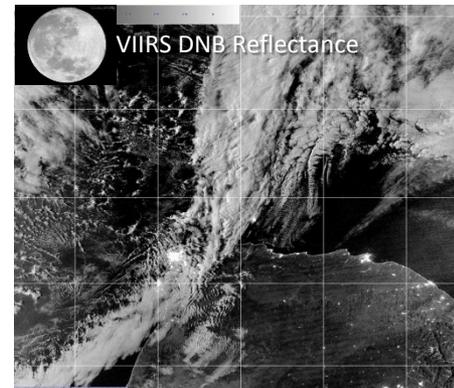
## Suomi NPP: A New Generation of Environmental Monitoring Satellites

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- **Nighttime Visible Imaging With the DNB**

The COMET Program  
Boulder, Colorado



# Suomi NPP: A New Generation of Environmental Monitoring Satellites (pub. May 2012)

## ➤ Overview of the Suomi NPP satellite

- Mission
- Instruments
- Products

## ➤ Role in environmental monitoring

- Land and oceans
- Atmosphere
- Climate
- Space weather

**Suomi NPP:  
A New Generation of Environmental Monitoring Satellites**

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**Suomi NPP: A New Generation of Environmental Monitoring Satellites**  
Produced by The COMET® Program

**About this Section**

- OVERVIEW OF SUOMI NPP
- SUOMI NPP ORBITS, DATA, AND PRODUCTS
- SUOMI NPP INSTRUMENTS
- ENVIRONMENTAL MONITORING
  - Introduction
  - About this Section**
  - Climate
  - Land
  - Ocean
  - Atmosphere and Space Weather
- CONCLUSION

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HOME  
PRINT VERSION  
QUIZ  
USER SURVEY

**Climate** **Land**

**Ocean** **Atmosphere** **Space Weather**

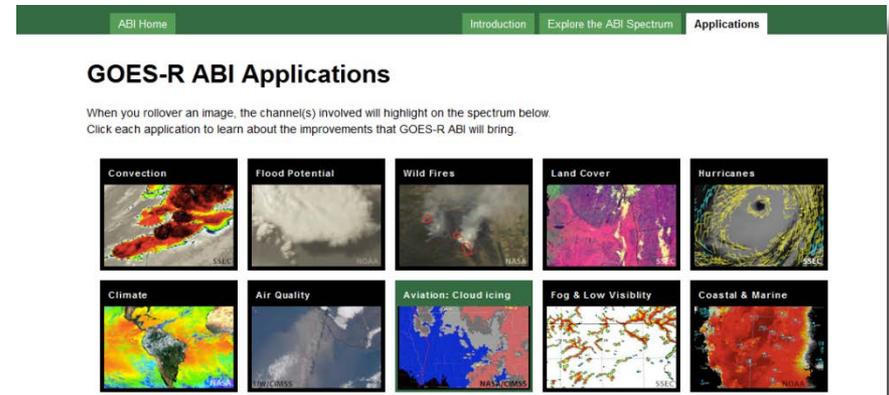
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• A tremendous number of products are generated from Suomi NPP data

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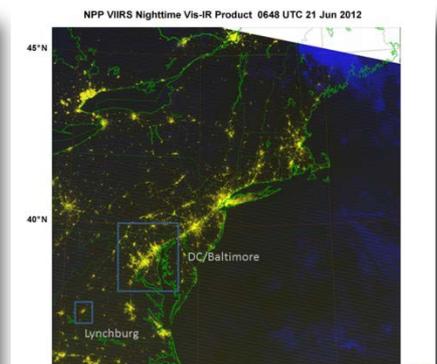
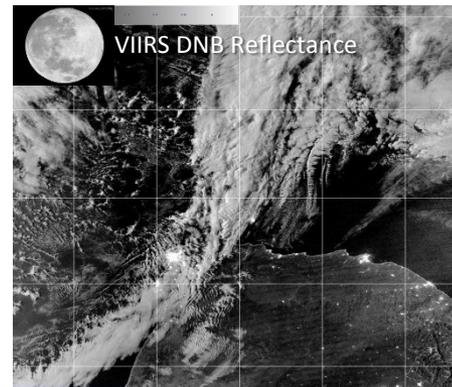
# GOES-R ABI: Next Generation Satellite Imaging (Jan 2013)

- GOES-R ABI capabilities and improvements
- Explores 16 spectral channels; spectral coverage and applications
- Overview of expected improvements for:
  - Analysis and forecasting
  - Numerical weather prediction
  - Climate and environmental monitoring



## Applications of the VIIRS Day-Night Band (early 2013)

- Describes atmospheric and surface features observed during nighttime
- Improvements over DMSP OLS
- Lunar cycle and lunar modeling
- Explores several uses of nighttime visible observations



# VIIRS Live Demonstration

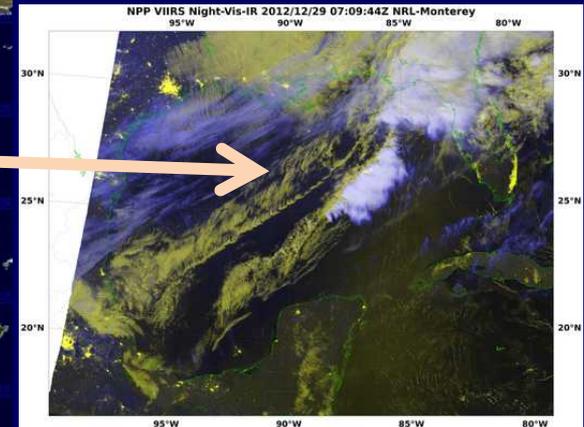
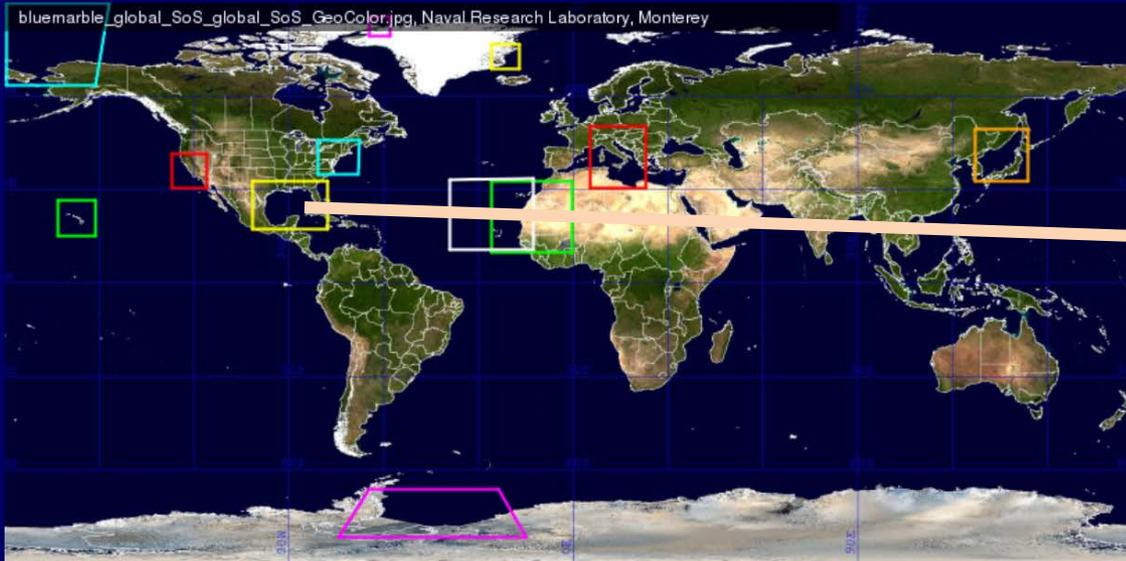


## VIIRS

[Feedback?](#) [About VIIRS](#) [NexSat](#)



Select VIIRS area of interest in the image map below.



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Technical POC: **VIIRS Lead**  
Webmaster: **contact**

Acknowledgement: Technical collaboration with the [Cooperative Institute for Research in the Atmosphere](#)

<http://www.nrlmry.navy.mil/VIIRS.html>