

# Suomi-NPP/JPSS Overview

*Supporting the NOAA, USA and International Missions  
through Applications and Research*



**Mitch Goldberg**

National Oceanic & Atmospheric Administration | NOAA

*JPSS Program Scientist*





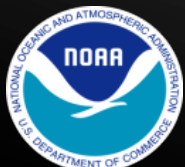
# JPSS Overview

JPSS consists of three satellites (Suomi NPP, JPSS-1, JPSS-2), ground system and operations through 2025

- JPSS mission is to provide global imagery and atmospheric measurements using polar-orbiting satellites

JPSS is a partnership between NOAA and NASA

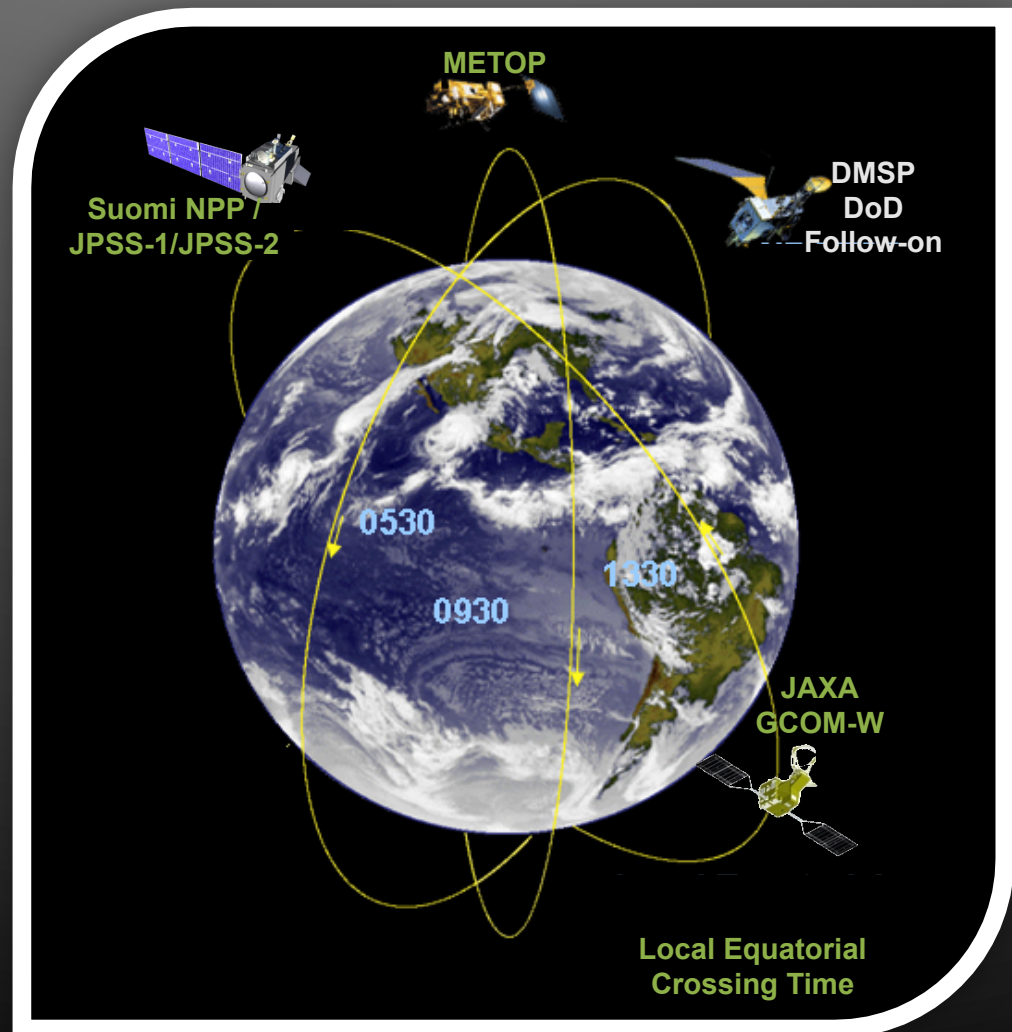
- NOAA has final decision authority and is responsible for overall program commitment
- NASA is the acquisition agent for the flight system (satellite, instruments and launch vehicle), ground system, leads program systems engineering, and program safety and mission assurance
- NOAA is responsible for operations, science, data exploitation and archiving, infrastructure



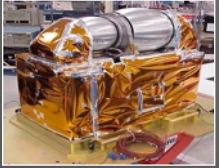
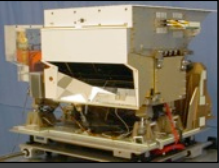

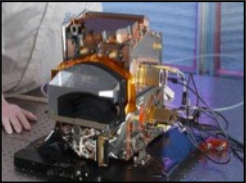



# JPSS Integral to 3-Orbit Global Polar Coverage

JPSS implements US civil commitment, interagency and international agreements to afford 3-orbit global coverage.



# JPSS-1 Instruments (same as S-NPP)

	JPSS Instrument	Measurement
	<p><b>ATMS</b> - Advanced Technology Microwave Sounder</p>	<p>ATMS and CrIS together provide high vertical resolution <b>temperature</b> and <b>water vapor information needed to maintain and improve forecast skill</b> out to 5 to 7 days in advance for extreme weather events, including hurricanes and severe weather outbreaks</p>
	<p><b>CrIS</b> - Cross-track Infrared Sounder</p>	<p>ATMS and CrIS together provide high vertical resolution <b>temperature</b> and <b>water vapor information needed to maintain and improve forecast skill</b> out to 5 to 7 days in advance for extreme weather events, including hurricanes and severe weather outbreaks</p>
	<p><b>VIIRS</b> – Visible Infrared Imaging Radiometer Suite</p>	<p>VIIRS provides many <b>critical imagery products</b> including snow/ice cover, clouds, fog, aerosols, fire, smoke plumes, vegetation health, phytoplankton abundance/chlorophyll</p>
	<p><b>OMPS</b> - Ozone Mapping and Profiler Suite</p>	<p>Ozone spectrometers for <b>monitoring ozone</b> hole and recovery of stratospheric ozone and for UV index forecasts</p>
	<p><b>CERES</b> - Clouds and the Earth's Radiant Energy System</p>	<p>Scanning radiometer which supports studies of Earth Radiation Budget</p>





# JPSS provides continuity and improved observations to meet critical operational applications

## JPSS

CrIS provides significantly improved temperature and water vapor information than POES HIRS

ATMS provides improved global coverage and spatial resolution than AMSU

VIIRS provides superior imagery and more spectral bands than AVHRR

OMPS provides improved spatial resolution, coverage and vertical profiling than SBUV

CERES and TSIS for fundamental energy budget climate measurements



Advancements are driven by the value of information

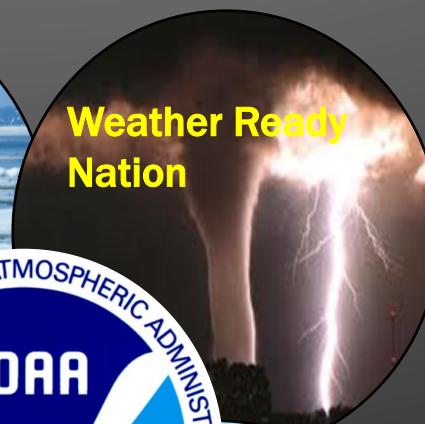


# Supporting the NOAA Mission

## JPSS data supports all four NOAA mission areas

- Assessments of **current and future states of the climate system** that identify potential impacts and inform science, service and stewardship decisions.
- **Mitigation and adaptation efforts** supported by sustainable, reliable and timely climate services.
- Improved scientific **understanding of the changing climate system.**

- Improved **coastal water quality** supporting human health and coastal ecosystem services.
- Safe, environmentally sound **Arctic access** and resource management.
- **Coastal communities that can adapt** to the impacts of hazards and climate change



- **Reduced loss of life, property and disruption** from high-impact events.
- More productive and efficient economy through relevant **environmental information.**
- Healthy people and communities due to improved **air and water quality services.**
- Improved **transportation** efficiency and safety.

- Improved **understanding of ecosystems** to inform resource management decisions.



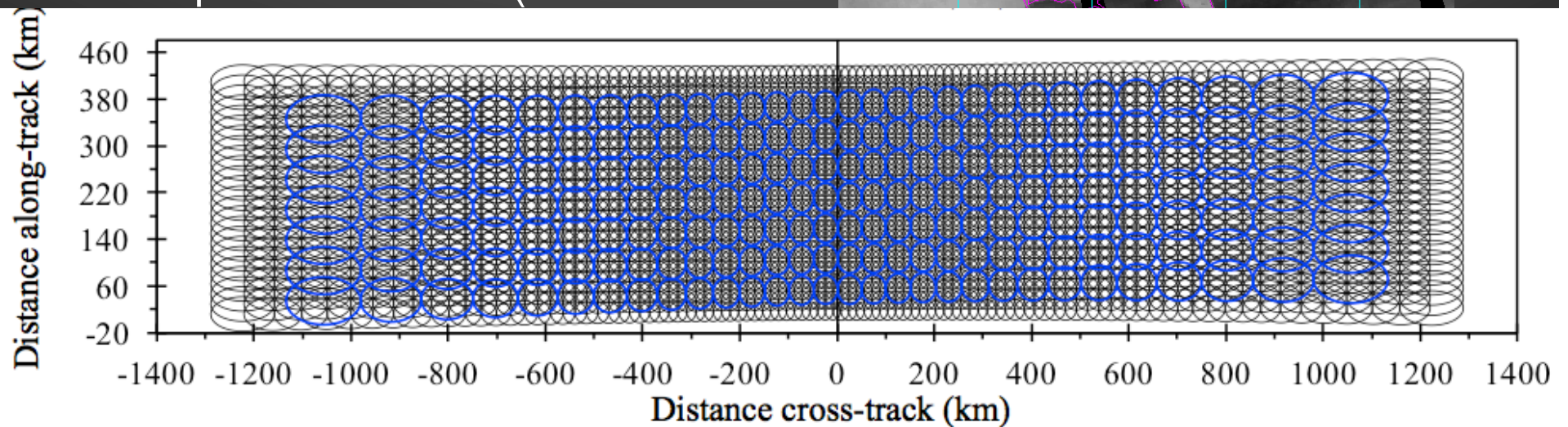
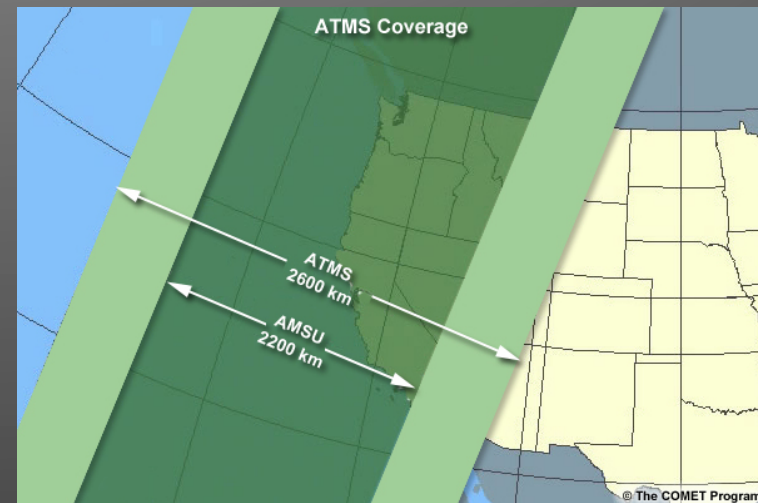


# ATMS - Advanced Technology Microwave Sounder

## Advanced Features

Three instruments (AMSU-A1, AMSU-A2 and MHS) in one instrument – less power and weight

Better spatial resolution (~48 to



# JPSS ATMS-Based TC Intensity Estimates

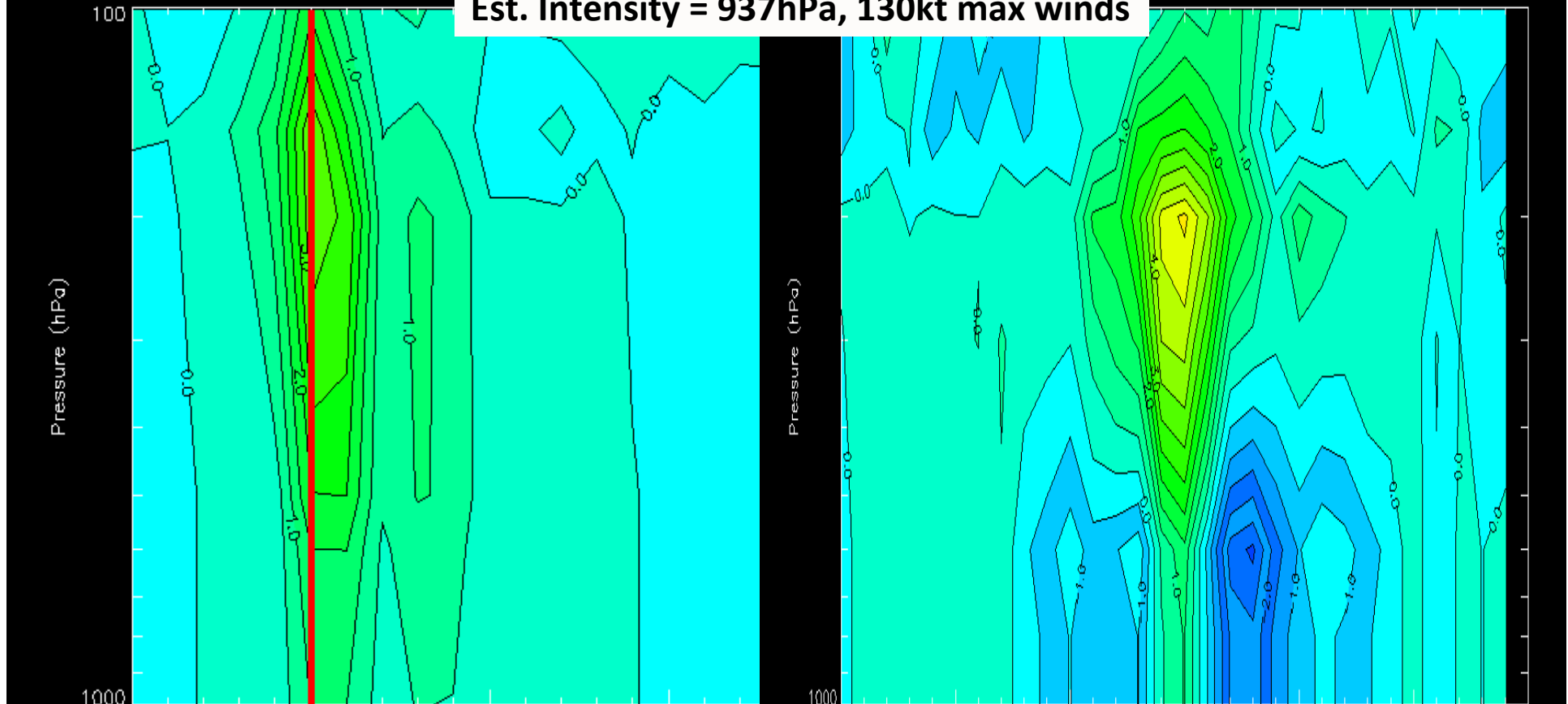
Calculate TC Warm Core Anomalies from ATMS Microwave Radiances and Relate to Storm Intensity using Method Developed at UW-CIMSS Based on AMSU and SSMIS

AMSU 06UTC

Typhoon Bopha, Dec 3 2012

ATMS 04UTC

Est. Intensity = 937hPa, 130kt max winds



Vertical cross-sections through TC Bopha center (red line on left panel indicates storm center).

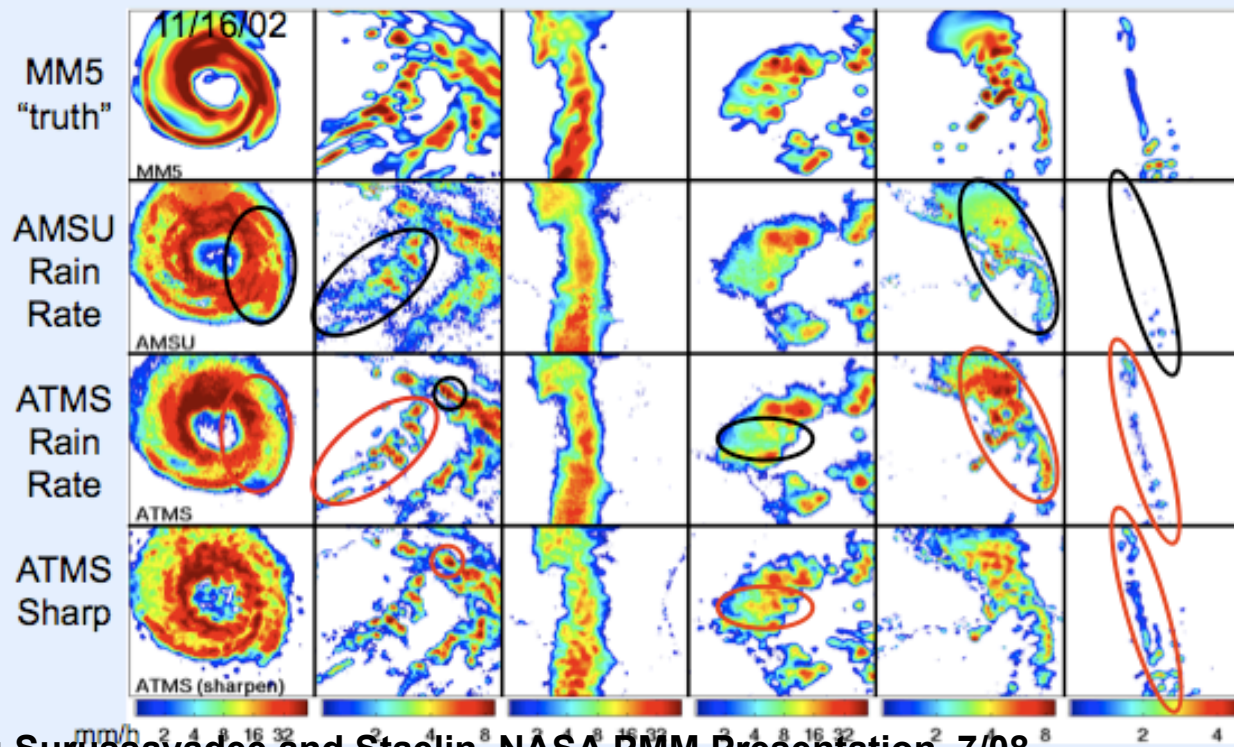
- Warm anomalies in green/yellows (contour interval=0.5C), with max around 200 hPa.
- Correction for rain scattering in ATMS not yet applied (cool/blue signal in lower levels (eyewall)).
- NPP ATMS FOV resolution is 32km at nadir versus AMSU 48km >> **Better depiction of warm core.**



# ATMS Storm Mapping: Improvements Relative to AMSU

Black and red circles highlight “before” and “after” differences between AMSU and ATMS, and between ATMS and ATMS-sharpened, for six simulated storms validated with AMSU. Note the better definition of strong convective cells with ATMS due to its 33-km resolution and Nyquist sampling, and the better recovery of the warm rain with sharpening

Fig. 3 Typhoon French Fr. Florida Fr. ITCZ Siberian Fr. Warm rain  
12/8/02 1/2/03 12/31/02 4/14/03 7/9/02

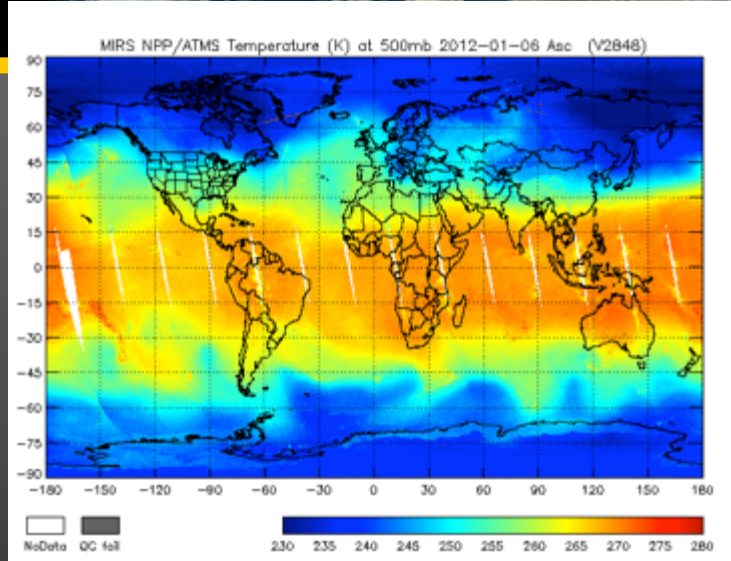


Source: Surussavadee and Staelin, NASA PMM Presentation, 7/08

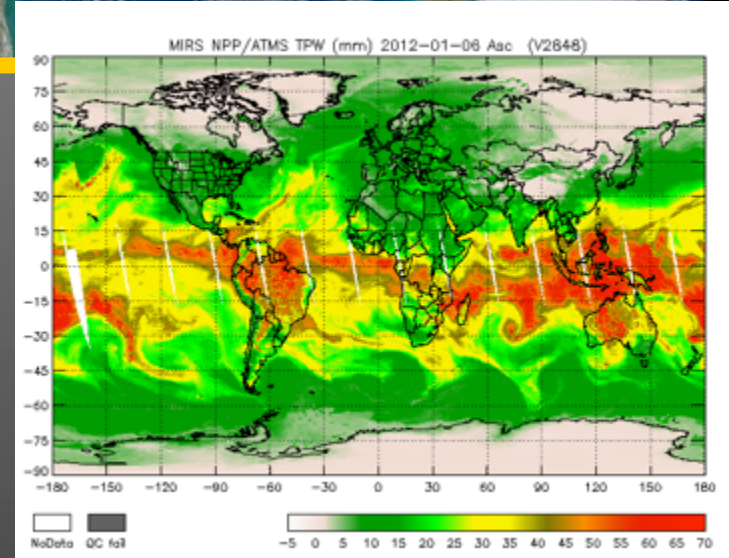


# NOAA ATMS MIRS Products

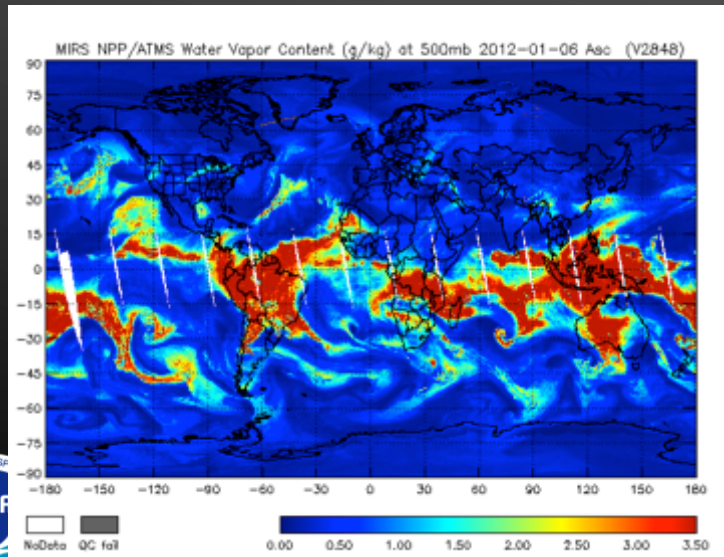
T



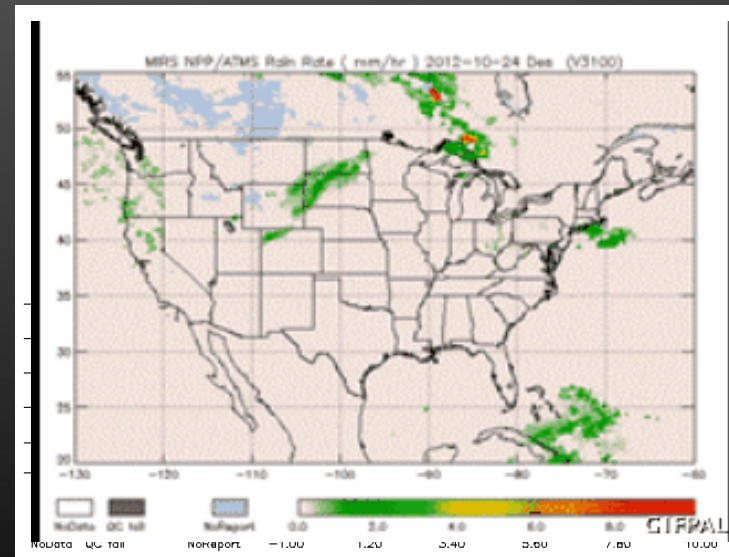
TPW



WV



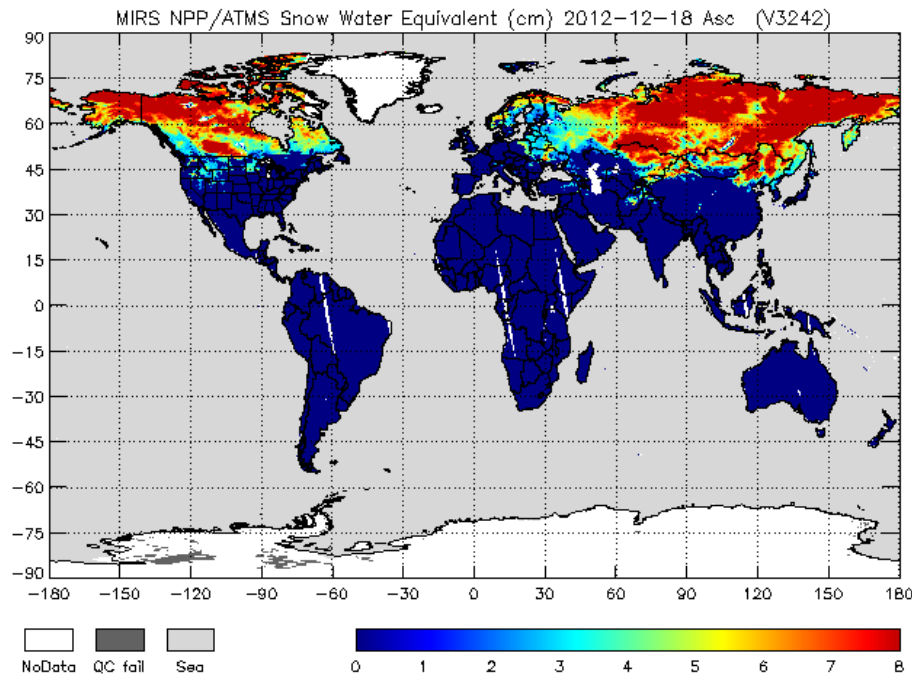
RR



Courtesy of Sid Boukabara (STAR)



# MIRS SNPP/ATMS-based Snow Water Equivalent *Global perspective*



## ATMS Data Products

- ATMS TDRs, SDRs (radiances)
- CLOUD LIQUID WATER
- PRECIPITATION RATE
- PRECIPITABLE WATER
- LAND SURFACE EMISSIVITY
- ICE WATER PATH
- LAND SURFACE TEMPERATURE
- SEA ICE CONCENTRATION
- SNOW COVER
- SNOW WATER EQUIVALENT
- ATM VERT TEMPERATURE PROFILE
- ATM VERT MOISTURE PROFILE



# CrIS – Cross-track InfraRed Sounder

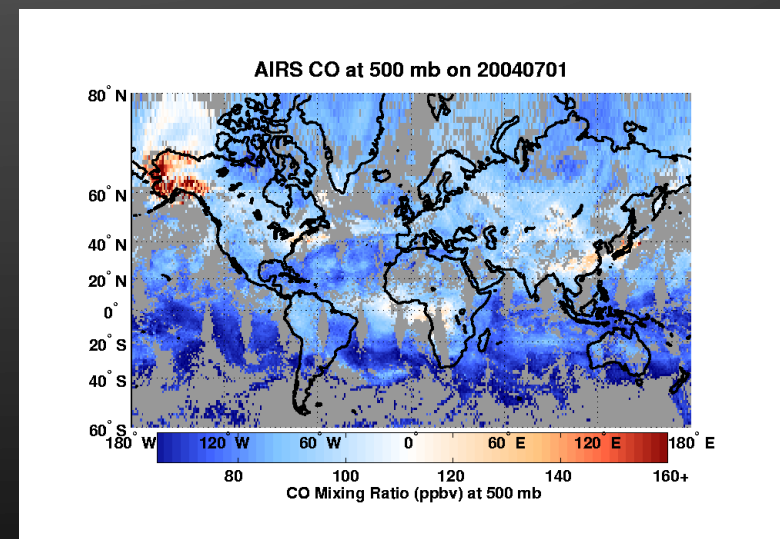
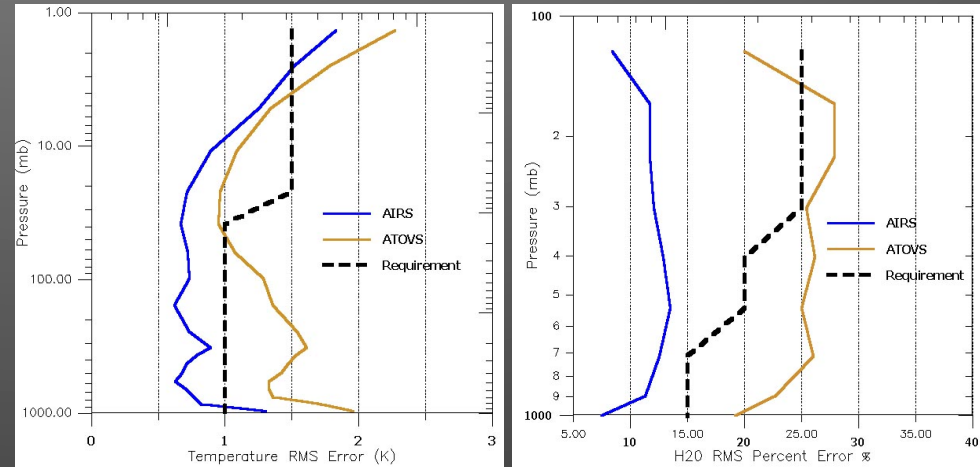
## Advanced Features

Lower power, volume and mass when compared to AIRS and IASI, and excellent signal to noise

Significantly improved vertical resolution of temperature and water vapor when compared to POES HIRS and AMSU (1 – 2 km instead of ~6 km)

Combined with ATMS for cloud clearing – provides precision of about 1 Celsius for temperature and 15% for water vapor at vertical resolutions of 1-2 km

Also provides information on trace gases – O<sub>3</sub>, CO<sub>2</sub>, CO, CH<sub>4</sub> - continental transport of greenhouse gases



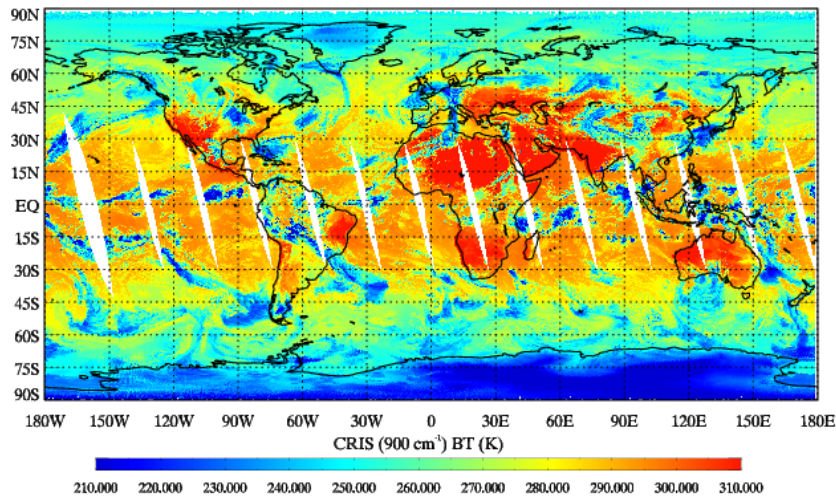


# CrIS SDR Spectra and Global Coverage

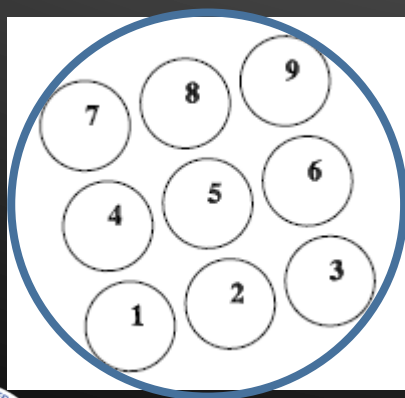
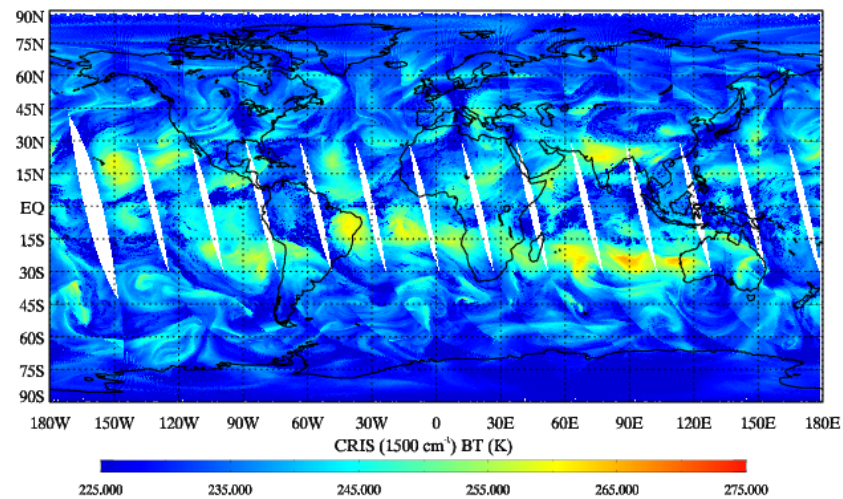
Window Channel

Water vapor Channel

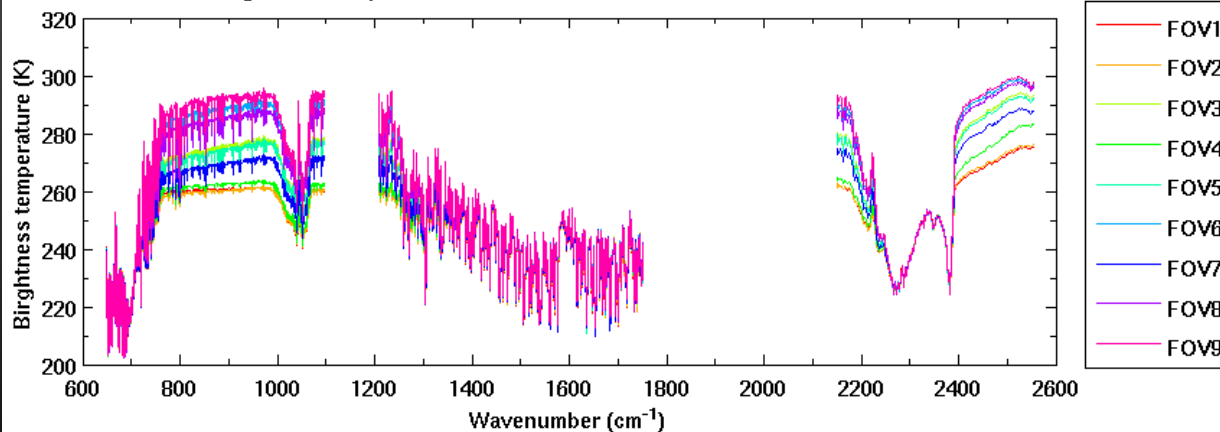
Ascending\_orbits: CRIS (900 cm<sup>-1</sup>) BT (K) Date: 2012-04-29



Ascending\_orbits: CRIS (1500 cm<sup>-1</sup>) BT (K) Date: 2012-04-29



Brightness Temperature Lat: 0.00 Lon: -154.99 Time: 20120428 23:19:43

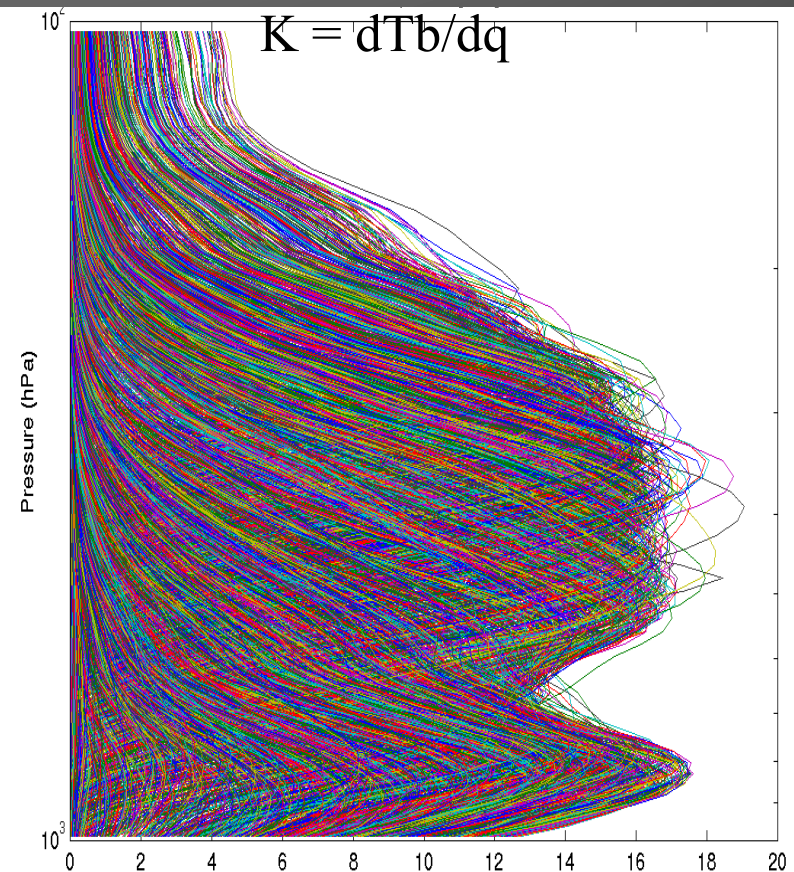
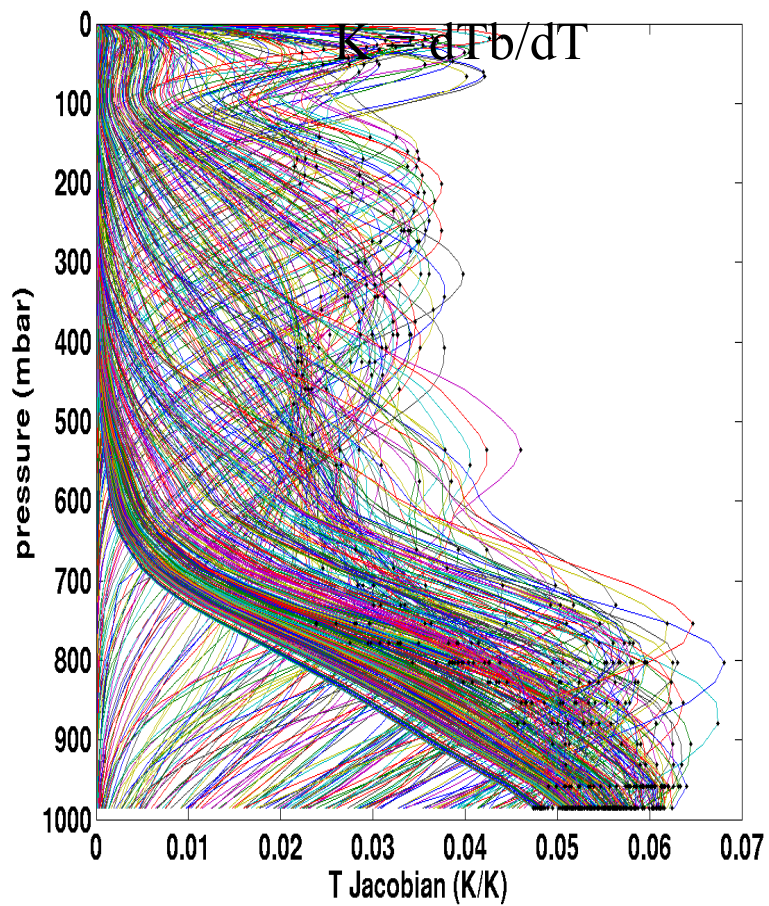




# Example of $T(p)$ & $q(p)$ Channel Kernel Functions

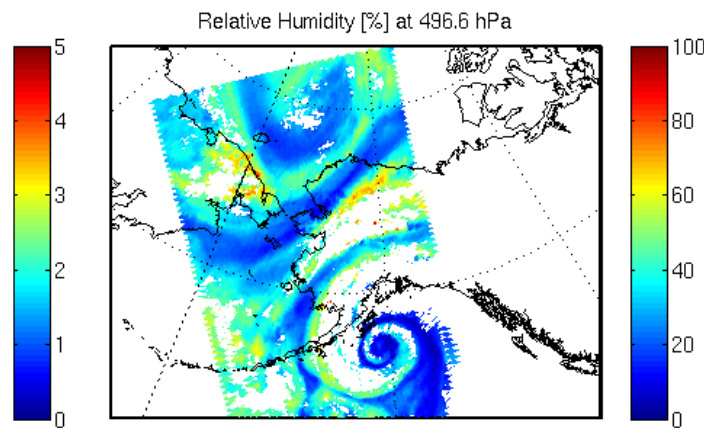
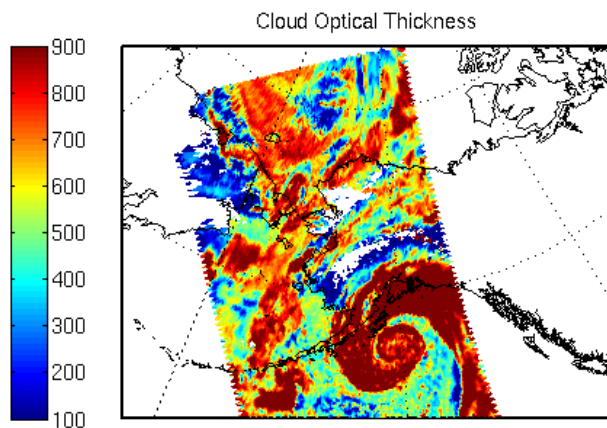
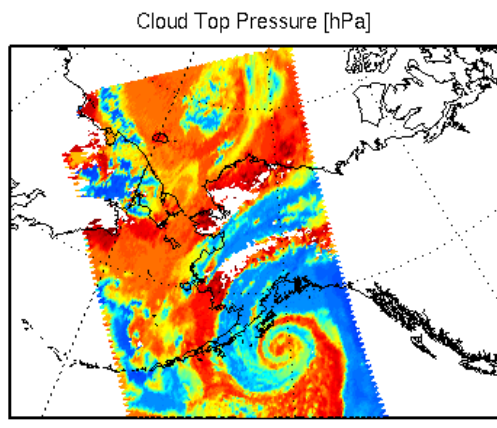
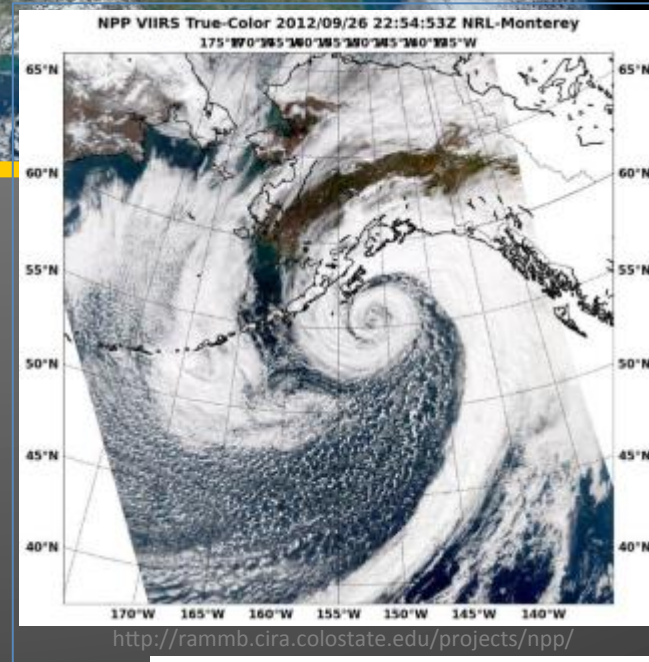
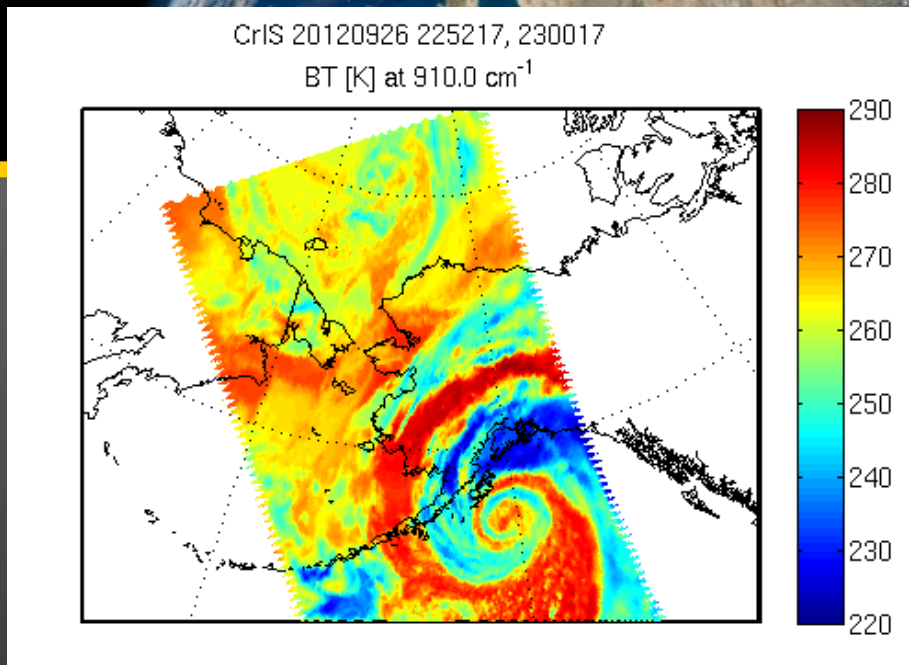
Temperature  $15 \mu\text{m}$  ( $650\text{-}800 \text{ cm}^{-1}$ ) band

Water Vapor  $6.7 \mu\text{m}$  ( $1200\text{-}1600 \text{ cm}^{-1}$ ) band



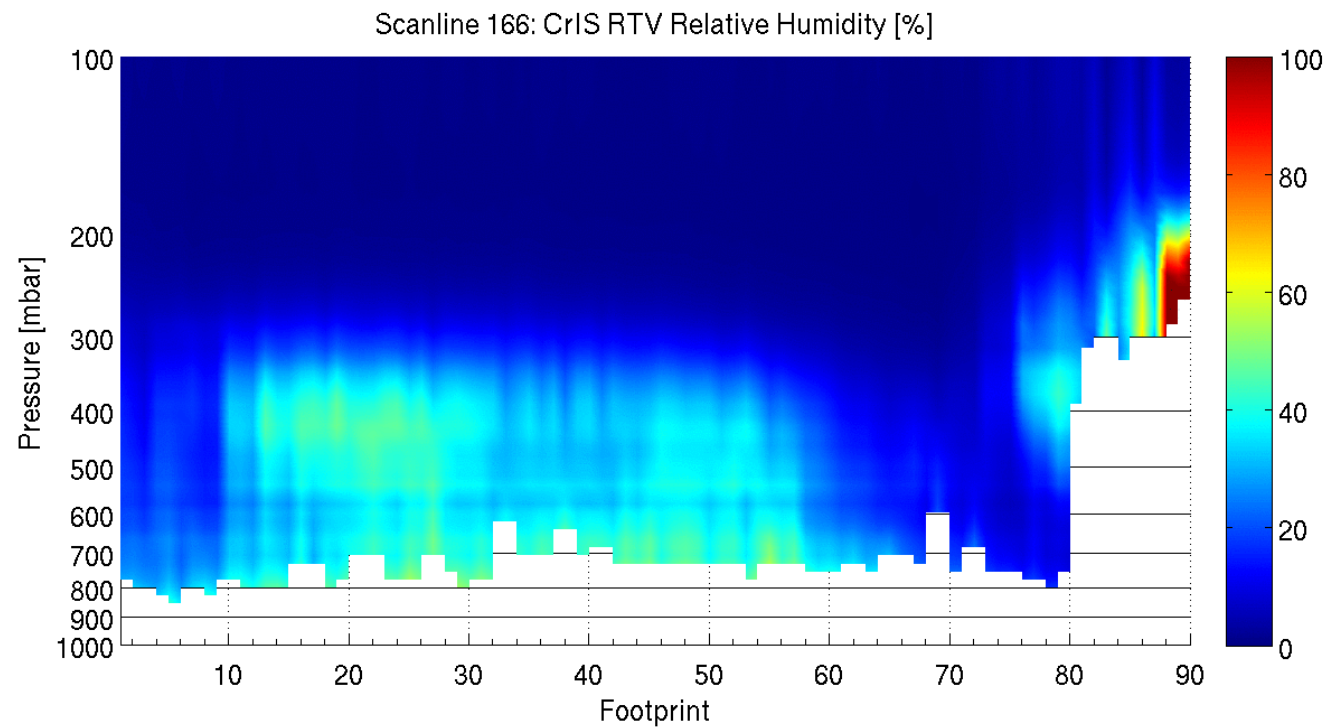
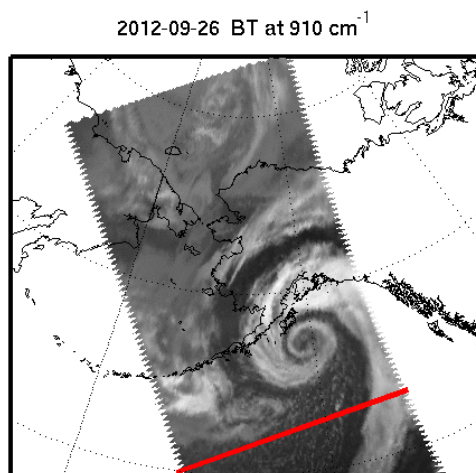


# Gulf of Alaska Low Pressure System (26 Sept 2012)

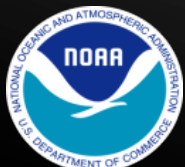


*Sounding retrievals provide quantitative interpretation of satellite imagery*

# RH south-north cross-section Movie (26 Sept 2012)



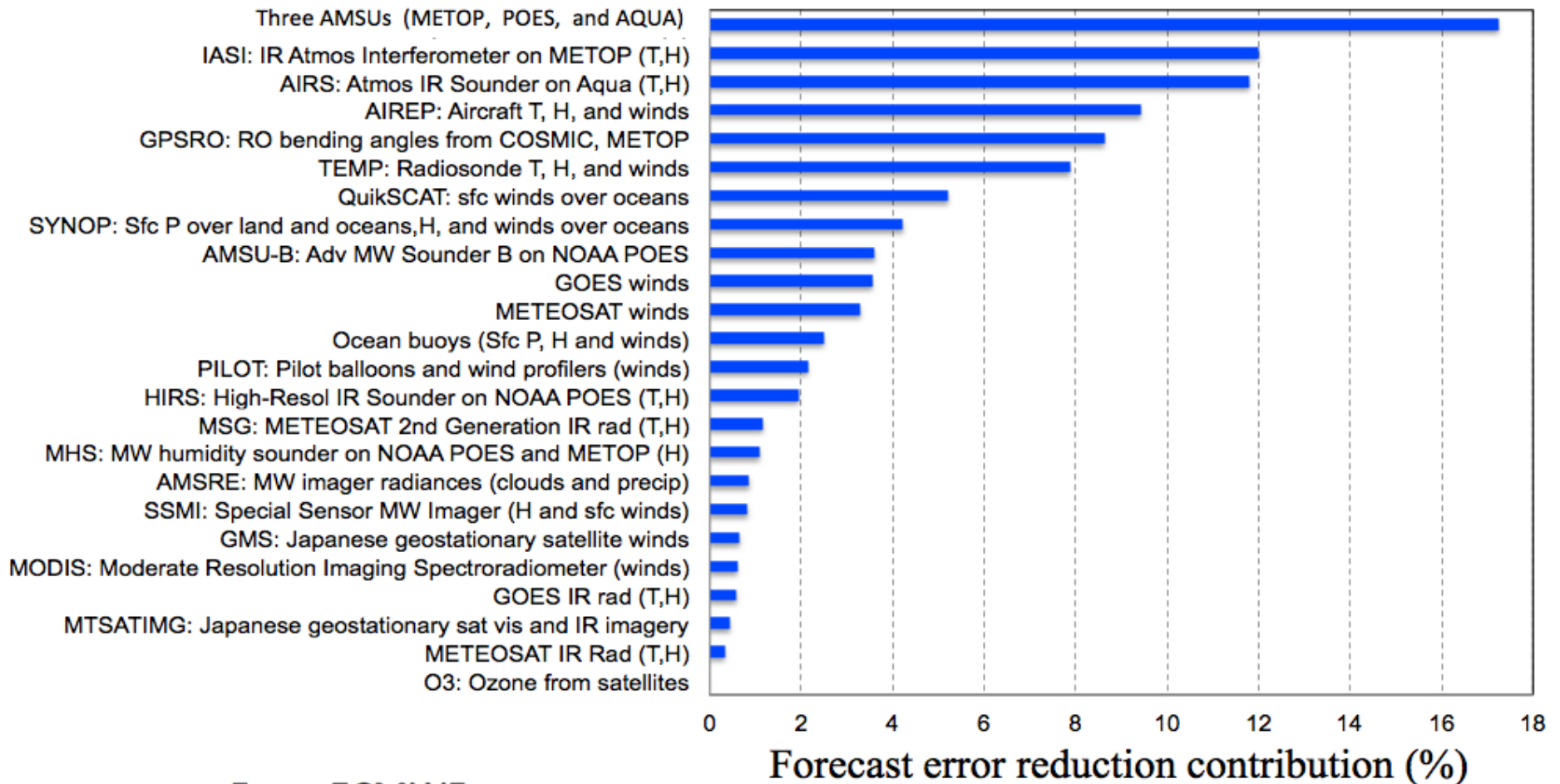
*Sounding retrievals provide 3-d structure of storm systems*





# CrIS and ATMS provides continuity of essential atmospheric sounding information for weather forecasting

*Hyperspectral Infrared Sounders and Advanced Microwave Sounders are the top two contributors for reducing forecast errors*



From ECMWF

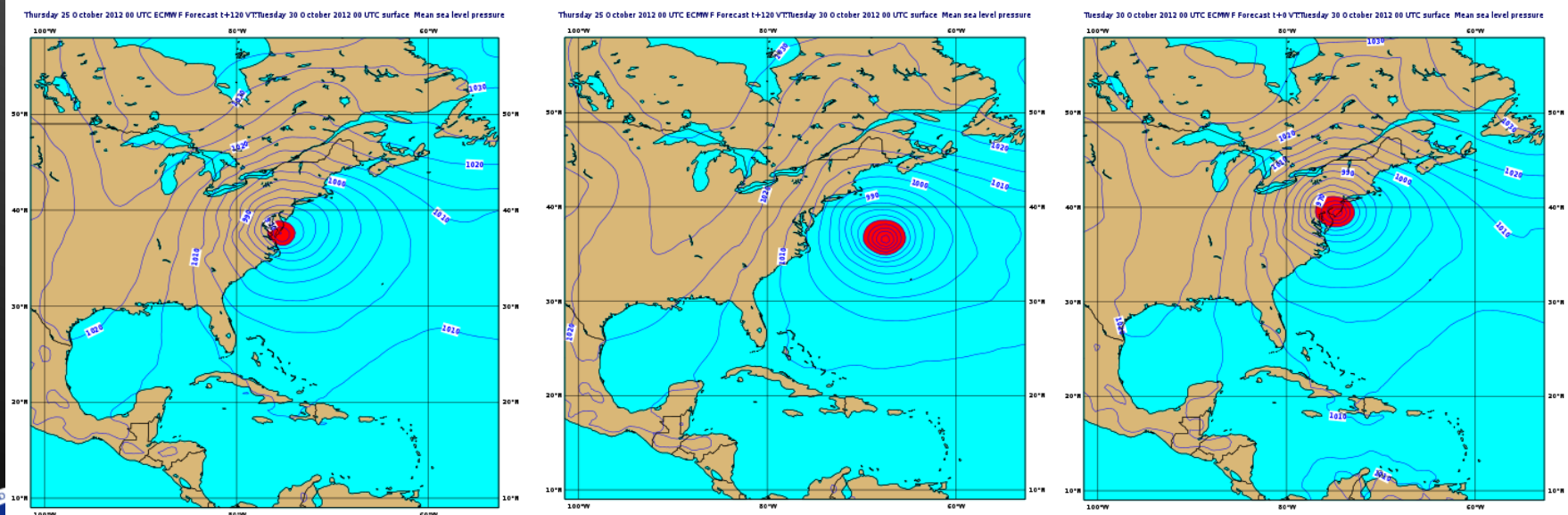
# Forecasts of Hurricane Sandy without polar satellites

ECMWF forecasts of Mean Sea Level Pressure, 5 days in advance of the 30<sup>th</sup> October 2012 for the landfall of Hurricane Sandy. Forecasts from an assimilation system with no polar satellites fail to predict the landfall of the storm on the US east coast.

**ECMWF OPS**

**NO POLAR SAT**

**VERIFICATION**

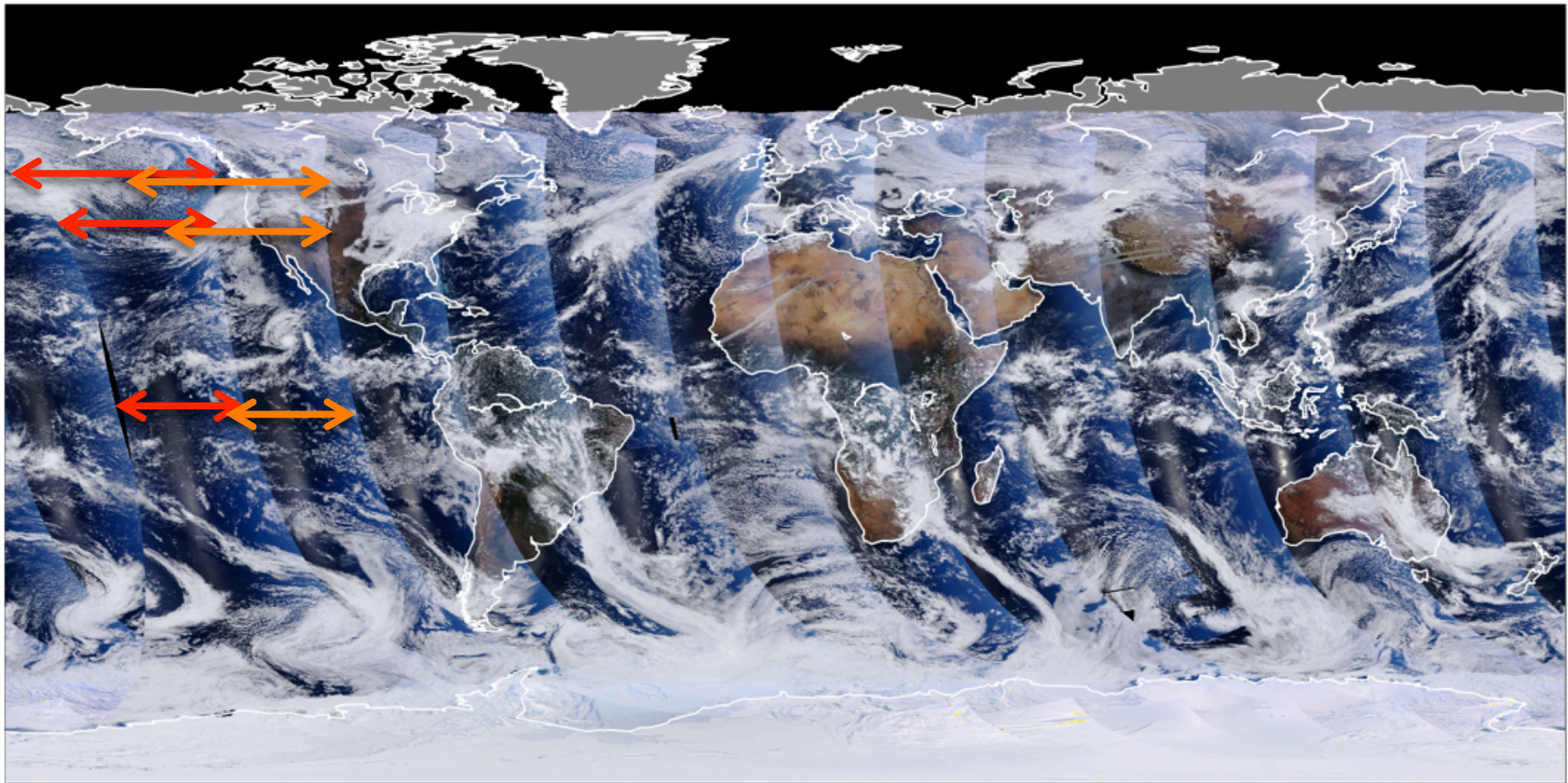


**5 day forecast: Base time 2012-10-25-00z Valid Time: 2012-10-30-00z**





# VIIRS – the work horse for environmental assessments



VIIRS RGB (True Color), 20111122

R : M05 (0.672  $\mu\text{m}$ ); G : M04 (0.555  $\mu\text{m}$ ); B : M02 (0.445  $\mu\text{m}$ )



# Imagery provides large number of environmental products

## Land

- ✓ Active Fire
- ✓ Land Surface Albedo
- ✓ Land Surface Temperature
- ✓ Vegetation Index & Fraction
- ✓ Surface Type
- ✓ Ice Surface Temperature
- ✓ Sea Ice Characterization
- ✓ Snow Cover/Depth

## Ocean

- ✓ Sea Surface Temperature
- ✓ Ocean Color/Chlorophyll

## Clouds

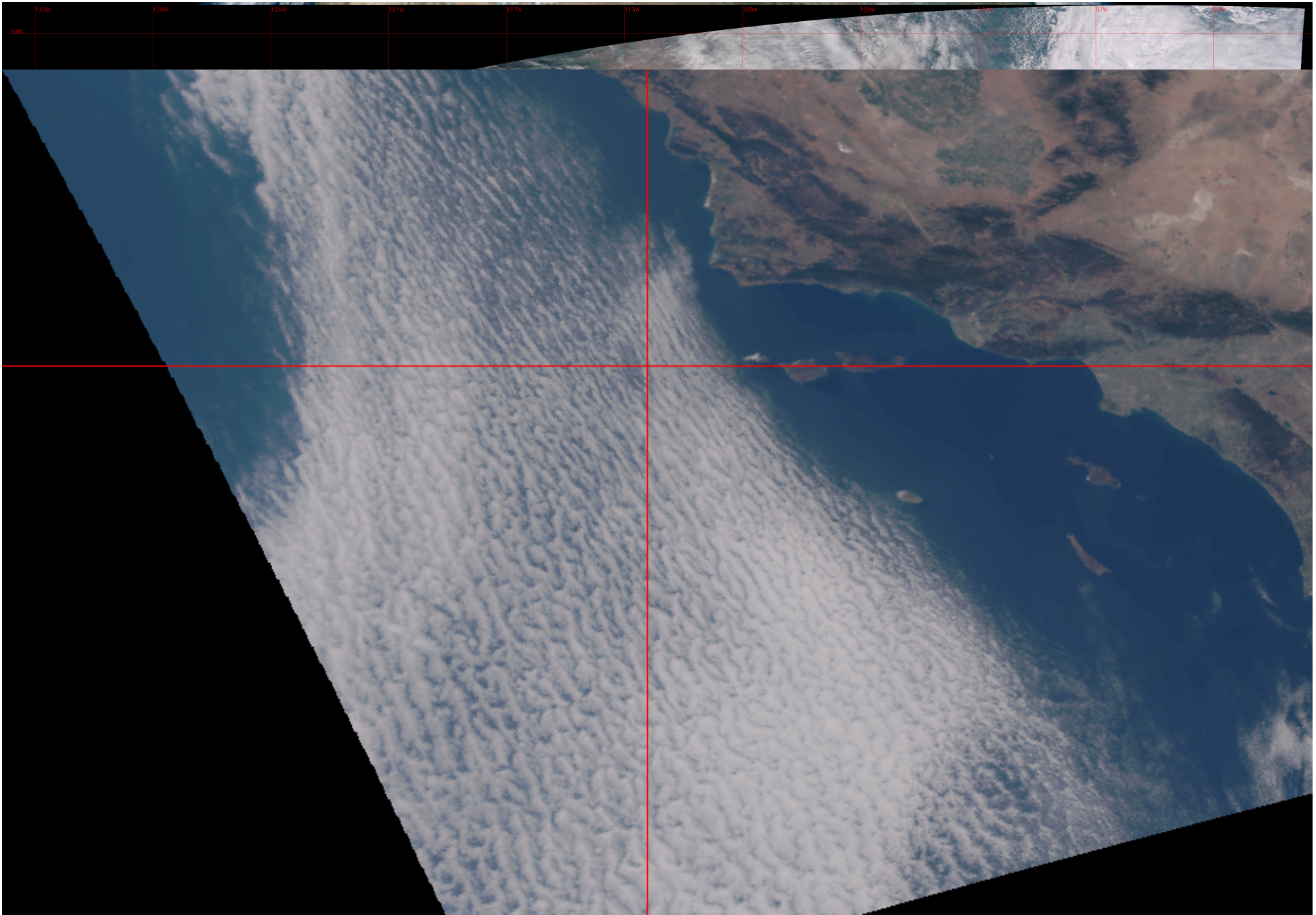
- ✓ Cloud Mask
- ✓ Cloud Optical Thickness
- ✓ Cloud Effective Particle Size Parameter
- ✓ Cloud Top Height
- ✓ Cloud Fraction
- ✓ Polar winds

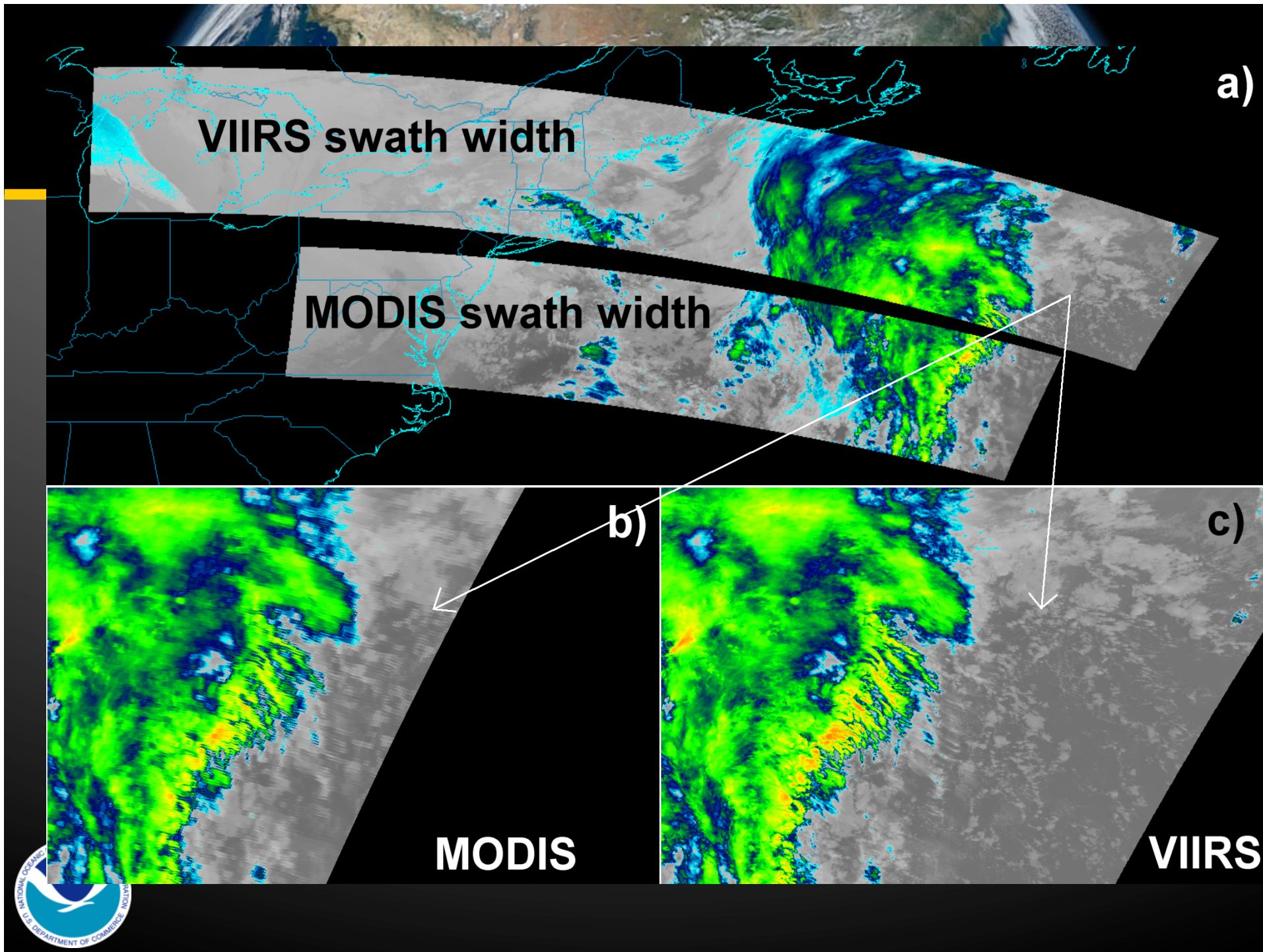
## Aerosols

- ✓ Aerosol Optical Thickness
- ✓ Aerosol Particle Size Parameter
- ✓ Suspended Matter (Volcanic Ash)









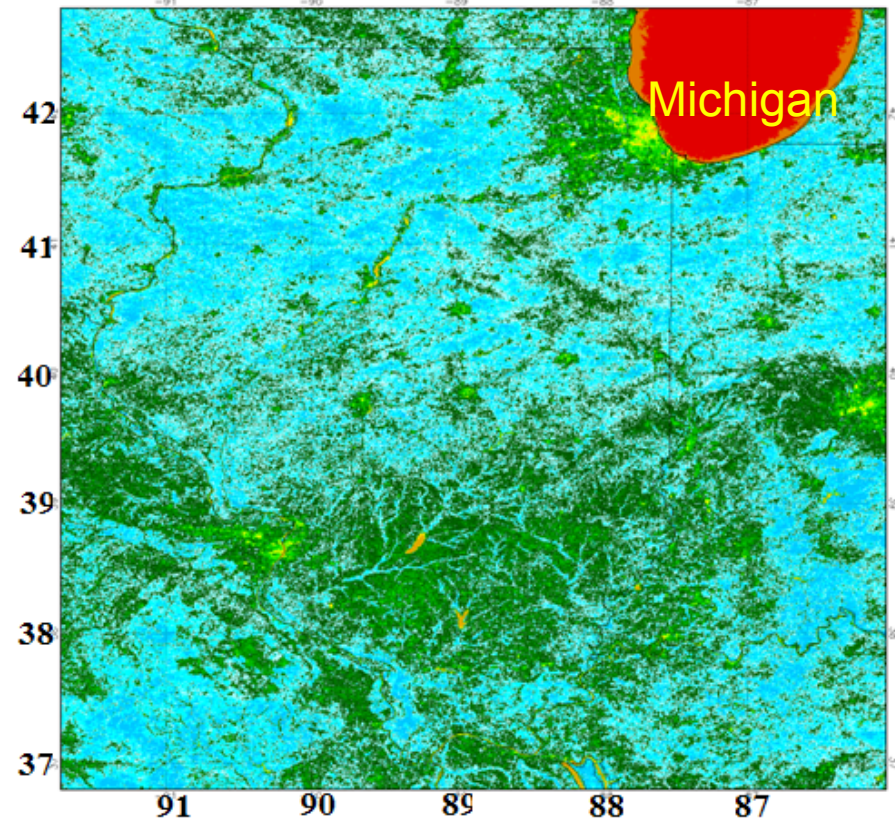
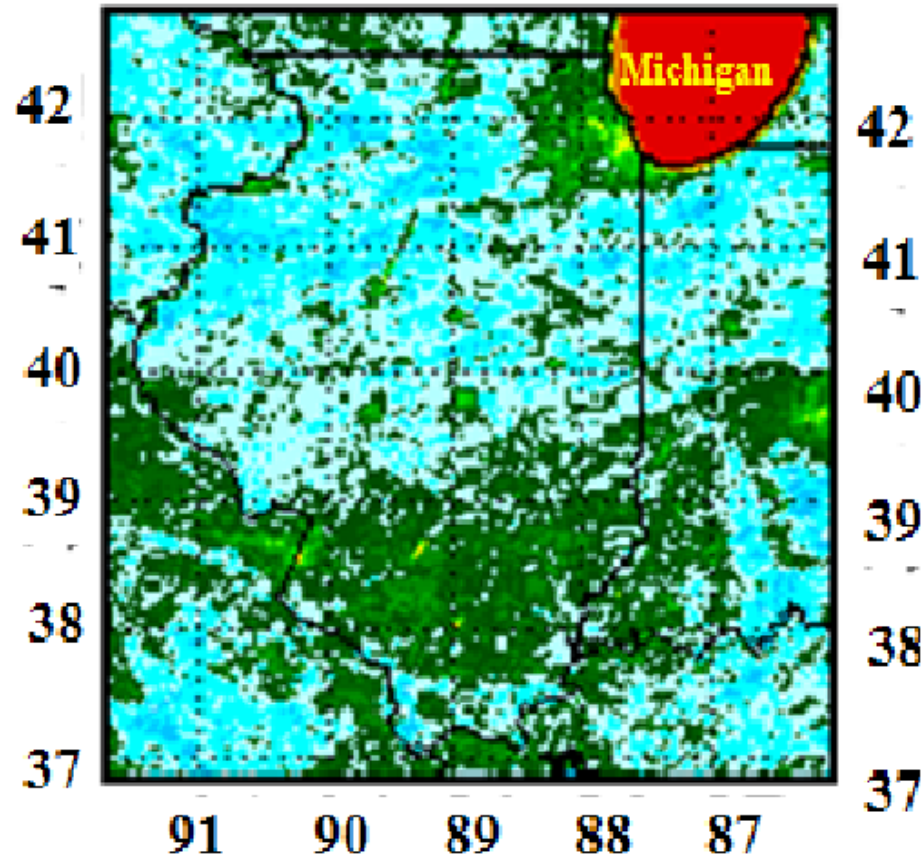


# VIIRS NDVI, Jul 28, 2012

NDVI is used as a base for Vegetation fraction and Ecosystem classes used in NWS modeling

4 km

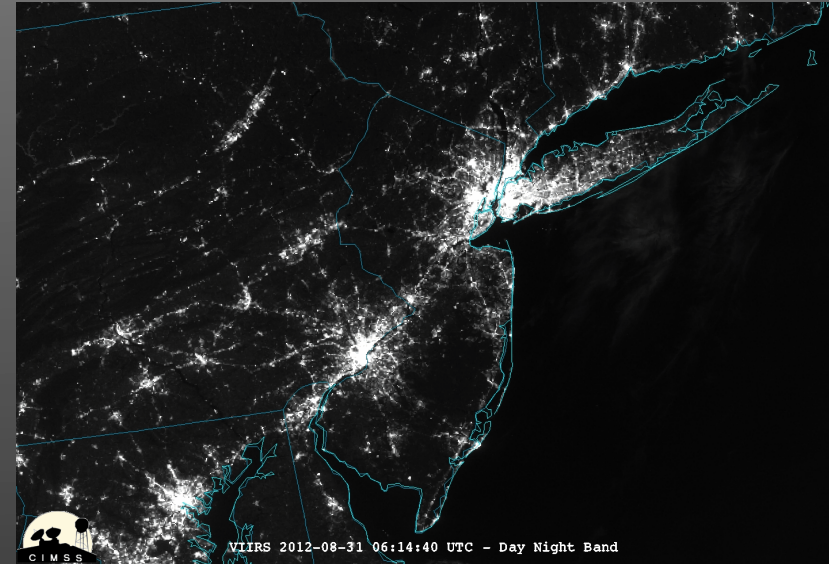
1 km



1 km resolution NDVI shows many features which is hard to see with 4 km data:  
small lakes & reservoirs  
river valleys;  
forest

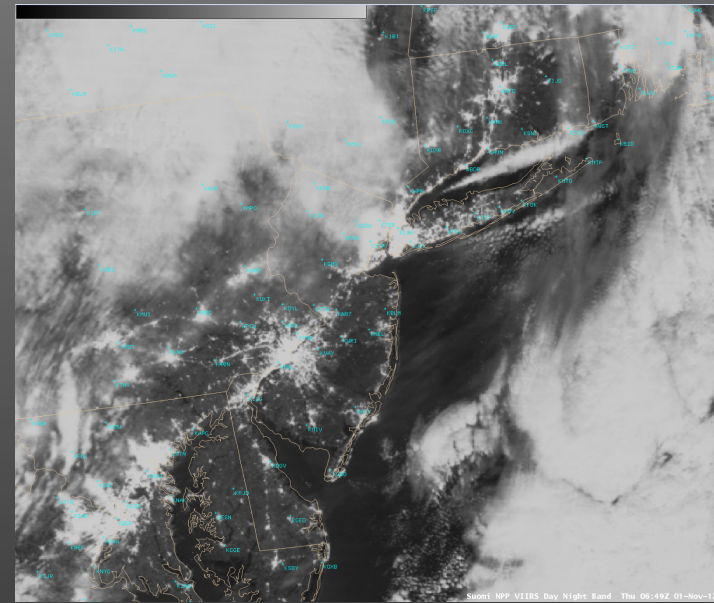
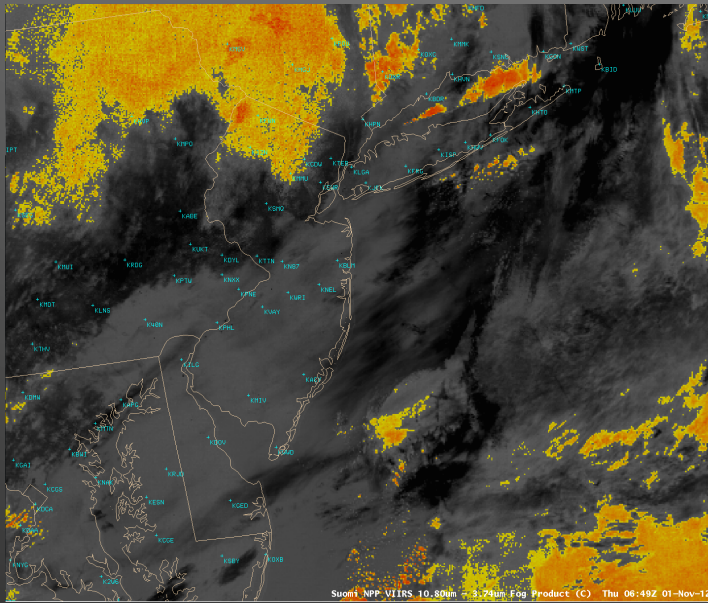


# VIIRS Day Night Band - Hurricane Sandy





# Improved Fog Products – using DNB



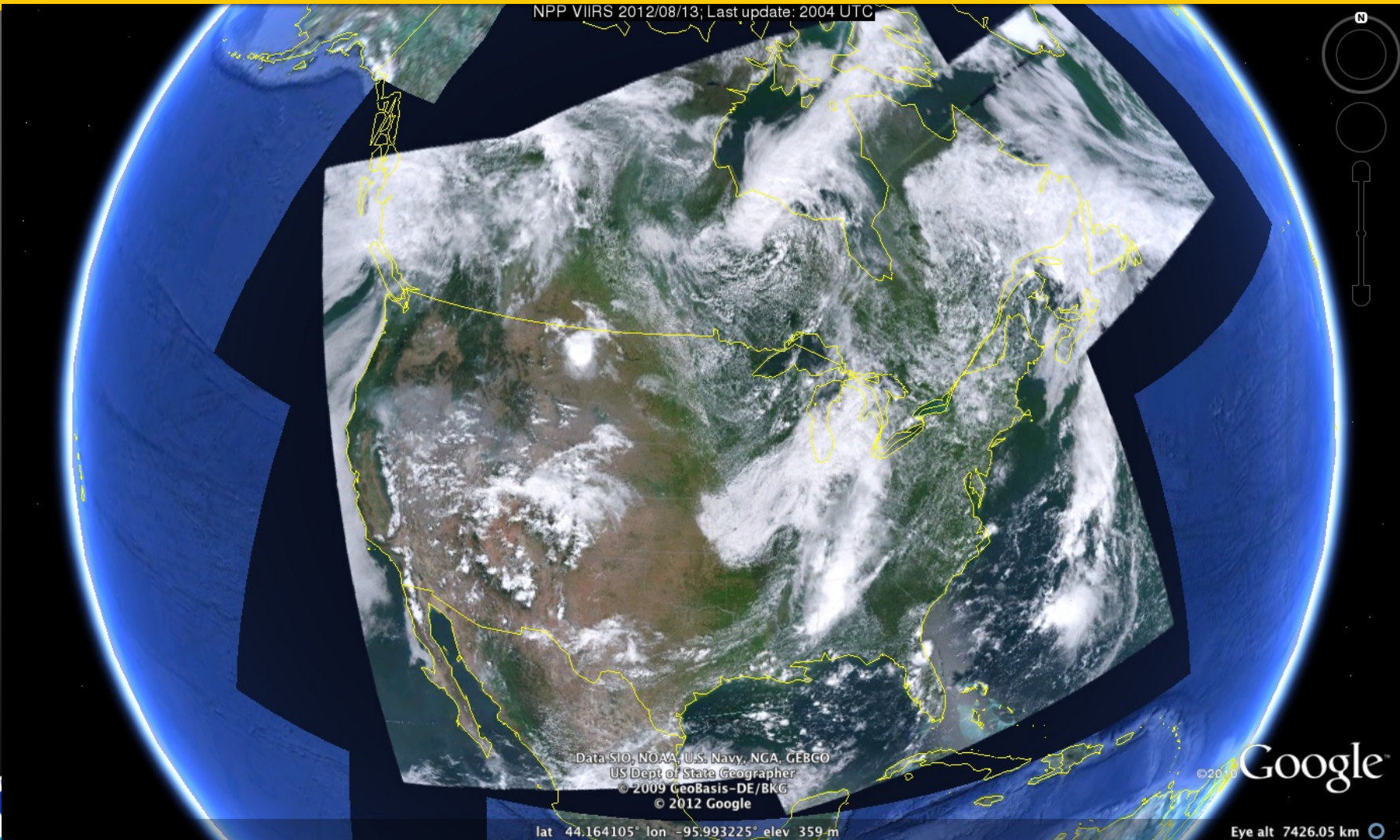
**Cloud mask:** Images show an example how DNB can improve cloud detection. Left image shows difference M12 ( 3.75um) – M15 ( 11um) brightness temperature, one cloud test in the current cloud mask. Water clouds appear yellow and red. Right image shows VIIRS DNB, where water clouds are very bright. It can be seen that DNB will detect low-level clouds those are missed in IR.





# Direct Broadcast Through the CSPP Data *Faster - Greater Operational Impact*

NPP VIIRS 2012/08/13; Last update: 2004 UTC



Data SIO, NOAA, U.S. Navy, NGA, GEBCO  
US Dept of State Geographer  
© 2009 GeoBasis - DE/BKG  
© 2012 Google

lat 44.164105° lon -95.993225° elev 359 m

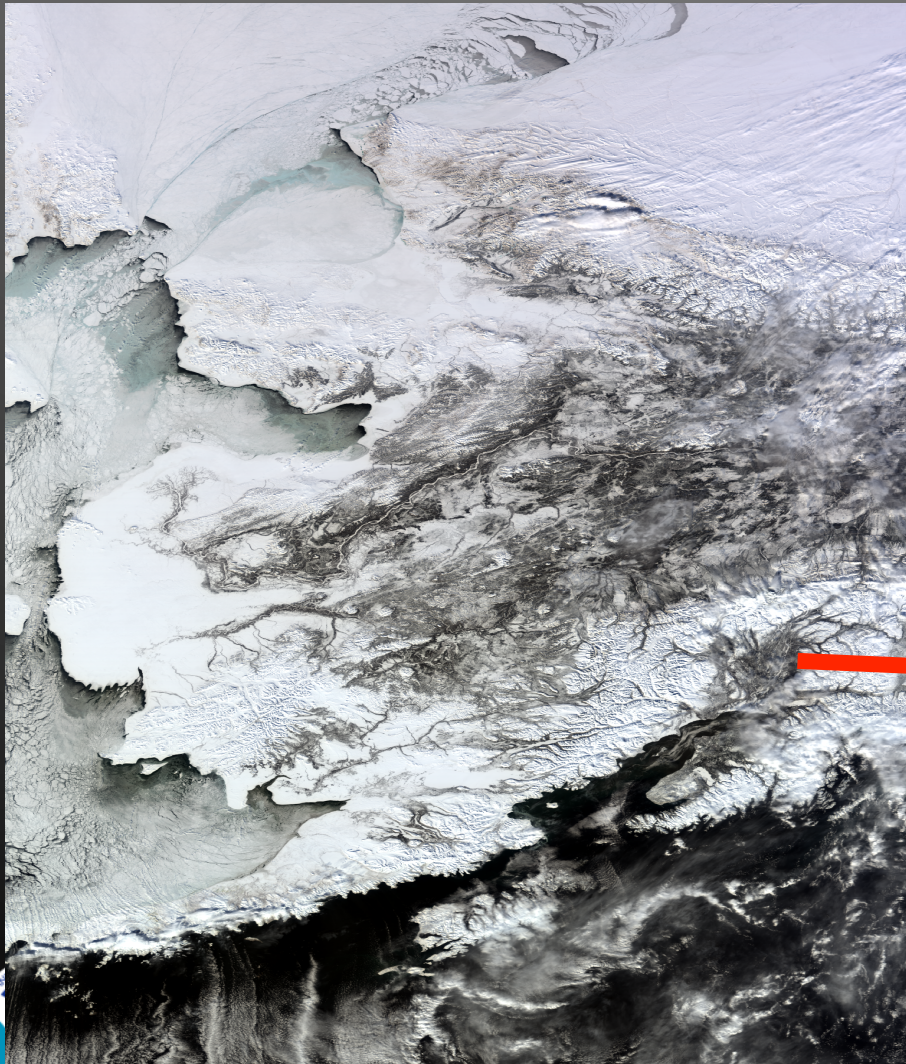
©2011 Google

Eye alt 7426.05 km



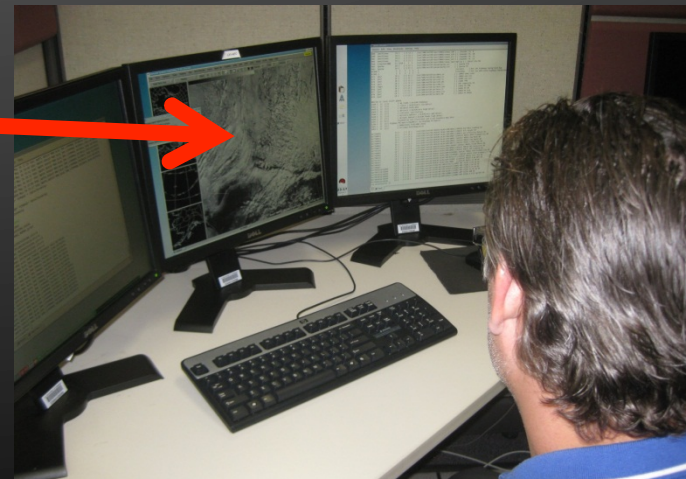


# University of Alaska Provides Real-Time VIIRS Imagery to Alaska WFOs



## Big Dog Dish

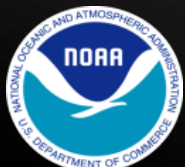
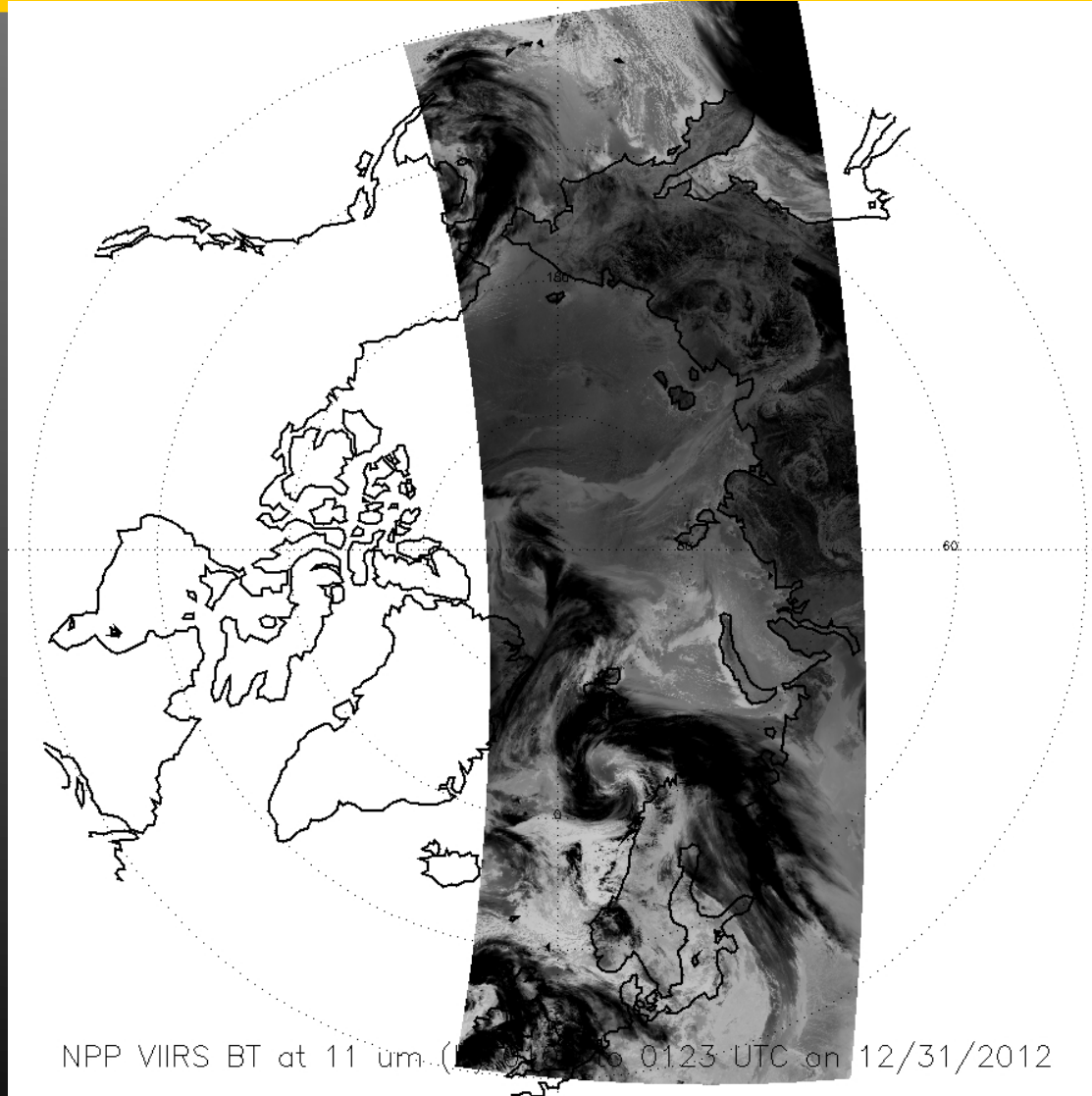
The GINA X-Band receiving station antenna on top of the IARC building. The 3.6-meter dish inside the fiberglass radome captures dozens of passes per day from the SNPP-VIIRS, Terra-MODIS, and Aqua-MODIS satellites. (UAF photo by Todd Paris)





# JPSS Supporting Weather Ready Nation through VIIRS

VIIRS provides critical visible and IR imagery which supports weather forecasting and navigation and hydrology at polar latitudes.







Local Forecast by  
City, St or Zip Code

City, St

Forecasts/Products

- Public
- Forecast Discussion
- With Glossary
- Aviation
- Marine
- Hydrology(RFC)
- Rivers & Lakes AHPS
- Ice Desk
- TV Weather
- Fire Weather
- Avalanche
- Travel 511
- Graphical
- XML** RSS Feeds
- Marine FTPMall

Data

- Vent Factor
- Mesonet
- Model Graphics
- Local Model
- Observations
- Marine Obs
- Satellite/Radar
- Soaring Index
- Weather Links

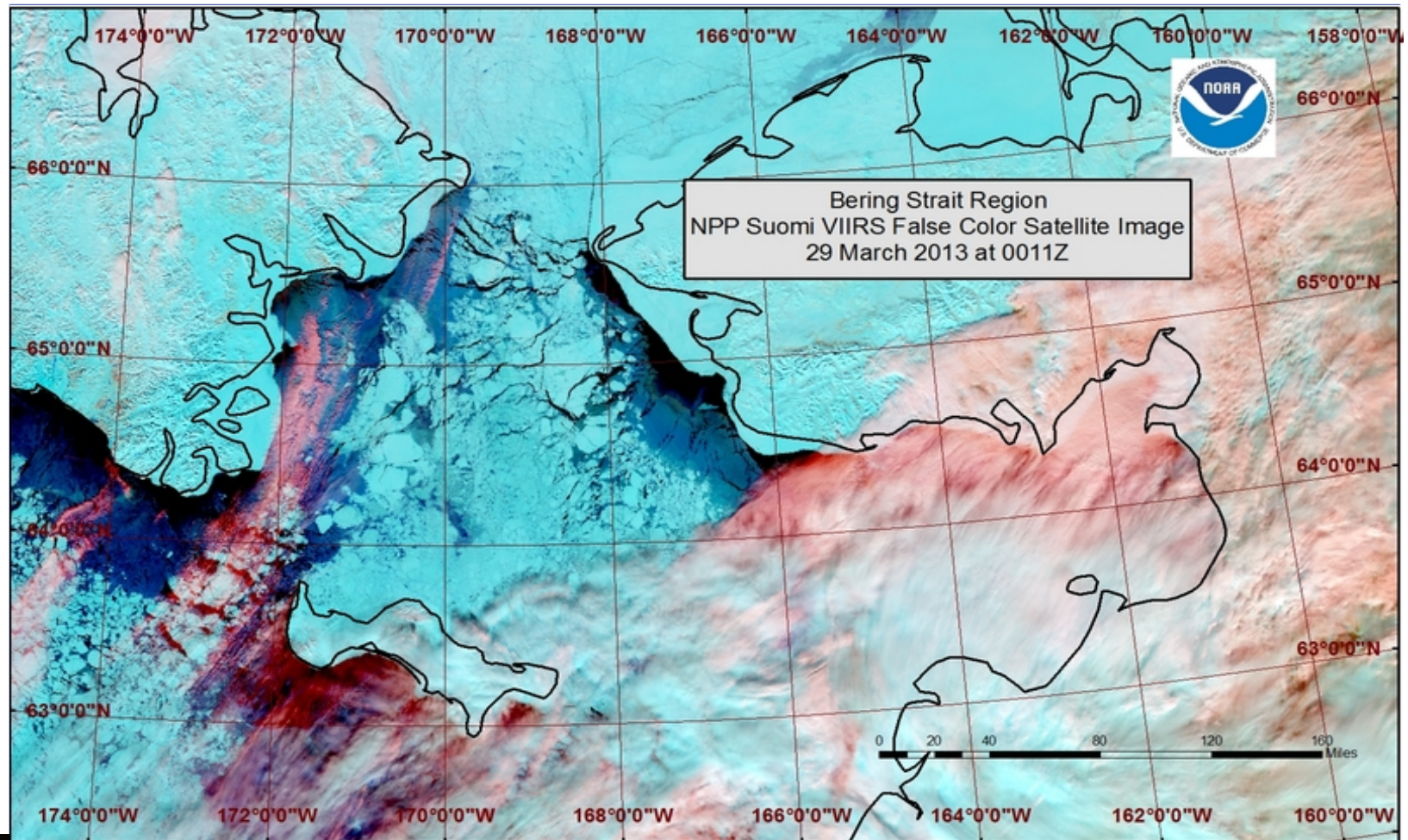
Climate

- PAFC Climate
- Interactive Climate
- PAFC Records

Satellite Ice Imagery

This page is used to post satellite images of sea ice. Resolution of the images ranges from 250 meters to 4 kilometers. Sources for the imagery are POES AVHRR from NWS Alaska Region. Images are added to this page as cloud cover and time permit.

Click on each image for a larger view:

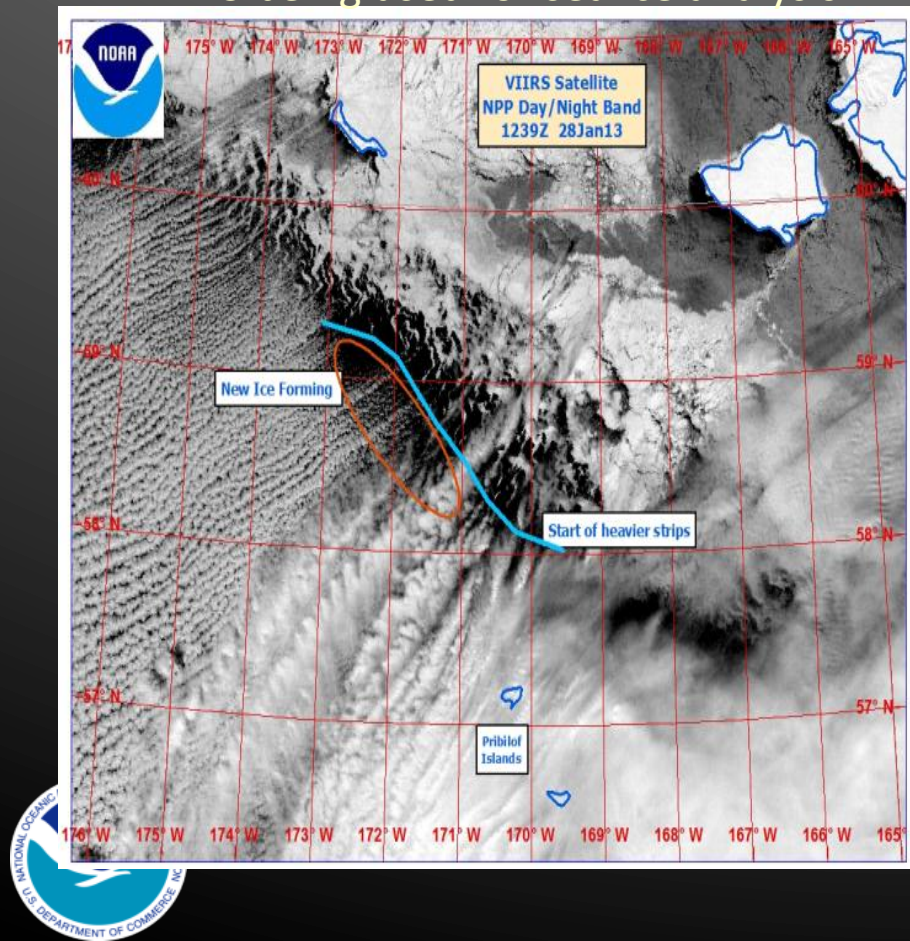




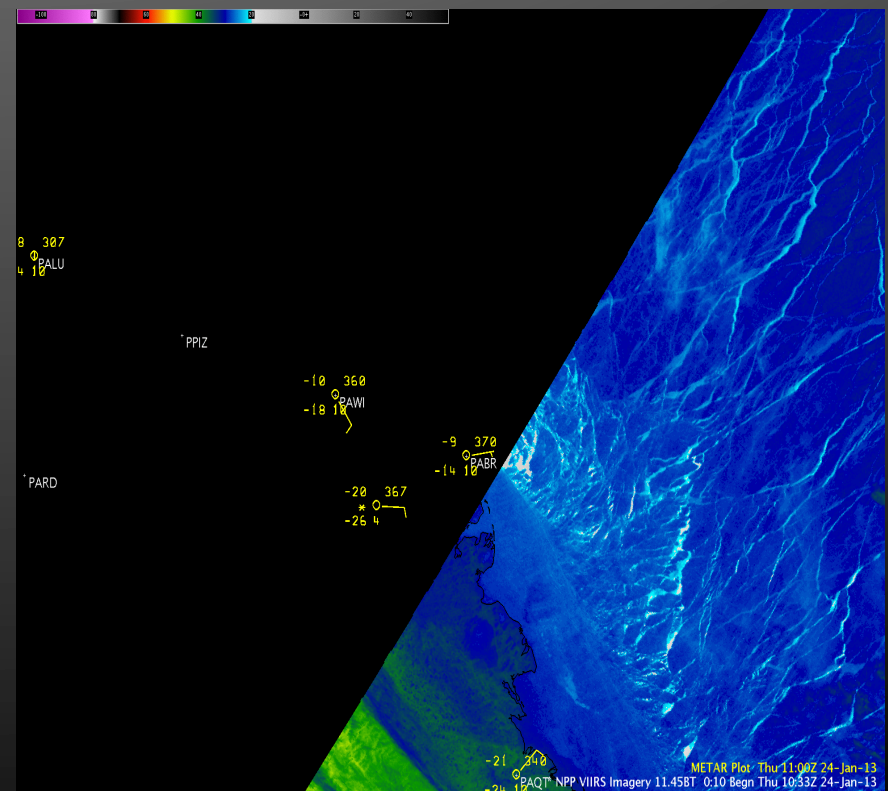
NWS in Alaska, through the JPSS Proving Ground, has become a primary and proactive user of VIIRS products and imagery.

The examples demonstrates exploitation of critical data for arctic access and navigation, and safe transportation.

### VIIRS being used for sea ice analysis



### VIIRS animation showing strong Easterly Flow (Polynyas\* and Leads) in Ice.



\* An area of open water surrounded by sea ice. It is now used as a geographical term for an area of unfrozen sea within the ice pack.

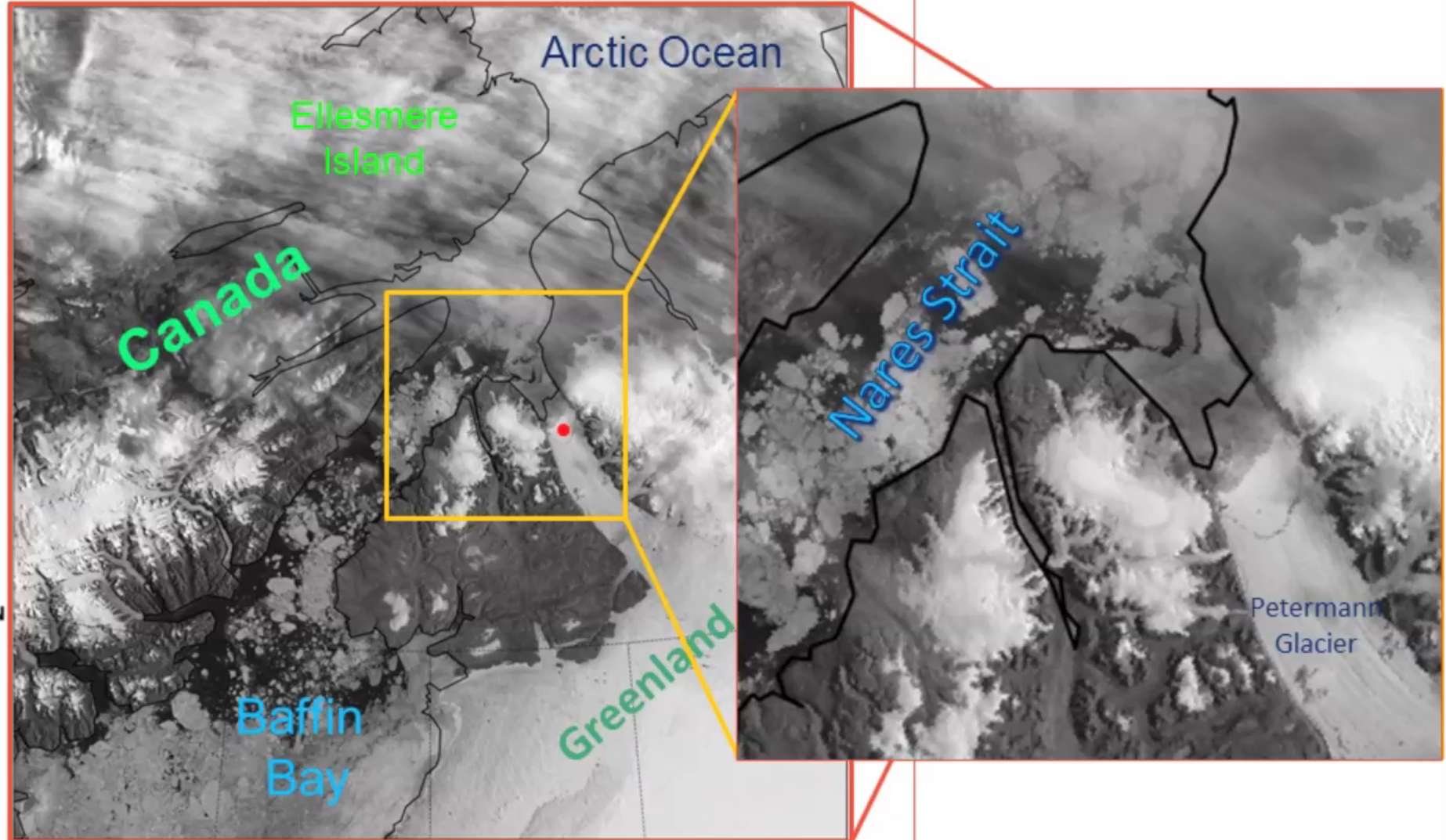




# Suomi-NPP VIIRS Monitoring of Petermann Glacier "Calving" Event Initial break

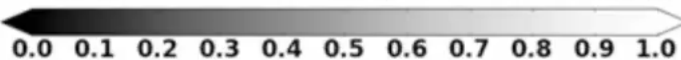
NPP VIIRS Visible-Hires 2012/07/16 10:29:09Z NRL-Monterey

70°W 65°W 60°W



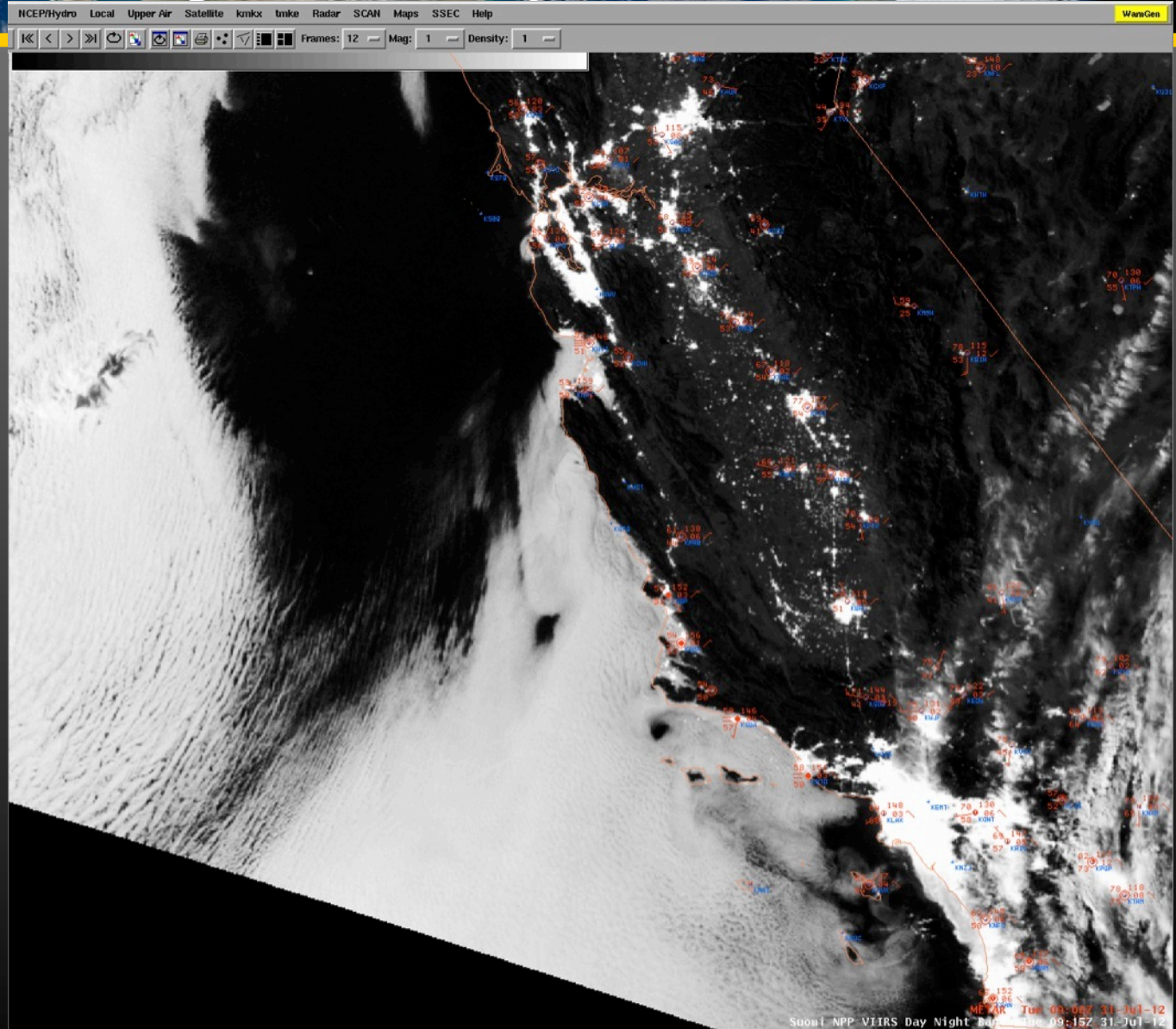
80°N

70°W 65°W 60°W



# Identifying Maritime Stratus Intrusion at Night 31 July 2012

The National  
Weather Service  
Forecast Office  
in Monterey,  
California  
Currently  
employs the  
VIIRS DNB to  
provide higher  
confidence for  
issuing marine  
dense fog  
advisories





# JPSS Supporting Wildfire Detection through VIIRS

**Active Fires Webpage**

VIIRS Active Fires

Date Detections Over Pass  
Date24    
Date48

Zoom to Location

Latitude: Longitude:  
  zoom

Enter a location

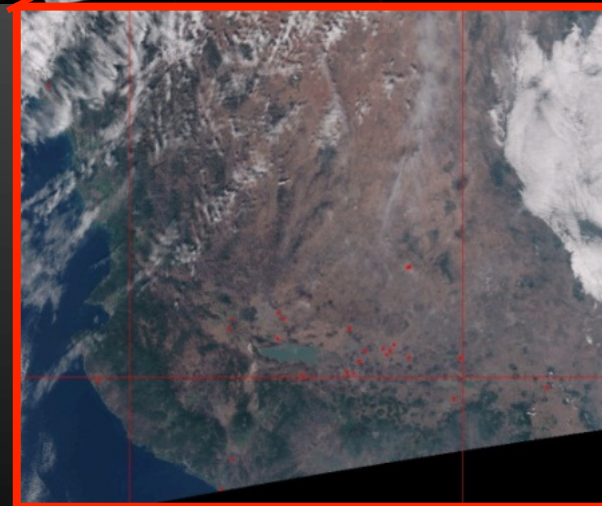
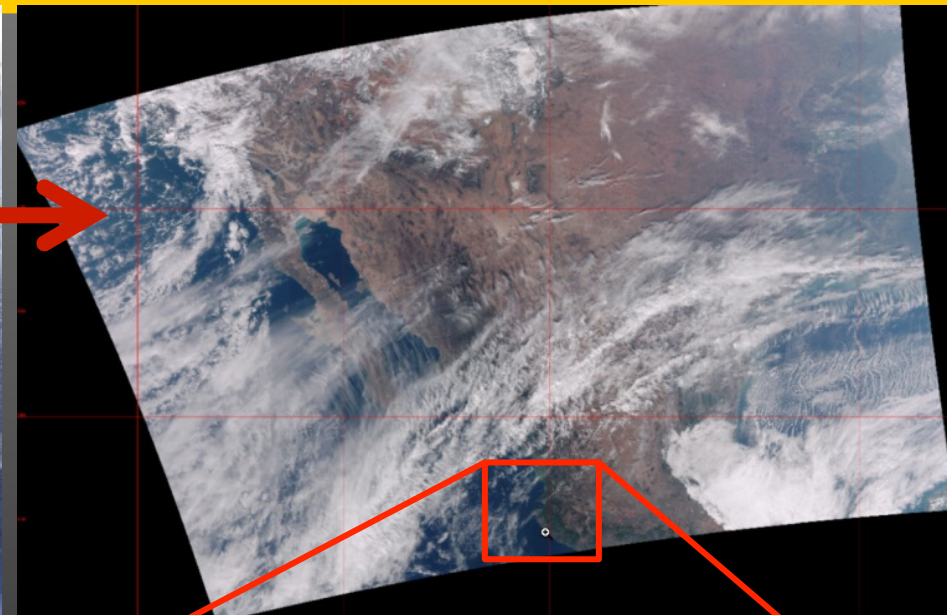
Overlay Options

Temperature   
Cloud Cover   
US Active Fire Perimeters   
InciWeb Wildfire Information

Reset Center Clear  
[Return Home](#)

NPP\_VIIRS\_20121229\_200625\_201205

Latitude: 28.8554 [View](#)  
Longitude: -106.361 [\(GeoTIFF\) Download](#)  
Date: 12/29/2012 [\(ASCII\) Download](#)  
[\(KMZ\) Download](#)



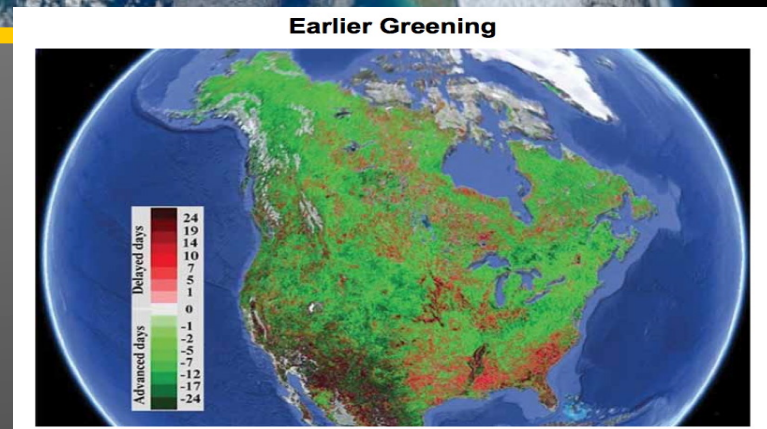
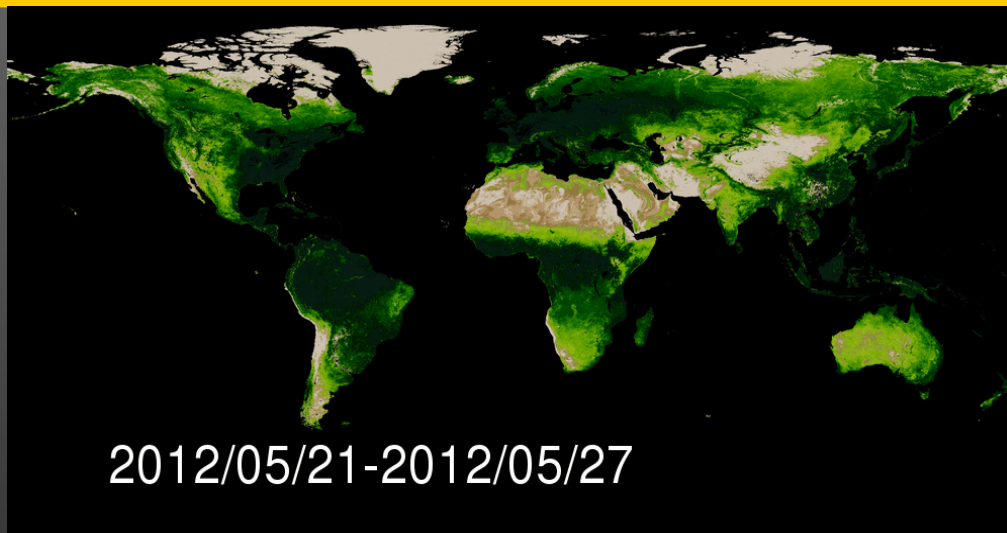
The National Weather Service and US Forest Service both depend on VIIRS data to predict, identify and monitor wildfires.

JPSS has funded development and implementation of the Active Fires program through its Proving Ground.

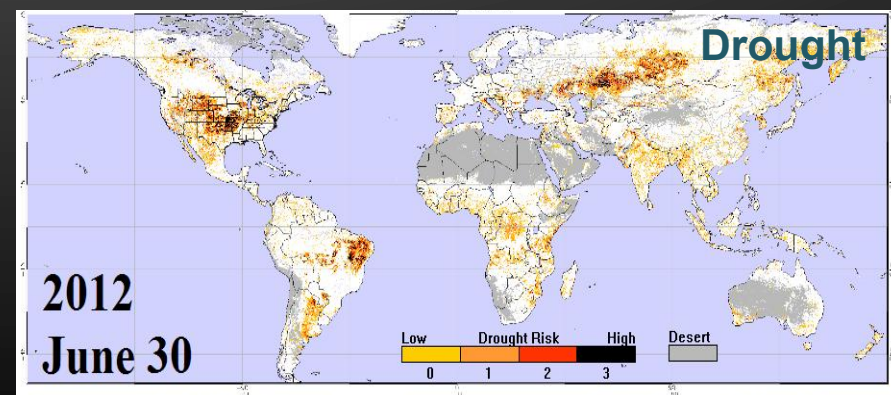
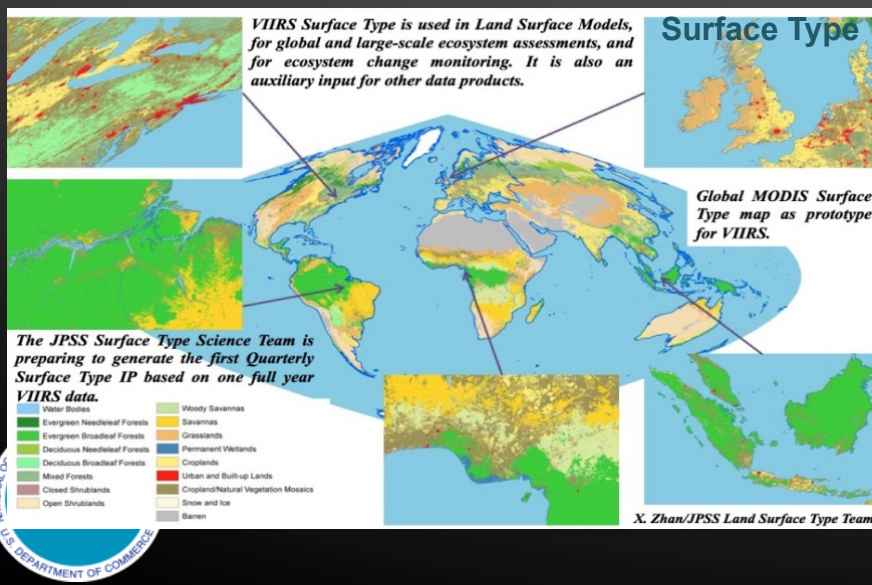




# JPSS Supporting Land and Ecosystem Monitoring through VIIRS

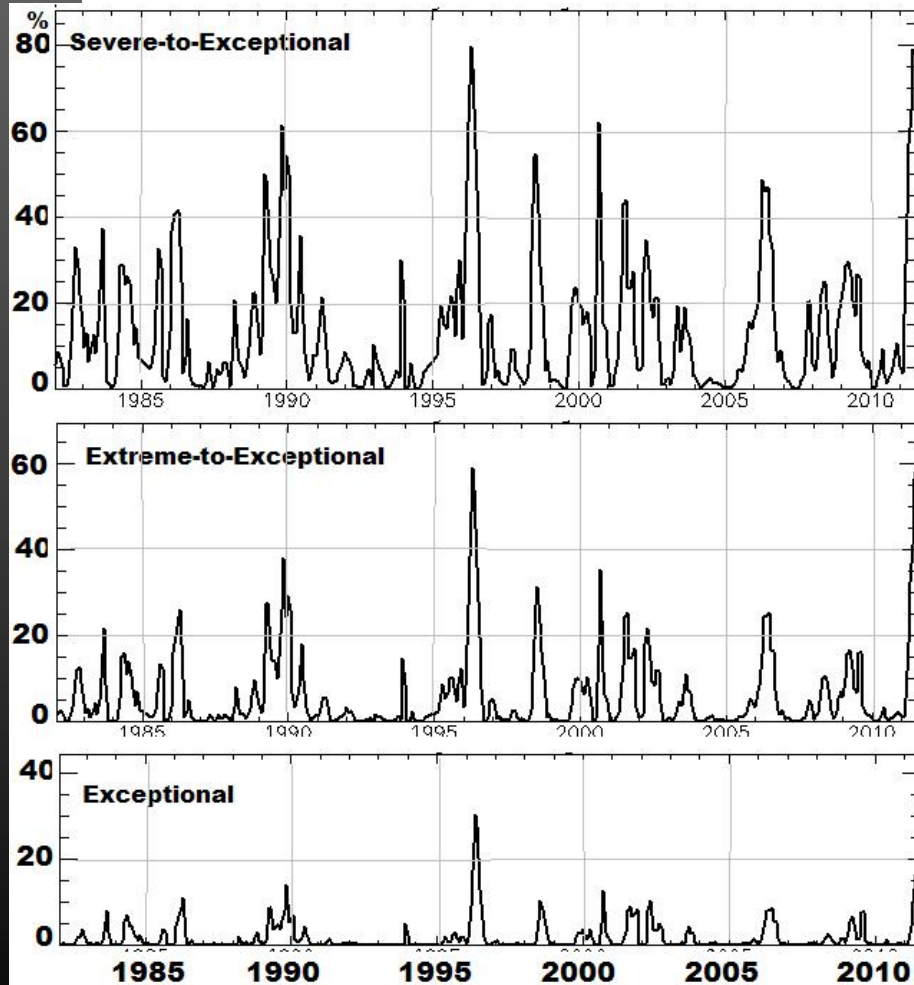


Understanding climatically-induced changes allows for NOAA to better support land, ecosystem and drought monitoring to provide decision support to US stakeholders





# 2011 TEXAS Drought Assessment using AVHRR (replaced by VIIRS)



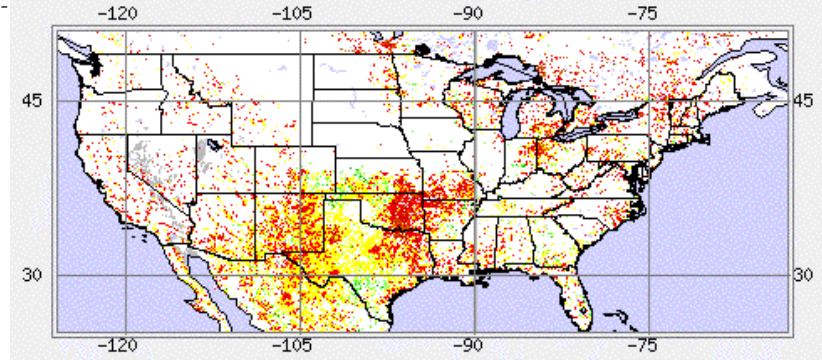
**Percent drought area, Texas, USA**

From AVHRR 1981-2012 data

## Change in Moderate-to-Exceptional Drought

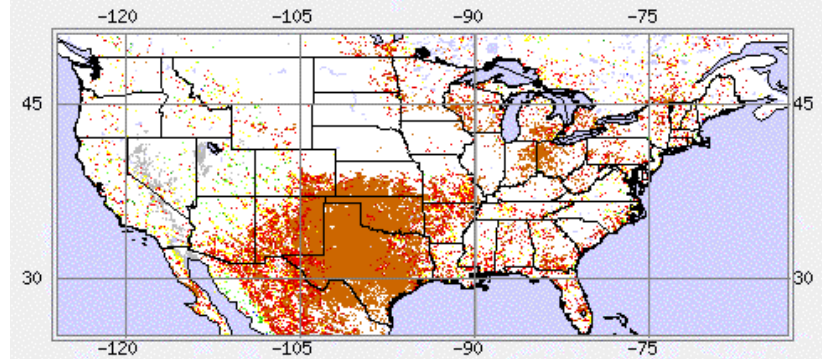
### Change In 4 Weeks

7/1/2011, week=26



### Change In 52 Weeks

7/1/2011, week=26



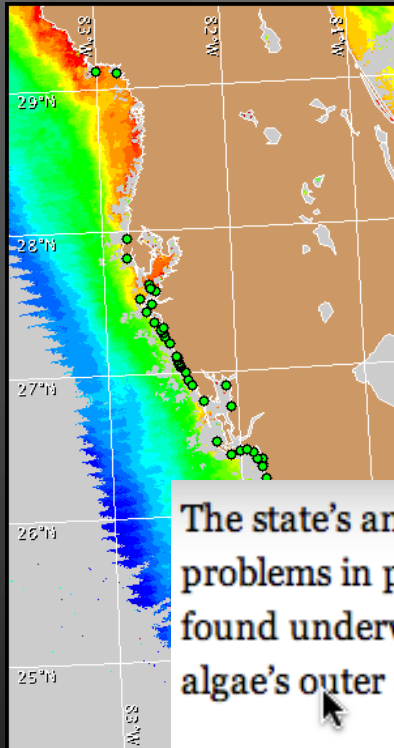
# Harmful Algae

## Florida Algae Bloom Leads to Record Manatee Deaths



A manatee off Peanut Island, Fla.

Julio Cortez/Associated Press



The state's annual red tide affects a wide range of aquatic animals and can cause problems in people. The algae contain a nerve poison known as brevetoxin that is not only found underwater but that is also blown through the air when waves break open the algae's outer casing.

Manatees, birds, dolphins and other animals can be killed by consuming the poison, either by accidentally eating the algae or by ingesting small organisms clinging to sea grass that have soaked up the poison while filtering seawater.

Residents and tourists regularly have respiratory problems after inhaling brevetoxins while strolling on beaches near red tides. People can also become ill after eating oysters and clams that have absorbed the toxin.

### Conditions Reports

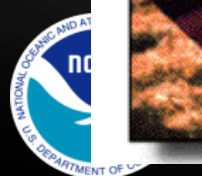
ulfside region of the Lower to Middle Florida through Wednesday, with moderate impacts ngshore southwest Florida today through

egion. No impacts are expected. Last



Data courtesy of: USDOC/NOAA/NESDIS CoastWatch

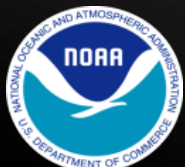
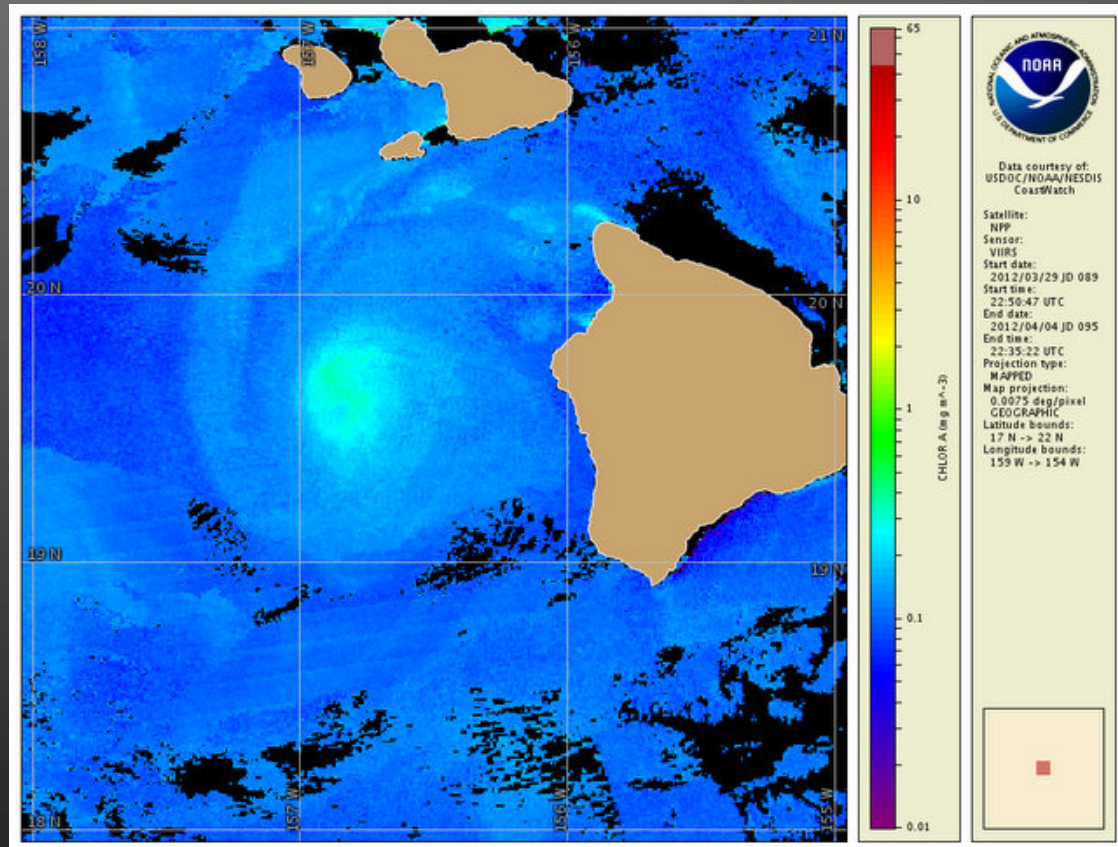
Satellite: NPP  
Sensor: VIIRS  
Date: 2012/04/09 JD 100  
Start time: 19:20:39 UTC  
End time: 19:19:12 UTC  
Projection type: MAPPED  
Map projection: 0.83 km/pixel  
MERCATOR  
Latitude bounds: 15 N -> 32 N  
Longitude bounds: 100 W -> 78 W





# Managing marine resources via monitoring ocean nutrients

The cyclonic spin of the eddy causes the nutricline at its core to shoal, bringing deep nutrients to surface waters resulting in increased phytoplankton. These eddies appear to create food webs resulting in foraging habitat for apex species including tunas and cetaceans off the coast of Hawaii.

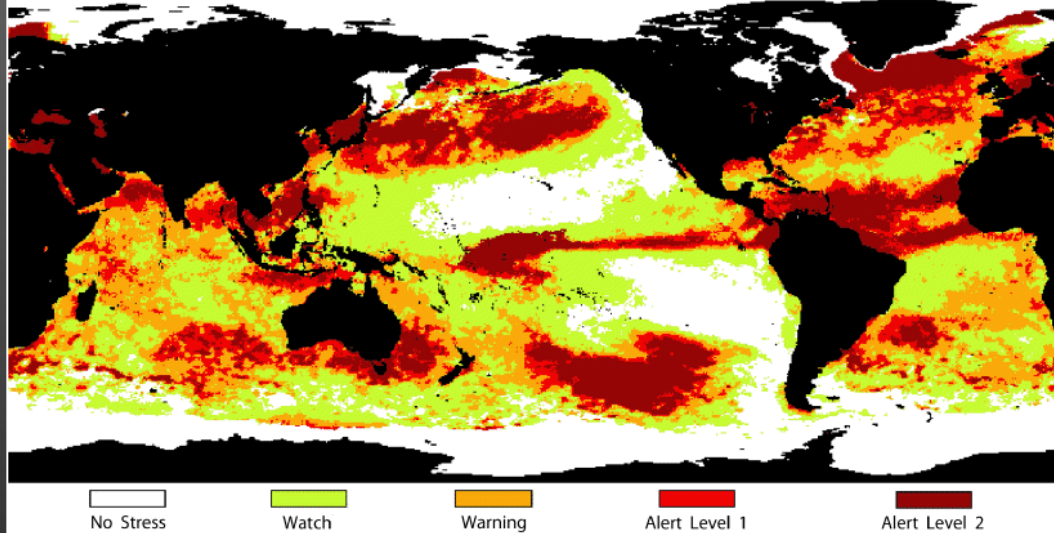


VIIRS ocean color derived Chlorophyll-A

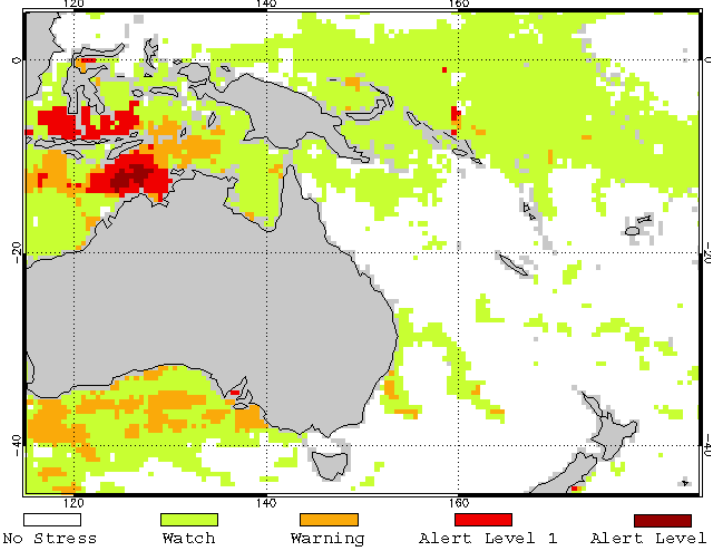
# JPSS Supporting Healthy Oceans and Reefs through VIIRS

NOAA Coral Reef Watch Annual Maximum Satellite Coral Bleaching Alert Area

2010

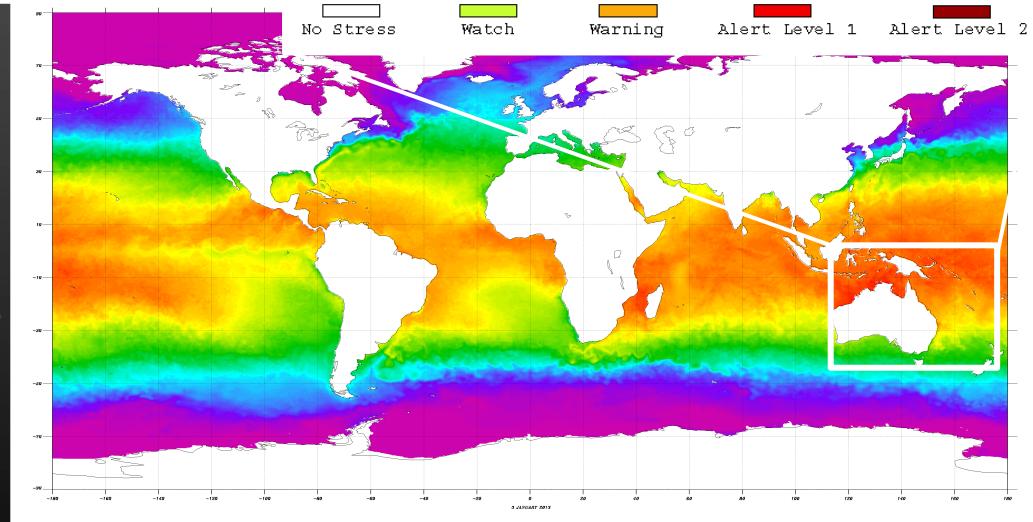
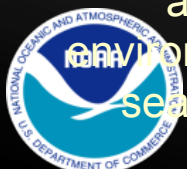


NOAA Coral Reef Watch Satellite Coral Bleaching Alert Area  
03 Jan 2013



In 2010, major bleaching occurred to coral reefs throughout much of the Indian Ocean, Southeast Asia, the Coral Triangle, and the Caribbean

Coral Reef Watch (using AVHRR) provide a nowcast of current bleaching environmental conditions as derived from sea surface temperature anomalies





# OMPS- Ozone Mapping and Profiler Suite

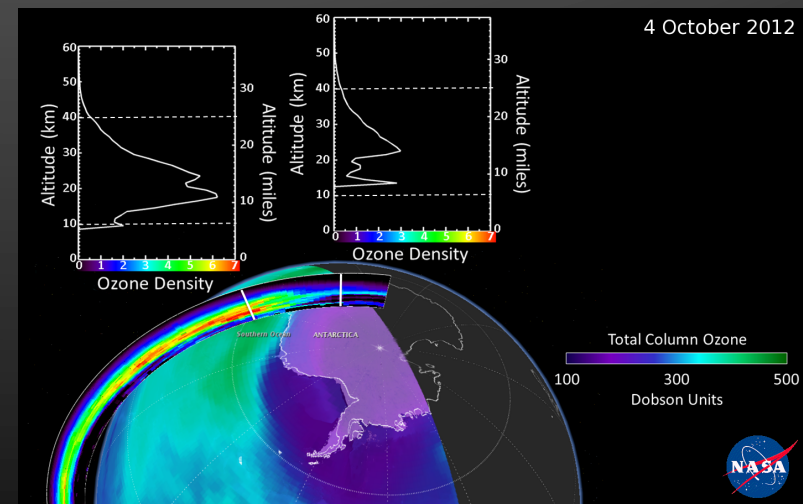
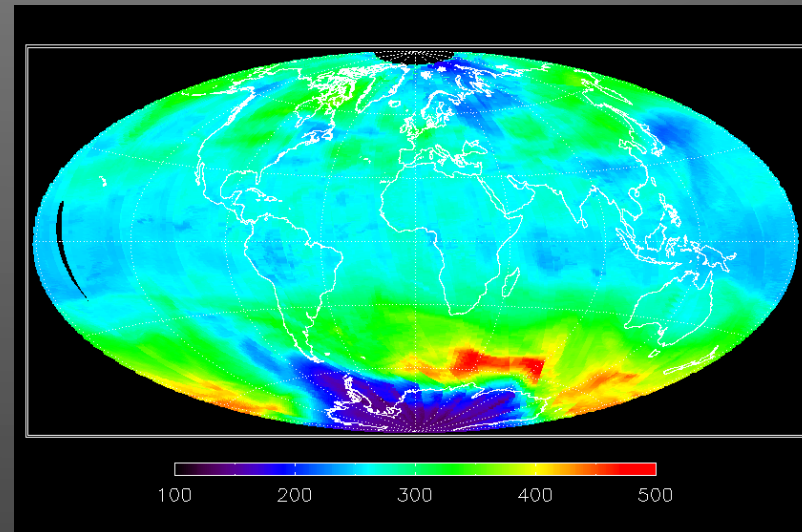
## Advanced Features

Three hyperspectral imaging spectrometers:

Nadir Mapper: 50 km spatial with 2600 km swath

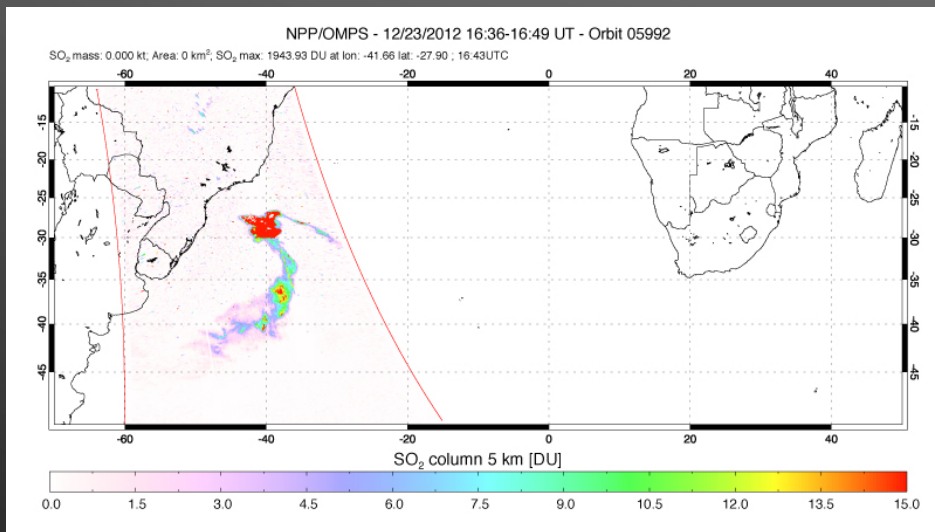
Nadir Profiler: 250 km spatial, 8 km vertical resolution

Limb: 3 km vertical, three cross-sections separated by 500 km

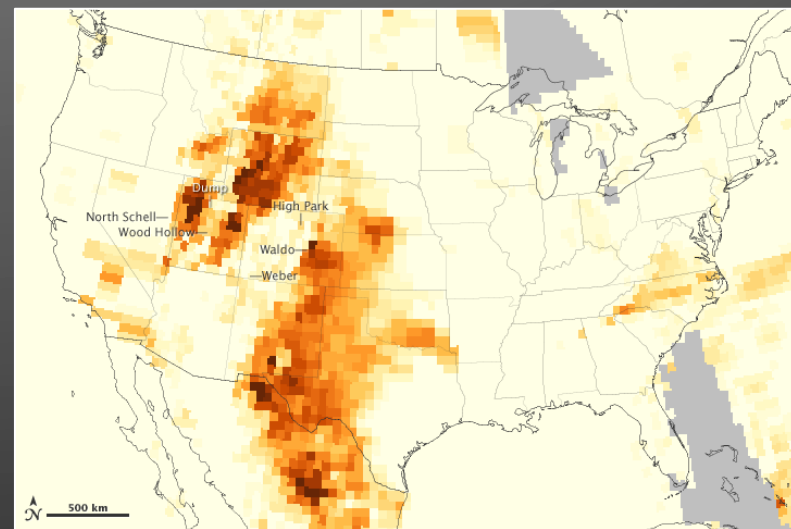


# OMPS Aerosol and SO<sub>2</sub> Index

Copahue Eruption Dec. 13, 2012



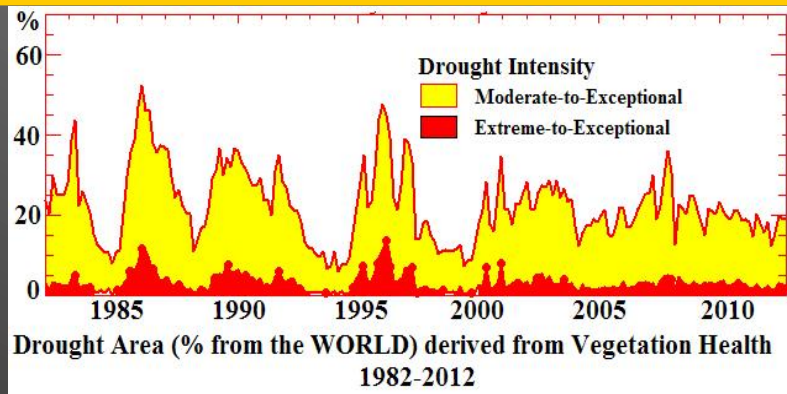
June 23, 2012



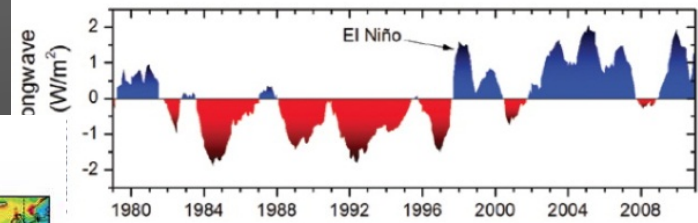
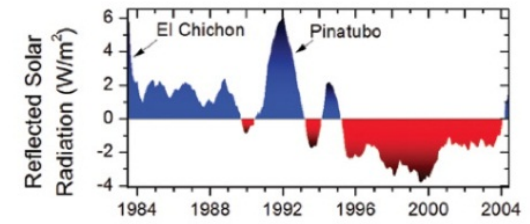
(NASA Science Team)



# JPSS provides Critical Observations to Extend Climate Data Records

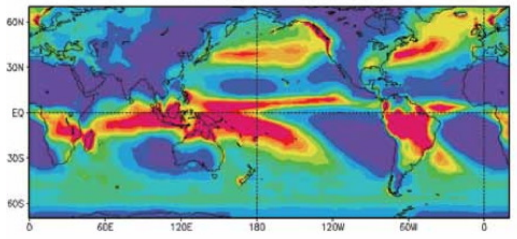


## Changes in the Earth's Radiation Budget

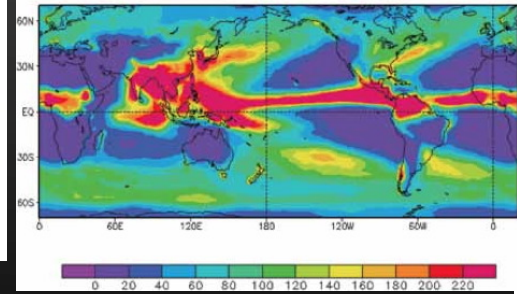


## Average Rainfall

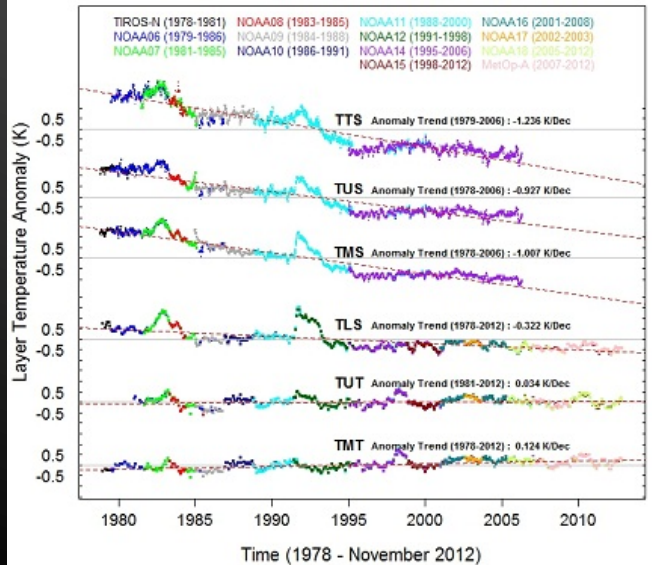
Northern Hemisphere Winter



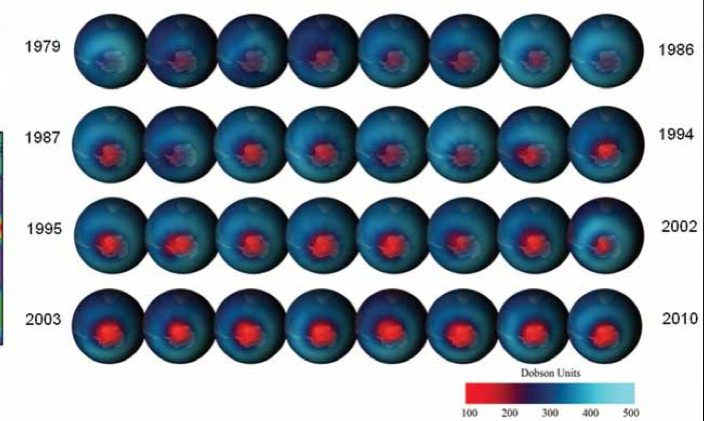
Northern Hemisphere Summer



## MSU/AMSU/SSU Global Mean Layer Temperature Anomaly Time Series



## The Antarctic Ozone Hole: 1979 to 2010



# JPSS ENVIRONMENTAL PRODUCT PRODUCTION

## VIIRS (28 EDRs)

RDR & SDR (for each band)

### EDRs

ACTIVE FIRES  
ALBEDO (SURFACE)  
AEROSOL OPTICAL THICKNESS  
AEROSOL PARTICLE SIZE PARAMETER  
CLOUD BASE HEIGHT  
CLOUD COVER/LAYERS  
CLOUD EFFECTIVE PART SIZE  
CLOUD OPTICAL THICKNESS  
CLOUD TOP HEIGHT  
CLOUD TOP PRESSURE  
CLOUD TOP TEMPERATURE  
CLOUD MASK  
ICE SURFACE TEMPERATURE

● IMAGERY

LAND SURFACE TEMPERATURE  
OCEAN COLOR/CHLOROPHYLL  
QUARTERLY SURFACE TYPE  
SEA ICE CHARACTERIZATION  
SEA SURFACE TEMPERATURE  
SNOW COVER  
SURFACE TYPE  
SUSPENDED MATTER  
VEGETATION INDICES  
*Green Veg Fraction Index*  
*Ocean Color/Chlorophyll*  
*Polar Winds*  
*Sea Surface Temperature*  
*Vegetation Health Index Suite*

## GCOM AMSR-2 (11 EDRs)

RDR, SDR, TDR

### EDRs

Cloud Liquid Water Imagery  
Precipitation Type/Rate  
Precipitable Water  
Sea Ice Characterization  
Sea Surface Temperature

Sea Surface Winds-Speed  
Snow Cover/Depth  
Snow Water Equivalent  
Soil Moisture  
Surface Type

## CrIS/ATMS (4 EDRs)

### EDRs

Atm Vert Moisture Profile  
Atm Vert Temperature Profile  
Atm VERT MOISTURE PROFILE  
Atm VERT TEMPERATURE PROFILE

## ATMS (11 EDRs)

RDR, ●SDR, TDR

Cloud Liquid Water Imagery  
Land Surface Emissivity  
Land Surface Temperature  
Moisture Profile  
Rainfall Rate  
Sea Ice Concentration  
Snow Cover/Depth  
Snow Water Equivalent  
Temperature Profile  
Total Percipitable Water

## CrIS (4 EDRs)

RDR & ●SDR

CO CO<sub>2</sub> CH<sub>4</sub>  
Infrared Ozone Profile

## OMPS (3 EDRs)

OMPS-N RDR & SDR  
OMPS-L RDR<sup>2</sup> & SDR<sup>3</sup>

### EDRs

O<sub>3</sub> TOTAL COLUMN (OMPS-N)  
O<sub>3</sub> NADIR PROFILE (OMPS-N)  
O<sub>3</sub> LIMB PROFILE (OMPS-L)<sup>3</sup>

## CERES (2 EDRs)<sup>1</sup>

RDR & SDR

### EDRs

REFLECTED SOLAR RADIATION (TOA)  
OUTGOING LW RADIATION (TOA)

## TSIS<sup>1</sup>

RDR & SDR

## A-DCS

PLATFORM REPORTS<sup>4</sup>

## SARR & SARP

DISTRESS BEACON REPORTS<sup>5</sup>

RDR = Raw Data Record  
SDR = Sensor Data Record  
EDR = Environmental Data Record  
TDR = Temperature Data Record  
● = EDRs w/Key Performance Parameters  
**BOLD CAPS** = JPSS Ground System EDR  
*Italics* = ESPC EDR

### KEY

JPSS Mission (NPP, JPSS- 1 & 2)  
GCOM-W1 Mission  
Free-flyer Mission

- CERES and TSIS Climate Data Record (CDR) production is outside the scope of JPSS.
- NPP and JPSS-2 Threshold requirement.
- JPSS-2 Threshold requirement. OMPS Limb not flown on JPSS-1.
- The JPSS program does not process the A-DCS Platform Reports. These reports are downlinked from the spacecraft to the local/regional (HRPT) ground stations who will deliver the data to CLS.
- The JPSS program does not process the SARR Distress Beacon Reports. These reports are downlinked from the spacecraft to the SARSAT Local User Terminals, which then forward the data to one or more of the SARSAT MCCs.



# Non-Real-Time User Access Products from CLASS

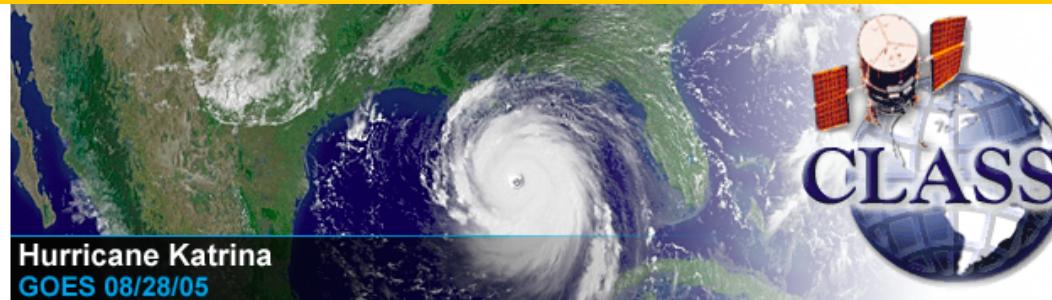
- » Search for Data
- » Upload Search
- » Search Results
- » Shopping Cart
- » Order Status
- » Help

## User Account

- » User Profile
- » User Preferences
- » Advanced Options
- » Download Keys
- » Release Info
- » Version 6.1.2  
January 17, 2013

## Other Links

- » CLASS Home
- » NODC
- » NCDC
- » NGDC
- » NESDIS
- » NOAA
- » DOC



## NEWS

### Attention Metop users::

Except for the HIRS 1b data all Metop-B level 1b satellite data is now publicly available beginning on January 15, 2013. Data collected prior to that date remains restricted. We will post another message on the HIRS data once it becomes available. For any questions or assistance in obtaining the data please contact the [CLASS Help Desk](#)

### Attention CORS users:

The National Geodetic Survey's CORS data is now available for ordering from the CLASS archive. Older data are currently in the process of being migrated from the NGDC archive to CLASS. While every effort is made to retain data in the original at-sampling rate, there may be cases where only the 30-second decimated rate data exists. For more details select 'Continuously Operating Reference Stations (CORS)' from the product drop down menu and click on Go.

### Suomi NPP data access status:

Below is a list of S-NPP products released to the public and now available through CLASS. The complete list of products along with the begin dates of product availability are located on the [Suomi NPP FAQ](#) page. The remaining NPP products will be released to the user community over a time frame of several months. Please note that all newly released products are at 'Beta' maturity level as defined in the [Product Maturity Level page](#). Details of high priority issues related to the data quality are contained in the Readme files provided by the NPP Project Scientist. Please read these before ordering and using the data!

#### ATMS

[Readme](#) for released S-NPP ATMS SDR data

#### CrIS

[Readme](#) for released S-NPP CrIS SDR data

#### CrIMSS

[Readme](#) Readme for released S-NPP CrIMSS EDR data

#### OMPS

[Readme](#) for released S-NPP OMPS Nadir Ozone Profile data  
[Readme](#) for released S-NPP OMPS SDR data

## SEARCH FOR DATA

- + Environmental Data from Polar-orbiting Satellites
- + Environmental Data from Geostationary Satellites
- + Defense Meteorological Satellite Program (DMSP)
- + Suomi National Polar-orbiting Partnership (NPP)
- + Sea Surface Temperature data (SST)
- + RADARSAT
- + Altimetry / Sea Surface Height Data (JASON-2)
- + Global Navigation Satellite Systems (GNSS)
- + Other - Miscellaneous products in CLASS

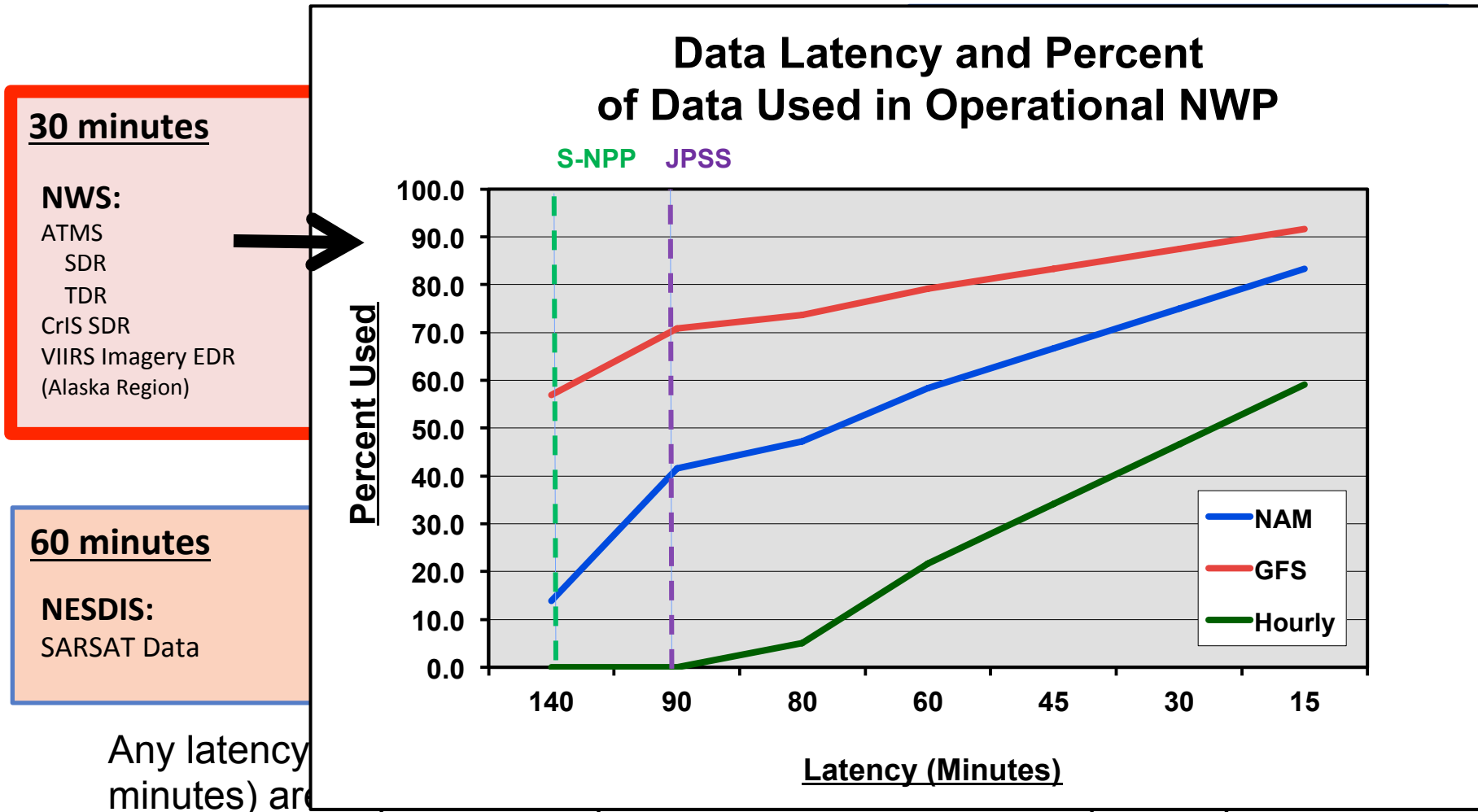
## SEARCH COLLECTION METADATA

[»GO](#)



# NOAA User Latency Requests

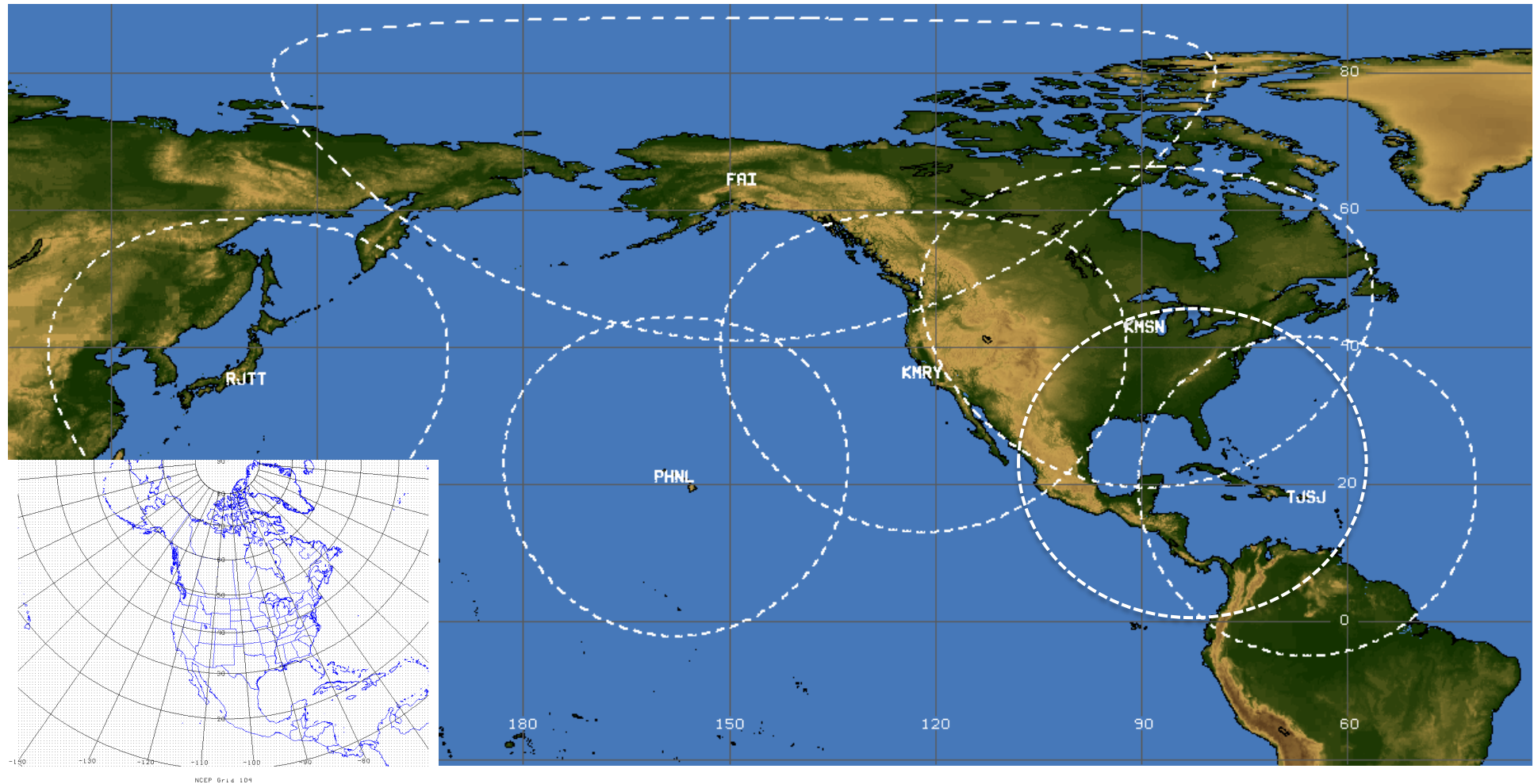
- NOAA operational Line Offices have provided true latency values for their respective critical products (focusing on the near-real time requirements)





# Future JPSS Proving Ground DB Demo

## *CSPP sites*



Community Supported Processing Package (CSPP) demonstrates the value of 30 minute latency for nowcasting and regional forecast model applications by establishing a network of direct readout stations



# Summary

JPSS is a major contributor to the global observing system.

Suomi NPP instruments are performing exceptionally well!!

Many applications will benefit

International partnerships are essential.

Direct readout provides excellent opportunities for full resolution data and low latency for critical applications. Also solves problem of access/



distribution of data from centralized processing centers