



JPSS Proving Ground and Risk Reduction

Brief to NOAA Testbed and Proving Ground Meeting

Dr Mitch Goldberg

17 Apr 2014



Outline of Presentation

- JPSS Status
- Operational use of SNPP data at NOAA
- User data exploitation – JPSS Proving Ground and Risk Reduction Program Initiative



JPSS Program Status

S-NPP is producing outstanding data

- ✔ Satellite healthy; data availability high (~99.99%)
- ✔ Operations transitioned to OSPO in February 2013
- ✔ Significant progress in cal/val and operational use of instruments
- ✔ S-NPP on May 1 will be declared as the primary operational polar orbiting satellite



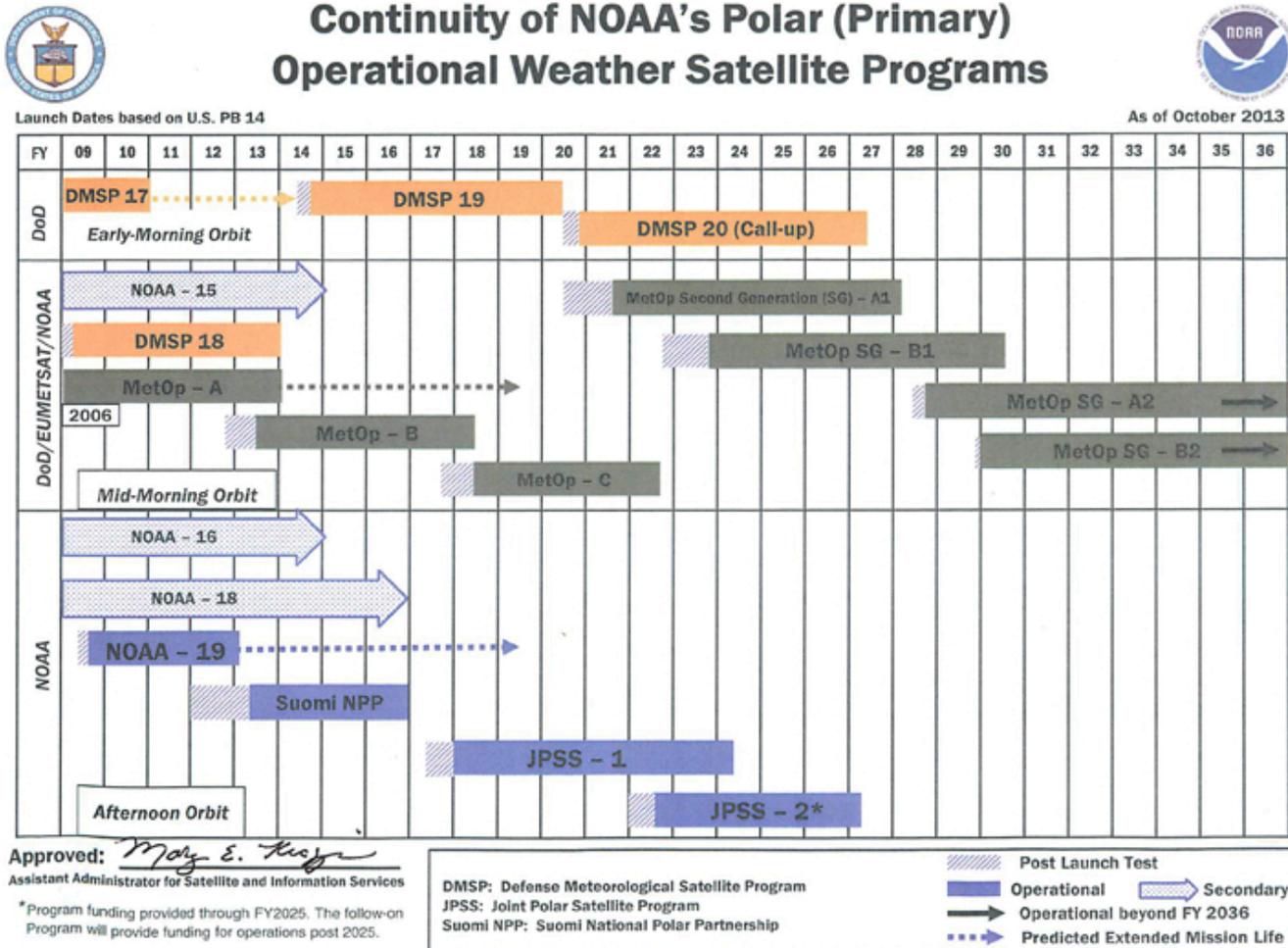
JPSS-1 Spacecraft integration and testing courtesy of Ball Aerospace & Technologies Corp.

JPSS-1 is executing as planned

- ✔ Instruments and spacecraft proceeding well
- ✔ All instruments assembled and in test
- ✔ Spacecraft is in assembly and integration



Polar Program Satellite Flyout Chart



JPSS-1 Instruments (same as S-NPP)

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



S-NPP and JPSS Data Products From NOAA available in real-time

VIIRS (25)

ALBEDO (SURFACE)
CLOUD BASE HEIGHT
CLOUD COVER/LAYERS
CLOUD EFFECTIVE PART SIZE
CLOUD OPTICAL THICKNESS
CLOUD TOP HEIGHT
CLOUD TOP PRESSURE
CLOUD TOP TEMPERATURE
ICE SURFACE TEMPERATURE
OCEAN COLOR/CHLOROPHYLL
NET HEAT FLUX*
SUSPENDED MATTER
VEGETATION INDEX, FRACTION,
HEALTH
AEROSOL OPTICAL THICKNESS
AEROSOL PARTICLE SIZE
ACTIVE FIRES
POLAR WINDS
IMAGERY
SEA ICE CHARACTERIZATION
SNOW COVER
SEA SURFACE TEMPERATURE
LAND SURFACE TEMP
SURFACE TYPE

CrIS/ATMS (4)

ATM VERT MOIST PROFILE
ATM VERT TEMP PROFILE
PRESSURE (SURFACE/PROFILE)
CARBON (CO₂, CH₄, CO)

ATMS (11)

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 TEMPERATURE PROFILE
ATM MOISTURE PROFILE

OMPS (4)

O₃ TOTAL COLUMN
O₃ NADIR PROFILE
SO₂, AEROSOLS

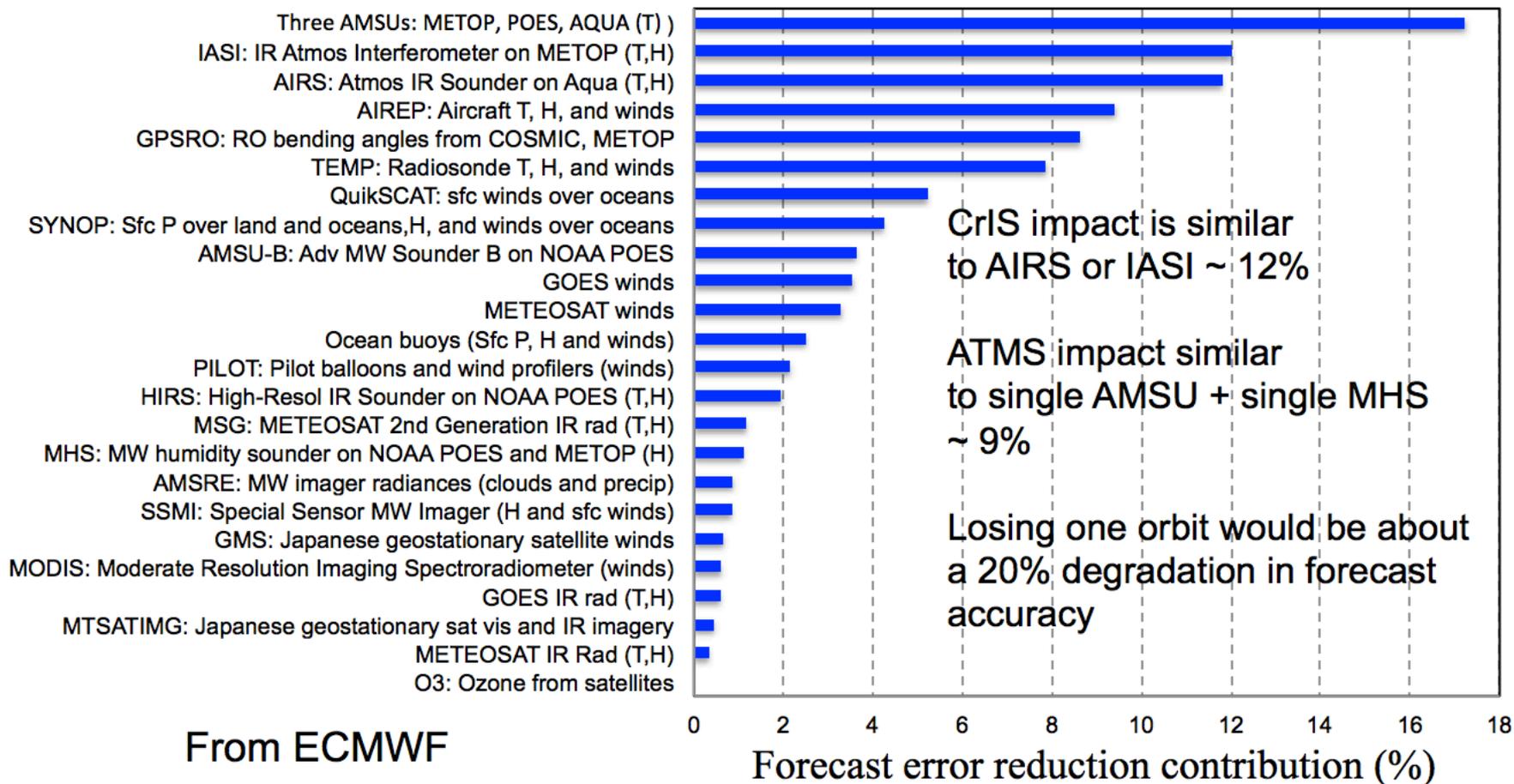
GCOM AMSR-2 (11)

CLOUD LIQUID WATER
PRECIPITATION TYPE/RATE
PRECIPITABLE WATER
SEA SURFACE WINDS SPEED
SOIL MOISTURE
SNOW WATER EQUIVALENT
IMAGERY
SEA ICE CHARACTERIZATION
SNOW COVER/DEPTH
SEA SURFACE TEMPERATURE
SURFACE TYPE

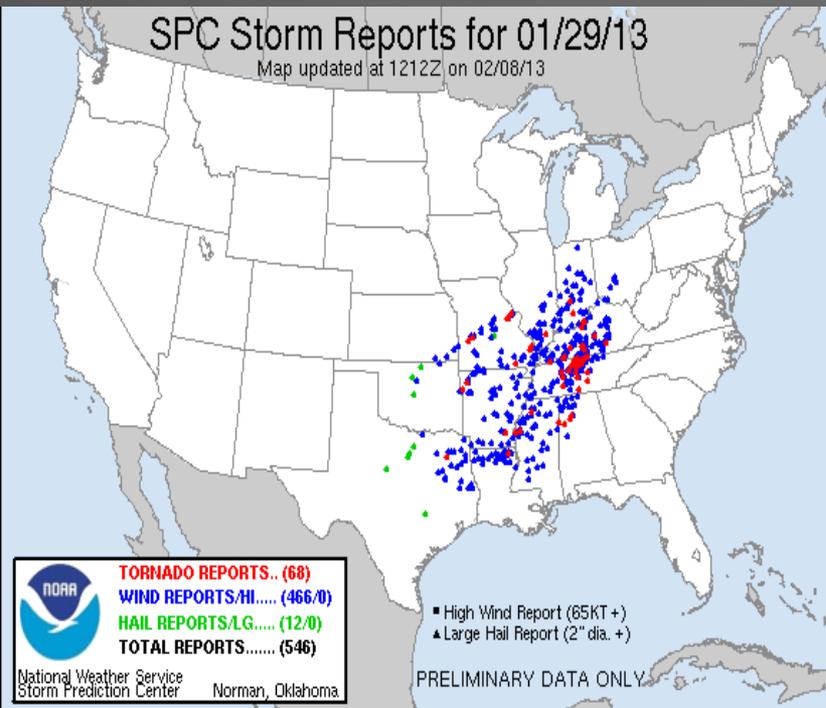


CrIS and ATMS provides continuity of essential atmospheric sounding information for weather forecasting

Hyperspectral Infrared Sounders (e.g. CrIS) and Advanced Microwave Sounders (e.g. ATMS) are the top two contributors for reducing forecast errors



Analysis Field vs 120 Hr GFS Forecast 850 hPa 29 January 2013



**120 Hour Forecast with
ALL Satellite Data
+ conventional**

Light Blue – Analysis Field
Purple – 120 Hr Forecast

**120 Hour Forecast with
Only GPS-RO +
conventional**

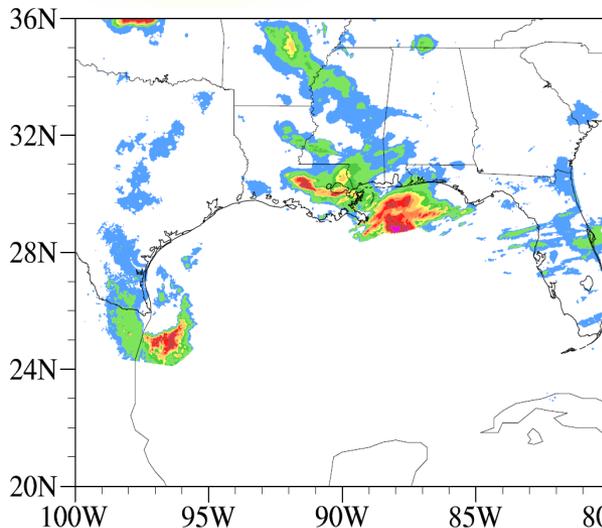
Light Blue – Analysis Field
Purple – 120 Hr Forecast



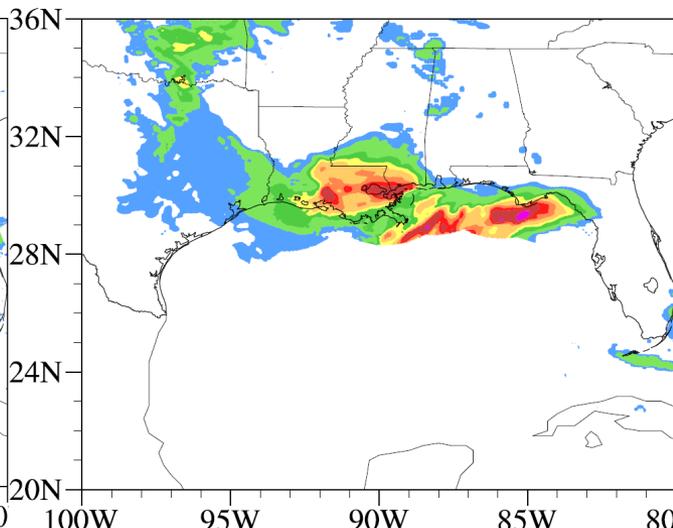


Impacts of Early Morning Orbit Data from NOAA-15 on Gulf Coast Precipitation Forecasts

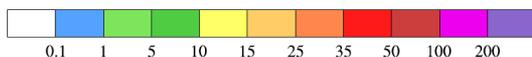
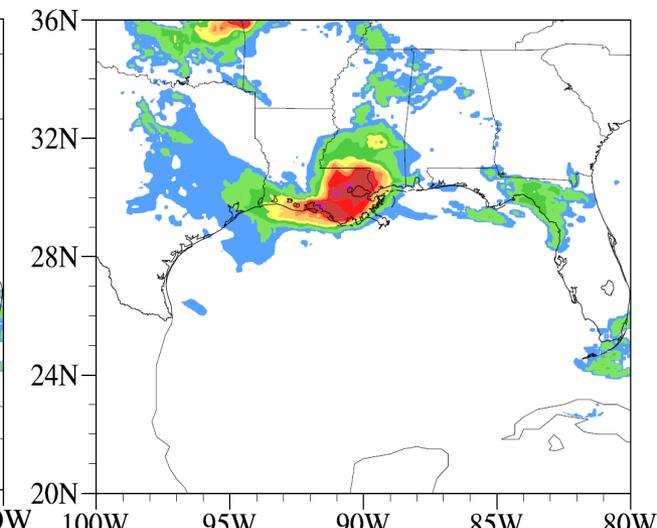
0300 UTC NCEP Observation



QPF with NOAA-15



QPF without NOAA-15



Significance: NOAA-15 AMSU data results in large positive impacts on precipitation forecasts gulf coast from 0000 UTC to 0600 UTC 23 May, 2008. Without the early morning orbit data, the precipitation system does not exhibit any major decaying and movement.



S-NPP NOAA Operational Customers

NOAA real-time customers of S-NPP/JPSS include:

- ☑ National Weather Service
 - ☑ ATMS and CrIS for weather forecasts
 - ☑ VIIRS nowcasting imagery and products
 - ☑ VIIRS environmental products for modeling, assessments and forecasting
 - ☑ OMPS ozone for ozone monitoring, UV forecasts

- ☑ National Ocean Service
 - ☑ Coastal Water Quality/Harmful Algal Bloom alerts

- ☑ National Marine Fisheries Service
 - ☑ Marine Resources/Ecosystems

- ☑ NOAA Satellite and Information Service
 - ☑ Hazard Mapping System (Fire, Volcanic Ash, Smoke, Precipitation, Oil Spills)
 - ☑ Okeanos/Coastwatch



Operational Use of S-NPP Data

May 1, 2012, VIIRS imagery used to support local warning and forecast operations throughout the NWS Alaska Region.

May 22, 2012, the Advanced Technology Microwave Sounder (ATMS) radiances were operationally assimilated in the National Centers for Environmental Prediction's (NCEP)/ NWS Global Forecast System (GFS).

September 25, 2012, ATMS data was assimilated operationally into the European Centre for Medium-Range Weather Forecasts (ECMWF) weather forecast models.

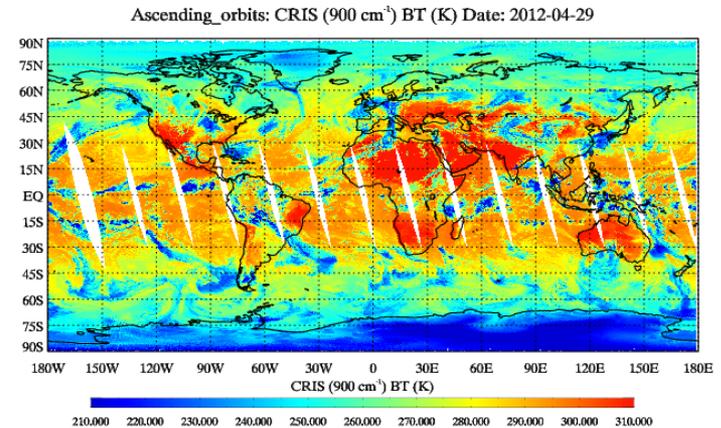
April 2013, the United Kingdom Meteorology Office began assimilating operational data from the Cross-track Imaging Radiometer Suite (CrIS) and ATMS into its weather forecast models.

August 20, 2013, NCEP began incorporating S-NPP CrIS satellite data operationally into the GFS.

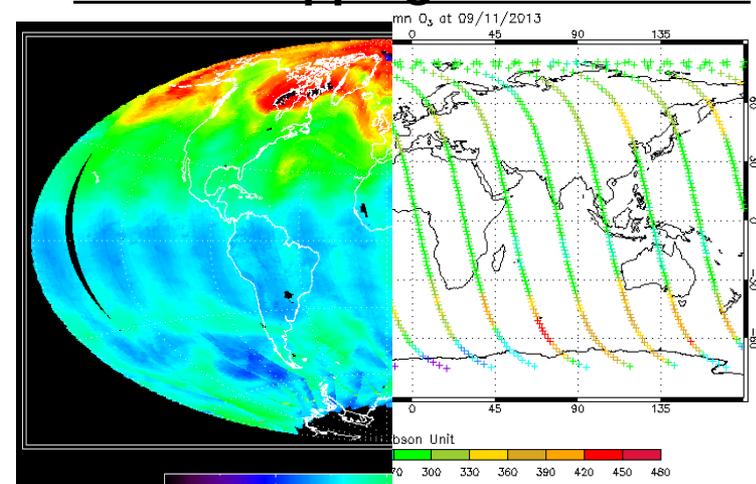
October 31, 2013, NCEP/CPC started to use OMPS Ozone operationally

November, 2013, NRL started to use ATMS operationally in their global forecast model.

Cross-track Infrared Sounder



Ozone Mapping Profiler Suite





Proving Ground and Risk Reduction Definitions

- **Proving Ground**

- Demonstration and utilization of data products by the end-user operational unit, such as a NWS Weather Forecast Office or Modeling Center.
- Promote outreach and coordination of new products with the end users, incorporating their feedback for product improvements

- **Risk Reduction**

- Development of new research and applications to maximize the benefits of JPSS satellite data
 - Example - use of Day Night Band for improved fog and low visibility products at night, benefiting transportation industry.
- Encourages fusion of data/information from multiple satellite, models and in-situ data
- Primary work is done at the algorithm and application developer's institution.
- Address potential risk in algorithms and data products by testing alternative algorithms.



JPSS Proving Ground and Risk Reduction Application Areas

Weather Forecasting - Improving Global, Regional forecasts

Tropical Cyclones

Severe Weather (Nowcasting)

Ocean/Coastal - Coral Bleaching, Harmful Algal Bloom alerts

Land - Droughts, Agriculture

Hazards - Smoke, Fire, Volcanic Ash, Air Quality

Hydrological - Precipitation, Floods, Soil Moisture, Snow/Ice, River Ice

Climate - Integrated products, real-time anomaly products

Education and Training

Infrastructure - Direct Readout + Software (CSPP), Airborne campaigns

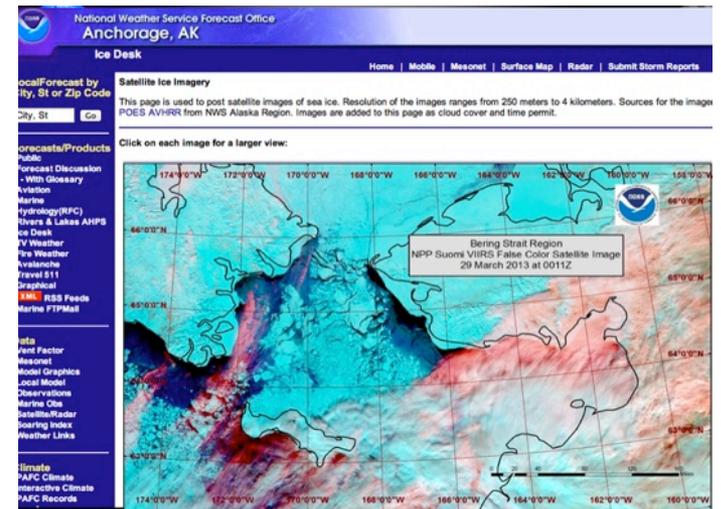
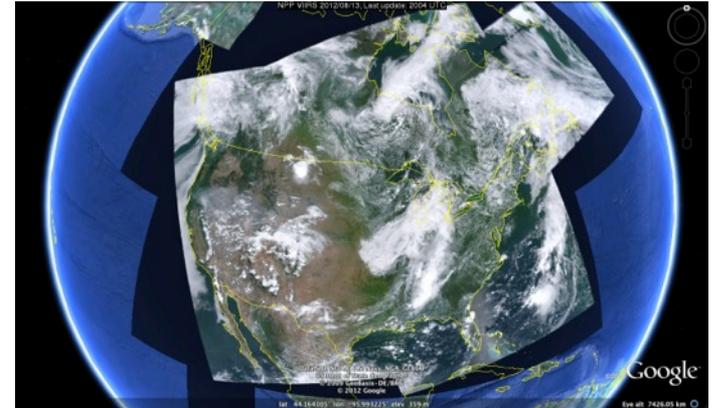
JPSS Proving Ground Partners :

NWS, NOS, NMFS, OAR, NESDIS, NOAA Cooperative Institutes, NASA, and NRL



PGRR Achievements

- **S-NPP Direct Broadcast for Alaska, Hawaii, Continental US, and World Wide Users**
- **Routine use of VIIRS Imagery by forecast offices (significant use by Alaska and Hawaii)**
- **VIIRS Active Fire, Air Quality, and Ocean Color imagery and data portals**
- **Tropical Cyclone Forecasting Improvements using ATMS and CrIS**
- **Global Data Assimilation Experiments of ATMS and CrIS (ATMS and CrIS are used operationally)**
- **Education and Training (New COMET VIIRS Day Night Module)**
- **First Airborne Validation Campaign via NASA ER2**
- **First Operational Demonstration Work (ODW) plan for flood and river ice products**





JPSS contribution to NOAA Testbeds

Testbeds

Hydrometeorology - Atmospheric Rivers, Precipitation, Floods.

Hazardous - mesoscale ensemble model guidance in creating frequently updated, high- temporal resolution probabilistic forecasts of severe weather.

Hurricane - upgrades to dynamical models and model components, enhancements to observed data and assimilation techniques, storm surge modeling, track forecasting algorithms, intensity estimation and forecasting algorithms.

JPSS contributions

Atmospheric river project using CrIS/ATMS, ATMS precipitation products and VIIRS flood maps

Direct readout project – provide CrIS and ATMS sounder data with 10- 15 minute latency - on demand high resolution rapid refresh (HRRR) forecasts.
Nearcasting project (Ralph Peterson)

Supporting three hurricane forecasting improvement projects 1) Mark Demaria (NHC) , 2) Fuzhong Weng/Vijay Tallapragada – HWRF, 3) Ju Li (UW-CIMSS)



Testbed and JPSS mapping

Testbed

- Coastal and Ocean Modeling - flexible and extensible community research framework to test and evaluate predictive models to address key coastal environmental issues
- Climate - transition of scientific advances from the climate research community to improved NOAA climate forecasts and services
- Aviation - visibility, turbulence, icing
- OSSE - (1) determine the potential impact of proposed space-based, sub-orbital, and in situ observing systems on analyses and forecasts, (2) evaluate trade-offs in observing system design

JPSS Contribution

- VIIRS ocean color supporting harmful algal bloom alerts, marine isoprene emissions project, chesapeake bay ecosystem forecasting project, coral bleaching project.
- Drought monitoring project (w/NIDIS), precipitation and OLR projects (Pingping Xie), ozone (Craig Long)
- VIIRS cloud suite, Volcanic ash products from VIIRS, CrIS and OMPS, polar winds
- Follow-on to JPSS will need OSSE support to determine if any enhancements to current instrument suite are needed.



The JPSS PGRR Portfolio



Joint Polar Satellite System (JPSS) Proving Ground and Risk Reduction Projects Portfolio

Supporting the NOAA Mission through Applications and Research

Edited by: Mitch Goldberg, Julie Price, Bill Sjoberg, John Furgerson, Ingrid Guch, Ralph Ferraro and Kathryn Shontz

The contents of this portfolio were current as of March 2014. The status of the projects described herein are subject to change at any time. An updated version of this portfolio is expected to be published at a later date. JPSS PG Portfolio FY 2013 ver1 Date revised 3/05/2014

- Ocean and Coastal Applications 46**
 - Application of SNPP and JPSS for High-Resolution SST and Coral Bleaching Products for Resource Management 47
 - Global VIIRS Ocean Color Operational User Expansion, User Specified Independent Quality Assessment, Product Development/Support, and Next Generation Distribution Portal Deployment 49
 - Development of Neural Network (NN) Algorithms for Retrieval of Chlorophyll-A in the Chesapeake Bay and Other Coastal Waters Based on JPSS-VIIRS Bands 51
 - Assimilation of VIIRS SSTs and Radiances into Level 4 Analyses..... 53
 - Comparison of 4DVAR and LETKF in Assimilating JPSS-derived Sea-surface Temperature in the Chesapeake Bay Operational Forecasting System 56
- Climate Applications 58**
 - Development, Generation, and Demonstration of New JPSS Ice Products in Support of a National Ice Center JPSS Proving Ground and Risk Reduction Activity 59
 - Infusing JPSS PMW Retrievals to CMORPH Precipitation Estimates for Improved Weather, Climate, and Water Applications 61
- Special Applications 63**
 - ‘Seeing the Light’: Exploiting VIIRS Day/Night Band Low Light Visible Measurements in the Arctic. 64
 - Estimating flared gas volumes and CO₂ emissions with VIIRS data 66
 - Advancing Nighttime VIIRS Cloud Products with the Day/Night Band 68
- End User Applications 71**
 - Facilitating end-user access to VIIRS data 72
 - Using the Next Generation Satellite (NexSat) Webpage to Demonstrate and Apply SNPP Sensor Products During the SNPP/JPSS Missions 74
 - The Development of a Community Satellite Processing Package (CSPP) in support of NPP/JPSS Real Time Regional (RTR) Applications 76
 - High Latitude Proving Ground – SNPP/JPSS Data in Support of Operational Forecasters..... 79
 - Uniform Multi-Sensor Algorithms for Consistent Products 81

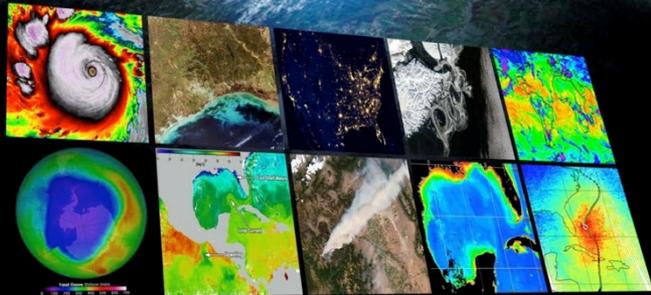




Proving Ground is Supporting a Wide Range of NOAA Operational Applications

Joint Polar Satellite System Science Seminar Annual Digest

2013



Contents

From the Senior Program Scientist 1

From the Director 1

[Section 1:](#) The JPSS Fire Weather Proving Ground: Improving Decision Support Tools for Detection, Monitoring, Predicting and Mitigating Fire Events 1

[Section 2:](#) Using the Community Satellite Processing Package to Transform Raw Satellite Observations into Data Products and Images within Minutes..... 8

[Section 3:](#) Using SNPP Data to Support Alaska Missions 15

[Section 4:](#) NASA/Short-term Prediction Research and Transition (SPoRT) Activities for the JPSS Proving Ground..... 22

[Section 5:](#) Using Suomi NPP Sounder Observations to Improve Hurricane Structure Monitoring and Intensity Forecasts 29

[Section 6:](#) Introducing New Polar-orbiting Data into Operations at NOAA’s National Centers for Environmental Prediction (NCEP)..... 37

[Section 7:](#) Applications of Suomi NPP data in the Joint Center for Satellite Data Assimilation (JCSDA) Operations to Research/Research to Operations (O2R/R2O) capabilities..... 43

[Section 8:](#) NOAA CoastWatch User Engagement, Quality Assessment, Product Development, Data Distribution Portal, and Chesapeake Bay Ecosystem Modeling..... 52

[Section 9:](#) JPSS Proving Ground Hyperspectral Sounder Applications: Enhancing Real-Time Applications and Decision Making 61

[Section 10:](#) Suomi NPP VIIRS Day/Night Band: A New Dawn to Nocturnal Remote Sensing 68

[Section 11:](#) The JPSS Proving Grounds: Advancing the Visible Infrared Imaging Radiometer Suite (VIIRS) Nightfire and Nighttime Lights 79

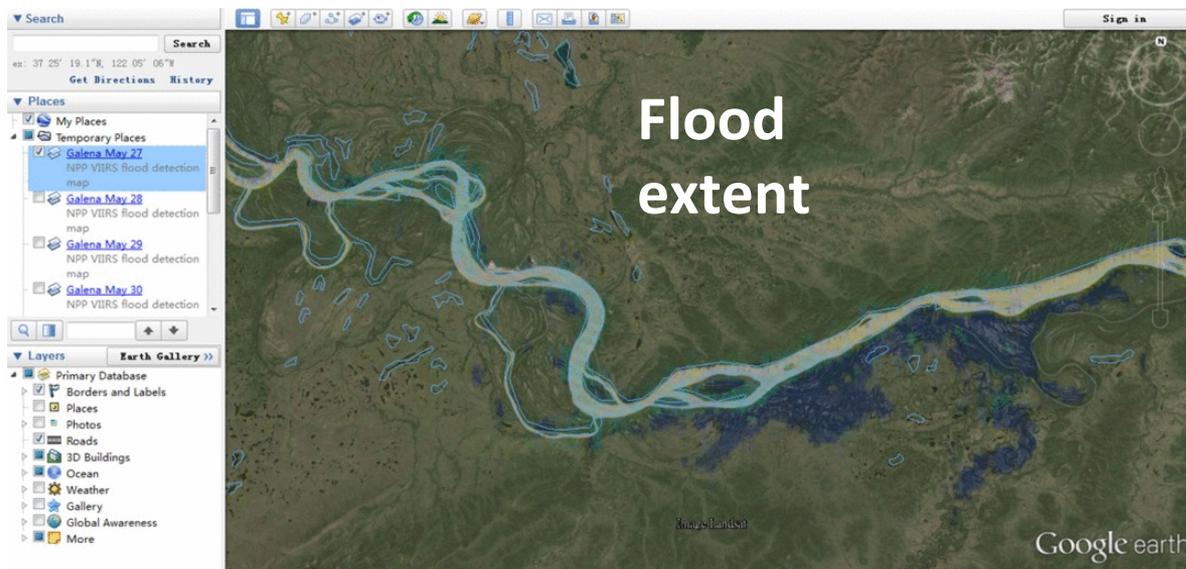
[Section 12:](#) An Eye in the Sky for the Boots on the Ground 86

[Section 13:](#) VIIRS -- Making the Difference for the NOAA Ocean Mission..... 93

VIIRS River Ice and Flood Products

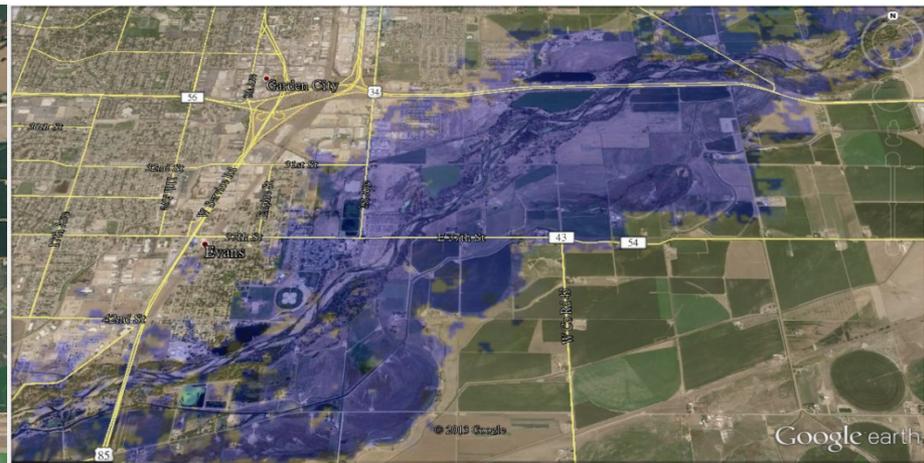


- VIIRS can identify river ice jams which can lead to large flood events
- Flooding from ice jams can occur in a very short time



Galena, Alaska on
May 28, 2013

VIIRS flood map vs Landsat 30m Colorado Floods - September 17, 2013

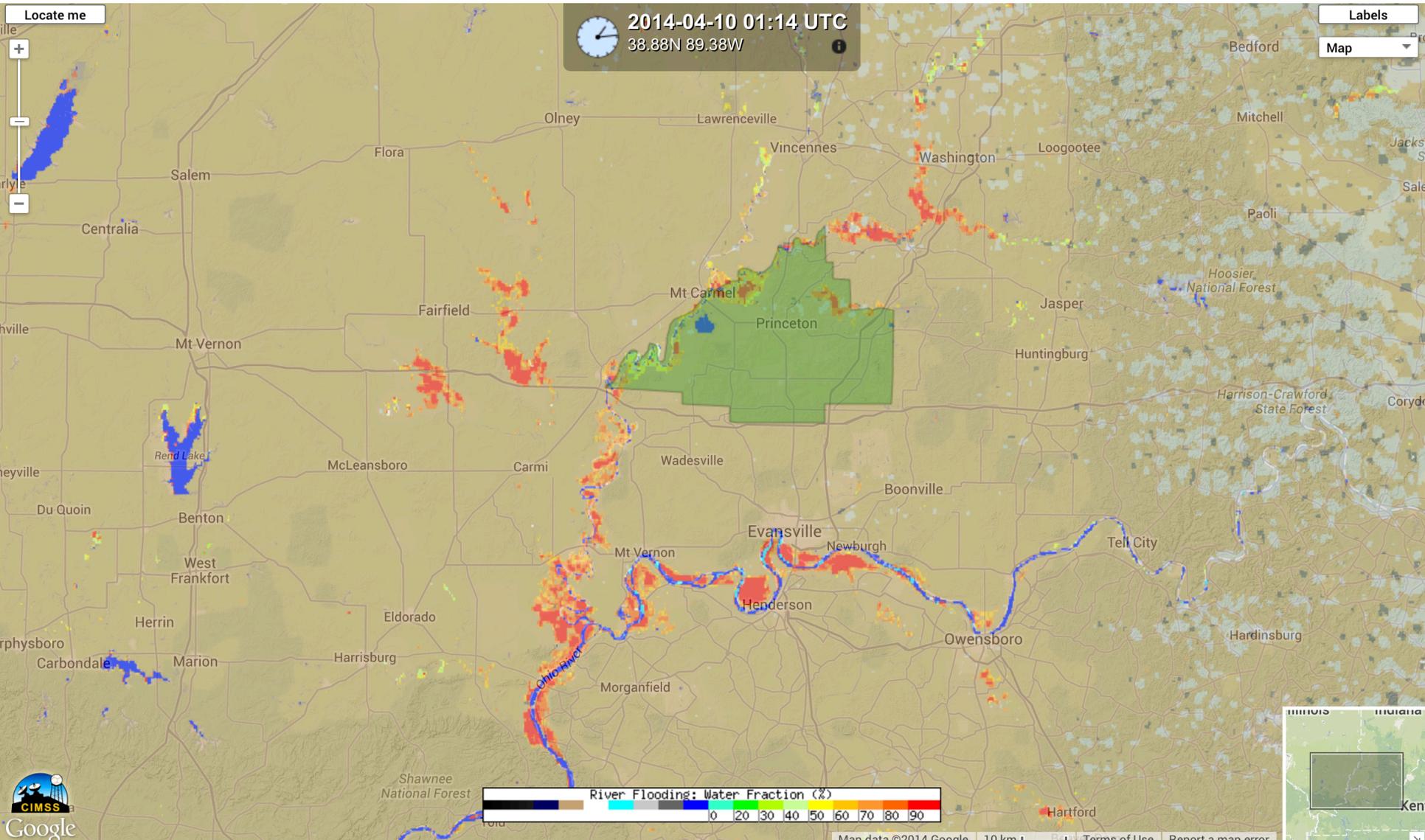


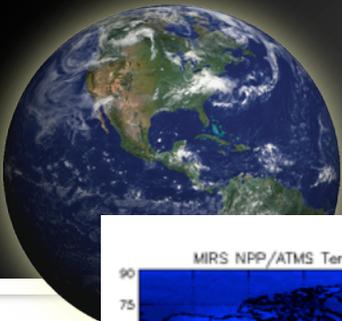
LANDSAT-8 30 m

VIIRS using 30 m DEM

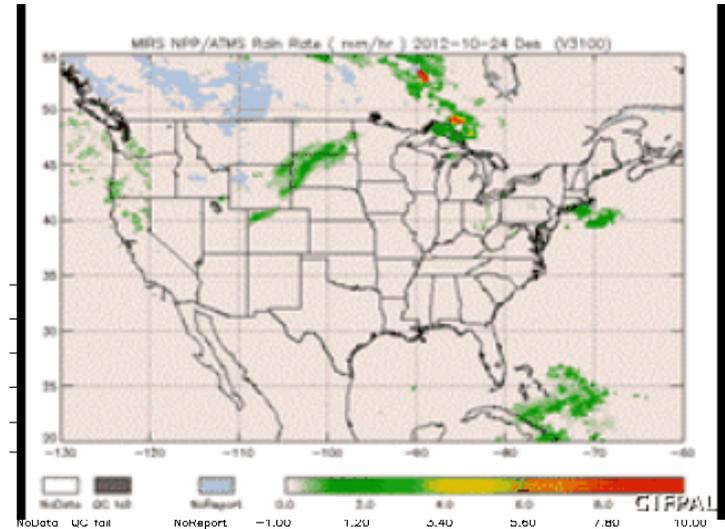
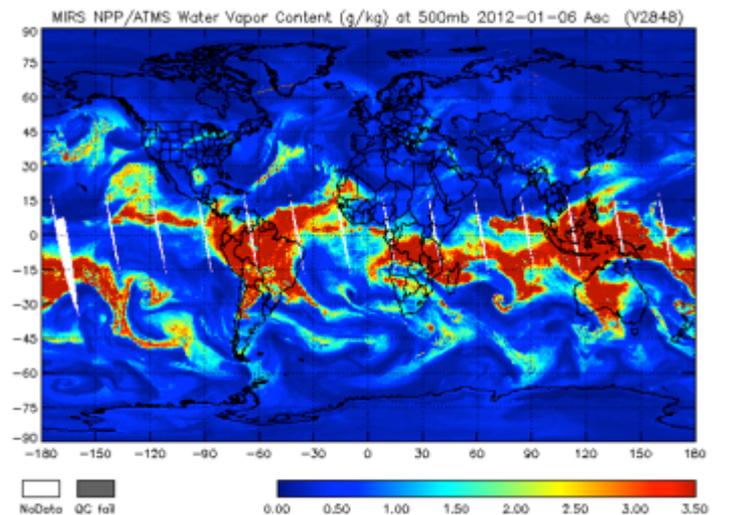
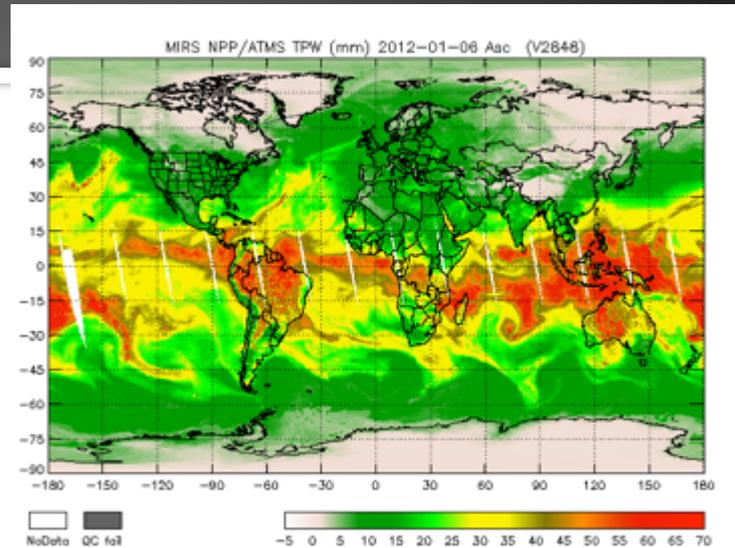
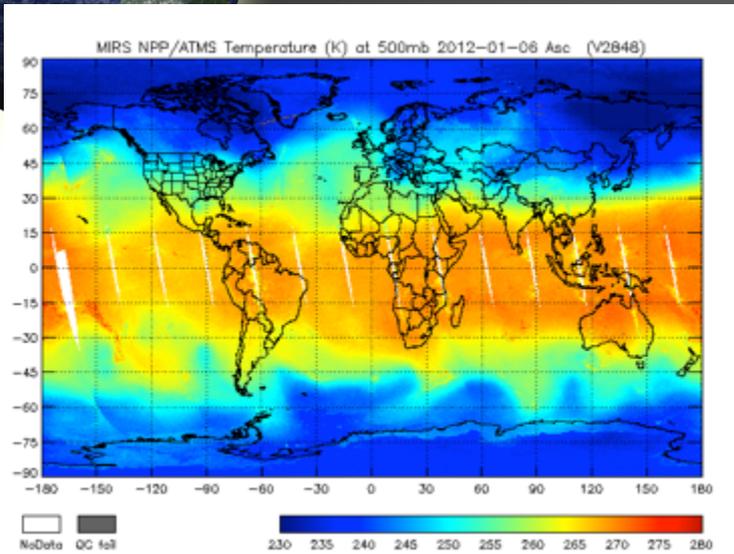


SNPP > CSPP > Browse Flood/Ice Products





NOAA ATMS MIRS Products



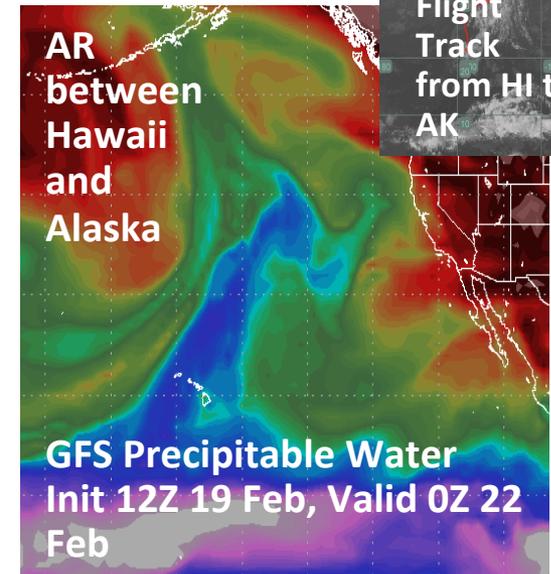
Courtesy of Sid Boukabara (STAR)



CalWater 2 Early Start – NOAA G-IV Flights

Chris Fairall (ESRL), Marty Ralph (Scripps), Ryan Spackman (STC)

- Objective: Examine the development and structure of atmospheric rivers (ARs) before landfall to improve forecasts of extreme precipitation events along the US West Coast
- Accomplishments:
 1. 12 research flights in Eastern Pacific in Feb 2014
 2. Measurements included 190 dropsondes released between 8°N – 60°N and tail doppler radar
 3. Observations included 2 major landfalling AR events along West Coast, a developing AR between Hawaii , Alaska, and the AR source region between Hawaii and the ITCZ
- **CalWater 2 is a 5-year broad interagency vision to address key water cycle science gaps along the US West Coast**
- CalWater 2 white paper is at <http://esrl.noaa.gov/psd/calwater>

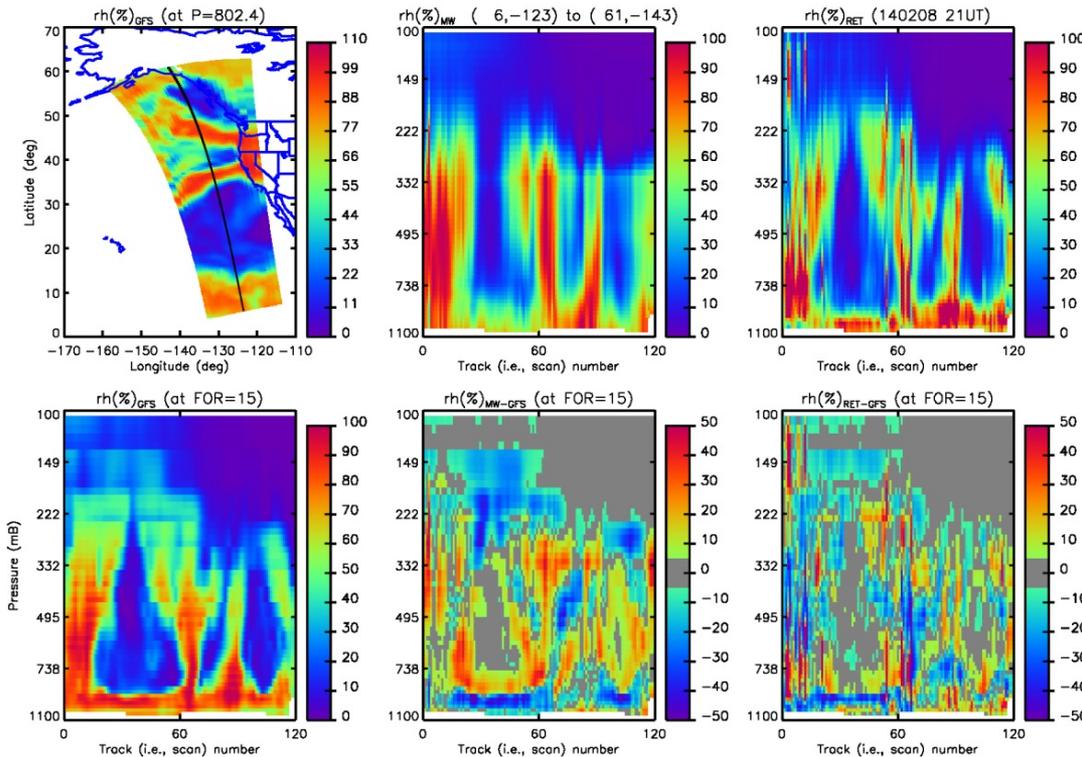




Can Retrievals Improve Forecasts? The Value of CrIS and ATMS

Item 1: AR landfalling forecast errors are large (500 km at 5 day, 200 km at 1 day, Wick et al. 2013)

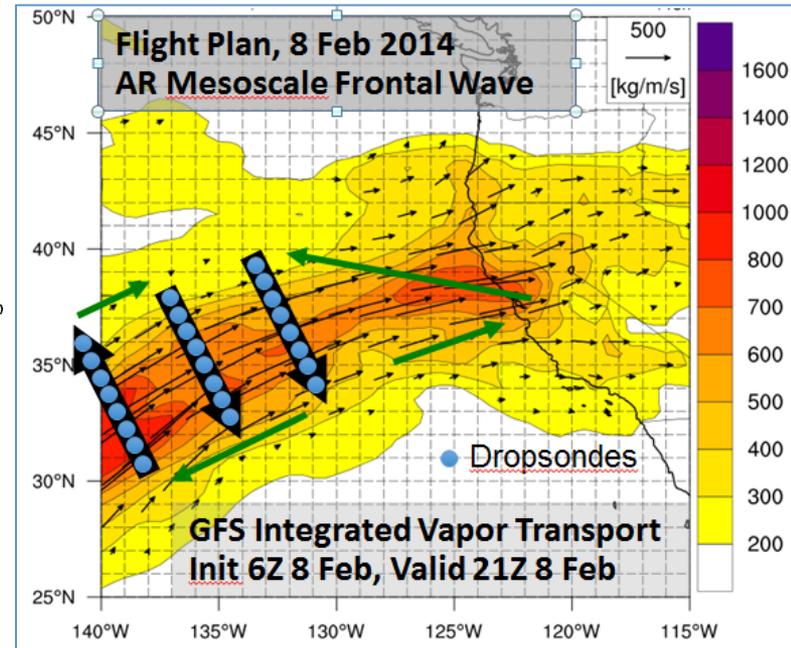
➤ Preliminary analysis suggests retrievals from CrIS and ATMS could improve landfalling forecasts



GFS interpolated to retrieval sampling

ATMS-only retrieval

CrIS+ATMS Retrieval



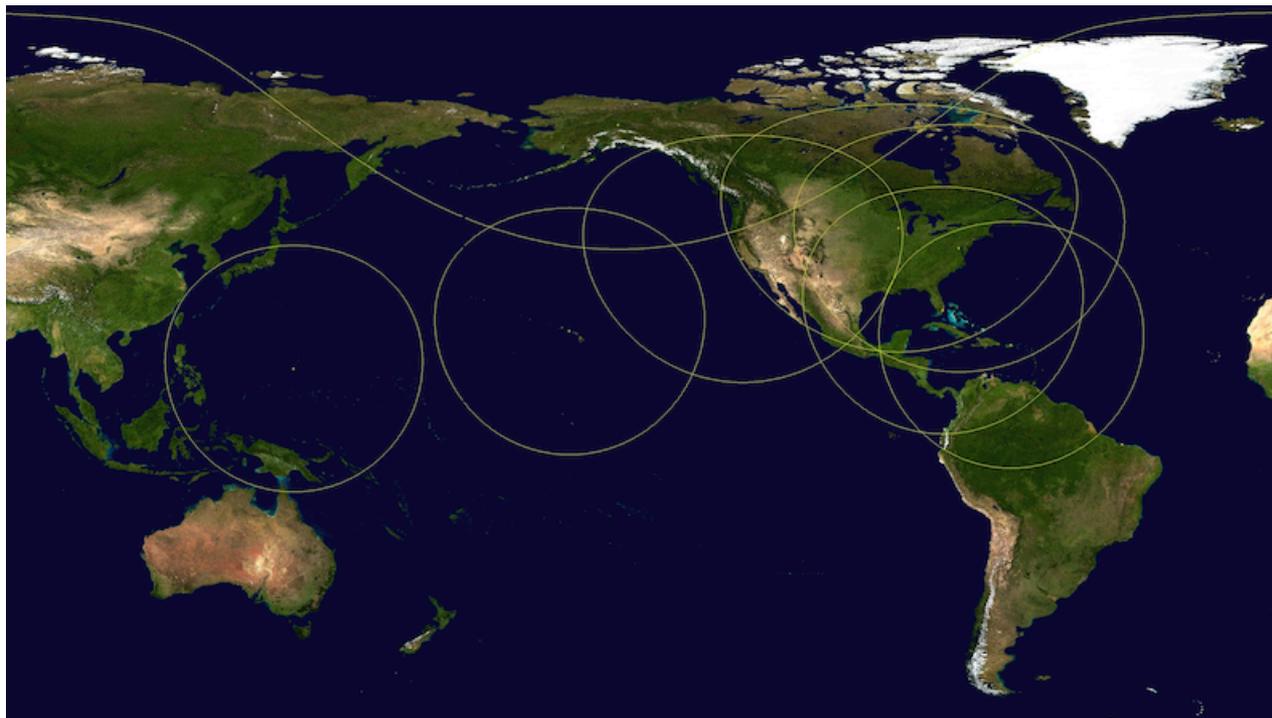
Item 2: Vertical structure of water vapor in ARs is crucial to getting integrated vapor transport correct

➤ Numerous discrepancies between model and dropsonde data were observed in vertical profiles of water vapor across ARs

Antenna Sites: Partners and Volunteers



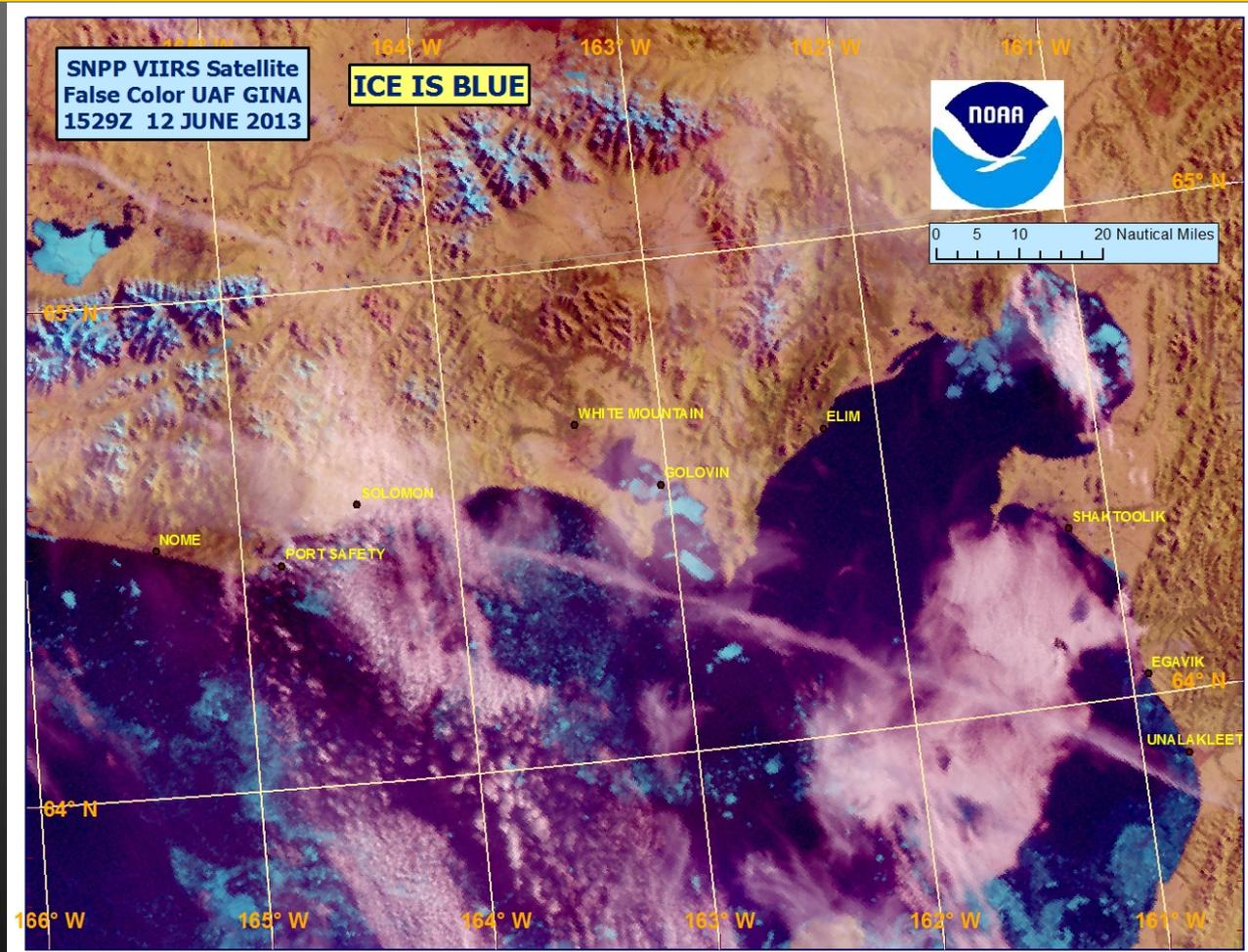
NOAA/NWS
Honolulu



Guam,
Honolulu HI,
Fairbanks AK,
Monterey CA,
Madison WI,
Greenbelt MD,
Miami FL,
Mayaguez PR

- **Partner Sites:** Funded by NOAA and operated by NOAA, SSEC, or NOAA-funded partners.
 - Officially part of the network, including EUMETSAT Sites
- **Volunteer Sites:** Direct Broadcast stations who provide data as a community service such that they are informal partners in the network.

Alaska Nowcasting – Ice Detection Warnings



VIIRS 375 meter resolution - False Color Imagery use I1, I2, I3 - ICE is blue

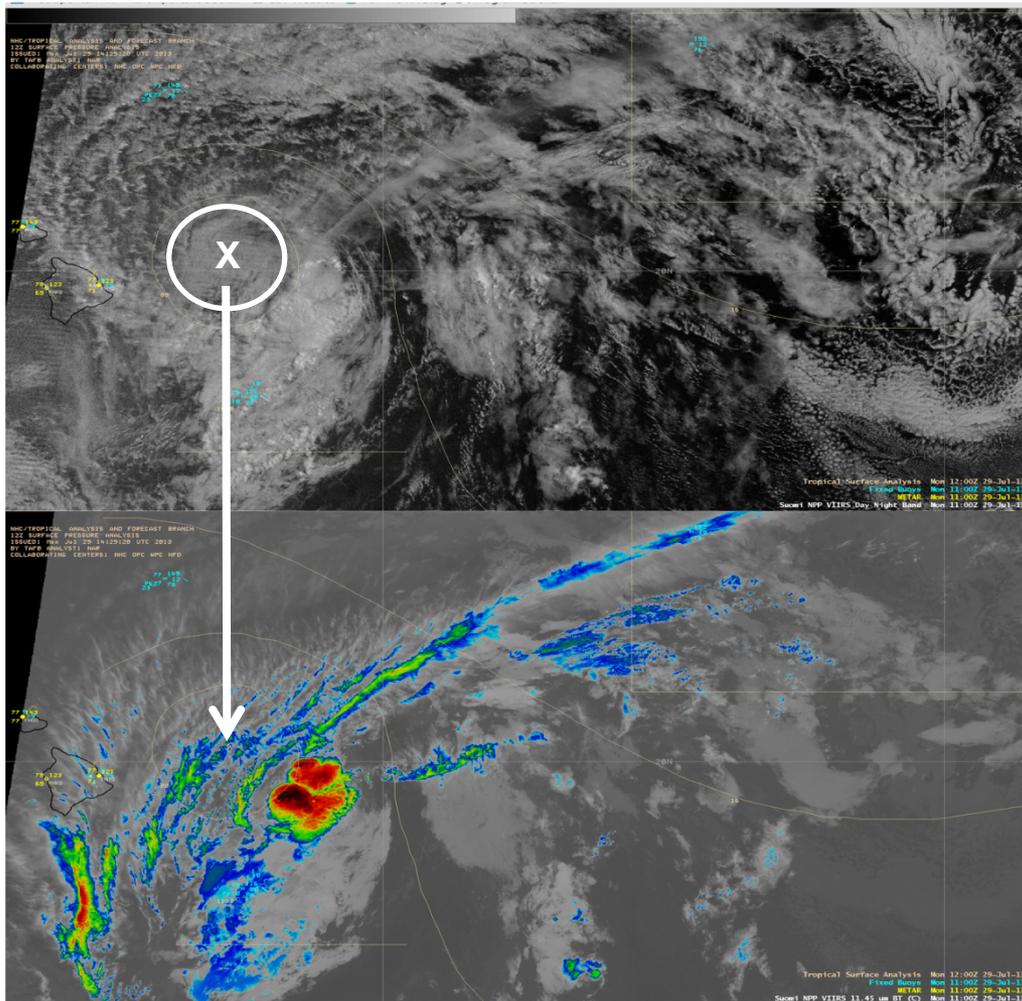




Tropical Storm Flossie: July 29, 2013

Center is further north than expected

VIIRS is valuable in areas where geostationary is primary



11.45 μm IR

Day Night Band

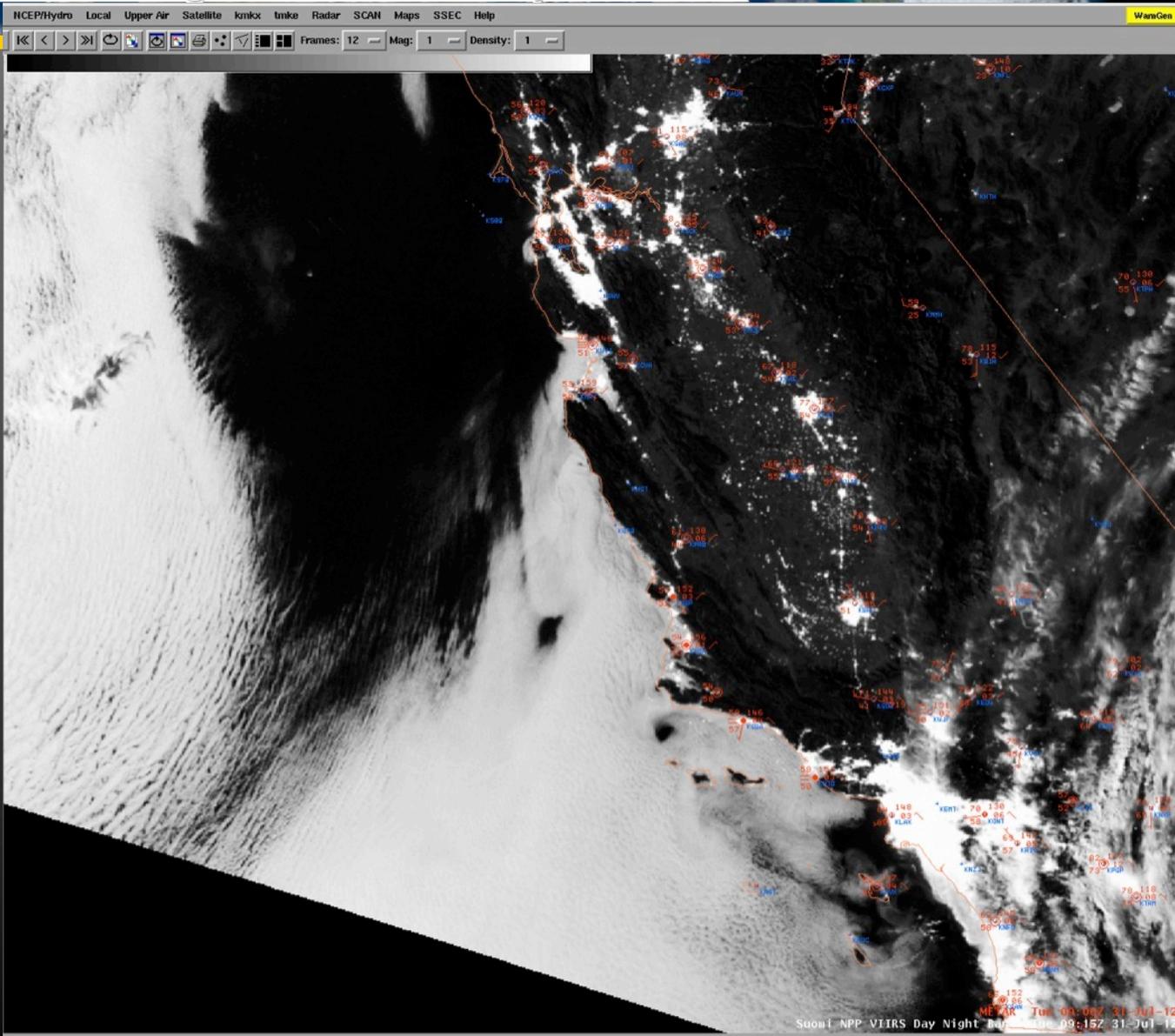
Central Pacific Hurricane Center Forecast Discussion

WTPA41 PHFO 291511 TDCDP1
TROPICAL STORM FLOSSIE DISCUSSION NUMBER 19
NWS CENTRAL PACIFIC HURRICANE CENTER HONOLULU HI
EP062013
500 AM HST MON JUL 29 2013

THE CENTER OF FLOSSIE WAS HIDDEN BY HIGH CLOUDS MOST OF THE NIGHT BEFORE VIIRS NIGHTTIME VISUAL SATELLITE IMAGERY REVEALED AN EXPOSED LOW LEVEL CIRCULATION CENTER FARTHER NORTH THAN EXPECTED. WE RE-BESTED THE 0600 UTC POSITION BASED ON THE VISIBLE DATA. SUBJECTIVE DVORAK ANALYSES CONTINUED SHOW CURRENT INTENSITIES OF 3.0 BUT SATELLITE LOOPS SUGGEST A RAPID WEAKENING TREND WITH THE LOW LEVEL CENTER PULLING AWAY FROM A SMALL AREA OF CONVECTION SOUTHEAST OF THE CENTER. IT IS LIKELY THAT CONTINUED NORTHWEST SHEAR WILL MAINTAIN THIS WEAKENING TREND.

THE TRACK HAS BEEN SHIFTED NORTH TO REFLECT THE RE-LOCATED CENTER. THE TRACK GUIDANCE SHIFTED FOLLOWING THE TRACK CHANGE AND WAS CONSISTENT WITH A NEW TRACK FARTHER TO THE NORTH. THE TRACK NOW SHOWS FLOSSIE PASSING OVER MAUI TODAY...OVER OAHU TONIGHT...THEN PASSING SOUTH OF KAUAI EARLY TUESDAY MORNING. WE EXPECT FLOSSIE TO WEAKEN STEADILY AS IT TRACKS WEST NORTHWEST AND DISSIPATE WITHIN 96 HOURS.

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

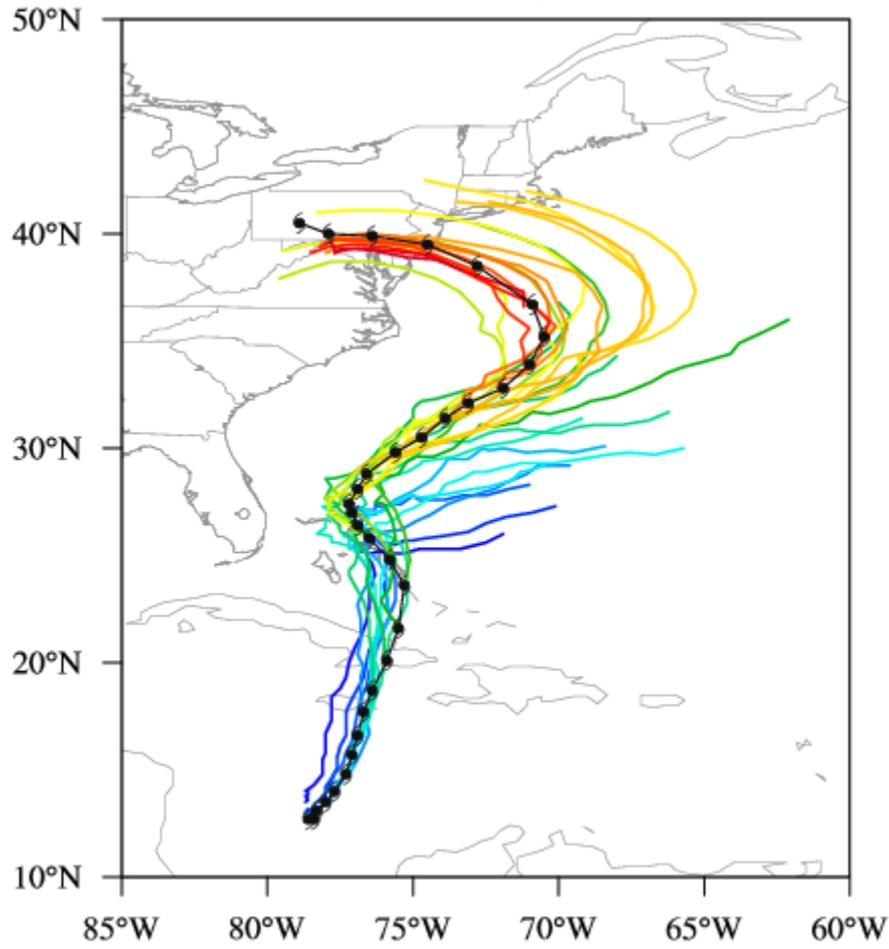




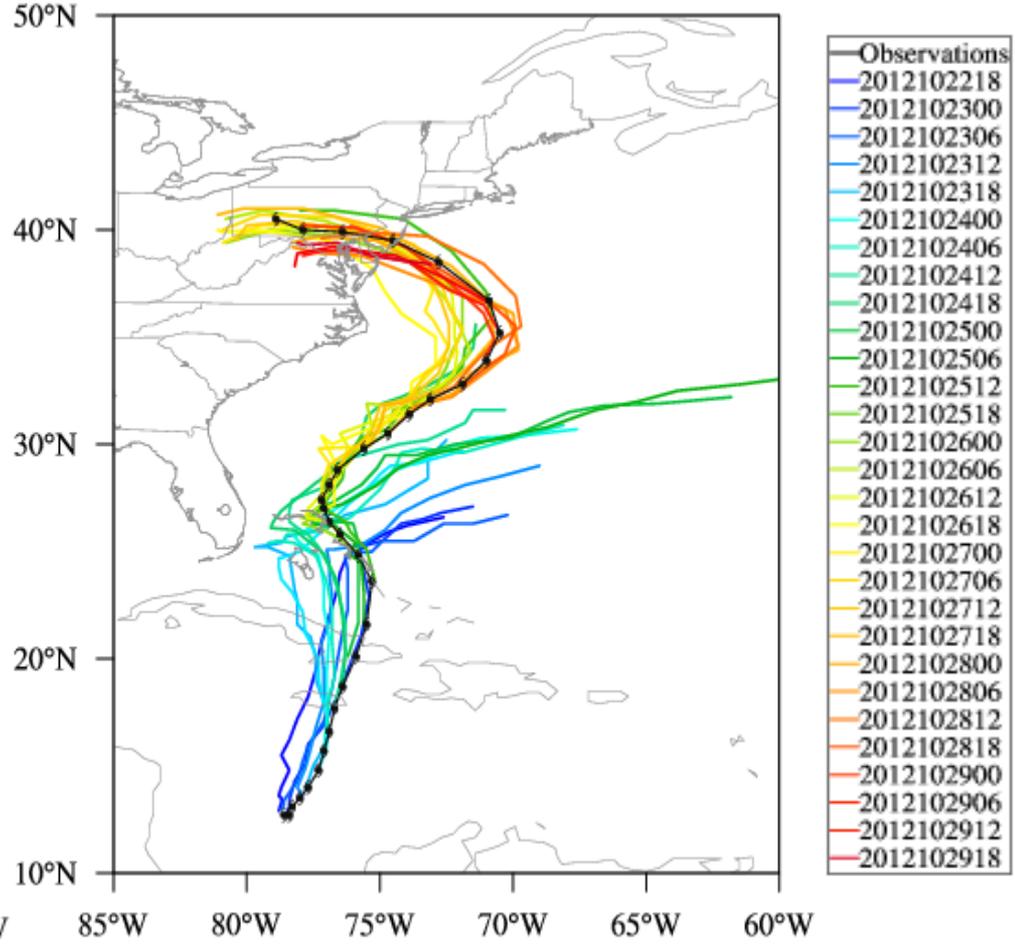
Direct Assimilation of ATMS into Models

Experimental results showing improvements in Sandy track forecasts from Hurricane Weather Research Forecast model with ATMS

HWRF-NCEP Operational

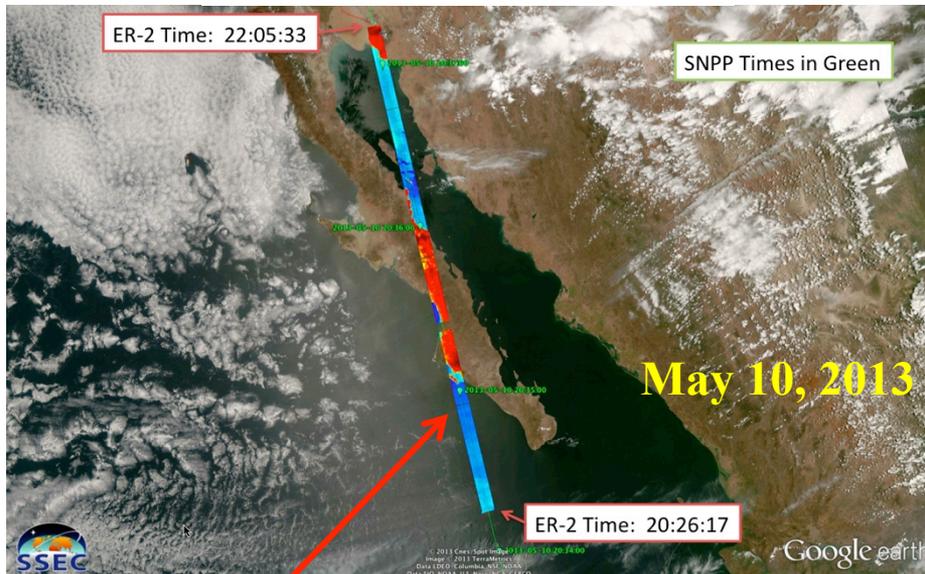


Modified HWRF-NCEP with ATMS

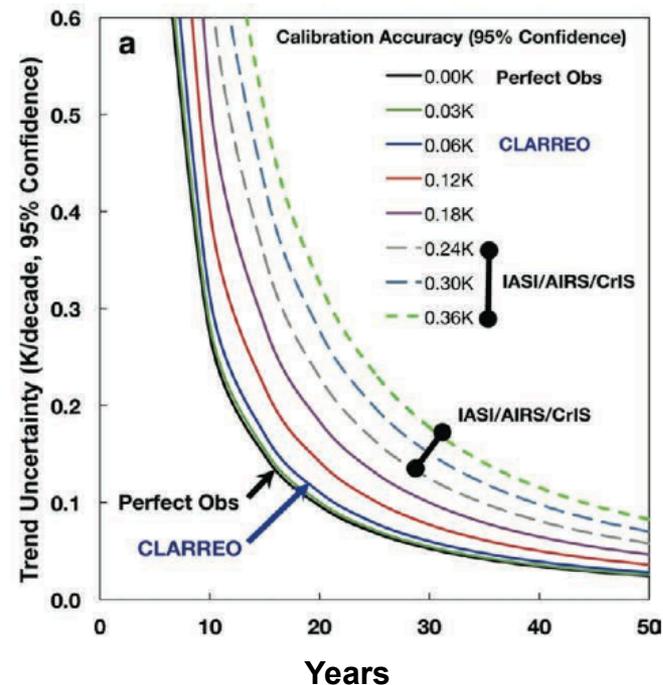
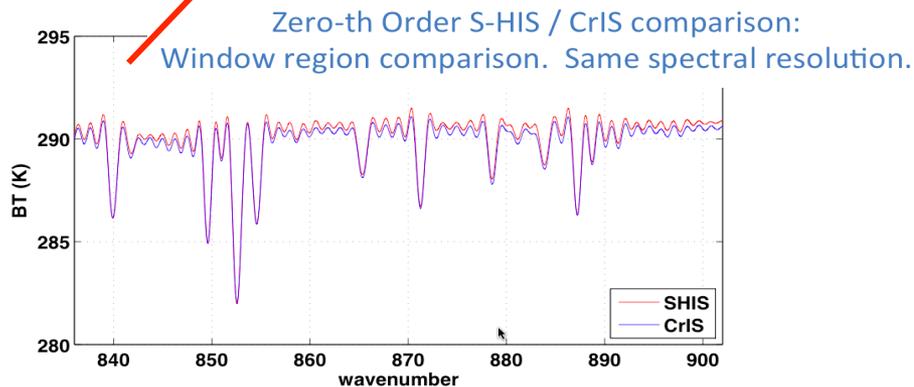


JPSS PGRR Deep-Dive Validation: First S-NPP ER-2 Aircraft Campaign to Provide Validation *NIST traceable absolute calibration for CrIS*

S-HIS 895-900 cm^{-1} (280 – 320K)
over VIIRS Imagery



- Campaign showed that we are within 0.1°C absolute accuracy.
- With this accuracy, CrIS can be leveraged for climate application
- CrIS can be used as anchor points for weather forecast models



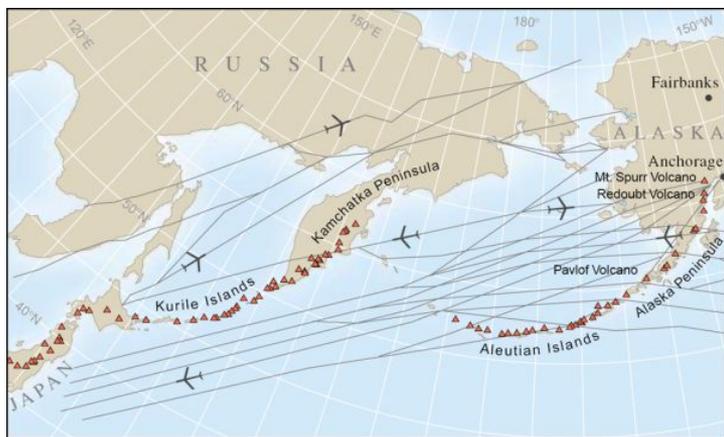
Klyuchevskoy – October 20, 2013

VIIRS provides critical data for volcanic advisories



Klyuchevskoy - code red

Ash cloud estimated at 33,000 feet



Aviation Color Codes

GREEN

Volcano is in typical background, noneruptive state or, after a change from a higher level, volcanic activity has ceased and volcano has returned to noneruptive background state.

YELLOW

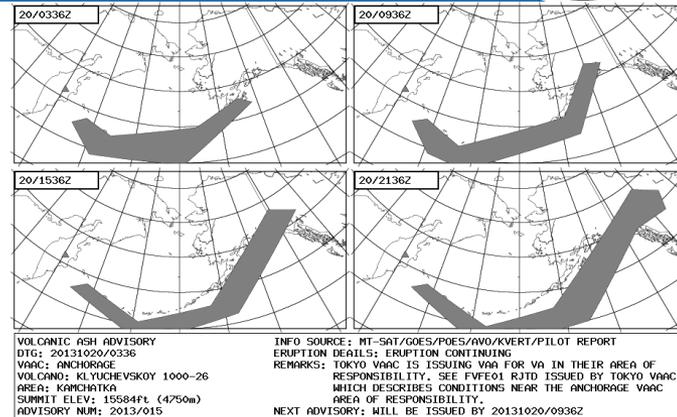
Volcano is exhibiting signs of elevated unrest above known background level or, after a change from a higher level, volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.

ORANGE

Volcano is exhibiting heightened or escalating unrest with increased potential of eruption, timeframe uncertain, OR eruption is underway with no or minor volcanic-ash emissions [ash-plume height specified, if possible].

RED

Eruption is imminent with significant emission of volcanic ash into the atmosphere likely OR eruption is underway or suspected with significant emission of volcanic ash into the atmosphere [ash-plume height specified, if possible].



Summary of Volcano Impact Findings

- Global aviation sector losses in the first week tallied US\$2.6 billion. However, when factoring in deferred business and leisure travel, the net aviation sector impact was US\$2.2 billion.
- The visitor spending impact realised by destinations around the world is estimated at US\$1.6 billion in lost revenues, primarily to hospitality sectors.
- Productivity losses stemming from stranded workers are estimated at US\$490 million.
- International trade has also been severely disrupted as a result of the flight restrictions—particularly for perishable goods and for just-in-time production processes (e.g. high-value items which are also low-weight such as electronic parts and machine components).
- The total impact on global GDP caused by the first week's disruption amounts to approximately US\$4.7 billion.
- Since the massive airspace shutdown in the first week, another 5,000 flights have been sporadically cancelled. This would add an additional 5% to the first week impacts, bringing the total cost to US\$5.0 billion lost GDP through 24 May, 2010.

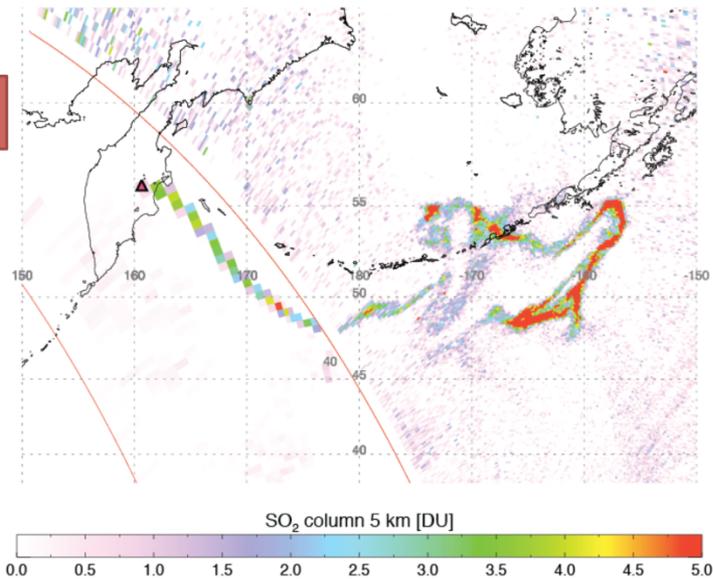
Economic impact from Iceland's Eyjafjallajokull volcano

– from Oxford Economics report

OMPS Capabilities: Volcanic SO₂

NPP/OMPS Orbits 10253 & 10252 -- 10/19/2013 - 10/20/2013

NRT SO₂
LF Algorithm

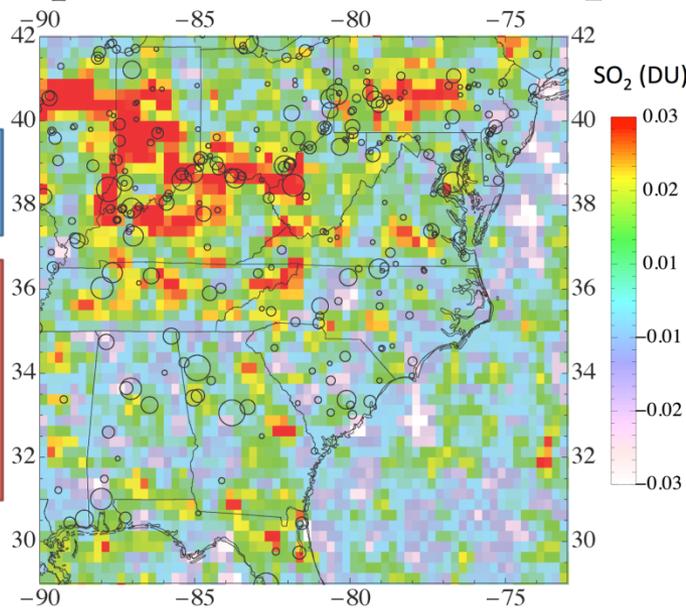


OMPS Capabilities: Pollution SO₂

October 2013
Monthly Mean
ISF Algorithm

ISF sensitivity is an order of magnitude higher than other existing algorithms for boundary layer retrievals:

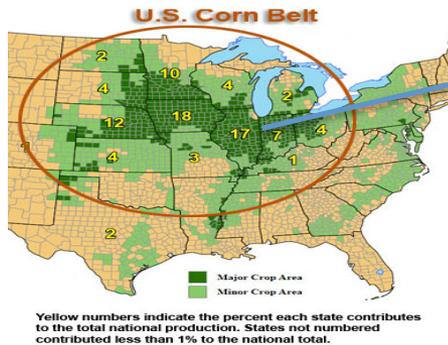
- 20 to 30 times > BRD
- 5 to 10 times > PCA
- 5 to 10 times > LF



Vegetation Health from AVHRR

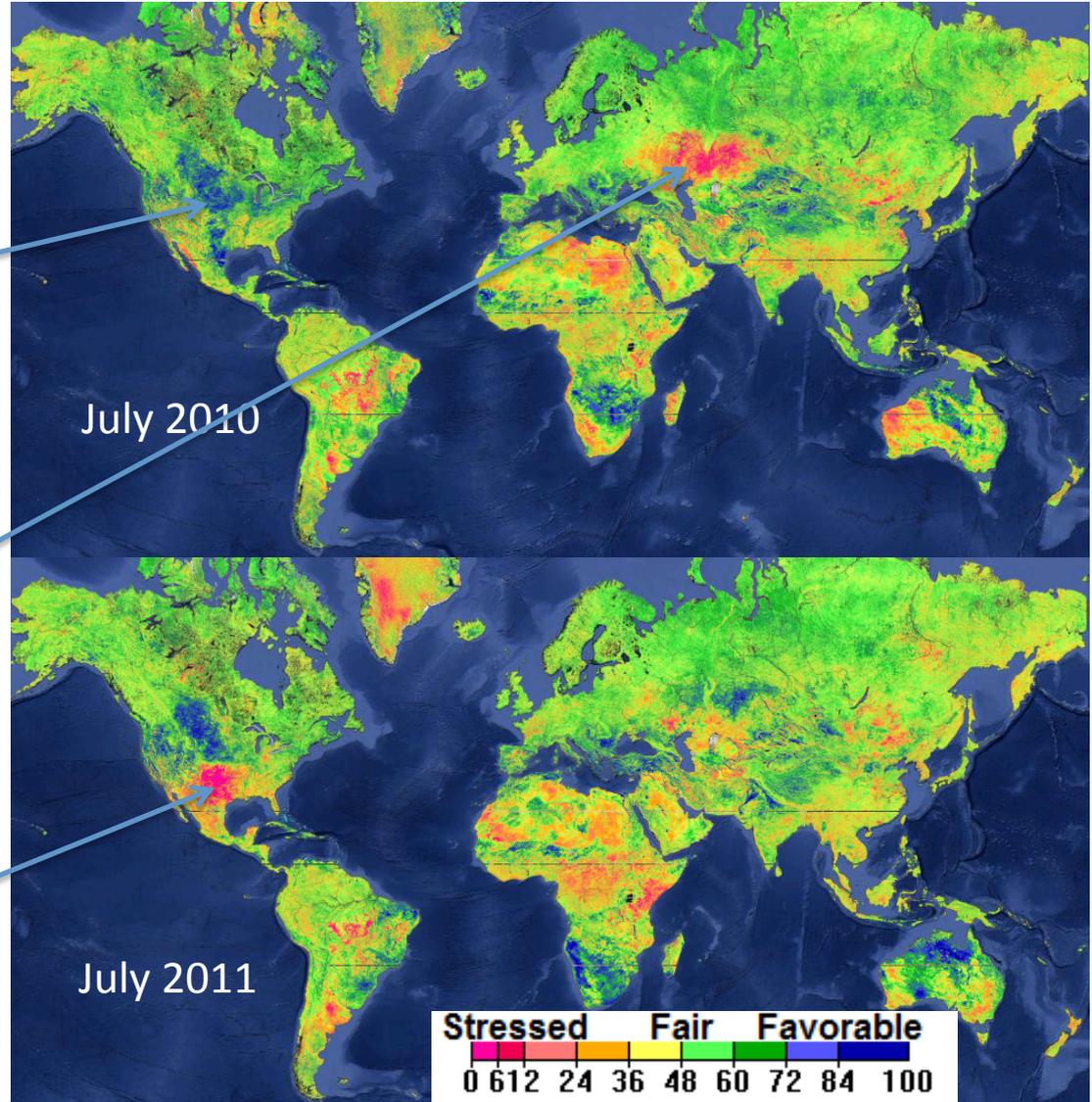
IMPACTS:

U.S. corn production in 2010
Hit a record high.



Wheat was down 27% in **Russia**, 32% in **Kazakhstan**, and 19% in the **Ukraine**.

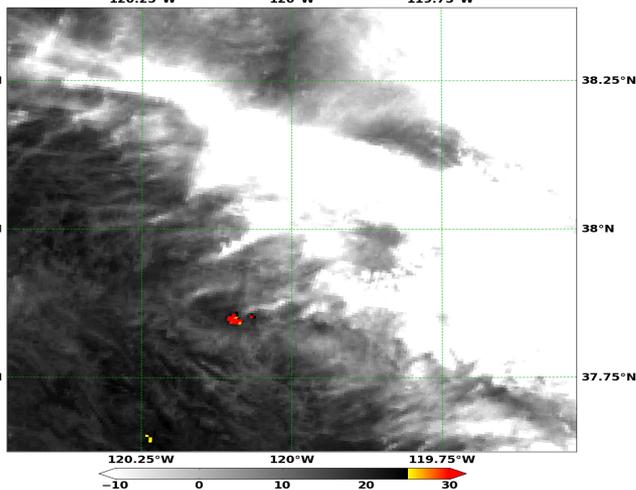
Texas cotton production fell by more than half, from 7.84 million bales in 2010 to 3.5 million in 2011.



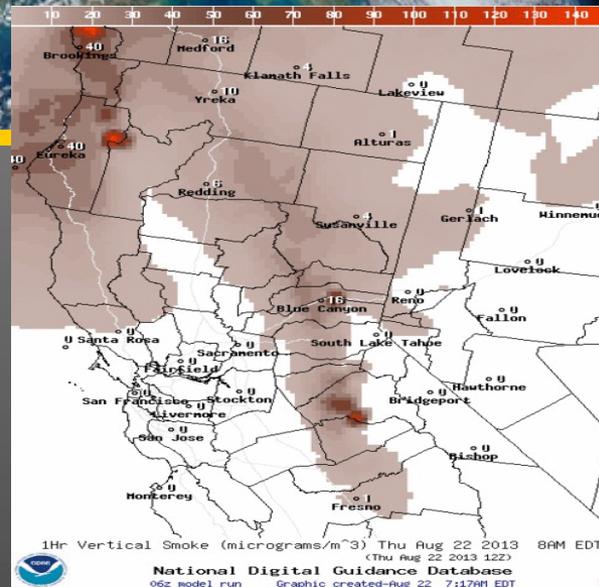
RIM Fire as viewed from VIIRS

Hot spot/intensity from VIIRS

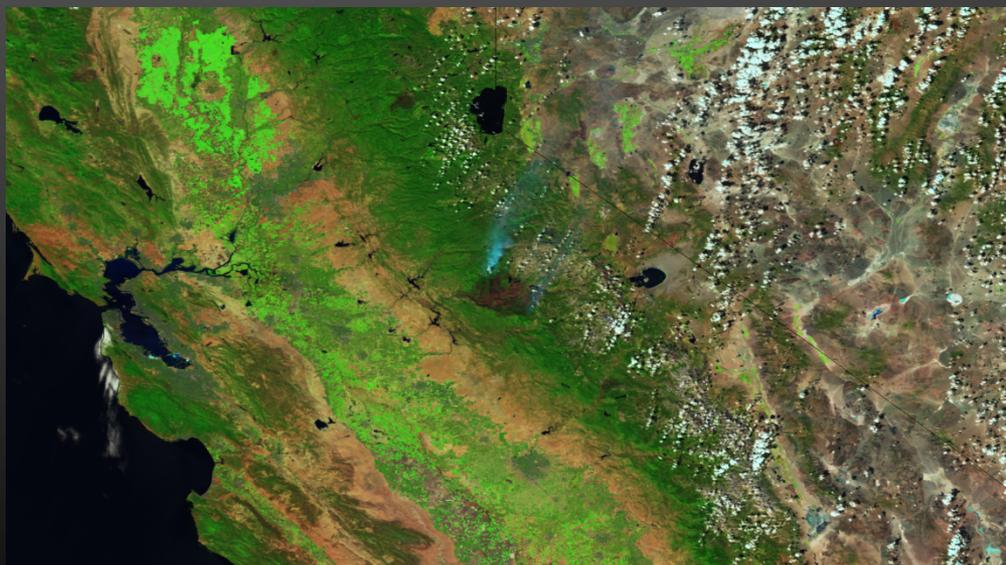
NPP VIIRS SVI04-Hotspots 2013/08/19 09:24:16Z NRL-Monterey



Fire locations used by NOAA for operational smoke plume predictions



80% contained and burn scar – Sept 5, 2013

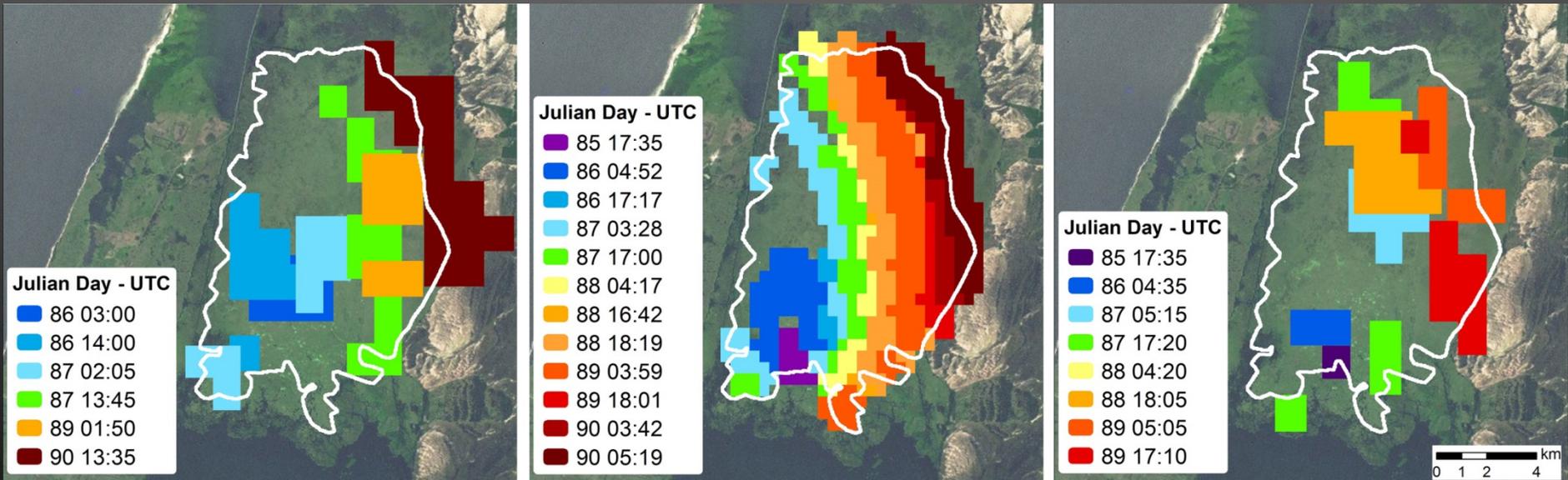


Improved Satellite Mapping of Active Fires Achieved Using VIIRS I-bands

Terra/MODIS 1km

S-NPP/VIIRS 375m

Aqua/MODIS 1km



Wildfire in southern Brazil, March/2013

High spatial resolution enables fire behavior modeling





Conclusions

An understanding of how JPSS data used throughout NOAA is pivotal to evolving and maintaining a robust satellite mission that serves the needs of all Line Offices.

- SNPP KPPs are now all validated and operational.
- The JPSS Program is on-track for a successful JPSS-1 launch.
- Demonstrated and documented major accomplishments of the Proving Ground and Risk Reduction Program
- The JPSS River Ice and Flooding Products initiative has proven its value supporting the Alaska Pacific and North Central River Forecast Centers.
- This initiative will pave the way for other joint opportunities to evaluate and transition new and improved JPSS Capabilities into operations.