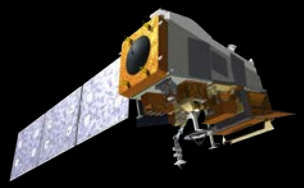
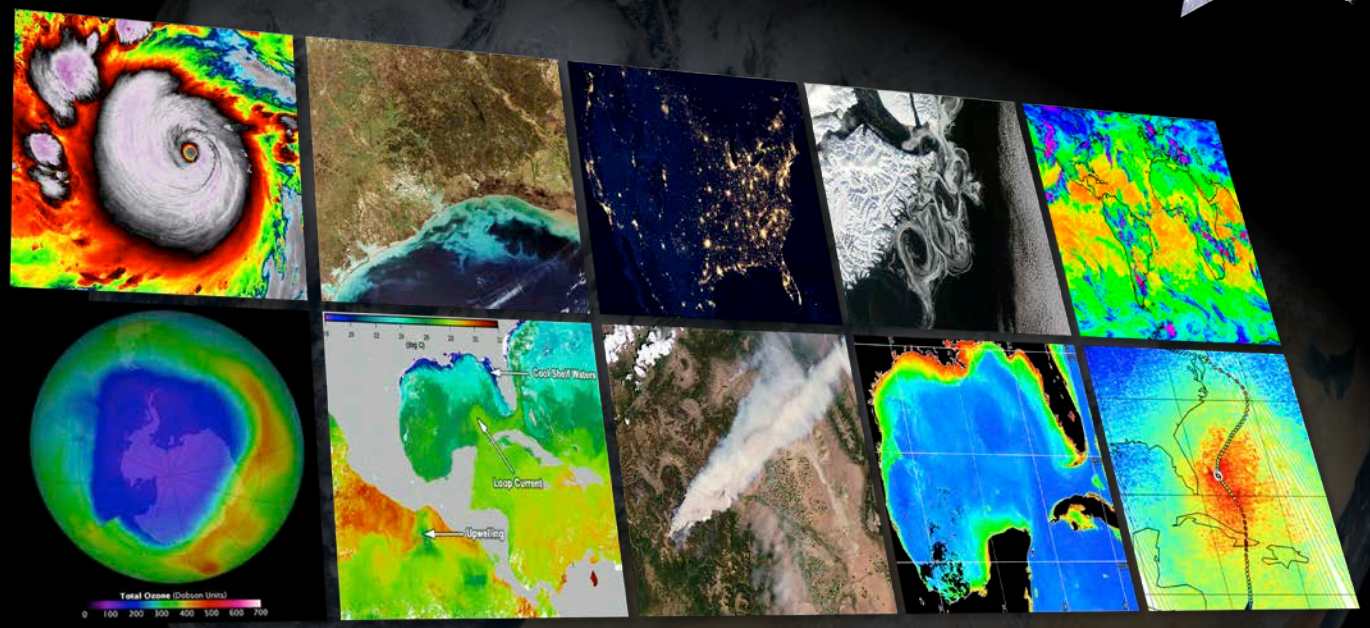
Joint Polar Satellite System (JPSS)





Mitch Goldberg, JPSS Program Scientist
June 2, 2014 - Satellite Proving Ground

Joint Polar Satellite System-1 (JPSS-1)

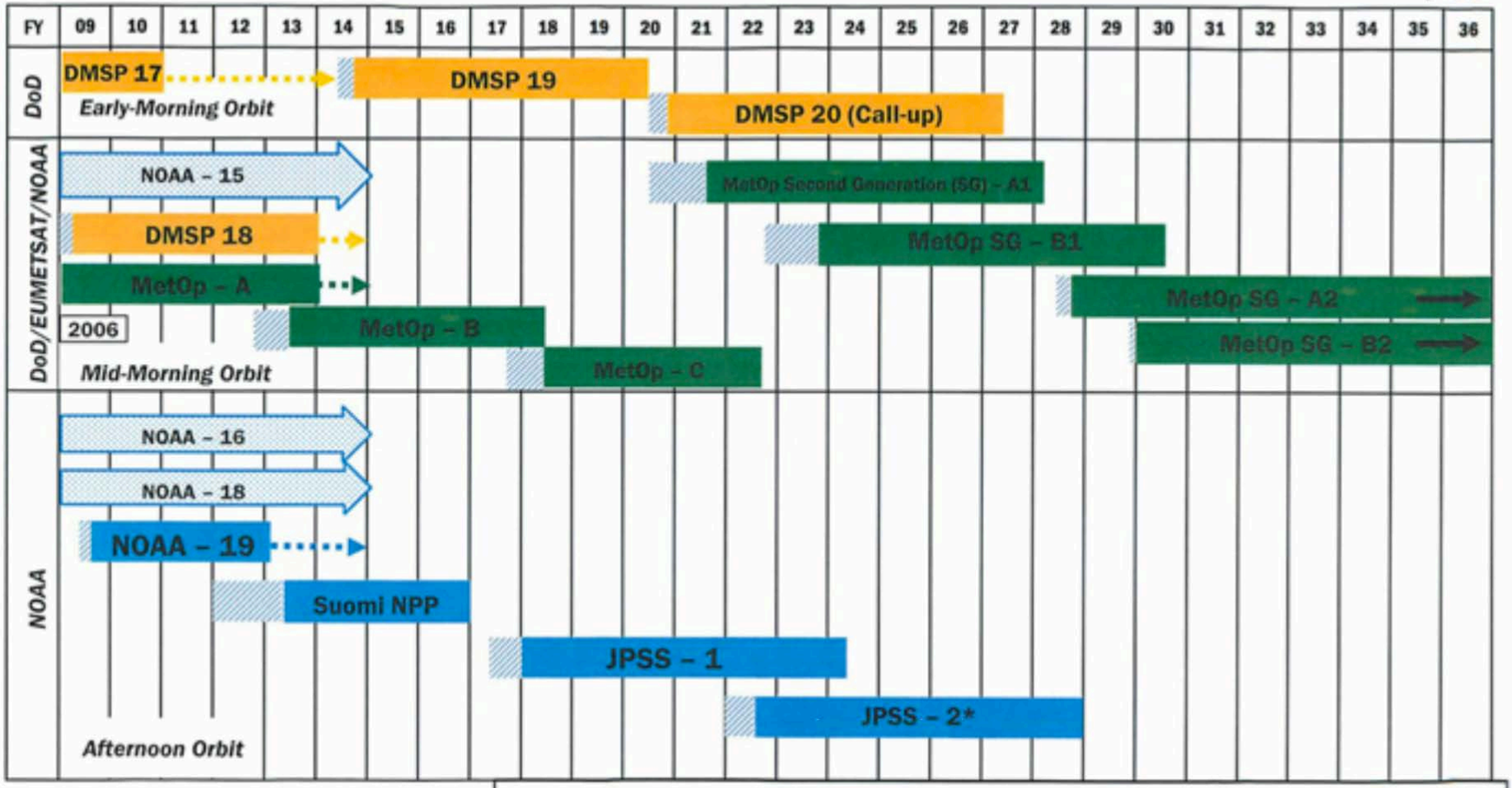
Mission Lifetime:	7 years (LRD: December 2016)
Mission Orbit:	824 km, 1330 LTAN, Polar Sun-Synchronous, 16 day repeat cycle, **Mission Constellation w/S-NPP**
Launch Vehicle:	Delta II
Mission Payload:	VIIRS, CrIS, ATMS, OMPS **(Nadir only)**, CERES
Mission Communications:	Telemetry and Command (T&C): S Band, Svalbard, Fairbanks (alt) Stored Mission Data (SMD): **Ka band**, 300 Mbps, Svalbard & **McMurdo, Fairbanks, Trollsat**, Backup **SMD**/T&C TDRSS; High Rate Data (HRD): X band, 15 Mbps, Continuous transmission
Mission Data Latency & Onboard Storage:	96 minutes (capture of photons to data product delivery to NWS) SMD storage capacity of ~ 6 orbits (343 Gbit SSR)
Mission Ops:	NSOF (Suitland, MD)
Mission Disposal:	Controlled reentry
Mission Redundancy:	NSOF and CBU mission operations and data processing

Note: Underline denotes changes from S-NPP

JPSS represents significant technological and scientific advances in environmental monitoring

Continuity of NOAA's Polar (Primary) Operational Weather Satellite Programs

As of May 2014



Approved: _____

Assistant Administrator for Satellite and Information Services

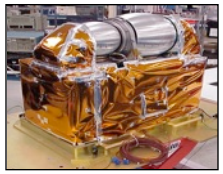
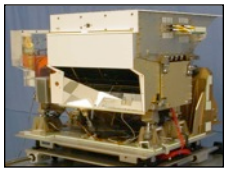
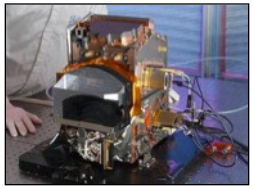
*Program funding provided through FY2025. The follow-on Program will provide funding for operations post 2025.

DMSP: Defense Meteorological Satellite Program
JPSS: Joint Polar Satellite Program
Suomi NPP: Suomi National Polar Partnership

Post Launch Test
Operational based on design life
Secondary
Operational beyond FY 2036
In Extended Mission

Note: Extended operations are reflected through the current FY, based on current operating health.

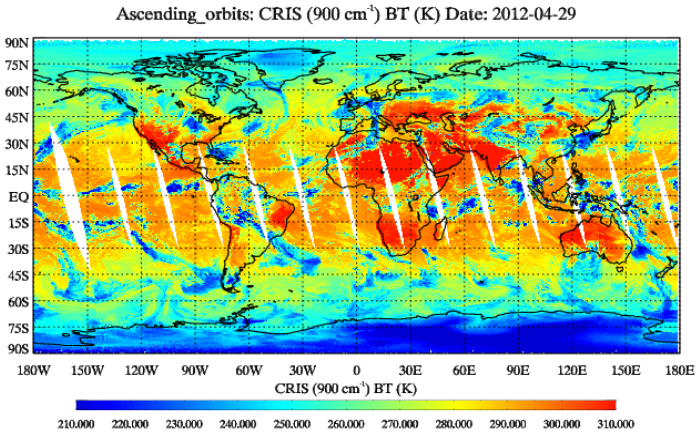
JPSS-1 Instruments (same as S-NPP)

JPSS Instrument		Measurement
	**ATMS** - Advanced Technology Microwave Sounder	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
	**CrIS** - Cross-track Infrared Sounder	
	VIIRS – Visible Infrared Imaging Radiometer Suite	VIIRS provides many **critical imagery products** including snow/ice cover, clouds, fog, aerosols, fire, smoke plumes, vegetation health, phytoplankton abundance/chlorophyll
	**OMPS** - Ozone Mapping and Profiler Suite	Ozone spectrometers for **monitoring ozone** hole and recovery of stratospheric ozone and for UV index forecasts
	CERES - Clouds and the Earth's Radiant Energy System	Scanning radiometer which supports studies of Earth Radiation Budget

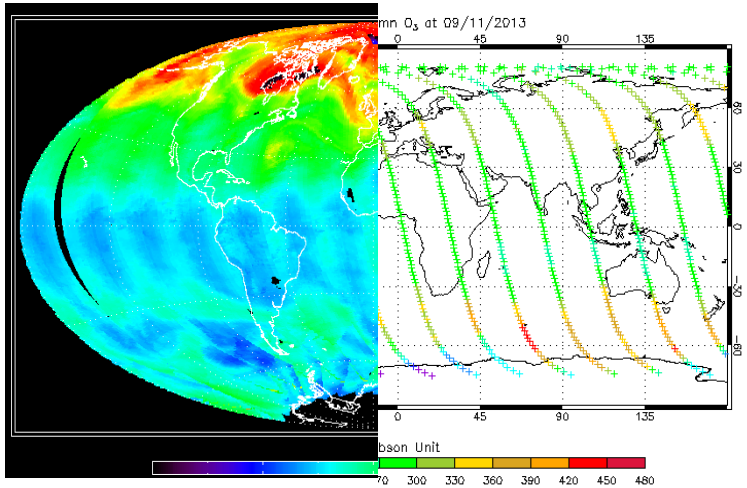
Operational Use of S-NPP Data
S-NPP is now NOAA's primary polar satellite

- 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

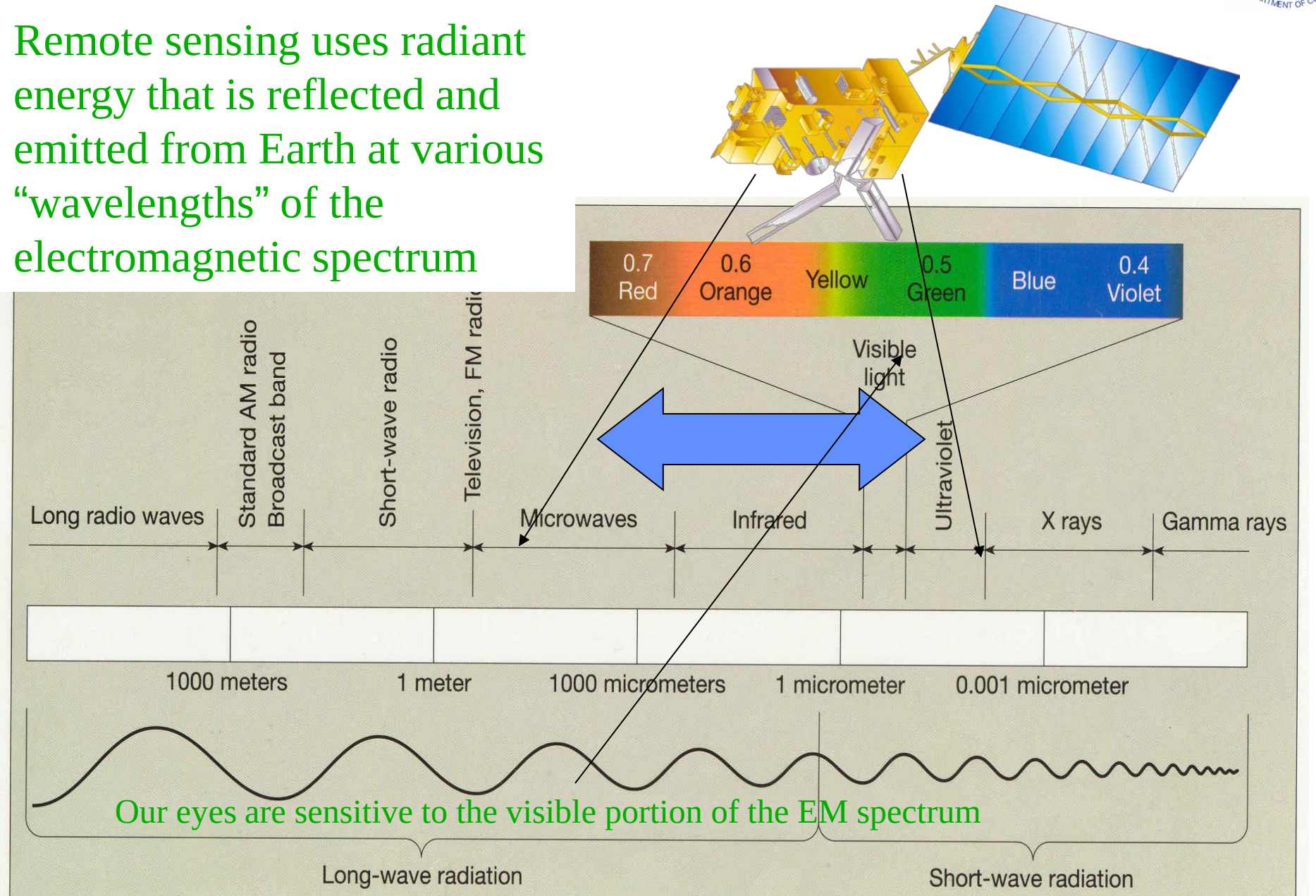


Ozone Mapping Profiler Suite



Electromagnetic spectrum

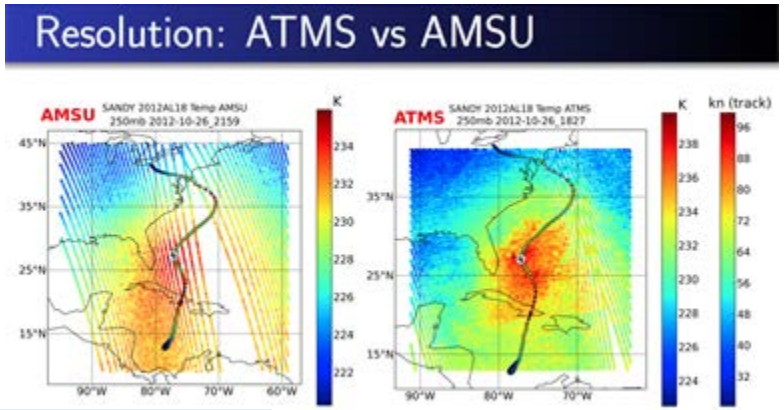
Remote sensing uses radiant energy that is reflected and emitted from Earth at various "wavelengths" of the electromagnetic spectrum



Our eyes are sensitive to the visible portion of the EM spectrum

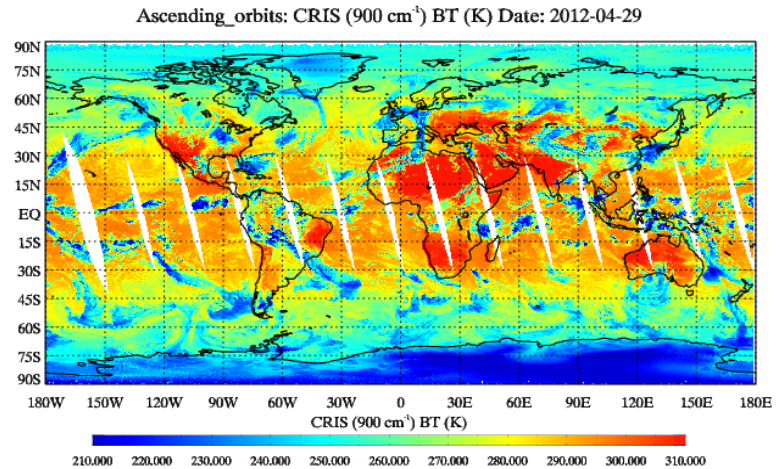
JPSS Next Generation Instruments

Advanced Technology Microwave Sounder



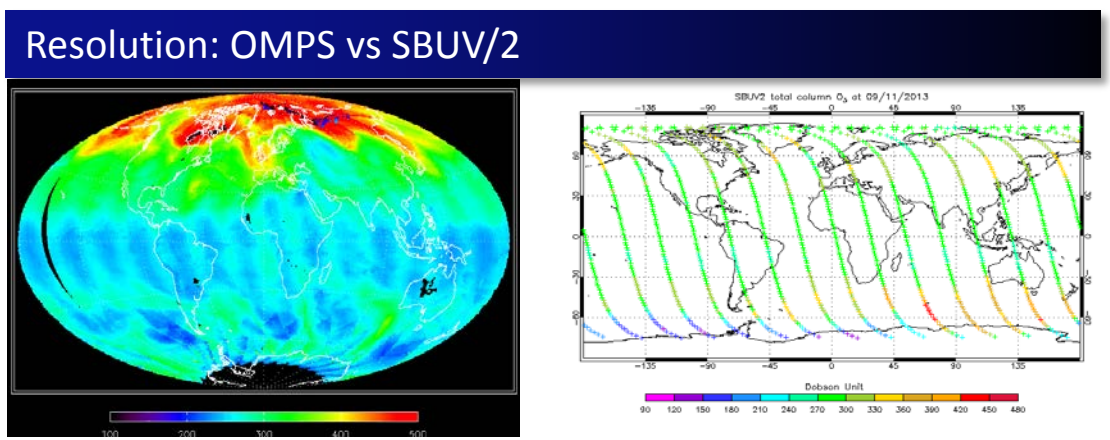
Higher resolution, wider swath, smaller gaps

Cross-track Infrared Sounder



6x more vertical resolving power

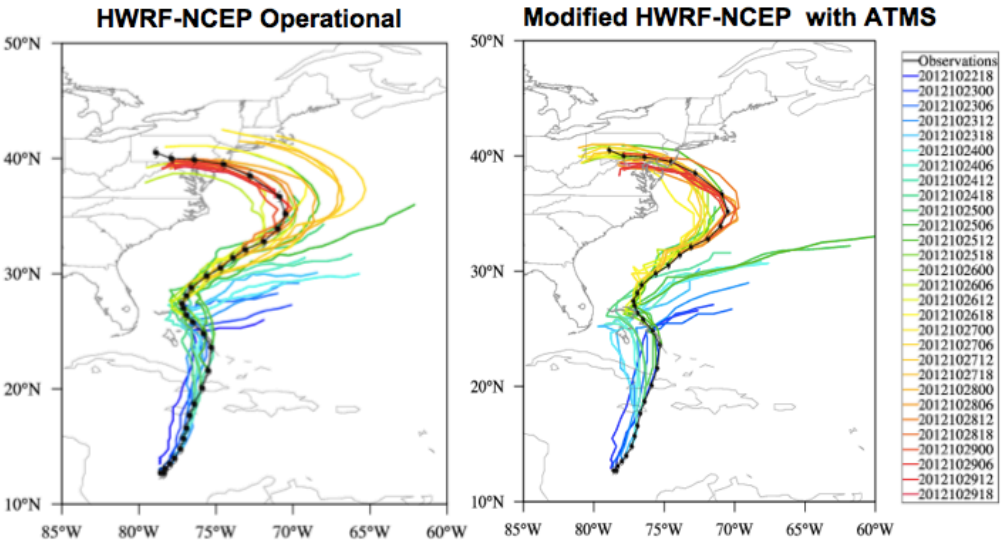
Ozone Mapping Profiler Suite



Provides global coverage ozone monitoring

Sandy Simulation Experiment

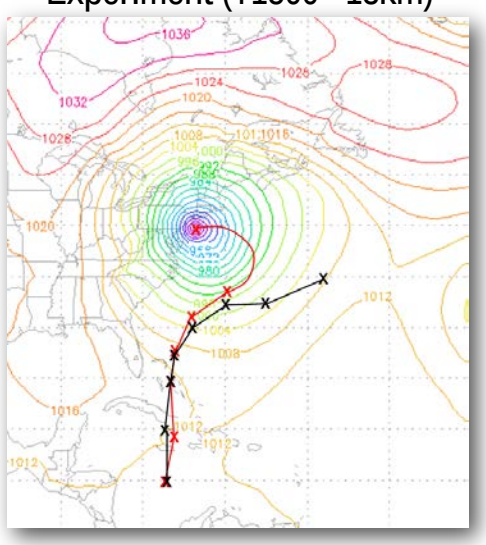
Experimental results showing improvements in Sandy track forecasts from Hurricane Weather Research Forecast model with ATMS



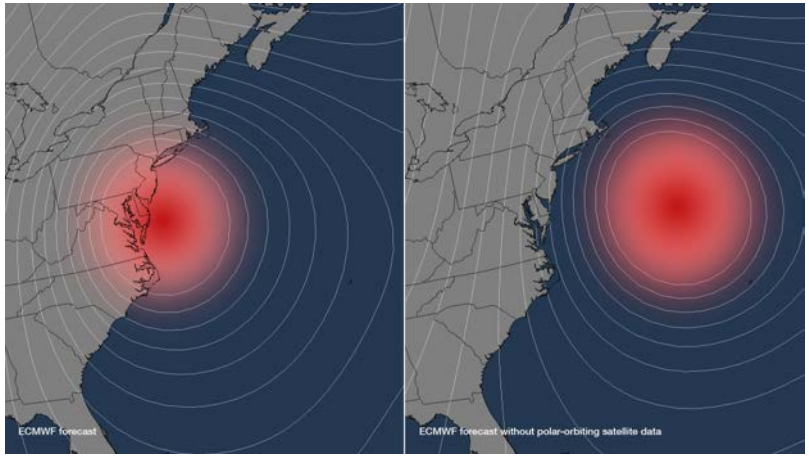
A study by the European Centre for Medium-Range Weather Forecasts (ECMWF) showed that forecasts of Hurricane Sandy's track would have been hundreds of miles off without information from polar-orbiting satellite data. Rather than identifying the New Jersey landfall location within 30 miles five days before landfall, the models would have shown Sandy remaining at sea.

Next-generation satellite instruments will continue to support improved data, modeling and forecasting.

Experiment (T1500~ 13km)

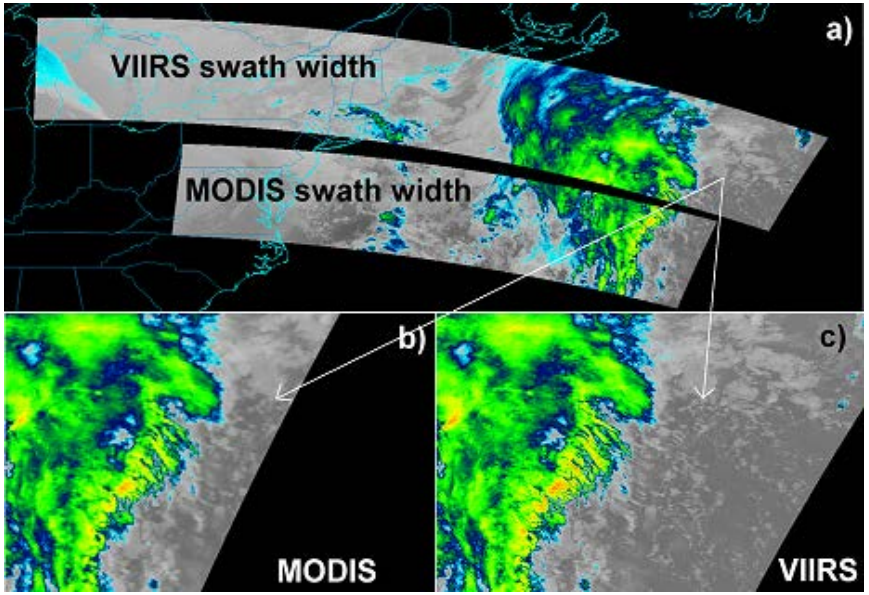


Experiment: Is the 7 day forecast of Sandy improved by increasing model resolution from 27 km (black) to 13 km (red)?
Hypothesis: Increased horizontal resolution resolves complicated Atlantic blocking pattern, slows simulated hurricane, and allows it to curve toward the East Coast.

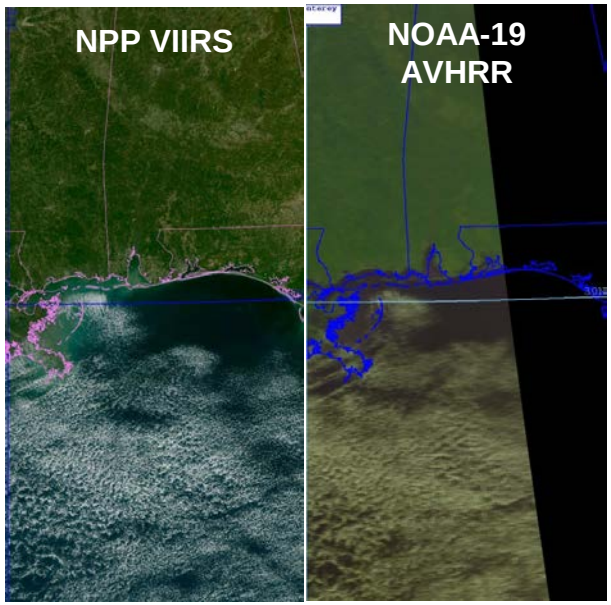


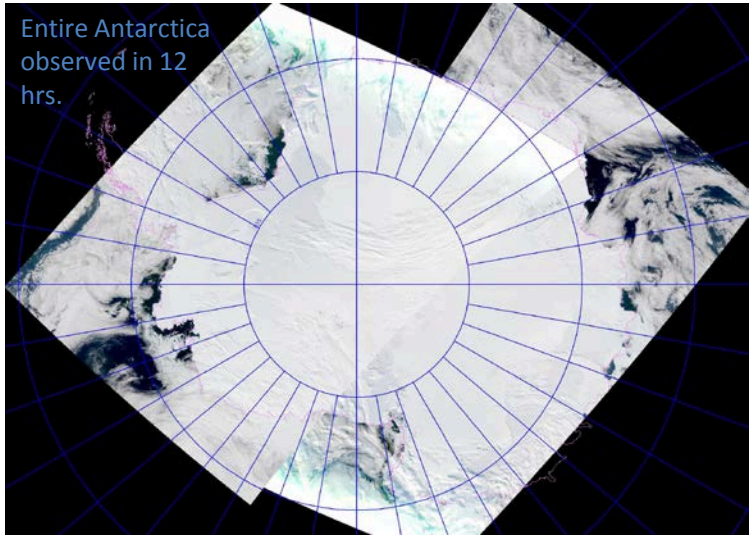
ECMWF with and without polar-orbiting satellite data

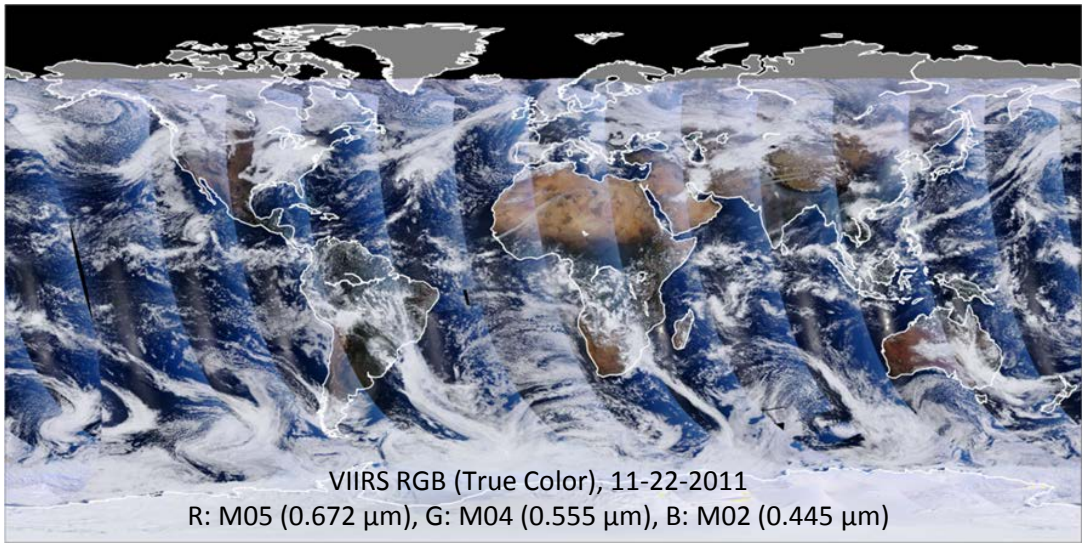
JPSS Next Generation Instruments



The Visible Infrared Imaging Radiometer Suite offers more spectral bands, higher resolution, wider swath and greater accuracy, resulting in a large number of products.



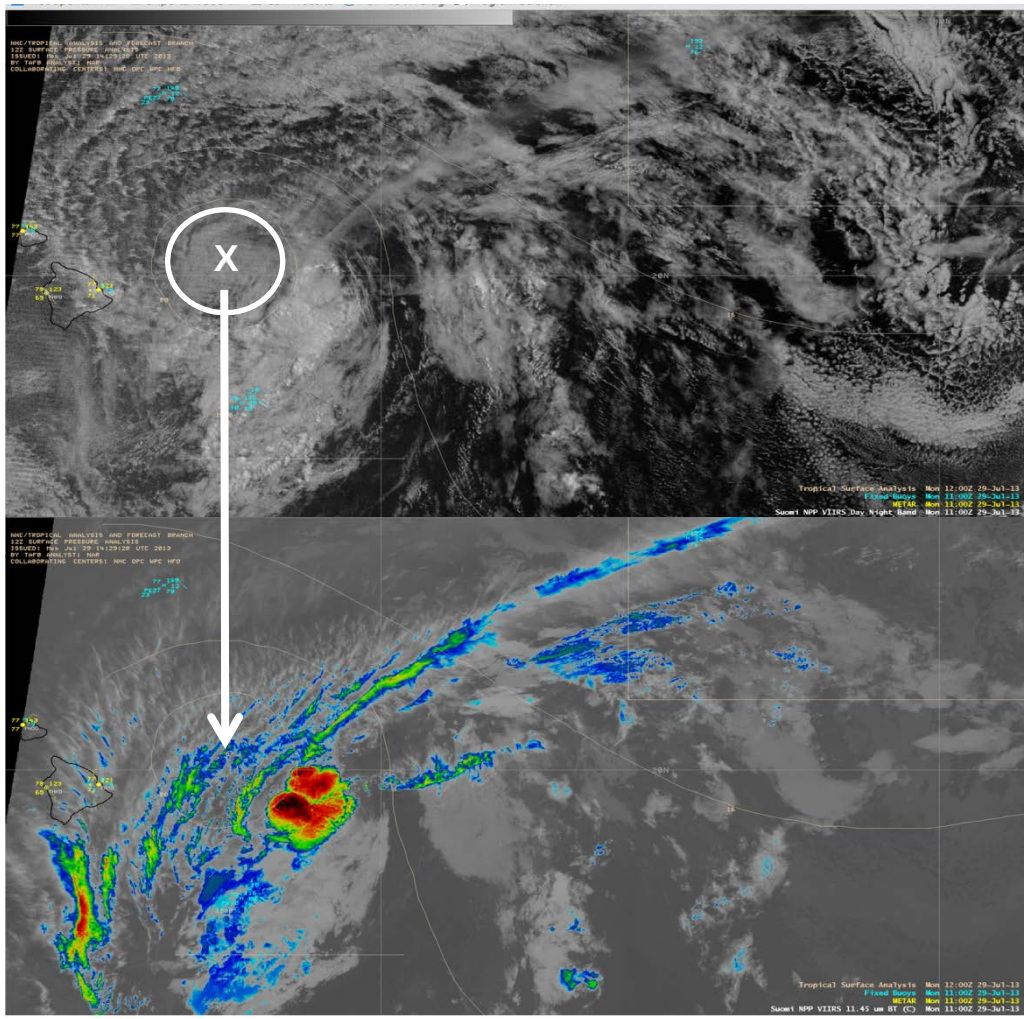




Tropical Storm Flossie: July 29. 2013

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 TCDCP1

TROPICAL STORM FLOSSIE DISCUSSION NUMBER 19

NWS CENTRAL PACIFIC HURRICANE CENTER HONOLULU HI EP062013

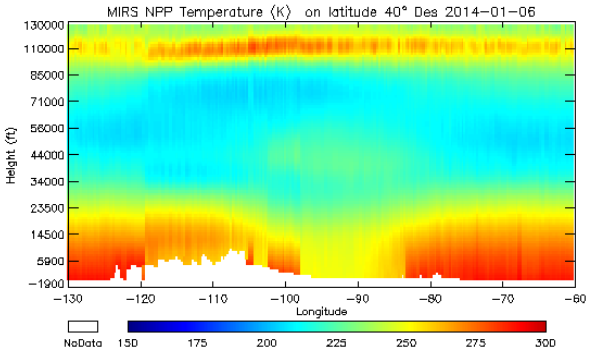
500 AM HST MON JUL 29 2013

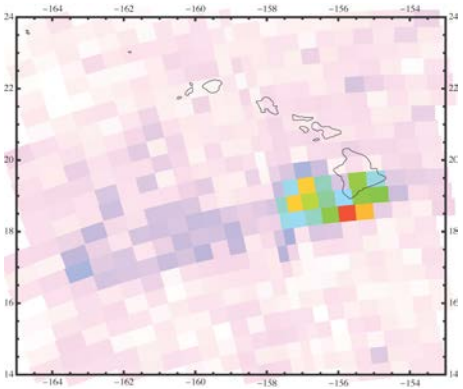
THE CENTER OF FLOSSIE WAS HIDDEN BY HIGH CLOUDS MOST OF THE NIGHT BEFORE VIRS NIGHTTIME VISUAL SATELLITE IMAGERY REVEALED AN EXPOSED LOW LEVEL CIRCULATION CENTER FARTHER NORTH THAN EXPECTED. WE RE-BESTED THE 0600 UTC POSITION BASED ON THE VISIBLE DATA. SUBJECTIVE DVORAK ANALYSES CONTINUED SHOW CURRENT 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.

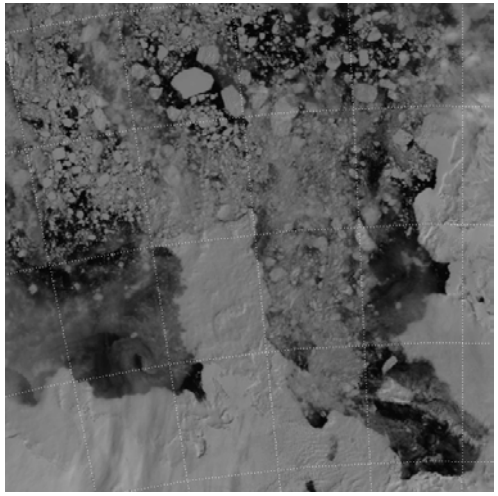
THE TRACK HAS BEEN SHIFTED NORTH TO REFLECT THE RE-LOCATED CENTER. THE TRACK GUIDANCE SHIFTED FOLLOWING THE TRACK CHANGE AND WAS CONSISTENT WITH A NEW TRACK FARTHER TO THE NORTH. THE TRACK NOW SHOWS FLOSSIE PASSING OVER MAUI TODAY...OVER OAHU TONIGHT...THEN PASSING SOUTH OF KAUAI EARLY TUESDAY MORNING.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

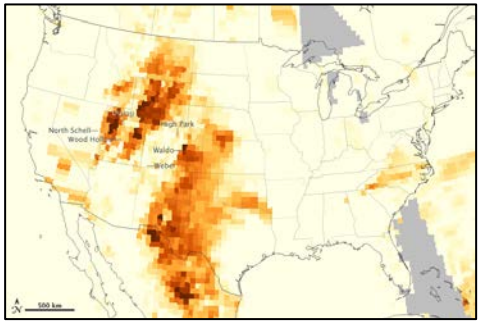
Unique about JPSS

- **Microwave – provides temperature and moisture soundings in cloudy conditions and rainfall rates, sea ice, snow, surface temperature**
- **Infrared – provides high vertical resolution temperature and moisture soundings in clear and cloud corrected regions; atmospheric chemistry - CO, CH4, SO2, … and cloud products**
- **Visible (day & night) and Infrared Imagery (including deep blue channels) – chlorophyll, cloud imagery, cloud products, SST, Active Fires, Smoke, Aerosols, land products, Snow, Ice … at exceptional resolution**
- **UV - ozone - Aerosols over bright surfaces, SO2 plumes, NO2…**

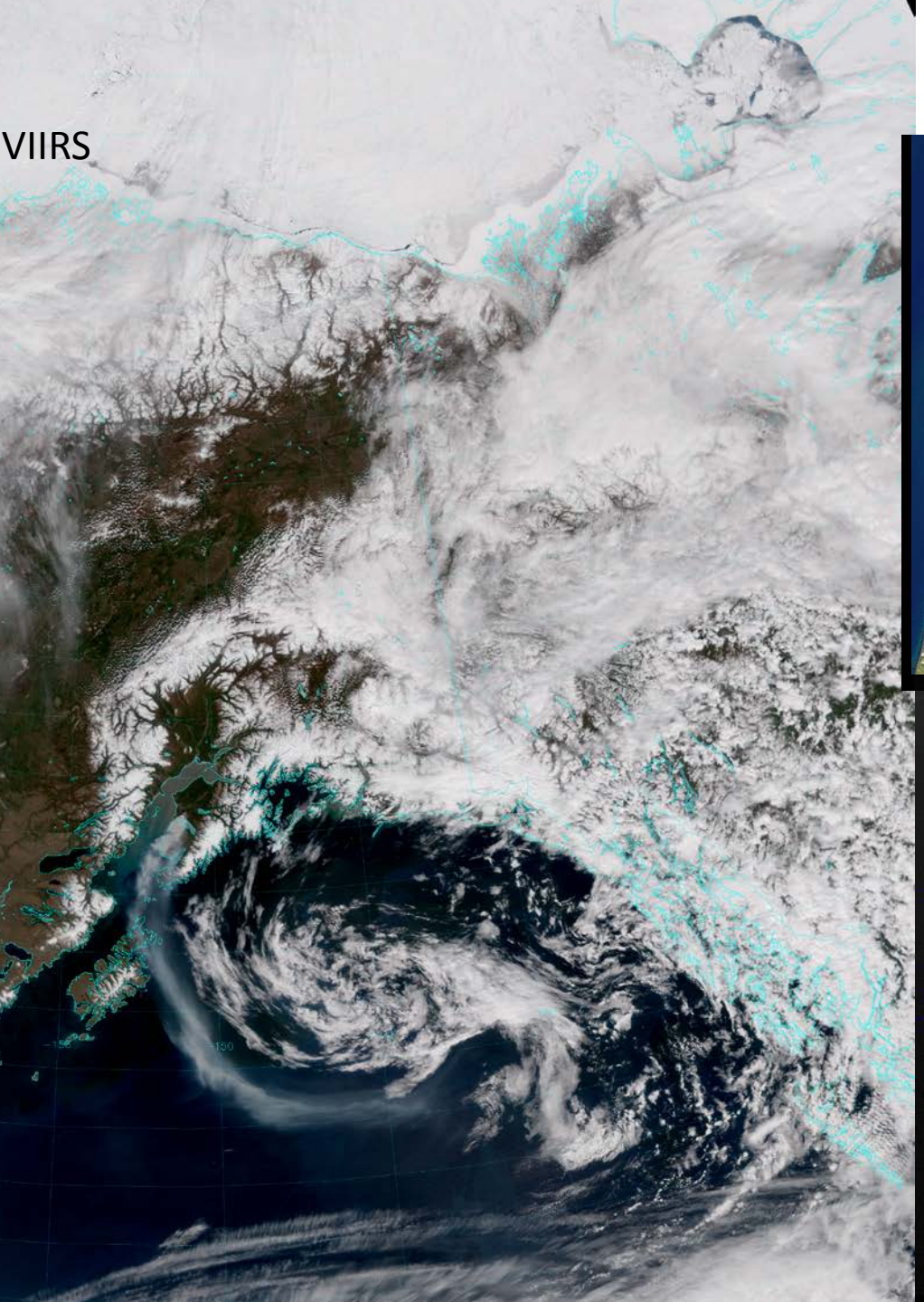


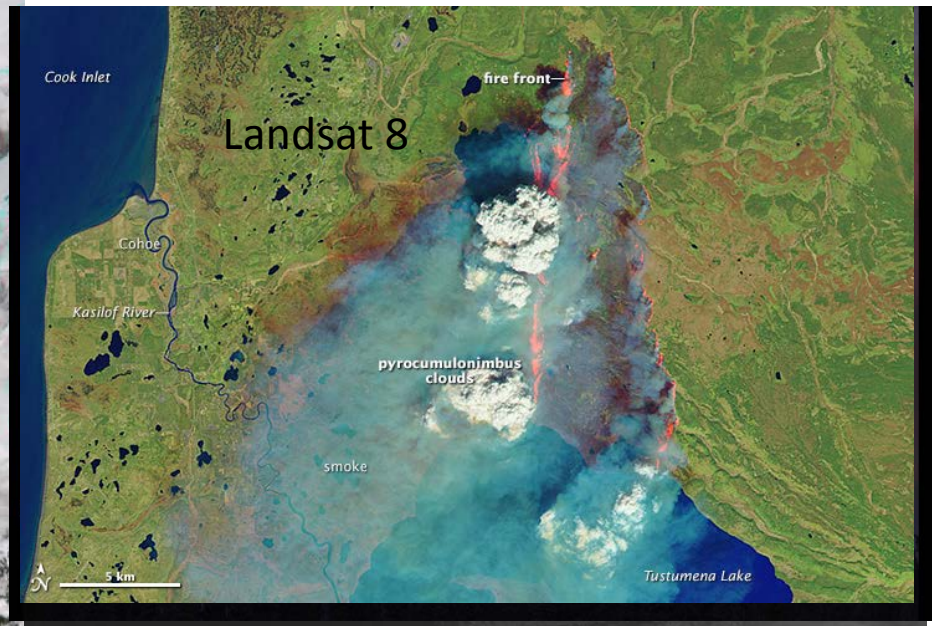


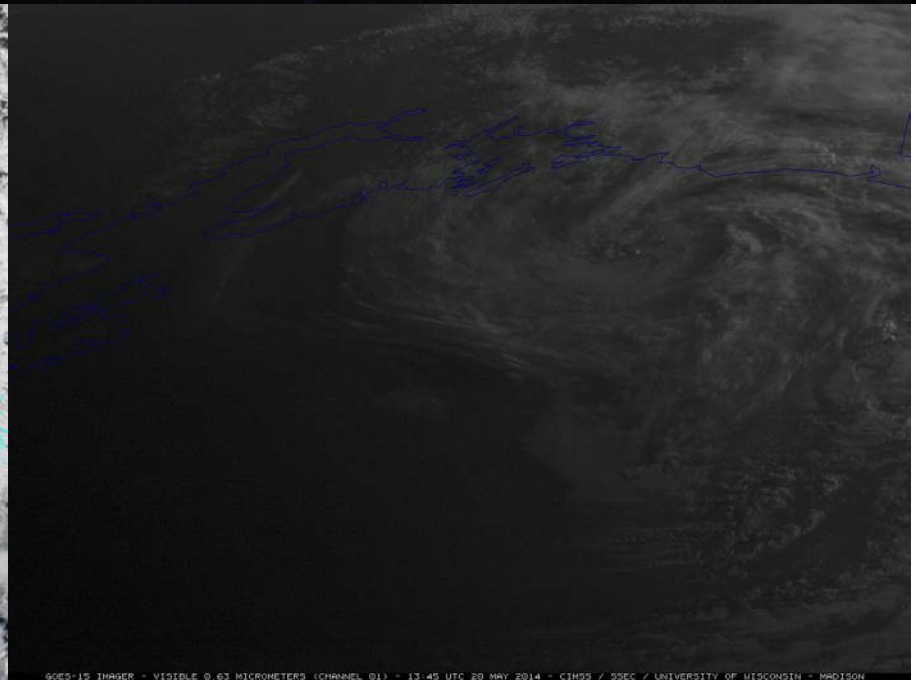




Funny River Fire – Alaska - May 20, 2014

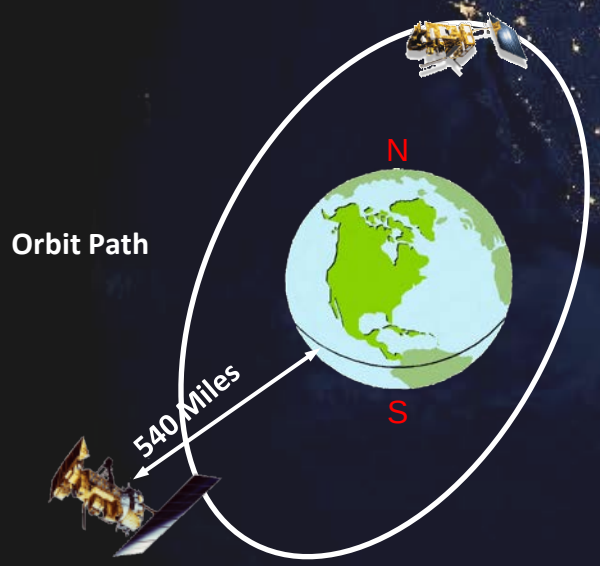






Two Orbits, One Mission

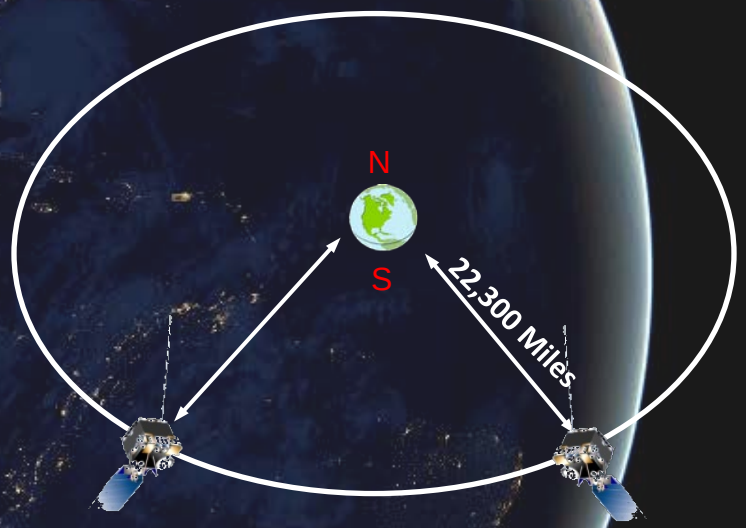
Polar-orbiting Operational Environmental Satellites



Each satellite covers the Earth twice per day

- Pole-to-pole orbit is 102 minutes and views each location at the same time of day
- Global coverage every 12 hours with one satellite
- Information is used for mid-range, 3-7 day advanced warnings of severe weather, and environmental imaging and monitoring for short term polar weather and global ocean and atmosphere forecasting/monitoring

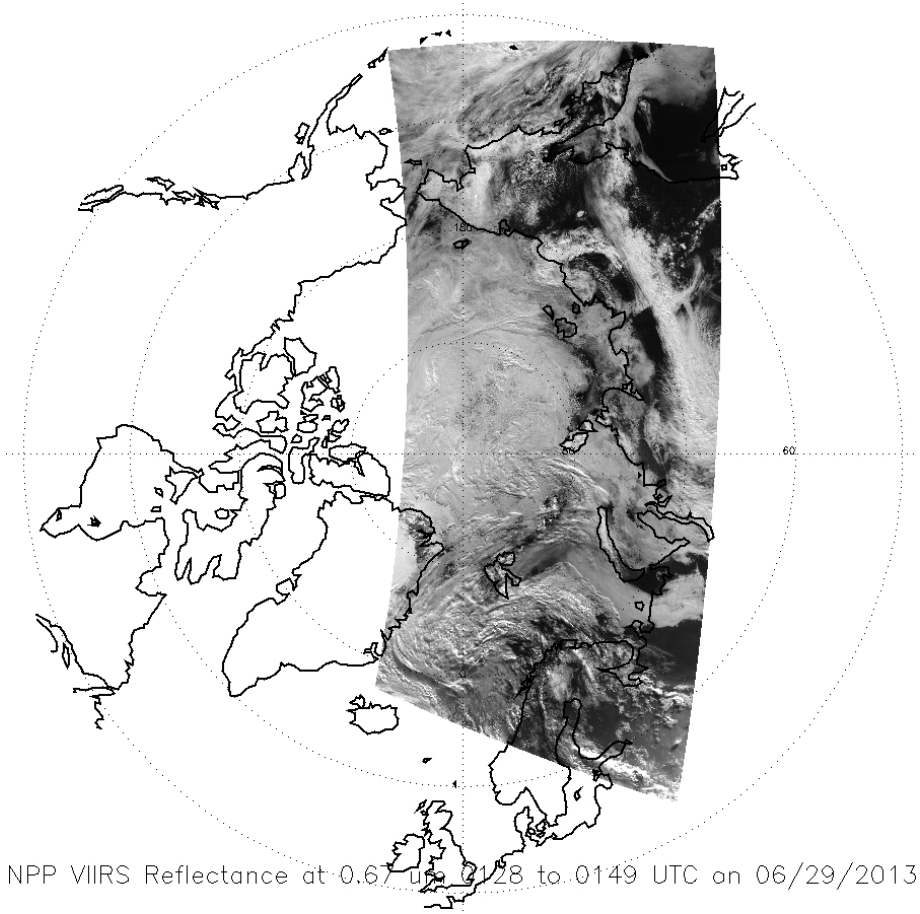
Geostationary Operational Environmental Satellites



Continuously monitors the Western Hemisphere

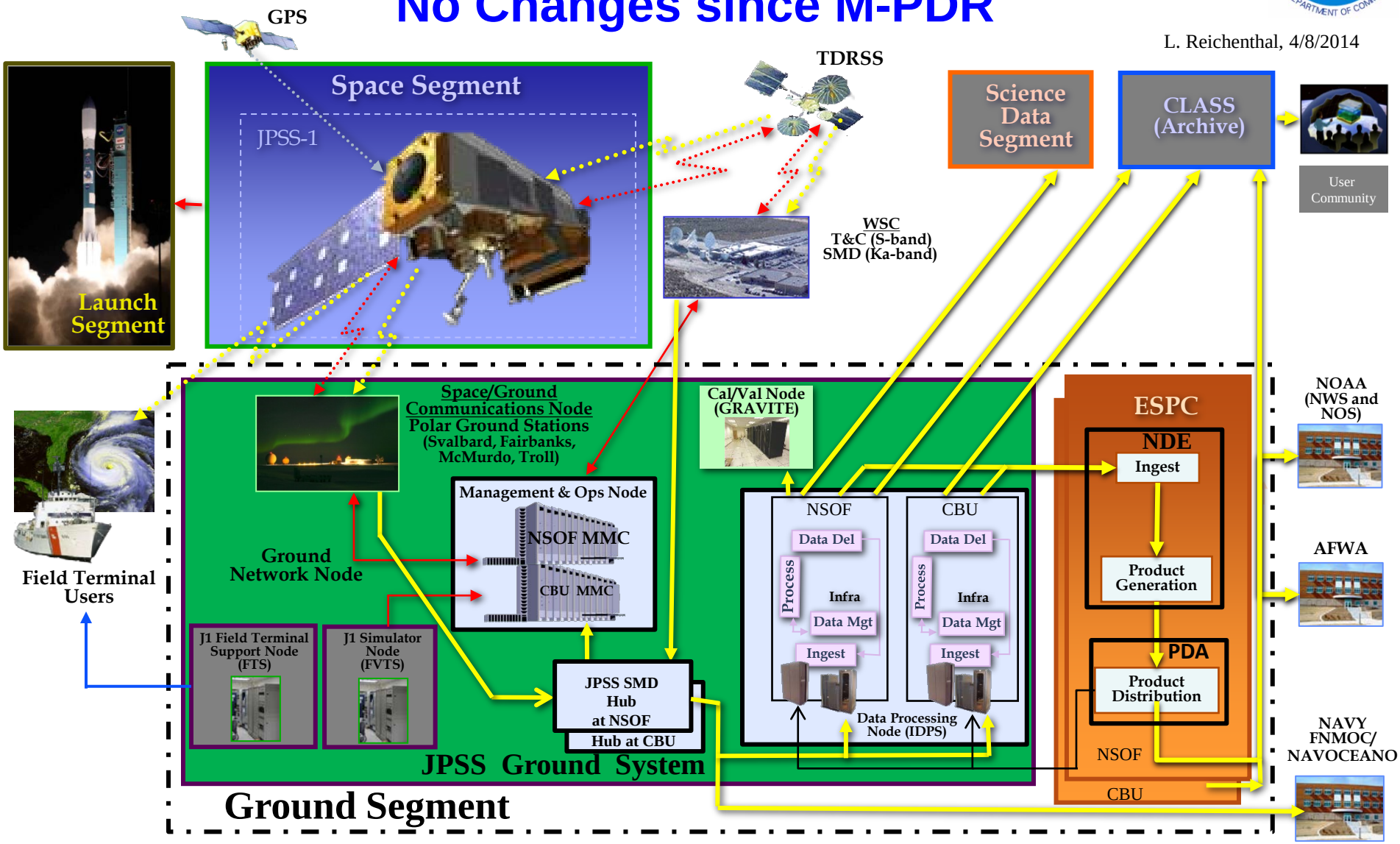
- Same geographic image over time
- Full image every 30 minutes and Northern Hemisphere images every 15 minutes
- Usable images between 60ºN and 60ºS
- Information is used for short-term weather forecasting and severe storm warning/tracking

JPSS Supporting Polar Region Weather Forecasting and Climate



JPSS-1 Mission Architecture
No Changes since M-PDR

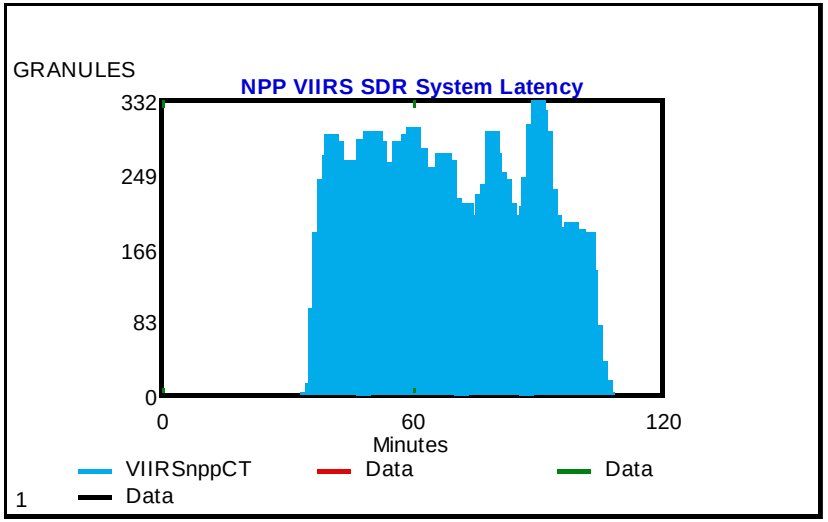
L. Reichenthal, 4/8/2014



S-NPP SDR System Latency

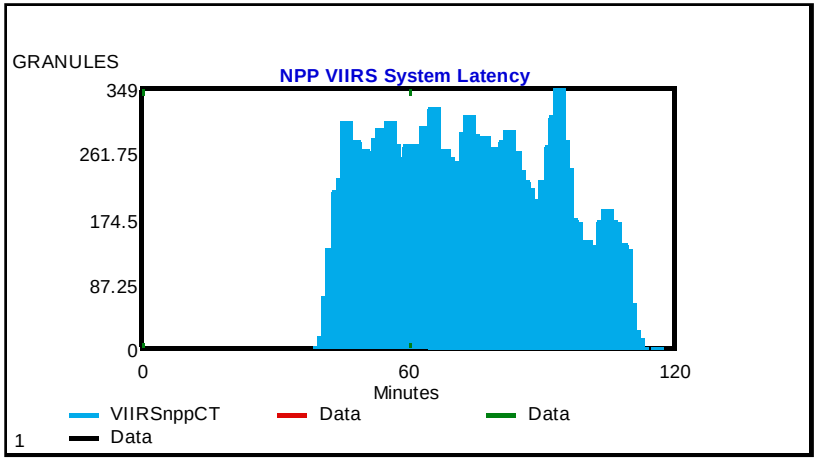
S-NPP VIIRS SDRs

- Min: 35.5 minutes
- Mean: 69.4 minutes
- 95%-tile: 99.1minutes
- Max: 113 minutes



S-NPP VIIRS EDRs

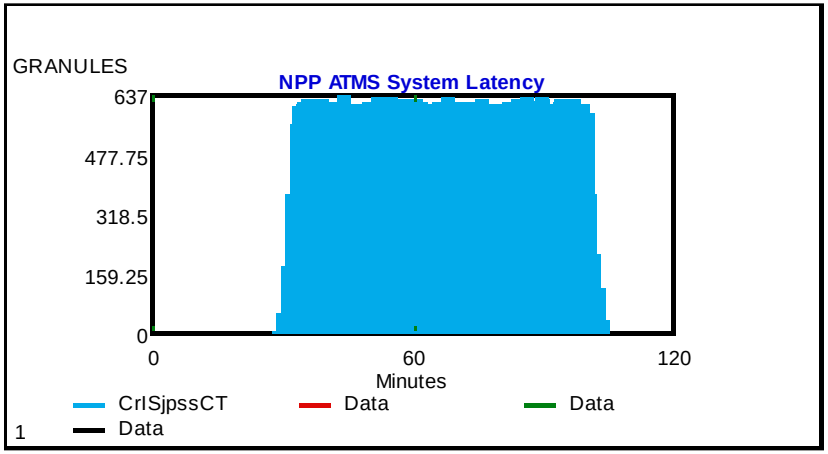
- Min: 40.7 minutes
- Mean: 74.3 minutes
- 95%-tile: 104.5minutes
- Max: 120 minutes



S-NPP SDR System Latency

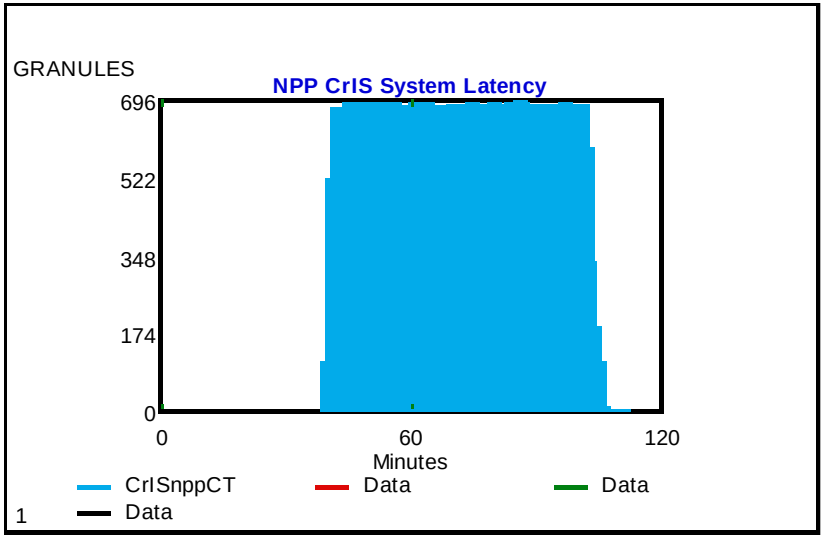
S-NPP ATMS SDRs/TDRs

- Min: 29.2 minutes
- Mean: 67.1 minutes
- 95%-tile: 97.7 minutes
- Max: 112 minutes



S-NPP CrIS SDRs

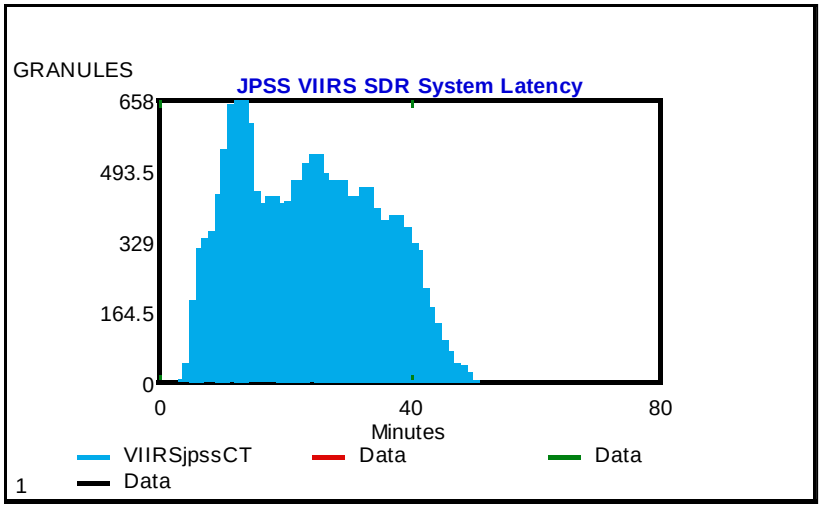
- Min: 40.3 minutes
- Mean: 72.5 minutes
- 95%-tile: 99.7 minutes
- Max: 112 minutes



JPSS-1 SDR System Latency

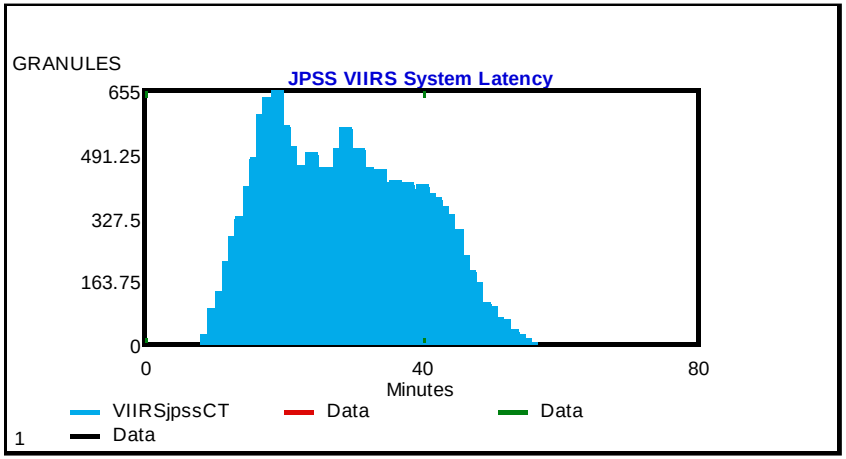
JPSS VIIRS SDRs

- Min: 4.8 minutes
- Mean: 24.6 minutes
- 95%-tile: 40.9 minutes (96)*
- Max: 50.5 minutes



JPSS VIIRS EDRs

- Min: 8.9 minutes
- Mean: 29.5 minutes
- 95%-tile: 45.9 minutes (96)
- Max: 57.4 minutes

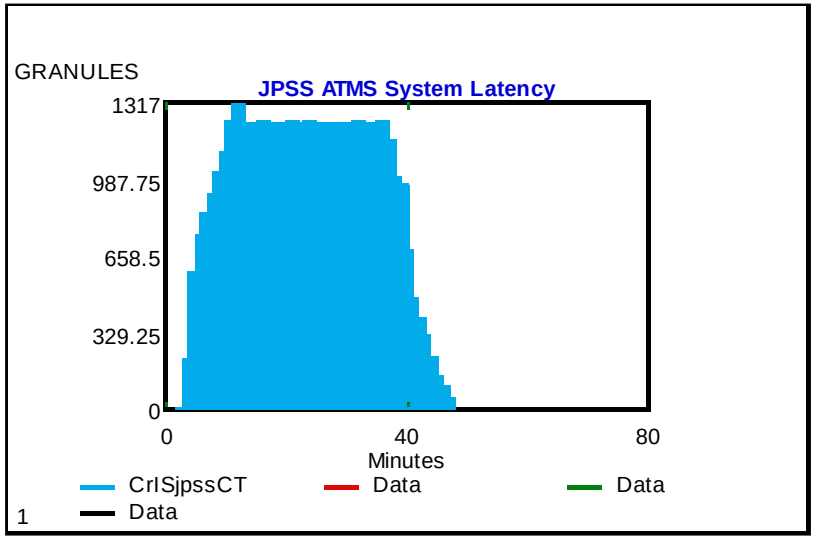


* Level1 requirement

JPSS-1 SDR System Latency

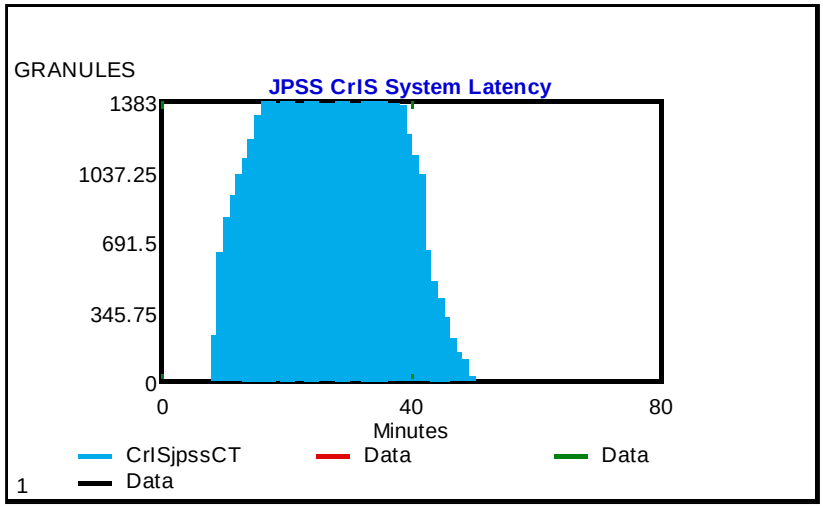
JPSS ATMS SDRs/TDRs

- Min: 3.6 minutes
- Mean: 24.1 minutes
- 95%-tile: 39.4 minutes (96)
- Max: 47.8 minutes

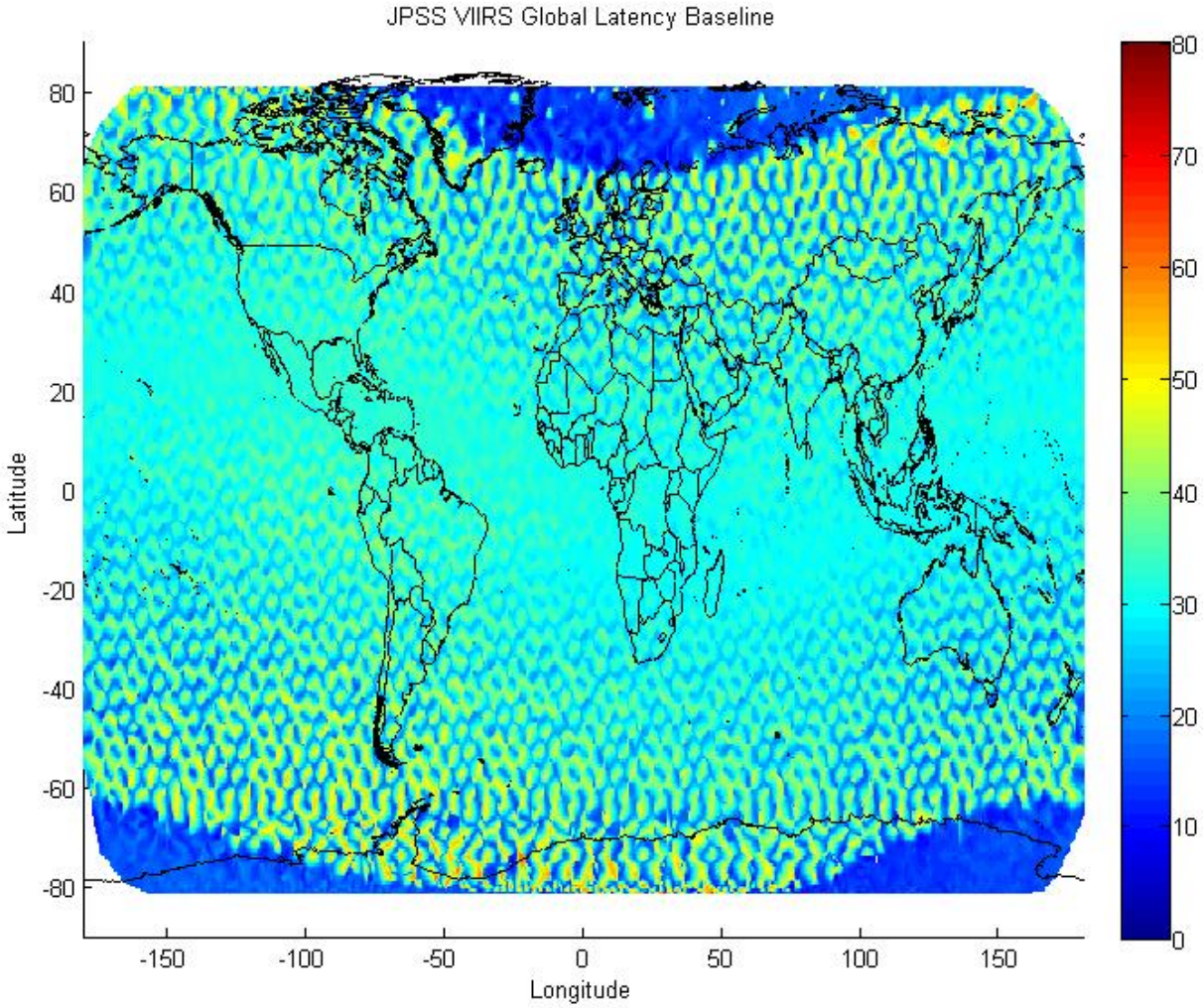


JPSS CrIS SDRs

- Min: 8.8 minutes
- Mean: 27.5 minutes
- 95%-tile: 41.3 minutes (96)
- Max: 49.4 minutes

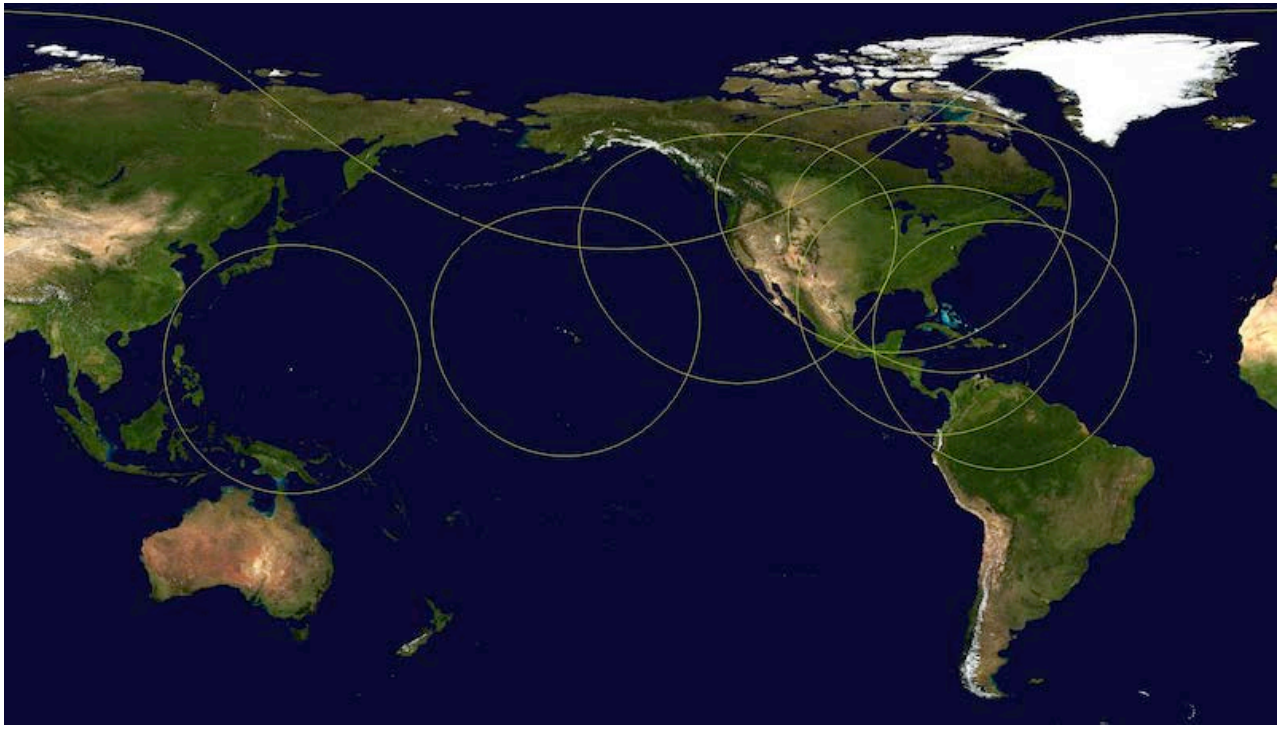


JPSS-1 VIIRS System Latency



Direct Readout Network Demonstration

NOAA/NWS
Honolulu



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

- **Demonstrating the value of regional applications**
- **Demonstrating the distribution of very low latency JPSS products to NWS and evaluate the impact**
- **CSPP – provides operational and research algorithms and products**

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

VIIRS (24)

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
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 (3)

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

OMPS (2)

O_3 TOTAL COLUMN
O_3 NADIR PROFILE
SO2 and Aerosol Index

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

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

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

VIIRS (24)

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
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 (3)

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

OMPS (2)

O_3 TOTAL COLUMN
O_3 NADIR PROFILE
SO2 and Aerosol Index

ATMS (11)

CLOUD LIQUID WATER
PRECIPITATION RATE
PRECIPITABLE WATER
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LAND SURFACE TEMPERATURE
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SNOW WATER EQUIVALENT
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ATM MOISTURE PROFILE

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

Blue - currently available in CSPP

Need to get products into AWIPS2

NPP_Products_2013_April_NCEP_Focused.xlsx

	Product Name	NDE Ops Readiness Planning Date	CPC	Area of Coverage	Mission Priority (1, 2 or 3)	NHC	Area of Coverage	Mission Priority (1, 2 or 3)	WPC	Area of Coverage	Mission Priority (1, 2 or 3)	OPC	Area of Coverage	Mission Priority (1, 2 or 3)	AWC	Area of Coverage	Mission Priority (1, 2 or 3)	AWIPS	Area of Coverage	Mission Priority (1, 2 or 3)
3	ATMS SDR	Jul-2012																		
4	ATMS TDR	Jul-2012																		
8	*ATMS Radiances (BUFR)*	Jul-2012																		
9	Sea Surface Temperature (SST) - need working group	Jan-2013		Global	1		Global			Global	1		Global	1					Defined in AWIPS R	2
11	CrIS Earth View SDR	Jul-2012								Global	1b		Global							
14	*CrIS Radiances (BUFR) All Channels All FOV*	Jul-2012																		
15	*CrIS Radiances (BUFR) 399 Channels*	Jul-2012																		
16	Global Grids (NetCDF)	Jul-2012																		
17	Global Binaries (NetCDF)	Jul-2012																		
22	Nadir Profile Ozone IP	Apr-2013		Global	1															3
23	Ozone Total Column	Apr-2013		Global	1					Global	1		Global	1						3
24	OMPS Total Column Earth View SDR	Jul-2012		Global	1															
26	OMPS Nadir Profile Earth View SDR	Jul-2012		Global	1															
28	OMPS Limb Profile Earth View SDR	Jul-2012		Global	1															
33	***Ozone Total Column BUFR***	Mar-2013		Global	1															
34	***Ozone Nadir Profile BUFR***	Mar-2013		Global	1															
35	**VIIRS Radiances SRDs**	Jul-2012																		
64	*VIIRS Radiances (BUFR) All Imagery Channels*	TBD																		
65	*VIIRS Radiances (BUFR) All Moderate Channels*	TBD																		
66	*VIIRS Radiances (BUFR) 4 Monderate Channels*	Jul-2012																		
67	*VIIRS Radiances (BUFR) 1 Imagery Channel*	Jul-2012																		
70	*VIIRS Snow Cover Binary Map EDR*	Apr-2013		Global	3					Global	3								CONUS and Alaska	3
71	*VIIRS Snow Cover Fraction EDR*	Apr-2013		Global	3															
72	***Blended Snow Cover***	Jun-2013		Global	3					Global	1								CONUS and Alaska	3
	Aerosol Optical Thickness	Apr-2013		Global	3														Defined in AWIPS R	3

JPSS Proving Ground and Risk Reduction (PGRR) Application Areas

- ***Weather Forecasting*** **- Improving Global, Regional forecasts**

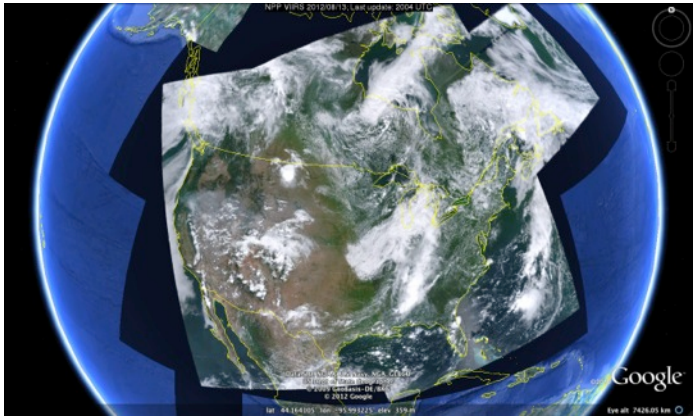
  Tropical Cyclones

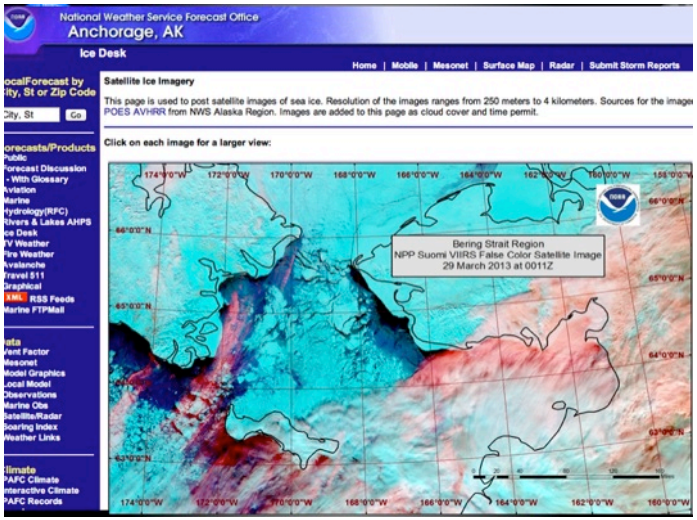
  Severe Weather (Nowcasting)
- ***Ocean/Coastal*** **- Coral Bleaching, Harmful Algal Bloom alerts**
- ***Land*** **- Droughts, Agriculture**
- ***Hazards*** **- Smoke, Fire, Volcanic Ash, Air Quality**
- ***Hydrological*** **- Precipitation, Floods, Soil Moisture, Snow/Ice, River Ice**
- ***Climate*** **- 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 Major 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)
- 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





April 2014 – Review of all PGRR projects

- **New call for proposals in Summer of 2014**
- **Using feedback from Science Meeting in Madison, the JPSS PGRR review, and this meeting and other user feedback (NOS, NMFS, OAR, CPC) to assess priorities.**
  - Excellent – Outstanding – CSPP and Direct Readout
  - Excellent feedback on Active Fires and Air Quality – need to include fire behavior and smoke forecast modeling at high spatial resolution
  - Very good to outstanding feedback on Tropical Cyclone forecasting projects
  - Good to excellent on river ice and flooding project
  - Very good to excellent on land phenology and drought project
  - Very good to excellent on sounding applications
  - Very good to outstanding on JPSS risk reduction – enterprise algorithms
  - Excellent – nearcasting project
  - Very good to excellent - data drop in model skill project
  - Very good to excellent - data impact studies)
  - Excellent - cryosphere project
  - Excellent to Outstanding - SPORT activities
  - Excellent to Outstanding - GINA
  - Very Good to Excellent – Day Night Band applications

ALL PROVING GROUND PROJECTS
ARE DESCRIBED IN OUR PORTFOLIO
AND OUR MONTHLY SEMINARS PROVIDE ARTICLES FOR
OUR ANNUAL SCIENCE DIGEST
BOTH AVAILABLE ON THE JPSS WEBSITE

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

Supporting the NOAA Mission through Applications and Research

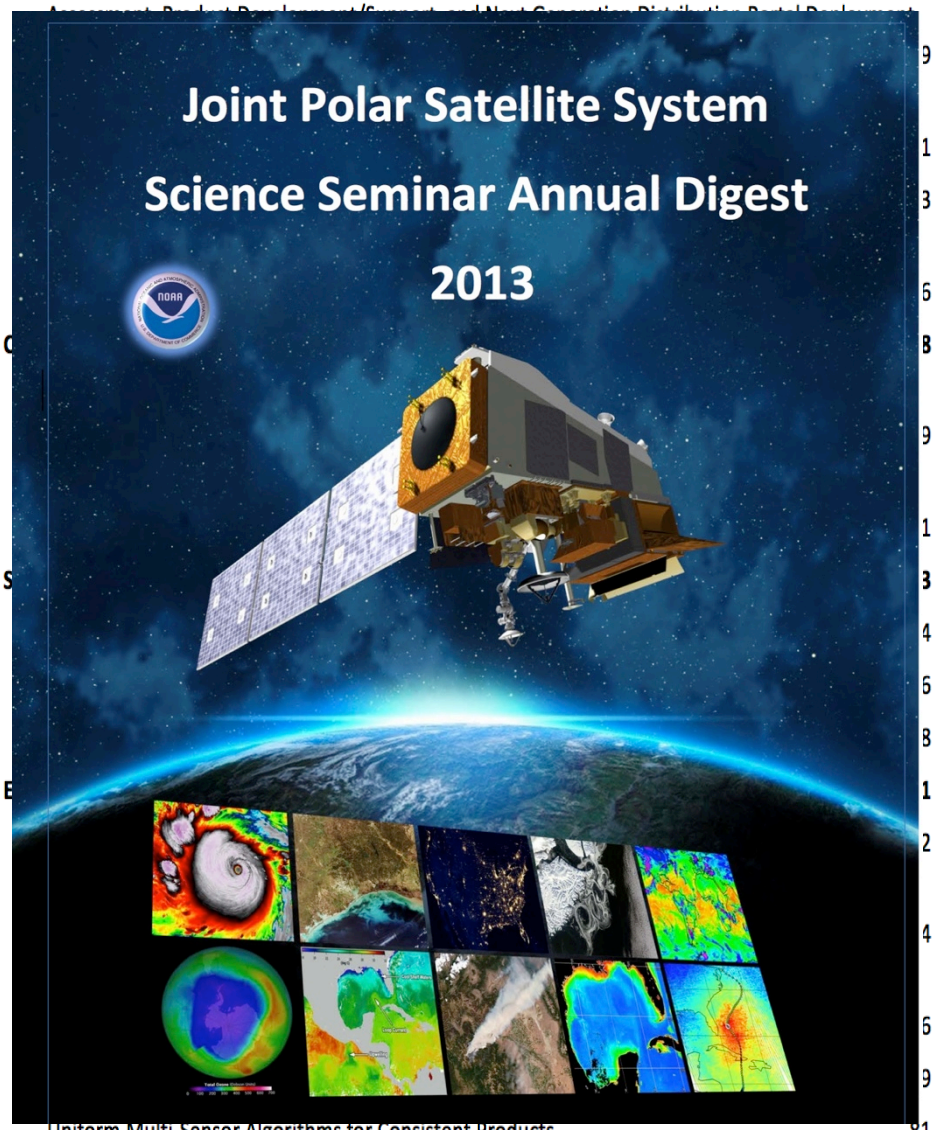
Edited by:
Mitch Goldberg, Julie Price, Bill Sjoberg, John Furgerson, Ingrid Guch, Ralph Ferraro and Kathryn Shontz

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



Uniform Multi-Sensor Algorithms for Consistent Products 81

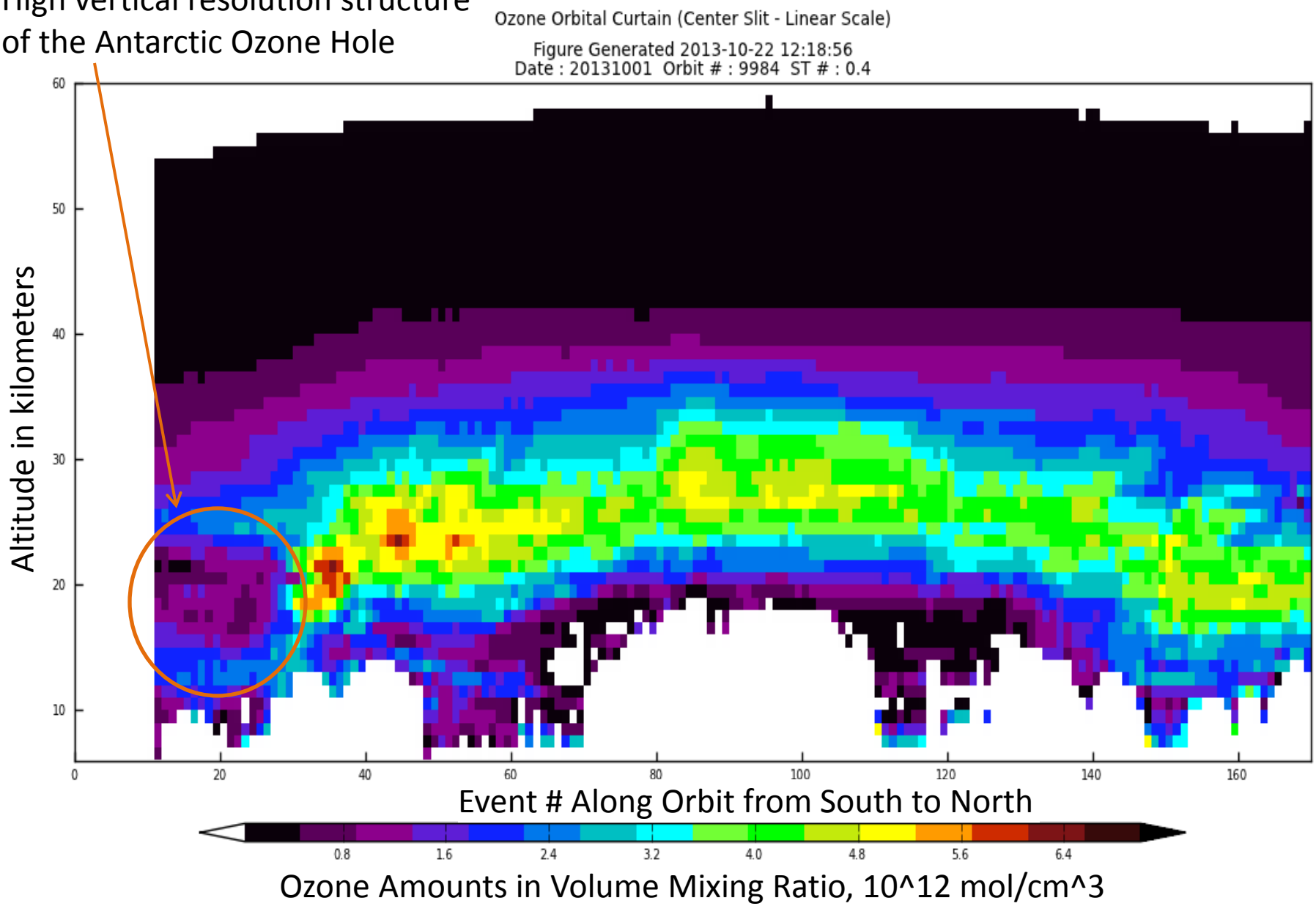
Summary

- **Demonstrated significant value from SNPP**
- **JPSS-1 on track**
- **Proving Ground and Risk Reduction projects have been very effective in promoting the use of SNPP data within NOAA**
- **We will continue to work on improving applications, working with NWS and other partners**
- **Challenge**
  - getting the data into AWIPS and developing the plug-ins/drivers
  - determine connectivity (ESPC – NCO bandwidth is excellent)
  - emphasize both direct readout and ESPC (PDA) interfaces
  - Alaska direct readout is on path for big O operations.
  - Demonstrate improved latency in forecast models (emphasis for next call)

Backup

Center Slit, OMPS Limb Ozone Profile Retrievals for one Orbit on October 22, 2013

High vertical resolution structure of the Antarctic Ozone Hole



NPP_Products_2013_April_NCEP_Focused.xlsx

	Product Name	NDE Ops Readiness Planning Date	CPC	Area of Coverage	Mission Priority (1, 2 or 3)	NHC	Area of Coverage	Mission Priority (1, 2 or 3)	WPC	Area of Coverage	Mission Priority (1, 2 or 3)	OPC	Area of Coverage	Mission Priority (1, 2 or 3)	AWC	Area of Coverage	Mission Priority (1, 2 or 3)	AWIPS	Area of Coverage	Mission Priority (1, 2 or 3)
73	*Aerosol Optical Thickness*	Apr-2013		Global	3														Defined in AWIPS R	3
74	VIIRS Aerosol EDR Geolocation	Apr-2013		Global	3														Defined in AWIPS R	3
75	***Aerosol Optical Thickness (BUFR)***	Apr-2013		Global	3															
76	***Sea Surface Temperature (SST) (BUFR)***	Jan-2013																		
85	***Polar Winds (VIIRS BUFR)***	Oct-2012																		
87	***Green Vegetation Fraction***	Dec-2012		Global	2															
94	***Blended Total Precipitable Water - Need Working Group (line 94-102)***	Feb-2013		Global	2		Global			Global	1		Global	2					Update Existing OSPO Product w/NPP Data. No increase in data	1
95	MIRS Global TPW Composites	Oct-2012		Global	3					Global	1									
96	MIRS AWIPS Blended TPW	Feb-2013					Global			Global	1								Update Existing OSPO Product w/NPP Data. No increase in data	1
97	***Blended Total Precipitable Water (GCOM) [New]***	Sep-2014		Global	3					Global	1								Update Existing OSPO Product w/NPP Data. No increase in data	1
98	***Blended Total Precipitable Water Anomaly***	Feb-2013		Global	3					Global	1		Global	2					Update Existing OSPO Product w/NPP Data. No increase in data	1
99	***Blended Total Precipitable Water Anomaly (GCOM) [New]***	Sep-2014		Global	3					Global	1								Update Existing OSPO Product w/NPP Data. No	1
101	MIRS AWIPS Blended RR	Feb-2013		Global	2					Global	1								Update Existing OSPO Product w/NPP Data. No increase in data	1
102	***Blended Rain Rate (GCOM) [New]***	Sep-2014		Global	2					Global	1								Update Existing OSPO Product w/NPP Data. No increase in data	1
103	***Tropical Rainfall Potential***	Sep-2014		Global	2		Global			Global	1									
104	***Tropical Rainfall Potential (GCOM) [New]***	Sep-2014																		
105	***Tropical Cyclone Intensity***	Aug-2013		Global	3		Global			NH	2		Global	2						
107	***Blended SST (Imagery)***	Feb-2013					Global			Global	1		Global	1						
110	***SST Anomalies***	Feb-2013		Global	1		Global			Global	1		Global	1						
111	***SST Degree Heating Weeks***	Feb-2013												3						
112	***SST Hot Spots***	Feb-2013												2						
114	Active Fires	Apr-2013		Global	3															

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118	Ocean Color/Chlorophyll	Apr-2013		Global	3								Global	2						
121	*Harmful Algal Bloom Anomaly [New]*	Mar-2014											Global	2						
122	*Emiliania huxleyi Bloom [New]*	Mar-2014											Global	2						
123	*Chesapeake Bay Ocean Color [New]*	Mar-2014												2						
124	*Near Coast Ocean Color (SWIR) [New]*	Mar-2014											Global	2						
127	VIIRS Imagery Channel 1 0.64 um	Oct-2012		Global/Land	1					Global	1		Global	1		AWC Area	1			
128	VIIRS Imagery Channel 1 AWIPS II CONUS 0.64 um	Oct-2012								Global	1			1					Defined in AWIPS R	1
129	VIIRS Imagery Channel 1 AWIPS II Alaska 0.64 um	Oct-2012								Global	1			1		PANC AOR	2 (backup)		Defined in AWIPS R	1
130	VIIRS Imagery Channel 1 AWIPS II Pacific 0.64 um	Oct-2012								Global	1			1		PHFO AOR	2 (backup)		Defined in AWIPS R	1
131	VIIRS Imagery Channel 1 AWIPS II Caribbean 0.64 um	Oct-2012								Global	1			1		CARSAM AOR	2 (backup)		Defined in AWIPS R	1
132	**VIIRS Imagery Channel 1 AWIPS II MAXIMUMS**	Oct-2012								Global	1			1					Alaska, Pacific, CONUS, & Caribbean	
133	VIIRS Imagery Channel 1 NIC 0.64 um	Oct-2012																		
134	VIIRS Imagery Channel 2 0.865 um	Oct-2012		Global/Land	1		Global			Global	1			1						
135	VIIRS Imagery Channel 2 AWIPS II CONUS 0.865 um	Oct-2012								Global	1			1					Defined in AWIPS R	2
136	VIIRS Imagery Channel 2 AWIPS II Alaska 0.865 um	Oct-2012								Global	1			1					Defined in AWIPS R	2
137	VIIRS Imagery Channel 2 AWIPS II Pacific 0.865 um	Oct-2012								Global	1			1					Defined in AWIPS R	2
138	VIIRS Imagery Channel 2 AWIPS II Caribbean 0.865 um	Oct-2012								Global	1			1					Defined in AWIPS R	2
139	**VIIRS Imagery Channel 2 AWIPS II MAXIMUMS**	Oct-2012								Global	1			1					Alaska, Pacific, CONUS, & Caribbean	
140	VIIRS Imagery Channel 3 1.610 um	Oct-2012								Global	1			1						
141	VIIRS Imagery Channel 3 AWIPS II CONUS 1.610 um	Oct-2012								Global	1			1					Defined in AWIPS R	2
142	VIIRS Imagery Channel 3 AWIPS II Alaska 1.610 um	Oct-2012								Global	1			1					Defined in AWIPS R	2
143	VIIRS Imagery Channel 3 AWIPS II Pacific 1.610 um	Oct-2012								Global	1			1					Defined in AWIPS R	2
144	VIIRS Imagery Channel 3 AWIPS II Caribbean 1.610 um	Oct-2012								Global	1			1					Defined in AWIPS R	2
145	**VIIRS Imagery Channel 3 AWIPS II MAXIMUMS**	Oct-2012								Global	1			1					Alaska, Pacific, CONUS, & Caribbean	
	VIIRS Imagery Channel 4	Oct-2012								Global	1		Regions	1		AWC Area	1			

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146	VIIRS Imagery Channel 4 3.74 um	Oct-2012								Global	1		Regions	1		AWC Area	1			
147	VIIRS Imagery Channel 4 AWIPS II CONUS 3.74 um	Oct-2012								Global	1			1					Defined in AWIPS R	1
148	VIIRS Imagery Channel 4 AWIPS II Alaska 3.74 um	Oct-2012								Global	1			1					Defined in AWIPS R	1
149	VIIRS Imagery Channel 4 AWIPS II Pacific 3.74 um	Oct-2012								Global	1			1					Defined in AWIPS R	1
150	VIIRS Imagery Channel 4 AWIPS II Caribbean 3.74 um	Oct-2012								Global	1			1					Defined in AWIPS R	1
151	**VIIRS Imagery Channel 4 AWIPS II MAXIMUMS**	Oct-2012								Global	1			1					Alaska, Pacific, CONUS, & Caribbean	
152	VIIRS Imagery Channel 5 11.450 um	Oct-2012								Global	1		Regions	1		AWC Area	1			
153	VIIRS Imagery Channel 5 AWIPS II CONUS 11.450 um	Oct-2012								Global	1			1					Defined in AWIPS R	1
154	VIIRS Imagery Channel 5 AWIPS II Alaska 11.450 um	Oct-2012								Global	1			1		PANC AOR	2 (backup)		Defined in AWIPS R	1
155	VIIRS Imagery Channel 5 AWIPS II Pacific 11.450 um	Oct-2012								Global	1			1		PHFO AOR	2 (backup)		Defined in AWIPS R	1
156	VIIRS Imagery Channel 5 AWIPS II Caribbean 11.450 um	Oct-2012								Global	1			1		CARSAM AOR	2 (backup)		Defined in AWIPS R	1
157	**VIIRS Imagery Channel 5 AWIPS II MAXIMUMS**	Oct-2012								Global	1			1					Alaska, Pacific, CONUS, & Caribbean	
158	VIIRS I-Band Imagery GTM Geolocation	Oct-2012		Global/Land	1		Global			Global	1		Global	2		AWC Area	1			
168	VIIRS Imagery Moderate Channel 5 0.672 um	None					Global			Global	1			2						
172	VIIRS Imagery Moderate Channel 9 1.378 um	Oct-2012								Global	1			2						
173	VIIRS Imagery Moderate Channel 9 AWIPS II CONUS 1.378 um	Oct-2012								Global	1			2					Defined in AWIPS R	2
174	VIIRS Imagery Moderate Channel 9 AWIPS II Alaska 1.378 um	Oct-2012								Global	1			2					Defined in AWIPS R	2
175	VIIRS Imagery Moderate Channel 9 AWIPS II Pacific 1.378 um	Oct-2012								Global	1			2					Defined in AWIPS R	2
176	VIIRS Imagery Moderate Channel 9 AWIPS II Caribbean 1.378 um	Oct-2012								Global	1			2					Defined in AWIPS R	2
177	**VIIRS Imagery Moderate Channel 9 AWIPS II MAX**	Oct-2012								Global	1			2					Alaska, Pacific, CONUS, & Caribbean	
181	VIIRS Imagery Moderate Channel 13 4.05 um	None								Global	1			2		0	0			
182	VIIRS Imagery Moderate Channel 14 8.55 um	Oct-2012								Global	1			2		AWC Area	2			
183	VIIRS Imagery Moderate Channel 15 10.763 um	Oct-2012		Global	1		Global			Global	1		Global	2		AWC Area	2			
184	VIIRS Imagery Moderate Channel 15 AWIPS II CONUS 10.763 um	Oct-2012								Global	1			2					Defined in AWIPS R	2
	VIIRS Imagery Moderate Channel 15 AWIPS II Alaska	Oct-2012								Global	1			2		PANC AOR	2 (backup)		Defined in AWIPS R	2

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184	VIIRS Imagery Moderate Channel 15 AWIPS II CONUS 10.763 um	Oct-2012								Global	1			2					Defined in AWIPS R	2
185	VIIRS Imagery Moderate Channel 15 AWIPS II Alaska 10.763 um	Oct-2012								Global	1			2		PANC AOR	2 (backup)		Defined in AWIPS R	2
186	VIIRS Imagery Moderate Channel 15 AWIPS II Pacific 10.763 um	Oct-2012								Global	1			2		PHFO AOR	2 (backup)		Defined in AWIPS R	2
187	VIIRS Imagery Moderate Channel 15 AWIPS II Caribbean 10.763 um	Oct-2012								Global	1			2		CARSAM AOR	2 (backup)		Defined in AWIPS R	2
188	**VIIRS Imagery Moderate Channel 15 AWIPS II MAX**	Oct-2012								Global	1			2					Alaska, Pacific, CONUS, & Caribbean c	
189	VIIRS Imagery Moderate Channel 16 12.013 um	Oct-2012		Global	1		Global			Global	1		Global	2		AWC Area	2			
190	VIIRS Imagery Moderate Channel 16 AWIPS II CONUS 12.013 um	Oct-2012								Global	1			2					Defined in AWIPS R	2
191	VIIRS Imagery Moderate Channel 16 AWIPS II Alaska 12.013 um	Oct-2012								Global	1			2		PANC AOR	2 (backup)		Defined in AWIPS R	2
192	VIIRS Imagery Moderate Channel 16 AWIPS II Pacific 12.013 um	Oct-2012								Global	1			2		PHFO AOR	2 (backup)		Defined in AWIPS R	2
193	VIIRS Imagery Moderate Channel 16 AWIPS II Caribbean 12.013 um	Oct-2012								Global	1			2		CARSAM AOR	2 (backup)		Defined in AWIPS R	2
194	**VIIRS Imagery Moderate Channel 16 AWIPS II MAX**	Oct-2012								Global	1			2					Alaska, Pacific, CONUS, & Caribbean c	
195	VIIRS M-Band Imagery GTM Geolocation	Oct-2012		Global	1		Global			Global	2		Global	2		AWC Area	1			
201	VIIRS Imager Near Constant Contrast (NCC)	Apr-2013								Global	2		Regions	2		AWC Area	2			
202	VIIRS Image Near Constant Contrast AWIPS II CONUS 12.013 um	Apr-2013								Global	1			1					Defined in AWIPS R	2
203	VIIRS Image Near Constant Contrast AWIPS II Alaska 12.013 um	Apr-2013								Global	1			1		PANC AOR	2 (backup)		Defined in AWIPS R	2
204	VIIRS Image Near Constant Contrast AWIPS II Pacific 12.013 um	Apr-2013								Global	1			1		PHFO AOR	2 (backup)		Defined in AWIPS R	2
205	VIIRS Image Near Constant Contrast AWIPS II Caribbean 12.013 um	Apr-2013								Global	1			1		CARSAM AOR	2 (backup)		Defined in AWIPS R	2
206	**VIIRS Image Near Constant Contrast AWIPS II MAX**	Apr-2013								Global	1			1					Alaska, Pacific, CONUS, & Caribbean c	
207	NCC-Band Imagery GTM EDR Geolocation	Oct-2012		Global	3					Global	1		Global			AWC Area	1			2
215	Cloud Cover/Layers	Apr-2013		Global	3					Global	1			2					10 East westward to	3
216	VIIRS Cloud Aggregated EDR Geolocation	Apr-2013		Global	3		Global						Global						10 East westward to	1
218	Cloud Mask	Apr-2013								CONUS	3									
220	CrIMSS EDR	Apr-2013					Global			Global	2		Global	2					10 East westward to	1
221	CrIMSS EDR Geolocation	Apr-2013					Global			Global	2		Global	2					10 East westward to	1
	Atmospheric Temperature Profile (CrIS/ATMS) - will be	Aug-2013								Global	1								Will replace	

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	Product Name	NDE Ops Readiness Planning Date	CPC	Area of Coverage	Mission Priority (1, 2 or 3)	NHC	Area of Coverage	Mission Priority (1, 2 or 3)	WPC	Area of Coverage	Mission Priority (1, 2 or 3)	OPC	Area of Coverage	Mission Priority (1, 2 or 3)	AWC	Area of Coverage	Mission Priority (1, 2 or 3)	AWIPS	Area of Coverage	Mission Priority (1, 2 or 3)
222	*Atmospheric Temperature Profile (CrIS/ATMS) - will be in AWIPS II*	Aug-2013								Global	1								Will replace CrIMSS product	
223	*AWIPS Temp-Moisture-Pressure Profile - will be in AWIPSII*	Aug-2013																		
224	*AWIPS Temp-Moisture-Pressure Profile Area 1*	TBD																	35S<=lat<37N/ 35W<=lon<=90W	
225	*AWIPS Temp-Moisture-Pressure Profile Area 2*	TBD																	37N<=lat<=75N/ 35W<=lon<=90W	
226	*AWIPS Temp-Moisture-Pressure Profile Area 3*	TBD																	35S<=lat<37N/ 90W<lon<=109W	
227	*AWIPS Temp-Moisture-Pressure Profile Area 4*	TBD																	37N<=lat<=75N/ 90W<lon<=109W	
228	*AWIPS Temp-Moisture-Pressure Profile Area 5*	TBD																	35S<=lat<42N/109W<lon<=140W	
229	*AWIPS Temp-Moisture-Pressure Profile Area 6*	TBD																	42N<=lat<=75N/109W<lon<=128W	
230	*AWIPS Temp-Moisture-Pressure Profile Area 6*	TBD																	42N<=lat<52N/128W<lon<=140W	
231	*AWIPS Temp-Moisture-Pressure Profile Area 7*	TBD																	35S<=lat<50N/140W<lon<=180W	
232	*AWIPS Temp-Moisture-Pressure Profile Area 8*	TBD																	35S<=lat<50N/180<lon<=130E	
233	*AWIPS Temp-Moisture-Pressure Profile Area 9*	TBD																	52N<=lat<=75N/128W<lon<=140W	
234	*AWIPS Temp-Moisture-Pressure Profile Area 9*	TBD																	50N<=lat<=75N/140W<lon<=130E	
235	***NUCAPS SDR: Global Matchups Data***	Jan-2013																		
236	***NUCAPS SDR: Global Matchups List***	Jan-2013																		
237	***NUCAPS EDR: Global Matchup Data***	Jan-2013																		
238	***NUCAPS EDR: Global Matchup List***	Jan-2013																		
240	*Atmospheric Moisture Profile (CrIS/ATMS)*	Aug-2014								Global	1								Will replace CrIMSS product	
242	*Land Surface Emissivity (ATMS)*	Oct-2012																	RC areas over land	3
245	*Cloud Liquid Water (ATMS)*	Oct-2012		Global	3															3
250	*Snow Water Equivalent (ATMS)*	Oct-2012		Global	3					Global	3									3
251	*Ice Water Path (ATMS)*	Oct-2012																		3
252	*Land Surface Temperature (ATMS)*	Oct-2012		Global	3														RC areas over land	3
256	Limb Profile Ozone	Jul-2013		Global	1															
	Blended Ozone	Jun-2013		Global	1					NH	2			2						

NPP_Products_2013_April_NCEP_Focused.xlsx

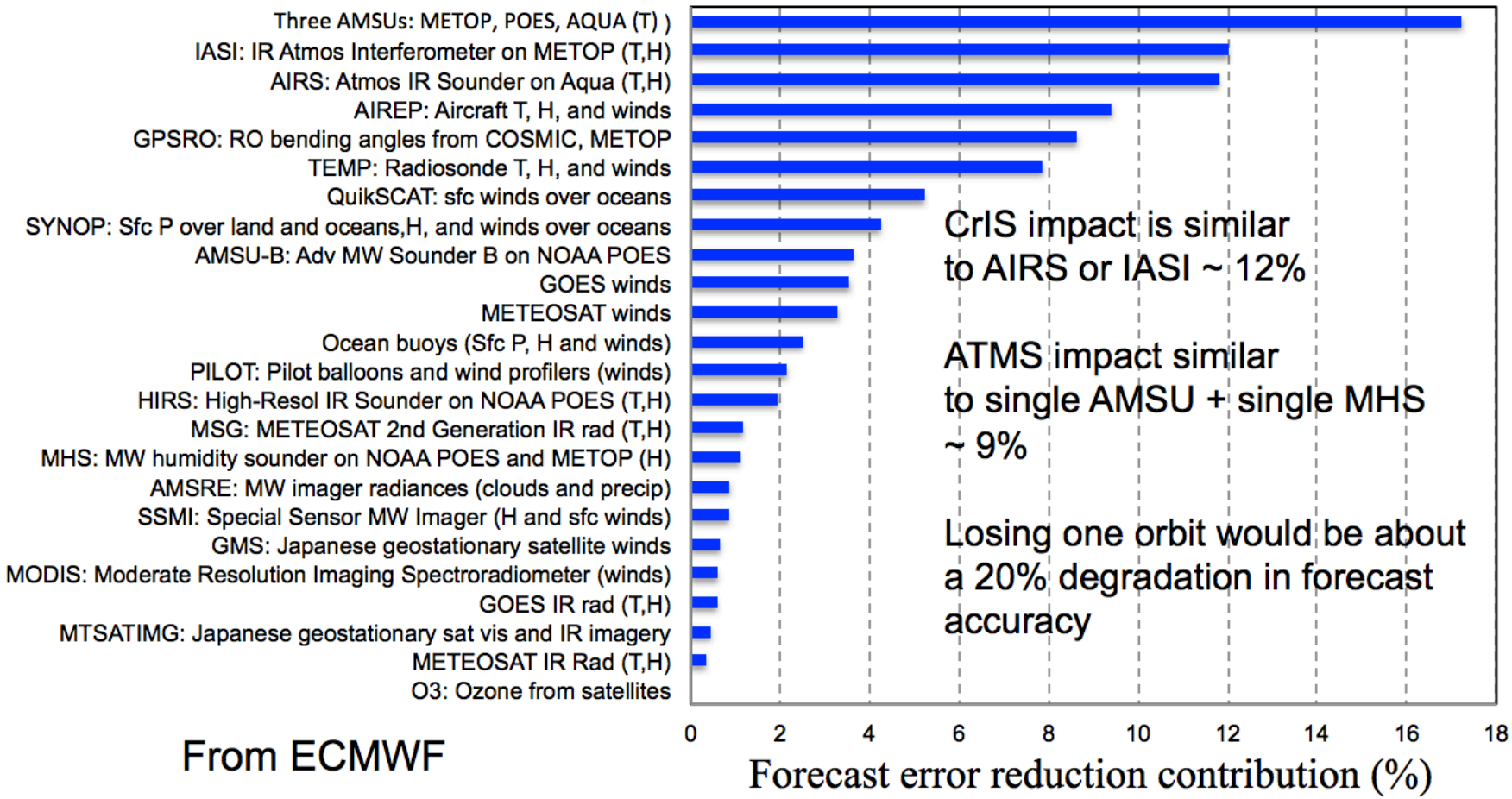
	Product Name	NDE Ops Readiness Planning Date	CPC	Area of Coverage	Mission Priority (1, 2 or 3)	NHC	Area of Coverage	Mission Priority (1, 2 or 3)	WPC	Area of Coverage	Mission Priority (1, 2 or 3)	OPC	Area of Coverage	Mission Priority (1, 2 or 3)	AWC	Area of Coverage	Mission Priority (1, 2 or 3)	AWIPS	Area of Coverage	Mission Priority (1, 2 or 3)
259	Suspended Matter [New]	Apr-2013														AWC Area	1		10 East westward to	3
263	*Fire & Smoke Analysis*	Sep-2013		Global	2															
264	*Volcanic Ash [New]*	Sep-2013		Global	2								Global	1						
265	*Outgoing Longwave Radiation (CrIS) - Project is funded*	Jun-2014		Global	1															
266	IR Ozone IP	Apr-2013		Global	3															
267	Vegetation Index	Apr-2013		Global	1														CONUS, Alaska, and	3
268	Land Surface Type	Apr-2013		Global	2															
271	Surface Albedo	Apr-2013		Global	2														CONUS, Alaska, and	3
272	Aerosol Particle Size	Apr-2013		Global	2														10 East westward to	3
273	Cloud Top Temperature	Apr-2013		Global	3		Global			Global	1		Global	1					10 East westward to	3
274	Cloud Top Temperature (VIIRS)	Apr-2013												1						
275	Cloud Top Pressure	Apr-2013								Global	3			2					10 East westward to	3
276	Cloud Effective Particle Size	Apr-2013											Global							
277	Cloud Optical Thickness	Apr-2013																	10 East westward to	3
278	Cloud Top Height (VIIRS)	Apr-2013					Global			Global	1		Global	1					10 East westward to	3
279	Cloud Base Height [New]	Apr-2013		Global	3					Global	1		Global	1					10 East westward to	1
280	Land Surface Temperature (VIIRS) [New]	Apr-2013		Global	2					Global	1								CONUS, Alaska, and	3
281	Sea Ice Characterization (VIIRS)	Apr-2013		Global	2								Global	2						
282	Ice Surface Temperature [New]	Apr-2013		Global	2					Global	3		Global	3					Northern Hemispher	3
285	*Trace Gases (Carbon Dioxide, Methane, Sulfur Dioxide)*	Jan-2013																		
286	*Outgoing Longwave Radiation TOA (VIIRS)*	TBD		Global	1															
287	*Downward Shortwave Radiation (VIIRS)*	TBD		Global	2															
288	*SST (AVHRR-like)*	Jan-2013		Global	1		Global			Global	1		Global	1						
291	*Aerosol Optical Depth (AVHRR-like)*	Jan-2013		Global	2															
	Outgoing Longwave Radiation TOA (CERES) [New]	TBD		Global	1															

NPP_Products_2013_April_NCEP_Focused.xlsx

	Product Name	NDE Ops Readiness Planning Date	CPC	Area of Coverage	Mission Priority (1, 2 or 3)	NHC	Area of Coverage	Mission Priority (1, 2 or 3)	WPC	Area of Coverage	Mission Priority (1, 2 or 3)	OPC	Area of Coverage	Mission Priority (1, 2 or 3)	AWC	Area of Coverage	Mission Priority (1, 2 or 3)	AWIPS	Area of Coverage	Mission Priority (1, 2 or 3)
99	CERES SDR	Apr-2013		Global	1															
00	Downward Shortwave Radiation at Surface (CERES) [New]	TBD		Global	1															
02	Net Solar Radiation TOA (CERES) [New]	TBD		Global	1															
04	Downward Longwave Radiation at Surface (CERES) [New]	TBD		Global	1															
05	*Vegetation Health Index [New]*	TBD		Global	2															
07	*Vegetation Temperature Condition Index [New]*	TBD																		
08	*Fire Potential/Risk [New]*	TBD		Global	2															
10	*Vegetation Moisture [New]*	TBD		Global	2					CONUS	3									
11	*Drought Indices [New]*	TBD		Global	2					CONUS	3									
12	*Leaf Area Index [New]*	TBD		Global	2															
15	VIIRS Net Heat Flux EDR Geolocation	Apr-2013					Global													
16	Orbital MIRS Profiles (T, q, and cloud profiles)	Oct-2012								Global	1									
17	Mapped MIRS Profiles	Oct-2012								Global	1									
18	Orbital MIRS Surface and Cloud Products (TPW, CLW, RR, ...)	Oct-2012		Global	3		Global			Global	1		Global	1						
19	Mapped MIRS Surface and Cloud Products	Oct-2012								Global	1									
20	MIRS Global RR Composite	Oct-2012		Global	3					Global	1									
29	AERONET Aerosol	Jul-2012																		
31	Cloud Liquid Water Path (VIIRS)	Deleted																		
32	Cloud Ice Water Path (VIIRS)	Deleted																		

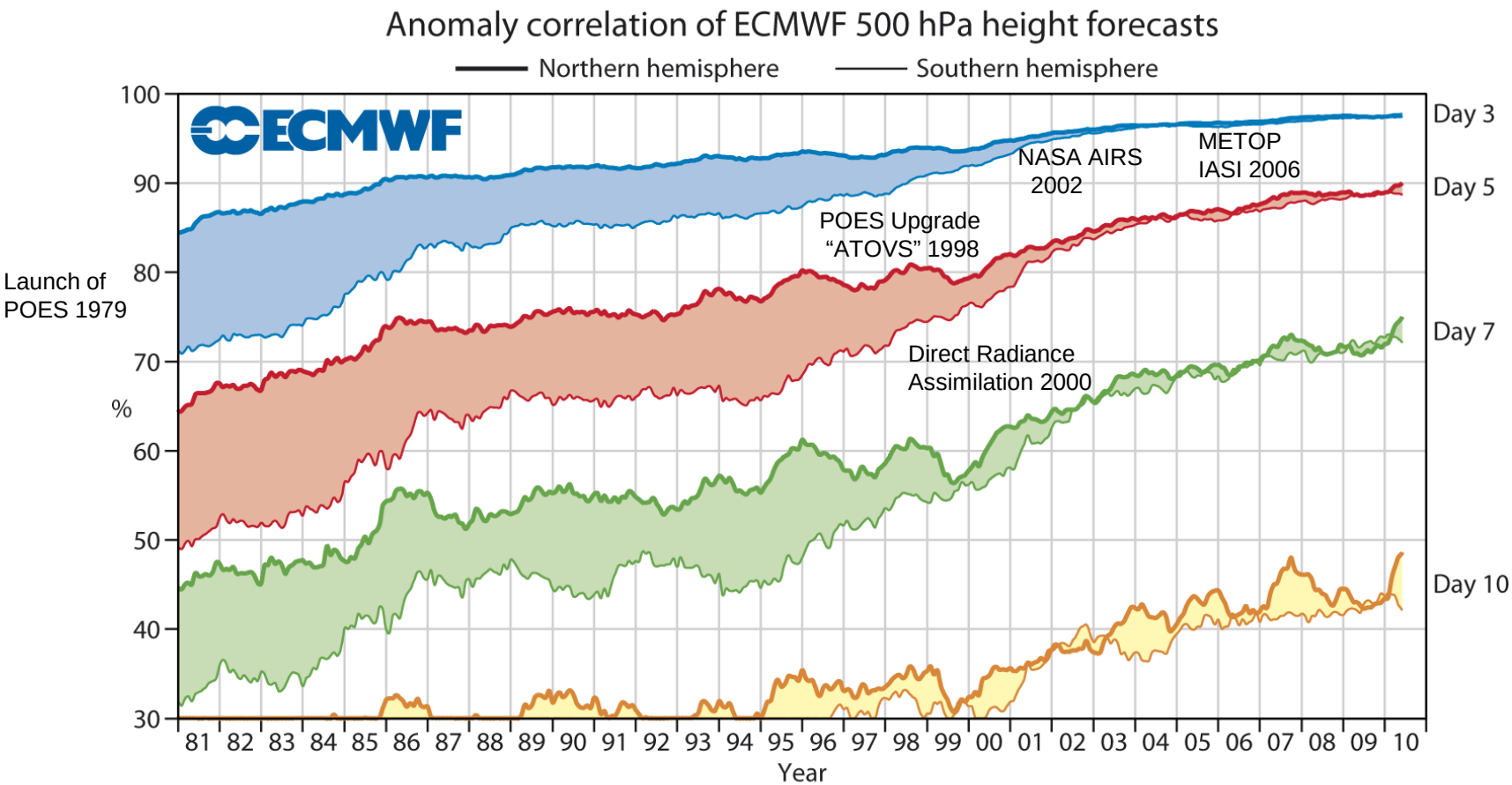
CrIS and ATMS provides continuity of essential atmospheric sounding information for weather forecasting

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



From ECMWF

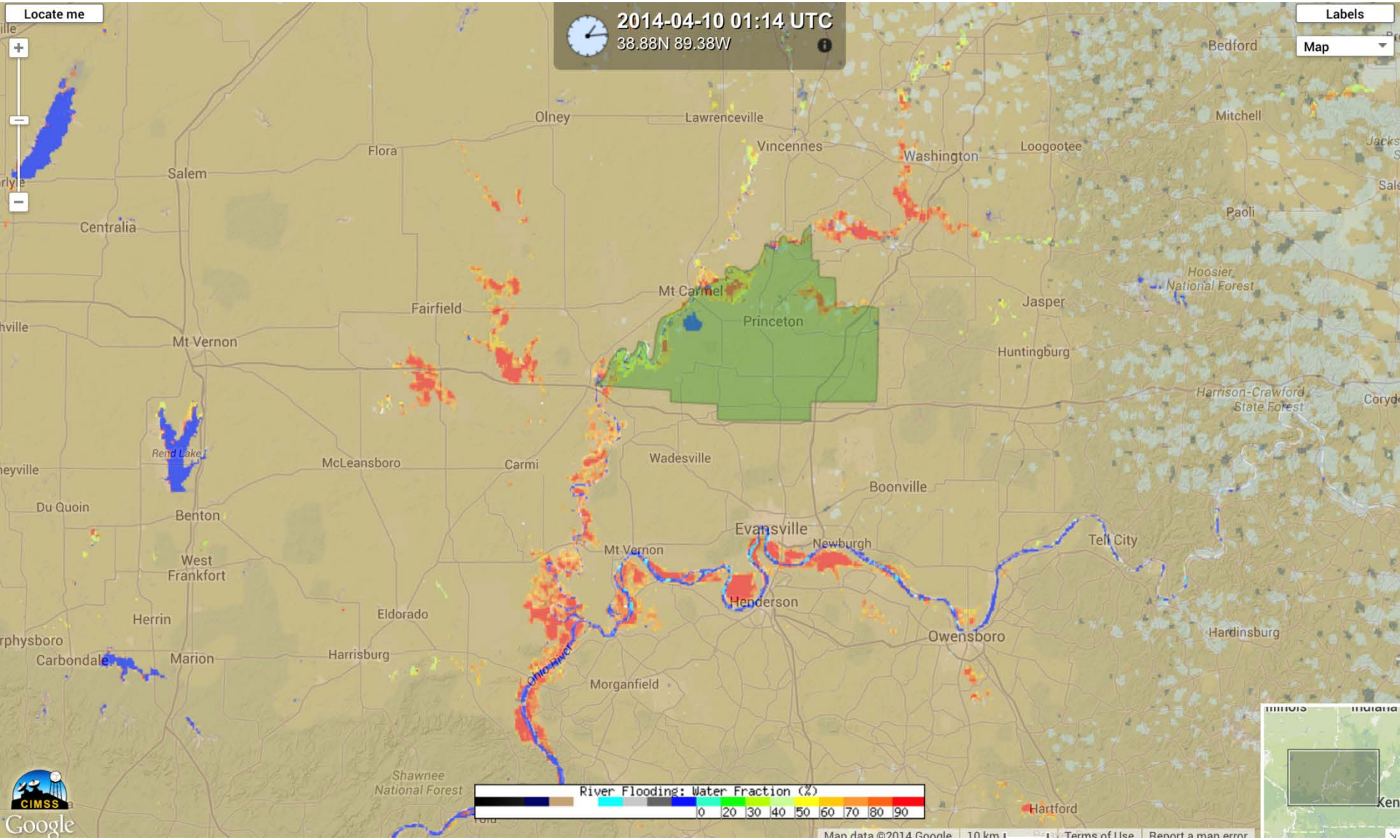
Good news - Forecast skills have improved significantly over the past 30 years



Courtesy of ECMWF. Adapted and extended from Simmons & Hollingsworth (2002)

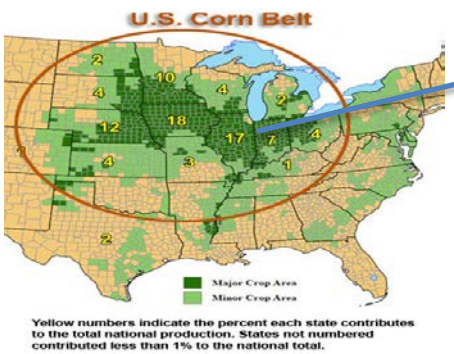
40

SNPP > CSPP > Browse Flood/Ice Products



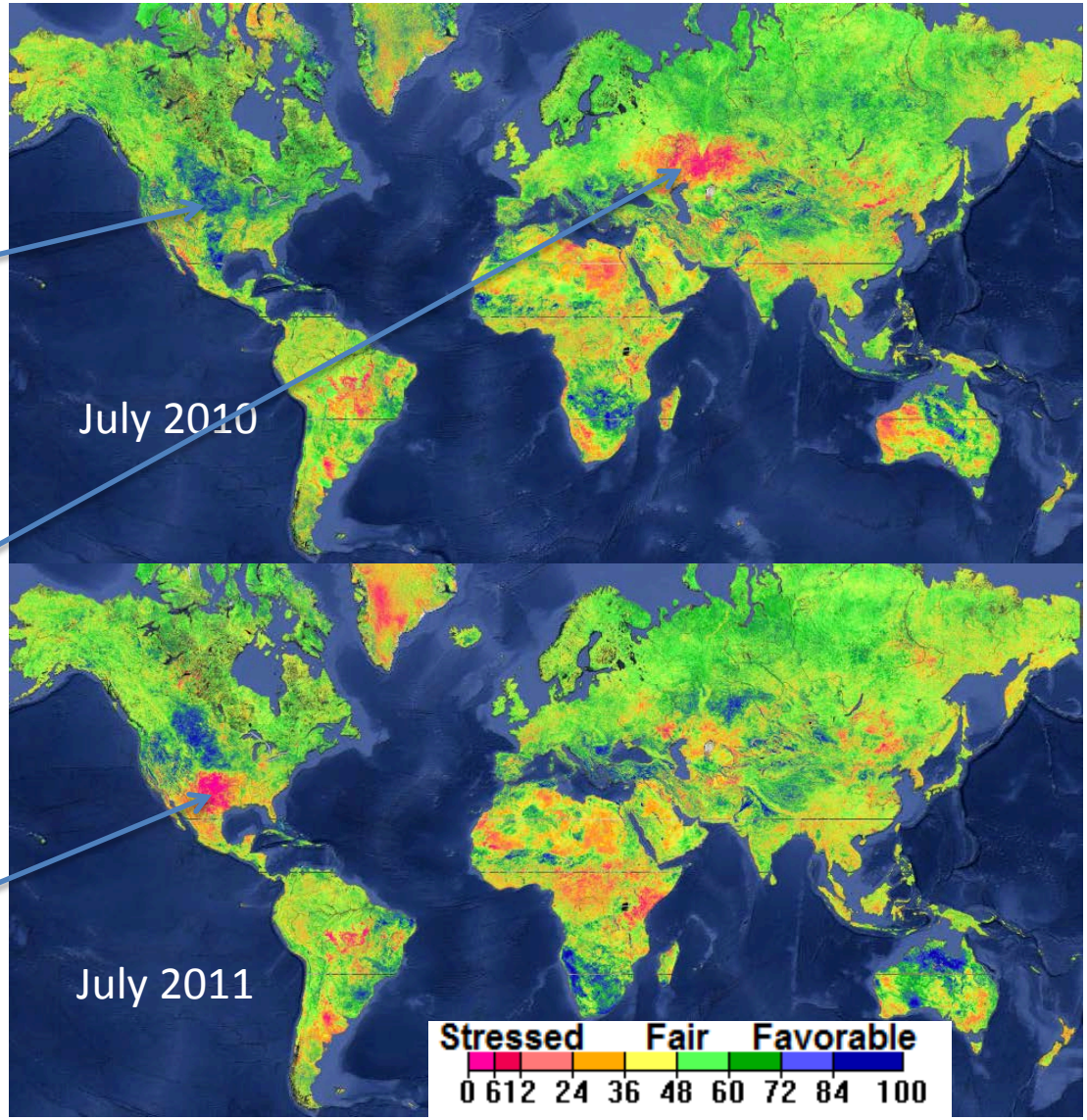
Vegetation Health from AVHRR

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.



Proving Ground Includes Risk Reduction

- **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

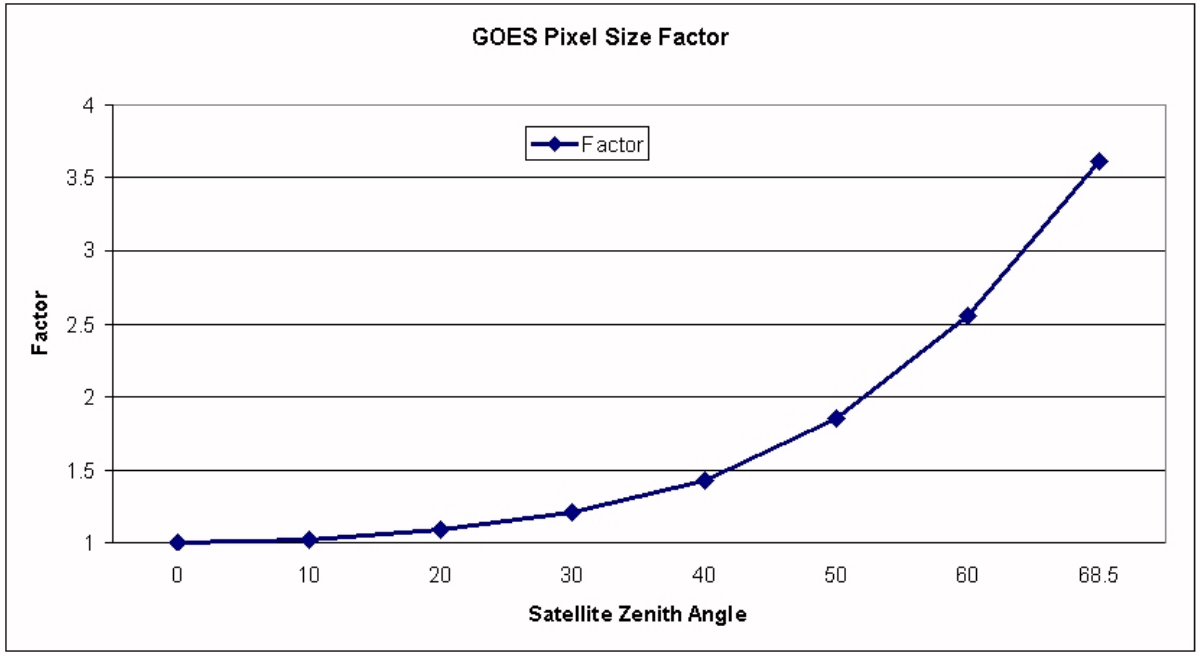
- **Risk Reduction**
  - Development of new research and applications to maximize the benefits of JPSS satellite data
    - Example - use of Day Night Band for improved fog and low visibility products at night, benefiting transportation industry.
  - Encourages fusion of data/information from multiple 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.

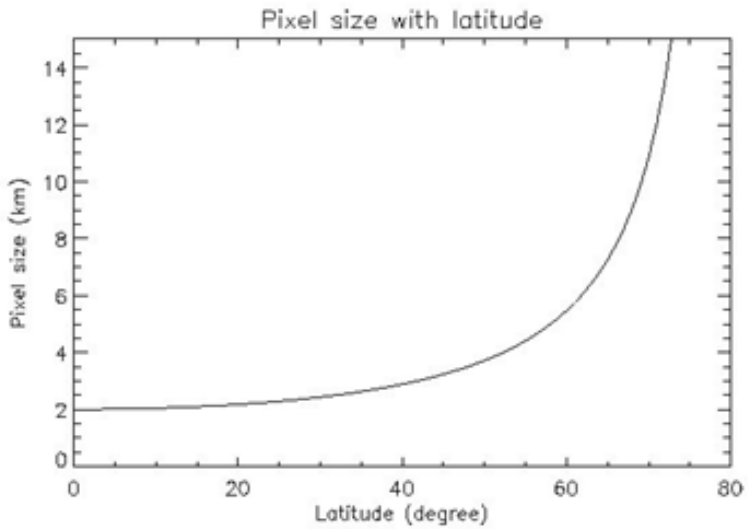
VIIRS Improvements From AVHRR: Radiometric properties

Greater spectral coverage with increased radiometric quality

VIIRS			MODIS Equivalent			AVHRR-3 Equivalent			ABI		
Band	Range (um)	HSR (m)	Band	Range	HSR	Band	Range	HSR	Band	Range	HSR
DNB	0.500 – 0.900	750				Low light capabilities					
M1	0.402 – 0.422	750	8	0.405 – 0.420	1000						
M2	0.436 – 0.454	750	9	0.438 – 0.448	1000						
M3	0.478 – 0.498	750	3 10	0.459 – 0.479 0.483 – 0.493	500 1000	Ocean Color, Aerosol			1	0.45-0.49	1000
M4	0.545 – 0.565	750	4 12	0.545 – 0.565 0.546 – 0.556	500 1000						
I1	0.600 – 0.680	375	1	0.620 – 0.670	250	1	0.572 – 0.703	1100	2	0.59-0.69	500
M5	0.662 – 0.682	750	13 14	0.662 – 0.672 0.673 – 0.683	1000 1000	1	0.572 – 0.703	1100			
M6	0.739 – 0.754	750	15	0.743 – 0.753	1000	Atm Correction					
I2	0.846 – 0.885	375	2	0.841 – 0.876	250	2	0.720 – 1.000	1100			
M7	0.846 – 0.885	750	16	0.862 – 0.877	1000	2	0.720 – 1.000	1100	3	0.846-0.885	1000
M8	1.230 – 1.250	750	5	SAME	500	Cloud Particle Size					
M9	1.371 – 1.386	750	26	1.360 – 1.390	1000	Thin Cirrus			4	1.371-1.386	2000
I3	1.580 – 1.640	375	6	1.628 – 1.652	500	Snow Map			5	1.580-1.640	2000
M10	1.580 – 1.640	750	6	1.628 – 1.652	500	3a	SAME	1100			
M11	2.225 – 2.275	750	7	2.105 – 2.155	500	Cloud			6	2.225-2.275	2000
I4	3.550 – 3.930	375	20	3.660 – 3.840	1000	3b	SAME	1100			
M12	3.660 – 3.840	750	20	SAME	1000	3b	3.550 – 3.930	1100	7	3.80-4.00	2000
M13	3.973 – 4.128	750	21 22 23	3.929 – 3.989 3.929 – 3.989 4.020 – 4.080	1000 1000 1000	SST, Fire					
M14	8.400 – 8.700	750	29	SAME	1000	Cloud Top Properties			11	8.3-8.7	2000
M15	10.263 – 11.263	750	31	10.780 – 11.280	1000	4	10.300 – 11.300	1100	13	10.1-10.6	2000
I5	10.500 – 12.400	375	31 32	10.780 – 11.280 11.770 – 12.270	1000 1000	4 5	10.300 – 11.300 11.500 – 12.500	1100 1100	14	10.8-11.6	2000
M16	11.538 – 12.488	750	32	11.770 – 12.270	1000	5	11.500 – 12.500	1100	15	11.8-12.8	2000

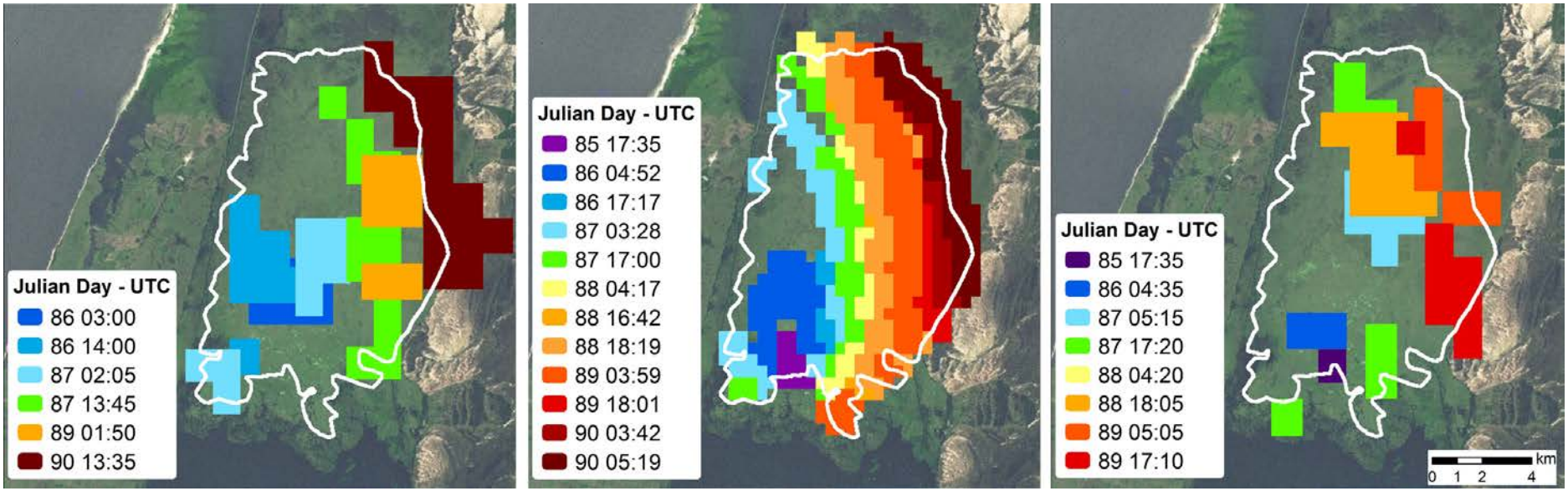
ABI has 5 additional bands to compensate no sounder – 3 water vapor, 1 ozone, 1 lower tropospheric temperature
MODIS has 10 additional temperature, water vapor and ozone channels


GOES Pixel Size Factor
Factor
4
3.5
3
2.5
2
1.5
1
0
10
20
30
40
50
60
68.5
Satellite Zenith Angle


Pixel size with latitude
Pixel size (km)
14
12
10
8
6
4
2
0
0
20
40
60
80
Latitude (degree)

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

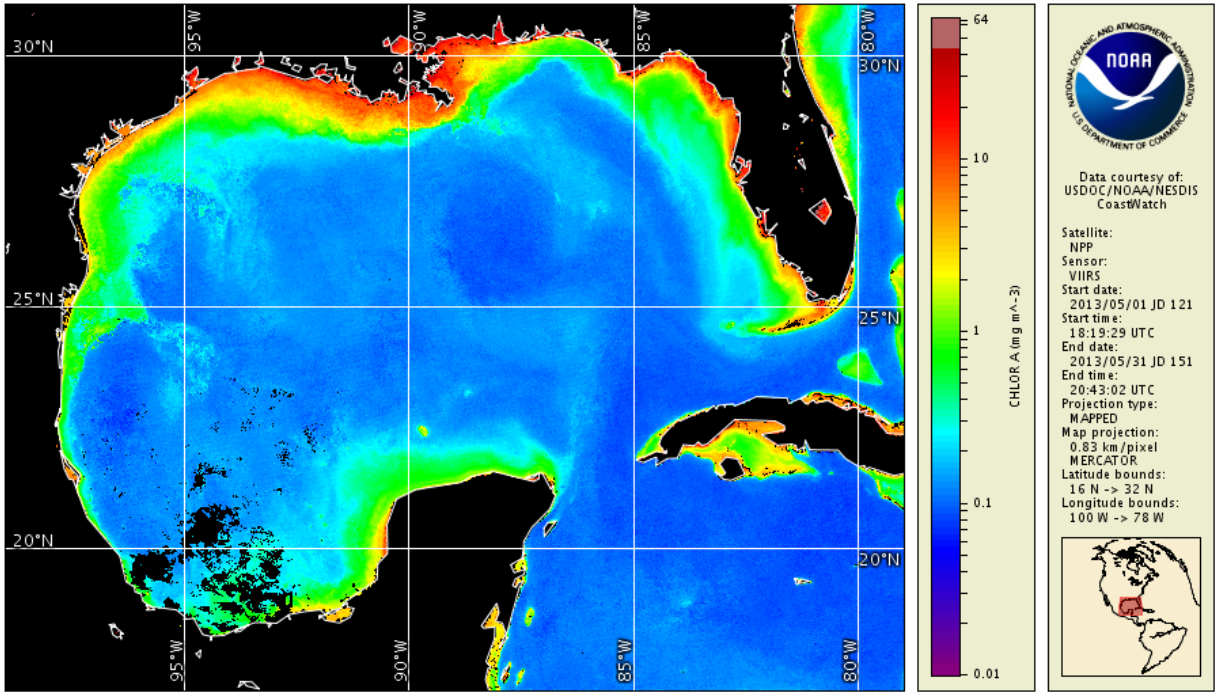
Terra/MODIS 1km **S-NPP/VIIRS 375m** **Aqua/MODIS 1km**



Wildfire in southern Brazil, March/2013

Ivan Csiszar and Wilfred Shroeder

VIIRS Ocean Color is used by NOAA to monitor health of ocean, coastal and large lake ecosystems



Credit: NOAA Coastwatch

The New York Times **Environment** April 6, 2013

Florida Algae Bloom Leads to Record Manatee Deaths

A manatee off Peanut Island, Fla.

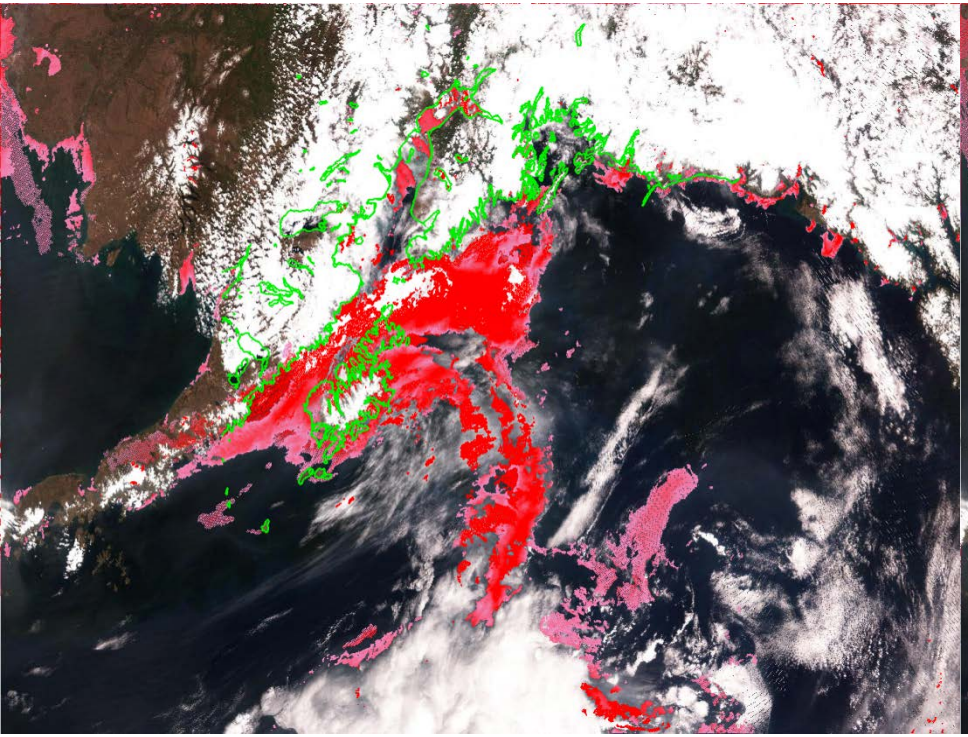
The state's annual red tide affects a wide range of aquatic animals and can cause problems in people. The algae contain a nerve poison known as brevetoxin that is not only found underwater but that is also blown through the air when waves break open the algae's outer casing.

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.

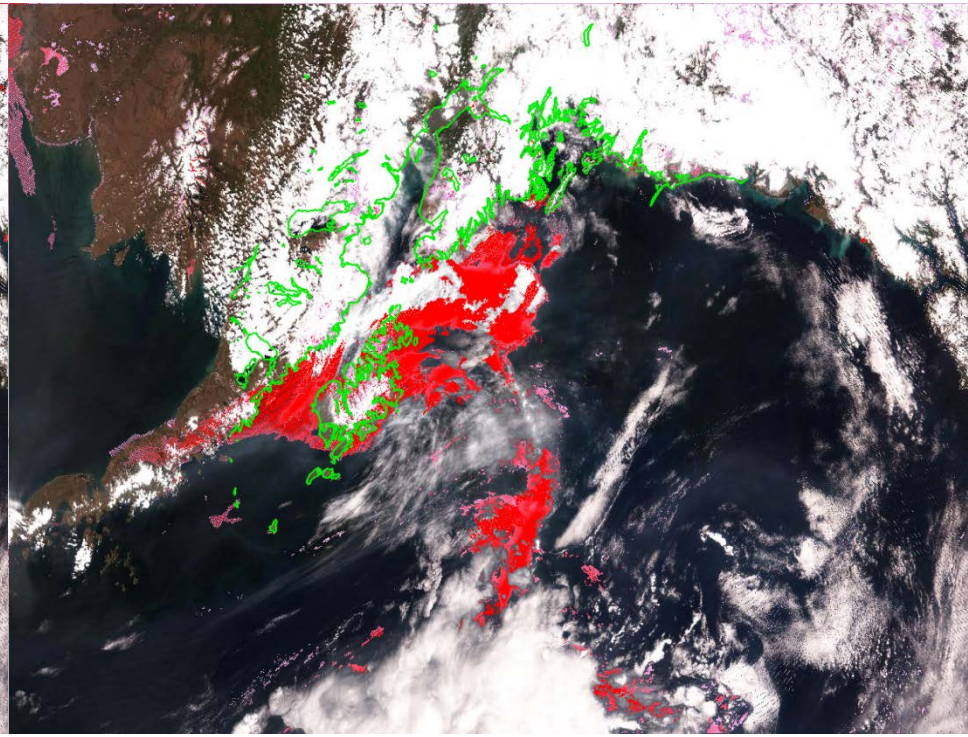
Residents and tourists regularly have respiratory problems after inhaling brevetoxins while strolling on beaches near red tides. People can also become ill after eating oysters and clams that have absorbed the toxin.

VIIRS Smoke Detection from Funny River Fire Southern Alaska on 05/22/2014

JPSS RR Algorithm



GOES-R ABI algorithm



Operational Demonstration Work (ODW) Plans

- **A ODW plan is for selected JPSS Proving Ground and Risk Reduction (PGRR) initiatives that have:**
  - Strong user support for transitioning these capabilities from research to operations
  - Sufficient JPSS and user resources to ensure this transition is timely and effective
- **This Plan would document actions and milestones for the transition of PGRR Capabilities**
- **This Plan would provide oversight and reporting mechanisms to assist in effective communication of activities**
- **Inaugural ODW plan established for River Ice and Flooding Product Initiative supporting the Alaska Pacific, North Central, and Ohio River Forecast Centers.**