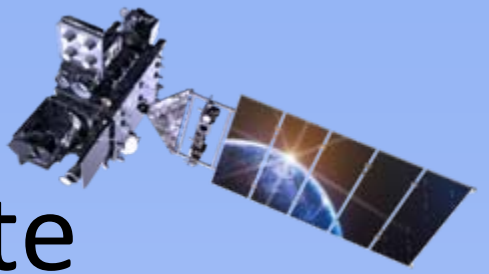


NOAA Satellite Update and McIDAS at ESPC

Matthew Seybold
Satellite User Services Coordinator
NESDIS Operations (OSPO)

2012 McIDAS Users Group Meeting – Madison, WI
May 7-8, 2012

Talk Collaborators

- Natalia Donoho – User Services Co-Coordinator
- Thomas Renkevens – SPSD Deputy Division Chief
- Tim Schmit – NESDIS/StAR GOES Senior Scientist
- Jessica Staude – SSAI GOES & McIDAS Guru
- Bonnie Morgan – GOES Product Area Lead
- Mark Ruminski – SAB Fire Team Lead & All Desks
- Gregg Gallina – SAB COOP Team Lead & All Desks
- Tony Salemi – SAB Ash, Fire, Oil, Tropical Desks
- Russ Lancaster – SSAI Senior Systems Analyst

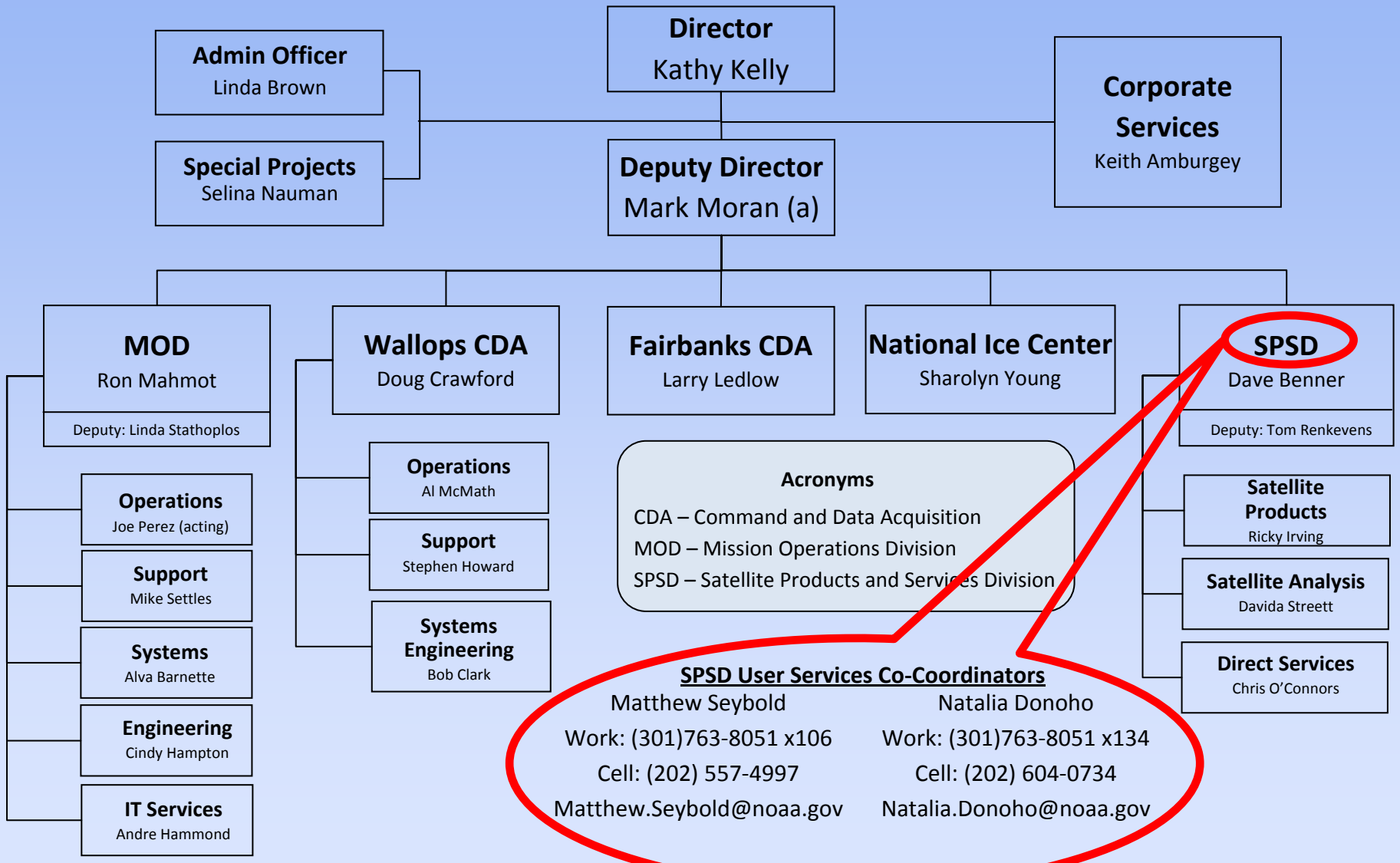
I needed and received a lot of help!

Talk Outline

- OSPO Overview
- Operational Satellite Status
  - GOES, POES, NPP, Non-NOAA
- Future GEO Plans
  - Meteosat, Himawari
- Future LEO Plans
  - METOP-B, Suzuki
- Anomalies, Outages, and Retirements
  - Envisat Failure
  - GOES-7 De-Orbit
  - Missing GOES-15 scans in AWIPS
  - GOES-15 Imager Calibration
  - GOES-15 Yaw Flip Maneuver
- Maneuvers, Eclipse, Stray Light, Schedules
- McIDAS in ESPC
- New and Enhanced Products & Services
- Data Access Policy & CRM

Command & Control & NSOF

NESDIS Office of Satellite and Product Operations (OSPO)



NESDIS Office of Satellite and Product Operations (OSPO)

Operates the Nation's 17 environmental satellites

- 4 Geostationary (GOES) by NOAA
- 5 Polar-Orbiting (POES) by NOAA
- 6 Defense Meteorological Satellite Program (DMSP) operated by NOAA
- 1 OSTM Jason-2 (Ocean Surface Topography Mission) Joint NOAA, NASA, CNES, EUMETSAT effort
- 1 Suomi National Polar-orbiting Partnership (NPP) by NOAA & NASA

Locations at four facilities housing 700 people

- NOAA Satellite Operations Facility (NSOF) in Suitland, MD - $5B facility operating $5B of satellites
- World Weather Building (WWB) in Camp Springs, MD
- Command and Data Acquisition Stations at Fairbanks, AK and Wallops, VA

NSOF

WWB

NESDIS Office of Satellite and Product Operations (OSPO)

Key Roles

- Ground System Command & Control, Ingest, Generation, and Distribution
- Pre-Launch and Post-Launch Testing
- Operational Testing, Validation, and Verification
- User Readiness for Broadcast Services and Product Delivery
- Long-Term Continuity of Products and Services

Fairbanks CDA

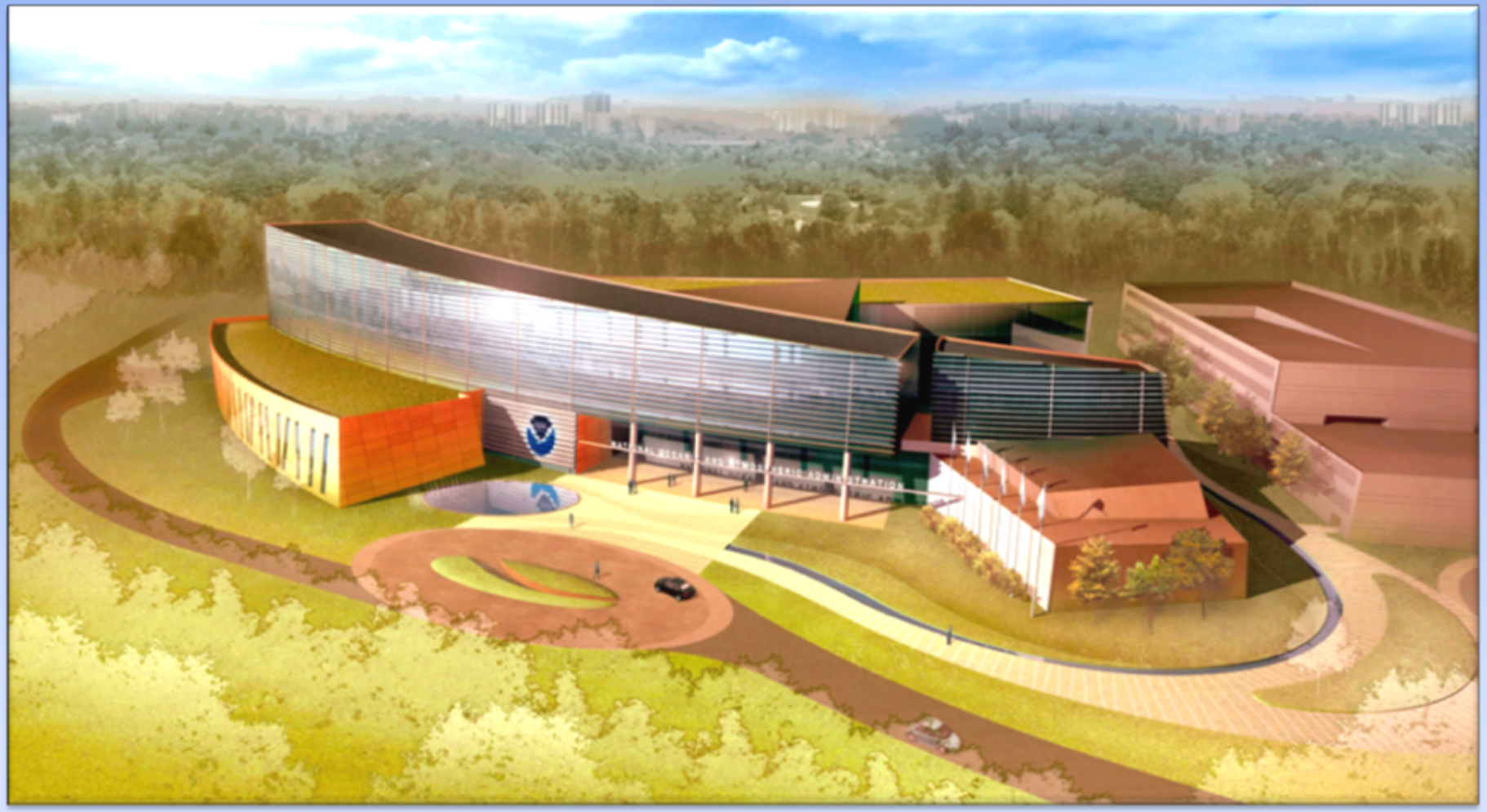
Interpret products and manage services including GVAR, LRIT, SARSAT, EMWIN, DCS, Argos, Geonetcast

Issue critical environmental data and imagery used for tracking and predicting

- Hurricanes, Tornadoes, Floods
- Wild Fire, Ash Plumes, Vegetation
- Ocean Color, Sea Surface Temperature

Wallops CDA

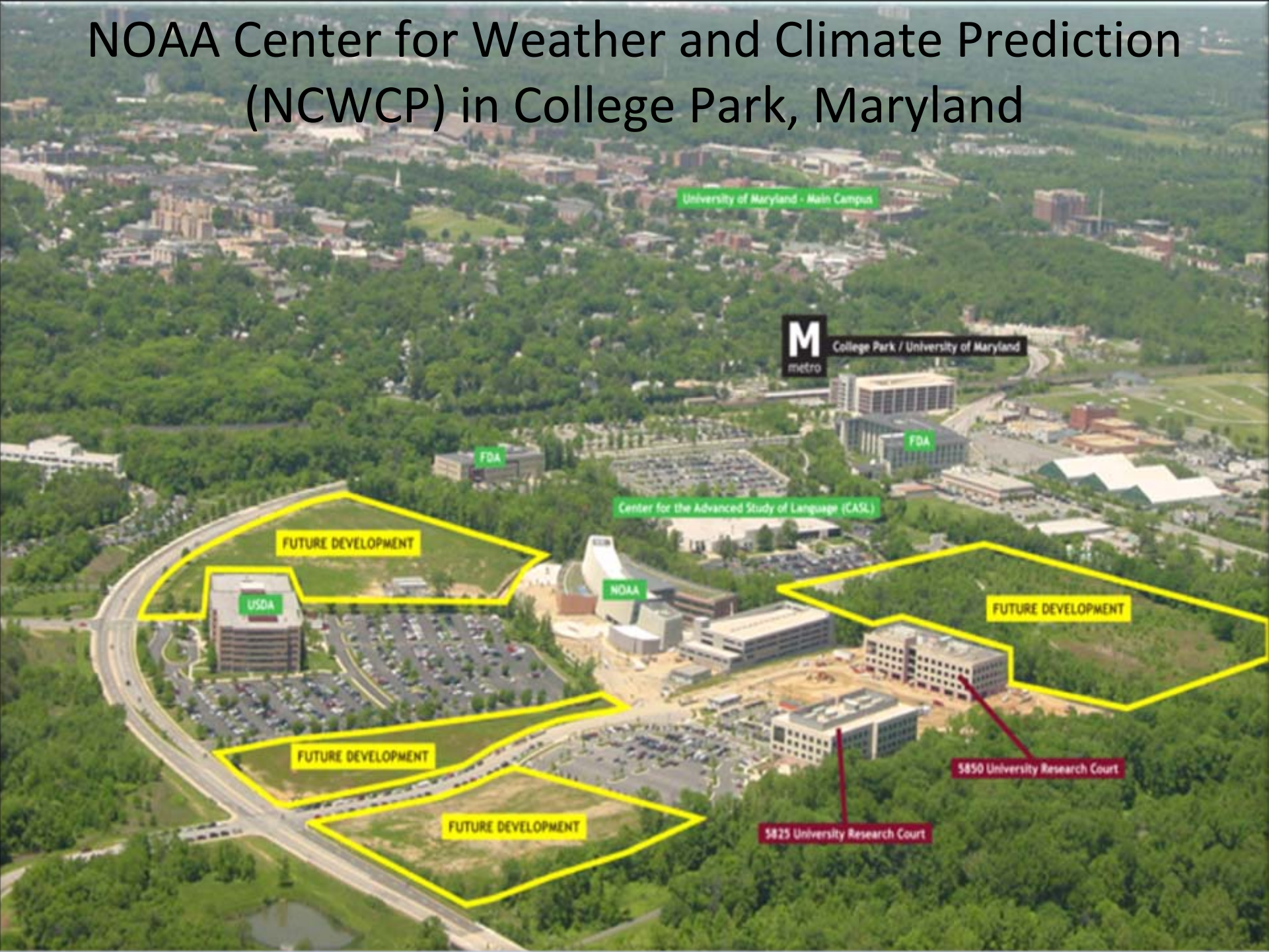
NOAA Center for Weather and Climate Prediction (NCWCP) in College Park, Maryland



Home to NWS / NCEP (NCO, EMC, HPC); NWS / ARL; NESDIS / STaR & OSPO

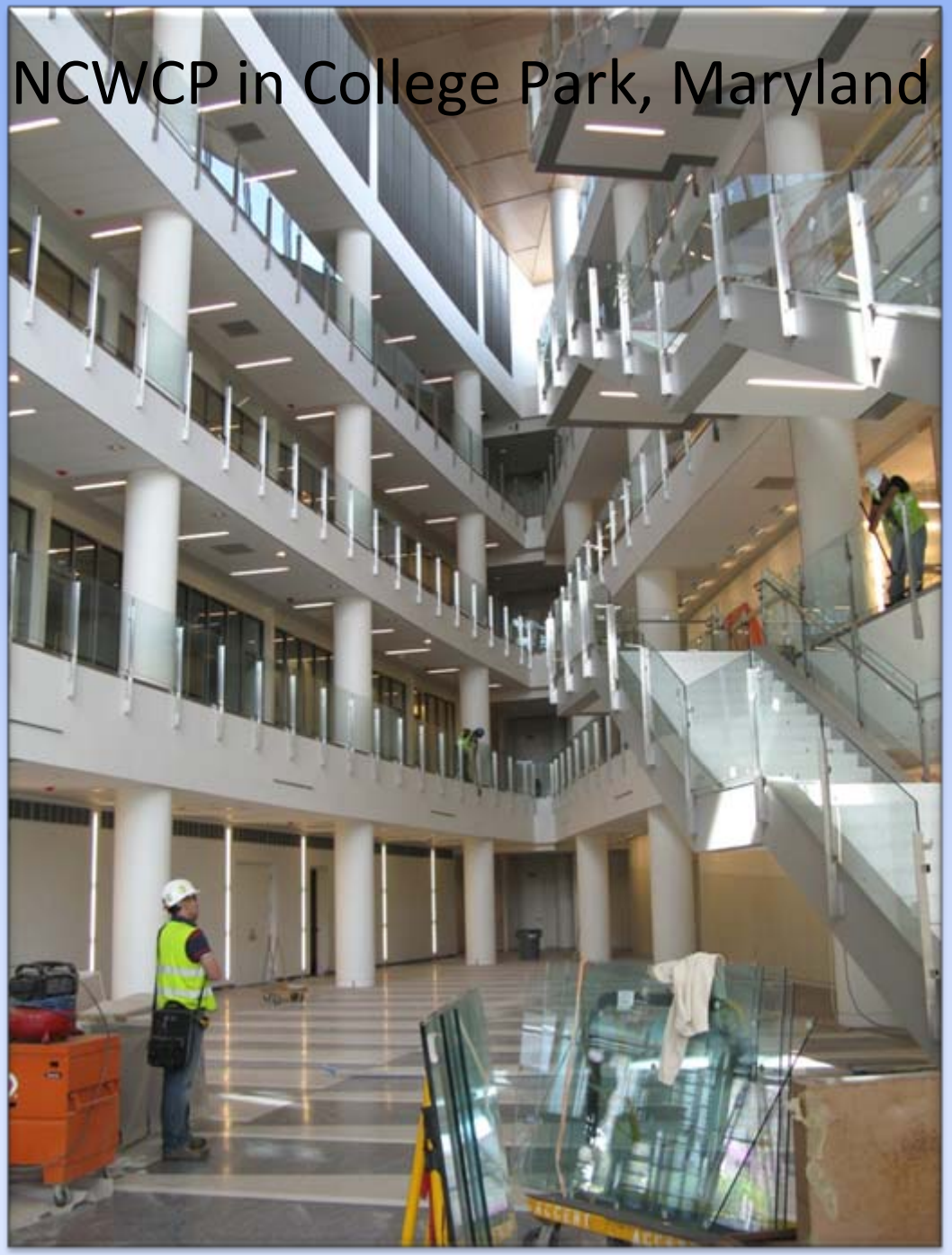
Public access photo log: http://www.ncep.noaa.gov/news/ncwcp/

NOAA Center for Weather and Climate Prediction (NCWCP) in College Park, Maryland

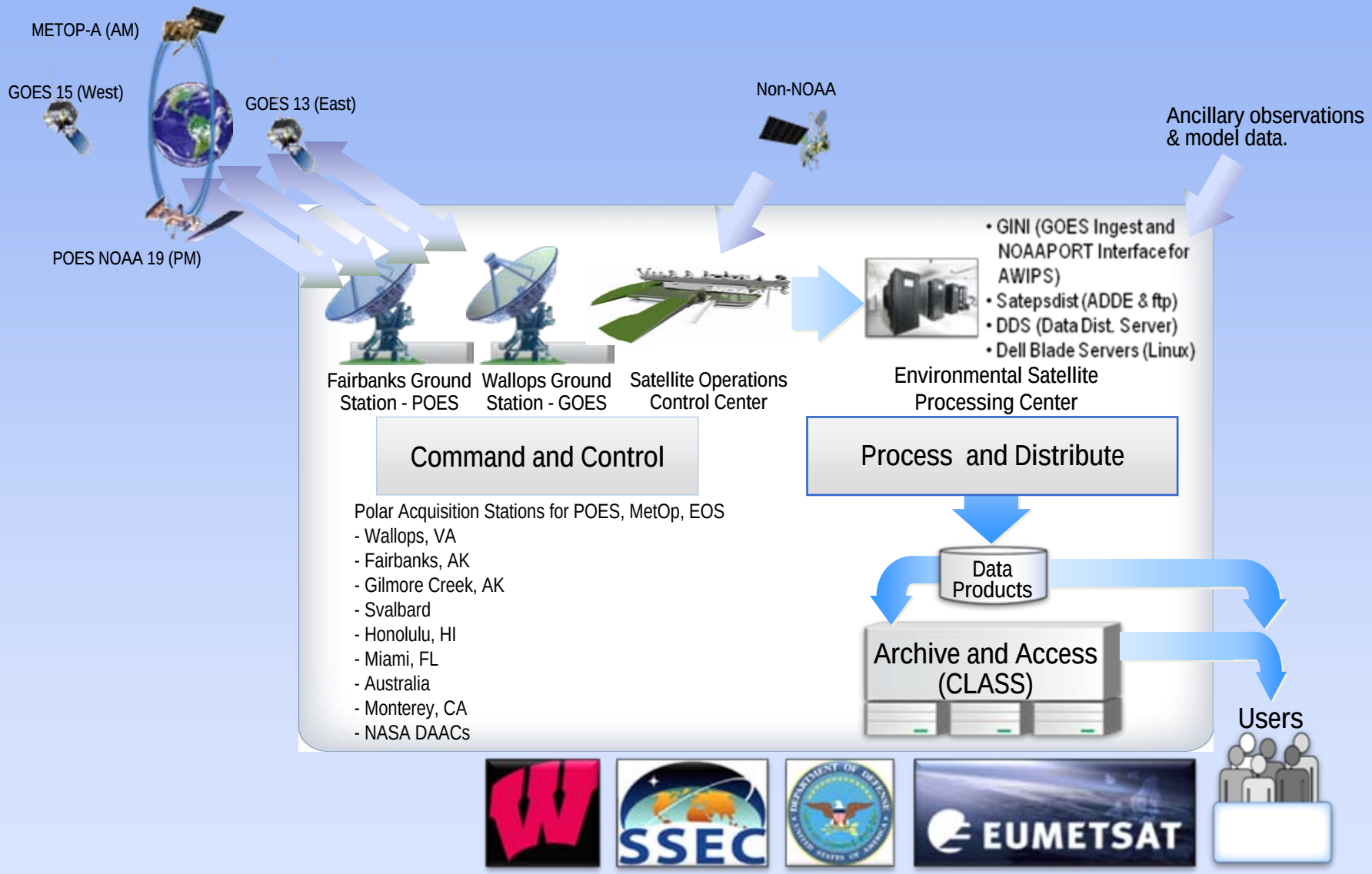



NCWCP in College Park, Maryland

NCWCP in College Park, Maryland



Satellite Information Flow



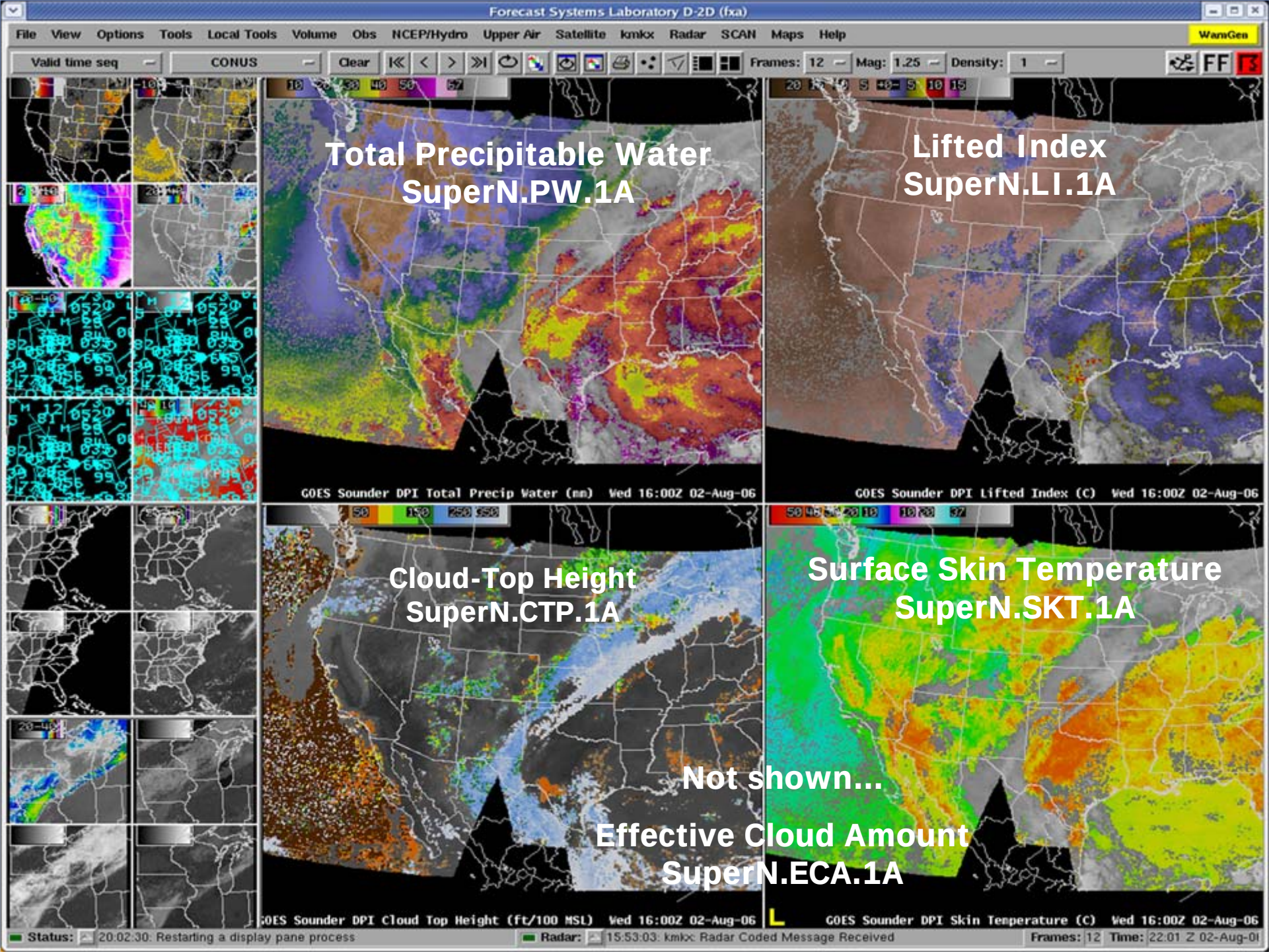
GOES Data Delivery Summary

- Broadcast Services – GVAR, LRIT
- Various Websites
- GINI / NOAAPORT – for AWIPS display
- DDS – mostly polar data and products, some GOES derived products
- SATEPSDIST
  - Geostationary satellite data is ingested on a Satellite Data Ingestor (SDI), converted to McIDAS format and placed on a server. This data can then be transferred to the various workstations via McIDAS ADDE software

Data	NSOF Server	ADDE Name
Derived Products	SATEPSDIST1e	DPD
GOES-E	SATEPSDIST2e	GER
GOES-W	SATEPSDIST3e	GWR
Polar	SATEPSDIST4e	PLR
Model data	SATEPSDIST5	MOD
Global Mosaic 5 Sat. Comp.	SATEPSDIST6	MOS
MSG/MET	SATEPSDIST6e	MSG / MET
FY-2D from SSEC	SATEPSDIST7	FY2D
MTSAT	SATEPSDIST7e	MTS
Select requested data	SATEPSANONE	PUB
Surface/Ship Buoy/RAOBs	FOS2	FOS (Family of Services)

Sample of GINI and AWIPS Products

- Created and distributed through GINI
  - Imagery
  - Sounder “images”
- Created outside of GINI, but distributed through GINI
  - Five satellite composite files (VIS, IR, WV)
  - Sounder Derived Products (TPW, LI, CTP, ECA, Skin-T)
  - Imager Derived Products (LCB)
  - Polar (POES and DMSP) microwave derived products (TPW, Rain Rate, blended TPW)
  - SSM/I AMSU Blended RR products
- Created outside of GINI, distributed outside of GINI, but appearing within AWIPS
  - Precipitation Autoestimator (PG on satepsdist1, PD from DDS to AWIPS)
  - GOES BUFR and POES BUFR Soundings
  - High Density Winds
  - ASCAT
  - Text Messages: SPENES, VAA, Tropical Bulletins, Help Desk messages
  - ASOS Satellite Cloud Products


Forecast Systems Laboratory D-2D (fxa)
File View Options Tools Local Tools Volume Obs NCEP/Hydro Upper Air Satellite kmkx Radar SCAN Maps Help
WarnGen
Valid time seq
CONUS
Clear
Frames: 12
Mag: 1.25
Density: 1
FF
Total Precipitable Water
SuperN.PW.1A
GOES Sounder DPI Total Precip Water (mm) Wed 16:00Z 02-Aug-06
Lifted Index
SuperN.LI.1A
GOES Sounder DPI Lifted Index (C) Wed 16:00Z 02-Aug-06
Cloud-Top Height
SuperN.CTP.1A
GOES Sounder DPI Cloud Top Height (ft/100 MSL) Wed 16:00Z 02-Aug-06
Surface Skin Temperature
SuperN.SKT.1A
GOES Sounder DPI Skin Temperature (C) Wed 16:00Z 02-Aug-06
Not shown...
Effective Cloud Amount
SuperN.ECA.1A
Status: 20:02:30: Restarting a display pane process
Radar: 15:53:03: kmkx Radar Coded Message Received
Frames: 12 Time: 22:01 Z 02-Aug-06

Direct Service Operations

Emergency Managers Weather Information Network (EMWIN):

- NOAA satellites relay critical information to users across the country.
  http://www.weather.gov/emwin/index.htm

Low Resolution Image Transmission (LRIT):

- NOAA satellites are used to relay satellite and weather products to users in remote locations, that do not have landlines or internet connections.
  http://www.noaasis.noaa.gov/LRIT/

Data Collection:

- NOAA satellites are used to collect and relay scientific data from around the globe.
  http://www.noaasis.noaa.gov/DCS/ http://www.noaasis.noaa.gov/ARGOS/

Search and Rescue:

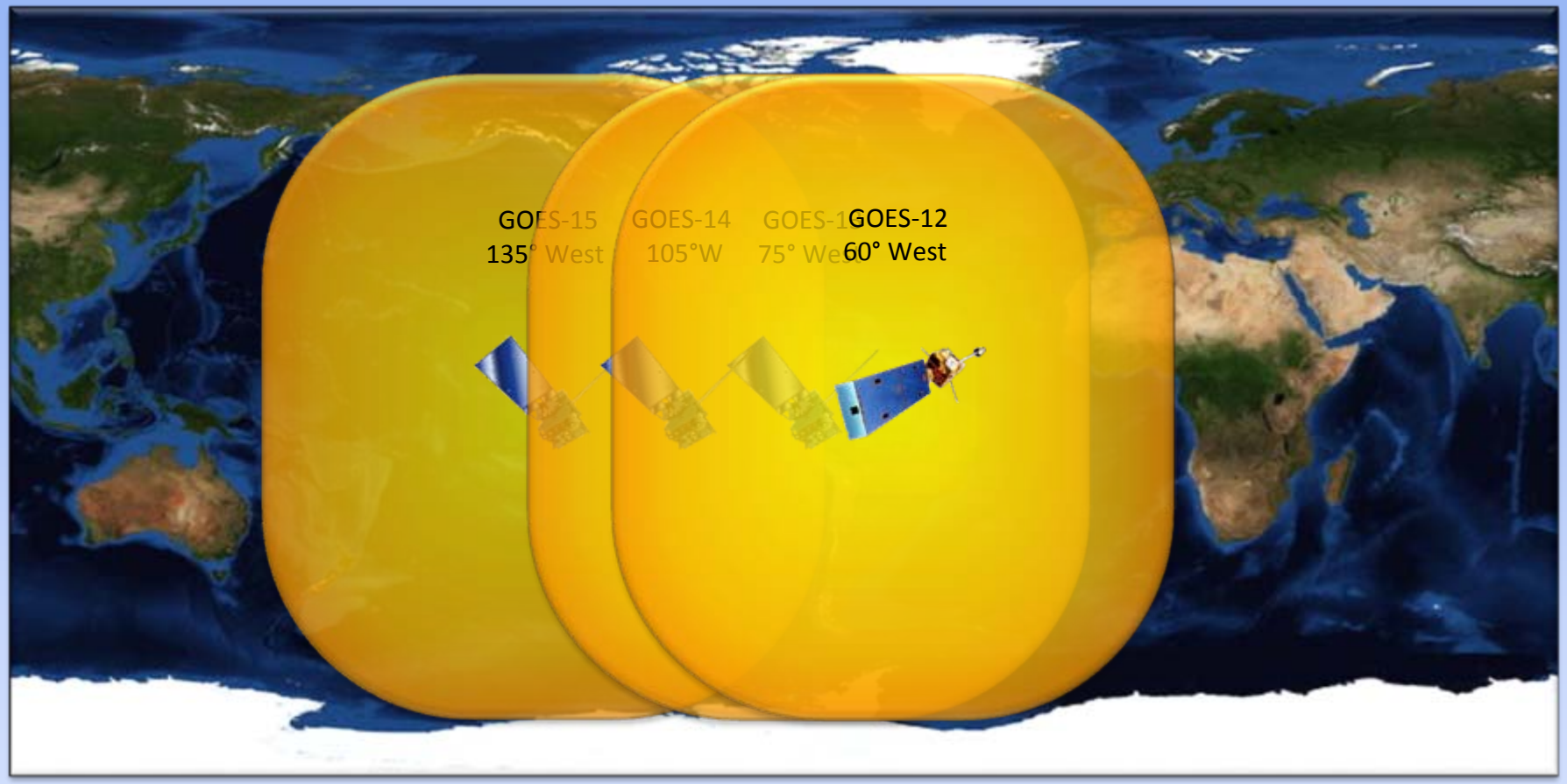
- NOAA satellites are used to relay distress alerts from aviators, mariners and land-based users
  http://www.sarsat.noaa.gov/

Geonetcast Americas:

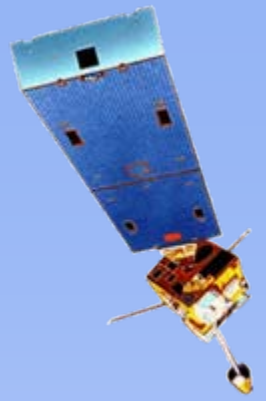
- Data from NOAA for diverse societal benefits - agriculture, energy, health, climate, weather, disaster mitigation, biodiversity, water resources, and ecosystems.
  http://www.geonetcastamericas.noaa.gov/index.html

Operational Satellite Status

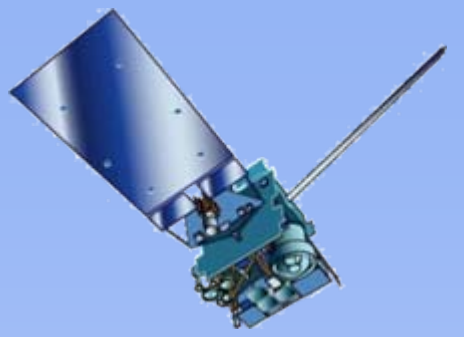
GOES Constellation



- Primary source of data for short term forecasting, especially of severe weather such as tropical storms
- Continuity of Operations since 1974
- GOES 13/14/15 improvements over GOES 10/11/12
  - Spring and fall eclipse outages are avoided by larger onboard batteries
  - Improved navigation and radiometrics

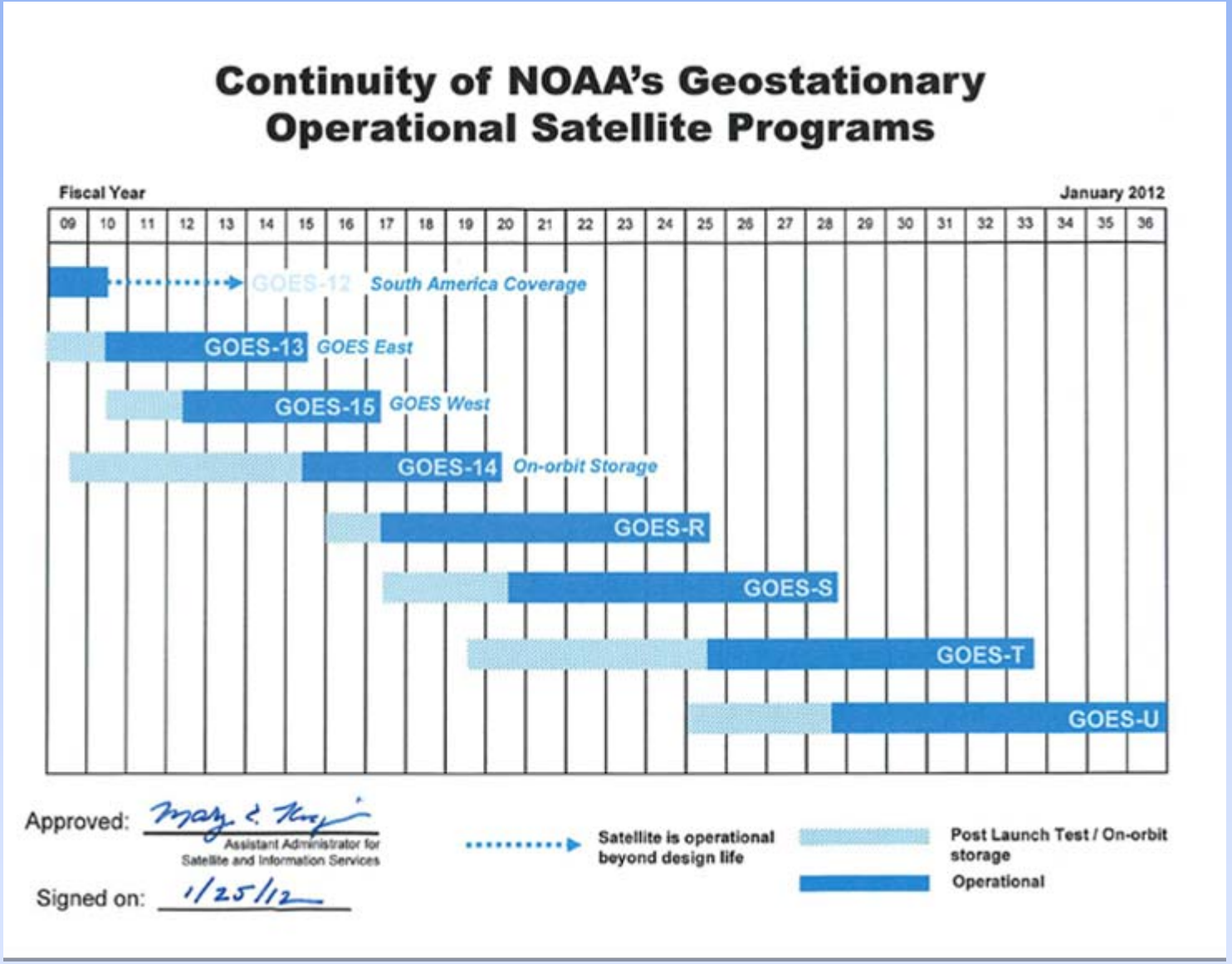


…just in case…
GOES-West Transition



- In December, 2011 GOES-15 replaced GOES-11 at GOES-West
- GOES-11 was decommissioned to a higher “retirement” orbit
- GOES-15 sounder requires a yaw flip twice per year, creating 30 additional hours of unstable data
- GVAR format (version 3) for GOES-15 and GOES-14 is different from earlier GOES satellites
  - The data for the 8th detector has been added to block 0
  - Instrument Factory Coefficients are located in Block 11
  - Instrument Nadir and Detector Offsets located in Block 11 but are also located in Block 0
  - Detector Offsets located in block 0, words 7933 to 8028
  - Instrument Nadir located in block 0, words 8033 to 8038

GOES Flyout Schedule



http://www.nesdis.noaa.gov/FlyoutSchedules.html http://www.goes-r.gov

GOES Status (May 1, 2012)

http://www.oso.noaa.gov/goesstatus

Payload Instrument	GOES-12 (S. America) Launch: Jul 01 Activation: Apr 03	GOES-13 (East) Launch: May 06 Activation: Apr 10	GOES-14 (Storage) Launch: Jun 09 Activation:	GOES-15 (West) Launch: Mar 10 Activation: Dec 11
Imager	Y(1)	G	G	G
Sounder	Y (2)	G	G	Y (11)
Energetic Particle Sensor (EPS)	Y (3)	G	G	G
Magnetometers	G	G	G	G
High Energy Proton and Alpha Detector (HEPAD)	G	G	G	G
X-Ray Sensor (XRS)	Y (4)	R (8)	G	G
Solar X-Ray Imager (SXI)	R (5)	Y (9)	G	S/C (12)
Spacecraft Subsystems				
Telemetry, Command & Control	G	G	G	G
Attitude and Orbit Control	S/C (14)	G	G	G
Inclination Control	R (6)	G	G	G
Propulsion	Y (7)	S/C (10)	G	G
Mechanisms	G	G	G	G
Electrical Power	G	G	G	G
Thermal Control	G	G	G	G
Communications Payloads	G	G	G	S/C (13)

Key

Operational

G

Spacecraft issues but no user impacts

S/C

Operational with limitations

Y

Non-operational

R

GOES Status (May 1, 2012)

http://www.oso.noaa.gov/goesstatus

Payload Instrument	GOES-12 (S. America) Launch: Jul 01 Activation: Apr 03	GOES-13 (East) Launch: May 06	GOES-14 (Storage) Launch: Jun 09	GOES-15 (West) Launch: Mar 10
Imager	Y(1)			
Sounder				
Energetic Particle Sensor (EPS)				
Magnetometers				
High Energy Proton and Alpha Detector (HEPAD)				
X-Ray Sensor (XRS)				
Solar X-Ray Imager (SXI)				
Spacecraft Subsystems				
Telemetry, Command & Control	G			
Attitude and Orbit Control	S/C (14)			
Inclination Control	R (6)			
Propulsion	Y (7)			
Mechanisms	G			
Electrical Power	G			
Thermal Control	G			
Communications Payloads	G			

GOES-12 Imager Cycle Slip Occurs periodically. 2 ted or lost for each cycle pseudo-telemetry to quick correction response.

GOES-15 Sounder temperature control blanket is raised. Yaw flip at Equinox to keep Sun angle below cooler plane. Data outage and degraded products during each yaw flip maneuver and 28 hours of INR recovery period.

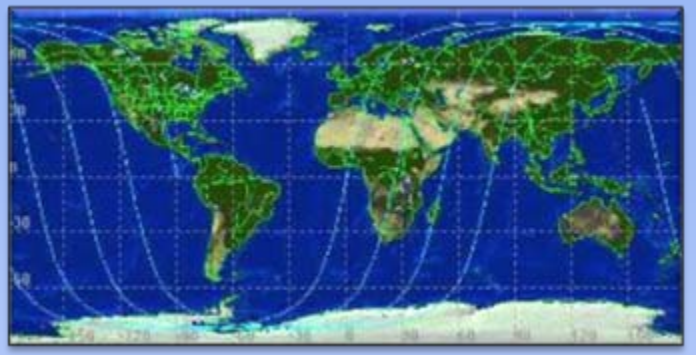
X-Ray Sensor Failed. space measurements lected.

No fuel remains for inclination control maneuvers. Code was loaded to mitigate image motion at slightly inclined orbit. XGOHI (eXtended GOES High Inclination.) Users should expect a 4 minute delay from the time actually imaged. As with the past GOES-10, users should also expect if there is a frame break during an image that the rest of the image will be lost. Without XGOHI, the growing satellite inclination would continue to cause loops with an ever increasing "wobble".

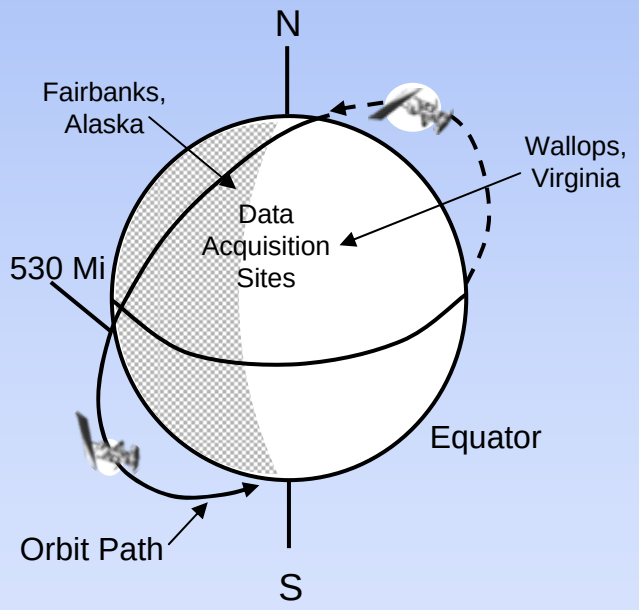
POES Constellation

10 am Orbit (Metop-A)

2 pm Orbit (NOAA-19)

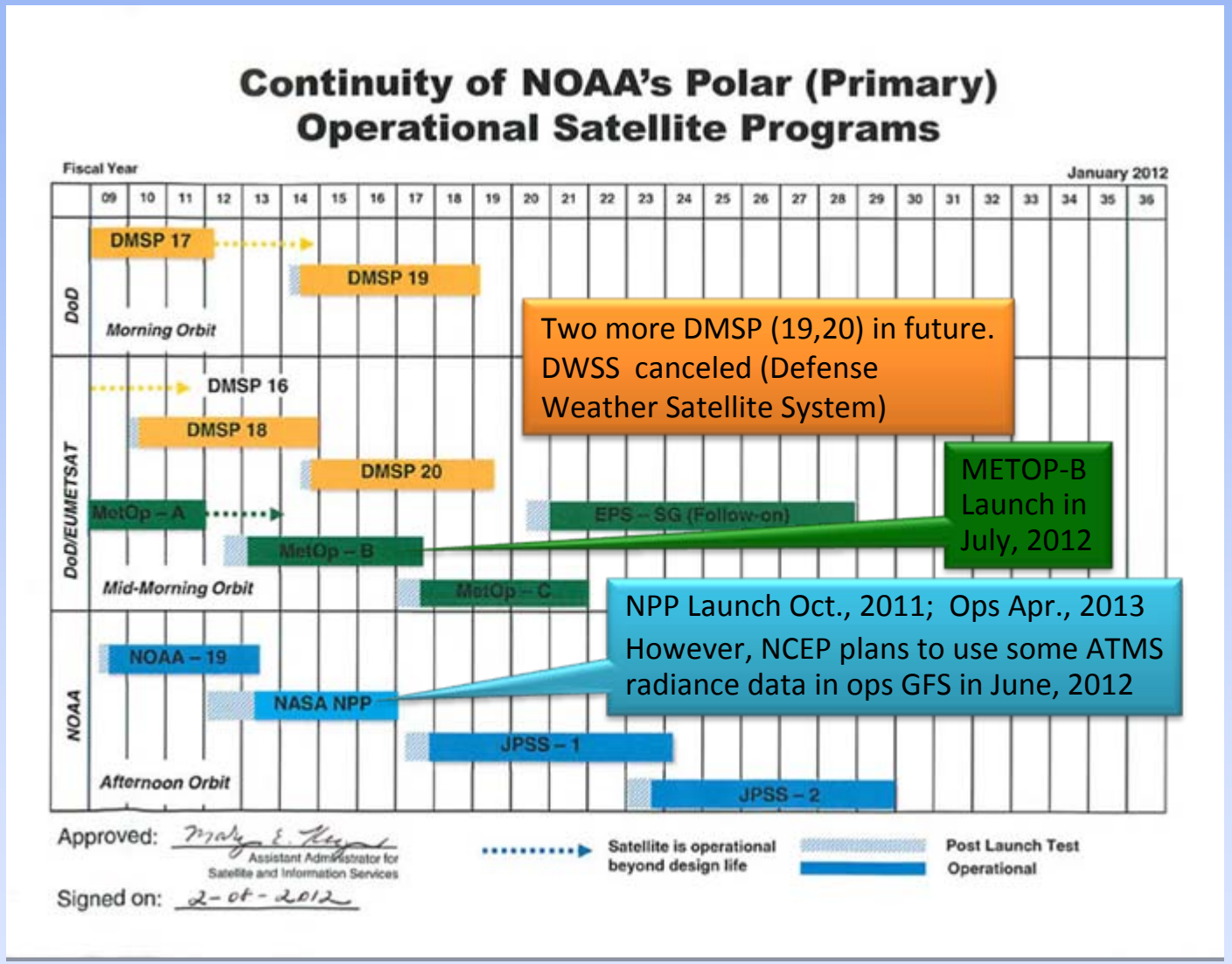


- Two polar operational satellites; one in morning and one in afternoon orbit. Each orbit is 102 minutes
- Since May 2007, NOAA using EUMETSAT satellite operationally for mid-morning orbit through NOAA/EUMETSAT partnership
- Each satellite provides world-wide coverage every 12 hours (6-hour global sampling for the pair)
- Directly broadcasts data to users worldwide
- Continuity of operations since early 1960s



- Primary source of data for longer term weather prediction, global environmental monitoring, and long-term predictions

POES Flyout Schedule



POES Status (May 1, 2012)

http://www.oso.noaa.gov/poesstatus/index.asp

Operational	G
Spacecraft Issue but no User Impact	S/C
Operational with Limitation	Y
Non-Operational	R
Not Applicable	N/A

Spacecraft Subsystems	METOP-A	NOAA-19	NOAA-18	NOAA-17	NOAA-16	NOAA-15
Launch Date	Oct 2006	Feb 2009	May 2005	Jun 2002	Sep 2000	May 1998
Operational Date	May 2007	Jun 2009	Aug 2005	Oct 2002	Mar 2001	Dec 1998
Mission Data Category	Primary (AM)	Primary (PM)	Secondary (PM)	Secondary (AM)	Secondary (PM)	Secondary (AM)
Payload Instruments						
AVHRR	G	G	G	R (11)	Y(13)	Y(20)
HIRS	G	G	Y (3)	G	Y(14)	R (6)
AMSU-A1	Y(26)	G	G	R (4)	Y(15)	Y(21)
AMSU-A2	G	G	G	G	G	
AMSU-B	N/A	N/A	N/A	Y (9)	G	R (12)
MHS	G	Y (8)	G	N/A	N/A	N/A
SEM	G	G	G	G	G	G
SBUV	N/A	S/C (9)	G	G	Y(16)	N/A
Spacecraft Subsystems						
Telemetry, Command & Control	G	G	G	G	G	G
ADACS	G	G	Y (7)	G	Y(17)	Y(10)
EPS	G	G	G	Y(25)	G	G
Thermal Control	G	G	G	G	G	Y(22)
Communications	Y (1)	G	G	S/C (5)	G	Y(23)
APT/LRPT	R (2)	G	G	G	R(18)	G
SAR	G	G	G	G	Y(19)	Y(24)

POES Status (May 1, 2012)

http://www.oso.noaa.gov/poesstatus/index.asp

Operational	G
Spacecraft Issue but no User Impact	S/C
Operational with Limitation	Y
Non-Operational	R
Not Applicable	N/A

Spacecraft Subsystems	METOP-A	NOAA-19	NOAA-18	NOAA-17	NOAA-16	NOAA-15
Launch Date	Oct 2006	Feb 2009	May 2005	Jun 2002	Sep 2000	May 1998
Operational Date	May 2007	Jun 2009	Aug 2005	Oct 2002	Mar 2001	Dec 1998
Mission Data Category	Primary (AM)	Primary (PM)	Secondary (PM)	Secondary (AM)	Secondary (PM)	Secondary (AM)
Payload Instruments						
AVHRR						
HIRS						
AMSU-A1						
AMSU-A2						
AMSU-B						R (12)
MHS	G	Y (8)				N/A
SEM	G	G				G
SBUV	N/A	S/C (9)				N/A
Spacecraft Subsystems						
Telemetry, Command & Control	G	G	G	G	G	G
ADACS	G	G	Y (7)	G	Y(17)	Y(10)
EPS	G	G	G	Y(25)	G	G
Thermal Control	G	G	G	G	G	Y(22)
Communications	Y (1)				G	Y(23)
APT/LRPT	R (2)				R(18)	G
SAR	G				Y(19)	Y(24)

AVHRR Scan Motor Failed

AMSU –A1 Scan Motor Fail
N15 still available to users

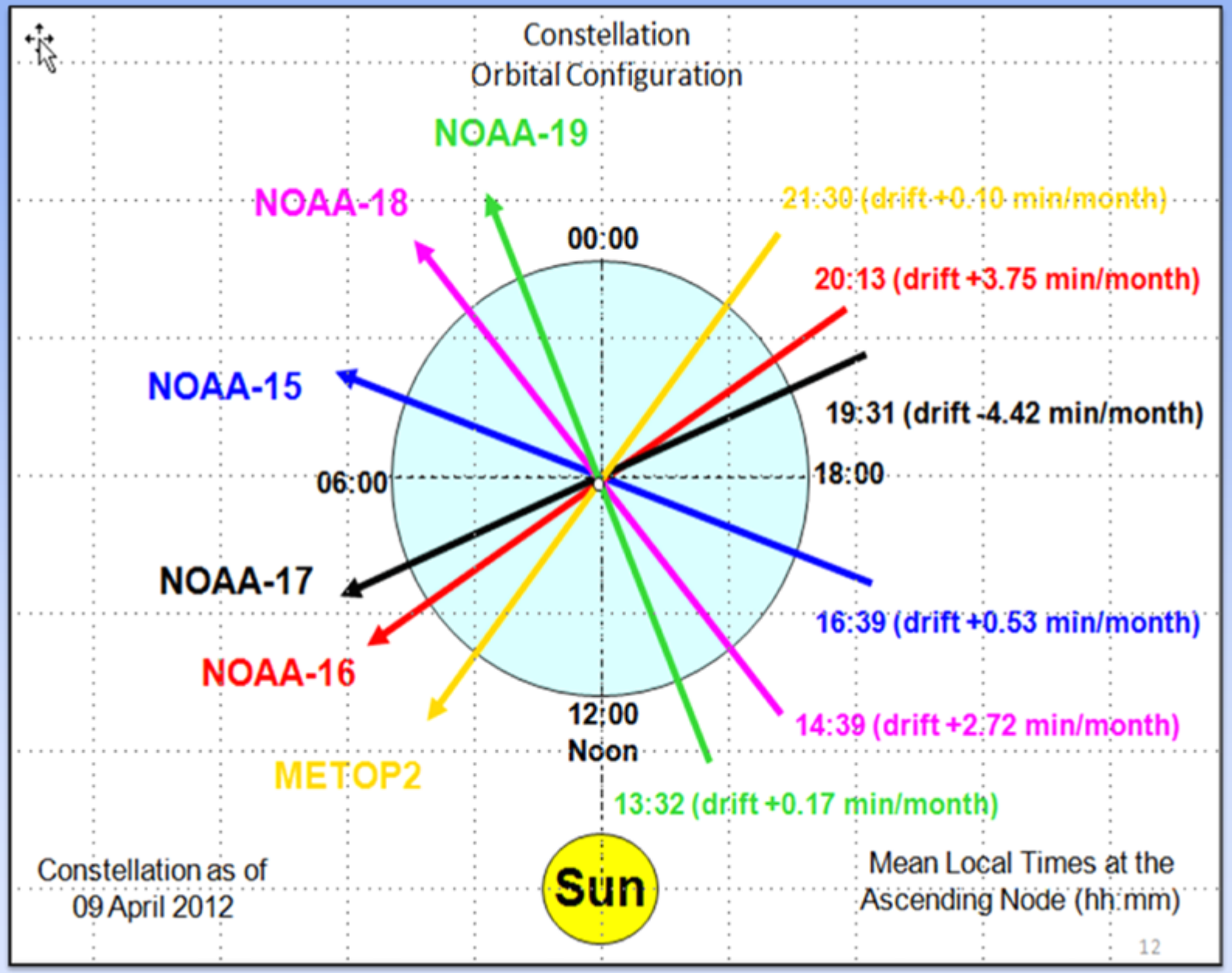
HIRS Filter Wheel Stalled,
N17 & METOP-A still
available to users

nel noise

AMSU-B Antenna Scan
Motor Failed, METOP-A
MHS still availalble to users

Trans

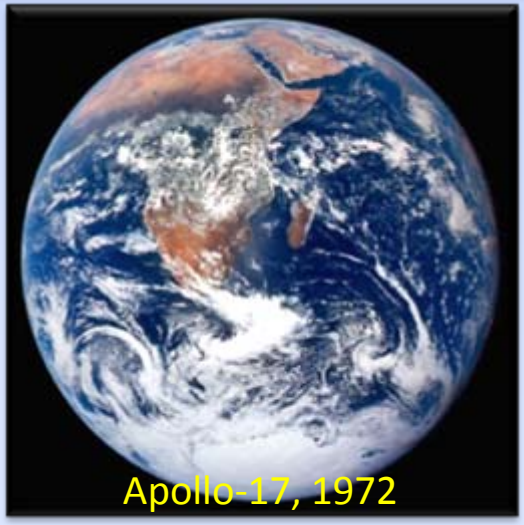
APT 1 & 2 Failed, N19
still available to users



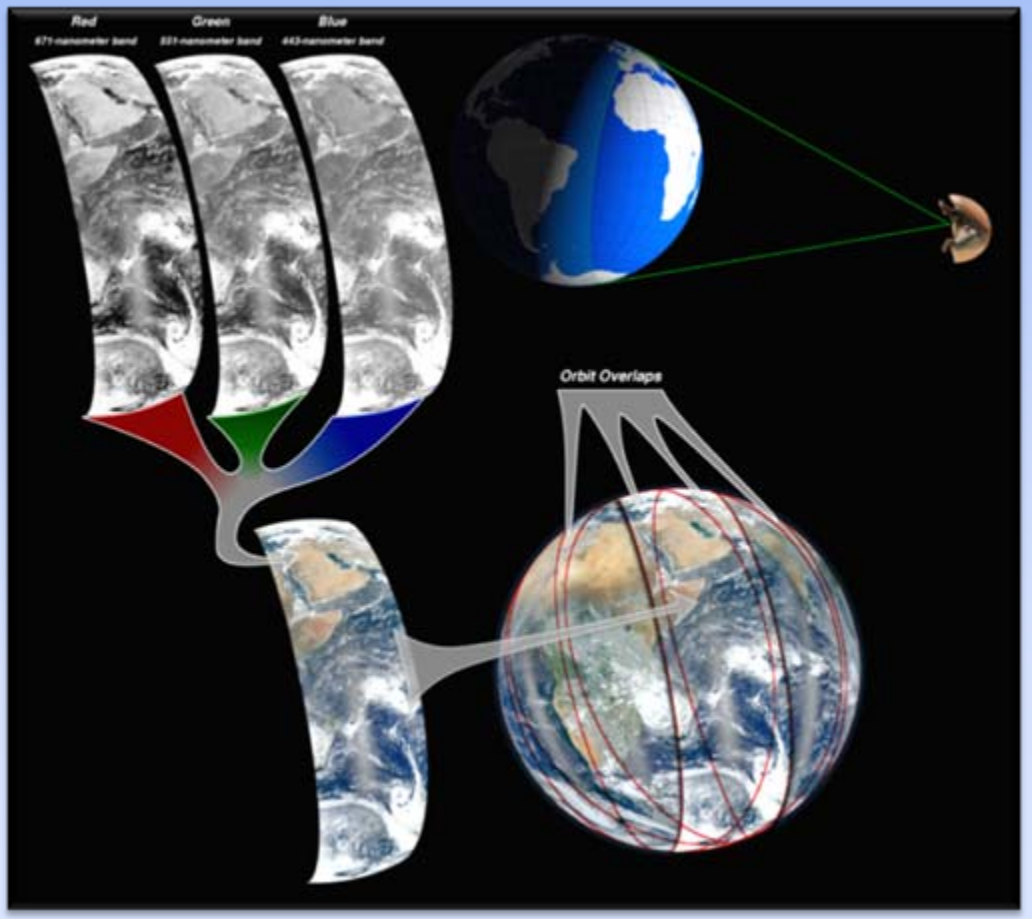
Slide credit: Renee Smith-Dearring

Suomi NPP (National Polar-orbiting Partnership)

- Launched in October, 2011



- What is the NPP Blue Marble?
- 6 composite RGB swaths in an 8 hour period (not full disk)



Images Credit: NASA

Suomi NPP
Instrument Status - May 6, 2012

- VIIRS: In Nominal operations mode, full science data production
- CrIS: In Nominal operations mode --- Full science data production --- On-orbit performance evaluation shows CrIS is meeting its top level performance requirements
- ATMS: In Nominal operations mode (Scan profile 1)
- OMPS: In Nominal operations mode (Operate), Full science data production
- CERES: In Nominal operations mode (Cross track), Full science data production
  - Instrument performance supports product accuracy requirements
  - Earth Radiation Budget Climate Analysis Research System (ERBCARS) is fully operational
  - Solar presence sensor anomaly occurred on orbit 2280 (April 6) during lunar calibration scan and resulted in no science data for nine orbits

Suomi NPP - Mission Status

- The number of NPP Data Access requests from OSPO is growing
- Testing with primary customers is well underway with the NDE group at NSOF testing with NCEP, AFWA, NAVO, FNMOC, EUMETSAT, and others
- NCEP will ingest ATMS to the GFS in June, 2012
- The plan for data access requests and delivery to customers is still being finalized between NESDIS/OSD and NESDIS/OSPO
- OSD will provide 8 x 5 (and best effort) monitoring
- Hand over from OSD to OSPO is slated for _____

Resources:

- Common Data Format Control (CDFC) book of NPP products being delivered to NDE: http://jointmission.gsfc.nasa.gov/science/documents.html
- FY11 Project Acquisition Plan: http://projects.osd.noaa.gov/NDE/ pub-docs/NDE_FY2011_Project_Acquisition_Plan.pdf
- Project Summary: http://projects.osd.noaa.gov/NDE/pub-docs/NDE_Concept_of_Operations-v4.pdf

Non-NOAA Federal Satellite Data acquired by NOAA

Satellite	Source	Primary Product Areas
EOS Aqua	NASA	Imagery, Fire/Smoke, Hurricane, Aerosols, Precipitation, Oil Spill Monitoring, Ocean Color, Winds
EOS Terra ***(With loss of ENVISAT, looking to augment Ocean Color Product with Terra)***	NASA	Imagery, Fire/Smoke, Hurricane, Aerosols, Precipitation, Oil Spill Monitoring, Winds
EOS Aura	NASA	SO2, Volcanic Ash
TRMM	NASA	Precipitation
DMSP	DoD	Precipitation, Winds, Hurricane Intensity, Imagery
Coriolis / Windsat	DoD / NRL	Winds
Landsat	USGS	Oil Spill Monitoring

The systems are leveraged through agreements which require no direct exchange of funds between NOAA and the inter-agency partner.

Non-NOAA International Satellite Data acquired by NOAA

Satellite	Source	Primary Product Areas
Meteosat-7	EUMETSAT	Imagery, Tropical Cyclones, Precipitation, Snow & Ice
Meteosat-9 (Meteosat-8 is backup)	EUMETSAT	Imagery, Tropical Cyclones, Precipitation, Snow & Ice, Sea Surface Temperature, Fire
Metop-A	EUMETSAT	Imagery, Tropical Cyclones, Precipitation, Winds, Snow & Ice, Volcanic Ash, Sea Surface Temperature, Fire
MTSAT-2 (MTSAT-1R is backup)	JMA (Japan)	Imagery, Tropical Cyclones, Precipitation, Winds, Snow & Ice, Volcanic Ash, Sea Surface Temperature, Fire
FY-2D	CMA (China)	Imagery, Tropical Cyclone ***(Limited usage – mainly at night over Indian Ocean)***
Jason-2	NOAA & CNES	Sea Surface Heights
Envisat ***(Failed on April 9, 2012)***	ESA	Snow and Ice, Ocean Color, Oil

Non-NOAA International Satellite Data acquired by NOAA

Satellite	Source	Primary Product Areas
COSMIC	NSPO Taiwan	Soundings (Radio Occultation)
Oceansat	ISRO (India)	
Radarsat-1, Radarsat-2*	CSA (Canada)	Snow and Ice, Oil
TerraSAR-X	German Aerospace Center DLR / EADS Astrium	Oil Spill Monitoring
SPOT	CNES (France)	Oil Spill Monitoring
Worldview	Digital Globe (Commercial)	Oil Spill Monitoring

The systems are leveraged through agreements which require no direct exchange of funds between NOAA and the international partner, except for Radarsat-2.
*Radarsat-2 is a public-private venture. NOAA pays for or leverages other Federal agency acquisitions of data from this system.

Future GEO & LEO Plans

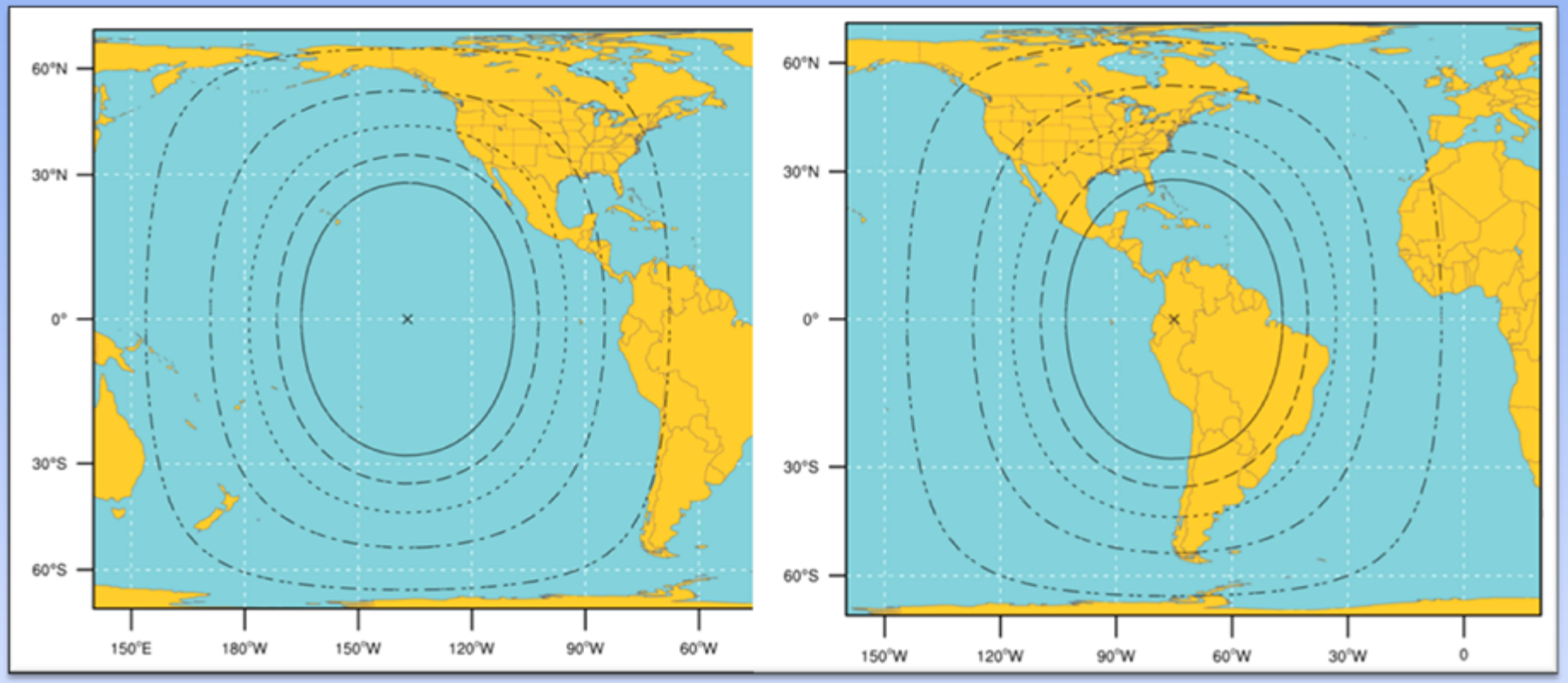
Prepare for GOES-R transition to GOES Rebroadcast (GRB) (Replaces GVAR and will be tested during PLT)

	GVAR	GOES Rebroadcast (GRB)
Full Disk Image	30 minutes	5 minutes (Mode 4)
		15 min (Mode 3)
Other modes	Rapid Scan, Super Rapid Scan	3000 km x 5000 km CONUS: 5 min
		1000 km x 1000 km Mesoscale: 30 sec
Polarization	None	Dual circular polarized
Receive Center Frequency	1685.7 MHz (L-band)	1686.6 MHz (L-band)
Data Rate	2.11 Mbps	~30 Mbps
Antenna Coverage	Earth coverage to 5°	Earth coverage to 5°
Data Sources	Imager and Sounder	ABI (16 bands), GLM, SEISS, EXIS, SUVI, MAG
Space Weather	Non	~2 Mbps
Lightning Data	None	~0.5 Mbps

NWS plans to use NHC as primary downlink and PD point to other prediction centers.

Slide Credit: Vanessa Griffin, GOES-R GS

GRB Ground Antenna Sizes



Antenna Diameters
- 6.0 m
- 5.0 m
- 4.5 m
- 4.2 m
- 3.8 m

NOTES:
1. Calculations based on available data as of May 2011
2. Each antenna size is usable within the indicated contour
3. Rain attenuations included are:
   1.3/1.6/2.0/2.2/2.5 dB (3.8 to 6 m)
4. An operating margin of 2.5 dB is included as the dual polarization isolation is likely to vary within each antenna size area

Slide Credit: Vanessa Griffin, GOES-R GS

GRB Downlink Characteristics

- Input Center Frequency: 1690.0 MHz
- Content (specified for each of two polarization channels: LHCP, RHCP)
  - L1b data, QC data and metadata: ABI, SUVI, EXIS, SEISS, MAG
  - L2 data, QC data, metadata: GLM
  - GRB Information Packets
- Data rate
  - 31 Mbps maximum data rate
  - 15.5 Mbps instantaneous maximum for each polarization channel
  - Down link margin: 2.5 db
- Compression - Lossless compression required
  - JPEG2000 and SZIP are candidates that are being considered/studies
- Format
  - Inner Frame Format: CCSDS Space Packet
  - Outer Frame Format: DVB-S2
- Coding
  - BCH + LDPC (2/3) for 8-PSK and LDPC (9/10) for QPSK
- Modem Required C/No (dB-Hz): 78.6
- Maximum Demodulator Required Eb/No (dB) for $1x10^{-10}$ BER: 4.8 dB/Hz
- Minimum Antenna System G/T (dB/K) : 15.2

These specs should be considered preliminary and will be finalized in 2012

Slide Credit: Vanessa Griffin, GOES-R GS

GRB Simulators

- Purpose
  - On-site testing of user ingest and data handling systems, aka GRB field terminal sites
  - Simulates GRB downlink functionality by generating Consultative Committee for Space Data Systems (CCSDS) formatted GRB output data based on user-defined scenarios, test patterns, and proxy data files.
  - Available in 2013
- Key Capabilities and Features
  - Transportable
    - Fully self contained
    - Configurable hardware units
  - Outputs simulated GRB
  - "Off-line Mode" to create and setup configurations and scenarios
    - Also, create test patterns and input proxy data
  - "On-line Mode" to continuously output GRB data stream at IF or baseband levels
    - Includes monitoring and logging of events

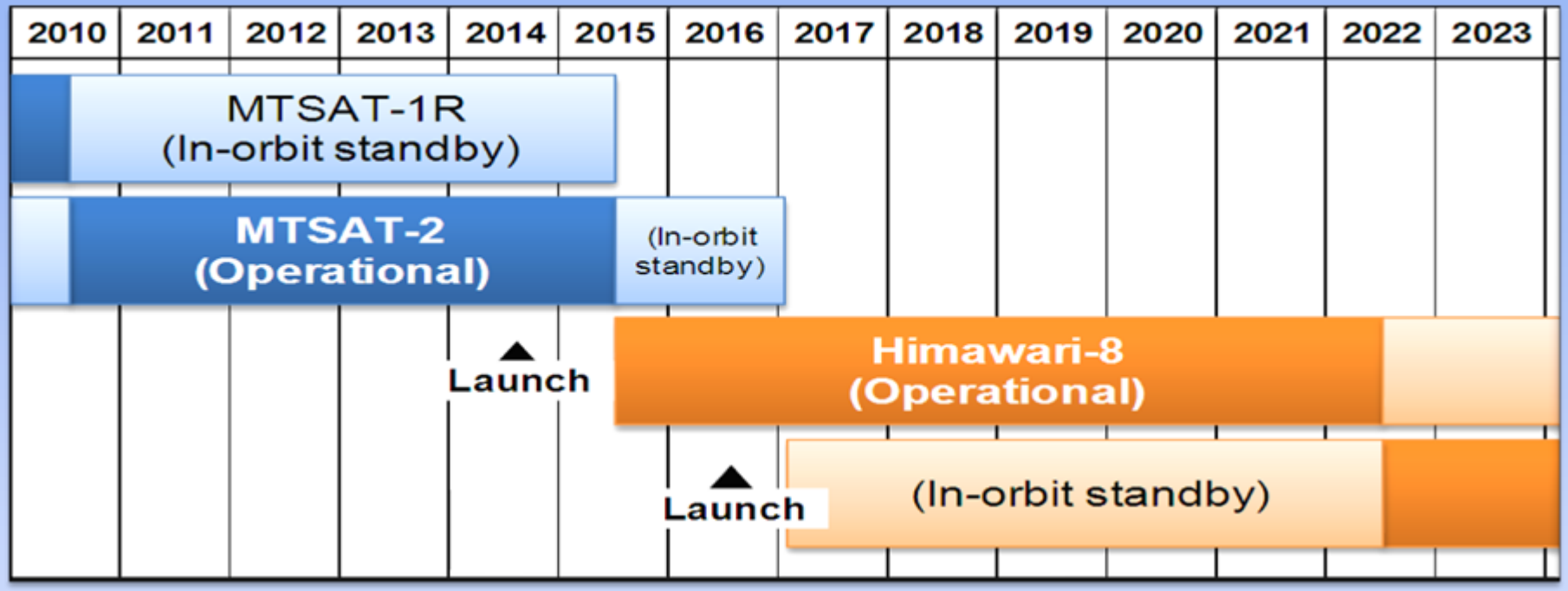
Slide Credit: Vanessa Griffin, GOES-R GS

Future GEO Plans – METEOSAT-10 (MSG-3)

- Launches in June 19, 2012
- From French Guiana
- Operational Transition Plans in progress at EUMETSAT
- Heard unofficially and without timelines…
  - -10 will go to 0°
  - -9 will go to 5° East in backup status
  - -8 will go to Indian Ocean
  - -7 will go ?

Future GEO Plans – Himawari-8/9

(sunflower)



- There is no L-band on these satellites. There is dialogue with JMA and COPC partners on if/how to get data back to the U.S.
- JMA plans to launch Himawari-8 in 2014 and begin its operation in 2015
- The launch of Himawari-9 for in-orbit standby is also scheduled in 2016
- Himawari-8/9 will be in operation around 140 degrees East covering the East Asia and the Western Pacific

Future GEO Plans

- At this point, NESDIS is not pursuing COMS (Korea) or Elektro-L (Russia) GEO data

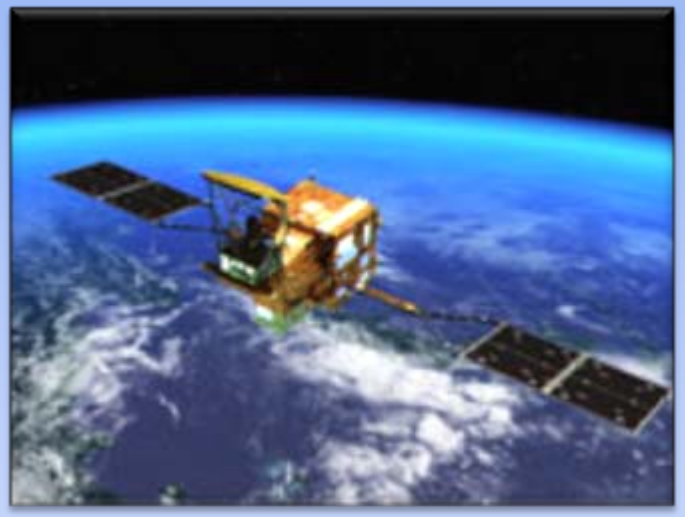
Future LEO Plans – METOP-B

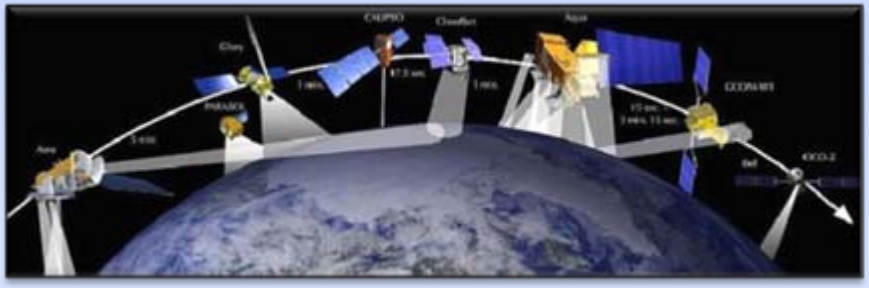
- Launch in July 2012 (already on site, but postponed from May to ensure safe liftoff drop zones for launch components)
- From Baikonur, Kazakhstan
- 50 minutes behind METOP-A (morning)
- More…
  - ASCAT – Winds
  - IASI, AMSU-A, HIRS/4 – Soundings
  - AVHRR – Fires
  - GOME-2 – Ozone
  - MHS – Cyclones
  - Searth & Rescue
  - SEM – Space Obs

- NOAA will continue to receive Metop-A as Metop-B completes checkout and is expected to get Metop-A data indefinitely, on a best effort basis from EUMETSAT, in conjunction with operational Metop-B.
- Once Metop-B is declared operational, 1/2 orbit dumps, a minimum of 9 dumps/day are expected to be received from the Antarctic Data Acquisition (ADA) site in McMurdo. Metop-A will not be available via ADA after that time.

Future LEO Plans – "Shizuku"

(water droplet)

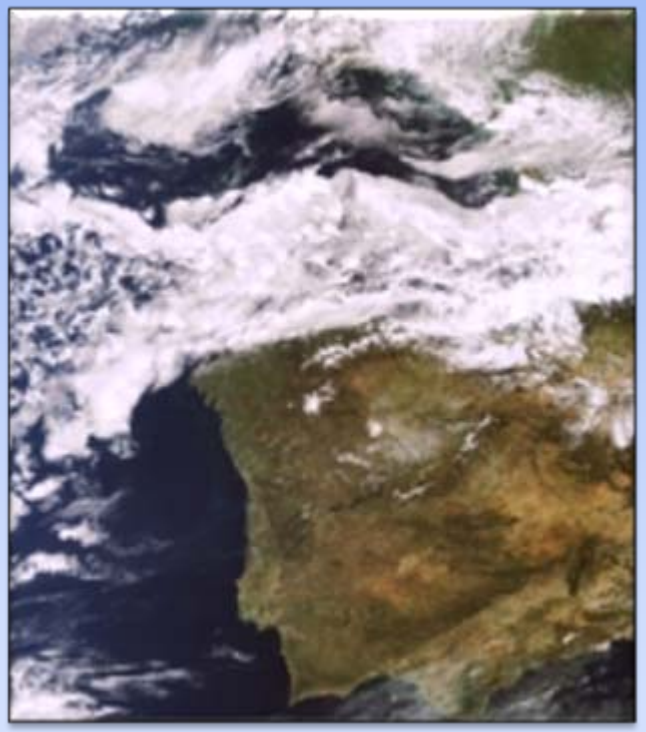




- GCOM-W1 (Global Change Observation Mission – Water 1st) - JAXA
- Launch by Sept, 2012
- Joins afternoon "A-Train"
- AMSR2
- Focus is water observations
- It is a successor to Aqua and is part of the GEOSS (Global Earth Observation System of Systems)
- http://www.jaxa.jp/countdown/f21/index_e.html

Anomalies, Outages, Retirements

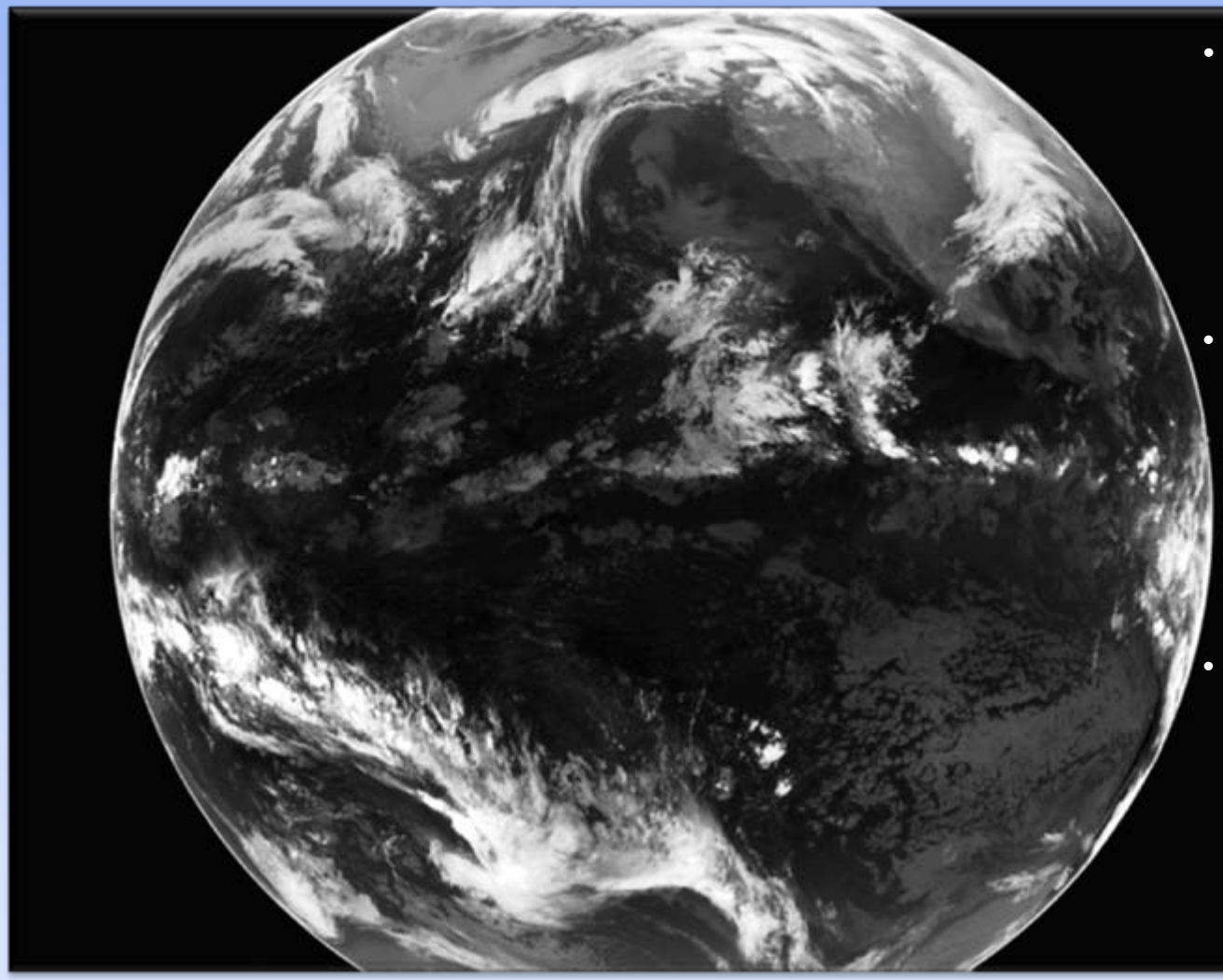
Satellite Anomalies - Envisat



MERIS image before loss of contact.
Photo courtesy: ESA

- April 12, 2012: After 10 years of service, Envisat has stopped sending data to Earth
- ESA still trying to re-establish communications
- Remains in stable orbit
- Applications:
  - snow and ice cover analysis
  - ocean color

Aloha GOES-7!



- GOES-7 is the only satellite in the history of NOAA's geostationary program to serve both as the GOES-East and GOES-West spacecraft in the course of normal operations
- In 1999, NOAA leased GOES-7 to the Pan-Pacific Education and Communication Experiments by Satellite (PEACESAT) program, which used the satellite to provide critical communications for the Pacific islands
- On April 12, GOES-7 was de-orbited and "retired" from service

GOES-7 Last Operational Image
January 11, 1996 at 13:31 GMT
Infrared

Missing GOES-15 CONUS 4km WV in AWIPS

- Discovered by SSEC's Jordan Gerth and others… Thanks!
- Interestingly, GOES-15 4km WV imagery for CONUS scale (only) was not in AWIPS
  - CONUS was available at 8km
  - 4km was available at regional scale
- AWIPS addressed this oversight February 7, 2012
- Appreciated by Andy Edman - NWS Western Region Scientific Services Division Chief

Missing GOES-15 CONUS Scans in AWIPS-I "Every Image Loops"

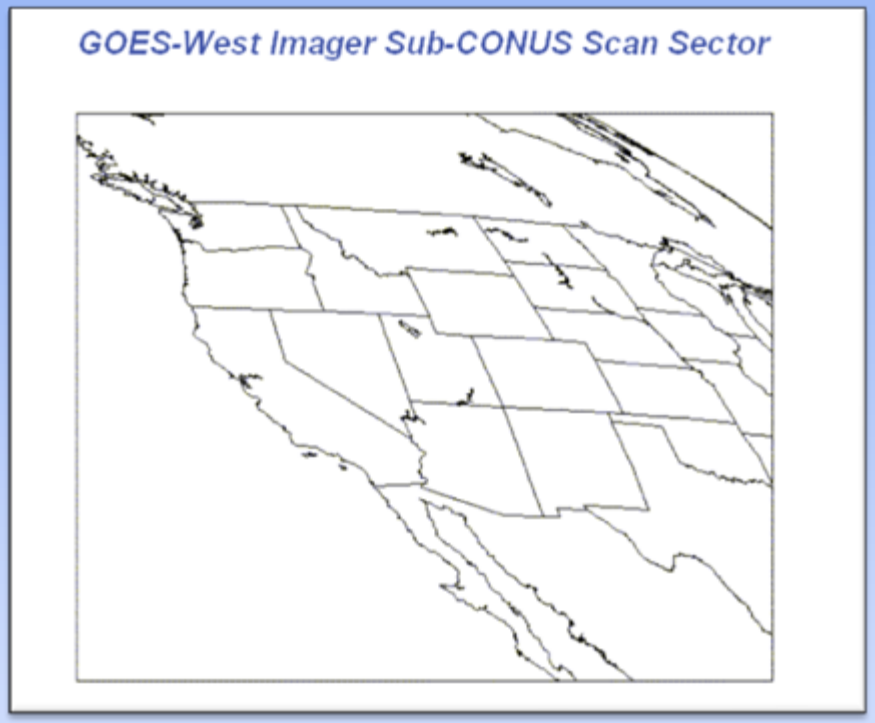
- Discovered by SSEC's Scott Bachmeier and Jordan Gerth… Thanks!
- Due to logic in the AWIPS-I configuration files, scans at 15 and 45 after the hour do not appear in the "every image" loop on the CONUS scale
- The bug in the code logic is not going to be fixed since AWIPS-II is coming on line

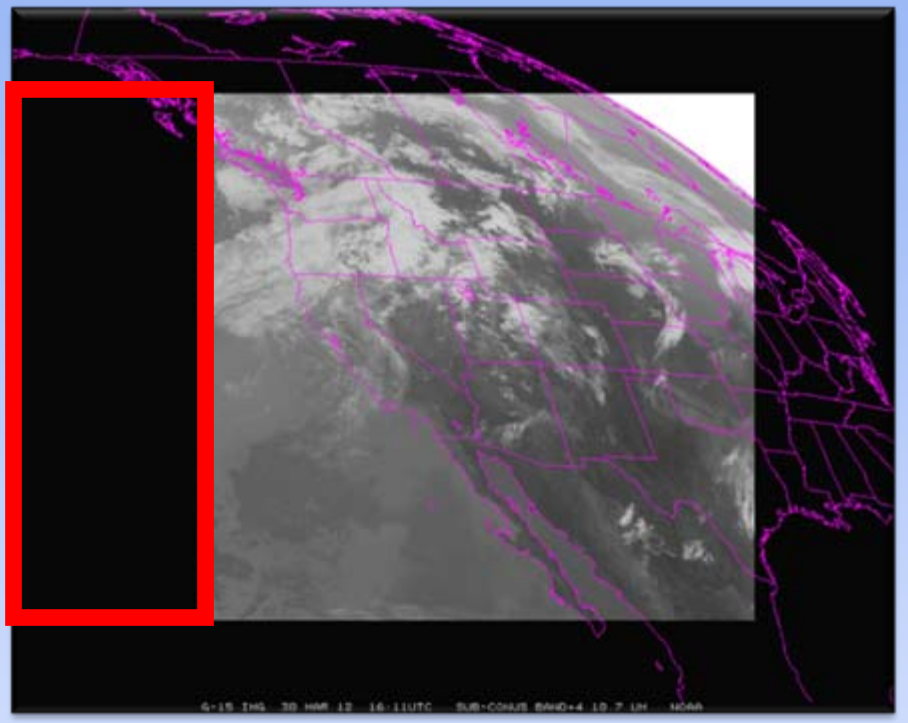
GOES-West Routine Imager Schedule:

TIME (UTC)	SCAN SECTOR	DURATION (MM:SS)
00:00:00	Full Disk	26:00
00:30:00	Northern Hemisphere	10:05
00:51:55	Southern Hemisphere	6:54
01:00:00	Northern Hemisphere	10:05
01:10:20	SUB-CONUS	2:14
01:15:00	PACUS	6:29
01:21:55	Southern Hemisphere	6:54
01:30:00	Northern Hemisphere	10:05
01:40:20	SUB-CONUS	2:14
01:45:00	PACUS	6:29
01:51:55	Southern Hemisphere	6:54
02:00:00	Northern Hemisphere	10:05
02:10:20	SUB-CONUS	2:14
02:15:00	PACUS	6:29
02:21:55	Southern Hemisphere	6:54
02:30:00	Northern Hemisphere	10:05
02:40:20	SUB-CONUS	2:14
02:45:00	PACUS	6:29
02:51:55	Southern Hemisphere	6:54
03:00:00	Full Disk	26:00
03:30:00	Northern Hemisphere	10:05
03:40:20	SUB-CONUS	2:14
03:45:00	PACUS	6:29
03:51:55	Southern Hemisphere	6:54
04:00:00	Northern Hemisphere	10:05
04:10:20	SUB-CONUS	2:14
04:15:00	PACUS	6:29
04:21:55	Southern Hemisphere	6:54

GOES-West Routine Imager Schedule:
http://www.ospo.noaa.gov/Operations/GOES/west/imager-routine.html

Missing GOES-15 CONUS Scans in AWIPS-I "Every Image Loops"





Subsequent discussions about expanding the subconus region to capture more of the NWS western region's upstream weather have been tabled for now, due to lack of resources.

GOES-West Routine Imager Schedule:
http://www.ospo.noaa.gov/Operations/GOES/west/imager-routine.html

Recent Major Outages

- Dec 29, 2011 EMC SAN Outage
  - 21 hours, 40 minutes; backlogged data processed
  - 6 Disk Failures on EMC SAN caused failed data distribution through DDS, Polar Dev, Satepsdev9...
  - While replicating to each spare disk, another would fail causing corrupted tracks to be recorded
  - Root Cause: bug in EMC SAN software
- Jan 1, 2012 EMC SAN Outage
  - 8 hours
  - Derived products outage, mostly GOES
  - Root Cause: EMC technician replaced drives without setting up correct synchronization

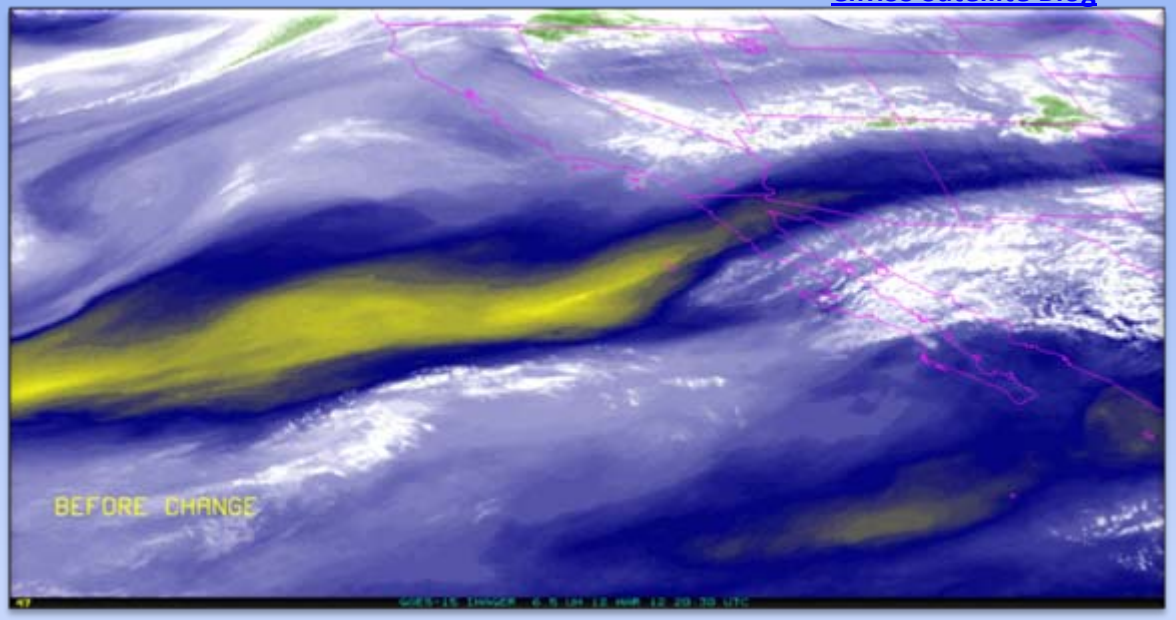
Recent Major Outages

- Jan 21-22, 2012 Bad IMC Load to GOES-15 **[ORB]**
  - 6 hour outage, Period: 2230Z (Jan 21) – 0415Z (Jan 22)
  - Impact: Pitch in attitude and 25km image offset and Attitude Error
  - Products Impacted: Volcano and Fire products
  - Image Motion Compensation (IMC) is used on board for bus pointing and image navigation
  - Root Cause: GOES-15 bad IMC (Integrated Memory Controller) Load
- GOES Imagery Dropouts – Wallops facility remains susceptible to thunderstorm activity
- Recent (April, 2012) ESPC notifications regarding missing GOES 13/15 images and causes of "RFI", "BER", "GOES-R Construction"
  - An uplink antenna at Wallops has identified hardware shortfalls that are being addressed

GOES-15 Imager Calibration Anomaly [ORB]

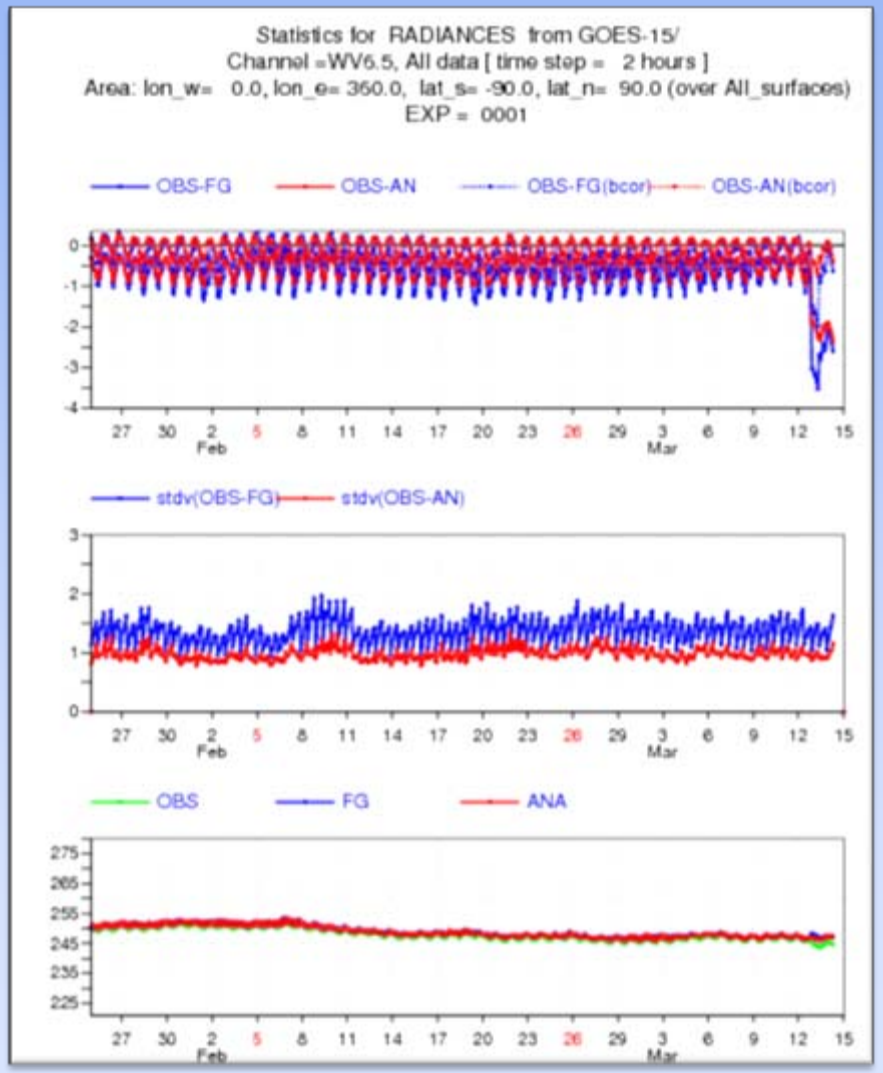
http://cimss.ssec.wisc.edu/goes/blog/archives/9995

CIMSS Satellite Blog

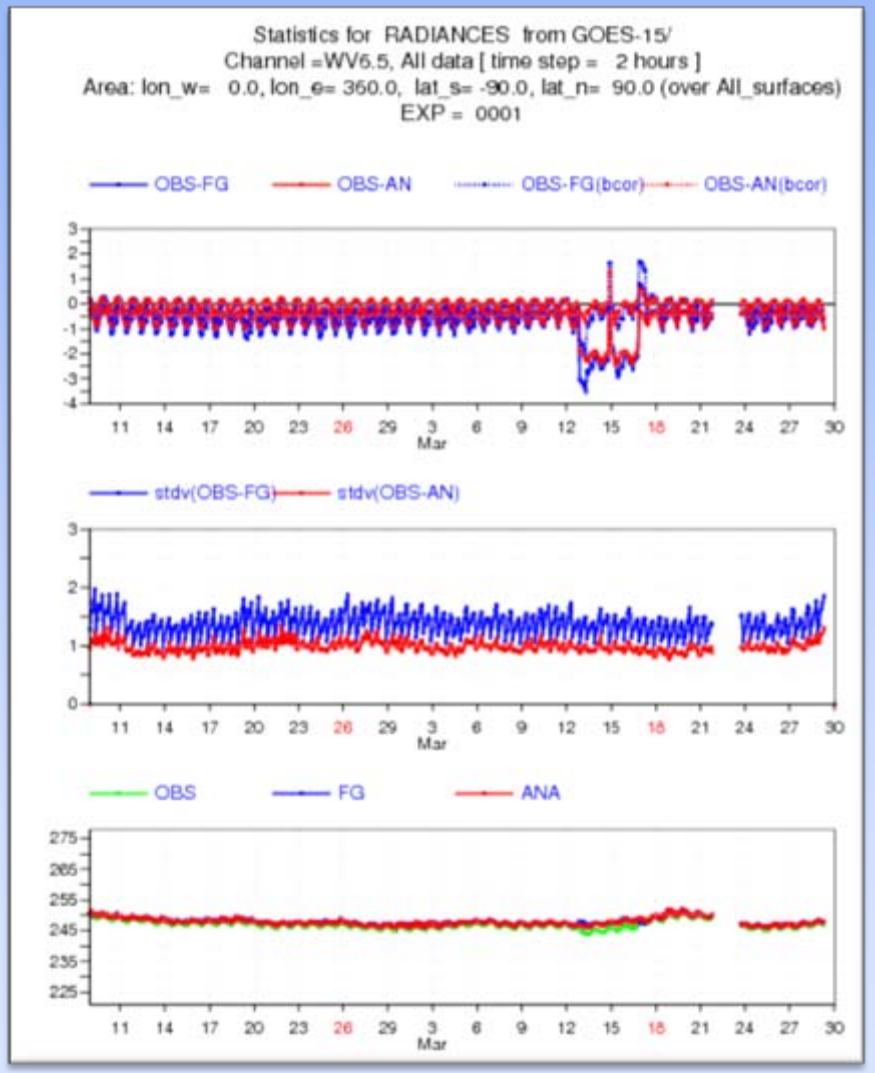


- The Sensor Processing Subsystem (SPS) for GOES-15 (operational as GOES-West) was changed at 20:45 UTC on March 12, 2012.
- This change that should have been transparent to the users introduced an error to the calibrated data that was especially apparent in the Imager Water Vapor Channel (Channel 3). Watch the 5% cool brightness temperatures.
- ESPC distributed 5 days worth of erroneous band 3 (WV) data due to this calibration mistake. It situation was not completely remedied until March 17th.

GOES-15 Imager Calibration Anomaly [ORB] (monitored by ECMWF)



Beginning of the anomaly



Encompassing the anomaly

GOES-15 outage in March 21-23, 2012 [ORB]

Event: GOES15 failed to sun acquisition mode during a momentum dump following the yaw-flip maneuver (fault trip #1) and again during recovery, detecting a low state of charge (fault trip #2)

Date/Time of Events:

- 2048z, Wednesday, March 21 (Day 81) -Fault trip #1
- 1006z, Thursday, March22 (Day 82) – Fault trip #2
- 2017z, Friday, March 23 (Day 83) – return to normal data operations

Impact: Spacecraft (s/c) went from earth point mode to sun acquisition mode due to two different faults. Loss of all GOES15 data for almost 48 hours

Major Cause:

- Fault Trip #1 - Orbital and Attitude Tracking System (OATS) error in calculation of ECI-to-Body direction cosine matrix.
- Fault Trip #2 – Error in the STOL Proc ZWEBCMCHGRAT, thus the s/c was not commanded to "High Charge" while going through eclipse.

GOES-15 outage in March 21-23, 2012 [ORB]

Contributing Factors:

- Antenna swap during the momentum dump slowed the recognition of the problem.
- GOES 15 did not get a full check-out during Post Launch Testing (PLT). It was never put into storage mode and a storage mode database was never created. The STOL Proc error might have been prevented and the recovery process would have been quicker with the storage data base.

Note

- This momentum dump just happened to be near the 24 hour mark since the yaw-flip maneuver which *might* have been the reason the OATS solution was incorrect. This was the 11th yaw flip maneuver of the NOP series, the 7th for GOES 15, but the first at its new location at 135' west longitude. Thus, it was the first time the maneuver occurred at the same time of day as the momentum dump during the housekeeping period. This needs further research to find the actual source of the error (Action Item #1, below).

March Anomaly Communications [ORB]

- Shortfalls identified in the prior two March Anomalies resulted in a separate Help Desk & User Services ORB
- The ESPC notifications, User Services Outreach, and Procedures for email contingencies were investigated and actions were taken to remedy shortfalls

GOES Maneuvers, Eclipse Season, SLZs, and Schedules

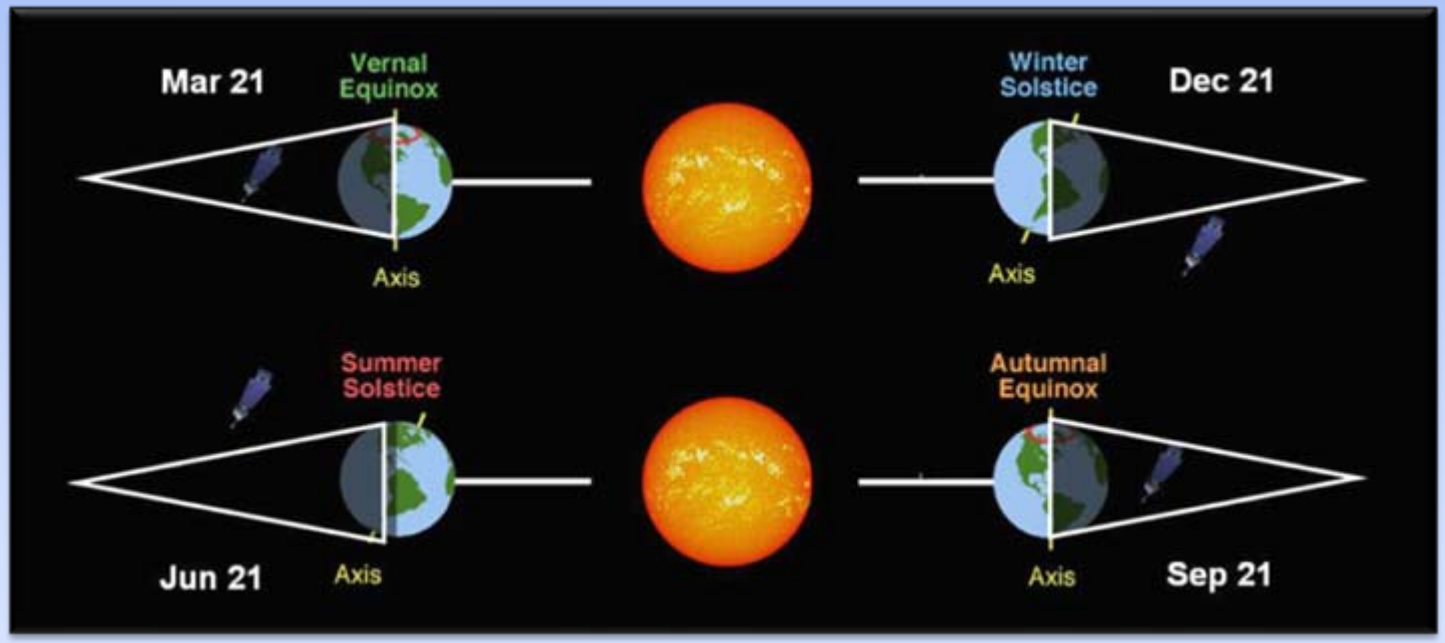
GOES Maneuvers and Schedules

- Successful orbital keeping maneuvers this year
  - GOES-13 E/W on May 1, 2012 (15-30 minute impact)
  - GOES-12 E/W on April 11, 2012 (12 hour impact)
  - GOES-15 E/W on April 10, 2012 (15-30 minute impact)
  - GOES-13 E/W on March 6, 2012 (15-30 minute impact)
  - GOES-13 N/S on February 21, 2012 (~2 hour impact for N/S)
  - GOES-12 E/W on January 25-26, 2012 (12 hour impact)
  - GOES-15 E/W on January 25, 2012 (15-30 minute impact)

- The Spring eclipse schedule (1/31-4/28) has passed, but the Fall eclipse schedule with shifted frames, keep out zones, and stray light recovery periods will be distributed & posted August, 2012
  - http://www.ospo.noaa.gov/Operations/GOES/eclipse.html

GOES Eclipse Season

- GOES solar panels are blocked from sunlight up to 72 minutes/day
  - Insufficient power for instruments on GOES-12 causes prolonged frame outages
  - Cannot image for up to 3 hours during daily eclipse on GOES-12
- Midwest thunderstorms occur during Vernal Equinox
- Hurricane season occurs during Autumnal Equinox

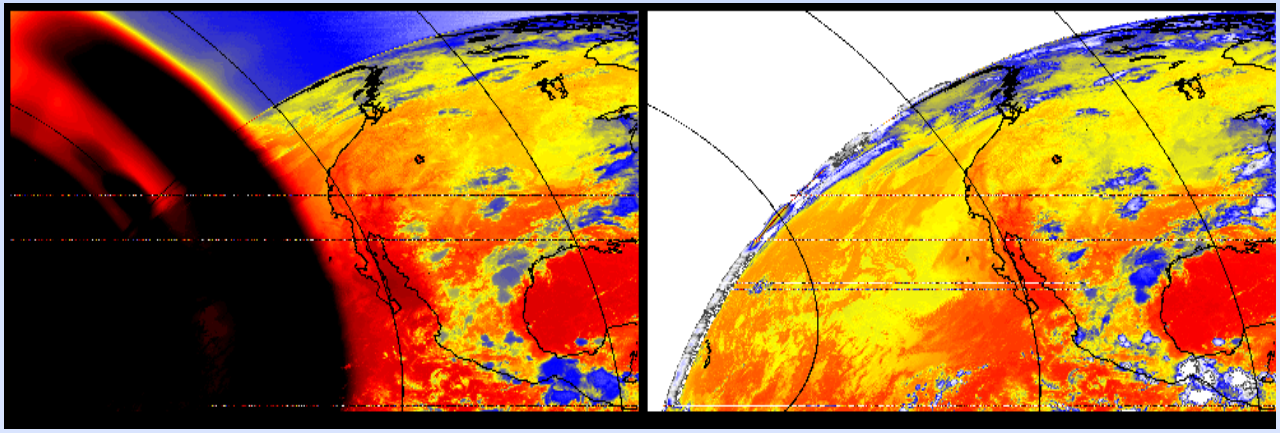


- GOES-12, as well as GOES 13/14/15 are susceptible to stray light intrusion as the satellite passes in and out of the eclipse

http://www.ssd.noaa.gov/PS/SATS/eclipse.html

Stray Light Correction (SLC)

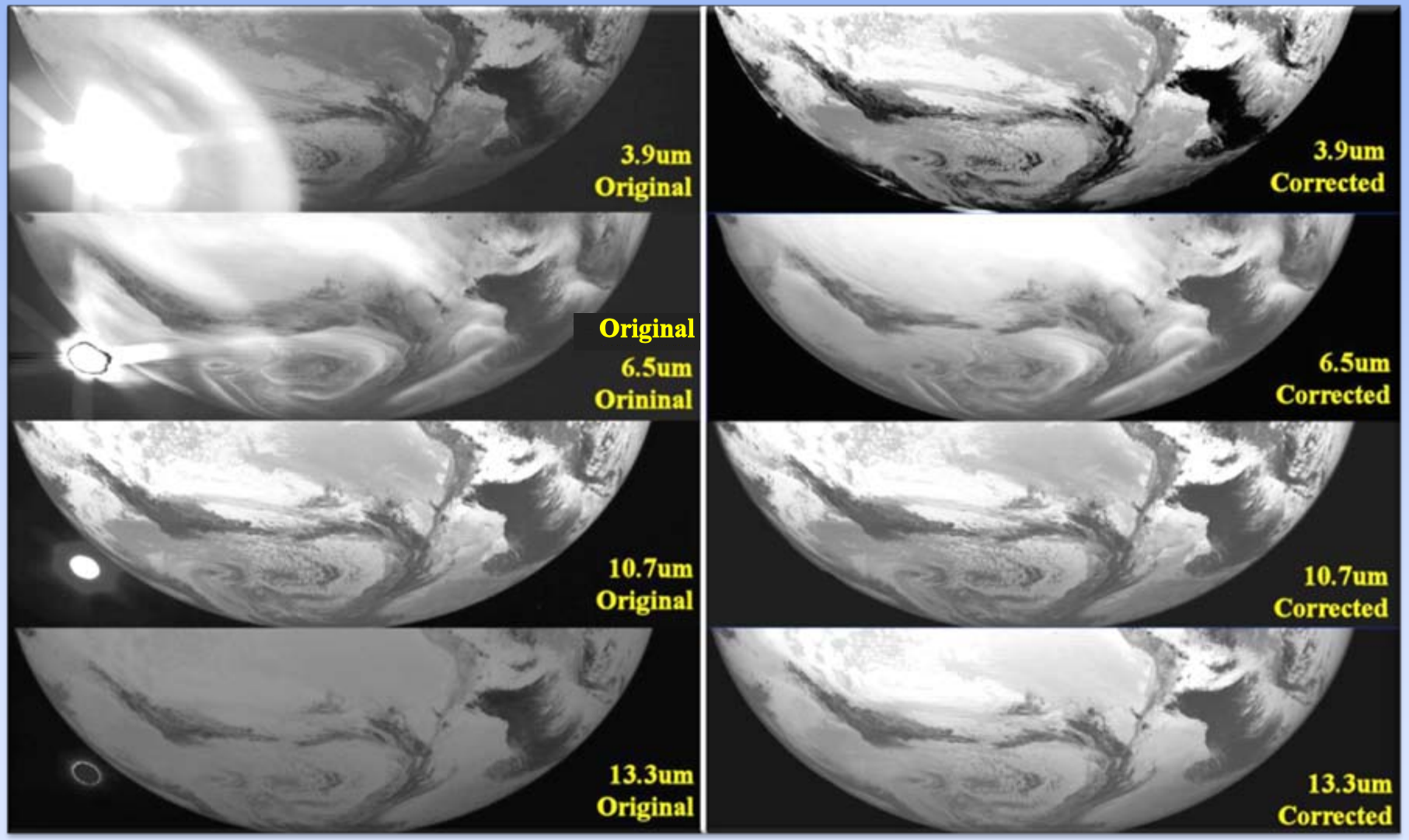
- GOES-13/14/15 imagers and sounders are capable of scanning the sun without health and safety issues
- However, imaging within 6 degrees must be canceled or replaced due to intolerable sun intrusion
- The annual loss is equivalent to 6 days of imaging
- ITT Exelis has characterized the effect of the sun intrusion and developed a correction algorithm to claim >95% of lost images
- SLC is Operational on GOES-13 as of Feb 22, 2012
- Algorithm promotion to GOES-15 is planned for the Fall of 2012



Slide Credit: Hyre Bysal & Tim Schmit, NESDIS

SLC: Results for all channels corrected 1° from Sun

Mostly affects imager band 2 (4 micrometer), but all bands can be affected



Slide Credit: Tim Schmit, NESDIS

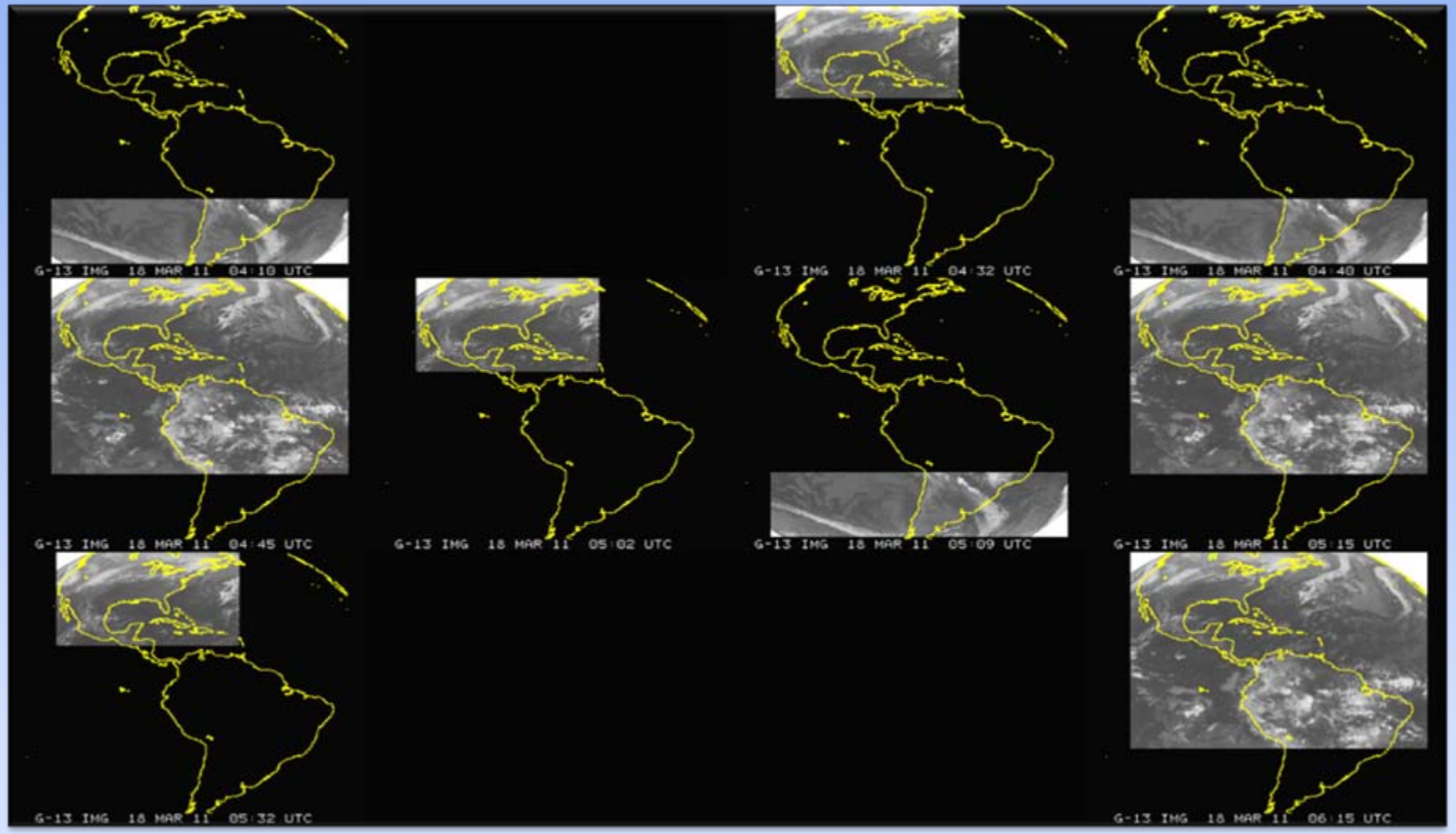
SLC: Spring Eclipse (GOES-13 Imager)

Net Scan Time gained (hours per season):			
Scan Sector	**Eclipse**	**StrayLightCorr**	**Both**
CONUS	5.8	5.4	11.2
SHEMI	5.5	5.5	11.0
NHEMX	15.2	21.2	36.4
FD	0.0	16.0	16.0
TOTAL	**26.4**	**48.2**	**74.6**

Number of Frames Saved (per season):			
Scan Sector	**Eclipse**	**StrayLightCorr**	**Both**
CONUS	69	65	134
SHEMI	73	73	146
NHEMX	65	91	156
FD	0	37	37
TOTAL	**207**	**266**	**473**

Slide Credit: Tim Schmit, NESDIS

GOES-13 (East) Imager Coverage during Eclipse w/o SLC

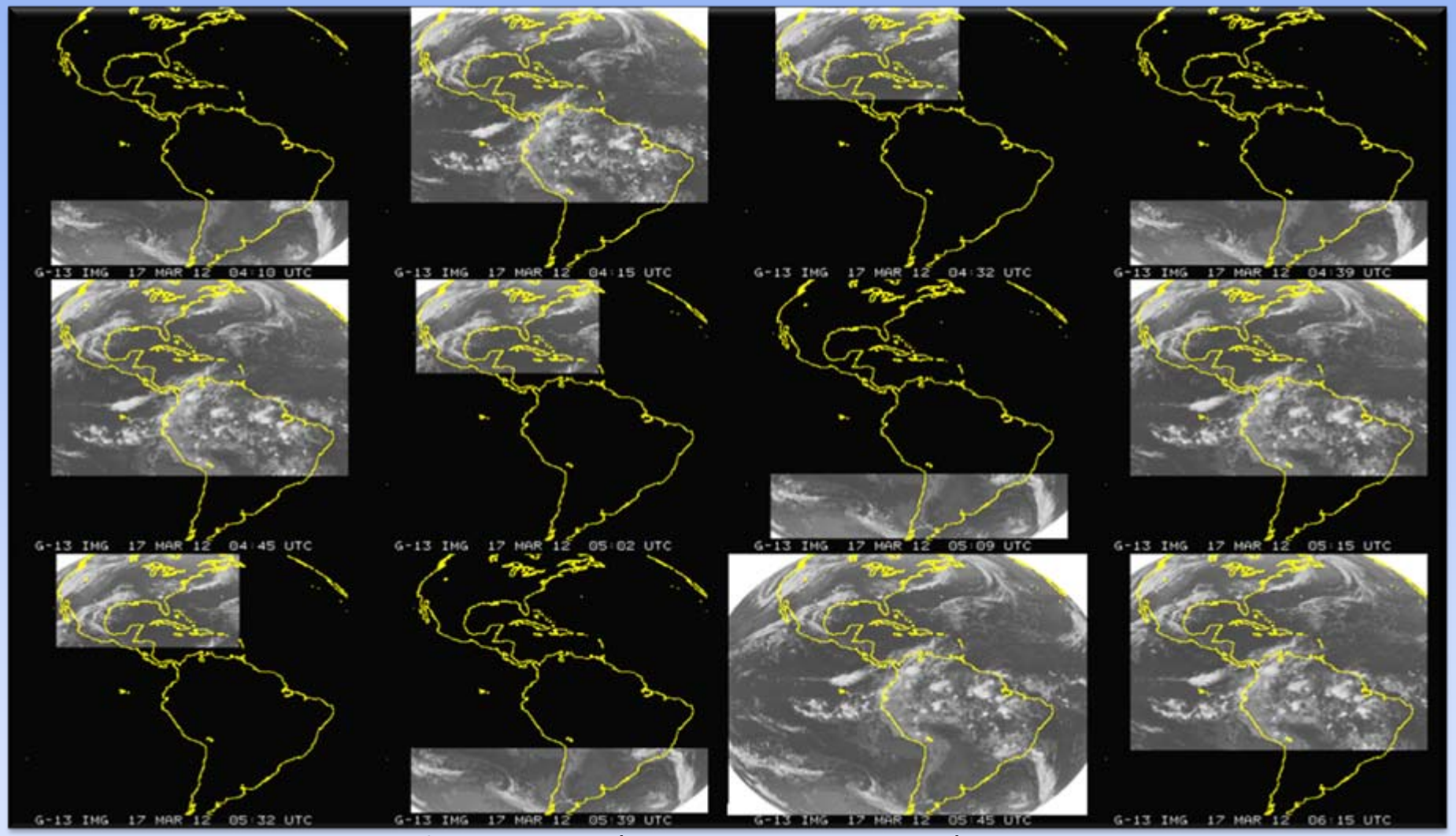


JD=077; March 17, 2011 (04:10 to 06:15 UTC); GOES-13 Imager

Several frames canceled during Eclipse Period

Slide Credit: CIMSS & Tim Schmit, NESDIS

GOES-13 (East) Imager Coverage during Eclipse w/ SLC



JD=077; March 18, 2012 (04:10 to 06:15 UTC); GOES-13 Imager

SLC saves those frames that were previously canceled.

Slide Credit: CIMSS & Tim Schmit, NESDIS

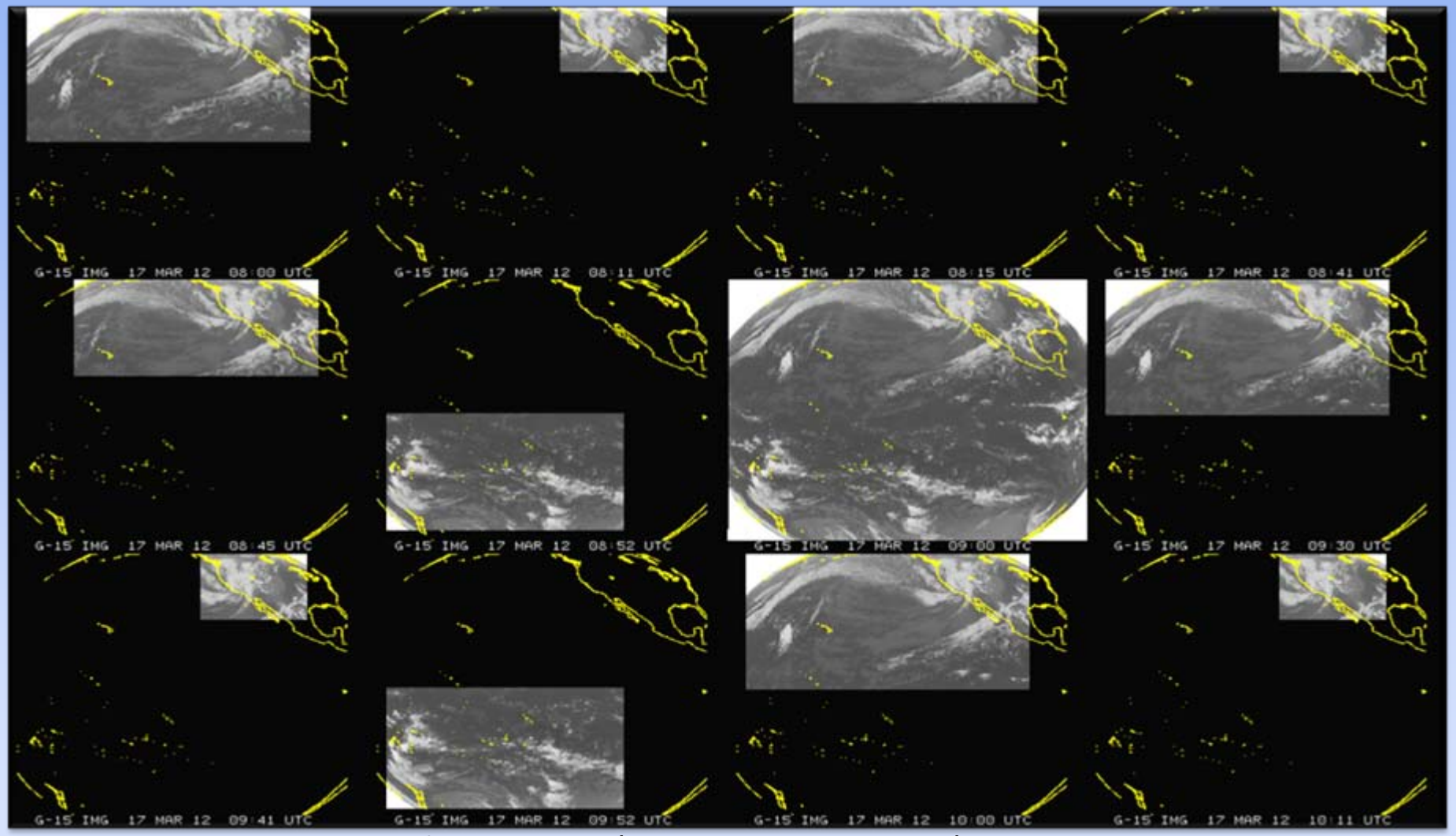
GOES-11 (West) Imager Coverage during Eclipse

JD=077; March 18, 2011 (08:00 to 10:11 UTC); GOES-11 Imager

GOES-11 had to shut off entirely during Eclipse Period

Slide Credit: CIMSS & Tim Schmit, NESDIS

GOES-15 (West) Imager Coverage during Eclipse w/ SLC



JD=077; March 17, 2012 (08:00 to 10:11 UTC); GOES-15 Imager

SLC saves those frames that were previously canceled.

Slide Credit: CIMSS & Tim Schmit, NESDIS

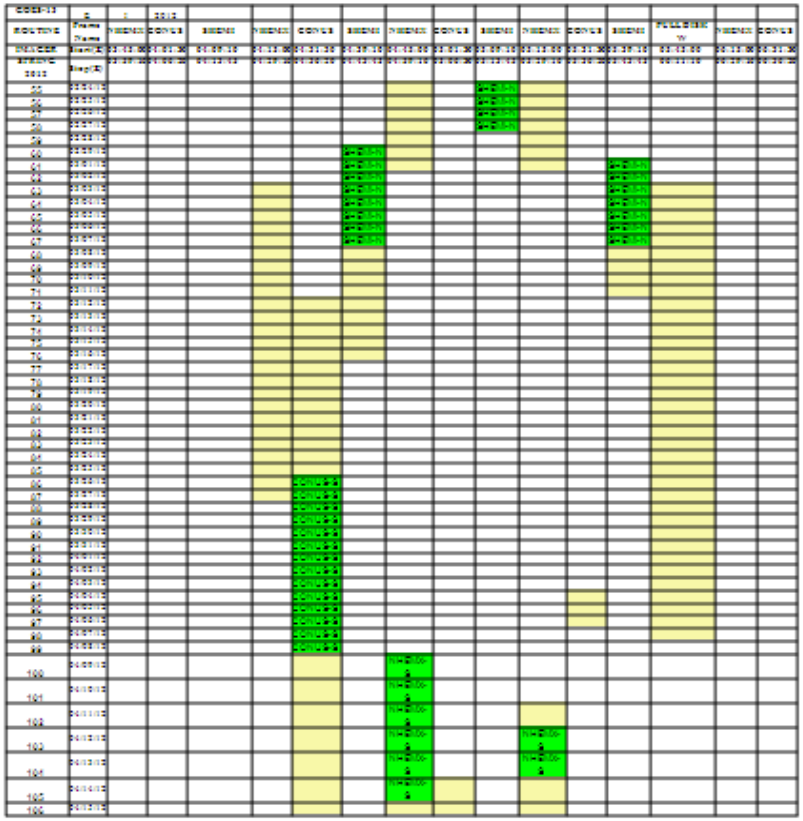
SLC: Info in the GVAR stream

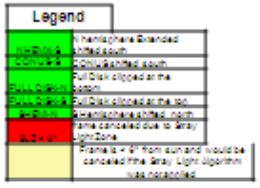
- Stray Light correction status bits are sent out over GVAR (GOES VARiable data transmission format) and are now part of the McIDAS area line prefix
  - Enabled, performed relative position of the sun, etc.
- An example of the type of output of Stray Light Correction information found in the GVAR stream, in the area line prefix for the GOES-13 Imager data is shown below. This provides a summary of how each image is modified depending on the time of year (i.e. relative declination of the sun and GOES platform).
  - Directory information (sensor #, image ccyyddd, image hhmmss): 180, 2012068, 54500
  - SLCE (# lines w/SLC enabled) = 2705
  - SLCD (# lines w/SLC disabled) = 0
  - SLCP (# lines w/SLC performed) = 2705
  - SLCNP (# lines w/SLC not performed) = 0
  - SLC_FRST (1st ln w/SLC performed) = 1
  - SLC_LST (last ln w/SLC performed) = 2705
  - SUNE (# lines w/sun on e/side earth) = 2705
  - SUNW (# lines w/sun on w/side earth) = 0
  - SUNN (# lines w/sun on n/side earth) = 0
  - SUNS (# lines w/sun on s/side earth) = 2705
  - 2705 nonzero values were found for parameter: min_sun_angle
  - Smallest sun angle value = 5 found at line # 1419
  - Largest sun angle value = 15 found at line # 1

Slide Credit: Hyre Bysal & Tim Schmit, NESDIS

GOES-East
Eclipse Schedule / Frames

Imager





Green - Shifted or Clipped
Red - Canceled due to SL
Yellow - Recovered by SL algorithm

Sounder

GOES-13	E	S	2012							
ROUTINE	Frame Name	MEX/HUR 1	CONUS/ASOS1	MEX/HUR 1	CONUS/ASOS1	MEX/HUR 1	CONUS/ASOS1	MEX/HUR 1	CONUS/ASOS1
SOUNDER	Start(Z)	03:20:00	3:46:10	4:20:00	4:46:50	5:20:00	5:46:10	6:20:00	6:46:10
SPRING 2012	Stop(Z)	03:40:40	4:15:02	4:40:40	5:15:02	5:40:40	6:15:02	6:40:40	7:15:02
72	03:12:12								
73	03:13:12			KOZ					
74	03:14:12			KOZ					
75	03:15:12			BLZ					
76	03:16:12			BLZ					
77	03:17:12			BLZ					
78	03:18:12			BLZ					
79	03:19:12			BLZ					
80	03:20:12			BLZ					
81	03:21:12			BLZ					
82	03:22:12			BLZ					
83	03:23:12			BLZ					
84	03:24:12			BLZ					
85	03:25:12			BLZ					
86	03:26:12			BLZ					
87	03:27:12			BLZ					
88	03:28:12			BLZ					
89	03:29:12			BLZ					
90	03:30:12			BLZ					
91	03:31:12			BLZ					
92	04:01:12			BLZ					
93	04:02:12			BLZ					
94	04:03:12			BLZ					
95	04:04:12			BLZ					
96	04:05:12			BLZ					
97	04:06:12			KOZ					
98	04:07:12			KOZ					
99	04:08:12			KOZ					
100	04:09:12								
101	04:10:12				KOZ	KOZ			
102	04:11:12				KOZ				
103	04:12:12				KOZ				
104	04:13:12				KOZ				
105	04:14:12				KOZ				
106	04:15:12				KOZ				
107	04:16:12				KOZ				
108	04:17:12				KOZ				
109	04:18:12				KOZ				
110	04:19:12				KOZ				
111	04:20:12				KOZ				
112	04:21:12				KOZ				
113	04:22:12				KOZ				
114	04:23:12								

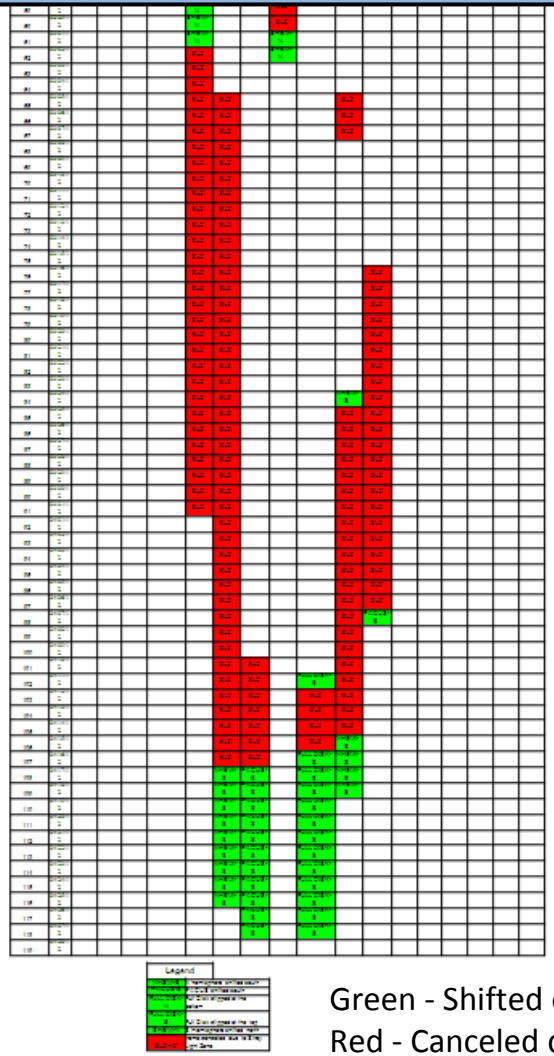
Legend	
KOZ < 3°	frame canceled due to Keep Out Zone
BLZ between 3° and 6°	frame canceled due to Stray Light Zone

Red - Canceled due to KOZ
Orange - Canceled due to SL

http://www.ospo.noaa.gov/Operations/GOES/eclipse.html

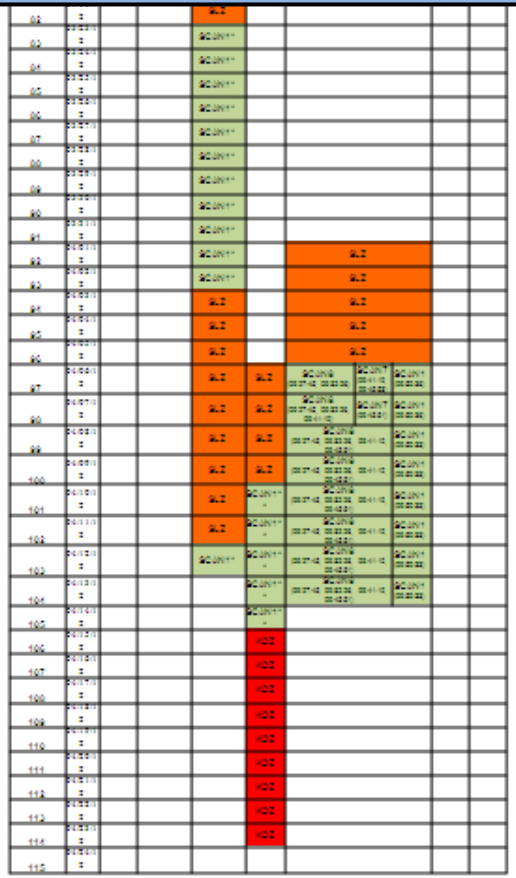
GOES-West
Eclipse Schedule / Frames

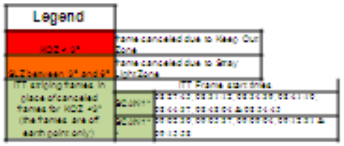
Imager



Green - Shifted or Clipped
Red - Canceled due to SL

Sounder



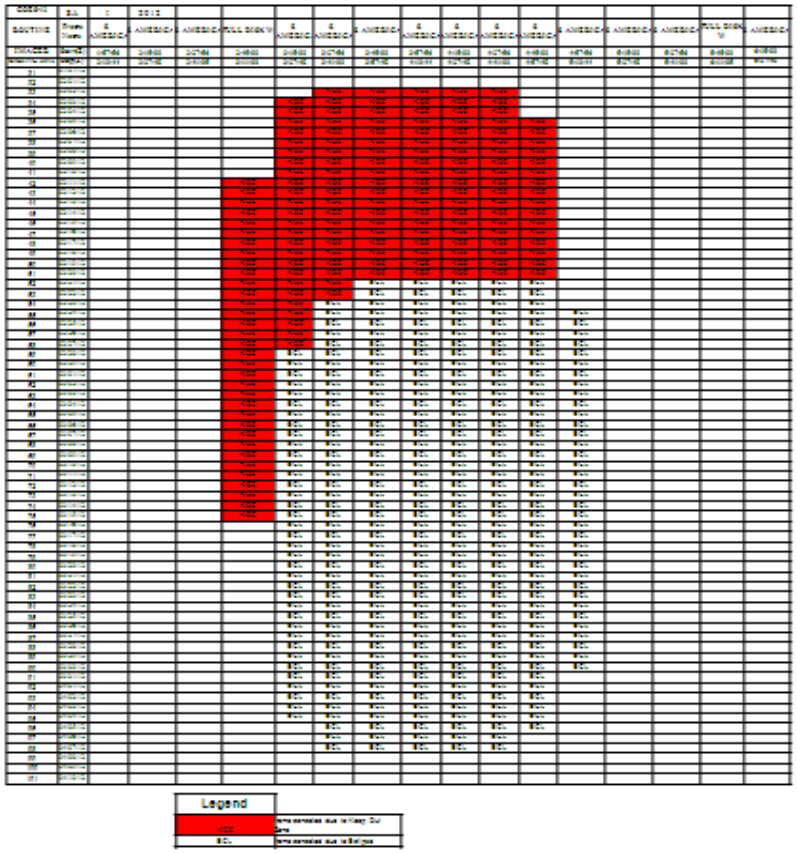


Red - Canceled due to KOZ
Orange - Canceled due to SL
Tan - Off-Earth striping frames

http://www.ospo.noaa.gov/Operations/GOES/eclipse.html

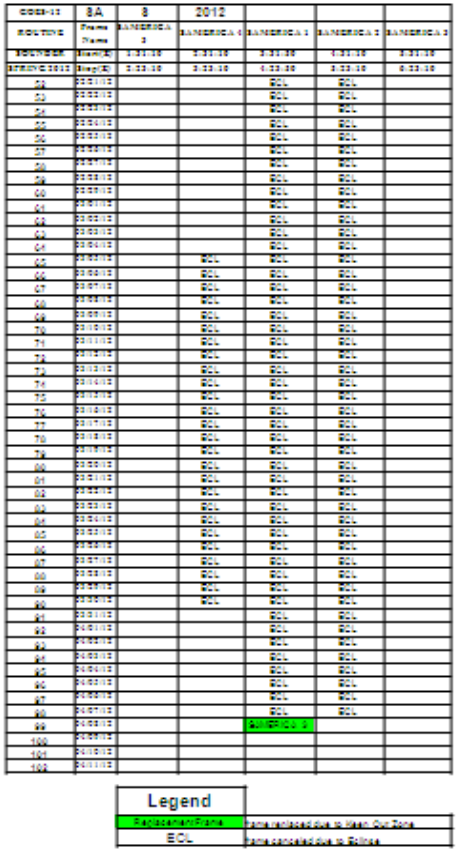
GOES-South America Eclipse Schedule / Frames

Imager



Red - Canceled due to KOZ
ECL – Canceled due to Eclipse

Sounder



Green – Replaced due to KOZ
ECL – Canceled due to Eclipse

http://www.ospo.noaa.gov/Operations/GOES/eclipse.html

DMSP Half Orbit data from the Antarctica Data Acquisition (ADA) Station at McMurdo

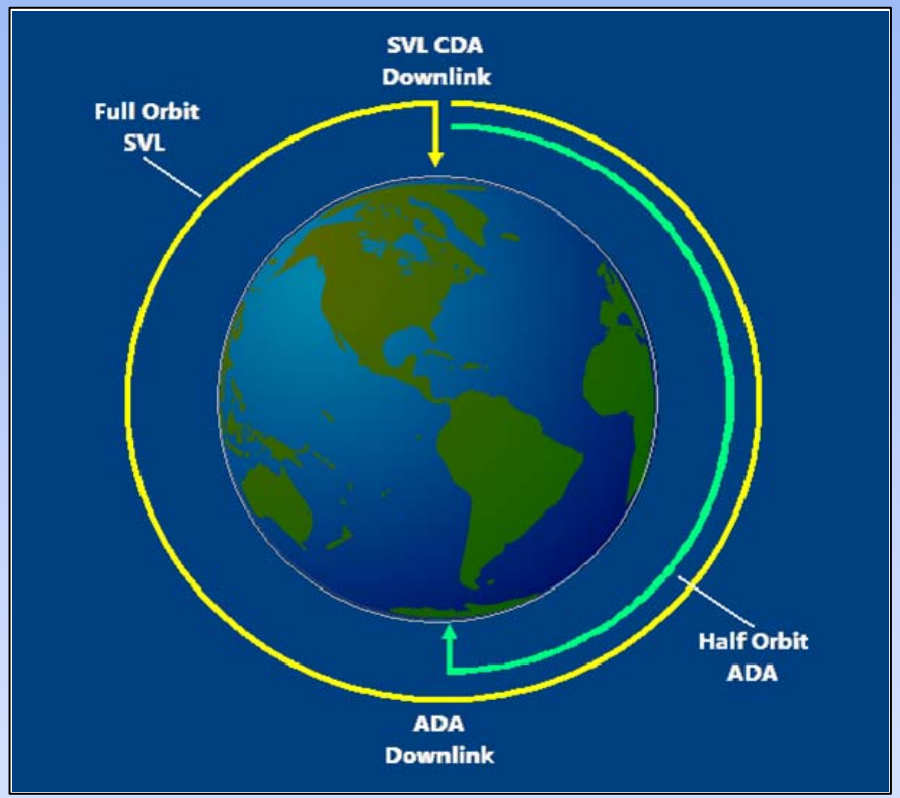
- ***McMurdo Station – Ross Island***
- ***77.5°S (similar in Latitude to Svalbard)***
- ***166.6°E (below Australia/New Zealand)***

- Operational Processing and Delivery began June 10, 2011 for Metop-A
- DMSP F-17 & F-18 became operational in February, 2012

Reference for Map: Capt Gaber, Defense Weather Systems Directorate
http://directreadout.noaa.gov/miami11/docs/5.9_Gaber_DWSD.pptx
Reference for Image: http://www.eumetsat.int/Home/Main/News/Features/807695?l=en

DMSP ADA Benefit to Users

- There are 14 DMSP orbit ingests at McMurdo per day per satellite
- DMSP ADA provides ~ 30 minutes of improved latency for the first half orbit
- Second half of orbit does not benefit (like Metop-A) due to the DMSP CDAs at Fairbanks, Wallops, Suitland (compared to the single other Metop-A CDA at Svalbard)
- Impacts these files: EDR/TDR/SDR/UPP (unifed pre-process) data (ESPC names “TDUP”))



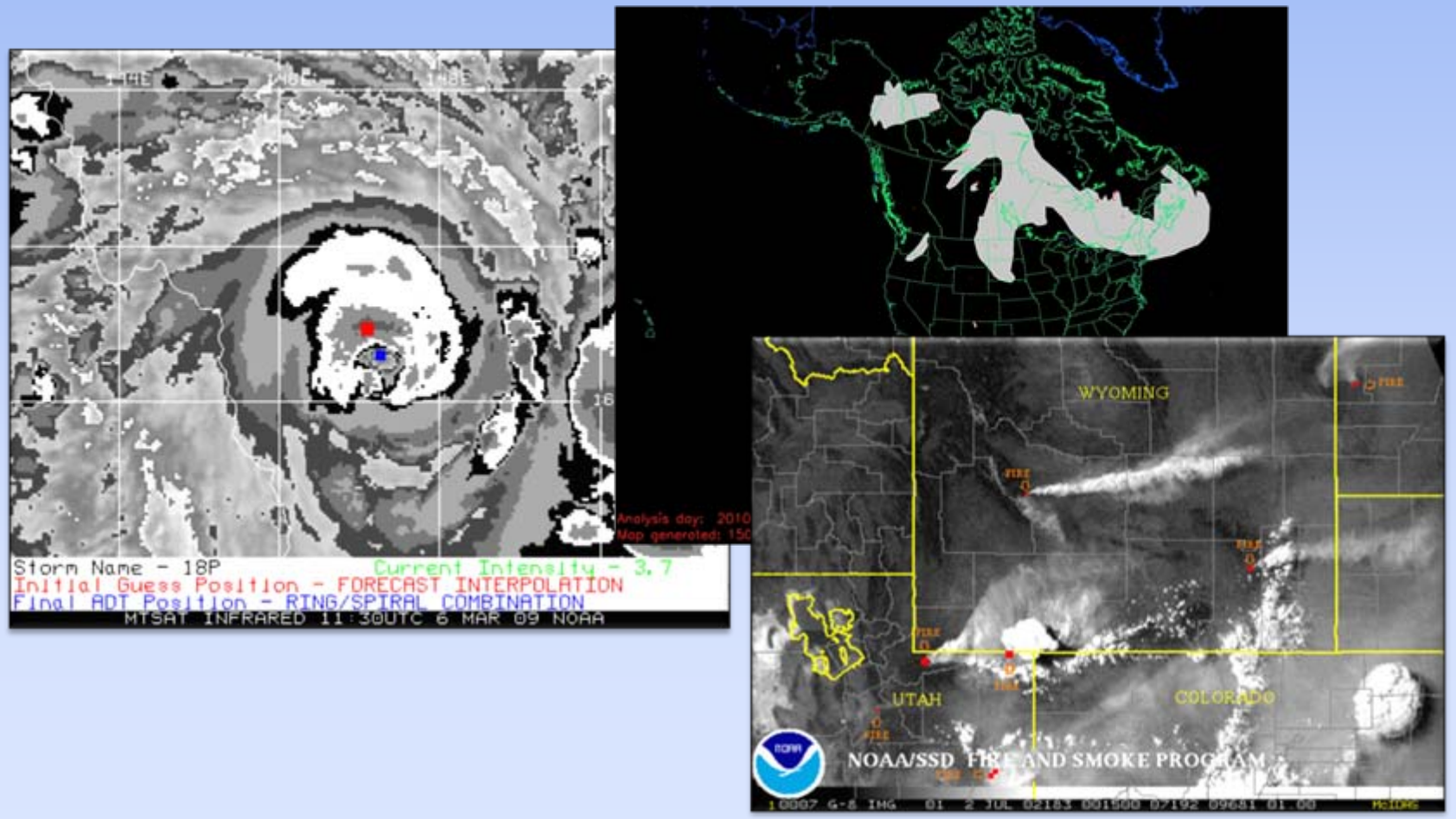
SVL CDA – Svalbard Command & Data Acquisition

ADA – Antarctica Data Acquisition

McIDAS at ESPC

McIDAS at ESPC

- Over 50 applications in ESPC use McIDAS, McIDAS libraries, input files (AREA), or serve McIDAS files (AREA) via ADDE
- ADT, ABBA, CSBT, HMS, others…



McIDAS at ESPC

- Windsat is in McIDAS area on ESPC polar server for brightness temperature
- Heavily using the local GINI server in McIDAS format for validation checks (image previews) prior to sending test data to NWS AWIPS
- McIDAS was relied upon for the GOES-11 to GOES-15 conversion to AWIPS
- Cons – Lack of AIX support (GOES-East, GOES-West, TCFP, MTCSWA are all on AIX servers)
- ESPC is working on moving the GINI's from SGI IRIX to Linux

McIDAS at ESPC

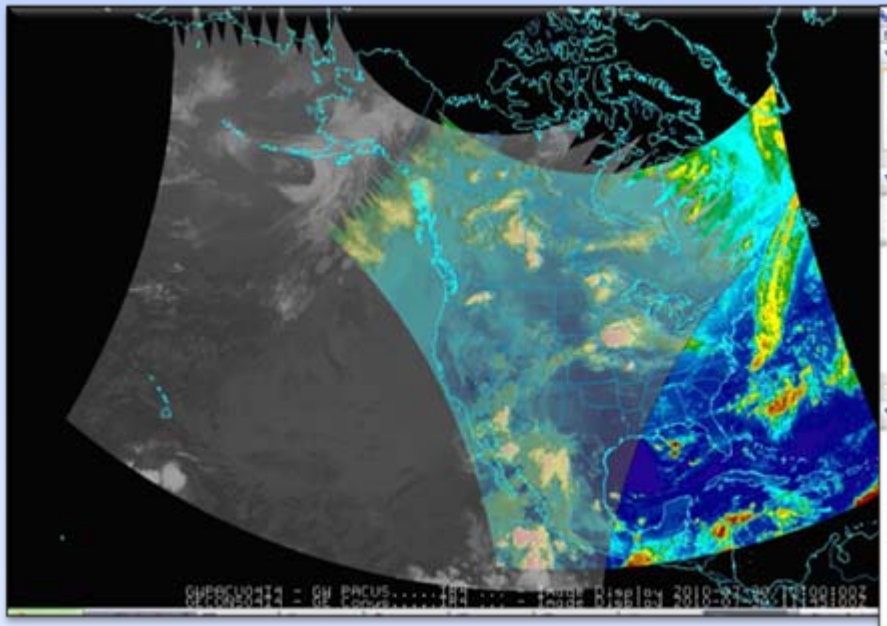
- Over 20 SDIs at NSOF and Wallops OBF:
  - GOES-East, West, spare (-15)
  - MTSAT
  - GOES Ingest and NOAAPORT Interface (GINI)

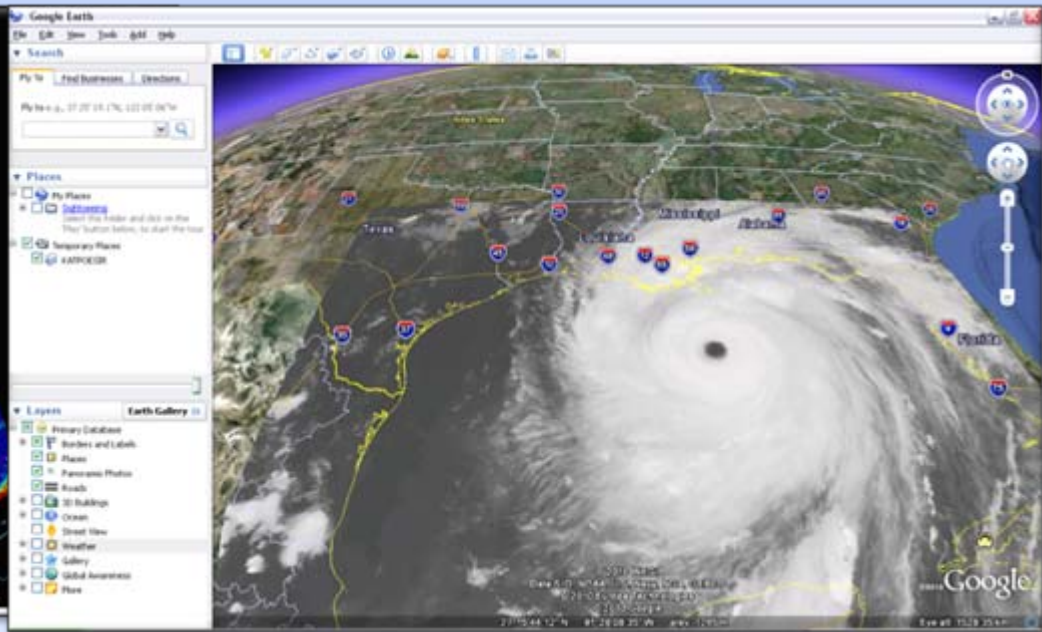
- Over 20 High Performance Workstations in Satellite Analysis Branch:
  - -X for realtime analysis, product generation, and QA/QC
  - RHEL 5 Linux on Intel x86
  - Many “home grown” programs in Fortran, .PGM, BATCH

- ESPC Product Generation/Distribution:
  - IBM P6 Series with Linux Partitions
  - Migration from Intel to IBM completed in 2008 (byte flipping)
  - GINI running on SGI IRIX

McIDAS Advantages at ESPC

- The ADDE protocol allows for many users accessing single systems with one port (112)
- Common legacy (and future?) formats for satellite remote sensing data (GOES and POES) and ancillary information for research and operations



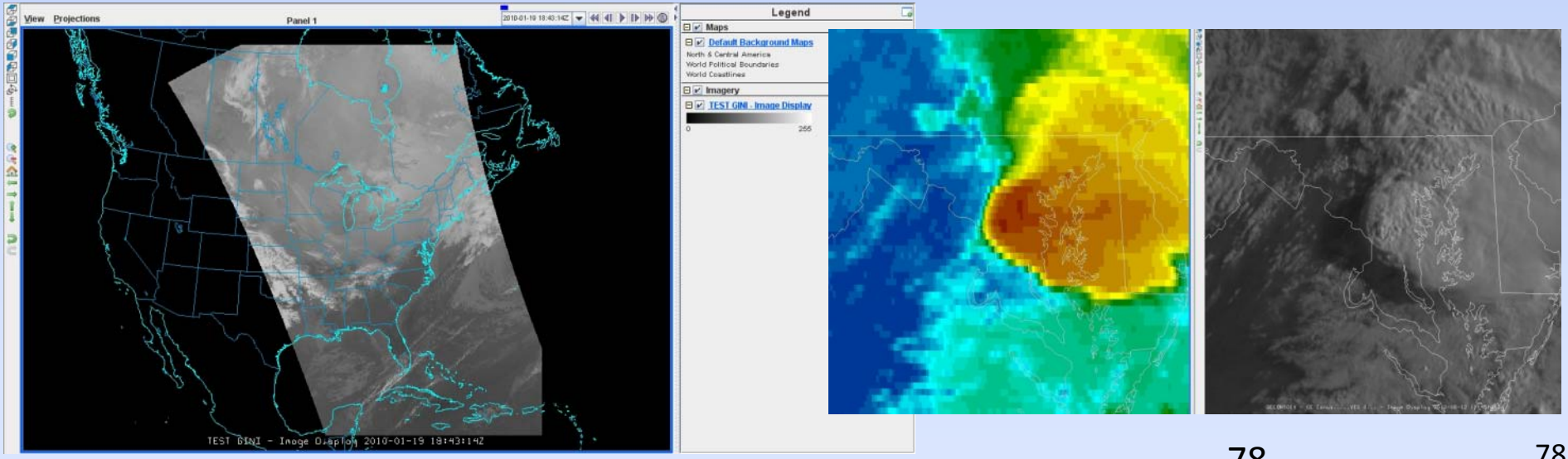


McIDAS Advantages in SAB

- Ability to have quick, efficient load of 900+ frames is essential. The ability to load (display) imagery literally as it is coming in to the servers. This is important when every minute counts for products that are fast developing - like volcanic eruptions and flash floods and to some extent fires. This cannot be done with NAWIPS or HMS. In fact, depending on the area of concern up to 20 minutes is lost waiting for imagery to show up on these other systems vs McIDAS.
- SAB Analysts have great familiarity with McIDAS
- Since the NWS is the primary user of many SAB products (e.g. volcanic ash and heavy precipitation), there are benefits for SAB to conduct PG on the NWS platform, NAWIPS for communication, firewall, and security reasons
- Analysts find this to be a hindrance because McIDAS allows for greater manipulation, interrogation, and imagery generation than NAWIPS or HMS (Fires & Smoke)

McIDAS Challenges at ESPC

- Maintaining efficient access to servers for operations
- Additional customer requirements for advanced data formats (GIS, KMZ)… writing own local code for NPP VIIRS, Windsat, others to convert them to AREA files as there are no local servers
- Learning Curve with commands
- Color Tables – only 8 bit – problem with upcoming GOES-R



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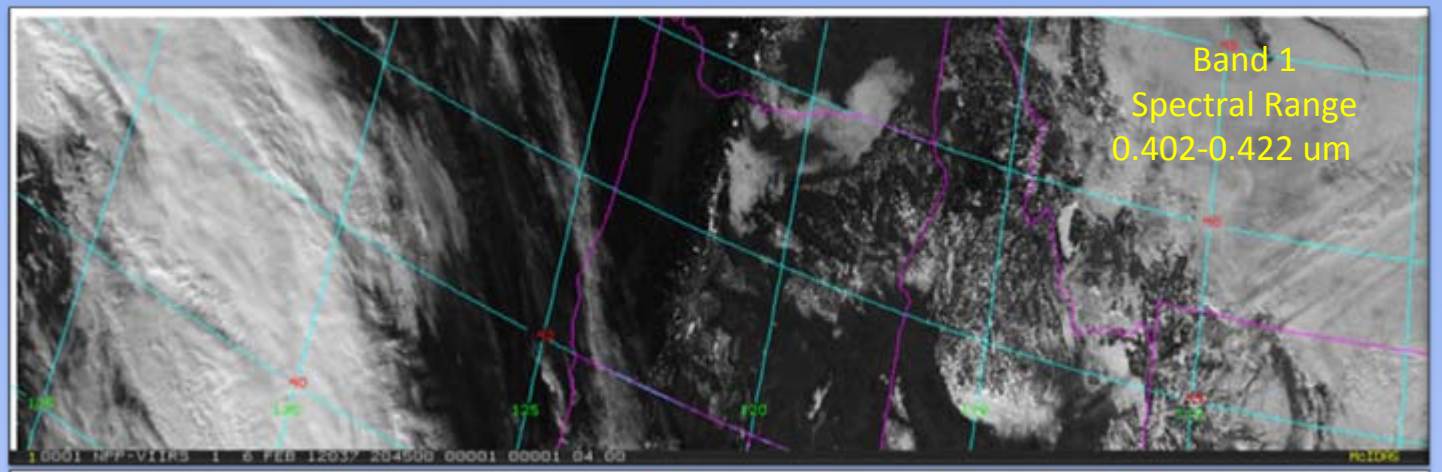
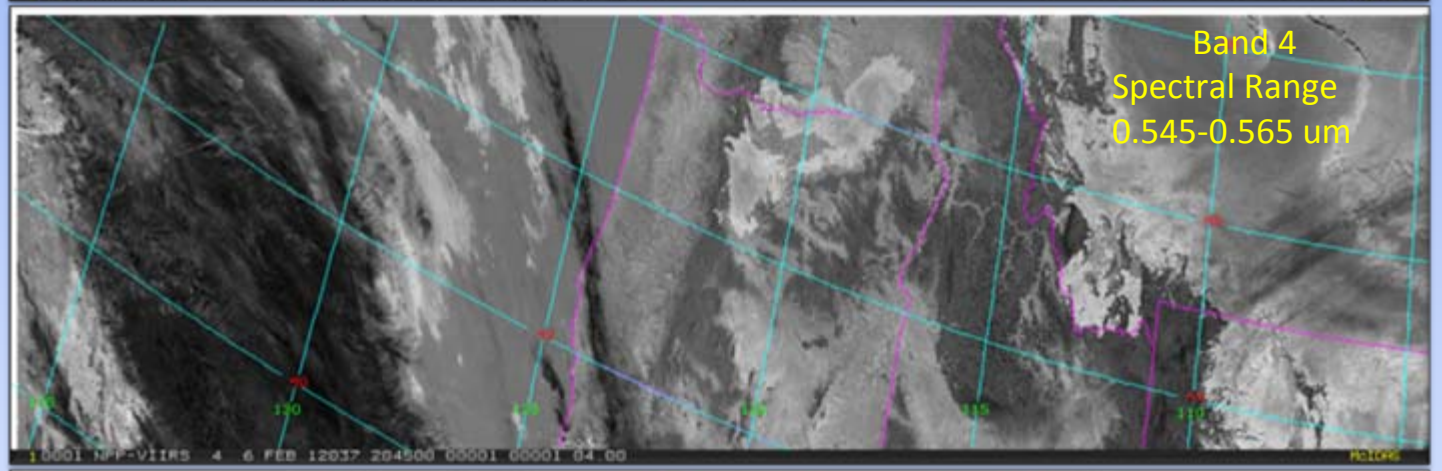
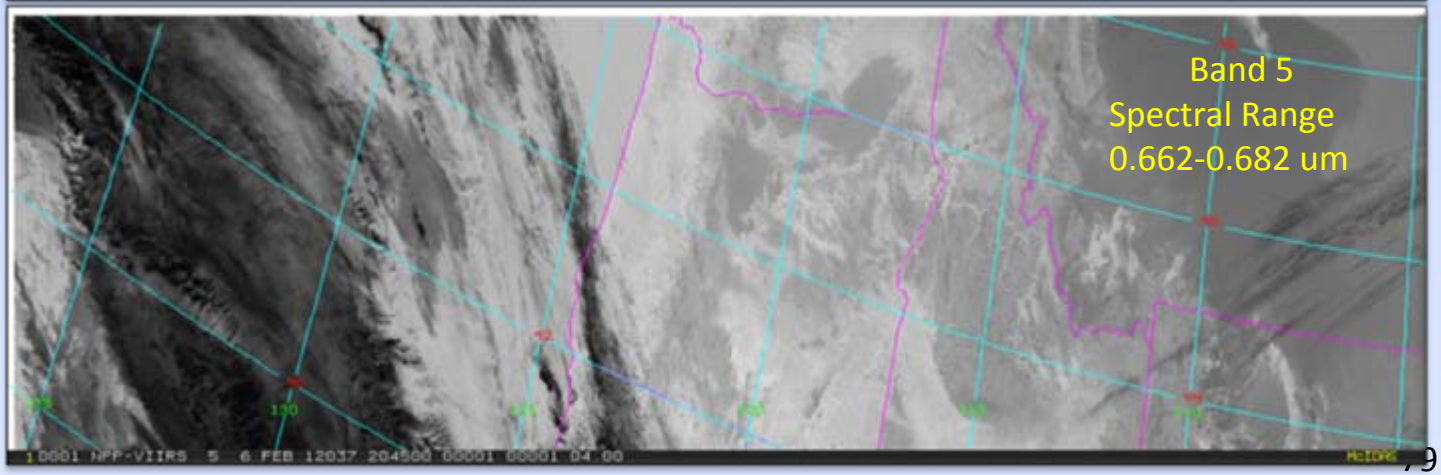
NPP VIIRS EDR Imager-Band Conversion from NetCDF to McIDAS (provided by Jerry Guo)

Imagery Resolution Band for EDR:
NPP/EDRI1
NPP/EDRI2
NPP/EDRI3
NPP/EDRI4
NPP/EDRI5
If you would like, may add
Moderate Resolution Band for EDR:
NPP/EDRM1ST
NPP/EDRM2ND
NPP/EDRM3RD
NPP/EDRM4TH
NPP/EDRM5TH
NPP/EDRM6TH
Day Night Band for EDR:
NPP/NCC
Moderate Resolution Band for SDR:
NPP/SDRM2
NPP/SDRM3
NPP/SDRM5
NPP/SDRM6
NPP/SDRM8
NPP/SDRM11
NPP/SDRM12
NPP/SDRM13
NPP/SDRM7
NPP/SDRM10







New or Enhanced Products & Services

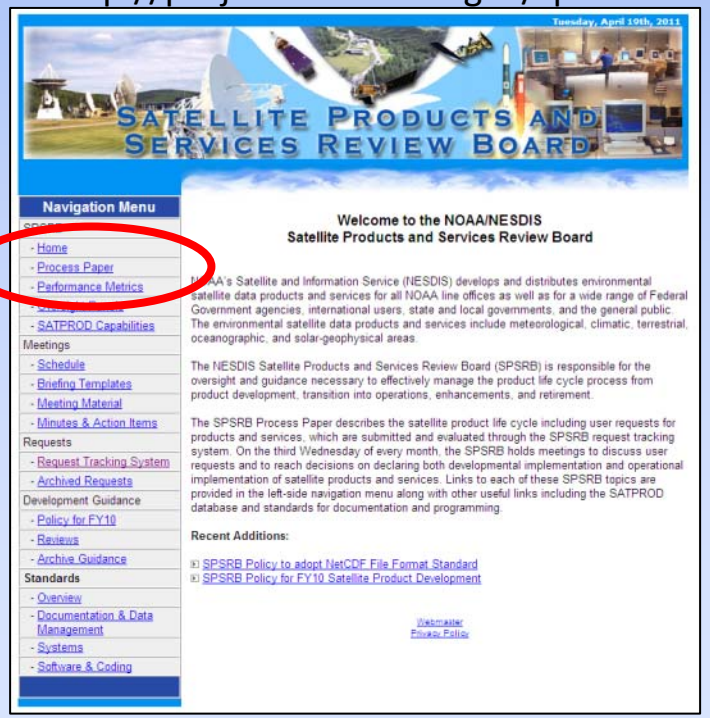
SPSRB Requests

(Satellite Products & Services Review Board)

Several new requests since last quarterly meeting – Gridded Clouds (format, res), Elektro-L radiances for fire/aerosols, NPP Vegetation

All new development projects require a user request from a federal agency.

http://projects.osd.noaa.gov/spsrb



https://requesttracker.osd.noaa.gov/admin_login.asp

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Space Weather Data Plot

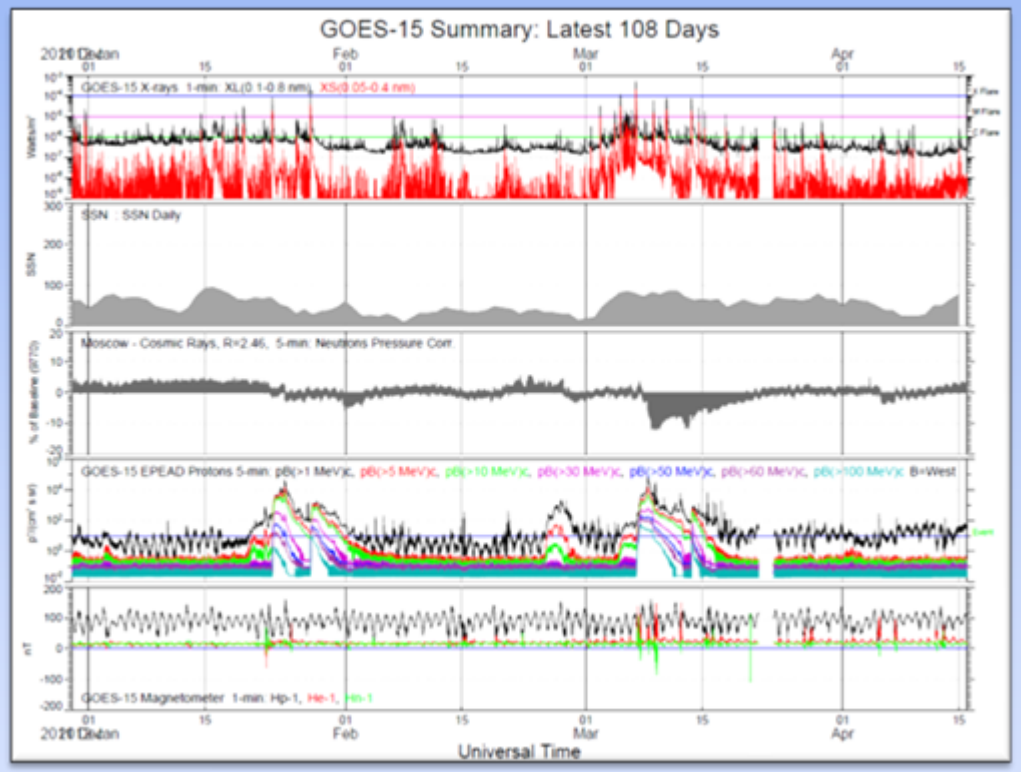


Image courtesy of NESDIS/NGDC

In addition to the 3-day and 14-day space environment plots, a new time series of 108 days has been add for both GOES-13 and GOES-15 satellites

Promoted April, 2012

http://satdat.ngdc.noaa.gov/sem/goes/data/new_plots/latest/goes15/g15_summary_latest108days.pdf

Blended TPW

(Total Precipitable Water)

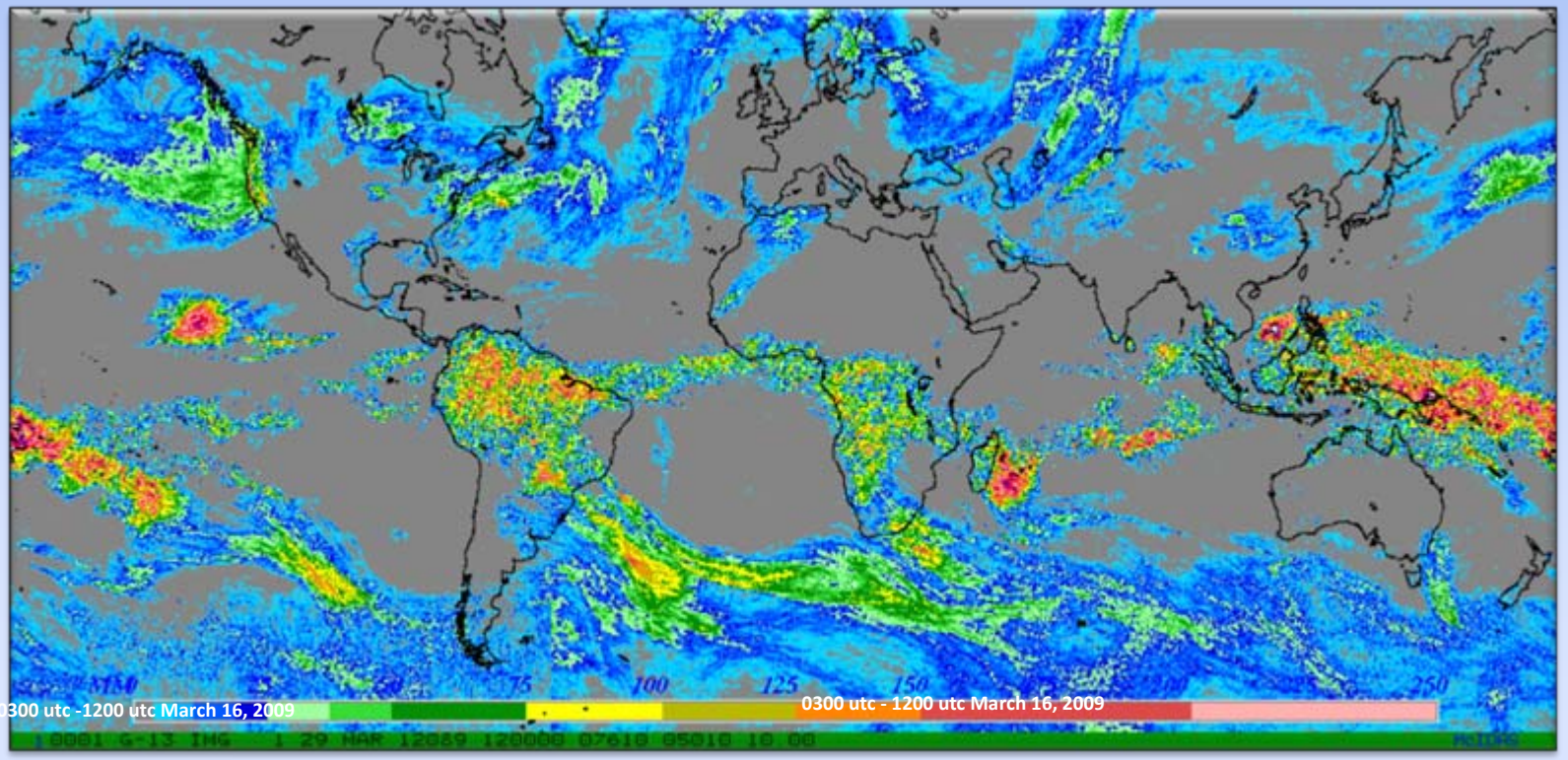
- Blended TPW replaced the MIRS AMSU TPW from N18, N19 and Metop-A with those from the MSPPS over ocean, while still keeping MIRS TPW over land.

- Improved spatial and temporal continuity for the blended TPW products , especially over west pacific ocean.

- The changes were implemented into operation on March 26 , 2012

Global Hydro-Estimator (GHE)

- Instantaneous rain rate, 1 hour, 3 hour, 6 hour, 24 hour and also multi-day precipitation accumulation
- Available in GRIB, McIDAS and netCDF4 formats through DDS and ADDE servers
- Can be accessed through NAWIPS, but no requirement for AWIPS
- The operational promotion occurred on April 30, 2012



Promotion Readiness Activities

- ESPC systems freeze is months removed and promotion activities are hot!
- Green Vegetation Fraction (GVF) data continuity and upgrades for NPP/VIIRS (GVF) Critical Design Review (CDR) held April 3rd
  - The GVF system will produce a Weekly Green Vegetation Fraction (GVF) global (4km) and regional (1km) map using VIIRS Surface Reflectance, Cloud Mask, and Geolocation
- Infrared Atmospheric Sounding Interferometer (IASI) Phase 2 Software Code Review held April 4th
  - Overall the IASI code meets the SPSRB software coding standards, the review team highlighted several issues that need to be resolved before proceeding to operational transition.
- Microwave Integrated Retrieval System (MiRS) NPP/ATMS Integration into NDE System Readiness Review (SRR) held April 19th
  - The review included open risks and actions, system requirements, system integration of MiRS into the NPOESS Data Exploitation (NDE) environment and system readiness (incl. system test, readiness for users and maintenance/operations).

Data Access Policy, CRM, Upcoming Conferences, Feedback

Data Access & Distribution Policy

Contact: NESDIS.data.access@noaa.gov

www.ospo.noaa.gov

- To consistently vet user requests for near real-time satellite data and products based on organizational affiliation or type of application
- To effectively manage data distribution resources to ensure effective system performance
- To be in compliance with policy, procedures and required interconnection agreements with NIST/DOC IT security regulations
- To factor ESPC IT system planning and future distribution resource availability and capacity needs into data access decisions

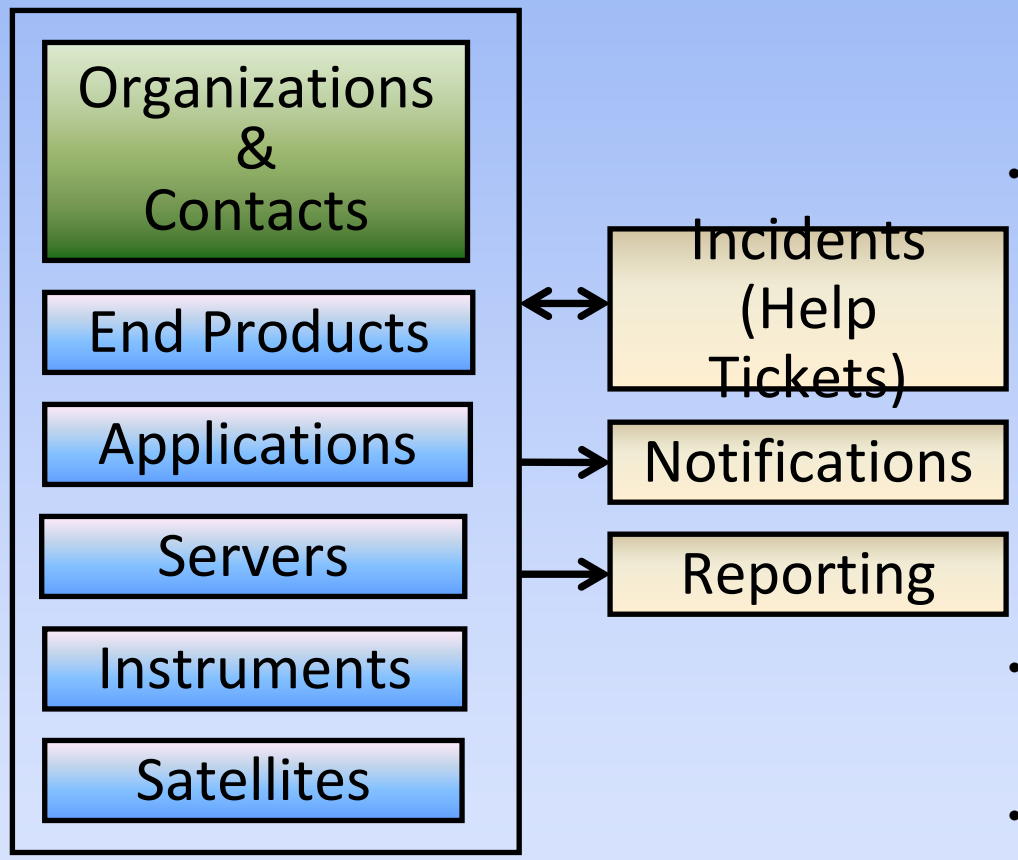
Data Access & Distribution Policy

Contact: NESDIS.data.access@noaa.gov

www.ospo.noaa.gov

- DDS Re-Validation is nearly complete
  - User list was validated and finalized
  - New DDS is set up with test data available
  - DDS Adminstrator, Donna McNamara, has asked all DDS users to confirm their connectivity to the new DDS
  - Users who need early access to Metop-B data after the May 23 launch will be set to get that data only from the New DDS
  - The new DDS will be operational in June or later. The exact date will be provided when it is known.
  - The count of accounts to be removed on the new DDS - 24! That's 17%.
- Satepsdist Re-Validation exercise will be conducted this summer

Customer Relationship Management (CRM) Database



- **The Goal** is for improved management of
  - Product Monitoring Procedures
  - Trouble Tickets
  - Notifications
  - Tracking of Interactions with Users
- **Data Load Status**
  - Complete
    - Satellites
    - Instruments
    - Applications
    - End Products
    - Servers
  - In Progress
    - Organizations and Contacts
    - User / End Product Linkage
- **Training for Help Desk and PALs**
  - Complete – Incident Tracking
  - Next – Queries & Notifications
- **Web Portal (Future)**
  - User Help Ticket Submission
  - User Contact Information and Reaffirmation

CRM - Application Usage

- An Application is the image or science software running in ESPC that ingests satellite data & generates End Products

- 168 Applications produced for All Users
- 93 Applications used by 37 NWS centers / offices / branches
- 55% of available Applications are used by NWS
- 37% of Applications used by NWS use GOES (Any combination of GOES-12/13/15 including Blended Applications with NOAA and/or Non-NOAA POES)

CRM - End Product Usage

- An End Product is generated by an Application and may vary by satellite, instrument, region, format, resolution, etc.

- 30,560 End Products produced for All Users
  - Those are unique End Product-to-User records.
  - Some of the records include multiple satellites and sensors, some do not. It depends on how the product is typically characterized by the Product Area Lead (PAL) and users.
- 6,050 End Products used by 37 NWS centers / offices / branches
- 21% of available End Products are used by NWS
- 79% of available End Products are produced for use by Non-NWS users

Upcoming Conferences

- **EUMETSAT Meteorological Satellite Conference**
  - September 3-7, 2012
  - Sopot, Poland
  - http://www.eumetsat.int/Home/Main/News/Conferences_and_Events/810062?l=en

- **SeaSpace International Remote Sensing Conference**
  - October 21-24, 2012
  - San Diego, CA
  - http://www.seaspace.com/?mid=conference

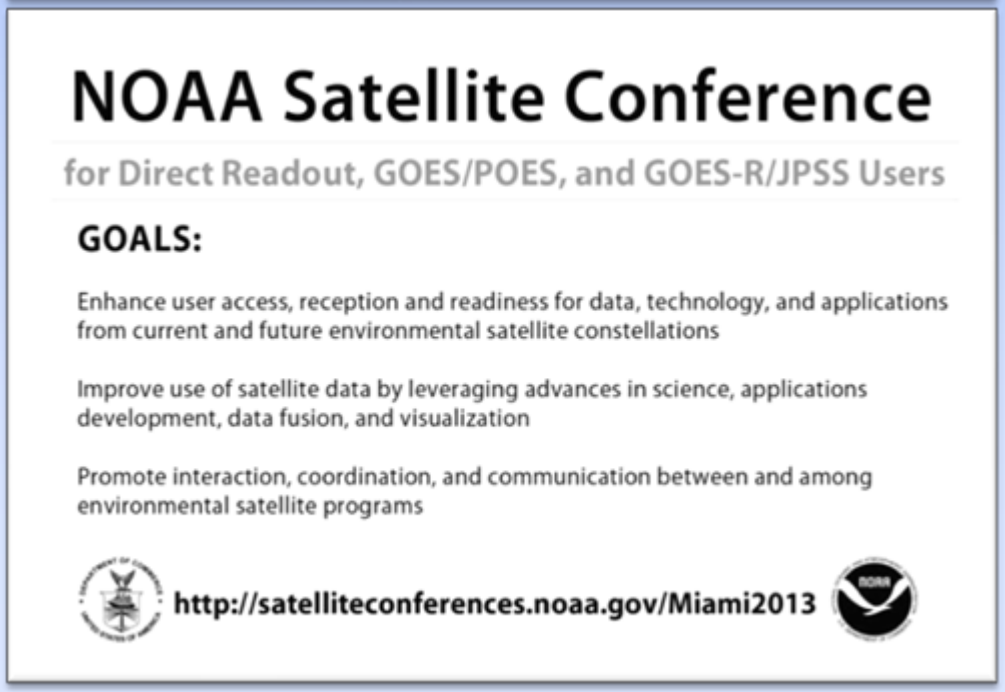
  - **NOAA Satellite Conference !!!** …see next slide

Attention Users!

If you go to DRO, this is for you!

If you go to GUC or Polar Year, this is for you!

If you care about GOES-R or JPSS, this is for you!



Looking for Feedback – Let's Talk!

- The focus of NOAA Satellite Operations
  - Availability
  - Timeliness
  - Quality

- On a scale of 1 to 10, how would you rate the quality of our relationship (or service, or a specific product) during the FY12?

- What would it take to make our operations a 10?

Contact Information

24/7 Help Desk	ESPCOperations@noaa.gov
User Services	SPSD.UserServices@noaa.gov
Data Access	NESDIS.Data.Access@noaa.gov
Webmaster	SSDWebmaster@noaa.gov
Web	www.ospo.noaa.gov
Find us on Facebook	www.facebook.com/NOAANESDIS
FOLLOW US ON twitter	www.twitter.com/usnoaagov_ospo

Office of Satellite and Product Operations (OSPO) Video

http://www.nnvl.noaa.gov/MediaDetail2.php?MediaID=1008&MediaTypeID=3&ResourceID=104489
or
http://www.youtube.com/watch?v=TWSua5ysuag