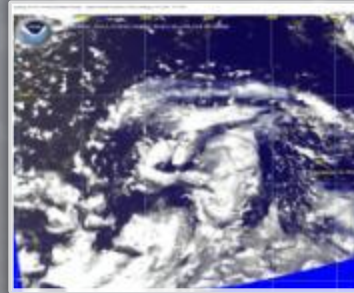
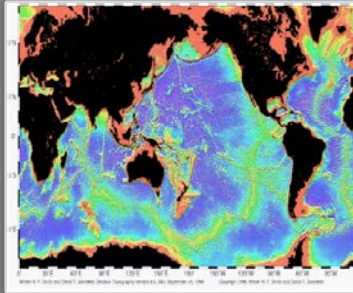
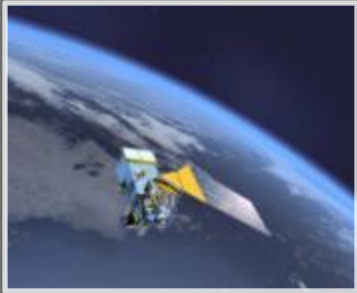
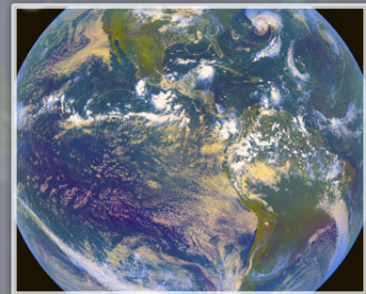
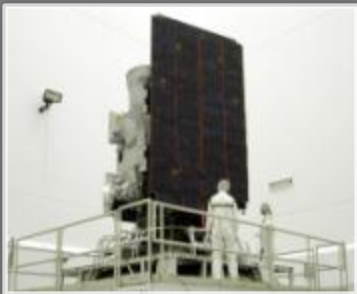


# NOAA Satellite and Information Service

National Environmental Satellite, Data, and Information Service (NESDIS)

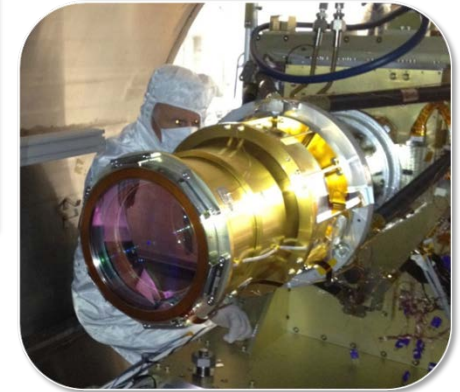


Status of Current and Future Systems (NOAA-WP-33)  
Presentation to CGMS-40  
November 2012; Lugano, Switzerland



# GOES-R Update

- ✔ GOES-R Maintains continuity of weather observations and critical environmental data from geostationary orbit
  - ✔ Provides faster scanning of entire hemisphere while simultaneously observing individual storms, provides a new lightning mapping capability for improved early warnings of severe weather, provides improved warning of solar events to minimize impact to communications, navigation systems, and power grids
- ✔ Program is in final stages of completing its Critical Design Review
- ✔ Spacecraft and instrument developments are progressing well, with instrument flight model builds underway and ground system development is making good progress at multiple contractor and government locations



GOES-R Launch Readiness Date*	October 2015
Program Architecture	4 Satellites (GOES-R, S, T & U) 10 year operational design life for each spacecraft
Program Operational Life	FY 2017 – FY 2036
Program Life-cycle (FY 2013 President's Budget)	\$10.860 billion

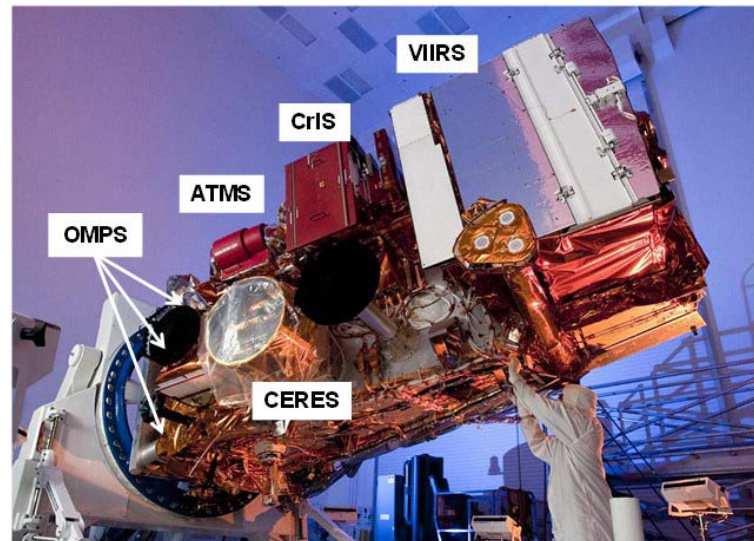
\*Launch Readiness Date based on FY 2013 President's Budget Request





# Joint Polar Satellite System (JPSS) Update

- ✔ JPSS provides operational continuity of polar afternoon orbit satellite-based observations and products
- ✔ S-NPP operating well, spacecraft and instruments healthy, cal/val progressing well and on schedule, ATMS data being assimilated into operational weather models
- ✔ JPSS-1 instruments on schedule instrument flight builds ranging from 65 to 100% complete; spacecraft development well underway; launch vehicle under contract
- ✔ RFO for free flyer spacecraft (FF1) released; supports SARSAT, data collection (ARGOS) and Total Solar Irradiance
- ✔ TSIS Calibration Transfer Experiment (TCTE) delivered and integrated into STP-3

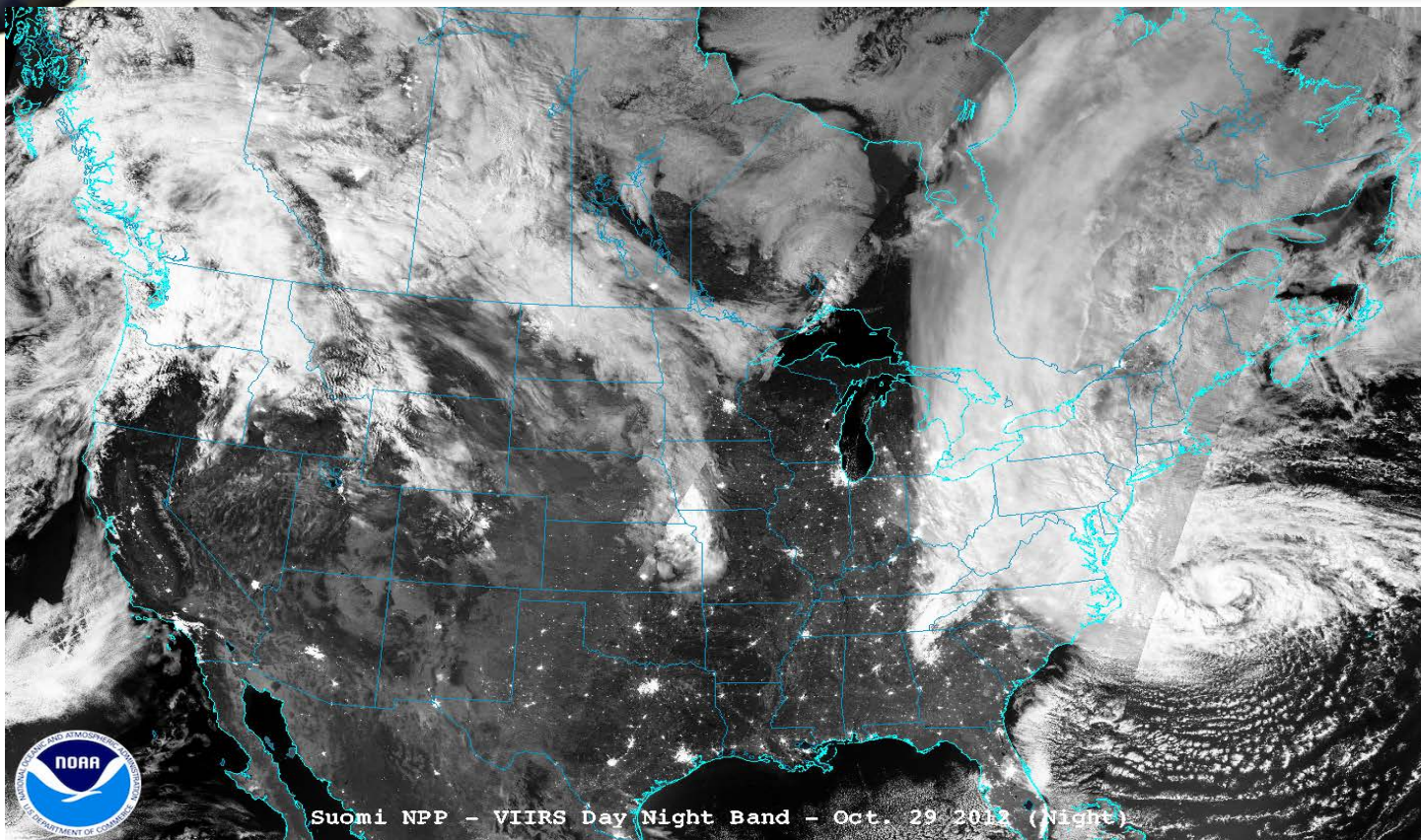


Launch Readiness Date	FY 2017 (JPSS-1)*; FY 2021 (JPSS-2)
Program Architecture	2 Satellites (JPSS-1 and JPSS-2) & 2 free-flyer satellites
Program Operational Life	FY 2016 – FY 2028
Program Life-cycle FY 2013 President's Budget	\$12.9 billion

\*Launch Readiness Date based on FY 2013 President's Budget Request



# Suomi NPP VIIRS and OMPS



As Hurricane Sandy made an historic landfall on the New Jersey coast during the night on Oct. 29, the Visible Infrared Imaging Radiometer Suite (VIIRS) on Suomi National Polar-orbiting Partnership (NPP) satellite captured this night-time view of the storm with its unique “day night band” using moonlight to provide detail cloud structures. The image provided by University of Wisconsin-Madison, is a composite of several satellite passes over North America taken 16 to 18 hours before Sandy's landfall. City lights in the south and mid-section of the U.S. are visible in the image.

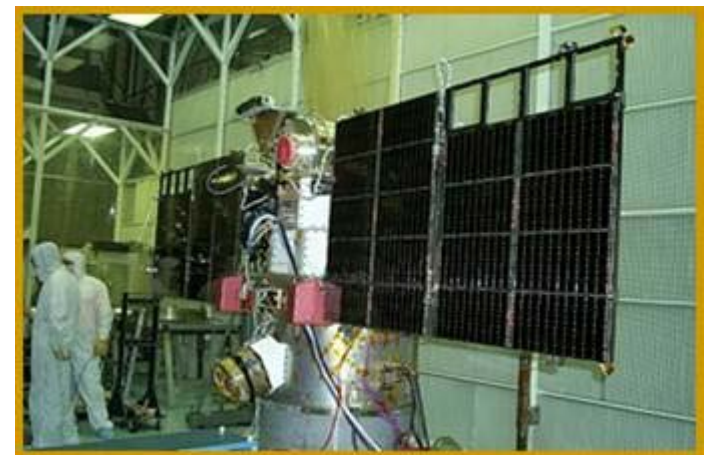
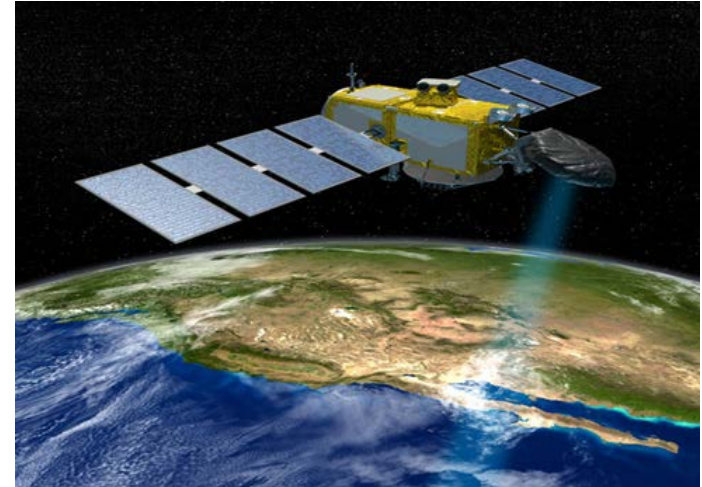






# Jason-3 and DSCOVR Updates

- Jason 3
  - Jason-3 ensures the continuity of space-based altimetry (i.e., sea surface height) observations.
  - NOAA instrument development progressing well and on target for delivery to CNES in early 2013
  - Launch vehicle (Falcon 9) under contract to support launch NET Dec 2014
- DSCOVR
  - DSCOVR provides continuity of solar wind measurements in support of advanced warnings of geomagnetic storms.
  - DSCOVR spacecraft and instrument refurbishment underway at NASA GSFC in support of launch NET 3rd Quarter FY 2014.
  - DSCOVR launch vehicle procurement underway with USAF/SMC.



\*Launch Readiness Dates based on FY 2013 President's Budget



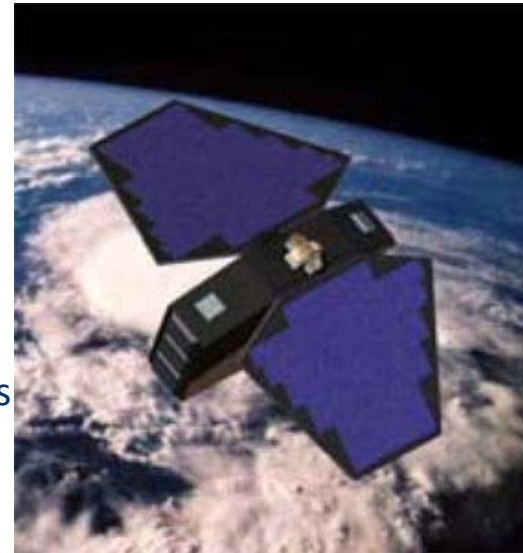
# COSMIC Updates

## ☑ COSMIC-1

- ☑ In partnership with Taiwan NSPO, COSMIC-1 provides real-time global atmospheric temperature and moisture data that are valuable in improving weather forecast accuracy
- ☑ NOAA requires continuation of GPS radio occultation (GPSRO) data that it receives from the COSMIC-1 mission, currently operating beyond the end of mission design life (2011)

## ☑ COSMIC-2

- ☑ US & Taiwan signed a MOU in May 2010 to jointly develop a satellite program to deliver next-generation global navigation satellite system (GNSS) radio occultation (RO) data to users around the world.
- ☑ USAF is on contract to provide the first six COSMIC-2 primary payloads and the launch vehicle for the first 6 COSMIC-2 satellites.
- ☑ Taiwan's NSPO selected Surrey Satellite Technology Limited (SSTL) UK as the spacecraft manufacturer.
- ☑ Ground architecture study underway that is examining the use of existing infrastructure domestically and internationally to capture the RO data from COSMIC-2 to meet operational data latencies.
  - ☑ Investigating international partnerships for ground station support





# DoD Updates

- ✔ Defense Weather Satellite System (DWSS) was canceled
- ✔ The DoD continues to hold responsibility for the early-AM polar orbit
- ✔ For the mid-term, DMSP-19 (Launch ~ January 2014) and DMSP-20 (2020) are planned for sequential launch
- ✔ For the long-term, analytical work continues on various options:
  - ✔ The Senate Armed Services Committee proposes \$60M for DoD's Operationally Responsive Space Office to study smallsat options
  - ✔ DoD has asked the Joint Center for Satellite Data Assimilation to do Observing System Simulation Experiments on forecast model sensitivity to various instrument configurations
- ✔ DoD is currently conducting an Analysis of Alternatives



# Ongoing NOAA Satellite Enterprise Activities

- ✔ Several key reviews recently reporting out and/or underway -- all focused on achieving mission success in an environment of continued fiscal pressure
  - ✔ Internally-led NOAA satellite enterprise ground study (June 2012 report) has resulted in several actions underway to enable migration to greater use of Enterprise Ground Services.
  - ✔ Internally-led study to examine consolidating NOAA's National Data Centers (July 2012 report) -- options brought forward continue to be examined and will be addressed in our FY15 deliberations
  - ✔ Independent Review Team has completed assessment of total NOAA satellite enterprise, offering several recommendations focused on maximizing probability of success (September 2012 report).
    - ✔ Provides important recommendations to NOAA and Department of Commerce with respect to oversight, governance, JPSS gap, programs and budget
    - ✔ NOAA and DOC responding aggressively, with external stakeholders reacting favorably and monitoring progress
  - ✔ NOAA Science Advisory Board's Satellite Task Force chartered to provide strategic assessment of the NOAA satellite enterprise, providing recommendations to address more affordable, flexible and robust future ground and space architectures (November 2012).
    - ✔ Report currently out for public review





# NOAA Satellite and Information Service International Partnerships

- ✔ The U.S. National Space Policy recognizes the importance of international partnerships. International partnerships are crucial to obtaining continuity, providing global observations and filling gaps:
  - ✔ NOAA-EUMETSAT Joint Polar System agreements— polar orbiting satellite systems in complementary orbits, options for exchange of key instruments, sharing of data
  - ✔ NOAA, EUMETSAT, NASA, CNES and ESA agreements for Jason-2, Jason-3 ocean altimetry missions and discussion ongoing for Jason-CS (follow-on)
  - ✔ NOAA-JAXA agreement for JAXA's Global Change Observation Missions
  - ✔ AIT-TECRO (Taiwan) for COSMIC-2 GPS radio-occultation mission
  - ✔ NOAA-EUMETSAT-JMA agreements for backup in case of failure of geostationary weather satellites
  - ✔ U.S., Canada, France, Russia International Cospas-SARSAT Programme agreements to support international search and rescue capability
  - ✔ NOAA-CNES- EUMETSAT agreements to exchange and operate Argos instruments on polar orbiting satellites
  - ✔ NOAA-NASA-ISRO agreements for Oceansat-2 scatterometer and ocean color
- ✔ NOAA also maintains a number of partnerships in CEOS through mechanisms like the Virtual Constellations

We continue to be mindful of our international partnerships in responding to our ongoing fiscal challenges



# NOAA Satellite and Information Service International Partnerships

BACK UP



# Geostationary Operational Environmental Satellite (GOES)

**GOES-13**

**Primary East Satellite (75 degrees)**

**GOES-12**

**South American Support (60 degrees)**

**GOES-14\***

**Storage/Space Weather Support**

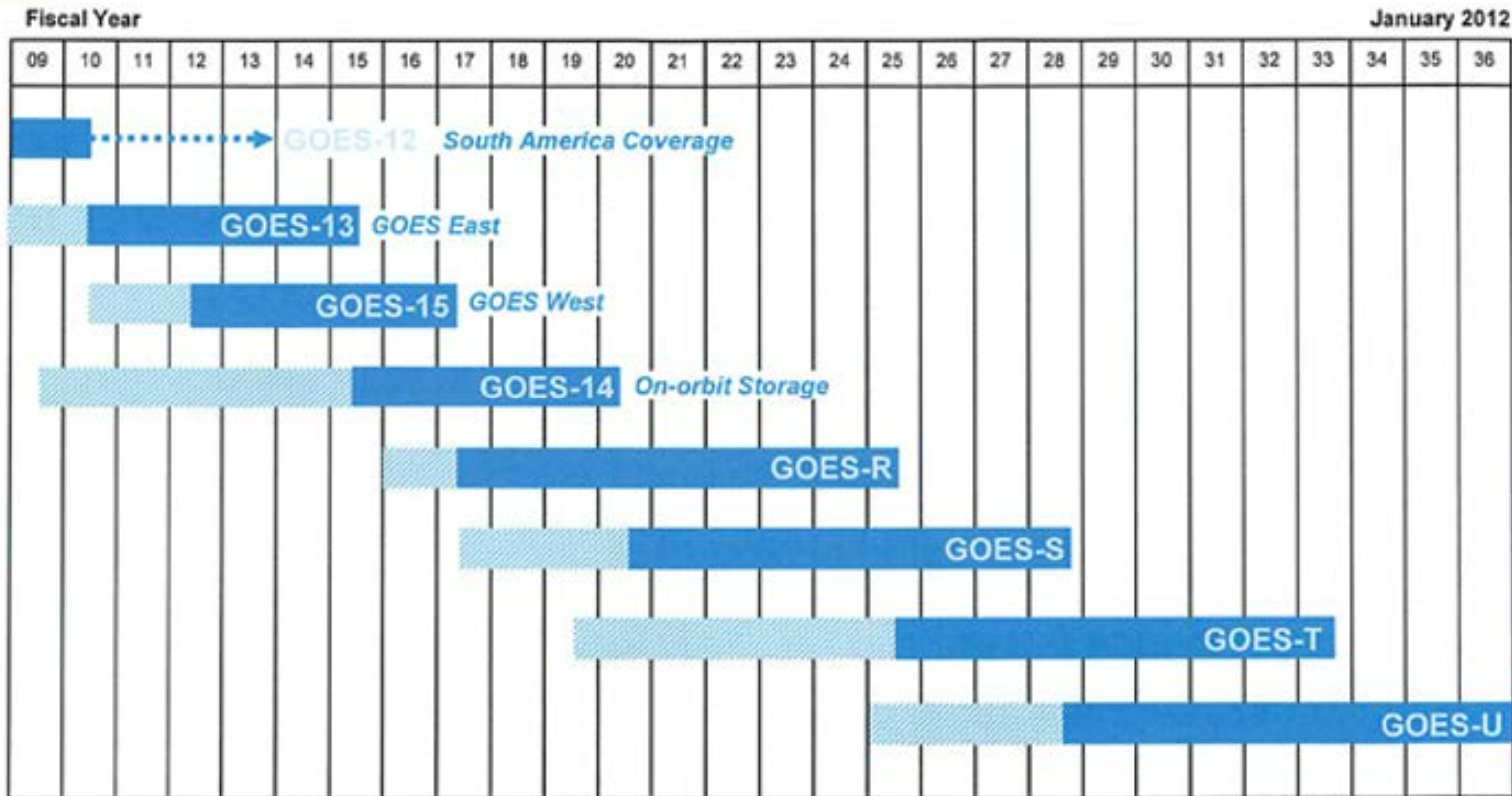
**GOES-15**

**Operational West Satellite (135 degrees)**





# Continuity of NOAA's Geostationary Satellite Program



Approved: Mary E. Kelly  
 Assistant Administrator for  
 Satellite and Information Services

Signed on: 1/25/12



Satellite is operational  
beyond design life



Post Launch Test / On-orbit  
storage



Operational





# Polar-orbiting Operational Environmental Satellites (POES)

NOAA-19 (2009)

PM Primary IJPS satellite

✓ All instruments health (HIRS, AMSUA1, AMSUA2, MHS, AVHRR, SBUV2)

Metop-A (2006)

AM Primary IJPS satellite

✓ (HIRS, AMSUA1 (7), AMSUA2, MHS, AVHRR, SBUV2)

NOAA-18 (2005) PM Secondary

HIRS, AMSUA1, AMSUA2, MHS, AVHRR, SBUV2

NOAA-17 (2002) AM Backup

HIRS, AMSUA1, AMSUA2, AMSUB, AVHRR, SBUV2

NOAA-16 (2000) PM Secondary

HIRS, AMSUA1, AMSUA2, AMSUB, AVHRR, SBUV2

NOAA-15 (1998) AM Secondary

HIRS, AMSUA1, AMSUA2, AMSUB, AVHRR

[www.oso.noaa.gov/poesstatus](http://www.oso.noaa.gov/poesstatus)

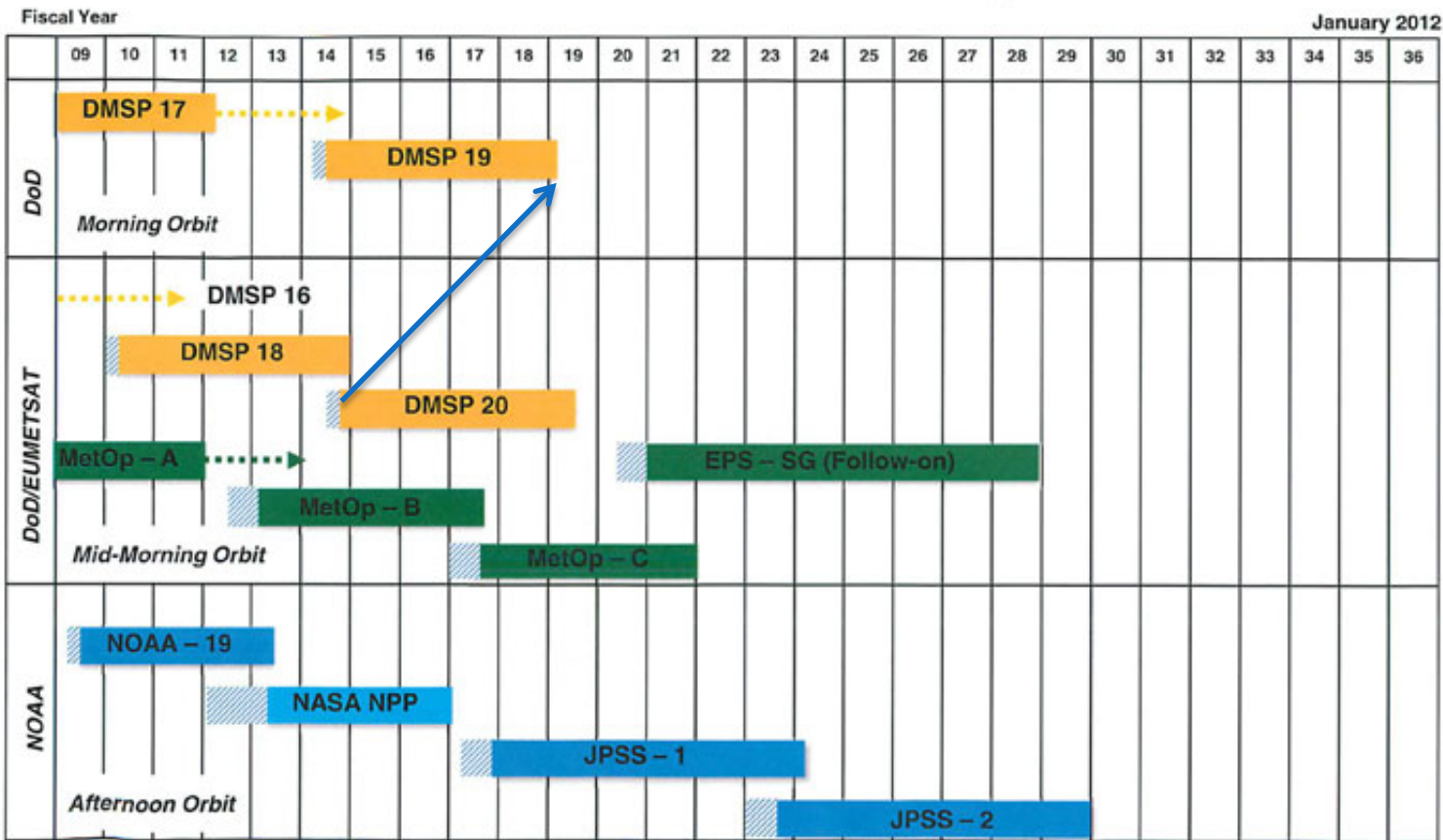
<http://www.star.nesdis.noaa.gov/icvs> (trending)

## Status Key

Status Color	Meaning
GREEN	= Operational (or capable of)
YELLOW	= Operational with limitations (or Standby)
ORANGE	= Operational with Degraded Performance
RED	= Not Operational
BLUE	= Functional but Turned Off
BLANK	= No Status Reported



# Continuity of NOAA's Polar Satellite Program



Approved: *Mary E. Hays*  
 Assistant Administrator for  
 Satellite and Information Services

Signed on: *2-08-2012*

.....▶ Satellite is operational beyond design life

▨ Post Launch Test

█ Operational

