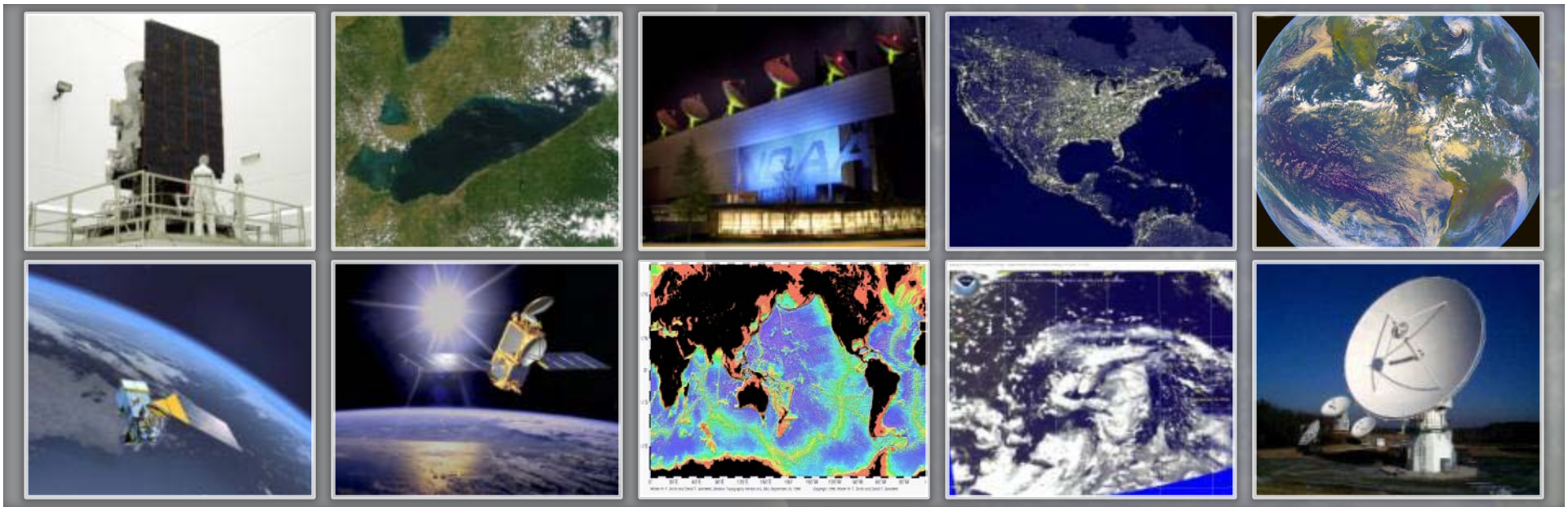
NOAA Satellite and Information Service

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



Mary E. Kicza
Assistant Administrator, NOAA Satellite and Information Service

April 5, 2011

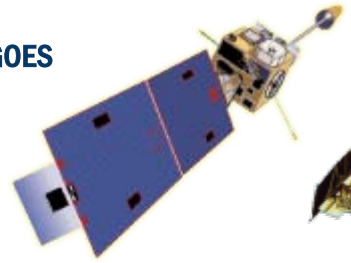
NOAA Satellite and Information Service (NESDIS)

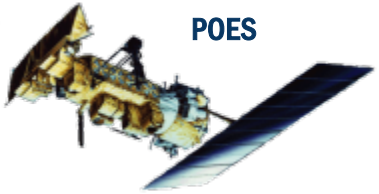
Our mission is to deliver accurate, timely, and reliable satellite observations and integrated products and to provide long-term stewardship for global environmental data in support of the NOAA mission.

Principal Activities

Current Satellite Programs

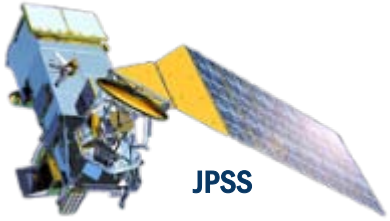
- 24/7 Satellite operations and product processing
  - Geostationary satellites (GOES)
  - Polar-orbiting satellites (POES)
  - Defense Meteorological Satellite Program (DMSP)
    - DMSP is operated by NOAA on cost reimbursable basis for the Air Force
  - Jason-2 Altimetry satellite (started in Fall 2008)



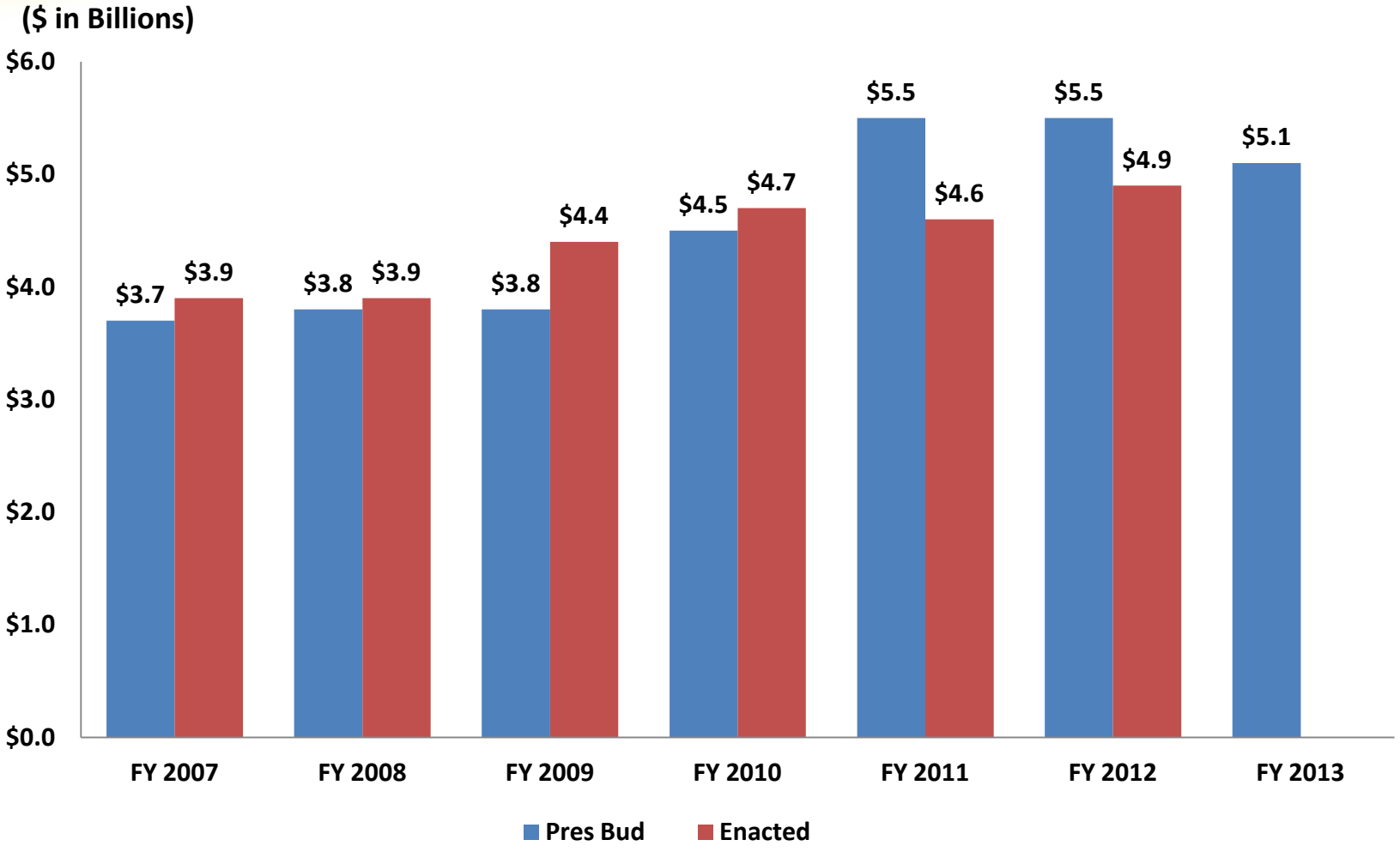


Future Satellite Programs

- Joint Polar Satellite System (JPSS)
- GOES-R
- DSCOVR
- Jason-3



NOAA Budget Trend
- (FY 2007 to FY 2013)



NESDIS BUDGET OVERVIEW

($ in millions)	FY 2011 Spend Plan	FY 2012 Spend Plan	Program Change	FY 2013 President's Request
Environmental Satellite Observing Systems (ORF) Forecasts	$114.6	$112.5	$9.7	$123.2
NOAA Data Centers and Information Services	$69.1	$68.7	($1.3)	$67.9
Subtotal ORF	**$183.7**	**$181.2**	**$8.3**	**$191.1**
Systems Acquisition	$1,258.2	$1,694.4	$153.7	$1,848.1
Construction	$2.2	$2.2	$0.0	$2.2
Subtotal PAC	**$1,260.4**	**$1,696.6**	**$153.7**	**$1,850.3**
NESDIS Total	**$1,444.1**	**$1,877.8**	**$162.0**	**$2041.4***

* FY 2013 total of $2041.4 includes $1.5M for inflationary adjustments. This yields a delta of $163.2M from FY12 Enacted to FY13 PBR.

NESDIS ORF: $191.1 million

ORF Account ($ M)	FY 2013 President's Budget
Environmental Satellite Observing Systems	$123.2
Data Centers and Information Services	$67.9
Total*	**$191.1**

*Numbers may not add due to rounding and excluding inflationary adjustments

Environmental Satellite Observing Systems: $123.2 million

ORF Account ($M)	FY 2011 Spend Plan	FY 2012 Spend Plan	Program Change	FY 2013 President's Budget
Satellite Command and Control	$47.9	$47.6	$0.2	$48.2
Product Processing and Distribution	$36.0	$35.9	$9.4	$45.7
Product Development, Readiness & Application	$28.2	26.7	$0.1	$27.0
Office of Space Commercialization	$0.7	$0.7	$0.0	$0.7
Commercial Remote Sensing Licensing & Enforcement	$1.3	$1.1	$0.0	$1.1
Group on Earth Observations (GEO)	$0.5	$0.5	$0.0	$0.5
Total*	**$114.6**	**$112.5**	**$9.7**	**$123.2**

* Numbers may not add due to rounding and excluding inflationary adjustments

NESDIS PAC: $1,850.3 million

PAC Account ($ M)	FY 2013 President's Budget
Satellite Acquisitions	$1,833.4
Data and Other Systems Investment	$16.9
Total*	**$1,850.3**

* Numbers may not add due to rounding and excluding inflationary adjustments

Satellite Acquisitions: $1,833.4 million

PAC Account ($M)	FY 2011 Spend Plan	FY 2012 Spend Plan	Program Change	FY 2013 President's Budget
Geostationary Operational Environmental Satellite (GOES)-N Series	$40.5	$32.5	($2.6)	$29.9
GOES-R Series	$662.4	$615.6	$186.4	$802.0
Joint Polar Satellite System (JPSS)	$471.9	$924.0	($33.5)	$916.4
Jason-3	$19.9	$19.7	$10.3	$30.0
Restoration of Climate Sensors	$7.0	$25.9	XFER to JPSS	XFER to JPSS
Polar-orbiting Operational Environmental Satellite (POES)	$40.8	$32.2	$0.0	$32.2
Deep Space Climate Observatory (DSCOVR)	$2.0	$29.8	($6.9)	$22.9
Total*	**$1,244.4**	**$1,679.7**	**$153.7**	**$1,833.4**

* Numbers may not add due to rounding and excluding inflationary adjustments

GOES-R Overview

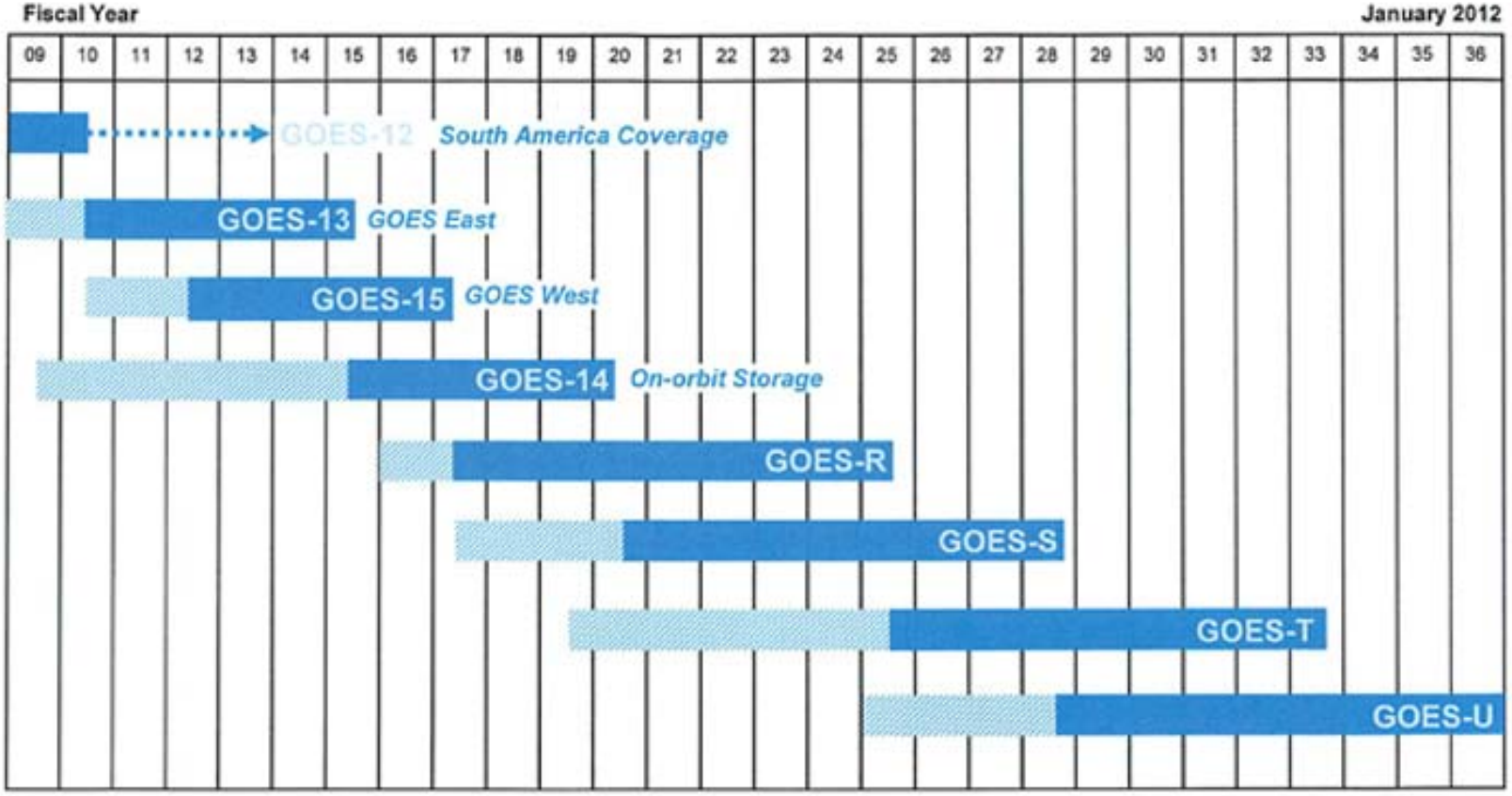
Benefits

- 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

GOES-R Launch Readiness Date*	October 2015
Program Architecture	4 Satellites (GOES R,S,T&U), 10 year operational design life
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

Continuity of NOAA's Geostationary Operational Satellite Programs



Approved: Mary E. Kicza
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

Joint Polar Satellite System (JPSS)

- JPSS will provide operational continuity of satellite-based observations and products for NOAA Polar-orbiting Operational Environmental Satellites (POES) and the Suomi National Polar Partnership (Suomi NPP) mission.

- JPSS-1 will fly the following instruments in the afternoon orbit:
  - Visible/Infrared Imager/Radiometer Suite (VIIRS)
  - Cross-track Infrared Sounder (CrIS)
  - Advanced Technology Microwave Sounder (ATMS)
  - Ozone Mapping and Profiler Suite –Nadir (OMPS-Nadir)
  - Clouds and Earth Radiant Energy System (CERES)**

- JPSS is responsible for accommodations of sensors from NOAA Climate Sensor Program (TSIS) and data communications packages (DCS and SARSAT)

- Spacecraft bus
  - Decision made to procure NPP-like spacecraft for JPSS-1
  - JPSS-2 will be subject to open competition
  - Freeflyer accommodations are under review

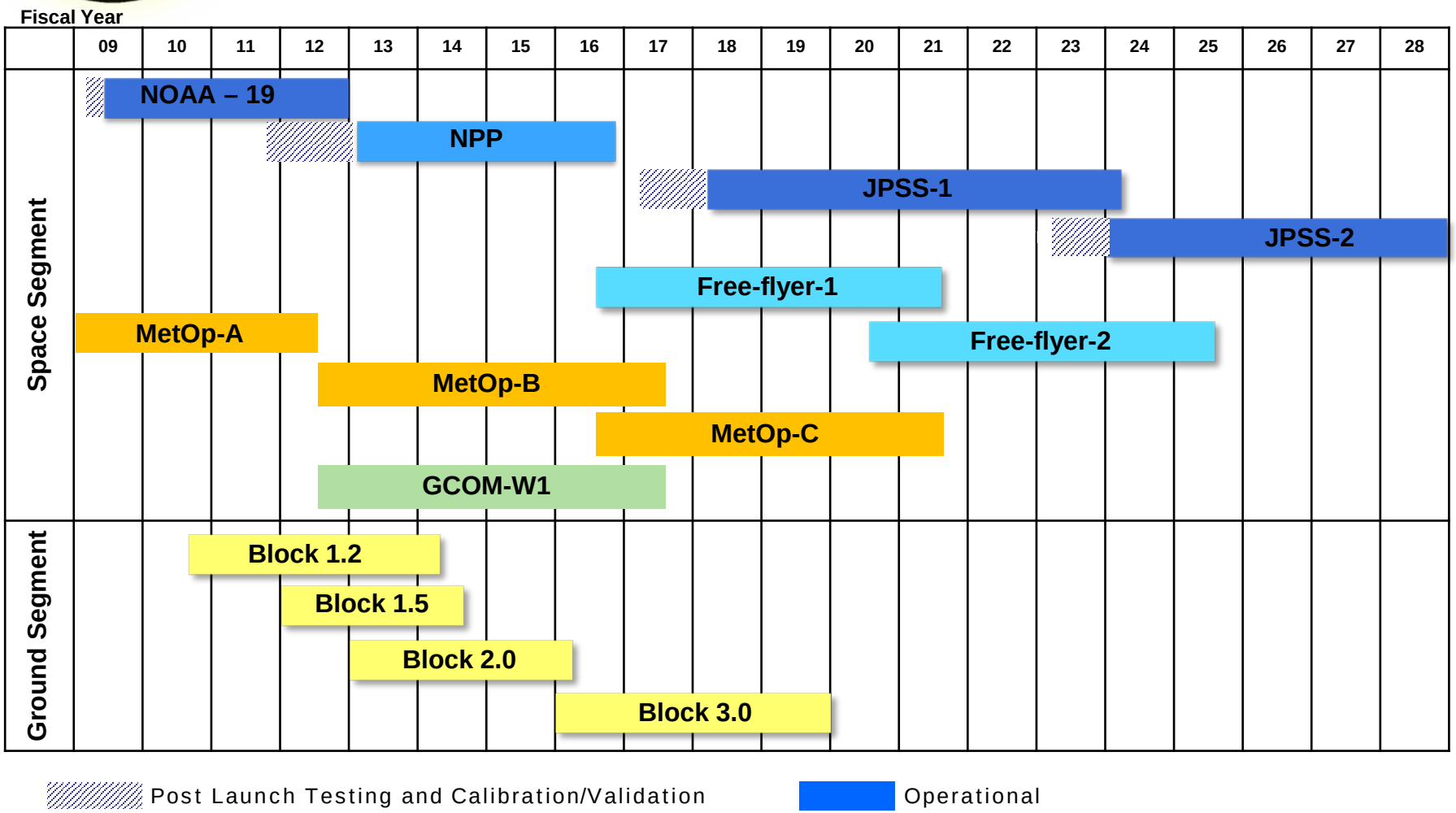
- FY 2013
  - Life cycle cost (LCC) cap of $12.9 bln will affect decisions on accommodation for OMPS, TSIS and user services instruments, data latency and other issues TBD

Launch Readiness Date	2016 (JPSS-1)*; 2018 (JPSS-2)
Program Architecture	2 Satellites (JPSS-1 and JPSS-2) & 2 free-flyer satellites (to accommodate A-DCS and SARSAT)
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

** CERES, along with TSIS, is transferred from the NOAA Climate Sensor Program to JPSS

JPSS Status


Fiscal Year
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Space Segment
NOAA – 19
NPP
JPSS-1
JPSS-2
Free-flyer-1
Free-flyer-2
MetOp-A
MetOp-B
MetOp-C
GCOM-W1
Ground Segment
Block 1.2
Block 1.5
Block 2.0
Block 3.0
Post Launch Testing and Calibration/Validation
Operational

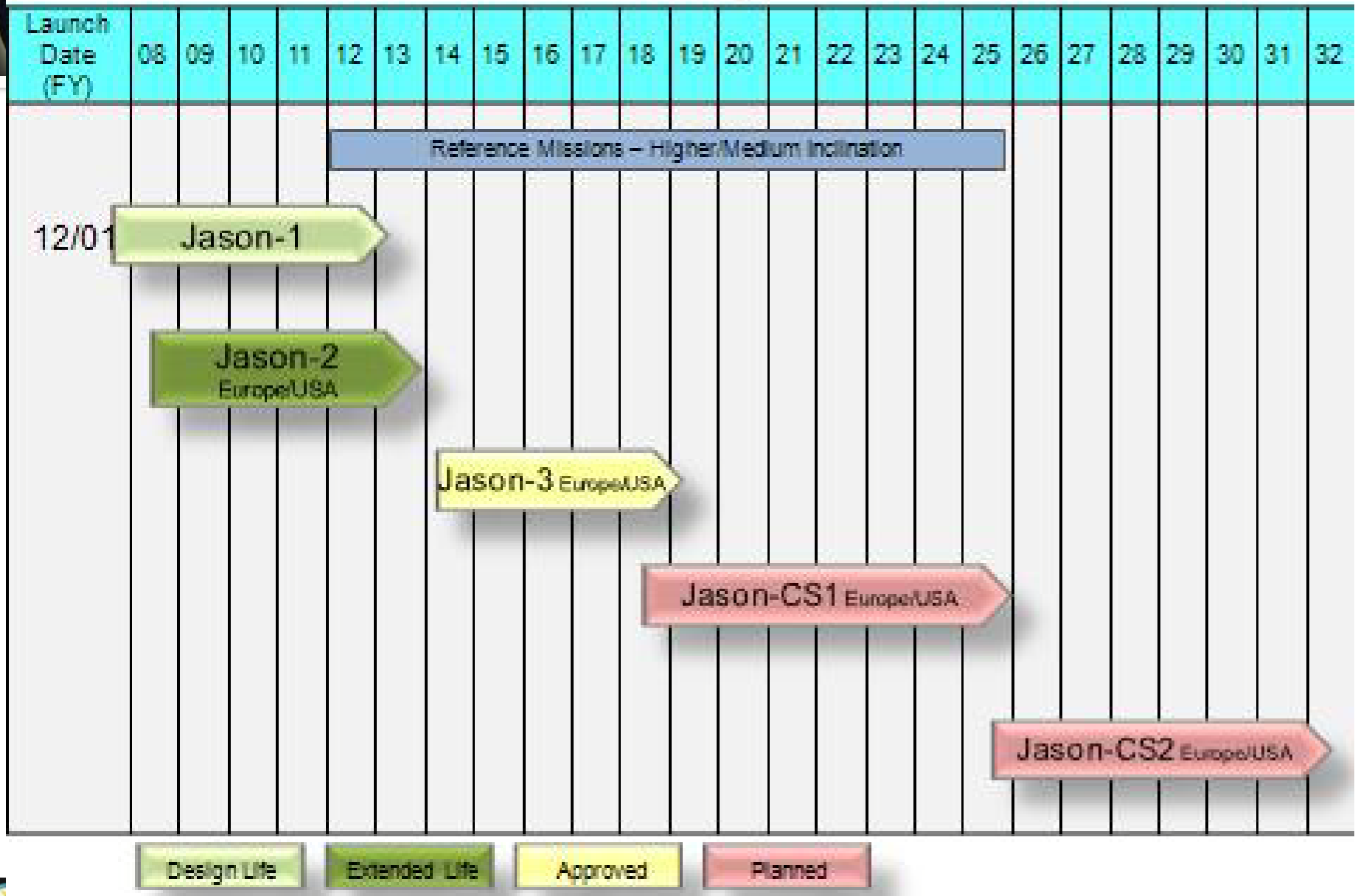
Jason-3 Altimetry Mission

($ in millions)	FY 2012 Spend Plan	Program Change	FY 2013 President's Request
PPA: Jason-3			
Jason-3	$19.7	$10.3*	$30.0

- Funding continues the development of the Jason-3 satellite, a partnership between NOAA and EUMETSAT, the European Meteorological Agency.
- Launch vehicle options are currently under review. Launch readiness date will be updated once Launch Vehicle is selected.
- Jason-3 ensures the continuity of space-based altimetry (i.e., sea surface height) observations that started over 20 years ago with TOPEX Poseidon, and continued with Jason-1 and Jason-2 satellites. Data from these satellites assist in measuring global sea level change that is associated with global climate change
- Jason-3 will also provide data that are important to assess and predict hurricane intensity, surface wave forecasts, and the monitoring of the development of El Niño/La Niña events

* Numbers may not add due to rounding and excluding inflationary adjustments

Jason Altimetry Missions



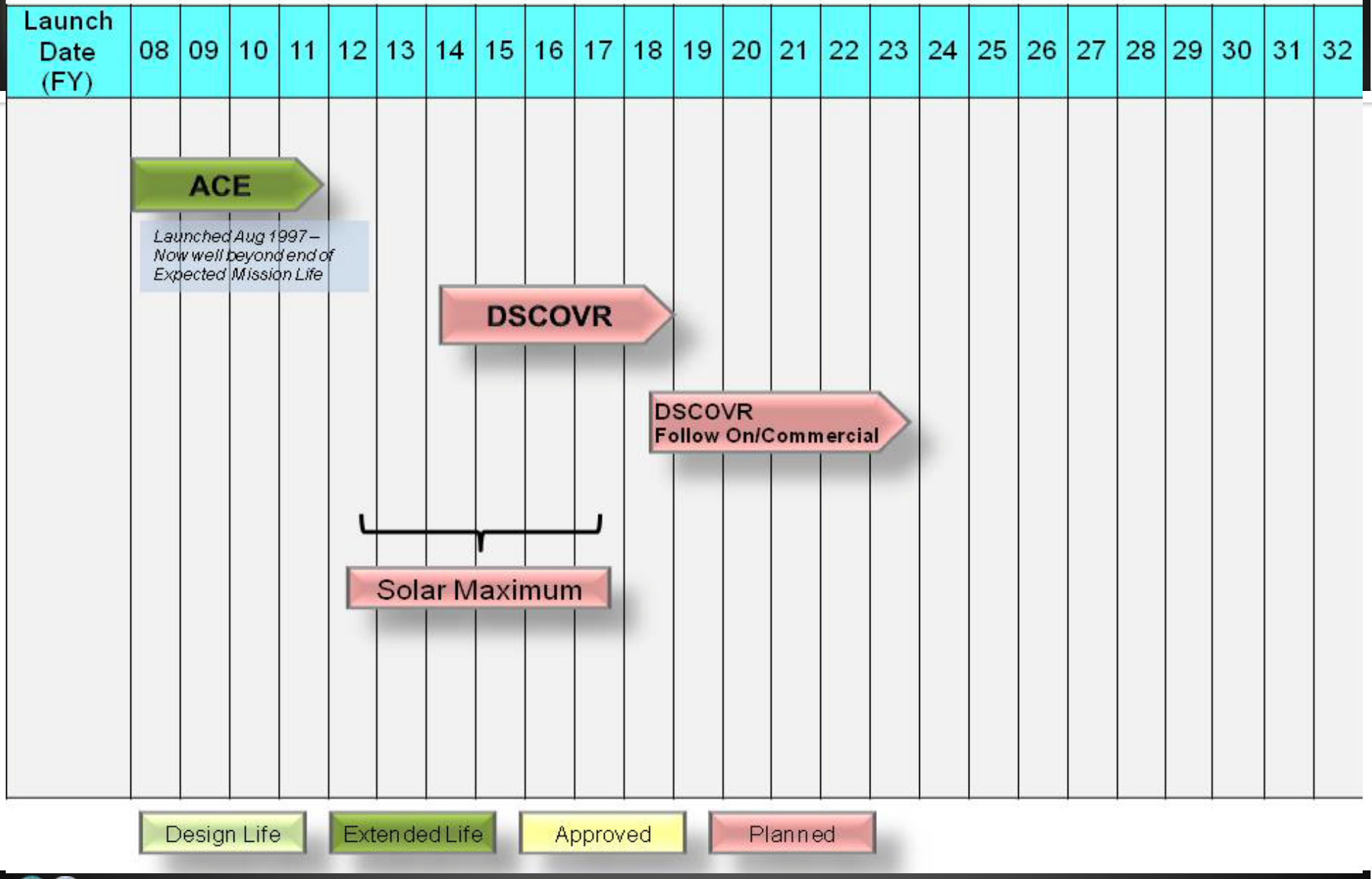
DSCOVR
Advanced Warning of Solar Storms

($ in millions)	FY 2012 Spend Plan	Program Change	FY 2013 President's Request
PPA: Deep Space Climate Observatory Mission			
DSCOVR	$29.8	($6.9)*	$22.9

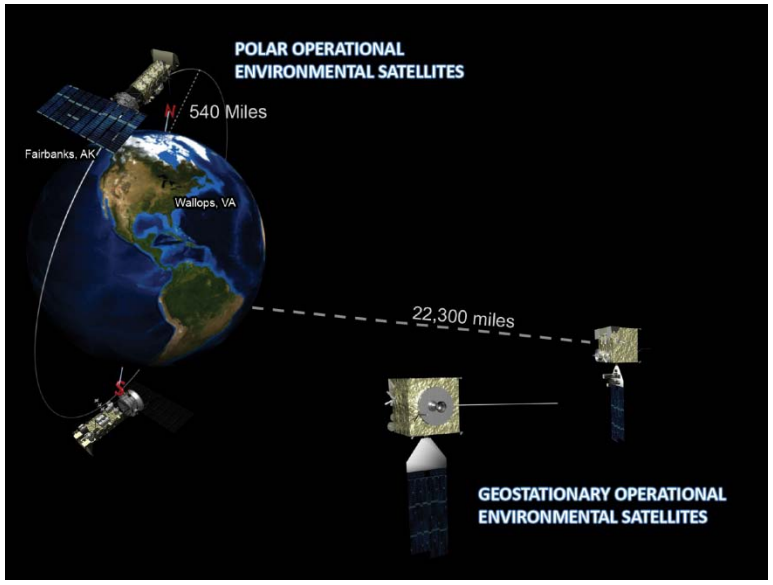
- Provides advanced warnings of geomagnetic storms that could adversely affect power grids, telecommunications, satellite systems, and the health and safety of astronauts and airline passengers.
- NOAA has partnered with NASA and the Air Force to refurbish and launch DSCOVR as a space weather mission with a launch readiness date of 3rd Quarter FY 2014.

* Numbers may not add due to rounding and excluding inflationary adjustments

Solar Wind Missions



NESDIS Strategic Direction



- OSTP Earth Observing Task Force
  - Satellite Sub-team Working Group
- NESDIS Satellite Architecture Studies
  - Flight and Ground
  - Science Advisory Board Satellite Working Group
- International Partnerships

Working with major satellite programs (GOES-R and JPSS) in anticipation of reduced budget profiles for next 5 years

Thank You!

"Blue Marble" image of Western Hemisphere, taken from Suomi NPP satellite, January 4, 2012

Backup

"Blue Marble" image of Western Hemisphere, taken from Suomi NPP satellite, January 4, 2012

OSTP Earth Observations Task Force

The National Earth Observations (NEO) Task Force is charged with developing a national strategy and strengthened governance arrangements for Earth observations in response to congressional direction to the Director of the Office of Science and Technology Policy (OSTP) in the Executive Office of the President

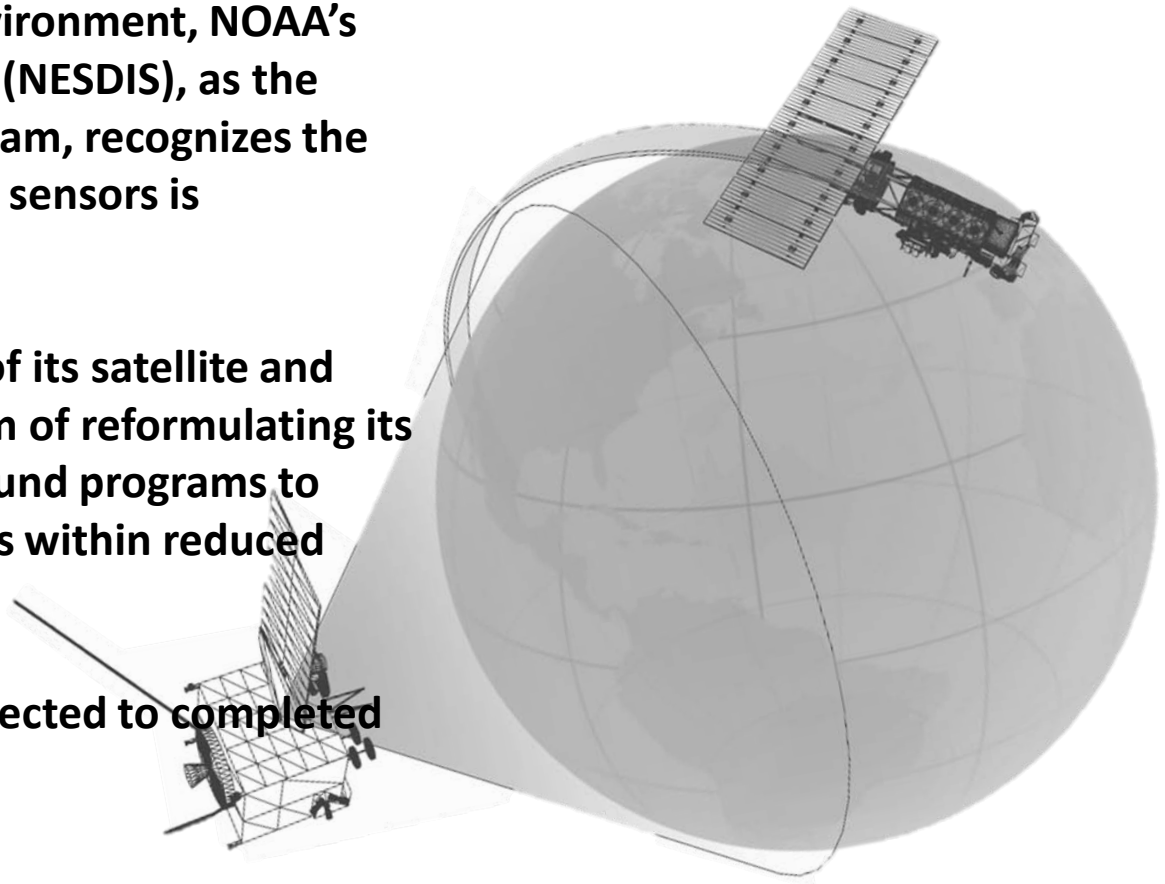
- Established in response to Congressional language to create a mechanism and a process that would lead to the establishment of a National Strategy and Governance plan for Earth Observations
- NEO TF Co-Chairs: OSTP, NOAA, NASA, USGS
- Kick-off meeting of Co-Chairs held February 2011
- Expected completion: Spring 2012

NESDIS Satellite Architecture Studies

- **In light of the austere budget environment, NOAA's Satellite and Information Service (NESDIS), as the steward of NOAA's satellite program, recognizes the current portfolio of satellites and sensors is unsustainable.**

- **NESDIS is undertaking a review of its satellite and ground architectures with the aim of reformulating its approach to our satellite and ground programs to sustain continuity of observations within reduced budgets.**

- **The study is underway and is expected to completed by the end of Summer 2012.**



International Partnerships

- Vital to the success of the Nation's environmental monitoring, scientific research, and weather forecasting.
- Significant benefit to the participants.
- Consistent with National Space Policy
- As satellite systems grow more complex and more expensive, satellite agencies will become more reliant on one another to share data and observations.
- International coordination is becoming more important, and we will likely see the growth of bilateral and multilateral partnerships in the coming decades.

Summary

- NOAA satellites are recognized as a National priority
- NOAA has made significant progress this year in our two major programs, JPSS and GOES-R.
- Given the austere budget environment, NESDIS is interested in engaging users, industry, and academia to understand observational requirements, prioritize those requirements and adjust the NESDIS portfolio to accomplish those requirements in a fiscally-responsible manner.

GPSRO Missions