



NOAA Satellite and Information Service

Dr. Stephen Volz, Assistant Administrator

NOAA Satellite Conference
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NOAA Satellite and Information Service





NSC 2015 Conference Purpose

- To bring together users and providers of polar-orbiting and geostationary satellite data, products and applications;
- To enhance interaction between providers and users; and
- To demonstrate how these satellite systems will enhance the ability to observe, understand, predict, and communicate weather and climate data and forecasts.



National Oceanic and Atmospheric Administration

2015 NOAA SATELLITE CONFERENCE

Preparing for the Future of Environmental Satellites



Providing Environmental Information

NOAA is a science-based services agency engaged with the entire Earth system science enterprise.

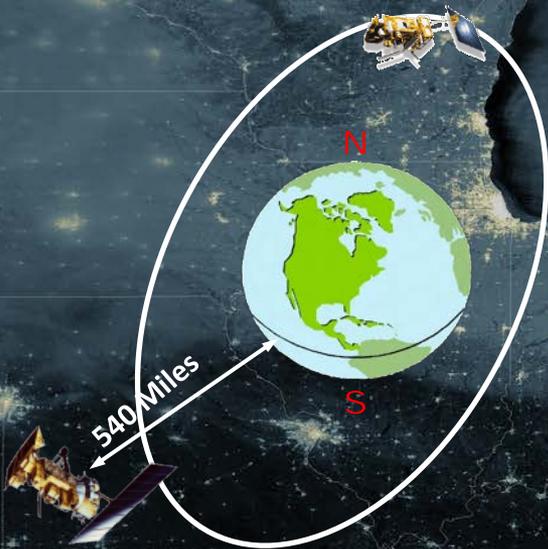
NOAA's Top Four Priorities:

1. To provide information and services to make communities more resilient
2. To evolve the National Weather Service
3. To invest in observational infrastructure
4. To achieve organizational excellence

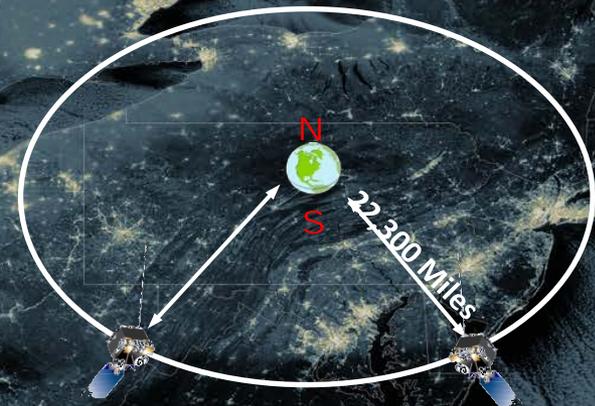


Today: Two Orbits, One Mission. . .

Polar-orbiting Operational
Environmental Satellites (POES)
Followed by S-NPP and JPSS-1 thru -4



Geostationary Operational
Environmental Satellites (GOES),
Through GOES-U



A satellite in orbit with Earth in the background. The satellite is a large, complex structure with multiple solar panels and instruments. It is positioned in the center-right of the frame, with the Earth's surface and atmosphere visible in the background. The satellite's main body is white and gold, with various instruments and antennas protruding. The solar panels are a dark blue color with a grid pattern. The background shows the curvature of the Earth with blue oceans and brown and green landmasses.

NOAA's established LEO and GEO Platforms

- From Low Earth Orbit
 - The five (5) satellite combination of JPSS + Polar Follow-On (PFO) will establish NOAA's LEO coverage in the afternoon orbit well into the 2030s
 - Cooperative agreements with EUMETSAT and DMSP (near term) establishes the global polar constellation
- From Geostationary Orbit
 - The four (4) GOES-R series satellites, following on the GOES-N/O/P series, provides the US continental coverage well into the 2030s
 - Cooperative agreements with EUMETSAT and JMA establishes the global geostationary constellation
- Together, these platforms have and will form the backbone of our observing network for the coming decades
 - To which we will add measurements from other sources to improve our NWP performance

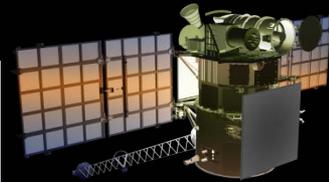
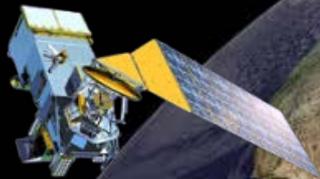
Current Operational Status

In Orbit:

- POES – 15, 18, 19, S-NPP (primary)
- GOES – 13 (East), 14 (reserve), 15 (West)
- Jason-2
- DMSP – 14, 15, 16, 17, 18, 19
- DSCOVR – scheduled to reach L1 orbit in June

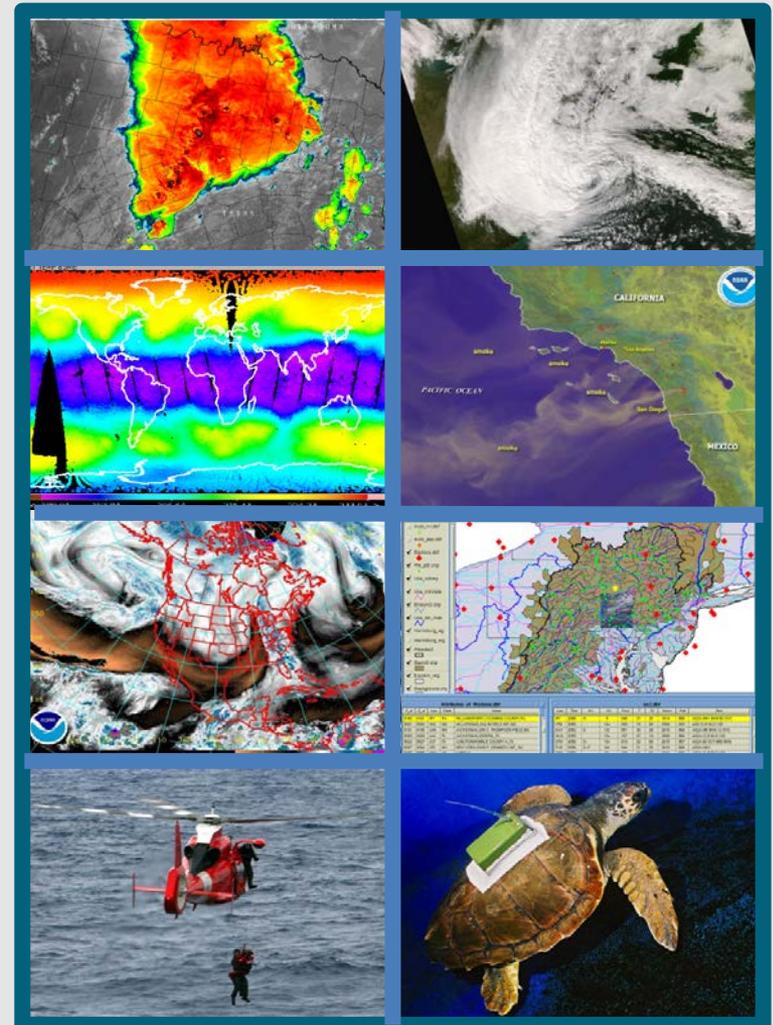
To be launched:

- Jason 3: July 22, 2015
- GOES-R: 2Q FY2016
- COSMIC-2a: 3Q FY2016
- JPSS-1: 2Q FY2017



Satellite Products and Services Division

- Provides 24x7 interpretive analyses of satellite data
 - Hurricane intensity and position
 - Significant Precipitation
 - Volcanic Ash
 - Fire and Smoke
 - Oil Spills
- Manages automated environmental products
- Search and Rescue Satellite Aided Tracking (SARSAT)
- Argos Data Collection System
- GOES Data Collection System
- Broadcast Services
 - Geonetcast
 - Emergency Managers Weather Information Network
 - Direct broadcast of geostationary and polar data
- Collaborate with partners to support transition of research products into operations



National Centers for Environmental Information (NCEI)

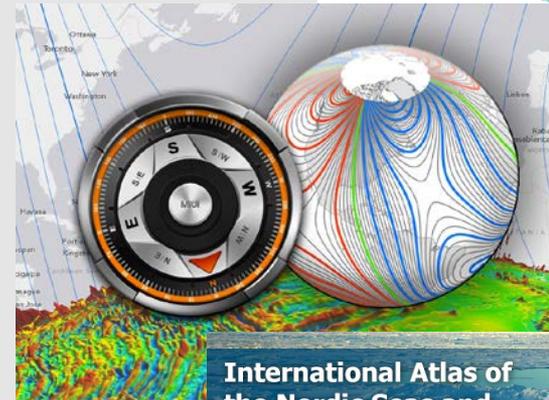
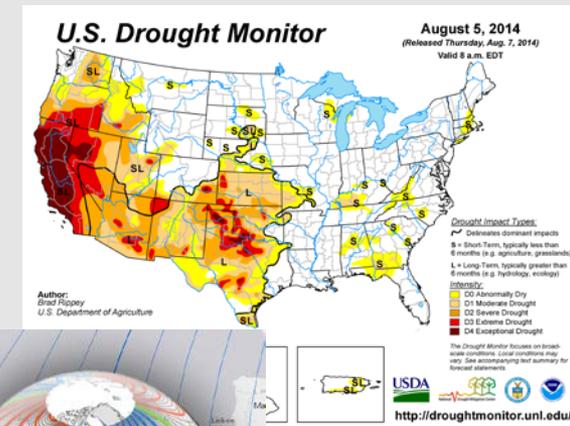


NCEI continues a long tradition of being the trusted source of authoritative environmental data.

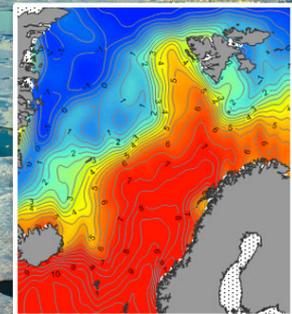
NCEI provides improved access to environmental data and information products by using consistent data management and data stewardship best practices.

Top priority during the transition to NCEI:

Build new synergies into the full spectrum of atmospheric, oceanographic, coastal, and geophysical data and information products and services that users have come to rely upon from each of the previous centers



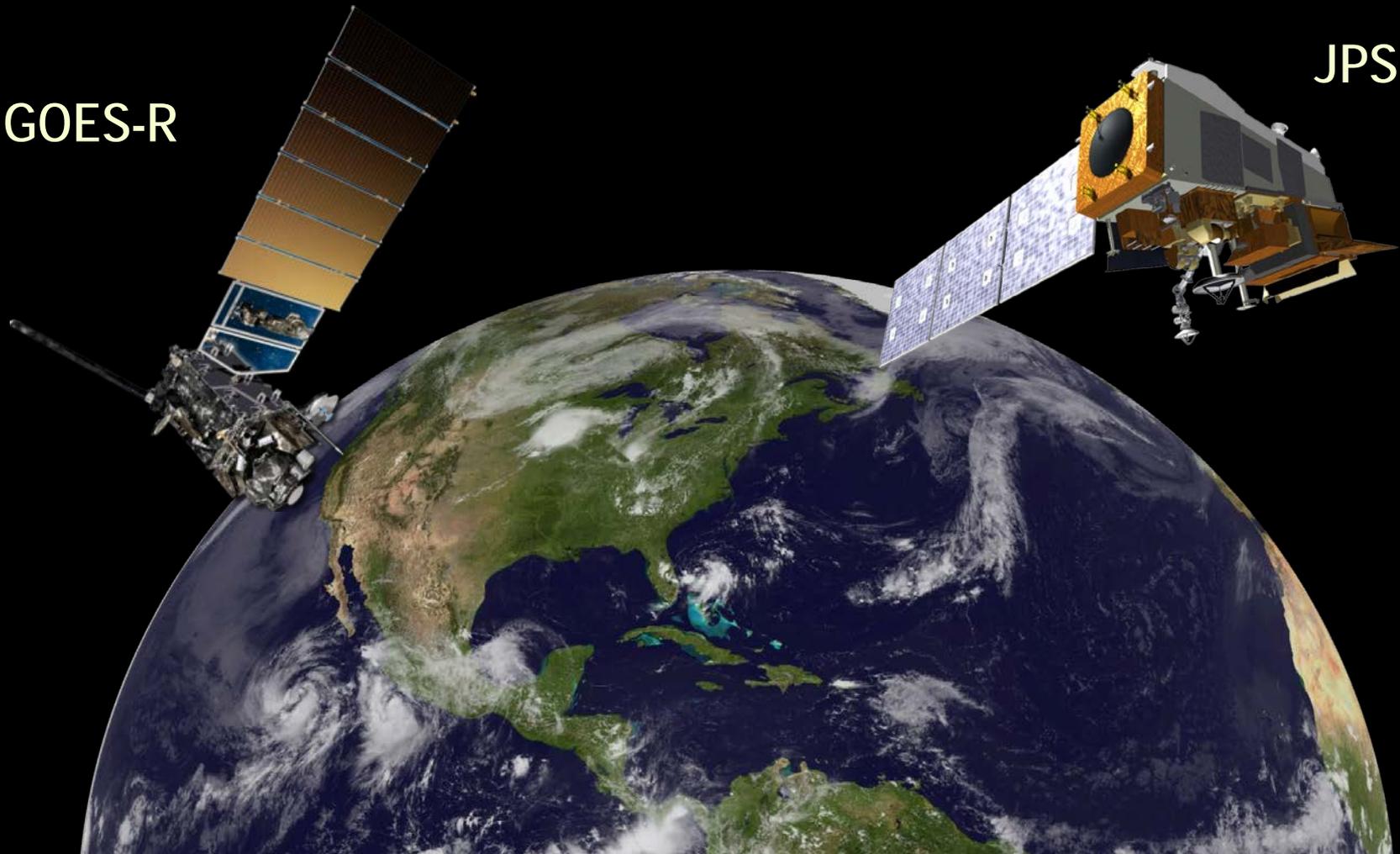
International Atlas of the Nordic Seas and Northern North Atlantic



Coming Soon To You

GOES-R

JPSS-1





Three times greater spectral information
Four times greater spatial resolution
Five times faster coverage of high impact weather phenomena
Real-time mapping of total lightning activity
Real-time monitoring of space weather

... Resulting in more timely, accurate, and actionable information leading to ...

- ✓ Increased thunderstorm and tornado warning lead time
 - ✓ Improved hurricane track and intensity forecasts
- ✓ More accurate detection of wildfires and volcanic eruptions
- ✓ Improved monitoring of solar flares and coronal mass ejections
 - ✓ Improved geomagnetic storm forecasting

GOES-R Satellite



Post-Launch Testing

- Six months of post-launch testing at 89.5 W

Post-Launch Product Testing

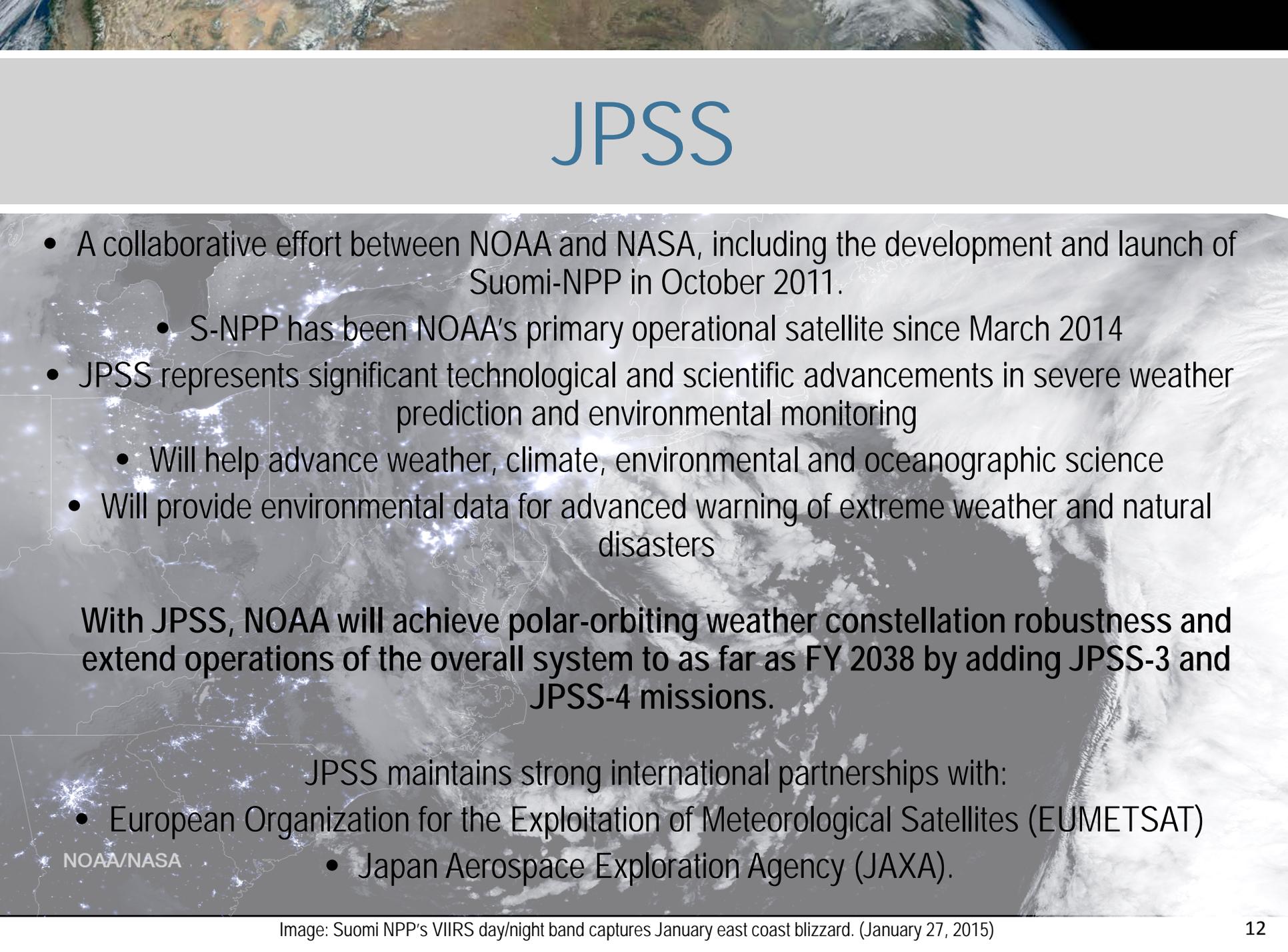
- Level 2 products will undergo an additional six-month period of extended validation also at 89.5 W
- The plan is for GOES-R to be declared operational in March 2017



GOES East or GOES West?

- The final decision will be based on the health, safety, and performance of the GOES constellation at the time.

Clockwise from top: GOES-R spacecraft rotation (Dec 14, 2014); ABI is installed on spacecraft (Oct 13, 2014); GLM is installed on spacecraft (Oct 15, 2014).
Credit: Lockheed Martin

A satellite image of Earth showing a blizzard over the East Coast. The image is in grayscale, with the blizzard appearing as a bright, textured area over the eastern United States and parts of Canada. The rest of the Earth is in shadow, showing the outlines of continents and oceans.

JPSS

- A collaborative effort between NOAA and NASA, including the development and launch of Suomi-NPP in October 2011.
 - S-NPP has been NOAA's primary operational satellite since March 2014
- JPSS represents significant technological and scientific advancements in severe weather prediction and environmental monitoring
 - Will help advance weather, climate, environmental and oceanographic science
- Will provide environmental data for advanced warning of extreme weather and natural disasters

With JPSS, NOAA will achieve polar-orbiting weather constellation robustness and extend operations of the overall system to as far as FY 2038 by adding JPSS-3 and JPSS-4 missions.

JPSS maintains strong international partnerships with:

- European Organization for the Exploitation of Meteorological Satellites (EUMETSAT)
 - Japan Aerospace Exploration Agency (JAXA).

NOAA/NASA

JPSS-1 Satellite



Orbit

- Will be placed in afternoon polar orbit
- Exact orbit placement will depend on the health of Suomi NPP

Recent Milestones

- VIIRS, OMPS-N, CrIS and CERES are integrated with spacecraft
- On track for launch no later than 2Q FY 2017

Upper: CrIS installation (Mar 17, 2015); Lower: VIIRS installation (Feb 18, 2015). Credit: Ball Aerospace & Technologies Corp.

A photograph of a satellite ground station facility. Several large white parabolic antennas are mounted on a metal structure against a clear blue sky. The ground in the foreground is a mix of green grass and brown earth. The top of the image shows a satellite view of Earth from space.

Goals of the Conference

- Facilitate interaction with customers/users of satellite environmental data, products/applications, and services.
- Improve users' knowledge about access, reception, and readiness for data, products/applications, broadcast services, and technology from current and future environmental satellite constellations.
- Allow attendees to network with other professionals and vendors.
- Aid in increasing the cohesiveness and collaborative nature between and among environmental satellite programs.
- Reach out to our customers, provide them with updates on our current and future systems and receive feedback.
- Your participation is essential to making this a successful conference!

Enjoy the Conference!

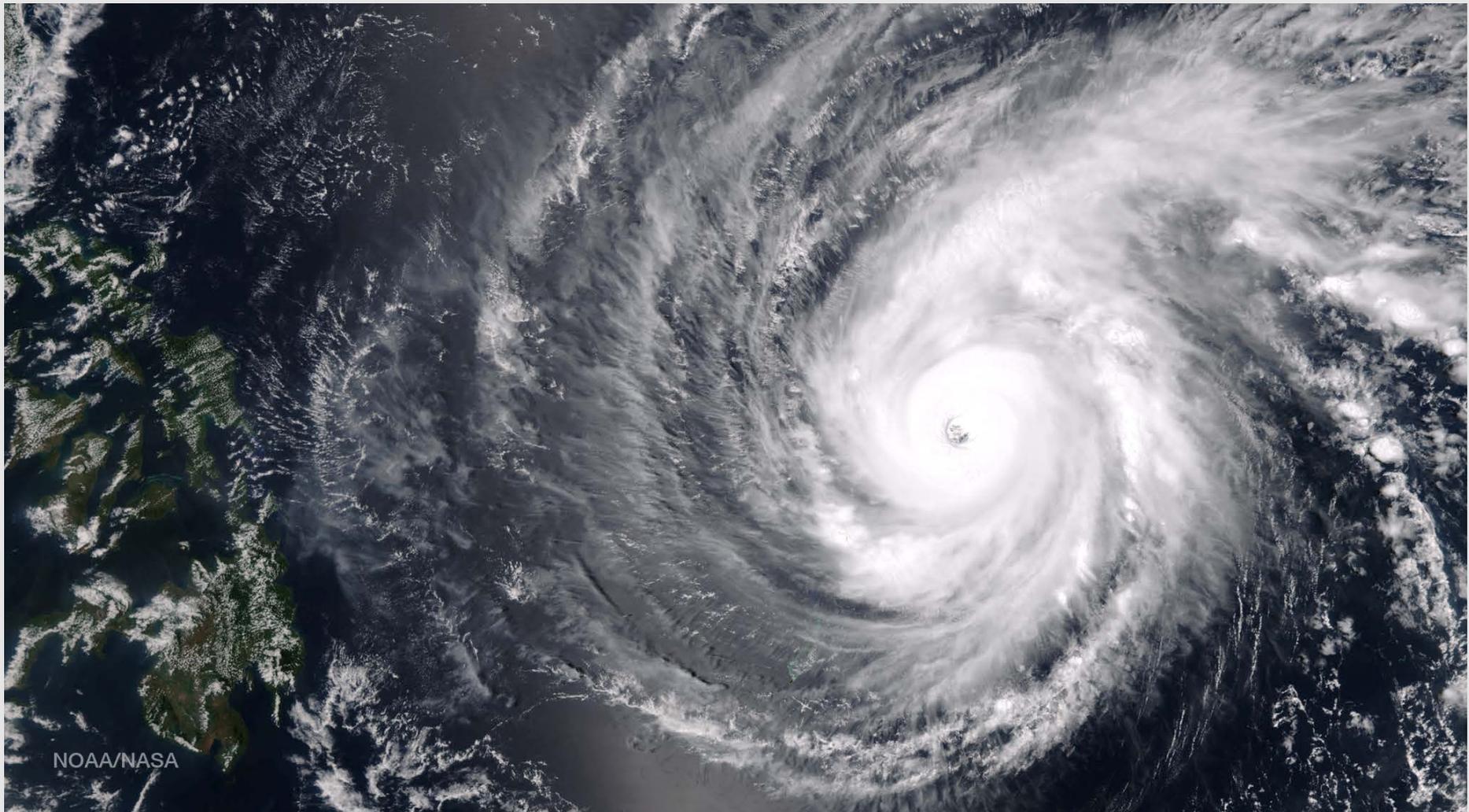


Image: Suomi NPP's VIIRS instrument captures Super Typhoon Maysak on track for landfall on Luzon, Philippines (April 1, 2015)