

Meteorological Satellite Update

National Oceanic and Atmospheric Administration

53rd Session of the Scientific and Technical Subcommittee

UN Committee on Peaceful Uses of Outer Space

February 24, 2016

NOAA Satellite and Information Service

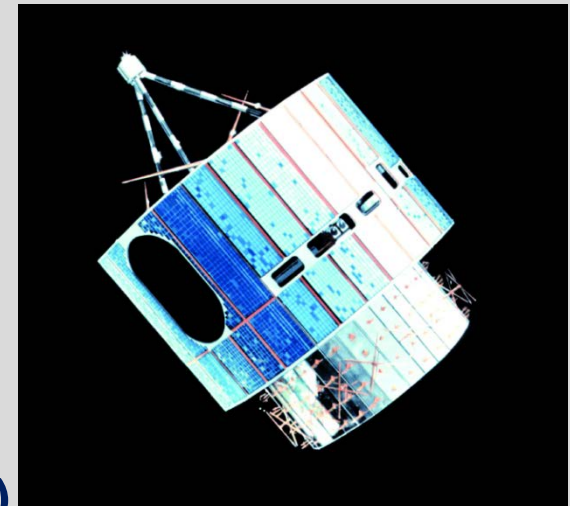
Mr. Mark Mulholland, Office of Systems Architecture and Advanced Planning



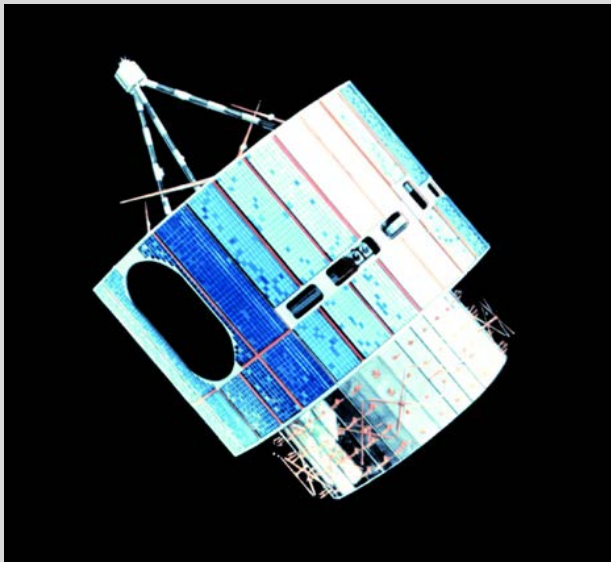
40 Years Ago!

First Geostationary Weather Satellite

- **GOES-1 launched October 16, 1975**
- **First image taken only nine days after launch**
- **Real-time weather observations**
 - **Cloud imagery and surface temperature**
 - **Data collection and communications**
 - **Space Environment Monitor**
- **Numerous missions**
 - **Western Hemisphere weather observations**
 - **Global Atmospheric Research Program (GARP)**
 - **Contingency operations**
- **Mission ended March 7, 1985**



How Big Was GOES-1?



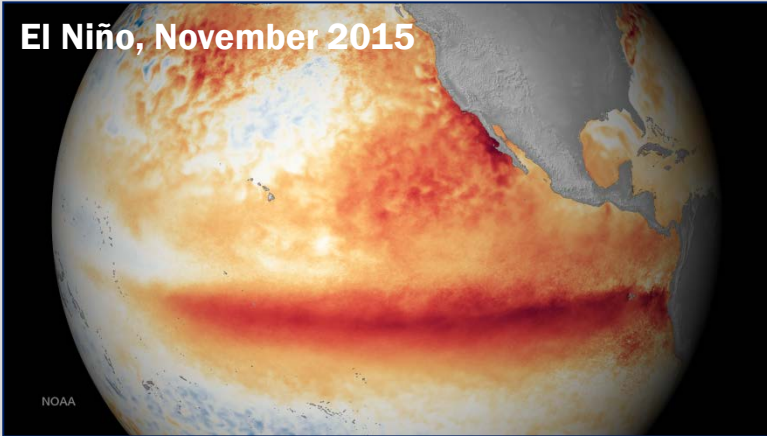
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Photo: mein_at.car2go.com

Severe Weather Affects All of Us!

El Niño, November 2015



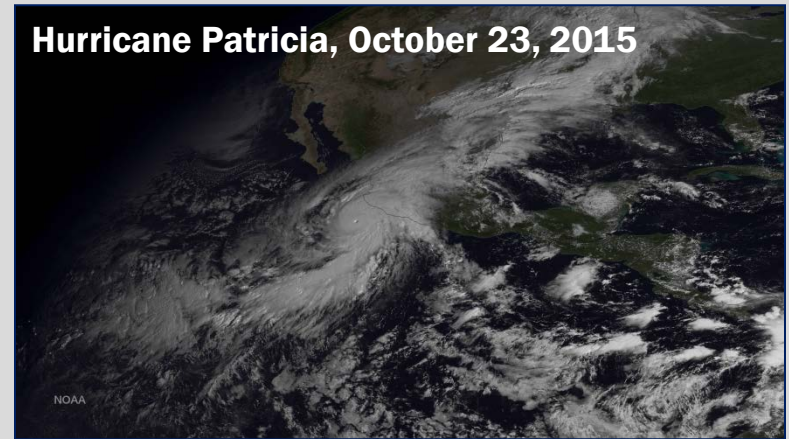
Eastern U.S. Blizzard, January 23, 2016



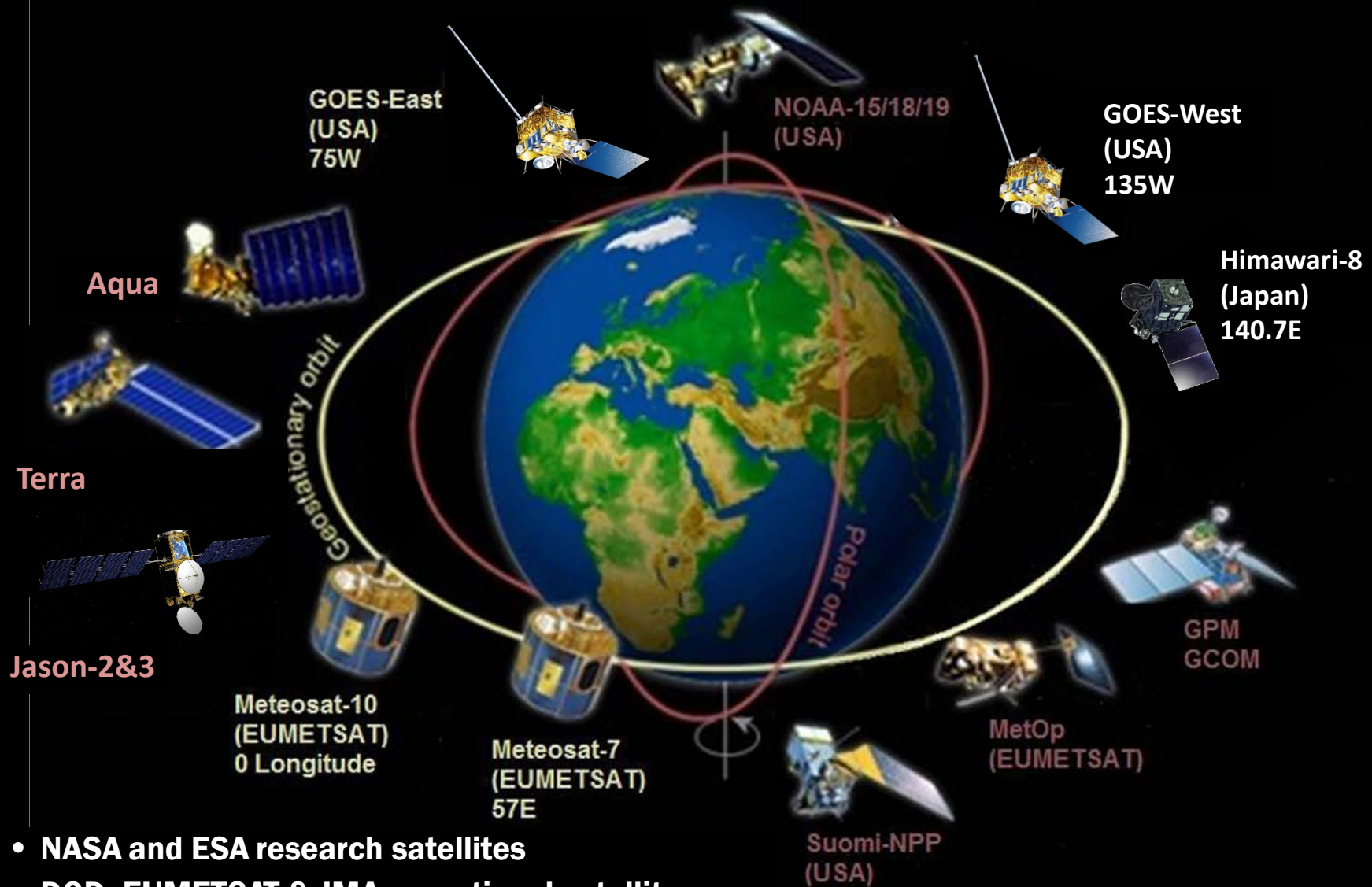
Four Pacific Tropical Storms, July 7, 2015



Hurricane Patricia, October 23, 2015



Global Coverage – Global Partners

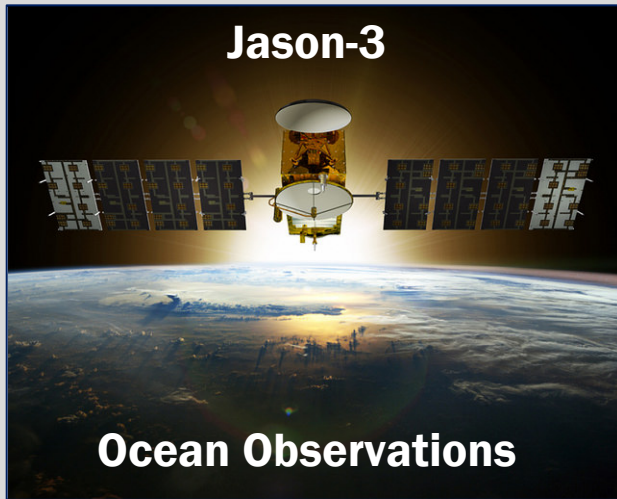


- NASA and ESA research satellites
- DOD, EUMETSAT & JMA operational satellites
- EC Sentinel satellites



Building For The Future

New Satellites Observe Earth and Sun



- **Launched on January 17, 2016**
- **Achieved final orbit on February 13, 2016**
- **Continues 20-year partnership**
- **Operational oceanographic forecasts**
- **El Niño monitoring**
- **Tropical storm intensity forecasting**
- **Sea level rise monitoring**



- **Launched on Feb 11, 2015**
- **Arrived at L-1 on June 7, 2015**
- **Operations began on October 28, 2015**
- **Data received at Real Time Solar Wind Network (RTSWnet) sites in Japan, South Korea, Germany and U.S.A.**
- **Data archived at NOAA's Center for Environmental Information (NCEI)**

Next-Generation Spacecraft

GOES-R
October 2016



www.goes-r.gov

Joint Polar Satellite System (JPSS)
Early 2017



www.jpss.noaa.gov

New Supercomputers For Accurate Forecasts

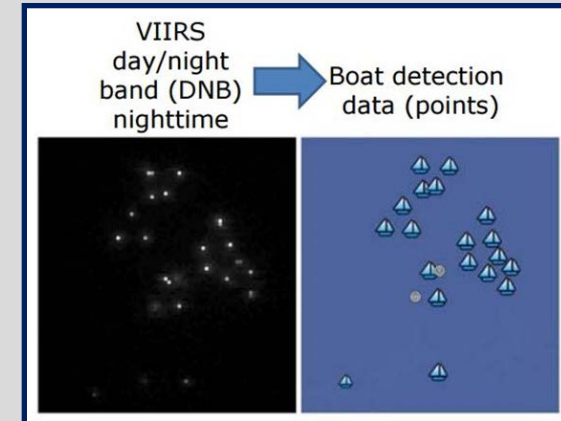


- **Quadrillions of calculations per second**
- **400% increase in processing speed**

- **Capable of handling new satellite data**
- **Precise predictions of winter storms**
- **Timing and location of thunderstorms**
- **More accurate predictions of floods and droughts**
- **Upgraded hurricane monitoring permits forecasting up to eight storms**

New Products and Services

- **Global Space-based Inter-Calibration System**
 - Himawari-8 provides data for NOAA and GOES-R
 - Combined lessons-learned to other agencies
- **Geostationary Lightning Mapper**
 - Increases tornado and storm warning lead time
 - Reduces false alarms
 - Provides severe weather warnings for aviation
- **Illegal fishing detection**
 - JPSS day-night band can detect illegal fishing
 - Partnerships with Indonesia, the Philippines and three other countries



Partnerships For the Future

- **EUMETSAT Joint Polar Agreement**

- Ensures cooperation through 2040
- Continuity of polar weather data



- **U.S. -- EU Copernicus Cooperation Arrangement**

- Promotes full & open data policy
- Realizes full value of Copernicus constellation

- **NOAA Commercial data policy**

- Broad framework for use of commercial data
- Leverages commercial expertise



Thank You!



<http://epic.gsfc.nasa.gov>

DSCOVR July 16, 2015