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**NORTHROP GRUMMAN**



## JPSS

### Joint Polar Satellite System

**T**he Joint Polar Satellite System (JPSS) is the Nation's next generation polar-orbiting operational environmental satellite system. JPSS is a collaborative program between the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA).

Satellites in the JPSS constellation gather global measurements of atmospheric, terrestrial and oceanic conditions. JPSS delivers key observations for the Nation's essential products and services, including forecasting severe weather days in advance and assessing environmental hazards such as droughts, forest fires, and poor air quality. Data and imagery obtained from satellites in the JPSS constellation is designed to increase timeliness and accuracy of public forecasts and reduce the potential loss of human life and property.

### Spacecraft

Building on the success of Suomi NPP and JPSS-1 in the JPSS series, the JPSS-2, JPSS-3 and JPSS-4 spacecraft will provide operational continuity of satellite-based observations with highly sensitive instruments and a versatile ground system that controls the satellite, processes the mission data and provides information to users around the globe. Northrop Grumman is responsible for the design, production and integration of JPSS-2, JPSS-3 and JPSS-4 spacecraft, full satellite environmental testing, and support to launch/early on-orbit checkout. The spacecraft design is derived from Northrop Grumman's proven LEOStar-3™ bus used for NASA's Landsat 8 and ICESat-2 Earth science satellites as well as for commercial imaging and defense missions.

### Facts At A Glance

- Managed by the National Oceanic and Atmospheric Administration (NOAA).
- Each JPSS satellite has an on-orbit design life of seven years.
- The JPSS-2 satellite is due for delivery on-orbit in 2021. JPSS-2 is scheduled for delivery on 2023 and JPSS-4 in 2026
- The JPSS spacecraft builds on Northrop Grumman's LEOStar-3 design used on NASA's LDCM / USGS' Landsat 8 and NASA's ICESat-2.
- In 2012, the polar-orbiting satellite data helped forecasters accurately predict Hurricane Sandy's hurricane track into New York and New Jersey more than five days in advance.

### Customer

National Oceanic and Atmospheric Administration (NOAA)

National Aeronautics and Space Administration (NASA)

## Specifications

### Spacecraft

Mass:	NTE 2930 kg
Redundancy:	Fully redundant with cross-strapping
Solar Array:	Deployable 5 panel, GaAs cells, 4,450 watts EOL
Stabilization:	3-axis, zero momentum bias, nadir pointing
Pointing:	0.13 deg arcsec control, 0.02 deg arcsec knowledge
Communications:	KaBand Mission, XBand Mission and Sband Command & Telemetry
Orbit:	Sun-synchronous Polar 824km with a 1330 Local Time Ascending Node Crossing
Mission Life:	Class B mission (NPR 8705.4) with a 7-year mission life, including controlled de-orbit

### Launch

Launch Vehicle:	TBD (either ATLAS-V, Falcon 9 or Delta IV)
Launch Site:	Vandenberg AFB
Launch Readiness Date:	2021, 2023, 2026

### Instruments

Advanced Technology Microwave Sounder (ATMS), Northrop Grumman Electronics Systems, Azusa, CA

Cross-track Infrared Sounder (CrIS), Harris Corporation (Exelis), Fort Wayne, IN

Ozone Mapping Profiler Suite (OMPS), Ball Aerospace and Technologies Corporation, Boulder, CO

Radiation Budget Instrument (RBI), Harris Corporation (Exelis), Fort Wayne, IN

Visible Infrared Imaging Radiometer Suite (VIIRS), Raytheon Space and Airborne Systems, El Segundo, CA

## Mission Partners

### NASA

Procuring agency, customer program management, instrument procurement, system integration.

### NOAA

Mission program management, mission operations.

### Northrop Grumman

Spacecraft prime contractor and integrator; responsible for spacecraft design and manufacture, instrument integration, launch vehicle integration support, with launch and early on-orbit checkout support.

## Mission Operations

Mission Operations Center: NOAA's NESDIS Operations Center, Suitland, MD.