

# JPSS-1



## Joint Polar Satellite System

From devastating tornadoes to crippling floods, from raging wildfires to frigid blizzards, severe weather can strike anywhere. The Joint Polar Satellite System (JPSS-1), known as NOAA-20, collects critical data for tracking and monitoring severe weather events, increasing the accuracy and timeliness of forecasts.



Images (Left): Preparing JPSS-1 for VAFB; (Above) Atlantic hurricane as imaged by VIIRS.

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## Overview

Weather forecasters rely on data collected from polar-orbiting satellites to provide decision makers the actionable environmental intelligence they need to predict and prepare for future weather events. In fact, more than 85 percent of our weather data comes from these satellites.

A joint project led by NASA and NOAA, and executed by Ball Aerospace, Harris, Raytheon and Northrop Grumman, JPSS-1 is a next-generation weather satellite. Collecting data on our Earth's atmosphere, oceans and land surface, JPSS-1 feeds National Weather Service models, giving forecasters the ability to monitor and predict weather patterns with greater speed and accuracy and filling critical weather satellite data gaps.

One of the most advanced environmental satellites ever created, JPSS-1 provides a significant technological and scientific advancement in severe weather prediction and environmental monitoring. Data collected from JPSS-1 increases the timeliness and accuracy of forecasts three to seven days in advance of severe weather events, enabling emergency managers to make timely decisions to protect lives and property, including ordering effective evacuations.

In addition, the data from JPSS-1 gives our troops a competitive advantage on the battlefield; allows the transportation industry to prepare and move resources, protecting local economies; and provides citizens with more accurate weather forecasts to plan their day.

## Our Role

Ball designed and built the JPSS-1 spacecraft bus and the Ozone Mapping and Profiler Suite instrument, integrated all five of the spacecraft's instruments, performed satellite-level testing and provided launch support. JPSS-1 launched from Vandenberg Air Force Base, California, on Nov. 18, 2017. We successfully handed over control of the JPSS-1 spacecraft to NASA in February 2018.

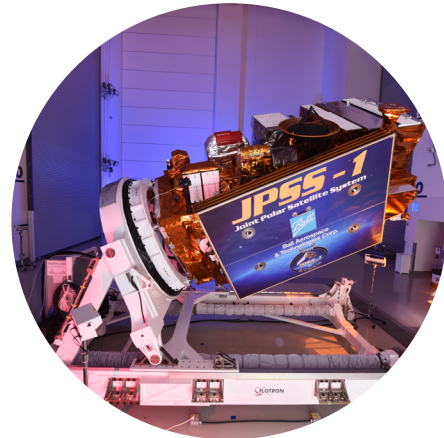
JPSS-1 circles in a polar orbit at an altitude of 512 miles (824 km) above Earth in the same plane as the Ball-built Suomi National Polar-orbiting Partnership (Suomi NPP), operating approximately 50 minutes ahead of Suomi NPP to allow for overlap in observational coverage. JPSS-1 crosses the equator approximately 14 times daily – providing full global coverage twice a day.

The JPSS-1 spacecraft bus is based on Ball's flexible and proven Ball Configurable Platform.

## Instruments

JPSS-1 follows the successful and ongoing mission of Suomi NPP and flies a similar suite of advanced remote sensing instruments:

- Visible Infrared Imager Radiometer Suite (VIIRS)
- Cross-track Infrared Sounder (CrIS)
- Advanced Technology Microwave Sounder (ATMS)
- Ozone Mapping and Profiler Suite (OMPS)
- Clouds and the Earth Radiant Energy System (CERES)



*Images (Top): JPSS-1 at VAFB;  
(Bottom): OMPS instrument integration.*



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