

EARTH OBSERVATION SYMPOSIUM (B1)
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CALIBRATION AND VALIDATION FOR THE UNITED STATES NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION'S JOINT POLAR SATELLITE SYSTEM SERIES OF
SATELLITES**Abstract**

The United States Joint Polar Satellite System (JPSS) is the new generation of Polar Operational Environmental Satellites in the early afternoon sun-synchronous orbit. The system consists of a series of five satellites providing coverage from 2012 through the late 2030's with a common suite of instruments. The first satellite in the series, the Joint NOAA/NASA Suomi-National Polar Partnership (S-NPP) mission was launched October 28, 2011. The succeeding four missions, JPSS-1 through JPSS-4 are planned for launch in 2017, 2021, 2026 and 2031 respectively. JPSS is operated in close partnership with the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT). Their current Metop series and future EUMETSAT Polar System-Second Generation (EPS-SG) provide similar observations from the mid-morning sun-synchronous orbit. Because the primary functions of JPSS are to provide global environmental observations for weather, and environmental prediction; for operational forecasting critical to life and property protection from severe weather and environmental phenomenon; and to provide long term time series of observations for long term predictions and scientific use, calibration and validation of the JPSS data products is critical to meet the observational quality standards demanded of the wide range of user applications for environmental monitoring and prediction. In this paper, we describe how JPSS program conducts calibration and validation for the life cycle of the instruments and data products, including traceability to absolute standards, instrument development testing, ground testing of the integrated satellite, on-orbit commissioning, initial calibration / validation, long term monitoring, and calibration/validation maintenance. We will also discuss how we plan calibration and validation for each new mission, how we utilize in-situ data, and specific calibration campaigns using specialized ground, airborne and ocean going instrumentation. Finally, will discuss how we cooperate with EUMETSAT and other environmental satellite agencies on calibration and validation, and how we communicate calibration / validation status to users. The body of work represented by this paper comprises a uniquely effective and comprehensive system to ensure the quality of JPSS delivered observational products.