

EARTH OBSERVATION SYMPOSIUM (B1)
Future Earth Observation Systems (2)

Author: Mr. Harry A. Cikanek
National Oceanic and Atmospheric Administration (NOAA), United States

Mr. Ajay Mehta
National Oceanic and Atmospheric Administration (NOAA), United States

Dr. Mitchell Goldberg
NOAA/NESDIS, United States

INVITED PAPER: UNITED STATES NATIONAL OCEANIC AND ATMOSPHERIC
ADMINISTRATION'S JOINT POLAR SATELLITE SYSTEM**Abstract**

The National Oceanic and Atmospheric Administration (NOAA) is assigned primary responsibility for the 1330 Local Time Ascending Node (LTAN) orbit for the United States' polar environmental satellites. NOAA's program, called the Joint Polar Satellite System (JPSS), is the civil successor to the Polar Orbiting Environmental Satellite (POES) series and the National Aeronautics and Space Administration's (NASA's) Earth Observing System (EOS) to provide observational continuity. JPSS is also the result of a restructuring of the former National Polar-orbiting Operational Environmental Satellite System (NPOESS) which was to address both civil and defense needs. JPSS consists of the Suomi National Partnership Program (Suomi-NPP) spacecraft, a JPSS-1, a JPSS-2 spacecraft and two Free-flyer spacecraft. The NPP and JPSS-1 spacecraft carry a complement of five main environmental instruments. These are: Visible/Infrared Imager Radiometer Suite (VIIRS) that provides advanced imaging and radiometric capabilities, Cross-track Infrared Sounder (CrIS) that provides improved atmospheric moisture and temperature profiles in clear conditions, Advanced Technology Microwave Sounder (ATMS) that provides improved atmospheric moisture and temperature profiles in cloudy conditions, Ozone Mapping and Profiler Suite (OMPS) that provides improved vertical and horizontal measurements of the distribution of ozone in the Earth's atmosphere, and Clouds and the Earth's Radiant Energy System (CERES) sensor that continues precise, calibrated global measurements of the earth's radiation budget. JPSS-2 is early in definition but the plans are for the same suite of instruments. These three spacecraft share a ground system. The JPSS ground system also provides various services for other polar systems supporting partnerships including with the United States Department of Defense, European Organization for the Exploitation of Meteorological Satellites (EUMETSAT), the Japanese Space and Exploration Agency (JAXA). JPSS also provides sensors for Total Solar Irradiance and accommodations for the internationally provided Advanced Data Collection System (A-DCS) and Search and Rescue (SARSAT) sensors through smaller Free-flyer spacecraft. This paper describes the state of development of JPSS, early results, and current plans.