UNITED STATES

SPACE FORCE

SPACE OPERATIONS COMMAND

FACTSHEET

DEFENSE METEOROLOGICAL SATELLITE PROGRAM (DMPS)

MISSION: The Defense Meteorological Satellite Program (DMSP) has been collecting weather data for U.S. military operations for more than five decades and provides assured, secure global weather imagery and space weather data to support Department of Defense (DoD) operations.

GENERAL CHARACTERISTICS

Primary Function: Collect cloud, atmospheric, space weather, and Earth surface data

Weight: 2,720 pounds (1,236.4 kilograms), including 772-pound (351 kilogram) sensor payload

Orbit Altitude: Approximately 450 nautical miles (nominal)

Dimensions: 25 feet long (7.62 meters) with solar panels deployed

Date Deployed: August 1962

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BACKGROUND

The first DMSP satellite, known at that time as the Defense Satellite Applications Program (DSAP), was launched in 1962. DMSP was initially classified and run by the National Reconnaissance Office (NRO) in support of the CORONA program. CORONA satellites had limited film onboard, and it was essential to have timely and accurate weather forecasts to ensure cloud-free pictures were taken of high-interest areas. DMSP data are also critical to the forecast process. Declassified in 1972, DMSP data was made available to civilian and scientific user communities.

In May 1994, the president directed the Department of Commerce (DOC) and DoD to converge their separate polar-orbiting weather satellite programs. A tri-agency organization consisting of the DOC, DoD and National Aeronautics and Space Administration (NASA) was formed. As part of the convergence plan, DMSP operations were transferred from the DoD to the DOC in June 1998, with funding responsibility remaining with the U.S. Air Force. Satellite operations were moved to Suitland, MD, where the National Oceanic and Atmospheric Administration (NOAA) Office of Satellite and Product Operations (OSPO) provides the command, control and communications for DMSP, Polar-Orbiting Environmental Satellite (POES), Geostationary Operational Environmental Satellite (GOES), Joint Polar Satellite System (JPSS) and others. Satellite Control Authority (SCA) resides with Space Delta 2 (DEL 2) and is delegated to the 19th Space Defense Squadron, Operating Location-Alpha (OL-A), located at the NOAA Satellite Operations Facility (NSOF), for oversight of the DMSP constellation. Backup operations are performed by 6th Space Operations Squadron (6 SOPS) located at Schriever Space Force Base, CO. DMSP continues to provide assured, secure, global environmental monitoring sensing data to support the warfighter.

DMSP spacecraft have the ability to store data onboard as well as transmit data directly to ground terminals. Sites are used to retrieve stored data and electronically transfer the data to Offutt AFB, NE. Northern sites in U.S. Indo-Pacific command also support DMSP stored data distribution to users. DoD deployed tactical systems can receive direct broadcast of data when in the field of view of the satellite.

DMSP space vehicles and sensors were developed and acquired by the Space and Missile Systems Center (SMC) at Los Angeles SFB, CA. DMSP sustainment is provided by the USSF Space Systems Command (SSC) at Peterson SFB, CO.

FEATURES

Two primary operational DMSP satellites are in sun-synchronous low-earth polar orbits at about 450 nautical miles (nominal). The main weather sensor on DMSP is an optical system, which provides continuous visual and infrared imagery of cloud cover over an area approximately 1,600 nautical miles wide. Complete global coverage of weather features is accomplished every 14 hours providing essential data over data-sparse and data-denied areas. Additional satellite sensors measure atmospheric vertical profiles of moisture and temperature. Military weather forecasters can detect developing patterns of weather and track existing weather phenomena over remote areas, including the presence of fog, severe thunderstorms, dust and sandstorms, and tropical cyclones.

Other DMSP sensors measure space weather parameters such as charged particles, electromagnetic fields and ionospheric characteristics to assess the impact of the natural environment on ballistic-missile early warning radar systems, long-range communications and satellite communications. Additionally, data are used to monitor global auroral activity and to predict the effects of the space environment on satellite operations.

For more information please visit
https://www.spoc.spaceforce.mil

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