Nation's Newest Advanced Polar Operational Environmental Satellite Built By Lockheed Martin Ready For Launch

The NOAA-N spacecraft, a Polar Operational Environmental Satellite (POES), is being prepared for launch from Vandenberg Air Force Base, Calif. on May 11, 2005. Lockheed Martin Space Systems Company in Sunnyvale designed, built and tested the NOAA-N spacecraft.

NOAA-N is the latest in the Advanced TIROS-N (ATN) satellite series. All have been designed and built for the National Aeronautics and Space Administration (NASA) by Lockheed Martin since the first Television and Infrared Observational Satellite (TIROS) weather satellite launch in April 1960. NASA is managing the spacecraft's launch and the National Oceanic and Atmospheric Administration (NOAA) will operate the satellite once in space. Over many years of service, the TIROS satellites have earned the reputation as the workhorses of the Civil Space Earth-imaging inventory.

"Our long-standing partnership with our NASA customer is a genuine source of pride for Lockheed Martin, and we look forward to the launch of NOAA-N," said Dan Hoffman, Lockheed Martin TIROS program director. "The Lockheed Martin team has been totally dedicated to providing NASA with a series of satellites that extend NOAA's ability to provide uninterrupted environmental data products to users."

A constellation consists of two POES satellites circling the planet in nearly north-south orbits. As the Earth rotates, the entire globe, one swath at a time rolls into view of the satellites' instruments. The satellites provide measurements of reflected solar and radiated thermal energy from land, sea, clouds and the atmosphere in the visible and infrared spectrum, atmospheric soundings of temperature and humidity, measurements of global sea surface temperature, aerosol distribution data, ozone concentration data, soil moisture data, and measurements of orbital proton and electron flux.

Additionally, POES satellites collect data from remote platforms, relay search and rescue data, and also provide direct broadcast of environmental data worldwide. Data from the spacecraft supports a broad range of environmental monitoring applications including weather analysis and forecasting, climate research and prediction, ocean dynamics research, volcanic eruption monitoring and forest fire detection.

Together these data comprise irreplaceable inputs to the numerical weather forecast model and are vital to medium and long-range forecasting. Separately or in combination, the data are utilized to produce sea-surface temperature maps, ice condition charts, vegetation maps and other forecasting and management tools.

The NOAA-N spacecraft is 13.75 feet long by 6.2 feet in diameter, and weighs 3130 pounds at liftoff. Its solar array has 180.6 square feet of surface area and generates 833 watts at a zero degree sun angle. The instruments onboard NOAA-N were provided by NASA and NOAA, and include the Advanced Very High Resolution Radiometer (AVHRR/3), the High Resolution Infrared Radiation Sounder (HIRS/4), the Advanced Microwave Sounding Unit-A (AMSU-A1, A2), the Microwave Humidity Sounder (MHS), the Solar Backscatter Ultraviolet Radiometer (SBUV/2), the Space Environment Monitor (SEM/2) and the Data Collection System (DCS/2). In addition, NOAA-N carries two search and rescue instruments, the Search and Rescue Repeater (SARR) and the Search and Rescue Processor (SARP) that are used internationally for locating ships, aircraft, and people in distress. The use of satellites in search and rescue has been instrumental in saving more than 17,000 lives since the inception of the Search and Rescue Satellite-Aided Tracking (SARSAT) system.

Spacecraft launch site processing at VAFB includes end-to-end testing with the Satellite Operations Control Center in Suitland, MD, final spacecraft electrical testing and spacecraft inspections. The NOAA-N spacecraft will be launched from the Western Range Space Launch Complex-2 at Vandenberg Air Force Base, by a two-stage Delta II 7320-10 space launch vehicle. Liftoff is slated to occur at 3:22 a.m. PDT. There will be a 10-minute window in which to launch.

NASA's Goddard Space Flight Center, in Greenbelt, MD, is responsible for the procurement, development, launch services, and verification of the spacecraft, instruments, and unique ground equipment. Following spacecraft launch, Goddard is responsible for satellite health and safety during a comprehensive on-orbit verification period that lasts 45 days. Following satellite checkout, NASA turns operational control of the satellite over to NOAA. NOAA will operate the satellite from the Satellite Operations Control Center along with the nation's other environmental satellites.

The NOAA-N satellite will operate in a circular, near-polar orbit of 470 nautical miles above the Earth with an inclination angle of 98.73 degrees to the equator. Its orbital period -- the time it takes to complete one orbit of the Earth -- will be approximately 102.14 minutes. The NOAA-N orbit is Sun- synchronous, rotating eastward about the Earth's polar axis 0.968 degrees each day, approximately the same rate and direction as the Earth's average daily rotation about the Sun. The rotation keeps the satellite in a constant position with reference to the Sun for constant scene illumination throughout the year.

Lockheed Martin Space Systems Company, a major operating unit of Lockheed Martin Corporation, designs, develops, tests, manufactures, and operates a variety of advanced technology systems for military, civil and commercial customers. Chief products include a full-range of space launch systems, including heavy-lift capability, ground systems, remote sensing and communications satellites for commercial and government customers, advanced space observatories and interplanetary spacecraft, fleet ballistic missiles and missile defense systems.

Headquartered in Bethesda, MD, Lockheed Martin Corporation employs about 130,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services. The corporation reported 2004 sales of $35.5 billion.

Media Contact: Buddy Nelson, 510-797-0349; e-mail, buddynelson@mac.com,
pager: 1-888-916-1797

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