Long-Lived NASA Polar Satellite, Built By Lockheed Martin, Ends Service After 12 Productive Years

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After more than 12 years of collecting valuable data on how Earth's space environment is affected by continual bombardment from radiation and particles from the Sun, NASA has decommissioned its Polar spacecraft. Polar -- built by Lockheed Martin -- was launched from Vandenberg Air Force Base on February 24, 1996 and was the second element in NASA's Global Geospace Science (GGS) program. In an orbit that loops over the Earth's poles, the Polar spacecraft and its instruments have enabled scientists to study the movement of energetic charged particles above the polar regions.

The original requirement for the Polar mission was that it would operate for a minimum of two years, yet the small but robust satellite and its instruments continued sending back valuable data until this week. The unique treasure trove of information has yielded more than a thousand papers in refereed scientific journals and will continue to provide researchers a fertile field of discovery for years to come.

The other spacecraft in NASA's GGS program, called Wind, was also built by Lockheed Martin. It was launched on November 1, 1994 and continues to operate in orbit around the L-1 libration point about one one-hundredth of the way from the Earth to the Sun, where the gravitational pull of the Earth and Sun and centrifugal force balance in such a way as to give an orbit of exactly one Earth year. The objectives of the Wind mission are to provide complete plasma, energetic particle, and magnetic field input for magnetospheric and ionospheric studies; determine the magnetospheric output to interplanetary space in the up-stream region: and investigate basic plasma processes occurring in the near-Earth solar wind.

"We are enormously pleased with the performance and longevity of both Polar and Wind," said Mark Valerio, vice president and general manager of special programs at Lockheed Martin Space Systems Company, and formerly the company's deputy program manager of the Polar and Wind spacecraft design and construction. "The name Lockheed Martin typically is associated with large spacecraft, yet the company has a long heritage as a nimble, responsive source for smaller, cutting-edge satellite systems delivered quickly, and Polar and Wind are prime examples of our diverse capability."

The NASA GGS program is part of a larger effort called the International Solar Terrestrial Physics (ISTP) program that was mounted by NASA, the European Space Agency (ESA), and the Japanese Institute of Space and Astronautical Science. The fleet of spacecraft flown represented a collaborative effort to better understand how energy is generated deep within the Sun, how it radiates to the surface, crosses space to eventually reach the near-Earth environment, and, finally, how that energy affects the Earth.

In addition to building the Polar and Wind spacecraft, Lockheed Martin's Advanced Technology Center in Palo Alto, Calif. built and/or designed six instruments for various ISTP spacecraft. PIXIE (the Polar Ionospheric X-ray Imaging Experiment), TIMAS (for Toroidal Imaging Mass Angle Spectrograph) and SEPS (the Source/Loss Cone Energetic Particle Spectrometer experiment) all flew on Polar; the Michelson Doppler Imager flew on the ESA/NASA Solar and Heliospheric Observatory; and ESA's Cluster spacecraft carried the EDI (Electron Drift Investigation) and CIS (Coordinated Ion Spectroscopy) instruments.

The Lockheed Martin Space Systems Advanced Technology Center is a world-class provider of advanced scientific and space technologies, prototypes, and research for physical, electronic, information/computing, materials, engineering, and electro-optical applications.

Lockheed Martin Space Systems Company, a major operating unit of Lockheed Martin Corporation, designs, develops, tests, manufactures and operates a full spectrum of advanced-technology systems for national security, civil and commercial customers. Chief products include human space flight systems; a full range of remote sensing, navigation, meteorological and communications satellites and instruments; space observatories and interplanetary spacecraft; laser radar; fleet ballistic missiles; and missile defense systems.

Headquartered in Bethesda, Md., Lockheed Martin employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation reported 2007 sales of $41.9 billion.

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