Final Pair Of Massive Lockheed Martin Solar Arrays Begin Providing Power To International Space Station

The fourth and final pair of massive solar arrays, built by Lockheed Martinat its Space Systems facility in Sunnyvale, have been installed on the International Space Station by the crew of the space shuttle Discovery. The two new arrays have been deployed and are generating electricity.

"It is a testament to the professionalism of the STS-119 crew and the mission support team that they made this challenging ISS construction project look easy, and the deployment of the new arrays was a sight to behold," said Brad Haddock, Lockheed Martin ISS program director. "To see all eight of our arrays deployed is wonderfully satisfying, and we're confident that this addition will provide the electricity to fully power science experiments and support expanded crews for many years to come."

The Space Systems ISS solar arrays are the largest deployable space structure ever built and are by far, the most powerful electricity-producing arrays ever put into orbit. When the Station is completed the eight flexible, deployable solar array wings will generate the reliable, continuous power required for the on-orbit operation of the ISS systems. The eight array wings were designed and built under a $450-million contract from The Boeing Company. Boeing is the prime contractor to NASA, and is responsible for design, development, construction and integration of the ISS.

Each of the eight wings consists of a mast assembly and two solar array blankets. The blankets each have 84 panels, of which 82 are populated with solar cells. Each panel contains 200 solar cells. The eight photovoltaic arrays thus accommodate a total of 262,400 solar cells. Fully deployed in space, the active area of the eight wings -- each 107 by 38-feet -- encompass an area of 32,528-square feet and are designed to provide power to the ISS for 15 years.

In addition to the arrays, Space Systems in Sunnyvale designed and built other elements for the Space Station. Two Solar Alpha Rotary Joints (SARJ) -- each 10.5 feet in diameter and 40 inches long -- were delivered to ISS in 2006 and 2007, and maintain the arrays in an optimal orientation to the sun while the entire space station orbits the Earth once every 90 minutes. A pair of Thermal Radiator Rotary Joints (TRRJ) -- each five and a half feet long and three feet in diameter -- was launched in 2002, and maintains Space Station thermal radiators in an edge-on orientation to the sun that maximizes the dissipation of heat from the radiators into space.

Space Systems also produced the Trace Contaminant Control System -- launched to ISS as an element of the U.S. Destiny Laboratory module in 2001 -- an advanced air processing and filtering system that ensures that over 200 various trace chemical contaminants, generated from material off-gassing and metabolic functions in the Space Station atmosphere, remain within allowable concentration levels. It is an integral part of the Space Station's Cabin Air Revitalization Subsystem.

Lockheed Martin Space Systems Company, a major operating unit of Lockheed Martin Corporation, designs and develops, tests, manufactures and operates a full spectrum of advanced-technology systems for national security and military, civil government 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; ballistic missiles; missile defense systems; and nanotechnology research and development.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 146,000 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 2008 sales of $42.7 billion.

Media Contact: Buddy Nelson, (510) 797-0349, email, buddynelson@mac.com

First Call Analyst:
FCMN Contact:

SOURCE: Lockheed Martin

https://news.lockheedmartin.com/2009-03-21-Final-Pair-of-Massive-Lockheed-Martin-Solar-Arrays-Begin-Providing-Power-to-International-Space-Station