

Hubble Space Telescope Emerges Atop The Field In Lockheed Martin's "Innovation Madness" Tournament

SUNNYVALE, Calif., April 11, 2013 /PRNewswire/ -- Between March 18 and April 8, Lockheed Martin [NYSE: LMT] invited fans to participate in "Innovation Madness," a tournament-style competition to vote for the ultimate Lockheed Martin innovation on the company's Facebook page. Approximately 32 innovations from Lockheed Martin's storied 100-year history were featured in the tournament, which was part of the corporation's year-long centennial commemoration. The venerable Hubble Space Telescope (HST) came out on top.

"In a corporation renowned for innovation, the competition was fierce," said Jim Crocker, vice president of Civil Space at Lockheed Martin Space Systems Company. "The SR-71 Blackbird, Mars Phoenix Lander, the F-35, the Space Based Infrared System (SBIRS), the P-38 Lightning and the Littoral Combat ship were all worthy opponents, but Hubble pulled it out at the end. The pride we all feel for what this company has done in 100 years carries us forward in all we do, and this little tournament was a great way to share that heritage."

"Hubble is iconic. The history of the Universe is written in starlight, and the Hubble Space Telescope has recorded much of that history," continued Crocker. "It is the world's premier orbiting astronomical observatory. It views the Universe from the near-ultraviolet through the visible light spectrum and into the infrared, and it's the first orbiting observatory to be designed for extensive on-orbit servicing."

Lockheed Martin Space Systems in Sunnyvale, Calif. was selected by NASA in 1977 to design and build the spacecraft and provide spacecraft systems integration. Since the 1990 launch, Lockheed Martin personnel in Sunnyvale, and at NASA's Goddard Space Flight Center, Md., have helped NASA manage the day-to-day spacecraft operations of the telescope, and provided extensive preparation and training for the telescope servicing missions.

The success of the first HST servicing mission in December 1993 proved that complex, on-orbit spacecraft servicing could be effectively performed. On four subsequent servicing missions - in February 1997, December 1999, March 2002, and May 2009 - spacewalking astronauts installed several new state-of-the-art scientific instruments, a new high-performance main computer, and new energy efficient solar arrays. They replaced gyroscopes, batteries, and data recorders, and repaired surface insulation on the telescope. Hubble was built to be serviced, and the five shuttle missions not only extended its life, but made it a much more powerful and capable telescope on each visit.

Since its launch in April 1990, Hubble has provided scientific data and images of unprecedented resolution that have generated many new and exciting discoveries. Even when reduced to raw numbers, the accomplishments of the 12.5-ton orbiting observatory are impressive:

- Hubble has taken over one million exposures.
- Hubble has observed more than 33,000 astronomical targets.
- Astronomers using Hubble data have published over 8,500 scientific papers.
- Circling Earth every 96 minutes, Hubble has traveled approximately 3.2 billion miles.
- The Space Telescope Science Institute (STScI) has archived more than 42 terabytes of data from Hubble.

The NASA Goddard Space Flight Center (GSFC) in Greenbelt, Md. manages the HST program for the Science Mission Directorate, NASA Headquarters. Since the 1990 launch, under contract to NASA, Lockheed Martin personnel in Sunnyvale, Calif. and at GSFC have helped manage the day-to-day spacecraft operations of the telescope, and provided extensive preparation and training for the telescope servicing missions. The Space Telescope Science Institute in Baltimore, Md. selects observing programs from numerous proposals and analyzes, archives and disseminates incoming astronomical data.

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 and aerospace company that employs about 120,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration, and sustainment of advanced technology systems, products, and services. The Corporation's net sales for 2012 were \$47.2 billion.

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