

NASA's Mars Odyssey Orbiter Passes Longevity Record

Lockheed Martin-Built Spacecraft Operates at Mars for 3,340 Days

DENVER, Dec. 15, 2010 /[PRNewswire](#)/ -- A Lockheed Martin (NYSE: LMT)-built spacecraft, NASA's Mars Odyssey orbiter has worked longer at Mars than any other spacecraft in history. Odyssey entered orbit around Mars on Oct. 24, 2001 and today, the 3,340th day since that arrival, it passed the Martian career longevity record set by its predecessor, Mars Global Surveyor. Lockheed Martin also built and flew the Mars Global Surveyor for NASA's Jet Propulsion Laboratory (JPL).

"Achieving this milestone at Mars exemplifies the long and continuing partnership we have with NASA and JPL," said Bob Berry, Odyssey program manager at Lockheed Martin Space Systems Company. "Hundreds of people who built the Odyssey spacecraft here, in addition to the much smaller crew operating it today have great pride in seeing the spacecraft achieve this record."

Flight operations for the spacecraft is performed by Lockheed Martin at its Mission Support Area near Denver. Program management and navigation are handled by JPL. Launched April 7, 2001, Odyssey cruised to Mars for nearly seven months. Five days from now on Dec. 20, the spacecraft will surpass 40,000 total orbits of the red planet. Odyssey completed its primary mission in August 2004. Since then, the bonus years of extended missions have enabled many accomplishments that would not have been possible otherwise.

Odyssey made its most famous discovery during its first few months of science operations; detection of copious hydrogen just below the surface throughout the planet's high-latitude regions. Deduction that the hydrogen is in frozen water prompted NASA's Phoenix Mars Lander mission, which confirmed that fact in 2008.

Other major achievements of the Odyssey mission include:

- Highest-resolution map covering virtually the entire planet comprised of nearly 21,000 individual images
- Nearly all the science data from NASA's Mars Exploration Rovers Spirit and Opportunity has reached Earth via Odyssey relay
- Odyssey became the middle link for continuous observation of Martian weather by Mars Global Surveyor, Odyssey, and Mars Reconnaissance Orbiter, which began its science mission in late 2006
- Odyssey scientists have had the opportunity to monitor seasonal changes on Mars year-to-year, such as the cycle of carbon-dioxide freezing out of the atmosphere in polar regions during each hemisphere's winter
- Completed a radiation levels safety check to aid planning of future human missions
- Observations by Odyssey have contributed to selection and analysis of landing sites for four Mars surface missions

NASA has planned future work for Odyssey, in addition to having the orbiter continue its own science and its relay service for the Mars Exploration Rover mission. If required, controllers will adjust Odyssey's orbit so the spacecraft is in a favorable position for a communication relay role during the August 2012 landing of NASA's next Mars rover, Curiosity.

Investigators at Arizona State University, Tempe, operate the Thermal Emission Imaging System. Investigators at the University of Arizona, Tucson, head operation of the Gamma Ray Spectrometer suite of instruments. Additional science partners are located at the Russian Aviation and Space Agency, which provided the high-energy neutron detector, and at Los Alamos National Laboratories, New Mexico, which provided the neutron spectrometer.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 133,000 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 2009 sales from continuing operations were \$44.0 billion.

For more information about NASA's Mars Odyssey:

<http://www.lockheedmartin.com/products/2001MarsOdyssey>

and, <http://mars.jpl.nasa.gov/odyssey>

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