Lockheed Martin-Built Stardust Spacecraft To Fly By Earth Jan. 14

Stardust-NExT on Its Way to Explore Comet Tempel 1

On Jan. 14, NASA's Stardust-NExT spacecraft will fly by Earth during a gravity assist maneuver that will increase its velocity and sling shot the spacecraft into an orbit to meet up with comet Tempel 1 in February 2011. Flight operations for the spacecraft are performed from Lockheed Martin's Mission Support Area in Denver, Colo. The Jet Propulsion Laboratory in Pasadena, Calif. provides the precision navigation need for the flyby and the journey to Tempel 1.

The Lockheed Martin-built spacecraft's closest approach will happen at 12:33 p.m. MST as it comes within 5,690 miles (9,157 km) of Earth. At its closest point, the spacecraft will fly over the California/Mexico border south of San Diego at a speed of approximately 22,400 miles per hour (36,000 kilometer per hour).

"We performed our final trajectory correction maneuver on Jan. 5 that put us into a precise position for the flyby," said Allan Cheuvront, Stardust-NExT program manager at Lockheed Martin Space Systems Company. "On Jan. 10, we sent the last set of commands to the spacecraft that it will use to perform the gravity assist maneuver. We're in great shape and we're looking forward to seeing Stardust fly by before it heads back into deep space."

This isn't the first time Stardust has flown by Earth. The first was Jan. 15, 2001 when it used the Earth for a gravity assist to meet up with comet Wild 2. Five years later on Jan. 15, 2006, the spacecraft flew by Earth as it released it sample return capsule safely back to Earth; which held particles from comet Wild 2 and interstellar dust.

The Stardust-NExT (New Exploration of Tempel) mission is a low-cost mission that will expand the investigation of comet Tempel 1 initiated by NASA's Deep Impact spacecraft. The mission uses the still-healthy Stardust spacecraft to perform a flyby of comet Tempel 1 and obtain high-resolution images of the coma and nucleus, as well as measurements of the composition, size distribution, and flux of dust emitted into the coma. Stardust-NExT will also provide important new information on how Jupiter family comets evolve and how they formed 4.6 billion years ago.

Dr. Joseph Veverka at Cornell University is the principal investigator of the Stardust-NExT mission. JPL is managing Stardust-NExT for the NASA Science Mission Directorate, Washington, D.C.

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 is a global security company that 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.

Additional information: http://stardustnext.jpl.nasa.gov/

Stardust-NExT fact sheet: http://stardustnext.jpl.nasa.gov/mission/pdfs/SD_NEXT_Fctsht.pdf

Stardust-NExT illustration: http://stardustnext.jpl.nasa.gov/multimedia/mission_art/earth_sc_l.jpg

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