Boeing Delta II Heavy Lift Rocket Developed for NASA Payload

A new configuration of the Boeing Delta II rocket is being developed to launch a space-based telescope that will probe the origins of the universe.

The launch of Space Infrared Telescope Facility (SIRTF), the fourth and final element in NASA's Great Observatories program, will take place in late 2001 as part of the space agency's Medium Expendable Launch Vehicle System program. SIRTF is managed for NASA by the Jet Propulsion Laboratory in Pasadena, Calif.

The two-stage Delta II will be equipped with the larger 138,000-pound-thrust solid rocket motors of a Delta III. By using nine of these solid motors the lift capacity to geosynchronous transfer orbit will increase to 4,550 pounds - a 10 percent gain over a conventionally equipped Delta II.

The nine 46-inch-diameter solid rocket motors used on the larger Delta III launch vehicle will be attached to the first stage of a Delta II, replacing nine 40-inch-diameter units.

"In the past, Boeing has been able to expand the capabilities of the Delta II launch vehicles to meet our customers' requirements," said Darryl Van Dorn, director of NASA and Commercial Launches. "This tradition continues with the development of this higher performing configuration."

Delta rockets have carried 79 scientific and technology development payloads into space with a 98 percent launch success rate. This year alone, Delta II rockets successfully launched four NASA missions, Mars Polar Lander/ Deep Space 2, STARDUST, Landsat 7, and FUSE.

SIRTF will view the universe that is invisible to the human eye. The orbiting telescope will study the infrared region of the electromagnetic spectrum.

The telescope will permit scientists to study low-temperature environments such as dusty interstellar clouds where stars are forming and study newly-forming planetary systems around nearby stars. Infrared can probe through the cosmic dust particles that normally block the view of many astronomical environments.

SIRTF will complement the Hubble Space Telescope, Compton Gamma-Ray Observatory and the recently launched Chandra X-Ray Observatory. Each of these telescopes views the universe through various portions of the electromagnetic spectrum.

The Delta II is manufactured in Huntington Beach, Calif., with final assembly in Pueblo, Colo., and is powered by the RS-27A engine built by Boeing in Canoga Park, Calif. The Delta launch team at Cape Canaveral Air Station, Fla., will handle launch coordination and operations.

Alliant Techsystems, Magna, Utah, builds the Delta II and Delta III graphite epoxy-encased solid rocket motors for boost assist. Aerojet, Sacramento, Calif., manufactures the second-stage engine and AlliedSignal, Teterboro, N.J., builds the guidance and flight control system.

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