

TRW/Ball Aerospace Team Awarded Contract to Develop Design for NASA's Next Generation Space Telescope

REDONDO BEACH, CALIF. — July 12, 1999 — A TRW-led team that includes Ball Aerospace & Technologies Corp. has been awarded a contract by NASA's Goddard Space Flight Center, Greenbelt, Md., to develop a preliminary design concept for the space agency's Next Generation Space Telescope (NGST), the successor to the Hubble Space Telescope. The 30-month contract, one of two NGST contracts awarded by Goddard, has a total potential value of \$14.9 million, including options.

Operating from the edge of the visible to the mid-infrared region of the electromagnetic spectrum (radiation with wavelength of 0.6 to 20 microns), NGST is expected to have about 10 times the light-gathering capabilities of the Hubble Space Telescope. It will also be able to see objects 400 times fainter than those currently studied with ground telescopes such as the Keck Observatory, with a spatial resolution comparable to Hubble.

“This award capitalizes on the demonstrated experience of TRW and Ball Aerospace in developing spacecraft for NASA's most challenging space science missions,” said Joanne Maguire, vice president and general manager of TRW's Space & Laser Programs Division. “Our innovative technologies and effective management approach for NGST promise a space system that will significantly expand the world's knowledge of the universe while meeting the mission cost constraints.”

The NGST mission, an important component of NASA's Origins program, will use a lightweight, 8-meter-class, deployable mirror and highly sensitive infrared detectors to gather clues about the nature of the universe when it was between one million and several billion years old. From a position in deep space known as the L2 Lagrange point, it will search for answers to astronomers' fundamental questions about, among other things, the birth and evolution of galaxies, the size and shape of the universe, and the mysterious life cycles of matter in the universe.

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Under the terms of its NGST Phase 1 definition contract, TRW and its principal subcontractor, Ball Aerospace, will develop the NGST design concept and continue a series of activities that will bring to maturity the technologies necessary to build and deploy NGST. As the prime contractor, TRW will lead the overall system design effort, while Ball Aerospace will play a major role in developing the NGST payload, with special emphasis on the optical elements.

A competition to select a winning NGST design for Phase 2 of the program is expected in 2001. Phase 2 of the program will include detailed design, fabrication and delivery to orbit of the NGST spacecraft. Launch of the NGST is expected in 2008.

Collectively, TRW and Ball Aerospace have played a major role in every one of NASA's Great Observatories. TRW designed and built the Compton Gamma Ray Observatory (CGRO) and the soon-to-be-launched Chandra X-ray Observatory, while Ball provided key instruments for the Hubble Space Telescope, and is building the telescope for the Space Infrared Telescope Facility (SIRTF). TRW is also working under contract with the Jet Propulsion Laboratory (JPL), as the spacecraft industry partner for NASA's Space Interferometry Mission (SIM), the first in a series of Origins missions planned for launch early in the 21st century.

NASA's Origins program is a series of linked science missions directed at answering fundamental questions about the origin of galaxies, stars, and planets, and the possibility of habitable, Earth-like worlds around nearby stars. Technology developed under SIM and NGST will support a subsequent Origins mission, Terrestrial Planet Finder (TPF), which will detect Earth-sized planets around nearby stars. TRW is a participant with NASA in all of these Origins missions.

TRW has been developing scientific, communications and environmental satellite systems for NASA since 1958. In addition to its work on NGST and SIM, the company is currently studying architectures and technologies needed to implement several of NASA's future space science missions including Terrestrial Planet Finder; Constellation-X, NASA's next major X-ray mission after Chandra; and Gamma-Ray Large Area Space Telescope (GLAST), a follow-on program to CGRO, which has been in service since 1991.

Based in Cleveland, Ohio, TRW provides advanced technology products and services for the global automotive, aerospace and information systems markets. The company's 1998 sales totaled nearly \$12 billion. TRW news releases are available on the corporate Web site: www.trw.com.

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