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NASA's New Millennium ST-9 Mission

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NASA's New Millennium Space Technology 9 (ST-9) mission is the latest of a series of in-space technology validation activities that began in 1996 with Deep Space 1. ST-9 is an integrated system validation project and part of New Millennium Program effort to identify the technological capabilities needed for future space science missions and the technology advances that require validation in deep space to help provide those capabilities. The ST-9 mission will validate one of five technology capabilities that NASA Associate Administrator has selected as candidates. The five technology capabilities under consideration are of great relevance to the full breadth of the NASA's Space Science endeavor and are based on input from the space science community for guidance and concurrence. NASA prepared a NASA Research Announcement (NRA) that solicited proposals for technology advances to provide needed capability for the following technology capability areas:

Solar sail capability-design metrics, scaling, deployment, propulsion and attitude control.

Large Space Telescope-structure and control dynamics, materials, structures, actuators, controls for fabrication, packaging and deployment, optical correction and active figure control, thermal control at cryogenic temperatures.

Formation Flying- autonomous operations, intersatellite communications, spacecraft formation control, and relative position estimation.

Aerocapture- system and performance modeling, aerodynamics and aerothermodynamics, thermal protection systems and structures, and guidance, navigation, and control.

Pinpoint Landing and Hazard Avoidance-sensors/algorithms for guidance and navi-

gation, aerodynamic/propulsive maneuvering system options, terrain sensing and hazard recognition systems, and terrain sensors.

The technology providers were selected to provide needed technology advances in these areas in FY 2005. One these five technologies capability areas will be subsequently selected to implement the New Millennium ST-9 technology validation experiment in FY 2007.

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