Lockheed Martin And NASA Ames Team Selected To Design New Solar Mission

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The Lockheed Martin Space Systems Company, the NASA Ames Research Center in Mountain View, and a national and international team of co-investigators have been selected by NASA to undertake a $750 thousand six-month study to design a new NASA Small Explorer Mission called the Interface Region Imaging Spectrograph (IRIS). In the recent announcement, NASA selected six missions for study. Two of them will eventually be chosen to move forward to development, with each mission capped at $105 million.

IRIS fills a crucial gap in our ability to advance Sun-Earth connection studies by tracing the flow of energy and plasma through a dynamic interface region between the solar corona and heliosphere, where all but a few percent of the non-radiative energy leaving the Sun is converted to heat and radiation. Magnetic fields and plasma exert comparable forces in this region, and IRIS is uniquely suited to provide the observations necessary to pinpoint the physical forces at work in this little understood piece of real estate near the surface of the Sun.

"With IRIS we have a unique opportunity to work with our colleagues at NASA Ames to pool the expertise of each of our organizations and put together a nimble and robust design for a mission that will provide significant missing pieces in our understanding of energy transport on the Sun," said Dr. Alan Title, Lockheed Martin Advanced Technology Center solar physicist and IRIS principal investigator. "The complex processes and enormous contrasts of density, temperature and magnetic field within this interface region require instrument and modeling capabilities that are only now within our reach."

"Ames is pleased to be involved in these innovative, inexpensive Small Explorer mission proposals that promise to open new windows of understanding into our world and universe," said Ames Director S. Pete Worden. "We're looking forward to teaming with the principal investigators to boost our proposals into selection for launch."

The proposed IRIS spacecraft will fly in a Sun-synchronous polar orbit for continuous solar observations on a two-year mission. It will obtain ultraviolet spectra and images with high resolution (1/3 arcsec) -- with a cadence of as little as one second apart -- focused on the chromosphere and the transition region. Spectra will cover temperatures from 4,500 K to 107 K, and images covering temperatures from 4,500 to 65,000 K.

The Lockheed Martin Space Systems Advanced Technology Center is a world-class provider of advanced scientific and space technologies, prototypes, and research for physical, electronic, information/computing, materials, engineering, and electro-optical applications.

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 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.

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