

The RSDO News

September 2002

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A Message From the Chief of the RSDO

Greetings from the RSDO! We have had quite a busy and productive season and have a great deal of news to share with our readers in this issue. Since the last newsletter was published, we facilitated the award of two delivery orders: one for the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project (NPP) spacecraft last May, and one for the Gamma-ray Large Area Space Telescope (GLAST) in August.

This summer, RSDO representatives attended and participated in two conferences. The 2002 Small Payload Rideshare Conference (June 2002) was hosted by the U.S. Air Force Space Test Program Office and the National Reconnaissance Office in Albuquerque, New Mexico. The meeting addressed the availability of and issues concerning expendable launch vehicle support for small payloads. Our participation in the conference centered on our management of the Access To Space (ATS) web site. The interactive ATS web site provides both information and the tools to plan and select orbital and suborbital rides into space. We took advantage of this opportunity to provide conference attendees with information about the RSDO's capability, as well.

The RSDO also sponsored a booth at the 16th Annual Small Satellite Conference (August 2002) hosted by the American Institute of Aeronautics and Astronautics and the Utah State University in Logan, Utah. This conference provides an opportunity for the small satellite community (industry, academia, and government) to share information about products, capability, research and ideas. We shared a booth with the NASA/GSFC Integrated Design Capability (IDC) Office, an organization that offers customers a space instrument and mission design capability. The RSDO concentrated on providing conference attendees access to the RSDO and ATS resources. Both conferences were a huge success in that we were able to perform extensive marketing of our capability, reaching numerous aerospace companies and potential customers.

In addition, studies for the Geospace Electrodynamics Connection (GEC) mission were completed this past June, and we implemented numerous updates and improvements to the Access To Space (ATS) web site this summer.

Looking ahead, we have several studies and business opportunities approaching in the upcoming months. This fall, we expect to put out an Announcement of Opportunity (AO) for a series of Magnetospheric Multiscale Mission (MMS) spacecraft studies that will be associated with the MMS Instrument Suite Phase A studies. Also, NASA's Small Explorer (SMEX) Project will be releasing an important AO in the next few months. In Spring 2003, we will sponsor an On-Ramp period for the Rapid II contract, and will also facilitate the process for a set of Pre-formulation Studies for the Constellation X mission.

Articles detailing these accomplishments and upcoming opportunities are present in this newsletter—please take time to peruse it.

As always, if you have questions or comments regarding NASA's Rapid Spacecraft Development Office, please feel free to contact me.

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Contracting Officer's Corner

On-Ramp VI Canceled, On-Ramp VII Planned for Spring

The RSDO did not receive any proposals for On-Ramp VI and therefore that On-Ramp opportunity has been canceled. The RSDO plans to hold On-Ramp VII, in the spring of 2003. Proposals for On-Ramp VII will be due the last business day in February 2003. The RSDO will release an email in December reminding industry of the upcoming opportunity, and will also release a Commerce Business Daily Notice (CBD) in the middle of January 2003.

The RSDO would like to take this opportunity to remind industry that proposal preparation for this pending On-Ramp may be started prior to the release of the CBD Notice. Materials for preparing your proposal response to the On-Ramp are available at the following link: <http://rsdo.gsfc.nasa.gov>. Click on Rapid II and then click on Vendor On-Ramp Information to obtain all the information necessary to prepare a proposal for the On-Ramp. If you have any questions, the RSDO strongly encourages you to call the RSDO Contracting Officer at (301) 286-7586 or Greg Smith at (301) 286-1289. We will be glad to assist you with any questions or concerns.

The RSDO requests that companies that plan to bid during the next On-Ramp please notify the RSDO. Likewise, please notify the RSDO if your company's plan to bid changes. Lack of bidding is not looked upon negatively by the RSDO. We understand that time, money, and business opportunities dictate changes in business strategy. We look forward to working with each of you in the future.

By Jerry Edmond/RSDO Contracting Officer

A Reminder...

The RSDO strongly suggests you consider choosing a small or disadvantaged business when selecting your subcontractors. There are many businesses in this category who, when added to your team, could potentially increase the value of your offerings.

New Business

GEC Studies: The Results Are In!

Last February, NASA awarded delivery orders for Geospace Electrodynamic Connections (GEC) Mission Accommodation Studies to Spectrum Astro Incorporated and Orbital Sciences Corporation. For the studies, NASA provided the participants with the mission's science goals and basic requirements, and asked them to create a conceptual design for the GEC spacecraft, including schedule and cost information. In early June, the two companies completed their studies, and forwarded the results to NASA.

NASA personnel are finding the study data to be very useful as they plan GEC's future. The information will assist GEC Project Managers in formulating the overall mission goals and objectives, and in planning the cost and schedule of the project.

A Space Science Enterprise project, GEC is managed by NASA's Solar Terrestrial Probes (STP) program at GSFC, and will enable scientists to study complex multi scale coupling between Earth's magnetosphere and Ionosphere-Thermosphere (I-T) regions. GEC will consist of four identical mission spacecraft, carrying duplicate sets of nine instruments. The spacecraft are scheduled to launch on a single Delta II 2920 in September 2009, and will be variably spaced in an elliptical parking orbit.

More information on GEC will be available in the next issue of the RSDO newsletter, as specific plans for the mission solidify. General information regarding the GEC mission is available online at <http://stp.gsfc.nasa.gov/missions/gec/gec.htm>.

GLAST Delivery Order Signed

In late August, NASA representatives were pleased to announce that Spectrum Astro, of Gilbert, AZ, was selected to build the Gamma ray Large Area Space Telescope (GLAST) Observatory. The delivery order was awarded under the RSDO's Rapid II Indefinite Delivery Indefinite Quantity Contract. Release of the final Request For Offer (RFO) for this procurement effort occurred on May 11. The proposal evaluation period extended from June 19 to August 23, and the contract was signed on August 30, 2002. The contract is for Core Spacecraft Systems with non-standard services such as launch services, components, and studies to meet the Government's space science, earth science, and technology needs. The delivery order is valued at \$107 million (including the spacecraft, and all associated options). Spectrum Astro will be responsible for the design and fabrication of the GLAST Observatory, integration of the Government furnished instruments, Observatory-level testing, and on-orbit Observatory checkout. GLAST will have the ability to detect gamma rays from the most energetic phenomena in the universe. Gamma rays are the most energetic form of light; GLAST will detect gamma rays that are roughly 10 million to 150 billion times more powerful than the light visible to the human eye. Radiation of such a magnitude can only be generated under the most extreme conditions: strongest gravity, highest temperatures, most dense plasmas, and extreme magnetic fields. GLAST will observe thousands of black holes, magnetized pulsars, gamma ray bursts, and other gamma ray sources throughout the universe and will directly contribute to NASA's mission to explore the universe.

GLAST is part of the Structure and Evolution of the Universe science theme within NASA's Office of Space Science. For this unique endeavor—one that brings together the space astrophysics and particle physics communities—NASA is teaming with the U.S Department of Energy and institutions in France, Germany, Japan, Italy and Sweden. The launch is scheduled for September of 2006.

The GLAST mission will start with a one-year survey of the gamma-ray sky, after which the observation program will be determined by proposals from the international science community. The mission is being designed for a lifetime of five years, with a goal of 10 years of operations.

GLAST will be managed by NASA's Goddard Space Flight Center, Greenbelt, Md., for the Office of Space Science, Washington, DC.

More information about the GLAST mission is available at the following website:
<http://glast.gsfc.nasa.gov/>

From an August 23, 2002 NASA Press Release

NPP Contract Awarded!

NASA Goddard Space Flight Center has awarded Ball Aerospace and Technologies Corporation (BATC) of Boulder, Colorado with a delivery order to build the National Polar-orbiting Operational Environmental Satellite System (NPOESS) Preparatory Project (NPP) spacecraft.

The procurement was accomplished under RSDO's Rapid II spacecraft acquisition process, using an Indefinite Delivery Indefinite Quantity (IDIQ) contract. On March 4, 2002, the RSDO released the NPP Request For Offer (RFO), and two vendors responded with proposals by the April 4 due date. After careful evaluation of the proposals, NASA awarded the \$94 million contract to BATC in May 2002.

NPP is a joint mission sponsored by NASA and the NPOESS Integrated Program Office, which is comprised of representatives from the National Oceanographic and Atmospheric Administration, the Department of Defense, and NASA. NPP will serve as a bridge between the existing Earth Observing System (EOS) Terra and Aqua missions and the NPOESS missions, and will ensure that scientists are provided with a continuous stream of global change observations until NPOESS is launched in 2008. The NPOESS program is a cost-saving initiative that will consolidate the functions of two separate environmental satellite systems (currently independently operated by the National Oceanic and Atmospheric Administration and the Department of Defense) into one new system. NPP is critical to the NPOESS program. It will provide risk reduction and validation for three of four critical sensors slated for use on the NPOESS missions, and will demonstrate and validate the algorithms and data processing methods to be used on NPOESS.

BATC will be responsible for the design and fabrication of the NPP spacecraft bus, integration of the Government-furnished instruments, satellite-level testing, and on-orbit

satellite check-out. NPP is scheduled for launch in 2006; it will be placed in a 515-mile orbit, with an expected operational lifetime of five years.

Constellation X Study in the Works

NASA's Constellation X mission is a key component of the agency's Office of Space Science Structure and Evolution of the Universe (SEU) theme. The mission will consist of a constellation of spacecraft that are each equipped with an X-ray telescope. The spacecraft will fly together while simultaneously observing astronomical phenomenon and, in effect, create a single large instrument that is 100 times more powerful than any single X-ray telescope to date.

Scientists will utilize Constellation X to learn how black holes evolve and produce energy, and to test Einstein's Theory of General Relativity in the extreme gravity conditions that exist near black holes. Constellation X will also have the capability to peer back in time to the earliest moments of the universe's existence, when clusters of galaxies formed. In addition, Constellation X will enable scientists to search for the "Missing Matter" which theorists say should have been produced by the Big Bang during the creation of the universe.

The project team has generated a Reference Configuration that demonstrates one mission architecture that can achieve the mission requirements. In addition, industry representatives (TRW and Ball Aerospace) performed preliminary trade studies and generated various observatory configurations that might be possible for Constellation X under a Cooperative Agreement Notice in 1998. To keep costs down, and still meet mission goals, Constellation X will utilize identical, modest satellites as its components. The spacecraft will be launched using Expendable Launch Vehicles in a series of launches. For more details regarding the results of these studies visit <http://constellation.gsfc.nasa.gov/docs/design/description.html>

The Constellation X project will be funding a Pre-formulation Study effort under the auspices of NASA's Rapid Spacecraft Development Office. Funding for four study contracts will be available. The period of performance for each contract will be approximately 100 days, and award of the contracts will be scheduled some time before April 1, 2003. The Constellation X project looks forward to the execution of these studies, and the valuable information that will be gained. All available vendors are encouraged to participate in this upcoming study initiative.

For further information on the Constellation X mission, please refer to the Constellation X web site at <http://constellation.gsfc.nasa.gov/>.

Spacecraft Systems Study Task for MMS Mission

The purpose of the Magnetospheric Multiscale (MMS) mission is to study magnetic reconnection, charged particle acceleration, and turbulence in the key boundary regions of the Earth's magnetosphere. MMS consists of four spin-stabilized spacecraft in a tetrahedron constellation, and is targeted for launch in 2009. Release of the MMS Instrument Suite Announcement of Opportunity (AO) is expected in October 2002, and

is planned to result in multiple awarded contracts for Phase A concept studies. The main purpose of the Phase A study is for the instrument suite teams to define instrument implementation requirements, perform preliminary trade studies, and identify risks in terms of engineering, management and any impact to the proposed science.

In support of the Phase A study, there will be multiple MMS spacecraft systems study tasks awarded to qualified RSDO vendors. These studies will focus on evaluating the impact of the various MMS instrument suite designs on potential RSDO spacecraft bus designs. Results from the instrument suite/spacecraft system trades will provide assessments of impacts (small or large) to an RSDO-type spacecraft design to aide the instrument suite proposers and the AO proposal evaluation teams.

Release of the MMS Mission Spacecraft Systems Study Task Request for Proposal (RFP) is expected in November 2002.

For further information on MMS, please refer to the MMS web site at <http://stp.gsfc.nasa.gov/missions/mms/mms.htm>.

By Kitt Reinhardt/Magnetospheric MultiScale Mission (GSFC Code 460)

Other RSDO News

New Features Added to the "Access To Space" Web Site

The Access To Space web site (located at URL: <http://accesstospace.nasa.gov>) enables individuals or parties that need a ride into space to link up with organizations that can provide space access. The site, which is maintained by the RSDO, contains a wealth of technical information on numerous types of missions (instruments, spacecraft, and launches) in different stages of development. It also contains data on various space access modes, including expendable launch vehicles, reusable launch vehicles, sub-orbital vehicles such as rockets and balloons, Shuttle carriers, transfer vehicles, secondary payload adaptors, and over 30 spacecraft buses. Using this web site, a potential customer can research available space access modes, and determine whether there are options that meet his needs.

Over the past several months, RSDO contractors (from a.i. solutions Inc.) have improved the web site to include additional mission information and launch vehicle information. They have also modified the layout of the site to simplify navigation and make it easier and quicker for users to get to a desired area of the site. For example, it is now easier to update mission database information. Instead of having to access numerous web pages to make each change, authorized users can utilize a single page to insert mission information updates.

In addition, two new sections were added to the Access Mode area of the web site. The first contains information about new launcher programs that are in the development or test flight stages (e.g., Scorpius and Super Strypi). The second section includes information about alternative space access methods such as Transfer Vehicles, which are stand-alone vehicles designed for the transfer of smaller payloads to final orbits, and Secondary Payload Adaptors, which are designed to provide a standard interface between secondary payloads and launch vehicles.

The most recent release (early September) provides a new tool for finding launch vehicles that satisfy user-entered orbit parameters (inclination, altitude, mass, and payload object size). From the returned list of launch vehicles, users can view how the payload object(s) fit in the fairing.