MARSHALL STAR

Serving the Marshall Space Flight Center Community

Dec. 20, 2001

Marshall lead Center for SLI

NASA awards more than $94 million to advance next generation space transportation effort

Marshall news release

NASA announced Monday an additional $94.6 million in contract awards to advance the agency's Space Launch Initiative (SLI) — a research and development effort to develop the technologies needed to build a second-generation reusable launch vehicle, as well as to design vehicle architectures for 21st century missions.

These awards represent the final round of competitive selections under cycle one of the NASA Research Announcement (NRA) for NASA's Space Launch Initiative issued in October 2000.

NASA's Space Launch Initiative made its first round of contract awards — valued at $791 million — in May to 22 prime contractors. A new round of competitive proposals should be received in March 2002 under cycle two of the NASA Research Announcement.

See SLI story on page 4

NASA selected Northrop Grumman in El Segundo, Calif., and Orbital Sciences Corp. in Dulles, Va., to receive a combined increase of $20.7 million. The two companies will team to provide systems engineering and architecture definition for NASA's Second Generation Reusable Launch Vehicle program, which manages the SLI, laying groundwork for greater access to space for civil exploration, as well as potential defense and commercial applications.

Of the new award, Northrop Grumman will receive $15.7 million and Orbital Sciences Corp. will receive $4.9 million. The two contracts hold a renewal option upon successful completion

*See **Space Transportation** on page 7*

Gregory

Office of Space Flight

Gregory brings years of experience as astronaut to job

NASA news release

NASA Associate Administrator Frederick D. Gregory, an astronaut and the senior executive responsible for the safety and reliability of all agency programs, recently was named acting associate administrator for the Office of Space Flight.

Gregory, 60, was associate administrator for the Office of Safety and Mission Assurance at NASA Headquarters in

*See **Gregory** on page 6*

Inside the Star

Holiday reception an example of Marshall teamwork

Director's Corner

Season's Greetings!

I just want to say how impressed I was with the Holiday Reception, even though I was unable to attend as I was at the Shuttle launch that day. I heard great things about the event, starting with an excited call from my wife, Loa, who said it was so exhilarating and fun and that I had to go over and see the village ("Marshallville") before it was taken down the next day. I got out of bed early to go over the next morning after returning from the launch. She was right! I could imagine the fun of being there with everyone and enjoying visiting in the "village."

Stephenson

I want to congratulate everyone for a very creative and exciting set of buildings and related "stuff." Everyone obviously got into the spirit of the idea and put a lot of energy and time into making it a unique event. Congratulations, too, to Angela Storey and Mike Wright for coming up with the outstanding idea and leading the event this year. Thanks to the team that supported them. You all did great!

Why do I think it was so great, really? The answer is simply the Center Teamwork Value it represents. While I was involved down in Florida working with a great Shuttle team to successfully launch another Shuttle, each organization at Marshall was working together on literally hundreds of space related projects at the Center. This relatively small Holiday Reception event demonstrated teamwork in a very simple way — the kind of teamwork that is making us successful in our NASA work. Everyone pitched in and created a wonderful village in ways that were unique to each organization.

With teamwork like this we can truly be successful in our mission to reinvent how we go to space and do science from space.

The holidays are a time to be with our family and friends and value relationships. Our People Value supports this very well. Attending several organization holiday receptions and seeing the wrapped presents for underprivileged children warmed me. You truly care about one another and others in our community who are less fortunate. This was also demonstrated by our record-setting Combined Federal Campaign results. Congratulations to Deborah Gonzalez for her leadership in the CFC campaign and to her team.

It is a pleasure to be a part of the Marshall Team. Thanks for all that you do. Have a wonderful holiday and safe New Year celebration.

— Art Stephenson
Marshall Center Director

Welcome home, Expedition Three crew

Craig Cruzen of the Payload Operations and Integration Department in the Flight Projects Directorate, left, and Andy McClendon, Dan Massey and Brian Little of Teledyne Brown Engineering, sign a welcome home banner for the International Space Station Expedition Three crew. The crew returned to Earth on board Space Shuttle Endeavour after 129 days on the Station.

Photo by Terry Leibold, NASA/Marshall Space Flight Center

Marshall contractors selected for Excellence Awards

by Ron Mize

Four Marshall Center contractors will receive Contractor Excellence Awards to recognize outstanding product and service contributions made by contractors to the Center. The awards are presented annually.

Lockheed Martin Space Operations Company was selected this year's winner in the large-business product category. Jacobs Sverdrup Technology Inc. received the award for the large-business service category. In the small-business categories, Marotta Scientific Controls Inc. received the award in the product category and Morgan Research Corporation took the award for the service category.

Center Director Art Stephenson will present the awards during the coming months.

"These contractors have made significant contributions to the mission of the Center over the past three years," said Amanda Goodson, director of Marshall's Safety and Mission Assurance Office. "These winners will be publicly recognized by the Center and will become Marshall's nominees for NASA's George M. Low Award," she said. The award is the Agency's most prestigious award for quality and performance in the aerospace industry.

For the Marshall Contractor Excellence Award, contractors are scored on seven basic factors. Nominations are rated on criteria such as customer satisfaction and contract technical performance; schedule performance; cost performance; management initiatives responsive to Marshall's strategic goals; leadership and continuous improvement; and innovative technology breakthroughs.

Lockheed Martin Space Operations Company is one of the world's leading diversified technology companies. The Utilization and Mission Support Contract with Marshall is managed locally by Lockheed Martin. Through this contract, the company has delivered ground systems and services for Marshall facilities and capabilities in support of ground simulation, test and flight operations.

Significant contributions have been made by Lockheed Martin to the overall mission of the Marshall Center by producing world-class command and control systems for the Chandra and International Space Station programs. Commencing in March 2001, the company deployed Space Station payload operations systems at Marshall's Payload Operations Center. These systems are in use by 12 external sites, including International Partners, NASA Centers, universities and Telescience Centers with approximately 300 remote science users.

Jacobs Sverdrup Technology Inc., Marshall Center Group, has served as the support contractor for the Engineering and Science Directorates for the past 11 years. Sverdrup contributes to Marshall-managed projects such as the Space Transportation System, microgravity experiments and the International Space Station, as well as in-house projects such as the Space-Based Observatories and technology development and application.

'These contractors have made significant contributions to the mission of the Center over the past three years, and will become Marshall's nominees for NASA's George M. Low Award.'

— Amanda Goodson, director of Marshall's Safety and Mission Assurance Office

Sverdrup has maintained consistently high award fees during the past three years and has demonstrated an outstanding commitment to timeliness by meeting or exceeding milestones on all assigned tasks. One noteworthy achievement was the implementation of the Sverdrup Enterprise Management System in January 2001, which resulted in new work order subtask directive process savings of 12 days per work order.

Marotta Scientific Controls Inc. is a highly competitive, international supplier of quality, advanced technology fluid control solutions. Marotta has been engineering proprietary manufactured parts, equipment and fluid control solutions since its inception in January 1946. Recent work for Marshall was for the NASA FASTRAC Engine Program. Other work for the Marshall Center included contracts to other prime contractors for Marshall-controlled programs such as Boeing on the International Space Station.

Marotta's restructured production facility to a "cell concept" has provided a more focused attention and clearly defined responsibilities concept to increase quality and timeliness. Implementation and use of a Master Scheduler System has resulted in a 37-percent improvement in customer schedule requirements in the last two years with lead times reduced from 26 to 10 weeks.

Morgan Research Corporation has made major contributions to the technical excellence of Marshall-managed projects such as the Space Transportation System, Microgravity Experiments and the International Space Station, as well as Marshall in-house projects such as the Space-Based Observatories and technology development and application.

Morgan has consistently fulfilled contractual requirements and deliverables on or ahead of schedule. Continuous cost savings for the last four years with costs 12.6 percent below plan have resulted in a saving of $706,000. One noteworthy achievement was the development of the Lab-on-a-chip concept for the Iterative Biological Crystallization Project at the Marshall Center.

The writer is Marshall's quality management associate in the Safety and Mission Assurance Office.

Space Launch Initiative Executive Management Council meets to discuss program progress, direction

More than 50 NASA, contractor and university leaders of NASA's Space Launch Initiative (SLI) met Dec. 6 to explore how new technologies and various launch architectures under development today will help open the space frontier for continued scientific exploration and economic expansion.

Members of the Space Launch Initiative's Executive Management Council assembled at the Marshall Center. The group included NASA Headquarters officials, directors of NASA's field centers and chief executive officers and other high-ranking officials of companies and universities with SLI contracts. They heard an overview of the program's progress to date from NASA's SLI manager Dennis Smith, and discussed upcoming milestones. They discussed what is needed to make space flight significantly safer and less expensive — two primary goals for the Space Launch Initiative — and how they can work together effectively toward that end.

The meeting — the first Executive lead meeting since contract awards were made last May — was viewed by participants as a valuable communications forum. The group agreed to meet every six months.

"This program is critical to our nation's future in space. It's important that aerospace leaders meet face-to-face to chart the course for this effort," said Art Stephenson, director of the Marshall Center, which leads the Space Launch Initiative for NASA. "The companies partnering in SLI are pushing technology frontiers. As partners, it is essential that we actively communicate because each technology being developed can affect all the others needed to develop a launch system. That's why we are doing our homework, developing the technologies first." Stephenson emphasized the importance of proper execution of contracts and encouraged industry and university leaders to get personally involved.

The Space Launch Initiative is a research and development effort designed to substantially improve safety and reduce the high cost of space travel. The program's ultimate goal is to reduce the cost of launch to low Earth orbit to $1,000 per pound of payload and improve safety to loss of crew to 1 in 10,000 flights.

These cutting-edge advancements will be used for future government and commercial launch systems and space transportation operations.

The Space Launch Initiative will lead to the development of a common set of alternative technologies that NASA will make available to all U.S. companies.

NASA, contractor and industry leaders attended SLI executive council meeting

Executives attending the Dec. 6 meeting at Marshall included:

Jason Andrews, president, Andrews Space Technology
Carla Bossard, director, Space System Marketing, Aerojet Missile and Space Propulsion
Barry Boswell, deputy manager, Lyndon B. Johnson Space Center
Steve Bouley, director, Propulsion Development, Rocketdyne Propulsion and Power
Roy D. Bridges, director, John F. Kennedy Space Center
Donald J. Campbell, director, Glenn Research Center
John Campbell, Goddard Space Flight Center
Harry Cikanek, acting chief, Space Transportation Project Office, Glenn Research Center at Lewis Field
Mark Craig, acting director, John C. Stennis Space Center
Jeremiah F. Creedon, director, Langley Research Center
Fred DeJarnette, professor, Department of Mechanical & Aerospace Engineering, North Carolina State University
Antonio Elias, executive vice president and general manager for Advanced Programs, Orbital Sciences Corporation
Roy S. Estess, acting director, Lyndon B. Johnson Space Center
Delmar Freeman, Langley Research Center
Joe Fuller, president and chief executive officer, Futron
Victor Guiliano, regional manager, Huntsville Field Office, Pratt & Whitney
Jay Hennig, general manager, Moog, Incorporated
George Husman, vice president, Engineering Division, Southern Research Institute
Hans Jensen, chief engineer, Materials Research & Design, Incorporated
Larry Knauer, president, Pratt & Whitney Space and Russian Operations
Richard Kohrs, Kistler Aerospace
Dave Leestma, manager of SLI, KSC, John F. Kennedy Space Center
Charles J. Leising, manager of Project Planning Office, NASA Jet Propulsion Laboratory
Wayne Littles, consultant
Tom Marsh, president and general manager of Astronautics Operation, Lockheed Martin Space Systems Company
Michael F. Martin, president, Aerojet Missile and Space Propulsion
Henry McDonald, director, Ames Research Center
Bob Mitchell, vice president, Advanced Systems Development, Northrop Grumman, Air Combat Systems

*See **Attendees** on page 5*

Partnering for success

Job fair helps employees connect with opportunities

Most of the representatives staffing the directorate booths at the Internal Job Fair Dec. 5 could not remember Marshall ever hosting an Internal Job Fair. They hoped they would have someone to talk to when the doors opened at 9 a.m.

By 1 p.m., when the event was ending, they had talked to roughly 200 Marshall employees about 142 vacancies across the seven directorates represented.

Openings discussed ranged from management support assistants, to a deputy manager of an engineering group. The event allowed hiring managers to meet one-on-one with prospective employees and discuss the jobs available.

Now managers will identify which employees to evaluate further. Human Resources will conduct a qualifications review of selected resumes. Directorates will then be free to conduct more formal interviews.

"Special thanks to the directorate representatives who manned the booths, and especially to Craig Young, the Computer Sciences Corp. employee who serves as a special events coordinator, for the work done to make this a success," said Gene Fundam of the Human Resources Department.

Rosalynne Strickland, of the Safety and Mission Assurance Office, left; Judith Gregory of Space Transportation Directorate, center; Kristie French of the Safety and Mission Assurance Office, second from right; and Mike Galuska of the Safety and Mission Assurance Office discuss opportunities at the job fair.

Attendees

Continued from page 4

George Mueller, chief executive officer, Kistler Aerospace
Kevin Neifert, project manager SLI, The Boeing Company, Space and Communications
Bob Noblitt, Northrop Grumman, Air Combat Systems
Mark Ottaviano, research engineer, Materials Research and Design, Incorporated
Kevin Petersen, director, Dryden Flight Research Center
William Readdy, deputy associate administrator, Office of Space Flight
Row Rogacki, deputy associate administrator for Aerospace Technology and Space Transportation, NASA Headquarters
Tom Romesser, vice president and deputy of Engineering, Space & Electronics, TRW
Mike Saba, Defense and Space Engineering Segment manager, Honeywell International
George Satornino, president, Sierra Lobo
Wallace Sawyer, special assistant to the director, John F. Kennedy Space Center
Richard "Gale" Schluter, vice president and general Manager of Expendable Launch Systems, The Boeing Company, Space and Communications
Darin Skelly, executive staff center director KSC, John F. Kennedy Space Center
Dennis E. Smith, manager for Second Generation Program Office, Marshall Space Flight Center
John Swiatowy, manager, Product Line, Moog, Incorporated
Mike Talbot, president and chief executive officer, Universal Space Lines, LLC
David Thompson, chairman and chief executive officer, Orbital Sciences Corporation
Julie Van Kleeck, Aerojet Missile and Space Propulsion
Sam Venneri, associate administrator for Aerospace Technology, NASA Headquarters
Ron Welch, senior vice president, Oceaneering Space and Thermal Systems
Warren Wiley, Code YA, Kennedy Space Center
Byron Wood, vice president and general manager, Rocketdyne Propulsion and Power
Doug Young, director of Space Programs and program manager 2GRLV, Northrop Grumman, Air Combat Systems

Annual publication spotlights NASA technologies improving quality of life on Earth

by Jonathan Baggs

New technologies developed at the Marshall Center are featured in the latest edition of "Spinoff" — an annual publication highlighting the successes of NASA's commercial partnerships with the business community.

"Spinoff 2001" explores more than 50 NASA technologies created for the space program, then adapted for use commercially. The highlighted technologies this year include those from previous Spinoff editions, illustrating the many years of hard work and dedication from NASA field centers and industry that have resulted in solid returns on America's investment in the space program.

Featured spinoffs in the publication developed at, or with the support of the Marshall Center include:

• Laser-etched digital data matrix codes, which contain 100 times as much information as conventional bar codes for tracking parts and keeping records.

• A plant-growth filtration system that increases the shelf life of produce and can drastically reduce costs associated with discarding rotten food.

• A generic spacecraft "brain," or core module, to lower the costs of satellite development for the commercial information and communications markets.

• Video image stabilization software that provides videotape enhancement and analysis and is adaptable for use in areas such as law enforcement and national defense, plus civilian applications.

• A low-energy electron beam gun for curing composite materials, a valuable new capability for the aeronautics, aerospace and automotive industries.

• A new tool for friction stir welding, a metal bonding process which is revolutionizing the fabrication industry.

• An innovative metal casting process which creates high-quality, low-cost components for demanding applications such as turbine engines.

U.S. patents owned by NASA are made available for the widest possible benefit by licensing to industry in return for royalties paid to the inventors and their NASA Centers.

Since its founding in 1958, NASA technologies have enabled American industry to introduce more than 1,200 new or improved products, ranging from improved equipment for breast cancer detection, to systems for water purification, to better, easy-to-use software for a variety of tasks.

The writer, employed by ASRI, supports the Media Relations Department.

Gregory

Continued from page 1

Washington. He replaces Joseph H. Rothenberg, who retired Dec. 15.

"Safety permeates everything Fred does. He's the right person for this job," said Acting NASA Administrator Dr. Daniel R. Mulville. "His experience as an astronaut, pilot and manager of flight safety programs is essential during this period of transition for the Office of Space Flight."

As a NASA astronaut, Gregory logged more than 455 hours in space during three Space Shuttle missions. In 1985, he served as pilot on board Challenger during STS-51B. Gregory was mission commander for STS-33 in 1989 and STS-44 in 1991.

Gregory was selected as an astronaut in 1978, after a distinguished career with the U.S. Air Force. He logged nearly 7,000 hours in 50 types of aircraft, including 550 combat missions over Vietnam.

In his former position, Gregory was charged with overseeing all safety issues within NASA through the development, implementation and oversight of reliability, maintainability and quality assurance policies.

"I deeply appreciate the confidence Dr. Mulville has shown in me throughout my NASA career," said Gregory. "NASA has the safest and most reliable human space flight program in the world. I'm going to work to make sure we continue to safely explore and develop space for the benefit of everyone here on Earth."

Gregory has been awarded the Defense Superior Service Medal, two Distinguished Flying Crosses, the Defense Meritorious Service Medal, the Meritorious Service Medal, 16 Air Medals, The Air Force Commendation Medal and three NASA Space Flight medals.

His honors also include the NASA Distinguished Service Medal, the NASA Outstanding Leadership Award, the National Society of Black Engineers Distinguished National Scientist Award, the George Washington University Distinguished Alumni Award and an "Ira Eaker Fellow" by the Air Force Association.

Dr. Michael A. Greenfield, Office of Safety and Mission Assurance deputy associate administrator, will serve as acting administrator during Gregory's interim assignment.

Additional information about Gregory is available on the Internet at:
http://www.hq.nasa.gov/office/codeq/
or
http://www.jsc.nasa.gov/Bios/htmlbios/gregory-fd.html

SHE Program improvements targeted through self-assessment

by Lesley Guerin
Marshall Safety Office

All civil service and contractor organizations recently participated in the self-assessment of Safety, Health and Environmental Program implementation at the Marshall Center.

The self-assessment activity was designed to refresh supervisor awareness of their Safety, Health and Environmental Program management responsibilities, identify program weaknesses occurring across a significant number of Center organizations and define corrective actions needed to assure compliance with internal directive documents.

Supervisory personnel responded to a 41-item questionnaire presented in a checklist format.

Ten significant improvement areas identified by Marshall personnel are listed below. Discussions are under way to identify the most effective and efficient strategies for implementing the needed improvements.

- Material Safety Data Sheet (MSDS) availability and accessibility
- Defining and posting work area housekeeping rules
- Promoting employee membership in Marshall's Safety Action Team and participation in other safety activities
- Safety assessment of operations and identifying Facility Risk Indicator
- Reviewing and working organization results on FY2001 Protective Equipment Program Summary Survey
- Adequate organization resources to correct hazardous conditions
- Scheduling and/or completion of required Safety, Environmental and Health training
- Completing safety assessment(s) required for designated Facility Risk Indicator
- Safety Concerns Reporting System submission knowledge and ability
- Employee participation in goal-setting, hazard assessment, mishap investigation, etc.

The writer is employed by Hernandez Engineering Inc.

Space Transportation

Continued from page 1

of a review in March 2002.

An additional award of $5.4 million is being made to the Boeing Company in Seal Beach, Calif., to initiate studies in crew-survivability and crew-escape systems technologies, a project unique to NASA. A primary goal of SLI is to reduce the risk of space travel — making flight much safer than today's reusable launch system.

Rocketdyne Propulsion and Power, a division of the Boeing Company, located in Canoga Park, Calif., and TRW in Redondo Beach, Calif., have also been awarded options for existing contracts for potential continued work on advanced propulsion systems. Rocketdyne could receive an additional $63.0 million; TRW could receive $5.4 million.

The activities initiated by these awards are not intended to provide a specific vehicle design, but are the first step in developing a set of alternative technologies for a new generation of launch systems and associated space transportation operations. These evolutionary technologies include crew survival systems, advanced tanks and airframe structures, long-life rocket engines and robust thermal protection systems.

The SLI investment is expected to pay off with full-scale spacecraft development options around mid-decade.

NASA is investing money and other resources in technical and business studies, hardware development, and laboratory and flight tests that will lower the risk of developing a second-generation reusable launch vehicle.

"Right now we are bringing together teams of experts who can help us expand from our baseline. We need to make sure we identify areas that merit additional research and development and pursue those," said Dennis Smith, manager of NASA's Second Generation Reusable Launch Vehicle program. "Improving access to space is an ambitious goal and we take it seriously. Sharply reducing the cost of getting payloads into orbit is the key to our future in space and to U.S. economic competitiveness."

The planned budget for the Space Launch Initiative totals $4.8 billion through fiscal year 2006.

All NASA's field centers and the Air Force Research Laboratory are actively participating in the Space Launch Initiative. The Marshall Center is NASA's lead center for SLI.

Additional information on NASA's Space Launch Initiative, including a list of the selected contractors, is available on the Internet at:
http://www.slinews.com or *http://www.spacetransportation.com*

Obituaries

Champion, Ray H., 79, of Somerville, died Nov. 29. He retired from Marshall in 1975 where he worked as an aerospace engineering technician.

Sorenson, Victor C., 85, of Huntsville, died Dec. 3. He retired from Marshall in 1971 where he was the director of Management Services. He is survived by his wife, Catherine Sorenson.

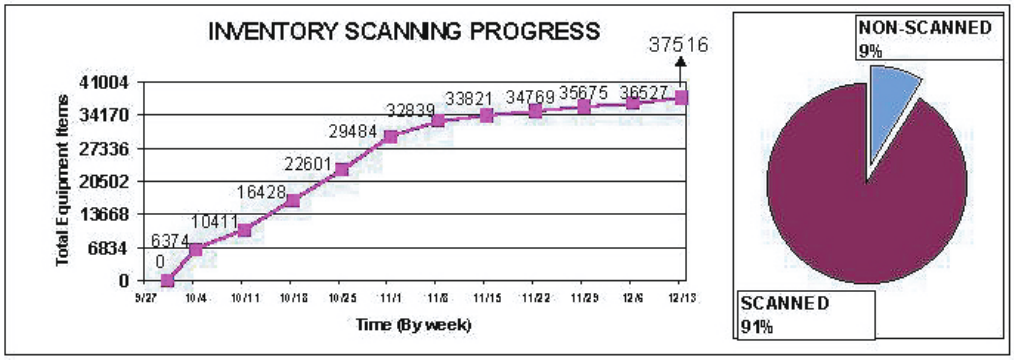
Way, Arthur L., 83, of Huntsville, died Dec. 3. He retired from Marshall in 1993 where he worked as an aerospace engineer. He is survived by his wife, Ruth H. Way.

Inventory of Marshall equipment 91 percent complete

The Marshall Center's physical inventory of all government-owned equipment will continue through Dec. 31.

As of Dec. 13, more than 91 percent of the 41,007 equipment items have been inventoried.

The inventory schedule is on the Web at: *http://inv2001.msfc.nasa.gov*



NASA bids farewell to successful Deep Space 1 mission

NASA news release

NASA's adventurous Deep Space 1 mission, which successfully tested 12 high-risk, advanced space technologies and captured the best images ever taken of a comet, ended Tuesday.

"American taxpayers can truly be proud of Deep Space 1," said Dr. Colleen Hartman, director of NASA's Solar System Exploration Division in Washington. "It was originally designed to be an 11-month mission, but things were going so well that we kept it going for a few more years to continue testing its remarkable ion engine and, as a bonus, to get close-up images of a comet. Deep Space 1 has earned an honored place in space exploration history."

Shortly after 2 p.m. CST Tuesday, engineers sent a final command turning off the ion engine, which has used up 90 percent of its xenon fuel. After Earth's final goodbye, the spacecraft will remain in orbit around the Sun, operating on its own. Its radio receiver will be left turned on, in case future generations want to contact the spacecraft.

"Deep Space 1 is a true success story," said Dr. Charles Elachi, director of NASA's Jet Propulsion Laboratory in Pasadena, Calif. "We are proud that future generations of spacecraft will benefit from its accomplishments."

Deep Space 1 leaves the technologies it flight-tested as legacies for future missions, which would have been impossible without its trailblazing technology tests. Enabling spacecraft to travel faster and farther than ever before, Deep Space 1's ion engine was once a science fiction dream. Now this ion engine has accumulated more than 670 days of operating time. Future Mars missions may use this technology to return samples from the Red Planet.

Deep Space 1's successful test of autonomous navigation software was a major step in the path of artificial intelligence for spacecraft. Using images of asteroids and stars collected by the onboard camera, the spacecraft was able to compute and correct its course without relying on human controllers on Earth. NASA's Deep Impact mission will use a system based on autonomous navigation to reach the nucleus of comet Tempel 1.

Within nine months after launch, Deep Space 1 had successfully tested all 12 new technologies. As a bonus, near the end of the primary mission, Deep Space 1 flew by asteroid Braille. In late 1999, its primary mission complete, Deep Space 1's star tracker failed to operate. So in early 2000, engineers successfully reconfigured the spacecraft from 185 million miles (300 million kilometers) away to rescue it for a daring extended mission to encounter comet Borrelly.

In September 2001, Deep Space 1 passed just 1,349 miles (2,171 kilometers) from the inner icy nucleus of comet Borrelly, snapping the highest-resolution pictures ever of a comet. The daring flyby yielded new data and movies of the comet's nucleus that will revolutionize the study of comets.

Launched on Oct. 24, 1998, Deep Space 1 was designed and built in just three years, the shortest development time for any interplanetary spacecraft NASA has flown in the modern age. It was the first mission in NASA's New Millennium program. In addition to its technical achievements, Deep Space 1 is an ambassador of Earthlings' goodwill, carrying with it a compact disc of children's drawings and engineers' thoughts.

"I'm not sad it's ending, I'm happy it accomplished so much," said Dr. Marc Rayman, Deep Space 1 project manager at NASA's Jet Propulsion Laboratory. "I think it inspired many people who saw the mission as NASA and JPL at our best — bold, exciting, resourceful and productive."

Additional information on Deep Space 1 is available at: *http://nmp.jpl.nasa.gov*

In NASA co-op program at Marshall

Utah State's Brandon Boone reaches for the stars

Marshall news release

Brandon E. Boone, a graduate student in corporate communications at Utah State University in Logan, Utah, is currently working in the U.S. space program as part of a NASA cooperative education program.

Boone, serving the first of two terms in the Media Relations Department at the Marshall Center, is working with NASA exhibits and with news media reporting on NASA.

During his first term, Boone has spent time working on NASA's newest "space vehicle," Starship 2040. A national touring exhibit, Starship 2040 is designed to educate the public on what commercial spaceflight might be like four decades from now, in the year 2040.

Boone also has been involved in support for the Student Launch Initiative. The initiative is a Marshall Center education program designed to provide high school and university students with an exciting, hands-on learning experience in the areas of science, math and engineering.

"To be a part of one of our nation's most important endeavors, space exploration and travel, is a once-in-a-lifetime experience that I'm very excited about," Boone said. "I'm very thankful to have been afforded this opportunity to work in our nation's space agency and the cooperative education program."

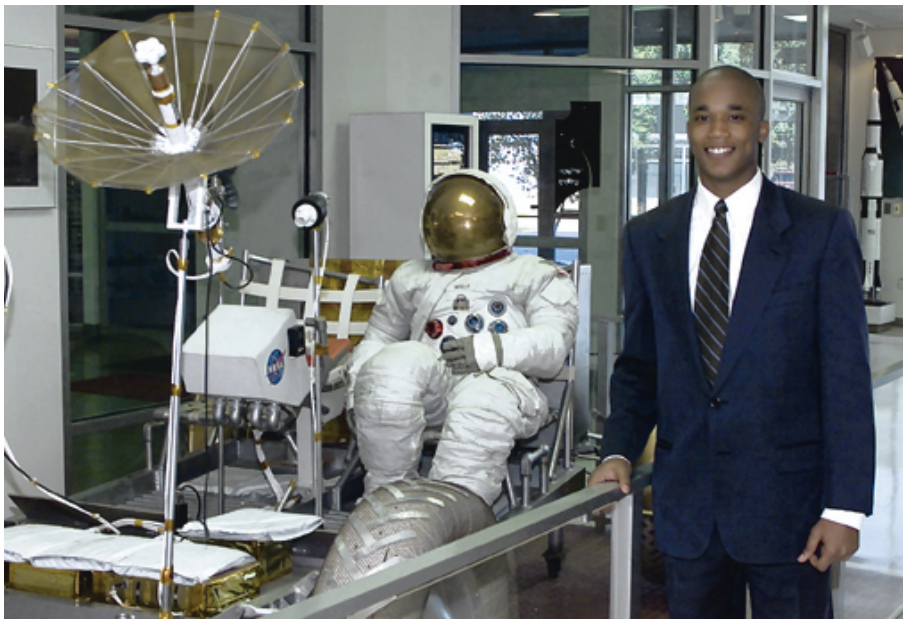


Photo by Terry Leibold, NASA/Marshall Space Flight Center

Boone is a co-op student working in the Media Relations Department at Marshall.

NASA's cooperative education program combines a student's academic study with a paid career-related work experience. Students must be enrolled in the program at their respective schools and be referred to a NASA center by their school's cooperative education administrator.

Cooperative education provides students full-time positions directly related to their field of study, and better understanding of human relations. Participants alternate periods of study at their schools with periods of work at NASA centers.

Boone earned a bachelor's degree in public relations from Utah State University in 2001. At Utah State, he participated in track and field, earning seven All-Big West honors in the long jump, 100 meters, 200 meters and 400 meter relay.

A 1996 graduate of Redmond High School in Redmond, Wash., Boone was two-time state champion in both the 100 and 200 meters. He is the son of Gwyn Boone of Redmond and Charles Boone of Baltimore, Md.

Energy tip

Track your energy costs with a home energy audit

An energy audit will reveal which areas of your home use the most energy. It will help you decide the most effective way to reduce energy costs.

You can conduct a simple audit yourself by doing the following:

• Check your home's insulation levels. An attic insulation R-value of 19 is recommended for this part of the country.

• Check for open fireplace dampers. A significant amount of heat can escape through open dampers.

• Look for holes or cracks around doors, light and plumbing fixtures, and other places where air may leak into or out of your home. Weatherstrip, repair or seal the holes and cracks.

• Make sure your appliances and heating and cooling systems are properly maintained. Cleaning air filters increases the efficiency of air handling units.

• Study your family's lighting needs and use compact fluorescent lamps when practical. Pay special attention to high-use lighting areas.

The audit provides the information needed to determine your strategy to reduce your home energy costs. For a more comprehensive home energy audit, contact your local utility, or call an independent energy auditor.

To share an energy tip with the "Marshall Star" readers, send it to: *Cedreck.davis@msfc.nasa.gov*

Customer and Employee Relations Directorate collected toys for Toys for Tots and Christmas Charities Year Round. From left: Charles Chenn, Betty Golden, Chrissa Hall, Ola Metcalf, Billie Griffis, Judi Hollingsworth, Chris Robinson and Julie Mills.

Ron Grimes, project manager for Coastal International Security, left, and Security Officer Chris Moore, right, present collected gifts to Shafunda I. Holtzclaw, director of public relations for the Harris Home for Children.

Spreading holiday cheer

Organizations across the Marshall Center helped spread holiday cheer in the Huntsville community by collecting gifts for area children.

Holiday hours for Marshall's cafeterias

Marshall's cafeterias in Bldgs. 4203, 4471 and 4610 will operate on holiday schedules during the weeks of Christmas and New Year's. Schedules are:

Bldg. 4203 — Specialty Bar closed Dec. 17-Jan. 6; cafeteria closed Dec. 24-25 and Dec. 31-Jan. 1; limited service Dec. 26 — grill, main event, pre-made salads. Reopen with limited service Jan. 2-4.

Bldg. 4471 — Cafeteria closed Dec. 24-25

Bldg. 4610 — Cafeteria closed Dec. 24-Jan. 6

To the wonderful people of Marshall,

Thanks so much for all the support and love you gave to my husband Sid (Saucier) and me during the years of his illness and that you have continued to give to me since his passing.

Sid loved working here, and he loved the people here. I know that your words of kindness and offers of help and support over the years helped to sustain him during difficult times. He was always touched by your generosity, and I continue to be so.

Sincerely,
Gloria Carr

Center Announcements

Marshall Star

This is the last issue of the "Marshall Star" for 2001. Publication resumes Jan. 10, 2002.

King Unity Breakfast

The Seventeenth Annual Martin Luther King, Jr. Unity Breakfast will be at 8 a.m. Jan. 21 in the Von Braun Center North Hall. Dr. Kevin W. Cosby, Senior Pastor of St. Stephen Baptist Church in Louisville, Ky., will speak. For tickets — at $20 each — see Madeline Hereford in the Equal Opportunity Office, Bldg. 4200, room 716.

Blood drive

The American Red Cross will hold its monthly blood drive from 8 a.m.-1:30 p.m. Friday in Bldg. 4752. All blood types are needed. Donors will receive a Christmas ornament and a certificate for a free, one-topping Domino's pizza. Anyone who cannot attend this blood drive but wishes to participate may donate at The American Red Cross, 1101 Washington St., Monday through Thursday from 10 a.m.-5:30 p.m. or Friday from 8 a.m.-1 p.m. For more information, call Nancy Jane Fitzgerald at 544-7561.

Moonbuggy Race

The ninth annual Great Moonbuggy Race will be April 12 -13, 2002, at the U.S. Space & Rocket Center. More information about the competition is available on the Marshall Center's Great Moonbuggy Race Web site at: *http://moonbuggy.msfc.nasa.gov*

AMPET conference

The 5th Conference on Aerospace Materials, Processes and Environmental Technology (AMPET) will be Sept. 16-18 in Huntsville. Marshall's Materials, Processes and Manufacturing Department will host the event. The department is seeking technical presenters through a call for papers. For more information about the conference, visit the Web at: *http://ampet.msfc.nasa.gov*

TSP Open Season

Thrift Savings Plan (TSP) Open Season continues through Jan. 31, 2002. Employees are encouraged to submit changes via the Web at: *www.employeeexpress.gov.* For more information, call Ginger Martin at 544-5654, or Debbie Allen at 544-7536.

Upcoming classes

Cost Control classes

Remaining classes in the series of project planning and analysis classes from 8 a.m.-noon in Bldg. 4200, room G-13E will resume in January with Project Analysis on Jan. 9, Schedule Assessment and Analysis, Jan. 16, and Managing a Technology Program, Jan. 23. The series of 10 classes will be repeated at future dates. Participants interested in attending should register via AdminSTAR.

Clubs and Meetings

MOO meets

The Management Operations Office (MOO) will meet at 10 a.m. Dec. 27 at the Cracker Barrel Restaurant in Madison. MOO retirees, former employees, present employees, and friends are invited. For more information, call 539-0042.

Instrumentation Division meets

The Measuring Branch, Telemetry Branch and Radio Frequency Branch meet the first Tuesday of each month at 11 a.m. at the Redstone Golf Club Coffee Shop. For more information, call Tom Escue at (256) 232-1549.

Miscellaneous

Charlie's Grill

Charlie's Grill in the basement of Bldg. 4200 will be closed Dec. 24 and 26.

S&H Barber Shop

S&H Barber Shop in Bldg. 4203 will be closed Dec. 24 and 25.

Auto Shop

Marshall's Auto Shop will be closed Dec. 24-Jan. 2.

NASA Exchange

Symphony tickets

Tickets to the Huntsville Symphony's New Year's Eve Concert are available at a 20 percent discount to NASA's employees, retirees and contractors, and their families. To order, call the Huntsville Symphony at 539-4818 or bring your badge to the Box Office on New Year's Eve The concert — honoring 50 years of space exploration — starts at 7:30 p.m.

Redstone Arsenal

New Year's Eve parties

The Redstone Officers' and Civilians' Club will have a New Year's Eve gala Dec. 31. Dinner will be served 7-9 p.m. and live music will be by "The Usual Suspects." Cost is $35 per person or $65 per couple. Ticket price includes dinner, entertainment, full breakfast, party favors and champagne for toasting. The Firehouse Pub will be open from 8 p.m.-2 a.m. Tickets — at $15 each — include karaoke, hors d'oeuvres and champagne for toasting. The Challenger will open at 8 p.m. Continental breakfast will be from 12:30-1:30 a.m. Tickets — at $15 per person — include DJ, cash bar, continental breakfast, party favors and champagne. There is also an all inclusive on-post lodging package. Cost includes lodging on Redstone Arsenal, transportation to and from the New Year's Eve gala, dinner and dance, and a complimentary bottle of champagne in your room. Deluxe rooms are $115.50 per couple and cottages are $135.50 per couple. For tickets to the parties, call 830-CLUB. For the New Year's Eve gala package, call 837-4130 or 876-5713.

Employee Ads

Miscellaneous

★ Upright piano, antique reproduction, mahogany, $300; Ab-Doer w/video, $50. 694-8297/650-0500
★ Antique Duncan-Fyffe sofa, $90; matching mahogany coffee table, $30; Men's leather bomber jacket, size 38, $30. 881-8674
★ Sears bicycle, 12-speed, men's, 26" street, $30. 890-0302
★ Smith & Wesson, Sept. 11th Commemorative pocket knives, collector's item, $25 each. (256) 776-0112 after 6 p.m.
★ Three Stooges talking wall clock, new, $30. 885-2450
★ Fireplace insert, wood-burning, heavy-duty steel, blowers, damper, $325. 858-9153/509-0413
★ Four Music City Bowl tickets, Section 209, Row B, Seats 17-20, $60 each. 837-6552
★ Six Music City Bowl tickets, $60 each, 30/40-yard line, Section 237 club level, two free parking tickets included. 895-9414
★ Wells Cargo enclosed trailer, 24', interior: 19'8"Lx7'6"Wx6'6"H, $3,850 obo. 883-2948
★ Computer desk, $50; entertainment center, $75; pine desk, $50; TV, 27", $225; ring, 30 diamond, $600. 539-4902
★ Five Douglas P225/60R16 tires, less than 3 mo. old, $200. (256) 355-7064/(256) 603-5560
★ Limestone windowsills and headers; about 40 albums, classical and rock, $1 each. 882-1097
★ X-box, new, extra controller, two games. 658-5855
★ Six green plates from the Spode Blue-room collection, Georgian Series, $50 for set. 882-1097
★ Sony laptop VAIO FX150, Pentium III 750, 128MB RAM, 20GB HD, docking station, $900. 603-7898
★ Under-bumper receiver trailer hitch for Taurus/Sable (off 1989 model), $30. (256) 233-4680
★ Graco portable playpen, $25, Weed-Eater gas blower, $50. 539-7857
★ Kimball console piano, oak, $1,800 obo. 508-1144
★ Antique solid oak dining room suite, table w/six chairs and buffet, $1,000. 881-3797
★ Ladies shoes, 65 pair, size 8 1/2, most new in box, all for $265; hand sewn quilt, $40. 852-6952
★ Sheldon belt driven lathe, 110V, 10" swing, 36" between centers 3 & 4 jay chucks, table included, $1,500. (205) 647-4949
★ Pool table, durable full size 1 piece 1" slate, 5'4"x9'6", with light, $1,500. 430-0549
★ Dish Network, Model 2800 receiver, 1 year old, $40. 655-3065
★ Music City Bowl tickets, 12/28, two tickets plus parking pass, all for $75. 859-0729
★ Mobile home 14x60, remodeled, new flooring, central heat/air, one bedroom, back porch & deck, $5,000 obo. 509-3392
★ Brunswick pool table, 2 yrs. old, paragon oak w/cherry finish, 1" slate, drop leather pockets, $1,800. 509-3392
★ Computer monitor, 17" and Voodoo video card w/TV-out, $80. 489-0136
★ Child's desk and chair, $30; 4-drawer file cabinet, $20; girl's 20" bike, $20. 971-1414
★ Iomega CD-RW, 12x10x32, rip 20x DAE, Adeptec & music software, new, $95; 100MB zip-drive, USB, new, $75; six zip-disks, new, $50. 837-0625

Vehicles

★ 1969 Cadillac Coup de Ville, Classic designation, drive or restore, $3,300. 772-8489
★ 1998 Geo Prism 5S, 1.8L, 42K miles, a/c, dual air bags, dark blue, $5,500 firm. (256) 539-9864
★ 2000 Toyota Tacoma SR5, 4WD, 6-cyl., ext. cab, 18K miles, $20,000 obo. 859-2633
★ 1991 Toyota Corolla, auto, air, AM/FM/cassette, $2,500. 539-9491
★ 1979 Chevrolet, 4x4, LWB pickup, 350 engine, rebuilt transmission, $1,500 obo. 883-7695
★ 1995 Grand Cherokee Limited, moss green, auto, power, towing pkg., 116K miles, $11,000 obo. 882-0461
★ 1999 Jeep Grand Cherokee, 6 cyl., gold pkg., 84K miles, CD, air, all power, $15,500. 518-9802
★ 1987 Chevrolet Caprice Station Wagon, 9-passenger, 307/V-8, roof rack, air, AM/FM. 337-6827
★ 1993 Chevy Mark III Conv. van, TV, VCR, new tires, white w/Alabama tire cover, $5,500. 325-0300/772-3319
★ 1991 Toyota Celica ST, 5-speed, a/c, stereo, 148K, maroon, gray interior, well-maintained, $3,500. 880-9025
★ 1971 Volkswagen Westfalia camper, 4 cylinder, 4-speed, low miles on rebuilt motor, $3,800. (256) 739-4734
★ 1969 Camaro, needs paint & upholstery, $8,500 obo. 509-3392
★ 1996 Mazda Millenia, all-power, sunroof, premium stereo w/CD changer, 72K miles, champagne, $9,700. 880-9025
★ 1995 Toyota Camry LE, gold/tan interior, 63K miles, auto, all power, new tires, gold package, $8,750 obo. (256) 536-4326
★ 2001 Jetta, 12K miles, $18,500. 289-7776/430-3184
★ 1990 Olds Delta 88 Royale, 67K miles, $3,200. 536-0427

Free

★ Puppies. Very cute. Black and white. 6 weeks old. 971-0048

Wanted

★ Treadmill in good condition. 637-6549
★ Clarinet in good condition for student. (931) 433-9868
★ Bugle for Boy Scout group. 837-1413

Found

★ Dec. 18, cell phone in south parking lot of Bldg. 4201. Call to identify/claim. 544-5705

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