



# MARSHALL STAR

Serving the Marshall Space Flight Center Community

Oct. 5, 2006



Emmett Givens/MSFC

Shirley "Peanut" Abercrombie, an engineer in Marshall's Rapid Prototyping Lab, works with the new Electron Beam Melting machine. A table displays some of the intricate hardware created by using the machine to melt titanium powder.

## Marshall's rapid prototyping puts new capability to the test

By Lori Meggs

The Marshall Center's Rapid Prototyping Lab is "beaming" over its new capability that uses an energy beam to build parts from computer designs.

The Rapid Prototyping Lab is located within the National Center for Advanced Manufacturing, part of the Materials and Processes Laboratory of Marshall's Engineering Directorate. This innovative technology is a new direct-metal, three-dimensional printing capability, called Electron Beam Melting.

The system will provide a new manufacturing capability for intricate hardware. NASA plans to use this or a similar technology to build replacement parts quickly, if needed, during a long-duration mission to the moon or Mars. The new capability also has applications for creating newly designed parts in a change-of-plans scenario where existing parts or spares are not adequate.

The electron beam system fuses together thin, successive layers of metal powder — titanium alloy, one of the most common materials used in space hardware — using a focused energy beam to "grow" objects, layer-by-layer, directly from computer designs. Parts can be built with a much higher degree of complexity than the traditional stock removal processes, such as cutting, grinding or drilling.

The system can build parts up to 180 millimeters on a side, about the size of

*See Rapid Prototyping on page 7*

## Goldman named Stennis Space Center deputy director

NASA has named Arthur E. (Gene) Goldman as the new deputy center director at NASA's John C. Stennis Space Center, Miss., effective mid-October. As deputy director, Goldman will support Stennis Space Center Director Rick Gilbrech in managing all of NASA's rocket propulsion test capabilities, Stennis' roles in NASA's applied science programs and managing the center.

Goldman replaces David Throckmorton who announced he will retire in February 2007, after more than 40 years of federal service with NASA.

Goldman most recently served in management positions for the space shuttle main engine project at the Marshall Center, first as

deputy project manager from 1998 through 2004, and then as project manager from March 2004 until his appointment to the new position at Stennis.

"Being part of the space shuttle main engine community and working with the shuttle senior management team has been the highlight of my career," said Goldman. "I am honored by the selection to be part of Stennis Space Center



Gene Goldman

*See Goldman on page 7*

## Your commitment and dedication to the space program really shows

I had a good time at the Marshall cookout held at the pavilion last month. It was good to meet people I don't know and get reacquainted with folks I haven't seen in awhile. Agency business keeps so many of us on the road that opportunities like the cookout — to relax and talk — are a welcomed change of pace.

It's hard to believe that 2007 is just around the corner. But before we welcome a new year, there's lots of work to be done. This month the Exploration Systems Mission Directorate has its quarterly meeting. It's



**David King**

a chance to get the latest on the progress from around the agency and highlight the contributions of the Marshall team to the exploration initiative. Sometimes we debate issues, but mostly it's a review of where we are to date. I have to tell you that with each review, the reality of going back to the moon gets closer and closer.

In a few weeks, I'll be attending the monthly Senior Management Council and the Program Management Council. The monthly SMC looks at the direction the agency is taking, and we discuss the progress we're making toward NASA's mission. It's a good way to look at the big picture. At the PMC, we delve into the progress we are making at the program and project level. We look at performance and are briefed on where the agency is in meeting its overall strategic goals and objectives. Both councils are part of NASA's governance structure, which has proved its worth time and again. These councils give a rudder to the huge ship we are navigating.

The successful completion of the STS-115 mission last month marked a milestone: International Space Station assembly has started again. It took a lot to get to this point, and I know everyone is working hard to keep forging ahead. In a few months, the 20th station assembly flight is planned. STS-116 is slated for launch in mid-December. Space Shuttle Discovery and the crew will transport the third port truss segment, the SPACEHAB single cargo module and the Integrated Cargo Carrier. I know I'm getting ahead of things, but in about 24 months, the station will be ready to hold a crew of six people. The station is an important part of the agency's exploration mission, so completing it is crucial.

Things are busy around here and all across NASA, and will continue to get busier. With that in mind, it is important we be vigilant in every aspect: meeting ship dates, keeping our promises and focusing on quality. We're making a lot of progress in our work, and your commitment and dedication to the space program really shows.

*David A. King*

*Director, Marshall Space Flight Center*

## NSSTC global lightning data promises fresh insight into severe storms

*By Rick Smith*

For more than a decade, two NASA science instruments have orbited the planet, observing lightning activity that may help NASA scientists and forecasters worldwide better understand dangerous weather patterns, and help minimize danger to lives and property.

Researchers at the National Space Science and Technology Center have collated and released 11 years of lightning data from the Optical Transient Detector and the Lightning Imaging Sensor — twin instruments that continuously recorded the position, strength and frequency of lightning strikes.

From the merged data sets, the science team delivered a unique, comprehensive picture of worldwide lightning activity — one that may yield new insight into the relationship between global climate and weather patterns and the formation and movement of intense and extreme storms.

The lightning information was introduced in September during the Lightning Imaging Sensor International Workshop, a conclave of international atmospheric scientists held at the NSSTC.

"Delivering this unprecedented wealth of lightning information to the international science community is a major success for NASA and the NSSTC," said co-investigator Steve Goodman, who manages earth science research for Marshall's Science and Mission Systems Office. "We're eager to have climatologists and weather researchers study this data, looking for trends on a regional and global scale, and identifying storm characteristics that could offer new insight into the relationship between weather and climate."

The science team is led by principal investigator Hugh Christian, a retired NASA scientist now working for the University of Alabama in Huntsville, and co-investigators Rich Blakeslee and Goodman of Marshall, and Douglas Mach of the University of Alabama in Huntsville. At the NSSTC, more than a dozen NASA and university scientists and graduate students support their effort.

*See Lightning on page 11*

# Ares I Industry Day draws hundreds of small companies to 'talk business' about launch vehicles

By Sheri Bechtel

Nearly 500 small business representatives from more than 200 companies from 12 states — as far away as New Jersey, Arizona and Utah — attended NASA's "Ares Industry Day" at the Von Braun Center in Huntsville on Friday, Sept. 29.

The event provided business leaders with a forum to network with representatives from NASA and large prime industry contractors, and to discuss business opportunities related to the design and development of NASA's Ares I and Ares V launch vehicles.

"Friday's Industry Day allowed small businesses the opportunity to network with many large businesses to discuss their company capabilities," said David Brock, small business specialist in the Small Business Office at the Marshall Center. "Typically, these types of events lead to the formation of important prime/subcontractor teaming relationships, which ultimately help lay the foundation for future NASA programs and partnerships."

Ares I is the crew launch vehicle that will transport the Orion crew exploration vehicle and deliver uncrewed cargo payloads to space. Ares V is the cargo launch vehicle that will carry heavy-lift payloads, such as large hardware and supplies, to space for use by exploration missions to the moon and beyond.

Several NASA senior managers spoke at the Industry Day. Robin Henderson, associate director of the Marshall Center, welcomed participants to the event. Jeff Hanley, manager of NASA's Constellation Program, provided an overview of the program, which is led by NASA's Johnson Space Center in Houston. Constellation is

responsible for the development of the next-generation crew exploration and launch vehicles and related systems in support of NASA's exploration goals to return to the moon and travel to Mars and destinations throughout the solar system.

Steve Cook, director of the Exploration Launch Projects Office at Marshall, discussed the Ares projects and ongoing vehicle development activities. The office is responsible for the design and development of the Ares launch vehicles. Dan Dumbacher, deputy director of the projects office, also was on hand at the event.

"Our goal is to get the word out on activities related to the Ares projects," said Dumbacher, "and increase the potential of small businesses participating in this work by connecting them with the companies already involved."

The agenda included presentations by senior element managers from Marshall's Exploration Launch Projects Office. These included Tom Williams, deputy manager of the Ares I First Stage; Mike Kynard, acting manager of the Upper Stage Engine Element; Danny Davis, manager of the Ares I Upper Stage; and Craig McArthur, acting manager of the Ares V Core Stage and Core Stage Engine. Earl Pendley, a contracting officer in the Space Transportation Support Office of Marshall's Procurement Office, updated business leaders on acquisition activities related to the Ares I Upper Stage.

Prime industry speakers included representatives from ATK Thiokol in Brigham City, Utah; Pratt & Whitney Rocketdyne in Canoga Park, Calif.; Jacobs Engineering in Huntsville; and Teledyne Brown Engineering in Huntsville. Additional companies who may have sub-

contracting opportunities participated in the afternoon networking session.

Also speaking at the Industry Day was Ethan Hadley from the Chamber of Commerce of Huntsville/Madison County. Hadley provided an overview of Huntsville, highlighting the city's business opportunities and community. Carla Bossard with the Alabama Coalition for Space Exploration and Huntsville Mayor Loretta Spencer also were on hand to greet attendees.

The Industry Day was hosted by the Chamber of Commerce. Small business owners from Alabama, Tennessee, Louisiana, Georgia, Mississippi, Florida, Virginia, New Jersey, Colorado, Arizona, Utah and Texas attended the event.

*The writer, an ASRI employee, supports the Public and Employee Communications Office.*



David Higginbotham/MSFC

Small business representatives gather at the Von Braun Center during Ares Industry Day on Friday, Sept. 29.

Water runs deep

## Architectural historian team documents Marshall's Neutral Buoyancy Simulator

By Rick Smith

On the floor of the massive Neutral Buoyancy Simulator tank at the Marshall Center, a team of architectural historians pores over schematics and plans the day's work. Where they're standing, at the center of the empty 75-foot-diameter tank, 40 feet below the upper rim, more than a million gallons of water once swirled and lapped, a wet weight of memory that still throws a hush over this vast chamber.

For decades, the tank — built in the early 1960s and put into operation in 1968 — provided the next-best thing to the weightlessness of space to astronauts training for spaceflight or NASA scientists conducting research. Hardware and human subjects were fitted with a series of weights and ballasts that prevented floating or sinking, thus creating "neutral buoyancy" similar to gravity-free conditions in space.

It's been more than a decade since water flowed into the simulator, which was decommissioned in 1996. But on this day, touring the tank, astronaut changing rooms, monitoring chamber and other facilities in Building 4705, the memory of water seems very close. It's the last day of documentation by a team from the Historic American Buildings Survey & Historic American Engineering Record program.

Part of the U.S. Department of Interior's National Park Service, the program documents historic private, commercial and engineering structures and facilities all over the nation. In 1986, the program designated the Neutral Buoyancy

Simulator as a National Historic Landmark.

This summer, Tom Behrens, an architect with the program, and three graduate-student interns toiled daily in 90-plus-degree heat to document the complex.

"Our job has been to provide a comprehensive historic record of the physical site as it exists now, all the nuts and bolts," Behrens says.

The site was assessed in the mid-1980s before it received landmark status, according to Ralph Allen, Marshall facilities planner and cultural and historic preservation manager, who served as the historic survey team's liaison at Marshall.

But Behrens says that preliminary assessment barely scratched the surface of the facility's vast inner workings. "We're capturing the entirety of operations here," he says, "all the support facilities, the network of service pipes, electrical and air systems, everything."

The team has taken countless photographs, recorded hardware measurements and other numerical data, and produced stacks of computer-aided design, or CAD, drawings of the simulator facility's complex inner works.

As they discuss their final day's tasks, the team exits the huge water tank through a cramped airlock at the base of the curving, 3/4-inch-thick steel wall. They climb four flights of wide stairs to the observation deck. Up here, the floor is dusty and stacked with piles of hardware and equipment, but the most remarkable thing is how well-kept it all remains — even a decade after the simulator's deactivation.

"It's obvious NASA takes safety seriously," Behrens says, gesturing

**See Simulator on page 5**



David Higginbotham/MSC

From left, Laura Royer, Anne Harrington, Tom Behrens and Meghan Shannon study facility diagrams on the floor of Marshall's Neutral Buoyancy Simulator. Royer, Harrington and Shannon are architectural and historic preservation interns supporting Behrens, an architect for the Historic American Buildings Survey and Historic American Engineering Record program. This summer, the team exhaustively documented the Neutral Buoyancy Simulator facility, a National Historic Landmark.

# Simulator

*Continued from page 4*

at the guard-rails encircling the upper edge of the tank to protect unwary visitors. "You guys mothball your facilities really well. I've been through old steel mills and commercial factories that were falling down around me."

In September, Behrens returned to his office in Washington to compile the CAD files, images and data. His last task will be to develop a final series of interpretive diagrams and cutaway drawings to enhance the hard data. "I try to bring a site to life on paper," he says, "Humanizing the cold, technical data with an accessible, artistic aesthetic."

For their part, Behrens' interns — Laura Royer of Omaha, Neb.; Anne Harrington of Claremont, Calif.; and Meghan Shannon of Charleston, S.C. — enjoyed their summer in Huntsville, despite the cloying heat of the airless facility.

"As a civilian, you hear and read about NASA, this amazing undertaking, so it was really great to actually come out and see NASA at work, see its history and activities firsthand," says Royer, 27, who is completing her master's thesis in historic preservation at the Art Institute of Chicago.

## The Neutral Buoyancy Simulator: Highlights of service

Between 1968 and 1996, the Neutral Buoyancy Simulator was a staple of advanced space environment testing at the Marshall Center. Some notable highlights:

In 1973, NASA engineers used the facility to develop the procedures that saved the Skylab science platform after it suffered sunshield damage during launch.

In the early 1980s, engineers used the simulator to practice the intricate space repair procedures that revitalized the Solar Maximum Mission satellite, launched in 1980 to study solar flares. The simulator also was used to test the Manned Maneuvering Unit, a jet-powered backpack that propels astronauts untethered through space.

In the early 1990s, the tank helped engineers and astronauts prepare for the 1993 Hubble Space Telescope servicing mission, which corrected issues with the satellite's "eyesight" and enabled it to continue its successful 16-year mission of discovery.

The Neutral Buoyancy Simulator was decommissioned in 1996. It is one of four formally designated National Historic Landmarks at Marshall, along with the Saturn V Dynamic Test Stand, the Redstone Test Stand, and the Propulsion and Structural Test Facility.



NASA astronaut Kathryn Thornton trains in the Neutral Buoyancy Simulator for STS-61, the 1993 flight of Space Shuttle Endeavor to carry out the first Hubble Space Telescope servicing mission. The facility was a NASA mainstay to prepare crews for such unique activities in the space environment.

"What folks at NASA were doing (when they built the simulator), nobody else was manufacturing or providing parts or hardware to support that," says Harrington, 24, who this fall begins the second year of her master's program in architecture at the University of California in Los Angeles. "They had to be ingenious. They had to do the work on the spot, finding their own solutions to their design challenges. That's fascinating."

Once Behrens has delivered the documentation, a program historian will write a comprehensive history of the facility and its use. The entire package, once approved by the National Park Service and NASA, will be filed with the Library of Congress, forever preserving the history of one of NASA's most unique facilities.

But the historic survey program isn't finished at Marshall yet, Allen says. Next June, another team will document the Dynamic Test Stand, one of NASA's vital proving grounds for space shuttle propulsion systems in the late 1970s and early 1980s, and also a National Historic Landmark.

"We'll be very excited to welcome the historic survey program back for that site review," Allen says. "Very soon, Marshall will begin modifying the test stand to support Ares rocket system testing, so it's historically valuable to NASA and the nation to capture a thorough picture of the test stand before it is altered for new work."

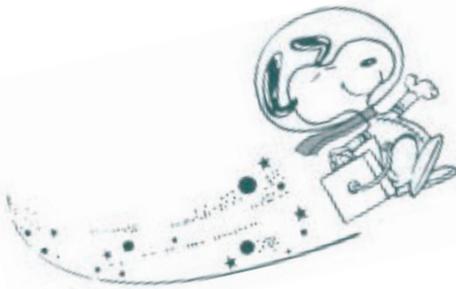
Meanwhile, the Neutral Buoyancy Simulator sits hot and silent, the memory of water still lingering, and its own legacy — as a landmark test facility that helped further America's space mission — now secured for posterity.

*The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.*

# Astronauts present 12 Silver Snoopy Awards

Silver Snoopy Awards were presented to seven Marshall team members Sept. 14 by STS-121 astronauts Commander Steven W. Lindsey, pilot Mark Kelly, and mission specialists Piers J. Sellers and Lisa M. Nowak. Five Marshall team members of Teledyne Brown Engineering were presented Silver Snoopy Awards by astronaut Dr. Donald A. Thomas on Sept. 13.

The Silver Snoopy is the astronauts' personal award to members of the workforce for outstanding and exemplary work. The Snoopy emblem reflects NASA and the industry's sense of responsibility and continuing concern for astronaut flight safety. Less than one percent of the space program workforce receives the award annually.



From left, astronauts Mark Kelly and Steven W. Lindsey; Shirley Blair, Safety & Mission Assurance Directorate; Bob Osterblom, Safety & Mission Assurance Directorate; Bruce Funderburg, Hernandez Engineering Inc.; and astronauts Piers J. Sellers and Lisa M. Nowak.

Doug Stoffer/MSFC



From left, astronaut Mark Kelly and Isaac W. Jones of the Office of Procurement.

David Higginbotham/MSFC



From left, Louise Semmel, Shuttle Propulsion Office; astronaut Steven W. Lindsey; and Lori Mullins, United Space Alliance.

Doug Stoffer/MSFC

*See page 7 for additional Silver Snoopy Awards*

## Silver Snoopy Awards continued



From left, Sharon Manley, Allen Taylor, Kathy Brown, astronaut Donald A. Thomas, Patti Rehage and Shaun Hicks. The recipients are employees of Teledyne Brown Engineering.



From left, Louis V. Nosenzo of the Office of Human Capital and astronaut Piers J. Sellers.

Emmett Given/MSC

## Rapid prototyping

*Continued from page 1*

a common desk telephone with features as small as 0.5 millimeters, about the diameter of a paperclip.

Marshall's Rapid Prototyping Lab already has built several test parts, including a complex hexagonal-grid air filtering device and a set of gas diffuser cones used for repair work on the space shuttle main engines. Over the next year, the lab will conduct extensive testing of the process by analyzing part integrity, accuracy and repeatability of the technology.

Through a NASA Space Act Agreement, the team plans to work with Boeing Phantom Works in St. Louis, Mo., which also has a beam system, to develop written procedures for building test and flight hardware. Once the first titanium alloy material is qualified, the team will begin working with another aerospace metal alloy, either nickel-based or aluminum-based, to address the needs for other space hardware systems that either cannot use or afford titanium alloys.

*The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.*

## Goldman

*Continued from page 1*

and am looking forward to the exciting and challenging work in their immediate future. It is a great time to be part of NASA."

Goldman was a project engineer for the Tennessee Valley Authority from 1978-1981. He then worked for Gulf States Utilities in Baton Rouge, La., from 1981 to 1987. He returned to work for the Tennessee Valley Authority, this time in Athens, Ala., from 1987 to 1990. He began his NASA career in 1990 at the Marshall Center as

a project engineer for the space shuttle systems integration office, later serving as the supervisor of that organization from 1992 to 1994. In 1994, he moved to the space shuttle main engine project, working as a manufacturing engineer until 1996. He continued to support the main engine project as the technical assistant from 1996-1997 and then as the business manager from 1997-1998.

Goldman was appointed to the Senior Executive Service in March 2004. He has received numerous awards including NASA's

Exceptional Achievement Medal, multiple certificates of appreciation, and the Marshall Center Director's Commendation award.

He holds a bachelor's degree in civil engineering from Mississippi State University and is a registered professional civil engineer. He has completed the Senior Executive Fellows Program at Harvard University and the Congressional Operations program at George Washington University.

Goldman is married to the former Jennifer Swearingen of Natchez, Miss., and they have one daughter.

# NASA Exchange nut sale pre-orders under way

The NASA Exchange is offering Marshall team members and retirees the opportunity to purchase nuts through pre-orders. Orders will be accepted through Oct. 17. Expected delivery date is Nov. 15.

The order form should be completed and mailed or delivered, along with payment, to the NASA Exchange Space Shop, Attn: Teresa Davis, HS01X, Bldg. 4203, Marshall Space Flight Center, AL 35812.



*Marshall Exchange*

## “NASA EXCHANGE ANNUAL NUT SALE”

### Order Form

NAME: \_\_\_\_\_ Office Symbol: \_\_\_\_\_

Office Phone: \_\_\_\_\_ Email Address: \_\_\_\_\_

#### SPECIFY QUANTITY AND TOTAL PRICE

Product (16 oz. Unless noted):	QUANTITY	TOTAL PRICE
Slivered Almonds (11 oz.) @ \$5.25	_____	\$ _____
Cashews @ \$5.75	_____	\$ _____
Chocolate Covered Pecans @ \$7.25	_____	\$ _____
Crunchy Praline Pecans @ \$7.25	_____	\$ _____
English Walnuts @ \$4.75	_____	\$ _____
Natural Almonds (12 oz.) @ \$5.25	_____	\$ _____
Pecan Halves @ \$7.00	_____	\$ _____
Pistachios @ \$5.75	_____	\$ _____
Raw Peanuts @ \$2.00	_____	\$ _____
Roasted & Salted Pecans @ \$7.25	_____	\$ _____
White Chocolate Pecans @ \$7.25	_____	\$ _____
<b>Totals</b>		<b>\$ _____</b>

\*\*\*\*PAYMENT MUST ACCOMPANY ORDER\*\*\*\*

Make Checks Payable to: NASA Exchange - MSFC

DEADLINE FOR ORDERING IS: October 17, 2006 to ensure delivery before Thanksgiving.

PLEASE MAIL CHECK & ORDER TO: HS01X, ATTN: TERESA DAVIS, NASA EXCHANGE SPACE SHOP, BLDG. 4203, Huntsville, AL 35812. Payment may be made by Cash, VISA, MasterCard, Discover, or American Express by taking your order form to the NASA Exchange Space Shop located in Building 4203.

Received by: \_\_\_\_\_ Date \_\_\_\_\_

# National Disability Employment Awareness Month recognized during October

By Shelley Miller

Team Redstone, which includes the Marshall Center and Army organizations located on and off-site Redstone Arsenal, will observe National Disability Employment Awareness Month with a luncheon on Wednesday, Oct. 25. Marshall employees are invited to attend.

This year's theme is "Americans with Disabilities: Ready for the Global Workforce." The luncheon, which begins at 11:30 a.m., will be held at the Redstone Officers' and Civilians' Club. Tickets are \$10 per person. Team Redstone also will sponsor display and essay contests during the month-long recognition. Marshall employees are encouraged to enter a two-page, double-spaced essay or a stationary display that relates to the observance theme.

Congress enacted a law in 1945 declaring the first week in October as a time to focus on educating the American public about issues related to disability and employment. In 1988, Congress expanded the week to a month and renamed it National Disability Employment Awareness Month to further increase the public's awareness of the contributions and skills of American workers with disabilities.

Robin Henderson, associate director of the Marshall Center, will present opening remarks at the luncheon. Becky Pillsbury, a featured speaker, is

vice president of Still Serving Veterans, a non-profit organization founded in Huntsville committed to long-term career development and life skills support for severely wounded veterans and their spouses.

Commissioner Christine Griffin of the U.S. Equal Employment Opportunity Commission will be the keynote speaker. Griffin is part of the five-member commission — appointed by the president and confirmed by the Senate — that participates in all matters that come before it related to equal employment opportunity policy.

For more information about the luncheon or to purchase tickets, call Allan Day, manager for Disability Programs in Marshall's Office of Diversity & Equal Opportunity, at 544-4079.

For information about the display and essay contests, contact Sgt. 1st Class Monique Mixon at 876-8648 or monique.c.mixon@redstone.army.mil. Display entrants should provide notification of the display location and point of contact to Sgt. 1st Class Mixon. All entries are due by close of business Oct. 17. Submissions will be judged beginning Oct. 18. Winners will be recognized at an awards presentation during the Team Redstone luncheon.

*The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.*

## Classified Ads

*To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue is 4:30 p.m. Thursday.*

### Miscellaneous

Mink stole, well cared for, appraised \$1,000, sell \$400. 256-971-0499  
KitchenAid refrigerator, Model KTRS20M, refrigerator 14.3 cu. ft., top freezer, 5.5 cu. ft., \$225. 325-7201  
Computer monitor, 17" CRT, \$35; NVIDIA 6800 video card, 256Mb, PCI-E, \$129. 655-1986  
Washburn X50-PROQ guitar w/Seymour duncan pickups and case, red, \$500. 256-655-6293  
Four cemetery plots, Tri-Cities Memorial, Florence, \$4,000. 256-436-1106  
Tama 5-piece drum set w/cymbals, high-hat, stands, throne, pedal, cowbell, more, \$1,000. 551-0276  
Windows XP Home Edition w/Service Pack 2, never used, \$80. 859-3136 after 5 p.m.  
Push mower, \$30; Oak antique reproduction record/tape/CD player, \$45; inflatable camping bed w/frame, \$40. 348-7146  
New Epson C66 inkjet photo printer w/4 extra ink cartridges, \$75. 565-6499/Jay  
Talladega tickets: Arca, Craftsman truck, Nextel Cup races, South Tower, Addition 3, Section Q, Row 68. 679-3025  
Chandelier for dining room, gold, double tier, \$100. 881-2131  
Stoeger Condor 12 gauge O/U shotgun, IC&M choke tubes, \$200. 256-430-0861

Golf club, Callaway RCH 96 Firm Graphite Big Bertha 1 iron, \$40. 536-8692  
Overstuffed sofa, loveseat and ottoman, white w/colors, will sell separately, \$200 all. 325-9264  
Body lift kit for Ford Bronco, 3", fits 66-77 models, new in box, \$45. 683-9364  
Old 10 cent Coke machine, red and white, \$700. 655-8166  
Four winds spa, seats 6 people, \$3,500. 434-0499  
Oak entertainment center w/recessed lights, adjustable shelves, storage, holds up to 36" TV, \$500. 829-0285  
Golf clubs, men's left-handed: woods 1-3-5, irons 3-9, PW, SW, putter, no bag, \$125. 882-3983  
Full bed, \$100; twin bed, \$100; computer desk, \$50; sofa, \$100; student desk, \$50. 534-0939  
Two Auburn/Arkansas tickets, \$130 for pair. 256-783-4216  
Pair of Advent speakers, original model, 26"x14", \$50. 534-4968

### Vehicles

1999 Chevy Suburban, loaded, leather, heated seats, new Michelin tires, front/rear a/c, \$8,875. 256-658-0987  
1998 GMC Yukon SLT, maroon w/tan leather, heated seats, auto, 4WD, \$8,900. 682-6326  
1999 Honda Prelude, black/black, auto, well maintained, no modifications, \$8,250. 656-4203  
2001 Chrysler Sebring LX, convertible, 52K miles, \$7,800. 651-8236/Mike  
1971 Ebb Tide fishing boat w/trailer, \$900. 885-2293  
2000 Victory 92c Special Edition motorcycle, 1592cc, \$8,500. 256-722-8064  
1997 Nissan Maxima, teal, loaded, leather, \$9,700. 256-772-5051  
1999 GMC Yukon Denali, 137K miles, loaded, leather, CD/DVD, \$8,900. 256-777-4030  
Boat w/trailer, 1980 Monarch, 15', 40HP, Mercury engine, steering console, trolling motor, \$1,200. 837-6352  
1996 Buick Century, 4-door, gray, 56K miles, \$2,500. 256-837-6296  
2000 Buick LeSabre, blue, all-power, 80K miles, \$6,275. 430-3275  
1965 GTO convertible, restored, fontaine blue, original drive train, \$35,000. 651-9859

2003 Matrix, 4-door, auto, white, non-smoker, luggage rack, one-owner, \$8,950. 256-527-8116  
2000 Daewoo Leganza, 108K miles, silver w/leather, 6 CD changer, sunroof, loaded, \$4,500. 256-759-1515  
1994 Toyota Camry LE, 120K miles, \$3,000. 497-3260  
2000 Nissan Frontier crewcab, automatic, CD/cassette, silver, liner, power, remote, 104K miles, \$9,600. 880-9025  
Toyota Tundra double-cab, Undercover bed cover, Line-X, towing package, 21K miles, \$23,000. 714-3742  
2004 Ford F150 XLT SuperCrew, camper shell, 35K miles, \$19,500. 683-6433  
1997 Jeep Grand Cherokee Laredo, leather, red, 6-cyl. 4.0L, 181K highway miles, 23mpg, \$3,995. 256-228-9513  
2000 BMW 323Ci, 98K miles, 5-speed, blue, \$11,900. 534-9678  
2001 Harley Davidson Ultra Classic L/E Special Edition, 23.3K miles, \$15,500. 434-0499  
2002 Pontiac Grand Prix GT, 4-door, auto, white, leather, loaded, 82K miles, one-owner, \$9,100. 508-3673  
1998 Jeep Wrangler Tj, a/c, 5-speed, \$6,000. 603-0424  
1999 Pontiac Grand Am SE, black, 2-door, V6, leather, all-power, 134K miles, \$5,200. 256-738-1594  
1998 Corvette Roadster, 13.5K actual miles, \$28,500. 837-1774  
2001 Suzuki 80 four wheeler, \$800. 684-6271

### Wanted

To buy 4 tickets to Alabama vs. Duke game. 233-3215/Patrick  
Black smooth top slide-in range. 256-658-0987  
Used Whitewater kayak suitable for 135 lb. person, rated medium to high for roll ability. 256-828-4502  
Piano for student. 722-9989  
One gently used crib to buy or rent. 880-2285.

### Found

One small gold hoop earring; one pair ladies sunglasses; one bracelet. 544-3623/Kathy Cobb

### Free

Basset Hound mix, 2-year old male, neutered. 881-2676

## Marshall employees can lend helping hand during Community Service Days, beginning Oct. 2

By Rita Roberts

Beginning Monday, Oct. 2, through Friday, Nov. 3, Marshall Center employees can lend a helping hand to local charities during the center's Combined Federal Campaign Community Service Days.

The Combined Federal Campaign is an annual campaign led by federal and military personnel to raise money for local charities. The campaign's service days enable participating employees to donate their time and skills by volunteering at local organizations during regular work hours.

Ten agencies in the Tennessee Valley, including the Salvation Army, the Harris Home for Children and the Downtown Rescue Mission, have requested volunteers to help with a variety of indoor and outdoor activities during Community Service Days. Civil service employees are granted four hours of administrative leave to participate in the community outreach effort. Activities can include anything from serving lunches to the homeless to building wheelchair ramps to painting.

"Marshall employees have always been generous with their time," said Irene Taylor, deputy manager of Safety, Reliability and Quality Assurance Policy and Assessment, and Marshall's CFC Community Service Days chairperson. "I encourage everyone to invest some time and make a difference in the community."

Over the past two weeks, Marshall employees have visited local charities, and seen the reality of "Compassion in Action," this year's CFC theme. Employees have had a firsthand look at how organizations provide community services during a series of bus tours ending Thursday, Oct. 5.

These services range from Meals on Wheels, which provides meal services to people in need, to the

Children's Hospital of Alabama, the Huntsville clinic that provides services to children who have had surgery, are being treated for serious diseases or have chronic conditions.

But volunteering at a local charity isn't the only way Marshall employees can help.

"Marshall employees can also show their support as giving begins Oct. 9," said George Myers, an engineer in the Spacecraft & Vehicle Systems Department in the Engineering Directorate, and the Marshall 2006 CFC executive chairperson. "Employees can designate the organization they want to receive their gift and help provide for local charities, as well as national organizations of their choice. I look forward to beating this year's Marshall goal for donations of \$575,000," added Myers.

Donations to CFC can be made by cash, check or payroll deduction. The campaign continues through Nov. 17. To register for Community Service Days or for more information about the campaign, visit <http://cfc.msfc.nasa.gov/>.

*The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.*



Patricia Puckett, office automation assistant in Optics in the Science and Mission Systems Office at Marshall, admires the work of volunteer Noel Roper at the Madison County Senior Center during a Combined Federal Campaign bus tour on Sept. 22.

## Office of the Chief Information Officer prepares to rollout Center for Internet Security template settings

As part of ongoing efforts to better secure the Marshall Center's networked systems from malicious damage, the Office of the Chief Information Officer, in partnership with ODIN, is preparing to initiate the rollout of the Center for Internet Security template settings for Marshall's domain clients. The mandatory CIS template will set security rules and provide security measures.

The Federal Information Security Management Act requires all federal agencies to use a consistent set of operating system and application configuration guidelines. In response to this

requirement, NASA evaluated and selected the configuration guidelines published by the Center for Internet Security.

All ODIN systems will be updated to CIS compliance in a phased implementation, which will occur over the next four weeks. Non-ODIN domain systems will be affected only by the new account and password policies. Administrators for non-ODIN systems should contact the Office of the Chief Information Officer for guidance.

The application of CIS group policy will begin Thursday, Oct. 5. For more information, a CIS fact sheet is available on "Inside Marshall."



## NASA Starcrow greets visitors at the Huntsville Botanical Garden

The Office of Strategic Analysis and Communications recently donated a NASA Starcrow to the Huntsville Botanical Garden on behalf of the entire Marshall team. Louise Catalfamo, Marcia Cobun, Chrishana Hunt, Michael McLean, Sherri Stroud and Craig Young clothed the crow in an old community outreach spacesuit and stuffed it full of packing peanuts. The concept for the exhibit was developed by Clara Keyes. Janice Robinson and graphics employees from the Office of the Chief Information Officer provided the Earth and stars backdrop. The Starcrow guards the visitor center entrance as part of the Scarecrow Trail until Oct. 31. A Space Garden also is located at the botanical garden. Opened during the summer, it features an International Space Station node program mockup, provided by Marshall, an aquaponic display and a water rocket clock.

Emmett Given/MSFC

## Lightning

*Continued from page 2*

Lightning is not difficult to measure from the ground using radio frequency signals, Christian said. But obtaining wide-scale data around the clock is hampered by the limited detection ranges of even the most sophisticated measurement systems. It is especially difficult to accurately track in-cloud and cloud-to-cloud lightning — activity much less visible on the ground than the cloud-to-ground strikes that punctuate heavy thunderstorms.

From space, however, the whole world's a laboratory. "Satellite tracking provides us the first clear means of obtaining a global lightning picture, including activity during intense oceanic storms, and over remote environments we can't chart from the ground," Christian said. "Continuous global coverage from space expands our understanding of the physical processes that influence the seasonal

to interannual variability of storms."

The compilation and delivery of satellite data relies on complex algorithms executed daily by computers at the NSSTC. Researchers there process and analyze raw data to deliver clean, graphical interpretations of lightning strikes, which are geographically mapped to create a three-dimensional global picture. Information collected during every orbit is sent to the National Oceanic and Atmospheric Administration, to help alert the international aviation community to possible storm systems. Academic, commercial and government weather researchers also regularly request the data for various research efforts.

Data and products available for download are maintained for public use on an NSSTC Web site.

The Optical Transient Detector and Lightning Imaging Sensor were built and managed for NASA by the Marshall Center. The transient detector was launched in 1995

as a secondary payload on Orbital Sciences' commercial Microlab-1 satellite. The imaging sensor was launched in 1997 on the joint Japanese-American Tropical Rainfall Measuring Mission Observatory. Both are components of NASA's Earth Observing System of satellites.

During a 365-day period in 1995-1996, the transient detector alone observed nearly 1 million worldwide lightning flashes. More than 1.2 billion in-cloud and cloud-to-ground lightning flashes are believed to occur around the world every year, most over continental land masses. To date, nearly 300 weather and climate researchers in 27 countries have requested lightning data from the two instruments.

For more information about the lightning instruments, visit [thunder.nsstc.nasa.gov](http://thunder.nsstc.nasa.gov).

*The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.*

# “Inside Marshall” has been redesigned based on user feedback

The Office of Strategic Analysis and Communications and the Office of the Chief Information Officer have collaborated to redesign “Inside Marshall,” the Marshall Center’s intranet site. The redesigned site will be available on Tuesday, October 10.

“Inside Marshall” has three primary functions, serving as a clearinghouse for accessing center services, a news site and an information archive. During user surveys conducted prior to the redesign, most respondents stated that the Web site was very difficult to use to access center services. Therefore, enabling users to access center services quickly and easily was a primary objective of the redesign. To do so, the Office of the Chief Information Officer support contractor, UNITEs, created a highly visible “services” link on the front page of “Inside Marshall.” That link takes the user to a new comprehensive, alphabetized list of services available to the Marshall Team, as well as a listing of services provided by various center organizations.

UNITEs used the results of usability

surveys and consultations with Web site usability experts to inform the redesign of “Inside Marshall.” One feature many users asked for is an improved search engine. So the new site features a new, much more effective search engine. In addition, UNITEs added metatags to much of the content on “Inside Marshall” to make it readily searchable. Another improvement has been the addition of software that detects bad links, which are then repaired or eliminated, thus eliminating a problem some users had identified.

In the redesigned “Inside Marshall,” the clearinghouse, news and archive functions are all clearly visible and accessible on the front page. In the old “Inside Marshall,” much of the content existed several layers beneath the front page of the site. The entire content of the redesigned site is accessible from the front page or in just one click of the mouse, a significant improvement. Also, UNITEs created a comprehensive site index with hot links to every element of content, another new, “user friendly” feature.

The content of “Inside Marshall” also

has been improved. Every page of the site has been reviewed, and outdated or inappropriate material was removed. New material was added, including a page communicating the center’s business goals and the progress it is making toward accomplishing them. Minutes from center director staff meetings, including forum meetings, will be added, as well as minutes of center governance councils. Center director speeches also will be available. A new page entitled “About Marshall Center” contains detailed fact sheets about Marshall, its activities and its capabilities. In addition to routine maintenance of the site, “Inside Marshall” will be thoroughly reviewed at least twice each year to ensure that its content remains current.

The entire Web Site will also be available to other NASA centers and Headquarters via the NASA portal. Those who need to access “Inside Marshall” externally may do so with Virtual Private Network access. That will enable Marshall team members to access the entire site remotely, and will enable all of NASA to take full advantage of the information available on “Inside Marshall.”

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