



MARSHALL STAR

Serving the Marshall Space Flight Center Community

Oct. 4, 2007



Space shuttle Discovery a step closer to launch

Space shuttle Discovery arrived at Launch Pad 39A at the Kennedy Space Center, Fla., Sept. 30 — a milestone for the next shuttle mission, STS-120, to the International Space Station. Discovery's crew will deliver and install the Italian-built U.S. Node 2, Harmony, a pressurized module that will be an internal connecting port and passageway to additional international science labs and cargo spacecraft. Launch is targeted for Oct. 23 from the Kennedy Space Center.



50 years ago today Sputnik launched

Fifty years ago, on Oct. 4, 1957, the launch of the Sputnik satellite by the Union of Soviet Socialist Republics began the "space race" between that nation and the United States.

A few months later, on Jan. 31, 1958, the United States successfully launched Explorer 1, America's first satellite. Later that year, Congress passed the National Aeronautics Space Act

to create NASA, the first federal agency specifically designed to manage America's mission in space. Two years later, NASA formed the Marshall Space Flight Center in Huntsville, with the nucleus of the new NASA team spawned from the Army Ballistic Missile Agency's Development Operations Division, directed by Dr. Wernher von Braun.

THE FACE OF MISSION SUCCESS IS:

Lisa Hughes

Paralegal specialist in Marshall's Office of the Chief Counsel

Think you have a great idea for an invention that would benefit NASA? Some Marshall employees thought so, and their ideas became reality with the legal aid of Marshall's Office of the Chief Counsel. Lisa Hughes, paralegal specialist, focuses on working with the U.S. Patent and Trademark Office to help concepts become patented inventions.

"On average, we file about 15 patent applications each year," said Hughes. "Since I began working in the patent office in 1989, Marshall has filed 275 applications with the Patent and Trademark Office, with 279 different inventors, of which 158 are civil service employees.

"From these 275 patent applications, 177 patents have been issued thus far, with 207 different inventors, of which 126 are civil service employees."

Out of the legal office, Hughes enjoys swimming or throwing the ball around with her two sons.

What is your education background?

I have two associate degrees in applied science from Calhoun Community College in Decatur — in office administration technology in 1987, and in paralegal technology in 1997.

How many years have you been at the Marshall Center?

I began my career at Marshall in June 1986 in the Office of the Chief Counsel as a student-trainee clerk-stenographer in Marshall's secretarial Cooperative Education Program. My co-op partner and I were the first students to work in the office. Once I graduated from the program, I was offered a permanent position in the office.

What are the key responsibilities of your job?

I assist Marshall's chief counsel and chief patent counsel with all administrative matters involved with patent prosecution. I am responsible for the administrative processing of waivers related to large businesses that request title to inventions, and maintenance of the patent budget.

My responsibilities also include assistance with license agreements, Space Act awards, litigation case management, legal research, ethics review of financial disclosure reports and office library organization. In addition, I represent the legal office as the computer support official for information technology security, perform administrative officer duties related to human resources and awards, and serve as the records management liaison.

What services does your job provide in support of the center's mission?

The Office of the Chief Counsel provides centerwide legal support. The office's primary areas of practice are procurement, ethics, personnel and labor law, and patenting and intellectual property law. The majority of my job involves patenting and intellectual property law. I ensure that new technology disclosures are processed for an initial legal review and a patenting decision. I support all inventor-attorney communications, and initiate and submit all the paperwork for filing patent applications with the U.S. Patent and Trademark Office. I am also responsible for managing contracts for patent application preparation and other legal work, including the prosecution of foreign patent applications. This includes tracking

all budget items for this work and handling all financial actions required for contract payment.

What do you hope to accomplish in your role this year?

I have two goals for this year: to maintain the high level of service to our clients, and to improve the office's organization and processes to increase efficiency and quality. To further these goals, I plan to increase automation of my job functions, reorganize the office

library — which includes legal opinions dating back to the 1960s — and streamline the various processes in the patent program.

What is the biggest challenge you face?

Doing more with less. Our daily office workload has increased while the support staff has decreased. The challenge is to maintain both quality and responsiveness while learning new databases and ways to do business that seem to change yearly.

On the personal side, how do you like to spend your leisure time?

My husband and I enjoy being with our children, Ryan, 8, and Joshua, 3. Our leisure time is spent being parents, swimming in the pool, playing ball and board games, and reading with the kids. Both boys have spent their formative years at the Marshall Child Development Center. I also enjoy participating in congregational activities and public ministry.

Jessica Wallace, an ASRI employee and Marshall Star editor in the Office of Strategic Analysis and Communications, contributed to this article.



David Higginbotham/MSC
Lisa Hughes



Thousands of Marshall team members lined up to enjoy good food, lively entertainment and interesting conversation at the center's annual fall cookout Sept. 26. In the background, a model of the Ares I crew launch vehicle, the rocket that will transport the Orion crew exploration vehicle to space, was a popular focal point as people went through the line.

Marshall team members line up for good food and entertainment at fall cookout



Marshall Center Associate Director Robin Henderson, left, and Office of Procurement Director Steve Beale dish up smiles and barbecue to hungry picnic participants as they help serve food at Marshall's fall cookout. The cookout was hosted by Marshall management as a thank-you to center personnel for their hard work.

Doug Stoffer/MSFC

Systems engineering at your fingertips

New guide for the Marshall Center goes live on the Web

By Lori Meggs

With the click of a mouse, Marshall Center engineers have a guide to any systems engineering information they may need.

The Systems Engineering Guide is now live on the Web.

The online tool is an overview, review and tutorial of how Marshall performs systems engineering — the coordination of all engineering efforts on a project.

"This is another step to ensuring each NASA center uses the same processes for building space hardware and products for systems engineering," said Jerry Shelby, an engineer in Marshall's Spacecraft and Vehicle Systems Department, and designer of the Web site. "We want engineers to have access to this information at their fingertips."

The guide describes the systems engineering processes and is the primary source for systems engineering and integration applications, guidelines and best practices. The Web site provides tutorial information, links to assist system engineering, guidance and references.

It also provides links to NASA and Marshall documents with requirements, processes, standards and work instructions for all

NASA projects. Other instructions, examples and templates used to develop and assess systems engineering products also are readily available.

"If engineers need to prepare a systems acceptance review, they can click on a link to see a template of a generic plan and examples of past plans," said Dr. Dale Thomas, chief of the Systems Engineering Branch of the Engineering Directorate. "This online tool will be a valuable resource for Marshall."

Ben Craigmyle, a junior in mechanical engineering and computer science at the University of Kentucky in Lexington, helped in the scripting language and coding of the Web site. "Craigmyle was an immense asset in getting the guide up and running during his summer internship here at Marshall," added Shelby. "Folks will appreciate the mark he left on the site in terms of user friendliness."

The Marshall Center is an engine of opportunity, helping to create and sustain the scientific and engineering workforce of the future.

For more information on the Systems Engineering Guide, call Shelby at 544-9591 or log on to the guide at <http://seg.msfc.nasa.gov>.

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

Discovery@15 conference exceeds expectations

By Jennifer Morcone and Dauna Coulter

Exceeding expectations for attendance, the Discovery@15 conference brought together more than 150 planetary scientists and project and mission managers to review successes, challenges and future goals of NASA's innovative Discovery missions. Hosted by NASA's Planetary Science Division and the Discovery Program Office based here at Marshall, the conference, called "Discovery@15 — Looking Back, Moving Forward," took place Sept. 19-20 at the Embassy Suites hotel in downtown Huntsville.

NASA's Discovery programs give scientists the opportunity to dig deep into their imaginations and find innovative ways to unlock the mysteries of the solar system. The programs represent a breakthrough in the way NASA explores space, with lower-cost, highly focused planetary science investigations designed to enhance our understanding of the solar system. The conference commemorated the successes of the Discovery missions completed or in progress: Mars Pathfinder, NEAR, Lunar Prospector, Genesis, Deep Impact and Stardust. The event also looked ahead to the successes expected from missions not yet complete: MESSENGER, Dawn, Kepler and the Missions of Opportunity.

This is the first time such a vast collection of Discovery talents have come together in one place. Representatives from eight NASA centers, nine industry partners and 18 academic institutions attended. The meeting provided a unique forum for the exchange of experiences, discoveries and new ideas for future missions among program participants and the next generation of mission managers and scientists.

"We're bringing to Huntsville the Christopher Columbus of the 21st century. The principal investigators of Discovery missions are the explorers of our time," said Paul Gilbert, Marshall Program manager for Discovery & New Frontiers.

Discovery Program Scientist Dr. Michael New from NASA Headquarters in Washington opened the proceedings, telling attendees they would "hear about the challenges of sending small robotic probes to weird and wonderful places. We hope our next 15 years will be as successful and challenging as our last 15."

Alan Stern, associate administrator of NASA's Science Mission Directorate at NASA Headquarters in Washington, was the featured speaker at the opening night dinner. Session and panel discussion topics included the technical challenges of sample return, the infusion of new technology into low-risk missions, the ins-and-outs of international cooperation, complex flight operations, successful education and public outreach programs, and project management challenges. Conference speakers reflected on proposal development, mission implementation, challenges overcome, innovations employed and lessons learned.

Marshall's Science and Mission Systems Office promoted the conference's education and public outreach efforts by sponsoring visits for 150 local students to Marshall and Sci-Quest — the North Alabama Science Center Inc. The students attended a presentation by astronauts Barbara Morgan and Charlie Hobaugh and had an opportunity to ask questions about the astronauts' experiences on STS-118. They also



Doug Staffer/MSFC

In foreground, Paul Gilbert, left, Discovery and New Frontiers program manager, and Michael New, Discovery Program scientist, listen to a panel presentation.

toured a solar system exhibit including the comets, asteroids and planets visited by each Discovery mission.

A four-hour educator workshop led by Shari Asplund, Discovery education and public outreach coordinator from the Jet Propulsion Laboratory in Pasadena, Calif., supplied 30 teachers and home schooling parents from the greater Huntsville area with space science materials and activities to take back to classrooms to share with students. NASA education outreach coordinators demonstrated hands-on activities based on different Discovery missions and suitable for several age groups. Teachers commented that they will incorporate these materials into their lesson plans and said they appreciated the chance to relate science concepts to real-world classroom settings. "Not only did we reach these teachers and parents, but they've assured us they will share our unique teaching tools with colleagues," said Asplund. "These educators left the fast-paced workshop energized and eager to teach students about the solar system and inspire them to pursue careers in math and science."

Nine Discovery educators also took Discovery materials on the road, traveling to two area schools, Limestone County's Tanner High School in Tanner and Morgan County's Priceville Junior High in Decatur. Leading hands-on, space science activities, educators captured the attention of upwards of 500 students.

Making the most of his time in Huntsville, Stern led an all-hands meeting for more than 100 Marshall employees pursuing a rich portfolio of science activities. Melissa McGrath, chief scientist of the Science & Mission Systems Office, introduced Stern, noting his "can-do leadership and management skills."

In his remarks, Stern said, "The first word in Science Mission Directorate is science." He emphasized that he wants to start linking a mission's success to its science goals by stressing the research and analysis part of a mission. This way, he said, "we make sure missions deliver the science they promise." Stern also listed other goals, including re-creating a lunar science community and controlling costs.

Morcone works in the Public & Employee Communications Office. Coulter, a Schafer Corp. employee, supports the Office of Strategic Analysis and Communications.

Marshall to hold Breast Cancer Awareness Month events Oct. 11

The Marshall Center will observe National Breast Cancer Awareness Month in October with activities involving speakers, music, a vendor fair and an honorary "Pink Ribbon" walk.

On Oct. 11, the center will host the fourth annual Marshall Breast Cancer Awareness program in Building 4200. The program will begin at 10:45 a.m. in Morris Auditorium, with music by guitarist and Marshall environmental technician Shane Adkins. All Marshall team members are invited to bring a brown-bag lunch and attend.

This year's featured speaker will be Dr. John Waples of the Comprehensive Cancer Institute in Huntsville. He will speak about breast cancer and the importance of early detection. Christel Dunn, retired first vice president of investments and senior financial advisor at Merrill Lynch in Houston will address attendees on the subject "Extending Love for Healing."

There will be a Q&A session at the end of the program, followed by a photo opportunity at 12:30 p.m. on the front steps of Building 4200. The event will conclude with the fourth annual Pink Ribbon Walk around the 4200 complex.

Vendor exhibits will be on display in the Building 4200 lobby

from 9 a.m. to 2 p.m. Vendors will include the American Cancer Society, the Huntsville Hospital Foundation 4th Annual Liz Hurley Ribbon Run, the Susan G. Komen Race for the Cure, Just For Women magazine, Clearview Cancer Institute, Crestwood Hospital, the Imaging Center of Huntsville, the Sandra J. Bryant Bosom Buddies Support Group and NESIN Therapy Services.

For more information about the Marshall Center event, call Inge Kuberg, Breast Cancer Awareness committee chair for 2007, at 544-5678, or e-mail her at inge.h.kuberg@nasa.gov.

Marshall Center team members also will take part in a number of off-site events celebrating Breast Cancer Awareness Month, and encourage others to attend or participate.

- Oct. 13: The Susan G. Komen Race For the Cure, Linn Park in Birmingham, Ala.
- Oct. 20: The Liz Hurley Ribbon Run, corner of Lowe Avenue and Adams Street in Huntsville
- Oct. 27: The American Cancer Society Fashion Show, Stein Mart on Airport Road in Huntsville

For more information about National Breast Cancer Awareness Month, visit <http://www.nbcam.com>.

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, Oct. 11, is 4:30 p.m. Thursday, Oct. 4.

Miscellaneous

Whirlpool washer, dryer, less than one year old, \$600. (334) 750-1116

Toyo Proxes 4 tires, 225/45-ZR17, 235/45-ZR17, \$50 pair; Michelin 4X4 tires, 255/65.R16, \$20. 256-773-6294

Putting green cups, metal, white, six inches deep, 10 available, \$5 each. 882-0133

Sectional couch, queen sleeper, two recliners, earth tones, \$200. 361-3561

Three-in-one push mower, \$75. 361-3561

Antique bicycle, restored, \$195; antique server, solid cherry wood, rare, \$425. 852-1726

Logitech Z-2300 2.1 PC speaker system, THX-certified, 200 watts, \$70. 810-9104

Two mobile home doors, closet, bedroom; ladies' Misty Harbor rain coat, size 8 petite. 655-6348

Air hockey table, \$150; Sumpter solid cherry entertainment center, TV, stereo, \$300. 721-7799

Levitz custom-made sectional sofa, cream, peach print, \$700. 604-9663

Deep freezer, \$150. 539-4898

Bundy II alto saxophone, \$400; go-cart, \$75; Piedmont pool membership, \$300. 776-9165

Craftsman GT5000 lawn tractor, Kohler engine, 48-inch cut, brush guard, \$850. 653-9222

White Kenmore 5.9 cubic-foot gas dryer, extra-large capacity, \$200. 244-0682

Boys' clothing, sizes newborn-4T. 837-5380

Queen-size mattress, box springs, frame, \$65; push mower, \$85. 658-8171

10-inch Craftsman radial-arm saw, \$195; Trek, KDR 1000 road bike, \$340. 828-2808

Twin comforter set, \$20; couch \$225. 489-8147

AKC Chesapeake Bay Retriever puppies, champion, master, junior hunter pedigrees, two males, three females. 776-1652

One sheet of 40 29-cent Elvis stamps, \$20. 890-0499

Two antique formal arm chairs, new fabric, matching ottoman, \$200. 503-6773

32-inch Go Video/SOYO LCD TV, warranty, two controllers, \$400. 882-2447

Gibson Epiphone Les Paul guitar, Gibson LP hard case, Fender Champion 30 DSP, \$575. 653-0800

White vinyl screen door, \$15, propane tank, \$8, turtle sandbox, \$10. 325-2919

Speed Queen washer, dryer, heavy duty, large capacity, \$50 each, \$75 both. 656-2965

Madison Academy uniforms, boys', girls' sizes, 7-16H, \$5 each. 837-8967

Four Cemetery plots, TriCities Memorial, Florence, Ala., \$4,000. 436-1106

Two-in-one crib, toddler mattress, \$30. 508-6845

Whirlpool bathtub, 72 by 42 inches, almond, six jets, working pump, \$150. 655-6701

Four sturdy child chairs, \$20. 539-5439

White smooth-top Sears range, \$400; refrigerator, \$200; dishwasher, \$100. 233-3407

Two-year-old, side-by-side fridge, white, ice maker, filtered water in door, \$900. 783-1466

Vehicles

2007 Chrysler 300, silver, warranty, 21k miles, \$18,500; 2003 Escalade, black, 76k miles, \$22,500. 520-2802

2005 BMW Z4 3.0 sport, premium, black, red leather, six-speed manual, 15k miles. 426-6708

2005 LaCrosse CXL, white, gray leather, new tires, sunroof, 42k miles, \$14,500. 759-0478

2004 Nissan Pathfinder Platinum, pewter, Bose, sunroof, power, leather, 40k miles. 429-8534

2004 R-Vision Class-A motorhome, slide, workhorse chassis, extended warranty, www.thewilletfamily.com/rv, \$58,995. 883-7021

2003 FLHTCUI Harley-Davidson Ultra Classic Electraglide motorcycle, 100th anniversary edition, fuel injection, loaded, \$16,000. 683-1846

2003 Toyota 4Runner, side airbags, sunroof, new tires, 57k miles, \$17,200. 655-9638

2003 Dodge Ram, Laramie package, 4x4, Hemi, 69k miles, \$13,500. 468-9377

2002 Ford Explorer XLT, all power, V6, 77,500 miles, \$8,500. 536-8601 or 651-4132

2001 Honda CRV LX, black, gray interior, power windows/locks, luggage rack, 95k miles, \$9,900. 883-6894

2001 Chevy S10 pickup truck, red, three door, new tires, 66k miles, \$7,700. 864-0413

2000 GMC custom-designed work truck, 4x4, V6, automatic, skid plates, 92k miles, \$5,000. (931) 967-7307

2000 Volkswagen Jetta, GLS VR6, five speed, green, beige leather, sunroof, 79k miles, \$7,500. 508-8246

1999 Pontiac Grand Am GT, V6, black, leather, sunroof, new tires, 130k miles, \$4,800. 694-0656

1998 Dodge Dakota, 4x4, V8, extended cab, manual transmission, towing package, bed liner. 783-4216

1997 Ford F150 XL truck, \$4,700. 828-2808

1986 Honda Civic, four door, light blue, five speed, 219k miles, \$1,000. 722-8570

19-foot Bayliner Capri Bowrider, 125 hp, trailer, covers, extras, \$4,000. 653-3647

27-foot Allegro motorhome, jacks, new tires, 15k miles on drive train, \$7,450 obo. 655-3469

Wanted

Small, enclosed, lockable trailer to pull behind small car, carry luggage. 656-8902

Free

1-1/2-years-old Australian/English Shepherd mix. 338-9840

'Focus on Marshall' – an inside look at Marshall's capabilities – now seen on NASA TV

By Lori Meggs

Learning about the Marshall Center's wide array of capabilities just became a lot easier for folks around the agency and the general public. "Focus on Marshall" is now airing nationwide on NASA TV.

"Focus on Marshall" is a monthly video program featuring work performed at Marshall. Offering an inside look at the varied skills and cutting-edge technologies found at Marshall, the program shows viewers how this work supports the NASA mission.

"Our goal for the program is to inform Marshall team members about interesting center activities and provide them insight into center capabilities outside their own areas of expertise," said Dom Amatore of Marshall's Public and Employee Communications Office. "We've received feedback from organizations featured on the program that they have picked up new business from customers who didn't realize their capability existed on Center until they saw it on "Focus on Marshall." NASA TV broadcasts of "Focus on Marshall" will expand that awareness of Marshall capabilities to a far wider audience."

Each 10-to-15-minute monthly segment of "Focus on Marshall" features two or three specific Marshall capabilities. To date, 18 episodes of the program have been produced. Segments are broadcast on Marshall TV the first and third Tuesday and Thursday of each month at 11 a.m., noon and 1 p.m. Employees can check the NASA TV schedule for air times. "Focus on Marshall" also is available on Inside Marshall and on the NASA portal.

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

October's 'Focus' features center's work to return to the moon

By Lori Meggs

The October episode of "Focus on Marshall" features a pair of Marshall Center projects vital to NASA's return to the moon.

Mian Abbas, of Marshall's Science and Mission Systems Office, points out the unique capabilities of the Dusty Plasma Laboratory at the National Space Science and Technology Center in Huntsville. He demonstrates the exciting work his team is currently performing on lunar dust grains returned on the Apollo 11-17 moon missions from 1969 through 1972.

The team is studying one dust grain at a time and levitating it to determine its electrical charge properties — an issue that must be understood before building permanent lunar shelters. Also, you'll hear from Apollo 17 astronaut Dr. Harrison Schmitt about the work Marshall is doing for a return trip to the moon.

There's also a segment on work with lunar regolith, or moon soil. Carol Mclemore, project manager for In Situ Resource Utilization in Marshall's Science and Mission Systems Office, talks about her team's efforts to reclaim or recycle resources on the moon.

You'll learn how NASA uses rocks and soil found on Earth to create a simulated lunar soil, saving our limited supply brought back from the lunar missions. "Focus on Marshall" goes inside the lab where several experiments are set up, including one measuring how much oxygen can be extracted from simulated lunar soil.

Other team members discuss their efforts to determine the best method of extracting other elements from the lunar soil, including water.

"Focus on Marshall" airs on Marshall TV and on Desktop TV the first and third Tuesday and Thursday of each month at 11 a.m., noon and 1 p.m. The program also will be posted on Inside Marshall and the Marshall home page within the NASA portal Web site, and can be seen on NASA TV.

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

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