



# MARSHALL STAR

Serving the Marshall Space Flight Center Community

Nov. 22, 2006

## Rocket motor test helps NASA's shuttle and Ares I

*NASA Headquarters release*

Promontory, Utah — NASA's Space Shuttle Program successfully fired a reusable solid rocket motor Thursday, Nov. 16, at a Utah facility. The two-minute test provided important information for nighttime shuttle launches and for the development of the rocket that will carry the next human spacecraft to the moon.

The static firing of the full-scale, full-duration flight support motor was performed at 7 p.m. CST at ATK Launch Systems Group, a unit of Alliant Techsystems Inc. in Promontory, Utah, where the shuttle's solid rocket motors are manufactured.

The flight support motor, or FSM-13, burned for approximately 123 seconds, the same time each reusable solid rocket motor burns during an actual space shuttle launch. The Reusable Solid Rocket Motor Project Office at the Marshall Center manages these tests to qualify any proposed changes to the rocket motor and to determine whether new materials perform as well as those now in use.

The motor firing also provided the Space Shuttle Program with data on how image quality is affected by night launch conditions. The data will help determine camera settings and techniques that are most suitable for future night shuttle launches and those which could possibly enhance imagery gathered during a day launch.

"Full-scale static testing such as this is a key element of the 'test before you fly' standard and ensures continued quality and performance," said Jody Singer, manager of the Reusable Solid Rocket Motor Project, part of the Space Shuttle Propulsion Office at Marshall.



NASA

Reusable solid rocket motor test light up the night sky in Utah.

*See Test on page 4*

## ***NASA completes milestone review of next human spacecraft system***

*From a Headquarters release*

NASA has completed a milestone first review of all systems for the Orion spacecraft and the Ares I and Ares V rockets. The review brings the agency a step closer to launching the nation's next human space vehicle.

NASA completed the thorough systems requirements review of the Constellation Program. Review results provide the foundation for design, development, construction and operation of the rockets and

spacecraft necessary to take explorers to Earth orbit, the moon and eventually to Mars.

"This review is a critical step in making the system a reality," said Constellation Program Manager Jeff Hanley of NASA's Johnson Space Center, Houston. "I am proud of this dedicated and diligent NASA-wide team. We have established the foundation for a safe and strong transportation system and infrastructure. It is a historic first step."

*See Milestone on page 4*

# The face of mission success is: *Becky Caneer, Marshall's printing officer and copying manager for the Applications, Web & Multimedia Services Office in the Office of the Chief Information Officer*

On the ground floor of Building 4200, copy machines run continuously, creating materials for the Marshall Center's many organizations. For Becky Caneer, Marshall's printing officer and copying manager for the Applications, Web & Multimedia Services Office, overseeing the in-house duplicating facility is just the tip of the iceberg. Away from the office, she is devoted to her family and taking her children to their many sports practices and games.

## What is your education background?

I received a Bachelor of Fine Arts with a major in visual communications from Auburn University in Auburn, Ala. I have continued to receive professional training in color and digital printing technology, government contracting and information technology.

## How many years have you been at the Marshall Center?

I began my career at Marshall in September 1981, as a Cooperative Education student. After graduation, I came to work full time at the center in September 1984.

## What are the key responsibilities of your job?

As the printing and copying manager, my job is to provide quality reproduction, copying and printing procurement services to all Marshall organizations, contractors and affiliate partners such as the Michoud Assembly Facility. The work is primarily done in the contractor-operated, in-house duplicating facility in Building 4200.

Lanier Worldwide Inc. currently holds the agencywide digital copier contract. As the copier manager and technical monitor, I oversee placement and procurement of multifunctional devices such as copiers and fax machines. To date, we have more than 220 multifunctional devices in 46 Marshall buildings and five off-site locations.

I also procure commercial printing with appropriated funds for all Marshall entities. By law, the center is required to procure all commercial printing through the Government Printing Office. The Government Printing Office is responsible for the production and distribution of information products and services for all branches of the federal government.



Becky Caneer

Doug Staffer/MSFC

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

The duplicating facility is heavily supporting the Exploration Launch Projects Office's vehicle definition and program review printing for the Ares and Orion spacecraft vehicles as well as the Shuttle Propulsion Office's program review printing. In addition, we directly support

Marshall's Office of the

Chief Counsel in case document duplication, as well as the Office of Procurement in solicitation and modification document releases. On a daily basis, the reproduction staff goes out of its way to courteously provide customers with last-minute, quick-turnaround services.

The traditional printing industry has been revolutionized by digital technology; therefore, I provide Marshall organizations with my expertise in traditional printing technology and procuring commercial printing. Professionally printed products still have an application in public audiences, especially for high-quality, high-volume distribution. Multifunctional devices will potentially reinvent the business office in the 21st century. I assist organizations in identifying technology and products that can help them achieve efficiency and cost savings.

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

In fiscal year 2007, we will recompetee and transition the agencywide digital multifunctional contract. This contract will

*See Caneer on page 5*

# Marshall exceeds CFC goal

Marshall team members have exceeded this year's goal of \$575,000 with contributions of \$628,005.86 to the Combined Federal Campaign. An annual initiative by federal and military personnel to raise money for local charities, the campaign ended Nov. 17. Marshall team members have given an average of \$395.47 per person to the CFC with more than 1,500 people participating.

"With their generous donations, Marshall team members have truly shown 'Compassion In Action,' this year's CFC theme," said George Myers, an engineer in the Spacecraft & Vehicle Systems Department in the Engineering Directorate, and the Marshall 2006 CFC executive chairperson. "Numerous charities will benefit from the money, and many have already benefited from the time Marshall employees gave during Community Service Days. I commend everyone who has participated in this year's campaign for their service to the community."



## NASA's Charles Scales, Steve Cook hit the field for Alabama A&M High School Senior Day



Charles Scales, center, NASA associate administrator for the Office of Institutions and Management, and Steve Cook, left, manager of the Exploration Launch Projects Office at the Marshall Center, took to the football field Saturday, Nov. 18, at Louis Crews Stadium on the campus of Alabama A&M University in Huntsville. Cook joined Scales, an A&M graduate, at midfield for the pre-game coin toss between the Alabama A&M Bulldogs and Prairie View A&M University Panthers of Prairie View, Texas. The game was the highlight of the 10th Annual High School Senior Day at Alabama A&M. NASA and the Marshall Center teamed with the university for the event, contributing volunteers and resources to support the day's activities, which drew high school seniors from across the Southeast to learn about the importance of a college education and future career opportunities.

Emmett Given/NSFC

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# Test

## *Continued from page 1*

The shuttle solid rocket motor firing also supports NASA's future exploration goals to return humans to the moon. The test provided data for development of the first stage reusable solid rocket motor for NASA's Ares I, the launch vehicle that will carry the Orion crew module to space. Engineers with NASA's Exploration Launch Projects Office at Marshall, which manages the Ares launch vehicles, will analyze motor-induced, roll-torque measurements. The information — how the motor affects the rotation and twisting of a system — is needed for the Ares I control system design.

Thursday night's test provided data on numerous process, material and design changes planned for shuttle solid rocket motors, including a propellant structural redesign that more evenly distributes loads and improves safety during storage and transportation; an improved adhesive bonding process to eliminate insulation voids and increase bond strength; and a new nozzle liner material to replace a material that is no longer available. Stress data was also gathered on an instrumented external tank attachment ring, which connects the solid

rocket booster to the shuttle's external fuel tank.

Preliminary indications are that all test objectives were met. After final test data are analyzed, results for each objective will be published by NASA in a report that will be available early next year.

The shuttle's reusable solid rocket motor is the largest solid rocket motor ever flown, the only one rated for human flight and the first designed for reuse. Each shuttle launch requires two reusable solid rocket motors to lift the 4.5-million-pound shuttle. The motors provide 80 percent of the thrust during the first two minutes of flight. Each motor, just over 126 feet long and 12 feet in diameter, generates an average thrust of 2.6 million pounds. It is the primary component of the shuttle's twin solid rocket boosters.

During a shuttle launch, the rockets take the shuttle to an altitude of 28 miles at a speed of 3,094 mph before they separate and fall into the ocean. Then they are retrieved, refurbished and prepared for another flight.

Regular static-fire tests of the motors help maintain the highest safety, quality and reliability standards of solid rocket motors used for human spaceflight. Engineers conduct approximately 110,000 quality-control inspections on each motor designed for flight.

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# Milestone

## *Continued from page 1*

This is the first system requirements review NASA has completed for a human spacecraft system since a review of the space shuttle's development held in October 1972. The Constellation Program system requirements are the product of 12 months of work by a NASA-wide team.

The system requirements review is one in a series of reviews that will occur before NASA and its contractors build the Orion capsule and the Ares launch vehicles, and establish ground and mission operations. The review guidelines narrow the scope and add detail to the system design.

"We are confident these first requirements provide an exceptional framework for the vehicle system," said Chris Hardcastle,

Constellation Program systems engineering and integration manager at Johnson. "This team has done a significant amount of analysis which will bear out as we continue with our systems engineering approach and refine our requirements for the next human space transportation system."

An example of the activity was a review and analysis that confirmed the planned Ares I launch system has sufficient thrust to put the Orion spacecraft in orbit. In fact, the Ares I thrust provides a 15 percent margin of performance in addition to the energy needed to put the fully crewed and supplied Orion into orbit for a lunar mission. Engineers established Orion's take off weight for lunar missions at over 61,000 pounds.

Each Constellation project also is preparing for a narrower, project-level

systems review, according to the following schedule:

- Orion crew exploration vehicle, February 2007
- Ground operations (launch support), February 2007
- Mission operations (mission support), March 2007
- Extravehicular activity (space suits), March 2007

Once the project-level reviews are complete, the Constellation Program will hold another full review to reconcile the baseline from this first review with any updates from the project reviews. A lunar architecture systems review of equipment associated with surface exploration and science activities on the moon is expected in the spring of 2009.

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## **NASA Exchange preordered nuts can now be picked up at the Wellness Center**

The pecans and other assorted nuts that were ordered through the NASA Exchange-MSFC are now available for pickup from 8 a.m. to 3 p.m. in the Wellness Center, Building 4315.

A limited amount of extra nuts has been ordered and is available for purchase in the Space Shop, located in Building 4203.

# Caneer

## Continued from page 2

replace all the digital copiers and multifunctional devices with new equipment. With this change, the center will begin a new office model with strategically placed multifunctional devices that copy, print, scan and fax. This would greatly benefit Marshall because industry studies show a one-third cost savings (equipment and supplies) within organizations who implement a multifunctional office model. Additionally, the Environmental Protection Agency reports 40 percent energy savings in office settings where machines are replaced with one device.

### What is the biggest challenge you face?

The biggest challenge is updating the technology to keep up with the changing service needs so that Marshall can meet mission goals.

This is difficult in a static budget environment. As an institutional service, we are often challenged to reduce our costs to save dollars for other areas. In the last three years, we have cut our operating budget twice and maintained a no-cost gain position. In spite of these budget limitations, the in-house duplicating staff meets each Marshall customer with a "can-do" attitude. They are really outstanding people!

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

My leisure time is devoted to my home, family and church. My husband Art and I have three children, Daniel, 17; Hallie, 14; and Caroline, 11. They are active in school band programs, community sports and dance. I also enjoy Auburn football, snow skiing and gardening.

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

## MARS Ballroom Dance club to host Christmas dance and dinner

The MARS Ballroom Dance club will hold a Christmas dance and dinner Saturday, Dec. 2, at the Von Braun Center. A social begins at 6:30 p.m. with dinner at 7 p.m. Dancing will be from 8 to 11 p.m.

Reserved tickets cost \$25 for MARS members and \$30 for non-members.

For more information or to purchase tickets, call Jerry Maxwell at 544-1954.

## 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

K&N, P/N 57-9014-1, used intake for 2000/2001 Toyota Tundra V8, \$125. 256-714-6609  
Whirlpool dryer, \$90; Whirlpool washer, \$95. 837-6649  
Rear tine tiller w/reverse drive, \$100; various tools, make offer. 885-2293  
Small ladies Joe Rocket leather motorcycle jacket, Tempurpedic, padded, \$400. 256-503-8282  
Hardwood flooring, 3/4" nail-down red oak, 600 sq. ft., \$2.50 per sq. foot. 227-0339/Dave  
Yakima roof rack for automobile, Q100 clips, 2 regular trays, extra tray, 4 towers, \$300. 722-9989  
Franklin leather sectional sofa, two recliners, hunter green, queen hide-a-bed, \$900. 256-533-5942  
Seven PlayStation II games, \$60 or \$10 each; Lord of Rings, Starwars, CallDuty 2. 682-2550  
Large 19" LCD monitor, working, \$125; two 17" LCD monitors, working, \$25 each. 429-8534  
Washer/Dryer, \$300 set; Christmas tree, 7-1/2', \$75; table, 4 chairs, \$50; Gazelle, \$75. 337-7943  
Computer desk, black, w/hutch, wheels, assembled, 36"Widex20"Deepx53"Tall, \$25. 895-6722  
White metal bunk bed w/mattress, \$100. 859-338-2649  
Chest of drawers, twin beds, triple dresser w/mirror, night stand, TV cabinet w/glass doors. 650-5375  
O'Sullivan computer work center w/hutch, pine wood grain laminate, 56.25Hx59.36Wx29.75D, \$50. 256-337-1471

Infinity Basslink powered subwoofer for car, new, \$100. 429-8534  
AKC Bichon Frise champion bloodlines, males, \$500 each, females, \$600 each. 931-0481/leave message  
2004 Coachman Catalina, 32' travel trailer w/super slide, new April 2005, used 4 days, \$15,500. 256-426-0856  
Two tickets to Cirque Dreams Jungle Fantasy, VBC, Nov. 25, 8 p.m., Row R, seats 38 & 39, \$80. 656-5244  
Two adjacent 5th row seats, Broadway Theatre League Production, "The Producers," Jan. 12, 8 p.m., \$100. 325-0085  
Retired Longaberger John Deere basket set, new in package, \$75. 864-8094 after 4 p.m.  
Scent-Lok bow jacket, pants, gloves and facemask with bag, size large, \$75. 508-6840  
Brass ceiling fan w/lights, 52", \$25; small white three light metal chandelier, \$15. 837-1774  
Corner desk, light wood, black top, \$50; entertainment center, medium dark wood, \$80. 256-658-4661  
PSP with 2 games, \$250. 256-506-7352  
Golf balls, 12 dozen (240) for play or practice, \$1.25 per dozen. 881-8879  
ARIA electric guitar, blue solid body, practice amp, cable and gig bag, \$110. 777-3594  
Sunbeam warming mattress pad, full-size, new in sealed pack, 20 temperature settings, \$35. 468-3749  
Sony 5-disc DVD/CD player, \$50; RCA VCR, \$20, miscellaneous audio equipment, reasonable price. 533-9356  
Two KOVE by Armagedon 12-inch subwoofers, imported box; 500-Watt KOVE Amp; \$650 for both. 256-694-1217.  
Clayton Marcus sofa and loveseat, gold colored fabric, \$800. 881-3527  
Oval green wrought iron patio table with 6 chairs, \$200. 509-2536  
Sears air compressor, portable, 12-gallon tank, twin cylinder, 80psi, 1HP electric motor, 220/120V, \$40. 508-0691  
Golf clubs, men's left-handed, woods 1/3/5, irons 3-9, PW, SW, putter, no bag, \$125. 882-3983  
Used Fender Deluxe 5-string Jazz Bass, red/tortoise shell pick-guard, includes strap, case, strings, \$450. 256-694-2363

Silver bullion, 100 oz. bar, \$1,350. 256-227-5671

### Vehicles

1986 Nissan pickup, good farm vehicle, \$750. 426-1586  
Go Cart, 5HP, single seater, \$275. 656-4211  
1996 Ford Explorer, 4 door, blue, leather, towing package, all power, 192K miles, \$4,275. 880-6335  
1995 Lexus RX300, 88K miles, AWD, loaded, \$11,985. 714-4651  
2006 Chevy Cobalt sedan, silver, 5K miles, auto, power, anti-theft system. 859-7946  
1999 Ford Ranger, Super Cab XLT, 3.0L, 5 speed, all power, 98.3K miles, \$5,250. 722-9274  
2001 Honda Odyssey EX, power sliding doors, quad seating, 105K miles, \$9,995. 830-0851  
1993 Mercury Villager, 195K miles, rear air, 7 passenger, \$1,800. 417-0945  
2004 Honda Civic EX, \$13,500. 233-6197  
1994 Dodge Caravan SE, blue, auto, 128K miles, one owner, \$2,400. 656-57457  
2003 Yamaha yz85. 851-0938  
1997 Saturn SL2, red, power, power/door/locks, cassette, spoiler, keyless, ABS, traction, records, 126K, \$2,200. 256-259-2164  
1958 Apache pickup, fleet side, \$5,000. 777-6167  
1989 Toyota Corolla, 159K miles, red, 4 door, sunroof, \$2,000. 651-2429  
1995 Toyota 4Runner SR5 4x4, green w/tan leather, new tires, auto, 135k miles, \$5,350. 256-457-4006  
2004 KTM 125SX, 125cc-37HP, low hours, \$1,850. 256-429-8063  
2004 Harley Davidson Road King Custom, 1550 kit, lots of chrome, 11K miles, \$15,900. 682-0704

### Wanted

Used white baby crib in good condition, less than \$50. 885-5973  
Hybrid bicycles, man's and woman's, leave message. 881-9426

### Free

House broken 4-month-old black kitten, bobtail. 256-658-4661

# Marshall to deck the hall, light the tree Nov. 30

By Bill Hubscher

A pair of seasonal traditions at the Marshall Center — the centerwide holiday reception and the lighting of the tree in front of Building 4200 — will be Thursday, Nov. 30.

“The holiday reception and tree lighting are valued traditions — occasions for workplace friends to gather and enjoy time together in a fun and lively atmosphere,” said Marshall Center Director David King. “It’s also a time to reflect on the many blessings and good things in our lives. In essence, it’s a celebration.”

The festivities start with the reception in the Marshall Activities Building 4316 from 1 to 3 p.m. Holiday music and food will get everyone into the spirit of the season, and door prizes will be



awarded. A surprise guest is promised.

Marshall team members also are encouraged to bring a non-perishable food item to donate to the North Alabama Food Bank.

Buses to the event will run every 15 minutes from noon until 3:30 p.m. A complete bus schedule will be posted on Inside Marshall. Those employees not on a bus route may call the Marshall Center taxi service at 544-TAXI to schedule a ride.

At 4:15 p.m., Marshall employees are invited to gather in front of Building 4200 for a short address from King before the lighting of Marshall’s

holiday tree.

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



## Dr. Frank Franz, president of UAH, speaks at Marshall Association luncheon

Dr. Frank Franz, president of the University of Alabama in Huntsville, spoke at the Marshall Association luncheon recently in Activities Building 4316. Franz has served as the president of UAH since 1991. He spoke about the university’s direction for the future. He also discussed expanded research activities, new student opportunities and increased enrollment. In addition, Franz thanked Marshall for its continued support of UAH and higher education. The Marshall Association meets monthly and is open to Marshall employees. Contact George Schmidt at [George.Schmidt@nasa.gov](mailto:George.Schmidt@nasa.gov) or call 544- 7240 for more information.

# MARSHALL STAR

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