



MARSHALL STAR

Serving the Marshall Space Flight Center Community

Nov. 8, 2007

Marshall-managed external tanks are safer after STS-120

Space shuttle Discovery lands at Kennedy Center on Nov. 7

By Sanda Martel

Space shuttle Discovery is back at home after a successful 15-day mission to the International Space Station. Landing was at the Kennedy Space Center, Fla., Nov. 7, at 12:01 p.m. CST.

Discovery launched on its STS-120 mission from the Kennedy Center on Oct. 23.

During its stay at the space station, which began Oct. 25, the STS-120 crew continued the on-orbit construction of the station. They installed the Harmony Node 2 module and relocated the P6 truss.

The shuttle astronauts also performed four spacewalks. During the third spacewalk, the crew installed the P6 truss and solar array pair in its permanent location outboard of the port truss. The fourth spacewalk was changed during the mission so that the crew could repair a torn solar array on the P6 truss. Following the successful repair work, the crew was able to fully deploy the solar array.

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Space shuttle Discovery lands at Kennedy Space Center, Fla.

Test managed by Marshall

Successful rocket motor test helps NASA's shuttle and Ares I



A space shuttle reusable solid rocket motor billows smoke and fire during a two-minute static test Nov. 1 at a Utah test facility.

By Sanda Martel

NASA's Space Shuttle Program successfully fired a four-segment reusable solid rocket motor Nov. 1 at a Utah test facility. The two-minute test provided important information for continued launches of the shuttle and for development of the Ares I rocket — a key component of NASA's Constellation Program — which will launch the Orion crew vehicle on missions to the moon.

The Reusable Solid Rocket Booster 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 static firing of the full-scale motor was performed at K Launch Systems Group, a Promontory, Utah-based unit of Alliant

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Moving toward NASA's 50th anniversary

The Marshall perspective on the early space race

By Mike Wright

Fifty years ago this month, Americans saw President Dwight Eisenhower on television next to a large missile nose cone.

On Nov. 7, 1957, Eisenhower attempted to reassure his audience that the United States had not given up on its plans for space exploration despite public awareness that the Soviet Union had already launched the first ever human-made satellite into orbit Oct. 4, 1957.

Unfortunately, Eisenhower's speech came more than a year after he had already turned down a 1956 proposal prepared by Wernher von Braun's Army rocket team in Huntsville. They proposed to use a Redstone short-range ballistic missile with added upper stages — later named the Jupiter-C — to put into orbit a small American satellite in early 1957.

Of course, January 1957 came and went with no orders to launch from the president but with a commitment by the Huntsville team to make sure they were ready if Eisenhower said "Go."

In particular, the Army team in Huntsville pressed on and by August had solved one of the most challenging technical problems related to launching rockets and missiles in those days. In early August 1957, Jupiter-C Missile RS-40, a modified REDSTONE missile, was successfully launched. Its nose cone was the first to be recovered from outer space. Army scientists had successfully solved the problem of ballistic missile reentry.

Still, Eisenhower failed to react with orders to launch an American satellite, and, in the span of time between the August



U.S. Army

President Eisenhower gives a national television address to the American public on Nov. 7 1957. Eisenhower is standing next to the Army-Jet Propulsion Laboratory Jupiter-C nose cone that verified the efficacy of ablative technology for overcoming the missile reentry heating problem.

test and his November address, the Soviets had launched Sputnik in October, marking the birth of the space age.

Ironically, Eisenhower's address on Nov. 7 came one day before the secretary of defense directed the von Braun team in Huntsville to launch the United States' first scientific satellite using a modified Jupiter-C. That happened in January 1958.

One of the immediate consequences of the Soviet's Sputnik launch in 1957 and the U.S. Explorer I launch in early 1958 was the creation of the National Aeronautics and Space Administration in October 1958. Two years later, NASA created the George C. Marshall Space Flight Center in Huntsville, Alabama, from the nucleus of Wernher von Braun's rocket team.

The writer is the Marshall Center historian and supports the Office of Strategic Analysis and Communications

Events planned to commemorate Veterans Day

By Megan Norris

A few good Marshall men and women are needed Nov. 12 to take part in the annual Huntsville Veterans Day parade honoring members of the U.S. Armed Forces.

The event will begin at 11 a.m. in downtown Huntsville. The Marshall Center's mobile shuttle, a scaled-down replica of NASA's flagship spacecraft, will be featured in the parade.

Marshall team members are encouraged to join the NASA marchers, and to wear clothing with the NASA logo. Participants will meet at 10 a.m. in the parking lot next to the Coca-Cola Company on Clinton Avenue.

On Nov. 15, Marshall's senior management team will recognize civil service team members who served in the Armed Forces at a "meet-and-greet" event.

The event will be held at 10 a.m. in Building 4200, Room P110. Light refreshments will be served.

For more information on the parade, or to make reservations to the meet-and-greet event by Nov. 13, contact Allan Day, Marshall's equal employment manager, at 544-4079 or allan.v.day@nasa.gov.

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

Obituaries

Homer C. Powers, 85, of Huntsville died Oct. 4. He retired from the Marshall Center in 1979 as an engineer.

Leo L. Jones, 84, of Huntsville died Oct. 16. He retired from the Marshall Center in 1985 as a financial program specialist. He is survived by his wife, June Jones.

Marshall Star Readership Survey available now

The Marshall Star has been published continuously since 1960 and has undergone many changes over the years. The Office of Strategic Analysis & Communications is conducting a Marshall Star Readership Survey to better understand the information needs of its readers.

We invite you to participate in this survey, which is being conducted Nov. 6 through Dec. 7. Your input is essential to evaluating how effective and efficient the Marshall Star is in communicating to the Marshall team. Our goal is to continuously improve the publication to meet its readers needs.

The survey is available online now through Dec. 7 at http://extweb.bah.com/NASA/Marshall_Star_Survey.html. The survey also is printed in this week's Marshall Star for readers who may not have ready computer access. Take the survey online at http://extweb.bah.com/NASA/Marshall_Star_Survey.html or fill in a hard copy of the survey and return it to: MSFC, Star Survey, Public & Employee Communications Office, Building 4200, Room 102-12, Huntsville, Alabama 35812. Please fill out only one survey per reader.

The survey should take no more than 15 minutes to complete and all feedback is strictly confidential.

Marshall Star Readership Survey 2007

Please indicate your employee status:

- Direct Report/Deputy
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- First-Line Supervisor
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- Other

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Do you read the printed version of the Marshall Star or the online version?

- Printed version
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Do you have access to read the Marshall Star online?

- Yes
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If you did not get the Star mailed to you at home or in your mailbox at work, would you read it online?

- Yes
- No

See Survey on page 4

Marshall Star survey

Please indicate the extent of your agreement or disagreement by selecting the appropriate response.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Reading the Marshall Star has increased my knowledge of Marshall's programs, overall performance, and direction.					
Matters that I care about are covered in the Marshall Star.					
I am satisfied with the Marshall Star's coverage of my program, project, or field.					

I read the following articles in the Marshall Star frequently:

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Management interviews					
Stories about different Marshall organizations/offices					
Employee features					
Director's Corner					
Stories about Marshall technologies/capabilities					
Stories about human capital and other center policies/procedures/etc.					

Please rate how effective you think the Marshall Star is at keeping you informed about news and developments around the center:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Marshall Star is effective at keeping you informed about news and developments around the center					

See Survey on page 5

Marshall Star survey

Is there one thing in the Marshall Star you always read? If so, what is it?

If you could change something about the Marshall Star what would it be?

What type of stories would you like to see more of in the Marshall Star?

Please return your responses to:

Marshall Space Flight Center
Star Survey, Public & Employee Communications Office
Building 4200, Room 102-12
Huntsville, Alabama 35812

Rockets of yesterday, rockets of tomorrow

Constellation managers visit Huntsville

As part of a strategic planning session with the Ares integrated communications team at the Marshall Center, Paul Marshall, left, assistant manager for management integration within NASA's Orion Project, and Jennifer Rhatigan, center, strategic communications lead for NASA's Constellation Program at the Johnson Space Center in Houston, tour the new Davidson Center for Space Exploration with Bob Armstrong, deputy manager for Ares project integration at Marshall. Located at the U.S. Space & Rocket Center in Huntsville, the Davidson Center is a 68,200-square-foot facility that will house heritage hardware, such as the massive Saturn V rocket in the background, along with exhibits showcasing rockets of the future, including the Ares launch vehicles, managed by the Ares Projects Office at Marshall. The Davidson Center's grand opening is set for Jan. 31, 2008, as one of several events planned nationwide to mark NASA's 50th anniversary.



Doug Staffer/MSFC

Landing

Continued from page 1

The STS-120 crew included Pamela A. Melroy, a veteran shuttle pilot, who commanded the mission; Marine Corps Col. George D. Zamka, who served as pilot; and mission specialists Scott E. Parazynski, Army Col. Douglas H. Wheelock, Stephanie D. Wilson and Paolo A. Nespoli, a European Space Agency astronaut from Italy.

Discovery also delivered a new station crew member, flight engineer Daniel Tani. He replaced astronaut Clayton Anderson, who returned to Earth with the STS-120 crew. He arrived at the space station in June with STS-117.

The shuttle undocked from the space station Nov. 5 to begin its journey home. Before leaving the orbital outpost, Zamka backed Discovery about 400 feet from the station and performed a fly-around to allow crew members to collect video and still imagery of the space station in its new configuration.

"This mission demonstrated the real value of having humans in space," said Wayne Hale, space shuttle program manager, during a news conference Nov. 5. "Things not conceived of before this launch were performed during the mission."

Hale credited a "superbly trained ground crew that was able in a short amount of time to put together one of the most complex spacewalks in NASA's history."

He declared the space station in good shape, with a secure solar array after the on-orbit repair, but noted that there is still work to be done between now and the next space shuttle visit.

Hale said the team is still working toward the replanned launch

date of Dec. 6 for the next shuttle mission, STS-122, which will deliver the European Space Agency's Columbus Laboratory to the space station. He said the shuttle team is working with space station partners to set the launch date. Atlantis, which will fly on STS-122, has been mated to its external tank and the stack and is expected to roll out to the launch pad at the Kennedy Center on Nov. 10.

"January will be a time of preparation for the Space Shuttle Program — getting ready for the February flight of the first Japanese module and the second Japanese module flying in April," said Hale.

"External tank, ET-120, which flew on Discovery for the STS-120 mission, was a 'demonstrator' for the upcoming ice frost ramp design, which will fly the first time on STS-124, targeted for launch in April 2008," Hale said.

"All tanks are much safer because of the demonstration we saw with this tank," he said, explaining that ET-120 was a great learning tool that helped the program understand how foam works.

"We've eliminated almost all major foam losses, working our way down the list," said Hale. A major tank improvement on the third flight from now will be the bracket redesign of feedline and ice frost ramps, and the shuttle program wanted to demonstrate these modifications before the Hubble repair mission, targeted to launch in August 2008.

"It's an exciting time to be flying," he said. "We're at the height of our assembly of the International Space Station."

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

Celebrate Native American Heritage Month at Marshall on Nov. 14

Marshall Center team members are encouraged to join the festivities for Native American Heritage Month on Nov. 14, from 9 a.m. to 2 p.m. The event will be held at the Mississippi Mud House, near the Rustic Lodge on Honeysuckle Road, just off Patton Road.

The celebration is hosted by Team Redstone, including Marshall and U.S. Army organizations on Redstone Arsenal. Families are welcome.

For more information or to confirm attendance, call Cindy Campbell at 544-0144 or Jerald Kerby at 544-3243.

Daniel Tramper, a Cherokee dancer from North Carolina, performs a traditional hoop dance at the 2006 Native American Heritage Month celebration at Marshall.



Doug Stoffer/MSFC

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, Nov. 15, is 4:30 p.m. Thursday, Nov. 8.

Miscellaneous

Two-year-old, side-by-side fridge, white, ice maker, filtered water in door, \$900. 783-1466
Body-Solid Ab & Back Machine, \$125. 520-4750
10'x10' chain link dog run, \$120. 714-8580
Remington 1100 magnum, 30-inches full, factory recoil pad, \$400. 214-1645
32-inch LCD TV, warranty, two controllers, 400. 882-2447
One-year old stove, refrigerator, microwave, dishwasher, sell for half of original prices. 852-1726
Valhalla Masonic Garden, four plots, Lot 97, Block C, \$5,000 plus transfer fee. 881-9421
Co-sleeper, infant car seat, door swing, play gym, walker, baby clothes premature-18 months. 881-4418
Five-drawer metal office desk, tan, wood grain top, \$50. 533-1797
Wooden bunk beds, all hardware, needs paint, \$50. 351-1754
Over 600 VHS movies, \$500 for all, \$1 each. 355-0302
Aluminum checker plate running boards, fits full-size Chevy, GMC 1500 truck, \$125. 318-3403
Framed art print, "Reflections," by Lee Teter, green matting, \$250. 256-673-0009

Stanley "Young America" maple bunk bed set, rails, ladder, mattresses, \$200. 350-7461
2006 Women's Trek Navigator 2.0 bike, \$225. 655-5436
Framed print of Bear Bryant, by John Woods, 15x24 frame, \$50. 694-1217
15-foot trampoline, safety enclosure, \$125. 658-8645
Chromcraft circular dinette table, four swivel chairs, \$125. 881-1249
Bruce Fulton Plank hardwood flooring, 22 squares, oak, seashell, Traven grade, \$40. 883-1003
Antique mahogany dining room table, eight chairs, eight-drawer credenza, \$675. 603-4950
Washer, dryer, large capacity, three years old, \$400 for set. 975-1667
Washburn X50 ProQ electric guitar, red, \$400. 655-6293
Four large, matching hanging light fixtures, polished nickel, one fan/light combo, \$75 a set. 325-2919
8-foot by 12-foot Persian carpets, \$1,000-\$1,500. 650-5422
Encyclopedia Britannica, yearbooks, 129 volumes, \$400. 539-8378
Acer laptop, 1.73Ghz, 15.4 inches, wireless, 1GB RAM, DVD/CD-RW 80GB, Vista hard drive, \$475. 656-0077
Brunswick pool table, auto return, \$200; Sportscraft air hockey table, \$300. 858-5552

Vehicles

2007 Nissan Versa, 31 MPG city, warranty, auto/air, loaded, 17k miles, \$13,950. 852-1726
2007 Honda TRX450R Sport ATV/quad, electric start, plastics black/flames, red frame, \$5,400. 345-9555
2006 Honda Accord Coupe EX, silver, five-speed, 16k miles, \$18,499. 651-2200
2005 Honda Odyssey EX, silver, gray cloth interior, 87,900 miles, \$15,700. 464-3639
2005 Hyundai Elantra, assume payments, \$272. 658-6353

2005 Suzuki Aerio SX, blue, four door, auto, 27k miles, \$9,800. 679-5916
2004 F-150, SuperCrew cab, lariat, tow, leather, sunroof, 2WD, 46k miles, \$20,000. 426-1822
2004 Harley Davidson Road King Classic, pearl white, 14k miles, \$13,900. 776-0811
2004 Ford Explorer, 100k mile warranty, pictures available, 46k miles, \$14,500. 684-0521
2004 Pontiac Montana van, automatic transmission, captain's seats, 76k miles, \$11,500. 232-4466
2003 Toyota 4-Runner SR5, V6, side airbags, sunroof, new tires, 57k miles, \$16,800 obo. 655-9638
2003 Honda Accord EX, four door, auto, power windows, locks, sunroof, 55k miles, \$13,500. 461-0903
2003 Honda Accord EX, V6, leather, sunroof, 83k miles, \$13,900. 426-1822
2001 Honda CRV LX, black, gray interior, power windows/locks, luggage rack, 96k miles, \$9,100. 883-6894
2001 Chevy S10 pickup, red, three door, new tires, 67k miles, \$7,500. 864-0413 or 682-5927
1999 Lincoln Navigator, red, leather, third row seat, rear air, 132k miles, \$8,750. 881-8877
1997 Toyota Camry, \$3,950. 534-6831 or 797-7204
1996 Honda XR80 motorcycle, \$550. 527-8116
1995 Nissan Maxima, leather, sunroof, CD, air, 270k miles. 837-2223
1992 Chevy C1500 LS pickup, V8, leather, power seats, tow package, 78,555 miles, \$12,500. 325-6491
1991 Chevrolet Caprice, four door, gray, less than 50k miles, \$2,500. 534-5653
1989 Chevy G20 custom van, Michelin tires, \$3,000. 764-8847
19-foot Bayliner Capri Bowrider, 125 hp, trailer, covers, extras, \$4,000. 653-3647

Wanted

Old, no longer used surfboard. 351-1754

Marshall Center CFC fundraising effort nears halfway mark



Marshall Center team members continue to give generously for the 2007 Combined Federal Campaign effort. At the close of week four, the center's total stood at \$346,353.74.

The goal for the seven-week fundraiser, which began Oct. 8 and continues through Dec. 7, is \$600,000.

Team members are reminded to visit <http://cfc.msfc.nasa.gov> to sign up for the remaining bus tours, to volunteer for CFC Community Service Days supporting local charitable organizations, and to find out more about donating to the campaign effort.

For more information, call Irene Taylor at 544-2051.



Rallying Oct. 25 for the Combined Federal Campaign, along with hundreds of Marshall Center team members, were, from left, Irene Taylor, Marshall's 2007 CFC executive chairperson; Amy George, director of special projects for the Huntsville Hospital Foundation and guest speaker at the rally; Baraka Truss, special assistant to the center director; and Robin Henderson, Marshall Center associate director.

Motor test

Continued from page 1

Techsystems Inc., where the shuttle's solid rocket motors are manufactured. Preliminary indications are that all test objectives for shuttle and Ares I were met.

The test evaluation motor, or TEM-13, burned for approximately 123 seconds, the same time each reusable solid rocket motor burns during a space shuttle 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, deputy manager of the Shuttle Propulsion Office at Marshall.

One test objective was to demonstrate the thrust vector control system operation using only one of two hydraulic power units. The vector control, part of the flight control system, directs the thrust of the two solid rocket booster nozzles to control shuttle attitude and trajectory during liftoff and ascent. During a shuttle launch, both hydraulic power units run and provide backup power to thrust vector control actuators. The test

with only one hydraulic power unit will validate the system's redundancy capability and operating performance data.

Another test objective was to measure the external sound or acoustics created when the motor ignites. More than 25 microphones were located near the motor to record the data from the firing. This information will be used to predict the motor's acoustic effects and aid in the final design of the launch structure for Ares I.

After final test data are analyzed, NASA will publish results for each objective in a report available later this year.

Through the Constellation Program, NASA is working to send astronauts to the moon, where they will set up a lunar outpost to prepare for possible future journeys to Mars and other destinations. The crewed launch of the Orion spacecraft on board an Ares I rocket is set for no later than 2015. Humans will return to the moon by 2020. For more information about Constellation, visit <http://www.nasa.gov/constellation>.

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

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