National Aeronautics and Space Administration
NASA Marshall Star: Aug. 14, 2008: Vol. 48/No. 46

MARSHALL STAR

Serving the Marshall Space Flight Center Community

Aug. 14, 2008

Marshall makes first welds with tools to be used on Ares I

By Rita Roberts

Marshall Space Flight Center engineers have made the first "official" weld with tools that will enable development of the upper stage of the Ares I rocket.

For this historic moment, the engineers used tools that soon will aid in manufacture of major test hardware for the Ares I rocket.

A cutting-edge, metal-joining process known as friction stir welding — first used in the aerospace industry in 2005 to weld elements of the space shuttle external tank — will be used in the Ares manufacturing process. Friction stir welding produces high-strength, almost defect-free bonding at joints. Significantly, it can weld materials with uniform precision — a vital requirement for next-generation launch vehicles.

David Higginbotham/MSFC

Marshall engineers watch the welding process closely as the successful welds are completed Aug. 11 in Building 4755.

Beginning in 2015, the Ares I rocket will launch the Orion crew capsule to the International Space Station, carrying six astronauts and small, pressurized cargo payloads.

The Ares I is a single, five-segment, reusable solid rocket booster derived from the Space Shuttle Program's reusable solid rocket motor. Ares I may use its 25-ton payload capacity to deliver resources and supplies to the space station, or to "park" payloads in orbit for retrieval by other spacecraft bound for the moon or other destinations.

Roberts, an employee of AI Signal Research Inc., supports the Office of Strategic Analysis & Communications.

Marshall Center college internships conclude

Intern Poster Expo features students' work

Doug Stoffer/MSFC

Marshall Center Director David King talks with Frank Barnes, an engineering student at Embry-Riddle Aeronautical University in Daytona Beach, Fla., about his experiences this summer as an intern in the Safety & Mission Assurance Directorate.

By Rick Smith

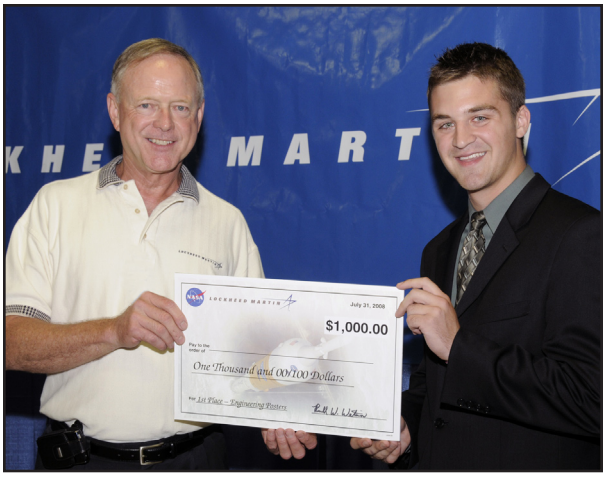
The Marshall Space Flight Center team said goodbye to more than 120 summer interns July 31 at the 2008 University Intern Poster Expo — and sent a number of those college and university students back to school with extra cash in their pockets.

The expo, an opportunity for Marshall interns to demonstrate the results of their summer work at the center, awarded $5,000 in cash

See Poster Expo on page 2

Poster Expo 2008

Continued from page 1



Doug Stoffer/MSFC

Ed Pruitt, director of NASA/NOAA Programs at Lockheed Martin Space Systems in Huntsville, left, awards Andrew Damon the first-place prize for engineering at the 2008 University Intern Poster Expo.

Alan Lowrey, Lockheed Martin senior systems engineer, left, presents Brent Roberts with the first-place prize for science at the 2008 University Intern Poster Expo.

Alfredo Wetzel, left, and Robert West, right, receive the prize for "Best Team Poster" from Mark Vaughn, Lockheed Martin senior manager for business development, at the 2008 University Intern Poster Expo

prizes from Lockheed Martin of Huntsville, which sponsored the event. Hundreds of civil servants and contractors turned out for it, crowding the floor of Activities Building 4316.

The expo is hosted annually by the Academic Affairs Office, part of the Marshall Center's Office of Human Capital.

The interns, each participating in one of 12 NASA summer education programs (see related article on page 4), worked for 10 weeks alongside Marshall engineers and scientists, contributing to a variety of NASA science and exploration projects. To summarize their experiences, they created 24-by-36-inch posters detailing their efforts.

Four teams of judges from Marshall and Lockheed Martin visited with the interns during the expo, assessing posters and listening to presentations. The judges picked eight winning entries, including first-, second- and third-place winners in two categories: engineering and science.

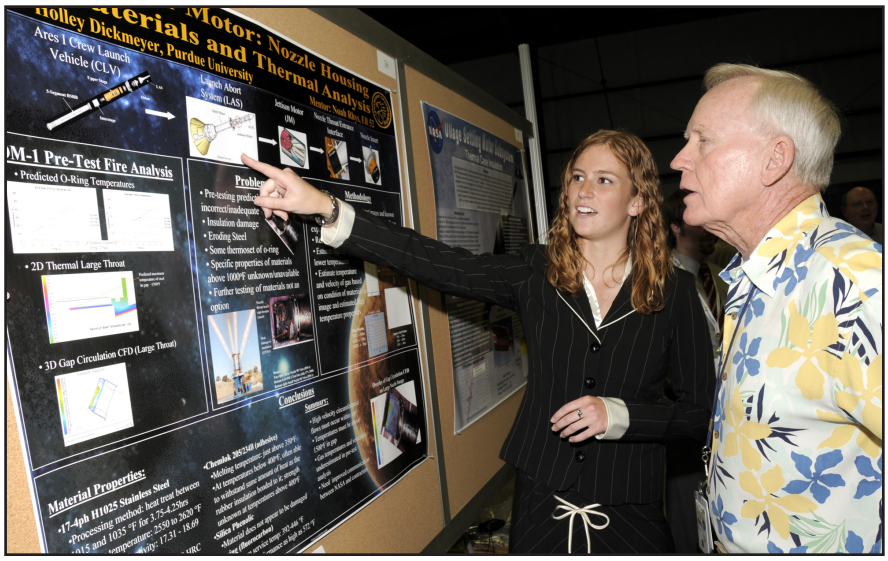
To read about the college and university intership programs represented by students in the 2008 Intern Poster Expo, go to page 4.

Engineering winners: Andrew Damon, who is studying aeronautical and astronautical engineering at Purdue University in West Lafayette, Ind., won the first-place prize for his presentation on the J-2X gas generator, a vital engine component tested this summer at Marshall to support development of the Ares I rocket. Derrick Babb, who studies industrial and systems engineering at the University of Florida in Gainesville, won second place for his presentation, which detailed his development of tools to model and analyze the structural health of composite pressure vessels — fabricated hardware used to store air, liquids and fuels for a variety of space applications. Omar Fabian, who is studying materials science and engineering at the Massachusetts Institute of Technology in Cambridge, placed third for his presentation on techniques for extracting oxygen from lunar materials.

Science winners: Brent Roberts, who is studying meteorology at Florida State University in Tallahassee, won the first-place prize for his presentation on using a satellite-based "neural network" — a linked set of computers modeled after the human nervous system — to predict humidity near Earth's surface. Curran Muhlberger, who studies physics at the University of Maryland in Baltimore, won second place for his presentation about the on-orbit performance of the GLAST Burst Monitor, the Marshall-managed instrument now flying aboard the Gamma-ray Large Area Space Telescope, which will study some of the most energetic explosions in the deep reaches of the universe. Albanie "Rudy" Bolton, who is studying computer science and applied mathematics at Alcorn State University near Lorman, Miss., placed third for her presentation on the development of abort failure detection algorithms designed to protect future astronaut crews in the event of a launch mishap.

Best Poster Design: Holley Dickmeyer, who is studying materials science and engineering at Purdue University, won for her presentation on development and thermal analysis of materials for the jettison motor. The motor is part of the Ares I launch abort system that lifts the Orion crew capsule and its occupants away from the rocket on the pad or during launch in the event of a mishap.

Best Team Poster: Robert West, who studies physics at Harding University in Searcy, Ark., and Alfredo Wetzel, who studies mathematics and aerospace engineering at the University of Michigan in Ann Arbor, won the team prize for their presentation on analysis of lunar sample X-rays taken during the Apollo missions, and methods of creating three-dimensional information from the two-dimensional data.



Doug Stoffer/MSFC

"Best Poster Design" winner Holley Dickmeyer, left, presents her findings to Frank Six, university affairs officer at Marshall. Dickmeyer spent her summer analyzing materials and components to improve crew safety on the Ares I rocket. More than 120 students worked as Marshall Center interns this summer.

"The poster presentation does more than showcase the results of the interns' research experience," said Mona Miller, education specialist on the Higher Education team in Marshall's Academic Affairs Office. "The event provides students with practical experience for future technical conference presentations. It also introduces them to key NASA managers and staff across a number of Marshall research and business organizations, offering them unparalleled networking opportunities."

"Ultimately, we believe the summer internships and expo will contribute to the development of NASA's next-generation workforce," Miller added.

For more information about NASA education initiatives, visit www.nasa.gov/education.

Smith, a contractor with AI Signal Research Inc., supports the Office of Strategic Analysis & Communications.

Space shuttle external tank ET-129 arrives in Florida

John Chapman, left, external tank project manager, and Sherman Avans, systems team leader in the External Tank Project, were at NASA's Michoud Assembly Facility in New Orleans Aug. 6 when ET-129 rolled out to the covered barge that delivered it to the Kennedy Space Center, Fla., Aug. 11. ET-129 is scheduled to fly with space shuttle Endeavour on the STS-126 mission, targeted to launch in November. The shipment of ET-129, only 27 days after the previous tank, ET-127, was shipped, represents a major accomplishment by the external tank team, Chapman said. ET-127 is being processed at the Kennedy Center and will fly with Atlantis on the next space shuttle mission, STS-125, targeted to launch Oct. 8 at 12:34 a.m. CDT from Kennedy.


NASA

Summer internships at Marshall: A primer

By Rick Smith

What draws enterprising young science and engineering students, already working hard in college and university classes, to heat-soaked Huntsville for the summer? Simple: the future — and the final frontier.

"I always followed the space program, and it became a passion of mine," said Holley Dickmeyer, a Marshall Space Grant Research fellow and a senior at Purdue University in West Lafayette, Ind. "Purdue has a great relationship with NASA, which is one reason I looked into coming here. It's my goal to work for NASA after graduation."

"The primary goal of NASA internships for high school and college students," said Tammy Rowan, manager of the Marshall Center's Academic Affairs Office, "is to offer candidates a unique opportunity to work alongside engineers and scientists in a professional environment, applying practical lessons based on their class work."

Some 120 interns, most of them college and university undergraduate and graduate students, worked across Marshall this summer.

"I wanted to increase my research experience," said Josh Anthony, a biochemistry junior at Oakwood University in Huntsville. An intern in the Minorities in Science Education program, Anthony spent the summer studying extremophiles — organisms that can survive even the harshest environments, such as deep space.

"My mentors familiarized me with a range of instrumentation and research protocols," Anthony said. "They've increased my knowledge dramatically — not just in astrobiology, but in all related scientific fields, from geology and physics to microbiology and genetics."

Rowan, whose team shepherds interns in a dozen NASA education programs each summer, says it's not just the mentors who influence the students. Their enthusiasm rubs off on one another.

"The experience creates an esprit de corps that reinforces the interns' desire to pursue careers in science, technology, engineering and math — fields where they now know they'll find a community as well as a career," Rowan said.

Here's a brief rundown of the college and university internships represented at the 2008 University Intern Poster Expo. For more information, visit www.nasa.gov/centers/marshall/education/higher_education.html.

Achieving Competence in Computing, Engineering and Space Science: A 10-week, paid internship for students with disabilities who want to pursue technical careers.

American Indian Higher Education Consortium Summer Research Experience: A six- to 10-week, hands-on internship for Native American students.

Exploration Systems Mission Directorate Student Project: A 10-week session that provides hands-on engineering work experience in industry or at a NASA field center.

Emmett Given/MSFC

Marshall student interns Albanie Bolton, center, and Derrick Babb congratulate one another at the 2008 Intern Poster Expo. Bolton earned a third-place prize in the science category; Babb finished second among engineering interns. Lockheed Martin of Huntsville provided the cash prizes.

Graduate Students Researchers Program: Mentored NASA research experience and three-year fellowships for graduate students.

Minorities in Science and Engineering: A 10-week internship at Marshall for students at Oakwood University, Alabama A&M University or the University of Alabama in Huntsville.

Marshall Space Grant Research Internship: A 10-week internship at Marshall funded by the National Space Grant Consortium.

Motivating Undergraduates in Science and Technology: An undergraduate scholarship program open to minorities, women and people with disabilities.

NASA Academy: A 10-week program with laboratory research, group projects, visits to NASA centers and technical writing and presentations.

NASA Robotics Academy: A 10-week program for students interested in robotics.

Society for Hispanic Professional Engineers Summer Scholars Program: A 10-week internship for Hispanic students majoring in science, math, technology or engineering.

Undergraduate Student Research Project: A 10-week, summer or 15-week, fall mentored research experience.

Visiting Researcher Exchange and Outreach Program: A Marshall-unique program that establishes working relationships between government, universities, industry, and Marshall scientists and engineers.

Smith, a contractor with AI Signal Research Inc., supports the Office of Strategic Analysis & Communications.

Moving toward NASA's 50th anniversary ...

Friday, Aug. 15, will mark a milestone in the history of NASA and the Marshall Space Flight Center. NASA did not officially open for business until Oct. 1, 1958. However, Aug. 15 is the 50th anniversary of the official U.S. Army order granting specific instructions to the Wernher von Braun Team in Huntsville to begin development of what would eventually become the Saturn rocket, one of the most famous icons in the history of the Marshall Center.

Before the Marshall Center was created in July 1960, however, the U.S. Army had responsibility for Saturn. It was 50 years ago this week that the Army's Advanced Research Programs Agency issued specific orders to the Army Ballistic Missile Agency, granting authority and authorizing funds for a vehicle first called Juno V, later renamed Saturn.

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, Aug. 21, is 4:30 p.m. Thursday, Aug. 14.

Miscellaneous

Sleeper sofa, matching loveseat, blue-jean color, $250. 830-9507

Leblanc Normandy wood clarinet, professional mouthpiece, $700. 890-2128

Baldwin upright piano, last tuned in 2006, $600 obo. 722-0440

Mary Kate and Ashley Shaw nylon rug, "City Blocks" pattern, 5'x7'4", $50. 722-0440

Valhalla Masonic Garden, four plots, $4,000 plus transfer. 881-9421

1915 Edison disc phonograph, Model A-250, working condition, $600. 461-0903

O'Sullivan desk, 30"x60", two file drawers, two 4-inch drawers, center drawer, $40. 881-2069

Honda HRM215 self-propelled lawn mower, bagger, needs minor repair, $80. 527-8116

Trailer, to pull behind lawn mower, $25. 527-8116

AKC German Shepherd puppies, four black/tan, $300, one white, $350. 652-5051

Canon A610 5MP digital camera, three months remaining on HHGregg replacement warranty, $125. 656-9201

Large Sears X-Cargo luggage carrier, $40. 721-0617

Universal fitness machine, eight stations, 350-pound stack, $100. 783-4850

Trek 1200 black/pink road bike, $350. 843-513-7939

Garbage compactor, brown, $300 obo. 852-5595

Queen-size bed, cherry, box springs, mattress, chest, dresser, nightstands. 345-8012

Tunturi F715D dual-action air-cycle exercise bike, $200. 881-3797

North Star ATV spot sprayer, $35. 270-9113

Accessories for 2006 or later Suzuki Grand Vitara. 883-8340

Compaq C700 laptop, Dual Intel 1.47GHz, 1G RAM, 80G HD, wireless, $500. 882-0133

Blue couch, fold-out bed, matching loveseat, $250. 830-9507

Bush Hog 5-foot finishing mower, heavy duty, three-point hitch, rear discharge, $1,250. 656-0043

Cobra Hybrid golf club, model DWF, baffler, 26 degree, R shaft, $90. 536-8925

Kenmore Series 90 washer, white, $150; washer, dryer set, $300. 345-9555

Bicycle carrier, hidden hitch, holds three bikes, 2-inch receiver, $20. 355-3586

Ping G5 Hybrid golf club, 22-degree stiff-steel shaft, cover, $70. 683-3397

Bird cage, medium size, twin peak, center dome, $15; two dog igloos, $25 each. 652-5177

Michelin 215x65Rx16 tires, four, blackwall, $20. 721-0331

1.5-carat diamond engagement ring, $1,500; 0.25-carat diamond wedding band, $300. 425-3727

Futon, cushion, $100; 9-inch TV, VHS player, $75; dog crate, $15; girl's bike, $25. 881-4148

AKC German Shepherds, 3 months old, four females, three males, black/tan, $600. 694-5912 or 828-3373

Yamaha Electone Organ, band type, dual keyboard, $850. 881-7283

Two Ryder Cup tickets, Valhalla-Louisville, Ky., Sept. 16-21, $1,700. 777-2701

Vehicles

2007 Mitsubishi Eclipse, red, black interior, five speed, four cylinder, sunroof, 25k miles, $16,900. 776-8785

2007 Camry LE, black, gray interior, CD, moon roof, 14k miles, $20,600. 614-3190

2006 TRX300EX ATV, warranty through 2012, $3,300 firm. 603-7447

2006 Trail Cruiser by Trail-Lite travel trailer, 28 feet, loaded, Sway kit, $11,800. 503-6695

2003 Acura RSX, gray, 35mpg, five-speed manual, alloy wheels, moon roof, leather, 79k $8,990. 652-5274

2002 Z71, quad cab, $14,500 obo. 990-3162

2000 Volvo S-70 GLT-SE, four door, 148k miles, $5,900 obo. 881-7283

2001 Honda CRV LX, black/gray, new timing belt/battery, 105k miles, $7,900. 883-6894 or 468-6894

1999 Toyota 4-Runner Limited Edition, white, brown interior, sunroof, CD, A/C, $7,000. 694-1260

1999 Ford Ranger, assume payments of $160 a month. 658-6353

1999 GMC Suburban SLT, trailering package, complete Pull-Rite hitch, 84k miles, $7,500. 420-2444

1999 Suzuki Intruder 800 motorcycle, helmets, leather, 10k miles, $4,000. 837-6776

1998 Itasca Class A motor home, 35 feet, hydraulic levelers, 14-foot slide, 43k miles, $29,900. 489-5150

1995 Windstar, 136k miles, $2,995 obo; 2008 Maxima SL, blue, loaded, leather, 10k miles. 520-2802

1994 Fleetwood Prowler camper, 24 feet, self contained, kitchen, 3/4 bath, stabilizer hitch, $4,900. 964-5312

1986 Honda 4-wheel ATV TRX70, $500. 656-0043

1982 Mustang GL, black, 2.3L four-cylinder engine; 1971 Honda Z50, all original, blue/white, $2,500. 205-559-7668

1966 Ford Mustang GT Coupe, black, fully restored, 289 engine and compartment, $9,500 firm. 520-3740

1965 Piper Cherokee 180, autopilot, Garmin 430 GNS, IFR rated, $52,000 obo. 426-0856

1953 Chevy truck, restored. 227-0542

John Deere 4410 eHydro tractor, finishing mower, 35HP, 195 hours, $16,500 obo. 353-7670

5x10 tilt utility trailer, metal flooring, $450. 975-0068

Wanted

PALM IIIe CD, to load system on PC, sync capability lost. 837-2783

Old 45 RPM records, 1950s to present. 774-2820 or dmcmicken@bellsouth.net

Responsible female to care for daughters after school, transport to activities. 880-2290

Nintendo DS, games, reasonably priced. 658-9784

Tile projects, floors, bathrooms, backsplashes. 679-5799

Clarinet, reasonable price. 317-294-2766

TV, broken speakers, good picture. 813-842-9356

Electrical work, wiring, adding/removing lights, circuits, plugs, switches. 468-8906

410-gauge shotgun shells, any shot size or slugs, 2 1/2 or 3 inches. 828-1234

Four to six football tickets, Tennessee vs. Auburn, Sept. 27. 679-4869

Free

Janssen spinet-style piano, you pick up. 777-3221

Yellow lab mix, 3 1/2 years old, spade, house broken, crate trained. 885-5973

Found

Pair of small brass keys, letters S.F. on them, Building 4611 gas pumps; "I Can Only Imagine" CD, Building 4200 lobby desk. 544-4680

NASA names deputy associate administrator for Aeronautics, associate administrator for Program Analysis & Evaluation

From NASA Headquarters

NASA announced that Thomas B. Irvine will be the deputy associate administrator for the agency's Aeronautics Research Mission Directorate, effective immediately; W. Michael Hawes will be the associate administrator for Program Analysis & Evaluation.

Since May 2005, Irvine has been the director of the Mission Support Office for NASA Headquarters in Washington. In his new position, he will assist NASA Associate Administrator for Aeronautics Research Jaiwon Shin with planning, management and development of NASA's aeronautics research activities.

NASA's Aeronautics Research Mission Directorate conducts cutting-edge, fundamental research in traditional aeronautical disciplines and emerging fields to help transform the U.S. air transportation system and support future air and space vehicles.

"Tom has been instrumental in the restructuring and management of NASA's aeronautics research programs since he came to Washington in 2004," said Shin. "He has extensive and well-rounded experience in the areas of aeronautics research, space station program engineering and management, institutional management, and NASA administration. Aeronautics benefits greatly from his presence on my team."

Irvine previously served as deputy director of the Aeronautics Test Program at NASA Headquarters. From 1999 to 2004, Irvine was the chief of the Facility Management and Planning Office at NASA's Glenn Research Center in Cleveland, Ohio. During 26 years with NASA, he has held a variety of program management and research engineering positions in technical services, space operations and aeronautics.

Irvine holds a master's degree in engineering mechanics and a bachelor's degree in civil engineering from Ohio State University in Columbus.

Irvine has received several commendations for group achievements, as well as NASA's Exceptional Service Medal for sustained contributions to NASA aeronautics and spaceflight missions.

NASA Administrator Michael Griffin also announced the appointment of W. Michael Hawes as the associate administrator for Program Analysis & Evaluation. Hawes will succeed Scott Pace, who will leave the agency later this month to become director of the Space Policy Institute at George Washington University in Washington.

In his new role, Hawes will be responsible for providing objective studies and analyses in support of policy, program and budget decisions by the NASA administrator.

He has served as the deputy associate administrator for the Program Integration Office in the Office of Space Operations at NASA Headquarters since 2005. From 2002 to 2003, he was special assistant to the associate administrator for Space Operations, and from 1999 through 2002, Hawes was the deputy associate administrator for the International Space Station program. He also has worked as the deputy director of the International Space Station Requirements; chief engineer of the International Space Station; and as the manager of the utilization and operations at the Space Station Freedom Program Office in Reston, Va.

Prior to joining the Space Station Freedom Program Office in Reston, Hawes served in several technical and managerial positions at NASA's Johnson Space Center in Houston. His responsibilities included the integration of experiments and commercial satellites into the space shuttle. Hawes served as the payload officer in the shuttle Mission Control Center for several missions, from STS-5 through STS-61B. In addition, he served on the Mission Control team for the Skylab reentry in 1979.

Hawes received a bachelor's degree in aerospace engineering from the University of Notre Dame, Indiana, in 1978, and master's and doctorate degrees from George Washington University in 1996 and 2006, respectively. He also is a graduate in program management from the Defense Systems Management College in Fort Belvoir, Va.

MARSHALL STAR
Vol. 48/No. 46

Marshall Space Flight Center, Alabama 35812
(256) 544–0030
http://www.nasa.gov/centers/marshall

The Marshall Star is published every Thursday by the Public and Employee Communications Office at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. Classified ads must be submitted by 4:30 p.m. Thursday, and other submissions no later than 5 p.m. Friday to the Marshall Public and Employee Communications Office (CS20), Building 4200, Room 102. Submissions should be written legibly and include the originator's name. Send e-mail submissions to: intercom@msfc.nasa.gov. The Star does not publish commercial advertising of any kind.

Manager of Public and Employee Communications — Dom Amatore
Editor — Jessica Wallace

U.S. Government Printing Office 2008-723-022-20162

PRSRT STD
US POSTAGE PAID
HUNTSVILLE, AL
PERMIT NO. 298