



MARSHALL STAR

Serving the Marshall Space Flight Center Community

Sept. 6, 2007

All-nighters at Marshall's X-ray Calibration Facility test James Webb Space Telescope components

By Dauna Coulter

If you traveled Rideout Road to the Marshall Center any night this summer, you would have seen lights burning brightly in at least one building — the X-ray Calibration Facility. Two people and sometimes more have staffed this facility every night since late May, monitoring screens on a large panel in the control room. Twelve people alternated shifts to watch the control panel 24/7.

Why did all these people become “all-nighters”? The success of NASA's next great space telescope depends upon it. “We're testing the James Webb Space Telescope,” explained X-ray Calibration Facility team leader Jeff Kegley.

Scheduled for launch in 2013, the Webb telescope is widely regarded as the premier observatory of the next decade. It is an infrared telescope, which means it senses the heat of stars and galaxies millions and even billions of light years away. To pick up those incredibly faint signs of warmth, the telescope itself must be kept extremely cold — and that is why everyone has been staring at screens.

The Webb telescope will operate in space at a temperature of -238 degrees Celsius (-396 degrees Fahrenheit). Such extreme cold could cause the telescope's structures and mirrors to change shape. Before that happens, the telescope must be tested at the X-ray facility, piece by piece, inside a vacuum chamber that simulates the hyper-cold of space. Results reveal any distortion that happens to the components so changes can be made if needed.



Dauna Coulter/MSFC

The cryogenic vacuum chamber at Marshall's X-ray Calibration Facility where components are being tested.

“We just finished testing a section of the ISIM Breadbox,” said Jay Carpenter, facility engineer. “That's our nickname for the Integrated Science Instrument Module support structure, which holds the telescope's four main science instruments.” The instruments are the Mid-Infrared Instrument, Near-Infrared Camera,

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Deputy Director Lightfoot to speak at joint AIAA/ASME meeting



Robert Lightfoot

Marshall Center Deputy Director Robert Lightfoot will be the featured speaker at the joint American Institute of Aeronautics and Astronautics and American Society of Mechanical Engineers luncheon meeting Wednesday, Sept. 12.

Lightfoot will address the center's role in lunar exploration and systems, with a general

Constellation Program overview.

The meeting will begin at 11 a.m., with lunch at 11:30 a.m., and will be held at the NASA Education Training Facility at the U.S. Space & Rocket Center. The cost of lunch is \$10 per person.

To confirm a reservation, contact Allison Cash, AIAA vice chair and programs director, at allison.cash@itt.com or 964-1440. Reservations and cancellations must be received by noon on Monday, Sept. 10.

Marshall's Academic Affairs hosts events for teachers as part of education conference

By Megan Norris

Marshall's Academic Affairs Office in the Office of Human Capital hosted workshops and tours July 19-20 for 45 state educators who attended the Alabama Association of Career Technical Education Professional Development Conference.

The workshops, held at the Von Braun Center, provided overviews and demonstrations of NASA Student Opportunities, a podcast series, and NASA's Digital Learning Network. The network session on videoconferencing highlighted NASA's education role in the STS-118 mission. An overview was presented on the latest podcasting trends and equipment for using podcasts to connect students with NASA. Participants toured Marshall's National Center for Advanced Manufacturing and the Payload Operations Center. They learned about NASA technology, equipment and strategies to lead students into the science, technology, engineering and mathematics, or STEM, disciplines, which are crucial to NASA's future missions.

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

Bob Zeek, right, simulation engineer for Teledyne Brown Engineering in Marshall's Engineering Directorate, shows teachers touring Marshall's Payload Operations Center in Building 4663 different types of graphical interfaces used on a virtual payload rack.



Doug Stoffer/MSFC

Majid Babai, left, acting team lead for nonmetallic processes in Marshall's Engineering Directorate, explains rapid prototyping technologies to a group of educators touring the National Center for Advanced Manufacturing in Building 4707.



X-ray

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Near-Infrared Spectrograph, and Fine Guidance Sensor.

By watching the control room screens and making facility "rounds," the night crew ensured that all equipment pressures, flow rates, temperatures and valve positions stayed in proper range for the tests. They also manipulated helium refrigeration systems, vacuum chamber pressure and liquid nitrogen zones for the vacuum chamber to keep the test article on its test plan profile.

As the ISIM Breadbox in the test chamber endured the transition from room temperature down to -233 degrees Celsius (-387 degrees Fahrenheit), an Electronic Speckle Pattern Interferometer, or ESPI, optically measured the structural distortion.

"This is one of only two instantaneous phase-shift speckled interferometers in the world," said Dr. Joseph Geary of the University of Alabama in Huntsville, who also worked the night shift. The interferometer was used to detect thermal distortions of the ISIM Breadbox as small as 20 microns — a fraction of the width of a human hair.

Now that ISIM Breadbox testing is complete, the X-ray facility crew will reconfigure the facility instrumentation, equipment and test chamber for the Webb telescope flight-mirror segment

verification tests. In the spring, the engineers will begin testing the optical quality of each individual mirror segment. The Webb telescope consists of 18 individual mirror segments that will ultimately form a 6.5-meter mirror assembly. The 24/7 mirror testing will continue through 2010.

Carpenter commented that he doesn't really mind working nights, but said, "It's a little hard on my family to be quiet during the day when I have to sleep. My granddaughter wants to play, but she isn't allowed to knock on my door. That's a little hard for me, too."

Kegley said he likes to work the night shift occasionally. "You don't get many calls or e-mails to interrupt you at 3 o'clock in the morning."

The writer, a Schafer Corp. employee, supports the Office of Strategic Analysis and Communications.

The Goddard Space Flight Center manages development of the James Webb Space Telescope and provides the Integrated Science Instrument Module.

The Marshall Center's Science and Mission Systems Office manages the Webb telescope components testing at the X-ray Calibration Facility.

'Focus on Marshall' highlights summer interns and 300-meter test tunnel

By Lori Meggs

Seen a lot of new faces around the Marshall Center this summer? The September episode of "Focus on Marshall" takes a look at Academic Affairs' College Internship Program, bringing in college students from across the country to get hands-on experience in aerospace fields. Dr. Frank Six, University Affairs Officer, talks about the importance of the program and how students are chosen to come to Marshall for the summer.

The program takes you to different locations where so many students have been working in various jobs, including the Flight Robotics Laboratory and the Impact Test Facility.

You'll also hear from a University of Alabama in Huntsville

student on the advantages of having the Marshall Center right in his "backyard," and how this intern opportunity was too good to pass up.

The other segment takes you deep below the East Test Area to see how engineers have reclaimed the old Saturn test stand tunnel for a new capability. The 300-meter tunnel — the only one of its kind in the country — is being used for automated sensor testing.

You'll also get a rare glimpse of a "RATT," or Remote Automated Target Transporter — a robot that moves targets up and down the tunnel. Tom Bryan in Marshall's Engineering Directorate explains the tunnel's unique capabilities and what it took to clean out the old tunnel. And you'll hear about the recent testing of laser sensors that could have possible applications to future lunar lander missions.

"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.

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

Classified Ads

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

Miscellaneous

Sealy Posturepedic TrueForm Visco queen mattress, foundation, \$1,000. 881-1061
Rolls ConvaCare wheelchair, foot rests, \$60; walker, front wheels, \$10. 651-5847
Sheet of Elvis Presley 29-cent stamps, \$30. 890-0499
Black side-by-side refrigerator, smooth-top stove, microwave, dishwasher, \$2,200. 852-1726
Four cemetery plots, Tri-Cities Memorial, Florence, Ala., \$4,000. 436-1106
Craftsman radial-arm saw, \$200; Trek KDR 1000 child's road bike, \$360. 828-2808
30-year-old western cedar wood, rough cut, nails removed, \$25. 883-7910
1996 Hermann Beyer 1/8 children's violin, bow, hard case, \$80. 468-5177
Ashley oversized coffee table, carved legs, sunburst top, \$100; Magnavox 13-inch color TV, \$25. 828-9651
Two formal antique arm chairs, matching ottoman, \$200. 503-6773
Chevy 350 turbo automatic transmission, rebuilt, Kevlar bands, \$300. 797-8895
Trombone, hard carrying case, \$200. 859-0729 or 603-3617
1-year-old hedgehog, cage, supplies, \$50. 541-4445
Samsung 17-inch flat-screen CRT monitor, black, \$50; 19-inch CRT monitor, \$75, both, \$100. 489-6320

Four Auburn-New Mexico State football tickets, Sept. 22, \$30 each. 881-0457
Gravely ZT 1740 zero-turn lawnmower, 30 hours, mulching kit, \$2,350. 651-3064
Gold's Gym free-weight setup, punching bag, \$300. 497-5471
Wedding bands, men's, size 11, titanium, women's, size 4, white gold, diamonds, \$50 each. 431-2336
Gemeinhardt flute, case, \$140; 4-by-4 display case, glass top, front, locks, \$150. 348-2670
Whirlpool bathtub, 72 inches by 42 inches, almond, six jets, working pump, \$150. 655-6701
Radio Flyer wooden wagon, \$45; Little Tikes large tugboat, sandbox, pool, \$10. 325-2919
10-by-4 bathroom mirror, glass-beveled frame, \$350. 461-3803
90-gallon fish tank, wood cabinet/stand, all accessories, \$300. 468-8177
AKC German Shepherd puppy, male, black/tan, born June 22, vet checked, \$350. 828-3373 or 694-5912
Leblanc Vito tenor saxophone, gig bag, stand, \$1,000. 355-6093
DVDs: Talladega Nights, \$7, Chicago, \$5. 527-8116
Tour of Duty 3 Wii game, \$40. 527-8116
Seven Chesapeake Bay retriever puppies, master/junior hunters, champion pedigrees, Oct. 1, \$400 each. 776-1652
T-shaped bunk beds, built-in shelves, drawers, desk, chest of drawers, mattress, \$800. 830-5285
32-inch LCD Soyo TV, two controllers, warranty, \$450. 882-2447 or 961-7674
ATV Spreader, holds 50 pounds, \$75. 508-6840

Vehicles

2007 Toyota Tacoma Prerunner, double cab, sport package, loaded, white, 6k miles, \$24,900. 497-3311
2007 Chrysler 300, gray, 20k miles, \$19,500; 2003 Escalade, loaded, black, 75k miles, \$23,500. 520-2802
2004 Nissan Pathfinder LE, platinum, leather, Bose, sunroof, new tires, 40k miles, \$18,500. 429-8534
2004 R-Vision Class-A motorhome, slide, workhorse chassis, extended warranty, www.thewilletfamily.com/

rv, \$59,995. 883-7021
2000 GMC Sonoma, automatic, off-road skid plates, regular cab, green, 90k miles, \$6,500. (931) 967-7307
2000 Mitsubishi Eclipse, red, moon roof, tinted windows, 74k miles, \$8,000 obo. (931) 438-1730
2000 Nissan Pathfinder, medium blue, CD player, power windows, 106k miles, \$7,000. 762-8493
1998 35-foot Itasca Suncruiser motorhome, 14-foot slide, 42k miles, \$31,700. 698-3761
1998 Buick LaSabre, V6, 114k miles, \$3,000. 289-0885
1995 Chevy Lumina, 130k miles, \$2,600, cash only. 655-8510
1989 F-150 XLT, four-wheel drive, five speed, long bed, 153k miles, \$2,500 obo. 603-7138
19-foot Bayliner Capri Bowrider, 125 hp, trailer, covers, \$4,000. 653-3647
6-by-10 horse/stock trailer, \$1,000; wagon, harness for miniature horse, \$500. (931) 433-5848

Wanted

Information on use of the Samsung Jitterbug. 232-0188
Full-size mattress, box springs, good condition. 221-4567
Cockapoo or Maltipoo puppy, reasonably priced. (205) 362-1900
Pontiac Trans-Am, prefer 1969-1974, 1998-2002 models, will consider others. 509-3510
Go-cart, small ATV, must be running. 651-2429
Suspended ceiling parts, 24-inch cross-tees, older style for 25- to 40-year-old grid system. 233-0705

Free

10-month-old female Alaskan Malamute puppy, friendly, all shots. 278-0607
Two panes of clear glass, 17 inches by 62-1/2 inches, quarter-inch thick. 837-6776
Male, female kittens, born May 2007, variety of colors. (931) 636-2726

Found

Ladies watch, Protective Services suite lobby, Bldg. 4200/222. 544-4680

Redstone information security conference to be held Sept. 25-26

Marshall's Bob Devlin to be keynote speaker

By Rick Smith

Bob Devlin, deputy director of the Marshall Center's Office of Center Operations, will deliver the keynote address Sept. 25 at the 8th annual Redstone Arsenal and NASA Marshall Center Information Technology Security and Assurance Conference and Expo.

The conference, a forum for review and discussion of information assurance systems and technologies used to safeguard government, businesses and personal identities, will be held Sept. 25-26 at the Sparkman Center on Redstone Arsenal. The theme for the event is "Information Security Protects Mission Security. Are You Doing Your Part?"

Devlin, a 24-year U.S. Army veteran, will address attendees at 8:30 a.m. Sept. 25, following a welcome and introduction by John McDougale, director of the Office of the Chief Information Officer at Marshall.

The importance of information security will be the subject of Devlin's keynote speech, he told the Marshall Star. "In the not-so-distant

past, the greatest threats to the protection of our nation were nuclear missiles and armies faced across borders of barbed wire and landmines," he said. "With the advent of personal computers, and revolutionary changes in information management technologies, the potential threats to our ability to manage and protect our nation have morphed in ways that are much more subtle and potentially more dangerous.

"Unlike in the past, where warfare and threats were well defined, these threats offer the potential for nations and corporations to steal or defeat critical national technology, for terrorist and rogue nations to attack the ability of a nation to operate its power grid and life support systems, and for criminals to steal the identity that makes each of us unique and allows us to enjoy the prosperity that is America," Devlin added.

From 2002 to 2005, Devlin was garrison commander of Redstone Arsenal. He supervised more than 2,000 military, civil service and contractor employees and directed a comprehensive array of institutional services, programs and emergency management operations for arsenal facilities, organizations

and personnel. He retired from the Army in 2005 at the rank of colonel and joined the Marshall Center in 2006.

Other conference speakers will include representatives from Microsoft, Dynetics Inc., and SecureInfo Corp., as well as the Federal Bureau of Investigation's Cyber Crime Squad and the U.S. Army Network Enterprise Technology Command.

The free conference is hosted by the U.S. Army Garrison-Redstone Command and the Marshall Center, and is presented by Technology Forums of Huntsville. Registrants must be U.S. citizens.

Registration for security badges to enter Redstone Arsenal must be completed by Sept. 10.

For more information, visit <https://www.technologyforums.com/7RE/index.asp>.

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



Bob Devlin

Obituaries

Daniel William Gates, 85, of Huntsville died Aug. 22. He retired from the Marshall Center in 1977 as an engineer. He is survived by his wife, Miriam Hoyle Gates.

Louis H. Sommers Jr., 82, of Huntsville died Aug. 23. He retired from the Marshall Center in 1985 as an engineer. He is survived by his wife, Helen Overton Sommers.

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