

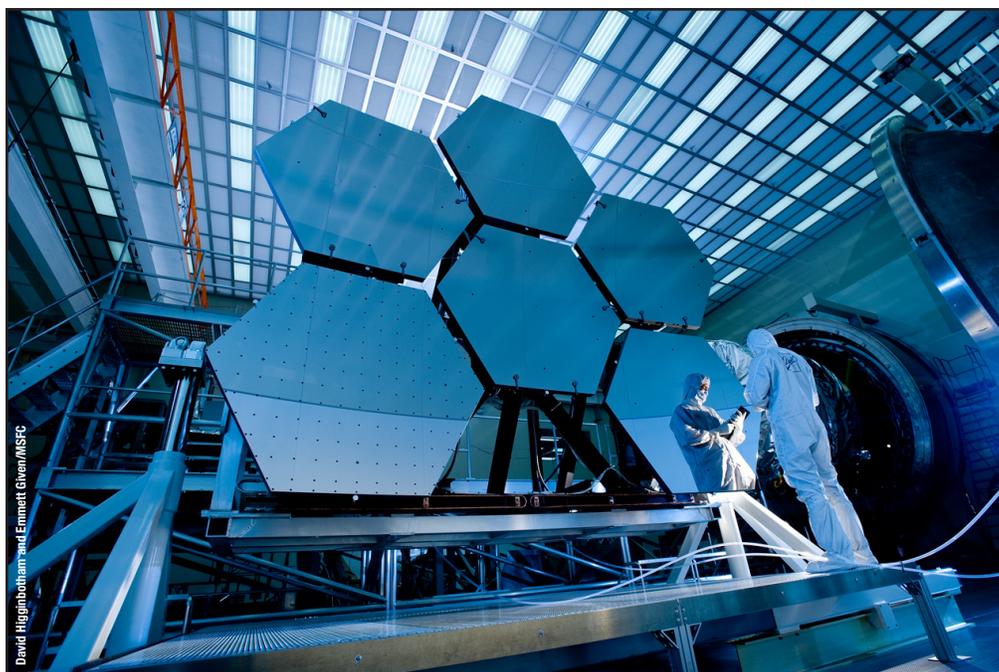


MARSHALL STAR

Serving the Marshall Space Flight Center Community

July 29, 2010

James Webb Space Telescope completes mirror test



By Kim Newton

Recently, six James Webb Space Telescope beryllium mirror segments completed a series of cryogenic tests at the X-ray & Cryogenic Facility at the Marshall Space Flight Center.

During testing, the mirrors were subjected to extreme temperatures dipping to -415 degrees Fahrenheit, permitting NASA contractor engineers to measure in extreme detail how the shape of the mirror changes as it cools.

With those measurements, the mirrors will be shipped to Tinsley Corp. in Redmond, Calif., for final surface polishing at room temperature. Using those "surface error" measurements, each mirror

During cryogenic testing, the mirrors will be subjected to temperatures dipping to -415 degrees Fahrenheit, permitting engineers to measure in extreme detail how the shape of each mirror changes as it cools.

See *Telescope* on page 6

New eye on space station will enable Earth science

Janet Anderson and Mario Runco

A new Earth science observatory rack is providing the International Space Station – the world's only orbiting research facility – with an eye in space, helping researchers keep watch over the Earth.

The Window Observational Research Facility, or WORF, will help capture some of the most detailed images and information about our planet ever from an orbiting spacecraft.

The WORF rack is designed to make the best possible use of the highest optical quality science window ever flown on a crewed spacecraft. Meticulously calibrated before its installation, the window has been used by station astronauts since the American Destiny laboratory module became the keystone of space station research



Window Observational Research Facility

See *WORF* on page 5

'Focus on Marshall' wins Silver Telly Award for space shuttle hardware video production

"Focus on Marshall," the video program that features Marshall Space Flight Center people, facilities and activities and is broadcast on NASA TV, has won a 2010 Silver Telly Award for the episode, "Space Shuttle Propulsion Elements." Another Marshall production garnered a Bronze Telly Award.

The episode – shot in March 2009 at ATK Launch Systems in Promontory, Utah; Stennis Space Center, Miss.; Michoud Assembly Facility in New Orleans; and Kennedy Space Center, Fla. – highlights space shuttle hardware manufacturing, processing and transit to Kennedy for preparation for launch. It also includes the retrieval and recovery of solid rocket boosters.

The Telly Awards competition received nearly 11,000 entries from all 50 states and numerous countries. Less than 10 percent of the entries were chosen for a Silver Telly, the highest honor. This is the second consecutive year "Focus on Marshall" has earned the award. The team won a 2009 Bronze Telly for its episode featuring the NASA Exchange and Marshall's development of the Water Recovery System for the International Space Station.

Founded in 1979, the Telly Awards are considered in the trade as the premier award honoring outstanding video and

film productions; local, regional and cable TV commercials and programs; and Web commercials. Winners represent the best work of advertising agencies, production companies, television stations, cable operators and corporate video departments worldwide. Other 2010 winners include ESPN, NBC Universal, The Weather Channel, Microsoft and Elvis Presley Enterprises.

A panel of more than 500 industry professionals, each a past Silver Telly winner, judged the competition. Entries do not compete against each other, but are judged against a high standard of merit to recognize distinction in creative work. Other outstanding work is awarded a Bronze Telly.

The "Focus on Marshall" production team includes co-host Lori Meggs of AI Signal Research Inc., supporting the Office

of Strategic Analysis and Communications; and – supporting Marshall Television Services in the Office of the Chief Information Officer – co-host Bill Hubscher, producer Bob Moder and editor Lee Erickson, all of HDC Corporation; and videographers Carver Myhand and Tyson Eason of Dynetics Technical Services Inc.

Mick Speer, an HDC employee and Marshall Television producer, won a Bronze Telly Award in the public relations category for his video, "NASA History,"

produced for a NASA exhibit at the Smithsonian Folklife Festival in Washington.

"Focus on Marshall" airs on Marshall TV, and also is seen on NASA TV, the NASA portal and Inside Marshall. To see the winning entry and other "Focus on Marshall" videos, visit <http://msvictor3.msfc.nasa.gov/STREAMING/ACCORDENT/HONEYWELL/FOM/FOM034/>.



"Focus on Marshall" hosts Bill Hubscher and Lori Meggs taping an episode of the program, which highlights Marshall Center capabilities.

Marshall Career Transition Center moves to Education Training Facility

The Marshall Career Transition Center moved from Building 4200, Room G13, to the Education Training Facility at the U.S. Space & Rocket Center.

The transition center, opened to all team members,

provides information about job opportunities and employment services such as virtual and on-site job fairs, and workshops. It works to ensure all team members are informed and prepared for a successful transition.

Workshops, covering topics such as resume writing and interviewing skills, are held from 9 a.m. to 2 p.m. on Tuesdays, and by appointment on Thursdays.

For more information about the transition center and workshop topics, visit Inside Marshall, <http://transition.msfc.nasa.gov/index.html>, or contact Julia Seal at 544-3106.

First Caring in Action Program Recipient of the Month

Galloway commended for stabilizing load during lifting operation

By Jessica Wallace Eagan

When Douglas Galloway saw that his Marshall Space Flight Center coworker might get hurt by an unstable load on a lifting device in Building 4205, he put a stop to it. He halted the lifting operation and got someone to help him steady the load before it could do any harm.

For his effort, the Marshall Safety Action Team has selected Galloway – an engineering technician in the Engineering Directorate – as the first Caring in Action Program Recipient of the Month. Caring in Action gives civil service and contractors a chance to recognize the safety efforts of their coworkers.

The Safety Action Team – a volunteer forum for team members to promote safety and health in the center's community – put the program into place May 5.

"Doug clearly demonstrated caring in action by watching out for

others' safety and well being," said Glenda Morton, Safety Action Team chairwoman. "We appreciate his effort in making Marshall a safe place to work."

Peers can be nominated at <https://safety.msfc.nasa.gov/sites/cia/>. The nominated employee will receive a pin and citation from the Safety Action Team. These will be sent through interoffice mail to the employee's supervisor for presentation.

Each month, the Safety Action Team will select a team member who best exemplifies the Caring in Action value through their performance. Those selected will be recognized at a Marshall senior staff meeting. Their photo and a brief description of their action will be announced in the Marshall Star.

For more information about the Caring in Action Program or to view the list of center recipients, visit [https://safety.msfc.nasa.gov/sites/cia/index](https://safety.msfc.nasa.gov/sites/cia/index.php?action=viewCiaDetails).



Dennis Galloway receives the Caring in Action Program Recipient of the Month award from Glenda Morton, Safety Action Team chairwoman, during a recent Marshall senior staff meeting.

<http://msat.msfc.nasa.gov/>

For more information about the Marshall Safety Action Team, visit <http://msat.msfc.nasa.gov/>.

Eagan, an AI Signal Research Inc. employee and the Marshall Star editor, supports the Office of Strategic Analysis & Communications.

Live Web chat: Getting a 'GRIP' on hurricane forecasting

Every summer, tens of thousands of people follow the spinning, counterclockwise drama that plays out across their television screens. Satellite images show a tropical depression forming off the coast. Will it become one of the most powerful storms on Earth? Will it turn into a hurricane?

NASA's Genesis and Rapid Intensification Processes mission, or GRIP, will use 15 cutting edge instruments to get a daring new look at some of the world's fiercest storms. Scientists will study how storms form, strengthen, and weaken, and try to better understand how tropical storms develop into major hurricanes.

At 2 p.m. CDT July 29, atmospheric scientist Tim Miller of the Marshall Space Flight Center will answer your questions about hurricanes and the upcoming NASA study, which is scheduled for deployment



Hurricane Isabel, seen from the International Space Station.

Aug. 15 to Sept. 30. To join in on the chat, visit http://www.nasa.gov/connect/chat/hurricane_chat.html.

Marshall team members get 'techie' at expo



More than 800 Marshall Space Flight Center team members and guests checked out the latest trends in technology and products June 23 at the Marshall Technology Expo. Some 35 commercial exhibitors were on-hand in Activities Building 4316 to give participants tips and useful information on technology-related topics, ranging from 3-D imagery to social networking. The expo was hosted by Marshall's Office of the Chief Information Officer. Visit the Technology Expo website at <https://cio.msfc.nasa.gov/node/590> for more information.

Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Marshall Star Ad Form." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, Aug. 5, is 4:30 p.m. Thursday, July 29.

Miscellaneous

Black Lipton crock teapot, from 1940, stand, holds two gallons of tea, \$400. 256-520-4839

Bridal set, 14 karat, 1/4 ct engagement ring, 1/3 ct wrap, can e-mail pictures, \$500. tralblaz@bellsouth.net

"Foundations of Financial Management," \$100. 256-508-5449

Pearl Snare drum kit, carry case, pad, stand, \$100 obo. 256-694-3103

Baldwin piano, bench, certified with papers, spinette quick action, cherry finish, Queen Anne style, \$1,190. 256-325-3089

Sugargliders, mated pair, large cage, accessories, \$200; 20" blue tongue skink, 30-gallon breeder, lamps, \$100. 256-479-4993

CB radio mast, tripod, antenna, connection cable, \$50. 256-881-0656

24" Magnavox TV, remote, non-flat screen; computer desk, hutch, \$50 each. 313-655-7966

Yardman riding lawn mower, 20HP, \$650. 256-658-6353

Felt 65 bicycle, 52 cm, Shimano 105 components, flight deck computer, new tires, \$475. 256-656-2951

Yamaha grand piano, 5'3", black high gloss finish, GH-1 series, \$6,800. 931-625-0671

White Kenmore upright 16.7 cubic foot freezer, \$70. 256-457-8984

Steel angle, 1/8"x1 1/2"x1 1/2" by 6 feet, \$1 each; truck camper shell, \$40. 256-852-6952

Vehicles

2010 Toyota Camry, automatic, full warranty, 3,772 miles, \$17,650. 256-651-8507

2006 Toyota Tundra double cab, black, tan interior, bed cover, 52k miles, \$17,000. 256-509-9431

2006 Ford Escape Limited SUV, red, four door, leather, luggage rack, 70k miles, \$11,900. 256-270-7702

2003 Keystone Montana travel trailer, 32' slide out, queen bed, sleeps six, \$12,000. 985-710-2850

2004 Tundra double cab, blue, 59k miles, \$13,990. 256-723-8877

2003 Honda Accord Coupe EXL, silver, black leather, 4 cylinder, 109k miles, \$8,950. 256-520-9318

2001 Dodge Ram 1500, \$3,000 obo. 256-426-2379

2000 Volvo Black S80, 102k miles, \$8,000. 256-652-8412

1998 Stingray RS180 Bowrider, seats seven, bimini covers, fish/ski, new 140 I/O, \$9,500. 256-640-6427

1998 Chrysler Cirrus, four door, maroon, call for more details. 256-468-9377

1995 Ford Explorer Eddie Bauer, rebuilt transmission, 183k miles, \$2,950. 256-880-6563 leave message

1994 Sea Doo XP Jet Ski, trailer, cover, \$1,100. 256-348-3438

Wanted

Pressure washing work. 256-468-1415

facilities in 1998.

Until now, there has been no stable platform for instruments to use this uniquely clear window from its one-of-a-kind vantage 200 miles above our planet. Just as photographers use tripods to steady their cameras for ultimate focus and clarity, WORF will allow scientists to steady their high-resolution cameras and active remote sensing instruments as they train them on their targets below.

WORF will support a variety of scientific, commercial and educational experiments. Areas of interest will involve agriculture, forestry, ranching, resource management, oceanography, meteorology and low-light phenomena such as aurorae – the northern and southern lights seen in the atmosphere around the Earth’s poles.

The WORF rack was developed jointly by the Marshall Space Flight Center and the Johnson Space Center in Houston. The rack was manufactured and tested at Marshall. It was launched to space on April 5 aboard space shuttle Discovery as part of the STS-131 mission to the space station.

To support the science instruments and sensors that will be placed in Destiny’s window, NASA needed to develop a hardware system to mount such payloads in the proper position. Window developers and Johnson Space Center employees Dr. Dean Eppler, a geologist, and Dr. Karen Scott, an expert in optics, worked closely with NASA astronaut and Earth scientist Mario Runco and Marshall Center engineers



STS-131 Mission Specialist Naoko Yamazaki works with the Window Observational Research Facility in the Destiny laboratory of the International Space Station while space shuttle Discovery was docked with the station.

Rick Turner and Bryan Barley on the concept development.

Turner and Barley proposed developing a unique version of the "Expedite the Processing of Experiments to Space Station," or EXPRESS, racks. Derived from the EXPRESS rack model, the WORF rack provides the essential stable platform on which to mount instruments. It also delivers the necessary power, command, data and cooling connectivity needed for the Earth-observing equipment to operate. The rack, which is about the size of a refrigerator, has a payload volume of approximately 27 cubic feet. Payloads are mounted on a shelf approximately 3 feet wide and 2 feet deep in the lower portion of the rack. The entire rack can be sealed against light and is coated with a flat black, non-reflective finish to reduce stray light and false reflections that could interfere with data collection.

Cameras and remote sensing instruments in the WORF can be preprogrammed to operate independently, or can be controlled and operated from

the ground or by the onboard crew. The presence of trained station crews can potentially improve data collection by WORF experiments by allowing human intervention when needed for maintenance, repairs or close scientific observation.

The Payload Operations Center at Marshall manages Earth observation experiments in the WORF rack and all other science research operations on the space station.

For more information about the International Space Station visit http://www.nasa.gov/mission_pages/station/science.

Obituaries

James A. McCool, 98, of Huntsville died July 5. He retired from the Marshall Center in 1974 as a supervisory procurement analyst. He is survived by his wife, Rosalie Tutwiler McCool.

Robert Lewis Morris, 71, of Decatur died July 21. He retired from the Marshall Center in 1995 as a project management engineer. He is survived by his wife, Shelby Houston Morris.

Don Neville, 84, of Huntsville died July 21. He retired from the Marshall Center in 1974 as an aerospace engineer technician supervisor.

Telescope *Continued from page 1*

will then be polished in the opposite of the surface error values observed, so when the mirror goes through the next round of cryogenic testing at Marshall, it should "distort" into a perfect shape.

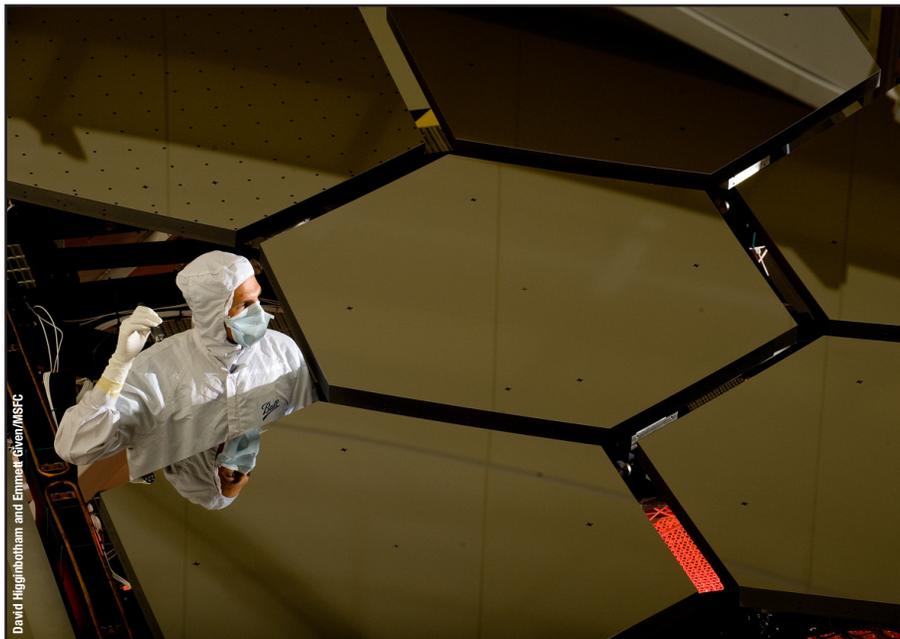
The facility at Marshall is the world's largest X-ray telescope test facility and a unique site for cryogenic, clean-room optical testing.

The next set of mirrors are due to arrive at the center in August.

The Webb telescope has a total of 18 mirrors. Each of the 18 mirror segments will be cryogenically tested twice in the Marshall's X-ray & Cryogenic Facility to ensure that the mirror will maintain its shape in a space environment – once with bare polished beryllium and then again after a thin coating of gold is applied.

The cryogenic test gauges how each mirror changes temperature and shape over a range of operational temperatures in space. This helps predict how well the telescope will image infrared sources.

The mirrors are designed to stay cold to allow scientists to observe the infrared light they reflect using a telescope and instruments optimized to detect this light. Warm objects give off infrared light, or heat. If the Webb telescope mirror



Six of the 18 Webb telescope mirrors are readied for shipment. All of the 18 mirror segments will be cryogenically tested twice in the Marshall Center's X-ray & Cryogenic Facility – once with bare polished beryllium and then again after a thin coating of gold is applied to gain optimal reflectance in the infrared.

is too warm, the faint infrared light from distant galaxies may be lost in the infrared glow of the mirror itself. Thus, the Webb telescope's mirrors need to operate in a deep cold or cryogenic state, at around -379 degree Fahrenheit.

Northrop Grumman in Redondo Beach, Calif., is the prime contractor for the Webb telescope, leading a design and development team under contract to NASA's Goddard Space Flight Center in Greenbelt, Md.

The James Webb Space Telescope is NASA's next-generation premier space observatory, exploring deep space phenomena from the formation of distant galaxies to the behavior and interrelationships of nearby planets and stars. The Webb telescope will give scientists clues about the formation of the universe and the evolution of our own solar system, from the first light after the Big Bang to the formation of star systems capable of supporting life on planets like Earth.

For more information about the telescope, visit <http://www.jwst.nasa.gov>.

Newton is a public affairs officer in the Office of Strategic Analysis & Communications.

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