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MARSHALL STAR

Serving the Marshall Space Flight Center Community June 1, 2006

Years of research and engineering pay off

Marshall team witnesses first drop test of X-37 spacecraft

By Sherrie Super

April 7, 2006, a Marshall Center team saw years of research and engineering support pay off when they witnessed the first drop test of the X-37 approach and landing test vehicle — an unpiloted, reusable space plane created to demonstrate advanced flight technology.

Doug Stoffer/MSFC

The X-37 program taps the expertise of Marshall team members who provide flight test support, anomaly resolution and tracking, schedule development and technical assessments.

Managed by the Pentagon's Defense Advanced Research Projects Agency, or DARPA, the X-37 program taps the expertise of about a dozen NASA Marshall team members. Marshall provides flight test support, anomaly resolution and tracking, schedule development and technical assessments.

The X-37 is being developed by the Boeing Company's Phantom Works division in Huntington Beach, Calif.

The initial flight began at 6:30 a.m. PDT from the Mojave airport. The X-37 demonstrator was carried to an altitude of 37,000 feet by the White Knight carrier plane, operated by Scaled Composites of Mojave, Calif. Nearly one hour later, the White Knight released the X-37 within the test range air space of Edwards Air Force Base, Calif.

The X-37's autonomous landing sequence and initial touchdown were flawless and functioned fully according to plan — an accomplishment that gratified the Marshall team members who logged many hours and miles to support the program.

"Due to the X-37 team's organization and geography, with team members on both coasts, our clock starts in the Eastern time zone and ends in the Pacific time zone," said Marshall's Susan Turner, deputy program manager. "Leading up to any first flight test is an important event and one that requires extensive preparation. Therefore, the time spent in cars, airports, airplane hangars and the control room is difficult to imagine — but well worth it."

"The flight was a phenomenal success," said Karen Spanyer, chief engineer of the joint DARPA-NASA project team. "We've put a lot of hard work into ensuring the success of this project. To see it released from the White Knight, fly flawlessly and land successfully was one of the most beautiful sights I've ever seen."

Even with the successful flight and landing, Turner and Spanyer said there is still work to be done. The X-37 experienced a fault

See X-37 on page 4

Message from the center director

Marshall to take vital role in exploration

I am pleased to pass along some exciting news released by the Associate Administrator for the Exploration Systems Mission Directorate (ESMD): we have been asked to take on an additional vital role in Exploration.

The Robotic Lunar Exploration Program (RLEP) has been renamed the Lunar Precursor and Robotic Program (LPRP) and will be located at Marshall. Marshall's Tony Lavoie, as Acting Program Manager for LPRP, will serve on detail to NASA HQ to spearhead the development of NASA's Human and Robotic Lunar Architecture being developed under the overall global architecture led by ESMD Deputy AA, Doug Cooke.

A new Lunar Lander Project Office also will be located here, reporting to the Constellation Program Office, and will be responsible for performing early trade studies and developing requirements for the Lunar Surface Access Module (LSAM).

We appreciate the confidence NASA Headquarters has in us, and we will now work to get the job done. As more details become available, we will share them.

— David King, Director

NASA Shared Services Center Payroll Office begins processing time, attendance

On May 28, the NASA Shared Services Center Payroll Office, located on the grounds of Stennis Space Center, Miss., began processing time and attendance for all NASA employees. The Shared Services Center Payroll Office is assuming the role previously performed by the Liaison Payroll Office at the Marshall Center. This transition will not affect pay or leave and earnings statements.

NASA employees are encouraged to continue using Employee Express, located at https://www.employeeexpress.gov/, and the Department of Interior help desk at 1-800-662-4324 for payroll issues. If the issues cannot be resolved through the help desk, the payroll office can be reached through the Customer Contact Center. Calls will be answered from 7 a.m. to 7 p.m. CDT at 1-877-NSSC-123, or via e-mail at nssc-contactcenter@nasa.gov. The call will be logged and tracked to ensure prompt, efficient processing.

NASA-sponsored telemedicine experts aid Pakistan's earthquake victims

By Sherrie Super

October 2005: An earthquake devastated rural Pakistan. Winter quickly descended on the mountainous region, leaving many victims without shelter in the bitter cold.

In early January, Dr. Azhar Rafiq, a researcher and physician for a NASA Research Partnership Center in Virginia, returned to his homeland to help. He brought with him medical monitoring technology — known as "telemedicine" — developed for the space program.

Rafiq and his colleague, Dr. Ronald Merrell, spent seven days in Pakistan, the culmination of a months-long distance-learning course they conducted with medical students there. During their trip, they spoke to medical students about telemedicine work and traveled directly into the disaster zone to demonstrate the technology.

The trip proved that the benefits of telemedicine are universal.

For Rafiq, it was a bittersweet return to his homeland. He was anxious to help those in his native country, yet saddened by the devastation. But certain that telemedicine would have helped in the recent earthquake, he knew it was important for him to go.

"With no mechanism for information-gathering or sharing, treatment teams were in a position of responding as patients entered the door," he said. "Helicopters brought in 20 to 30 patients at a time, with little or no screening. All the area hospitals soon were overflowing. With telemedicine, they could have anticipated the level of injuries en route to the hospital."

Rafiq and Merrell are researchers at Virginia Commonwealth University's Medical Informatics and Technology Application Consortium in Richmond. Recognized experts in telemedicine, they were invited by the U.S. State Department and the Department of Defense's Telemedicine and Advanced Technology Research Center in Fort Detrick, Md., to complete the telemedicine training program.

Their journey actually began months before with online and videoconference lectures to 30 students at the Rawalpindi Medical College based at the Holy Family Hospital in Rawalpindi, a region hard-hit by the quake. Using the NASA-sponsored technology, they helped diagnose injuries, communicate treatment needs to local health care workers and demonstrate how telemedicine equipment can improve health care.

For the visiting physicians, seeing the transition from research to reality proved gratifying. "All the time in the lab paid off," said Merrell, director of the medical consortium. "By managing medical information, our systems were designed to help save lives in remote locations of any kind. It was heartening to see the technology put to good use on Earth."

In space, telemedicine technology assists astronauts with checking, diagnosing and communicating health issues — a critical need when family physicians are a spacecraft ride away. On Earth, telemedicine

See Telemedicine on page 6

Marshall TV honored with NASA videography awards

Marshall TV videographers Sarah Milligan and James Bilbrey won three prestigious honors at the annual NASA Videographer of the Year awards ceremony in Las Vegas recently.

Milligan won second place in the Production category for a video called "NSSTC: Combined Strength for America's Future" and third place in the Documentation category for a solar sail test video file. Bilbrey earned third place in the Public Affairs Release category for the Great Moonbuggy Race. Milligan and Bilbrey work for Honeywell Technical Services Inc., which operates Marshall TV under NASA's UNITeS contract at the Marshall Center.

The competition, established three years ago, salutes talented videographers from across the country who support America's space program. The awards ceremony was held in Las Vegas to coincide with the National Association of Broadcasters' Annual Convention.

NASA

International Space Station crew sees volcano's eruption

Headquarters news release

Eruption of Cleveland Volcano, Aleutian Islands, Alaska, is featured in this image photographed by an Expedition 13 crewmember on the International Space Station. This most recent eruption was first reported to the Alaska Volcano Observatory by astronaut Jeffrey N. Williams, NASA space station science officer and flight engineer. This image, acquired shortly after the beginning of the eruption, captures the ash plume moving west-southwest from the summit vent. The eruption was short-lived; the plume had completely detached from the volcano summit two hours later.

Marshall managers participate in Lean Six Sigma Executive Overview

Marshall Center managers recently participated in a Lean Six Sigma Executive Overview at the center.

The Executive Overview outlined their leadership role in implementing Lean Six Sigma to produce significant improvements in operational and financial performance. As part of Marshall's continuous improvement transformation, the center has an initiative called Lean Six Sigma Operating Excellence.

The initiative is in support of NASA's goal of moving from producing products to producing solutions — and doing so with unprecedented efficiency. The central focus is on improving operating processes, becoming more efficient, eliminating waste, squeezing out costs and becoming more responsive to customers' priorities. Marshall has hosted several executive overviews for center management, with participation from each office.

Among those attending the recent session were Marshall Center Director David King, Marshall Deputy Director Charles Chitwood, NASA's Assistant Associate Administrator Christyl Johnson and NASA's Deputy Chief Engineer Greg Robinson.

Marshall's Lean Six Sigma Management Office is responsible for training, event management and project-specific efforts. For more information, contact Patty Fundum at 544-8436 or Mark Adrian at 544-0883.

'Focus on Marshall' looks at in-flight video imaging and rapid prototyping

By Lori Meggs

The newest edition of "Focus on Marshall" will air on NASA TV the week of June 5.

This month's program features a segment on Marshall Center engineers who are developing video and imaging equipment for spaceflight to better analyze launch and in-flight vehicle performance and safety. These engineers analyze video footage and still images taken during space shuttle launches and in-flight to help NASA decision makers better manage vehicle performance and safety issues.

The Imaging System Development Laboratory developed Return-to-Flight cameras for the external tank and solid rocket boosters, giving unprecedented images of the shuttle during launch. These Marshall capabilities are expected to be instrumental in spaceflight camera development associated with future vehicles for travel to the moon and Mars.

The other segment features Marshall engineers in the Rapid Prototyping Laboratory. A series of machines in this lab are used to create molds to build various parts in support of Return to Flight and functioning sub-scale models for testing of new hardware. The manufacturing machines can be programmed to fashion intricate parts from plastic, aluminum and powdered metal. The program will show examples of the work and time-lapse photography of one of the machines carving a part.

Each monthly segment of "Focus on Marshall" is broadcast on Marshall TV the first and third Tuesday and Thursday of each month at 11 a.m., noon and 1 p.m. The video can be viewed live on Desktop TV as it's shown live on Marshall TV. Subsequently, it 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.

X-37

Continued from page 1

in the brake controller and rolled off the end of the runway at low speed, causing some repairable damage. "The braking performance was not as expected," Turner said. "But with the perfect flight and landing, assessments indicate we will be able to move forward with plans for a second and third free flight."

Depending on the results of the anomaly investigation, the second flight could occur as soon as the summer of 2006.

"Along with demonstrating technology, this flight demonstrated the success of an integrated government/contractor team and Marshall's ability to team with another federal agency," said Spanyer.

Flight demonstrators such as the X-37 have a critical role in validating technologies that cannot be demonstrated on the ground. Before DARPA assumed responsibility for the program in 2004, NASA had been pursuing the X-37, along with other space launch technologies, as an option for establishing safe, reliable and affordable access to space.

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

Marshall-developed software capability supports X-37 flight

By Sherrie Super

To support the X-37 space vehicle's first drop test, the X-37 team tapped MAVERIC, an award-winning software tool developed at the Marshall Center.

MAVERIC — short for "Marshall Aerospace Vehicle Representation In C" — is a spacecraft flight simulation program developed by Jim McCarter of the Flight Mechanics and Analysis Division in Marshall's Engineering Directorate.

Recipient of Marshall's Software of the Year Award in 2004, the computer program has become Marshall's primary tool for simulating space transportation vehicle designs. MAVERIC enables rapid development of spacecraft and launch vehicle flight simulations for vehicles of any configuration and for all phases of flight.

Its simulations can provide detailed predictions of how a vehicle design will perform before the craft is actually built and flown, resulting in significant cost savings and helping to ensure robust and safe spacecraft designs.

For the X-37 drop test, engineers from Marshall used MAVERIC to conduct independent flight simulations. The benefits were two-fold, with MAVERIC providing valuable premission support in planning the drop test and NASA software developers receiving real-world validation that the tool can support all development ranging from conceptual design to the actual flight of a finished vehicle.

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

Head of management firm to speak at Marshall Association meeting

The Marshall Association will hold its next luncheon meeting Tuesday, June 6, at 11 a.m., at the Marshall Institute Educational Training Facility near the U.S. Space & Rocket Center. The guest speaker will be Dr. Warren Blank, president of The Leadership Group, a management and organizational development firm founded in 1986.

The Leadership Group provides training, consulting and speaking services for organizations throughout the United States, Central America, Europe, Africa and Asia.

The author of five books, Blank has worked as a manager in private industry, a university administrator and a professor at the University of Tulsa.

Attendees can join the Marshall Association by paying a $25 membership fee at the door.

The money goes directly into the fund that finances scholarships awarded by the association each year.

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

X-Box, three controllers, one game, $110. 468-3803

iPod Remote Interactive dock DS-A1, works w/Onkyo audio or home theater system, $75. 256-828-1234

Aria guitar, 3/4 size w/soft case, good beginner instrument, $110. 527-8116

Stack of unused 1x-16x DVD-R discs, $20; Little Tikes workbench, $40. 828-9099

CRT monitor, 17", color, with Sony Trintron display, $75; Epson Perfection bed scanner, 1640SU, $50. 882-3110

Hand chair, $75; PlayStation 2 w/many accessories, $700; Samick jumbo guitar, $200. 864-2629

Chevy rally wheel w/new tire, 6 hole, fits 4x4, $60. 683-9364

Bowflex Treadclimber TC3000 w/treadclimber mat, 1 yr. old, $1,000. 468-6016

Tin-friction toy rocket w/box, 15" w/automatic lift and opening stairway, $20. 303-3702 Decatur

Trampoline, 12' diameter, $50 firm. 881-8009

Twin country pine armoires, 77"Hx40"Wx20"D, $325 each; both $550. 256-509-2046

Martin acoustic guitar, Model DH Dreadnaught, mahogany w/hard case, $625. 256-604-8661

Blue-Crested conure, 5-year-old parrot w/2 cages and accessories, $250. 233-4680/Heather (Athens)

Gas clothes dryer, white, $100. 832-215-1619

Countertop microwave oven, $20. 603-9016

AKC Italian Greyhound puppies, available June 10, $600. 256-880-8378

Innotek SD2100 rechargeable in-ground pet fencing system & lightning protection system, used little, $150. 325-0085

Hubcaps and chrome lugs for Honda Accord from 1999 model, set of 4, $45. 665-2732

Murray push mower, 20", 4HP, $35. 348-7146

Plumbing equipment: electric auger, pipe threading equipment, acetylene torch, pipe wrenches, etc., $300. 880-7378

Rowe sofa, 6 yrs. old, damaged, free slipcover included, $200. 890-1142

Couch, brown, 2 yrs. old, $100. 489-6320

Sony Playstation, $35. 865-567-8862

Boss TU-2 guitar tuner, $80; Boss BE-5B bass guitar effects, $50. 256-655-6293

Shopsmith, Mark V, older model w/brown base, band saw, books, other accessories, $285. 256-880-6146

Custom built smoker, 250-gallon tank on 14' trailer, two wooden storage boxes, $3,500. 520-2327

Queen-size sleeper sofa, navy, sleeper rarely used, $150. 882-3326

Fuel tank w/electric pump, 500 gallon, $500. 256-772-9768

Reserved Gold level tickets for Steely Dan/Michael McDonald, Nashville, Starwood, July 10. 859-6647

Two Dish network receivers with Smartcards and remotes, $75. 256-572-7396

Black western roping saddle with girth and slightly-used green saddle pad, $150. 256-508-7388.

Vehicles

2002 Nissan Pathfinder SE, automatic, Bose CD changer, running boards, luggage rack, 62K miles, $15,200. 880-9025

2003 Lincoln LS, V6, black w/black leather, automatic, 4 door, 50K miles, $19,000. 256-694-1217

Yamaha PW80 motorcycle, $475. 527-8116

1998 Chevrolet Cavalier, 4 cylinder, burgundy, cruise, keyless, a/c, all power, CD/radio, 153K miles, $1,950. 256-603-3558

2000 Plymouth Neon, 4 door, auto, 120K miles, $3,800. 256-572-1867

1987 944S Porsche, red, owned 16 years, $4,500. 534-1227

2001 Dodge RAM-1500 SLT, extended cab, 2WD, dark blue, 75K miles, camper shell, $10,900. 256-682-1350

2005 Nissan Frontier extended cab, V6, automatic, 21-mpg city, loaded, under warranty, $16,500. 837-1774

Two 2005 Honda Recon 4-wheelers, sell together $3,350 or separate $1,800 each. 230-4980

1994 Ford Crown Victoria, white, runs good, $1,300. 684-5712

1995 Dynasty Elanti 171 ski boat, 135HP Mercruiser, trailer, $4,9 00. 721-3370

Villian II ski boat, new motor, $3,000. 679-0073

1995 Cadillac Deville, black, $2,750; 1996 Deville, hunter green, $3,300; 1994 Cougar, 102K miles, $2,200. 256-520-2802

2000 Dodge Dakota SLT extended cab, 6 cyl., new tires, many extras, $8,100. 931-427-8205

2005 Kawasaki Concours ZG1000, 2.5K miles, under warranty, $8,300. 256-653-5992

1972 Aristocraft, 19', V-hull, Mercuriser I/O, hardtop, cover, trailer, skis, jackets, dry stored, $3,500. 256-881-7357

1999 Honda Shadow ACE 1100, 6.3K miles, $3,750. 777-1812

1995 Ford Explorer Expedition, 2 door, all extras, CD changer, sunroof, 157K miles, $4,000. 881-9643

1991 Nissan Stanza, 5 speed, 155K miles/body, 75K miles/motor, a/c, PW/PL, $1,490. 256-426-2516

1998 Buick Park Avenue. 256-797-8970

Wanted

2004 Toyota Sienna. 539-5495

To rent, water well driller, 3 point hitch fence post driver. 509-7907

PT lumber for deck, will remove old decks for lumber. 256-874-7874

Someone to care for 8-year-old daughter for up to 4 non-consecutive weeks, SE Huntsville. 651-2257

Turtle shells found in the woods, NO LIVE TURTLES. 256-572-7396

Free

Pea gravel, 10-12 cubic feet, approx. 1/2 feet, approx. 1/2 ton, you pick up. 551-0522

Telemedicine

Continued from page 2

offers the promise of treating patients living long distances from hospitals or impacted by massive medical emergencies that overwhelm the health-care system.

In Pakistan, doctors faced both types of challenges. Even months after the October 2005 earthquake left 3.5 million homeless, the devastation remained unimaginable, with 80,000 people dead and countless others injured.

The physicians hope to see the technology used not just in emergency situations but in everyday lives. Rural health-care providers, for example, could use monitoring and videoconferencing technology to consult and submit diagnostic information to experts at regional hospitals. "A doctor from a town two hours away saw the benefit of providing higher quality care without the discomfort and cost of traveling to see a physician," Rafiq explained, adding that the technology can help diagnose and treat people with conditions ranging from heart disease to diabetes.

Virginia Commonwealth University

Dr. Azhar Rafiq of Virginia Commonwealth University's Medical Informatics and Technology Application Consortium during 2005 tests of medical monitoring technology.

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

Obituaries

Charles Augustus Brosemer, 82, of Hazel Green died May 2. He retired from the Marshall Center in 1981 as an engineering technician. He is survived by his wife, Barbara Turner Brosemer; two sons, Richard Wayne Brosemer and Roger Allen Brosemer; and two stepsons, Lloyd Allen Jr. and Edward Allen.

Elbert B. Craig, 81, of Huntsville died May 1. He retired from the Marshall Center in 1985 as a contract specialist supervisor. He is survived by his wife, Jackie Craig; three sons, Harry Craig of Huntsville, Richard Craig of Birmingham and Jeffrey Craig of Maryland; two daughters, Janet Craig of Huntsville and Kellie Craig of Athens; one brother, Hubert Craig of North Carolina; and two sisters, Bessie Lee Hammond of Hoover and Margaret Campbell of Ozark.

Robert Louis Hurford, 77, of Huntsville died April 27. He retired from the Marshall Center in 1984 as an aerospace engineer. He is survived by his wife, Nathalie Emery Hurford; one son, Steven W. Hurford of Madison; one daughter, Nancy Hurford McDougald of Boca Raton, Fla.; and two brothers, Howard Eugene Hurford of Longmont, Colo., and Raymond Lee Hurford of Johnson City, Tenn.

Marvin Calvin Hypes, 85, of Madison died April 2. He retired from the Marshall Center in 1986 as a contract specialist. He is survived by his wife, Iona Hypes; one son, Ronald Hypes of Texas; two daughters, Patricia Johnson of Madison and Linda Hypes of Huntsville; and one brother, Fred Hypes of New Mexico.

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