



MARSHALL STAR

Serving the Marshall Space Flight Center Community

June 5, 2008

Discovery docks to space station after successful launch

By Sanda Martel

Space shuttle Discovery docked with the International Space Station June 2 at 1:03 p.m. CDT, delivering the largest payload – the Japanese Kibo experiment module — ever to arrive at the orbital outpost. The module will further expand the Japanese segment of the space station.

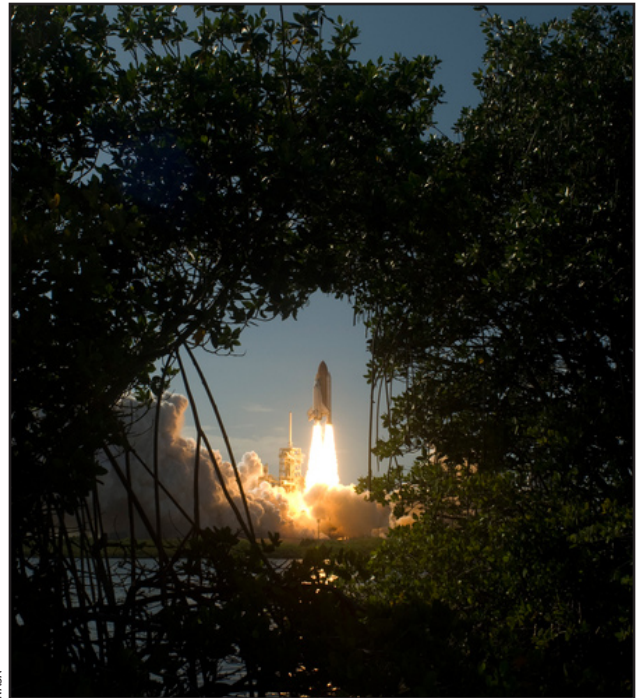
Discovery and its seven-member crew lifted off from the Kennedy Space Center, Fla., May 31, at 4:02 p.m. CDT, on a 14-day mission to the space station.

"The launch was spectacular," said Steve Cash, manager of the Marshall Space Flight Center's Shuttle Propulsion Office. "We're all extremely proud of the shuttle propulsion team, as well as the entire shuttle team that made this launch go so smoothly," he added.

Cash said all indications indicate that the newly designed ice frost ramps and liquid oxygen feedline brackets on the external tank performed extremely well.

The space shuttle main engines and solid rocket boosters with their reusable solid rocket motors performed superbly.

See Launch on page 6



NASA

Tree branches across the pond from Launch Pad 39A at NASA's Kennedy Space Center frame the fiery liftoff of space shuttle Discovery on its STS-124 mission to the International Space Station.

Marshall Center engineer dies in vehicle collision

Marshall Space Flight Center engineer Darren Spurlock, 39, died May 30 when his vehicle was struck broadside by a car whose occupants were said to be fleeing from Huntsville city police across Redstone Arsenal.



Darren Spurlock

Spurlock, who joined the Marshall Center earlier in May, was an engineer in the Stage Design & Integration Branch of the Marshall Engineering Directorate's Spacecraft & Vehicle Systems Department.

He came to Marshall from The Boeing Company of Huntsville, where he was part of the systems engineering and integration team for the Ares Upper Stage Production, a key element of NASA's Ares I

rocket development effort.

He leaves behind his wife, Kelly, and their two children.

A memorial service for Spurlock was held June 3 at Berryhill Funeral Home in Huntsville. He was buried June 4 at Hermitage Memorial Gardens in Old Hickory, Tenn.

"My thoughts and prayers go out to Darren's family, friends and coworkers," wrote Marshall Center Director David King, in an e-mail to employees May 30. "He was a fairly new member to the Marshall team, but invaluable to his department and an asset to the Marshall Center and to NASA.

"I know we all are heartbroken over such a tragic loss. While we can never understand why events like this happen, I hope that each

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Marshall plays critical role in Tennessee Valley Corridor's 2008 Economic Summit

By Rick Smith

Marshall Space Flight Center representatives took the stage at the Tennessee Valley Corridor's 2008 Economic Summit May 28-29 to highlight NASA's latest achievements and long-term national goals — and to demonstrate Marshall's critical role as an engine of economic prosperity for North Alabama and the Tennessee Valley.

Founded in 1995, the Tennessee Valley Corridor, Inc., is a non-profit organization based in Nashville that promotes this resource-heavy stretch of the nation — including North Alabama, Tennessee, southern and eastern Kentucky and southwest Virginia — as a premier growth area for research and high-tech business development.

The annual summit, held this year at the Von Braun Center in Huntsville, draws hundreds of business leaders and stakeholders from industry, academia and government organizations across the Southeastern United States.

On May 28, Robert Devlin, deputy director of Marshall's Office of Center Operations, joined representatives of other government entities, including the U.S. Department of Energy and the U.S. Air Force, to ponder the topic "Advancing Our Federal Missions for Regional Success."

Devlin praised the return on investment yielded by NASA research and development, which is sizeable, given that NASA's annual budget amounts to just a fraction of each taxpayer dollar. Many of the more than 1,000 NASA innovations with high-value consumer applications sprang from work conducted by the Marshall Center and its regional partners, he said. "NASA returns much more to American lives and businesses than it costs," he concluded.

On May 29, several Marshall team members participated in a session called "NASA Marshall Space Flight Center: Exploring New Worlds to Improve our Own." The panel, moderated by Dr. Herb Shivers, deputy director of Marshall's Safety & Mission Assurance Directorate, opened with presentations by Steve Cook, manager of

Ares Projects at Marshall, and Dr. Raymond "Corky" Clinton, deputy manager of the Science & Mission Systems Office.

Cook spoke at length about NASA's Constellation Program and its primary elements — the Ares I and Ares V rockets, the Orion crew capsule and the Altair lunar lander — and discussed the regional teamwork that will return human explorers to the moon and help them journey through the solar system in coming years.

"Today, Ares Projects employs more than 1,800 engineers and technicians in the Tennessee Valley," Cook said, "from main propulsion systems design work at Marshall to Orion Propulsion in Madison, Ala., which is developing flight thrusters, to Arnold Engineering Development Center in Tullahoma, Tenn., which is conducting aerodynamic re-entry testing.

"The highly talented workforce in the Valley is critical to getting us back to the moon and on to Mars," Cook said.

Clinton, who spoke about NASA and Marshall Center programs integrating science and exploration, echoed that praise. He emphasized that the end goal of the Constellation Program — to permit long-term, high-value science exploration of other worlds — is just as vital an economic driver in the region as the work on the launch vehicles themselves.

"Building rockets provides high-quality engineering jobs, and investing in new scientific activities ensures future economic viability," Clinton said. "The Tennessee Valley is very well positioned to play a key role in these endeavors — as it has throughout the space age."

For more information, visit <http://www.tennvalleycorridor.org>.

Smith, an ASRI employee, supports the Office of Strategic Analysis & Communications.



Talking business at the Tennessee Valley Corridor's 2008 Economic Summit are, from left, Corky Clinton, deputy manager of Marshall's Science & Mission Systems Office; Steve Cook, manager of Ares Projects; and Herb Shivers, deputy director of Marshall's Safety & Mission Assurance Directorate. They led a panel session about the Marshall Center's role as an economic driver in the Tennessee Valley.

Todd May reassigned to SES position of special assistant to director

Pending final approval by NASA Headquarters, Todd A. May has been reassigned to the Senior Executive Service position of special assistant to the director at the Marshall Space Flight Center.

The Senior Executive Service is the personnel system covering top managerial positions in approximately 75 federal agencies.

Since April 2007, May has served at NASA Headquarters as deputy associate administrator for programs in the Science Mission Directorate, responsible for the effective and efficient management of the directorate's programs, including nearly 100 robotic science missions. In his new role, he will be responsible for assuring that all center activities, processes and policies are consistent with the U.S. Space Exploration Policy, performing special studies, providing authoritative advice and assistance in policy review, managing and reporting on center-wide metrics, and developing benchmarking strategies. In this capacity, May will also occasionally chair center management boards and reviews, and represent the center at agency-level reviews.

May is a graduate of Auburn University and began his NASA career in 1991 as an engineer in Marshall's Materials & Processes Laboratory in the Engineering Directorate. Since then, he has served the agency in a variety of leadership and program and project management roles spanning all three of NASA's space-related mission directorates. He relocated to Johnson Space Center in Houston in 1994 to support the International Space Station program and served as deputy manager of the Russian Integration Office.



Todd May

In 1998, May returned to Marshall to manage the successful integration, launch and commissioning of the International Space Station "Quest" Airlock. He then joined the team that launched the Gravity Probe B mission to test Albert Einstein's general theory of relativity.

In 2004, May assumed the management of the Discovery & New Frontiers Program. Major milestones included the launch of Deep Impact, New Horizons and Dawn missions, and the deep space sample return missions of Genesis and Stardust. He joined the Constellation Program in 2006 as an associate program manager. In a dual role, May also served as deputy director of Marshall's Science & Mission Systems Office.

NASA awards Marshall operations support services contract

NASA has selected EG&G Technical Services Inc. of Gaithersburg, Md., to provide facility operations and maintenance services at the Marshall Space Flight Center.

The contract begins on July 1, with a one-year base period, followed by four one-year options. The maximum potential value of

this contract is approximately \$153 million.

EG&G Technical Services Inc. will perform facilities operations and maintenance services for Marshall. The company will furnish resources — including management, personnel, equipment and supplies — to support Marshall's work.

Moving toward NASA's 50th anniversary ...

On October 1, NASA will mark 50 years of service to the nation. One of space exploration's major milestones came during this same week in 1965.

NASA astronaut Ed White made history on June 3, 1965, when he floated out of the hatch of his Gemini 4 capsule into the void of space. The first American "spacewalk" — or extravehicular activity — lasted 23 minutes, not nearly long enough for White.

He later said the spacewalk was the most comfortable part of the mission, and said the order to end it was the "saddest moment" of his life.

White was attached to the capsule by a 25 foot umbilical cord. He initially used a gas powered gun held in his hand to maneuver. After the first three minutes, the fuel ran out and White moved around by twisting his body and pulling on the cord.



Ed White's spacewalk taken by Gemini 4 Commander James McDivitt from inside the spacecraft.

All-hands meeting with Lightfoot available on Inside Marshall

Marshall Center Deputy Director Robert Lightfoot held an all-hands meeting June 3 with Marshall team members to discuss the recent loss of Marshall employee Darren Spurlock in a car

accident on Redstone Arsenal, and the impact of this incident on the center.

The meeting is available for viewing on Inside Marshall.

Accident

Continued from page 1

of you will look to each other for support during this difficult time," King wrote.

King noted that Marshall team members who feel the need to seek counsel should contact Lynn Motley, coordinator of Marshall's Employee Assistance Program. The program offers confidential, cost-free, short-term assistance to those in need.

Mike Danford, Spurlock's supervisor and chief of the Stages Design & Integration Branch, remembers him as a "humble, well-grounded man whose family was the center of his life."

Though he was just a few weeks into his NASA career, Spurlock was very excited to be a part of the Marshall team, Danford said.

"Darren had supported us from the Boeing side on the Ares I upper stage construction contract, and he brought a lot of in-depth experience and insight to his work," he said. "When I had the opportunity to bring him to Marshall, I considered it one of the most significant hires I'd ever made. He had an immediate, positive impact on everything we were doing.

"I've heard from his wife and from his old colleagues at Boeing that working for NASA had been Darren's dream for a long time," Danford added. "He was a very special person. You don't have the

opportunity to work with someone of his caliber very often."

An educational savings account has been established for Spurlock's children. Checks payable to "College America" may be sent to First Financial Group, 400 Meridian Street, Suite 100, Huntsville, AL 35801, with a note designating the contribution for the Spurlock Education Fund.

King has been in contact in recent days with Redstone Arsenal leadership to discuss security and access to the arsenal, which is managed by the U.S. Army. King spoke with Maj. Gen. James Myles, commanding general of the U.S. Army Aviation and Missile Command at Redstone Arsenal, who expressed his condolences for Spurlock's family and friends. King said the Marshall Center will continue to work closely with the Army in any investigation of the incident.

The accident occurred at approximately 1:30 p.m. May 30, at the intersection of Rideout and Martin roads.

A second vehicle driven by Kathleen Lundy, a management support assistant in the Engineering Directorate's Space Systems Department, also was struck in the accident. Lundy and her husband Leon, a passenger in her car, were both injured. They were transported to Huntsville Hospital, where they were treated and released the evening of the accident.

Charter member of Marshall passes away

An extended career at the Marshall Space Flight Center sometimes affords opportunities that other government employees may not always experience. Those were the kind of opportunities that came to Gertrude Conard, a charter member of the Marshall Center, who passed away May 20.

During her career as an executive assistant to Marshall's Dr. William R. Lucas, Conard met such distinguished individuals as journalist Edward R. Murrow and first lady Mrs. Lyndon Johnson.

Conard began her career as an administrative assistant to Lucas in 1958 while still working for the Army in Huntsville. Two years

later, both transferred from the Army to the new NASA center in Huntsville. Lucas was named center director in 1974 and for the next 12 years, Conard continued working with him. Noting her patience and efficiency, Lucas described Conard's contributions to Marshall's success as "absolutely essential." Conard retired in 1999.

To read an article in the Marshall Star about her early years at the center, go to Inside Marshall.



Gertrude Conard

Obituaries

Joseph N. Portwood, 83, of Decatur died May 12. He retired from the Marshall Center in 1986 as an engineering technician.

John Genter, 77, of Huntsville died May 23. He retired from the Marshall Center in 1990 as an aerospace engineer. He is survived by his wife, Madge Genter.

Germs lose at hide and seek on space station

By Dauna Coulter

A Marshall Space Flight Center-developed hand-held "lab-on-a-chip" device is beating bacteria in a game of hide and seek aboard the International Space Station. The LOCAD PTS, short for Lab-On-a-Chip Application Development Portable Test System, is an experimental, shoebox-sized biological lab that serves as a kind of "white glove" test for germs.

To help avoid the spread of germs on the space station, astronauts are carefully tested for infection before shuttle launch and only allowed to be part of the crew if healthy. Aboard the station, crew members follow a strict cleaning protocol, but a small number of bacteria still survive, just as they do in our homes here on Earth. The LOCAD PTS finds them hiding on specific surfaces.

Instead of wearing a white glove, a space station crew member uses LOCAD to swab surfaces where the germs might be lurking. The system yields results in less than 15 minutes — after the tester mixes the sample with sterile water, puts the sample into a cartridge and inserts the cartridge into the unit for readings. The procedure is done on location. Nothing has to be sent back to a lab on Earth, which Marshall scientists say would take time and introduce the possibility of contamination en route. With LOCAD's point-of-use technology, microbial molecules can be detected using cartridges the size of a pack of gum.

"Ultimately we want to provide cartridges for all kinds of microorganisms and chemical compounds," a Marshall LOCAD scientist Heather Morris explained. "We'd even like to be able to use our system to figure out, on location and immediately, what 'bug' an astronaut has if he or she becomes ill. Then the most effective treatment could be given right away.

"For now, it's important to monitor bacteria on the space station in order to find the best ways to keep their growth under control," said Morris. "Currently, we're analyzing data from LOCAD ISS measurements of endotoxin, a molecule found on bacteria like *E. coli* and salmonella."

Traditional methods of sampling, such as contact media slides, take one to three days to give results. The bacteria need enough growth time to become detectable.

"With contact media slides you have the problem of getting rid of the germ slides without contaminating anyone or anything," Morris said. "On the other hand, the slides can tell us how many live bacteria are on a surface, while LOCAD can't distinguish between live and dead bacteria yet. We're working to add this capability in the future."

In addition to detecting bacteria like *E. coli* and salmonella, the latest LOCAD cartridges, just sent up to station aboard space shuttle Endeavor, can tell the crew if unwelcome fungi are "hanging around" on specific surfaces. Since fungi decomposed some electronics on the Russian space station Mir, these microbes



LOCAD scientist Heather Morris loads a sample onto a demonstration microfluidic chip.

are unwanted houseguests on the International Space Station. LOCAD can detect low concentrations of a common fungal compound; this allows LOCAD to find fungi before they have a chance to multiply.

By the end of the year, yet another cartridge will be available for testing on the space station. This one will detect the presence of bacteria such as staphylococcus and streptococcus.

LOCAD researchers say that as space voyages become longer and longer, it will be even more imperative to have ways on location to check astronauts' health and monitor electronics and other materials for damage. The scientists point out that if an astronaut became ill, it would take too much valuable time to send a sample home, have it tested, and receive a long-distance answer about what ails him or her. With future LOCAD technologies, detection and diagnosis would be quick and easy, so measures could be taken right away to treat an identified problem.

Does Morris foresee space station crew members taking turns swabbing each other's throats with lab-on-a-chip for a culture?

"Right now, we don't envision using LOCAD to swab an astronaut's throat. But in the distant future, it might be used to analyze an astronaut's saliva, blood, or urine that's been collected using other instruments. For the moment, our tool is for monitoring the environment surfaces and, in the future, water, to detect any contamination," Morris said.

Lisa Monaco, LOCAD project scientist, added her vision of the future: "What we are developing at Marshall has use not only on the space station, but will play an important role for lunar missions, long duration stays on other planets and most certainly here on Earth."

For more information about the LOCAD PTS, go to <http://locad.nasa.gov/>.

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

Launch

Continued from page 1

"The External Tank Project office has been looking forward to the flight of ET-128 — the first tank with all of our inline modifications — for quite some time," said John Honeycutt, External Tank deputy project manager. "The tank's performance was outstanding and I'm proud of the team for the hard work and dedication in the redesign of the ice frost ramps and feedline brackets."

ET-128 was the first tank to fly with all Return to Flight modifications added during the production process and also the first to fly with redesigned ice frost ramps and liquid oxygen feedline titanium brackets.

During a Space Shuttle Program Mission Management Team press briefing on June 1, team chairman Leroy Cain said preliminary analysis of photographs following launch indicate the new feedline brackets and ice frost ramps on the external tank did not lose foam. Some foam loss occurred, Cain said, and more will be known as additional photography becomes available and is analyzed. He added that the tank performed in a "top manner." The foam loss occurred after the critical time frame.

The Marshall Center, the world's leader for meeting America's space propulsion challenges, is responsible for the space shuttle's propulsion system. The three high-performing, reusable liquid propellant rocket engines, along with the solid rocket boosters, provide more than 7.8 million pounds of thrust to lift the space shuttle to orbit.

STS-124 is the second of three flights to launch components to complete the Japan Aerospace Exploration Agency's Kibo laboratory. Discovery is delivering Kibo's bus-sized Japanese Pressurized Module, or JPM, which will be the station's largest module. The shuttle astronauts will work with the three-member station crew and ground teams around the world to install the JPM and Kibo's robotic arm system during the mission.

"We're looking forward to the installation of Japan's Kibo experiment module in what is really a great moment for the International Space Station, as well the Shuttle Program," Cash said.

The STS-124 crew includes Commander Mark Kelly,

Pilot Ken Ham and Mission Specialists Karen Nyberg, Ron Garan, Mike Fossum, Greg Chamitoff and Japan Aerospace Exploration Agency astronaut Akihiko Hoshide. Garan and Fossum will conduct three spacewalks during the mission. Chamitoff will replace current station crew member Garrett Reisman, who has lived on the outpost since mid-March. Chamitoff will return to Earth on Endeavour's STS-126 mission, targeted for launch Nov. 10.

NASA is providing continuous television and Internet coverage of Discovery's mission, which is the 123rd shuttle flight. It is the 35th for Discovery and the 26th shuttle mission to the station.

NASA Television features live mission events, daily mission status news conferences and 24-hour commentary. NASA TV is being Web cast at <http://www.nasa.gov/ntv>.

NASA's Web coverage of STS-124 includes current mission information, interactive features, and news conference images, graphics and videos. Mission coverage, including the latest NASA TV schedule, also is available on the main space shuttle Web site at <http://www.nasa.gov/shuttle>. For information about other NASA missions and activities, visit <http://www.nasa.gov>.

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



The STS-124 and Expedition 17 crewmembers greet each other shortly after space shuttle Discovery and the International Space Station docked in space and the hatches were opened on June 2.

Reunion Weekend to be held at U.S. Space & Rocket Center on July 18-19

The U.S. Space & Rocket Center will host a special Reunion Weekend on July 18-19, which includes the fifth annual Saturn/Apollo Reunion and the second Space Camp Hall of Fame dinner. Both events will be held in the Davidson Center for Space Exploration.

Individual ticket prices for the Saturn/Apollo Reunion are \$10 for adults and \$5 for children. Tickets for the Hall of Fame Dinner are \$40 each. For more information and to register, go to <http://www.spacecamp.com/reunionweekend/>. Check the Web site periodically for updates.

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, June 12, is 4:30 p.m. Thursday, June 5.

Miscellaneous

JBL speaker surround set, center channel, front/left/right speakers, \$40; DirecTV HD receiver, antenna, \$50. 541-0627

Full set of 175/70 R14 tires, \$40. 813-391-9673

4GB iPod Mini, \$70; 6-foot adult bean bag, \$100; Xbox 360 driving wheel, pedals, \$50. 837-2806

Nordic Track Achiever Ski Machine, adjustable incline/resistance, folds, \$75. 837-2035

Frigidaire Gallery microwave, smooth-top range, dishwasher, almond, \$450. 508-0509

Ryobi weed eater, hedge trimmer, edger, string attachments, \$100; Tetra reptile food, \$4 can. 828-6213

SonyH9 8.1 mega pixel digital camera, 15X optical zoom, steady shot, \$295. 851-7406

Light oak and glass tables, square coffee, two end tables, sofa table, \$175. 429-8534

Mirage speakers, two OM-7 tower, two Omnisat satellite speakers, stands, \$1,500. 679-2165

Kenmore washer/dryer, series 90, white, \$300; Snow Village, around 30 houses, \$300 all. 895-6916

1983 Sears 3-ton central AC unit, \$200 firm. 859-2770

Tilting bed trailer for golf cart, 4 feet wide x 8 feet long, \$210. 325-2919

Two laptop memory sticks, 512MB DDR 333Mhz, \$40 both. 658-0327

Huntsville Memory Garden, Garden of Devotion, six adult spaces, \$2,195 each, negotiable. 859-4002

One unrestricted space, Maple Hill Cemetery, \$1,800. 552-0998

CKC-registered Yorkies, two girls, three boys, ready July 6, taking deposits, \$500-\$600 each. 890-6193

Xbox, 10 games, \$145; garden trailer for lawnmower, \$30. 325-6000 or 527-8116

Girl's white dresser, mirror, \$150; oak dining set, table, pad, six chairs, hutch, \$350. 468-1066

Sofa, rocker/recliner, pair occasional chairs, rolling TV cart, telephone table. 883-9509

Sony KP-C46C36 46-inch rear projection TV, includes original manual, remote, \$150. 468-4823

SNAP-ON MT 2500, automotive diagnostic scanner, \$500 obo. 348-1931

4x8 tilt trailer, 14-inch tires, \$450. 652-1495

Strapless ivory wedding dress, size 6. 615-225-7364

Chocolate/burgundy leather sofa, love seat, \$650 obo. 651-9738

AKC Lab puppies, available June 10, yellow, chocolate, black, male, female. 233-5620

Bunk beds, metal, red, built-in ladder, safety rails, twin, full, mattress, \$75 obo. 270-4196

Ticket to the Boonaroo Music Festival, Manchester, Tenn., \$260. 350-4932

Trombone King 3B, F-attachment, \$800; black TV table on rollers, \$45. 539-5439

HP Photosmart D-7360 photo printer, 4x6 and 8.5x11 prints, extra ink, \$80. 683-7683

Vehicles

2003 Jeep Cherokee Laredo, 2WD, 59k miles, \$11,000. 655-6701

2003 Club Car, 48 volt, DS/IQ model, \$2,150 obo. 682-6326

2001 Ford F-150, XLT, small V8, matching camper shell, 44k miles, \$11,500. 350-2971

2001 Blazer, gray, LS, leather, sunroof, power door/windows/seats, towing, \$6,000. 694-7941

2000 Expedition XLT, 2WD, 4.6L, white, loaded, 101k miles, \$6,850 obo. 534-5044

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

1999 VW Jetta GLX VR6, auto, silver, 213k miles, \$3,000. 890-0834

1998 Isuzu Oasis, 4-cylinder, automatic, seven seats, leather, CD changer, 23-28 mpg, \$5,400. 828-6213

1995 Pontiac Bonneville, V6, \$1,800. 650-0317

1994 Mitsubishi Montero, dark green, runs, 180k miles, \$2,000. (256) 239-1874

1987 Sylvan V-171 ski boat, open bow, deep V-Hull, 140 HP, \$3,250 obo. 233-7583

Wanted

Summer intern needs ride from SE Huntsville to any Marshall building. 544-1635

Paddle boat; gym-quality treadmill; coin-operated washer/dryer. 509-7907

Houses/offices to clean, available evenings, weekends. 777-8595

Free

Manchester terrier, 6 months old, all shots, doghouse. 498-3672

Correction

In the May 29 issue of the Marshall Star, the J2 rocket engine was identified as America's first liquid hydrogen-fueled rocket engine. In fact, the RL-10 engine was first.

'Focus on Marshall': Learn about Marshall Exchange services; how Marshall-designed system makes water out of urine

By Lori Meggs

It can be challenging for employees of the Marshall Space Flight Center to find time to leave their job for simple errands such as going to the store, the bank or even grabbing a bite to eat. That's where the Marshall Exchange comes in.

The June episode of "Focus on Marshall" highlights the many services of the Marshall Exchange, from the Space Shop, coffee stand and barber shop in Building 4203, to the branch of Redstone Federal Credit Union, the garage mechanic and the Wellness Center.

This month's other segment features the continued work of Marshall Center engineers and scientists supporting the

International Space Station. The group has reached a major milestone: the delivery of the new Water Recovery System. Viewers will learn how the system creates water clean enough to drink from crew urine and perspiration. This system will allow space station crews to recycle wastewater and make it possible for up to six crew members to live on board the orbiting laboratory.

"Focus on Marshall" is broadcast on Marshall TV and will air on June 5, 17 and 19 at 11 a.m., noon and 1 p.m. It also is available on NASA TV, Inside Marshall and on the NASA Portal.

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

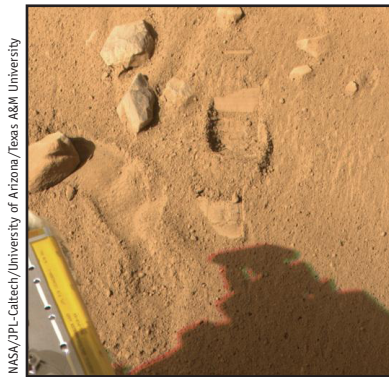
NASA's Phoenix scoops up Martian soil

From www.nasa.gov

One week after landing on far-northern Mars, NASA Phoenix spacecraft lifted its first scoop of Martian soil as a test of the lander's Robotic Arm.

The practice scoop was emptied onto a designated dump area on the ground after the Robotic Arm Camera photographed the soil inside the scoop. The Phoenix team plans to have the arm deliver its next scoopful, later this week, to an instrument that heats and sniffs the sample to identify ingredients.

A glint of bright material appears in the scooped up soil and in the hole from which it came. "That bright material might be ice or salt. We're eager to do testing of the next three surface samples collected nearby to learn more about it," said Ray Arvidson of Washington University in St. Louis,



This image, acquired by NASA's Phoenix Mars Lander's Surface Stereo on June 1, shows the so-called "Knave of Hearts" first-dig test area to the north of the lander. The Robotic Arm's scraping blade left a small horizontal depression above where the sample was taken.

Phoenix co-investigator for the Robotic Arm.

The camera on the arm examined the lander's first scoop of Martian soil. "The camera has its own red, green and blue lights, and we combine separate images taken with different illumination to create color images," said the University of Arizona's Pat Woida, senior engineer on the Phoenix team.

The Phoenix mission is led by Peter Smith at the University of Arizona with project management by NASA's Jet Propulsion Laboratory, Pasadena, Calif., and development partnership at Lockheed Martin, Denver. International contributions come from the Canadian Space Agency; the University of Neuchatel, Switzerland; the universities of Copenhagen and Aarhus, Denmark; Max Planck Institute, Germany; and the Finnish Meteorological Institute.

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