



MARSHALL STAR

Serving the Marshall Space Flight Center Community

June 19, 2008

Security measures added to Redstone Arsenal gates, communications with Huntsville Police Department improved

As a result of the May 30 police chase on Redstone Arsenal, which resulted in the death of NASA employee Darren Spurlock and the injury of other NASA and Army employees, Army officials have added security measures at all gates. Extra concrete barriers have been added, and access through the gate has been tightened and restructured to slow traffic as it nears the gate and give guards more time to assess oncoming vehicles. These additions will help prevent a recurrence of the incident in which a vehicle fleeing from Huntsville police crashed through Gate 1.

Gate upgrades planned prior to the accident are scheduled to begin in the next 30 days. While current gate security measures meet Department of Defense standards, improvements will include fortified booths and lanes for better lane control through the gates and more "Grab-It Systems" intended to stop vehicles. The Army Corps of Engineers will manage construction of the upgrades. Construction is expected to continue for the next 12 months. Gates will be improved one at a time, with efforts to manage normal

traffic flow during the construction.

Another initiative Army officials have taken is to improve communications with the Huntsville Police Department. Due to the short time lapse and speed of the suspect vehicle on May 30, guards at Gate 1 did not receive notification before the arrival of the suspects at the gate. Huntsville Police Department officials now have agreed to notify Redstone Arsenal anytime there is a pursuit near Arsenal boundaries, so that security officials and gate guards will have advance notice of a potential incident. Radio communications between the Redstone Arsenal 911 Center and the Huntsville Police Department also have been enhanced.

Meanwhile a thorough investigation of the events of May 30 continues and will provide authorities with information on what can be done to improve security. Redstone Arsenal Commander Major General Jim Myles said, "We want to tell the workforce here that we understand what has occurred. We are taking all actions needed to

See Security on page 6

Discovery home after successful mission

From Combined Reports

Space shuttle Discovery and its crew landed June 14 at the Kennedy Space Center, Fla., completing a 14-day journey of more than 5.7 million miles in space.

"I can't think of a mission that's been better than this one," said Bill Gerstenmaier, associate administrator for space operations, during a news conference at the Kennedy Center on June 14. "From launch through landing — it was phenomenal across the board."

Shuttle Discovery's launch on May 31 from the Kennedy



STS-124 crew members before heading to crew quarters after their landing aboard Discovery.

See STS-124 on page 7

NASA completes review milestone for Ares I first stage

By Craig Dunn

NASA has completed the preliminary design review for the first stage of the Ares I rocket — giving overall approval for the agency's technical design approach. This review brings NASA one step closer to developing a new mode of space transportation for astronauts to explore the moon, Mars and beyond.

"We have been working a very aggressive

See Ares I on page 6

Marshall Center's Champion and Doreswamy selected for Senior Executive Service Candidate Development Program

By Lori Meggs and Craig Dunn

Two Marshall Space Flight Center employees have been chosen by NASA Headquarters in Washington to participate in the Senior Executive Service Candidate Development Program: Robert Champion, division chief of Stage Systems Engineering and Integration in Marshall's Engineering Directorate, and Dr. Rajiv Doreswamy, deputy manager of Program Planning and Control for Ares Projects.

They were among 26 Marshall employees who applied for the development program. Only 23 candidates were selected agency-wide from more than 200 applicants.

The program, which will begin in July, provides training and prepares candidates for possible entry into the Senior Executive Service — the federal personnel system covering most top managerial and policy positions in the executive branch.

Champion, a 22-year NASA veteran, was nominated for establishing a disciplined systems engineering process and aligning organizational and employee goals in his division. His team is key to the successful in-house development of the Ares I rocket upper stage. Champion manages a team of 165 civil servants and contractors responsible for the technical integration of the subsystems that comprise the upper stage. He has served as division chief since 2007.



Robert Champion

"Participation in this program will give me an opportunity to strengthen the capabilities of my team, define my leadership style and advance my understanding of the agency from a national perspective," said Champion. "This will further develop my abilities to better serve the Marshall workforce."

From 2004 to 2007, Champion served as deputy manager, chief engineer and technical manager in the Propulsion System Engineering & Integration Office in Marshall's Space Shuttle Propulsion Office. From 2003 to 2004, he was manager for the Orbital Space Plane Project, and from 2001 to 2003 he managed the Auxiliary Propulsion Project for the Next Generation Launch Vehicle Program.

In 2000, he served as manager of Marshall's Internal Relations and Communications Department, responsible for center-wide events and managing the Marshall Star and Daily Planet. As lead for the Vehicle Propulsion System team from 1999 to 2000, he coordinated group support for projects such as the Chandra X-ray Observatory and the X-34 Main Propulsion System. From 1994-1999, he served as team lead for the design of the X-34 main propulsion systems.

A native of Woodstock, Ala., Champion began his NASA career in 1986 as a propulsion engineer in the Preliminary Design Office at Marshall. He earned a bachelor's degree in aerospace engineering from Auburn University in Auburn, Ala., in 1986.

Doreswamy, a 19-year NASA veteran, was nominated for his numerous contributions to spaceflight including designing, developing

and operating flight hardware. In Ares Projects, he supervises a staff of 90 information technologists, budget analysts, and communications and engineering management professionals. He has served as deputy manager of Program Planning and Control since January 2008.



Rajiv Doreswamy

"The experiences, training and contacts I will gain in the NASA Senior Executive Service Candidate Development Program will help me to become a more effective and efficient leader," Doreswamy said. "This will allow me to make a greater contribution to NASA's goal of bringing the Ares vehicles on line to support future spaceflight and human exploration."

Beginning in July 2007 he served as Project Integration Manager for the Ares Projects. Part of NASA's Constellation Program, Ares Projects is responsible for developing NASA's Ares I rocket, which will transport the Orion spacecraft and its crew of astronauts to space, and the Ares V cargo launch vehicle, which will carry large payloads to space during missions to the moon and beyond.

From 2006 to 2007, Doreswamy served on the executive staff of the associate administrator at NASA Headquarters. From 2002 to 2006 at Headquarters, he served as acting manager of analysis and integration for the Constellation Systems Division, operations officer for Systems Engineering and Integration Source Evaluation Board, manager of Advanced Studies and Systems Analysis, Program Executive for Space Launch Initiative and space transportation manager for the Office of Aerospace Technology.

From 2001 to 2002, he was Marshall's resident manager for the International Space Station, based at the Johnson Space Center in Houston. He also was chief subsystems engineer for the International Space Station's Propulsion Module Project from 1999 to 2001.

Doreswamy began his career at the Marshall Center in 1988 as a power systems engineer on the Hubble Space Telescope and for the Orbital Maneuvering Vehicle. Born in India and raised in Montgomery, Ala., he earned three degrees in electrical engineering — a bachelor's in 1986 from the University of Florida in Gainesville; a master's in 1988 from Auburn University in Auburn, Ala.; and a doctorate in 1999 from the University of Alabama in Tuscaloosa.

The SESCDP curriculum will take 12 to 24 months to complete. Candidates must then be certified by the Office of Personnel Management's Qualification Review Board as meeting the Executive Core Qualifications required for members of the Senior Executive Service. While participation in the Senior Executive Service Candidate Development Program does not guarantee selection for a Senior Executive Service position, it does certify those that successfully complete the program as having fulfilled the executive-level requirements for selection.

Meggs and Dunn, ASRI employees, support the Office of Strategic Analysis & Communications.

NASA's GLAST successfully launches June 11

Headquarters news release

NASA's Gamma-ray Large Area Space Telescope, or GLAST, successfully launched aboard a Delta II rocket from Cape Canaveral Air Force Station in Florida at 11:05 p.m. CDT on June 11.

The GLAST observatory separated from the second stage of the Delta II at 1:20 p.m. and the flight computer immediately began powering up the components necessary to control the satellite. Twelve minutes after separating from the launch vehicle, both GLAST solar arrays were deployed. The arrays immediately began producing the power necessary to maintain the satellite and instruments. The operations team continues to check out the spacecraft subsystems.

"The entire GLAST Team is elated the observatory is now on-orbit and all systems continue to operate as planned," said GLAST program manager Kevin Grady of NASA's Goddard Space Flight Center in Greenbelt, Md.

After a 75-minute flight, the GLAST spacecraft was deployed into low Earth orbit. It will begin to transmit initial instrument data after about three weeks. The telescope will explore the most extreme environments



Carlston Baillie for United Launch Alliance

The GLAST spacecraft and Delta II rocket leap off the launch pad.

in the universe, searching for signs of new laws of physics and investigating what composes mysterious dark matter. It will seek explanations for how black holes accelerate immense jets of material to nearly light speed, and look for clues to crack the mysteries behind powerful explosions known as gamma-ray bursts.

"After a 60-day checkout and initial calibration period, we'll begin science operations," said Steve Ritz, GLAST project scientist at Goddard. "GLAST soon will be telling scientists about many new objects to study, and this information will be available on the Internet for the world to see."

NASA's GLAST mission is an astrophysics and particle physics partnership, developed in collaboration with the U.S. Department of Energy, along with important contributions from academic institutions and partners in France, Germany, Italy, Japan, Sweden and the United States.

Marshall manages the GLAST Burst Monitor, one of two instruments on NASA's GLAST spacecraft. Development of the instrument was a collaborative effort between the National Space Science and Technology Center in the United States and the Max Planck Institute for Extraterrestrial Physics in Germany.

Take a walk on the moon

Marshall invited to tour Exploration Experience exhibit June 25

The NASA Exploration Experience exhibit, a vivid glimpse into the nation's ambitious future in space, will be open to all members of the Marshall Space Flight Center team June 25 in the south loop outside Building 4203.

Team members may tour the exhibit from noon to 3 p.m.

The exhibit, which simulates a visit to the moon, travels the nation sharing NASA's mission with visitors of all ages. Inside the 60-foot trailer are interactive control panels and activity stations, immersive 3D imagery and video and audio presentations — all designed to show Americans what it will be like to live and work on other worlds, and how that mission of discovery will benefit life here on Earth.

Marshall Center staffers will be on hand to answer visitors' questions. The exhibit is wheelchair-accessible.

The Marshall Center manages the NASA Exploration Experience for NASA's Exploration Systems Mission Directorate in Washington. For more information about this and other NASA exhibits and exploration outreach programs, visit <http://www.nasa.gov/directorates/esmd/outreach>.

For news and information about NASA's exploration mission, visit <http://exploration.nasa.gov>.



David Higginbotham/MSFC

Children chase interactive moon rocks across the "lunar surface" during a presentation in the NASA Exploration Experience theater. The traveling exhibit offers visitors of all ages a dazzling, informative look at the work now under way at the Marshall Center and across the nation to return human explorers to the moon and eventually launch crewed missions deeper into the solar system.

Mars Phoenix Lander uses tweets to bring space to Earth

By Amie Cotton

What are you doing?

Veronica McGregor, news service manager at the Jet Propulsion Laboratory at Pasadena, Calif., has been answering that question frequently as the voice of the Phoenix Mars Lander — sharing minute-by-minute activities about the Martian craft with a captive audience of over 20,000 co-workers, media and anyone else who wants to sign-up as a follower on Twitter, a Web micro-blogging service.

Started in March 2006, Twitter allows users to post brief updates, or tweets, under 140 characters via cell phone, instant messenger or the Web to connect family, friends, coworkers, etc., by simply answering the question: What are you doing?. It currently has over 1.8 million users and is proving to be one of the fastest growing social networking tools on the web.

NASA media relations specialist Rhea Borja suggested the Phoenix team use Twitter — a free service — to keep updated over the Memorial Day weekend on the Phoenix landing on May 25. That little internal networking idea has since skyrocketed to bring individuals all around the world virtually face-to-face with NASA scientists and engineers to directly ask them questions: from what programming language Phoenix uses to how many days it takes to analyze a Martian soil sample.

Cleverly, McGregor decided to personify the Mars Lander to keep within the Twitter posting parameters, explaining its work and answering questions in first person, giving Phoenix a life of its own. "I'm blown away by the success of the Mars Phoenix Twitter site," McGregor said. "We had about 3,000 followers on our Twitter account during the May 25 landing, and now we have over 20,000. That number puts us in the top 15 of all Twitter accounts. Even the founders of Twitter have noticed — they've e-mailed me too."

Twitter's popularity also has caught the attention of two of Marshall Space Flight Center's Lunar Precursor Robotic Program missions. The Lunar Reconnaissance Orbiter mission and Lunar Crater Observation and Sensing Satellite mission — both scheduled

to launch together in late 2008 — now have Twitter accounts as well.

The Lunar Reconnaissance Orbiter mission is part of NASA's first step back to the moon. Its one-year satellite mission is to find safe landing sites, locate potential resources, characterize the radiation environment, and demonstrate new technology. With particular emphasis on the moon's polar regions, the mission will return global information including day-night temperature, radiation and lighting data.

At Goddard Space Flight Center in Greenbelt, Md., Stephanie Stockman, education and public outreach lead for the orbiter and an avid twitterer, saw the success of Phoenix on Twitter and got the lunar mission onboard with a Twitter account. "Twitter is

See page 8 for Phoenix news

an effective social media tool that gives us a unique opportunity to put individuals who have not been exposed to NASA's science missions in the front seat to share in the excitement of building and launching a NASA craft to the Moon," Stockman said. "We have over 350 followers so far. Twitter gives us another open door to reach a younger audience and have them follow the satellite play-by-play."

The Lunar Crater Observation and Sensing Satellite mission — also launching with the Lunar Reconnaissance Orbiter — will investigate the presence of water ice in craters in the moon's polar regions. Three months after launch, it will impact the moon to provide data on the moon's composition by excavating craters with heavy impactors seeking water ice or hydrated minerals.

The Lunar Crater Observation and Sensing Satellite team at Ames Research Center in Moffett Field, Calif., has recently set up its Twitter account and already has a following of over 200.

Brian Mitchell, the Marshall Center's education and public outreach lead for the Lunar Precursor Robotic Program, sums it up, "Social media is becoming increasingly important in our education and public outreach efforts. Social networking tools like Twitter are the next generation communication mediums that allow the public to interact with NASA in real time. It's exciting to have NASA not only be on the cutting edge of science and technology but also communicating our achievements in such high-tech venues."

To check out the Mars Phoenix Twitter site, visit <http://twitter.com/MarsPhoenix>. For the LRO Mission Twitter site, visit http://twitter.com/lro_nasa.

For more information on the LCROSS Twitter site, visit http://twitter.com/LCROSS_NASA

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

Obituaries

Leonard Moore, 82, of Huntsville died May 27. He retired from the Marshall Center in 1981 as an aerospace engineering technician. He is survived by his wife, Obera Hundley Moore.

Leland L. Belew, 83, of Huntsville died June 6. He retired from the Marshall Center in 1980 as deputy director of Science & Engineering.

Ceremonies June 24

Marshall to recognize 244 at Honor Awards

Marshall Space Flight Center will hold its annual Honor Awards ceremonies June 24 in Morris Auditorium in Building 4200. Team members are encouraged to attend.

Awards will be presented in two ceremonies. Agency-level honors will be presented at 10 a.m., and the Marshall Honor Awards ceremony will be at 2 p.m.

Dr. Michael Ryschkewitsch, NASA's chief engineer at Headquarters,

will deliver a keynote address at each ceremony, and will join Marshall Center Director David King to make the awards presentations.

A total of 244 award recipients, including 184 individuals and 60 Marshall teams, will be recognized. A reception in the 4200 lobby will follow each ceremony.

A complete list of award recipients appeared in the June 12 edition of the "Marshall Star." For more information, visit Inside Marshall.

Buckle up, Marshall!

At right, Protective Services Officer Josh Lee hands out flyers urging Marshall Space Flight Center motorists to buckle up while driving. The center kicked off a Seat Belt Campaign on April 10, sponsored by the Safety, Health and Environmental Communications Team — part of the SHE Committee — and by the Protective Services Office in the Office of Center Operations. Protective Services began writing tickets for noncompliance June 1. To read about the campaign, go to <http://marshallstar.msfc.nasa.gov/4-10-08.pdf>.



David Higginbotham/MSFC

Moving toward NASA's 50th anniversary ...

This year marks NASA's 50th anniversary. Twenty-six years ago this month on June 27, 1982, NASA launched STS-4. This was the fourth space shuttle mission. It was also the fourth mission for the space shuttle Columbia.



Security

Continued from page 1

mitigate what happened and to ensure the safety of the people who live and work on Redstone Arsenal." The general added that there must be a balance between providing the right level of security and ensuring access to the installation for the 48,000 cars that enter it daily.

Myles also said that, although gate security is key, it's only

Ares I

Continued from page 1

plan for more than two years and making great progress on detailed designs," said Steve Cook manager of Ares Projects at the Marshall Space Flight Center. "Completing the preliminary design review of the first stage element is a critical step for development of the Ares I rocket."

Starting in 2015, the Ares I rocket will carry the Orion crew vehicle and its crew of four to six astronauts, and small cargo payloads, to the International Space Station. The first stage element, an in-line, two-stage rocket configuration, will power the first two minutes of launch for the Ares I vehicle.

This just-completed preliminary design review, which was conducted at Marshall, looked at the current designs for the first stage to ensure that the planned technical approach will meet NASA's requirements for the vehicle.

This review was part of a series of milestones that will occur before the actual flight hardware is built. Each major review provides more detailed requirements for the vehicle design to ensure the overall system can meet all NASA requirements for safe and reliable flight. The review process also identifies technical and management challenges and addresses ways to reduce potential risks as the project goes forward.

"Our government and industry team is to be congratulated on meeting this important milestone for the integrated, five-segment first stage," said Alex Priskos, manager of the first stage. "We have tackled many challenges and look forward to our first development motor firing next spring which will prepare us for our next step — the critical design review."

The Ares I preliminary design review process began in May with the first stage and continues this month with the upper stage review. The Ares I integrated vehicle preliminary design review

one element of an overarching force protection strategy. "There's a multi-layered approach to Force Protection and security on this post," he said. "Stopping a terrorist (or anyone without authorization to enter the installation) is not just about securing a gate, it's about understanding the threat to the installation."

Marshall Space Flight Center's Protective Services Office in the Office of Center Operations is working closely with Army officials to ensure the security of both the NASA and Army workforce on Redstone Arsenal.

this summer will serve as the major checkpoint for the entire Ares I vehicle. Kickoff is scheduled for late July and the review runs through September. Next year the Ares Projects will move forward to the critical design review, beginning in November with the J-2X engine. The J-2X engine will power the Ares I upper stage to orbit after separation from the first stage.

With a length of approximately 173 feet, the Ares I first stage is derived from the solid rocket boosters used on the space shuttle. The primary difference between the shuttle booster and the Ares booster is the addition of the fifth booster segment which will give the launch vehicle greater thrust, or power, to lift the entire launch and crew vehicle stack, or about 2 million pounds, to Earth orbit.

This summer, engineers will begin casting a fully functional development motor for the first five-segment test in April 2009 at ATK's facility in Promontory, Utah. The static firing of the fully-developed five-segment booster will provide valuable data including thrust, maximum internal operating pressure, acoustics and vibration data. Currently there are five ground tests scheduled for the five-segment booster.

The Constellation Program, located at NASA's Johnson Space Center in Houston, has overall responsibility for development

of the human space transportation system to accomplish NASA exploration missions to extend a human presence throughout the solar system. Johnson also is responsible for developing the Orion spacecraft and mission operations.

The Ares Projects at Marshall are responsible for design and development of the Ares I rocket and Ares V cargo launch vehicle.

NASA's Kennedy Space Center in Florida is responsible for ground and launch operations. The program also includes multiple project element teams at other NASA centers and contract organizations around the nation.

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



David Higginbotham/MSFC

Alex Priskos, manager of the Ares I first stage for Ares Projects, gives briefing on first stage changes.

Continued from page 1

Center was a very successful milestone for the Marshall Space Flight Center's space shuttle team, which is responsible for the space shuttle's propulsion system: the shuttle main engines, reusable solid rocket boosters and external tanks. Discovery's external tank, 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.

There was no foam loss from the redesigned hardware. While some foam loss occurred, it came after the critical, early phase of the flight to orbit.

Marshall Center Deputy Director Robert Lightfoot was on hand to observe the June 14 landing of shuttle Discovery and saw the orbiter up close. "Discovery looked really clean — almost like it is ready to fly again. It made me so proud of all the folks who have worked so hard to improve the entire shuttle system." said Lightfoot.

STS-124 was the second of three flights to launch components to the International Space Station to complete the Japan Aerospace Exploration Agency's Kibo laboratory. Discovery delivered Kibo's tour bus-sized Japanese Pressurized Module, which is the station's largest module.

The mission included three spacewalks to install and outfit the module and activate its robotic arm system. The lab's logistics module, which was delivered and installed in a temporary location in March, was attached to its permanent position on top of the module.

Mark Kelly commanded the flight and was joined by Pilot Ken Ham, mission specialists Karen Nyberg, Ron Garan, Mike Fossum, Greg Chamitoff and Japan Aerospace Exploration Agency astronaut Akihiko Hoshide. Chamitoff remained aboard the space station, replacing Expedition 17 Flight Engineer Garrett Reisman, who returned to Earth on Discovery after nearly three months on the station. Chamitoff will return on shuttle Endeavour's STS-126 mission, targeted for launch in November.

STS-124 was the 123rd space shuttle flight, the 35th flight for shuttle Discovery and the 26th flight of a shuttle to the station.

With Discovery and its crew safely home, the stage is set for the launch of STS-125 in October. Space shuttle Atlantis' mission will return the space shuttle to the Hubble Space Telescope for one last visit before the shuttle fleet retires in 2010. During a period of 12 days and five spacewalks, Atlantis' crew will make repairs and upgrades to the telescope, preparing it for at least another five years of research.

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 26, is 4:30 p.m. Thursday, June 19.

Miscellaneous

Intex 18'x48" frame pool, disassembled, \$185 obo; 18-foot leaf net, solar cover, \$35 each. 656-5703
Air hockey table, \$65. 776-9165
Pond fish; Wardley reptile food, 4.75-ounce cans, \$3.50 each or \$30 for 34 ounces. 828-6213
White baby crib, mattress, \$60. 265-8091
Portable Grande DGX-500 full keyboard, songs/database/voice memory. 289-9674
Mohawk Solo 14 Canoe, PFD, paddle; Royalite web seat; 39 pounds, \$475. 971-0571
Nurse scrubs, small, medium. 722-9982
4x8 tilt trailer, 14-inch tires, \$450. 652-1495
Factory mid-size GM car cover; Harwood fiberglass ram-air hood for 1999-2002 Silverado. 612-7729
Pedestals, for Whirlpool Duet or Maytag front-loading washer and dryer, white, \$250. 468-0854
Nordic Track ski machine, \$150; antique claw-foot table, \$350. 533-7234
Two Bristol Race tickets, Aug. 22, Food City 250, \$120. 682-6325
Samsung 941BW LCD 19-inch widescreen, no dead pixels,

original packaging/materials, \$125. 656-6464
Camper shell, for short-wheel base mid-size truck, \$75. 461-9894
Male Triton cockatoo, cage, \$700. 603-0608
Small Kenmore chest freezer. 503-7060
Two cherry-finish barstools, counter height, upholstered. 503-7060
Two Kenny Chesney tickets, field level, Atlanta, regular price. 417-8972
Heritage Collection 3-in-1 convertible cribs, mattress, bumper pads, sheets, changing table, \$100 each piece. 656-2965
Barbie Jeep, 6V, \$75. 351-1754
Pool pump, filter, two covers, Polaris pool vacuum, other pool accessories, \$300. 771-3227
Kit/Aid artisan mixer, onyx, 5 quart, 325 watts, 10 speeds, \$185. 539-6945
Yanmar compact diesel tractor, model YM1301, finish mower, tiller, \$2,900. 325-2919
Wood executive desk, credenza, glass protective tops, \$375. 880-9025
Green leather sofa, loveseat, \$650. 837-3562
Assorted Ham Radio equipment. 931-638-7518
1983 Sears 3-ton central air unit. 859-2270

Vehicles

2007 Chevy Tahoe LT, 5.3 V8, silver, 4x4, leather, third-row seats, 19k miles, \$35,000. 565-9918
2004 Toyota Tundra crew cab, 2WD, TRD off-road package, new tires, 50k miles, \$16,500. 714-1941
2004 Chrysler Pacifica, silver, leather, AM/FM, CD, 65k miles, \$8,400. 714-8496
2004 Ford Explorer XLT, leather, third-row seating, power windows/seats, V8, 85k miles. 762-5584
2004 G3 Yamaha 18-foot aluminum bass boat, \$20,500. 820-3759
2003 Club Car, 48 volt, DS/IQ model, \$2,100 obo. 682-6326
2003 Jeep Cherokee Laredo, 2WD, leather, cruise, CD, 59,500 miles, \$9,500. 655-6701
2002 Acura RSX-S, burgundy, loaded, six speed, alloy wheels, moonroof, 94k miles, \$12,500 obo. 652-1882
2002 Acura RSX-S, leather seats, moonroof, alloy wheels, six-speed manual, 93k miles, \$12,500 obo. 652-1882
2001 Honda CRV LX, black/gray, 102k miles, \$7,900. 883-6894 or 468-6894

2000 Dodge Dakota, extended cab, six cylinder, 125k miles, \$5,800. 655-6348
2000 TravelStar, sleeps six, bath, kitchen, \$4,000; 1989 Shadow Tunnel-V hull boat, trailer, \$4,000. 461-9841
1999 Toyota 4-Runner Limited Edition, white, brown interior, sunroof, CD, A/C, \$7,000. 694-1260
1999 Ford Explorer, Eddie Bauer edition, leather, Michelin tires, 101k miles, V6, \$5,600. 468-3749
1999 Toyota Tacoma PreRunner, auto, Alpine CD, bedliner, toolbox, 2.7 liter, four cylinder, \$7,100. 830-6584
1997 Chevy Camaro Z28, automatic, black, leather, T-tops, CD, 157k miles, \$6,000. 565-9918
1995 Pontiac Bonneville, V6, \$1,800. 650-0317
1994 MasterCraft Maristar, 225 VRS, V-Ride, 275HP, V8, 360 hours, \$16,000 firm. 714-3769
1972 Olds Vista Cruiser Wagon, 350-4BRL, green, \$5,000 obo. 682-1083

Carpool

From Athens, 7 a.m. to 3:30 p.m. 230-6819

Wanted

Houses/offices to clean; children or elderly sitting. 651-4723
Two SeaDoos or Jet skis, good double-trailer, possible 20-foot open-bow Glastron for trade. 652-5177
Nice leather/vinyl recliner, non-rocker, easy recline. 651-1531
Cat scratching post/perch. 881-6077

Free

Black Lab, 4 years old, spayed, female, all shots, great with kids. 479-3046
8-month-old yellow Lab mix. 586-2994

Found

U.S. currency, found on June 9, sidewalk between buildings 4202 and 4203; Memory stick, Building 4200 area, found on June 13. 544-4680

Lost

Revo sunglasses, Building 4200 complex, wire frame, dark orange, reward offered upon return. 544-0175

Phoenix makes first trench in science preserve

From www.nasa.gov

NASA's Phoenix Mars Lander began digging in an area called "Wonderland," taking its first scoop of soil from a polygonal surface feature within the "national park" region that mission scientists have been preserving for science.

The lander's Robotic Arm created the new test trench called "Snow White" on June 17, the 22nd Martian day, or sol, after the Phoenix spacecraft landed on May 25.

Newly planned science activities will resume no earlier than Sol 24 as engineers look into how the spacecraft is handling larger than expected amounts of data.

During the dig, the arm didn't reach the hard white material, possibly ice, that Phoenix exposed previously in the first trench it dug in the Martian soil.

That's just what scientists both expected and wanted. The Snow White trench is near the center of a relatively flat hummock, or polygon, named "Cheshire Cat," where scientists predict there will be more soil layers or thicker soil above possible white material.

The Snow White trench is about two centimeters deep (about three-quarters of an inch) and 30 centimeters (about a foot) long.

The Phoenix team plans at least one more day of deeper digging into the Snow White trench.

They will study soil structure in the Snow White trench to decide at what depths they will collect samples from a future trench

planned for the center of the polygon.

Meanwhile, the Thermal and Evolved-Gas Analyzer — or TEGA — instrument continues its ongoing experiment in the first of its eight ovens.

TEGA has eight separate tiny ovens to bake and sniff the soil to look for volatile ingredients, such as water. The baking is performed at three different temperature ranges.

The Phoenix mission is led by Peter Smith of the University of Arizona with project management at JPL and development partnership at Lockheed Martin, located in 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.

For more about Phoenix, visit: <http://www.nasa.gov/phoenix> and <http://phoenix.lpl.arizona.edu>.



NASA/JPL-Caltech/University of Arizona/Texas A&M University

NASA's Phoenix Mars Lander began excavating a new trench, dubbed "Snow White," in a patch of Martian soil located near the center of a polygonal surface feature, nicknamed "Cheshire Cat."

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