



MARSHALL STAR

Serving the Marshall Space Flight Center Community

Oct. 3, 2002

Marshall's various roles critical to STS-112 mission to Space Station

by Martin Burkey

A new piece of the International Space Station tested at the Marshall Center and new scientific experiments managed by Marshall are among the payloads on Space Shuttle Atlantis' STS-112 mission.

"The cargo aboard Shuttle Atlantis is typical of Marshall's broad capabilities in space exploration," said Dr. Jan Davis, Marshall's flight projects director. "From large structures to research at the microscopic level, Marshall's expertise continues to be a critical part of the ongoing mission of the world's only research center in space."

During the mission, Atlantis will deliver the backbone-like S1 Truss

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The S1 Truss segment inside Atlantis' payload bay

When 'parts' are not 'just parts'

by Martin Burkey

Each part of the International Space Station is a hand-crafted masterpiece of aerospace engineering.

Some of the most important parts, however, will never fly in space.

They are the "test articles" — test parts that get pushed, pulled, shaken, blasted by loudspeakers and much more to ensure that the real hardware can stand up to the rigors of launch and years in space.

One of those test articles is the obscurely named S1-STA (Starboard 1 Structural Test Article), a twin to the S1 (Starboard 1) Truss. The S1 Truss is being taken to the Space Station on the Shuttle Atlantis to be attached to the growing international research complex during three spacewalks.

See *Parts* on page 2

Students can soar to new heights in NASA's student rocket contest

by Grant Thompson

High school students from across the country will get a chance to soar to new levels — thanks to a partnership between NASA and sponsors of the Team America Rocketry Challenge.

The Team America Rocketry Challenge is a first-of-its-kind national amateur rocket competition for high school students. Co-sponsored by the Aerospace Industries Association and the National Association of Rocketry, the challenge is being held in conjunction with the nationwide Centennial of Flight celebration in 2003.

The new partnership will tie the Team America Challenge to NASA's Student Launch Initiative. The Student Launch Initiative is an educational activity designed to motivate students

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'Going for the goal'

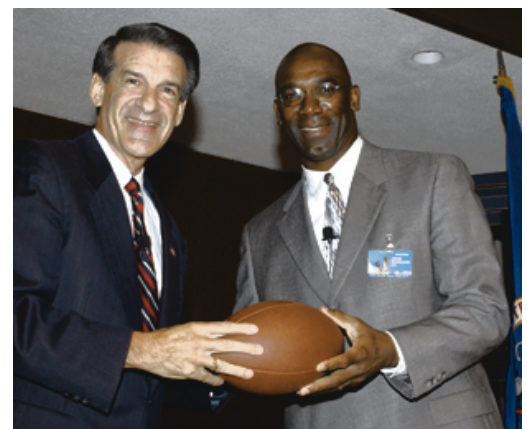


Photo by Emmett Given, NASA/Marshall Center

Marshall Director Art Stephenson, left, gets help "kicking off" the Combined Federal Campaign last week from John Stallworth, president and chief executive officer of Madison Research Corp., and recent inductee into the National Pro Football Hall of Fame. The campaign runs through Nov. 3. This year's theme is "Caring for Communities ... Going for the Goal." Marshall's goal is \$475,000.

Parts

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Primarily built of aluminum, the S1 Truss segment is 45 feet long, 15 feet wide and 10 feet tall. Fully outfitted, it weighs more than 27,000 pounds. It is one of nine similar truss segments that will serve as the Station's main backbone, measuring 356 feet from end to end when fully assembled. The Space Station's labs, living modules, solar arrays, heat radiators and other main components will be attached to the truss.

The S1-STA test article is a structural duplicate of the S1 Truss. NASA also built test articles for the Space Station pressurized modules, such as the U.S. Destiny lab and Unity connecting node module.

"It's not unusual for any manufacturer to build a test version of real hardware," said Lanny Upton, a test engineer at the Marshall Center, where both the S1 and S1-STA trusses were partly assembled and tested.

"But test articles are particularly important in developing space hardware, which is often one-of-a-kind equipment designed on a computer and is difficult or impossible to return to the factory if it fails. We can subject the test article to flight-like conditions so we can be 100 percent confident in the performance of the flight hardware when it reaches space."

The primary structure of the S1-STA truss test article was built by The Boeing Company in Huntington Beach, Calif., and flown to the Marshall Center, where the company added secondary structural components and outfitting items such as tubing, brackets, cables, said Alex Pest, a Boeing manager who oversaw assembly of both the test article and flight truss. It then underwent "modal" testing at Marshall - using machines that precisely strike the structure, like a piano key strikes a chord, to look for natural vibration frequencies that could be damaging. It was flown to Johnson Space Center in Houston to be blasted with sound from large speakers to simulate the Shuttle's enormous acoustic energy during launch and ascent. After that, it was returned to Huntington Beach to undergo pushing and pulling using hydraulic pistons to simulate the stresses the flight truss would have to endure during launch, landing, docking, temperature extremes and other aspects of its anticipated flight life.

The S1 flight truss primary structure also was built by Boeing in Huntington Beach and flown to Huntsville, where brackets, cable trays, fluid tubing and other secondary components and outfitting items were added. In Huntsville, it was screened for manufacturing flaws, including pressure- and leak-checking tubing and electrical checks for cabling, before being shipped to Kennedy Space Center, Fla., for final hardware installation and testing.

"It turns out both the flight article and the test article are almost equally important," Pest said. "We take the combination of all the worst case events and try to stress the test article to meet those worst case events. Obviously, we don't want to subject the actual S1 flight truss to those worst case tests."

The S1 Truss segment's particular job is to provide structural support for half of the Space Station's radiator panels, which cool

its complex power system components. The panels use a liquid ammonia coolant to draw off heat from the Station's solar array wings - four photovoltaic modules that turn sunlight into electricity, which power the Station. The coolant is delivered through a series of tubes to the radiators, where the excess heat is expelled into space. But the S1 is also much more than just a metal tower, which made the job of testing it more critical.

"The term truss is really a simple way of describing a very technically complex part of the Space Station," Upton said. "In fact, the truss is more like part of a building minus the walls. It may not be a 'room' like the Station's pressurized lab and other modules. But it has structural framework, cables for power, plumbing for fluids, utility trays, power outlets, brackets for fluid storage tanks, a communications antenna, video cameras for watching the outside of the 'building,' and even a track that spacewalking astronauts will use to travel along the truss."

The S1 Truss also is divided in half by a Thermal Radiator Rotary Joint that allows the heat radiators to remain pointed away from the heat of the Sun, Upton noted.

Boeing employees and support contractors built more than 140 wiring harnesses and welded hundreds of feet of metal tubing to carry fluids for the radiator panels, said Pest, who oversaw the completion of the S1 Truss. Workers designed and installed 600 pieces of multi-layer insulation to shield the S1 truss from extreme temperatures. They installed a track for a cart that astronauts will use to move easily along the truss. They built 34 umbilical mating adapters and 11 video cameras - including two of each for the S1 segment — that will be fitted along the full length of the Station framework by the time it's completed.

The adapters will serve as plug-ins for spacewalking astronauts' power tools, while the cameras will give astronauts inside the Station a full-length view of the Station's exterior. They also installed a new antenna on the S1 truss that will markedly improve communications between the Station crew and ground controllers.

The writer, employed by ASRI, supports the Media Relations Department

Obituaries

Sacks, Randy M., 44, of Huntsville, died Sept. 26.

Burial was in Maple Hill Cemetery with Rabbi Jeffrey Ballon officiating and Laughlin Service Funeral Home directing.

Sacks was a 1976 graduate of Huntsville High School and a 1980 graduate of the University of Alabama at Tuscaloosa where he was a percussionist in the Million Dollar Band. He worked at the Marshall Center as a program analyst with NASA Shuttle Integration and was a member of Temple B'nai Sholom and Etz Chayim Synagogue.

Survivors include his wife, Lisa Sacks; one son, Harrison Sacks; one daughter, Nicole Sacks, all of Huntsville; his father, Joe Sacks; his mother Harriet Sacks; and two brothers, Alan Sacks and Gordon Sacks.

First-time Shuttle viewers program open

from Marshall's Protocol Office

A Web site is open to allow Marshall civil servants who have never seen a Shuttle launch an opportunity to do so.

The First-time Shuttle Launch Viewers Program allows 54 civil servants to request an opportunity to see a launch. Each person selected is allowed to bring one guest.

Those selected will be responsible for making, and paying for, their own travel arrangements and lodging expenses. Employees can sign up at <http://ntf-2.msfc.nasa.gov/ftlvp.nsf/main> and a computer will randomly select those to attend. The next launch is STS-113 in November.

This program is in addition to the Space Flight Awareness Program, where employees and contractors are awarded a launch trip based on work performance. The Space Flight Awareness program honorees receive an expenses-paid trip but they are responsible for all guest expenses.

McMillan named head of Marshall Center's Technology Transfer Department

by Celeste Atkins

The chance to "change the world everyday" is what Vernotto C. McMillan likes best about his new job as manager of the Technology Transfer Department at the Marshall Center. In his new role, McMillan is helping businesses put NASA technology in products we use on Earth.

McMillan leads a team of 30 senior engineers, scientists and contract personnel in the Technology Transfer Department.

Marshall's Technology Transfer Department is responsible for making space technology a part of products and services used by people everyday. The department seeks to stimulate broad use of NASA-developed technologies by American private enterprise.

McMillan began his NASA career in 1983 as a materials engineer at the Marshall Center. In 1991, he served as manager

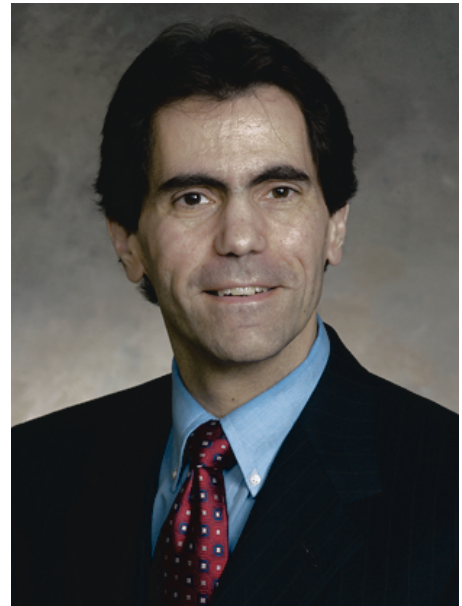
Lavoie new deputy director of Flight Projects Directorate

From the Human Resources Department

Anthony R. Lavoie has been named deputy director of the Flight Projects Directorate at the Marshall Center.

Throughout his more than 20-year NASA career, Lavoie has been deeply involved in managerial and technical aspects of systems engineering for important NASA programs and projects. He received the NASA Exceptional Service Medal in 1991 for his significant contributions to the success of the Astro 1 mission.

Lavoie most recently served as manager of the Chandra Program and was responsible for directing all Marshall Center and associated Chandra elements in the operation of the world's premier X-ray observatory. Previously, he served as chief engineer for the Tethered Satellite System Project and as office chief of telescope and science instruments in the Chandra Chief Engineers Office.



Lavoie

Photo by Emmett Given, NASA/Marshall Center



McMillan

Photo by Doug Stoffer, NASA/Marshall Center

of materials and processes in the Office of Safety and Mission Quality at NASA Headquarters in Washington, D.C. Returning to Marshall in 1992, McMillan became a subsystem manager on the Space Shuttle solid rocket motors. He assumed the role of technical manager in the Technology Transfer office in 1996 and became deputy manager of the department in 1998.

Throughout his NASA career, McMillan has received awards for job performance and dedication, including two NASA Exceptional Achievement Medals, a NASA Headquarters Special Service Award and the "Silver Snoopy" — awarded by a member of the astronaut corps for dedication in support of the Space Shuttle program.

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STS-112

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segment to the Space Station. Once attached to the Station, its main job will be to provide structural support for the orbiting research facility's radiator panels, which use ammonia to cool the Station's complex power system. The S1 Truss segment also will house communications systems, attachment points for external experiments and other subsystems.

Boeing employees and local contractors built more than 140 wiring harnesses and welded metal tubing to carry power and fluids for the Station's cooling radiator panels. They designed 600 pieces of multi-layer insulation to shield the S1 truss from the extreme cold and heat of space. They also built 34 umbilical mating adapters and 11 video cameras that will be fitted along the full length of the Station framework by the time it's completed.

The adapters will serve as plug-ins for spacewalking astronauts' power tools, while the cameras will give astronauts inside the Station a full-length view of the Station's exterior. Boeing workers also installed a new antenna on the S1 truss that will markedly improve communications with ground controllers.

"This is much more than just a structural component," said Alex Pest, a Boeing manager who oversaw the

completion of the S1 truss. "It's a very important part of the Station."

Test engineers used both electromagnetic shakers and hydraulic cylinders to simulate events such as launch, assembly, Shuttle docking and other stresses that the truss will have to withstand.

"Testing allowed engineers to prove that the truss as built matched the strength requirements of the design, as well as verify electrical connections and fluid line integrity," said Marshall test engineer Alan Patterson.

To continue scientific research of the fifth crew to occupy the Space Station, Atlantis will carry three new experiments for transfer to the Station and additional samples for a fourth. Four completed experiments will be transferred from the Station to the Shuttle for return.

The exchange of scientific experiments represents research in the fields of medicine, biotechnology, agriculture, petroleum processing and pharmaceuticals. Two of the experiments headed to the Space Station involve commercial research sponsored by private industry through NASA's Space Product Development Program at the Marshall Center. A third is fundamental research managed by the Macromolecular Biotechnology Program at Marshall.

The Commercial Generic Bioprocessing Apparatus (CGBA) will serve as a refrigerator to stabilize biological samples from the Plant Growth Bioprocessing Apparatus for post-flight analyses. The Plant Growth Bioprocessing Apparatus (PGBA) will fly to the Station to investigate the effects of microgravity on plant structures. Following flights on Expeditions Two and Four, the Protein Crystal Growth Single-locker Thermal Enclosure System (PCG-STES) again will provide a temperature-controlled environment for growing high-quality protein crystals of selected proteins in microgravity for analysis on the ground. And the Shuttle will bring fresh Zeolite Crystal Growth (ZCG) samples for processing.

Returning to Earth with Atlantis on this mission are soybean plants grown in the Advanced Astroculture experiment, PCG-STES protein crystals for analysis, experimental capsules for drug delivery from the Microencapsulation Electrostatic Processing experiment, liver cell tissue samples cultured in the StelSys experiment, and Zeolite Crystal Growth samples processed during the mission.

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Center Operations Directorate 2002 Award recipients

On Sept. 18, the Center Operations Directorate held its 2002 Awards Day. Performance Awards, Marshall Values and Principles Awards, and Peer Awards were presented. In the left photo, May Vales and Farley Davis are all smiles



after being selected as the Directorate's "MVP" award winners for exemplifying the values of "People, Customers, Teamwork, Innovation and Excellence" as well as safety in their work. In the right photo, the winners of the Peer Awards are, from left, Barbara Feaster, Becky Hopson, Carolyn Landry, Jimmy Phillips, Julian Hamilton and Annette Tingle. Not pictured are Joe Edmondson, Donna Holland-Jackson, Melvin Scruggs and Charlie Winkler. The Center Operations Directorate provides the Marshall Center with everything from basic utilities, laboratory and office space, to graphics, security and cutting-edge information technology.



Photos by Terry Leibold, NASA/Marshall Center

Sputnik began modern space age 45 years ago

by Bob Jaques

Forty-five years ago, on Oct. 4, 1957, an event occurred that shook the world and ushered in a new era. That event was the successful launching of Sputnik 1 by the former Soviet Union. The new era was to be called the Space Age.

Sputnik 1, the first of three satellites in the Sputnik program, was about the size of a basketball and weighed 184 pounds. It orbited the Earth every 98 minutes in an elliptical path. There were no instruments on Sputnik 1, and the only sound it made was a continual “beep-beep.” The “beep-beep” transmission stopped 22 days later and the satellite continued its silent orbit until it burned up during re-entry into Earth’s atmosphere on Jan. 4, 1958.

The story actually begins in 1952, when the International Council of Scientific Unions decided to establish July 1, 1957, to December 31, 1958, as the International Geophysical Year because solar activity would be at its peak. The Council passed a resolution for artificial earth satellites to be launched during that year to map the Earth’s surface. However, neither Sptunik 1 nor the U.S. satellite Explorer I ever mapped the Earth’s surface.

In July 1955, the White House announced plans for the United States to launch a satellite aboard a Navy Vanguard rocket during the International Geophysical Year. The American proposed satellite was to weight only 3.5 pounds. However, on Dec. 6, 1957, the Vanguard rocket blew up just after liftoff – putting U.S. launch plans farther behind schedule. The United States wanted to be first to launch a satellite during the International Geophysical Year, but the orbiting Sputnik 1

changed those plans.

Immediately following the Sputnik 1 launch, the Defense Department responded to public furor by approving the funding for another satellite project. The alternative to the Navy Vanguard rocket was Dr. Wernher von Braun and his Redstone Arsenal team in Huntsville. They began work on Explorer I, which would be the United States’ first successful satellite, launched less than four months later on a modified Jupiter rocket known as Juno.

Sputnik 1 opened the door for new political, military, technological and scientific events, and it marked the beginning of the U.S. and Soviet space race. But it directly led to the formation of the National Aeronautics and Space Administration, which was created in July 1958.

What was the most important result of the launching of Sputnik?

In a 1997 interview with the New York Times, former NASA Chief Historian Dr. Roger Launius said, “I would say ... a galvanizing of public opinion in favor of a national effort to undertake an aggressive exploration of space.”

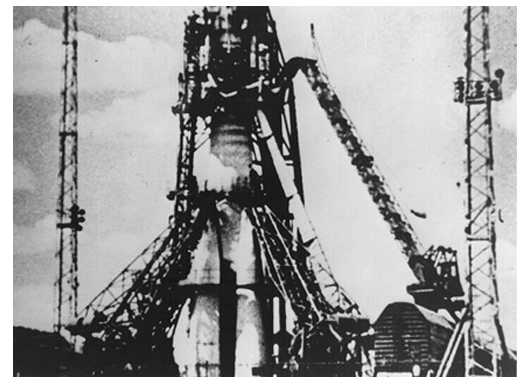
The Russian satellite inspired all types of marketing ideas in the United States. A bakery in Milwaukee called their doughnuts “sputnuts,” and a café offered “sputnikburgers.” At a Lansing, Mich., hairdresser’s convention there was a new hairdo creation called a “Sputnik.” This had the hair wrapped around the head with an upward flair, covering the ears and topped with a 4-inch plastic model satellite with antennae.

Twelve years after Sputnik 1, the United States landed a man on the Moon. But it was Sputnik 1 that began the modern space age 45 years ago.



An internal view of Sputnik 1

Marshall Imaging Services



The launch of Sputnik 1 aboard a Soviet R-7 rocket.

The writer, employed by ASRI, supports the Marshall history office.



MARS softball 2002 champions

The NASA softball league plays from April to August with a season-ending double-elimination tournament. All Marshall civil servants and on-site contractors, approved off-site contractors and family members are eligible to participate. Division II Champions this year are the "Renegades," left photo. Team members are, in front row, from left, Debbie Scrivner, Mark Walton, Bill Hicks, Randy Reed, Shawn Selvidge and Greg Rowan. Back row, from left, Rob Ray, Rob Milton, Mike Rorex, Corey Harrell, Steve Knight and Chris McGougan. Not pictured are John Hutt, Louie Clayton, Joel Anderson and Derek Wang. Division III Champions this year are the "TBE Integrators," right photo. Team members are, in front row, from left, Jimmy Wrape, Britney Wagner, Nathan Neveu, Leigh Young and Austen Young. Back row, from left, Brad Mason, Gary Wagner, Scott Walter, Sean Buntin, Rantz Berryman, Boyd Evans and John Geiger. Not pictured are Cliff Jones, Torsten Segewitz, Cory Wagner, Donna McLamb, Beth Young and Lisa Martin.



Marshall Imaging Services

Students

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toward careers in science, math and engineering, while giving them a taste of practical, hands-on aerospace work.

Introduced in the fall of 2000, the program, based at the Marshall Center, inspires students to design, build and launch reusable rockets and real science payloads.

"We are excited about the opportunity to join two nationally recognized organizations and expand this opportunity for using rocketry as a learning tool," said Marshall Director Art Stephenson. "The partnership will offer hands-on experi-

ence and provide a learning forum for students and teachers across the United States through building advanced reusable rockets."

The joint venture will enable the top 10 teams in the Rocketry Challenge competition to submit proposals to participate in the 2003-2004 Student Launch Initiative at Marshall. Up to three high school teams will be selected to participate and be mentored by Marshall engineers and scientists. With guidance from their mentors and teacher representatives, each student team will design, build, test and launch a reusable vehicle and payload

aiming for an altitude of 5,280 feet, or one mile.

After completing the project, the three teams will be eligible to receive an invitation to attend Space Camp at the U.S. Space and Rocket Center in Huntsville.

The Team America Rocketry Challenge will select winners from the top 100 schools nationwide at a fly-off competition in Northern Virginia May 10-11, 2003.

For more information go to <http://education.msfc.nasa.gov/docs/127.htm> or <http://www.rocketcontest.org>

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Safety Day set for Oct. 23

Safety Day at the Marshall Center is 7 a.m.-3 p.m. Oct. 23. An awards ceremony is scheduled at Bldg. 4200 in Morris Auditorium, and a Safety, Health & Environmental Fair will feature displays by vendors and organizations.

This year's theme is "Working Together for a Safe and Healthy Work Environment."

Some of the required activities for all Marshall Center organizations are to review SHE reference handouts with employees, verify that each employee can name his or her organization's Marshall Safety and Action Team and SHE Committee members and to review the new SHE Committee System with employees.

Job announcements

MS02C0229, AST, Aerospace Flight Systems, GS-0861-15. Second Generation RLV Program Office, Systems Engineering and Integration Office. Competitive placement plan. Closes Oct. 9.

MS02C0230, Executive Support Assistant, GS-303-08. Office of the Chief Financial Officer. Competitive placement plan. Closes Oct. 11.

Center Announcements

CFC Community Service Days activities and bus tour open

Volunteers can sign up to work with the Salvation Army and United Cerebral Palsy during Combined Federal Campaign Community Service Days. For more information, go to <http://ntf-2.msfc.nasa.gov/cfc2002.nsf/csd>. To register for the Combined Federal Campaign bus tour, go to <http://ntf-2.msfc.nasa.gov/cfc2002.nsf/bus>.

AUTOTESTCON conference begins Oct. 15

The Institute of Electrical and Electronics Engineers is sponsoring AUTOTESTCON 2002 -- an international conference that for 37 years has gathered the military/aerospace automatic test industry together to share new technologies, discuss innovative applications and exhibit products and services. This year's event is Oct. 15-17 in the South Hall of the Von Braun Center. Admission on Oct. 16 is free to anyone with a Marshall Center or Redstone Arsenal badge. For more information, go to <http://autotestcon.com/2002/2002.htm>.

Training schedule changed

The training course "Introduction to Contract Administration" has been changed to 1-4:30 p.m., Oct. 17, Bldg. 4200, Room G-13E.

Disposal Operations sale is Tuesday

A drop-by spot bid sale will be from 9 a.m.-2 p.m. Oct. 8 at Intergraph Building 21, 470 Dunlop Blvd., Huntsville. Disposal Operations at the Marshall Center is conducting the sale, which will consist of 12 IBM compatible desktop computer systems, five monitors, two shipping containers and 32 lots of assorted furniture including chairs, desks, computer tables, bookcases, file cabinets, podium, examining chair and storage cabinets. For more information, call 544-4667, Greg Tate at 544-1774 or go to <http://www.gsaauctions.gov>.

Space Society event features Konrad Dannenberg

Konrad Dannenberg, a propulsion engineer for Dr. Wernher von Braun's A-4/V2 rocket team, will speak from 7-8:30 p.m. Thursday at the Huntsville-Madison County Public Library. His topic will be "60th Anniversary of the A-4: The First Rocket to Reach Space." The event is sponsored by the local chapter of the National Space Society and is open to the public. There is no admission charge. For more information, call Ronnie Lajoie at 721-1083 or e-mail HAL5@hiwaay.net.

Travel document updates available

The Travel Office at Marshall has received numerous calls from preparers saying that they are being instructed to enter all travel through Oct. 21. This is incorrect. Authorizations for travel beginning in fiscal year 2002 should already have been completed. Do not enter any authorizations for travel beginning in fiscal year 2003 until you have received the new travel URL. Documents entered under the old URL will not move to the new URL. Payment of vouchers will not resume until sometime after Oct. 21. For more information, call 544-7312.

2002 physical inventory under way

A 100-percent physical inventory of controlled equipment at the Marshall Center has begun. All controlled equipment should be made available when inventory teams arrive in your department. For a schedule of assigned scanning times, go to <http://inv2002.msfc.nasa.gov>.

FIRST Robotics Competition volunteers needed

The Marshall Center's Education Programs Department is requesting volunteers to work with local and area schools involved in the For Inspiration and Recognition of Science and Math Robotics Competition. A meeting for volunteers is at 10:30 a.m. on Oct. 8. For more information, call Beth Ingram at 544-0774 or visit <http://www.usfirst.org>.

MARS Tennis Club tournament is Saturday

The October tennis club tournament begins at 8:30 a.m. with warm up at 8 a.m. Saturday. Only MARS Tennis Club members may participate and partnerships will be announced prior to play. For more information or to play, call Ronda Moyers at 544-6809. The September closed Hi-Lo tournament results were Joe White and Bernice Bowling, first place; Waymon Carver and Art Lapietra, second place; Roy Germash and Roger Roe, third place; Martin Burkey and Cathy White, fourth place.

WebTADS has new labor codes for 2003 fiscal year

All labor codes for fiscal year 2002 have been de-activated in WebTADS. After employees add their new labor codes for fiscal year 2003, they can easily delete the inactive codes by clicking on the red "X" to the left of the code. If employees are unsure of which code to choose, they should contact their organization's resource analyst.

Maxiflex tour information available

Marshall employees will have the option to use the new maxiflex tour schedule beginning Sunday. The maxiflex tour is intended to increase an employee's flexibility in completing the basic 80-hour pay period. For more information, go to http://hrd.msfc.nasa.gov/maxiflex_info.html.

1972 Butler High School class reunion is Friday and Saturday

The 30-year Butler High School in Huntsville class of 1972 reunion begins at 6 p.m. Friday at the Huntsville Marriott. There will be a picnic at 10:30 a.m. Saturday at Ditto Landing with a 7 p.m. social at the Huntsville Marriott. Tickets are \$75 a couple or \$40 for singles. For more information, call 256-325-0785.

Employee Ads

Miscellaneous

- ★ Home gym, already assembled, asking \$250. 489-1487
- ★ Warren & Sweat climbing tree stand, 3 yr. old, \$80. 961-1291/Ted
- ★ Dynamo pool table, 3 yrs. old, accessories, cues, balls, wall mount racks, etc., \$800. 256-852-6884
- ★ Queen bedroom suite, \$750; pine bunk beds, \$200; "Cool Wave" slide, \$50. 880-9754
- ★ King 606 student trombone, \$225; Conn 50H trombone w/F attachment, \$75. 881-6388
- ★ Formal solid cherry dining room set, two captain and six regular chairs w/buffet, \$1,950. 351-6066/656-2965
- ★ Kitchen-Aid Superba Whisper Quiet washer/dryer, washer need timer, 4200. 881-6388
- ★ Nordic track Walk-fit treadmill, \$200. 931-433-0975
- ★ Wireless pet fence, never used, \$175. 256-498-5332
- ★ 1978 172N, 180HP, King IFR, VFR GPS, 4-place intercom, reupholstered, Horton STOL, \$68,999. 256-852-7662
- ★ Alabama vs. Ole Miss tickets, Section U3-P, Row 21, four at \$50 each. 655-3065
- ★ Multi-brown couch w/two recliners, 3 cushions, 2 throw pillows, matching chair, \$175. 256-603-8837
- ★ New (zero hours) Craftsman 10K watt generator, \$2,200. 830-5157
- ★ Sectional sofa, 3 piece, w/two recliners & queen bed, \$375. 256-603-8837
- ★ Fresh water shrimp, harvesting pond Sept. 28-29, bring your own cooler/ice. 931-937-4643
- ★ Sterling/bar, size 7', slate pool table, fluorescent light and accessories included, \$12,000. 881-9150
- ★ 2002 Haulmark race trailer, 28', 20K GVWR, bumper pull, roof vents, interior lights, \$6,500. 837-5862
- ★ Black and white Clarence House fabric wall-hanging, "La Vie Parisienne," \$375. 882-1097
- ★ 1997-2000 Ford Explorer hood mounted bug deflector. 881-0457
- ★ Nordic Track Gold, power meter, butterfly, manual, operation video, \$400. 837-6797

- ★ Bach Stradivarius trumpet, \$1,300; Epiphone Stratocaster guitar, \$100; Apple Quadra 605, make offer. 851-8085
- ★ Bassett dining room suit, solid cherry, table, 6 chairs, china cabinet, and buffet, \$4,000. 881-0883
- ★ Trampoline, \$75. 351-9822
- ★ Jack Russell puppies, one male, one female, 1st shots and wormed. 961-0431
- ★ Beer making kit, capper, six case bottles, used 5 times, \$75. 551-9060
- ★ Boy's dark finish bedroom suite, full headboard, footboard, metal rails, mirrored dresser, chest, \$450. 256-498-6568
- ★ Wooden room divider, \$175; computer desk, \$65; sofa table, \$90; bar stool, \$15. 534-0939
- ★ Dirt Devil Deluxe upright vacuum w/ attachments, \$45. 461-8369
- ★ OSB "wafer" board, _", \$5 per sheet; _" T&G \$10 per sheet. 851-1854
- ★ Bedroom suite: dresser, chest, bed, end tables, Oak w/Pecan finish. 256-586-7424
- ★ Lionel train set, postwar w/box, \$150. Lionel switcher/calf unit set, new, \$120. 306-0700

Vehicles

- ★ 1991 Mercury Grand Marque, 92,737 miles, garage kept, well maintained, metallic gray. 881-6040
- ★ 1991 GMC Sierra, black, CD player, PW, PD, customized, \$4,500 obo. 751-2731/565-0230
- ★ 1994 Ford Ranger XLT, 4x4, ext. cab, 4.9L engine, 5-speed, \$4,500. 256-878-1579/878-9082
- ★ 1999 Camaro, teal, new tires, loaded, below NADA. 256-656-5552
- ★ 1999 GMC Sierra, extended cab, fully loaded, \$16,900. 721-0872
- ★ 2001 Ford Taurus, V6, CD, all-power, keyless entry, low mileage, \$13,000. 533-9356
- ★ 1997 Neon, purple, 88K miles, 2-door, sport wheels, auto, CD, tilt/cruise, windows leak, \$2,900. 851-1854
- ★ 1998 Chevy S-10, 5-speed, LS, 50K miles, a/c, alloy wheels, bedliner, \$4,950 firm. 256-753-2278
- ★ 1996 Toyota Avalon, dark green, all leather,

- loaded, \$6,900. 256-728-5768
- ★ 1991 GMC Explorer van, 58K actual miles, a/c, all-power, auto, TV/VCR/CD, radar detector. 256-232-5552
- ★ 1997 GMC, 4x4, _ ton pickup, short step-side, 4" lift kit and roll-bar, \$2,800 obo. 683-9364
- ★ 1999 VW Cabrio GLS, 5-speed, white/black, leather, Pioneer CD, security system 57K miles, \$13,000. 880-2859
- ★ 1990 PathfinderSE, 2-door, red, 5-speed, 4WD, cassette, 168K miles, new tires, grill guard, \$3,600. 256-864-3133
- ★ 1989 Dodge Caravan, 143K miles, \$1,500. 230-6819
- ★ 1997 Ford Explorer XLT, loaded, AWD, 98K miles, \$5,500. 895-8306
- ★ 1997 Toyota Camry, gray, 92K miles, CD player, sun-roof, new brakes, \$8,100. 420-6577
- ★ 1993 Lexus SC320 sports coupe, gold package/spoiler, leather, sun-roof, 12-CD, 170K miles, \$9,000. 651-3422
- ★ 1999 Avalon XL, leather, sun roof, 85K miles, side a/b, \$14,700. 880-9025.

Wanted

- ★ Dirt bike/motocross bike. 325-6000
- ★ Two or three tickets to Alabama/Mississippi State or Alabama/Auburn football game. 883-2757
- ★ Carpooler(s), West Limestone County to Bldg. 4200 area, "first Friday shift," 7 a.m.-4:30 p.m., Non-smokers. 256-614-0044

Free

- ★ White Terrier, mixed breed, 1 yr. old, female/spayed, very energetic, good w/ children. 520-3553

Found

- ★ Sunglasses, Bldg. 4200. Call 544-3623 to claim/identify
- ★ Blood test kit, Bldg. 4201 parking lot. Call 544-3623 to claim/identify

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