MARSHALL STAR

Serving the Marshall Space Flight Center Community **Feb. 26, 2004**

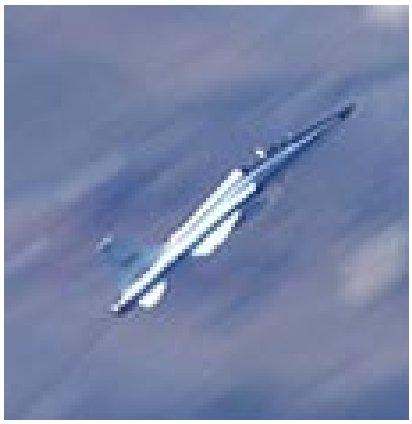
High-flying imaging testing part of NASA's Return to Flight

by Jonathan Baggs

Engineering and feasibility testing of a potential air-based imaging system for tracking the Space Shuttle during ascent was conducted at the Marshall Center last week.

A recommendation in the Columbia Accident Investigation Board report is that NASA should improve the imaging system for the Space Shuttle during ascent. NASA is exploring ways that this can be accomplished by mounting cameras on ships or aircraft.

David Higginbotham, Marshall Center



Marshall Imaging Services

A U.S. Army Huey helicopter, left photo, uses a gimbal-mounted imaging system to target a NASA T-38 aircraft, right photo, during engineering and feasibility tests for tracking a Space Shuttle ascent.

The exercises last week at Marshall, involving a U.S. Army Huey helicopter and a NASA T-38 aircraft, are part of NASA's effort to determine the feasibility of putting an imaging system on a high-flying aircraft.

Rodney Grubbs, chairman of NASA's DTV Working Group at Marshall, said his team found that NASA has two WB57 aircraft.

*See **Imaging** on page 2*

Four Marshall Center contractors selected for 2003 Excellence Awards

by Ron Mize

Four Marshall Center contractors will be recognized with a 2003 Contractor Excellence Award — presented annually to recognize outstanding product and service contributions made by contractors to the Marshall Center.

ATK Thiokol Propulsion of Brigham City, Utah, and Hamilton Sundstrand Space Systems Inc. of Windsor Locks, Conn., were co-winners in the large business product category. Teledyne Brown Engineering Inc. of Huntsville won in the large business service category. ERC Inc. of Huntsville was selected in the service category for small businesses. No applications were received for the small business product category. Marshall Center Director David King will present the awards at a future date.

"These contractors have made significant contributions to the mission of the Center over the past three years," said Dr. Jan Davis, Marshall's director of Safety and Mission Assurance. "These winners will be publicly recognized by the Center and will become the Marshall Center's nominees for the George M. Low Award."

The George M. Low Award is NASA's

*See **Excellence** on page 3*

NASA's new vision inspires students in Great Moonbuggy Race

by Jack Robertson

Student teams from New Jersey to Arizona are creating human-powered vehicles, similar to the first vehicles that roamed the lunar surface in the 1960s, to compete in NASA's Great Moonbuggy Race in Huntsville on April 2-3.

On Jan. 14, as President Bush announced new goals for America's space program to return to the Moon and explore beyond, students across the nation were already working to support the new NASA

*See **Moonbuggy** on page 4*

Imaging

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"They are very high-flying aircraft – 65,000 feet," he said.

But Grubbs' team could not find a gimbal system large enough to house the high-definition camera system required to get the image quality needed of a Space Shuttle racing toward orbit. That's when they remembered the Army's "Fat Boy," an imaging system in a large gimbal built by Southern Research Institute (SRI) in Birmingham.

"We asked Southern Research if the Fat Boy gimbal could be modified to fly on a WB57 aircraft and their answer was 'yes,'" Grubbs said. "So we've been working with SRI to see what was needed to modify the gimbal and fly it on the nose of a WB57. The project is called the WB57 Ascent Video Experiment (WAVE)."

The team needed to test the tracking system's performance to see if it could follow a moving target, such as a Space Shuttle, throughout a specified period of flight. They also needed data on command and control of the system. If flown in the nose of a WB57, a controller in the aircraft's rear seat would operate the system.

During the tests at the Marshall Center, the Huey helicopter stood in for a WB57 aircraft, while the NASA T-38 substituted for the Space Shuttle. On the helicopter's side was "Fat Boy" – the gimbal carrying a HDTV camera, an infrared camera and an acquisition or "wide-field-of-view" camera.

"We calculated the speed and trajectory of the T-38 and where the helicopter was going to have to be to approximate flight conditions of a Space Shuttle," Grubbs said. "We flew the helicopter at 2,000 feet altitude and slightly less than two miles away from the target, which in this case was the T-38."

At a predetermined time and flying at 300 knots approximately 500 feet above ground, the T-38 "pulled up," or began a 45-degree ascent to an altitude of 5,000 feet.

Results of the tests are being studied.

Grubbs said the Marshall Center is responsible for the sensor package, lens, cameras and recorders that will go into the imaging system. Johnson Space Center in Houston is responsible for the aircraft that will carry the system. Last week's feasibility and engineering study was conducted through a Marshall-managed contract with Southern Research Institute.

"Marshall will remain responsible for the sensor package," Grubbs said. "So, this is a joint project between Marshall and Johnson. Since the Army already had a Fat Boy, it made it easy for us to have an imaging platform and we used them to help us with the test. The Air Force is going to help us with the contract with SRI to actually build the gimbal if we get approval."

The writer, an employee of ASRI, is the Marshall Star editor.

Photo by David Higginbotham/Marshall Center

Tim Ricks, senior project engineer for captive flight tests, stands near "Fat Boy," the gimbal system that holds an array of photographic equipment used in recent imaging tests at the Marshall Center.

Photo by Emmett Given, NASA/Marshall Center

NSSTC Director Smith kicks off luncheon

Gerald Smith, executive director of the National Space Science and Technology Center in Huntsville, speaks to Marshall Association members during the group's recent 2004 kickoff luncheon and membership drive. Open to civil service employees only, dues are $25. The association provides a forum for the exchange of ideas and information through guest speakers and forums. It also hosts a scholarship program for dependents of Marshall civil service employees.

U.S. Space & Rocket Center pathway will recognize Saturn V restoration donors

from the U.S. Space & Rocket Center

The U.S. Space & Rocket Center is creating a pathway and courtyard to recognize donors who participate in helping restore the Saturn V on the museum's grounds.

"The Apollo Walk" that eventually will lead to a building housing the rocket will be made up of bricks with the names of donors etched into them. The "Apollo Circle" courtyard will have six monuments -- one representing each landing on the Moon.

The four-inch by eight-inch bricks in the walkway will sell for $100 and can be personalized with two lines of 17-20 characters each. The eight-inch by eight-inch tiles in the courtyard will sell for $1,000. For more information, e-mail saturn@spacecamp.com.

The Saturn V at the U.S. Space & Rocket Center is one of only three left in the world.

Excellence

Continued from page 1

most prestigious award for quality and performance in the aerospace industry. NASA will present the 2004 Low Award in spring 2005.

Contractor Excellence Award nominees are scored in seven areas, including; customer satisfaction and contract technical performance, schedule performance, cost performance, management initiatives responsive to Marshall's strategic goals, leadership and continuous improvement, and innovative technology breakthroughs.

ATK Thiokol Propulsion has had a key role with NASA and the Marshall Center by providing the Reusable Solid Rocket Motor (RSRM) for the Space Shuttle. The RSRM inventory has been maintained by ATK Thiokol at a level that allows NASA flexibility to adjust the flight-set delivery sequence. Contract hardware delivery has been in compliance with the schedule 100 percent for the last 13 years.

Seeking opportunities to reduce costs and improve reliability and safety, ATK Thiokol realized a 25 percent reduction in RSRM cycle time during the last four years and implemented initiatives resulting in program improvements of $13.5 million on the RSRM Buy 4 contract.

Hamilton Sundstrand Space Systems International Inc. (HSSSI) is a world leader in designing and building environmental control and life support equipment. HSSSI has been under contract with the Marshall Center since April 1998, to develop two re-generable life-support systems for the International Space Station. These systems, the Water Processor Assembly (WPA) and Oxygen Generation Assembly (OGA), are to be installed within the Space Station's Node 3.

The Marshall evaluation of HSSSI's technical performance and schedule commitments of the Node 3 WPA and OGA systems has consistently been rated "Excellent." During the past year, $1.05 million in cost savings and avoidance were implemented on overhead and program processes.

HSSSI has incorporated strategies, goals and actions into a long-term strategic plan to ensure alignment with NASA and the Marshall Center in key areas of safety, technology, quality, and leadership development.

Teledyne Brown Engineering has a 50-year heritage of providing engineering, manufacturing and technology support services to government and industrial customers. Current NASA support includes payload integration for the International Space Station under contract to The Boeing Co.

Teledyne also provides services and support to Marshall for various programs and operations such as the Operation and Maintenance of Propellants, Pressurants and Calibration services for the Center and Engineering, Analytical, and Integration Support to the Glove box and Biotechnology Programs.

Teledyne Brown has realized a cost savings of $10 million during the last three years of Marshall Center support. By cross-training and hiring personnel with diverse backgrounds, Teledyne Brown has controlled costs to almost nine-percent below plan. Throughout Teledyne's successful and productive relationship with Marshall, safety and quality assurance has been a major company commitment.

ERC Inc. has supported the Marshall Center for the past 14 years as a Small Business Administration-certified small disadvantaged business. Currently, ERC Inc. has three contracts and subcontracts with Marshall. The support contracts are for the Engineering Design, Analysis and Evaluation (EDAE) of Reusable Solid Rocket Motor Performance; Operations and Maintenance of Propellants, Pressurants and Calibration Facilities (PP&C); and Engineering, Science and Technical Support Services. A fourth contract to provide Test Operations Support to both the Marshall Center and Stennis Space Center in Mississippi began in August 2003.

ERC has been highly responsive to rescheduling, workaround, and reprioritized work activities and has consistently operated at or below the estimated contract cost. ERC Inc.'s emphasis on cost-reduction and cost avoidance has yielded a 27-percent reduction of planned spending halfway through the EDAE contract. ERC Inc. avoided 60 percent of the $30,000 cost of installing MetCal software in the Calibration Laboratory on the PP&C contract.

The writer is the Marshall Center's quality management associate in the Safety and Mission Assurance Office.

International Space Station crew to step outside Thursday

NASA Headquarters release

On Thursday, for the first time, an International Space Station crew will conduct a spacewalk with all crewmembers working outside the orbiting laboratory.

Expedition Eight Commander and NASA Science Officer Mike Foale, and Flight Engineer Alexander Kaleri, will work outside the Station for a five-and-a-half hour excursion to replace technological experiments and survey the exterior of the complex. Foale and Kaleri have a total of seven spacewalks to their credit. It will be the 52nd spacewalk in support of the assembly and maintenance of the Station.

The spacewalk will be covered live on NASA Television beginning at 2 p.m. CST.

The Russian and U.S. space programs are very experienced in spacewalks of this kind. From the Russian Salyut and Mir space stations, cosmonauts performed about 50 two-person crew spacewalks without a crewmember inside.

During a status briefing, Foale pointed out that he and Kaleri would be much safer than the Apollo astronauts, who sometimes ventured far from their landing site on a Lunar Rover.

Foale said he and Kaleri were confident that mission controllers in Houston and Moscow would act as "our third person," and said this is the kind of spacewalk "we all must get used to."

Moonbuggy

Continued from page 1

vision for space exploration. Students are undertaking their moonbuggy projects hoping the skills they learn now may one day put them on the Moon, or that their designs someday may be used on the lunar or Martian surface.

Their challenge, and the Great Moonbuggy competition, is inspired by the first lunar roving vehicles, created more than 40 years ago at the Marshall Center. Building a racing buggy gives students hands-on experience that could pay off in returning humans to the Moon, and journeying to Mars and beyond.

"The Great Moonbuggy Race is an excellent example of how NASA is inspiring young people and at the same time aligning its education outreach with the President's new vision," said Dr. Adena Williams Loston, NASA associate administrator for education.

The teams competing in the Great Moonbuggy Race encounter some of the same challenges conquered by the original Lunar Rover team in the 1960s. That team was challenged to design a vehicle that was compact, durable and able to handle the rigors of a tough, unflinching environment.

Team members met that challenge. Astronauts used separate Lunar Rovers on the final three Moon missions — Apollo 15, 16 and 17 — to travel 52 miles, gather 620 pounds of rock and soil samples, and return them to Earth.

"This competition prepares young men and women to study science, technology, engineering and technology needed to take explorers to the Moon and Mars," said Durlean Bradford, Moonbuggy Race coordinator in Marshall's Education Programs Department. "Some of these moonbuggy racers could be chosen to make the trips or design and build the machines that will help our nation reach those goals. That's something to be excited about."

The student's Moonbuggy challenge is to design a human-powered vehicle able to fit into a space no more than 4-feet by 4-feet by 4-feet that also must be quickly unfolded and ready to ride, yet light enough for its two drivers to carry. During the race, the two operators — one male, one female — power and drive the vehicle over a half-mile obstacle course of simulated moonscape terrain.

In addition to working issues of design, fabrication and teamwork, the budding student engineers must make sure the buggies work and can withstand the punishment of the rigorous course obstacles. The riders must be in top physical condition to pedal the tough course.

In 2003, 55 teams from 20 states and Puerto Rico participated. This year, high school teams will race April 2 and college teams will compete April 3.

Prizes are awarded not only for the fastest vehicles, but also to the team whose design represents the best technical approach to solving the engineering problem of navigating a simulated lunar surface.

For more event details, race rules, information on the course and photos from previous competitions, go to http://moonbuggy.msfc.nasa.gov.

The writer, an employee of ASRI, supports the Media Relations Department.

Photo by Dennis Olive, NASA/Marshall Center

Inspecting foam test panel

Steve Holmes, team lead for testing on the External Tank's intertank -- which joins the liquid hydrogen and liquid oxygen tanks -- looks for missing pieces of foam on a test panel made to duplicate the External Tank's intertank area. A team from Marshall's Engineering Directorate recently subjected the panel to minus 423 F -- the same conditions experienced prior to launch -- at the Center's thermal vacuum testing facility at Test Stand 300. The testing is part of the effort to safely return the Space Shuttle to flight. The External Tank Project Office is re-evaluating the performance of the foam, which serves as the tank's thermal protection system.

NASA selects Accenture to implement IFMP software

NASA Headquarters release

The Marshall Center has selected Accenture of Reston, Va., for a contract to provide support services for NASA's Integrated Financial Management Program (IFMP).

Accenture will provide services to implement a suite of administrative systems for the Integrated Asset Management module of the IFMP.

The five-year, firm-fixed price contract has a minimum value of $12 million and a maximum value of $200 million. The volume of services NASA needs will determine the actual value within the contract range. The contract provides flexibility through its Indefinite Delivery-Indefinite Quantity provisions. Additional tasks under the contract may be required to include support in contract and human resources management.

The overall goal of the IFMP is to improve the financial, physical and human resources management process throughout NASA. The Integrated Asset Management module will allow NASA to better control and manage assets and programs in financial reporting, project management and physical inventory. NASA owns and manages a wide range of assets such as land, buildings, aircraft, spacecraft, computers, equipment, chemicals and supplies.

Accenture will provide services at NASA Headquarters and all 10 agency field centers. The Marshall Center supports the implementation of new modules and hosts the Competency Center on behalf of the IFMP.

FIRST Robotics teams battle it out during competition

by Jonathan Baggs

Seven high school teams participated in competition trials Feb. 19 for the FIRST (For Inspiration and Recognition of Science and Technology) Robotics event at the University of Alabama in Huntsville.

The goal was to test their robots and work out any "bugs" before heading to regional competitions where they will pit their creations against those built by students from across the country.

Students receive identical kits containing parts from which their team must build a robot. They have six weeks to work with engineering mentors from government, industries and universities to design, build and operate robots capable of playing a specific game. The goal is for students to gain experience solving engineering challenges in a competitive environment.

The Marshall Center sponsored four teams this year: New Century Technology High School and Madison County Career Academy, both in Huntsville; Guntersville High School in Guntersville; and Austin High School in Decatur. Other area teams involved in area competition include Lee High School and Butler High School, both in Huntsville; Arab High School in Arab; and Lincoln County High School in Fayetteville, Tenn.

The writer, an employee of ASRI, is the Marshall Star editor.

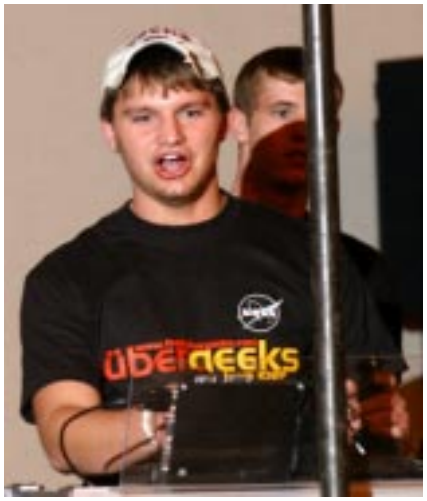
Yell loudly and carry a big wrench seems to be key to Cole Palmby's enthusiasm as he cheers on Austin High School teammates.

It's all about finesse as Wesley Brown operates the controls for Guntersville High School.

These Arab High School teammates know their robot can hang with the competition.

Photos by David Higginbotham, NASA/Marshall Center

Derec Roby, left, and Grant Reeves, right, help Butler High School student Shaun Clark get the hang of "robot control."



Madison County Career Academy's Josh Langford has the finesse part down and is going for just plain fun as he controls "Ursula," his team's robot.

From left, Christina Goshen, Christine Jackson and Mary Tabor with an intimidating robot built by their New Century Technology High School team.

Photo by Emmett Given, NASA/Marshall Center

Teachers learn about Marshall education programs

Paul Varsho, kneeling, an eighth grade science teacher from Menomonie Middle School in Menomonie, Wis., checks out a propeller and test stand made for the Centennial of Flight Engineering Design Challenge. Varsho and 17 other teachers from Wisconsin, Nevada and Iowa attended a two-day workshop at Marshall last Thursday and Friday. With Varsho are, from left, Dawn Mercer, Marshall education specialist; educators Chad Marx and Beth Gaywont; NASA aerospace education specialist John Lowerison; and educator Mike Carr. The Centennial of Flight Engineering Design Challenge is a hands-on, inquiry-based challenge where student teams work together to design, build and test propellers, as well as learn about the challenges faced by the Wright Brothers. The test stand being explained was built to hold student-made propellers. If the propellers are designed successfully, their rotation creates lift, which causes the arm of the stand to rise.

Job Announcements

MS04D0075, Industrial Property Management Specialist. GS-1103-12 (Promotion potential to GS-13), Center Operations Directorate, Logistics Services Department, Property Management Group. Closes Feb. 26. Contact: Dana Blaine at 544-7514.

MS04N0077, AST, Flight Systems Operations (two vacancies). GS-0801-12 (promotion potential to GS-13), Flight Projects Directorate, Payload Operations and Integration Department, Payload Systems Group. Closes March 4. Contact: Carolyn Lundy at 544-4049.

MS04C0080, Management Support Assistant. GS-0303-07, Flight Projects Directorate, Flight Systems Department. Closes March 3. Contact: Carolyn Lundy at 544-4049.

MS04C0081, Education Program Specialist. GS-1720-14, Customer and Employee Relations Directorate, Education Programs Department. Closes March 4. Contact: Edwina Bressette at 544-8115.

MS04D0083, AST, Liquid Propulsion Systems. GS-0861-07, 09 (Promotion potential to GS-13), Space Transportation Directorate, Subsystems and Component Development Department, Mechanical Designs Group. Closes Feb. 26. Contact: Jim Bramblett at 544-3398.

NASA selects 22 projects to advance human support technologies

NASA Headquarters release

NASA's Office of Biological and Physical Research recently selected 22 researchers to receive grants of up to four years to conduct research and development in advanced human support technologies.

These technologies are expected to have a significant impact on the ability of humans to conduct long-duration space flight missions safely. Benefits to the quality of life on Earth from improved environmental technologies may also result from this research.

The proposals were selected for one-to-four-year efforts, and are potentially worth $16.5 million over four years. Work under these grants will enhance safe human space flight in both low earth orbit, where the International Space Station operates, and in exploration of the Solar System beyond low earth orbit.

Five of the grants are for new technologies in advanced environmental monitoring of space habitats. Three grants address strategies for advanced control systems or systems analysis. Two projects are for biomass production. Four projects focus on space human-factors engineering. Eight others address novel approaches to waste processing, including air revitalization, water recycling and treatment of solid wastes.

NASA received 122 proposals in response to a NASA Research Announcement, which was released in March 2003. The proposals were peer-reviewed by scientific and technical experts from academia, government and industry before selections were made. In addition to technical and scientific merit, selection criteria also included cost, relevance to NASA programs and feasibility of utilization by NASA.

For a listing of the selected researchers, listed by state, along with their institutions and their research titles, go to: http://research.hq.nasa.gov/code_u/nra/current/NRA-03-OBPR-01.

NASA history online

The NASA History Office has added three additional works to its online historical collection:

• "Adventures in Research: A History of Ames Research Center, 1940-1965," (NASA SP-4302, 1970) by Edwin P. Hartman, is at http://history.nasa.gov/SP-4302/sp4302.htm

• "Humans to Mars: Fifty Years of Mission Planning, 1950-2000," (NASA SP-2001-4521) by David S. F. Portree, is at http://history.nasa.gov/monograph21.pdf

• "The History of the XV-15 Tilt Rotor Research Aircraft: From Concept to Flight," (NASA SP-2000-4517) by Martin Maisel, Demo J. Giulanetti and Daniel C. Dugan, is http://history.nasa.gov/monograph17.pdf.

Announcements

Marshall Deputy Rex Geveden to speak at NASA conference

Marshall Center Deputy Director Rex Geveden will be a speaker at the first NASA Project Management Conference March 30-31 at the University of Maryland Conference Center near College Park. Goddard Space Flight Center is coordinating the event, which will examine current trends in project management. Mike Kostelnik, NASA's deputy associate administrator for International Space Station and Space Shuttle, also will speak. The event is open to civil service and contractor team members. Seating is limited. For more information, go to http://pmchallenge.gsfc.nasa.gov.

American Cancer Society 'Relay for Life' set for April 30-May 1

The American Cancer Society's "Relay for Life" fund-raising event will be from 5:30 p.m.-7 a.m. April 30-May 1 at Milton Frank Stadium in Huntsville. The overnight event remembers those who have lost the fight against cancer and honors those who have survived. For more information, call Bennie Jacks at 852-8325.

NASA Fellowship Program applications available

The NASA Administrator's Fellowship Program is accepting applications through March 19. The program is designed to enhance relations between NASA and historically black colleges and other minority institutions. NASA employees at the GS-13 level or above are encouraged to apply and must hold a master's or doctorate degree. The 18-22 month program allows NASA employees to teach or conduct research at a minority institution for one year and participate in other opportunities for the remainder of the fellowship. For details, call 544-3740.

Retirement events

Rick Helmick retirement celebration, 2-3:30- p.m. March 4, Marshall Center Activities Bldg. 4316. For details, call 544-2856 or see "Inside Marshall."

Earth Day contests open for submissions

Three Earth Day contests are open for submissions by Marshall team members. The theme for this year's Earth Day celebration is "Spaceship Earth: No Passengers ... All Crew." Gift certificates will be awarded in each contest -- "Earth Day Logo," "Earth Day Photography," and "Environmental Suggestions." For contest rules and submission deadlines, see "Inside Marshall." Marshall's Earth Day events will be from 10:30-11:30 a.m. April 15 in Center Activities Bldg. 4316.

Geometric Dimensioning courses set for March, April

Two courses in Geometric Dimensioning will be offered at the Marshall Institute. Basic Geometric Dimensioning & Tolerance Training will be from 8 a.m.-3:30 p.m. March 1-4. Geometric Dimensioning Space Flight Design will be April 12-16. For details, e-mail pat.schultz@nasa.gov.

Women's History Month program set for March 16

A program commemorating Women's History Month will be from 8:30-10 a.m. March 16 in Bldg. 4200, Room P-110. Carolyn Griner, principal at Booz Allen Hamilton and retired deputy director of the Marshall Center, will speak. This year's theme is "Women -- Inspiring Hope and Possibility." For details, call Billie Swinford at 544-0087.

Engineering Summer Camp for high school students set at UAH

The University of Alabama in Huntsville will host its third annual Engineering Summer Camp for incoming high school seniors and juniors to explore different fields of engineering using lab experiments and group projects. Some of the projects include bridge building, rocket launches, robotics, circuits and sensors, and chemical reactions. Camp dates are June 14-18 and July 12-16. Cost is $350. Applications are available at www.eb.uah.edu/camp or call (256) 824-3590.

Astrionics retirees to meet Monday

Marshall Center Astrionics retirees will meet for breakfast at 9 a.m. Monday at Gibson's Bar-B-Q at 3319 Memorial Parkway Southwest in Huntsville. For more information, call Jim Lewis at (256) 353-1557.

'Take Our Children to Work Day' set for April 22

The annual "Take Our Children to Work Day" at the Marshall Center for children in grades 3-12 will be April 22. Since 1994, the event has been an opportunity for the Marshall team to promote education and awareness of the space program. A Web link detailing registration, workshops, tours and other information will be available Monday on "Inside Marshall."

Instrumentation Division Astrionics retirees meet Tuesday

Instrumentation Division Astrionics Lab retirees and friends will meet at 11 a.m. Tuesday at the Redstone Golf Course coffee shop. For more information, call Tom Escue at (256) 232-1549.

AIAA Engineering scholarship applications available

The Alabama-Mississippi Section of the American Institute of Aeronautics and Astronautics is accepting applications for its Third Annual Engineering Scholarship Program. Three scholarships will be awarded -- $1,500, $1,000 and $500. The program is open to high school seniors entering an accredited university to pursue an engineering or science degree that will lead to an aeronautics or astronautics career. Eligible seniors can find the application at http://www.aata.net/scholarships/index.htm. Deadline for application acceptance is March 15. For more information, call Kevin Connell at the Aerospace Development Center in Jacksonville at (256) 782-5972.

For more Announcements, see "Inside Marshall"

Classified Ads

Miscellaneous

★ Formal dining suite, Cherry, never used, table, six chairs, china cabinet, $1,800. 256-864-2517
★ Basketball goal w/pole and water fill base. 881-6040
★ AKC Lab puppy, black male, born 1/25/04, first shots, wormed, $150. 353-6750
★ Pressure hose for Karcher Model #1250 high-pressure washer, 1400psi, $15. 256-353-8010
★ Men's 3-diamond 10K band, 3/4 carat total, clarity SI2, color H, $990. 828-8630
★ La-Z-Boy recliner, beige, $40; Quasar microwave, $20; Bissell upright vacuum cleaner, $30. 881-5642
★ Walnut-finished dresser w/mirror, matching headboard & frame for full-size bed, solid wood construction, $75. 828-5326
★ Picture window, 8'x4.5', $100; pre-hung wood outside door, 32", $50. 883-5168
★ Over 400 rounds of .223 ammo, $55. 325-6000
★ BowFlex, barely used. 233-5336 after 5 p.m.
★ AKC registered Shetland Sheepdogs, 2 males, 1 female. 931-363-1329
★ "Evolution" stair climber, 4 months old, $100; Antique school desk, refinished, $100. 837-1774
★ Delphi XM radio, SKYFi tuner & audio system, SKYFi speakers, new, $165. 489-8421
★ VOX AD120VT Valvetronix Modeling Amp, 120 watts w/2x12 speakers, floorboard included, $700. 256-232-0246
★ 1977 Avion travel trailer, 27', for hunting, camping or lake lot, $4,500. 931-427-2059
★ King Serta Perfect Sleeper Nightstar Twilight contour comfort quilt w/Body Loft mattress, best offer. 772-7262
★ Five drawer chest and nightstand painted primary colors for child's room, $100. 859-4048
★ TV stand w/casters, 30"Wx18"Dx20"H, dark walnut color, $20. 751-2460
★ Sofa and matching loveseat, beige and green design, $500. 880-6894
★ Black IR wireless keyboard/mouse combo, $20; Microsoft natural Pro-Multimedia keyboard, $5. 765-532-4218
★ Oak bentwood rocker, $10; 42" round wood table, $20; two 18"x30"x36" wire cages, $15. 880-0150
★ 1989 Honda CR250R dirt bike, $1,000; 1996 Honda XR100 dirt bike, $1,200. 655-6293
★ Scandinavian natural teak queen bedroom suite w/tambour doors, $500. 536-6345
★ Jacuzzi hot tub, four person, new cover, redwood base, needs blower motor, $500 firm. 533-4504
★ AKC Australian Shepherd puppies, 8 weeks old, 2 males, 1 female, $250-$275. 256-828-3668
★ Drafting table, 42x31, adjustable height and tilt, Pickett Plan Hold "Designer", $95. 656-9009
★ Motorized hospital bed, $1,200; chest freezer, $100; large box canning jars, $10. 653-4240
★ Wedding gown w/train/veil, size 6, $150; long red halter evening gown, size 5, $75. 881-8674
★ Carved Oak dining room table, two leaves, 6 chairs, w/matching lighted hutch. 464-8506
★ Youth bed, 5-1/2' long, mattress, headboard, footboard, side rails (optional), Cherry wood, $65. 316-2902
★ Entertainment center, glass doors, holds stereo, make offer. 880-6498
★ Two PowaKaddy battery-powered golf bag carriers w/batteries, chargers, timers, fold-away seats, $350 ea./both $600. 534-2368
★ Knight Inline disc rifle, 50 caliber, black composite/blued steel, new in box, $275. 880-7305
★ Cemetery lots w/vaults, Huntsville Memory Gardens, $1,200; vacuum cleaner, $75; computer desk, $40. 256-534-0939
★ Large antique desk. Two-drawer, two doors w/cubbyholes. One door damaged, but repairable. $250. 306-0700 Decatur

Vehicles

★ 1987 Ford Ranger, 5-speed, 107K miles, a/c, $1,000. 880-9754
★ 2000 Mercury Villager minivan, 78K miles, new tires, CD, well maintained, $8,000. 256-797-7251
★ 1987 Pontiac Bonneville, V6, auto,137K miles, a/c, cruise, $1,400. 348-7146
★ 1996 Chevy S-10, ext. cab, 5-speed, 94K miles, CD, air, $5,200. 895-0634
★ 2000 Chevy Camaro, pw/pdl/ps, V6, auto, T-tops, keyless, silver, 37K miles, $12,800. 256-232-4379
★ 1995 Ford Windstar van, one-owner, $2,950. 256-722-0997
★ Nissan Frontier, crew-cab, yellow, 70K miles, cd/pw/pdl, $9,500. 895-6916
★ 1996 Ford Bronco, 4x4, 351 engine, XLT/Sport trim, 87K miles, $9,000. 656-4846
★ 2003 Ford Expedition, loaded, approx. 15K miles. 233-6197
★ 1986 Chevrolet C20 truck, LWB, auto, toolbox, hitch, $1,500. 379-3606
★ 1994 Mustang GT convertible, 5.0L, 5-speed, one owner, 123.5K miles. 461-6337
★ 2002 Pontiac Bonneville SLE, loaded, sunroof, low miles, extended 75K warranty, leather, $22,500. 350-2971
★ 2000 Lincoln Town car, executive series, leather, charcoal gray, 20K miles, $18,000. 883-2125
★ 1997 Ford Ranger, V6, 140K miles, automatic, air, multi-disc CD, heavy duty suspension, $4,000. 479-3660
★ 1993 Ford Explorer XLT, all-power, new air/blower, brakes, new tires, $3,100. 256-772-0430

Wanted

★ Small office refrigerator. 256-498-2028
★ Old flight/trajectory plans, press releases, track maps, etc. from Gemini, Mercury or Apollo missions. 885-0116
★ Four tickets to Larry the Cable Guy, March 4, VBC, two couples will sit separately. 753-2459
★ Mulcher for tree limbs, buy, rent or borrow for a day. 828-6213

Free

★ Freshly cut fruit tree branches, you pickup. 828-6213
★ Pine logs, gutters, vinyl soffit and facia, you remove. 536-7906

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