

MARSHALL STAR

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April 29, 2004

Scientists: Gravity Probe B performing 'well'

from combined reports

At 11:57 a.m. CDT on April 20, the Gravity Probe B spacecraft had a picture-perfect launch from Vandenberg Air Force Base in California. The Boeing Delta II rocket hit the exact center of the bull's eye in placing the spacecraft in its target polar orbit, 400 miles above the Earth.

"The Gravity Probe B Mission Operations Team performed very well during this critical spacecraft activation period,"

said Tony Lyons, Gravity Probe B deputy program manager at the Marshall Center.

"We're ecstatic," said Stanford Gravity Probe B Program Manager Gaylord Green. "We couldn't have asked for a better or more beautiful launch — or a more perfect orbit insertion."

NASA's Gravity Probe B mission, also known as GP-B, will use four ultra-precise gyroscopes to test Einstein's theory that space and time are distorted by the

See Gravity Probe B on page 2



David Higginbotham, MSFC

Roth shares memories

Marshall Associate Director Axel Roth shares his memories of more than 45 years of service at the Center during a program at Marshall last week. The Marshall Association event was part of its "Lunch-N-Learn" series.

Students from four states to test rocket building skills for Marshall engineers

NASA Student Launch Initiative teams ready for 'Southern Thunder 2004'

by Sheri Bechtel

High school and college students from four states will go the extra mile to prove their rocket-building skills in a two-day event sponsored by the Marshall Center in collabora-

tion with the Arnold Engineering Development Center at Arnold Air Force Base in Tullahoma, Tenn.

The students make up 10 teams that will showcase and launch reusable rockets they designed and built during the school

year as part of NASA's Student Launch Initiative.

Teams will present their rocket designs to engineers at the Student Launch Initiative Fair at the Marshall Center on Friday. The rockets will be on display

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Photo by Emmett Given, NASA/Marshall Center

Learning about rocket 'fuel'

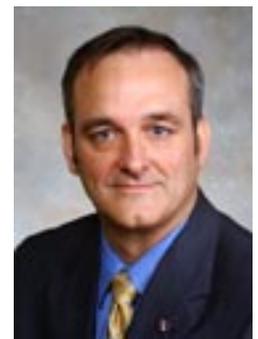
Marshall's Chanel Leslie, center, helps Nicholas Tygielski load his model rocket with water for "fuel," while Paul Thompson II, left, eagerly awaits launch countdown. The children participated in the annual "Take Our Children to Work Day" at Marshall last week. For more photos of the day's activities, see page 5.

Marshall Deputy Rex Geveden named distinguished alumnus

by Sanda Martel

Rex Geveden, deputy director of the Marshall Center, will be honored as the 2004 Distinguished Alumnus by Murray State University in Murray, Ky., during commencement ceremonies May 8.

The Distinguished Alumnus honor recognizes alumni who have made significant contributions to their profession on a national, state and local level. Honorees are nominated by Murray State alumni and selected by a vote of the executive committee of the university's



Geveden

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Gravity Probe B

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presence of massive objects. The mission will measure two factors — how space and time are warped by the presence of the Earth, and how the Earth's rotation drags space-time around with it.

The spacecraft is being controlled from the Gravity Probe B Mission Operations Center at Stanford University. The Initialization & Orbit Checkout (IOC) phase of the Gravity Probe B mission is planned to last 45-60 days, after which the 12-month science data collection will begin. This will be followed by a two-month final calibration of the science instrument assembly.

A little more than one hour after launch, the spacecraft's solar arrays deployed, and shortly thereafter, the on-board cameras treated all viewers, via NASA TV, to the extraordinary sight of the separation of the spacecraft from the second stage rocket, with a portion of the Earth illuminated in the background.

Gravity Probe B's solar arrays are generating power and all electrical systems are powered on. The spacecraft is communicating well with the Tracking and Data Relay Satellite System and supporting ground stations.

All four Gyro Suspension Systems have been activated. In addition, a lift check was successfully accomplished for all four gyros.

"We've successfully achieved the first of many upcoming steps in preparing these four gyroscopes for science data collection," said Rob Brumley, Stanford Gravity Probe B deputy program manager - technical. "We are all extremely gratified with the initial performance of these gyroscopes in space, including the first ever levitation of a Gravity Probe B gyro on orbit."

The spacecraft's Attitude Control System is maintaining attitude control with thruster calibrations ongoing to fine-tune this system. After that, the ultra-precise science telescope will be locked onto the Gravity Probe B guide star, IM Pegasi, to within a range of 1/100,000th of a degree.

"All of us on the Gravity Probe B team are very grateful for the tremendous support we have received from NASA, Lockheed Martin, Boeing, and many others," said Francis Everitt, Gravity



Photo by Dennis Olive, NASA/Marshall Center

New engineers learn about Shuttle engine

Mike Kynard, second from right, of the Marshall Center's Space Shuttle Main Engine Projects Office, familiarizes recently hired NASA engineers with Main Engine hardware using the engine in front of Bldg. 4200. With Kynard, are, from left, Matt Devine, Dave Reynolds, Walter Stephens, Robert Polsgrove, Paul Gradl, and Jonathan Stephens.

Probe B principal investigator at Stanford University. "We're off to a fine start, but we now have a great sense of responsibility to make sure we do the science in the best possible way."

The Marshall Center manages the Gravity Probe B program for NASA's Office of Space Science. Stanford University in Stanford, Calif., developed and built the science experiment hardware and operates the science mission for NASA. Lockheed Martin of Palo Alto, Calif., developed and built the GP-B spacecraft. Mission Operations Control at Stanford University operates the spacecraft.

Geveden

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alumni association. Geveden, this year's only honoree, graduated from Murray State with a bachelor's degree in engineering physics in 1983, and a master's degree in physics in 1984.

"Receiving this recognition from Murray State, the school that gave me the skills to succeed and contribute as a professional, is truly an honor," Geveden said. "It's gratifying to be considered for this award, and my great appreciation goes to the alumni association."

A native of Mayfield, Ky., Geveden was named deputy director of the Marshall Center in July 2003, where he shares responsibility for one of NASA's largest field installations with more than 6,500 civil service and contract employees and a \$2.3 billion annual budget. He previously served as deputy director of Marshall's Science Directorate, leading research and development projects in space science, materials science, biotechnology, earth science and space optics. He also led NASA's Gravity Probe B program,

steering development of sophisticated hardware designed to test two features of Albert Einstein's Theory of General Relativity. The hardware was successfully launched April 20, from Vandenberg Air Force Base, Calif.

Geveden also was project manager for several other successful NASA efforts and has received numerous awards throughout his career since joining the Agency in 1990.

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

Lunar, planetary expert Mike Duke bolsters NASA research to help explorers 'live off the land'

Space Partnership Development Program contributes to Vision for Space Exploration

by Tracy McMahan

Sludge. That's what most people think of when they envision the gray, powdery soil — called regolith — covering the airless surface of the Moon. Not Dr. Mike Duke. He sees gold.

Gold in the form of rocket propellant, power, and even breathable air — all things that will be as valuable as gold to the first Moon-dwellers.

"As a young man, I wanted to go to the Moon," the 68-year-old Duke said. He was one of the first geologists to study samples from Moon rocks collected during the Apollo missions in the 1970s. I may be too old to make the trip when Americans return to the Moon, but the research I am leading will help the first lunar settlers take what's there and make something practical."

Duke is an expert in what space explorers call "in-situ resource utilization" or ISRU — living off the land of an alien world. He spent 25

years as a NASA geologist. In 2003, he was named director of the Center for Commercial Applications of Combustion in Space Centers at the Colorado School of Mines in Golden. This is one of NASA's 15 Research Partnership Centers managed by the Space Partnership Development Program at the Marshall Center for NASA's Office of Biological and Physical Research in Washington. He joined the partnership center in 2000.

Astronaut candidate

In 1965, Duke was a candidate for NASA's Scientist Astronaut Program, made the finals, but wasn't selected to fly. He went on to help other space explorers, from 1976 until 1990 as the director of the Solar System Exploration Division and from 1990 to 1995 as the chief scientist for the Human Exploration Program — both at NASA's Johnson Space Center in Houston.

"We can't take everything to the Moon or Mars with us," Duke said. "Today, it would take about 100,000 dollars to get a couple pounds of material moved from Earth to the Moon. So making propellant on the Moon would make trips back to Earth or on to Mars less expensive."

Processing lunar soil

Before you can process the lunar soil and turn it into rocket propellant or other useful materials, you have to figure out a way to mine it. For four years, Duke and a team of graduate students have been working on a robotic excavator. They built a prototype that weighs around a hundred pounds and has a chassis similar to the NASA rovers — Spirit and Opportunity — on Mars now. An arm-like boom extends from the vehicle's front end. It sports a wheel of buckets that scoop up soil. The dirt falls out of the buckets and into a conveyer system that takes it up the side of the boom. The arm moves from side to side and excavates a swath of dirt one and a half feet wide, the width of the excavator.



Mike Duke, a geologist with 25 years of experience working for NASA, with a prototype of a robotic excavator that might one day be used to turn lunar and Martian resources into rocket propellant, power and breathable air.

Photo: Center for Commercial Applications of Combustion in Space

The current model can dig up several hundred pounds of dirt in an hour, but the team is working to increase the excavation rate. They also are designing a system to shoot the dirt from the excavator to a "lunar dump truck." The truck would carry the soil to a processing facility to extract hydrogen — a component of the fuel that powers the Space Shuttle and could fuel a lunar rocket.

Duke and his students also have completed a model

that identifies lunar resources and their potential uses. The team even examined how a company could make money on the Moon, and came up with a scenario for a "space filling station" — where in-space tugs would be loaded with lunar-made propellants and used to boost communications satellites to high orbits.

Why is Duke concerned with space business ventures? Collaborating with industry to explore the solar system is one of

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Students

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from 9-10 a.m. in the Bldg. 4200 lobby. Dr. Ernst Stuhlinger, a member of Dr. Wernher von Braun's original German rocket team, will speak at 10 a.m. in Morris Auditorium. All Marshall team members are invited to the event.

On Saturday, students will launch their rockets with hundreds of "rocketeers" from across the country cheering them on, as part of "Southern Thunder 2004" — expected to be one of the largest regional rocket events in the United States. The event is from 10 a.m.-5 p.m. at Hickerson Field — a 1,500-acre sod farm near Manchester, Tenn. "Southern Thunder 2004" is co-hosted by the Music City Missile Club in Nashville, Tenn., the Huntsville Area Rocketry Association, and the Smokey Mountain Amateur Rocketry Team in Knoxville, Tenn.

Education program

The Student Launch Initiative is an education program designed to allow high school and college students to experience practical aerospace and engineering activities. Working in teams, students demonstrate proof-of-concept for their designs, develop Web sites dedicated to their work, learn how to budget — including how to present financial proposals to NASA engineers and community leaders — and gain problem-solving skills.

"It's important for NASA to fuel students' interest in careers in science and engineering," said Jim Pruitt, manager of the Education Programs Department at the Marshall Center. "This initiative gives students hands-on experience building and launching rockets — to inspire the next generation of space explorers, and help our nation prepare our young people for the challenges ahead."

At the launch, student teams will attempt to reach an altitude of one mile with their rockets, and college teams will attempt to send their rockets two-miles high. All rockets will carry a scientific payload. The teams will be evaluated on rocket design, propulsion, materials, payload and safety features. NASA volunteers also will look at the target altitude, formal reviews and Web site designs.

Launch teams

High schools participating in the 2004 Student Launch Initiative include Johnson High School, New Century Technology High School and Lee High School in Huntsville; Bob Jones High School in Madison; Athens Bible School in Athens; Boonsboro High School in Boonsboro, Md.; Goshen High School in Goshen, Ind.; and Manlius Pebble Hill School in Dewitt, N.Y. College teams participating in the event include Huntsville's Alabama A&M University and the University of



Photo by Emmett Given, NASA/Marshall Center

Ionic liquids expert Rogers speaks at MSFC

Dr. Robin Rogers, during a recent visit to the Marshall Center, discusses ionic liquids and their potential use for conducting experiments and other processes in the microgravity environment of a spacecraft or space station. Rogers is the director of the Center for Green Manufacturing at the University of Alabama at Tuscaloosa. Ionic liquids are organic salts with high thermal stability. They may be ideal for conducting space-based experiments, removing carbon dioxide, oxygen recovery, waste treatment, thermal transfer, organic synthesis and electrochemical applications.

Alabama in Huntsville.

This is the first year the Student Launch Initiative program has invited out-of-state schools to join Huntsville-area schools in the launch event. The three out-of-state teams in the lineup were chosen from teams that entered the 2003 Team America Rocketry Challenge held last May at Great Meadows in The Plains, Virginia. That national model rocket competition challenges teams of high school and middle school students to build a rocket with two stages, weighing less than 3.3 pounds, and powered by

commercially made model rocket engines. The rockets must carry a payload of two raw Grade A large eggs to 1,250 feet, while functioning safely and returning

the eggs without breaking or cracking them. The top 10 teams at the 2003 challenge were invited to submit proposals to participate in this year's Student Launch Initiative.

Huntsville-area teams were chosen through a selection process involving NASA scientists, engineers, and education specialists. NASA sent out a request for proposals to local schools and colleges, within a 50-mile radius of the city of Huntsville. Award winning high school teams received a \$2,500 grant and colleges received a \$15,000 grant to participate in the event.

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

Teams will present their rocket designs to engineers at the Student Launch Initiative Fair at the Marshall Center on Friday. The rockets will be on display from 9-10 a.m. in the Bldg. 4200 lobby. Dr. Ernst Stuhlinger, a member of Dr. Wernher von Braun's original German rocket team, will speak at 10 a.m. in Morris Auditorium. All Marshall team members are invited to the event.

More than 900 turn out for 'Take Our Children to Work Day' at Marshall

from the Equal Opportunity Office

More than 900 children turned out for the annual "Take Our Children to Work Day" event April 22 at the Marshall Center.

Marshall Center Director David King welcomed the crowd in Morris Auditorium -- giving a brief presentation on "What We Do at MSFC."

"This annual event provides an opportunity to promote education and awareness in children through the space program and inspires them to think about working for NASA or joining the aerospace industry, said Billie Swinford of Marshall's Equal Opportunity Office.

Children, parents and guardians toured the Microgravity Development Laboratory, National Center for Advanced Manufacturing, Rapid Prototyping -- Environmental Test Facility -- Space Simulation, and the Payload Operations Center.

Workshops included:

- "Go Hawaiian with the SHE Mascots: Fun in the Sun -- the Safe Way" hosted by the Safety, Health and Environmental group and Helen Eddleman
- "Shuttle Launch Experience" interactive workshop hosted by Alan Murphy
- "The Red Planet" exploration of

Mars and NASA's future missions presented by James Drake of Jacobs Sverdrup

- "Real Life on the Space Station" hosted by Amy Lovell of Colsa
- "Keeping Children Out of Harm's Way," a workshop on reducing chances of being a victim of abduction or child molestation, presented by former St. Louis police detective Nancy Hightshoe
- "Vacation to Mars," a musical play sponsored by NASA employees and directed by Betty Kilpatrick of the Procurement Office
- "Model Rockets," a hands-on experience in building rockets hosted by Chanel Leslie.



Photo by David Higginbotham, Marshall Center

Sophie Howard, left, and her father Scott Howard/CSC-HOSC, watch the "Shuttle Launch Experience" video in Morris Auditorium.



Photo by Emmett Given, NASA/Marshall Center

A demonstration of a Laser Interferometer by Patrick Vitarius, right, intrigues visitors during the Space Transportation Directorate Expo in Bldg. 4203 during "Take Our Children to Work Day." In the foreground, from left, are Jeff Saxon, 12, and his sister Christina Saxon, 10.



Photo by Emmett Given, NASA/Marshall Center

There is no shortage of volunteers for Chanel Leslie, left, of Marshall's Equal Opportunity Office, during the rocket-building workshop.



Photo by David Higginbotham, NASA/Marshall Center

Heather Niehuss and her father, Keith Niehuss, ED34, arrive for "Take Our Children to Work Day" kickoff ceremonies.

Duke

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the goals of the Research Partnership Centers.

“NASA’s Research Partnership Centers bring together industry, academia and government to advance exploration in space,” Duke said. “These collaborations are an effective way to create new technologies at lower costs.”

One of the aspects Duke most enjoys about his job is creating new opportunities for students to conduct original research that will help advance space exploration.

“I studied geology at Caltech because I loved California’s mountains and deserts,” recalled Duke, a Los Angeles native who earned his doctorate degree in 1963 from the California Institute of Technology in Pasadena. “But the university was a hotbed for planetary science, and my professors inspired me to study the geology of meteorites and the Moon. I

want my students to become the next generation of scientists and engineers who take America to the Moon and beyond.”

One recent project that students helped design was the water mist investigation, conducted in space to examine how to fight fire with a fog-like mist of water — instead of large amounts of water that can damage computers and other equipment. The STS-107 Space Shuttle crew completed the experiment during their January 2003 flight.

Obituaries

William L. “Bill” Campbell, 86, of Section, died April 10. Funeral services were held at Scottsboro Funeral Home with burial in Pinehaven Cemetery.

Campbell was born Feb. 16, 1918. He was a World War II veteran and worked for the Tennessee Valley Authority before joining the Marshall Center, where he

retired as an electronics technician in 1977 after 15 years of service.

Campbell is survived by his wife, Margaret Campbell; one son, Larry Garner; and one daughter, Jan Pitts.

Robert T. Jackson, 72, of Decatur, died March 11. He retired from the Marshall Center in 1994, where he was an AST, ARSPC engineer in Reliability & Quality Assurance.

Jackson is survived by two daughters, Deanna Jackson Matonic and Kimberly Jackson Holloway.

Retirement events

A retirement party for George Duve of the Flight Projects Directorate will be from 2-4 p.m. May 4 in Bldg. 4610, Conference Room 5016. Duve has been a NASA employee for 36 years. For details, call 544-6004.



Photo by David Higginbotham, NASA/Marshall Center

Marshall team helps judge state science, engineering fair

Five Marshall team members helped judge more than 150 science and engineering projects recently during the 2004 Alabama Science and Engineering Fair at the University of Alabama in Huntsville. The projects were submitted by high school and middle school students who placed in regional science and engineering fairs. Helping judge the entries are, from left, Brian Walls, Jania Johnson, Michael McLean, Karen Stephens and Brian Mitchell.

Although the experiment equipment was lost in the Columbia accident, the team received data from video sent back to Earth during the mission. They are using the data to design a space fire extinguisher for contained environments such as spacecraft, space habitats and submarines.

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

Job Announcements

MS04B0119, AST, Quality Assurance. GS-0861-14, Safety and Mission Assurance Directorate, SR&QA Policy, Assessment & Integration Department. Delegated Examining Unit and Competitive Placement Plan. Closes April 30. Contact: Rita Evans-McCoy at 544-7507.

MS04C0124, Lead AST, Flight Systems Test. GS-0861-14, Science Directorate, Microgravity Science and Applications Department, Systems Test Group. Competitive Placement Plan. Closes May 4. Contact: Debbie Longeddy at 544-2308.

MS04C0125, Management Support Assistant. Competitive Placement Plan. GS-0303-07, Flight Projects Directorate, Payload Operations and Integration Department. Closes April 30. Contact: Carolyn Lundy at 544-4049.

MS04C0126, Lead AST, Basic Properties of Materials. GS-1310-14, Engineering Directorate, Materials, Processes & Manufacturing Department, Environmental Effects Group, Space Environmental Effects Team. Competitive Placement Plan. Closes May 7. Contact: Debbie Longeddy at 544-2308.

Announcements

'I Am Set' mentors needed

Mentors are needed to work with high school students during a high-tech summer internship for the Individuals with Disabilities in Math, Science, Engineering & Technology (I Am Set) program scheduled for June 7-July 16. For more information, including location and times, call Dr. Barbara Cady, project director, at (256) 372-4041 or Madeline Hereford in the Marshall Center's Equal Opportunity Office at 544-7420.

Earth Science Technology Conference will be June 22-24

NASA's Earth Science Technology Office will present the fourth annual Earth Science Technology Conference June 22-24 in Palo Alto, Calif. The conference showcases a variety of technology research related to the Agency's earth science efforts, as well as new developments in information systems, computing, instruments and component technologies. To register or view a schedule of events, go to <http://esto.nasa.gov/conferences/estc2004/>.

Marshall Association luncheon to feature Dr. James Voss

Auburn University professor and former NASA astronaut Dr. James Voss will speak at the Marshall Association luncheon at 11:30 a.m. May 7 in Center Activities Bldg. 4316. Luncheon cost is \$8, payable at the door, but reservations are required by Wednesday. For details, call Roslin Hicks at 544-7795. The Marshall Association membership drive also is underway. Dues are \$25 per year.

UAH Engineering Summer Camp set for June, July

The University of Alabama in Huntsville will host its third annual Engineering Summer Camp for incoming high school juniors and seniors June 14-18 and July 12-16. Lab experiments and group projects will include bridge building, rocket launches, robotics, circuits and sensors, and chemical reactions. Cost is

\$350, which includes fees, materials and lunch. Scholarships are available. For applications or more information, go to www.eb.uah.edu/camp or call Veronica Molina at (256) 824-3590.

Seats available for Space Launch, Transportation class

Seats are available for the "Space Launch and Transportation Systems 15" workshop June 28-30 at the Marshall Institute. The event will provide an integrated view of space launch and transportation systems design and operations. The course is designed for a variety of space professionals who must interact with one another to produce, operate and use cost-effective space launch and transportation systems. Participants should include managers of all types, subsystem engineers, designers, analysts, operators and users of launch systems. Registration deadline is May 10. For details, call Georgann Crump at 544-6525.

Export control management and updates courses open

A course on Export Management and an Export Control Update will be offered at the Marshall Institute. "Introduction to Export Licensing and Technology Management" will be May 4-6. "Export Current Events and Updates" will be May 7. Both courses will be from 8 a.m.-4:30 p.m. in Room 714 at the Institute. For more information, call Vanita Brown at 544-2476.

Winners announced in MARS Tennis Club Hi-Lo Tournament

Winners in the MARS Tennis Club April Hi-Lo Doubles Tournament are Joe Cremin and Paul Gill, first place; Sasiwan Roe and Cathy White, second place; Bil Bhat and Bruce Guy, third place; Bill Boglio, fourth place. The next MARS Hi-Lo Closed Doubles Tournament will be Saturday with warm-up at 8 a.m. Closed tournaments are for members only. Call Amy Hemken at 544-7097 for details.

Retired Federal Employees to meet May 8

The National Association of Retired Federal Employees will meet at 9:30 a.m. May 8 at the Senior Center on Drake Avenue in Huntsville. Candidates for Huntsville mayor will participate in an open forum at the meeting.

Astrionics Lab Instrumentation Division retirees to meet Tuesday

Marshall Astrionics Lab Instrumentation Division retirees and friends will meet at 11 a.m. Tuesday in the Coffee Shop at the Redstone Golf Course. For details, call Tom Escue at (256) 232-1549.

Asian Pacific American Heritage Month program set for May 26

The Asian Pacific American Heritage Month program will be from 11 a.m.-noon May 26 in the Center Activities Bldg. 4316 at the Marshall Center.

Redstone Base Supply Center to be closed for inventory

The Redstone Base Supply Center will be closed for inventory beginning May 3, reopening May 10. For more information, call 876-4011 or 382-1111.

Balancing priorities and project management course set May 6

A course on "How to Balance Priorities & Manage Multiple Projects" will be from 8:30 a.m.-3:30 p.m. May 6 at the Marshall Institute in Room 723. Registration is due by Monday. The course focuses on priority planning and sound decision making. To register, send an e-mail request to Deborah.Watson@msfc.nasa.gov. For more information, call Chris Robinson at 544-1422.

Leadership, management seminar set for Wednesday

A satellite seminar will be from 10 a.m.-noon Wednesday on "Excellence in Leadership & Management" in Marshall's Self-Study Learning Center. For details, call 544-8291 or see "Inside Marshall."

Classified Ads

Miscellaneous

- ★ Boss RC-20 Loop Station phrase sampling pedal for guitar, vocals, bass, keyboards. \$200. 306-0700 Decatur
- ★ Murray mowers, 3.8HP, \$45; Big Wheel mulcher, 4.0HP, \$85; mulcher, 5.75HP, \$95. 883-6284
- ★ Craftsman cast iron jigsaw, 18" throat, motor & cabinet stand, \$125. 534-2623
- ★ Oreck XL upright vacuum, 81b, and separate handheld canister vacuum, \$120. 883-7695
- ★ Remote control planes, Piper Cub & Stearman, many extras, tools included, never flown, \$700. 931-425-0896
- ★ Sears Pro Form 750 treadmill, \$500. 852-6936
- ★ Toro electric blower/vac without vacuum attachments, \$25. 658-3901
- ★ Welsco Cadence 840 treadmill, good operating condition, \$45. 256-498-3194
- ★ German Shepherd pups, AKC, champion line, born 2/13/04, dewormed, shots, vet checked, \$500. 256-694-5912
- ★ New .50 cal. CVA muzzleloader, ChromeMoly barrel w/syn. Camo stock, used once, \$145. 851-8491
- ★ Small kids Hot Wheel 4x4, 12-volt battery w/charger, \$75. 256-828-7013
- ★ Antique English Pine draw leaf table, late 19th Century, \$800 firm. 881-5756
- ★ Wedding gown with train and veil, size 6, \$100; green naugahyde recliner, \$30. 881-8674
- ★ Girl's dress, size 5, Ivory Gown by Pure by Avica, worn once, \$35. 509-2536
- ★ RCA television, 27" console, Picture on Picture, \$50. 256-586-7424
- ★ Mahogany secretary, \$150; Ethan Allan wingback chair, \$150; lamp, \$20; new queen/king designer linens. 533-6800
- ★ Jenny Lind baby bed including complete comforter set and mattress, \$125. 852-0627
- ★ Car seat, infant up to 80 lbs., \$60, stroller, \$10. 682-9540
- ★ Intex Easy Set Pool, 15'x42", chemicals, pump, cover, ladder, filters, used one summer, \$125. 828-9099
- ★ Target's Dolce Dark Walnut computer desk, hutch, filing cabinet, used 1-year, \$100. 256-325-9890
- ★ Mizuno 9-degree Titanium driver, ProGold 65 tip stiff shaft, \$75. 851-7406
- ★ Oceanic Alpha4/SP4 regulator, Alpha7 Octo, Dacor console, compass, U.S. Divers Matrix

- Master computer. 797-2668
- ★ Iris bulbs, many colors, \$1 each; curly Willow trees, \$5 each. 256-773-5051
- ★ Kenmore free-standing range/oven, self-cleaning, \$50; Kenmore built-in dishwasher, black/white, \$50. 765-532-4218
- ★ Kenmore "super-capacity" gas dryer, white, with hookups and manual, 1-1/2 yr. old. 890-0981
- ★ Camper trailer, 19.5', \$3,200. 256-773-6427
- ★ Shogun 10-speed bicycle, chrome-moly frame, campy parts, mavic wheels, \$110. 461-6337
- ★ Two tickets, Alan Jackson/Martina McBride, Birmingham, May 20, Section G, Row CC, \$145. 464-9014
- ★ Cendyne CD burner, Lightning V 52x CD-R/RW, internal, EIDE, unopened box, \$35. 828-1234

Vehicles

- ★ Yamaha 3-wheeler, \$350. 256-351-6996
- ★ 1995 Mustang GT, leather, performance exhaust, shifter, air-filter, new shocks headlights, 02 sensors, tune-up, \$6,200. 216-8868
- ★ 1994 Pace Arrow, 34', new Michelins/brakes, TV, VCR, 7KW generator, 31K miles, \$30,000. 256-830-1008
- ★ 2000 Ford Contour, pw/ps/pb, cruise, automatic, 80K miles, \$5,000. 256-746-8289
- ★ 1999 Buick Century Custom, V6, dark green, gray cloth seats, 26K miles, \$8,000. 256-828-4758
- ★ 1991 Ford Crown Victoria, \$600. 723-2462
- ★ 2003 SUV Expedition. 233-6197
- ★ 2003 Toyota Tundra SR5, access cab, 4.7L, automatic, 2wd, 33K miles, loaded, \$22,765. 256-520-6353
- ★ 2001 Nissan Altima GXE, many options, 4-cyl., auto, 4-door, 115K highway miles, \$5,950 firm. 256-753-2278
- ★ 1998 Jeep Cherokee Classic, 4x4, lt. blue, 113K miles, \$4,950. 533-5858
- ★ 2000 Nissan Maxima GXE, black, sunroof, tinted windows, BOSE sound system, 69K miles, \$11,000. 256-784-5299
- ★ 1996 Pontiac TransSport SE van, 7-passenger, loaded, 93K miles, \$5,000. 256-518-9162 before 8 p.m.
- ★ 1998 Voyager mini-van, 112K miles, 3.0L, ps/pb/ac, driver side door, good tires, \$4,600. 509-2751
- ★ 1990 Honda motorcycle, VFR 750F, V4, red sport bike, 26K miles, \$3,000. 859-0729
- ★ 2001 Oldsmobile Silhouette GLS minivan,

- leather, quad seating, rear a/c, new Michelins, 68K miles. 468-3803
- ★ 1998 Ford Windstar van, one-owner, all-power, 132K miles, 3.8L/V6, \$2,750. 256-355-8530
- ★ 1987 motor home, 23', 350 Chev., approx. 33.7K miles, sleeps 4, \$4,500. 256-536-4506
- ★ 2001 Ford Taurus SE, 50K miles, new tires, \$8,500. 256-773-5108
- ★ 2000/2001 Honda EX 250R dirt bikes, \$2,200 each/\$4000 both. 256-498-5911
- ★ 1971 GMC LWB step-side pickup, engine runs, for restoration, \$300 firm. 883-8340 evenings
- ★ 1999 KTM 250 EXC. trail bike with complete riding gear, \$3,000. 325-6000
- ★ 2001 Ford F150 XLT, 4-door, Super Crew, V8, white, bedliner, tow package, 69.5K miles, \$15,000. 426-2224

Wanted

- ★ Ride to work, near Huntsville Hospital, 7 a.m.-3:30 p.m., \$7 per day. 533-6980
- ★ Electric powered recliner in good condition, prefer petite size. 883-7729
- ★ Carpool to work Scottsboro, Section, or Dutton; leave time adjustable from 6:30-7:00 a.m. 228-6353
- ★ Sturdy bookshelves (no particle board) and durable two-drawer filing cabinets, HON style preferred. 256-922-0948
- ★ Baby trailer for bicycle. 880-9025
- ★ Craftsman tractor riding mower for parts, have model number available when you call. 881-6040

Free

- ★ Composted horse manure for your garden, will load. 420-8101
- ★ Terrier/Boxer/Beagle mix, spayed, inside/outside dog, small female, almost 1 yr. old. 883-6496

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- ★ Two pair of sunglasses in Bldg. 4200. Call 544-3623 to identify/claim

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