



MARSHALL STAR

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Water ice in abundance under Mars surface

Odyssey spacecraft find surprises scientists

JPL news release

Using instruments on NASA's 2001 Mars Odyssey spacecraft, surprised scientists have found enormous quantities of buried treasure lying just under the surface of Mars — enough water ice to fill Lake Michigan twice over. And that may just be the tip of the iceberg.

"This is really amazing. This is the best direct evidence we have of subsurface water ice on Mars. We were hopeful that we could find evidence of ice, but what we have found is much more ice than we ever expected," said Dr. William Boynton, principal investigator for Odyssey's gamma ray spectrometer suite at the University of Arizona, Tucson.

Scientists used Odyssey's gamma ray spectrometer instrument suite to detect hydrogen, which indicated the presence of water ice in the upper three feet of soil in a large region surrounding the planet's south pole.

"It may be better to characterize this layer as dirty ice rather

than as dirt containing ice," added Boynton. The detection of hydrogen is based both on the intensity of gamma rays emitted by hydrogen and by the intensity of neutrons that are affected by hydrogen. The spacecraft's high-energy neutron detector and the neutron spectrometer observed the neutron intensity.

The amount of hydrogen detected indicates 20-to-50 percent ice by mass in the lower layer. Because rock has a greater density than ice, this amount is more than 50 percent water ice by volume. This means that if a full bucket of this ice-rich polar soil were heated, it would result in more than half a bucket of water.

The gamma ray spectrometer suite is unique in that it senses the composition below the surface to a depth as great as one meter. By combining the different type of data from the instrument, the team has concluded the hydrogen is not distributed uniformly over the upper meter but is much more concentrated in a lower layer beneath the top-most surface.

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Wellness Center ribbon cutting

All Marshall team members are invited to the grand opening and ribbon-cutting ceremonies Thursday, June 27, at the Wellness Center, Bldg. 4315.

The event begins at 10 a.m.

Among the center's new features are state-of-the art exercise equipment, 44 pieces of cardio equipment including 15 treadmills, air conditioning and new wood floors for the racquetball and basketball courts. The Weight Room's square footage has more than doubled in both floor space and equipment.

Marshall employees and contractors also can participate in aerobics classes, yoga, kick boxing and other activities.



Photo by Emmett Given, NASA/Marshall Center

Discussing the Space Launch Initiative

Johnson Space Center Director Jefferson Howell, left, and Marshall Center Director Art Stephenson discuss the Space Launch Initiative. Howell was at Marshall as part of the SLI Executive Management Council meeting last week. The Council meets twice annually for briefings on SLI goals and strategies.

'Headmaster' of astronaut science 'academy'

by Martin Burkey

When looking for a new job, science teacher Debrah Underwood didn't dream that today she would be training astronauts to operate cutting-edge science experiments aboard the International Space Station.

Underwood, training and crew operations group lead at the Marshall Center, oversees a team of 17 government employees and 40 contractors, supported by seven trainers at NASA's Johnson Space Center in Houston, where Space Station crew training is conducted.

Her experiment trainers work with Johnson Space Center's crew trainers, who oversee basic astronaut training and detailed mission and Space Station training. Her group also works with experiment developers around the world to write lesson plans, prepare study materials, conduct training, develop and provide training equipment, and schedule the science training around an already-busy crew-training schedule.

Underwood's team also trains groups of about 60 controllers who staff control consoles at Marshall's Payload Operations Center for science operations on board the Space Station during four-month missions. These controllers operate science experiments from the ground and answer questions the crew may have about payloads.

Not only does her team train people for these highly specialized operations, they man two of the consoles themselves — the PAYCOM console, responsible for air-to-ground communications with the Space Station crew, and the PODF Support console, responsible for making updates to crew operating procedures.

Yet another responsibility of her team is to write the operating procedures for experiments that the crew uses. They also make sure the experiment developers use standard controls and labeling on their payloads to make the crews' job as simple as possible.

"Space Station crews are very experienced, but they can't be experts in every experiment onboard," Underwood said. "Their time on the ground is almost as precious as their time in space. It's our job to work around the other demands on their time and deliver clear, complete, concise training. And when the crews get to space, the ground team has to know as much or more than they do, anticipate their questions and be ready with the answers."

The Marshall Center was a key leader in the design and development of the International Space Station program. Today, the Payload Operations Center at Marshall manages all science research experiment operations on board the Station. The center is also home for coordinating the science plans of NASA's

international partners, all science payload deliveries to the Station and retrieval from the Station, and payload training and payload safety programs for the Station crew and ground personnel.

Underwood taught science for three years in Memphis schools before she applied for government service. Despite a natural interest in science — she had more college credits in biology, chemistry physics and other science courses than in education — she had never seriously considered the space program as a career choice.

Joining the Marshall Center in 1976, Underwood found other women who were already climbing the career ladder in non-traditional engineering, scientific and management roles. They became her mentors as she began to make a place for herself in the space program.

Her first jobs were analyzing satellite data and studies of how science experiments being planned for NASA's then-new Space Shuttle would be affected by space flight. She soon became interested in the details of the experiments she was analyzing and Marshall's role in training astronauts to operate them. So she asked for a transfer into the new training organization. By 1980, Underwood was scheduling and conducting training — and loving every minute of it.

"It was everything I thought it would be," Underwood said. "I met the scientists, learned about their experiments and science objectives. I could see the equipment and learn how to use it. One of the most exciting things was talking with the astronaut crew and working with them on a daily basis. From there, my interest and my career just expanded."

Underwood worked her way up to lead training manager for the Spacelab 3 science mission in 1985 aboard the Shuttle. During the flight, she did double duty as lead payload communicator — the voice of the science operations center in Huntsville for all communications with the crews in space. She also became a diver in the Neutral Buoyancy Facility at Marshall, helping train astronauts in the simulated weightlessness of the 1.3-million-gallon water tank. On later Shuttle missions, she advanced to become a Payload Operations Director, overseeing the entire science control room during Spacelab missions.

That broad experience led to increased responsibilities, including assignments as branch and division managers, before she was appointed to her current position. She has received NASA Group Achievement awards, Sustained Superior Performance awards and Special Service awards for her work.

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



Underwood

L. Dale Thomas new director of Systems Management Office at Marshall Center

By Grant Thompson

L. Dale Thomas has been named director of the Systems Management Office at the Marshall Center.

In his new position, Thomas is responsible for the quality of project management and systems engineering used on Marshall Center programs and projects. He will direct development and implementation of project management and systems engineering processes and training programs, and will direct engineering cost analysis and estimation for Marshall programs and projects. He supervises a staff of approximately 30 civil servants and contractors.

Thomas most recently served as the lead systems engineer for NASA's Space Launch Initiative. He led a team of



Thomas approximately 45 engineers and technical professionals in systems specification, technology integration, risk management

and systems analysis for the Second Generation Reusable Launch Vehicle Program.

Thomas began his NASA career at the Marshall Center in 1983 as an aerospace engineer in the Systems Analysis and Integration Laboratory. He has held increasingly challenging positions including manager of the International Space Station Vehicle Analysis and Integration Team at Johnson Space Center in Houston; technical assistant to the director of the Marshall Center Systems Analysis and Integration Laboratory; chief of the Marshall Systems Test Division; and manager of the Marshall Systems Engineering Office.

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

Ice

Continued from page 1

The team also found that the hydrogen-rich regions are located in areas that are known to be very cold and where ice should be stable. This relationship between high hydrogen content with regions of predicted ice stability led the team to conclude that the hydrogen is, in fact, in the form of ice. The ice-rich layer is about two feet beneath the surface at 60 degrees south latitude, and gets to within about one foot of the surface at 75 degrees south latitude.

"Mars has surprised us again. The early results from the gamma ray spectrometer team are better than we ever expected," said Dr. R. Stephen Saunders, Odyssey's project scientist at NASA's Jet Propulsion Laboratory, Pasadena, Calif. "In a few months, as we get into Martian summer in the northern hemisphere, it will be exciting to see what lies beneath the cover of carbon dioxide dry-ice as it disappears."

"The signature of buried hydrogen seen in the south polar area is also seen in the north, but not in the areas close to the pole. This is because the seasonal carbon dioxide (dry ice) frost covers the polar areas in winter. As northern spring approaches, the latest neutron data indicate that the frost is receding, revealing hydrogen-rich soil below," said Dr. William Feldman, principal investigator for the neutron spectrometer at Los Alamos National Laboratories, N.M.

"We have suspected for some time that Mars once had large amounts of water near the surface. The big questions we are trying to answer are, 'Where did all that water go?' and 'What are the implications for life?' Measuring and mapping the icy soils in the polar regions of Mars, as the Odyssey team has done,

is an important piece of this puzzle, but we need to continue searching, perhaps much deeper underground, for what happened to the rest of the water we think Mars once had," said Dr. Jim Garvin, Mars Program Scientist, NASA Headquarters, Washington, D.C.

Another new result from the neutron data is that large areas of Mars at low to middle latitudes contain slightly enhanced amounts of hydrogen, equivalent to several percent water by mass. Interpretation of this finding is ongoing, but the team's preliminary hypothesis is that this relatively small amount of hydrogen is more likely to be chemically bound to the minerals in the soil, than to be in the form of water ice.

JPL manages the 2001 Mars Odyssey mission for NASA's Office of Space Science, Washington, D.C. Investigators at Arizona State University, Tempe; the University of Arizona, Tucson; and NASA's Johnson Space Center, Houston, operate the science instruments. The gamma-ray spectrometer was provided by the University of Arizona in collaboration with the Russian Aviation and Space Agency, which provided the high-energy neutron detector, and the Los Alamos National Laboratories, which provided the neutron spectrometer. Lockheed Martin Astronautics, Denver, developed and built the orbiter. Mission operations are conducted jointly from Lockheed Martin and from JPL, a division of the California Institute of Technology in Pasadena.

Additional information about the 2001 Mars Odyssey and the gamma-ray spectrometer is available on the Internet at: <http://mars.jpl.nasa.gov/odyssey/> and <http://grs.lpl.arizona.edu>

STS-107 launch delayed

NASA Headquarters release

NASA managers on Monday suspended STS-107 launch preparations for Space Shuttle Columbia.

The launch was previously scheduled for July 19.

The delay is due to several small cracks found in metal liners used to direct the flow inside main propulsion system propellant lines on other orbiters in the fleet. Inspections of Columbia's flow liners are part of an intensive analysis of the cracks found on Space Shuttle Atlantis and Space Shuttle Discovery. The impact of the investigation on other upcoming Space Shuttle launches has not been determined.

Some of the cracks were not identifiable using standard visual inspections and were only discovered using more intensive inspection techniques.

Space Shuttle Program Manager Ron Dittmore said he was confident the issue would be resolved.



Photo by Terry Leibold, NASA/Marshall Center

Solid rocket motor test

The Space Transportation Directorate tested a 24-inch solid rocket motor -- a versatile, quick turnaround, low-cost test bed -- for the Shuttle's Reusable Solid Rocket Motor Project Office. The test took place at Marshall's East Test Area on June 20. The baseline test motor was used to proof thermocouple plugs designed for use in the Engineering Test Motor 3, to show how an improved two-piece throat design on the exit cone performs. The test also was to evaluate how erosion induced by molten aluminum oxide particles affect a longer exit cone.

PP&C team sets new safety 'benchmark'

1.49 million hours without lost time accident

From the Industrial Safety Department

Employees of the Operation and Maintenance of Propellants, Pressurants, and Calibration (PP&C) contract recently achieved a stellar accomplishment — they have worked at the Marshall Center without a single lost workday accident in more than 10 years.

These members of the Marshall team have raised the bar on standards for safety performance at the Center.

Only a small number of Teledyne Brown Engineering employees and subcontractors spend most of their time in office environments and are not routinely involved in hazardous operations.

The current PP&C contract includes operation and maintenance of propellant and pressurant generating, storage and distribution systems. These systems contain hazardous cryogenics and high-pressure gases such as air, oxygen, nitrogen, hydrogen and helium. Teledyne's subcontractor partners also perform potentially hazardous work. SIMCO Electronics and ERC Inc. employees calibrate devices and equipment associated with these and other hazardous systems. Sigmatech Inc. personnel operate the Marshall Center's Valve and Component Shop, where they are exposed to electrical, mechanical and chemical hazards.

PP&C employees routinely handle and transport hazardous materials capable of detonating, burning, asphyxiating and

cryogenic freezing. Personnel also face the risks involved in welding, entering confined spaces, pressure testing, working at heights, manual material handling and operating high pressure and cryogenics systems on a daily basis. Teledyne began providing these services at Marshall in 1971.

Mitchell Britt, contract program manager, said the PP&C program is a team effort and that subcontractors are an important part of the team. They have worked 1.49 million labor hours since their last lost workday accident in March 1992.

John Nugent, PP&C contract chief of safety and product assurance, attributes their remarkable achievement in managing the risks of their work to "proper training, tools, procedures, supervision, employee experience and attitude, and the uncompromising commitment of Teledyne's management to the safety of the people on the PP&C team."

Each person who performs hazardous work is either certified to do that work by a team of experienced senior technical personnel, or works under the direct supervision of a certified employee. PP&C personnel also follow work orders and procedures developed by engineers.

"It is management's responsibility to ensure ... the safe performance of our contract," Nugent said. "But management cannot ensure the safe performance of the job -- only the employees can. That is why we place such a strong emphasis on the training and certification of our employees and subcontractors."

A stroll down 'Safety Lane'

As part of National Safety Month, the Marshall Center hosted a "Safety Lane" on Monday.

Booths and exhibits offered informational tips on both work and personal safety for employees. Free gifts were distributed and drawings were held at the event in the Bldg. 4200 courtyard.



Dorothy Holloway examines a CPR mannequin.



Lots of free safety literature is distributed during the "Safety Lane" event Monday.

Photos by Emmett Given, NASA/Marshall Center



William Vasquez has his blood pressure checked by paramedic Alison Boylen.



Fire extinguisher safety catches the interest of participants.



Marshall Center Director Art Stephenson, left, congratulates John Nugent and members of the Teledyne Brown Engineering Propellants, Pressurants and Calibration team on its safety record for no lost work-time accidents in more than 10 years.



Scott David, right, as "Dr. Know," demonstrates a safety lanyard to Cheri McCaskey-Burton.

Obituaries

Allen, Vern P., 86, of Huntsville, died June 7.

He retired from the Marshall Center in 1973 as an engineering technician in the Space Science Department.

He was a native of Utah, member of the Church of Jesus Christ of Latter Day Saints and a U.S. Air Force veteran. He was the father of the late Steve Allen.

He is survived by his wife, Irene Allen; three sons, James Allen of Normal, Ill., and Gordon Allen and Lawrence Allen, both of Huntsville; one brother, Robert Allen of Tremonton, Utah; one sister, Hellen Abbot of Salmon, Idaho; 11 grandchildren; and one great-grandchild.

Burial was in Richmond, Utah.

Carter, Kathryn Foster, 78, of Huntsville, died June 6.

She retired from the Marshall Center in 1986 as a program analyst.

She was a member of Fanning Heights Church of Christ and was the widow of Ryan H. Carter.

She is survived by one son, Ryan Carter of Woodstock, Ga.; one daughter, Nancy McFarlane of Tampa, Fla.; one sister, Irene Adams of Huntsville; and two grandchildren.

Burial was in Maple Hill Cemetery.

Clotfelter, Wayman Noel, 81, of Huntsville, died June 6.

He retired from the Marshall Center in

1978 where he worked as an engineer in the Nondestructive Testing Branch of the Materials and Processes Laboratory.

He is survived by his wife, Vida Tidmore Clotfelter; and one daughter, Debra Clotfelter.

Delaney, Albert "Jim," 82, of Mims, Fla., died May 18.

He retired from the Marshall Center in 1981 as an engineer, AST, Flight Systems.

He was a native of Parsons, W.Va., a former employee of USBI and member of Spirit Fire World Outreach Church of Titusville.

He is survived by his wife, Juanita Delaney; two sons, Marian Delaney of Huntsville and Thomas Delaney of Cocoa, Fla.; two daughters, Martha D. Walls of New Market and Donna Delaney of Cocoa, Fla.; one brother, Early Delaney Jr., of West Virginia; two sisters, Mary Jane Martin and Betty Jennings, both of West Virginia; 10 grandchildren; and seven great-grandchildren.

Horner, Jack B., 67, of Rogersville, Tenn., died June 6.

He retired from the Marshall Center in 1995 as an aerospace engineer where he worked on programs including Skylab, Space Shuttle, Hubble Space Telescope and the International Space Station.

He was a graduate of the University of Tennessee, a U.S. Army veteran, member

of the Huntsville Jaycees, Rogersville Presbyterian Church, Huntsville YMCA volunteer and served on the board of the Rogersville Heritage Association and National Association of Retired Federal Employees.

He is survived by his wife, Lois Trent Horner; one son, Michael Scott Horner of Houston; two daughters, Jill Darlene Dixon of Atlanta and Jan Marie Cox of Houston; one brother, Hugh Bryson of Leesburg, Fla.; one sister, Pattie Ellison of Tacoma, Wash.; and one grandchild.

Burial was in McKinney Cemetery.

Morgan, Alton O.P., 73, of Horton, died June 16.

He retired from the Marshall Center in 1977 where he worked in the Facilities Office.

He was a U.S. Air Force veteran of the Korean War, worked in radio broadcasting at WGSV and taught electronics at the U.S. Army Ballistic Missile Agency at Redstone Arsenal before working for NASA. He was a member of Southside Methodist Church.

He is survived by his wife, Evelyn Maurine Boozer Morgan; three daughters, Sylvia McCoy and Kathy Lowe, both of Horton, and Theresa Thacker of Madison; one sister, Suzie Jackson of Guntersville; and four grandchildren.

Job announcements

MS02D0056, AST, Technical Resources Management. GS-801-07/09/11, Space Shuttle Projects Office. No closing date.

MS02C0159, AST, Engineering Project Management. GS-801-14, Second Generation RLV Program Office, Architecture Definition Office - Houston, Texas. Closes June 28. Competitive Placement Plan.

MS02C0160, Facilities & Property Utilization Specialist. GS-301-12, Center Operations Directorate, Facilities Engineering Department, Planning & Integration Group. Closes June 28. Competitive Placement Plan.

MS02C0163, Supv., AST, Aerospace Flight Systems. GS-861-15, Second Generation RLV Program Office, Systems Engineering and Integration Office. Closes June 28.

MS02C0164, AST, Flight Systems Design. GS-861-14, Space Transportation Directorate, Subsystem & Component Development

Department, Mechanical Design Group. Closes July 5.

MS02C0167, Safety & Occupational Health Manager. GS-0018-13, Safety and Mission Assurance Department, Industrial Safety Department. Closes June 28.

MS02C0168, Safety & Occupational Health Specialist. GS-018-12, Safety and Mission Assurance Department, Industrial Safety Department. Closes July 8. Competitive Placement Plan.

MS02N0165, Information and Protocol Specialist. GS-100-11, Customer and Employee Relations Directorate. Closes July 10. This is a reassignment bulletin. Applications will not be accepted for promotional opportunities.

MS02C0169, AST, Structural Materials. GS-0806-14, Engineering Directorate, Materials, Processes & Manufacturing Department, Non-metallic Materials & Processes Group. Closes July 9. Competitive Placement Plan.

Center Announcements

University scholarships available

Two university scholarships sponsored by the Marshall Association are available for incoming freshmen in September. Both technical and non-technical scholarships will be awarded. The Association will accept applications for the scholarships until July 31. Completed applications should be submitted to Cliff Bailey in AD01 or call 544-5482.

Thrift Savings Plan for Marshall employees open

Marshall employees can change their contributions to Thrift Savings Plan accounts until July 31. Employees also may begin contributions to their accounts during this period. There are five different funds to choose from. For more information, call Ginger Martin at 544-5654 or Debbie Allen at 544-7536.

Marshall Retirees Association offering university scholarship

Students who are descendants of a Marshall Center retiree can apply for the NASA-MSFC Retirees Association Scholarship at the University of Alabama in Huntsville. The \$1,000 scholarship will be awarded for the academic year beginning in the fall. For more information, call UAH Student Financial Services at 824-2755.

Wellness Center grand opening

A grand opening ceremony for the Wellness Center, Bldg. 4315, will be at 10 a.m. June 27. All Marshall team members are invited to attend.

NASA Performance Evaluation Profile Survey required

All Marshall team members, civil service and contractor, are required to complete the Performance Evaluation Profile Survey. A training module is at the Safety, Health and Environmental Web site. The training module can be completed in about one hour. For assistance, or for more information, call Dennis Davis at 544-8628, or Kristie French at 544-7474.

'Latin Dance Night' set June 29

The Alabama Hispanic Association will present "Latin Dance Night" Saturday, June 29 at the Huntsville Senior Center, 2200 Drake Ave. S.W. Dance lessons will be from 7-8:30 p.m. followed by Latin dancing until midnight. Door prizes also will be awarded. Tickets are \$8 in advance or \$10 at the door. To purchase a ticket or for more information, call Elia Ordonez in the Equal Opportunity Office at 544-6658.

Marshall cafeterias, grill and barbershop closed July 5

Cafeterias in Bldg. 4203, 4610 and 4471, as well as Charlie's Grill in Bldg. 4200 and the Barbershop in Bldg. 4203, will be closed July 5.

Did you once race a moonbuggy?

Planning for the 10th annual Great Moonbuggy Race, to be held in 2003, has begun. Organizers would like to find any Marshall team members who once raced on a moonbuggy team. For more information, call Durlean Bradford at 544-5920.

WebTADS training notice

NASA Administrator Sean O'Keefe has requested that time keeping be delegated to the employee level. Training is now available to Marshall employees on WebTADS timesheet entry and NASA standardized policies. The WebTADS training team will be contacting the administrative officer or management support assistant of each organization to coordinate training dates and location. The training sessions will last approximately two hours and will include timekeeping standardized policies and a WebTADS system navigation demonstration. Labs will be available as needed for additional practice. These labs will be for navigation only and no WebTADS demonstration or policy discussions will occur. Administrative officers or management support assistants should call Pam Vaughn at 544-9372 for additional information.

Executive overview of system requirements playback available

NASA's systems requirements course has been revised to provide systems engineers and other technical personnel with a proven process to obtain information needed before writing requirements and to write good requirements. A playback of an executive overview of the revised course is being hosted by Marshall's Employee and Organizational Development Department on Marshall Channel 14. The playback will occur on July 2 at 10 a.m. and July 3 at 1 p.m.

AdminSTAR employee overview training dates set for July

The AdminSTAR employee overview training is designed to provide users with the core functionality of AdminSTAR learning management software application. Users will be able to identify methods to overcome AdminSTAR log-on barriers, use catalog and calendar features, review and print requested and approved training as well as cancel out of approved courses. All sessions will be in Bldg. 4200, Room G13A, on July 9 from 1-2 p.m. and 2:30-3:30 p.m.; July 24 from 1-2 p.m. and 2:30-3:30 p.m.; and July 25 from 1-2 p.m. and 2:30-3:30 p.m. To register, call John Heath at 544-2622.

Children's parade set for July 1

The Marshall Child Development Center invites all Marshall team members and retirees to a July 1 parade. Development Center students will parade around Solar Circle and Mercury Road beginning at 10 a.m. and throw candy to spectators. The children will be dressed in patriotic red, white and blue.

Payroll Savings Campaign

The Marshall Center's 2002 U.S. Savings Bonds Payroll Savings Plan Campaign will end June 30. When employees enroll in the plan, savings are set aside before they receive their paycheck. For more information, call Edwina Bressette at 544-8115.

Employee Ads

Miscellaneous

- ★ 300 MHz Gateway computer w/64Mb Ram, CDROM, 17" monitor, Windows 98 & Modem, \$325. 882-1779
- ★ Troy-Bilt EconoHorse tiller, electric start; GE electric clothes dryer, white. 881-6040
- ★ 14' boat w/trailer, new tires, rims, trolling, 55HP Johnson motor needs carb work, \$600. 721-4534
- ★ Trailer hitch, fits extended Astro/Safari vans, \$40. 256-420-2444
- ★ Hospital bed, electric in 3 positions, \$500 obo. 864-0155
- ★ Super-single water bed, bookcase head board, \$100; Frigidaire refrigerator, almond, 24 cu. ft., \$75. 837-0996
- ★ California King walnut bed w/6-drawer unit and Simmons Beautyrest mattress, \$225. 533-5942
- ★ Go-cart, 1 seater, 5HP Briggs & Stratton engine, \$300. 882-0461
- ★ Two 12" bikes, for 2-4 year olds, w/training wheels, \$15 each, \$25 for both. 890-0755
- ★ Solo-Flex muscle machine, butterfly & leg extension, manual of exercises, \$390. 256-766-9348
- ★ Coleman Powermate, 5KW gasoline-powered electric generator, 10HP, Tecumseh engine, never used, \$500. Krebsbach. 882-2369
- ★ Black hard-top for 1955-1975 Jeep, hard doors included, make offer. 461-8369
- ★ Kitchen-Aid washer and Kenmore dryer, \$150 for both. 828-3181 anytime
- ★ Waterbed, queen size, waveless mattress, two heaters, padded side rails, \$100 obo. 851-2460
- ★ Two twin-size beds, one iron frame, one wood, \$25 each. 534-4968
- ★ Single waterbed, honey maple with brass trim includes heater, comforter and bedding, \$140. 859-0729
- ★ Apple G3 laptop 300MHz/64MB/8GB HD/DVD w/extra monitor, optical drive, case, etc., \$600 828-6213
- ★ Leather rocker/recliner, taupe, \$399. 881-0755
- ★ Whirlpool self-cleaning electric oven/range,

- ★ \$150; side-by-side refrigerator w/ice in door, \$225, both white. 536-4507
- ★ Boston Whaler, 16'-7", bass/ski, boat, no motor, \$1,200. 536-4506
- ★ Playstation 2, DVD remote, 4-games, 2 controllers, \$255 obo. 489-0136
- ★ Wedding dress w/train, white, size 12, includes veil, \$250 obo. 858-5552
- ★ Yerfdog off-road go-kart, two seater, used less than 10 hrs., \$800. 837-9022
- ★ Kenmore upright freezer, 9.0 cu. ft., almond, \$95. 325-0705/337-0075
- ★ Children's wooden table w/2-seat bench and 2 chairs, \$40. 830-5285
- ★ Fisher Price 3-in-1 game table; pool, tennis, & hockey, \$50. 722-9989
- ★ Quart canning jars, five dozen, \$3 per dozen. 852-2936
- ★ Sixteen used aluminum framed jalousie windows and screens, 16"x60", \$30 each. 256-723-4983
- ★ Retired Longaberger baskets. 256-757-0469

Vehicles

- ★ 1991 Nissan Stanza XE sedan, 114K miles, 5-speed, a/c, moonroof, \$2,800. 534-4968
- ★ 1993 Toyota Celica GT convertible, power, a/c, 5-speed, \$6,000. 464-9922
- ★ 1993 Ford Ranger, 6 cyl., 87K miles, a/c, p/s, p/b, \$3,000 firm. 539-4677
- ★ 2000 Nissan X-Terra XE, 4-door, keyless entry, 51K miles, \$18,300. 774-0158/337-1702
- ★ 1989 Honda Prelude, 191K miles, 4-wheel steering, sunroof, power windows/locks, \$2,300 obo. 256-230-1154
- ★ 1998 Dodge Grand Caravan, \$8,900 obo. 233-6197
- ★ 1991 Honda Accord EX, 4-door, 5-speed, green, \$3,500. 256-233-2262/653-1013
- ★ 1996 Ford Ranger XLT, automatic, 60K miles, am/fm/cassette, bed rails, alloy wheels, garaged, \$4,900. 256-753-2278
- ★ 2001 Olds Alero GL, 4-door, all-power, anti-lock brakes, cruise, alloys, warranty, 13K miles, \$10,500. 536-3697
- ★ 1967 Camaro convertible, \$5,500; 1969 RS Camaro, \$1,800; 1955 Chevy Hardtop, \$800. 316-1880
- ★ 1990 Lincoln Town Car, 302 ci, maroon,

- loaded, one-owner, Sony am/fm/CD, 175K miles, \$2,450. 351-6996
- ★ 1994 Chevy S-10 Blazer LT, 4WD, 1-owner, \$6,500; 1992 Firebird, 8-cyl., T-tops, 1-owner, \$5,000. 653-0406
- ★ 1995 Nissan King-Cab XE pickup, gray, 71K miles, V6, automatic, a/c, \$6,500. 895-9589
- ★ 1995 Chevrolet Cavalier, 2D, auto, a/c, blue, new tires, 154K miles, \$2,000 obo. 256-931-6954
- ★ 1996 Millenia, sunroof, all-power, Alpine CD changer, 81K miles, champagne/gray, \$8,500. 880-9025
- ★ 1989 Olds Cutlass Supreme, black, one-owner, full-power, \$2,150. 852-5446
- ★ 1993 Ford Ranger XLT, 6-cyl., auto, bedliner, toolbox, AM/FM/CD, 118K miles, \$3,500. 256-536-8223
- ★ 1996 Buick Regal Limited, a/c, all-power, 139K miles, CD/cassette, sunroof, leather interior, \$4,500. 773-7730
- ★ 1998 Ford Taurus, white w/tan interior, loaded, \$6,000. 256-878-1485

Free

- ★ To good home, registered female Golden Retriever, friendly, great with children. 351-6996
- ★ Weathered barn wood, you tear down barn, call between 3 p.m. & 8 p.m. 379-2933

Lost

- ★ Ladies watch, stainless steel, CYMA, REWARD! 544-8293

Wanted

- ★ 100th Shuttle flight bookmark. 256-306-0700
- ★ Used 4-wheeler ATV. 882-0461 after 5 p.m.
- ★ Open hole flute in fair to good shape with case for band student. 828-5840
- ★ Elementary level, "Hooked on Phonics." 859-2633
- ★ Baby clothes for girl, size 12 months and up. 776-0425
- ★ Showgard stamp mounts. 881-6595

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