MARSHALL STAR

Serving the Marshall Space Flight Center Community

May 1, 2003

Photo by Doug Stoffer, NASA/Marshall Center

U.S. Rep. Bud Cramer, left, receives a picture of the National Space Science and Technology Center Annex from Dr. Richard McNider, NSSTC acting executive director, during ribbon-cutting ceremonies for the new annex last week.

More room for science

New laboratory annex opens at National Space Science and Technology Center

by Sherrie Super

A ribbon-cutting ceremony April 23 marked the grand opening of the new research annex of the National Space Science and Technology Center (NSSTC) in Huntsville.

The 80,000 square-foot addition nearly doubles the size of the NSSTC core facility on Sparkman Drive in Cummings Research Park and provides office space for some 300 scientists, engineers and staff. From its shock-absorbing foundation to its rooftop lightning observatory, the new annex offers state-of-the-art facilities for research in Earth sciences, materials science, biotechnology, propulsion, information technology and optics.

The first floor is constructed with a special "shock-absorbing"

*See **NSSTC** on page 6*

Fred Schramm to receive national technology transfer award

by Sanda Martel

Fred Schramm, an industrial engineer at the Marshall Center, has won national recognition for adapting a parts identification marking system to NASA's standards and introducing the technology into the private sector. He will receive the Federal Laboratory Consortium Excellence in Technology Transfer Award.

The marking system — first known as compressed symbology and now by its commercial name Data Matrix — works much like linear bar coding but the matrix symbols, resembling small checkerboards, are more efficient and reliable. Capable of storing up to 100 times more information in the same amount of space than traditional bar codes, the matrix codes are more permanent and smaller than the older, more familiar product

*See **Award** on page 2*

Photo by Dennis Olive, NASA/Marshall Center

Take Our Children to Work Day

The Marshall Center's annual "Take Our Children to Work Day" was April 28, in conjunction with the Space Transportation Expo. Dexter Strong, right, a student at the Huntsville Academy for Science and Foreign Language, demonstrates a fluid metal flow propulsion system to, from left, Boeing employee Joel Bridges and his sons, Jacob and Billie, at the Expo event. For more photos from the educational day, see page 3.

Award

Continued from page 1

marking code. They are also stackable, can be made invisible and won't fall off as sticky bar codes sometimes do. They can be read through six layers of paint or paper and are now being integrated with security technologies to prevent counterfeiting of commercial products.

In 1987, with Schramm as principal investigator, Marshall performed a study to determine if marking the two-dimensional symbol directly on part surfaces would be an effective way to track the millions of parts used in the Space Shuttle program. The Marshall Center has since led the way in direct part marking and worked with industry partners to enhance Data Matrix technology as part of NASA's effort to improve life on Earth through technology developed for the space program.

"This award is a prestigious honor in the technology transfer community," said Victor Chavez, Federal Laboratory Consortium Award committee chairman.

Nominees must be employed by one of 700 consortium member federal laboratories and must have demonstrated not only a technology development but also evidence that the technology was transferred into the private sector.

Schramm, a resident of Winchester, Tenn., will receive the award May 7 at the consortium's annual meeting in Tucson, Ariz. He is one of 22 winners chosen on the basis of innovation and potential for overwhelming positive impact on society. A panel of experts from industry, state and local government, academia and other Federal Laboratory Consortium members judged nominations for the coveted award. The organization promotes cooperation between government and private labs to exchange ideas and enhance the nation's economic growth.

Marshall Imaging Services

Schramm

"We're extremely proud that Fred is being recognized for his accomplishments," said Vernotto McMillan, manager of Marshall's Technology Transfer Department. "He is very deserving of this honor. The number of technologies selected for this honor is few. In recent years, the number and types of cutting-edge technologies developed and commercialized at Marshall have increased dramatically."

A Marshall employee since 1981, Schramm has been a member of the Technology Transfer Department, formerly known as the Technology Utilization Office, since 1993 and serves as program manager for development of the family of products and applications that has evolved from compressed symbology technology. He has submitted 15 invention disclosures and filed 13 patents — four of which have been issued with five pending.

His previous Marshall work includes assignments in the Heavy Lift Launch Vehicle Project, Shuttle-C Project, Space Shuttle Main Engine Project and External Tank Project.

Schramm has written numerous articles for technical publications and presented NASA technical briefings at several conferences.

Schramm is a 1974 graduate of Tennessee Technological University in Cookeville, Tenn., with a bachelor's in industrial engineering. He earned a master's in engineering management from the University of Tennessee in Knoxville in 1991.

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

Chandra Observatory detects X-rays from low-mass brown dwarf

From the Smithsonian's Chandra X-ray Center

Using NASA's Chandra X-ray Observatory, scientists have detected X-rays from a low mass brown dwarf in a multiple star system, which is as young as 12 million years old.

This discovery is an important piece in an increasingly complex picture of how brown dwarfs, and perhaps the very massive planets around other stars, evolve.

Chandra's observations of the brown dwarf, known as TWA 5B, clearly resolve it from a pair of Sun-like stars known as TWA 5A. The system is about 180 light years from the Sun and a member of a group of about a dozen young stars in the southern constellation Hydra. The brown dwarf orbits the binary stars at a distance about 2.75 times that of Pluto's orbit around the Sun. This is first time that a brown dwarf this close to its parent star(s) has been resolved in X-rays.

"Our Chandra data show that the X-rays originate from the brown dwarf's coronal plasma which is some 3 million degrees Celsius," said Yohko Tsuboi of Chuo University in Tokyo and lead author of a paper describing these results in "Astrophysical Journal Letters."

"The brown dwarf is sufficiently far from the primary stars that the reflection of X-rays is unimportant, so the X-rays must come the brown dwarf itself," Tsuboi said.

TWA 5B is estimated to be only between 15 and 40 times the mass of Jupiter, making it one of the least massive brown dwarfs known. Its mass is near the currently accepted boundary, about 12 Jupiter masses, between planets and brown dwarfs. Therefore, these results may also have implications for very massive planets,

*See **Chandra** on page 4*

Take Our Children to Work Day at Marshall a success

About 800 children visited the Marshall Center last week as part of the annual "Take Our Children to Work Day."

It all began at 7 a.m., including group activities and tours of the Center, meetings with scientists, demonstrations and the Space Transportation Expo.

Children in grades 3-12 participated in the event, which was an opportunity to promote education and awareness in children through exposure to the space program.

Photo by Doug Stoffer, NASA/Marshall Center

Joel Best, right, data systems engineer at the Marshall Center's Payload Operations Center, discusses science in space with a group of children.

Photo by Emmett Given, NASA/Marshall Center

Abbey Steed, 9, with the help of Alan Murphy, helps demonstrate how astronauts sleep in space.

Photo by Doug Stoffer, Marshall Center

Marshall team member Bill Evans tells children how his group at the Payload Operations Center interacts with astronauts on board the International Space Station.

Photo by Dennis Olive, NASA/Marshall Center

Marshall team member Gary Matthews, right, his son Tristian and daughter Marcilla, all listen to Leslie Curtis explain the Tether Satellite System during the Space Transportation Expo.

Photo by Dennis Olive, NASA/Marshall Center

Tim Karigan and his daughter Jennifer look over Solar Propulsion models at the Space Transportation Expo.

Clinton named manager of Microgravity Science and Applications Department at Marshall

from the Human Resources Department

Dr. Raymond G. Clinton Jr. has been named manager of the Marshall Center's Microgravity Science and Applications Department in the Science Directorate.

During his 18 years with NASA, Clinton has become a nationally recognized authority in the development and application of advanced materials for space transportation systems. Currently, he is completing a two-year special assignment to the Physical Sciences Division in the Office of Biological and Physical Research at NASA Headquarters in Washington. He is the special assistant for research integration and management responsible for strategic planning and the establishment of integrated scientific research policies for the Physical Sciences Division.

Clinton also has served as the assistant enterprise scientist for Materials Science responsible for the redefinition and redirection of the microgravity materials science research program.

Photo by Terry Leibold, NASA/Marshall Center

Clinton

Other leadership positions at Marshall include: supervisor, AST Structural Materials; group leader, Nonmetallic Materials and Processes Group; chief, Nonmetallic Materials and Processes Division; chief, Nonmetallic Materials Branch; and chief, Ceramics and Coatings Branch.

In 1995, Clinton received the NASA Medal for Exceptional Achievement for his leadership and technical contributions in the analysis, testing, qualification, and performance evaluation of Solid Rocket Motor nozzle materials. He has played an important leadership roll on the External Tank Composite Nose Cone Recovery Team, and served as NASA co-chair of the Integrated High Payoff Rocket Propulsion Technologies Materials Working Group.

Clinton earned a doctor of philosophy and a masters and bachelor degree in aerospace engineering from Atlanta's Georgia Institute of Technology in 1982, 1976, and 1973, respectively. He is the author and co-author of numerous professional papers and publications in professional journals.

Chandra

Continued from page 2

including those that have been discovered as extrasolar planets in recent years.

"This brown dwarf is as bright as the Sun today in X-ray light, while it is 50 times less massive than the Sun," Tsuboi said. "This observation … raises the possibility that even massive planets might emit X-rays by themselves during their youth."

This research on TWA 5B also provides a link between an active X-ray state in young brown dwarfs — about 1 million years old — and a later, quieter period of brown dwarfs when they reach ages of 500 million to a billion years.

Brown dwarfs are often referred to as "failed stars," as they are believed to be under the mass limit — about 80 Jupiter masses — needed to spark the nuclear fusion of hydrogen to helium, which characterizes traditional stars.

Scientists hope to better understand the evolution of magnetic activity in brown dwarfs through the X-ray behavior.

Chandra observed TWA 5B for about three hours on April 15, 2001, with its Advanced CCD Imaging Spectrometer (ACIS). Along with Chandra's mirrors, ACIS can achieve the angular resolution of a half arc second.

"This brown dwarf is about 200 times dimmer than the primary and located just two arc seconds away," said Gordon Garmire of Penn State University who led the ACIS team. "It's quite an achievement that Chandra was able to resolve it."

The Marshall Center manages the Chandra program, and TRW, Inc., Redondo Beach, Calif., is the prime contractor for the spacecraft. The Smithsonian's Chandra X-ray Center controls science and flight operations from Cambridge, Mass., for the Office of Space Science at NASA Headquarters, Washington.

Photo by Doug Stoffer, NASA/Marshall Center

Lockheed Martin wins excellence award

Ron Wetmore, left, of Lockheed Martin Space Systems Co., receives the Marshall Center's 2002 Contractor Excellence Award from Marshall Associate Director Axel Roth.

Marshall team 'talks trash' during Earth Day events

Earth Day ceremonies last week at the Marshall Center emphasized personal responsibility in protecting and enhancing the environment.

The theme of this year's event was "Let's Talk Trash."

Guest speaker was Pat Byington, an environmental consultant serving on various state boards.

Other activities included the annual tree planting, vendors presenting environmental information, free trees for participants as well as other environmental demonstrations on how to keep the Earth healthy.

During a recent creek cleanup sponsored by Redstone Arsenal, Robert Patrick, of Marshall's Environmental Engineering Department, accepted an award for the most trash collected.

Photo by Emmett Given, NASA/Marshall Center

Pat Byington, left, is told the story of the Newton Apple Tree at Bldg. 4650 by Marshall team member Cedreck Davis. The tree is a descendant of the same tree that prompted Sir Issac Newton to ponder the theory of gravitation in 1665-1666, when he saw an apple fall to the ground in his mother's garden in England. The original tree is said to have died in 1814, but not before grafts were taken from it and regenerated.

Marshall Imaging Services

Former astronaut Dr. N. Jan Davis, director of the Marshall Center's Flight Projects Directorate, is surrounded by student winners of the recycling and Earth Day contests at Rainbow Elementary School in Madison.

Photo by Emmett Given, NASA/Marshall Center

Marshall Center officials have a chuckle at the number of mementos Pat Byington has in his lap after speaking at the Center's Earth Day ceremonies. From left are Director of the Center Operations Directorate Sheila Cloud, Byington, Marshall Director Art Stephenson and Marshall Deputy Director David King.

Photo by Emmett Given, NASA/Marshall Center

Paul Taylor, left, and Randy Cain, have fun with Earth Day windmills while touring the exhibit area.

Photo by Emmett Given, NASA/Marshall Center

Shirley Novy-Shue, left, gives Alan Adams a free tree and pointers for planting.

Continued from page 1

foundation to protect sensitive research experiments from disturbances such as traffic and wind vibrations. A high bay area gives scientists space to assemble large airborne instruments.

Crowning the annex is a glass-encased observation facility on the center's roof. Built to withstand the strain of severe weather, it offers an ideal vantage point for observing lightning during thunderstorms.

Speakers at the ceremony included Marshall Center Director Art Stephenson, U.S. Rep. Bud Cramer, and University of Alabama in Huntsville President Dr. Frank Franz.

"We can all be proud of this newly expanded facility, because it significantly enhances what is already a unique institution — pooling talent and resources from NASA, Alabama's research universities, industry and other organizations such as the National Weather Service Forecast Office and USRA in the pursuit of new knowledge," Stephenson said.

After the official ribbon cutting, attendees toured laboratories to get a glimpse of the addition's state-of-the-art facilities, including the new Huntsville-based National Weather Service Office.

While the office's primary responsibility is to provide weather forecasts and warnings for North Alabama, its location also enables it to be an active participant in a range of meteorological research. The Huntsville Weather Forecast Office is the only one in the nation to share space with a NASA research facility.

The NSSTC is a partnership with the Marshall Center, Alabama research universities, industry and other federal agencies.

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

Photos by Emmett Given, NASA/Marshall Center

Brian Ramsey, right, demonstrates mirror modules that flew on the first High Energy Replicated Optics (HERO) project to, from left, Deputy Director of the Science Directorate Rex Geveden, Director of the Science Directorate Ann Whitaker, and Marshall Center Director Art Stephenson, during a tour of the National Space Science and Technology Center.

Inside the NSSTC's new Passive Microwave Laboratory, Mark James, left, shows Marshall Director Art Stephenson the Advanced precipitation Microwave Radiometer, a microwave device that senses rain and ice crystals in rainstorms and hurricanes.

Special thank you

Thanks to the employees at Marshall, government and contractor, for their prayers, calls and cards during my recent lengthy illness. I also would like to thank Procurement Director Stephen Beale and the procurement managers for their support and encouragement. I extend a special thanks to everyone who donated leave. I appreciate your kindness and generosity.

— Vickie J. Ivey
Procurement Office

Photo by Terry Leibold, NASA/Marshall Center

Educators visit Marshall

Marshall team member Patrick Fulda, right, demonstrates some of the hardware for a Phase Change Device to a group of Wisconsin educators who recently visited the Marshall Center.

Center Announcements

Dial-in and VPN require security registration

Marshall team members who use the Virtual Private Network software to connect to the Marshall Private Network, or who dial directly into the network from home or TDY, must apply for a MSFC RSA SecurID Token in May or June. For more information, including frequently asked questions and an updated schedule to apply, go to http://www1.msfc.nasa.gov/INSIDE/announcements/dial_in_token.html.

Thrift Savings Plan season open

The Thrift Savings Plan open season closes June 30 for employees wanting to begin, increase or decrease, contributions to their account. For more information, see "Inside Marshall" or call 544-5654 or 544-7536.

LatinFest Dance set for May 3

The Alabama Hispanic Association is sponsoring a "LatinFest" dance at 9 p.m. on Saturday. Dance lessons begin at 8 p.m. at the Senior Center on Drake Avenue at Ivy Avenue in Huntsville. For more information, call 544-6658.

'Relay for Life' set

The Madison County chapter of the American Cancer Society will have a "Relay for Life" from 7 p.m. Friday to 7 a.m. Saturday at Milton Frank Stadium off Bob Wallace or Drake Avenue in Huntsville. For more information, call Jenny Huie at 535-1090, 1-800-ACS-2345 or go to www.cancer.org.

Disability awareness training required for all civil servants

In a few weeks, the Employee and Organizational Development Department will offer an online disabilities awareness training course and all civil servants are required to participate. The training is designed to heighten awareness and knowledge of regulatory requirements under the Rehabilitation Act and help the workforce understand the special needs of employees with disabilities. The training touches on all five of the Marshall Center values. Credit will be received in training records for those taking the course.

Marshall Association luncheon will be May 13

The Marshall Association will host a luncheon from 11:30 a.m.-1 p.m. May 13 at the Redstone Officers' and Civilians' Club. John Gordon, meteorologist in charge of the weather forecast office for the National Weather Service in Huntsville, will speak. The luncheon costs $9, payable at the door, but reservations are required and can be made by e-mail to Cliff Bailey or by calling 544-5482.

Karate Club offering Tai Chi

The Marshall Seibukan Karate Club is offering Tai Chi as a form of exercise for health and mobility. The club also is offering "beginner friendly" karate classes on Mondays and Wednesdays from 3:45-4:45 p.m. For more information, see "Inside Marshall" or contact Bill Mayo at 544-7564.

Free Huntsville Stars tickets available for Saturday game

The Boeing Co. has given 3,000 tickets to the Marshall Center for team members to attend the Huntsville Stars vs. Chattanooga Lookouts baseball game at 7:05 p.m. Saturday. One ticket will admit four and tickets can be upgraded to upper or lower box seats for $4 per person. Tickets are available at the Space Shop in Bldg. 4203 and the Wellness Center, Bldg. 4315.

Art Stephenson to address IEEE conference in Huntsville

Marshall Director Art Stephenson will speak at the Institute of Electrical and Electronics Engineers (IEEE) RadarCon03 event to be held Monday-Thursday at the Huntsville Marriott. Stephenson will speak at 8:15 a.m. Tuesday. The conference theme is "Radar-Exploring the Universe," to encourage expanding the ways that radar technology can impact society, Earth, the solar system and universe. For more information, go to www.ieee.org/radar03 or call Sonya Hutchinson at 544-3312.

Marshall Team Meeting rescheduled

The Marshall Team Meeting has been rescheduled from Monday to May 12 at 8:30 a.m., Bldg. 4200, Room P110.

E-learning available; 2003 course catalogs updated

The Self-Study Learning Center has updated 2003 course catalogs available. Marshall team members can choose from 1,500 courses they can access from the office, home or on TDY -- anywhere there is internet access. Accounts are given on a first-come, first-serve basis. For more information, call 544-8291 or go to self.study@msfc.nasa.gov or http://mi.msfc.nasa.gov/elearning.

MARS Archery Club beginning season

The MARS Archery Club league will be held each Thursday until the fall. Shoots start at about 4:30 p.m. and continue until dark. Participation is open to all club members. Membership is $5 for singles, or $10 for a family per year, and is open to all civil servants and on-site contractors. For more information, call Rich Wegrich at 544-2626.

MARS Tennis Club Hi-Lo closed doubles tournament set

A closed Hi-Lo doubles tournament will be at 8 a.m. Saturday for the MARS Tennis Club. The tournament is for MARS Tennis Club members only. For more information, call Bill Boglio at 544-3806.

Facilities Office breakfast meeting is Tuesday

Facilities Office retirees, current employees and friends will meet for breakfast at 8 a.m. Tuesday at Shoney's on University Drive at Memorial Parkway in Huntsville. For more information, call Carl Gates at 232-2695.

Employee Ads

Miscellaneous

★ Executive desk, solid mahogany, file drawers, $300. 881-3527
★ Bausch & Lomb 454x equatorial refractor telescope, 910mm focal length, Model 780454, $250. 351-6066/656-2965
★ Dinette table & 6 chairs, wood w/Formica wood grain top, two extender leaves, $100. 325-5646
★ Sweetheart wedding gown and veil, size 12, $300. 881-7932/Sonya
★ Chevy 305 engine, bore 40/350 turbo transmission, $600. 256-755-0288
★ Steeda strut tower brace, $50; LX wheels w/ Goodrich Comp T/A 225/60/R15, fits 1979-93 Mustang, $200. 837-9479
★ Nike Air Barrage youth baseball bat, 29", 19 oz. & 31", 21 oz., $75 each. 533-5942
★ 1991 Dynasty 19.5', 3.7L/165HP Mercruiser w/Alpha One outdrive, dry storage, trailer w/ new tires, $4,800. 961-3408
★ 1985 Coleman Williamsburg pop-up camper, sleeps 6, a/c, shower, port-a-potty, stove, awning, $2,000. 230-6846
★ Broyhill solid pine entertainment center, 60.5"x22"x50", $250. 325-6266
★ Thistle sailboat & trailer, 17', two sets of sails, hull #2886, $2,500. 256-650-5010
★ Eight 6-week old pit-bull puppies. 256-998-0055
★ Golf clubs w/bag, $50; roller blades, size 10 w/pads, sizes 3 & 4, $100. 828-6287
★ Black Lab puppies, wormed and weaned. 256-498-3023/Lee
★ Hang Glider RamAir146, $2,500; accessories: wheels, parachute, helmet, blazer truck rack, etc., $2,080. 931-438-7110
★ Fleetwood Mac tickets, two floor seats, Birmingham BJCC, June 5, $350. 464-9866
★ Two twin-sized daybeds, mattresses, bedspreads w/two matching cushions, $120 each. 533-4824
★ Tropic brown granite counter top, 25"x60", w/4 element KitchenAid glass cook top installed, $975. 880-7305
★ Pool table, 8', 1" slate, Kasson, Victorian style, 2-yrs. old, $1,900 firm. 880-6563
★ Kid's bike, 12", $20; bicycle trailer, $50; car-seat, $20; stroller, $25. 721-0540 after 5 p.m.
★ Ping-pong table, $75; Rattan table and four chairs, $200; small student desk, $25. 464-0710
★ Two Dogloo Igloo dog houses, $50 ea. 882-8993/Evenings or 337-0562 Cell
★ Angel Line convertible crib, white, $100; Simmons mattress, $50. 533-1797
★ Mizuno 9-degree titanium driver, Pro-Gold 65 tip, stiff shaft, $70. 851-7406
★ Pembroke Welsh Corgi, female, 2 yrs. old, $200; Chow/Golden retriever mix, 5 yrs. old, spayed, $75. 652-0379
★ CVA Firebolt Ultra-mag muzzle-loader w/ scope, used one season, $200. 256-325-0306
★ 1990 TW 200 Yamaha Duel Sport, black, $1,000. 256-423-2662
★ Total gym 1000, $100; carbon monoxide alarm, never opened, $40. 776-9165
★ Boy's and girl's bedroom furniture, $600 per set. 882-1696
★ Couch and love seat, $250; King mattress/ frame, $250; washer/dryer, $100. 658-7768
★ Refrigerator, $100, range, $100; washer/ dryer, $100 for both. 881-2131
★ 1.3GHZ, 128mb, 20GBhd, 52xcd, all accessories included, no monitor, $520. 256-348-6731
★ Complete Matchbox X-33 vehicle set. All five vehicles MOCs. Series 8 from 1999. $30. 306-0700.

Vehicles

★ 1978 Mercury, 460 CID. 881-6040
★ 2002 Mustang GT, black, leather, loaded, 13.5K miles, $22,000 or take over payments. 859-2633
★ 1995 F150 truck, regular cab, short wheelbase, toolbox, dual gas tanks, 107K miles, $5,500. 895-2959
★ 1987 Olds Ciera, 4-door, silver, 133K miles, $1,400. 881-0354
★ 1989 GMC Vandura, _ ton custom van, $3,500. 256-565-6192
★ 1994 Mercury Villager van, one-owner, crimson, gold interior, rear air, maintained, 112K miles, $3,500. 931-438-0476
★ 2000 Ford Windstar LX, all-power, dual sliding doors, 68K miles, maroon, $13,250. 828-7377
★ 1996 Buick Regal GranSport, low mileage, fully loaded, moonroof, one-owner, $8,500. 653-9124
★ 1990 Mazda MX-5 Miata, red, 4-cylinder, 5-speed, convertible, 90K miles, one-owner. 883-1874
★ 1997 Nissan Maxima SE, 4-door, 82K miles, pearl white, automatic, CD, new brakes, $9,990. 881-8674
★ 1993 Lexus ES300, dark green, tan leather, 98K miles, $6,950. 883-7088
★ 2000 Suzuki Grand Vitara XL7/SUV, white, 45K miles, one-owner, seats seven, sunroof, CD/cassette, $17,000. 837-8487
★ 1979 Mercedes Benz SL450 roadster, $13,000. 922-9294
★ 1996 Toyota Avalon, loaded, all-power, leather, 182K miles, $6,200. 728-5768 after 5 p.m.
★ 1999 Ford Ranger XLT Sport, 6 cyl., CD, cruise, power windows/door locks, fiberglass truck cap, $9,800. 859-0729
★ 1969 Chevelle SS, rebuilt Grooms' 396 engine, automatic, bucket seats, $7,500. 859-3136

Wanted

★ Small computer table. 520-5422
★ Ride to work from near Huntsville Hospital to MSFC, 7 a.m.-3:30 p.m., $7 per day. 534-5398
★ Free chain-link fencing, will take down and/ or pick up. 776-9684
★ Chrono Trigger and Final Fantasy II for Super Nintendo entertainment system. 534-7691
★ Small outboard engine for sailboat, 5-10 horsepower. 883-1211
★ Storage shed, 8'x10'. 256-348-6731

Free

★ Hickory cut in firewood lengths, you pick up. 536-6228
★ Two kittens, male gray tabby, female long-haired calico, spayed, neutered, declawed. 566-1912
★ Two indoor/outdoor cats, Tabbies, brother & sister, neutered, spayed, 2 yrs. old. 353-9339

Found

★ Charm bracelet, Bldg. 4200 Lobby. Call 544-3623 to claim/identify
★ Ladies hair barrette, broken, Bldg. 4200 area. Call 544-3623 to claim/identify

Lost

★ Bracelet, Bldg. 4203, Apr. 25. Call 544-1130 if found

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