



"We bring people to space — We bring space to people"

Marshall Center boosts Alabama economy by \$735 million in FY 1999

by Marianne Higgins

Marshall contributed \$735 million to Alabama's economy in fiscal year 1999.

That contribution included \$229 million in salaries for civil service personnel and related costs, as well as travel. It also included \$506 million spent on locally procured services, prime contractor and subcontractor support, and local construction.

Approximately \$68 million in retirement annuities were paid in 1999 to 2,550 Marshall retirees residing in Alabama, with 1,475 retirees in Huntsville receiving \$39 million of that amount.

The \$735 million spent in Alabama was significantly more than the Marshall Center's expenditures in any other state. In addition, NASA funding of approximately \$152 million was spent in North Alabama for International Space Station hardware

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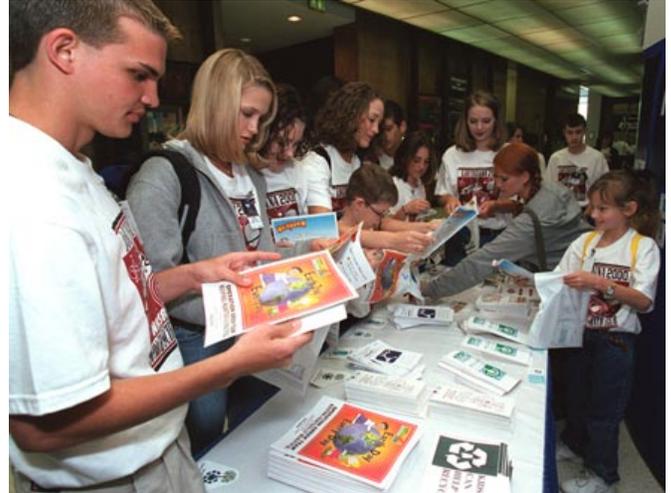


Photo by Emmett Givens, NASA/Marshall Space Flight Center

Nine years and counting

For the ninth year, students from 11 schools in North Louisiana visited Marshall. The students, here last Monday, are members of the space science and mathematics club. Among their many stops was the Earth Day exhibit set up in the lobby of Bldg. 4200. See *Earth Day* story on page 3.

Monday marks 10 years in space for Hubble Telescope

A spectacular morning launch of the Space Shuttle Discovery 10 years ago, on April 24, 1990, ushered in a new golden age of astronomy. The payload in Discovery's cargo bay, NASA's Hubble Space Telescope, was released by the crew into Earth orbit the next day and the universe hasn't looked the same since.

"This month marks the anniversary of one of the greatest observatories ever flown. We have watched in awe as the Hubble Space Telescope has produced some of the most amazing images about the universe that surrounds us," said U.S. Sen. Barbara A. Mikulski of Maryland. "I am so proud of the NASA team that has worked to keep it running, and I'm pleased my support has kept your efforts funded and in business."

Even though initially impaired by a flaw in its main mirror (it was expertly made but to the wrong "prescription," causing its images to be blurred), Hubble's position above the distortion of Earth's atmosphere enabled it to begin making major discoveries even before astronauts repaired it in 1993.

When corrective optics were installed during that dramatic first servicing mission, the universe suddenly snapped into sharp focus, and there followed a flood of spectacular images and discoveries which have forever changed how we view the cosmos.

"Hubble's rate of discovery is simply unprecedented for any single observatory," said Dr. Ed Weiler, NASA's associate administrator for Space Science in Washington, D.C., who has been associated with the Hubble program since 1978. "But what may be even more important in the long term is what Hubble has given to just

about everyone on Earth. Hubble's spectacular images and discoveries of black holes, colliding galaxies and bizarre objects at the edge of the universe have been brought into millions of homes by newspapers, television and the Internet."

In its first 10 years, the 12.5-ton Earth-orbiting Hubble has studied 13,670 objects, made 271,000 individual observations, and returned 3.5 terabytes of data, archived as a scientific treasure trove for future generations of astronomers. Its rapid-fire scientific achievements have resulted in over 2,651 scientific papers.

"Not since Galileo aimed a small 30-power telescope into the night sky in 1609 has humanity's vision of the universe been so revolutionized in such a short time span by a single instrument," said Dr. David Leckrone, Hubble project scientist at Goddard Space Flight Center in Greenbelt, Md. "The Hubble Space Telescope has

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"Get Strong on Safety"

— Safety slogan submitted by
Terry Christopher, QS10

Marshall Star guidelines help those submitting items

The size and content of the Marshall Star have grown significantly in the past year. Many of you are contributing news items, photographs and other items for publication and we appreciate that.

To help you, here are some guidelines to make the submission of material simple and easy to understand.

Articles

Articles, no more than three, double-spaced pages, should be submitted via e-mail as Word documents. Preferred font is Geneva, 12 point.

Include the author's name at the beginning of the article, and add a sentence at the end giving the author's job title and organization. Spell out the name of the organization rather than use organization codes.

When writing a story, answer these basic questions up front: who, what, where, when, why and how. Articles should be written with clarity, for a general readership, without highly technical or bureaucratic language, and without acronyms. A good rule of thumb is that if someone unfamiliar with your organization and what you do can understand the article, you have succeeded in telling your story.

Photographs

The Marshall Star uses black and white hard copy photographs for the printed version, and color digital images made from color negatives for the online version. Sometimes digital images are used. However, if submitting a digital image, it should be a high-resolution file to ensure the best quality.

All photographs should include caption information such as

who appears where in the photograph, job titles and organizations, written in easy-to-understand language, what they are doing, when the event occurred, and where. An easy way to identify people in a photo is to use this format: "From left, Jane Doe, Jim Smith, Sally Sams."

Photographs should show something happening rather than static group shots of people. The photo should tell a story. If a group shot is absolutely necessary, please limit the number of people in the group to five. Groups larger than five result in images too small to see who's in the picture, making identification difficult.

Deadlines

Prior coordination with the editor will help you get your news in the Marshall Star in a timely manner. To meet our publication schedules, deadlines must be met or we don't receive the Star on time. All articles and photographs are due to the editor no later than noon on Monday of the week of publication. Feature articles that are not time restrictive may be held for another issue, depending on news items that must run in any given week.

Not everything submitted to the Marshall Star can always appear exactly as it is submitted. Articles are edited according to professional standards, and editorial judgment determines when an article will appear and in what format. Space is limited, but every effort will be made to include your news.

Thanks for helping us make the Marshall Star the best newspaper in NASA.

If you have questions, call Marshall Star Editor Debra Valine at 544-3749.



Photo by Doug Stoffer, NASA/Marshall Space Flight Center

Planning for the future

Jonathan Lowe, left, a Franklin, Tenn., high school student who dreams of the day when he's a rocket scientist, recently spent the day with Dr. George Schmidt, deputy manager of Marshall's Propulsion Research Center. Alongside Schmidt, Lowe participated in research discussions, staff meetings and experiment demonstrations in the propulsion labs at the Marshall Center. Lowe, 17, plans to major in aerospace engineering at the Georgia Institute of Technology in Atlanta next fall. Schmidt, right, gives Lowe a hands-on demonstration of an advanced propulsion experiment.

Marshall to celebrate Earth Day Thursday — in spades

The Marshall Center once more is preparing to demonstrate its environmental awareness — in spades.

Marshall employees will gather to turn over soil during the Center's annual Earth Day tree-planting ceremony from 10-11 a.m. Thursday at Bldg. 4493.

Speakers at the ceremony will include Charles Weber, Huntsville superintendent of Urban Forestry and Horticulture, and Marshall Director Art Stephenson, who will turn the first spade of earth. Joe Rothenberg, NASA's associate administrator for space flight, also will attend.

The theme of this year's Earth Day celebration at Marshall is "Reuse It or Lose It." Winners of Marshall's "Spot an Environmentalist" contest — employees and contractors cited by colleagues for environmentally friendly habits — will be honored at the tree-planting ceremony.

For more information about Marshall's Earth Day activities, visit the Web site at:
<http://www.recycle.msfc.nasa.gov>

Public Service Week events scheduled May 1-5

Public Service Recognition Week May 1-5 recognizes the services federal, state and local public employees provide to improve the quality of American life.

The week, marked since 1985, is an opportunity to say "thank you" to public employees for dedicated service, and to inform Americans about the range and quality of vital services provided by public employees.

Events include a luncheon, exhibit and visits to area schools by Marshall employees. An exhibit at Madison Square Mall on May 4 from 10 a.m.-9 p.m. will feature information about Marshall and its programs. Other governmental agencies will be represented.

The luncheon is May 3 at 11:30 a.m. at the Holiday Inn at Madison Square Mall. Additional information and tickets at \$12.50 are available by e-mailing Rosa Kilpatrick by April 26.

April Blood Drive to be Friday at NASA Exchange

The Marshall Center's April Blood Drive will be from 8 a.m.-1:30 p.m. Friday at the NASA Exchange, Bldg. 4752.

Employees should enter the south side of the building for registration in front of the Multi-Purpose Room. If unable to attend, employees may go to the Madison County Chapter at 1101 Washington St. in Huntsville.

The blood drive schedule is: A-B, 8 a.m.; C-F, 8:30 a.m.; G-H, 9 a.m.; I-L, 9:30 a.m.; M-O, 10 a.m.; P-S, 10:30 a.m.; and T-Z, 11 a.m. If unable to make assigned times, the Red Cross will be available until 1:30 p.m.

Upcoming Events

U.S. Rep. Lee to address Marshall Association

— U.S. Rep. Sheila Jackson Lee of Houston will address the Marshall Association at 9:15 a.m. Friday in the Bldg. 4203 cafeteria. You do not have to be a member of the Marshall Association to attend this meeting. All Marshall employees and retirees are eligible to join. The annual membership fee is \$25 and may be paid to Efreem Hanson, PS-41-E.

New Employee Orientation — New employee orientation will be from 8 a.m.-4:30 p.m., April 25-27 at the Rustic Lodge on Redstone Arsenal. Bus service will be provided each morning from Bldg. 4203 beginning at 7:45 a.m. and returning after each day's activities are completed. The new employees for this orientation will be invited by letter. For more information, call Chrissa Hall at 544-5468 or Sherry McKellar at 961-0012.

Marshall Exchange Book Fair — The semi-annual Book Fair, sponsored by the Marshall Exchange, will be from 8 a.m.-4 p.m. April 25-28 in Bldg. 4203, room 1201. A selection of best sellers, cookbooks, decorating, sports and children's books will be available for purchase at substantial savings. For more information, call Michele Miller at 544-7564.

Silent Auction — The Marshall Exchange is holding a silent auction through April 26 to sell old fitness equipment. On April 27, buyers will be notified via phone and must pay and pick up their merchandise by close of business on April 28. Prospective buyers may view equipment and place bids at Bldg. 4752.

Fireside Chat — The Marshall Retirees' Association will host the third in a series of talks recalling Huntsville's role in defense and space at 7 p.m. April 27 at the University of Alabama in Huntsville's Student Union Building. The event is free and open to the public. The April presentation is entitled, "The Lunar Program – 1960-1970." Woody Bethay will moderate the panel. Panelists include Bonnie Holmes, retired U.S. Army Col. Lee James, Bob Lindstrom, Dr. William R. Lucas, Leland Belew and Konrad Dannenberg.

Cooperative Education Conference — The 35th annual Southeast Regional Cooperative Education Conference will be May 17-19 at the Huntsville Hilton Hotel. Learn about the latest technology and marketing strategies to attract today's secondary, college and international students for cooperative education programs. The registration fee of \$250 covers the cost of conference workshops and meals. Professional tours, golf, tennis and area interest tours will be offered. For more information, call Alabama A&M University, Sarah Ford, at 851-5690 or download the registration form from the conference Web site at: www.coop.gatech.edu/SERCEC.html

Smaller, robust systems improve safety, reduce cost

Reducing the cost and improving the safety of getting to space is foremost on the minds of scientists and engineers in Marshall's Avionics Department who are developing technology for the future of space flight and payload applications.

Today's avionics systems are fairly heavy, rather expensive and somewhat fragile. These systems are made up of many boxes weighing 20- to 50-pounds and consuming hundreds of watts of power, and often require cold plates for active cooling.

This equipment is normally located in an avionics bay or compartment that also provides access for maintenance in reusable systems. A typical flight system could require 2,000 to 4,000 watts of power, also representing a large and heavy power system such as fuel cells, batteries, solar arrays or combinations of these.

"To get from where we are to the smaller, more robust and less consuming systems, we need to look to the newer micro- and nano-technologies," said Jim Miller, assistant manager of the Avionics Department.

One of the newer technologies that avionics is promoting is called the "micro navigator." This small unit provides the navigation function by the use of micro-electro-mechanical accelerometers and gyros combined with a global positioning system on a chip.

The use of the micro navigator, along with micro computers and micro health management units, can not only significantly reduce the weight of a flight system, but can greatly reduce the labor cost of operational maintenance by increased life through robust design and packaging.

Reducing power requirements and getting rid of the need for active cooling further decreases weight, complexity and cost of maintenance while improving safety.

Another of the newer technologies the Avionics Department has embraced is called "smart structures." Supplying the "smart" to structures involves imbedding micro avionic devices within the basic structural elements that will monitor the health of the structure and report the flight worthiness. It is not labor intensive, and drastically reduces ground operations turn-around costs of a reusable vehicle.

Emerging technologies make it feasible to imbed not only the sensing elements, but the computing, power and data transmission systems, as well. This technology is applicable to cryogenic tankage, engine parts and thermal protection systems, as well as the basic structural elements.

Total monitoring of the structural state of health will decrease operations costs by showing specifically where structural repair is needed. It also will improve safety of flight by providing visibility of fatigue or damage not previously discernible in structural areas of high stress.

Marshall's Avionics Department works closely

with the NASA research centers, several universities and private industry to promote advances in the micro- and nano- technologies and to take advantage of these advancements in systems of interest to customers of the department — primarily product line directorates at Marshall.

Joint projects with the U.S. Army Aviation and Missile Command are being undertaken to leverage investments from the Department of Defense in similar systems.

Motivation for the two agencies for these systems is the same: decrease cost, improve safety and improve assurance of mission success.

Avionics Dept. holds open house Thursday

The nine groups of the Avionics Department will be showing some of this technology at its open house from noon-4 p.m.

Thursday. The event starts in the main lobby on the south side of Bldg. 4487 and continues to Bldgs. 4487, 4190, 4436, 4475, 4476, 4619, 4656 and 4663. A bus will take visitors to Bldg. 4194 at 1:30 p.m. Reserved parking will be provided in the south parking lot, across from the main lobby of Bldg. 4487.

Shuttle veteran joins X-33 program as deputy manager

Jeff Bland, an engineer and 17-year veteran of NASA's Space Shuttle program, has joined the Marshall-managed NASA X-33 Program Office in Palmdale, Calif., as deputy manager.

In his new role, Bland will help lead development of the X-33 technology demonstrator — a half scale, sub-orbital technology demonstrator for a next-generation space plane.

Before accepting the X-33 deputy manager position, Bland managed the NASA resident office at Pratt & Whitney in West Palm Beach, Fla. There he led a



Jeff Bland

team working to deliver high-pressure turbopumps for the Space Shuttle Main Engines.

Bland began his engineering career in 1980 with D'Applonia Consulting Inc., in Pittsburgh, where he performed structural analysis for nuclear power plants. He joined the Marshall Center in 1982 to work on structural analysis for complex Space Shuttle engine designs.

Using those frequent flyer miles

Joe Hamaker, second from right, manager of the Cost Engineering Office, receives a cash award for using frequent flyer points, saving Marshall travel dollars. From left are Marshall Center Director Art Stephenson; Robert McBrayer, director of the Systems Management Office; Hamaker; and David Bates, Marshall's chief financial officer.

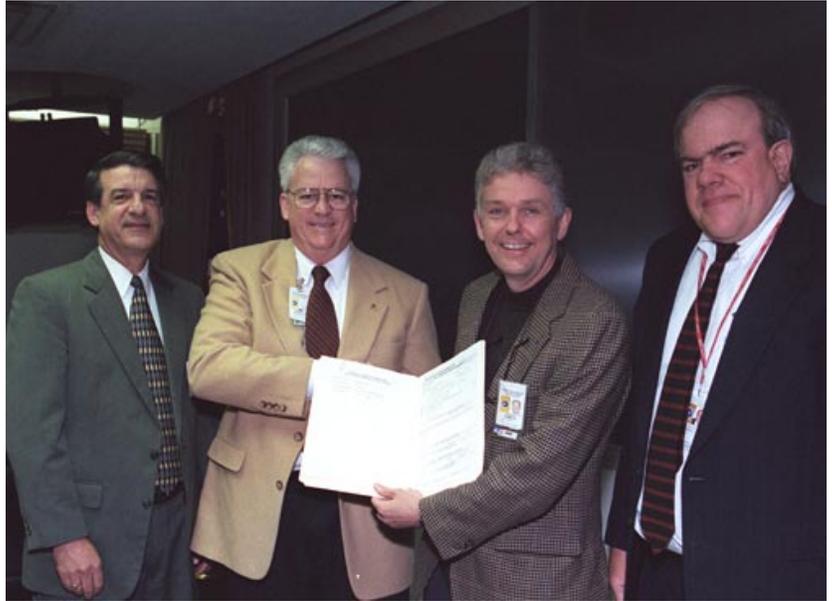


Photo by Doug Stoffer, NASA/Marshall Space Flight Center

Hubble

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seen further and more clearly than any visible-light telescope before it, and has revolutionized the science of astronomy. It already has earned a place as one of the wonders of the modern world.”

Hubble's photographic hall of fame includes the deepest view ever of the universe in visible light; a peek into the environs of supermassive galactic black holes; the majestic birth of stars in monstrous stellar clouds; planetary systems forming around other stars; extraordinary arcs, shells and ribbons of glowing gas sculpted by the deaths of ordinary stars; mega-megaton blasts produced by the impact of a comet into the cloud tops of Jupiter; the surface of mysterious Pluto; and galaxies at the edge of space and time.

Hubble was conceived to tackle scientific goals that could be accomplished only by an observatory in space. Its mission is to spend 20 years probing the farthest and faintest reaches of the cosmos. Crucial to fulfilling this objective is a series of on-orbit servicing missions by Space Shuttle astronauts. The first servicing mission took place in December 1993 and second

servicing mission was flown in February 1997. Last December, servicing mission 3A was performed. These missions extended Hubble's scientific power with new instruments; modernized its systems with new technology; and performed critical maintenance and repairs of its optics, solar arrays, gyros and other components. As a result of these improvements, Hubble is a far more capable observatory than when it was launched. Future servicing missions to Hubble are planned for 2001 and 2003.

The telescope is named after U.S. astronomer Edwin P. Hubble who, early in this century, discovered galaxies beyond our Milky Way and made the first rough measurements of the expansion rate of space. Now, after 70 years of debate and speculation, astronomy has come full circle: scientists using the Hubble Telescope have detected galaxies out to the visible horizon of the universe, and have accurately pinned down the size, expansion rate and age of the universe.

Hubble will be decommissioned in 2010, and replaced by the Next Generation Space Telescope. Having a much larger mirror, the Next Generation Space Telescope will pick up where Hubble left off by searching for the faint glimmer of light from the first stars ever born in the universe.

Beyond the Next Generation Space Telescope, ever larger and more advanced telescopes will search for Earth-like extrasolar planets and evidence for life beyond our solar system.

The Hubble Space Telescope is managed and operated by Goddard for the Office of Space Science at NASA Headquarters. The Space Telescope Science Institute manages the Hubble Telescope's science observing program under contract to NASA. The Hubble Space Telescope is a project of international cooperation between NASA and the European Space Agency.

More information about the telescope and its anniversary can be found on the Internet at:
<http://hubble.stsci.edu/go/tenth>

U.S. Postal Service unveils Hubble commemorative stamp

The U.S. Postal Service on April 10 unveiled five new commemorative postage stamps to celebrate the Hubble Space Telescope's 10th anniversary, Monday.

The five stamps feature images of the Eagle Nebula, the Ring Nebula, the Lagoon Nebula, the Egg Nebula and Galaxy NGC 1316, all taken by Hubble over the past 10 years.

More information on the HST anniversary can be found on the Internet at:
http://www.gsfc.nasa.gov/gsfsc/spacesci/hst10/hst_main.htm



Photo by Terry Leibold, NASA/Marshall Space Flight Center

Open House

Thom Holden, right, Marshall Center Open House 2000 Committee chairman, presents Center Director Art Stephenson with an Open House hat and T-shirt. Open House is 9 a.m.-6 p.m. May 20. Admission is free. See out-of-this world space flight technology demonstrations, appearances by NASA astronauts and space experts. Enjoy games, family activities and entertainment. Get a first-hand look at the Marshall Center's laboratories and sophisticated test facilities. For more information and directions, call (888) 901-NASA. Register to volunteer for Open House online at: <http://openhouse.msfc.nasa.gov>.

NASA, NCI join to develop nano-explorers for humans

To treat symptoms of the common cold, most people take a gel capsule containing hundreds of granular pieces of medicine as a remedy for coughing, sneezing and a runny nose. Now, imagine ingesting a capsule of similar size, containing microscopic sensors to detect, diagnose and treat disease inside the human body.

It sounds like science fiction. However, NASA, in collaboration with the National Cancer Institute (NCI), is working to turn this vision into "science fact." The development of such technologies will improve life on Earth and one day revolutionize medicine and space travel.

The joint collaboration comes as NASA and the cancer institute each move forward with historic initiatives requiring major advances in available technology.

The institute is attempting to define cancer for the first time based on the unique molecular characteristics of tumors. NASA is seeking to develop a new form of patient care — "microscopic explorers" — that would travel through the human body looking for disease. This technology will allow NASA to monitor astronaut health and treat conditions in space, where medical test capabilities and communication with Earth will be limited.

Additional information is available online at: <http://search.nci.nih.gov/search.nci.nih.gov/s97is.vts> or <http://www.sverdrup.com/nasa/sensors.html>

Frequently asked questions about Marshall's Environmental Health Program addressed

Q: Does Marshall have an environmental health program?

A: Occupational Medicine and Environmental Health Services, located at the Marshall Medical Center in Bldg. 4249, provides the Center with a comprehensive environmental health program. The program consists of industrial hygiene, health physics and respiratory protection and is available to Marshall employees and onsite contractors. The program is administered through the Management Support Office, Center Operations Directorate. Kelsey-Seybold Clinic of Pennsylvania is the current contractor and sub-contracts Environmental Health Services to AJT & Associates.

Q: What is environmental health and industrial hygiene?

A: Environmental health and industrial hygiene is the science devoted to the anticipation, recognition, evaluation and control of those chemical, biological and physical hazards or stresses arising in or from the workplace that may cause sickness, impaired health and well-being, or significant discomfort among employees.

Q: What types of services are provided?

A: Environmental Health services include annual walk-through building inspections, workplace hazards assessments, indoor air

quality monitoring, asbestos inspections/monitoring/analyses, lead inspections/monitoring/analyses, hearing conservation, hazard communications, ergonomic evaluations, food service inspections and confined space entry assessments. Consultative services also are available for Center organizations. The program also assures that personnel are provided with appropriately selected and fitted respiratory protection equipment. Health physics services include sealed-source leak testing, radon monitoring, laser and radiation surveys.

The staff, which consists of certified industrial hygienists, health physicists and respiratory protection technicians, provides an array of training and educational programs to adequately inform personnel of potential workplace health hazards. Such training consists of hazard communication, respiratory protection, hearing conservation, chemical hygiene officer, bloodborne pathogens, radiation/laser safety, and confined space entry.

Q: When are environmental health services available?

A: Services are available from 7 a.m. to 3:30 p.m., Monday through Friday, excluding federal holidays. For more information, call 544-2390.

Sports

MARS Fishing Club — Results of the April 15 bass tournament at Elk River are: First place — Charlie Cothran and Alex Rawleigh, 13.46 pounds; second place — Brian Mitchell, 8.37 pounds; third place — Joe Glover and Billy Gonterman, 8.30 pounds; big fish — Alex Rawleigh, 5.46-pound smallmouth. A bream tournament will be held on Guntersville Lake on May 6. For information, call Ross Evans 961-2305, Don McQueen 544-9073 or Charlie Nola 544-6367.

Rocket City Rowing Club — The spring adult rowing clinic for beginners will be from 5:30-7 p.m. April 25, May 2, 9, 16, 23 and 30. Learn basic rowing technique, along with equipment and basic lingo. Cost for the clinic is \$90. For more information, call Halley Little at 539-8841.

MARS Golf — A two-person best score golf tournament will be held at 9 a.m. May 6 at Guntersville State Park.



Courtesy photo

Tennis anyone?

Members of the MARS Tennis Club relax following the completion of the first tournament of the season April 1. From left are Maurice Wolf, Bob Wolf, Barry Dawson, Larry Newman, Phil Hayes, Joe Cremin, Mike Mitchell, Joanie Bell, Amelia Gillis, Margaret Craig, and Karen Thompson. Ronda Moyers is not pictured.

Deadline for registration is April 28. The Mars Golf Club is open to all NASA employees, onsite contractor personnel and NASA retirees. Events

will be conducted in a variety of tournament formats. Some tournaments may have limited entries.

Economy

Continued from page 1

development by The Boeing Co., while approximately \$41 million was spent on other NASA programs in which Marshall had a supporting role.

Marshall received approximately 17 percent — or \$2.3 billion — of NASA's total budget of \$13.7 billion during fiscal 1999. Of Marshall's allocation, \$1.32 billion was spent for Human Space Flight activities; \$623 million for Science, Aeronautics and Technology; and the balance of \$367 million went to mission support at the Marshall Center and other sites across the country.

Since it was established in 1960, the Marshall Center has had budget responsibility for more than \$64.9 billion. When yearly figures are adjusted for inflation, this total is equivalent to more than \$160 billion in 1999 dollars.

Through September 1999, the Marshall Center paid \$4.8 billion in federal salaries since its creation in 1960.

At the end of September, Marshall's permanent and temporary civil service employees totaled 2,637, including employees at resident offices at prime contractor facilities and at NASA's Michoud Assembly Facility near New Orleans, La.

Of that workforce, 2,134 were college graduates, with 1,438 holding bachelor's degrees. There were 154 employees with doctorate degrees and 542 with master's degrees in fields of engineering, science — predominantly mathematics and physics — as well as other disciplines, predominantly business administration.

During 1999, approximately 25,188 contractor personnel engaged in work for the Marshall Center, including 2,612 in mission support, 10,249 on prime contract work and 12,327 as subcontractors and vendors. Of the total, 6,473 worked in Alabama. Addition-

ally, 1,554 contractors were associated with International Space Station work being done by Boeing in Huntsville and other NASA work supported by Marshall.

During fiscal 1999, 312,700 people toured Marshall, including educators, conference and symposium visitors and news media. Of these, 254,554 toured the Marshall Center as part of the U.S. Space & Rocket Center's bus tour program. The Space & Rocket Center in Huntsville is Marshall's official NASA Visitor Center.

The Marshall Space Flight Center is celebrating 40 years of operation in 2000. As Marshall marks this milestone and looks to the future, the Center continues its role as a vital contributor to America's future in space — as well as to the economy of Huntsville and the state of Alabama.

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

Employee Ads

Miscellaneous

- ★ Collection of classical albums, 80-100 albums, \$1 each, want to sell all. 539-7912
- ★ Push mower, 3.5 HP, side discharge, \$50; Craftsman, 3" belt hand sander, \$15. 883-6284
- ★ Sears Coldspot freezer, upright, white, 15 cu. ft., no auto. defrost. 881-0278
- ★ HP 712C printer, \$100. 881-5237
- ★ Chromecraft oval table and four chairs, \$100. 881-0656
- ★ Mac classic/starter computer w/various programs/games, \$100 obo; Apple laser printer, 4 ppm, \$100. 864-0465
- ★ Motorcycle helmet, HJC, half-helmet, black, size large, \$45. 882-2654
- ★ Amateur radio, Yaesu FT-8100, dual band (VHF/UHF), mobile transceiver, \$350 obo. 464-5685
- ★ 1986 Polarcraft aluminum boat w/trailer, 17 ft., 55HP, Suzuki, \$1,500. 880-7950
- ★ Symphonic, 4-head, Hi-Fi VCR Model SL-2960, in box, \$90. 533-5942
- ★ Fletcher 2100 professional mat cutter, 48", squaring arm, measuring stops, angle mat guide, \$450. 732-4759
- ★ Student violin w/bow, full size, new strings, \$200. 534-8186
- ★ Golf clubs and bag, \$30; lawn mower for parts, \$12. 536-8951
- ★ Trail bike helmet, \$75; fiberglass camper shell, small truck, \$300; P215/70R14 tires & rims, \$25 ea. 859-0729
- ★ Upright freezer, 12 cu. ft., \$50; 1985 Floatdeck boat, dry stored, \$5,500. 464-5850
- ★ 1994 KTM 300EXC dirt bike, fatty pipe, ceet seat, renthal bars, low hours, \$2,100. 732-4759
- ★ Sunfire cinema grand five channel amplifier, \$1,500. 776-4175
- ★ Colonel bed liner for 98 or older standard bed Ford F150, \$50. 461-3803
- ★ Craftsman rear engine riding mower/mulcher, 10HP, electric start, 30" deck, bagger, \$500. 498-6349
- ★ Refrigerator, 18 cu. ft., freezer on top, \$100 negotiable. 858-0700
- ★ The North Face Coriolis backpacking/scout tent, \$100; Sharp Wizard personal organizer w/PC link, \$25. 859-5475

Vehicles

- ★ 1995 Chrysler Concorde, 70K miles, 3.5L, V-6, \$9,875. 881-6388

- ★ 1997 Mitsubishi Eclipse GS, alloy wheels, leather, moon-roof, 6-CD changer, 53K miles, \$13,000. 990-2050
- ★ 1993 Ford Taurus, 124K miles, \$2,800 obo. 536-8692
- ★ 1981 Chevy pickup, C-10, 6-cylinder, automatic, \$1,500. 586-7375
- ★ 1972 Chevy truck, SWB, orange/white, 350-engine, 350-transmission, factory a/c, many new parts, \$7,500 obo. 851-2929
- ★ 1993 Chevrolet Cavalier station wagon, 110K miles, red, a/c, power locks/brakes/steering, \$3,000. 726-8645/859-1547
- ★ 1997 Altima, 4-door, auto, air, PS/PB, payoff approx. \$12,000. 828-1763 leave message
- ★ 1996 Mazda 626LX, V-6, white, power sun-roof, 61K miles, 5-speed, \$10,100. 574-5098
- ★ 1992 Mazda B2600i pickup, extended cab, manual 5-speed, 106K miles, \$4,200. 880-9024
- ★ 1990 Nissan 240SX, 120K miles, AM/FM cassette, power windows/locks, hatchback, 5-speed, sunroof, good tires, \$3,500. 728-5790
- ★ 1993 Ford Ranger, King cab, V-6, 5-speed, 92K miles, \$6,800. 325-6000
- ★ 1999 Explorer Sport, white, CD, 2WD, automatic, 45K miles, warranty to 75K miles, \$18,500. 828-9861

Found

- ★ Eyeglasses, Bldg. 4200 area. Call 544-4676 to identify
- ★ Wedding band, Bldg. 4200. Call 544-4758 to identify

Free

- ★ RCA TV console, needs repair; Magic Chef dryer, operational; large two-story dog house. 882-7084

Wanted

- ★ Large bird bath. 971-0048
- ★ Personal computer RAM, 72-pin non-parity, i.e. 8-bit. 881-6040
- ★ To trade: Dillon XL-650 and accessories for 12 gauge semi-auto shotgun suitable for skeet. 722-0882

Center Announcements

☛ **MESA Meets** — The Marshall Engineers and Scientists Association (MESA) will meet at 11:30 a.m. Thursday in Bldg. 4471, room C-105. Refreshments will be served.

- ☛ **Shuttle Buddies** — The Shuttle Buddies will meet for breakfast at 9 a.m. April 24 at Mullins Restaurant on Andrew Jackson Way. For more information, call Deemer Self at 881-7757 or Gail Wynn at 852-8189.
- ☛ **NARFE Meets** — The National Association of Retired Federal Employees (NARFE)-Decatur/Morgan County Chapter 736 will meet at 11 a.m., April 26 at Piccadilly's in Decatur. Sue Stancil, director of Meals on Wheels, will speak. Retired federal employees are welcome. For more information, call Marty Eddy at 773-4826.
- ☛ **GSA Forum** — A federal customer forum sponsored by General Services Administration (GSA) and a panel of commercial partner experts will be from 8:30 a.m.-3 p.m. April 26 at the Sparkman Center on Redstone Arsenal. Learn about available supplies, services and solutions. Continental breakfast will be served at 8 a.m. For more information, call Adrian Finney at (404) 331-3026.
- ☛ **Go for the Magic** — Executive Tour and Travel Services Inc. is offering two Disney vacation packages to Marshall employees, retirees, families and friends. One includes five days/four nights hotel accommodations in the Disney/Epcot area for \$699, and two adult, four-day Hopper Passes to Disney World, EPCOT, Animal Kingdom and MGM. This price is for up to four people per room. The other includes a four-day/three-night Disney/Epcot Area Hotel package for two adults and two children up to 12 for \$139. Room tax not included. Travel to Florida not included. A \$70 deposit per person must be made by June 30. Although 60-day advanced notice is required, travel dates are good through June 2001. For more information, call (800) 272-4707. Flyers are available at the Marshall Space Shop in Bldg. 4752.

Job Opportunities

SES, GRC 00-SES-01: Director, Aeropropulsion Research Program Office, John H. Glenn Research Center, Lewis Field, Ohio. All qualified candidates are eligible. Closes May 10.
Reassignment Bulletin, AST, Manned Systems, GS-801-12/13, Flight Projects Directorate, Payload Operations & Integration Department, Operations Training Group. Closes April 27.
Reassignment Bulletin, 00-20-CP, Amendment 1, AST, Technical Management, GS-801-14, Science Directorate, Microgravity Research Program Office. Closes May 1.
CPP 00-67-JB, Management Support Assistant (OA), GS-303-06 (Multiple Vacancies), Procurement Office. Closes April 26.

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