

# MARSHALL STAR

Serving the Marshall Space Flight Center Community

March 28, 2002

## STS-110 to carry Marshall biotechnology studies to Space Station

*Marshall news release*

Space Shuttle Atlantis will deliver experiments managed by NASA's Biotechnology and Space Product Development programs at the Marshall Center to the International Space Station on mission STS-110 in April.

The Enhanced Gaseous Nitrogen Dewar will make its fourth trip to the Space Station. This low-cost facility enables scientists to grow hundreds of biological crystals at once to study optimum crystal growth conditions and molecular structure of biological substances.

On past missions, more than 430 teachers and students have participated in the dewar experiment and sent samples to the Space Station as part of a NASA-sponsored education activity.

For this flight, the dewar will be filled with approximately 300 samples loaded by teachers and students from Alabama, California, Florida, Indiana, Illinois, Michigan, Ohio, Texas and West Virginia, as well as samples loaded by scientists at the University of California, Irvine and other institutions. In May,

*See STS-110 on page 6*



Photo by Jeff Wolfe, NASA/Marshall Space Flight Center

### *Happy hunting*

Blake Potvin was ready to fill his basket during Saturday's annual Easter egg hunt at Marshall.

### Inside the Star

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## Technology for growing plants in space leads to device that destroys pathogens like anthrax

*Marshall news release*

Building miniature greenhouses for experiments on the International Space Station has led to the invention of a device that annihilates anthrax – a bacteria that can be deadly when inhaled.

“Space-based greenhouses may seem to have little to do with the war against terrorism,” said Mark Nall, director of the Space Product Development Program at Marshall. “Yet this invention shows how commercial space research can benefit

people on Earth in unexpected ways.”

The anthrax-killing air scrubber, AiroCide TiO<sub>2</sub>, is a tabletop-size metal box that bolts to office ceilings or walls. Its fans draw in airborne spores and airflow forces them through a maze of tubes. Inside, hydroxyl radicals (OH<sup>-</sup>) attack and kill pathogens. Most remaining spores are destroyed by high-energy ultraviolet photons.

“Spores that pass through the box aren't filtered — they're fried,” said John

*See Technology on page 7*

# NASA Administrator Sean O'Keefe lauds Marshall team for 'pride and professionalism' during visit

National Aeronautics and  
Space Administration  
**Office of the Administrator**  
Washington, DC 20546-0001



March 13, 2002

Mr. Arthur G. Stephenson  
Director  
George C. Marshall Space Flight Center  
Marshall Space Flight Center, AL 35812-0001

Dear Art:

Thank you for your superb hospitality during my visit to the Marshall Space Flight Center (MSFC).

I was, of course, very impressed with the facilities, but I especially want to comment on how impressed I was with the splendid hospitality, the warm welcome from the workforce, and the clockwork precision of all the arrangements.

Everywhere I stopped during my visit, you could feel the enthusiasm and commitment of the workforce to our important NASA missions. It is obvious that MSFC employees share your sense of pride and professionalism.

I am already looking forward to my next visit to MSFC. In the meantime, please pass along my gratitude and best wishes to your superb space flight team.

Cordially,

  
Sean O'Keefe  
Administrator

# Marshall's Alex McCool honored as National Space Club's 2002 Astronautics Engineer of the Year

*Marshall news release*

**N**early a half-century of contributions to America's space program were recognized when Alex A. McCool Jr., manager of the Space Shuttle Projects Office at Marshall accepted the National Space Club's 2002 Astronautics Engineer Award.

McCool received the award at the 45th Annual Goddard Memorial Dinner March 22 in Washington, D.C.

McCool's 48-year career includes exceptional contributions to the vehicle that launched America into orbit, the rocket that carried man to the moon, America's first space station and the world's first reusable spaceship, the Space Shuttle.

The Astronautics Engineer Award, first given by the National Space Club in 1959, recognizes those who have made an outstanding personal contribution in engineering management to the national



**McCool**

space program.

McCool began his career in rocket development in 1954 at Redstone Arsenal in Huntsville, working on the design of the Redstone Jupiter rocket. In 1960, he joined NASA to continue working with

Dr. Wernher von Braun, the Marshall Center's first director and a leader in America's race to space.

As a charter member of the Marshall Center, McCool was instrumental in the design of the propulsion systems for the Saturn launch vehicles that propelled Apollo to the Moon and directed project engineering for Skylab, the first space science laboratory.

McCool also served as director of the Structures and Propulsion Laboratory at Marshall during the design of the Shuttle's propulsion elements. He played a leadership role in engineering the Space Shuttle's Main Engine and Solid Rocket Boosters.

McCool is the recipient of several awards, including the Presidential Rank of Meritorious Executive from President George Bush in 1991, as well as the NASA Distinguished Service Medal, Exceptional Service Medal, and Outstanding Leadership Medal.

## *NASA history volume on Soviet space program receives award*

*NASA Headquarters release*

**A** recent NASA history of the Soviet human space flight program received the Emme Award for Astronautical Literature recently at the Goddard Memorial Symposium, sponsored by the American Astronautical Society.

"Challenge to Apollo: The Soviet Race to the Moon, 1945-1974," by Asif A. Siddiqi, is the first comprehensive history of the Soviet human space flight program since the opening of the archives in the early 1990s. In the book, the author goes beyond the basic facts and weaves together broad themes, including a challenge to Western conventional wisdom that the Soviets always tended toward incremental — rather than revolutionary — technological innovation.

Named in honor of the first NASA Historian, Eugene Emme, the Emme award was created in 1982 to recognize an outstanding book that increases public understanding of the field of astronautics. Details on ordering the book can be found at: <http://history.nasa.gov/gpo/order.htm>



Photo by Terry Leibold, NASA/Marshall Space Flight Center

### **At Marshall Association**

**Karen Stanley, vice-president of finance for Stanley Construction Co., in Huntsville, addresses the Marshall Association during its recent March meeting.**

## Marshall recalls its first director

# Wernher von Braun: Champion of space exploration

By Mike Wright

“The mastery of space is man’s greatest adventure and his most inspiring undertaking. It should spur us to maximum effort. The nation which mastered all of man’s earthly environment - - land, sea and air — owes to its destiny the mastery of the limitless environment of space.”

So said Wernher von Braun, first director of NASA’s Marshall Space Flight Center in Huntsville.

Although he was born 90 years ago on March 23, 1912, and died 25 years ago, von Braun’s name is still synonymous with “America in space.” He was one of the most important rocket developers and champions of space exploration during the period between the 1930s and the 1970s.

He served as director of the Marshall Center from 1960 to 1970.

As a youth, he became enamored with the possibilities of space exploration by reading the science fiction of Jules Verne and H.G. Wells, and from the science fact writings of Hermann Oberth, whose 1923 classic study, “Die Rakete zu den Planetenräumen” (By Rocket to Space), prompted young von Braun to master calculus and trigonometry so he could understand the physics of rocketry.

From his teen-age years, von Braun held a keen interest in space flight, becoming involved in the German rocket society, Verein für Raumschiffahrt (VfR), as early as 1929. As a means of furthering his desire to build large and capable rockets, in 1932, he went to work for the German army to develop ballistic missiles.

While engaged in this work, on July 27, 1934, von Braun received a doctorate in aerospace engineering. Throughout the 1930s, he continued to develop rockets for the German army. The brainchild of Wernher von Braun’s rocket team operating at a secret laboratory at Peenemünde on the Baltic



Wernher von Braun: 1912 - 1977

coast, the V-2 rocket was the immediate antecedent of those used in space exploration programs in the United States and the Soviet Union.

A liquid propellant missile extending some 46 feet in length and weighing 27,000 pounds, the V-2 flew at speeds in excess of 3,500 mph and delivered a 2,200-pound warhead to a target 500 miles away. First flown in October 1942, it was employed against targets in Europe beginning in September 1944. On Sept. 6, the German military deployed to Holland and northern Germany to bomb Belgium, France, and London with the newly developed V-2s.



Dr. von Braun relaxes after Apollo 11 launch in July 1969

By the beginning of 1945, it was obvious to von Braun that Germany would not achieve victory against the Allies, and he began planning for the postwar era. Before the Allied capture of the V-2 rocket complex, von Braun engineered the surrender of 500 of his top rocket scientists, along with plans and test vehicles, to the Americans.

For 15 years after World War II, von Braun would work with the U.S. Army in the development of ballistic missiles. As part of a military operation called Project Paperclip, he and his rocket team were scooped up from defeated Germany and sent to America where they were installed at Fort Bliss, Texas. There they worked on rockets for the United States army, launching them at White Sands Proving Ground, N.M.

In 1950, von Braun’s team moved to the Redstone Arsenal near Huntsville, where it built the Army’s Jupiter ballistic missile. In 1960, his rocket development center transferred from the Army to the newly established NASA and received a mandate to build the giant Saturn rockets. Accordingly, von Braun became director of the Marshall Center and the chief architect of the Saturn V launch vehicle, the booster that would propel Americans to the Moon. Von Braun also became one of the most prominent spokesmen of space exploration in the United States during the 1950s and 1960s.

In 1970, NASA leadership asked von Braun to move to Washington, D.C., to head the strategic planning effort for the Agency. He left his home in Huntsville, but in less than two years he decided to retire from NASA and to work for Fairchild Industries of Germantown, Md. He died in Alexandria, Va., June 16, 1977.

For more information about von Braun, and about the history of the Marshall Center, visit: <http://history.msfc.nasa.gov/>

*The writer is the Marshall Center historian.*

# Photo history: von Braun's years as Marshall director



Wernher von Braun tries out a "floating platform" in 1961, at the Marshall Manufacturing Engineering Lab in a test to help determine how future astronauts will perform maintenance tasks in space.



Greeting President Kennedy at Redstone Airfield on Sept. 12, 1962.



Suiting up prior to entering Marshall's neutral buoyancy tank in 1967.



Von Braun discusses welding technology with Werner Kuers, center, director of Marshall's Manufacturing Laboratory, and Gordon Parks, chief of the Welding Department Branch, right, in 1967.



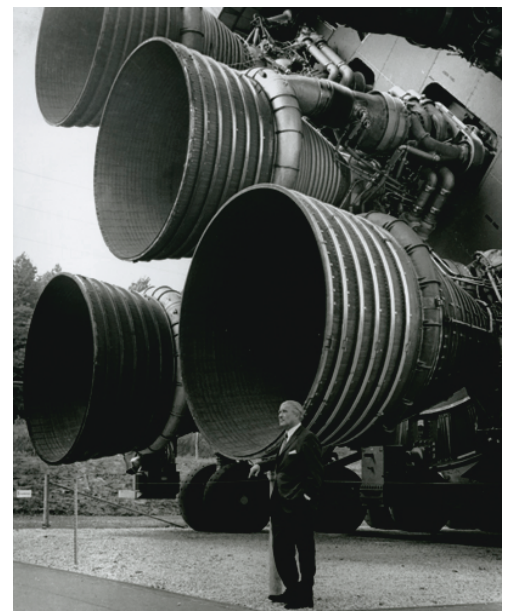
NASA's KC-135 aircraft provides von Braun with a brief moment of weightlessness in 1968.



Von Braun's dream is about to be realized as Apollo 11 sits on the pad in 1969.



Von Braun in 1970, shortly before his promotion to NASA associate administrator.



Paying a visit to the Saturn V at the Space & Rocket Center.

## STS-110

*Continued from page 1*

Space Shuttle Endeavour will return the samples to Earth, where scientists can study the crystals' structures to learn about the biochemistry of animals and plants. NASA's Biotechnology Program at Marshall is sponsoring the experiment.

Two experiments sponsored by NASA's Space Product Development Program at Marshall are making their second trips to the orbiting laboratory. These experiments are being sponsored in conjunction with two of NASA's 17 Commercial Space Centers, which are located across the country and designed to help companies carry out space research.

The Commercial Generic Bioprocessing Apparatus will study bacterial fermentation that could improve the production of antibiotics for treating cancer. This experiment is sponsored by BioServe Space Technologies in Boulder, Colo. - a NASA Commercial Space Center working with Bristol-Myers Squibb Pharmaceutical Research Institute in Wallingford, Conn.

The Commercial Protein Crystal Growth-High Density experiment will grow crystals from more than a thousand different biological samples. This experiment is sponsored by the Center for Biophysical Sciences and Engineering at the University of Alabama at Birmingham. More than 50 major industrial companies work with this Commercial Space Center to study how biological crystals can be grown and then used to design new pharmaceutical products. Both these biological crystal samples and the antibiotic samples will be returned to Earth in May.

Also going up on STS-110 will be the first samples to be processed in the Zeolite Crystal Growth Furnace, which was delivered on an earlier flight and is also sponsored by a Commercial Space Center - the Center for Advanced Microgravity Materials Processing at Northeastern University in Boston. Zeolites are the backbone of the chemical processing industry, and virtually all the world's gasoline is produced or upgraded using



Photo by Terry Leibold, NASA/Marshall Space Flight Center

### Touring Payload Operations Center

Editors and writers of the Huntsville Times recently toured Marshall's Payload Operations Center. From left, John Ehinger, Steve Byers, David Prather, Melinda Gorham, Shelby Spires and Joe Distelheim with Carrie Olsen, payload operations director.

zeolites. The petroleum industry is interested in growing improved zeolites in space to reduce chemical processing costs. The first set of samples will be returned to Earth in May, and another set will be delivered for processing inside the furnace, which will remain on the Station.

Several experiments and samples will come back on Atlantis in April. These include plants, biological crystals and cell cultures. All are sponsored by NASA's Office of Biological and Physical Research in Washington, D.C.

All science operations on the Space Station are planned and carried out with the help of the Payload Operations Center at Marshall.

While Atlantis is docked with the Station, controllers in the operations center will assist with transferring new STS-110 experiments from the Shuttle to the Space Station, and will manage science operations as well — ensuring that the experiments are installed, checked out and working.

Staffed around the clock by three shifts of six to 19 flight controllers, this science command and control center links Earth-bound researchers with their experiments in orbit. This team of controllers is like a virtual "fourth crew-member" devoted to making Space Station science happen.

## Obituaries

**Bush, Edward T., 85**, of Huntsville, died Feb. 19. He retired from Marshall in 1980 where he worked as an electronics technician. He is survived by his wife, Gladys M. Bush.

**Fortune, William C., 90**, of Big Bear Lake, Calif., died in August, 2001. He retired from Marshall in 1971. In 1963, he became the first director of the Mississippi Test Facility, later Stennis Space Center. Fortune is credited with being instrumental in establishing Stennis as a premier NASA test facility.

**Green, Gary A., 49**, of Taft, Tenn., died March 23. At the time of his death, he was a Marshall contract employee with Morgan Research Corp. He is survived by his wife, Patricia Green, one son and one daughter.

**Smith, Lindsey B., 78**, of Fayetteville, Tenn., died March 16. He retired from Marshall in 1974 as an aerospace engineer technician. He is survived by his wife, Johanne Smith.

**Whitt, Charley R., 93**, of Toney, died Feb. 28. He retired from Marshall in 1966 as a plumber steamfitter. He is survived by two sons, three daughters, 14 grandchildren, 13 great-grandchildren and nine great-great-grandchildren.

# Technology

*Continued from page 1*

Hayman, president of KES Science & Technology Inc., in Kennesaw, Ga., which manufactures AiroCide TiO<sub>2</sub>. "That's appealing because you don't have to change an anthrax-laden air filter."

Scientists at the University of Wisconsin-Madison tested the AiroCide TiO<sub>2</sub> with a non-virulent cousin of anthrax. During a typical experiment, a cloud of approximately 1,000 spores was sucked into the chamber and only 100 or so spores emerged. Spores spend at least 5 to 10 seconds traveling through the device's jumbled tubes and often become trapped by turbulent airflow. They linger and are attacked by hydroxyl radicals, or are zapped by germ-killing ultraviolet light.

"The longer pathogens stay inside, the more likely they are to die," said Hayman. "Tests showed that as many as 93 percent of anthrax spores that enter the device are destroyed. Survivors are usually drawn back in on later passes through the reactor bed and are killed."

The technology to build the anthrax killer emerged from another product, Bio-KES, which is used by grocers and florists to remove ethylene and thus extend the life of vegetables, fruits and flowers. Ethylene (C<sub>2</sub>H<sub>4</sub>) is a gas

released by the leaves of growing plants — but too much of it can build up in an enclosed plant growth chamber or produce storage facility.

Too much ethylene causes plants to mature too quickly, fruit to ripen prematurely, and it even accelerates decay. This hinders researchers' efforts to harvest healthy plants grown in space and would also be undesirable when space travelers build larger space-based greenhouses for growing fresh food.

The research that led to the invention of Bio-KES started with a crucial discovery made in the early 1990s by scientists at the Wisconsin Center for Space Automation and Robotics - a NASA Commercial Space Center at the University of Wisconsin-Madison. These scientists collaborated on the discovery with Dr. Marc Anderson, a professor and chemist who also works at the university.

The research team found that ultra-thin layers of titanium dioxide (TiO<sub>2</sub>) exposed to ultraviolet light converted ethylene into carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O) — substances that are good for plants. Subsequently, they developed a coating technology that applies TiO<sub>2</sub> layers to the surfaces of many materials.

The Wisconsin Center for Space

Automation and Robotics, which specializes in developing robotics/automation technologies for agriculture and biotechnology research in space, used the TiO<sub>2</sub> coating technology to design an ethylene scrubber. This first-generation ethylene scrubber was used effectively inside the ASTROCULTURE(tm) plant growth unit, which grew potato plants during Space Shuttle mission STS-73 in 1995. Over the years, scientists refined the ethylene scrubber, and currently, the third-generation scrubber is being used successfully inside the ADVANCED ASTROCULTURE(tm) for plant experiments on the International Space Station.

This Space Station experiment and the Wisconsin Center for Space Automation and Robotics are part of NASA's Space Product Development Program, which encourages the commercialization of space by industry. There are 17 Commercial Space Centers across America, each specializing in a variety of areas such as agriculture, materials and biotechnology.

"Through our program, companies invest resources to do experiments in space that can benefit their businesses," said Nall. "This results in new and improved products and services for the American public."

## Marshall hosts reknowned scientist Dr. Paul Davies

**D**r. Paul Davies, one of the foremost authorities on the origin and nature of the universe, was at the Marshall Center for several days this week working with Dr. Richard Hoover, astrobiology group leader in the Space Science Department.

Davies is a professor with the Australian Center for Astrobiology at Macquarie University in Sydney.

While at Marshall, Davies and Hoover searched for microfossils in meteorites using an electron microscope.

These meteorites, possibly the remains of comets, contain high carbon content, water and complex organic chemicals.

"We know that comets are basically dirty snowballs once composed of water, ice and minerals," Hoover said. "The one dominant requirement for life on Earth, as we know it, is water. The significance of the studies are an indication that life may be far more widespread than the planet Earth."

Davies is the author of 25 books and is recognized as one of the world's authorities on quantum field theory and gravitation and cosmology. He wrote "The Fifth Miracle: The Search for



From, left, Dr. Richard Hoover and Dr. Paul Davies.

the Origin of Life," and his latest book is "How to Build a Time Machine," which explores the physics of time.

In 1995, Davies was awarded the Templeton Prize by Prince Phillip at Buckingham Palace in London.

Davies also has discussed his work on several television and cable programs.

Photo by Terry Leibold, Marshall Space Flight Center

# 9th annual Marshall Easter Egg Hunt



Photos by Jeff Wolfe, NASA/Marshall Space Flight Center

Safety, Health & Environmental mascots flank Marshall Director Art Stephenson and the Easter Bunny at the annual egg hunt March 23. From left, Monte Gravunder is "Hazardous Harry," Steve Knight is "The Easter Bunny," Stephenson, Kandy Hayden is "Protective Pam," Helen Eddleman is "Reuse it Rita," and Patrick McManus is "Dr. Know."



Daniel Torres thinks life is good when buckets of cheese balls are to be had.



Stephanie and Jacob Wolfe balancing refreshments.



It's a fun-filled, mad scramble for eggs and treats for this group.



Thom Tingle registers his son, Austin, for door prizes.



Participants line up for the start of the festivities.



# draws more than 400 participants

★ ★ ★  
*Marshall Stars*  
★ ★ ★

## Marshall team member Scott Savage saves the day with impromptu egg hunt

**W**hen about 40 children and their families showed up for the Easter egg hunt, originally scheduled March 17, they found that a threat of rain had cancelled the day's plans.

Scott Savage didn't want the children to go home disappointed. He asked the families to stay at the picnic grounds while he drove to a local department store where he bought eggs and candy. After returning to Marshall with the goodies, the children were organized into three groups and hunted for approximately 300 eggs.

Although there were not any door prizes, there were a lot of smiling faces as a reward for Savage's efforts. Some said he demonstrated what the word "community" really means.



Tereasa Washington and granddaughter Nyah gather treats during the egg hunt.



Eggs, eggs and more eggs are found hidden between the pines.



Toddlers go this way and that way in their search.



These three are taking a break to compare their treats.

## Shuttle gets new lift for STS-110

# More than 100 companies across country dedicated to success of Space Shuttle's newest engine

Marshall news release

**M**ore than 100 companies across the country will mark a significant milestone April 4, with the launch of Space Shuttle Atlantis: The Shuttle is getting a new lift - three improved Main Engines that will make the world's only reusable launch vehicle safer and more reliable than ever before.

Companies in 17 states provide parts and materials for the Shuttle's "new" Main Engines.

One of the most sophisticated rocket engines ever designed, the Space Shuttle Main Engines were developed by the Marshall Center, together with Boeing Rocketdyne of Canoga Park, Calif., and Pratt & Whitney of West Palm Beach, Fla.

The enhanced engines — called Block II Main Engines — incorporate an improved high-pressure fuel turbopump with a stronger integral shaft/disk and tougher bearings. The improvements make the "new" engines safer and more reliable, potentially increasing the number of flights between major overhauls.

"NASA's suppliers and their products are an integral part of the Space Shuttle program," said Art Stephenson, director of the Marshall Center. "Each individual who contributes to the production and delivery of the Shuttle Main Engine is a valued member of our NASA team. Each should be proud of the Space Shuttle technologies that have benefited U.S. industry, improved our quality of life and created jobs for Americans."

A single Block II Main Engine was demonstrated in July 2001 on the STS-104 mission, and again on the STS-108 mission in December 2001. The upcoming mission marks the

first time the Shuttle will be powered by three of the new engines.

Developed in the 1970s by engineers at the Marshall Center and Rocketdyne, the Shuttle Main Engine performs at greater temperature extremes than any mechanical system in common use today. At minus 423 degrees Fahrenheit, the liquid hydrogen fuel is second only to liquid helium as the coldest liquid on Earth. When it and the liquid oxygen are combusted, the temperature in the main combustion chamber of the engine is 6,000 degrees Fahrenheit, hotter than the boiling point of iron.

If the three engines pumped water instead of fuel, they could drain an average-sized home swimming pool in 25 seconds. At lift off, each engine produces 417,975 pounds of thrust.

"Our suppliers' diligent attention to detail is critical to the safe and reliable performance of the Shuttle's Main Engine," said George Hopson, manager of the Space Shuttle Main Engine Project Office at the Marshall Center. "Each one is responsible for preserving the safety of the world's astronaut corps."

The new fuel turbopump — made by Pratt & Whitney — is not much larger than an automobile engine, yet it generates 360 times the horsepower.

Boeing Rocketdyne is responsible for the manufacture of the Space Shuttle Main Engine. NASA's Stennis Space Center in Mississippi tests the engines.

Companies providing parts and supplies to the Shuttle Main Engine program are located in Alabama, Arizona, California, Connecticut, Florida, Indiana, Massachusetts, Michigan, Minnesota, New Jersey, New York, New Hampshire, Ohio, Pennsylvania, Tennessee, Virginia and West Virginia.

### **Energy Tip: Shopping for outdoor lighting**

**W**hen shopping for outdoor lights, you will find a variety of products that can help reduce lighting bills, from low-voltage pathway lighting to motion-detector floodlights.

Some stores carry lights powered by small photovoltaic modules that convert sunlight directly into electricity.

Look for outdoor lights with photosensors, which automatically turn off when they sense sunlight. Timers for outdoor lighting may have to be reset often with the seasonal daylight variation. However, they can be used effectively with other controls. A photosensor could turn a light on at dusk, and a timer could turn the light off at a certain hour — like 11 p.m.

Long-lasting compact fluorescent lamps can be great for exterior lighting, but be sure to find lamps that operate at low temperatures for outdoor use.

This energy tip is featured in: "Energy Savers Quick Tips — February 2002," a monthly newsletter from the Office of Building Technology, State and Community Programs.

The Energy Savers Web site is:

[http://www.eren.doe.gov/energy\\_savers/ENERGY TIP OF THE WEEK](http://www.eren.doe.gov/energy_savers/ENERGY TIP OF THE WEEK)

### **Property Management Association hosting training**

**T**he Marshall Center's Property Management Group is hosting a spring training session for the National Property Management Association's Rocket City Chapter.

Courses will be taught by Janice E. Hawk, deputy director of the Government Property Group in the Defense Contract Management Agency and Lawrence W. Worthy, a consultant specializing in training and implementation of corrective actions for property management systems.

The event will be in Morris Auditorium, Bldg. 4200, from 8 a.m. - 4 p.m. May 21. Registration information is available at [www.npmahsv.org](http://www.npmahsv.org). For more information call at 544-6572.

# Center Announcements

## 2002 Earth Week activities

Earth Week activities will be held April 15-19, including recycling, environmental and energy exhibits will be in the lobby of Bldg. 4200; a logo contest, a spot-an-environmentalist contest and the tree-planting ceremony. Harvey Cotton, director of the Botanical Garden, will speak at the ceremony, which will be from 10-11 a.m. April 18 at the Wellness Center, Bldg. 4315. In case of inclement weather, the ceremony — with the exception of the tree planting — will be in the Morris Auditorium, same date and time.

## Spot-an-environmentalist contest

Marshall employees and onsite contractors are asked to submit the names of employees they see who are assisting in keeping the Marshall Center environmentally friendly. Submit the employee's name and a short description of the environmental deed to justify the person's nomination via e-mail to: [lucy.boger@msfc.nasa.gov](mailto:lucy.boger@msfc.nasa.gov) or mail to AD21, Bldg. 4250, room 16B, no later than March 29. Entries will not be accepted after the closing date. Each nominee selected will receive a gift certificate from "Wild Birds Unlimited" at the tree-planting ceremony at 10 a.m. April 18 at the Wellness Center, Bldg. 4315.

## Clubs and Meetings

### MARS soccer league organizing

The MARS soccer league is looking for players interested in starting new teams or joining current teams. All Marshall team members are invited to participate. For more information call Andy Heaton at 544-3839.

### Procurement Office Retirees breakfast April 2

Procurement Office Retirees will meet for breakfast April 2 at 9:30 a.m. The breakfast is at Mullins Drive-In on Andrew Jackson Way in Huntsville. For more information, call 837-5604.

### Spring dinner dance April 13

The MARS Ballroom Dance Club is hosting its spring dinner dance April 13 in the West Exhibit Hall of the Von Braun Center. The Buddy Chambers Combo will perform during an evening of dancing. Attire is semi-formal and tickets are \$17 for members and \$20 for guests. The evening begins with a social at 6:30 p.m. with dinner at 7 p.m. Dancing is from 8-11 p.m.. For more information, call 544-0563, 544-3998 or 544-3525. For table reservations, call Woody Bombara at 650-0200.

### Property management group hosting 2002 training

The Marshall Center Property Management Group is hosting the National Property Management Association Rocket City Chapter on May 21 from 8 a.m. to 4 p.m. for spring 2002 training. The training is open to all Marshall team members associated with the National Contract Management Association, National Property Management Association, National Association of Purchasing Management or the International Facility Management Association. For more information, call Debie Grissom at 544-6572.

### Washington update luncheon April 3

The Huntsville/Madison County Chamber of Commerce is hosting a Washington update luncheon featuring U.S. Sen. Jeff Sessions of Alabama. The event is at noon April 3 in the North Hall of the Von Braun Center. Tickets cost \$25. For more information, call Tracy Lamm at 544-0328.

### Disabled former NBC sitcom star to give motivational talk

The Missile and Space Intelligence Center's Deaf and Disabled Persons Employment Program Council will present a motivational program Wednesday, April 3. Geri Jewell, of the former NBC sitcom "The Facts of Life," will share her experiences and challenges as a disabled person. The program begins at

9:30 a.m. in the Richard C. Shelby Center for Missile Intelligence, Bldg. 4544 on Fowler Road. For more information, call 313-7388 or 313-7276.

## Miscellaneous

### Weight management program offered

A weight management program will meet once a week for 16 weeks at the Wellness Center, Bldg. 4315. Exercise physiologist Lana Hart will teach the "LEARN" program and will host an orientation meeting Wednesday, March 27 from 9-10 a.m. Space is limited and priority is given to civil servants, who can take the class free of charge. On-site contractors are eligible for any remaining slots for a \$30 charge. For more information, call 544-3337.

### Password changes to MIS3090 to take effect

Password synchronization and auto logon capability between MSFC mainframe host and IDS servers will be disconnected effective April 1 for security reasons. If you previously used auto logon or password synchronization, you will need to go directly to the NACC MIS3090 host. You also can access the URL <https://nacomm.nacc.nasa.gov/bluezone/mis/default.htm> or call 544-HELP, Option 0 for assistance.

### Moonbuggy Race April 12-13

The 9th annual Great Moonbuggy Race is April 12-13 at the U.S. Space & Rocket Center. Admission is \$12 for adults and \$6 for children aged 4-12. The last date to order T-shirts is Friday.

### 'Take Our Children to Work Day' T-shirt orders due Friday

Friday is the last day to order T-shirts for "Take Our Children to Work Day." For more information, see "Inside Marshall."

## Job Announcement

AST, Technical Management GS-0801-14 in the Space Transportation Directorate, Program Planning and Development Office, Development Projects Group. Closes April 3, 2002.

# Employee Ads

## Miscellaneous

- ★ Wheel Horse/Toro riding mower, 12.5HP, 37" deck, hydro trans., 334 hours, \$800. 830-6584
- ★ 1999 BMW R1100RT motorcycle, 17K miles, heated hand grips, heated Corbin seat, \$12,500. 461-9569
- ★ Homelite rear engine riding lawn mower, 10HP, 30", \$100. 653-5248
- ★ Wooden step ladder, 8', \$25. 325-6000
- ★ Talladega 500 tickets, three seats in OVHILL North tower, April 21, \$330. 772-6963
- ★ Baby items; Childcraft crib w/mattress and sheets; stroller, gate, tub, snuggli, more. 859-8814
- ★ Sofa, 87", cream color; glass top Faux marble coffee table, \$400 for both. 430-6985
- ★ Pool table, commercial, full size, 5'4"x9'6", 1 piece/1" slate, \$1,500. 430-0549
- ★ Ladies golf bag, new, never used, navy blue/champagne w/14 individualized club compartments, fur lined for graphite shafts, \$40. 828-8005
- ★ Cherry bedroom suit, 5 piece, beveled mirrors, marble deco, \$2,150. 881-0883
- ★ Bill Blass tuxedo, size 40R, cummerbund; tuxedo wing collar shirt, 16/33; studs, cuff links, \$40. 518-9869
- ★ New glass top table, 42"x65", iron base, four chairs w/cream cushions, \$400. 256-446-6310
- ★ Washer and dryer set, X-large; Hybrid king-size waterbed mattress w/heater; make offers. 828-6213
- ★ Kenmore LP gas grill with side burner and propane tank, \$150. 539-4508
- ★ White metal frame bunk bed, selling one mattress, \$50. 883-7657
- ★ Metal utility trailer for lawn mowers, motorcycle, small car, 72"Wx99"L, \$1,000. 837-6776
- ★ MTD tiller, rear tine, 5 HP, \$400; Amana central heat and air conditioner, 3.5-

- ton, \$300. 256-586-7424
- ★ Micron 300Mhz PC with 64Mb Ram, 4 GB hard drive & 17" color monitor, \$300; modem and speakers, \$25. 882-1779
- ★ Boat/trailer, 4 sets skis, \$350; table saw, \$100; grinder, \$35; drill press, \$50. 837-7024
- ★ Roper riding lawn mower, 11HP front engine, \$350 obo. 796-8529
- ★ Desk w/hutch, wood, 4'3"Hx3'7"Wx2'D, \$30; metal return w/3 drawers, 2'2"Hx3'4"Wx1'9"D, \$15; \$40 for all. 880-9025
- ★ Ford lawn and garden tractor, 18HP, hydrostatic foot operated, low hours, 48" deck, \$1,650. 852-5446
- ★ 1998 Harley-Davidson, XL1200S Sport, 3,500 miles, black/orange/white, many extras, \$8,750. 837-6109
- ★ Talladega 500 tickets, three seats in Ovhill North Tower, April 21, \$330. 772-6963

## Vehicles

- ★ 1979 Ford truck, V8, automatic, long bed, new tires, \$3,200. 539-3889
- ★ 1993 Grand Cherokee, 4x4, \$5,200; 1988 Yamaha ATV, \$850. 859-6522
- ★ 1994 Ford Ranger XLT, automatic, V6, extended cab, teal green/tan, bedliner, a/c, PW/PL, cruise, tilt, 92K miles, \$6,975 obo. 895-8306
- ★ 1998 Z71 extended cab, loaded, all-options. 539-1408
- ★ 1996 Mazda Miata, convertible, white/black top, 60K miles, \$8,500. 837-9685
- ★ 1968 Mustang coupe, auto, air, ps, \$4,500. 256-757-2850
- ★ 1995 Mazda MPV, 108K miles, \$3,700. 830-5140
- ★ 1999 Chevy Camaro, teal, 5.5K miles, new tires, power locks/windows, CD player. 971-2243
- ★ 1995 Ford Ranger XLT SuperCab, maroon w/beige interior, 5-speed, 4-cylinder, 139K miles, \$3,200. 880-9025
- ★ 1996 Mazda Millenia, CD changer, sunroof, all-power, champagne w/gray interior, 78K miles, \$8,400. 880-9025
- ★ 1986 Ford Econoline 150 van, new tires/

- battery, carb. rebuilt, 123K miles, \$1,875 or make offer. 837-2955
- ★ 1988 Ford Ranger, 2.3L, auto, a/c, PS/PB, Leer shell, one-owner, \$2,300. 883-6284
- ★ 1991 Buick Regal Custom, auto, a/c, 3.8L, \$2,500 obo. 830-6584
- ★ 1998 Dodge Grand Caravan, \$9,900. 233-6197/564-6225 beeper
- ★ 1994 Dodge Grand Caravan, champagne, V6, air, power windows/locks, AM/FM/Cassette, child seats, \$2,900. 851-9982
- ★ 1999 Ford F-150 XL, red, step-side, 45K miles, bed cover, loaded, \$12,700. 777-4416
- ★ 2000 Chevrolet Venture LS w/LT features, 33.5K miles, taupe, power windows/doors, cruise CD/Cassette, \$19,000. 830-1844
- ★ 2001 Jetta TDI, manual, fully loaded, load mileage, \$17,500. 289-7776/430-3184
- ★ 1996 Mazda Millenia, sunroof, CD changer, all-power, champagne w/gray interior, 78K miles, \$8,350. 880-9025

## Wanted

- ★ Used go-cart, one or two seat, preferably in running condition but not necessary. 256-771-2986
- ★ Dependable automatic vehicle for teenage son, i.e. Cutlass, Regal, \$1,200 or less. 721-7835
- ★ Keyboard, semi-pro (medium) quality. 880-9025

## Free

- ★ Ferret with cage, friendly & playful, doesn't bite. 461-7947

# MARSHALL STAR

Vol. 42/No. 28

Marshall Space Flight Center, Alabama 35812  
(256) 544-0030  
<http://www1.msfc.nasa.gov>

The Marshall Star is published every Thursday by the Internal Relations and Communications Department at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. Contributions should be submitted no later than Monday noon to the Marshall Internal Relations and Communications Department (CD40), Bldg. 4200, room 101. Submissions should be written legibly and include the originator's name. Send electronic mail submissions to: [intercom@msfc.nasa.gov](mailto:intercom@msfc.nasa.gov) The Marshall Star does not publish commercial advertising of any kind.

Manager of Internal Relations  
and Communications — Steven Durham  
Editor — Jonathan Baggs

U.S. Government Printing Office 2002-733-060-20091

Permit No. G-27  
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