



# MARSHALL STAR

Serving the Marshall Space Flight Center Community

Nov. 1, 2007

## Mission extended by one day

### Propulsion elements gave Discovery good send-off



Space shuttle Discovery approaches the International Space Station during STS-120 rendezvous and docking operations on Oct. 25. The Harmony node is visible in Discovery's cargo bay.

By Sanda Martel

"It was a good day for the shuttle propulsion team," said Steve Cash, manager of Marshall Center Shuttle Propulsion Office, about the performance of the shuttle's main engines, external tank and reusable solid rocket boosters with their solid rocket motors during the launch of space shuttle Discovery. The shuttle launched Oct. 23 from the Kennedy Space Center, Fla.

There was no significant foam loss from the tank prior to booster separation, and the performance of the newly designed ice frost ramps on the liquid hydrogen tank was "outstanding," he added. Flying these redesigned foam ramps was a "test" for a further redesign of the ramps that will fly the first time on external tank ET-128, on STS-124, targeted to launch in April 2008.

"I have confidence in the tanks now, but we're always trying to

*See Discovery on page 3*

## An interview with Marshall Center solar astronomer David Hathaway

### VISAR technology turns an astronomer into a crime fighter

David Hathaway, a solar astronomer in the Space Science Office of the Marshall Center's Science & Mission Systems Office, continues to perfect his invention called Video Image Stabilization and Registration — or VISAR — to solve crimes. The VISAR invention was originally developed to help Marshall scientists in the Science & Missions Systems Office take and analyze satellite imagery of weather systems and solar activity.

VISAR was first used in a crime fighting application in the investigation of the 1996 Centennial Olympic Park bombing in Atlanta. This technology, which helped reveal important details about the bomb and the explosion, dramatically improves videotape sequences and still images extracted from moving video.



Doug Steffer/MSC

David Hathaway explains that he invented VISAR to help Marshall take and analyze satellite imagery of weather systems and solar activity. This technology would also help to solve crimes, including the 1996 Centennial Olympic Park bombing in Atlanta.

*See Hathaway on page 6*

## Former astronaut Eileen Collins to headline Marshall safety event Nov. 6

Former NASA astronaut Eileen Collins — the first woman to pilot and command an American spacecraft — will visit the Marshall Center Nov. 6 to talk with team members about safety during the “Safety & Mission Success Awareness” all-hands meeting.

The event, which starts at 9:30 a.m. in Morris Auditorium in Building 4200, is an outgrowth of NASA’s traditional, day-long “Safety Day” event, designed to update the Marshall workforce’s safety knowledge in all areas of daily operation.

“In the past, we held a full stand-down day to encourage a cultural change across Marshall and help our employees internalize our safety program,” said Marshall industrial safety engineer Sonya Hutchinson, who is organizing this year’s event for the Safety & Mission Assurance Directorate.

“Because most of us will agree that our culture has changed tremendously in the safety arena, we’re moving beyond the stand-down-day concept,” she added.

The combination of the Nov. 6 event and the Safety & Health Expo held Oct. 30-31 at Marshall, with its focus on industrial and

occupational safety and physical fitness, was designed “to give our employees a good balance of useful safety information, without trying to condense everything into a single day,” Hutchinson said — a primary feedback comment from employees after past Safety Day events.

Collins will answer event attendees’ questions following her keynote speech, and will sign autographs in the Building 4200 lobby before and after the all-hands. Robin Henderson, Marshall Center associate director, will open the meeting, and Randy Lycans, general manager of Jacobs Engineering, Scientific & Technical Services in Huntsville, will introduce Collins. Roy Malone, director of Marshall’s Safety & Mission Assurance Directorate, will close the program.

In July 1999, Collins became the first female space shuttle commander, leading the crew of shuttle Columbia to space during STS-93, the mission that saw the successful delivery to orbit of the Chandra X-ray Observatory, NASA’s flagship X-ray astronomy satellite. In July 2005, Collins commanded shuttle Discovery during STS-114, the first historic “Return to Flight” mission. She retired from active NASA duty in 2006 to spend more time with her family and pursue private interests.



Eileen Collins

## Quarterly video highlighting Ares milestones now available online



NASA/Stennis

Employees tuning in to the latest Ares video can view some of the assembly work leading up to the installation of Powerpack 1A on the A-1 Test Stand at Stennis. The test article consists of a gas generator and engine turbopumps originally developed for the Apollo Program. By testing these heritage components, engineers can glean data needed to modify the turbomachinery to meet the higher performance requirements of the Ares launch vehicles. Testing is set to begin this month.

By Sherrie Super

The latest Ares quarterly progress report — the sixth in an ongoing series — is now available online. The five-minute video features highlights of milestones achieved in the design and development of the Ares launch vehicles.

This segment includes a wide array of test footage — including wind-tunnel and parachute tests — conducted at several sites ranging from the Marshall Center to the U.S. Army’s Yuma Proving Ground near Yuma, Ariz.

Viewers also can see the progress at the Stennis Space Center near Bay St. Louis, Miss., as NASA refurbishes its heritage test stands while paving the way for construction of a new 300-foot-tall stand that will rumble with the rocket tests of tomorrow. Other highlights include efforts by NASA engineers to perfect new alloys, build stronger fuel tanks and tap the latest in welding techniques.

Viewers also can join Ares exhibits specialists traveling coast-to-coast, giving potentially tens-of-thousands of people the chance to share in the excitement of America’s next launch vehicles.

The video is available on Inside Marshall at <http://inside.msfc.nasa.gov/temp/ares.html>.

The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.

# Marshall CFC fundraising effort nears halfway mark

Following a sizeable and energetic turnout at the annual Combined Federal Campaign rally Oct. 25, the Marshall Center's push to raise \$600,000 for local and national charities this year is edging toward the halfway point. At the close of business Oct. 29, team members had raised \$297,273.

The seven-week fundraiser continues through Dec. 7.

## Bus tours continue through Nov. 15

There is still room for additional riders on board CFC bus tours of local charitable organizations. Marshall personnel are encouraged to sign up at [http://cfc.msfc.nasa.gov/bus\\_tour.html](http://cfc.msfc.nasa.gov/bus_tour.html). Tours include:

- Therapy Partners, Nov. 7, 1-3 p.m.: The not-for-profit organization provides certified teams of handlers and therapy animals to work as a therapeutic tool in medicine, education and other appropriate settings.
- Huntsville-Madison County Senior Center, Nov. 8, 9-11 a.m.: The center provides a community focal point where older persons, as individuals or in groups, can come together for services and activities.
- Volunteer Center of Huntsville & Madison County / Huntsville Rehabilitation Center, Nov. 14, 9-11 a.m.: The Volunteer Center seeks to mobilize volunteers to support schools, non-profits and government agencies. The Huntsville Rehabilitation Foundation serves veterans, students and others with disabilities in the pursuit of stable and upwardly mobile employment.
- Huntsville Hospital Foundation, Nov. 15, 9-11 a.m.: The foundation develops relationships and financial resources in support of Huntsville Hospital, including present and future equipment and program needs.

## Helping hands needed for Community Service Days

A number of volunteer slots remain open for this year's CFC "Community Service Days" activities – helping local charitable organizations with some of the special and everyday tasks they accomplish to serve those in need. Visit <http://cfc.msfc.nasa.gov/csd.html> for a complete roster of open volunteer shifts, and sign up to lend a helping hand.



- Downtown Rescue Mission: Volunteers needed Nov. 2, Nov. 8 and Nov. 15-16.
- CASA of Madison County: Volunteers needed Nov. 2 and Nov. 6.
- Huntsville Botanical Garden: Volunteers needed Nov. 8 and Nov. 15.
- WAAY-FM Share-A-Thon: Volunteers needed Nov. 13-16.
- Harris Home for Children: Volunteers needed Nov. 6, Nov. 8 and Nov. 13-15.

Employees who participate in Community Service Days efforts during regular Marshall Center work hours are allowed to charge excused leave. Contractors should consult with their program managers or business leads about participation and leave.

For more information about the bus tours, call Steve Spearman at 544-0587. For more information about Community Service Days, call Pat Benson at 544-3780.

For other information about Marshall's CFC efforts, call Irene Taylor at 544-2051.

## Discovery

### Continued from page 1

make them better, said John Shannon, chairman of NASA's Mission Management Team, in a news conference Oct. 23.

Space shuttle Discovery and its seven-member STS-120 crew arrived at the International Space Station Oct. 25.

Space station expansion is making great strides during the mission, with installation of the Node 2 connecting module, Harmony, setting the stage for the arrival of new research laboratories from the European Space Agency and the Japan Aerospace Exploration Agency in upcoming shuttle missions.

After docking at the station, STS-120 mission specialist Daniel Tani switched places with Expedition 16 flight engineer Clayton Anderson, who will be wrapping up a four-month tour of duty as an expedition crew member and returning to Earth as an STS-120 crew member. Tani is scheduled to stay on the station until he returns to Earth with STS-122 later this year.

NASA managers added an extra day to the STS-120 mission to allow more time for spacewalkers to inspect the space station's starboard Solar Alpha

Rotary Joint, or SARJ, after debris was discovered inside the joint during the second space walk of the mission on Oct. 28. The debris was described by Tani as "metal shavings" inside the rotary joint. He used tape to gather samples of the shavings. The space station has two SARJ's that rotate the solar arrays and track the sun for electrical power generation.

At Marshall Star press time, spacewalker Scott Parazynski had completed further inspection of the SARJ during the mission's third space walk and found no evidence of further debris, describing the SARJ's race rings as "nice and clean."

NASA managers said it does not appear at this point that extending the mission by one day will prevent flying the STS-122 mission, targeted to launch Dec. 6 from the Kennedy Center.

On Oct. 28, managers cleared Discovery's thermal protection system or heat shield and cleared the vehicle for entry. Discovery is scheduled to land Nov. 7 at the Kennedy Center.

*The writer, an ASRI employee, supports the Office of Strategic Analysis and Communications.*

## Tradition and legacy

# Marshall, Team Redstone gather to celebrate Native American Heritage Month on Nov. 14

By Rick Smith

*"Everything an Indian does is in a circle, and that is because the Power of the World always works in circles, and everything tries to be round. Even the seasons ... always come back again to where they were."*

— **Black Elk, Lakota holy man (1863-1950)**

As November arrives and the seasons circle around once more, Team Redstone, which includes the Marshall Center and the U.S. Army organizations on Redstone Arsenal, will honor the spirit and traditions of the original people of the Americas on Wednesday, Nov. 14.

They'll also seek to nurture those traditions — to maintain the circle, as a "sachem," or as a Native American leader might put it, for a new generation. Some 275 Huntsville-area schoolchildren will visit the arsenal to take part in the festivities.

The annual Native American Heritage Month event will be held from 9 a.m. to 2 p.m. at the Mississippi Mud House near the Rustic Lodge on Honeysuckle Road, just off Patton Road.

The visiting students include those in home-school programs and classes from Rainbow Elementary School in Madison.

Darlene Simmons, Rainbow Elementary's kindergarten lead, said it's extremely important for students to learn different customs and cultures.

"As teachers," Simmons said, "we believe allowing students to share in realistic activities and participate in the customs and traditions of others will give them a true experience — one that will help them grow as individuals, and embrace others by seeing their similarities and differences."

Activities during the event will include traditional and mystic Native American dance in authentic regalia; demonstrations of flint-knapping, campfire building and spear throwing; kids' games; storytelling; preparation and tasting of traditional Indian fry bread and Three Sisters soup; and exhibits of Indian artifacts.

Performers will include Scott Crisp, a Native American men's northern traditional dancer from Etowah, Tenn.; Daniel Tramper, a world-championship Cherokee hoop dancer from rural North Carolina; and Jimmy "Yellowhorse" Webster, a flutist from Decatur, Ala.

Even the site of the day's activities provides an authentic glimpse into another era. The Mississippi Mud House is a meticulous recreation of an authentic 18th century Native American structure. It's being built by Ben Hoksbergen, a U.S. Army archaeologist at Redstone Arsenal.

### What's your ancestry?

Cindy Campbell, a financial resources specialist at Marshall and the

center's chairperson for Native American Heritage Month, expects a big turnout for the festivities.

Presently, there is a loose association of some three-dozen members of the Marshall workforce — scientists, technicians, engineers and support personnel — who identify themselves as Native Americans. But Campbell, who is 1/8th Cherokee, believes many more team members here share those bloodlines.

According to the 2005 U.S. Census, about 1 percent of the American population is of American Indian and Native Alaskan descent. More than 560 federally recognized tribal governments now exist in the United States. Hundreds more are petitioning for recognition.

"It's important to embrace one's heritage," Campbell said. "Where we come from helps define who we are as individuals and as a society. Clear knowledge of the past helps us better understand the future, and our responsibility to future generations."

Helps maintain the circle, in other words.

Buses will be available to take attendees to the site of the event and back. A complete bus schedule will appear on Inside Marshall next week.

For more information or to confirm attendance, contact event chairperson Cindy Campbell at 544-0144 or [Cindy.Campbell@nasa.gov](mailto:Cindy.Campbell@nasa.gov), or contact co-chair Jerald Kerby at 544-3243 or [Jerald.Kerby@nasa.gov](mailto:Jerald.Kerby@nasa.gov).

*The writer is an ASRI employee who supports the Marshall Center's Office of Strategic Analysis and Communications.*

## 'Honoring Warriors' essay, display contests now open

This month, Team Redstone will honor the ancestry of Native Americans and native-born Alaskans with essay and display contests on the subject of "Honoring Warriors: Past and Present."

All essays should be two double-spaced pages in length and must be received by Nov. 6.

E-mail all essay entries to Specialist First Class Samuel Cason and Specialist First Class Monique Mixon at [samuel.cason@conus.army.mil](mailto:samuel.cason@conus.army.mil) and [monique.c.mixon@conus.army.mil](mailto:monique.c.mixon@conus.army.mil). For display contest entries, contact Cason at 842-9765 or Mixon at 876-8648 to submit works for judging. The display contest will begin Nov. 7.

Awards for winning essays and displays will be presented during the Native American Heritage Month celebration Nov. 14.

# November 'Focus on Marshall' features a little sweat for one project and 15 years of hard work for another

By Lori Meggs

In November, the "Focus on Marshall" team will take you inside Marshall's "sweat lab," the Exploration Life Support Test Facility, where more than 50 Marshall employees donated their time, sweat and urine for an enhanced water recovery system.

They participated in a technology development test of life support hardware that could provide clean air and water for future crew members on the moon.

Monsi Roman, project manager of the Exploration Life Support Project, and Keith Parrish, team lead for the testing, will discuss the goals of the project in the November segment of "Focus on Marshall." They also will explain what the participants had to do and the process that converts perspiration into water you can drink.

The Discovery Program also will be highlighted on this "Focus on Marshall" episode, as the program celebrated its 15th anniversary. Alan Stern, NASA's associate administrator for science at NASA

Headquarters, and Paul Gilbert, manager of the Discovery and New Frontiers Program Office at Marshall, will discuss past mission successes and what's ahead for the program.

You'll hear from Keyur Patel, the Dawn project manager at NASA's Jet Propulsion Laboratory in Pasadena, Calif. The Dawn mission will provide new answers to questions about the formation and evolution of the early solar system. And William Borucki, the science principal investigator for the Kepler mission at Ames Research Center in Moffett Field, Calif., will discuss the mission to find Earth-size planets outside of the solar system.

"Focus on Marshall" is broadcast on Marshall TV the first and third Tuesday and Thursday of each month at 11 a.m., noon and 1 p.m. It also is available on NASA TV, Inside Marshall and the NASA Portal.

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## Marshall members to talk careers with high school seniors Nov. 3

### *Volunteers sought for annual 'Senior/NASA Day' at Alabama A&M*

By Rick Smith

Alabama A&M University is poised for its Nov. 3 gridiron clash with the Jackson State University Bulldogs of Jackson, Miss. The Bulldogs are enjoying a 6-1 season to date, but the scrappy Tigers, 5-3 since the year started, are determined to battle back.

Hang on a minute — this isn't Sports Illustrated.

But football season is marching on. And Marshall Center Deputy Director Robert Lightfoot is tossing the coin for this matchup.

Why the Marshall connection? It's Alabama A&M University Senior/NASA Day, cosponsored by the Marshall Center, and a choice opportunity to share NASA's message with hundreds of bright, enthusiastic young minds. And some 3,000 of them — high school seniors from Alabama, Tennessee, Missouri, California, Illinois and Georgia — are converging on Huntsville to watch. And, more importantly, to listen.

"The seniors come to the university to listen to motivational speakers, tour the campus and cheer at the football game," said Marshall education specialist Madeline Hereford. "They also come to learn more about opportunities awaiting them in math, science, engineering and technology — fields critical to NASA's ongoing mission of exploration and to the continuing economic prosperity of the nation."

Hereford says more Marshall team members can help. A total of 50 "Marshall Ambassadors" are needed to help share information about the center and NASA with students. Activities begin at the university gymnasium at 7 a.m. and continue until the 1:30 p.m. coin toss and game kickoff at Louis Crews Stadium.

Volunteers are welcome to sign up now to work the event. Two shifts are available: 7-10 a.m. and 10 a.m.-1 p.m. All volunteers will receive free admission to the game, free parking and a barbecue lunch. To sign up, e-mail Efreem J. Hanson at [efrem.j.hanson@nasa.gov](mailto:efrem.j.hanson@nasa.gov) or call 544-6340. For more information about the event, call Hereford at 544-7420.

*The writer is an ASRI employee who supports the Marshall Center's Office of Strategic Analysis and Communications.*

## Are you receiving the Marshall Star by mail?

Do you get your Marshall Star by mail? Then you should have received a postcard which you must return to the Marshall Center to continue to receive the weekly publication.

The postcard has the return mailing address printed on it. Just sign the postcard, affix the proper postage of 26 cents and

mail it by Nov. 13. If you do not respond, your name will be taken off the mailing list by the end of December.

If you do not receive the postcard and would like to continue to receive the Star, please contact Jessica Wallace at 256-544- 0030 or e-mail [jessica.d.wallace@nasa.gov](mailto:jessica.d.wallace@nasa.gov).

# Hathaway

*Continued from page 1*

## **What is Video Image Stabilization and Registration technology and what challenges did you encounter when developing the technology?**

VISAR is computer software that improves poor quality video and produces a sharp image that reveals features that would not otherwise be seen. It takes pieces of individual frames from video and tries to match up parts of the image that you're interested in.

The frames in video clips can be added together to bring out details not otherwise visible in dark, underexposed footage. VISAR also stabilizes camera motion and smoothes jagged edges of moving elements. It produces clearer images of shaky, jittery or moving objects.

My co-inventor Paul Meyer — an atmospheric scientist in the Earth Science Office, part of the Science & Mission Systems Office — and I had three main challenges in this technology. Our first challenge was figuring out how to successfully develop VISAR. Once we figured that out, our second challenge was writing a program to have a computer perform the work. Originally, Paul and I did it manually by changing an image and comparing it to the first image until it was a good match. Our third challenge

was to make it faster and user-friendly. Paul and I could run the program, but if a commercial company wanted to use it, there was no way we could easily train them to use the technology. This is where technology transfer came into the picture. Tech transfer is the process of developing practical applications from the results of scientific research. We received funds from Marshall's Technology Transfer Program that allowed us to hire a programmer to turn the technology into a Windows-based, user-friendly program. That's what we still use to this day.

## **What is your background and what generally is your area of research?**

I'm an astrophysicist by training and more specifically, a solar astronomer. Much of what I do as a solar astronomer is to analyze images of the sun. A lot of my background is in image processing and I've learned how to de-blur images. It's hard to make out details about flows on the surface of the sun. Therefore, I use image-processing techniques to pull those details out.

That knowledge came in handy in September 1996, the year Paul and I actually got into VISAR. The Federal Bureau of Investigation came to Marshall, asking for help with a video and still images

from the Centennial Olympic Park bombing in Atlanta. Paul and I probably looked at a dozen videos, some of them were dead ends. But some of them were crucial, with two in particular. One was of the backpack containing the bomb before the bomb went off. This video really is, to this day, our best piece of work. It's 13 seconds of network-quality video but it's very dark. If you look at an individual image, it's very hard to even tell what it is. After we were done analyzing and processing the video, you could identify the make and model of the backpack and see how it was rigged. Inside, there

was a container holding nails and an alarm clock. You could also see a wooden dowel underneath that the bomber apparently used as a handle. This clarity came from adding together 400 images. Before that, you couldn't even tell that it was a backpack. Most of what I get nowadays from people such as the FBI or the police, I have one or two images, so it's difficult. That was just one case that really lent itself to what we invented and it worked really well.

## **What influenced you to develop this technology?**

We developed this technology to support the study of violent explosions on the sun and hazardous weather conditions on Earth. Trying to match up the images was really tedious. We spent hours staring at the computer monitor and flicking back and forth between images. It was a real chore, so

training the computer to figure out how to match the images made it a lot easier. Both Paul and I kind of knew the basic process for doing that. At the time, we didn't recognize that we had something that was more widely useful and could be patented, commercialized and so forth. A year after we started working on VISAR, we were called by the FBI to go back to Atlanta. They thought we could do better than what we had done. So, Paul invited people he knew from Los Alamos National Laboratory in New Mexico, who previously had worked with the Central Intelligence Agency on image processing. We had them join us in Atlanta to look at what we had done and how we did it. They advised us to patent VISAR because it was better than anything they had seen.

And as much as I like my job as an astronomer, crime fighting is amazing. I believe there's something inside all of us that wants to see justice served. If I can help do that, it's a real thrill. When I hear that a crime is solved because of the help of VISAR, I get a deep sense of satisfaction. Although we don't often learn of the end results of our work, we do know that in at least a dozen cases criminals have been brought to justice largely because of our work. That's the reward for us ... knowing that we helped.

*See Hathaway on page 7*



Doug Stoffer/MSFC

**Hathaway says when he hears a crime is solved because of the help of VISAR, he gets a deep sense of satisfaction.**

## How does VISAR help Marshall accomplish its mission? How does it help the space program?

We've used VISAR on the space shuttle Columbia investigation. We've also used it on later missions, looking at foam coming off the external tank. We're hoping to get a version that would run real-time that could be used with the WAVE system, a series of cameras mounted on aircraft flying around NASA's Kennedy Space Center, Fla., at the time of launch. We think that by combining high-definition launch images with VISAR, we can get extremely high-quality images.

That being said, I think probably the biggest benefit to NASA is the fact that the VISAR spinoff has been so helpful to law enforcement that I've heard people say, "Wow, this is great that NASA does this sort of thing." The good press that NASA gets from a spinoff that came out of the space program — one that helps people in a tangible way — is beneficial for everyone.

## VISAR seems to be a success story for Marshall inventors. Was it a challenge to find an industry partner?

It was very challenging. Marshall's Technology Transfer Program originally found two. The one that stuck with VISAR was Intergraph Corporation in Madison, Ala. They use it for image processing for law enforcement. Paul and I recognized early on that probably the biggest place for the technology is video editing. I've even used VISAR in some of my home video that was very shaky! Paul and I recognized that's where the big benefit would be, but unfortunately we haven't found a commercial operation or company to pick that up yet.

I have little doubt that there are probably companies out there

that would pick this up. We've talked to a number over the years, but then they just seem to disappear.

## Does VISAR benefit everyday life? Do you see it being commercially adapted for other uses in the future?

Definitely. At the moment, I have a half-dozen criminal cases waiting in my drawer. We've worked on over 100 cases in the last 10 years. I have to do it aside from my job, which is why they're still sitting there in that cabinet. It depends on whether I can take extra time at the end of the day or work over lunch to try to fit it in. But I know law enforcement agrees this is a big benefit.

I also think this would be a big benefit for video processing. There are a ton of different applications out there. For example, the military has a lot of remote-controlled vehicles with cameras on them that bounce around in different directions. Being able to stabilize that in real time would be a benefit to them.

## How critical is technology development like this and cultivation of technologists to the future of Marshall as a successful NASA center?

This particular technology helps because it's used in criminal investigations and could be used in other processes as well. NASA itself is usually identified with leading-edge technologies so cultivating technology and encouraging its commercialization enhances that image. I think one big benefit of VISAR is the positive press that comes out. Whenever we work on a big case, it usually ends up in the news. I think it looks good for Marshall and NASA because it says, "Here are your government dollars, doing something to help everyday people."

Jessica Wallace, an ASRI employee and Marshall Star editor in the Office of Strategic Analysis and Communications, contributed to this article.

## Classified Ads

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Employee Ads — Submit Ad." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, Nov. 8, is 4:30 p.m. Thursday, Nov. 1.

### Miscellaneous

Two-year-old, side-by-side fridge, white, ice maker, filtered water in door, \$900. 783-1466  
Body-Solid Ab & Back Machine, \$125. 520-4750  
PlayStation 2 game console, two controllers, NHL 2001 game, original box, \$40. 533-5942  
Table, chairs, TV trays, auto bike, dresser, night stand, entertainment center, computer desk, printer/scanner/copier. 656-0529  
La-Z-Boy queen sleeper, \$400; queen futon, \$400; jogging double stroller, \$150; ride-on jeep, \$99. 714-8580  
Kirsch K803 loudspeakers, 400 watts, www.KirschLoudspeakers.com, \$2,100. 351-2848  
Encyclopedia Britannica, yearbooks, 129 volumes, \$400. 539-8378

Two matching wine-colored recliners, \$100 each. 922-9387  
2003 L.A. Spa Esteem hot tub, \$3,500. 714-6609  
Two antique formal arm chairs, new fabric, matching ottoman, \$100. 503-6773  
Various wood trim, door/window molding, crown, various lengths/prices. 233-8505  
Craftsman lawn vacuum/mulcher/chipper, \$75; pressure washer pump, motor, \$10. 325-2919  
Seven genuine crystal champagne glasses, hand-blown, platinum-rimmed; four cut-crystal wine glasses, \$40. 464-7074  
Whirlpool bathtub, 72 by 42 inches, almond, six jets, working pump, \$150. 655-6701  
Maytag Neptune washer, one year old, frontloading. 602-4337  
52-inch big-screen projection TV, \$250. 476-5837  
Rifle, Savage 111F, 30-06, Timney trigger, Pachmayr decelerator pad, Burris scope bases, \$325. 783-7543

### Vehicles

2007 Honda TRX450R Sport ATV/quad, electric start, plastics black/flames, red frame, \$5,400. 345-9555  
2007 Nissan Versa, auto, air, 31 mpg city, under warranty, 15k miles, \$13,950. 852-1726  
2004 Honda Foreman S, 4x4, \$3,800 obo. 412-3406  
2003 Chevy S10 pickup truck, tinted windows, bed liner, bed cover, 24k miles, \$11,500. 233-1991  
2003 Jeep Wrangler, four cylinder, five speed, white, lift, AC, 44k miles, \$12,000. 990-9206  
2001 Jeep Grand Cherokee Limited, 4WD, V8, blue, 78k miles, \$12,500. 603-0741  
2001 Honda XR50R, free helmet, \$600; 2002 Honda

XR70R, free helmet, \$850. 773-2483  
2001 Chevrolet Tahoe LS, pewter, leather, 4WD, 76k miles, \$14,500. 653-9519  
2002 Nissan Sentra GXE, automatic, 164k miles, \$4,200. 509-2122  
1999 Nissan Pathfinder, silver, gray interior, tinted windows, 152k miles, \$4,200. 479-1433  
1990 Pontiac Grand Am, five speed, white, 167k miles, \$475. 851-7406  
1981 Corvette, 350 engine, auto, air, power seats/windows, other new items. (931) 438-0009  
1966 Thunderbird, classic parts for restoration. 533-0005  
19-foot Bayliner Capri Bowrider, 125 hp, trailer, covers, extras, \$4,000. 653-3647  
27-foot Allegro motorhome, jacks, new tires, 15k miles on drive train, \$7,450 obo. 655-3469

### Wanted

Handyman to do electrical work at home. 772-1870  
Two Alabama vs. LSU football tickets. 679-5736  
Used 125-500 gallon propane tank, good condition. 585-4564  
Young guinea pig, with or without cage or accessories. 684-6271  
Two box springs sets for full/queen size mattresses. 233-8505  
Suspended ceiling panels, 24-inch cross-tees, older style for 25- to 40-year-old grid system. 233-0705

### Free

12-week-old kittens, healthy, litter-trained. (931) 732-5375  
Adult orange male cat, front feet declawed, fixed, loving home. 230-3655

# NASA Administrator Michael Griffin hosts all-hands meeting for Marshall team



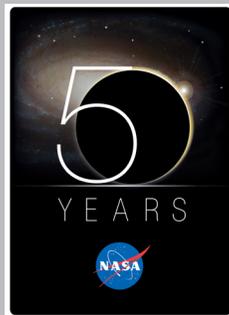
David Higginbotham/MSFC

NASA Administrator Michael Griffin, left, and Marshall Center Director David King talk with Marshall employees at Griffin's all-hands meeting Oct. 19. Marshall team members in Activities Building 4316 had the opportunity to ask the administrator questions. Discussing NASA's future after the 2010 retirement of the space shuttle, Griffin said, "Space shuttle retirement and transition to a new system is an upheaval that occurs not even as often as once in a generation. We are trying to manage this challenge as best we can with the resources we have been given." He added, "We must commit ourselves, as a nation, to the space enterprise."

## This week in history ...

NASA is moving toward its 50th anniversary of service to the nation and the world. That anniversary on Oct. 1, 2008, will mark the culmination of a series of events — some noteworthy and others obscured by time — that resulted in the creation of the new agency.

As NASA progresses toward that anniversary, it seems fitting to share some of those events that have been recorded as significant in its creation. Each week, the Marshall Star will highlight a significant event in history that brought NASA where it is today.



For example, more than 50 years ago, on Oct. 14, 1957, the American Rocket Society presented to President Dwight Eisenhower a program for outer space development. This program proposed the development of an Astronautical Research and Development Agency, with responsibility for all space projects except those directly related to the military defense — similar to the National Advisory Committee for Aeronautics started in 1915, and the more recently created Atomic Energy Commission.

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