



# MARSHALL STAR

Serving the Marshall Space Flight Center Community

Sept. 23, 2010



## *Discovery at launch pad for last time*

Space shuttle Discovery completed its last planned trip to the launch pad Sept. 21 at NASA's Kennedy Space Center, Fla. Discovery, which first launched Aug. 30, 1984, on STS-41D, is being readied for the STS-133 mission to the International Space Station. Liftoff is targeted for Nov. 1 at 3:40 p.m. CDT. STS-133 is scheduled to be the last mission for the oldest of NASA's three orbiters. Astronaut Steve Lindsey will command a veteran crew on the mission, which also will include Pilot Eric Boe and Mission Specialists Alvin Drew, Tim Kopra, Michael Barratt and Nicole Stott. They will deliver and install the Permanent Multipurpose Module and the Express Logistics Carrier 4, and provide critical spare components for the International Space Station. For more information about STS-133, visit [http://www.nasa.gov/mission\\_pages/shuttle/main/index.html](http://www.nasa.gov/mission_pages/shuttle/main/index.html).

## Marshall's Combined Federal Campaign goal set

*Tennessee Valley CFC  
kickoff event Sept. 29  
at Sparkman Center*

The Marshall Space Flight Center will hold its 2010 Combined Federal Campaign fundraiser from Sept. 30 to Dec. 10. The center's goal this year is to

raise \$675,000.

Marshall team members are invited to help usher in the giving season at the Tennessee Valley CFC kickoff event Sept. 29 at Bob Jones Auditorium in the Sparkman Center on Redstone Arsenal.

The Combined Federal Campaign is the federal government's annual goodwill drive to benefit charitable

organizations at the local, state and national level.

The Tennessee Valley CFC drive is a

*See CFC on page 3*



Amy George

# Chandra finds evidence for stellar cannibalism

*NASA news release*

Evidence that a star has recently engulfed a companion star or a giant planet has been found using NASA's Chandra X-ray Observatory. The likely existence of such a "cannibal" star provides new insight into how stars and the planets around them may interact as they age.

The star in question, known as BP Piscium or BP Psc, appears to be a more evolved version of our sun, but with a dusty and gaseous disk surrounding it. A pair of jets several light years long blasting out of the system in opposite directions has also been seen in optical data. While the disk and jets are characteristics of a very young star, several clues – including the new results from Chandra – suggest that BP Psc is not what it originally appeared to be.

Instead, astronomers have suggested that BP Psc is an old star in its so-called red giant phase. And, rather than being hallmarks of its youth, the disk and jets are, in fact, remnants of a recent and catastrophic interaction whereby a nearby star or giant planet was consumed by BP Psc.

When stars like the sun begin to run out of nuclear fuel, they expand and shed their outer layers. Our sun, for example, is expected to swell so that it nearly reaches or possibly engulfs Earth, as it becomes a red giant star.

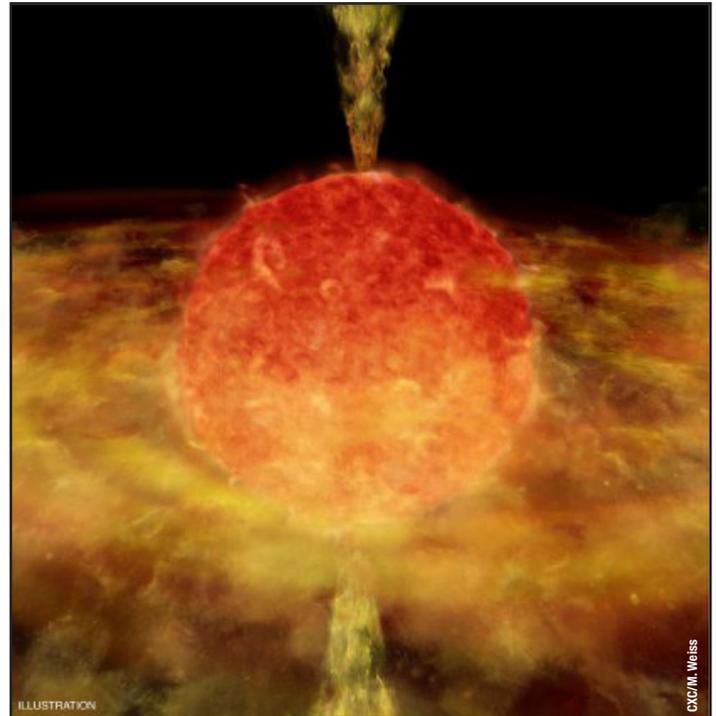
"It appears that BP Psc represents a star-eat-star universe, or maybe a star-eat-planet one," said Joel Kastner of the Rochester Institute of Technology in New York, who led the Chandra study. "Either way, it just shows it's not always friendly out there."

The Marshall Space Flight Center manages the Chandra program for NASA's Science Mission Directorate in Washington. The Smithsonian Astrophysical Observatory controls Chandra's science and flight operations from Cambridge, Mass.

Several pieces of information have led astronomers to rethink how old BP Psc might be. First, BP Psc is not located near any star-forming cloud, and there are no other known young stars in its immediate vicinity. Secondly, in common with most elderly stars, its atmosphere contains only a small amount of lithium. Thirdly, its surface gravity appears to be too weak for a young star and instead matches up with one of an old red giant.

Chandra adds to this story. Young, low-mass stars are brighter than most other stars in X-rays, and so X-ray observations can be used as a sign of how old a star may be. Chandra does detect X-rays from BP Psc, but at a rate that is too low to be from a young star. Instead, the X-ray emission rate measured for BP Psc is consistent with that of rapidly rotating giant stars.

The spectrum of the X-ray emission – that is, how the amount of X-rays vary wavelength – is consistent with flares occurring on the surface of the star, or with interactions between the star and the disk surrounding it. The magnetic activity of the star itself might be generated by a dynamo caused by its rapid rotation. This rapid rotation can be caused by the engulfment process.



Artist concept of BP Piscium, a more evolved version of our sun.

"It seems that BP Psc has been energized by its meal," said co-author Rodolfo Montez Jr., also of the Rochester Institute of Technology.

The star's surface is obscured throughout the visible and near-infrared bands, so the Chandra observation represents the first detection at any wavelength of BP Psc itself.

"BP Psc shows us that stars like our sun may live quietly for billions of years," said co-author David Rodriguez of the University of California, Los Angeles, "but when they go, they just might take a star or planet or two with them."

Although any close-in planets were presumably devastated when BP Psc turned into a giant star, a second round of planet formation might be occurring in the surrounding disk, hundreds of millions of years after the first round. A new paper using observations with the Spitzer Space Telescope has reported possible evidence for a giant planet in the disk surrounding BP Psc. This might be a newly formed planet or one that was part of the original planetary system.

"Exactly how stars might engulf other stars or planets is a hot topic in astrophysics today," said Kastner. "We have many important details that we still need to work out, so objects like BP Psc are really exciting to find."

These results appeared in *The Astrophysical Journal Letters*. Other co-authors on the study were Nicolas Grosso of the University of Strasbourg in France, Ben Zuckerman from UCLA, Marshall Perrin from the Space Telescope Science Institute in Maryland, Thierry Forveille of the Grenoble Astrophysics Laboratory in France and James Graham from University of California, Berkeley.

## Caring in Action Program Recipient of the Month

# Jeremy Rousseau acts to ensure Automated External Defibrillators are installed at Education Training Facility

Jeremy Rousseau, an aerospace engineer in Marshall Space Flight Center's Engineering Directorate, has been selected as the Caring in Action Recipient of the Month for July.

Recently he was attending a class at the Education Training Facility when a co-worker had a medical emergency. Realizing there were no Automated External Defibrillators available during the emergency, Rousseau requested that defibrillators be installed, and then followed up to ensure the installation was handled expeditiously.

"Jeremy Rousseau is a life saver who cares," said Glenda Morton, Safety Action Team chairwoman.

For more information about the Caring in Action Program or to nominate a team member, visit <https://safety.msfc.nasa.gov/sites/cia/>.



Jeremy Rousseau receives the Caring in Action Program Recipient of the Month award from Glenda Morton, Safety Action Team chairwoman, during a recent Marshall senior staff meeting.

## *Physical inventory of NASA bar-coded property to begin Oct. 4*

A physical inventory of all NASA-tagged, bar-coded property at the Marshall Space Flight Center will begin Oct. 4. The inventory will be conducted by Marshall's Logistics Services Office, part of the Office of Center Operations.

All equipment in team members' file cabinets, desks and other storage areas must be made available for scanning by the inventory teams. All

controlled equipment documented on an individual's "Mobile Equipment Property Pass" also must be made available for inventory. Property passes are assigned to those people carrying government equipment on or off Redstone Arsenal.

The Logistics Service Office has posted the 2010 physical inventory schedule on Inside Marshall. Managers are asked to

review the schedule and inform their employees, including contractors and off-site workers, of the inventory schedule for their department. If absences are anticipated during an inventory visit, users must make arrangements with management for an alternate time.

For questions, contact Patsy Nash at 544-0050 or Margarete Saint at 544-4771 prior to the scheduled visit.

## **CFC** *Continued from page 1*

joint effort between Marshall, the Army's Aviation and Missile Command and other federal agencies at Redstone Arsenal and in surrounding Alabama and Tennessee counties.

Its kickoff event will start at 10 a.m. with a keynote address by Amy George of Huntsville, founder of the Melissa George Neonatal Memorial Fund, which has been a participating CFC organization since it was founded in 2005. Lunch will be served from 11 a.m. to

12:30 p.m. on the Sparkman Center Parade Field, where a fair spotlighting participating CFC organizations will be held from 11 a.m. to 1:30 p.m. Door prizes will include \$50 gas cards; participants must be present to win.

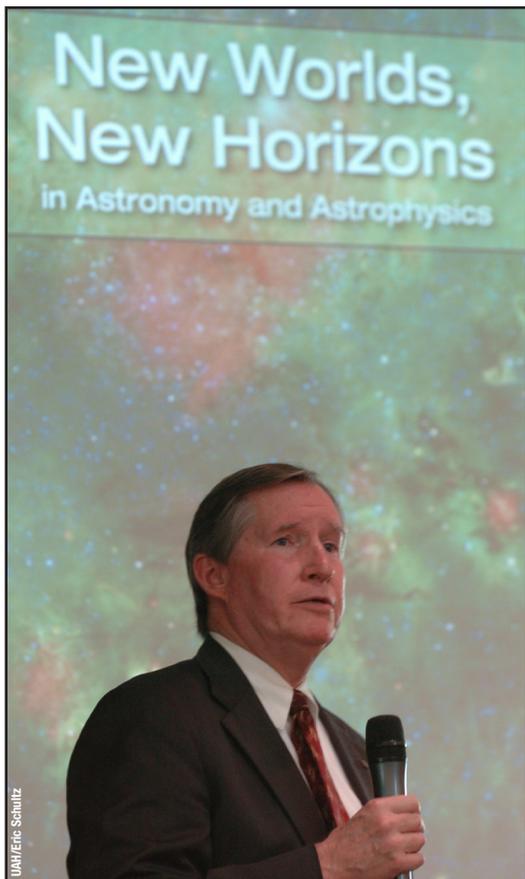
Watch Inside Marshall for bus schedules and other updates on the Sept. 29 event.

Read next week's Marshall Star for information about Marshall's own CFC rally and other kickoff events.

# Scientists gather for 'New Worlds, New Horizons' Decadal Survey results

By Kim Newton

Scientists from across the Southeast met at the University of Alabama in Huntsville on Sept. 14 for a town hall meeting to discuss the recently released 2010 Astronomy and Astrophysics



Dr. Raymond "Corky" Clinton Jr., deputy manager of the Science & Mission Systems Office, welcomes attendees to the 2010 Astronomy and Astrophysics Decadal Survey town hall.

and Astrophysics Decadal Survey, entitled "New Worlds, New Horizons."

The survey is

conducted every 10 years to rank the science priorities for astrobiology and astronomy.

This is the latest in a series of surveys released by the National Research Council of The National Academy of Sciences. The 2010 Astronomy and Astrophysics Decadal Review Committee surveyed the field of space- and ground-based astronomy and astrophysics, recommending priorities for the most important scientific activities of the decade 2010-2020.

The survey considers what scientists should focus on – and what major funding entities will support – in the areas of astronomy and astrophysics. The audience was given an overview by Steve Battel, a member of the survey committee and president of Battel Engineering in Scottsdale, Ariz., about how the survey was conducted. Questions about rankings were taken at the end.

Scientists from regional universities, colleges, government agencies and corporations from Alabama, Tennessee, Mississippi, Georgia and Florida were in attendance.

UAHuntsville and the Marshall Space Flight Center co-hosted the event with the American Astronomical Society.

*Newton is a public affairs officer in the Office of Strategic Analysis & Communications.*



The town hall meeting drew a large crowd to listen to the 2010 Astronomy and Astrophysics Decadal Survey findings.

## Obituaries

**Glenn A. Parker**, 76, of Huntsville died Aug. 29. He retired from the Marshall Center in 1989 as an electronics engineer. He is survived by his wife, Anne C. Parker.

**Robert Riemer**, 82, of Huntsville died Sept. 14. He retired from the Marshall Center in 1988 as an aerospace engineer supervisor. He is survived by his wife, Norma Riemer.

**Ralph Murphy**, 90, of Huntsville died Sept. 16. He retired from the Marshall Center in 1988 as a technical management engineer. He is survived by his wife, Florence Murphy.

# MARS Running Club to host 5K race



The MARS Running Club will host a 5K race Oct. 20 at 9 a.m. at the Marshall Space Flight Center. The race will start at the Wellness Center, Building 4315, and is open to anyone with access to Redstone Arsenal.

The entry fee is \$15. Additional information and a registration form can be obtained at [nasarunners.blogspot.com](http://nasarunners.blogspot.com) or by contacting Sam Ortega at 544-9492 or Ryan Decker at 544-3068.

## Classified Ads

---

To submit a classified ad to the Marshall Star, go to Inside Marshall, to "Employee Resources," and click on "Marshall Star Ad Form." Ads are limited to 15 words, including contact numbers. No sales pitches. Deadline for the next issue, Sept. 30, is 4:30 p.m. Thursday, Sept. 23.

### Miscellaneous

Treadmill, \$200; exercise bike, \$50; total gym, \$75; king headboard, \$100; oak desk, \$150. 256-425-1762

Rabbit cage, accessories, \$45; deluxe carrier, \$55; bike rack, \$35. 256-539-1316

Parrots; green-wing macaws, blue and gold macaw, umbrella cockatoo, blue-front amazon. 256-603-0608

Airzone trampoline, safety enclosure, 14-foot diameter, one year old, \$190. 256-683-4758

PowerBilt golf clubs, 3-4 hybrid, 5-PW, driver, PowerBilt bag, \$120. 256-683-4758

Wilson Grand Slam tennis balls, number WRT1043, all court felt, unopened 8-pack, \$24. 256-828-1234

Winchester Ranger 270, 3x9x40 Simmons scope, hard case, ammo, \$450. 256-783-1144

Mini Cooper wind reflector, storage bag, \$150. 256-998-6414

Leaf cover/net for 16X32-foot in-ground swimming pool, \$75. 256-883-2653

Antique furniture; baby crib, converts to toddler bed. 256-551-0276

Ashley 5-piece table, server, \$725. 256-503-1230

Queen Anne sofa, gold damask fabric, refinished, \$875. 256-509-6069

Brass chandelier with 10 candles, price negotiable. 256-772-4901

Baldwin spinet piano, pecan finish, \$995. 256-536-7445

Two elephant-ear like plants & pots, inside or outside above 50 degrees, \$45 each. 256-655-6348

Flower bulbs; cana lilies, iris, day lilies, \$20 per box. 256-773-5051

### Vehicles

2008 Ford F150 Lariat Supercab 5.4L, two wheel drive, leather, 14,500 miles, \$24,500 obo. 256-679-2052

2006 Toyota 4-Runner SR5, V8, 4WD, all power, sunroof, 83K miles, \$19750. 256-683-1525

2002 Jeep Grand Cherokee Laredo, 2WD, V6, 144k miles, \$5,700. 662-934-2896

1998 Toyota Avalon XL, white/tan leather, 185K miles,

\$4,700. 256-683-3397

1998 Stingray RS180 Bowrider, seats seven, bimini covers, fish/ski, new 140 I/O, \$9,500. 256-640-6427

1995 Toyota T100, LWB, manual transmission, 205k miles, \$1,200. 256-653-2931, leave message

1992-F350 Diesel 4x4 long -bed crew cab, 90 gallon bed tank included, \$4,500. 256-603-0646

1987 Ford Mustang LX 5.0, 144K miles, \$2,000 obo. 256-759-3009

### Wanted

Rear-tine garden tiller or 48-inch to 54-inch tiller for tractor. [jbschwarz@gmail.com](mailto:jbschwarz@gmail.com)

Houses/offices to clean, available evenings and weekends. 256-777-8595, leave message

Electrical work; wiring houses, detached garage, yard lights, adding/removing switches, plugs, lights. 256-468-8906

Little Genie or equivalent lapidary grinding unit with diamond wheels. 256-536-8951

Land to hunt, willing to lease or work for it. 265-468-8906

### Free

Chesapeake Bay retriever, male, less than 2 years old, neutered, brown, three-generation pedigree. 256-655-8908

# External tank for last planned shuttle mission ships from Michoud



Lockheed Martin

The external fuel tank that will power the last planned space shuttle into orbit rolled out to an enclosed barge at NASA's Michoud Assembly in New Orleans Sept. 20 to begin its 900-mile trip to NASA's Kennedy Space Center, Fla. The five- to six-day sea

journey began Sept. 21. Designated ET-122, the tank will support space shuttle Endeavour's flight, targeted for launch in February. The tank was restored to flight configuration at Michoud after sustaining damage during Hurricane Katrina in 2005.

## MARSHALL STAR

Vol. 51/No. 3

Marshall Space Flight Center, Alabama 35812  
 256-544-0030  
<http://www.nasa.gov/centers/marshall>

The Marshall Star is published every Thursday by the Public and Employee Communications Office at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. Classified ads must be submitted no later than 4:30 p.m. Thursday to the Marshall Public and Employee Communications Office (CS20), Bldg. 4200, Room 102. Submissions should be written legibly and include the originator's name. Send e-mail submissions to: [MSFC-INTERCOM@mail.nasa.gov](mailto:MSFC-INTERCOM@mail.nasa.gov). The Star does not publish commercial advertising of any kind.

Manager of Public and Employee Communications: Dom Amatore  
 Editor: Jessica Wallace Eagan

U.S. Government Printing Office 2010-623-044-00067

[www.nasa.gov](http://www.nasa.gov)

PRE-SORT STANDARD  
 Postage & Fees PAID  
 NASA  
 Permit No. 298