



# MARSHALL STAR

Serving the Marshall Space Flight Center Community

Dec. 22, 2005

## *Marshall oversees program management*

### **MESSENGER engine burn puts spacecraft on track for Venus**



MESSENGER controllers monitor the engine burn from Johns Hopkins University Applied Physics Laboratory.

*From Johns Hopkins University*

NASA's Mercury-bound MESSENGER spacecraft has successfully fired its large bipropellant thruster for the first time since launch, completing the first of several critical deep-space maneuvers that will help the spacecraft reach Mercury orbit.

MESSENGER, short for MErcury Surface, Space ENvironment, GEOchemistry, and Ranging, is the seventh mission in NASA's Discovery Program of lower-cost, scientifically focused exploration projects. Program management responsibilities for the project formulation, development, launch, mission operations and risk assessments have been assigned by the Science Mission Directorate at NASA Headquarters in Washington to the Marshall Center's Discovery and New Frontiers Program Office.

"The burn took nearly nine minutes and changed MESSENGER's velocity by about 706 miles per hour," said

*See MESSENGER on page 4*

## ***Progress to sub for Santa at International Space Station***

A new Progress will bring Christmas gifts to the International Space Station, but there will be no Santa coming down a chimney. The unpowered cargo carrier will use the Pirs Docking Compartment.

It will be the 20th Progress to visit the International Space Station, and will double the number of unpowered cargo carriers at the orbiting outpost. With the Soyuz TMA that brought the Expedition 12 crew to the station and will take them home, P20 brings

to three the number of Russian vehicles at the station.

Its sister and predecessor at the station, Progress 19, will remain docked to the aft port of the Zvezda Service Module. Generally, a Progress is undocked and deorbited shortly before the launch of the next Progress, to clear that docking port for the new arrival.

In this case, mission managers have decided that Progress 19 will remain at the station so its remaining oxygen and

propellant can be transferred. That also will give station crew members, Cmdr. Bill McArthur and Cosmonaut Valery Tokarev, a chance to fill it completely with garbage and unneeded equipment. It will re-enter and burn in the Earth's atmosphere shortly after its undocking, scheduled for early March.

P20 is to launch from the Baikonur

*See Progress on page 3*

### **Administrator Griffin to hold all-hands meeting with Marshall employees on Jan. 6**

NASA Administrator Mike Griffin is scheduled to have an all-hands meeting with Marshall Center employees the morning of

Friday, Jan. 6. More details will be provided as they are available. All center employees are encouraged to attend.

# Marshall's Bonometti named to Naval Postgraduate School professorship

By Sheri Bechtel

Dr. Joe Bonometti, an aerospace engineer at the Marshall Center, recently was awarded the Michael J. Smith Space Systems Chair Professorship at the Naval Postgraduate School in Monterey, Calif.

The professorship was created in 1995 to honor the memory of NASA astronaut Capt. Michael J. Smith, who graduated from the Naval school in 1968. Smith was one of the seven crewmembers killed in the space shuttle Challenger accident in 1986.

Bonometti is the technology area manager of Emerging Propulsion Technologies in Marshall's In-Space Propulsion Technology Office. He manages research and development of advanced propulsion technologies for future space exploration. His work includes tether-based propulsion technology research, such as electrodynamic systems and their spin-off technologies. Electrodynamic tether propulsion uses a long conducting cable attached to a space vehicle and the magnetic field surrounding the Earth to propel spacecraft without the use of on-board propellant.

Bonometti will assume the chair professorship position, expected to last up to two years, in January 2006. He will serve as a liaison between NASA and the Naval Postgraduate School, bridging the government's military and civilian space communities.

He will assist students with thesis research at the naval school, coordinate inquiries and work with NASA centers to promote collaboration between the agency and the military. Bonometti also will serve as a professor at the Monterey campus. He will teach classes in space systems engineering and orbital mechanics and present seminars on his NASA research and technology

development.

"This is a tremendous honor — to train and teach our young generation of military students in the area of space technology development and project management," Bonometti said. "By bringing together the military side of space research and NASA's unique spacecraft propulsion heritage, this is a great opportunity to instill in these students a desire to be part of NASA's future exploration goals."

The liaison role is crucial for naval postgraduate students focusing on the space industry. Approximately every two years, students are assigned a project to build a satellite. Students must design, develop, test and launch the system. This coming year's project plan will include a propulsion element requirement, most likely an electromagnetic tether-based system. The project provides a hands-on learning environment, aimed at giving students a better understanding of space systems development, from concept to flight.

Bonometti occasionally will conduct liaison-related activities at Marshall, and will return to Marshall's In-Space Propulsion Technology Office after completing his term as chair professor.

The Naval Postgraduate School was established in 1909 in Annapolis, Md., and was given its current name in 1912. The school moved to Monterey, Calif.,

in 1951. The academic institution offers master's and doctorate degrees in more than 40 programs of study to officers and selected civilians in the U.S. Navy and other branches of the U.S. military. The school has the distinction of graduating more astronauts than any other university or collegiate institution.

*The writer, an ASRI employee, supports the Public and Employee Communications Office.*



Doug Staffer/NSFC

**Joe Bonometti, technology area manager of Emerging Propulsion Technologies in Marshall's In-Space Propulsion Technology Office, showcases some of the advanced technologies under development by NASA.**

## 2006 Team Redstone Martin Luther King Jr. Day Observance is Jan. 12

The 2006 Team Redstone Martin Luther King Jr. Day Observance will be Thursday, Jan. 12, at 11 a.m. at the Redstone Arsenal Officers' and Civilians' Club. Dr. Virginia Caples, interim president of Alabama A&M University in Huntsville, will speak.

This year's theme is "Remember! Celebrate! Act! A Day On ... Not a Day Off." Music will be provided by the Alabama A&M University Jazz

Ensemble.

To see a luncheon menu, go to "Inside Marshall." Tickets cost \$10 and must be purchased by 4:30 p.m. Jan. 5 from the Marshall Center's Equal Opportunity Office in Building 4200, Room 716. Tickets will not be available at the door. For more information, call the Marshall Equal Opportunity Office at 544-0091.

# 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 is 4:30 p.m. Thursday.

## Miscellaneous

Dooney & Bourke purse, unused, detachable shoulder strap, \$70; two brass reindeer, \$8 pair. 837-6776

Craftsman miter box w/saw, 4"x18", \$5. 828-5289

Dodge factory LCD monitor/DVD/VCR, \$300. 603-6306

PC game, NASCAR Heat, Microsoft Sidewinder steering wheel & pedals, \$50. 508-0691

Ruger 10/22 semi-auto rifle, .22 cal., 3 clips, ammo, \$125. 859-9165

Space shuttle table lamp, \$20; new U-Haul paper moving pads, 4 sets, \$3 each. 971-9840

Weider Pro Power Stack, complete dual station home gym, \$175. 379-4677

Broyhill traditional couch, \$100. 882-6982

Longaberger ladies cardigan sweater, new, size L, \$50; Apple iPod nano, 2 GB, NIB. 527-8116

Taylor 210 acoustic guitar w/hardshell case, \$550. 652-3809

Fender P Bass, Mexico made, w/case, brown burst w/ upgrades, \$300. 534-5175 after 5 p.m.

Celestron Firstscope 114, 4.5" Newtonian telescope w/motor drive, 910mm fL, \$150. 830-9507

Yamaha Portatone PSR-270 keyboard, MIDI compatible w/stand, \$85. 830-9507

Tower, 50', self-supporting, old w/rust, \$140. 256-971-0499

Christmas tree, 7.5', \$50; van console w/TV & DVD player, \$150; Monessen vented LP logs, \$75. 881-7000

Canon Rebel Ti 35mm camera w/Canon 28-90 auto-focus zoom, \$150. 961-9469

Two tickets to BTL Chicago, Saturday, Jan. 7, 2 p.m., seats G17 & G18, \$95. 883-2863

Edge 500 manual treadmill, new, \$75. 468-9874 after 4 p.m.

Lexmark all-in-one scanner printer, \$30; JVC DVD player, slight motor sound, \$25. 534-3252

Sofa, leather, tan, \$450. 256-746-8289

White metal daybed w/ trundle, \$250. 256-830-0851

Large Kenmore chest-type freezer, 23.5 cubic feet, can deliver, \$200. 256-694-7391/Scott

## Vehicles

Go-cart, 6HP, 2-seater, regular oil changes, \$375. 859-7017

2003 Toyota Tacoma, X-cab, black, TRD off-road pkg., SR5, all-power, tool box, 51K miles, \$17,000. 325-8958

2003 Chevy Tracker, black, 2-door convertible, 4x4, 16K miles, \$9,900. 256-533-5942

2001 Chevrolet Camaro, one-owner, \$8,500 negotiable. 714-4962/Larry

1986 Subaru GL-10, auto, air, silver, 4-door, \$1,000. 684-6541

2001 Ford Sport-Trac, automatic, loaded, 88K miles, gold, \$11,500. 256-593-7207

2000 Nissan Frontier crew-cab, automatic, power, 97K miles, cd/cass, silver, \$10,700. 880-9025

2001 Limited Edition PT Cruiser, 98K miles, \$8,800. 722-9989

2005 Yamaha YZ125F, four-stroke, blue fenders, \$2,000. 751-3766 after 4:30 p.m.

1999 Ford Expedition, black, tow package, 145K miles, third seat, \$8,500. 694-5911

2001 Eddie Bauer Expedition, rear air, sunroof, third seat, 51K miles, \$17,000. 468-0170

1999 Rodeo, new motor, 22" custom wheels, \$8,000. 828-3181

1995 Taurus wagon, \$3,000 or trade for truck. 256-339-0970

1999 Acura TL, blue, loaded, all-power options, 93K miles, \$11,000. 256-571-9762

1998 Subaru Forester, one-owner, 77K miles, green, heated leather seats, altimeter, compass, T-hitch, \$7,750. 533-6473

## Wanted

Old cane bottom chairs in need of re-caning. 509-7907

Used weightlifting set and/or workout bench. 655-5195

Someone to alter model ship. 694-0880

## Lost

Men's gold wedding band, 1/4" wide, size 12.5, lost 12/8/05 in/around Bldg. 4600. 679-5359

Amber & silver ring in/or near Bldg. 4708 on 12/12. Call Karin at 544-8925 if found

Men's eyeglasses with brown frame. 536-6228

## Free

Two Rat Terrier dogs, have all shots, 2 years old. 679-3430/leave message

Black Lab, 2-year old male, neutered. 282-5573

# Progress

## Continued from page 1

Cosmodrome in Kazakhstan Dec. 21 at 1:38 p.m. EST. Docking to Pirs is scheduled for Dec. 23 at 2:55 p.m.

The P20 cargo weighs about 5,680 pounds. It comprises 1,940 pounds of propellant, 183 pounds of oxygen and air, 463 pounds of water and almost 3,100 pounds of dry cargo.

The dry cargo consists of equipment and supplies, experiment hardware, spare parts for the station, repair gear and life support system hardware.

The Progress is similar in appearance and some design elements to the Soyuz spacecraft, which brings three crewmembers to the station, serves as a lifeboat while they are there and returns them to Earth. The aft module, the instrumentation and propulsion module, is nearly identical.

But the second of the three Progress sections is a refueling module, and the third, uppermost as the Progress sits on the launch pad, is a cargo module. On the Soyuz, the descent module, where the crew is seated on launch and which returns them to Earth, is the middle module and the third is called the orbital module.



MASA

An unpiloted Progress supply vehicle approaches the space station.

# New service office searching for travel volunteers

The NASA Shared Services Center is looking for volunteers to temporarily staff new offices at the Stennis Space Center in Mississippi.

The Shared Services Center needs 30 volunteers from across the agency who are experts in human resources, procurement, financial management and information technology. These volunteers will staff the new location beginning as early as January.

Temporary positions will last approximately 6-12 months. NASA will pay travel costs, salary, lodging, meals and periodic trips back to the home center. Interested volunteers can apply online at the Project Announcement Visibility Effort Web site after receiving their supervisor's verbal approval. The request closes Dec. 30.

For more information, visit <http://pollux.hq.nasa.gov/pave> or the Shared Services Center Web site at <http://nssc.nasa.gov>.

## Shuttle Safety Hotline offers way to report potential flight safety concerns

A new Shuttle Safety Hotline for reporting potential flight safety concerns is online at <http://sma.jsc.nasa.gov/sirma/hotline/>. The Web site offers ways for Marshall team members to discuss and resolve shuttle safety concerns. Employees should try to first resolve the issue themselves and then discuss concerns with management or individuals identified on the Web site. Once a concern is entered, it will be addressed and



an analysis made to see what program action is appropriate. If applicable, the concern will be entered into the Shuttle Integrated Risk Management Application database for tracking. There is an option to document shuttle safety concerns anonymously directly into the Web site's database. It also is available through the NASA Safety Reporting System on "Inside Marshall."

## MESSENGER

*Continued from page 1*

Allen Bacskay, the Discovery and New Frontiers Program Office Mission Manager for MESSENGER.

"The change in the spacecraft's speed is comparable to the speed of a jet as it reaches the sound barrier," he said, adding that the spacecraft is now on track for a flyby of Venus in October 2006.

Until the recent burn, only 16 of the MESSENGER spacecraft's 17 thrusters had been used in five small trajectory correction maneuvers. This latest maneuver, known as Deep Space Maneuver 1, is the first to rely solely on the largest, most efficient thruster. MESSENGER controllers monitored the engine burn from the Mission Operations Center at Johns Hopkins University Applied Physics Laboratory in Laurel, Md.

"Credit for the completion of this important milestone belongs to the entire MESSENGER team," said Dave Grant, MESSENGER program manager at the Applied Physics Laboratory. "We are very fortunate to have a highly skilled group of engineers, scientists and operations experts leading our journey to Mercury."

During a 4.9-billion-mile journey that includes 15 trips around the

sun, MESSENGER will fly past Venus twice and Mercury three times before easing into orbit around its target planet. As with the planned flyby October 2006 event, the second Venus flyby in June 2007 will be a gravity-assist maneuver. The Mercury flybys in January 2008, October 2008 and September 2009 will help MESSENGER match the planet's speed and location for an orbit insertion maneuver in March 2011, which will initiate the first-ever study of Mercury from orbit.

With just over 20 percent of the flight time completed between launch and Mercury orbit insertion, MESSENGER has traveled more than 0.81 billion miles around the sun. Since its August 2004 launch, the solar-powered spacecraft has completed 1.5 orbits of the sun, including a successful flyby of Earth in August 2005.

Dr. Sean C. Solomon, of the Carnegie Institution of Washington, leads the mission as principal investigator. Johns Hopkins University Applied Physics Laboratory manages the mission for NASA, built MESSENGER and operates the spacecraft.

*Sherrie Super, an ASRI employee, contributed to this report. Super supports the Public and Employee Communications Office.*

# MARSHALL STAR

Vol. 46/No. 15

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 by 4:30 p.m. Thursday, and other submissions no later than 5 p.m. Friday to the Marshall Public and Employee Communications Office (CS20), Bldg. 4200, Room 103. Submissions should be written legibly and include the originator's name. Send e-mail submissions to: [intercom@msfc.nasa.gov](mailto:intercom@msfc.nasa.gov). The Star does not publish commercial advertising of any kind.

Manager of Public and Employee Communications — Dom Amatore  
Editor — Jessica Wallace

GPO: U.S. Government Printing Office 2006-523-050-20030

PSRRT STD  
US POSTAGE PAID  
HUNTSVILLE, AL  
PERMIT NO. 298