



MARSHALL STAR

Serving the Marshall Space Flight Center Community

Jan. 22, 2009

Administrator Griffin holds final NASA Update, urges agency to 'collaborate, cooperate,' carry on

By Rick Smith

NASA Administrator Michael Griffin bid the agency farewell Jan. 16 in his final "NASA Update," noting he was pleased to go out the way he came in: talking with his team.

Speaking to employees at NASA Headquarters in Washington and many more via streaming video at field centers nationwide, Griffin praised the NASA team and encouraged its members to carry on the country's work with "all the spirit and technical acumen we can bring to the task.

"Job one is to collaborate," he said, "to cooperate in carrying out NASA's great enterprises and to support whomever leads them."

Griffin praised a number of key personnel across the agency, including Marshall Space Flight Center Director Dave King, who, said Griffin, could always be counted on for thoughtful, informed analysis. Griffin said he appreciated King's "willingness to say, 'I'm not sure that's right. Have you thought about this?' And whatever the decision, he'll always support it. You can't ask for better than that," the administrator said.

Responding to questions from team members around the country, Griffin praised the drive, energy and resilience of the men and women of NASA. He lauded the agency's unflagging energy to return the space shuttle to flight after

the loss of shuttle Columbia, and for its work to complete construction of the International Space Station.

"I want to thank those who threw your shoulders to the wheel," he said. "It was an enormous pleasure to work with you."

Griffin concluded his tenure as NASA administrator on Jan. 20.

Smith, an AI Signal Research Inc. employee, supports the Office of Strategic Analysis & Communications.



Michael Griffin

NASA tests engine technology for landing astronauts on moon

By Jennifer Morcone

How can a rocket engine that generates 5,000-degree steam and 13,800 pounds of thrust form icicles at the rim of its nozzle? It's cryogenic, or super-cooled, by a mixture of minus 297 F liquid oxygen and minus 423 F liquid hydrogen.

The Common Extensible Cryogenic Engine, CECE for short, is based on the design of the heritage Pratt & Whitney Rocketdyne RL10 engine. As the engine burns its frigid fuels, hot steam is produced and propelled out the nozzle,

creating thrust. The steam is cooled by the cold engine nozzle, condensing and eventually freezing at the nozzle exit to form icicles. This high-speed, hot-gas mixture is essential for propulsion.

"Using liquid hydrogen and oxygen in rockets will provide major advantages for landing astronauts on the moon," said Tony Kim, Deep Throttling Engine project manager at the Marshall Space Flight Center. "Hydrogen is very light but enables about 40 percent greater performance than other rocket fuels. Therefore, NASA can use this weight

savings to bring a bigger spacecraft with a greater payload to the moon than with the same amount of propellants used in the Apollo era."

CECE is a deep-throttling engine. This means it has the flexibility to reduce thrust from 100 percent to 10 percent – allowing a spacecraft to gently land on the lunar surface. The CECE demonstrator has evaluated two engine configurations during three rounds of hot-fire testing.

See Cryogenic on page 3

Paul Gilbert named SES manager of Marshall's Science Programs & Projects Office



Paul Gilbert

Paul A. Gilbert has been named Senior Executive Service manager of the Science Programs & Projects Office in the Science & Mission Systems Office at the Marshall Space Flight Center. As manager,

Gilbert will lead the implementation of all Marshall programs and projects funded by NASA's Science Mission Directorate.

The Senior Executive Service is the personnel system covering top managerial positions in approximately 75 federal agencies.

Gilbert joined NASA in 1990 after working for the Tennessee Valley Authority for several years where he supervised teams supporting three major nuclear plants. His

first position with NASA was as assistant mission manager for the U.S. Microgravity Laboratory-1 Spacelab mission. Since then, Gilbert has served in many leadership positions, including U.S. Microgravity Laboratory-2 mission manager; International Space Station integration manager; Express Rack Office manager; Multiuser Payloads Group manager; Orbital Space Plane Program system operation integration element manager; Discovery and New Frontiers Program integration manager; and Discovery, New Frontiers and Lunar Quest program manager.

As integration manager of the Discovery and New Frontiers Program, Gilbert established the program office structure and implementation philosophy necessary to effectively operate complex planetary science programs that included missions

with lifecycle costs ranging from \$325 million to over \$1 billion.

As program manager for Discovery, New Frontiers and Lunar Quest Program Office since February 2006, Gilbert has managed the multi-faceted work of a program office, which includes three major space science programs encompassing ten space science projects with a five-year budget in excess of \$3 billion.

For his contributions and dedication to the nation's space program, Gilbert has received numerous honors, including NASA's Outstanding Leadership Medal, a Marshall Center Certificate of Appreciation, a Director's Commendation, NASA's Exceptional Achievement Medal, an ISS Program Award and the prestigious Silver Snoopy Award. He holds a bachelor's degree in mechanical engineering from the University of Alabama in Tuscaloosa.

Jonathan Pettus named Marshall chief information officer

Jonathan Pettus is reassigned to the position of chief information officer in the Office of the Chief Information Officer at the Marshall Space Flight Center. Since 2007, he has served as NASA's chief information officer leading the agency's information technology organization in the delivery of mission-enabling, integrated, secure and efficient capabilities and services.

Throughout his 18-year NASA career, Pettus has played a leadership role in creating the vision and implementation plan for NASA's Integrated Enterprise Management Program and developing the vision and strategy for implementation of the Integrated Financial Management Competency Center. Earlier in his career, he worked with senior NASA information technology officials in defining and implementing the agency-wide distributed environment. This implementation set standard information technology tools that provided improved access to data stored on NASA's mainframe computer systems. Pettus

also led the design and deployment of key elements of the original Distributed Desktop Services at Marshall.

His NASA career began in 1991 as an electronics engineer in Marshall's Institutional and Program Support Office. From 1997 to 2000, he was a computer engineer in the Information Services Department where he established himself as a recognized expert within Marshall, NASA and throughout the government.

In 2000, Pettus was appointed as Integrated Financial Management Integration Program Office manager and agency-wide consultant responsible for planning and directing the overall integration of all projects formulated and executed within the integrated program office. From 2002 to 2005, he served as competency center manager responsible for guiding all elements of the Integrated Enterprise Management Program. In 2005, Pettus was selected as Marshall's chief information officer, responsible for leading support services and security for Marshall's expansive computer and communications

networks. He served in this capacity until his appointment as agency chief information officer in 2007.

Pettus earned a bachelor's and master's degree in computer science from the University of North Alabama in Florence in 1987 and the University of Alabama in Huntsville in 1994, respectively. He has received numerous awards and special recognitions, including a Meritorious Presidential Rank award for exemplary federal service in 2008, the NASA Medal for Outstanding Leadership, the NASA Medal for Exceptional Service, a NASA Certificate of Appreciation, and a Director's Commendation Award. "Federal Computer Week" magazine named Pettus to its 2005 "Federal 100," an annual list of individuals who turn innovative technology ideas into real-life solutions.



Jonathan Pettus

“The first test series in 2006 was a challenge but showed promise,” said Kim. “Testing in 2007 provided an in-depth examination of low-power-level throttling and engine performance characteristics. This third cycle we actively addressed and found solutions to the challenges we faced.”

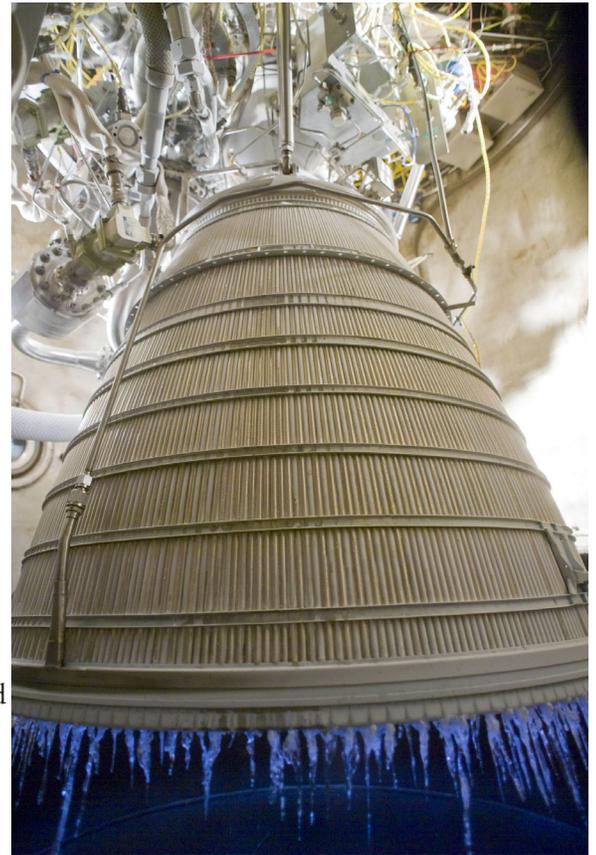
During the recent test series, the engine was successfully throttled from a high of 104 percent of the engine’s potential thrust down to 8 percent, a record for an engine of this type. Engineers carefully assessed test results that showed pressure oscillations in the engine at lower throttle levels, called “chugging.” Chugging may not be a concern for the engine itself, but the resulting vibrations could have the potential to resonate with the structure of the rocket and cause problems for the lander or crew.

Injector and propellant feed system modifications successfully eliminated engine chugging by controlling liquid hydrogen and liquid oxygen flow to the combustion chamber. The latest engine

configuration incorporates a new injector design and propellant feed system that carefully manages the pressure, temperature and flow of propellants.

“The technology developed from this effort will help engineers successfully design future cryogenic engines to meet the throttling requirements of the Constellation Program’s Altair lunar lander,” Kim said.

The CECE collaboration includes engineers from the Marshall Center, NASA’s Glenn Research Center in Cleveland, and Pratt & Whitney Rocketdyne. NASA has invested in CECE technology since 2005 as part of the Propulsion and Cryogenics Advanced Development project at Glenn. The project is funded by the Exploration Technology Development Program in NASA’s Exploration Systems Mission Directorate.



Common Extensible Cryogenic Engine shown at 10 percent thrust during its recent test fire.

Morcone is a member of the Public & Employee Communications Office in the Office of Strategic Analysis & Communications.

‘Breakfast with Opportunity’: Mars rover event scheduled for Marshall team members

By Dauna Coulter

Five years ago this month, NASA landed two identical robotic rovers named Spirit and Opportunity on the surface of Mars. These two “robotic geologists” were primed to search for and characterize a wide range of rocks and soils that hold clues to past water activity on Mars. The Mars Exploration Rover mission to achieve these scientific goals was expected to last about 3 months.

After their safe touchdown, the dynamic duo began a saga of overachievement that continues to this day and has resulted in a proliferation of Mars pictures and information for Earthlings.

To celebrate the rovers’ five years of successes, Dr. Barbara Cohen, the only current Marshall member of a Mars

rover science and operations team, will host “Breakfast with Opportunity” on Jan. 28. This event will give Marshall team members a chance to observe a lively, interactive planning session by Opportunity’s science and operations team and listen in as the day’s plans are made for the rover. The Mars Exploration Rover science instruments principal investigator, Steve Squyres of Cornell University in Ithaca, N.Y., will chair the meeting by remote video and telecon feed.

Marshall team members are invited to join in the planning session at the National Space Science and Technology Center at 320 Sparkman Drive, Room 4078. Cohen will give a prebriefing at 9:30 a.m. If unable to arrive by 9:30 a.m., attendees

should arrive by at least 9:55 a.m. A light breakfast will be available at no charge.

Marshall team members and their families are also invited to two public events Jan. 31 to learn more about Spirit and Opportunity. Beginning at 10 a.m. at the U.S. Space & Rocket Center, Cohen will answer questions about the rovers. She will present a lecture at 11 a.m., and a special showing of the movie “Mars 3-D” will follow at 11:30 a.m. The Von Braun Astronomical Society will host a Cohen lecture, star show and the PBS NOVA video “Welcome to Mars” at the Planetarium on Monte Sano that evening at 7:30.

Coulter, a Schafer Corp. employee, supports the Office of Strategic Analysis & Communications.

Shuttle stand down is 'magical' and inspirational

Marshall Center's Shuttle Propulsion Office, and other Marshall employees who support Shuttle, paused for a half-day stand down to experience the unbelievable magic and inspirational message of keynote speaker, Brad Barton, author of "Beyond Illusions, The Magic of Positive Perception."

Interspersing magic and personal experience, Barton praised NASA's accomplishments in spaceflight and science while highlighting the personal skills and attitudes that manage change and setbacks as well as successes that impact the work force.

"One of life's grand illusions is that everything that at first appears bad – is bad," said Barton. "That perception,



Brad Barton performing a magic trick.

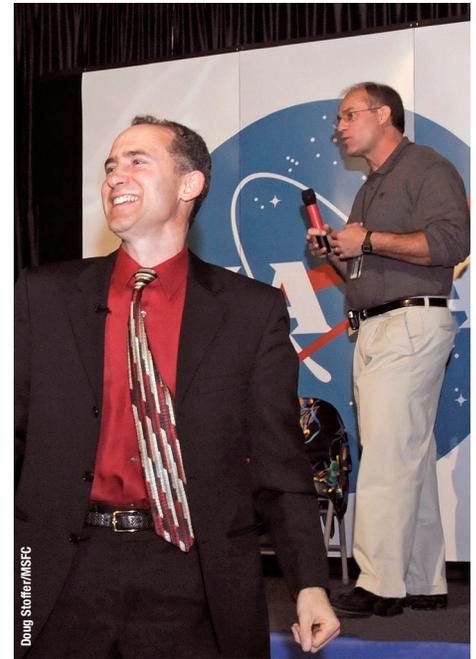
while perhaps comfortable and familiar, only hinders our effort to deal constructively with a difficult situation. It is our approach that defines whether a difficulty is actually 'bad' – and determines the eventual outcome."

In addressing the shuttle team, this master illusionist warned of the dangers of misdirection, "Look beyond the illusion of the immediate circumstance; accept that everything that looks real isn't necessarily real; and stay focused on the opportunity, not the disaster."

In advising the shuttle team, Barton said, "Don't be self-limiting. Avoid misdirection. Look beyond the illusion of circumstances, accept personal responsibility and stay focused on what is important."

"The Space Shuttle Program is totally focused on the safe launch and flight of the remaining missions before us," said Steve Cash, manager of Marshall's Shuttle Propulsion Office. "We have a great deal of work still to do in shuttle, and I am very proud of the efforts of the entire program to continue to improve the shuttle and all of its systems – especially the Marshall-managed propulsion systems – after and before every flight.

"Beyond shuttle, the future of human spaceflight is bright with the prospects of leaving Earth orbit for missions to



Steve Cash, right, introduces Brad Barton.

the moon and the planets," added Cash. "But first we are going to make full use of the International Space Station to prepare for the future. And Marshall-developed propulsion systems are key elements to those future successes."

Some 300 members of the Shuttle Propulsion Office and other Marshall employees attended the presentation by Barton.

Barton is a member of the National Speakers Association and a member of International Brotherhood of Magicians. He lives in Ogden, Utah.

Obituaries

Joseph Carlton, 89, of Huntsville died Dec. 7. He retired from the Marshall Center in 1978 as an engineer. He is survived by his wife Eva Nell Carlton.

William Craft "W.C." Baker, 77, of Huntsville died Dec. 8. He retired from the Marshall Center as an electronics technician.

Ruby Lee Legg, 82, of Athens died

Dec. 12. She retired from the Marshall Center in 1981 as a secretary.

Vance Harton, 82, of Hazel Green died Dec. 19. He retired from the Marshall Center in 1989 as an industrial property management specialist.

Charles Bobby Gaines, 82, of Huntsville died Jan. 4. He retired from the Marshall Center in 1981 as an engineer. He is

survived by his wife Lena Gaines.

David E. Cramer, 89, of Huntsville died Jan. 6. He retired from the Marshall Center in 1982 as a photographer. He is survived by his wife Mary Cramer.

Clarence J. Driver, 82, of Decatur died Jan. 8. He retired from the Marshall Center in 1981 as an electronics technician. He is survived by his wife Estelle Claiborne Driver.

'Focus on Marshall' looks back at an exciting 2008 for center

It was an exciting and productive year in 2008 for the Marshall Space Flight Center. Many of its activities, milestones and cutting-edge research were captured in episodes of the center's monthly video

program "Focus on Marshall."

From unique testing techniques, to new missions, to moon-monitoring, the January episode of "Focus on Marshall" takes a look back over the center's

accomplishments of the past year.

"Focus on Marshall" airs on Marshall TV on Jan. 27 and 29 at 11 a.m., noon and 1 p.m. It also is available on NASA TV, Inside Marshall and on the NASA Portal.

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, Jan. 29, is 4:30 p.m. Thursday, Jan. 22.

Miscellaneous

Firewood, \$80 per truckload. 755-0050

2003 Ford F-150 factory bedliner, \$100. 880-6335

B&S 16HP lawn mower motor, \$50. 289-5406

15-foot trampoline, enclosure frame, \$110; Serta queen box springs, \$125. 837-6148

Bombay office furniture, two-drawer lateral file cabinet, matching two-shelf cabinet, \$40 each. 772-1989

Canon printer, all-in-one scanner copier, PIXMA MP170, no ink, \$37. 417-4828

Frigidaire Crown Series washing machine, large capacity, white, \$50. 882-3895

Pecans, unshelled. 722-0963

River bottom topsoil, Killen, Ala., area. 658-8849

CKC Yorkie, born Nov. 24, female, teddy bear face, \$500. 890-6193

TaylorMade golf clubs, ladies, bubbleshaft2 L60s, 1,3,5 woods, 3-PW irons, putter, \$250. 655-8166

Ibanez GIO electric guitar, Ibanez hard case, Yamaha amp, \$160. 874-1012

Two tickets, Broadway Theater League's "Chitty Chitty Bang Bang," Jan. 30, \$54 each. 975-6766

Murray Go-Cart, 6HP, Tecumseh engine, \$300. 684-6006

55-gallon tank/cabinet stand, all items for both salt/fresh installation, \$300. 783-4326

Souvenir space shuttle tile, <http://webstore.com/~spaceflightusa>. 321-264-7469

Broyhill kitchen hutch, \$395; indoor wicker set, \$350; two outdoor wicker rockers, \$150. 975-1667

Men's titanium wedding band, size 10.5, \$200; 12-foot basstracker boat, new trolling motor/battery, \$1,700. 606-1477

Sony MiniDV camcorder, extra battery, \$50; Hitachi DVD camcorder, extra battery, \$75. 714-3742

Cedar fence posts. 682-7165

Two tickets, "Chitty Chitty Bang Bang," Jan. 30. 508-8394

1969-1975 455 Oldsmobile crankshaft, needs machining, \$100. 612-7729

Vehicles

2008 Eclipse, 11k miles, take payoff. 990-3162

2005 4X4 Suzuki Eiger, automatic, new tires, new battery, wench, low mileage, \$3,500. 694-6302

2007 Chevy Tahoe LT, gold mist, tan leather, third row seats, 38k miles, \$23,000 obo. 404-281-9808

2006 SL55 Mercedes AMG, loaded, hardtop convertible, silver, 14k miles. 830-5999

2005 Ford Five Hundred Limited, AWD, leather, power moon roof, 44k miles, \$13,500. 975-1667

2005 Nissan Armada LE, loaded, towing package, DVD, leather interior, 40k miles, \$18,500. 347-1674

2003 Exiss horse trailer, 3HS load, full LQ, \$19,500. 353-8120 or 616-3666

2003 Club Car, gas, beige, windshield, \$2,275. 682-6326

1997 Lincoln Town Car, loaded, \$4,100. 586-7424

1995 Chevy Corsica, gray, 174k miles, \$1,500 obo. 852-2378

1995 Palomino Mustang TXL-DD popup camping trailer, sleeps seven, new tires, \$3,500. 773-5051

1988 Buick Regal Limited, \$750. 503-8040

1986 Yamaha Radian, 600cc, 12k miles, carburetor rebuilt, \$1,000. 655-2548

Wanted

Trailer donation, 15-foot flat bottom boat, 501(c)(3) Search and Rescue Team, ED. 859-5550

Old fishing nets for upcoming Bible school in the summer. 837-2848

Original 2G iPhone, excellent condition, all cables. 659-6164

Stationary exercise bike, weighted front wheel. 536-8925

Houses/offices to clean, available evenings, weekends. 777-8595

Pedal exerciser. 776-7399

Found

Memory stick in B-4315, found some time in December. 534-4968

Pair of brown rimmed reading glasses, north parking lot, Building 4200, Jan. 13. 544-4680

Lost

Gold hoop earring, Jan. 8, around buildings 4200 and 4201 parking lots, or in Building 4201. 714-1831

Center Director David King speaks at Marshall Association meeting



Marshall Space Flight Center Director David King spoke Jan. 13 at the Marshall Association's first meeting of the year at the Redstone Arsenal Officers and Civilians Club. At left, King speaks about the center's 2008 successes and the 2009 challenges. The Marshall Association fosters the exchange of innovative and stimulating ideas within the Marshall community. To learn more about the organization, visit http://inside.msfc.nasa.gov/marshall_association/. To join, contact Jennifer McCaghren, Marshall Association treasurer at 544-5189. The next meeting will be at 11 a.m. Feb. 25 at Activities Building 4316. An introduction to this year's officers will be published in the Feb. 5 Marshall Star.

King, left, greets Alan Murphy, right, of the Shuttle Propulsion Office and Melvin McKinstry of the Office of Center Operations, who were among the approximately 90 people who attended the event.



MARSHALL STAR

Vol. 49/No. 18

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 5 p.m. Friday 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: 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

U.S. Government Printing Office 2009-523-047-20183

www.nasa.gov

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