MARSHALL STAR

Serving the Marshall Space Flight Center Community

Jan. 30, 2003

NASA Administrator outlines Agency push for upcoming year

O'Keefe hosts 'NASA Update' from the Marshall Center

by Jonathan Baggs

One NASA is working as the Agency moves forward in developing new propulsion technologies, understanding long-term human exposure to the environment of space and how to inspire the next generation of explorers, said NASA Administrator Sean O'Keefe during a visit to the Marshall Center last Friday.

At Marshall, O'Keefe hosted the latest edition of "NASA Update." He also met with managers of the Orbital Space Plane project, and representatives from several NASA centers involved in the Integrated Space Transportation Plan (ISTP). ISTP encompasses Space Shuttle and Next Generation Launch Technology programs, as well as the space plane project designed to function as an astronaut crew transfer vehicle.

As President Bush readies the fiscal 2004 budget, O'Keefe said there will be important initiatives included that will have application "across the Agency."

Power generation is among the initiatives that NASA is to move forward with so that future missions can be planned.

O'Keefe said the 2004 budget proposal will represent an effort to accelerate a lot of the work NASA

*See **O'Keefe** on page 2*

Photo by Emmett Given, NASA/Marshall Center

O'Keefe addresses Marshall employees during the "NASA Update" program.

Photo by Doug Stoffer, NASA/Marshall Center

Gov. Riley visits Marshall

Alabama Gov. Bob Riley, left, is presented with a Shuttle model by Marshall Director Art Stephenson. Riley visited Stephenson last week after addressing the Huntsville-Madison County Chamber of Commerce. Riley and Stephenson discussed possible partnerships between NASA and the state.

Explorer 1 launched 45 years ago

America's first successful spacecraft/satellite

by Bob Jaques

Explorer 1, the first successful United States spacecraft, was launched 45 years ago on Jan. 31, 1958, at 9:48 p.m. CST.

This stovepipe-shaped satellite, weighing about 31 pounds, was equipped to detect cosmic rays, micrometeorites, and temperature measurements. Explorer 1 orbited the Earth every 114 minutes in an elliptical path. Its perigee – the closest it passed to Earth, was 220 miles and the apogee – its farthest distance from Earth, was 1,563 miles.

Dr. James Van Allen of the University of Iowa designed the satellite's cosmic ray sensor to measure an area of radiation around the Earth. A strong radiation band held in place by the Earth's magnetic field became known as the Van Allen Radiation Belt after Explorer 1's discovery.

Explorer 1 was the U.S. answer to the 184-pound Soviet

*See **Explorer 1** on page 4*

O'Keefe

Continued from page 1

started as part of the 2003 program — taking the most mature of the power generation and propulsion technologies and developing them. "And certainly, nuclear propulsion is one of those technologies that we will be concentrating on a lot."

Nuclear propulsion is going to move forward, O'Keefe said, as part of what he dubbed "Project Prometheus," which has a goal of expanding all of the propulsion technologies, and including a way to apply them to "specific ... missions in the near term." The exact mission objectives, however, are still being discussed. He said it is a great example of how One NASA objectives of collaborating and contributing have come together to move Agency goals forward in a way that could not be done if any single NASA center tried to do it alone.

"The same is true of ISTP," O'Keefe said. "That really requires the participation of so many across the Agency to come up with different solutions to what have become intractable sets of problems. That's a lot of what Project Prometheus' effort is all about - thinking about how we get past what has been a technical, enduring ... limitation that we've lived with throughout the entire 45 years we've been an Agency. How do you get past those power generation and propulsion kinds of challenges that make future missions possible; that all we can do right now is talk about and dream about? One of the things we can do responsibly right now is to think how we can ... make those kinds of missions and destinations and opportunities possible in the future."

Photo by Emmett Given, NASA/Marshall Center

O'Keefe at Marshall.

Part of making these future missions possible is to better understand the effects of long-duration space flight on the human body. O'Keefe said NASA, entering only the third year of a continuous presence on the International Space Station, is "beginning to discover ... that long-duration space flight has some serious physiological consequences."

O'Keefe cited the loss of muscle and bone mass that affects humans on long-duration flights, as well as the exposure to radiation. "These are the kind of medical challenges that we need to conquer," he said. "So, we have a chance right now to look at enabling capabilities in terms of speed, power generation (and) propulsion capabilities, which, in turn, means if you can do it faster, you minimize the amount of time human exposure is existent. We're going to look at specific accelerated efforts - very aggressive approaches - to meeting what those challenges are ... to make possible in the future those exotic and important exploration and discovery destination objectives that we may learn more and more about in the time ahead."

None of these accelerated goals will be at the expense of pursuing the three NASA mission objectives of "understanding and protecting the home planet; exploring the universe and searching for life; and inspiring the next generation of explorers," O'Keefe said.

It was the next generation of explorers that O'Keefe focused on during the second half of his talk, specifically the Educator Astronaut Program that kicked off January 21. The program is encouraging the nomination of K-12 teachers to apply to become members of the astronaut corps as educator mission specialists, qualified to fly on the Space Shuttle and work on the International Space Station.

Barbara Morgan, the first designated educator mission specialist, is scheduled to fly on STS-118 to the Space Station in November.

"Hopefully (she is) the first in a long line of educator astronauts who come to the perspective of being an astronaut from that of a teacher, an educator, someone who can make the experience of what they do exciting ... to our children and grandchildren so they will consider the kinds of careers and opportunities they will have ahead," O'Keefe said.

O'Keefe said that by the end of the day of the Educator Astronaut Program announcement, the Web site had 35,000 visitors. And within three days, that number grew to 200,000 — with more than 600 applications collected. He said this was "a tremendous testimonial" to NASA's name recognition.

"In terms of initiatives that we've worked on and developed, we're seeing very clear evidence right now, not only of the interest level that the American people have, but, I think, the very important factor ... as well (that) we're making a positive contribution to the larger education agenda," O'Keefe said. "It's an opportunity for teachers to have very easily accessible information, that in turn tells them not only how to go about nominating teachers, but also how to go about accessing all the information on the array of things we do across this Agency and make it interesting and fun for their students."

The recruiting of educator astronauts will continue through April. For more information on the program, go to www.edspace.nasa.gov or call 1-877-332-7876.

The writer, an employee of ASRI, is the editor of the Marshall Star.

Marshall engineer oversees water recycling test on Space Shuttle

by Martin Burkey

Cindy Hutchens thinks a lot about something most people take for granted — water.

An aerospace engineer for the Marshall Center, Hutchens is responsible for a Space Shuttle experiment to make life aboard the International Space Station more efficient and water a little less hard to come by.

"Growing up in Holly Pond, in a region where water is plentiful, I don't think I ever gave much thought to the importance of water to my life," Hutchens said. "Working in the space program as I do, my perspective now is that water is as valuable as gold."

Water is so costly to launch into space aboard the Shuttle or Russian supply ships that each Space Station crewmember is allowed only 4.4 gallons per day. The average American uses 60 gallons per day on Earth. That's why NASA is working to collect and recycle as much water as possible.

Hutchens oversees the Vapor Compression Distillation (VCD) Flight Experiment, which will be tested during the STS-107 Shuttle mission. It is a full-scale demonstration of technology to turn crewmember urine and wastewater aboard the Space Station into clean water for drinking, cooking and hygiene. Based on results of the experiment, an operational urine processor could be installed aboard the Space Station in the future.

"When this technology is installed aboard the Space Station, it will be able to recycle about 4,400 pounds of waste water annually to support the crew and decrease the re-supply burden on the Shuttle," Hutchens said. "The early pioneers in this country could find water along their way, but that's a luxury space explorers don't have. It's a technology we will need to explore the space frontier."

Hutchens earned a bachelor's degree in mechanical engineering in 1986 from Arizona State University in Phoenix. She joined NASA in May 1987, and has devoted much of her space-program career to water recycling for space applications, authoring or co-authoring 16 technical papers on the subject.

Photo by Emmett Given, NASA/Marshall Center

Hutchens

"The space program is a very stimulating environment," Hutchens said. "I've been lucky to be part of designing, developing and building flight hardware to be flown aboard the International Space Station."

The writer, employed by ASRI, supports the Media Relations Department.

Dobbs appointed trustee for Alabama Institute for Deaf and Blind

by Jonathan Baggs

William P. "Chip" Dobbs III is one of four new members of the Alabama Institute for Deaf and Blind Board of Trustees, following his appointment to the board by former Gov. Don Siegelman.

The Talladega Institute trains hearing- and seeing-impaired children and adults.

"We're very excited about these appointments, and we look forward to working with all our trustees as we strive to make our institute the best it can be," said AIDB President Dr. Terry Graham.

Photo by Dennis Olive, NASA/Marshall Center

Dobbs

Dobbs is an industrial property management specialist for the NASA Property Management Group at the Marshall Center. He will represent AIDB alumni from the state at-large through Nov. 28, 2004.

"I went to school there and I want to give back what they gave me – to help the children to live a better life and get a good education," Dobbs said. "It's an honor to be a member of the board and to me, I think, the reason I got on the board is my supervisor Ron Burns and team lead Carolyn Landry gave me the opportunity to volunteer and help others here at the Marshall Center. If the Center gives the hearing impaired a chance, they'll do a good job."

Dobbs has an 80-percent hearing loss. For the last four years, he has served as a mentor for hearing-impaired students at the Institute.

"Chip is an outstanding performer in the property management group and he is always willing to assist others, no matter what the task. The AIDB is very fortunate to have someone like Chip to represent them," Landry said.

Dobbs was valedictorian of the Alabama School for the Deaf Class of 1981. He graduated from Athens State College in 1995, with a bachelor's degree in human resource management. He lives in Huntsville with his wife, Sally, and their two sons.

Siegelman also reappointed three existing members to new terms on the board.

Other new appointments are Ronald Garrett, Lynwood French and Amy Burks. Members reappointed to the board are Morris Savage, Jean Gamble and Jackie Smith. Garrett and French are both retirees of AIDB.

All the appointments are subject to Senate confirmation.

The writer, an employee of ASRI, is the editor of the Marshall Star.

Explorer 1

Continued from page 1

satellite "Sputnik," which was launched Oct. 4, 1957, ushering in the Space Age.

However, as early as 1954, Dr. Wernher von Braun and his rocket team, working for the Army's Ballistic Missile Agency (ABMA) at Redstone Arsenal, had proposed an orbiting satellite. Von Braun wanted to use the Redstone rocket as a launch vehicle. But there were indecisions within the Department of Defense. In 1955, the Department of Defense decided to give the Navy a go-ahead for a satellite launch on a Vanguard rocket. The Navy's hope of launching a satellite was dashed when the Vanguard rocket exploded seconds after launch on Dec. 6, 1957.

Immediately following the launch of Sputnik, Von Braun told U.S. Secretary of Defense Neil McElroy that he and his team could place a satellite in orbit within 60 days. Gen. John Medaris, the commander of ABMA, told Von Braun to "make it 90 days." Von Braun said, "OK, make it 90 days." On Nov. 8, 1957, the order was given to Medaris to proceed with the satellite project. Under Von Braun's leadership, and using a modified Redstone Rocket called a Jupiter-C, Explorer 1 was launched 87 days after the being given the go-ahead by Medaris.

SATELLITE EXTRA

The Huntsville Times

SATELLITE EXTRA

Jupiter-C Puts Up Moon

Wail Of Sirens Brings In Era On Space Here

Thousands Gather On The Square For Noisy Success Demonstration

9 Labs Here Aided Project Of Launching

Eisenhower Officially Announces Huntsville Satellite Circles Globe

Weather Change Sped Launching

Army Reveals Second Moon Is Scheduled

Marshall Imaging Services/Courtesy Photo

Huntsville and the nation were wild with excitement when the Jupiter-C delivered Explorer 1 into orbit 45 years ago.

The Jet Propulsion Laboratory in Pasadena, Calif., built Explorer 1.

The Huntsville community was proud of the scientists, engineers, and support technicians at Redstone who played a role in this historic event. The accomplishment of Explorer 1 made Huntsville "The Rocket City." The Huntsville Times featured large headlines heralding the spectacular event. Large jubilant crowds gathered in the courthouse square and lit fireworks to celebrate.

Explorer 1's final transmission was on May 23, 1958, but it remained in orbit for 12 years before burning up in the atmosphere March 31, 1970. This was the first of six satellites using the Explorer name.

We still remember, 45 years later.

The writer, an employee of ASRI, is a Marshall Center historian.

Marshall Imaging Services

Celebrating the successful launch, from left, are William Pickering, James Van Allen, and Dr. Wernher von Braun hoisting a model of Explorer 1 for news cameras.

Marshall Imaging Services

Jupiter-C on the pad in 1958.

Sounding rocket demonstrates hybrid propulsion technology

from a Michoud news release

The launch and flight of a sounding rocket on Dec. 18 continued the development of large-scale hybrid propulsion systems.

The Marshall Center and Lockheed Martin signed a Space Act Agreement in 1999 to develop, test and launch the hybrid sounding rocket. The program goal is to develop a single-stage propulsion system capable of replacing existing two- and three-stage sounding rockets.

Sounding rockets take their name from the nautical term "to sound," meaning, "to take measurements."

Lockheed Martin, under company funding, designed and built the rocket to demonstrate that hybrid propulsion technology offers a low cost solution for delivering payloads. The Marshall Center had responsibility for program oversight, rocket motor ground tests at the Stennis Space Center, Miss., and provided flight support at the Wallops Flight Facility on Wallops Island, Va., where the rocket was launched.

Photo courtesy Michoud, Lockheed Martin

Sounding rocket on the pad at Wallops Flight Facility, Wallops Island, Va.

The sounding rocket – 57 feet long and 2 feet in diameter — using liquid oxygen and solid fuel — generated 60,000 pounds of thrust during a burn time of 31 seconds while reaching an altitude of approximately 43 miles.

During flight, the rocket released a NASA Ames experimental payload over the Atlantic Ocean. The payload included a "wave rider" flying wedge, a linear aerobrake or hypersonic parachute and a super stable planetary reentry probe. In an attempt to develop a wind tunnel in the sky, NASA tested the experiments at more than Mach five — five times the speed of sound — during reentry.

"We're pleased that the hybrid rocket motor performed well and met our objectives," said Randy Tassin, vice president, Program Management & Technical Operations for Lockheed Martin Space Systems, Michoud Operations. "Hybrid propulsion offers significant advantages over solid fuel propellants in that hybrids are non-explosive, throttleable, affordable and environmentally benign. These advantages are not only applicable to sounding rockets, but hopefully, this technology will lead to other applications as well."

"This program was a successful example of a government-industry partnership moving a concept from paper to developmental flight in only three years," said Curtis McNeal, Marshall project manager. "I want to congratulate Lockheed Martin, Stennis, and Wallops on their successful efforts."

Lockheed supports NASA's Michoud Assembly Facility in New Orleans, and designs and assembles large aluminum and composite structures such as the Space Shuttle External Tank for aerospace and other applications.

New book on Marshall history to be released

The Marshall Space Flight Center Retirees Association and Turner Publishing Co. will release "Fifty Years of Rockets & Spacecraft in the Rocket City" in February.

The hardcover book contains 176 pages of history, including a detailed narrative of the Marshall Center. Many never-before-published photographs and insider stories from Marshall retirees are included, along with a special tribute to Dr. Wernher von Braun and a roster of Marshall retirees.

Cost is $39.95, plus $7 shipping and handling. Call 1-800-788-3350 to order or send check or money order to Turner Publishing Co., P.O. Box 3101, Paducah, Ky. 42002-3101. For more information, call Turner Publishing Co.

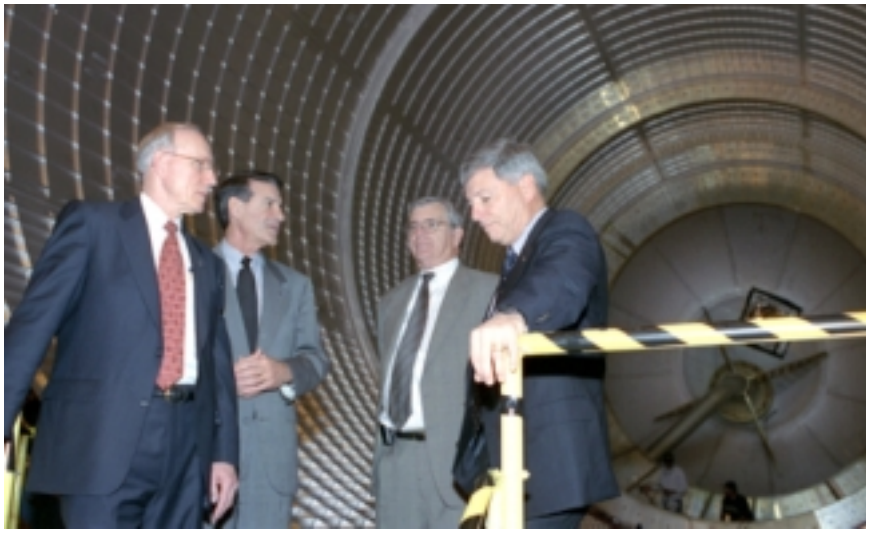

Photo courtesy Michoud Assembly Facility

Kostelnik tours Michoud, Marshall Center

Maj. Gen. Michael C. Kostelnik, USAF (Ret.), right, NASA Deputy Associate Administrator for Space Shuttle and International Space Station, checks out a liquid hydrogen tank as he tours the Michoud Assembly Facility in New Orleans on Jan. 22. With Kostelnik are, from left, Senior Systems Integration Manager for Space Shuttle Programs Parker Counts, Marshall Center Director Art Stephenson, and Michoud Operations President Dennis Deel. Kostelnik toured the Marshall Center on Jan. 21. Michoud manufactures the Space Shuttle External Tank, which is managed by the Marshall Center.

Obituaries

Golmon, James H., 79, of Huntsville, died Jan. 6. Funeral services were held at Valhalla Funeral Home with the Rev. Byron White officiating. Burial with full military honors was in Valhalla Memory Gardens.

Golmon was earned a master of science in mathematics from Ole Miss University in Oxford, Miss., and was a part-time mathematics instructor at the University of Alabama in Huntsville and mathematics tutor in the Equal Opportunity Center. He was a U.S. Navy veteran of World War II and retired from the Marshall Center in 1979 where he was an aeronautical engineer. He was a member of Epworth United Methodist Church.

Golmon is survived by his wife, Virginia Golmon; two daughters, Gail Richardson of Alamogordo, N.M., and Connie Andrews of Arab; one brother, Phillip Eugene Golmon of Roxie, Miss.; and four grandchildren.

Kromis, Theodore, 76, of Huntsville, died Jan. 8. Funeral services were held at Holy Spirit Church with Father Phil O'Kennedy officiating. Graveside services were held at Corinth Baptist Church in Joppa.

Kromis retired from the Marshall Center in 1989 where he was an auditor. He was a U.S. Army veteran of World War II where he served in the Third Army commanded by Lt. Gen. George S. Patton Jr., and he also was a veteran of the Korean War. He was a CPA, a member of the Alabama Bar Association and later earned a doctorate in mathematics. He was an assistant scoutmaster for 15 years, a member of the Board of Directors for Catholic Charities for the Dioceses of Alabama and was a founding member of Holy Spirit Church – serving as financial manager for 15 years. He served as secretary and treasurer of NASA's employee benefits association for many years, helped organize the Huntsville Alzheimer's Association and served as a board member, and was an associate professor at Athens State University for 16 years.

Kromis is survived by his wife, Jeanette Hill Kromis; five sons, Theodore Kromis Jr. of Santa Barbara, Calif., Philip A. Kromis, Rex E. Kromis, Yon C. Kromis, all of Huntsville, and Damian S. Kromis of Madison; one daughter, Denise K. Price of Owens Cross Roads, three brothers, Mike Kromis of North Carolina, Steve Kromis of Louisiana and Tom Kromis of Texas; two sisters, Kate Kromis of Louisiana and Matilda Hamilton of Birmingham; and seven grandchildren.

Riley, Charles L., 77, of Huntsville, died Jan. 20. Funeral services were held at Valley United Methodist Church with the Rev. Dorothy Scott and the Rev. Talmadge Clayton officiating. Burial was in Maple Hill Cemetery.

Riley was a member of Valley United Methodist Church, a member of the Sons of the American Revolution and a member of the Sons of Confederate Veterans. He was a U.S. Navy veteran of World War II, a member of the Society of the Descendants of Washington's Army at Valley Forge, and retired from the Marshall Center in 1980 were he was an electrical engineer.

Riley is survived by his wife, Alice W. Riley; one son, Charles Louis Riley of Orlando, Fla.; three daughters, Kathryn Riley Goyer of Huntsville, Carolyn E. Riley of Petersburg, Ill., and Janet Riley O'Connor of Hatboro, Pa.; and three grandchildren.

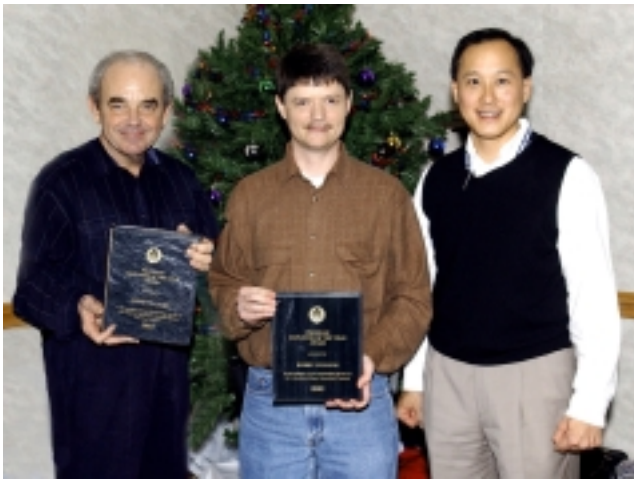

Photo by Terry Leibold, NASA/Marshall Center

Arcata employees receive awards

Emmett Given, left, and Bobby Collins, center, receive Program Employee of the Year awards for 2002 from Tim Wong, right, president of Arcata. Collins, an engineer, supports the Consolidated Space Operations contract at the Marshall Center and Given, a photographer, supports the Program Information Systems Missions Services contract. The awards, for outstanding performance, are the highest company awards given by Arcata.

Job announcements

MS03N0036, AST, Aerospace Flight Systems. GS-861-14, Space Shuttle Projects Office, Solid Rocket Booster Project. Notice/reassignment. Closes Jan. 31.

MS03N0037, AST, Aerospace Flight Systems. GS-861-13, Space Shuttle Projects Office, Solid Rocket Booster Project. Notice/reassignment. Closes Jan. 31.

MS03C0038, Aerospace Engineering Technician. GS-802-12, Engineering Directorate, Structure, Mechanics and Thermal Department, Thermal and Fluid Systems Group. Competitive Placement Plan. Closes Jan. 31.

MS03N0039, Program Analyst. GS-343-12, Space Transportation Directorate, Business and Administrative Office. Notice/Reassignment. Closes Feb. 5.

MS03N0040, Program Analyst. GS-343-11. Space Transportation Directorate, Business and Administrative Office. Notice/Reassignment. Closes Feb. 5.

MS03N0041, AST, Technical Resources Management. GS-801-14, Flight Projects Directorate, Business Management Office, Resources Group. Competitive Placement Plan. Closes Feb. 3.

Center Announcements

SHARP mentors needed for student education programs

The Marshall Center's Education Programs Department needs volunteers to work with students participating in the 2003 NASA Summer High School Apprenticeship Program. SHARP offers high school students opportunities to participate in an eight-week science and engineering program. Researchers and other science and engineering professionals are encouraged to volunteer as mentors. For more information, call 544-6025.

ADA topic of 'Lunch & Learn' meeting Thursday

A "Lunch & Learn" meeting from 11-11:45 a.m. Thursday, Jan. 30, in Morris Auditorium will feature discussion on the Americans with Disabilities Act. Graham L. Sessions, Jr., Alabama assistant attorney general and head of state rehabilitation services, will speak on basic ADA employment provisions and issues of reasonable accommodation, emotional and mental health, conduct and direct threat issues.

Spacecraft Charging Technology Conference will be Oct. 20-24

The 8th Spacecraft Charging Technology Conference is set to be held in Huntsville Oct. 20-24. The international forum is held once every three years. For more information, go to http://see.msfc.nasa.gov/sctc.

Valentine's Latin dance is Feb. 14

A Latin dance will be 9 p.m.-1 a.m. Feb. 14 at the Senior Center Auditorium on Drake Avenue at Ivy Avenue in Huntsville. Free group Merengue and Salsa lessons will begin at 8 p.m. Music will be by Luis Trevino's Latin Rhythms Band and disc jockey Signey Hernandez. Tickets are $10 in advance or $15 at the door and are available from Tiendita Latina on Jordan Lane or from Elia Ordonez in the Equal Opportunity Office at 544-6658.

NASA Ski Week reservations being accepted

The 12th-annual NASA Ski Week will be at Big Mountain ski resort in Montana Feb. 22-March 1. All Marshall team members, retirees, and their families are eligible. For more information, call 233-0705 or e-mail Thomas.S.Dollman@msfc.nasa.gov.

Military, aerospace meet set; abstracts due in April

The sixth Military and Aerospace Programmable Logic Devices (MAPLD) International Conference will be Sept. 9-11 in Washington, D.C. Abstracts are being accepted through April 25. Emphasis is on programmable devices, technologies and related aspects of digital engineering. The event is hosted by the American Institute of Aeronautics and Astronautics and the NASA Office of Logic Design. For more information, go to http://klabs.org/mapld03.

AIAA Space Propulsion Symposium is Feb. 15

Early registration for the American Institute of Aeronautics and Astronautics Space Propulsion Symposium is through Friday with R.S.V.P.s due by Feb.7. The symposium will be Feb. 15 at Brevard Community College Astronaut Memorial Planetarium in Cocoa, Fla. Cost for AIAA members is $10 or $15 at the door, $15 for non members or $20 at the door and $5 for all students plus $5 for lunch. Topics will include current NASA propulsion initiatives, space nuclear propulsion and enabling technologies, Space Shuttle main propulsion, commercial space, Space Launch Initiative propulsion research, hypersonic research, solar propulsion and microwave electrothermal thruster. For more information, go to www.CapeAIAA.org or call Doug Wright at 1-321-726-0030.

Program Planning and Control classes begin Feb. 5

Classes for Program Planning and Control begin Feb. 5 for the Intermediate Program Planning and Control Series. Times will be announced. This class is intended for participants who have completed introductory classes or for those with some previous experience with the subject. Other courses, along with scheduled dates and times, are available by going to AdminSTAR, or for more information, call Janie Moyers at 544-7552 or e-mail janie.moyers@nasa.gov.

MARS Ballroom Valentine Dance set for Feb. 8

The MARS Ballroom Dance Club is hosting a semi-formal Valentine Dance at the Von Braun Center East Hall. A social is at 6:30 p.m., buffett dinner at 7 p.m. and dancing to the music of "The Little Big Band" is from 8-11 p.m. Tickets are $25 each and are available through Tuesday. Members will receive a $5 discount. For information or tickets, call 461-0230, 544-3998, 544-3525, 544-5427, 544-6818, 534-7408 or 880-2270.

New test area access hours in effect Monday

Effective Monday, new "after hours" access for entry into the east or west test areas will be defined as 3:30 p.m.-7 a.m. on weekdays and all day on weekends. Any personnel performing after-hours work must be pre-approved if they do not have keycard access. For more information, call Van Blankenship at 544-1188. to request pre-approval, go to http://stdweekly.msfc.nasa.gov/td70/access.html. This Web site also can be accessed through the Protective Services Web site at http://co.msfc.nasa.gov/ad50/.

'Asteroid Hunting' class is Feb. 8

The Von Braun Astronomical Society will coach "Asteroid Hunting 101" at 7:30 p.m. Feb. 8 at the Wernher von Braun Planetarium in Monte Sano State Park. Loren C. Ball will instruct the class. Admission is $3 for adult non-members and $2 for children 12 and under. Weather permitting, a "star party" using the planetarium telescopes will follow. For information, call 961-7626.

Employee Ads

Miscellaneous

★ Four Colonial Village houses, $40 for all; Magnavox stereo, 54", dark maple, $25. 837-6776

★ Lincoln wheat pennies, approx. 1600 in tubes, dated between 1933 and 1958, $130. 883-5114

★ Kenmore washer and dryer, almond, large capacity, $200 for pair. 880-9025

★ Recliner, medium gray, $250; soda table and 4 chairs, $60. 683-2161

★ Baby stroller, $40; playpen, $40; 4 car seats, $20-$40; boys and girls clothes & toys. 233-1649

★ GE side-by-side refrigerator w/ice & water dispenser, $300; Monessen vented LP gas logs, 27", $200. 881-7000

★ Wooden spice rack, 2-visual doors. 830-2492

★ Bedroom suite, queen size, 2-night stands, mirror and dresser. 256-586-7424

★ Waterford chandelier, six lights; two Turkish hand-woven carpets, 6'x8'; Spode china, Red Ships pattern. 882-6832

★ Round oak table w/claw feet, 42", $350; four oak ladder back chairs, $85. 883-1025

★ New Goodyear Wrangler tires, P265-70R-17, set of four, $400. 256-776-9506

★ Canoe, 16', poly, 3-seats, green/tan, $250. 721-2782

★ Baby stroller, Century SmartMove XT, car seat, 2 bases, navy/white, $75. 776-6943

★ Gameboy color, atomic purple, $45. 256-895-9843

★ Large walnut-finish desk w/wood desk chair, $50; Thomasville dark pine coffee table, $30. 880-7376

★ One week space camp tuition, age 9-12, includes spacesuit, good through 12/03. 722-4069 days

★ Wooden bookcase, $50; computer desk, $75; ladies clothes sizes 12-14, $2-$10. 534-0939

★ Electric (120VAC) lawn mower; climbing exercise machine; Troy-Bilt tiller. 881-6040

★ Contemporary couch and love seat, $500. 233-1487

★ Drop-in polyurethane bedliner for Toyota Tundra, $75; Heavy-duty rubber bedmat for full-size pickup, $25. 256-232-0188

★ Executive desk, antique, $400. 539-3166

Vehicles

★ 1995 Chevrolet Camaro, automatic, white, T-tops, 3.4L/V6, 96K miles, $5,500. 931-625-0671 lv. msg.

★ 1999 Ford Ranger, 65K miles, 4 cyl., 5-speed, short bed, a/c, CD, bedliner, $4,950 firm. 256-753-2278

★ 1991 Ford Econoline High-top customized conversion van, TV/VCR, 120K miles, $7,500. 256-586-8483

★ 1996 Honda Accord EX, 89K miles, white, leather, sunroof, new tires, am/fm/CD/cassette, loaded, $7,999. 971-3102/461-0176

★ 1997 Dodge Caravan w/warranty, PW/PDL, ABS, roof rack, privacy glass, 5-door, $7,600. 230-6846

★ 1995 Pontiac Grand Prix, V6, red, new tires, new brakes, 138K miles, $3,275. 772-0364

★ 1998 Ford F-150, V8, extended cab, long-bed, 53K miles, $15,700. 325-6090

★ 1980 Chevy 4x4 pickup, 350 w/4-speed manual, no bed, $980. 683-9364

★ 1977 Chevy El Camino, 350CI, V8, auto, air, PW/PS, $3,000. 882-1343

★ 1988 Honda Accord DX, 4D, 4-cyl., 5-speed manual, 120K miles, $2,300. 539-1316

★ 2002 Honda Civic LX, 4-door, auto, all-power, 34-41 mpg, 13K miles, $13,000 obo. 828-6213

★ 1995 Chevrolet Camaro, white, 3.4L, V6, T-tops, 97K miles, automatic, $5,500. 931-625-0671

★ 1990 Cutlass Calais, white w/blue interior, 125K miles, auto, air, 4-door, cruise, $2,000. 265-739-6840

★ 2001 Honda Civic EX, 4-door, moonroof, power windows/locks, CD, 43K miles, $10,900. 830-8435

★ 1976 Datsun 280Z, good engine & interior, some new parts, blue, $1,300 obo. 256-880-5838

Found

★ Pair of ladies prescription glasses, damaged, in Bldg. 4201 parking lot. 544-7883 to claim

Lost

★ Silver cross earring in Bldg. 4200 area. 544-7040

Wanted

★ Vanguard gas wall heater. 508-0509

MARSHALL STAR
Vol. 43/No. 18

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

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

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

U.S. Government Printing Office 2002-533-083-60038

PRE-SORT STANDARD
Postage & Fees PAID
NASA
Permit No. G-27