



MARSHALL STAR

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April 17, 2003

Marshall to play major role in new space telescope

Space Station observatory will study the most energetic particles in universe

by Sherrie Super

Led by Dr. James H. Adams Jr. of the Marshall Center, NASA is contributing to an International Space Station-based investigation of extremely energetic cosmic particles.

A joint mission with the European and Japanese space agencies, the Extreme Universe Space Observatory (EUSO) will

study the most energetic particles in the universe.

From its unique Space Station vantage point, EUSO will look down on Earth's atmosphere to observe fluorescent light flashes generated by the interaction of extreme-energy cosmic particles. Too brief to be seen by the human eye, these light flashes come from the collision of a single

subatomic particle having the kinetic energy of a major league pitcher's fastball.

Each particle coming from the initial collision also collides with other atoms creating a second generation of particles. This process repeats, multiplying the numbers until a strong shower of second-

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North Dakota and Missouri teams win 10th annual 'Great Moonbuggy Race'

by Jack Robertson

A team from North Dakota State University in Fargo, N.D., and a team from Higginsville, Mo. overcame a grueling, obstacle-strewn course and rode to victory last weekend in the college and high school divisions, respectively, of NASA's 10th annual "Great Moonbuggy Race."

The North Dakota State Team No. 1 topped 23 college and university teams from 10 states and Puerto Rico. In addition to the first place honor, the team earned a trip to NASA's Kennedy Space Center, Fla., to view a Space Shuttle launch.

The University of Tennessee Team No. 1 from Knoxville finished second, while the team from the University of South Alabama in Mobile placed third. Those teams received plaques, and all three winning teams received medallions and duffel bags bearing the Great Moonbuggy Race logo.

The award in the college division for best moonbuggy design went to the Arizona State University Team No. 2 from Tempe



Photo by Doug Stoffer, NASA/Marshall Center

The Huntsville Center for Technology team demonstrates its moonbuggy entry at the U.S. Space & Rocket Center. The team won Best Moonbuggy Design in the high school division. For more photos of race winners, see page 2 and pages 4-5.

and the same team was honored with a special "Pits Award" for ingenuity and persistence in overcoming problems.

Vehicles powered by two team members — one male and one

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Moonbuggy

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female — raced one at a time over a half-mile obstacle course of simulated moon-scape terrain at Huntsville's U.S. Space & Rocket Center.

"It was way, way harder than I expected," said North Dakota State's Troy Redlinger after the team's victory was announced. "I knew it would be hard, but not this bad." He and teammate Danielle Baumann, both seniors in mechanical engineering, piloted the winning vehicle, designed and built as a class project.

The competition is inspired by the actual lunar roving vehicle project, which was successfully accomplished by the Marshall Center during the 1960s and 1970s. The race challenges students to design and build a human-powered vehicle so they will learn how to deal with real-world engineering problems — similar to those faced by the actual NASA lunar rover team.

In the high school division, the right mix of brains and brawn was the key to victory for a team from Higginsville, Mo. The Lafayette County (Mo.) C-1 school's Team No. 2 bested 29 other teams representing high schools from 10 states, and repeating the first place finish by a Lafayette County High School team in the 2002 Great Moonbuggy Race. Besides the first-place



Photos by Terry Leibold, NASA/Marshall Center

Collins Hill High School students from Suwanee, Ga., negotiate the terrain during the moonbuggy race. The team won the Pits Award for ingenuity and persistence in overcoming problems on the course. Their "buggy" featured a small rear wheel.

honor, the team earned a weekend trip to Space Camp at the U.S. Space & Rocket Center.

The team from East Lake High School in Chula Vista, Calif., finished second while a team from New Orleans Area Schools in New Orleans, La., placed third. Those teams also received plaques, medallions and duffel bags.

The award for best moonbuggy design in the high school division went to the team from Huntsville Center for Technology. A team from Collins Hill High School in Suwanee, Ga won the Pits Award for ingenuity and persistence in overcoming problems.

The Marshall Center, U.S. Space & Rocket Center, American Institute of Aeronautics and Astronautics Alabama-Mississippi Section, Aerospace Development Center of Alabama, Morgan Research Corp., Jacobs Sverdrup Technology and WHNT-TV 19, sponsored the event.

More photos of the event are at <http://www1.msfc.nasa.gov/NEWSROOM/news/photos/2003/photos03-056.html>.

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



Arizona State University Team No. 2 on their way to winning both the Best Moonbuggy Design Award and Pits Award in the college division of the 10th annual Great Moonbuggy Race.

Telescope

Continued from page 1

dary particles is created. The fluorescent light emitted as this “shower” passes through the air is bright enough to be observed by the observatory’s large wide-angle camera aboard the Space Station.

Nothing is known about the sources of these cosmic particles, historically dubbed “cosmic rays.” Past investigations, conducted from the ground, have recorded cosmic particles at energy levels so extreme even their existence contradicts our current understanding.

To solve this mystery, the EUSO investigation will measure the particles’ energies, track their arrival directions and take additional measurements to identify the types of particles being observed.

NASA’s portion of the investigation is a joint collaboration between the Marshall Center and the University of Alabama in Huntsville. Both are partners in the National Space Science and Technology Center. The other partners in EUSO are Vanderbilt University in Nashville, the University of California in Los Angeles and the University of California in Berkeley.



Photo by Doug Stoffer, NASA/Marshall Center

Dr. James H. Adams Jr. with a prototype for a portion of the largest fresnel lens ever designed for orbit. Adams leads the Marshall team contributing to the Extreme Universe Space Observatory.

The EUSO telescope will have the largest fresnel lens ever placed in orbit. Weighing much less than conventional optics, fresnel lenses have multiple concentric zones, each forming a lens segment. Acting together, these segments collect and focus the light from these particle showers. This lens type is named for Augustin Fresnel, a French scientist

who first developed it for lighthouses.

The lens will be manufactured by the Marshall Center in its Space Optics Manufacturing and Technology Center from a design created by UAH. The EUSO telescope is expected to launch in 2009.

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Oakwood students learn safety tips with help from Marshall team

From the Safety and Mission Assurance Office

The Safety and Mission Assurance team recently helped spread the Marshall Center’s messages on personal safety at the Oakwood College Safety and Health Fair on the school’s Huntsville campus.

Kyle Daniel and Sonya Hutchinson, both of QS50, and Keegan Jackson, of QS20, staffed the Marshall exhibit booth, which featured displays on dormitory safety, handouts, and a computer-based Safety Jeopardy Game.

“The students showed an overall enthusiastic reaction to the presence of NASA,” Jackson said. “We shared how general safety relates to their everyday environment — things like food safety, electrical safety, home repair safety and dorm safety.”

Information on tornado safety also was of particular interest to the students, said Jackson. “A lot of students at Oakwood are international students who have never really had to deal with the threat of a tornado.”

The Safety Jeopardy Game was a popular activity, offering Frisbees, tote bags, and mind teaser puzzles as prizes for those



Marshall Imaging Services

Kyle Daniel, left, and Keegan Jackson, right, hand out safety literature to Oakwood students.

who answered the multiple choice safety questions.

The Marshall Center was invited to participate to heighten safety and health awareness among students, faculty, and staff by Sandra Griffin, the Oakwood College risk control coordinator.

10th annual Great Moonbuggy Race brings

And the winners are ...



Photo by Emmett Given, NASA/Marshall Center

First place

North Dakota State University Team No. 1, from Fargo, pedals to win first place in the college division of the 10th annual Great Moonbuggy Race.



Photo by Terry Leibold, NASA/Marshall Center

Second place

University of Tennessee Team No. 1 from Knoxville comes in second place in the college division.



Photo by Terry Leibold, NASA/Marshall Center

Third place

Kimberly Saxton, left, and Graham Harris, right, pedal to their third-place win for the University of South Alabama in Mobile.

out competitive spirit in school teams



Photo by Terry Leibold, NASA/Marshall Center

First place

Lafayette County C-1 School Team No. 2 members get ready to race to their first-place win in the high school division. The Higginsville, Mo., team repeated the first-place win by a Lafayette County high school team in the 2002 moonbuggy race.



Photo by Doug Stoffer, NASA/Marshall Center

Second place

East Lake High School team members from Chula Vista, Calif., coast to a second-place finish in the high school division.



Photo by Terry Leibold, NASA/Marshall Center

Third place

The New Orleans Area Schools team goes over a rough spot on its way to a third-place win in the high school division.

NASA revamps 'Starship 2040' Web presence

by Martin Jensen

As NASA's Starship 2040 conducts a five-stop tour through eastern Texas, NASA officials are marking the event — and the space transportation exhibit's two-year anniversary — by unveiling a revamped Web presence.

Like Starship 2040 itself, the Web site is expected to give visitors an unprecedented and fun glimpse of what a passenger spacecraft might look like in four decades.

The Starship 2040 exhibit, created and maintained by the Marshall Center, is a mock-up of a commercial spaceliner housed in a 48-foot tractor-trailer rig, complete with flight deck, passenger compartment and engineering bay.

Visit the new Starship 2040 Web site, developed and maintained by the Marshall Center's Media Relations Department, at:

<http://www.Starship2040.com>.

Highlights of the site include details of the exhibit's design and development, tour information and links to NASA education and technology sites. A unique "Starship Experience" section even offers "flight" information, boarding instructions and a virtual tour of the ship to tantalize prospective "passengers" — a provocative glimpse into a world where space travel is as routine as commercial air transportation.

But the "imaginative reality" of this potential future isn't the primary message of the Starship 2040 Web site. Like the exhibit itself, the site's main mission is to showcase space transportation and propulsion technologies now in development by NASA and its research partners. And, also like the exhibit, the site packages this information in an entertaining and enlightening way — engaging

students and older visitors alike.

Starship 2040 represents the promise and potential of today's most ambitious NASA pursuits:

- The Space Launch Initiative, the key to opening the space frontier for continued scientific exploration and economic expansion — improving launch vehicle safety, reliability and affordability for government and private industry, and;
- The In-Space Propulsion Technology program, which seeks innovative new propulsion solutions to replace conventional chemical fuels, enabling robust science and exploration missions throughout the solar system.

In its first two years on the road, Starship 2040 visited nearly 40 cities in 20 states, drawing more than half-a-million total visitors.

The writer supports the Media Relations Department.

Job Announcements

MS03C0067, Administrative Officer. GS-341-07 (promotion potential to GS-11), Space Transportation Directorate, Business and Administrative Office. Contact: Patricia Caraway at 544-7755. Competitive Placement Plan. Closes April 17.

MS03C0072, Program Specialist. GS-0301 07 (promotion potential to GS-11). Second Generation RLV Program Office, Systems Engineering and Integration Office. This is a PIP position. Closes April 18.

MS03N0071, AST, Mission Support Requirements and Development. GS-801-13, Flight Projects Directorate, Payload Operations and Integration Department, Training and Crew Operations Group. Closes April 22.

MS03N0075, Center Operations Support Specialist. GS-301-12, Center Operations Directorate, Integrated Customer Support Department, Operations and Sustaining Support Group. Contact: Dana Blaine at 544-7514. Closes April 24.

MS03C0076, Lead Inventory Management Specialist. GS-2010-13, Center Operations Directorate, Logistics Services Department, Property Management Group. Contact: Dana Blaine at 544-7514. Closes April 17.

MS03C0077, Administrative Officer. GS-341-07 (promotion potential to GS-11), Procurement Office. Contact: Allan Day at 544-4079. Competitive Placement Plan. Closes April 25.

MS03D0079, AST, Human/Machine Systems. GS-801-13, Engineering Directorate, Engineering Systems Department, Systems Engineering Support Group. DEU/Outside Hire. Contact: Gene Fundum at 544-3366. Closes April 18.

For a complete list of vacancy announcements, go to http://www1.msfc.nasa.gov/INSIDE/announcements/msfc_jobs.html.

Obituaries

Eugene M. Maples, 79, of Owens Cross Roads, died March 1. He retired from the Marshall Center in 1974 where he worked as an aerospace engineer.

Maples is survived by his wife, Jamie Russell Maples.

Douglas W. Westrope Jr., 76, of Huntsville, died April 9. Funeral services were held at Covenant Presbyterian

Church with the Rev. Hal Oakley officiating. Burial was in Madison City Cemetery with Laughlin Service Funeral Home directing.

Westrope was a U.S. Navy veteran of World War II and the Korean War. He was a member of MENSA, coached little league baseball, YMCA football and basketball, and was a member of Covenant Presbyterian Church. He was a graduate of the Georgia Institute of Technology. He

retired from the Marshall Center in 1994 where he was an aerospace engineer.

He is survived by his wife, Jeanne; three sons, Douglas W. Westrope III and Drew Westrope, both of Madison, and Clay Westrope of Huntsville; one daughter, Christine Austin of Birmingham; two sisters, Shirley Gural of Rosedale, Long Island, N.Y., and Corrine Westrope of Oxon Hill, Md.; and eight grandchildren.

Center Announcements

Annual 'Software of the Year' competition nominations open

The annual call for nominations for the NASA Software of the Year Award is open until Friday. The award is for recognition of software developed and owned by NASA. The recognition includes a Space Act award of up to \$100,000. For details, see "Inside Marshall" or call 544-0013 or 544-0014.

AIAA annual Section Award nominations open until Friday

The American Institute of Aeronautics and Astronautics Alabama-Mississippi Section 2002-2003 Annual Section Awards nominations are open until Friday. The awards will be presented at the annual Officers and Board of Director Installation and Awards Banquet on May 15. For more information, see "Inside Marshall" or call Steve Noneman at 544-2048.

New print servers added to IDS Utilities at Marshall

Three new print servers have been added to the IDS Utilities folder at the Marshall Center. Employees should delete their current installed printer and then install their printer from one of the new servers. The old print server will be retired April 30. For print queues of the new servers, see "Inside Marshall." Call 544-HELP, Option 7, for questions regarding how to load the print queue.

Dial-in and VPN require security registration

Marshall team members who use the Virtual Private Network software to connect to the Marshall Private Network, or who dial directly into the network from home or TDY, must apply for a MSFC RSA SecurID Token in April, May or June. For more information, including frequently asked questions and an updated schedule to apply, go to http://www1.msfc.nasa.gov/INSIDE/announcements/dial_in_token.html.

For more Center Announcements, see "Inside Marshall"

MARS Skeet and Trap Club beginning season

The MARS Skeet and Trap Club informal leagues will hold shoots until daylight savings time ends in the fall. The Skeet League shoots on Wednesdays and the Trap League shoots on Thursdays. Both leagues begin at about 3:30 p.m. and run until dark. Shooting is informal. For more information, call Randy Thornton at 544-1141.

Management Operations Office retirees meet April 24

Management Operations Office retirees will meet for brunch at 10 a.m. April 24 at the Cracker Barrel Restaurant in Madison. For more information, call 539-0042.

AIAA dinner meeting is April 17

The American Institute of Aeronautics and Astronautics will meet at 5 p.m. April 17 at the Radisson Suite Hotel at 6000 South Memorial Parkway in Huntsville. AIAA Fellow William F. Chana will speak on "Understanding the Wright Brothers." Cost is \$20 for adults and \$10 for students. Reservations are required. For more information, call Tom Hancock at 722-5555 or 961-4002 or e-mail tom.hancock@msfc.nasa.gov.

Shuttle Buddies to meet

The Shuttle Buddies will meet at 9 a.m. April 28 at Mullins Restaurant on Andrew Jackson Way in Huntsville. For more information, call Deemer Self at 881-7757.

Dinner to celebrate J.F. Drake State Technical College

A dinner celebrating more than 40 years of educational excellence and service of J.F. Drake State Technical College will be at 7 p.m. May 1 at the Von Braun Center North Hall. The Marshall Center's Education Department, Government and Community Relations Department, and the Customer and Employee Relations Department are sponsoring a NASA/Marshall table to support the event.

Tickets cost \$50 and reservations are due by April 25 to Rosa Kilpatrick at 544-0042.

T-shirt distribution set for 'Take Our Children to Work Day'

T-shirts for the "Take Our Children to Work Day" event will be distributed in the Bldg. 4203 lobby on Monday from 10 a.m.-3 p.m., Tuesday from 10 a.m.-2 p.m. and Wednesday from 10 a.m.-4:30 p.m.

Thrift Savings Plan season open

The Thrift Savings Plan open season closes June 30 for employees wanting to begin, increase or decrease, contributions to their account. For more information, see "Inside Marshall" or call 544-5654 or 544-7536.

MARS Tennis Club posts tournament results

Bernice Bowling and Ronda Moyers won first place in the MARS Tennis Club Hi-Lo Tournament on April 5. Bob Goss and Bruce Guy won second place, while Brian Meade and Phil Hays won third place. The next tournament will be May 3. NASA employees, retirees, on-site contractors and family members are eligible for membership. For more information, call 544-7097.

Astronomy program is April 26

The Von Braun Astronomical Society will present a program on "Wimps and Machos at the End of the Universe" by astronomer Dr. Rob Preece. The event is at 7:30 p.m. April 26 at the Von Braun Planetarium in Monte Sano State Park. Admission is \$3 for adults and \$2 for children 12 and under. For details, call Mitzi Adams at 961-7626.

LatinFest Dance set for May 3

The Alabama Hispanic Association is sponsoring a "LatinFest" dance at 9 p.m. on May 3. Dance lessons begin at 8 p.m. at the Senior Center on Drake Avenue at Ivy Avenue in Huntsville. For more information, call 544-6658.

Employee Ads

Miscellaneous

- ★ Pellet rifle, assault style w/folding stock, one pump clip-fed, all wood/steel .177 cal. \$60. 306-0700
- ★ Corner cupboard, Cherry, \$1,300. 882-0271
- ★ Pump-in-Style double electric breast pump, \$150. 931-433-1888
- ★ Couch/love seat, washer/dryer, king size mattress & frame. 658-7768
- ★ Fender Princeton chorus amplifier w/ footswitch, \$200; Coleman 14' canoe, oars, life jackets, \$350. 461-8077
- ★ Olympus D-270 digital camera 1.3M pixel, 2X digital zoom, two memory cards, software, \$135. 777-6318
- ★ Bushnell computerized star locator, 563x60mm telescope w/up to 563X magnification, tripod, lens, eyepieces, \$100. 256-656-0077
- ★ Women/Girls 26" 18-speed bike, \$85; waterbed, wood frame w/mirror & liner, \$100. 256-859-1947
- ★ Four tires w/rims for Honda Accord, hubcaps & lug nuts, \$200. 830-5140
- ★ Solid Oak Sumter bedroom set, two-twin beds w/mattress sets, dresser w/ mirror, chest-of-drawers. 722-5282
- ★ Swimming pool, 4'x18', pump, filter, & ladder, \$200. 233-5403
- ★ Sony surround sound system, Bose 401 front, Sony center & rear, DTS Dolby. 882-0431
- ★ Wooden folding ladder, 6', \$20. 922-1424
- ★ Yamaha A31 stereo amplifier, 115-watt/ 7-band graphic equalizer; Yamaha T-33 stereo tuner, both \$85. 864-0465
- ★ Window AC/heater, 230/208 VAC, \$250. 714-3495
- ★ Sleeper sofa, recliner, solid oak dining table, twin bed, component stereo. 256-653-7792
- ★ 1997 Premier pontoon, 21', 90HP

- motor trailer, full-cover, conv.-top, one-owner, \$9,900. 828-4211
- ★ Grandfather clock, 6', German movement, sun & moon face, cleaned and tuned, \$545. 682-1431
- ★ MacGregor golf bag, black w/silver trim, \$30. 533-4824
- ★ MTD tiller, rear tine, 5HP, \$350; Queen bedroom suite, dresser, mirror, end tables, \$1,200. 1-256-586-7424
- ★ Stair stepper, black, \$25; file cabinet, 2-drawer, \$15. 256-859-1947
- ★ Hay baler, 6' diameter 5' wide variable throat, fully loaded, \$14,500. 852-5446 after 5 p.m.
- ★ AKC German Shepherd puppies, born 1/17/03, 2 males, black & tan, shots, \$350. 256-694-5912
- ★ Streaker go-kart, gas powered, \$400. 533-5942
- ★ Metal bunk beds, \$50; white Appaloosa horse, \$500. 256-316-1880
- ★ Murray Go-Cart, 2-person, safety belts/ harness roll-bar, \$550; solid Mahogany executive desk, \$300. 881-3527
- ★ Trailer built for 4-wheeler, aluminum, load ramps, \$7. 534-5398
- ★ Forward Pacer wheels, new, 15x5, in box, \$500; trailer, tilt, 4x8, \$350. 652-1495/707-6544 beeper
- ★ Flex cross training system, power band exercise machine w/stepper attachment, \$50 obo. 881-6862

Vehicles

- ★ 2001 Dodge Durango SLT, dark green, fully loaded, one-owner, leather, 33K miles, \$17,000. 773-8458
- ★ 1994 GMC SL truck, 4x4, Z71, black, CD, auto, \$6,900. 256-796-5136
- ★ 1995 Explorer, Eddie Bauer, leather, power seats, windows, door locks, 108K miles, hitch, \$6,900. 880-6563
- ★ 1994 Class A Triple motorhome, 46K miles, 230 Cummins Diesel w/6-speed

- Allison, \$48,000. 256-883-8523
- ★ 1997 Nissan Maxima SE, 82K miles, white, 16" rims, automatic, CD, new brakes, \$10,200. 881-8674
- ★ 1999 Ford Ranger XLT Sport, 6-cyl., CD, cruise, power windows/locks, fiberglass truck cab, \$9,800. 859-0729
- ★ 1992 Chevy Silverado Sportside pickup, blue, 4.3L engine, \$4,000. 256-878-9345 after 6 p.m.
- ★ 1996 Monte Carlo LS Coupe, V6, green, loaded, auto, 91K miles, one-owner, \$5,500. 350-3226
- ★ 1969 Chevrolet Caprice, 350/300HP, all original, garage kept, many extras, \$9,500. 256-883-6416
- ★ 1998 Ford Expedition, Eddie Bauer, fully loaded, leather, power moonroof, 88K miles, \$15,500. 256-233-8336
- ★ 1999 Lexus LX470, SUV, pearl w/tan heated leather, moonroof, Nakamichi stereo, hands-free cell, \$31,900. 350-2901
- ★ 1999 Honda CR-V LX, 2WD, red, auto, roof rack, keyless entry, 80K miles, \$11,200. 256-739-6840

Wanted

- ★ Ride to work, near Huntsville Hospital, 7 a.m.-3:30 p.m., \$6 per day. 534-5398
- ★ Scout uniforms/items for Troop/Pack closet, donations preferred. 233-4680/ Athens
- ★ Used trailer for the purpose of transporting a standard size lawnmower. 746-1910

Free

- ★ Pine trees suitable for pole building, cut to specifications, i.e. diameters and lengths. 881-6040
- ★ Female indoor cat, spayed, declawed, 2-years old. 881-8176

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