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The Right Tool For The Job Langley's GIS Web Site Offers A Wealth Of Information

By **JIM ROBERTS**
Researcher News *editor*

Do-it-yourselfers are familiar with the expression: "Always use the right tool for the job." Of course, it implies that the do-it-yourselfer knows what the right tool is.

Langley Research Center's Geographic Information Systems (GIS) Team has the right tool for many jobs, but a lot of people don't even know it exists.

Case in point: Last September, when Hurricane Isabel was threatening southeastern Virginia, only 150 people visited the GIS web site to check on the potential effect of storm surge on Langley's land and facilities.

Those "in the know" visited the site, entered the predicted tidal data and could instantly see aerial maps of the Center clearly showing not only where the water would be, but how deep it would be.

The right tool for the job, indeed.

So what is GIS? The National Science Foundation defines it as a computerized database management system used for the capture, storage, retrieval, analysis and display of spatial data. GIS software gen-

erates computer maps and links the underlying data stored in traditional electronic databases to these maps.

At Langley, GIS is used for things as simple as locating a building or room to viewing detailed drawings of the electrical, water and steam systems.

(To see Langley's GIS capabilities firsthand, visit: <http://gis-www.larc.nasa.gov/>.)

"The value is far more than the sum of any of its parts," said William "Brad" Ball, leader of Langley's GIS Team.

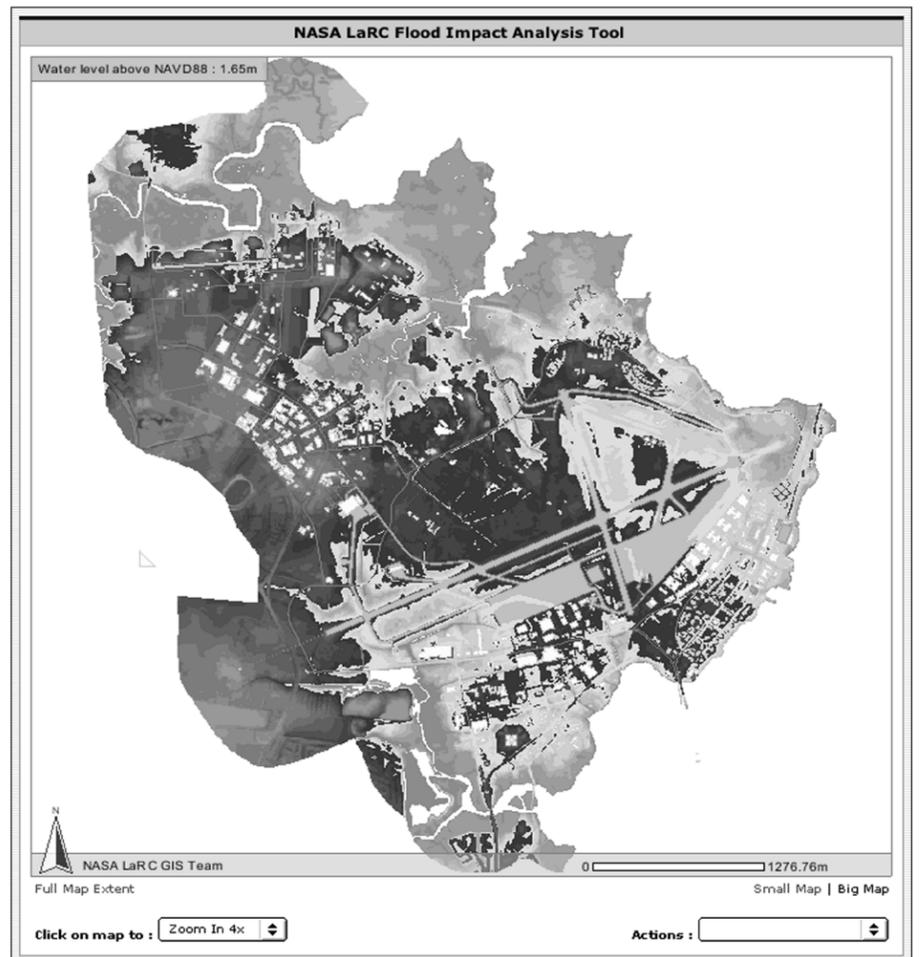
Ball said the GIS site should be the "go-to" web site for anyone who needs spatial data to help them make decisions. For example, once all the data is collected, a facility safety head could find out how many fire extinguishers are

in a particular building, not to mention where they are and when they were last inspected.

How does it work?

Every piece of spatial data is characterized in one of three ways — "point, line or polygon" — and entered into a GIS database. The data can be called out and displayed visually and in layers.

Every piece of spatial data can be called out and displayed visually and in layers. Simply put, if a picture is worth a thousand words, the GIS site is worth millions.



The Geographic Information Systems (GIS) Team's Flood Impact Analysis Tool can be used to visualize the potential effect of storm surge on Langley's land and facilities. (The light gray areas in this image show where the water would likely be at five feet over mean high water at Sewells Point.) Last September, when Hurricane Isabel was threatening southeastern Virginia, only 150 people visited the GIS web site to use the tool.

Image from the GIS web site

Continued on Page 4

NIA Names First Langley Professor

By **KATHY BARNSTORFF**
Langley Research Center

The National Institute of Aerospace (NIA) has appointed the first of six Langley Professors.

Alan Wilhite will become Langley Professor in Advanced Aerospace Systems Architecture for the Georgia Institute of Technology, one of the six founding member universities of the NIA. Wilhite will be the principal Georgia Tech faculty member resident at the NIA and

will lead its research program in the field of systems analysis, with primary emphasis on developing life-cycle systems analysis and risk methodologies for advanced aerospace system architectures.

The NIA is a world-class, non-profit research and graduate institute located near Langley Research Center. It was created to support Langley's mission to do cutting-edge aerospace and atmospheric research,



Wilhite

develop new technologies for the nation, and help train the next generation of scientists and engineers.

"NASA Langley is excited to see the National Institute of Aerospace moving forward with the hiring of the first distinguished Langley Professor," said Randy Rooker, deputy director of the NIA Management Office. "The Langley Professorship Program was created to attract talent that will complement

NASA Langley's research strengths in aerospace systems and atmospheric science."

Since 2001, Wilhite has held the position of Eminent Scholar in Systems Engineering and Simulation at the University of Alabama in Huntsville. He previously served as director of Langley's Independent Program Assessment Office and director of Langley's Systems Management Office. He received a bache-

Continued on Page 3

Inside
This Issue:



'Aero Art' Exhibit
Moves To Washington
Page 3



Mars Rovers Get
OT Assignments
Page 5

NASA Vision: To improve life here, To extend life to there, To find life beyond
NASA Mission: To understand and protect our home planet • To explore the Universe and search for life
To inspire the next generation of explorers ... as only NASA can

Around the Agency

NORTH ATLANTIC CURRENT WEAKENING

A NASA study shows that a North Atlantic Ocean circulation system weakened considerably in the late 1990s, compared to the 1970s and 1980s.

Sirpa Hakkinen, lead author and researcher at Goddard Space Flight Center, and co-author Peter Rhines, an oceanographer at the University of Washington, believe slowing of this ocean current is an indication of dramatic changes in the North Atlantic Ocean climate. The study's results about the system that moves water in a counterclockwise pattern from Ireland to Labrador were published on the Internet by the journal *Science* on the Science Express web site: <<http://www.scienceexpress.org>>.

The current, known as the sub polar gyre, has weakened in the past in connection with certain phases of a large-scale atmospheric pressure system known as the North Atlantic Oscillation (NAO). But the NAO has switched phases twice in the 1990s, while the subpolar gyre current has continued to weaken. Whether the trend is part of a natural cycle or the result of other factors related to global warming is unknown. NASA HQ RELEASE: 04-130

NASA PRAISED FOR PMA SUCCESS

NASA has been recognized for achieving the highest standard in Strategic Management of Human Capital and Budget and Performance Integration.

Kay Coles James, director of the Office of Personnel Management, and Clay Johnson III, deputy director of the Office of Management and Budget, recognized NASA Administrator Sean O'Keefe for his leadership of the effort.

"This is a great achievement for NASA," O'Keefe said. "The hard work, dedication and technical excellence of our human resources and budget teams resulted in significant improvement in critical management areas. The entire NASA family is proud of the teams being honored today."

For information about PMA, visit: <<http://www.whitehouse.gov/omb/budget/fy2002/mgmt.pdf>>. NASA HQ RELEASE: 04-124

NASA NAMES EXPLORATION PROJECT DIRECTORS

NASA has selected Garry M. Lyles as deputy director of Project Constellation and Charles J. Precourt as program director of the Crew Exploration Vehicle (CEV).

"I am very excited about the addition of these two excellent managers to the Office of Exploration Systems' team," said Craig Steidle, NASA's Associate Administrator for the Office of Exploration Systems. "Their experience and skills will be critical as we begin developing plans for extending human presence to the moon by 2015."

Lyles is responsible for the development of all exploration transportation and support systems needed to achieve the Vision for Space Exploration. Precourt is responsible for developing the CEV, NASA's first human exploratory spacecraft since Apollo. NASA HQ RELEASE: 04-120

Rep. Joann Davis Visits



Rep. Jo Ann Davis (right) tours Langley Research Center's 14-by-22-Foot Wind Tunnel during a visit on April 15. Also pictured are (left to right) Langley employees Jennifer McNabb, Frank Quinto, Cynthia Lee and Doug Dwoyer and Center Director Roy. D. Bridges Jr. Following her tour and lunch, Davis spoke to Langley employees and contractors in the H.J.E. Reid Conference Center, fielding questions about her role as chair of the Civil Service Subcommittee, the NASA Shared Services Center and Vision for Exploration. Davis said she supports going to Mars, but not at the expense of funding of aeronautics.

Photo by Jeff Caplan

400 Employees Begin ROME Work On May 1

More than 400 Jacobs Sverdrup employees will begin working at Langley Research Center on May 1 in support of the Research Operations, Maintenance and Engineering (ROME) contract.

The contract includes a broad scope of facility-related operations, maintenance, engineering and related information technology support services, including the development of new and emerging technologies.

The ROME Customer Service Management Center (CSMC) staff will process service requests. The CSMC, located in Bldg. 1199, Room 107A, will be open from 6 a.m. to 6 p.m. Monday through Friday, except on federal holidays. The after-hours office will be located in Bldg. 1215, Room 103.

To request service, call the ROME Group at 864-7663 (ROME). For more information or to submit an electronic request, visit the ROME web site at: <<http://rome.larc.nasa.gov>>.

VASC Reports Large Increase In Attendance

The Virginia Air & Space Center (VASC) announced that it experienced its best March ever, with an 80 percent increase in attendance over the previous year.

Kim Hinson, deputy director of the VASC attributed the increase to the positive response to the new Adventures in Flight gallery, the "NASCAR 3D" IMAX film and the traveling exhibit "Circus: Science Under the Big Top."

"We really have something for everyone to enjoy with a strong mix of educational and entertaining exhibits and IMAX films," Hinson said.

Since the opening of the \$6.4 million Adventures in Flight gallery and Riverside 3D IMAX Theater in November, the VASC has experi-

enced a 40 percent increase in admissions. It also has seen substantial increases in revenue through admission sales, memberships, special events and café and museum store sales.

The VASC is the official visitor center for Langley Research Center.

In Memoriam

Theodore H. Elder

Theodore H. Elder died on April 6. Elder, a native of Homer, N.Y., retired from NASA after 35 years of service.

Robert L. Fox

Robert L. Fox died on April 4 at the age of 52. Fox, a native of York County, worked as an electronic technician at Langley Research Center's Technology Development and Integration Branch. He retired in March after 33 years of service.

"Bob was noted for his relentless dedication to his job, but of equal importance for his loyalty to his family, friends and co-workers," said S. Stewart Harris Jr. of Langley's Systems Engineering Competency. "The high standards that he set for himself served as an example to all who worked with him. He will be greatly missed by his friends and colleagues."

William C. Holloway

William "Chink" Christian Holloway died on April 7 at the age of 85. Holloway, a native of Poquoson, retired from NASA in 1976 after 27 years of service.

David R. Mason Jr.

David Routten Mason Jr. died on April 10 at the age of 59. Mason, a native of Hampton, retired from NASA after 30 years of service.

News Researcher

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The privilege of listing announcements in this publication is restricted to the employees, contractors and retirees of the Langley Research Center. Articles must be offered without regard to race, color, religion, sex or national origin. All materials are subject to editing.

Read the *Researcher News* online at
<<http://researchernews.larc.nasa.gov>>.

X-43 Offers Treasure Trove Of Data

By GRAY CREECH

Dryden Flight Research Center

NASA's successful X-43A hypersonic research aircraft flight resulted in a treasure trove of scramjet data.

The initial data review, conducted on March 31, confirmed high-fidelity flight data was obtained throughout the vehicle's boost, stage separation and descent to splash down.

"The data clearly shows, and without question, that scramjets work," said X-43A chief engineer Griff Corpening of Dryden Flight Research Center. "But we did see a couple of areas that differed from what was seen in the wind tunnels, thus reinforcing the need for flight testing."

Some significant aviation milestones occurred during this combined effort by Dryden, Langley Research Center and their industry partners. The milestones

"The data clearly shows, and without question, that scramjets work. ... We flew very closely to how we predicted we would fly in terms of Mach, dynamic pressure, vehicle angle of attack, vehicle yaw and vehicle roll."

Griff Corpening

included the first controlled accelerating flight at Mach 7 under scramjet power; the first air-breathing, scramjet-powered free flight; and the first successful stage separation at high dynamic pressure of two non-axisymmetric vehicles.

The flight also set a new aeronautical speed record. The X-43A reached more than Mach 7, approximately 5,000 mph. That was faster than any known aircraft powered by an air-breathing engine has ever flown.

"We flew very closely to how we pre-

dicted we would fly in terms of Mach, dynamic pressure, vehicle angle of attack, vehicle yaw and vehicle roll," Corpening said.

The March 27 flight from Dryden began with NASA's B-52B launch aircraft carrying the X-43A to the test range over the Pacific Ocean off the California coast. A modified Pegasus rocket boosted the X-43A to its test altitude of about 95,000 feet. It separated from the booster and flew freely under its own power. The vehicle landed in the Pacific Ocean at the

end of the test. Planning is underway for the next flight this fall at Mach 10, approximately 7,500 mph.

Langley and Dryden conduct the Hyper-X program. ATK GASL in Tullahoma, Tenn., built the vehicle and the engine; Boeing Phantom Works in Huntington Beach, Calif., designed the thermal protection and onboard systems; and Orbital Sciences Corp. Chandler, Ariz. built the modified Pegasus rocket booster.

■ For information about the program on the Internet, visit: www.nasa.gov/missions/research/x43-main.html.

Gray Creech is an employee in Dryden Flight Research Center's Public Affairs Office. Keith Henry is Langley Research Center and Michael Braukus of NASA Headquarters also contributed to this story.

Aero Art Exhibit Moves To Washington



The "Aerospace Design" art show that was featured last year at the Art Institute of Chicago has moved to the Octagon Museum in Washington, D.C., and will remain on display through Dec. 5.

The exhibit, subtitled "The Art of Engineering from NASA's Aeronautical Research," explores the power and beauty of aerospace design, from early wind tunnel models to modern aeronautical engineering. It features 65 NASA artifacts, including many from Langley Research Center. (The invitation, shown here, features a photo from the 1990 rehabilitation of Langley's 16-Foot Transonic Tunnel.)

The exhibit was organized by the Art Institute of Chicago and NASA's Aeronautics Enterprise. Tom Dixon, a Planners Collaborative employee working in Langley's Public Services Office, collected the artifacts for the show.

The Octagon exhibit is sponsored by the American Architectural Foundation.

The Octagon Museum is open from 10 a.m. to 4 p.m. Tuesday through Sunday. For more information, visit: <http://www.archfoundation.org/octagon/>.

NIA

Continued from Page 1

lor's degree in aerospace engineering from North Carolina State University, a master's degree in flight systems from George Washington University and a doctorate in aerospace engineering from N.C. State.

"Dr. Wilhite's appointment is an important step forward for NIA's research and graduate education missions," said Robert Lindberg, NIA president and executive director. "He is an accomplished research leader with a national reputation for his work in life-cycle simulation of advanced aerospace systems."

Each Langley Professor will hold a

"Dr. Wilhite's appointment is an important step forward for NIA's research and graduate education missions."

Robert Lindberg

teaching and research faculty appointment at one of the founding member universities. They will work as an integrated team with the NIA president and vice presidents, the Langley NIA Management Office and research community, and the NIA Liaison Professors at the six NIA founding universities to create a unique research and education institute. NIA's founding members continue to recruit

Langley Professors for distinguished faculty in the fields of earth system science, high-confidence computational systems, quantum/molecular materials design for sensors, multifunctional design, and smart, adaptive aerospace vehicle technology and concept development.

NIA was formed by a consortium of universities and the American Institute of Aeronautics and Astronautics Foundation.

The roster of major research universities includes consortium members: Georgia Institute of Technology, Hampton University, North Carolina A&T State University, North Carolina State University, University of Maryland, University of Virginia, Virginia Polytechnic Institute and State University, and affiliate members: Old Dominion University and the College of William & Mary.

■ More information about the National Institute of Aerospace is available at: <http://www.nianet.org>.

Kathy Barnstorff works in Langley's Public Affairs Office. Shannon Verstynen of the National Institute of Aerospace also contributed to this story.

Markovits To Speak On Innovation

Langley Research Center's Culture Kick Start Team will host a presentation on innovation by Gary Markovits at 9 a.m. April 23 in the H.J.E. Reid Conference Center.

Every year, the Organisation for Economic Co-operation and Development (OECD) nations collectively spend more than half a trillion dollars on research and development (R&D). This dwarfs the R&D budgets of even the largest federal or commercial laboratories. How can an R&D organization leverage this investment? How can scientists and engineers

learn from the knowledge that is generated by this half trillion dollars to accelerate invention and increase the capacity for innovation?

Markovits, CEO of Innovation Business Partners, will discuss tools and processes that can be used to accelerate innovation and dramatically increase the rate of invention. When tested by the U.S. Navy, the tools increased the rate of invention by the benchmark teams by more than 100 times and saved



Markovits

several years and millions of dollars in R&D. The processes enabled teams to learn from and leverage the R&D of others.

Markovits has many years of leadership and management experience in both Fortune 100 and start-up companies. He has held executive positions at IBM, WinStar Telecommunications, Community School Networks and Innovation Business Partners, consulted to major corporations on strategy and intellectual property, and founded several

companies, including an Internet company that he eventually sold to a telecommunications leader.

He is a recognized expert who has testified to Congress on issues of advanced manufacturing systems technology and manufacturing competitiveness. During the downsizing of IBM, Markovits was appointed to an economic development action committee by New York Lt. Governor Stan Lundine. The results of this committee created a business incubator that has spawned more than 30 new businesses in the Hudson Valley.

Colloquium and Sigma Series Lectures

The Wright Experience On 'The Secrets Of Flight'

Ken Hyde, Terry Queijo and Kevin Kochersberger of the Wright Experience will present a Colloquium lecture titled "Discovering the Secrets of Flight" at 2 p.m. May 4 in Langley Research Center's H.J.E. Reid Conference Center. A Sigma Series lecture will follow at 7:30 p.m. at the Virginia Air & Space Center in Hampton.

The Lecture

Ken Hyde formed the Wright Experience to discover and preserve the secrets of the Wright Brothers to inspire future generations. The talk will describe the team's extensive research that led to the building, testing and flying of accurate reproductions of the Wright brothers' gliders and 1903 Flyer.

Pilot training using gliders, simulators and modifications to the 1902 glider will

be discussed. Challenges of piloting the 1903 Flyer will be explained, and flight data and videos from the historic flights at Kitty Hawk will be shown. The team also will describe the significant support they received from local groups and their future plans.

The Speakers

Hyde's passion for aviation came at an early age — he earned his pilot's and mechanic's licenses while still in high school. He was a pilot for American Airlines for 33 years. In 1965, he founded Virginia Aviation, an antique aircraft restoration company, through which he gained national attention. In 1992, he became interested in rediscovering and preserving the secrets of the Wright Brothers. That commitment led Hyde and



Hyde



Queijo



Kochersberger

Boeing 757s and 767s. Queijo was chosen as one of the pilots to fly the Wright Flyer at Kitty Hawk.

Kochersberger is an active glider and power pilot with 1,500 hours. He holds a doctorate in mechanical engineering from Virginia Tech and is an associate professor of mechanical engineering at the Rochester Institute of Technology. He participated in the Wright Experience's effort to

conduct an in depth analysis of the Wright aircraft. He assisted in the wind tunnel tests of Wright aircraft at the Langley Full-Scale Tunnel and the development of the simulator used for pilot training. He successfully flew the 1903 flyer twice in Kitty Hawk.

■ For more information about the lecture series, visit <<http://shemesh.larc.nasa.gov/Lectures/>> on the Internet.

his wife to form the Wright Experience, which was commissioned to build a replica of the Wright Flyer and to fly it on Dec. 17, 2003, in Kitty Hawk, N.C.

Queijo became an avid skydiver while in college at Virginia Tech and started her career in aviation by flying skydivers. She was hired by American Airlines in 1985 and made aviation history by co-piloting the first all-female flight crew for American in 1987. By 1991, she achieved captain status and today she captains

GIS

Continued from Page 1

Simply put, if a picture is worth a thousand words, the GIS site is worth millions.

Some of the data is new, but most of it is being transferred from hard copy — some dating back 40 years.

"This is not an attempt to capture all the data for the Center," Ball said. "What this is is an attempt to integrate all the existing data."

Langley's GIS Team consists of three civil servants, nine contract staff and six interns. Although it has been around for more than 10 years, it has become more and more integral of late, thanks in part to a vote of confidence from Wilson Lundy, director of Langley's Research Facilities Systems Competency.

Ball said Center Director Roy D. Bridges Jr. is also an advocate of GIS. When he was Director at Kennedy Space Center and a water main burst, he reportedly asked, "Where is my GIS to support decision-making on where we're going to go from here?"

Ironically, a significant amount of the work the GIS Team does is for other



Brad Ball (right) poses with the members of Langley Research Center's Geographic Information Systems (GIS) Team. Ironically, a significant amount of the work the GIS Team does is for other facilities. The team has supported GIS projects at other NASA Centers, the White Sands Test Facility and even the U.S. Geological Survey.

Photo by Jeff Caplan

facilities. The team has supported GIS projects at other NASA Centers, the White Sands Test Facility and even the U.S. Geological Survey.

It has been recognized for setting the standard, not only for NASA but also

more widely in the federal government.

The team recently completed the Master Plan Online, which is being cultivated as a central access point for all spatial data at Langley. The Team also is developing Business Plan 2.0, an update

of the original GIS Business Plan, originally published in 1995. The plan includes a vision of future applications of GIS to Langley's facilities management processes as well as to safety, security, environmental management and even core scientific research programs is presented.

The team also is working on a new web capability that will allow Langley organizations to better understand their use of office space as well as potential occupancy levels for facilities under new Center space utilization guidelines. The initial tool should be available by the end of April.

Ball and the other members of the GIS Team know what an effective resource they have on their hands. They just hope more people learn about it and embrace it as "the right tool for the job."

■ The GIS Master Plan Online can be found at: <<http://gis-www.larc.nasa.gov/masterplan/>>, and Business Plan 2.0 can be found at: <http://gis-www.larc.nasa.gov/papers/bplan2/GIS_BusPlan_final.pdf>.

■ For more information about Langley's GIS Team, contact Brad Ball at 864-7297 or <William.B.Ball@nasa.gov>.

Rovers Get Overtime Assignments

Spirit And Opportunity Will Continue Working Through September

By **GUY WEBSTER**
Jet Propulsion Laboratory

NASA has approved an extended mission for the Mars Exploration Rovers, handing them up to five months of overtime assignments, as they finish their three-month prime mission.

The first of the two, Spirit, met the success criteria set for its prime mission. Spirit gained check marks in the final two boxes on April 3 and 5, when it exceeded 600 meters (1,969 feet) of total drive distance and completed 90 Martian operational days after landing.

Opportunity landed three weeks after Spirit. It will complete the two-rover checklist of required feats when it finishes a 90th Martian day of operations April 26. Each Martian day, or "sol," lasts about 40 minutes longer than an Earth day.

"Given the rovers' tremendous success, the project submitted a proposal for extending the mission, and we have approved it," said Orlando Figueroa, director of NASA's Mars Exploration Program.

The mission extension provides \$15 million for operating the rovers through September. The extension more than doubles exploration for less than a 2 percent additional investment, if the rovers remain in working condition. The extended mission has seven new goals for extending the science and engineering accomplishments of the prime mission.

"Once Opportunity finishes its 91st sol, everything we get from the rovers after that is a bonus," said Firouz Naderi, manager of Mars exploration at NASA's Jet Propulsion Laboratory (JPL), where the rovers were built and are controlled. "Even though the extended mission is approved to September, and the rovers could last even longer, they also might stop in their tracks next week or next



The Mars Exploration Rover Opportunity digs a trench with its left front wheel on sol 73. The trench was dug so Opportunity would be able to place its Mössbauer spectrometer on a soil target during a four-day flight software update. The trench is 95 centimeters (38 inches) long by 16 centimeters (6 inches) wide by 11 centimeters (4 inches) deep. It is the deepest hole dug by either Spirit or Opportunity to date.

Photo courtesy of JPL

month. They are operating under extremely harsh conditions. However, while Spirit is past its 'warranty,' we look forward to continued discoveries by both rovers in the months ahead."

JPL's Jennifer Trosper, Spirit mission manager, said even when a memory-management problem on the rover caused trouble for two weeks, she had confidence the rover and the operations team could get through the crisis and reach the 90-sol benchmark.

"We never felt it was over, but certainly when we were getting absolutely no data from the spacecraft and trying to fig-

ure out what happened, we were worried," she said.

Trosper was less confident about Spirit's prospects for reaching the criterion of 600 meters by sol 91, given the challenging terrain of the landing area within Gusev Crater. On sol 89, Spirit set a short-lived record for Martian driving, with a single-sol distance of 50.2 meters (165 feet) that pushed the odometer total to 617 meters (2,024 feet). Two days later, Opportunity shattered that mark with a 100-meter (328-foot) drive.

Beyond the quantifiable criteria, such as using all research tools at both landing

sites and investigating at least eight locations, the rovers have returned remarkable science results. The most dramatic have been Opportunity's findings of evidence of a shallow body of salty water in the past in the Mars Meridiani Planum region.

"We're going to continue exploring and try to understand the water story at Gusev," said Mark Adler, deputy mission manager for Spirit. Spirit is in pursuit of geological evidence for an ancient lake thought to have once filled Gusev Crater.

Reaching "Columbia Hills," which could hold geological clues to that water story, is one of seven objectives for the extended mission. Opportunity has a parallel one: to seek geologic context for the outcrop in the "Eagle" crater by reaching other outcrops in the "Endurance" crater and perhaps elsewhere. Other science objectives are to continue atmospheric studies at both sites to encompass more of Mars' seasonal cycle and to calibrate and validate data from Mars orbiters for additional types of rocks and soils examined on the ground.

Three new engineering objectives are to traverse more than a kilometer (0.62 mile) to demonstrate mobility technologies; to characterize solar-array performance over long durations of dust deposition at both landing sites; and to demonstrate long-term operation of two mobile science robots on a distant planet. During the past two weeks, rover teams at JPL have switched from Mars-clock schedules to Earth-clock schedules designed to be less stressful and more sustainable over a longer period.

■ *For more information about the Mars Exploration Rover Mission, visit: <<http://marsrovers.jpl.nasa.gov>>*

Donald Savage of NASA Headquarters also contributed to this story.

O'Keefe Immortalized In New Disney Attraction

'We're Back — And We're On Mars' Added To Epcot's 'Mission: SPACE'

By **GLENN MAHONE**
NASA Headquarters

NASA Administrator Sean O'Keefe joined NASA scientists, mission managers and a Mars rover on April 6 to help Disney's Epcot celebrate the success of the Mars Exploration Rovers Spirit and Opportunity.

O'Keefe's now famous quote, "We're back — and we're on Mars," is being added to a permanent collection of space-related quotations on the facade of Disney's latest attraction, "Mission: SPACE." The popular attraction launches visitors on a simulated space adventure to the Red Planet. "Mission: SPACE" combines NASA-based technology and imagery with the creative minds of Walt

Disney Imagineering to deliver a one-of-a-kind exploration experience.

"The attraction builds on a foundation of science fact and provides visitors a fantasy ride into the future of exploration," O'Keefe said. "It's a realistic experience that can introduce a new generation of explorers to the excitement of science, technology and discovery."

"Mission: SPACE" officially opened on Oct. 9, 2003. It is Disney's most technologically advanced attraction, relying on visual imaging, motion control and centrifuge technology to send would-be astronauts on a futuristic voyage.

"Mission: SPACE appeals to the explorer in all of us," said Al Weiss, president of Walt Disney World Resort. "NASA's triumphant Mars missions

embody that spirit of exploration. We are pleased and honored to have Administrator O'Keefe's comments taking their place at Mission: SPACE alongside those of others who dared to dream."

NASA provided Disney's Imagineering team with tours, briefings and discussions about human and robotic missions, as well as the challenges future missions, like a trip to Mars, might present. The attraction took five years and some 350,000 work-hours to build.

During a special ceremony, an actual Mars rover made a ceremonial pass through wet cement. O'Keefe's quote will be affixed near the rover's tracks in the attraction's planetary courtyard. The latest developments and discoveries on Mars also were shared during the event.

As for the real rovers traversing Mars some 35 million miles from Earth, Spirit and Opportunity have made extraordinary discoveries and found important clues to a watery past on the martian surface. The Spirit rover is driving toward the "Columbia Hills," and Opportunity has been making close examinations of a martian rock known as "Bounce" before moving toward Endurance Crater.

■ *For more information about "Mission: SPACE," visit: <http://disney.go.com/vacations/missionspace/ms_mainflash.html>*

Miguel Piedra of Walt Disney World also contributed to this story.

CLASSIFIED

FOR SALE: 1999 Dodge Grand Caravan, V-6, 3.3L engine, A/C, cruise control, CD player, tow package, new brakes, clean, great gas mileage, recently safety checked, \$6,500 or best offer. Call 303-0436.

FOR SALE: 1988 Oldsmobile 88, four door, engine excellent, inspected in February, great driver for local commutes, \$1,195. Call 249-2246.

FOR SALE: Vacation in Myrtle Beach, S.C., June 6-13 Presidential Villas (Gold Crown Resort), 2 BR with full kitchen, sleeps six, on-site golf, indoor/outdoor pool, plus other amenities; 1 mile to beach, \$1,000. Call 876-6684.

FOR SALE: 1995 Snapper rear-engine riding mower, good condition (needs spring tune-up), with bagger, \$500. Homelite gas-powered blower/vacuum, \$30. Call 930-4709 between 6 and 9 p.m.

FOR SALE: Whirlpool washer and dryer, \$100; GE stacked washer/dryer combo, \$200; waterbeds with frames \$50; lawn edger, \$20; hedge trimmer, \$15. Call 224-7314

FOR SALE: White bassinet, very good condition \$40, white crib with four drawers and changing table attached, very good condition, \$150. Call 719-1487.

FOR SALE: Rainbow 375 sailboard, good condition, \$300 or best offer. Call 223-1444.

FOR SALE: One Cooper LifeLiner Touring SLE tire, P225/50R17, brand new, only used 3,500 miles, excellent condition, \$80. Call 867-7319 after 5 p.m.

FOR SALE: Women's black leather jacket, XL, one year old, soft buttery leather, lined, clean, no rips or stains, retailed for \$200, will sell for \$50. Call 303-0436.

FOR RENT: Studio apartment on Chesapeake Avenue in Hampton, renovated with all new appliances and fixtures, water view, \$525 per month, utilities included. Call 245-4854.

FOR RENT: 1 BR, 1BA in-law suite in private home, private locked entrance, kitchen/laundry privileges, cable TV hookup, no smokers, \$500 per month, utilities included. Call 329-2423.

FREE: Two MGB service/repair handbooks, MGA/MGB service repair handbook for all models 1956-1976 and workshop manual for the MGB and MGB GT 1969-71. Call 686-9227.



The deadline for the May 7 edition is April 26. Send submissions to <j.r.roberts@larc.nasa.gov>.

Space Congress Planned In April

The Canaveral Council of Technical Societies (CCTS) will host the 41st annual Space Congress from **April 27-30** at the Radisson Resort at the Port in Cape Canaveral, Fla.

The international conference brings together the scientific, commercial, military and educational communities to discuss current and future activities affecting space initiatives.

This year's theme is "Determination: Meeting Today's Challenges, Enabling Tomorrow's Vision."

For tickets or more information, call 321-452-3068 or visit: <<http://www.spacecongress.org/>>.

LAA To Meet On May 11

Langley Research Center's Alumni Association will meet from 10 a.m. to 1 p.m. **May 11** at the Newport News/Williamsburg International Airport for a tour of the Virginia Aviation Academy. Lunch will be provided for \$2.50. RSVP to Bill Reed at 851-5322 or <whreed1@cox.net>.

Blood Drive On May 19

The American Red Cross will host a blood drive on **May 19** in Langley Research Center's H.J.E. Reid Conference Center. Langley employees, contractors and retirees are invited to participate. Civil servants may charge their time to FCS 23-090-20-BE.

Future blood drives are scheduled on **July 14, Sept. 15** and **Nov. 24**.

For more information, contact Connie Small at 864-2564 or <Connie.J.Small@nasa.gov>.

J-Lab Hosting Summer Physics Fests

Jefferson Lab will host "Summer Physics Fests" from 10 a.m. to noon **June 9, June 30, July 28, Aug. 11** and **Aug. 25** in the CEBAF Center auditorium in Newport News.

New Art Work Display In Pearl Young Theater

Eleven new pieces of art from a traveling exhibit called "Pushing the Limits" are now on display in Langley Research Center's Pearl Young Theater.

Since 1962, NASA has commissioned artists to document America's major accomplishments in aeronautics and space.

The exhibit presents the history of flight research at NACA and NASA. Some of the pieces include John Clark's "Wind Shear Flight Tests," William Philips' "Hypersonic Final," Charles Schmidt's "Wind Tunnel Testing at Langley" and Stan Stokes' "Next Stop Mach 3."

The exhibit was on display at the following museums as a part of the Centennial of Flight celebration: the Museum of Flight in Seattle, the Fayetteville (N.C.) Museum of Art, and the Outer Banks History Center in Manteo, N.C.

The "Physics Fests," designed for families and student groups, include an interactive summary of the research conducted at the Jefferson Lab followed by the popular "Deep Freeze" and "Hot Stuff" presentations.

The presentations are free and open to the public, but reservations are required. For reservations or more information, contact Stacy Ring at 269-7560 or <ring@jlab.org>.

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Center Snapshot

Larry Minter has worked for six contractors at Langley Research Center, dating back to 1971. He currently works for Johnson Controls in the area of fire protection. In May, he will begin working for Jacobs Sverdrup on the Research Operations, Maintenance and Engineering (ROME) contract. Minter, a Newport News native, enjoys kayaking and photography (including collecting vintage 35mm film cameras). What does he like about working at Langley? "Just seeing the changes over the past 30-something years," he says. "All the different projects."

Photo by Jeff Caplan