



# Glenn Generates Excitement for "Transit of Venus"

## Learning a lot from a Dot

During the evening on June 5, many North Americans viewed a rare celestial phenomenon as the planet Venus crossed over the face of the sun. Locally, NASA Glenn offered several opportunities that day to create awareness of this once-in-a-lifetime astronomical event called the Transit of Venus.

Scientists have observed that historically, the Transit of Venus—when Venus is visible as a tiny dot passing directly between the Earth and sun—occurs in pairs, 8 years apart, with more than

a century elapsing before the next pairing. The last North American transit viewing happened in June 2004. The next pair will not happen again for 105 years.

Dr. Steven Williams, chief of Education Initiatives at the National Air and Space Museum, Smithsonian Institution, came to Cleveland to share insight on the phenomenon.

Currently on detail in the Planetary Science Division at NASA Headquarters, Williams spoke to center employees in the morning and to the general public at the Great Lakes Science Center (GLSC) in the afternoon.



C-2012-1590

Photo by Marvin Smith

*Sunset at Edgewater Park Beach in Cleveland was an ideal location for the public to view the Transit of Venus.*

“The Transit of Venus is a heaven-sent opportunity to broadly discuss its significance to the process of scientific inquiry—from a 400-plus-year tradition of success beginning with Galileo’s

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C-2012-2093

*Dr. Williams improvises using a CD to demonstrate a point about the Transit of Venus at the Glenn briefing.*

Photo by Bridget Caswell

## Key Topics Discussed at Center All Hands

During his recent All Hands meeting, Center Director Ray Lugo emphasized the words “strategic” and “focused” to guide the center through challenges and opportunities in the near and distant future.

“With a limited budget and resources, we are looking for efficient ways to do things,” Lugo explained to a capacity-filled Administration Building Auditorium on June 18.

Lugo and Deputy Center Director Jim Free touched on a number of key topics during the meeting, including those relating to the budget, center

reorganization and new ways of doing business.

### Budget & FTEs

NASA Glenn’s leadership team is undertaking a comprehensive assessment of Center Management & Operations (CM&O) expenditures to identify necessary reductions. Lugo assured employees that in upcoming meetings with members of the Ohio Congressional delegation, he would continue to stress the importance of CM&O funding and the impact of reductions on NASA mission-related operations and workforce effectiveness.

When asked specifically about the future of Plum Brook Station (PBS), Lugo replied that “funding for station is embedded in the center budget.” He foresees the bulk of the work at PBS will primarily be in the Space Power and Spacecraft Propulsion Research facilities.

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*Center Director Lugo*

## Reflecting Back, Moving Forward

During the last 2 years serving as Center Director of NASA Glenn Research Center, I have learned a lot about myself as I lead this organization that has a diverse portfolio and tremendous capabilities.

Upon my selection, I set an ambitious goal of growing our reimbursable business. We continue to work in achieving this goal, and have increased our reimbursable income stream. This year we are on track to execute approximately \$40 million of reimbursable work, which does not include the work we may do for the European Space Agency, which potentially will double this figure. Clearly, the center is making significant progress.

I am pleased to report that we are very close to demonstrating our flywheel technology. This work represents a significant advancement in state-of-the-art technology and has been an area

of focus for our external business development activity. I am very proud of the work this team has done and believe their efforts will contribute to our external business efforts.

Another area Glenn has made significant progress is in advancing the technology associated with producing high-quality, low-defect SiC (silicon) crystals. The center has invested in this technology and has received external funding from the Department of Energy that will help us advance this critical technology. If we are able to make advancements in this technology, it will add to our future reimbursable business. Further, the center is making significant progress in polyamide aerogels, which holds a lot of promise.

The first class of Leadership University candidates have graduated, and the second class is due to begin soon. These examples are just a few of the success stories happening at Glenn.

Despite some challenges, we have delivered on our commitments and continue to deliver high-quality products to our customers. I am very proud of the accomplishments that the people who work at NASA Glenn have achieved. Outside the gates, people are noticing us and asking about our work, which is a good thing.

I have learned that growing new business is not something that can be done overnight, and I need to be more patient. Adapting to change is not easy, and leading change can be even more difficult. However, I now know I am where I am supposed to be at this time.

I want to thank everyone for helping us make real progress over the last 2 years. It has not been easy or fun at times, but we are moving forward and doing what we need to do to secure the center's future.

## STEMsation! - Stimulating Students Through Discovery

How do varying temperatures affect ultraviolet sensitive beads? How do you create a water filtration system? What is the maximum height of a rocket with a Roadrunner G80R engine?

Students from five Cleveland-area schools demonstrated their abilities in scientific inquiry and engineering design related to these questions and others at the *STEMsation!* culminating event held at the Cleveland Clinic Administrative Campus on May 18. They were among the nearly 2,000 students that benefited from *STEMsation!*, a project-based

educational program developed by NASA Glenn in collaboration with the Cleveland Clinic Foundation.

The research projects were one of three components—Exploration, Engagement and Research—that make up the *STEMsation!* program experience, which replaces activities formerly coordinated through National Engineers Week and National Lab Day. Over a 4-month period, 12 NASA Glenn and Cleveland Clinic subject matter experts, previously matched to an educator or school based upon their area of expertise or interests, profiled their own careers and helped students explore other STEM-related careers; engaged students and educators by assisting or providing resources for classroom instruction; and assisted in research project development.

“Students amazed us with presentations that in many ways mirror the work of



C-2012-1962

*Magnificent High School participants received certificates from, left to right, Robyn Gordon, NASA Glenn Center Operations director, Johnson and Doak.*

our scientists and engineers,” said Greg “Box” Johnson, Glenn’s associate director of external programs. “This symposium offered students practical experience giving presentations in a professional setting while providing a front-row seat to NASA’s careers, research and discoveries.”

Lynne Sammon, Glenn’s Educational Programs Office, and Scott Doak, Cleveland Clinic’s Enterprise Leader of Staffing and Recruitment, coordinated the event.

—By S. Jenise Veris



C-2012-1954

Photos by Bridget Caswell

*Michael R. White STEM School students give a review of their project and experience.*

## Follen Helps Lead Aeronautics Office

Gregory Follen has been selected as deputy director of NASA Glenn's Aeronautics Research Office. The office is the focal point for the center's aeronautics research and



Follen

provides project management, leadership and oversight in support of the Aeronautics Research Mission Directorate at NASA Headquarters.

Follen has over 30 years of Aeronautics project management experience at Glenn. He will have responsibility for Glenn's participation in the Fundamental Aeronautics, Integrated Systems Research, Aviation Safety and the Aeronautics Test projects.

Follen previously served as the NASA Fundamental Aeronautics Subsonic Fixed Wing deputy project manager.

## Step Out and Bike to Work Drew Hundreds

NASA Glenn's annual Step Out and Bike to Work Day on May 16 provided a healthy break in the workweek. Coworkers at Lewis Field and Plum Brook Station followed designated walking routes while cyclists donned their helmets to bike to work and around the center. In addition to fitness benefits, the event offered over 750 participants a chance to win a coveted Golden Shoe Award and door prizes.



Photo by David Tabayoyon

Walkers enjoyed Plum Brook's natural scenery.

The 2012 Golden Shoe Awards went to **Office Division**—Office of Technology, Partnerships and Planning, with 58 percent participation, and the **Directorate Division**—Office of the Chief Financial Officer, with 78 percent participation.



Photo by Eli Abumeri

The rain didn't stop these enthusiastic participants at Lewis Field.



Golden Shoe Trophy

## All Hands: Center to Remain Strategic and Focused

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### New Business

In his presentation on Glenn's new Business initiatives, Free stressed that new business is being sought in an organized way with a single repository for all potential pursuits.

He assured employees that the focus would be on both NASA and non-NASA business, and cited examples of new business successes, such as the Auto Showcase and the Technology Showcase.

### Travel, PR and Other Topics

Lugo also addressed several other topics, including highlights of the recent consolidation of Travel Preparation and Purchase Requisition as an initiative that promotes efficiencies. Implemented in April, these functions previously performed at various locations across the campus have been centralized.

"I'm hearing back that it is a change that is working," Lugo said. He encouraged employees to learn more about the initiative and provide feedback through the Office of the Chief Financial Officer's website.

Lugo touched briefly on the NASA Employee Performance Communication System and announced the center will soon roll out Dual Career Ladder revised guidelines for engineers and scientists.

He encouraged employees to contact him by posting questions to his blog. Stay tuned to *Today@Glenn* for information on upcoming All Hands meetings where the center director will continue to provide updates on important issues and address employee questions.

—By Doreen B. Zudell

## Glenn Wins Emmy!

The National Academy of Television Arts and Sciences—Lower Great Lakes Chapter presented an Emmy Award to "NASA Now," a weekly online video series created for the NASA Explorer Schools project on June 2. The show is produced by a NASA Glenn-based core team of video producers that includes Frank Wilson, Terry Peterson, Lisa Moyer and Alicia Baturoni, Oklahoma State University employees supporting Glenn's Educational Program Office; and Ron Petransky, a WYLE employee supporting Glenn's Imaging Technology Center. For more details on NASA Now, visit <http://go.nasa.gov/KpGI27>.





## "Some Gave All" >

Glenn's Veterans Awareness Committee presented a Memorial Day Observance on May 25 to recognize those who gave their lives in the service of our country. Keynote speaker John Marinaro, NASA Safety Center, reflected on his military experiences (Marine Corps, Navy Reserves and Army National Guard) and shared how a good friend from the National Guard gave the ultimate sacrifice during the September 11 attacks. The observance included a color guard, invocation, ceremonial flag lowering and presentation of the wreath.

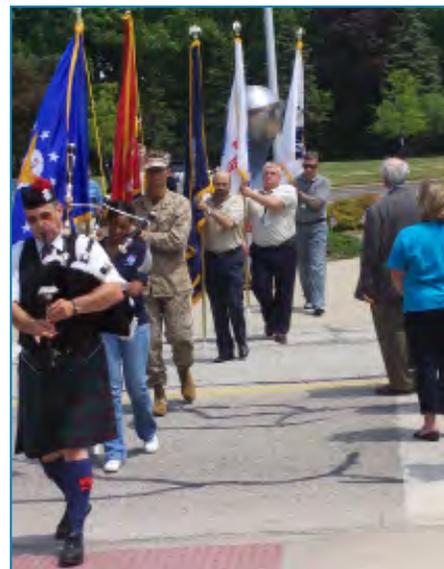


Photo by Doreen B. Zudell

## Agency Security Chiefs Meet at Glenn ^



Glenn's Chief of Protective Services Michael Bilinovich hosted NASA's new Assistant Administrator (AA) for Protective Services Joseph Mahaley and the Agency's Chiefs of Security (pictured) and Emergency Managers on May 15, 16 and 17. It was AA Mahaley's first trip to Glenn and an opportunity to meet face-to-face with security personnel to discuss overlapping

issues within all offices of protective services, and the agency policies pertaining to security and protection of NASA personnel, property and information.

## Asian American/Pacific Islander Observance ^

How did Dr. Hiroyuki Fujita, a 1998 Case Western University alumnus, become a leading entrepreneur of high-tech, advanced manufacturing jobs in the health care and energy sectors in America? Fujita (pictured) captivated Glenn employees with a presentation on his unique experiences in establishing two businesses and fostering a work culture that has led to their worldwide success, at the annual Asian American/Pacific Islander Heritage Month event on May 30. Additional heritage highlights included instruction in native languages, cultural music and dance performances and a sampling diverse cuisine prepared by Asian personnel among Glenn's workforce.



C-2012-1681

Photo by Bridget Caswell

## Greening Glenn One Event at a Time

### July Events

Thursday, July 19, 12 to 1 p.m.: A speaker from First Energy will provide information on their Residential Energy Audit program. Visit

<http://energysaveohio-home.com/residential-energy-audit/>

Thursday, July 26, 12 to 1 p.m.: What are invasive species? (Focusing on home gardens) by Rosemary Walker, SAIC/Environmental Management Office. Walker will talk about invasive plants in yards, the difference between native and non-native plants, edible plants and more. She will also cover the Emerald Ash Borer beetle, soil testing and any gardening questions you may have.



## Outreach Opportunities

Here are some upcoming events to consider staffing: Aug. 3 & 4: Traffic Jamin, Grass Lake, Mich. • Aug. 4 & 5: Great New England Air Show, Chicopee, Mass. • Aug. 5 & 6: MSL/ Curiosity Landing Event, Cleveland • Aug. 11: W. 58th Church of God Back to School, Cleveland • Aug. 12: Harvest Festival Parade, Chagrin Falls. Visit <http://outreach.grc.nasa.gov> for information and registration.



## Mars Curiosity Landing Event

On August 5 at approximately 10:31 p.m. PDT (1:31 a.m. EDT on Aug. 6), you and your family and friends are invited to be a part of the excitement when NASA's Curiosity Rover lands on Mars. Watch [Today@Glenn](mailto:Today@Glenn) and [www.nasa.gov/glenn](http://www.nasa.gov/glenn) for details!



## The 3 Es of Traffic Engineering

### Making Glenn's Roadways Safe

With the construction season in full swing, it is crucial that all employees be alert to changes in traffic flow, obey traffic laws and exhibit courtesy while driving or walking around the center.

While uniform traffic control devices are installed for our safety, personal feelings and opinions can cause distractions that impede safety. At NASA Glenn, the Facilities Division (FD), the Office of Protective Services (OPS) and the Safety and Health Division (SHeD) apply traffic-engineering principles to help provide safe transportation solutions. The team of Ron Zurawski (FD) and Steve Hershman (FD/SAIC), Don Ornick (OPS), and Lou Galmarini (SHeD) are focusing their efforts on what they call the 3 Es of traffic engineering: education, engineering and enforcement.

Traffic engineering is a branch of civil engineering that uses engineering techniques to achieve the safe and efficient movement of people and goods on roadways. The primary focus is on the infrastructure and what is necessary to maintain safe and efficient traffic flow.

“Traffic engineering also brings into play a knowledge of psychology and habits of users of the transportation systems,” said Zurawski. “Often people get comfortable with a route and miss warning signs or barriers.”

Education is a two-fold process. First, drivers at the center must be informed of traffic rules. Second, it is the FD's responsibility to inform employees of current traffic regulations at Glenn and inform them when traffic patterns change.

Engineering analyses are performed to ensure that the traffic design adopted is in the best interest of motorists and pedestrians. Although engineering is largely based upon research, principles and formulae, there's an element of art. A traffic engineer also draws on experiential instinct and previous best practices to formulate a solution.

Enforcement promotes compliance with implemented traffic engineering controls and regulations. Drivers and pedestrians need to comply with center traffic rules. OPS provides enforcement action when there are violations of center traffic requirements.

Glenn's traffic engineers strive to accommodate all pedestrians and drivers so that their journey is as short as possible and, most importantly, safe. Employees can do their part by keeping alert and observing all the traffic rules.

—By Doreen B. Zudell

### Mark Your Calendar: August 7

## Safety Awareness Day

NASA Glenn's 2012 Safety Awareness Day Program will be held Aug. 7. The morning event, 9 a.m. to noon, will be held in the Hangar and broadcast live to Plum Brook Station. The keynote speaker will be Charlie Morecraft, owner of Phoenix Safety Management, on making safety personal. In the afternoon, a Mishap Review Panel and a concurrent NASA Project Assurance Panel will explore lessons learned from recent incidents. There will be internal and external exhibitors with display tables at both Lewis Field and Plum Brook. This year's theme is “*Safety Matters to All of Us!*” How is Safety Important to you?

<http://smad-ext.grc.nasa.gov/glenn/safety-comments.shtml>

## Ease@Work Can Help

Need some help overcoming stress in your life? NASA Glenn's Employee Assistance Program, Ease@Work, can help. They have answers!

**Q.** Does NASA Glenn offer employees free counseling services?

**A.** Yes! Employees and their qualifying dependent family members have access to a variety of counseling and coaching services through our Employee Assistance Program, Ease@Work. Ease can help with a myriad of work-life concerns, including stress management, anxiety and depression, relationship issues, child care and school-age services, elder care concerns, financial and legal consultations, nutritional and fitness coaching, and so much more.

**Q.** What type of professionals provide the counseling?

**A.** Ease@Work provides qualified experts who offer an objective third-party perspective. The certifications and credentialing of the individual you are referred to will depend on your specific need. In addition to clinicians, Ease@Work has access to a number of other professionals with specialized expertise. If your concerns are legal or financial, we will connect you with a financial advisor or attorney. We also have qualified professionals to help in the areas of diet and fitness as well as elder care or child care and school-age issues.

**Q.** Can I keep my counseling confidential?

**A.** Yes. Ease@Work services are confidential. No one will know you're seeing a counselor or coach unless you tell them.

**Q.** Okay, so who do I call?

**A.** For your convenience, Ellen Hartson, LISW, is available to meet with civil servants Mondays, Wednesdays and Fridays in building 15, room 105A at Lewis Field. She can be contacted by calling 3-2989 or by e-mail at [ellen.m.hartson@nasa.gov](mailto:ellen.m.hartson@nasa.gov). You may also call Ease@Work directly at 216-241-3273 with any questions or to schedule an appointment.



## Awards and Honors

### Crain's Honors NASA Glenn Employees

The editorial board of *Crain's Cleveland Business Magazine* recently recognized the impact of NASA Glenn leadership and technical expertise on Northeast Ohio.

In May, *Crain's* editorial staff named Center Director Ray Lugo among its "Who's Who: 150 Names to Know," a profile of Northeast Ohio leaders—from college presidents to CEOs—responsible for leading major organizations and industry shaping the region's future.



Lugo



Dr. Lei

*Crain's* also named Dr. Jih-Fen Lei, Glenn's Research and Technology director, among its 2012 "Women of Note" honorees. She is one of 15 outstanding female leaders of accomplishment, character and perseverance, who will be recognized for the "example of passion, dedication and strength they bring to the region's professional landscape," during a reception at the LaCentre in Westlake on July 25.



Dr. Dietrich, center, is congratulated by division managers, left, Dr. David Urban and, right, Dr. Jerry Myers.

Dr. Daniel Dietrich, Space Processes and Experiments Division, received an award for Advancements in Health Care on May 23 during *Crain's* "2012 Health Care Heroes" award reception "honoring everyday people helping to make Northeast Ohio the premier destination for world-class health care." Dietrich accepted as the principal investigator of the NASA Glenn team that developed PUMA, the Portable Unit for Metabolic Analysis, originally developed to remotely monitor cardiovascular fitness of astronauts on

the International Space Station. A clinically proven method for monitoring fitness levels and detecting dangerous drops in oxygen levels, the battery-powered, wearable device represents a significant advancement that can help improve quality of life and health, here on Earth.

### Eleven Honored for SBIR/STTR Success and Service

During an Awards Luncheon on June 5, Dr. George Schmidt, deputy director for Research and Technology, thanked a group of Glenn program managers and researchers for serving as Small Business Innovation Research (SBIR)/Small Business Technology Transfer (STTR) Programs topic managers. Schmidt noted that their efforts have significantly helped the center to consistently lead the agency in advancing technologies useful to Glenn and NASA at large. Schmidt joined Gynelle Steele, Glenn's SBIR/STTR program manager, in recognizing 11 topic managers for their long-term support.



C-2012-2179

Photo by Michelle Murphy

Pictured, standing, left to right: Steele, Dr. Bhim Singh, Calvin Ramos, Dr. Louis Povinelli, Ann Over and Dr. Schmidt. Seated, left to right: Dr. Carolyn Mercer, Marsba Nall, Mary Wadel, Dr. Valerie Lyons, David Anderson and Mark Klem.

### President Obama Awards Glenn, Medal of Freedom

President Barack Obama honored John H. Glenn with the Presidential Medal of Freedom during a ceremony at the White House on May 29. The medal is the highest civilian honor this nation can bestow on individuals. Glenn was recognized for his steady, incredible impact on the nation over a lifetime.



NASA/Bill Ingalls

### Veterans Awards Luncheon

Glenn's Veterans Awareness Committee will host a Veterans Awards Luncheon on Aug. 30 from 11 a.m. to 1 p.m. in the Guerin House. The luncheon is free to all employees (civil servant and support service contractors) and retirees who have served or currently serve in active duty, guard and reserve status. Please RSVP by July 27 to Peggy.A.Cornell@nasa.gov, 216-433-2748. For questions, contact Gloria Richards, 216-433-5395.



### Retirements

Rodrick V. Chima, Inlets and Nozzles Branch, Aeropropulsion Division, retired on June 1, 2012, with 34 years of NASA service.

John J. Juhas, Space Combustion and Materials Branch, Testing Division, retired on June 2, 2012, with 42 years of NASA service.

Tesfahuney T. Tecele, Instrumentation and Electromagnetics Branch, Electrical Systems Division, retired on June 30, 2012, with 23 years of NASA service.

Susan M. Kraus, Logistics and Technical Information Division, Center Operations Directorate, retired on June 30, 2012, with 23 ½ years of NASA service.



Kraus



## In Memory

J. Calvin Lovell, 88, who retired in 1979 with 35 years of federal service, died Feb. 29. Lovell retired as chief of the Facilities and Engineering Branch, Wind Tunnel and Flight Division. He began his NACA/NASA career in transition from the U.S. Army Air Corps to work in the Full-Scale Tunnel at NACA Langley where he worked on high-lift devices, stability and drag cleanup of the first jet fighter. Lovell transferred to the Cleveland area to work with the Lewis Unitary Plan Group on the initial design of tunnels. He helped design the 10- by 10-Foot Supersonic Wind Tunnel (SWT) and worked there as a research engineer. Lovell also served as lead design engineer for the Research Requirement Group that designed the Space Propulsion Facility at Plum Brook Station. He was appointed branch chief of the Atlas-Agena Office in 1966, where he worked on shrouds and spacecraft adapters, before transferring back to the SWT where he retired. Lovell also served as vice chairman for the Plant Accident Investigation Committee for the Area Safety Committees and as a member of the Energy Conservation Committee.



McCutcheon

Dale H. McCutcheon, 85, who retired in 1974 with 17 years of federal service, died Feb. 15. McCutcheon joined the Plum Brook Station (PBS) workforce in 1959, following 2 years in the U.S. Army.



### Article Deadlines

News items and brief announcements for publication in the August issue is noon, July 20. Larger articles require at least one month notice.

**READ US ON THE INTERNET:**

<http://aerospacefrontiers.grc.nasa.gov>

Hermes  
Award  
2010-  
2012



He was a mechanic in the Facilities Service Division, where he supported the research and tests conducted in several PBS facilities, including the Heat Transfer and Hypersonic Tunnel Facility, the B-3 Rocket Test Stand and the Rocket Service Experiment Section. He received several cost reduction awards for his ingenuity during his NASA tenure.

John I. Sullivan, 88, who retired in 1981 with 35 years of federal service, died March 20. Sullivan served as a machine operator, working in the Propulsion Systems Laboratory (PSL) Equipment Building, shortly after it became operational in 1952. He remained there until retirement and returned to support NASA for 2 more years as a contractor working in the Chemistry Laboratory.

Robert E. Yavoich, 80, who retired in 1988 with 36 years of federal service, died March 7. A veteran of the U.S. Air Force, Yavoich joined the Lewis Apprentice Program in 1956 and graduated to become



Yavoich

a research instrument mechanic in the Test Installations Division. Yavoich contributed to the success of a variety of projects, ranging from the Aerobee sounding rocket launch program evaluating liquid hydrogen as a fuel in zero gravity to testing commercial television broadcast patterns. He also was a valued member of the Engine Research Building Championship Golf Team. He is survived by his wife, Linda Yavoich, chief of the Information Technology (IT) Business and Planning Office.



## In Appreciation

My family and I would like to thank all the people for the kindness we received during the passing of my husband, Edward Krawczonek. Thank you for your prayers and support.

—Lillian Krawczonek



## Calendar

**HARRINGTON RETIREMENT PARTY:** Mark your calendar for Thurs., July 19, for a retirement reception for Sally Harrington. The reception will be held from 2 to 4 p.m. in the Administration Building Auditorium. POC: Raquel Wallace, 3-3397.

**IFPTE LOCAL 28, LESA MEETING:** LESA will hold its next membership meeting on Wednesday, Aug. 8, at noon in the Employee Center's Small Dining Room.

**IFPTE LOCAL 28, LESA PICNIC:** LESA will hold a summer picnic on Friday, Aug. 24 from 5 to 11 p.m. at the Glenn Picnic Grounds. For tickets (\$20 a person), contact Sally Weiland, 216-4333-5623. Members and guests are welcome.

**CLEVELAND INDIANS GAME:** Save the date of Sunday, Aug. 26 for NASA Day at Progressive Field featuring John Glenn. Plan to join coworkers for a group outing to see the Cleveland Indians take on the New York Yankees. The first pitch is at 1:05 p.m., but you'll want to arrive early for pre-game activities. Watch *Today@Glenn* for announcements including discount ticket sales.

**FREE FACILITY TOUR:** On Sept. 8, the public can learn more about Glenn's enhanced Zero-gravity Locomotion Simulator, a ground-based simulator developed to address the detrimental physiological effects of spaceflight. On-the-hour tours of the facility begin at 10 and 11 a.m., 12 and 1 p.m. Call 216-433-9653 to register.

**PLUMBROOK REUNION:** PBS will hold its sixth reunion on Saturday, Sept. 22, at the Engineering Building Cafeteria. All current and former employees of the Station, Glenn Research Center Associates, support service contractors and surviving spouses are invited. A luncheon and program on PBS activities are planned. If you have not received a notice from the Reunion Committee and want to place your name on their mailing list, contact: Bill Brown at 3802 Windsor Bridge Circle, Huron, OH 44839, or e-mail [huronbill@bex.net](mailto:huronbill@bex.net) or Jack Crooks at [jackcrooks@aol.com](mailto:jackcrooks@aol.com).

## National Aeronautics and Space Administration

### John H. Glenn Research Center at Lewis Field

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## Viewing Venus

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study of sunspots in 1610, to today's Kepler spacecraft finding hundreds of exoplanets," Williams explained.

Although there are records of more than 20 successful spacecraft visits to Venus, he noted that our knowledge of the planet is limited because, of the 12 that landed, none survived for more than about 2 hours on the surface of the planet. On Venus there are clouds of sulfuric acid that drizzle corrosive rain; surface temperatures exceed 900 degrees Fahrenheit, hot enough to melt lead; and an atmospheric pressure 92 times that of Earth.

After Williams' talk, Dr. Rodger Dyson, Thermal Energy Conversion Branch, was available to field questions on the development of Glenn's Extreme Environment Rig, or GEER, a new one-of-a-kind simulation chamber capable of mimicking Venus' hostile environment.

"There's no data to predict how long materials will survive on Venus' surface," Dyson said. "GEER was created to test hardware and science experiments for proposed future robotic exploration missions, which are intended to reveal basic information about the planet. GEER will become fully operational this fall."



C-2012-2164

Later that evening, Dyson and Williams participated in live interviews with Tom Benson, Inlet and Nozzle Branch, who served as master of ceremonies at the Edgewater Park Beach viewing site. They took turns at the microphone with Glenn researchers Dr. Gary Hunter

and Dr. Geoff Landis, who are involved in developing enabling technologies and experiments for future unmanned missions to Venus. Interviews focused on GEER, a Glenn-developed power system that will keep vital electronics on a Venus lander cool and work on

*Pictured clockwise: Cleveland State University, Baldwin-Wallace College and local astronomical societies provided telescopes for public viewing. • Benson interviewed Dyson and other Glenn researchers, as well as the public. • NASA Glenn distributed special glasses and "solar viewers" for safe viewing of the transit.*



a heat-tolerant seismometer to measure and transmit information about Venusian quakes.

With the aid of Glenn's Imaging Tech-

nology Center and the Digital Learning Network, these interviews, and those with random visitors, were streamed live to the NASA Venus Transit website. The interviews served to not only inform the public viewing worldwide, but also built excitement locally around the historic astronomical event.



Photos by Marvin Smith

C-2012-2130

—By S. Jenise Veris