



# Island Access

## LDSD

Wallops supports  
new technologies for  
future Mars missions  
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to Wallops**  
100,000+ miles flown  
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# The Director's Cut

Looking back at our 2013, we saw: The first lunar mission to launch from the facility, the first-ever Antares rocket liftoff, the first Cygnus cargo spacecraft launch to the International Space Station, a record-setting scientific balloon flight, and the most science aircraft flight hours logged in a single year.

My point with that short (and admittedly incomplete) recap is when we were entering into 2014, it was abundantly clear we had a lot to live up to from our past year's accomplishments. Now, nearly halfway through the year, it's clear to me that 2014 is standing out in its own right with many notable accomplishments, and that's entirely due to the great work by all the men and women at Wallops serving in many and varied capacities.

The picture-perfect launch of Orb-1 in early January got us off on the right start. In other rocket news, the Sounding Rocket team added to its list of consecutive successful launches, with missions out of Alaska and New Mexico taking that number to 43 now.

Later this month, we have two sounding rocket launches from Wallops planned. The first, scheduled June 26, will see the return of university students flying payloads they built as part of the RockOn! program, a collaboration with the Colorado and Virginia Space Grant Consortia. Just two days later, the SubTec-6 mission is scheduled to lift-off.

Our aircraft office staff continues to break flight records while enabling vital earth science. In late May, our P-3 team working Operation IceBridge returned to Wallops following an 11-week deployment in the Arctic. During that time, the team flew the most flight hours in a single P-3 mission ever, overall logging more than 100,000 miles. That's like flying around the globe four times! And now, that team is prepping the P-3 for its next mission, Discovery-AQ later in July.

The Balloon team continues to do great work, playing a very important role in the Low-Density Supersonic Decelerator (LDS) mission. LDS, which you can read about more in this inaugural issue of *Island Access*, is helping us build the necessary technologies to safely land bigger payloads on Mars. The balloon team will take a saucer-shaped flight vehicle, known as a Supersonic Inflatable Aerodynamic Decelerator (SIAD), to the edge of space, at which time a rocket



**Bill Wrobel joins the Wallops team virtually for the annual Safety Awareness campaign on May 20.**

motor will take the SIAD up to supersonic speeds. All of this, in short, is to simulate reentry into the Martian atmosphere. The Wallops Range has managed key logistical aspects of the LDS mission, to include the recovery of the SIAD. Wallops also built the test vehicle's avionics package.

There's more on the mission front, but I'd also like to highlight some of what I'd call people accomplishments thus far in 2014. I'm very impressed with the work our Diversity and Inclusion Committee has accomplished, most recently kicking off the Inclusion Ally campaign here at Wallops. If you want to know more about that program, call Sheryl Eni, who is featured in a story on page 6 of this newsletter. Our safety staff did a marvelous job putting together a great agenda for our Safety Awareness Day, and while I regret being out of town, it was great pleasure to join you virtually for that important event. From the establishment of the Wallops Farmers Market to the resurgence of the Women of Wallops and the New and Developing Professionals Advisory Committee, I see a growing list of people-focused endeavors forming at the grassroots level on up.

I think many of us agree that the mission always comes first, but I think we'd also agree that our people are never second. As the momentum continues to build on our mission successes, let's also keep the momentum building on our people successes. Let's continue to strive to make every year, ever moment for that matter, better than the last.

# What's up @NASA\_Wallops?



John Doyle, Cate Easemunt and Freddie Bynum take a Global Selfie.

## Wallops participates in Global Selfie for Earth Day

WALLOPS ISLAND — On Earth Day 2014, NASA asked people all around the world a simple question – “Where are you on Earth Right Now?”

We asked people to answer the question on social media, with a selfie. The goal was to use each picture as a pixel in the creation of a “Global Selfie” – a mosaic image that would look like Earth appeared from space on Earth Day.

NASA released the finished product on May 22, 2014. [Click here to see the final mosaic.](#)

## Wallops Research Park Groundbreaking planned for June 9

WALLOPS ISLAND — A groundbreaking ceremony for the Wallops Research Park, a 226-acre parcel of land adjacent to NASA's Wallops Flight Facility, is planned at noon, June 9, at Wallops.



According to Wallops Research Park Manager Julie Wheatley, the park is the decisive location for



The Antares Orb-2 launch team stands in front of Antares Orb-2 launch vehicle prepped to launch to the ISS.

aerospace and aviation operations, specifically for Unmanned Aircraft Systems (UAS) and medium-class space launch vehicles and particularly for those seeking to leverage and enhance the capabilities of the Mid-Atlantic Regional Spaceport and NASA Wallops Flight Facility.

The ceremony formally marks the beginning of work on vital infrastructure, to include utility work and building a taxiway connecting the NASA Wallops airfield to the Park.

Visit the [Accomack County website](#) on the project for more information.

## Antares launch postponed

WALLOPS ISLAND — Orbital Sciences Corporation has postponed the launch of the Orbital-2 mission to the International Space Station after an engine test aborted prematurely. The engine being tested at NASA's Stennis Space Center was slated to be used for a launch in 2015, but Orbital has taken the action to investigate

the mishap before attempting to launch Orb-2. Orbital now is targeting no earlier than June 17 for the Orb-2 launch.

Visit the NASA news page for more information.

## Inclusion Ally initiative kicks off at Wallops

WALLOPS ISLAND — The Inclusion Ally initiative, aiming to educate and inform people about creating

a work environment that is



equitable, respectful, and inclusive of all groups and individuals, formally kicked off at Wallops May 20 during Safety Awareness Day.

The Inclusion Ally core team conducted a follow-up event May 28 and additional activities are planned for Wallops personnel in July during Wallops Diversity Day.

For more information about the Inclusion Ally program, call Sheryl Eni, Wallops Diversity Specialist, at 757-824-1133.

# Wallops helps lead the way to Mars

**KEKAHA, Hawaii**  
— What will it take to land heavier spacecraft on Mars? How will engineers slow large payloads traveling at supersonic speeds in a thin Martian atmosphere? Can this be done?

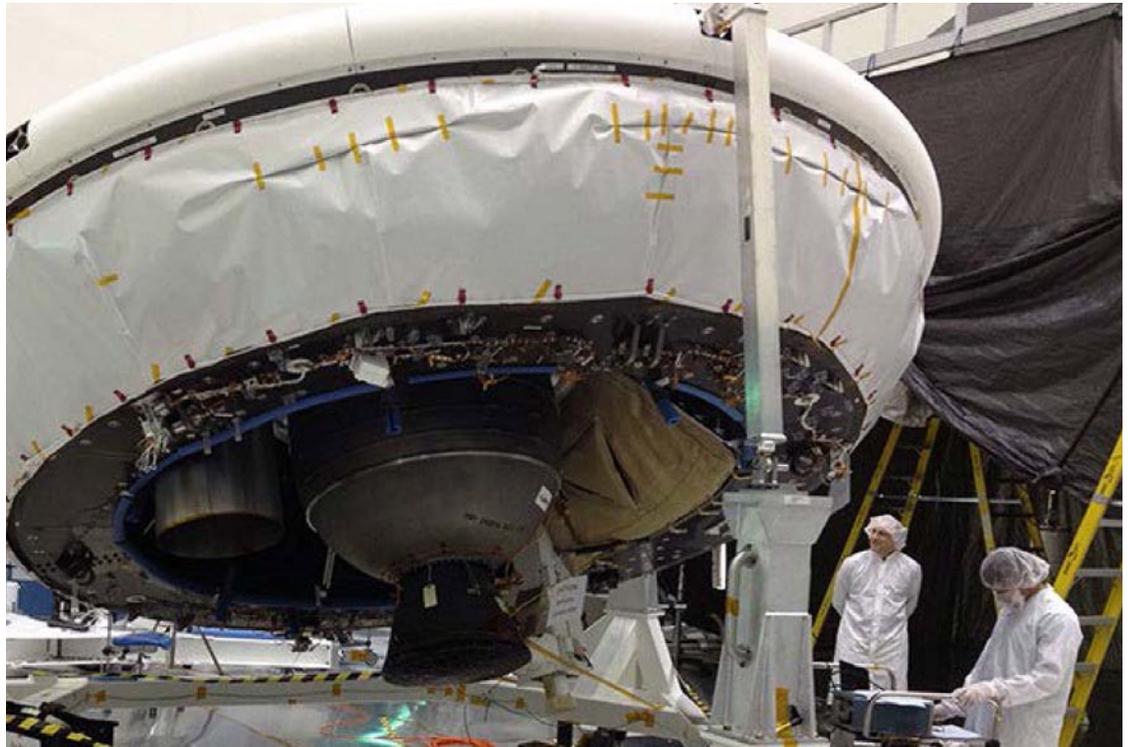
NASA's Wallops Flight Facility is playing an integral role in potentially answering those questions with the Low Density Supersonic Decelerator mission (LDSD).

To conduct advanced exploration missions in the future and safely land heavier spacecraft on Mars, NASA must advance the technology of decelerating large payloads traveling at supersonic speeds in thin atmospheres to a new level of performance. The current technology for decelerating payloads dates back to NASA's Viking Program, which placed two landers on Mars in 1976. That same technology is still being used, and most recently, delivered the Curiosity rover to Mars in 2012.

Future robotic missions to Mars and even future human exploration will require more massive payloads than previously sent to the surface of the Red Planet. To accomplish these goals, NASA is developing new systems to deliver this important cargo to the surface of Mars.

NASA scientists and engineers borrowed a technique used by the 'o'opu hue, also known as the Hawaiian pufferfish. The technique? Rapid inflation. For the pufferfish, it is simply a defense mechanism. For NASA, it is potentially the element that links to the future of space exploration.

Set for a test launch in early June from the Pacific Missile Range Facility in Hawaii, LDSD will use a 20-foot diameter, solid rocket-powered balloon-like vessel called a Supersonic Inflatable Aerodynamic Decelerator (SIAD) to test these capabilities.



**A supersonic inflatable aerodynamic decelerator undergoes testing and prep work at NASA's Jet Propulsion Laboratory in Pasadena, Calif.**

## When & Where

**Where:** Watch on the web at [NASAtv](#) or Channel 50.3 on base cable at 1:45 p.m.

**When:** Thursday, June 5, at 2-3:30 p.m.

**Back-up Days:** June 6, 7, 9, 11 and 14

**Info:** Visit the [LDSD website](#).

To duplicate many of the most important aspects of Mars' thin atmosphere, NASA plans to use the very thin air found high in Earth's stratosphere as a test bed for the LDSD mission.

To reach the desired altitude of 120,000 feet, the LDSD project will use a helium-filled scientific balloon provided by NASA's Wallops Flight Facility and Columbia Scientific Balloon Facility. When fully deployed, the balloon itself is more than 34 million cubic feet. At that size alone, one could fit a professional football stadium inside it. The material that makes the balloon, a very thin film called polyethylene that is similar thickness to that of sandwich wrap, will lift the massive test article to 120,000 feet.

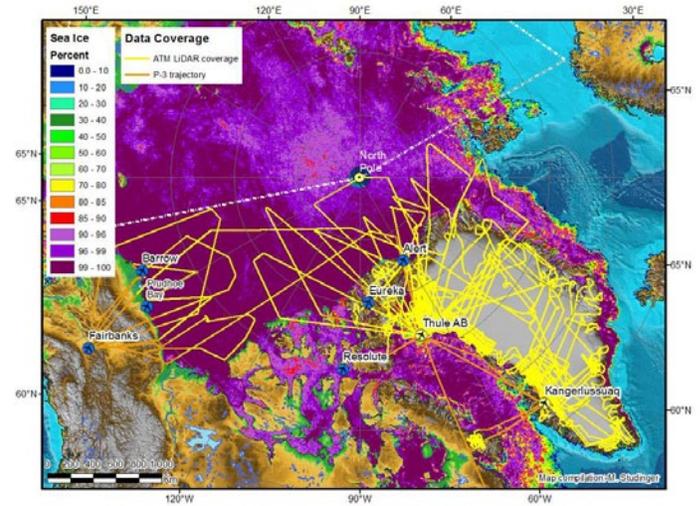
**Continued on Page 7**

# P-3 concludes spring IceBridge mission

**GREENLAND** — Researchers with NASA's Operation IceBridge have completed another successful Arctic field campaign that included studying Arctic sea ice from Thule, Greenland and Fairbanks, Alaska before moving south to Kangerlussuaq, Greenland. From there researchers surveyed the Greenland ice sheet and coastal glaciers such as Jakobshavn Glacier, the most rapidly-changing ice stream in Greenland.

On May 23, 2014, NASA's P-3 research aircraft left Greenland, and returned to Wallops Flight Facility in Virginia marking the end of 11 weeks of polar research in the Arctic. A total of 373.9 flight hours were flown, marking the most flight hours ever flown for a single mission on the P-3. During the Arctic campaign the aircraft supported 49 mission flights and flew 100,554 miles, which is the equivalent of flying approximately 4 times around the Earth's equator.

While based in Kangerlussuaq, Greenland, IceBridge hosted three high school science teachers – one each from the United States, Greenland and Denmark – who joined the team to get a closer look at IceBridge's science. This was the third year that IceBridge has provided a research experience for teachers, who plan to take what they learned back to



**This map shows the P-3 flight trajectory and LIDAR coverage during the IceBridge mission.**

their students.

Researchers will now spend the next few months processing data from the campaign and mission planners will start getting ready for IceBridge's next campaign in October, when IceBridge returns to Punta Arenas, Chile, to survey Antarctica.

## Wallops engineers to file patent application for CubeSat technology

**WALLOPS ISLAND** — Wallops engineers are demonstrating a new technology that promises to reliably deploy stowed solar panels, antennas, or even sunshades on a new class of small satellites called CubeSats.

The Diminutive Assembly for Nanosatellite deployment (DANY), which Principal Investigator Luis Santos Soto plans to demonstrate on a sounding rocket mission in June, was designed to unlatch a stowed device — in this case, a hinged piece of aluminum simulating a solar panel. The flight demonstration could advance DANY's technology-readiness level, paving the way for its possible infusion into future CubeSat missions and ultimate

commercialization, Santos Soto said, adding he is in the process of filing a patent application.

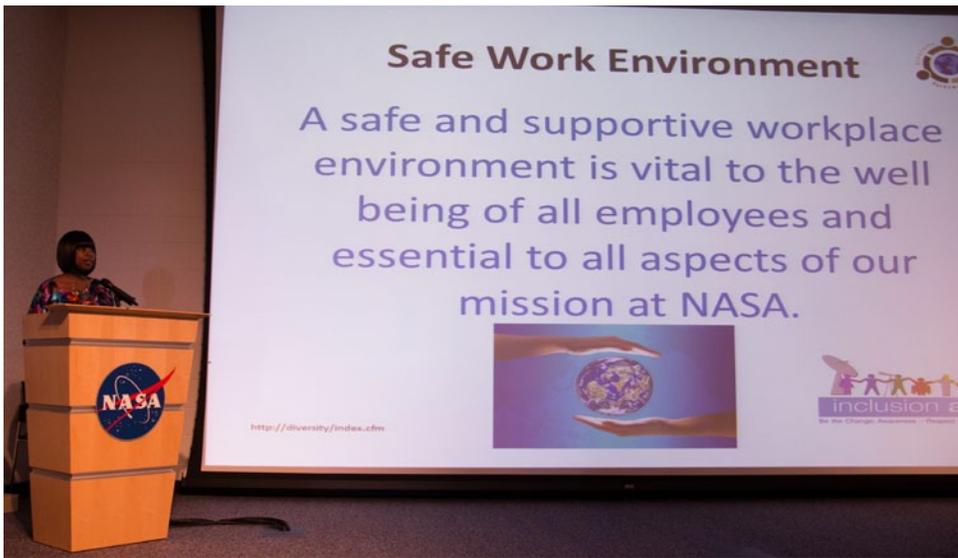
The miniature release mechanism measures nearly three inches long, one-and-a-quarter-inch wide, and less than a quarter-inch thick. It operates much like a car-door latch, Santos Soto said. Affixed to the exterior of a CubeSat, it fastens an antenna, solar panel, or some other deployable in place during launch and then, upon command, applies a current that activates a heating element that melts a plastic retainer constraining the component. After the satellite reaches its intended orbit, the satellite activates the heating element and the stowed deployable can swing open to



**Luis Santos Soto and Scott Hesh with their miniature payload release mechanism called DANY.**

begin operations.

Santos Soto designed and built DANY specifically for six-unit or 6-U CubeSats, rectangular-shaped satellites that measure about a foot in height. Though invented by the California Polytechnic State University and Stanford University in 1999, CubeSats only in recent years have become more popular among government agencies seeking reliable, low-cost access to space.



# I am **Goddard** Sheryl Eni

**S**heryl Eni's office is cheerful and inviting. The wooden chair she offers to visitors looks like something out of the dining room, complete with armrests and a small green cushion for comfort. There's a couch near her window, and on the windowsill there are a number of small trinkets — personal artifacts — the kind of stuff you pick up here and there and otherwise have no home for. But here, they're perfect.

Next to the couch is a small side table with a lamp and a 5-by-7 print of President Obama's official photo. Pictures of her children, two boys now 6 and 12, at various stages of their lives fill areas on the filing cabinet, on her desk, on the book shelf, and just about every other corner of her office. Above her credenza are a number of plaques. Awards. Teamwork Award, 2005. Innovator Award, 2006. Teamwork Award, 2007. Teamwork Award, 2009. Customer Service Honor Award, 2010. And many others.

Above her computer there's a gorgeously framed diploma from the University of Maryland, University College, showing that Sheryl recently earned a Masters of Business Administration.

"I just got it," Eni said, referring to the diploma, beaming with a sense of accomplishment. "I finished the work this past March, turned in my last paper and took off for Las Vegas to celebrate."

One quickly realizes that Eni's office is cheerful and inviting because Eni herself is cheerful and inviting, not to mention dedicated, tenacious, inclusive and

hardworking.

Eni has worked at Wallops for some 10 years now in vastly different areas. Her first nine years were spent as a contractor lab technician in the Environmental Division.

"She is reliable," said Owen Hooks, Air and Water Programs manager in the Wallops environmental division. "The sign of an organized thinker is how well they put their thoughts on paper. Sheryl is an organized thinker and is also a great colleague and friend."

Her work in environmental has its roots in work she started while studying psychology and biology at Virginia Tech.

During her freshman year, Eni's biology professor, impressed by her grades and work ethic, invited her to work in the school's lab. "I'm not sure it was my calling, but I stuck with it and was good at it. It required a lot of attention to detail," Eni said.

Eni continued to work in the environmental field eventually taking a position with the Accomack County Health Division. "I didn't know about the Eastern Shore, so I definitely had to do some research before coming here," Eni said. But, the Palm Beach, Fla., native and daughter of two retired Marines, her mother an administrative specialist and her father an engineer, considered the Shore's weather similar to that at home and a key change from the unpredictable weather in Blacksburg, Va.

## I am Goddard continued from Page 6

“I love the water and I love the area,” Eni said. “I think when you’re at a place where you like what you do and you like doing it ... that keeps you going.”

In time, the relationships and collaborations she built with the Wallops environmental group led to an opportunity to join the NASA team. She considers her time in environmental key to building skills and experience necessary to progress.

Sometimes progress requires change, and this past year Eni made two major changes in joining the civil service and taking a position out of environmental, serving in Code 271 as a management and program analyst in the Wallops Technical Information Management Services Branch. The branch is responsible for all the facility’s mail, records management, audiovisual services and duplicating.

“Working for NASA is beyond any dream I ever could have imagined,” Eni said. “There’s something different every day — I love that aspect.”

Eni is also very engaged in the center’s diversity

and inclusion work, recently being named Wallops’ diversity specialist. In this capacity, she serves as a resource for managers and employees on diversity and inclusion and develops outreach efforts for these initiatives.

Growing up in a military household prepared Eni for this role. Eni’s worldwide travel has molded her into a well-rounded person that appreciates diversity. “I just think there’s a lot we can do with diversity and inclusion here,” said Eni. “I’m passionate about employee engagement and I’m passionate about what I do. I want everybody to have that same level of passion working for NASA.”

Along with her work in diversity and inclusion, Eni has also led the relaunch of the Wallops New and Developing Professionals Advisory Committee. In this capacity, Eni is working to develop resources and support for new employees at Wallops, whether contractor or civilian.

“What I like best about Wallops is the people; it’s an incredible group of people to work with,” Eni said. “The mission is great, but it takes great people to accomplish the mission.”

## LDSD continued from Page 4

At that altitude, the test article will be detached from the balloon and a solid rocket motor will be employed to boost the test article on a trajectory to reach supersonic speeds (Mach 4) needed to test the SIAD.

Once at supersonic speeds, the deployment and function of the inflatable decelerators will be tested to slow the test article to a speed where it becomes safe to deploy a supersonic parachute. The balloon and test article will all be recovered from the ocean.

Two recovery vessels, Kahana and Konua, will recover the test article and balloon respectively. Before the articles can be recovered, a G-2 and a C-26 aircraft will focus on determining positioning of the articles for recovery. Wallops, with extensive experience vehicle recovery, will oversee the recovery operations for the LDSD mission.

In addition to the balloon operations and oversight of recovery, Wallops is the range services coordinator, has provided the core electronics for the test article and electrical ground support equipment.



Director Bill Wrobel talks to interns on their first day at Wallops Flight Facility on June 2.

## DID YOU KNOW?

Wallops by the numbers

Wallops is the largest technical employer within 100 miles.

Economic Impact\*

**Virginia:** \$267.5M and 2278 jobs

**United States:** \$829.3M & 5875 jobs

\*The Economic Impact of NASA Virginia Operations for Fiscal Year 2013  
(Chmura Economics & Analytics)