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GoddardView

TRENDING

New Horizons Completes Pluto Flyby
The New Horizons spacecraft, which was tested at Goddard in 2005 prior to its launch, achieved its closest approach to Pluto and its moons on July 14. The mission has provided the clearest images ever of the dwarf planet, which was discovered in 1930.

Astronomy Club Attends White House Campout
Members of the Goddard Astronomy Club joined President Obama, first lady Michelle Obama and 50 Girl Scouts for a campout on June 30. The club provided telescopes and led stargazing activities with scientists.

Hubble Celebrations Continue at Visitor Center
Goddard's visitor center hosted a second public event in celebration of the Hubble Space Telescope's 25th anniversary. More than 200 guests listened to presentations from scientists and participated in hands-on demonstrations.

Goddard Hosts Agency Honor Awards Ceremony
NASA celebrated the achievements of its workforce with an honor awards ceremony at Goddard on July 8. Thirty-five teams and 107 individuals were recognized for their contributions across 17 categories.

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On the cover: Artist concept of the New Horizons spacecraft during its approach to Pluto on July 14.

Image credit: Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute

GoddardView Info

Goddard View is an official publication of NASA's Goddard Space Flight Center in Greenbelt, Maryland. Goddard View showcases people and achievements in the Goddard community that support the center's mission to explore, discover and understand our dynamic universe. Goddard View is published by the Goddard Office of Communications.

You may submit story ideas to the editor at darrell.d.delarosa@nasa.gov. All contributions are subject to editing and will be published as space allows.

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MAIN AUDITORIUM RENAMED FOR FORMER CENTER DIRECTOR

By Elaine Hunt

Dr. Noel W. Hinners was known for his ability to create an atmosphere in which scientists could thrive and discover. On June 24, NASA's Goddard Space Flight Center paid tribute to him during a renaming ceremony for its main auditorium in Building 8. Hinners, who passed away in 2014, served as center director from 1982 to 1987.

Current Center Director Chris Scolese, whom Hinners hired into NASA in 1987, praised his foresight in science and his willingness to take chances and make changes at Goddard. "Noel continues to influence the center in ways that will go on for decades," said Scolese. "It's in our DNA now."

He cited the James Webb Space Telescope and ICESat-2, both of which are in production at Goddard, as examples of Hinners' lasting success in bringing science and engineering together.

"All of us in science have heroes – those who guide us and enable us," added Goddard Chief Scientist James Garvin, whom Hinners also hired. "His enabling encouragement is seen every second of every day here."

Thomas Young, who served as center director before Hinners, recounted trips they would take together to Capitol Hill when Hinners testified before Congress.

"He talked about the science," Young said. "When Noel started talking, even the principals came in to listen. He was incredible."

In the presence of Hinners' family and friends, as well as former center directors and current NASA employees, Scolese unveiled the auditorium's plaque with Hinners' wife Diana.

"We're really happy that we can come visit this auditorium because it means a lot to us," said Hinners' eldest daughter Elana, who attended the ceremony with her two daughters. "It's going to mean a lot to the kids, to help them know their grandfather."

Hinners' space career began in the 1960s as a contractor with the Apollo missions. He later served as NASA's deputy director of lunar programs. He became the agency's associate administrator for space science in 1974 and was instrumental in getting Congress to commit full funding for the Hubble Space Telescope. Hinners also lobbied for the establishment of the Space Telescope Science Institute in Baltimore, suggesting that Hubble's long-term success would largely depend on having a separate outlet for external advocacy.

Prior to Hinners' arrival at Goddard, he served as director of the Smithsonian's National Air and Space Museum from 1979 to 1982. Following his tenure at Goddard, he returned to NASA Headquarters in Washington during the agency's recovery from the Challenger accident before spending the remainder of his career at Lockheed Martin and retiring in 2002.

Hinners regarded his time at Goddard as one of the best experiences in his career. "Goddard is the best of the NASA centers," he said upon leaving the center in 1987. "And this is the best job in NASA." ■

Above: Members of Noel W. Hinners' family (right of plaque) stand next to the auditorium's new entrance plaque with (from left to right) former Goddard Center Director Thomas Young, Goddard Chief Scientist James Garvin and Goddard Center Director Chris Scolese.

Photo credit: NASA/Goddard/Bill Hrybyk

PUTTING WITH SPACELIKE PRECISION: FORMER GODDARD PHYSICIST FINDS A SECOND

By Roberto Molar Candanosa

Millions of golf enthusiasts worldwide tuned in to watch Zach Johnson conquer the famed Old Course at St. Andrews in Scotland on his way to victory in the 2015 British Open. That included former Goddard physicist Dave Pelz, a scientist-turned-golf instructor whose teachings were applied by many players in the tournament.

Pelz's unique scientific approach to golf has helped professional golfers worldwide, including Hall of Famers Tom Kite and Phil Mickelson, who won the British Open himself just two years ago. With 10 golf schools in the United States and two in Europe, Pelz also helps amateurs improve their game.

In part, it all started at NASA's Goddard Space Flight Center, where Pelz studied planetary atmospheres for nearly 15 years.

After attending Indiana University on a golf scholarship and earning a bachelor's degree in physics, Pelz joined the Goddard family in 1960.

"Doing space research was the dream," he said. "At the time, the Soviet Union had just put up Sputnik, and NASA was new, exciting and doing things that had never been done before."

He studied the atmospheres of Earth, Venus and Mars through international collaborations with Italian and German agencies. "I got to work with brilliant people – the best minds in the world," he added.

He also analyzed variables one at a time to prevent other variables from mixing up results and masking the causes and effects of things. After a decade, this new approach to research got him thinking seriously about pursuing golf professionally.

In his spare time, Pelz used lasers and computers to analyze his swings and strokes in his basement, helping him hit the ball more accurately. "I was really in the high-tech end of the golf industry," he said.

His analysis would show that most golf shots are taken inside and within 100 yards from the green, the small area surrounding a hole. He would later focus all his efforts on perfecting pitches, chips and putts – which are collectively known as the "short game."

"Golf is all about controlling your golf ball," Pelz explained. "Any child or old man can get the ball to the hole because they are strong enough, but the question is total accuracy."

Based on his findings, Pelz designed the Teacher Putter, a club with retractable clips to help players aim the ball better toward the hole. His new putter led to an improved golf game, leading to his participation in the U.S. Amateur Championship in 1974.

Soon after that, professional and amateur golfers began asking him about his peculiar approach to the game. "I was a very unique personality in golf because I knew physics," Pelz said. "I could do research in golf that most people couldn't."

In January 1975, Pelz took a one-year leave of absence from Goddard to pursue a business opportunity making new golf devices and training golfers. But by the end of

CAREER IN GOLF

that year, Pelz was so into his new life that he decided to focus exclusively on his new venture.

Pelz has had a successful career after leaving Goddard by doing research for big golf companies, writing books and articles, and teaching pros and amateurs alike. Today, he holds 21 patents for inventions and techniques that golfers all over the world use as learning aids, and he is continually working to come up with new ones.

Golf Digest named Pelz one of the 25 most influential instructors of the 20th century, and his professional students have won 20 major championships to date. His book, Dave Pelz's Short Game Bible, was a New York Times best seller in 1999. He made regular appearances on the Golf Channel and remains a contributing writer to Golf Magazine.

He now studies the game in an area much bigger than his basement. Pelz has turned the 2-acre backyard of his dream house – located just outside of Austin, Texas – into a space-age golf course that he casually calls his "research facility."

Covered with artificial turf and a range of greens that includes a replica of the iconic 12th hole of Augusta National Golf Club in Georgia – site of the annual Masters Tournament – Pelz's course functions rain or shine, hot or cold. "In 30 seconds, I can get out of my chair and go hit shots and have balls in the air," he said.

Even after leaving Goddard, he remembers the good times he had as a NASA scientist. In 2006, he reunited with nine scientists from his former team.

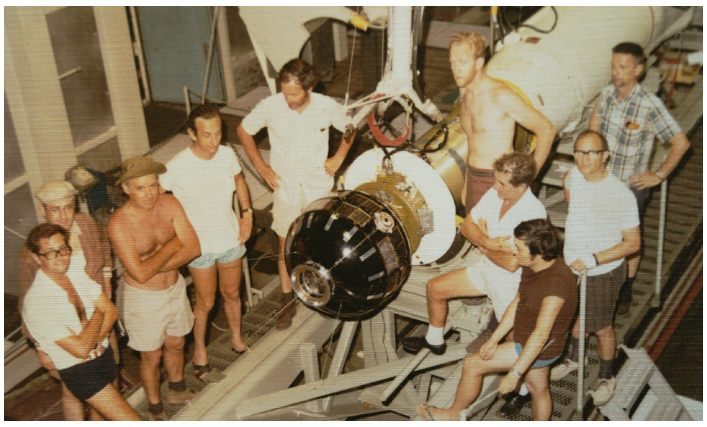
"It was a grand old time," said Pelz, who was among the few members of that team who left NASA. "I am probably one of the few people who ever left a job they loved as much as I loved working at Goddard."

Looking back, Pelz just considers himself to be a lucky guy. "I've had an incredible life. I feel like I'm living the dream, and it has continued even after I left NASA," he added. ■

Above, left: Golf instructor Dave Pelz, a former Goddard physicist, poses in front of his backyard golf course just outside of Austin, Texas. Photo credit: Pelz Golf

Above, right: Phil Mickelson (foreground, left), winner of five major golf championships, credits much of his success to short game skills he learned from Dave Pelz (foreground, right). Photo credit: Pelz Golf

Below: Dave Pelz (fifth from right) with a Goddard team in Italy. Photo courtesy of Pelz Golf.



EMPLOYEE SPOTLIGHT

Goddard is pleased to welcome these new employees to the NASA community.

Francine Smith

Code 110, Human Capital Strategist

Why Goddard?: I have a passion for aviation and wanted to be a part of supporting the NASA mission.

Hobbies/interests: traveling, water activities, hiking, running

Mihir Patel

Code 566, Student Trainee (Engineering)

Why Goddard?: One of my childhood dreams was to contribute to the ongoing initiative of space exploration.

Hobbies/interests: reading, tennis, photography, skiing

Colin Shackleford

Code 157.1, Accountant

Why Goddard?: To develop a deeper understanding of NASA financial management.

Hobbies/interests: investing, cars, travel

Kelly Busquets

Code 250, Environmental Engineer

Why Goddard?: It's the most impressive agency to work for!

Hobbies/interests: volleyball, tennis, basketball, biking, surfing, scuba diving, snowboarding, skiing, drums

Michael Morgan

Code 228, Civil Engineer

Why Goddard?: A challenging and rewarding new career.

Hobbies/interests: fishing, college football, working on cars, home renovation and construction, farming, musical instruments

Armen Gholian

Code 564, Student Trainee (Engineering)

Why Goddard?: Exciting missions and new challenges.

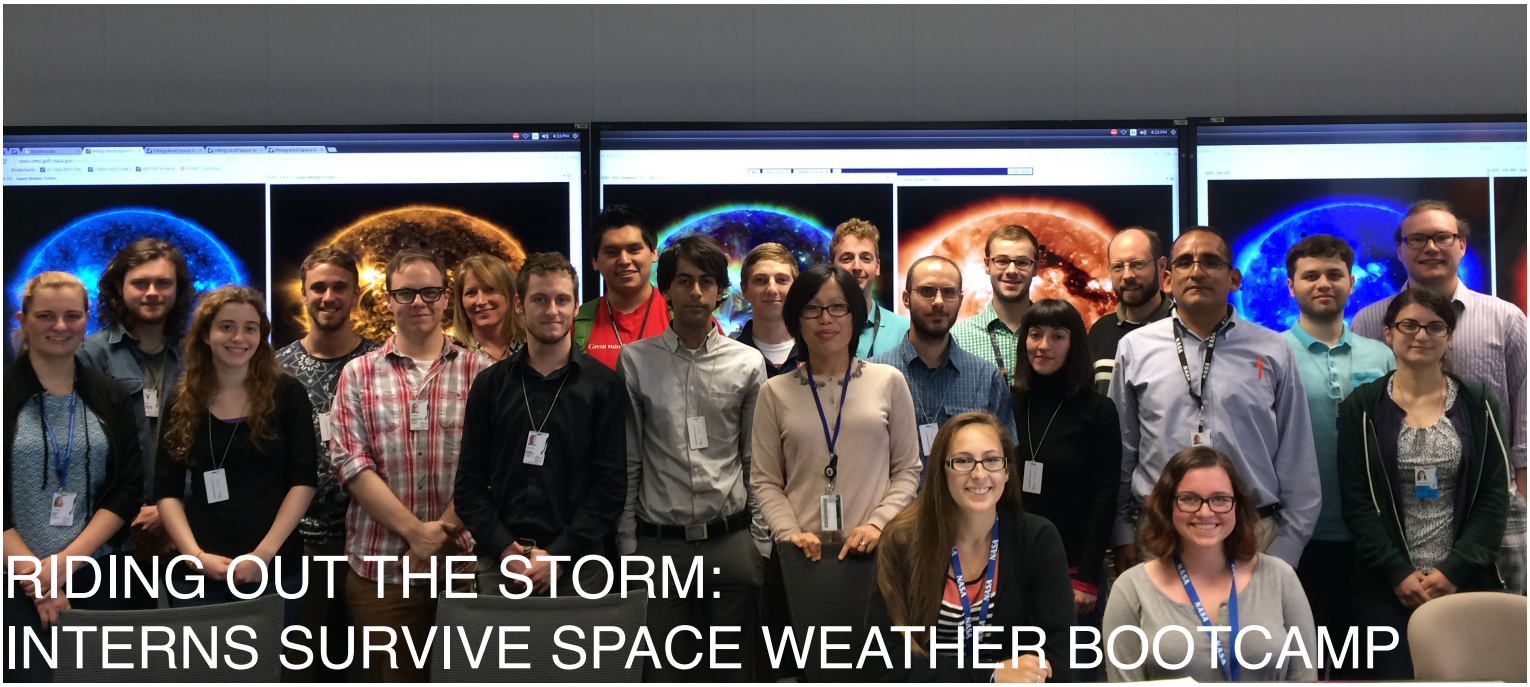
Hobbies/interests: hiking

Brianna Jordan

Code 160, Pathways Intern; Office of Education

Why Goddard?: NASA is a highly recognized agency and I am excited to be a part of it.

Hobbies/interests: singing, writing poetry, reading, music, shopping



RIDING OUT THE STORM: INTERNS SURVIVE SPACE WEATHER BOOTCAMP

By Sarah Frazier

On June 20, the sun unleashed a coronal mass ejection, causing a geomagnetic storm that created an aurora that reached as far south as Virginia. Several interns at NASA's Goddard Space Flight Center worked with space weather forecasters at the Community Coordinated Modeling Center to determine the impacts of the events near Earth.

Just weeks earlier, the interns were novices in the subject matter prior to their participation in the third annual Space Weather Bootcamp. A multi-agency partnership that uses forecasts to improve space weather models and send warnings to NASA missions about potentially damaging events, the Goddard-based CCMC has organized the two-week crash course since 2013 to train interns and others in the basics of space weather forecasting.

"The main challenge is to connect eruptions on the sun, like solar flares and coronal mass ejections, to impacts here on Earth," said Yihua Zheng, a research astrophysicist with the Goddard Space Weather Laboratory and organizer of the Space Weather Bootcamp.

"It's a lot of information thrown at you really fast," added Zach Waldron, one of five space weather forecasting interns who participated. "But it's fun to learn about such a specific aspect of physics, especially from the people who practically invented space weather forecasting."

This year, the forecasting interns were joined by interns from other divisions, Goddard scientists and engineers, and visitors from research organizations and space weather prediction centers in Greece, Norway, Peru, South Africa and other parts of the United States.

"It was really cool to attend the same workshop as all of these scientists and engineers from different projects," said Katie Krohmaly, an intern in the science data processing branch. "Everyone was learning the same material, so it really emphasized how broad the topic is."

The first week of the camp, intended for those with a broad interest in space weather, covered the fundamentals. About 40 people attended in person while another 13 attended via videoconference.

"I was surprised by how many people were participating," said Jenna Zink, a returning forecasting intern who helped grade assignments. "The homework and quizzes were only required for the forecasting interns, but most everyone did them anyway."

The second week focused on hands-on training for the five forecasting interns, who used space weather measurements to test their forecasting skills. They monitored the present space weather environment, but also used older data to measure past solar events, such as a large solar storm in July 2012.

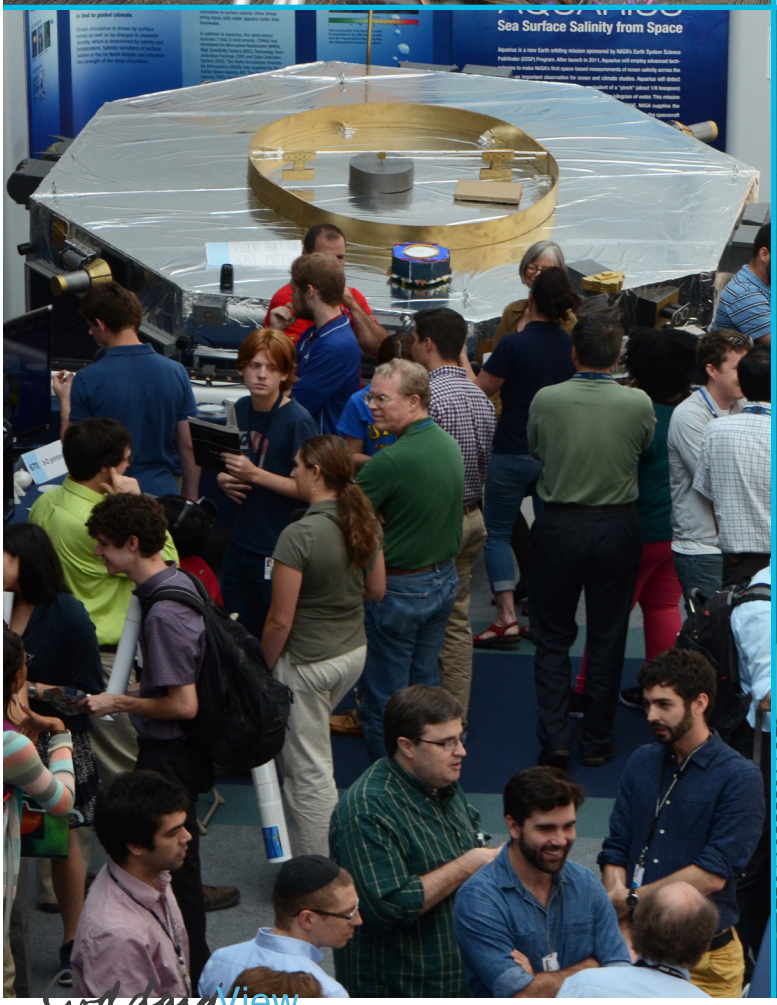
For the rest of the summer, the interns will continue to hone their skills by making practice forecasts based on old data, monitoring the ever-changing status of the sun, and coming up with predictions for impacts near Earth when the sun releases a solar flare or coronal mass ejection.

"Getting to know each other and hearing about each other's work was exciting for the students," added Zheng. "Some of these students might not have known about different careers in space weather." ■

Above: Space Weather Bootcamp participants at the Goddard-based Community Coordinated Modeling Center.

Photo credit: NASA/Goddard/Leila Mays

SPACECRAFT
ORATION OF THE PLUTO SYSTEM AND SMALL KBOS BEYOND
9 2006, ATLAS V-551 ROCKET
11KG PU-238, 202 WATTS AT PLUTO
NS:
HIGH-GAIN ANTENNA
PLINK/DOWNLINK, 3000 BPS MAX AT PLUTO
OF POWER
RUMENTS:
HIGH RESOLUTION CAMERA
COLOR AND PANCHROMATIC CAMERA
NIR SPECTRAL MAPPER
UV SPECTRAL MAPPER
AND PEPSSI - PLASMA ENVIRONMENT INSTRUMENTS
RADIO SCIENCE EXPERIMENT
A BURNEY STUDENT DUST COUNTER
ALICE
RALPH
MVICLESA


Sea Surface Salinity from Space

CLASS OF

GODDARD'S BRIGHT MINDS GATHER FOR ANNUAL SCIENCE JAMBOREE

By Elaine Hunt

From cryogenically frozen marshmallows and pennies to 3-D-printed supernovae, the Science Jamboree at NASA's Goddard Space Flight Center gave scientists, engineers and interns a chance to present and share their projects with fellow employees.

Following an introduction from Center Director Chris Scolese, employees from about 60 different divisions and groups engaged onlookers in demonstrations ranging from areas such as satellite technology and supercomputing to heliophysics and sea ice.

"This is an opportunity not just for us to share with the rest of the community what people are working on, but also for them to talk with each other," said Lora Bleacher, acting assistant director of science for education in the Goddard Sciences and Exploration Directorate and organizer of the sixth annual jamboree. "It's sharing with the larger community what's going on, but it's also an opportunity for people to really connect and form new partnerships that may lead to future collaboration on missions or in research."

"NASA has always strived for public outreach and awareness," added Jordan Robertson, system administrator of the Discover supercomputer. "It's integral. We just want to get it all out there."

SED organizes the jamboree in the summer with the primary purpose of giving the more than 400 interns at the center more exposure to the different projects going on at Goddard.

"The jamboree allows people to communicate and learn in a relatively informal setting," said intern Ross McCurdy, who is working on X-ray polarimetry that will help detect and try to make images of black holes. "It's great hearing scientists get all excited about what they're working on and it helps people learn what they want to do."

Intern Sean McCloat presented Aurorasaurus, his team's citizen science project that tracks auroras with the use of social media platform Twitter. "The Science Jamboree was great," he said. "I definitely think we've reached a number of people."

Five scientists gave presentations using Goddard's hyperwall, a set of 15 individual high-definition screens that collectively make up a 20-by-6-foot visualization. This included Dennis Reuter, co-investigator of the New Horizons mission, who spoke about the spacecraft's impending flyby of Pluto and the high-resolution photos of the dwarf planet that it would produce.

The event also featured a student-made full-scale replica of one of the four identical spacecraft that make up the Magnetospheric Multiscale mission. Launched earlier this year, MMS examines what happens when magnetic fields connect, disconnect and reconfigure around Earth.

The Goddard Astronomy Club set up two telescopes outdoors. A few members of the club were on hand to explain what was being viewed when the telescopes were pointed toward the sun.

The Goddard Flight Dynamics Facility, which helps satellites send data back to Earth, was open for tours as well.

"There are so many things going on. This is just scratching the surface of everything that goes on here at Goddard," Bleacher added. "The jamboree showcases all of the amazing work and the hard work that people put into their jobs and the things they can do." ■

Center: Scientists, engineers, interns and other Goddard employees gather at the sixth annual Science Jamboree to learn about the many projects going on at the center and develop partnerships that may lead to future collaborations on missions or in research. Photo credit: NASA/Goddard/Jay Friedlander

Opposite: Dennis Reuter, co-investigator of the New Horizons mission, gives a hyperwall presentation on the spacecraft's impending flyby of Pluto (top left). The Goddard Astronomy Club teaches participants how to use telescopes and identify celestial objects (top right). A full-scale replica of a Magnetospheric Multiscale mission spacecraft on display at the jamboree (bottom left). Goddard interns experiment with a gravitational wave demonstration (bottom right). Photo credits: NASA/Goddard/Jay Friedlander and Katy Mersmann

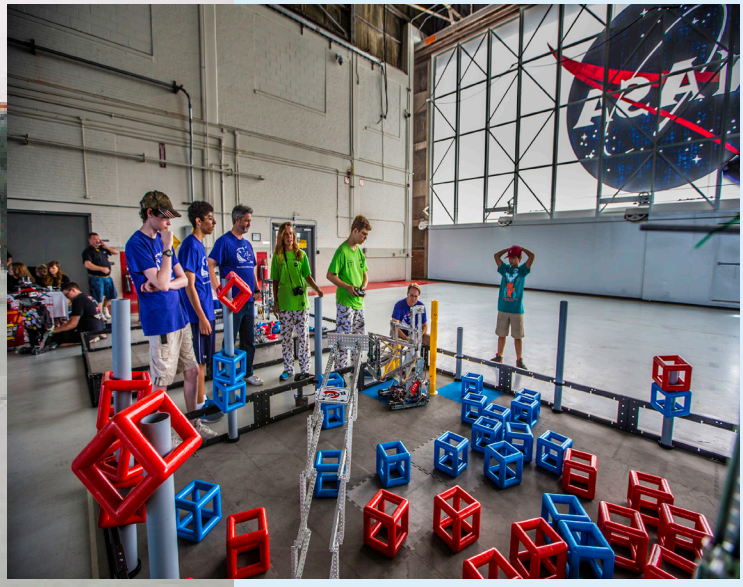
WALLOPS' 70TH ANNIVERSARY

More than 7,000 visitors attended the Wallops Flight Facility's 70th anniversary open house celebration on June 27. The event featured more than 60 exhibitors, special presentations and static display aircraft, as well as a 5k run.

Rep. Scott Rigell, from Virginia's Second Congressional District, spoke during the opening ceremony and highlighted Wallops' contributions to America's space program and its economic impact in Virginia.

Chris Scolese, center director of NASA's Goddard Space Flight Center, read a certificate from Barbara Mikulski, senior U.S. senator from Maryland, that recognized Wallops as "a world class international launch site celebrating 70 years of science and innovation."

OPEN HOUSE CELEBRATION



In addition, Virginia state Sen. Lynwood Lewis and state Del. Rob Bloxom read proclamations from the Virginia General Assembly and Gov. Terry McAuliffe that praised Wallops for 70 years of excellence.

Wallops Director Bill Wrobel touched on the importance of inspiring the next generation of space explorers during the event. “STEM programs here like the Virginia Space Coast Scholars, the Virginia Space Flight Academy, the Eastern Shore Community College work experience, as well as the Summer Institute in Science, Engineering and Research, are helping to inspire and grow the next generation,” he said. “We could not have accomplished anything over the past 70 years or in the 70 to come if not for an energized, talented workforce.” ■

Photo credits: NASA/Wallops/Patrick Black and Terry Zaperach

NASA Goddard Opens Its Doors

National Aeronautics and Space Administration

SAVE THE DATE!

Saturday, Sept. 26, 2015

Goddard welcomes the public for a free open house event for all ages on Saturday, Sept. 26, 2015, from 11 a.m. to 5 p.m. We invite you to visit our center in Greenbelt, Maryland, for a day of activities, tours and hands-on demonstrations that are both fun and educational. Explore@NASAGoddard will engage visitors in Goddard's work in Earth science, heliophysics, planetary science, astrophysics, and engineering and technology.

In celebration of the Hubble Space Telescope's 25th anniversary, this year's theme will be "Celebrating Hubble and the Spirit of Exploration."

Bring your family and friends and come learn about the extraordinary work we are doing to better understand our dynamic universe. For more information, please visit www.nasa.gov/explorenasagoddard.

#ExploreGoddard

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