



Island Access

Antares ORB-2

The resupply mission took flight
July 13 from Wallops Island
Page 8



Beach Dredging

Work begins on the second
beach restoration project
Page 5

HS3

Global Hawks return
to the skies this Fall
Page 6

I am Goddard

Meet a few of the
Wallops interns
Page 10-12

August Calendar

6 | **Diversity & Inclusion Day**
11 a.m.-2 p.m. See page 4 for more information on the activities.

7 | **Wallops Farmers' Market**
11 a.m.-1 p.m. in parking lot "E" at the Chincoteague Bay Field Station, featuring Shore Beef & BBQ, fresh fruits and veggies, exotic jams, jellies and butters, dog and cat treats and much more.



7 | **UFO Luau**
5-9 p.m. at the F-3 Rocket Club
Purchase tickets at the Rocket Club or at the E-2 WEMA Exchange
Live music, food and Hawaiian attire requested

13 | **Stuff A Rocket!**
11 a.m.-1 p.m. Outside the Cafeteria
Help Feds Feed Families by donating non-perishable food items directly into a sounding rocket.
Rain date: August 14

15 | **Movie Nights at the Rocket Club**
Starts at 7 p.m. Aug 15 - Toy Story; Aug 22 Million Dollar Arm; Aug 29 Top Gun. The Rocket Club Snack Bar will be open for refreshments. (Alcohol will not be permitted in the Banquet Room during the movie.)

What's inside

3 | **The Director's Cut**
ISS Thanks Wallops Employees

4 | **What's up @ Wallops?**
Diversity & Inclusion Day

5 | **Wallops Beach Dredging**
Second restoration is underway



6 | **HS3 Mission**
Global Hawks return for third hurricane science mission

7 | **Fall Balloon Campaign**
The Balloon Office heads to Fort Sumner for 8 planned missions



8 | **Antares Orb-2**
The Cargo Resupply Mission took flight from Wallops July 13

10 | **I Am Goddard**
Meet a few of the Wallops interns that were here during the summer

on the COVER | The Antares Orb-2 rocket takes off from Pad OA July 13, 2014.

Photo Credit: NASA/Allison Stancil





The Cygnus docked with the International Space Station (ISS) July 16, 2014. The spacecraft delivered 3,669 pounds of cargo.

The Director's Cut

Team: I wanted to take a moment to share this thank you note we received from the crew of the International Space Station on the occasion of the successful Antares/Cygnus operations this past week. The Orb 2 mission was a true team effort across the board—thank you for what you do here on Earth every day so that those 260 miles above can continue critical work aboard the station.

— *Bill Wrobel, Director of Wallops Flight Facility*

The crew of Expedition 40 would like to say a huge thanks to all the fantastic folks at NASA GSFC/WFF who worked launch support for Orb2. This

vehicle brought us critical supplies that not only increased our science capability, but also restocked our dwindling food supplies allowing us to rest a little easier at night. We know the Orbital team couldn't have gotten Cygnus here without the tremendous efforts of the men and women working behind the scenes at Wallops. We wanted to make sure we gave a shout out to our NASA team that helped get them off the ground and on their way. We appreciate all your efforts!

Thanks from the ISS,
Swanny, Reid, and Alex

What's up @NASAWallops?

DISCOVER-AQ flights begin

WALLOPS ISLAND — The NASA P-3B aircraft departed the Wallops Flight Facility July 14 for a month-long campaign in Colorado that will probe the factors leading to unhealthy air quality conditions and improve the ability to diagnose air quality conditions from space.

The Colorado study is part of DISCOVER-AQ, which stands for Deriving Information on Surface Conditions from Column and Vertically Resolved Observations and is Relevant to Air Quality, the final stop in a series of four field studies by the DISCOVER-AQ team focused on areas across the United States that routinely experience poor air quality. Previous flights focused on the Baltimore-Washington area (2011), California's San Joaquin Valley (2013), and Houston (2013).

The Colorado study runs through Aug. 16. For more information on DISCOVER-AQ and its partners, [click to visit the DISCOVER-AQ page](#).

Events scheduled for Wallops Diversity and Inclusion Day

WALLOPS ISLAND — Wallops Diversity and Inclusion Day is scheduled for Aug. 6, 2014.

The theme of the day is unity, and the event is meant to bring individuals of different backgrounds together for a day of learning, engagement, community-building, and networking.

This event aims to increase awareness of Diversity and Inclusion (D&I) at WFF; showcase Center Advisory Committees,



Charles Bolden presented Certificates of Appreciation to Equal Opportunity and Diversity and Inclusion directors, program managers and related staff.

WEMA Clubs, and the Inclusion Ally Initiative; and increase the overall employee engagement and sense of community at WFF. The events will be spread across three days.

The event will kick off Tuesday, August 5, with an "I Am Goddard" success story featuring Caroline Massey, assistant director for management operations, in the E-100 Auditorium from 10-11 a.m.

The majority of events will be held between 11 a.m.-2 p.m. Wednesday, August 6, in the E-100 Auditorium. The Advisory Committees and WEMA Clubs will have displays from 11 a.m.-noon. Brown bag panel discussions featuring WFF D&I committee members, GSFC advisory committee representatives, Inclusion Ally POCs, and WFF senior leadership will run from noon-1 p.m. Furthermore, from 1-2 p.m., the WFF D&I committee will host a speed mentoring event featuring members of the WFF senior leadership team.

Diversity and Inclusion Day will conclude Thursday, Aug. 7, with a Hawaiian Luau hosted by WEMA and the MAC. This grand finale will run from 5-9 p.m. at Building F-3, the Rocket Club. Activities will include Island

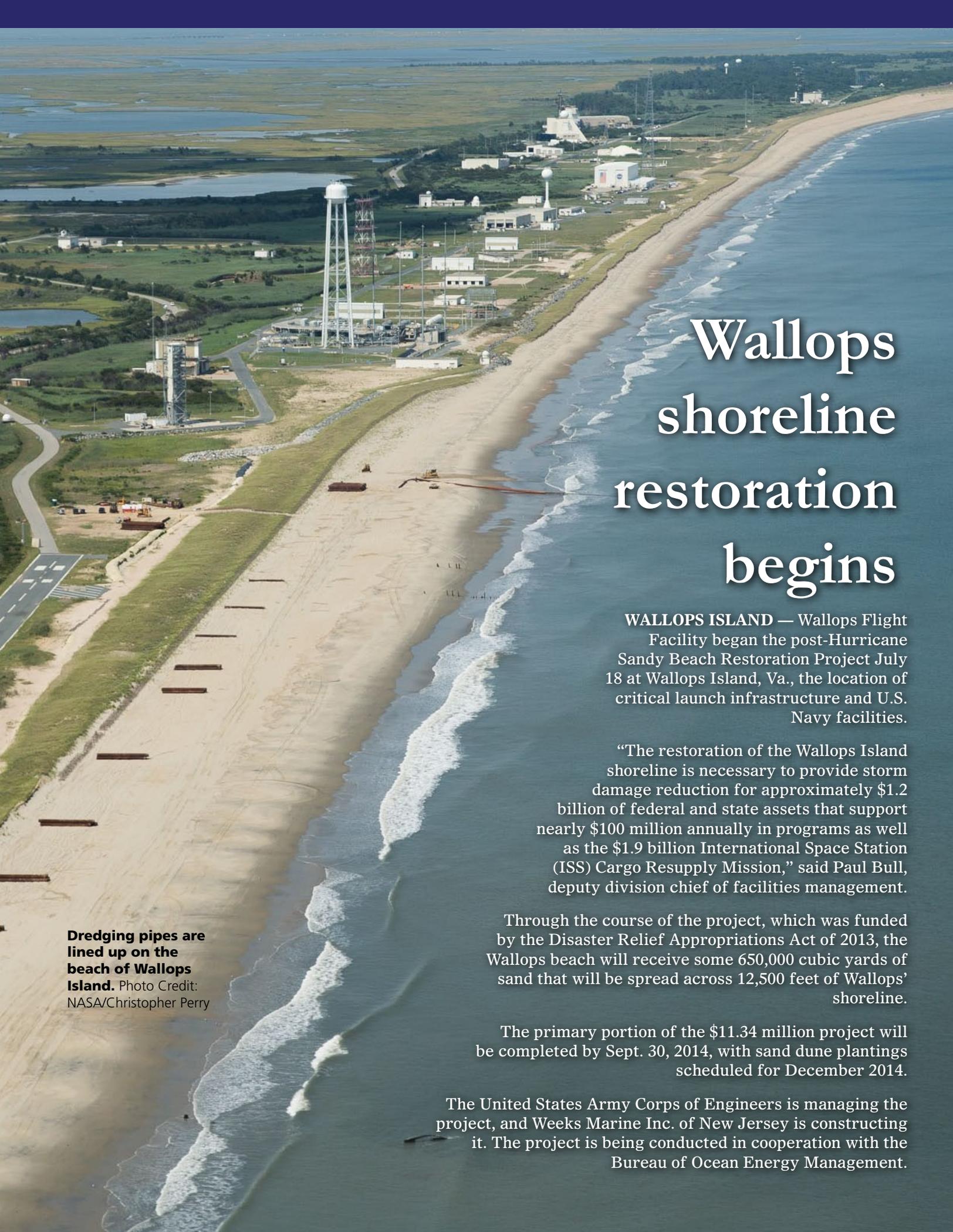
music, Hawaiian-themed cuisine, corn-hole, hula hoop contests, door prizes and more.

NASA recognizes Civil Rights Act anniversary

WALLOPS ISLAND — NASA commemorated the 50th anniversary of the Civil Rights Act on June 23 when Administrator Charles Bolden presented Certificates of Appreciation to Equal Opportunity and Diversity and Inclusion directors, program managers, and related staff for their key roles in the promotion of equality.

Passed shortly after the establishment of NASA in 1958, the Civil Rights Act of 1964 outlawed discrimination on the basis of race, color, religion, national origin, and gender, paving the way for a more diversity and inclusion-focused era.

With the support and efforts for change executed by the Office of Diversity and Equal Opportunity at NASA headquarters, great progress has been made toward celebrating the diverse backgrounds that comprise the NASA employee network, Bolden noted in a letter to NASA employees.



Wallops shoreline restoration begins

WALLOPS ISLAND — Wallops Flight Facility began the post-Hurricane Sandy Beach Restoration Project July 18 at Wallops Island, Va., the location of critical launch infrastructure and U.S. Navy facilities.

“The restoration of the Wallops Island shoreline is necessary to provide storm damage reduction for approximately \$1.2 billion of federal and state assets that support nearly \$100 million annually in programs as well as the \$1.9 billion International Space Station (ISS) Cargo Resupply Mission,” said Paul Bull, deputy division chief of facilities management.

Through the course of the project, which was funded by the Disaster Relief Appropriations Act of 2013, the Wallops beach will receive some 650,000 cubic yards of sand that will be spread across 12,500 feet of Wallops’ shoreline.

The primary portion of the \$11.34 million project will be completed by Sept. 30, 2014, with sand dune plantings scheduled for December 2014.

The United States Army Corps of Engineers is managing the project, and Weeks Marine Inc. of New Jersey is constructing it. The project is being conducted in cooperation with the Bureau of Ocean Energy Management.

Dredging pipes are lined up on the beach of Wallops Island. Photo Credit: NASA/Christopher Perry

Global Hawks return to Wallops for third and final HS3 mission

WALLOPS ISLAND — The Hurricane and Severe Storm Sentinel (HS3) mission enters its third and final year with the arrival of two NASA Global Hawk aircraft Aug. 20 and 22 at NASA's Wallops Flight Facility in Virginia.

HS3 is a collaborative effort that brings together several NASA centers with federal and university partners to investigate the processes that underlie hurricane formation and intensity change in the Atlantic Ocean basin.

The flights from Wallops are scheduled to occur between Aug. 26 and Sept. 29 during the peak of the Atlantic hurricane season, which runs from June 1 through Nov. 30.

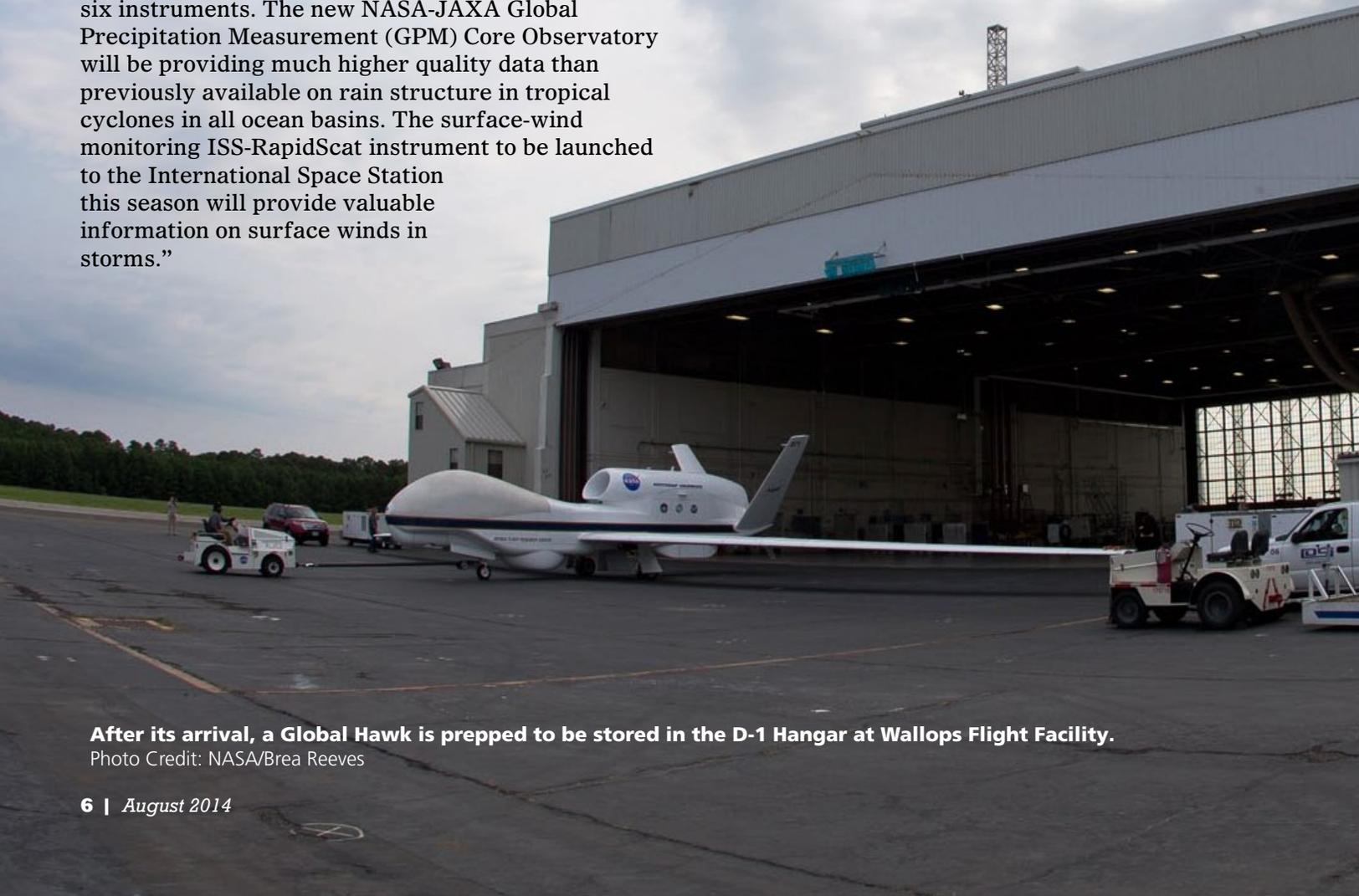
“This year we’re going full-force into tropical cyclone research,” said Scott Braun, HS3 mission principal investigator and research meteorologist at NASA’s Goddard Space Flight Center in Greenbelt, Md. “We’ll have two Global Hawks equipped with six instruments. The new NASA-JAXA Global Precipitation Measurement (GPM) Core Observatory will be providing much higher quality data than previously available on rain structure in tropical cyclones in all ocean basins. The surface-wind monitoring ISS-RapidScat instrument to be launched to the International Space Station this season will provide valuable information on surface winds in storms.”

One of the remaining mysteries that HS3 is attempting to solve is the effect of the hot, dry and dusty Saharan Air Layer (SAL) in tropical storm formation and intensification. Some research points to SAL contributing to storm formation, while other research indicates SAL suppresses it. HS3 also will investigate the role of strong thunderstorms near the core of the storms as a possible driver of intensity change.

This year NOAA, in addition to managing all of the dropsondes during the HS3 mission, will enable the mission to fly another week to better study tropical cyclones. A dropsonde is a device that measures winds, temperature and humidity, dropped from an aircraft.

The NASA Global Hawks are unmanned aircraft that will be piloted remotely from the HS3 mission control

HS3 continued on Page 13



After its arrival, a Global Hawk is prepped to be stored in the D-1 Hangar at Wallops Flight Facility.

Photo Credit: NASA/Brea Reeves

Balloon Office kicks off Fall campaign at Fort Sumner

FORT SUMNER, N.M. — The Wallops-managed NASA Balloon Program is set to kick off its fall scientific balloon campaign this week in Ft. Sumner, N.M., with eight missions planned.

Balloon flights begin the first week of August and will continue through the end of September.

The campaign will host eight balloon missions supported by the NASA Science Mission Directorate. The missions include student outreach, support systems tests, various science research missions and Long Duration Balloon verification.

These missions are launched from Ft. Sumner, N.M., a location typical for conventional balloon flights lasting up to approximately 24 hours in duration. Ft. Sumner is a remote desert launch location. This, coupled with the typical westward flight trajectory, provides a low risk to public safety for the balloon flights.

“We look forward to the Fall Fort Sumner Campaign every year,” said Deb Fairbrother, chief of the balloon program office. “We are able to support numerous launch opportunities for NASA science, technology and education.”

Scientific balloons are massive in size. The balloons for the Ft. Sumner campaign range in size from 11 million cubic feet to 40 million cubic feet. The largest balloon for this campaign could fit nearly 200 blimps inside. These massive balloons will carry the payloads from 100,000 to 125,000 feet.

The missions set to launch during the fall campaign are:

- **Wallops Arc Second Pointer/HyperSpectral Imager for Climate Science:** Principal Investigator Dr. Gregg Kopp from the Laboratory for Atmospheric and Space Physics
- **High Altitude Student Platform:** Principal Investigator Dr. Greg Guzik from Louisiana State University
- **Long-Duration Ballooning Systems Test:** Principal Investigator Debora Fairbrother from NASA's Wallops Flight Facility



The Wallops Arc Second Pointer preps for a balloon flight out of Fort Sumner, N.M. Photo Credit: Courtesy Photo

- **JPL Remote:** Principal Investigator Dr. James Margitan from NASA's Jet Propulsion Laboratory
- **X-Calibur:** Principal Investigator Dr. Henric Krawczynski from Washington University in Saint Louis
- **Gamma-Ray Polarimeter Experiment:** Principal Investigator Dr. Mark McConnell from the University of New Hampshire
- **Balloon Observation Platform for Planetary Science:** Principal Investigator Dr. Andrew Cheng from The Johns Hopkins Applied Physics Laboratory
- **Wallops Arc Second Pointer/Observatory for Planetary Investigations from the Stratosphere:** Principal Investigators Mr. David Stuchlik, Mr. Terry Hurford and Mr. Avi Mandell from NASA Goddard Space Flight Center.

The Columbia Scientific Balloon Facility, located in Palestine, Texas, provides all support operations from payload integration and launch services to flight termination and full system recovery.

Visit the [NASA Balloon Program website for more information.](#)

Antares Orb-2 completes second resupply mission

WALLOPS ISLAND — A multitude of NASA research investigations, crew provisions, hardware and science experiments from across the country headed to the International Space Station aboard Orbital Sciences Corp.'s Cygnus spacecraft. The cargo craft launched aboard Orbital's Antares rocket from NASA's Wallops Flight Facility in Virginia at 12:52 p.m. July 13, 2014.

The mission is the company's second cargo delivery flight to the station through a \$1.9 billion NASA Commercial Resupply Services (CRS) contract. Orbital will fly at least eight cargo missions to the space station through 2016.

The Orbital-2 mission is carried almost 3,300 pounds of supplies to the station, which will expand the research capability of the Expedition 40 crew members. Among the research investigations headed to the orbital laboratory are a flock of nanosatellites designed to take images of Earth, developed by Planet Labs of San Francisco, and a satellite-based investigation called TechEdSat-4 built by NASA's Ames Research Center in Moffett Field, California, which aims to develop technology that will eventually enable small samples to be returned to Earth from the space station.

An experiment managed by Ames called Smart Synchronized Position Hold, Engage, Reorient Experimental Satellites (SPHERES) features a sensor and multiple cameras to enable 3-D mapping and robotic navigation inside the space station. In addition, a host of student experiments are on board as part of the Student Spaceflight Experiment Program, an initiative of the National Center for Earth and Space Science Education and NanoRacks.

Cygnus reached the ISS on July 16, 2014, successfully grappled by the Expedition 40 astronaut crew at 8:53 a.m. Cygnus will remain berthed at the ISS for 30 days before departing with approximately 2,800 pounds of disposable cargo.



The Antares Orb-2 rocket is seen through the clouds as it makes its way toward the International Space Station.
Photo Credit: NASA/Allison Stancil



The payload fairing is installed on the Orbital Sciences Antares rocket at the Horizontal Integration Facility.
Photo Credit: NASA/Brea Reeves



The Antares rocket is rolled out to Pad 0A for its launch on July 13. Photo Credit: NASA/Brea Reeves



The Antares rocket lifting into its vertical position. Photo Credit: NASA/Jamie Adkins



Antares is seen lifting off from Pad 0A on July 13, 2014.
Photo Credit: NASA/Brea Reeves



The Antares rocket took off from Pad 0A July 13, 2014.
Photo Credit: NASA/ Joshua Murray



An aerial photo shows the Antares Orb-2 launching from the MARS Pad 0A. Photo Credit: NASA/Terry Zaperach

I am **Goddard**

Wallops Interns

The Public Affairs Office interns, shown at right, interviewed various Wallops Flight Facility (WFF) interns from different codes and origin states, and created biographies describing their internship, projects, and how their experience at WFF may influence future endeavours.



From left, Tess Wilder Cervantes, Gary Qian and Jessica Stanfield interned for the Office of Communications during Summer 2014.

Tess C. Wilder Cervantes

I grew up on a tiny reservation called Hoopa, CA. I received my Bachelor's in English, with an emphasis on Creative Writing, from Humboldt State University and am currently pursuing my Master's in Library and Information Science at the University of Washington in Seattle.

Gary G. Qian

I am from "Berlin," MD, Shanghai, China, Fremont, CA, and Germantown, MD and will attend Johns Hopkins University this fall. I will study Computer Engineering and hope to enter the technology entrepreneurship field. I am considering degrees in Computer Science and Robotics. This is my second year at Wallops.

Jessica M. Stanfield

I am from Chincoteague, VA and will be attending the University of Virginia. I intend to major in Foreign Affairs and minor in a foreign language. This is my second year with the WFF Internship Program and the experience has had a huge impact on my professional development.

Featured Intern Stars

Victoria Lee



Tori, a Mechanical Testing and Development intern in the Balloon Lab and a student

at Brown University, works with the testing of sample materials essential to the expansion of the Balloon Program. She does everything from heat tacking and splicing samples of balloon material to working the laboratory and collaborating with engineers. Her efforts and hands-on experience have not only been a positive contribution to the Balloon Lab, but also to her interests in biomechanics and research development.

Sally Ann Keyes



Sally Ann works with the aircraft office, developing models of the P3 aircraft to predict its

performance changes after modifications. This system is normally used with UAVs, so Sally Ann must validate the model results with actual P3 test flight data and extrapolate it to UAVs. She likes how her work allows her to apply concepts she has learned, such as differential equations, aerodynamics, and controls. This experience is helping her decide what to pursue in graduate school. "I love airplanes," she said with glee.

Dan Perdue



During his time in Code 589, Dan has had two major projects: 1) developing a

software that would monitor the health and status of a network of computers, and 2) creating a diagram of the various data systems in the RCC. According to Dan, his experience at WFF has also further supported his chosen career path. "I just love programming and coding...It's been a good reinforcement of 'yes this is something I wanna do.' You know, you'd hate to find out that you get bored of it after a couple weeks."

Laurel Marsh



Laurel is working with the ICE Cube Satellite in Guidance, Navigation, and Control,

using software to model the impacts of gravity and drag on the satellite's torque. Her findings determine the size of the momentum wheel, which drives the design of the satellite. Laurel's work here has given her a head start in Aerospace Engineering at Mississippi State University, and has helped her decide to get a master's degree. "The most interesting thing...was actually just volunteering at the Antares launch this past Sunday."

Max Martell



Max was brought in to work on the P3 and the C-130 in support of the Airborne

Science Program, which is meant to repurpose old military airplanes and use them for airborne science research. They're currently replacing a window with an aluminum plate in order to install a mount for connecting scientific instruments to the plane. "You're designing something that really doesn't exist....You come up with this idea and you see if it works," Max responded when asked what he finds most interesting.

Olivia Hancock



Olivia is a Ground Operations intern in Code 840. Her main task this

summer has been to update an access file containing all of the records of employee job training and completion statuses. She estimates that she has typed approximately 1,000 entries into the file, which is essential for supervisors to make sure all employees are informed and safe. Working in a professional government setting and seeing different employee jobs has opened her mind to possibly majoring in Engineering.

Featured Intern Stars

Aran Teeling



Aran works in the IT department, working with BURST contingency plans,

ACES asset lists, mobile desktop apps, cable plant, technical writing, and architects. Aran's favorite project during his time here was working with other code 763 members on the BURST database. He believes that his internship has developed his writing and professional skills, which he aims to use in his future career. Aran plans to double major in Spanish and History at UVA and pursue a Master's in Teaching.

Jasmine Jackson



Jasmine is in the Mission Planning Lab, working on two main projects: Project

Management Documentation (for another intern's project) and the Solar Power Analysis Tool. The former is meant to ensure that the MPL is meeting the requirements for the project itself, while the latter entails Jasmine making autoCAD models through a modeling software and coding them for import into the system's toolkit. "The most interesting experience is [that] we are kind of like the hub for everyone else in the building," said Jasmine.

Andrew Bradshaw



Andrew is working on the C-130 GOX (gaseous oxygen) Project,

where they are retrofitting a secondary gaseous oxygen system onto the back of NASA's C-130 Research Plane. Additionally, he is taking parts and creating 3D models of them in Autodesk Inventor for later construction and application. When asked, Andrew said he finds the process of problem-solving in this field (from identifying the issue, to finding and implementing a solution) to be particularly interesting.

Charlotte Olmsted



Charlotte works in the Environmental Office in building F-160 as the Environmental

Support Specialist. Her main responsibilities include research on recycling, hazardous waste disposal, monitoring the local piping plover species, and developing a water table model for the Inspire the Next Generation Day. She will attend Virginia Tech to study Engineering and plans to use her experience interacting with WFF engineers who worked alongside the Environmental Office to aid her future education.

Samuel Stanfield



Sam is in the Distance Focusing Overpressure project, which involves research on

possible damage to buildings in the event of a launch failure. Working on the GIS side, Sam photographs the windows of buildings to determine which ones are at risk of breaking. Sam has enjoyed working with the local people, who were oftentimes quite "an adventure." Sam wants to study Aeronautical Science at the Naval Academy or Embry Riddle to become a fighter pilot, and this internship has provided him with an excellent background.

Tammy Sheppard



Tammy, an eighth grade teacher in Tennessee and a Workforce

Development Intern in the Education Department, currently attends Middleton University pursuing a Chemical Engineering degree. Her main tasks at WFF include intern management, aiding the W.R.A.T.S program, student tours, and helping design Inspire the Next Generation for the local community and schools across the United State. Her ultimate goal is to become an astronaut and take her honed professional skills to the world of chemical engineering.



A Global Hawk prepares to take off from the runway at Wallops Flight Facility. Photo Credit: NASA/Brea Reeves

HS3 continued from Page 6

at Wallops. Global Hawk aircraft are well-suited for hurricane investigations because they can fly for as

long as 26 hours and fly above hurricanes at altitudes greater than 55,000 feet.

One Global Hawk will carry three instruments to examine the environment around the storms, including the Scanning High-resolution Interferometer Sounder (S-HIS), the Advanced Vertical Atmospheric Profiling System (AVAPS), also known as dropsondes, and the Cloud Physics Lidar (CPL).

The second Global Hawk will focus on the inner region of the storms to measure wind and precipitation, surface winds, and atmospheric temperature and humidity. It will carry the High-Altitude Imaging Wind and Rain Airborne Profiler (HIWRAP) conically scanning Doppler radar, the Hurricane Imaging Radiometer (HIRAD), and the High-Altitude Monolithic Microwave Integrated Circuit Sounding Radiometer (HAMSR) microwave sounder.

Virginia Space Coast Scholars second program session begins

WALLOPS ISLAND — The Virginia Space Coast Scholars Summer Academy, sponsored by the Commonwealth of Virginia, returned for its second year at Wallops with an initial weeklong session conducted July 26-Aug. 1.

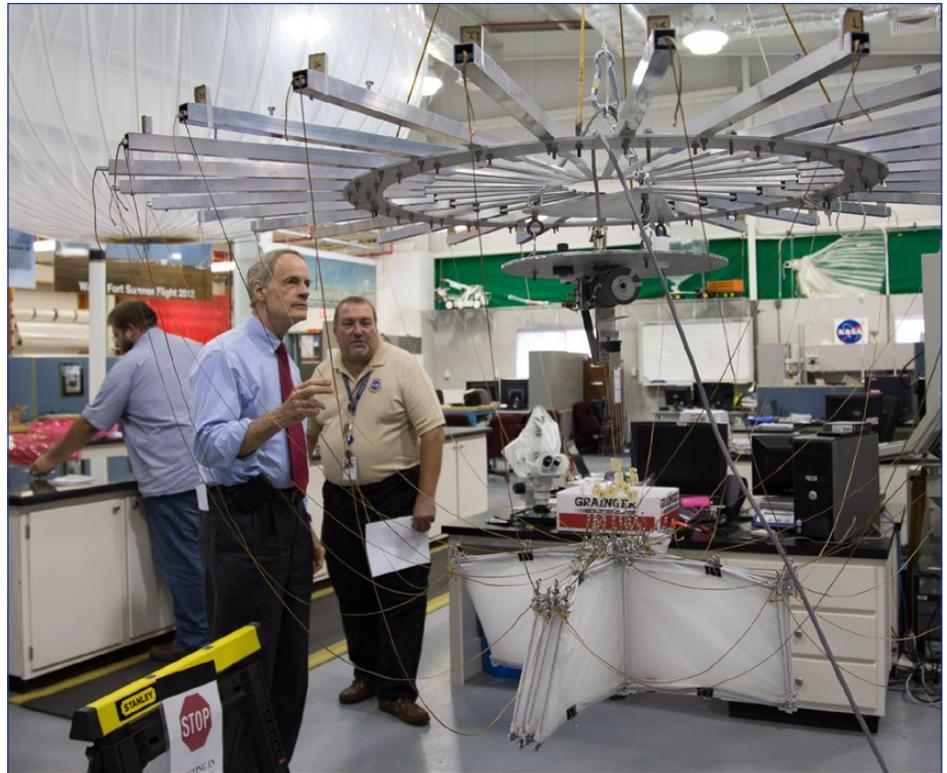
A second session is scheduled August 9-15; each session has about 45 students.

VSCS is a program designed for high school sophomores to promote interest in Wallops-related STEM fields through engineering and design challenges.

“The Virginia Space Coast Scholars program provides an opportunity for high school sophomores from across the state to come together and develop their team building and leadership skills while learning about NASA and its missions and platforms,” said Linda Sherman, Wallops education specialist.

The program has grown from 40 to 90 students during the past year.

US Sen. Tom Carper visits Wallops



David Gregory, NASA Wallops, looks on as U.S. Senator Tom Carper, Delaware, checks out a 1:20 scale model of the Exa Volt Antenna (EVA) project during a tour of the Balloon Program Office at Wallops Flight Facility Aug. 4, 2014. EVA will be used to detect neutrinos, small “ghost” particles that have little or no mass, during the next balloon Antarctica campaign. While here, the senator also visited the Wallops Range Control Center, Virginia’s Mid-Atlantic Regional Spaceport Pad 0A, and the Horizontal Integration Facility, where Orbital Sciences’ Antares rocket is undergoing processing for its next ISS commercial resupply mission, scheduled for mid-October 2014. Photo Credit: NASA/Jamie Adkins