Inside Wallops

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NASA to Test Future Flight Vehicle Concepts

Concepts of future flight vehicles on Earth and for planetary exploration will get their first test in space carried aboard a hybrid rocket conducting its first flight September 14 from the NASA Goddard Space Flight Center's Wallops Flight Facility.

The purpose of the payload, which is carrying three test articles, is to develop new high-speed flight test and control methods.

These techniques may be applied to novel designs for high-speed flight and next generation planetary entry technology.

The wave rider' flying wedge. *PAO Digital Photo*

"This suborbital rocket flight will allow us to test these concepts at more than mach five or five times the speed of sound during reentry," according to Marc Murbach, a research engineer from the NASA Ames Research Center, Moffett Field, Calif. "We are trying to develop a wind tunnel in the sky."

The payload, a joint project between Ames and Wallops, includes a 'wave rider' flying wedge, a linear aerobrake or hypersonic parachute, and a super stable planetary reentry probe.

The wedge is about 50 inches (127 centimeters) long and will free-fly like a glider after deployment at about 90 miles (145 kilometers) altitude.

Recovery of the wave rider and linear aerobrake is planned from the Atlantic Ocean following the flight. The probe is not designed for recovery.

The rocket, built by Lockheed Martin, is 57 feet (17 meters) long, two feet (.6 meters) in diameter and propelled by a 60,000-pound thrust hybrid motor - solid fuel with a liquid oxidizer.

Demonstrating the technology of hybrid propulsion, the rocket expects to achieve an altitude of approximately 78 miles (125 kilometers) with a burn time of about 36 seconds.

"Hybrid propulsion offers significant advantages over solid fuel propellants in that hybrids are non-explosive, able to be throttled, low cost and environmentally benign," said Randy Tassin, vice president, Program Management & Technical Operations for Lockheed Martin Space Systems, Michoud Operations, La.

Lockheed Martin signed a Space Act Agreement with NASA Marshall Space Flight Center, Huntsville, Ala., in 1999 to develop, test and launch the hybrid sounding rocket.

The program goal is to develop a single-stage hybrid propulsion system capable of replacing existing two- and three-stage sounding rockets.

The rocket is scheduled for launch between 5:30 and 8 a.m. (EDT), September 14. The backup launch days are September 15 and 16. For an update on the launch schedule call 757 824-2050.

Wallops shorts……

In the news

Eastern Shore News
"Four Local Residents Receive NASA Medals"

Chemical & Engineering News
"Gathering Data on Cosmic-Ray Electrons"

The Wall Street Journal
"Flexjet, a Unit of Bombardier, Signs up NASA"

Balloon Launch

A NASA scientific balloon was successfully launched from Fort Sumner, N.M. on September 7.

The 3.46 million cubic foot balloon carried a solar tracker with up to 45 individual solar cell modules. Measurements from the individual cells were sent to the launch site for subsequent data reduction and establishment of calibration standards. These standards will set the intensity of solar simulations, which will be used to measure solar cells and panels used in the space flight program.

Bruce Anspaugh of the Jet Propulsion Laboratory was the principal investigator.

Total flight time was 4 hours, 40 minutes. The payload was recovered.

Reflect and Remember Sept. 11, 2001

Wallops employees are invited to join NASA Administrator Sean O'Keefe at 10:30 a.m. on Wednesday, September 11, to participate in a NASA-wide memorial event that will broadcast live on NASA TV, Wallops Channel 6.

The event will include a moment of silence and remarks from the Administrator and from astronaut Mike Massimino. A video compilation of "How NASA Helped" also will be shown.

On the morning of September 11, 2001, America experienced several tragic terrorist attacks in which thousands of innocent civilians perished. It was a day of violence, horror and great sadness that will never be forgotten.

Dry and Hot Again

by Bob Steiner, Meteorologist

During August, we experienced an average monthly temperature of 78.5 degrees, which is 3 degrees above normal for the month. The warmest day occurred on August 1 when the temperature climbed to 96 degrees. This tied a record for the date.

Two record high temperatures were set during August. On August 18 and 19 the mercury topped out at 95 degrees, the previous records were 93 degrees set on Aug. 18, 1996, and 91 degrees set on Aug. 19, 1966.

The coolest temperature during the month was on the morning of August 8 with a reading of 58 degrees. This tied the daily record low for the date that was previously reached in 1994. No record lows were set in August.

The daily high temperature was above normal on 23 days. Temperatures also were above normal on 21 nights. The temperature climbed into the 90s during 10 days in August.

The greatest amount of rainfall in a 24-hour period was 1.34 inches that fell on August 28 and 29. We were almost two inches below what is normal for the month. The total rainfall for August was 1.74 inches. Measurable rain fell on nine days; the average is eight days.

School is back in session and cooler weather is headed our way. The lazy days of summer passed so swiftly, that we should enjoy every day during September. October will be here before we know it.

Daily high temperatures in October start out near 73 degrees before falling to near 63 degrees by the end of the month. Overnight lows at the beginning of the month are near 55 degrees, decreasing to 46 degrees as November approaches.

The record high temperature for October is a reading of 89 degrees that occurred on Oct. 1, 1986, and again on Oct. 6, 1997. The extreme low for the month is 26 degrees and occurred on Oct. 28, 1976.

Measurable precipitation normally falls on seven days during October giving us an average of a little less than 3 inches.

Although Halloween signals the end of October, the same cannot be said of the official hurricane season. Hurricanes can and do occur during October. Please remain alert to danger.

American Heritage Week Celebration

Renowned author of **Feeling Your Way Through Life**, David DeNotaris, will be a guest speaker during the Wallops American Heritage Week celebration.

DeNotaris was born with a rare eye disorder. Doctor's insisted his life was hopeless, but his family knew better. "My family provided me with the proper information and inspiration for me to overcome the challenge of blindness", he said.

Come over to the Wallops Gym and hear DeNotaris from 10 a.m. to noon on Tuesday, October 8.

For more information visit: www.daviddenotaris.com

Sympathy is extended to the family and friends of **John F. "Jack" Spurling** who died September 1 in Peninsula Regional Medical Center. Spurling had a 30 year career as a meteorologist with NASA Wallops Flight Facility. He is survived by his wife, Marian, four daughters and 10 grandchildren.

A Wallops Pig Pickin' Party

5 p.m.
September 20

at the Wallops Pavilion

BBQ pork on a bun, cole slaw, baked beans and dessert for $10 per person. Purchase tickets at the Wallops Exchange, Building E-2. A cash bar will be open.

Car Pool Information

For information on car pooling to Wallops, visit: http://128.154.44.13/Carpool/ViewCarpoolReport.cfm

Sign-Up for Dart League

September 10 at 4:45 p.m. at the Rocket Club, Building F-3

House for Rent

The house is located in the Historic Town of Accomac, Va. at 23410 Front St. It may be rented as a residence and/or office. It has a high efficiency heating and a/c system. It rents for $525 per month (unfurnished) and for $675 (furnished). For details call (757) 623-8855 and leave a message or e.mail: kmaier@pinn.net

September is Ovarian Cancer Month

Ovarian cancer begins in the cells that constitute the ovaries. There are many types of tumors that can start in the ovaries. Some are benign, or non-cancerous, and the patient can be cured by surgically removing one ovary or the part of the ovary containing the tumor. Some are malignant or cancerous. The treatment options and the outcome for the patient depend on the type of ovarian cancer and how far it has spread before it is diagnosed.

Symptoms of Ovarian Cancer

Ovarian cancer is difficult to detect, especially, in the early stages. This is partly due to the fact that these two small, almond shaped organs are deep within the abdominal cavity, one on each side of the uterus. For potential signs and symptoms of ovarian cancer visit: http://www.wff.nasa.gov/~healthline/JuneJuly/Ovarian%20Cancer.html

5 A Day Fruits and Vegetables

Drink one glass of 100% fruit juice every morning and you're on your way to 5 A Day.

Half a cup of cooked vegetables equals one serving of your 5 A Day.

Just a half a cup of canned pineapple or any other fruit counts as one serving of your 5 A Day.

A whole carrot or a handful of baby carrots counts as one serving!

Count one handful of raisins or a mini box as one serving of your 5 A Day.

One cup of salad counts as one serving.

A medium salad is two servings and a large salad makes three servings.

Crunchy and Crispy

Peppers, carrots, celery and apples.

All of these vegetables and fruits are wonderful nutrition and they offer fiber. Get your 5 A Day, start with breakfast!

Breakfast: Drink a glass of 100% fruit juice and eat a banana.

Lunch: Eat an apple and some carrots.

Snacks: Eat some grapes, raisins, a fruit cup, a banana, or some raw veggies.

Dinner: Eat broccoli, a salad, and a sweet potato

Dessert: Eat juicy pineapple or tangy mango.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found on the NASA Wallops Flight Facility homepage: www.wff.nasa.gov

Editor Betty Flowers