

Inside Wallops

National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility, Wallops Island, Va.



Volume XX-08 Number 02

January 14, 2008

Scientific Balloon Testing Conducted at Wallops

The NASA Balloon Program Office is conducting tests this week on a model of the super pressure Ultra Long Duration Balloon, (ULDB). A number of small model balloons have been made and tested for various purposes and are a major part of the ULDB development effort.

Photogrammetry is a technique of taking and using multiple photographs of an object. A software tool produces a three dimensional map or image of the object. In this case, the areas of interest are selected portions of the balloon.



Photo by Lee Wingfield

Henry Cathey, Physical Science Laboratory, New Mexico State University, examines the balloon material during testing. The photo team can be seen on the left side of the balloon.

The balloon currently being tested in the Payload Processing Facility, Building H-100, is approximately 28 feet in diameter and has 48 gores or sections. This particular balloon is referred to as a flat facet balloon since it has no lobing built into the gores.

The balloon is partially inflated with helium until it has a slight amount of lift. The remaining volume of the balloon is filled with air to fill out the shape.

The internal pressure in the balloon is increased in a pre-determined number of steps. At each step measurements of the balloon are made to determine how it is performing.

The changes in the balloon shape as the balloon is pressurized will be accurately determined using photogrammetry.

Comparing one set of processed photos to another, minute changes can be determined. In this way, the changes in shape of the structure and how the balloon materials strain when pressurized can be very accurately determined. Minute changes that are not visible to the human eye can be determined.

The photogrammetry techniques used for tests on these types of structures were developed for the ULDB project by the Balloon Program Office at NASA Wallops Flight Facility.

The goal of this testing is to explore the material and structural design limits of the proposed balloon and to measure the changes in shape and strain in the materials as the balloon is incrementally pressurized. The intent of this testing is to demonstrate the potential of a strain arresting design for a pumpkin balloon with zero built-in lobing. It will take several days for the actual testing and several weeks to process the test data.

The next step for the ULDB project is a test flight of an approximately two million cubic foot balloon in the spring from Ft. Sumner, NM. The test balloon will be over 240 times larger than the model currently being tested in the Payload Processing Facility.

Wallops Shorts.....

Launches

A NASA Terrier-Black Brant sounding rocket was launched from White Sands Missile Range, N.M., on January 11.

The 1,125 pound payload (LIDOS) was to perform long split spectra imaging of the Orion Nebula.

Initial assessment indicates the celestial attitude control system performed nominally and good data was obtained. The payload will be recovered.

Dr. Stephen McCandliss, Johns Hopkins University was the experimenter. Bill Payne, NASA Sounding Rocket Operations Contract (NSROC) was the mission manager.

In the Field

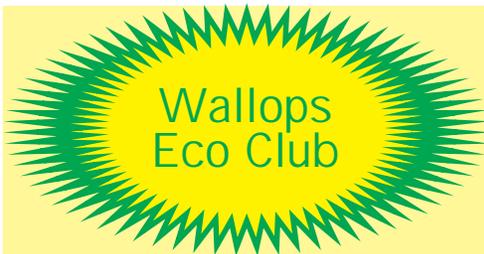
A NASA Sounding Rocket Operations Contract (NSROC) team is on site at the Andoya Rocket Range in Norway awaiting science conditions to launch a Black Brant XII sounding rocket.

In the News

Daily News-Miner, Fairbanks, Alaska, "Rockets Will Return to Poker Flat Research Station"

We remember and honor their legacy.....

Space Shuttle Columbia, STS-107 mission lifted off on January 16, 2003. Upon reentering the atmosphere on February 1, 2003, Columbia suffered a catastrophic failure. The orbiter and its seven crewmembers, Rick D. Husband, William C. McCool, David Brown, Laurel Blair Salton Clark, Michael P. Anderson, Ilan Ramon, and Kalpana Chawla were lost approximately 15 minutes before Columbia was scheduled to touch down at Kennedy Space Center.



If you have a passion

- = To build solar arrays and wind turbines
- = To convert a car to electricity
- = To generate free hot water from the sun
- = To squeeze more miles per gallon from your car
- = To cook on a solar BBQ or rocket stove
- = To buy less, pollute less and have more fun!!

Come to the first membership meeting
January 23, 2008
11:30 a.m. to 12:30 p.m.
Building E-109, Room 112

Introduction to Yoga

Wednesdays
4:30 to 5:30 p.m.
Building D-10 Gym

The Wallops Aerobics Committee is offering a new class, Introduction to Yoga, on Wednesday afternoons. The class is being taught by Shuli Tor. If there is enough interest a class may be offered on Fridays from 11 a.m. to noon.

The cost of the class is \$3 per hour for WAC members and \$4 per hour for non-members. For further information or to schedule a class time, contact Virginia Johnston at x1551 or by email: vjohnsto@pop200.gsfc.nasa.gov

Visit the WAC website for membership information: <http://sites.wff.nasa.gov/WAC/>

Martin Luther King, Jr. Day January 21, 2008



January 15, 1929
–
April 4, 1968

Space Club Scholars Summer Program

Summer will soon be here and with it high school students looking for a way to expand their knowledge and gain experience in science, math, engineering and technology careers at Wallops.



Space Club Scholars program, provides high school students an opportunity to experience how research and development organizations operate on a day-to-day basis.

Participants will be assigned to work with a technical professional in a field related to the student's stated interests and expertise. The available areas of interest include earth and space systems science, computer science, and engineering. All placements include computer applications.

Applicants must meet the following eligibility criteria:

- Be a U.S. citizen.
- Live within reasonable commuting distance from Wallops Flight Facility.
- Have completed their sophomore year by June 2008.
- Be at least 16 years of age before the starting date of the program: June 23.

The six-week program runs from June 23 through August 1, 2008.

The deadline for submitting applications is February 20, 2008.

For further information or to get an application visit: <http://education.gsfc.nasa.gov/files/spaceclub.pdf>

For questions, contact Rebecca Powell at x1139 or by email: Rebecca.H.Powell@nasa.gov

Investment Day

NASA Federal Credit Union
January 23
9 a.m. to 4 p.m.
Building N-133

Review your financial objectives for 2008 and beyond during Investment Day at the Credit Union.

Financial advisor, Erdal Elmas, will be available to meet with employees on a one-on-one basis to discuss traditional and alternative investment strategies, asset allocations and portfolio review, retirement planning and more.

To schedule a meeting or for further information, call 1-888-627-2328, x650.

NSROC Delivers Holiday Cheer

NASA Sounding Rocket Operations Campaign (NSROC) team members reported another successful year with their annual toy and nursing home drive.

Many of the toys went to the Toys for Tots in Maryland and to the Lighthouse Ministries in Keller, Va. The nursing home items were delivered to a Snow Hill, Md. nursing home.



Thanks to Janet Rickmond for heading up this effort.

Mentoring Program

Employees are currently being recruited as mentees and mentors to participate in the 2008 Goddard Mentoring Program. This program provides an opportunity for employees to benefit from developing a mentoring relationship or adding structure to an existing one.

Applications are due by January 23. Visit <http://ohcm.gsfc.nasa.gov/hot/home.htm> for registration information. For further information contact Nicole Manning at x66-9122 or Tracey White at x66-7823.

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 at: <http://www.nasa.gov/centers/wallops/news/newsletters.html>

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