

Inside Wallops



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NASA Successfully Completes Launches for EQUIS II Sounding Rocket Campaign

The NASA Goddard Space Flight Center's Wallops Flight Facility, has announced the completion of the 2004 EQUIS II sounding rocket campaign on September 20, 2004, with the launch of 14 suborbital sounding rockets over the previous five weeks.



Photo by John Spicher

The EQUatorial Ionospheric Study (EQUIS II) mission was conducted from a launch complex located on the island of Roi-Namur, Kwajalein Atoll, Republic of the Marshall Islands. Located very near the equator, the site provided a unique set of atmospheric observations to better understand the Earth's ionosphere in the equatorial region. Experiments on the various rockets were designed to study disturbances in the ionosphere created by interactions between the Sun and the Earth's magnetic field.

Measurements made with the ALTAIR radar located on Roi-Namur, provided information needed to determine when ionospheric conditions were appropriate for launch. The radar also provided critical measurements that will be used in the analysis and interpretation of data obtained from the launches.

"All of the data needed to meet the main objectives of the campaign were

collected, and I am excited," said Dr. Miguel Larsen, Campaign Scientist from Clemson University, S.C. "The in-depth analysis of measurements taken will occur over the next year by the scientists and organizations that participated in the campaign. The results will be published in various scientific journals upon completion of the analysis."

Preliminary results indicate that winds, wind shears and turbulence at high altitudes from 50 miles (80 kilometers) to 125 miles (200 kilometers) are critical in generating and maintaining the naturally occurring layers that were studied in EQUIS II. The information provided by the launches is important to an understanding of the natural atmospheric phenomena that occur in the mid-latitude ionosphere.

During the campaign, NASA Wallops Flight Facility personnel conducted classroom and educational activities in rocketry for the students at George Seitz Elementary school, Kwajalein High School and students on the island of Enniburr, Kwajalein Atoll



Photo by John Spicher

(pictured). Approximately 700 students took part in 43 classroom programs as well as the building and launching of model rockets. Parents and U.S. Army Kwajalein Atoll personnel attended the model rocket launches.

The EQUIS II project was similar to studies conducted from Roi-Namur during the EQUIS project in 1990.

Wallops Shorts.....

EQUIS II Launches

A NASA Black Brant VB sounding rocket was launched at 8:05 p.m. (local time), September 17 from Roi Namur, Kwajalein Atoll. The purpose of the mission is to understand the complex electro-dynamics and neutral plasma coupling inherent to the equatorial lower ionosphere during nighttime conditions. All payload events occurred as planned and the NSROC, (NASA Sounding Rocket Operations Contract), developed magnetic attitude control system, (ACS), functioned properly. Dr. Robert Pfaff, NASA Goddard Space Flight Center, was the principal investigator. Tracy Gibb, NSROC, was the mission manager. John Hickman, NASA Sounding Rockets Program Office, is the EQUIS II campaign manager.

A NASA Terrier-Orion sounding rocket was launched at 8:12 p.m. (local time) September 17 from Roi Namur. The purpose of this mission was to release Trimethyl-Aluminum, (TMA), trails on the upleg and downleg portions of the flight to reveal the neutral wind profiles. All TMA events functioned properly. Dr. Robert Pfaff was the principal investigator and Tracy Gibb was the mission manager.

A NASA Nike-Black Brant sounding rocket was launched at 9:02 p.m. (local time), September 17 from Roi Namur. The experiment was to determine the coupling between neutral winds and electric fields in the nighttime equatorial ionosphere. All events functioned nominally, good e-field data was obtained, and the NSROC developed magnetic ACS functioned nominally. The TMA trail was observed by all three camera sites. Dr. Lynette Gelinas, Cornell University, was the principal investigator, and Jay Scott, NSROC, was the mission manager.

A NASA Terrier-Orion sounding rocket was launched at 11:30 p.m. (local time), September 20 from Roi Namur. The purpose of this mission was to investigate dynamic processes associated with the mesosphere and lower thermosphere. Dr. Gerald Lehmacher, Clemson University, was the principal investigator, and Ted Gass, NSROC, was the mission manager.

Hurricane Support

The Aerosonde UAV (Unpiloted Aerial Vehicle) team is making preparations to support NOAA's Hurricane Mission. A tentative flight into Hurricane Jean is on schedule for this week.

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Wallops Shorts Continued.....

Balloon Launches

A 39.57 million cubic foot NASA scientific balloon was launched from Ft. Sumner, N.M., on September 16. The balloon carried the International Focusing Optics Collaboration for Micro-Crab Sensitivity (InFOCuS) experiment, which incorporates recent breakthroughs in focusing optics and detectors to attain improvements in hard X-ray sensitivity, imaging resolution and high resolution. Dr. Jack Tueller, NASA Goddard Space Flight Center, was the principal investigator. Total flight time was 27 hours, 47 minutes.



Photo by Eric Frische, Space Data Corp

NASA scientific balloon at float over Arizona with Dr. Jack Tueller's x-ray telescope.

A four million cubic foot NASA scientific balloon was launched from Ft. Sumner, N.M., on September 17. The payload consisted of multiple in-situ sensing instruments measuring the abundance of ozone and other compounds to determine the chemical composition of the atmosphere in an attempt to provide scientific evidence of the processes that regulate the abundance of ozone in the stratosphere and troposphere.

Dr. James Margitan, Jet Propulsion Laboratory, was the principal investigator. Float altitude was 104,000 feet. Total flight time was 5 hours, 50 minutes.

On the Road

The Wallops Fire Department supported a Boy Scout event at the Crisfield Airport on September 18. Fire department personnel took one of the crash trucks for a "show & tell." The event was attended by approximately 200 scouts from throughout the region.

Russ Dufrene, NASA GN&C and Mission Systems Engineering Branch, participated in Salisbury University's Fun Day Event, September 18, with a demonstration on robotics.

In the News

Space.com

"Canadian Ansari X-Prize Team Pushes Toward First Launch"

**Federal Employees' Group
Life Insurance Program Open
Season Ends September 30**

American Heritage Week is October 4 - 7

NASA civil service, contract, and partner employees are invited to participate in the American Heritage Week Celebration sponsored by Center Director's Office, Equal Opportunity Programs Office, Wallops Exchange and Morale Association, and Wallops Senior Management.

Monday, October 4 "Town Hall" All-Hands Meeting with Dr. John Campbell

8:30 - 9:30 a.m. Bldg. D-10 Gym

Native American Artifacts and History presented by Mark Greenly

9:45 - 10:45 a.m. Bldg. E-104, Chincoteague Room

WOW Federal Women's Program - Pioneering Women of the Eastern Shore

11:30 a.m. - 12:30 p.m. Bldg. E-2, Williamsburg Room

Railroad History presented by Bill and Jan Neville

1 - 2:00 p.m. Bldg. E-104, Assateague Room

Storytelling: Faces of the Eastern Shore presented by Wallops Employees

2:15 - 3:15 p.m. Bldg. E-104, Assateague Room

Tuesday, October 5, is "Celebrate Wallops Day"

10 a.m. - 2 p.m. Bldg. N-159 Hangar

Exhibits, Food, Demonstrations, Entertainment, Door Prizes. Interested in a display for your organization? Contact: Rebecca.D.Beach@nasa.gov

Wednesday, October 6, is Parade Day

11 a.m. - Parade starts and ends at the Pavilion

To register contact: Rebecca.D.Gramlich@nasa.gov

11:45 a.m. - Holy Grove Choir (Pavilion)

Noon - Bottle Rocket Launch Competition and Parade Exhibits (Ball Field)

To register contact: Edward.D.Parrott.1@gsfc.nasa.gov

12:15 p.m. - Papa Grande Band (Pavilion)

Our Hispanic Brothers and Sisters with Carmen Colona

1:15 - 2:15 p.m. Bldg. E-104, Assateague Room

Scrapbooking: Preserving Your Family Images presented by Margaret Holland and Barbara Tankard

2:30 - 3:30 p.m. Bldg. E-104, Chincoteague Room

Thursday, October 7, is "International Luncheon Day"

Eastern Shore Quilting Heritage presented by Pam Taylor

8:30 - 9:30 a.m. Bldg. E104, Assateague Room

9:45 - 10:45 a.m. **Celebrating the Eastern Shore Way with Charles Petrocci**

Researcher and writer specializing in Maritime Heritage and tourism, he has been educating the public about the Eastern Shore cultural heritage for almost 20 years. Petrocci has been an instructor of Anthropology at the University of Maryland Eastern Shore, coordinated regional heritage tourism workshops and periodically consults for the University of Maryland and the Virginia Institute of Marine Science Sea Grants Programs. He published 450 articles and reports in various magazines and journals and currently serves as coordinator of the Virginia Foundation of the Humanities Eastern Shore Council.

International Luncheon

11:30 a.m. - 12:45 p.m. Bldg. F-3, Rocket Club

All lunch guests must have a ticket. Tickets are provided to employees who bring a dish. Register by the deadline to be eligible for a special door prize. A limited number of tickets will be available for sale at the Exchange, Sept. 23-29 ONLY. No tickets available after September 29. No walk-ins. It is important that you register for the luncheon or purchase a ticket. Seating is limited in the club. Registration contacts: Rebecca Beach, Audrey Young, Regena Haugh, Sandy Banks, or Barbara Justis

African American Heritage presenter TBA

1-2 p.m. Bldg. E-104 Assateague Room

GHOTES - Genealogy and History of the Eastern Shore presented by Tammy Elvenia

2:15-3:15 Bldg. E-104 Assateague Room

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
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