National Aeronautics and Space Administration
Goddard Space Flight Center

Inside Wallops

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Balloon-Borne Instrument Collects Antimatter

NASA launched a 60-story-high scientific balloon to the upper fringes of Earth's atmosphere to collect precious particles of some of the rarest stuff in the Universe - antimatter - and, just possibly, evidence that entire antigalaxies exist.

Carrying a Japanese-built instrument, one of NASA's largest scientific balloons, 39 million cubic feet in volume, was launched from Lynn Lake, Manitoba, Canada, at 9:22 a.m. EDT, Aug. 11 for a 38-hour flight more than 20 miles above earth. The 5,000-pound instrument was recovered Aug. 12 and will be prepared for another flight next year.The Balloon-borne Experiment with a Superconducting Solenoidal magnet (BESS) was sponsored by NASA and Monbusho in Japan.

A NASA scientific balloon being inflated prior to launch.

"We have collected excellent data, which should contain several hundred anti-protons among a hundred million cosmic-ray particles that passed through our detector," said Prof. Shuji Orito of the University of Tokyo, who along with researchers from Japan and the United States was at Lynn Lake for the launch.

Although many theorists believe that the entire Universe is made of "ordinary" matter, some speculate that antimatter galaxies exist. However, no evidence of these galaxies has been found. Previous scientific balloon flights have detected numerous anti-protons, but these can be produced by collisions of "ordinary" particles in interstellar space.

If BESS were to find a more sophisticated form of antimatter, such as molecules of anti-helium, it would provide evidence that antimatter galaxies exist. Unlike antiprotons, anti-helium is virtually impossible to create by collision and would have to come from some other source.

"The discovery of anti-helium would be stunning," said Dr. Orito. "That is why we search for such exotic objects, although there exist no compelling reasons to believe that anti-galaxies do exist. We have actually found no anti-helium in data taken during five balloon flights from 1993 to 1998, while we have detected three million helium nuclei. This fact provides the most direct evidence that the Galaxy and the nearby part of the Universe are made solely of matter, not antimatter."

The detection of anti-helium would rewrite the books on cosmology, according to Dr. Jonathan Ormes, head of the Laboratory of High Energy Astrophysics at NASA's Goddard Space Flight Center (GSFC). "The idea that large regions or domains of the Universe might be built of antimatter has been discussed for many years," said Dr. Ormes, one of many scientists involved in data analysis. "We are very excited every year when we check the latest data hoping to find the first 'Ambassador from the Anti-World."

GSFC's Wallops Flight Facility, Balloon Program Office manages the NASA Scientific Balloon Program. Included in the BESS collaboration are the University of Tokyo, High Energy Accelerator Research Organization, Kobe University and Institute of Space and Astronautical Science, all in Tokyo; NASA and the University of Maryland.

The Center's ISO 9001 Registration Audit will occur this week. Any of us may find ourselves subject to a visit or a question from the audit team, and we all need to be prepared to answer them. The ISO Team has put some helpful information on the internal web page (http://internal.gsfc.nasa.gov/) that will guide you through the process and help you prepare for meeting with and answering questions from an auditor.

I would encourage you to look at the information, familiarize yourself with our quality policy and be prepared to deal with questions concerning procedures, work instructions, and quality records that pertain to your job. Be positive in describing your work to an auditor — this is your system, it works and you know it works. We can be very proud of the Quality Management System we have put in place at Goddard. I personally believe it is second to none in NASA.

This will be our opportunity to show the registrar how much work we have done and that we have the systems in place to deliver quality products to our customers. The audit will end with a closing meeting on Friday afternoon in which we will find out if the lead auditor recommends us for certification. I am confident we are prepared for this audit and that we will be successful in obtaining certification. Receiving this certification is important to our Center. It will tell our customers that we say what we do, do what we say and can prove it. Thank you for your hard work preparing us for this important milestone. I'll keep you posted. ***Al Diaz***

NASA P3-Orion Aircraft Sustains Damage

The NASA P3-Orion aircraft sustained damage on Aug. 16 when it hit a large flock of seagulls during a takeoff roll.

The P3 crew was attempting an engineering check-flight of the aircraft prior to an upcoming Ocean Salinity Project. Taxing to Runway 04 (north/south runway) the plane was cleared for takeoff with no mention from the tower of unusual bird activity on or around the runway. Co-pilot, Michael Singer, (DYNCORP) reported there also was no bird activity visible from the approach end of Runway 04.

Rich Rogers, Aircraft Office, was piloting the plane and began the takeoff roll. At the appropriate time Singer called "80 knots" airspeed and glanced outside the aircraft. A flock of approximately 100 seagulls were on the runway roughly 500 to 700 feet in front of the departing aircraft. Realizing that impact with the majority of the flock was imminent, Singer called for an abort of the takeoff. Rogers initiated the abort immediately.

With the P-3 Orion in the background, Wallops Fire Department members remove seagulls from the runway.

Digital photo by Rick Huey

Although several of the birds were struck at approximately 100 knots, Rogers was able to control the aircraft and taxied back to the hanger.

There were no personnel injuries and a total assessment of damage to the aircraft is being conducted. Preliminary reports are that damage was done to the radome (nose), leading edge of the right wing and possibly to an engine. Several birds struck the windshield but no damage resulted.

Directorate Name Change

Effective Aug. 1, the name of Suborbital Projects and Operations Directorate (Code 800) was changed to Suborbital and Special Orbital Projects Directorate.

This new name reflects changes in Code 800's mission that occurred with the implementation of Wallops Mission 2000.

Dumping Trash and Debris on Wallops *by Caroline R. Massey*

In recent months there has been an increase in littering on Wallops Flight Facility. There have been several incidents where trash has been dumped on the south end of Wallops Island near Camera Station Z-100 and near Building V-24 on the north end of the Island.

Everyone visiting the Island is responsible for maintaining its natural state. It is requested that violators be reported to the Wallops Security Guards or call x2222.

Working together, we can keep Wallops Flight Facility clean and minimize restrictions, especially for recreational use of the Island. For further information about disposal of any type of waste, call the Wallops Environmental Team, x1718.

Wallops Shorts……..

Balloon Launches

Three NASA scientific balloons were successfully launched from Lynn Lake, Canada during the past week.

On Aug. 11, a 39.57 million cubic foot balloon carrying a cosmic and heliospheric physics experiment was launched. This was a reflight of an Aug. 1 attempt. Dr. Jonathan Ormes, NASA Goddard Space Flight Center was the principal investigator. Total flight time was 38 hours, 22 minutes.

A 1.507 million cubic foot balloon launched Aug. 14 carried a plasma physics experiment for a total flight time of 13 hours, 29 minutes. Dr. Edgar Bering, University of Houston, was the principal investigator.

On Aug. 17, a 39.57 million cubic foot balloon carrying a cosmic and heliospheric physics experiment was launched. Dr. Paul Evenson, University of Delaware, was the principal investigator. Total flight time was 45 hours, 13 minutes.

Wallops Fire Department

Firefighters and Emergency Medical Technicians responded with the Hurst Tool to a motor vehicle accident on Route 175, Aug. 14, near the NASA Visitor Center. Accomack County 911 placed the mutual aid request.

Sounding Rocket Launch

A NASA Terrier-Black Brant sounding rocket was successfully launched and recovered from the White Sands Missile Range, N.M. on Aug. 18. The solar physics experiment was to obtain accurate solar EUV irradiance data to produce a data base for the calibration of the solar instruments on the SOHO satellite. Dr. Darrell Judge of the University of Southern California was the principal investigator.

Women's Equality Day

August 26
11:30 a.m. to 1 p.m.
Williamsburg Room, Bldg. E-2

Speaker: Dr. Dolores Spikes
President, University of
Maryland Eastern Shore

Tickets ($3.00) are available at the Exchange.

Management Operations Directorate Presents Awards

Mike Bundick and Mike Hill were honored with the Gold Star Award, the top award presented by the Management Operations Directorate (Code 200) during an Awards Ceremony held Aug. 13 in the Greenbelt Rec Center.

Teamwork Awards went to the following Wallops employees:
Center Rehousing Team -- Tom Arceneaux, Barbara Lusby and Marshall Ryon.

Wallops Y2K Team -- Thomas Bell, Bill Bott, James Brady, Mike Bundick, James Hill, Carl Johnson, A.J. Kellam, Glenn Lilly, Everett Noble, Bernie Pagliaro, Dave Quillen, Bob Reynolds, Robert Snead, Joseph Thornton, Kirk Webb, Scott Webb, Warren Williams and George Young.

Wallops Island Seawall Restoration Team -- Tom Arceneaux, Bill Bott, David Brittingham and Peter Turlington.

H&H Consolidated Inc. Electronic Control Systems Section, Electric Power Monitoring System -- Everett Noble, Robert Snead and Norris Beauchamp

Software Development Introduction to MATLAB

DATES: Sept. 21-22, 1999
TIMES: 8:30 a.m. to 4 p.m.
WHERE: Wallops Flight Facility, Building E-104, Room 308
COST: Directorate funded at $1035, (dependent on enrollment)

DESCRIPTION: This hands-on class is designed to provide a comprehensive understanding of MATLAB as a programming language.The course topics include: working with matrices; data manipulation; graphical visualization; programming; file I/O; advanced data types; and handling graphics.

SUBMISSION DEADLINE: Aug. 31
NASA civil service personnel should forward training requests to Tracey White, fax x66-1679, or Sherry Kleckner, fax x2313. Non-NASA federal employees may register by submitting a copy of their Training Request and a Purchase Request to Tracey White, Code 114.

Contractor employees may register by sending a memo to White stating they are interested in taking the course and that their company is willing to pay a pro-rated cost for the course. The memo must be on company letterhead and signed by the employee's immediate supervisor and contract monitor (ATR/COTR). Contractors are admitted on a "space available" basis.

Wallops Aerobics Club Session

August 16 to October 1, 1999

$20 for Members (attend as many sessions as you like)

$2 per hour for Non-Members or Members Option Plan

Schedule:
Lunchtime classes on the gym stage behind the curtain -- 11:30 AM - Noon

Evening classes on the gym basketball court -- 5 p.m. - 6 p.m.

Wallops contractor, civil service, and tenant employees are invited to participate. New participants are welcome throughout the session. Evening classes consist of a half-hour of aerobics and a half-hour of toning exercises. Half-hour lunchtime classes consist of aerobics on Mondays & Wednesdays and toning on Tuesdays & Thursdays. Steps, weights, mats and other equipment are provided.

There are no classes on holidays and no classes on most Fridays. Make-up classes will be scheduled on a Friday. Instructors attempt to give participants as much notice as possible if a class has to be re-scheduled. For additional information call Donna Smith, x1346**.**
Sponsored by WEMA/Morale Activites Committee

Cellular Telephone Service

Bell Atlantic Mobile is offering a special promotion for all NASA employees, civil service and contractors. A representative will be at Wallops from 11 a.m. until 2 p.m. on Aug. 26 in the entrance to the cafeteria.

During this promotion, cell phones will be offered starting at $9.99 while monthly service will be $9.99 per month with .29 peak and .19 off-peak rates per minute. You may sign on as a new subscriber or you may switch from another Bell Atlantic Mobile plan.

As an added bonus, if you sign up prior to Aug. 31 you will receive free minutes after 9 p.m. weekdays and on weekends. For more information, call Jennifer Mace, (410) 430-7575.

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