NASA Hurricane Researchers Study Intensity of Tropical Storm Gabrielle

NASA’s Convection and Moisture Experiment (CAMEX-4) team had planned a flight into tropical storm Gabrielle on Friday, September 14 as the storm gathered strength in the Gulf of Mexico and moved toward Florida’s west coast. Based at the Naval Air Station at Jacksonville, Fla., this flight had to be scrubbed due to high winds and heavy rain in the area.

A team of Wallops Flight Facility researchers in the Observational Science Branch has been participating in CAMEX-4, a study of tropical cyclone (hurricane) development, tracking, intensification and landfall impacts that uses NASA-funded aircraft, satellites and surface remote sensing instrumentation.

Scientists from the National Oceanic and Atmospheric Administration’s (NOAA) Hurricane Research Division helped move two truck-mounted radars and a microwave profiling system that was stationed in the Florida Keys to a location further up the Gulf Coast near Venice, Fla. ahead of the storm on Friday. These ground-based components of CAMEX were successful in documenting the storm’s landfall.

This was the first time a mobile 5 cm Doppler radar has intercepted a tropical system as it reached landfall. The radar observed winds just barely below hurricane force and were able to acquire data despite the buffeting from winds and torrential rain.

Gabrielle hit Florida’s west coast with 70-mile per hour winds and moved across the state in an easterly direction packing high winds and heavy rain. The system spawned tornadoes, knocked down trees and interrupted power to over 500,000 homes. Gabrielle dumped several inches of rain causing flooding in some areas before moving out into the Atlantic early on Saturday, September 15.

NASA Dryden Research Center’s DC-8 and the NOAA P-3 Orion aircraft flew into the storm with a team of some 30 researchers using several instruments to gather data about Gabrielle. An Observational Science Branch scanning radar altimeter mounted in the P-3 Orion was used to measure wave height and direction around the eye of the system. Instruments on the DC-8 measured the storm’s structure, environment and changes in intensity and tracking.

During the almost seven hour mission, the CAMEX team flew three separate figure-four patterns into the storm and along the outer edges to gather moisture and convection data. The P-3 Orion flew to an altitude of from 14,000 to 20,000 feet (6,100 meters) and the DC-8 from 31,000 to 39,000 feet (11,900 meters).

Researchers hope to determine why Gabrielle failed to re-intensify despite being over very warm waters of the Gulf Stream. Data gathered from instruments on the DC-8 indicate that there was unusually dry air and a strong wind shear at high levels over the storm.

Conditions were not acceptable for NASA’s ER-2 to conduct high altitude missions on Saturday but it did fly in coordination with a NOAA research aircraft in and around Gabrielle on Sunday, September 16 as the system moved northeastward approximately 250 miles off the North Carolina coast.

The ER-2 flew at altitudes of approximately 60,000 feet (18,300 meters) to place dropsondes - devices used to measure the vertical profile of winds, temperature and moisture - at specific points on the perimeter and at the center of the diminishing storm. Instrumentation onboard the ER-2 also gathered remote sensing measurements that are similar to weather information gathered from satellites.

The CAMEX mission includes researchers from 10 universities, five NASA centers and the National Oceanic and Atmospheric Administration (NOAA).

Balloon Launch

A NASA scientific balloon was successfully launched on September 20 from Ft. Sumner, N.M. The 39.57 million cubic foot balloon carried a cosmic ray experiment. Dr. Akira Yamamoto was the principal investigator. Weather conditions were excellent and the launch operation went smoothly. The balloon bubble restraint collar failed to release on command causing the balloon to fail at approximately 40,000 feet (12,200 meters). The payload was recovered in excellent condition. There was no reported injury to personnel or damage to property. Total flight time was 58 minutes.

Launches Cancelled

The launch of two NASA Nike Orion sounding rockets from Wallops Island carrying geospace science payloads has been cancelled. According to Dr. Charles Croskey, Penn State University, principal investigator for the missions, the science window has closed. These missions will be scheduled again next year.

Projects Test Firing

The U.S. Army Aberdeen Test Center will be conducting the firing of test projectiles from Wallops Island into the Atlantic Ocean September 24 through 26. The project is scheduled for 10 a.m. to 1 p.m. on September 24 and from 10 a.m. to 6 p.m. on September 25 and 26. Backup days are scheduled for September 27, 28 and 29 from 10 a.m. to 6 p.m.

On the road

Ed Parrott, Wallops Teacher-On-Loan, conducted a science teacher workshop at the St. Francis de Sales School, Salisbury, Md. on September 18.

Taurus Rocket Fails to Deliver QuikTOMS to Orbit

The NASA QuikTOMS ozone monitoring satellite launched Friday, September 21 was lost due to the failure of the commercial launch vehicle purchased by the Agency to deliver the payload into orbit.

QuikTOMS was a secondary payload on board a Taurus rocket launched by Orbital Sciences Corporation from Vandenberg Air Force Base, California.
Upcoming Training

Adult CPR
Building E-2
Two sessions will be held.
8 a.m. to noon and 1 p.m. to 4 p.m.

Basic First Aid
Building E-2
Oct. 23, 2001
Two sessions will be held
8 a.m. to noon and 1 p.m. to 4 p.m.

This course is offered at no cost to all NASA and contractor employees.
Submit a course registration form with supervisory signature. Respond before Oct. 5, 2001. Additional information and course registration forms can be found at: http://www.wff.nasa.gov/~code803/pages/training.html or call Dwayne Rye, x1884.

Aerobics Club
A new six-week session starts on September 24.
There will be one-hour evening classes on Monday, Wednesday and Friday in Building D-10, Gym.
Check out the Wallops Aerobics Club web page at: http://www.wff.nasa.gov/WAC/
For more information, call Annette Conger, x2596, or Jeanette Smolinski, x1512.

Used Media and Jewelry Sale
September 26
Lunch Time
Building E-2
Cassettes, Game and Video Tapes, CD’s, Advertising Collectibles, Books, Jewelry, Magazines, Matchbooks, Photographs, Post Cards, Posters, Signs

Scheduled Service for NASA 8 Suspended
Effective October 1, the NASA-8 scheduled service between Goddard Space Flight Center’s Wallops Flight Facility, Langley Research Center, Reagan National Airport and the Baltimore/Washington Airport will no longer be available.

The decision to terminate the NASA-8 scheduled service to provide for more cost effective use of this aircraft based on projected cost and passenger use was made in July 2001.

NASA-8 will be available for charter service beginning October 1. Terms and costs for charter services are being developed and will be published soon. Inquiries regarding this service should be directed to George Postell, Chief of the Aircraft Office, x1529 or by E-mail: george.w.postell.l@gsfc.nasa.gov.

Guidelines for Foreign Travel
The U.S. Department of State has issued a Worldwide Travel Warning regarding travel to foreign destinations. In addition, the NASA Office of External Relations (Code I) has announced additional NASA procedures regarding foreign travel.

For details, see http://www.hq.nasa.gov/hq/foreign.htm

New Items at Exchange Store
United States flags for vehicle antennas and United States flag lapel pins
Romer suits for babies, sweatshirts for kids.

45-minute calling cards (AT&T) for $3.60.

Pig Pickin’
September 28 at 6 p.m.
Social Time - 4:30 to 6 p.m.
At the Pavilion

With DJ Herm from the best oldies to
the newest dance music
Tickets are available at the Exchange Store, x2020, and at the Rocket Club, x1454.