



National Aeronautics and Space Administration
Goddard Space Flight Center

Wallops Flight Facility, Wallops Island, Virginia

Inside Wallops

Volume XX-00

Number: 32

August 7, 2000

Flying Laboratory Begins Pacific Rim Earth Science Studies

The most volcanically active region in the world—the Pacific Rim—is center stage for a comprehensive Earth-observing mission being conducted by NASA and a team of scientists from several research institutions over the next 2 1/2 months.

The ambitious program to collect data in more than 15 countries around the Pacific Ocean got underway July 31 with the deployment of NASA's DC-8 Flying Laboratory from NASA's Dryden Flight Research Center. The highly-modified aircraft is carrying a suite of precision instruments to document geographic and atmospheric factors throughout the Pacific Rim area.

Among the areas where data will be collected during the Pacific Rim 2000 (PacRim II) mission are Cambodia's Angkor Wat Temple, French Polynesia, Papua New Guinea, the Philippines and the Australian coastal wetlands.



NASA Dryden Flight Research Center Photo.

“The mission of PacRim 2000 includes gathering geographic and atmospheric data for coastal analysis and oceanography, forestry, geology, hydrology and archaeology,” said Ellen O’Leary, PacRim 2000 mission coordinator at NASA’s Jet Propulsion Laboratory.

The primary PacRim II instrument is the Airborne Synthetic Aperture Radar (AIRSAR), designed and built by JPL. AIRSAR is NASA’s radar technology testbed and is used to demonstrate technology for spaceborne radar missions.

AIRSAR also collects data for Earth Science research purposes and is an all-weather imaging tool able to see through clouds and collect data at night. Radar’s ability to collect data of the Earth’s surface, even in cloud-covered regions, makes it a particularly valuable tool for the tropical areas around the Pacific Rim which are often covered with clouds. The instrument’s longer

wavelengths can also penetrate into the forest canopy, providing scientists with data at different levels in the forest.

The AIRSAR radar antenna panels are mounted on the outside of the aircraft. The instrument looks to the side of the flight path. The radar transmits microwaves and the return signal is collected after the Earth reflects it. Rough areas, such as cities, mountains and forests, have more surfaces from which the signal can reflect, and return more of the radar signal to the antenna, appearing brighter on the resulting radar image.

Smooth areas, such as deserts, roads and water surfaces, return less of the radar signal and appear darker on the radar images. Trees with differing branch and leaf structures will also return different amounts of the radar signal to the antenna. The resulting data can be used for forest and land cover classification purposes.

In addition to collecting data about the roughness characteristics of the surface, AIRSAR can also collect data that is processed to high-resolution digital elevation models (DEMs), which are three-dimensional topographic maps of the surface.

A third type of AIRSAR data is used to measure motion of currents and waves. DEM data are particularly important to disaster managers around the Pacific Rim who are responsible for developing plans to mitigate and respond to natural hazards such as typhoons, earthquakes and volcanic eruptions.

Also onboard the DC-8 is the MASTER instrument, which is the MODIS/ASTER airborne simulator. The Moderate Resolution Imaging Spectroradiometer (MODIS) and the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) are two instruments on NASA’s Earth Observing System (EOS) Terra satellite launched in December 1999. The MASTER instrument is used to obtain detailed maps of land surface temperature, emissions and reflectance.

Wallops Shorts.....

Shuttle Small Payloads Projects Chief Selected

Arnold Torres, Director of Suborbital and Special Orbital Projects, has announced the selection of Gerard J. Daelemans as Chief of the Shuttle Small Payloads Project Office. Daelemans had been serving as Associate Chief for this office.

Fire Department Responses July 28 to August 3

Aircraft Stand-bys — 42

Fire Alarms — 1

Ambulance Calls — 0

Mutual Aid Assistance — Assist Chincotague Vol. Fire Co. with a motor vehicle accident.

Sounding Rocket Launch

A NASA Terrier-Black Brant sounding rocket was successfully launched from the White Sands Missile Range, N.M. on August 5. The galactic astronomy experiment payload for principal investigator, Dr. Supriya Chakrabarti, Boston University was recovered.

Wallops ISO Periodic Audit August 21-22

NASA Satellite Technology to Monitor Motor Vehicle Pollution

NASA satellite technology originally developed to track global greenhouse gases and the Earth’s protective ozone layer may soon be used in the battle against automotive air pollution.

NASA’s atmospheric remote sensing technology will be adapted to an autonomous roadside system to monitor motor vehicle emissions. Cars and trucks will pass through a low-power light beam, without stopping or slowing down. Space-age sensor technology will instantly analyze vehicle exhaust pollutants important to local and state governments working to meet federally mandated air quality standards.

NASA Langley Research Center and SPX Service Solutions, Warren, Mich., jointly announced that the patented NASA technology has been exclusively licensed to SPX for use in developing a new remote sensing device to monitor motor vehicle exhaust.

The U.S. Clean Air Act mandates that a certain percentage of the U.S. fleet of vehicles be measured each year. The act allows for remote sensing as an option.

Notes from the gardener

This is the time to start planning a fall/winter crop for the garden. Extend the harvest into late fall by planting certain crops over the next several weeks. Here are some guidelines:



* Sowing fall crops is like gardening in reverse. The days start out hot and gradually get cooler. Cool-weather crops will need protection from the heat early on and warm weather crops will need protection later in the fall.

* In spring, successive plantings usually catch up with each other. In fall, growth slows as the season progresses. Crops planted only a week apart in September will mature 2 to 4 weeks apart in November or December.

* Lettuce and other greens make the perfect crop for a fall garden because they grow well even when soil temperatures dip into the 40s. Lettuce also grows well with fewer daily sunlight hours than almost any other crop.

* There's still time to sow some quick-producing crops, such as bush cucumbers and bush green beans.

* Turnips and kale enjoy the progressively cooling temperatures and taste best when grown in those conditions. A good recommendation is to sow turnips 8 weeks before frost and kale 4 to 6 weeks prior to frost.

* Three to four weeks after planting begin fertilizing vegetables such as lettuce, collards, beets and carrots.

Payload Safety Review and Analysis

Where: Wallops

Dates: Sept. 12-15, 2000

Times: 8 a.m. to 4 p.m.

This course is offered at no cost to NASA civil service and contractor employees. A course registration form with a supervisor's signature is required. Personnel wishing to attend need to respond before Aug. 11. Additional information and course registration form can be found at: http://www.wff.nasa.gov/~code803/pdf/payload_safety_review.pdf

Explosive Safety Program Management

Where: Wallops

Dates: Sept. 19-21

Times: 8 a.m. to 4 p.m.

This course is offered at no cost to NASA civil service and contractor employees. A course registration form with a supervisor's signature is required. Personnel wishing to attend need to respond before Aug. 18. Additional information and course registration form can be found at: http://www.wff.nasa.gov/~code803/pdf/explosive_safety.pdf

Space reserved for mailing labels.

IT Security Awareness Overview Training Schedule

Information Technology (IT) is an essential tool that enables NASA Goddard Space Flight Center (GSFC) to meet its mission goals and strategic objectives. GSFC relies on Internet-based technologies to conduct its work, collaborate with partners at other institutions and distribute information to the public. Unfortunately, Internet-based attacks on GSFC systems have increased despite a strengthened defense.

The Agency has established a requirement that all civil servants and support service contractors take this course. Furthermore, NASA has set a goal of having 80% of the workforce trained by September 30, 2000.

IT Security training is essential to provide employees with the skills and knowledge they need to protect the IT resources entrusted to them. IT Security is similar to the safety function in that all employees have a responsibility in ensuring the security of GSFC's information and IT operations.

In cooperation with the Defense Information Systems Agency, NASA has developed a CD-based IT Security Awareness training course.

The Human Resources Development Office, working with the GSFC CIO, and the Safety, Environmental and Security Office, has scheduled numerous, convenient showings of this course. The CD will be shown every hour on the hour beginning at 8 a.m. through 4 p.m. in the Management Education Center (Building E-104/ Assateague Room) from Aug. 21-25 and Aug. 28-Sept. 1, 2000. The briefing lasts approximately 45 minutes. No training requests or advance registration is necessary. Employees should sign-in on the sheets provided in the MEC.

The course is available on the Web on the NASA Site for On-line Learning and Resources (SOLAR) <http://solar.msfc.nasa.gov:8018/solar/delivery/public/html/newmain.htm>. Employees may take the Information Technology Security Overview course on SOLAR instead of attending an MEC session. First time users will be asked to register and provide identification information. The SOLAR web-site automatically tracks employee attendance.

If you have any questions, contact Don Wolford, x66-9236.

Single Parenting

Dr. Chris Garner, an Employee Assistance Program affiliate counselor will be guest speaker for the EAP August discussion group. The topic is "Single Parenting".

If you are a single parent or know someone who may be struggling with finding balance between parenting responsibilities and other work or personal issues, remember that you are not alone. Learn how and where to locate support resources for single parents.



The group will meet at 11:30 a.m. in Building F-160, Room C164. Call x66-4600 for further information.

From FedWeek

Aug. 2 Issue

Health Insurance Open Season

The Office of Personnel Management says that the next open enrollment season under the Federal Employees Health Benefits program will run from Nov. 13 through Dec. 11. New rates for all plans will be released in early September. They are expected to rise by an average 8.5 percent.

Federal Pay Raise Pushes Ahead

The Senate is on schedule to join the House in endorsing a 3.7 percent raise for general schedule employees in January 2001. The Senate Appropriations Committee has included funds to provide a raise of that amount in its version (S-2900) of the treasury-postal appropriations bill for fiscal 2001. Also like the House-passed version (HR-4871), the Senate's measure includes language to cancel the higher contributions toward retirement that federal and postal employees currently are paying because of a previous budget bill (0.4 percent of salary more currently, with another 0.1 percent increase slated for January 2001 under current law). Although budget leaders tried maneuvers to get the bill to passage before Congress went on its August recess, the legislation still awaits a full Senate vote.

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.

Editor
Printing

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Printing Management Office

<http://www.wff.nasa.gov>