

Inside Wallops

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



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TacSat-2 Preparing for Launch from Wallops

Air Force Release

Employing the responsive space concept, the United States Air Force, in the near future, will design, construct, test and deliver a mission-ready satellite within a 15-month time frame, as well as launch and operate the vehicle in the cosmos one week following receipt of a tasking order.

With the TacSat-2 micro satellite's scheduled lift-off from Wallops Island in December, this rapid capability will take significant steps to becoming reality.

Unlike similar military spacecraft, which have taken 10 plus years to go from the drawing board into the heavens, TacSat-2, managed by the Air Force Research Laboratory's Space Vehicles Directorate, Kirtland Air Force Base, N.M., has evolved into a responsive space demonstrator ready for flight in 24 months. In addition, the micro satellite provides an inexpensive alternative to most current defense-related space systems, which cost about 90 percent more.

"I am excited because TacSat-2 is another demonstration of a new way of doing business. We have had high level Air Force and DOD interest, as well as high level congressional interest," said Neal Peck, TacSat-2 program manager, AFRL's Space Vehicles Directorate. "The push that we are getting from high levels will cause real change in how we procure space systems. TacSat-2 is step one in that process."

Weighing approximately 814 pounds, TacSat-2 features 11 onboard experiments, which will be conducted during the spacecraft's planned six to 12-month mission. The U.S. Navy's Target Indicator Experiment (TIE) consists of a wideband sensor to gather radar, radio, and handheld communication signals. The TIE will also check for the automated identification transmission now mandated for large ocean-going ships. Built by the Space Vehicles Directorate, the 20-inch optical telescope will be operated during

the satellite's initial day in orbit and throughout the flight to exhibit low-cost, high-quality photography. Other scheduled tests include the integrated global positioning system occultation receiver, which will compile high-precision location data for the micro satellite, recycled solar array panels producing 500 watts of power, and autonomous operations allowing TacSat-2 to think for itself.

One particular trial, the Common Data Link (CDL) tactical radio, has significant impact to deployed forces. The CDL will provide communication and imagery to the Modular Interoperable Surface Terminal (MIST) located at the U.S. Navy's China Lake, Calif., facility. During functional testing, the apparatus successfully passed color pictures through the spacecraft to the ground station. In addition, program personnel will assess the satellite's ability to accept commands from the MIST, but if previous history serves as an omen, than this particular test should be achieved.

While undergoing evaluations at Kirtland AFB, TacSat-2 would not accept instructions, so the project team requested assistance from the MIST, and the West Coast-based operation successfully communicated with the spacecraft. Nevertheless, all pre-flight evaluations have been completed and the satellite will be shipped to the launch site in October.

"TacSat-2 will directly benefit the troop on the ground," said Peck. "By demonstrating that it can communicate directly with the China Lake facility, TacSat-2 can directly talk to any common data link compatible ground station across the globe."

TacSat-2 will be propelled into a circular orbit approximately 255 miles above the



Earth at a 40 degree inclination by a Minotaur I launch vehicle. The satellite, housed in a shroud atop the rocket, will be released into space between 100,000 and 150,000 feet altitude, and will share the brief ride into the cosmos with NASA's GeneSat-1, a 22-pound nanosatellite, which will perform a life sciences experiment.

"The trend is towards low-cost systems like TacSat-2, but that is a philosophical change. The current philosophy is to build highly redundant systems to last 10 to 20 years in orbit," said Peck. "These platforms cost billions of dollars and they are already obsolete (technologically speaking) before their lifetime expires in orbit. Now, by flying the most recent technology, their lifetime is short, but they do not become obsolete and the federal government will save a lot of money."

TacSat-2 Employee Briefing

8:30 a.m.
November 16
Building D-10, Gym

Wallops Shorts.....

First Class

The National Weather Service ranked Wallops Meteorological Operations number one in the nation for the month of October 2006. They received a National Upper-air Station Performance Score of 299.60 out of a possible 300 and outscored nearly 100 other stations.

Range News

A science flight of AAI Corporation's Aerosonde UAV with Goddard Space Flight Center's new micro-spectrometer was completed on November 6. The flight was very successful. The instrument system performed very well throughout the 5 hour, 50 minute flight to the Gulfstream. An extended flight over the ocean was accomplished. Launch and recovery was from the Wallops Main Base airport

Launch

A Terrier Black Brant was launched from White Sands Missile Range, N.M., on November 7. The mission was to measure absolute EUV irradiance data in support of the SOHO mission.

The principal investigator was Dr. Darrell Judge, University of Southern California. Mission managers were Bill Payne and Bruce Scott, NASA Sounding Rocket Operations Contract (NSROC).

Carl Mason Dies

Sympathy is extended to the family and friends of Carl Eugene Mason who died November 10 at Shore Memorial Hospital in Nassawadox, Va.

Mason retired from NASA Wallops Flight Facility as an electrician and served in the U.S. Navy and Merchant Marines during WWII. He is survived by his wife, Rosetta, two sons and their wives, Donnie and Andrea, Mike and Debbie, and a granddaughter, Jessica.

Reminder

Federal Employee Health Benefits (FEHB) Open Season begins today and runs until December 11.

Annual Thanksgiving Dinner in the WFF Cafeteria

November 16

Cost: \$6.00



Roast Turkey and Dumplings
Mashed Potatoes
Homemade Dressing
Cranberry Sauce

Dinner Roll and Butter
Turnip Greens or Green Beans
Pumpkin or Sweet Potato Pie

Pre-orders will be picked up in the Building E-2 Williamsburg Room

6th Annual Holiday Craft and Shopping Extravaganza

Wednesday, November 15

11 a.m. to 1 p.m.

Building E-2 Training Room

Jewelry

Beaded Jewelry, Handbags, Beachbags
Wood Crafts

Christmas Baskets, Trees, Wreaths, and Ornaments

Lighted Gift Boxes

Pine Needle Baskets and Gourd Baskets

Beaded Lanyards

Pen and Ink Drawings

Baked Goods

Packaged Food Mixes and Soups

(Samples available for tasting)

Autographed Books by:

Lenore Hart Poyer and David Poyer

How to Reach Middle School Students

November 27

10:30 - 11:30 a.m.

E-2 Williamsburg Room

Dr. Adena Williams-Loston, Director of Education, will offer suggestions on how to "Make 'The Connections' in the Classroom."

The course will feature practical advice on how to speak to middle school students and have them hear what you say and a guide for reaching middle school students.

The course will answer these three questions: What knowledge-concepts will students learn?

Which strategies will help students acquire and integrate that knowledge?

What strategies will help students practice, review and apply that knowledge?

Visitor Center Providing Viewing for Leonid Meteor Shower

The NASA Visitor Center will be open to the public on the night of November 17 to learn more about shooting stars and possibly view an actual meteor shower from the observation deck.

The "Bizarre Stars" program will begin at 8:30 p.m. In this 30 minute program, visitors will learn what shooting stars are and children can make a shooting star craft project to take home. Following the program, visitors may set up to observe the Leonid shower from the Visitor Center observation deck. The center will be open from 8 p.m. until midnight. This event is weather dependent. For more information, call x2298.

Learn About the COOLRoom

November 16

11 a.m.

Building E-106, Room 217

Local anglers may be familiar with sea surface temperature and chlorophyll charts. Josh Kohut, director of the COOLRoom at Rutgers University in New Jersey that generates these charts will describe an oceanographic system that uses remote and land based sensors to characterize the continental shelf. The system includes an international constellation of ocean color satellites, multi-static high frequency long-range surface current radar, real time telemetry moorings, and long duration autonomous underwater vehicles.

Of particular interest to Wallops, is the long-range surface current radar. Wallops Hydrospheric and Biospheric Sciences Laboratory is installing three of the HF radar sites on the Eastern Shore's barrier islands. Measurements from these sites will be used for ocean modeling, weather prediction, search and rescue, ship surveillance and oil spill monitoring. For further information contact Kristen VanSant at x2176.

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