

SARSAT Van Makes Its Debut At Oshkosh Air Show

Goddard, the National Oceanic and Atmospheric Administration (NOAA), the Air Force, and the Coast Guard jointly exhibited Search and Rescue Satellite-Aided Tracking (SARSAT) at the annual Oshkosh Air Show in Oshkosh, WI, July 26-August 2.

SARSAT is an international cooperative program of the U.S., U.S.S.R., France, Canada and other

nations to use satellites to speed location and rescue of aviation and marine accident victims. The program, for which Goddard is the U.S. representative for research, uses distress-signal receivers on three Russian satellites and two U.S. NOAA satellites. Nearly 500 lives have been saved since the program began in September 1982.

To tell the SARSAT story, Goddard

and the other cooperating U.S. agencies, sent a SARSAT van to Oshkosh manned by George Griffin, a technician representing Goddard's SARSAT office, and Darlene Ahalt, a spokesperson from the Goddard Office of Public Affairs. The appearance was the first anywhere by the new van and drew some 2,500 visitors a day.

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NASA

National Aeronautics and
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Goddard Space Flight Center

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Int'l. Cometary Explorer Scores Bull's-Eye On Giacobini-Zinner

By Charles Recknagel

After a voyage of more than one billion 50 million miles and 3 years, the Goddard-managed International Cometary Explorer (ICE) reached Comet Giacobini-Zinner September 11 and passed through the tail just 5,000 miles from the cometary nucleus.

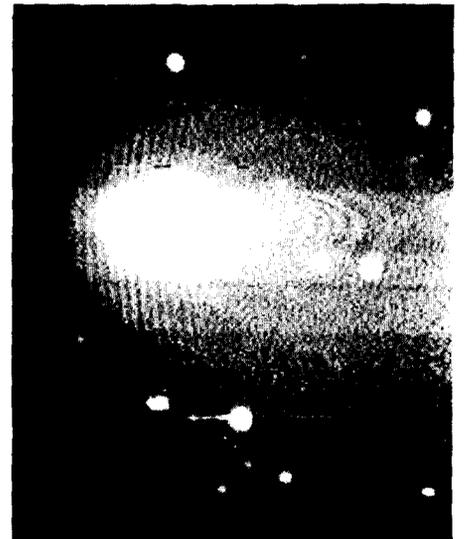
The spectacular interception climaxed one of the most ambitious and risky, but least expensive space probes, in NASA history. It provided scientists their first in-situ look at a comet six months before Russian, European and Japanese probes reach Halley's comet and proved that an aging satellite can have almost as many different mission lives as a clever cat.

The satellite, originally known as the International Sun-Earth Explorer-3

(ISEE-3), was launched August 12, 1978. For the first 4 years of its life, the satellite observed conditions on the Sun and the Sun-Earth neighborhood as part of a series of three ISEE's designed to provide a better understanding of the interaction between the Earth and the interplanetary medium.

ISEE-3 performed this original mission from a unique orbit around a gravitational point in space—the first

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THE COMET AND THE TEAM—The encounter team (right) steers the ICE satellite through the tail of comet Giacobini-Zinner (above). The team includes (left to right): Principal Investigator Dr. Ed Smith (JPL), Comet Expert Dr. Malcolm Niedner (684), Mission Director Bob Farquhar (550), Flight Controller David Suddeth (400), Project Scientist Dr. Tycho von Roseninge (661), and Project Manager Pat Corrigan (602). The image of Comet G-Z is courtesy of Kitt Peak Observatory in Tucson, AZ.

ICE Bull's-Eye

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satellite ever to do so. The point, Libration Point 1, is located some 900,000 miles from Earth where the Sun and Earth's gravitational forces are in balance.

Then, on June 10, 1982, flight controllers at Goddard began moving the 1,054-pound satellite from its solar-watching position to a journey which ultimately would lead to the interception of Comet Giacobini-Zinner.

"In the early 1980's," explains Dr. Robert Farquhar, the Goddard aerospace engineer who originally put ISEE-3 in its libration-point orbit, "NASA was looking for ways to get a spacecraft to explore a comet. The first target was Halley's Comet, but this was too expensive. So, I proposed sending ISEE-3 to Comet Giacobini-Zinner instead. We had a used spacecraft with plenty of fuel on board so the mission made both good scientific and economic sense."

The idea became even more attractive with the possibility of making an extended exploration of the Earth's magnetic tail along the way. Thus ISEE-3 acquired two new lives at once: first to explore the Earth's deep



ICE PRESS CONFERENCE—Members of the ICE team brief the media on the mission. The panel includes (left to right): moderator Jim Elliott (130), Mission Director Bob Farquhar (550), Project Scientist Dr. Tycho von Rosenving (661), and Comet Scientist Dr. John Brandt (680).

geomagnetic tail for 1½ years, then to intercept a comet.

Exploring the Earth's tail involved what has been the most complex set of orbital maneuvers ever carried out by a spacecraft. The maneuvers included five passes by the Moon, one of which came within 75 miles of the surface.

First Visit by a Satellite

"The magnetic tail mission gave us a detailed look at the physics of energy from the Sun flowing into different sectors of the Earth's magnetosphere," notes ISEE-3/ICE mission scientist Dr.

Tycho von Rosenving. "Many of the regions had never before been visited by a satellite, and no other missions to them were planned," he explained.

Finally, on December 22, 1983 on its last pass by the Moon, ISEE-3 began its journey to the comet. As it did, it was given the new name ICE. Over the next 21 months the course was corrected just four times before the satellite scored a bull's-eye on Giacobini-Zinner's tail.

"The interception," says ICE comet scientist Dr. John Brandt, "has given us significant data regarding the magnetic field and plasma in the comet's tail. It should help us answer a number of questions about the composition of comets." Until now, he noted, observers only have been able to surmise cometary composition through remote observations and theory.

With Giacobini-Zinner now behind it, ICE is next scheduled to take solar wind measurements upstream of Halley's Comet in March 1986. Following these observations, the spacecraft will continue making measurements of interplanetary conditions for another two years until it is finally out of range of radio contact.

"I estimate the cost of the world's first comet encounter at under \$3 million," said Farquhar summing up this month's success. "The estimated cost for building and launching a new spacecraft to do the same job could have run as high as \$500 million. That's a pretty good measure of the scientific bargain we just got."

For Safety's Sake—Win A Prize!

By Gail K. Regan

Notice anyone using a swivel chair as a stepladder lately? How about someone wearing flip-flops while mowing their lawn? Just yesterday I saw a motorist backing up on the beltway in order to use an exit he had just passed. Observations like these can earn you a 500-milliliter glass beaker with handle (known as a "Mugger") or \$250!

Fiscal year 1985 was our safest year ever at Goddard. This year we would like to reduce even further your chances of being injured on Center or in the more hazardous environment outside the gate. To accomplish this, the Safety Office is conducting an experimental safety awareness effort in the form of a contest focused on unsafe acts - the source of over 85% of all accidents.

All Center employees (including non-Civil Service personnel) are encouraged to enter the "Goddard's Safety's Free Contest" beginning September 30, 1985 and ending November 22, 1985. All one needs to do is spot an unsafe act anywhere, anytime, jot it down on an official entry blank and drop it in the Center's mail system. The more frequently you enter the more likely it is that you will win. Entry blanks are available on the poster located near the Dateline display or from the Health and Safety Branch, Code 205.2, telephone 344-6298 or 344-6296.

In addition to random drawings for two \$250 grand prizes and eighteen Muggers, Muggers will be awarded each week for the most humorous/outrageous unsafe act observed, and the most serious unsafe act observed.

The Director of the directorate which submits the most entries per capita (Civil Service) that week will also receive a Mugger. Weekly winners will be notified by phone every Tuesday and announced in Dateline. Grand prizes will be awarded at the Facilities, Health & Safety Committee Meeting.

Dr. Loretta Cornelius Opens Colloquia Series

By Sharon Garrison

Dr. Loretta Cornelius, Deputy Director of the Office of Personnel Management (OPM) spoke at Goddard September 17 as the first speaker in the newly revitalized Goddard Management Colloquia series.

Dr. Cornelius spoke on "Leadership in the 21st Century." She was appointed by President Reagan and confirmed by the Senate in September 1981 to be the second ranking official at the civil service personnel agency. Her responsibilities include civil service pay, retirement and insurance programs, senior executive personnel development, staffing programs, workforce effectiveness, ethics in government and OPM's personnel and equal employment opportunity efforts.

GIVE LIFE. . . IT'S IN YOUR BLOOD! Next bloodmobile visit is scheduled for Wednesday, October 2 in Building 8 from 8:30 a.m. to 2:30 p.m.

Sarsat Van

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The visitors included owners, operators, manufacturers and airplane enthusiasts of all sorts, drawn to Oshkosh by the chance to view vehicles ranging from ultralight experimental aircraft to the Concorde. During the airshow, which is sponsored by the Experimental Aircraft Association, some 14,000 airplanes flew in and out of Oshkosh, briefly making it the busiest airport in the world.

Following the Oshkosh appearance, the van returned to the Goddard area for stops at the College Park Airport and at Goddard. The van will continue to tour air and boat shows and other events indefinitely as part of Sarsat's outreach effort to familiarize potential users with the system.

Around the Center

Lynn Barranger (below center), a Bendix audiovisual specialist in Goddard's Closed Circuit Television (CCTV) Studio receives a NASA Special Services Award last month from Robert C. Nysmith (right), NASA Associate Administrator for Management. Joining in the presentation was James M. Beggs, NASA administrator.



Barranger was honored for her work on a video series which featured the NASA administrator. In addition, Barranger and the CCTV group were the primary video support team for the NASA National Productivity Symposium and played an important role in the development of video programs about NASA's Productivity Program.

Martha Horseman, Code 285.2, designed the winning entry for the Program Procurement Division (PPD) Emblem Contest. Her entry was selected in August from thirteen submitted by Center employees.



The overall design is based on unity, represented by the circle, while the interior octagon represents the many facets of procurement. Horseman was presented with a desk pen set featuring the division emblem by Donna Fortunat, the new Associate Chief, and Michael Lodomirak, Chief, PPD.

James W. Thompson, a pioneer in the United States space program and one of the original employees of Goddard, passed away on July 28th after a long bout with cancer. Thompson

began his government career at the Naval Research Laboratory (NRL) from 1943-1958, where he worked on the V2 and Viking rockets and on the Vanguard satellite program.

He came to Goddard in the mass transfer from NRL in 1958, which formed the nucleus of Goddard. Here, he continued to work in the satellite and sounding rocket programs until his retirement in 1977.

He is survived by his former wife, Fern, who is in the accounting branch at Goddard, and by his son, Brad. The family suggests that memorial contributions may be made to:

National Institute of Mental Health
5600 Fishers Lane
Rockville, MD 20857

Don't Run Us Down!

All GSFC employees and contractor personnel are reminded of the Maryland Vehicle Law [§21-502a(2)] that *requires* motorists come to a complete stop for pedestrians in crosswalks.

The pedestrian and the driver each has a responsibility in crossings: the "pedestrian may not suddenly leave a curb or other place of safety and walk or run into the path of a vehicle which is so close that it is impossible for the driver to yield." Also, "it is the duty of the motorist to observe movements of a pedestrian while crossing streets and to have his car under such control as to avoid injury to him. . . crossing is not duly respected if (a) driver is operating an automobile so rapidly towards a pedestrian crossing place that the automobile cannot be stopped in time. . ."

The speed limit on the Center is 25 miles per hour, unless otherwise posted.

September Retirees

Congratulations to the following Goddard employees who retired this month. Thank you all for your contributions, and good luck in retirement. We'll miss you!

Thomas J. Butash	716.2	26 years
Ronald Britner	400.6	32 years
James A. Findlay	301	30 years
Alexander Skopetz	730.4	31 years

Bruce Milam Loves Friendly Skies; Flies With And Without Airplane

By David W. Thomas

Bruce Milam was 15 when he learned to pilot an airplane. Now 26, he often flies without the aircraft, soaring through the sky performing acrobatic stunts like aerobatic stunts.

Milam, code 716.2, is an avid skydiver. Nearly every weekend he skydives or pilots airplanes full of other human birds. Three-hundred-eighty jumps and 1200 flying hours ago he became hooked, or rather high on the friendly skies.

"Skydiving makes me feel like Superman," said the aerospace engineer who joined Goddard last November. "Vertically, I can fly up to 200 miles per hour, horizontally, up to 80. With slight body movements, I can go in any direction or flip, roll or tumble."

Jumpers usually bail out at about 11,000 feet, according to Milam. Two to three minutes later, they're on the ground.

"They say it's the most fun thing you can do with your clothes on," Milam said.

Father Gives Lesson

He said he's wanted to be a pilot since he tried to build an airplane years ago. But his father was leery of a home-built airplane so he paid for his son's first flying lesson. The younger Milam financed more lessons by working various jobs.

Milam likes skydiving and piloting equally. But while being a pilot has always interested him, skydiving

resulted from a safety requirement during aerobatics. Aerobatic pilots have to wear parachutes, but, he says, most pilots "wouldn't jump if you put a gun to their heads."

He decided to test the parachute for bailing out in an emergency. During the test, conducted on the ground, he found there was little time to exit a doomed aircraft, and he wondered about getting out fast enough.

"That's when I decided to learn how to parachute," he said.

Learning to bail out for safety's sake turned into a love for skydiving, and since that first parachuting lesson, Milam has been "jumping for joy" and even lecturing on the sport.

Once, for a lecture on skydiving at his alma mater, West Virginia University, he entered from the sky and proceeded with his presentation; for his birthday party, he landed in his parents' back yard. He's dropped in on a pig roast; has splashed in a lake, and has dared night jumps.

For a while, he was a regular attraction at the annual Airport Appreciation Day in his hometown, Summersville, West Virginia, and once, during a July 4 air show, displayed the U.S. flag and had red smoke grenades on each foot burn as he descended.

"My favorite jump scared the crowd," Milam says. "After a speech on safety during an air show, I accompanied a pilot while he did aerobatics. As the pilot did a roll, I fell out of the



SKYDIVER—Bruce Milam (716) flies or jumps out of airplanes nearly every weekend. He is shown here in full skydiving attire.

airplane, faking a casualty as if my seat belt wasn't fastened. It looked like I was going to crash to the ground, but I pulled the rip cord at the last moment."

Flight Instructor

In addition to having fun in the sky, Milam also makes money from his hobbies. On weekends, he gets paid for hauling skydivers. He also is a flight instructor. For a year while in college, he ran his own business towing banners across the sky. But he had to quit because the demand for his services interfered with classes.

Now his work involves tasks like developing instruments for the Cosmic Background Explorer (COBE), to be launched by the Shuttle in 1987. But he still finds time to skydive and fly and to teach others to fly, like his wife, Laura, whom he met at his alma mater. She is an aerospace engineer at Goddard. Recently, she soloed for the first time, and she, too, has tried skydiving.

"I don't think she liked it too much," he said.

But they both enjoy flying. So, with the new Twin Comanche airplane they just bought, they'll probably traverse the country and visit other far away places.

"Once you've got your wings," he said, "the sky's the limit."



Goddard News

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