

San Marco Atmospheric Satellite Scheduled for Launch March 18

by Jim Elliott

A March 18 launch has been set for the San Marco D/L spacecraft, officials of the University of Rome and NASA announced recently.

The international satellite, designed to make studies of the lower atmosphere, will be launched from Italy's San Marco Equatorial Range in Kenya. The two-hour launch window runs from 10:16 a.m. to 12:16 p.m., Kenya time (2:16 a.m. to 4:16 a.m. Eastern Standard Time).

The spacecraft will be launched on a U.S. Scout rocket, built by LTV Missiles and Electronics Group in Dallas, TX, according to Ronald E. Adkins, NASA San Marco Project Manager at Goddard.

The 237-kilogram (522-pound) spherical spacecraft will carry five scientific instruments. One of the instruments is from Italy, one from West Germany and three from the United States.

Two of the U.S. instruments are from Goddard. They are the Wind and Temperature Spectrometer to measure neutral winds, neutral particle temperatures and concentrations of selected gases in the atmosphere, and the Three-Axis Electric Field Experiment, which will measure the electric field surrounding the spacecraft in orbit. Principal investigators are Nelson Spencer, formerly of Goddard and now with the University of Maryland's University Research Foundation, College Park, MD, and Dr. Nelson Maynard, of the Air Force Geophysics Laboratory, Hanscom Air Force Base, MA, respectively.

The third U.S. instrument is the Ion Velocity Instrument from the University of Texas at Dallas. It is designed to measure the plasma (hot gases) concentration and ion winds surrounding the spacecraft in orbit. Principal investigator is Dr. William

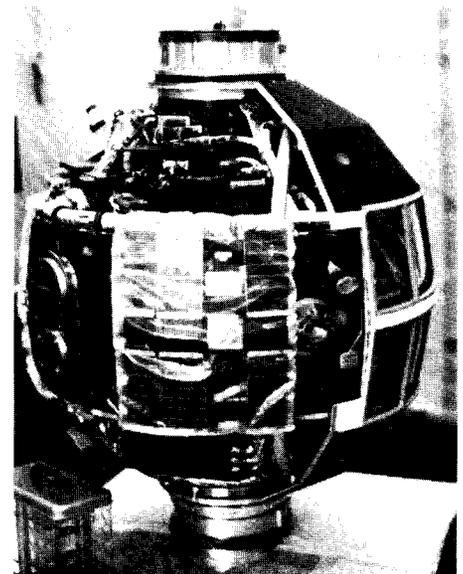
B. Hanson, University of Texas.

The Italian instrument on the spacecraft is the Neutral Atmosphere Density (Drag Balance) experiment, designed to measure drag forces on the satellite in orbit. Professor Luigi Broglio is principal investigator.

West German Instrument

The West German instrument is the Air-glow Solar Spectrometer, sponsored by the Institut für Physikalische Weltraumforschung (IPW) in Freiburg. It is designed to measure equatorial day and night air-glow, solar extreme ultraviolet radiation, solar radiation from the Earth's surface and from clouds, and the radiation from interplanetary and intergalactic origin reaching the satellite. Principal investigator is Dr. Gerhardt Schmidtke of IPW.

Continued on page 3



COOPERATIVE PROGRAM—The San Marco D/L Satellite (right) is part of the San Marco Project, an international cooperative project which was initiated in 1962 between Italy and the United States. The March 18 launch will mark the fifth time that a San Marco spacecraft has been sent into space. San Marco D/L will be launched aboard Scout rocket from the San Marco platform (center) in the Indian Ocean.

Wallops
Engineer
Among Ten
Outstanding Women

INSIDE

Page 6



Talk from the Top

John W. Townsend Jr

Q: *There have been several management changes at GSFC recently. What are these changes? Will these changes affect overall management strategy?*

A: Some changes were expected. John Boeckel's retirement meant replacing the director of engineering. John Busse was the candidate, and I chose Bob Baumann to replace John as the Director of Reliability. Some changes were unexpected. When John Quann accepted an offer on the outside, I decided to operate in a different mode with two associate directors: Bill Keathley [former Director of Flight Projects] and Frank McDonald [Chief Scientist]. I was the first Goddard deputy and now I've abolished the position! I like to promote from within and so I chose Jerry Longanecker to fill the director of flight projects slot.

Q: *How will the current backlog of payloads affect our scientists' future work? What steps, if any, are being taken to ascertain that our skills will be sharp when we need to use them?*

A: Goddard's been lucky since the Challenger accident because we still have missions going on—balloon payloads, sounding rockets, Delta rockets. And of course, the first shuttle flight will carry TDRS [Tracking and Data Relay Satellite], a Goddard payload. Len Fisk [NASA Associate Administrator for Space Science and Applications] and I are trying to emphasize the smaller payloads because they represent more opportunities for flight. We will be bringing in some Scout payloads and smaller-size Explorers as the money allows. When the shuttle resumes flight, some things that aren't in the books right now may become possible as confidence rebuilds. I'm also emphasizing in-house projects. I would like to keep at least an Explorer and a Scout kind of payload in-house at all times.

Center Director Dr. John W. Townsend, Jr. wants to hear from you! Send your questions to: TALK FROM THE TOP, Code 130.

Dr. Fletcher Visits Goddard

by Randee Exler

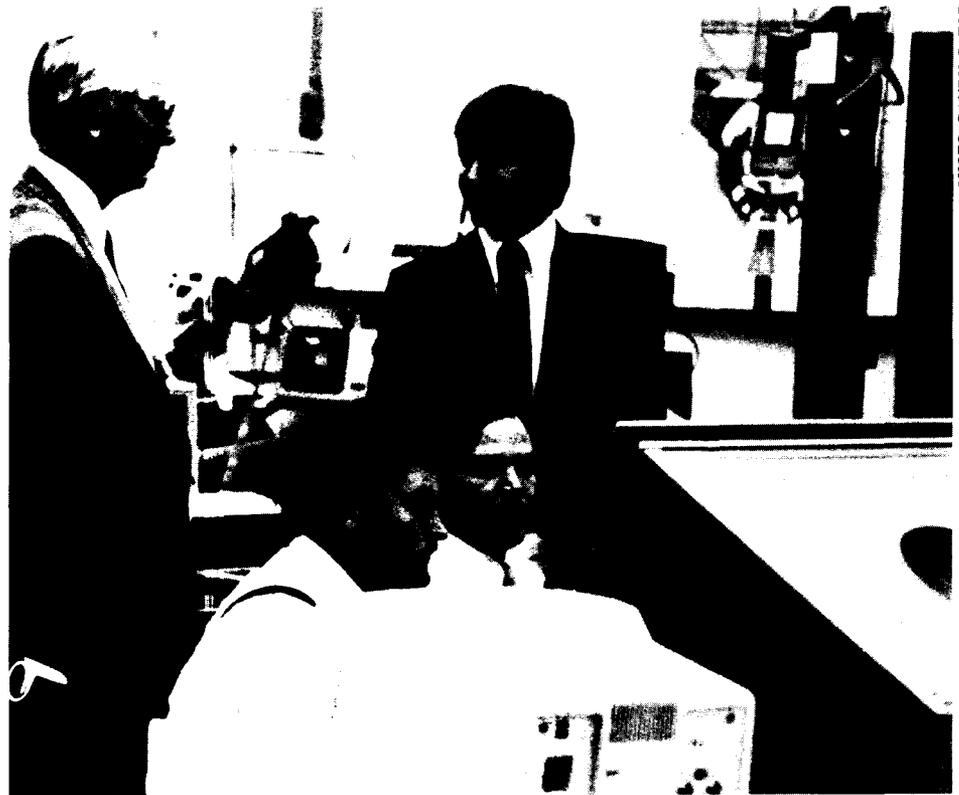


PHOTO: RANDY CATOE

ORBITAL REPLACEMENT UNIT DEMONSTRATION—Tom Field (standing, right) explained to NASA Administrator Dr. James C. Fletcher (standing, left) how robots may be used on future missions to exchange boxed space experiments as Tim Sauerwein (seated, left) and Arlie Long watch the demonstration on a monitor. Field, Sauerwein and Long work in Code 735.1.

NASA Administrator Dr. James C. Fletcher visited Goddard on January 29 to meet Center personnel and see projects in action.

Following a Center overview by GSFC Director Dr. John W. Townsend, Jr. and a meeting with the Center's Senior Executive Service personnel, Dr. Fletcher began a day-long series of tours.

Dr. Fletcher's first stop was the Robotics Laboratory for a demonstration on how robotics may be used in the future to repair satellites and construct parts of the Space Station. Dr. Fletcher operated master-control robot arms whose movements were mimicked by a slave unit. Ron Browning, Deputy Director for Space Station; and David Provost, Robotics Data Systems and Integration Systems, led the presentations and demonstrations.

After lunching with Goddard project managers and scientists, Dr. Fletcher visited the National Space Science Data Center (NSSDC). Dr. James Trainor, Director of the Space and Earth Sciences Directorate; Dr. Milt Halem, Chief, Space

Data and Computing Division; and Dr. Jim Green, Associate Chief for the NSSDC, briefed Dr. Fletcher on data acquisition, processing and storage. The tour included the NSSDC's efforts to use optical discs as a means to store growing amounts of data.

How are mathematical models used to understand the Earth's atmospheric system? Oceanographer Dr. Paul Schopf, Physicist Dr. Max Suarez and Goddard Institute for Space Studies Physicist Dr. Michael Prather briefed Dr. Fletcher on this subject. Because it's impossible to bring the Earth and its atmosphere into the laboratory, Goddard modelers, mathematically recreate atmospheric conditions through the use of computers. One atmospheric study is of the El Nino effect, a warming trend in the Pacific Ocean which causes changes in wind and rain.

For Dr. Fletcher's final briefing, Bob Spearing, Director of Mission Operations and Data Systems; Joe Rothenberg, Chief, Mission Operations Division; and John Dalton, Chief, Data Systems Technology

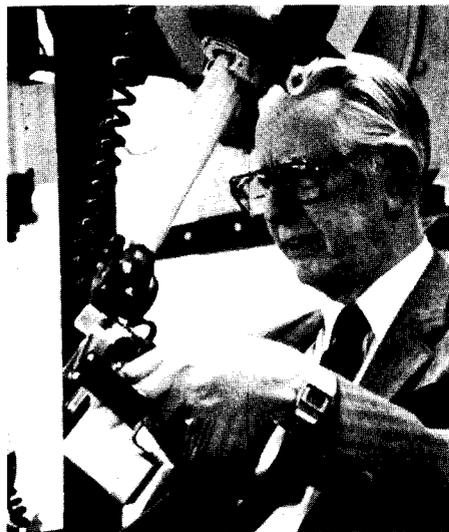


PHOTO: RANDY CATOE

HANDS ON EXPERIENCE—The briefings and demonstrations arranged for NASA Administrator Dr. James C. Fletcher's recent visit included several hands-on opportunities. In this picture, Dr. Fletcher is operating the arm of a master/slave unit in the Robotics Laboratory.

Division, led a tour on spacecraft control systems, present and future. In the Earth Radiation Budget Satellite Payload Operations Control Center, Jim Williamson explained this modern-day control system. Following a tour of the Flight Dynamics Facility, future control systems were explored as Dr. Fletcher operated a console that could graphically display spacecraft orientation.

San Marco

Continued from page 1

The Scout has an unmatched 100 percent success rate during the last 10 years (12 launches, 12 successes); 98 percent during the past 20 years (53 launches, 52 successes). The Scout is a four-stage, solid propellant rocket, approximately 33 meters (75 feet) in length with a launch weight of 21,600 kilograms (47,520 pounds). It has a liftoff thrust of 649,182 newtons (145,942 foot-pounds per second).

The Scout program at San Marco is unique in that the U.S. Scout launch vehicle is processed at launch by an Italian launch team. There have been eight Scout launches from San Marco and eight successes.

The Scout program in the U.S. is managed by NASA's Langley Research Center, Hampton, VA. Jon L. Vancleave is Project Manager.

Continued on page 5

NASA Pipeline

AMES RESEARCH CENTER, Mountain View, CA—Using NASA's new super-computer system called the Numerical Aerodynamics Simulation Facility, an Ames researcher has made by far the most in-depth analysis to date of vortex breakdown, a complex phenomenon which can cause loss of lift and control for high-performance aircraft. A computer model, developed by Dr. Kozo Fujii, fellow at Ames, simulates the air flow field physics associated with vortex breakdown and provides new insights into its causes. Above the upper aircraft wing surfaces, vortices of swirling, low-pressure air flow create increased lift for fighter-type aircraft. With the aircraft's nose pitched up at a high angle to its flight path, these vortices can burst, causing a loss of aerodynamic lift. Once this breakdown occurs, air flow may become asymmetric, which can lead to loss of aircraft control, sending it into a roll. Understanding and eventually controlling vortex breakdown will lead to greater maneuverability and safety for high-performance aircraft.

JOHNSON SPACE CENTER, Houston, TX—NASA announced crew members for Space Shuttle mission STS-28, currently targeted for late 1988 recently. STS-28 will be a Department of Defense (DOD) mission aboard the Shuttle orbiter Columbia. The crew will be commanded by Col. Brewster H. Shaw, Jr. (USAF). Pilot for the mission will be Cdr. Richard N. Richards (USN). Cdr. David C. Leestma (USN), Lt. Col. James C. Adamson (USA), and Maj. Mark N. Brown (USAF) have been assigned as mission specialists. Shaw has flown previously as pilot on STS-9 and as commander of STS-61B. Leestma has flown previously as a mission specialist on mission STS-4G. Richards, Adamson and Brown will make their first Shuttle flights.

KENNEDY SPACE CENTER, Kennedy Space Center, FL—A \$635,529 contract has been awarded by EG&G Florida, Inc., the base operations contractor for KSC, to Jensen Construction Company, Des Moines, IA, for modifications to the Space Shuttle Landing Facility (SLF). Work to be performed by the contractor consists of grinding a 3,500-foot section at each end of the runway to smooth the surface texture, removing cross grooves and adding longitudinal "corduroy grooving." Also included in the contract are modifications to existing landing zone light fixtures and repainting of the markings on the entire runway and overruns. The primary purpose of the modifications is to enhance landing safety by reducing Space Shuttle orbiter tire wear during landing operations.

JET PROPULSION LABORATORY, Pasadena, CA—Miniature spacecraft, about the size of a coffee can, could be launched by electromagnetic launchers to conduct dozens of different space exploration missions, according to an engineer at JPL. Ross Jones said Earth-orbiting electromagnetic launchers, or railguns, being developed for the U.S. Strategic Defense Initiative Office, would be useful in launching very small, low cost scientific probes to various destinations in the solar system. Drawbacks to miniature spacecraft, such as limited space for instruments, would be offset by advantages such as the speed with which their highly-focused missions could be accomplished.

HEADQUARTERS, Washington, DC—Dr. Raymond S. Colladay left NASA on February 1 to become director of the Defense Advanced Research Projects Agency (DARPA). As associate administrator, he was responsible for direction of NASA's aeronautics and space research and technology development programs and for the institutional management of the Ames, Langley and Lewis research centers. NASA Administrator Dr. James Fletcher, commenting on Colladay's appointment as DARPA director said, "All of us at NASA appreciate the leadership and vision that Dr. Colladay has given to reinvigorate the nation's civilian space technology program and to ensure U.S. preeminence in aviation. I know that his understanding of advanced technology and his management and leadership will continue to benefit the nation in his capacity as director of DARPA. We wish him well in this new assignment and look forward to seeing him back at NASA at the end of this Administration."

Foreign Reservations Total 131 for GAS Program

by David Thomas

Smart consumers make early provisions for good deals. Redskins fans camped out at the stadium to buy scarce tickets for the National Football Conference championship game; veteran grocery shoppers consult grocers to learn when the freshest foods are stocked; frequent travelers make reservations months in advance to get the best "super-saver" deals. Not surprisingly, there are smart buyers in the space business, too.

Specifically, buyers in 20 foreign countries have made 131 reservations for NASA's Get Away Special (GAS) Program and await their chance to fly aboard the Space Shuttle, now scheduled to

resume flights later this year.

"Local" space consumers are shrewd shoppers, too. Approximately 400 reservations have been made within the U.S.

The program's popularity stems from its wide appeal as a low-cost program available virtually to anyone meeting the requirements, be it individual, group, company or agency. As a result, it has gained both national and international recognition.

Small Containers

Get Away Specials are small, trash can-size containers which carry experiments in the cargo bay of NASA's Space Shuttle on

a space-available basis. The cavernous cargo bay is 60 feet long and 15 feet in diameter, capable of carrying 65,000 pounds of payload into Earth orbit. Primarily, the bay accommodates application and scientific satellites, or manned laboratories, all of which come in a variety of sizes.

Usually, these major payloads do not use all of the orbiter's payload capacity and leave room for smaller experiments—such as the GAS. They come in three sizes: two-and-a-half cubic feet, which carry 60 pounds; two-and-a-half cubic feet, which carry 100 pounds; and five cubic feet, 200 pounds. Prices are \$3,000, \$5,000 and \$10,000, respectively. Reservations are secured through NASA Headquarters with a \$500 down payment.

Compared to the typical commercial communication satellite, which costs \$15 million or more, GAS offers an attractive deal. Moreover, the program, managed by Goddard, allows thousands of people who otherwise might not be able to participate to send their own experiments into space. The project marked its tenth anniversary in October 1987 with its annual symposium plus a hardware exposition.

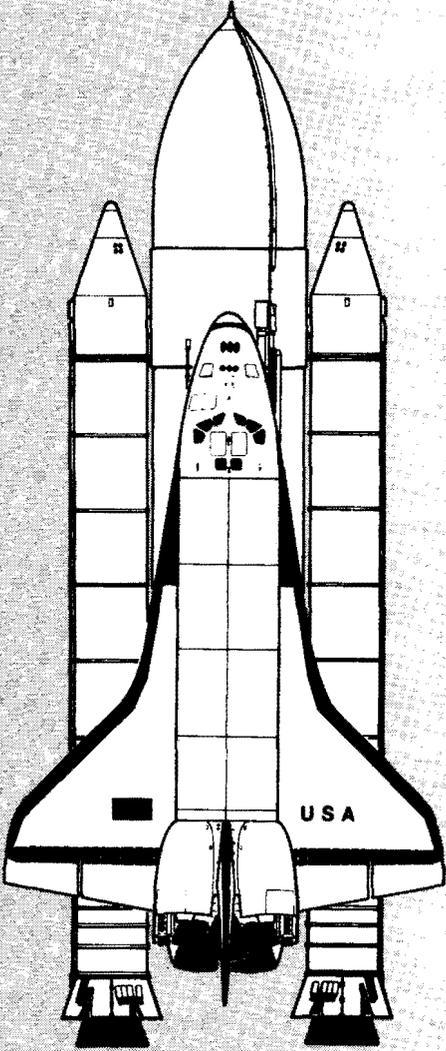
Foreign Reservations

Thirty-five of the 131 foreign reservations are "active," meaning paperwork is being processed and experiments are being fabricated. Those remaining have made a down payment and submitted a letter of intent. A list of the countries of origin and the number of their reservations follows: Argentina, one; Australia, 11; Austria, three; Belgium, two; Canada, 19; China, one; Denmark, two; England, 12; Germany, 41; France, four; Ireland, one; Italy, three; Japan, 19; Mexico, two; Norway, two; Pakistan, one; South Africa, one; Sweden, two; Thailand, one; and The Netherlands, three.

Of the 53 GAS canisters which already have been flown on the shuttle, 12 have been foreign.

Just like U.S. consumers in the space business, foreign groups are learning that the term "Get Away Special," coined by an airline company, has a far greater connotation than a vacation deal. The foreign users have learned that NASA's GAS program allows them to send their experiments into space aboard one of the most sophisticated vehicles in existence, America's Space Shuttle.

Launch Update: STS-26



NASA has announced a target of August 1988 for launch of the next Space Shuttle mission, STS-26. This new launch target was selected following a major program assessment, subsequent to the most recent full-scale firing of the redesigned solid rocket motor (SRM) in December 1987.

An internal planning date of August 4 will be used to focus the schedules for individual program elements. This planning date, although for internal purposes only, is consistent with the August target time frame.

Three full-scale, full-duration test firings are planned prior to the August launch of STS-26. Two will incorporate "manufacturing-type" flaws in the test hardware.

In support of the new target launch date, it is planned that Discovery will be rolled out to Kennedy Space Center Launch Pad 39B on May 13. A Flight Readiness Firing of Discovery's main engines and liquid propulsion system is targeted for June 13.

In announcing the new target launch date for STS-26, Rear Admiral Richard H. Truly, NASA Associate Administrator for Space Flight, indicated that he was very pleased with the progress of the Shuttle program toward resuming flight.

"The performance of the entire NASA/contractor team over the past month, during the conduct of this major review of the entire Shuttle recovery program, has been outstanding. It has clearly demonstrated that we have struck the proper balance between our first priority of safety and quality, while still maintaining our commitment to return the Space Shuttle to flight just as quickly as we can reliably do so," he said.

San Marco

Continued from page 3

Kenya Range

The Kenya range, operated by the Centro Ricerche Aerospaziali (CRA) of the University of Rome, features an unusual launch facility. Located 145 kilometers (90 miles) north of Mombasa, it is composed of two offshore platforms and a base camp. The platforms are located 2.9 degrees south of the Equator, approximately five kilometers (three miles) off the coast in the Indian Ocean where the water is nine meters (30 feet) deep.

Both platforms—the San Marco, from which the Scout vehicle with the spacecraft is launched, and the Santa Rita, which serves as a launch control center—are raised so that the bottom decks stand about five meters (15 feet) from the highest known water level.

The San Marco platform, named for the patron saint of navigators, is a rectangular floatable steel barge 27-meters (90 feet) wide, 91-meters (300 feet) long and four meters (13-feet) deep.

The Santa Rita platform, named for the patron saint of things impossible, is a triangular platform similar to ones for offshore oil drilling and more commonly known as "Texas Towers." Its sides are 35-meters (115-feet) long.

The launch will mark the fifth time a San Marco spacecraft has been sent into space. The first one, San Marco A, was launched from Goddard's Wallops Flight Facility on December 15, 1964. The subsequent three launches were from San Marco: San Marco B, launched April 26, 1967; San Marco C1, April 24, 1971; and San Marco C2, on February 18, 1974.

San Marco D/L ("L" for low orbit) will be placed in an orbit of approximately 277 by 685 kilometers (172 by 425 statute miles.) Its inclination will be 2.89 degrees, and it will circle the Earth every 100 minutes, project officials said.

**See your name
in print!**

Mail your story to the Goddard News (Code 130), or call the Editor at 286-7277.

TAPS Support Structure Testing Begins

Goddard recently completed construction of the primary support structure for the Two-Axis Pointing System (TAPS) of the Shuttle High Energy Astrophysics Laboratory (SHEAL) and transported the 2,880-pound structure to Building 15 for structural tests.

The TAPS Support Structure, or TSS, will straddle the Shuttle payload bay and secure the pointing system and instrumentation throughout the mission.

The TSS also will house the NASA's Shuttle Payload of Opportunity Carrier (SPOC) avionics system which will provide electronics to receive near-real-time commands from the SHEAL Payload Operations Control Center (POCC) during the mission.

Structural testing of the TSS began on February 2. After the TSS has passed structural tests, it will be integrated with the other components of the SHEAL laboratory.

SHEAL, originally planned to measure x-rays from the Shuttle payload during a 1992 flight, has been reconfigured so that one of the instruments can fly three years early to measure x-rays emanating from Supernova 1987A, which NASA scientists

have been monitoring since its discovery last February in the Large Magellanic Cloud, a neighboring galaxy.

SHEAL consists of two instruments—the Diffuse X-ray Spectrometer (DXS), to measure the wavelengths of diffuse x-rays scattered throughout the interstellar medium; and the Broad Band X-ray Telescope (BBXRT), to measure the electrical charges of x-rays emanating from specific sources—such as quasars, active galaxies, galaxy clusters, and Supernova 1987A.

Scientists expected the supernova to begin emitting x-rays in about 100 years—plenty of time to build and launch a satellite to measure them. But Supernova 1987A has made a career out of confounding astronomers' expectations: the Japanese satellite Ginga detected x-ray emissions in September 1987, eight months after the supernova was detected.

The early appearance of x-rays gave Goddard scientists the idea of flying the BBXRT early.

Frank Volpe is the Mission Manager; Jim Barrowman is the Project Manager. Dr. Peter Serlemitsos is the BBXRT principal investigator.



CONGRESSIONAL VISIT—Shown here is Congressman Martin Sabo of Minnesota performing tasks with a master/slave force-reflecting robot during a recent tour of Goddard. Mark Brumfield, Code 735.1 (left) and Dave Provost, Code 735.2 (right) assist the Congressman as he operates the robotic arm while watching via monitor as another arm performs the same motion.

PHOTO: RANDY FRISCH

Wallops Engineer Selected Among Ten Outstanding Women

Debbie Frostrom, a project engineer at Goddard's Wallops Flight Facility, filled out an application for *Glamour* magazine's 10 Outstanding Young Working Women for 1988 competition "just to see what would happen." This month, Frostrom is featured in the magazine along with the nine other winners.

Frostrom, a Chicago native, graduated from the Taylor University in Indiana in 1983 with a bachelor's degree in physics. She joined Wallops four and a half years ago as a project engineer. Within a year, she was assigned the responsibility of coordinating the Wallops network support of Space Shuttle missions.

After the Challenger tragedy in January 1986, the 26-year-old Frostrom was assigned to several sounding-rocket launch programs at Wallops as well as to the transfer of a satellite tracking station from Greenbelt to Wallops, both of which led to Group Achievement Awards.

Currently, she is the youngest and only



PHOTO: ALICE REW

OUTSTANDING WOMAN—"It's been so exciting," said Debbie Frostrom, a Wallop's project engineer who was selected as one of *Glamour* magazine's 10 Outstanding Young Working Women.

female project engineer at the Eastern Shore facility. Frostrom was named NASA campaign manager for the Middle Atmosphere Cooperation/Epsilon cam-

paign, a two-month international sounding-rocket project involving 12 countries and 35 rockets. A team of 40 NASA and contractor personnel successfully launched eight sounding rocket experiments and eight meteorological rockets from the Norwegian Andoya Rocket Range.

Frostrom was in Norway when *Glamour* made their selection. "Because I wasn't sure when I would be home, *Glamour* arranged for my picture to be taken in Norway," she explained.

"My husband says that he knew all along that I would win," said Frostrom. "After I made the first cut, I started thinking that maybe I had a chance." Her husband, Robert, also works at the Wallops facility.

As a result of the *Glamour* article, Frostrom was selected to appear on the CBS *This Morning* program with two other winners. "It's been so exciting," the Pocomoke City resident said.

"I see myself working at Wallops for many years to come," she added.

Goddard's Dr. Joanne Simpson Elected President of American Meteorological Society

by Carolynne White

Dr. Joanne Simpson, a pioneer in cloud and storm research and head of Goddard's Severe Storms Branch (Code 612) of the Laboratory for Atmospheres has been elected president of the American Meteorological Society.

The first woman to receive a Ph.D. in meteorology, and the first woman ever to win the American Meteorological Society's Meisinger Award (1962)—and, later, the prestigious Carl-Gustaf Rossby Research Medal (1982)—Dr. Simpson has an outstanding history of pioneering research in Earth and atmospheric sciences.

One of the first persons to use an instrumental aircraft in meteorological research, Dr. Simpson won the Meisinger Award for her "outstanding experimental work in cumulus investigations by means of aircraft and for her imaginative use of these observations for deductions about the dynamics and energetics of cumulus clouds..." according to Kenneth C. Spengler, Executive Director of the

American Meteorological Society.

In addition to Dr. Simpson's current position as head of the Severe Storms Branch, she is supervising work on the Tropical Rainfall Measuring Mission (TRMM), a free-flying satellite mission.

TRMM has been proposed as part of the Earth System Science projects, an international program to study the Earth and its components (atmosphere, oceans, ice cover, biosphere, crust, and interior) on a global scale. It will measure tropical rainfall, and rainfall over oceans, two components of the Earth system which are very hard to measure.

"This mission is tremendously important to developing countries," said Dr. Simpson, "because they never have an 'average' rainfall—it's always a flood or a drought."

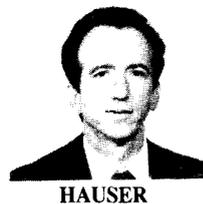
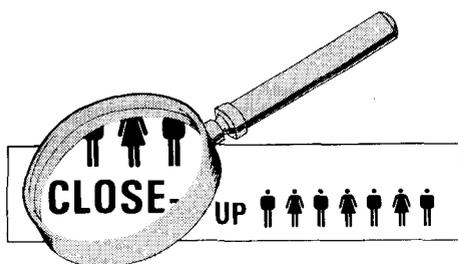
A member of the Meteorological Society since 1943, Dr. Simpson has pursued her early interest in weather throughout her "whirlwind" career in meteorology.

Way To Go, Delta!

A Goddard-managed Delta rocket carrying a Strategic Defense Initiative payload was successfully launched from the Cape Canaveral Air Force Station, FL, on Monday, February 8, at 5:07 p.m. The Delta 181 mission has been called by the Department of Defense "one of the most complex unmanned Earth orbit space missions ever attempted by the United States."

Delta 181 carried a number of experiments related to the detection and tracking of ballistic missiles. The mission used an array of state-of-the-art observation instruments covering wave lengths from the far ultra-violet through the visible and out to the long-long wave infrared. Delta 181's active instruments include the pulsed ladar (laser/ radar), a coherent doppler ladar, and a continuous wave doppler radar.

These instruments were integrated into the Johns Hopkins University's Applied Physics Laboratory-designed and built sensor module and underwent environmental testing at Goddard in November 1987.



DR. MICHAEL HAUSER, formerly Associate Chief, Laboratory for Astronomy and Solar Physics, Code 680, has been appointed to the Senior Executive

Service position of chief of the laboratory. Since coming to Goddard in 1974, Dr. Hauser has received numerous honors in recognition of his managerial abilities and scientific accomplishments in infrared and submillimeter astronomy, including the NASA Exceptional Scientific Achievement Medal and the John C. Lindsay Memorial Award.

DR. MANFRED OWE, Code 624, has received funding approval from NASA Headquarters for his proposal for a water and energy balance study in a typical African savanna, a grassland of scattered trees and shrubs. The study will employ ground, aircraft and satellite data in a cooperative effort of the Free University of Amsterdam and Goddard to model soil moisture and evapotranspiration (combined water loss from soil and vegetation) in the region.

FRANZ "FRANK" HOFFMAN, formerly Head of Goddard's Procurement Analysis Branch, Code 263, has moved to Headquarters to accept a position as a NASA Small Minority Business Advisor. In his new position, he will advise owners of small and minority businesses on contracting with NASA—a role for which he received the U.S. Small Business Administration Region IV Employee of the Year Hilary J. Sandoval, Jr., Award at Goddard in August 1987.

Goddard's Homer E. Newell Library, celebrated an open house and ribbon cutting on January 27 for the new Aerospace Research Information Network (ARIN). This automated system replaces various batch processing systems with an on-line integrated data base. **ADELAIDE DEL FRATE**, NASA Administrative Librarian and former Head, GSFC Library Branch; and **JANET ORMES**, Head, GSFC Library Branch, spoke at the ceremony.

Blood Donors

Following is a list of Goddard donors who were cited by the American Red Cross with gallon pins at the bloodmobile of February 3, 1988:

Name	Gallons
Robert Aleman	1
Susan Breon	4
Dave Case	1
Don Dazlich	4
Carolyn Dent	2
Mort Friedman	17
Frederick Hager	1
Norman Haiflich	16
Corinne Hardy	1
Ronald Kaese	2
Dolly Perkins	2
Sherry Schmitz	3
Judi Starlings	1
Teresa Vincent	1

The next bloodmobile visit will be on April 6, 1988, from 8:30 a.m. to 1:30 p.m. in the Building 8 Auditorium. **THANK YOU, GODDARD, FOR YOUR CONTINUED SUPPORT OF THE PROGRAM!**

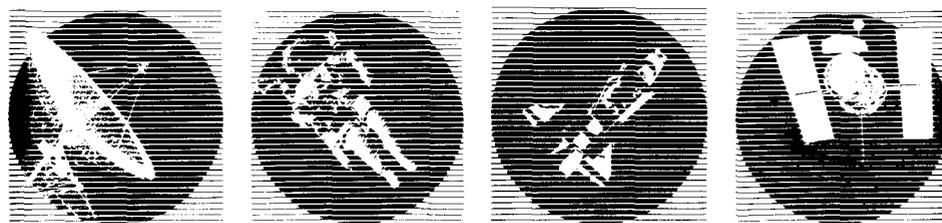
DIAL 286-NEWS

Feeling out of touch? Out of the news mainstream? Dial 286-NEWS. This is the new number for the Office of Public Affairs code-a-phone. Dial in for up-to-the-minute information on Goddard and related events.

Retirees

Farewell and best of luck to the following retirees who left Goddard recently!

	Code	Years
Agree, Irvin	531.3	25
Arnowitz, Leonard	740	24
Arslanian, John G.	543	32
Bell, Alan M.	420	23
Boeckel, John	700	39
Brumberg, Paul G.	540	34
Christiansen, Leon E.	205.2	16
Elliot, Dean F.	716.3	22
Evans, Kurt A.	270	25
Evans, James S.	284.3	40
Cleveland, Virgil	302	34
Frazier, Walter	542.1	20
Gilbert, Jack	750.2	20
Gillis, Joseph A.	405	30
Glazar, Walter S.	675	19
Grove, Donald H.	514	32
Gustafson, Carl E.	410	34
Hall, Willard D.	205.2	26
Karick, Francis S.	273	32
Leone, Peter	674	35
Matthews, Donald R.	205.2	35
Mende, Hans M.	615	25
Meyer, Harry V., Jr.	724	29
Miller, Ronald B.	705	34
Mountain, Elmer	752.1	25
Nisson, Robert S.	205.2	39
O'Connor, Joseph W.	716	38
Paroby, Walter	405	22
Paxton, William D., Jr.	542.3	37
Posthuma, William	514	25
Ridgley, James W.	551.2	36
Rogers, Lib C.	728.4	40
Smith, Harry	292	35
Spillane, Neil	411	26
Szajna, Edmund	636	40
Taylor, Robert M.	833.2	35
Tebay, Jack C.	683.2	18
Toth, Gabriel	562.2	32
Whitelock, Herbert E.	551.1	33



Visitor Center—March Calendar

March 6

Model Rocket Launch—1:00 p.m.

March 12

Star Watch—7:00 p.m. to 9:00 p.m.

March 12 & 13

NASA Film Series—1:00 p.m.

“A Man's Reach Should Exceed His Grasp”

“Apollo 14: Mission to Fra Mauro”

March 20

Model Rocket Launch—1:00 p.m.

March 27

Indoor Model Aircraft Demonstration—1:00 p.m. to 3:00 p.m.

For more information, call the Visitor Center at 286-8981.

The Visitor Center is open Wednesday through Sunday, from 10:00 a.m. to 4:00 p.m.

Space Station Associate Administrator Announces April Retirement

Associate Administrator for Space Station Andrew J. Stofan will retire from NASA on April 1. Stofan, 53, was appointed June 30, 1986, to the position responsible for developing a permanently manned Space Station by the mid-1990's. Stofan directed the Space Station program through a difficult period marked by significant progress.

While Stofan was the associate administrator, the Space Station was reorganized to include the establishment of the Space Station program office in Reston, VA. Eight major contracts were competed and awarded, including those for the design and development of the Space Station; for technical and engineering support to the program office; for the software support environment; for the technical and management information system; and for preliminary definition and design for the flight telerobotic servicer.

Stofan also directed the program through a major cost review, which culminated in an Administration-approved plan to develop the Space Station in two phases, and through a major technical and cost review by a committee of the National Research Council, which validated the baseline configuration for the Space Station. Significant progress on technical and programmatic agreements between NASA and the international partners for the development, use and operations phase of the Space Station program also was made during this time.

Stofan's career with NASA spans nearly 30 years. He began his professional career



STOFAN

at the Lewis Research Center in Cleveland in 1958 as a research engineer. From 1966 to 1978, Stofan managed a variety of technical projects at Lewis and during that time, served as manager of the Titan/Centaur project office and director of launch vehicles.

In 1978, Stofan was appointed deputy administrator for the Office of Space Science at NASA Headquarters, and held the title of acting associate administrator for that office from 1980 until 1982 when he was appointed director of the Lewis Research Center.

Stofan has received numerous awards, including the Exceptional Service and Distinguished Service Medals, the Presidential Rank Award of Meritorious Executive and the Presidential Rank Award to Distinguished Executives.

NASA Continues Rocketborne Studies of Supernova From Australia

by Joyce Milliner

Goddard's Wallops Flight Facility will launch three suborbital rocket experiments from the Woomera, Australia, range beginning later this month to continue NASA's studies of Supernova 1987A. The launch window is from February 15 through March 20.

The studies are part of a continuing NASA campaign to investigate this astronomical event throughout a three-dimensional effort, using sounding rockets, scientific balloons and one of NASA's research aircraft.

The first sounding rocket campaign, also involving three launches, was conducted from Woomera during November and December 1987. Both campaigns use the Black Brant IX two-stage, solid-fuel rockets.

The first sounding rocket flight in the second campaign, set for no earlier than February 15, is designed to study X-ray emissions in the 0.2-2 keV band. This mission will use a charged-coupled device (CCD) imaging spectrometer and X-ray telescope used in the first campaign, recovered and refurbished for this flight. Dr. Gordon Garmire, of Pennsylvania State University, is the principal investigator. Co-investigators are John A. Nousek and David N. Burrows from Penn State, Andy Collins from the Jet Propulsion Laboratory, and Guenter Reigler, NASA Headquarters.

The second rocketborne experiment, set for February, is also designed to observe X-ray emissions but in the 0.3-7 keV band and has not been flown to study the supernova previously. The experiment will use an X-ray spectrometer which was designed and fabricated at Goddard. Dr. Peter Serlemitsos of Goddard is the principal investigator.

The third experiment is scheduled for no earlier than March 7 and is designed to observe supernova emissions in the 900-1240 Angstrom band, a band not covered by any other instrument in the campaign. This experiment was also flown last November and recovered for future flights. The principal investigator is Dr. Webster Cash of the University of Colorado, Boulder.

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