NASA
National Aeronautics and Space Administration
Goddard Space Flight Center

Goddard News

Greenbelt, Maryland and Wallops Island, Virginia

Vol. 33 No. 10 October 1987

NASA's Fall Supernova Campaign May Yield First Gamma Ray Detection

by Jim Elliott

NASA will conduct a coordinated series of sounding rocket, scientific balloon and research aircraft observations of Supernova 1987a from Australia and New Zealand beginning in October, according to officials at Goddard's Wallops Flight Facility.

Personnel from Wallops will play a major role in two sounding rocket launches and four balloon launches planned for the campaign, they said. The research aircraft, the Kuiper Airborne Observatory, is from the Ames Research Center, Moffett Field, CA.

Launch Window

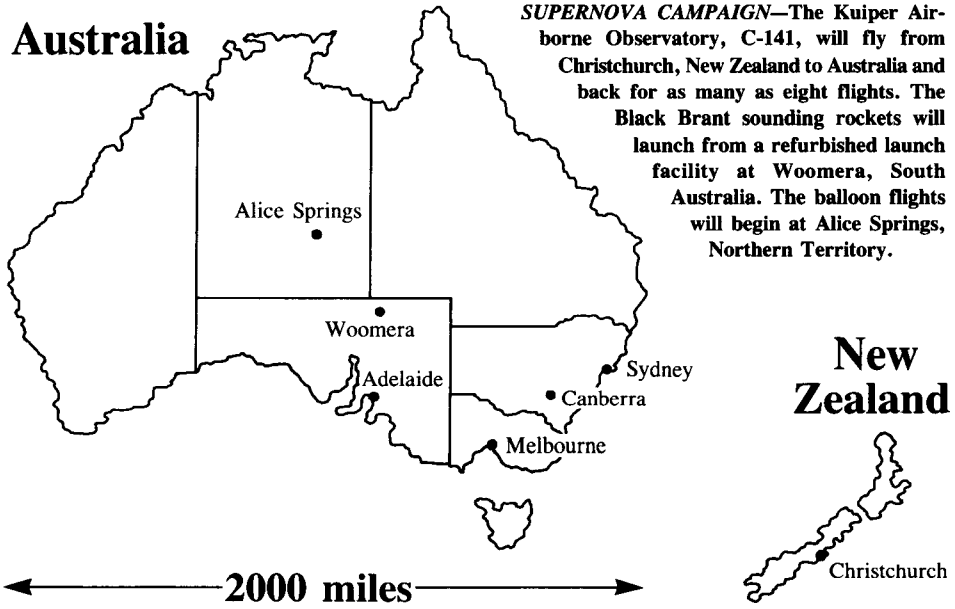
The window for the balloon launches, which will be conducted at Alice Springs, opens October 26 and closes December 14, according to Richard H. "Dick" Bradford, Balloon Campaign Manager at Wallops.

The two sounding rocket launches, from the Woomera Range, are scheduled for November 12 and 18, according to W.A. "Bill" Brence, the Wallops Sounding Rocket Campaign Manager. The November 12 flight will study x-ray emissions and the November 18 mission will investigate for gamma rays, Brence said.

The Kuiper Airborne Observatory will operate from Christchurch, New Zealand, performing eight flights between November 2 and 28, according to Guenter Riegler, Supernova Program Manager at NASA Headquarters.

Continuing Investigation

The fall campaign in Australia is a follow-on to a spring campaign in which three successful supernova balloon flights were made from Alice Springs. It also is a prelude to a continuing series of investigations of the supernova by these three means of study over the next two years, Riegler said.



SUPERNOVA CAMPAIGN—**The Kuiper Airborne Observatory, C-141, will fly from Christchurch, New Zealand to Australia and back for as many as eight flights. The Black Brant sounding rockets will launch from a refurbished launch facility at Woomera, South Australia. The balloon flights will begin at Alice Springs, Northern Territory.**

The supernova, 170,000 light years from Earth, was first detected last February 23 in the Large Magellanic Cloud by Ian Shelton of the University of Toronto, Canada and Oscar Duhalde of the Las Campanas Observatory, Chile. Within a few hours of the discovery, Goddard's International Ultraviolet Explorer (IUE), a cooperative project with the European Space Agency and Great Britain's Science and Engineering Research Council, began a program of observations of ultraviolet and visual wavelengths. Within the first week of the discovery, radio measurements from the Deep Space Network, far ultraviolet observations from the Voyager spacecraft and gamma ray observations from Goddard's Solar Maximum Mission satellite also were begun.

X-ray Emissions

Recently, first sightings of x-ray emissions have been reported by Japanese and Soviet scientists. The Japanese observations were from the Ginga satellite, and the Soviet observations from the astrophysics module Kvant, which is docked to the space station Mir.

U.S. scientists with payloads for this Australian campaign plan to detect x-rays that will help solve some of the mysteries of the supernova and hope to be the first to detect gamma rays.

Bobby Flowers, Jon Van Overeem, Paul Buchanan, Anel Flores and Frank Lau from the Sounding Rocket and Balloon Projects Office at Wallops are the payload managers for this series of supernova flights.

INSIDE
LASER ENGINEER WINS MOE I. SCHNEEBAUM AWARD
Page 6

Lab Chief Uses Remote Sensing To Study Mercury

by Carter Dove

We know it as the solar system's innermost planet: too close to the Sun to see, too hot by day and cold by night to touch, with an atmosphere too alien to breathe.

Not a good place for a family vacation.

The "place" is Mercury.

Mercury is the least-studied of the terrestrial planets. As a result, scientists know little about its interior and subsurface properties. And until very recently, most of what we learned about the planet came from the data transmitted back to Earth by the Mariner 10 spacecraft 13 years ago.

Even today, only 40 percent of its surface has been photographed; the rest is largely unmapped.

But now, aided by advances in remote sensing technology, scientists such as Goddard's Dr. Dan Baker are approaching Mercury with renewed interest.

One of the "tools" being used by Baker and his colleagues to increase their knowledge of Mercury are the Very Large Array (VLA) ground-based radio antennas at Socorro, NM

Baker—formerly with the Los Alamos National Laboratory, NM, and now Chief, Laboratory for Extraterrestrial Physics—along with Dr. Jack Burns and colleagues at the University of New Mexico, has reported on radio imaging observations which represent new information about the planet.

Augmenting the photographs taken by Mariner 10, the Baker team obtained the first-ever radio wavelength "pictures" of Mercury on July 6, 1986. The images:

• Probed a level approximately three feet (1 meter) beneath the Hermean (for Hermes, Greek-god counterpart of Mer-

Continued on page 6

Simulated Encounter

Mercury, smallest of the nine planets in the solar system, is named after the Roman mythological god of commerce, travel and thievery.

The solar system's innermost planet, Mercury is so close to the Sun that usually it is not visible from Earth. When it is — just after sunset or just before dawn — it is obscured by the haze and dust in our atmosphere.

Until recently, most of what we knew about Mercury was derived from the photographs which the Mariner 10 spacecraft radioed back to Earth during three flybys from September 1974 to March 1975.

Mariner 10, passing within 500 miles (805 km) of the planet, showed us an ancient, heavily-cratered surface much like our own Moon — crisscrossed by cliffs as high as 1.2 miles (2 km) and as long as 932 miles (1,500 km). Apparently, these cliffs were created when Mercury's interior cooled and shrank, compressing its crust.

Further, the Mariner 10 instruments revealed a planet with a weak magnetic field and only a trace of atmosphere — one with just a trillionth of the density of the Earth's and mostly made up of the gases argon, neon and helium.

Accentuating Mercury's inhospitability to humans, the days and nights are each 59 Earth days long, with temperatures in the extreme: 950° Fahrenheit (510° Celsius) on the sunlit side to −346° Fahrenheit (−210° Celsius) on the night side.

FIRAS: An Infrared Eye of the COBE

by Carter Dove

Construction is complete now on one of the infrared "eyes"—the Far Infrared Absolute Spectrophotometer (FIRAS)—which will fly on the Goddard-managed Cosmic Background Explorer (COBE) spacecraft, according to Roger Mattson, the spacecraft project manager.

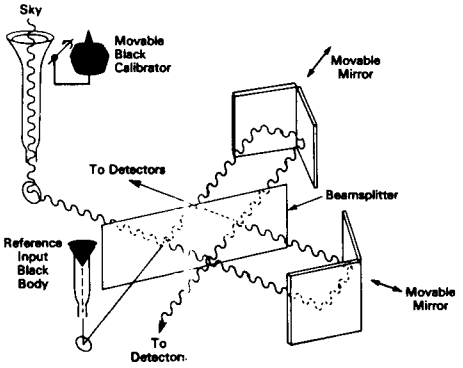
The FIRAS is one of three instruments designed to fly aboard the COBE.

The COBE, originally built as a Space Shuttle payload, now is being modified extensively for a 1989 launch aboard a Delta expendable launch vehicle—a move dictated by the Space Shuttle Challenger accident in January 1986.

The COBE spacecraft's mission is to answer questions about the Big Bang, the cataclysmic explosion which created the universe about 15 billion years ago.

The FIRAS, using a trumpet-shaped cone to collect light, will produce scientific information from each of 1,000 different parts of the sky. The data will be analyzed to determine how much of the light originates from the Big Bang.

The other instruments designed to fly on the COBE are the Differential Microwave Radiometer (DMR), to determine if the residual radiation from the Big Bang was equally bright in all directions; and the Diffuse Infrared Background Experiment (DIRBE), to search for the light of primordial galaxies and other celestial objects which formed after the Big Bang.



***FIRAS CONCEPT*—The FIRAS measures the wavelength of incoming radiation. Light from the sky is funneled through a trumpet-shaped cone and sent to an interferometer which breaks the wave into two equal parts, delays one part, and then recombines the wave. The wavelength can be measured by varying the delay and studying how the wavelength recombines. Four detectors are used to sense the radiation.**

The Delta launch, set tentatively for early 1989 from Vandenberg Air Force Base, CA, will place the spacecraft into a circular orbit 559 miles (900 km) above the Earth.

The Delta expendable launch vehicle program is managed by Goddard.

The COBE has been designed and is being integrated and tested by Goddard engineers and scientists, who also designed its instruments. Dr. John Mather is COBE project scientist.

NASA Pipeline

AMES RESEARCH CENTER, Moffett Field, CA — Ames had lead responsibility for implementing U.S. participation in Cosmos 1987, a Soviet biosatellite mission launched recently. More than 50 NASA-sponsored scientists from Ames and universities throughout the Nation were involved directly in 27 major joint experiments. The U.S. has participated in five previous Cosmos missions. The last mission was in 1985 and involved a single American experiment.

HEADQUARTERS, Washington, DC — NASA announced five crew members for STS-27, a Department of Defense Space Shuttle mission targeted for early fall, 1988, aboard the orbiter Atlantis. Crew members are Robert L. Gibson (Cdr., USN), commander; Guy S. Gardner (Lt. Col., USAF), pilot; and mission specialists Richard M. Mullane (Col., USAF), Jerry L. Ross (Lt. Col., USAF) and William M. Shepherd (Cdr., USN).

LEWIS RESEARCH CENTER, Cleveland, OH — Lewis Director Dr. John M. Klineberg announced recently the appointment of Lawrence J. Ross as Lewis Deputy Director, effective immediately. Ross has served as Director of Space Flight Systems at Lewis since 1980. Recently, Ross directed the investigation into the May 1986 failure of a Delta launch vehicle.

NATIONAL SPACE TECHNOLOGY LABORATORIES, Bay St. Louis, MS — NASA assisted fire fighters in northern California by providing remotely sensed data, taken from a specially equipped jet aircraft, which shows where fires and other "hot spots" are located in large areas of burning forests. NSTL's Learjet acquired images covering more than 10,000 square miles over the fire areas.

JET PROPULSION LABORATORY, Pasadena, CA — The Magellan spacecraft, scheduled for launch from the Space Shuttle in April 1989, has completed a critical test of the interface between the spacecraft and the radar that will map the surface of Venus. John Gerpheide, Magellan project manager at JPL, said, "As a result of the successful test, Magellan's prospects for meeting the scheduled launch aboard Atlantis is excellent."

MARSHALL SPACE FLIGHT CENTER, Huntsville, AL — Marshall has completed construction of its Transient Pressure Test Facility which will be used for a series of Space Shuttle solid rocket motor tests scheduled to start in early November. The tests will verify the ignition pressure dynamics of the motor. These tests, in conjunction with Joint Environment Simulator tests and full-scale motor firings being conducted at Morton Thiokol's Wasatch Facility in Utah, are expected to lead to qualification of the redesigned motor.

Former Associate Director Honored

Former Associate Director Dr. Leslie H. Meredith was told that the scientific colloquim on September 18 would be dedicated to him in recognition and appreciation of his many years of outstanding scientific leadership at Goddard.

What he wasn't told was that Former Center Director Dr. Noel W. Hinners and Center Director Dr. John W. Townsend, Jr. would present him with one of NASA's highest honors, the Distinguished Service Award.

Before Dr. Meredith left Goddard July 31 to become Director of Research Programs with the American Geophysical Union, he played a leading role in establishing Goddard's space science programs and in fostering the Nation's space research effort.

Dr. Meredith was a Goddard pioneer. He was on the original team from the Naval Research Laboratory when Goddard was established in 1958. His tenure was interrupted in 1975 when he served in the London Office of the Office of Naval Research.

At Goddard, Dr. Meredith served as Chief of the Laboratory for Space Sciences, Deputy Director of the Space and Earth Sciences Directorate, Director of the Applications Directorate, and Assistant Director of Goddard.

Space Station Council Selects GSFC Logo

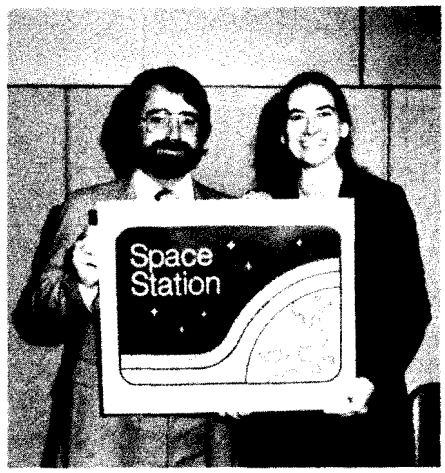


PHOTO: PETE BALTZELL

Congratulations to Dominic Manzer, Code 711.2 (left) and Elsie Grant, TS Infosystems (right) whose Space Station logo design was selected by the Space Station Management Council to represent the program!

The Office of Space Station, NASA Headquarters, received 34 logos from the NASA Centers. Seven designs, including two from Goddard, were chosen to present to the Space Station Management Council. The Goddard logos were submitted by Dominic Manzer/Elsie Grant and Kent McCollough/Elsie Grant.

The Space Station Management Council narrowed the seven entries down to three, and once again, both Goddard entries were selected.

Finally, the Dominic Manzer/Elsie Grant logo won.

"The design for this logo comes from the double 'S' in Space Station, stretched to form the atmosphere around the Earth," Manzer explained about his winning entry.

"I think it's how the Earth will look from the Space Station," Grant said.

The logo will be used for a variety of printed materials, such as publications and vugraphs, as well as for applications such as lapel pins, decals and cloth patches.

Lunch & Learn With Dr. Townsend

by Randee Exler

PHOTO: DEBORA McCALLUM

"I have been in both government and industry... and I must say that in many ways government is much harder...."

Center Director Dr. John W. Townsend, Jr. was the Lunch and Learn keynote speaker on September 8 at the Goddard Recreation Center.

Lunch and Learn, a quarterly luncheon/speaker series, is co-sponsored by Goddard and the American Institute of Aeronautics and Astronautics and features prominent speakers from NASA and the aerospace community.

Following lunch and an introduction by Leonard Arnowitz, Chief, Special Payloads Division, Dr. Townsend addressed 175 employees.

Dr. Townsend's talk included topics such as good rules for sound management and reserved parking at Goddard. He answered the questions that he's most frequently asked as well as queries from the audience. Following are some excerpts:

Government vs. Industry

"I have been in both the government and industry...and I must say that in many ways government is much harder...for a very simple reason. There is no objective measurement of your performance.

"In industry...you can pretty much be given a plan and it's yours to make or break and at the end of the year you're judged on that plan. If you make your plan, they'll usually keep you. If you exceed it, you'll get a bonus. Those plans are substantive. They're objective. They're easily measured.

"In government, we have three or four bosses. In the first place, we have an executive and, in NASA, it's more often than not OMB. We have at least six committees up on the hill.... We've got a constituency out there in the aerospace industry that, at times, shows a lot of ownership of NASA and the management of the operation has to stand in the middle of that kind of triangle and somehow or other make a living. It's very difficult. So anybody who tells you that government is easy...don't pay them any attention!"

Good Management

"In all management endeavors... common sense is probably the most important thing. You'd be surprised how many people do not exercise common sense.... If you have to have one trait as a manager ...I would want that trait to be common sense.

"The second thing...is integrity.... You've seen a lot of examples recently in the aerospace industry that are real horror stories of people losing all sense of balance and doing things that...are illegal, illegitimate and very definitely not moral....

"Sometimes you have to tell the boss, 'Hey, I screwed up!' Believe me, it's better telling the boss.... Every now and then bosses can help.

"The third thing...is to have some heart. Superior managers generally like people. They can be tough but they like people, are comfortable with them, are sympathetic and do what they can.

"The last thing is attention to the customer. That may be a little surprising to you because in industry it's suppose to be the rule. But it's a rule in government, too!

"We have customers. We build satellites. We buy satellites. We cause them to be launched, and we do it for a reason... space science, space applications; etc.

"One thing NASA has trouble in is dealing with customers. It tends to be a little arrogant and tell other agencies and other individuals that...'NASA knows more than you do about this so you can relax and we'll take care of all of that for you!'

"...In some ways, Headquarters is a customer.... They expect you to do something and you should treat them like a customer....

"Those are my principle principles...."

Goddard Changes

"How does it feel to be back?

"Absolutely great...It doesn't feel any different. The culture has not changed at Goddard. I don't think it will ever change...."

"What has changed?"

"...on the positive side, the Centers have become much more powerful.... I think that there's some little redress needed there....

"On the negative side, I find that Goddard has gotten quite bureaucratic....

"In the old days, we used to pride ourselves on getting out onto thin ice and skating around on it. Every now and then we fell in, but so what....

"I think all of NASA has become too risk intolerant since the Challenger tragedy. You run around and have a sounding rocket bust and it's like a federal offense of some sort. Sounding rockets should never be treated the same way as a manned spacecraft is....

"I think there's a little less willingness to take risk here than when I left. That's something that we're going to have to pay close attention to....

PHOTO: DEBORA McCALLUM

"In the old days, we use to pride ourselves on getting out onto thin ice and skating around on it. Every now and then we fell in, but so what...."

"There's a balance between let's get it done and let's get it done right. And there's some cases where getting it done quickly is important even if you take a little more risk then you should....

"The next question people always ask me is how long am I going to stay?...I'll stay as long as I enjoy getting up in the morning and coming to work...as long as this job's fun and I think I can do some good, I intend to stay....

Reserved Parking

"The other question is reserved parking.... I heard more about this downtown than any issue at Goddard...everybody says do something! Noel made me promise not to do anything for six months. Theresa tells me to count off six months from June 22...we'll see...."

Luncheon Highlights Hispanic Heritage Week

by Carolynne White

Strains of "La Bamba" and other Latin American songs filled the air at the Hispanic Heritage Luncheon, held at the GEWA Recreation Center on September 15.

The luncheon highlighted Goddard's participation in National Hispanic Heritage Week, created to promote awareness of Hispanic American contributions to American history.

The featured speaker was Dr. Carmelo E. "Tom" Velez, a former Goddard employee, now Chief Operating Officer, Computer Technology Associates Inc., Denver.

Velez's original interest was music; he began his career at the Manhattan School of Music in classical violin and jazz guitar, before coming to Goddard in 1964 as an entry level mathematician. At Goddard, he continued his education and received a master's degree in mathematics and computer science, then a Ph.D. in applied math from Georgetown, and a law degree from the University of Baltimore, meanwhile becoming a branch chief.

In 1979, Velez and a partner launched Computer Technology Associates. One of the fastest growing, privately-held firms in the country, this computer design and systems engineering firm was ranked eighty-sixth in last year's *Hispanic Business 500.*

Dr. Velez talked about the bridges minorities must cross in adapting to a new cultural environment, citing his own experiences when moving to the United States from Ecuador.

Chris Rodriguez, Goddard's Hispanic Program Manager, said that new Hispanic employees often experience a culture shock when coming to Goddard. Goddard's Hispanic Employment Program recruits talented Hispanics from such diverse areas as Puerto Rico, the New York metropolitan area, and the Southwest.

"We try to reach out to these new employees and make sure that they feel welcome," Rodriguez said. "In many instances this is their first time away from home."

Goddard currently employs approximately 80 Hispanics in a variety of occupational areas. Rodriguez provides orientation, counseling, and referral services to help these and other ethnic minority employees make the transition to a new environment.

GROUND BREAKERS **— NASA, New Mexico and Las Cruces Officials participated in ground-breaking ceremonies for NASA's Second Tracking and Data Relay Satellite System (TDRSS) Ground Terminal (STGT) being built at White Sands, NM. Pictured (left to right): John Quann, GSFC Deputy Director; Bob Spearing, Director, Mission Operations and Data Systems Directorate; Donald P. Eckel, STGT Project Manager; Secretary Thomas Thornhill, Governor's Office, New Mexico Department of General Services; Robert O. Aller, Associate Administrator, Office of Space Operations, NASA Headquarters; Benita Cooper, Director Management Operations Directorate; David Steinborn, Mayor, Las Cruces. Special thanks is given to Code 270 which is responsible for the design and construction of the facility.**

Health Plan Premium Increase Announced

The Office of Personnel Management (OPM) has announced that there will be a Federal Employees Health Benefits Open Season from November 9 through December 11, 1987.

This should be a busy Open Season because OPM has announced sharp increases in health plan premiums for next year. The average premium for non-postal federal employees will rise by 31 percent.

Employees will receive a copy of a new 1988 plan brochure directly from their current plan. Open Season instructions will be distributed to all employees prior to November 9.

Choosing a health plan for Greenbelt employees can be confusing because there are so many plans and Health Maintenance Organizations (HMOs) in the Baltimore/Washington area to choose from. Plan on attending the Center's fourth annual Health Benefits Fair on Wednesday, November 18, 1987, in the Building 8 Auditorium from 11:00 a.m. to 2:00 p.m.

Blood Donors

Following is a list of Goddard donors who were cited by the American Red Cross with gallon pins at the bloodmobile of October 7, 1987:

NAME	*Gallons*
Darlene Ahalt	3
Virg Cleveland	17
Dennis Giblin	1
Scott Glubke	1
Ted Mecum	1
Richard Mills	2
Paul Schneck	4
Merrick Shawe	5
Oren Sheinman	1
Robert Stepp	1
Richard Tagler	3
Claudia Tom	2
Barbara Vargo	2
Charles Woodyard	6

The next bloodmobile visit will be on December 2, 1987 from 8:30 a.m. to 1:30 p.m. in *Room 205* of *Building 26.*

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

Goddard Laser Engineer Wins Moe I. Schneebaum Memorial Award

by Carolynne White

When John Degnan began his physics career as a co-operative education student attending Drexel University in Philadelphia, he had two interests: light and space. He landed an ideal first co-op assignment—designing lasers for NASA!

Now head of the Advanced Electro-Optical Instrument Section of the Instrument Electro-Optics Branch, Degnan recently won the Moe I. Schneebaum Memorial Award for Engineering for his original contributions to the advancement of laser technologies for remote sensing, ranging, and communications. The award was presented in conjunction with the Memorial Lecture, given by Walter S. Sullivan, Jr., Science Editor for the New York Times, in the Building 3 Auditorium, on Monday, September 21.

Sullivan's talk included a discussion of the development of laser technology. The word, laser, is actually an acronym for light amplification by stimulated emission of radiation. Lasers use the stimulation of high-energy atoms by light to amplify a beam of light.

For more than 20 years, Degnan's work at Goddard has run the gamut of laser applications and design technology. As a co-op from 1964 to 1968, Degnan investigated liquid-chelate lasers, forerunners of modern dye lasers. After graduating in 1968, Degnan joined Goddard full-time, and developed theories for two components of heterodyne spectroscopy: the waveguide carbon dioxide (CO_2) laser and optical antennas. Heterodyne spectroscopy is a means of spectral analysis which mixes the light of a laser with an extraterrestrial source to generate different frequencies in the radio or microwave region of the spectrum, providing a very high spectral resolution.

Degnan's more recent projects include the successful upgrade of the Mobile Laser Ranging (MOBLAS) and Transportable Laser Ranging System (TLRS-2) satellite laser tracking stations to centimeter-level accuracies. He currently is developing alexandrite laser transmitters for the joint Langley/Goddard Lidar Atmospheric Sensing Experiment (LASE), which will measure water vapor profiles from the NASA Earth Resources (ER-2) high altitude research aircraft. Degnan also is leading an effort for extending these sources into other spectral regions through improved optic techniques. In addition, Degnan heads an effort to develop compact automated waveguide CO_2 laser oscillators for future spaceborne missions.

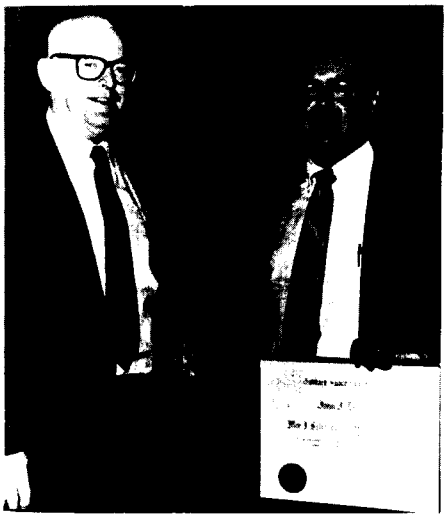


PHOTO: DEBORA McCALLUM

LASER ENGINEER--**Center Director Dr. John T. Townsend, Jr. (left) presents John Degnan with the 1987 Moe I. Schneebaum Memorial Award for Engineering. Degnan has worked with lasers at Goddard for more than 20 years.**

When he's not revolutionizing laser technology, Degnan's interests include community theatre and guitar (you may remember his guitar solo in the recent MAD Christmas Show). Degnan lives in Annapolis with his wife, Adele, and two children, Adam 17, and Andrew, 14.

Mercury

Continued from page 2

cury) surface. These observations allowed the Baker team to examine the long-term heating effects on Mercury by the Sun.

- Confirmed the theory that Mercury possesses a "hot pole" which arises from the unique spin-orbit coupling of the planet with the Sun.
- Allowed scientists to predict the electrical properties of the Hermean surface.

"Lying fallow for so long," explained Baker, "Mercury has emerged as an intriguing and exciting object for study. Despite being so close to Earth, it is still among the least understood of the planets."

The Mercury observations were conducted at the National Radio Astronomy Observatory, operated by Associated Universities, Inc., under contract with the National Science Foundation.

Agency-Wide System Links NASA Libraries

by Randee Exler

Patrons of Goddard's Homer E. Newell Memorial Library soon will be using personal computers to look up books, documents and periodicals.

The Aerospace Research Information Network (ARIN) will be operational by the end of the year, according to Joe Langdon, Technical Information Specialist, Code 252. This NASA-wide system will integrate the Centers' library holdings and keep users up-to-date with library materials at all of the NASA libraries.

"When the library first opened, we used a card catalogue to index materials. We eventually switched to book catalogues and then to the current microfiche system," explained Langdon. "ARIN is the next step," he said.

"The biggest advantage that the ARIN system has over microfiche is that it can be updated immediately," Langdon explained. The library's microfiche system is updated monthly.

"When ARIN is fully operational, patrons will know what is on the shelves and what is circulating," Langdon explained.

"Each entry also will indicate where materials can be located," he commented. "For example, if another NASA library has a book that you need, we can get it for you through the interlibrary loan program."

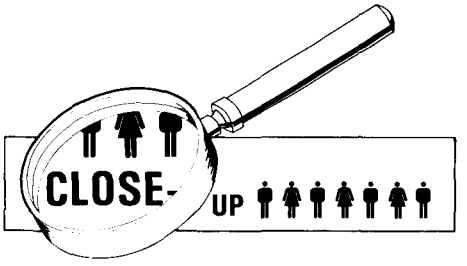
Six Work Stations

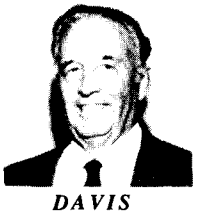
Six work stations will be set up in the library for ARIN users. Each station will have a desktop terminal, printer and disc drive.

"The ARIN system also is compatible with the IBM personal computers on Center," Langdon noted. "Users will be able to copy information found in ARIN onto floppy discs for customized bibliographies," he said. Users must bring their own discs for this service.

The main computer for the ARIN system is located at the Scientific and Technical Information Facility located near the Baltimore Washington International Airport and is operated by RMS Associates. This is where all of NASA's official records are stored.

The software for the ARIN system was originally developed by Northwestern University. The Goddard network is being developed by Win Laboratories Ltd.




DAVIS

"I have a real soft spot for Goddard's Tennis Club," said **ROBERT E. "BOB" DAVIS,** Code 408. Davis helped form the club and build the courts. Recently, he was one of nine members of the United States Professional Tennis Association, Inc. (USPTA) awarded the rating of USPTA Master Tennis Professional for this year. Davis received the award at the Saddlebrook Golf and Tennis Resort in Tampa, FL on September 26.

A major three-year effort in Goddard's Oceans and Ice Branch has been completed with the recent publication of an Arctic sea ice atlas based on the data of the Electrically Scanning Microwave Radiometer on the Nimbus-5 satellite. Entitled *Arctic Sea Ice, 1973–1986: Satellite Passive-Microwave Observations,* the book was written by **DRS. CLAIRE L. PARKINSON, JOSEFINO C. COMISO, M. JAY ZWALLY, DONALD J. CAVALIERI AND PER GLOERSON OF CODE 671.**

Once again, the members of the **CODE 200 SECRETARIAL NET** are helping Center employees learn more about Goddard's mission and activities. Their latest endeavor is an employee-tour series of different GSFC facilities. A tour of the Wallops Flight Facility is scheduled for November 19. Sign-up information for the bus from Greenbelt will be announced in *Dateline Goddard.*

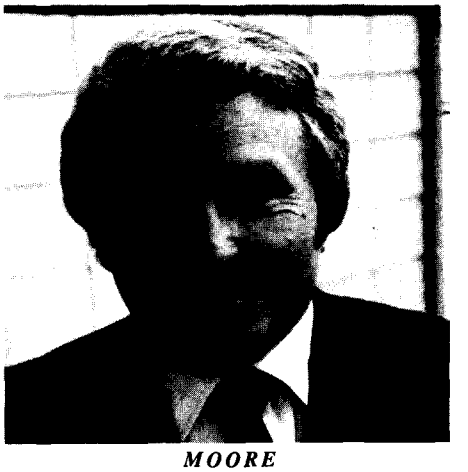
Retirees

Best Wishes to the following Goddard employees who retired recently!

	CODE	YEAR
Barritt, Paul F.	540	27
Cottrell, Julian	727.2	37
Grant, Daniel J.	725	42
Murray, Charles W. Jr.	636	25
Righter, Donald L.	661	36
Rossey, Calvin E.	723.3	20
Sundermann, James A.	303	32
Tresansky, John O.	204	38

Carr Accepts Headquarters Position: Moore Named HST Project Manager


CARR


MOORE

Frank A. Carr has accepted the position of Deputy Director of Solar System Exploration Division, NASA Headquarters. Carr formerly was Deputy Director of Flight Projects for Space Telescope at Goddard, a position he had held since December 1982.

In his new role, Carr will assist in planning and conducting NASA's exploration of the planets and small bodies of the solar system.

Carr fills a previously vacant post. He has been succeeded at Goddard by James V. Moore, who has assumed the title of Project Manager, Hubble Space Telescope. Moore was the previous Experiment Systems Office and Systems Engineering Office Manager for the project.

The Hubble Space Telescope is scheduled to be launched from the Shuttle Discovery in 1989.

GSFC Scientists Join Topex/Poseidon Team

Drs. James Marsh, Braulio Sanchez, and Antonio J. Busalacchi are among the scientists participating in the joint U.S. and French Topex/Poseidon oceanographic satellite mission.

Dr. Marsh's investigation is entitled "Ocean Topography Mapping, Improvement of the Marine Geoid, and Global Permanent Ocean Circulation Studies from Topex Altimeter Data." "Global Ocean Tide Mapping Using Topex" is Dr. Sanchez's investigation. Both Drs. Marsh and Sanchez work in Code 621. In addition, Dr. Antonio J. "Tony" Busalacchi, Code 671, is a collaborator on one and a co-investigator on two of the Topex/Poseidon studies.

Scheduled for launch on the European Ariane rocket in December 1991, Topex/Poseidon will carry instruments in a 63 degree inclination orbit to measure the Earth's ocean circulations and its variation in detail. This data and data from other international experiments planned at the same time will produce the most extensive studies of the world's oceans ever undertaken, officials believe.

Visitor Center—November Calendar

November 1—
Model Rocket Launch—1:00 p.m.

November 7 & 8—
Commemorative Films—1:00 p.m.
"The Four Days of Gemini 4"
"Within This Decade: America in Space"

November 15—
Model Rocket Launch—1:00 p.m.

November 22—
Lecture on NASA's Hubble Space Telescope and tour of the Space Telescope Operations Control Center (STOCC)

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

GSFC Sets Goal for 1988 Combined Federal Campaign

by Carolynne White

"Remember, someone out there *needs* someone like you."

The 1988 Combined Federal Campaign (CFC) is here, and Goddard is prepared to raise more money than ever for the worthy organizations supported by the CFC. Last year, the Center exceeded its goal of $235,000, raising a total of $289,776, which represented 123% of the 1987 goal.

The overall goal set by CFC Headquarters is $23 million; Goddard's goal for 1988 has been set at $245,000 an increase of 4% over last year's goal.

Your contribution may be donated to any health and welfare charity. The money raised by the Combined Federal Campaign is distributed to more than 2,000 voluntary agencies dedicated to serving poor, hungry and sick people here and overseas. CFC also helps fund critical health research and education.

PHOTO: DEBORA McCALLUM

1988 COMBINED FEDERAL CAMPAIGN COORDINATORS — **Standing (left to right): Tom Hamilton, Code 600; GSFC Comptroller Duke Stanford, Chairman; Marietta Sturgell, Code 300; Cindy Thornberry, Alternate Coordinator, Code 700 (not pictured Clay McGee, Coordinator, Code 700); Kathy Mikkelsen, Code 400; Alan Drew, Code 200. Seated (left to right): Sharon Arneson, Code 500; Theresa Wirth, Code 100; Sylvia Parker, Committee Advisor, Code 231; MaryAnne Hartman, Code 150.**

Payroll Deduction

A special emphasis is placed on giving through payroll deduction, which makes it easy to make a substantial gift because of the convenience of spreading a contribution over the entire year. A $4.00 bi-weekly payroll deduction can provide glaucoma screening for 14 people; $9.00 deducted bi-weekly can provide four days of comprehensive residential care for an abused infant or child; $19.00 bi-weekly will purchase a wheelchair; and a $30.00 bi-weekly deduction can feed 50 children overseas a daily nutritious lunch for one month.

Employees who designate payroll deduction between October 19 and November 13, automatically will be entered in a drawing for a VIP tour of the Air and Space Museum, followed by an IMAX theatre showing of "Living Planet." The drawing, to be held November 17, will select 28 people to go on the trip, scheduled for Friday afternoon, November 20. Also, 28 additional names will be drawn to attend a VIP tour of Goddard, on November 24.

The Combined Federal Campaign is especially proud of its remarkably low administrative costs. Only about 4% of the money raised by CFC is spent on the costs incurred in printing materials, training volunteers, auditing contributions, and other management functions, so that nearly all of the money collected can be spent on helping people. This also helps the charities served by CFC minimize their fund-raising costs.

NASA National Aeronautics and Space Administration
Goddard Space Flight Center

Goddard News

The GODDARD NEWS is published monthly by the Office of Public Affairs, Goddard Space Flight Center, Greenbelt, MD 20771 for people like:

Deadline for submitted material is the first of each month. For additional information, contact Randee Exler, 286-7277. The GODDARD NEWS staff is:

Executive Editor . . . James C. Elliott
Managing Editor . . . Randee Exler
Senior Editors . . . Michael Braukus, Carter Dove, Joyce Milliner and Carolynne White

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.