# SLDPF Processes Record Data Rate For Spacelab 2

Personnel of the Spacelab Data Processing Facility (SLDPF) at the NASA/Goddard Space Flight Center, supported Spacelab 2 by processing information returned by the Shuttle payload at a data rate volume that exceeded the combined volume of the last two Spacelab missions.

Goddard principal Angie Kelly, SLDPF Mission Manager, reported that "the average rate for Spacelab 2 was 9.6 trillion bits over the 7-day mission". She added, "This compares with 6.7 trillion bits over the 10-day mission of Spacelab 1 and 2.7 trillion bits for the 7-day Spacelab 3 mission."

Spacelab 2 was the dedicated payload of Space Shuttle Challenger (STS 51-F) launched from Kennedy Space Center, FL July 29. This was the first flight of Spacelab in an igloo-pallet configuration, allowing the payload crew to conduct its experiments from the Challenger's aft flight deck instead of inside the habitable module.

Data from Spacelab—NASA's modular, reusable research facility—are captured and recorded at Goddard's Spacelab Input Processing System (SIPS)—one of two

*Continued on page 3*

NASA
National Aeronautics and Space Administration
Goddard Space Flight Center

# Goddard News

Greenbelt, Maryland and Wallops Island, Virginia

Vol. 31 No. 8 August 1985

## ICE To Encounter Comet Giacobini-Zinner on Sept. 11

**By Jim Elliott**

More than 100 news media representatives are expected at Goddard next month for the world's first encounter with a comet by a satellite.

The interception of Comet Giacobini-Zinner by NASA's International Cometary Explorer (ICE) will occur at 7 A.M. EDT on Wednesday, September 11, according to Goddard's Dr. Robert W. Farquhar. Farquhar conceived the project and designed the complicated maneuvers that diverted the spacecraft on a dizzying set of maneuvers to make certain that the United States would be the first nation to fly a comet.

Because of the significance of the event, media from throughout the world are expected at Goddard. A full week of activities is planned for them, including three news conferences and individual briefings.

The first news conference will be held on Monday, Sept. 9 at 2 P.M., when Dr. Jack Brandt, Chief, Laboratory for Astronomy and Solar Physics; Dr. Tycho von Rosenvinge, ICE Project Scientist; a representative from the Jet Propulsion Laboratory in Pasadena, Calif., where the tracking will be conducted through its Deep Space Network (DSN), and Farquhar will discuss plans for the encounter, review the mission and outline the facilities to be used in tracking the spacecraft on its historic encounter.

*FLIGHT PROFILE OF ISEE -3/ICE*—**A total of 37 propulsive maneuvers and 5 lunar gravity assist maneuvers were used to produce this trajectory.**

### Encounter Description

The second news conference will be conducted on Wednesday, Sept. 11 at noon. The conference will follow the encounter by four hours and will be devoted to a description of what took place during the encounter. Farquhar, von Rosenvinge and some of the principal investigators will participate.

The third news conference will be held at 10 A.M. on Friday, Sept. 13. At that time, von Rosenvinge and the principal

*Continued on page 2*

## ICE/Comet To Cross

*Continued from page 1*

investigators will report on their preliminary findings, and Brandt will present a summary.

The news conferences will be held in the Building 8 auditorium, where most of the press activity during Encounter Week will be focused. A supplementary news operation will be operated from the Visitors Center.

The Building 8 auditorium, which will be restricted largely to the media, will show visual depictions of the spacecraft as it approaches, enters and leaves the comet's tail, if it survives the encounter. The spacecraft is expected to enter the comet's bow shock about 45 minutes before the encounter. It will be in the tail about five minutes and on the upstream side of the bow shock for another 45 minutes or so, according to Dr. Malcolm Niedner, of the Goddard Laboratory for Astronomy and Solar Physics, who has carried out many of the cometary calculations for the mission.

### Damage Possible

The excitement of survival will be present during the encounter, the scientists predict, because of the possibility that the heavy dust accumulations in the tail could damage the spacecraft. If it does survive, ICE will continue on to take upstream data of Halley's Comet in 1986. Japan, the Soviet Union and the European Space Agency will take scientific data from Halley, but they will not fly through its tail, and their encounters will be in 1986, or about six months after the U.S. spacecraft passes through the tail of Comet Giacobini-Zinner.

Comet Giacobini-Zinner is not as large as Halley's Comet, but it returns to the vicinity of the Earth every six-and-a-half years, while Halley only approaches once every 76 years.

Scientists from throughout the United States and from several foreign nations who have instruments on the spacecraft will be at Goddard for the encounter. They will operate from Building 26, according to Dr. Frank Martin, Director of Space and Earth Sciences at Goddard.

A group of visiting scientists also will be at Goddard on the day of the encounter, he said. That group of approximately 30 persons will be from the Inter-Agency Consultative Group (IACG), which will be in the Washington area for a three-day meeting.

In addition, Goddard engineers and scientists will conduct their spacecraft operations from a Payload Operations Control Center (POCC) in Building 14. Closed-circuit TV coverage from the POCC as well as transmissions from the International Ultraviolet Explorer (IUE) will be shown in the Building 8 auditorium, and all TV will be transmitted to other NASA centers on NASA Select, the system used by Space Shuttle.

### Telescope Only

The spacecraft will not be visible to the naked eye but will be accessible through a small telescope or binoculars.

The mission will have the support of the Deep Space Network's Goldstone, Calif.; Madrid, Spain, and Canberra, Australia ground stations, plus stations at Arecibo, Puerto Rico and Usuda, Japan.

The aging satellite, launched from Florida in 1978, will measure the magnetic field and plasma (electrified gas) in the tail to determine if there is an organized magnetic structure there, according to Brandt.

To get to the comet, the Fairchild-built spacecraft used small four-pound rocket motors (thrusters) built by TRW, not designed as primary propulsion engines, to make its diversions. In addition, Farquhar made use of the Moon's gravitational pull as a slingshot, whipping the craft toward the comet after it had made five lunar passes, one as close as 70 miles from the Moon's surface.

Originally known as International Sun-Earth Explorer (ISEE-3), the spacecraft got a new name after its final lunar flyby and set out for the comet. Because no spacecraft was built for the mission and because of the frugality of the project, the U.S. is accomplishing the mission at a bargain-basement price of under $3 million.

***INFORMATION CENTER*—Deputy Director John Quann (r) and Management Operations Directorate's Richard Reeves, are shown cutting the ribbon at the dedication ceremonies of the Management Operations Directorate (MOD) Information Technology Center. The June 25 ceremonies marked a week-long Open House that was attended by more than 400 GSFC employees. The new facility is open to all Goddard personnel from 7 am to 7 pm.**

**Mail your story to the Goddard News (Code 130), or call the Editor at 344-5565**

# AMPTE Creates Second "Comet"

**By Carter Dove**

An international scientific experiment to determine how the solar wind interacts with the Earth's magnetosphere produced the world's second artificial comet at midnight (EDT), July 17, according to Goddard's AMPTE project manager, Gilbert Ousley.

"All indications are the AMPTE (Active Magnetospheric Particle Tracer Explorers) experiment was highly successful," Ousley said. "The Argentine 707 aircraft was airborne off the coast of Mexico and reported good observations".

(The U.S. documentation aircraft, a Convair 990 from the Ames Research Center, CA did not fare as well. The Convair was destroyed by fire at approximately 10 p.m. (EDT); July 17 when a tire blew on take off from March Air Force Base, CA. None of the 19 passengers was injured. The Convair was to have photographed the comet as it formed and moved across the heavens.)

**Observers See Comet**

Additionally, Ousley said that observers in Phoenix, AZ saw the comet clearly as green and then red for several minutes.

In this fourth and final phase of the AMPTE project, the comet was produced by the release of two canisters of barium by a West German satellite 70,000 miles from Earth into the solar wind on the flank of the Earth's magnetosphere. An American satellite analyzed the charged particle environment inside the Earth's magnetosphere.

The chemical releases are part of a joint venture of the United States, West Germany, and the United Kingdom.

In September 1984 in the first phase of the AMPTE project the West German satellite released lithium into the solar wind, outside the Earth's magnetosphere.

Preliminary results from those experiments indicate that less than 1 per cent of the solar wind gains access to the magnetosphere under the conditions in which the releases took place.

In the visually spectacular second phase, the West German satellite created a barium

*Continued on page 4*

*More Than 3,000 People Visit Open House*

# *Wallops Facility Marks 40th Year*

**By Joyce Milliner**

More than five hundred employees, families and guests gathered on June 28 at Wallops Flight Facility to commemorate the facility's 40th anniversary.

Opening the ceremony in Building D-10, key speakers reviewed some of the facility's past accomplishments and some of the amusing incidents which have occurred

***UP, UP, AND AWAY*—Models of NASA rockets past and present take to the sky as the Wallops facility celebrates its 40th anniversary.**

over the years. The speakers included Center Director Dr. Noel W. Hinners; Director of Suborbital Projects and Operations Warren Keller; Virginia Congressman Herbert Bateman; former Wallops Director Dr. Robert Krieger; Director of Space and Earth Sciences Dr. Frank Martin; and former Langley Director for Systems Engineering and Operations Jim Parks.

After the morning addresses, more than one hundred employees, retirees and guests attended a luncheon in Building F-3 where Mike Cushman of the NASA Headquarters Office of the Comptroller regaled the audience with humerous stories about the beginnings of Wallops as a rocket launching facility. After the luncheon, many people toured the facility prior to the Open House the following day.

More than 3,000 people visited Wallops during the Open House on Saturday, June 29. The Public Affairs Office received many calls from employees and visitors who said that "this was the best Open House ever."

In addition to the facilities open on the Island, Buildings F-10 and N-159, there were many other activities going on all day—a crash/fire/rescue demonstration, space sciences lecture-demonstrations, model rocket launches, and radio-controlled model airplane demonstrations—all highlighted by the Air Force's F-15 aerial demonstration.

## *SLDPF Data Rate*

*Continued from page 1*

major components of the SLDPF. The SIPS captures digital, audio and analog data and formats it into computer-compatible tapes.

Further processing takes place at the Spacelab Output Processing System (SOPS) where the data is recorded on tape for shipment to the users in the form of such products as audio, analog and instrumentation data tapes.

These products must be available within 60 days after the data are received.

Spacelab 1 was flown aboard the Columbia on STS-9 in November, 1983; Spacelab 3 was carried by the Challenger (STS 51-B) during its April 29-May 6 mission.

Spacelab 2 carried 13 scientific investigations, 11 from the U.S. and 2 from the United Kingdom, in solar physics, atmospheric physics, infrared astronomy, high energy astrophysics, technology research and life sciences.

# Galileo Instrument Ready To Fly

**By Charles Recknagel**

One of three Goddard experiments to fly aboard the Galileo mission to Jupiter in 1986 has left Goddard for the Jet Propulsion Laboratory (JPL) in California for integration onto the spacecraft.

The instrument, the Galileo Heavy Element Monitor (GEM), will be attached to the Galileo Orbiter to monitor the flux of energetic oxygen and sulphur ions in Jupiter's magnetosphere.

The two other Goddard-associated instruments aboard Galileo are the Photopolarimeter Radiometer, which left for JPL in January 1984, and the Galileo Probe Mass Spectrometer (GPMS), which left last month.

The Photopolarimeter Radiometer is a visible and infrared light detector attached to the Orbiter which will determine cloud structure on Jupiter. Principal investigator is Dr. James Hansen, Chief of the Goddard Institute for Space Studies (GISS).

The Galileo Probe Mass Spectrometer will descend into the Jovian atmosphere aboard Galileo's Probe for 60 minutes, taking samples of ambient gas, analyzing their spectra, and identifying the chemical composition of the atmosphere. Dr. Hasso Niemann, Head, Atmospheric Experiments Branch at Goddard, is principal investigator.

Both the Photopolarimeter Radiometer and the GPMS are instruments with exclusively scientific purposes. The Galileo Heavy Element Monitor, however, will serve as both a scientific and engineering tool aboard the Orbiter.

"The instrument," says Dr. Neil Gehrels, Goddard co-investigator for GEM in the Cosmic Radiations Branch, "will provide important data for designing future spacecraft to Jupiter at the same time it studies the planet."

As an engineering tool, GEM will provide the first direct measure of the highest-energy heavy ions in Jupiter's magnetosphere which penetrate the radiation shields of spacecraft and disrupt computer memory circuits.

"The ions are known to cause random changes in memory elements," said Gehrels, "but little is known about how many ions are trapped in the inner magnetosphere of Jupiter. The tolerance of the circuits to heavy ion penetration also is not well understood."

GEM will provide correlations between magnetospheric conditions and single-event upsets in Galileo's computer memory to help clarify the problem. As it makes its measurements, the instrument also will provide scientists with a better idea as to the origins of the energetic particles in Jupiter's magnetosphere and their relationship with the giant planet.

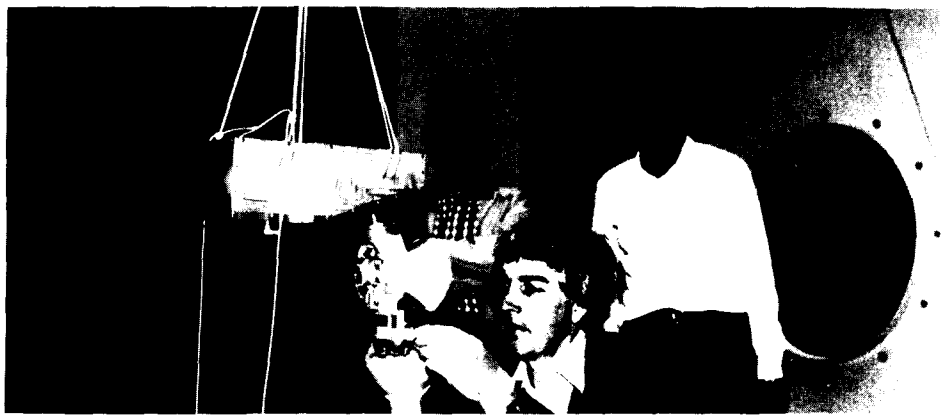
Principal investigator for GEM is Dr. Ed Stone of the California Institute of Technology. Goddard's Dr. Jim Trainor, Deputy Director, Space and Earth Sciences Directorate, also will participate in the scientific investigations.

GEM was developed at Goddard by modifying a spare version of the Cosmic Ray Experiment aboard the Voyager spacecraft. A new sensor designed by Goddard's late Dr. Alois Schardt also was added to allow the instrument to measure the highest-energy ions.

The conversion team for the instrument, which was modified in less than a year, included Don Stilwell, principal engineer (663); Harry Trexel, mechanical designer (663); Bill Davis, detector engineer (661), and Mo Beazley, electronics technician (663).

The rapid turn-around of GEM was accomplished almost completely in-house at Goddard and was possible because of the excellent support provided by Paul Cleveland (732), Wes McDonald, the Machine Shop personnel, and Jules Hirshfield's Thermal Control Section, all of Code 750.

Following construction, the GEM was tested at Goddard against thermal stress, electromagnetic interference, vibration and shock.



*GEM TEST*—**The Galileo Heavy Element Monitor (GEM) is readied for testing in the Goddard Acoustic Facility. Bill Davis, Code 661, places protective covers on the detector while Mo Beazley (left) (1), code 663 and contractor K.C. Shah (right) watch.**

## *AMPTE Experiment*

*Continued from page 3*

cloud on the flank of the Earth's magnetosphere about 70,000 miles above the Pacific Ocean off the coast of Lima, Peru. The event occurred Dec. 27, 1984, and was known as the Holiday Comet. Data from the artificial comet indicate that it was "eroded" much faster by the solar wind than had been anticipated, according to the scientists.

Two releases of barium and two of lithium into the Earth's magnetotail region March 21-May 13, 1985, ended the third phase of the AMPTE experiments.

"Although, disappointingly, no tracer ions were detected by the U.S. satellite (Charge Composition Explorer) located inside the magnetosphere, this fact is in itself a very significant result," according to Dr. Mario Acuno, Goddard's project scientist.

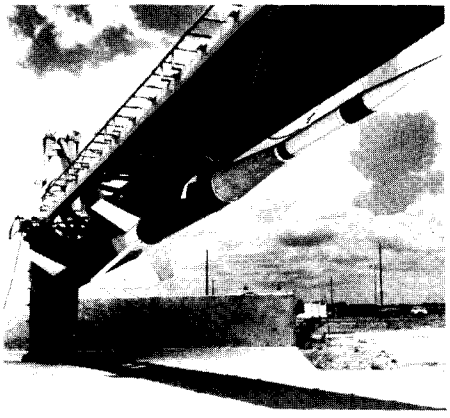
Ousley said that the American satellite will remain on orbit for at least another year to take passive measurements in the Earth's magnetosphere. The West German satellite is expected to remain on orbit until mid-November, and possibly until early 1986. The United Kingdom spacecraft, which was launched at the same time and by the same Delta rocket as the U.S. and West German satellites, became inoperative in January 1985 because of power problems.

# Nike-Orion Rockets Launched At Wallops

A pair of Nike-Orion sounding rockets was launched successfully from the NASA Goddard Space Flight Center's Wallops Flight Facility at 1:46 p.m. EDT on June 24 and 1:46 p.m. EDT on June 26. Purpose of these experiments was to investigate the daytime mid-latitude ionosphere between 96 and 241 statute miles above the Earth.

Specific mission objectives were:

- to investigate differential absorption of radio waves.



*SOUNDING ROCKET*—**A Nike-Orion is readied for launch from Pad 2 at Wallops Island.**

- to determine the electron density profile, and
- to investigate the irregular structure of the electron density profile.

The scientific data received from this mission will be correlated with information from a similar study of the daytime Equatorial ionosphere, conducted as part of Project CONDOR in Peru in March 1983.

The 120-pound payloads reached peak altitudes of 110 statute miles. Preliminary results indicate that all instrumentation performed satisfactorily and good data were obtained.

These launches were conducted for the University of Illinois. "These studies are important because turbulence is the major unsolved problem of the atmosphere and ionosphere," according to Dr. L. G. Smith, University of Illinois project scientist.

Wallops project personnel were: Debra L. Frostrom, project engineer, and R. Paul Buchanan, payload manager.

# *IUE Satellite Views Approaching Comet*

**By Carter Dove**

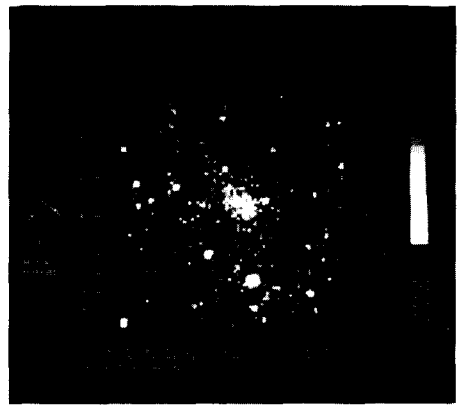
A Goddard-managed satellite has made the first observations from space of the Comet Giacobini-Zinner while it was approximately 87 million miles from Earth on the inbound leg of its orbit between the Sun and the neighborhood of Jupiter.

The satellite, the International Ultraviolet Explorer (IUE), made the observations on June 22. It will continue to make observations as the comet evolves and ultimately becomes the target of the world's first satellite intercept of a comet by the International Cometary Explorer (ICE) spacecraft on Sept. 11, 1985.

The June 22 IUE observations of Giacobini-Zinner produced ultraviolet spectrograms—graphic depictions of the intensity of light over a range of ultraviolet wavelengths—revealing emissions of both a molecule known as the hydroxyl radical and carbon monosulfide.

Preliminary evaluation indicates that the ultraviolet emissions from both molecules were somewhat brighter than expected at this stage of the comet's development.

The IUE observations of the comet are under the direction of Professor Michael A'Hearn of the University of Maryland, assisted by colleagues from Goddard Space Flight Center; Howard University, Washington, D.C.; the Johns Hopkins University, Baltimore, Md.; and West Germany.



*COMET GIACOBINI-ZINNER*—**The comet as it appears to the International Ultraviolet Telescope's Star Tracker instrument. The comet is the light mass in the center of the image.**

The spacecraft—launched in 1978 as a cooperative venture of the British Science Research Council, the European Space Agency and NASA—was designed and integrated by scientists, engineers and technicians at Goddard.

The Goddard representatives on the IUE/Comet Giacobini-Zinner science team are Dr. John C. Brandt, Chief, Laboratory for Astronomy and Solar Physics (LASP); Dr. Stephen P. Maran, LASP Senior Staff Scientist; and Dr. Malcolm B. Niedner, also a scientist at the LASP.

# *Technology Utilization Office Requests Your Submissions for NASA "Spinoff" Publication*

Laboratory personnel are requested to inform the Technology Utilization (TU) Office when they are aware of technical assistance rendered to industry representatives that has led to improved or new products that their companies manufacture for commercial application.

Such examples of the commercialization of existing NASA technology, expertise, laboratory or other technical assistance from the core of the agency's annual *Spinoff* publications. Included are those situations in which a product or system, initially developed to meet NASA requirements, is later adapted to meet a need in the marketplace.

There is much interaction between laboratory personnel and industry, and opportunities to credit private organizations often are lost because word of benefits does not filter back to the TU Office. The information is furnished to a *Spinoff* team at Headquarters which performs the research necessary to ascertain that (1) a company wants representation in *Spinoff* and (2) the circumstances involved meet established criteria for the publication.

Please let the TU Office know of any situations you believe warrant consideration for publication in *Spinoff*. Only brief technical information and the name, phone number and address of the industry contact are needed. Contact: TU Officer: Donald Friedman (Code 702).

*End of 9 Month Effort*

# *COBE Subsystem Assembly Complete*

**By Carter Dove**

One of the subsystems of a satellite designed to study the origin and dynamics of the universe was rolled out June 26 at Goddard.

The COBE primary structure is one of the major subsystems of the Cosmic Background Explorer (COBE) spacecraft designed to challenge or confirm the theory that the universe began about 15 billion years ago with a Big Bang—a cataclysmic explosion—and then expanded.

The structure is the culmination of a nine-month assembly effort at Goddard. It stands four feet tall, is more than 15 feet in diameter and is held together by more than 6,000 rivets. It weighs approximately 1 1/4 tons.

The COBE spacecraft itself will be designed, integrated and tested by engineers and scientists at Goddard.

Due for Space Shuttle launch in late 1987 or early 1988, the COBE spacecraft will produce maps of the sky in 100 microwave and infrared wavelengths to show the sky as it appears now and any remaining traces of what has taken place since the first year after the Big Bang.

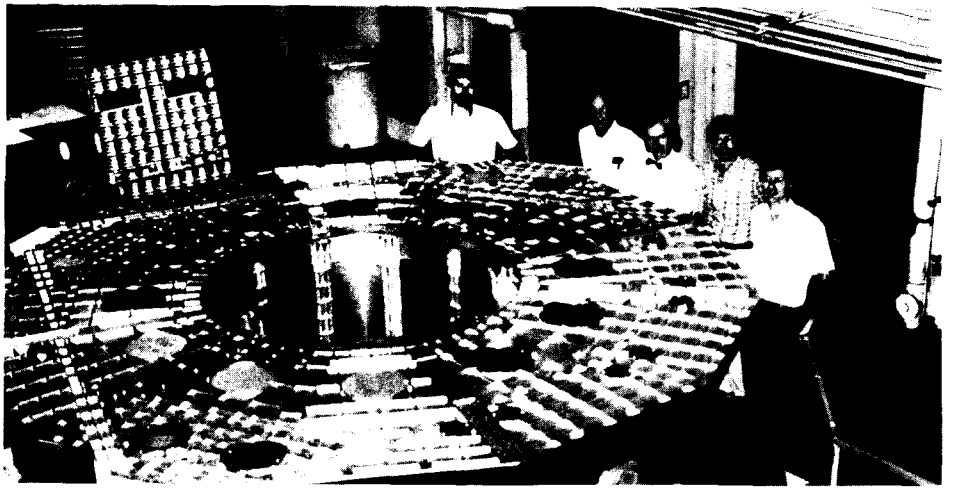
Data from the sky maps will help determine if the universe rotates, expands uniformly, is homogeneous, when galaxies formed and how they clustered, and when the first stars appeared.

The maps also will show the locations of interstellar and interplanetary dust clouds and stars and electrons in our own Milky Way galaxy.

The COBE observatory is scheduled for launch from the Western Space and Missile Center by the Space Shuttle and will ultimately reach an operational Sun-synchronous orbit of 560 statute miles.

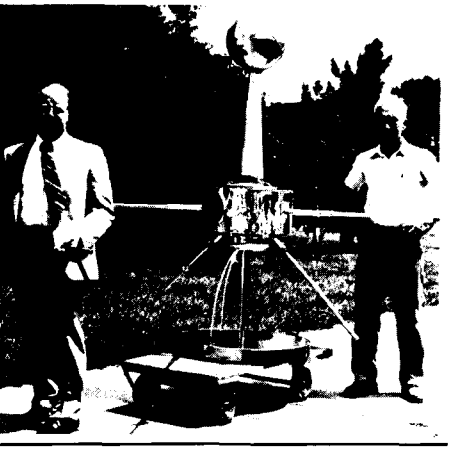
COBE's planned lifetime is one year.

COBE's other subsystems will be available for integration into the primary structure at Goddard in 1986 after testing of the structure. The three COBE instruments—designed by the engineering and science staff at Goddard—are now being assembled and will be ready for testing in late summer 1985.



*SATELLITE ROLL-OUT NOW AND THEN: HOW TIMES HAVE CHANGED*

**The COBE Subsystem whose assembly was completed in June dwarfs the first Goddard-built satellite, P 14 (Explorer 10), which as launched in 1961. Above: Posing with COBE are (left to right) James Woods (731.2), Elmer Mountain (752.1), Director of Engineering, John Boeckel (700), John Robinson (731.2), and Rodger Farley (731.2). Right: Re-enacting the P 14 roll out are original satellite team members Deputy Director of Flight Projects for Space Station Ronald Browing (400.6) on the left and Electrodynamics Branch Head Dr. James Heppner (696) on the right.**



# *Goddard Starts First Literary Publication*

**By Charles Recknagel**

Here's some good news for your muse.

A group of Goddard folks want your submissions to the Center's first literary magazine.

The magazine, called RENDEZVOUS, is the brainchild of Dan Palmer, a computer programmer in the Information Processing Division (560) who came to Goddard two years ago.

"Goddard has such a campus-like atmosphere," he says, "that when I got here I really was surprised not to find a magazine already existed. I worked on literary magazines in college and in high school, so at first I was a little disappointed."

But not any more. For the last two months, Palmer and some colleagues have been making plans for a 100-page, annual magazine to give exposure to Goddard employees' creative musings. Anticipated publication date is this winter.

"We have had a very good initial response already," Palmer said. "We have received poetry ranging from one line about flight to much longer pieces, for example, about one person's responsibility to his brother. We've received short stories that are computer related and short stories about nature, action stories, and queries about photography."

There is still room for more submissions. "I want to encourage everybody to send us their work," he noted. "We're looking for quality, but we also want people submitting for the first time."

He issued a special plea to the artists in the crowd: "We really need people who do line drawings or charcoal sketches or whatever for full-page artwork or as illustrations for individual poems."

The core group producing the first issue includes Palmer, Mark Leone (Bendix), Bill Davenport (522.2), Mary Elsen (633) and Earl Hicks (Lockheed).

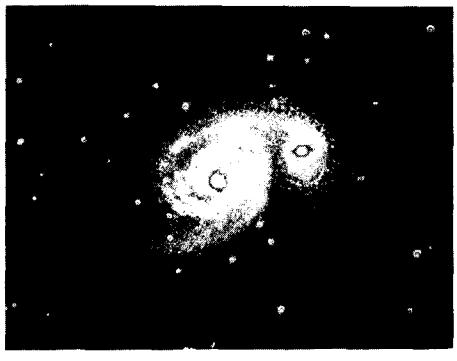
"I'd like to invite anybody who wants to join the team to come to our meetings," said Palmer. Meeting times are advertised in both Dateline Goddard and the GEWA Newsletter.

# Around the Center

**Dr. Gerald R. North** of the Climate and Radiation Branch, Code 613, has been cited by the American Geophysical Union for "Excellence in Refereeing" at the recent AGU National meeting in Baltimore.

Dr. North was nominated for the citation by the Editor of the Journal of Geophysical Research-Atmospheres (JGR). Each editor of AGU journals is allowed to cite one outstanding referee each year. Dr. North has served as an Associate Editor of JGR for the past six years.

**Fred Espenak,** code 693.1, won first place and an honorable mention, worth a total of $1,100, for this isophote map (below) of a whirlpool galaxy, and for another such map of the Comet Bennett, respectively. Espenak nabbed these kudos in the American Association for the Advancement of Science's 1985 photography contest. His was among 2,000 entries submitted for competition. Isophote mapping is a technique which color codes the light intensity from a given source.



**Janet K. Wolfe** has been named Chief of Public Affairs at Goddard. Her appointment was effective July 15.

Ms. Wolfe moves into her new position after having served as Deputy Public Affairs Officer at the Center since October 1983. She succeeds Gene Guerny, who has accepted an assignment to support NASA Headquarters as the NASA Public Affairs Officer for Productivity and Academic Services.

**Scott Hangey,** an educator from Prince George's County Goddard Middle School, has joined the Public Affairs Office Educational Services Unit on a one year assignment. Hangey, who teaches physical science to the 8th grade at the School, is on leave from the county to serve as a liaison with Goddard Space Flight Center's outreach programs.

**John Birmingham** (below left), son of Thomas Birmingham (below right), code 695, has been selected from among 127 eligible applicants to receive a $6,000 NASA Scholarship. The award entitles the

recipient to $1,500 per year for four years for studies in science or engineering at a school of their choice.

John, 17, ranked first out of 480 graduating students in the 1985 class from Springbrook High School in Silver Spring, MD. He had a 4.0 grade point average with a score of 1580 (out of a possible 1600) on the Scholastic Aptitude Test (SAT). He will be attending Princeton University in the fall and plans to pursue a career in physics.

John is a Presidential Scholar Candidate, a National Merit Finalist, and a Maryland Distinguished Scholar. He has received the George Washington University Medal for excellence in math and science, has received two Maryland High School Math Exam Scholarships and an outstanding English student award.

In high school, he was a member of the National Honor Society and the National Junior Honor Society; a varsity swim team co-captain; a member of the math team and Mu Alpha Theta, and editor of Literary Magazine. He also worked on the school newspaper and participated in student government activities.

The NASA Scholarship Fund, Inc., was established in October 1982 by author James A. Michener for dependents of NASA employees. Two scholarships are presented annually and six have been awarded to date. Timothy Boykin, son of Dr. Wilbur R. Boykin at the Johnson Space Center, Houston, TX, is the other 1985 recipient.

***"SOMETIMES ALL IT TAKES TO DO THE IMPOSSIBLE IS A MONO-MANIAC WITH A MISSION."*—Congratulations to Michael Comberiate the self-described "mono-maniac" of code 407 and recent recipient of a $5K cash award for his employee suggestion to establish a satellite data relay link from Antarctica. Your idea may be a winner too. Call 344-6118 for further details.**

**Wiley W. White,** a retired Goddard employee, died in March 1985, after a four-month bout with cancer. Wiley joined NASA/Goddard in January 1966 and worked at the Merritt Island Tracking Station in Florida as a shift supervisor. While in Florida, Wiley was one of the first city councilmen for the City of Satellite Beach.

Wiley came to Greenbelt in February 1974 to manage the Goddard Laser Tracking Network (GLTN), responsibility for which had just transferred to the then Networks Directorate. He was instrumental in expanding the GLTN to a worldwide ranging network. Wiley retired in December 1981.

# NEBA Directors Adjust Group Life Insurance

**By Howard Ottenstein**

The NASA Employees Benefit Association (NEBA) Basic Group Life Insurance schedule has been adjusted from the current three age brackets to five age brackets by the NEBA Board of Directors. Meeting in June at the Lewis Research Center, the board also reduced premiums for two age brackets. The five age brackets and reduction in premiums more accurately reflect the risk for the age groups and keep the NEBA plan competitive with other plans. There is no increase in premiums.

All changes are effective January 1, 1986. The tables below provide the current and changed schedules for basic term insurance including accidental death and dismemberment insurance.

**Premiums**

| Current Quarterly Premiums (Per $1,000 of Insurance) | | Quarterly Premiums Effective 1/1/86 (Per $1,000 of Insurance) | |
|---|---|---|---|
| *Under Age 40* | — $ .55 | *Under Age 30* | —$ .35 |
| | | *Age 30-39* | — $ .55 |
| *Age 40-54* | — $ .95 | *Age 40-44* | — $ .75 |
| | | *Age 45-54* | — $ .95 |
| *Age 55 and over* | —$1.10 | *Age 55 and over* | — $1.10 |

Premium rates will be reduced for all dependents insurance categories effective January 1, 1986. The tables below provide the current rates and the rates effective January 1, 1986 for spouse/children (under 19) coverage. A member's base salary determines the amount of dependents insurance coverage for which he or she is eligible.

**Salary**

| | Employee salary (less than $16,000) | Employee salary ($16,000 to $30,000) | Employee salary (over $30,000) |
|---|---|---|---|
| | *$5,000* | *$10,000* | *$15,000* |
| Current | $3.75 per qtr. | $7.00 per qtr. | $10.25 per qtr. |
| Jan. 1, 1986 | $2.95 per qtr. | $5.75 per qtr. | $ 8.30 per qtr. |

As part of dependent coverage, $2,000 of insurance is provided for all dependent children under age 19.

NASA National Aeronautics and Space Administration
Goddard Space Flight Center
Greenbelt, Maryland and Wallops Island, Virginia

**Goddard News**

The GODDARD NEWS is published monthly by the Office of Public Affairs, Goddard Space Flight Center, Greenbelt, Md. 20771. Deadline for submitted material is two weeks before the date of publication. For additional information, contact Charles Recknagel 344-5565. The GODDARD NEWS staff is:

Executive Editor ..... James C. Elliott
Managing Editor ..... Charles Recknagel
Senior Editors ..... Carter Dove and Joyce Milliner (Wallops).

**FEGLI Comparison**

Effective January 1, 1986, NEBA rates will be lower priced than the Federal Employee Government Life Insurance (FEGLI) at every age bracket, and NEBA's own Optional Insurance Plan (non-smoker) is lower priced than FEGLI's Optional Insurance at every age bracket.

If you have any questions on any NEBA matter, please contact: Greenbelt: President Howard K. Ottenstein, 402, 7722; Vice Pres. Pat Greco, 225, 6118; Sec-Treas. J. Prestley Fisher, 151, 6926. Wallops: President George A. Matzner III, 220.3, 0550; Vice Pres. William B. Johnson, 840, 0581.

# Retirees

Congratulations to the following Goddard employees who retired in July and August. We will miss them and their contributions as they move on to new adventures:

| | | |
|---|---|---|
| **July** | | |
| Charles L. Davis | 833.3 | 34 years |
| Andrew W. Huntress, Jr. | 272 | 35 years |
| **August** | | |
| Richard Blumenthal | 754.1 | 20 years |
| Joseph Dunst | 650 | 28 years |
| Albert Fitch | 750.2 | 35 years |
| Charles A. Harris | 754.1 | 31 years |
| Philip H. Kinney | 292.1 | 35 years |
| William P. O'Leary | 130 | 36 years |
| Robert L. Segal | 301 | 34 years |
| Robert F. West | 834.2 | 37 years |

# *Blood Donors*

Following is a list of Goddard donors who were recently cited by the American Red Cross with gallon pins at the recent Bloodmobile of August 7, 1985.

| Name | No. of Gallons |
|---|---|
| Sharon Channer | 1 |
| Carolyn Dent | 1 |
| John Di Bartolo | 1 |
| Rex Elliott | 2 |
| Elmer Jones | 1 |
| Owen Kardatzke | 5 |
| Adolf Lekebusch | 5 |
| Ken Reed | 1 |
| Scott Ross | 1 |
| Steven Wadding | 1 |

Thank you, Goddard, for your overwhelming support of the recent bloodmobile.

Next mobile is scheduled for Wednesday, October 2, 1985, in Bldg. 8 auditorium from 8:30 - 2:30.