

UARS Deployed and Doing Well!!

* Instruments Activated and Receiving Data

* UARS Team Keeping Everything on Schedule

NASA
National Aeronautics and
Space Administration

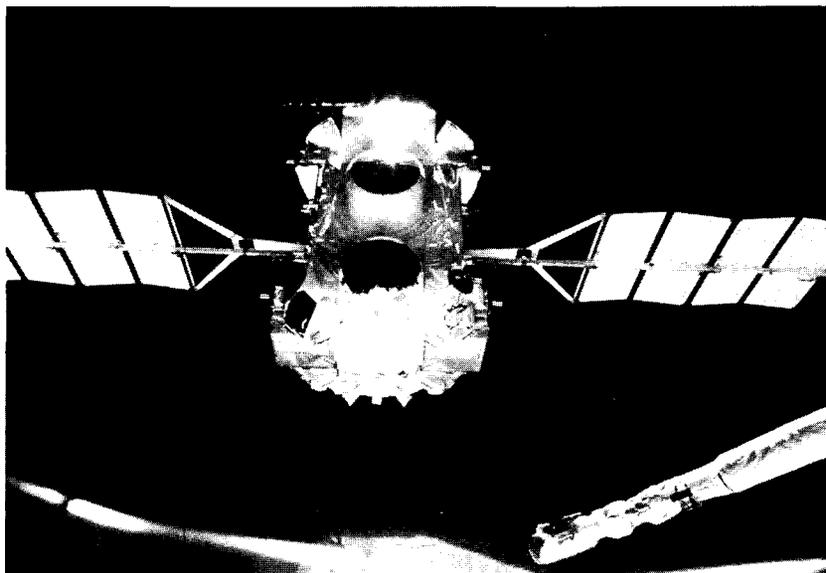
Goddard Space Flight Center

Goddard News

Greenbelt, Maryland and Wallops Island, Virginia

Vol. 38 No. 10 October 1991

Compton Gamma Ray Observatory Reveals Significant Findings



The Compton Gamma Ray Observatory shortly after deployment from the Space Shuttle Atlantis on April 7, 1991.

by John J. Loughlin II

Science results from all four instruments aboard Goddard's Compton Gamma Ray Observatory may rewrite the books of gamma-ray astronomy, according to Dr. Neil Gehrels, Code 661, project scientist.

Goddard's Energetic Gamma Ray Experiment Telescope (EGRET) outlined the discovery of a strong gamma-ray signal from the distant quasar 3C279. Goddard's Dr. Carl Fichtel, Code 662, principal investigator, said that this quasar is about six billion light years away and is the most distant gamma-ray source ever detected.

"The scientific excitement here is that the energy released in these gamma rays is more than a thousand times the energy emitted from our galaxy at all wavelengths combined," Gehrels said.

Among the most significant findings

according to Gehrels were the results announced by Marshall Space Flight Center's Dr. Gerald Fishman. Dr. Fishman is the principal investigator for the Burst and Transient Source Experiment (BATSE). BATSE is designed to study the mysterious phenomenon of gamma-ray bursts.

"Gamma-ray bursts have been observed for over 25 years," Gehrels said, "but finding the source of these bursts has been a kind of Holy Grail in gamma-ray astronomy."

Before the mission, the prevailing belief was that the bursts would be concentrated in the disc of the galaxy. However, BATSE has determined that they come uniformly from throughout the sky.

"The BATSE results indicate that either the bursts come from some exotic small objects very near to our solar system or that

(Continued on page 3)

NASA Names Gamma Ray Observatory in Honor of Arthur Holly Compton

NASA officials announced on September 23, that Goddard's Gamma Ray Observatory, deployed April 7, 1991 from the Space Shuttle Atlantis, will be renamed in honor of Nobel Prize-winning American physicist Arthur Holly Compton. The new official title of the 17-ton orbiting observatory is the Arthur Holly Compton Gamma Ray Observatory (Compton Observatory).

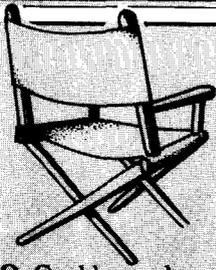
Dr. Arthur Holly Compton (1892-1962) was the American physicist whose ground-breaking series of experiments on the interaction of high-energy radiation and matter demonstrated the wave particle duality of nature. His findings played a key role in the development of modern physics.

In the late 1930s, Compton conducted comprehensive studies of cosmic rays. Cosmic rays create many of the gamma rays that the Compton Observatory is studying. Compton's work enabled modern science to understand many of the basic properties that create gamma radiation.

**Vern
Weyers:
Settling In**

Page 6

INSIDE



Directors' Dialogue

Q. Could you please describe the new building that's going to wipe out the trees next to Building 11 behind Building 6? Rumors here in Buildings 6 and 11 are that it is a Code 300 or Code 400 facility.

A. The construction currently underway behind Building 11 provides for a Quality Assurance and Detector Development Laboratory (QUADDL), a project which has been developed on behalf of Codes 300 and 700. This 58,800-sq.-ft. building will provide a new facility for the Materials Branch (Code 313) currently located in Building 22 and a new Detector Development Laboratory (DDL) for the Solid State Device Development Branch (Code 724). The new facility will enable the Materials Branch to increase its activities in composite materials testing and evaluation, fracture mechanics of ceramic and composite materials and evaluation of long duration low Earth orbit effects on materials. The DDL will provide Goddard with an enhanced capability in the production of semiconductor microelectronics and detectors in a state-of-the-art clean room environment. The DDL builds on a capability already existing in Building 11 and this dictated the building's location adjacent to Building 11.

Q. A second rumor about the new building is that there are no plans for a parking lot to accompany the building, that Facilities thinks there is enough parking in Building 6 and 11 lots. Have they been over here lately? Parking is extremely difficult at 6, and not much better at 11. Building 6 people have to routinely park in Building 2, 11 and 21 lots. I think they're only counting "residents," not counting the many "off-site" contractors who are on-site full time every day.

A. Plans are currently being developed to add an additional 40 spaces to the parking lot south of Building 6 to help alleviate the parking problem at Buildings 2 and 6. This should take place this fall. The orientation of the QUADDL should encourage better utilization of the Building 11 west lot by the 35-40 additional people that will be moving into the new building in the Spring of 1993. The Building 11 west lot has excess capacity significantly exceeding current requirements.

Q. Due to construction of the QUADDL facility adjacent to Building 11, the Building 11 west parking lot is no longer accessible from the south entrance. As a result, more Building 11 personnel are parking in the lot between Building 11 and Building 6. This lot was already crowded, and the Building 6 parking situation has become even worse. A simple solution to this problem would be to change the barricades at the south end of Building 11 to allow access to the Building 11 west parking lot. This can be done by forming a corridor along the west side of Building 11 from the south entrance to beyond the construction area. This would not disrupt construction operations or present a danger to personnel.

A. The QUADDL construction contractor will soon be installing electrical and communication ductbanks, chilled water piping and steam distribution piping along the west side of Building 11. The proposed access corridor will be blocked by this construction activity. The project also provides for a connecting link between the QUADDL and Building 11. This construction will also block the proposed corridor. To help solve the immediate problem, Building 11 occupants will be encouraged to use the Building 11 west lot in lieu of the parking area adjacent to Building 6. This lot has excess capacity significantly exceeding current requirements. In addition, as noted above, plans are currently being developed to add an additional 40 spaces to the parking lot south of Building 6 to help alleviate the parking problem at Buildings 2 and 6.



**Sherry Foster, Director
Management Operations Directorate
Code 200**

1991 Antarctic Ozone Levels Reach Record Low

Ozone levels in the Antarctic have reached the lowest values ever observed, according to preliminary data obtained by the Total Ozone Mapping Spectrometer (TOMS) on Goddard's Nimbus-7 satellite.

"The minimum ozone on October 6, 1991, is the lowest we have ever seen with the TOMS instrument in its 13-year record of data," said Goddard Scientist Arlin Krueger, Code 916. "Although the data are preliminary, we expect that the final results will confirm this conclusion."

This is the fourth severe ozone hole since 1986 and the third consecutive year that severe ozone depletion has developed over the Antarctic.

The implications of a single-day minimum are uncertain. The severity of each year's ozone hole also is measured by the persistence of the depletion through the southern spring and its geographical extent across Antarctica.

This is the 13th year that the ozone hole has been monitored using the TOMS on the Nimbus-7 spacecraft. Both are managed by Goddard. On August 15, a refurbished engineering model of TOMS was launched aboard a Soviet Meteor-3 spacecraft. This new instrument began gathering data soon after launch and also has observed this year's ozone hole.

Retirees

Congratulations to the following employees who recently retired!

Name	Code	Years
Zeb Barfield	821.2	29
Alan L. Drew III	271.4	30
William A. Leavy	731.3	32
Henry G. Linder	901	29
Erik Mollo-Christensen	900	8
Arthur Reid	917	29
Melvin Saltzberg	554.2	31
John B. Schutt	923	33

Launch Update:

EUVE



Everything is on schedule for the launch of the Extreme Ultraviolet Explorer (EUVE) in January reports Frank Volpe, Code 410, EUVE project manager.

Thermal vacuum testing was completed in early October and mating the Explorer platform with the payload module is scheduled for mid-October, with integrated testing to follow shortly after. All of this is happening at Goddard. EUVE will be shipped to Cape Canaveral, FL, around mid-December, Volpe said.

EUVE will be launched for NASA by the U.S. Air Force from the Cape Canaveral Air Force Station aboard a Delta II rocket.

EUVE, consisting of three scanning telescopes and a deep survey/spectrometer, will map the entire sky to determine the existence, direction, brightness and temperature of numerous objects that are sources of extreme ultraviolet radiation.

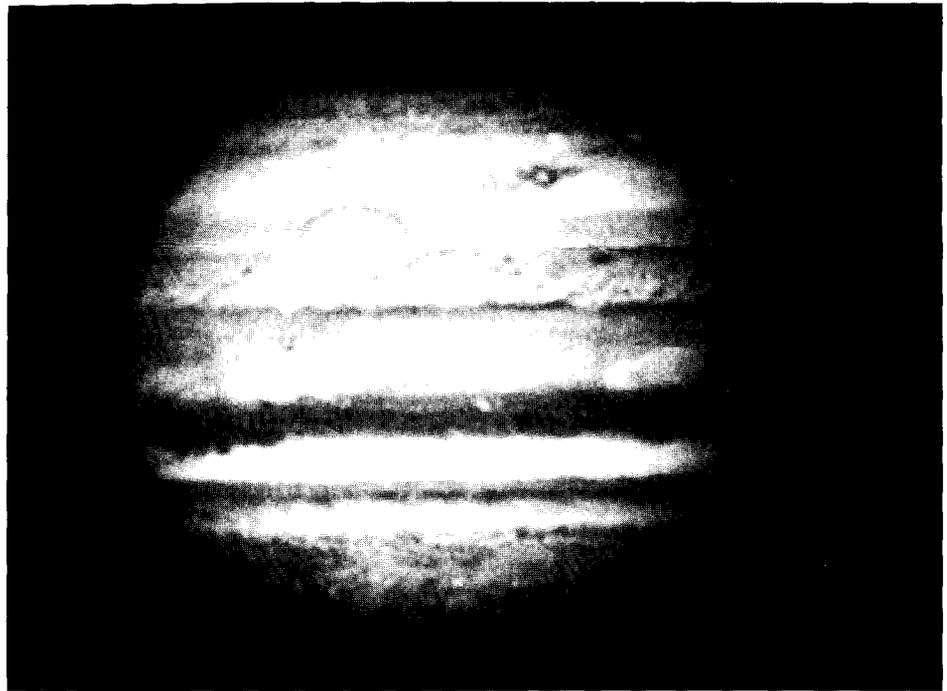
Compton Gamma Ray Observatory (Continued from page 1)

they come from some extremely powerful distant objects located well beyond our galaxy," Gehrels said.

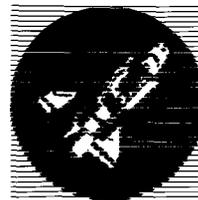
"If the massive objects producing these bursts lies beyond our galaxy, then the energy released in the brief one-second flash of gamma rays in the burst is many times the total energy released when a star explodes in a supernova."

The Compton Observatory is the second of NASA's "Great Observatories." The first was the Hubble Space Telescope, launched in April 1990. The others are the Advanced X-ray Astrophysics Facility (AXAF), to launch in 1997, and the Space Infrared Telescope Facility (SIRTF), scheduled for launch in 1999.

The Compton Observatory was deployed from the Space Shuttle Atlantis on April 7, 1991 and currently orbits Earth at an altitude of 287 x 280 statute miles (462 x 451 kilometers). The Compton Observatory was developed and is managed and operated by Goddard.



This photo, reproduced in black and white for the Goddard News, was the first true-color photo of the giant planet Jupiter taken by the Wide Field/Planetary Camera on Goddard's Hubble Space Telescope. All features in this image are cloud formations in the atmosphere of Jupiter, which contain small crystals of frozen ammonia and traces of chemical compounds of carbon, sulfur and phosphorus.



Visitor Center Events for November

The Goddard Space Flight Center Visitor Center is reaching for the stars in November with a variety of exciting activities. The Visitor Center is open to the public Wednesday through Sunday from 10:00 a.m. to 4:00 p.m. and closed most federal holidays. For more information, call x6-8981.

Launch Site Goddard -- Sunday, November 3 and 17, 1:00 p.m. If you have ever put something together from scratch, you know the feeling of accomplishment that comes at the end of a job well done. This is the feeling model rocketeers have when they see the rockets they have assembled fly for the first time. Come share the excitement!

Star Watch -- Saturday, November 9, 7:00 p.m. to 9:00 p.m. -- What is a nebula? What does one look like through a telescope? How many rings does Saturn have? Find out the answers to these questions at the next Star Watch. Bring your own binoculars or telescope, or look through the telescope provided. The Star Watch will be canceled during inclement weather.

Know and Tell -- Sunday, November 24, 1:00 p.m. -- "The Extreme Ultraviolet - The Last Remaining Frontier" -- Join Dr. Yoji Kondo, of Goddard's Laboratory for Astronomy and Solar Physics, as he discusses one of the least known areas of the spectrum, the extreme ultraviolet and the role of the Extreme Ultraviolet Explorer (EUVE), a spacecraft in the Explorer series built and tested at Goddard and scheduled for launch in January 1992.

Your Help is Their Hope

by Susie Marucci

Every year Goddard and other federal institutions join together through the Combined Federal Campaign (CFC) to raise money for voluntary organizations that help people across the street and around the world. This year's theme is "Your Help is Their Hope."

Goddard's CFC Coordinator Kent Kwiatkowski, Code 411, said, "I was a little skeptical at first...then you realize it's for a good cause. We all have the responsibility to help other people who are worse off than we are. This is a good way to do it."

"Ninety-six cents out of every dollar goes directly to the charity. The other four cents go for administration costs," he said. This year there are almost 1,500 charitable organizations that can be designated as donation recipients.

Goddard traditionally exceeds its goal, Kwiatkowski explained. Last year, Goddard employees gave \$36,000 above the goal. Eighty-five employees donated more than one percent of their yearly salary.

This year's goal is \$325,000. The campaign will run from October 14 through November 8. The kick-off rally took place October 15 in the Building 3 auditorium. Center Director Dr. John M. Klineberg spoke, and videotaped remarks by NASA Administrator Richard H. Truly were shown.

The CFC makes it easy to donate. Participants can choose the charitable organizations to which they wish to donate, and



Proving this year's Combined Federal Campaign (CFC) theme -- "Your Help is Their Hope" -- these people donate their time to work on the CFC campaign. From left to right are Bob Theis, Code 910, organization coordinator; Lynn Lobmel, Code 720, organization coordinator; Darla Swanson, Code 400, organization coordinator; Dedra Gunning, Code 152, organization coordinator; Kent Kwiatkowski, Code 411, Goddard CFC Coordinator; Khrista Gunning, Code 111.2, organization coordinator; Bob Ball, Code 503, organization coordinator; John Rigby, Code 300, organization coordinator; Barbara Glasser, Code 600, organization coordinator. Not pictured are Janine Sefcik, Code 100, organization coordinator; and Lois Ryno, Code 201, Goddard CFC Administrative Officer.

the donations can be made through payroll deduction. One-time donations in the form of money or checks will also be accepted.

Kwiatkowski said, "Your participation in this campaign is vital. For those in need,

so much more will be required in the coming year -- from the agencies delivering services, so much more will be asked."

Photo: D. McCallum



Photo: R. Frisch



Two local political leaders visited Goddard in September. In the photo on the left, Prince George's County Executive Parris Glendening, right, stands next to Dr. Klineberg during a visit to the Spacecraft Systems Development and Integration Facility (SSIDF) -- the largest laminar-flow clean room in the free world, located in Building 29. In the photo on the right, Maryland Congressman Steny Hoyer, seated center, visits the Robotics Lab in Building 11.

COMMUNITY DAY 1991

More than 2,000 people attended Goddard's annual "Community Day" on Sunday, September 15. During the day, portions of Goddard were open to the public. All photos were taken at the Visitor Center, except where noted.

Photos: D. McCallum



(Clockwise - from top left) (A) A father gives a hand up to his son at the "Look up and See Why" exhibit. (B) Goddard Astronaut Ron Parise signs autographs for excited youngsters. (C) A visitor examines a piece of the High Energy Imaging Device fabricated at Goddard while David Clark of the Spacecraft Assembly Section looks on in Building 7. (D) A future engineer tries her hand at building her own spacecraft. (E) Dennis Christopher, an Aerospace Education Specialist with the Spacemobile program, helps a future astronaut try on a space suit in the Building 8 auditorium. (F) The Federal Focus Jazz Band swings into action. (G) Visitors examine a model of a scientific balloon provided by Wallops Flight Facility.

INSIDE

Vernon J. "Vern" Weyers: Settling In

by Susie Marucci

Vern Weyers (as he prefers to be called) has a desktop with three items on it, one of which is Goddard's strategic plan. After three weeks on the job, Weyers (pronounced Wires), the new head of the Flight Projects Directorate, Code 400, is settling into his job.

Except for one year at NASA Headquarters, Weyers, a pleasant soft-spoken man, has spent his varied career -- 29 years -- at NASA's Lewis Research Center in Cleveland, OH. While he was at the University of Wisconsin in the late 50s and early 60s working on his B.S. in Electrical Engineering, the space program was taking off.

THE EARLY YEARS

"While I was in college, the first suborbital flights took place, then John Glenn's trip [the first orbital flight, February 20, 1962]," he explained. "When I found out NASA was coming to my school to interview engineers, I went out and signed up." Weyers joined Lewis after graduation and has never regretted the path he took. "Things were happening so fast in the space program that it seemed like it was around for a long time. But it had only been around for four or five years," he said.

The first part of Weyers' career was spent in mission analysis. He worked on trajectories (the path a spacecraft will take) for Viking, Voyager and some of the Apollo missions. He became involved in mission studies, evaluating which would become new missions and which would remain scientists' dreams.

In 1974, Weyers began his first project work. He spent his days working on launch vehicles. "It was a very exciting time," he said. He stayed with that program for four years. After working on launch vehicles, Weyers' career went in another direction -- power. For four years, he worked on Lewis' energy program. "It was the middle of the energy crisis," he said. "Lewis was supporting the Department of Energy." Weyers worked on the large wind turbines. "They had no applications for space, but the project management problems involved were very similar," he explained.

A STOP AT HEADQUARTERS

While Weyers thinks his time on wind turbines was well spent, Headquarters called



Photo: J. Semeraro

Vern Weyers, new director of Code 400, thumbs through his copy of Goddard's strategic plan.

in 1982 and he responded. He spent a year in Washington as the Lewis Research Center Liaison Manager. In this capacity, he worked both for Code R -- the Office of Aeronautics, Exploration and Technology -- at Headquarters and for Lewis. As the liaison, Weyers' job was to keep informed of what was going on at Lewis and what was going on at Headquarters that would affect Lewis and keep both sides happy. Code R had liaisons from Lewis, Langley Research Center and Ames Research Center.

Not only did the year at Headquarters give Weyers a chance to see things from a larger perspective -- it gave him a love of Washington that years later would be one of the lures that brought him to Goddard.

BACK TO LEWIS

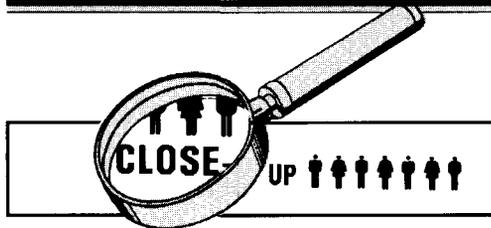
When Weyers returned to Lewis, he was the Deputy Project Manager for the Shuttle/Centaur Project. Then, he worked on the space station. In 1988, he was promoted to the Director of Space Flight Systems by Lewis' then Center Director Dr. John Klineberg. Lewis' Space Flight Systems office is similar to the Flight Projects Directorate at Goddard, the office Weyers now heads. He says the biggest difference between the two is size. "We did the same type of work, but the numbers were smaller," he explained. Code 400 has 485

employees. The Space Flight Systems Directorate at Lewis had about 200. "We had three or four projects we worked on. Here there are 16," he said.

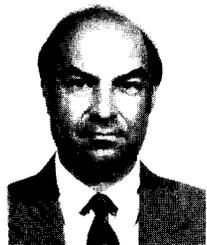
Weyers has a number of goals for his directorate. The first is to set up a directorate strategic plan that will incorporate the points of Goddard's strategic plan that are relevant to Code 400. He met recently with his senior staff to begin this process.

Another of Weyers' goals is to get to know his employees. Weyers said he is a people-oriented manager -- that people should be able to talk to him. "Where I come from I'm known as a people person," he said. "I believe people should have fun at their jobs."

When he isn't working, Weyers likes the quiet life. Weyers and his wife, Maureen, are having a house built in Bowie and, until January when it is finished, they are living in a nearby furnished apartment. Their three children, two of them engineers and one a pre-med student at the University of Notre Dame, live in other parts of the country. "I like to bicycle," he explained. "My wife likes to walk. We enjoy traveling, especially to the beach. And we like to spend time with the kids." He added with a smile, "It may not sound exciting, but we like it."



Congratulations to the following employees on their recent appointments: **THOMAS LAVIGNA**, Deputy Project Manager of the Tropical Rainfall Measuring Mission (TRMM) project, Code 490 . . . **QUINTON BARKER**, Head of the Operations Management Support Section, Code 513.1 . . . **RAYMOND PAGES**, Head of the Mission Readiness Test Section,



LAVIGNA

Code 513.2 . . . **DR. RICHARD FISHER**, Head of the Solar Physics Branch, Code 682 . . . **NELSON FERRAGUT**, Head of the Instrument Structure Section, Code 716.3 . . . **GEORGE REINHARDT**, Head of

the newly-established System Development Section, Code 716.5 . . .

RICHARD DAY, Head of the Payload Systems Management Office, Code 730.1 . . . **BOBBY FLOWERS**, Head of the Electro-Mechanical Systems Branch, Code 823 . . . **DR. OTTO THIELE**, Head of the



DAY

TRMM Office, Code 910.1 . . . **DR. WILLIAM LAU**, Head of the Climate Radiation Branch, Code 913 . . . **RICHARD HARTLE**, Head of the Planetary Atmospheres Branch, Code 914 . . . **DR. RICHARD KIANG**, Head of the Information Systems Development Facility, Code 936. Congratulations to **E.G. STASSINOPOULOS**, Code 933, for receiving an award from the Academy of Montpellier in Montpellier, France, the oldest university in Europe. Stassinopoulos received the award for his "contribution to the field of science and engineering." In addition to the award, while he was in France, Stassinopoulos was made a "Knight of the Illustrious Court of the Lords of the Corbières." He was a co-organizer of the RADIX 1991 conference. This international European conference on Radiations and their Effects on Devices and Systems, had only two Americans on the organizing committee.

Photos: M. Small

IN MEMORIAM Roger Mattson 1936 - 1991



Roger Mattson, Code 460, died September 22 of cancer. The 55-year-old Bowie resident held various positions at Goddard from 1964 until his 1991 retirement. Early in his Goddard career, Mattson was the launch vehicle manager for the Titan III which was used to launch the Applications Technology Satellite. From 1973 to 1975, he was the program manager of the Titan Centaur Program at NASA Headquarters. He returned to Goddard in 1975 as the head of the Shuttle Payloads Office and subsequently served as project manager of the spinning solid upper stage. In 1980, Mattson was named project manager of the Cosmic Background Explorer (COBE). Following the launch of COBE in 1989, Mattson served as the project manager of the Orbiting Solar Laboratory. The winner of both NASA's Exceptional Service Medal (1990) and Goddard's Award of Merit (1991) is survived by his wife and four children.

Schneebaum Keeps Case Smiling



Photo: D. McCallum

William Case, Code 725.1, right, receives his Moe I. Schneebaum Memorial Award for Engineering from Center Director Dr. John M. Klineberg. The Schneebaum Award is the highest engineering award given at Goddard.

by Susie Marucci

Consider a lego -- this child's toy is small and doesn't look like much, but when added to a lot of other legos it can make almost anything.

William Case, Code 725.1, this year's recipient of the Moe I. Schneebaum award, compares one of his projects -- NASTRAN -- to legos. Case spent a lot of his time when

he first came to Goddard working on the development of NASTRAN, the NASA Structural Analysis computer program. NASTRAN takes complex spacecraft that are hard to analyze and breaks them down into simple building blocks like

(Continued on page 8)

Schneebaum Keeps Case Smiling*(Continued from page 7)*

legos. From there the program can analyze the entire structure. NASTRAN was developed in the late 1960s, and according to Case, "it is used all over the world now. It is probably the most widely used program in engineering. Computers have gone through incredible changes, and although

NASTRAN also has changed somewhat, it is basically the same as it was 20 years ago."

Today, Case's involvement is primarily as a user of NASTRAN. His work in development was one of the reasons that he was honored on September 9, when he became 18th recipient of the Schneebaum award.

Case came to Goddard 25 years ago. He spent his first 10 years in the old Code 300 Test and Evaluation Division. In 1976 that division was disestablished, and Case moved to the Engineering Directorate. He is still there today, as section head of the Systems Analysis Section in the Instrument Division. Since coming to Goddard he has worked on such projects as the International Ultraviolet Explorer (IUE), Solar Maximum Mission (SMM), the Synchronous Meteorological Satellite-C, which later was renamed Geostationary Operational Environmental Satellite (GOES)-A, the first geostationary weather satellite. More recently, he has worked on the Cosmic Background Explorer (COBE), the Broad Band X-Ray Telescope (BBXRT) and the Upper Atmosphere Research Satellite (UARS). When asked about his favorite missions, Case said IUE and SMM because, "Over the years I worked a little bit on a lot of programs, but I spent a lot of time on IUE and SMM."

As a structural analyst, Case's job was to look at instruments and spacecraft, study them using NASTRAN and other tools, and examine them for strengths and weaknesses, making sure they were checked out and ready to go.

CENTER FOR *Lines*

EXPLORING SPACE THROUGH THE MAIL -- The U.S. Postal Service held a special celebration at Goddard on October 3 to present its new Space Exploration Stamps. The 10 stamps depict the planets and the Moon and some of the spacecraft that explored our solar system -- from Mariner 10 to Voyager 2. The stamps were on display and for sale. At noon a ceremony featuring Center Director Dr. John Klineberg, Greenbelt Mayor Gil Weidenfeld and Postmaster for the Southern Maryland Division Joseph Harris was held. There was also a one-day only special hand-stamped pictorial cancellation.

CELEBRATING SEVEN YEARS WITH ERBS -- The Earth Radiation Budget Satellite (ERBS) celebrated its seventh birthday on October 5. ERBS is continuing to acquire data without any new or significant problems. The spacecraft batteries and gyros remain stable. ERBS started using the new Tracking and Data Relay Satellite (TDRS-5) in early October. ERBS was designed to study phenomena that determine the Earth's climate and weather. Instruments onboard the spacecraft produce maps of geographical and seasonal variations of the Earth's radiation budget.



Goddard News

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

TOP ENGINEERING AWARD

Case considers receiving the Schneebaum award, "quite an honor. It is the top engineering award at Goddard. There have been some top engineering people I have great respect for who have won it in the past."

Case has also received the NASTRAN award for his contribution to the computer system. Besides heading the Systems Analysis Section, Case also spends time teaching structural analysis-related courses at the University of Maryland, both in Baltimore and College Park. He has been teaching for about 15 years and he says, "One of the big benefits is seeing the bright young engineering students and occasionally, as I have done twice, being able to hire them."

Deadline for submitted material is the fifteenth of each month. For additional information contact Code 130, (301) 286-7504.

The GODDARD NEWS Staff is:
Executive Editor: Randee Exler
Managing Editor: Susie Marucci

Contributing Editors: Dolores Beasley, Jessie Katz, Keith Koehler, John J. Loughlin II
Editorial Assistant: Katie Brannigan