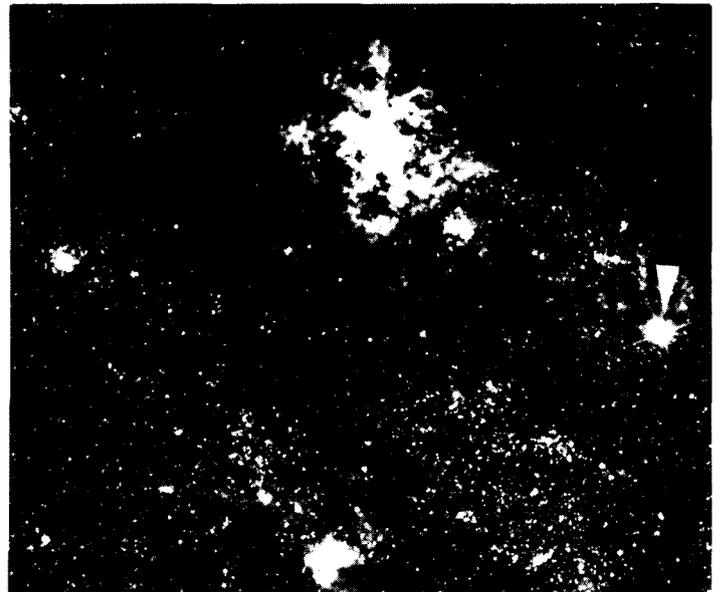
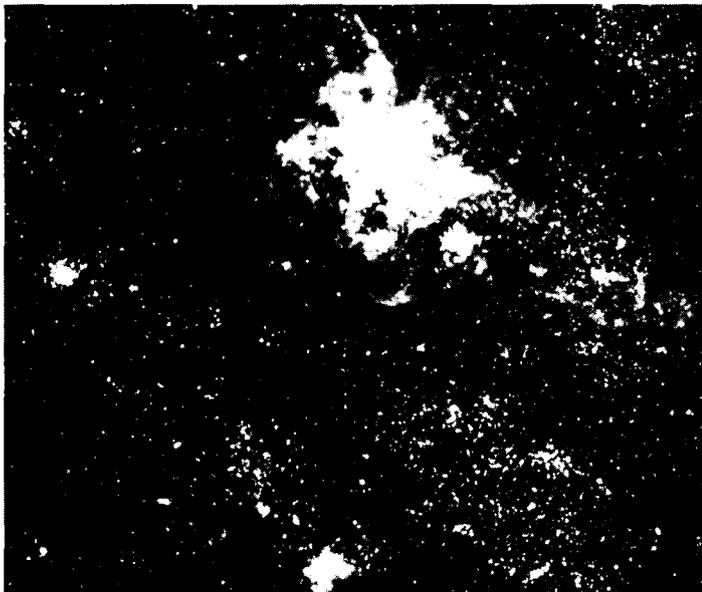


Which Star Exploded? Which Two Stars Remain?

by Randee Exler



BEFORE AND AFTER—Which star exploded in the Large Magellanic Cloud creating the brightest supernova in more than 400 years? It may be Sanduleak-69 202, a blue supergiant, according to Dr. George Sonneborn, staff astronomer, International Ultraviolet Explorer Observatory Control Center. The left picture shows the Large Magellanic Cloud before the February 24 explosion. The large mass in the center is the nebula 30 Doradus. An arrow (right photo, right side) points to Supernova 1987a. Photo credit: National Optical Astronomy Observatories (NOAO).

“Now you see it . . . now you don’t.” That’s what an astronomer at Goddard has been saying since he reported recently that Sanduleak-69 202, a blue supergiant in the Large Magellanic Cloud, may be the star which exploded creating the brightest supernova seen since 1604.

“For several weeks the star still was thought to be alive. We’re not seeing it now,” said Dr. George Sonneborn, Computer Science Corporation staff astronomer at the International Ultraviolet Explorer (IUE) Observatory Control Center, who made the discovery along with Dr. Robert Kirshner of Harvard University.

Ultraviolet Radiation

Astronomers have used a telescope aboard the IUE, a 9-year-old orbiting satellite, to monitor the intense emissions of ultraviolet radiation from the supernova since February 24.

Based on photographs taken from ground-based telescopes of the region prior to the explosion, Sanduleak-69 202 was

thought to be the supernova’s progenitor (originating star) shortly after the supernova was discovered. The pictures indicated that there were two stars in the area—a hot supergiant and a fainter star. “The blue supergiant appeared to be the progenitor because it was in the right spot,” Sonneborn said.

This theory was quickly tossed out. Spectral data from the IUE, taken after the explosion, indicated that two stars still remained in the vicinity of the supernova. This led astronomers to believe that the Sanduleak star was still there, according to Sonneborn.

Closer examination of the photographs, taken before the explosion, revealed that there were actually three stars in the region—one blue supergiant and two fainter blue stars.

Which star exploded and which two remain?

“Although the supernova is 10,000 times brighter than the remaining stars in visible light, it is actually much fainter than these stars in the ultraviolet. The IUE is

the only operating telescope that can detect the ultraviolet radiation emitted from these faint stars,” according to Sonneborn.

Puzzle Solved

Sonneborn and Kirshner solved the puzzle by comparing the IUE spectral data from the two remaining stars with astrometric measurements of the position of the three stars in the sky. They used a computer program developed by Applied Research Corporation Scientist Bruce Altner which separated the spectrum.

“We’re very fortunate that the supernova took place when it did,” Sonneborn said. “The aperture of the IUE instrument captured the stars in alignment which allowed the spectral measurements to be made. The aperture orientation of the spacecraft changes due to its orbit and position to the sun.”

“We won’t get another shot of the spectra in that alignment until this summer,” Sonneborn explained.

Continued on page 2

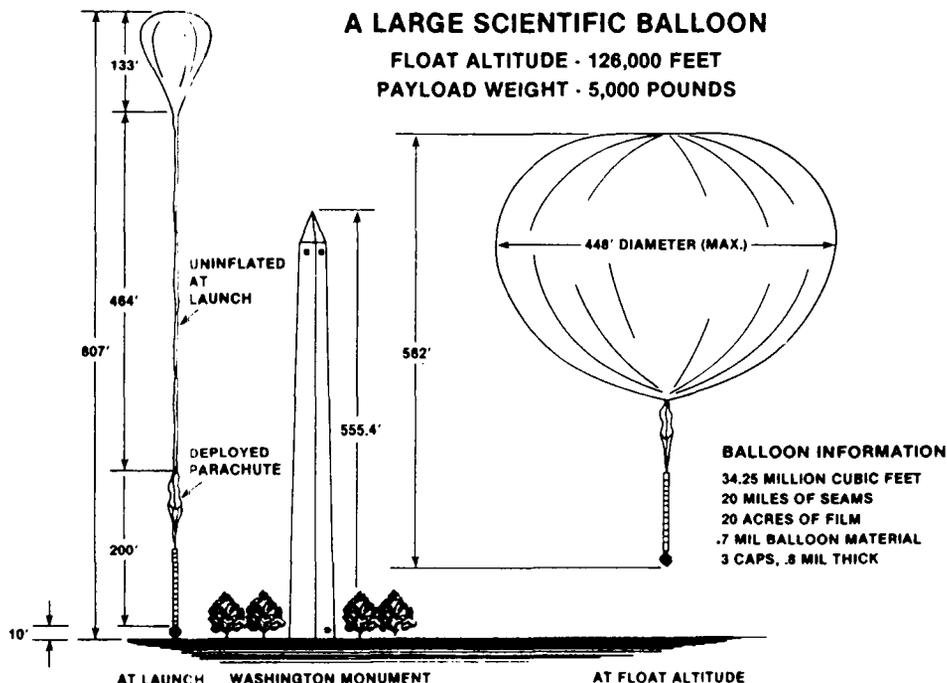
Goddard Plays Major Role in Supernova Science Program

by Rande Exler

An astronomer working at the Las Campanas Observatory in Chile on February 24, 1987, discovered Supernova 1987a—the brightest supernova since the invention of the telescope—in the nearby Large Magellanic Cloud galaxy. Within hours, Goddard scientists were monitoring the supernova with the Earth-orbiting International Ultraviolet Explorer (IUE), and Solar Maximum Mission (SMM) spacecraft.

Goddard will play a major role in the comprehensive program that NASA is currently developing to study Supernova 1987a. The program involves observations using high altitude balloons, sounding rockets, and the Kuiper aircraft. The observations will span the entire electromagnetic spectrum.

Goddard's National Space Science Data Center is developing a special information system network with NASA Headquarters to support the program. This network ties the various science teams together so that planning and reporting activities and science team messages can be handled quickly.



Balloon Flights

Wallops Flight Facility, which manages NASA's balloon program, will provide

launch services and helium for three balloon flights to study Supernova 1987a, according to Harvey Needleman, Head, Balloon Projects Branch at Wallops. The flights will be conducted over a one-month period from Alice Springs, Australia no earlier than May 16.

One of the balloons to be launched will have a volume of 28.4 million cubic feet, when fully expanded. This balloon will carry a 3,000 pound payload to an expected altitude of 130,000 feet. The scientific instrument contains a high resolution gamma ray spectrometer called Phoenix. It has been launched from Australia before.

Dr. Marvin Leventhal, Bell Laboratories, Princeton, NJ is the principal investigator. Project collaborators are Drs. Bonnard Teegarden, Neil Gehrels, and Jack Tueller of Goddard, Code 661; and Dr. Crawford MacCallum, Sandia National Laboratories, Albuquerque, NM.

Phoenix will provide real-time telemetry through a radio transmitter back to a ground station. An additional ground station, located downwind, also may be established in Eastern Australia. The length of flight will range from 6 to 20 hours and will be determined by high altitude wind conditions and the line-of-site telemetry.

A second balloon about the same size as
Continued on page 8

Star

Continued from page 1

"This discovery provides an excellent opportunity for identifying the progenitor of a supernova for the first time in human history," said Dr. Yoji Kondo, IUE Project Scientist at Goddard.

The IUE is a joint project of NASA, the European Space Agency and the United Kingdom Science and Engineering Research Council.



SPECTRAL IMAGE—Dr. George Sonneborn, Computer Science Corporation staff astronomer (back) and Dr. Yoji Kondo, International Ultraviolet Explorer (IUE) Project Scientist (front) view a spectral image produced by the IUE. Sonneborn used spectral data from the IUE to determine that a blue supergiant may be the star which created Supernova 1987a.

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

Greenbelt is 50

by James Capshew

The City of Greenbelt is celebrating its 50th anniversary in 1987. With pageantry, pomp, and ceremony, the unique



Maryland community is commemorating its origins as one of the model "new towns" built during the New Deal. Opened by the Federal government in 1937, Greenbelt was an experiment in community planning designed to combine the best elements of city and country life.

During the Depression, rural areas suffered severe economic and social problems. President Franklin D. Roosevelt's advisors, including his wife, Eleanor, and Rexford Tugwell, head of the USDA Resettlement Administration, saw the creation of new towns as a way of using unemployed manpower to build viable communities. They envisioned a crescent-shaped town surrounded by forests and fields, with homes oriented around parks and playgrounds rather than streets. The city center—containing schools, shops, and public buildings—would be within easy walking distance of the residential area.

Nearly 10,000 previously unemployed workers helped to construct the new town's lake, parks, shopping center, and homes from 1935-37. Greenbelt's population grew rapidly after World War II, from less than 3,000 in 1940 to more than 7,000 in 1960, when Goddard Space Flight Center was in the midst of its initial construction. Today, about 450 Goddard employees make Greenbelt their home.

The growth of the Washington metropolitan area has modified the original vision for Greenbelt substantially over the years. Three major highways—the Baltimore-Washington Parkway, Kenil-

worth Avenue, and the Capital Beltway—were completed by 1964, dividing the town into five separate sections. Additional housing units have allowed Greenbelt to grow to its present population of 21,000. New shopping centers and office buildings have increased the city's tax base and added to traffic congestion. Yet, Greenbelt, especially in its older sections, retains much of its garden atmosphere and sylvan charm. Its residents, too, maintain a distinctive community spirit, a living legacy of collective involvement.

50th Anniversary Events at Goddard

Goddard will host a full day of activities on Saturday, June 6 to help celebrate the 50th anniversary of the City of Greenbelt.

A double decker bus will shuttle visitors from 10 a.m. to 5 p.m. between the Goddard Visitor Center (VC) and downtown Greenbelt, where other activities will be taking place.

Activities at Goddard include tours of the Test & Integration Test Facility, which houses a full scale shuttle mockup and the Cosmic Background Explorer, a spacecraft being built for a 1989 liftoff.

One of only two "touch" moon rocks in the world will be on display at the VC.

Another major highlight will be the selection of the winners of an art contest sponsored by the VC for 5th, 6th and 7th graders residing in the City of Greenbelt. All participants will have their art displayed in the VC and will receive a certificate for participating. Second, third, and fourth place winners will receive a ribbon, and two winners, selected from a panel of four judges, will receive a free week, transportation included, at the U.S. Space Camp in Huntsville, AL.

Refreshments will be available, the Roosevelt High School string ensemble will provide live music and two outstanding NASA films will be shown throughout the day.

Some of the events to be seen in downtown Greenbelt at the Roosevelt Center include an arts and crafts fair, blacksmithing demonstrations, a health fair, folk singers and dancers, concert groups, magicians, games and pony rides. For further information on additional activities on Friday and Sunday, call the Greenbelt Recreation Department on 474-6878.

Goddard Hosts Open House: June 22 & 24

Want to find out what your colleagues have been up to? Then mark your calendar for June 22 and 24 when Goddard hosts an Open House.

Tours will be available for Goddard employees, families and friends. Tour topics and locations include: the Spacecraft Test and Integration Facility, Spacecraft Machining/Spartan and Gas, Image Analysis and the Massive Parallel Processor (MPP), Data Systems that Benefit Mankind, National Space Science Data Center (NSSDC), Control Centers/NASA Communications System, the Hubble Space Telescope, Robotics and Space Station.

The tours will be conducted on the afternoon and early evening of Monday, June 22 and the afternoon of Wednesday, June 24.

On Tuesday, June 23 these same tours will be given for about 500 registrants who are attending a NASA/American Institute of Aeronautics and Astronautics Symposium on Space Information systems in the Space Station Era.

Check Dateline Goddard for additional information.

NASA Team Named To Review Launch Decision Processes

NASA recently announced the appointment of a team to review and compare the launch decision processes used for NASA expendable launch vehicles and the Space Shuttle. The team will be cochaired by Joseph B. Mahon, Deputy Associate Administrator for Space Flight (Flight Systems), and Robert L. Crippen, Deputy Director, National Space Transportation System Operations.

The purpose of the review is to ensure consistent approaches and risk evaluations for all NASA launches while recognizing the inherent differences in the vehicles. The review will entail a comprehensive examination of the entire launch decision process for all vehicles from the flight readiness review to liftoff. It will include, but not be limited to, launch constraints and weather criteria and will be completed by July 3, 1987.

Other members of the team are Jay H. Greene, Flight Director, Johnson Space Center, Houston; James A. Thomas, Director of Safety, Reliability and Quality Assurance, Kennedy Space Center (KSC), FL; Charles D. Gay, Director, Shuttle Operations, KSC; and William A. Russell, Jr., Delta Project Manager at Goddard.

1987 Secretary/Clerical Awards: "Thanks for Job Well Done!"

Note from the Editor: Goddard recognized the outstanding dedication and contributions of our secretarial and clerical work force at the Twelfth Annual Secretaries/Clericals Awards Luncheon on April 21, 1987. The Goddard News Staff conducted interviews to find out what makes these winners a cut above the rest. Here's what we found out:

Y. Michele Joy—Code 140

"Michele is dedicated to getting things done. She has a great attitude and shows a great deal of initiative. We couldn't ask for a more important person on our team."—Larry Watson, Chief Counsel

Adrienne M. Hurt—Code 151.A

"Adrienne's most obvious asset is her ability to get along with everyone. She has this unique capability of putting herself on the level of the person she's dealing with."—Eldon F. Hawley, Jr., Head, Office Automation Technical Support Office

Sheila D. Skarnulis—Code 151

"She's remarkable! No matter what you give her, she gets it done. Sheila has this hidden energy level. No matter how fast you need something, she always has it finished."—Helen A. Mitchell, Assistant Chief, Financial Management Division

Karen A. Bennett—Code 205.2

"Karen has the desire to do a good job and the drive to follow it through."—Terry Potterton, Associate Chief, Health, Safety and Security Office

Luann M. Giese—Code 253.2

"Competence, professionalism and a willingness to get the job done makes Luann a winner. She has exceptional organizational skills."—Carol Jorgensen, Head, Printing and Publication Section.

Janet L. M. Hannah—Code 246

"Janet has the capability to deal with all of the computer equipment and procurement statistics. What would I do without her?"—Marlene V. Forster, Head Institutional/Facilities Procurement Branch

Elizabeth A. Jackson—Code 240

"She's always involved and concerned with the division. Elizabeth makes people feel that the division cares about them."—Robert Keefe, Chief, Institutional Procurement Division

Lesa R. White—Code 280

"Lesa has savvy... Her sixth sense about internal operations is uncanny!... She's developed a real feel for what's important."—Donna Fortunat, Associate Division Chief, Program Procurement

Elizabeth H. Giles—Code 303

"She's an outstanding performer who handles work for 34 people! Lib accepts all kinds of work loads and keeps everybody happy."—Bill Kneval, Chief, Assurance Management Office

Karen D. Oppenhauser—Code 400.2

"Karen has an absolutely can-do attitude about everything. She's bubbly, energetic and a real asset to the program."—Jim Moore, Manager, Experimental Systems Office, Systems Engineering Office

Winnifred R. Otten—Code 400.6

"She's an extremely efficient and productive secretary. Wendy has the ability to understand the technical and programmatic aspects of the job that are beyond her normal job duties."—Ken Sizemore, Associate Deputy Director for Flight Projects for Space Station

Robin L. Cogar—Code 554

"Robin is enthusiastic and eager to learn new things including the technical activities of the branch."—Jerry Teles, Head, Flight Dynamic Analysis Branch

LeAnn Hundley—Code 562

"LeAnn has the right stuff for NASA. She has all of her work completed by the end of the day. She's a real team player and brings spirit to the office."—John T. Jackson, Head, Operations Management Branch

Mary Ann Robertson—Code 510

"There isn't anything that she won't try. She's constantly aware of everyone's needs and always on top of everything."—Lou Koschmeder, Associate Chief, Mission Operations Division

Nita A. Curry—Code 650

"Nita is enthusiastic and dedicated. She's willing to do activities which are outside of her job description to support the Center."—Tom Hamilton, Chief, Administration Resources Management Division

Joan E. Isensee—Code 680

"Joan is the greatest secretary in the world! Getting along well with people is her forte. She makes everyone feel important."—Dr. Jan M. Hollis, Head, Science Operations Branch

Victoria L. Jenkins—Code 670

"Vicky was thrown into the pot without any instruction and swam right to the top! She does things on her own and gets everything done."—Bob Kirk, Aerospace Technologist/Physical Scientist

Carol D. Lundregan—Code 670

“Carol has been able to maintain continuity during the transition of three different branch heads. She really keeps things rolling! Ours is a large branch, and Carol manages it by herself.”—Dr. Jack Bufton, Head Experimental Instrumentation Branch.

Stephanie A. Myers—Code 790

“Stephanie makes my life smooth and easy. She’s good at juggling the demands of my time. She handles people very well and is extremely gracious.”—Dr. Michael Mumma, Head, Planetary Systems Branch

June M. Brown—Code 700

“She has a lot of talent. June is capable of handling increasing amounts of responsibility. She picks things up quickly.”—Robert Kraemer, Assistant Director for Technical Resources

L. Darlene Capone—Code 730

“In a nutshell, Darlene’s dedication to the job and personality make her a winner. She’s motivated, has a lot of patience and pays personal attention to the quality of the work.”—Donald Krueger, Chief Applied Engineering Division

Karen M. Latham—Code 713

“Karen is a very dynamic person who is willing to take on any kind of challenge. She’s a self-starter . . . She’ll always find a way to get it done.”—Albert Yetman, Branch Head, Cryogenics, Propulsion and Fluid Systems Branch

Sharon H. Truitt—Code 801

“She wants to be busy all the time and approaches her work with a good attitude. Sharon is very capable and always wants to help others.”—Oscar Flores, Chief, Suborbital Resources Management Office

Denise E. Eberspeaker—Code 841

“Denise’s personality and willingness to keep track of everything makes her a winner. She’s flexible and takes care of everyone. Denise can roll with the punches.”—Frank Boykin, Head, Attitude Control & Guidance Section



GUEST SPEAKER—Judy Mann, columnist, Metropolitan Staff, Washington Post (left) was the guest speaker at the Secretaries/Clericals Awards Luncheon, April 21, 1987. Debbie Radcliffe-Borsch (right) interpreted Mann’s remarks for the hearing impaired.

**Training Administration Unit
Employee Organization &
Development Branch,
Personnel Division—Code 224**

**Jacqueline M. Cooper
Dorothy A. Slade
Doris J. Jackson**

“This group is extremely responsive to thousands of training requests annually. They have the ability to quickly pull together data and respond in a positive manner.”—Wayne Boswell, Assistant Chief, Personnel Division

**Mission Operations and Data Systems
Procurement Support Staff—Code 285**

**Denise L. Anderson
Arlene Brown
Iris Murphy
Mary Ann Reboso**

“They take charge of the office without anyone having to tell them how to do things . . . They train each other and set up their own procedures. This group takes an active rather than passive role in getting things done.”—John Baniszewski, Mission Operations and Data Systems, Directorate Procurement Manager

**Management Operations Secretaries
Colloquium NET**

**A. Patrice Andrucyk—Code 263
Wanda A. Locklear—Code 260
Barbara A. Reamy—Code 200
Ann T. Williams—Code 290
Katherine A. Richardson—Code 200
Natalie McMurdy—Code 200**

“This group wanted to make a difference in the lives of themselves and their peers. They developed the Secretarial Colloquium and took advantage of the Center’s interest in trying to do something positive to change and improve their working conditions.”—John Scully, Deputy Director, Management Operations Directorate

**Flight Projects Directorate
Multidiscipline Support Services
(FPDMSS) Contract SEB
Clerical Support Team—Code 400**

**Mary J. Dant
Laura D. Marachek
I. Linda Osbourne**

“They work for three separate offices but you’d never know it because they pull together as a team. They do this on their own.”—Colette Yost, Management Assistant

Give Him A Crack To Solve and He'll Crack It

by David Thomas

A fan bursts in a generator at the Bermuda Tracking Station, hurling metal that misses an employee by just eight feet. Just like exploding shrapnel, flying fragments from a broken fan with blades spinning 25 revolutions a second are deadly.

What caused the mishap? And how can it be prevented from happening again?

Enter Mike Barthelmy.

Weeks later at Goddard, Barthelmy, one of the Center's "crack" experts, was troubleshooting the problem in the Metals Section where he works. He received the pieces of the suspect fan and tried methodically to pinpoint the origin of the breakdown.

Microscopic cracks in the metal could have caused the fan to break under stress. Or, nuts and bolts could have been tightened improperly. Maybe the fan was accidentally damaged during maintenance.

One approach used in the investigation was to attempt to reproduce the failure.

"I cut a sample of the blade, put a crack in it and tested it under different loading conditions," he said. The sample's fracture surface features were then examined in a scanning electron microscope and compared to the service fractures to help identify the cause of failure.

Barthelmy's study showed that the fan failed because a crack in one of the blades grew to a critical size. He recommended that the aging fans be replaced or enclosed or that testing be performed to prevent further failures.

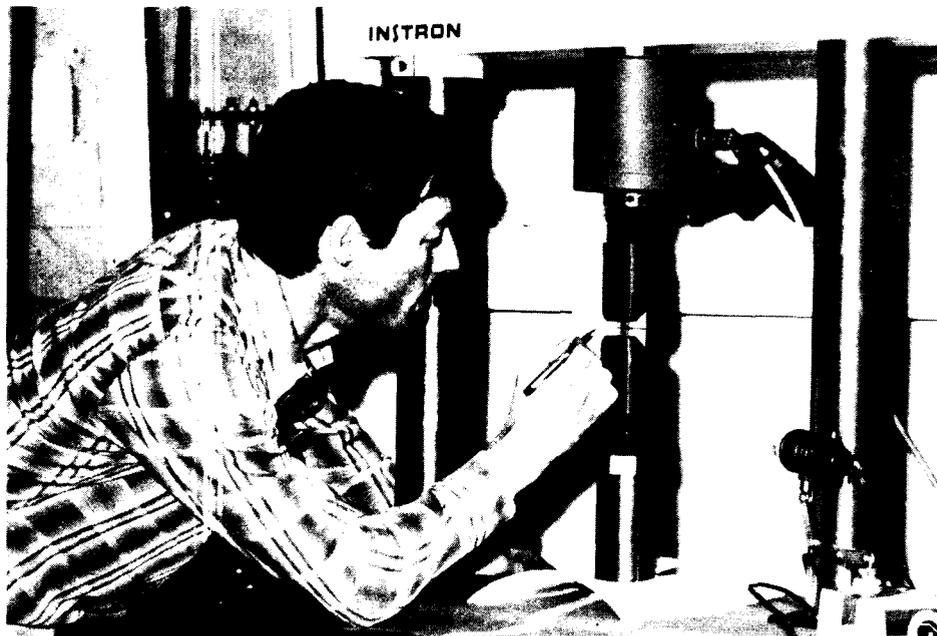
Determining why a metal fan broke, however, is but one facet of Barthelmy's work. Nondestructive evaluation, which helps ensure structural integrity of payloads and spacecraft instruments, mechanical testing, and materials support for all Goddard activities, comprise the remainder of his work.

Some of his tasks have included ultrasonic inspection of the ceramic beams on the Energetic Gamma Ray Experiment Telescope (EGRET) for cracks, and investigation into the cause of capacitor failures in the Space Telescope Flight Support System. On the Cosmic Background Explorer (COBE), he is performing mechanical tests on solar panel prototypes and also is inspecting flexible pivot devices for the Mirror Transport Mechanism.

Before joining Goddard in 1977, Barthelmy worked for the U.S. Army in Fort Belvoir, VA, where he conducted corrosion surveys at various Army installations. Before that, he performed research and de-

velopment of high temperature alloys and stainless steels at Carpenter Steel's laboratory in Reading, PA. He also served in the U.S. Navy from 1968 to 1972 as an aircraft electrician.

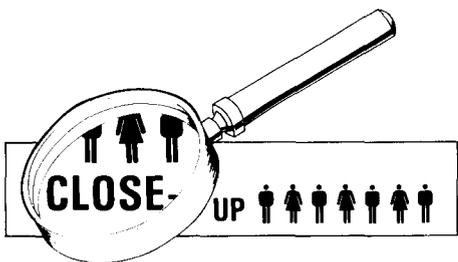
In March 1986 Barthelmy received the Special Achievement Award for his investigation into the cause of Teflon wire insulation cracking for the Space Telescope Flight Support System.



"CRACK" EXPERT—Mike Barthelmy studying a sample blade from a fan which burst in a generator. Barthelmy troubleshoots problems in Goddard's Metals Section, where he ensures structural control for spacecraft instruments and payloads.



THE TROPHY RETURNS—This is the second-time that NASA's Equal Opportunity Award trophy has resided at Goddard. Goddard received the first Equal Opportunity Award in 1981 and became a second-time winner in 1986. The trophy is on display in the building 8 lobby. Pictured with trophy: (left to right) Dillard Menchan, Chief, Equal Opportunity Program Office; Lewin Warren, Deputy Assistant Administrator for Equal Opportunity Programs, NASA Headquarters; Dr. Noel W. Hinners, Center Director.



ROTHENBERG

JOE ROTHENBERG has been appointed Chief, Mission Operations Division, Code 510. Rothenberg was formerly the Hubble Space Telescope Operations Manager. He joined Goddard in 1983.

Chain of events... The Laboratory for Terrestrial Physics got a new associate chief recently. **DR. DAVID E. SMITH**, formerly Head, Geodynamics Branch, was appointed to that position. Smith replaces **CHARLES COTE**, who was appointed Associate Chief, Laboratory for Atmospheres. Cote replaces **WILLIAM BANDEEN**, who was reassigned to the position of Associate Director of Space and Earth Sciences.

JENNIFER MUHONEN, daughter of **DANIEL MUHONEN**, Code 501, was awarded a NASA College Scholarship under a fund established by Pulitzer prize-winning author, James Michener. Jennifer, a senior at Northern high school in Calvert County, will attend Duke University, Durham, NC in the fall where she will study mathematics.

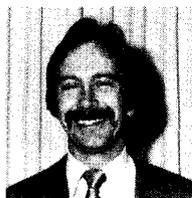


TINDAL

MARGARET TINDAL is the new Head, Employee Development Section, Code 224. Tindal most recently was with the Corps of Engineers in Baltimore but is not entirely new to Goddard. She previously was employed here from 1974 - 1979.

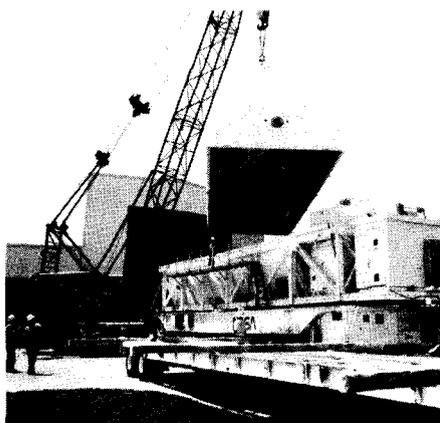
HARRY G. McCAIN, the newly-appointed Deputy Project Manager for the Space Station Project's Flight Telerobotic Servicer Project, was formerly with the National Bureau of Standards.

The **PROBLEM SOLVERS**, a secretarial Code 200 NASA Employee Team (NET), earned its name for the solution to the problem of how to present GSFC missions to center employees in a non-technical manner. The solution, the Secretarial Colloquium, earned this NET a group award. The Problem Solvers, established in 1984, is one of eight NETs at Goddard that receive special training in group problem solving. For information on Goddard's NET program, call Ken Fly on x69236.



CONNELL

Congratulations to **EDWARD B. CONNELL**, the former Head, Data Systems Applications Branch, who has been appointed Chief, Information Processing Division. Connell has been with Goddard since 1967.



HUBBLE SPACE TELESCOPE—The 11,500 pound aluminum cap of the Hubble Space Telescope shipping container is removed in front of the Multimission Support Facility building as testing and checkout of the container continues. The container will be used to transport the 43-foot long, 14-foot diameter telescope from Lockheed, Sunnyvale, CA to Kennedy Space Center, FL next year. The telescope is scheduled for launch aboard the Space Shuttle in November 1988.

Blood Donors

Following is a list of Goddard donors who were cited by the American Red Cross with gallon pins at the Bloodmobile of April 1, 1987.

Name	No. of Gallons
Kerril Bauerly	1
Sandra Camacho	1
Bruce Clark	1
Charles Cosner	7
Rex Elliott	3
Bonita Evans	1
John Ferguson	1
Morton Friedman	14
Gene Jones	3
Jack Knox	8
Jon Knox	1
William Smith	5
G. Richard Stonesifer	3
David Thompson	3
June Tveekrem	2
Steve Wadding	2

THANK YOU, Goddard, for supporting the urgent need for blood in our community! Two hundred and eleven donors presented themselves; 196 productive pints were collected. All special orders for blood for patients in hospitals were met!!!

The next bloodmobile visit will be on June 3, 1987 from 8:30 a.m. to 2:30 p.m. in Bldg. 8 auditorium.

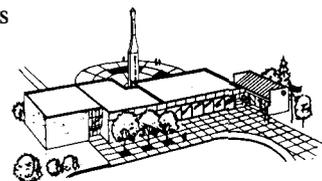
Retirees

Farewell and best of luck to the following retirees who left Goddard in April:

	Code	Years
McFord, Edward	293	31
Stephenson, B. H.	731.2	31

Visitor Center—June Calendar

- June 6 — Greenbelt 50th Anniversary Activities
- June 7 — Model Rocket Demonstration Launch — 1 p.m.
- June 13 & 14 — Commemorative Films — 1 p.m. "Flying Machine" "4 RMS — Earth View"
- June 21 — Model Rocket Launch — 1 p.m.



The Visitor Center is open to the public five days a week, Wednesday through Sunday, from 10 a.m. to 4 p.m. There is no admission charge. For more information, call the Visitor Center at 286-8981.

“How To Be A Part of History and Let Freedom Ring”

A Martin Luther King, Jr. (MLK) Time Capsule will be implanted in Washington, D.C. in 1987 and will remain underground for 100 years.

The capsule will contain selected memorabilia chosen by Mrs. Coretta Scott King, as well as photos, video and audio tapes, film strips, speeches and sermons, depicting national historical events highlighting the work of Martin Luther King, Jr.

National and world leaders have been invited to submit 60-second audio statements to be included in the capsule, including a statement from NASA Administrator Dr. James C. Fletcher.

Dr. Fletcher invites individuals to have their names and those of loved ones laser-inscribed on a miniature Liberty Bell, which will be included in the Time Capsule, for a contribution to the MLK Federal Holiday Commission of \$1.00 per name.

cut along here

I WANT TO BE A PART OF HISTORY!

Please laser-inscribe the following name(s), city and state, on the miniature Liberty Bell to be included in the Martin Luther King, Jr. Time Capsule in Washington, D.C. Enclosed is my contribution of \$1.00 each, for each name listed below:

Please make checks payable to **MLK Federal Holiday Commission**, and mail to: **Martin Luther King, Jr. Time Capsule, P.O. Box 44820, Washington, D.C. 20410** before **December 20, 1987**.

All donations will be used to support activities of the Martin Luther King, Jr. holiday observances nationwide for years to come. Your support and generosity in this history making event is very much appreciated.



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 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 and Joyce Milliner (Wallops).

Science Program

Continued from page 2

the first (29.47 million cubic ft.) will carry a second 3,000-pound payload to about the same altitude. This scientific payload also contains a high resolution gamma ray spectrometer. It is the maiden flight for the instrument. The principal investigator is Dr. William Sandie, Lockheed, Palo Alto, CA, and Gerald Fishman, Marshall Space Flight Center, Huntsville, AL, is the co-investigator for the project.

Real-time spectra will be downlinked from the Lockheed instrument to a ground support computer. The data also will be recorded on tape.

A third U.S.-supplied balloon will launch a payload which weighs 4,300 pounds, and will have a volume of 23.5 million square feet. It is expected to reach a float altitude of 120,000 feet. This scientific instrument, which first flew in October 1986, contains an instrument called the Gamma Ray Imaging Payload (GRIP). The principal investigator is Dr. Thomas Prince, California Institute of Technology.

The GRIP is a moderate resolution gamma ray spectrometer. The camera collects gamma rays and produces digital signals which are sent to the ground for analysis. The data also is recorded on videotape.

Gamma Rays

Although gamma rays have not yet been detected from the supernova by Goddard's Solar Maximum Mission satellite, current models predict that this radiation will begin to emerge from the expanding shell of hydrogen and helium in the near future.

The detection of gamma ray radiation from the supernova will represent a major breakthrough in our understanding of the process of element building in nature. If gamma radiation is detected, a direct measurement of the radiation can help scientists identify and measure the elements produced.



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.