National Aeronautics and Space Administration
Goddard Space Flight Center

# GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia — May 1997 Vol. I No. 1

*The Goddard News is published weekly by the Office of Public Affairs, Goddard Space Flight Center, Greenbelt, MD 20771*

Joe Rothenberg, Center Director

## news from JOE

Welcome to the new WEEKLY Goddard News format. I hope you find this new format and frequency helpful in getting the latest news to you as it happens. This one-pager will give you synopses of news happening at Goddard. Pointers to webpages for more in-depth stories will be provided when possible. This format and frequency has been successful at our Wallops Flight Facility and I hope you will find it meets your needs as well. Please provide your feedback to **gsfcpao@listserv.gsfc.nasa.gov** or via mail to Goddard Space Flight Center, Code 130 - Goddard News, Greenbelt, MD 20771

## SPACECRAFT WATCH FOR COMET HALE-BOPP TAIL DISRUPTION

***by William Steigerwald, Office of Public Affairs***

A fleet of spacecraft for the International Solar Terrestrial Physics (ISTP) program is watching for a break in Comet Hale-Bopp's plasma ion tail.

"Preliminary estimates indicate that it may happen in the next few days," said ***Dr. Mario Acuna***, lead scientist for ISTP at Goddard. Goddard is the focal point for many of the ISTP investigations.

Amateur astronomers around the world were put on watch last week when ***Dr. Bill Farrell***, co-investigator for NASA's Wind spacecraft at Goddard, placed a notice on an Internet E-mail list, after scientists studying data from ISTP spacecraft estimated that Comet Hale-Bopp's ion tail likely would be disrupted when it enters a region around the Sun known as the "current sheet." Observations from amateur astronomers monitoring changes in the comet's tails will provide near-real-time data to scientists to complement observations from spacecraft.

The ISTP spacecraft involved in this study are NASA's Polar and Wind missions and the European Space Agency/NASA Solar and Heliospheric Observatory mission.

## CURRENT news

- Antimatter Clouds and Fountain Discovered in the Milky Way
- New science instruments and other hardware on the Hubble Space Telescope (HST) are performing well. Excellent results are being obtained from new instruments NICMOS, STIS and CCD. Some new images will be released during a press conference May 12.
- POLAR detects Hale-Bopp Sodium Tale
- The third in a series of the most sophisticated weather satellites ever built, has reached geosynchronous orbit. GOES-K Satellite began its final journey toward its on-orbit storage position at 105 degrees West Longitude and officially became known as GOES-10.
- Congratulations to Goddard's DELTA Team for their successful launch on May 5.
- ***Dr. Joanne Simpson,*** Goddard's Chief Meteorologist will have the newly installed SGI/Cray T3E testbed named in her honor on May 14.

To read more about these and other news stories check out the Goddard Homepage at **http://www.gsfc.nasa.gov** and choose **FLASH**

## Goddard Scientist Selected for National Academy of Sciences

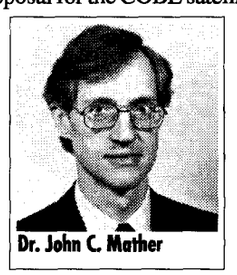
***Dr. John C. Mather,*** a senior astrophysicist at Goddard has been elected to the National Academy of Sciences (NAS) for his distinguished and continuing achievements in original research.

Mather joins 74 new NAS members and associates who were elected this week.

***Election to membership in the Academy is considered one of the highest honors that can be accorded a U.S. scientist or engineer.***

Mather was selected for his work as project scientist for NASA's Cosmic Background Explorer (COBE) spacecraft. He currently is the study scientist for NASA's Next Generation Space Telescope and is a senior fellow in Goddard's Space Science Directorate.

Mather led the first proposal for the COBE satellite in 1974 and became its project scientist and principal investigators. in 1989 and measured microwave and infrared precision.



Dr. John C. Mather

In 1992, the COBE mapped the primordial the cosmic microwave These spots are related field in the early one of the three COBE was launched and mapped the sky with unprecedented team announced it had hot and cold spots in background radiation. to the gravitational universe, only instants after the Big Bang, and are the seeds for the giant clusters of galaxies that stretch hundreds of millions of light years across the universe. The team also showed that the Big Bang radiation has a spectrum agreeing exactly with the theoretical prediction, confirming the Big Bang theory and showing that the Big Bang was complete in instants, with only a tiny fraction of the energy released later.

When asked how the team could do such a remarkable thing, Mather said, "It was an incredibly challenging team project. We attempted something that seemed impossible, and it nearly was. It was only by tremendous effort and constant testing that we could do it at all. It seemed that everything that could go wrong did go wrong, but we fixed it, and it worked. The real credit should go to the whole team. We had to rebuild the whole satellite after the Challenger accident, and we did it in just over two years."

Mather attended Newton High School in New Jersey and grew up living on the Rutgers University Dairy Research Station near Sussex, where his father worked. He received a bachelor of arts degree in Physics with highest honors from Swarthmore College (near Philadelphia) in 1968. He received his doctorate in Physics in 1974 from the University of California at Berkeley.

Mather has received six non-NASA awards and honors since graduate school and published more than 50 technical articles on his research. He published a book on the COBE project, titled, "That Very First Light," in 1996.

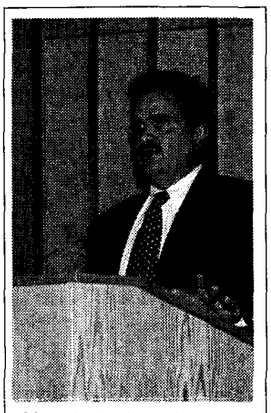
For more details on Mather's election into the National Academy of Sciences visit our Goddard Homepage at **http://www.gsfc.nasa.gov** and choose **FLASH.**

Other websites of interest:
Next Generation Space Telescope - **http://ngst.gsfc.nasa.gov/**
Laboratory for Astronomy and Solar Physics (LASP) - **http://stars.gsfc.nasa.gov/www/welcome.html**
COBE Home Page - **http://www.gsfc.nasa.gov/astro/cobe/cobe_home.html**

# EMPLOYEE achievements

Congratulations to the 15 Space Flight Awareness Honorees: ***Michael C. Bruegge***/542, ***Thomas W. Collinson***/745, ***Andrew B. Dougherty***/704, ***Gilbert W. Ousley, Jr.***/724, ***Barbara B. Pfarr***/510.1, ***Elender J. Pouncy***/550, ***Todd G. Sanders***/224, ***David E. Murphy***/AlliedSignal Technical Services Corp., ***Steven B. Testoff***/AlliedSignal Technical Services Corp., ***Gregory V. Kurtz***/Computer Sciences Corp., ***Ronald D. Kiefer***/CTA Inc., ***Raymond F. Douglass***/Hughes Danbury Optical Systems, ***George Givson***/Lockheed Martin Space Missions and Services, ***Joel Sills, Jr.***/Lockheed Martin Technical Operations. Honorees will attend the STS-84 launch scheduled for May 15, 1997.

Two from Goddard were inducted into the Aviation Week Laureates Hall of Fame April 9 - congratulations to ***Joe Rothenberg,*** Center Director, and ***Dr. John C. Mather***, senior astrophysicist at Goddard. [For more information check the Goddard Homepage at **http://www.gsfc.nasa.gov/** choose FLASH]



**Alphonso V. Diaz, Deputy Director 1996 Presidential Rank Award Winner**

***Alphonso V. Diaz*** and ***Sharon C. Foster*** were in the distinguished ranks of only 1% of Senior Executive Service employees who have been honored with a Presidential Distinguished Service Award. President Clinton had this to say at the ceremony, " Today, we honor you, the men and women of the Senior Executive Service, who serve this country with pride and distinction. Your leadership of some of our nation's most important programs is helping to improve the quality of life for all Americans - young and old. Your energy and your dedication have made our nation stronger and more prosperous.

**Sharon (Sherry) C. Foster, Director, Management Operations Directorate 1996 Presidential Rank Award Winner**

Be proud of your record of achievement, for your contributions are laying the groundwork of our nations' continual success. Indeed, future generations of government leaders will be inspired by your accomplishments." Goddard is proud to announce our Meritorious Award winners ***Brian Keegan***, Director of Applied Engineering and Technology Directorate, and ***James V. Moore***, Director of Flight Projects

## Achieving Balance Between Work and Family

***by Marian T. Humphrey, LCSW-C, Employee Assistance Program***

May 20 and 21 are just around the corner and Goddard will be celebrating **Focus On Our Future Day**. Take a moment, relax and read this column and learn tips for coping.

There is a popular country and western song which sadly laments, "there is too much month left at the end of the money." The song may serve as a metaphor for understanding the complexities of maintaining a balanced career and a personal life. Some individuals feel as though they do not have sufficient energy left to invest in their personal and family lives after spending the day in a fast paced office. As a result of the limits that exist on time and energy, people can feel frustrated, even guilty and engage in unproductive self-blame. They often end up unable to enjoy even the little personal time available to them.

A way to begin to free oneself from the guilt and self-blame for not being able to devote more energy to one's personal life is to give yourself permission to be human. Being human means first and foremost accepting the fact that no one can achieve perfection. We all make mistakes. We are never going to be able to do everything we would like to, let alone the level of perfection we desire. I suggest we accept this reality.

One strategy that may be helpful to people who find themselves in this dilemma may be to examine life from the perspective of balance. The adage "all work and no play" is meritorious. It is vital in these stressful and hectic times to schedule periodic vacations and adequate rest.

Over-working may become a way for us to avoid facing difficult personal issues. One cannot expect to enjoy good health without the proper care to ensure such health. Counselors sometimes refer to a compulsive need to work as a process addiction. This means that individuals may be searching for a "high" from the very way they work and the rewards and status that are derived from working longer and longer hours.

Actively setting aside 20 minutes each day or at least several times a week for an activity, exercise, or a hobby can restore one's energy and perspective and is key to surviving stressful times. Consciously re-prioritizing tasks and demands on our time can also help, as can learning when, where and how to say no. Both can yield mental and physical health dividends.

For more information or for further assistance in achieving a more balanced lifestyle, please contact me for a confidential appointment at extension 6-6667.

## Clip-n-Save Clip-n-Save Clip-n-Save

### IMPORTANT dates

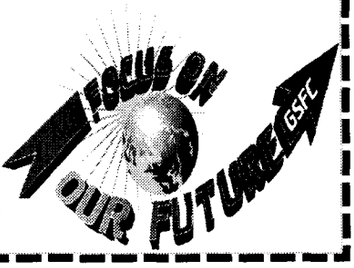
***SPECIAL EVENTS***

| | |
|---|---|
| ***May 15*** | ***STS-84 launch at KSC*** |
| ***May 20*** | ***Greenbelt FOCUS On Our FUTURE Day*** |
| ***May 21*** | ***WFF FOCUS On Our FUTURE Day*** |
| ***May 26-30*** | ***AGU Conference, Balt. MD*** |
| ***May 29*** | ***Goddard Honor Awards*** |

***WEEKLY/MONTHLY EVENTS***

| | |
|---|---|
| ***May 09*** | ***Scientific Colloquium*** ***(Fridays, Building 3-Auditorium at 3:30)*** ***(The African Plate and Small Scale Convection in the Earth's Upper Mantle - Kevin Burke, University of Houston)*** |
| ***May 12*** | ***Engineering Colloquium*** ***(Mondays, Building 3-Auditorium at 3:30)*** ***(Radioactive Waste: Science, Technology, and Politics - Henry W. Kendall)*** |
| ***Tues & Thurs.*** | ***Tea and Posters Building 28, Atrium 3:00-4:00p.m.*** |

Schedules are posted on the Goddard Homepage at **http://www.gsfc.nasa.gov/** choose Public Services & Information

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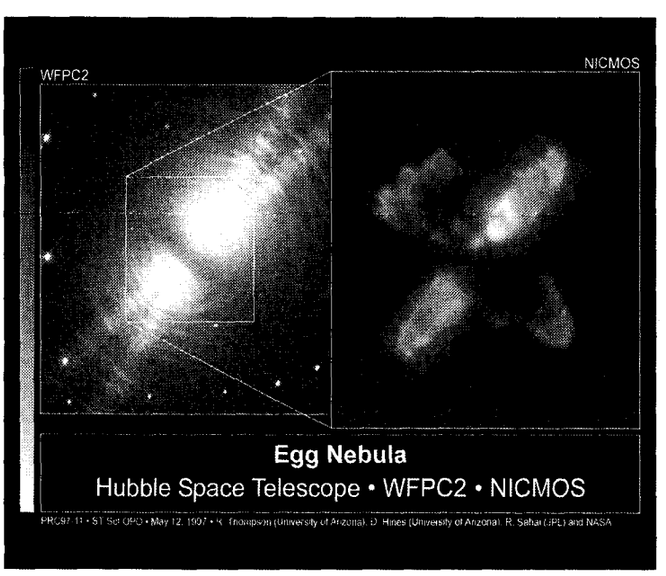
## HUBBLE'S NEW SCIENCE INSTRUMENTS UNVEIL DRAMA OF STELLAR BIRTH AND DEATH; DISCOVER A MASSIVE BLACK HOLE

*by Tammy L. Jones, Office of Public Affairs*

Completing almost three months of intensive testing and calibration following the highly successful Hubble Space Telescope (HST) servicing mission in February, NASA released early science observations from the two new instruments installed during the mission — the Near Infrared Camera and Multi-Object Spectrometer (NICMOS) and the Space Telescope Imaging Spectrograph (STIS). These initial results clearly demonstrate the ability of both instruments to fulfill their science goals with the HST, say project astronomers. Project officials are pleased to report that other instruments and electronics installed during the second servicing mission are performing well.

"The NICMOS team is extremely excited about the quality and preciseness of the images from NICMOS's two high resolution cameras," said NICMOS's Principal Investigator, Rodger Thompson of the University of Arizona. Thompson reported that the third NICMOS camera has moved back toward the range of focus of the instrument.




Jets and Gaseous Disk Around the Egg Nebula

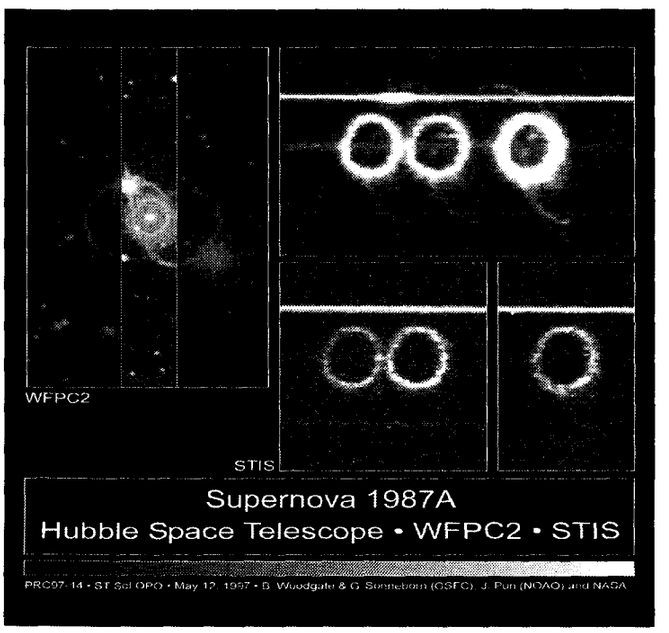
NICMOS peered deep into the dust obscured central region around a dying star embedded in the Egg Nebula to provide a clear view of a twin pair of narrow bullet-shaped "jets" of gas and dust blasted into space. NICMOS also revealed an unusual scalloped edge along a doughnut-shaped molecular hydrogen cloud which the dying star is embedded inside. When these "missing pieces" are compared to an earlier image taken in visible light with Hubble's Wide Field and Planetary Camera 2 (WFPC2), astronomers are able to assemble a more complete view of the dynamic and complicated structure around the star, as well as seeing a "fossil record" of its late evolutionary stages.

"The STIS team is extremely pleased at how well the instrument is working as we check it out, as illustrated by these early scientific results. It looks as if it will fulfill our expectations and hopes for exciting new science," said Bruce Woodgate of Goddard Space Flight Center, STIS's principal investigator.

After a few more weeks of testing, both instruments will begin normal science observations.

Project scientists also reported that other upgrades to Hubble's performance are all performing well, including installation of a new solid state recorder (SSR), fine guidance sensor (FGS), and solar array drive electronics. The solid state recorder has significantly improved data storage and playback, and the new fine guidance sensor is by far the best of the three FGS's on Hubble.

Highlights of science results such as the Monster Black Hole in Galaxy M84, the Jets and Gaseous Disk Around the Egg Nebula, the Composition and Structure of the Ring Around Supernova 1987A, the Unveiling Violent Starbirth in the Orion Nebula, and other science results can be found by visiting the Goddard Homepage at **http://www.gsfc.nasa.gov** and selecting FLASH or going directly to the Space Telescope Science Institute (operated for NASA by AURA) homepage at **http://www.stsci.edu**




Composition and Structure of the Ring Around Supernova 1987A

The STIS provided a new and unprecedented look at one of the most unique and complex structures in the universe — a light-year wide ring of glowing gas around Supernova 1987A, the nearest stellar explosion in 400 years. STIS's long-slit spectrograph dissected the ring's light into its separate colors — each color representing a different element in the ring.

## TRANSITION MANAGEMENT TEAM GETS UNDERWAY

*by Nina Desmond, Office of Public Affairs*

A Transition Management Team (TMT), led by Krista Paquin of the Management Operations Directorate, was formed in April to facilitate the Center's reorganization implementation activities. Subteams were formed to develop and carry out detailed plans for Contracts, Resources, Space, Communications, Human Resources, and Training. The transition management subteams have met and developed an initial cut at an integrated project schedule to make sure all of the activities dovetail. More information about the subteams and their activities will be forthcoming in future issue of Goddard News.

Information about the reorganization, can be accessed by Goddard employees on the Goddard Homepage at http://pao.gsfc.nasa.gov/gsfc/project/project.htm

**The Communications Subteam of the TMT will be staffing a booth at "Focus on Our Future" Day, on May 20. Come out and see us with your comments, concerns and questions.**

## CURRENT events

**• SPACE SHUTTLE MISSION STS-84 LAUNCH COUNTDOWN BEGINS**

At Goddard News press time launch was scheduled for 4:07 a.m. (EDT) on Thursday, May 15. Information about the countdown and mission can be accessed electronically via the Internet at: **http://www.ksc.nasa.gov/shuttle/countdown/** and at **http://shuttle.nasa.gov/**

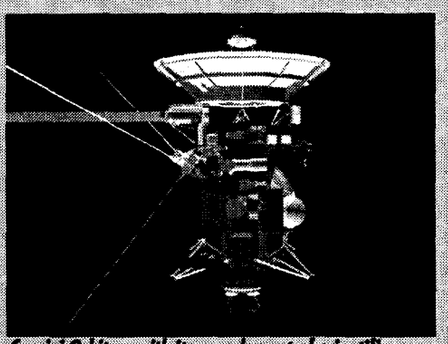
**• HYAKUTAKE X-RAYS SHOW ABILITY TO MONITOR COMETS AND SOLAR WIND**

A supercomputer simulation of Comet Hyakutake's interaction with the solar wind demonstrates that resulting X-ray emissions can be used to monitor comets and solar wind phenomena

To read more about these and other news stories check out the Goddard Homepage at **http://www.gsfc.nasa.gov** and choose **FLASH**

# PARTNERSHIPS

## CASSINI - FOCUS ON CIRS



Cassini Orbiter, with its complement of scientific instruments, is an amazing "tool" for making remote observations.

The Cassini Mission is a remarkable partnership between directorates, team members, scientists, and engineers, centers, government, contractors, and between the United States and Europe. The Principal Investigator, ***Virgil G. Kunde,*** and Instrument Manager, ***Richard D. Barney,*** noted the extensive involvement and remarkable cooperation of all the teams over a six year development cycle which at any given time had 60-80 civil servants in-house, and approximately 40 contractors working full-time.

The Composite Infrared Spectrometer (CIRS) is a remote sensing instrument to be flown on the Cassini orbiter. The instrument will retrieve profiles of temperature and gas composition for the atmospheres of Titan and Saturn, Saturn's rings and Saturnian satellites. The Cassini Orbiter/ Huygens Probe will launch on a Titan IV in October 1997, arriving at Saturn in July 2004.

Barney had this to say, "Codes 600, 700, and 300 have worked together as a team and worked together through adverse conditions such as the furloughs (during engineering delivery), and a 25% budget cut, ... it's the people and support from our internal management that set the environment for us to be able to do this project and to work together. The individuals working on this project are the best Goddard has. Goddard realized from the beginning how technically challenging this project would be and they gave us the best technicians, engineers, and scientists." An example of the teamwork is how the engineers took an interest in what the instrument was going to be used for and the scientists took an interest in how difficult it was to design it. "Communication was real easy with this shared knowledge between the engineers and scientists — we were able to solve problems in hours that might have taken weeks."

Kunde emphasizes the strength of our in-house expertise. He said, "The expertise was not out in the private sector. Goddard really functioned like it should. We did something here that you couldn't get done in the private sector, you couldn't really afford to. Cassini is the last big NASA mission to the outer planets."

For more details on this fascinating Mission and the CIRS instrument, visit the CIRS homepage at **http://rbarney.gsfc.nasa.gov/**

## AN OASIS AT GODDARD

***by Natalie Nace, Office of the Director***

The OASIS (Office Automation Systems Improvement Standards) Team has been mandated by the Center Director to examine how we currently do business at the secretarial and clerical levels and to look for ways to improve and automate processes. The OASIS Team, headed by Natalie Nace of Code 100, is composed of secretarial representatives from across the Center including Wallops: Sheila Dezio, Code 150; Desiree Taminelli, Code 201; Sandy Hare, Code 500; Donna Burfoot, Code 700; Lisa Ward, Code 800; and Linda Baumann, Code 900.

The vision of the OASIS Team is to implement an improved administrative business process for value-added efficiency while utilizing advances in technology to lead Goddard into the 21st Century. The mission of the OASIS Team is to enable efficient flow of work and increase communications; implement ongoing improvements in technologies leading the secretarial/clerical workforce into the next millennium for the benefit of the Center, Agency, Industry, and Academia; and ensure enhanced, proficient computer technologies at all levels.

OASIS has begun customer interviews across the Center, targeting problem areas in the secretarial/clerical business processes. The Team is focusing on such things as electronic calendaring and correspondence to decrease the amount of paper across the Center. The goal of OASIS is to have a pilot in place by the summer with full implementation beginning in early FY98 as requested by the Director.

# **MEET** Karen Flynn-Newlon

***By Deanna O'Donnell, Office of Public Affairs***

Karen Flynn-Newlon, with the Main Bridge telegraph she recovered May 1996.

"Finding new ways to transform facilities into assets that energize our customers" is the vision of the Facilities Management Division (FMD), Code 220. As Goddard migrates into the 21st century, FMD continues to build new facilities and refurbish old ones. Meet Karen Flynn-Newlon, the Head of the Planning Office of the Facilities Management Division, Code 220. Her organization is responsible for planning Goddard's overall facilities construction, rehabilitation, modification, and repair budget programs, as well as providing short and long range planning and management of Goddard's facilities resources.

Flynn-Newlon, who graduated from the University of Maryland with a bachelor's degree in architecture, began her career at NASA in 1983 as a facilities engineer. Later, in 1990 she became a project architect supporting the Design and Construction Branch, and in 1994 she was appointed to her current position as Head of the Planning Office.

Some of the facilities that she has had responsibility for designing are the Program Support Communications Network (PSCN) facility addition in building 1 and the Data Interface Facility at White Sands, NM. She also has overseen the planning for these new Goddard facilities: the Earth System Science building, the ISOMAX facility, and the NOAA Operations Research Center (NORC) facility.

In addition to her challenging career, Karen has a penchant for challenging hobbies. She devotes her free time to scuba diving which has been her passion since 1983. Her dives have taken her to depths of nearly 300 feet, where she has uncovered history. In July 1994, she recovered a bell from the E.M. Clark, a ship sunk off the coast of North Carolina during World War II. In May 1996, she recovered the Main Bridge telegraph, also from the *E.M. Clark* ship. The telegraph, an instrument which was used to send commands to the ship's engine room operators, is proudly displayed in her office in building 17.

## Visitors See Goddard at its Best! Spring 97 Community Day

***by Steven J. Moore, Office of Public Affairs***

The Goddard Space Flight Center and Visitor Center hosted Community Day for Spring 1997 on Sunday April 27. Thousands turned out to see first hand the excitement and knowledge being generated by this world class facility, and thanks to our family of dedicated Community Day Volunteers everyone was greeted with a smile and took away a new appreciation of the work going "behind the gates" here at Goddard.

The "thank you" list is long, but that says a great deal about the dedication to public service shown by so many here at Goddard. Special thanks go to the volunteers from the HST Project, and to all those from the Engineering Services Division who opened their facilities to us on this special day.

September 28 is the next Community Day - mark your calendars! Visit the Visitor Center homepage at **http://pao.gsfc.nasa.gov/vc/vc.htm**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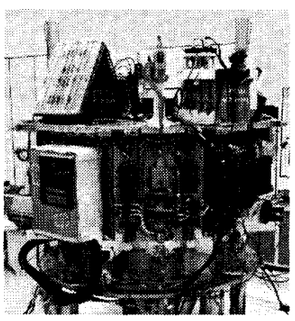
## ADVANCED COMPOSITION EXPLORER (ACE) IN THE FINAL STRETCH

**By Lynn Jenner, Office of Public Affairs**



The Advanced Composition Explorer (ACE) Spacecraft

The Advanced Composition Explorer (ACE) Spacecraft, built by Johns Hopkins University, is currently undergoing testing at Goddard. Tests include acoustical testing, shock and deployment testing, wet/dry spin balancing testing, and thermal testing. Launch is set for August 21, 1997.

From a vantage point approximately 1/100 of the distance from the Earth to the Sun, ACE will perform measurements over a wide range of energy and nuclear mass, under all solar wind flow conditions and during both large and small particle events, including solar flares. ACE will provide continuous real-time solar wind "space weather" information that will give an advance warning (about one hour) of geomagnetic storms that can overload power grids, disrupt communications on Earth, and present a hazard to astronauts.

The scientific goal of ACE is to help us understand the origin of the matter in our bodies, the Earth, and the universe as a whole. To do this, ACE will accurately measure the composition of several different types of matter, including particles coming from the Sun, the very thin gas between the planets, the even thinner gas just outside the solar system, and matter from distant parts of the galaxy. The particles that ACE measures are moving very fast, up to 3.5 million miles per hour, and are atomic and subatomic. To measure these particles, ACE uses nine complementary instruments built by NASA and many universities in the U.S. and Europe.

## *EARTH DAY AT GODDARD*

***By Jennifer O'Connell, Office of Public Affairs***

Captain Planet takes a question from 9-year-old Christa Fogleman who was interested in ways that Captain Planet could suggest to get everyone to care about Earth

Goddard's Earth Day celebration on April 23 was a big success. Over 150 students from area elementary schools attended an assembly that focused on how NASA studies planet Earth and how everyone can work to sustain its health. Captain Planet, the Hanna-Barbera cartoon super-hero, hosted the assembly. Special guests included ***Dr. Lou Walter***, Associate Director of the Earth Sciences Directorate, ***Mr. Vern Smith*** featuring the Goddard Spacemobile and exhibits, and Richard Warshauer, Georgetown Paper Stock, Inc. recycling expert. In addition to the assembly, a gardening columnist, author, and radio and television personality, Jack Eden, addressed employees in an informal discussion in the building 1 cafeteria.

Due to inclement weather on April 23, the luncheon picnic was held on April 30. Over 1000 Goddard employees came to the mall to participate in the lunchtime event which featured volleyball, frisbee, DJ entertainment by ***Marion Farmer***, and exhibits highlighting the Center's successful and continued recycling efforts.

## *HST Images of Mars*

Pictured below are two sets of Mars images taken by the Hubble Space Telescope (HST). Image 1 consists of four different faces of Mars as seen on March 30, 1997. The Upper left image is a view of Ares Valley, the spot where the Mars Pathfinder will make its landing on July 4, 1997. The image in the upper right shows the Thesarsis volcanoes and associated clouds. The lower left image shows a section from the Elysium volcanic region to the west of the Thesarsis volcanoes. The lower right image shows the dark Syrtis Major region.

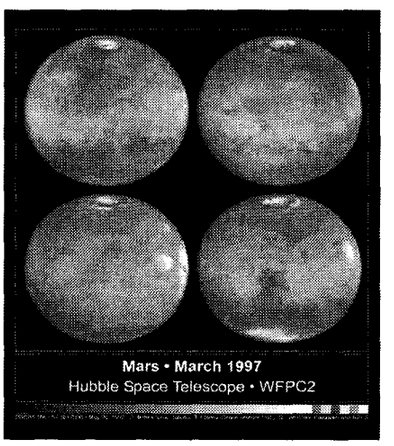



Image 1 - HST Views of Mars

The pictures in Image 2 were taken by the Hubble Space Telescope two weeks after Earth made its closest approach to Mars. At the time the pictures were taken, Mars was at a distance of 62 million miles (100 million kilometers). Both images were made with the Wide Field Planetary Camera. To view these images in color, go to the Goddard Homepage at http://www.gsfc.nasa.gov and click on FLASH.

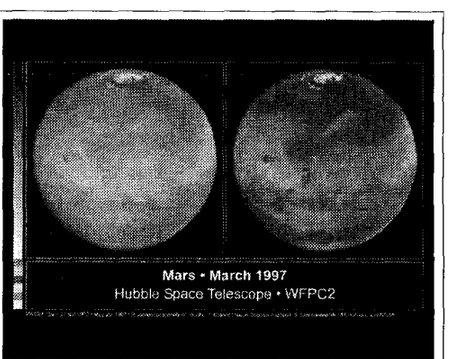



Image 2 - HST Views of Mars

## CURRENT events

- **June 7 - Goddard annual picnic from 12:00 - 4:00 p.m.**
- **Shuttle/MIR docking mission status at www.shuttle.gov**
- **NASA Image Exchange (NIX) offers database of NASA photos; homepage at http://nix.nasa.gov**
- **NASA studying how forests in urban area help maintain air quality**
- **MUSES-C Mission - NASA and Japan's Institute of Space and Astronautical Science will collect samples from the surface of an asteroid for in-depth study**

To read more about these and other news stories check out the Goddard Homepage at **http://www.gsfc.nasa.gov** and choose **FLASH**

# EMPLOYEE achievements

***Desiree Taminelli*** is one of the 11 Gold Award winners of the Baltimore Federal Executive Board (BFEB) 1997 Annual Excellence in Federal Career Awards. There were five other Silver and Bronze Awards to Goddard employees.

Desiree Taminelli, Code 201, BFED
1997 Annual Excellence Gold Award

The BFEB, one of the 29 established in 1961 by Presidential Directive, operates under the Office of Personnel Management (OPM). The BFEB at its annual awards program on May 2, 1997, recognized six Goddard employees for "Excellence in Federal Career." The six were chosen along with 198 others from 112 Federal agencies located throughout the State of Maryland. Center Director, ***Joe Rothenberg***, who attended the ceremony in Baltimore along with the recipients said, "These awards exemplify the high caliber of employees we have at Goddard."

Congratulations to the following six winners: Gold Winner, Outstanding Clerical: ***Desiree Taminelli*** (Code 201); Silver Winner, Outstanding Supervisor: ***Joseph Nuth, II*** (Code 691); Bronze Winner, Outstanding Para-Professional/Administrative Management Specialist: ***Marjorie Gustafson*** (Code 213); Bronze Winner, Rookie of the Year—Professional: ***Kathy Nado*** (Code 100); Bronze Winner, Outstanding Professional/Technical, Scientific, and Program Support: ***Robert Langel*** (Code 921); and Bronze Winner, Community Service: ***Leslye Boyce*** (Code 441).

***Dr. Aprille Ericsson-Jackson*** of Code 712 was presented with the 1997 WISE Award for Engineering Achievement at the 1997 WISE Award Luncheon on May 12.

WISE is an organization formed in 1978 by Federal women scientists and engineers for the purpose of encouraging young women to pursue science and engineering careers, to enhance advancement opportunities for women scientists and engineers, and to recognize outstanding performance of women scientists and engineers.

***Dr. Ericsson-Jackson***, an aerospace engineer in the Guidance, Navigation and Control Design Analysis Section, has many accomplishments to be proud of, including the fact that she was the first American to receive a Ph.D. in Mechanical Engineering, the Aerospace Option, from Howard University.

In front of an audience of attentive, young women, Center Director, ***Joe Rothenberg***, summarized ***Dr. Ericsson-Jackson's*** achievements and presented her with the award.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## YOUR CAREER: JOURNEY OF A LIFETIME

**by Mac Saddoris**
**GSFC Career Counselor**

One of the characteristics of "refocusing" and the GSFC reorganization is that while it has structure, neither one will result in anything that will last a lifetime. Each becomes, in a sense, a journey on which we travel together, a journey to new realities, to new opportunities, to a new definition of our roles and work. Along the way there will be more changes, new assignments, new missions, and new stop-overs, all of which will lead to continuous moving around and moving on.

We can benefit from reframing the way we look at our careers in a similar way. The word "career" in its original meaning denotes a "journey," a "path," that encompasses new scenery, new places, and the continuous evolution of a new "self," presumably on the way to some place or experience at which we want to arrive.

Career can also be used to refer to a "race." What's important in this use of the word is not only that it denotes movement, but competitive movement to win a goal. People who run races usually repeatedly run races to achieve new and still more challenging goals. And still another way to look at your career is to use the Swahili word for "journey," "safari." Imagine that! . . . a *career safari* . . . an adventure in the wild.

The career management issues relevant to this "safari" are ones of refocusing our career vision: How do I fit into GSFC's changing mission? How do I prepare to fit into this kind of fluid and continuous opportunity? How do I find security and desired rewards in this new environment? Will I still be able to "advance" in the organization? And each of us has more personal questions, as well.

Career counseling, for many, is like coaching for a race. You'll find it instructive and helpful in planning your race. *Running* the race is up to you. (Call 286-5794 for an appointment.)

## PROJECT GODDARD

**http://www.gsfc.nasa.gov**

***Employees looking for news on the Center's reorganization/transition activities should check this space in Goddard News. Also, be sure to check out "Project Goddard" on the Goddard Homepage at http://www.gsfc.nasa.gov***

**An Information Exchange regarding the reorganization is planned for the two new directorates next week:**

**Systems Technology & Advanced Concepts (STAAC) Directorate - Thursday, May 29, Building 26, Room 205; Two sessions will be held: 8:30 a.m. - 10:30 a.m. and 10:30 a.m. to 12:30 p.m.**

**Applied Engineering & Technology Directorate (AETD) - Friday, May 30, Building 8 Auditorium; Two sessions will be held: 8:30 a.m. - 11:00 a.m. and 12:00 p.m. to 2:30 p.m.**

**http://www.gsfc.nasa.gov**

National Aeronautics and Space Administration
Goddard Space Flight Center

# GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia

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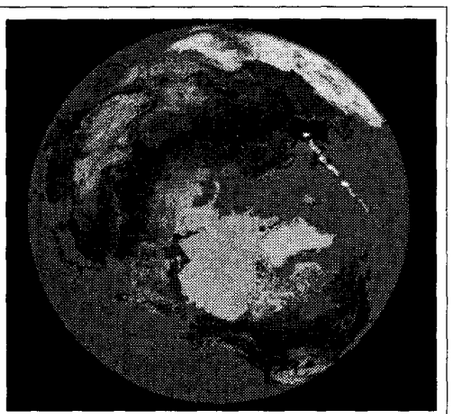
## POLAR IMAGES SUPPORT THEORY OF INTERPLANETARY SNOWBALLS SPRAYING EARTH

Images from NASA's Polar spacecraft provide new evidence that Earth's upper atmosphere is being sprayed by a steady stream of water-bearing objects comparable to small comets. Using Polar's Visible Imaging System (VIS), a research team led by Dr. Louis A. Frank of the University of Iowa in Iowa City has detected objects that streak toward Earth, disintegrate at high altitudes and deposit large clouds of water vapor in the upper atmosphere.



Pictured above is an image taken from the Polar Spacecraft's VIS Camera showing a white streak (right) that is an atmospheric hole

The incoming objects, which Frank estimates to be the size of a small house, pose no threat to people on Earth, nor to astronauts in orbit. "They break up and are destroyed at 600 to 15,000 miles above the Earth," Frank noted. "In fact, this relatively gentle 'cosmic rain' -- which possibly contains simple organic compounds -- may well have nurtured the development of life on our planet."

The Polar cameras have imaged trails of light in both ultraviolet and visible wavelengths as the objects disintegrate above the atmosphere. Using a filter that detects visible light emitted only by fragments of water molecules, Frank has shown that the objects consist primarily of water.

"The Polar results definitely demonstrate that there are objects entering the Earth's upper atmosphere that contain a lot of water," commented Dr. Thomas M. Donahue, a noted atmospheric physicist and professor at the University of Michigan in Ann Arbor.

"The images show that we have a large population of objects in the Earth's vicinity that have not been detected before," said Frank, who designed the VIS instrument. "We detect these objects at a rate that suggest Earth is being bombarded by five to 30 small comets per minute, or thousands per day." Comets are known to contain frozen water and are sometimes called "dirty snowballs." Frank's new observations are consistent with a controversial theory he proposed in 1986 to explain the existence of dark spots, which he termed "atmospheric holes," in images of the sunlit atmosphere of the Earth. He first detected these holes while analyzing data from an ultraviolet imager flown on NASA's Dynamics Explorer 1 spacecraft. He theorized that the holes were caused by the disintegration of small icy comets in the upper atmosphere. The water vapor they produce momentarily absorbs the ultraviolet solar radiation scattered from oxygen atoms in the upper atmosphere, preventing it from reaching his camera and resulting in a dark spot on the image. These holes have diameters of 15 to 25 miles (25 to 40 km).

This multiple exposure image taken by Polar's VIS shows an object (upper left) containing water moving across the face of the Earth

His theory of a new class of objects in the solar system ignited a wide-ranging controversy. Many colleagues discounted the appearance of the holes as an instrumental problem. But the new images from Polar also include observations of atmospheric holes in much greater detail than before, suggesting that they are real. "These results certainly vindicate Lou Frank's earlier observations," said Donahue. "These remarkable images cap a great first year for Polar," added ***Dr. Robert Hoffman***, Project Scientist for Polar, which is operated and managed by Goddard. "I am pleased that Polar's instruments were able to actually detect these objects streaking towards the Earth and disintegrating into clouds of water vapor. They give scientists a fascinating new and important phenomenon to take into account in theories of Solar System evolution."

Images of the comets and the atmospheric holes can be found on the Goddard Homepage at ***http://www.gsfc.nasa.gov***

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## SAM ARMSTRONG VISITS GODDARD

In his capacity as owner of the Communicate Knowlege process, one of four core processes in NASA's Strategic Plan, Spence (Sam) Armstrong, Associate Administrator for Human Resources and Education, is heading a team of 24 NASA employees from Headquarters and NASA's field centers that will visit Goddard on June 3.

Their objective is to meet with scientists and research teams to document the way NASA currently communicates knowledge to the various customer communities. "Goddard's suppport will add value to the team's efforts to enhance and improve one of the Agency's strategic core processes," said Armstrong.

Goddard will be the first NASA Center to host Armstrong's visit. Representatives from the space sciences, Earth sciences and technology areas will be interviewed by members of Armstrong's team. After Goddard, the team will visit other NASA Centers to sample ways the Communicate Knowledge process works there, and they will benchmark other Goverment or private operations where research is conducted and whose results are useful to public, scientific, industrial or educational communities.

The wrap-up step will be for the team to assemble a handbook of the various ways to communicate knowledge and provide examples of the best practices to NASA managers who have the responsibility to carry out this process.

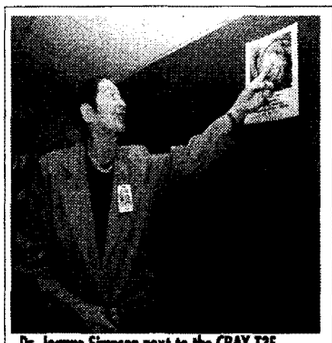
## CURRENT events

### GODDARD HOSTS ANNUAL PICNIC

A terrific picnic for all Goddard employees (civil service & contractor), retirees, and their families will be held on Saturday, June 7th, from 12 noon until 4 p.m. at the GSFC Rec. Center. Activities include a Trackless Train, Moon Bounce, Ball Crawl, a DJ, Pinata and Limbo contests, Horseshoes, Softball, Volleyball, and more. There's a delicious menu of BBQ chicken, fresh-grilled burgers and hot dogs, baked beans, assorted salads, beer/wine/sodas, 100% juice for kids, cotton candy, popcorn, ice cream, novelties, and popsicles. Plus door prizes! Tickets are available at the GEWA Store thru COB June 6th (NO door sales) and cost only $4 for ages 10 & up until COB June 3 ($6 from June 4-6), $1 for ages 4 thru 9, and FREE for ages 0 thru 3. Don't miss out on this fun employee/family event! (Sponsored by the Goddard Employees Welfare Association and NASA HQ Exchange Council).

## EMPLOYEE achievements

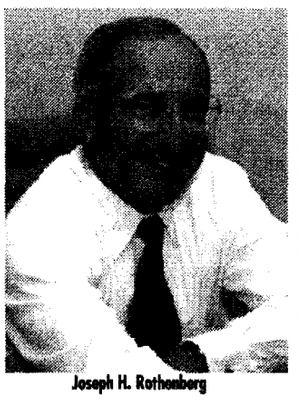
### SUPERCOMPUTER NAMED FOR PIONEER RESEARCHER AT GODDARD


Dr. Joanne Simpson next to the CRAY T3E

NASA's fastest supercomputer, the CRAY T3E, has been named for ***Dr. Joanne Simpson***, chief scientist for Meteorology in Goddard's Earth Science's Directorate. Simpson was chosen for this honor for her pioneering work using computers in meteorological research. A dedication ceremony and reception was held at Goddard on May 14.

"It is a great honor to have such a remarkable supercomputer named after me," said Simpson. The NASA meteorologist was a pioneer in cloud modeling, producing the first one-dimensional model and the first cumulus model on a computer. She also led research into multi-cloud modeling. Her credits include more than 170 publications in the areas of tropical meteorology, tropical cloud systems and modeling, tropical storms and tropical rain measurement from space.

### CENTER DIRECTOR RECEIVES HONORARY DEGREE


Joseph H. Rothenberg

On May 22, Center Director, ***Joseph H. Rothenberg***, spoke at the commencement services for the Stevens Institute of Technology in Hoboken, New Jersey, and also received an honorary doctor of engineering degree.

Dr. Harold J. Raveche, President of the university, presented the degree during the ceremony and John LaPalace, Director of university communications spoke on Mr. Rothenberg's selection saying "Joe Rothenberg is being recognized for his truly outstanding career and accomplishments. His selection was based on his integrity, advancement in science education, and leadership abilities both at Goddard and in the aerospace industry."

Goddard's involvement with the Stevens Institute continues with two educational programs: the Stevens Technical Enrichment Program (STEP) and the Distance Telementoring Program. Both programs are designed to promote the interest and teaching of science and engineering.

## PROJECT http://www.gsfc.nasa.gov

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**The Contracts Subteam to the Transition Management Team is charged with identifying the technical organization that will provide future management and oversight to existing and future contracts. We will look for restructuring opportunities, such as contract consolidations, where appropriate. All recommendations must take into account possible impacts to Small and 8A Business programs, and initiatives such as Performance Based Contracting.**

**The members of the team are: Gretchen Burton, John Day, and David Shrewsberry, Code 700; Cliff Leitao and Dave Pierce, Code 800; Dennis Vander Tuig, Code 500; George Morrow, Code 400, and Valorie Burr and Steve Metcalf, Code 200.**

http://www.gsfc.nasa.gov

### *FITNESS CENTER HELPS DISABLED*
***By Boyd Pearson, Code 303***

Goddard's Heath Unit has a fitness center that is available for use by Goddard civil service employees. It has free weights, stabilized bikes, rowing machines, and specialized equipment which enable workers to tone and sculpt their muscles.

The Fitness Center also serves a significant purpose for employees who are disabled in some functions. It provides a controlled environment where they can get much needed exercise. Employees in wheelchairs, those that are blind or deaf, or those recovering from a stroke, cancer, pregnancy, or back, shoulder, or knee injury should consider using the fitness center.

I was diagnosed with Multiple Sclerosis about twenty years ago and now must use a motorized wheelchair to get around work. Just the same, three days a week I go to the exercise room and work out to a certain extent with various equipment. My balance does not allow me to stand but I am able to exercise my legs on the leg press. I also get a cardiovascular workout using a Tru-Kinetics Uppercycle. I can exercise my arms with pulleys and weights, and also rubber tubing. I do all of this without getting out of my wheelchair. The fitness trainer, Mike Miller, helps me do stretching exercises and helps me to stand to a walker to do some limited squats and leg lifts. I have had several internal infections recently and this exercise program has accelerated my recovery and had promoted my job performance.

If you think this sounds interesting, useful, or potentially helpful for you and your own particular situation, call the Fitness Center at X6-6668.

### SES LEADERSHIP PROGRAM

NASA Headquarters has instituted a new development program for the Agency's Senior Executive Service (SES) corps designed to address the particular needs of NASA's executives in implementing the agency's strategic vision, the SES Leadership Program. All NASA SES personnel are invited to the opening evening of the next program, offering which is being held on Monday, June 16, 1997 at the Savoy Suites Hotel at 2505 Wisconsin Avenue, NW.

The evening will begin with a social hour and cash bar from 5:30 - 6:30 p.m., followed by dinner from 6:30 to 7:30 p.m. with guest speaker John Koskinen, Deputy Director for Management, Office of Management and Budget (OMB). Mr. Koskinen will address the issue of leadership in the Federal government. He will discuss the key changes that will impact the way executives lead the Government and the skills and abilities needed to be successful. To make a reservation (Cost is $28.00. ) Make check payable to Savoy Suites Hotel. Payment must be made in advance. Send check to Chris Williams, Code FT, by Friday, June 6, 1997. Please include name for the dinner reservation if different from the name printed on the check. Also, please note any special dietary requirements.


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