National Aeronautics and Space Administration
Goddard Space Flight Center

GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia Oct. 1997 Vol. 1 No. 23

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

news from the CENTER DIRECTOR

Goals five, six and seven of Goddard's seven high priority objectives are described below. To read all seven goals, go to the Goddard Homepage at ***http://www.gsfc.nasa.gov***

5. Complete Directorate Strategic Management Plans and Metrics.

We need to complete the Strategic Implementation Plans for each Directorate. The Directorate plans should contain information on the alignment and implementation of Agency and Center plans. They should also include the metrics against which achievements will be measured. An additional element of this goal is the identification of suitable communication activities, ensuring that our employees understand the Agency Strategic Plan, and the Center and Directorate Strategic Implementation Plans.

6. Complete workforce skills assessment, ensuring workforce refocus and training plans are in place and initiated.

The objective of this goal is to make an impartial assessment of our strengths and weaknesses from a workforce capability viewpoint. This assessment will provide management with the information necessary to make informed decisions pertaining to training, hiring, partnering, or contracting out various activities.

7. Ensure successful implementation of the Goddard ISO 9000 Plan.

Consistent with the Agency's commitment, Goddard will identify and provide adequate staff to support our scheduled ISO 9000 implementation plan. This activity should be viewed as an opportunity to improve our mission success. We need to provide the appropriate leadership and support to the ISO 9000 Implementation Team so that their development of our ISO 9000 policies and procedures will enhance, not burden, our missions.

Hubble Identifies Most Luminous Star Known

By Tammy Jones, Office of Public Affairs

Astronomers using NASA's Hubble Space Telescope have identified what may be the most luminous star in the universe, a celestial mammoth which releases up to 10 million times the power of the Sun and is big enough to fill the diameter of the Earth's orbit. The image was taken by a team from the University of California - Los Angeles using the Near-Infrared Camera and Multi-Object Spectrometer (NICMOS).

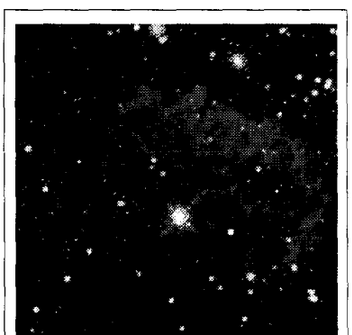


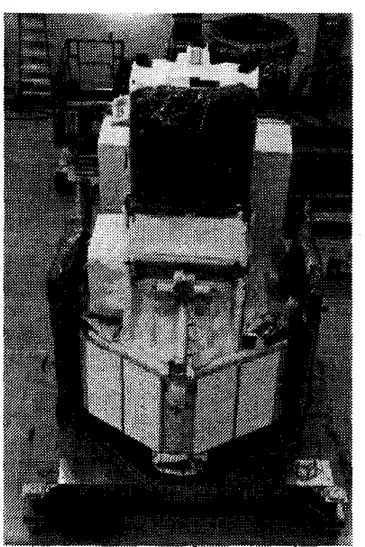
Image of the Pistol Star taken with HST's NICMOS Instrument

Astronomers estimate that the star, called the "Pistol Star," is approximately 25,000 light-years from Earth near the center of our Milky Way Galaxy. It is not visible to the eye because it is hidden behind great dust clouds along the galaxy. For details and images, check out ***http://pao.gsfc.nasa.gov/gsfc/newsroom/flash/flash.htm***

New Launch Date Set for Tropical Rainfall Measuring Mission

By Allen Kenitzer, Office of Public Affairs

NASA and the National Space Development Agency of Japan (NASDA) have set Nov. 18, 1997, at 3:40 p.m. EST (Nov. 19, 1997, 5:40 a.m., JST) as the new launch date for the Tropical Rainfall Measuring Mission (TRMM). The launch was originally scheduled for Oct. 31, 1997 (Nov. 1, 1997, in Japan), from the Tanegashima Space Center in Tanegashima, Japan. The launch delay was caused by a problem with TRMM's companion payload on the H-II Rocket, the Japanese Engineering Test Satellite-VII (ETS-VII).



The TRMM Spacecraft in Tanegashima, waiting to be shipped to the launch sight

The first Earth science satellite dedicated to studying the properties of tropical and subtropical rainfall, TRMM carries microwave and visible/infrared sensors, and the first spaceborne rain radar. Tropical rainfall comprises more than two-thirds of global rainfall. More precise information about this rainfall and its variability is crucial to under-standing and predicting global climate change.

One of the science goals of TRMM is to study how El Nino-related rainfall anomalies correlate with other oceanic and atmospheric processes. "Unfortunately, this delay will limit significantly our ability to study the approach of the peak of the current El Nino condition in the Pacific Ocean," said ***Dr. Joanne Simpson***, project scientist for TRMM at Goddard. "It also will reduce the mission's role in the start of a multifaceted research program in the South China Sea. But, we understand the needs of our important international partner in the TRMM launch, and we will make every effort to get science data flowing as soon as possible."

The TRMM project is part of NASA's Mission to Planet Earth enterprise, a long-term, coordinated research effort to study the total Earth system and the effects of natural and human-induced changes on the global environment. TRMM is managed by Goddard for NASA's Office of Mission to Planet Earth. Visit the TRMM Homepage at ***http://trmm.gsfc.nasa.gov/trmm_office/index.html***, or the El Nino Homepage at ***http://nsipp.gsfc.nasa.gov/enso/***

NASA Receives Approval To Launch Cassini Mission

NASA has received formal approval from the White House Office of Science and Technology Policy (OSTP) to proceed with the launch of the robotic Cassini mission to explore Saturn and its moon Titan. Cassini is scheduled to launch aboard a Titan IV-B/Centaur launch vehicle at 4:55 a.m. EDT on Oct. 13 from Cape Canaveral Air Station, FL. OSTP Director Dr. John Gibbons signed the launch approval.

NASA Administrator Daniel S. Goldin said, "I am confident in the safety of the Cassini mission, and I fully expect that it will return spectacular images and scientific data about Saturn, in the same safe and successful manner as the Voyager, Galileo and Ulysses missions."

Cassini is a cooperative effort of NASA, the European Space Agency (ESA) and the Italian Space Agency, or Agenzia Spaziale Italiana.

Education Showcase Next Week

By Denise Konopka, Code 222

Goddard's first Education Showcase will be held on Thursday, October 16 beginning at 9:00 a.m. This is an internal event for the Goddard community to increase enthusiasm and highlight opportunities for individuals or organizations to connect to existing outreach initiatives and to showcase ongoing educational programs. Both of these objectives support the technological and scientific literacy goal of Goddard's Strategic Implementation Plan.

Center Director ***Joe Rothenberg*** will welcome attendees at 9:00 a.m. in the building 3 auditorium. A Showcase Overview given by ***Dr. Robert Gabrys***, Chief, Goddard Education Office, will follow at 9:15 a.m.

Beginning at 9:30, two special presentations will take place. The first will be delivered by Arlene Ackerman, Chief Academic Office of Washington D.C. Public Schools. Then, Dr. Neil Tyson, Director of the Hayden Planetarium, New York City will speak at 10:00 am. Both will be held in the building 3 auditorium.

Throughout the day, over 75 exhibits, open from 10:30 a.m. - 4:30 p.m. will be showcased at the following sites:

Earth Science -	B. 28 Atrium
Space Science -	B. 26, Rm. 205
Technology -	B. 8
Cross Enterprise System Support-	B. 8
Goddard Library -	B. 21
Visitor's Center-	Educator's Resource Center
Seminars-	B. 1, Rm. E100D and Rm. 103 (hourly, 10:00 a.m. - 4:30 p.m.)
Hands-on Workshop-	B. 8 Auditorium

In addition to the exhibits, there will be 11 seminars on educational outreach programs and one hands-on workshop experience. Although this event is designed for the Goddard workforce, area teachers from Washington D.C. to Baltimore, MD have been invited for the late afternoon seminars and will also visit exhibits as time permits.

A full program will be available on the day of the event, listing the exhibitors and contacts for each program. In the meantime, visit the web site at: ***http://esd/ESDCD/Edu_Show/*** or call the event hotline at: x6-2716.

Committee members are also available for assistance. They are: ***Chan Park***; ***Denise Konopka***; ***Rebecca Elliott***; ***Maybelene Burrell***; ***Leonard Brown***; ***Dr. Robert Gabrys***; ***Dr. Dick Hartle***; ***Paul Hunter***; ***Dr. Nahid Khazenie***; ***Stephen Collymore***; ***Brad Lee***; ***Kathy Nado***; ***Stephanie Stockman***; ***Dr. Jim Theiman***; and ***Deanna Trask***.

Goddard's Changing Workforce Web Site

By Gail Williams, Code 150

A "Changing Workforce Web Site" was developed for the benefit of the on-site Goddard workforce. This intranet site correlates with Goal 4 of the Goddard Strategic Implementation Plan: "To accomplish the Center's mission through a vital and effective workforce."

The "Changing Workforce Web Site" consolidates, in a single location, a wealth of workforce-related information. It has been organized around four key concepts, each correlating to a section: (1) Workforce Vitality; (2) Managing Your Career; (3) Balancing Work and Home; (4) The Big Picture.

The site includes a comprehensive search capability for resident, as well as hyper-linked text. Feedback and suggestions can be provided through an integrated on-line capability. Please visit this intranet site at ***http://workforce.gsfc.nasa.gov/***

The Center is preparing an intranet version of the Goddard homepage. Once operable, the "Changing Workforce Web Site" will be linked to this intranet location.

What's Happening Around the Center

Goddard To Receive Award from PG College

Goddard will receive the Science & Technology Resource Center Award from Prince George's Community College (PGCC) for its contributions in bringing science to the public. The STRC award will be presented to Center Director ***Joe Rothenberg*** at PGCC's 11th Annual Science Engineering Education Day, on October 31. Congratulations Goddard!

SHEDS Is Inaugurated

The first phase of SHEDS, the Spacecraft Hardware environmental Test Database System, was officially inaugurated on September 16, 1997.

SHEDS is a on-line system that will speed up and organize the archival of environmental test information, including test setup and instrumentation responses. This system will improve the availability of test data to project and test engineers as well as individuals evaluating test effectiveness. When finalized, SHEDS will include data from Structural, Electromagnetic, and Thermal tests.

SHEDS is the product of a combined effort between Code 754, Code 302, and Code 251. For more information please contact Scott Milne 6-7668 or Carlos Gomez 6-8748.

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

- Presentation on Visual Thinking - Bldg. 3 Aud. Oct. 15, 11:30 a.m. (Dr. Temple Grandin)
- Education Showcase Oct. 16, 9:00 a.m.
- Scientific Colloquium - Bldg. 3 Aud. Oct. 17, 3:30 p.m. (Thomas Crowley)
- Director's All Hands Meeting - Bldg. 3 Aud. Oct. 17, 2:00 p.m. (Mandatory for Branch Heads and Above)
- Engineering Colloquium - Bldg. 3 Aud. Oct. 20, 3:30 p.m. (Peter Kander)
- Director's Lobby Meeting - Bldg. 32 Oct. 30, 3:00 p.m. (Rescheduled from Oct. 22)

PROJECT GODDARD

http://www.gsfc.nasa.gov

Below are recently announced titles within the new Systems, Technology and Advanced Concepts Directorate (STAAC):

Bonnie Norris, Deputy Chief (Designee), Mission Integration & Planning Division

Richard Barney, Manager (Designee), Instrument Development, Mission Integration & Planning Division

Tom Taylor, Manager (Designee), Mission Development, Mission Integration & Planning Division

Eduardo Torres, Manager (Designee), Mission Enabling, Mission Integration & Planning Division

***These titles are corrections to those printed in Issue 21**

http://www.gsfc.nasa.gov

staff

Executive Editor: Darlene Ahalt
Managing Editor: Deanna O'Donnell
Senior Photographer: Mark DeBord
Guest Photographer: Jane Love
Submission deadline is Thursday each week (submissions subject to editing)
For additional information contact: Deanna O'Donnell 301•286•0918

Subscription Information:
GSFC & WFF Mailing List
Offsite/Commercial Subscriptions
Retiree Subscriptions

Contact:
Gweny Durrah, Code 239
Darlene Ahalt, Code 130
Bob Wilson 301•422•8334

National Aeronautics and Space Administration
Goddard Space Flight Center

GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia Oct. 1997 Vol. I No. 24

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

NASA Selects Rapid Spacecraft Contractors

By Tammy Jones, Office of Public Affairs

Goddard Space Flight Center has awarded multiple Indefinite Delivery/Indefinite Quantity contracts for satellite core-systems to support NASA's space science, Earth science and technology needs. The awarded contracts will be open for use by all NASA Centers and other Government agencies furthering NASA's Contract Consolidation Initiative.

"We're really excited about the start of a revolutionary 'new way of doing business' in the acquisition of spacecraft which takes advantage of previous government and industry investments," said ***Joseph Rothenberg***, Director of Goddard. "This approach promises our scientific customers an opportunity for far quicker and cheaper access to space. We have already seen evidence of high demand for this service."

As NASA identifies missions, the contract holders, listed below, will be given an opportunity to compete for providing the spacecraft. All mission specific spacecraft will be awarded under firm fixed-price delivery orders with delivery expected between 18 and 36 months after placement of the delivery order. The placement of orders is expected to take between 30 and 90 days, improving the lead time from identification of a need to the placement of a contract to begin work toward the delivery and launch of the satellite.

The following companies were awarded contracts:

Ball Aerospace Systems Division, Boulder, CO
Lockheed Martin Missiles and Space, Sunnyvale, CA
Orbital Sciences Corporation, Germantown, MD
Space Systems/Loral, Palo Alto, CA
Spectrum Astro, Gilbert, AZ
Surrey Satellite Technology Ltd., UK
Swales Aerospace, Beltsville, MD
TRW, Inc., Redondo Beach, CA

Each contract will have a minimum value of $100,000 and a maximum value of $755 million, with a three year ordering period. The first two spacecraft delivery orders are expected to be placed in the first quarter of fiscal year 1998.

CURRENT news

- A seven-year journey to Saturn began on Wednesday, October 15 at 4:43 a.m. EDT as the Cassini orbiter and its attached Huygens probe launched aboard a Titan IVB/Centaur. View the launch at: ***http://www.ksc.nasa.gov***

- Three-time Shuttle veteran Kenneth D. Cockrell has assumed the role of Chief of the Astronaut Office, replacing Robert D. Cabana.

- The Mars Global Surveyor's orbit has been raised temporarily and the aerobraking process suspended while the flight team analyzes data to determine why one solar panel exhibits unexpected motion.

- On Thursday, October 9, the Senate passed the VA-HUD-IA Conference agreement by voice vote, the House had adopted the measure on October 8. The conference report language (H. Rept 105-297) can be downloaded as a text file or as a PDF file by going to the following url: ***http://www.hq.nasa.gov/office/legaff***

To read about other exciting news stories, go to the Goddard Homepage at http://www.gsfc.nasa.gov and choose FLASH

EET Makes Students A Part of NASA's Science and Technology Enterprise

By Jean Sauber, Laboratory for Terrestrial Physics

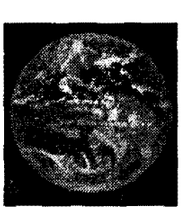
Since 1984, NASA has been making precise geodetic measurements to assess earthquake hazard associated with the subduction zone process in Alaska. Initially these measurements (very long baseline interferometry (VLBI), 1984-1990 and global positioning system (GPS), 1991-1997) required the expertise of professional surveyors, engineers and scientists.

For the inhabitants of Alaska, understanding the hazards and underlying physical processes associated with earthquakes has immediate personal relevance: large earthquakes occur yearly; great earthquakes have occurred during the lifetime of many residents; and the tsunami warning system in coastal towns is a reminder of the devastation caused by earlier Alaska-generated tsunamis.

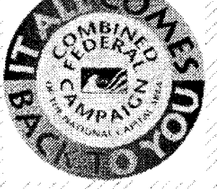
In 1995, NASA began the Educate, Engage, Transfer (EET) outreach program. Structured to educate and train students, the EET program directly engages them in NASA's scientific and technological enterprise. Kodiak Island High School Earth science teacher, Eric Linscheid, and seven high school students joined NASA researchers to conduct GPS measurements at seven sites on the island. In 1997 four additional teachers and their students from across southern Alaska joined the program: Leroy Key/ Darla Church and six students from Cordova; John Strang and four students from Valdez; Gene Crow and five students from Glennallen; and David Wellman and one student from Kenny Lake.

Grants were given to the five teachers and each teacher formulated their own program which covered the measurement requirements. By evaluating the GPS measurements and transferring the knowledge they gained, these students are making a contribution to those people who care most about earthquake hazard, the local inhabitants.

Employees Can Follow the Development of El Niño



The NASA Web offers internet users a chance to follow the development of the El Niño, an occasional warming of surface waters in the central equatorial region of the Pacific Ocean. Goddard's web offers recent El Niño images from a variety of satellites. To view a variety of combined color images taken by NOAA's AVHRR sensor, and JPL's TOPEX/Poseidon instrument, go to the following web site: ***http://nsipp.gsfc.nasa.gov/enso/nino/***



The Combined Federal Campaign (CFC) began on October 13 and will run through November 7. You can help those in need by making a contribution. Your donation does make a difference. Visit Goddard's CFC Homepage at ***http://pao.gsfc.nasa.gov/gsfc/cfc/cfc.html***

Goddard and Headquarters Battle It Out On The Softball Field

Front Row (L to R): Cindy Jones, Karen Flynn-Newlon, Kelly Carter, Jill Griffin, Christine Collins, Dorene Kramer, Cynthia Spivey, Danielle Vigneau; **Back Row (L to R):** Al Diaz, Kathy Nado, Dan Krieger, Dennis Kundin, Mark Walther, Jim Becker, Tom Russell, Jamie King; (Not Shown: Aprille Ericsson-Jackson)

The Goddard/Headquarters Softball Championship was held at the Goddard softball field late last month. This third annual grudge match, championed by Code AI/Jack Dailey and Code 100/***Joe Rothenberg***, is also known as the "Toilet Bowl" series. Prior to this year's friendly match, the series was tied at 1-1: Goddard was the big winner in '96 and lost in the inaugural Toilet Bowl game in '95.

As game time approached, the friendly barbs flew; however, with the first pitch, a strong Goddard lineup came out with their game faces on and began the first inning with four quick runs. While the suspense built in anticipation of the Headquarters lineup stacked with Inspector General personnel, the Goddard defense rose to the challenge, taking a commanding 11-4 lead. By the end of the game, Goddard had shellacked the Headquarters team with an impressive 17-7 win.

A quick review of the final box score revealed the leaders of Goddard's strong, offensive attack: ***Jim Becker***, Code 210; ***Jamie King***, Code 214; ***Mark Walther***, Code 250; ***Aprille Ericsson-Jackson***, Code 712; and ***Jill Griffin***, Code 725. The losers were gracious in defeat and the teams spent a companionable time "whacking" crabs after the game.

Goddard Hosts GSRP Symposium

By Beverly Floyd, Code 160

Recently, thirty-five Graduate Student Researchers Program (GSRP) participants arrived for Goddard's Sixth Annual GSRP Symposium. The GSRP brings top-quality graduate students into collaborative research arrangements with NASA scientists and engineers through a highly competitive fellowship program. The Graduate Student Researchers Program is designed to provide direct support (normally 3 years) for full-time students and to cultivate research ties to the academic community and to support a culturally diverse group of students pursuing advanced degrees in science and engineering. Fellows selected by GSFC conduct research at their respective host institutions in the areas of research consistent with the mission of Goddard to expand knowledge of the Earth and its environment, the solar system and the universe through observations from space. There are currently 43 Fellows participating in the program. The application deadline for 1998 is February 2, 1998. Please contact the Office of University Programs (6-9690) or visit our web page at ***http://university.gsfc.nasa.gov/university.html*** for further information about this dynamic program.

Joe Rothenberg welcomes GSRP Fellows and Faculty

The GSRP selected Fellows must spend a period of time in residence at the Center. The Symposium conducted provides the Fellows with an opportunity to consult with their NASA Technical Advisor, network, and learn more about NASA and the Goddard Space Flight Center. The Fellows spend one day learning about the research being conducted by each other and one and a half days learning about the mission, programs, goals, and exciting new developments taking place here at Goddard. Highlighting this year's Symposium was the Director of University of Programs, ***Dr. Gerald Soffen's***, presentation on the plans for a new NASA Astrobiology Institute.

COMING Nov. 3rd

Goddard's Intranet - Employee Homepage

In response to the Center Director's desire to enhance communications, a secured website just for Goddard employees has been developed. The webpage will premiere on Monday, November 3rd. It includes such exciting features as G-Whiz (a browse feature for Goddard services, organizations, and websites); links to a new Cafeteria Homepage, GEWA, Credit Union, Visitor Center, Goddard Directives (Goddard's Seven High Priority Objectives, Goddard's Plan for Implementing NASA's Strategies, Annual Report and ISO 9000); Daily Announcements, the Weekly Goddard Newsletter, listing of news groups at Goddard; and so much more. We've taken the Goddard Phonebook and provided the information in an easy to reference format for you to browse. We look forward to you bookmarking the address and using it daily. Watch this newsletter for announcement of the URL.

This site was developed as a cooperative effort of the Office of Public Affairs, the Center Network Environment (CNE), the Goddard Library and the Information Technology and Services Division (ITSD).

For questions contact ***gsfcpao@pop100.gsfc.nasa.gov***

staff

Executive Editor: Darlene Ahalt
Managing Editor: Deanna O'Donnell
Senior Photographer: Mark DeBord
Guest Photographer: Pat Izzo, Debbie McCallum
Submission deadline is Thursday each week. (submissions subject to editing)
For additional information contact: Deanna O'Donnell 301•286•0918.

Subscription Information:
GSFC & WFF Mailing List
Offsite/Commercial Subscriptions
Retiree Subscriptions

Contact:
Gweny Durrah, Code 239
Darlene Ahalt, Code 130
Bob Wilson 301•422•8334

National Aeronautics and Space Administration
Goddard Space Flight Center

GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia Oct. 1997 Vol. I No. 25

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

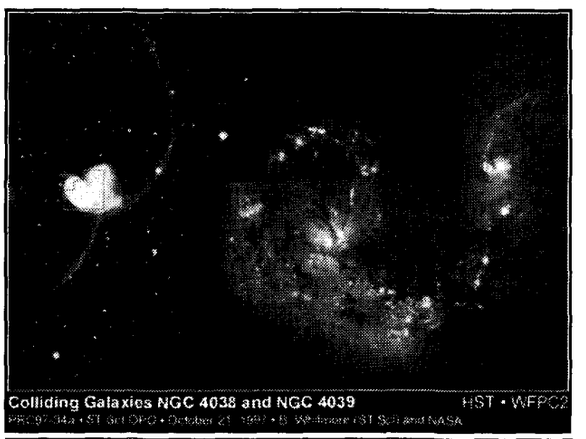
Hubble Reveals the Nearest Known Colliding Galaxies

NASA's Hubble Space Telescope has uncovered over 1,000 bright, young star clusters bursting to life in a brief, intense, brilliant "fireworks show" at the heart of a pair of colliding galaxies. "The sheer number of these young star clusters is amazing," said Brad Whitmore of the Space Telescope Science Institute (STScI). "The discovery will help us put together a chronological sequence of how colliding galaxies evolve. This will help us address one of the fundamental questions in astronomy: why some galaxies are spirals while others are elliptical in shape."

"These spectacular images are helping us understand how globular star clusters formed from giant hydrogen clouds in space," adds Francois Schweizer of the Carnegie Institution of Washington, Washington, D.C. "This galaxy is an excellent laboratory for studying the formation of stars and star clusters since it is the nearest and youngest example of a pair of colliding galaxies."

By probing the Antennae galaxies (called the Antennae because a pair of long tails of luminous matter formed by the encounter resembles an insect's antennae) and some of the other nearby galactic-scale collisions, Hubble has provided astronomers with insight into star formation.

Earlier Hubble pictures show that nearly a third of very distant galaxies, which existed early in the history of the universe, appear to be interacting galaxies, like the Antennae. In particular, the Hubble Deep Field (a "long-exposure" image from Hubble looking at galaxies far back into time), uncovered a plethora of odd-shaped, disrupted-looking galaxies. They offer direct visual evidence that galaxy collisions were more the rule than the exception in the early days of the universe. These distant galaxy collisions are too faint and too small to study in much detail. Astronomers say we are fortunate to have such a nearby example as the Antennae to study, since collisions between galaxies are relatively rare today. "The degree of detail in these images is astounding, and represents both a dream come true and a nightmare when it comes to the analysis of such a large amount of data," Whitmore says.



Left: Ground-based telescopic view of the Antennae galaxies; Right: Image taken by Hubble's Wide Field Planetary Camera.

In addition to providing a window into how stars and galaxies formed in the dim past, the Hubble views might also offer a glimpse of the future fate of Earth's home galaxy, the Milky Way, when it either sideswipes or plows head-on into the neighboring Andromeda galaxy billions of years from now.

The Hubble observations of the Antennae galaxies, as well as several other nearby colliding galaxies, were conducted by Whitmore (STScI) and co-investigators Francois Schweizer and Bryan Miller (Department of Terrestrial Magnetism, Carnegie Institution of Washington), and Michael Fall and Claus Leitherer (STScI) over the past several years.

Hubble's resolution and sensitivity allowed the team to uncover over 1,000 exceptionally bright young star clusters, sometimes called super star clusters, within the Antennae -- the prototypical galaxy smashup. Ground-based telescopes were only able to see the brightest of these clusters, and even in these cases were not able to show that the clusters were very compact with the sizes of normal globular clusters.

Observing other galaxy collisions, the Hubble team discovered the presence of young star clusters which were very bright and blue in the case of ongoing collisions, but had faded to become fainter and redder for the older merger remnants. This allowed them to place the snapshots of galaxy collisions into a chronological sequence.

The Space Telescope Science Institute is operated by the Association of Universities for Research in Astronomy, Inc. (AURA) for NASA, under contract with the Goddard Space Flight Center. The Hubble Space Telescope is a project of international cooperation between NASA and the European Space Agency (ESA). To view the above and other exciting images, visit News Flash at ***http://pao.gsfc.nasa.gov/gsfc/newsroom/flash/flash.htm***

NASA Selects Two Small Explorer Missions and One Mission of Opportunity for Development

NASA Headquarters has recently announced the selection of two new science missions to investigate solar flares and the evolution of galaxies and a mission of opportunity which will provide stereo imaging of the Earth's magnetosphere. The missions were selected under the Small Explorers (SMEX) program managed by Goddard for NASA Headquarter's Office of Space Science.

The first mission, High Energy Solar Spectroscopic Imager (HESSI), will observe the Sun to study particle acceleration and energy release in solar flares. The Principal Investigator (PI) is Dr. Robert P. Lin, University of California, Berkeley. HESSI is scheduled for launch in 2000 aboard an Orbital Sciences Corp. Pegasus rocket and will cost $67 million.

The second mission, Galaxy Evolution Explorer (GALEX), will use an ultraviolet telescope during its two-year mission to explore the origin and evolution of stars and galaxies. The PI is Dr. Christopher Martin, California Institute of Technology, Pasadena. GALEX will detect millions of galaxies out to a distance of billions of light years and also will conduct an all-sky ultraviolet survey. The mission will cost $65 million and will be launched aboard a Pegasus rocket in 2001.

Selected as an alternate mission in case one of the primary missions does not progress to launch, the Broadband Observatory for Localization of Transients (BOLT) mission will pinpoint locations of gamma ray bursters, the most energetic objects known in the universe. BOLT, which will cost $66 million, will detect the positions of gamma ray bursters and immediately radio this information to ground-based telescopes.

The SMEX program provides frequent flight opportunities for highly focused, relatively inexpensive science missions that typically weigh around 500 pounds or less.

Selected as a mission of opportunity, the $15 million Two Wide-Angle Neutral-Atom Spectrometers (TWINS) mission will be launched in 2001 or 2003 aboard a currently undesignated U.S. Government mission. TWINS will provide stereo imaging of the Earth's magnetosphere, the region surrounding the planet controlled by its magnetic field. TWINS will enable three-dimensional global visualization of this region, which will lead to greatly enhanced understanding of the connections between different regions of the magnetosphere and their relation to the solar wind. Dr. David McComas, Los Alamos National Laboratory, NM, is the Principal Investigator.

Visit the SMEX Homepage at:
http://sunland.gsfc.nasa.gov/smex/

Goddard and Wallops to Participate in Coqui Dos Campaign


A Wallops Black Brant Sounding Rocket

On Wednesday, October 22, Center Director ***Joe Rothenberg*** signed a Memorandum of Understanding (MOU) bwtween Goddard and the Puerto Rico Economic Development Administration in support of the Coqui Dos Campaign.

Coqui Dos, a continuation of a 1992 study, will use 11 suborbital rockets to examine atmospheric turbulence, composition, and electrical properties. Goddard, Wallops, the National Science Foundation, and many other organizations including a variety of universities are among the campaign participants. The Coqui Dos experiments will be conducted in Puerto Rico, at the Camp Tortuguero Recreation Area.

NASA selected Puerto Rico due to a combination of factors, including the fact that the latitude is ideal for these measurements and the unique opportunity to coordinate these launches with operations of the Arecibo Radar Facilities which are essential to this mission. The Coqui Dos launches will be carried out during the nighttime hours when ionospheric instabilities are present in the high altitude region above Puerto Rico. The suborbital rockets to be used are the Black Brant V, the Taurus-Orion, the Terrier-Orion, and the Terrier-Black Brant.

Founder of NASA College Scholarship Fund Passes Away

Pulitzer Prize winning author, James A. Michener, died at his home in Austin on Thursday, October 16 at the age of 90. Mr. Michener was the author of 48 books, including Tales of the South Pacific and Space.

Mr. Michener and his wife, Mari, contributed over $110,000 to establish the NASA College Scholarship Fund, Inc., in 1982, and subsequently made a $25,000 contribution to the fund in 1991. He gave as his reasons for the gifts that he held the people of NASA in very high esteem for their good work through the years and that he thought it important for education to go forward in this country. He specifically requested that the scholarships be awarded to the children of NASA employees who were pursuing science or engineering degrees. He and Mari stated that they had made significant contributions to the arts and that they felt strongly that students of the sciences should be supported in their endeavors. He was not disappointed in the quality of the recipients because in 1991, at a gathering of the 18 recipients, 8 of the 9 who had graduated were pursuing masters or doctorates. A member of the Board of Directors of the Scholarship Fund at the time, Harold Stall, stated that "this may be the most important spinoff we have—repopulating the science and engineering community of the country."

PROJECT GOLDARD

http://www.gsfc.nasa.gov

There will be a make-up session of the STAAC All Hands Meeting (originally presented on October 3) for those who did not attend the original presentation. The session is scheduled as a "Lunch and Learn" (bring your lunch) and will be held on Wednesday, October 29 at 12:00 - 1:00, in Building 23, Room S300 (STAAC Directorate conference room).

KidSat Experiment on STS-86

By Kevin Boone, Office of Public Affairs

Goddard and approximately 15 students from Canton Middle School in Baltimore were among the participants around the country that recently completed the first phase of the final pilot mission of KidSat. The KidSat program provides students the opportunity to command a shuttle-borne digital camera to take images of the earth that can be used later in classroom learning activities.


Kidsat Photo of Welkom, South Africa

Prior to the launch of the recently completed Space Shuttle's STS-86 mission, the Canton students were given a task by Maryland State Senator Perry Sfikas who charged the students with obtaining images of the Chesapeake Bay to study the bay's ecology. Unfortunately, during the mission, there were no opportunities to request Chesapeake Bay images. To continue with the senator's request, the students will use images of the Chesapeake from other shuttle flights, and will present their findings to the Maryland General Assembly in January 1998. In addition to the Chesapeake images, the students will be studying archived shuttle and environmental satellite imagery in their analyses. In the second phase of the Kidsat project, the objective will be to engage students in research using their selected images.

The Canton KidSat teachers, Jimmy Tadlock and Lord Seyon, participated in a two-week long training workshop at Goddard. The focus of the workshop was to integrate Mission To Planet Earth and Earth Systems Science into the KidSat curriculum. Presentations by ***Dr. Nahid Khazenie*** (Code 170), ***Dr. Ted Engman*** (Code 974), ***Dr. Claire Parkinson*** (Code 971), and Dr. Farzhad Mahootian (Gonzaga College High School, Washington, D.C.), provided the teachers a strong foundation on which to build interdisciplinary instructional strategies for integrating the images in daily teaching activities.

Community Outreach Fair - October 31 Join Together to Lend a Hand

Have you ever wanted to lend a helping hand to someone in need, but didn't know where to start, who to call, or how big a commitment it would be? Come to the Outreach Fair in building 8 from 10:00 a.m. to 1:00 p.m. on October 31. Here is your opportunity to talk to volunteer coordinators from a variety of community service organizations. Because many schools are now requiring that students participate in community service, the Outreach Fair may help your student find a place to fulfill this requirement. For a listing of participating volunteers, visit the following web site:
http://pao.gsfc.nasa.gov/gsfc/service/outreach/outreach.htm

COMING Nov. 3rd: Goddard's Intranet - Employee Homepage
In response to the Center Director's desire to enhance communications, a secured website just for Goddard employees has been developed. The webpage will premiere on Monday, November 3rd. Access will be provided to the following offsite domains: *gsfc.nasa.gov; *wff.nasa.gov; *nascom.nasa.gov; * hst.nasa.gov; *sewp.nasa.gov; *eos.nasa.gov; *giss.nasa.gov; and *wstc.nasa.gov. For those dialing in from home, if you use the annex, you'll be able to see the pages. The homepage includes such exciting features as G-Whiz (a browse feature for Goddard services, organizations, and websites); links to a new Cafeteria Homepage; GEWA; Credit Union; Visitor Center; Goddard Directives; Daily Announcements; the Weekly Goddard Newsletter; listing of news groups at Goddard; and so much more. Watch this newsletter for announcement of the URL. For questions contact ***gsfcpao@pop100.gsfc.nasa.gov***

staff

Executive Editor: Darlene Ahalt
Managing Editor: Deanna O'Donnell
Senior Photographer: Mark DeBord
Submission deadline is Thursday each week. (submissions subject to editing)
For additional information contact: Deanna O'Donnell 301•286•0918.

Subscription Information:
GSFC & WFF Mailing List
Offsite/Commercial Subscriptions
Retiree Subscriptions

Contact:
Gweny Durrah, Code 239
Darlene Ahalt, Code 130
Bob Wilson 301•422•8334

National Aeronautics and Space Administration
Goddard Space Flight Center

GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia Oct. 1997 Vol. I No. 26

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

NASA Joins the Fight Against Breast Cancer and Other Women's Illnesses

By Tammy Jones, Office of Public Affairs

Most adults know someone who has fought or will have to fight breast cancer. It is a lonely journey for those who travel that road, but many organizations, including NASA, are joining the fight against the disease. NASA was applauded last week by the Congressional Women's Caucus for its efforts to fight breast cancer by focusing research and applying technology to the medical field.

In the spirit of Breast Cancer Awareness month, Administrator Daniel S. Goldin has unveiled dramatic new technological developments affecting women's health. The technologies, which grew out of spin-offs from the U.S. space and aeronautics program, will usher a new era in the detection and treatment of health problems such as breast cancer and osteoporosis. "As a husband, father of two daughters, and a grandfather, few subjects are as important to me as women's health," Goldin said. "That is why I am so proud of how NASA technologies, originally developed for our space and aeronautics programs, improve health care for women, men and children around the world."

Goldin was keynote speaker at a luncheon sponsored by the Congressional Caucus on Women's Issues discussing "Space Technology Contributions to Breast Cancer Research." He highlighted several research and technology programs that help scientists and doctors understand, diagnose and treat breast cancer.

Carolyn Krebs, Code 442, also spoke at the luncheon about a new technology originally developed for the Hubble Space Telescope's (HST) Space Telescope Imaging Spectrograph (STIS), the Charged Couple Device (CCD). CCDs are silicon chips that convert light directly into electronic or digital images to observe stars, galaxies and other astronomical objects in visible and ultraviolet light. Goddard contracted with Scientific Imaging Technologies, Inc. (SITe), Beverton, Oregon to develop the CCDs for STIS and the technology was then commercialized for medical use by the LORAD subsidiary of the Trex Medical Corporation, Danbury, Conn. The new technique, called stereotactic large-core needle biopsy, enables doctors to easily detect suspicious spots in breast tissue. The precision in locating the exact spot allows doctors to further analyze the tissue using a needle rather than traditional surgery. This procedure is less painful and traumatic for the patient.

"To me, no scarring and minimal trauma are the most important benefits of this new procedure," said Krebs. "As one doctor noted, the happiest woman in the world is the one who has a needle core biopsy after having previously undergone an open, surgical biopsy. No scarring, no disfigurement--I think that's what makes it all worthwhile." A traditional surgical biopsy requires a one-week recuperation period, involves a significant amount of pain and scarring, and costs several thousand dollars more than the core biopsy technique. In addition, the new procedure allows tissue sampling to be done in a radiologist's office.

In the breast imaging system, a special phosphor enables the CCD to convert x-rays to visible light, allowing the system to "see" with x-ray vision. The thin and highly sensitive CCD is now leading the field of digital breast imaging technology, and improving the lives of women who undergo breast biopsies. Also, last week, NASA and the Department of Health and Human Services (HHS) signed an agreement establishing a cooperative framework to identify, develop and transfer NASA technologies to benefit women's health. Major areas of concern are cancer, reproductive health, pregnancy, osteoporosis and education.

Astronomers Find Indicator of Rate of Consumption of Matter by Black Holes

By William Steigerwald, Office of Public Affairs

Astronomers working with the Japanese/NASA Advanced Satellite for Cosmology and Astrophysics (ASCA) have found an indicator of the rate at which giant black holes at the centers of distant galaxies are swallowing matter from their surroundings. The indicator consists of x-ray emissions from very energetic iron atoms swirling in toward the edge of the black hole.

"Now, we can observe quasars and other Active Galactic Nuclei and explore what's happening in the immediate environs of their black holes," said ***Dr. Paul Nandra***. Nandra leads a team of astrophysicists at Goddard's Laboratory for High Energy Astrophysics that published its results recently in the rapid release web pages of the Astrophysical Journal Letters.

ASCA was used to observe a so called x-ray "emission line" produced by iron atoms close to giant black holes believed to be lurking in the centers of these remote galaxies. "This black hole indicator can be thought of as the final cry of doomed matter as it slides down the throat of a black hole," said Nandra. "We found that as black holes swallow material at a greater rate, the x-ray emission lines become dimmer and less distorted." As a result, what he calls "this vanishing emission line" was adopted by the research team as an indicator of black hole material consumption. "The new findings, like all discoveries, need follow-up with further observations and study, but this is a really exciting and useful result," added ***Dr. Richard Mushotzky***, a senior member of Goddard's research team.

Galaxies are immense collections of billions of stars and interstellar matter held together loosely by their mutual gravity. A typical black hole is the collapsed core of a massive star that has exploded. The gravitational field near it is so intense that nothing, not even light, can escape. Much larger black holes, whose origins are uncertain, are believed to be the powerhouses in the hearts of certain distant galaxies with very bright centers. These bright centers, called Active Galactic Nuclei (AGN) are what the research team studied with the ASCA satellite. The researchers observed almost 40 AGN to establish the x-ray emission line as a reliable indicator of the prodigious rates at which the black holes are consuming matter from their surroundings.

CURRENT news

- Lee B. Holcomb has been named Chief Information Officer (CIO) at NASA Headquarters, Washington, DC. He replaces Ronald S. West, who retired earlier this year.

- Congress cleared for the President HR 2158, the FY 1998 VA-HUB-Independent Agencies Appropriations Bill; NASA was provided the following appropriations amounts (in millions): Human Space Flight - $5506.5; Science Aeronautics and Technology - $5,690.0; Mission Support - $2433.2; and Inspector General - $18.3, for a total NASA budget of $13,648.0.

- Goddard is at $49,169 for CFC contributions. This is 11.3% of its goal of $435,000.

Goddard's 1st Education Showcase Demonstrates Ways in Which the Center Helps the Education Community

Dr. Robert Gabrys gives education showcase overview

Goddard hosted its first Education Showcase on October 16. This showcase was designed to give Goddard employees first-hand information on what their colleagues at the Center have been doing in terms of assisting the education community, kindergarten through college, by using Earth and space sciences knowledge and data to enhance scientific and technological literacy. The showcase opened with a welcome from ***Joe Rothenberg*** followed by an overview given by ***Dr. Robert Gabrys***, Chief of the Goddard Education Office. Following the overview were remarks from Neil De Grasse Tyson, Director of the Hayden Planetarium and Visiting Research Scientist and Lecturer at Princeton University Department of Astrophysical Sciences, and Ms. Arlene Ackerman, Chief Academic Officer for the District of Columbia Public Schools.

Ron Ernst of the Education Office demonstrates a ring-wing rocket

The showcase featured a variety of exhibits, seminars and workshops in the areas of Earth science, space science and technology. The exhibits showcased included the Goddard Educator Resource Center, Mission to Planet Earth (MTPE) Education and Outreach, The NASA Space Experiment Module, Impacting the Science Curriculum, Lunar Sample Certification, and more.

Cathy Dankewicz explains a model of the Space Experiment Module (SEM) carrier

"The Education Showcase was viewed as a means of providing support to Goddard personnel in *understanding how Goddard's lines of business are being translated for use by educators from kindergarten through graduate school to meet national, state and local curriculum standards; *identifying areas and programs in which an employee might wish to participate as part of his/her outreach efforts; and *enhancing technological and scientific literacy inherent in Goal 3 of Goddard's Strategic Implementation Plan," said ***Dr. Gabrys***. "Initial feedback is that we were successful in each of these arenas. The Education Office extends its offer of support to the projects as they develop their education initiatives. We look forward to an exciting and expanding FY98."

Health Benefits Open Season

The Federal Employees Health Benefits Open Season will begin November 10, 1997, and run through December 8, 1997. The Enrollment Information & Plan Comparison Chart booklet for 1998 will be distributed to all employees after the Open Season begins. Individual plan brochures are arriving daily; however, it is expected that all Open Season material will be available in Bldg. 1, Room 160, the week of November 10. Wallops Flight Facility employees Open Season materials will be available in the Wallops Personnel Office in Bldg. F160.

In addition, mark your calendars now to attend the 14th Annual Health Benefits Fair to be held Wednesday, November 19, 1997, in the Bldg. 8 Auditorium from 11:00 a.m. to 2:00 p.m.

COMING Nov. 3rd: Goddard's Intranet - Employee Homepage In response to the Center Director's desire to enhance communications, a secured website just for Goddard employees has been developed. The webpage will premiere on Monday, November 3rd. Access will be provided to the following offsite domains: *gsfc.nasa.gov; *wff.nasa.gov; *nascom.nasa.gov; *hst.nasa.gov; *sewp.nasa.gov; *eos.nasa.gov; *giss.nasa.gov; and *wstc.nasa.gov. For those dialing in from home, if you use the annex, you'll be able to see the pages. The homepage includes such exciting features as G-Whiz (a browse feature for Goddard services, organizations, and websites); links to a new Cafeteria Homepage; GEWA; Credit Union; Visitor Center; Goddard Directives; Daily Announcements; the Weekly Goddard Newsletter; listing of news groups at Goddard; and so much more. Watch this newsletter for announcement of the URL. For questions contact gsfcpao@pao10.gsfc.nasa.gov

Cassini Update

The Cassini spacecraft is operating as planned while it continues on its journey to Saturn. "Spacecraft and mission operations have been exceptional," said Cassini Deputy Program Manager, Ronald Draper.

A major milestone was met last week with the first checkout of the European Space Agency's Huygens Probe. While results are still being evaluated, initial reports from the Huygens Probe Operations Centre in Darmstadt, Germany revealed that the test data results are optimal. To follow the Cassini mission, check out the following url: ***http://www.jpl.nasa.gov/cassini/***

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

Upcoming Events

- Scientific Colloquium - David Pinkerton (Bldg. 3 conf., 3:30 p.m.) — Nov. 7
- Scientific Colloquium - Robert Bakker (Bldg. 3 conf., 3:30 p.m.) — Nov. 14
- Engineering Colloquium - Nancy Petrosky (Bldg. 8 conf., 3:30 p.m.) — Nov. 17
- Center Director's Colloquium - Phil Smith (Bldg. 3 conf., 3:00 - 4:30 p.m.) — Nov. 19
- Engineering Colloquium - Kirsten Voss (Bldg. 3 conf., 3:30 p.m.) — Nov. 24

staff

Executive Editor: Darlene Ahalt
Managing Editor: Deanna O'Donnell
Senior Photographer: Mark DeBord
Submission deadline is Thursday each week. (submissions subject to editing)
For additional information contact Deanna O'Donnell 301•286•0918

Subscription Information:
GSFC & WFF Mailing List
Offsite/Commercial Subscriptions
Retiree Subscriptions

Contact:
Gwenty Durrah, Code 239
Darlene Ahalt, Code 130
Bob Wilson 301•422•8334