National Aeronautics and Space Administration
Goddard Space Flight Center

GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia June 1997 Vol. I No. 5

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GODDARD HOSTS FOCUS ON OUR FUTURE DAY
by Gail Williams, Code 150

Joe Rothenberg and Loretta LaRoche looking dapper in their "leadership" hats

On Tuesday, May 20, all Goddard employees had a unique opportunity to "focus on our future." Several thousand employees took advantage of this chance to learn about the change process. The best attended workshop of the day was unequivocally the stress management presentation by Loretta LaRoche. Consistent with the stress management focus, a stress measuring tool that doubles as a ruler was distributed to workshop participants. I would venture a guess that the stress levels measured before and after Ms. LaRoche's presentation would be noticeably different!

After a rainy start to the day on Tuesday, the weather was sunny and pleasant for the duration of the activities—just in time for lunch time food and fun on the mall area. As usual, food and fun were an effective draw.

Tommy Ivey, the strolling magician performs magic tricks for folks on the mall

Workshop participants were asked to provide feedback via a survey. The results are being evaluated. A post-event survey will be administered, via the web in the late June/early July time frame, to both measure the longer term benefits of the day's workshops and obtain ideas for enhancing future activities of this nature.

UPCOMING events

The John C. Lindsay Memorial Lecture will be held on June 6 in the building 3 auditorium at 3:30 p.m. ***Dr. Hasso B. Niemann*** of the Atmospheric Experiment Branch, has been selected to receive the John C. Lindsay Award following the final lecture of the Scientific Colloquium series. The lecture, "Life in Extreme Environments," will be presented by Professor Thomas Gold of Cornell University. Coffee and tea will be served courtesy of GEWA. Everyone is invited to attend.

The Goddard Annual Picnic will be held on June 7 from 12 noon to 4:00 p.m. at the Goddard Rec Center. All Goddard employees (civil service & contractor), retirees, and their families are invited. Come enjoy an afternoon of fun and food! There will be lots of activities/games and a delicious menu of BBQ chicken, fresh-grilled burgers and hot dogs, baked beans, assorted salads, beer/wine/sodas/juice, and various snacks. 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. (Sponsored by the Goddard Employees Welfare Association and NASA HQ Exchange Council).

NAIS
NASA Acquisition Internet Service

NASA TEAM HONORED NATIONALLY FOR ACHIEVEMENTS IN GOVERNMENT PROBLEM SOLVING

The NASA Acquisition Internet Service (NAIS) was recognized recently by the Ford Foundation and Harvard University for its original work in distributing NASA acquisition information to contractors.

The NAIS is the federal government's first Agencywide acquisition service on the Internet. The NAIS team established this Agencywide service that delivers NASA's acquisition documents to industry over the Internet while reducing paperwork and saving time and money. Companies get the electronic version of a solicitation immediately upon release, avoiding several days of document reproduction and mail time.

The NAIS was chosen as a semi-finalist in the Innovations In American Government Awards Program sponsored by Harvard and the Ford Foundation. Only 99 of the 1540 applicants were chosen as semi-finalists.

The Innovations Program's goal is to find and celebrate outstanding examples of creative problem-solving in the public sector. Since it began 11 years ago, the program has recognized 180 innovative programs and has awarded $12 million in Ford Foundation grants.

The NAIS team has been nominated for the finalist selection. Twenty-five finalists will be chosen and given $20,000 grants for replication and dissemination of their programs. Additionally, 10 of the finalists will be chosen as winners in October and will receive an additional $80,000, for a total of $100,000.

The NAIS is a unique service that has been created and run at the working level, involving procurement and technical personnel from every NASA center. It is truly an example of an innovative way of doing business. The NAIS saves time, energy, and money for contractors and for NASA personnel. The NAIS is located at ***http://procurement.nasa.gov.*** Our NAIS Procurement Representative is Corinne Reed-Miller of Code 210.

GODDARD WELCOMES NEW CUSTODIAL SERVICES CONTRACTOR

On June 1, Melwood Horticultural Training Center, Inc. which currently provides landscaping and grounds maintenance for the Center, joined Goddard as the new custodial services contractor.

Melwood, founded in 1963, provides employment opportunities for people with developmental disabilities. From a modest beginning, Melwood has grown into an internationally recognized program offering a variety of progressive programs and positions for people with developmental disabilities. Today, Melwood supports over 700 individuals each day in employment, job training and residential programs.

Melwood has fourteen years of experience in providing custodial services. Their professional staff, dependable workers, and state-of-the-art equipment guarantee quality services to their customers. Goddard gives a warm welcome to its new contract partner.

EMPLOYEE achievements

Goddard held the 1997 GSFC Honor Awards Ceremony on May 29. Over 80 employees received recognition for their outstanding efforts. Congratulations to the following award recipients:

Group Achievement Award: Goddard Space Flight Center Strategic Plan Team; President's Award Application Team (PAAT); President's Quality Award Site Visit Preparation Team; Printing, Publications, and Graphics (PPG) Team; Building 24 Chilled Water System Project Design and Contruction Management Team; GOES Imager/Sounder Motor Anomaly Resolution Team; Operational GOES Support Team; Next Generation Space Telescope (NGST) Team; Mars 1996 Delta Launch Vehicle Team; White Sands Ground Terminal Upgrade Project Contractor Team; ADEOS Data Stripper and FAST Packet Processing System Engineering Teams; EUVE Explorer Platform Flight Operations Team; RXTE Science Operations Facility (SOF) Group; SMEX-Lite Architecture Development Team; Global Positioning System (GPS) Test Facility Development Team; Spartan 201-03 Mission Team; Wallops Range Control Center (RCC) Software Support Team; ADEOS Automation Team; Earth Sciences Administration and Resources Management Office; Infrared Spectral Imaging Radiometer (ISIR) Team; Forest Ecosystem Dynamics Project; and the Regional Validation Center (RVC) Development Team.

Community Service Award: Leslye A. Boyce and Wannamaker Lawrence.

Equal Opportunity Award: Sharon B. Johnson

Productivity Improvement and Quality Enhancement Award: Henry J. Middleton, Jose O. Santos, Cynthia L. Tart, GSFC TV Working Group, Advanced Composition Explorer (ACE) Common Ground System Development Team, Consolidated NMOS (CNMOS) Planning and Implementation Teams, Tracking and Data Relay Satellite System/Expendable Launch Vehicles (TDRSS/ELV) Team, Flight Dynamics Division (FDD) Reengineering Team

Exceptional Achievement Award: Charles S. Adams, John D. Baniszewski, Pawan K. Bhartia, David L. Burkhead, Lourdes F. Carson, John F. Cavanaugh, P. R. K. Chetty, Thomaseena A. Cox, John J. Deily, Jody S. Fillmann, Andre S. Fortin, Claudia S. Fulk, Brantley E. Furness, Andrew J. Green, Timothy D. Gruner, John G. Hagopian, Robert C. Hartman, Alan T. Johns, Timothy R. Kallman, Benjamin Kedem, Richard D. Kinder, Arletta R. Love, Michelle D. Marrie, Charles M. Melhorn, Paul E. Mills, William H. Mish, Armando Morell, Ronald M. Muller, Bonnie G. Norris, Frank J. On, Thomas Paprocki, Michael E. Plants, Linda D. Price, John E. Robinson, John L. Scheifele, William J. Schiavone, Sylvia B. Sheppard, David A. Short, Francis E. Snow, Michael Stark, Louis J. Stief, Marilyn C. Tolliver, Craig R. Tooley, Joseph W. Toth, and Ann M. Travis

Award of Merit: Robert C. Baumann (Posthumously), Jane E. Jellison, Louis S. Walter

On Thursday, May 22, Goddard held the 24th Annual Small and Small Disadvantaged Business Conference. Over 200 small business representatives met with counselors from Goddard, HQ, other federal agencies and prime contractors. Key end users from Goddard's scientific and technical staff were present to inform small businesses of contracting opportunities at GSFC.

Goddard also hosted NASA's first Semi-Annual Science Forum for small businesses. The Forum provided the opportunity for small businesses to present their technical capabilities to key NASA personnel. Six small businesses (small, disadvantaged, and women-owned) presented their firm's products and services. Attendees of both the Small Business Conference and the Science Forum expressed their appreciation for the opportunity to market Government and prime contract counselors and to demonstrate their capabilities.

SATELLITES GOING TO SCHOOL
By Lynn Jenner, Office of Public Affairs

As the level of technology rises, so must the level of education rise to meet it. In order to further NASA's strategic plan, Goddard's mission has been to increase scientific literacy. An interesting and impressive way Goddard has accomplished this is by turning over four different satellite ground operations to universities to manage post-launch.

The Extreme Ultraviolet Explorer (EUVE) satellite was transferred to University of California at Berkeley for command and control in March of 1997. The SAMPEX satellite will be turned over to the University of Maryland (UMD), College Park, to begin remote spacecraft operations in late summer 1997. UMD will be responsible for the determination of orbit and generating products for the mission. There actually will be parallel operations of this spacecraft, the other center involved being Bowie State University which is under the purview of the University of Maryland. Goddard scientists feel that this project will enable both undergraduate and graduate students to get hands-on experience in operating a spacecraft in order to cultivate expertise at a university level so that future missions can be directed from a university for all operations support from launch forward.

The Naval Academy at Annapolis is currently using the UHF Follow-On (UFO)-1 satellite as a testbed for an artificial intelligence laboratory. The Spacecraft Artificial Intelligence Laboratory (SAIL) is a joint Navy/NASA/Industry/Acedemia research and development project. The SAIL project is unique because it uses the UFO-1 spacecraft as an on-orbit test article, providing the means to "space qualify" artificial intelligence (AI) applications. The laboratory will also be used to support USNA classes and associated laboratories, as well as midshipmen and faculty research projects.

The use of universities for commanding and controlling spacecraft serves a dual purpose. It enables students at the undergraduate and graduate level to get hands-on experience which is an invaluable learning tool and it enables the Government to function more efficiently. It is anticipated that this way of doing satellite business will become a constant rather than a curiosity.

Project Goddard

http://www.gsfc.nasa.gov

Key Appointments Announced Within the Applied Engineering and Technology Directorate (AETD)

In response to the Reassignment Opportunity Bulletins that had been previously posted, **Jim Mason** has been selected as the Chief of the Instrument Technology Center (ITC), and **Frank Bauer** has been selected as the Chief of the Guidance, Navigation, and Control Center (GNCC). The appointments will be effective in conjunction with the formation of AETD. In the interim, both will continue to serve in their current capacities within the Engineering Directorate while participating in the AETD organization planning activities. Frank Bauer is added to the membership of the AETD Advisory Board and will assume chairmanship of the GNCC planning committee. Jim Mason has been and of course will continue to be a member.

Chuck Woodyard, who has been chairing the committee to define the GNCC organization, will continue to serve as a member of the AETD Advisory Board.

For information on the Center's reorganization/transition activities, check this space and the Project Goddard Homepage at the URL above.

http://www.gsfc.nasa.gov

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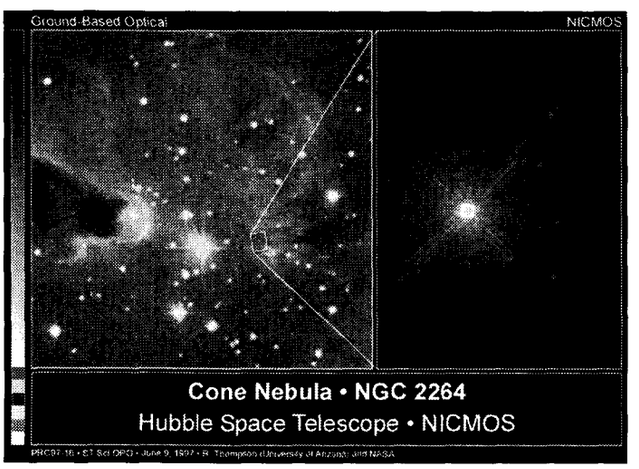
NEW HUBBLE DISCOVERIES REVEALED AT AMERICAN ASTRONAUTICAL SOCIETY CONFERENCE

Seeing a group of baby Sun-like stars surrounding their "mother" star; detecting a titanic shock wave smashing into unseen gas around a supernova; finding a disk at the heart of a galactic collision: these are among what are now becoming routine discoveries for astronomers as they finish checking out the Hubble Space Telescope's new instruments. These results were presented on June 9 at the 190th American Astronautical Society Conference in Winston-Salem, NC. The Near Infrared Camera and Multi-Object Spectrometer (NICMOS) principal investigator, Dr. Rodger Thompson of the University of Arizona, and ***Dr. Bruce Woodgate***, principal investigator for the Space Telescope Imaging Spectrograph at Goddard, presented the discoveries.

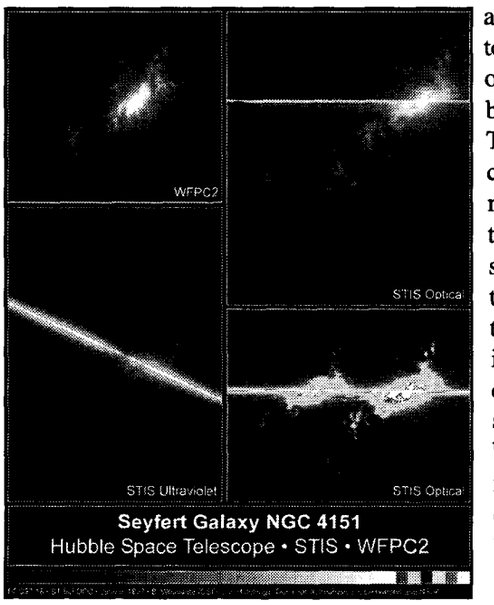
"We are very pleased to see this new generation of ultraviolet light sensors come up to full operation so successfully. That's a major step forward for space astronomy. We still have a lot of work to do to get them fully commissioned, but these first ultraviolet science images taken with the spectrograph are very promising," said ***Dr. David Leckrone***, Goddard HST Project Scientist.

Peering through the dust in a nearby star-forming region called NGC 2264, the NICMOS has provided direct confirmation of a type of starbirth called "triggered" star formation. This form of starbirth occurs when a gale of high speed particles from a young massive star compresses nearby dust and gas until it is dense enough to trigger the formation of much smaller and fainter Sun-like stars only a fraction of a light-year away from the massive "parent." Two images of NGC 2264 are pictured below. (Credits: Rodger Thompson, Marcia Rieke and Glenn Schneider of Univ. of AZ, and NASA.) The left image, taken by a ground-based



telescope, shows the Cone Nebula, located 2,500 light-years away. The white box pinpoints the location of the star nursery which cannot be seen in this image because dust and gas obscure it. The NICMOS image on the right shows this massive star, the brightest source in the region, and the baby stars formed by its outflow.

The STIS, which just last month demonstrated its efficiency as a black hole hunter, has shown the results when the power of a black hole is unleashed into its surrounding environment. In a single observation, the STIS measured the velocity of hundreds of gas blobs caught up in a twin-cone beam of radiation emanating from a supermassive black hole at the core of galaxy NGC 4151. Follow-up observations reveal hot gas emanating from deep within the throat of the beam, near the vicinity of the black hole. These observations also allow scientists to map the mass outflows near the black hole. The surprisingly complex motion may offer clues to the galaxy's stellar population, the orientation of the beam in the past, or evidence of some kind of backflow of gas into the central cone regions. The figure on the left shows four images of the NGC 1451 galaxy. The upper left image was taken with the WFPC-2 Camera. The remaining three images were taken with the STIS instrument. (Credit: John Hutchings, Dominion Astrophysical Observatory; Bruce Woodgate, Goddard; Mary Beth Kaiser, Johns Hopkins University; and the STIS Team.)



REBOOST OF COMPTON GAMMA RAY OBSERVATORY


The CGRO Satellite

The reboost of the Compton Gamma Ray Observatory (CGRO) was successfully completed on June 3. This reboost, which included several rocket burns per week over a two month period, has placed the 17-ton satellite into an orbit with an altitude of 320 miles (515 kilometers), This prevents the spacecraft from reentering Earth's atmosphere until perhaps 2007, say Goddard scientists.

CGRO was launched into orbit on April 5, 1991, on board the Space Shuttle Atlantis (STS-37), and was successfully deployed on April 7, 1991. When exactly CGRO will reenter the Earth's atmosphere in the next decade is uncertain, as it will depend on the level of solar activity which cannot be precisely predicted.

UPCOMING events

During the week of June 23-27, the Office of Equal Opportunity Programs will host the Summer Institute in Science, Technology, Engineering and Research (SISTER) program for 20 middle school girls from the DC metropolitan area. The purpose of the SISTER program is to provide an opportunity for girls to explore career fields with professional women engineers, mathematicians, scientists, technicians and researchers as well as careers in business, management or accounting. Volunteers are needed to serve as mentors and career speakers throughout the week. The girls will also participate in tours, field trips and hands-on science activities. If you would like to volunteer, please contact ***Cyn Hadnott*** at X6-5424.

Home Depot and Code 239 will hold an office products seminar on June 18 in the building 8 auditorium from 10:00 a.m. - 2:00 p.m. Product displays, free samples, and training seminars will be available from several product vendors and manufacturers. Don't miss this opportunity to learn about the newest items available through stores stock.

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

MEET Mr. Eclipse

By Bill Steigerwald, Office of Public Affairs

In high school, Fred Espenak happened to be in the path of a total solar eclipse, and it changed his life. "It's absolutely the most spectacular natural phenomenon you can possibly see. It is impossible to explain to those who haven't seen it. No photos do it complete justice. The solar corona is incredibly beautiful, so far removed from your everyday life. It's almost like a special effect from a Spielberg movie." After this experience, he chose to major in astronomy, which led to his employment at Goddard.

This fascination has led Mr. Espenak, an astrophysicist in Code 693, the Planetary Systems Branch of the Laboratory for Extraterrestrial Physics, to become the world's unofficial expert in the prediction of solar eclipses. He has chased them all over the Earth, 16 trips to date, traveling to countries as diverse as India, Bolivia, Kenya, Java, and Mongolia (where clouds conspired to block the view). "I thought the eclipse I saw during high school was one chance in a lifetime, but after it was over, I had to see another."

Fred Espenak preparing for a total solar eclipse in 1970

Mr. Espenak publishes the NASA eclipse bulletins, used by the international science community and amateur astronomers all over the world for planning trips to study the sun's corona. Using spherical trigonometry, geometry, and detailed orbital models for the Earth and Moon, he assumed responsibility for publishing this reference when the U.S. Naval Observatory terminated the program due to budget constraints.

"It was a labor of love in the beginning, because I had no funding. I had to beg and borrow money to get these published." He smiles. "Now, at least I get funding to cover publication costs."

"About eight months ago, I learned HTML and started publishing on the World Wide Web. I include data not found in the books. There's a huge educational market looking for this kind of material." Mr. Espenak's eclipse web page is probably the most complete in existence. It includes photos, maps and even long range climatological studies so an eclipse hunter can choose a location with the highest probability of good weather.

Mr. Espenak's knowledge in other areas of astronomy has given him the opportunity to field many space-related questions from the general public. "Recently I was on NASA TV nearly a dozen times for Comet Hale Bopp interviews," he said with a laugh.

"Every eclipse is different. The corona is always changing. Unfortunately, there won't be a total solar eclipse in the U.S. until 2017. But there's a close one that passes through the Caribbean in February, 1998 and another that crosses central Europe in August, 1999. Even if it's cloudy, these are places people wouldn't mind going to for a vacation. I usually tour a location both before and after an eclipse," he adds. "The travel is part of the thrill."

Mr. Espenak's Eclipse Home Page is located at:
http://planets.gsfc.nasa.gov/eclipse/eclipse.html
Requests for NASA Eclipse Bulletins can be sent via Email to:
espenak@gsfc.nasa.gov

NASA is accepting applications for mission specialist and pilot astronauts for the current selection cycle. Interested individuals may apply until the cut-off date of July 1, 1997. Applications received after the deadline will be eligible for consideration in the next cycle. NASA accepts applications for mission specialist and pilot astronaut positions on a continuing basis. An application package may be obtained by calling the Astronaut Selection Office at (281)483-5907 or writing to:

NASA Johnson Space Center
Astronaut Selection Office
Mail Code AHX
Houston, TX 77058-3696

COMING SOON TO GODDARD

SAFETY AND MISSION ASSURANCE TRAINING ON THE WORLD WIDE WEB

The NASA Office of Safety and Mission Assurance (OSMA) announces the premiere of the newest element of its Professional Development Initiative (PDI)—an Internet-distributed training and on-the-job information resource. According to Frederick D. Gregory, Associate Administrator for Safety and Mission Assurance, this self-paced instructional and developmental education resource "will enhance your understanding of SMA theory, practice, and the new techniques which will enable us to meet the challenges facing NASA now and in the future." This innovative approach implements NASA's strategic plan by delivering self-paced instruction and day-to-day job support in a variety of project-related subject areas. Sample topics include performance-based contracting, configuration management, ISO 9000, and preventive action/corrective action.

Training material is currently available to any NASA employee who wishes to preview the system prior to the on-site demonstrations. Every user of the NASA SMA Training System must have a unique user ID and password. Using the Netscape browser from a computer workstation, a user may request access from the NASA SMA Training Home Page: ***http://pdi.msfc.nasa.gov***. After completing a registration form, including name, contact information, and desired password, the request is processed and a confirmation e-mail is sent to the user. The PDI Web site provides the following benefits:

- Convenient, flexible instruction.
- Quick access to NASA corporate knowledge, procedures, and policies.
- Low-cost training.
- Links to supporting reference material, including NODIS.
- Direct e-mail contact with subject matter experts.

Premiere activities at GSFC are scheduled for June 30, 1997, with exact times and location of events to be announced soon. For more information, contact the Center PDI Representative, ***Jim Dafnis***, at 6-2945.

PROJECT GODDARD

http://www.gsfc.nasa.gov

Information exchanges, presented by *Brian Keegan* and *Orlando Figueroa*, were held on May 29 and 30. Both sessions were well attended and received positive feedback. The STAAC and AETD presentation packages are available under "Project Goddard" on Goddard's Homepage at the URL above.

Brian Keegan, Director designee, has announced another key appointment within the Applied Engineering and Technology Directorate (AETD). *Krista Paquin* has been selected as the Associate Director of AETD. In that capacity, she will be responsible for the many strategic initiative and management process activities that must be planned and deployed throughout the AETD as it seeks to accomplish the objectives of the GSFC reorganization. Her appointment will be effective upon the inception of AETD. Krista also is appointed as a member of the AETD Advisory Board.

For information on the Center's reorganization/transition activities, check this space and the Project Goddard Homepage at the URL above.

http://www.gsfc.nasa.gov

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news from the CENTER DIRECTOR

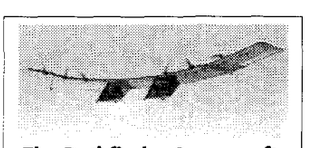
One of the positions that Goddard must fill in its current reorganization is that of the NASA Mission Services Manager, a key position with the NASA Space Operations Management Office. This position is currently held by Carroll Dudley, the designated Deputy of AETD. The MSM will play a critical role in defining the future mission operations architectures of NASA, and has responsibility for understanding the breadth and depth of NASA operations, identifying opportunities for collaboration and consolidation across the agency, assuring appropriate technology infusion into NASA systems, and supporting NASA strategic outsourcing and operations cost reduction objectives. The NASA Administrator has recently asked the SOMO office to potentially broaden their scope to include science operations and to explore the interaction of operations architectures with spacecraft development. The person filling the NASA MSM position is the senior Goddard representative to the SOMO Office and will play a crucial role in defining the interaction of Goddard's future roles with the SOMO Office. The future work of much of Goddard's civil service and contractor workforce is dependent on these developments.

After lengthy consideration, I have decided to reassign Dolly Perkins to this position. She clearly possesses the unique combination of skills - broad technical understanding of mission system development and mission and science operations, state-of-the-art technology awareness, and demonstrated ability to work effectively with a broad range of people from different NASA Centers and cultures - that are key to the successful fulfillment of this position.

Dolly is currently designated Chief of the Information Systems Center within AETD, and has led the team defining that organization. The position of ISC Chief is also key to the success of Goddard. In reassigning Dolly, I recognize that I am creating a temporary void. However, the strategic importance of the MSM position, and my belief that Dolly can fill it effectively, representing the interests of both Goddard and NASA, lead me to this decision.

Brian Keegan has initiated the process of identifying a replacement to fill the ISC Chief position. Because of the compelling need to fill this vacancy with the individual who will lead ISC in its formative stages, a ROB was posted on June 18. It will remain open until July 7. Dolly will continue to work with the AETD and in particular the ISC throughout the planning of the new organization as she transitions to her newly assigned NASA Mission Services Manager position over the upcoming months.

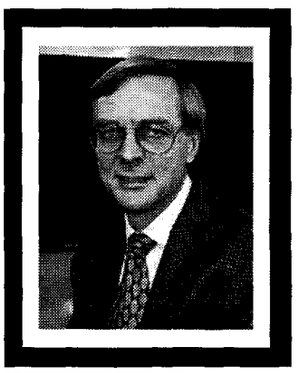
PATHFINDER SETS NEW WORLD RECORD



The Pathfinder Spacecraft

The Pathfinder, a remotely-piloted aircraft, set a new world record for high-altitude flight for solar-powered aircraft at the Pacific Missile Range Facility, Kauai, Hawaii. During its flight on Monday, June 9, the aircraft reached an altitude of 67,350 feet, breaking its previous record of 50,500 feet, set on Sept. 11, 1995, at NASA's Dryden Flight Research Center, Edwards, CA.

Pathfinder is part of NASA's Environmental Research Aircraft and Sensor Technology (ERAST) Program, and was designed and manufactured by Aerovironment Inc., Simi Valley, CA. The study of solar-powered, remotely-piloted aircraft such as Pathfinder, may lead to revolutionary technologies in conducting low-cost, high-altitude atmospheric and remote sensing studies.



Jurgen H. Rahe
June 30, 1939 - June 18, 1997

NASA MOURNS THE LOSS OF DR. JURGEN H. RAHE

Dr. Jurgen H. Rahe, 57, Science Program Director for Exploration of the Solar System at NASA Headquarters, died tragically on the evening of June 18. Dr. Rahe was killed during a severe storm when a large tree fell on his car as he was driving near his home in Potomac, MD.

Dr. Rahe had a distinguished career in NASA and in the field of astronomy and space exploration. In his most recent position, he was responsible for overall general management, budget, and strategic planning for NASA's Solar System Exploration programs, including the Galileo mission to Jupiter, several upcoming missions to Mars, including the July 4, 1997 landing of Mars Pathfinder, and the Cassini/Huygens mission to Saturn.

"I am shocked and deeply saddened by the loss of Jurgen Rahe. He was a good friend and an extremely dedicated scientist," said Dr. Wesley T. Huntress, Jr., Associate Administrator for NASA's Office of Space Science, Washington, DC. "Under his leadership, NASA's planetary exploration program was experiencing an almost unparalleled period of major discoveries at the same time that a number of new missions were being started and launched. His legacy to the exploration of space is large, and I like to think that Jurgen's ideas, hopes, and dreams are aboard many of the spacecraft now headed to the frontiers of our Solar System."

Rahe is survived by his wife and daughter, who live in Potomac, MD.

TO ALL NASA EMPLOYEES

NASA's 40th anniversary is little more than a year away and we need your help! We are looking for a slogan to be used in conjunction with activities and programs to commemorate NASA's founding on October 1, 1958. Please submit your idea in writing to Steve Garber at NASA Headquarters, Office of Policy and Plans, Code ZH, or via e-mail to steve.garber@hq.nasa.gov. The deadline for entries is July 31, 1997. The winner will receive a special illustrated book about space exploration. We look forward to hearing your good ideas!

CURRENT news

- **Image taken on May 5 by the Ocean Color and Temperature Scanner, on board NASDA's ADEOS satellite, is available on the Goddard Homepage**
- **Shuttle Mission Reflight of NASA's Microgravity Science Laboratory, to launch on the Space Shuttle Columbia on July 1 from Kennedy Space Center**
- **The time for Joe Rothenberg's kick-off for Safety Awareness Day on July 23 has been changed from 11:00 a.m. to 9:00 a.m in the building 8 auditorium**

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

EMPLOYEE achievements

Congratulations to the following employees who received awards at the 1997 NASA Honor Awards Ceremony:

Public Service Group Achievement Award: Delta II Avionics Upgrade Team and The Goddard Visitor's Center Model Rocket Launch Team; ***Group Achievement Award:*** GSFC Project Parts Acquisition Team, MIDEX Contract Team, Total Ozone Mapping Spectrometer (TOMS) EP Mission Team, Near Infrared Camera and Multi-Object Spectrometer (NICMOS) Calibrated Infrared Source (CIRCE) Team, MELVS Launch Team, GGS/WIND POLAR Mission Operations and Data Systems Analysis Implementation Team, ISTP/SOHO Mission Operations and Data Systems Implenentation Team, White Sands Ground Terminal Upgrade (WSGTU) Project Team, ISTP/GGS Coordinated Data Analysis Team, EOS Common Spacecraft SEB Team, FAST Development and Launch Team, South Pole Infrared Array Camera (SPIRAC) Instrument Development Team, Space Experiment Module Concept Development and Implementation Team, and the Global Change Master Directory Team; ***Public Service Medal:*** Luis Gonzales and James B. Young; ***Equal Employment Opportunity Medal:*** James E. Hansen; ***Exceptional Engineering Achievement Medal:*** Stephen H. Castles, Oswald Siegmund, and Pen-Shu Yeh; ***Exceptional Scientific Achievement Medal:*** George R. Carignan, Michael J. Mumma, Hasso B. Neimann; ***Exceptional Service Medal:*** W. James Adams, Elizabeth E. Beyer, Kristi S. Brown, D. Bryant Kramer, Daniel S. DeVito, Joseph A. Dezio, Kenneth E. Ford, Michele L. Garrett, Arthur F. Hasler, George P. Kramer, Catherine M. LeBoeuf, Hongwoo Park, Kelly L. Pecnick, David L. Pierce, Peter K. Shu, Kenneth O. Sizemore, Lynne G. Slater, H. Ray Stanley, Cynthia J. Stoltz, Paul A. Thompson, Vaughn E. Turner, Diane E. Williams, and Catherine M. Windsor; ***Exceptional Achievement Medal:*** Sharon D. Arneson, Frank H. Bauer, Sherrie L. Butler, William J. Campbell, Candace C. Carlisle, Michael K. Choi, Karen E. Flynn-Newlon, William S. Guion, Thomas W. Hamilton, Curtis E. Johnson, Ruthan Lewis, Dino Machi, Robert J. Martineau, Linda K. Pacini, John A. Ruffa, Dale F. Schulz, Steven S. Scott, Mary V. Stevens, Thomas E. Wallace, William A. Watson, and William D. Worrall; ***Outstanding Leadership Medal:*** Dixon M. Butler, Richard M. Day, Carroll G. Dudley, Dale W. Harris, Donald L. Miller, Phillip A. Sabelhaus, Jean H. Swank, and Darrel L. Williams; ***Distinguished Public Service Medal:*** Lyle J. Holloway; ***Distinguished Service Medal:*** Donald A. Krueger and Vernon J. Weyers; ***1996 Presidential Rank Recipients:*** W. Brian Keegan, James V. Moore, A. V. Diaz, and Sharon C. Foster.

VISITOR CENTER PROGRAM FOR JULY 4TH MARS PATHFINDER LANDING

Goddard employees and their families are invited to witness the NASA Mars Pathfinder Landing on July 4, 1997 at the Goddard Visitor Center (VC). A special program and activities are planned for you and your family to enjoy: NASA TV coverage throughout the VC, computer stations linked to the Internet with Mars Websites and live coverage from Mars on a large screen, Rover and Mars terrain remote control for participants, a special presentation on Mars--Pathfinder and the Future, and many hands-on activities for youngsters. For more information, call the Visitor Center at 286-8981. Check Goddard News next week for further details.

UPCOMING events

An Open Microphone Session
hosted by Center Director,
Joe Rothenberg

July 1, 1997
1:00-2:00 p.m., Bldg. 26, Room 205

An opportunity for employees to give feedback to the boss, initiate discussion, ask questions or offer comments. The microphone is open for everyone.

Something new! Something different! Bring your questions!

This is your chance to ask about:

- Personnel
- Goddard's projects/missions
- What's great; what's not
- Reorganization
- Our future
- Anything at all

Sign interpreter available upon request.

All are encouraged to attend.

Mr. Rothenberg will join employees at Wallops for a session in the near future.

PROJECT GODDARD

http://www.gsfc.nasa.gov

Transition Management Team/Training Subteam

The Transition Management Team/Training Subteam's charter is to develop a workshop that will immerse participants in Goddard's new way of doing business, and to provide each employee with the tools necessary to make a vital contribution in achieving organizational excellence. Goddard's projects will be done in teams, with team membership drawn from across Center and across disciplines. For many, this cross-cutting team concept is a departure from their normal working mode of operation. To enable these teams to succeed, leadership, customer focus, and change management principles, along with the basic tenets of working in teams, need to be developed or reinforced.

To prepare the Center for this paradigm shift, focusing initially on the STAAC and AETD, the Training Subteam has begun interviewing the Directors Of to determine their vision for their areas of expertise and to gain insight as to the training they see necessary for a vital workforce within their directorates. Their feedback will be incorporated into a set of priorities that mesh with both the Strategic Plan goals for the entire Center and the specific, near-term needs of the STAAC and AETD. Using expert and customer-based interviews and benchmarking practices of successful organizations, the team will formulate a plan by the end of the summer.

Training Subteam members: Stacey Day, Code 114, Chair; LaShonda Goodwyn, Code 114; Kathy Pedelty, RDC/Code 170; Denise Konopka, Code 222; Mark Fontaine, Code 430; Darryl Lakins, Code 505; Bonnie Norris, Code 701; and Bruce Underwood, Code 802 will be happy to answer any questions.

http://www.gsfc.nasa.gov

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National Aeronautics and Space Administration
Goddard Space Flight Center

GODDARD news

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X-RAYS FROM SUPERNOVA REMNANT SHED LIGHT ON ORIGIN OF COSMIC RAYS

By Bill Steigerwald, Office of Public Affairs

Astronomers have announced that the detection of X-rays from the remains of a dead star are providing a clue to the origin of cosmic rays, mysterious, extremely high-energy particles that move at almost the speed of light.

The report was presented on June 9, by ***Dr. Glenn E. Allen*** of Goddard, to the American Astronomical Society at its meeting in Winston-Salem, N.C. The discovery is of special interest because the origin of cosmic rays has been a long-standing puzzle in astrophysics. "We seem to have found the smoking gun," remarked Allen.

The stellar corpse, labeled "Supernova Remnant Cassiopeia A," is located 11,000 light years from Earth in the constellation of Cassiopeia. It is the remains of a star that exploded in approximately 1680 AD. The star's outer layers, made up of atoms of hydrogen, helium, and heavier elements, were blown off. Today, this material forms a shell that is still expanding away from the site of the explosion at about ten million miles per hour.

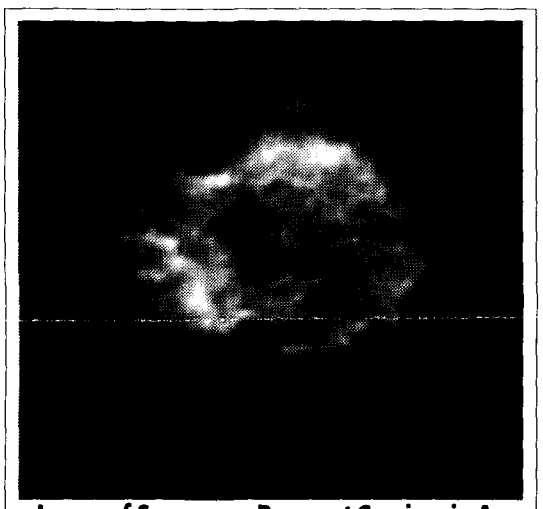

Image of Supernova Remnant Cassiopeia A, taken with the ROSAT Satellite developed by NASA, Germany, and the UK. Credit: Dr. Eric V. Gotthelf, Goddard/USRA

This shell, like the shells of other supernova remnants in our Galaxy, contains magnetic fields thought to be responsible for the acceleration of Galactic cosmic rays. "After decades of research, the evidence to support this claim is finally beginning to fall into place," said Allen.

Recently, detectors on the Rossi X-ray Timing Explorer (RXTE) satellite, which is managed at Goddard, were pointed at Cassiopeia A. A team of astronomers, led by Allen, analyzed the X-ray data and found that its spectrum contained a "tail" that extended to high energies. Unlike X-rays produced by hot atomic matter, the most likely explanation for the high-energy "tail" is a special type of radiation produced by fast-moving electrons called synchrotron radiation. "In the same way electrons produce synchrotron radiation in particle accelerators on Earth, we believe we are seeing X-ray synchrotron radiation from electrons accelerated in Cassiopeia A," said Allen. "The new X-ray results suggest Cassiopeia A accelerates cosmic ray electrons and probably protons and other nuclei, too."

If other supernova remnants accelerate particles in a similar manner, most of the Galactic cosmic rays may be accelerated by supernova remnants. "While much more work needs to be done, we seem to have clear and compelling evidence that Galactic cosmic rays are accelerated in supernova remnants. I believe we are seeing the end of the era of the search for the origin of Galactic cosmic rays," remarked Allen. To view the above image in color go to the Goddard Homepage at ***http://www.gsfc.nasa.gov*** and choose ***FLASH***.

LOCKHEED MARTIN SELECTED TO BUILD SOLAR X-RAY IMAGER

NASA's Goddard Space Flight Center and the National Oceanic and Atmospheric Administration (NOAA) have awarded a $54 million contract to Lockheed Martin Missiles & Space for the development and delivery of solar-imaging instruments for future U. S. weather satellites.

The Solar X-Ray Imager (SXI) instruments would be carried aboard upcoming NOAA Geostationary Operational Environmental Satellites (GOES-N, O, P and Q).

The SXI instrument will take full-disk images of the Sun every minute. The data will be used by NOAA and the U.S. Air Force for solar forecasting and monitoring of special events such as solar flares or geomagnetic storms. The ability to monitor and forecast such events is valuable to operators and users of military and civilian radio and satellite communications systems, navigation systems and power networks, as well as to astronauts, high-altitude aviators and scientists.

The total basic contract value of $54,229,000 provides funding for an engineering model instrument and two flight instruments. In addition, there are two priced options, each for one additional instrument. The contract is a hybrid Cost Plus Award Fee/ Incentive Fee agreement.

The incentive fee portion is a "structured cost incentive," whereby the contractor would pay a portion of cost overruns. Also, the U.S. government would receive a payback of the earned award fee in the event of an on-orbit instrument failure.

The SXI acquisition is a partnership between NASA and NOAA. The NASA Goddard GOES Project Office is responsible for the acquisition of the instrument and oversight of the contract, and will support NOAA during the post-launch operations phase. NOAA is responsible for determining the technical requirements for the SXI, funding the contract, operating the SXI instrument in orbit, and disseminating and using the SXI data.

The principal work performance location is the Lockheed Martin Missiles & Space Advanced Technology Center, Palo Alto, CA.

Other companies submitting proposals were Ball Aerospace Systems Division, Boulder, CO; Hughes Aircraft Company, Santa Barbara Remote Sensing, Santa Barbara, CA; and Panametrics, Inc., Waltham, MA.

CURRENT news

- **Mike King of Code 900, Stephen Castles of Code 713, and John Osantowski of Code 717 were elected as Goddard Senior Fellows. Complete stories will be included in an upcoming issue.**
- **The Advanced Composition Explorer (ACE), scheduled to launch in August aboard a McDonnell Douglas Delta II Rocket, arrived at KSC last Friday, June 13.**
- **NASA develops non-toxic fluid which makes flying safer by preventing ice build-up on airplanes.**
- **NASA robot, designed to assist surgeons in delicate brain surgery, was unveiled at a New York convention.**

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

APPOINTMENT OF WALLOPS 2000 MANAGER

Judith N. Bruner has been appointed Wallops 2000 Manager for Goddard Space Flight Center. In this new position, Bruner will lead the finalization and manage the implementation of the Wallops Mission 2000 Plan and ensure the enhanced integration of WFF activities and initiatives with related or complementary efforts at Greenbelt.

The Wallops Mission 2000 effort is aimed at making Wallops a unique national resource for providing low-cost integration, launch and operations of suborbital and small orbital payloads.

Prior to this appointment, Bruner served as Head, Data Processing Systems Branch and Head, Spacecraft Control Systems Branch at Goddard. She came to Goddard in 1989 following eight years with Unisys Corporation as a Project Manager for the PORTS Contract supporting Hubble Space Telescope.

In addition, Bruner holds the rank of Captain in the U.S. Naval Reserve. During her Navy career, she was a pilot conducting weather and worldwide research missions. She received a bachelor of science degree in computer science from Ohio State University in 1970 and a masters in engineering management from George Washington University in 1994.

JULY 23 IS SAFETY AWARENESS DAY

Goddard's Safety Awareness Day is just around the corner. July 23, 1997, is the day our Center will concentrate on the importance of safety on the job and at home. The theme for Safety Awareness Day this year is "In the Blink of an Eye." We are directing our efforts to raise the level of awareness in the area of Eye Safety.

Center Director, ***Joe Rothenberg***, will kick off Safety Awareness Day at 11:00 a.m., in the Building 8 Auditorium. Mary Olszewski, former Director of Occupational Services will give us a very interesting briefing on Eye Safety followed by a bag lunch discussion with a panel of Safety Specialists and Safety Engineers. The audience will be able to ask the panel to discuss any Center-related safety questions. A very entertaining as well as educational videotape starring Richard Karne can be seen on CCTV at 10:00 a.m. and 2:00 p.m. Everyone on Center is strongly encouraged to participate in the Safety Awareness Day activities. Refreshments will be available during the Building 8 Auditorium activities. Be there!

CORRECTIONS TO LAST WEEK'S ISSUE

Last week's issue incorrectly identified the AAS as the American Astronautical Society. The correct name for the organization is the American Astronomical Society.

The office products seminar held June 18 was sponsored by Office Depot and Code 239, not Home Depot.

NASA is accepting applications for mission specialists and pilot astronauts for the current selection cycle. Interested individuals may apply until the cut-off date of July 1, 1997. Applications received after the deadline will be eligible for consideration in the next cycle. NASA accepts applications for mission specialist and pilot astronaut positions on a continuing basis. An application package may be obtained by calling the Astronaut Selection Office at (281)483-5907 or writing to:

NASA Johnson Space Center
Astronaut Selection Office
Mail Code AHX
Houston, TX 77058-3696

ASTEROID NAMED FOR GODDARD SCIENTIST

In a surprise announcement at the American Geophysical Union Spring Meeting in Baltimore, astronomer, Gene Shoemaker, and his wife Carolyn announced they have named an asteroid after John A. O'Keefe.

Shoemaker made his announcement on May 27 at a special session held in honor of O'Keefe, who retired two years ago after a long and distinguished career at Goddard. Among Dr. O'Keefe's many accomplishments was the discovery of the "pear-shaped" Earth, which showed that our planet has significant excess mass in the Southern Hemisphere compared to the Northern. This was one of the earliest results of space geodesy. The discovery was made in 1959 by tracking the Vanguard satellite; the tiny sphere was only the second satellite to be launched by the United States. The discovery of the "pear-shaped" Earth made the front page of the Washington Post, and was the subject of a "Peanuts" cartoon.

During his days at Goddard, O'Keefe became a leading authority on tektites, which are small, glassy objects found scattered across the Earth. Most scientists believe that tektites are produced by the impact of small asteroids with our planet. O'Keefe, however, believes they were ejected from volcanoes on the Moon and landed on the Earth.

Dr. O'Keefe was also active in the manned space flight program. He worked on the scientific aspects of the Apollo flights to the Moon and interacted with many people, including Shoemaker. In recognition of his work on the geology of other worlds, Dr. Shoemaker declared O'Keefe the "Godfather of Astrogeology." Aside from being himself an internationally famous astrogeologist who worked on Apollo, Shoemaker and his wife Carolyn, together with colleague David Levy, discovered Comet Shoemaker-Levy. The comet crashed into Jupiter in 1994 amid much fanfare here on Earth.

In presenting Dr. O'Keefe with a plaque certifying the official name of the minor planet, Shoemaker said that the asteroid is about 5 kilometers in diameter. Carolyn and Gene Shoemaker discovered "O'Keefe" in 1984 from the Mount Palomar observatory, but waited until now to give the object an appropriate name. John O'Keefe was delighted to have the Shoemakers name the asteroid for him.

http://www.gsfc.nasa.gov

Project Goddard Lunch & Learn Sessions

On Thursday, June 19, from 12:00 noon to 1:30 p.m, representatives from STAAC, AETD and the Office of Human Resources will be on hand to answer questions about recent vacancy announcements for the new Directorates. This "Lunch and Learn" session will take place in Building 1, Room E100E. Handouts will be available, so stop by on your way to or from lunch and learn about the Center reorganization's current and forthcoming staffing opportunities. A follow-on session will be held on Wednesday, June 25, from 11:30 a.m. to 1:00 p.m. in Building 1, Room 100H. All Goddard employees are welcome and encouraged to attend. These Lunch and Learn sessions are hosted by Project Goddard's Communications Subteam.

Goddard employees may visit the Project Goddard Homepage at the URL above to see the staffing approach for the new AETD directorate.

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

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National Aeronautics and Space Administration
Goddard Space Flight Center

GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia June 1997 Vol. I No. 9

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news from the CENTER DIRECTOR

As part of an enhanced Center focus on quality, I have chartered a team to institute a Quality Management System (QMS) that fully meets the requirements of the international standard adopted by the Agency, ISO 9000 "Quality Management and Quality Assurance Standards." The team is working to meet the Agency's target date of September 1999 for Center compliance and third party registration. The underlying principle of this approach is that responsibility for quality is universal and depends upon everyone, not just on people in the Center's assurance organization.

ISO 9000 emerged in 1987 as a set of world-wide industry standards that place emphasis on customer awareness, process control, and continuous improvement. Over 110 countries, including the U.S., have adopted ISO 9000, with NASA being the first government agency to seek certification.

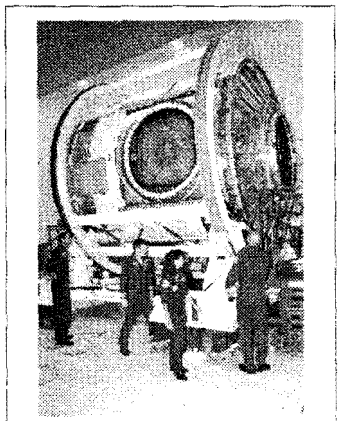
As a first step, I have issued a GSFC Policy Directive (GPD) that describes the Quality Management System we are building. The purpose is to begin establishment and implementation of policies related to the provisions of the first standard, ISO 9001 "Quality Systems--Model for Quality Assurance in Design, Development, Production, Installation, and Servicing." The system will apply to all aspects of our work effort, encompassing nearly every task of our Center.

Acceptance of the ISO standard by organizations and businesses will allow customers to examine and compare practices that most affect product quality. Whether in industry academia, or government, an organization that is compliant with the standard has policies and practices that describe the approach to its work.

Benefits that the center will derive are increased effectiveness and productivity, as a result of the discipline of defining policies and practices, monitoring their implementation, and self-improvement through preventive actions. It is my expectation that obtaining ISO 9001 certification will help us maintain and improve on our position as a national resource and Center of Excellence in research in Earth science, space science and technology.

U.S. SPACE STATION COMPONENT BEING PREPPED

The International Space Station Program passed a major milestone last week as the first U.S.-manufactured component began a year of launch preparations at the Kennedy Space Center, FL.



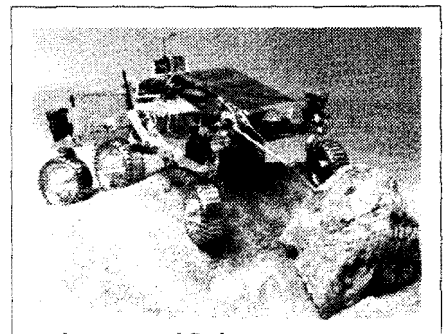
STS-88 Crewmembers examine the Node 1 in the Space Station Processing Facility's High Bay

A connecting module, called Node 1, was shipped by cargo aircraft to Florida on Sunday, June 22, from the Marshall Space Flight Center's Space Station Manufacturing Facility in Huntsville, AL. The node will be the first U.S.-built segment for the station to reach orbit when it is launched in July 1998 aboard the Space Shuttle Endeavour on the STS-88 mission.

MARS PATHFINDER NEARING JOURNEY'S END

Since the December 1996 launch of the Mars Pathfinder, astronomers have been eagerly awaiting its July 4th landing on the Red Planet, and with good reason. Pathfinder will be the first spacecraft to land on Mars in more than 20 years, and the first ever to send a rover out to independently explore the Martian landscape. The new era of scientific exploration that Pathfinder represents will eventually lead to human expeditions to Mars.

Mars Pathfinder is one of the first of NASA's Discovery class of missions, designed to foster rapidly developed, low-cost spacecraft with highly focused science objectives. Pathfinder's purpose is to demonstrate an innovative way of placing an instrumented lander on the surface of the planet. The lander will also carry a free-ranging robotic rover as a technology experiment. Future landers and rovers will benefit from the heritage of this pioneering mission.



The Mars Pathfinder Sojourner Rover

The highlight of the mission will be Pathfinder's atmospheric entry and landing on the Martian surface. After a fiery entry, the spacecraft will release a large, billowing parachute to slow its descent through the thin Martian atmosphere. Then a giant cocoon of airbags will inflate seconds before landing to cushion the spacecraft's impact. "This is a new way of landing a spacecraft on a planet," said Brian Muirhead, Mars Pathfinder Flight System Manager of NASA's Jet Propulsion Laboratory, "and the first time a U.S. mission will use airbags to absorb the shock of landing and protect the lander from the rough rocky terrain."

"The science investigations carried by Mars Pathfinder are going to give us unique insights into the planet's atmosphere and how it varies, and our first detailed understanding of the precise composition of its surface rocks and soils," said Joseph Boyce, Mars Program Scientist at NASA Headquarters. "This knowledge is the key to helping unlock many interrelated mysteries about the history and evolution of Mars."

current news

- **For the latest status on the GOES Satellite, go to the Goddard Homepage at the URL below and choose FLASH**
- **STS-94 - NASA's Microgravity Science Laboratory Reflight Mission successfully launched on Tuesday, July 1 at 2:02 p.m. est. from Kennedy Space Center**
- **For an update on the status of the MIR Space Station, go to the following URL: http://www.hq.nasa.gov/office/pao/Newsroom/today.html**
- **NASA licenses air quality monitoring technology which will help U.S. industries reduce pollution**
- **Japan's National Space Development Agency (NASDA) loses contact with the ADEOS Satellite. For more information, go to the following URL: http://mentor.eorc.nasda.go.jp/ADEOS/index.html**

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

MULTI-AXIAL VIBRATION SHAKER BREAKS NEW GROUND IN STRUCTURAL DYNAMICS TESTING

The Shuttle Vibration Forces (SVF) payload is the first payload to be tested on the new 6 Degree of Freedom (DOF) Shaker. This facility was purchased as a research and development facility, which is capable of producing controlled vibration environments in multiple degrees of freedom simultaneously, thus providing a more realistic vibration environment. The Structural Dynamics Test Engineering Section, (Code 754.1) is working with the Jet Propulsion Laboratory (JPL) and others to develop this 6 DOF shaker with its unique capabilities to improve current test methodologies and to investigate new techniques to improve the level of technology in the structural dynamics area.

Kathy Jenkins, Code 754.1 and Terry Scharton of JPL conduct a model survey test on the SVF payload mounted on the 6 Degree of Freedom Shaker at GSFC's I&T Lab

The SVF payload is a cooperative project between JPL and Goddard to investigate payload mechanical impedance effects in reducing interface loads. The payload consists of a mass simulator mounted in a Get-Away-Special (GAS) canister. The mounting brackets of the GAS canister have been designed to include multi-component force transducers to measure the interface loads during testing and during the Shuttle launch.

The objective of the SVF testing is to determine the mechanical impedance of the payload by measuring the interface forces and accelerations. The closely coupled modes of the payload will be separated by using an analytical technique, called Polyreference. This technique uses response data from environments produced by multiple excitation sources. The payload is scheduled to fly next March.

ASTEROID MATHILDE REVEALS HER DARK PAST

More than 100 years after her discovery, asteroid 253 Mathilde has been sharing her secrets with scientists in the Science Data Center at the Johns Hopkins University's Applied Physics Laboratory in Laurel, MD. A 25-minute flyby of the asteroid by NASA's Near Earth Asteroid Rendezvous (NEAR) spacecraft on June 27 has resulted in spectacular images of a dark, crater-battered little world assumed to date from the beginning of the solar system.

The Mathilde flyby is the closest encounter with an asteroid to date and the first with a C-type asteroid. The asteroid's mean diameter was found to be 33 miles (52 kilometers), which is somewhat smaller than researchers originally estimated. A study of the asteroid's albedo (brightness or reflective power) shows that it reflects three percent of the Sun's light, making it twice as dark as a chunk of charcoal. Such a dark surface is believed to consist of carbon-rich material that has not been altered by planet-building processes, which melt and mix up the solar system's original building block materials.

The Mathilde flyby met all its initial goals: getting a clear image of the sunlit side of the asteroid, getting color images that will give clues to the types of rock that make up the asteroid, and getting images that will help researchers determine if Mathilde has any moons. In the next month, scientists expect to complete initial analysis of their data and have improved measurements of Mathilde's volume, mass, and density.

"The Mathilde encounter was one of the most successful flybys of all time," said Dr. Robert W. Farquhar, of the Applied Physics Laboratory, NEAR Mission Director. "We got images that were far better than we thought possible, especially since the spacecraft was not designed for a fast flyby."

The NEAR spacecraft was launched on Feb. 17, 1996, from Cape Canaveral Air Station in Florida. NEAR Science Team Group Leaders are: Joseph Veverka, Cornell University; Jacob I. Trombka, NASA/Goddard; Mario H. Acuna, NASA/Goddard; Maria T. Zuber, MIT and NASA/Goddard; and Donald K. Yeomans, NASA/Jet Propulsion Laboratory, Pasadena, CA. Andrew Cheng, JHU/APL, is the Project Scientist. The Johns Hopkins University Applied Physics Laboratory operates the mission for NASA's Headquarters Office of Space Science. For more on NEAR, go to the following URL: ***http://sd-www.jhuapl.edu/NEAR/Mathilde***

NASA Goddard Space Flight Center Invites
You and Your Family to Witness the

MARS PATHFINDER LANDING

JULY 4, 1997

A Special Program will be held at the
Goddard Visitor Center, located on
Soil Conservation Road in Greenbelt, Maryland

Activities for you and your family to enjoy:

Ongoing - 8 Computer Stations available, linked to Internet
- "Live from Mars" on large screen
- Mars Websites
- Pathfinder -- NASA Ames Website

1:00 p.m. to 2:00 p.m. - Pathfinder Lands on Mars: NASA Checks Spacecraft's Health

3:00 p.m. - Rover and Mars Terrain Demonstration -- Remote Control for Participants

4:00 p.m. - Presentation on Mars "Pathfinder and the Future" by Invited Mars Expert

5:00 p.m. to 6:00 p.m. - Hands-on Activities
- Observations of a Planet
- Soils
- Stream Tables
- Mars Activity
- Impact Crater

6:30 p.m. - Briefing on NASA TV

7:30 p.m. to 9:00 p.m. - Possible First Martian Images

All activities will be held there. For more information call [illegible]
A Sign Interpreter will be provided with one week's notice. Please call ahead for special needs.

http://www.gsfc.nasa.gov

Brian Keegan, Director designee, recently announced another key appointment within the Applied Engineering and Technology Directorate (AETD). Mr. Robert Kichak has been appointed as the designated Acting Chief of the Electrical Systems Center (ESC). Bob, in his role as chairman of the committee to develop the organization for the ESC, has been and will continue to be a member of the AETD Advisory Board.

Transition Management Team/Human Resources Subteam

The Human Resources subteam is chartered to help build trust, respect, and unity in Goddard's workforce during these crucial months leading up to the reorganization. Areas being addressed include: the definition of career paths, promotion processes and criteria, and performance management in a team environment.

Subteam members are: Sandy Buffalano/110, Arletta Love/110, Pat Lightfoot/500, Frank Ottens/600, Alda Simpson/700 and Jay Pittman/800.

For information on the Center's reorganization/transition activities, check this space and the Project Goddard Homepage at the URL above.

http://www.gsfc.nasa.gov

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