



National Aeronautics and  
Space Administration  
Goddard Space Flight Center

# GODDARD news

Greenbelt, Maryland/Wallops Island, Virginia

Sept. 1997 Vol. I No. 18

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



## NEWS from the CENTER DIRECTOR

I have initiated a new colloquia series-- The Center Director's Colloquia Series-- designed to provide us with insight into a wide range of current management issues, including how others enhance creativity, communications and team effectiveness.

I invite you to join me at the first Center Director's Colloquium on Tuesday, September 9 from 9-11 a.m. in the building 8 auditorium. To initiate this series, I have invited Margaret Wheatley. A Harvard graduate, Dr. Wheatley is a scientist, professor, and author of Leadership and the New Science: Learning About Organization from an Orderly Universe. Her book was named the best management book of 1992 by Industry Week. Dr. Wheatley's talk will address what 20th century science can teach us about 21st century organizations. Using insights from quantum physics, chaos theory and biology, she will discuss how to organize work, people, and life by sharing information, developing honest relationships, and interacting with vision.

In addition, please reserve time for the next two speakers. On Wednesday, October 8, from 10 a.m. to noon, Benjamin Zander, founding Music Director and Conductor of the Boston Philharmonic Orchestra will speak. On Wednesday, November 5, from 9 to 11 a.m. Philip M. Smith, former National Academy of Science executive and science policy consultant, has been invited.

I am very excited about the topics selected for this series and by the experts identified to present these topics. I look forward to seeing you there.

## Two Voyager Spacecraft Still Going Strong After 20 Years

Twenty years after their launch and long after their planetary reconnaissance flybys have been completed, both Voyager spacecraft are now approaching another milestone: crossing the invisible boundary that separates our solar system from interstellar space, the heliopause.

Since 1989 when Voyager 2 encountered Neptune, both spacecraft have been studying the environment of space in the outer solar system. Science instruments on both spacecraft are sensing signals that scientists believe are coming from the heliopause -- the outermost edge of the Sun's magnetic field that the spacecraft must pass through before they reach interstellar space.

"During their first two decades, the Voyager spacecraft have had an unequaled journey of discovery. Today, even though Voyager 1 is now more than twice as far from the Sun as Neptune, their journey is only half over, and more unique opportunities for discovery await the spacecraft as they head toward interstellar space," said Dr. Edward Stone, the Voyager project scientist and director of NASA's Jet Propulsion Laboratory, Pasadena, CA. "The Voyagers owe their ability to operate at such great distances from the Sun to their nuclear electric power sources which provide the electrical power they need to function."

The Voyagers are now so far from home that it takes nine hours for a radio signal traveling at the speed of light to reach the spacecraft. Science data are returned to Earth in real-time to the 34-meter Deep Space Network antennas located in California, Australia and Spain. Voyager 1 will pass the Pioneer 10 spacecraft in January 1998 to become the most distant human-made object in our solar system.

## Mars Ready for Its Second Visitor

Mars Global Surveyor (MGS) will arrive at its destination, the atmosphere of Mars, on September 11 at 6:31 p.m. Pacific Time after traveling 300 days, a journey that began on November 7, 1996. After its arrival, the MGS will then be ready to begin a technique called aerobraking. This allows a spacecraft to use the drag of a planet's atmosphere to lower its orbit without relying on propellant. The aerobraking period will last approximately four months. Once the aerobraking is complete, Mars Global Surveyor will spend a full year taking samples of data on Mars surface features, atmosphere, and magnetic properties.

Spacecraft operations and instrument calibrations have gone very well as Global Surveyor now nears the red planet. When Global Surveyor was at a distance of 5.3 million kilometers (3.3 million miles), the spacecraft's camera shot a series of images of Mars that will be processed to create a rotational movie of the planet.

Among the five science instruments on board the spacecraft are two Goddard instruments: the Mars Orbiter Laser Altimeter and the Magnetometer and Electron Reflectometer. The Laser Altimeter will bounce beams of light off the surface of Mars to measure the heights of mountains and depths of valleys. The Magnetometer/Electron Reflectometer will study magnetic

properties to gain insight into the planet's interior. "We are very excited with the expected results from Mars Global Surveyor. For the first time we will establish unequivocally whether Mars has an intrinsic magnetic field or not. In spite of many attempts, Mars is the only planet other than Pluto for which we have not been able to settle this question,"

said *Dr. Acuna*, Principal Investigator for the Magnetometer instrument.

Mars Global Surveyor is the first spacecraft in a new NASA program of Mars exploration, called the Mars Surveyor Program. The program will send pairs of orbiters and landers to Mars every 26 months well into the next century. These robotic explorers will answer a variety of scientific questions about Mars' history, surface, atmosphere, interior and current condition, and pave the way for eventual human expeditions to Mars. Scientists hope that by studying Mars, they will learn more about our own planet, Earth.



Mars Global Surveyor being lowered onto the test stand

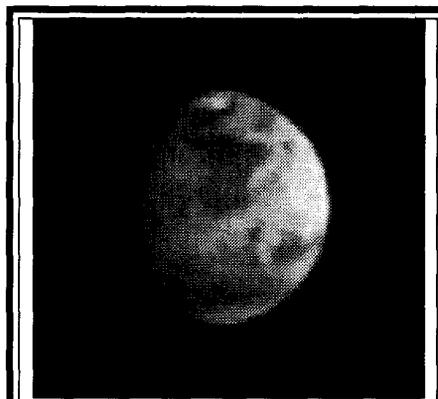


Image of Mars taken by the MGS Orbiter Camera centered on the Mars Pathfinder landing site at Ares Valles

# You Could Be Someone's Miracle

On September 11, Goddard employees will have the opportunity to make a difference in someone's life by registering as a potential bone marrow donor. From 11:00 a.m. to 4:00 p.m. in building 1, room E-100B, there will be a Marrow Typing Drive, sponsored by Goddard's Multicultural Advisory Team and the Equal Opportunity Advisory Committee.

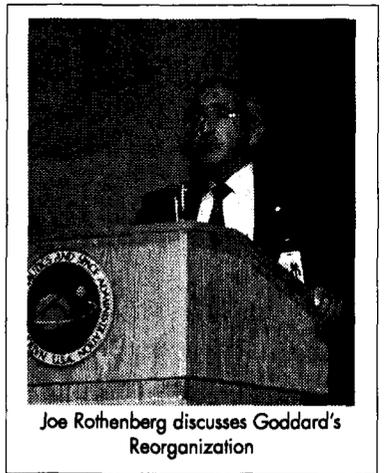
A patient's most likely match outside their immediate family is someone of the same racial or ethnic group, therefore, patients from minority communities have a special need for volunteer marrow donors. This includes the African American, Asian/Pacific Islander, Hispanic and American Indian/Alaskan Native communities.

The typing process is easy. A simple blood test is used to screen possible candidates. Nothing permanent is taken from a marrow donor, only the potential to save a life. Volunteers must be between the ages of 18-60 and in good health. A special information session in which Goddard bone marrow donors and recipients will share their experiences will be held on September 8 from 12:00 noon - 1:00 p.m. in the building 8 auditorium.

For more information on how to sign up to be a potential donor, contact Sharon Johnson on x6-7022, Ted Northrop on x6-7516, or Cynthia Cheung on x6-2780.

## Center Holds Town Meeting

A Centerwide Town Meeting was held August 28 to present the Center's reorganization status to all employees. In an effort to communicate the latest information on the reorganization, Center Director, **Joe Rothenberg**, presented a revised schedule of upcoming events (see below). Rothenberg also talked about the stability of the workforce, recognized how hard people have been working on the reorganization efforts, and discussed Goddard's exciting future.



Joe Rothenberg discusses Goddard's Reorganization

Director designees, **Brian Keegan** (AETD) and **Orlando Figueroa** (STAAC) discussed personnel and organizational issues which have delayed the reorganization. A major reason cited for the delay was the large number of applicants to positions and the numerous panel interviews which followed. **Dr. Arnold Torres**, Director of Suborbital Projects and Operations, presented a brief overview of Wallops activities, specifically describing the recent Wallops 2000 mission which was unveiled in July. Dr. Torres also explained that Wallops will be undergoing its own reorganization very shortly.

**Art Fuchs**, Associate Director and Chairman of the Transition Management Team (TMT), gave a summary of TMT and subteam progress to date. A question and answer session followed by informal discussion groups took place after the presentations. The meeting was well attended and positive feedback is being received.

## Congratulations Goddard Race Runners!!



On August 24, a cool, sunny Sunday morning, an unofficial team of nearly twenty Goddard employees gathered to participate in the 22nd annual Annapolis 10 Mile (A-10) race. For some participants, the A-10 was a training run in preparation for the Marine Corps marathon in October; for others, it was the first 10 mile course they had ever run. From the greetings exchanged at the starting line with the commander of the Navy contingent at Wallops, to final salutations as the runners departed for home, a general feeling of accomplishment was shared by all. No matter the level of fitness, the depth of running experience, or the motivation behind their participation, each runner reaped the benefit of their effort, and are congratulated.

To check on Goddard runners times and finishes (i.e. What male runner finished 300th overall; who was the female runner who finished 24th in her age group?) check the A-10 results at the following URL:

<http://www.cs.washington.edu/homes/brad/striders/overall.txt>

### Revised Schedule of Upcoming Activities:

Activity	Original Date/Current Date
Complete Proposed Reassignment Rosters	08-08-97 09-19-97
Complete Selection of "Center"/Division/Office Associate Chief & Branch Heads	07-18-97 09-25-97
Complete Proposed Re-Org Package-	09-26-97
o Notify employees	
o Submit for review	
Review Comments Received	10-24-97
Estimated Re-Org Effective Date	09-28-97 11-09-97

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

A Lunch and Learn Session/Job Fair has been scheduled for September 10, from 11:00 a.m. to 1:00 p.m. in Building 23, Room S300. This session is designed for professional administrative and clerical/secretarial personnel to talk with representatives from both STAAC and AETD about positions within the new Directorates. Representatives from the Office of Human Resources will be available to answer questions, will provide copies of announcements posted on 9/3 and 9/10, and will provide guidance on how to complete applications.

**GODDARD**  
<http://www.gsfc.nasa.gov>

**Upcoming Education Showcase** - Mark your calendars for Goddard's first Education Showcase to be held October 16. The showcase is designed to increase employee awareness of education as one of Goddard's Strategic Goals, and increase awareness of existing education resources, programs and activities currently available at the Center. The day will be full of activities including guest speakers, hands-on workshops, exhibits and displays. If you would like more information or would like to participate in this Centerwide event, please contact **Chan Park** at x6-7262. You can visit our website at <ftp://pao.gsfc.nasa.gov/ftpshared/Educ/showcase.htm>

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## Summer's End Marks Another Successful Year For Goddard's Education Programs

By Nancy Neal, Office of Public Affairs

Goddard's Education Office has had a successful summer hosting a variety of programs for both students and teachers. "We have been busy with a lot of interesting educational programs this past year. The Goddard team has truly helped us with our educational outreach," said **Dr. Robert Gabrys**, head of the Goddard Education Office.



County School Library Media Specialists get a demonstration on NASA resources for education

One of the educational programs that Goddard sponsored was the Maryland Ambassadors Program. This program has traditionally brought together teachers from twenty of the twenty-four state school districts over a three year period. This summer, twenty of the Ambassador alumni returned to Goddard and developed forty scientific investigations using the Internet. These experiments will be pilot-tested throughout the coming

school year at the Ambassadors' schools. The intent of the program is to use current information and data to teach students Earth system sciences.

A second program conducted jointly by the Education Office and the National Security Agency (NSA) is the NASA/NSA Teacher and Student Program. This initiative allows both teachers and middle and high school students to participate in a one and two week program respectively at the University of Maryland, Eastern Shore. "Fifteen students from Washington D.C. and fifteen students from Baltimore were selected to participate in this math and science enrichment program. The idea of a residential setting was intended to allow students to engage full time in an enjoyable learning environment," said Dr. Gabrys.

Also this summer, Goddard hosted the Summer High School Apprenticeship Research Program (SHARP) for 21 students. Students in the SHARP program participate in an eight-week intensive science and engineering program primarily for minority groups who have shown an aptitude and desire for careers in engineering and science. Students are matched with mentors and given actual work assignments.

Another program in which students get involved with science gathering and data analysis is the Global Learning and Observations to Benefit the Environment (GLOBE) program. "Our interest in this international program focused on what the students have learned as a result of doing this activity. We want to keep people interested in learning," said Dr. Gabrys.

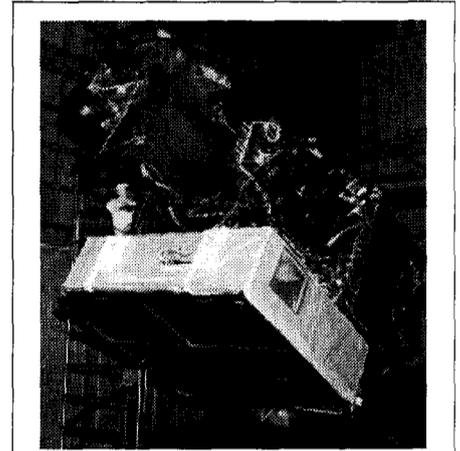
The next major project the Education Office has on its horizon is the Education Showcase set for Oct. 16. The showcase will be a Centerwide-exhibit showcasing educational programs for each directorate. Each directorate will have an opportunity to showcase their best educational tools. Several seminars and exhibits will occur simultaneously. "This showcase promises to be an educational experience for all," said Dr. Gabrys.

Chan Park, x6-7262, of the Education Office is leading the showcase effort.

## Tropical Rainfall Measuring Mission (TRMM) Arrives at Japan Launch Site

The Tropical Rainfall Measuring Mission (TRMM) Observatory has arrived at the Japanese Space Agency's Tanegashima Space Center and is being readied for its November launch aboard an H-II rocket.

Following a 16-hour flight from Andrews Air Force Base, the spacecraft landed at a civilian airfield in Kagoshima, Japan, on August 22 aboard a C-5 cargo aircraft, delivered there by the Air Force's 9th Airlift Squadron. It was then shipped by barge to NASDA's sea-side launch facility



The TRMM Spacecraft. For more info, visit <http://trmm.gsfc.nasa.gov> on the Web

located on Tanegashima Island to undergo prelaunch checkout at the Spacecraft Test and Assembly Building.

TRMM is part of NASA's Mission to Planet Earth Program and involves Japan's National Space Development Agency (NASDA). NASA will provide the observatory, four of the five instruments, system integration and test, as well as post-launch mission and science operation. Japan provided one of the scientific instruments as well as the launch service. This will be the first launch of a NASA satellite from Japan's Yoshinobu Launch Complex.

A 3-year mission is planned, during which time TRMM will provide accurate rainfall data, enabling scientists to achieve significant improvements in the results obtained from weather and climate models. The ability to accurately measure rainfall is crucial in understanding and predicting global climate change.

TRMM was designed, assembled, and tested at Goddard. Weighing 8,000 pounds, the observatory stands 17 feet tall and is the largest observatory ever built at Goddard.

## CURRENT news

- First image from the SeaWiFS Instrument is available at [http://seawifs.gsfc.nasa.gov/SEAWIFS/WHATS\\_NEW.html](http://seawifs.gsfc.nasa.gov/SEAWIFS/WHATS_NEW.html)
- NASA's Earth-orbiting Lewis spacecraft has entered a spin that had disrupted the spacecraft's power-generating capability, raising the potential of the loss of the mission. Lewis was launched successfully on August 22 at 11:51 p.m. PDT from Vandenberg Air Force Base, CA and is part of NASA's Small Spacecraft Technology Initiative. Preliminary findings indicate that excessive thruster firing had occurred on one side of the spacecraft, causing it to spin when it should be stable on all three axes.
- The NASA Image eXchange (NIX) provides a single point of entry to various photographic databases of six NASA Centers (Langley, Lewis, Ames, Dryden, Goddard, and Johnson). To view and search NIX, check out the following URL: <http://nix.nasa.gov>

For information on other news stories go to the Goddard Homepage at <http://www.gsfc.nasa.gov> and choose **FLASH**

# Goddard Engineer Saves a Life Through Bone Marrow Donation

By Donna Drelick, Office of Public Affairs

Goddard's **Ken Wagner** is now known throughout Canada as "the Yank with a big heart." Wagner saved a Canadian woman's life by donating his bone marrow to her in 1995, and finally last month he was able to meet the recipient of his generosity.

Upon arriving at the Edmonton International Airport, Wagner was given a hero's welcome and was besieged by television cameras and newspaper reporters from the Alberta area covering the special moment. "Of course I was nervous to meet Kristina and her family. But after talking to her on the phone and exchanging letters, I knew that I had to meet her," said the unassuming Wagner. "When I finally got to meet the person who I now share a very special bond with, I felt so at ease. We immediately felt at home with each other. I can't explain the uniqueness of the situation, except to say that I now am a member of a special family in Canada."

Because of the anonymity of the bone marrow registry, the donor and recipient can not contact one another until

one year after the procedure. "Although I didn't know who I had helped, the registry kept me informed of her positive progress along the way." Then after one



Kristina Milke and Ken Wager finally meet, nearly two years after Wagner donated bone marrow that allowed Milke to conquer leukemia.

year had passed, Wagner received a touching phone call from his recipient, Kristina Milke. "Out of the blue my phone rang and it was Kristina. She quietly said, 'hi, you don't know me but you saved my life.' She kept trying to thank me, and I kept trying to thank her... because it's not everyday when a person can save someone's life," said the Goddard engineer.

Wagner donated his marrow to the 30 year old Milke, a complete stranger at the time, who was diagnosed with Chronic Myelogenous Leukemia. Wagner had been registered for years with the international bone marrow registry, but he did not get a call about his opportunity to save Kristina's life until 1995. The odds are one in 10,000 that a match is ever found.

Fortunately, Wagner's blood was found to be a match with someone who needed it. "The procedure was so easy and relatively painless," said Wagner. "It was such a simple way to make an impact on someone's life. I strongly encourage everyone

to get registered as a possible donor. The registry says that you will probably not hear from them again because the odds are so high for matches to be found. But if the match is made and you can help someone in grave need, the rewards are indescribable." For more information on the bone marrow registry, call 1-800-MARROW2.

## Recent Center Key Appointments

**Mr. James V. Moore** assigned as Acting Head of the Special Projects Office, Code 401.

**Mr. John Oberright** assigned as Office Chief of the Mission Integration Office, Code 401.1

**Mr. Bobby German** to serve as Project Office Chief of the Integrated Financial Management Project Office (IFMP), Code 401.2

**Mr. Richard Lawrence** assigned as Office Chief of the Atmospheric Effects of Aviation Project (AEAP), Code 401.3

**Mr. John Wolff** assigned as Office Chief of the Thermosphere, Ionosphere, Mesosphere, Energetics, Dynamics (TIMED) Office, Code 401.4

**Mr. W. James Adams** assigned as Office Chief of the Rapid Spacecraft Development (RDS) Office, Code 401.5

**Mr. Joseph Dezio** assigned as Office Chief of the Mission to Planet Earth Laser Altimetry Mission (LAM) Office, Code 401.6

Additionally, Code 424 has been retitled the EOS Chemistry Project. This reorganization disestablishes the Global Geospace Sciences (GGS) Project, Code 406 and the International Solar Terrestrial Physics (ISTP) Project, Code 407.

## Goddard Hosts Fall Community Day



Goddard is sponsoring a "Community Day" on Sunday, September, 28 at the Goddard Visitor Center (VC). This event provides the general public with a unique opportunity to participate in a sampling of Goddard's on-going activities. Some of the scheduled activities for this event include a keynote speaker, guided walking and bus tours of the Center, "Living in Space" presentations, demonstrations by the Goddard amateur radio club, and a model rocket launch. Admission and parking are FREE! Food and beverages will be available for purchase from 10 a.m. to 4 p.m. Bring your family and friends to this event to learn more about Goddard and all of its projects.

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## NEWS from the CENTER DIRECTOR

The upcoming year is a critical one for the future of Goddard. We need to ensure that the new organizational structure supports the success of our ongoing mission development and operations commitments. It is equally important that we aggressively pursue the goals of the Strategic Implementation Plan: securing Goddard's future as a National Resource, Center of Excellence for Scientific Research, and the leader for the next generation technology and spaceflight missions. The Directors Of are responsible for ensuring that the activities of their Directorates support both our current commitments and the goals of the Center Strategic Implementation Plan. The Strategic Management Team (SMT), formed in February, will provide Centerwide direction and coordination to achieve the goals of the Plan. Consistent with these goals, I have provided the Directors Of and the SMT seven high priority objectives to be achieved over the next 12 months. They are:

1. Establish a strong "hand on" Civil Service capability to support and develop technologies for the next generation Space and Earth Science Missions.
2. Prioritize existing manpower utilization against Strategic Implementation Plan and new initiatives goals.
3. Establish a formal process, with open competition, for technology development predicated on strategic partnerships with industry.
4. Ensure that the new initiatives tracking and Center resource allocation process is operational.
5. Complete Directorate Strategic Management Plans and Metrics.
6. Complete workforce skill assessment, ensuring workforce refocus and training plans are in place and initiated.
7. Ensure successful implementation of the Goddard ISO 9000 Plan.

I ask each one of you to vigorously support the Center achievement of these objectives. They are critical to the success of achieving our Strategic Implementation Plan and the future NASA Scientific Technology and Mission Leadership of the Goddard Space Flight Center.

### STS-85 CREW TO VISIT GODDARD

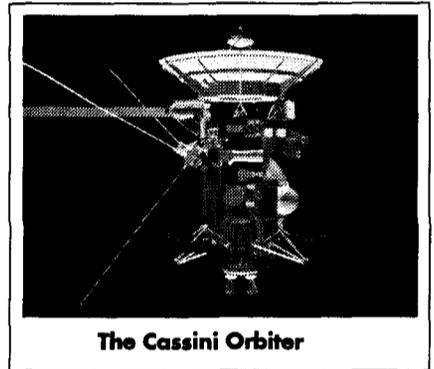
On Tuesday, September 23, 1997, the STS-85 astronaut crew will visit Goddard and give an employee colloquium presentation about their recent mission. The presentation will be held in the building 8 auditorium, beginning at 3:00 p.m. Following the presentation and a question and answer session, employees are invited to stay for autograph signing. Lithographs will be provided by the Office of Public Affairs.

## Goddard Scientists Participate in Cassini Mission

On October 13, a robotic spacecraft named Cassini will begin a seven-year journey to Saturn, some 875 million miles (1.4 billion kilometers) from Earth. Once at Saturn, the Cassini spacecraft will explore the planet's atmosphere and interior, its system of dramatic rings, its magnetosphere, numerous icy satellites and one of Saturn's moons, Titan. The mission marks the first time a space probe will attempt to land on the moon of another planet.

Goddard scientists will be participating in the mission with three instruments on board the spacecraft. The Ion and Neutral Mass Spectrometer (INMS) will determine the composition and structure of positive ion and neutral particles in the upper atmosphere of Titan and the magnetosphere of Saturn as well as measuring the positive ion and neutral environments of Saturn's icy moons and rings.

Goddard's Gas Chromatograph Mass/Spectrometer (CG/MS) instrument will be carried on the Huygens Probe and will be parachuted through the atmosphere of Saturn's moon, Titan, and will analyze complex mixtures of various molecular species in Titan's atmosphere.



The Cassini Orbiter

The Composition Infrared Spectrometer (CIRS), a remote sensing instrument, will measure the infrared light from Saturn, its rings and moons, in order to study their structure and composition. By analyzing this light, scientists can discover the temperature of an object as well as its chemical composition. "The CIRS is the most complex infrared spectrometer ever flown to the outer solar system, and will surpass, by an order of magnitude, the scientific capability of the Voyager infrared spectrometer at Saturn and Titan," said *Virgil G. Kunde*, principal investigator for the CIRS instrument.

Cassini is a cooperative effort of NASA, the European Space Agency (ESA) and the Italian Space Agency. The spacecraft, equipped with 12 scientific experiments, will orbit Saturn for four years. The ESA-built Huygens probe that will parachute into Titan's atmosphere will carry six additional instruments.

## STS-86 Set to Launch September 25

Space Shuttle managers have chosen September 25 as the launch date for the seventh shuttle mission to rendezvous and dock with Russia's Mir Space Station. STS-86 will deliver supplies and return Mike Foale from his four-month stay at the outpost.

"Our review today shows that the processing and training teams have done an exceptional job in getting Atlantis and the crew ready for this mission," said George Abbey, Director of the Johnson Space Center, who chaired the Flight Readiness Review at the launch site in Florida. Astronaut Dave Wolf has completed training and is scheduled to replace Michael Foale for a four-month stay on Mir to continue the permanent U.S. presence on the station that began with Shannon Lucid on the STS-76 mission in 1996.

The launch window opens at 10:34 p.m. EDT and closes about 7 minutes later at 10:41 p.m. Following a nominal flight duration of 9 days, 20 hours, 24 minutes, Atlantis is scheduled to land at the Kennedy Space Center, Florida at about 6:58 p.m. EDT, on October 5.

# CELEBRATE GODDARD DAY II A SUCCESS



Goddard employees choose from a variety of culinary delights in which to "feast" upon



Marit Jentosh-Nilsen and David Moreno demonstrate the benefits of karate: exercise, relaxation, and self defense!

Celebrate Goddard Day '97, held on Sept. 11, was a huge success! Despite the uncertain weather, the mall was alive with culture, food, entertainment and fun!

Goddard's own MC "extraordinaire," **Randy Barth**, kept the stage alive during the day-long event. Center Director Joe Rothenberg welcomed Goddard employees with a mid-morning address followed by Dr. Robin Hailstorks' diversity message. Then, over 5,000 attendees took part in an international lunch time food festival with culinary fare from countries including Pakistan, Greece, Germany, Italy, Mexico, Africa, China, United States, the Caribbean, and many other food styles, including soul food,

Middle Eastern and Hawaiian fare. Artisans and crafters offered merchandise that spanned the globe as well. To compliment the assortment of food and craft vendors, an afternoon of entertainment helped to highlight the traditions of music, dance and song from a variety of countries.

Many attendees mapped their birth place on a giant world map showing the diverse ethnic and racial community that makes Goddard great. And greatness was also exhibited by the "ISTP'ers," who took first place in the Scavenger Hunt. Team members included: Captain, **Nicky Fox**; **Maruchi Peredo**; **Mike Carlowicz**; and **Adam Szabo**.

While Celebrate Goddard Day was a way to boast the festive parts of the many cultures present in Goddard's diverse work force, it also served as a forum for optional formal education and discussion. Guest speaker Dr. Robin Hailstorks, of Prince George's Community College, and Ms. Jane Elliott, famed adapter of the 1960s discrimination experiment "Blue Eyes," "Brown Eyes," both hosted discussion groups in the morning and afternoon.

The day finished late afternoon with a burst of sunshine while the clean-up team officially ended the event, which was a perfect exclamation to a fun-filled day! Visit the web page at <http://arioch.gsfc.nasa.gov/MCAT/CDG97.html> for more follow-up on the event or call the hot line at x6-2716 to offer feedback or suggestions about Celebrate Goddard Day 97.



Here, (Gerald) Tiqui of the Spacecraft Fabrication Shop performs the Hawaiian "Fire and Knife Dance."

## Update on Mars Global Surveyor

<http://mgswww.arc.nasa.gov>

After a successful engine burn, NASA's Mars Global Surveyor (MGS) entered orbit around the Red Planet on Thursday, September 11. MGS has now begun the aerobraking process that will gradually lower the spacecraft through the Martian atmosphere. This process is expected to last through January 1998.

The operations of the two Goddard instruments aboard MGS are proceeding along well. "The MGS Magnetometer/Electron Reflectometer was configured for full operation shortly after MGS passed through its first orbit periapsis. The instrument is performing very well and is returning interplanetary magnetic field data which also includes signatures of possible upstream events related to Mars interaction with the solar wind," said **Mario Acuna**, principal investigator for the magnetometer. "Analyses of the data will be conducted in the following week to establish important characteristics of the Mars-Solar Wind interaction and the possible existence of a planetary magnetic field."

"The Mars Orbiter Laser Altimeter (MOLA) has provided laser-based observations of the fine scale topography of Mars. The engineering team and science team delighted in seeing the third dimension of remarkable martian landscapes at nearly human scales using the MOLA sensor," said **Dr. Dave Smith**, principal investigator for the MOLA instrument.

Once the aerobraking process is completed, Mars Global Surveyor will spend two years studying Mars surface features, atmosphere, and magnetic properties.

## More Key Center Appointments

Effective July 20, 1997, the Office of Chief Financial Officer was reorganized to establish three organizations: the Office of the Deputy Chief Financial Officer (Finance), the Headquarters Accounting Office, and the Integrated Financial Management Program (IFMP) Implementation Operations Office. Key appointments within these offices include:

**Ms. Paula Gal-Edd** appointed as Chief of the Headquarters Accounting Division (Code 155).

**Mr. Curtis E. Johnson** appointed as Chief of the Financial Management Division (FMD) (Code 151).

**Ms. Nancy Abell** appointed as Acting Head of the IFMP Implementation Operations Office.

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## NEWS from the CENTER DIRECTOR

Last week I introduced seven high priority objectives to be achieved within the next twelve months, which will support the Center Strategic Implementation Plan. Within the next several newsletter issues, I will address each goal individually and in detail. The first two goals are:

**1. Establish a strong "hand on" Civil Service capability to support and develop technologies for the next generation Space and Earth Science Missions.**

During the coming year, we must reassign a significant percentage of our Civil Service (CS) workforce to the highest priority new mission and instrument initiatives relevant to Goddard's role in space and Earth science research. The CS personnel will be assigned to development teams with appropriate partners, performing predominantly hands-on work rather than oversight work. We should select the in-house activities for the next generation space and Earth science missions and associated instruments based on two primary factors: the technology must be innovative, leading edge, and high risk; and the activities should be consistent with the basic skills and competency in our workforce. The staffing of these activities will conform to Goddard's Strategic Implementation Plan and new initiative priorities and schedules.

**2. Prioritize existing workforce utilization against Strategic Implementation Plan and new initiatives goals.**

The intent of this goal is to ensure that our workforce is applied to support both ongoing and new business initiatives consistent with both Goddard's Strategic Implementation Plan and customer priorities. To accomplish this, we need to complete a person-level Zero Base Review of all ongoing activities, prioritize the ongoing activities along with all new initiatives, and make appropriate adjustments in the workforce assignments. A part of this activity requires the Center to defer or even terminate low priority work. This is a high priority activity with a target completion of January 1998.

The above goals are necessary in order for us to succeed in achieving our Strategic Implementation Plan as well as the future NASA Scientific Technology and Mission Leadership of the Goddard Space Flight Center. Please read this space next week for details on goals three and four. All seven goals may be found on the Goddard Homepage at <http://www.gsfc.nasa.gov>

## First Global Ocean-Color Images from New Sensor Show Promise for Climate, Biological Studies

Exciting ocean-color images from the Sea-viewing Wide Field-of-view Sensor (SeaWiFS) - the first readily available ocean-color data in more than ten years - should play a major role in studying the ongoing El Niño and in conducting other global warming research.

The SeaWiFS data also is giving scientists their first continuous look at the global biosphere, the combination of living organisms and their environment. Ocean color is largely determined by the concentration of microscopic marine plants called phytoplankton.

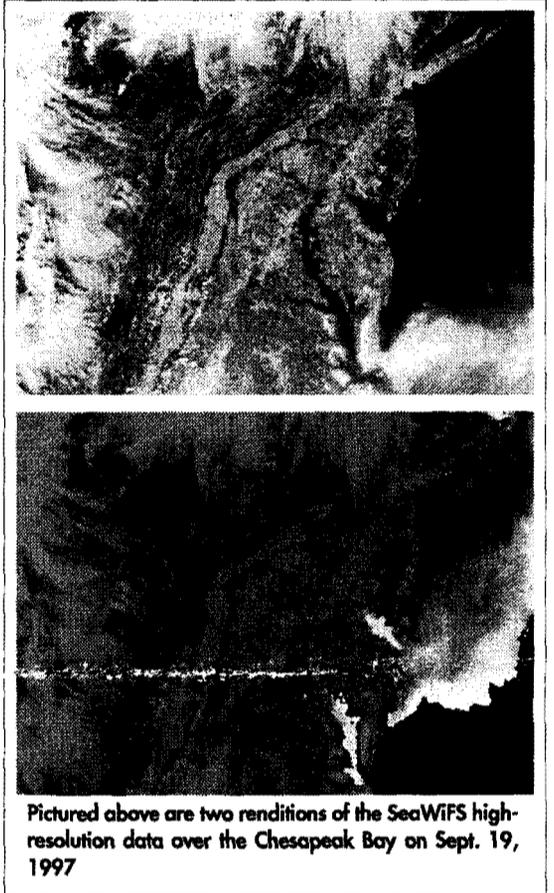
Accurately measuring phytoplankton concentration is important to climate change research and to local economic concerns such as commercial fishing.

"The images are more than we ever could have hoped for," said oceanographer, **Dr. Gene C. Feldman**, head of the SeaWiFS's data processing team at Goddard. "Although originally designed to just study the oceans, we've also discovered a way of using it to study the land as well, and as a result, we can study the global biosphere for the very first time."

"The new images clearly show areas of coastal upwelling along the northwest U.S., Argentina and western South Africa. These upwelling events foster dramatic plankton blooms which are a critical source of food for major fisheries. The data will be extremely valuable for fisheries management," said **Dr. Charles McClain**, SeaWiFS Project Scientist.

SeaWiFS offers great potential for monitoring oceanic conditions that have serious, and often tragic, effects on human health. Coastal blooms of algae have been associated with cholera outbreaks around the world. Early detection of these blooms, and subsequent in-water sampling, may significantly reduce the impact of these outbreaks. Red tides, ocean dumping of organic and chemical waste, and perhaps even oil spills can be tracked with SeaWiFS data, Feldman said.

The SeaWiFS instrument is aboard a commercially built and operated satellite called OrbView 2, owned by Orbital Sciences Corp., Dulles, VA. OrbView 2 was launched at 3 p.m. EDT Aug. 1, 1997, from Vandenberg Air Force Base, CA, aboard an Orbital Pegasus XL launch vehicle. The SeaWiFS mission is unlike many other NASA missions. NASA's SeaWiFS Project described the data they wanted to purchase without giving specific requirements for the spacecraft itself. "It's a whole new way of doing business," said SeaWiFS Project Manager, **Dr. Mary Cleave**. To view the above image in color, go to <http://www.gsfc.nasa.gov> and choose **FLASH**.



Pictured above are two renditions of the SeaWiFS high-resolution data over the Chesapeake Bay on Sept. 19, 1997

### Red Cross Blood Drive



The Red Cross will accept blood donations on Wednesday, October 1, 1997, in the bldg. 8 Auditorium from 8:30 a.m. until 2:15 p.m. Please schedule your donation appointment by the close of business on Tuesday, September 30, 1997, by calling Donna Lynch on 286-5053. The whole process takes approximately an hour. Any healthy person at least 17 years of age and weighing a minimum of 110 pounds can donate every eight weeks. The process of giving blood is always under the supervision of a Medical Unit Supervisor. The procedure includes a medical check, actual donation, and some time for relaxation and refreshments. Please be sure to get sufficient rest the night before and eat a well balanced breakfast and lunch the day you donate. The blood supply in our area is very low at this time and we can change that. Give Blood!

## STS-85 Crew Visits Goddard

On Tuesday, September 23, Goddard welcomed the crew from the STS-85 Shuttle Mission for an employee colloquium briefing. The program began with a welcome from *Dr. Robert Price*, Director of the Mission to Planet Earth Office, followed by remarks from Lt. Col. Curtis Brown, Commander, who stated "We as a crew are very proud to be a part of the N A S A family."

Following his remarks were a movie and slide shown on the mission, after which,

Dr. Price presented a plaque to the crew. At the end of the

briefing, there was an autograph signing session, where employees were able to have lithographs signed by each crew member.

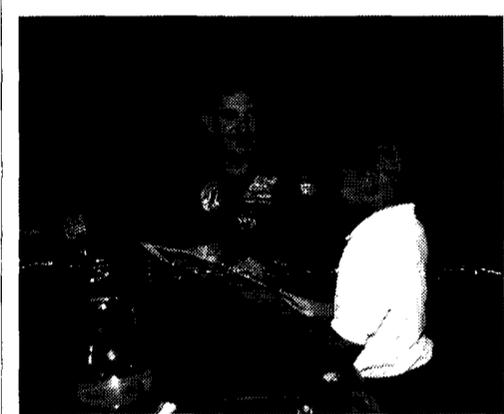
The STS-85 mission was a major milestone for NASA and Goddard in particular. The mission continued NASA's ongoing study of Earth's environment under the agency's Mission to Planet Earth

(MTPE) enterprise by studying several MTPE research interests, including atmospheric dynamics, atmospheric chemistry, long-term climate change and land cover/land use change around the world. "It was an excellent

scientific mission that represented international cooperation," stated Dr. Price.



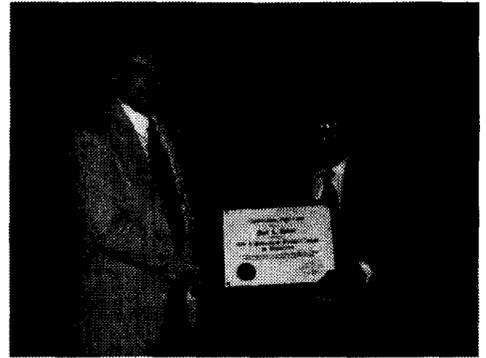
From left to right: Robert L. Curbeam, Kent V. Rominger, Stephen K. Robinson, N. Jan Davis, Curtis L. Brown, Bjarni V. Tryggvason



Future "astronaut," Aaron Johnson, asks Commander, Lt. Col. Curtis Brown for his "John Hancock."

## EMPLOYEE achievements

On September 15, *Dr. Jack Bufton* was presented with the Moe I. Schneebaum Memorial Award for Engineering. Dr. Bufton received the award in recognition of his exceptional and sustained contributions to NASA research and development in laser remote sensing and electro-optics. Dr. Bufton supports the Laboratory for Terrestrial Physics in the Earth Sciences Directorate.



Dr. Jack Bufton receives the Moe I. Schneebaum Award presented by Joe Rothenberg

## Satellites Aid in Rescue Efforts

Fourteen years after the launch of its first satellite, the COSPAS/SARSAT system continues to aid in the rescue of those in need of help. COSPAS, a Russian abbreviation of Space System for Search of Vessels in Distress, and SARSAT, Search and Rescue Satellite-Aided Tracking System, are a model program of international cooperation. The antennas of the COSPAS/SARSAT satellites are aimed towards Earth to detect signals of distress. The signals are transmitted to space from downed airplanes, capsized boats, and other emergency situations.

For example, on August 27, the COSPAS/SARSAT system detected a distress signal near Deadhorse Alaska where two people, father and son, were at a hunting camp. The son had activated his PLB because his father, suffering from hypertension, was very close to having a stroke. The medic onboard the helicopter sent to the location was able to stabilize the man's condition, and both father and son were airlifted out.

Then, on August 31, the COSPAS/SARSAT system detected a distress signal at the Johnson Glacier in Alaska. The Alaska Rescue Coordination Center dispatched the Civil Air Patrol to investigate what they assumed was a crashed plane. Once on the scene, they found a hunter who was injured and could not fly out. He had dislocated his shoulder. The Civil Air Patrol transported him to a waiting ambulance.

The two above rescues show how the COSPAS/SARSAT system remains invaluable in aiding worldwide rescue centers in locating the sources of the signals to speed search and rescue efforts.

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

*Orlando Figueroa*, Director Designee, recently announced the following key appointments within the new Systems, Technology and Advanced Concepts Directorate (STAAC): *Ms. Bonnie Norris* has been selected as Associate for Mission Integration and Planning Division (MIPD); *Mr. Richard Barney* has been selected as Assistant for Instrument Development; *Mr. Tom Taylor* has been selected as Assistant for Mission Development; and *Mr. Eduardo Torres* has been selected as Head of the Mission Enabling Office.

Biographies and photos of these new Directorate managers will be available soon under Project Goddard via the Goddard Homepage at the URL above.

GODDARD  
<http://www.gsfc.nasa.gov>

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

#### UPCOMING EVENTS September

- Community Day 09/28  
(Visitor Center, 9:00 a.m. - 4:00 p.m.)
- Engineering Colloquium - Ford Weiskittel 09/29  
(bldg. 3 aud., 3:30 p.m.)
- MO&DSD Farewell Open House 09/30  
(bldg. 8 aud., 3-5 p.m.)

#### October

- Center Director's Colloquia - James Burke 10/01  
(bldg. 3 aud. 2:30 - 3:30 p.m.)
- Scientific Colloquium - Compton J. Tucker 10/03  
(bldg. 3 auditorium, 3:30 p.m.)
- Director's Lobby Meeting 10/22  
(bldg. 32, 3:00 - 4:00 p.m.)



National Aeronautics and  
Space Administration  
Goddard Space Flight Center

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## NEWS from the CENTER DIRECTOR

Listed below are goals three and four of the seven high priority objectives I have established to ensure achievement of the goals of Goddard's Strategic Implementation Plan.

### 3. Establish a formal process, with open competition, for technology development predicated on strategic partnerships with industry.

Effective implementation of this goal will focus a significant portion of the Civil Service workforce on customer-driven, cutting-edge technology development. This activity will be accomplished in partnership with Industry, Academia, other Centers, and other Agencies. It will secure Goddard's relevance as a National Resource for spaceflight technology as well as provide new, challenging opportunities for our employees. In order to effectively meet this goal, we must develop a process which supports the solicitation and competitive selection of partners for all new technology development activities. This process should be in place before we initiate the next round of Goddard technology development, either in response to Agency technology or flight project technology requirements. We will begin to transition existing technology developments into partnerships over the upcoming year.

### 4. Ensure that the new initiatives tracking and Center resource allocation process is operational.

The substance of this goal is to ensure that all New Business Opportunities, including requests by external PI's or Industry, are prioritized, have appropriate partners, are understood by employees, and that the required Centerwide resources are assigned. An additional objective of this goal is for Senior Management to advocate the Center's commitment to these initiatives to our employees, customers, external supporters and Industry partners.

## KidSat Flies Final Flight on STS-86

By Nancy Neal, Office of Public Affairs

The STS-86 mission, which launched Thursday night, Sept. 25, marked the third and final flight of KidSat. KidSat is a three-year pilot program sponsored by the National Aeronautics and Space Administration. Goddard's Education Office is working closely with Canton Middle School in Baltimore on the school's participation in the project. **Kevin Boone** from the Education Office is lead on this initiative.

Kidsat is a research and development program that allows students around the country to study Earth using remote-sensing instruments. The mission of the KidSat project is to demonstrate how middle school students can study the Earth by using mounted cameras on board the Space Shuttle to conduct scientific inquiries in conjunction with their Earth science studies program. The students are allowed to pose their own investigation questions, select and analyze the images received during the flight, and utilize the Internet to view the images. The KidSat project involves three phases.

Phase One involves planning and practicing for the actual mission. The Student Mission Operations Center (SMOC) is established where students can practice targeting the pictures they want during the mission. Canton Middle School will have two simulations for the students to practice. Next, they learn the mechanical aspects of the shuttle. Lastly, they learn how to read the images that they receive from the camera.

Phase Two is the actual mission. The middle school students remotely operate a Kodak electronic still camera which is mounted on the right overhead window on the flight deck. These students are responsible for planning the photo requests. This involves calculating the longitude and the latitude of a particular region. High school and college students compile these photo requests into a single file that is then forwarded to KidSat representatives at Johnson Space Flight Center. Special flight software developed for the project allows the Thinkpad to command the camera to take the pictures requested by the students. Students can access these pictures by using the Internet. Canton will provide five computers with Internet access for the mission.

Phase Three begins an extended, in-depth investigation of the pictures. The students now have images of personal relevance which can act as a catalyst for further investigations. As a result of further investigations, the students extend their understanding of earth science.

KidSat has flown on two previous missions. The first was STS-76, launched in March 1996. The second mission was STS-81 in January 1997. KidSat has grown tremendously. The first mission only had three middle schools involved, 52 schools will participate in STS-86 mission.

Although STS-86 marks the final flight of KidSat on the Space Shuttle, there is hope that KidSat cameras and other instruments may fly aboard the International Space Station. If this happens, this will give students and educators a permanent avenue for studying the Earth from space.

## CURRENT news

- The United States Space Command tracked the reentry of the Lewis satellite into the Earth's atmosphere on September 28. The Lewis satellite, an earth-orbiting spacecraft was not designed to survive re-entry and is expected to have burned up in the atmosphere.



- This year's CFC kick-off will be held on Wednesday, October 8 in the Building 8 auditorium. The program begins at 9:00 a.m. with Master of Ceremonies, **Al Diaz**, Deputy Director.

Come join us at the kick-off; there will be videos, music, door prizes and of course refreshments. Everyone is invited to attend.

**Goddard News Goes Electronic** - The weekly Goddard News is now online. To view the newsletter electronically, you must use Adobe Acrobat Reader. To access, go to the Goddard Homepage at URL <http://www.gsfc.nasa.gov> and choose "Public Services and Information" or go directly to <http://pao.gsfc.nasa.gov/gsf/Gnews/Gnews.pdf> We are interested in your comments/feedback; please send them to [gsfc\\_pao@listserv.gsfc.nasa.gov](mailto:gsfc_pao@listserv.gsfc.nasa.gov)



## Travel Budget Allocation Paperwork Reduced

By Greg Davidson,  
Travel Engineering Team Leader

Did you remember to develop a travel plan for every trip you will be taking next year? The good news: you don't have to! Chartered to recommend changes in travel policy and processes, the travel reengineering team has redesigned the current process for allocating travel funds. Last year, the process went something like this: (1) Travel call to Directorates; (2) Directorate guidance to Divisions/Projects; (3) Division guidance to branches (4) Thousands of employees generate travel requests; (5) Inputs rolled up at the Branch level; (6) Inputs reworked; (7) Inputs rolled up at the Division/Project level; (8) Inputs reworked; (9) Inputs rolled up at the Directorate level; (10) Inputs reworked; (11) Directorates submit request to Code 153; (12) Inputs reworked; (13) Inputs discarded; allocation made based primarily on history.

The process was both burdensome and ineffective. Employees typically would spend a combined total of over 7,000 hours generating inputs with the information on true needs not reaching the appropriate decision-makers because it was hidden in the clutter of paper. In addition, there was inadequate strategic guidance to establish criteria for allocating funds.

The new process is based on these findings of the travel reengineering team: (1) The funding for some activities is relatively stable from year to year; therefore, these trips do not need to be considered in the annual allocation process. Overall funding for conference travel, institutional travel, and outreach can be set based on strategic priorities; (2) Even in areas where there is year-to-year changes in travel needs, those changes are minor (i.e. Code 400's travel budget usually fluctuates between 38 percent and 42 percent of the Center's total each year).

The new allocation process focuses on the \$4M part of the travel budget that does vary significantly from year to year: new business/proposals, flight projects, field campaigns, and MO&DA. The baseline is established based on the FY 1997 budget. Even in this "variable" budget there is not much change from year to year, so the Travel Council (**Art Fuchs**, **Vince Salomonson**, **Diane Williams** and **Jane Hardman**) is chartered only to consider re-allocating the last 15% of this variable budget (about \$500K). The Travel Council will then take a centerwide perspective and allocate this 500K within the variable budget to best achieve the goals of the center strategic plan. This meeting does not end until the Council has reached unanimous agreement on the allocation.

While there are other issues to be tackled, including working with a limited travel budget, the travel reengineering team has introduced a simpler process for allocating travel funds, a process that will return to you, your portion of the 7,000 hours.

The travel reengineering team members are: Greg Davidson, Joe Dezio, Herb Frey, Darryl Lakins, John Langmead, Dave Larsen, Esmond Marvray, Rob Petre, Alda Simpson and Diane Williams.

## Goddard Celebrates Community Day

Goddard sponsored Community Day on Sunday, Sept. 28. Many Goddard employees, along with their children, and outside folks came out to see what Goddard is all about and participate in the activities. The day's events included two Living In Space presentations and a Puppets In Space presentation that was the debut of Puppets here at Goddard. The Puppets presentation was a great addition to the Community Day events and was the highlight of the day.

**Dr. Claire Parkinson** of Code 971, presented a lecture, on her recently published book, Earth From Above. There was standing room only as Ms. Parkinson gave her presentation and passed out a large number of her book as well as the Sea Ice CD-ROM.

A variety of tours of the Center were conducted and the day concluded with a Rocket Launch that was witnessed by about 350, wet from the rain showers, people!

## RVC Workshop at Goddard

Goddard's Applied Information Sciences Branch hosted the 2nd Regional Validation Center (RVC) Workshop on September 17-19. At this event, 16 different institutions from around the country (including one county government) joined together to learn of recent technology

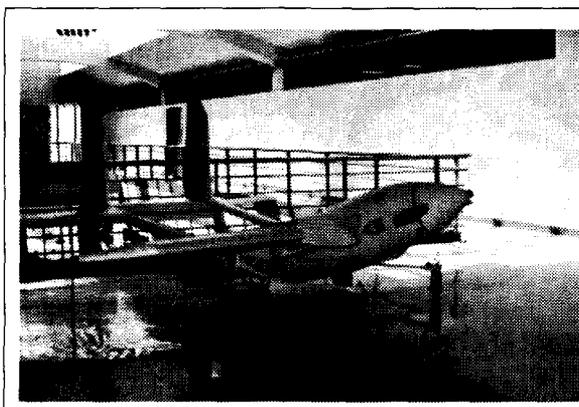
development by Code 935 and identify how it can be applied to their own varied uses of imagery for their own user groups.

Additionally, the workshop

provided an opportunity for the RVC institutions to trade ideas, techniques and methodologies that they have developed individually. The Workshop included welcomes by Deputy Center Director, **Al Diaz**, Code 900 Directorate Chief, **Vince Salomonson**, and Code 930 Division Chief, **Milt Halem**. An overview of the program activities was provided by Code 935 Branch Head, **Bill Campbell**.

A presentation on research results in object oriented databases and RVC software development was provided by **Bob Crompt** along with a presentation on development of specific applications of the RVC system by **Jerry Garegnani**. **Steve Maher** and **Jim Tilton**, also from code 935, presented information on visualization techniques for data selection and new imagery classification methods.

The RVC program is partially funded by Mission To Planet Earth and The Office of Space Science at Headquarters. The program enables regional institutions to receive data directly from imaging satellites, as well as other sources of data, for automated processing, user specified product production as well as storage and distribution to end users.



On display at the workshop, this small, unmanned aircraft is being evaluated by Code 935 for low altitude collection of high spatial resolution hyperspectral data in remote locations.

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

On Friday, October 3, from 9:00 a.m. to 11:00 a.m., in the Building 8 auditorium, there will be a STAAC all-hands meeting.

On the same day, from 1:00 p.m. to 3:00 p.m., employees of the STAAC Divisions and Offices will meet in the designated buildings/rooms as follows:

- Systems Engineering Division - Bldg. 8 auditorium
- Mission Integration and Planning Division - Bldg. 3 auditorium
- Technology Commercialization Office - Bldg. 3/ Room 200
- NASA Technology Planning & Integration Office - Bldg. 8/Room 121
- Business Management Office - Bldg. 8/Room 235

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