



National Aeronautics and
Space Administration
Goddard Space Flight Center

Goddard News

Greenbelt, Maryland / Wallops Island, Virginia

February Vol. 44 No. 2

GODDARD MOURNS THE LOSS OF ONE OF OUR ORIGINAL SPACE PIONEERS



Robert C. Baumann, Director,
Office of Flight Assurance

Robert Baumann, Director of Flight Assurance, passed away on January 25, 1997. A sigh of disbelief was heard around Center when the news went out. **“Bob was a big part of GSFC, and GSFC was a big part of him,”** reflects Brian Keegan while giving the eulogy. Goddard was fortunate to have Bob on our team. When we look back on our beginnings Bob was there each step of the way. He is one of the original space pioneers. His coworkers note that there won't be a Flight Readiness Review in the future that won't prompt thoughts of Bob and his never ending questions. Bob was known for his smile. He had a casual, up-beat, relaxed presence that made everyone around him feel comfortable. “When someone mentions travel you think of Bob.” Brian Keegan sums it up well: “I had a close working relationship with Bob over the last 10 years, 7 as his deputy. As a Deputy, I saw him once a week, twice if travel money was tight.” Bob was fiercely proud of his family and loved to talk about his children. One especially touching story he liked to tell was how his wife Evelyn would welcome him home from travel with fresh shrimp and champagne.

“Bob respected everyone's input. He will always be remembered as “deputizing” the audience as he began his Launch Readiness Reviews” says Gustave Comeyne, Jr.

Catherine Windsor reflects, “I worked with Mr. Baumann for 9 years and I will miss him. He was always on an even keel. He treated everyone with the same respect and kindness and his philosophy was to make life an adventure. He truly loved his job!”

These characteristics are Bob, “precise, not pretentious, a good delegator, good friend and a wonderful sense of humor. He always gave me the upside to any problem or challenge” notes Pat Dunn.

Bob began his many years of Federal Service in 1944 when he enlisted in the Marine Corps. He served in the Pacific Theater during World War II. He transferred from the Naval Research Laboratory's Vanguard program to NASA when it was established in 1958. He was awarded the first U.S. satellite design patent in 1957 and he held a basic patent in satellite control systems as a co-inventor. He was the first NASA project manager of a cooperative international project — Ariel I with the United Kingdom. He was the initial project manager on other early international projects with the European Space Research Organization, now the European Space Agency and the Netherlands. Bob received numerous prestigious awards for his distinguished service. Just last year he was awarded the Distinguished Service Medal, the highest honor NASA can bestow. Joe Rothenberg presented Bob's wife Evelyn with a replica of Dr. Goddard's first rocket at the memorial service and the Center has posthumously awarded Bob its Award of Merit for his many years of faithful service.

Dan Goldin had this to say in a letter commemorating Bob's 50 years of service

“Rarely does one have the opportunity to honor a dedicated and successful federal employee like you who have given so much of his life to public service”... Especially significant are the many contributions you have made to the National Aeronautics and Space Administration, Goddard Space Flight Center. ... your managerial oversight has helped immensely in achieving the goals and objectives of the national space program and its diversified user community. ...It is people like you who have made NASA and the Nation proud.”

Center Director, Joe Rothenberg expressed his sorrow: “Bob's contributions to Goddard were recognized by every organization on Center. His cheerful attitude, dedication to excellence; honest, accurate and frank assessments; all these earned him a reputation as one of the Center's most respected and distinguished leaders. We will miss him terribly.”

February is Black History Month

CENTER ACTIVITIES DURING FEBRUARY BLACK HISTORY MONTH

As a center strategic effort to increase cultural awareness, all employees are encouraged to attend these activities sponsored by the Office of Equal Opportunity

BLACK HISTORY MONTH THEME:

AFRICAN AMERICANS AND CIVIL RIGHTS: A RE-APPRAISAL

FEBRUARY 5, 1997

CITIZENS OR HUMANS IN PURSUIT OF THE "RIGHT" RIGHTS

Eraka Rouzoroudu, *Executive and Artistic Director*

Ascension Productions

Building 3, Auditorium

11:30 - 1:00 p.m.

FEBRUARY 12, 1997

BLACKS IN THE OLD WEST

C.R. Gibbs, *Author, Freelance Writer, Lecturer and Exhibitor of historical artifacts*

Building 3, Auditorium

11:30 - 1:00 p.m.

FEBRUARY 19, 1997

AFRICAN DRUMMING AND DANCE WINDOWS OF KUUMBA

Tyehimba Gregory McColbough

Building 8, Auditorium

11:30 - 1:00 p.m.

FEBRUARY 26, 1997

THE IMPACT OF RESTRUCTURING IN A MULTICULTURAL ORGANIZATION

Carl L. Jennings, *Organizational & Management Development Specialist*

Jennings & Jennings

Building 8, Auditorium

11:30 - 1:00 p.m.

Did you know?

On February 7, 1926, Negro History Week was observed for the first time by originator, Carter G. Woodson. Check out the Internet site for Carter G. Woodson at URL <http://cpl.lib.uic.edu/002branches/woodson/wncgwoodson.html>

Contact the Public Affairs Office for a copy of the inspiring poster "Your Attitude Determines Your Altitude - Superstars of Space Flight"

AN IMPRESSIVE START TO 1997



Joe Rothenberg

Events over the past few months have been as intensive as any that I have seen in all my years at Goddard. From the completion and printing of the Goddard Strategic Implementation plan, to on-going planning and reorganization activities at Goddard - including the Wallops Mission planning activities, to preparations for the upcoming SWAS launch and the HST servicing mission, to preparations for the Presidential Quality Award site visit, to representation and involvement at AGU and AAS meetings, FY97 has been an energizing year so far! The drive and dedication of each of you impresses me and makes me extremely proud.

During the remainder of this fiscal year, there will be many

more opportunities for each of you to become involved with reinforcing the new vision and direction that Goddard has taken. As an example, consistent with achieving the commitments made in the GSFC 2005 goals, procurement planning for a "rapid" spacecraft acquisition process has begun. Increased implementation of performance based contracting, implications of full cost accounting, and technical and programmatic issues involving insertion of new technologies in our programs are other examples of new processes that will challenge us.

The efforts of the entire Goddard team over the past few months gives me great confidence that we can and will succeed with the scientific, technical, and managerial challenges we will encounter this coming year. I look forward to working with each of you as we execute the Goddard Strategic Implementation plan, a plan that will position us for continued success in the new millennium.

SBIRs CRAVE THE WAVE OF THE FUTURE

by Lynn Jenner, Office of Public Affairs



In California, an automated robotic assistant helps surgeons doing intricate laparoscopic surgery. Thirty miles above California, another robotic assistant helps Shuttle astronauts service a satellite in space. In Vietnam, a small child drinks a glassful of water that has been checked for harmful microbes using the same Shuttle technology that checks the crew's water for back contamination by microorganisms. An aircraft filled with snow skiers returning home from a trip to Big Sky are safer because of an IDI sensor system which detects ice build-up on the aircraft. This same technology is currently supported at the NASA Lewis Research Center Icing Technology Branch. George Orwell's 1984? Nope, just the Small Business Innovation Research (SBIR) program at work.

The technologies above represent just three of the many success stories that have arisen as a result of a 1982 Congressional mandate to the larger Government agencies to develop innovative technologies through small businesses. Scientists, engineers, and researchers at NASA are solicited to formulate broad ideas for technologies that will be needed in future missions (as many as five years away). As a result of the research and development these participating small businesses are not only able to help further NASA's mission, they also help themselves by being able to market their new technologies to industry by way of private sector commercialization.

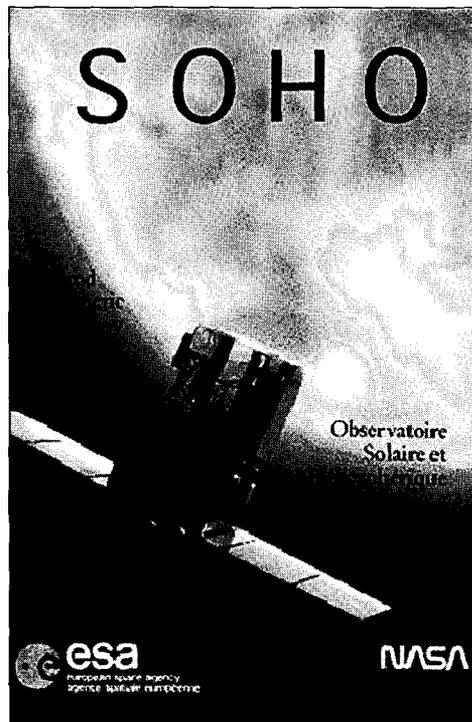
Don Friedman of the Office of Commercial Programs had this to say about the SBIR program. "It's an opportunity for the researchers to gain new technologies that are not available through the normal research route. Money is tight around the Government and a lot of the technologies would not have been developed without the SBIR program." The monies for the SBIR program are funded over and above each center's allotted budget. It sometimes is the only research money available for some scientists, and as such, becomes a glimmer of hope that the much-needed technology will indeed be developed.

The SBIR program begins with the various NASA centers developing technology requirements. These requirements are based on future mission needs and are very broad in nature so that the small business contracted actually does the main research and development. Once the requirements are set, a solicitation which contains all NASA center provisos is sent out to over 10,000 small businesses. On average, 2500 to 3000 proposals are received on each solicitation issued. SBIR is broken into two phases. The first phase is for a six month feasibility study to determine whether the technology proposed actually has a reasonable chance of being developed. The company is paid \$70,000 for this phase of the program. Once this phase is completed, the selection committee reviews the Phase I feasibility studies completed and decides which small businesses will be allowed to continue into Phase II—the development phase. This phase lasts for two years and the companies are funded \$600,000 to develop the technology proposed in Phase I.

SBIR Continued on Page 6

SOHO MISSION WINS BEST OF WHAT'S NEW AWARD

by Jim Sahli, News Chief, Office of Public Affairs



The Solar and Heliospheric Observatory (SOHO) has won one of 100 nationwide *Popular Science* magazine "Best of What's New" awards for 1996. Winners of the "Best of What's New" awards are featured in the magazine's December 1996 issue.

The spacecraft was one of eight chosen in the Aviation and Space Category. In the first year of operation, SOHO has captured public attention by sending solar data to the Earth on a daily basis.

SOHO, is a joint project of NASA and the European Space Agency to study the

Sun. Mission operations for the solar spacecraft are directed from the mission operations control center at the NASA Goddard Space Flight Center in Greenbelt, Md.

"The SOHO science team has been hard at work for the past year since launch trying to unravel some of the mysteries of the Sun. It is great that the team is receiving this recognition," said Dr. Art Poland, NASA mission scientist for SOHO at the Goddard Center.

"The SOHO spacecraft is sending back extremely detailed images that reveal a surprising level of motion and activity even though the Sun is in the quiet phase of its 11-year cycle. SOHO instruments also have discovered that the interior structure of the Sun is different than previously assumed," said Poland.

"Additionally, from SOHO's initial data, we also have discovered that mass ejections from the Sun, that sometimes strike the Earth, are global in nature and not just localized events on the Sun. New understanding of these processes may well make these events predictable. Everyday, we learn a little more about our Sun," said Poland.

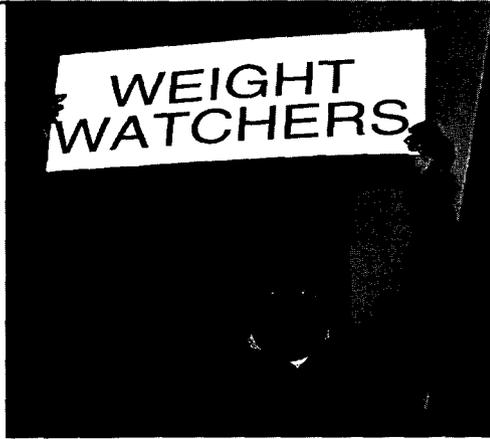
SOHO was launched one year ago (Dec. 2, 1995) aboard an ATLAS II rocket from Florida. The spacecraft is observing the Sun from a "halo orbit" around a point known as the first Lagrangian Point which is 930,000 miles from Earth, where the gravitational forces of the Earth and Sun balance one another. Energy is transported from the Sun's interior by a variety of processes that are not clearly understood. The observatory's 12 instruments are investigating a wide range of these phenomena.

For more information about the SOHO project, visit the SOHO home page at: <http://sohowww.nascom.nasa.gov/>

FROM THE DIRECTOR:

The President's Quality Award (PQA) application process has been a timely "forcing function," for doing some important self-assessment. While we look forward to the formal feedback from the Office of Personnel Management, and have plans to share this information with our employees, I believe that we have already derived a benefit from the overall assessment process. Too often, we get so caught up in actions, planning and change that we don't take time to look thoughtfully at our work and our many accomplishments. The recently completed PQA site visit offered us all an opportunity to take stock of where we are as a quality organization. And, I for one, am extremely proud of the Goddard workforce for its commitment to excellence, for its willingness to look critically at itself, and for its innovation, creativity and daring. During their brief stay with us, the PQA examiners saw many outstanding science and technology products, processes and initiatives, but what impressed them most was the people. They saw people who enjoy their work, people committed to making improvements, people who meet challenges head on, and people who know how to make things happen. Your enthusiasm and your support for Goddard's continual improvement came shining through. Paraphrasing the words of a famous celebrity and our own John Baniszweski, the principal author of our PQA application: "Congratulations! You are already winners."

Joseph H. Rothenberg



Bob Lane and the Code 400 Auction

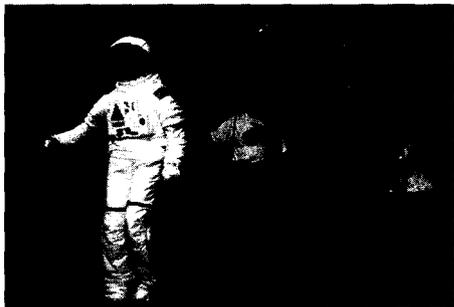
Kelly Carter, Code 230, leading the audience in the Macarena



Joe Rothenberg & Team playing the "It's Quality" Game Show



Carl Poleskey, and the Team from 100 - Faster, Better, Cheaper



Jerry Simpson leading the Human Resource Team in song to the tune of "YMCA"



"Customer Appreciation" Organizers with Dave Jones, Meteorologist from Channel 4

Rally for Quality

This January, more than 2,000 employees turned out to show their support for Goddard as a quality organization, participating in President's Quality Award awareness program — engineering special egg-drop apparatus and demonstrating their personal and professional commitment to excellence through drama, dance and song.

People also took time out to bone up on the 65-page written PQA application and the Center's newly released Strategic Implementation Plan in preparation for the arrival of the Office of Personnel Management's four independent site examiners.

During the actual site visit on January 14-16, 1997, examiners spoke with an estimate 150 employees at Goddard and Wallops to "validate" Goddard's written application. In all accounts, the site examiners were extremely impressed by the enthusiasm, openness and honesty of Goddard's people.

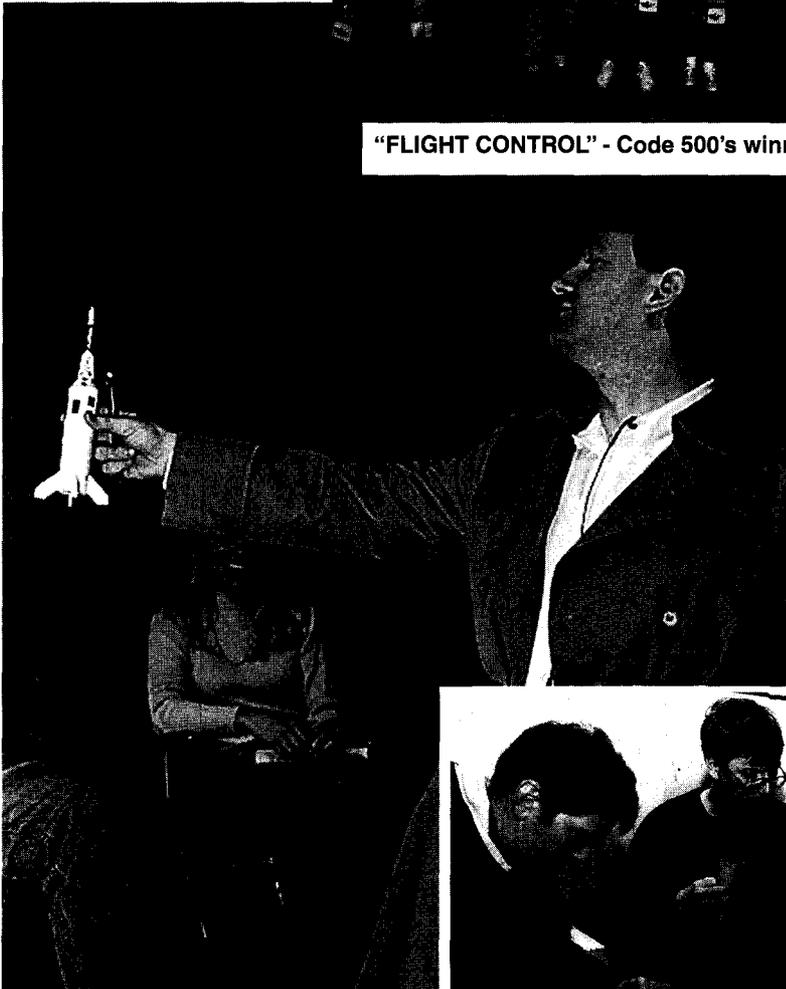
The examiners' written report will be provided to a panel of OPM judges, who will formally review the nine semi-finalists before making final recommendations to the White House.



Fritz Hasler and "Name that Hurricane Game"



"FLIGHT CONTROL" - Code 500's winning team



Gerry Daelemans as Dr. Robert Goddard in Code 700's take off of "Welcome Back Kotter" skit



Jay O'Leary, Britt Griswold and Jeff Schmidt - the winners of the Egg Drop Contest celebrating "Innovation in All That We Do"

a
good
time
was
had
by
all

FINAL REPORT

Goddard will receive a formal 20-30 page written report through OPM later this spring. The report will include: an executive overview; summary & scoring by each category (1-7); and, breakdown by areas of strength and areas for improvement. The report will not be prescriptive or tell us what to fix.

The Score Sheet: Baldrige Criteria

PQA Applications are scored against seven major categories patterned after industry's Baldrige Award Criteria.

A total of 1,000 points are available, but is rare for a "winning" organization to score above the 500-600 point range.

- 120 Leadership — The Center's senior executives' personal leadership and involvement in creating and sustaining a customer focus, clear values and expectations, and a leadership system that promotes performance excellence.
- 75 Information and Analysis — The management and effectiveness of the use of data and information to support customer-driven performance excellence and organization success.
- 55 Strategic Planning — How the Center sets strategic directions, determines key plan requirements and translates them into an effective performance measurement system.
- 140 Human Resources — How the Center's workforce is enabled to develop and utilize its full potential - in alignment with the Center's performance objectives, including efforts to build and maintain an environment conducive to personal and organizational growth.
- 140 Process Management — The Center's design processes, product and service delivery processes, and support service and supply management processes — including a review of how our processes are improved to achieve higher performance.
- 220 Business Results — The Center's performance in key business areas, as well as improvements over time, including a review of the financial performance indicators linked to these business areas and a comparison of performance based on other similar organizations and competitors.
- 250 Customer Focus and Satisfaction — Center systems for better understanding customers and building/maintaining relationships, measures of customer satisfaction and retention, and an assessment of customer satisfaction relative to our competitors.

While Goddard's 1996-1997 application will be rated according to this scale, the Baldrige Criteria are expected to change for the upcoming year. The major change anticipated is a consolidation of all distributed "results" points found in each of the seven categories into the Business Results category.

WHAT HAPPENS NEXT?

Late January	Examiners submit their report to OPM judges.
February	OPM judges review reports for all 9 applicants.
March/April	President Selects Winners. GSFC receives formal written feedback from OPM.
June	Presentation of Awards.
Beyond	Continuous improvement.

SBIR continued from page 3

NASA announced the 1995 recipients of SBIR awards on October 2, 1996. 170 research proposals were selected for negotiation of Phase II contract awards. The selected projects, which have a total value of \$100 million, will be conducted by 144 small high-technology firms located in 30 states. Goddard received 23 of the awards with Code 500 receiving 2 awards, Code 600 receiving 6, Code 700 receiving 12, and Code 900 receiving 3.

Small high-tech firms being solicited to develop the next generation of technologies and businesses is what the SBIR program is all about. It's just one more way for dedicated scientists and engineers to carve the wave of the future. For further information about this exciting new way of doing business, contact the Office of Commercial Programs, Code 702.

GODDARD'S WORKFORCE REFOCUSING COLUMN

Maintaining a vital workforce, especially in these dynamic times, is critical to Goddard's mission accomplishment. Each month an article dealing with some aspect of Workforce Refocusing and Retraining will be included in the Goddard News in support of this goal

The What, Why and How of Workforce Refocusing

by *Gail Williams, Chair
Workforce Refocusing Committee*

By now I hope you are aware of Goddard's proactive efforts to voluntarily redirect civil servants into areas of work with a new emphasis that are consistent with the roles and missions assigned to the Center by the Agency. This initiative is referred to as the Workforce Refocusing and Retraining Program. The size of the Center workforce is decreasing, external hiring opportunities have, and will continue to be, extremely limited; some jobs previously performed by contractors are now done in-house; and oversight of support contractors is being replaced with an insight approach that frees civil servants to do hands-on Research and Development (R&D). Bottom line: Goddard's work is becoming more focused on our assigned mission and roles in support of returning NASA to a premier R&D Agency.

Key to understanding these changes is insight into the budget scenario. The President's FY98 budget reflects the number of Goddard civil servants decreasing approximately 8% from FY97 to FY00 from 3,573 to 3,275 full time equivalents. In the same time frame, we will undergo a major reorganization designed, in



by *Ivy C. Hungerford, Office of Public Affairs*

The Mars Pathfinder launched on a Delta rocket on Wednesday Dec. 4 from Cape Canaveral Air Station in Florida and is scheduled to arrive at Mars on July 4, 1997. NASA's Goddard Space Flight Center's Orbital Launch Services (OLS) Project has a major role in placing the spacecraft, such as Pathfinder, in orbit.

The Mars Pathfinder will investigate the structure of the Martian atmosphere, surface meteorology, surface geology, form and structure, and the elemental composition of Martian rocks and soil. In addition, the microver will conduct technology experiments and serve as an instrument de-

ployment mechanism.

Pathfinder, OLS's second Mars mission, includes a lander, parachute, rocket braking system and an air bag system, that will land on the surface of Mars and deploy a microver.

"Delta activity in the (OLS) has been pretty brisk this year. Pathfinder will be the 12th Delta launch in a span of 13 months with six of the 12 being NASA (OLS) mission vehicles," said David Mitchell, Delta Launch Services manager at Goddard. When launched, Mitchell and his team will have the satisfaction of knowing they played a major role in successfully placing a Mars spacecraft on its proper trajectory, for the second time this year.

Mitchell, holds an undergraduate degree in mechanical engineering from the University of Buffalo and a graduate degree in engineering administration from George Washington University in Washington, D.C. He oversees management of the Medium Expendable Launch Vehicle Services (MELVS) in the OLS project. As such, he serves as the contracting technical representative and provides support in the areas of scheduling, manpower, and cost control.

With prior experience on Scout, Atlas-

part, to facilitate accomplishment of our strategic implementation plan. Other key workforce changes, in the same time frame, include an increase in our supervisor to employee ratio from approximately 1:8 to 1:11. From a skill mix perspective, the collective impact of all of these changes is that the civil servant skills we possess today differ from those skills we believe are required in the year 2000 and beyond.

Center management is committed to achieving this change in skill mix, on a voluntary basis, through the Workforce Refocusing and Retraining Program. A streamlined job announcement process was implemented to facilitate this refocusing. To date, over 60 refocusing jobs have been advertised, resulting in 30 selections. Even though voluntary, most of the reassignments have been from organizations where work is being deemphasized to organizations performing future work. Given the refocusing emphasis and the goal of ensuring effective use of our workforce, most job announcements have offered lateral transfers. Future vacancies will be examined on a case-by-case basis to ensure that the advertisement approach will yield an appropriately broad recruitment base. In some instances, refocusing advertisements may be handled under the more standard Competitive Placement Plan procedures, offering career advancement potential.

In closing, I want to emphasize that the continued success of the program depends on many factors. Critical is each employee's keeping informed of the "Big Picture" and latest workforce-related developments, while taking charge of their own careers.

In an effort to readily communicate with employees on relevant workforce-related issues, a web page is under development. I hope to unveil the web site this spring.

Questions and concerns about the Workforce Refocusing and Retraining Program should be directed to Gail S. Williams, the Chair of the Center's Workforce Refocusing Committee, at 6-0159.

E, and Pegasus vehicle programs, Mitchell and his team are responsible for reviewing all vehicle data prior to launch and are responsible for providing to the OLS project manager, the decision to launch. This decision team of engineers from McDonnell Douglas and subcontractors. The McDonnell Douglas Aerospace Delta II launch vehicle is provided under contract to NASA.

Goddard's OLS project duties for each launch include project management, systems engineering, reliability and flight assurance, performance analysis, payload integration, launch operations, safety, procurement and contract management. OLS is also responsible for successfully placing the payload in its proper orbit.

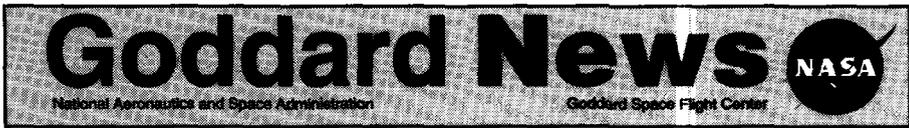
"Our team does travel a lot each year. But, that is part of the business. We provide the oversight expertise to ensure that each NASA launch vehicle is ready to go when the rocket is built up on the launch pad. When that vehicle deploys its payload each time, you have a great feeling of a mission successfully completed. A mission that you might have been working on for several years," said Mitchell.

Best Wishes to our 1997 RETIREES

CODE	NAME	CODE	NAME
170	Ronald Muller	551	Douglas Rose
200	John Firmin	551	Thomas Lojaco
210	Arlene Preston	552	Leland C. sney
214.3	Doris Watkins	552	John Behuncik
216	Gloria Blanchard	552	Clarence Doll
218	Billie Blackwell	553	George Mistretta
218	Darlene Floyd	600	Ken Frost
222	Paul Mills	630.1	Paul Pashby
235	Brenda Toyer	660	Carl Fichtel
253	Helena Hungerford	663	Frank Birsá
253	June Marshall	664	Claudia Brevard
253	Patricia Neff	680	Vernon Krueger
301	Bill Bangs	704	Robert Feavler
301	James Milligan	712	Joseph Fedor
303	Dan Garcia	712	John Cerner
313	Tom Heslin	718	Paul Mudock
313	Jane Jellison	720	James Phenix
313	Dr. Huai-Pu Chu	722	Ralph Mollerick
400	Vernon Weyers	723	Allen Tyler
404	Jerre Hartman	737	David Nice
410	George Daelemans	740	Theodore Goldsmith
421	Mildred Saari	740	Robert Weaver, Jr.
422	Peter Pecori	750	James Munford
422	John Hurd	820	Nathan Novack
480	John Knoll	821	William Parker
501	Donald Hei	821	Frederic Sawyer
501	William Macoughtry	823	Jack Gum
501	Thomas Ryan	823	Hartwell Taylor, Jr.
503	Sharon Arneson	831	Walter Melson
504	Art Jackson	832	W. A. Brence
504	William Guion	832	Ben Robbins
514	Joseph Eck	833.1	Donald Grant
530	Delores Curtis	915	Hong-Yee Chiu
541	Ormond McDaniel	972	Helen Shirk
542	Ed Lawless	912	Joseph Johnston

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Spring Scientific Colloquia Series to include Three Nobelists & Tommy Gold

February 28 Steven C. Cohen, GSFC Laboratory for Terrestrial Physics
 "Pacific Plate Subduction: Regional Tectonics, Space Geodesy, and Earthquake Hazards"

March 7 Luigi Luca Cavalli-Sforza, Stanford U
 "Genes, People, and Languages"

March 14 John Bahcall, Institute for Advanced Study
 "Solar Neutrinos"

March 21 Peter Hobbs, U Washington
 "Quonam Evasit Cloud Seeding Research? Quonam Evadet Climate Change Research?"

March 28 Douglas Osheroff, Stanford U.
 "Superfluid Helium-3"

April 4 Ramesh Narayan, Harvard U
 "Black Holes and Event Horizons"

April 11 Donald A.B. Lindberg, National Library of Medicine
 "Computers, the Modern Library, and Medicine"

April 18 A.G.W. Cameron, Harvard U
 "Formation of the Solar System"

April 25 Michael Mumma, GSFC Laboratory for Extraterrestrial Physics
 "Comets!"

May 2 Geoffrey Marcy, San Francisco State U
 "New Planetary Detections"

May 9 David Pimentel, Cornell U.
 "Global Depletion of Topsoil: Implications for Society"

May 16 James Cronin, U Chicago
 "The Highest Energy Cosmic Rays"

May 23 Richard Taylor, Stanford U
 "Electron Scattering and the Structure of the Proton"

May 30 Torrence Johnson, Jet Propulsion Laboratory
 "The Jovian System: a View from Galileo"

June 6 JOHN C. LINDSAY MEMORIAL LECTURE
 Thomas Gold, Cornell U
 "Life in Extreme Environments"

All colloquia will take place at 3:30pm in the **Building 3 Auditorium**. Shall we see you there?