



National Aeronautics and
Space Administration
Goddard Space Flight Center

Goddard News

Greenbelt, Maryland / Wallops Island, Virginia

March Vol. 44 No. 4

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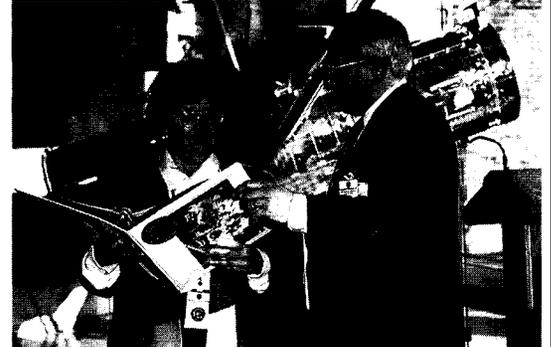
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**Engineering
Colloquia
Schedule**

Welcome Senator Barbara Mikulski



Senator Barbara Mikulski phoning Mission Control at JSC from the STOCC as Joe Rothenberg and Preston Burch look on.



Joe Rothenberg presents Senator Barbara Mikulski with Hubble 2nd Servicing Mission memorabilia book.

STS-82 Brief Mission Summary

- 4.1 million mile mission
- 33 hours and 11 minutes logged during five spacewalks (EVA's extravehicular activities)
- Two instruments (STIS and NICMOS), new data recorders and engineering components installed, and insulation on the telescope repaired.
- Check out the Goddard Homepage for exciting information, photos and links to other web sites on the Hubble Space Telescope Second Servicing Mission activities at:

<http://pao.gsfc.nasa.gov/educ/science/hubble.htm>

Watch the Goddard News for more details in the coming months.



Astronauts raved about the Pistol Grip Tool designed at Goddard.



Hubble Second Servicing Mission a Huge Success.

Hale-Bopp is Coming to a Sky Near You!

The comet will make its closest pass to Earth on March 23, with no indication of an impending collision. From late March through mid-April the comet will be at its best behavior, visible and bright...assuming no clouds.

Goddard plans lots of activities during this time. The Visitor's Center will hold events for the public on March 29 and April 4th (5:00-9:00 pm). You will meet with Goddard's Astronomy Club, use telescopes and binoculars to view the comet; hear a presentation in the auditorium focusing on the nature and origin of comets and their place in the solar system.

For additional sources of information on Hale-Bopp check out the Goddard Homepage at:

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

Weyers Retires after 35 years

by Deanna O'Donnell, Office of Public Affairs

Mr. Vernon Weyers, Director of Flight Projects, retired on February 1 after 35 years of dedication to NASA and the space program. **Weyers** joined GSFC in 1991 as the Director of Flight Projects, Code 400, overseeing responsibility for all GSFC space flight missions, which include some of NASA's most prestigious programs: Geostationary Operational Environmental Satellite (GOES), Hubble Space Telescope (HST), and the Earth Observing System (EOS).

Weyers' NASA career was launched in 1962 at the Lewis Research Center in Cleveland, Ohio. Until 1974, he worked as an electrical engineer in advanced mission planning. From 1974 to 1978 he served as a Mission Project Engineer, managing the integration of such spacecraft as INTELSAT and SEASAT. In late 1978, he was assigned to the Wind Energy Project Office and managed a joint project with the Bureau of Reclamation for the design, development, testing, and operation of two large wind turbines near Medicine Bow, Wyoming. In 1982, he was appointed to a temporary assignment at NASA Headquarters, where he served as the Lewis Institutional Manager. Other positions he held at Lewis included Deputy Project Manager of the Shuttle/Centaur Project Office (1983), Chief of the Systems Engineering and



Vernon J. Weyers

Integration Division in the Space Station Systems Directorate (1986), and Director of Space Flight Systems (1988).

Weyers takes great pride in having been part of Goddard's workforce. He firmly believes Goddard's strength is in its people. "Organizations change, mission change, goals change, but the people don't change. Goddard has a tremendous number of competent, dedicated people, and they are what make this agency strong."

Knowing his thoughts on that, it is no wonder he is very proud to have been part of the Goddard Team and even hinted that he plans to stay in touch with Goddard. His advice for folks just starting out: "Set your goals high because there are so many opportunities at Goddard. Take advantage of change as it occurs because change itself can be an opportunity, although it may not seem like it at the time."

Weyers expressed high hopes for Goddard's future, believing Goddard will continue as the scientific research leader for the Agency. "Goddard has a lot of things going for it, its close proximity to Washington DC, its facilities, and the knowledge each person here holds. All of these things will enable Goddard to continue this type of role into the next century." As for his own future, **Weyers** intends to go back to work, though he is not yet sure in what capacity. In his free time, he plans on doing some landscaping, home improvement

projects, and biking. However, **Vern Weyers** may be kidding himself; with a brand new granddaughter around, he may not have as much free time as he thinks!

Architect & Artist All in One

by Eraina R. McCoy, Public Affairs Office

Goddard has an abundance of artistic talent amongst its employees. **Alan Binstock**, an architect and project manager for the Facility Management Division, not only designs projects, but also facilitates designs by others. In his leisure time he creates a hybrid of primitive and futuristic sculptures made of steel and stone.

Binstock currently is displaying his work in the atrium and corridor of the federal courthouse in Greenbelt, Md. through the end of the month. His works vary in size from small to large pieces and are mainly abstract. Using his architectural skills, **Binstock** supports and suspends stones in elaborate steel frames and stands.

When asked about this current show, **Binstock** simply replied that "I was fortunate to be selected to be put my artwork in such a fine venue."

Binstock has been sculpting for over thirty years and has been involved with fine arts at vari-

ous stages in his life. This yoga practicing sculptor was an art major at Hunter College, taught Fine Arts in a South Bronx Junior High School and later emerged from a four-year graduate program at the University of Maryland School of Architecture with a new perspective in three dimensional design.

After gaining more exposure, **Binstock** would like to show his art in galleries and other public places. A feature on his work was published in the July 15 *Washington Post* Style section. This article along with current exhibits are helping to provide this exposure.

Two of **Binstock's** pieces are currently displayed at the Maryland National Park and Planning Commission art show at the U.S. Air Arena in Largo, Md. and will be there for several months. Small and midsized work will be displayed from May through December of 1997 in gallery showcases at the University of Maryland University Conference Center.

Binstock's handiwork can be seen in the serving area of the Building 1 cafeteria at the Goddard facility.

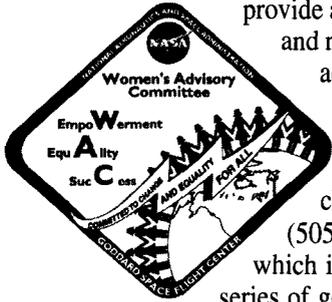


Alan Binstock beside his artwork at Federal Courthouse in Greenbelt

Women's Advisory Committee (WAC)

by **Melanie Ott**, *Fiber Optics Systems Engineer, Swales Aerospace*

The Women's Advisory Committee (WAC) is committed to enabling communication, empowerment, diversity, and advancement opportunities among and for civil service and contractor women here at Goddard. WAC members represent all Greenbelt directorates, contractors, and support offices such as Equal Opportunity Programs and Human Resources. The WAC seeks to provide a forum for women's concerns, to identify and resolve issues of interest to women, and to advise management on the status of women at Goddard.



Under the leadership of former Chair, **Ann Garrison-Darrin** (310) and current chairs **Karen Smith** (212) and **Tonjua Hines** (505), the WAC has developed a strategic plan which identifies five primary program areas and series of goals related to each. The strategic plan is

available on the WAC website <http://arioch.gsfc.nasa.gov/wac/> or in printed form from a WAC member. The group has formed six sub-committees to implement their strategic plan. They are as follows:

Lunchtime Seminars, Women's History Month (March), Awards System Study, Program and Career Development, Take Our Daughters to Work, and Diversity Dynamics.

To keep women informed of WAC events and other information of interest to women, we have developed an E-mail distribution for all Goddard women. If you are not on email or are not receiving messages, but would like to, please contact your representative:

Code/Organization	Name	Phone
Code 100	Lynne Slater (acting)	6-7770
Code 200	Karen Smith, Co-Chair	6-2384
	Jackie Cooper	6-8823
Code 300	Ann Garrison-Darrin	6-8884
Code 400	Laura Marechek	6-0442
Code 500	Tonjua Hines, Co-Chair	4-5333
Code 600	Susan Neff	6-5137
Code 700	Felicia Donnell	6-2517
Code 900	Christa Thorpe	6-0622
Contractor (Hughes STX)	Margo Duesterhaus	6-3569
Contractor (Swales Aerospace)	Melanie Ott	6-0127
Office of Human Resources	Ann Nadzam	6-1340
Equal Opportunity Programs Office	Lynne Slater	6-7770

New Rules For Managing Your Career

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

The most important word in career management these days is "CHANGE."

There is change in the ways work gets organized, assigned, and carried out.

There is change in the way assignments are defined as fluid and short-term and change in the rewards that are available to us. There is change in what the work world wants and expects from us. And there is change in what leads to development, advancement, recognition, increased responsibilities, and access.

All of these changes, and other events, require that all of us change the way we view our careers and the strategies we use to find satisfaction and success in what we do. There are, so to speak, some new rules for managing our careers effectively.

The first new rule has to do with how you view your career: Rather than thinking of your career as a sequence of jobs and employment over a lifetime, think of your career as a journey the purpose of which is to express certain interests, do things you want to do and achieve accomplishments that matter to you, and to get involved in those things you care about and value most in your experience. "Career" literally means a road or path from one place to another. It is the path that is important, not the stopping off places. Think of your work as constantly moving, changing, growing, fluid and flexible. It is deadly to let your career vision get trapped in a "job box." Learn to think outside of what is obvious about your work and employment.

New rule number two is to reorder how you commit your time and attention, so that you increase the quality time used for planning, preparing for, and anticipating the path your career will take. This rule is critical, for it has to do with ensuring that the path you take in your career is defined by the goals you want to achieve in your work. You need to have a clear picture of where you want to go, some of the things you want to try, and some of what you want to be as a citizen of this world. As well, you need to spend more time than most in studying and experiencing the market before you make new career investments. Of course you are busy with important and urgent tasks. But don't let those activities that are neither urgent nor important crowd out planning and preparation such as networking, researching your fields of interest, and clarifying the real "ends" you want your life and work to serve.

The third essential in today's career strategies is to expand your career network.

Recent research has shown a dramatic connection between people with the largest, most active networks and access to money and rewards, to the most challenging assignments, and to key responsibilities. In short, people with the largest and most active networks are the ones who get the best jobs, the best pay, more rewards, and the highest satisfaction in both their lives and their work.

Finally, it is essential that you take responsibility for your own career. The Goddard leadership and organization may be concerned for your satisfaction and growth and may offer you opportunities for development in your career. But the organization cannot define for you where and how you will find satisfaction; you have to define that for yourself and take the initiative in finding its completion -- within the NASA/Goddard family or elsewhere. Taking ownership and seizing the initiative in what happens in your career, as opposed to letting the organization define your journey, is critical.

New Rules continued on page 8



Penguin Rookeries at Cape Royds

Hot Facts About a Cool Place

- Antarctic ice is two miles thick in most places and 3 miles thick at its summit
- 90% of the Earth's fresh water supply is in Antarctica's ice
- There is only one day per year—6 months of night and 6 months of day
- Only 2% of Antarctica is NOT covered with snow
- Only appx. 3,000 persons have ever set foot in that continent
- Antarctica is actually a cool desert—water vapor is less than 5%
- The annual average temperature is -57 degrees F.
- Elevation of Antarctica is 9,300 ft. (almost two miles!)
- The continent is larger than the U.S. and Mexico combined
- The Antarctic Treaty makes the continent a world park dedicated to scientific research
- Antarctica even has an ATM machine!
- Total duration of travel to the Pole: appx. 62 hrs.

The Purpose of the Antarctic Site Visit

Five distinguished visitors from Goddard were invited down to Antarctica by the National Science Foundation for essentially three reasons: 1) to do a site survey to all command, control, and data handling facilities including McMurdo Station, South Pole Station, and the Research Vessel Nathaniel B. Palmer; 2) to visit a wide variety of science facilities in Antarctica in order to assess areas of present and future collaboration opportunities; and 3) to assess opportunities for infusing NASA spacecraft technology into hands-off operations of remote scientific instruments.

Distinguished Visitors on the Site Visit

Michael Ryschkewitsch

Chief, Systems Engineering Office (Code 704)

Michael King

EOS Senior Project Scientist (Code 900)

Harry McCain

Project Manager, POES Project (Code 480)

Jim Greaves

Head, Program Group, Mission to Planet Earth Program Office (Code 170)

Mike Comberiate

EOS PM External Interfaces Manager (Code 422)

Science Already Being Done in Antarctica

Goddard science is already being done in Antarctica. In fact, Goddard personnel have been down there at various times doing scientific investigations for over fifteen years! *Mike Comberiate* was one of the early Goddard pioneers in Antarctica. *Mike Ryschkewitsch* has praised *Mike Comberiate's* "enterprenurial spirit." He says of *Comberiate*, "Mike has set up a very impressive set of capabilities for communications and operations of Goddard missions on a shoestring budget." *Mike Comberiate*, also known to Goddard and

the Internet as *NASAMike*, is very excited about all of the possibilities awaiting Goddard at the South Pole. Of this he says, "Antarctica is like a space station on earth. It's a whole continent dedicated to science. The connection between Antarctica and NASA is this—we explore the final frontier in space, while we have the last frontier here on earth to explore as well."

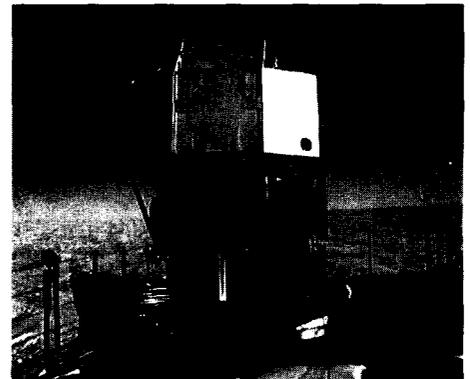
Michael King, EOS Senior Project Scientist, is careful to point out that impressive science has been going on in Antarctica for quite some time, and wants the scientists down there doing world class science to receive the recognition they so richly deserve. Some of this top flight science includes:

Antarctic Submillimeter Telescope/Remote Observatory (AST/RO) - used to conduct surveys of atomic and molecular line emissions from interstellar gas and the Magellanic clouds.

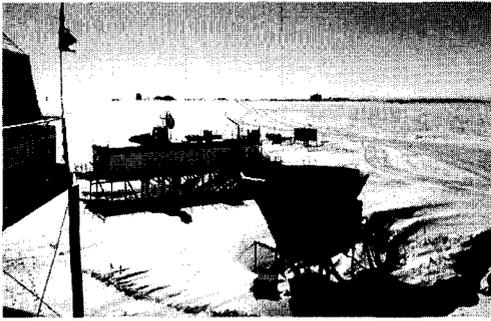
Cosmic Background Radiation Anisotropy (COBRA) - a suite of telescopes for mapping the temperature variations in the sky, much like COBE.

Advanced Telescopes Project (ATP) - to assess the Antarctic plateau as an astronomical site and plan a more powerful infrared-submillimeter telescope. (Harvey Moseley of Code 685)

LIDAR Observations of Troposphere, Stratosphere, and Mesopause - used to characterize Polar Stratospheric Clouds throughout Antarctic winter and spring as well as measure temperature profile using to different techniques and measure the structure and dynamics of the sodium layer. (Jim Abshire of Code 924 and Jack Bufton of Code 920)



AST/RO



COBRA

Ozone hole imagery - continuous imagery of the ebb and flow of the ozone hole using data collected by the Antarctic station of the TOMS spacecraft.

This is by no means an inclusive list of all science being done in Antarctica, but a mere sampling of the science being done there now.

Antarctica also boasts an impressive science and engineering complex in the Crary Science and Engineering Center located at McMurdo Station which has a host of high-end laboratories, computer centers, and even an aquarium that studies the Antarctica sealife.

Even field camps are set up to explore the nature of the ice flow as slow inland ice accelerates to form a rapidly flowing ice stream which could impact the level of water around the world. These are staffed in the remote sections of Antarctica for months at a time. This research is being conducted by **Bob Binschandler** of Code 971.

The Nathaniel B. Palmer Research Vessel named after the first explorer to set foot in Antarctica does research cruises in the Southern Ocean. Currently a Joint Global Oceans Flux Study is being conducted to accomplish such science as the carbon flux in and out of the ocean, the measurement of sea surface temperatures, and the mapping of magnetic anomalies and tectonic features associated with seafloor spreading.

It's hard to believe that such a rich source of science is found in the barren wastelands of Antarctica, but all of the science both mentioned above, and from all the other agencies and countries around the world, refute the idea that Antarctica is a wasteland. On the contrary, Antarctica's a treasure chest, still not fully opened, and far from being empty!

Scientific Opportunities Still to Be Explored

The incredible opportunities for science in Antarctica are still being discovered daily in different and diverse fields of research. Antarctica is second only to the oceans in its impact on global processes, therefore, it is a virtual Ali Baba's cave of riches for environmentalists. Its low atmospheric moisture, absence of pollution and thin atmosphere make it the the premier site for spectacular stellar viewing second only to the Hubble telescope.

Mike Comberiate stresses the impressive track record that Antarctica has for collecting data from orbiting satellites. He says, "We have the capability of downloading 300 million bits per second to McMurdo and 150 million bits per second from McMurdo to White Sands. Incredible! No one else is doing this!" Basically as Mike sees it there are five important reasons for making McMurdo the premier data collection site: reliability can easily be maintained; McMurdo can access TDRSS 100% of the time; all polar satellites pass over the South Pole on every orbit; data can be unloaded faster than anywhere else; and NSF is already a partner in maintaining the site and can be a science partner as well. **Michael King** said, "I was pretty impressed with the [communication] capability and think it is viable. I think Mike's arguments are quite legitimate." As Comberiate points out, "McMurdo can do things better, faster, and cheaper than anyone else can do it." These are the watchwords of NASA today.

Michael King was "most interested in the science in Antarctica and the infrastructure there." He also sees opportunities in atmospheric chemistry to monitor the frequency of Polar Stratospheric Clouds which contribute to the enlargement of the ozone hole. Also of interest is the monitoring of the vertical distribution and column abun-

dance of ozone. Other opportunities to further explore would be ice sheet topography and sea level rise; cloud and radiation by monitoring surface radiation balance and temperature and aerosol optical thickness and size distribution; and ocean processes by measuring biological productivity of the southern oceans and the characteristics of Antarctic sea ice.



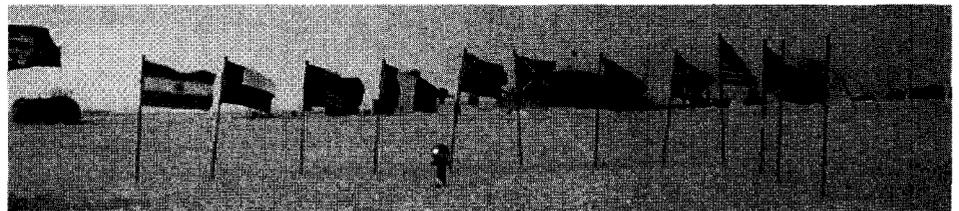
The Crew on their way to South Pole

Lasting Images of Antarctica

As **Mike Ryschkewitsch** so aptly put it, "I was expecting plywood shacks and whale blubber, but what I found was a real city of 3,000 people, an impressive infrastructure enabling scientific research. The Crary Complex is the equivalent of labs that we see at the university level. There was an extremely positive atmosphere down there."

Antarctica. The word that used to evoke visions of penguins, blinding snowstorms, and desolation. And now that you've read the article what do you imagine? Well, you still might imagine penguins, but more importantly we hope you'll think of the science being done there that helps us understand our world and the universe better.

Internet address information on this trip: <http://www.omitron.com/nasamike/> - The Antarctic Essays and Real-time Photos of the Ozone Hole.



Flags represent the original signatory countries of the First Antartic Treaty



by **Robert Gabrys, Education Officer, Office of Public Affairs**

1997 promises to be an exciting one in the education world. We conducted a seminar at KSC around the Hubble Second Servicing Mission launch, and approximately 70 teachers attended. Additionally, GSFC has been approved by NSTA to offer a pilot program for elementary teachers. Previously, GSFC has only offered the NEWMASST program for middle and secondary teachers. **Elaine Lewis**, Education Specialist (6-7205) will be coordinating this effort. The KIDSAT program continues to move forward with Canton Middle School in Baltimore City. Because of equipment limitations, GSFC Education Specialists, **Kevin Boone** and **Elaine Lewis**, have arranged for the Canton students to travel to the Morgan State University Computer Center in order that the students can have direct participation in the program. **Keith Koehler** at Wallops is also coordinating a KIDSAT experience at Wicomico Middle School in Salisbury, Md., and has been extremely helpful in getting Canton Middle School and Wicomico Middle School teachers and students working together.

On the education success story side, **Bill Taylor** has notified us of the work of the INSPIRE program.

What's INSPIRE? It's an all volunteer non-profit educational/scientific corporation founded by **Bill Taylor**, the Project Manager of the Space Science Data Operations Office contract at GSFC. INSPIRE is an acronym for Interactive NASA Space Physics Radio Experiments. Bill founded it seven years ago with three friends who shared his conviction that science and technology are the underpinnings of our modern society and that only with an understanding of science and technology can people make correct decisions. Stimulating students to learn and understand science and technology is key for them to fulfill their potential and to be able to act in the best

interests of our society.

INSPIRE has provided radio receiver kits to over 1,500 student and other groups over the last seven years to make observations of signals from transmitters in the ionosphere at audio frequencies.

A high school physics teacher from California recently told **Bill Taylor** that he thought INSPIRE had been the main reason one of his students had been able to turn his school career around. The teacher said that a student had signed up for physics, even though he did not appear motivated or to have the enthusiasm for learning by traditional criteria

As the student learned about the physics behind the radio waves that INSPIRE receivers observe, put together an INSPIRE VLF (Very Low Frequency) kit, and heard the pops and whistles from the receiver, his teacher noticed a heightened enthusiasm and a sense of self confidence and worth. Other teachers noticed a radical change too and even discussed it among themselves. At the end of the school year the student came to the physics teacher and told him that he was going to college and that his work with INSPIRE was a major reason that he now realized that school was meaningful and important to him. More information can be obtained at the following URL: http://www.gsfc.nasa.gov/education/inspire/inspire_home.html

On another non-profit front, the Education Office has been working with **Peter Wasilewski**, a scientist at GSFC, and the Blue Ice Program in order to support their materials being known to teachers. Blue Ice uses Antarctica as its focal point because of the ability of Antarctica to serve as baseline for the study of many science and interdisciplinary curricular topics in k-12 schools. More information can be obtained at <http://www.global2000.net/blueice>.

Finally, the Education Office is supporting the KIST, Kids in Science and Technology. This GSFC group is headed by **Kris Brown** and **Dona Vance** and has pulled together a forum planning team made up of partners from the Early Childhood world, to plan a forum in June 1997 that should culminate in the formation of a collaborative for helping students become literate in science, mathematics, and technology in support of Goal 3 of the GSFC strategic plan.

Visit our Education Program Office homepage at <http://pao.gsfc.nasa.gov/educ/educ.htm>

Kudos!

Dr. Joseph Nuth, of Code 691 is a finalist for the "Outstanding Supervisor" award and **Desiree A. Taminelli** of Code 201 is a finalist for Outstanding Clerical award from the Baltimore Federal Executive Board Excellence in Federal Career Awards. Winners will be announced at May 2nd ceremony.

Bronze Recipients (Honorable Mention) are:

Dr. Robert A. Langel from Code 921 for "Outstanding Professional (Non-Supervisory), Technical, Scientific, and Program Support.

Marjorie E. Gustafson of Code 213 for "Outstanding Para-Professional (Non-Supervisory) Administrative, Management and Specialist.

Leslie A Boyce of Code 424 for "Community Service".

These recipients will be honored at the Annual FEB Luncheon and Ceremony at Martin's West, Towson, Md on May 3.

Congrats to **Laura Potler**, Employee Development Specialist, and **Lynne Slater**, Equal Opportunity Manager, for being selected as a team, by the Federal Women's Program Committee of the Baltimore Federal Executive Board for this year's Federal Women's Program Award. This prestigious award will be presented in March at a ceremony with Lieutenant Governor Kathleen Kennedy Townsend.

Dr. John Mather co-authored a book with John Boslough titled "**The Very First Light**". It is a true inside story of the scientific journey back to the dawn of the Universe. There will be an Employee Colloquia followed by a book signing in Building 3, Auditorium on March 27.

1997 CALENDAR OF EVENTS MARCH/APRIL

- 3/26 Director's Lobby Meeting, Bldg. 30 for Code 300 employees
- 3/27 Employee Colloquium and Book Signing by John Mather, Bldg. 3 Auditorium
- 3/29 Viewing of Comet Hale-Bopp at the Visitor Center (5:00-9:00 pm)
- 4/4 Viewing of Comet Hale-Bopp at the Visitor Center (5:00-9:00 pm)
- 4/23 Director's Lobby Meeting, Bldg. 22 for Code 900 employees
- 4/24 GOES-K Launch at 1:50 a.m. EDT at Cape Canaveral Air Station, Fla.
- 4/25 Earth Day 1997
- 4/27 Community Day at the Visitor Center

clip n' save

NEW DATA SET HELPS SCIENTISTS UNDERSTAND A CENTURY OF PRECIPITATION

Precipitation is one of the most important parameters in the climate system, both from a practical standpoint due to its impact on the biosphere and from a physical standpoint because it limits the amount of water vapor in the atmosphere. For about a century, a significant fraction of the land area of the Earth has been covered by rain gauges that measure precipitation at single points. A historical data set developed by Goddard scientists represents a potentially valuable resource for understanding the nature of precipitation variations and their role in other climatic processes. Unfortunately, inferring precipitation over large areas from such point measurements is notoriously difficult. Most of the precipitation on Earth occurs in short bursts over small areas. This is typical of thunderstorms, which can produce torrential rains for a few minutes in one location while no rain at all is experienced just a few miles away. Since rain gauges are not placed in every spot, it is difficult to objectively estimate how much rain has fallen over a large area.

Furthermore, changes in the type of rain gauge employed, station location, and recording practices over the past century introduce spurious changes into the historical record of precipitation. The documentation of these changes is poor, making it difficult to separate real climatic variations from spurious changes.

To address these concerns, Goddard scientists used objective techniques to determine the size of the area over which rain gauge measurements must be accumulated to give a reasonably accurate estimate of the monthly deviation of precipitation from its historical value. They also removed spurious changes in precipitation from the records by objectively separating them from the spatial and temporal patterns of real precipitation changes. The result was a gridded data set of precipitation variations that covers global land areas and spans the entire 20th Century up to 1988. The data set clearly shows the global pattern of wetting and drying that accompanies El Nino every few years. It also depicts the well-known Sahelian drought of the past few decades.

Of more interest is that the data set reveals the presence of a long-term upward trend in global precipitation over the 20th Century, primarily in middle and high latitudes; this trend is at least suggestive of the precipitation changes that are predicted by global climate models in response to increasing concentrations of carbon dioxide and other greenhouse gases. Finally, the data set helps to put the well-documented U.S. midwest 1988 drought and 1993 floods into a global historical context. We find that 24 droughts and 5 flooding episodes of comparable severity have occurred worldwide in the 20th Century, although most of these took place in the tropics rather than the middle latitudes.

REFERENCE: In press for the *Journal of Climate* is the paper, "Surface observed global land precipitation variations during 1900-1988" by Aiguo Dai, Inez Fung, and Anthony Del Genio. For further information, contact: Dr. Anthony Del Genio, (212) 678-5588 adelgenio@giss.nasa.gov

MEET

Frizzella Scott

by Susan R. Capretti,
Office of Public Affairs

Meet this remarkable woman, Frizzella Scott. Scott has 30 years at Goddard, 27 as a custodian in Building 4. She will retire on March 14, 1997. The Center will lose an outstanding employee and so much more.

What makes her remarkable? She has a smile that lights up a room and work ethics that make any organization proud to call her an employee. Her life is a tribute to what is "good" and "right" with this world. When you reach your last days and have to account for your life—it won't be your material accomplishments that matter but the way in which you lived your life. Were you a good person? Did you make a difference in others lives? Scott

epitomizes these values and more. She has touched many lives by the example she sets. She has touched my life and I am better for it.

Scott, a North Carolina native, grew up in Bowie then moved to Baltimore. She came to Goddard on March 2, 1967. Making the long commute from Baltimore each day, relying on carpools or other creative transportation, she rarely missed a day of work. Scott looks fondly on her 30 years at Goddard and says she loves working and will miss the job and the people. Several years ago Plant Operations and Maintenance (POMD) employees extended a rare honor on Scott by choosing her as their Peer Award recipient. This award is usually reserved for government employees but she was so valued by the organization and their workers they honored her.

Frizzella plans to keep busy with her grandson, Devin, and her new granddaughter who will arrive in May. Frizzella is a fiercely proud grandmother and mother.

Heidi Fisher says, "Frizzella always had a smile on her face and a kind word to say. She is very considerate with the workload of others and goes about completing her daily tasks making sure that others can do theirs as well. We are truly blessed for having had the pleasure of working with her."



Mrs. Frizzella Scott

Jerome Proctor reflects, "She is very special to me; we share the same birthday and have become close friends."

Frizzella leaves behind many friends. We are excited for her and wish her the best. Knowing Frizzella as I do, it won't be long before she is busying herself with volunteer work. Lucky are those who get her time and attention now.

New Rules continued from page 3

Otherwise you will probably end up somewhere else.!

The individual career counseling available at Goddard through the person of Mac Saddoris exists to assist each of you in exercising these essential strategies. Whether your interest is to stay within the Goddard/NASA family or to explore opportunities elsewhere, your responsibility begins with thoughtful clarification and planning.

Mac Saddoris is available both at the Greenbelt and Wallops facilities of the Goddard Space Flight Center. A leader and mentor in the Career Development business, with more than thirty years of experience in both government and the private sector, he is uniquely qualified to assist you in implementing effective career management strategies. He meets individually with GSFC employees for confidential planning. As well, he makes brief presentations and provides longer training programs on career management strategies in program offices by request. Call (301) 286-5794 for an appointment. Mac is the only National Certified Career Counselor at Goddard.

Meet Man's Best Friend

Yukon, newly badged Goddard employee, is owner Joe Padgett's, Code 693, assist dog. Yukon is the first assist dog on Center accommodating the physical needs of its owner at the worksite

Subscription Information (contacts):

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Send Inquiries to:

**Goddard Space Flight Center
(Contacts Code ###),
Greenbelt, MD 20771**

**Goddard Engineering Colloquia
Spring 1997 Schedule**

All colloquia are held at 3:30 p. m. on Mondays in the Building 3 Auditorium, unless otherwise indicated below. Any changes in the schedule will be noted the Engineering Colloquia internet page. You can obtain this information through the Goddard homepage at <http://www.gsfc.nasa.gov> by choosing Public Services & Information, then click on Goddard Engineering Colloquia or directly by going to the following URL <http://groucho.gsfc.nasa.gov/ecollog/sched.html>

Of special note this spring is the addition of the new "Technology Forum" on three Wednesdays (March 12, 3:30 p.m., April 2, 12:00 Noon, and May 28, 12:00 Noon). Each of these will feature presentations by Goddard experts on recent technological developments related to NASA missions.

March 10 - No colloquium

March 12 - Wednesday, 3:30 p.m., TECHNOLOGY FORUM 97-1, John R. Kolasinski, GSFC (on "Spaceflight Fiberoptics"); Robert G. Beaman, GSFC (on "Flywheels 101: Spacecraft Energy Storage & Attitude Controls"); and Theodore D. Swanson, GSFC (on "New Thermal Control Technologies for Spacecraft & Instruments")

March 17 - 3-D Vision Robotic Droids, Col. Bruce R. Altschuler, US Army, Fort Meade

March 24 - Application of Nano-Technology, Ralph Merkle, Xerox Research Lab - Palo Alto

March 31 - No colloquium

April 2 - (Wednesday, 12:00 Noon, lunch time) TECHNOLOGY FORUM 97-2 TBD

April 7 - Technology and the Movies, Robert Wise, Robert Wise Productions

April 14 - The Internal Missile Race in the Soviet Union, Sergie Krushchev, Brown University

April 21 - The Second Servicing Mission for the Hubble Space Telescope, Frank Cepollina, GSFC

April 28 - The Case for Electric-Drive Vehicles, Professor Daniel Sperling, University of California at Davis

May 5 - Missions to Comets and Asteroids: Past, Present, and Future, Robert Farquhar, JHU/Applied Physics Lab

May 12 - **Radioactive Waste: Science, Technology and Politics**, Henry W. Kendall, Massachusetts Institute of Technology

May 19 - TBD

May 26 - HOLIDAY

May 28 (Wednesday-12:00 Noon-Lunch Time) TECHNOLOGY FORUM 97-3 TBD

June 2 - Satellite Ozone Measurements: Past, Present, and Future, Ernie Hilsenrath, GSFC



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