

STS-30 Successfully Deploys Magellan!

story next month

NASA

National Aeronautics and
Space Administration
Goddard Space Flight Center

Goddard News

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Goddard Aids U.S.-Soviet Humanitarian Effort

by Carter Dove

Goddard has taken a leading role for NASA in linking U.S. and Soviet physicians via television for consultation on treatment of the victims of the December 1988 Armenian earthquake.

Starting Friday (April 28), Goddard began the downlinking of the televised discussion by doctors in Soviet Armenia from the NASA Select TV transponder on General Electric/Aericom's communications satellite for distribution to doctors at the four U.S. hospitals taking part in the project, known as the "Telemedicine Spacebridge."

The medical facilities on the U.S. end of the "spacebridge" project are located at the University of Texas, Austin; University of Utah, Salt Lake City; the University of Maryland, College Park; and the Uniformed Services University of the Health Sciences, Bethesda, MD.

Soviet Transmissions

The Soviet transmissions, which will include live video of the victims for evaluation by U.S. medical experts, will originate from Yerevan, Armenia.

The first step in the communications process, following the joint U.S.-Soviet agreement on the TV linkup, was the loading of a Goddard-provided Earth station antenna and electronics trailer on board a Soviet Aeroflot cargo jet at Washington's Dulles International Airport on April 21 for airlift to Yerevan, Armenia.

International Coordination

The three-month project will put into play the latest advances in communications satellite technology, with participation by: INTELSAT, the international satellite consortium, providing the satellite transponders (receiver-transmitter antennas); COMSAT (Communications Satellite Corporation), the U.S. representative to INTELSAT, coordinating the international arrangements; the Houston, Texas-based STARS (Satellite Transmission and Reception Specialists), providing the Goddard-



PHOTO: D. McCALLUM

U.S. TECHNOLOGY, SOVIET AIRLIFT—A Goddard-provided Earth station antenna and electronics trailer were the heart of a communications package loaded on board a Soviet Aeroflot cargo aircraft on April 21 at Washington's Dulles International Airport. The equipment will serve as a key link in the operation of a "telemedicine spacebridge" between Soviet doctors treating victims of the Armenian earthquake and medical experts at four hospitals in the U.S. Goddard's NASA Communications Division (NASCOM) also is managing the technical operation of the NASA Select TV link in the transmission of the consultations between the U.S. and Soviet doctors.

managed Earth station for Armenia; and Bendix Field Engineering Corporation, managing the technical operation of program transmission on behalf of Goddard.

NASA's role in the use of communications satellites for public service dates to 1969 when the Applications Technology Satellite (ATS-1) was used in health and education demonstrations in Alaska.

In 1975, NASA—in an historical undertaking—repositioned ATS-6 over India for a year-long set of demonstrations in education, health and agriculture. The project was known as SITE.

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Talk from the Top

John W. Townsend Jr.

Q: I have two questions regarding the Performance Management and Recognition System (PMRS). First, in my three years as a "GM" employee, I have received a "highly successful" rating each year. My base pay and responsibilities have increased significantly over this period. Yet, the amount of my Performance Award... has gone down each year. ... Why the decrease...? Second, why is there such a long period of time between receiving a performance rating and receiving the Performance Award? The time lapse is consistently three months. ...

A: The PMRS performance awards fund is 1.5 percent of the aggregate of GM salaries at the Center, the maximum allowed by law. ... The reason for the decrease in the dollar value of awards is that the number of higher ratings has increased significantly, resulting in more awards, while the awards pool has remained steady at 1.5 percent of the total salary pool. ... The performance awards are processed and distributed as quickly as possible. It is necessary to wait until October to calculate the awards pool in order to include the merit increase in the total GM salary pool. ... The Office of Human Resources and the Financial Management Division work together to process the awards and assure that the checks are issued by the Treasury Department at the earliest possible date. This entire process takes approximately two months. The merit increases were effective on October 9 this past year and award checks were distributed to Directorates on December 16.

Q: The alternate work week was first discussed in your column almost a year ago. ... will the alternate work week become a reality at Goddard? If so, how soon?

A: After consideration, I have decided not to go to an alternate work week schedule for the foreseeable future.

Center Director John W. Townsend, Jr. wants to hear from you! Send your questions to: TALK FROM THE TOP, Code 130.

First Four Small Explorer Missions Chosen

by Carolynne White

The first four missions for the Small Explorer project have been chosen from among 51 submissions, according to Dr. Lennard A. Fisk, Associate Administrator for NASA's Office of Space Science and Applications.

The experiments chosen, in chronological order by launch date, are:

- Solar Anomalous and Magnetospheric Particle Explorer (SAMPEX), University of Maryland, 1992
- Fast Auroral Snapshot Explorer (FAST), University of California, Berkeley, 1993
- Submillimeter Wave Astronomy Satellite (SWAS), Smithsonian Astrophysical Observatory, 1994
- Total Ozone Mapping Spectrometer (TOMS), NASA/Goddard, date unknown.

While Goddard's role will be to manage the program overall, Goddard also is contributing the principal investigator and eight co-investigators to the fourth experiment, the TOMS, which will be similar to the instrumentation of the same name flown aboard the Nimbus-7 Earth-observing spacecraft.

Dr. Charles E. Cote (Code 610) is the principal investigator; the co-investigators (all of Code 616) are Dr. Arlin Krueger, Dr. Robert Hudson, Dr. Richard Stolarski, Dr. Mark Schoeberl, Dr. Richard McPeters, Dr. Jay Herman, Ernest Hilsenrath, Dr. Donald Heath, Dr. J. Stanford, Iowa State University; and Dr. S. Roland, University of California at Irvine.

Ron Adkins, Code 740, is Goddard's Project Manager for the Small Explorer program. "The program," he said, "is designed to build and successfully launch each small scientific satellite in three years time. This provides frequent opportunities for the scientific community to get into space."

In addition, the program will emphasize training opportunities for young profes-

sionals in how to design, build, fabricate, test, launch, and operate small satellites, he explained.

"Larger, more expensive projects stretching over a long period of time could constitute the entire career of an engineer or scientist," said Adkins. "With the small explorers, we hope to create an opportunity for young engineers and scientists to learn their craft on one small explorer project in three years or so, and then move on to the next project. We are trying to reestablish an in-house satellite capability for Goddard."

The missions are limited to about \$30 million each and cannot weigh more than approximately 500 pounds, the maximum weight a Scout-class expendable launch vehicle can boost into low-Earth orbit.

The Small Explorer program is also unique in that it is designed to employ the concept of a standard spacecraft bus, with different payloads attached for each mission. "This will save design costs," said Adkins, "as Goddard engineers need only design one spacecraft concept, which can be modified with 'off-the-shelf' avionics for the different missions."

The instruments for each mission will be designed to be compatible with that spacecraft. Some missions will have multiple instruments; others only a single instrument.

Approximately 100 Goddard personnel are already at work designing a structural model and electrical systems for this spacecraft bus. "And we are already ahead of schedule on the bus design," said Adkins.

"We think this will be a program that is both fun and valuable for Goddard," he added. "With the Small Explorers program we provide a short turnaround and the excitement of relatively immediate results to offer the young scientists and engineers; in turn, we acquire the benefits of a trained corps of experts for future endeavors."



**Coming in June...
Highlights from Goddard's
30th Anniversary
Celebrations**

Launch Update: Crew Members Named for Two 1990 Science Missions

Astronaut crew members have been named for two 1990 scientific Space Shuttle missions.

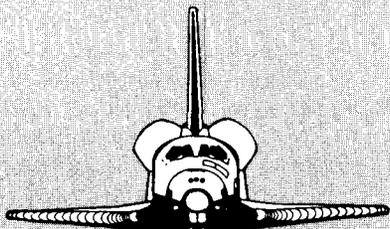
USAF Col. Steven R. Nagel will command the Space Shuttle Discovery on mission STS-37, scheduled for April. USMC Lt. Col. Kenneth D. Cameron will serve as pilot. Mission specialists are USAF Lt. Col. Jerry L. Ross, Jay Apt, Ph.D., and Linda M. Godwin, Ph.D.

During STS-37, the crew will deploy Goddard's Gamma Ray Observatory (GRO) from the payload bay using the Shuttle's robot arm. The GRO will explore gamma ray sources throughout the universe, studying the origin of our own galaxy and others, and examining quasars, pulsars and supernova remnants from an altitude of 243 miles above the Earth.

USMC Col. Bryan D. O'Connor will be commander of STS-40, the space and life sciences-dedicated mission, SLS-1. Serving as pilot aboard the Space Shuttle Columbia will be USAF Col. John E. Blaha. Also named as a mission specialist is Tamara E. Jernigan.

SLS-1 mission specialists M. Rhea Seddon, M.D., and James P. Bagian, M.D. and payload Specialists F. Drew Gaffney, Ph.D., and Robert W. Phillips, Ph.D., were named previously.

Inside a pressurized laboratory fixed in Columbia's payload bay, the SLS-1 crew will conduct more than two dozen life sciences investigations in the microgravity environment. Launch is currently set for June 1990.



NASA Pipeline

HEADQUARTERS, Washington, DC—Dr. James C. Fletcher named Dr. Robert Rosen as Acting Associate Administrator for Aeronautics and Space Technology (OAST) recently. Rosen has served as Deputy Associate Administrator OAST since March 1986. He replaces Acting Associate Administrator Dr. William F. Ballhaus, Jr., who returned to his permanent position as Director of NASA's Ames Research Center, Mountain View, CA.

JET PROPULSION LABORATORY, Pasadena, CA—A two-way digital voice terminal for land, aeronautical or maritime mobile communications has been demonstrated in the field for the first time by researchers from JPL recently. Researchers used a voice terminal on a Boeing 727 to communicate with a ground station in Southbury, CT. The plane was airborne over the eastern U.S. seaboard and signals were relayed between the plane and ground by a satellite operated by the International Maritime Satellite (Inmarsat) organization. This system may benefit planes flying over the Atlantic Ocean, according to the program manager.

LEWIS RESEARCH CENTER, Cleveland, OH—A one-of-a-kind aircraft has been getting attention in the Cleveland skies recently. The airplane is a propfan test assessment (PTA) aircraft, a modified Gulfstream II equipped with an eight-bladed, single-rotation, advanced turboprop (propfan) on its left wing. The U.S. aviation industry is considering the development of several new engines and aircraft that may incorporate advanced turboprop propulsion systems. Tests show that advanced turboprop propulsion systems can reduce fuel usage by 25 to 30 percent, compared to future turbofan engines with equivalent levels of advanced technology.

MARSHALL SPACE FLIGHT CENTER, Huntsville, AL—Marshall is initiating a program to share the scientific and engineering data from flight experiments with American colleges and universities. The pilot program, called the NASA/University Joint Venture Initiative, will make available data generated from space missions in exchange for analysis and interpretation by faculty members and students. The program is expected to become operational nationwide in two years.

Goddard's Explorer Post 1275 Wins Top Boy Scout Awards

Youth and adults participating in the Goddard-sponsored Explorer Post 1275 received three of the top awards given by the Boy Scouts of America Capital Area Council at an awards ceremony held March 31 in Silver Spring, MD.

The Explorer Leadership Award for outstanding youth leader was given to Elizabeth Meade, last year's Post 1275 President, and this year's youth chairperson of the Explorer's Officer's Association. Meade is a senior at Laurel High School.

Two of Goddard's adult Explorer advisors also received awards. Tom Bryant, Code 440.8, received the Explorer Advisor Award for outstanding adult advisor. Bryant spent the last year working with the

youth in the Astronomy Special Interest Group of Post 1275, helping them build their own telescopes.

John Wolfgang, Code 704, received the Big "E" Award, in recognition of outstanding training at the council level. Wolfgang is the head Post Advisor.

The Explorer program is a co-educational program for youth ages 14 to 21, sponsored by the Boy Scouts of America. The Goddard-sponsored Post 1275 strives to encourage interest in science and technology among this age group, as well as to introduce the students to principles of leadership and organization. Special interest groups in Explorer Post 1275 include astronomy, computers, photography, and satellites.

Goddard's Technology Transfer P

Goddard Signs Technology Agreement With West Virginia, Other NASA Centers

Goddard and two other NASA Centers signed a memorandum of understanding with the State of West Virginia last month which promotes the transfer of NASA-derived technology to the state's private sector.

On hand for the technology transfer agreement in Wheeling, WV were Center Director Dr. John W. Townsend, Jr.; West Virginia U.S. Senator Robert C. Byrd; West Virginia Governor Gaston Caperton; Marshall Space Flight Center Deputy Director Jack Lee; and John F. Stokes, Director for Management Operations at Langley Research Center, Hampton, VA.

The signing of the agreement is part of a pilot program for technology transfer in developing states like West Virginia, according to Goddard's Commercial Programs Officer, Donald S. Friedman. "We're trying to work with people in West Virginia industry

and universities to make them aware of Goddard/NASA technology which is available for commercial development, and facilities which are available for use," said Friedman.

Friedman was appointed Goddard's official point of contact to coordinate technology transfer activities under the agreement.

As part of the agreement, Friedman will participate in industry and university symposia and workshops throughout West Virginia on the subject of technology transfer, beginning with a talk on May 2, at Berkeley College, Berkeley, WV.

The signing occurred during the Software Valley VIII Conference in Wheeling. The conference was an effort to promote the development of high-tech industry in West Virginia and focus on new opportunities for West Virginia businesses in the field of technology transfer.



TECHNOLOGY AGREEMENT—Center Director Dr. John W. Townsend, Jr., Marshall Space Flight Center Deputy Director Jack Lee, and Langley Research Center Director for Management Operations John F. Stokes (left to right, standing) look on as West Virginia Governor Gaston Caperton (left) and U.S. Senator Robert C. Byrd (WV) sign a memorandum of understanding to promote technology transfer in West Virginia.

Goddard Engineer Helps F



JHABVALA

Many people are deaf in only one ear; they hear noise, but lose the stereo effects. Murzy Jhabvala, Code 724.1, has invented a device to help these people "hear" which direction sounds are coming from—sounds like fire engine and ambulance sirens, beeping trucks backing up, and fire alarms.

"People who are deaf in one ear often cannot tell from which direction an ambulance is coming, for instance, and often turn left into the path of an emergency vehicle," said Jhabvala.

This device could help in such situations by indicating visually which direction the siren is coming from.

The directional hearing aid is a pair of glasses. Colored lights on the lenses indicate to the wearer the loudness of sounds, and which direction they're coming from.

"Small microphones on the glasses detect the sounds and indicate which side is louder," said Jhabvala. "The circuitry inside the frames decides where the sound is coming from and how loud it is."

Jhabvala worked with the University of Maryland to design a custom chip for the directional hearing aid. "A huge board of circuitry had to be condensed into a single, tiny chip," he said.

The circuitry lights up small light-emitting diode (LED) displays on either the

Program: Three Success Stories

Hearing-Impaired to "See"

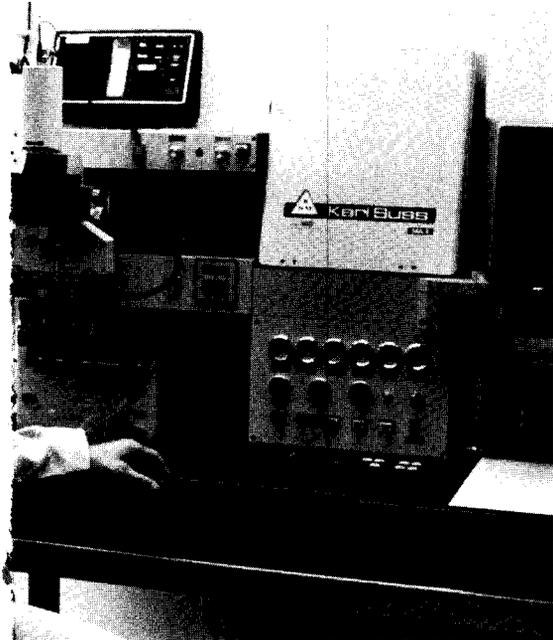
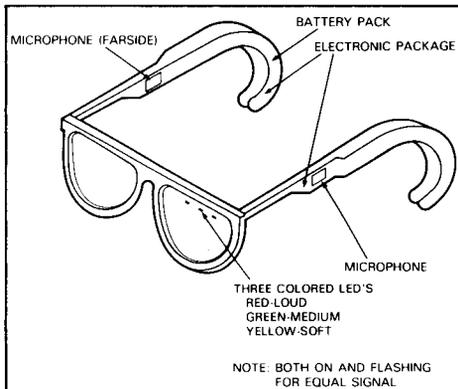


PHOTO: D. McCALLUM

right or left lens to indicate which side the sound is coming from. The lights are different colors: red for a loud sound; green for medium; and yellow for soft. Both sides on and flashing indicate a signal of equal loudness in both directions.

The device may eventually be able to identify what type of emergency vehicle is producing the sounds, in addition to determining their origin and strength, according to Jhabvala.

Jhabvala has been working with DTI Engineering, Inc., in Oxon Hill, MD, to develop a commercial prototype, which should be complete in about nine months. "Then my role is complete," said Jhabvala. "Then it's up to supply and demand."



He'll Paint Any Spacecraft Any Color For Just \$4,500

by Michael Braukus

Earl Scheib, the head of the car painting franchise, might consider getting into the spacecraft painting business, if he knew that the paint developed by Goddard's Charlie Shai sells for \$4,500 a gallon.

Charlie Shai, a technician in the electromagnetic test engineering and technology support section, develops paint for use on spacecraft. Paint that he developed has flown on virtually all NASA spacecraft since 1968, including the Apollo missions and the current Magellan mission. More than six of his paints are qualified for space flight and are used by NASA, the U.S. Air Force and private industry.

The workhorse of his paints is MS-74, which, according to Shai, takes its name from a page of a book. Shai says that the development of MS-74 in 1966 was a collaborative effort with Dr. John Schutt, with whom he worked until 1971.

Shai says the claim to fame for the brilliant white MS-74 is its heat-resistant qualities. "This thermal-control coating allows the spacecraft and its experiments to run cool," he said. "Also, the paint will remain stable and not degrade over a period of four or five years. That's one of the reasons it was used on the Voyager spacecraft.

"The only problem with this paint," Shai said, "is that it takes a month to make one gallon. It's the cost of labor that makes the paint so expensive. The cost for the materials is only about \$100."

Earlier in his career, Shai tried to speed the manufacturing process but with no success. "The paint just didn't have the same consistency," he said.

A high school graduate, with some night school classes in chemistry and algebra, Shai has co-authored three paint patents and is the sole author for another.

Shai routinely can be found in his Building 10 laboratory minding his paint mixers as they whirl their way



PHOTO: F. BALTZELL

SHAI

through another 30-day cycle. But the hum of the mixers is interrupted regularly by the telephone as customers call Shai to consult him about the application of his coatings. "I've been invited to fly to Italy to supervise the application of a conductive coating on their Tethered Satellite," said Shai. "But I didn't go because I'm afraid of flying. Instead, I gave them the instructions over the phone."

Frequently, during his 25-year career at Goddard, Shai has been asked to develop a paint that eliminates or reduces a problem on a spacecraft. "Sometimes I'll team up with a scientist, such as Dr. Ben Seidenberg (nominated for NASA Inventor of the Year in *Tech Briefs* magazine), and concoct a custom paint that meets a spacecraft's special requirements. That's how we developed the black silicone paint used on the National Oceanic and Atmospheric Administration's GOES satellites," said Shai.

The sound of Shai's voice and his facial expressions, as he explains why the paints were developed, are telltale signs that he's very proud of his work. And why shouldn't he be proud—the planetary probe Voyager 1, which carries some of his handiwork, will encounter Neptune in August, carrying Shai's paint to regions of the universe humans have never seen.

INSIDE

Keeping Goddard S-A-F-E: Security Branch Chief Dave Moulton

by Carolynne White

If you ever need to talk to Goddard's new Security Branch Chief Dave Moulton, just dial 286-S-A-F-E.

That's the acronym Moulton chose for his telephone number when he worked at Goddard previously, as the STS/TDRSS Security Specialist (1983-1986). Now he's back as the Security Branch Chief—and they even gave him his old phone number!

Moulton has been Goddard's Security Branch Chief since February of 1989. Perhaps because of his previous stint at Goddard, he says he feels that he is an "old hand" already.

Security Branch Chief Moulton is still interested in Programmatic Security, his primary responsibility when he was the STS/TDRSS Security Specialist.

"Programmatic security means taking a look at a given project or program," explained Moulton, "and assessing appropriate security controls, either protecting classified information or a project/program of great value in terms of dollars or national importance."

"And I think that's where our emphasis is going to be over the next few years," he continued. "I'd like to see our office work on enhancing Goddard's programmatic security, as well as the level of security awareness in the workplace."

Sympathetic Colleagues

Moulton returned to Goddard this time after a three-year stint as Deputy Director for Security at the Naval Intelligence Command in Suitland, but he said he had no difficulty settling back in at Goddard—despite sentiments of his former colleagues in Codes 405 and 500 who presented him upon his return with a card reading "With Deepest Sympathy!"

"It was very easy to reacclimate to Goddard," said Moulton. "It was like a breath of fresh air. Like anywhere in the security arena, we frequently have one crisis after another every day but at least here at Goddard we generally have a little more time to plan for them."

"I think we have to take the crisis management type of approach here at Goddard," he continued, "because things are always changing. There's always something new and different every time you turn around—so it's never boring."

In the "it's-never-boring" department—Moulton helped coordinate security ar-



PHOTO: D. McCALLUM

rangements when former President Reagan visited Goddard in 1984.

Thriving on Chaos

"Coordinating a Presidential visit takes more than just a few days—we spent a lot of time interfacing with the Secret Service, and planning his agenda," said Moulton. "We also provided physical protection of the buildings and sites where he went on center."

To help him deal with the constant change inherent in his job, Moulton keeps a copy of the book "Thriving on Chaos" on his shelf—just in case.

Also on his shelf is a faux bronze statue of an Old West lawman. This, plus a framed badge, is the only evidence in his office of his twenty-plus years of security experience—from his experience in the military intelligence branch of the Army, to his three years of worldwide travel as a NATO security inspector, to a position as a security specialist with the U.S. Army Computer Systems Command at Ft. Belvoir, Virginia.

Conspicuously absent from Moulton's office, however, is any evidence of his primary hobby—collecting postal-related cartoons and figures.

Although his father was a postmaster, Moulton says his collection began outside of the influence of his father.

"It began when I was in Germany during my tenure as a NATO security inspector," explained the youthful Moulton. "I saw one of those little Hummel figures, which happened to be a little postman. So I bought it and that was the start of the collection."

"When I got back to the States, I saw a cartoon (also about the postal service). I wrote to the cartoonist, and he sent me an original. And I've been writing letters ever since. Most of the cartoonists send me copies—what they call stats, or proofs—but I have about 25 originals."

Moulton keeps some 90 of them framed on his den wall at home—although he says he has a backlog of about a dozen to be framed!

Except for traveling and attending military schools, Moulton has lived in the Washington, DC area ever since he left his hometown of Scarborough, Maine to join the Army in 1968.

A True "Maineiac"

Though he makes his home in Bowie, Maryland now, Moulton is actively involved in the Maine State Society of Washington, DC and considers himself a true "Maineiac."

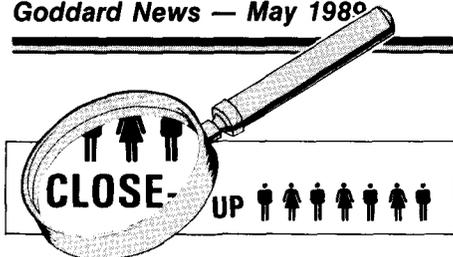
"A Maineiac is a native of the state of Maine, who leaves, for whatever purpose," explained Moulton. "Our group is sort of a social club of people who were born there, or own land there, or went to school there. We have activities throughout the year, culminating with our Annual Lobster Dinner, which is our largest event, usually attended by 500 or more people."

A former president of the society, Moulton's duties as Director of Public Affairs now include soliciting door prizes from Maine organizations and business firms, in exchange for promoting Maine in the Washington area.

Although Moulton travels to Maine occasionally to visit his family, he doesn't get a discount from the club. "I'm hoping for a few trips on President Bush's airplane!" he laughed. A possibility—because President Bush is also a member of the Maine State Society.

Settling down at Goddard might seem tame to a man who used to voyage worldwide for a living, but Moulton says he doesn't miss the travel, "just as long as I can get away for a few days every couple months on NASA business."

"Enhancing programmatic security and security awareness at Goddard are my two main goals," said Moulton. "And I'm looking forward to tackling these and any other challenges that arise in the security arena at Goddard."



Three Goddard inventors recently have received royalties for the licensing of their patents: **CHARLIE SHAI**, Code 754.2, featured in this issue, received royalties for the licensing of his patent for an invention, entitled "Electrically Conductive Thermal Control Coatings," to a company called Space Craft Coatings, Inc., of Gambrills, MD; **JOHN B. SCHUTT**, Code 623, received royalties for the licensing of "Potassium Silicate-Zinc Coatings and Alkali-Metal Silicate Binders and Method of Manufacture" to Shane Associates of Wynnewood, PA, and Inorganic Coatings, Inc., of Malvern PA; and **LO I. YIN**, Code 682, received royalties for the licensing of "Low Intensity X-Ray and Gamma-Ray Imaging Device," to Lixi, Inc., of Downers Grove, IL and Healthmate, Inc., of Northbrook, IL. **BENJAMIN SEIDENBERG**, Code 732.4, has been nominated as NASA Tech



SCHUTT



YIN

Briefs Inventor of the Year, for his invention, the Polymeric Heat Pipe Wick, a major advance in the art of heat transfer.

In procurement, Goddard has selected the Martin Marietta Space Systems Co., Denver, Co, to negotiate a cost-plus-award-fee contract for the flight telerobotic servicer (FTS) for use in the assembly and maintenance of Space Station Freedom, scheduled to be deployed in the mid-1990's... NASA announced the suspension of the random testing portion of its drug-free workplace program at all its installations in response to a lawsuit filed against NASA, in part by the Goddard Engineers and Scientists Association... The San Marco Office has been disestablished. Responsibility for the remaining post launch activities has been assigned to the Small Explorer Project (Code 740.4)... The Office of Flight Assurance, Parts Branch, reports that **Walter B. Thomas** (Code 311.2) was appointed head of the Parts Technology Section...

Jim Green Receives Arthur S. Fleming Award

Dr. James "Jim" Green, Head of the National Space Science and Data Center and Associate Chief of the Space Data and Computing Division, Code 630.2, was among the ten outstanding men and women presented the Arthur S. Fleming Award at an April 27 ceremony sponsored by the Downtown Jaycees of the District of Columbia.

This prestigious award honors outstanding individuals in the Federal Government. Dr. Arthur S. Fleming created the award 41 years ago for several reasons: to recognize those who have performed outstanding and meritorious work for the Federal Government; to attract outstanding persons to the Federal Government; to encourage high standards of performance in the Federal service; and to enhance appreciation of our form of government and the opportunities and responsibilities that it presents.

Green was recognized for his innovative, technical and scientific leadership in the design, implementation and expansion of the Space Physics Analysis Network (SPAN). This computer-to-computer network, which Green initiated with three nodes in

1981, now has more than 6,000 nodes in cooperative networks worldwide. He was cited also for his community involvement with teachers, high school and university students.



OUTSTANDING FEDERAL SERVICE—Dr. Arthur S. Fleming (left) presents Dr. Jim Green, Code 630.2, with his award at an April 27 ceremony. Fleming's career in and out of the Federal service is an exemplary model of the purposes set forth for granting the awards named in his honor, to recognize outstanding Federal employees. At this 41st award presentation, Green was honored for his development of the Space Physics Analysis Network (SPAN).

Retirees

Best wishes to the following Goddard employees who recently retired.

Name	Years of Service	Name	Years of Service
Bell, David O.	27	Johnson, Thomas	33
Darby, Shirley E.	36	Miles, Anthony	33
Davidson, Ida	31	Wilkins, Jr., Wayman	31
Harris, Jr., Charles E.	35	Wilkinson, Robert	29
Henegar, John A.	35		



Following is a list of Goddard donors who were cited by the American Red Cross with Gallon pins at the bloodmobile on April 5, 1989.

Name	Gals.	Name	Gals.
Walter Allison	3	Arnold Rausch	3
Rob Boyle	3	Steve Stalos	1
Edwin Fung	4	Alex Storrs	2
Robert Price	5	Edward Zenker	3

The next bloodmobile visit will be on June 7, 1989 from 8:30 a.m. to 1:30 p.m. in the Building 8 Auditorium.

Black History Club Honored for Scholarship Assistance

by W.N. "Bill" Weston and Herman Hines

Goddard's Black History Club was honored recently at a Sponsors Dinner to recognize sponsors who contributed to Bowie State University's 1988-1989 Scholarship program.

The GSFC Black History Club was honored for contributing \$1500 to the BSU Scholarship Fund. Black History Club members Herman Hines and Dennis A. Small attended the affair, along with Dillard Menchan, Goddard's Chief of Equal Employment Opportunity Programs.

Dr. James E. Lyons, Sr., President of Bowie State University, addressed the 40

sponsors in attendance, stating that although the amount of scholarships the college receives have increased over the past years, he had the unpleasant task of sending students home after the first semester because many students could not play tuition costs for the second semester. President Lyons emphasized the continuing need for more scholarships to maintain the program.

The GSFC Black History Club also contributed \$1000 to the Sojourner-Douglas College in Baltimore, MD, during February Black History Month activities.

Goddard Hosts Center's First Career Day

by Michael Parrish

Forty-five students from various colleges and universities came to Goddard April 17 to participate in the center's first Career Day.

Sponsored by the Office of Human Resources (Code 110) as part of its strategic plan to enhance the center's college recruiting, the program arranged for the students to tour the Center, learn about its career opportunities, and interview managers and supervisors to determine their qualifications for potential employment at Goddard.

Center Director Dr. John W. Townsend, Jr. began their visit by delivering opening remarks in the Building 3 Auditorium. The students then were presented with an overview of the various directorates by Brian W. Keegan, Deputy Director, Office of Flight Assurance; Robert E. Spearing, Director, Mission Operations and Data Systems Directorate; and Jon R. Busse, Director, Engineering Directorate.

Following the presentations, the students toured the Communication and Control Center (Building 3/14), the Integration and Test Facility (Building 7) and the new Robotics Lab (Building 11).

Lillie Jefferson, a computer science student from Memphis State University commented on the tours: "I didn't realize how involved your facility is in the overall support of the space program. The tours were outstanding!"

Following a luncheon at the Rec Center, the students were interviewed individually by the three host directorates. This was the first time the students had a chance to see first-hand the work environment and the specific kind of work they might do. Some students interviewed with more than one directorate.

Preliminary feedback received at the conclusion of the program was very positive.

Miriam Dvorak, a computer science student at LaSalle University, remarked, "I'm ready to start working here immediately!"

Job offers already have been made to a majority of the students who attended the Career Day. The Office of Human Resources is considering plans for a second Career Day, continuing on as a regular part of the Center's college recruiting program.

Apollo 11 Celebrates 20th Anniversary

July 20, 1989 marks the 20th anniversary of the first lunar landing, Apollo 11. This official NASA commemorative logo incorporates the original Apollo 11 crew insignia within the circle of the figure 20. The crew insignia depicts an eagle descending upon the lunar surface holding an olive branch, symbolizing America's peaceful mission.

A search is on for all former employees of the Apollo Spacecraft Program Office (ASPO). The office is planning a reunion to commemorate the

20th anniversary on July 22, 1989, at the Johnson Space Center. If you or someone you know was assigned to JSC's ASPO during this historical period, please contact Sharon Martin (FTS 525-1432/JSC mail code VN2) with names and addresses so they can be included on the mailing list.



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