



## WELCOME ABOARD, ED SMYLIE

Effective December 19, 1976, Mr. Robert E. (Ed) Smylie, presently the Acting Associate Administrator for Aeronautics and Space Technology at NASA Headquarters, will become Goddard's new Deputy Director.

As Deputy Director he will serve as general manager for the Center and be responsible for day-to-day operations related to the Center's wide range of space science, application and tracking programs.

Mr. Smylie has been at NASA Headquarters (OAST) since October 1973. Prior to that from 1962-1973 he was assigned to the Johnson Space Center. Earlier positions within NASA include Assistant Chief for Apollo Support, Crew Systems Division, 1967-1968 and Chief, Apollo Support Office, 1964-1966; Head, Environmental Control Systems Branch, Life Systems Division, 1962-1964. In these positions, he was responsible for all Division activity in support of the Apollo Program including environmental control, thermal control, portable life support systems, bioinstrumentation, and water and waste management. He served from 1972-1974 as U.S. Chairman of the working group concerning with crew transfer and life support systems for the Apollo-Soyuz Test Project.

Before joining NASA in 1962, Smylie was employed by the Douglas Aircraft Company, Santa Monica, California, where he was responsible for various systems in the development of the DC-8 aircraft. Upon completion of the DC-8 program, he was assigned as lead engineer for the Skybolt Missile thermal conditioning systems and led a research group concerned with air conditioning problems associated with the supersonic transport.

Smylie graduated cum laude from Mississippi State University in 1952 and received a Masters Degree in Mechanical Engineering from MSU in 1954, during which time he was an instructor. He completed the requirements for a Masters Degree in Management as a Sloan Fellow at MIT in 1967. In addition, he has done graduate work at UCLA.

He is a member of Tau Beta Pi, Pi Tau Sigma, Kappa Mu Epsilon, and has received the NASA Exceptional Service Medal, and the Victor Prather Award as well as various JSO awards. He is the 1974 Chairman of the AIFA Technical Committee for Life Sciences and Systems. He served as City Councilman in El Lago, Texas in 1970-1971.

Mr. Smylie and his wife, June, have three children.

## Landsat Photos Help Settle Land Claims

Alaskan Indians are using pictures from satellites to help settle claims against the U.S. government, some of which date back to the U.S. purchase of Alaska from Russia in 1867.

With the pictures from Goddard's Landsat-1, the Indians are selecting thousands of acres of potential commercial timber land and promising areas for mineral exploration.

Vast tracts of wilderness are being offered to the Indians by the federal government in settlement of native claims.

One of Alaska's native regional corporations asked the University of Alaska at Fairbanks to recommend the best land for mapping forests and mineral areas.

Few settlements, roads or airfields have been located in the area since it was purchased by the United States. Though it was known to be rich in minerals and forests with stands of birch, aspen and white pine of commercial quality, there were no detailed land-use maps.

Scientists at the university's Geophysical Institute used images from NASA Goddard's Landsat-1 Earth resources survey satellite, combined with the limited ground and aerial data available, to make maps of seven million acres showing areas of caribou and moose pasture, potential agricultural and potentially marketable softwood and hardwood forests and areas where geological features indicated possible deposits of hardrock minerals.

Under the Alaska Native Claims Settlement Act of 1971, 99 million acres were set aside for the federal public domain for selections of 40 million acres of surface title and mineral rights by more than 200 native village corporations and 12 native regional corporations representing some 100,000 Indians, Eskimos and Aleuts.

Besides mapping forests and possible mineral areas, the data has been used for—among other things,—measuring crop acreages, mapping snow cover, detecting oil slicks, mapping urban and agricultural land use, detecting offshore dumping of sewage and industrial waste, monitoring the environmental effects of strip mining and locating potential earth-quake zones.

Landsat-1 has been in operation since July 1972 and a sister spacecraft, Landsat-2, since January 1975. A third one is planned for launch by NASA next year.

The work was supported financially by the U.S. Department of the Interior's Bureau of Indian Affairs and NASA's Office of University Affairs.



JANE HURD, Registered Nurse of the Goddard Health Unit painlessly and swiftly inoculates an employee against swine flu with a ped-o-jet gun. Approximately 4000 Center personnel have been immunized with either monovalent or bivalent shots.

APRIL release!

## Career Planning Services at Goddard

By Margaret A. Tindal

Have you ever asked yourself the question "Where do I go from here?" Are you concerned about career opportunities and options available to you? Are you locked into a job with little growth opportunity and feel that you would like to explore other avenues of career possibilities? If you answer is "yes" to one or more of the above questions then you might be interested in knowing about Goddard's Career Counseling and Work Experience Program (CCWE).

CCWE became operational at Goddard in January, 1976 under the guidance of professional career counselor, Dr. Zardy Leibowitz of the University of Maryland's Counseling and Personnel Services Department. The program was initially designed to assist journeyman (full performance level) non-supervisory employees who are: 1) in positions lacking growth potential and looking for new career choices; 2) content with their present jobs but desire to acquire additional skills; or 3) desirous of receiving assistance in planning and assessing career options.

CCWE program participants are provided opportunities to assess their career-related interests, values, skills, and motivations. Self-generated in nature, this data is used in defining realistic career goals and plans in determining individual strengths and interests. If, as a result of this process, a determination is made that a work experience would enhance career development and if there are opportunities available, the employee will be assigned to appropriate work experience. For those individuals who have no need to participate in work experiences, other options such as additional education or training experiences will be explored as alternative means of implementing career choices or goals.

Of the 20 initial applicants for the program, five are currently participating in work experiences on center. All of the individuals involved are at the journeyman level in their career ladders. Some of the work experiences are "development of improved computerized configuration change request", "systems engineering of instrument packages for AEM," "state and regional participation in the application of Landsat data," and other. Currently plans are underway to expand the career planning services component of CCWE to include other groups of Goddard employees. This promises to be of great value to employees who feel a need for assistance in career planning.

As a means of carrying out the functions of CCWE and creating a more conducive atmosphere in which Goddard personnel may avail themselves of career planning services, a Career Resource Center has been set up and is currently housed in Building 16, in what used to be the GSFC planetarium. The career will house a library of resource and other materials on careers and career planning, and conference areas where trained personnel can provide career planning assistance.

Employees who need to avail themselves of career planning services may be referred to their supervisors or they may take the initiative in seeking assistance. The CCWE is prepared to deal with employees at all levels in providing career planning assistance.

Potential clientele of the career planning service should be cognizant of the fact that this is not a job placement service, nor is it likely that they will be told what to do or how to make career choices. The career planning and assessment process will require a great deal of introspection and self-assessment on the part of the employee and it demands that the employee assume responsibility for and make a commitment to his/her own plan for self and career development.

## Over 300 Goddard Employees Now Qualified in C.P.R.

Throughout the United States the lives of many thousands of people have been saved by application of Cardiopulmonary Resuscitation procedures (C.P.R.).

They have literally been brought back to life after their heart, breathing, or both have stopped as a result of heart attacks, drowning, asphyxiation, electrocution or other causes.

Over 300 Goddard employees have already been certified as qualified in C.P.R., and the number is growing rapidly.

The course requires approximately 6-8 hours of instruction under the careful supervision of qualified American Red Cross instructors, who are also Goddard employee volunteers. Life size instrumented dummies of adults and infants are used by trainees for practice purposes. Passing a written test is also required in addition for proficiency in "reviving" the victim.



FRANN SMITH, Goddard's first female cardiopulmonary resuscitation (CPR) instructor checks the progress of her students as they learn basic life support skills.

## BICENTENNIAL BURN MANEUVER

A Goddard 'Bicentennial' event occurred on Friday November 12 when the 200th maneuver for the Atmosphere Explorer series of satellites was executed. Since December 1973, a total of 119 maneuvers have been performed on AE-C, 14 on AE-D and 67 on AE-E. These maneuvers have converted one satellite (AE-C), and soon a second (AE-E), from an initial highly elliptical orbit with a low perigee altitude to a circular orbit, and allowed the onboard experiments to sample a wide variety of atmospheric conditions. The perigee altitude has also changed to meet scientific requirements with measurements made deep in the atmosphere to as low as 129 km for AE-C and 134 for AE-E.

Other maneuvers have phased the ground track over certain ground stations for correlative measurements, provided desired sun angles for experiment viewing, and provided phasing with other satellites in orbit.

Congratulations to the Atmosphere Explorer Project, Control Center, Flight Dynamics Team, and other supporting groups for adaptive maneuver planning and operations which help to enhance the scientific data return.

## Bicentennial Symposium Series Ends

"Can Existing Economic, Political and Value Systems Cope with the Problems of the Earth?" This was the question faced on October 28 by participants in the fourth and final symposium in the Bicentennial Symposium Series. "Mounting Pressures on Planet Earth." Co-sponsored by the Maryland State Department of Education (MSDE) and the Goddard Space Flight Center, the Series was coordinated by Dr. James Latham (MSDE) and Dr. Jaylee Mead. Earlier forums had examined the questions of food, population, energy and other resources, as well as the role of science and technology in solving the problems of the earth. A report is being prepared to summarize the twelve lectures and panel discussions.

On October 29 a Youth Forum for 400 high school students from Maryland was held to discuss the same topic. A feature of this event was a very successful communications experiment in which the attendees in Goddard's Building 8 Auditorium were linked by the Canadian Communications Satellite with students at the Lewis Research Center in the morning and with another group at the Ames Research Center in the afternoon. Elva Bailey and Richard Crone of Goddard's Educational Programs Office worked with Randall Lake of MSDE to organize this event.



On October 28 Dr. James Addy of the Maryland State Department of Education (MSDE), representing the Maryland Bicentennial Commission, presented certificates of recognition to Dr. James Latham (MSDE) and Dr. Jaylee Mead for their contributions as coordinators of the Bicentennial Symposium Series, "Mounting Pressures on Planet Earth." Mr. Elva Bailey was also recognized for his work creating a series of forty 40-second historical spots for television, entitled "It Happened in Maryland."

## Goddard Joggers Win Trophies

If a jogging trophy is your goal, better step up the pace this winter since competition will be keen at the next NASA intercenter jogging event to be held in April 1977.

Last October nine Centers participated involving a total of 208 men and women. The race was held over a two mile course, and was divided into categories by sex and age.

Although Goddard placed seventh, three of our eleven participants earned points. Lynn Puccineeli placed second in the under 30 category. In the men's divisions, Al Greenberg finished eighth in the 30-39 age group, while Emil Kirwin finished sixth in the 40-49 category.

Participation is open to all Goddard employees, government and contract.

## NASA HOME SAVES \$ \$

A house built with advanced energy conservation technology could save a homeowner an average of \$96.59 a month on mortgage and utility bills, NASA scientists estimate.

The researchers said in a paper presented at an international housing symposium, the 1,500-square foot house would contain air locks, a partial water reclamation system, a water-source heat pump supplemented by a solar collector and a wastewater heat recovery system.

The savings are contingent on the cost of a solar supplemental heat pump system being reduced from the current \$13,000 to \$6,000 in five years through mass production, they said.

Using the researchers' premise, monthly payments on a well-insulated conventional house would be \$282 on a 20-year, 10 per cent loan while the monthly cost for the advanced house would be \$375. Assuming a 10 per cent energy inflation rate, the average monthly utility bill would be \$223.41 for the conventional house and \$32.68 for the NASA design, they said.

NASA scientists also said a partial water reclamation system used in conjunction with conservation methods, including a small tank commode and special shower nozzle inserts, could cut water use by a family of four from 73,000 gallons a year to 34,000. The extra cost would be about \$600, but a net savings of \$1,273 over 20 years would result.

## Landsat Tested for Use as Census Taker

Landsat-1 and -2, now being used to monitor Earth resources, may take on the additional task of "census takers" in the 1980 United States census.

The pair of spacecraft are currently undergoing a series of tests designed to evaluate their effectiveness in selective geographic operations of the U.S. Bureau of the Census. These tests are part of a joint technology transfer project which is being initiated by the Bureau of the Census and NASA.

Evaluation of the satellites' application to census requirements is being conducted at Goddard, and the U.S. Bureau of the Census, Suitland, Md. Goddard Project Scientist is Jerrold W. Christenson of the Information Transfer Laboratory (CENTRALAB).

Based on their ultimate performance in 1980, the robot census takers are expected to be put to work helping chart urban growth in subsequent censuses. Instead of once every 10 years, a complete U.S. census is now required every five years according to Public Law 521, signed by the President on Oct. 18, 1976.

Landsat images are not detailed enough for counting people or houses. They are used, however, to identify many geologic, agricultural and societal features, including residential patterns of growth.

Research on the use of satellite data for census applications was initiated in early 1975. Since then, satellite imagery of Prince George's County, Md., and Austin, Tex., has been processed for the identification of major types of land cover typical of the zone of transition from rural to urban landscape.

Prior to the 1980 national census, Landsat census tests will be made on a regional basis in the Pacific northwest, north central and northeastern sections of the country. These will be followed by verification tests in about 20 medium-sized urbanized areas across the country.

The first Landsat was launched July 23, 1972. It was followed by a second, identical spacecraft on Jan. 22, 1975. A third, improved Landsat is scheduled for launch in 1977.

# NASA Awards Ceremony

The following Goddard individuals/groups received NASA Honor Awards at the Annual NASA Awards Ceremony on November 4, 1976:

## OUTSTANDING LEADERSHIP MEDAL

- Albert G. Ferris
- Michael J. Vaccaro

## EXCEPTIONAL SCIENTIFIC ACHIEVEMENT MEDAL

- Vincent V. Salomonson
- Friedrich Vonbun.

## EXCEPTIONAL SERVICE MEDAL

- Lawrence L. Cook
- Howard L. Galloway
- Raymond D. Hesson
- George D. Hinshelwood
- George J. Karras
- Paul A. Mowatt
- Robert H. Pickard
- David H. Suddeth
- Charles E. White

## EQUAL EMPLOYMENT OPPORTUNITY AWARD

- Helen V. Thayer

## GROUP ACHIEVEMENT AWARD

- Apollo-Soyuz Geodynamics Team
- Atmospheric and Oceanographic Information Processing Team
- Materials Support Team
- OAQ Copernicus Operations Team

In addition, Dr. Donald G. York, Princeton University, will receive the NASA Public Service Award, and METPAK/TESTPAK Software Development Team, Computer Sciences Corporation, will receive the NASA Public Service Group Achievement Award.



JANET GUTHRIE (above), the first woman in the history of the Indianapolis 500 to have entry acceptance, was a featured speaker at Goddard on November 14. In addition to being a champion race car driver, Ms. Guthrie is a commercial pilot, a physicist and an excellent public speaker.

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# COST REDUCTION AWARDS BY 75'



PICTURED ABOVE during Cost Reduction Award presentations are (from left): Director of the Engineering Directorate John H. Boeckel, Jon Busse, Herbert H. Honecker, Jr., Thomas A. LaVigna, Goddard Director Dr. Robert S. Cooper and Elmer Travis.



H. WILLIAM WOOD, Associate Director for Operations, Networks Directorate, is pictured above (left) with Wesley Bodin (accepting award for Anthony Dirham), Cost Reduction Award winner Robert Ambrose and Goddard Director Dr. Robert S. Cooper.



ROBERT L. BALL (above, center) receives his 1975 Cost Reduction Award from Goddard Director Dr. Robert S. Cooper (right) and A&M Director William A. Mecca, Jr.



From left, Mr. A.G. Ferris, Director of Mission & Data Operations; Award recipients Messrs. Jack Balakirsky, Evmenios Damon, William Anonsen; and Goddard Director Dr. Robert Cooper.



From left, Mr. Robert N. Lindley, Director of Project Management; Goddard Director Dr. Robert Cooper; award recipients Mr. Daniel Dembrow, Mr. Charles Gunn and Mr. William Russell.



From left: Mr. Merland L. Moseson, Director, Office of Flight Assurance; Award recipient Mr. Irving Ross; and Goddard Director Dr. Robert Cooper.