GODDARD NEWS
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CENTER DIRECTOR, Dr. John F. Clark, is shown being interviewed by WRC-TV reporter Bill Sternoff just after Apollo splashdown in a live TV broadcast from GSFC. This was but one of many press activities which kept the Center's Office of Public Affairs busy.

GODDARD ACTIVE IN ASTP

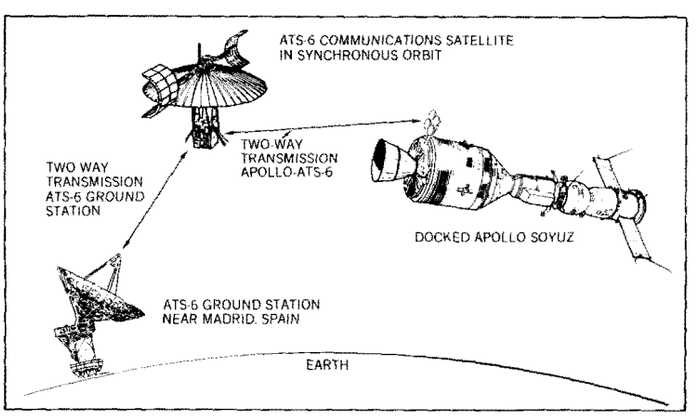
With the completion of the U.S.-U.S.S.R. Apollo-Soyuz Test Project (ASTP), another vital page has been added to Goddard's history book of contributions to the NASA space program.

The Spaceflight Tracking and Data Network (STDN) mustered all of its global forces—land stations, aircraft, and a ship—to support this first international manned rendezvous in space. STDN is managed for NASA by Goddard under the general direction of Tecwyn Roberts, Director of Networks.

Throughout the ten-day mission, Roberts' Associate Directors Bill Wood and Laverne Stelter were busy respectively "putting out fires" and insuring the engineering integrity of the worldwide STDN. The three around-the-clock Network Directors for the ASTP Mission included Joe Garvey, Dale Call, and Mike Stevens.

The Goddard-managed Applications Technology Satellite-6 (ATS-6) recently moved to a synchronous orbit position at the equator over Kenya, was used to augment the STDN for this mission. Use of this spacecraft provided continuous tracking and communications relay with the docked Apollo-Soyuz spacecraft for 55% of their orbit versus the 17% available using only ground systems. TV viewers around the world can attest to the quality of the TV signals relayed by the ATS-6.

The NASA Communications system (NASCOM), managed by Goddard, relayed all signals between Mission Control in Houston and the Apollo.



WORLDWIDE TV VIEWERS were treated to continuous live color coverage of U.S. and Russian spacemen greeting one another inside their docked spacecraft, thanks in great part to the ATS-6.

AMONG THE MANY VISITORS to Goddard's OPSCON during the ASTP mission were (from left) Mrs. Nancy Pascal, daughter Robin, Anne Arundel Executive Robert Pascal; Administration and Management Director William A. Mecca, Jr.; Mrs. Kelly and her husband, Prince George's County Executive Winfield Kelly.

From Earth to Moon

Is the Moon a piece of Earth that broke away early in our planet's formation about 4½ billion years ago?

A paper prepared by Dr. John A. O'Keefe, Assistant Chief for Planetary Studies in Goddard's Laboratory for Space Physics, and Nobel prize winner Professor Harold C. Urey of the University of California, San Diego, suggests this fission theory of the Moon's formation should be seriously considered.

The paper, which was presented by O'Keefe at a Discussion Meeting of the Royal Society in London, England, on June 12, is the result of research undertaken by the two scientists to numerically test numerous theories on the Moon's origin.

Using data gathered largely from the Apollo lunar landing missions and from earlier unmanned lunar flights, O'Keefe and Urey have found chemical evidence that the rocks of the Moon were once part of a mass which included a considerable proportion of molten iron. The lunar core of molten metal today, if there is one, is believed to be at most one-hundredth the volume of the Moon or some 720 kilometers (446 miles) in diameter as opposed to the Moon's total diameter of 3,476 km. T2,160 mi.). The Earth's core of molten metal, on the other hand, is 6400 km. (4000 mi.) in diameter compared to a total Earth diameter of 13,800 km. (8,000 mi.).

According to O'Keefe and Urey, the higher proportion of molten metal in Earth suggests support for the fission theory of the Moon's formation.

In the fission theory, the Moon is held to have been pushed to its present distance from the Earth by interaction with the tides in the body of the Earth.

Prior to the split, the iron in the Earth would have sunk to the center, drawing with it the gold, platinum and other noble (rare) metals found in the molten rock originally mixed with the iron. This accounts for the low density of the Moon, as well as its low content of noble metals. What little iron was left in the Moon did not have enough mass to form a large metallic core.

O'Keefe and Urey's method of arriving at their hypothesis was to calculate numerically the thermodynamic requirement for lunar metallic content. The required metal is not now in the Moon, as indicated by numerous lunar phenomena, such as the behavior of moonquake waves and the way the Moon wobbles as a result of Earth's gravitational attraction.

ON JUNE 4, Goddard's John M. Bogert III, a data analyst in the Theoretical Section, Laboratory for Solar Physics and Astrophysics, received from Director Dr. John Clark the award of a plaque as NASA's nominee for handicapped Federal employee of the year. For those attending, the highlight of the ceremony was Bogert's reading to them his letter of congratulation from Dr. Clark, which had been put into Braille by Kathi Williams. Blind since birth, Bogert attended the Virginia Polytechnic Institute at Blacksburg and received a B.S. in mathematics in 1967. He taught high school math in Emporia, Virginia, before coming to Goddard in 1969.

Dr. Clark Presents Cost Reduction Awards

Goddard Director Dr. John F. Clark presented the Annual Cost Reduction Awards to 17 employees in ceremonies on Thursday, June 26, 1975. Certificates of Merit, plaques, and monetary awards are given to those employees whose suggestions, inventions, or other achievements beyond job requirements result in first-year benefits to the government of $5000 or more.

Recipients of Cost Reduction Awards for Fiscal Year 1974 are, by directorate:

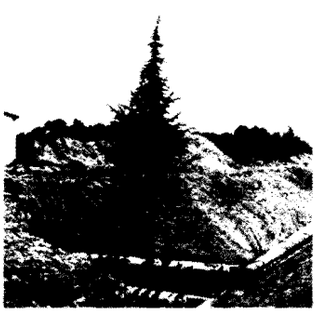
Administration and Management: Charles S. Brown, Delos C. Dupree, Ben Goldman, Douglas G. Hoover, William S. Kramar, John A. Palmieri, Paul Reising, and John T. Tominovich

Projects: John M. Thole

Mission and Data Operations: Michael Mahoney

Engineering: Ralph B. Shapiro and Lloyd G. Green (shown above, right, with Dr. Clark.)

Networks: Lynn F. Woodward, Leonard L. Stewart, John E. Liner, Leonard C. Manning, and Charles H. Underwood.



THIS ISOLATED EVERGREEN outside of Building 7 was recently spared by construction workers who were putting in new ground pipes.

Goddard Mourns . . .

Robert M. Porter, who died at the age of 49 on June 27, 1975, after a brief illness. One of the first NASA employees, Porter joined Goddard in 1958 after working at NRL on project Vanguard. His contributions to the Blood Bank were exceptional and his 13½ gallon record was one of the highest in the area for his age. He will be especially remembered by his many friends at Goddard and in the community, and by his wife and five children.

Students Spend the Summer at GSFC

While some young people spend their summers sunbathing on the beach or hiking through the woods, many spend their summer vacations working to finance their educations or to earn extra spending money. Through a wide variety of programs, Goddard summer employees learn about various aspects of the space program, gaining valuable work experience while earning money.

SUZANNE PAGE, here for the second year with the American University Program, is assisting Dr. John Barker of the Earth Resources Branch in checking the accuracy of LANDSAT images of Swift Creek Reservoir. Other participants are Stuart Baker, Michael Broome, Debra Hughes, Curtis Skerl, Philip West, Ira Willkin, George Winkert, and Gordon Myers.

SICA PARTICIPANTS are (first row, from left) Dr. Carl Kirksey (Bowie State Program Coordinator), Linda Hawkins, Sheila Upshur, Deborah Hollingsworth, Mariah Barnes, Sheila Carter, Janet Reid, Bonnie Jones, Kenneth Hamilton, (top row, from left) Michael Neely, Robert Carey, Cornell Downs, Frances Howell, Arlene Jones, and Veronica Fitz.

SIPA PARTICIPANT TONY CASTALDO is researching Management Style Inventory. Others in this program are Bradley Cost, June Ewing, Sylvester Frazier, Mel Greene, Greg Lindsay, and Barbara Schwartz.

• **Summer Civil Service Program:** Seventy-six teachers, college graduates, and college students are employed under this program at Goddard. They are placed in a variety of positions, including clerk-typist, technician, and science aide. All prospective employees over the age of 16 must qualify under the Summer Employment Examination, except for college graduates who may apply directly to the government agency at which they desire employment. College juniors and seniors with at least a 3.5 grade point average are also exempt from the exam. This year, the program is being coordinated by Dee Newlin of Personnel Services.

• **Summer Aides:** Under this eleven year old program, youth between the ages of 16 and 21 are provided with clerical, maintenance, and technical jobs. The purpose of this program, coordinated by Summer Aide Counselor Gloria Blanchard, is to give young people a chance to work in government agencies, broaden their career horizons, and earn money to further their education or training. This year's more than 90 Summer Aides are paid the minimum hourly wage for ten weeks of work. Many of them attend a basic English class at Goddard two days a week. Twenty-eight of the Summer Aides are transfers from the Stay-in-School Program, under which they work 16 hours a week while school is in session and are paid on a different wage scale from the other Summer Aides.

• **SIPA:** Seven graduate students in business and public administration are participating in the Goddard/Morgan State 1975 Summer Institute in Public Administration. According to coordinator Jim Gorman of the Organization and Employee Development Branch, this program gives students experience, organization, and a chance to apply techniques and theories they have learned in school. Each participant undertakes an individual research project, focusing on such topics as Incentive Contracts, Middle Management Training, Implementation of the Private Policy Act, and the Economic, Social, and Political Implications of LANDSAT. Also, the students attend seminars given by Delry Cornick, an instructor from Morgan State.

• **SICA:** Bowie State College sponsors the ten-week Summer Institute in Computer Applications at Goddard. The 14 students selected for the program have completed their sophomore year in college and have at least a 3.0 cumulative grade point average. Students receive a $1,150 fellowship and four college credit hours. Goddard staff provides a three-week computer course covering concepts of computer utilization, Fortran programming and basic job control language. Students are then assigned in teams of two to a specific problem to which they will apply their previous training to solve. Field trips and seminars are also included in the program, which is directed by Dr. Carl H. Kirksey of Bowie State and is coordinated at Goddard by Dora Puleo of EEO.

• **American University Research Program:** Nine high ability senior high school students are participating at Goddard in American University's sixteenth research participation program. Each student is assigned to a research project under the supervision of a Goddard scientist. Seminars and reports given at American University will conclude the program on August 15. Coordinating the program for American University is Mrs. Margaret Maury, and Dolores Reeves of the Employee Organization and Development Branch is the Goddard coordinator.

STEP PARTICIPANTS and their new positions are (seated, from leftp Cynthia Kelly, Inventory Management Specialist; Sue Douglas, Computer Systems Analyst; Joyce Jarrett, Business Support Specialist; Mary Alice Spruill, Budget Analyst; Ralph Strnad, Contract Assistant; Marlene Forster, Contract Assistant; and Edward Gantt, Contract Assistant. Their supervisors are (standing, from left) Bruno Seppi, Kent Kwiatkowski, John Hurd, Richard Demarco, Gladys Chasnoff (coordinator) and Stanley Kovell.

OSO-8 Transmits Data

Orbiting Solar Observatory-8, launched from Cape Canaveral, Florida, June 21, has been checked out by ground controllers at Goddard and all experiments are functioning normally.

The last experiment, an Extreme Ultraviolet Radiation experiment by the U.S. Naval Research Laboratory, was turned on June 26.

OSO-8, the last in a series of eight solar observation spacecraft, is transmitting information back to Earth from which scientists are expected to get a better understanding of solar energy transfer in the Sun's atmosphere. In addition, it will continue the 11-year solar cycle study begun with the launch of the first OSO in March 1962.

As this is the minimum phase of the Sun's 11-year cycle, data coming back from OSO-8 now will be compared with the intense activity of our nearest star as it again enters an intensely active period expected in 1980-82.

In addition to looking at the Sun, the spacecraft's X-ray telescopes will be aimed at more than 100 preselected objects of special interest to astronomers including supernova remnants (hot expanding clouds of cosmic debris that result from dying star explosions) and X-ray binary stars that seem to consist of a visible star and an invisible companion.

These companion stars may be highly condensed neutron stars or even black holes in space. A black hole is believed to form when a shrinking star's gravitational field intensifies to the point that no light or matter can escape. Gravitational force in a black hole is so great that New York City would fit into a teaspo[illegible] composed of such dense material.

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Seven Employees Chosen for STEP Program

Specialty Training for Entry Professionals (STEP), a component of the Upward Mobility Program, is in its first year here at Goddard. Coordinated by Gladys Chasnoff of the Manpower Utilization Division, the STEP Program provides Goddard employees in non-professional jobs an opportunity to enter administrative professional career fields.

The Civil Service Commission approved a training agreement for STEP enabling the selected candidates to prepare for their new positions. Goals of STEP are to effectively utilize the maximum capabilities of employees and to provide an in-house base for selecting candidates for administrative professional positions at Goddard.

Candidates enter the program laterally at any grade between GS-5 and GS-10, or wage grade equivalent, moving directly into the professional series. The initial target position is at the next highest grade. Most positions covered by the training agreement involve a career ladder with promotion potential to GS-12. Although participants were chosen Center-wide, all of this year's STEP jobs thus far are in the Administration and Management Directorate.

Training for this program includes up to 18 months of intensified on-the-job training and selected college and government courses. An individual training plan is being developed for each participant.

Candidates were chosen for STEP on the basis of an application showing experience and education, supervisors' evaluations, and an interview. The top 21 applicants chose from a list of seven available positions and were then reevaluated by their supervisors for these specific occupations. The supervisor of the vacant position and the appropriate Director Of made the final selection. Fourteen finalists are still waiting to be placed if new STEP positions open before next year's program begins in the spring.

Completion of the program depends on satisfactory training progress and performance evaluation. Each participant's training will be carefully monitored to ensure that the plan is followed.

SAILING, FISHING, AND BARBECUING highlighted the Goddard Sailing Association's spring picnic on June 14. More than thirty employees and their families attended the event at Chalk Point, a cove on the West River just south of Annapolis. Several arrived by boat. Membership in the Goddard Sailing Association permits chartering the club sailboat for full or half-day periods and enrolling in a beginning sailing course. Monthly meetings held during the lunch hour often feature sailing films and are open to all Goddard civil service and contractor employees. For more information, contact club treasurer Harvey Walden on extension 6683.