GODDARD NEWS

GODDARD SPACE FLIGHT CENTER / GREENBELT, MARYLAND

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FIFTH TIROS METEOROLOGICAL SATELLITE READY FOR LAUNCH

The National Aeronautics and Space Administration will soon attempt to launch another Goddard-managed TIROS weather satellite.

The launch is timed to allow the new picture taking meteorological satellite to spend the maximum amount of time over the breeding grounds of hurricanes during the coming season.

The new spacecraft is quite similar to the four hat-box-like Tiros satellites which have taken more than 120,000 useful cloud cover photographs. It will be the first Tiros to be launched at the northeasternly inclination of 59 degrees, compared to 48 degrees for previous Tiros orbits.

At an inclination of about 58 degrees, Tiros V's first pictures will be of weather conditions as far north as 65 degrees—on a line with Fairbanks, Alaska; Iceland; Greenland and Scandinavia. Here it may transmit pictures of the pattern of ice breakup, which brings the menace of icebergs and fog to North Atlantic shipping lanes. It may send pictures of storms which originate in northern latitudes.

However, tropical storms are the chief study target of Tiros V. It is estimated that the spacecraft will orbit over the

(See TIROS, Page 2)

127 NEW EMPLOYEES TOPS GSFC RECORD

On Monday of this week GSFC ranks were increased by 127 new employees. This represents the largest number to join the Goddard staff on a single day. The group consisted of both permanent and summer employees.

Permanent staff additions included 28 scientific and professional employees; 13 administrative and clerical positions and 3 student employees participating in Goddard's college co-op programs.

In addition, 83 employees joined the center on a temporary basis. A large number of these are students serving in sub-professional positions. Their skills will supplement the Goddard staff during the summer months.

During the past two weeks, 13 recent college graduates joined the Goddard center to begin a career in space science and technology.

As of this week, the Goddard staff totalled 2,331 permanent and 186 summer employees.

BENDIX GETS MERCURY NETWORK SERVICE CONTRACT

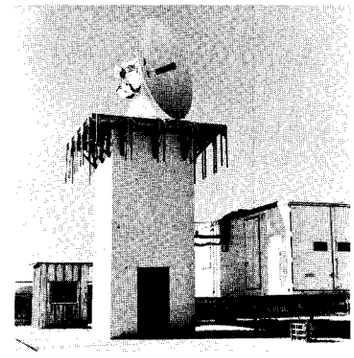
Goddard to monitor $10 million contract

The Bendix Corporation's Radio Division at Towson, Maryland, has been selected for the award of an incentive contract to operate five of NASA's world-wide Project Mercury tracking and communications stations. In addition, the contract, totalling approximately $10 million over a two-year period, calls for certain engineering and operations services for all 16 Mercury network stations. Bendix has been performing such services under an existing contract since July 1, 1961. The new contract will be effective January 1, 1963.

The contract will be monitored by the Goddard Space Flight Center. Bendix will be able to earn incentive payments above its fixed fee by demonstrated superior performance.

Incentive features for outstanding performance

Incentive contracts have been used before, particularly in research and development "hardware" contracts. This contract, however, is believed to be the first awarded by any agency to provide a monetary incentive for outstanding performance in service-type work.



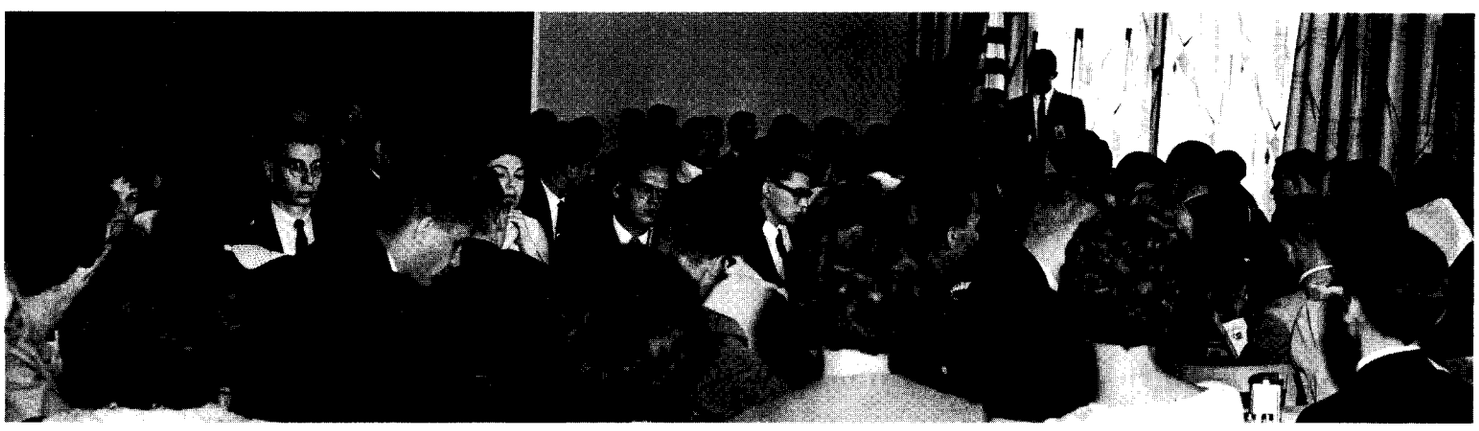
GUAYMAS, MEXICO

In addition to the incentive feature, contract provisions include ceilings on indirect costs, options for extension of the contract under the same terms as the initial contract, and the ability to retain key employees within the Mercury program should another contractor be selected at a later date.

Five stations to operate

Under the supervision of Niles "Buck" Heller, Manned Spaceflight Support Division Chief, who heads Goddard's Mercury Flight Operations, Bendix will operate and maintain the following five stations: Bermuda, headed by GSFC Station Director D. D. Webb, Jr.; Grand Canary Island, headed by GSFC Station Director C. A. Rouiller; Kano,

(See BENDIX, Page 2)



PERSONNEL BRIEFING . . . Clark Jamison (standing, far right) briefs 127 Goddard newcomers.

TIROS

(Continued from Page 1)

northern hemisphere for its first ten days, spend the next 38 days over the southern hemisphere, then head north again. On this schedule, it will be over the northern hemisphere's hurricane belt during the time when, from weather history hurricanes can be most expected.

The satellite will circle the earth about every 97 minutes at an approximate altitude of 350 nautical miles.

The satellite will be boosted into orbit by a three-stage Delta rocket.

Goddard Space Flight Center has responsibility for overall technical direction of the satellite, including tracking, command, data acquisition, and the infra-red radiation experiment.

The Goddard Staff concerned with the TIROS experiment includes: William G. Stroud, Chief of the Aeronomy and Meteorological Division; Herbert I. Butler, Associate Chief for Projects, Aeronomy and Meteorology Division; and Robert M. Rados, Tiros Project Manager.

BENDIX

(Continued from Page 1)

Nigeria, headed by GSFC Station Director A. E. Smith; Zanzibar, headed by GSFC Station Director Thomas K. Spencer and Guaymas, Mexico, headed by GSFC Station Director Otto Womick. Bendix will also maintain and operate a training facility at NASA Wallops Station, Wallops Island, Virginia, and operate aircraft which will service and calibrate the electronics communications equipment at all stations. In addition, the contract provides for a depot for logistics support at Owings Mills, Maryland.

OSO COMPLETES ITS MISSION

NASA recently announced that after seventy-seven days and 200 miles of scientific data tape, since it was launched into orbit from Cape Canaveral, the Orbiting Solar Observatory has ceased transmitting useful information.

On May 22, after 1,138 orbits, a malfunction in the spin control system caused the OSO satellite to spin-up to a point where the servo system could no longer orient the scientific instruments and the solar cells towards the sun. The servo system, in attempting to orient the solar cell array to the sun. is using large quantities of power, the batteries are in a continually discharged state and, therefore, little useful information can now be obtained from the spacecraft.

OSO was successfully launched from Cape Canaveral by a Delta Vehicle, March 7, 1962. During its eleven weeks of near perfect operation, the extremely complicated satellite transmitted almost 1,000 hours of scientific information on solar flares and subflares, mapped the sky in gamma radiation, examined energetic particles in the lower Van Allen region, monitored the sun in a broad region of x-ray and gamma radiation and performed surface erosion studies of various kinds of materials. Until the spin circuitry malfunction, OSO suffered no apparent degradation of performance.

As a result of the successful OSO flight, scientists will be able to understand more fully the phenomena of solar radiation and solar energy. Early next year, an attempt will be made to fly the second in this series of satellites.

GODDARD DIRECTOR URGES PRESS TO COVER SPACE SCIENCES

The story of America's efforts in the scientific exploration of space must not end with the headline "Satellite in Orbit", Dr. Harry J. Goett, GSFC Director told the Aviation Space Writers Association recently.

"The main story of space projects to date seems to focus on advance preparation for the launch and the launch itself. Actually at this point the project has just reached the threshold of its useful life. To end the story here, is equivalent to ending the biography of a great man on the day of his graduation from school", he remarked.

Dr. Goett was banquet speaker at the 24th annual meeting and news conferences of the Aviation Space Writers Association meeting in San Francisco, California.

Perhaps one reason that the space story ends after launch is due to the fact that it is so diffuse, he added. Except for the manned space flight projects, there is no single personality on whom the spotlight can be concentrated. The job of putting together the cosmic jigsaw puzzle of space from the bits and pieces of data obtained from the scientific satellites engages the efforts of many people throughout the scientific community. This jigsaw puzzle goes together so gradually that there are no singular events which merit a headline.

"I suspect that there are Nobel prizes in the making, but it is going to be difficult to determine who should get the medal", Dr. Goett said.

Relating highlights of the Center's efforts and findings in Space, Dr. Goett explained that the scientific exploration of Vanguard I provided information that the earth was pear shaped; that Explorer I gave first direct evidence of the Van Allen belts; that the Vanguard and Echo experiments hint at the interrelation that exists between the sun and what goes on in the earth's upper atmosphere, and the influence of this region on weather conditions.

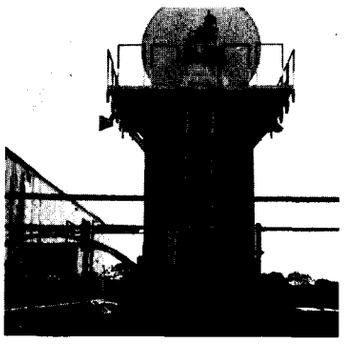
He predicted that some day in the future, the understanding of the sun-earth interrelationship will have a direct impact on our lives.

"Our knowledge of sun-earth relationships derived from satellites will justify the comment that these results will some day influence the price of beans in Kansas", he remarked.

He observed that space science covers many disciplines and that a very broad segment of the scientific fraternity is helping unravel the meaning of the new data being brought back from outer space. Each one of these disciplines is finding that it has a new frontier.

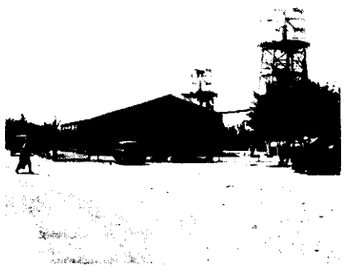
He encouraged the press, both general and technical media, to further public understanding in the scientific explorations of space. Beyond the launch, the story of space science begins. The pattern of findings of a family of spacecraft and experiments is what gives the individual efforts meaning, he remarked.

"I feel that the press has a most challenging opportunity by taking the pieces that we are gaining in the form of scientific information and interpreting this with meaning and depth," Dr. Goett concluded.

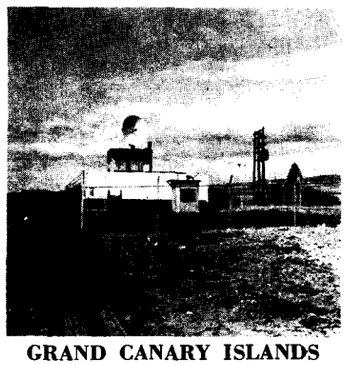


BERMUDA

ZANZIBAR, EAST AFRICA



KANO, NIGERIA



GRAND CANARY ISLANDS

Townsend Speaks At Aero-Space Symposium

Recently scientific and engineering leaders in the instrumentation field from around the world attended the 8th National Aero-Space Instrumentation Symposium held in Washington, D. C.

Dr. John W. Townsend, Jr., Assistant Director for Space Sciences and Space Applications, was the main speaker at the annual banquet. In his discussion "Future Space Exploration—Its Requirements and Influence on Instrumentation", Dr. Townsend said: "An important and disturbing trend in spacecraft instrumentation systems is toward a considerable increase in complexity in the second generation spacecraft now under development. A specific example is the use of more on-board data processing equipment in space probe and satellite communications and data handling systems." He added that on-board data processing can conserve bandwidth and reduce ground processing difficulties.

The complexities of the spacecraft-borne instrumentation to accomplish this job will grow markedly, particularly in the NASA 'Observatory' spacecraft.

"Already we are learning that our forecasted reliabilities in terms of six months to one year lifetime are unexceptable. The only reasonable way to achieve reliability in complex spacecraft instrumentation systems is through standardization, and further— The time is ripe for action," Dr. Townsend stated.

Other Goddard participants were: Program Chairman, Cyrus J. Creveling, Data Systems Design Branch; Program Coordinator and Session Chairman, "Instrumentation for Measuring Properties of Space", Dr. George H. Ludwig, Fields and Particles Branch; and Program Coordinator and Session Chairman, "Instrumentation for Measuring Space Vehicle Performance", Merland L. Moseson, Spacecraft Systems Branch.

Earlier some 30 members were guests of GSFC and were briefed on the Goddard Mission by Dr. Harry J. Goett. The group also toured principal facilities at the Center.

GODDARD'S SANTIAGO STATION HOSTS FRIENDSHIP SEVEN CAPSULE

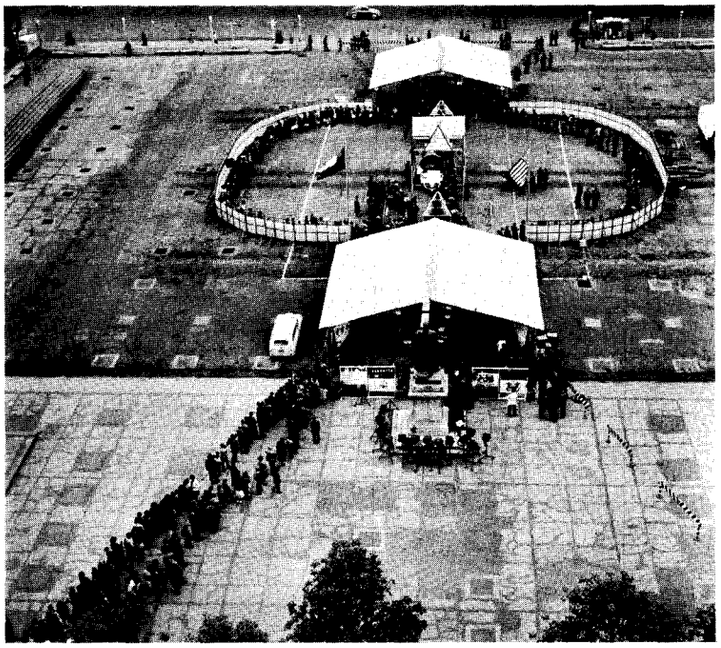
The Friendship Seven Capsule is again orbiting the earth, this time however, in a C-124 Globemaster. NASA has loaned the spacecraft to the United States Information Agency which has arranged for the capsule to be seen by people of all continents with a series of exhibits at many of the major cities of the world. Recently, one morning the capsule arrived in Santiago, Chile, where Mr. C. B. Cunningham is director of the NASA satellite tracking station. Mr. Cunningham arranged for the handling of the capsule and the exhibit from the aircraft to the Plaza Constitution in the center of Santiago where it was on display for 38 hours.

1,000 Carabineros *on guard*

The Carabineros or Military Police of Chile arranged for the temporary buildings to house the panel displays and the capsule. Over 1,000 Carabineros were detailed to guard the exhibit over the week end. One person passed by the capsule window every six seconds during the entire time the exhibit was open. At four o'clock in the morning the waiting line was one block long. On Sunday afternoon, the waiting line was four blocks long, and it took over three hours standing in line to have a six second closeup look. At night, a large screen was set up and NASA movies were shown continuously to crowds of up to 2,000 people.

The Chileans were tremendously interested in the exhibit. Time and time again Mr. Arnold Aldrich, NASA Mercury engineer who accompanied the exhibit, was asked, "Is this the real capsule?" It was with real pride that he could show the visitors the ablated heat shield and convince even the most skeptical that here was concrete evidence that the United States had put a man into orbit as part of the program for the Peaceful Use of Outer Space.

The Friendship Seven tour includes stops in Australia, Bermuda, Spain, Nigeria, Mexico, Great Britain and Zanzibar —nations cooperating with the United States in the Project Mercury Tracking program. The itinerary also includes two to four day exhibitions in France, Japan, India and Brazil. Friendship Seven will return to the United States in Mid-August for the Century 21 Exposition at Seattle, Washington, before being presented to the Smithsonian Institution in Washington, D.C. for permanent exhibit.



THREE HOURS FOR A SIX SECOND CLOSEUP LOOK . . . Arranged by the U.S. Information Service, the exhibit was on display in Plaza Constitution directly in front of the Presidential Palace. These photos show the exhibit and part of the long line of viewers who stood in line for over three hours to get a six second closeup look.

Goddard to Coordinate US/Swedish Research Project

NASA and the Swedish Committee on Space Research recently announced signing of a memorandum of understanding for a cooperative program in space research.

It is planned to launch four Nike-Cajun sounding rockets late this summer from the Vidsel Range in Sweden with the main objective of making direct samplings of noctilucent clouds. Noctilucent clouds are faintly luminous, very high clouds which occur at night and which are of unknown origin and nature. These clouds occur only in certain regions of the auroral zone for a short period during the summer months.

The rocket payloads are to include a nuclear emulsion pack and an electrostatic analyzer to make energetic particles measurements.

U.S./Sweden coordination

The project will be coordinated for the U.S. by the Goddard Space Flight Center. Goddard's coordinator is Wendell Smith, Aeronomy & Meteorology Division.

The U. S. is to provide an appropriate launcher, the necessary telemetry equipment and ground antennas, the rockets and the four scientific payloads and payload checkout equipment.

Sweden is to provide supplementary payload instrumentation to measure energetic particles; portions of the noctilucent sampling instrumentation; launching pad; a control center; housing for assembly and testing of rockets and payloads; and suitable housing for the telemetry equipment. Data analysis work will be done by scientists of both countries.

GODDARD NEWS

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GSFC HOST AND NEWSBEAT TO FOREIGN JOURNALISTS

Visiting journalists hear Goddard's world-wide Mercury Network described. Pictured are Balwant Singh Garcha, India; Soma S. Golden, Washington, D.C.; Monika Angela Moesslang, Germany; Father Miguel Jeronimo d'Escoto, Nicaragua; Mohammed Abdur Rauf, Jr., India; Waka Tsunoda, Japan; Mr. and Mrs. Pek Poedjioetomo, Indonesia; Father Martinus T. Peters, Holland; Glenford E. Mitchell, Jamaica, West Indies, and Miss Dorothy Roche, New York.

Goddard's communications center receives close attention by Glenford E. Mitchell of Jamaica, West Indies and Mohammed Abdur Rauf, Jr., Indian Journalist.

Foreign journalists, all recent graduates of the International Division, Columbia University Graduate School of Journalism, New York, this week were guests of the Goddard Space Flight Center. They studied Center activities and for the duration of their stay were guests in the homes of Goddard families. The group consisted of journalists from India, Germany, Japan, the Netherlands, Jamaica, Indonesia and Nicaragua.

The seminar was designed to acquaint the foreign journalists with the U.S. space program and with the specialized news requirements associated with space science activities. The program was developed in cooperation with the Columbia University Journalism Department, NASA Headquarters and the Goddard Office of Public Information.

Goddard hosts included: James Donegan, Alberta Moran, James Keene, Ed Mason, Ray Kruger, Dr. M. J. Vaccaro, Gilbert Courtney, and Dr. W. N. Hess.

The two-day seminar included briefings by: Herman LaGow, Space Sciences; Robert Mackey, Communications Satellites; William Meyer, Test and Evaluation; James Donegan, Mercury Network; Herb Butler, Weather Satellites and John South, Tracking.

The group also visited NASA's Wallops Island Station and Lewis Research Center, Cleveland, Ohio.

Jim Donegan (left) explains Mercury Network Operations to Miss Monika Angela Moesslang of Munich, Germany and Balwant Singh Garcha, of Maharashtra, India.

Father Martinus T. Peters (left) of Oldenzaal, Holland, discusses GSFC's real-time computers with Walt Adams.