

GODDARD NEWS

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THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NOV. 24, 1961



LOOKING OVER DATA FROM TIROS INFRARED EXPERIMENTS . . . (l to r) Herbert I. Butler, A & M Division's Associate Chief for Projects, Dr. Rudolf Stampfl, Tiros II Project Manager and now Spacecraft Systems Manager for the Nimbus Project, and Robert M. Rados, current Project Manager for the Tiros program.

TIROS II MARKS YEAR OF OPERATION

When Tiros II was sent into orbit by a Delta Booster on November 23, 1960, it had a "working lifetime" expectancy of about 90 days. Last Thursday, powered by its solar cells and nickel-cadmium batteries, the 285-pound hat-box-shaped spacecraft marked a full year of operating, still capable of transmitting cloud cover pictures useful for meteorological study and weather forecasting.

Like its predecessor, Tiros I, this experimental weather satellite carries a wide-angle TV camera for viewing broad areas of the earth and a high-resolution narrow-angle camera to ob-

serve the structures of the clouds within the wide-angle camera's field. In addition, the satellite carries experiments to measure the emitted and reflected solar radiation from the earth and atmosphere. The instrumentation for these experiments, though no longer providing useful data, also functioned beyond the satellite's expected lifetime and sent back a wealth of information.

As of November 13, 1961, Tiros II (Television Infrared Observation Satellite II) had produced approximately 3,840,000 feet of magnetic tape con-

(See **TIROS** on Page 4)



GODDARD'S second big telemetry dish will look like the Fairbank's when completed in the mountainous area of North Carolina, near Asheville.

TWENTY-SEVEN NATIONS REPRESENTED

Twenty-seven nations were represented at the International Meteorological Satellite Workshop held in Washington, D. C. on November 13 to 22.

On the opening day of the workshop, the participants were welcomed by James E. Webb, Administrator of NASA, and Harry Wexler of the Weather Bureau. After these addresses, scientists from the National Aeronautics and Space Administration and the Weather Bureau discussed current weather satellite operations, research results, and plans for the future.

The Workshop group visited NASA and Weather Bureau installations, including the Goddard Space Flight Center, the data acquisition station at Wallops Station, Virginia, the Meteorological Satellite Labora-

tory, and the National Meteorological Center.

The Goddard Space Flight Center resembled a miniature United Nations on November 15 as eighty participants of the International Meteorological Workshop toured the facility. Director, Dr. Harry J. Goett welcomed the group. The delegates toured the Space Operations Control Center, the TIROS Control, TIROS Data Processing and Goddard Space Science Facilities.

The invitation to participate in the workshop was extended early in August to the weather services of more than one hundred nations by the National Aeronautics and Space Administration and the Department of Commerce Weather Bureau.

(See **WEATHER** on Page 4)



METEOROLOGISTS TOURING GODDARD examine the mechanism and mission of Explorer VII with the guidance of Dr. John W. Townsend, Jr., Assistant Director, Space Sciences and Satellite Applications.

'BIG DISH' SITE SELECTED

The site for the second in a series of giant parabolic telemetry antennas was selected last week by the Goddard Space Flight Center. The huge 85-foot diameter high-gain data acquisition "dish," to be constructed in the mountainous area of western North Carolina, will be used for receiving and recording telemetry from high inclination orbits of the upcoming "second generation" satellites.

It will be modelled after the first in this series, the ultra-

sensitive data acquisition antenna recently constructed near Fairbanks, Alaska.

The satellite telemetry facility will be located near Rosman, about 40 miles southwest of Asheville in the Glassmine mountain area of the Pisgah National Forest.

The site will include approximately 640 acres to be acquired through the cooperation of the U. S. Forest Service. Only 40 acres will be used for initial construction.



NASA SECRETARIES listen intently as Dr. John W. Townsend, Jr., discusses future Goddard-managed satellites and their various components.

HEADQUARTERS SECRETARIES TOUR THE CENTER

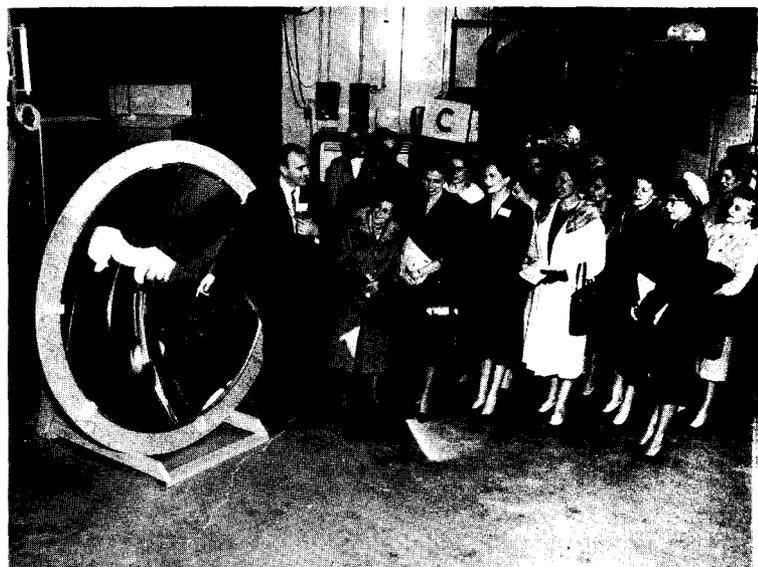
A very special "Open House" was held at Goddard on Saturday, November 18. It was for those all-important "Gal Fridays" at the NASA Headquarters who work diligently behind the scenes to keep our space program moving.

The secretaries were invited to visit the Center by the Office of the Director and "hosted" by the secretaries of the Goddard executive offices.

The occasion provided an opportunity to get a first hand look at Goddard's activities in the NASA program, and they were given a complete tour of the facilities at Greenbelt. On hand to extend a warm welcome and to describe various Goddard projects, highpoints of some of the programs, com-

munications responsibilities, and equipment were the Director, Dr. Harry J. Goett, Dr. Michael J. Vaccaro, John T. Mengel, and Dr. John W. Townsend, Jr.

By the end of the day, the ladies who devote long hours working with the problems of various programs and projects had a close acquaintance with space sciences, sounding rockets, scientific satellite's, micro-miniaturization, test and evaluation, laboratory duplication of launch conditions and space environment, and the world-wide Minitrack and Mercury networks. The reception at the end of the tour gave both the secretaries and their hosts and hostesses a relaxing time to become acquainted with each other.



SPACE FLIGHT IN THE LABORATORY . . . Headquarters secretaries get associated with various equipment used to simulate conditions of spaceflight while attending the "Open House" held for them at Goddard, November 18th.

EMPLOYEES GET SERVICE AWARDS

In ceremonies held on Tuesday, November 7, emblem awards were presented by the Office of Administration to 4 Goddard employees for fifteen and ten year service. Making the awards was Dr. Michael J. Vaccaro, Assistant Director of OA.

Eighteen employees received 15-year awards while twenty-four 10-year pins were presented. Each pin was embossed with the insignia of the National Aeronautics and Space Administration. Ceremonies were held in the auditorium of Building three.

Fifteen Year Awards

- Edmond J. Golden
- Cecil N. Draper
- William L. Jenkins
- Thomas V. Lucas
- Frances G. Kent
- Joseph H. Burrell
- Charles A. Lee
- Saverio DiBenedetto
- Kenneth B. Foster
- Edwin J. Mann
- Reba N. Sheldon
- Harry Silverman

- Mary T. Oliver
- Harry T. O'Toole
- Norman E. Ritchey
- Charles W. Trotter
- Robert S. Wyatt
- Gertrude A. Garnett

Ten Year Awards

- Shirley R. Deremer
- Herbert J. Fivehouse
- Richard J. Keegan
- Gwynn R. Berry
- Joseph J. Brooks
- Robert H. Huddleston
- Gary Purvis
- George E. Vaughn
- Mary R. Foley
- Rita H. Burns
- Robert Geier
- Marguerite A. Kates
- Helen G. Jackson
- Carrie L. Johnson
- Sidney H. Alterescu
- Anthony J. Andrella
- Thomas E. Donaldson
- Velva M. Filling
- James N. Hines
- Frederick M. Johns
- Robert F. Longyear
- Beverly J. Dinn
- Patrick M. Kelly
- Wayne K. Walters



HAPPY SMILES typify the success story of OA employees receiving their Service Award emblems in recent ceremonies here at Goddard. Pictured above is Velva Filling, being handed her ten-year badge by Dr. Michael J. Vaccaro, Assistant Director, Office of Administration.

EMBRY ASSIGNED RADIOLOGICAL SAFETY OFFICER

K. Gene Embry, Systems Review Group, Space Science & Satellite Applications Directorate, has been assigned as the Radiological Safety Officer for the Goddard Space Flight Center. Prior to Goddard, Mr. Embry was employed by the Naval Research Laboratory. He was a Radiological Fellow from

1955 to 1956 at Vanderbilt and Oak Ridge, Tenn., AEC.

Personnel requiring assistance for the procurement, storage, handling, and use of radioactive material or equipment which produces radiation should contact Mr. Embry on extension 4341, Building 2, Room 137.

THE SPACE SCIENTIST

AS PROCUREMENT SEES HIM...



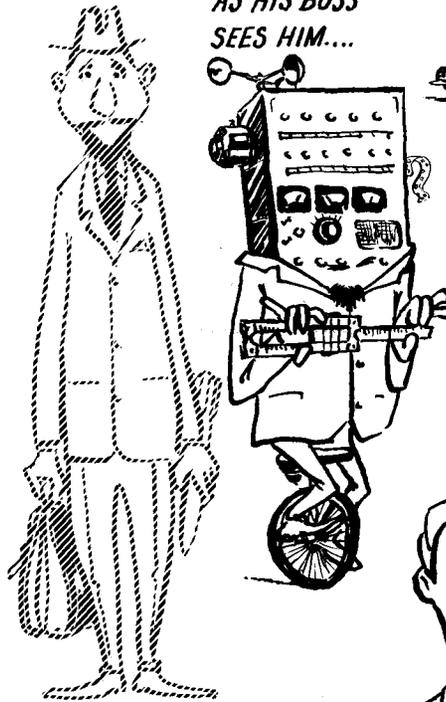
AS HIS SECRETARY SEES HIM....



AS THE GENERAL PUBLIC SEES HIM....



AS HIS BOSS SEES HIM....



AS HIS WIFE SEES HIM....



AS PIO SEES HIM....



GODDARD WIVES CLUB LAUNCHED

Approximately 170 Goddard wives attended a coffee at the Fort Mead Officer's Club on November 7 to organize the Goddard Wives Club.

During the business meeting committees were appointed to nominate a slate of officers, to write the by-laws, to plan programs and to work out a bud-

get. These committees met at Goddard in the auditorium of Building 3 November to organize their ideas which will be presented at the December 6 meeting at Goddard. Notices will be sent to all wives giving further details.

All Goddard wives are eligible and welcomed.



THE GOODARD WIVES CLUB NOMINATING COMMITTEE . . . The important job of nominating ladies for officers in the new organization is the responsibility of (left to right) Dorothy Cinciripini, Theda Lovell, Virginia Stine, Polly Covington, Rita LaGow, Lois Schroeder (standing), elected President of the Club, Dorothy Heller, and Bernie Sisco.

GSFC TENPIN LEAGUE STANDINGS

(As of November 14, 1961)

Team No.	Team Name	Games	
		Won	Lost
1.	12—Split Fits	32	8
2.	9—The Junto	28	12
3.	10—Rackets	26	14
4.	18—Hi-Lows	24	16
5.	3—Bleebbs	23	17
6.	1—Guided Muscles	23	17
7.	11—Colt 45's	22½	17½
8.	15—Mogenbaiters	22	18
9.	8—Coolies	22	18
10.	19—Oscillators	22	18
11.	5—Integrators	21	19
12.	16—A-OK's	20½	19½
13.	4—Orbiting Elements	20	20
14.	14—Hi-Five	19	21
15.	22—Second Stage	19	21
16.	17—Odd Balls	19	21
17.	24—Atom Spheres	18	22
18.	20—Twenties	16	24
19.	23—Flap Doodles	16	24
20.	6—Aborters	16	24
21.	7—Vibrators	15	25
22.	13—Fumbling Five	15	25
23.	2—Honey Potters	14	26
24.	21—Lechers	7	33

GSFC DUCKPIN LEAGUE STANDINGS

(As of November 14, 1961)

Team Standings	Games		
	Won	Lost	
1.	Bluffers	19	11
2.	Quicksilvers	17	13
3.	Vi Vacs	17	13
4.	Ducklings	16	14
5.	Flintstone "5"	16	14
6.	What You Says	15	15
7.	Alley Cats	15	15

8.	Bob Cats	15	15
9.	Untouchables	14	16
10.	Wood Choppers	14	16
11.	Stumblebums	13	17
12.	Space Katz	9	21

REPORTING EMERGENCIES

In the event of fire, serious injury or incident, go to the nearest telephone and dial "O". When the operator answers, give her the nature and type of emergency.

GODDARD NEWS

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GODDARD TRAVEL OFFICES NEW LOCATION . . . The Travel Office is now located off the Computer Room in Building I basement. Telephone extensions are 4844 and 4845.

Weather Workshop

(Continued from Page 1)

It is the policy of the United States to share weather satellite information with all nations. Current analyses of weather satellite photographs are regularly distributed throughout the world on international radio teletypewriter circuits. Meteorologists in many countries use these analyses in preparing forecasts, particularly for ocean areas.

When TIROS photographs reveal areas of severe weather, the Weather Bureau immediately advises the weather service of any nations likely to be affected. During the autumn of 1961, a number of typhoons were photographed by TIROS III, and the Weather Bureau's warnings proved valuable to nations in the Pacific.

Through the International Meteorological Satellite Workshop, the participants acquired greater knowledge of the capabilities, limitations and future plans for weather satellites.

Tiros II Anniversary

(Continued from Page 1)

taining valuable meteorological data, including a total of 36,156 pictures—11,650 from its narrow angle camera and 24,506 from its wide angle. Two hundred and fifty nephanalyses were prepared from the photographs in "real time" at the Tiros command/read-out stations in the Pacific Missile Range, California, and Wallops Station, Virginia, to provide a "quick-look" of prevailing weather conditions.

During the launch phase of Tiros II, the wide angle camera became defocused. This caused a slight blurring in the transmitted photographs. Conse-

quently, the resolution of the wide angle photos from Tiros II is not as sharp as that of the photos from its sister satellites, but TIROS II pictures are adequate for the observation of large-area cloud cover and storm vortices.

On March 16, after the spacecraft had exceeded its expected lifetime, a malfunction occurred in the shutter control circuitry of the wide angle camera, and direct-command readouts from the camera could not be observed. However, remote readouts stored on the tape recorders continued to function successfully.

Tiros II has attained many significant meteorological achievements. A few of these have been the observations of a typhoon south of Australia in December 1960 and in the same month, a cloud mass approaching Australia which meteorologists successfully used to predict the end of a severe heat wave on that continent. In January, the satellite observed the severely packed ice in the St. Lawrence waterway and in March took photographs for several days showing the breakup of the ice pack.

The satellite's achievements beyond its photo-transmitting life expectancy included the observations of a major storm off the tip of South Africa on July 31 and photographing a storm in the northwest Pacific Ocean on August 3rd. It also was called upon to support two NASA launchings from Cape Canaveral. It furnished photographs of weather conditions in the impact area to supplement data from Tiros III for the suborbital flight of Captain Alan B. Shepard last May and later, for the launching of Ranger I.

As the satellite has aged, its power supply has lost some of

its efficiency. Therefore, the number of pictures that can be taken during an orbit has been limited and the satellite is programmed only for "special assignments." Actually, Tiros II was taken off a full programming schedule after Tiros III was placed in orbit last July.

A vast amount of data from the infrared experiments has been collected from Tiros II. This data is in the process of being computed and analysed. Data from the first fifty orbits have been processed by the NASA and the Meteorological Satellite Laboratory of the U. S. Weather Bureau and made available to the scientific community. The Weather Bureau receives meteorological data from Tiros satellites for weather analysis, forecasting, and distribution to various "users" in the U. S. and other countries.

The radiation detectors have provided maps of the distribution of radiation, both reflected and thermal, over large areas. In addition to providing knowledge of the distribution of the energy balance, these experiments permit the estimation of cloud heights and temperatures.

The longevity and achievements of Tiros II also marked another high point in the successful efforts of government-industry teamwork. The Tiros program is under the overall direction of Dr. Morris Tepper, Director of Meteorological Systems, NASA Headquarters. Personnel of the Aeronomy and Meteorology Division, headed by William G. Stroud, are the driving Goddard team for development and management of the project, with support branching out through various other divisions of the Center.

Tiros, initially, was a DOD project. When it became a NASA project in 1959, Mr. Stroud was the program manager. Herbert I. Butler, who joined Goddard and the Aeronomy and Meteorology Division this year as Associate Chief for Projects, formerly was the Tiros Project Manager in the U. S. Army Signal Corps, DOD.

Dr. Rudolf Stampfl, Head of the Instrumentation Branch was the Project Manager for Tiros II. Mr. Robert M. Rados is the current manager for the Tiros program.

The prime contractor in the industry part of the Tiros team is the Radio Corporation of America. With the exception of infrared experiment instrumentation, the RCA's Astro-Electronics Division designed and

built the satellites under NASA contract. The Barnes Engineering Company built the radiometers for the infrared experiments under contract. The Aeronomy & Meteorology Division designed, developed, and built the Infrared experiment instrumentation of which the radiometers are the sensors.

The first in the highly successful series of experimental meteorological satellites, Tiros I, was launched April 1, 1960 and clearly demonstrated the feasibility of meteorological satellites. During its transmitting lifetime of nearly three months, it relayed a total of 22,952 cloud cover photos. Tiros I contained no infrared experiments.

Tiros III was placed in orbit July 12, 1961. It, too, has exceeded its designed lifetime. As of November 13, it had completed 1,788 orbits, transmitting 31,529 photographs and a considerable amount of infrared data.

The high resolution narrow angle camera in Tiros I and II proved to be of limited value to meteorologists, who found that the coverage provided by the wide angle camera furnished much more information for weather analysis and prediction. Consequently, Tiros III was equipped with two wide angle cameras.

VEHICLE DISPATCH

(1) Have valid government permit before requesting government vehicle and have permit on person at all times.

(2) Once issued a government vehicle.

(a) Check gas and if needed have filled at GSFC garage and repair shop.

(b) Drive car as if it were your own.

(c) Check back of trip ticket to note vehicle performance and fill in front of trip ticket and sign.

(d) Park car in place designated for Government Vehicle, be sure lights are off, emergency brake on and windows are up, return keys, trip ticket and credit card to Dispatcher immediately.

(3) If requesting vehicle and driver for trip notify Dispatcher as soon as possible that trip is pending.