

**Awards Issue**



VIRGIL H. BYRD holds the CR Man-of-the-Year certificate with Dr. John F. Clark. From left are Clarence A. Schroeder, Stanley P. Kovell, William J. Rhodes, and Harold L. Hoff.

## Goddard's First CR Man-of-Year: Virgil Byrd

Dr. John F. Clark, Director, implemented a new series of cost-reduction (CR) awards on November 2, 1967 with the presentation of cash and certificates to Virgil H. Byrd, Head of the Recording Systems Office (SOD); Anthony Walch Jr., of the Aerospace Experimental Machine Branch (EF & ED); John G. Guidotti, of the FR-2 French Project Office; and John W. Adolphsen, of the Flight Data Systems Branch (STD).

The awards were specifically presented to these men for their individual cost reduction performances during FY-66 and generally for their overall contributions to Goddard's cost reduction program.

Mr. Byrd's CR performance during FY-66 was considered to be so outstanding that he was designated the FY-66 Man-of-the-Year.

Stanley P. Kovell, Goddard's Cost Reduction Officer, said: "This new incentive awards program, based on the premise that cost reduction is part of everyone's job, establishes special recognition and awards for individuals who outperform others in carrying out their cost reduction responsibilities. These awards are not based on dollars saved but instead are determined by the manner in which any individual discharges his overall cost reduction responsibilities during the course of the fiscal year."

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## Paul Marcotte Wins NASA Exceptional Service Medal

Goddard's Paul Marcotte, AIMP Project Manager, was awarded the NASA Exceptional Service Medal at NASA's Annual Awards Ceremony, October 24, 1967 in the Department of Health, Education and Welfare auditorium, Washington, D. C.

He was cited for "exceptional contributions as Project Manager for the AIMP Project, a highly successful program which significantly enhances NASA's stature in the scientific and technological community of the world."

Mr. Marcotte's medal and other awards, including the NASA Distinguished Service Medal, were presented by NASA Administrator James E. Webb and Deputy Administrator Dr. Robert C. Seamans, Jr.

Four scientists who have held key managerial positions within NASA were presented the Distinguished Service Medal: Homer E. Newell, Associate Administrator; Edgar M. Cortright, Deputy Associate Administrator, Office of Manned Space Flight; Dr. Floyd L. Thompson, Director of the Langley Research Center; and Dr. Raymond L. Bisplinghoff, former and now head of the Aeronautics and Astronautics Department, Massachusetts Institute of Technology.

The program was opened by Dr. Seamans who introduced Dr.

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ANTHONY WALCH JR. (in shirt-sleeves) shows his CR certificate to (from left) Maurice Levinsohn, Stanley P. Kovell, Don Hutchison, Harry Bickford, Fred Starbuck, J. Frederick Taub, and Dr. John F. Clark.



JOHN G. GUIDOTTE, holding certificate, is flanked by (from left) Robert D. Mattingly, Stanley P. Kovell, Robert C. Baumann, William K. Ritter, and Dr. John F. Clark.



JOHN W. ADOLPHSEN, CR Award winner, holds certificate with Dr. Clark. From left are James E. Scobey Jr., Richard F. Morris, Stanley P. Kovell, William K. Ritter, Roland Van Allen and N. Whitney Matthews.

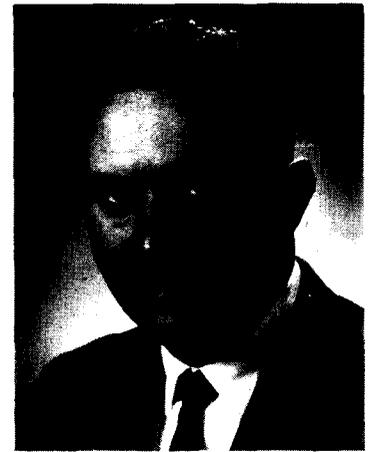
(PAUL MARCOTTE . . . from Page 1)

Roger W. Heyns, Chancellor of the University of California who delivered the principal address.

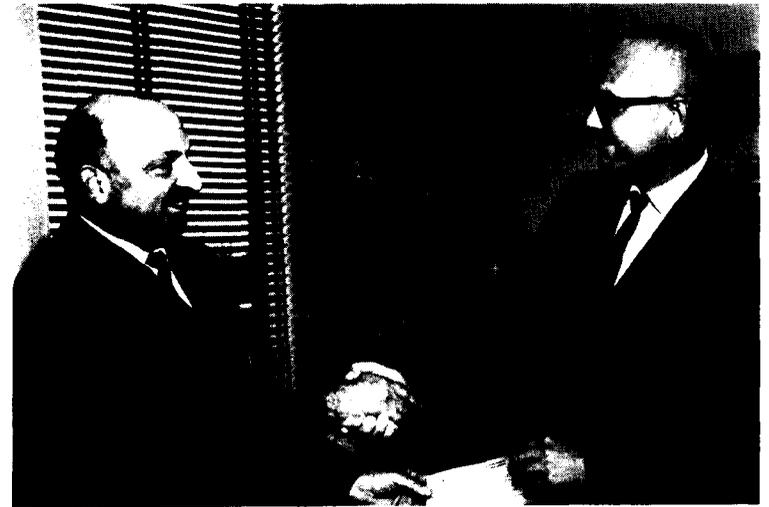
Dr. Charles Stark Draper, director of the MIT instrumentation laboratory, was honored with the presentation of the NASA Distinguished Public Service Medal. This was only the second time this award has been made. The late Dr. Lloyd V. Berkner was the first recipient last year.

Astronaut Roger B. Chaffee was honored posthumously with the NASA Exceptional Service medal. The award was accepted by Mrs. Chaffee.

In addition to Mr. Marcotte, the NASA Exceptional Service Medal was presented 19 other NASA men for individual accomplishments in different fields of endeavor, including seven at NASA Headquarters: William Cohen, George C. Deutsch, Arthur F. Hood, Joseph B. Mahon, Benjamin Hilwitzky, Lee R. Scherer, and William M. Shea.



Paul G. Marcotte



VERN STELTER (right) Chief of Communications Division, receives a CFC check from Fred Singer, Bendix NASCOM Senior Manager.



KAZUO MATSUMOTO, of the Tracking Division, Japanese National Space Development Center; was at Goddard from September 25 to November 13, 1967, to study space tracking systems with the Network Operations Branch. His course of study included design techniques of satellite tracking networks and the operation Range and Range Rate facilities. After leaving Goddard, he will spend one week at the Rosman, North Carolina, STADAN Tracking station, and then visit the Jet Propulsion Laboratory before returning to Tokyo.

COST REDUCTION



COST REDUCTION. From left are Dean S. Smith, Head of Experiment Engineering Branch (LABS); James Findlay, cost reduction originator; and Mrs. Gail T. Young, Cost Reduction Representative.

## Jim Findlay Saves Goddard \$9-Thousand

James A. Findlay, of the Experiment Engineering Branch (LABS), made a detailed study of ways to save Goddard money on the Cylindrical Langmuir Probe Experiment which was scheduled for launch aboard an Aerobee rocket (NASA 4.156) in conjunction with the Nimbus MUSE experiment.

He discovered that this electrostatic probe experiment, which has a price tag of about \$10,000, could actually be modified at great savings from an existing experiment electronics unit left over from a previous satellite program.

After making this discovery, Mr. Findlay proceeded to set up a foolproof way to make this adaptation at a cost of less than a thousand dollars, thereby saving Goddard \$9,000.

The Aerobee flight was a complete success from the viewpoint of the Langmuir Probe Experiment. Incidentally, the electronics unit was recovered intact via parachute from the rocket payload and is now being used in the laboratory for additional studies.

Cost Reduction Representative, Mrs. Gail T. Young, said: "We congratulate Mr. Findlay on his sharp thinking, which we classify as an excellent example of the cost-reduction philosophy which all of us try to follow as a 'way of life' throughout our work area."

### — In Memoriam —



William G. Looney

WILLIAM G. LOONEY, for four years Head of Administrative Communications Branch, (MS&SD), died of a heart attack November 2, 1967. Mr. Looney's extensive communications experience was instrumental in significant improvements to Goddard's telephone system.

OUR GIRL FRIDAY



Linda Bassett

Linda Bassett is project secretary in the International Satellites Office (SI&SR) and in this capacity works for Anthony J. Caporale, San Marco Project Manager; Maurice D. Handegard, San Marco Project Coordinator; Herbert L. Eaker, ESRO Project Manager; and James P. Talantino, ESRO Project Coordinator.

She was also secretary to John E. Flynn and Ronald K. Browning on the UK-E satellite project for a time.

Her duties include filing, typing from rough drafts and shorthand notes, doing general secretarial duties, such as receiving visitors, taking and placing calls for the men and reminding them of scheduled appointments, and carrying out countless other routine tasks.

When asked what she thinks of her job, Miss Bassett said, "I thoroughly enjoy my work and consider myself very lucky to work with such wonderful, interesting, and considerate people."

As to how she handles her job, Mr. Caporale said, "As one may well imagine, an office dealing with project management of the ESRO I, ESRO II, UK and San Marco projects throughout all of their various phases, places many demands on a secretary.

"When all of its demands are fulfilled quietly and efficiently, that office is blessed. It is doubly blessed when the person fulfilling those demands is quiet, unassuming, and personable. Linda's qualities are these and more. Her warmth of personality is particularly attested to by the many compliments we have received from various agencies and companies with which we have had telephonic contact.

"Is it any wonder, then, that we are proud to have Linda on our team?"

Born in Washington, D. C., Miss Bassett was graduated from DuVal Senior High School in Glenn Dale, Maryland, and studied at the Prince Georges Community College in Suitland, Maryland. She came to Goddard on June 27, 1966. Her favorite pastimes are reading and sewing.

She lives with her parents, Mr. and Mrs. Edward M. Bassett at 6125 Main Street in Lanham, Maryland.

## Bloodmobile Here Nov. 21

The Red Cross Bloodmobile will visit Goddard, Tuesday, November 21, 1967, in the Building 8 Auditorium, 9 A.M. to 2:45 P.M.

Through the cooperation of the American National Red Cross, Goddard has arranged to have blood replaced for employees, including contract employees, and members of their immediate families. (A family consists of spouse, children under 18, parents, parents-in-law, grandparents, grandparents-in-law, and any relative living in the same household and economically dependent upon the employee.)

In order to continue this service, twenty percent of our employees (over)

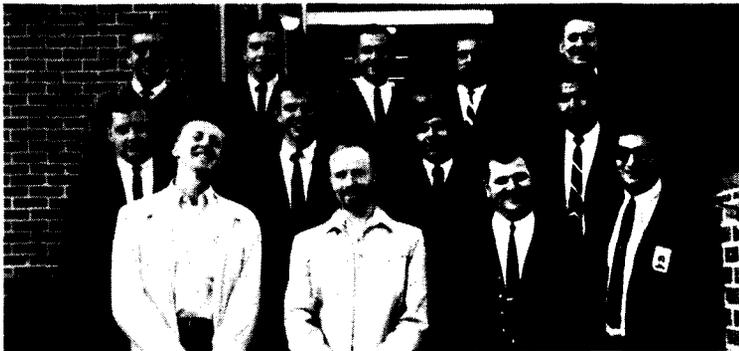
**(BLOODMOBILE . . . from Page IG-1)**

must donate blood annually. Since the last visit of the Bloodmobile to Goddard in September, our blood bank has replaced blood for eight employees and/or members of their families. Contract employees as well as Goddard employees are eligible to participate in this worthwhile program. If you have not been contacted in your area of work, call Betty Duelley, Extension 4757, to make an appointment to donate.

## Tarantulas Win

The last game of the GSFC Intermural Touch Football League this season was held October 30 at Goddard's Antenna Site with the Tarantulas beating the Brontosaurus, 38 to 0, to become champs of the 9-team league.

The final league standings of the three top scoring teams are Tarantulas, 8/0/0; Brontosaurus, 7/1/0; and Space Sciences, 4/3/1.



TARANTULAS



BRONTOSAURS

## Buy Books at Discount

Personal books may be purchased at discount savings through a new service available at the Goddard library to all personnel assigned at the Center. Two book suppliers provide this service on the following basis:

### 1. John I. Thompson Company, Washington, D. C.

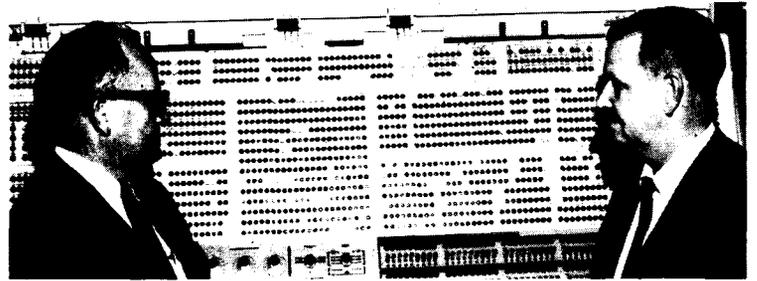
- 10% discount on titles in stock
- Stock is maintained on more than 400 scientific and technical book titles from selected publishers
- Immediate availability of titles in stock
- List of stocked titles available at GSFC Library
- Service available on non-stock items at list price
- Direct mailing and billing to your home

### 2. Taylor-Carlisle's Book Store, New York

- 10% discount on most text, technical, university press and business books
- 20% discount on most current fiction and other popular type books. (No discount on paperbacks and medical books)
- Direct mailing and billing to your home

Order forms, instruction leaflets and general assistance in answering inquiries concerning this service are available at the Goddard Library Loan Desk. The library, however, assumes no responsibility for orders, remittances or deliveries; all transactions are considered personal between reader and dealer.

## New Computers Arrive



WILLIAM F. CAHILL (left) of the Mathematics and Computing Branch (LTS); and William E. Doles, of the T&DS Negotiation Branch (PD); inspect the main console of the IBM 360/91 computer during its installation in Bldg. 1, Oct. 30, 1967.



UNLOADING of the new IBM 360/91 computers took place in the morning of October 30, 1967.

Goddard's Co-op Work-Study Program, in progress since 1961, provides students with the opportunity to gain valuable work-experience in the aerospace field.

## Ray Eberly: Co-op Student



Raymond C. Eberly, a junior electrical engineering student at the Georgia Institute of Technology, has encountered challenging work assignments from three different areas at Goddard since coming here in March 1965.

Prior to his present position, Ray worked for Fred Wulff in the Data Processing Branch of the Information Processing Division, and for Paul J. Alphonsi in the Structural Dynamics Branch of T&E. Currently, Ray is working for Henry C. Hoffman in the Stabilization and Control Branch of the Systems Division.

When asked to comment on the co-op program, Ray stated that "Working in many different areas provides an excellent opportunity to examine many engineering applications to determine major interests."

His supervisor, Lawrence T. Draper, says, "Ray is working on a laboratory study that is being conducted to aid in the mathematical modeling of a spacecraft boom oscillation problem. He has an excellent attitude and is making a positive contribution to the study."

Ray is one of three co-ops from Georgia Tech currently working at Goddard. He received the Briaerean Society's award for having the highest scholastic average of all freshmen co-ops at Tech. Last spring he was presented with the Eta Kappa Nu sophomore award for maintaining the highest average of all sophomore electrical engineering students. This past summer Ray, as an officer in the Co-op club, was instrumental in planning all of the activities of the entering freshmen at Tech. Much of his spare time at school is devoted to his fraternity, Lambda Chi Alpha. He graduated with honors from Good Counsel High School in Wheaton, Md.

Ray's parents, Dan and Jo Eberly, reside at 7902 Woodbury Drive, Silver Spring, Md. His father, a Lieutenant Colonel in the U. S. Air Force Reserve, is an attorney in private practice in the District of Columbia. He has one sister, Jo Ellen, a graduate of the University of Maryland, who is married and lives in Howard County, Maryland.

## MEET OUR PEOPLE



Anthony J. Caporale

Anthony Caporale is Project Manager of the San Marco cooperative international space project and also is Assistant Project Manager of the GRS-A German project. He has also worked on OGO as Experiment Integration Coordinator and ESRO II as Project Coordinator.

He came to Goddard on August 7, 1961 from the U. S. Naval Ordnance Laboratory where he had been a Mine Design and Mine Project Engineer. His previous work included that of a Missile Systems Engineer and Underwater Weapons Engineer for the Vitro Corporation. He holds a patent on Electronic Control Systems for Influence mines.

Born in Donora, Pennsylvania, Mr. Caporale studied at Duquesne University of Pittsburg, Penna., and earned his degree as Bachelor of Electrical Engineering in 1952 at Catholic University.

During World War II, Mr. Caporale served in the U. S. Army from 1942 to 1945 with two years overseas in the 849th Signal Intelligence Service. He was cited by the Department of the Navy in 1962 and presented a Superior Accomplishment (Invention) Award and a monetary award. He is an associate Member of the American Institute of Electrical and Electronics Engineers.

A musician of no mean ability, Mr. Caporale plays the trombone, guitar, as well as the piano, and is a member of the Rockville Dance Band and St. Jude's Choir. Another favorite interest is his work as Committeeman for Cub Pack 1071 in Rockville.

He and his wife, Mary Catherine, have three children, all boys: Mark, 14; Larry, 10; and Tom, 8.

They live at 12705 Weiss Street in Rockville, Maryland.

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## DATA TOPICS

CHARLES E. TREVATHAN has been a member of the Space Electronics Branch (IPD), since January 1967. He earned a BEE degree from North Carolina State and has spent several years in industry engaged in design and application of digital communication and computing equipment.



This is the first of a series of articles discussing the design and development of a general purpose computer for application on-board scientific spacecraft.

## Less Raw Data, More Information

By Charles E. Trevathan

Scientific satellites are producing experiment and spacecraft data at such rates that the volume seems to be approaching 'unreal' proportions. In fact, the Information Processing Division and control Center Computers are hard pressed to keep pace with the task of converting this raw data to understandable information for analysis by experimenters and spacecraft controllers. The hope, therefore, is a trend toward placing more data reduction and computing capability on board the spacecraft with a resulting decrease in telemetry volume and an increase in information.

Some of the recent Data Topics articles have shown that application of small scale, wired program computing equipments is indeed becoming more common with resulting improvements in mission performance. Up to the present time, however, larger, stored program general purpose computers have not found a role on board the applications and scientific spacecraft primarily because of their bulk, weight, and high power consumption. A major SRT project of the Space Electronics Branch, therefore, has been the development of a compact, low-power processor capable of in-orbit reprogramming and high speed instruction execution. This computer is made up of three module types: 1) memory, 2) central processor unit, and 3) input-output.

The heart of the 18 bit on-board processor (OBP) will be a plated wire, random access memory unit currently being developed by the Libroscope Group of General Precision. They combine woven wire and non-destructive readout (NDRO) techniques with power switching to achieve word cycle times of 2 microseconds with a power dissipation of 6 to 7 watts. A computer memory system may contain up to 8 basic memory modules each having a storage capacity of 8192 words (18 bits per word) and weighing 6 pounds. An important feature is that the power requirement does not increase with increase in number of memory modules. This is achieved by applying power only for the period of the memory cycle and then only to the addressed module.

The Central Processor module (CPU) performs arithmetic and logical operations, and is being developed and implemented with low power integrated circuits which will be interconnected by a scheme known as Hybrid Large Scale Integration. This module will require 5 watts of power and weigh approximately 4 pounds. CPU characteristics, such as speed of instruction execution, instruction repertoire, etc., were defined jointly by Westinghouse Electric personnel and members of the Space Electronics Branch with Westinghouse performing the detail logic design. A discussion of the CPU and the software considerations will be presented in the next Data Topics.

The final OBP subsystem is an Input/Output (I/O) module which

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# Goddard Ninth Annual

Dr. John F. Clark, Director, the Ninth Annual Honor Awards at the Building 8 Auditorium.

Career Service Awards were presented for Federal service. The Goddard two special groups: The Manpower Utilization (Project 246) and the OGO-III

The 14 members of Project 246 accomplished in the development of techniques to the analysis of C

The 28-man OGO-III crew goes in the complete integration, test and outstanding contribution to the launch and operation of the physical Observatory."

Dr. Clark made the opening remarks. The Manpower Utilization Division was headed by the High Point High School section of Robert Holloway. From the side lobby of Building 8.

## 25 Years Career Service

Frank W. Abel  
Calvin F. Allison  
Lewis J. Allison  
Robert B. Appleby  
Robert G. Atwood  
Eleanor J. Barber  
William B. Beauchamp  
Raymond E. Berkeley  
Hager Blair  
George Bondra  
Elsie M. Brookshier  
John A. Brown  
Willis S. Campbell  
George A. Cassels  
J. Ronald Chisholm  
Leland B. Clark  
Alach L. Cole  
George G. Coletto  
Reynolds W. Collins

Ozro M. Covington  
Chester B. Cunningham  
Frank G. Cuzzolina  
Charles B. Davis  
Charles L. Davis  
Curtis S. Dennis  
Raymond W. Disilvestre  
Raymond L. Eckert  
Morris B. Falk  
Stanley D. Fawley  
John F. Fay  
Benjamin H. Ferer  
Victor M. Figuerda  
Anthony P. Flanick  
William L. Fortier  
David B. Friedman  
William A. Gallo  
Walter J. Gates  
Harry L. Gerwin

Francis I. Glynn  
Vivienne O. Goebel  
Ben Goldman  
Franklin A. Greer  
Charles R. Hamilton  
Antonina G. Ingegneri  
John E. Jackson  
D. Wiley Jenkins  
Morgan M. Johnson  
Sidney H. Johnson  
Harry S. Jones  
Abe Kampinsky  
Robert A. Kenney  
William A. Kley  
William H. Kohlhafer  
Stanley J. Kominic  
Abe Kopan  
Paul Lantz  
Raymond L. Lauver

John W. Lindstrom  
Clifford Link  
Charles W. Little  
William J. Logan  
Hugh A. Mason  
Chester A. Matthes  
James W. McDowell  
Richard G. McGowan  
Ernest J. Mosher  
John A. O'Keefe  
Harry T. O'Toole  
John C. Onda  
Lloyd T. Payne  
Harold Peake  
Christine G. Phillips  
Harry Press  
Nathaniel Price  
Samuel O. Randolph  
Richard W. Rice

Fred E. Ringe  
Raymond J. Roche  
James A. Saxty  
Ben H. Simmons  
Joseph W. Siry  
Charles P. Smith  
Ernest F. Sorgnit  
Giles Spaid  
Otto T. Steiner  
Ruth E. Stewart  
James F. Suite  
Robert C. Tannenbaum  
J. Frederick Taub  
Henry F. Thompson  
Ronda Triplett  
Dorothy M. Watts  
William A. White  
Charles E. Whitfield  
Woodrow W. Wines  
Philip Yaffee



## Goddard Group Achievement Award



## 30 Years

William C. Barron  
Lyle D. Bonney  
James R. Burton  
C. Snowden Conkey

Elizabeth M. DeMa  
Marie DeNovens  
James E. Duvall



OGO-III INTEGRATION AND TEST CREW. Joseph Purcell (Group Leader), Bruno Baldini, Peter Burr, Thomas Clemons, Kenneth Dolan, Ton Eng, Robert Federline, Vergile Goblirsch, Jeff Greenwell, Gerald Hempfling, Charles Hoffman, Bud Jackson, Hayes Jackson, Louis Koschmeder, Thomas Long, Donald Margolies, Earl Moyer, Frank Pipkin, Charles Reeves, Louis Schmadebeck, James Shisler, David Streaker, Frederick J. Styles, Charles Taylor, George Vanderhoff, Edward Weller and Al Wolfson.

PROXY FOR CHET SHADDEAU. Dr. M... administration and Management, accepts Ch... congratulations from Dr. John F. Clark. M... Dr. Vaccaro's method of saving travel money... the STADAN facility.

# Annual Awards Ceremony

presented awards in four categories at Ceremony on October 26, 1967 in

presented for 20, 25 and 30 years of up Achievement Award was given over Resources Development Team Migration and Test Crew.

won their award for "outstanding ment and application of innovative er resources."

citation for "superior achievement d preparation of the OGO-III. The group was a major factor in the officially successful Orbiting Geo-

ress. Raymond J. Sumser, Chief of , handled the introductions. Music ol String Ensemble under the dishesments were served afterwards in



## 20 Years Career Service

John W. Adolphsen  
Signey Alterescu  
John H. Armiger  
Anna L. Austin  
Ray Basham  
Lucille M. Bernatowicz  
Jim L. Bradford  
Lawrence E. Bromery  
James S. Burcham  
Rita H. Burns  
William A. Burton  
Joseph J. Cannon  
Raymond V. Capo  
Walter J. Carrion  
Frederick W. Charles  
Lawrence L. Cook  
Edwin I. De Long

John J. De Luca  
Toni R. Durantine  
Herbert Eaker  
Walter C. Edwards  
Dominic J. Femiano  
Richard L. Fenton  
Mitchell W. Finkel  
Irving Finkleman  
Robert J. Fisher  
William J. Gautier  
Albert J. Glorioso  
Rita F. Graham  
Willard E. Graves  
Darrin H. Gridley  
John D. Grimsley  
Edith C. Hall  
Harry W. Harbourt

David A. Hardester  
Alphonso F. Hargis  
William J. Healy  
William D. Hibbard  
James Hooper  
Frank T. Hopkins  
Emil W. Hymowitz  
Ralph E. Jones  
Seymour Kant  
William N. Keeley  
Alma A. Kunz  
Solomon Levine  
William Q. Lockaway  
Roy E. Logan  
Gerald Mansberg  
Robert D. Mattingly  
Edward B. Mc Intyre

David R. Mc Masters  
Aldo A. Merollini  
Cleonce E. Mierley  
George T. Morris  
Salome U. Morris  
Stephen F. O'Dea  
George M. Orr  
Harold Oseroff  
Benjamin N. Paxson  
Nicholas H. Piegari  
Randall Reed  
Burrree Richardson  
Jeanne D. Ruddell  
Victor A. Schwartz  
Chester H. Shaddeau  
Paul Shapiro  
Eileen G. Silvestro

Wade O. Smith  
John W. Smith  
Arthur L. Sprott  
Edwin O. Stengard  
David J. Stewart  
H. Ronald Surgen  
Henry Sweet  
Loetta F. Thompson  
Joseph L. Tinsley  
Virgil True  
William W. Vetter  
Charles B. Walker  
James O. Williams  
Leroy A. Wolf  
Frank Wrigley



## Career Service

Romolo Fiorelli  
Silvio V. Giovanetti  
William E. Miller  
George W. Newlon  
Abraham Piltch  
Eugene M. Reading  
Benjamin Schlachman



Israel J. Vaccaro (left), Assistant Director for Ad-  
ministrative Services, is pinning a 20-year-service pin on  
Mr. Shaddeau. Mr. Shaddeau is in Santiago, Chile, heading up

## Goddard Group Achievement Award



MANPOWER RESOURCES DEVELOPMENT TEAM (PROJECT 246). William Mecca, (Team Leader), Susanne Auth,  
Margaret Becker, Kurt Evans, George Gingerelli, Richard Hultberg, Harris Keller, Kent Kwiatkowski, Maceo Leatherwood,  
Robert Martin, David Reuben, Ed Speake, Anthony Toronto and Paul Villone.

## OSO-IV: 'Everything's Working Fine'

—Delta Marks its 50th Successful Orbital Launch—

The flawless performance of OSO-IV began at the moment of launch from Cape Kennedy, October 18, 1967, aboard a Delta rocket which marked its 50th success by putting the spacecraft into a near-perfect orbit.

Both rocket and spacecraft, being Goddard-managed, put two new feathers in Goddard's cap of current successes. The OSO project manager and Mission Director is Laurence T. Hogarth. The Delta project manager is William R. Schindler.

Mr. Hogarth said, "The success of OSO-IV, both spacecraft and experiments, is attributable to the outstanding cooperation and competence of many groups at Goddard, including the Tracking and Data Systems Directorate, the OSO project teams, the Delta Project, and the Reliability Directorate which all share in the credit of this mission. For myself, I am proud to be a member of the team."

Milton W. Kalet, OSO Project Coordinator (Assistant Mission Director at Cape), said: "The OSO-IV launch operation went extremely well with only a very few minor problems which were cleared up immediately. All in all, it was a completely successful operation."



Laurence T. Hogarth  
OSO Project Manager



William R. Schindler  
Delta Project Manager



OSO CONTROL CENTER TEAM. From left (standing) are Joe Racko, Bob Harrison, Everette Cole, Warren McCarn, RCA OSO Control Center Supervisor; Bill Reinke, Les Adler, Ernie Bortniker, Bill Truscott, and Bill Worrall, OSO T&DS Manager, Seated are Laura Pimsler and Ann Merwarth, computer programmers for the OSO Control Center.

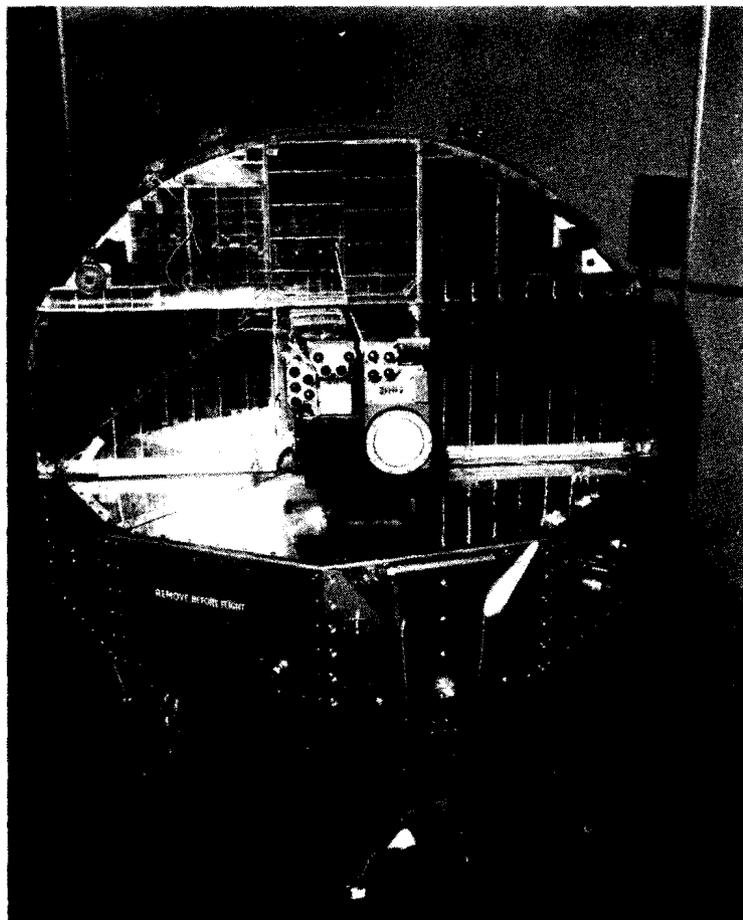


OSO TEAM. From left (back row) are Ann Cecchetti, Francis J. Barrett, Neil P. Zylich, Carl E. Westman, Robert C. North, Alexander Skopetz, and Laurence M. Goodman. Front row (from left) are William F. Gallagher, Robert E. Davis, Laurence T. Hogarth, Pam Rose, William R. Bailey, Wanda Eckell, and James N. Hines.

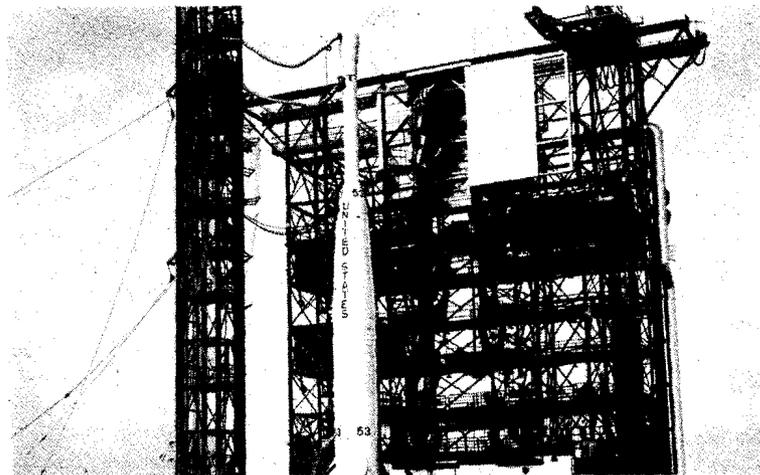
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OSO LAUNCH TEAM (at Cape). From left are Lee Etheridge, Electronic Systems; Milton Kalet, Project Coordinator and Assistant Mission Director; Harriet Meeler, William Ostaff, Experiment Coordinator; and James Walls, Mechanical Systems Manager.



OSO IV.



Prelaunch Alert OSO/Delta

**Goddard Scientific Colloquium**

November 17, 1967\*\*

4:00 p.m.\*

Bldg. 3 Aud.

**QUASARS**

**Professor Thomas Matthews**

*Department of Physics and Astronomy  
University of Maryland  
College Park, Maryland*

The original complete separation of quasars from the rest of the radio galaxies is becoming less distinct. Most of the radio and optical properties are common to some members of each group. Thus, the quasars may only be an extreme case of highly compact galaxies.

\*Coffee served from 3:30 p.m.

\*\*There will be no colloquium on November 24 due to the Thanksgiving holiday.

**DATA TOPICS . . . from Page 3**

serves to interconnect various spacecraft devices such as inertial reference units, sun sensors, particle counters, command receivers and telemetry transmitters with the memory unit. The I/O concept is that each device will have direct access to memory under control of one or more time shared memory addressing circuits. Interface with the CPU is achieved by a program controlled priority interrupt system. This I/O module is being developed in-house.

The I/O, CPU, and memory modules are wired together by an interface bus. This bus serves to transmit memory addresses, memory input data and memory output data between all modules of the system. Modules such as additional I/O devices or spare processors and memories may be rather arbitrarily connected to or disconnected from the bus. In fact, the interface design is based on the concept that if improvement in system reliability is necessary it is attained through the use of spare modules as opposed to redundancy at the circuit level. Another interesting feature of this system organization is that it is very amenable to future modification; for example, the CPU can be replaced by a small quantity of control logic to yield a general purpose, programmable telemetry system.

As the software or programming portion of the system develops, an executive routine will be prepared as an additional tool for the spacecraft designer. By this executive control the OBP will be capable of operating in a time shared mode and provide a unified system for any spacecraft function requiring data storage, computation or bit manipulation. An example of a time shared system will be presented in the final article of this series which will deal with application of the on-board computer to the fourth orbiting Astronomical Observatory (OAO-C).



EDWIN G. REID, of the Optical Systems Branch (ADD) is working with a carbon dioxide laser.

### Laser Survey

There are safety and health problems with the use of lasers no matter which type of laser is being used. The short term hazards of exposure to lasers are fairly well known. They consist mainly of permanent damage to the structures of the eye and skin tissues. The significance of laser energy transformations insofar as long term effects is concerned is not known.

As a part of our laser protection program we perform periodic eye examinations on employees working with lasers. However, the main prevention of laser hazards is at the work site. A number of protective measures should be in effect in laser work areas.

There are 50 or more solid, liquid, and gas lasers used throughout the Center. To assess the extent of the hazards and to institute adequate protective measures, a team of experts from the U. S. Army Environmental Hygiene Agency will conduct a Laser Survey here on November 20, 21, 28 and 29, 1967. In order to conserve time, assure proper coverage and minimize possible interference with established work schedules, a memorandum requesting necessary background information was distributed to known laser users a few weeks ago. Almost all of this information has now been received, however, it is possible that some users were overlooked. If you have a laser within your jurisdiction which was not included in the original distribution, please contact Mr. Gene Proctor, Code 209, Health Unit, Extension 6669 by November 16, so that arrangements can be made to have your laser equipment included in the Survey.

## PERSONALITY PROFILES



Jennie E. Frangioni

Jennie Frangioni, one of Goddard's best-known and best-liked personalities, is a Procurement Analyst for the Procurement Policy and Review Office.

She prepares her division's procurement instructions, information bulletins, and administrative procedures, and submits items to NASA headquarters for Procurement Countdown. She maintains the Procurement Data Retrieval System to make available information on specific subjects as requested.

Harry A. Hegarty, Head of the Policy and Review Office, said: "Jennie is the Procurement regulation girl. She gathers information on procurement practices and regulations for future reference to solve procurement problems when they arise. She is frequently called upon by Branches and Offices in Procurement and Offices outside the division for citations to applicable procurement rules and regulations. She has a great ability to recall where something is and is of invaluable assistance in providing information."

Mrs. Frangioni came to Goddard in July 1960. In January of 1966, she began Goddard's Graduate Training Program and completed the training early this year. She says, "To my knowledge, I am the only grandmother to have completed the program so far at Goddard."

Before Goddard, she worked with the Navy Department and then with the Social Security Board from 1942 to 1944. Later she worked for the Interior Department's Fish and Wildlife Refuge from 1959 to 1960.

A native of Wilkes-Barre, Pennsylvania, she was graduated there from E. L. Meyers High School where she was a reporter on the school paper "Elmprint."

Her favorite pastimes, sewing and decorating, date back to the time she worked as a professional seamstress from 1944 to 1959. "I worked with an interior decorator, making slip-covers and draperies. Among our clients was the Italian Embassy in Washington, and I also did all the alterations for a men's clothing store. Since losing sixty pounds, I had to refurbish my complete wardrobe, and recently I have redecorated our home."

Her husband is Kenneth F. Frangioni, manager of the Safeway store in Hillandale, Maryland. They have three children: Kenneth, Jr., 21, who is in the U. S. Army in Munich, Germany; and Hank, 16. Their daughter Roseanne Fieghenne, 24, worked at Goddard for the Accounting Branch for five years until early 1966. Mrs. Fieghenne is the mother of the Frangionis' granddaughter Janice, 18 months.

The Frangionis' live at 10914 Bond Road, Adelphi, Maryland.