

The

Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. I

JULY 9, 1959

NUMBER 19

Charles Harvey Dies



Charles H. Harvey, Assistant Chief of the Ames Engineering Services Division, died last Friday at the San Jose Hospital after a brief illness. During nearly 19 years of service at Ames, he had been closely connected with the growth of the Research Center through his outstanding work in the Construction Division and as Contract Administration Officer.

A native of Grand Forks, North Dakota, where he was born in 1909, he completed his early education there. Before graduating from high school, his family moved to California, and he was graduated from San Jose High School in 1927. From 1927 to 1932, he studied Electrical Engineering at the University of Santa Clara, from which he held the degree of Bachelor of Science. In 1938, he accepted appointment with the Navy Department and was assigned to the Bureau of Ordnance in Washington, D. C., as a junior engineer. With the Navy Department, he worked on the design and engineering phases of a variety of projects, including anti-submarine nets, naval guns, depth charges and bomb-handling equipment.

The desire to live and raise his family in California led him to seek employment with the NACA, which in 1940 was begin-

ning the development of Ames Aeronautical Laboratory. A transfer was finally arranged, and in August 1940, he reported to Ames as a Junior Mechanical Engineer in the Aerodynamics Division. Engineering work on designing the 40-by 80-Foot Wind Tunnel was his first assignment, and in December 1941, he was transferred to the Construction Section where he spent the major portion of his career with Ames. He was placed in charge of the Construction Section in 1945.

Although his position titles changed during the years, Charlie Harvey became intimately associated with administering the construction contracts which marked the growth of Ames as it now exists. To his engineering training he added diplomatic abilities which assured the rapid and economical completion of the major facilities of the research center. He was a quiet but very effective worker, known and respected by many commercial construction and engineering firms. He became Assistant Chief of the Engineering Services Division when the Construction Division he headed was merged into it, retaining his responsibilities as head of the Construction Contract Administration Office.

He is survived by his wife, two sons, two daughters, two brothers, one sister and his mother. Funeral services were held Monday, July 6, at St. Patrick's Church, San Jose.

FALL SEMESTER SCHEDULES AVAILABLE

Foothill College will begin a full program of instruction next fall, offering both freshman and sophomore courses in day and evening classes. This past year primarily freshman courses were offered at the new junior college.

Fall semester class schedules are now available through your Training Officer, John Leveen,

JOHN CROWLEY RETIRES

John W. Crowley, Jr., director of Aeronautical and Space Research for the NASA, retired from government service June 30 after a 38-year career as a research scientist.

In announcing the retirement, Dr. T. Keith Glennan, NASA Administrator, said Crowley's successor will be Ira H. Abbott, who has been his deputy.

A native of Boston, Massachusetts, Crowley was born in 1899. He received a Bachelor of Science degree in Mechanical Engineering from the Massachusetts Institute of Technology in 1920, and joined the staff of the NACA the following year at Langley.

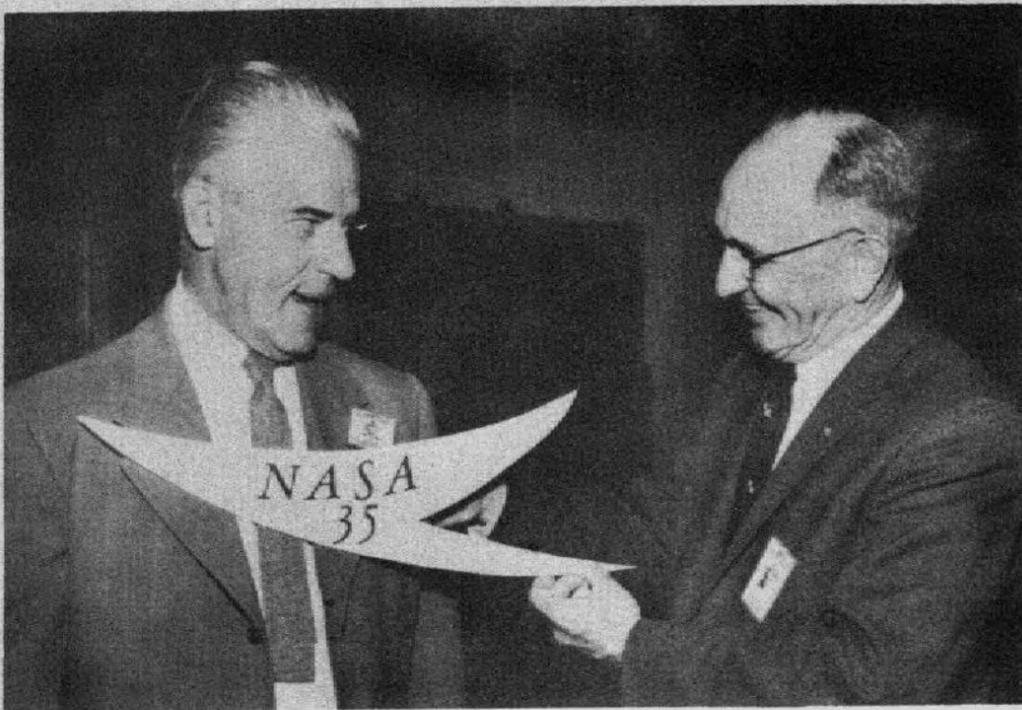
Serving there from 1921 until 1945, he progressed from junior aeronautical engineer to head of the Flight Research Section, chief of the Aerodynamics Division and head of the Research Department. For several months in 1945, he was acting engineer-in-charge of the Langley Laboratory.

In 1945, Crowley was transferred to NACA's Washington Headquarters as Acting Director of Aeronautical Research. Two years later, he was appointed Associate Director for Research, a position he held until NASA was established October 1, 1958.

Abbott, Crowley's successor, also is a graduate of the Massachusetts Institute of Technology. He has been with NACA and NASA 30 years, 19 years at Langley and the remainder in Washington headquarters. He has been Assistant Director of Research (aerodynamics and flight mechanics) since 1950. He was appointed Crowley's deputy in March.

ext. 260.

More than 150 classes will be offered in 30 subject areas during the fall semester, according to Dr. H. H. Semans, dean of instruction. In programming, a student may select a major from more than 100 occupational areas.



DONALD WOOD RECEIVES "35 YEAR PIN"!

Donald Wood, Technical Assistant to the Associate Director, receives a special "Ames Award" from Dr. Smith J. DeFrance, Director, upon completion of 35 years of service with the NACA-NASA. The award was made in the Committee Room, in the Administration Building, following the presentation of incentive awards to a number of Ames personnel on Thursday, July 2.

NOTE OF APPRECIATION

I would like to thank each and every one of you who contributed to my lovely gift and also those of you who were able to attend my dinner party. It was all very wonderful.

I can truthfully say that June 26 was the saddest day of my life, knowing that I was leaving many, many friends and very fond memories of Ames. I shall never forget you.

Sincerely,
Lorraine Vernon

Wanted--Cashier & Cafeteria Help, Ames Cafeteria. Call Mr. Loucks, ext. 249.

LOST SOMETHING?
FOUND SOMETHING??

As a result of a suggestion submitted to the Incentive Awards Committee, a central "Lost and Found" department has been established in Room 114 of the Administration Building. In the future all items found should be turned in at this office so restoration to the owner can be made more easily and more quickly. Lost items that have been turned in may be recovered by contacting Barbara Pederson of the Security Office, Room 114.

Ames Personnel Win Awards

A number of Ames personnel received extra money this month as a result of submitting suggestions to the Incentive Awards Committee. John Foster and Louis Smaus (a former employee), both of Flight Instrument Research Branch, split an award of \$10.00 for their suggestion that a stop sign be installed near the Ames gate on the County Road. Fred Blume of Procurement and Supply won an award of \$10.00 for his suggestion concerning supply and equipment receipt reports. Mrs. Hazel Granato, of Administrative Services, was awarded \$60 for a suggestion concerning a filing procedure.

Beatrice Aikman, also of Administrative Services, collected \$15.00 for her suggestion concerning the establishment of a central lost and found department in the Security Office, Room 114, in the Administration Building. James Patterson, of Electronic Instrument Branch, was awarded \$10.00 for his recommendation on the marking of pedestrian lanes. Leslie Wilson, of Structural Fabrication, received \$10.00 for his suggestion for installation of turn signals and a rear view mirror on the Lorain Moto Crane. Have you forwarded your sug-

Astroventuring...
★ with Walt Krumm

Pluto

Beyond Neptune another planet was supposed to be moving slowly through space in its orbit around the sun. A systematic search was conducted for this object for years.

At the Lowell Observatory at Flagstaff, Arizona, a very new, efficient telescope (the Lowell telescope) was designed and built for the search of this trans-Neptunian planet; and on January 21, 1930, Dr. Clyde Tombaugh found Pluto on plates taken with this instrument. Later Pluto was confirmed visually by astronomer E. C. Slipher with the 42" telescope at Flagstaff. Just beyond the range of the amateur telescope, Pluto may be seen as a dim "star" with a 16" or larger telescope.

Pluto has the most eccentric orbit of the planets and will actually pass inside the orbit of Neptune and be closer to us in 1989. At aphelion, it is an amazing distance of 214,750,000 miles from the sun.

The orbit of Pluto is also tipped to a much greater angle from the ecliptic than the other planets. This, combined with its small size and eccentric orbit, causes some to feel that Pluto may be an escaped satellite of another planet that has assumed a planetary orbit. Could be that it may some day be picked up again by the planet (probably Jupiter) as it comes into the sphere of influence of the planet and thus prove it was a satellite in the first place.

Are there still other planets? What else is included in the solar system? Continue to read Astroventuring for the answers to these questions.

For those interested in seeing the planets ---

Mercury is low (almost on the horizon) in the northwest.

Venus, the most brilliant, is about halfway to the zenith in the west.

Mars, small and red, is just below Venus.

Jupiter is almost on the zenith and a little south.

Saturn is in the southwest at 9:30 p. m. D. S. T.

Have you forwarded your suggestion to the Incentive Awards Committee yet? There is no time like the present to submit your ideas.

Recent Arrivals...



Thirty-five new employees joined the staff of Ames in the period June 18 through 29, raising the total number of employees to 1,478. Included in this group are the people pictured above and on the following page.

First row: Jeanette Bulmer, of Belmont, California, assigned to Administrative Services. John Curtis, of Ridgecrest, California, a former Ames employee and a graduate of the University of Idaho, assigned to the Hypervelocity Ballistic Range. Valentine Getzi, of Homestead, Pennsylvania, also a former Ames employee, assigned to Machine Branch. Harold Lagergren, of Sauk Rapids, Minnesota, a graduate of University of Minnesota, assigned to Electronic Machine Computing. Jung Lai, of San Francisco, assigned to the Electronic Instrument Branch.

Second row: Elaine Larson, of Salt Lake City Utah, assigned to the 8-by 7-. Robert McPhee, of Santa Rosa, California, assigned to the SSFF Tunnel. Marilyn Myers, of San Jose, California, a graduate of San Jose State, assigned to EMC. Barbara Packard, of Orange, California, a graduate of Stanford, assigned to the 14-Foot Tunnel. Brenda Reed, of Tucson, Arizona, assigned to the 11-Foot.

Third row: Carole Sawdon, of Oakland, California, assigned to EMC. Stanton Golding, of San Francisco, California, assigned to EMC. Iris Stephens, of Lancaster, California, assigned to Fiscal. Robert Dennison, of Grand Junction, Colorado, assigned to the Electrical Branch. Rose Rocchi, of San Jose, California, assigned to Administrative Services.

Recent Arrivals... (Continued)



Top row: Thomas Rutten, of Laramie, Wyoming, a graduate of University of Wyoming, assigned to WTIR. Beverly Rodebaugh, of Santa Clara, assigned to Fiscal. Raymond Hicks, of San Luis Obispo, a graduate of California State Polytechnic College, assigned to the 8-by 7-. James Terry, also of San Luis Obispo and a graduate of Cal Poly, assigned to the SSFF Tunnel. Sandra Barnhart, of Los Altos, assigned to the 6-by 6-.

Second row: Arden Ferris, of San Jose, a graduate of San Jose State, assigned to the 8-by 7-. Lola DeGoeas, of Hayward, California, assigned to Fiscal. Edmund Devine, of Sunnyvale, assigned to EIB. Donna Gargone, of San Jose, assigned to the 8-by 7-. Beverly Jacues, of Santa Clara, assigned to the 40-by 80-.

Third row: Joan Jessen, of Saratoga, assigned to the 10-by 14-. Patricia Malley, of Monta Vista, assigned to the 40-by 80-. Grace D'Amelio, of San Jose, assigned to Fiscal. James Raby, of Chicago, Illinois, a graduate of the Illinois Institute of Technology, assigned to Dynamics Analysis. Leslie Randall, of Mountain View, assigned to Unitary.

Fourth row: Elmer Thomsen, of Seattle, Washington, assigned to Procurement and Supply. Ermelinda Neves, of Sunnyvale, assigned to the 40-by 80-. Barbara Rivers, of San Mateo, assigned to EMC. Robert Boese, of Denver, Colorado, a graduate of the University of Denver, assigned to WTIR. Ronald Berlin, of San Jose, a graduate of San Jose State College, assigned to Personnel.

Ames Closeups



MARSHALL BIGGS

Down in the Engineering Services building, amid engineers, draftsmen, illustrators and scientists, is one lonely architect -- at least he is the only one we've found. Marshall Biggs, a member of Ames staff since January 1952, began his career here as an engineer in the old Engineering Design Section, working in a number of areas. In 1954 he was reclassified as an architect and since that time has had his hand in the construction and remodeling of most of the Center's facilities.

A graduate of Texas A & M with a degree of Bachelor of Architecture, Marshall was born in Chillicothe, Texas, and remained a Texan until he went on active duty with the Army in 1940. At that time he was assigned to army anti-aircraft and was stationed in Hawaii. After the attack on Pearl Harbor, Marshall came to the conclusion that anti-aircraft was not his field. "If you can't hit 'em, join 'em," he says. And he transferred to the Air Force!

On separation from the Air Force in 1946, Marshall chose the San Francisco Bay area for his home. Married to a San Francisco girl he met in Hawaii during the war, he pursued his career as an architect with the rehabilitation of Tanforan Race Track as his first assignment. Shortly thereafter he went into general contracting, and with three associates formed the Calstone Company, manufacturing concrete blocks.

Finding the manufacturing business too confining, Marshall came to Ames. In his spare time at home he manages to pursue his favorite hobbies -- architecture and building. He has remodeled his home and added to



ANITA PALMER WED

Anita L. Palmer, of the Flight Research Branch, was wed to Kenneth E. Hunt on Saturday, June 6, at 8 p.m. The wedding took place at the home of Mrs. Hunt's parents, Mr. and Mrs. W. D. Palmer, at Provolt, Oregon. The couple's new home is at 3060 Moorpark Avenue, San Jose. Mr. Hunt is with the Navy in Alameda.

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Reporters: NASA Employees

it using the do-it-yourself method. In addition, he maintains a studio at his home and carries on his architectural pursuits for industrial, commercial and residential construction.

Marshall, his wife, Vera, their daughter, 14, and two sons, 12 and 13, live in Palo Alto. When not involved in architecture, Marshall devotes his time and energies to the Air Force Reserve. He is currently a Lt. Colonel in the Research and Development Flight of the local 9365th Air Force Reserve Squadron.

Here at Ames he is not really a "lonely" architect - just a busy one - with the 3 1/2-Foot Hypersonic Tunnel under construction, the Hypervelocity Research Laboratory about to begin, the modifications to the Flight Research Laboratory soon to be let for bid, and several other ventures planned that will require his talents. However, don't let this keep you from seeking his ideas on your particular architectural problem - remember, his hobby is architecture too!

COLONEL PENN TRANSFERRED TO WASHINGTON

Lt. Colonel William W. Penn, Chief of the Air Research and Development Command Liaison Office at Ames, will be transferred to Headquarters, ARDC, Andrews Air Force Base, Washington, D. C., on July 15. Colonel Penn has been stationed at Ames since March 18, 1955.

Replacing him in the Liaison Office will be Lt. Colonel Gerald Brownell, formerly assigned to the Arnold Engineering Development Center, Tullahoma, Tennessee.

WANT ADS

For Sale--Lineman's body belt and leather safety; 1/2 inch electric drill; electric sander, vibrator type; two GE electric blankets, 1 contour dble bed, never used, 1 regular dble bed size; several table lamps; 1 TV lamp; 2 camping blankets; grocery shopping cart, 2 wheels, collapsible; leather purses; ultraviolet lamp, table model; custom-built Hi-Fi; 50-W amplifier, all transistor pre-amp, pilot tuner; 4-speed Collaro changer, Jensen speaker; hand-carved, imported bar; car cushions. Call REgent 9-0813 after 5 p.m. weekdays and any time after noon on week ends.

Wanted--One person to join 3 others in car pool, 7:30 to 4:00 shift. Vicinity O'Connor Hospital and Cypress. Call R. Fallo, ext. 292.

For Sale--1955 Buick Special, 2-door hardtop, very good condition, like new interior. \$1,400. Call E. E. Whiting, SSFF, ext. 275.

For Sale--Parakeets (Lutinos, Albinos, Normals), assortment of colors, ready for mating. One aviary with walk-in attachment, 30 nest boxes, 7 feeders, 4 drinking dishes. \$50. Call AL 2-6736.

Interested in car pool or riders from Melody Park or south San Jose area. 8:00 - 4:30 shift. Call Bill Leak, HBR, ext. 343, or CY 7-6863.

For Rent--Vacation trailer, 12' over-all length. Butane stove, ice box. Sleeps 2. Lots of storage space. \$3.00 per day. Call G. Nothwang, ext. 317, or AX 6-3757.

bar-b-Q

July 18, 1959 - Saturday 10 a.m. - 10 p.m.
Bar B Q Time 1 p.m. - 4 p.m.
Blackberry Farm, Monta Vista - "Sycamore Grove"

MENU

- Adults: 12 oz. Steak, Bar B.Q. Beans, Tossed Green Salad, French Bread, Ice Cream and Coffee. All for... \$2.25
- or
1/2 Bar-b-Q'd Chicken, Beans, Tossed Green Salad, French Bread, Ice Cream and Coffee. All for... \$1.50
- Children: 2 all Beef Hot Dogs & Buns, Tossed (6-12) Green Salad, Bar B.Q. Beans, Ice Cream and Milk. Only..... \$1.00
- Children: Admission free!
(Under 6) Eats a la carte.

These bargain prices include admission and use of all facilities. Your credit is good so please get your tickets now. We must know how many steaks, chickens, and hot dogs to order. Regular ticket sales close July 10, '59. Get your tickets from your branch representative, or call John Leveen, ext. 260, for information.

----Program----

Bob George, Chairman

- | | |
|-----------------------|-------------|
| Children's Games | 12 - 1 p.m. |
| Adult Games | 2:30 - 3:30 |
| Bar B Q Queen Contest | 4 p.m. |
| Dancing and Bingo | 5 p.m. |

This should be a real Bang Up Bar B Q. The facilities are excellent, and we have sufficient help to make this the best darn Bar B Q ever!

Don't forget to bring your own silverware!

JULY 18 • 1^P T^o 4^P at
blackberry farm
BOLSI • P.A. music!
Games! • rides!!



The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. I

JULY 23, 1959

NUMBER 20

Harry Goett to Head New NASA Space Flight Center

Harry J. Goett, Chief of Full Scale & Flight Research Division and long associated with NASA flight research, has been appointed Director of the NASA's new Goddard Space Flight Center. In announcing the appointment, T. Keith Glennan, NASA Administrator, said it will be effective September 1, 1959. As Director, Goett will report to Abe Silverstein, NASA Director of Space Flight Development.

In his new post Goett will have a staff of scientists, and technical and administrative employees engaged in basic research and in developing satellites, space probes, vehicles and systems for tracking, communications and data reduction.

Pending completion of new quarters for the Center at Greenbelt, Maryland, units of the organization are located in several temporary sites at Washington, D. C., and Langley Field, Virginia. Temporary main office is at 4555 Overlook Drive, Washington 25, D. C.

Goett, beginning in 1948, directed some of the first space research of the NASA's predecessor agency, the National Advisory Committee for Aeronautics, using a special wind tunnel to reproduce low densities found at extreme altitudes. He has been engaged in research in aerodynamics and operating problems of flight more than 23 years. Since NASA was established last October 1, he has provided technical liaison for the agency's west coast satellite and space probe activities, including the Pioneer series, one of which was put into orbit around the sun.

Goett was Chairman of a technical review team which contributed improvements to rocket vehicle systems used by NASA. He is a member of the Research Advisory Committee on Control,



Guidance, and Navigation, the Research Steering Committee on Manned Space Flight, and Head of the Astronomical Satellite Team of the NASA's Ames Research Center.

In his career with NACA, Goett for many years was a member of the Subcommittee on Automatic Stabilization and Control, and on the Working Group on Instrumentation of the Special Committee on Space Technology, which was formed in 1957. He has been Chief of the Full Scale & Flight Research Division at Ames since 1948.

The Goddard Center organization will be composed of three major research and development groups under Assistant Directors. These are Space Sciences and Satellite Application under John W. Townsend, Jr., Tracking and Data Systems under John T. Mengel, and Manned Satellites under Robert R. Gilruth. Michael J. Vaccaro is Business Manager.

Born November 14, 1910, in New York City, Goett attended elementary and high schools there. He was graduated from Holy Cross College in 1931 with a Bachelor of Science degree, and two years later earned the degree of Aeronautical Engineer at New York University. He took additional studies in law at Fordham

CROWLEY RECEIVES AWARD

John W. Crowley, Jr., former Director of Aeronautical and Space Research for NASA, was awarded the NASA Distinguished Service Medal June 30 for "outstanding leadership in aeronautical science." He is the first recipient of the NASA award.

The presentation of the award was made by T. Keith Glennan, NASA Administrator, at a dinner marking Crowley's retirement from government service after 38 years as a research scientist for NACA-NASA. The award was accompanied by a citation signed by Dr. Glennan and Dr. Hugh L. Dryden, Deputy Administrator.

The citation noted the outstanding part Crowley played in accelerating "progress in American aircraft, missiles and spacecraft by scientific investigations, by developing your research scientists, by enlarging their vision and building their morale, and by promoting teamwork and cooperation with the military and industry.

University.

From 1933 to 1935, he supervised machinery installation for the Waterbury Rope Company, New York City, then was employed by the Summerill Tubing Company and the Douglas Aircraft Company for a short period. He joined the research staff of NACA's Langley Aeronautical Laboratory in July 1936. He was transferred in July 1940 to Moffett Field, California, where the Ames Laboratory was under construction.

At Ames, Goett first was engaged in design of wind tunnel models and support systems. He became Head of the Laboratory's 7- by 10-foot wind tunnels, conducting research on stability and control qualities of airplanes. In

(Continued on page 4)

Astroventuring...
★ with walt krumm

Vulcan

Perturbations - the discrepancies in a planet's orbit that drive an astronomer wild but which led to the discoveries of Neptune and Pluto - also led to the belief that there should be a planet within the orbit of Mercury, for Mercury too had its perturbations.

This planet could be seen only at total eclipse of the sun because of its proximity to the sun, and then only at its greatest elongation. When one recalls that one must travel all over the world to see a solar eclipse and then realizes that a solar eclipse lasts only a few minutes, you can imagine the fun in the search for this inner-mercurial planet.

Several observers saw this object, and their observations were recorded. It was even given a name, Vulcan, god of fire, for being so close to the sun it could be only extremely hot.

These observers obviously saw a bright star (for the stars

are visible during a solar eclipse) as the existence of Vulcan has now been absolutely disproved.

Are there other planets beyond Pluto? The possibilities are few and the probabilities of finding such a planet even less.

Planetary rules and regulations would lead us to assume that a trans-Plutonian planet would be small, and at so great a distance would be so dim as to make observations practically impossible.

Even if more than suspected, such a small planet would cause only imperceptible perturbations on Pluto - much too small to use for calculating procedures to establish its position in the sky.

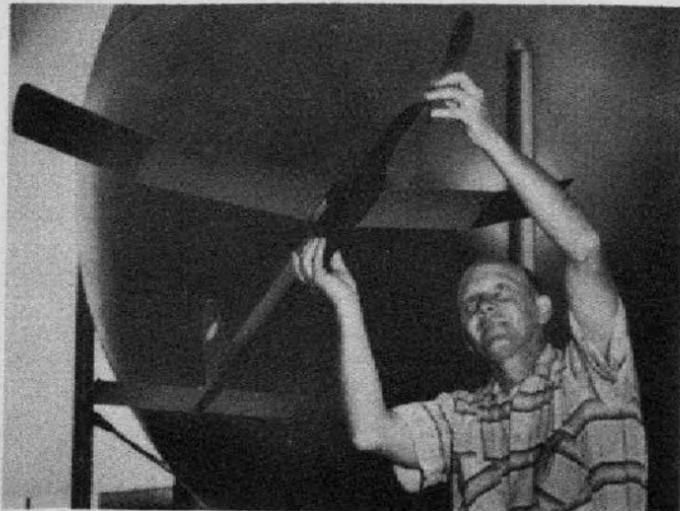
Therefore, a trans-Plutonian planet, though a possibility, may never be indicated, much less discovered.

In opposition to the above thoughts, the divisions of the solar family into terrestrial planets, the planetoids or asteroids, and the giant planets, suggest that Pluto may be the first discovered member of a further group.

NEW HOURS FOR CREDIT UNION

The Credit Union offices located in Bldg. 69, Navy side, are now open from 11 am to 4:30 pm

Joe Bilgri Wins Trip to France



Joe Bilgri, of the Procurement & Supply Branch, won the Western Regional Model Airplane Endurance Contest at a meet held in Fresno on June 27 and 28. The first prize is an all-expense paid trip to Paris, France, to participate in the international contest. He departed from New York on July 16 aboard a Pan American jet.

The contest was sponsored by the Academy of Model Aeronautics, a division of the National Aeronautical Association, and was not the first contest won by

Bilgri. In 1952 he flew to Sweden as a first prize winner to participate in the international contest scheduled for that year. In two other contests he came out the winner, but lack of funds prevented the Academy from sending him to the international meets.

In 1955 Bilgri was sent to Germany to help stage the contests there. Prizes won at the international meets are for glory only, says Bilgri, which isn't bad! He also writes articles for various model airplane magazines and has been building models for about 25 years.

Farewell Luncheon for Colonel Penn



Almost 100 Ames personnel attended a farewell luncheon held at the Ames cafeteria Tuesday, July 14, for Lt. Col. William W. Penn, Chief of the Air Research and Development Command Liaison Office at Ames, shown above with Dr. DeFrance. Colonel Penn has been transferred to Headquarters, ARDC, Andrews Air Force Base, Washington, D. C.

Colonel Penn was presented with an executive briefcase by those in attendance at the luncheon. He thanked everyone for the gift and for the fine cooperation he had received during his more than four-year stay at Ames.

He then introduced Lt. Col. Gerald Brownell, formerly assigned to the Arnold Engineering Development Center, Tullahoma, Tennessee, his replacement in the Liaison Office.

Monday through Friday, for your convenience. Mr. Anthony Bondi, formerly of Electrical Branch, will be on duty full time to serve you.

Visitors At Ames...

Recent visitors to Ames were D. J. Harper and C. W. Rhodes from the Royal Aeronautical Laboratory, England, who were guests of Manley Hood, Technical Assistant to the Director.

M. W. Salisbury of Vickers-Armstrong, England, and T. W. Smith of English Electronic Aviation, England, were guests of Charles Hall, 6- by 6-.

Allen O. Gamble, Examinations and Standards Officer, Benjamin Edwards, Assistant Examinations and Standards Officer, and Guy Ferguson, Assistant Classification and Organization Officer, all from NASA Headquarters, were guests of M. Helen Davies, Personnel Officer.

Ames Closeups



RUSSELL G. ROBINSON

The year 1930 was a "vintage year" at Stanford as far as Ames Research Center is concerned since those awarded degrees from the school of engineering of that year included two of Ames top personnel -- John F. Parsons and Russell G. Robinson. Mr. Robinson, a native of Spokane, Washington, attended the University of California at Los Angeles from 1924 to 1926 and then transferred to Stanford, receiving his AB degree in 1928 and the degree of Engineer in Aeronautics in 1930.

Joining NACA soon after completion of college, Mr. Robinson began his career at Langley. In mid-1939, he was detailed to Washington Headquarters to work on expansion plans then beginning. He carried out the analysis of the many sites proposed for a second laboratory, resulting in the recommendation by Col. Lindbergh's site committee of Moffett Field as the location for Ames Laboratory. In December 1939, Mr. Robinson set up the NACA Western Coordination Office in southern California and initiated the liaison with western universities and industry that is a continuing function of that office.

Six months later, Mr. Robinson was returned to NACA Headquarters in Washington, D. C., where he was assigned to the position of Assistant to Dr. George W. Lewis, Director of Aeronautical Research. One of his first duties was to join Dr. John F. Victory, then Executive Secretary of NACA, in the matter of selecting a site for the Lewis Laboratory! In 1942, he advanced to the position of Chief of Research Coordination at NACA Headquarters.

CHECK YOUR INSURANCE IDENTIFICATION CARDS

All members of the group surgical, medical and hospital expense plan insurance are requested to check their identification cards to make certain they are carrying the current cards bearing the name of the Central Standard Life Insurance Co. If the card does not bear this name, destroy it and apply at the Fiscal Branch for a new one.

From late 1944 to mid-1945, Mr. Robinson was a member of a group of scientific personnel who were sent with advancing forces into German territory. Object of the mission was to determine what progress the Germans had made in nuclear and other important military studies. In this assignment Robinson succeeded Dr. H. J. E. Reid, currently Director of Langley, and was followed by Carlton Kemper, formerly of Lewis. With headquarters in Paris, the group joined advancing combat units, successfully reaching a number of laboratory complexes in Aachen, Göttingen, Braunschweig and Salzburg, and having the first opportunity since the late 1930's to determine the progress of German research. Among the experiments the Germans had carried on was found a complete documentation of the swept wing principle which had been independently discovered by R. T. Jones of Ames.

Following the war, Mr. Robinson was given the post of Assistant Director of Research at Headquarters. In January 1950, he transferred to Ames as Assistant Director, the post he currently holds.

When not at Ames, Mr. Robinson can be found at his home in Los Altos with his wife and three sons, ages 6, 11, and 13. Or perhaps you will find him at his favorite sport -- camping at Lake Tenaya in the Sierras or in the rugged Tetons at Jackson Hole, Wyoming.

When time permits, you may even find him sailing on San Francisco bay -- since he is a member of the Palo Alto Yacht Club. However, he says, this latter activity has been somewhat neglected of late in favor of the mountains. It is possible that if Mr. Robinson is ever appointed to another site selection committee, we just might see a research center in Jackson Hole, Wyoming!

CONLON NAMED ASSISTANT RESEARCH DIRECTOR

Emerson W. Conlon has been named Assistant Director of Aeronautical and Space Research (Power Plants) for NASA, with responsibility for research on propulsion problems and energy generation for application to both aeronautics and space.

Conlon will take leave of absence as Director of Research for the Drexel Institute of Technology in Philadelphia to accept the appointment effective July 6. The post formerly was held by Addison Rothrock, now Scientist for Propulsion in NASA's Office of Program Planning and Evaluation.

Conlon is a graduate of Massachusetts Institute of Technology, having served with the Navy Bureau of Aeronautics directing the development of the Douglas D-558, the Navy transonic research airplane. He also served with the Air Force as technical director of the Arnold Engineering Development Center at Tullahoma, Tennessee, during 1950-51.

Conlon is a Fellow of the Institute of Aeronautical Sciences and serves on the Technical Advisory Panel of the Committee on Aeronautics, Department of Defense.

BLOOD BANK DUE HERE JULY 30

Those employees who are planning to donate blood to the Santa Clara Valley Blood Center, are reminded that the mobile unit will be here on July 30. Donors may sign up on the sheet provided for that purpose in each branch chief's office. Employee's may also sign up for other members of their family who may wish to donate on that date.

Those who have donated before as well as those who will be donating for the first time are urged to sign up now. All employees are also reminded that they can obtain blood from the bank.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to the editor, Personnel Branch, --Phone 385. Deadline: Thursday between publication dates.
Editor: B. P. Wilson
Reporters: NASA Employees

HARRY GOETT
(continued from page 1)

World War II he was advanced to Head of the 40- by 80-foot wind tunnel (world's largest) supervising the general research program for improving American airplanes. He was promoted again in 1944 to Assistant Chief of the Full Scale and Flight Research Division where he became Chief four years later.

His research work has covered a broad range of problems in aerodynamics and operations, including atmosphere re-entry, aerodynamic heating, low-speed and vertical take-off aircraft, stability and control, in-flight studies of boundary-layer control, automatic flight and jet engine thrust reversers. Under his direction, the Division conducted successful research on a thrust reverser and flight-approach control for jet airplanes. Goett has written or co-authored a dozen technical reports.

He and his wife, the former Barbara Alexander, are parents of two boys and two girls. They now live in Los Altos, California.

Recent Arrivals...

The latest arrivals reporting to Ames are CAROLE A. ARAGON of Pasadena, California, assigned to the Hypervelocity Ballistic Range as a Math Aid; DAVID J. LIQUORNIK of Denver, Colorado, a graduate of the University of Denver, assigned to the 10- by 14- as an Aeronautical Research Engineer; KENNETH A. MEYER of Palo Alto, California, a graduate of Cornell University, formerly at Ames under the joint NASA-USAF program, assigned to Construction Engineering as a Mechanical Equipment Design Engineer; EMMONS C. HANSEN of San Jose, California, a former employee returning from disability retirement, assigned back to the Machine Branch as a Trades Helper; HELMUT B. REISCHL of Hagen/Linz, Austria, a graduate of Technische Hochschule Stuttgart, assigned to Dynamics Analysis as a Research Engineer; LADO MUHLSTEIN, JR., a graduate of Texas A & M, serving under the joint NASA-USAF program, assigned to the 11-Ft. as an Aeronautical Research Engineer; JACQUELYN L. WARD, formerly a teacher in San Mateo, California, a graduate of Harris State College, St. Louis, Missouri, assigned to Low Density & Heat Transfer as a Math Aid.

WANT ADS

Wanted--Cashier & Cafeteria help, Ames Cafeteria. Call Mr. Loucks, ext. 249.

For Sale--Highlander Polaroid Camera with flash attachment and close-up lenses. \$40. Call R. J. Freeman, ext. 247.

For Sale--1949 Packard engine. Perfect condition. Car has been standing for some time. Also other parts of this car available. \$35 for everything. Call Betty Greene, ext. 262.

For Sale--Model 88 Winchester, caliber .243, like new (fired 60 rounds). \$115. Also, Springfield 1903 A-3, as issued, excellent mechanical condition. \$35. Call Howard L. Turner, ext. 206, or Yorkshire 7-6188.

Wanted--.30-40 Krag, as issued. Howard L. Turner, ext. 206, or Yorkshire 7-6188.

For Sale--1955 Ford 2-door, mechanically excellent, new tires, battery, and muffler. Equity of \$200. Contact Nancy Wright, ext. 247, or Davenport 6-8870.

For Sale--G. E. Push Button Range (Liberator), double oven, 3½ years new. \$222. Call L. Evans, ext. 358.

For Sale--4' by 6' full-length chromespun drapes, unlined. \$20. Call L. Evans, ext. 358.

Wanted--Interested in organizing a ride group in vicinity of Bolinger Road (Cupertino-San Jose) near Greentree model home. 8:00 - 4:30 shift. Call Helmut Reischl, ext. 258, or Alpine 2-7657.

For Sale--Home bar, 6 feet, half round, red formica top, plenty of bottle storage space, with 6 padded bar stools. (Stools set in front of bar, off the floor, when not in use.) \$125. Call Harry Stefani, ext. 232 or 233.

For Sale--1947 British Standard "sports car". Good tires and heater. Right-hand drive, four passenger. \$295. Call Harry Stefani, Machine Shop, ext. 232 or 233.

Wanted--Car pool or riders from Woolworth Garden Shop and Food Villa area, Santa Clara. 8:00 - 4:30 shift. Call J. E. Maher, Dyn Anal, ext. 258.

GOLF

The picturesque Gilroy Golf and Country Club set the scene for a "Flag" tournament conducted by Vernon Fietzer and Otto Meckler. The number of strokes each player was allowed was determined by adding his handicap strokes to par. The final resting place of the ball after his last stroke determines the location of the flag ceremony. Twenty-four flags were staked between the sixteenth tee and the nineteenth cup. Although there were no sand traps, players were entrapped by the weather (102° in the shade).

Top honors went to Harry Stefani, Mach., who came within 10 feet of the nineteenth hole. Otto Meckler, Struct. Fab., was 20 yards away for second place. Frank Lazzeroni, 6- by 6-, and Bill Fietzer, Mach., were 175 and 200 yards away for third and fourth places, respectively. Three flags in the eighteenth cup indicated a tie for fifth place between Armand Lopez, 12-Ft., Frank Pfyl, 6- by 6-, and Paul Barisich, Mach.

The Riverside Tournament, sponsored by the Supersonic Free Flight W. T. personnel, is scheduled for August 22, 7:30 a.m. New players are invited to call Mitch Radovich, ext. 232.

BOWLING

The Ames 800 Handicap Bowling League is scheduled to start the 1959-60 season the first part of September. The league would like to expand so additional bowlers and teams are needed. Anyone who would like to bowl in this league or enter a complete team should contact Fred Gustina, ext. 281, or Joe Bilgri, ext. 287. Last year's team captains should submit a list of team members along with their averages as soon as possible to the league secretary, Joe Bilgri, Procurement & Supply Branch.

For Sale--Memberships in Ames Flying Club. Cessna 120 hangared at San Jose Municipal Airport. Hourly flying rate \$3.60, monthly dues \$5, membership \$245. Contact Walt McNeill or Joe Douvillier, Flt. Research, ext. 206. Open to Ames employees only.

For Sale--Basset hound puppies. Call Milton Evans, Whitecliff 7-4586.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

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NUMBER 21

New NASA Insignia Approved



The selection of the official NASA insignia, pictured above, has been announced by Dr. T. Keith Glennan, NASA Administrator. The insignia is composed of a circular design with a sky background of dark blue. Within and extending slightly beyond the circle is a wing configuration of solid red. Within the circle are the letters, NASA, an elliptical flight path, and random-placed stars in white.

No announcement has been made as yet as to the design of an official NASA seal.

DEMBLING NASA POLICY OFFICER

Paul G. Dembling, NASA Assistant General Counsel, has been designated as NASA Employment Policy Officer to assist the Administrator in implementing the employment policy of the Federal government. This policy affords equal opportunity to all qualified persons, consistent with law, for employment in the Federal government and prohibits discrimination against any employee or applicant because of race, color, religion, or national origin.

Miss Marie St. John, Administrative Assistant to the Director at Ames, is Deputy Employment Policy Officer at this Center,

PRESSURE SUIT FOR ASTRONAUTS SELECTED

The National Aeronautics and Space Administration has selected a modified U. S. Navy pressurized flight suit as the life-support garment to be worn by the Project Mercury astronauts in manned orbital flight.

Selection of the suit came after more than six months of intensive testing and evaluation of three different pressure suits. The Navy suit is made by the B. F. Goodrich Company, Akron, Ohio.

NASA is ordering 20 suits. Final cost of the order is expected to be about \$75,000.

Under the one-piece Navy suit, the orbiting astronaut will wear a double-walled rubber ventilated garment of a type used by Air Force pilots. The inner wall of this suit will be perforated to permit the body pores to "breathe".

Air will flow into the inner suit through a waist connection, circulate through the suit and be exhausted through a pipe in the helmet. The air then will move through an air conditioning system under the astronaut's couch where impurities will be purged before it is recirculated.

The outer suit features body, leg and arm lacings. The headgear, which locks to the suit on a neck ring, looks like a football helmet with a plastic facepiece.

As in modern fighter aircraft, the outer suit -- a single layer of reinforced rubber -- will be pressurized only if the capsule pressure fails. It will serve as a backup safety feature. Should anything go wrong with the capsule pressurization, the astronaut will have the pressurized suit to fall back on.

whose duty is to assist the NASA Employment Policy Officer with matters concerned directly with Ames.

Dinner Scheduled In Honor Of Harry Goett

Ames employees and their guests are invited to attend a going-away party in honor of Harry Goett. Scheduled for Tuesday, August 18, the party will be held at the Palo Alto Elks Club.

Mr. Goett, Chief of Full Scale & Flight Research Division, has been appointed Director of NASA's Goddard Space Flight Center in Maryland. He plans to take over his new duties on September 1.

Representatives in the various branches will be selling tickets to the dinner, scheduled for 7:30 p.m. A social hour will precede the dinner, beginning at 6:30.

Interested In Hawaiian Tour ?

A number of Ames employees have indicated an interest in making plans for an Ames group tour to Hawaii. To make the trip possible, a group of at least thirty would be necessary, and efforts are currently being made to determine how many Ames personnel would like to make the trip.

To be scheduled sometime after October 1, the tour would include round-trip air travel, hotel accommodations for seven days and seven nights at one of Honolulu's new luxury hotels on the beach at Waikiki, plus such features as an Hawaiian Luau, a motor tour of Oahu, outrigger canoe riding, a tour of the Hawaiian Pineapple plant, an "Aloha" dinner at one of Honolulu's finest dining rooms on the eve of departure, and many other exciting events. Current estimate of the cost, which may vary due to the number of people participating, is approximately \$300 per person for the tour.

We are informed that the cost

(Continued on page 4)

Astroventuring...

★ with walt krumm

THE ASTEROIDS OR PLANETOIDS

Bodes Law (which is not a law but a mathematical progression) says, if you take the numbers 0, 3, 6, 12, 24, 48, 96, etc. (except for the 1st and 2nd terms, each is twice the last), and add 4 to each (4, 7, 10, 16, 28, 52, 100, etc.), and divide by 10, you will have 0.4, 0.7, 1.0, 1.6, 2.8, 5.2, 10.0, 19.6, etc. This, you will observe, gives the approximate distances of the planets from the sun in astronomical units (see *Astrogram*, Vol. 1, No. 10).

Now, you will notice that there is no planet for the fifth term in our series (2.8). It was suspected that an unobserved planet revolved about the sun at this distance, and the astronomers set about to find it.

On January 1, 1801, Piazzi, observing in Sicily, found a little planet that he named Ares; but Ares was lost before it could be confirmed. The German mathematician, Gauss, discovered a method of calculating the orbit of a planet using only three observations. He calculated the orbit of Ceres, and rediscovered Ceres just a year later on December 31, 1801, from his calculations.

The German astronomer, Olbers, concluded that because Ares was so small (488 miles in diameter), there must be more asteroids like Ares in existence so the search was continued. Pallas was found in 1802, Juno in 1804, Vesta in 1807, etc. Since 1891 most of the asteroids have been found by photography.

The asteroids were all given feminine names until the list became too large, then masculine names, and now they are identified by number.

The thought that the asteroids were formed when a planet broke into pieces has been disproven for the reason that, if all the known asteroids and the suspected number of tiny asteroids were taken together, the mass is not sufficient to make a planet.

The methodical British keep track of all the asteroids that have known orbits and issue an ephemeris yearly of these objects. They range in distance from the sun from 2 to 5 astronomical units (more or less) and follow planetary orbits except that some

ASTROGRAM VISITS AMES' "BRAINS"!

We have finally found the coolest spot to work at Ames, and this air-conditioned room in the 7- by 10- is all for the benefit of fifteen gray steel pieces of electronic equipment. This is the IBM 704 computing center of EMC. The 704, one of IBM's newer, faster machines, is capable of handling ten digit decimal data at the rate of 40,000 additions, or 4,000 multiplications per second. With the increase in speed and accuracy being made available to Ames personnel, theoretical problems that a few years ago would have been considered impractical can be solved readily.

Supplying instructions to the 704 for these extensive and complicated operations is the responsibility of a staff of programmers, who very soon develop a profound respect for the capability of this machine. Originally, all this staff was concentrated at EMC, but today numerous branches have a full-time

are highly eccentric and others have high inclinations to the ecliptic.

The Trojan asteroids are of interest in that each, with Jupiter and the Sun, follows the triangular case of three bodies perfectly. Ten Trojans are known - five precede Jupiter and five follow.

Eros is of particular interest in that at close approach to the earth it varies in brightness. This is explained as follows: Eros may be shaped like a capsule and tumbling so that when broadside it appears brightest, and when seen on end it appears dimmest. Also, at close approach Eros' geocentric parallax is large, and because of this the distance can be computed accurately, from which an accurate value of the astronomical unit is found.

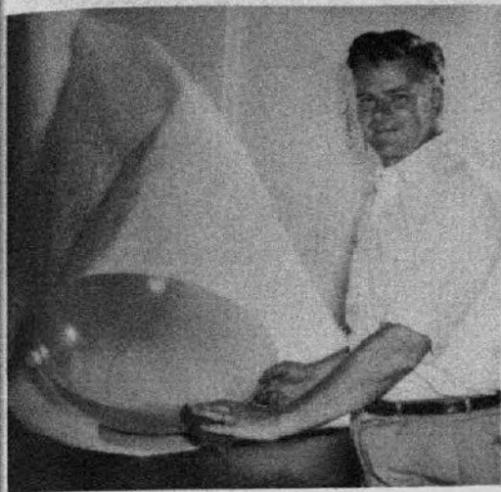
Today, a search is being made for an asteroid of great eccentricity and of sufficiently close approach to the earth to use as a "tailor-made" space station. Why put a man-made platform into orbit if such an asteroid can be found? One of the asteroids came almost as close to the earth as the moon about 1950 and was supposedly in danger of crashing into us until it swung away in its orbit, but this was a relatively large one (about 10 miles in diameter). Wouldn't a smaller one do?

programmer. These programmers use a special language in the translation process from mathematical problem to machine instruction, and such words as ABC, SAP, ALPS, and PEAKS have acquired new meaning. In addition to our own staff, Ames has a hidden supply of programmers. Through cooperative programming efforts sponsored by SHARE, an organization of 704 users, a library of general routines is made available to every 704 installation. During the past year, approximately a hundred routines from this vast library have supplemented the programs written by Ames personnel, thereby saving vital hours and avoiding unnecessary duplication.

Over in the Unitary building we have two Burroughs computers -- a Datatron 204 and a Datatron 205. Although smaller in size, these machines are assigned much of the data reduction at Ames and are run on three shifts daily during most of the year. They have card input and output, paper tape input and output, and typewriter output. It is possible to connect the card input devices of either of the Datatron computers directly to the data recording equipment of any one of the three Unitary Wind Tunnels and the 6- by 6- Supersonic Wind Tunnel. While operating in this manner, the computer typewriter is connected to a similar typewriter in the tunnel test section. This enables the engineer in the tunnel test section to see computed answers within a minute or two after he pushes the button to record a test point. When the cost of tunnel operation may exceed \$1,000 an hour, even a small saving of tunnel time by automatic data recording is well worth while.

A most important link in this complex system known as electronic computing is the staff of operators who physically process all problems. They feed information to the computer and manually initiate computer operation. The effectiveness of any computer installation is in direct proportion to the operators' competence. Another important group at EMC is composed of the people who operate the card punches, verifiers, reproducers and accounting machines necessary in the preparation of input cards for all of EMC's computers. Ames is fortunate to have the finest equipment and the staff to back it up.

Ames Closeups



AL CLARKE

It's only a short drive between casting models of the X-15 in metal and imbedding butterflies in plastic for Al Clarke of the Model Construction Branch. When Al completes a day at Ames, where he spends the greater portion of his time in "lost wax castings" of free-flight models of the X-15, nose cones, and various other configurations, he heads home to his plastics "hobby" of creating coffee tables, trays, screens and other items of decorative art. Those who attended the Ames Soiree last May will remember seeing many of these items on display.

Al, a native of Pittsburgh, Pennsylvania, came to Ames in 1940 from a position in aircraft construction with Lockheed's

Burbank plant. He was interested in airplane models and took the first opportunity to get into model building by applying at Ames as the laboratory was just beginning operation. Al was one of the first employees of the Model Shop. Following high school, he had taken his first job with the Hearst papers, writing the "Junior Birdmen" column for syndication. In 1938 he came to Santa Monica where he attended the Fletcher Aircraft School before taking his job with Lockheed.

The Clarkes, Al, Eloise, and their two children, Carol, 9, and Douglas, 6, live in the Los Altos Hills. Doug has already proven himself to be a champion swimmer, and Carol has turned her attention to horses. However, they all manage to get into the "plastics hobby" one way or another.

Al and Eloise formed the "Lorac Company--Originals in Plastic" a few years ago, and have been knee deep in polyester resin, fiberglass, and assorted seaweed, pebbles, butterflies, ferns, shells, and a variety of other materials that can be artistically imbedded in plastics ever since. Al designs the molds for his products, then pours the polyester resins over a fiberglass matting imbedding weeds, ferns, or any other flora and fauna found around the adjacent landscape. A catalyst is added, and the product hardens on the mold and is soon ready for the

finishing touches. The Clarkes had a distributor selling their wares, but the demand began to exceed the supply to such a great extent that they had to forego this arrangement in favor of sales to a few select shops that now take their entire output. Many of their products have found homes from coast to coast. Al is particularly proud of the translucent lighting fixtures he created for "Don the Beachcomber's" in Hollywood.

When they have time to get away, they make trips along the coast. Even then, however, it is with the intent of finding something unusual to bring back for a plastic creation. They make an annual trip to Pacific Grove each year, watch the giant Monarch Butterflies come in, and gather seaweed and pebbles along the beaches. The artistic arrangements resulting from the assembly of these various odds and ends can be credited to Eloise, Al says. She was an artist before their marriage and taught courses in arts and crafts as an occupational therapist.

Doug and Carol do seem to find outside activities not directly related to the plastics, however. Al says he presumes he will have to build a swimming pool for Doug in the near future. (Maybe of plastic with a few fish imbedded in the wall?) And Carol wants her own horse. (No resins or fiberglass here, just a real flesh and blood variety!)



AMES EMPLOYEES ENJOY BARBECUE!

Over 300 members of the Ames family attended the annual barbecue at Blackberry Farm on July 18. Pictured above left is Hy Zimmer, Entertainment Committee Chairman, presenting the "Barbecue Queen" award to Sandy Jackson (wife of SSFF's Chuck) as Chyrl Byington and Beverly Saich, runners-up, stand by. Above right, Jerry Hall, Phil Ekholm, Ted Foster, Ed Hoin, George DeYoung,



Fred Bear, Hy Zimmer and John Leveen aid or lend moral support in the preparation of the chicken and steaks that were featured on the menu.

Several special events highlighted the afternoon. In addition to the selection of a queen, George Herrold (Security) and his trained dog "Toad" delighted the children and adults alike; the new egg tossing champs, Mr. and Mrs. Kent Bourquin (WTIR), were christened; lively music was provided by George Aiken (Struct. Fab.) and friends.

Giving the Entertainment Committee many hours of help with preparation and serving of the food were Jo Daugherty (10- by 14-), Jean Ward, Fred Bear (1- by 3-), Ted Foster and Phil Ekholm (Struct. Fab.), and Ed Hoin (14-Foot). Pitching in during the peak serving hours were the many Guest Chefs.

(Continued from page 1)

will be approximately \$50 to \$75 less per person than individual rates for the same trip.

Those interested in joining a tour group may contact Ron Berlin, ext. 385, leaving their name and indication of preference as to approximate time they would prefer the trip to be scheduled. See the next issue of the Astrogram for more tour information.

PHIL CITTI INVITES FRIENDS

Phil Citti, formerly of the Procurement and Supply Branch, has invited his many friends to visit him at his "Big Four Inn" on Highway 101 at Arcata, California. He says the fishing is excellent in the Trinity and Eel Rivers, and he hopes to have many of his friends drop in to see him on their fishing and camping expeditions to the northern part of the state.

Phil, his wife and daughter have moved to Arcata recently to join his father-in-law in the operation of the Inn. They were former residents of Santa Clara.

WANT ADS

For Sale--1956 Hillman Husky (station wagon), radio, heater, turn signals, \$500. Call Steva Hill, CY 5-2542.

Wanted--Car pool, vicinity of Gould and Homestead Road, Santa Clara. 8:00-4:30 shift. Call Tom Snouse, ext. 377, or AX 6-0188.

For Sale--3-bedroom house, fireplace, dishwasher, garbage disposal, hardwood floors and fenced yard. Cherry Chase district, Sunnyvale. No phone calls. 744 Donna Street.

For Sale--Will sell as parcel or separately:

- 1 - one-bedroom duplex
 - 1 - one-bedroom cottage
 - 1 - two-bedroom home
- \$30,000. Inquire at 26 Gladys Ave., Mountain View. YO 8-0388.

For Sale--1951 Packard 4-door, good shape, four excellent re-caps, radio, heater, Ultramatic. \$200. Call Tom Canning, ext. 275, or DA 3-6282.

For Sale--Dachshund pups, AKC registered, champion stock. Call Ed Rosselli, Mach., ext. 232, or EL 6-2630.



Four members of the National Aeronautics and Space Council visited Ames on Monday, August 4. Shown above listening to a presentation by Bob Crane, Chief of TA&R Division, are (left to right) Herbert Rosen, Assistant to NASA Public Information Officer; Dr. DeFrance, Director of Ames; Dan Wentz (partially hidden), Ames Information Officer; Dr. John T. Rettaliata, William A. M. Burden, both Council members; Dr. T. Keith Glennan, NASA Administrator and Council member; Russell G. Robinson, Assistant Director of Ames, and H. Julian Allen, Chief of HSR Division at Ames (both in background); and Dr. Alan Waterman, Council member. Mr. Franklyn Phillips, Acting Secretary of the Council, was also a member of the party.

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"WHAT DO YOU MEAN, I SHOULD HAVE CONSULTED THE AMES PROCEDURE MANUAL?"



It's easy to find the correct answers to problems involving Ames and your job here. Whether the question concerns processing actions, military leave, job order requests, accidents to government motor vehicles, or any of innumerable other possibilities, you will find the correct way to handle it in the Ames Procedure Manual.

A copy of this book is available for reference or may be checked out over night at each branch office or from Administrative Services, Room 105, Administration Building. Please feel free to use it whenever the need arises.

Film Classics Club Announces New Program

The Film Classics Club is currently planning a new series of films to be shown on alternate Wednesday nights beginning October 7, 1959. A total of six features will be shown with show time scheduled for 7:30 p. m. in the Ames auditorium.

Admission for the entire series will be \$2.50 per person. A minimum of 80 subscriptions is needed to make the program financially possible. A lesser number would necessitate canceling the program. Those interested in attending the series should contact Armando Lopez, 12-Foot Wind Tunnel, in writing, giving him their names, branch, and the number of tickets they would like to have. Tickets may be ordered for guests provided they attend the shows accompanied by an Ames employee. A schedule and description of the films has been distributed to all employees.

PORTZ TRANSFERS TO WESTERN COORDINATION OFFICE

Matthew H. Portz, former Information Officer at Lewis Research Center, has been appointed Public Information Officer for NASA at the Western Coordination Office in Santa Monica. He will be responsible for information activities in southern California and neighboring states.

Portz' successor at Lewis is Harry J. McDevitt, Jr., formerly of the General Electric Company news bureau.

The

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AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

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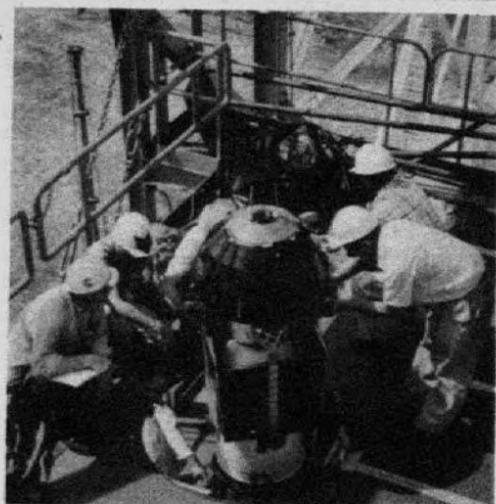
NUMBER 22

Explorer VI Satellite Outstanding Success

The Explorer VI satellite, launched recently under the direction of the NASA, is successfully sending back space information daily in its 12-3/4 hour orbit. Placed in orbit by a three-stage Thor-Able rocket, the satellite reaches an apogee (farthest from Earth) of 26,400 miles and perigee (closest to Earth) of 167 miles, providing an extremely broad sampling of space information.

Experiments to be conducted with the satellite include:

1. Three devices to map the radiation belt ringing the Earth with each of the instruments concentrating on a specific radiation energy level.
 2. A 2½ pound scanning device, something like a TV camera, which is designed to relay a crude picture of the Earth's cloud cover. Success of the camera experiments hinges not only on the operation of the instrument but on the motion and flight attitude of the satellite.
 3. Solar cells, 8,000 in all or 1,000 on each side of four paddles projecting from the satellite's waist, to change solar energy into electricity for recharging the satellite's chemical batteries in flight. The electronic gear in the satellite includes three transmitters and two receivers.
 4. A micrometeorite detector built to gauge the size and speed of meteoric particles hitting the satellite.
 5. Two types of magnetometers to map the Earth's magnetic field.
 6. Four experiments to study the behavior of radio waves, all aimed at finding out more about deep space communications.
- The heavily instrumented spherical satellite weighs 142 lbs.



At launch stand 17-A at Cape Canaveral, technicians are shown here making the final assembly of the payload, prior to installation atop the third stage of the THOR-ABLE missile.

REESE AND JERN RECEIVE APPOINTMENTS

Dave Reese, of the 6- by 6-, has been named Assistant Chief of the 9-by 7-Ft. Supersonic Wind Tunnel Branch, effective August 23, 1959. He will take over the position vacated by Edward Perkins, who was recently appointed Chief of the Branch.

Clifton Jern, of Operations Branch, Unitary Plan Wind Tunnel Division, has been appointed Assistant Chief of his branch. He replaces Clyde Wilson, who has been assigned to the 3.5-Ft. Hypersonic Tunnel project. Wilson is becoming acquainted with the complicated equipment currently being installed in the new tunnel.

BERT COSS VISITOR AT AMES

Mr. Bert A. Coss, Chief of the Automatic Data Processing Branch at Lewis Research Center, visited the Electronic Machine Computing Branch at Ames on August 12. Mr. Coss was on a summer vacation trip through the west when he took advantage of his proximity to this center to visit the installation.

NASA-HOME LIFE CONTINUES LOW RATE

The present low premium rate of \$1.30 per quarter for each \$1,000 coverage under the NASA-Home Life Insurance Company group life insurance plan has been extended through June 30, 1960. A dividend check for \$128,953.47 received by NASA Headquarters from Home Life was proof of our favorable claims experience during the insurance year, April 1, 1958, through March 31, 1959, and the reason for Home Life's extending the current rate.

NASA now pays the insurance company \$2.05 per quarter for each \$1,000 of insurance in force. 75¢ of each \$1,000 in insurance per quarter will be taken from the dividend fund and paid to the insurance company to make up the difference between the \$2.05 actually charged by the company and the \$1.30 paid by individual members of the insurance program.

Employees who were on the rolls prior to October 1, 1958, and who are not covered under this low-cost life insurance plan are again reminded to apply on or before September 30, 1959, since no medical examination will be required if the applications are made by this deadline. The necessary forms may be obtained from the collector for each branch.

COUNSELING EXAMINATIONS TO BE GIVEN AT FOOTHILL COLLEGE

Special counseling examinations for new students planning to attend Foothill College for the fall semester will be given at the College library on Saturday, August 29.

Counseling examinations are required to be completed by all new day and evening students planning to enroll in courses in science, electronics, business and English. No student may

(Continued on Page 4)

Astroventuring... ★ with walt krumm

The Comets

The word comet is derived from the Greek, koun'rno, meaning "the long haired ones" - descriptive of the comet's streaming tail.

Most of us saw the two visible comets that appeared in the last few years, but the expression "born too late" is especially true of the comets. There were many more visible comets in the past than at present, and it seems the number continues to grow less.

The comets usually appear suddenly in the sky, change their form and brightness nightly as they pass around the sun, then disappear to return years later. The ancients thought the comets to be harbingers of evil and that if the earth were to pass through the tail of a comet, the world would come to an end. We know now that this is not true.

Harvard and Copenhagen (where comet discoveries are cabled) announce many comets each year, but most of these are too faint for even the amateur telescope. After several observations are made of a new comet, an orbit is calculated (with most of the computations done at the Lenschner Observatory at the University of California at Berkeley), and the new comet is followed until it disappears completely.

Most of the cometary orbits seem parabolic. If this were true, it would mean that mathematically a comet came from rest at an infinite distance, passed around the sun, and then disappeared again to infinity. Since, however, the parabola is a limiting case between the ellipse and the hyperbola, and since we know of no hyperbolic cometary orbits, it is thought that most comets have elliptical orbits closely approaching the hyperbolic.

Comets are the bulkiest objects in the solar system. Made up of three parts, the nucleus can have a diameter up to 10,000 miles, the coma (which surrounds the nucleus) a diameter up to 100,000 miles, and the tail with a length of many million miles. Some of the larger comets of the past spread more than halfway across the sky and were visible even in the daylight, while others are so faint as to be distinguishable from other nebulous objects



Jerry Panighetti of Electronic Instrument Branch brought this Razorback Boar trophy head aboard to satisfy the skeptics at Ames. Jerry shot this boar last February in Carmel Valley on the north side of Los Padres National Forest. This particular boar weighed over 325 pounds, stood almost 30 in. tall, and its tusks were over 4½ in. long.

NEWS RELEASE FROM THE 6- by 6-

At approximately 8:00 a.m. on August 5, 1959, Mr. and Mrs. Roy Presley became the proud parents of a baby boy. The new model, Michael William, weighed in at 8 lbs., 7 oz.

only by their orbit.

In contrast to their size, the mass of a comet is extremely low, even less than the atmosphere at sea level. They produce no observable perturbations on small bodies at close approach. It is fairly certain that no cometary mass exceeds 1/100,000th the mass of the earth. This does not preclude that a comet is all gaseous. There is solid material in the nucleus of small pieces (dust or sand-like particles in size). It is not surprising, then, that one can see the stars through a comet easily.

The tail of a comet is most fascinating. Away from the sun a comet has no tail. As it approaches the sun, material is pushed out from the coma by radiation pressure from the sun. This is in proportion to the proximity to the sun, and the tail is directed away from the sun. As the comet passes the sun and goes out into space again, it loses the tail.

Do not forget to observe Venus in the early evening for the next week or so. It is a nice, slender crescent as it comes between us and the sun.

WANT ADS...

For Sale--Child's plastic spring horse, perfect condition, \$10. Child's stroller, cost \$35, will sell for \$15. Call Don Goodsell, ext. 352.

For Sale--Two-piece chesterfield, Lawson type with slip cover, \$50. Call Eve Wunn, Library, ext. 262.

For Sale--Two-element, Hi-Gain Mini-Tribander amateur transmitter antenna, 10, 15 and 20 meters, \$30. Also, antenna rotor, medium weight, Cornell-Dubiler AR-2, \$20. Both for \$45. Call Harry Blomquist, ext. 218, or Alpine 2-6229.

Ride Wanted--From vicinity of Tropicana Village, San Jose. 8:00 - 4:30. Call Shirley Hernan, ext. 260, or CYPRESS 3-2205.

Wanted--From San Jose, car pool driver to join pool of four drivers, each to drive one day a week. Area of Coe Ave. and Riverside Dr. in Willow Glen, or Park Ave., vicinity of Newhall St. 8:00 - 4:30. Call Helen Schoner, ext. 256, for details.

For Rent--Unfurn. apt. Heated pool. \$100 month. Apt. #8, 528 Kendall (Barron Park), Palo Alto. For information call R. Kurkowski, ext. 247, or DAVENPORT 5-2340. Available August 15.

For Sale--Anso Nemar camera, good to excellent condition, with Agfa Apotar F 3.5 lens (35 mm film size), case and flash attachment. Series V supplementary lenses, Series V lens hood, adapter, and double retaining ring, separate Accurra rangefinder. Make offer. Marvin Kussoy, ext. 327, or FIRESIDE 1-4197.

For Sale--Zenith Royal 500, 7-Transistor Radio with carrying case and earphone. \$60. Call M. Yoshioka, ext. 226.

For Sale--30-inch Occidental gas range, like new, broiler never used. \$85. Call A. Berlin, CYPRESS 3-0342.

For Sale--1950 Buick Spec. R. Auto trans, very clean, good tires. Make offer. ANDREW 9-1477, or ext. 291. Reid Selth.

Ames Closeups



RAYMOND E. BRAIG

The NACA-NASA has had considerable appeal for the Braig family. The brothers, five in all, currently are devoting their considerable talents to the betterment of NASA. Roswell is at NASA's Plumbrook facility, Eugene is at Lewis, Joe and Richard are at Langley, and, of course, our own Ray Braig, of the Technical Services Division, is here at Ames.

Ray was the first to join the ranks of the NACA as an aircraft mechanic's helper at Langley in April 1925. A native of West Point, N. Y., and son of a field artillery instructor, Ray attended high school in Hampton, Virginia, working at Langley during summer vacation. In the early 30's he took a course in aeronautics, obtaining a pilot's license. He also attended a Pratt & Whitney Aircraft Company school, took several Air Force extension courses at Langley, and went to the University of Virginia extension courses at night. Ray joined the Naval Reserve during this period, taking this opportunity to further his knowledge about aircraft.

In 1940 he was offered the opportunity to join the group who were to establish the new Ames Aeronautical Laboratory. Arriving here in June of that year, Ray was assigned to construction inspection of the small hangar. On completion of the hangar, he joined the aircraft maintenance inspection section of Flight Operations. Later, Flight Operations was split, and Ray went to Technical Services Division where he is now Assistant Chief.

Soon to complete 35 years with the NACA-NASA, Ray can remember some exciting events in aviation. One event well etched in

TOOL ENGINEERS VISIT AMES



Pictured above is Al Clarke of the Model Construction Branch (far right) explaining a process to members of the Santa Clara Valley Chapter of the American Society of Tool Engineers who visited Ames on July 21. The luncheon speaker was Dan Wentz, Ames

Information Officer, who spoke on "The Changed Role of the National Aeronautics and Space Administration with Emphasis upon Space Technology". The group toured the Machine Branch, the 40-by 80-Ft. Wind Tunnel Branch, and the Aviation Sheet-metal Branch after lunch.

his mind is the thermal de-icing program conducted in 1942 and 1943. Ray was sent to Minneapolis in mid-winter to conduct flight tests under the most "ideal" conditions. Fortunately for the program, Ray says, it was the coldest winter Minnesota had known in years. He spent several months flying in and out of storms getting "iced" and "de-iced" until the problems were solved. Ray still shivers at the thought of that cold winter. On September 19, 1944, another memorable day for Ray, the Lockheed YF-80-A, our first jet airplane, arrived for testing. The project was so secret, Ray says, that we had to build a "hangar" within a hangar around the plane and post men to guard it night and day!

During recent years, Ray has been sent out as a consultant in major aircraft accidents with Air Force, Navy and commercial airlines, to assist in determining the cause of the accident.

He and his wife, Catherine, live in Palo Alto. Whenever they can get away, they head for the High Sierra, Echo Lake and the headwaters of the American River to fish. Once a right fielder for the NACA baseball team at Langley (1927), Ray now prefers to spend his leisure hours at gardening and cooking.

The Braigs have one daughter, Kay, who married Ronald Pressnell two years ago. Ron is with the Stanford Research Institute and is currently on an assignment in Scotland. Ray says Kay and Ron discovered the housing shortage was even acute in Scotland - but they managed by renting a castle!

Ames Hawaiian Tour Plans

A number of Ames employees have indicated an interest in the Hawaiian tour plans announced in the last issue of the Astrogram. The tour is proposed for sometime after October 1. It would include round-trip air travel, hotel accommodations for seven days and seven nights at one of Honolulu's new luxury hotels on Waikiki Beach, plus such features as a Luau (native feast), a motor tour of Oahu, outrigger canoe riding, a tour of the Hawaiian Pineapple plant, an "Aloha Dinner" at one of Honolulu's finest dining rooms on the eve of departure, and many other exciting events. Current estimate of the cost, which may vary due to the number of people participating, is approximately \$300 per person for the tour.

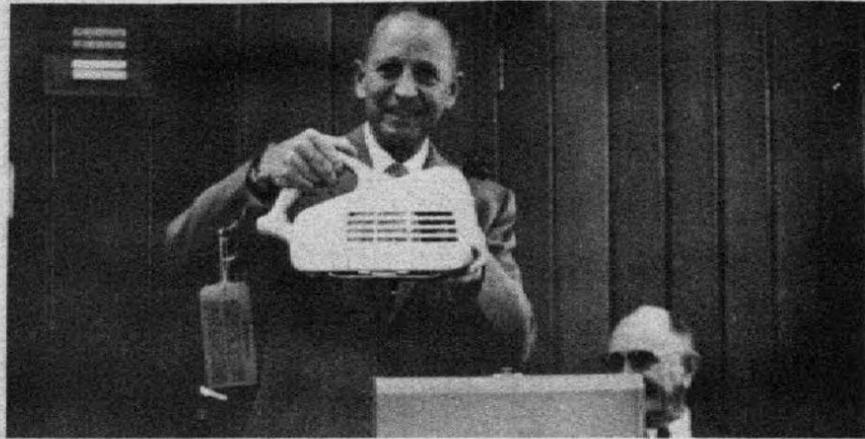
Those interested in joining the tour group should contact Ron Berlin, ext. 385, leaving their name and indication of preference as to the approximate time they would prefer the trip to be scheduled. August 28 is the deadline for accepting time preferences so act now if you are interested!

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to the editor, Personnel Branch, --phone 385. Deadline: Thursday between publication dates.
Editor: B. P. Wilson
Reporters: NASA Employees.

ABBOTT VISITS AMES



Ira H. Abbott, Director of the Office of Aeronautical and Space Research, NASA, visited here on August 11 and 12. Mr. Abbott is shown above discussing current research programs with Ames staff members. Harry J. Allen, Chief of the High Speed Research Division, is shown at the right. Mr. Abbott inspected Ames' research facilities before returning to headquarters.



HOOD CELEBRATES 30 YEARS WITH NASA-NACA

Over 100 employees attended a luncheon held in Ames cafeteria on Tuesday, July 28, honoring Manley J. Hood, Technical Assistant to the Assistant Director. Mr. Hood is shown above holding a power sander that was presented to him by fellow employees in celebration of his completion of 30 years service with the NASA-NACA.

PREPARE YOURSELF FOR THE SHIPWRECK DANCE



"S.S. AMES SHIPWRECK" DUE SOMETIME IN OCTOBER. RESERVE YOUR LIFEBOAT SEAT EARLY. WATCH FOR "HURRICANE WARNINGS" IN FUTURE ASTROGRAMS.

IF YOU ARE TALENTED AND WISH TO BE PART OF THE "ISLAND" ENTERTAINMENT, CONTACT BOB GEORGE EXT. 224.

(Continued from Page 1)

register until he has completed these examinations, according to Arla L. DeHart, dean of students.

Registration for day and evening classes opened on August 10, and will continue through September 8. Counselors will be available in the counseling center by appointment for program approval. An evening counselor will be available from 7:00 - 9:30 p.m. Monday through Thursday.

Counseling examinations will be given again on Wednesday evening, September 2; Saturday, September 12; and Tuesday evening, September 15. However, students taking examinations as late as September 12 or 15 will be forced to take a limited program for many courses will have been filled and closed. Instruction begins on September 10.

GOLF



The Spring Valley golf course was the setting of a recent "point par" tournament of the Ames Golf Club. Harvard Lomax, shown above, at left, receiving a transistor radio from President Paul Barasich, was the big winner of the event with a gross 73 and 43 points. "Harv" is one of the finer golfers in the club, and this round was one of his best days. Congratulations! Golf balls were awarded to first and second place winners in each flight.

First Flight

	<u>Points</u>
H. Lomax	43
A. Petretti	41
F. Corsini	40
F. Pfyl	40
H. Matthews	40
R. Fietzer	38
M. Radovich	36
P. Barasich	36
C. Wagoner	32
F. Lazzeroni	31
Larry Clousing	31

Second Flight

	<u>Points</u>
D. Havill	40
B. Kelley	39
T. Canning	39
F. Follette	38
J. Barrie	36
J. Monfort	34
J. Gonzales	34
A. Lopez	34
Lois Clousing	31
J. Nelan	31
T. Plum	31

The next tournament will be at Riverside on August 22. New members are always welcome and may partake in the coming tournament by contacting Mitch Radovich, ext. 232.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. 1 SEPTEMBER 3, 1959 NUMBER 23

NASA-AMES GIVERS FUND DRIVE BEGINS

"EVERY GOOD GUY GIVES" is the slogan of the United Bay Area Fund Campaign, and we agree. These slogans all over the center are to introduce our own NASA-Ames Givers campaign.

Maybe a word of explanation for the employees who have come aboard since September of 1958 is in order. Here at Ames we have our big drive for charity ONCE A YEAR. Our drive differs from the usual "United Fund" drives in two major respects. At Ames you have your choice of naming any charity you wish as the benefactor of your contribution. You are not limited to those in the federated fund drives. You also have the choice of specifying the city where your favorite charity is located.

Our goal is a day's take-home pay pledged by every employee. Some of us can better afford to give than others, but our goal of 100% participation is realistic and should be reached this year for the first time.

Starting on September 16, designated solicitors will contact each Ames employee asking him or her to pledge their contribution to charity through the Ames Givers. This pledge affords the charities the opportunity to know how much money they can depend on and thereby be able to plan their research or charitable work for the coming year. If you wish, your contributions may be made in three or four payments during the year. The campaign this year will be held after the second payday in September (we will receive three checks this month).

The success of the previous drives has proven that you prefer this method of making your contributions to charity. The money

(Continued on Page 4)

WILLIAMS NAMED TO PROJECT MERCURY, BIKLE TAKES OVER HSFS

Walter C. Williams, Chief of the High Speed Flight Station, has been named an Associate Director of Project Mercury. His successor at HSFS is Paul F. Bikle, Technical Director of the USAF Flight Test Center at Edwards. Both appointments are effective September 15.

The new assignment will take Williams to Langley where the Space Task Group administering Project Mercury is located. He will be responsible for launching command, range, data acquisition, and recovery operations connected with the program, and will report to Robert R. Gilruth, project director. Williams has been in charge of HSFS since it was established in 1947. A native of New Orleans, Louisiana, he was awarded a BS degree in Aeronautical Engineering from Louisiana State in 1939. After a year with the Glenn L. Martin Company, he joined the NACA at Langley.

Bikle, born in Wilksburg, Pennsylvania, earned a BS degree in Aeronautical Engineering from the University of Detroit in 1939. Except for a short time with Taylorcraft Aviation Corporation, Alliance, Ohio, he has been associated with the U. S. Air Force as a civilian scientist since leaving school.

AMES HAWAIIAN TOUR PLANS MAY BE DROPPED

Efforts to arouse interest in a group tour to the Hawaiian Islands to be scheduled later this year failed to produce an indication that the required number of employees would avail themselves of the opportunity to see the Islands. Plans for the tour will be dropped unless an unforeseen last minute interest develops.

New Chief of Liaison Office at Ames



Lt. Colonel Gerald S. Brownell officially assumed his duties at Ames the first of this month as Chief of the Air Research and Development Command Liaison Office.

A native of Fayette, Iowa, Colonel Brownell graduated from Iowa State University with a Bachelor's degree in mathematics and electrical engineering. He is a graduate of the Command and General Staff School, Fort Leavenworth, Kansas, and the Air Command and Staff School, Maxwell Air Force Base, Alabama.

A command pilot, Colonel Brownell won the Distinguished Flying Cross and the Air Medal with four Oak Leaf Clusters for World War II service as a troop carrier pilot. He flew 64 night missions to paradrop and land equipment, explosives, personnel and mules to the Balkan country partisans, and participated in the air evacuation of Marshall Tito's staff from their mountain headquarters where they were bottled up by the Germans.

Prior to his assignment to Ames, Colonel Brownell served as Chief of the Gas Dynamics Fa-

(Continued on Page 4)

Ames Closeups



EDWARD SCHNITKER

A familiar figure in the battle of the budget for the past ten years has been Ed Schnitker, Assistant Budget Officer. A graduate of Purdue University, Ed has been with the NACA-NASA almost thirty years.

He joined the staff at Langley as a junior engineer in 1930, following receipt of his BS degree in Civil Engineering. Originally from Toledo, Ohio, Ed worked in construction and design at Langley for over 10 years, coming to Ames with the first contingent from Langley in the late summer of 1940. Here he headed up a design group engaged in preparing drawings and specifications for the many buildings that were soon to be erected. The only buildings then completed, Ed remembers, were the Flight Research Laboratory, with the 14-Foot Tunnel, the Technical Services building, and a garage-stockroom-electrical building combination under construction.

In 1955, Ed was appointed Chairman of the Board of Directors of the Ames Givers Fund. He served that year also as the campaign chairman for the drive. His appointment was a natural result of his previous efforts on behalf of the United Fund in which he had become engaged through his participation in the Rotary Sponsored Troop 43 of the Boy Scouts. Ed was also given opportunity to represent Ames in the Mt. View United Fund Committee and has been elected president of the organization for the current year.

Ed says that the Ames Givers Fund Drives have been successful right from the start. In 1955, 93.7% of the employees at Ames participated in the drive donating \$10,439. Last year, over 90% again participated, with a total

Personnel-ly Speaking

PROCESSING A HEALTH INSURANCE CLAIM?

In order to expedite the payment of claims of employees and dependents who are covered by the Ames Group Surgical, Medical, and Hospital Expense Plan, the following procedure should be followed.

1. When you or your dependents receive medical or hospital bills that exceed \$50, contact Dorothy Armstrong in Fiscal immediately. Mrs. Armstrong will provide you with a claim form, a claim number card, enclosure cards, and self-addressed envelopes.

2. Complete part A of the claim form, and have your physician complete the reverse side. When the form is completed, submit it to Kane and Zeimer Associates immediately. If the doctor's office indicates that there will be a delay in completing his part of the form, be sure to inform the doctor that the insurance company will not make any payments without the completed claim form.

3. Only one claim form is required for each illness. Once a claim form has been submitted, hospital bills, bills for laboratory expenses, doctor bills, druggist bills, etc., may be submitted separately, but be sure to attach an enclosure card to all bills submitted to identify your claim by

number.

4. In having prescriptions filled, it is necessary that the Rx numbers be shown on your bill. The bill must be made out to the claimant. Do not submit cash register receipts. If the physician prescribes medication by name without a prescription form, have him approve by signature the bill submitted to you by the druggist.

5. When Kane and Zeimer Associates receive your claim form and bills, they will process your claim immediately. Claims of \$500 or less are paid by Kane and Zeimer without any further approval. Claims of over \$500 require approval of Central Standard in San Francisco. Payment of claims usually takes from 7 to 10 days. Remember, any delay in submitting your claim form delays your payment.

6. Generally, hospitals require an assignment of claim that authorizes the insurance company to make payment of the bill directly to the hospital. The claimant is usually required to pay \$50 (\$50 deductible) and 20% of the balance of the bill plus any miscellaneous expenses such as TV, phone, etc., that are not covered under the plan.

7. In maternity cases, nurseries expenses and services rendered the baby are not covered under the plan.

EVERY GOOD GUY GIVES!

donation of \$10,955. This year he feels the results will be even better. Other campaign chairmen who assisted Ed in the past few years were Lee Jones, Harry Stefani, and, currently, Emerson Shaw of Photo. This year's drive is scheduled for September 16, with the windup scheduled for the 17th and 18th.

Ed and his wife, Elizabeth, live in Los Altos. They have two daughters, Kay Rockhold, who lives in Mt. View and has presented the Schnitkers with two grandchildren, and Carol, who is a student in Los Altos High School this year. Ed is an enthusiastic gardener when he isn't working with the Boy Scouts, planning for the United Fund, or worrying about budget problems.

EARL GISH HONORED AT LUNCHEON

A luncheon was held at Rupe's restaurant in Mt. View on August 13, honoring Mr. Earl Gish for his outstanding work on behalf of the Moffett Field Employees Credit Union. Mr. Gish, a founder of this Credit Union, was presented with a silver dollar mounted in a silver money clip representing the quarter of a millionth dollar that the Credit Union has loaned its members in the last 2½ years.

The presentation of the gift was made by Mr. Byron Beach, President of the organization, assisted by Mr. Anthony M. Bondi, Sr., Treasurer and Manager.

NASA'S WESTERN OFFICE REORGANIZED

NASA's Western Coordination Office, 150 Pico Boulevard, Santa Monica, California, has been reorganized and designated the Western Operations Office, Richard E. Horner, Associate Administrator of the National Aeronautics and Space Administration, has announced.

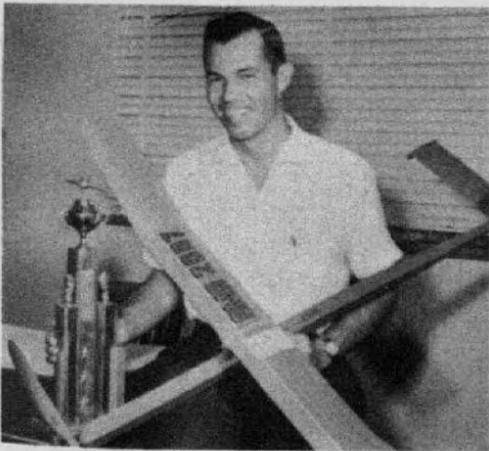
The office will, in addition to the liaison functions previously performed, provide administrative and management support west of Denver, Colorado, as required for rapidly expanding NASA research and development activities.

Director of NASA's Western Operations Office will be Robert W. Kamm, for the past two years chief of the plans and policy office of the Arnold Engineering Development Center at Tullahoma, Tennessee. He reported for work in Santa Monica September 1.

Edwin P. Hartman, who has headed the Western Coordination Office since it was established on the eve of World War II, will continue in charge of technical liaison with universities and the aerospace industry.

A native of Minnesota, Kamm, 42, was graduated from New York University in 1939 with a degree

Cole Wins



Henry A. Cole, Jr., of Flight Research is shown holding the trophy he won by taking first place in the 1959 National Model Airplane Championships. Cole's plane set a new endurance record in the meet by staying aloft 17 minutes and 41 seconds. The meet was held early in August at Los Alamitos Naval Air Station near Long Beach, California, and it is sometimes called the World Series of Model Aviation. Winning model airplane contests is not new for Cole. In 1956 he went to Europe, representing the United States in international model plane competition.

in aeronautical engineering. From 1940 to 1946 he was at Langley where he became assistant to the chief of the stability division. He then went to the Martin Company as senior aerodynamicist, and in 1948, was named executive director of the Panel on Facilities of the Committee on Aeronautics of the Research and Development Board. He joined the Arnold Engineering Development Center in 1950.

GOLF

All Ames golfers are preparing themselves for the annual championship tournament, which will be held on September 12. First place cups will be awarded for the low gross score and for the low net score. In addition to these cups, many other prizes will be awarded to the low net scores in all flights. The tough Almaden Golf Course will require the best from all the players. The tournament will be handled by the officers of the Ames Golf Club. Reservations should be made with either Mitch Radovich (ext. 232) or Paul Barisich (ext. 232) by September 9.

The results of the recent Ames Golf Club Sweepstakes Tournament at Riverside have been fed into all available computers, and the conclusions are unanimous -- no team did well enough to deserve a prize!



Ruth Richardson of Fiscal Branch is shown above with the trophy she won last month. She took 2nd place in the Spring Valley Flight in the 3rd Annual East Bay Ladies Amateur Golf Championships held at the Spring Valley Golf Course on August 9 and 16. Winning golf trophies is not new to Ruth (those in the foreground are hers too); she has won more than her share since taking up the game in 1954. She has played in the Women's Southern Open in 1956 and in the Women's

Astroventuring...

★ with walt krumm

Meteors

The "shooting stars", or meteors as they are properly called, are pieces of solid material (either metal or stone) of space that hit our atmosphere and ignite from the friction of the air as they speed across the sky. On any clear, dark night you can see a few meteors, and at times many, if you pass through what we term a "meteor swarm".

Faint meteors that make mere streaks in the sky and vanish almost instantly are the most numerous. They are apparently about the size of a grain of sand and do not have enough material to burn for any length of time. The bright meteors that leave a short trail are about the size of a pea. The unusually bright meteors are called "Fire Balls" or "Bolides" and move across the sky more slowly, burning for quite some time.

Meteors that are as large as a football or larger have a sufficient mass to penetrate the atmosphere without burning completely and hit either the land or water. The object that remains is called a "meteorite". These are of particular interest for they give a clue to extra-terrestrial material.

Some meteors are so small and of so little mass that when they hit the atmosphere, they just stop and drift down, eventually reaching the earth.

The meteor swarms are the remains of a disintegrated comet and burst into view as the earth passes through the orbit of the original comet. These meteor showers appear at established dates during the year; and if we are fortunate enough to pass through the orbit of said comet where the bulk of these meteors lie, we can see literally hundreds of them.

Meteors have been studied intensively of late for they furnish data on the re-entry problem. Impact data may be gained from inspection of meteor craters, and ablation phenomena from the meteorites. All these are of keen interest because of our advancing space age.

western Open Championships at Montgomery, Alabama, in 1957, when Patty Berg won the tournament for the fifth consecutive time.

LAST YEAR'S NASA-AMES GIVERS DRIVE RESULTS

The NASA-Ames Givers Board of Directors has released the final figures on the 1958-59 fund raising drive conducted at Ames. A total of \$10,955 was collected and distributed to youth, health, and welfare agencies in accordance with the selections made by the donors here at Ames.

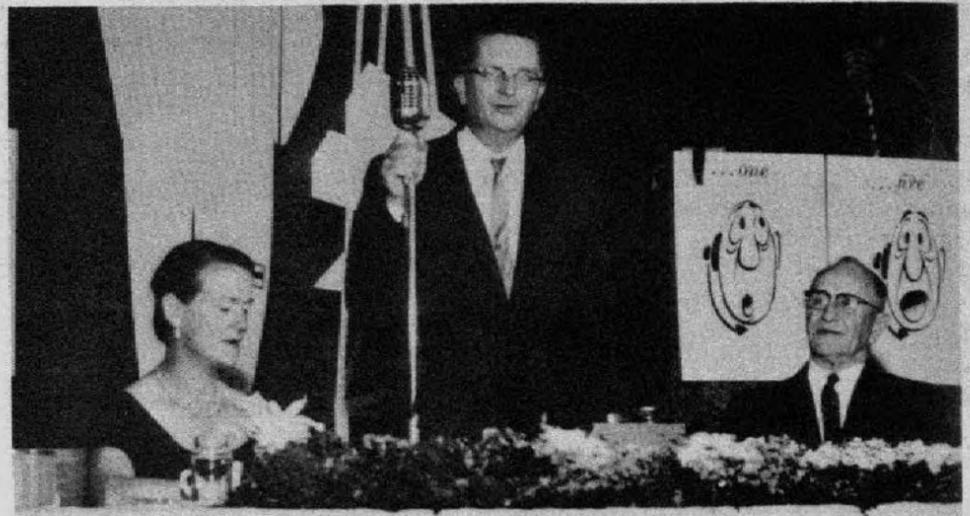
Checks in the following amounts have been presented to these agencies in the communities or areas specified by the contributors. Up to 30 different communities have benefited from our drive. This illustrates that we amply support the slogan, "Give where you work to support the agencies where you live".

Agency	Contribution
United Fund	\$3,782
Hope for Retarded Children	68
Heart Fund	1,340
Shriners Hospital	40
Cerebral Palsy	783
YMCA	21
Crusade for Freedom	207
Crippled Children	40
Cancer	1,880
Adult and Child Guidance Clinic	20
Salvation Army	936
Guide Dogs for the Blind	15
Community Welfare	230
Boy Scouts	468
Girl Scouts	276
Red Cross	391
USO	30
Catholic Social Service	147
CARE	34
March of Dimes (Polio)	553
Arthritis and Rheumatic Fund	26
All other agencies	168
Total	\$10,955

NEED EQUIPMENT?

If you need a particular piece of equipment but don't know whether it's available at Ames, check with the Property Section. This section keeps a record of all Ames inventoried property with a description of each item since an important part of utilization of equipment is to see that it is available for all necessary needs, regardless of who has current custody.

When the need arises, contact the Property Section, ext. 334, and find out what we have and get assistance in arranging to use it.



FAREWELL DINNER HELD FOR GOETT

Over 200 friends and fellow employees attended the farewell dinner held in honor of Harry J. Goett, who left Ames August 31 to take up his new duties as Director of the Goddard Space Flight Center at Beltsville, Maryland. The dinner was held at the Palo Alto Elks Club on Tuesday, August 18. Shown above are Mrs. Goett, Goett, and Dr. DeFrance.

WANT ADS...

For Sale--By owner, 3-bedroom, 2-bath ranch home in choice Los Altos location. Electric kitchen, dining area, huge attached garage, Sloane carpet and drapes. Large patio, fiberglass covered. Professionally landscaped, fully fenced. Low county taxes. GI loan at 4 1/2% for about \$12,100 may be assumed, or other financing available. Price \$25,000. 11600 Country Club Drive, phone Whitecliff 8-4227.

For Sale--3-bedroom home, 2-car garage, oversize patio, 5 fruit trees, separate children's play

area, fiberglass insulation. Full price, \$14,450. Existing 4 1/2% G. I. loan. Call A. Lopez, Regent 6-7661.

For Sale--Bartlett pears, 45 lb. lug, \$1 per box. Call Frank Follette, ext. 323.

For Sale--Paint spray outfit, tank type, \$125. 6" jointer with motor, \$120. 4" x 5" Pacemaker Speed Graphic, Heiland flashgun, 12 film holders, cut-film magazine, pack adapter, case, \$275. 15" Tele-optar lens with case (for any 4 x 5 camera) \$75. Call Helmer Nielsen, ext. 327.

EVERY GOOD GUY GIVES!

NASA-Ames Givers....

Continued from Page 1) you give is a tax-deductible item, and it will be going to a good cause - the charity that you yourself pick. You will receive a sticker for your home window that will be honored by the federated drives.

The chairman for our Ames Givers Campaign is Mr. Emerson Shaw (ext. 218), assisted by Mr. Al Boissevain (ext. 275), and Mr. Eugene Osborne (ext. 234). If you have any questions regarding your contributions or the charities, contact any of the above or any member of the NASA-Ames Givers Board of Directors.

Remember, EVERY GOOD GUY GIVES, so give where you work to support the charities where you live.

New Chief of Liaison Office....

(Continued from Page 1) cility Project Office at the Arnold Engineering Development Center at Tullahoma, Tennessee.

Colonel and Mrs. Brownell and their 3-year old daughter, Celia Ann, are in the process of establishing a new home in this area.

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AMES GIVERS FUND

EXTRA!

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. I

SEPTEMBER 15, 1959

NUMBER 24



Peggy Larson of the 10 x 14 is trying to find room on the board for the many letters of thanks from the recipients of contributions of last year's Ames Givers Drive. If the board hasn't been to your section yet, it soon will be. It's worth seeing.

EVERY GOOD

AMES THERMOMETER

The next time you go past the 40 x 80 Foot Wind Tunnel take a look at the Ames Givers Thermometer. This gage will be kept up to date and will let everyone know how well we are progressing toward our goal of 100 per cent participation in the Ames Givers

GUY GIVES!

Drive. Remember, the drive will begin on September 16, the extra payday. The branch solicitors will be taking cash and pledges for charitable contributions on the 16th, 17th, and 18th of September. So PLEASE GIVE, ("like every good guy should") so that Ames, you and I, can boast 100 per cent participation.

UNIQUE FUND

The Ames Givers Fund is unique in several ways. One is that the contributions of Ames' employees go directly to the charitable organization specified by the donor. There are no administrative costs taken out of your contributions. In some charitable campaigns, administrative costs have taken as much as 14 cents out of every dollar contributed. In the Ames Givers Drive "a dollar is received for every dollar given". The administrative costs are borne by the Center.

Another is that this is the only time during the year that Ames employees are asked to contribute to charitable organizations. Rather than allow periodic appeals for funds by separate groups throughout the year, the Ames Givers - once each year - collects your contribution to any charity, fund, or institution that you choose. Any organization can be specified by you in making your contribution. The Ames Givers Fund serves only as the middle man. This one drive once a year is your one opportunity to contribute, either by cash or through a pledge.

We regret that the Ames Givers cannot accept contributions to the Jim Lowe Trust Fund or any other fund for the benefit of a single individual.



Ames employee donating to his pet charity through his branch solicitor.



There are good guys and . . .

Thanks to the following for posing in the photographs:
Jessie Gaspar
Bob George
Al Boissevain
Joette, Dorette, and Bobby Marchisella. (Bobby's bandage is real and hides five new stitches)

*your
big
give
...give
big*



Solicitor putting his contribution into the Ames Givers Fund



SOLICITOR

AMES
RESEARCH
CENTER



AMES GIVERS

Remember, when your branch solicitor calls on you, it is to help you with your contribution to your charity.



Recipients named receiving the donor's entire contribution.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. I

SEPTEMBER 17, 1959

NUMBER 25

Ames Presentation Readied for Langley Triennial Inspection

The theme of Ames presentation at this year's Langley Triennial Inspection, scheduled for the week of October 12, will be "High Speed Impact". James Summers and Robert Nysmith, both of the Hypervelocity Ballistic Range, Don Gault, of the 12-Foot Tunnel, and William Carlson of the Electrical Branch will present talks as part of the Ames program. Harry DeVoto, head of the Technical Illustration Section, is currently at Langley to aid in preparation of materials for the inspection. Marie St. John, Administrative Assistant to the Director, will leave September 19 for Langley where she will assist in handling invitations, reservations and registrations.

Dr. Smith J. DeFrance and Mr. John F. Parsons, Director and Associate Director of Ames, respectively, plan to attend the opening of the inspection together with Dan Wentz, Ames Information Officer, and Manley J. Hood, Technical Assistant to the Director. Mr. Hood will arrive at Langley from Europe to assist in the technical presentations to be given by Ames.

Beginning in 1926, the NACA held inspections annually to report on its activities, programs and accomplishments. Those attending included officials of Government, scientists, engineers and the press. The Inspection programs, in a series of eight to ten exhibit-demonstrations, presented a report on the researches of the staff and the new or changed facilities with which the agency fulfilled its objectives.

Earlier this year NASA decided to continue the Inspections, with the 1959 session to be held

(Continued on page 4)

Frutkin Appointed to NASA Post

Arnold W. Frutkin, an official of the U. S. National Committee for the International Geophysical Year, has been named Director of the NASA's Office of International Programs, T. Keith Glennan, NASA Administrator, announced today. Frutkin, who will join the NASA staff September 14, succeeds Henry E. Billingsley.

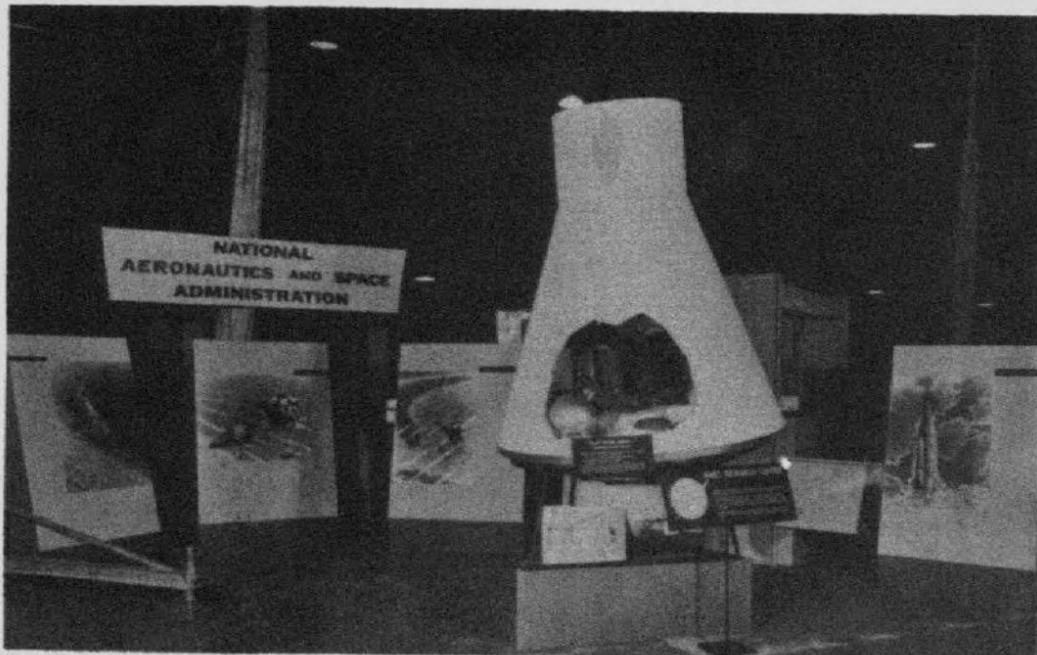
As Director of International Programs, Frutkin will head an NASA-sponsored program to coordinate U. S. non-military research and development in aeronautical and space matters with

similar work of other nations and international organizations.

Since 1957, Frutkin has served as Director of the Office of Information, U. S. National Committee for the International Geophysical Year at the National Academy of Sciences, and in addition has been Deputy for International Affairs to the Executive Director of the Committee. For the last year he has been Secretary to the International Relations Committee of the Space Science Board at the Academy.

EVERY GOOD GUY GIVES!

FULL SCALE MERCURY CAPSULE ON DISPLAY



The Mercury capsule shown above is a full scale replica of the one recently launched over 100 miles into the outer atmosphere. Constructed here at Ames, it is currently on display at the Santa Clara County Fair in San Jose. The theme of the Fair this year is "Space, The New Frontier". The capsule will be on display through Saturday September 19th following which it will be shown at the Pacific Festival in San Francisco's Brooks Hall from September 23 through 27. A RAMAC electronic brain of the same type provided for the U. S. exhibit in Moscow this summer will also be one of the many displays at the Festival.

Astroventuring...
 ★ with walt krumm

NATIONWIDE AMATEUR
 ASTRONOMERS CONVENTION
 Denver - August 28-31

While on vacation the astroventurer attended the NAAC in Denver, about which he must tell you. This convention was the first endeavor to bring the amateur astronomers of the entire United States together at one time and place.

Meeting jointly were - The American Association of Variable Star Observers, the Association of Lunar and Planetary Observers, The Astronomical League, The Western Amateur Astronomers, and the Unaffiliated Amateur Astronomers.

Host society to the convention was the Denver Astronomical Society in cooperation with the Pueblo Astronomical Society and the Colorado Springs Astronomical Society, and co-sponsored by the Marin Astronomical Society, The Association of Amateur Astronomers (Los Angeles) and The Sacramento Valley Astronomical Society of the Western Amateur Astronomers.

Denver planned upon 400 and there were considerably over 500 registrants with from 750 to 800 people, if you include wives and families - to give you an idea of the tremendous success of this first endeavor.

Ninety percent of the fascination of a convention comes from the pleasure of meeting people one has heard of for years. This convention offered the astroventurer the opportunity to meet such people as Dr. Armand N. Spitz, manufacturer of the Spitz planetariums; Dr. Earl G. Lindsley, of the University of Hawaii and this year's recipient of the Western Astronomers G. Bruce Blair award; Dr. Albert W. Richt, Dept. of Physics, University of Denver and Director of Chamberlain Observatory; Charles A. Federer, Editor of Sky and Telescope Magazine; Chandler H. Holton and Mrs. Grace Scholz Spitz of the Astronomical League; Walter H. Haas of the Lunar and Planetary Observers; Clinton B. Ford of the Variable Star Observers; Walter Munn of the Smithsonian Institute and Moonwatch project; etc.; and of interest to the others - Walter J. Krumm, Chairman of Western Amateur Astronomers for 1959-1960.

At an amateur astronomers convention formal papers are given

on subjects of interest. This year's papers were of special interest because of the wide range and choice to choose from. Of interest to you here at Ames would be the talk by Dr. Rense of Chamberlain Observatory. In his opening welcome to the convention for the University of Denver, he stressed the value of work done by the amateur astronomer to the professional (as each professional does) and Dr. Rense pointed out the need of the amateur to concentrate on one field of endeavor rather than being just observers in this ever increasing field of astronomy.

"Why should I study Astronomy (or Astroventure, as this column calls it)?" "Of what use is it to me?" These two questions are asked so often that we should answer them here.

To a number of scientists and engineers here at Ames the answer is, "It is my life's work," because of the military and scientific problems of space.

To the majority of us, the answer to the second question is, "Of no use." Few have been able to turn to any practical use the ability to recognize Bach or Beethoven, or to know a Raphael or a Dali, to be able to name a flower or even a star. Yet we recognize the value of such knowledge and spell it with a capital V. We spend much time and money to gain knowledge and know the advantages of that knowledge.

The answer to the first question is even easier, "Don't (study astronomy) unless you enjoy it." Without a special interest study can be tiring work and most of us have enough to do as it is.

The sad part of astronomy is that, until the advent of the amateur telescope, astronomy was dull facts and figures, even duller texts and those horrible mathematical equations.

We do not need botany to enjoy a rose, we (at least the women) do not need mineralogy to appreciate a diamond and we do not need astronomy to unfold the vastness of space or the beauty of the universe.

We do not need facts and figures for we can SEE the planets, we can VENTURE through the universe and even ESCAPE to distant galaxia - with an amateur telescope.

AMATEUR ASTRONOMY

An adult education class at Fremont High (Highway 9), 7:30 to 9:30, Tuesday evenings, began



Fred Drinkwater, one of our daredevil test pilots, has been presented a 90 Degree Certificate by Claude Leibensberger, Bell XV3 Flight Test Engineer. The certificate states that "Fred has gone all the way in Bell's XV3 Convertiplane and is hereby named an official member of the Royal Order of Tipplers." The Convertiplane is a cross between a helicopter and a conventional aircraft taking off vertically like a helicopter. Then the propeller assembly is rotated frontward so that it resembles a conventional aircraft in horizontal flight.

Ames
 Entertainment
 Committee
 Presents.

The pots on and
 the waters hot,
 so jump on in
 and get your
 tickets early.

September 15.

This year we will be studying the objects of interest in the constellations. Double and variable stars - Nebulae, Galaxies, Clusters, Planetaries, etc.

One hour inside instruction - one hour outside observing - each evening. Registration is still open.

Ames Closeups



HOWARD K. LARSON

While attending the Massachusetts Institute of Technology, working toward his BS degree in Mechanical Engineering, Howard Larson was told by an NACA recruiting representative that his talents could be used only at Lewis and that he should not bother to apply to Langley or Ames. Howard considered this and went on to complete his Master's degree. Completely ignoring the advice, he applied at Ames and was immediately accepted and neither he nor Ames have regretted the decision.

A native of Bellingham, Washington, Howard attended High School and Western Washington College there. During his years at MIT, he worked for the Institute as a research assistant and part time during this period he worked at the Naval Ordnance Laboratory and in the summer of 1953 he was awarded an MIT Fellowship and went to Sweden where he did research for the de Laval Steam Turbine Company. Howard adds, incidentally, that de Laval was the inventor of the supersonic nozzle used today in so many of our high speed experiments. He toured all of Europe after completion of his work in Sweden.

Howard and his wife, Pat, a former pediatric nurse at the Palo Alto Clinic, live in Cupertino. They have two sons, Kenny, 22 months, and Kevin, 2 months, who have managed to slow down the Larsons' favorite sports activities of camping and fishing. Such favorite haunts as Carson Pass have been neglected of late--as well as salt water fishing, in favor of do-it-yourself activities around the home where Howard gardens, tends to his fruit trees, and, occasionally builds furniture. He still has one outside activity to



The Ames Summer League Bowling Teams concluded the season August 13th with a pizza and beer party with 46 bowlers present.

President Bob Tinkey presented trophies and awards to the winners with prize money going to the teams on a points won basis.

The individual trophies went to V. Kelly for men's high game (226-51-277) and also high series (566-153-719); S. Braga for women's high series (482-171-653).

The championship team trophies went to the Flameouts shown above receiving their trophies. Left to right are President Bob Tinkey, R. De Los Santos, B. Larson, P. Larson, H. Clements, and B. Mollusky. The team had only 12 losses with 40 wins and received chevrons from the ABC and WIBC.

Also awarded to B. Mollusky was an ABC belt buckle for 20 pins improvement in average. A WIBC plaque went to N. Davis,

which he devotes time and energy, however. Whenever the occasion demands, he acts as a member of the pit crew for a friend who races a Cooper-Norton sports car at Laguna Seca, Tracy, and other meets. Howard tends to the needs of the 1 cylinder, 120 mph vehicle with almost as much tender care as he devotes to Kenny and Kevin.

Here at Ames, Howard has worked under Dean Chapman in the fields of separated flows and heat transfer in the 1- by 3- section of Fluid Mechanics Branch, where he has been since coming to Ames in 1954. Some of his most recent work has been in experimental ablation studies. "We have used liquid nitrogen to freeze such substances as gelatin, alcohol, and oils into various shapes and configurations. These forms are then subjected to high speed air flow and colored motion pictures are taken to study the ablating process. Regardless of the original shape of the material tested, the remaining portion after ablation usually has the same shape as meteorites found on Earth." This, Howard said, was encouraging news. He also hastened to add that these tests were carried on in the "blow down" tunnel where the air is released to the atmosphere rather than recirculated as it is in most tunnels. "We wouldn't want people to think we were saturating the 1- by 3- with oil, alcohol, and jello!"

BUSINESS COURSES OFFERED AT SAN JOSE STATE COLLEGE

Offered as part of the extended-day program at San Jose State College this fall are courses in professional typewriting and secretarial training. The courses are scheduled for Monday evenings (7:00 to 8:40) beginning Monday, September 21, and Tuesday evenings (7:00 to 9:45) beginning September 22, respectively.

Permission to register for either course must be obtained today from the Admissions Office at the College with actual registration taking place Friday, September 18, 2 to 7 p.m. and Saturday, September 19, from 8 to 11 a.m.

EVERY GOOD GUY GIVES!

WANT TO DONATE?

Anyone planning to make a donation to his or her favorite charity, foundation, or health research organization may do so through the NASA-Ames Givers. The donation will be sent to the agency specified, and in the donor's name, if so desired. The notice of receipt or thank-you letter for the gift will be forwarded to the donor. This special donation may be made at any time during the year but would be most appreciated during the Ames Givers Drive.

WANT ADS...

Instructor Needed--Current American Red Cross first aid instructors card. Contact John Leveen, Training Officer, ext. 260.

For Sale--Bunk beds, complete--\$35; fireplace screen--\$10.00; sofa bed--\$20; two burner propane gas stove--\$12. Bill Kerwin, ext. 293, or Chestnut 5-0401.

For Sale--Portable stereophonic phonograph. Four speed Garrard changer with diamond stylus; 16 watt amplifier and two 9x6 Arkay speakers and 2 separate detachable enclosures. \$150.00. Call Bob Dennison, ext. 213 or 214.

Professionally landscaped, immaculate 3 bedroom home; near elementary and parochial schools in Palo Alto. \$19,500 with \$16,000 FHA commitment. After 5 p.m. or on weekends phone DA 5-6051.

Wanted--1 or 2 more drivers for carpool from east San Jose. Presently meeting vicinity Pala Market; 8 to 4:30 shift. Can work out details with anyone from Mt. Pleasant vicinity north. Call G. Fox, ext. 273.

For Sale--Memberships in the Ames Flying Club. Cessna 120, hangared at San Jose Municipal Airport. Hourly flying rate, \$3.60, monthly dues \$5.00, membership, \$245. Contact Walt McNeill or Joe Douvillier, Flight Research, ext. 206. Open to Ames Employees only.

For Sale--Plymouth 1955 Station Wagon. 6 cyl. Standard Transmission. \$950.00. De Soto 1953 V-8 Hardtop. Automatic Transmission, power steering, Radio and Heater. \$500.00. Call CH 5-2756.

For Sale--3-bedroom home, 2-car garage, oversize patio, 5 fruit trees, separate children's play area, fiberglass insulation. Full price, \$14,450. Existing 4 1/2% G. I. loan. Call A. Lopez, REgent 6-7661.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to the editor, Personnel Branch, --phone 385. Deadline: Thursday between publication dates. Editor: B. P. Wilson
Reporters: NASA Employees.

Recent Arrivals...

New employees reporting to Ames since July 20 include JAMES S. PAPPAS of Las Cruces, New Mexico, a graduate of the University of Houston, assigned to Dynamics Analysis as an Aeronautical Research Engineer; JACQUELINE C. WILLIAMS of Louisville, Kentucky, assigned to the Office of the Director as a Secretary; WARREN C. NORMAN of San Jose, California, assigned to Procurement & Supply as a Stores Attendant; ROBERT L. MCKENZIE of North Syracuse, New York, a graduate of the University of Cincinnati, assigned to the 6-by 6- as an Aeronautical Research Engineer; HAROLD HORNBY of Ottawa, Ontario, Canada, a graduate of Paris University, assigned to the 10-by 14- as an Aeronautical Research Engineer; THOMAS E. POLEK of La Grange, Illinois, a graduate of the University of Illinois, also assigned to the 10-by 14- as an Aeronautical Research Engineer; ARLENE L. GAAR of Petaluma, California, a former employee, assigned to Fiscal as a Time, Leave and Payroll Clerk; NORMAN L. WADE of Menlo Park, California, back from leave of absence while attending the University of California, assigned to the 8-by 7- as an Aeronautical Test Technician; SHIRLEY C. HERNAN of San Francisco, California, assigned to Personnel as a Clerk-Typist; JANE E. WALTZ of Sunnyvale, California, assigned to Flight Research as a Math Aid; MARY M. HALL of Sunnyvale, California, a former employee, assigned to Fluid Mechanics as a Math Aid; LAWRENCE J. ROBELLO of Mt. View, California, a graduate of San Jose City College, assigned to Hypervelocity Ballistic Range as a Wind Tunnel Mechanic; VICTORIA J. MALATESTA of San Francisco, California, assigned to Ad Services as a Library Assistant; EDITH R. ELLIOTT of Redwood City, California, assigned to Fiscal as a Cost Accounting Clerk; BERNARD M. LANGEDYK of San Jose, California, assigned to the 6- by 6- as a Wind Tunnel Mechanic; LINDA J. KILLEBREW of Dallas, Texas, assigned to Personnel as a Clerk-Steno; JAAN LAURMANN, a graduate of Trinity College, Cambridge, England, assigned as an Aeronautical Research Engineer to Theoretical Aerodynamics; JOHN K. MORGAN, of Cupertino, assigned to the 14-Foot as a Wind Tunnel Mechanic; S. BARBARA THOMPSON, of Los

(Continued from page 1)

at Langley and with participation by other units of NASA.

The Ames exhibit will include an orrery, slides and movies, a duplicate of the "Explorer VI" satellite and other displays describing the impact of micrometeorites. The last inspection was held at Ames in July, 1958.

FILM CLASSICS CLUB PRESENTATIONS

The Ames Film Classics Club will present the following features on their fall schedule for 1959:

OCT. 7: "M"

OCT. 21: "Open City"

NOV. 4: "Birth of a Nation"

NOV. 18: "Alexander Nevsky"

DEC. 2: "Crime and Punishment"

DEC. 16: "Battle of San Pietro", "Olympia Diving Sequence", and "Potemkin"

Season tickets will be on sale until October 2 through the various Branch Secretaries or other designated representatives for each Branch. Admission will be \$2.50 for the entire season with children under 16 admitted free. No single admission tickets will be sold unless the Club breaks even on season sales. Shows are scheduled for 7:30 on Wednesday nights in the Ames Auditorium.

Armando Lopez, of the 12-Foot, is Chairman of the Film Classics Club with S. C. Sommer, of SSFF, in charge of the ticket sale.

Altos, assigned to Administrative Services as a Clerk-Typist; HOWARD N. MATTILA, graduate of University of Michigan, assigned to EMC as a Mathematician; BRIAN DOOLIN, former Ames employee, assigned to Flight Research as an Aeronautical Research Engineer; EDWARD L. STEPANOSKI, of Ontario, assigned to Dynamics Analysis as an Electronic Instrument Maker; MARY BROWN, a former Ames employee, assigned to the 1- by 3- as a Math Aid; NORMAN GUNTHER, a graduate of Santa Clara University, assigned to WTIR; DOROTHY BUNDY, of Milpitas, assigned as a Clerk-Typist to Administrative Services; GILBERT ROBINSON, graduate of Oregon State College, and a transfer from China Lake, assigned to WTIR as a Research Engineer; DOROTHY JOWETT, a transfer from Fort Mason, assigned to Fiscal as a Cost Accounting Clerk; and GRACE RADTKE, of Santa Clara, also assigned to Fiscal as a Cost Accounting Clerk.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. I OCTOBER 1, 1959 NUMBER 26

PROGRESS REPORT ON AMES CENTRIFUGE

A centrifuge with five degrees of freedom is now in the development stage and will be used in research on piloted flight control problems here at Ames. The five degrees of freedom this motion simulator will have are roll, pitch, and yaw angular motion, vertical translation and rotational motion of the arm.

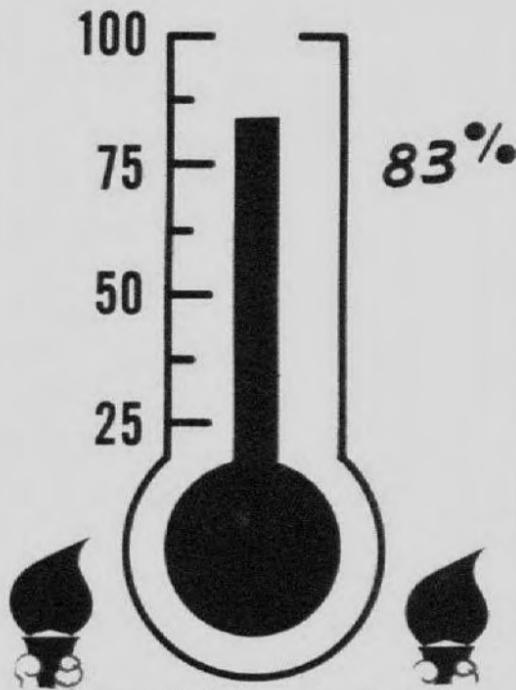
The target date set for completion of the three degree facility, the one with roll, pitch, and yaw angular motion, is January 1960 with completion of all five degrees scheduled for June 1960. The three degree facility can be operated either by itself or in conjunction with the complete five degree motion simulator.

This simulator facility will be one of the first centrifuges built expressly for aeronautical pilot control problems rather than biomedical research. Its purpose will be the evaluation of the abilities of human pilots to control advanced types of satellite or re-entry vehicles such as Dyna-Soar which requires more human pilot control than the current Project Mercury.

This simulator will have a high frequency response to the pilot's controls. Our own test pilots will be the pilot subjects. The centrifuge is designed to give these pilots 6 G's normally and up to 10 G's on overload. Six G's can be obtained from speeds of about 60 miles per hour which is not fast in comparison to other centrifuges used elsewhere for medical research. The acceleration, however, is tremendous. It will take only one second to reach top speed from a dead stop.

An analog computer will be the heart of the simulator control system. Flight control problems will be programmed and the computer will guide the centrifuge through its paces.

AMES GIVERS



Congratulations are in order to the following branches and their Ames Givers solicitors for having reached 100% participation by all employees.

Ad. Services was the first branch to reach 100% participation followed by Personnel, Transportation, Construction Inspection, Engineering Services, and Flight Instrument Research.

There are several branches which have not reported in as yet. The latest Ames-wide participation figures we have received before going to press are on the thermometer above.

This project is unique in the manner in which it has involved many branches. Some directly involved in the centrifuge project are: Mechanical Engineering, Electrical Engineering, Aviation Sheet Metal, Machine, Structural Fabrication, Dynamics Analysis, Flight Research, Flight Instrument Research, and Flight Operations.

NEW NAME FOR HIGH SPEED FLIGHT STATION

The NASA is reorienting its aeronautical Flight Research Program and will conduct most of its future test flight operations at the NASA Facility at Edwards, California.

Simultaneously, the name of the California site has been changed to reflect its mission. Previously called the HIGH SPEED FLIGHT STATION, the facility now is named the NASA FLIGHT RESEARCH CENTER.

Reasons for the reorientation are the need to conduct high speed test operations away from congested air lanes and built up areas, and the economy which will result from centralization.

Both the Langley Research Center in Hampton, Virginia, and the Ames Research Center will continue flight research in the low speed ranges, mainly with VTOL and STOL craft. The Lewis Research Center in Cleveland, Ohio will continue its small scale flight program using low speed propeller and jet aircraft.

A study is now under way to determine which flight research projects at Langley and Ames will be transferred to the Flight Research Center. Most high performance aircraft now at these centers will be returned to the military or transferred to the Edwards facility.

NASA AWARDS CONTRACT FOR GODDARD SPACE FLIGHT CONTROL CENTER

A contract has been awarded by NASA for the third building to be located at its Goddard Space Flight Center, Beltsville, Md.

The \$2,244,695 contract was awarded to Humphreys and Harding Inc., New York, N. Y. The building will house the flight control and range operations functions of the Goddard Center.

(Continued on page 4)

Astroventuring...
★ with walt krumm

The Satellites of the Planets

MOON COMPARED TO OTHER SATELLITES OF THE SOLAR SYSTEM

Satellite	Average Distance From Center of Primary, Miles	Diameter Miles	Siderial Period d-h-m
EARTH			
Moon	239,000	2,160	27-7-43
MARS			
Phobos (1)	5,800	10-12	0-7-40
Deimos (2)	14,600	5-10	1-6-20
JUPITER			
Amalthea (5)	113,000	100-150	0-11-57
Io (1)	262,000	2,000-2,200	1-18-28
Europa (2)	417,000	1,750-1,900	3-13-14
Ganymede (3)	665,000	3,000-3,300	7-1-43
Callisto (4)	1,170,000	2,900-3,200	16-16-32
6	7,120,000	100	250-15-0
7	7,290,000	30	260-1-25
10	7,200,000	20	260-12-0
12 (retro)	13,000,000	14	625-0-07
11 (retro)	14,000,000	18	692-12-0
8 (retro)	14,600,000	30	739-0-0
9 (retro)	14,700,000	15	750-0-0
SATURN			
Mimas (7)	113,000	300-350	0-22-37
Enceladus (6)	148,000	350-450	1-8-53
Tethys (5)	183,000	700-800	1-21-18
Dione (4)	235,000	700-1,000	2-17-41
Rhea (2)	328,000	1,000-1,150	4-12-25
Titan (1)	760,000	3,000-3,500	15-22-41
Hyperion (8)	923,000	200-300	21-6-38
Japetus (3)	2,215,000	1,000-1,500	79-7-56
Phoebe (9)	8,050,000	150	550-10-50
(retrograde)			
URANUS			
Miranda (5)	75,000	200	1-9-56
Ariel (3)	119,000	500-1,000?	2-12-29
Umbriel (4)	166,000	300-700	4-3-28
Titania (1)	272,000	800-1,200	8-16-56
Oberon (2)	364,000	600-1,000	13-11-15
NEPTUNE			
Triton (1)	220,000	2,500-3,100	5-21-3
Nereid (2)	3,500,000	200	359-0-0

THE MOON

We can see from the table above that Mercury and Venus can be automatically eliminated from our discussion of the satellites of the planets as these two planets have no satellites. So we start at the Earth and its satellite, the Moon, about which more has been written than all the others put together. We know more about the face of the moon than we do about parts of Asia, Africa, South America, etc.

A small telescope which magnifies but 100 times will show a spot on the moon only 1223 yards in diameter (less than a mile). At 1000 power, only 122 yards. You could easily see a football stadium on the moon. About 6000 power (which is the highest used) brings the moon to an apparent distance of 40 miles from us.

GREEN CHEESE? No, the moon looks more nearly like a PLASTER-OF-PARIS sphere!

Probably the first thing one notices in an amateur telescope, when viewing the moon for the first time, is the short time it takes for the Moon to move out of the field of view. The magnification emphasizes the speed with which we rotate and it is impressive.

Then, as one continues to look, the craters, maria, mountain chains etc., appear in sharp detail. The craters appear most numerous. These craters are unlike anything on earth and whether volcanic or meteoric in origin should be called walled plains. These craters are so large - 50, 100, 150, etc. miles across - and their vertical walled sides so high - upward of 25,000 feet - sometimes with smaller craters within are the most spectacular features of the Moon. The vast maria, or dark smooth plains are next in prominence, but under high magnifications appear pock-marked with tiny craters and lined. Isolated peaks rise vertically from the surrounding plains - Pico, for instance, is 8,000 feet high. The lofty peaks of the mountains rise to 10,000 feet and "the Alps" for example, has a gorge 80 miles long and from 4 to 6 miles wide. Rays, light streaks, radiating from some of the larger craters with no apparent depth for they cast no shadows. Rills, Walls, Tunnels? Craterlets, etc., etc., to keep the Selenographer forever busy.

More than five hundred of the lunar features have names. The nomenclature is of interest because it seems to immortalize the wise men of old, the ancient astronomers and even contempor-

EDNA MEACHAM
NOW MRS. THOMAS

Edna I. Meacham of Procurement and Supply Branch and George Thomas of Mountain View were wed Saturday, September 5th. The ceremony was held at 2:00 PM in the Church of the Wayfarer in Carmel. They were attended by Walter Thomas, brother of the groom. Mrs. Walter C. Thomas and daughter Carol, of San Jose, were also present for the ceremony.

After spending a few days in Carmel and Monterey, the couple journeyed to Southern California where they visited Knotts Berry Farm and Disneyland.

Edna has been with the Supply Section here at Ames since July of 1946. Her husband is employed by the Lew Jones Construction Co. in San Jose. Their new home is 3523 Machado Ave., Santa Clara.

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Reporters: NASA Employees.

ary Selenographers whose names might otherwise be lost with time.

As the Moon always keeps one side toward us, it is best to learn the features of its surface as they appear on the terminator (line between sunlight and shadow), from night to night, when they are in sharpest contrast. Librations allow us to see more than 50-percent of the moon's surface. We move ahead or fall behind the moon in our path around the sky or the moon moves above or below the ecliptic - in all we see 59-percent of the surface.

The most important function of the Moon (other than its effect upon youth) is its causing of the tides. Without the Moon there would be but insignificant tides. Highest tides occur when the Moon and Sun are on the same side of the Earth (new Moon).

The astronomer has long been interested in the Moon as a space station without an interfering atmosphere for his observing. We won't mention the military significance of such a station and it might have some commercial value. Man on the Moon? We have the know-how and are rapidly working toward the making of this possible.

Ames Closeups



THE HARPERS - BILL & VICKI

In 1931, Charles William Harper, like so many other high school graduates of the depression era, decided a college education was a waste of time and proceeded to set forth to make his mark on the world. After several years on odd jobs that didn't quite establish Bill in a profession with a future, he reconsidered and went back to school. At first, he attended the Boeing School of Aeronautics. This barely whetted his appetite for more learning and in the fall of 1937 Bill enrolled at the University of California.

A native of Winnipeg, Canada, he came to Seattle at 14 and moved to the San Francisco Bay area about two years later. Following graduation from the University of California, Bill applied at Ames in the spring of 1941 for a research position. He had received offers from Douglas and Lockheed; however, Ames prestige (plus higher salary) won out and he joined the staff of the 7x10 under the supervision of Harry Goett. Two years later when Goett became assistant chief of the Full Scale and Flight Research Division, Bill was appointed chief of the 40- by 80- Foot Wind Tunnel where he remained until recently when he assumed the duties of chief of the FS & FR Division when Goett was appointed to Goddard.

Bill's duties in recent years have included ways and means of keeping the 40- by 80- in business. When the space age came upon us many thought that the airplane was on the way out and Bill was faced with the problem of keeping his tunnel from being "turned into a hay barn". In this he was remarkably successful, proving the old tunnel was still capable of providing important information on take-off and landing problems with a large percentage of research being done on VTOL and STOL aircraft. Recent tests included work on jet thrust reversers for jet transports.

Vicki Harper, a native of Cambridge, New York, came to California after graduation from Oberlin College, Ohio, in 1946. While in college she had received correspondence from Lewis Laboratory concerning job opportunities. In the letterhead she noticed Ames Laboratory listed at Moffett Field, California and decided that was where she wanted to work. She applied here and was assigned as a Math Aid in the 40- by 80- where she met Bill. He says that when it looked as though she might quit in 1950, he married her.

Although this didn't keep her in the Branch, Ames didn't lose her completely. She is now a mathematician in Dynamics Analysis.) Vicki says she needed a reliable (but cheap) mechanic to keep her 1934 Jaguar running--so she ac-

cepted.

The Harpers were sailboat enthusiasts when they were first married until disengaging their boat from the mud a number of times dampened their sailing ardor. After forsaking sailing they took a keen interest in sports car racing at various courses--Palm Springs, Pebble Beach, San Diego, Arcata, San Jose. Both Vicki and Bill raced such famous sports cars as MG, Osca, Frazier-Nash, Lotus, Alfa Romeo. They went to Europe to see the auto races and enjoyed the trip so much that they decided to go back again in 1954 to take part in a sports car race being held in Casablanca, North Africa. When they arrived, they found the race had been cancelled due to unrest among the natives. While there, they met the Carlton

Biolettis (he is in High Speed Research Division here) and drove through North Africa, Italy, and France culminating their trip in Paris.

Bill says Harry Goett bribed him with a trip to Europe again in 1957 to get him to present a paper on Boundary Layer Control in England and the Harpers were off on another excursion. On this trip they toured Sweden, Denmark, Germany, Switzerland, Italy and again back to Paris before returning on the SS United States.

Before the Harpers were married, Bill lived with H. Julian Allen for a year. Both were interested in cooking and turned out many unusual dishes. Bill claims he and Harvey taught Vicki everything she knows about cooking, a fact with which Vicki is not in complete agreement. She says that Bill taught her how to make coffee but since their marriage she has single-handedly concocted "Boeur de Bourgogne" and a variety of other tempting dishes from her collection of 75 cook books! Vicki also remembers a Harper-Allen gastronomical failure when the two gourmets came up with a rose petal salad -- Bill is still trying to forget. On their trips through France, the Harpers indulged in the finest foods and wines they ever encountered and strongly recommend France as a "must" for the gourmet.

When they moved into the Los Altos Hills, where they now live, Vicki and Bill took over an old house and proceeded to remodel, rebuild, and eliminate parts of it, until little of the original house remains. They are confirmed patrons of L'Omelette French Restaurant in Palo Alto and when the proprietor installed a new bar top in the restaurant, he offered the old one to Bill. He immediately accepted and proceeded to install it in his living room, after which, he says, they had little time for rebuilding!

In Los Altos Hills, Bill is Vice-President of the Blanco Rancho Water Company. Vicki explains this impressive title means he reads water meters once a month and helps dig up pipes in times of stress. Accused by his neighbors of having the brownest thumb in existence, Bill confesses this is true. But he blames his meager landscaping on the hot weather, lack of water and poor soil conditions. Next time you are out that way, stop by. He won't show you around the garden, but he'll be delighted to sit down with you at his bar.



FAIR NOTES

Mr. John Ramey and Miss Laurel Ann Wheeler, Junior King and Queen for the 15th Annual Santa Clara County Fair, march to the platform for the official Queen's coronation ceremonies. Laurel Ann is the granddaughter of Eugenia McKay, Ames assistant librarian. Ramey is carrying the Queen's official scepter while Miss Wheeler carries the Queen's Trophy.

On the same note we would like to mention that another Ames employee, Harriet Voorhies, Secretary in the 12-Foot Tunnel, had a beautiful flower arrangement at the Fair.

The Ames Mercury Capsule Exhibit was well received. There were always quite a few people standing around the capsule solving the problems of getting the Capsule and the Astronauts out into space and back again.



PARADISE ISLAND

This posed picture of Brenda Reed of the 11' and Charles Davis of Bell Aircraft Co. will act as a reminder to you not to miss the "Shipwreck Dance" with live music and entertainment on October 23rd.

There will be door prizes for the best costumes. A few ideas

WANT ADS...

Wanted--1 or 2 more drivers for car pool from Idlewild-Life Village-Greentree area; 7:30 to 4:00 shift. Call Schallen or Frolich, ext. 226.

Wanted--Etching press, new or used, 16" x 30" bed size, professional type, double geared. Call Marvin Kussoy, ext. 327 or FI 1-4197.

Wanted--Driver to join car pool from San Carlos; 7:30 to 4:00 shift. Call Robert Nellis, ext. 293.

Lost or Strayed--2 1/4" belt sander, Skil #325. Serial number 660067. Contact the 40- by 80- if located.

For Sale--1957 Chevrolet 4-door hardtop Bel Air. White walls, radio & heater, tinted glass, V-8, and automatic transmission. \$1795. Call Mel Fohrman, ext. 327 or DI 4-3805.

For Sale--1957 "T" Bird, with white removable hardtop, straight stick, radio & heater, excellent condition. \$2900. Call YO 7-1275.

For Sale--Four breeding rabbits with aluminum lined pens. \$20. Call Betty Greene, ext. 262.

For Sale--14' Ski boat, trailer, 30 HP Scott outboard with controls. \$650. Call YO 7-1275.

For Sale--1958 Volkswagen, white wall tires, Capri blue color, and only 10,000 miles. Excellent condition. \$1600. Call Ray Mathew, ext. 348 or DA 3-2745.

Wanted--William Ward will accept two or three more students in his oil painting class, painting from the nude, portrait, and still life. Tuesday evenings from 7:00 to 10:00 PM. Studio-482 University, Los Altos, or call WH 8-5888 after 5:00 PM.

Wanted--Ride to work from vicinity of Winchester Road and Cadillac Drive in San Jose. Call D. Jowett, ext. 329.

for appropriate costumes are: buccaneer, shipwrecked sailor, cannibal, south sea island native or the customary sport clothes, of course. Shutter Bugs should bring their flash and camera as there should be lots of good picture material present. Refreshments will be on sale in the lobby.

GOLF

The fifth annual championship tournament of the Ames Golf Club was held at Almaden Golf Course. Otto Meckler, Structural Fab., claimed the Club Championship and Presidents Trophy by posting a 72-stroke score. Howard Matthews, Dynamics Analysis, took the Directors Cup for low net score after defeating Mitch Radovich, Machine Shop, in a nine hole playoff. Feo Corsini, Machine Shop, Mitch Radovich, and Ruben De Los Santos, Aircraft Modification, received trophies as flight winners. First and second runners-up received golf balls for consolation.

	Gross Net	
Low gross	O. Meckler	72 72
Low net	H. Matthews	84 68

Spring Valley will host the Ames Golf Club on October 17th. Call Mitch Radovich, ext. 232, for details.

FREMONT HI ALUMNI PLAN PARTY

A reunion for the Sunnyvale Fremont High School Alumni is being planned for Saturday, October 24. Honoring the classes of '29-'30 and '39-'40, a Homecoming game will be held at the high school that evening.

On Sunday, October 25, a potluck dinner and dance will be held for alumni. The exact time and place will be announced later. Those graduates of Fremont interested in attending may call A. Bogart, ext. 234, or Peter Haro, ext. 352, for complete information.

GODDARD CONTRACT...
(Continued from page 1)

It will be built in two sections. The first, scheduled for completion in the spring of 1960 to allow early occupancy by the Goddard Operations Division, will house tracking, data handling, ground command, and other flight control operations. The second section, to include supporting office space and briefing rooms, is scheduled for completion in the fall of 1960.

Construction is underway on the first two buildings at the site--the Space Projects and Research Projects Buildings--with completion scheduled for mid-1960.

Pending completion of this facility, the Goddard Operations staff is quartered at the Anacostia Naval Station, Washington, D. C.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. I

OCTOBER 15, 1959

NUMBER 27

Glennan Speaks In Detroit

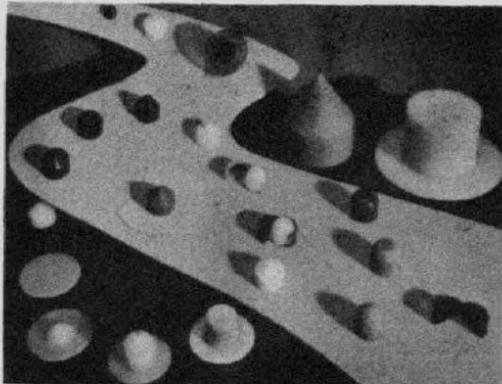


In a speech before the Economic Club of Detroit, Dr. T. Keith Glennan, NASA Administrator, outlined six major reasons for the national space program.

First - There is the matter of competition with the Soviet Union. Achievements in space appear to have made more credible Soviet statements in other fields--economic, political, and ideological. Other countries not knowing fully how these advances were made reason that the Russian peasant hoisted himself by his bootstraps in less than a lifetime, lifting himself to technological peaks in all areas. Uncritically they wonder if other marginal peoples might not be well advised to step in quietly along behind the Communist bandwagon in the hope of being swept on to Utopia, overnight, and practically painlessly.

Second - There are the significant contributions to be made to the defensive strength of the United States. This point will become increasingly valid as the developing technology employed involves increasingly sophisticated methods of guidance, control, phenomena-sensing devices, and data-acquisition systems which the military developmental programs will be able to utilize.

AMES REENTRY SHAPES MAKE MAGAZINE COVER



The above picture appeared in color on the front cover of the September issue of Western Aviation. This interesting pattern shot, prepared by the Technical Illustration Section, shows the collection of various plastic re-entry shapes (those on the ramp) and launcher components being tested in the Atmosphere Entry Simulator here at Ames. The goal of this research is to find the ideal shape which when combined with a light weight missile will give the ICBMs field launch capability.

Third - There is the conviction that space research will turn up great amounts of new information that ultimately will be useful to man. The point is often made that man's progress to date has resulted from his search for new knowledge and the application of that knowledge to his benefit in the eradication of oppressive conditions of labor, in the abolition of routine drudgery, and in the elimination of hunger and disease. It appears reasonably certain that weather forecasting, communications, navigation, and geodesy are fields that will benefit from the use of space as a base for operational systems.

Fourth - We have man's unwillingness to leave unconquered any new and adventurous frontier, and thus the urge that pushes us toward manned space flight. We are con-

Health Benefit Law Passed

The Federal Employees' Health Benefits Bill has been signed by the President and will go into effect in July 1960.

Regulations have not yet been drafted nor have arrangements been made with the various health plans. Questions and answers on the new law are published on page 2. Succeeding issues of the Astrogram will contain further information on the subject.

NOTICE-NO CAMERAS AT PARTY!

In the last issue of the Astrogram, we advised those planning to attend the "Shipwreck Dance" scheduled for Friday, Oct. 23, 1959, to bring their cameras and in so doing, we goofed. The rules prohibiting cameras on the field still apply.

So leave your cameras at home. Come and have a good time (with the assurance that no photographic evidence will be used against you).

BLOOD MOBILE DUE HERE OCTOBER 29

The Santa Clara Valley Blood Center mobile unit will visit Ames Thursday, October 29. All employees who can donate blood are urged to sign the sheet provided for that purpose in each branch chief's office.

All employees and members of their immediate families may obtain blood from the bank if needed. Those who have never donated, as well as previous donors, are encouraged to sign up now.

fidant in our conviction that unmanned, mechanized, and instrumented space vehicles will gain for us vast amounts of very useful information, but manned space flight is the immediate symbol of supreme achievement in the space field.

(Continued on Page 4)

*Astroventuring...**
★ with walt krumm

DEIMOS and PHOBOS
The Satellites of Mars

Lemuel Gulliver wrote of the two moons of Mars over 150 years before the actual discovery of the Satellites. He even described their strange size, position and periods so closely that it amazed the astronomers when these data became known.

The two moons - Phobos and Deimos (See Table in Astrogram Vol. 1, No. 26) are both very small bodies. The largest estimate of their diameters being 10 miles and 35 miles. The distance from the planet's center - 5,800 miles for Phobos and 14,600 miles for Deimos, and the periods -- Phobos, 7h 40m and Deimos, 30h 18m. They both revolve in circular orbits in the plane of the planet's equator.

Phobos revolves faster than the planet's surface (the only satellite to move faster than its primary in the solar system) so that to a Martian it would rise in the west and set in the east 3 times a day.

Deimos revolves with a period so close to the Martian day that it would be above the horizon for more than 60 hours and go twice through its changes of phase between rising and setting.

According to mythology, Phobos and Deimos were attendants to Mars though some students of mythology think they were his sons. In this case, Mars should have more moons for there were more attendants or sons listed.

Magnitudes of 11 and 13 are given for Deimos and Phobos. This is marginal in an amateur telescope (say 12-1/2-inch reflector) and the author has never seen them. In early 1961 when Mars comes close to the earth again we will make a special attempt to see them.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.
Editor: B. P. Wilson
Reporters: NASA Employees.

Personnel-ly Speaking

In answer to many queries concerning the new health benefits law passed by the last Congress, the Astrogram is publishing a series of questions and answers prepared by the Civil Service Commission about eligibility, plans, cost, and other features of the law.

Complete information on health benefits will be issued as details are worked out. Federal employees will be given full information in ample time to enroll for benefits before the law becomes effective in July 1960.

ELIGIBILITY

- Q. Who is eligible for health benefits?
A. Generally speaking, all employees who are eligible for Federal Employees' Group Life Insurance. (One exception to this rule is Tennessee Valley Authority employees; they already have their own health benefits program and cannot be included under this one.)
If you have the group life insurance, you will be eligible for the health benefits coverage.
- Q. I do not have group life insurance because I signed a waiver of coverage. Can I get the health benefits?
A. Yes. The two are separate and not related to each other.
- Q. Will the health benefits program be compulsory?
A. No. You do not have to apply for it if you do not wish to be covered.
- Q. Will health benefits coverage be automatic or will it be necessary to fill out an application?
A. Coverage will not be automatic. Each employee who wishes to be covered will have to apply.
- Q. Should I apply for the health benefits now?
A. No. The health benefits will not begin until the first pay period after June 30, 1960. Before that date, you will be given full information by your employing office and you will have plenty of time to apply.
- Q. If I drop the health benefits coverage I now have, would my eligibility to join the Government-sponsored program next July be affected?
A. No. However, the safest thing is to continue your present health benefits plan until you come under the Government-sponsored program. In this way you will have continuous protection.
- Q. Will the health benefits be only for myself or can my family be covered also?
A. You will be able to enroll for yourself only or for yourself and family.
- (Questions and answers on other phases of the health benefits will be published in the next issue.)

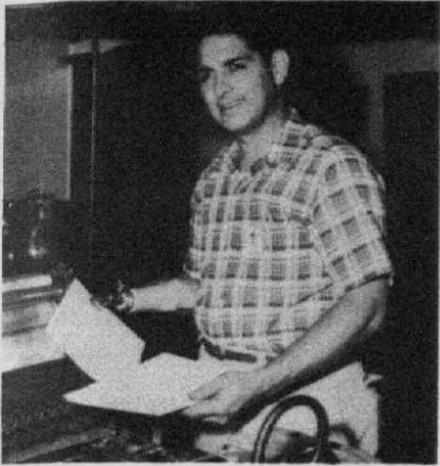
WANT ADS...

- Wanted--Anyone interested in salmon fishing during the month of October. Contact Ed Hoin, ext. 224 or 225.
-
- For Sale--1955 Buick Century 2 door hardtop. Radio and heater, whitewall tires, good condition. \$925. Call Warren Wilson, ext. 241.
-
- For Rent--Room in Cupertino. \$55 per month. Kitchen services available. Prefer female and if so will share my three bedroom home. Call AL 2-6043 after 5:30 PM.
-
- Wanted--Ride to and from work. Vicinity of Coleman and Willow Road in Menlo Park. 8 to 4:30 shift. Call Janice Madsen, ext. 338.
- Wanted--Band saw, 14 inch minimum. Call Millard Thompson, ext. 357 or 244. Leave message.
-
- For Sale--Camera, Rolleicord III with case, Kalart flash gun, sun shade and filters. Like new \$50 call Frank Gibson, ext. 226 or 343.
-
- For Sale--Exceptionally clean 1955 Cadillac 62. Radio and Heater, whitewall tires, power brakes, power steering, tinted glass all around, and crash dashboard. Call AN 9-1477

NOTE OF THANKS

From Frank Mellick of Security for the many kind expressions of sympathy at the loss of his wife.

Ames Closeups...



ROGELIO HERNANDEZ

Rogelio Hernandez is better known as "Roger" here at Ames where he is an Offset Lithographic Pressman in the Reproduction Section of Administrative Services. This month he begins his tenth year at this Center. A native of Laredo, Texas, Roger attended Martin High School there, entering the Army on December 6, 1941 --the day before World War II began.

The Aleutians were his first stop after basic training. From there he embarked to take part in the invasion of the Marshalls, the Philippines and Okinawa as a member of the 7th Infantry Division. During mopping up operations on Okinawa, Roger was hit by a grenade causing the loss of his right forearm and the vision of his right eye. He was flown to Guam and then back to the States for hospitalization and treatment.

Following his discharge from the Army in 1946, Roger married the former Mary Silva of Santa Clara. They returned to Laredo for one year but found the hot climate unsuitable for Roger and moved to Santa Clara. Here he was employed by the Burke Rubber Company of San Jose, but the heating process in the making of rubber articles was again annoying since it heated the prosthetic device Roger had by now learned to use so well. A search for more satisfactory work brought him to Ames where he began as a clerk in the Administrative Services Branch.

During his years at Ames, Roger has been "borrowed" by the Navy Medical Department on several occasions to participate in exhibits and amputee demonstrations. In January, 1956, he was sent to the Latin American Society of Orthopedics and Traumatology meeting in Mexico City. On this occasion Mary went with him,

and like the wives of other participants, toured the city daily, while Roger, involved in the business of the meeting, got to glimpse the city only for brief intervals. He was selected for this meeting since he had become extremely adept at using his prosthesis, had an excellent attitude toward his handicap, and in addition, spoke Spanish fluently.

All Latin American countries, Italy, Portugal, the U. S., and Canada were represented. Roger was a monitor at the meeting, answering questions presented by the Press, and demonstrating the use of artificial limbs. His contributions to the program were so outstanding that he was invited to attend a similar meeting held in Chicago and at Great Lakes in September, 1956. Again, in November of that year, he traveled to Miami, Florida, to participate in a program designed to illustrate the useful place the handicapped person can fill in his community. A fourth such program was scheduled for October, 1957, in Olympia, Washington in which Roger again took part.

Roger, Mary, and their three children, Rogelio, Michael and Judy, (ages 10, 7, and 5 respec-

SOCIAL HOUR TO FOLLOW FILM CLASSICS

A social hour has been scheduled to follow each presentation in the Film Classics series to be shown this season. Beverages will be on sale in the cafeteria.

Sponsorship for the events is under the direction of the Ames Social Club. Everyone is invited.

GOLF CLUB TO ELECT NEW OFFICERS

The Ames Golf Club will accept nominations for candidates for new officers at the Spring Valley Golf Course immediately following the tournament on October 17, 1959. All members are urged to attend and nominate their favorite candidates.

tively) live in Campbell where the children attend St. Lucy's School. When time permits, Roger is an ardent fisherman, visiting the delta region of the Sacramento River near Walnut Grove or going deep sea fishing.

Plans for the future? Roger says he thoroughly enjoys his work at Ames and hopes to be able to continue to do his share in aiding other handicapped workers to find their place in the world.

Ames Entertainment Committee



Shown above are members of the Ames Entertainment Committee making preparations for the Shipwreck Dance. Standing from left to right are Irving Israel, a new member; George De Young; Hy Zimmer; Pearl Pappas, a non-member (mermaid for the Shipwreck Dance); and Barbara Citti, a new member. Kneeling are Burt Skow; Bob George; and Any Thomas, a former member. Absent were Gerald Hall and Richard Kurkowski, the latter also a new member of the Committee.

DR. GLENNAN...
(Continued from Page 1)

Fifth - We have every right to expect that significant improvements in techniques and processes in many fields of industry, unrelated to space exploration, will result from the research and development work undertaken in the nation's space program.

Sixth - There is the possibility of the discovery of life on the far-off planets. Such a discovery could very well become the crowning achievement of man's quest for knowledge in space. Even if there were no other reason for a space program, we would be drawn on by the urge to know whether life, in whatever form, exists on planets other than our own. And there is just enough evidence of the possibility of some kind of living matter on Mars--perhaps only lowly types of vegetation--to make this one of the most fascinating, if long-range, objectives of our space research.

Recent Arrivals...

Employees recently reporting aboard include MELVIN J. FOHRMAN of Chicago, Ill., holder of a Masters Degree from the Illinois Institute of Technology, assigned to Low Density and Heat Transfer as an Aeronautical Research Engineer; MANTA J. SNYDER of Merna, Nebrasks, assigned to Ad Services as a File Clerk; JANICE L. MADSEN of Vallejo, Calif., assigned to Ad Services as a Clerk-Typist; JOHN C. EASLEY of San Bernardino, Calif., assigned to Photo as a Photo Offset Camerman; ROBERTA J. NATION of Sunnyvale, Calif., a former employee reassigned to the 40- by 80-as a Math Aid; ELIZABETH H. THOMSEN of Seattle, Washington, assigned to Personnel as a Personnel Clerk; and PEGGY L. ANGIN of Los Gatos, Calif., a former employee, assigned to Dynamics Analysis as a Clerk-Steno.

AMES EMPLOYEES INVITED TO JOIN CREDIT UNION

The Moffett Field Credit Union has issued an invitation to those Ames Employees who are not currently members of the Credit Union to join now. The election of officers for the next term will be held late this year and employees joining now will be eligible to run for office simply by submitting their names to the election committee headed by Harold Mathews, extension 298.

The Credit Union is sponsoring a course in accounting and business management for its officers at no cost to them. Mr. Mathews points out that here is an opportunity for any Ames employee fortunate enough to be elected an officer to obtain a working knowledge in such fields as parliamentary law and corporate activities at no cost to themselves. He advises, "Join now and take an active part in the organization by running for office."

The election is held at an annual meeting of all Credit Union members. The date and location of this year's meeting will soon be announced.

Shipwreck Dance!

Friday evening, October 23, 1959, 8 to 12 midnight -----

DANCE TO THE CLEFS & JOANNE



Electric Steel Guitar
Accordion
Sax
Clarinet
String Bass
Drums

And a Dream Girl vocalist!

You will enjoy the talents of this orchestra with their complete repertoire of dance music and novelty skits.

9:30---

Floor Show with Sheryn Martin's Aloha Noni dancers (translated--lovely and beautiful). The group will dance and sing the "Hawaiian War Chant", "Hawaiian Vamp", "Amateur Hula", and "Hawaiian Wedding Song". Group manager: Helen Martin

10:30---

Judging of best costumes. Judges: Victoria Malatesta, Stephen Belsley and Ralph Maines.

12:00---

Goodnight to all, and we thank you for coming!

Committee: Hy Zimmer, Chmn.; Andy Thomas and Irving Israel, Program; Bob George, Ticket Sales; Barbara Citti and Dick Kurkowski, Food Sales; George DeYoung and Jerry Hall, Refreshments; Burt Skow, Treasurer, lighting and sound control.

Special credit to the Illustration Section, Model Shop, Maintenance Shop and Photo Lab.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. II

OCTOBER 29, 1959

NUMBER I



DR. VICTORY SPEAKS AT AMES

Dr. John F. Victory, Assistant to the Administrator, NASA, visited Ames on October 12 and 13, 1959. On October 12 he spoke to a group of Ames employees on the subject of his recent trip to Moscow, presenting a colorful report of his impressions of the Russian people.

Dr. Victory also stated that this may be his last major speaking tour since he plans to retire in the not too distant future.

ASTROGRAM STARTS SECOND YEAR

With this issue the Astrogram begins its second year of reporting local and NASA news to Ames employees. From the news story of the unveiling of the X-15 in our first issue to the latest progress report on our centrifuge, we have endeavored to keep you posted on current events.

The Astrogram would appreciate comments from you regarding features you would like to see in forthcoming issues. In addition, if you know of some interesting personality you would like to see featured in the "Ames Closeup" column, or if you have news items concerning Ames employees, just drop the Astrogram a note in the mail.

We wish to express our appreciation to the Photographic Branch, Reproduction and Illus-

Army Ballistic Missile Agency to NASA

The announcement of the transfer of the Army Ballistic Missile Agency at Huntsville, Alabama, to NASA was made last Wednesday, October 21. In a statement for the press, Dr. T. Keith Glennan, NASA Administrator, said:

"I believe the President's action today announcing his intention to transfer the development operations division of the Army Ballistic Missile Agency to NASA is in the best interest of the nation. It will contribute to the strengthening of the national space program. The President's action further clarifies the management organization of the national space program, with NASA now assuming responsibility for development of space booster vehicle systems of high thrust--the field of dominant interest to the personnel of the development operations division of ABMA.

We at NASA feel it most fortunate that this division will become an integral part of our organization. The scientists and engineers of ABMA have earned a worldwide reputation for excellence in their field and have become a national asset.

During the past year, ABMA contributions to NASA space programs have been characterized by dedicated teamwork and cordial relationships. I look forward to this new relationship with real enthusiasm.

Within a few days, a team of specialists will begin working with their counterparts in the Army and other Federal agencies to work out the details of the transfer."

tration for their cooperation in reproducing the Astrogram this past year. Also, we wish to express our thanks to Walt Krumm and the many others who have contributed to the paper.

PICTORIAL DISPLAY OF SPACE VEHICLES AND SATELLITES FEATURED IN ASTROGRAM

Through special permission of the editors of *The Aeroplane and Astronautics*, the Astrogram is reprinting on pages 3, 4, and 5 of this issue a summary of all known major space vehicles and satellites, both actual and envisaged, up to August 13, 1959, as published in their issue of August 28, 1959.

Full data on actual launchings of space vehicles and satellites through August 13, 1959, will be printed in the next issue of the Astrogram. Launchings since August 13 include Discover VI, August 19; the Russian moon rocket, September 13; Vanguard III, September 18; the Russian moon orbiting rocket, October 4; and Explorer VII, October 13.

LANGLEY INSPECTION OUTSTANDING SUCCESS

The annual NASA Inspection was held the week of October 12, 1959, at Langley Research Center. Members of the military, other Federal agencies, educational institutions and the aircraft industry were in attendance at the five day affair. Saturday, October 24, was designated as open house and the facilities were open to the general public.

The Inspection proved to be a complete success in presenting the plans, ambitions and problems in the rapidly accelerating program of space research. Emphasizing the theme of "High Speed Impact", the program covered the research story as it has been written to date by the various NASA Centers.

Attending the affair from Ames were Dr. Smith J. DeFrance, John F. Parsons, Dan Wentz, and Manley J. Hood. Taking an active part in the inspection were Harry DeVoto, Marie St. John, James Summers, Robert Nysmith, Don Gault, and William Carlson.

Astroventuring... ★ with walt krumm

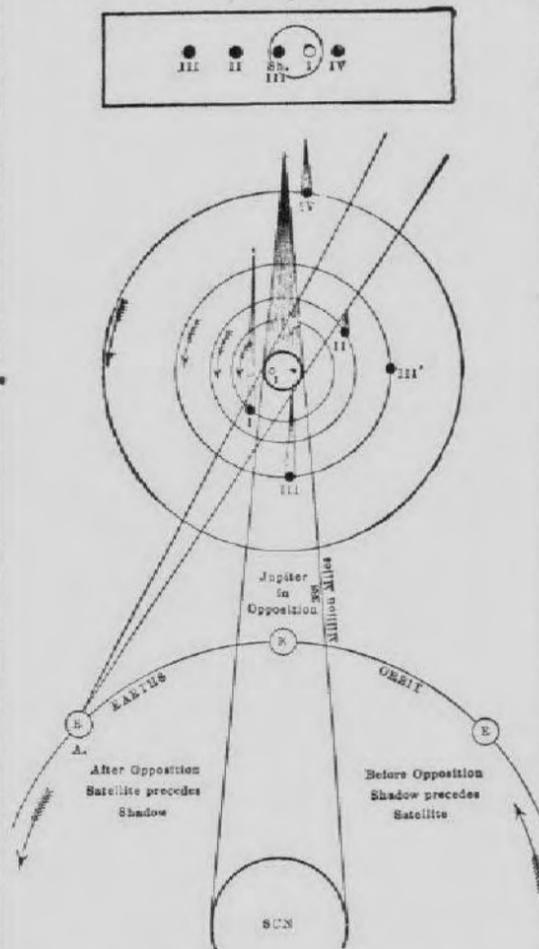
The Satellites of Jupiter

Of all the planets, Jupiter has the moons, and rightly so for you will recall Jupiter is the largest of the planets.

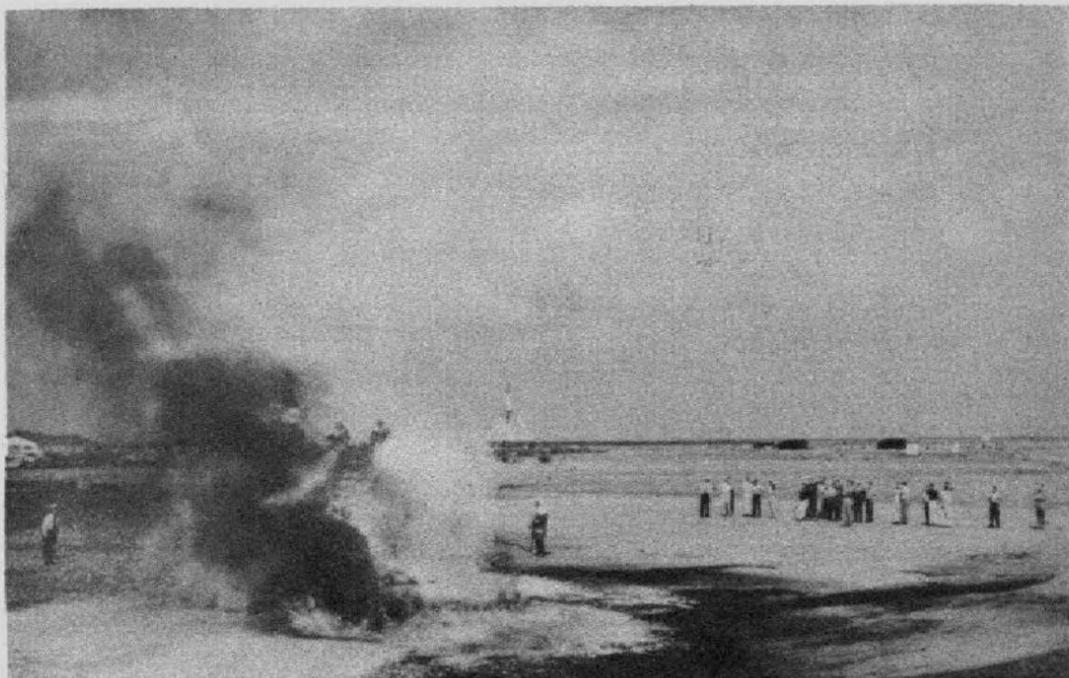
Jupiter has 12 satellites and it is in the author's understanding that Nicholson (of Lick Observatory, who discovered the last three) suspects two more though they have not been confirmed.

Four of Jupiter's moons are of great interest. Io, Europa, Ganymede, and Callisto. Of historic interest because they were the first celestial objects to be discovered by Galileo with the first telescope. Of observational interest because they can be seen with but field glasses or small telescopes. They are of the 5th and 6th magnitude and need only magnification to separate them from the planet, otherwise they could be seen by eye. So rapid are the changes in position of these four moons that in a few hours of observation you can see the change. Sometimes the four will be all on one side of the planet, sometimes two on each side, etc., with eclipses, occultations, transits and transits of

their shadows occurring often. The diagram shown below portrays an instance of this phenomena. A Nautical Almanac contains full information regarding these events.



The fifth moon, Amalthea, (you will see from the table) is so close to the planet it is very hard



DEMONSTRATE FIRE FIGHTING TECHNIQUE

The spectacular fire quenching scene shown above was presented by NAS Fire Chief Frank Hicks for Ames personnel during Fire Prevention Week, October 4 through 10. The demonstration illustrated the use of foam in extinguishing fires resulting from aircraft accidents. Watching the demonstration were Ames Fire Marshal Alfred E. Wilson and his assistants.

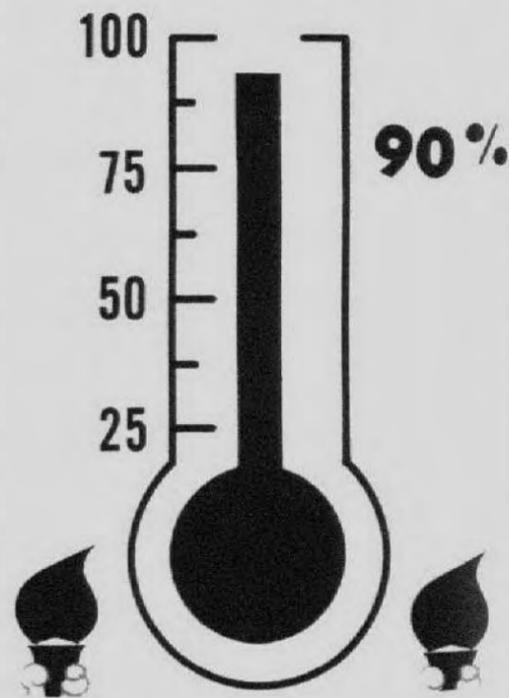
to see even in a large 'scope. Number six is not so difficult but the rest are photographic objects.

The word retrograde, as applied to a satellite, means that the moon revolves around the planet clockwise rather than the "normal" counterclockwise as most satellites do. No explanation has been given for this (except perhaps that they are captured asteroids).

In 1927 Stebbins announced that the four Galilean moons (the first four or the large ones) rotate on their axis in the same time which it takes them to revolve around the planet. This means these four moons keep one side toward the planet just as our Moon does to us.

Got a news item for the next Astrogram? Send it in now to Ron Berlin, Personnel!

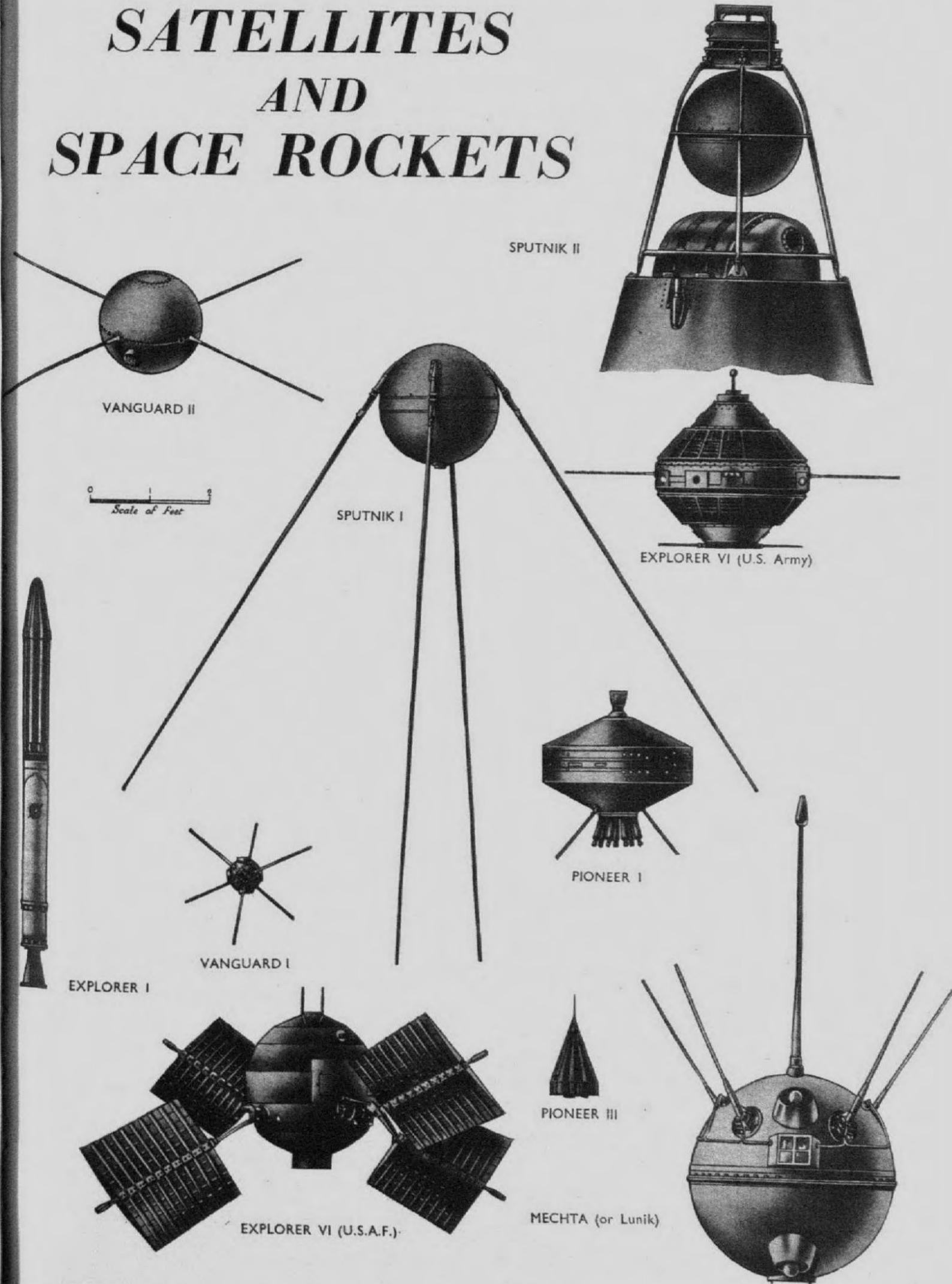
AMES GIVERS

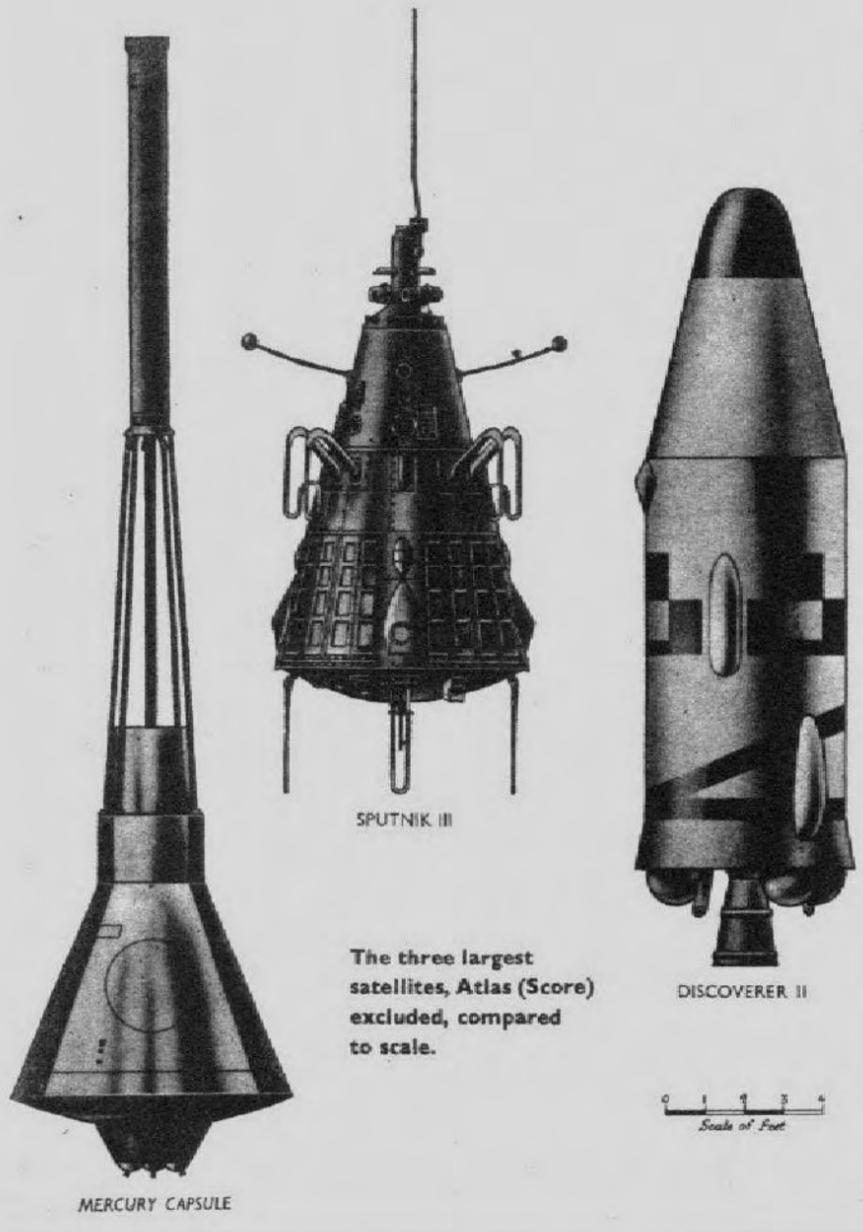


CONGRATULATIONS!

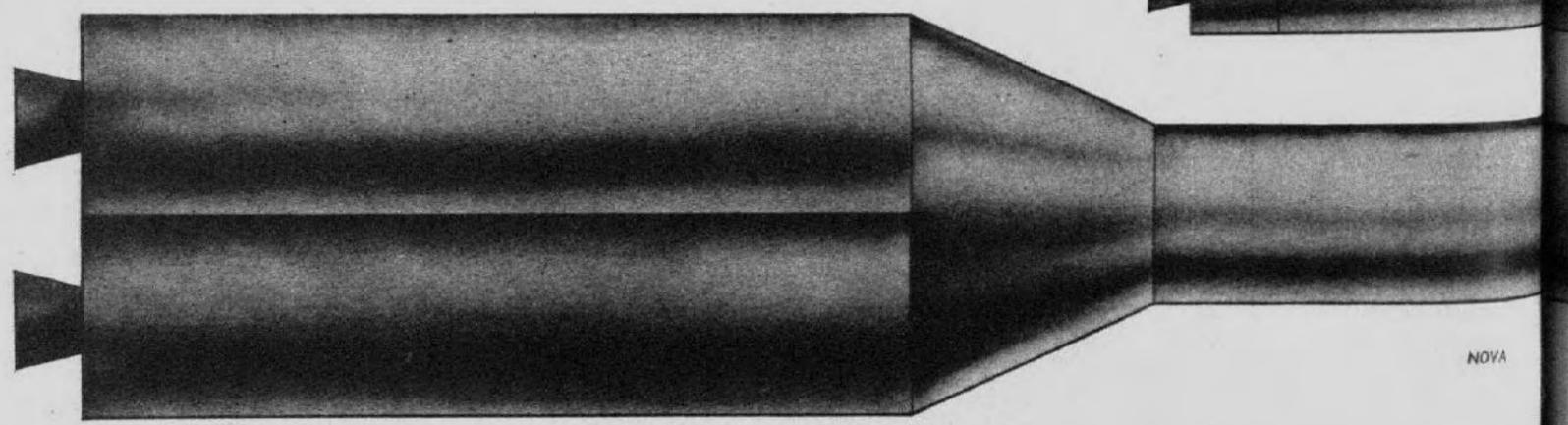
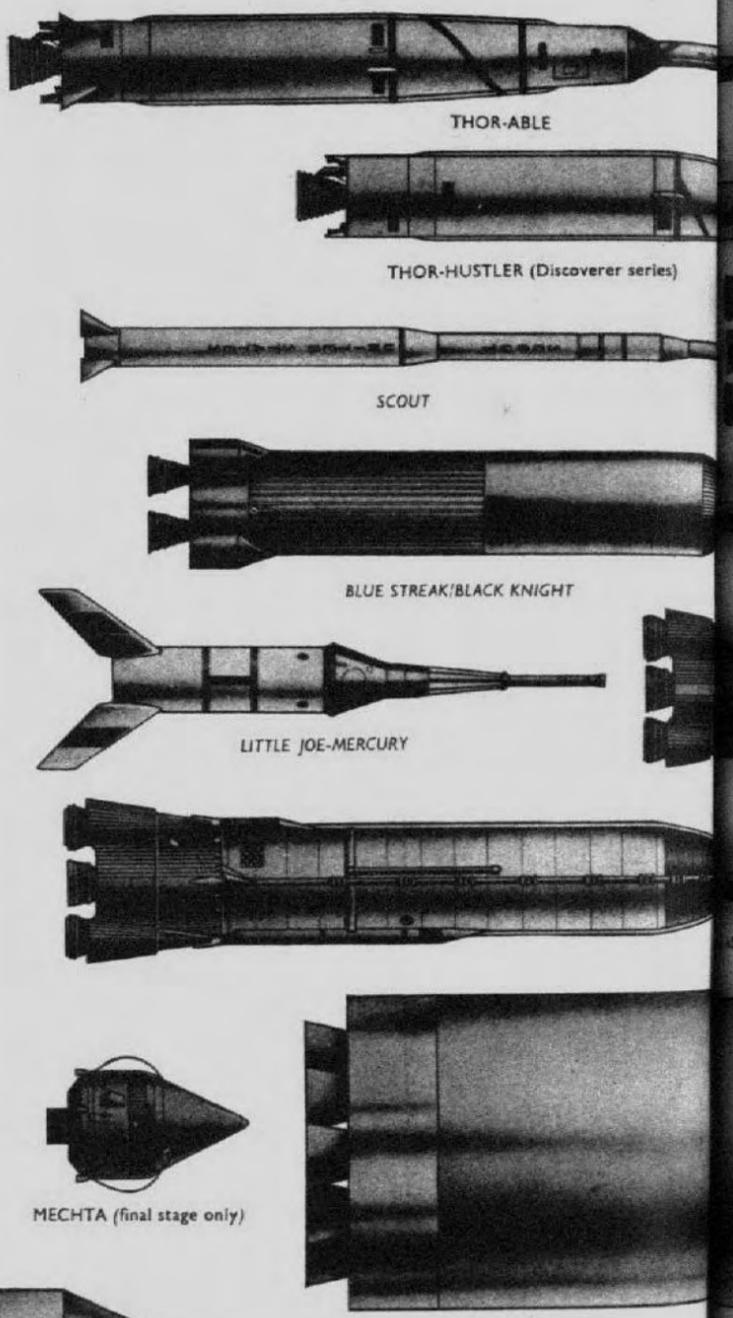
The NASA-Ames Givers Drive, just completed for this year, was a whopping success. Our 90% participation equalled last year's record and the \$12,167 pledged set a new record for the Center. The money will be distributed to the various charitable, youth, and humanitarian organizations according to the wishes of the donors. A report of this distribution will be published in the Astrogram when the results are finally tabulated.

SATELLITES AND SPACE ROCKETS

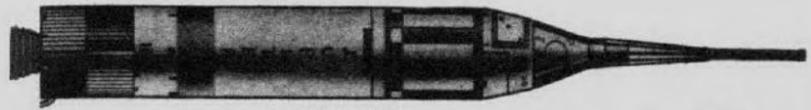




The three largest satellites, Atlas (Score) excluded, compared to scale.



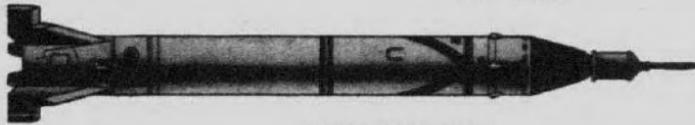
NOVA



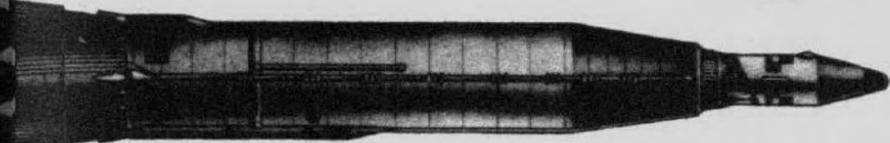
JUPITER-MERCURY



VANGUARD



JUPITER C/EXPLORER



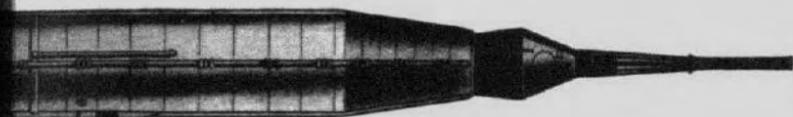
ATLAS-HUSTLER (Discoverer series)



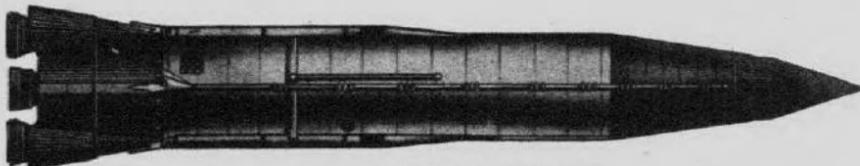
JUNO II



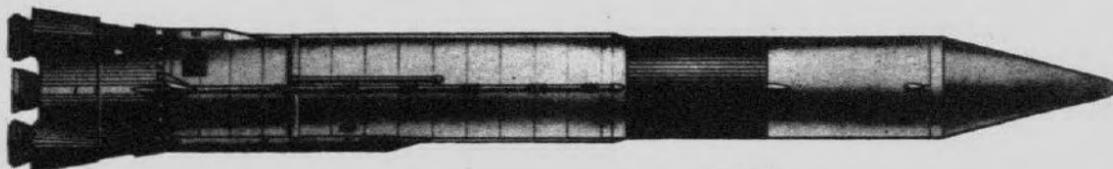
REDSTONE-MERCURY



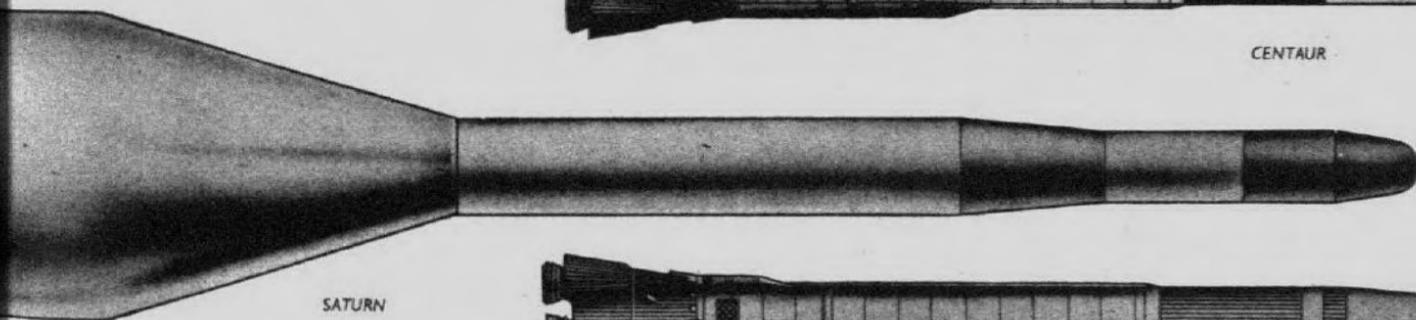
ATLAS-MERCURY



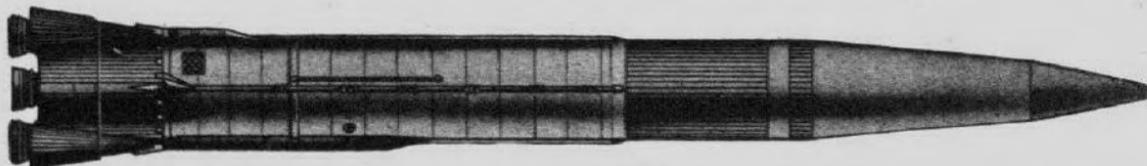
PROJECT SCORE (ATLAS)



CENTAUR



SATURN



VEGA

ASTRONAUTICS HARDWARE -- So swiftly are the space-sciences advancing that it is difficult to keep abreast of developments. On these pages are presented a pictorial analysis of all the major space-vehicles, both actual and envisaged. Next issue we will publish a comprehensive record, with full data, of all the satellites and space-probes launched up to August 13, 1959. Details of vehicles illustrated but not yet launched (italicized above) will be printed on page 6 of the next Astrogram.



Personnel-ly Speaking

In answer to many queries concerning the new health benefits law passed by the last Congress, the Astrogram is publishing the second series of questions and answers prepared by the Civil Service Commission about eligibility, plans, cost, and other features of the law.

Complete information on health benefits will be issued as details are worked out. Federal employees will be given full information in ample time to enroll for benefits before the law becomes effective in July 1960.

ELIGIBILITY (Continued)

Q. What members of a family may be included?

A. Your wife (or husband) and any unmarried children under the age of 19, including adopted children and also stepchildren if they live with you.

An unmarried child may be covered regardless of his or her age if he is incapable of self support because of a disability which began before he reached age 19.

Parents or other relatives cannot be covered even though they may live with you.

Q. Will I or any member of my family have to pass a physical examination to enroll for health benefits?

A. Not if you enroll at the first opportunity. If you enroll later, you may have to furnish evidence of good health.

Q. Can I (or a member of my family) be excluded from joining a plan because I have a hazardous job?

A. No.

Q. Can I be excluded from joining a plan because of my age?

A. Not if you enroll at the first opportunity. Employees and family members will be originally enrolled without regard to their ages.

Q. I am a Government employee and so is my husband. How do we enroll?

A. You may each enroll individually or one of you may enroll for the family. If you have children and one of you enrolls for the family, your children would also be covered. If you each enroll individually, your children would not be covered.

PLANS

Q. What kind of health benefits plans will be offered?

A. Every employee will have a choice between two types of Government-wide plans. One will be the service benefit type and the other will be the indemnity benefit type.

Many employees will have a further choice. Instead of joining one of the Government-wide plans, they will be able to enroll in an employee-organization plan or in a group-practice prepayment plan or in an individual-practice prepayment plan.

Q. What is the Government-wide service benefit plan?

A. This is one of the two Government-wide plans which any employee may join. It is a plan provided through Blue Cross-Blue Shield organizations and is similar to the kind of plan furnished by Group Hospitalization, Inc., and Medical Service of the District of Columbia. It is called a "service benefit plan" because it works on the principle of paying benefits directly to the doctor or the hospital which supplies the service to you.

Q. What is the Government-wide indemnity benefit plan?

A. This is the other Government-wide plan which any employee can join. It is the type of plan which is usually provided by commercial insurance companies.

It works on the principle of paying cash benefits directly to you--in other words, indemnifying you--although, usually, arrangements can be made for the plan to pay the hospital or doctor directly.

Q. What is an employee-organization plan?

A. There are several national employee organizations which sponsor health benefits plans for their members. The Civil Service Commission may approve such plans and any employee who is a member of an organization that sponsors a plan approved by the Civil Service Commission may enroll in the approved plan and get a Government contribution toward its cost.

Q. What is a group-practice prepayment plan?

A. There are a limited number of such plans. They operate only in certain areas, for example, the Group Health Association in Washington, D. C., the Health Insurance Plan in New York, and the Kaiser Foundation Health Plan in California. These plans have their own medical center or centers and their own doctors who practice as a group. If you live in an area where there is a group-practice prepayment plan and if it is approved by the Civil Service Commission, you may choose to join it instead of one of the other plans.

Q. What is an individual-practice prepayment plan?

A. This is a plan where doctors agree to accept regular payments from the plan instead of the usual charge to the patient. Like the group-practice plans, they operate only in certain areas. An example of these plans is the Group Health Insurance Plan in the New York City area. If you are in a locality which has such an approved plan, you may choose to join it instead of one of the other plans.

(Questions and answers on other phases of the health benefits will be published in the next issue.)

Ames Closeups...



M. HELEN DAVIES
Personnel Officer

Known to just about every employee at Ames, M. Helen Davies (the "M" is for "Mary" which she would just as soon forget) has been in Personnel since 1940. Having worked previously for H. Woods Co., a glove firm in San Francisco, she was enticed into applying for a Federal position by her sister who had been employed for some time by the forestry service. On arriving at Ames, she joined about thirty other employees in a construction shack which housed the administrative offices. She says she was among the few native Californians at Ames--most of the employees were homesick Virginians.

Born and raised in San Francisco, Helen is a true-blue native to her home town. In 1940 when she was certified to Ames by the Civil Service Commission, she wasn't quite sure where Moffett Field was located. When she discovered it was way down the Peninsula, she couldn't bear moving from San Francisco. So, she commuted for a full year before finally giving in and promising on San Mateo as a nice half-way point between the city and Ames.

In her 19 years at Ames, Helen has witnessed such improbable situations as recruiting engineering talent with no difficulty--recruiters currently find this hard to visualize--and Navy Lieutenants taking orders from Chief Petty Officers. The latter came about during the war years. The Armed Forces were

drafting research personnel and Ames was about to go out of business--until an Army-Navy-NACA agreement was reached whereby the scientists were assigned to the "Ames Detachment". In the transfer, some of Ames supervisory personnel failed to meet the rigid physical requirements for officers. Most of the younger engineers did meet the requirements and the unique situation developed.

Away from Ames, Helen enjoys spoiling her niece's young son, Michael David Stevens, who lives nearby in Burlingame, and planting flowers in her niece's garden (which, she gleefully admits, she doesn't have to weed). She is secretary of the San Jose Chapter of Zonta International, a service club of executive and professional women, and chairman of the Amelia Earhart Committee of the organization, which sponsors scholarship awards for women engineers. One evening each week Helen serves as a volunteer worker at the Travelers Aid booth at the San Francisco Municipal Airport. In her eagerness to help distressed travelers, Helen says she has managed to round up stray children (giving one to the wrong mother on one occasion), almost lose a non-English speaking citizen of Portugal, and otherwise keep the Airport on an even keel. In the case of the Portuguese traveler, Helen met three planes, looking for a dark-eyed, dark-haired individual who turned out to be a blue-eyed blond and was only saved by a fellow traveler who could speak Portuguese.

To get away from it all, Helen often takes to the mountains. She has covered all the trails traversing Mt. Tamalpais. This summer she assailed the High Sierra country, taking the loop trip back into the high camps. In a more domestic mood at home she spends her time cooking, taking particular pride in her wine cookery--dishes that simmer long over a low heat to delight the gourmet. She says she loathes TV dinners and similarly prepared foods.

Even though she may be away from work, she still manages to keep Ames needs foremost in mind. On her hiking trip this summer, for instance, Helen's guide was a mechanical engineering student from the University of California. And right there, high in the granite peaks, beneath silent glaciers, and an azure blue sky, Helen recruited him for Ames when he graduates from UC.

WANT ADS...

For Sale--Peri-50 Hi-Fi. Fifty watt amplifier, mod. PPC-203, freq. response 6 cps-60KC within .5 db. Power response 20 cps within 1 db of 50 watts. Distortion 1%. Kit price \$49.50; wired and tested, \$69.50. Original kit price, \$69.75. Glen Baker, ext. 352, or DA 3-3221 after 5 p.m.

For Sale--Simmons Hide-a-bed, platform rocker, wrought iron divan. Any reasonable offer accepted. Phone CH 5-1141 after 5 p.m.

For Sale--1957 Triumph TR-3. Black with white top and tonneau, wire wheels. Best offer, call Jim Nute ext. 241 or DA 6-8039

For Sale--Gas Range, "Spark". \$10.00 Call AL 2-2616 after 4:30 p.m.

For Sale--Memberships in the Ames Flying Club. Cessna 120 hangared at San Jose Municipal Airport. Hourly flying rate \$3.60; monthly dues \$5.00. Membership \$245. Contact Walt McNeill or Joe Douvillier, Flight Research, ext. 206.

For Sale--Immaculate 36" gas stove and griddle (36" oven) 2 years old in excellent condition. \$75.00, ext. 293 or 821 Arroyo Road, Los Altos.

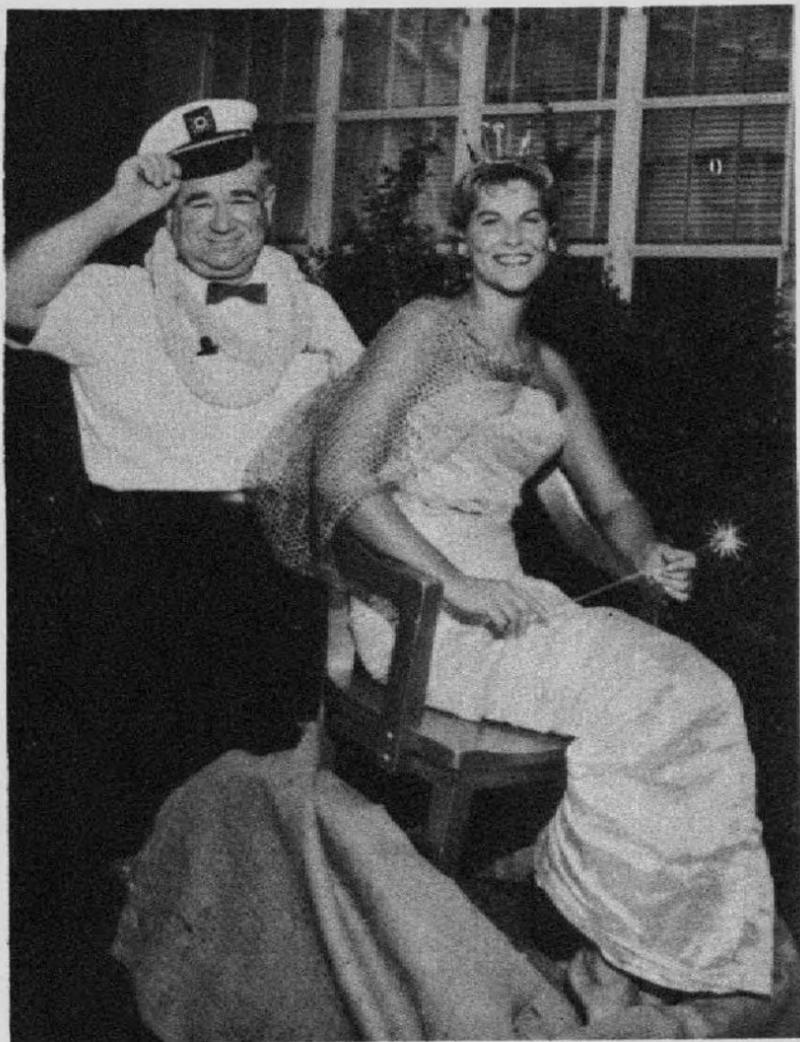
For Rent--Apartment in Santa Clara; 4 rooms, 2 bdrms. unfurn., very clean and spacious. Carport, 220 volt wiring. Adults. \$85.00, ext. 334, or ANDrews 4-4814 after 5 p.m.

For Sale--1951 Dodge 4-Door sedan. Radio & heater. Good Shape. \$185. Call Joseph Quartuccio, ext. 219.

For Sale--Parakeet cage - 15 inch diameter, 44 inches high - plus 2 parakeets. Aquarium - 5 gal. capacity, light hood. Louvered panel screen, 5 louvered panels, each panel 16x63. Call V.A. Norling, ext. 230

For Sale--30 inch Occidental gas range. Excellent condition. \$75. Call Ron Berlin, ext. 385.

Have something to buy, sell, rent or trade? Send your ad in now to the Astrogram!



IF YOU MISSED THE SHIPWRECK DANCE

"Captain" Hy Zimmer escorted beautiful mermaid Ronni McCoy around Ames last week to remind everyone to attend the "Shipwreck Dance" last Friday night. On the right, lucky Zimmer and beachcomber Bob George serenade lovely mermaid

Stormy Morgan who toured various branches the previous day. Ronni and Stormy, formerly employed at Travis Air Force Base, are recent arrivals at Ames and normally are found at the Security Office and Photo Branch, respectively, when not engaged as mermaids.

CERAMICS ENGINEERING TECHNOLOGY

Eleven representatives of industry met with Foothill College officials this week to launch a new pilot program in ceramics engineering technology.

During the luncheon meeting, which was held Tuesday (Oct. 20), the critical need for ceramics engineering technicians was emphasized, according to Dr. Nathan H. Boortz, director of technical education at the college. The group agreed that it was possible to train a ceramics technician in a two years period and that this type of training was in keeping with Foothill's technical standards.

Ceramics engineering technicians work on such highly skilled aspects of national defense projects as nose cones and components for missiles, Dr. Boortz said.

The representatives from industry, who will comprise the advisory committee for the new

program, organized a sub-committee composed of college and industry officials which will study further the project before reporting back to the total group. The program will eventually be submitted to the federal government under the National Defense Education Act, Dr. Boortz said.

Recent Arrivals...

New employees reporting for duty within the last two week period include the following: Edward Moran, of San Francisco, assigned to the 10- by 14-, as an Aero. Test Technician; Ronni McCoy, of Fairfield, California, assigned to Security as a Security Clerk; Stormy Morgan, also of Fairfield, assigned to Photo as a Clerk Typist; Toshi Kato, of San Francisco, assigned to Administrative Services as a Clerk Steno; Bass Redd, of Bryan, Texas, assigned to the 11-Foot as an Aeronautical Research Engineer; David

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees.

Garner, of Sunnyvale, assigned to the Electronic Instrument Branch as an Electronic Instrument Maker; Bonnie Ribera, of San Carlos, assigned to Photo as a Photo Negative Compositor; Robert Davidson, of Napa, assigned to Engineering Services as a Mechanical Engineer; Denver Stapleton, of Strongsville, Ohio, assigned to the 10- by 14- as a Wind Tunnel Mechanic; and Kay Harper, of Cupertino, a former employee, assigned to Flight Research as a Math Aid

The

Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOL. II

NOVEMBER 13, 1959

NUMBER 2

NASA LAUNCHES INFLATABLE SATELLITE



A sphere as large as a ten-story building was inflated 250 miles above the Atlantic Ocean late last month by the NASA. The huge balloon, glistening in the evening sun, was visible for hundreds of miles.

The aluminum-coated sphere, similar to the ones pictured above, was the largest but not the heaviest object placed in space so far. The sphere remaining aloft for only half an hour, was not designed to go into orbit around the earth. The test was conducted as a prelude to the launching of such inflatable spheres as earth satellites.

The NASA plans to use such balloon satellites as reflectors for a new and potentially revolutionary form of space communications. By bouncing radio signals off the spheres, it should be possible to transmit signals for thousands of miles. Scientists hope to build a worldwide television network around such reflecting satellites.

Preparations are under way to establish a transcontinental radio link between California and New Jersey by means of these passive communications satellites. The first launching of such a satellite is expected late this year or early next year.

The purpose of this firing was to test the processes used for ejecting the sphere from its container and inflating it in space. The size of the sphere makes it impossible to test in a ground facility.

The sphere is made of mylar plastic coated with aluminum.

The skin is only a five-hundredth of an inch thick. The aluminum surface provides a high degree of reflectivity for light and radio signals. The "glancing lights" and "shooting sparks" reported by some observers apparently was caused by the fact that the sphere, as it was being inflated, had a crumpled surface that reflected light in different planes.

When aboard the rocket the sphere was folded up in a magnesium container 26½ inches in diameter. Once in space the sphere was ejected from the container, and inflation was be-

AMES ENTERTAINMENT COMMITTEE

The Ames Entertainment Committee has announced that the Shipwreck Dance was a huge success and judging from the pictures on the bulletin board everyone must have had a grand time. The new officers of the Committee are Hy Zimmer, Chairman; Irving Israel, Secretary; Dick Kurkowski, Treasurer; and Barbara Citti, Decorations Chairman.

The Annual Christmas Party has been set for Saturday, December 19th, from 10AM to 3PM at the rear of the Aviation Sheet-metal Shop, Hangar 2.

SAN JOSE STATE NOW ACCREDITED

For the first time, San Jose State College graduates in civil and electrical engineering will be fully-accredited engineers. The new recognition came from the Engineers' Council for Professional Development in New York.

Currently, there are twenty professional Ames employees attending San Jose part-time under the NASA graduate study program.

gun as the residual air inside it, at sea-level pressure, expanded. Inflation was completed by the release of four pounds of water contained in two plastic bags. In the near-vacuum of space the water quickly vaporized and inflated the 523, 998 cubic-foot sphere.

The inflatable sphere satellite was originally conceived by the Space Vehicle Group at Langley Research Center, Virginia. The group is headed by William J. O'Sullivan Jr.

Astroventuring...

★ with walt krumm

THE SATELLITES OF SATURN

Saturn has 9 moons - Mimas, Enceladus, Tethys, Dione, Rhea, Titan, Hyperion, Japetus, and Phoebe - and the countless meniscal satellites that form the rings.

Mimas, 117,000 miles from Saturn's center has a 22-1/2 hour period and is just 30,000 miles beyond the rings.

Satellites numbers 2, 3, 4, 5, 6, 7, and 8 are at distances up to 2-1/2-million miles and have periods to 80 days.

Titan is larger than our own Moon and holds the distinction of being the only satellite which is known to possess an atmosphere, methane.

The lonely, anti-social Phoebe, at 8,000,000 miles and 564-day period, was a curiosity when first discovered. It was then the only satellite with retrograde motion.

It is thought that Saturn's moons keep one side toward the planet because they change brightness as they revolve (Japetus changing brightness by a factor of 5).

Two of Saturn's moons - Titan and Japetus - are easily seen in a small telescope. A 10" reflector will show 5 (Rhea, Tethys and Dione with the other two) but the planet itself should be screened from view to see these readily.

And - while you are viewing - don't forget to observe the divisions in the rings (Cassini's division is readily observable).

THE SATELLITES OF URANUS AND NEPTUNE

Uranus has 5 satellites that revolve very nearly in the plane of the planet's equator. They are of average size - 400 to 1000 miles in diameter, and from 76,000 to 364,000 miles from the planet (see table in Astrogram, Vol 1, No. 26).

You will recall that the poles of Uranus were tipped 82° which would put the orbits of the satellites nearly flat to us at times (1945) and they would appear to circle the planet. Sometimes they would appear edgewise (1922 and 1966) and they would appear as if in straight lines as do the Galilean moons of Jupiter.

These moons of Uranus - Miranda, Arid, Umbriel, Titania,

Personnel-ly Speaking

In answer to many queries concerning the new health benefits law passed by the last Congress, the Astrogram is publishing the third series of questions and answers prepared by the Civil Service Commission about eligibility, plans, cost, and other features of the law.

Complete information on health benefits will be issued as details are worked out. Federal employees will be given full information in ample time to enroll for benefits before the law becomes effective in July 1960.

BENEFITS

Q. What benefits will each of the plans offer?

A. The law does not spell out the exact benefits of any of the plans so this question cannot be specifically answered at this time. The law does require each of the two Government-wide plans to offer the employee a choice or option between two levels of benefits.

The employee organization plans and the group- and individual-practice prepayment plans may or may not offer options between various levels of benefits.

Q. What will be the difference between the two options offered by each of the Government-wide plans?

A. There will be two main differences. First, one option will offer lesser benefits than the other and second, the option with lesser benefits will also cost less.

However, all options of the Government-wide plans will include both "basic health" and "catastrophic" coverage.

Q. What is meant by "basic health" coverage which each of the options under the Government-wide plans must include?

A. This is the kind of coverage most people now have. It gives some protection against the more common kinds of hospital and surgical expenses.

Q. What is meant by "catastrophic" coverage which each of the options under the Government-wide plans must include?

A. Catastrophic coverage gives some protection against the more unusual and heavy expense of a serious or prolonged illness. It often includes such costly items as long periods of hospitalization, expensive operations, private nurses, medical care received at home, drugs and medicines, medical supplies and equipment, etc.

Q. Will the employee-organization plans and the group- and individual-practice prepayment plans include catastrophic coverage?

A. Many of these plans may very well do so, but unlike the Government-wide plans, the law does not require them to include catastrophic coverage.

and Oberon - are too small to be seen in an amateur telescope because of their distance from us.

Neptune has two moons - Triton and Nereid.

Triton is approximately the same distance from Neptune as our Moon is from us but because Neptune is 17 times as massive as the earth, Triton's period is slightly less than 6 days. Triton's motion is retrograde but the planet Neptune is direct.

Neptune's second moon, Nereid, is too faint for existing telescopes and was found photographically (both are too faint for the amateur telescope).

Pluto has no satellites. There is no reason to believe our current list of satellites is complete, particularly as the last was discovered as recently as 1951. What

Recent Arrivals...

New employees recently reporting to work at Ames include JUANITA R. NOBRIGA of Winters, California, a graduate of San Jose State College, assigned to the 9x7 as a Mathematician; MARIE H. MARICH of Saratoga, California, assigned to the 11' as a Math Aid; PEGGY J. ENGLEBRETSON of Santa Clara, Calif., assigned to Personnel as a Clerk-Typist; FRANCES R. RADFORD of San Francisco, Calif., assigned to Ad Services as a Clerk-Typist; and SHIRLEY A. HICKERSON of Memphis, Tennessee, assigned to Personnel as a Clerk-Typist.

others there may be, would necessarily be small and await photographic discovery.

RECORD OF ALL KNOWN SPACE-VEHICLE LAUNCHES

Corrected to August 13, 1959

Name	Lifetime	Shape and size	Weight	Shell material	Experiments	Radio			Orbit			Launching site and vehicle		
						Frequency	Lifetime	Power supply	Antennas	Peri-gee	Apo-gee		Period	Inclination to equator
Sputnik I	Oct. 4, 1957, to Jan. 4, 1958	Sphere, 22.8 in. dia.	184 lb.	Aluminum alloys	Internal temperatures, pressures and "other data." lost. container sep. from final stage.	(a) 20,005 mc. (b) 40,002	(a) and (b) stopped Oct. 27, 1957.	Chemical batteries.	4 spring-loaded whip, 7 ft. 10 $\frac{1}{2}$ in., and 9 ft. 6 in.	miles 142	miles 588	min. 96.17	deg. 65.0	*Modified Soviet I.R.B.M.?
Sputnik II	Nov. 3, 1957, to April 14, 1958	Cone-tipped cyl., 75 ft. long (est.)	1,120 (equipment plus dog)	Aluminum alloys	Physiological reactions of test animal (dog "Laika"), cosmic rays, solar ultra-violet and X-radiation, temperatures and pressures.	(a) 20,005 (b) 40,002	(a) and (b) stopped Nov. 10, 1957.	Chemical batteries.	Not disclosed	140	1,038	103.7	65.0	*Modified Soviet I.C.B.M.?
Vanguard (TV-3)	Dec. 6, 1957, to 0	Sphere, 6.4 in.	3 $\frac{1}{2}$	Magnesium-aluminum-silicon monoxide	Micrometeor impact and geodetic measurements.	(a) 108.00 at 10 mw. (b) 108.03 at 5 mw.	(a) Not applic. (b) } applic.	(a) Mercury battery. (b) Six groups of solar cells.	1 turnstile, 1 dipole, with total of 6 x 12 in. rods.	FAILED TO ORBIT (Vehicle lost thrust at take-off; consumed in flames.)	FAILED TO ORBIT	FAILED TO ORBIT	FAILED TO ORBIT	†U.S. Navy TV-3, 3 stages, length 72 ft., launch wt. 22,600 lb. Stage 1: 44 ft. long x 45 in. dia., s.t. 28,000 lb. x 142 sec. Stage 2: 31 ft. long x 32 in. dia., s.t. 7,500 lb. Stage 3: 5 ft. long x 20 in. dia., s.t. 2,300 lb.
Explorer I	Jan. 31, 1958 (3 to 5 years est.)	Cone-tipped cyl., 6 ft. 8 in. x 6 in. dia.	30.8 (including stage four rocket case) 18.3 equipment	Steel with 8 aluminum oxide strips	Cosmic rays, micrometeors, internal temperatures, nose cone, front skin and rear skin. (Radiation belt discovered girdling equator.)	(a) 108.00 at 10 mw. (b) 108.03 at 60 mw.	(a) stopped May 23, 1958. (b) stopped Feb. 11, 1958, began again Feb. 24, stopped finally Feb. 28, 1958.	Mercury batteries.	1 turnstile with 4 whip elements 22.5 in. long. 1 dipole using skin of satellite.	224	1,573	114.8	33.34	†U.S. Army Jupiter C, 4 stages, length overall 68.6 ft. Stage 1: elongated Red-stone. Stage 2: 11 scaled-down Sergeants. Stage 3: 3 scaled-down Sergeants. Stage 4: 1 scaled-down Sergeant.
Vanguard (TV-3 backup)	Feb. 5, 1958, to 0	Sphere, 6.4 in.	3 $\frac{1}{2}$	Magnesium-aluminum-silicon monoxide	Micrometeor impact and geodetic measurements.	(a) 108.00 at 10 mw. (b) 108.03 at 5 mw.	(a) Not applic. (b) } applic.	(a) Mercury battery. (b) Six groups of solar cells.	1 turnstile, 1 dipole, with total of 6 x 12 in. rods.	FAILED TO ORBIT (Control system failure after 57 sec.; rocket broke in half.)	FAILED TO ORBIT	FAILED TO ORBIT	FAILED TO ORBIT	†U.S. Navy TV-3 (backup). Same as TV-3 (Dec. 6, 1957).
Explorer II	March 5, 1958, to 0	Cone-tipped cyl., 6 ft. 8 in. x 6 in. dia.	31.5 (including stage four rocket case) 18.83 equipment	Stainless steel	Cosmic rays, micrometeors.	(a) 108.03 at 60 mw. (b) 108.00 at 10 mw.	(a) Not applic. (b) } applic.	Mercury batteries.	2 dipole using skin of satellite itself.	409	2,453	134.18	34.3	†U.S. Army Jupiter C. Same as Explorer I vehicle (Jan. 31, 1958).
Vanguard I (TV-4)	March 17, 1958 (200 to 1,000 years est.)	Sphere, 6.4 in.	3 $\frac{1}{2}$	Magnesium-aluminum-silicon monoxide	Temperatures and geodetic measurements.	(a) 108.00 at 10 mw. (b) 108.03 at 5 mw.	(a) stopped April 5, 1958. (b) Indefinitely.	Mercury battery. (b) Six groups of solar cells.	1 turnstile, 1 dipole, with total of 6 x 12 in. rods.	121	1,746	115.87	33.4	†U.S. Navy Vanguard I. Same as TV-3.
Explorer III	March 26, 1958, to June 27, 1958	Cone-tipped cyl., 6 ft. 8 in. x 6 in. dia.	31 (including stage four rocket case) 18.56 equipment	Steel with 8 aluminum oxide strips	Cosmic rays (with tape recorder), micrometeors, internal and external temperatures.	(a) 108.00 at 10 mw. (b) 108.03 at 60 mw.	(a) Telemetering and beacon signal stopped May 10, 1958; beacon transmitted again May 15 to June 16. (b) First stopped May 14; responded erratically May 22 to June 5, 1958.	Mercury batteries.	2 dipole, using skin of satellite itself.	121	1,746	115.87	33.4	†U.S. Army Jupiter C. Same as Explorer I.

Vehicle	Launch Date	Dimensions	Weight	Materials	Environment	Power	Telemetry	Life	Locking	Orbit Status	Notes
Vanguard (TV-3)	April 28, 1958, to 0	Sphere, 20 in. dia.	21.5	Highly polished silicon monoxide-coated magnesium	Solar X-radiation and space environment.	(a) 108.00 at 80 mw (tracking and telemetry)	Not applicable	Mercury batteries	4 spring-lock rods.	FAILED TO ORBIT (Final stage did not ignite.)	†U.S. Navy Vanguard. Same as TV-3.
Sputnik III	May 15, 1958 (17 months e.t.)	Cone, 11 ft. 9 in. x 5 ft. 8 in. (ovoid base)	2.925	Aluminum alloys	Atmospheric pressure and composition, concentration of positive ions, satellite's electrical charge, Earth's magnetic field, intensity of Sun's corpuscular radiation, composition and variations of primary cosmic rays, micrometeorite, temperature measurements.	(a) 20.005 (transmission at 40.07 is harmonic of 1st)	(a) Indefinitely.	(a) Chemical batteries. Solar cells.	Folded dipole and trailing rods.	135, 1.167, 106.0, 65.3	*Modified Soviet I.C.B.M.?
Vanguard (SLV-1)	May 27, 1958, to 0	Sphere, 20 in. dia.	21.5	Highly polished silicon monoxide-coated magnesium	Solar Lyman-Alpha radiation and space environment.	(a) 108.00 at 80 mw, continuous (tracking and telemetry)	Not applicable.	Mercury batteries	4 spring-lock rods.	FAILED TO ORBIT (2nd stage did not cut off properly, causing injection of final stage at wrong angle.)	†U.S. Navy Vanguard SLV-1. Same as TV-3.
Vanguard (SLV-2)	June 26, 1958, to 0	Sphere, 20 in. dia.	21.5	Highly polished silicon monoxide-coated magnesium	Solar x-rays	(a) 108.00 at 80 mw, continuously (tracking and telemetry)	Not appl.	Mercury batteries	4 spring-lock rods.	FAILED TO ORBIT (2nd stage engine cut off early.)	†U.S. Navy Vanguard SLV-2. Same as TV-3.
Explorer IV	July 26, 1958/ 1 year plus est.	Cone-tipped cyl. 6 ft. 8 in. x 6.25 in. dia.	39.4 (including stage four rocket case) 25.8 equipment	Stainless steel	Corpuscular radiation at several intensity levels. (The sub-carrier oscillator was calibrated to give internal temperature measurements.)	(a) 108.00 at 10 mw, (b) 108.01 at 24 mw.	(a) stopped Sept. 9, 1958 (b) stopped Oct. 6, 1958 (last intelligible telemetry Sept. 19, 1958)	Mercury batteries	2 dipole using skin of satellite itself	163, 1.380, 110.7, 50.29	†U.S. Army Jupiter C. Same as Explorer I.
Unnamed (First attempted Moon probe)	August 17, 1958, to 0	Toroidal 30 in. x 29 in. dia.	83.8 (including shell and retro-rocket) 25.0 equipment	Glassfibre	Radiation in space; magnetic fields of Earth and Moon; density of micrometeorites; internal temperatures; electronic scanner.	(a) 108.6 at 300 mw, (telemetry and doppler command) (b) 108.09 at 1 watt.	Designed to last: 10 days	Mercury batteries	2 x 12 in. metal rods	FAILED IN MISSION (Exploded after 77 sec. reached alt. of 40,000-70,000 ft.)	†U.S.A.F. Thor-Able 4 stages, length overall 88.1 ft., launch wt. 112,000 lb. Stage 1: Thor I.R.B.M. Stage 2: Modified Vanguard second stage. Stage 3: Vanguard third stage (ABL-X2). Stage 4: Thiokol solid (retro) rocket, intended to orbit probe around moon.
Explorer V	August 24, 1958, to 0	Cone-tipped cyl. 6 ft. 8 in. x 6 in. dia.	38.43 (including stage four rocket case) 25.8 equipment	Stainless steel	Corpuscular radiation at several intensity levels.	(a) 108.03 at 30 mw, (b) 108.00 at 10 mw.	(a) } Not applic (b) }	Mercury batteries	2 dipole using skin of satellite itself	FAILED TO ORBIT (Collision between separated 1st stage and control compartment carrying 3 high-speed stages.)	†U.S. Army Jupiter C. Same as Explorer I.
Vanguard (SLV-3)	Sept. 26, 1958, to 0	Sphere 20 in. dia.	21.5	Highly polished silicon monoxide-coated magnesium	Earth's cloud cover (fitted with two infra-red photocells).	(a) 108.00 at 10 mw, (b) 108.03 at 1 watt.	(a) } Not applic (b) }	Mercury batteries	1 turnstile with four 30-in. spring-loaded rods	FAILED TO ORBIT (2nd stage gave inadequate speed; satellite believed to have made one circuit.)	†U.S. Navy Vanguard SLV-3. Same as TV-3.
Pioneer I (Moon probe)	Oct. 11, 1958/ Oct. 12, 1958 (43 hr. 17.5 min.)	Toroidal 30 in. x 29 in. dia.	84.4 (including 43.7 lb. of vernier and retro-rockets) 39 instruments	Glassfibre	Radiation in space; magnetic density of micrometeorites; internal temperatures; electronic scanner. (Determined radial extent of radiation belt.)	(a) 108.05 at 300 mw, (telemetry and doppler command) (b) 108.09 at 1 watt. (controls)	Designed to last 10 days	Mercury batteries	2 x 12 in. metal rods	FAILED IN MISSION (Lacked sufficient speed; (max. distance)	†U.S.A.F. Thor-Able 4 stages (same as unnamed Moon-probe August 17).
Beacon (Inflatable satellite)	Oct. 23, 1958, to 0	Cone-tipped cyl. (containing folded sphere) 50 in. x 7 in. dia.	31.5 (including stage four rocket case) inflatable satellite 9.26	Mylar polyester film and micro-thin aluminum foil	Atmospheric density at various levels by studying behaviour of 12 ft. inflated sphere over estimated lifetime of two weeks.		INFLATABLE SATELLITE CARRIED NO TRANSMITTER (tracking transmitter in final stage)			FAILED TO ORBIT (Part of high-speed cluster separated from booster before cut-off.)	†U.S. Army Jupiter C. Same as Explorer I.

Pioneer II ... Nov. 8 ... Toroidal ... Glassfibre ... Total ionizing radiation cosmic ... 108.06 ... Designed to last ... Mercury ... 2 x 12 in. metal ... FAILED IN MISSION ... †U.S.A.F. Thor-Able 4

Pioneer II (Moon probe)	Pioneer III (Space probe)	Project Score	Mechta (or Lunik)	Vanguard II (SLV-4)	Pioneer IV (space-probe)	Discoverer I	Discoverer II	Vanguard (SLV-5)
Nov. 8, 1958, to 0 (42.4 min.)	Dec. 6, 1958/ Dec. 7, 1958 (38 hr. 6 min.)	12.95	Jan. 2, 1959, in orbit around Sun	Feb. 17, 1959 (10 years plus est.)	March 3, 1959 in orbit around Sun	Feb. 28, 1959, to March 5, 1959	April 13, 1959, to April 26	April 13, 1959, to 0
Toroidal 30 in. x 29 in. dia.	Cone 23 in. x 10 in. dia. (max.)	86.4 (total) 34.3 instruments	Sphere (inst. container separated from final stage)	Sphere, 20 in. dia.	Cone, 20 in. x 9 in. dia.	Cone-tipped cyl., 18.8 ft. x 5 ft. dia.	Cone-tipped cyl., 19.2 ft. x 5 ft. dia.	Sphere, (a) 13 in. dia. with 17.5 in. x 2.5 in. dia. cyl. extension (b) Sphere (inflatable) 30.0 in. dia.
Glassfibre	Gold-washed glassfibre	8.750 (total) 150 (radio equipment)	Aluminium magnesium alloy	Highly polished silicon- monoxide- coated magnesium	Gold- washed glassfibre	Not disclosed	Not disclosed	(a) Glassfibre and phenolic resins (b) Laminated aluminium foil and plastic sheet
Total ionizing radiation, cosmic ray flux, magnetic fields of Earth and Moon, density of micrometeoroids, internal tem- peratures, electronic scanner.	Radiation in space. (Discovery of second, outer radiation belt girdling equator.) Vehicle intended to pass Moon and become satellite of Sun.	3,245 (total, incl. final stage) 800 (in instrument container)	Internal and external tempera- tures; gas components of interplanetary matter and cosmic radiation of Sun; magnetic fields of Earth and Moon; micrometeoroids, heavy nuclei in primary cosmic rays, and other properties. Ejection of sodium vapour cloud from final stage. Vehicle passed within 3,125 to 4,375 miles of Moon.	Earth's cloud cover (carried two infra-red photostats). Steel- lite developed wobbling motion, rendering interpretation of data impossible.	Radiation in space; test of photo-electric sensor (for triggering of future Moon- probe cameras) if within 20,000 miles of Moon. Pro- duced excellent radiation data; probe passed within 37,300 miles of Moon; sensor not operated.	Tests of propulsion, guidance, staging and communications. First polar orbit. Radio trans- mitter failed—only intermit- tent signals received.	Recovery of 195-lb. hemisphere- shaped capsule 27 in. long x 33-in. base dia. Also to main- tain in capsule temperatures and oxygen sufficient to sus- tain life; radiation in space (emulsion packs). Timer ejected capsule on April 14, but not recovered.	Mapping of Earth's magnetic field by magnetometer; drag studies in outer atmosphere.
at 100 mw. (telemetry command) (b) 108.09 at 100 mw. (telemetry)	960.05 at 180 mw.	(a) 19,997 and 19,995 signals of 1.6 sec. duration; (b) 19,993 signals of 50.9 sec. duration (c) 183.6	(a) 132,435 and 132,905 F.M. (b) 107.97 and 107.94 Minitrack	(a) 108.00 at 10 mw. (b) 108.03 at 80 mw. (triggered from ground)	960.05 at 180 mw. with three sub- carriers	Not disclosed	Not disclosed	(a) 108.00 at 10 mw. (tracking) and 108.03 at 80 mw. (telemetry on ground command)
Designed to last 10 days	90-hr. (design limit)	12 days		(a) 23 days (b) 27 days	90 hr. (approx.)	Not disclosed	Not disclosed	(a) Not applicable
Mercury batteries	Mercury batteries	Mercury batteries	Silver zinc and mercury oxide batteries	Mercury batteries	Mercury batteries	Nickel cadmium batteries	Nickel cadmium batteries	Silver zinc batteries
2 x 12 in. metal rods	Cone itself serves as antenna; gold is conduc- tor	Slot-type, flush with body of Atlas	(a) 4 metal rods (b) 2 T-antennas (c) 1 T-antenna	4 spring-lock rods	Cone itself serves as antenna; gold is conductor	1 directional, 1 whip	1 directional, 1 whip	4 spring-lock rods
4 stages (same as un- named Moon-probe August 17).	†U.S. Army Juno II, 4 stages, length 76 ft., launch wt. 121,000 lb. Stage 1: Jupiter I.R.B.M. (modified). Stage 2: 11 scaled-down Sergeants. Stage 3: 3 scaled-down Sergeants. Stage 4: 1 scaled-down Sergeant.	110	91.2 million (peri- heliion)	347	91.7 million (peri- heliion)	99	142	†U.S. Navy Vanguard, Same as TV-3.
†U.S.A.F. W5107A-1 Atlas, 1 1/2 stages, length overall 85 ft., launch wt. 244,000 approx. Booster: 2 x 150,000 lb. s.t. engines in jettison- able skirt. Sustainer: 1 x 60,000 lb. s.t. engine.	FAILED IN MISSION (Lacked sufficient speed.) 63,580 (max. dist- ance)	920	123.1 million (aphe- liion)	125.85	106.1 million (aphe- liion)	605	220	†U.S. Navy Vanguard, Same as TV-3.
†U.S.A.F. Thor-Hustler, 2 stages, length over- all 78.2 ft., launch wt. 108,500 lb. (approx.). Stage 1: Thor I.R.B.M., launch wt. 100,000 lb., plus 150,000 lb. s.t. Stage 2: Hustler, launch wt. 8,400 lb., 15,000 lb. s.t.	—	443 days	450 days	—	443 days	3 deg. off Earth's north- south axis	2 deg. off Earth's north- south axis	—
†U.S. Army Juno II, Same as Pioneer III.	—	SUN SATELLITE		SUN SATELLITE		SUN SATELLITE		—

Discoverer III...	June 3, 1959, to 0	Cone-tipped cyl., 19.2 ft. x 5 ft. dia.	1,600 (total, including final stage) 245 (instruments)	Not disclosed	Biological; four black mice in recoverable capsule.	Not disclosed	Not applicable	Nickel cadmium batteries	1 directional whip	FAILED TO ORBIT (2nd stage failure.)	‡U.S.A.F. Thor-Hustler. Same as for Discoverer II.
Vanguard (SLV-6)	June 22, 1959, to 0	Sphere, 20 in. dia.	21.5	Highly polished silicon-monoxide-coated magnesium	Earth's cloud cover (two infrared photocells).	(a) 108.00 at 10 mw. (b) 108.03 at 80 mw. (triggered from ground)	(a) Not applic. (b) }	Mercury batteries	4 spring-lock rods	FAILED TO ORBIT (2nd stage failure.)	†U.S. Navy Vanguard. Same as TV-3.
Discoverer IV ..	June 25, 1959, to 0	Cone-tipped cyl., 19.2 ft. x 5 ft. dia.	1,600 (total, including final stage) 245 (instruments)	Not disclosed	Test of capsule separation and recovery.	Not disclosed	Not disclosed	Nickel cadmium batteries	1 directional whip	FAILED TO ORBIT (2nd stage failure.)	‡U.S.A.F. Thor-Hustler. Same as for Discoverer II.
Explorer VI (U.S. Army)	July 16, 1959, to 0	Toroidal, 30 in. x 30 in. dia.	91.5	Not disclosed	Seven concurrent experiments: Solar X-rays, Lyman-Alpha radiation, cosmic rays, heavy nuclei, micrometeoroids, radiation and heat balance.	(a) 108.00 (b) 20,000	(a) Not applic. (b) }	Chemical batteries recharged by solar cells	(a) 4 whip (b) 4 extensible rods	FAILED TO ORBIT (Control failure immediately after take-off.)	†U.S. Army Juno II. Same as for Pioneer III.
Explorer VI (U.S.A.F.)	Aug. 7, 1959 (1 year plus est.)	Spheroid, 26 in. dia. x 29 in. deep with 4 x 20 in. square vane extensions	142.0	Aluminium	Fifteen concurrent experiments, including behaviour of radio waves in ionosphere, mapping of Earth's magnetic field, micrometeoroids, Earth's cloud cover, checks on various "deep space" equipment.	(a) 108.06 (b) 108.09 (c) Not disclosed (kicker rocket)	Indefinitely	Chemical batteries recharged by solar cells	Not disclosed	48.0	†U.S.A.F. Thor-Able, 3 stages, length over all 90 ft., launch wt. 105,000 lb. plus Stage 1: Thor I.R.B.M. Stage 2: Modified Vanguard second stage. Stage 3: Vanguard third stage (A.B.L. X2) Stage 4: Solid "kicker" rocket on satellite axis, 14-in. long, wt. 5 lb.
Discoverer V ..	Aug. 12, 1959 (2 months est.)	Cone-tipped cyl., 19 ft. x 5 ft. dia. capsule 27 in. x 33 in. dia.	1,700 (total, including final stage) 300 (capsule)	Not disclosed	Ejection and recovery of capsule from orbit. (Capsule ejected but not recovered).	Not disclosed	Not applicable	Nickel Cadmium batteries	1 directional whip	136 450 94	‡Thor-Hustler. Same as for Discoverer II, except for use of more energetic fuel in stage one.

Launching site symbols: *Believed to be Krasny Yar, near Stalingrad; †Cape Canaveral; ‡Vandenberg.

FUTURE PROJECTS

A number of launching vehicles illustrated in the last issue are still in the planning stage and consequently do not appear in the tabulated list. All are American except the Blue Streak/Black Knight, a British concept.

ATLAS-ABLE.—Three-stage; mission: launcher for experimental Venus probe. Stage 1, modified Atlas; stage 2, modified Vanguard 2nd stage; stage 3, improved Vanguard 3rd stage.
ATLAS-HUSTLER (Discoverer series).—Two-stage; object: to orbit 3,000 lb. at 300 miles. Stage 1: modified Atlas; stage 2, Bell Hustler.
ATLAS-MERCURY.—Single-stage Atlas, object: to launch man-carrying space-capsule at 100-150 miles (capsule intended to return to Earth on command within 24 hr. using braking rockets and parachutes).

BLUE STREAK/BLACK KNIGHT.—Two or three-stage; object: to orbit 1,000 lb. at 300 miles. Stage 1: modified Blue Streak; stage 2: modified Black Knight. (It was announced by M.o.S. on May 12 that design studies for an all-British satellite launching vehicle had begun.)

CENTAUR.—Two-stage; object: to establish 10,000 lb. in close-orbit, or 2,500 lb. at 23,000 miles; alternatively, could soft-land 730 lb on Moon.

JUPITER-MERCURY.—Single-stage Jupiter. Object: sub-orbital ballistic test for Mercury space-capsule.
LITTLE JOE-MERCURY.—Six clustered solid-propellant rockets. Object: short range ballistic test of Mercury space-capsule recovery devices.

NOVA.—Up to five stages; N.A.S.A. advanced project. Over-stage 3, 80,000 lb. s.t. (liquid oxygen/liquid hydrogen); stage 4, 40,000 lb. s.t. (liquid oxygen/liquid hydrogen); stage 5, 6,000 lb. s.t. (storable liquid propellant).
REDSTONE-MERCURY.—Single-stage Redstone. Object: sub-orbital ballistic test for Mercury space-capsule.
SATURN.—Up to four stages; N.A.S.A. advanced project. Overall height, 200 ft.; launch wt., 1,160,000 lb. Object: could

orbit 19,000 lb. at 300 miles or 3,300 lb. at 23,000 miles. Stage 1, 8 x 187,500 lb. s.t. Rocketdyne H-1 engines; stage 2, modified Titan first stage (twin-chamber engine of 300,000 lb. s.t.); stage 3, 2 x 150,000 lb. s.t. (liquid oxygen/liquid hydrogen); stage 4, 6,000 lb. s.t. (storable liquid propellant).

SCOUT.—Four-stage, all-solid. Object: to orbit 150 lb. at 300 miles, or loft 100 lb. vertically to 5,000 miles. Stage 1, Aerojet General Senior; stage 2, improved Thiokol Sergeant; stage 3, sealed-up Vanguard third stage (ABL X-254); stage 4, improved Vanguard third stage (ABL X-248). Under joint U.S./U.K. agreement, Britain will use this vehicle to orbit satellite equipment beginning 1961.

VEGA.—Two or three stages. Object: to orbit 7,400 lb. at 300 miles, or 1,300 lb. at 23,000 miles; alternatively, could soft-land 730 lb. on the Moon. (One planned mission over next three to four years will be extensive survey of Moon's surface. Vega's final stage would be placed in orbit around Moon with a T.V. camera in payload.) Stage 1, modified Atlas; stage 2, improved Vanguard first stage; stage 3, 6,000 lb. s.t. (storable liquid propellant).

Ames Closeups...



RAY MEYERS

Who said it couldn't be done? The transition from Trust Administrator in the Trust Department of the Anglo California Bank in San Francisco (now the Crocker-Anglo) to Aircraft Inspector at Ames Research Center was no problem for Ray Meyers, of the Aircraft Inspection Branch. Ray had spent fourteen years with the bank before World War II came along and convinced him that his talents could be put to better use for the war effort by going into aviation.

Ray's interest in aviation dates back to his youth. Prior to his employment with Anglo-California, Ray took courses in aircraft maintenance and pilot training at the Palo Alto School of Aviation. In 1928 he became the 5012th licensed pilot in the U. S. A native of San Francisco, he was raised in nearby Los Altos. Here he continued his flying until wartime restrictions curtailed these activities.

In April, 1943, Ray joined Ames as a mechanic helper in Flight Maintenance. In the ensuing years he became a crew chief on an airplane and in 1950 was assigned to the Inspection Branch, where he became an Aircraft Inspector, responsible for major aircraft inspection and final aircraft modification inspection. With the shift of certain flight research projects to the Flight Research Center at Edwards, Ray sees no lessening of inspection problems, but rather a switch to the VTOL and STOL craft that will be tested here in future programs.

In addition to his inspection duties, Ray has been called upon



Representative Charles R. Jonas of North Carolina, a member of the House Committee on Appropriations recently visited the Center and was shown our Atmosphere Entry Simulator, the not-yet-completed Physics Laboratory, the Friction-Free Space System Simulator, and the Roll-pitch Chair in Dynamics Analysis.



The Cisl Committee, appointed to advise the Secretary of Defense on management problems of missile ranges and worldwide tracking facilities, recently visited the Center. Members of the Committee shown are from left to right, Mr. A. G. Waggoner, Mr. Glen Gibson, and Mr. Donald F. Kigar, the Administrative Assistant to Mr. Cisl. Another member of the Committee not shown in the picture is our own Ira H. Abbott, Director of Aeronautical and Space Research.

each fall for the last five years to participate in the annual wage survey conducted by the Personnel office. He says he has enjoyed visiting various bay area industries, interviewing personnel to obtain information as to rates of pay on positions comparable to those at Ames.

Currently, Ray is treasurer of the NASA Exchange Council, which controls the operation of the cafeteria and all vending machines on the field, and is responsible for its books and arranging annual audits, etc. In addition, Ray has served as chairman of the annual bond drive, has been the director of the Ames Givers Fund, and acted as a panel member for our local Board of U. S. Civil Service Examiners.

Ray, no longer flying, devotes his free time to sports cars. He and his wife Ruth reside in

Palo Alto where Ray is Director of the Mercedes Benz Club of Northern California (a California Corporation started by Ray in 1956). This is a social organization strictly for M-B owners-- Ray drives a Mercedes 190 SL, Ruth, a 190 sedan. The group Tours various sports and racing events.

On free week-ends, you'll find the Meyers at their favorite ocean retreat, Rio Del Mar-- just south of Santa Cruz.

To fill in her free time, when she isn't on the job as a receptionist for three doctors in Palo Alto, Ruth raises French Poodles. Asked about how he met his wife, Ray said he went into a store in Palo Alto to buy a birthday card. Ruth waited on him. Well, he kept going back, buying more cards until his home became cluttered with them. Finally, in the interest of neatness, he married her.

WANT ADS...

For Sale--Golde, 35mm Slide Projector 300 watts, 5" and 7" lenses, manumatic manual slide changer and airequipt remote control changer. Call S. C. Hanscom, ext. 237 or YO 7-9207.

For Sale--Blond dining-room table, two leaves, six chairs. Also a buffet. \$65. Call Mr. R. Harmon, ext. 294 or CHerry 3-7415.

Wanted--Driver from West San Jose wishes to join car pool. 8 - 4:30 shift. Can work out details with anyone in the vicinity of Cambrian Park. Call Bob Coate, ext. 258 or ES 7-3584.

For Sale--Two Drexel mahogany step tables. Excellent condition. Ext. 305.

Wanted--Cashier for Ames cafeteria. Call Ray Loucks, ext. 249 or Don Humpal, ext. 273.

For Sale--Fishing Boat - 16 feet with 5 foot beam. Ready to be glassed. Call E. Morris, ext. 293.

Wanted--Four drivers would like another to make a day-a-week pool, 8 - 4:30 shift, Park Avenue (San Jose) as route out, Willow Glen resident if possible. Contact George Barker, ext. 202.

For Sale--Large white walnut halves. Would make beautiful Christmas gifts. \$1.50 per pound. Call AL 2-2090 anytime.

For Sale--4 x 5 speed Graphic with holders, magazine, flash and case. Also 4 x 5 Solar enlarger. Call Ken Caillat, ext. 234 or AX 6-7843.

For Sale--30 inch Occidental gas range with oven, broiler, and griddle. Excellent condition. Ideal for apartment, duplex, or small home. Call Ron Berlin, ext. 385.

For Sale--Simmons Hide-a-bed. Good condition. Phone ext. 305.

For Sale--Country Club Area-- 3 BR, 2 bath, sep. dining room. Util. room. (1500 sq. ft. of living area on 1/4 acre). Fully landscaped. Fruit trees, patio, \$23,950. WH 8-2543.

BASKETBALL

An Intra-Ames Basketball League will be organized to begin play after the first of the year if sufficient interest is shown by Ames employees. The Mountain View Recreation Department has generously offered the use of the high school gym on weekday evenings for league play.

Widespread participation by all Ames employees is encouraged since at least six teams will be needed to provide an adequate and interesting schedule.

Please call R. Petersen, ext. 317, if you are interested in joining a team or organizing a Section or Branch team.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees.



RETIRING

Joe R. Amato, Cleaner in Maintenance Branch, is retiring from Ames on October 30, after completing over 13 years service at this Center. Joe a native of Italy, says plans for the future include fishing and clamming and touring Canada with a trailer.

Notice--Coke bottles are not being returned to vending machines. Please make every effort to return bottles immediately after use.

GOLF



The recently completed Hill Golf Course was the scenic site of the most recent best-ball tournament. Broad fairways, well-trapped greens, and appropriate water hazards were to the liking of Ed Stepnoski, of Dynamics Analysis, and Reuben De Los Santos, of Aircraft Modification, who won with a low net of 57.

Loren Bright, of the 8- by 7- and Frank Follette, of the 2- by 2- enjoyed the well kept turf by displaying long drives and sharp putting to come in second with a 61. Although Vernon Fietzer, of the Machine Branch, Jim Monfort, of the 11-Foot, and Otto Meckler, of Structural Fabrication, and Bernard Cunningham, of the 10- by 14-, all tied for third with a 62, they were particularly pleased with the convenient location of this new golf course, namely, Moffett Field!

Although this course is primarily for Navy personnel, the Ames Golf Club is appreciative of the opportunity to play and practice so close to home. Other scores were as follows:

Musselman-Wyss	63
White-Mathews	63
Radovich-Lopez	64
Clousing-Plum	66
Griffin	69
Barisich-Clousing	71

New officers of the Ames Golf Club, elected unanimously, will be installed December 1, to serve through 1960.

President, Armando Lopez; Vice President, Jack Wyss; Secretary, Loren Bright; Treasurer, Mitch Radovitch; Handicap Chairman, Ted Plum.

For information regarding membership or club activities contact any of the above officers. The Club would also like to add that the ladies are most welcome! The last club tournament for the year, a turkey shoot, will be held November 14, 7:30 AM at Hillview Golf Course, San Jose. There will be seven turkeys going to the winners. For information call Paul Barrisich, ext. 232.

The Astrogram

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Report on Ames Ion Accelerator



Michel Bader, of the Physics Branch, is shown above observing the ion Accelerator in operation. Results of these studies will aid in determining the effects of collisions between spacecraft and high altitude molecules at high speeds.

How long will that satellite orbit about the earth? This is a question which is unanswerable by the space scientist at present. However, here at Ames, studies being done with the ion accelerator may soon provide the answers for the accurate prediction of the life span of earth satellites.

It was with the ion accelerator that the hazards of tiny gas particles in space that erode the surfaces of space vehicles were discovered. Space vehicle exteriors are built with maximum reflectivity so that the sun's heat will be reflected and not absorbed. If the shiny surface becomes pitted it will absorb heat and not reflect it. This erosion can also effect satellites with solar cells on their exteriors. These devices designed to convert solar power to energy for operation of satellites can be measured then the time they take to push satellites back into the atmosphere can be accurately predicted. As satellites slice through space they collide with these thinly dis-

tributed molecules. The molecules do not flow like a liquid around the satellite, but collide with them. It is these collisions which cause a satellite to slow up, eventually to a point below the minimum orbital speed of 17,000 miles per hour.

The ion accelerator can create gas molecules as thinly distributed as those in space many miles from earth. In the experiments, a beam of these molecules will be focused on a piece of metal. The force of the particle flow on the metal will be measured. These forces are in the area of one-millionth of one-millionth of a pound.

By measuring these forces the degree which molecules slow up an orbiting satellite can be computed; from these figures, the length of time a satellite will orbit can be estimated. With this data scientists can compute the trajectory of a satellite, which slows up and shortens its orbit a small degree each spin around the earth.

NEW MEMBERS APPOINTED TO EXCHANGE COUNCIL

Effective November 16, 1959, Cleve Foss, of Personnel; Edward Hoin, of Structural Dynamics; and Don Humpal, of Procurement and Supply, were appointed members of the Exchange Council of the NASA Exchange-Ames. The Council has the responsibility for the operation of the cafeteria and vending machines throughout the Center.

Other current Council members who have served previous terms include Ray Meyers, of Aircraft Inspection; Henry Citti, of Machine Branch; Ray Loucks, of Transportation; and Myrno Schwarz, of Fiscal.

AMES ANNOUNCES EXAM FOR POSITION OF "CLEANER"

The Board of U. S. Civil Service Examiners at Ames has announced an examination for cleaners, WB-1. The examination, restricted to veterans only, will be open until further notice. Interested parties may file a Form 57 and 5001 B-C card with the Board.

SAN JOSE MUNICIPAL CHORUS TO SING "MESSIAH"

Handel's "MESSIAH" will be sung by the San Jose Municipal Chorus for the 35th consecutive year on Monday, December 7th, in the Scottish Rite Auditorium, 3rd and St. James Streets, San Jose, at 8:15 PM.

Richard Pea of Wind Tunnel Instrument Research will be a participating singer.

Reserved seats are by patronage only; non reserved seats are open without cost on a first-come first-served basis. The auditorium doors will open at 7:30 PM.

Persons desiring reserved seats should contact the Institute of Music, 1166 Martin Avenue, San Jose, or telephone CY 3-0304.

Astroventuring... ★ with walt krumm

THE SUN

We began our astroventuring with Mercury and worked our way outward among the planets because we could not stand the terrific heat of the Sun. Now, let's see if we can fill in the center without actually going there.

Our Sun is a star upon which we are absolutely dependent for light and heat but we shall talk about it as a part of the solar system before we treat it as a star and tie it in with the universe.

The Sun's distance and diameter have already been given (see Astrogram Vol. 1, No. 10). It is impressive to compare the Moon's orbit with the Sun's diameter. If the earth were to be placed at the Sun's center, the Moon's orbit would be within the Sun and only a little more than halfway toward the surface. The Sun's light is 600,000 times that of the Moon. Of the total light and heat the Earth receives only 1/2,200,000,000 part. The temperature at the visible surface of the Sun is about 6,000° C and at the center an estimated 40,000,000° C. This fantastic temperature is by no means meaningless and should be taken literally for the astronomer Eddington says: "I suppose that nine-tenths of the matter of the universe is above 1,000,000 degrees."

The Sun rotates in the same direction as the Earth and upon an axis inclined 83° to the ecliptic. Rotation is not uniform all over the Sun, for a point at the equator rotates in 25 days, at ±45° latitude about 33 days. This may be checked easily by the amateur astronomer.

Upon the intensely brilliant surface of the Sun, which is called the PHOTOSPHERE, are often seen dark spots, the SUN SPOTS. Above the photosphere is the red CHROMOSPHERE from which rise the vast flame-like PROMINENCES, while beyond all extends the beautiful, pearly white, tenuous CORONA which may be seen only during total eclipse. The abundance of sun spots, prominences, and the form of the corona, all vary for some unknown reason in an irregular period of 11 years.

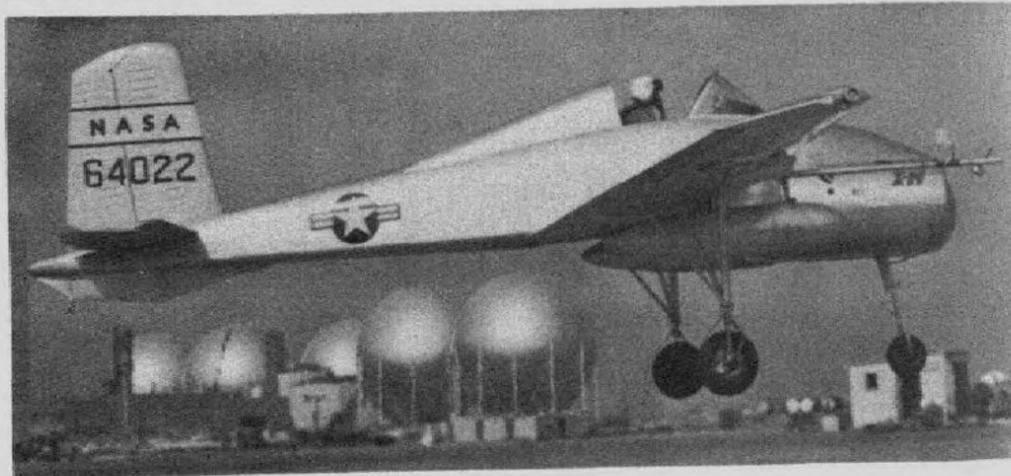
To the observer the SUN SPOTS are of great interest.

CONGRESSMEN VISIT AMES



Three members of the House of Representatives Committee for Science and Astronautics visited the Center on November 12th. From left to right are Representative Walter H. Moeller, Ohio; Representative James M. Quigley, Pennsylvania; and Representative George P. Miller, California. With these are Dr. Smith J. DeFrance, Director of Ames; Mr. James P. Gleason, NASA Assistant Administrator; and Mr. John F. Parsons, Associate Director.

Test of Bell X-14 Viewed



The X-14 VTOL research airplane built by Bell Aircraft, shown above, was viewed in flight Thursday, November 12, by members of the House of Representatives Committee for Science and Astronautics. The plane was flown by Ames test pilot Fred Drinkwater III. The X-14 is powered by two jet engines whose thrust direction can be changed by turning bands on the tail pipe exits. It has been flight tested here for the past month.

But first a warning - DO NOT LOOK DIRECTLY AT THE SUN WITH A PAIR OF FIELD GLASSES OR A TELESCOPE OF ANY SIZE. The intense heat and light will cause permanent damage to the eye. To observe the Sun, project the image on a white cardboard. This not only produces a large image but allows viewing by a number of people simultaneously. The sun spots will appear as dark spots upon the light background if any are present.

Sun spots are known to be cyclonic disturbances of vast extent and terrific violence on the surface of the sun. They appear dark only in contrast to the rest of the solar surface but in reality they are too bright.

The dark central portion, the UMBRA, of the sun spot is a powerful magnetic field, a vortex of swirling "flames" of elemental gases. The PENUMBRA of a sunspot, the less-dark ring that surrounds the umbra consists of filaments that converge toward the center. As the distance to the sun is so great, that to subtend an angle of 1 second (a pretty small angle for the average telescope) a sun spot must be at least 450 miles in diameter in order to see it.

More about the Sun next issue. Again, let us give the warning - DO NOT LOOK DIRECTLY AT THE SUN - but have your amateur astronomer friend show you some sun spots projected on a card.

Ames Closeups...



JACK BONNELL

Like a missile whose guidance control is malfunctioning, Jack Bonnell spent a number of years skipping through the California atmosphere from Los Angeles to San Francisco, to Vallejo, to Lake County, to Long Beach, to Stockton, to Sunnyvale, touching down for brief stays at many towns and cities enroute. Not until he collided with Ames in 1944 did he find what he was looking for. This wanderlust may have been a result of his early youth. Jack says he attended at least 30 different schools in southern California throughout his elementary and high school education.

In 1944, Jack arrived at Ames from Lake County where he had been assistant foreman in the truck shop of the Bradley Mining Company. He applied for a position as a Wind Tunnel Mechanic. At that time, the 40- by 80- was not yet in operation. Pending this event, he was assigned to the stock room in the utilities building. Somehow, Jack has been in Supply ever since, where he is now serving as head of the Section.

A native of Los Angeles, Jack worked for the B. H. Dias Co., at 16, as head of stock in women's ready-to-wear. In 1927, he quit this position and went to San Francisco by boat. From here it was an easy hike to Lake County where he accepted his first position with the Bradley Mining Company as an assayer. After a year or so, he developed an insatiable desire to return to

southern California where he soon went to work in the Long Beach ship yards. By 1930, he had reversed his previous decision and had returned to Lake County, only to visit his father a short time later in Sunnyvale and decide to work for the McKee Construction Company on the new Navy installation of Moffett Field. There followed a series of other positions in Stockton, and again in Lake County, culminating in his acceptance of a position at Ames.

Jack and his wife, LaVita, have been married for twenty years, live in MountainView, and have two boys, ages 19 and 16. The elder, John, is currently on the way to Korea with the U. S. Army. Frank, the younger, is a senior in Mountain View High School and has been nominated for the Air Force Academy for the class beginning July, 1960. LaVita is an Ames employee, also, having worked in Aircraft Inspection for the past eight years.

Both Jack and LaVita have become avid fishermen. (She got him a new pick-up for Christmas last year to tote their 14-foot trailer to their favorite haunts). Jack has been an officer of the Rod and Gun Club for a number of years and does considerable hunting as time permits. He returned just last month from a trip to Utah, with his son Frank and Don Graham (Chief of the 11-Foot Tunnel), where they bagged several deer; (the limit being 3 each, they took advantage of it!) In addition to hunting and fishing, Jack has taken an active interest in color slides, shooting Yellowstone, the Olympic Peninsula, and Glacier Park (a fabulous fishing area!) with Retina and Rollei.

Jack complains that the hunting areas are constantly retreating under the onslaught of civilization. They used to hunt in the Sierras, he said, making their headquarters near Placerville. Now, he says, next year's plans are taking him into the northwestern part of Colorado!

Known to a great many Ames employees who receive their safety glasses through his section, Jack doesn't plan to change jobs again. Asked how he settled at Ames after his previous wandering career, he said he enjoys his work thoroughly and has never met so many wonderful people as his fellow employees at Ames. And that's as good a reason as we can think of!



This bird wasn't SAFETY CONSCIOUS!

Don't let an ACCIDENT ruin
your Holiday Season!

ANNUAL CHRISTMAS PARTY

The Annual Ames Children's Christmas Party will be held in the Aviation Sheet Metal Shop, Saturday, December 19th from 10:00 a.m. to 3:00 p.m. The Ames Gate will be open to allow Ames personnel wearing their badges access to the party.

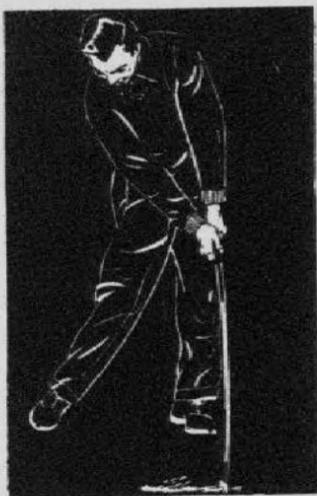
Included among Santa's gifts for the adults are: a 17" portable computer controlled TV with stand, a 6 transistor radio, a portable electric drill set, an electric fry pan, fly rod and reel, camera with flash attachment, and a table model radio.

The party will include a playland with hobbyhorses and seesaws; a beautiful Christmas tree; a balloon booth; a space control station which will be in constant communication with the rocketship on its way to and from the moon; Tinkerbell will be there giving out candy canes and introducing the children to Santa Claus; the tasty goodie shoppe will have cookies and fruit punch for the youngsters and cookies and coffee for the oldsters; and the gift shop will have hundreds of gifts for the children. Arrangements are being made to have Santa's private plane available again for the children to visit and talk to Santa's pilot. The live kiddie show (closed TV) is scheduled for 11:00 a.m. and 2:00 p.m.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees.

GOLF



The Ames Golf Club's annual "Turkey Shoot" gathering was held at San Jose's Hillview Course on November 14th. Twenty-two contenders joined in the play with Ed Stepnoski of Dynamics Analysis on top in the championship flight.

Jim Monfort of the 11-Foot and Armando Lopez of the 12-Foot took first places in the first and second flights respectively. Other prizes in the three flights were awarded as follows:

Championship Flight---

F. Corsini	2nd
M. Radovitch	3rd
Barisich & Muselman	tied for 4th

1st Flight

B. Tinling	2nd
Nysmith & White	tied for 3rd

2nd Flight

De Los Santos	2nd
J. Wyss	3rd

The "Turkey Shoot" concludes the tournament year and a tournament schedule is being prepared for 1960. Suggestions for new golf layouts at which next year's tournaments could be held are welcome. Contact any of the club officers with your ideas.

Tournament prizes amounting to about \$300 were awarded during 1959 as well as several handsome trophies. Most of the prize money was obtained through membership and tournament entry fees. Since a larger membership will enable the club to award better prizes, we would like to urge Ames golfers to join the club now and compete for bigger and better prizes next year. Memberships are \$3 annually with a \$1 initiation fee for new members. Mitch Radovitch of the Machine Branch will be most happy to register your 1960 membership.

BOWLING

With four more nights remaining in the first half of the season and with 16 more points to be decided, the standings of the teams in the league are as follows.

	Won	Lost
Heat Transfer	29	15
Electrical	28.5	15.5
Afterburners	28	16
SSFF	27	17
Five Jets	26.5	17.5
EMC	26	18
Pinbusters	25	19
Mach. Shop 1	24.5	19.5
Struc. Fab.	24	20
Spoilers-Unitary	21.5	22.5
Mavericks	16	28
Hangar Instr.	16	28
Mach. Shop 2	15.5	28.5
Designers	15.5	28.5
HBR	15	29
Hangar Hoods	14	30

As can be seen it is a very close race with any of the top 10 in real contention.

The top three in the league - high game:

	Scr.	Hndc.	Game with Hndc.
D. Oishi	245	42	287
R. Sheaffer	246	24	270
S. Sommer	229	34	263

The top three in the league - high series:

	Scr.	Hndc.	Game with Hndc.
D. Oishi	549	126	675
S. Sommer	572	102	674
J. Deibert	580	90	670

CHRISTMAS MAILING SUGGESTION--MAIL EARLY!

Christmas is again approaching and this is a reminder from your Moffett Field Post Office to Mail Early and avoid the last minute rush.

The deadline for Parcel Post to APO's and FPO's was November 20. So get them in! You may still make it by Christmas.

Moffett Field Post Office Hours:

Monday through Friday
7:45 AM to 5:00 PM

Saturday
8:15 AM to 12:00 Noon

On the two Saturdays preceding Christmas, December 12th and 19th, the hours will be from 8:15 AM to 5:00 PM.

WANT ADS...

For Rent--Spacious (1800 sq. ft.) home, unfurnished. 4 bedrooms, 1 1/2 baths. Wall to wall carpet and drapes. 2 car garage and fenced yard. Near Fremont and Miramonte, Los Altos. \$160 per month. Call Carl Tusch, YO 7-3342.

For Rent--4 bedroom - 2 bath home in lovely part of Los Altos, landscaped, double garage, close to school. Call WH 8-9938 after 4:00 p.m.

For Sale--1958 Chev. Bel-Air Hardtop. 16,700 miles, 250 hp engine. In A-1 condition. \$300 cash and take over payments. Call Jim Gysan, ext. 294.

For Sale--Hi-Fi-Radio phonograph combination in a custom cabinet. Exterior done in red leather with hob nails. Harmon-Kordon equipment. Will sell reasonable. Call William Thompson, ext. 310 or WH 8-4110.

For Sale--1950 Hudson, good condition. \$120. Call Thomas Shipman, ext. 348.

Wanted--Driver from Scott Lane in Santa Clara wishes to join car pool. 8 - 4:30 shift. Call Ken Green, ext. 252.

For Sale--O'Keefe and Merritt Stove, automatic oven, chrome grill, excellent condition. \$70 Call YO 7-6101 after 5 PM.

Recent Arrivals...

New employees at Ames include FELIX S. RAYA of Mountain View, assigned to Maintenance as a Cleaner; NORMA M. ARCHIBALD of Santa Clara, a former employee, assigned to Electronic Machine Computing as a Tabulating Equipment Operator; LEONA I. SIMPSON of Santa Clara, assigned to Low Density and Heat Transfer as a Secretary; PHYLLIS E. GOURLEY of Santa Clara, assigned to Ad Services as a Clerk-Steno; and CAROLE C. WINKLE of Tacoma, Washington, assigned to the 11-Foot Wind Tunnel as a Clerk-Typist.

The Astrogram

AMES RESEARCH CENTER, MOFFETT FIELD, CALIFORNIA

VOLUME II

DECEMBER 10, 1959

NUMBER 4

Christmas Party Plans Complete

The Annual Ames Children's Party will be held in the Aviation Sheet Metal Shop (behind Hangar 2), Saturday, December 19th from 10:00 AM to 3:00 PM.

The children should be enthralled with the huge Christmas tree, the balloon booth, and the space control station which will be in constant communication with the rocketship on its way to and from the moon. They will naturally want to meet Tinkerbell and talk to Santa Claus. The older ones will want to see Santa's plane and talk to Santa's personal pilot. There will be fruit punch and cookies for the children and coffee and cookies for the adults.

The live kiddie show is scheduled for 11:00 AM and again at 2:00 PM. A return engagement has been scheduled for the dancers, tumblers, and acrobats that performed so well and were so entertaining last year. The performers are all children and are under the training of Fredrick and Asella's Dance Studio in

Santa Clara.

The Entertainment Committee hopes to invite (free of charge) a group of deserving children as was done last year with the hope that we may make their Christmas a bit happier.

Your branch ticket agent will be contacting you soon to sell you your subscription tickets which support this children's party. These tickets at \$1 each will admit one adult. Those without a subscription ticket will be charged 25 cents for admission. Children with reservation cards will be admitted free. For the children without reservation cards the admission fee will be 25 cents per child.

For an artist's sketch of the Ames Christmas party, see page 3.

FOR A SAFE CHRISTMAS....

Christmas decorations will undoubtedly be on display throughout the Center as this issue of the Astrogram goes to press. However, a few words of caution regarding these decorations may still be timely.

Inasmuch as the Christmas tree is a potential fire hazard, caution should be taken in its selection and placement in the office (as well as at home).

Only flameproof Christmas trees and decorations will be permitted in Center facilities during the holiday season. Trimmings and fabrics may be made flameproof by using a solution of 9 ounces of borax, four ounces of boric acid, mixed with one gallon of hot water. This solution may be used to spray, dip or brush on the articles to make them flameproof. A simple method of spraying is use of an insect spray gun or vacuum cleaner spray gun.

In placing trees, avoid contact with electric bulbs or placing



Miss Ronni McCoy
TINKER BELL, 1959

Miss Ronni McCoy, of Security was elected "Tinker Bell" for the forthcoming Christmas party to be held Saturday, December 19, for employees and children. The election was conducted by a roving ballot box that circulated among the various branches last week. Pictures of all the candidates will be seen on page 4.

CREDIT UNION TO HOLD ANNUAL MEETING

The Moffett Field Employees Credit Union will hold its annual meeting January 19, 1960, at 7:30 p. m. in the Ames Auditorium. Election of officers for the ensuing term will be held at this meeting. All members are invited to attend.

them near a fireplace or television set. It should not be located near a stairway which would provide an upward draft, or near doors where it may block the exits.

Use only electric lights (never candles) and be certain that wires are in good condition. Decorate with non-flammable ornaments of glass or metal and "fireproof" snow.

NEW COURSE AT FOOTHILL

Foothill College will offer a basic course in electronics, next semester, for night shift employees in local electronics firms.

According to Dr. Nathan H. Boertz, director of technical education, the course will consist of both lectures and laboratories co-ordinated in such a manner as to emphasize the knowledge needed by electronics technicians in today's fastest growing industry.

Dr. Boertz announced that the course will be given only if individuals in the community respond with an immediate letter of intent to register.

Technicians wishing further information about the course are requested to contact the college registrar or call YORKSHIRE 8-6521.

Ames Closeups...



MARCIE CHARTZ

In a cool room on Durand Road under the 7- by 10-, rests the IBM 704 Computer. Standing guard over this complex machine is Marcie Chartz, Machine Programming Mathematician. Marcie says she sometimes finds it difficult to keep a cool head with the whirlwind of activity around the 704 even though it refuses to operate properly in anything but an air-conditioned atmosphere where the temperature is an even 68° or so.

In this pleasant atmosphere, Marcie labors over the work of coordinating programs that are fed into the computer. Coming to Ames in January, 1950, as a Math Aid, she was assigned to the Reeves Electronic Analog Computer in what was then the Theoretical Aerodynamics Branch. Later, she worked with an IBM digital computer, and in May, 1952, was transferred to Electronic Machine Computing when that branch was formed.

A native of San Francisco, if ever so briefly, Marcie moved to Carson City, Nevada at the age of six months. There she was raised, returning to California to attend the San Francisco College for Women in 1943. After obtaining a degree in mathematics, Marcie attended Stanford graduate school for a year. Here one of her professors discussed the new computing machines that were being put into service and mentioned that Ames had such a machine. This was sufficient to entice Marcie to apply and she says she has never been sorry.

Away from Ames, Marcie's favorite hobby is computing (it's in her blood). Last February she went to New York for two weeks, spending an additional week in Washington, D. C.,

WANT ADS...

For Sale--3 bedroom home. Family room, 2 baths, 4½% GI loan, \$14,700 owing. Electric kitchen, water softener, drapes, and fenced yard. \$20,950, \$3,500 down. 218 Larsen Ave., Mountain View, call YO 8-1700.

For Sale--2/3 acre lot, east foothills. Call W. E. Kyle, CY 4-1654

For Sale--Industrial M-1 lot, older home next to downtown San Jose. Call W. E. Kyle, CY 4-1654.

For Sale--Gonset 6 meter communicator. 6 volt/115 vac. in A1 condition. \$110. 6 meter V. F. O. \$25. Call Jim Gysan ext. 294.

Want Ads continued on Page 3

to attend a meeting of SHARE (an organization of 704 users which provides a library of general programming routines and information for all to share). While in New York, she did manage to take in a Broadway show each night. In August, Marcie attended another SHARE meeting in Seattle, bringing back more useful information for the 704 programs.

In addition to computing, Marcie likes music (plays the piano) and collects classical records. She knits ski sweaters on occasion for her jaunts to ski areas around Reno. As a cook, she admits she is a failure. But she claims skill with a hammer, saw and paint brush, to say nothing of her adept plumbing technique.

She likes to drive (gets into more trouble that way) and goes up to San Francisco on the slightest provocation. Marcie regrets having moved away from San Francisco at such a tender age, since she has a strong attachment for the City. As to her trouble with driving, she has developed a proficiency for collecting tickets--usually for exceeding the speed limit. She blames all this on her work. What with the 704 handling ten digit decimal data at the rate of 40,000 additions per second, she finds herself subconsciously trying to keep up with the rapid pace of her daily existence and in the process--whoops! another ticket!

Astroventuring...★

★ with walt krumm

THE SUN (CONTINUED)

If the sun is observed visually or photographically, under near perfect conditions, it presents a clear-cut circular disk that is brighter at the center than at the edge (limb).

The PHOTOSPHERE, the visual surface, appears granular and the "granules" are some hundreds of miles in diameter. Rapid-succession photos show these granules to be short lived (about a half-minute in duration) and moving (like the crests of waves on a rough sea). The darkening of the limb is due to the general absorption of overlaying gasses. Bright irregular spots, the FACULAE, are seen near the limb and are thought to be somewhat higher than their surrounding and due to higher temperatures or lower pressures, or both.

Solar PROMINENCES are vast eruptions of gas which rise to heights sometimes as great as 600,000 miles. In appearance they resemble great sheets or tongues of flame. These are seen moving out from the edge of the sun into space, though there are other prominences that seem to be formed in space and drift towards the sun. A time-lapse movie of this phenomena is most interesting.

The solar CORONA is a pearly-white atmosphere which extends at least 300,000 miles all around the sun. At times some of its streamers have reached a height of 5,000,000 miles above the sun. Although the total light of the corona is about half that of the moon, the light per unit area is small and can be seen only during a total eclipse.

The modern astronomer has a new instrument for viewing the sun without the necessity of a solar eclipse, the CORONASCOPE. This instrument has an occulting disc at the focal plane the exact size of the sun's image which blocks out the light of the sun and allows continuous viewing of the prominences and the corona. The "time-lapse" pictures mentioned above are made with this instrument. Great strides have been made in solar physics since 1930 when Lyot, in France, made the first coronascope.

The dates for the recent International Geophysical Year were set to correspond to the peak of the sun's activity cycle.

Ames Airings

JUNE FREIBURGER (Security) taking a short holiday to welcome her husband back from his Pacific cruise as a member of the Lexington's crew. . . . LARRY MAURO (Ad. Services) married November 8 to Dorothy Sourci at St. Christopher's Church in San Jose. Honeymooned in Las Vegas and Southern California, returning to Ames November 30. Their home is in Evergreen (San Jose). . . . STORMY MORGAN (Photo) celebrating Christmas early in Hawaii! Stormy and her sister, Joyce, received the trip as a Christmas gift from their parents. Staying at Hawaiian Village, was only "tourist" invited to an Hawaiian wedding. Returned to work December 4. . . . SARAH OGATA (Ad. Services) toured Disneyland with her family over the Thanksgiving holidays. . . . MILDRED WARREN (Personnel)

and BILL WARREN (Aviation Sheet Metal) toured southern California Thanksgiving week, visiting in Fontana and Escondido FRED DEMELE (12-Foot Tunnel) returned from a recruiting trip in time to welcome the arrival of a new 8-lb., 5-oz., son and heir, born November 18. A very special event for Fred and his wife Donna. It's their first boy--they have five daughters! Named "Mark" by his parents, he's known around the 12-Foot as "Mark I". . . . DR. ALEX CHARTERS (HBR) recuperating nicely from his recent operation. Expected back December 14. . . . CLEVE FOSS (Personnel) enjoying (?) the weather back at Langley, will return in two weeks. . . .

Want Ads (continued from Page 2)

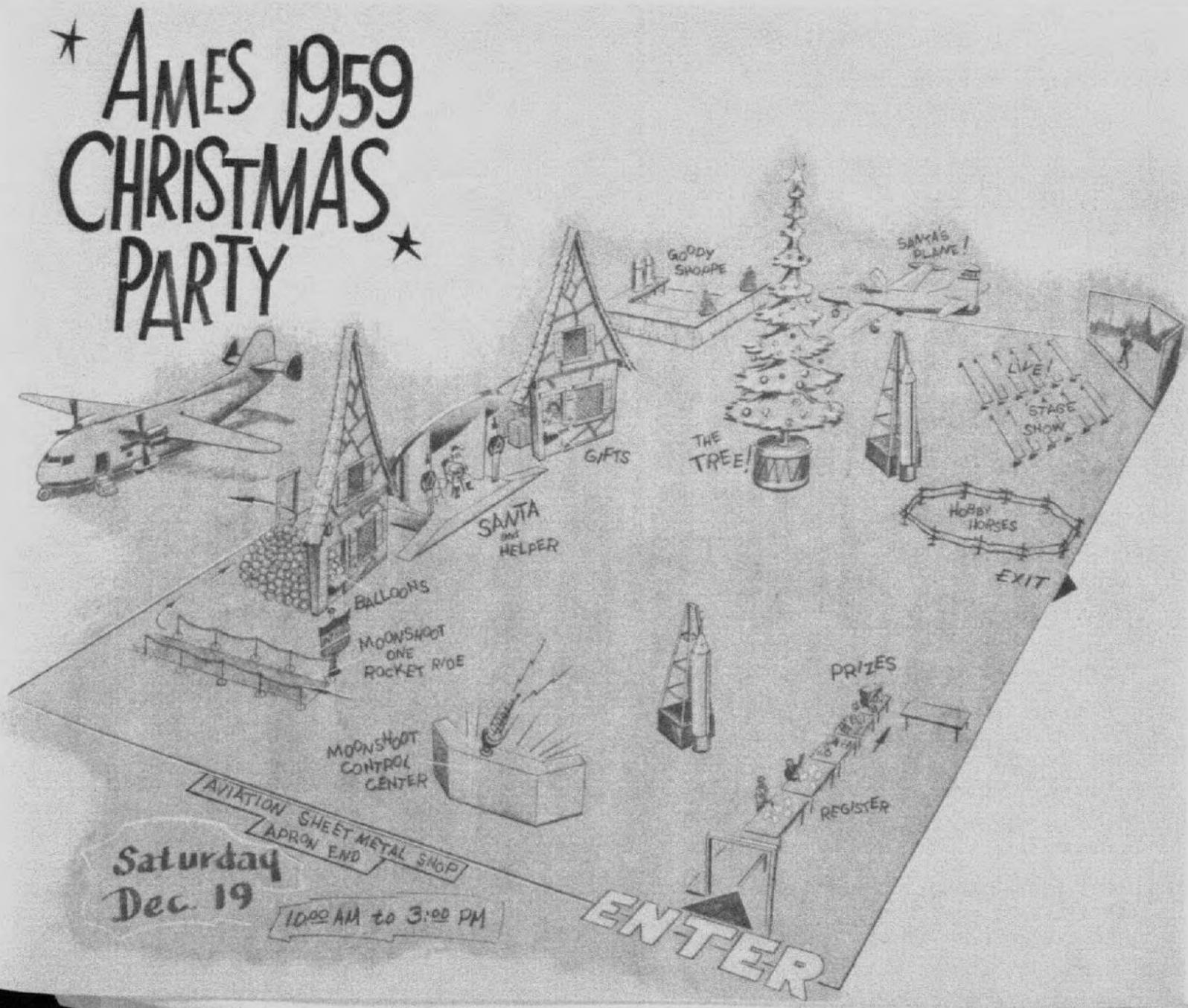
For Sale--4-door 1949 Studebaker. 3 good tires. Best offer. Call Tom Gregory, ext. 247.

For Sale--Electric train, American Flyer. Engine, tender, 3 cars, transformer and trestle set, \$35. Also baby buggy and mattress. Buggy dismantles easily for use as car bed. Call N. Barsi, ext. 310 or WH 8-5968.

For Sale--Baby walker, "Tot-L-Walk", can't damage furniture. Used only 6 months, will sell for half price. Call secretary, ext. 288 or YO 7-6046, evenings.

For Sale--Aluminum top to fit pickup truck, new condition. \$30. Call Krause, ext. 343 or YO 7-5648.

For Sale--8 inch Hi Fi speaker and enclosure. Response from 20 to 19,000 c.p.s. 4 lb. magnet, new. List price for speaker alone is \$55. Will take \$25 for both. Call Don Goodsell ext. 352 or YO 8-1200.



"Tinker Bell" Candidates for 1959



MARILYN MYERS
EMC



RONNI MC COY
Security



JOY MOBLEY
Ad. Serv.



STORMY MORGAN
Photo



ELAINE LARSEN
8- by 7-



CATHERINE DONNELLY
9- by 7-



JERRY REED
Instr. Div.



BEVERLY JAQUES
40- by 80-



JUDY SHAFFER
Fluid Mechanics



JANICE MADSEN
Ad. Serv.



VIRGINIA STRADER
Elec. Instr.



JOAN JESSEN
10- by 14-



JANE WALTZ
FSS



JUANITA NOBRIGA
9- by 7-



BONNIE RIBERA
Photo.



MEREDITH WHITSTINE
10- by 14-

VOL. I DECEMBER 24, 1959

NO. 5

AMES RESEARCH CENTER

Astrogram

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

*Season's
Greetings*

HJORNEVIK GETS NEW NASA POST

Wesley L. Hjernevik, 33, has been named deputy director of Business Administration for the NASA. He will move into the job, a new post in NASA, on December 15.

A veteran of more than 10 years of government service, Hjernevik has served as assistant to NASA Administrator T. Keith Glennan since the agency was formed.

Before that, he was assistant to the Under Secretary of the Department of Health, Education and Welfare for a year and a half. That post followed an eight-year stint with U. S. Bureau of the Budget.

He is a graduate of North Dakota State College (class of '49) where he majored in economics and was elected to Phi Kappa Phi, national honorary scholastic fraternity.

MOON EXPLORATION MAY PROVIDE KEY TO SOLAR HISTORY

A recent NASA release stated that exploration of the moon might solve the mystery of the origin of the solar system and provide clues to whether life existed on distant planetary systems.

Preserved on the dust-covered face of the moon, since it has not been eroded over the ages by water and wind or disrupted by internal activity, may be the whole history of the solar system. Scientists on the Lunar Science Panel of NASA described their plans to read this history by sending payloads to the vicinity of the moon and by landing instruments on the lunar surface.

One of the first and most important lunar experiments to be performed is to send a payload in the near vicinity of the moon to measure its radioactivity. These measurements should tell us whether the moon was ever a molten mass and give an indication of the lunar temperature over the ages.

Another experiment is to explore the surface of the moon with a television camera in a lunar satellite to see whether the moon's surface is covered by dust and rocks.

Another experiment being prepared is to make a chemical analysis of the elements on the moon's surface by landing instruments on the moon that would radio back their findings.

Once again we approach the Christmas season with thoughts of peace and good will.

The events of 1959 have brightened the hope of attaining the Christian goal of harmony among all peoples and it is most gratifying that each of us, through our space effort, has contributed a small part toward this achievement. You have energetically attacked the problems of space, and by continuing to meet and master the challenging problems of the universe we can greatly help to fulfill the hope for everlasting peace.

I wish each of you and the members of your family a very joyous Christmas and a most happy New Year.

Personnel-ly Speaking

NASA EMPLOYMENT POLICY PROGRAM

Executive Order 10590 provides that equal opportunity be afforded all qualified persons, consistent with law, for employment in the Federal Government. The order excludes and prohibits discrimination against any employee or applicant for employment in the Federal Government because of race, color, religion, or national origin.

Under provisions of the order, the head of each Federal agency is responsible for effectuating the non-discriminatory employment policy with respect to all personnel matters under his jurisdiction. To carry out his responsibilities under the program, the NASA Administrator designated Dr. Paul G. Dembling, Assistant General Counsel, NASA Employment Policy Officer. Miss Marie W. St. John, Administrative Assistant to the Director, has been designated Deputy Employment Policy Officer for Ames Research Center.

An employee, an applicant, or duly authorized representative, or the designated spokesman of a duly constituted group or organization may file a written complaint of alleged discrimination because of race, color, religion, or national origin within 45 days of specific personnel action and within 10 days involving a discharge action.

Complaints may be filed with the NASA Employment Policy Officer, the Deputy Employment Policy Officer (ARC), or the President's Committee on Government Employment Policy.

A copy of the complete NASA Administrative Regulations and Procedures No. 6-3-2, dated September 21, 1959, may be reviewed in the office of the Deputy Employment Policy Officer, Room 215, Administration Building.

Guggenheim Fellowships Announced

Applications can now be made for the Daniel and Florence Guggenheim Fellowships awarded annually for graduate study at any one of three major centers of research and development in rockets, astronautics and flight structures. Applicants interested in Jet Propulsion Fellowships may apply at the Guggenheim Jet Propulsion Centers at Princeton University or the California Institute of Technology. Flight Structures Fellowships are awarded for study at the Guggenheim Institute of Flight Structures at Columbia University.

Up to eight Fellowships are

granted annually at each institution. Each grant provides for tuition and a stipend which ranges from \$1500 to \$2000.

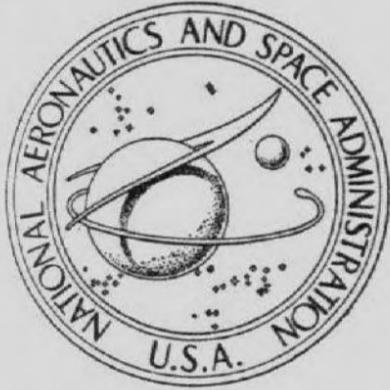
The Fellowships are open to qualified science or engineering students who are prepared for graduate study. Candidates must be residents of the United States or Canada, must have outstanding technical ability and qualities of leadership, deep interest in rockets, jet propulsion, flight structures or astronautics, and an intention to follow one of these fields as a career.

Fellowships are awarded each spring for study commencing the

(continued Page 5 column 3)

Official NASA Seal Approved

President Eisenhower has officially approved and established a seal for the National Aeronautics and Space Administration which is described as follows:



On a disc of the blue sky strewn with white stars, to dexter a large yellow sphere bearing a red flight symbol apex in upper sinister and wings enveloping and casting a gray-blue shadow upon the sphere, all partially encircled with a horizontal white orbit, in sinister a small light-blue sphere; circumscribing the disc a white band edged gold inscribed "National Aeronautics and Space Administration U. S. A." in red letters.

ASTRONAUTICS LECTURE SERIES

A lecture series in the field of astronautics will be sponsored by Foothill College beginning in January. Ten lectures will be given by top scientists of the mid-peninsula area in the series titled "Space -- the World's Frontier."

The lecture series, to be held in the Lockheed auditorium in Palo Alto, will open on January 11 and run through May 16. All lectures will be free and open to the public, according to Mrs. Anne Rambo, coordinator of relations with industry at Foothill. However, the capacity of the auditorium is limited to approximately 200 persons.

Scientists from Lockheed Missiles and Space Division, Ames Research Center, Stanford Research Institute and Aerojet will deliver lectures in the series.

The scientists are: Wayland Griffith, Don Perkins, Roy Smelt, Bruno Augenstein, Heinrich Rose and Martin Walt from Lockheed; Dr. A. J. Eggers, Jr.

OSTRANDER NAMED TO HEAD NEW NASA HEADQUARTERS UNIT

The NASA is setting up a new headquarters unit for rocket vehicle development. It will be headed by Air Force Maj. Gen. Don R. Ostrander, now deputy director of the Advanced Research Projects Agency.

Gen. Ostrander will join NASA on Air Force assignment about January 1 as Director of Launch Vehicle Programs.

"We are establishing the rocket development group because of our expanding programs," said NASA Administrator T. Keith Glennan. "For this job, we are particularly pleased to be able to call on the special talents of Don Ostrander."

The new post creates a fourth major unit in the NASA headquarters organization. Other principal offices are Business Administration, Aeronautical and Space Research, and Space Flight Development. The new division will mean some reorganization within the latter two groups.

The Space Flight Development team, headed by Dr. Abe Silverstein will have responsibility for space craft design and construction, mission planning and in-flight research and operations.

The Aeronautical and Space Research group, directed by Ira H. Abbott, has charge of advanced research in aeronautical and space areas.

BOWLING ALL-AMES LEAGUE-HANDICAP LEAGUE

The first half of the bowling season came to an end on Tuesday night, December 15, with the Afterburner team winning out over Electrical. These two teams went into the last night first and second and were playing each other. The match went right down to the wire with the deciding game - the third-being in doubt up to the tenth frame. The final result was that the Afterburners took the first half championship by 1/2 game with Electrical second and Heat Transfer third just one game behind the winners.

This means that the Afterburner team composed of J. Anaya, B. Kelley, B. Mollusky, R. Stevens,

or Clarence Syvertson, and R. T. Jones from Ames; Allen Peterson from Stanford Research; and Richard Geckler or Robert B. Young from Aerojet.

Foothill faculty members will serve as chairmen for the 10 lectures.

Wage Board Increases Announced

Ames Wage Board employees will receive an increase in salary beginning January 10, 1960 averaging approximately 5 1/2%. The wage board schedule is determined by an annual wage survey of prevailing rates in industry. The new schedule proposed by Ames to NASA Headquarters was approved by the NASA Wage Board on December 16, 1959 to be effective on January 10, 1960. The new schedule is reprinted on page 4 for your convenience.

CHANGE IN DATE CAUSES CONFUSION

The Ames Entertainment Committee wishes to announce that the closing date for the recent election of "Tinker Bell--1959" was moved up to December 7 to meet publication date of the Astrogram. In so doing, some employees' votes were inadvertently overlooked prior to the announcement in the paper. On discovering the oversight, the committee made a final tally of all votes with the result that the total count still indicated Ronni McCoy to be the popular choice. The top three candidates included Ronni McCoy, with 189 votes, Elaine Larson, 138 votes, and Bonnie Ribera, 112 votes.

The committee regrets having caused any misunderstanding and will do everything possible to avoid a similar situation in the future.

and W. Liewer with alternates H. Clements and V. Bravo will meet the winner of the second half for the league championship - that is unless they take it all by sweeping the second half.

The final team standings at the end of the half are as follows.

Name	Won	Lost
Afterburners	39	21
Electrical	38 1/2	21 1/2
Heat Transfer	38	22
EMC	36	24
Pinbusters	35	25
Machine Shop 1	34 1/2	25 1/2
SSFF	34	26
Structural Fab.	32	28
Five Jets	30 1/2	29 1/2
Spoilers	26 1/2	33 1/2
Designers	25 1/2	34 1/2
Hangar Hoods	24	36
Hangar Instrument	23	37
Machine Shop 2	22 1/2	37 1/2
HBR	22	38
Mavericks	19	41

Ames Airings

Intra Center romance culminated November 7 with VIOLET SHAW (FSS) marrying JOSEPH LAMICA (6- by 6-). The couple

honeymooned in Reno and at Lake Tahoe. Their new residence is in Sunnyvale. . . . THOMAS HARMOUNT (Constr. Eng'g) left for Cleveland, Ohio, via TWA Jet on December 15, 1959, to spend the Christmas Holidays with his family. Returning to Ames December 29. . . . BILL LEAK (HBR) spoke

at a meeting of the Mechanical Engineering Club at San Jose State on December 15 on the subject of HBR activities. . . . Numerous Christmas parties have blossomed the past few weeks among Ames employees. Ad. Services celebrated the Holiday season with a Pot Luck dinner at (continued on Page 6, column 3)

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Ames Research Center
WAGE SCHEDULE

WB Grade	Step 1		Step 2		Step 3		Step 4	
	Hourly	Annual	Hourly	Annual	Hourly	Annual	Hourly	Annual
1 - D	2.03	4,222.40	2.14	4,451.20	2.25	4,680.00	2.35	4,888.00
N	2.24	4,659.20	2.36	4,908.80	2.48	5,158.40	2.59	5,387.20
2 - D	2.12	4,409.60	2.23	4,638.40	2.34	4,867.20	2.45	5,096.00
N	2.34	4,867.20	2.46	5,116.80	2.58	5,366.40	2.70	5,616.00
3 - D	2.20	4,576.00	2.32	4,825.60	2.44	5,075.20	2.55	5,304.00
N	2.42	5,033.60	2.56	5,324.80	2.69	5,595.20	2.81	5,844.80
4 - D	2.30	4,784.00	2.42	5,033.60	2.54	5,283.20	2.66	5,532.80
N	2.53	5,262.40	2.67	5,553.60	2.80	5,824.00	2.93	6,094.40
5 - D	2.38	4,950.40	2.51	5,220.80	2.64	5,491.20	2.76	5,740.80
N	2.62	5,449.60	2.77	5,761.60	2.91	6,052.80	3.04	6,323.20
6 - D	2.47	5,137.60	2.60	5,408.00	2.73	5,678.40	2.86	5,948.80
N	2.72	5,657.60	2.86	5,948.80	3.01	6,260.80	3.15	6,552.00
7 - D	2.56	5,324.80	2.69	5,595.20	2.82	5,865.60	2.96	6,156.80
N	2.82	5,865.60	2.96	6,156.80	3.11	6,468.80	3.26	6,780.80
8 - D	2.65	5,512.00	2.79	5,803.20	2.93	6,094.40	3.07	6,385.60
N	2.92	6,073.60	3.07	6,385.60	3.23	6,718.40	3.38	7,030.40
9 - D	2.74	5,699.20	2.88	5,990.40	3.02	6,281.60	3.17	6,593.60
N	3.02	6,281.60	3.17	6,593.60	3.33	6,926.40	3.49	7,259.20
10 - D	2.82	5,865.60	2.97	6,177.60	3.12	6,489.60	3.27	6,801.60
N	3.11	6,468.80	3.27	6,801.60	3.44	7,155.20	3.60	7,488.00
11 - D	3.03	6,302.40	3.19	6,635.20	3.35	6,968.00	3.51	7,300.80
N	3.34	6,947.20	3.51	7,300.80	3.69	7,675.20	3.87	8,049.60
12 - D	3.25	6,760.00	3.42	7,113.60	3.59	7,467.20	3.76	7,820.80
N	3.58	7,446.40	3.77	7,841.60	3.95	8,216.00	4.14	8,611.20
13 - D	3.46	7,196.80	3.64	7,571.20	3.82	7,945.60	4.00	8,320.00
N	3.81	7,924.80	4.01	8,340.80	4.21	8,756.80	4.40	9,152.00
14 - D	3.67	7,633.60	3.86	8,028.80	4.05	8,424.00	4.25	8,840.00
N	4.04	8,403.20	4.25	8,840.00	4.46	9,276.80	4.68	9,734.40
15 - D	3.86	8,028.80	4.06	8,444.80	4.26	8,860.80	4.47	9,297.60
N	4.25	8,840.00	4.47	9,297.60	4.69	9,755.20	4.92	10,233.60
16 - D	4.06	8,444.80	4.27	8,881.60	4.48	9,318.40	4.70	9,776.00
N	4.47	9,297.60	4.70	9,776.00	4.93	10,254.40	5.17	10,753.60
17 - D	4.31	8,964.80	4.54	9,443.20	4.77	9,921.60	4.99	10,379.20
N	4.75	9,880.00	5.00	10,400.00	5.25	10,920.00	5.49	11,419.20
18 - D	4.57	9,505.60	4.81	10,004.80	5.05	10,504.00	5.29	11,003.20
N	5.03	10,462.40	5.30	11,024.00	5.56	11,564.80	5.82	12,105.60
19 - D	4.88	10,150.40	5.14	10,691.20	5.40	11,232.00	5.65	11,752.00
N	5.37	11,169.60	5.66	11,772.80	5.94	12,355.20	6.22	12,937.60
20 - D	5.21	10,836.80	5.48	11,398.40	5.75	11,960.00	6.03	12,542.40
N	5.74	11,939.20	6.03	12,542.40	6.33	13,166.40	6.64	13,811.20

Shift Differential 10%

Effective Date: January 10, 1960

Ames Closeups...



GORDON TITUS

Working as a drover on a cattle drive from Sequoia to Taft, California, seeing a volcano blow its top in Alaska, helping to bring in the "Lost Hills" oil fields west of Bakersfield are all a part of Gordon Titus' interesting background.

Gordon, a carpenter in the Model Construction Branch, came to Ames in November, 1946, from Mare Island where he had served as a shipwright for three years. A native of Visalia, he spent his early years in the San Joaquin Valley. In 1916, he took on the job of drover on the aforementioned cattle drive. Following this, he went to work on the "Lost Hills" project in the oil fields. At the beginning of World War I, Gordon was working at the Tacoma shipyards. Enlisting in the Army, he spent three years with the occupation forces in Germany at the end of World War I. The ensuing twenty years, Gordon spent roadbuilding in Tulare County.

Now a resident of Los Gatos, Gordon and his wife, Alice, spend most of their free time travelling. They have three children, now all married, Lorraine Farmer, Mercedes Burum, and Ben Titus. Ben, formerly a draftsman at Ames, is currently working for Boeing at Wichita.

Among their travels, Gordon and Alice have driven the Alaska Highway twice. The first time, in 1951, Gordon says the trip was fairly rugged. They never had to be pulled out of the mud, but assisted in pulling others out, and survived one flood with no casualties. In the summer of 1953 they repeated the trip and found conditions vastly improved.

Extra supplies and gas weren't necessary, Gordon says. You were never more than fifty miles from lodging. They arrived in Fairbanks in June, in time to witness 24 hours of sunshine, the sun dipping briefly toward the horizon only to zoom skyward again. While in Anchorage, one of Alaska's active volcanos erupted, scattering dust and debris over the entire area. Travelling home by water, Gordon and Alice embarked at Skagway, landing at Prince Rupert, British Columbia. They heartily recommend this trip to anyone interested in the beauties of the rugged northwest country.

More recently, they have travelled to the Mammoth Caves in Kentucky, the Carlsbad Caverns in New Mexico, and Yellowstone. On this trip they spent some time on a houseboat on a lake in the Ozarks. On their return through Yellowstone they just missed the mountain slide that caused so many casualties by a few days. Gordon is an avid photographer and has brought back many beautiful color slides of the many areas

(continued from Page 2)

following fall. Applicants who wish to be considered for Jet Propulsion Fellowships should apply directly to either Princeton or California Institute of Technology. Applications for Fellowships in Flight Structures should be made to Columbia University.

To be eligible, an applicant should file his credentials with the university he selects by March 1. Applications will be considered promptly, and successful candidates will be notified by April 1. Applications may be obtained through your training officer John Leveen, Room 109, Administration Building.

he has visited. A number of Ames employees have been fortunate in viewing some of his pictures on occasions.

On being asked about his plans after retirement, Gordon looked wistful, remembering those pleasant moments on a houseboat on a lake in the Ozarks. "We like the water," he said. "Maybe we'll just get us a houseboat and drop anchor in some lake or river."

George P. Miller
House of Representatives
Washington

November 25, 1959

1516 Oak Street
Alameda, California

Dear Dr. DeFrance:

I want to express my appreciation to you and the splendid staff that operates the Ames Research Center for the very instructive briefing that you gave members of the Committee on Science and Astronautics on the occasion of our recent visit.

I am exceptionally proud of the work done at Ames and the high calibre of people that you have attracted to this institution.

It is in keeping with the fine tradition that was established when your laboratory was part of NACA.

I also want to thank you for sending me the picture in which you and Mr. Drinkwater appeared.

Sincerely,

GEORGE P. MILLER

Dr. Smith J. DeFrance
Director
Ames Research Center
NASA, Moffett Field
Santa Clara County, California

WANT ADS...

To Trade--Five books Blue Chip stamps for S & H Green. Tom Rowland, EMC. YO 8-2786.

Wanted--Car pool arrangement for 7:30 - 4:00 shift from vicinity of Fremont and Wright Avenue, Sunnyvale. Call Tom Walsh, Ext. 221.

For Rent--Comfortable, well-furnished room, with outside entrance. Two blocks from Castro Street, Mountain View, and 2 blocks to bus depot. Reasonable rent. Phone YO 7-3047

For Sale--Circulating heater. Phone Clayburn 8-9524.

For Sale--Allen Spinnet Organ, blond, two manual with extra speaker and music. Comes with 3 1/2 year guarantee. Call CH 8-5383 after 4:30 evenings or Sat. & Sun.

For Sale--Apartment size stove, \$30. Call YO 8-1190.

For Sale--Electrolux tank-type vacuum cleaner with all attachments, like new. Call CHerry 3-3390 after six, or Ext. 327.

Wanted--Clerk-Stenographers for various positions at Ames. Please refer any interested parties to Personnel, Room 112, Administration Building. Phone Ext. 305.

For Sale--Kitchen sink and cabinet (white), 54". Complete with all fittings. Cost \$139.95 less trap, etc. \$60. Call Jim Gysan.

Wanted--Driver to join car pool, 7:30 to 4:00 shift; vicinity Gould Street & Saratoga Road, Santa Clara. Call Hans Bresler, ext. 334.

For Sale--Studebaker, 1949 pickup, 1/2 ton. Radio, heater, turning signals, over-drive, good tires. \$325. See McEwin, Unitary. Ext 367 or CY 2-5028.

For Sale--Roto-Broil "400", Capri model; and "Cosco" portable table with removable tray. Like new. Cost \$69. Will sell for \$45. Howard Maxwell, ext. 352.

Astroventuring... ★ with walt krumm

THE CHRISTMAS STAR The Star of Bethlehem

"Now when Jesus was born in Bethlehem of Judea in the days of Herod the king, behold, there came wise men from the east to Jerusalem,

Saying, Where is He that is born King of the Jews? for we have seen his star in the east, and are come to worship him."
Matthew 2:1, 2

The astronomer accepts the Star of Bethlehem as an act of divinity but his scientific curiosity has led him to search for centuries for a "star" as defined by the limitations of his own little universe that could conceivably be one and the same.

Investigations of the possibility of this "star" having been a comet, a conjunction, a meteor, a nova, or even a star as we know them, have been made.

The ancients considered a comet to be a harbinger of evil and this event was certainly not that. Also, a search of cometary records for this era reveal no comets at this time, to serve as the Star of Bethlehem.

The science of astronomy was well developed by the time of Christ. Planetary motions were known. The first great star maps had been made. Eclipses and conjunctions (the close approach of two or more planets) could be predicted. Even the term "wise men" indicates persons well versed in astronomy. The possibility that the wise men misjudged a conjunction for the Star of Bethlehem seems remote.

The possibility of a meteor as the Star of Bethlehem seems even more remote. Satellite studies show us that a meteor would circle the earth too rapidly to serve as a guide for the wise men and still be within the earth's atmosphere to "burn". When we recall that the wise men stopped and talked to Herod enroute a time lapse is inferred--a meteor to have lasted all this time would have to have

For Sale--Cannon 28 MM, F3.5 Wide Angle lens, Leica thread; Elmar 35 MM, F3.5 Wide Angle lens, Leica thread, Piesker TeleVotar 250MM F5.5 with Praktica adaptor. All lenses with cases. Call S. C. Hanscom, ext. 237 or YO 7-9207.

(continued from Page 4)

the home of LUCILLE BAKER (Ad. Services Branch Chief) on December 18. ELEANOR HOLT (Fiscal) invited her Branch to her home for a Christmas Party December 19. . . . Pay Roll Section has moved across the street from Admin. Annex to the Engineering Services Building in what were the offices of the 10- by 14- staff. . . . SKIP FLETCHER (8- by 7-) and LADO MUHLSTEIN (11-Foot) returned from a trip to Hawaii December 6. Spent 16 days in the islands witnessing the eruption of Kilauea Iki volcano (the one which has been making headlines lately), meeting DOT TYLER (EMC) who arrived on the Lurline, and enjoying Hawaiian hospitality. . . . From the staff of the Astrogram to our readers, a joyous Holiday season! See you January 7.

been enormous.

A nova is a star that explodes and increases in brightness for a period of time. If the wise men came from the Euphrates area to Jerusalem this would seem to move westward each evening and serve as a guide. But the nova seems an unlikely prospect for the Star of Bethlehem as they flare and dim too rapidly and could have disappeared by the time the wise men needed it most.

" . . . and, lo, the star, which they saw in the east, went before them, till it came and stood over where the young child was."

Matthew 2:9

Would a star, as we know the stars today have acted thusly--a "normal" star for the Star of Bethlehem? We know of no star that stops. If you pick any star, even Sirius, the brightest, can you say that it designates a place on earth as precisely as the Star of Bethlehem?

The more the astronomer puzzles the closer he returns to the thought that only an act of divinity is indicated for the Star of Bethlehem.

The ASTROGRAM, an official publication of the Ames Research Center, NASA, Moffett Field, Calif., is published bi-weekly in the interest of Ames employees. Send contributions to The ASTROGRAM -- phone 385. Deadline: Thursday between publication dates.

Editor: B. P. Wilson
Reporters: NASA Employees.