

National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

Congratulatory message from UN

The President of the United States recently received a message in a telegram from the United Nations Secretary General Kurt Waldheim which is pertinent to all employees of NASA and in particular those associated with the Skylab Program. Dr. Hans Mark, Center Director, received a copy of the telegram and wishes to share it with all Ames employees at this time:

"The Honorable Richard M. Nixon
President of the United States of America
The White House
Washington, D. C.

"I wish to convey to you, Mr. President, and through you to Colonel Gerald P. Carr, Dr. Edward G. Gibson and Lt. Col. William R. Pogue my sincere congratulations upon the success of the Skylab IV mission. These three brave astronauts have not only set a new record for man's endurance in outer space, they have also taken an important step forward in the voyage of man to our solar system. We are aware of the many concrete benefits presently derived from the peaceful exploration of outer space, and we know that through the courageous efforts of these and other astronauts and those who plan and work on these complex projects, we shall see new benefits for all mankind."

Kurt Waldheim
Secretary-General United Nations"

Applications Program at MTF

Officials from NASA Headquarters and its field installations across the country met on March 21-22 at the Mississippi Test Facility to study present and future programs of the space agency to ensure the efficient application of knowledge to our national problems.

Charles W. Mathews, NASA's Associate Administrator for Applications, Center Directors and other key policy-making personnel from Washington and NASA's field installations reviewed activities and programs which will provide social or economic benefits to the "user" community.

NASA and several federal, state and university organizations are involved in space and environmental investigations at the MTF.

Mathews began the sessions by reviewing fiscal year 1975 budget and outlining new programs. (Cont. Page 2)

American Astronomical Society Convention

New research results and studies on the planets and Comet Kohoutek were reported at a national meeting of the American Astronomical Society, Division of Planetary Science (DPS), at Rickey's Hyatt House the week of April 1.

Scheduled sessions and topics included: History of Planetary Astronomy; Venus; Mars; Asteroids, Moon and Mercury; Jupiter; Saturn, Uranus, Neptune, Saturn Rings and Satellites; Jovian Satellites; Radiative Transfer; Mariner 10 Mercury Results; Mariner 10 Venus Results; Titan; Jupiter; Pioneer 10 Results; and Comets.

Many Ames researchers participated in the five-day convention. They, their Ames organization, and their respective contributions are in alphabetical order as follows:

Hans R. Aggarwal, SSG, "Roche Limit of a Solid Body;" Betty Baldwin, SST, "Estimates of the Size of the Particles in the Rings of Saturn and Their Cosmogonic Implications;" Robert W. Boese, SSA, "Spectroscopic Constraints on the Clouds of Venus" and "Rotational Temperatures of Venus Derived from Inhomogeneous Scattering Model Atmospheres;" C. Chackerian, Jr. SSA,

"Calculations of Jovian H₂ Quadrupole Equivalent Wide Widths: The Influence of Pressure Shifts;" L. Colin, SS, "The Upper Ionosphere of Venus" and "The Ionosphere of Titan;" D. E. Gault, SSG, "Far Encounter Photography;" L. P. Giver, SSA, "Spectroscopic Constraints on the Clouds of Venus" and "Rotational Temperatures of Venus Derived from Inhomogeneous Scattering Model Atmospheres;" James B. Pollack, SST, "A Simplified Model of the Venus Atmospheric Circulation in Light of the Venera 8 Data," "Aircraft Observational of the Spectrum of Jupiter Between 16 and 40 Microns: A Determination of the Helium to Hydrogen Ratio and the Vertical Temperature Structure," and "Estimates of the Size of the Particles in the Rings of Saturn and Their Cosmogonic Implications;" Audrey L. Summers, SST, "Estimates of the Size of the Particles in the Rings of Saturn and Their Cosmogonic Implications;" R. C. Whitten, Jr., SST, "The Upper Ionosphere of Venus" and "The Ionosphere of Titan;" John H. Wolfe, SSS, "The Magnetosphere of Jupiter: Summary Review;" and Richard E. Young, NASA Headquarters, "A Simplified Model of the Venus Atmospheric Circulation in Light of the Venera 8 Data."

A new view of Jupiter



THIS NEW VIEW OF JUPITER . . . in blue light shows never-before-seen details of the planet's cloud tops. Taken by the Pioneer 10 spacecraft as it flew past Jupiter last December, details of the picture now have been greatly improved by data analysis and computer processing at the Optical Sciences Center, University of Arizona.

Ames co-hosts space day

Ames and the California Aerospace Education Association (CAEA) co-sponsored the 4th Annual Aeronautics and Space Day at Ames on March 15. Nearly 85 science students from nearby high schools and flight academies participated in Space Day this year.

Center Director Dr. Hans Mark welcomed the group in the morning. Various presentations by Ames personnel were made during the day and included: Donald L. Anderson, Airborne Science Office, "U.S.-U.S.S.R.: Earth and Space Science Projects;" Thomas L. Bridges, Pioneer Project Office, "Pioneer 10 - Mission to Jupiter;" Robert L. Cameron, Airborne Science Office, "Airborne Astronomy;" and Dr. Trieve A. Tanner, Man-Machine Integration Branch, "Community Acceptance of Aircraft Operation."

David Wilson and Kerry Joels from the Educational Services Office toured the group through the Center. Other tour escorts for the day included Sean Clinton, Gene Schoenberger and Andy Bogart of the DeAnza/Foothill Colleges Work Study Program at Ames. Kevin Tucker of the high school Exploratory Work Experience Program at Ames (Fremont Union High School District) also helped escort the guests around the Center.

Ames Educational Programs Officer Garth A. Hull worked with CAEA Northern Section President Barry Mirkin in organizing the 4th Annual Aeronautics and Space Day at Ames this year.

Flight test group visits Ames

In a joint effort to set new requirements for supersonic aircraft, authorities from Britain, France, and the United States governments met at Ames during the last two weeks of March for simulation exercises on the FSAA (Flight Simulator for Advanced Aircraft). The authorities were a flight test group consisting of pilots and engineers from each of the three countries.

The agencies involved included the Ames based office of the Federal Aviation Administration (FAA) headed by Jack E. Cayot; FAA, Washington D. C. representatives; the British Civil Aviation Authority (CAA); and the French Centre d'Essais en Vol (CEV), or "Flight Test Center."

The two week simulation tests were prompted by the cooperative effort in SST work which the three governments have participated in since 1969. For some of the visiting pilots and engineers this marked the seventh trip they have made to Ames Research Center since the 1969 agreement. (Photo on page 2)

Fire escape device developed

A new emergency fire escape device, invented at Marshall Space Flight Center may help reduce the number of individuals who die every year trapped by fire on the upper floors of tall buildings.

The unique device was developed by Peter Broussard and John Burch of Marshall's Astrionics Laboratory. Easily operated, it allows a trapped individual to lower himself to the ground by means of a harness attached to a steel cable. It can be adapted for any building height.

The cable reel, with an automotive-type shock absorber, is mounted on a metal frame and anchored outside of a

window or on an inside wall. The reel and shock absorber are designed to control speed and allow a constant rate of descent. The device will lower a 150-lb person at a rate of 2 feet per second. A lighter weight individual will descend at a slightly slower rate.

There are different options available for reuse of the basic mechanism after the evacuee has reached a safe lower level. The device can be retractable, or extra harnesses with attached reels can be successively attached to the frame so that retraction is not necessary.

Special Achievement Awards



RUTH E. SMITH . . . accepts a Special Achievement Award from Harry M. Nakayama, Chief of the Administrative Applications Analysis Branch. Mrs. Smith is a Computer Systems Analyst and received the award "for her contributions in the design, development, and implementation of the Center's new computerized financial and contractual management systems."



MARGARET COVERT . . . receives a NASA Special Achievement Award from John S. MacKay, Chief of Ames Scientific Applications and Analysis Branch. The incentive award is to honor Miss Covert for her contributions to the ILLIAC IV User's Support Group. She has provided her services in solving many of the problems "on the ILLIAC computer which could be of national importance in scope."

Procurement training



The Procurement Division began a four phase training program in "Fundamental Procurement Concepts" on February 11 which is available to procurement people who have expressed the desire to strengthen their knowledge of procurement procedures.

The participants pictured include (left to right) standing: Georgia Benson, Doris Grimes, Carolyn Anderson (Training Coordinator), and Velma Rodriguez; seated are Carol Burrous, Jeannette Kyles and June Wallace. Participants not pictured include Colleen Foley and Jessie Mosier. Jeannette Kyles and Jessie Mosier have completed the first phase and have received a Certificate of Training from Lloyd Walsh, Chief of the Procurement Division, in conjunction with the Training and Special Programs Branch.

Each phase involved 40 hours of training which is accomplished at a rate of 2 hours per day for 20 consecutive working days.



THE RECENT FLIGHT TEST GROUP PERFORMING EXERCISES ON THE FSAA INCLUDED . . . (standing, left to right): Paul Martin, FAA, Washington, D.C.; Ray Forrest, FAA, Ames; Pierre Dudal, CEV; (seated): Pierre Bolliet, CEV; Doug Benefield, FAA, Washington; Andre Cavin, CEV; Bob Le Seur, FAA, Washington; and Dennis Tuck, FAA, Washington.

Applications Program at MTF

(Continued from Page 1)

Topics discussed and reviewed included earth observations, communications, navigation and traffic control, space processing and technology, geodesy and applied earth physics and energy distribution.

Balch said he was most pleased that MTF was selected by Mathews for the Applications Board meeting because it would give many an opportunity to see first hand the productive working relationships at MTF which are developing between NASA and other agencies.

"We're looking for people-aiding uses of what we in NASA have and what we are learning in conjunction with other federal and state agencies," he concluded.

Ames representatives attending the meeting included Astronautics Organizational Director Dr. Dean Chapman and the Chief of the Ames Applications Aircraft Support Program Office (AASPO) Edward W. Gomersall.

Room 142
Admin. Mgt. Building
Phone 965-5422

astrogram

The Astrogram is an official publication of the Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Editor Meredith Moore
Reporters NASA Employees

Deadline for contributions:
Thursday between publication dates

Processing vaccines in space

Manufacturing vaccines in space vehicles in Earth orbit may make the difference between having vaccines of very low effectivity and vaccines which are extremely effective in controlling spreadable diseases, David W. Keller, Manager of Advanced Programs Space Division, General Electric Company, believes.

Processing vaccines in space "may help us to find a solution to the common cold or to the many things called the common cold," Keller said. Vaccines are used in the treatment of many diseases and respiratory ailments. The flu and the common cold are key among these.

Keller noted that there are a number of substances that could be manufactured or processed economically on space missions flown by the Space Shuttle in the 1980s. "The utility of resultant products should be high enough for distribution at profitable price levels," he said.

The pharmaceutical industry has spent millions of dollars over years of constant research to develop methods for refining and purifying such products as vaccines, serums, blood fractions, enzymes, and the like. This is necessary because even the very slightest traces of impurities can cause harmful side effects or disorders and because the concentration of the active agents in some experimental vaccines is too low to make them really effective, Keller said.

Such components can be separated or concentrated with a high degree of precision by a process called electrophoresis, a technique used routinely in medical laboratories on Earth today. It involves the application of electrical fields to solutions. The electrical fields cause components in the solutions to move and separate. As various particles are separated they can be removed from the solution. Gamma globulin, the blood component used as a specific treatment for several diseases, was first identified by this method.

"Earth's gravitational force, however," Keller said, "causes settling and convection currents and as a result liquids being subjected to electrophoresis must be confined in thin films or porous supporting materials thus limiting the procedure to small quantity testing."

Because no settling or convection should occur in a gravity-free or weightless environment, electrophoresis could be used "as an online processing technique for quantity production to separate desirable components from impurities," Keller said.

Two small demonstrations have already been performed on Apollo and Skylab flights, beginning the development of this promising space technique, Keller said.

"In the Space Shuttle, the processing of the ten most used vaccines could be done advantageously by this method," he noted. If the usage level of vaccines by all nations were to approach that of the United States, this would require the processing of only one ton per year total of the ten typical vaccines with an estimated annual value in the millions of dollars.

Lee Jones, "splashdown photographer"

Photographer Lee W. Jones of the Photographic Technology Branch has enthusiastically participated in numerous space flight recoveries throughout his extensive career with NASA-Ames. His most recent recovery mission was the final Skylab 4 mission. Jones spent 2 weeks aboard the "New Orleans" in February to capture and record on film the return of the crew who had experienced to date the longest space flight of all mankind.

Jones was one of two official NASA photographers aboard the Skylab recovery helicopter. "In the early days, I had to be black and white, color, and movie man all in one! This time I just shot Public Affairs color." Pictures of Photographer Jones aboard previous recoveries show him with five and six cameras slung over his shoulder.

In addition to being responsible for taking recovery photographs, Jones' activities included helping to coordinate the entire press pool (30 to 40 newsmen) where the photographs were involved. He identified each photo and gave it a caption and worked with AP and UPI in assuring distribution of the proper official NASA photograph. Timing was naturally important when it came to achieving final dissemination of the photos.

Jones says his accommodations aboard the "New Orleans" were "Excellent! I lived with the commanders in the Officers' Quarters." When asked what he enjoyed most about this recovery that might be special or different from other recoveries, the long-time government employee replied, "I especially got a kick out of actually having had the opportunity to unload the spacecraft and to pack all the EVA (Extra Vehicular Activity) gear after completing all my other duties. I was amazed at the orderly housekeeping within the craft and at the astronomical number of experiments aboard."

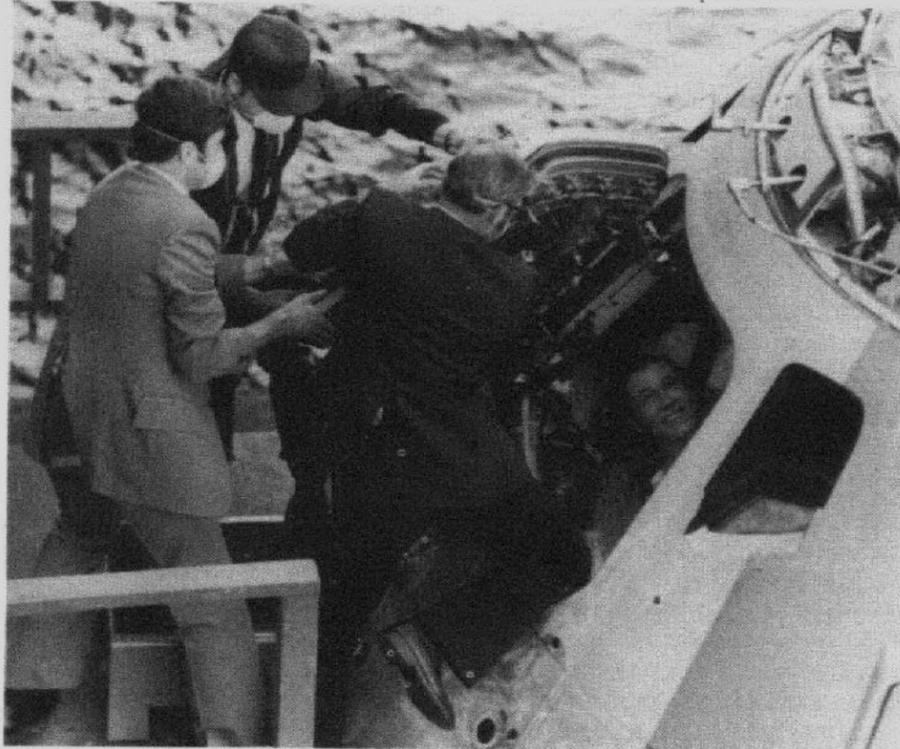
"Another thing that hit me hard this time was the fact that the astronauts must have really been lonesome for their families after such a long flight. I know I was after just having been on the ship for a 2-week period. My wife and son had the opportunity to come down to San Diego to see the spacecraft, the astronauts, and to see where I lived on board ship. I was so tickled to see my gang after just 2 weeks... just think how lonesome the astronauts were after 84 days!"

Lee Jones has been an active Ames employee since March of 1946. He originally joined the government when he entered the Air Force as an enlisted man. In the Air Force Jones taught photography and soon became a squadron commander with the rank of Captain on a photo reconnaissance squadron with the P-38s in the Burma-China-India theater. Though photography was once only a hobby, it didn't take the talented Jones long to make it a lifetime career.

It was in 1942 that Lee Jones married and later became the father of two boys and a girl; it was much later that he



PHOTOGRAPHER LEE W. JONES . . . (left) accepts a Certificate of Appreciation from Assistant Branch Chief Joseph A. March for aiding in the photography of the final Skylab recovery. The certificate was extended to Jones from NASA Headquarters.



ONE OF THE MANY SKYLAB 4 "JONES PHOTOS" . . . includes this shot where Astronaut Dr. Edward G. Gibson smiles as NASA team leader Melvin Richmond and the medical doctors open the hatch after the Command Module was lifted aboard the recovery ship, U.S.S. New Orleans.

and his wife became grandparents. They now have two grandchildren.

Lee Jones is not only a veteran photographer of Mercury 8 and 9 recoveries, numerous Geminis, and the majority of the Apollo recoveries ("ask my son which one and how many!"), he is also a veteran of a 25-year old Ames car pool. There are four in the ride group and they include Jones, Ed Kelly, Wayne Scott, and Charlie Ware. Kelly is an original rider like Jones.

The photographer feels that he has satisfied his career goals through his

work at Ames. As a participant in space recoveries, Jones says he was probably originally chosen because of his experience as a field photographer and because he was "at the right place at the right time." He adds, "I have been so lucky to have had the opportunity to participate in recording space history."

Another invitation has been extended to the Ames photographer to join the recovery crew of the upcoming US/USSR space mission in 1975. "If I attend," Jones says, "it will be a wonderful way to wrap up my NASA career."

Speakers Bureau

On February 22, E. Dale Martin (Computational Fluid Dynamics Branch) presented "Rapid Finite-Difference Computation of Subsonic and Transonic Flows" to the Computational Physics Seminar at Stanford University. The seminar was part of Engineering 295.

Lt. Col. Al Worden (Chief of the Systems Studies Division) was the guest speaker at the April 9 meeting of the Los Altos Kiwanis Club.

Donald Moody (Model and Instrument Machining) spoke to the Sunnyvale Antique Bottle Collectors Association at its meeting on April 2 at the De Anza Park Community Center. Don's presentation was: "Glass - What It Is, Its Composition, and Its Uses."

David Brocker (Simulator Computer Systems Branch) discussed the Apollo and Pioneer programs for two groups of students at Howest Elementary School in Los Gatos, on February 6. One group was third graders; the other group was fifth and sixth graders.

Barbara Busch (Educational Programs Office) was the guest speaker at an Eagle Scout Court of Honor in Kensington, on Saturday, March 30. She discussed how the personal qualities displayed by our astronauts are similar to the character goals emphasized in scouting.

George Holden (Chief of the Simulation Experiments Branch) was the luncheon speaker at the Cupertino Rotary Club's meeting on February 27. George reviewed Ames' role in NASA's space programs, and then updated the members on NASA's overall accomplishments during 1973.

AIAA Meeting

An illustrated lecture by Dr. Chauncey Starr on the role of the Electric Power Research Institute in solving the energy problem will be presented on April 25 at 8 p.m. in the Rickey's Hyatt House. The lecture is sponsored by the American Institute of Aeronautics and Astronautics (AIAA). A no-host social hour begins at 6 p.m. and dinner is at 7 p.m.

Please call Irene Hagen at United Technology Center (739-4880, ext. 2561) on or before Thursday, April 23.

Announcement

The San Jose Chorus, celebrating its 50th year of continuous service to the cultural events of San Jose, will give a "POPS" concert at San Jose City College on Sunday, May 12th at 3:00 p.m.

Celebrate Mother's Day by bringing her and the family to enjoy hearing old time melodies such as those from Jerome Kern, "My Fair Lady," "Sound of Music," "South Pacific," and others.

The concert is open to the public free of charge. Anyone wanting further information in regard to the Chorus, call Mrs. Dale Goodnight, 377-3843.

WANT ADS

FOR SALE: Camper self-contained w/ sliding dome, cab over, DELUXE. Offer? 252-9406.

'70, 510 Datsun wagon, automatic, air cond., good cond. \$1595. 253-2004.

MOTORCYCLE: 70 c.c. Honda CT70 (1970) trail bike, \$125. CAMPER LIFTS: Bradshaw, \$50. 252-9406.

Mercury Montego 2-dr hdtip, air cond. Good cond. \$575. Ext. 6052 or 255-1168 after 6 p.m.

'72 Datsun 540, automatic, great cond., AM-FM radio, air cond., 26 MPG. \$150 and take over payments. Call 274-1409 ask for Ms. B. Manning.

'66 Chrysler New Yorker. Lots of room and comfort for ride pool. Air cond., all power, incl. 6-way bucket seat and power antenna, rear window defogger, tilt steering wheel, reverb, etc. \$595. Call 494-3158.

Housing

FOR RENT: 2-story vacation house, Tahoe Keys, waterfront, private boat dock, exc. view. Near casinos. 736-4328.

All Ames Basketball League winners



THE "BEER BARRELS" TEAM . . . won the All Ames Basketball League 1973-74 playoffs. Team members include (back row, left to right) Dale Filbert, Dave Peterson, Mladen Chargin, George Ishiguro; (front row, left to right): Paul Soderman, Jim Myers, Mike Green Larry Olson. Not pictured is Frank Steinle.

"Peaceable Might" by John Calderwood an Ames tour group visitor

Wind flying in rectangles,
 guided in keenly studied, simulated flight,
 wind racing 'round the world's largest
 man-made funnel to tunnel the wind's might!
 Thirty tons coasting at thirty miles per hour,
 compressed, accelerating, adding two hundred
 fact-finding velocities
 funneling fluid force around within the course,
 when we're not pigmies standing, awed
 within this towering resource,
 smoothly caressing a crafted model,
 every fluctuating nuance revealing
 tolerance of design to flight,
 computer sensitivities recording
 the results of windy themes
 flowing gracefully day and night!
 Just down the Bay, NASA, an acronym, "Ames,"
 researches, centers the mind of man
 idea by idea, step by step out to the moon
 with PEACEABLE MIGHT, a hymn to man's
 finest hour, just about half a century
 after the Wright Brothers
 sent flight off on a honeymoon!
 "Hey! WOW! Why there's an Astronaut,
 a man from the moon, right there,"
 you can touch him in this small world
 allotted to coincidence in Moffett
 Field's space-lab cafeteria!
 But then, still, it's only the beginning
 for fly by's and sit downs
 for Mars, Jupiter, and Saturn in turn,
 and way stations on out to interstellar space!
 Soon?
 I'M FLYING BY THE SEAT OF YOUR PANTS!

FOR RENT: 2 rooms & bath, furnished, limited cooking, utilities furnished, 3 miles to Ames, female preferred. 967-5348.

Miscellaneous

FOR SALE: Complete set "Great Books of the Western World" w/bookcase, \$125. Earl Menefee, 243-5382.

Antique English balance scales (3), exc. condition, hard to find. Hank Asch, 736-6999.

BAR STOOLS, 4, black wrought iron base w/red seat. \$25 each. Home, 272-1086.

Men's ski boots, 2 yr old Lange Standards, size 8½M, \$35. Dovre ski racks, adjustable, w/locks, 1 yr old, \$15. Call ext. 6052 or 255-1168 after 6 p.m.

Magnavox Stereo \$75, Chord Organ with amplifier \$75, both in very good condition. Call 252-5596

'71 Alfa Spider, metallic silver, new tires, low mileage, \$3750, 964-5734.

Very old carpenter tools & chest (make offer). Also double Hideabed, very nice, \$60. 227-5307.

Bike: 5-speed Men's, Schwinn, 26", \$40. Call 252-9406.

Lrg. Dinette Set w/8 chairs. Wood grain Formica top. Good cond. \$40/offer. 252-3853.

Antique American wall clocks: 3 Schoolhouse, 1 Calendar, 2 Railroad, and 1 Empire. All in exc. cond. and running. Starting at \$125. Hank Asch, 736-6999.

TRADE: 3-2/3 S&H Green Stamps books for 3 Blue Chip books, Earl Menefee, 243-5382.

WANTED: a Roll-away bed in a good, clean condition. Call 321-1858 after 5 p.m.

Jetsetters notice

April 18, 1974 there will be a special film showing and presentation for our upcoming "Dubrovnik 74" trip. Questions and answers will follow the presentation. Interested parties may also sign up for the trip at that time. The presentation will start at 7:30 p.m. in the Space Science Auditorium Bldg. 245. Plan to attend this special showing.

Skylab stamp

The Houston Philatelic Society is offering an Official First Day Cover for the Skylab stamp to be issued May 14, 1974. The latest space stamp will commemorate the first anniversary of the launch of Skylab I on May 14, 1973. The multicolor cachet will feature the Skylab at the top with three parachutes below including names of the astronauts making the flights.

Covers are available for 50¢ for single stamp on cover, or five covers for \$2.00. Plate block FDCs \$1.25. For those who service their own covers, four for 50¢ plus stamped #10 envelope. Send orders to: Skylab Covers, 14359 Chadbourne, Houston, Texas 77024.

National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

Ames Controllers to retarget Pioneer 11

Project Pioneer controllers here at Ames commanded the firing of Pioneer 11's thrusters on April 19 at 10:00 a.m. PDT to retarget the spacecraft for a closest-ever look at Jupiter and a "first" in space-flight — an encounter with the ringed planet Saturn.

As a result of Pioneer 10's successful flyby of Jupiter on Dec. 3, 1973, Pioneer 11, launched April 6, 1973, and due to encounter Jupiter on Dec. 2, 1974, will be retargeted to pass within 26,000 miles of the planet, three times closer than its predecessor. It will then fly on to Saturn with a gravity assist from Jupiter.

Thrusters on the spacecraft were ignited from a distance of 420 million miles as ground controllers command the firing of the thrusters for a duration of 42 minutes and 36 seconds. The course change maneuver will expend 17 pounds of propellant, or 28 percent of the propellant originally stored on board the spacecraft, reports Jim Phillips, Ames trajectory engineer.

The trajectory change will be accomplished by adding a velocity increment of 63.7 meters/second (210.2 feet/second) to Pioneer 11's April 19 velocity of about 28,700 mph. The spacecraft's speed will continue to slow gradually until it enters Jupiter's sphere of influence. As it subsequently "falls" closer to the giant planet, the spacecraft's velocity will shoot up to 110,000 mph.

After collecting data about Jupiter's never-explored south polar region, the spacecraft will be whipped around the planet and streak towards its Sept., 1979, encounter with Saturn, 1,740 days after the Jovian encounter. The next presidential administration will be nearing the end of its term by that time.

The flyby course for Saturn is as yet undefined. The spacecraft could be directed inside the rings, or it could skim along outside them, depending upon the preferences of the experimenters. Pioneer 11 will be a scout for future exploration of this intriguing planet.

Ground breaking ceremony

A ground breaking ceremony marking the beginning of construction of a Space Shuttle Landing Facility at the Kennedy Space Center took place Monday morning, April 1.

Government officials and officers of Morrison-Knudsen Co., contractor for the \$21.812.737 project, participated.

The construction project includes a 15,000-foot runway with associated overruns, apron, towway, taxiway and access roads.

First Ames employee hired retires after 34 year career



JOHN C. DELANEY (MIDDLE) RECEIVES PHOTO ALBUM . . . from long-time co-worker Alvin S. Hertzog at his April 19 retirement dinner. Mrs. Delaney also enjoys the special evening.

John Delaney, the first employee hired at Ames when Ames was formed in 1940 under the direction of the National Advisory Committee on Aeronautics (NACA), completed his career today. He retired after 34 years of government service.

Delaney, leaving his position of Assistant Procurement Officer, began his long time Ames career with the title of "Assistant Messenger" which he once stated meant, "I did anything that had to be done---from handling mail and purchasing to being rod and chainman on a survey crew" in the very early days.

Hired on April 1, 1940, Delaney took a necessary leave of absence to serve in World War II from 1942-46. He returned to Ames and to the Purchasing Department after the war. Through the years he was promoted in his job and reached the Assistant Procurement Officer level.

Though a native of Pennsylvania, Delaney and his family plan on staying in California and, specifically, in the San Jose area.

Delaney is an avid photographer and astronomy enthusiast. He plans on spending more time with his hobbies and perhaps doing some limited amount of traveling in honor of his newly acquired retirement status.

A warm farewell from about 150 friends was extended to John Delaney at his retirement party on Friday evening, April 19. Everyone wished him luck 'n leisure in the many years to come!

(One more photo on Page 2)

McDonnell Douglas for Space Shuttle Support

NASA has selected McDonnell Douglas Corporation, Houston, Texas for negotiation leading to an award of a contract for Space Shuttle Engineering and Operation Support to the Space Shuttle Program Office at the Johnson Space Center.

The contractor's proposed cost for the two year cost-plus-award fee contract is approximately \$13.2 million. It is contemplated that there will be two extensions of approximately two years each.

The McDonnell Douglas Corporation will provide analytical support to the Space Shuttle Program in areas of

technical and engineering systems analysis; avionics systems engineering support; mission planning, mission analysis, and software formulation; computer systems and software integration systems engineering support; and crew procedures and flight planning.

Other firms submitting proposals for the work included: The Boeing Company, Houston, Texas; Martin Marietta Corporation, Denver, Colorado; Grumman Houston Corporation, Houston, Texas; and TRW, Inc., Houston, Texas.

The contract will be under the technical direction of the NASA Johnson Space Center, Houston, Texas.

Commuter's Corner Car pool courtesy

In the rush to form car pools, people may sign up for them without much thinking ahead, which could mean that car pools may be less pleasant than desirable, discouraging us from continuing with them. On the other hand, if begun with a little foresight, car pooling can be enjoyable as well as beneficial to everyone.

It might turn out that there will be benefits from the energy crisis after all. Car pooling, for instance, will force drivers to slow down allowing more time to arrive at destinations. There will be no more rushing around at the last minute, because if we take a chance on being late and lose we will also be responsible for others being late.

Primarily, we will learn to be more considerate. Our way of life with its emphasis on individualism has evolved an "every-man-for-himself" attitude. Perhaps one of the reasons for this, but at least a typical example of it, is that whenever someone wants to do something, he jumps in his car and does it.

Americans are so used to going their own way (literally, in their cars) that they may not be aware of habits that are annoying to others. In a car pool, it is often difficult or embarrassing for others to vent their gripes.

For instance, have you thought about how your driving habits rate? If they border on being reckless, before you start driving in a car pool, consider that what may not feel reckless to you may be totally unacceptable to a passenger. After all, you have the steering wheel to hang on to and they don't. And car poolers won't know what kind of driver you are at first, so they will worry about your ability to handle the car.

(To be continued next issue)

Retirement Seminar

A retirement seminar for employees who are considering retirement will be held in the Space Science Auditorium on Wednesday, May 15, beginning at 8:30 a.m.

The day-long program will include talks by guest speakers who will discuss a variety of subjects which are expected to be of special interest to those contemplating retirement. Subjects will include Federal retirement benefits, Social Security benefits, financial planning, leisure time, housing, part-time employment, and the like.

Interested personnel may submit their name to the Training Office, ext. 5624, by May 8.

Products of Ames youth programs aid office efficiency



BECKY PIKE . . . demonstrates her skill at handling the hundreds of telephone calls she assists daily at Ames in the Communications Branch.

Twenty-one year old Becky Pike has been working at Ames for over three years and has recently proved to be a "real life-saver" to the Communications Branch. She has been hired as a full-time temporary switchboard operator and she handles all on base information, all credit card calls, all incoming calls to the main Ames telephone number, and all operator-assisted outgoing calls.

Six weeks ago it became necessary for Ames' "number one" operator, Joan Nelson, to take a short leave of absence and the Communications Branch was in desperate need of a full-time temporary "switchboard operator."

Although there are lots of men and women who can handle an operator's job, there are very few people who know Ames Research Center, its employees, and the workings of its Centrix telephone system! In fact, only one such person could totally qualify for the temporary position and that was essentially due to her previous experience.

Becky Pike was the one chosen to fill the temporary slot.

Becky originally came to Ames on the Neighborhood Youth Corps (NYC) program in 1971. She became a student aid worker trainee in the Communications Branch on the standard switchboard. Becky was trained to operate the switchboard by her supervisor, Doris Sorrels. While working at Ames as an NYC enrollee, Becky was able to earn her General Education Development (GED) which is, by law, comparable to a high school diploma. She also earned a salary. Becky attended class three mornings a week in Building 241 and worked at her job site twenty-six hours a week.

The NYC Program is affiliated with Ames' Training and Special Programs Branch and is financially sponsored by the Department of Labor in conjunction with the County of Santa Clara. Needy teenagers are able to continue their education, gain work experience, earn a salary, and not totally drop out of school by joining the NYC program and working at Ames for up to two years.

NYC supervisors like Doris often gain work load relief by training an NYC

enrollee to perform a job. Becky was especially helpful to the Communications Branch during her training period with the switchboard. After learning the operations of the daily Ames communications, she transferred over to the Ames Life Sciences Library for the last few months of her two year term as an NYC. At that time, Becky earned her GED, married, and left Ames.

Becky applied for a job with the telephone company and was accepted. She was scheduled to start work as a telephone operator when she learned that she and her husband were expecting a child. Becky had her daughter and later applied for the temporary position which she now holds.

Becky operates a telephone console in the Communications Branch. It is no longer the switchboard she once

handled. Though the equipment is somewhat different now from when she used to work at Ames, Becky receives the same variety of questions. According to Doris and Brad Gibbs, Chief of the Communications Branch, the work load necessitates the skills of an experienced, well-trained and knowledgeable operator. Many urgent calls come across the board which require immediate and efficient direction. Becky handles all such calls in the appropriate manner.

"We have been very lucky to have a young woman like Becky working for us here in the branch," says Doris Sorrels. The NYC program gave us the opportunity to train a good person for a responsible position and to qualify the person for employment in or outside of Ames.



RITA HOWARD . . . is an efficient clerk typist in the Life Sciences Directorate. She takes pride in furthering her training to do the most effective job possible and is an asset to her office.

by Denise Bernard

Rita Howard came to Ames two and a half years ago as a Public Service Careeremployee on a training program sponsored by the Chief of Equal Employment Opportunity Office, Willie L. White, Jr.

Rita spent her first year at Ames on the training program and then became a permanent employee in her present position as clerk typist. She works in the Life Sciences Directorate office in the main administration building under Organizational Director Dr. Harold P. Klein.

While in high school, Rita took a few office skills courses. Upon graduation in 1971, she went to night school at the College of San Mateo (CSM) for a year and took an Algebra course. She was then thinking that she would some day want to become a lab technician. She had earlier inquired about the curriculum of the Peninsula Hospital in Burlingame.

After attending CSM, Rita enrolled in the Opportunity Industrial Center West (OICW) training school in Menlo

Park to obtain more office skills. From there, Rita came to Ames.

Rita's office responsibilities include handling the filing system, typing for everyone in the office and essentially acting as one of the main communicators between Ames personnel, the general public and the office officials.

Rita states that she enjoys working with the people in her office very much. She also enjoys the contact she has with others from outside the office.

As the mother of two daughters, Lazet (3-1/2 years old) and Tenechia (10 months) and wife of a Lance Corporal in the Marine Corps stationed at Hunters Point, Rita keeps herself quite busy after working hours! She does try to make time for her hobbies of sewing, cooking and various sports, however.

Rita's past supervisor, Phyllis Post, says of Rita, "I feel that Rita has a lot to offer and that she has progressed tremendously in increasing the efficiency of her work. She is truly a real asset to her office."

Delaney's early Ames days

(Story on Page 1)



astrogram

Room 142
Admin. Mgt. Building
Phone 965-5422

The Astrogram is an official publication of the Ames Research Center, National Aeronautics and Space Administration, Moffett Field, California, and is published bi-weekly in the interest of Ames employees.

Editor Meredith Moore
Reporters NASA Employees

Deadline for contributions:
Thursday between publication dates

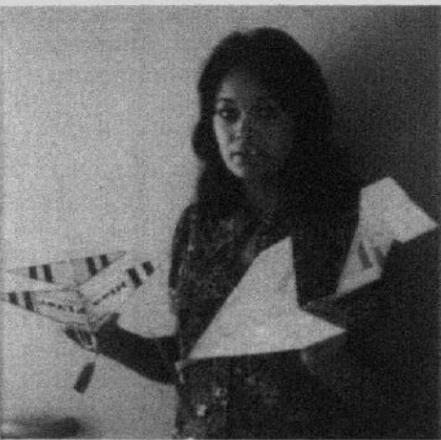
AIAA model airplane contest

The theme for the AIAA Model Airplane Contest this year is the introduction of aeronautics to youngsters through active participation. It will be held May 18, at the San Jose City College Men's Gym.

The key element for this contest is a delightful twelve-inch span rubber-powered model called the Delta Dart. Even without any modeling experience, it can be easily built from a kit in one evening. Prizes will be awarded in two Delta Dart age classes, 11 and under and 12 through 14. An original design event and a penny plane event will also be flown, each with one age class, 14 years and under.

Delta Dart kits at 25¢ each, contest entry blanks and rules, and free penny plane plans are available from AIAA representatives (call Joseph Steger, X6417).

The contest is free and open to all youngsters.



ALLISON YBARRA . . . of the Training and Special Programs Branch holds a Delta Dart model in her right hand and a T-Tailed original design built from a Delta Dart Kit in her left hand.

Lillian Cunningham visits Ames

Lillian Cunningham, Affirmative Action Officer from NASA Headquarters' Equal Employment Opportunity Office (EEO), met with various Ames personnel to discuss current equal employment opportunity policies.

Mrs. Cunningham spoke with Ames Director Dr. Hans Mark and EEO Chief Willie L. White, Jr. on various points of this year's Affirmative Action Plan. She toured Ames with Herm Gloria, EEO Contract Compliance Officer, and met with both the Ames EEO Counselors and the members of the four newly formed EEO Advisory Groups.

A two-hour meeting that Mrs. Cunningham held with the Advisory Groups included discussions of Upward Mobility, Community Relations, Training, Communication with Middle Management, and Student Work Experience Aids.

Mrs. Cunningham spent two days at the Center during the last part of the week of April 8.

An exhibit for space enthusiasts

In the minds and hearts of 30,000 Samoans living in American Samoa, Apollo 17's pocket-mice experiment is just about the most exciting event that has ever happened to the country throughout the twentieth century. So when the Samoans expressed their desire to have a permanent NASA space exhibit in remembrance of the great event, NASA was happy to oblige and Ames was put in charge of filling the request.

"Case background"

In October of last year, Dr. Delbert E. Philpott of Ames' Neurosciences Branch traveled to Pago Pago, Samoa, with a replica of the Apollo 17 pocket-mice experiment in the form of an exhibit. Dr. Philpott arrived in time to participate in a formal dedication ceremony which took place during the Samoan "Legislative Silver Jubilee" week. The ceremony was at the new Legislative building and the exhibit was later put in the newly opened museum in Pago Pago for all Samoan visitors and tourists to view. A small pocket mouse was placed in the exhibit to add an element of reality and additional curiosity to the display. Dr. Philpott was the co-investigator of the pocket-mice experiment while Dr. Webb Haymaker was the principal investigator.

Thousands of people have flocked around the NASA exhibit in Pago Pago during the past seven months. Few needed to be urged to see the display. Apollo 17 is the greatest event the Samoans have ever experienced. The people tend to naturally gravitate toward the pocket-mice-experiment display.

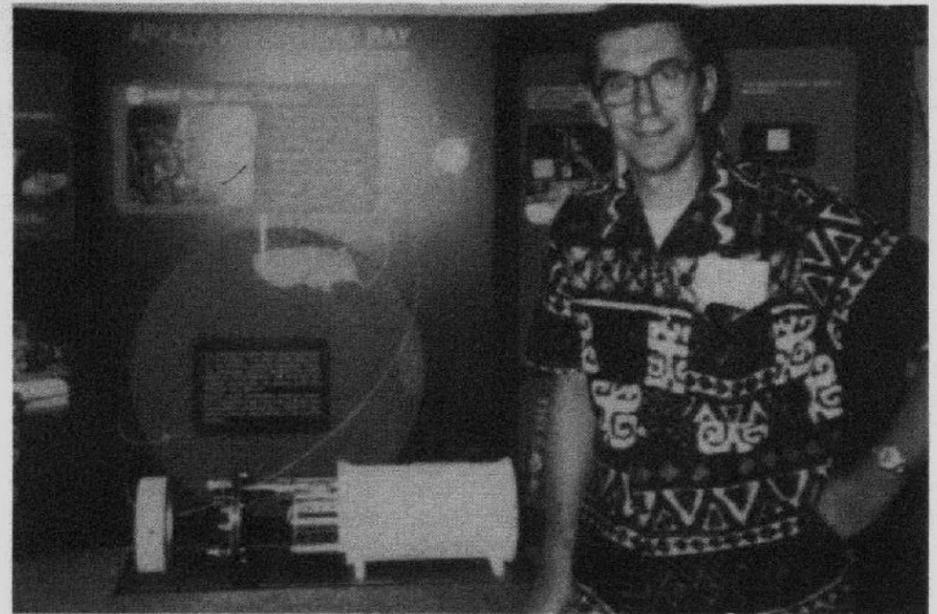
To emphasize the importance of Apollo 17 to Samoans it should be noted that in American Samoa on the day of splashdown school children were dismissed for the entire day to participate in the event and the festivities in honor of the astronauts and their flight. Splashdown was in the Pacific Ocean south of the Samoa Islands.

"Cat and mouse"

Active participants in the dedication ceremony were the governor of American Samoa, John H. Haydon, and his wife, Mrs. Haydon. Mrs. Haydon had also been a prime instigator in establishing a museum. She felt that the enormous number of lovely gifts the governor had received through the years from visiting dignitaries should be displayed where they could be enjoyed by every body. She therefore helped promote turning the old post office into the new museum.

Once the museum was opened and the NASA exhibit was intact with the pocket mouse living in the display happily, Mrs. Haydon more or less got to "know" and like the little fellow because she spent so much time in the building. One day, the mouse became ill. Mrs. Haydon decided to take him home that he might recover quickly with constant care and attention.

The mouse did recover quickly and he stayed on for an extra few weeks at the Governor's home since there was no one available to properly feed him at the museum.



DR. DELBERT PHILPOTT . . . poses with the Apollo 17 Pocket-Mice Exhibit in the Museum in Pago Pago, Samoa.



THERESA "TERRY" OLIVE . . . of the Office of the High Court in Pago Pago visits Ames as a representative of Governor Haydon, the American Samoa governor.

Unfortunately, he over stayed his welcome. One morning, Mrs. Haydon learned that the creature had escaped from his cage and had been viciously eaten by the house cat.

All that remained in sight was the small tail of the once very active pocket mouse.

"Epilogue"

Everyone was naturally sad to see the end of the little mouse. The NASA exhibit would never be the same. New mice would have to be obtained from someone, somewhere and the most obvious place was the original source, ARC.

Last week Theresa "Terry" Olive, a representative from the Office of the High Court in Pago Pago, appeared on the Ames scene. Terry had traveled to California for 50% business in Los Angeles and 50% pleasure vacation. Since the vacation portion included visiting her aunt and uncle in San Francisco, she felt she should take the opportunity to see ARC and the people she had worked so closely with in Pago Pago at the time of the Apollo splashdown. And, of course, if anyone at Ames had ". . . uh . . . any . . . uh . . . extra . . .

pocket mice" she would be happy to take a few back with her for the museum exhibit.

It just so happened that Dr. Philpott could supply Terry with some pocket mice and an escape-proof cage! So Terry, representing Governor Haydon, was given a "six-pack" of male mice to take back to the Samoa Islands.

During her visit to Ames Terry toured the Center with Dr. Philpott and met with Center Director, Dr. Hans Mark; Dr. Harold P. Klein, Life Sciences Organizational Director; Dr. David L. Winter, Deputy Director of Life Sciences; and Dr. Haymaker.

When asked if Ames fit her mental image Terry responded, "No, I imagined a two or three building facility and I found a real little city. Ames seems quite large to me. And everybody is so very cordial and friendly."

Once back in Pago Pago, Terry is scheduled to appear on television in an interview with Governor Haydon. She is also expecting to receive educational material on the space program sent from the Ames Public Affairs Office. Terry will disseminate it to the appropriate educators for all students interested in space, to share.

Speakers Bureau

Angelo Margozi (Earth Science Applications Office) gave two presentations to students of Earth Sciences classes at Aragon High School in San Mateo, on April 18. His presentation was "NASA's Work in Earth Resources, Particularly ERTS."

April 27, Lt. Col. Al Worden (Chief of the Systems Studies Division) will be guest of honor at the Nebula Awards Banquet in Los Angeles. The program is sponsored yearly by the Science Fiction Writers of America. Al also will conduct an afternoon seminar for interested attendees on his Apollo 15 experiences.

On April 17, Robert Hogan (Pioneer Project) was the luncheon speaker for the Engineering Technicians Club at the Alameda Naval Air Station. Bob presented a summary of the Pioneer program.

Ed van Vleck (Systems Studies Division) was the guest speaker for the Arizona Telecommunications Association at its meeting in Phoenix on March 12. Ed's address was "Domestic Satellites and the Future of Telecommunications."

Jim Phillips (Pioneer Project) will be addressing the Livermore Astronomy Club at its meeting on May 3. He will be presenting "An Overview of the Pioneer 10 and 11 Missions."

Volleyball

All Ames employees and contractors interested in entering a volleyball team for participation in an Ames volleyball league please contact Harry Cygielman, X6525.

Veterans

The Veterans Affairs representative from De Anza College will be at Ames during the noon hour on April 30, 1974, Bldg. 241, Room 147. Bring questions concerning GI Bill or VA benefits or services.

Basketball

Anyone interested in playing summer basketball on the Ames Industrial Team should contact Paul Kutler, ext. 6417.

"Thank you"

I want to thank all my friends for the gift of the calculator. I am delighted with it, and it is the most useful gift I could receive. My family and I thoroughly enjoyed the retirement luncheon.

Ben Beam

CONSERVE LIBRARY POWER!

Return your library books on time. DUE DATE IS: Friday, April 26, 1974 (Main Lib. 202-3 - Life Sci. Lib. 239-13).

Exchange Council Budget Projection-1974

INCOME	1973 Budget	1973 Actual	1974 Budget
Cafeteria Commissions	\$0.00	\$0.00	\$2,400.00
Vending Machine Commissions	9,300.00	7,852.49	8,000.00
Interest Earned on Deposits	900.00	1,115.74	1,000.00
Net Income ARA Store	1,500.00	.00	.00
Miscellaneous Income	.00	440.66	.00
Total Income	\$11,700.00	\$9,408.89	\$11,400.00
EXPENSES			
Vending Vehicle Expenses	\$500.00	\$349.10	\$150.00
Vending Vehicle Depreciation	334.00	333.50	.00
Vending Machine Utility	564.00	564.00	564.00
Federal Employee Scholarship	350.00	350.00	350.00
Galileo Memorial Scholarship	.00	500.00	500.00
Professional Accounting Service	200.00	500.00	450.00
Conference & Seminar Support	2,515.00	1,646.49	1,800.00
Insurance	200.00	177.00	.00
Equipment Replacement Cafeteria	200.00	166.56	200.00
Miscellaneous Expense	450.00	631.47	500.00
ARA Expense	5,573.00	5,577.83	4,008.90
Tennis Court Construction	17,000.00	.00	.00
Total Expenses	\$27,886.00	\$10,295.95	\$8,522.90
Net Profit	-\$16,186.00	-\$887.06	\$2,877.10

Below is the NASA Exchange-Ames Balance Sheet dated December 31, 1973:

ASSETS			
Cash, Operating	\$ 2,644.64	\$	\$
Cash, Savings	19,592.93	22,237.57	
Vending Vehicle	860.70		
Less Depreciation	(860.70)	-0-	
Total Assets			22,237.57*
LIABILITIES AND EQUITY			
Liabilities			
Accounts Payable		630.75	
Deferred Income		(858.98)	
Total Liabilities			(228.23)
Equity			
Surplus Reserve, January 1, 1973		28,608.53	
Net Year-to-Date decrease in Equity		6,142.73	
Total Equity			22,465.80
Total Liabilities and Equity			\$22,237.57

*Includes \$414.75 collected and deposited for Pioneer Jupiter Educator's Conference and will be paid in January 1974. \$75.00 is being held for the Training Office.

GOLF

Winners of the Ames Golf Club Tournament at Del Monte Golf Course, April 6, 1974: 1st Flight - 1-O. Sapp, 2-O. Koontz, 3-G. Lazzaroni, 3-J. Lee; 2nd Flight - 1-C. Eddy, 2-C. White, 3-P. Quattrone, 3-B. Kelley, 3-E. Magee; 3rd Flight - 1-R. Richardson, 2-N. Krause, 3-A. Lopez, 4-B. Nevotti; 4th Flight - 1-B. Gray, 2-R. Dowell, 3-F. DeMuth, 4-S. Johnson.

Tournament Co-chairmen were Armando Lopez, Mike Orozco, and Tom Almojuela.

Next tournament - Pajaro Valley Golf Course, Watsonville, May 11. Great golf course! If you would like to join the club, call Clark White, ext. 5438, or Donna Johnson, ext. 5336. See you at Pajaro!

Travel insurance

Eight years ago NASA began offering a low-cost travel accident insurance to its employees. The insurance is available in amounts of \$25,000, \$50,000, or \$100,000 covering personal travel and local business travel or personal travel and worldwide business travel. Brochures describing the plans are available in the Training Office (Bldg. 241, Rm. 138, X5622).

ENGLISH POINTER: pretty, friendly, intelligent. Rescued from Humane Society. Needs good, loving home. Molly's only 1 1/2 years old. "Foster Parents" would keep her, but already have 2 dogs. Call Al Bakke, 246-3356.

WANT ADS

Transportation
'71 HONDA car, 34,000 mi; 5000 on reblt engine. Exc. cond., 38 MPG, luggage rack. \$985. 322-3265.

'67 Dodge 3/4-ton pickup, white, good cond. throughout. \$850. Call after 6:00 p.m. 259-0509.

'72 Electra 225, custom 4 door; vinyl top; AM-FM stereo/tape; air cond., electric lock and seats; power brakes and steering; electric antenna; tilt steering wheel; \$300 cash and take over payments (15 payment balance!). Call Barbara Smith at 293-5303 after 5:30 p.m. call 274-1409 and ask for Mr. or Mrs. Smith, Sr.

'72 Datsun 510, automatic, great condition, AM-FM radio, air, 26 MPG. \$150 and take over payments. Call 274-1409 after 5:30 p.m. Work ext. is 5692. Ask for B. Manning.

'71, 450 CL, Honda, custom, ext. front, 19" rear wheel. \$550 and take over pymts, or \$1200 cash. J. Morningstar, ext. 5674 or 245-7734 after 4:30 p.m.

Housing

FOR RENT: South Shore Lake Tahoe. 3 bedrooms, 2 baths, deck & fireplace. Close to casinos. Walk to beach. \$150 wk. Call 252-4749.

FOR RENT: Available the 1st of May. In Sunnyvale next to St. Martin Church. 3 bedroom, 1 1/2 bath. Big backyard, located in the cul de sac area and close to medical center. Call 961-1901 or 965-5447.

FOR RENT in prime Sunnyvale location. Furnished five bedroom executive home with garden kitchen overlooking swimming pool and large covered patio. Available on one-year lease on/about June 20, 1974. (Family is leaving the area on a one-year sabbatical.) Call Ken McDonald, 245-0653 evenings.

Miscellaneous

FOR SALE: Asaki Pentax SL-35 Camera: Focal Plane Shutters, 1:8/55 mm. Close-up lens, 135 mm. Tripod. Flash. and Carrying Case, \$200, call Allie 739-1872.

FOR SALE: Schwinn 10 speed. Like new condition. \$85. Ellen 296-6203 after 5:00 p.m.

WANTED: 1 1/2 & 2 inch IPS pipe dies; to borrow, rent, or buy. Shapero, 10825 Alderbrook, Cupertino.

SPAULDING TOP FLIGHT (Gene Littler) right-hand set of 1-2-3-4 woods, approx. 8 years old. Rubber grips, steel regular shaft, swing-weight D-3. Good condition. Sell for \$30 for set. Call 966-5027 to see clubs.

HOSPITAL BED \$125. H. Schacht. 244-1136.

36" Kenmore gas range, good cond. \$30. 736-3984.