National Aeronautics and
Space Administration
Ames Research Center
Moffett Field, California 94035

NASA

The Astrogram

VOLUME XIX NUMBER 27

October 6, 1977

NASA awards wind tunnel modification contract for Ames

Ames has awarded a $2.5 million contract to two San Francisco Bay area firms for construction management services in connection with a major modification to the largest wind tunnel facility in the western world.

Contractors are the Turner Construction Co., 44 Montgomery Street, San Francisco, and the Lord Electric Co., 2105 North Broadway, Walnut Creek, Calif., operating as a joint venture.

The improved performance of the modified tunnel will enhance Ames' capabilities for research and development of new aircraft types, especially large helicopters and vertical and short take-off and landing aircraft.

Planned modifications to the Ames 40 by 80-foot Wind Tunnel, built in 1944, include the addition of a new 24 by 36-m (80 by 120-ft) test section and an increase in drive power from the present 36,000 hp to 135,000 hp. The increased power will increase the top speed of the present test section from the present 370 km/hr (230 miles/hr) to 565 km/hr (345 mph).

The tunnel is presently powered by six 6,000 hp electric motors which drive six 12-m (40-ft) diameter, six-bladed wooden propellers.

Although the new drive system will have more powerful motors to increase air flow, it is expected to generate less noise than the present system.

Procurement of long-lead-time items for the project has already begun. Completion is expected in early 1981.

NASA's Management Education Center

NASA's new Management Education Center officially opened this month at Wallops Flight Center, Wallops Island, Va.

Dr. Robert A. Frosch, NASA Administrator, presided at dedication ceremonies Friday, Sept. 30. A tour of the new facility preceded the dedication event.

The first two Ames employees to attend programs at the Education Center are EEO Specialist Annette Laboy and Dick Petersen, Chief of Aerodynamics Division.

"This facility has been established to provide personnel throughout the agency with unique educational opportunities by offering a variety of instruction," said Mary K. Fortune, Director of the Office of Professional Development, NASA Headquarters, Washington, D.C.

"The Management Education Center at Wallops will offer a full curriculum of short-term residential programs designed specifically for current and future NASA leaders. The sessions will range from three-day seminars to two-week courses in residence."

As a unit of the Headquarters Office of Professional Development, the new effort at Wallops will be the focal point agencywide for management education.

Army R&D lab dons new name

The name of the U.S. Army Air Mobility Research and Development Laboratory at Ames has been changed to *U.S. Army Research and Technology Laboratories (AVRADCOM)*, effective August 30, it was announced by Dr. Richard M. Carlson, Laboratory Director. AVRADCOM is the acronym for U.S. Army Aviation Research and Development Command, St. Louis, Mo., commanded by Major General Story C. Stevens, the Laboratories' higher command.

The Laboratories' four subordinate directorates, have also been renamed as follows: The Ames Directorate is now the *Aeromechanics Laboratory*, Moffett Field, CA.; the Lewis Directorate is now the *Propulsion Laboratory*, NASA Lewis Research Center, Cleveland, Ohio; the Eustis Directorate is now the *Applied Technology Laboratory*, Fort Eustis, Virginia, and the Langley Directorate is now the *Structures Laboratory*, NASA Langley Research Center, Hampton, Virginia.

The mission of the Research and Technology Laboratories remains the same, which is to plan, develop, manage and execute for AVRADCOM the research and exploratory development programs, and advanced development programs through demonstration of technology to provide a firm technical base for future development of superior airmobile systems. Special emphasis is placed on improved aircraft engine and rotor performance, reduced structural weight, cost and complexity, improved maneuverability, survivability, safety, reliability, maintainability and lower life cycle cost.

Major projects of the Army Research and Technology Laboratories include the following:

The XV-15 Tilt Rotor Research Aircraft is a 42-foot-long, 32-foot wing span aircraft, incorporating wingtip mounted engines, transmissions and 25-foot prop rotors which tilt from a helicopter position for hover, vertical takeoffs and landings, to a horizontal position for forward flight. In the airplane mode the aircraft is capable of forward speeds in excess of 300 miles per hour. (Bell Helicopter Textron).

The XH-59A Advancing Blade Concept, ABC, is a coaxial, counterrotation, hingeless rotor research helicopter that features very stiff rotor blades and rigid retention of the blades to the hub; a tail rotor is not required. Unlike conventional helicopters which need a wing for high speed flight, the ABC uses only its rotor blade system throughout the entire speed range. Under a $3,548,750 contract modification, funded by the Army, Navy and NASA, two Pratt & Whitney J-60 turbojet engines will be added to each side of the ABC and flight tests up to 350 miles per hour will be made. (Sikorsky Aircraft Div. UTC)

The Rotor Systems Research Aircraft, RSRA, is a test vehicle used by the Army and NASA to evaluate a wide variety of existing and future rotor and propulsion systems. First flown as a pure helicopter, the RSRA has now been fitted with two General Electric TF-34 turbofan engines, a 45-foot variable incidence wing, a stabilator, and smaller stabilizer for tests this fall as a compound helicopter. (Sikorsky Aircraft Div. UTC).

Career Development program

NASA, as part of its management development plan, annually participates in selected fellowship programs sponsored by leading universities, colleges, foundations, the U.S. Civil Service Commission, and the National Space Club.

In late October, Ames management will be reviewing candidates for the following programs:

Stanford and MIT – Sloan Fellowships, Dryden Memorial Fellowship, Education for Public Management, Harvard PMD (Programs for Management Development), Maxwell Midcareer Development (Syracuse University), Woodrow Wilson (Princeton), Congressional Operations Fellowship, and Industrial College of the Armed Forces. The grade levels for these programs range from GS-11 through GS-16.

Persons interested in being considered for any of the named programs may contact John Leveen or Meredith Moore, ext. 5623/5624, by Friday, Oct. 17. The details of each program will be outlined at meetings to be held in October.

First Shuttle payload to investigate Earth resources

The first payload to be carried into space by the Space Shuttle will carry out investigations in Earth resources, environmental quality and severe storm research in 1979.

The payload, under the management of the NASA Headquarters Office of Applications, will be on the second Orbital Flight Test (OFT-2) scheduled for launch from Kennedy Space Center. Space Shuttle Orbiter 102, sister ship to the "Enterprise" now undergoing approach and landing tests at Dryden Flight Research Center will make the first several Shuttle space flights.

The orbital flight test program is a series of six developmental missions in 1979 and 1980 leading up to operational readiness of the Space Shuttle in May 1980.

Objective of the OFT missions is to evaluate the performance of the Space Shuttle and its systems and to provide early demonstrations of the Shuttle's capability to do what it is designed to do in space.

The first orbital Shuttle mission (OFT-1) will carry instrumentation to evaluate its performance and also will carry a special package called the Induced Environment Contamination Monitor (IECM) to measure the effects of the Shuttle on the space immediately around it. The IECM will be carried on all six orbital flight test missions.

The payload carried on the second Shuttle flight, like the Shuttle Orbiter itself, is reusable. This will permit adjustment and modification of the payload instruments and other hardware to allow its use on subsequent flights at relatively low cost.

Fire Safety Week October 8-15

Evacuation bells

All personnel *must* evacuate a building when the evacuation bells ring. The bells are activated by the Duty Office or by automatic sensors. They will ring steadily until turned off by the fire department. When the emergency is over, an all-clear will be indicated by an intermittent ringing which will be initiated by the Duty Office upon notification by the Fire Chief or person in charge at the scene.

At Ames dial 5555
for all emergencies

Fire extinguisher service

Persons discovering defective fire extinguishers or extinguishers whose charge has been depleted should notify their Facility Safety Representatives.

The FSR or his representative will then tag the item with his name, building number and telephone extension, and the exact location from which it was removed. He will call the delivery service dispatcher, extension 5418, to arrange for pickup and delivery to Mail Stop 221-M. If a new extinguisher is not received within 24 hours, the FSR should contact Jerry Johnson on radio 26-113.

Burns

Burns are classified into three degrees of severity:

First Degree: The outer skin is reddened and slightly swollen.

Second Degree: The under skin is affected and blisters are formed.

Third Degree: The skin is destroyed and tissues underneath are damaged.

Burns of the second or third degree require emergency treatment. Remove or cut away loose clothing and apply a sterile dressing large enough to cover the burn and thick enough to exclude air from the area.

Never break a burn blister or apply oily or greasy modications to second or third degree burns.

Shock is always a dangerous possibility following a serious burn. Keep victim lying down and well covered. Move to hospital, preferably by ambulance.

In the case of a minor first degree burn, immerse the affected area in cold water until the victim ceases to feel pain. Then apply a burn ointment.

In the case of a chemical burn, remove the contaminated clothing and flood the affected part with water. The bathroom shower or garden hose are good.

Leaking gas

The immediate danger of leaking utility gas is an explosion. Vacate the house at once and from a neighbor's home call the local gas company for an emergency investigation.

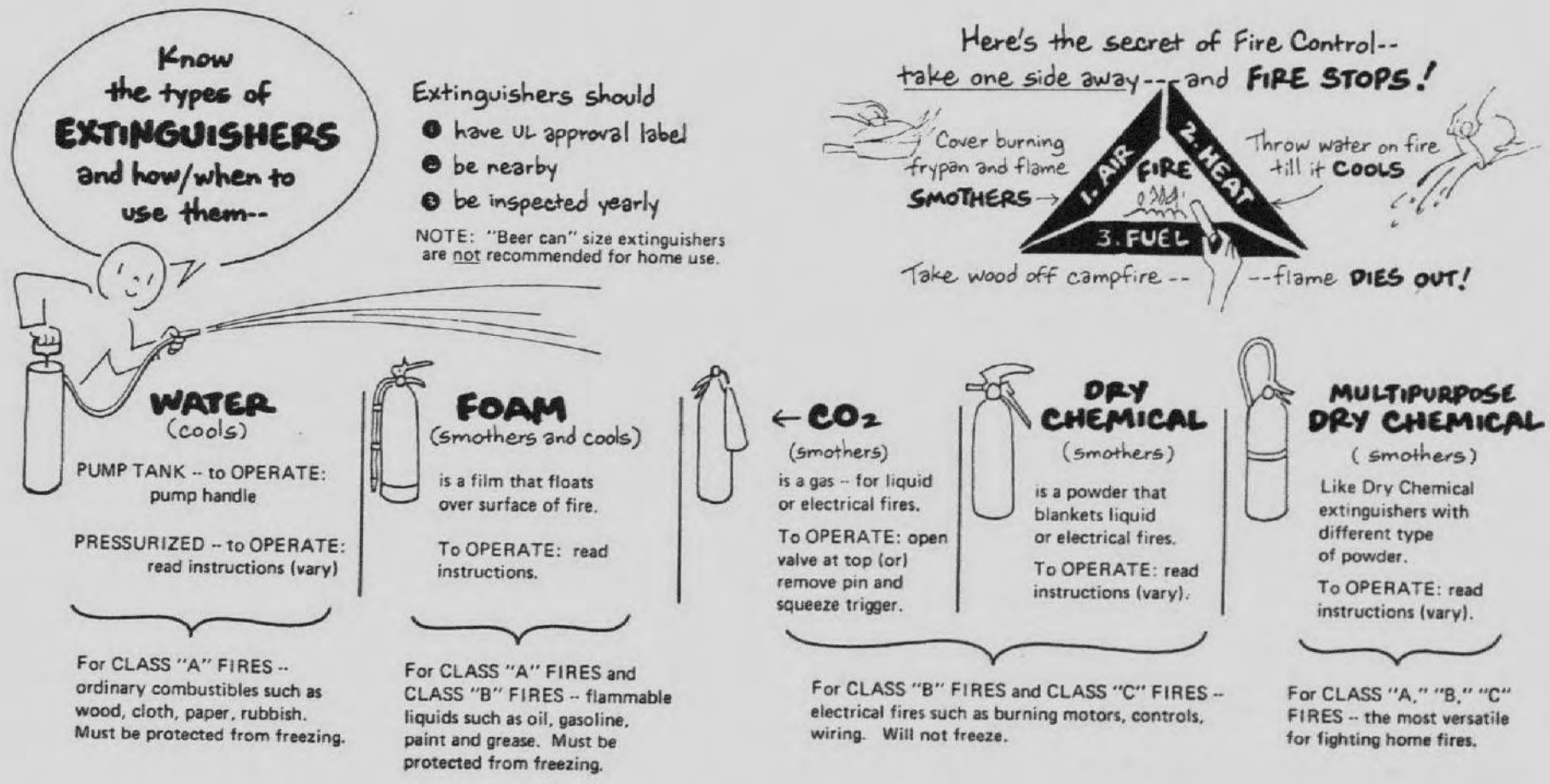
If, for some reason, you must remain in the house, open doors and windows – both top and bottom. Do not switch on a light or strike a match. Turn off the gas supply at the main valve near the meter. Most meters are now located outside the house, but it may be in the basement, garage, or utility room. Know the location of your gas meter.

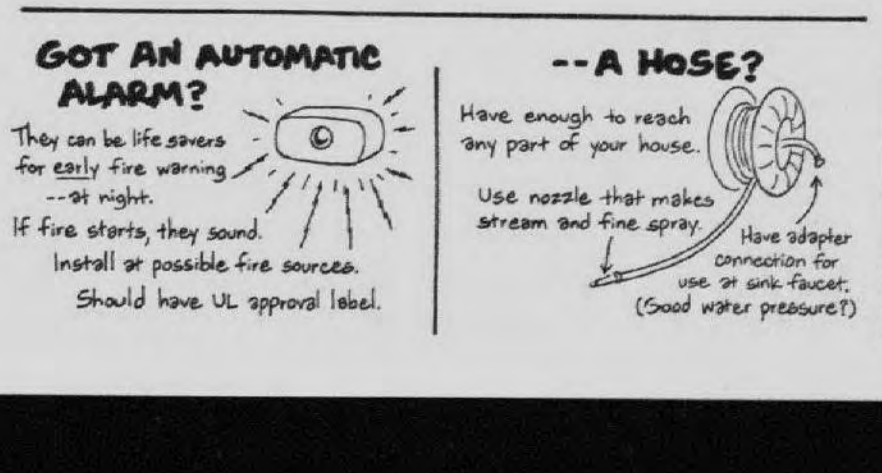
Car fires

Most fires are the result of a short circuit in the car's electrical system.

Don't waste time trying to disconnect the battery. If you don't carry a fire extinguisher rip loose any burning wires with a stick or the jack handle and smother with a blanket or coat. Don't grab the wires with your bare hands.

If the fire burns out of control and endangers the gas tank, get away from the car immediately.





NASA

Everyday we GAMBLE WITH FIRE--

Do you know the ODDS?

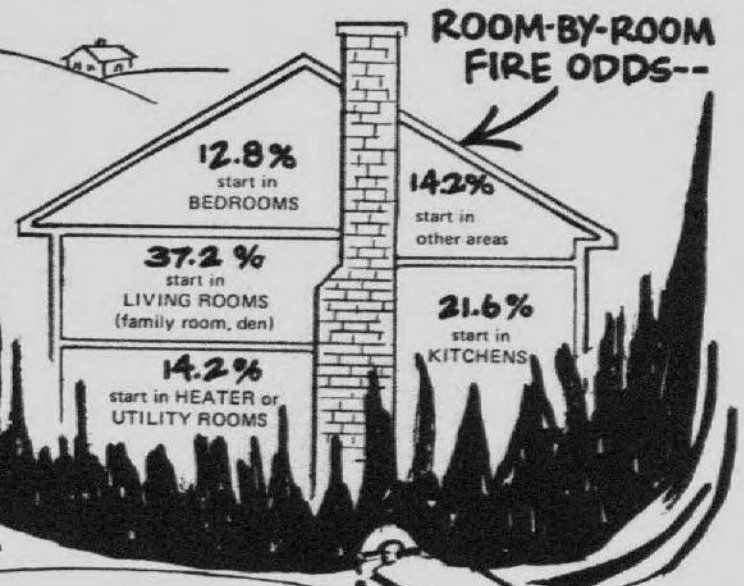
FOR EXAMPLE:
Do you know each year we have --

--over 901,000 HOME FIRES?
(nearly 2,500 daily)

--about 6,600 people are KILLED in homes?

--over $1.3 billion home property loss?

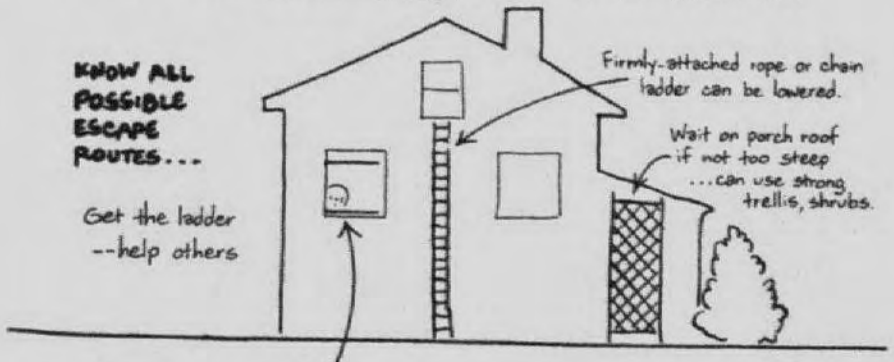
WHERE do fires START?
Here are the ROOM-BY-ROOM FIRE ODDS--



--and another home is "FIRE-TRAPPED" every 35 seconds!

HAVE AN ESCAPE PLAN

--and the whole family should know about it!



IN PUBLIC PLACES

1. Upon entering, look for fire escape and alternate route.
2. If fire, avoid panic rush.

ESCAPE RULES--

1. Get close to floor (less heat).
2. Take short breaths -- and cover face with wet cloth.
3. Keep out of excessive heat, smoke. Feel doors -- if hot, don't open.
4. Never leave doors, windows open. This spreads fire.
5. Have an outside gathering point. Is everyone out?
6. Don't re-enter burning building except to save a life.

Smell smoke

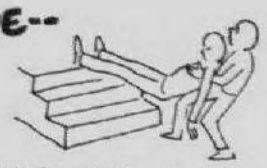
Don't throw open the bedroom door and rush into the hall. First, feel the panels and doorknob to find out if they are warm.

If the door is warm, don't open it. Heat and smoke could rush in and overcome you in seconds. Call loudly to warn everyone in the house of the danger. Make your escape through a bedroom window. If this is impossible, stuff blankets under the door to keep out smoke while awaiting rescue.

If the door is cool, cautiously open it and be ready to slam it shut again should you encounter a blast of heat. If the way is clear, lead the family out of the house and call the fire department.

TO RESCUE--

For an unconscious person -- tie hands, slip over neck and drag -- like above.



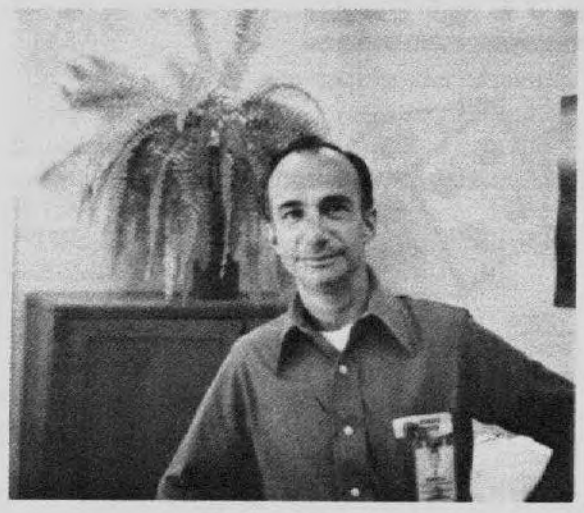
On stairs -- hold under arms, slowly back down stairs.

Three new EEO counselors

Ames' Acting Director C. A. Syvertson has selected three new EEO counselors for Ames personnel. They are: Clara Johnson, Computation Division, Ext. 5258; Arthur Mandell, Project Pioneer, Ext. 6534; and Jessie Mosier, Procurement Division, Ext. 5795. The new counselors will take over the counseling duties previously performed by Henry Asch, George Lee and Susie Rydquist, respectively.

Clara Johnson

Equal Employment Opportunity Counselors serve as a bridge between employees and management and have the responsibility for establishing an open and sympathetic channel through which employees may raise questions, discuss grievances, obtain answers and, on an informal basis, resolve problems connected with equal employment opportunity. The counselor's role is an integral part of the total EEO Program, and it is essential that the role of the counselor is understood and supported by all Center personnel at all levels.



Arthur Mandell

Jessie Mosier

Destruction of classified or privacy act materials

Recently, questions have arisen from the Center about the proper disposal procedures for classified documents and material subject to the Privacy Act of 1974. Accordingly, all resident personnel are reminded of the following:

1) *Privacy Act Material*: Call the Ames Duty Office (Ext. 5416) prior to Wednesday afternoon to request Privacy Act Pickup on Thursday morning. Give the dispatcher your name, bldg/room number, extension, organization and approximate amount of material to be picked up. Someone MUST be present on Thursday morning when the pickup person arrives, as they will not pick up unattended material.

2) Confidential Material: Call the Parcel Delivery Service Office (Ext. 5418) to make arrangements for Confidential Material pickup. Provide the same information as (1) above.

3) *Secret Material:* All Secret Materials must be controlled, including those brought in from outside sources (meetings, conferences, etc.). Each person who receives or has in his possession classified material, within the NASA system, which has not, but should have been, entered into the accountability system of the installation will promptly notify the Security Officer, and make arrangements to log the material in with the Secret Document Control Office. Destruction of Secret material is accomplished through the Library (John McLaughlin, Ext. 5157) for documents, publications, reports, etc., or through the Central Files (Ext. 5966) for Secret correspondence, memos, etc. Call the appropriate office to make arrangements for pickup and accountability relief.

Under no circumstances will ANY classified material be placed with Privacy Act material for destruction. Refer any questions to the Security Office (Ext. 5587).

11 employees receive Outstanding Performance Certificates

Eleven Ames employees were honored with Outstanding Performance Certificates presented to them by the Center's Acting Director, C. A. Syvertson. Pictured above are: (front row) Johnnie Coleman, Kenneth Souza, Angela Salter, Salvador Rositano, and Anthony Billalba; (back row) Dean Novak, Robert Hodge, Marnell Smith, Howard Nelson, Howard Goldstein, and C. A. Syvertson. Not pictured is Vera Buescher.

Golf

Golf Tournament Chairman, Mitch Radovich reports on the Ames Jet-Setters Golf Tournament held at the Royal Kaanapalli Golf Course on Maui, Hawaii:

Best 3-ball foursome was won by the team of Ed Rozewicz, Betty Quattrone, Bill Ross, Mitch Radovich; second place team was Phil Quattrone, Jeanette Remington, Marion Macon, Al Petretti.

Individual awards (donated by Bill Ross and Marion Macon) went to the following winners: Ed Rozewicz, low gross; Al Petretti, low net and closest to the pin; Bill Ross, lowest 9-hole total; Phil Quattrone, hit the most sand traps; Betty Quattrone, won the most points for her foursome; Marion Macon, won the most points for his foursome; Jeanette Remington, most outstanding shot; Mitch Radovich, fewest putts.

The players wish to thank "Cardy" Macon for the transportation service and for being the official photographer of the tournament.

Co-chairmen Stu Johnson and Elmer Hampel report the following winners at the individual low net tournament held at the Sunol-Palm Golf Course on Sept. 10, 1977:

First Flight: 1–Tie between G. Lazzeroni and L. McCulley, 3–T. Almojuela, 4–J. Lee.

Second Flight: 1–A. Lopez, 2–M. Orozco, 3–E. Menefee, 4–L. Hochstein.

Third Flight: 1–A. Joly, 2–J. Weyers, 3–Tie between B. Page and S. Brovarney.

Low gross for the day was a 77 by Tom Almojuela.

Viking guest investigators named

An experimenter at NASA's JPL is using the shadow of the Martian moon Phobos to attempt to pinpoint the precise location of a Viking spacecraft on the surface of Mars.

The experiment of Thomas C. Duxbury is one of 20 chosen under a Viking Guest Investigator Program established by NASA to provide experimental opportunities beyond those originally planned for the mission.

Other activities will be in the areas of radio science, mapping, atmospheres, Martian geology and chemistry, and imagery.

Duxbury's experiment is basically an attempt to determine exactly where Viking Lander 1 is located in pictures of the landing site taken by the Viking orbiters. Scientists know where the lander is located in relation to space, but they can't tie in orbiter photographs of the landing site to that position. The margin of error may be as large as 10 km (6 miles), according to Duxbury. The spacecraft is too small to be seen by the orbiter cameras.

Duxbury will "watch" the shadow of Phobos go over the landing site. As the shadow passes the lander, the lander and orbiter will both be programmed to take a picture. Knowing the time when the picture was taken and the exact position of the shadow at that time, Duxbury should be able to determine the location of the lander.

The Phobos shadow experiment is scheduled to be conducted on Sept. 20, 24, and 28.

C. J. Fenrick heads up 1978 CFC at Ames

C. A. Syvertson, Acting Center Director, has appointed C. J. Fenrick as this year's chairman of the Ames Combined Federal Campaign. The CFC will be conducted during the week of October 17.

Last year, with 88% of Ames employees participating, we contributed $61,555 to the CFC, with a per capita of $35.54. NASA/Ames placed in the top third of all Federal installations in the Santa Clara County, if one compared the per capita giving. This year ARC's Work Committee helped set a goal of a 10% increase over the previous year's contribution. This is believed to be a realistic and attainable goal for it is not too aggressive of an increase over last years results.

On Thursday, October 6, at 10:00 a.m. there will be a meeting with the Acting Director to finalize plans. Included at this meeting as feature speakers are Ralph Lewis, 1976 Loaned Executor, and Fred Styles, this year's Campaign Loaned Executor.

Finally on Friday, October 14 at 1:30 p.m. a CFC "Kick-Off Rally" will occur in the Space Science Auditorium for all interested campaigners. At this time we invite all campaigners to ask those last minute nagging questions about procedures and their responsibilities. Also available at this time will be the training aids and campaign documents for all the CFC campaigners.

Jetsetters club

Reno – October 28-30, 1977, cost – $51.50 double occupancy. Price includes bus trip and 2 nights lodging, plus gambling refund of $34.00. Bus leaves Ames at 6:00 p.m. on Friday, Oct. 28 and returns at 8:00 p.m., Oct. 30. For reservations contact California Host, 586 N. First St., San Jose, Calif. 95112, telephone (408)295-7878 (deadline, October 15).

NASA SPECIAL PUBLICATIONS

National Aeronautics and Space Administration

The following NASA Special Publications are now on display in the Ames Main Library and the ARA Store. Following your review of these new releases, if you would like a retention copy for your files, return a completed NASA Special Publication Request Form, ARC 303, for each publication you desire to the Main Library, M/S 202-3, and *a copy will be mailed* to you. Please allow 2 weeks for processing and distribution of your request. Because the number of copies of NASA Special Publications available to the Center is limited, requests will be processed as they are received until the supply is exhausted and distribution will be limited to Ames Research Center Civil Service employees.

NASA SP-400 **SKYLAB, OUR FIRST SPACE STATION**
Edited by Leland F. Belew, George C. Marshall Space Flight Center

This is the introductory volume in a series of books describing the Skylab program and its results. *Skylab, Our First Space Station* relates the dramatic story of the problems which arose and the means by which they were overcome. It also describes the experiments and observations made, but leaves the description of the scientific results to other volumes dedicated to that purpose.

NASA SP-416 **NASA AIRCRAFT SAFETY AND OPERATING PROBLEMS**
Prepared by Langley Research Center

The proceedings of a conference convened to discuss the results of NASA research in aircraft safety and operating problems are presented. Program components included: terminal area operations; flight dynamics and control; ground operations; atmospheric environment; structures and materials; powerplants; noise; and human factors. The conference was held at Langley Research Center, Hampton, Virginia, October 18–20, 1976.

NASA SP-398 **THE 1976 STANDARD ATMOSPHERE ABOVE 86-km ALTITUDE: RECOMMENDATIONS OF TASK GROUP II TO COESA**
Edited by R. A. Minzner, Goddard Space Flight Center

The recommendations of Task Group II to COESA concerning the 1976 revision of the *U.S. Standard Atmosphere*, 1962 (COESA, 1962) are presented. At a meeting in Boston, September 13–15, 1971, the Committee for the Extension to the U.S. Standard Atmosphere (COESA) divided the atmosphere into three overlapping regions and assigned a task group to each region: Task Group I, 50 to 100 km; Task Group II, 80 to 200 km; and Task Group III, 140 to 1000 km. The model developed by Task Group II, Model II, is discussed in terms of its philosophy and constraints, and the model is defined and compared with observations. Atomic hydrogen and the relationship of the 1976 Standard Atmosphere to earlier standard atmospheres are discussed in appendices.

NASA SP-415 **FLUTTER TESTING TECHNIQUES**
Prepared by Langley Research Center

A compilation of 19 papers and comments focused on recent developments in flutter testing in flight and on the ground and on new methods and techniques for improving flutter testing and data analysis. The papers were presented at a symposium on flutter testing techniques held at the Hugh L. Dryden Flight Research Center, Edwards, California, October 9–10, 1975. The first comprehensive meeting on flutter testing since 1958, the symposium provided an opportunity for discussion and evaluation of the state of the art. Sponsored by the Hugh L. Dryden Flight Research Center, the U.S. Air Force Wright Aeronautical Laboratory, the U.S. Navy Air Systems Command, and the Aerospace Flutter and Dynamics Council.

NASA SP-389 **X-RAY BINARIES**
Prepared by Goddard Space Flight Center

The proceedings of a symposium convened to coordinate measurements made at several observatories during a current and rather unusual period when a number of X-ray astronomy experiments aboard five orbiting satellites were operational, are presented. Measurements made with ground-based optical and radio telescopes located throughout the world are included. The symposium, which took the form of a workshop, was held at Goddard Space Flight Center, October 20–22, 1975.

NASA SP-395 **SECOND NASA CONFERENCE ON LASER ENERGY CONVERSION**
Edited by Kenneth W. Billman, Ames Research Center

Eighteen papers devoted to the question of whether a laser system, either ground-based or in orbit, can offer a practical solution to some of the problems of future space missions – cost, weight, radioactivity, and perhaps even propulsion – are presented. The papers were presented at a conference held at Ames Research Center on January 27–28, 1975. Conference discussions of the papers are included.

Safety corner

A recent burn symposium identified scalds from hot tap water as a frequent and preventable burn injury. Severe burns will occur after one second of exposure to water hotter than 158° F, according to conference participant Dr. Jerry Kaplan of Alta Bates Hospital in Berkeley, California.

"This is a temperature not uncommon in household tap water," Dr. Kaplan explained. "Lowering the water heater temperature can make household members, especially the very young and the elderly, safer from scald burns. It will conserve energy as well!"

For more information on first aid for burns consult the Ames Safety Office.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
77-118	Computer Technician (Growth Opportunity)	GS-4/5	RKS	Centerwide	10-24-77
77-119	Secretary (Typing)	GS-4/5	SPI	Centerwide & Outside	10-14-77
77-120	Secretary (Typing)	GS-4/5	SPJ	Centerwide & Outside	10-14-77
77-121	Engineering Technician	GS-5/7/9	FAR	Centerwide	10-19-77
78-1	Asst. Chief Scientific Applications Analysis Branch (Temporary)	GS-13	RKS	Centerwide	10-25-77
78-2	Sup AST Tech Mgt (Asst. Div Chief, Operations)	GS-14/15	LM	Centerwide	10-25-77
78-3	Procurement Clerk (Typing) or Clerk Typist	GS-4/5 GS-3/4	ASB	Centerwide & Outside	10-17-77

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
77-76	Mathematician, AST Theoretical Simulation Techniques	FLT	Benton Parris (CSE register)
77-77	Aerospace Engineer	FSV	Cancelled
77-78	Aerospace Engineer	FSN	Cancelled
77-79	Aerospace Engineer	FSN	William Sturgeon (Outside Candidate)
77-81	Aerospace Engineer	FSD	William Decker (Outside Candidate)
77-82	Computer Specialist	FSA	Gary Vander Roest (Army)
77-98	Secretary (Typing)	FSN	Maria Gold (Outside Candidate)
77-100	Secretary (Typing)	AT	Vicki Deiwert
77-102	Secretary (Typing)	FH	M. Louise Mahaffie
77-105	Purchasing Agent	ASP	Rosemary Buchanan
77-107	Procurement Clerk (Typing)	ASP	Joyce Pidgeon (Outside Candidate)
77-109	Voucher Examiner (2 Positions)	AFG	Leta Neyman Nancy Grube (Outside Candidate)
77-112	Secretary (Typing)	SC	Carol Anderson (Outside Candidate)

Stamp Collectors

Wanted: Stamp Collectors. With the events that will be commemorated by Ames in the near future, there has been a request by a number of people to establish a Stamp Club at Ames, which would have the backing of the ARA. All interested stamp collectors please submit your name to B. Gibbs MS200-24 or A. Lopez, MS210-10.

Want ads

Transportation

FOR SALE: 1967 Chrysler New Yorker 4-dr. blk. vinyl top, AT, PS, PB, power windows and seats, good condition w/heater and air conditioning. $750/best offer. Call 739-8478.

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'76 Chevy Van–green, AC, PS, PB, carpet and panel, Blaupunkt AM/FM 8-track stereo. Call 923-2710, evenings and weekends.

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Truck – FORD 1974 Courier with camper shell, AT, low mileage, excellent condition, one owner, $2700. Call 356-9692.

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1973 LTD Stationwagon, folding rear seats, roof rack, 4-speaker stereo, new carburetor, coil & ignition wires, only 10,000 miles on new brake system, good tires, $2500. Call (408)923-5567.

1963 VW – new sunroof, good condition, needs minor work, $695. Call 379-2385 after 4 p.m.

– – – – –

1969 Grand Prix, super special, Mags, 2 new tires $1000. Call 244-0866 after 6 p.m.

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FOR SALE: 1971 Plymouth, 4 dr, AT, PS, PB, new tires, good running condition, $1200. Call 854-5768.

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1971 Ducati R/T 450 cc, extras, $900. Call 854-5768.

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FOR SALE: 1971 Toyota Corona, 4-door sedan, air conditioning, radial tires, in good general condition, 73K miles, $1300. Call 966-3923.

Housing

ROOM FOR RENT: Nonsmoker, Eichler home in Sunnyvale, near Fremont and Mary, $170 per month. Call 738-0429 after 4:30 p.m.

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SKI GROUP: Group forming to lease 5 br., 3½ ba. house, Tahoe City, Dec.-April, $150-200, for more information call Linda Jahnke after 6 p.m., 969-5979.

Miscellaneous

MOVING – Must sell 8' Danish sofa, end table, upholstered chairs, aquarium, storage cupboard, base cabinet. Phone 967-5515.

FOR SALE: Pool Table, $90. Girls' clothes, size 2 to 6x. Call 493-6462.

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FOR SALE: Three-quarter roll-away bed, hardly used, excellent condition, $40. Call 253-7577.

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New tires and rims, ralley wheels, set of four, 1.78x15, $200. Call 967-5920 after 5 p.m.

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WANT TO BUY: The book, "*MOON, Man's Greatest Adventure*," by Bedini, Von Braun, and Whipple. Call 965-6329.

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FOR SALE: One pair of zebra finches, $12. Call 965-6329.

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ATTENTION: If you lost a watch, call Mike at 6131 and describe it.

– – – – –

Girl's coats, winter and summer, sizes 12 and 14, junior size 5, top condition, beautiful colors, $10 each. Call 964-1725.

– – – – –

WANTED: Return of all visitor badges! The last employee visited is responsible for obtaining the visitor's badge and returning it to the receptionist, MS253-1.

– – – – –

TRAILER 1977 – 24' Deluxe Vacationeer, self-contained, luxurious sofa bed, easy chair, carpet, full bath, air, frig. & freezer, TV & antenna, sleeps 6, stabilizer, sway bars, hitch, warranty, $6700. Call 356-9692.

– – – – –

Yamaha Clarinet, excellent condition, used one year, make offer. Call 272-1812 after 5:30 p.m.

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Lumber – 2"x4" to 6"x12"; C.I. sewer pipe with fittings, 2" to 4"; 12"x16' I beams; Re-bar; 6x6x10 gage mesh; 2'x4' ceiling tile; tools. Call 948-5029.

– – – – –

GEMINI HOUSE: RESALE BOUTIQUE
Sell your unwanted clothes for more pocket money, or buy for less from an up to date selection of slightly used clothing. Hours 10:30–5:00 p.m., Tues., Thurs., Saturday, 2373 Pruneridge Ave., Santa Clara. Call 241-1007 for directions or appointments.

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Decorative wall mirror, 30x42, fancy with gold frame, never used (in original carton), $50 (cost over $80). Call 964-1725.

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Wall lamp, very good condition, $15; Boy's ice skates, size 4, $20; green stamps, $3/bk; blanket, twin size, like new, $15. Call 964-1725.

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FOR SALE – "Redwood Burl" Clock with beautiful grain. The finish is a non-glossy satin finish, new battery-operated mechanism, $47. Call 253-3903.

– – – – –

SKIERS WANTED: Those in need of fun, snow, and mountains are invited to attend a week of skiing (Feb. 11-18) at Steamboat Springs, Colo. Priced at $360/person for lodging (condominium with kitchen), lift tickets, and transportation, it's a real bargain. To make your deposit call Tom Showalter, NASA/FLT, 965-5324, MS210-5. To secure the $360/person rate, make your deposit by Oct. 12. After Oct. 12 the rate will be $380/person.

The Astrogram

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
Associate Editor . . . . Marcia Kadota
Reporters . . . . . NASA Employees

Deadline for contributions: Thursday between publication dates

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NASA

The Astrogram

VOLUME XIX NUMBER 28

October 20, 1977

Origin of life breakthrough

A major breakthrough in explaining the origin of life appears to have been made by a team of scientists here at Ames.

The work appears to show how building blocks of life were collected and organized on the shores of the primordial oceans by "natural catalysts" found widely on Earth. This would be a step in the chemical evolution of the first living organisms.

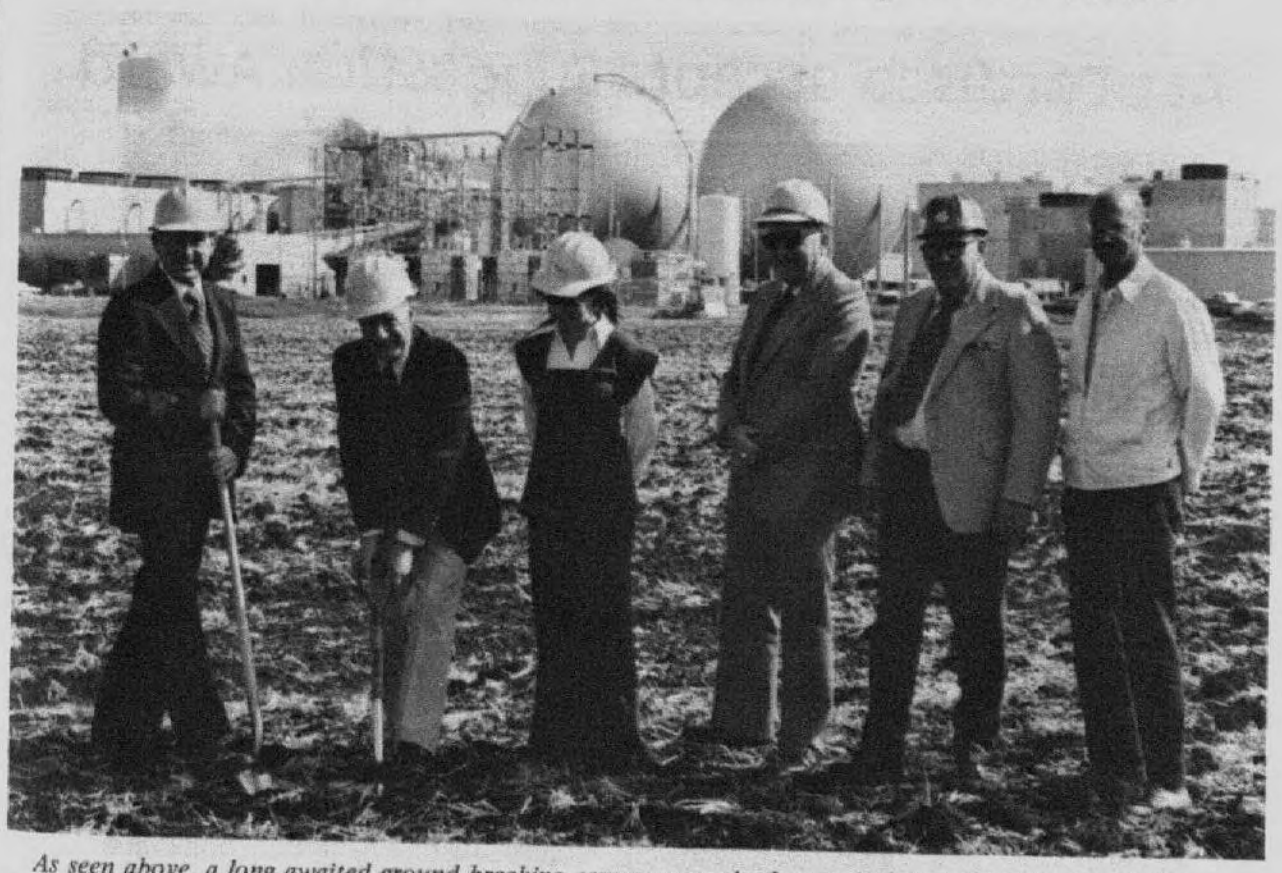
The experiments seem to demonstrate how two basic types of life molecules (amino acids, the building blocks of protein, and nucleotides, the building blocks of the life-directing DNA molecule) were concentrated in the primitive oceans. The work also seems to show how non-life amino acids were selectively destroyed, and how life-related amino acids were linked together in these ancient oceans into the chains needed to make living cells.

The question of how random collections and small amounts of life building blocks could be concentrated so that they could produce living organisms, has been unsolved for many years. Team leader for the work was Ames' Dr. James Lawless, along with Dr. Nissim Levi, a National Research Council Fellow from Israel, working at Ames. Their collaborators were Dr. Daniel Odom, now at the University of Houston, and Ms. Kristi Kjos and Mr. Randy Mednick, both students at the University of Santa Clara, working at Ames. Dr. Lawless recently gave a paper reporting on the work at the Pacific Conference on Chemistry, in Anaheim.

Most scientists accept the theory that life began by chemical evolution on the shores of the primitive oceans. The theory says that various forms of energy such as lightning, heat, and ultraviolet radiation converted the abundant, carbon-containing ammonia, methane, and water of the primitive earth into building blocks of life (organic molecules). These molecules, according to the theory, then joined together into ever more complex molecules until a molecule or group of molecules appeared which could replicate itself. This was the first living thing.

In recent years, many scientists have performed a very large number of chemical evolution experiments. These have produced most of the basic life molecules (including amino acids and nucleotides) in small quantities, by applying electric discharges or other energy release to ammonia, methane, and water. But until now scientists have been unable to explain how the life building blocks in the primordial oceans were organized. *(Continued on Page 5)*

New supply support facility for Ames



As seen above, a long awaited ground breaking ceremony took place on October 5, 1977, with Sy Syvertson, Louis Brennwald, Cindy Smith, Karrell Reynolds, Jerry Peterson, and Ralph Igler doing the honors. This new facility, which had been proposed over a period of 15 years, will contain about 80,000 square feet of storage and receiving space and will have office space for the Supply and Property Management Branches and support contractor. Construction is estimated to be about nine months, with occupancy by July 1, 1978. The facility will be located north of Bldg. 236, with access by way of Arnold Avenue.

Columbus Medal to Ames for Pioneer flights

Ames has been awarded the Columbus Gold Medal by the city of Genoa, Italy for the two multibillion mile Pioneer flights.

Genoa, Columbus' birthplace, presents the medal annually in connection with the Columbus celebrations there for "preeminence in courage, keenness and acuteness in research studies and achievements, audacity of realizations, tests of highly human significance, effective contribution to scientific advancement, and dissemination of information thereof."

Acting Director Clarence A. Syvertson, who is in Europe, accepted the medal on Wednesday, October 12.

Pioneer 10 flew past Jupiter in December 1973, returning the first close-up pictures of Jupiter and its planet-sized moons.

Major scientific findings included assessment of the hazard of Jupiter's enormous radiation belts and determination that the giant, which has more than two-thirds of the planetary material in the solar system, is an entirely liquid planet.

Pioneer Project Manager is Charles F. Hall and the Project Scientist is Dr. John H. Wolfe, both of Ames.

Some 50 Ames people man the Pioneer Project and 200 others at Ames worked part-time on the project. The two spacecraft were built by TRW Systems, Redondo Beach, CA. Bernard J. O'Brien is TRW project manager. A total of 40 scientists from the U.S. and abroad worked on the project. Several thousand people at numerous firms and universities worked on getting the two Pioneers to the giant outer planets.

New scope for age discrimination

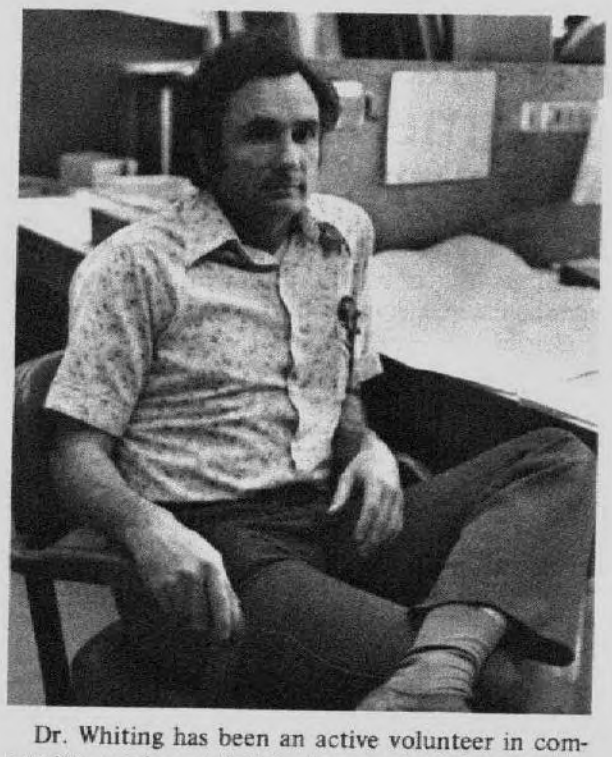
Due to a recent court decision, the maximum age limit on complaints of age discrimination by federal employees has been raised from 65 years of age to 70 years of age. The court decision, which was handed down on March 4, 1977, found that "Federal employees between the ages of 65 and 70 are protected from age discrimination by the Age Discrimination in Employment Act." The broadened scope of coverage is retroactively effective as of the date of the court decision. Accordingly, any employee who was at least 40 but less than 70 years of age and believes he/she was discriminated against because of age after March 4, 1977 is entitled to file a complaint of discrimination.

While the maximum age for federal employees was increased to 70, the limit for applicants for employment remains 65. Federal employees who apply for jobs in their own or other agencies are "employees," not "applicants," for purposes of cov-

(Continued on Page 4)

FEB honors Dr. Whiting

Dr. Ellis Whiting, Materials and Physical Sciences Branch, was honored by the Federal Executive Board at a luncheon held at the Presidio Officer's Club in San Francisco recently. Dr. Ellis was one of eight individuals to receive the Federal Executive Board's "Federal Employee Community Service Award." This award is given annually to recognize Federal employees' contributions to their community who by donating their time, talent, and energy during nonduty hours help those in need through work in civic community or other humanitarian activities.



Dr. Whiting has been an active volunteer in community service activities for nearly 20 years. He assisted in the fight to bring public housing to Santa Clara County, he helped organize the Santa Clara-Sunnyvale region of the "War on Poverty" program, and he was one of the founders of the Santa Clara County "Big Buddy" program.

For the past thirteen years, Dr. Whiting has been active in the "Friends Outside" program. The primary function of Friends Outside is to assist jail and prison inmates and their families. Their goal is to restore hope and pride and, thus, to break the pattern of transmitting delinquency and poverty from generation to generation. "Friends Outside" is acknowledged by both local and state officials as a highly successful and unique organization. Several judges and law enforcement officials serve on their Boards of Directors and Advisory Boards.

Dr. Whiting first became acquainted with Friends Outside in 1964 when it was a small local organization struggling to do its job in Santa Clara County. It had no office of its own and no permanent staff, but it was working and gaining the necessary trust from the local law enforcement authorities. As the need for its services expanded, Dr. Whiting was more and more enlisted to aid in the organization itself. He served on the Board of Directors for several years, two of these as chairman, and he helped Friends Outside to become a stable and successful venture. Today, the local Santa Clara County Chapter has a main office in San Jose and suboffices in Gilroy and Palo Alto; it has nine full-time staff members and well over a thousand volunteers to provide tutoring, day camps, summer camping, big brothers and sisters, women's club, emergency food, essential clothes, necessary transportation, and a feeling that someone cares so that there can be hope and pride.

By 1970, requests for services were coming from throughout California, and it was decided to expand the organization state-wide. Again, Dr. Whiting was asked to help set up such an organization. There are now nearly 20 Friends Outside chapters in California. In addition, they have full-time representatives stationed in six prisons, one established halfway house, and two more in the initial stages, a house in Sacramento to provide overnight accommodations for families visiting relatives or friends at Folsom prison, a day care center in San Francisco, and child care centers at several prisons and jails.

Dr. Whiting has served on the State Board of Directors for the past three years. Last year he was Vice Chairman and this year he is Chairman of the Board. He has been and is a major architect for the growth and development of this exceptional organization over the past 13 years.

Monroe receives NTA Award

Roscoe Monroe, a NASA Headquarters community relations officer, has been presented the Samuel Cheevers Annual Achievement Award by the National Technical Association at its annual convention meeting last month in Hampton, Va.

Monroe works in the Office of Equal Opportunity Programs at NASA Headquarters, Washington, D.C. He and his family live in Baltimore, Md.

The Cheever Award, the NTA's highest honor, was presented to Monroe for "his continued concern for the role of NTA in the black community and guidance to assure that that role is properly filled . . . he has given service of consistently high quality over a considerable length of time."

Monroe is a regional director for the NTA Eastern Region, and he has helped form three new NTA chapters since 1974.

NTA is the oldest black technical association in the world. One of its primary purposes is providing information and opportunities to young blacks in the scientific and technical professions. NTA membership is largely composed of engineers, scientists, educators, and architects. The organization was founded in 1925.

Weather lab in space

The old saying, "Everyone talks about the weather, but nobody does anything about it" may soon be put to rest by space age engineers and scientists. NASA and the General Electric Co., Valley Forge, Pa., are planning to build a special weather laboratory that will be carried into space by the Space Shuttle and its Spacelab in the early 1980s to study the causes of weather here on Earth. NASA and General Electric are expected to sign a $5.6 million contract to build the laboratory called the Atmospheric Cloud Physics Laboratory (ACPL) this week. The space agency chose General Electric to negotiate a contract for the work in June.

In the weightless environment of space, this highly sophisticated automated laboratory will be able to perform weather experiments that have not been possible on Earth.

Years of study have yielded a wealth of data on weather phenomena, but scientists have never been able to study properly the minute physical processes of cloud formation. Earth's gravity distorts experiments and renders the results incomplete.

Now, NASA may have found a way to help these scientists fill in some of the blanks.

Charles R. Ellsworth, manager of the cloud physics laboratory task team at Marshall Space Flight Center, explains two of the problems caused by gravity in Earth-bound laboratories:

"In an experimental cloud chamber on Earth, drops form and fall out of sight so quickly that they cannot be observed properly. In space, without the pull of gravity, the drops form and remain suspended so that the formation process can be observed as long as necessary.

"Convection, or movement of air or fluid, is an effect of gravity that occurs in cloud chambers when temperature differences are present, such as a higher temperature on one side of the chamber. This effect distorts the cloud formation procedure. Convection does not occur when there is no gravity.

"This new laboratory operating in orbit will essentially eliminate problems caused by gravity," he concludes, "and allow scientists to study the microphysical processes of cloud formation without that hindrance."

Art Cordisco accepts Suggestion Award

Arthur Cordisco, middle, of the Procurement Division, accepts a check from Bill Mead, Deputy Director of Administration, and Louis Brennwald, Director of Administration, for a recent suggestion.

Cordisco designed a procurement form which resulted in a tangible benefit of $25,000 per year. His Negotiation Summary Format helps maintain a minimum standard of documentation of procurement actions and provides consistency in facilitating review and reconstruction of action.

1977 Combined Federal Campaign is well underway

Chairperson's message

Problems that affect people in our community affect all of us directly or indirectly. They affect the development of the community, the quality of our lives. We have, in short, a common need to improve the community that sustains us.

This week we have the chance to renew our individual commitments to the Combined Federal Campaign (CFC), which funds 103 health and social service agencies in Santa Clara County. Perhaps you have already decided what you are able to contribute. If not, you might consider what would happen if there were not enough CFC dollars to distribute to those agencies – or rather, what would not happen. Here is what some of your CFC contribution made possible:

Last year, Pathway Society, Inc. provided social services to 4306 persons in drug-abuse programs.

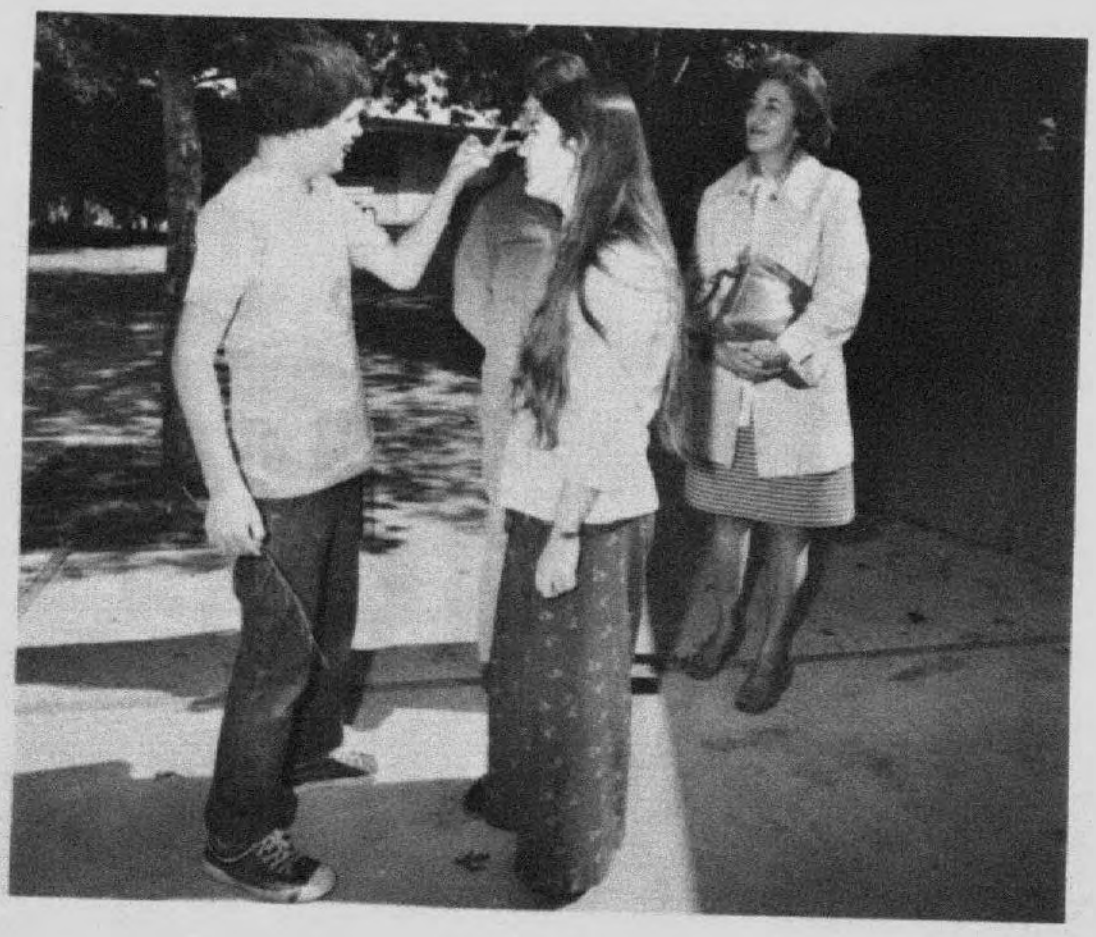
Hope Rehabilitation Services provided goal-oriented, comprehensive, and supportive services to 1,051 severely disturbed adults and adolescents. The major purpose of this service is to minimize the handicapping effect of a mental or physical disability and to effect a realization of the individual's potential. My own commitment to the CFC drive came to me on a personal level. I saw a mentally retarded child of one of my former neighbors on one of our visits to the Hope Rehabilitation Center in San Jose. She was working productively. Her abilities were evaluated at an early age and she was provided special training since she was very young. Now at age twenty, she is working gainfully. Also, let me say, she is happy to make a contribution to society.

I have heard many adverse comments about the CFC program (The United Way). Some people will always be negative when you ask them to donate to any fund raising campaign. But for those of you who have legitimate doubts about this program, this is the time for you and me to dispel those ugly statements. Let us contact our Loaned Executive to CFC, Fred Styles, and get the real story.

ARC Campaign captains visit Hope, PCC, CAR and Pathway Society

We all know that tax-supported programs, religious and sororal-fraternal organizations, and other groups never adequately meet the needs of all the people. What we desire to do is to give to agencies in *our* community who perform unique services and have met the standards of the Civil Service Commission.

As you consider making a contribution this year, possibly a much larger one than before, be positive. Some of these services you know, in the list of CFC agencies, are valuable to your family or some family close to you . . . then open your heart and give an effective gift.



A gift to the CFC produces . . .

A gift to the 1976 Combined Federal Campaign helped support the following services, locally, nationally and internationally:

- Self-help programs in health, education, nutrition and other community services serving more than 300,000 children and adults in 350 communities in the United States and 14 other countries.

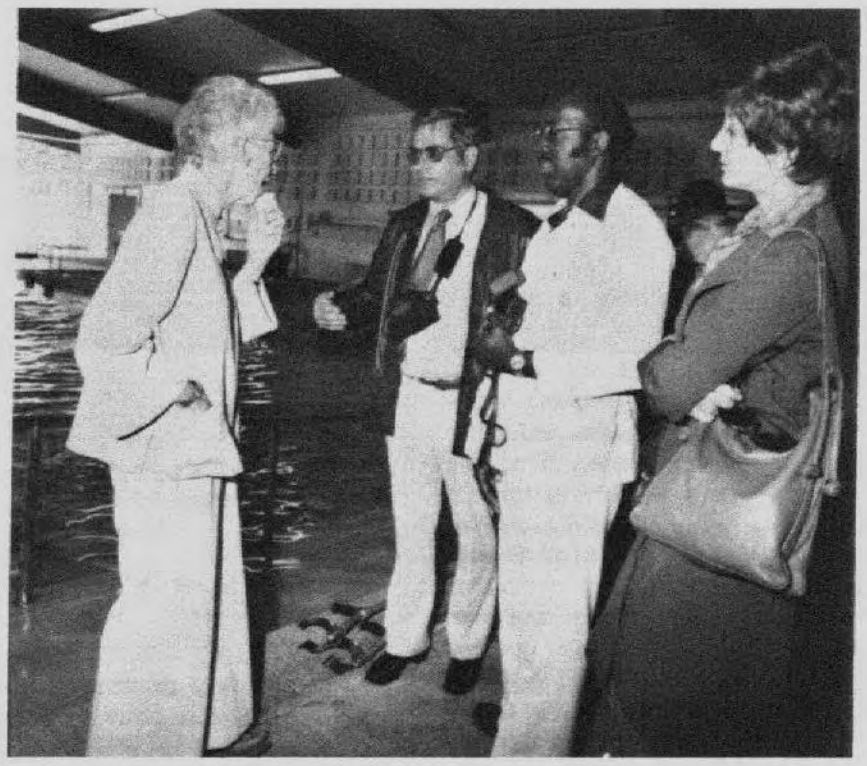
- Specialized medical clinics at Stanford and Santa Clara Valley Medical Centers for treatment of arthritis, multiple sclerosis, cystic fibrosis and muscular dystrophy.

- A sentencing alternatives program through which local courts referred more than 1,300 offenders for community service in lieu of fines and/or jail terms. Thirty percent of those referred continued to serve the agency AFTER completing their community service "sentence."

- Industrial eye safety programs conducted within the Santa Clara County industrial community.

- Ongoing research efforts dedicated to finding cause, treatment and cure for multiple sclerosis and related neurological diseases, affecting 500,000 Americans each year.

- Programs with an emphasis on helping the developmentally disabled and other handicapped persons reach their maximum potential serving 850 local clients each day.



- More than 8,400 job placements for retired senior citizens in Santa Clara County who needed to supplement Social Security or retirement pay.
- Residential mental health treatment for 474 severely disturbed adults and adolescents in Santa Clara County who would otherwise have required institutional care.
- Project CLASP (Counseling Leadership Against Smoking Pressure) for elementary and high school districts in the county.
- Comprehensive and emergency dental treatment for 256 local youth, senior citizens and others not covered by welfare or other insurance.
- Nutritionally balanced meals served to 2,136 elderly or ill county residents in their own homes.
- Twenty-two local children carrying the labels of various behavioral disorders successfully transferred from a comprehensive treatment center into public school or other community programs.
- In the Dominican Republic, one of thirty developing countries receiving aid, 600,000 were fed each day.
- A specially designed motivational program provided incentive for more than 300 local high school-aged youth to improve school attendance.
- Simple but critical skills like opening cans and threading sewing machines taught to blind people in their own homes throughout the county.
- Counseling for more than 4,000 persons in personal and family crises or stress situations, with special services to seniors, teenagers and Latino families.
- Three hundred clients treated in a drug-free residence, the only program of its kind for addicts in Santa Clara County.

Ames-ACES present "Solar Design"

On Tuesday, November 1st, Ames-ACES will present Mr. Noel Lee of "Solar Designs" to discuss in detail applications of solar air-collectors for space and water heating. Air Collectors have the advantage of simplicity of design without the problems of leaking, rusting or freezing found in liquid systems.

To determine if this system might be the one for your home, come to the Space Sciences Auditorium, Bldg. 245, at 11:30 a.m. Ames-ACES programs are open to all those interested in learning about alternate energy sources.

Awards Ceremony

The Ames Honorary Service Awards Ceremony honoring those federal employees with 20, 25, 30, and 35 years of service will be held in the Ames Auditorium on Friday, November 11 at 2 p.m. All Ames employees and retirees are invited.

Age discrimination

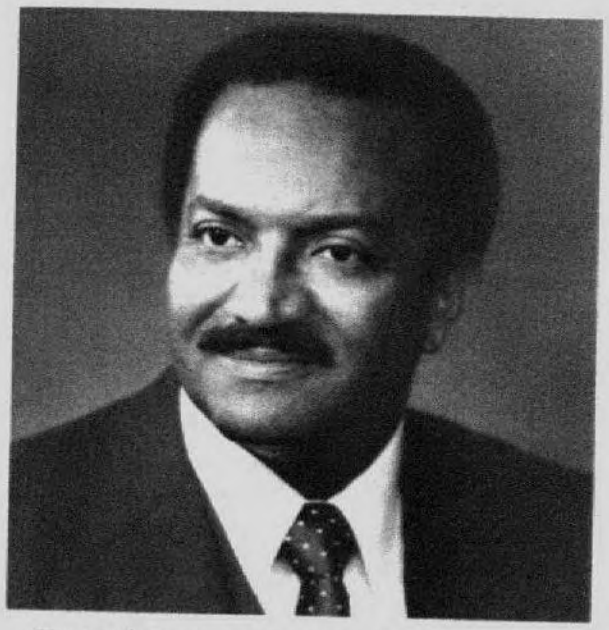
(Continued from Page 1)

erage and entitlement under the ADEA. The amended coverage does not apply to employment situations involving mandatory retirement between ages 65 and 70. You will soon be seeing a revision to AMM 3713-2, "Equal Employment Opportunity Complaints/Appeals by Ames Employees," reflecting these changes.

Dr. Percy to address helicopter conference

"The Helicopter Today and Tomorrow" is the subject of an address by Dr. Percy A. Pierre, Assistant Secretary of the Army for Research, Development and Acquisition to be made before the Nov. 16–18 Conference on Helicopter Structures Technology here at Ames.

In addition, W. Z. Stepniewski will review Soviet helicopter design philosophy as seen in the recent Russian text, "Helicopters" by Tischenko. "Steppy" Stepniewski is an aeronautical consultant in rotary wing technology, who recently completed an English translation of the Russian text.



The conference, sponsored by the Western Region of the American Helicopter Society and NASA Ames, will feature specialists in rotor craft structures who will review advances in materials and structures and discuss research goals for further development. They will also identify current or future programs that could benefit from application of advanced structures technology.

Conference general chairman is Andrew W. Kerr, aerospace engineer, Army Research and Technology Laboratories (RTL) (formerly Army Air Mobility R&D Lab), and vice president, AHS Western Region. Technical Chairman is Frederick H. Immen, Chief, Advanced Systems Research Office (RTL), and arrangements chairman is James Biggers, NASA Ames Research Center. For further information, contact Richard S. Dunn, Comm: 415-965-5578; AUTOVON: 586-5655.

Origin of life *(Continued from Page 1)*

The newly-found mechanism involves substances which would have been common on the shores of the primitive oceans – metal-clays. Clays had to be widely spread on the primordial Earth and ocean shores; and, by definition, all clays contain metals. Metal salts would be found in the oceans. When low-concentration solutions of amino acids were mixed with the commonplace metal-clays, Dr. Lawless's team found that all clays attract amino acids (of which there are about 1,000 different kinds) out of solution. One metal-clay (nickel containing) preferentially attracts the 20 amino acids which make protein, the main structural ingredient of living cells. Nickel-clay is a very abundant Earth material. Of eight metal-clays tried, only nickel-clay does this.

Dr. Levi reported that the other clays destroy non-protein-forming amino acids faster than protein amino acids. Thus, a realistic mechanism for the concentration and selection of the life forming amino acids has been found.

Experiments simulating tidal action on the clays (i.e., dry an amino acid-clay solution, warm it, wet it again and repeat the process several times) produces chains of amino acids (eight amino acid molecules linked together, so far). Presumably, time would produce the far longer chains found in life.

A metal-clay had a similar effect on the building blocks of DNA. (The very-long-chain DNA molecule in every living cell, including human ones, contains a blueprint of the entire organism.)

DNA building blocks are concentrated by zinc-clays. Only the zinc one, of the nine metal-clays tried, did this.

A further significant fact is that zinc is known to play an important role in the enzyme, DNA polymerase, which performs the task of linking DNA building blocks (nucleotides) in living cells. Enzymes are super-catalysts, which drastically speed-up many life processes.

Dr. Lawless believes that the key role of metals in many biological processes is a result of having had a lot of metals present since the beginning of the life process, and that the presence of metals in living systems today results from early prebiological chemistry.

NASA SPECIAL PUBLICATIONS

National Aeronautics and Space Administration

The following NASA Special Publications are now on display in the Ames Main Library and the ARA Store. Following your review of these new releases, if you would like a retention copy for your files, return a completed NASA Special Publication Request Form, ARC 303, for each publication you desire to the Main Library, M/S 202-3, and *a copy will be mailed* to you. Please allow 2 weeks for processing and distribution of your request. Because the number of copies of NASA Special Publications available to the Center is limited, requests will be processed as they are received until the supply is exhausted and distribution will be limited to Ames Research Center Civil Service employees.

NASA SP-350 **APOLLO EXPEDITIONS TO THE MOON**
Edited by Edgar M. Cortright

The story of the Apollo expeditions to the Moon is told in words and pictures by 18 men who were intimately involved in project planning and execution. Project managers, the launch operations director, the mission operations director, astronauts, and program officials recount the history of Apollo in their own terms. The craft that visited the Moon before man, the Saturn V rocket, and the Apollo spacecraft are described. Each Apollo mission is covered in detail, often by the men who made the Moon trips.

NASA SP-408 **VIKING 1: EARLY RESULTS**
Langley Research Center

The Viking 1 and 2 missions to Mars, from mission concept and planning to landing on the Martian surface, are described. The orbiters, communications links, atmospheric traverses, landings, and surface sampling techniques and instrumentation are discussed. Early mission findings, including biological data, are presented. Illustrated.

NASA SP-3101 **CRYOGENIC ADHESIVES AND SEALANTS – ABSTRACTED PUBLICATIONS**
Frank R. Williamson and Neil A. Olien, Cryogenics Division, Institute for Basic Standards, National Bureau of Standards, Boulder, Colorado

A selection of abstracts of published information about the properties of cryogenic adhesives and solvents, this special publication also contains author and subject indexes. Properties considered include: structural and thermoelastic; bonding; leak tightness; thermal and physical; and oxygen and other cryogenic fluid compatibility. As available, problems and their solutions are noted.

NASA SP-411 **THE APOLLO-SOYUZ TEST PROJECT – MEDICAL REPORT**
Compiled by Arnauld E. Nicogossian, M.D., NASA Lyndon B. Johnson Space Center

Preflight, in-flight, and postflight research studies performed on astronauts participating in the Apollo-Soyuz Test Project are described. The final flight in the Apollo program and the first space flight conducted jointly by the United States and the U.S.S.R., the Apollo-Soyuz mission demonstrated the feasibility of in-flight space rescues by testing the systems and procedures necessary to the rendezvous and docking of manned spacecraft. Crew health, in-flight monitoring of basic health-related aspects of space flight, and the results of several medical tests conducted before, during, and after the flight are discussed. Information about the inadvertent exposure of the U.S. crew to toxic nitrogen tetroxide gas on entry and their uneventful convalescence is included.

NASA SP-3085 **TABLES AND CHARTS OF EQUILIBRIUM NORMAL SHOCK PROPERTIES FOR HYDROGEN-HELIUM MIXTURES WITH VELOCITIES TO 70 km/sec.**
Vol. I: 95% Hydrogen – 5% Helium. Vol. II: 90% Hydrogen – 10% Helium. Vol. III: 85% Hydrogen – 15% Helium. Vol. IV: 75% Hydrogen – 25% Helium.
Charles G. Miller III and Sue E Wilder, Langley Research Center

Equilibrium thermodynamic and flow properties are presented in tabular and graphical form for moving, standing, and reflected normal shock waves in hydrogen-helium mixtures representative of postulated outer planet atmospheres. The results are contained in four volumes: a volumetric composition of 0.95 H_2 –0.05 He in Volume I; 0.90 H_2 –0.10 He in Volume II; 0.85 H_2 –0.15 He in Volume III; and 0.75 H_2 –0.25 He in Volume IV. Properties included are: pressure, temperature, density, enthalpy, speed of sound, entropy, molecular-weight ratio, isentropic exponent, velocity, and species mole fractions. This revised version of the original 1974 edition corrects some input data errors, uses a refined hydrogen-helium model, and presents data for four hydrogen-helium mixtures instead of the original three.

NASA SP-4009 **THE APOLLO SPACECRAFT: A CHRONOLOGY. Volume III**
Courtney G. Brooks and Ivan D. Ertel

A chronological history of the major events and management decisions that culminated the Apollo spaceflight program, this third in a series of four volumes planned by the Johnson Spacecraft Center covers the period from 1 October 1964 to 20 January 1966. Paperbound, 304 pp.; for sale for $5.20 by the Superintendent of Documents, Washington, D.C. 20402.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
78-4	Staffing Clerk/Assistant	GS-5/6	APM	Centerwide	10-31-77
78-5	Supervisory Aerospace Engineering Technician (Assistant Branch Chief)	GS-11/12	FOS	Centerwide	11-11-77
78-6	Secretary (Typing)	GS-5/6	RI	Centerwide	11-1-77
78-7	Clerk-Typist	GS-3/4	APM	Centerwide and outside	10-31-77
	Personnel Clerk (Typing)	GS-4/5			
78-8	Secretary (Typing)	GS-5/6	LB	Centerwide	11-1-77

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
77-70	AST Technical Management	FD	William Snyder
77-72	AST Technical Management	FD	Wendell Stephens (Langley)
77-97	Clerk-Typist	SEM	Cancelled
77-103	Tools and Parts Attendant Trainee	RFP	Barbara Thompson
77-104	Supervisory Aero. Engineer	FAR	George Lee
77-111	Illustrator	ATG	Barbara Moseley (outside candidate)
77-115	Printing Specialist	ATR	Carl Struckman
77-85	Secretary (Typing)	LB	Being reannounced

Swearing-in ceremony for Undersecretary of Air Force

Dr. Harold Brown and Dr. Hans Mark at Dr. Mark's swearing in ceremony as Undersecretary of the Air Force at the Pentagon on August 9, 1977. The ceremony was followed by a reception attended by high government officials and members of Dr. Mark's family.

Want ads

Transportation

1969 Ford Van, V8, 3 spd, cust int, looks and runs good, needs tires. $1900/offer. 253-7031 evenings.

For sale: 1974 Honda Civic, 4 spd, 30,000 miles. Exc cond. $2200. Contact Jane Cordell, X-5114.

For sale: Honda motorcycles – 1975 CB-550, headers, TD handlebars, rack, new tires, 7000 miles, mint cond, $1200. 1970 CL-350, rack, helmet, 12,000 miles, exc cond, $400. Call 374-2369.

Housing

Room for rent: Sunnyvale near 101 and Mathilda. Kitchen privileges. $120/mo. Call Ramona after 6 p.m.

For rent: Valco Park 4-bdrm, 2 story, 2 bth, 1800 sq. ft. Family room with fireplace, AEK, drapes, rugs over hardwood floors, community pool, gardener. $525/mo, negotiable. 264-3521, 253-3659.

Reserve now for Christmas or New Years. Ski or walk to Alpine Meadows lifts. Plush 3-bdrm condo sleeps up to 10. AEK, DW, laundry, fireplace, heated parking pad. Dramatic view of backside of KT-22 from large balcony. 736-1357.

Miscellaneous

Ansen sprints w/tires. 14x7, 5 bolt Chevy. 2/$50. 253-7031 evenings.

Canaries, male singers, $20 and up. 739-6054.

For sale: Beautiful 9x12 Couristan wool rug w/pad. Better than excellent condition. $125. Call 379-1753 after 6 p.m.

3-piece sectional, Chinese modern, light beige upholstery, ebony legs. $150/offer. Westbend air cleaner, filters smoke, dust, pollens. Breathe clean air!! $150. Both items like new. Call 293-3559 or 248-7164.

Notice

Mike Leeny of Scientific Products will be hosting a Laboratory Apparatus and Equipment Show for NASA Ames on Wednesday, October 26, 1977. The show will be located in the basement conference room of Life Science Bldg. 239 from 10:00 a.m. to 4:00 p.m. Refreshments and donuts will be served.

The Astrogram

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
Associate Editor . . . . Marcia Kadota
Reporters . . . . . NASA Employees

Deadline for contributions: Thursday between publication dates

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The Astrogram

VOLUME XIX NUMBER 29

November 3, 1977

Health insurance: "Open Season" lengthened

A Federal Employees Health Benefits Program open season will be held November 14 to December 9, 1977. Under open season regulations, any eligible employee who is not currently registered may enroll, and an enrolled employee may change from one plan or option to another, or from self only to self and family, or a combination of these. Those employees who do not wish to make a change in current enrollment need take no action during this open season.

Distribution of open season literature will be made through the Training Office prior to November 14. This year each employee will receive an open season instruction pamphlet, a list of premium rates for all plans, and brochures for the Government-wide Indemnity Benefit Plan (Aetna), the Government-wide Service Benefit Plan (Blue Cross-Blue Shield) and Kaiser Foundation Health Plan, Northern California Region.

Members of employee organizations, whether or not they are currently enrolled in the organization's health plan, will receive an appropriate brochure, by mail, directly from the Commission. Brochures on the following employee organization plans will be available to all employees upon request from the Training Office. *(Continued on Page 3)*

ESA/NASA agreement signed

The European Space Agency (ESA) has signed an agreement with NASA for participation in the space agency's 1983 Space Telescope mission.

A memorandum of understanding was signed October 7 in Paris by NASA Administrator Dr. Robert A. Frosch and Roy Gibson, Director General of ESA.

Scheduled to be carried into Earth orbit by NASA's Space Shuttle, the space observatory will be used to study the universe with much higher resolution than has ever been possible before.

Under the agreement, ESA will provide a major scientific instrument and a spacecraft subsystem, participate in the in-orbit operation and maintenance of the telescope, and arrange for participation of ESA-sponsored European astronomers in the observation programs.

The scientific instrument to be provided by ESA is the Faint Object Camera, for high resolution imagery in the ultraviolet, visual and near infrared portions of the spectrum and the spacecraft system to be contributed is the Solar Array to provide all power for the observatory.

The 2.4-meter (8-foot)-diameter Space Telescope will be capable of accommodating up to five different instruments at its focal plane. It will weigh about 9,070 kilograms (10 tons) and will orbit the Earth at an altitude of approximately 500 kilometers (310 miles), above the obscuring effects of the atmosphere.

Once placed in orbit, it will be operated remotely from the ground but will be designed to permit maintenance and the change of instruments by a space-suited astronaut and to be retrievable by the Space Shuttle for return to Earth for extensive overhaul and subsequent re-launch. These features should allow the Space Telescope to serve as an in-space astronomical observatory for more than a decade.

J. Lloyd Jones elected chairman of AGARD Fluid Dynamics Panel

J. Lloyd Jones, Chief of the Ames Planning and Analysis Office, was recently elected panel chairman of the AGARD Fluid Dynamics Panel. The election occurred at AGARD's fall meeting in Ottowa, Canada, and is considered a high professional honor. The chairmanship will extend over a two-year period. Jones has served as the panel's Deputy Chairman for the past two years.

AGARD (Advisory Group for Aerospace Research and Development) is a NATO-sponsored mission to bring together leading personalities of the NATO Member Nations in the fields of science and technology relating to aerospace for the mutual benefits of those nations. This it does primarily through its technical Panels and Aerospace Applications Studies Committee.

The Fluid Dynamics Panel is one of nine AGARD technical panels. The Panel assists in the interchange of aerodynamic information including that pertaining to experimental techniques of model and experiments. It also lends assistance in suggesting and coordinating research work in the field of fluid mechanics.

Past U.S. Fluid Dynamics Panel Chairmen have been I. H. Abbott, 1956–1958; H. H. Kurzweg, 1963–1965; and W. R. Sears, 1969–1971.

Current U.S. Panel Members are: Professor S. M. Bogdonoff, Princeton University; Mr. R. O. Dietz, AF AEDC; Mr. D. C. Lauver, ONR; Dr. H. W. Liepmann, California Institute of Technology; Dr. W. J. McCroskey, U.S. Army AMRDL, Ames Research Center; Dr. B. Quinn, AFOSR; Dr. G. K. Ritchey, AF Flight Dynamics Laboratory; and Dr. H. Yoshihara, Boeing Aerospace Company.

The 1978 FDP meetings include "Dynamic Stability Parameters" (May 29–31, Athens, Greece), and "High Angle of Attack Aerodynamics" October 4–6, Sandefjord, Norway).

Early Shuttle flight experiments

NASA has selected five materials processing experiments to be packaged and flown on the Space Shuttle during one of its six Orbital Flight Tests (OFT), providing scientists an interim opportunity to conduct investigations prior to Spacelab missions.

The experiment package, called the Materials Experiment Assembly (MEA), will be first flown on one of the early orbital flight tests that are scheduled to begin in 1979. The MEA will be in regular use in later Shuttle flights on a space-available basis.

Experiments for the first MEA package were chosen because they could easily adapt to hardware available from the Space Processing Applications Rocket (SPAR) program and could be fitted into a compact assembly that requires no interface with the Shuttle except for one command from the cockpit to start the experiment processes.

Occupying a relatively small place, the MEA package will be automated and unattended. In addition to the experiment equipment, the package will contain its own power source and a mini-computer to collect data.

Principal investigators and experiments selected for the MEA project are:

Dr. J. Bruce Wagner, Jr., Arizona State University, Tempe – Solid Electrolytes Containing Dispersed Particles.

Ralph A. Happe, Rockwell International, Downey, Calif. – Containerless Preparation of Advanced Optical Glasses.

Dr. Herbert Wiedemeier, Rensselaer Polytechnic Institute, Troy, N.Y. – Vapor Growth of Alloy-Type Semiconductor Crystals.

Dr. John W. Vanderhoff, Sinclair Laboratories at Lehigh University, Bethlehem, Pa. – Large-Particle-Size-Monodisperse Latexes.

Dr. S. H. Gelles, Gelles Associates, Columbus, Ohio – Liquid Miscibility Gap Materials.

David Scott to leave Dryden

Dr. David R. Scott, director of Dryden Flight Research Center, resigned from NASA Oct. 30 to enter private business in Los Angeles.

Isaac T. Gillam, deputy director at Dryden, will serve as acting director until a successor to Scott is announced.

Scott was appointed director of Dryden April 18, 1975, and previously had served as deputy director since August 1973. He retired as a colonel from the U.S. Air Force in March 1975.

As a NASA astronaut, Scott flew on Gemini VIII, Apollo 9, and was spacecraft commander of Apollo 15. When he left the astronaut corps in 1972, Scott was named technical assistant to the Apollo Program Manager at Johnson Space Center in Houston. Later he served as special assistant for mission operations and government funded equipment.

Scott is a Fellow of the American Astronautical Society; Associate Fellow of the American Institute of Aeronautics and Astronautics; a member of the Society of Experimental Test Pilots; and Tau Beta Pi, Sigma Xi and Sigma Gamma Tau.

Among Dr. Scott's special honors are two NASA Distinguished Service Medals, the NASA Exceptional Service Medal, two Air Force Distinguished Service Medals, the Air Force Distinguished Flying Cross, the Air Force Association's David C. Schilling Trophy and the Robert J. Collier Trophy for 1971.

Medal of honor winners in parade

Some 200 Medal of Honor recipients and their wives will participate in a Veterans Day parade November 11 through downtown San Jose.

The parade is just one highlight of this year's Biennial Convention of the Congressional Medal of Honor Society being held in San Jose November 8 to 12.

Another event featured will be a public reception and banquet November 12, where actor James Stewart will receive the Medal of Honor Society's Patriot's Award.

Louis Rossi, parade director, said that the Veterans Day parade will probably get national media coverage.

It will give "the American people an opportunity to view this celebration honoring the recipients of the Congressional Medal of Honor," he said.

Rossi also asked people to donate convertibles for the parade.

"We need open cars with drivers to transport the Medal of Honor recipients and their wives," he said.

Anyone interested in donating their car may contact the San Jose Convention Bureau.

Dr. Mark to speak in Bay Area

Former Center director Dr. Hans Mark will be the guest speaker for the San Francisco Post of the Society of American Military Engineers on Thursday evening, November 10. Ames personnel interested in attending this function should contact Terrie at 556-3661 for further information and reservations.

General Stevens to present AVRADCOM

Major General Story C. Stevens, Commander of the U.S. Army Aviation Research and Development Command (AVRADCOM), St. Louis, Mo., the higher command of the Army Research and Technology Laboratories located here at Ames, will present a briefing at the Ames Auditorium Friday, November 4th from 3:00 to 3:30 p.m.

General Stevens will cover the reorganization of the Army Aviation Systems Command (AVSCOM) to the new organization, AVRADCOM, its mission and functions and will highlight the command's activities in research, development and engineering programs.

Joggernaut Sebesta joins 10,000 mile club

Lewis Hughes, Chief of the Health and Safety Office (left), and Lana Olivas, a contractor with Ames, look on admiringly as Paul Sebesta (middle) displays a T-shirt signifying he has reached the 10,000 mile mark for jogging. Though Sebesta has probably totalled nearly 24,000 miles during this past decade, he has run 10,000 miles since he began tallying in December 1972.

Abstract algebra lectures

An introductory-level lecture series on abstract algebra will be given in the Flight Systems Research Division Conference Room during the week of November 7–11. The lectures will be given from 8:30 to 9:30 a.m. in room 205 of bldg. 210 daily throughout the week.

The algebra of vector spaces has been a standard tool for nearly 20 years in systems theory and in the engineering solutions of flight control problems. Ten years ago, Professor R. E. Kalman realized that vector spaces were too restrictive. With the help of an Ames grant, he and his students began to investigate simpler algebraic structures, and showed that some of them allowed better representations of systems of engineering significance. The publication of special issues of some journals recently, which recorded broad theoretical and algorithmic progress, signals maturation of this algebraic systems theory, and provided the impetus to having the series of lectures.

The lecturer, Professor Eduardo Kamen, of the Electrical Engineering Department of Georgia Institute of Technology, was an early student of Kalman's and has been working in the engineering applications of algebra since.

Further information regarding the lectures, or preliminary copies of the lecture notes, can be obtained from the Flight Dynamics and Controls Branch office, or from B. F. Doolin at extension 5449.

Winning Ames fastpitch softball team

The following Ames employees form the winning fastpitch softball team of the Sunnyvale League: Front row, left to right include: Mike Ospring, Bruce Ganzler, Mike Green and (back row) John Fetter, Fred Peters, Kevin Chargin, Bob Corbett, Paul Soderman; not shown are: Larry Gary, Jim Myers, Jim Engard, George Alger, Ray Firpo, Jeff Hammill.

Victorious fighting "Pumas"

The victorious Fighting Pumas prove they are still the best . . .

The all-Ames softball season is over for 1977 and once again the Fighting Pumas are Number One. The Pumas, with a total of 99 wins in 130 games played, boast of five championships in the nine years since the slowpitch softball league was organized.

Pictured are (back row, left to right) Bill Brigadier, Jim McClenahan, Don DeVincinzi, Ken Souza, Roger Hedlund and Tom Almojuela; (front row) Marnell Smith, Steve Kenley, Dan Kojiro, Bob Showman, and Jack Barrie. Not pictured are team members Dave Alper and Jon Barrie.

"Open Season"

(Continued from Page 1)

- AFGE Health Benefit Plan
- Alliance Health Benefit Plan
- American Postal Workers Union Plan
- Government Employees Hospital Association Benefit Plan
- Mail Handlers Benefit Plan
- National Association of Letter Carriers Health Benefit Plan

Employees wishing to enroll or change their enrollment must complete a Health Benefits Registration Form (Standard Form 2809). These forms are available from the Training Office, Bldg. 241, Room 138, extension 5622, and must be complete and submitted to that office prior to the close of business on December 9. We ask your assistance in making desired changes as early as possible in the open season.

New enrollments and changes in current enrollments elected during the open season will normally become effective January, 1978 (first day of the first pay period, 1978).

Ames Annual Children's Xmas party

Preparations are presently under way by the Ames Recreation Association for the annual Ames Children's Christmas Party. The attendance at these parties usually runs about 1200 children and about 500 to 1000 adults. The cost of this party is partially defrayed by the sale of Christmas Raffle Tickets. This year with the large increase in cost of the presents and other expenses it is even more important that everyone at Ames support the party to the best of their ability. This includes volunteering for help and purchasing as many raffle tickets as possible. To volunteer to help call either Stan Benbow, 5639, or Sal Tardio, 5475.

Moffett OWC Xmas bazaar

Moffett Officers' Wives' Club will be having its Christmas Bazaar on November 16 from 10 a.m. to 8 p.m. A touch of everything for everyone on your shopping list. Please join us on this special day. Tita Risk, OWC Publicity Chairman, 967-0253.

Forfeiture of annual leave

Employees are reminded that to avoid forfeiture of annual leave for reasons of sickness or exigencies of the public business, annual leave must be scheduled, requested in writing, and approved for use in time to be used before the end of the year. In order for any forfeited leave to be restored, the annual leave must be requested and approved at least six weeks prior to the end of the leave year. Standard Form 71 is required for documentation of annual leave requests and approvals in instances involving restoration of forfeited annual leave. Seek AMM 3630-3 for further information.

It is suggested that the Personnel Division be contacted immediately if there is any possible situation in which an employee's leave will be forfeited because of an emergency of "public exigency" since advance approval is normally required.

Basketball

BASKETBALL. Anyone interested in playing basketball in the Ames league should contact Paul Kutler, ext. 5194.

BASKETBALL REFEREES and SCOREKEEPER. Anyone interested in refereeing or keeping the score of the Ames league basketball games should contact Paul Kutler, ext. 5194. Salary is negotiable.

Rhododendrons

What you have always wanted to know, but never had a chance to ask. A new chapter of the American Rhododendron is being formed. The DeAnza Chapter will meet at the Northern California Savings and Loan, DeAnza Blvd., Cupertino. Time 8 p.m., the first Monday of the month. For further information call Bob George, 5835, or Tom Wynn, 6024.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
78-9	Supervisory Aerospace Engineer (Branch Chief)	GS-14/15	FHR	Centerwide & Outside	11/21/77
78-10	Supervisory Aerospace Engineer (Branch Chief)	GS-14/15	FHI	Centerwide & Outside	11/21/77
78-11	Secretary (Typing)	GS-4/5	FAX	Centerwide & Outside	11/15/77
78-13	Secretary (Typing)	GS-5/6	LM	Centerwide	11/18/77
78-14	Administrative Specialist (STEP)	GS-5/7/9	FL	Centerwide	11/17/77
78-15	Clerk-Typist	GS-2/3/4	AFG	Centerwide & Outside	11/14/77
78-16	Contract Specialist	GS-7/9	ASA	Centerwide & Outside	11/14/77
78-17	Secretary (Steno) or Admin. Asst. (Steno)	GS-6/7	A	Centerwide	11/14/77
78-18	Secretary (Typing)	GS-4/5	SPJ	Centerwide & Outside	11/11/77

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
77-68	Aerospace Engineer	FHI	Edward Seto (Outside Candidate)
77-108	Secretary (Typing)	FAR	Eileen Coppola (Outside Candidate)
77-116	Secretary (Typing)	FAE	Judy Long
77-120	Secretary (Typing)	SPJ	Being reannounced

Want ads

Transportation

For sale: Honda 90 Trail Bike. Like new, 1700 mi., $295. Mr. Brooks, 378-3143.

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1972 Dart Swinger, 2-dr, h.top, vinyl roof, AT, PS, PB, air, rally wheels, deluxe seats, 8-track, one owner, exc. cond., $1800. (408)335-3053.

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For sale: 1965 Pontiac LeMans, new tires, good work car. $350 or best offer. Call 253-3027 after 4:30.

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'72 Honda CB500-4, 17 K mi., extra sharp, Wixom fairing, crash bar, sissy bar, alarm. New battery, rebuilt carbs, fresh tune, ram pipes. $650. Bob Hodge, 251-6403, eves.

– – – – –

For sale: Honda CT70. Like new, 300 miles, $325; Honda ST70 step thru, new condition, 200 miles, excellent transportation with more power and comfort than Mopeds, with locked rear box, $325. Sal Rositano, 259-4618 eves.

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For sale: ½ interest, Cessna 1964 Skyhawk, model 172E, SMOH 1200, Duo-Nav-Com. New anual + extras. $3500. 984-5729 after 5:00, Wes Gidcumb.

– – – – –

1966 Chevy II Nova, 4-dr sedan, AT, new belt tires, good eng. One owner, $500/offer. Call 245-9688.

Housing

Ski Bear – enjoy the mtns. Rent mtn home (complete with wood for fireplace) by day or week. 18 mi. from Bear Valley just off Hwy 4. Sleeps 10. Contact Ed Sutton, 867-4465.

House for rent: Blossom Valley, 1 yr old, 3 br, 2 bth, fireplace, refrig., disposal, w/w carpet, drapes, near shopping and IBM, $380/mo, 969-1085.

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House, single story, 4 br. San Jose Evergreen area, Mackay Creekside development. On court, near elem. school. Insulated, hardwood floors, fireplace, cabana club, 8000 sq. ft. lot. $69,500. Hadland, X6028.

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Monaco condominium for sale: 2 bdrm, 2 ba, new ktch. Fl, lg mirrored cl., w/w cpt, utility rm, storage rm, 2 patios, pool, sauna, putting green, carport. Good location, $58,950. Contact Carmen or Art Lewis, (408)241-0968.

Miscellaneous

Library book missing: Title – Structural Adhesives with Emphasis on Aerospace Applications. Author – R. L. Patrick. Please return to Jeff Holloway, 223-6, X-6256.

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Schwinn Lil Tiger bicycle with training wheels (ages 4-6), $20; child's night light/lamp, exc. cond., $3; Samsonite suitcase, $5. 241-5503, evenings.

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2 year old, male Airdale. Free to good home. Loves children. Watchdog. Call Dick Petersen, 851-1906.

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For sale: Receiver, speakers, and turntable, all in 6' Barzalay walnut cabinet, $500 or best offer. Call 252-4749 after 6 p.m.

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For sale: Refrigerator, washer, clothes dryer, water softener. Call 595-1858 after 6 p.m.

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House sitting done: have local references. Call Ken Bilski, ext. 6001.

San Francisco Symphony at Flint Center, Cupertino. Two tickets, 6th row center orch, for each of the following: Thurs. eve., Dec. 29 (Vienna Nite) and Sat. eves., Feb. 18, 25, Mar. 18, April 15. $9.75/ticket. Leonard Tobias, X5451.

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Trumpet, Getzen; used 3 yrs. Perfect cond. $200+ value. Sell for $125. Mute and instruction manuals included. Phone 243-1044.

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Beautiful console type Philco stereo, made in England, with separate FM tuner. $75. 354-7839.

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Wanted: Women's 3-speed bicycle. Call 996-3923.

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For sale: Hoover cannister vacuum cleaner, approx. 6 yr old, $20. Call 259-7419.

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For Sale: Twin bed set; includes headboards. Desk and chair, like new condition. Ideal for students and space saver. $200. Call L. Wiley, 578-6660.

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Wanted: HP25 calculator. Phone 867-3794.

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Raisins: 30 pound box, $25. USDA inspected. Phone 964-5218.

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Family season ticket to El Camino Youth Symphony and String Ensemble, $5. Admits to six performances. 735-1855.

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For sale: Sink, 15x21 inches by 8 inches deep with faucets and spray hose. $25. 257-7265.

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Ride needed: To and from ARC. Hours 8 to 4:30. Vicinity of Cambrian Park. Ext. 5692 or 266-4083, evenings and weekends.

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For sale: Clean wood posts, diameters 10 to 14 inches, lengths to 14 feet. 10 to 12 inch diameter $0.75 per ft. Over 12 inches diameter $1.00 per foot. Will deliver for nominal fee. Call 245-8325.

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Wanted: 1 or 2 roommates to share house near Alum Rock Park. Own room. $115 or $165. Berl Halsema, 926-9843 evenings.

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For sale: Water softener, Sears automatic, needs timer repair, $25. 257-0583.

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Mariani "Dried Fruit Gift-Pak" suitable for mailing, consisting of dried apricots, prunes, figs, pears, peaches and chocolate covered prunes in vacuum sealed packages ("Moist-Pak"). Excellent gift for the holiday season. $5.00/box. Profit to Sunnyvale High School Marching Band for Orange Bowl expenses. Contact Joe Rokovich, 739-6054.

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Lost from Life Sciences Library: Four volumes of "Annual Review of Physiology," vols. 35–38, 1973–76. Call nos. are QP1, A535. Please return to Life Sciences Library, 239-13.

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Ski Group: Be an optimist, join our rental group. 5-bdrm house, Tahoe City, Dec.-Apr., $150-$200. for more information call Linda Jahnke after 6 p.m., 969-5979.

The Astrogram

Admin. Mgt. Building, Phone 965-5422

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The Astrogram

VOLUME XX NUMBER 1

November 17, 1977

Kramer named Associate Administrator

Dr. James J. Kramer has been named NASA's Associate Administrator for Aeronautics and Space Technology.

Kramer has served as Acting Associate Administrator for Aeronautics and Space Technology (OAST) since December 19, 1976.

As Associate Administrator for OAST, Kramer will be responsible for directing NASA research and technology programs to meet the nation's future requirements in aeronautics and space technology.

Kramer began his career with NASA's Lewis Research Center, Cleveland, Ohio, in 1951 and joined NASA Headquarters in 1971 as Chief of the Noise and Pollution Reduction Branch, OAST. After a number of successively more responsible positions, he became Acting Associate Administrator for OAST in 1976.

Among honors awarded to Kramer are the NASA Exceptional Service Medal in 1967, the Flemming Award in 1969, and the NASA Outstanding Leadership Medal in 1976.

Ames research aircraft search for Mayan ruins

A NASA research aircraft is surveying archaeological sites in Guatemala in an effort to learn more about the Mayan civilization which flourished there centuries ago.

"Galileo II" is carrying three different types of radars. Scientists hope the radar systems will penetrate the dense tropical foliage to different depths and, with modern data comparison and reduction methods, will allow identification of features not readily identifiable by other means. They will be looking for signs of roads, stone walls, agricultural terraces and other man-made structures.

The aircraft also carries a scanning infrared sensor which, if weather conditions permit, may show differences in vegetation in certain areas–clues to the extent and type of farming done by the ancient Mayans.

Galileo II conducted the survey October 25. The 6-1/2 hour survey flight began and ended in Houston, Texas.

Searching for archaeological sites by aircraft is not new. Charles and Anne Lindberg performed an aerial survey of Guatelmala in 1929. However this is the first time Galileo II has been used for a mission of this type, and the first time radar imagery has been explicitly explored as a tool for the archaeologist. If successful, the techniques demonstrated would be extremely valuable to archaeologists, who believe many important ruins lie buried and undiscovered in the dense forests of Central and South America.

Data from the flight will be studied at the Instituto Geografico Nacional in Guatemala and at the University of Texas at San Antonio, Texas, and Catholic University in Washington, D. C. A representative of the Guatemalan government will be aboard the aircraft during the survey flight.

Earl V. Petersen, of Ames, is Mission Manager for the survey. The Jet Propulsion Laboratory, is supplying the radar equipment. Walter E. Brown, Jr., of JPL, is Principal Investigator. Dean Richard E. W. Adams, of the University of Texas at San Antonio, is coordinating the experiment on behalf of the archaeological community.

Tech Utilization awards presented

Acting Director C.A. Syvertson (far left) presents major monetary awards ($4,000 each) by the Inventions and Contributions Board to the individuals pictured above for their technical contributions in the development of the high density reusable silica insulation and the glass coating for the surface of the Space Shuttle Orbiter. The people are (left to right) Howard E. Goldstein, Victor E. Latvala, Marnell Smith (all of ARC) and Daniel B. Leiser (Stanford University).

Children's Xmas party

Preparations are underway for the Annual Ames Children's Christmas Party. It will be held December 17, 1977 in the larger hangar, Building 211. The success of this event has always been due to the efforts of many members of the staff. The Ames Recreation Association will, as always, depend heavily on volunteer help from all resident personnel. Please call any ARA Executive Board member to volunteer your help.

Although the ARA sets aside a portion of its budget each year for this activity, the majority of the costs is carried by the sale of raffle tickets. This year we have an exciting array of gifts: a Microwave Oven, a ten-speed bicycle, a portable color television set, a portable AM/FM cassette recorder, and a polaroid camera. These raffle gifts are on display at the Cafeteria from now until December 17, 1977.

The tickets are available from all ARA Board members, ARA Store, and from local building representatives. You are urged to purchase as many tickets as possible to help defray the costs of this important event.

The ARA will probably have a few children's gifts remaining following the party. These remaining gifts will be sold, at cost, to all on-site employees on Monday and Tuesday December 19 and 20, 1977 in the lobby of the main auditorium between 11:30 and 1:00.

Reminder:
"Open Season"
Nov. 14 - Dec. 9

Raffle prizes for '77 Ames Children's Xmas party

Allison Ybarra, active member of the Ames Recreation Association and secretary of the Materials and Physical Sciences Branch, poses with all the raffle prizes for the 1977 Ames Children's Christmas Party. The Christmas party will be held in the Ames aircraft hangar on Saturday, December 17.

CTS library session

On Wednesday, November 2, at Ames, approximately 100 librarians and information specialists from various medical libraries and other health care organizations in California, Arizona, Nevada, and Utah participated in a training session held simultaneously at four widely separated locations. The session was broadcasted over NASA's Communications Technology Satellite (CTS). Participants were learning about changes and developments in information retrieval systems and data bases in the medical field.

The broadcast originated from the National Library of Medicine in Bethesda, Maryland.

The broadcast session at Ames was headed by:

Michael Homan, Head, Information Services
Pacific SW Regional Medical Library Services
Biomedical Library, Center for Health Services
University of Los Angeles, California

The session was hosted by the Ames Research Center Library staff.

So far as we are aware this was the first use of the Communications Technology Satellite in training for information on library services.

Can you suggest a caption for this photo?

The unscheduled meeting depicted above occurred on Monday, October 31, in Acting Director Clarence Syvertson's Office. No details have been released. A prize will be offered for the best caption. Entries should be submitted to the Astrogram Office, Mail Stop 241-3.

Navajos to use Landsat in managing natural resources

The Navajo nation is preparing to apply space technology using a NASA Earth resources satellite to assist them in managing natural resources on the 16 million acre Navajo reservation in Southwestern United States.

An agreement has been approved by the Navajo Tribal Council, Window Rock, Ariz., and NASA which provides for Navajos and NASA to work jointly on a two-year project to establish a Landsat satellite-based automated resource inventory for the Navajo reservation.

Emphasis will be placed on high-priority activities that are geared to multiple use management, specifically range rehabilitation, timber, agriculture, harvest prediction, and wildlife inventory.

The Navajos contacted NASA to investigate the use of satellite and aerial remote sensing techniques for specific applications to Navajo resource inventory and management problems.

Personnel of NASA's National Space Technology Laboratories, Earth Resources Laboratory, Bay St. Louis, Miss., will assist the Navajos in training in the field and in the laboratory development of the system.

The project will be conducted in two phases:

Phase one will demonstrate the utility of Landsat data to specific Navajo needs and applications and the ability of Landsat data to update resources changes.

Phase two will be essentially a transfer of technology and will include comprehensive training of Navajo personnel and the setting up of an operational system at Navajo Nation Headquarters, Window Rock. This phase will also include Navajos actively participating in assisting other Indian tribes in realizing the benefits of satellite information systems.

Landsat, circling the globe 14 times a day 912 kilometers (560 miles) overhead, surveys Earth natural resources with an electronic multispectral scanner that returns data for visual images and computer tapes from which experts can distinguish different types of terrain, vegetation, soils, rock outcrops and other surface features.

Besides mapping forests and possible mineral areas, the data has been used for measuring crop acreages, mapping snow cover, detecting oil slicks, mapping urban and agricultural land use, detecting offshore dumping of sewage and industrial waste, monitoring the environmental effects of strip mining and locating potential earthquake zones.

Golf

The Ames Golf Club held its annual "turkey shoot" tournament at DelMonte Golf Course on November 5, 1977. We found the course showing the results of our recent two years of drought with the areas 'tween tee and green somewhat void of grass; however, a shower the night before helped out. Big laugh of the day was Stan Brovarney showing up with cobwebs covering the top of his golf bag. Obviously, not sand-bagging! Tournament chairmen Earl Menefee and Conrad McCloskey report the following winners:

First Flight: 1 – R. Eddy, 2 – C. Eddy, 3 – O. Koontz, 4 – J. McGinnis, 5 – T. Almojuela.

Second Flight: 1 – R. Richardson, 2 – B. Kelly, 3 – A. Joly, 4 – J. Weyers, 5 – S. Brovarney.

Third Flight: 1 – C. McCloskey, 2 – G. Rathert, 3 – I. Rathert, 4 – B. Page, 5 – M. Reisner

The next tournament will be at Pleasant Hills on December 3 and will be the last one of the season.

Federal woman's coordinator to speak December 1

Ms. Oceola Hall, NASA's Agency-Wide Federal Women's Program Coordinator, will present a seminar on Thursday, December 1, at 10:00 a.m., in the Main Auditorium at Ames. Her talk is entitled "To Form a More Perfect Union," and she will be sharing with us experiences from the National Women's Conference at Houston, and an overview of the first ten years of the Federal Women's Program.

"Ocie" is a native of Louisiana, and received her B.S. degree from Southern University in Baton Rouge where she majored in Business Education. She has compiled an interesting background, having worked for several Federal agencies. While with the Department of Labor, she developed the first full-day of self-development for clerical employees, a program in which the Secretary of Labor participated personally. Because of her deep concern for helping people, she was granted a leave of absence for two years to work in Project Prove – a special Manpower Training Program wherein she counseled approximately 135 Neighborhood Youth Corps trainees and it is to her credit that all of the trainees were placed in permanent positions. Joining the U.S. Civil Service Commission as a Project Manager in the Public Service Careers Program, she initiated contracts with Federal agencies to hire and train minimally skilled employees at entry level of GS-1, WG-1 and 2 or equivalent, and to provide upgrade training for employees on board at the GS-5 level and below or equivalent. She became Associate Director for Interagency Training within the Bureau of Training with the U.S. Civil Service Commission.

In her current position as NASA's Agency-Wide Federal Women's Program Coordinator, Ms. Hall is actively engaged in implementing an agency-wide program to improve the status of women. She has received numerous awards, including NASA's Exceptional Service Medal for developing a visible and viable Federal Women's Program throughout the agency.

The opportunity to have Ms. Hall at Ames for this seminar is a rare one, indeed. Anyone hearing her agrees she is a frank, forceful, intelligent and realistic speaker; plan to attend the seminar Thursday, December 1, at 10:00 a.m., in the Ames Main Auditorium.

NASA SPECIAL PUBLICATIONS

National
Aeronautics and
Space
Administration

The following NASA Special Publications are now on display in the Ames Main Library and the ARA Store. Following your review of these new releases, if you would like a retention copy for your files, return a completed NASA Special Publication Request Form, ARC 303, for each publication you desire to the Main Library, M/S 202-3, and *a copy will be mailed* to you. Please allow 2 weeks for processing and distribution of your request. Because the number of copies of NASA Special Publications available to the Center is limited, requests will be processed as they are received until the supply is exhausted and distribution will be limited to Ames Research Center Civil Service employees.

NASA SP-420 VOYAGER TO JUPITER AND SATURN

The National Aeronautics and Space Administration's Voyager mission – undertaken to explore the giant and more distant planets of Jupiter and Saturn, and possibly Uranus – is described. Two Voyager spacecraft, to be launched in 1977, will pass Jupiter in 1979 and Saturn in 1981; for Voyager 2 an option is provided for a gravity-assisted boost from Saturn that would take the spacecraft to Uranus early in 1986. This illustrated booklet discusses the spacecraft and their missions with emphasis on the 11 principal mission investigations.

NASA SP-349 (REVISED) PIONEER ODYSSEY Prepared at Ames Research Center

NASA's Pioneer project to explore Jupiter is described in this copiously illustrated history of the space exploration program that sent the first man-made objects beyond Mars, to Jupiter, and on to an eventual escape from the solar system. The planet Jupiter and its satellites; the Pioneer 10 and 11 spacecraft and their scientific instrument packages; project management; the telemetry equipment that sent pictures of Jupiter back to Earth; and the many Pioneer experiments performed along the way from Earth to Jupiter, within the Jovian system, and then beyond it are discussed. This revised edition includes Pioneer 11 data that were unavailable when the original edition was published as well as further interpretations of Pioneer 10 data.

NASA SP-380 SKYLAB EXPLORES THE EARTH Prepared at NASA Lyndon B. Johnson Space Center

Earth observations made from Skylab during manned missions of 28, 59, and 84 days in 1973 and 1974 are documented and illustrated in this comprehensive compilation of Earth-feature data. Observations were made during Northern Hemisphere summer, fall, and winter seasons. Handheld cameras and color film were used to obtain thousands of pictures of principal Earth features including deserts and oceans, global tectonics, vegetation patterns, volcanoes, storm structures and cloud features, and cultural patterns that reflect man's effect on Earth. A glossary of terms, definitions of weather symbols, and identification numbers which can be used to order copies of photographs are included.

NASA SP-360 MISSION TO EARTH: LANDSAT VIEWS THE WORLD
Nicholas M. Short, Paul D. Lowman, Jr., and Stanley C. Freden, Goddard Space Flight Center; and William A. Finch, Jr., San Diego State University

A collection of 400 full-color images from the LANDSAT-1 satellite is contained in this large format (10 X 14 inches) book. The images cover the entire world; 150 images are of the United States. Although these are false color images, they contain a wealth of information. Legends discuss geography, geology, oceanography, agriculture, and some area histories. A description of the LANDSAT system, a glossary of technical terms, and an index of plates are included.

NASA SP-414 ON THE HABITABILITY OF MARS: An Approach to Planetary Ecosynthesis
Edited by M. M. Avener and R. D. MacElroy, Ames Research Center

A compilation of material from a collection of individually-authored reports in which the possibility of using Mars as a habitat for terrestrial life – including man – is examined. Biological considerations, physical and chemical characteristics of Mars, and the transplantation of terrestrial organisms to Mars are among the several subjects discussed. Although note is made of a lack of accurate data on some key factors, no insuperable limitations on the ability of Mars to support a terrestrial ecology are identified. Lack of an oxygen-containing atmosphere and strong ultraviolet radiation on the surface are principal barriers. Feasible solutions are, however, suggested. The reported work was conducted at Ames Research Center, NASA.

Books surplused

The Life Sciences Library, building 239 (basement), is preparing to surplus books no longer needed in the library or division library collections.

Before instituting formal surplusing procedures, the staff wants to be certain that all local needs are being met; therefore, the items being surplused will be available for examination by Ames employees. They may select any title pertinent to their work for retention in offices or laboratories.

Stop by the Life Sciences Library Room B71 anytime beginning *Friday, November 17.* The materials will be on display shelves in the hallway at the far end of the library outside Room B71.

Persons selecting materials are reminded that the material remains government property and may not be appropriated for addition to private libraries or collections.

Photography club notice

On Wednesday afternoon at 4:30 p.m. in the Space Science Auditorium (N-245) the Ames Photography Club is sponsoring a program entitled, *"How to Keep Your Camera Out of the Repair Shop,"* by Art Hall of International Camera Technicians. This program has been part of the Ansel Adams Workshops, been used by both Stanford and U.C. Berkeley and has been the subject of several recent articles in local newspapers. All Ames employees, contractors and their families are cordially invited to attend what promises to be an outstanding program. Further information available from Steve Deiwert, 6415.

Want ads

Transportation

1968 Mercedes 250; AT, PB, PS, new radials, exc. cond. $4200. 739-7836 evenings and weekends.

- - - - -

1969 Datsun 510 4-dr. 65K mi, 31 mpg. Best offer. 1968 Fury Station Wagon. 318. Runs well. Good radials, air shocks. Needs body work. Best offer. 736-1357.

- - - - -

Wanted: Toyota Celica GT, 14" steel styled wheels. Call Dave at 965-5352 weekdays.

- - - - -

1971 Camero 350, Air Conditioning, AT, PB, PS, AM/FM radio, very good cond., one owner. Call 961-8248.

- - - - -

'73 Datsun 1200, 41,000 miles, recent tune-up, condition good, compression good, $1900. Call 967-5898.

Housing

For Rent: Beautiful unfurnished 4 br, 2 ba, home with dining room, AEK, fireplace, and 2-car garage. Located in Palo Alto. Call evenings at 327-5146 for appt.

- - - - -

For Rent: Quiet, woodsy cottage-studio. Menlo Park. $200/mo., 1 year lease, available immediately or 1 Dec. Phone 369-4400.

- - - - -

THINK SNOW! Ski or walk to Alpine Meadows lifts. Plush 3 bdrm condo sleeps up to 10. AEK, DW, laundry, fireplace & wood. By day or week. 736-1357

- - - - -

For rent: A-frame at South Tahoe. Quiet street, week, $150; or weekend $75. 948-9301.

- - - - -

ALPINE MEADOWS – For Rent: Swiss Chalet cabin at North Shore, Lake Tahoe, AEK, dishwasher, 2 bed, 2 baths, sleeps 7, 739-5373 after 5:30.

- - - - -

Wanted: Working person to share large, furnished 3 bedroom, 2 bath apt. in Los Gatos with single, working woman and 16 year old son. Son quiet and well-mannered. $125 per month (includes utilities). Call 356-2643 after 6:30 p.m.

- - - - -

Housing needed for "Minimester" students from the Univ. of Puget Sound in Tacoma, WA, and the Univ. of the Pacific in Stockton for the month of January. If you can help, please contact the Training Office, ext. 5622.

- - - - -

Looking for male or female roommate to share 3 bdrm, 2 bath house off Saratoga Ave., in S.J. Ages 25-35, non-smoker. 996-2417, Ron or Charlotte.

Miscellaneous

For sale: ½ interest in CAL 20 sailboat with new outboard, trailer, and Santa Cruz slip. $2100. 257-1784 evenings.

- - - - -

The El Camino Youth Symphony performs works by Chabrier, Glinka, and Schubert, Sunday afternoon, Nov. 20, 3 p.m., Spangenberg Auditorium, Gunn High School, 780 Arastradero Rd., Palo Alto. Tickets at door $1.00 adults, $0.50 children-students-seniors, family tickets $5.00 good for season.

- - - - -

Calculator HP 25C, continuous memory, mint condition, $120, save $40. Bob Walker, ext. 6563.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
78-14	Admin. Specialist (STEP)	GS-5/7	FL	Centerwide	11/28/77 (extended)
78-19	Aerospace Engineer	GS-12/13	FHI	Centerwide & Outside	11/28/77
78-20	Aerospace Engineer	GS-12/13	FHI	Centerwide & Outside	11/28/77
78-21	Aerospace Engineer (2 positions)	GS-12/13	FHR	Centerwide & Outside	11/28/77
78-22	Mathematician, AST Data Analysis	GS-12/13	FSD	Centerwide & Outside	11/28/77
78-25	Aerospace Engineer	GS-11/12	FSV	Centerwide & Outside	11/28/77
78-26	Aerospace Engineer	GS-12/13	FSV	Centerwide & Outside	11/28/77
78-27	Electronics Engineer AST Measurement & Instrumentation Systems	GS-11/12	FSV	Centerwide & Outside	11/29/77
78-28	Personnel Clerk (typing) or Clerk-Typist	GS-4/5 or GS-3/4	APX	Centerwide & Outside	11/28/77
78-29	Secretary (Typing)	GS-4/5	FSV	Centerwide & Outside	11/29/77
78-30	Secretary (Typing)	GS-4/5	RKS	Centerwide & Outside	11/30/77
78-31	Secretary (Typing)	GS-4/5	SAM	Centerwide & Outside	11/28/77
77-110	Contract Specialist (Area of consideration & closing date extended)	GS-12/13	ASL	Centerwide & Outside	11/28/77

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
77-75	AST, Technical Management	FD	John Zuk (Lewis Research Center)
77-106	Research Aircraft Mechanic Crew Chief	FOS	Bruce Fox
77-106	Research Aircraft Mechanic Crew Chief	FOS	Gary Jackman (Langley)
77-114	Contract Specialist	ASA	Cancelled
77-117	Computer Aid	FAR	Betty Wong (Army)
77-119	Secretary (Typing)	SPI	Ellen Miller
77-121	Engineering Technician	FAX	Cancelled

For Sale: 16" convertible boys/girls bicycle with removable training wheels. Exc. cond. $20. 941-8579.

- - - - -

Wanted: Lycoming 0-235 or Continental 0-100 for Vari-Eze project. Prefer half run out. Call after 6 p.m. 961-5645.

- - - - -

Piano, Elington upright, ivory keys, inside completely rebuilt, $650. 379-4127.

- - - - -

Chandelier, 4 candle, wood with black iron. Mediterranian design. Call 262-1531, after 5:00.

- - - - -

For sale: Corning flattop electric stove, cookware included, used one year, exc. cond. $400/best offer. Call 738-1609.

- - - - -

Samsonite attache, classic III, Oxford grey, never used, in original box, $30 (new one costs over $50). Call: 964-1725.

- - - - -

Wall lamp, very good condition, $15, Boy's ice skates, size 4, $20; green stamps, $3/bk; blanket, twin size, like new, $15. Call 964-1725.

- - - - -

Girl' coats, winter and summer, sizes 12 and 14, junior size 5, top condition, beautiful colors, $10 each. Call 964-1725.

For Sale: Conn Caprice electric organ, $275. Hal Collard, 969-0217.

- - - - -

Transportation needed: To and from Ames Research Center. 8:00 a.m. to 4:30 p.m. Live in Campbell area, San Tomas Expressway & Budd Ave. Home: 379-5074. Office: 5253 or 6397. Ask for Katherine.

- - - - -

Wanted to rent: (From approx. Dec. 19, 1977 to March 13, 1978) Furnished house in Stanford/Palo Alto area, or anywhere within easy access of Ames. Contact Dr. Robert Machol, Graduate School of Business Management, Northwestern University, Evanston, IL 60201 (or Vera Buescher, ext. 5760).

- - - - -

For sale: Coleman gas heater, 15,400 BTU's, wall mounted, $50 or best offer. Call 732-9681 after 5 p.m.

- - - - -

For sale: Heathkit 25-watt monaural amplifier & preamp, $15; Harmon Kardon "Citation" FM-stereo tuner, $55; Jensen monaural speaker system complete (15-inch woofer), $35; Craig reel-to-reel portable tape recorder/player with case, $25. Phone 379-4120.

- - - - -

Brittany spaniel, AKC, male, 1 year old, $80. 248-1368.

- - - - -

For sale: Violin with case. Call 923-7421.

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NASA

The Astrogram

VOLUME XX NUMBER 2

December 1, 1977

Ames Children's Xmas party

Preparations are underway for the Annual Ames Children's Christmas Party. It will be held December 17, 1977, in the large hangar, Bldg. 211. The success of this event has always been due to the efforts of many members of the staff. The Ames Recreation Association will, as always, depend heavily on volunteer help from all resident personnel. Please call any ARA Executive Board member to volunteer your help.

Although the ARA sets aside a portion of its budget each year for this activity, the majority of the costs is carried by the sale of raffle tickets. This year, we have an exciting array of gifts: a microwave oven, a ten-speed bicycle, a portable color television set, a portable AM/FM cassette recorder, and a polaroid camera. These raffle gifts are on display at the Cafeteria from now until December 17, 1977.

The tickets are available from all ARA Board members, ARA Store, and from local building representatives. You are urged to purchase as many tickets as possible to help defray the costs of this important event.

The ARA will probably have a few children's gifts remaining following the party. These remaining gifts will be sold, at cost, to all on-site employees on Monday and Tuesday, December 19 and 20, 1977, in the lobby of the main auditorium between 11:30 a.m. and 1 p.m.

Serene process of chaotic bang

Was the Big Bang explosion that marked the beginning of our universe violent and chaotic?

Many scientists think so.

But measurements made recently by a team of researchers using a high flying NASA aircraft suggest that our cosmos may have started more serenely–with a powerful but tightly controlled and completely uniform expansion.

Using ultrasensitive radio equipment aboard an ARC U-2 jet, the research team measured the cosmic microwave background–the radiation left over from the Big Bang, the initial, universe-forming event–and concluded that this initial event was a very smooth, almost serene process, with matter and energy uniformly distributed and expanding at an equal rate in all directions.

The findings were made by Drs. Richard Muller, George Smoot, and graduate student Marc Gorenstein of the Lawrence Berkeley Laboratory and the University of California at Berkeley, who also designed and operated the radio equipment.

They also found that the Milky Way Galaxy, together with the Solar System and Earth, are hurtling through space at more than one million miles per hour towards the constellation Hydra. "The radiation left from the universe-forming event, about 15 billion years ago, is so uniform that it provides a universal reference for measuring this motion," says Gorenstein.

"The large scale regularity we have found in the expansion of the universe makes the million-mile-an-hour random local motion we have discovered for the Earth and our galaxy all the more surprising," says Muller.

"Another major surprise is that the U-2 measurements seem to show that there is no rotation of the universe," says Smoot. "This is surprising because we can see that everything within the universe is rotating–planets, stars, and galaxies. If there is rotation, it has to be less than one hundred-millionth of a rotation in the last billion years."

"Our measurements give a picture of an extremely smooth process," declare the researchers. "The big bang, the most cataclysmic event we can imagine, on closer inspection appears finely orchestrated. Either conditions before the beginning were very regular, or processes we don't yet know about worked to make the universe extremely uniform," says Dr. Smoot. This uniformity was greater than one part in 1,000 for matter, one part in 3,000 for energy, and one part in 10,000 for expansion.

According to the currently accepted "big bang" picture, the universe began as a hot, incredibly dense mass containing all the matter in the universe. At a certain "initial" instant, the primeval fireball exploded in the vastest cataclysm imaginable.

As the universe continued its expansion and the temperature dropped, protons and neutrons began to fuse into nuclei. The nuclei combined with electrons to form hydrogen, deuterium and helium. After millions of years, the material had cooled sufficiently to condense into galaxies and within the galaxies into stars and planets. As a consequence of the colossal explosion, the galaxies have continued to separate from each other, and thus form the expanding universe we observe. Those galaxies farthest from Earth appear to be traveling the fastest.

The cosmic microwave background radiation was discovered in 1965, and is now widely believed by scientists to be a remnant of the cataclysmic explosion which marked the beginning of time some 15 billion years ago. The radiation is believed to have originated in the intensely hot plasma that existed for the first million years after the Big Bang. Initially far more intense than the fireball of an atomic explosion, the radiation has greatly weakened with the passage of time. Scientists study it in an effort to find clues about the nature of matter and energy on its grandest scale.

The radiation can be employed to measure motion of the Earth by using the Doppler effect. Radiation in front of a moving Earth shifts toward the hotter blue side of the spectrum; that behind the Earth to the colder red side.

The plane, at an altitude of 65,000 feet, flies above 90 percent of the Earth's atmosphere where these sensitive experiments must be conducted. In charge of the flights for NASA's Ames Research Center, Mountain View, Calif., was James Cherbonneaux, U-2 Project Manager. When it is not investigating the cosmos, the U-2 jet is used for agricultural and Earth resources photography.

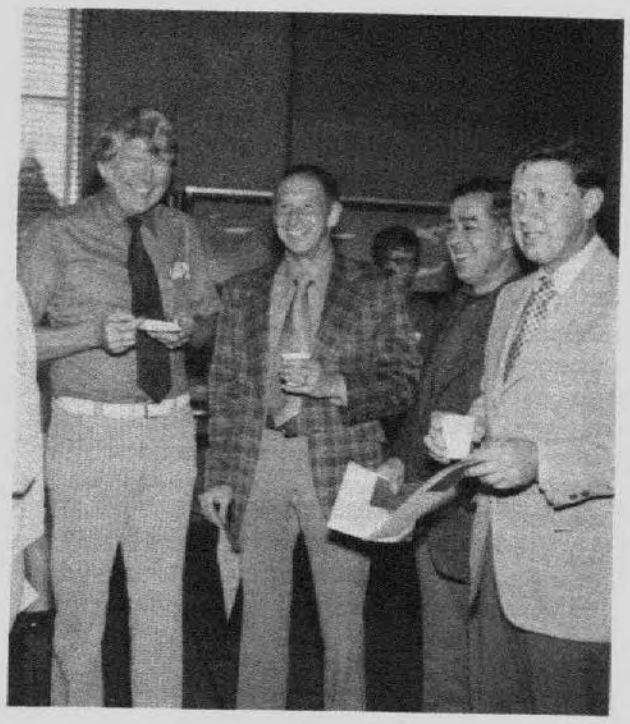
The project was funded by the Department of Energy and NASA. Measurements so far have covered almost the entire sky over the Northern Hemisphere, half the Celestial Sphere.

First aircraft in the helicopter transfer arrives at Ames

The first aircraft to arrive at Ames as a result of the plan to transfer lead Center responsibility for helicopter technology to Ames is the SH-3A pictured above. The aircraft was flown from Langley to Ames by the crew shown in the photograph.

The five gentlemen posed with the SH-3A are (left to right) Antonio "Tony" Gudino, Ames Research aircraft mechanic; Maxwell E. "Ed" Hoffman, Langley SH-3A Crew Chief; Major Robert "Bob" Merrill, Langley Army pilot; G. Warren Hall, Ames research pilot; and Erwin D. "Ed" Hess, Ames aircraft inspector.

1977 Length of service award recipients



FINAL REMINDER:
LAST DAY OF
''OPEN SEASON''
IS DECEMBER 9TH

Flame proofing of Xmas trees

The Safety Office has recently announced that arrangements have been made for the flame-proofing of all Christmas trees which are to be displayed within the Center's facilities. The transparent, clear, fire-retardant coating is approved by the State Fire Marshal's Office and according to the manufacturer will preserve the tree for a longer period of time.

Trees must be on stands to be sprayed, and should have an information tag securely attached to insure prompt return after spraying. The tag should include your name, extension, building and room number. Please phone for pickup and delivery at ext. 5418 or 5419. Request the tree to be sent to the Paint shop – mail stop 214-1.

Because of the electrocution hazard, Christmas tree lights and other types of electrical wires on artificial metal or semi-metal trees are strictly prohibited.

Dental plan "open season"

The open enrollment period for the Ames dental plan will run from December 1 to December 15, 1977 for effective date January 1, and from January 1, to February 15, 1978 for effective date March 1. The reason for the extended enrollment period is that the new program contains improved benefits and an advantageous cost structure. Ames employees and others eligible for the Ames plan should disregard renewal forms received in the mail and re-enroll through the Training Office. Enrollment material is available in the Training Office, ext. 5623. A representative from the dental plan will be available at Ames to answer questions in January. Time and place will be announced in a future Astrogram.

Abstract algebra lectures

A series of lectures on the basic algebra associated with linear systems defined over rings, as announced in the November 10 Astrogram, were given at Ames during the week of November 14. Four of these hour-long lectures were videotaped and are now available on 3/4 in. cassettes through the office of the Training and Special Programs Branch. The four lectures discuss: representation and realization; reachability, observability, and duality; and controllers and observers. The theory discussed applies to discrete systems with coefficients and values selected from the integers or from finite fields of numbers, and to continuous or discrete systems with significant time delays.

1978 calendars

The following 1978 calendars are available for issue:

7510-01-022-4022 Wall Calendar
7510-01-021-7478 Calendar Pad–Standard Size
7510-01-022-4974 Calendar Pad–Executive
7530-01-022-3567 Refill for Planning Guide

Please use Easy Order Form (ARC 579) when requesting items listed above.

Attention scuba and skin divers

Do you know that Ames has a "Scuba Club"? Yes – WE do and there's a club meeting on December 7, 1977 – 11:30-12:45 in the private dining room at the Ames Cafeteria. Come and hear about our activities and dive plans – such as "Fish Bowl," "Anchor Salvage," "AB Campout," "Sailboat Dive," and others. Membership is open to all Ames and Contract employees, including family. We also have dive-gear for certified divers to loan/checkout. *Come and Join the "Ames Scubies" – December 7, 1977 – 11:30 at the Cafeteria.*

NASA SPECIAL PUBLICATIONS

National Aeronautics and Space Administration

The following NASA Special Publications are now on display in the Ames Main Library and the ARA Store. Following your review of these new releases, if you would like a retention copy for your files, return a completed NASA Special Publication Request Form, ARC 303, for each publication you desire to the Main Library, M/S 202-3, and *a copy will be mailed* to you. Please allow 2 weeks for processing and distribution of your request. Because the number of copies of NASA Special Publications available to the Center is limited, requests will be processed as they are received until the supply is exhausted and distribution will be limited to Ames Research Center Civil Service employees.

NASA SP-401 SKYLAB, A CLASSROOM IN SPACE
Prepared by George C. Marshall Space Flight Center

Skylab experiments proposed and designed by 25 finalists in a nationwide Skylab Student Project contest are described. The experiments – in astronomy, microbiology, physics, botany, Earth observations, physiology, and zoology – were an integral part of the 1973 Skylab program. The Skylab program, dedicated to increasing man's knowledge of Earth by exploiting the unique space environment, made specific provisions for promoting the interest and participation of American youth in space research. Fifteen science demonstrations, performed by the second of three Skylab crews, are also discussed. The demonstrations were concerned with the effect of the space environment on various aspects of mechanics, magnetic phenomena, particle physics, fluid characteristics, crystal growth, and the life sciences. Nontechnical language, hardbound, generously illustrated in color.

NASA SP-7043(12) ENERGY
Prepared by NASA Scientific and Technical Information Facility

This twelfth issue of a continuing bibliography of energy-related references comprises 584 reports, journal articles, and other documentation introduced into the NASA scientific and technical information system. The listed references were announced from 1 October through 31 December 1976 in Scientific and Technical Aerospace Reports (STAR) and in International Aerospace Abstracts (IAA). Subject areas include: energy systems, sources, conversion, transport, transmission, distribution, and storage; hydrogen and solar energy; and methods for locating new energy resources. STAR and IAA entries are listed separately. Fuel cross-reference indexes – subject, author, corporate source, contract number, and report/accession number – are provided. Availability of each STAR and IAA entry and addresses of source organizations are included.

NASA SP-421 RECOGNITION OF COMPACT ASTROPHYSICAL OBJECTS
Prepared by NASA Goddard Space Flight Center

A compilation of the notes that served as the basic text for a graduate-level course on the recognition of compact astrophysical objects. The course, presented in 1975, was a collaborative effort of NASA's Goddard Space Flight Center and the Department of Physics and Astronomy at the University of Maryland. Subject matter includes the evolution of stellar objects, pulsars, binary stars, compact x-ray and gamma ray sources, and recognition of compact astrophysical objects in the binary pulsar PSR1913+16. Paperbound; bibliographies.

Life sciences library exhibits art of talented 7 year old youngster

The unique art of Mi Ae Lipe will be on exhibit in the Life Sciences Library, Bldg. 239, beginning Thursday, December 1. All employees and their families are invited to view her captivating drawings.

Mi Ae was born in Pusan, Korea, in January of 1970. Seven months later she was handed to her adoptive parents, Nancy and Dewey Lipe, at the San Francisco Airport.

Early in life, Mi Ae exhibited an unusual ability to pick up tiny crumbs between her fingers and to get her spoon into her mouth without spilling a drop. Later, she spent hours absorbed in drawing on cardboard boxes with pens and pencils, concentrating on getting control. Cartoons began to emerge at about age 3 as she was influenced by Jurgen Wolff, a cartoonist friend of the family. Her parents did not let her use coloring books, nor "fill in" any predetermined spaces, nor trace, all lessons learned by her mother in art school. Other than that, she was free to draw as she pleased, when she pleased, on boxes and computer print-out sheets.

Today, at 7 years, Mi Ae has filled the backs of several thousand sheets with everything from tiny scribbles to completed drawings. She has studied the works of artists like Jesse Allen and Arthur Rackham and has been inspired to create her own creatures which are recognizable as strictly hers.

People often enjoy watching the shy, tiny Mi Ae at work as much as they enjoy the finished product. With complete control, she rapidly creates her magical world where she says she would like to visit.

This seedling from the East has bloomed well in our Western culture to which she gives a generous outpouring of joy, magic, and humor through her art.

Blood Mobile visit

The American Red Cross Blood Mobile will visit Ames Research Center on December 14, 1977, between the hours of 8:30 a.m. and 1:30 p.m. in Bldg. N-239, Life Sciences Res. Lab, Room 39 (Basement).

Want ads

Transportation

FOR SALE: 1972 Honda 750, 5500 mi., w/faring, crash bar, luggage rack, etc. $1295. Call 379-2385.

- - - - -

'75 Fiat Spider, black, 28K mi., 5 speed, 8-track, AM/FM, radials; asking $4200. Call 377-4310 after 5 p.m.

- - - - -

'68 Mustang, V8, AT, PS, excellent condition. Call 238-2648.

- - - - -

'54 Austin Healey, runs, needs work. Best offer. Call 961-6689.

Housing

FOR RENT: Deluxe duplex, 3 br., 2 ba., family rm., fireplace. Sunnyvale location. $475/mo. Call 738-4849.

- - - - -

Housing needed for "Minimester" students from the University of Puget Sound in Tacoma, WA and the University of The Pacific in Stockton who will be working at Ames during the month of January. If you can help, please contact the Training Office, X5622.

- - - - -

FOR SALE: Greenhouse in Palo Alto. Three bedrooms, two baths, covered balcony, carpets, drapes, blinds, all appliances, pool, clubhouse, gardens, private garage and exterior storage. $85,000. Call 493-8248.

Miscellaneous

FREE: Christmas puppies, papered German Shepherd (mother) and papered Keeshound (father) mix. Unique markings and fur. Call 964-6944 evenings.

- - - - -

23" Zenith color console, walnut cabinet, very nice, can deliver, $135. Call 736-3984.

- - - - -

FOR SALE: Scandinavian desk (walnut). Known as "The Organizer." Has open, adjustable shelves. Also storage compartments for typewriter, files, bks. Opens to 45"Hx30"Dx64"W. Closes to 32"Wx45"Hx21"D. $325. (Same model in local store costs $589 + tax and shipping.) Call 732-9074.

- - - - -

WANTED: Model maker for one project. Call 247-5039 after 6 p.m.

- - - - -

LOST: Set of 3 keys in Life Sciences Lib. Small orange tab on the ring. Please return to Library Staff 239-13.

- - - - -

FOR SALE: Foreign car parts, 40%-50% off list price. New parts at salvage yard prices. Call 948-1627 after 5:30 p.m.

- - - - -

FOR SALE: New Whirlpool Connoisseur electric range/double oven (white). Never used. Model RDE 950P, $395/offer. Call 243-8341 or 941-9830.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
78-33	Employee Development Clerk (Typing) or Clerk Typist	GS-4/5 or GS-3/4	APT	Centerwide & Outside	12-9-77
78-34	Supervisory Aerospace Engineer	GS-14/15	FVS	NASA-wide	12-30-77
78-35	Procurement Clerk (Typing) or Clerk-Typist	GS-4 or GS-3/4	ASB	Centerwide & Outside	12-9-77

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
78-1	Asst. Chief Scientific Applications Analysis Branch (Temporary)	RKS	Cancelled
78-3	Procurement Clerk (Typing)	ASB	Bonnie Theis
78-4	Staffing Clerk	APM	Diane Pearson
78-15	Clerk-Typist	AFG	Cancelled

FOR SALE: Ceramic tiles for walls and counters, light blue and yellow. New – left over from family house project and there is no storage space. Will sell at token price; inspect and make offer. Call 494-7766.

- - - - -

BANFF–LAKE LOUISE: Skiers are advised that the final deposit date was November 18, 1977. The trip is scheduled for January 28 through February 3, 1978. Call Bulanti Travel, Linda Atwood, 369-1711, if you are interested. Final payment is due December 23, 1977.

- - - - -

WANTED: Ames choral group singers and instrumentalists. Rehearsals December 12-15. For details, call R. Pea X6536 or F. Cota X5462.

- - - - -

WANTED: Marine Sextant in good condition. H. Wygant X6175.

- - - - -

Ski boots, Nordica Comet, size 9M, orange color, $25. Call 326-7925.

- - - - -

Rotary mower, Sears 20-inch with grass catcher, $60. Call 326-7925.

- - - - -

Mariani "Dried Fruit Gift-Pak" suitable for mailing, consisting of dried apricots, prunes, figs, pears, peaches and chocolate covered prunes in vacuum sealed packages ("Moist-Pak"). Excellent gift for the holiday season. $5/box. Profit to Sunnyvale High School Marching Band for Orange Bowl expenses. Contact Joe Rokovich, 739-6054, or Bill Van Ark, 245-8670.

- - - - -

FOR SALE: 4'x8' custom pool table, 7/8" slate complete with balls, sticks, rack, and cover. Worth $1500; sacrifice $1000 or offer. Call 241-5364 after 6 p.m.

- - - - -

FOR SALE: Waterbed, super single, includes frame, lining, mattress, pedestal, and heater. Used only two months, paid $160, will sell for $125. Call 296-5171.

FREE KITTENS: Female only, litter box trained, 1½ months old. Call 296-5171.

- - - - -

WANTED: Female roommate to share house in Santa Clara. Rent $150 + utilities. Call 296-2009.

- - - - -

SKIERS & SKIING FAMILY: We have ski boots and other equipment for sale or give away prices. Some are new—never used, others are used—in excellent to good condition, mostly for young children to teenagers and some adults. Now is the time to equip the family at the right price. Call Palo Alto 494-7766.

Golf

Co-chairman Larry Hochstein and Jack Lee report the following winners at the Ames Golf Tournament held at the Ridgemark Golf Club, Hollister, CA., on October 15, 1977: Director's cup (low net) – B. Flippen, net 60; longest drive – R. Hedlund; closest to the pin – R. Hedlund and B. Page; point bogey results –

First Flight: 1 – E. Debevoise, 2 – B. Odneal, 3 – A. Petretti, 4 – T. Almojuela, 5 – N. Martin.

Second Flight: 1 – J. Mullen, 2 – P. Quattrone, 3 – M. Orozco, 4 – J. McGinnis, 5 – R. Richardson.

Third Flight: 1 – B. Flippen, 2 – J. Silver, 3 – J. Weyers, 4 – A. Joly, 5 – J. McCloy.

Fourth Flight: 1 – G. Rathert, 2 – R. Sandoval, 3 – B. Page, 4 – I. Rathert, 5.– J. Pogue.

Notice

CORRECTION: The National Stock Numbers (NSN) for Sight Savers Lens Cleaners and Dispenser were incorrect in LOGIST-O-GRAM No. 27 and should read 6640-00-936-4242 and 4510-00-077-4049, respectively. These lens cleaners can be used on glass and plastic lenses.

The Astrogram

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.

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Ames Research Center
Moffett Field, California 94035

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NASA

The Astrogram

VOLUME XX NUMBER 3

December 15, 1977

Small PR Status

Procurement has recently activated a new computer-based information system which will provide answers to some of the most-frequently-asked questions concerning the status of small ($10,000 or less) Purchase Requests (PR). The data base is accessible through any remote computer terminal at the Center. Potential users of the system may obtain information on the location of the nearest terminal and on the procedure for querying the computer by calling extension 5800.

The system will only have information on PR's that have been committed in the Procurement Control Unit (PCU) and have reached Procurement. For PR's over $10,000 in value, a hard-copy status report containing milestone tracking data is distributed semi-monthly to all Directorate offices. For that reason, the new information system will provide only the contract specialist's name and telephone extension if queried about a large PR. If more information is required, the contract specialist may be called directly.

For small PR's the following information is available through the remote terminals:

(a) If a buyer has been assigned, the buyer's name and telephone extension will be given.

(b) If the action has been completed, the Purchase Order number will also be given.

(c) If the action has been completed and the delivery due date has not passed, the delivery due date will also be given.

(d) If the action has been completed and the delivery due date has passed, a message to "call Receiving before calling the Buyer" will also be given.

(e) If the action involves a purchase through the "Fed Strip" or "Mil Strip" systems, a message to call supply will be given.

Use of the new system is expected to provide Ames Staff members with more reliable and up-to-date information on the status of their PR's while, at the same time, greatly relieving the telephone-inquiry workload in Procurement. Everyone is urged to take advantage of this new service.

Golf

A big turn out for our last tournament of the year, awarding many winners. This fine tournament was held at Pleasant Hills Golf Course on December 3, 1977. Co-Chairmen Tom Almojuela and Mike Orozco report the following results:

First Flight: 1 – Tie between R. Hedlund and T. Almojuela, 2 – O. Koontz. Low gross front 9 – D. Banducci; Low gross back 9 – F. Lazzeroni.

Second Flight: 1 – M. Orozco, 2 – T. Ritter, 3 – D. Dust. Low gross front 9 – J. Mullen; Low gross back 9 – P. Barasich.

Third Flight: 1 – J. Weyers, 2 – B. Page, 3 – S. Brovarney. Low gross front 9 – J. Silver; Low gross back 9 – E. Tischler.

Fourth Flight: 1 – B. Gray, 2 – J. Pogue, 3 – I. Rathert. Low gross front 9 – G. Rathert; Low gross back 9 – W. Harry.

Guest Flight: 1 – E. Mitz, 2 – tie between Hedricks, Davis, and Schlimm.

Longest Drive: R. Hedlund.

Closest to pin: 2nd hole – J. Silver; 6th hole – D. Dust; 13th hole – R. Hedlund; 16th hole – J. Silver.

Best Rounds: R. Hedlund, 73; T. Almojuela, 75.

Associated continuing education network Winter/spring courses

COURSE NUMBER	COURSE TITLE	START AND END DATES	DAY	TIME
GOLDEN GATE UNIVERSITY MBA PROGRAM				
HR 245	Business, Society & the Individual	1/31-5/9	T	4:30-7 pm
MA 234	International Marketing	1/31-5/11	TTh	7-8:15 am
FI 211	Investments	1/31-5/11	TTh	12-1 pm
GM 262	Policy Formulation & Administration	1/30-5/10	MW	7-8:15 am
EC 294	Current Economic Problems	2/02-5/11	Th	4:30-7 pm
COLLEGE OF NOTRE DAME FOUNDATION PROGRAM (MANAGEMENT DEVELOPMENT courses denoted by No.)				
BA C102.02	Financial Accounting No.	1/10-3/21	T	5-6:45 pm
MATH C102	Introduction to Probability & Statistics No.	1/12-3/12	Th	5-6:45 pm
MATH C104	Introduction to Computer Technology No.	1/11-3/22	W	5-6:45 pm
BA C160	Principles of Marketing	1/09-3/20	M	5-6:45 pm
PROFESSIONAL DEVELOPMENT				
BA C135.02	Leadership Tools & Techniques	1/10-3/23	TTh	12-1 pm
BA C113A	Technical Report Writing	1/09-3/20	M	5-6:45 pm
MATH C106	Introduction to COBOL	1/10-3/23	TTh	12-1 pm
CMS 214	Principles of Computer Modeling & Simulation	1/09-3/22	MW	12-1 pm
ET 299	Microwave Tubes & Solid State Devices (*)	1/11-3/22	W	5-6:45 pm
ET 500	Digital Signal Processing (*)	1/10-3/21	TTh	12:15-1 pm
PERSONAL DEVELOPMENT				
BA C117	Personal Income Tax Preparation	1/09-3/22	MW	12-1 pm
MGT 102	Organizing Time in Your Life	2/06-2/17	MWF	12-1 pm
MGT 104	Employment Interviewing Skills	1/09-1/20	MWF	12-1 pm
PR 842	Principles of Estate Planning	1/23-2/03	MWF	12-1 pm
PR 814	Effective Reading (*)	1/09-2/08	MW	12-1 pm
PR 850	Creative Problem Solving	2/12-3/08	MWF	12-1 pm
PR 824	Communicating Successfully (*)	1/13-2/03	F	12-1 pm

(*)Videotaped Program

Any students wishing to apply courses taken for credit through the College of Notre Dame via ACE towards the Business Administration major at the College of Notre Dame should check with the Dean of Continuing Education at CND before enrolling.

Saves government $, wins $295

Kathy Thomas (right) receives an oversize check for $295 from Beverley McDaris, Suggestion Program Coordinator, U.S. Army Research and Technology Laboratories RTL, as Colonel John B. Fitch, Deputy Director for the Laboratories smiles approvingly.

Ms. Thomas, Secretary to George K. Merchant, Chief, Policy, Plans and Programs Office, RTL, had suggested that travel advance funds to Lab personnel be disbursed from the Navy at Moffet Field, CA, rather than from the Presidio, in San Francisco, 50 miles away.

The Department of the Army commendation read in part, "As a result of Ms. Thomas' suggestion, HQ, RTL employees needing travel advance funds will no longer have to come to the Presidio of San Francisco, but will be able to obtain these funds from the Navy's Finance and Accounting Office at Moffett Field, CA, thereby saving $4,865 each year."

New electronics program

The West Valley Joint Community College District is in the process of establishing a two-year cooperative education program for Electronics Technicians and is looking for a limited number of qualified instructors. The program will require two years of electronics coursework. After the completion of the first semester, the students will attend school on the half-time basis and work in industry the other half. The program is designed to train technicians to work within the industries that are involved in the production, test, and design of integrated circuits.

West Valley hopes to begin the program with the spring 1978 semester, but is still in the need of qualified instructors and curriculum developers and advisors. The coursework will include: D.C. theory and circuit analysis, electronic calculations through trigonometric principles, phasors, rectifier circuits, semi-conductor principles, basic linear and integrated circuits and discrete devices, digital principles, microprocessors, IC fabrication and processing, and solid state circuits and device physics.

Center employees with appropriate qualifications who may be interested in assisting the West Valley District should contact Nadine Kuhlmann, Staffing Advisor, Personnel Division, on Extension 5620. Persons with Bachelors or Masters degrees in electrical or electronic engineering can be certified as instructors. Persons with an Associate degree or a high school diploma can be certified with an appropriate amount of experience. Details regarding work schedule arrangements will have to be resolved on an individual basis and will have to be coordinated with and approved by a participating employee's management.

Engineering exam

Engineers seeking registration as Professional Engineers are advised of the December 26 deadline for returning applications to take the P.E. exam. The Engineer-In-Training application deadline is January 30.

If you have questions about the exam – how to qualify or prepare for it – you are invited to a free question and answer hour to be held at 7 p.m. on December 20 in the SBA Building of Menlo College in Menlo Park. The session is presented by the Professional Engineering Registration Program under the sponsorship of the Peninsula Chapter of the California Society of Professional Engineers as an introduction to its P.E. and E-I-T review courses which begin in January.

To obtain more information or to reserve your place at the introductory meeting call (415)593-9731 during business hours or write: Professional Engineering Registration Program, P.O. Box 911, San Carlos, CA 94070.

Library notice

The Main Library Bldg. 202 is preparing to surplus books no longer needed in the Library or branch library collection.

Before instituting formal surplusing procedures, the staff wants to be certain that all local needs are being met: therefore, the items being surplused will be available for examination by NASA, Ames employees. They may select any titles pertinent to their work for retention in offices or laboratories, during the period December 16-30, 1977.

Stop by the library during the period December 16-30, 1977 any time during the day, and the staff will be happy to show employees where the material is on display.

Stanford instructional television network Televised winter quarter courses

AERO-ASTRO				
AA	200	Performance Analysis of Flight Vehicles	MWF	8:00-8:50
AA	278A	Optimal Control of Dynamic Systems	TTh	8:00-9:15
AA	297	Seminar in Flight Mechanics and Control	Wed.	4:15-5:30
CIVIL ENGINEERING				
CE	282A	Earthquake Engineering I	MWF	9:00-9:50
COMPUTER SCIENCE				
CS	137B	Numerical Analysis	MWF	2:15-3:05
CS	140A	Systems Programming	TTh	9:30-10:45
CS	144B	Data Structures	MWF	3:15-4:05
CS	145	Database Design	MWF	1:15-2:05
CS	150	Introduction to Combinatorial Theory	MWF	2:15-3:05
CS	237B	Advanced Numerical Analysis	MWF	3:15-4:05
CS	240A	Compiler Construction	TTh	9:30-10:45
CS	255	Analysis of Algorithms	MWF	1:15-2:05
CS	256	Computability and Complexity	TTh	11:00-12:15
ELECTRICAL ENGINEERING				
EE	101	Circuits I	MWF	8:00-8:50
EE	112	Electronics	MWF	8:00-8:50
EE	181	Intro to Computer Organization, Machine & Assembly Languages	MWF	10:00-10:50
EE	201B	Seminar	Thurs.	11:00-11:50
EE	216	Principles & Models of Semiconductor Devices	MWF	9:00-9:50
EE	221A	Linear Active Networks	MWF	10:00-10:50
EE	278	Intro to Statistical Signal Processing	TTh	1:15-2:30
EE	279	Information Transmission & Modulation	TTh	2:45-4:00
EE	284	Introduction to Discrete Mathematics	MWF	9:00-9:50
EE	286B	Systems Programming	TTh	1:15-2:30
EE	310	Integrated Circuits Technology & Design Seminar	Thurs.	4:15-5:30
EE	313	Digital Integrated Circuits – Analysis and Design	TTh	8:00-9:15
EE	322B	Basic Quantum Mechanics	MWF	1:15-2:05
EE	326B	Microwave Electronics	TTh	1:15-2:30
EE	328A	Physics of Semiconductor Devices	TTh	2:45=4:00
EE	347	Intro to Fourier Optics	MWF	2:15-3:05
EE	370	Information Systems Seminar	Mon.	4:15-5:30
EE	376B	Information Theory	TTh	2:45-4:00
EE	378A	Linear Estimation & Detection Theory	TTh	1:15-2:30
EE	380	Seminar on Digital Systems	Wed.	4:15-5:30
EE	381A	Switching Theory & Logic Design	MWF	11:00-11:50
EE	381B	Switching Theory & Logic Design	MWF	11:00-11:50
ENGINEERING-ECONOMIC SYSTEMS				
EES	201B	Dynamic Systems	TTh	9:30-10:50
INDUSTRIAL ENGINEERING				
IE	230	Capital Budgeting	TTh	2:45-4:00
IE	233	Industrial Finance & Control	MWF	11:00-11:50
MATERIALS SCIENCE AND ENGINEERING				
MATS	215	Photovoltaic Solar Energy Conversion	MWF	1:15-2:05
MECHANICAL ENGINEERING				
ME	200B	Mathematical Methods in Mechanical Engineering	MWF	9:00-9:50
ME	231B	Dynamics	Tues.	10:00-10:50
			Thurs.	9:00-10:50
ME	271	Combustion & Pollution	MWF	2:15-3:05
MATHEMATICS				
MATH	114S	Linear Algebra and Its Applications	MWF	11:00-11:50
MATH	131	Partial Differential Equations I	MWF	10:00-10:50
PHYSICS				
PHYS	211	Continuum Mechanics & Mathematical Physics	MWF	10:00-10:50
STATISTICS				
STAT	217	Intro to Stochastic Processes	MWF	3:15-4:05

Want ads

Transportation

FOR SALE: Honda C70, Trail Bike, 300 mi., $300. Honda SX70, 200 mi., $325. Both in new condition. Call 259-4618 after 6 p.m. Will deliver with a red bow around bike – Santa Claus costume is extra!

– – – – –

FOR SALE: 72 Buick Skylark, 350 Sun Coupe, excellent condition; asking $2100. Call 923-3322.

FOR SALE: 1969 Mercury Cyclone, 2-dr, 89,000 mi., V-8, PS, PB, $650. Call 732-4823 after 5 p.m.

– – – – –

1977 KZ-1000, 7000 mi., header, perfect condition, $1750. Call 259-8657.

– – – – –

1970 Fiat sport coupe, rebuilt engine, good tires, good body, $1650. Call 325-9451 after 5:30 p.m.

– – – – –

FOR SALE: 1967 Pontiac, 70,000 mi., original owner, all records, good work horse transportation, $395. Call 321-7605.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
78-17	Secretary (Steno) or Administrative Assistant (Steno) (area of consideration and closing date extended)	GS-6 or GS-7	A	Centerwide & Outside	12-23-77
78-36	Research Aircraft Inspector	WG-15	FOI	Centerwide & Outside	1-6-78
78-37	Contract Specialist	GS-5/7	ASF	Centerwide	12-23-77
78-38	Voucher Examiner	GS-5/6	AFG	Centerwide	12-23-77
78-39	Engineering Technician (Civil) (Temp NTE 1 Year)	GS-12	RF	Centerwide	12-27-77
78-40	Administrative Specialist	GS-5/7	RSTO	Centerwide	12-27-77
78-42	Secretary (Typing)	GS-4/5	LR	Centerwide & Outside	12-30-77
78-43	Aerospace Engineer	GS-12/13	LB	Centerwide	1-6-77

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.		Name
78-7	Personnel Clerk (Typing)	APM	•	Sue Ann Sue Christine Woods (outside candidates)
78-16	Contract Specialist	ASA		Sylvia Cox (outside candidate)
78-28	Personnel Clerk (Typing)	APX		Cancelled
78-18	Secretary (Typing)	SPJ		Stephanie Ferea

Cadillac – '73, Sedan de Ville, low milage, excellent condition, one owner. Call 961-2785.

1975 Honda CB 360T, 6500 mi., accessories, $725, offer. Call 493-3660 – leave message.

1969 Plymouth Satellite, 2-dr, h.top, AT, PS, factory air. New exhaust system and good conditions throughout. 84K mi. one owner, $950/offer. Call 878-9891 evenings.

Housing

Employed female with small dog needs one or two bedroom house or duplex with yard. Rent to $250. Call 244-9689 after 5:30 p.m.

FOR RENT: Coed townhouse, very close to Ames, 3 bedroom, 2 bath, washer, dryer, fireplace, balcony, patio and pool. $140/mo, 1st, last, and cleaning deposit. Call 965-9957 or 969-1393.

Mt. View Condo for sale. Clean, w-w carpets, modern AEK, patio, tennis courts and pools; 5 minutes from Ames. Close to Old Mill Shopping Center. $53,000. For more information, call 961-7547 after 5 p.m.

Miscellaneous

FOR SALE: Travel-Trailer, 25" excellent AI shape, air, awning, jacks, dual-propane, dual batteries, color TV and ant, full bath, dual beds, many extras including hitch, $4900. Call Noel X6034.

FOR SALE: Car seats (2 available), bucket type, beautiful medium brown, excellent condition, fits Toyotas or ?? $40 each. Call 252-9406 evenings.

FOR SALE: Photographic enlarger, Opemus, 2-1/4"x2-1/4" negative projection size, $35. Call 252-9406 evenings.

FOR SALE: Bicycle Rayleigh sports, girls 16-in frame, 24-in wheels, 3-speed, like new. Call 253-1454.

FOR SALE: Durst F-60 enlarger w/50 mm F4 El Nikkor lens, $70; Pentax SMCT macro lens $65; Vivitar 200 mm lens $65. Call 968-6559 evenings.

Blankets, twin size, beautiful colors, like new, $10 each. Call 964-1725.

WANTED: Used automatic washer and dryer in good condition, reasonable. Call 736-5393 after 5 p.m.

FOR SALE: Boat, 14-ft. fiberglass, 65 HP Mercury. Getting married, must sell! $900 or best offer. Call 247-6042 after 5 p.m.

Guitar, Gibson SG, hard case, excellent condition, $250; Boy's bicycle 24", like new, $80/offer. Call 738-2948.

WANTED: Used CRT, type 11WP22 or 11SP22. Call Noel X6034.

FOR SALE: Snow chains, fits: small car (Datsun, Toyota, Pinto, VW), $12; large car (Olds, Pontiac, Chevy, Buick), $18; both sets for $26. Call 998-6042 days, 225-3061 evenings.

FOR SALE: Extra firm California king mattress, box springs and frame; twin bed box springs and head board; metal lathe; band saw; tire chains Automotive Assoc. 1840 bar reinforced; circular saw. Call 657-2017.

Boy's ice skate-shoes, size 4, very good condition, $20. Call 964-1725.

India silk saree, new colorful, capturing. Can use to make a long or an evening dress. $35. Call 964-1725.

Table cloth, 70x80, Quaker lace, off-white, like new, beautiful, gorgeous, $30. Call 964-1725.

WANTED: Used skis with bindings and boots size 11-12. Must be reasonable. Call 354-8915.

Roommate: female student to share house near DeAnza, $125/mo, plus 1/3 utilities. Call 255-8627.

Girls bicycle, junior high size, 3-speed, 26x1-3/8 frt.calipers/r.coaster/Sears, nice condition, $30. Call 732-5569.

TOYS FOR SALE: "N" gage train set, layout, decorations, track, 5 cars, 2 engines, transformer, worth $100, asking $30; Rawlings football helmet, small, $2; Cadaco basketball game (new) $3; Mattel magnetic pool game, $3; Fisher-Price "A" frame house, $4; Ants-in-the-Pants (new), $2; Scrimshaw model, $3; Barbie boat,$. Call 259-6069.

Sewing machine, zig-zag, cams, attractive wooden console w/knee control, $115. Call 591-4320.

FOR SALE: Deluxe movie screen, 40"x40", $20. Also, Noritake China, white with platinum band, service for eight, $40. Call 257-8863 after 5 p.m.

FOR SALE: Pool table, regulation size, 1-1/2" thick top, very good condition, $175 firm. Call 252-8245.

Roommate needed to share 3-bedroom home in Cupertino. $200/mo. Call 965-6155.

FOR SALE: 10-speed man bike, $55; 3-speed man bike, $45; 20" girl hi-rise bike, $45; 20" boy hi-rise bike, $45; 20" boy hi-rise bike, $40; 20" boy Schwin Moto Cross HD, $65. Call 296-8594.

LACROSSE: Any lacrosse players hiding in the woodwork and interested in exposing themselves should contact Herb Finger, X6598. Practice is starting.

FOR SALE: 16" boy's sidewalk bike (needs one pedal), $20; Honda Kick-and-Go, $10. Call 245-8256.

FOR SALE: Shopping cart (folding), like new, $5. Call 252-9406 evenings.

FOR SALE: Student desks (elem.) 2 available, lift top storage compartment and swivel seats, $8/each. Call 252-9406 evenings.

FOR SALE: Bicycle, 5-speed, Schwinn, $40. Call 252-9406 evenings.

FOR SALE: Bicycle, 5-speed, Sting Ray, $15. Call 252-9406 evenings.

FOR SALE: Lawn mower, reel, J. C. Penny, self propelled, approximately 2 yrs old, $45. Call 252-9406 evenings.

FOR SALE: Lawn mower, rotary, runs but as is. $10. Call 252-9406 evenings.

FOR SALE: Motorcycle helmet, red, excellent shape, $8. Call 252-9406 evenings.

FOR SALE: Camp stove, 2-burner (used once), burns any gasoline, $12. Call 252-9406 evenings.

FOR SALE: Tire chains, two sets, $12/each, (1) fits 7.50-13, D70-14, E70-14, 7.35-15, 185R15, (2) fits 6.70-15, 7.75-14, 7.75-15, 7.50-14, 195R14, 195R15, E70-15. Call 241-5503 evenings.

FOR SALE: Mini two-wheeler Schwinn with training wheels, ages 3-5, $20. Call 241-5503 evenings.

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NASA

The Astrogram

VOLUME XX NUMBER 4

December 29, 1977

1977 NASA Honor Awards for Ames employees

NASA Administrator, Dr. Robert Frosch, flew to Ames on Friday, December 9, to personally present the NASA Honor Awards to this year's ARC recipients. Acting Director C. A. Syvertson joined Dr. Frosch in a ceremony in the Ames Auditorium to honor recipients.

Mark Kelly, Exceptional Service Medal

The program, coordinated by Marcia Kadota of the Training and Special Programs Branch, began with extending a warm welcome to the NASA Administrator. Each of the citations were read and the individual award recipients came forward from the audience to accept their award. It was first noted that Dr. Hans Mark, former ARC Center Director, had received the National Aeronautics and Space Administration's Distinguished Service Medal at a reception in Washington, D. C., on November 30.

Lester Briggs, Equal Employment Opportunity Medal

The first award presented by Dr. Frosch and Mr. Syvertson was to Loren G. Bright, Director of Research Support, for the Outstanding Leadership Medal.

Loren Bright, Outstanding Leadership Medal

The NASA Exceptional Service Medal was awarded to two Ames employees: Jack Boyd, Deputy Director of Aeronautics and Flight Systems and Mark W. Kelly, Chief of the Large Scale Aerodynamics Branch. *(Continued on Page 2)*

Jack Boyd, Exceptional Service Medal

McLaughlin earns 40-years Federal service

John McLaughlin (2nd from right) of the Ames Library Branch is shown receiving a certificate representing 40 years of Federal service from the Director of Administration, Louis Brennwald. Technical Information Division Chief, Paul Bennett (far left) and Library Branch Chief, Ralph Lewis look on. Mr. McLaughlin has 25 years of military service and 15 years of service with NASA.

NASA awards

(Continued from Page 1)

Dr. Janos K. Lanyi was honored with the NASA Exceptional Scientific Achievement Medal. Dr. Lanyi is a research scientist with the Extraterrestrial Biology Division.

The NASA Equal Employment Opportunity Medal was given to Lester B. Briggs, Jr., Assistant Chief of the Personnel Division.

Four Group Achievement Awards were presented to Ames teams. The Assess II Mission Team was first recognized and accepting the award for the team was Donald L. Anderson. The award was given by NASA to ARC jointly with Marshall Space Flight Center. Team members include: Donald L. Anderson, Robert M. Cameron, Matthew M. Cucuzza, Robert H. Davidson, Robert D. DeRenzy, Glen A. DeWitt, Fred J. Drinkwater, III, Charles E. Duller, III, James L. Eddy, Bradford P. Gibbs, Louis C. Haughney, Donna D. Johnson, John W. Kroupa, Seth S. Kurasaki, Patric L. Lewis, Robert A. Miller, Linda L. Miser, William B. Moores, Alfred G. Morningstar, Robert B. Morrison, Curtis L. Muehl, Carr B. Neel, George Olczak, John O. Reller, Jr., Hjalmer S. Schacht, Joan A. Showers, David G. Walton, Cleo B. Wagoner, and Barbara J. Yeager.

Janos Lanyi, Exceptional Scientific Achievement Medal

Another award winning team was the Aviation Safety Reporting System Project Team involving the following individuals: Charles E. Billings, Francis V. Frasca, Hallie M. Funkhouser, Edward M. Huff, John K. Lauber, Nancy C. Mandella, and William D. Reynard. This award was also presented jointly with Headquarters, the FAA and contractor employees.

The F-14 Flight Control System Survey Team also received a Group Achievement Award. The award was presented jointly to team members from Headquarters, Dryden, Johnson, Langley and Lewis team employees.

The ARC team members are Walter E. McNeill and Clyde H. Paulk, Jr.

The final team honored in the awards ceremony was the Spacelabs Mission III Project Support team. The project manager was William E. Berry and the technical support team leader was Salvador A. Rositano. The team members included: Bill Allan, Joseph Best, Mary Lee Bodily, Gary Bowman, Susan Burgenbauch, Paul X. Callahan, Johnnie O. Coleman, Roy Columbe, Patricia Cowings, Bonnie Dalton, Joan Vernikos-Danellis, Constantine B. Dolkas, Judy Dolkas, Norman Donnelly, Stanley Ellis, David D. Feller, Danielle Goldwater, David Gowan, Lionel Green, Richard E. Grindeland, Jerry Hart, Garland Hodges, Virginia Hughes, Catherine C. Johnson, John Johnson, Richard D. Johnson, Lanny C. Keil, Patricia Kirk, Arthur Kodama, Lisbeth Kraft, Henry Leon, Robert Mah, Richard Mains, Sally Mancini, Ernest McCutcheon, Jaime Miquel, Edwin Neville, Donald Rahlman, Carl Reichwein, Harold Sandler, John Stewart, Phyllis Strawbridge, Trieve Tanner, John Tremor, Vertis Upton, Bruce Webbon, Mary Wetzel, Bill Williams, and Donald R. Young.

The project's technical support team included: Salvador A. Rositano, Team Leader, John R. Anderholm, David B. Ackard, Mark Arrigo, Vicente Atoigue, Robert J. Carnahan, Terry L. Collins, Frank Cota, James P. Connolly, John P. Connolly, Mark W. Cowan, William K. Chun, Jerry E. Dunmire, Calvin H. Eddleman, Thomas E. Fitzgerald, Howard W. Frederick, James A. Hallam, Thomas H. Hamon, Peter J. Haro, Thomas N. Hood, Nozomu Iwasaki, Frederick O. Johnson, Robert Johnson, Daniel T. Juarez, Gilbert K. Kojima, Robert D. Lee, Patric L. Lewis, Charles Lonzo, Jr., Earl D. Menefee, Rafael Miranda-Fontanez, Donald P. Moody, Gerald P. O'Connell, Theodore Passeau, Guillermo Perez, James M. Peterson, Doris Price, John M. Rietman, William E. Shoemaker, Sara Shelly, Richard W. Westbrook, and Collin S. Yem.

Bill Berry, Spacelab Mission Development III Project Support Team
Group Achievement Award

Don Anderson, Assess II Mission Team
Group Achievement Award

Look for it!

The winner(s) of the best caption(s) for the photo of C. A. Syvertson and his office guest will be announced in the January *Astrogram* . . . so will the prize! **Look for it!**

Thank you

Thanks to all my friends for the lovely luncheon, for all the beautiful gifts and for making my retirement day one I will always remember. I really and truly felt like a queen for a day. I miss you all and God bless you. Ciao, Emma Cushman

Summer application procedures

Clerical jobs in grades GS-1 through GS-4 such as: clerk-typist, clerk-stenographer, administrative aid, etc. Applicants for these jobs must take a written test. Obtain a copy of Announcement 414, "Summer Jobs in Federal Agencies," The announcement will be available in January from college placement offices, Federal agencies, and Federal Job Information Centers. Send the written test application form (included on the last page of the summer announcement) to the Civil Service Commission area office that has jurisdiction over the geographic location where you wish to take the written test. This application must be submitted between January 4 and January 28, 1978. The test will be administered during the month of February. After the test papers have been scored, a notice of rating will be sent to you. To be considered for a job by Ames Research Center, you must file an application directly with us between March 15 and May 1, 1978. Applications postmarked after May 1, 1978, may not be accepted. You may apply to as many agencies or departments as you desire. You must file the material listed below with each agency to which you apply:

1. A photocopy of your notice of rating from the 1978 summer employment written test.
2. A completed copy of the application form especially designed for Federal summer employment consideration. (This form, together with instructions on its use, will be sent to you at the time you are scheduled for the written test.)
3. If applicable, proof of 10-point veteran preference (SF 15 and appropriate documentation).

Nonclerical jobs in grades GS-1 through GS-4. Some of the occupational fields appropriate to Group II coverage are:

Biological Sciences	Health Science
Computer Operations	Lifeguard
Dentistry	Mathematics
Engineering	Medicine
Forestry	Nursing
Illustrating	Physical Science

Announcement 414, "Summer Jobs in Federal Agencies," will instruct applicants to file directly with the agency or agencies where they wish to work. No written test will be required. You must file by the deadline date listed by each agency in Announcement 414. For agencies that have not advertised jobs in Group II of the announcement, the deadline date for accepting applications will be April 15, 1978. To apply for a job at Ames Research Center, submit a SF 171, "Personal Qualifications Statement," and a transcript of college courses. If a transcript is not available, submit a CSC 226, "List of College Courses and Certificate of Scholastic Achievement."

Positions in grades GS-5 and above, involving professional, technical, or administrative work requiring at least a bachelor's degree or the equivalent in experience. Application procedures are the same as those for Group II positions.

Note: SF 171, "Personal Qualifications Statement," and CSC 226, "List of College Courses and Certificate of Scholastic Achievement," may be obtained from the Personnel Office at Ames Research Center or any Federal agency.

Applications sent to Ames Research Center should be addressed to:

Personnel Office
Mail Stop 241-6
NASA-Ames Research Center
Moffett Field, CA 94035

American Helicopter Society 1978 symposia

The San Francisco Bay Area Chapter is scheduling a series of informational technical meetings with the objective of promoting an early exchange of information relative to ongoing rotorcraft research. Some of the speakers will be candidates for the Robert L. Lichten Award which is presented for the best technical paper presented at a regional meeting by a new author. Others will be presenting material which has been proposed for presentation at the 1978 National Forum of the American Helicopter Society, or which may be proposed for presentation at other national meetings. The Symposia Series is intended to provide the opportunity to discuss ongoing rotorcraft research in a friendly and informal atmosphere which will be of value to both the attendees and the speakers.

Where: Cafeteria, Building N-235, Ames Research Center, Moffett Field, California 94035.

When: No host cocktails, 4:30 p.m.; symposium, 5:00 p.m. to 6:00 p.m.

Topic and Speakers: January 11, *Fatigue Damage Monitoring*, David P. Chappel, Tilt Rotor Research Project Office, Ames Research Center. *The Study of Transonic Flow Past Airfoils Using Non-Intrusive Laser Techniques*, Dennis Johnson, Aerodynamics Research Branch, Ames Research Center.

January 26, *Flap-Lag Torsion Aeroelastic Stability of Circulation Controlled Rotors*, Inderjit Chopra, NRC Research Associate, Ames Research Center. *Application of Higher Harmonic Blade Feathering for Helicopter Vibration Reduction*, Richard W. Powers, Hughes Helicopters.

February 8, 1978 *An Advance in Analytical Prediction of Rotor Noise in the Transonic Regime*, R. Parthasarathy, Hughes Helicopters. *A Theoretical Technique for Analyzing Aeroelastic Stability of Bearingless Rotors*, Dewey Hodges, Army Aeronautical Research Group, Aeromechanics Laboratory.

Contact: Shorty Schroers, Ames Research Center, Moffett Field, California (415)965-5442.

"Designation of beneficiary"

To insure that benefits under retirement, life insurance, leave and unpaid salary will go to the proper person or persons in case of death, employees should designate their beneficiary. If no beneficiary is designated, the following is the order of payment:

1. Your spouse.
2. If none, then to your child or children in equal shares,
3. If none, then to your parents in equal shares, or
4. If none of these, to the executor or administrator of your estate, or
5. If none of these, to your next of kin in accordance with the laws of the state in which you lived.

If you want benefits paid other than as shown above, you should designate a beneficiary. Forms to designate beneficiaries can be obtained from the Records and Reports Branch, extension 5610.

Remember also that if you have ever filed a designation of beneficiary while working for NASA, it remains in effect until you cancel or change it in writing. Any change in family status should cause employees to consider whether a change in beneficiary is in order.

NASA SPECIAL PUBLICATIONS

National Aeronautics and Space Administration

The following NASA Special Publications are now on display in the Ames Main Library and the ARA Store. Following your review of these new releases, if you would like a retention copy for your files, return a completed NASA Special Publication Request Form, ARC 303, for each publication you desire to the Main Library, M/S 202-3, and *a copy will be mailed* to you. Please allow 2 weeks for processing and distribution of your request. Because the number of copies of NASA Special Publications available to the Center is limited, requests will be processed as they are received until the supply is exhausted and distribution will be limited to Ames Research Center Civil Service employees.

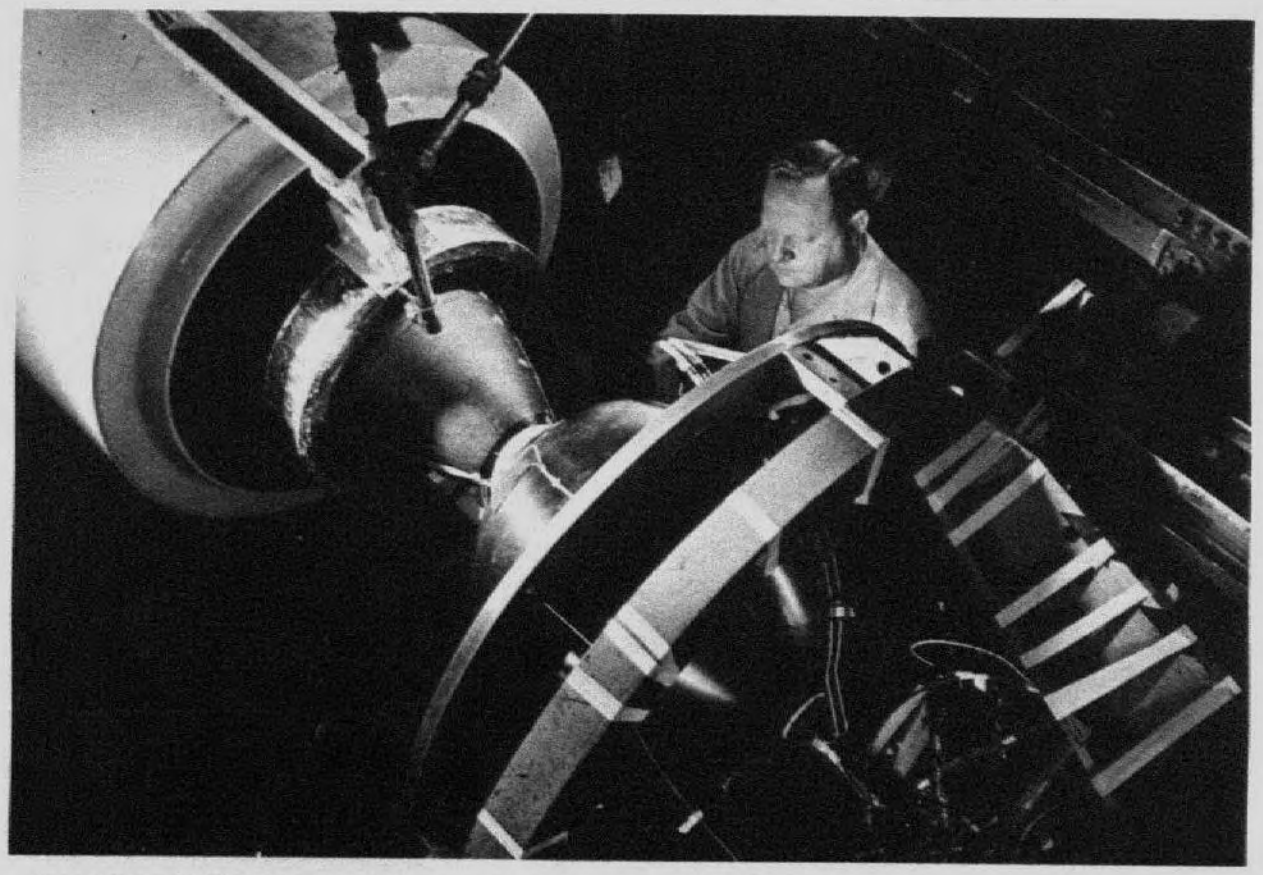
NASA SP-7041(12) EARTH RESOURCES
Prepared by the NASA Scientific and Technical Information Facility

Bibliographic citations and abstracts of 526 unclassified reports, articles, and other earth-resources-related documents announced between October and December 1976 in Scientific and Technical Aerospace Reports (STAR) and in International Aerospace Abstracts (IAA) are listed in this twelfth issue of a continuing bibliography. Listed documents – all of which rely on information gathered by spacecraft and aircraft sensors – are grouped in nine categories that include agriculture and forestry, environmental changes, geodesy and cartography, geology, oceanology, water resources, and data processing. Cross-referencing is provided by five indexes: subject, personal author, corporate source, contract number, and report/accession number. Sources, from which documents are available to the public, are also listed.

NASA SP-394 A SURVEY OF COMPUTATIONAL AERODYNAMICS IN THE UNITED STATES
Alfred Gessow and Dana J. Morris

A survey of representative U.S. work in computational aerodynamics – covering boundary-layer flow, internal flows, two-dimensional configurations, subsonic and supersonic aircraft, transonic aircraft, and the Space Shuttle – is presented in a publication originally prepared in 1975 for the AGARD Fluid Dynamics Panel. Each subject area is discussed and illustrated with specific examples, and principal investigators, methods, applications, and code status of representative programs are provided. Emphasis is on work related to aeronautics. Discussion of Navier-Stokes turbulence modeling, subject of a separate AGARD review, is limited. A comprehensive bibliography of computational aerodynamics work in the United States is included.

Pioneer-Venus motor



PIONEER-VENUS MOTOR – The small rocket motor that will position NASA's Pioneer-Venus spacecraft in orbit around that planet next year has completed qualification tests at Air Force Systems Command's Arnold Engineering Development Center. The Motor was first subjected to vibration tests, simulating conditions it will face during launch, and was then installed in a test cell for firing under realistic operating conditions. For 24 hours prior to firing, the motor was maintained at 115° F. Immediately before ignition, the aft four inches of its carbon-carbon composite material nozzle was quick-chilled to -160° F. Last year a similar motor was tested in the first half of the flight qualification program. The motor is manufactured by Thiokol Corp. and Hughes Corp. is prime contractor for the spacecraft. Tests were conducted by personnel of Sverdrup/ARO Inc., AEDC's operating contractor.

Ames Promotion Plan vacancies

Notice No.	Title	Grade	Org.	Area of Consideration	Closing Date
78-32	Secretary (Typing) (closing date extended)	GS-4/5	LB	Centerwide and outside	1-6-78
78-41	Research Aircraft Inspector	WG 14/15	FOI	Centerwide and outside	1-20-78
78-42	Secretary (Typing)	GS-4/5	LR	Centerwide and outside	12-30 -77
78-43	Aerospace Engineer	GS-12/13	LB	Centerwide	1-6-78
78-44	Accounting Technician (Growth Opportunity)	GS-4/5/6	AFC	Centerwide	1-11-78
78-45	Secretary (Typing)	GS-5/6	RK	Centerwide	1-9-78

TO APPLY: Complete ARC 59 and submit to Mail Stop 241-6.

MERIT PROMOTION PLAN SELECTIONS

Notice No.	Title	Org.	Name
77-113	AST, Data Systems	FSV	Michio Aoyagi
77-118	Computer Technician	RK	Clara Johnson
78-5	Supvy. Aerospace Engineering Technician	FOS	William E. Carpenter
78-6	Secretary (Typing)	RI	Sonia Bernard
78-11	Secretary (Typing)	FAX	Dorothy Moore
78-29	Secretary (Typing)	FSV	Constance Doloff
78-31	Secretary (Typing)	SAM	Diane Cusano

1978 AIAA/ARC Galileo scholarship

The Galileo Memorial Scholarship Program was established in 1973 by the San Francisco Section of the American Institute of Aeronautics and Astronautics and Ames Research Center of the National Aeronautics and Space Administration as a memorial to the men who perished with the Galileo I in an accident on April 12, 1973. The Galileo I, as is its replacement Galileo II, was a Convair 990 aircraft, modified and operated by Ames as an airborne laboratory for research in aeronautics, astronautics, astronomy, and earth observations. One $750 Scholarship will be awarded, and as many as four other finalists will receive $100 Savings Bonds.

Recipient of the Scholarship awarded in 1977 is James H. Johnsen, Monta Vista High School, Cupertino. Finalists were John W. Belliveau, Woodside Priory School, Portola Valley; Randall R. Brynsvold, Willow Glen High School, San Jose; Richard Lender, Cubberley Senior High School, Palo Alto; and Patricia A. Lum, Henry Gunn Senior High School, Palo Alto.

The Scholarship is open to high school seniors who intend to pursue a career in engineering, mathematics, or the physical or natural sciences and who are either residents of San Francisco, San Mateo, Santa Clara, or Santa Cruz County or children of Ames Research Center career employees, retirees, on-site support service contract employees or Galileo crew members.

The Selection Committee will determine the winner of the Scholarship on the basis of the following items:

1. An essay, limited to 1200 words, which describes the career that the applicant intends to pursue and the proposed course of study. Explain the motivation for the choice, describe any special interests, and the accomplishments expected.
2. Scholastic standing as determined by grade-point average and/or Scholastic Aptitude or other college entrance test scores.
3. Letter of recommendation from a faculty member who has personal classroom knowledge of the applicant's abilities.
4. Interview of finalists by the Selection Committee.

To apply, one must complete an application form and submit it with an essay, transcript, college entrance test scores, and letter of recommendation by February 28, 1978. The transcript should be current as of February 1978; the college entrance test scores may be shown on the transcript. Applications and essays must be postmarked on or before February 28, 1978. Finalists will be interviewed by the Selection Committee at Ames Research Center in April 1978. The winner will be notified in May and be honored with the other finalists at the May meeting of the AIAA San Francisco Section.

For further information and an application form, write to the above address or call the Scholarship Program Chairman, Mamoru Inouye, at NASA Ames Research Center (415)965-5126.

Want ads

Transportation

FOR SALE: 1975 Toyota, 5 new tires, 4-dr, 1 owner, $2750. Call 248-2419 or 268-7849 after 5 p.m.

FOR SALE: 1974 Datsun B-210, automatic (hatchback), needs some work, $1000 (negotiable). Call evenings 354-9345.

FOR SALE: 1967 Firebird 400, 4-speed trans., good condition, best offer. Call 245-4620 after 5 p.m.

Miscellaneous

FOR SALE: Mini pool table, 28" x 50", excellent condition, all accessories. Call 968-4624 afternoons and evenings.

FOR SALE: Brand new men's 10-speed touring bicycle – packed in two cartons. Net price $95. Call 964-6740.

LOST: Important film – 3 reels. Reward. Might be located at any mailstop. If found, please call Dennis Matsuhiro, X5651.

Christmas carolers

The Ames Christmas carolers presented their yearly Christmas music program in the cafeteria at noon on Tuesday, December 20, and visited a number of Ames buildings during the morning and afternoon to sing Yuletide songs for employees and friends.

Christmas carolers this year included: Frank Cota, Model and Instrument Machining Branch; Pat Edwards, Research Facilities and Instrumentation Division; Betty Hemphill, Accounts Control Branch; Carol Kuschill, CSC contract, Aerodynamic Research Branch; Mary Lingel, Aircraft Guidance and Navigation Branch; Bonnie McAffee, Contract Management Branch for Aeronautics; John McCloud, Large-Scale Aerodynamics Branch; Steve Mathews, Technology Development Branch; Jack Osorno, Model and Instrument Machining Branch; Dick Pea, Electro-Systems Engineering Branch; Ken Pitts, Astrophysical Experiments Branch; Cathy Schulbach, Scientific Applications Analysis Branch; Nancy Schweigert, Technology Development Branch; Jeannette Richards, Clinical Services and Management Corporation contract, Biosystems Research Division; Bonnie Theis, Systems Survey and Analysis Branch; Anne Thornton, Electro-Systems Engineering Branch and her son George; Floyd Wiens, Northrop contract, Simulation Sciences Division; Kathie Winget, Clinical Services and Management Corporation contract, Biomedical Research Division; and James Wolf, Santa Clara University contract, Biomedical Research Division. They were accompanied by: Barbara Busch, organ, Educational Programs Office; Bob Eglington, alto horn, Assistant Chief of Electro-Systems Engineering Branch; and Freddy Silva, alto saxophone, Moffett Naval Air Station.

The Astrogram

Admin. Mgt. Building, Phone 965-5422

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