



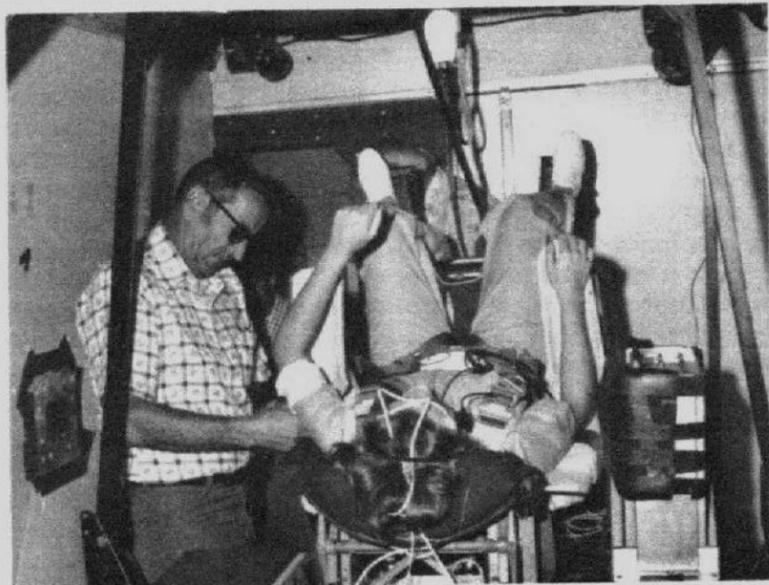
National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

Female Shuttle tests end

Twelve women completed five weeks of medical tests at Ames last week in which they were spun, examined and studied in a research project to help set medical standards for candidates for flight on the Space Shuttle scheduled for operation at the end of this decade.

Though detailed results of the test will require months of analysis, there is every reason to believe women can withstand the rigors of space flight. The preliminary results were presented at a press briefing at Ames on Tuesday, October 23rd.

The study is one in a series which have been conducted over the past few years, investigating responses to space flight conditions, looking forward to the time when persons other than pilot-trained astronauts will be making these flights. Eight of the



ONE OF THE AIR FORCE FLIGHT NURSE VOLUNTEER PARTICIPANTS . . . is strapped down by K. R. (Ski) Skrettingland of Medical Services, with sensors attached to her temples, to be tested on the centrifuge in which the relatively low acceleration forces are simulated.

12 Air Force flight nurses had two weeks of total bedrest in a weightlessness simulation, with the remaining four acting as ambulatory control subjects. Their ages are 23 to 34. All the women were single and either reservists or on active duty.

For the first two weeks of the program, the nurses underwent orientation and preliminary medical testing to establish baselines against which to compare their performance after two weeks of total bedrest.

The relatively low acceleration forces, which will be experienced during long duration Shuttle reentry into the atmosphere, were simulated in tests on the centrifuge. In line with findings from earlier tests with other subjects, the period of total bedrest decreased tolerance to acceleration on the centrifuge. In addition to testing on the centrifuge, the subjects also underwent cardiovascular and endocrine testing with close check kept on biorhythms, body chemistry and changes in body temperatures.

During the bedrest period, the subjects had to remain horizontal at all times, except during meals when they were permitted to raise themselves on one elbow. The ambulatory controls helped to chart data from the study during this time.

Television, stereo, books, other entertainments, and a lot of needlework by the participants helped make non-testing periods less wearing.

Because of the need for careful biochemical determination, diet was controlled carefully and such items as vanilla, bananas, pineapple, coffee and tea were forbidden. Sylvia DeJong, the spokeswoman for the control group, said some women lost weight and some gained, although all had the same diet. Weight loss ranged all the way to 13 pounds, while some women gained as much as seven pounds.

Among the biomedical measuring devices developed at Ames, which were used in the tests, was a capsule which radiates exact temperatures from inside the body to laboratory recording devices.

At the October 23 briefing, those discussing the experiment included: Dr. Hans Mark, Director of Ames; Dr. David Winter, Deputy Director of Life Sciences; Dr. Harold Sandler, head of the experiment team; and a spokeswoman for the nurse group.

The 12 test participants are all U.S. Air Force flight nurses, 10 from Reserve units in the California area and other western states.

Study of Comet Kohoutek planned

The most extensive array of electronic eyes ever assembled by NASA for cometary study will be focused on Comet Kohoutek this winter.

The comet, whose official designation is 1973f (the sixth comet discovered in 1973) is named for Dr. Lubos Kohoutek, a Czech-born astronomer at West Germany's Hamburg Observatory. In a classic example of serendipity in

science Dr. Kohoutek discovered the comet last March while photographing the night sky in search of asteroids.

Now some 400 million kilometers (250 million miles) from the sun, the recently discovered comet will materialize like the star of Bethlehem around Christmas time in the Northern Hemisphere.

To take advantage of the unusual opportunity, NASA scientists plan to study the comet in visible ultraviolet and infrared light with optical telescopes, radio telescopes and radar. They will watch it from the ground, from high-flying aircraft, with instruments aboard unmanned satellites, and with sounding rockets and telescopes and cameras on Skylab 4.

These extensive observations are expected to yield new clues to old mysteries.

Ames will fly the C-141 carrying its 36-inch telescope at altitudes up to 50,000 feet to look at the infrared spectrums of the comet in order to determine chemical composition of the icy substances of the nucleus. An Ames Lear Jet will carry a smaller infrared telescope for comet studies. Prof. Robert M. Cameron of Airborne Science Office is the ARC experimenter.

Probably the most important objective in studying Kohoutek is to find out whether or not there is such a thing as a solid comet nucleus.

Kohoutek is believed to have a nucleus of 20 to 30 kilometers (12 to 19 miles), while the comet's head may have a diameter of 96,000 kilometers (60,000 miles) or more.

As for the comet's tail, it has been stated that comet tails can stretch tens (Continued on Page 3)

Annual honorary award ceremony

October 30th marked the date on which the Ames Annual Honorary Awards Ceremony was held.

This occasion brought together many of the valued Ames employees who have contributed to the great success of Ames and NASA for the past quarter of a century and more.

The ceremony began with Robert L. Pike, Chief of Personnel Division, who gave the opening remarks, followed by Dr. Hans Mark, Center Director, who presented a very warm welcome and address.

Immediately following Dr. Mark's welcome, there was a filmed presentation entitled "NASA Aeronautics and Space Report - 1973" which stressed some of the main points on just a few of the many fields that Ames has successfully conquered in its research. The areas covered were Project Pioneer, Ocean Research, Space Forest Fire Alert and High Altitude Earth Research.

The last segment of the ceremony included the presentation of the awards ranging from 35 to 30 years of service and on to 20 years service certificates. Dr. Hans Mark and Organizational Directors Louis H. Brennwald, Loren G. Bright, John V. Foster, Glen Goodwin and Dr. Harold P. Klein and Systems Studies Division Chief Lt. Col. Al Worden congratulated each award recipient within their organization. The honorary recipients were also given pins.

Biology student speaks on Ames

David Buell was a participant in last year's Student Space Biology Research Program here at Ames. He is now a freshman at West Valley College. On his own, Dave contacted KGO-TV, and will be appearing on November 11 in three 45-second "speak out" appearances, between 3:00-3:30, 7:00-7:30, and 11:00-11:30.

You may wish to tune in and hear Dave's personal viewpoint on our nation's space programs.

Russian scientist visits Ames

Ames welcomed a visitor from the Soviet Union on Tuesday, October 29. The gentleman, Professor Doctor N. N. Rykalin, is an Academician from the Soviet Academy of Sciences. He is currently touring various government installations, universities and industries in the United States. His visit is sponsored for 30 days in the United States by the National Academy of Sciences.

Professor Doctor Rykalin was greeted at Ames by Dr. Theodore Wydeven, Jr., a research scientist from the Environmental Control Research Branch; Professor Alex Bell on sabbatical at Ames from the University of California, Berkeley; Dr. John R. (Continued on Page 3)

Ames employees honored

Seven Ames employees were honored for their outstanding contributions to the United States space exploration program at NASA's 15th Annual Awards Ceremony on Thursday, October 25. Dr. James C. Fletcher, NASA Administrator, made the presentation.

Receiving the NASA Medal for Exceptional Service were Glen Goodwin, Director of Astronautics; Norman S. Johnson, Assistant Chief of Flight Systems Research Division; Phillip D. Quattrone, Chief of Environmental Control Research Branch; and Dr. Michel Bader, Chief of Space Science Division.

The citation read as follows:

Glen Goodwin — "In recognition of his 27 years of distinguished service to NACA and NASA and his outstanding scientific acumen in a variety of fields ranging from heat transfer and aerodynamics to space and earth sciences."

Norman S. Johnson — "For outstanding contributions in formulating and supervising research and technology programs directed toward solving the problems relating to the safety, congestion, and environmental impact of the Nation's short-haul air transportation system."

Phillip D. Quattrone — "For outstanding contributions, as an individual Program Manager and as Branch Chief, to life support and protective systems technology needed for advanced manned space flight missions."

Dr. Michel Bader — "For implementing and demonstrating in flight a low cost approach to building and operating airborne experimental payloads."

Those receiving the NASA Medal for Exceptional Scientific Achievement were Howard Lomax, Chief of Computational Fluid Dynamics Branch; Dr. William R. Mehler, research scientist from Neurosciences Branch; and Dr. Joan Vernikos-Danellis, Chief of Human Studies Branch.

The citations read as follows:

Howard Lomax — "For outstanding contributions to the analytical and numerical analysis of fluid flows and for creativity in investing and developing a powerful new machine language (CDF) for use with the Illiac IV parallel processing computer."

Dr. William R. Mehler — "For pioneering neurosciences research leading to increased understanding of the structure and function of the vestibular nucleus in the brain and to new insights into the mechanisms of orientation and balance in animals and man under space flight conditions."

Dr. Joan Vernikos-Danellis — "For significant contributions to the better understanding of the neurohormonal and neurophysiological events in man's response to the stresses encountered in aeronautical and astronautical flights and to the possible means of mediating untoward responses."

"Live it up!"

The stag barbecue picnic seemed to be a total success so far as everyone began eating their dinner after a friendly social hour on the warm weekend evening. All of the men — energetic sportsmen at heart — were having a glorious relaxed time when quite suddenly and without warning one older gentleman sitting on a picnic bench quietly slumped forward — his head falling into his plate of food.

Those sitting nearby quickly decided to help the gentleman by lying him down along the picnic bench. There were many hasty conclusions drawn by the untrained observers — should they let him sleep it off? However, within the next 30 seconds or so the victim's face took on the distinctive coloring of someone in a cyanotic state. But to Bob Gordon, Assistant Chief of Ames Model and Instrument Machining Branch who was trained in Ames Safety Office's Advanced First Aid, it meant the victim wasn't getting oxygen and possibly was choking.

While someone ran to a phone to call an ambulance, Gordon removed the victim's dentures and reached down his throat. Gordon retrieved a 1½" x 1" piece of meat. Unfortunately the problem was not completely solved since the gentleman's pulse was still growing weaker. Gordon decided to probe further. The victim, having earlier been placed on the ground on his stomach was hit on the back by another person two or three times until Gordon finally got a hold of another piece of meat (3" in length) which had not been thoroughly chewed. Once this was extracted, Gordon performed mouth to mouth resuscitation for approximately 5 minutes and breathing was resumed by the victim. Gordon continued assisting with mouth to mouth resuscitation until

the ambulance arrived.

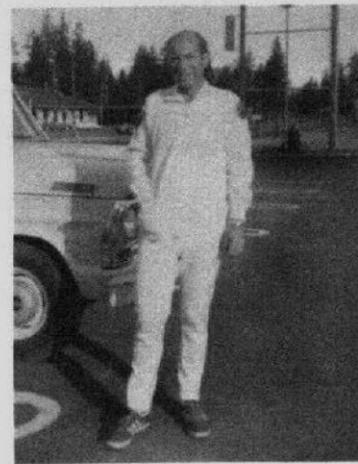
Gordon saved the gentleman's life. The performance had not been a pleasant one; however, the result was worth the effort.

Recent studies have indicated that many so called "heart attacks" within restaurants ("cafe coronaries") are really choking and suffocation cases. Choking and suffocation should always be considered when unconsciousness occurs while eating.

None of us know when we may have occasion to save someone's life; knowledge of first aid techniques would enhance one's chances of saving another person's life if the situation were to arise. John Habermeyer, Ames Safety Officer, was Bob Gordon's first aid instructor. In a recent interview, Habermeyer stated that, "This is the sort of thing that makes the effort of teaching really worthwhile. Bob Gordon is the third student I have taught who has actually saved a person's life and it's a very rewarding feeling."

Many Ames employees have taken the First Aid course through the Safety Office and those people are reminded that many of them are due for recertification. Some of the requirements have changed. A Basic First Aid and Emergency Care class will be given in the spring; it is comparable to the old First Aid Standard and the Advanced First Aid classes combined. A new Advanced First Aid and Emergency Care class (including drug overdose, child birth, extrication of victims from car accidents and cardiac massage) will also be given after the first of the year.

Cardiac massage classes however began November 7. Those interested in gaining further information should call Mrs. Dorothy Evans in the Training and Special Programs Branch.



TED PASSEAU

Ames jogger honored by local college

Jogger Ted Passeau will be honored by Foothill Community College on Tuesday, November 13 at 1:30 p.m. for jogging a total distance of 10,000 miles. The presentation will be made by Mary Lou Zoglin, Board member and past President of Foothill Community College Board of Trustees. Also in attendance will be Dr. James Fitzgerald, President of Foothill Community College.

Passeau, an experimental electronic technician in the Electronic Instrument Services Branch, will begin the ceremony by jogging down to the Foothill College campus area from Skyline Boulevard . . . a route Passeau has often taken in his jogging warm ups. Very few Bay Area joggers have jogged 10,000 miles. It is equivalent to jogging around the perimeter of the United States plus a little!

Passeau first became interested in jogging 7 years ago after reading about a newly offered course at Foothill entitled Recreational Adult Fitness. Part of the course included jogging. Passeau enrolled and soon became an avid jogger. He now jogs on the average of 6 miles a day during a five day week; he jogs early in the morning and also in the evening. Passeau may jog as far as 25 miles on a Sunday.

"I really don't feel good until I've run for a good 10 miles. When I've run 20 miles I really feel like I've accomplished something and it's a very good feeling," said the runner in a recent interview.

As a member of the Ames Joggers, Passeau has run in several foot races. Passeau states that, "There is a certain friendliness and comradship among joggers. I've attended and participated in many types of races — from

boat and car races to horse races — and I find that foot races attract a certain breed of people. Runners believe in a clean and fresh body and I feel that this attitude affects their minds too; i.e., clean body, mind and soul! I may sound as though I'm generalizing and I am, however, this is really the way I see foot racers." Only 1 or 2% of joggers smoke. (Continued on Page 3)



75 PALO ALTO ROTARIANS . . . visited the Center on October 29th. In general, the tour was arranged by General Donald L. Putt. General Putt is a member of the Palo Alto Rotary Club; when he was still on active duty with the Air Force he was one of the members of the last 17 man National Advisory Committee on Aeronautics (NACA).

Jogger honored

(Continued from Page 2)

It is a rare occasion, says Passeur, when a jogger will "light up."

Though Passeur averages 1200 to 1400 miles of jogging per year he does not preach jogging to anyone. It makes him feel good so he does it . . . others can do as they wish. He says, "When I feel 'blah' or headachy I go out and run." He continues and admits, "Though there's no proof of it, I think jogging is the healthiest thing a person can do."

When Passeur first began jogging he lost 30 pounds. He gained 10 of them back and has remained at that weight ever since.

Passeur still attends Foothill's Recreational Adult Fitness course which is part of the Foothill Community College Services (no credits). Two classes are given 1 night a week each (Tuesday and Thursday). Passeur adds, "I really enjoy the exercises as well as the jogging." Anyone may enroll and attend.

Those Ames employees interested in jogging may learn more about it by contacting Ames Jogger President Jerry Barrack. Though Passeur has always enjoyed sports (swimming, biking and hiking especially), jogging is the activity he can truly apply the popular saying, "I don't know whether it's adding years to my life, but it's adding life to my years!"

(with hesitation) also decided to go.

Their next step in preparing for their trip to Los Angeles was to think up a costume and a slogan for the show. After juggling different ideas around the Clements came to the conclusion that they would dress in William Tell oriented costumes. Clements went as Robin Hood and Mrs. Clements went as a target with a plastic arrow through her head. Her slogan read: "William tells me nothing's a straight shot. I'll trade my apples before they rot." Clements' slogan read: "William tells me I'm a bad shot, I'll trade my bow for whatever you got."

Having their costumes and their slogan ready they journeyed by air to Los Angeles. They got into their costumes and proceeded to ABC network. They found 400 people waiting in line. Out of 400, script writers for the show picked 62 people for the taping of two shows. Clements was lucky enough to be one of those 62 chosen because of the "uniqueness" of his costume. He was interviewed and was informed by ABC that if he had participated in a give-away show within the last 5 years he would be eliminated. He hadn't so he was accepted. However, Mrs. Clements' arrow had earlier been taken away because the network considered it a lethal weapon.

Once the show started Clements says he forgot about the TV cameras and

"Let's Make A Deal"



THE CLEMENTS . . . posed with the outfits they wore to the popular television show, "Let's Make a Deal."

by Denise Bernard

A few weeks ago, a young man by the name of Timmy wrote in for some tickets to the very popular daytime and night television show called "Let's Make a Deal."

Timmy's parents were not able to take him to Los Angeles to be on the show so Timmy asked his next door neighbors, the George Ratherts, if they would like to go (Rathert is Chief of Simulation Sciences Division). Mrs. Rathert said she would and thought she would ask Mrs. Harold Clements (Harold Clements is an aerospace engineering technician in the Planetary Science and Applications Branch) to accompany her and Timmy to Los Angeles. Mrs. Clements said yes and Clements himself (Continued at top of 2nd column)

even the audience when it was his turn to bid. He had to bid against a woman on 4 different pieces of merchandise and unfortunately lost a chance at a 1974 Vega. His opponent won the car, however, Monte Hall didn't want to see Clements go away without anything. He allowed him to keep \$200 or trade for a box. He took the box and won a washer and dryer. Clements was asked later to try for the big deal of the day and he immediately said yes!

Though Clements and his wife didn't choose the right door for the big deal of the day, they did win \$99 and \$50 worth of Eskimo Pie Mints. "Though \$99 in cash is better than \$0," Clements comments, "What am I ever going to do with \$50 worth of ESKIMO PIE MINTS!?????"

Marilyn Garis of Personnel

by Denise Bernard, a high school journalism intern.

Marilyn Garis is an Assistant Personnel Manager in the Personnel Division here at Ames.

Marilyn graduated from high school in San Diego and preceding her graduation she took many business courses such as typing, shorthand, switchboard operator etc.

Having obtained various business skills, Marilyn began her career with government as a secretary at North Island Naval Air Station in San Diego.

Marilyn married in 1963 and came to work for NASA-Ames as a secretary in the Classification, Organization and Safety Branch. In 1966 she took a maternity leave and later returned to her same position as secretary. In the summer of 1972 Marilyn was appointed Supervisor for the newly created office of personnel managers. She obtained her present occupation as an Assistant Personnel Manager in December 1972 when she became involved in Project Breakthrough.

Project Breakthrough is a program for people who are in "Dead-end positions" so to speak. This means that there are no further promotion opportunities in their current position so they apply for a new position under Project Breakthrough. After proper training they are appointed to the new position. It is a very uniquely designed program.

Marilyn's job consists of handling the personnel actions for the Aeronautics and Flight Systems Directorate. This involves classification of jobs, employment, i.e. hiring and position



placing. It also includes merit promotions.

Besides her direct work commitments, Marilyn also attends DeAnza College in the mornings. Right now Marilyn is enrolled in a class taking reading and composition. Many classes she has enrolled in have been arranged through the Training and Special Programs Branch here at Ames.

Marilyn has two favorite hobbies: she loves bowling and enjoys doing needle work. Marilyn is secretary of an Ames bowling league called the "Ames Mixed Fives."

Marilyn has a son named Dane who is extremely bright and attends Montebella Montessori School. He is in the second grade. He goes to school from 9 a.m. to 3 p.m. daily and also attends their convenient (on Marilyn's behalf) child day care center.



THOSE INTERESTED IN DISCUSSING PLASMA STUDIES . . . included (l. to r.) Dr. Lloyd C. Brown, N.R.C. fellow; Dr. Theodore Wydeven Jr., Code LTC; Professor Doctor N.N. Rykalin; Dr. John R. Hollahan, Tegal Corp.; and Dr. Alex Bell, U.C. Berkeley.

Russian scientist (Cont.)

Hollahan, an Ames contractor with Tegal Corporation; and Dr. Lloyd C. Brown of the National Research Council. The use of plasma is a mutual area of interest to the five scientists and therefore, they exchanged ideas and information on plasma processes. Professor Doctor Rykalin's plasma studies deal with metallurgy (primarily in welding) while the Ames scientists' plasma studies are in polymers.

Comet Kohoutek

(Continued from Page 1)

of millions of miles. The longest yet measured extended out to more than 297 million kilometers (186 million miles) from the Great Comet of 1843. Kohoutek's tail may eventually stretch across one-sixth of the night sky just after sunset around New Years Day, extending out 80 to 160 million kilometers (50 to 100 million miles).

Speakers Bureau

by Barbara Busch

A telelecture series was delivered to an aerospace education workshop for Butte, Montana, teachers. The following presentations were made: October 23, Jim Connolly (Electro-Systems Engineering) on biomedical instrumentation; October 24, Dr. Ted Bunch (Planetary Science and Applications), and October 25, Jack Dyer (Project Pioneer) on Pioneer-Jupiter.

Herm Gloria (Planetary Science and Applications) represented NASA-Ames at a teachers inservice program at Yerba Buena High School (San Jose) on October 26, at a career motivation program. The program was entitled "Pursuit of Excellence".

On October 31, Fred Witteborn (Chief, Astrophysics Branch) presented "NASA's Role in Infrared Astronomy" to the Northern California Chapter of the American Optical Society's meeting at Stanford.

Richard Haines (Neurosciences) will present a program on November 3 in Monterey to the 28th Annual Conference of the California Council of the American Institute of Architects. His slide program, entitled "Color Design for Habitability", discusses the impact of color in our habitations.

A class of DeAnza College biology students visited the Life Sciences Directorate at Ames and heard Vance Oyama (Chief, Life Detection Systems Branch) discuss the general field of life detection, on October 29.

Several Ames speakers are making presentations on Skylab to area groups:

Cal Fenrick (Procurement Division) talked to the Sunnyvale Optimists Club on October 30. He also will address the East Bay #10, Reserve Officers Associa-

"Open Season"

An "open season" is scheduled for November 15-30 during which time eligible employees may newly enroll and employees and retirees already enrolled may change from one plan or option to another, or from self-only to family coverage. Premium rates for most plans will increase in 1974 to enable plans to meet rising health care costs. The increases will be partially offset by an increase in the Government's biweekly premium contribution.

Prior to the open season, each eligible employee will receive a packet of open season materials. Employees who wish to make health plan changes must complete a Standard Form 2809. These forms are available in the Training and Special Programs Branch (ext. 5622). All rate or plan changes will be effective the first pay period in 1974.

tion's meeting on November 10 at the Alameda Naval Air Station.

Guy Ferry (Planetary Science and Applications) talked to the Miracle Mile Optimists Club at their breakfast meeting in San Jose on November 6.

Also on November 6, Frank DeRosa (Procurement Division) discussed Skylab for the Sunnyvale Rotary.

And on November 7, Jim Rogers (Flight Operations) addressed a management luncheon at the Naval Weapons Station, Concord.

AIAA-SAE attracts Ames scientists

Norman E. Sorensen and Frank A. Pfyl of the Aerodynamics Branch will be attending the AIAA/SAE 9th Propulsion Conference in Las Vegas, Nevada on November 5-7. Sorensen will be giving a paper entitled "Improved Supersonic Inlet Performance" by Sorensen and D.P.E. Beneze.

In this paper, Sorensen points out that improvements in the design of the supersonic inlet system can increase the range of typical long range cruise transports by approximately 9 percent.

Pfyl is attending the meeting to review the current propulsion technologies and to attend the AIAA Air Breathing Propulsion Committee meeting of which he is a member.

Thank You

Sincere thanks to my many friends for their telephone calls, cards, and beautiful flowers received during my illness. They were greatly appreciated.

Sincerely,

Mrs. Betty Thomsen

To all my friends at Ames:

I wish to express my heart-felt gratitude to each of you for your expressions of concern, wishes for rapid recovery, and the lovely flowers, candy, and other gifts that I received in the hospital while recovering from a coronary, and during my convalescence at home. Since there are several hundred of these items to acknowledge, I hope you will accept this open letter as a personal communication; answering each and every one of you individually is more of a task than I can undertake at this time.

I'm practically well now, and getting back into the swing of things again. And I sincerely believe that the rapidity of my recovery was due in large measure to the high spirits you put me in with your well wishes.

Most cordially,
S. N. (Sy) Stein, M. D.

Want Ads

Transportation

FOR SALE
MGB OWNERS - Keep your car clean and cool with an "MG Mitten" car cover. Nearly new - \$20 or offer. Bob McCracken 578-2676.

66 Volkswagen, convertible (new top), very good condition, call 415-259-0460 evenings. (\$775)

'71 Toyota Corolla, 1600 two door coupe w/ air conditioning, automatic drive, power assisted front brakes, and reclining bucket seats. Only 12,000 miles. \$1600. 252-3370

Housing

FOR RENT

Tahoe Keys, 4 bdrm., 2 ba. home, sleeps 9; tennis court, indoor pool facilities; T.V., near Heavenly Valley and casinos; avail. Holidays; 948-0569.

Skiing? S. Tahoe cabin, 2 bath, central heating, sleeps 8, 10 min. from Heavenly Valley. \$50 wk., \$130 wkend. Sinnott 225-8043.

FOR SALE: Beautiful 10 acre Sierra Home Site between Sonora and Twain Harte. Contact Howard Savage at 967-1443 weekday evenings or 209-532-5686 weekends.

Miscellaneous

FOR SALE - Two 600-15 tires for VW; \$15 for both. 967-9479

Dishwasher, G.E., under the counter in good running order. \$50 or offer. Joe DeRose 269-0158, Ames phone 6050.

THERMOSTAT for home furnace. Like new. Used one winter. \$10 or offer. Bob McCracken - 578-2676.

SWAN 500 transceiver & Swan 117xc Power supply with speaker \$365; Swan Mark II linear amp & power supply \$475, 225-3487.

Pocket Ocean Cruiser, Self steering, 20' wooden hull, galley, 5 sails, 6 H.P. O.B., Equipped for extensive ocean cruising, \$3,200., 961-6198 aft. 6.

Dishwasher - G.E. Pot Scrubber, 3 mo. old - slight odor of smoke - may need some repairs. \$100. H. Asch 736-6999.

Washer and Dryer - Lady Kenmore and Hotpoint - unidentified leak in washer otherwise perfect condition - both for \$100. H. Asch 736-6999.

Double oven - G.E. built-in - damaged by fire but repairable. \$50. H. Asch 736-6999.

BATTERIES, Sears High Voltage, size 22, good condition, \$7.50 each, call Roger Hedlund, 245-9542.

LEICA DRP 35MM CAMERA with 5 cm F1.2 lens, plus CANON 135MM F4. lens, filters, and more - in cases, make offer. 225-3487.

8 Foot king size hide-a-bed sofa, very good condition, \$175. Call: 246-9766.

4 RADIAL TIRES, WW Steel Belted, size GR78-15. Brand new, won in contest. Worth \$275, sell for \$200. X6512 or call 941-3056.

MISC. TOOLS & EQUIPMENT: 1/2" Drill \$35, Grinding Wheel \$15, Saber Saw \$13, 8mm Yashika movie camera \$20, Flood light \$10, Tripod \$15. Call 225-3487.

5 Sheets 4X8 plasterboard: \$1 each. 2 Sheets 4X8 garage liner: \$1 each. Call 245-2881

Twin collapsible stroller - like new - \$25; Lullabye crib, solid maple, excellent condition - \$30; Convertible Stroller-Carriage, excellent condition - \$25. 253-2987.

IBM SELECTRIC II Typewriter, Topaz bronze, like new, Call Darlyne 941-2842.

Fancipan 2 1/2 qts. very little used. \$7. Sears 4 qts. pressure cooker in good condition. \$10. Call: 321-1858.

PERSIMMONS, large size \$1.50/dz. 948-5968

MAPLE BUNK BEDS with springs and mattresses, very good condition. Asking \$50 - after 5 pm. 253-3659.

Sears child automobile harness, like new - \$5; Box of infant boys clothing - sizes 9 mo.-2 yr, like new - \$10; plus other miscellaneous items. 253-2987

Free Golden Hamsters: call 245-2881.

Honda 69 CL 350 with hooker header. Must sell, make offer Call 249-1479.

RIDE WANTED

Corner of Fair Oaks and Old San Francisco in Sunnyvale, 8-4:30, for approximately two months. Joan Timko, Ext. 5241.

WANTED

1967 Mustang shop manual 948-5968

'67-'68 Dodge or Chevy Van-Panel; wood lathe tools, reasonable (cheap) 293-4439.

A roll-away bed in good condition. Call: 321-1858

Children's snow boots, pants, gloves, caps, etc. In good condition. 257-0583.

CAR POOL: From Alameda, Oakland area; 0800-1630 shift; contact Tim Lindsey 965-6525.



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

Pioneer 10 nears encounter with Jupiter

Encounter report

Spacecraft controllers and scientists at Ames began the two-month encounter operations period for flight of the Pioneer 10 spacecraft past Jupiter.

The spacecraft has begun taking long-distance pictures and making measurements of the planet's atmosphere.

Pioneer is still 25 million kilometers (15.5 million miles) from the giant planet, and the planet's diameter at this distance would span about half an inch on a 19-inch TV screen, as seen by the spacecraft's imaging system. By November 20, the planet's image will be about an inch in diameter on a 19-inch screen. At closest approach, Jupiter will more than fill the screen.

Imaging at the present stage is largely to provide a position reference for polarimetry (polarized light) measurements of the planet in red and blue light.

These should provide information on the amount of transparent atmosphere above Jupiter's orange and blue-striped cloud tops, and on the character of the particles making up Jupiter's dense clouds.

Pioneer 10 crossed the orbit of Jupiter's outermost satellite, Hades, on Thursday, November 8.

Pioneer will make its closest approach to Jupiter in about 2 weeks — on December 3.

During its week-long passage by the giant planet, it will make a variety of measurements of Jupiter's atmosphere and interior, and of its four planet-sized satellites. It will also return pictures of Jupiter and of these four large moons. It will then become the first man-made object to leave the solar system.

All systems aboard Pioneer 10 are operating well. Last week, before beginning the encounter, the entire global team of spacecraft controllers and NASA's Deep Space Network completed a successful full-scale rehearsal of encounter operations.

During the encounter, controllers will send Pioneer more than 10,000 commands, by far the most ever sent to an interplanetary spacecraft.

CFC highest ever

The results are now tallied and the news is good! The Combined Federal Campaign drew 74% participation from the employees at Ames and the contributions amounted to \$47,205.

1973 CFC Chairman Horace F. Emerson thanks all who helped support the campaign. He stated that he feels, "The Santa Clara County recipients are especially grateful for the support Ames provided."

Ames biologists discover rare Earth organism

NASA researchers have discovered an Earth organism which can survive and grow in an environment resembling that of the outer planets of the solar system.

The rod-shaped bacteria — as yet unnamed — are swimming, growing and reproducing in a highly alkaline solution of sodium hydroxide.

The atmospheres of Jupiter, Saturn and Uranus are also believed by some scientists to be highly alkaline, although they probably contain ammonium hydroxide, rather than sodium hydroxide.

Ammonium hydroxide is the main ingredient in household ammonia. Sodium hydroxide is the main constituent of caustic soda or lye.

The newly-discovered bacteria would probably not be able to tolerate the high concentrations of ammonia which almost certainly exist in some zones of the Jovian atmosphere. However, in transition zones, where there is a mixing of the ammonia and water or carbon dioxide zones, habitats conceivably occur where life could exist.

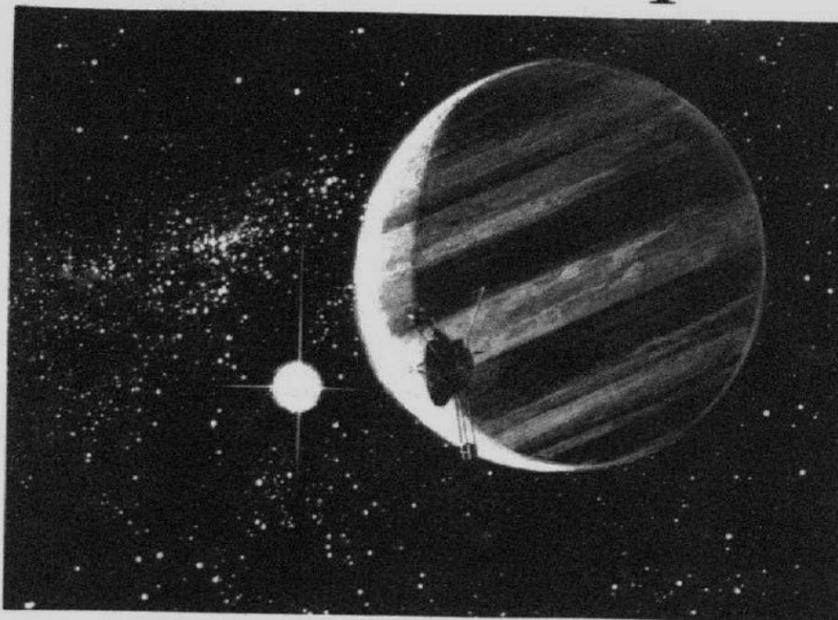
The discovery by biologists Paul Deal and Kenneth A. Souza of Ames is considered significant, because it raises anew questions on the possibility of life on Jupiter. The giant planet's extreme alkalinity has been advanced as a major reason for the improbability of life on Jupiter.

Ames Children's Christmas party

The Christmas party for the children and grandchildren of Ames employees sponsored by the ARA, will be held on Saturday, Dec. 15, from 10:00 a.m. to 2:00 p.m. This year the party will have a new location, the Model Construction Facility N-246.

Subscription tickets are now on sale and may be purchased from volunteer representatives in each building, or from any ARA Executive Board member or at the ARA store. The price is \$1.00 each or 3 for \$2.00. Prizes are: weekend for 2 in Las Vegas (approx. value \$280) or \$200 cash; 10-speed Centurian bicycle; binoculars; AM-FM digital clock radio; Lloyds cassette recorder; back pack; Kodak instamatic camera; golf pull cart; Hamilton Beach blender; Schick styling dryer; Oster can opener and ice crusher.

Any questions concerning this year's festivity should be directed to either Sal Tardio or Clark White who are the co-chairman of this year's event.



A NASA artist's conception of Pioneer's closest approach to Jupiter shows the Ames spacecraft passing over the twilight zone of the planet and the probe's dishlike antenna pointed back toward the sun. Earth is one of the many lights in the darkness of space.

Man's first spacecraft to Jupiter will reach the giant planet on December 3, after a billion-kilometer (620-million-mile) journey that began nearly two years ago.

Pioneer 10 will glide by at a distance of 131,400 km. (81,000 miles), taking pictures of the brightly-colored planet and making measurements that should provide new clues to old Jovian mysteries.

Pioneer will return color pictures of Jupiter and its inner moons, and provide information on its turbulent atmosphere and cloud currents, its bizarre Red Spot, its murky interior, and the surrounding magnetic, electrical, and radiation envi-

ronment.

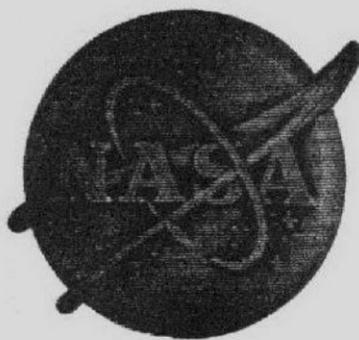
After Jupiter, the spacecraft will continue into deep space, eventually becoming the first manmade object to leave the solar system.

A few hours before closest approach, Pioneer 10 will begin to test the second major hazard of its flight, Jupiter's intense radiation belts.

These are believed by some to be a million times stronger than Earth's belts and to grow 100 times more intense for each Jupiter radius a spacecraft moves closer to the planet. The radiation belts may cripple or destroy Pioneer, and their intensity and extent must be known for future missions to Jupiter.



Charles F. Hall, Ames' Pioneer Project Manager, examines a series of views of the giant planet Jupiter transmitted to Earth from the Pioneer 10 spacecraft. Pioneer 10 now is about a half billion miles from the Earth and 12 million miles from Jupiter.



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Conference draws
top scientists

Leading scientists from around the world participated in a life sciences conference entitled "The Anatomy and Physiology of the Stato-Acoustic Nerve in Non-Mammalian Species" on November 5 and 6 at Ames.

Program chairmen included Dr. William R. Mehler of Ames Neurosciences; Dr. David Winter, Deputy Director of Life Sciences; and Dr. Walter Riss of Downstate Medical Center in Brooklyn, New York. There were some 25 distinguished scientists from numerous universities in the United States and from as far away as Sweden. Each presented a paper relating to the conference topic.

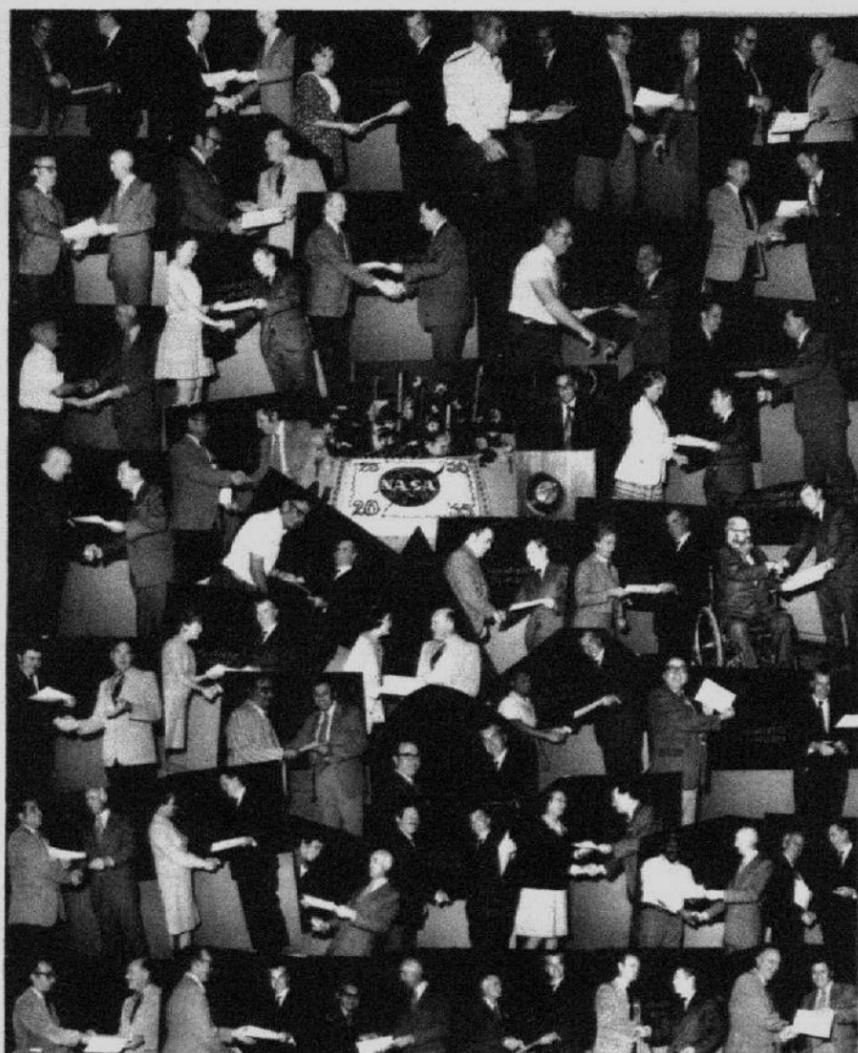
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Admin. Mgt. Building
Phone 965-5422

astrogram

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Editor Meredith Moore
Reporters NASA Employees

Deadline for contributions:
Thursday between publication dates



Acting Associate Administrator named

Edwin C. Kilgore has been named Acting Associate Administrator of the Office of Aeronautics and Space Technology, NASA Headquarters, Washington, DC.

The Office of Aeronautics and Space Technology, one of five major Headquarters Offices which direct NASA's research and technology programs, is responsible for providing the technology to meet the nation's future requirements in aeronautics and in space exploration.

A native of Coeburn, VA, Kilgore joined the Langley Research Center staff in 1944 after graduation that year from the Virginia Polytechnic Institute with a B.S. degree in mechanical engineering.

Prior to accepting assignment at NASA Headquarters in 1970, Kilgore had a key role in numerous Langley Research Center spaceflight projects, including the highly successful Lunar Orbiter program that paved the way for man's first steps on the Moon by providing advance photographic coverage of possible lunar landing sites.

Recently, Kilgore was awarded NASA's Outstanding Leadership Medal for developing and implementing a more effective system to manage advanced technology programs which largely has been adopted as the overall Agency practice.

Mrs. Kilgore is a member of the Hampton City Council. The Kilgores have two daughters.

Chinese visitors tour Computer Facility

Ames welcomed a dozen Chinese scientists from the People's Republic of China on November 6 to tour and discuss the Institute for Advanced Computation Computer Facility, which includes the ILLIAC IV, UNICON 690, the Central System and test equipment.

Dr. Hans Mark made the opening introductory remarks at the morning session. He stressed that he especially enjoyed welcoming the group to Ames because his father, Dr. Herman Mark, had been the first American scientist to visit the People's Republic of China after the May 1972 agreement.

Dr. Mark turned the program over to Loren G. Bright, Organizational Director of Research Support, who further welcomed the visitors and in turn introduced Dr. Mel W. Pirtle, Director of the Institute for Advanced Computation to the group.

Dr. Pirtle, accompanied by an interpreter, began his discussion with a slide presentation. Following the slides the group visited the ILLIAC Training Room. The Institute for Advanced Computation Computer Facility was toured after lunch. A demonstration and discussion of computer/simulation techniques and hardware relating to various aeronautics activities concluded the day's visitation.

Dr. Lawless back from Europe

Dr. James Lawless of the Chemical Evolution Branch recently returned from a month's business and leisure trip to Europe.

The business end was not only NASA oriented but international as well. Lawless attended three meetings while visiting the Continent. The first was held in Davos, Switzerland, and was solely devoted to the study of meteorites and their origin. Papers, such as the one presented by Dr. Clayton of the University of Chicago on the finding of primitive matter in a meteorite, were presented.

The second meeting was held in Edinburgh; its topic was Mass Spectrometry. Dr. Lawless presented a paper that he co-authored with Mike Romiez on "Computer Applications in Mass Spectrometry" specifically as related to the search for organic molecules in meteorites. This meeting, according to Dr. Lawless, was the most stimulating scientific meeting of all the internationally flavored meetings. Scientists from all

over the world were represented.

While attending the meeting in Paris, Dr. Lawless was invited to present a seminar at the University of Paris concerning his search for organic molecules in meteorites.

The third meeting was held in Paris and included papers from research scientists like Dr. Allen Schwartz. Dr. Schwartz was at one time employed by Ames as an NRC research associate; he is now a professor at Nijmegen University in Nijmegen, Netherlands. He presented a paper on "New Approaches to the Analysis of Heterocycles."

As for the leisure part of his trip, Lawless took a week and visited many exciting sites such as the Rhine Valley in

Germany, the Hague and the laboratories of the Max Planck Institute at Heidelberg and the University of Nijmegen. One of the main highlights of the trip was the purchase of a Triumph Spitfire which Dr. Lawless and his wife bought and had shipped home.

The Moffett Field Employees Credit Union is conducting a drawing to attract new members in the age group 12 years and under. The contest starts on Monday, 12 November 1973, and ends on Tuesday, 18 December 1973. The drawing will be held on Wednesday, 19 December, and the two winners will be notified.

Each child that joins the Credit Union will fill out a membership card

which will be used for the drawing.

The prizes are from the famous house of - Swiss Colony - who package attractive gifts for all ages.

Your child or children will get a charge out of being in the contest - with the opportunity to be a winner.

You need not be present to win.

Get on the Band Wagon - sign up your children in the Moffett Field Credit Union - TODAY!



Black Quake "73" was one of the civic events in which Ames again participated this year at San Francisco's Brooks Hall from November 8 through 11.

Featured in Black Quake "73" were many productions and contributions in exhibition that Blacks have made to our society.

Some of the exhibits included Ultra Sheen Products, Blacks in IBM, African Famine from the Black Studies Department of San Jose State College, and Drug Education from the Department of Justice. Ames presented an exhibit entitled "Blacks in Aerospace."

Willie L. White Jr., Chief of the Equal Opportunity Programs Office would like to thank the Center management for allowing employees from their organization to participate in the Center's exhibit at Black Quake.

It is hopeful that in the near future, programs such as Black Quake "73" and many others will be presented in the interest of not only our society but ourselves as well, so expressed by White.

Seated above at NASA's Black Quake booth are (left to right) Denise Bernard, Astrogram Office; Willie White, Chief of E.E.O.; Yolanda White (standing) Alicia White and Ruthie White of the Library.

Speakers Bureau by Barbara Busch

John "Jack" Dyer (Project Pioneer) discussed Pioneer-Jupiter in a telelecture program to a class at the University of Montana, Missoula, Montana. The class, entitled "Introduction to Planetary Astronomy", heard Jack on November 15.

Meredith Moore (Editor, Astrogram) addressed the Danville Newcomers Club on November 13, and gave an overview of Ames.

John Habermeyer (Safety Office) talked on NASA and Scouting for a Cub Scout Pack Meeting in Los Gatos, on November 16.

Howard Nelson (Materials Science Branch) presented two technical lectures in Albuquerque on November 15. One, at the Sandia Laboratory, was entitled "Environmental Hydrogen Embrittlement of Iron-Based Alloys"; the second, to the American Society for Metals, was "Gaseous Hydrogen Embrittlement of Alpha/Beta Titanium-Based Alloys".

Barbara Busch (Educational Programs Office) addressed the Braley Elementary School P.T.A. members on "NASA's

Interest in Education", following a showing of the Apollo 11 movie, on November 20.

Barbara has been asked by the West San Jose Kiwanis Club to talk on Skylab and the spinoff benefits of the space program, on November 28.

Also on November 28, Walter Reinhardt (Computational Fluid Dynamics) will discuss "Me and Math and NASA" to a career seminar at Los Altos High School.

Allan Bakke (Research Equipment Engineering Branch) will be the banquet speaker on November 30 for the California State University/San Jose's Tau Beta Pi (engineering honorary) annual banquet. He will discuss Skylab.

Guy Ferry (Planetary Science and Applications) will discuss Skylab IV for the Sunnyvale Metropolitan Lions Club on November 27.

John Vorreiter (Thermal Protection Branch) will describe Ames Research Center for the Stevens Creek Optimists Club, on December 4.



Demonstrating cardiac massage on a recording mannequin (supplied by the Santa Clara County Heart Association) are (l. to r.) Peggy Edgar, Ames Health Unit nurse; Tom Kerr, of OAST Safety and Operating Systems, NASA Headquarters; and John Habermeyer, Ames Safety Officer. Kerr, at Ames on safety inspection business, arrived just in time to be inspected himself! He earned a certificate for passing the 2 hour cardiac massage class given November 7 at Ames.

GOLF

A Turkey-Shoot tournament was held on November 3 at Las Positas Golf Course. The winners of the five flights as reported by tournament chairman Dave Banducci and Art Joly were:

First flight - R. Hedlund, 1st; T. Almojuela, 2nd; J. Lee and O. Koontz tied for 3rd. Second flight - P. Kutler, 1st; L. Walsh, 2nd; B. Eddy, 3rd; J. Quartuccio and A. Petretti tied for 4th. Third flight - K. Souza, 1st; H. Mathews, 2nd; J. Bull, 3rd; J. Cayot and L. Hochstein tied for 4th. Fourth flight - A. Lopez and B. Sutton tied for 1st and 2nd; R. Richardson, 3rd; C. White, 4th. Fifth flight - A. Joly, 1st; N. Barsi, 2nd; S. Johnson, 3rd; T. Nelan, 4th.

Kohoutek lecture

An illustrated lecture on the Comet Kohoutek will be presented by Dr. George H. Herbig at AIAA's November 28 meeting in the Minolta Planetarium, De Anza College, at 8 p.m. Dr. Herbig is a professor of Astronomy and Astrophysics at UC Santa Cruz.

Reservations are necessary. Please phone Joan, ext. 6440, on or before November 27.

The last tournament of the year will be held on December 1 at San Ramon. Anyone interested in playing should contact Clark White, ext. 5438.

Announcement

Ames Choral Group will rehearse Dec. 10, 11, 12, and 13, from 12:00 to 12:30 in lobby of auditorium. Bill Houck has graciously consented to break his retirement to direct this year. All vocalists and instrumentalists welcome.

WANT ADS

Transportation

FOR SALE
'72 Honda CB 175. Very clean. 225-1530, after 5.

HONDA 175 CL. Showroom cond. Cherry red. Low miles. 1970, \$375. Call after 5:30. 327-3335.

Housing

CO-OP APT, lg 2 bedroom, patio-garden, car-port, AEK, 20 mins. from Ames. Monthly pmts \$128.50 includes water. \$6000 cash for equity. Call 241-0685.

TAHOE KEYS TOWNHOUSE. 2 bedroom, 2 bath. Furnished. Available immediately. Weekly or monthly until June 1. \$125 per week or \$300 per month.

Miscellaneous

FOR SALE
Surfboard, Kienholz-Angell, 9'2", good cond. \$25 firm. Call 374-4925.

ACCORDIAN - 120 bass, like new condition, sacrifice \$125. 997-1357, evenings.

ZENITH T.V., excellent picture (gets Sacramento easily) & sound, with remote control, nice mahogany console. \$35. 10825 Alderbrook, Cupertino. Ext. 5459.

Electric fry pan, \$6; table lamp & shade, \$6; coffee table, mahogany, \$8. 257-7454.

Agfa camera with case, exc. cond; very good results, \$20, 321-1858.

Recording tape, Scotch Dyna. series, #203, 1/4 x 1800" reel, never used, \$5. 321-1858.

Home needed for lovable grey and white kitten, 3 months old, male. Our child's allergy makes it necessary. 968-5682

FREE puppies. Short hair German hunting, with Beagle. 238-3530.

16-foot 1970 Aristocrat "Lo-Liner" travel trailer, sleeps 5, centersway hitch and brake control, ex. cond. \$1149. 738-2948.

English Walnut meats, broken pieces, \$1.50 per pound. Irene Tharpe, 408-779-3022.

Portable electric heater, \$5; tapestries, 3, \$5 ea.; TV, Sylvania B&W, 23", \$50; tires, snow studded, 4 ply, exc. tread, \$15 ea. 257-7454.

TV CART, good condition \$5. Call 321-1858.

Bathroom sink w/faucet. Medicine cabinet (slightly scorched). Ceiling light fixtures and misc. Call if interested. H. Asch, 736-6999.

Range top, GE built-in, burner controls in hood no longer exist, good for parts, handyman might make it work. \$10. H. Asch, 736-6999.

WELDING GAUGES, 1 set oxygen & acetylene, rebuilt & unused. \$10 ea. Lepetich, 948-8002.

STORAGE BOX, top & side opening. Wood, masonite lined. Sturdy, w/hasps. 16x16x30, \$5. Lepetich, 948-8002.

Stainless steel double sink with Moen faucet. Fits 22"x33" opening. \$30. 732-6758.

Power mower. 18", large wheels. Overhauled. Good for rough service. \$10. Lepetich, 948-8002.

TV, 23" Admiral B&W. Looks & works good. New stand. Lepetich, 948-8002.

RUG, 9'x12' "Karastan"; with pad; off-white color; with fringe along narrow ends, \$175. Call 322-3823 after 6 p.m.

Boy's bike, sturdy Schwinn, 24" mid-weight. \$20. W. Love, 327-2418.

BICYCLE, girl's Schwinn Midget Stingray, with 16"x2.125" rear tire & ram's horn handlebar; suitable for 3-8 yr. old; excellent condition, \$35. Call 379-4305.

Boy's bike, Raleigh, with 20x1-3/8 wheels, child's size version of adult Raleigh lightweight. \$25. W. Love, 327-2418.

Shelty puppies, 6 wks. old. Call 226-5213.

SLIDE PROJECTOR, Airequipt, remote control, focus, automatic timing. Free slide trays. \$25/offer. Cicolani, 965-0329.

Fireplace set, brass w/black screen, \$5. Stove, gas, 4-burner Wedgewood, large oven/brlr. \$45. 296-8611.

SKI PARKA, Eddie Bauer Down parka. Comfort range -40° to +50°. Reasonable price. 739-4443 eves.

BABYSITTER: Reliable mother able to watch children for working parents. Call 732-3854 after 4:30 p.m.

WANTED: Wooden file cabinet. Lucie or Skip Rea, 968-7026.

High school student needs ride Mondays, 8-4:30, Middlefield and E. Meadows in Palo Alto. Peggy Tao, Ext. 5471.

Dumbarton Bridge commuters: I want to share expenses for rides to and from Fremont BART station any day shift. Contact Dave Tweten, ext. 5381.