

Sadoff and Haro receive NASA Medal for Exceptional Service

Melvin Sadoff, Assistant Chief of the Biotechnology Division, and Peter J. Haro of Electronic Instrument Services Branch, have each received a NASA Medal for Exceptional Service from NASA Headquarters.



Melvin Sadoff

Sadoff was cited for his "personal involvement and dedication" in helping Ames to achieve "significant progress in the analysis and solution of the difficult problems in the areas of the human control of aircraft, cockpit displays, and the measurement of aircrew performance in flight and in simulation. This progress has been achieved by applying engineering systems and control theory and practice as a powerful new tool in the understanding and evaluation of the behavior of the human central nervous system. Mr. Sadoff built up the Man-Machine Integration program at Ames over a ten-year period. The working relationships and trust which he has established with the scientist and engineers with whom he interfaces assures continued progress for the program."



Peter Haro

Haro joined the Ames staff 16 years ago as an apprentice and completed his training in four years. The NASA Medal for Exceptional Service honors him for "his dedication and competent efforts

which have resulted in the development of highly specialized, instrumentation and implant techniques which are being used in circadian rhythm research and bed rest studies conducted at Ames, Texas Women's College, Texas, and at the University of California, Davis. His numerous contributions in sensor packaging and design for implantation, transmitter calibration, and antenna design and placement have measurably improved the value of these research programs.

Working on research projects in the area of behavioral psychology and neural physiology, Mr. Haro made major design contributions to a relay logic system which allows a controlled experiment involving two animals, and a system which allows closed loop calibration of the experimental animal, a strain gauge bridge, an amplifier, a control box, and an IBM 1800 computer."

Both gentlemen received their awards at a NASA Headquarters program, October 29 in Washington, D.C.

(Next week: NASA Group Achievement Award recipients from Ames.)

Director elected AIAA fellow

Dr. Hans Mark, Ames Director, has been elected a Fellow of the American Institute of Aeronautics and Astronautics (AIAA). The honor is in recognition of Dr. Mark's many outstanding contributions and acknowledged leadership in the professional aerospace community.

By definition, AIAA Fellows are persons of distinction who have made notable and valuable contributions to the arts, sciences or technology of aeronautics and astronautics. This is an extremely high honor.

A certificate signifying the Ames Director's election will be made at the AIAA 11th Annual Meeting, February 24-26, 1975 in Washington, D.C.

"Safer bike routes sought for Ames employees"

See Page 3

Pioneer 11 Encounter: Employee-visitor activities

Pioneer 11 will reach its point of closest approach to Jupiter on December 2. The fly-by is the second visit to the solar system's largest planet and it also represents the start of Pioneer 11's flight to Saturn.

To reiterate a recent memorandum from Center Director Dr. Hans Mark to the staff, during this event, our primary effort at Ames to accommodate visitors is on behalf of our civil service, contract and student employees who may wish to bring guests on scheduled tours featuring insights into the Pioneer program and visits to other Ames facilities.

A one and one-half hour tour highlights the past, present and future of Ames Pioneers using exhibits and viewing of real time TV pictures in N-201 and includes a narrated bus tour of the Center with stops at the 40 X 80 Wind Tunnel and Flight Operations Hangar. The program concludes with a showing of the new film "Jupiter Odyssey." The tours will be available to employees and guests hourly at 8:30 a.m. through 3:30 p.m. on the following dates: November 25, 26, 27, 29, 30, December 1 and 3. On Encounter Day December 2, programs will be offered at 7:30 a.m., 8:00, 9:15, 9:45, 11:00, 11:30, 12:45 p.m., 1:15, 2:30, 3:00, 4:15 and 4:45.

Each employee may bring five guests who will join other employees and guests to form groups of about 30 for each tour. The Public Affairs Office Educational Services Section (Oklahoma

State University) will schedule and conduct the tours. Individual employees should contact their office at extension 6497 to arrange for specific tour times on a first-come, first-serve basis.

In addition, TV monitors in the cafeteria and in the auditorium, N-201, will carry continuous commentary on mission events beginning November 29 through December 5. (On Monday evening, December 2, N-201 will be available to employees only because of space limitations.)

To participate in the tour program, employees have the responsibility to:

- Arrange and confirm with the Tour Office (ext. 6497) for a specific number of guests at specific times. Guest names are not required.

- Escort their guests throughout the time they are at Ames, including the tour portion. Employees and guests may visit other facilities not included on the tour if the host employee makes formal visit arrangements with the facility involved.

- Notify the Tour Office promptly of changes in the number of guests in their group.

Upon arrival at Ames, guests may park in the circle, front of N-200. Hosts should meet them in the lobby of N-200 10 minutes before the tour is scheduled to begin. The Tour Office will have a reception desk in N-201 for badging, distribution of written material, and formation of hosts and guests in larger groups.

Low noise aircraft landings monitored on airline flights

A four-engine DC-8 jet transport has become the second aircraft in regular airline service to use steeper landing approach procedures under both visual and instrument flight conditions to greatly reduce aircraft noise levels on the ground in communities near airports.

Using a newly developed, NASA two-segment landing approach, the DC-8 transport achieves a 53-percent reduction in the area impacted by noise above desirable tolerances in a normal landing approach.

The United Air Lines DC-8 aircraft, equipped with a sophisticated navigation system modified to accommodate the new procedure, initially descends for a landing along a slightly steeper glide path - inclined 5.5 degrees to the ground instead of the normal 3 degrees. As the aircraft nears the runway and intersects the normal shallow approach flight path, the glide path angle is decreased and the final landing is made in the normal manner.

Noise levels on the ground are lower since the aircraft is at a higher altitude as it passes over early points in its glide. In addition, noise levels on the ground are also less due to reduced engine power settings made possible by the steeper approach.

United Air Lines is conducting an in-service evaluation of the modified landing procedures for Ames as part of a joint NASA/Federal Aviation Administration study to reduce jet-engine noise over airport communities.

Last year, a United Air Lines 727 aircraft, equipped with a special-purpose avionics package designed as a retrofit for existing aircraft, made 555 two-segment approaches in regular airline service. More than 40,000 passengers were carried and 55 line pilots participated in that evaluation. In nearly every case, passengers were unaware of the modified landing approach.

The flight program is designed to evaluate two-segment landing procedures for two types of jet transport aircraft in general use - short-to-medium range transports such as the three-engine 727, and longer range transports such as the DC-8.

Besides the two in-flight programs, studies have been conducted by Boeing and McDonnell-Douglas, under contract to Ames, to determine the feasibility of applying the new technique to Boeing and McDonnell-Douglas commercial transports. A similar study is being conducted by Lockheed on its L-1011 airplane.

Dr. Mark's "Length of Service" message

This is an auspicious occasion. We are here to honor people who have, by the length and quality of their service, demonstrated their commitment to the Center and to Government service. In view of this I would like to share some thoughts with you regarding the Center's future and to discuss with you some of the serious problems that we will be facing. It is entirely appropriate that I do so, especially with this group, precisely because of your proven dedication to Ames.

When I came to Ames nearly six years ago we were about to face our first big reductions in force. At that time the cutbacks to which I refer were specifically directed at NASA and at some of the other technological agencies in the Government. The argument then was that the nation had to "reorder its priorities," that technology was too expensive, and that enough technology existed in any event to solve the problems that we had. Thus, reductions in technology development were an easy way for the Federal Government to control its spending. You are all aware of the severe losses that we have suffered as a result of these policies.

In spite of these developments, we were also able to make some progress during the same period. First and foremost we survived as a vital research institution. Second, and perhaps more important, we were able to develop some programs in several important areas that have a very clear potential for the future. Among these are the Tilt-Rotor Research Aircraft, the Airborne Telescope in the C-141 aircraft, the various planetary Pioneers and the advances we have made in computational fluid mechanics. These are only examples of the many things we are doing. It is a tribute to all of you and especially to those sitting in this room today that we have been able to accomplish these things.

As you all know, the country is now facing severe economic difficulties. President Ford has placed the effort to deal with these difficulties at the top of the nation's agenda. One element of the President's program is to hold federal spending to a minimum. Present plans are to try to set federal spending for fiscal year 1975 at some level below three hundred billion dollars. This circumstance will necessitate further reductions in programs and in manpower. More specifically the Federal Government will lose 40,000 Civil Service positions during fiscal year 1975. NASA's share of this reduction is 300 positions and the fraction assigned to Ames is 22 civil service positions. This reduction, therefore, will take us from the current Civil Service complement ceiling of 1701 Civil Service employees to a new ceiling of 1679 by June 30, 1975. It now appears that such a reduction is well within our normal attrition rate.

I want to emphasize that the reductions we are facing during fiscal year 1975 are rather different than those that we have had in the past. In our prior

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Annual Honorary Awards Ceremony

THIRTY-FIVE YEARS' SERVICE

OFFICE OF THE DIRECTOR
Robert T. Jones

THERMO- AND GAS-DYNAMICS DIVISION
Dan E. Maghan

PERSONNEL DIVISION
John R. Derr

PROCUREMENT DIVISION
Carl A. Wanke



MORE PHOTOS NEXT ISSUE



THIRTY YEARS' SERVICE

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J. Violet Norcio

AERONAUTICS DIVISION
Angelo Bandettini
Frederick W. Boltz, III
Edward J. Hopkins

Adrien E. Anderson
Warren E. Anderson

Ernest J. Ransted
Quilla J. Rountree

SIMULATION SCIENCES DIVISION
Eugene P. Long • George A. Rathert, Jr.

AIRCRAFT OPERATIONS DIVISION
Robert M. Reynolds

RESEARCH AIRCRAFT PROJECTS OFFICE
L. Stewart Rolls

Robert B. Merrick

FLIGHT SYSTEMS RESEARCH DIVISION
Donald W. Smith
Jack D. Stephenson

Bruce E. Tinning

BIOMEDICAL RESEARCH DIVISION
Adrien D. Mandel

BIOTECHNOLOGY DIVISION
James R. Blackaby

PROJECT PIONEER
Joseph L. Frank
Robert U. Hofstetter

Thomas N. Canning

Norman J. Martin

OFFICE OF THE DIRECTOR OF ASTRONAUTICS
Elliott D. Katzen

CHEMICAL RESEARCH PROJECTS OFFICE
Edward J. Fontes

SPACE SCIENCE DIVISION
John C. Gerdtz

John W. Hawkins
C. Gilbert Lamica, Jr.

THERMO- AND GAS-DYNAMICS DIVISION
Harvard Lomax

David E. Magnuson
Carlton B. McMahon

COMPUTATION DIVISION
Jessie C. Gaspar

RESEARCH FACILITIES AND INSTRUMENTATION DIVISION

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Dorothy M. Dvoryak
Robert W. Eglinton
George E. Falkenthal
Thomas B. Fryer

Frank L. Gibson
George H. Holdaway
Henry L. Lueders
Joseph A. March

Jean W. Mead
Sidney D. Selan
James M. Silver
John W. Satriakoff
Luther Wilkerson

TECHNICAL SERVICES DIVISION

Donald C. Ayers
Fillmore A. Barozzi
David E. Bragg
David W. Brown
Louis J. Flores

Donald L. Leroy
Elmer G. Morris
Marvin E. Raby
Eugene A. Rizzuti

John A. Sekulo
Kenneth H. Smith
Frank F. Specie
Franklin E. Thompson
Mervin C. Troop

SERVICES AND SUPPLY DIVISION
Bradford P. Gibbs

FINANCIAL MANAGEMENT DIVISION
Phyllis R. Camm

PROCUREMENT DIVISION
Alfred T. Schrupp

Gabriel Fox

Ritchie H. Wilson

TWENTY-FIVE YEARS' SERVICE

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Carrie V. Kelley
David G. Koenig

FLIGHT SYSTEMS RESEARCH DIVISION
Armando E. Lopez
Eloy G. Martinez

Walter E. McNeill
Virgil R. Page

PLANETARY BIOLOGY DIVISION
Herbert S. Ginoza

BIOMEDICAL RESEARCH DIVISION
Richard R. Adachi

BIOTECHNOLOGY DIVISION
Charles W. Malich

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SPACE SCIENCE DIVISION
Neil H. Farlow • Thomas R. Pochari

Jack R. Hagen

James R. Jedlicka

Arthur F. Okuno

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Maurice J. Hitchman
Gerald A. Johnson

James F. Ladner
Conrad W. McCloskey

Bernardo G. Pongeggi
William W. Rodgers
Masato Yoshioka

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Manuel A. Lopez
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Paul H. Nelson

Raymond Sargis
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SERVICES AND SUPPLY DIVISION
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Donald B. Smeltzer

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Reuben D. McCann

AIRCRAFT OPERATIONS DIVISION
Milo D. Reisner

Robert R. Hinds
Lonnie J. Phillips

Elmer S. Thomsen
Walter M. Williams

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BIOMEDICAL RESEARCH DIVISION
Bernard D. Newsom

OFFICE OF THE DIRECTOR OF DEVELOPMENT
Betty M. Speelman

FLIGHT PROJECT DEVELOPMENT DIVISION
Emanuel H. Gross • Ernest J. Iufer

ADVANCED SPACE PROJECTS OFFICE
Toshiko Kato

SPACE SCIENCE DIVISION
Robert W. Boese • John P. Paddock

THERMO- AND GAS-DYNAMICS DIVISION

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Harry E. Bailey
Marvin I. Kussoy

George Lee
Gerald M. Mitvalsky
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Harry W. Simin
David A. Stewart
Kenneth K. Yoshikawa

Kin L. Lee

COMPUTATION DIVISION
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Samuel W. Pitts

Howard Tashjian

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Randal N. Hitchens

Gerald E. Peterson
Donald J. Robert

Sebastian S. Sandoval
Wilbur C. Vallotton

TECHNICAL SERVICES DIVISION
Jack E. Drager

Alfio S. Carbonaro
Arden O. Cole

Pedro C. Flores
Alfredo R. Ragasa

PERSONNEL DIVISION
John E. Levean

PROCUREMENT DIVISION
Esta P. Bakas • Virginia P. Sanford

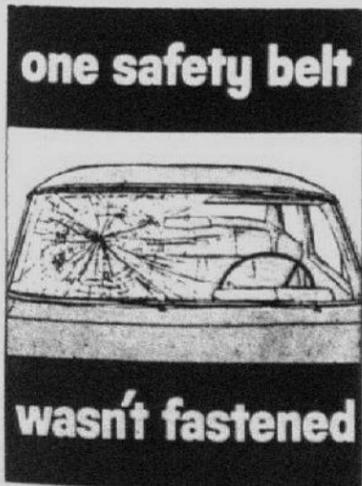
Dr. Mark's message

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reductions NASA has suffered proportionately larger cuts than other federal agencies. This is not true now. In fact the numbers that I have quoted in the last paragraph are almost precisely in the correct numerical ratio starting with the total number of Federal Civil Service employees, the number of Civil Service employees in NASA and finally the number of Civil Service employees at Ames. The current reductions are not aimed at technological agencies, rather they have been made across the board for the entire federal establishment. In my opinion the difference between the implementation of the current reductions and those made in previous years is most important indeed.

I believe, in fact, that there is some reason to hope that our national leadership is beginning to recognize the importance of organized and concerted technological development efforts to meet certain challenges now facing the nation. The passages of the bill creating the Energy Research and Development Administration is the most recent example. Another is the strong reversal in the trend among students in our Universities who are once again showing much greater interest in technical subjects than they did five years ago. This shows that our young people are recognizing that technological solutions to the problems we have offer greater promise than other proposals that have been made. While this trend is encouraging, I do not believe that it will help us to avoid further cutbacks in the next year. However, I do believe that in the course of the next five years the nation will adopt a much more positive attitude toward technology development. This circumstance will provide us with a great many new opportunities which we will do our best to grasp. The ability to take advantage of these opportunities will depend on the resources we can generate and on how you, as individuals, continue to make progress in your current work. Ultimately, you must develop the results and the new ideas on which our progress must be based. All of you have lived through periods of relative difficulties in the past, yet you have still managed to make most significant contributions. I am much encouraged by this and I know that we will continue to live up to the very high standards that you have set for us.

Thank you.



Safer bike routes sought for Ames employees and surrounding community

If you are presently using a bicycle to commute to Ames or have wanted to (but felt it unsafe), the recently formed Association of Ames Commuter Bicyclists needs your help and support now.

The group, headed by research scientist Lawrence W. Carr of the Army Air Mobility R&D Laboratory, is developing bicycle safety programs at Ames and, in conjunction with the Mountain View Police Department, for the community.

Carr began the campaign for safer bicycling to Ames approximately one year ago. He conducted a survey in January which confirmed that many Ames employees would bicycle to work if the route was less hazardous. Currently, 45 people commute to the Center via bicycle and another 100 to 150 state that they would definitely ride if a safe bike lane was established. After meeting with the Mountain View Environmental Planning Commission and the City Council during these past months, Carr announces that officials are now ready to hold a public hearing the 12th of November on the question of removing parking from the entire length (4.3 miles) of Middlefield Road to establish bicycle lanes, thus creating an arterial route feeding into Moffett Blvd. (Editor's note: It is interesting to state here that AACB took another survey last month at the intersection of Moffett Blvd. and Middlefield Road and within a 2 1/2 hour time frame counted 150 bicycling commuters; the city of Mountain View has found 473 in a 12 hour period at the same location.)

"Middlefield Road is the first big step in acquiring a safe and reasonable bicycle environment for cyclists riding to Ames Research Center as well as to the 30 to 40 surrounding industrial offices." Carr recently reported in an Astrogram interview. He continued, "If we can implement the Middlefield Road bicycle route successfully without interfering with the normal automobile flow, we will have built a good foundation for continuing to work on the very difficult problem which Moffett Blvd. poses to Ames employees - especially the section between Highways 85 and 101.

Moffett Blvd. to Ames

"This section is managed by the State of California Department of Transportation. They are presently studying alternatives that would improve the safety of commuter bicyclists."

Meanwhile, it seems like a vicious circle with planners saying, "We can't implement major changes on Moffett Blvd. until we are acting in behalf of more bicycle commuters;" and the potential bicyclists stating, "We can't commute to work en masse using bicycles unless the route is made safe." However, to increase bicyclists' numbers to prove that we are serious about riding to work, I have proposed a temporary safer bike route. It is not the most convenient, nor is it formally recommended or approved, but it is safer (see map) and it should help turn those "paper" potential bicyclists into real bicycle commuters."

Benefits from Commuter Bicycling

There are numerous reasons why men and women turn to bicycling as a means of transportation to and from work. The motive may lie in one's interest for exercise, economy or in doing one's part to save energy and reduce pollution. Whatever the reason may be, the Association of Ames Commuter Bicyclists needs support from all Ames bicyclists to improve the bicycling environment.

The average bicyclist at Ames travels 10 miles a day round trip. Thus, 50 Ames bicycle commuters would travel 100,000 miles a year total and save 8,000 to 10,000 gallons of gas a year. They may also be entitled to a reduced insurance premium since automobile liability insurance can be adjusted under some policies, to "recreational liability level" as opposed to a "work liability level" if a bicycle is used to commute to work at least three times a week.

The newly-formed association is interested in receiving ideas on what current and potential bicyclists feel are major problems and danger areas in commuting to Ames. The association is presently planning to implement an Awareness Program which will initiate the education of both the commuter driver as well as the commuter bicyclists. Safety is the most important thing and Carr reminds Ames auto commuters that, "We all work for the same agency, so please be kind to bicyclists! Their goal is the same as yours... getting to work on time. Bicyclists at Ames range in age from students in their early twenties to adults 55 years old, all of whom are literally "driving" their bike as you are driving your car. Just as there are responsible automobile drivers, there are responsible bicycle drivers. (The "nut" on a bicycle would be a "nut" in a car!) An Awareness Program should benefit all."

It is important to the Association's goals that implementation of safe bicycle

lanes be done through the proper channels in an orderly fashion. This will naturally take time. But as Carr points out, "The wheels have really begun to roll. However, we need as much support as we can gather from all potential bicyclists as well as anyone else who wishes to help."

The City of Mountain View has scheduled a public hearing about the banning of parking on Middlefield Road at 7:30 p.m., on November 12, 1974, at City Hall, 540 Castro Street. If you ever want to see a bicycle lane to Ames on Moffett Blvd. or Ellis St., you had better make your presence known now; because banning parking will be necessary for sections of both those routes. In case we are unable to persuade the City Council of our needs now, we will have even greater difficulty later."

If you have not already done so, please send us this registration card to indicate you agree (mark "active" if you can give us some of your time).

NAME _____
ADDRESS _____
HOME PHONE _____
ORG. CODE _____ MAIL STOP _____
COMMUTE BY BIKE NOW? _____
MILES/DAY _____
ACTIVE _____ SUPPORT _____
COMMENTS: _____

L. Carr - MS 215-1
Ben Zeitman - MS 239-9

Room 142
Admin. Mgt. Building
Phone 965-5422

astrogram

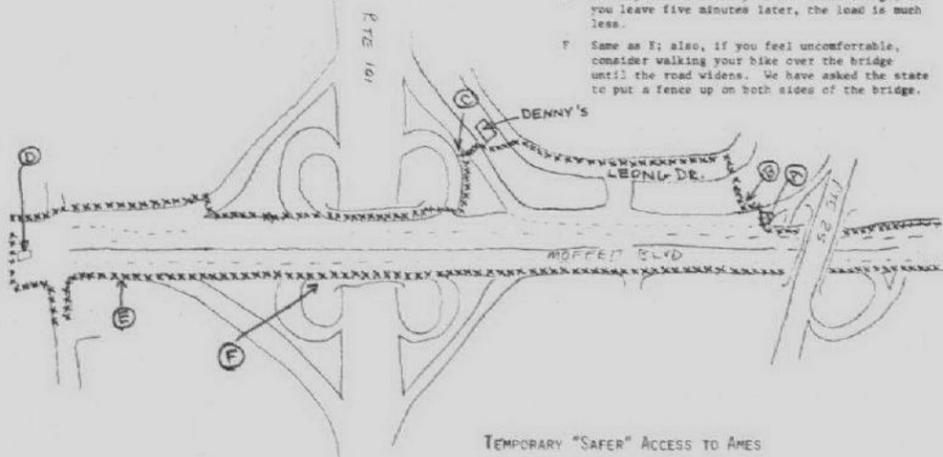
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Editor: Meredith Moore
Reporters: NASA Employees

Deadline for contributions:
Thursday between publication dates

COMMENTS This is a temporary route that is possibly a little safer.

- A STOP - Wait for auto driver to stop - cross and get on sidewalk.
- B Opening in fence permits access to Leong Drive.
- C Access to pedestrian crossing over bridge is through Denny's parking lot. Use pedestrian crossing over all of 101.
- D Guard Gate: If you wait at the crossing as "pedestrian", they will stop traffic to let you walk across. You can then ride to Ames. Remember to have your badge out; suggest clipping it to brake cable before getting to gate.
- E You may find this busy at the shift change; if you leave five minutes later, the load is much less.
- F Same as E; also, if you feel uncomfortable, consider walking your bike over the bridge until the road widens. We have asked the state to put a fence up on both sides of the bridge.



TEMPORARY "SAFER" ACCESS TO AMES

Ames Technology Associates Program

A proposed program for Ames employees and retirees to volunteer their talents to aid in the solution of some of society's problems was discussed in the August 1, 1974, ASTROGRAM. Since then there have been a number of activities directed toward establishment of the program according to John V. Foster, Director of Development, who is organizing the effort. A meeting was held during August for interested personnel. From a questionnaire distributed at the meeting it was determined that about 50 people would join such an organization if it were established. Based on this interest a decision was made to proceed. A number of meetings have been held with representatives of ARA, Technology Utilization Office, Legal Office, and individuals who have been actively working with local agencies to establish an organizational form capable of achieving the desired technical application objectives, protecting the interest of the participants, and providing some mechanism for adequate funding.

Finding an organizational form to meet all these requirements has proven to be more difficult than originally anticipated. George Lenahan, Chief Counsel's Office, and Charles Middaugh, former Chief, Management Analysis Office, have been working with Mr. Foster on this problem and now believe they have a workable solution. Meanwhile, in anticipation of formal establishment of the Technology Associates Program some activities have already proceeded. Discussions have been held with the Director of Technical Applications, Office of Applications, and with the Assistant Administrator for Industrial Affairs and Technology Utilization, NASA Headquarters, regarding possible support. Both offices were very cooperative.

Finally, advice and assistance in the formation of the program is still being solicited. Comments should be sent to Mail Stop 200-18.

Volunteers in demand

The Mountain View Adult Education Program is in need of volunteers to help in its English as a Second Language (ESL) daytime classes. Volunteers need not know how to speak a second language.

Mrs. Connie Hancock, a former Neighborhood Youth Corps general education teacher at Ames, is the new coordinator of the ESL program in the Mountain View/Los Altos Union High School District. Mrs. Hancock says, "We need volunteers who can work in either the morning or the afternoon. No training is necessary. We will provide the training and all the materials. Volunteers may work on either an individual level or in groups. A nursery is available for those with young children."

Mrs. Hancock added that more nursery volunteers are also needed. Please contact the new coordinator at 326-0222 for further information.

Speakers Bureau

John "Jack" Dyer (Project Pioneer) presented a telelecture to an astronomy class of the University of Montana, Missoula, on November 1. Jack lectured over the telephone lines of the Communications Branch, while members of the class viewed a duplicate set of visual materials which Jack had sent to the instructor. Jack talked about the mission objectives and accomplishments of Pioneer 10 and 11.

On November 1, S. N. "Sy" Stein (Guest Scientist) talked to the Palo Alto Amateur Radio Association, at the group's meeting at the Menlo Park Recreation Center. He presented "Another Side of the Moon," a discussion of the medical spinoff benefits of the space program.

Dr. William Haskell of Stanford University's Cardiac Rehabilitation Center will lecture on Tuesday, November 12 at noon in conference room B-39, Life Science Bldg. on the general topic of modes of exercise and their relation to heart disease. All are welcome and will find this a genuinely rewarding experience even if they are already involved in prescribed exercise programs. For further information, contact the Health Unit, ext. 5287.

Dr. Sanford Kellman, a National Research Council fellow working in Ames' Theoretical Studies Branch, was recently a guest on the morning talk show of San Francisco's television station KGO. Dr. Kellman appeared with Dr. Dick Reese, Executive Secretary of the American Astronomical Society and the show's host, Owen Span. The gentlemen spoke on astronomy in general and of Dr. Kellman's work in astronomy education with young people.

The Ames NRC has been asked to return to the KGO talk show on November 12.

2 Special Achievement Awards



Upon recommendation by Model Development Branch Chief Kenneth F. Caillat (not pictured), Model Makers Eugene Thomas (middle) and Manuel Fontes (right) each received a Special Achievement Award for performance at a level above that which is expected of them.

Leonel S. Stollar (left), Technical Services Division Chief, recently presented the award and a check to both gentlemen. The craftsmen have exhibited special insight into getting routine and rush jobs done quickly, efficiently, economically and safely.

WANT ADS

Transportation

'64 VW Squareback w/sunroof. Recent engine and brake overhaul, \$650 cash. Call Mark White at (408) 356-4772.

Housing

KAUAI - Family vacation cabin on lush half acre. Completely furnished. Sleeps five. Includes use of our '71 VW microbus, surfboard & fishing gear. Available Nov. 20-30. \$28 per day, call Stinnett at 867-0972.

Miscellaneous

Cassette Duplicator - High speed Cassette Tape Duplicator Model VM791 for sale, rent or trade. Call Verlin Reed - 948-2939.

FOR SALE - Persimmons, large size. \$1.75 per doz. 948-5968

Television - Sylvania, portable, b&w, 19" diagonal, 5 yrs old. VHF/UHF antennas, good picture, \$45. Call 259-6069.

Gun Dogs - Vizsla pups sired by champion, shots, wormed, call 248-2657.

Boat: 12 ft. alum., 7 1/2 HP, O-B, trailer, spare tire, and oar. \$350 for all. Call 961-8239.

Boat: 15 ft. fiberglass with cloth top, 65 HP Mercury Outboard, and trailer. Suitable for skiing or fishing. Excellent condition. Call 356-3436.

Moving Sale - Maple double bed, complete; queen size bed with hollywood frame, nearly new. Make offer. Call 961-3804.

Wedding dress size 7/9, \$50; 5-tiered veil, \$20. After 4:30 p.m., 374-1236.

Wanted: Used boys and mens clothing. I am going to visit an orphanage while vacationing in southern Mexico. Fred Bear, Ext. 5370.

Edm. Sci. 6-inch Refl. Telescope with equa. mnt. and clk. drive. Hardly used, \$130 firm. Tak Matsumoto, 264-8473.

CAR POOL - I want to join or start a car pool from Redwood City or environs to Ames. My hours are flexible. Howard Cohen, X5381 or (415) 366-4337.

Young female needs roommate. 2 bdrm., 2 bath., Sunnyvale apt., \$120/month. Phone 733-2592 after 6 p.m.

Health benefits open season

The open season for making changes in your health benefits plan is November 15-30, 1974. During an open season, you may make any of the following changes:

- From not enrolled to enrolled
- From one plan to another plan
- From one option to another option in the same or a different plan
- From Self Only to Self and Family

Open season changes will become effective on January 5, 1975. (For Army employees, the effective date is January 12, 1975).

Next week all eligible employees will receive a pamphlet discussing the open season and a sheet listing the 1975 rates. The Government contribution for 1975 is increased from 50% to 60% of the unweighted average high option premium of the 6 largest plans in the program.

In an effort to conserve paper, the printing of 1975 brochures has been sharply reduced. The 1974 brochure plus the open season pamphlet, which lists all plan changes, will constitute an up-to-date brochure. For employees contemplating changes, 1975 brochures will be available from the Training and Special Programs Branch (ext. 5622). Health Benefits Registration Forms (S.F. 2809) are also available from this office. All registration forms requesting changes must reach the Training and Special Program Branch (241-3) no later than November 30, 1974.

Worden donates time

Colonel Alfred M. Worden, Chief of Ames' Systems Studies Division, will be a guest author at the Peninsula Children's Center Charter Auxiliary's (PCCCA) annual Christmas Book House boutique on Thursday, November 7th.

Colonel Worden will autograph his two new publications "Hello Earth" and "A Trip to the Moon" for those who wish to purchase the books. He will be one of approximately twenty-four authors present at the fund raising event.

The PCCCA is a group of volunteers who support the Peninsula Children's Center which is a non-profit day care treatment center.

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

Pioneer 10 and 11: The old one-two

Special visitor program for Ames employees

Ames employees (civil service and contract) wishing to invite guests to the Center during the encounter period of November 25 through December 3 may wish to take advantage of the Public Affairs Office Encounter Visitors Program.

This 1½ hour tour highlights the past, present and future of the Ames Pioneers through exhibits in the N-201 Auditorium and includes a narrated bus tour of the Center with stops at the 40 X 80-Foot Wind Tunnel and Flight Operations Hangar. The program will conclude with a showing of the film "Jupiter Odyssey."

The Encounter Visitors Program will be conducted at hourly intervals from 8:30 a.m. - 3:30 p.m. on the following dates: November 25, 26, 27, 29, 30 and December 1 and 3. On December 2, Encounter Day, programs will be offered at 7:30 a.m., 8:00, 9:15, 9:45, 11:00, 11:30, 12:45 p.m., 1:15, 2:30, 3:00, 4:15 and 4:45.

Ames employees wishing to include guests (maximum 5 per employee and 30 per tour group) in the Encounter Visitors Program should contact the Educational Support Services Office (Ext. 6497) for advance reservations. Each program is limited to a maximum of 30 people. Bus transportation will be provided.

Ten minutes prior to the start of the program, pre-registered visitors will arrive at the N-200 Reception Area. The Encounter Visitors Program receptionist will escort them to the N-201 Reception Area for badging (Jupiter Encounter buttons). The escort will meet the group in the Auditorium and the program will begin with a spacecraft progress report followed by a Pioneer history briefing complemented by Pioneer models and exhibits.

Visitors will then board the bus and travel to the 40 X 80-Foot Wind Tunnel.

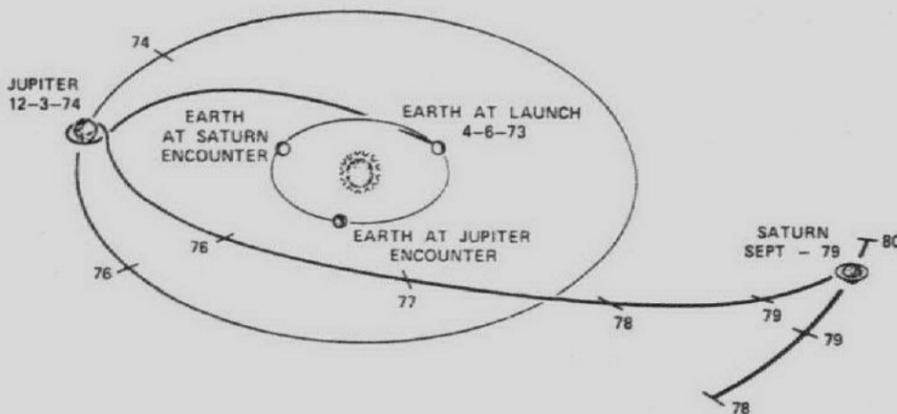
At the 40 X 80-Foot Wind Tunnel the escort will highlight Ames' aeronautical research effort using models, displays and a closed circuit TV tour through the tunnel.

Visitors will board the bus for travel to the Flight Operations Hangar, following a route past the supersonic and hypersonic wind tunnels, Atlas and Titan I launch vehicles, Pioneer Mission Operations (N-244) and Moffett Naval Air Station. The tour escort will describe the above facilities/research in transit.

The Flight Operations tour will highlight the role of various aircraft in

(Continued to Column 2)

PIONEER 11
SATURN TRANSFER TRAJECTORY



(Continued from Column 1) aeronautical, astronomical and earth science research programs.

Visitors will reboard the bus for travel to the TR 416 Visitor Orientation Facility.

At the Visitor Orientation Facility the "Pioneer Odyssey" film will be shown and visitor information packets presented. These handouts will include color lithographs of Jupiter, NASA literature and a Jupiter Encounter souvenir.

Following the film at the Visitor Orientation Facility the visitors will be directed or escorted back to N-200 for departure or reunion with their respective NASA hosts.

Total tour time will be 1 hour 30 minutes - 1 hour 40 minutes.

Pioneer 11 time line
(See Page 2)

Director's message

The Pioneer 11 fly-by represents the second encounter with, and closest approach to, the solar system's largest planet, Jupiter. Ames Research Center will celebrate this milestone in the continuing NASA space exploration effort by offering to our civil service, contract and student employees, and their guests, an attractive agenda of activities. All of the activities are discussed in this special issue of the Astrogram.

I urge all of you to invite friends, relatives, and fellow employees to participate in the tours program and acquaint or reacquaint yourselves with Pioneer and other Ames research efforts.

During Pioneer 11 Encounter heavy emphasis will be placed on accommodating our employees, and every effort is being made by the Public Affairs Office and its Educational Services Section to ensure the success of this endeavor.

Hans Mark

Pioneer 11 Mission

Pioneer 11 will reach periapsis (point of closest approach to Jupiter - 26,000 miles above cloud tops) at 9:21 p.m. PST, Monday, December 2, 1974. Forty-six minutes are required for data transmission from Jupiter, making periapsis time on Earth 10:07 p.m. PST.

Pioneer 11 data will be in the form of experiment results and color images of Jupiter. The first science results will be the sensing of Jupiter's bow-shock wave in the solar wind, perhaps at 100 Jupiter radii (4,350,000 miles out) about a week before periapsis.

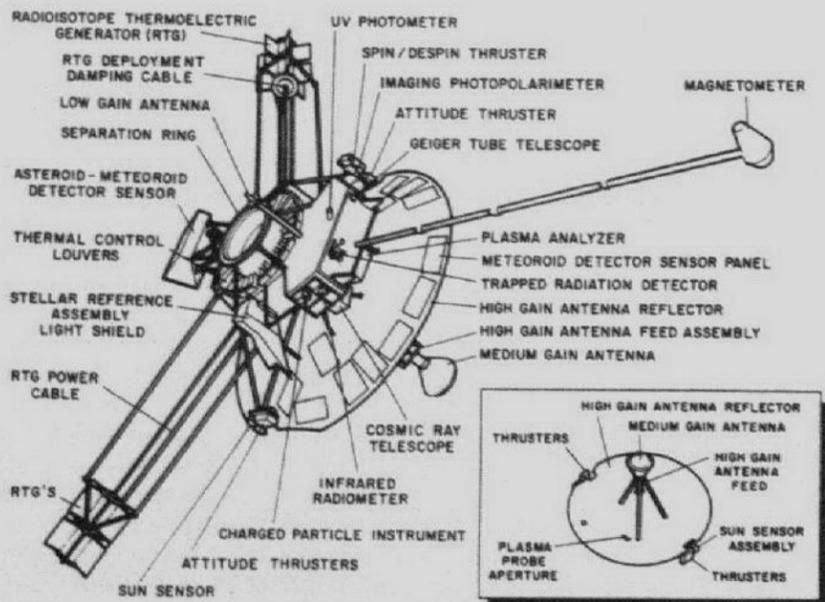
The Pioneer 11 encounter is expected to be of great interest because of the calculated risk in sending the spacecraft three times closer than Pioneer 10 despite the dangerous radiation belts. Officials believe Pioneer 11 will safely pass Jupiter and reach Saturn in 1979 to become the first mission to that planet. However, the continued operation of the spacecraft at Jupiter and the Saturn mission depends on a safe passage through the Jupiter radiation belts. Also, we will receive the first polar pictures of Jupiter, taken both approaching and leaving the planet.

Pioneer 11 experiments are:

- Two magnetometers to measure Jupiter's magnetic properties.
- Plasma instrument to sense solar wind/Jupiter interactions.
- Four particle experiments to measure particles and dust near Jupiter.
- Ultraviolet and infrared instruments to sense Jupiter's atmospheric composition and provide a thermal map of Jupiter.
- Imaging photopolarimeter to create images of Jupiter and measure characteristics of its clouds, atmosphere and moons.
- Occultation experiment will use radio signal characteristics to detect atmospheric properties of Jupiter.
- Celestial mechanics experiment to improve measurements of the Jovian system's mass characteristics.

Color images of Jupiter will be generated beginning about November 1 when the planet, some 17 million miles from the spacecraft, will fill 1/150 of the spacecraft's 10° field of view. Pioneer 11 will accelerate in the last 24 hours before periapsis. Distortion in the images will be pronounced during that time. During the last 50 hours before periapsis, there will be some 20 images of the full Jupiter disc from angles hitherto unseen from Pioneer 10 or Earth.

PIONEER / JUPITER SPACECRAFT



Encounter time line

1. All times PST.
2. One Jupiter diameter = 142,744 km.

11-18-74 8:00 a.m.	University of Arizona team arrives to begin intensive imaging and photopolarimetry activity. Imaging and polarimetry operations will continue up to 8 hours per day through 11-24-74.	12-2-74 12:21 a.m.	Closest approach to Callisto, 786,500 km (488,730 miles) at 21 hours from periapsis.
11-21-74 10:03 a.m.	Cross orbit of Hera, outermost of Jupiter's middle group of moons, at 11,667,000 km (7,248,000 miles) - 82 Jupiter diameters from planet.	1:50 a.m.	Ultraviolet measurements of Ganymede, 19 hours 31 minutes from periapsis.
10:50 a.m.	Cross orbit of Demeter, second of Jupiter's 3 middle moons at 11,639,000 km (7,231,000 miles) - 81.5 Jupiter diameters from planet.	8:01 a.m.	Cross orbit of Ganymede, second outermost Galilean moon, at 1,001,140 km (624,953 miles) - 7 Jupiter diameters from cloudtops, 13 hours 33 minutes from periapsis.
5:21 p.m.	Cross orbit of Hestia, closest of Jupiter's 3 middle moons, at 11,403,000 km (7,084,000 miles) - 80 Jupiter diameters from planet.	8:21 a.m.	Last full disc picture of Jupiter. Subsequent pictures will more than fill spacecraft 14° view field.
11-25-74 All day	Eleven images of Jupiter, polarimetry of Jupiter, Callisto, Ganymede and Europa.	1:56 p.m.	Infrared measurement Ganymede, inbound - 7 hours 25 minutes before periapsis.
4:00 p.m.	Begin 23 hours-a-day imaging and polarimetry for 14 days through December 9. Both imaging and polarimetry of Jupiter will occur every day through this period; imaging a little more than half the time.	2:06 p.m.	Cross orbit of Europa, second closest Galilean moon, at 601,780 km (372,803 miles) - 4.2 Jupiter diameters from the cloudtops, 7.25 hours from periapsis.
11-25-74 8:00 a.m.	Earliest time for bow-shock wave crossing, inbound.	2:09 p.m.	Closest approach to Ganymede, 692,300 km (430,195 miles) - 7.2 hours from periapsis.
11-26-74 All day	Twenty-five images of Jupiter. Polarimetry of Jupiter and Io.	2:45 p.m.	Ultraviolet measurement of Europa - 6 hours 36 minutes before periapsis.
8:00 a.m.	Earliest time for magnetopause crossing, inbound.	3:21 p.m.	Enter radiation belt at 3.5 Jupiter diameters from clouds, 6 hours from closest approach.
12:00 noon	Resolution of pictures sent back by Pioneer equals that of typical Earth telescope pictures.	4:00 p.m.	Begin 2-hour scan for last picture on incoming trajectory thus showing Red Spot, portion of Jupiter's surface. During picture, taken from 4:00 p.m. - 6:00 p.m., Pioneer well inside radiation belt. Range 265,000 miles; resolution 5 times Earth telescope resolution.
9:00 p.m.	Earliest time for magnetopause crossing, inbound. (Time period when crossing likely is 19 hours, from 11-26-74, 9:00 p.m., to 11-27-74, 4:00 p.m.)	5:00 p.m. to 7:45 p.m.	Infrared measurements of Jupiter - 2 hours 45 minutes of measurements starting at 4 hours 21 minutes from periapsis.
11-27-74 All day	Seventeen images of Jupiter. Polarimetry of Jupiter, Io, and Europa.	5:13 p.m.	Infrared measurement of Amalthea 4 hours 8 minutes from periapsis.
9:21 p.m.	Pioneer 5 days from periapsis 5,905,000 km (3,669,000 miles) - 41.5 Jupiter diameters away.	5:23 p.m.	Cross orbit of Io, innermost Galilean moon, at 352,560 km (217,945 miles) - 2.45 Jupiter diameters from cloudtops, 4 hours from periapsis.
9:21 p.m.	Planet occupies 1/10th (1.4°) of Pioneer's 14° field of view. Would have a 2-inch diameter on a 21-inch TV screen.	7:02 p.m.	Infrared measurements of Io at 2 hours and 19 minutes before periapsis.
11-28-74 All day	Twenty-two images of Jupiter. Polarimetry of Jupiter and Io.	7:09 p.m.	Closest approach to Io, 314,000 km (195,120 miles), 2.2 hours before periapsis.
9:21 p.m.	Pioneer 4 days from periapsis, 4,919,000 km (3,050,000 miles) - 34.5 Jupiter diameters from the cloudtops.	7:58 p.m.	Crossing of Pioneer 10's previous closest approach distance of 81,000 miles.
9:21 p.m.	Planet occupies 1.6° of Pioneer 14° view field - 2-1/2-inch diameter on a 21-inch TV screen.	8:10 p.m.	Cross orbit of Amalthea, closest Jovian moon, at 137,260 km (68,630 miles) - 0.77 Jupiter diameters from cloudtops, 1.18 hours before periapsis.
11-29-74 All day	Fifteen images of Jupiter. Polarimetry of Io, Europa, Jupiter.	8:15 p.m.	Closest approach to Europa, 586,700 km (364,575 miles), 1.1 hours before periapsis.
9:21 p.m.	Pioneer 3 days from closest approach, 3,895,000 km (2,420,000 miles) - 27 Jupiter diameters from cloudtops.	9:00:21 p.m.	Enter 33 minutes 31 seconds solar occultation - starts at 20 minutes, 58 seconds before periapsis.
9:21 p.m.	Planet occupies 1/7th (2.1°) of Pioneer's 14° view field - 3-inch diameter on a 21-inch TV screen.	9:00:42 p.m.	Enter Jupiter radio occultation (blackout) - duration 42 minutes 2 seconds. Starts 20 minutes 18 seconds before periapsis.
11-30-74 All day	Twenty-four images of Jupiter. Polarimetry of Ganymede, Callisto, and Jupiter.	9:21 p.m.	Periapsis - Pioneer is 42,828 km (26,613 miles) - 0.31 Jupiter diameters from cloudtops.
9:21 p.m.	All pictures from now until 48 hours after periapsis better than typical Earth telescope pictures. Average resolution in this 96-hour period 2 to 3 times better than telescope pictures. During these 96 hours Pioneer will return 40 pictures of the full planet, many pictures of portions of Jupiter's surface, 3 of Callisto, one each of Ganymede and Io.	9:33:52 p.m.	Exit solar occultation, 12 minutes, 33 seconds after periapsis.
11-30-74 9:21 p.m.	Two days from periapsis. Pioneer 2,813,000 km (1,748,000 miles) 20 Jupiter diameters from the cloudtops.	9:43:03 p.m.	Exit Jupiter radio occultation, 21 minutes 44 seconds after periapsis.
9:21 p.m.	Planet occupies 2.8° of Pioneer's 14° view field - 4-1/4-inch diameter on a 21-inch TV screen.	10:30 p.m.	Closest approach to Amalthea, 127,500 km (79,229 miles), 1.15 hours after periapsis.
11:28 p.m.	Ultraviolet photometer measurement of Callisto.	10:52 p.m.	Infrared measurement of Amalthea outbound - 1 hour 31 minutes after periapsis.
12-1-74 All day	Fourteen images of Jupiter, 2 images of Callisto. Polarimetry of Callisto, Io, and Jupiter.	11:00 p.m.	Start 4-1/2-hours Jupiter viewing period, outbound, for infrared instrument. Begins 1 hour 39 minutes after periapsis.
11:26 a.m.	Ultraviolet photometer measurement of Ganymede.	12-3-74 All day	Eleven images of Jupiter, 1 image of Io, polarimetry of Jupiter, Ganymede, and Callisto.
5:27 p.m.	Cross orbit of Callisto, outermost Galilean moon, at 1,812,800 km (1,125,295 miles).	1:30 a.m.	End 4-1/2-hours Jupiter view period for infrared instrument outbound. Ends 4 hours 9 minutes after periapsis.
9:21 p.m.	Pioneer 1 day from periapsis, 1,617,000 km (1,005,000 miles) - 11.5 Jupiter diameters from the cloudtops.	3:21 a.m.	Exit Radiation Belt at 3.5 Jupiter diameters from cloudtops, 6 hours after periapsis.
9:21 p.m.	Planet occupies one third (4.8°) of Pioneer's 14° view field - 7-1/4-inch diameter on a 21-inch TV screen.	7:58 a.m.	Infrared measurement of Io, outbound, 10 hours 37 minutes after periapsis.
9:21 p.m.	Begin best pictures of Jupiter. During the 24 hours before and after periapsis when Pioneer is within one million miles of the planet, pictures are much better than any from Earth, the best ever made of Jupiter except those taken by Pioneer 10.	9:21 p.m.	One day after periapsis. Pioneer is 1,617,000 km (1,005,000 miles) - 11.3 planet diameters from Jupiter.
10:18 p.m.	Infrared measurements of Callisto, inbound.	11:43 p.m.	Infrared measurement of Ganymede, outbound, 26 hours 22 minutes after periapsis.
12-2-74 All day	Eight images of Jupiter, 1 image of Callisto, 1 image of Ganymede. Polarimetry of Jupiter.	12-4-74 All day	Fifteen images of Jupiter. Polarimetry of Jupiter, Io, Ganymede, and Europa.
		9:21 p.m.	Two days after periapsis, Pioneer is 2,813,000 km (1,748,000 miles) from Jupiter.
		9:45 p.m.	Infrared measurement of Callisto, outbound, 48 hours 24 minutes after periapsis.
		12:00 midnight	Jupiter occupies 1/5 of 14° view field.
		12-5-74 All day	Eighteen images of Jupiter. Polarimetry of Europa, Ganymede, Callisto, Jupiter.
		9:21 p.m.	Three days after periapsis. Pioneer is 3,895,000 km (2,420,000 miles) from Jupiter.

(For further flight time information, contact Ames Public Affairs Office, Ext. 5091.)

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Chuck Kubokawa named TU Officer



The newly appointed Chief of the Technology Utilization Office is Charles C. "Chuck" Kubokawa, a human factors engineer at Ames since 1963. He is a graduate of UCLA, was an officer in the United States Air Force and an engineer in industry (the Rand Corporation and Philco WDL). Kubokawa has much to offer ARC in his new position. He feels that his background as a human factors engineer has enabled him to gain a very wide (as opposed to specialized) view of the technology that is developed at Ames.

Kubokawa explains, "I am now in the process of writing suggestions to those in key positions on how to efficiently and effectively disseminate technological information to the taxpaying public. I feel it is extremely important that this information be widely distributed throughout the country — especially to the non-industrial and university communities. There is no sense in keeping the technological discoveries here at Ames or only with our scientific community and simply regurgitating the data among ourselves.

"Each employee is responsible to the taxpaying public and should help promote proper awareness of NASA activities and its projects. The public's image of NASA must be changed if we are to continue working successfully for 'the benefit of all mankind.' The young people (new taxpayers, remember!) are not interested in landing on the moon. They are concerned about air and water pollution, job training the unemployed, medicare and crime, and are only vaguely, if at all, aware of the technology NASA is developing in these areas. Many forget or underestimate the vast amount of work NASA does for less than one penny out of each tax dollar budgeted for the space agency. It is interesting to note that even with all the budget cuts NASA has experienced, NASA is still one of only two government agencies which is showing an

(Continued on Page 2)

Dial-a-ride begins Nov. 24

The Santa Clara County Transit Commission will begin the new personalized dial-a-ride system on November 24 and the arterial, or fixed-route, system on December 22.

The arterial, or fixed-route, bus lines are the traditional system of regular scheduled buses along major streets. These routes are served by buses at frequent intervals and carry passengers from point to point along these routes. Timetables are available for each route Monday through Friday, Saturday, and Sunday/Holiday schedules. Passengers may board or depart arterial buses at any marked bus stop. Passengers may transfer wherever arterial lines intersect. Arterial bus lines also connect with Personalized Service Area buses at marked transfer points.

Door-to-door service is provided by Personalized Transit buses within each of 18 Personalized Service Areas, as indicated on the map at the left. These buses are smaller than the arterial buses and are designed to carry 25 people in comfort through neighborhood streets. They make a regular circuit to all transfer points within the Service Area and go from door to door in response to passengers' calls for pickup and delivery. They are directed by two-way radio from the Transit District's Control Center. Routing of the buses is computer controlled for maximum service. These buses will pick you up at your door and deliver you to any location within the Service Area or to a convenient transfer point.

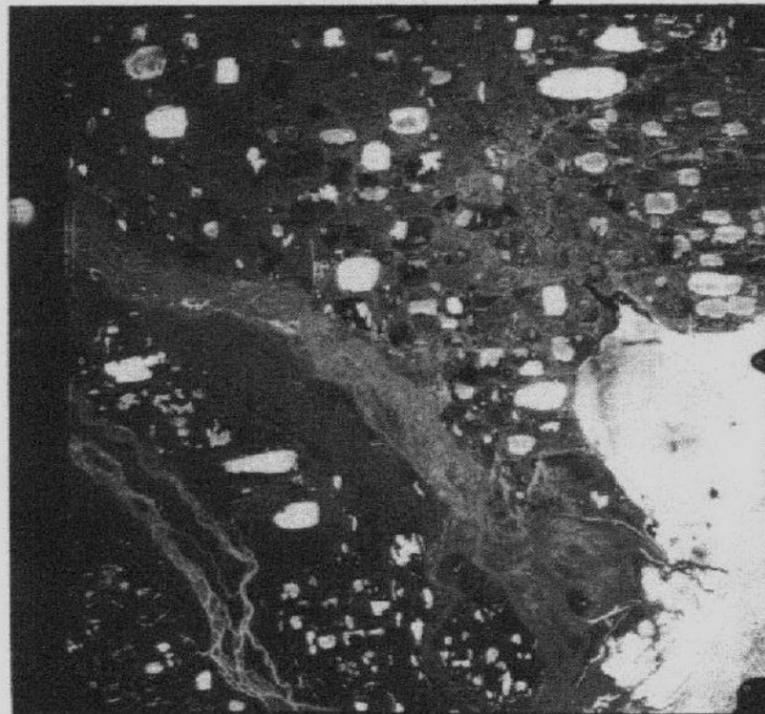
By combining the fixed route arterial system with the flexibility of Personalized Transit service within each Personalized Service Area, major population areas of the County are served with a system that fills the individual needs of passengers. Aside from morning and evening commuting, most travel is represented by short trips...to stores, schools, theatres, medical services and other needs within the community or Personalized Service Area. Such local trips are handled entirely by your Personalized Transit bus. For longer trips, your Personalized Transit bus will take you to the nearest arterial bus. It will take you either directly to your destination or to the appropriate Personalized Transit bus serving the Service Area in which your destination is located.

The fare is 25c for passengers 18 through 64 years of age and 10c for all others. Children under 5 are free when accompanied by a paying passenger.

Buses coming to Ames will currently stop at the Ames gate. The possibility of Ames employees forming other bus pools in addition to the one in operation now will depend on the demand

(Continued on Page 2)

Alaska pipeline terminal at Prudhoe Bay



A patchwork of frozen ponds and ice-covered Prudhoe Bay at the upper right stand out in this Earth Resources Survey Aircraft photo taken by NASA/Ames in June, 1974.

On the left bank of the silt-laden Sagavunivktok River running diagonally across the photo, the airfields of Prudhoe Bay, top center, and Deadhorse, lower center, are in operation to receive supplies for pipeline construction. Numerous smaller airfields, summer roads and winter trails can be located on the photo.

The infrared photo was made with a 6" focal length aerial camera aboard the NASA aircraft at an altitude of 65,000 feet. It covers an area of about 325 square miles. The photography was made in connection with a series of research flights to sample stratospheric particles conducted by Ames Research Center. The month long expedition to Alaska was based at Eielson Air Force Base near Fairbanks.

Ames library exhibits

The Ames Library is continuing to feature art exhibits in the main library.

The Ames Photography Club has established a continuing exhibit on the main stairwell landing and along the west wall of the first floor. Several interesting showings have been presented during the past few months. Currently they are exhibiting portraits.

For the past several months the Library has had a continuous showing of paintings by a peninsula group called "The Thirty and One Artists." They have maintained their exhibit for well over a year, changing the majority of paintings about every 4 months. A completely new showing began on November 4th.

Three Ames employees belong to the group: Jane Brown, through whom the exhibits have been obtained; Carey Fisk, an accomplished artist of many years; and George Fohlen. Two of George's paintings are featured in the present exhibit.

You may be familiar with the work of both of these groups. They have exhibits in several other Ames buildings.

Summer jobs for college students

The announcement "Summer Jobs in Federal Agencies" for 1975 is now available in the Personnel Office, Building 241, Room 133.

Those students who qualified for summer employment in 1974 based on the written test are not required to retake the test. However, their application must be updated by February 28, 1975. The forms for updating the application are attached to the above mentioned announcement.

If the student qualified for summer employment last year solely on grade point average, he/she must re-apply.

Those students who did not meet either of the above requirements must take the written test. The examination

(Continued on Page 3)

Health benefits
open season
Nov. 15-30

Length of Service Award photos

Kubokawa

(Continued from Page 1)
indirect profit for the taxpayers — the other being the U.S. Government Printing Office.”

Kubokawa thinks of the Tech Utilization Office's responsibility as being one step beyond that of the Public Affairs Office. He states, "Our job is to see that the end products are not only publicized but is also incorporated into private companies, hospitals, industries and is of benefit to everyone. By providing awards in terms of 'Tech Briefs' and 'Invention Awards,' our office encourages employees to participate in the creation of the technical information for public use.

"At the risk of sounding corny, I really feel that everybody has got to get out and beat the drum for NASA and Ames," he continues. "It's for the good of the oncoming generations. And programs such as the Speaker's Bureau, the Educational Services Office and the Youth Programs of the Training and Special Programs Branch are really doing good. More of us should be as aware of those who participate in such programs."

The San Francisco Bay Area community can be turned on to the goals of NASA and Ames if we work hard to publicize our research and its results. Kubokawa strongly feels that the pulse of all our national youth movements begin in the Bay Area and that the youth should be "NASA educated" so that the future tax dollar emphasis and delegation toward technology will be allotted fairly.

Dial-a-ride

(Continued from Page 1)
and the availability of a transit bus once this new system is in progress.

Ames Jetsetters news

An election of new officers for our travel club is long overdue. We feel we have overstayed our welcome, due to our desire to complete plans on upcoming events.

Rather than compile a list of prospective candidates, we are soliciting your help in supplying nominations. To be eligible for an office, you must be associated with Ames either as an employee, retired employee, or contractor.

If you are interested in running for an office, please telephone and submit your name and the office(s) you wish to hold. Your name will then be placed on the ballot which will be sent in December.

If you enjoy meeting people, have a talent for bargaining, and a desire to provide genuine help to other members, please submit your name.

Nominations are due by November 30.

Jeanne Clemson, ext. 5003

Jan Konrath, ext. 5539

Jeanette Remington, ext. 5609

Small business contracts increase

NASA contract awards to small business during Fiscal Year 1974 totaled \$181,247,000 — or 8.6 percent of all contracts — according to Ken Kier, the agency's Small Business Advisor.

This was the highest percentage of small business contracts awarded since 1962. Kier attributes the increase to an agency-wide effort for greater small business participation in NASA procurement programs.

During Fiscal Year 1974 NASA contract awards to both large and small business totaled \$2,118,627,000.

Peninsula artist's paintings in Ames library



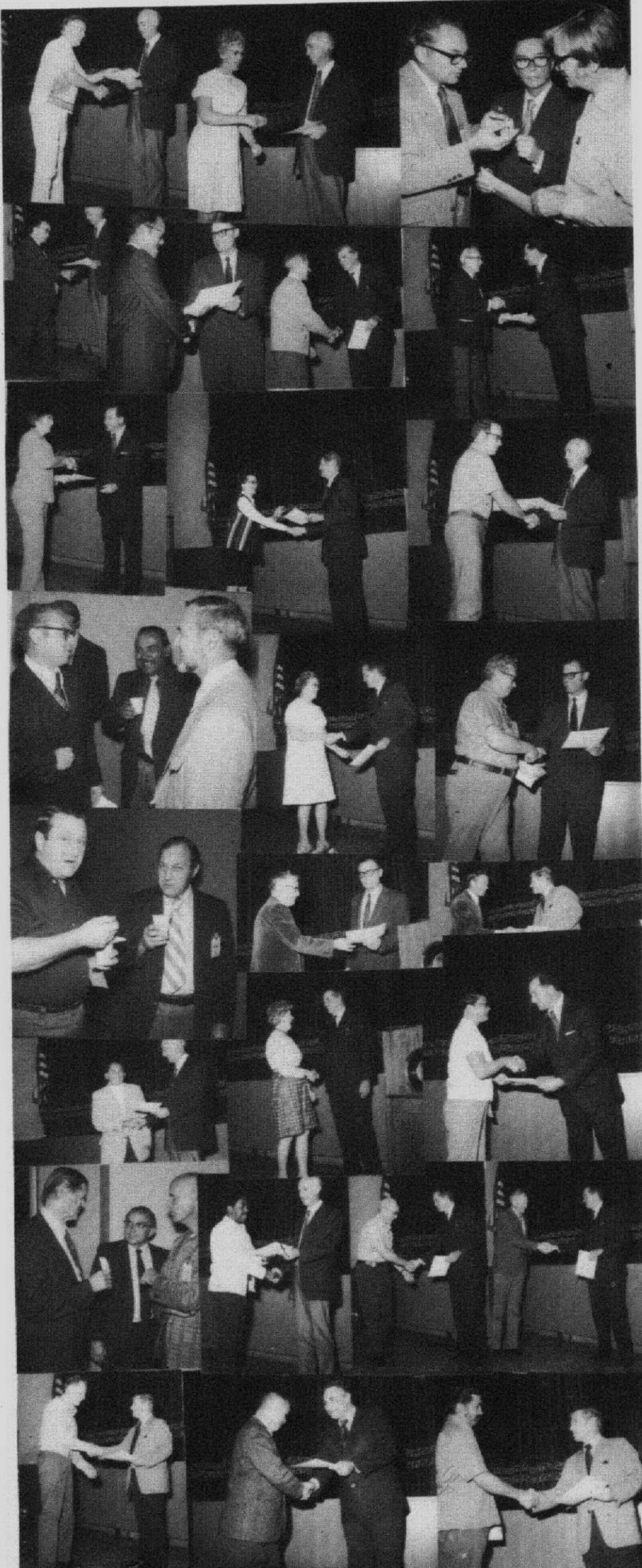
Local artist Marilyn Wheelwright will have some of her oil paintings on display in the Ames Library from November 18 through December 6.

Ms. Wheelwright has lived most of her life in San Mateo County where she studied art at the College of San Mateo, followed by specialized training in portraiture with Fred Robles.

Her earlier years were spent in Arizona where she developed a love of

the West and its people. This sensitivity is reflected in her paintings and has won for her many top prizes for Indian character studies. She also includes landscapes from the colorful Wasatch Mountains of Utah.

In her short career as a professional painter, Ms. Wheelwright's paintings have been widely shown throughout the Bay Area and Northern California.



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Initial Space Shuttle flights to land in California

Dr. James C. Fletcher, NASA Administrator, has announced that the first few Space Shuttle development flights will return from space to Flight Research Center at Edwards, California.

In a talk before the Antelope Valley Board of Trade, Lancaster, Dr. Fletcher stated: "We plan to make the first horizontal flight tests of the Shuttle Orbiter, launched from a 747 aircraft, at NASA's Flight Research Center at Edwards (Air Force Base). In addition, we plan to use Edwards as a secondary landing site for operational Shuttle flights when weather or other considerations make it desirable."

He continued: "We also plan to land the first few Shuttle orbital test flights at Edwards for the added safety margins and good weather conditions during these initial flights. To have the

Orbiter return to Antelope Valley for a landing after the first flight in space is quite appropriate."

The Space Shuttle, to be assembled in Palmdale, will be a reusable space vehicle designed for a wide variety of space missions in Earth orbit. Its primary launch and landing site will be the Kennedy Space Center.

Plans now call for horizontal flight tests of the Shuttle in 1977 and Earth orbital flight tests in 1979. When fully operational in 1980, the Shuttle will be able to retrieve satellites from Earth orbit; to repair and redeploy them; or bring them back to Earth for refurbishment and reuse. It can also be used to carry out missions in which scientists and technicians conduct experiments in Earth orbit or service automated satellites already in orbit.

Summer jobs (Continued from Page 1)

are as follows: If the application is received by December 13, 1974, the test will be given during the month of January; if received by January 17, 1975, the test will be given during the month of February.

It is important to note that students may not be considered in the same

department or agency in which a parent is employed until employment has first been offered to all other available applicants with the same or higher scores on the written test.

Opportunities at Ames are very limited this year, so it is wise for the student not to rely solely on obtaining a position here.

Army engineers win national R&D award



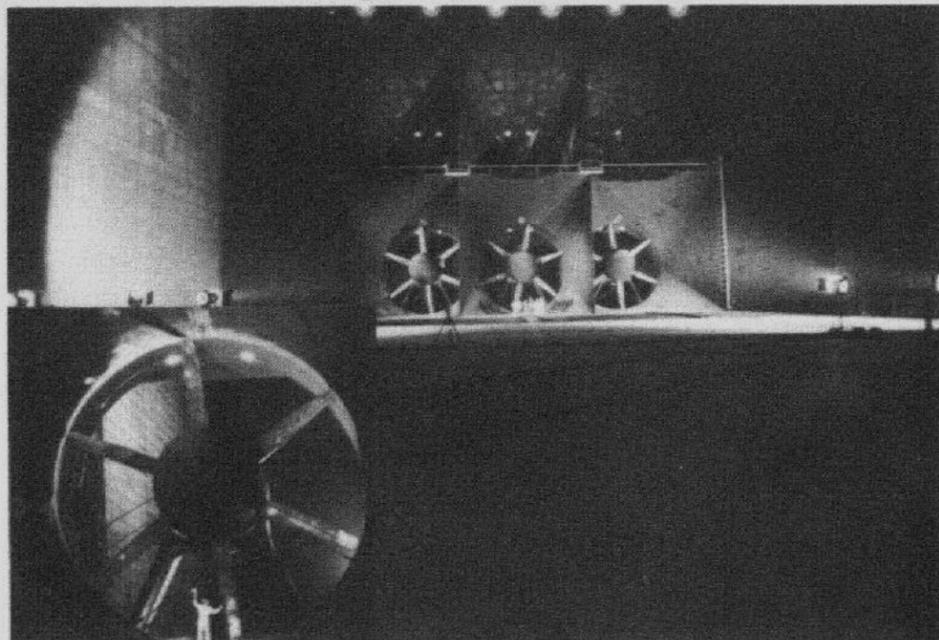
Lt. General John R. Deane Jr. (L), Deputy Chief of Staff for Army Research, Development, and Acquisition, and Dr. Hans Mark, NASA/Ames Director (R), pause during ceremonies with Army award winners Dr. Fredric H. Schmitz (2nd, L) and C. Rande Vause (3rd, L).

Dr. Schmitz and Mr. Vause, engineers employed with the U.S. Army Air Mobility R&D Laboratory (AMRDL), Ames Directorate, Ames Research Center, developed an award-winning technique which enables heavily loaded helicopters to get off the ground in a much shorter take-off area. The new technique has applications for commercial as well as military uses.

The researchers received an award citation and plaque from Lt. Gen. Deane during ceremonies held recently at AMRDL Headquarters.

The citation states, "In recognition of contributions to the Army's air mobile concept by development of a near-optimal helicopter take-off technique. Dr. Fredric H. Schmitz and Mr. C. Rande Vause are awarded the Army Research and Development Achievement Award. This achievement was accomplished by combining sophisticated optimal control analyses with a detailed helicopter performance model to define near-optimal take-off trajectories yielding a simplified and practical solution to the heavily loaded helicopter take-off problem. Their contributions in this research effort have proven their dedication to research and have materially enhanced the defense posture of the United States through substantial improvement of take-off technique of the heavily loaded helicopter."

40' x 80' wind tunnel a "star"



The 40 X 80 wind tunnel was the star of the show last week (10/23-24/74) when it was lit up by six of the largest movie lights that can be rented. This shot was for part of a film being made on Ames Research Center.

The six big movie lights lit up the section of the 40 X 80 wind tunnel where the large fans are located. The photo shows the six large fans and five of the six lights in the foreground. The smaller photo shows the size of one of the large fans as compared to a man.

Scuba club

All Ames personnel (government & contractor) interested in participating in the formation of an ARA associated "Scuba Club" are invited to attend a meeting on November 22 (Friday) at 11:30 a.m. in Building 239, basement conference room (B-39).

The purpose of the meeting will be to determine if sufficient interest exists to justify forming a club. For further information contact Dick Simmonds at extension 6390.

Universal time

According to the Communications Branch, by dialing 6112 on the field, anyone at the Center may obtain a universal time message.

Universal time is Greenwich Mean Time, commonly referred to as Zebra or Zulu Time. In order to get local West Coast Standard Time, one would subtract 8 hours. For Pacific Daylight Time, one would subtract 7 hours.

ACE winter-spring schedule

The following ACE television classes begin in January and February. Day, dates, and time are in parenthesis:

Policy Formulation & Administration (MW, 2/3-5/14, 7:00-8:15 a.m.); International Marketing (TTh, 2/4-5/15, 7:00-8:15 a.m.); Communications & Organizational Behavior (MW, 2/3-5/14, 7:00-8:15 a.m.); Applied Statistics in Management Decision Making (MW, 2/3-5/14, 12:00-1:05 p.m.); Management & Organizational Behavior (M, 1/6-3/24, 5:00-6:45 p.m.); Principles of Marketing (W, 1/8-3/26, 5:00-6:45 p.m.); Accounting for Managers (Th, 1/9-3/27, 5:15-7:00 p.m.); Management & Organizational Behavior (M, 1/6-3/24, 5:00-6:45 p.m.); Accounting for Managers (Th, 1/9-3/27, 5:15-7:00 p.m.); Practical Transistors* (MW, 1/6-2/26, 4:05-4:50 p.m.); Digital Troubleshooting Techniques I (M, 1/6-3/10, 5:00-6:45 p.m.); Applications of Minicomputers (W, 1/8-3/12, 7:00-8:45 a.m.); Introduction to Chemical Engineering (TTh, 1/7-3/13, 7:15-8:15 a.m.); Calculus Revisited I* (TThF, 1/7-3/28, 12:20-1:05 p.m.); Introduction to COBOL Programming (W, 1/8-3/26, 5:00-6:45 p.m.); Intermediate Algebra (TTh, 1/7-3/27, 12:00-1:00 p.m.); Technical Report Writing (Th, 1/9-3/27, 5:00-6:45 p.m.); Basic Accounting (MW, 1/6-3/26, 12:00-1:00 p.m.); Elements of Supervision (T, 1/7-3/25, 4:45-6:30 p.m.); Managing the Telecommunications Function (M, 1/6-3/24, 5:30-7:15 p.m.); Basic Conversational French II (MWF, 1/6-3/28, 12:10-1:05 p.m.); Effective Reading* (TTh, 1/7-2/6, 12:00-1:00 p.m.); Time Management* (TTh, 2/11-2/27, 12:00-12:45 p.m.); Management by Performance Measurement (F, 1/24-3/28, 12:00-12:45 p.m.); Technology Assessment** (TTh, 1/28-5/22, 4:15-5:05 p.m.); System Dynamics** (TTh, 1/28-5/22, 12:20-1:05 p.m.); Decision Analysis** (WF, 1/29-5/23, 12:05-12:55 p.m.); Strategic Corporate Planning: Energy** (M, 1/27-5/19, 12:05-12:55 p.m.).

*Video Tape Program

**All registration processes for San Jose State University courses to be handled directly with the Registrar of SJSU.

For further information, contact the Training and Special Programs Branch, ext. 5622.

Speakers Bureau

William Borucki (Theoretical Studies Branch) presented "Ball Lightning—Theory and Experiment" to a seminar sponsored by the Department of Meteorology of San Jose State University. The seminar was held November 5.

Robert "Skip" Nunamaker (Deputy Manager, Pioneer Project) was the banquet speaker for the Santa Clara Valley Section of the American Society of Mechanical Engineers, following their tour on October 17 of Ames. Skip spoke on "Pioneer 10 and 11 — Space Odyssey to Jupiter."

S. N. "Sy" Stein, M.D., (Guest Scientist) will address the Senior Seminar class of the Electrical Engineering Department, on Monday, December 9. Sy will talk about the relationship between NASA's engineering advances and medical science.

Barbara Busch (Educational Programs Office) gave the opening lecture for the Adult Education Program of Congregation Beth David of Saratoga. She spoke on "Man and Cosmos" and discussed how NASA's space exploration activities are widening mankind's view of the universe.

Edwin Erickson (Head, Airborne Infrared Astronomy Group) spoke on "Astronomical Far-Infrared Fourier Spectroscopy" to the annual meeting of the Optical Society of America. The meeting was held on October 15, in Houston, Texas.

Richard "Dick" Haines (Man-Machine Integration Branch) was the guest speaker for the Santa Clara Chapter of the American Institute of Interior Design, on November 19. At the chapter's meeting, held at San Jose State University, Dick presented "Color Design for Habitability."

On November 26, George Holden (Simulation Sciences Division) will be the guest of the National Sojourners at their evening dinner meeting at the Moffett Naval Officers Club. George will describe Ames' work in the simulation areas.

On November 23, two Ames employees will participate in the all-day "Air Explorers Day" conference hosted for Explorer Scouts of the San Francisco Bay Area. During the afternoon session, John Cowley (Pioneer Project) will describe the Pioneer 10 and 11 missions. Jon "Jack" Addison (Flight Operations Branch) will be the evening after-dinner speaker and will describe some of the work Ames is doing in aeronautics research.

Dr. Delbert Philpott (Head, Biological Ultrastructures Lab) presented two invited lectures at San Joaquin Delta College in Sacramento, on October 30. The college has a two-year program to train technicians in the field of electron-microscopy, and Del addressed the freshman section on "Electron Microscopy in the Space Program" and the sophomore

section on "Biocore Radiation Experiment."

Astronomer Sanford Kellman (at Ames, under contract to Foothill College) spoke to the Mentally-Gifted Minor program for grades 2-6 of Oak Grove School District, on November 19. At the program, held at Calero School in San Jose, Sanford presented "What Galaxies Have to Teach Us about Living on Earth."

Sanford also was the guest on KOME-FM's talk show on Sunday morning, November 3. The radio station claims an audience of 50,000 for the Sunday morning three-hour program, and once the listeners realized that Sanford was NOT Joan Baez (who had been the originally-scheduled guest), they phoned in several dozen questions on such topics as black holes, quasars, science and astronomy, galaxies, and varying views of education.

Basketball

The baskets in Sunnyvale High gym are smoking again this year due to the annual commencement of the All Ames Basketball League games. The Beer Barrels found the hoop first this year, rolling over MAD 56 to 29. Dale Filbert led the attack with 14 points. Tom Almojuela also scored 14 points to give Pumas a 45 to 32 victory over the Jets despite the valiant play of the Jet's veteran — Bruce Ganzler. Chausee of the Spoilers hit for 16 in the win over ARO 47 to 37. Games are played at 7, 8 and 9 o'clock, Wednesday nights.

GOLF

Pasatiempo Golf Course — October 12, 1974 — Director's Club — Point Par — Tournament Chairmen: M. Radovich, A. Petretti, P. Barisich — Director's Club Champ: L. McCulley — Net 68 — Point Par Winners:

1st Flight: 1—R. Eddy, 2—M. Orozco, 3—Tie: J. Lee, D. Banducci.

2nd Flight: 1—L. McCulley, 2 H. Matthews, 3—Tie: C. Eddy, L. Hockstien.

3rd Flight: 1—Tie: M. Walsh, J. Silver, S. Brovarney, 2&3—Tie: A. Lopez, E. Menefee, B. Nevotti.

4th Flight: 1—S. Daligcon, 2—P. Strawbridge, 3—Tie: R. Dowell, B. Gray. Beautiful day for 60 players. Tough golf course — a lot of high scores.

Winners of the Riverside Tournament, November 2, 1974:

1st Flight: 1—F. Lazzeroni, 2—M. Orozco, 3—A. Petretti, 4—D. Banducci, 5 R. Hedlund, and 6—J. Lee.

2nd Flight: 1—J. Cayot, 2—E. Magee, 3 L. Brennwald, 4—H. Matthews, 5 J. Nelan, and 6—M. Radovich.

3rd Flight: 1 A. Lopez, 2—S. Daligcon, 3 F. Moore, 4 B. Nevotti, 5—C. White, and 6 M. Walsh.

4th Flight: 1 E. Levin, 2 K. Bruck, 3 R. Oyama, 4 P. Strawbridge, 5 M. Kelley, and 6 T. Nelan.

Longest Drive: R. Ramos; Closest-to-Pin: H. Wygant (Men) and N. Krouse (Women).

WANT ADS

Transportation

FOR SALE — '66 CHRYSLER 300. Runs good and all accessories work. Needs rubber and one fender. \$250 or best offer. S. Benbow, 969-1494.

'74 El Camino Pickup, low mileage. PS/PB, Auto, T, Radio, (reasonable), Gem GT Top, 946-0167 after 5 p.m.

OPEL GT '71 AM-FM, mags, sharp green. Must sell. Make OFFER. Call Bob Taylor, 248-8266.

Chev. '71 Vega Wagon, 4-spd, 3K miles since new head & valve grind. \$1400 or best offer. 867-0958

'69 Toyota, AT, 4 dr, 60,000 miles, very good condition, \$800. Sally 961-4717.

Ski Club

No snow yet, but nevertheless the season is off with a bang. A slate of Officers has been elected, a Canadian Rocky Mtn. ski trip is nearly sold out, and an early December weekend trip to Heavenly Valley has just been announced. Terry Nowicki is the trip leader and the group is staying at the Waystation, So. Lake Tahoe. Wine and snacks will be provided on the bus. Phone Terry, Ext. 5014 for more information. Of particular interest is a mid-week trip to Mammoth, February 9-14, which is in the planning stage. We are attempting to make this a charter flight from San Jose, thus avoiding the 16-hour round trip bus time. The trip announcement will be out shortly.

The following is a list of trips that are currently firm, other trips are being planned.

Heavenly Valley — December 13-15 — Leader: Terry Nowicki, Ext. 5014
Mammoth — February 9-14 — Leader: Ralph Maines, Ext. 5589

Banff — March 8-15 — Leader: Denise Rochette, Ext. 5131

If you would like more information on any of the above trips, phone the trip leader. Hope you can join us on one or more of our trips this ski season.

Emergency phone calls

Emergency telephone calls are often received during off-duty hours for personnel working at ARC. Unfortunately, some of the calls cannot be completed until the next working day because the home telephones on file are incorrect, and the information operator is unable to locate them. To prevent this from arising in the future, Ames employees should submit ARC Form 208 whenever their home telephone number changes. All others should report changes to the Pass and Decal Office, extension 5590. Home telephone numbers are never released but rather, the caller's number is taken and a call is placed to the person who needs to be contacted.

'70 International Travelall — Air cond., p.s., p.b., 16 mps, very good condition. \$1900/offer. 967-6329

'71 Ford Econoline — Custom-built camper, cabinets, toilet, bed, 36,000 mi., \$2900. 967-6329

Housing

HOUSE FOR RENT: 3 Bedrooms, 2 Bath, carpets, drapes, stove, refrig. Available Nov. 20, \$250/mo. Lakewood Village, S.V., 967-0976.

FOR RENT MILPITAS: AVAILABLE DEC. 1, 4 bedrooms, 2½ baths, separate living, dining & family rooms. \$375. 262-8061.

So. Lake Tahoe Townhouse. 2 Bedroom, 2 Bath. Completely furnished, including fully equipped kitchen. Sleeps 5. Available Dec. 1 to Feb. 1. \$150 per week, or reduced rate by the month. S. Benbow, 969-1494.

For Lease — Beautiful Glenmoor Gardens in Fremont, 3-Bedroom, 2-Bath, all electric kitchen, separate family room with fireplace, carpets & drapes, 2-car garage. Large lot, 85X110. Free membership in swim and racquet club, near all shopping, schools, & BART. \$325 a month — Al Ghan, 269-5578.

ROOMMATE NEEDED: Student working at Ames would like to share apartment with someone in Mtn. View-Moffett Field area. Call 253-8724.

Miscellaneous

FOR SALE: 1. Magnus organ, table model. Large size (21 keys), like new, \$20. Call 321-1858.

2. Danish chairs (a pair), very good condition. Both for \$39. Call 321-1858.

Ladies Austrian made ski pants. Size 14 regular. Navy blue. Worn once. Perfect condition. Call 297-3843.

Kid's Skis — new 150 cm Kastle — no bindings—\$30. Wehrend, 326-7925 after 5:p.m.

Small Utility Trailer — 13 inch wheels, 4 ft X 6 ft bed with 4 ft sides. Ideal with subcompact cars. \$75. Paul Nichols, 736-5280.

For Sale: ENCYCLOPEDIA BRITANICA, 23 volumes plus index volume and 4 year books ('71-'74). 1970 edition, perfect condition. Over \$500 when new. Special bargain at \$300. Phone 967-9203.

LOST: Load-displacement charts in a green binder. The charts are fracture toughness test results for A-70 (12 ft wind tunnel) steel. They were last seen in Bld. 240, materials lab. about July 1973. Please contact R. Hampton, X6315, 213-4.

10-Speed Bicycle. 17½-inch yellow and black Peugeot. Size ideal for smaller adults and teenagers. Superb condition. 7 months old. Will sell for \$85 or best offer. Call 997-1357.

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