Griffin steps down as Center Director

Gerald D. Griffin, Director of the Johnson Space Center since August 1982, has announced his plans to leave the Agency effective Jan. 14. No successor has yet been named to become the fourth director of the Center since 1961.

JSC Deputy Director Robert C. Goetz will become Acting Director upon Griffin's departure.

Griffin, who will turn 51 Christmas Day, leaves to become President of the Houston Chamber of Commerce. He has served with NASA for more than 20 years in a number of key positions, not only at JSC, but at three other NASA Centers and at Headquarters.

Griffin also served in the U.S. Air Force and in the aerospace industry.

"It was a tough decision to leave NASA, but I am looking forward to the challenge and opportunity as president of the Houston Chamber of Commerce," Griffin said. "I'll spend the next month tying up a few loose ends. I'll depart with the comfort that the NASA team of government, industry and university people will continue their outstanding job in space activities for this country."

William R. Graham, NASA Acting Administrator, said of Griffin, "As one of NASA's key senior executives, Gerry has had a long distinguished career. He has received many honors and awards in recognition of the contributions he has made, both to aeronautics and space. We shall all miss him very much and wish him great success as he moves on to new accomplishments."

Griffin was honored in Washington, D.C. last week when he was awarded the Presidential Rank of Distinguished Senior Executive.

During his three-and-one-half year tenure as JSC Director, the space program has passed through several major milestones. As Griffin was assuming the job in the fall of 1982, the Space Shuttle was being certified as operational. Nineteen Shuttle missions later, the flight rate has increased dramatically, from one mission every two months or so to once a month, and the demands on personnel and budgetary management have increased accordingly.

Griffin played a key role in the naming of JSC as lead center for the Space Station Program, and

(Continued on page 2)

Gerald D. Griffin

NASA
Lyndon B. Johnson Space Center
Space News Roundup

Vol. 24 No. 23 December 20, 1985 National Aeronautics and Space Administration

Sprucing up for the Holidays

Agency leadership changes made at NASA Headquarters

Dr. William R. Graham has assumed the role of NASA Acting Administrator during the leave of absence which has been granted by the President to Administrator James M. Beggs.

Beggs will be on a leave of absence from the Agency until the legal action he is involved in has been resolved.

Graham has established the post of General Manager of NASA and has appointed Philip E. Culbertson, present Associate Administrator of the Office of Space Station, to that post.

John D. Hodge, Culbertson's deputy, has been appointed by Graham to become the Acting Associate Administrator for Station.

Graham was confirmed by the Senate Nov. 26 to be Deputy Administrator of NASA, filling the post which had been vacated by Dr. Hans Mark when he left to become Chancellor of the University of Texas system. Graham has served for the past three years as the Chairman of the President's General Advisory Committee on Arms Control and Disarmament. He is a former employee of the Rand Corp. and of the Air Force Weapons Laboratory at Kirtland AFB. He was a founder of and executive with R&D Associates.

Culbertson was appointed Associate Administrator for the Office of Space Station on Aug. 1, 1984. Before assuming that role, he was Associate Deputy Administrator of NASA. He also served as assistant for Space Transportation Systems from 1979 to 1981. His career with NASA began in 1965.

JSC, Rockwell sign final STSOC contract Dec. 5

The Johnson Space Center signed a cost-plus-incentive/award-fee contract with Rockwell Shuttle Operations Company of Houston Dec. 5 for Space Transportation System Operations (STSOC).

Rockwell was selected for negotiations September 12, 1985 from among four aerospace industrial teams competing for the contract. Starting January 1, 1986, the first two years of the contract are estimated to be valued at $378,536,000. The follow-on two-year extension option from January 1, 1988 through December 31, 1989 is valued at approximately $374,320,000 for a four-year total of $752,846,000.

Rockwell's STSOC tasks will include project management, maintenance and operations of the Mission Control Center, the Shuttle Mission Simulator, the Shuttle Avionics Integration Laboratory, the Software Production Facility and the Central Computing Facility; sustaining engineering, flight preparation requirements and analysis, flight preparation production, and direct mission operations, testing and support for Space Shuttle operations at JSC.

The Rockwell team includes Bendix Field Engineering Corp., Columbia, MD; System Development Corp., Camarillo, CA; Omniplan Corp., Santa Monica, CA; RMS Technologies, Inc., Landover, MD; and System Management American Corp., Norfolk, VA.

Remote sensing uncovers pre-Incan ruins

Remote sensing technology has uncovered information that suggests a civilization existed in the subtropical Peruvian jungles prior to the Incas.

Tom Sever, NASA's principal investigator at the National Space Technology Laboratories, and Tom Lennon, archaeologist and co-director of the University of Colorado's Rio Abiseo National Park Project, jointly completed a 5-day expedition into the jungles of Peru's Rio Abiseo National Park after remote sensing, by satellite and aircraft, permitted the explorers to map and prioritize the field investigation sites.

Prior to the field exploration, Cerro Central, the largest site including more than 250 buildings, was discovered by the remote sensing operation. The ancient site of Gran Pajaten, which included only 30 buildings, previously had been the major point of interest. Sever said, "We know now that Pajaten is probably the smallest and least important of the sites. We are fairly confident that we have approached the very edges of a new civilization and we believe that the farther in we go, the higher and more complicated the elevation of architecture and civilization will be."

Sever said some plant and animal species, thought to be extinct, were discovered. "That is the reason the expertise of more than 30 support people and interdisciplinary scientists was required on the expedition. Lou Whitacker, who climbed Mt. Everest in 1981, was brought in with his team to scale cliffs from which we could see the buildings, but we had no way to reach them."

A materials dating process is currently underway to determine when the civilization existed. Sever continued, "Our guess right now is that the civilization was pre-Inca because the architecture is circular and statuary have very delicate motifs, in comparison with the Inca ruins which are long, narrow structures with corner bases. This civilization built a totally different and perhaps more advanced architectural style than has been seen in the Inca civilizations." He concluded, "The Inca expanded dramatically in a short time. Apparently, the newly-discovered ruins are from a much more complicated civilization, but they had no desire to expand. Perhaps their empire extended into the Amazon Valley. We are not sure."

NSTL was asked to collaborate in the investigation with the University's Anthropology Department because of the installation's expertise in satellite remote sensing and image analysis.

According to Sever, NSTL remote sensing specialist and archaeologist, the investigation represents the best example of remote sensing application and perhaps the only known means by which the objectives of this project could be obtained. "The job certainly could not be accomplished on foot of by ground survey. We are dependent upon remote sensing because the jungle-cloud-forest environment is treacherous and extensive. Thus, we needed to prioritize where to send the field investigators."

Space News Briefs

Pricing decided for DOD flights

NASA and the Department of Defense have reached agreement on a pricing and reimbursement policy for DOD use of the Space Shuttle from Fiscal Year 1989 through FY 1991. The new agreement establishes an average price of $60 million (in FY '82 dollars) for each DOD launch. That average is based on the estimated cost to fly, and on an exchange of launch and range support services between DOD and NASA. Also part of the agreement is a fixed price coupled with an incremental price. The fixed price total per year is $270 million, based on $30 million for each of the DOD's projected nine flights per year. That amount will be paid regardless of the number of missions which actually fly. The incremental amount will be an additional $30 million for each mission actually flown.

ER-2 operates out of Ellington

For the past two weeks, a NASA ER-2 high-altitude research aircraft has been operating out of Ellington Field as part of a photographic survey effort of areas of Louisiana and Texas. The ER-2 is similar to a U-2 surveillance aircraft, but is distinguished by a longer wingspan. The flights originating at Ellington were performed for the Army Corps of Engineers, the Fish and Wildlife Service and the Forest Service and surveyed wetland areas of Louisiana and Texas suspected of Pine Beetle infestation.

Bulletin Board

NMA to meet Jan. 22

The next meeting of the JSC Chapter of the National Management Association will be held Wednesday, Jan. 22 at the Gilruth Recreation Center. The social hour will begin at 5 p.m., followed by a dinner meeting at 6 p.m. For more information, call Lupita Armendariz at x3041.

Viking Project reunion planned

The year 1986, besides being one of the most active years in space science since the late 1970s, will also be the tenth anniversary of the Viking Project landings on Mars. Accordingly, a tenth anniversary reunion has been scheduled for July 19, 1986 at the Langley Research Center. For more information, contact Jesse Timmons, Mail Stop 433, NASA Langley Research Center, Hampton, VA 23665. Timmons can also be reached at (804) 865-4621.

Astronomy brown bags scheduled

The weekly astronomy brown bag seminars, held every Wednesday from noon to 1 p.m. in Bldg. 31, Conference Room 193, will start the new year on Jan. 8 with Dan Whitmire of the University of Southwest Louisiana. Whitmire will discuss comet showers and theories which lead many scientists to believe that a 10th planet circles the Sun far beyond the orbit of Pluto. On Jan 15, Faith Vilas of NASA and Andrew Seacord will report on the Division of Planetary Sciences Meeting held in Oct. 1985 and on the American Astronomical Meeting to be held in January. On Jan. 22, Al Jackson of CSC will discuss the Voyager II close encounter with Uranus. An open discussion will mark the Jan. 29 meeting, and Charles Campbell of Lockheed will discuss developments in dynamic Earth atmosphere models at the Feb. 5 meeting. For more information on these astronomy meetings, call Al Jackson at 280-2285.

Next issue is Jan. 10

The *Roundup* will take a week off for the holidays, and resume publication Jan. 10, 1986 with the first issue of its 25th year of publication. The deadline for that issue is close of business Jan. 1. All advertisements submitted to the *Roundup* Swap Shop which do not appear in this issue will be carried over to the Jan. 10 edition.

Gilruth Center News

Call x3594 for more information

Defensive driving — Learn to drive safely and qualify for a 10 percent reduction in your auto insurance for the next three years. This class meets Jan. 18 from 8 a.m. to 5 p.m. at a cost of $20 per person. Space is limited.

Ballroom dance — Learn the basics of such steps as the rhumba, the foxtrot, the cha cha and the waltz in this eight week class which will be offered to beginning, intermediate and advanced dancers starting Jan. 2. Beginners and intermediates will dance from 8:15 to 9:30 p.m., while the advanced group will dance from 7 to 8:15 p.m. The cost is $60 per couple, with no individual registration.

Yoga — Gain inner peace and better control of your body in this class consisting of classic yoga exercises. The eight-week course begins Jan. 14 and runs from 7 to 8 p.m. The cost is $28 per person. Space is limited.

Intermediate bridge — This course, taught by an ACBL Life Master, will meet from 7 to 9 p.m. beginning Jan. 7 and running for 7 weeks. The cost is $40 per person.

Country western dance — This six week course offers sessions for intermediates and beginners starting Jan 13. Intermediates will meet from 7 to 8:30 p.m., beginners will meet from 8:30 to 10 p.m. The cost is $20 per couple.

Instructors needed — If you are proficient in teaching a leisure class which may be of interest to JSC employees, the Rec Center could use your services. Call Helen Munk at x3594 to discuss details.

NASA
Lyndon B. Johnson Space Center
Space News Roundup

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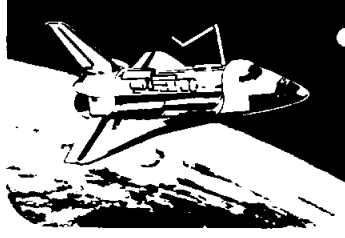
Editor.....Brian Welch



Griffin announces departure

(Continued from page 1)

was instrumental in the management philosophy the Center has adopted to conduct two major spaceflight programs at once. The Space Transportation Systems Operations Contract (STSOC), and the Flight Equipment Processing Contract (FEPC), are the two most tangible results of that management philosophy.

Griffin also has worked to strengthen ties between JSC and the University of Houston-Clear Lake, and took a leading role in NASA's effort to promote productivity improvement and quality enhancement.

Griffin's first chance to address employees after the announcement came at the Honor Awards Ceremony Dec. 17 in the Teague Auditorium. He said the awards were indicative of the talent at JSC. "One of the things that helped me make this difficult decision to move on," he said, "is the depth of outstanding talent we have here."

Goetz, JSC Deputy Director since July 1983, came to Houston from the Langley Research Center where he was Director for Structures. In his role as Deputy Director, Goetz has managed the major space vehicle and space development programs underway at JSC.

Goetz was a member of the Technical Evaluation Team of the NASA Space Shuttle Source Evaluation Board in the early 1970s during the infancy of the program. He was also awarded a NASA Exceptional Service Medal in 1981 for his work on the certification efforts for the Shuttle thermal protection system prior to STS-1.

Goetz served in several management positions at Langley, where he worked from 1959 to 1983, and also served as manager of structures and dynamics research in the Office of Aeronautics and Space Technology at NASA Headquarters.

Season's Greetings

With the Holidays upon us, I want to take this opportunity to congratulate all of you on a job well done during 1985, and to wish the JSC community all the best for the coming year.

As you know I have made the decision to leave Federal service in January to join the Houston Chamber of Commerce as President and Chief Executive Officer. It was a very tough decision to reach, but I leave with the knowledge that the JSC team is the best in the world and that you will continue to keep our country first in space. I have taken special pride during these last three years in how the people of JSC have responded to a series of historic challenges. In the last 12 months especially, the challenges have been great. For many of you, the challenges of the Space Shuttle's record flight rate meant ten- and twelve-hour days and long work weeks. Others have given of their time and energy in support of the Space Station effort and the transition to STSOC. In a variety of other programs, such as through the NASA Employee Teams and employee suggestions, JSC people have proven over and over their dedication to our task and their ability to carry it out through sheer talent and exuberance.

And in many other areas, from engineering to space and life sciences, our people have consistently shown themselves to be among the very best in their fields. In retrospect, the year has been busy and productive, yet also not completely problem free for the Federal workforce. Yet even with a Federal debt ceiling problem, continuing resolutions and pay freezes, the employees of JSC still showed outstanding generosity in the recent Combined Federal Campaign. Through the contributions of over 93% of the Civil Service employees here, JSC was able to exceed its goal for 1985 and has pledged a record total of over $250,000.

In all respects then, from your talents and willingness to pitch in and do the job, to your generosity and support of the Center's goals, you remain the source of great pride and further strengthen my belief that there are none better than the people of JSC.

Best wishes of the Season, and happy holidays to all of you.

Gerald D. Griffin

Green to head Public Affairs

The appointment of Shirley M. Green as director of public affairs for the National Aeronautics and Space Administration was announced last week by Thomas P. DeCair, associate administrator for external relations.

She replaces Frank S. Johnson Jr., who has been appointed assistant associate administrator for external relations (special projects).

Green comes to NASA with 20 years experience in communications and management. She will be responsible for planning and directing the full range of NASA activities to provide information to and respond to inquiries from the public and the media.

Since 1981, she has held the positions of deputy and acting press secretary to the Vice President of the United States. During that time she was responsible for planning and coordinating media activities for the Vice President on matters of domestic policy, including the Task Forces on Regulatory Relief and Drug Interdiction. She accompanied the Vice President to 61 foreign countries, coordinating all media activities.

A native Texan, Green is a former chairman of public affairs for the Texas Federation of Republican Women, press assistant to Congressman Bob Price and recipient of the Ten Outstanding Republican Women award in Texas. She is a member of the American Newswomen's Association and recently was selected for the Who's Who of American Women.

She received a bachelor of business administration degree from the University of Texas in 1956. She has two grown daughters who reside in Texas.

ICE results portend possible changes in Halley measurements for armada

Results from the ICE probe's flyby of Comet Giacobini-Zinner in September indicate that the spacecraft armada now closing on Comet Halley may need to begin measurements sooner than planned.

Those and other findings of the International Cometary Explorer were made public last week by scientists from the U.S., France, the United Kingdom and West Germany.

Although some data transmitted back to Earth by the ICE spacecraft confirmed the traditional portrait of a comet, other information received was unexpected. The data was collected by NASA's Goddard Space Flight Center.

Perhaps the most unexpected result was detection of electrical wave (plasma) disturbances and high speed, molecular species coming from the comet more than a day before the rendezvous. Detection of the electrical waves, while ICE was 1,429,200 miles away from the comet, was made by the spacecraft's Plasma Wave Experiment developed by Dr. Frederick Scarf of TRW. Scientists had theorized the first detection might occur just a few hours before the spacecraft crossed the comet's tail.

A few hours after initial detection, but still 1 day prior to the intercept, two of the ICE's instruments discovered electrically-charged particles (ions) as far as 1,130,000 miles from Giacobini-Zinner.

The ions were detected by the Energetic Proton Experiment and the Low-Energy Cosmic Ray Experiment, the former directed by Dr. Robert J. Hynds, Imperial College, London, England; the latter directed by Dr. Dieter Hovestadt of the Max Planck Institute for Extraterrestrial Physics in Garching, West Germany.

According to Hynds, it is believed that the gas molecules escaping from the comet's nucleus were ionized by solar ultraviolet light and then picked up and accelerated back toward the comet by the solar wind, a constant outpouring of magnetized, electrified gas from the Sun.

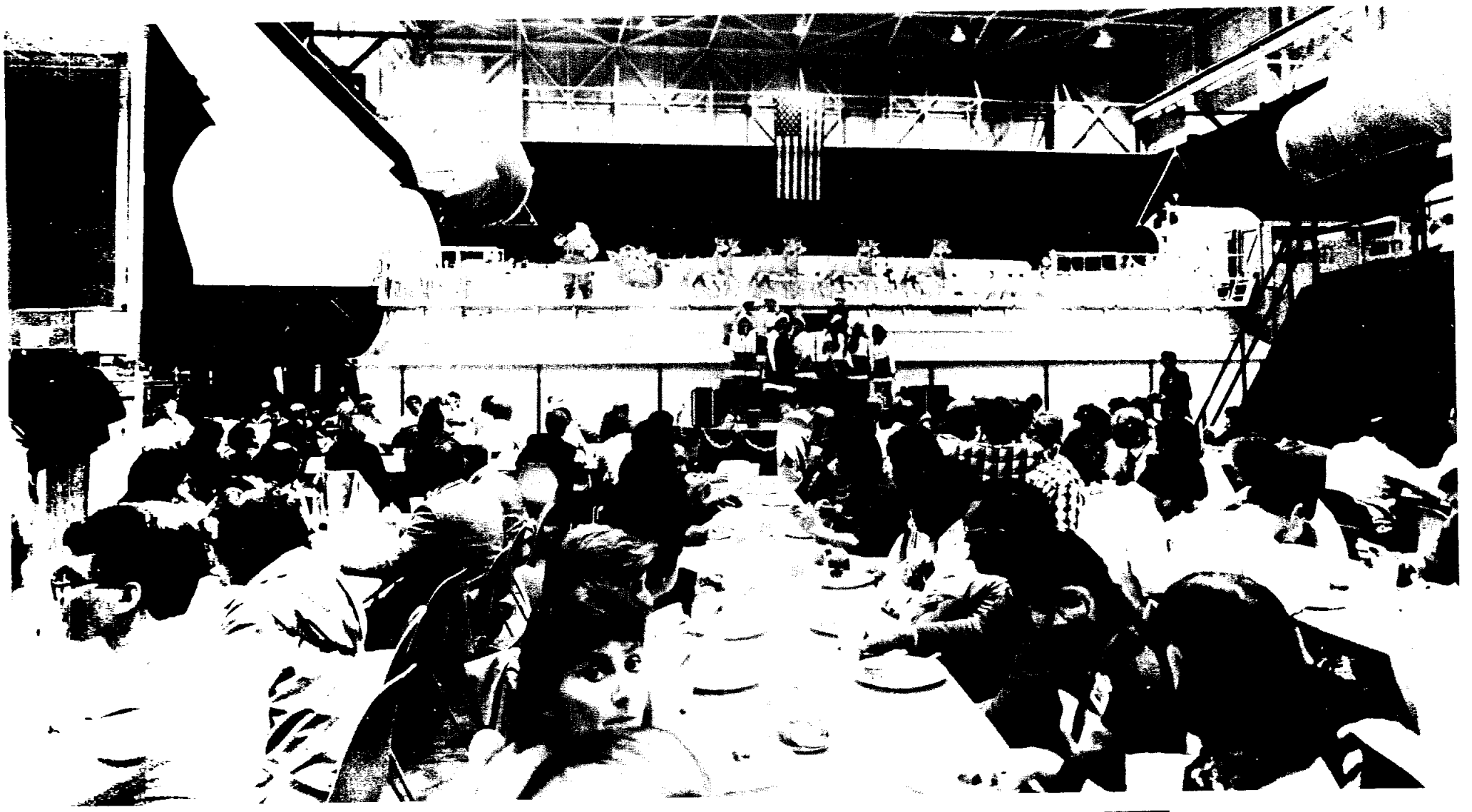
Discovery of the plasma waves and "pick-up" of the ions at great distances from Comet Giacobini-Zinner prompted Dr. John C. Brandt, ICE Comet Scientist at Goddard, to predict a possibly larger role for the spacecraft than earlier planned.

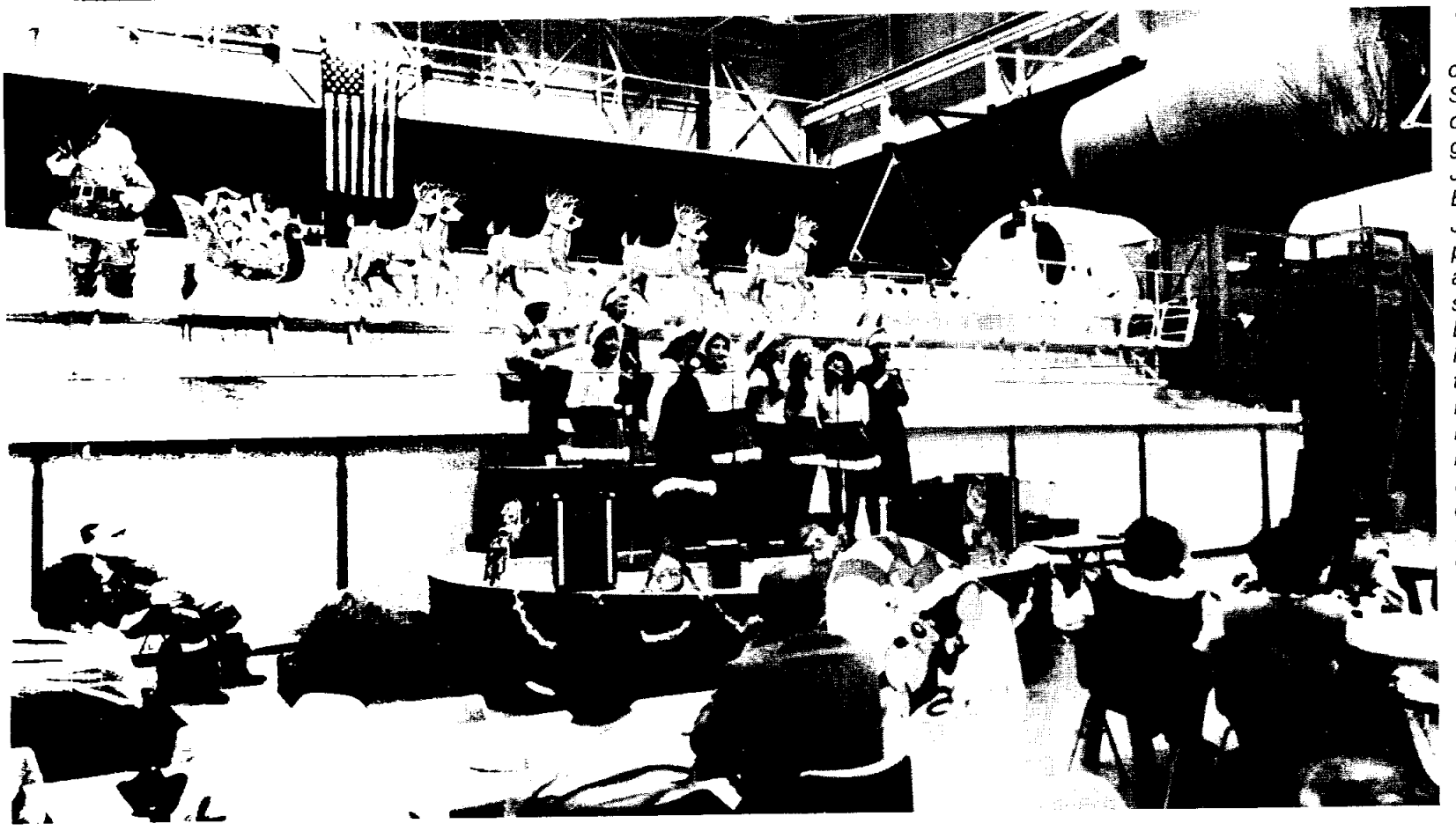
"The results from the ICE encounter lead to the conclusion that ICE may directly detect Halley," Brandt said. The results also indicate that Halley measurements by other spacecraft should be initiated earlier than previously planned, he added.

Scientists had thought that ICE, while between Comet Halley and the Sun in late March and early April 1986, would gather data only on variations in the solar wind to compare with the resulting disturbances caused in the comet's tail as photographed by ground telescopes.

In another finding, Dr. Samuel J. Bame of the Los Alamos National Laboratory reported that in contrast to the hot electrons on the outskirts of the comet, its tail consisted of a dense, narrow structure of cool plasma. This finding also was made by the Radio Wave Experiment of the Meudon Observatory in France, directed by Dr. J.L. Steinberg.

ICE's Ion Composition Experiment, directed by Dr. Keith Ogilvie of Goddard, made the first direct measurements of molecules in a comet. The experiment found mainly water vapor ions (H_2O+), confirming the "dirty snowball" model of comets.





The many holiday celebrations at the Johnson Space Center over the past days included this large gathering of the employees of Johnson Engineering in the Bldg. 9A mockup facility. Johnson Engineering is the primary contractor for design and operations in Bldg. 9A, and some 300 people attended the Dec. 12 luncheon. Decorations included a familiar addition to the payload bay section of the Manipulator Development Facility, above, and entertainment was provided by Johnson Engineering employees who called themselves "Santa's Helpers," at left. The group was comprised of (left to right) Francis Tewhill, Janet Cook, Laurisa Caroll, Virginia Cerny, Linda Richards and Sandy Bradshaw. Music was provided by Scott Bunde, Bill Badeaux, Patti McGeorge (who organized the party), and Bill Shropshire. Last but not least, Don Fisher played Santa.

Proposals sought for Telescope Institute

The Space Telescope Science Institute in Baltimore has issued an announcement of opportunity for scientists worldwide to submit proposals to become the first general observers to use NASA's Hubble Space Telescope after its launch in August.

The Space Telescope Science Institute is operated under contract to the National Aeronautics and Space Administration by the Association of Universities for Research in Astronomy, Inc.

The Hubble Space Telescope is a 94 1/2-inch telescope which will be placed in orbit by NASA's Space Shuttle orbiter Atlantis. It will be the first very large astronomical telescope in space. At an initial altitude of 368 miles, Space Telescope will be above the cloudy, dusty, and turbulent atmosphere of Earth which blocks, scatters, and absorbs much of the light from the cosmos.

With the Hubble Space Telescope, astronomers will be able to see with ten times the clarity of the greatest ground-based telescopes. They will be able to detect dimmer objects farther away than any telescope on Earth. They will be able to explore the universe in ultraviolet wavelengths as well as visible light. Space Telescope should provide important gains in our knowledge of the cosmos.

With the call for proposals, scientists are receiving:

- Proposal instructions and forms.
- Six handbooks describing in detail the performance expected of each of Space Telescope's six instruments: a wide field and planetary camera, a faint object camera, a high-resolution spectrograph, a faint object spectrograph, a high-speed photometer, and a fine guidance system which precisely measures star positions.
- Information on the observations planned by the Guaranteed Time Observers - the development teams for the Space Telescope project and the six instruments carried by the telescope. These astronomers will use the first six months (and a decreasing fraction of time thereafter for 2 1/2 years) of Space Telescope's planned 15-year mission to check out their instruments and to conduct their own research - their reward for the eight years they have invested in project and instrument development.

The Space Telescope Science Institute is the institution responsible for conducting the science programs of the Hubble Space Telescope. Complete proposals must reach the Institute by February 28, 1986. Then begins a six-month process of selecting the astronomers whose proposals will be awarded observing time. Coordinating this difficult procedure is Dr. Neta A. Bahcall, Chief of the General Observer Support Branch of the Institute. "Priority for the Hubble Space Telescope will be given to projects which cannot be done by ground-based telescopes," says Dr. Bahcall. "Space Telescope excels in observations that require very high resolution, very faint intensity limits, and ultraviolet wavelengths - all unobtainable from the ground. These observations are expected to reveal exciting fundamental properties of our universe such as the expansion rate of the cosmos and the way the universe has evolved with time. Space Telescope will provide the first opportunity to look in detail at objects near the "edge" of the observable universe. Because these objects are so far away, we see them as they were long ago, near the birth of the universe. Space Telescope will reveal the detailed structure of galaxies, quasars (the most luminous objects in the universe, possibly powered by huge black holes), and the distribution of matter in the cosmos. The Hubble Space Telescope will open up a new window on the universe."

The Space Telescope Science Institute anticipates receiving more than a thousand applications, but can accept only about 200 for the first year of general observer usage. The selection will be based on the scientific merit of each proposal. A new call for proposals will be issued each year.

When a proposal is received, it will be placed in computers to analyze its feasibility. Then it will be judged by an impartial panel of scientists specially chosen for their expertise in that particular area of astronomy. The winning proposals will be scheduled for observation for the year beginning about February 1987.

According to NASA policy, a small amount of telescope observing time is reserved as "Director's Discretionary Time," to be assigned by Dr. Riccardo Giacconi, Director of the Space Telescope Science Institute. This time will be used for a variety of special projects, including observations of sudden and unexpected events (for example, exploding stars), follow-up on dramatic discoveries, and some "high risk" projects - ones that have a low chance for success but would be of high scientific importance if successful.

Many of the astronomers awarded observing time will come to the Space Telescope Science Institute to be present when their data is received and to begin its analysis.

The Hubble Space Telescope is a project of international cooperation between NASA and ESA (the European Space Agency).

The Space Telescope Science Institute is operated for NASA by the Association of Universities for Research in Astronomy, Inc. (AURA). It is located on the Johns Hopkins University campus in Baltimore, Maryland.

Roundup Swap Shop

All Swap Shop ads must be submitted on a JSC Form 1452. The forms may be obtained from the Forms Office. Deadline for submitting ads is 5 p.m. the first Wednesday after the date of publication. Send ads to Roundup, AP3, or deliver them to the Newsroom, Bldg. 2 Annex, Room 147. No phone in ads will be taken.

Property & Rentals

Rent: Galveston/Tiki Island, furn. new 3 BR home on canal, boat dock, fishing, etc., TV, master bath spa, weekend, weekly or monthly rates. 486-9335

Sale: 100 acre ranch, old house, buildings, tractor, equipment, fruit trees, ponds, oaks, $815/acre, owner finance. 488-8105.

Rent: Freeway Manor 3-1.5-1, near Hwy. 3 at Edgebrook. $425/mo. Bill, x3871 or 487-6151.

Rent: Baywind 2-2 condo, split design, refrig. w/icemaker, full-size W/D, FPL, $380/mo. Bill, x3871 or 487-6151.

Sale: 1 BR El Dorado condo, FPL, W/D, alarm, $1,750 down, no closing, assume payments. Shapiro, (409) 744-8674 collect

Rent: Freeway Manor 3-1, central AC/heat, $400/mo. 481-2222.

Rent: Heavenly Valley ski condo, furnished, sleeps 6, Lake Tahoe, 2 BR, March 15-22, $450. Acres, x4007 or 649-4851.

Lease: Terresa Terrace 3-1.5-2, fenced, immaculate, $485/mo. + dep. Dean, x3241 or 488-7032.

Rent: Heritage Park 3-2-2, new paint/carpet/stove, near pool, $500/mo. + dep. Sue, 486-9469 or 280-3426.

Lease: Pearland 3-2-2, fenced, FPL, new paint, clean, split BR, formal dining, front porch, $525/mo. 482-6609.

Lease: CLC Oakbrook West 4-2.5-2, contemp., WB, FPL, prof. decorated/landscaped, alarm, no pets, $795/mo. 482-6609.

Sale: 3-2 home between League City & Kemah, large detached garage, 1.33 acres, off 518. $95,000. 334-1883.

Sale: Four cottages near Galveston Bay, furnished, $49,500, financing. 339-1951

Sale: Friendswood 3-1.5-1, FPL, fenced, near schools. $51,000, assume 9.5% VA. 482-7546.

Sale/lease Custom 2-2.5 townhouse, garage, FPL, fans, jacuzzi, appliances, paid lawn care. Mike, 280-4211 or 554-6378

Lease: Forest Bend 3-2-2, split plan, formal dining, FPL, miniblinds, new paint, fenced. $500/mo. Don, X2296 or 488-5127.

Rent: 1 BR & private bath in Camino South 3-2-2, FPL, W/D, game room, patio, non smoking M/F. $295/mo. + 1/2 util & deposit. Mike, x2375 or 486-0920

Lease: League City/Newport 3-2-2, FPL, cathedral ceiling, skylights, miniblinds, refrig., extra nice, $550/mo. 334-6138.

Lease: El Dorado Way 2-2 condo, FPL, W/D, new carpet/miniblinds, tennis, sauna, pool, weight room, $425/mo. 488-3497.

Sale: S. Austin 2 BR condo, near I-35 & Riverside, new paint/carpet, appliances, equity free, financing. 482-7910 or (512) 445-5310.

Lease: Baywind II 2-2 condo, FPL, W/D connect, appliances, split BR plan, $400/mo. Hiram, x3048 or 482-1045.

Lease: Friendswood 4-2, large corner lot, fenced, new paint/fans, $495/mo. + dep. James, x5595 or 486-0410.

Lease: Clear Lake Forest 5-3.5-2, brick patio, BBQ, appliances, formals, play room, den. 474-2196.

Sale: Large lot in Dickinson, Pin Oak S/D, heavily wooded. $15,000, owner finance. Cyndy, x4231 or 337-4133.

Cars & Trucks

'83 Pontiac Bonneville, 4-dr., V-8, many extras, ex. cond., $5,850 Mike, 280-8403.

'77 Buick Regal, 4 dr., AC, radio, clean & reliable, see to appreciate, $1,995. Margaret, x4231 or 526-7201.

'81 Mustang hatchback, 4 cyl, auto, PS, PB, AC, AM/FM, ex. cond., $2,950. 474-3507.

'75 Cadillac Coupe de Ville, good running condition, new rear tires, $750. Myers, x3241 or 488-7032.

'75 Datsun B210, auto, AC, good tires, needs engine work, best offer. 554-5818.

'82 Camaro sport coupe, 4-spd., V-6, AC, AM/FM/cassette, ex. cond., new tires, $5,800. Tammy, 280-1500, x3364, or 488-2499.

'77 Thunderbird, good condition, many new parts, $950. Rich, x6128 or 482-9212.

'85 Ford F150, 1/2 ton, longbed, AC, auto overdrive, PS, cruise, AM/FM, $400 & assume payments. Kirk, 280-3449 or 554-5816.

'78 Datsun 280Z, 5-spd., AC, AM/FM/cassette, good cond., 91K mi., $5,000 OBO. Gene, x6534.

'82 Olds 98 Regency, diesel, loaded, clean, runs well, 38K mi., below book at $6,450. 326-3370.

'75 Bricklin, collector's edition, 351 Ford engine, auto, 47,800 mi., $13,500 OBO. Don, 280-6307 or 554-6205.

'82 Mazda RX7, 5-spd., new tires/struts, good condition, $7,700 OBO. 434-8741.

'78 Chinook RV (Toyota), fully self contained, no shower, new inspection, $4,000 OBO. 482-7504.

'78 Toyota Celica GTL liftback, 5-spd., AC, shade kit, AM/FM/cassette, chrome wheels. $2,650. 729-5481.

'81 Buick Skylark Ltd., loaded, wire wheels, 52K mi., immaculate, $4,500. 485-2215.

'81 Chevy Silverado 1/2 ton SWB, auto, AC, PS, PB, tilt, cruise, aux. tanks, AM/FM/cassette, two tone, $4,800. 455-4864.

'81 Pontiac Firebird, V-6, AC, PS, PB, auto, tilt, AM/FM/cassette, very clean, $2,995. McNeely, x6347 or 482-5837.

'72 Toyota Cariena, runs but needs work, good parts car, make offer. Bob, x4734 or 921-1715.

'80 Turbo Trans Am, T-tops, AC, AT, PS, PB, pwr. windows/locks, tilt, cruise, alarm, 58K mi., $5,800. Mike, x4606 or 488-2185.

'84 Ford Tempo, loaded, $6,300. 538-1854.

'82 Chevette, ex. cond., AM/FM/cassette, equalizer, rear wipe/defrost, 30 MPG, $3,195 OBO. 326-5805.

'84 Trans Am, 5-spd., low miles, extend. warranty, ex. cond., below book. Kent, x4208 or 484-2411.

'76 Chevy Blazer, 4WD, 350 V-8, AT, AC, PS, AM/FM/cassette, CB, Cheyenne Pkg., $1,850. 333-2218.

'83 Dodge custom van, PS, PB, AM/FM/cassette, tilt, 38K mi., will consider trade for equity or $9,500 OBO. Runnels, x4739 or 484-4598.

'78 motorhome, 19', no generator, 33K mi., $7,450. '79 VW Beetle, auto stick, new paint/brakes. $1,250. John, x2217 or 482-8457.

'70 Olds Cutlass, 120K mi., good transportation but needs work, make offer. Wade, x4179.

'79 VW Bus, 7 passenger, $2,500. Manny, x7484 or (409) 945-3094.

Boats & Planes

'80 Monark bass boat, 50 HP Evinrude, troll mtr., depth finder, galv. Dilly trailer. $4,000. Don, 280-6307 or 554-6205.

'85 Wetbike, 800cc, Bullock, 326-4949.

Sportcraft 23', 165 HP I/O, ex. cond., many extras, $5,500. 486-0581.

14' catamaran w/trailer, trailer in ex. cond., cat needs sail, $600. Karl, x2323 or 333-3544.

Beech D-35 Bonanza, 225 HP, hyd. prop., 1000 scmoh., 100 stoh., dual nav-comms, ADF, 3 lmb., xpndr., A/P, aux. gas, 3rd window, etc., recent annual, $13,750. 488-3265.

Cycles

'71 Honda CB450, 2,400 mi., Wixom fairing, crash bars, carrier, mint, $1,100. 486-9335.

'81 Vespa scooter, 200E, 200cc, 1,000 mi., like new, windshield & fairing, front & rear fender protectors, backrest and luggage rack. Jim Sherman, 280-2187 or 326-3058.

'71 Honda 750, full fairing, extras, $450. 532-2082.

'75 Honda 750F Supersport, low miles, ex. cond. Bullock 326-4949.

'79 Honda Twinstar, brand new cond., electric start, $650 OBO. 479-3297.

Honda motorbike, good condition, $200. 554-6242.

'79 Honda CM400T, 16K mi., needs 33K mi., $7,450; '79 VW Bettle, auto

'80 Suzuki 850 GSL, fairing, luggage rack, ex. cond., Clint, 488-8919.

'73 Honda 350CB, fairing, carrier, roll bar, helmt., 14K mi., runs great. $400 firm. 480-8021.

Boy's Super Mongoose BMX 20" bicycle, top quality, like new, $150. McNeely, x6347 or 482-5837.

Raleigh 10-spd., 23", $99. 488-1809.

Audio/Video & Computers

Sony compact stereo system, AM/FM/cassette, turntable, 2-way spkrs., perfect, $60. 326-3370.

New Futaba 5-ch. R/C sys. w/4 micro servos, $100; 1 box new 3M 5 1/4 SS/DD 16-sector diskettes, $10. Wendel, x4267 evenings, 332-2318 days.

IBM PC(B), 8087, expansion unit & 10MB hard disk, mono & color displays and cards, Epson FX-80 & software, $3,000 OBO. Bryan, 488-9005 or 488-3381.

DEC PDP-11/03 and TI-99/4A best offer. Dean, 280-2286 or 280-8247.

Pioneer CT-F900 cassette deck, 3 heads, dual motor drive, microprocessor controlled, ex. cond., $375 new, asking $175; Panasonic cassette deck, good cond., $80. Joe, x6327.

Sanyo B&W portable TV, $40. 538-2504.

Stereo AM/FM amp w/blt. in 8 track tape drive, 4 spkrs., turntable and headphones, $75. Mary, x4568 or 482-1045.

Coleco vision video game, 1 yr. old, includes Turbo, 4 cartridges and two sets of controllers. 486-0790.

Household

Wooden bookcase headboard for dbl. bed, frame, $30; couch, $35 Hiram, x3048 or 482-1045.

Selig sofa, $150; high chair, $25; rattan night stand, $15; barber's chair, $175; car luggage rack cover, $25. 474-2196.

Round formica top table, leaf, 4 chairs, $50; twin boxsprings and mattress, $25; jogging trampoline, $15. Wade, x4179.

Sliding glass shower doors w/towel holders, swan decoration, $25; brown plaid couch & loveseat, $100. Wendel, x4267 evenings, 332-2318 days.

Sealy full size mattress, box spring & frame, $75; swivel chair, $35; baby stroller, $25. 538-2504.

Painted wooden 4-drawer desk, $25; maple 4-drawer chest, $35. Mary, x4568 or 482-1045.

Queen waterbed, full motion w/heater, padded headboard, storage area, bookshelf, used 4 mo., disassembled, $150. Keeton, x2311 or 488-5027.

Montgomery Ward gas range, almond, used 1 yr., cont. clean, very nice, $225; oriental rug, 9' · 12', fringed, traditional horseman pattern, woll blend, like new, $125. 482-8262.

Microwave stand, $25; AM/FM/cassette stereo w/spkrs., $75; coffee table and 2 end tables, $15. 485-1931.

Loveseat and chair, gold, good cond., $125. 641-5279.

Antique oak library table, chair, $350; antique dining room table and 4 hand carved leather covered chairs, $450; antique china cabinet, dated 1875, $375; antique buffet, dated 1875, $350. 488-5564.

Amana Touchmatic II Radar Range microwave, fully programmable, less than 1 yr. old, $300. Glenn, 333-6486 or 485-0803.

Whirlpool washer and dryer, $100. Dick, x4251 or 554-6290.

Two bar stools, brown vinyl covered, good cond., $70 for both. Suzanne, 280-6679 or 486-1173.

Dinette set w/4 chairs, $300; sofa/queen sleeper, Herculon fabric, $225; microwave stand, $30; buffet bar, $30. 486-5342.

China service for 8, brown w/dark brown trim, good looking, $20. 488-0397.

Wicker loveseat & matching chair, ex. cond., $45; set of 4 matching dinnette chairs, $10 ea. 941-5908.

Student desk, ex. cond., $50; early American rocking chair, $30. 334-4894.

Musical Instruments

Alto sax, $50. Gary, 486-8168.

King trombone, good student instrument, good cond., w/case, $125. Dave, 996-0910.

Guild X-82 electric guitar, ex. cond., 1 yr. old, hardshell case, paid $1,500, want $500. 486-0790.

Pevey musician amplifier, series 400, $350; Altec spkrs., $100; Cumar orchestrator, $900; Vantage Les Paul guitar, $250; all in ex. cond., Calanni, x4781 or 333-2979.

Wanted

Want roommate for 3 BR home, 12 mi. from NASA full privileges, bills paid. $250/mo. Runnels, x4739 or 484-4598.

Want roommate for large townhouse near NASA, large BR w/ private bath, cable TV, FPL, W/D, extras. Clint, 488-8919.

Want roommate to share 3 BR house in Middlebrook, w/1 other person, $300/mo. + 1/2 util. Mike, 280-8566 or 333-4149.

Want desk for 7 yr. old boy. 326-2187.

Want to swap good working electric dryer for gas dryer of equal value. 486-4156.

Want 12 ft. or 14 ft. canoe. Teresa, x5348 or 333-9776.

Want male roommate fo 2-2 CLC home, $215/mo. + 1/2 util., non-smoker. J.J., x6233 or 280-9794.

Want roommate for beautiful 4 BR home w/pool, FPL, microwave, duplex type arrangement, all util. included $350/mo. Lorusso, 280-4207 or 538-2914.

Miscellaneous

Ride West Loop park and ride vanpool to JSC. Heetderks, x4651.

100 National Geographics, $30 for all. new electric miniature grandfather's clock, $25. 488-5564.

Old mason jars, $10; toaster oven, $5. 486-8168.

Garmont Omnilite ski boots, women's size 9, black, almost weightless, $40 OBO. Karen, x6156 or 520-8348.

Two Uniroyal WSW radials, R185-13, $15 ea., both for $25. 488-8105.

Women's cowboy boots, sz. 7 1/2, handmade by Rios of Mercedes, like new, $100 OBO. Suzanne, 280-6679 or 486-1173.

Satin Texas A&M jacket, ex. cond., size L, $50 OBO. Erickson, X3803.

Several pairs of children's ski boots. $15. 532-2082.

6" bench grinder, $25; two Ford van bench seats, $100 ea. or $180/both; fur alpaca rug, 4' · 6', $225. John, x2217 or 482-8457.

Brunswick 6 ft. pool table, accessories, $140; Brother sewing machine, case, $40; Hagstrum electric guitar, $65; vaporizer, $10. 480-8021.

Men's black leather coat, new, sz. 42, $80. 485-1931.

20 gauge Winchester O/U shotgun, 3" chamber, fine cond., $500; Fox 12 gauge dbl. bbl. shotgun, good cond., $195. Jim, 280-3607 or (409) 925-3036.

I-H Cub tractor, hydraulics, woods mower, asstd. garden tools, $1,500. Jim, 280-3607 or (409) 925-3036.

Oak logs, unsplit, free for hauling. 488-4188.

Stiga expert roller table tennis table, brand new, cost $700, want $395. Bonsor, x3470 or 326-5805.

20 gauge dbl. bbl. shotgun, ex. cond., $75; Smith-Corona typewriter, good cond., make offer. Polaroid 225 folding camera, flash, case, like new, make offer. Dave, x3024 or 488-1069.

Sears 22" self-propelled lawn mower, less than 5 hr. on new engine, not running. $50 OBO. Dave, x3024 or 488-1069.

Artificial scotch pine Christmas tree, 8 ft., $35. Anne, x5066.

Austad Bodymaster rowing machine, $35. Ben, x4971 or 488-1326.

Limited edition prints by Bev Doolittle, Charles Frace, G. Harvey, Donald Vann, '84 Texas and Federal duck stamp prints. 486-1628.

Custom cover for Chevy S-10 Blazer. $60. 996-1410

Shopsmith Mark V, w/bandsaw and other accessories, $850 996-1410.

Set of 4 wheel rims, 15" · 6", $80. 482-7546.

Ladies' snow skis, used one season, $200. 482-7546.

Authentic wood propeller wall clock, 8 ft., $100; antique steamer trunk, $50; redwood patio set, $150; wheelbarrow, $10. 488-1809.

Ski boots, easy entry one buckle, Salamon SX80, ladies' sz. 310, white w/black trim, $100. Judith, x5891 or 741-0060.

Portable typewriter w/4k memory, runs on batteries, serves as 16 CPS printer, $200. Judith, x5891 or 471-0060.

Carpool from Spencer-Preston area of Pasadena to NASA, 8 a.m. to 4:30 p.m. shift. Carolyn, x5996.

Wedding dress, worn once, handmade veil, $200. Paul, x4824 or 486-6813.

Cookin' in the Cafeteria

Week of December 23 — 27, 1985

Monday — Chicken & Rice Soup; Wieners & Sauerkraut, BBQ Ham Steak, Steak Parmesan, Beef & Macaroni (Special); Green Beans, Carrots, Au Gratin Potatoes. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday — Tomato Soup; Potato Baked Chicken, BBQ Spare Ribs, Mexican Dinner (Special); Squash, Broccoli, Ranch Beans, Spanish Rice.

Wednesday — Christmas Holiday.

Thursday — Beef & Barley Soup; Chicken & Dumplings, Corned Beef w/Cabbage, Smothered Steak w/Cornbread Dressing (Special); Spinach, Cabbage, Cauliflower au Gratin, Parsley Potatoes.

Friday — Seafood Gumbo; Pork Chop w/Yam Rosette, Creole Baked Cod, Tuna & Salmon Croquette (Special); Brussels Sprouts, Green Beans, Buttered Corn, Whipped Potatoes.

Week of December 30 — January 3, 1986

Monday — Cream of Celery Soup; Braised Beef Ribs, Chicken a la King, Enchiladas w/Chili, Italian Cutlet (Special); Navy Beans, Brussels Sprouts, Whipped Potatoes. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday — Beef & Barley Soup; Turkey & Dressing, Country Style Steak, Stuffed Cabbage (Special); Corn Cobbette, Okra & Tomatoes, French Beans.

Wednesday — Seafood Gumbo; Catfish w/Hush Puppies, Roast Pork w/Dressing, Pepper Steak (Special); Broccoli, Macaroni & Cheese, Stewed Tomatoes.

Thursday — Cream of Tomato Soup; Beef Tacos, BBQ Ham Slice, Hungarian Goulash, Chicken Fried Steak (Special); Spinach, Pinto Beans, Beets.

Friday — Seafood Gumbo; Liver & Onions, Deviled Crabs, Roast Beef w/Dressing, Tuna & Noodle Casserole (Special); Whipped Potatoes, Peas, Cauliflower.

Week of Week of January 6 — 10, 1986

Monday — French Onion Soup; Beef Chop Suey, Polish Sausage w/German Potato Salad, Breaded Veal Cutlet (Special); Okra & Tomatoes, Green Peas. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday — Split Pea Soup; Salisbury Steak, Shrimp Creole, Fried Chicken (Special); Mixed Vegetables, Beets, Whipped Potatoes.

Wednesday — Seafood Gumbo; Fried Catfish w/Hush Puppies, Braised Beef Rib, BBQ Plate, Wieners & Beans, Shrimp Salad, Stuffed Bell Pepper (Special); Corn O'Brian, Rice, Italian Green Beans.

Thursday — Chicken Noodle Soup; Beef Stroganoff, Turkey & Dressing, BBQ Smoked Link (Special); Lima Beans, Buttered Squash, Spanish Rice.

Friday — Seafood Gumbo; Broiled Turbot, Liver & Onions, Fried Shrimp, Meat Sauce & Spaghetti (Special) Green Beans, Buttered Broccoli, Whipped Potatoes.

Week of Week of January 13 — 17, 1986

Monday — Beef & Barley Soup; Beef Chop Suey, Breaded Veal Cutlet w/Cream Gravy, Grilled Ham Steak, Wieners w/Baked Beans (Special); Buttered Rice, Brussels Sprouts, Whipped Potatoes. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday — Celery Soup; Fried Shrimp, Pork Chop w/Applesauce, Turkey a la King, Chinese Pepper Steak (Special); Au Gratin Potatoes, Breaded Squash, Buttered Spinach.

Wednesday — Seafood Gumbo; Fried Catfish w/Hush Puppies, Braised Beef Ribs, Mexican Dinner (Special); Spanish Rice, Ranch Beans, Buttered Peas.

Thursday — Green Split Pea Soup; Corned Beef w/Cabbage & New Potatoes, Chicken & Dumplings, Tamales w/Chili, Hamburger Steak w/Onion Gravy (Special); Navy Beans, Buttered Cabbage, Green Beans.

Friday — Seafood Gumbo; Deviled Crabs, Broiled Halibut, Liver & Onions, BBQ Link (Special); Buttered Corn, Green Beans, New Potatoes.