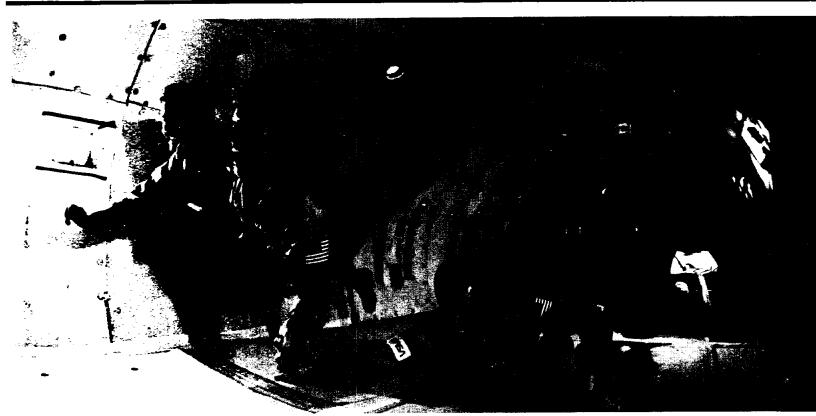
# Lyndon B. Johnson Space Center pace News Roundup)

Vol. 24 No. 21

November 22, 1985

**National Aeronautics and Space Administration** 



Members of this flying human chain are the prime and backup payload specialists for two upcoming Shuttle missions. The group shared some 40 parabolas in the KC-135 aircraft Nov. 20. Left to right are Gerald Magilton, RCA backup PS for 61-C; Sharon Christa McAuliffe, citizen observer on 51-L; U.S. Rep. Bill Nelson, an observer on 61-C; Barbara Morgan, backup to McAuliffe; and Robert J. Cenker, RCA PS for 61-C. (Photo by Otis Imboden)

### **NASA** solicits **OMV** ideas

A request for proposal has been issued by the Marshall Space Flight Center inviting the three aerospace companies involved in previous definition studies - LTV, Dallas, Tex.; Martin Marietta, Denver, Colo.; and TRW, Redondo Beach, Calif. - to compete for the design, development and manufacture of an Orbital Maneuvering Vehicle (OMV).

Often called a "space tug", the vehicle would be used to transfer satellites and other objects between Earth orbits. The maneuvering vehicle is expected to extend the reach of the Space Shuttle by about 1000 miles.

The companies have until Dec. 20, 1985 to respond to the request. From the proposals submitted, NASA will select one of the three companies to build the vehicle. The first contract is expected to be awarded June 1986 with the first flight planned for early 1991.

The contract includes provisions for testing and hardware flight test-(Continued on page 2)

# Contracts to study station power

The Lewis Research Center has awarded a total of \$8.7 million in four advanced development contracts in support of the definition and preliminary design (Phase B) of the power system for the Space Station.

A major technical issue in Phase B is a determination of whether solar-generated power for the Space Station will be best supplied by photovoltaic arrays or by a solar dynamic (heat engine) system. Photovoltaic arrays are the accepted system used to produce electricity for both manned and unmanned space missions. How-

ever, the electrical power requirements for the Space Station are 10 times higher than any mission flown to date and would require arrays of approximately one half acre for the initial station. Interest in solar dynamic systems lies in their higher overall efficiency and relatively smaller size.

In a solar dynamic system, electricity is produced by an alternator driven by a turbine in a heat engine cycle. Heat for these cycles is provided by focusing the sun's rays, by means of a concentrating mirror, into a heat receiver where the engine gas or liquid is then heated. The system operates as a closedcycle heat engine and a radiator cools the working fluid and rejects the waste heat to space.

Under a \$1,010,303 cost-plusfixed-fee contract awarded to Sundstrand Corp., Rockford, IL., two issues of an Organic Rankine Cycle engine will be studied. The Rankine is a vapor cycle using the boiling and condensing of an organic fluid such as toluene. The magnitude of possible chemical and thermal degradation of the working fluid will be studied. The contract will run for 36 months with performance at Rockford.

A \$1,010,000 cost-reimbursement contract to Grumman Aerospace Corp., Bethpage, NY, will study the solar dynamic waste heat radiator technology. The contract will run for 27 months with performance at Bethpage.

A \$3,117,059 cost-plus-fixed-fee contract to Boeing Aerospace Co., Seattle, Wash., will study the heat receiver/storage unit and identify and recommend testing required for concept verification. The contract will develop tooling and fabrication processes, perform detailed engineering design and analyses, fabricate test hardware, and con-

duct verification and demonstration tests. The contract will continue for 36 months in Seattle.

A \$3,619,870 cost-sharing contract to Harris Corporation, Melbourne, FL, will generate conceptual designs for the solar dynamic dish concentrator. The contract will further identify and test materials, identify and recommend testing required for concept verification, perform engineering designs, fabricate the concentrator and conduct verification and testing. The contract will continue for 36 months in Melbourne.

# 'Tis almost the season

## A sampling of upcoming Yuletide events

### Women's Christmas Dinner beginning at 9 a.m. Saturday, Dec. of the event will be carried on is slated for Dec. 10

Tickets are now on sale for the which will be held at 5 p.m. Dec.

7. The trees will be on display within the boundaries of the tennis annual dinner for JSC women, courts at the Rec Center. Tickets EAA has tickets for Dickens will go on sale at 9 a.m. sharp for \$16 each. The ticket buys admission to the tennis courts. Twenty shoppers will be allowed in at a time, first come, first served. There will be a limit of two trees per customer. A refund is available if no tree is selected. The sale is open to all Civil Service and contractor em, ployees. For more information call Ann at x2948.

KYND-FM, 92.1 on the dial.

on the Strand

Federal Employees will hold its available locally annual Christmas dinner meeting beginning at 6 p.m. on Tuesday, Dec. 3. The meeting will be held at the Harris County Park Bldg. on NASA Road 1. For more information, call Dick Jacobs at 532-1075. The local NARFE chapter also holds monthly meetings throughout the year.

### National Association of Retired M. D. Anderson cards

Christmas cards designed by the young cancer patients at M. D. Anderson Hospital have been a Houston tradition since the 1970s The cards are available again this year at a variety of locations in the Clear Lake area. Proceeds do to benefit the Pediatric Department at the hospital. There are eight designs to choose from, drawn by children aged 11 to 17. A package of 20 cards is \$7. The cards are available at Joske's in Baybrook Mall, Sakowitz on NASA Road 1, all Pizza Huts, Dorothy Stall & Associates Realtors at the Nassau Bay Shopping Center, and at all Allied Bank outlets. For more information, call 792-CARD.

10 at the Gilruth Recreation Center. The dinner, open to all women on site, will be limited to 200 persons. Reservations are required by Dec. 3, and should be made with directorate or program office secretaries, according to Betty Sue Fedderson, coordinator of the event. For the first time, the JSC Exchange Council will be subsidizing a portion of the party expenses. The event will consist of a social hour from 5 to 6 p.m., with a Chicken Kiev dinner beginning at 6:15 p.m. A gift exchange will follow the dinner. For more information, contact your directorate or program office secretary.

### EAA sponsoring Christmas tree sale at Gilruth

This may be the best bargain around when it comes to shopping for a Christmas tree this year. For \$16, employees will be able to choose from a large selection of trees, ranging in size from four feet to eight feet, at the Gilruth Center

### Boat Lane Parade on Clear Lake is Dec. 7

The annual Clear Lake Christmas Boat Lane Parade, sponsored by the NASA Area Shrine Club, will be held beginning at 7 p.m. Saturday, Dec. 7. Billed as the world's largest Christmas boat parade, the event will feature "more than a million dollars worth of brightly lighted boats," according to George Glauner, a spokesman for the event. Viewing sites include the Kemah-Seabrook Channel, Harris County Park, Watergate, Glenn Cove and Clear Lake Shores Park. For more information, call Glauner at 333-3526 or 326-1054. Live coverage

Discount tickets are now available from the Employees Activities Association for Dickens on the Strand, the annual Victorian Christmas celebration in Galveston. The celebration runs from 10 a.m. to 10 p.m. Saturday and Sunday, Dec. 7 and The tickets are \$3 and are available 8. at the Bldg. 11 Exchange Store. The Strand is located between 20th and 25th Streets. The event is being sponsored by the Galveston Historical Association.

### EAA Santa Clause to visit at Children's Christmas party The EAA will sponsor a Christmas party for children of JSC employees from 10 a.m. to noon Dec. 7 at the Gilruth Recreation Center, Activi-

ties will include pictures taken with Santa Claus. Tickets are on sale for \$1.50 in the Bldg. 11 Exchange Store.

### NARFE to hold Christmas dinner Dec. 3 The NASA Area Chapter of the

### EAA sponsoring Christmas dances Dec. 13 and 14

The Employees Activities Association will mark the holiday season with two Christmas dinner dances for employees on Dec. 13 and 14. Both dances will feature the music of the Mark Davis Orchestra and Sunshine Festival. The Dec. 13 dinner, roast beef with trimmings, will be \$10 per person. The Dec. 14 dinner, prime rib with trimmings, will be \$15 per person. Both events begin with a social hour at 6:30 p.m., followed by dinner at 8 p.m. and dancing from 9 p.m. to 1 a.m. Tickets are now available at the Bldg. 11 Exchange Store and will be on sale through Dec. 11, limit 8 tickets per person. For more information, call Barbara Fawcett at x6251.

### New Year's Eve dance planned by EAA

Although details were incomplete at press time, the EAA is now planning for the annual New Year's Eve dinner dance at the Gilruth **Recreation Center. Employees** interested in the event should consult the next issue of the Roundup (which will be dated Dec. 6) for details.

### **Space News Briefs**

### Voyager 2 closing on Uranus

The venerable deep space probe Voyager 2 is closing on the planet Uranus and its moons, with a closest approach scheduled for 8 a.m. CST Jan. 24. Voyager has already imaged the planet and its five known moons and, at a distance of almost 50 million miles, was able to send back a faint image of the outermost, or epsilon, ring of Uranus. Since the rings are believed to be composed of some of the darkest material in the Solar System, scientists were somewhat surprised that an image, however faint, was possible at such a distance. At 11 a.m. CST Nov. 26, Voyager will be 1.82 billion miles from Earth and 46.8 million miles from Uranus. Voyager's geocentric velocity (its speed relative to Earth) is 101,070 miles per hour. Images of Uranus to date have shown no features in the atmosphere of the planet. The moons show up as tiny points of light, and the planet itself resembles, in the words of one scientist, "a fuzzy blue tennis ball." Voyager 2's sister ship, Voyager 1, is now 11 Astronomical Units above the Ecliptic Plane, traveling at a velocity of about 1.5 A.U. per year. One A.U. is the mean distance between the Earth and the Sun, or about 93 million miles.

### JSC to build Station thermal test bed

Plans are in work for the construction of a test bed at JSC for determining thermal loads on components of the Space Station. The Center has selected Rockwell International Corp. of Houston for negotiations leading to the award of a contract for the design and test sequence studies on the test bed. The goal of the facility will be to determine what thermal loads will be placed on the habitation modules and structure of the Station by the space environment. The \$6.1 million cost-plus-fixed-fee contract will run from Jan. 1, 1986 through Dec. 30, 1990 and will be performed at JSC and at Rockwell facilities in Clear

### Nelson to conduct crystallography test

Rep. Bill Nelson, D-Fla., the Congressional Observer who will fly on STS 61-C in December, will attempt to grow protein crystals in space for the cancer research program at the University of Alabama at Birmingham. Researchers are trying to understand the molecular structure of proteins as they look for ways to combat cancer in the body. Knowing the structure is the key to understanding how the molecules carry out their biological functions. if the molecules can be linked to cancer, their behavior could then be altered with drugs so as to inhibit the growth of cancer cells. But researchers need a relatively large and well formed crystal for X-ray diffraction studies, and such crystals are difficult to grow on Earth. Nelson will be building on a new procedure for seeding the crystals that will first be tried by Payload Specialist Charlie Walker during the STS 61-B flight next week.

### Austria and Norway become full ESA members

Austria and Norway were unanimously approved as full member states of the European Space Agency at the 71st meeting of the ESA Council in late October. The agreement between the Republic of Austria and the Kingdom of Norway will be put forward for governmental approval and parliamentary ratification as both nations move toward full membership status by Jan. 1, 1987. That would bring the total number of nations within ESA to 13. The two countries have been associate member states since 1981.



### JSC blood drive is Dec. 5

The third JSC blood drive of 1985 will be held from 8:30 a.m. to 4 p.m. Dec. 5 at the Gilruth Recreation Center. Appointments for donating blood can be made by calling Helon Crawford, x5238, Jim McBride, x6226, or Bob Jones, x6251.

### Comet discussions highlight brown bags

The two remaining noontime discussions in the JSC Astronomy Brown Bag series will focus on viewing Comet Halley and on comet nuclei morphology. The seminars are held Wednesdays from noon to 1 p.m. in Conference Room 193 of Bldg. 31. On Dec. 4, Mark Lardas of the JSC Astronomical Society, who is editor of the Society's newsletter, "Starscan," will discuss telescopes and what to look for when choosing something with which to view Comet Halley. On Dec. 11, Jim Zimbelman of the Lunar and Planetary Institute will describe what is known about the nuclei of comets. The Dec. 18 meeting will be an open discussion and no meeting is scheduled for Dec. 25. Persons interested in giving presentations in the fields of astronomy and spaceflight should call AI Jackson at 280-2285.

### **BAPCO** meets Dec. 17

The Bay Area PC Organization, BAPCO, the local IBM-PC user's group, will hold its next monthly meeting at 7 p.m. Tuesday, Dec. 17, at the Holiday Inn on NASA Road 1. BAPCO meets regularly on the third Tuesday of each month. For more information, call Earl Rubenstein at x3501 or Jack Galvin at 326-2983.



The four JSC employees named as the Outstanding Employees of 1985 by the Federal Business Association gathered recently for a group photo. Pictured are, back row, left to right, Jesse T. Adkins, Jr. and William J. Nunnery, and front row, left to right, Lillian M. Hudson and Freda M. Lowe.

# EAA to be restructured

When the 24th General Assembly of the Employees Activities Association convenes Jan. 1. it will be amidst an effort to revitalize the organization with new people and ideas.

For the first time, representation in the EAA will be based on organizational structure, rather than the physical location of JSC employees.

'We're trying to get a little better visibility for the EAA," said Harvey Hartman, Chairman of the Exchange Council, which oversees EAA and other NASA Exchange operations. "In the past, the EAA has drawn its representatives from districts, with the districts based on floors and buildings. That repre-

sentation went across organiza- said. "We are looking for other tional lines, but information tends to flow more logically among employees within an organization."

New districts have been created which are based on employees within a division. The districts are grouped by location.

Another change will be the way in which representatives are chosen. In the past, elections were the uniform method. Beginning with the 24th General Assembly, representatives will be selected by whatever method the organizations choose appropriate.

EAA a little stronger," Hartman \$110,000.

ideas, on how to expand outdoor facilities for instance, and we want to hear from people around the Center. The hope is that this change will revitalize the EAA."

The EAA is one arm of the employee oriented programs at JSC, all of which are overseen by the Exchange Council. Other elements of the NASA Exchange are the Cafeteria, the Gilruth Center and Exchange Operations. The Exchange Council is appointed by the Center Director, and includes three primary officers of the EAA. "Our goal is to try to make the The EAA budget this fiscal year is

# Diversity pleases this secretary

For Kochetia Morman, no two days are ever the same as secretary to the Director of Center Operations

Morman, named JSC's Outstanding Secretary for October, works in an office where phone calls; visitors and out of the ordinary situations abound

Since the Center Operations Directorate is responsible for the multitude of support services that keep JSC running, public and employees relations are important and frequent. "The directorate is tasked daily with unusual requests as well as routine requirements," said Center Operations Director Kenneth Gilbreath. "We often receive suggestions and complaints on how to make JSC better. As a result, Mrs.



Kochetia L. Morman

directorate office. She is usually the first person that a visitor sees when contacting Center Operations.

interesting," she said. "There is something different every day." Comments and suggestions, she said, range along a wide variety of topics, from the beauty of the grounds at JSC to the quality of the Center's toilet paper. "You name it, we hear about it," she said.

As with other directorate secretaries, Morman's duties are extensive. She has full responsibility for office management and procedures, correspondance for the directorate and division offices, action items for the organization, administrative management of all training, Equal Opportunity reporting, awards and personnel status.

'She can always be counted on to give 100%," Gilbreath said. "And For Morman, that diversity is wel- she has made herself a very vital

### "Planet Earth" to air in January

"Planet Earth," a new public television series produced by WQED/ Pittsburgh and the National Academy of Sciences, will air on PBS beginning January 22. The series, featuring stock footage from the JSC film archives, explores geoscience on Earth and throughout the Solar System. The eight-episode series runs for one hour each Wednesday and concludes March 5.



The **Roundup** is an official publication of the National Aeronautics and Space Administration, Lyndon B, Johnson Space Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for all space center employees. **Roundup** deadline is the first Wednesday after publication.

Editor. .....Brian Welch worman gets many visitors in the come. It's really made the job part of this organization

# OMV proposals sought

### (Continued from page 1)

ing prior to its actual operational missions. One maneuvering vehicle will be built with an option by NASA to build a second.

The vehicle would be an element of the present Space Transportation System, the heart of which is the Space Shuttle. Although the Shuttle already has proven to be an effective ferrying system in moving satellites and other equipment to space and back, the rangeextending capabilities of the maneuvering vehicle make it a valuable addition to the Space Transportation System.

The OMV would have the ability to retrieve satellites from high orbits, bring them back to the Shuttle for maintenance and repair, then return the repaired satellites would serve as a means of reboost-

ing satellites as their orbits gradually decayed.

The maneuvering vehicle will be an unmanned spacecraft, 15 feet in diameter and approximately 4 feet in length. Its life will be approximately 10 years with refurbishment and on-orbit maintenance included in the design.

Plans call for the maneuvering vehicle to be deployed from the Shuttle for short duration missions. Later it will remain in orbit for extended periods for use in both Shuttle-based and Space Stationbased modes of operation. Its role in support of a future Space Station is viewed as one of the maneuvering vehicle's essential attributes. The OMV is expected to be available for assembly and buildup of the Space Station in the early 1990s. The maneuvering vehicle then would to their operational orbits. It also become an essential element of Space Station operations.

### F-8 oblique wing planned

NASA has awarded a \$400,000 contract for the preliminary design of a pivoting wing for an F-8 supersonic aircraft.

The contract went to North American Aircraft Operations, Rockwell International Corporation.

The pivoting wing is set in the conventional aircraft flight position for take off and landing operations. For faster flight speeds, the wing is pivoted so that one side is swept forward and the other side is swept aft, forming an oblique angle with the aircraft's fuselage. In the oblique wing configuration, the aircraft encounters less air resistance in high-speed flight.

This contract covers Phase "B" of a joint NASA/Navy program.

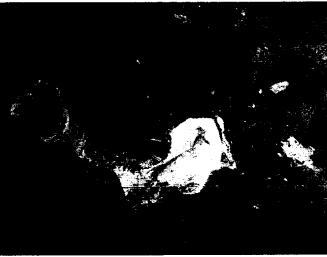
# **Das Leben auf dem Spacelab D-Eins**





ife aboard Spacelab D-1 on STS 61-A was a busy, around the clock effort on behalf of an international collection of over 70 experiments. The first mission to be chartered by another nation, it was also the first to have a remote payload control center overseas. The results were ausgeseichnet, according to the Germans. Scenes from the mission included, above, a crowded Spacelab module during shift handover and, above right, with Wubbo Ockels as the test subject, a series of experiments designed to understand bodily adaptations to micro-gravity. Halloween was celebrated, at left, by Commander Hank Hartsfield in a do-it-yourself mask, while, below center, Ockels tried out a new sleeping restraint of his own design. Views of the Earth included a dramatic shot of Houston on Nov. 5, clearly showing the towering cloud from the explosion at a refinery in Mont Belvieu, below left, a view of the 61-A landing site at Edwards Air Force Base, right, and an oblique view of Hurricane Juan, below right. At bottom, the largest spaceflight crew in history gathered for a group portrait.









# 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**

Lease: CLC 3-2-2, Camino South, FPL, split bedroom plan, ready Jan. 1, 1986. Brian, x5111 or 480-5194.

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: 4 cottages near Galveston Bay, furn \$49,500,10% down, balance financed at 11% for 15 yrs. 339-1951.

Sale: Lakefront lot. Brazoria Ctv., access to fishing, golf, swimming, tennis, 12% assum. Don, 280-6307 or 554-6205.

Lease: Barringer Knoll 2-1, fan, W/D hookup, \$330/mo. + \$200 deposit. 480-6742

near school/shopping, Ig. corner lot, new paint and fans, \$515/mo. + deposit. James, x5595 or 486-0410.

Sale: Heavily wooded lot. 75' × 150'. view of Taylor Lake, all utilities, \$21,500. 474-3181

Sale: Clear Lake Shores 2-2, 1,098 sq. ft., mini blinds, fans, appliances, faces water, \$43,500. Jenny, x4920.

Sale: Memorial Point, Lake Livingston lakeview lot, near pool/tennis/marina, paved streets, sewer/water, electricity, security. 946-3945.

Rent: Assume rent & utilities from 12-1-85 through 3-31-86, clean, quiet, upstairs, 670 sq. ft., \$250/mo. + \$40 elect. Mark, 480-9422 or 486-8851.

Sale: Alvin 3-2-2, den, study, formal dining, FPL, good location, 9% assum., \$56,000. Kave, x5222 or 585-3570.

Sale: El Dorado 1 BR condo, FPL, W/D, alarm, weight room, tennis, jacuzzi, etc., \$1,900 down, no closing, assume payments. Call collect, (409) 744-8674.

Sale: Dickinson 3-2-2 executive colonial, custom cabinets, formals, wet bar, FPL, master w/2 walk-ins, huge deck off den. Melody, x2731 or 534-3991.

Lease: Imperial Estates 3-2-2, Friendswood, large wooded lot, patio, built-in kitchen, \$600/mo. Jerry, 480-0102

Lease: 2-2 townhouse, new W/D, 3 min. to NASA, maintenance free, \$450/mo. + util. Betty Ruthbone, 486-4800 or 333-4040.

Sale: 105 ft. frontage waterfront lot, over 1/2 acre, trees, great fishing, near marina. (409) 855-2063.

Sale: Fully furnished 3-1 house, 1 acre, on small fishing lake, Trinity River at Horseshoe Lake Estates. Peterson, x3138 or 479-5594.

Rent: Garage apartment 3 mi. to NASA, on lake, 2-1, furnished, cooking equip., sep. entrance, off street parking, pool, \$300/mo. util. included. 532-1643.

Rent: Luxury West Galveston Island beach house, all conveniences, 3 decks, sleeps 14, weekend \$300, week \$625 280-8771

Sale: Mobile home, 3-2, FPL, wet bar, fenced, screened patio. 559-2925.

4 acres on Hwy. 150 near Hwy. 59, Shepherd, TX, wooded, beautiful, 4 houses, near schools, \$65,000. 326-2187.

Sale/lease: 2-2.5 custom townhouse, all appliances, FPL, jacuzzi, fans, paid lawn care, cable ready, tennis, pool, other extras. Mike, 280-4313 or 554-6378.

### Cars & Trucks

'82 Chevy S-10 Tahoe, longbed, V6, 4-spd, cruise, AC, PS, PB, AM/FM/ cassette, new tires, excel. cond., below

NADA avge. 482-1535.

'79 Chevy Malibu Classic, 2-dr., brown sedan, PS, PB, AT, AC, radio, 73K mi., \$1,500 OBO. Virginia, x3803 or 480-4131. '81 Datsun 310 GX Coupe, front-

wheel drive, 5-spd., new exhaust, Kenwood stereo, car alarm, front spoiler, 35 MPG, \$3,000 OBO. Jezierski, x5954 or 554-5910.

'77 Chevy Luv truck, camper top, \$1,200 OBO. Mike, x3314 or 585-8055. '79 Olds Cutlass Salon, AC, AM, V-6, 4-dr., excel. cond., 80K mi., \$1,450.

Mary, 629-6561 or 932-1202. Motor home, sleeps 6, full bath/w tub, ref., oven, dual air, '75 Dodge

chassis, \$6,000. Jim Whitmore, x7241 or (409) 925-1762. '81 Chevette, 2-dr., excel. cond., AC,

AM/FM/cassette, 38K mi., std., new Lease: Annalea/Friendswood 4-2, tires, \$2,400 OBO. Donna, x2708 or 481-0679.

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

'70 Datsun pickup, 4 spd., runs great, no rust, \$1,000 OBO. David, 333-0813 or 996-9715.

'84 Toyota Supra, clean, loaded, sunroof, tinted glass, power, AC, 5spd., reduced to \$13,000 firm. 486-9406. '76 Blazer 4WD, 350-V8, AT, AC, PS,

AM/FM/cassette, CB, Cheyenne pkg., \$2,500. 333-2218.

### **Boats & Planes**

'80 Monark bass boat, 50 HP Evinrude, troll mtr., depth finder, galv. Dilly trailer, \$4,000. Don, 280-6307 or 554-6205. Sportcraft, 23', 165 HP I/O, ex. cond.

many extras, \$5,500. Bill, 486-0581.

16-ft. Hobie Cat, fully equipped trailer, like new. \$2,800; single scull w/oars and Martin Oarmaster, \$500; 27-ft. Ericson sloop, new engine, \$16,500 firm. Horton, 474-7100.

Beech D-35 Bonanza, 225 HP, hyd. CS prop, 1000 SMOH, 100 STOH, dual nav-comms, ADF, 3 LMB, A/P, xpndr. \$15,000 or sell 1/2 interest. 488-3265. 14-ft. Hobie Cat, new trampoline, ready to sail, good cond., \$750. Kelly x3441 or (409) 925-5477.

Cycles

'71 Honda CB450, 2,400 mi., Wixom fairing, crash bars, carrier, mint, \$1,000. 486-9335.

'82 Honda V45 Magna, 2,200 mi., garaged, \$2,500. Craig, 326-1628. '80 Suzuki 450, \$850. 488-2652.

'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.

### Audio/Video & Computers

5" B&W portable TV, AM/FM radio combo, \$50. Adam, 486-0581.

Dokorder stereo tape deck, 10.5" reel-to-reel, Model 1120, many features, used approx. 100 hrs., \$350. 334-1934. Cobra 25GTL CB radio, 40-channel,

antennas included, \$75. Ed, x5489 or 480-0273. Band equipment: Lite system w/2

trees, Atlas tripods, cables & controllers, \$300; floor monitor w/12" horn, \$75; misc. cables, mics etc. Mark, 480-9422 or 486-8851.

Dual 1218 turntable, excel. cond., \$50 firm. Minette, x3431.

Radio Shack color computer, 64K extended color Basic, silver chassis, modem, joysticks, cassette recorder &

Rattan light yellow BR set, dbl. high back headboard, triple dresser w/mirror, bedside table, excel. cond., \$500; dbl. mattress/box springs, \$50. Virginia, x3803 or 480-4131.

King size bed, 3-pc. set, plus frame, good cond., \$100. Jan, 486-4420, x409, or 484-6286.

Sears washer, good cond., \$125; Sears small dryer, \$35. Betty, x2811.

Day bed, \$35; chair foam cushion bed, \$15; full-size antique rock maple headboard, footboard and frame, \$20. Claire, 474-4310.

Carpet and pad, 86 yards, good shape, \$100 OBO. Ray, x3954 or 474-4885.

Kenmore washer & dryer, heavy duty, white, less than 3 yrs. old, \$350. Wayne, 488-9005 x272 or 486-7674

Five-drawer lockable file cabinet. avacado, good cond. Gil, x3591 or 481-1172.

Frigidaire refrigerator, 21 cu. ft., side-by-side, needs new compressor. \$100; Zenith VCR w/remote, needs work, \$100. Jeff. x4235.

Portable washer, \$75; matching elec. dryer, needs new motor, \$30. Jim G., x6241.

Queen size sofa bed and rocking chair, \$125 OBO, 334-4894,

Antique table and 4 hand carved chairs, \$450; antique china cabinet, \$375: antique buffet. \$350, 488-5564.

Early American sofa, rust tweed, large, excel. cond., \$100 OBO. Dorothy, x3176 or 996-8750.

Royal Doulton china, 6-place setting less 4 salad plates, medium platter, \$100 OBO. Linda, x7251 or 455-7587,

Mediterranean style love seat, well used, lots of life left, \$50, 482-0755

### **Musical Instruments**

Cortley acoustical guitar, hard case, excel. cond., \$220 OBO. Walt, x2951 or 532-1032.

Ludwig professional drum set, 5 drums, high hat, 2 cymbols. Gil, x3591 or 481-1172.

### Photography

Leica IIIF, \$160; Nicca (Leica copy), \$90; 50mm f2 Nikkor, Leica mount, \$20; 35mm f35 Schact, Leica mount, new, \$25; Durst enlarger, accessories, \$80 Earl, x6445.

Bausch & Lomb Balomite 500 projector, 5" f3.5 lens, remote, 8 slide trays, \$75; Radiant screen w/cover, 50" × 50", \$25. 941-5908.

#### Wanted

Want lot near League City or Dickinson, 1-acre or less, util. preferred, not required. Jezierski, x5954 or 554-5910. Want carpool from Angelton/Lake Jackson to Bay Area/NASA, 8 a.m. to 4:45 p.m. Meena, 280-2245 or (409) 265-0950.

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

Want ukeleles and seek members for fun group of Hawaiian music players, we'll teach you how. John Trebes, x6313.

Want golf items-books, magazines, clubs, gadgets, etc. John Trebes, x6313 or 333-4374.

Will buy U.S. coins and mint sets, cash. Tyler, 333-6621 or 488-4859.

Want carpool from Preston to Beltway 8 to JSC, 8 a.m. to 4:30 p.m. Carolyn,

x5996. Want Sony TC-800 AC/batt.-powered

Nine foot garage door set, all hardware, good condition, \$100; 14" Herford saddle and all accessories, \$250. 585-8035.

3 Goodyear GT raised white letter tires, good condition, G70-15, \$75 OBO. Henry, x7484 or 554-6803.

Wedding dress, beautiful, worn once, handmade veil. Paul, x4824 or 486-6813. 7-strings outside Christmas lights,

approx. 100 light bulbs, \$9. 941-5908. Black "Gama" mink coat, appraised

at \$7,500, asking \$6,000. Lois, 473-4806 or Helon, 427-5068.

Wet suit, small, new, never used, \$35; Navy pea coat, 100% wool, size 42, new, never worn, \$35. Bob, x2871 or 333-3885.

limited.

person

Set of 4 aluminum rims, 14", \$60. Bob, x2871 or 333-3885.

DP1000 Shape Master rowing machine, excel. cond., \$100. 333-3234.

Fresh honey, \$10/gal.; papershell pecans, \$1.25/lb. Clarence Blume, x5159

or 554-2911 Girl's fur coat, size 12, like new, \$50.

944-6457 Spalding skis, his and hers, \$150/pr.;

boy's bikes: Kent, \$30, Schwinn Sting Ray, \$40; 14-ft. jon boat, 6HP Johnson, \$550. 326-2187.

Carpool from Strawberry-Spencer area, Pasadena, to NASA, drive one day a week, every 4th week drive twice, 7:30 a.m. to 4 p.m. Morton, x3537 or 946-4752.

### **Gilruth Center News**

Call x3594 for more information

Weight safety class - This course is required for any person interested

in using the weight room at the Rec Center. The class covers proper use

of the machines and the safety aspects of the facility. The next available

classes meet Dec. 8 and Dec. 18 from 8 to 9:30 p.m. The cost for either

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 Dec. 14 from 8 a.m. to 5 p.m. at a cost of \$20 per person. Space is

Exercise class — This general exercise class, offered on a monthly basis,

will begin Dec. 2 from 5:15 to 6:15 p.m. It meets Mondays and

Wednesdays and is open to males and females at a cost of \$20 per

**Orienteering race** — A thinking person's sport, this is a cross country

race with a map. Three courses will be offered in this Dec. 7 event.

Beginners will run a 1.53 kilometer race; intermediates will run a 3 to 4

kilometer race, and the advanced group will run a 5 to 7 kilometer race.

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

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.

Cookin' in the Cafeteria

Monday - French Onion Soup; BBQ Sliced Beef, Parmesan Steak,

Spare Rib w/Kraut, Chili & Macaroni (Special); Ranch Style Beans,

English Peas, Mustard Greens. Standard Daily Items: Roast Beef, Baked

Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads,

Tuesday - Split Pea Soup; Meatballs & Spaghetti, Liver & Onions,

Baked Ham w/Sauce, Corned Beef Hash (Special); Buttered Cabbage,

Wednesday — Seafood Gumbo; Cheese Enchiladas, Roast Pork

w/Dressing, BBQ Link (Special); Pinto Beans, Spanish Rice, Turnip

Thursday — Beef & Barley Soup; Roast Beef w/Dressing, Fried Perch,

Chopped Sirloin, Chicken Fried Steak (Special); Whipped Potatoes,

Friday — Seafood Gumbo; Fried Shrimp, Baked Fish, Beef Stroganoff,

Fried Chicken (Special); Okra & Tomatoes, Buttered Broccoli, Carrots in

Check in time is 9:30 a.m. and the guns sound at 10 a.m.

couple, with no individual registration.

Week of November 25 - 29, 1985

Cream Style Corn, Whipped Potatoes.

Peas & Carrots, Buttered Squash.

Week of December 2 - 6, 1985

Sandwiches and Pies.

Greens.

Cream Sauce.

one-night session is \$4 per person and pre-registration is required.

'83 Pontiac Bonneville, 4-dr., V-8. many extras, ex. cond., \$6,675. Mike, 280-8403.

'84 Chevy custom van, all extras, showroom condition, new tires and battery, \$15,300, 474-3181.

'73 Ford Gran Torino wagon, blue, PS, PB, AC, auto, radio, good cond., dependable, \$900. 482-2527

'82 Firebird V-8, AC, PS, PB, auto, Eagle GTs & louvers, 24K mi., good condition. Don, x4451 or 480-2597.

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

'83 Dodge custom van, PS, PB, AM/FM/ cassette, tilt, 37K mi., \$10,000 OBO. Will consider trade for equity. Richard, x4739 or 484-4598

'78 Ford Lariat F-150, fully equipped, excel. cond., high miles, \$2,295. Schnell, 480-9005 or 480-1074.

'66 Ford Mustang, w/w tires, radio, heater, AC, excel. cond., 1-owner, 53,800 mi. 528-7245.

'68 Cadillac Coupe convertible, rare classic, good condition, strong engine, \$2,500; '81 Cadillac Coupe de Ville, excel.cond., loaded, \$5,000. Mike, 333-6821 or 474-5228.

'82 Camaro V6, AC, 4-spd, new tires, excel. cond., \$6,300. Tammy, 280-1500, x3364 or 488-2400

some cartridges, \$250. Ken, x4154 or 997-1280.

Indus GT disk drive for C64/C128, software includes word proc., file mgr./ data base, spreadsheet, more, \$150 OBO. Jeff, x3696 or 480-6839. Atari 5200 w/Centipede, Gorf, Q\*Bert,

PacMan & Frogger games, \$90.996-9058. Atari 600XL home computer, brand new & still in box, \$100. 534-3415. Atari video computer system w/games, like new, \$100 OBO. Walt, x2951 or 532-1032.

13" Sanyo color TV, great picture, \$75; 9" GE B&W TV, \$25. 334-1934.

#### Household

Sealy full-sized bed, mattress & box spring, frame, excellent condition, \$50; solid oak nightstand, \$30. Brian, x5111 or 480-5194

Foam backed draperies, 72" × 61", burnt-orange, like new, \$10. Ed, x5489 or 480-0273

Queen size sleeper sofa and rocking chair, \$125 OBO. 334-4894.

Black naugahyde couch, gold trim, \$45 OBO; floral couch, \$75; loveseat, \$75. Kaye, x5222 or 585-3570.

Maple desk, \$225; Puddy diamond tough custom couch, \$400; black vinyl couch, \$100; 2 blue velvet chairs, \$100 ea.; 3 pedestal tables. 486-7230.

reel-to-reel tape recorder or equivalent. Terry White, 332-5177.

### Pets & Livestock

AKC registered Shetland sheep dog, 10 months, male, tricolor, needs children to play with, \$200. Carlene, x3041 or 554-6733.

Appaloosa mare, 9 yrs. old, reg., trained in Eng. riding & jumping, 15.2 hands. West, 331-8853 or 585-8035.

### Miscellaneous

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

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

Wheel covers for '82 Dodge 400, 14" wheels, \$15 ea. Bob, x4734 or 921-1715. Flatbed utility trailer, 5' × 7', lights, 16" wheels, current registration, \$150. Wayne, 488-9005, x272 or 486-7674. 100 National Geographic magazines, dates in '60's and collector's edition from 1976, \$30 for all. 488-5564

4 oil paintings, 2 large, 2 small, in frames, by Cantrell, forest/stream scene, gold/brown tones, best offer. Linda, x7251 or 455-7587

Four used high back van seats, \$15 ea. 486-7230.

Potato Baked Chicken, Meat Sauce & Spaghetti (Special); French Beans, Buttered Squash, Buttered Beans. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Monday — Cream of Potato Soup; Franks & Sauerkraut, Pork Chop,

Tuesday - Navy Bean Soup; Beef Stew, Liver & Onions, Shrimp Creole, Smothered Steak w/Dressing (Special); Corn, Rice, Cabbage, Peas. Wednesday - Seafood Gumbo; Roast Beef, Baked Perch, Chicken Pan Pie, Salmon Croquette (Special); Mustard Greens, Italian Green Beans, Sliced Beets.

Thursday — Beef & Barley Soup; Beef Tacos, Diced Ham w/Lima Beans, Stuffed Cabbage (Special); Ranch Style Beans, Brussels Sprouts, Cream Style Corn.

Friday - Seafood Gumbo; Fried Shrimp, Deviled Crabs, Ham Steak, Salisbury Steak (Special); Buttered Carrots, Green Beans, June Peas.

### Week of December 9 — 13, 1985

Monday - Cream of Chicken Soup; Beef Burgundy over Noodles, Fried Chicken, BBQ Sausage Link, Hamburger Steak (Special); Buttered Corn, Carrots, Green Beans. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday - Beef Noodle Soup; Baked Meatloaf, Liver & Onions, BBQ Spare Ribs, Turkey & Dressing (Special); Spanish Rice, Broccoli, Buttered Squash.

Wednesday - Seafood Gumbo; Broiled Fish, Tamales w/Chili, Spanish Macaroni (Special); Ranch Beans, Beets, Parsley Potatoes.

Thursday - Navy Bean Soup; Beef Pot Roast, Shrimp Chop Suey, Pork Chops, Chicken Fried Steak (Special); Carrots, Cabbage, Green Beans. Friday -- Seafood Gumbo; Broiled Halibut, Fried Shrimp, Baked Ham, Tuna & Noodle Casserole (Special); Corn, Turnip Greens, Stewed Tomatoes.