

Space News Roundup

Vol. 24 No. 12

June 28, 1985

National Aeronautics and Space Administration



Going Up

This one of a kind photograph of the 51-G launch represents a photographic feat for the folks at KSC. Enclosed in a firebox on the pad, a Nikon F camera loaded with a 36-exposure color roll had to be calibrated so as to capture the Orbiter during the one second when it passed through the correct field of view. Even more difficult was adjusting the exposure of the film to extremely diverse light levels — the SRB exhaust is brighter than the Sun, while the nose of the Orbiter, relatively, would seem almost darkened to the camera. The photo was made by Technicolor for the Public Affairs Office at KSC.

Four STSOC bidders in competition

Milestone reached

A multi-billion-dollar procurement aimed at combining Space Shuttle operations work at JSC into a single contract reached a major milestone last week with the announcement that all four bidders are within the "competitive range" for the contract.

A firm that is within the "competitive range" is said to have a reasonable chance of being awarded the contract based upon a review of company experience, past performance, technical capabilities, management, cost and other factors.

Work now being performed at JSC under 22 contracts held by 16 companies will be combined into a single contract with an estimated value of \$5.5 billion over 15 years.

The four bidders are Ford Aerospace and Communications Corporation, Grumman Space Operations Corporation, Lockheed Space Flight Company and the Rockwell Shuttle Operations Company.

The objective of the new contract, which is scheduled to start January 1, 1986, is to develop a more efficient and cost-effective approach to Shuttle operations as the flight rate increases and operations become more routine.

Activities such as the maintenance and operation of the Mission Control Center, the Shuttle simulator, the Shuttle Avionics Integration Laboratory and the STS portion of the Central Computing Complex as well as flight planning, crew training, sustained engineering and direct mission support are among items included in the contract.

Oral discussions with the four companies were held June 27 and 28. Best and final offers are due July 8. The Source Evaluation Board will present its findings to NASA Administrator James M. Beggs in early September. The Administrator will make the final selection.

Negotiations with the successful bidder will then begin, leading to a two-year contract with an option for a firm price two-year extension. The remaining 11 years of the contract will be negotiated in the future.

Complex ICE probe maneuvers begin

Flight controllers for NASA's International Cometary Explorer (ICE) performed the first and largest of four mid-course corrections June 5 to direct the satellite toward an intercept of Comet Giacobini-Zinner on September 11, 1985.

The course corrections, conducted from ICE Mission Control at NASA's Goddard Space Flight Center utilized two thousand pulses of the satellite's two pound hydrazine thrusters to change the spacecraft's heading so that it will fly through the comet's tail 16,200 miles from the cometary nucleus.

The burns began at 8 a.m. EDT and lasted four and-a-half hours. Had the burns not been made as planned, ICE would have missed the Comet by more than 124,000 miles.

The first satellite/comet encounter in history will provide

scientists with their first look at the make-up and dynamics of a comet's tail. ICE was launched in 1978 as the International Sun-Earth Explorer and was redirected toward Comet Giacobini-Zinner in 1982. The satellite and comet are now closing at a relative velocity of 13 statute miles per second.

Three smaller orbit maneuvers will be performed as ICE ap-

proaches the comet. The last adjustment is scheduled for three days prior to encounter. Such course corrections are necessitated by slight alterations in the comet's orbital path as material spontaneously outgasses from the comet's core, acting as jet thrusters on the comet's body.

The latest ICE trajectory adjustment will place the satellite/comet

encounter within the coverage window of the world's largest single dish radio astronomy telescope located at the Arecibo Observatory, Puerto Rico. The 300-meter dish, managed by the National Science Foundation, will be used for the first time to communicate with a spacecraft during the ICE mission. It will supplement coverage by three NASA Deep Space Network Stations

at Goldstone, Calif.; Madrid, Spain; Canberra, Australia; and the recently completed 64 meter antenna of the Japanese National Space Development Agency at Usuda, Japan.

ICE's current course adjustment is based on recent telescopic observations of Giacobini-Zinner as the comet emerged from behind the Sun in April. Those observations were the first since July, 1984. Currently, the comet is approximately 149 million miles from the Sun on the inbound leg of its orbit between the Sun and the neighborhood of Jupiter.

Comet Giacobini-Zinner was discovered in 1900 and returns to Earth's neighborhood every 6 1/2 years. It will not be visible to the naked eye but should be an easy target for small telescopes used by amateur astronomers.

Goddard eyes comet's dust tail formation

At press time, Goddard Space Flight Center officials working on the ICE mission were watching the unexpected development of a long dust tail on Comet Giacobini-Zinner.

Officials expressed some concern that particles in the dust tail could damage the International Cometary Explorer when it passes through

Giacobini-Zinner's tail Sept. 11. Previous observations of the comet, which passes through the Solar System every 6.5 years, have not revealed the presence of a dust tail.

A second tail extending from the nucleus of the comet consists of electrically charged gas and particulate matter and is expected to grow to a length of 600,000 miles

as the comet interacts with the solar wind.

ICE is aimed to pass through the two tails about 6,000 miles behind Giacobini-Zinner's ice and dust nucleus. If ICE survives that encounter, it is scheduled to make distant observations of Halley's Comet in late October and again next spring.

Bulletin Board

Rockwell, IBM plan construction

To the list of new facilities for contractor organizations in the JSC community (Singer-Link, Ford Aerospace, McDonnell Douglas, Lockheed, Barrios Technology and Grumman Aerospace), add Rockwell International and IBM. Construction has begun on a new 170,000 square-foot headquarters building for Rockwell, to be located on Gemini Ave. near its intersection with Bay Area Blvd. The building will be two stories tall and will feature underground parking. IBM also has announced that it is in final negotiation with Cadillac Fairview Urban Development for construction of a new headquarters for its Federal Systems Division. The 410,000 square-foot office building would be located on a 21-acre site at the intersection of Bay Area Blvd. and Middlebrook Drive, adjacent to the University of Houston-Clear Lake. The proposed design calls for two six-story wings in the shape of an arc spreading out from a central lobby area.

Spaceweek events planned

Model rocket launches, seminars and exhibits will be in evidence at JSC July 16-24 as part of the Spaceweek '85 observance. The nation's leading model rocket enthusiasts will hold their annual conventional and national championships July 21-26, with 10 model rocket events planned to take place at two sites near the Saturn V display on-site. A public demonstration launch is scheduled from noon to 4 p.m. July 21. NASA and contractor employees and their families also are invited to observe all of the week's planned launches. For more information, call Connie Pursley at 499-5925. Also on tap will be daily talks at noon in the Bldg. 2 Auditorium. Topics will include possible Mars missions, a lunar base and the Space Station. Call Jane Grady at x5930 for details. Other special events at JSC will include a Space Station display, and space and astronomical artwork at the Visitor Center in Bldg. 2. The Houston Chapter of the American Institute of Aeronautics and Astronautics will also sponsor a model airplane contest July 19 at 4 p.m. at the Gilruth Recreation Center. For more information on the contest, call Bret Wingert at 333-7148.

BAPCO meeting is July 16

The next regular meeting of the Bay Area PC Organization (BAPCO) will be at 7 p.m. July 16 at the Sheraton Kings Inn on NASA Road One. BAPCO is a microcomputer users group whose members share a common interest in IBM-PCs and compatibles.

Halley's Comet information offered

A non-technical information packet about the return of Halley's Comet is being made available by the non-profit Astronomical Society of the Pacific. The 36-page pamphlet is designed to instruct lay people on locating, viewing and understanding the most famous of all comets. During its upcoming appearance in Earth's skies, the comet will be difficult to see from the Northern Hemisphere. The pamphlet addresses the viewing conditions and offers advice on how best to see the comet. The information is available for \$4 from the Astronomical Society of the Pacific, Comet Packet Department, 1290 24th Ave., San Francisco, CA 94122.

Ribbon cut at Ellington Field

Houston Mayor Kathy Whitmire co-piloted a Beechcraft Hawker 125 jet through a runway ribbon June 14, officially opening Ellington Field as a Houston civil aviation facility. Southwest Airport Services, which has been awarded a three-year interim contract to provide services at Ellington as the fixed base operator, also marked its grand opening June 14. The company, which will do business at Ellington as Southwest Services, is providing fueling, tie downs, rental cars, taxis and hangar storage. Southwest also provides services at League City's Houston Gulf Airport. The City of Houston assumed control of Ellington last year.

Reservations due for NACA reunion

Reservations are due now for the upcoming NACA Reunion III, to be held Sept. 5 to 8 in Cleveland. Some 700 veterans of the National Advisory Committee for Aeronautics have registered for the reunion so far, said Chairman Jim Modarelli. The reunion will be held at Stouffer's Inn on the Square in Cleveland, with registration beginning at 2 p.m. Sept. 5 and a full range of activities scheduled for the following three days. Reservations or questions should be directed to NACA Reunion III Committee, c/o NASA Lewis Research Center, 21000 Brookpark Road, Mail Stop 60-1, Cleveland, Ohio, 44135.

Copies of Shuttle Conference Proceedings available

A landmark collection of data from the early days of the Shuttle Program is now available in limited quantities at the JSC Technical Library in Bldg. 45. NASA Conference Publication 2342, Proceedings of the Space Shuttle Technical Conference, was taken from the conference held at JSC in June 1983. The two-volume work reprints papers presented which chronicled many of the issues involved with the development of the Space Shuttle. "The purpose of the conference was to permit a retrospective presentation of the outstanding achievements of the program in a suitable archival form," said Aaron Cohen, Director of Research and Engineering, who acted as conference chairman. "This excellent two-volume publication provides a balanced view of the challenges and successes of the program," he said. Between 100 and 150 copies are available for those who have not already received a set.

Bldg. 3 to get Credit Union Pulse machine

The JSC Federal Credit Union will install a new automated teller machine adjacent to the Bldg. 3 Cafeteria. The new ATM will be the second Money Shuttle outlet on site (a third is located at the Credit Union) and the first to be linked to the Pulse financial network. The machine in Bldg. 11 and the one at the Credit Union main office will be linked to Pulse at a later date. Credit Union Manager Frank Kucera said. The new Bldg. 3 ATM is expected to be operational by the end of July, he said.

NASA
Lyndon B. Johnson Space Center

Space News Roundup

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Editor Brian Welch
Editorial Assistant Tina Griego

Allen leaves NASA

Dr. Joseph P. Allen has announced his plans to resign from NASA effective July 1.

Allen, a NASA astronaut since August 1967, was a crew member on STS-5, the Space Shuttle's first operational mission, and flew two years later on history's first space salvage mission aboard STS 51-A.

Allen will become Executive Vice President of Space Industries Inc., a Houston-based firm pursuing ventures in the utilization and commercial use of space. The

President of Space Industries is Dr. Maxime A. Faget, former Director of Engineering and Development at the Johnson Space Center. In 1984, the firm signed a Memorandum of Understanding with NASA to design and build the world's first man-tended space platform. Space Industries is currently negotiating further agreements for launch of the platform in 1989.

In addition to his work as an astronaut during his NASA career, Allen served as a mission scientist

for Apollo 15, a staff consultant on science and technology to the President's council on International Economic Policy, and NASA Assistant Administrator for Legislative Affairs. He is the author of "Entering Space: An Astronaut's Odyssey," a personal account of the spaceflight experience.

He and his wife, the former Bonnie Jo Darling of Elkhart, Indiana, have two children and reside in the Clear Lake area.

61-I crew announced

The crew for Space Shuttle mission 61-I, scheduled for launch from the Kennedy Space Center, Florida, no earlier than July 15, 1986, was announced last week.

Loren J. Shriver will command the flight, which will deploy the Intelsat VI-1 and Insat 1-C communications satellites and carry the Materials Science Lab-4. The mission will be flown with the Space Shuttle Orbiter *Challenger*.

Other crew members currently assigned include Bryan D. O'Connor, Pilot, and Mission Specialist Sally K. Ride, William F. Fisher, and Mark C. Lee.

It will be Shriver's second mission. He was pilot on flight 51-C, the Department of Defense mission in January. O'Connor will also be making his second flight on 61-I. He is scheduled to fly as pilot on mission 61-B in November 1985.

Fisher also will be making his second trip into space. He is scheduled to fly as a Mission Specialist on 51-I in August 1985. Ride flew on STS-7 in June 1983, as America's first woman in space, and again on 41-G in October 1984.

Lee will make his initial flight on 61-I. He is the first of the 1984 group of astronauts to receive a flight assignment.

Brake test program OK'd

NASA has approved a major new test program to identify and resolve the source of brake damage experienced during Shuttle landings.

The program was recommended and will be conducted by B. F. Goodrich, which manufactures the tires, wheels and brakes for NASA's Orbiter fleet. The program will be carried out at Goodrich's Troy, Ohio facility.

Central to the effort is a plan to reproduce the brake damage experienced during Shuttle landings and verify the source of the damage. "The testing and analysis done to date have confirmed that the brake

damage is part of the landing gear system problem," said Steven McCrillis, Goodrich's Engineering Manager of Military Programs. "The new test program will enable us to study the interaction of the brakes with other landing gear and brake control systems including the hydraulic system and anti-skid system, and to study landing gear dynamics."

The tests will combine landing gear hardware and data from previous landings and laboratory tests to simulate the conditions encountered on actual Orbiter touchdowns. Information for the simulations will come from the two instrumented landings done with the Orbiter

Challenger, and from previous dynamometer test results.

"This program will mark the first time that we will simulate the current landing gear and brake control systems in an instrumented configuration," McCrillis said. "In the past we have focused our tests on brakes. In those tests, we were not able to damage the brakes at all."

The tests are scheduled to begin in October and will take about 30 days to complete. A followup test program is envisioned, in which potential hardware and landing gear system modifications would be evaluated.

RCA payload specialist named

NASA, as part of its commercial payload specialist program, has assigned Robert J. Cenker, a senior staff engineer at RCA Astro-Electronics, East Windsor, N.J., as a Payload Specialist on Space Shuttle mission 61-C, now targeted for launch on Dec. 20, 1985.

Cenker will support the deployment of the Astro-Electronics-built RCA Satcom Ku-Band-1 communications satellite from Shuttle orbiter *Columbia* and perform experiments with an infrared camera developed at RCA's David Sarnoff Research Center, Prince-

ton, N.J., and manufactured at Astro-Electronics.

Over the course of his 13-year career at RCA, Cenker has held a number of engineering positions involved in the Satcom program — carrying out activities ranging from spacecraft design, integration and test to scheduling, cost control and launch site activity planning.

About his next major assignment Cenker said, "This is something I've wanted to do all my life, and I'm enthusiastic about the opportunity to achieve something that many people dream about."

The first RCA Satcom Ku-Band satellite, designated KU-2, will be launched from the Shuttle on mission 61-B in November. Three RCA Satcom Ku-Band satellites will complement the present Satcom C-Band system in providing distribution of TV services to customers in metropolitan areas.

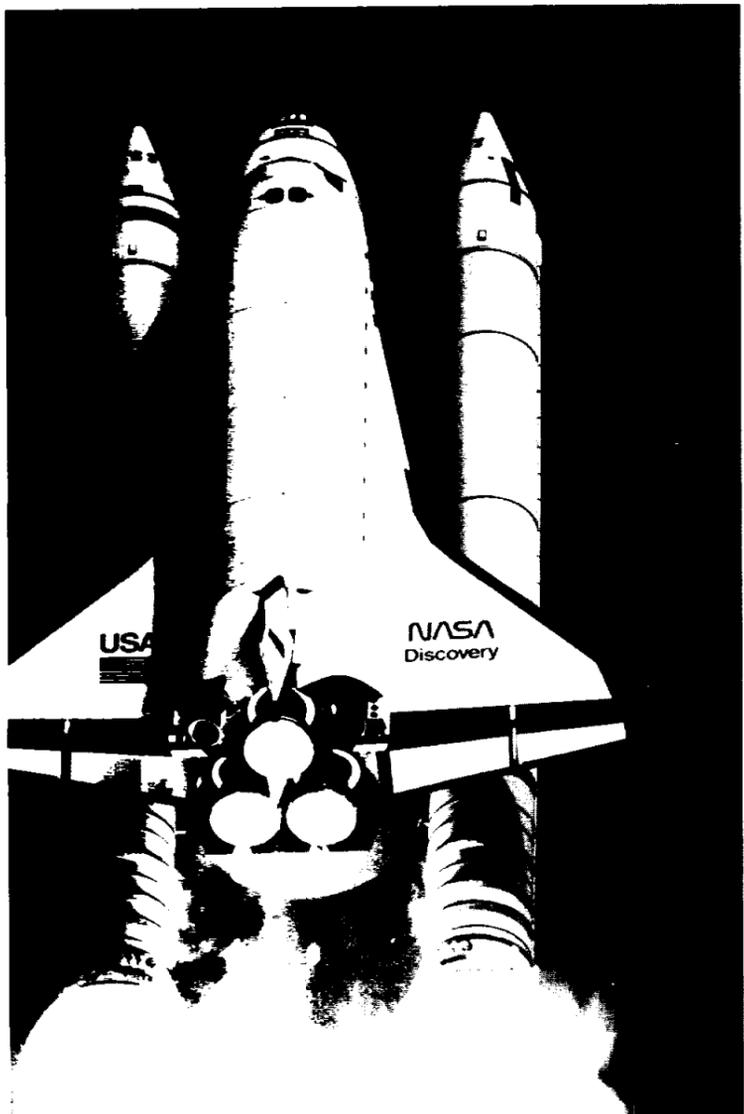
Cenker is a member and former chairman of the Princeton section of the American Institute of Aeronautics and Astronautics. He and his wife, Barbara, live in East Windsor, N.J., with their children, Daniel, Brian and Laura.

Foreign payload specialist commitments

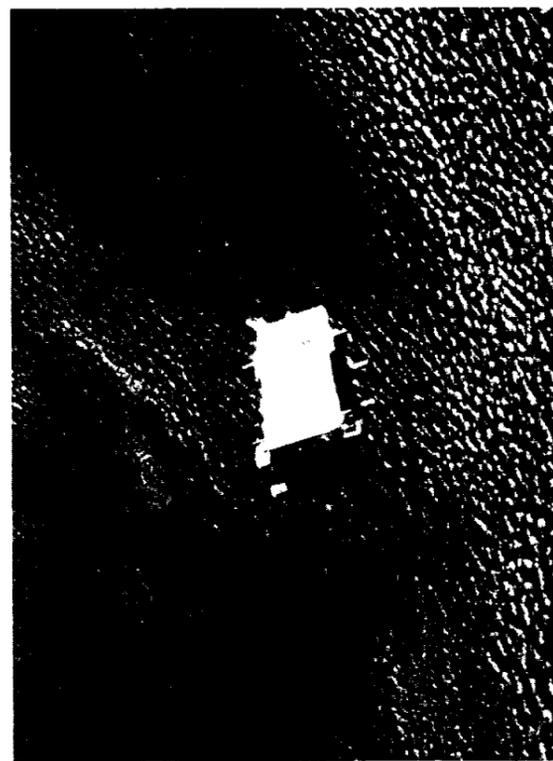
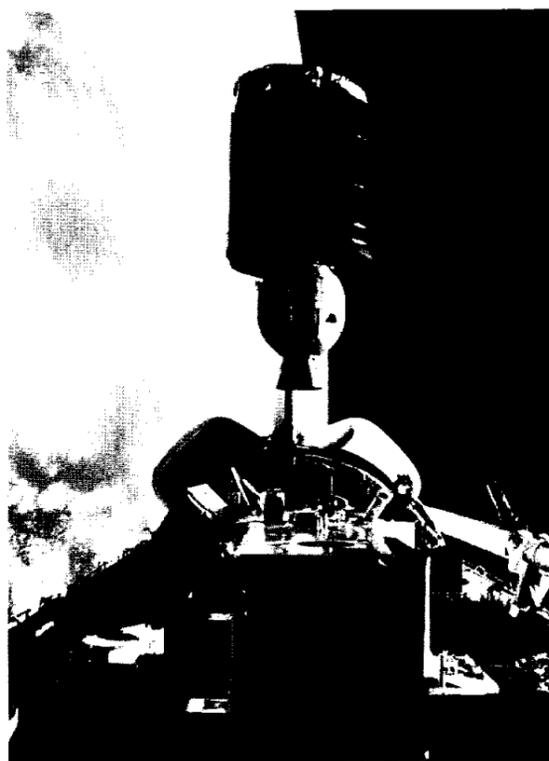
Sponsor	Payload	Commitments	Flight
NASA/ESA	Spacelab 1	Ulf Merbold	STS-9 11/83
National Research Council of Canada*	CANEX	Mark Garneau	41-G 10/84
ARABSAT	ARABSAT-1B	Sultan Salman Al-Saud	51-G 6/85
France**	FEE/FPE	Patrick Baudry	51-G 6/85
West Germany	Spacelab D-1	Reinhard Furrer (West Germany) Ernst Messerschmid (West Germany) Wubbo Ockels (The Netherlands)	61-A 10/85
Mexico	Morelos-B	Rudolfo Neri Vela	61-B 11/85
Indonesia	PALAPA B-3	Not Yet Selected	61-H 6/86
United Kingdom	SKYNET 4A	Nigel Wood	61-H 6/86
India	INSAT 1-C	Not Yet Selected	61-M 7/86
United Kingdom	SKYNET 4B	Peter Longhurst	71-C 12/86
Brazil**	BRESSEX (Tentative)	Not Yet Selected	Under Review
Italy**	Tether Satellite	Not Yet Selected	Early 88
China**	N/A	Not Yet Selected	Under Review
Japan	Spacelab	Not Yet Selected	1/88

*Offer made in conjunction with Canada's Development of the RMS
**Presidential Offers

STS 51-G: 'Nominal, nominal, nominal'



It was hailed as a truly international mission, but 51-G might go down in history as the one where everything that could go wrong didn't. With the exception of a minor pointing error in conjunction with the Strategic Defense Initiative experiment, 51-G was one of the cleanest flights on record, program officials said. Three satellites were deployed — including Arabsat, above, and Morelos, below—bringing the Space Transportation System's deployed cargo total to well over 400,000 pounds to date. The 51-G crew also deployed Spartan, below, for 45 hours of deep space observations prior to being picked up and returned to Earth. The mission also marked the flight of the 100th American in the NASA program, Mission Specialist Steve Nagal, and the deployment of the 100th piece of space hardware built by the Hughes Aircraft Co. Below, the crew members pose for a group shot. Below, left, Commander Dan Brandenstein proudly displays a Father's Day card from his 13-year-old daughter Adelle. At bottom, Mission Specialist John Fabian, who now has helped deploy more satellites than any other person, poses with a Shuttle motto that keeps growing.



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

For rent: House in Bryan near Texas A&M, 2 BR, excellent location, central AC/heat, stove, refrigerator, fenced. Call 947-0644 or 481-2665 after 5 p.m.

For sale: University Green patio home, 2-2-2, spacious corner lot near greenbelt, cathedral ceilings, FPL, wet bar, solar paned windows, neutral colors, Jenn-Air range, near tennis, pool, \$91,000. Call 480-7413.

For lease: Forest Bend townhouse, 2 BR, 1 1/2 bath, ceiling fans, two-story, patio, \$395/mo. Call Betty Craig, x4031 or 1-420-2936.

For rent: Galveston Gulf-front condo, full accommodations for a two-day to one-month vacation or business retreat, low rates. Call Nussman, 488-7762.

For lease: Galveston By-The-Sea luxury condo, completely furnished, 2 BR, sleeps six, two-day minimum, week, month or year. Call Jay Clements, 474-2622 evenings.

For lease: University Green patio home, 2-2-2, split BR plan, detached garage, utility room, cathedral ceiling, FPL, microwave, fenced, near pool, 2 yrs. old, \$650/mo. Call 488-0500 or 480-6516 after 5 p.m.

For sale: League City, secluded ranchette on 6.25 acres, five yr. old 1,900 sq. ft. raised house w/encircling porch, sundeck, 20' x 40' shop, 14' x 14' tack room and storage. Call Sandra, 332-4545.

For sale: 2-1-2 condo, The Landing, on the water, excellent condition, new carpet and AC, \$44,500. Call Peter, 480-2600 or 532-1812 evenings.

For sale: 31 beautiful wooded acres near Lufkin, running creek, hard top road, community water, perfect for retirement. Call 488-7238.

For lease: 1 BR condo, all appliances including W/D, ceiling fans, covered parking, pool, tennis, \$295/mo. Call Clarence, x3643 or 333-4381 evenings.

For sale: Beaver Creek condo timeshare, 1 BR/1 bath, \$3,000 plus pick up payments. Call Mark, x6101.

For sale: League City 3-2-2, plus carport, quiet wooded area, water access, many extras, \$50,000. Call 538-4214 after 5 p.m.

For sale: Nassau Bay 4-2-2, 2,200 sq. ft., master down, new carport/paint/roof/sundeck, large garage, 20' FPL, atrium, owner financing until your house sold, \$114,900. Call Jerry, x3561.

Rent a vacation: Two BR resort on Lake Palestine near Tyler, one or two weeks, Aug. 10-17 or 17-24, \$350/wk. Call Bill, x4007 or 649-4851 evenings.

For sale: League City/Newport, 3-2-2, FPL, cathedral ceiling, formals, indoor utility, beautiful home, \$69,900. Call 332-2291.

For sale: 2 BR mobile home, new carpet and tile, perfect starter or vacation cabin, appraised at \$9,700 — first \$7,500 accepted. Call 332-2291.

For sale: Gillespie County, 39 acres of prime land, old Harper/Fredericksburg Road frontage, excellent hunting/investment, \$2,495 per acre. Call Bernhard, x4461 or 333-2968.

For sale: Townhouse, 4 yrs. old, 1-1.5 and study, near pool/tennis, Westheimer and Hwy. 6 area, \$49,900. Call Bernhard, 333-2968.

For sale: Large 3-2-2, El Cary Estates, 1.1 miles to JSC, living/dining/family rooms, FPL and 3 yr. wood pile, large brick patio, new roof/heat pump/gas furnace/paint in and out/carpet/wallpaper, private park with ramp and pier on Clear Lake, \$87,300. Call Hoover, x3138 or 996-7716.

For lease: Heritage Park 3 BR home, convenient location, quiet cul-de-sac, newly remodeled, fenced, attractive home, \$495/mo. for NASA employees or contractors. Call 488-6309.

For sale: Dickinson 4-3-2A, brick, 1.5 story, cul-de-sac, beautiful yard w/timbers/lighting/gazebo/deck, wet bar, circular FPL, new roof, near I-45, owner financed, low \$80s. Call Stu, x7261 or 337-1935.

For lease: Nassau Bay 2-2.5-2, \$500/mo. Call 488-0887 after 5 p.m.

For sale: Colonial styled home, custom cabinets, both formals, wet bar, FPL, master bath with his 'n her walk-in closets, huge deck off den, perfect for entertaining. Call Melody, x2731 or 534-3991.

For sale: 3-1, detached garage, one mile from Gulfgate Mall, 1,450 sq. ft., 70' x 145' lot, aluminum siding, sunken bar area, 1/2 block to elementary school, 5 min. to Hobby, appraised at \$55,000, asking \$40,000. Call 333-0698 or 455-2146 after 6 p.m.

For rent: Private room with bath, low rent (negotiable) in exchange for before school and evening child care,

excellent situation for student, 8-5 worker. Female, non-smoker. Call 280-5225 evenings.

For sale: Pebblebrook condo, 1,070 sq. ft., W/D, all appliances, pool, tennis, 2-2, FPL, mirrored dining room, \$34,000 or assume payments, must sell. Call Linda, x4660 or 480-3771 after 5 p.m.

For lease: Gulf-front beach house, secluded, on Bolivar Peninsula, all weather, fully furnished and equipped, low maintenance, Sunfish sailboat. Call Don Cherry, x4031.

For lease: Bar at 707 West Main in League City, good location, growing area. Call Don Cherry, x4031.

OBO mystery solved

The Great OBO mystery, a source of puzzlement to some of our Swap Shop readers and, alas, of many phone calls to the Roundup office, is solved at last. Neither a reed instrument, a new type of archery device nor a reference to the STS 51-D Commander, OBO is in fact an acronym, commonly used in the Roundup Swap Shop, which stands for "Or Best Offer." We often use other acronyms and abbreviations for space saving reasons, such as "FPL" for fireplace, "W/D" for washer/dryer and "w/" for with.

Cars & Trucks

1978 Cadillac El Dorado, low miles, leather, all power, runs well, powder blue, \$2,750 neg. Call x4036 or 480-0713 after 5 p.m.

1981 Gran Prix LJ, beautiful car in excellent running condition, V-6, auto, landau top and other extras, \$5,900. Call Nussman, 488-7762.

1982 VW Scirocco, 25,000 miles, AC, AM/FM/cassette, 5-spd., red, excellent condition, garaged, \$6,800. Call Lou, 538-3458 mornings, x4267 afternoons.

1968 Mustang, California Special, \$2,500 OBO. Call Howard, x3697 or 480-1123.

1984 Ford F-150, Model XL pickup, V-8, auto trans. w/overdrive, AC, 2-tone paint, 10,000 miles, \$8,000. Call Dick Bishop, 280-6890 or 326-1666.

1982 Trans Am, glass tops, fuel injection, leather, cassette, \$8,500. Call Mandell, x3228.

1971 Vega, station wagon, runs ok, make offer. Call Steve, 554-6290.

1983 Buick Century Ltd., beige 4D sedan, loaded, excellent condition, 19K miles, \$7,800. Call 334-1824 or 334-4352 evenings.

1984 Cougar, clean, 19,000 miles, loaded, \$10,500 or best offer. Call Judy, 280-6969.

1985 Plymouth Voyager SE, 2.6 litre, 4 cyl., auto, AC, 7-seat, two-tone paint, low miles and much more. Call Vic, x3786.

1981 Ford F-150 pickup, 1/2 ton, 1 owner, long bed, cold AC auto, V-8, dual tanks, clean, \$3,795 or trade. Call 280-0454.

1973 BMW 3.0 CS, 2 door, 4-speed, sunroof, rebuilt engine, recent paint, best offer over \$8,000. Call John, x3558.

1978 Ford LTD, landau top, 4-door, loaded, original owner, excellent condition, \$1,600. Call 334-4639 evenings.

1977 Chevy pickup, 3/4 ton, AC, PS, PB, longbed, AM/FM, 4 speed, \$1,500. Call 331-0419 or 944-3560.

1970 VW Beetle, auto stickshift, 47,200 miles, new paint, new clutch, \$1,500. Also, Ford van bench seats, blue vinyl, \$140 each or \$225 for both. Call John, x5301 or 482-8457.

1976 GMC van/camper, AC, power, AM/FM/stereo cassette, rebuilt auto transmission, looks and runs great, \$2,500 negotiable. Call Dean Thompson, x2638.

1981 Pontiac T1000, 3-door hatchback, very economical, excellent condition, maintenance record provided, one owner, 44,000 miles, Call Jeff, x4237.

Boats & Planes

Wellcraft 165 Fisherman, center console, 165 Mercruiser I/O, power trim and tilt, depthfinder, galv. trailer, excellent condition, \$3,000. Call 488-2897 after 5 p.m.

For rent: IFR Piper Warrior, PA-28-161, \$38/hr. wet, based at Houston Gulf, instructors available. Call 946-1750.

1977 Chrysler 26' sailboat w/trailer, 3 sails, self-furler, new Imron paint, 10 HP motor, excellent condition, sell or trade for early model Corvette. Call Claudia, x2426 or 470-9283.

1971 Sea King 15, 55 HP, good condition, pare new bottom end, gas tanks, life jackets, etc., \$1,350. Call Sanchez, x4028 or 996-0401 evenings.

AMF TRAC-18 sailboat with many extras, paid \$6,500 new, \$5,150 OBO. Call 280-8033 or 333-3056.

Gulf Coast 20 sailboat, Little Dude trailer, British Seagull outboard, excellent rigging and sails, \$3,400. Call Dick Bishop, 280-6890 or 326-1666.

1983 4-WINNS, 120 HP I/O with drive-on trailer, like new. Call 946-3408 after 5:30 p.m.

Audiovisual & Computers

Heathkit 25-inch color TV. Call Tom Moore, x4405 or 488-4089 after 5 p.m.

Hewlett-Packard 15C programmable calculator w/continuous memory, includes case and handbook, like new, \$95. Call Rommel, 280-7947 or 280-7969.

Cycles

1983 Yamaha 650 Heritage Special, 3,000 miles, excellent condition, \$1,800 OBO. Call Scott, x6171.

1978 Suzuki GS550, new pipes, excellent condition, asking \$800. Call Kent Dekome, x5561.

1976 Honda GL 1000, full faring, excellent condition. Call Bob, x2723.

1982 Honda CB750, 2,000 actual miles, excellent condition, \$1,400 OBO. Call 440-8636.

Household

Montclair china by Lenox: dinner plates, \$14; salad plates, \$10, cups & saucers, \$21. Also, Fostoria engagement crystal, 4 iced tea, \$21/stem. Call 554-7371 between 7-9 p.m.

Two matching solid pecan wood end tables, \$50 each; Spanish foot warmer coffee table, \$35. Call 332-5721 after 5 p.m.

King size water bed with etched mirror bookcase headboard, one year old, one set of new sheets included, \$325 negotiable. Call Lisa, x3952.

15-17 cu. ft. refrigerator, frost free, runs well, coppertone color, \$35; solid wood birch chairs, new, still in carton, \$35 each. Call Beth, x2076 or 554-2908 after 6 p.m.

Queen size box springs, excellent condition, \$50. Call 471-3498.

Mediterranean sofa set, 2 couches, 2 end tables, coffee table, 2 chairs, \$300; Sansui stereo, 15 watts, ultra-linear speakers, \$150. Call Mark, x6101.

Pets

Large deluxe parakeet cage with two beautiful parakeets, both birds with cage, \$40. Call 482-6158.

Free loving kittens, potty trained, shots. Call 488-7238.

AKC Cocker Spaniels and Beagles, \$100-\$150. Call 477-3341.

Puppies: 1/2 brindled boxer, 1/2 Doberman, will grow to be strong, devoted dogs, healthy, wormed, tails cropped. Call Diane, x4966 or 480-3812 evenings.

Wanted

Want full-size bedframe without headboard, in good condition. Call Jeff, x4237.

Roommate wanted for large 2-2.5 Baywind II townhouse, next to NASA, cable TV, W/D, private bath, \$240 plus 1/2 utilities. Call 488-8919 after 6 p.m.

Ride or carpool wanted from the I-45-Kuykendahl Park and Ride area to NASA. Call Doug Justus, x5036.

Miscellaneous

1984 14-foot Neckover gooseneck stock trailer, spare tire, escape door, dividers, storage compartment, \$2,800. Call Scott, x6171 or 554-6148.

Lost: Baseball glove, old Spaulding, great sentimental value, lost at "C" league field across from Gilruth. Please call Craig, x2004, 334-4352 or 334-1824.

Rent my motorhome by day or week, self-contained with onboard generator, roof air, the comforts of home on wheels. Call Dave, x5111 or 480-0202 after 6 p.m.

Regulation slate bed pool table, new felt, newly remodeled exterior, \$400 if you move, \$600 and I'll move. Call Tom, x4576 or 474-3100.

Five HP go-cart, two seater, maintained well, originally \$350, asking \$150. Call Tom, x4576 or 474-3100.

High efficiency air conditioner, window unit, 17,000 BTU, perfect condition, new \$750, sell for \$250. Call Lee, 480-8357 or 538-4483.

Solid wood front door, 36" x 80", includes hardware, best offer. Call Briggs, x5165.

Four 15" x 8.5" AR turbo mags, with radial tires, excellent condition, \$150. Call Wade, 482-2810.

Save on insurance and gasoline — join our West Look Park and Ride van pool. Call Richard Heetderks for information, schedules and rates, x4651.

For sale: Ford 302 motor and transmission, in good running condition, \$500. Call 480-1889, x226.

Johnson camper top, longbed, roll out, screened windows, cream color, \$200; slide open cab rear window for Dodge truck, never installed, \$60 OBO.

Call 480-1889, x226 (Kay) or x205 (Chuck), or 480-7396.

Tent, 8' x 10', \$75; dishwasher, stand-alone or install, \$200; electronic test equipment. Call Will, x4528 or 530-2544.

1890's Lord & Taylor steamer trunk, \$125 or trade. Call 280-0454.

Vivitar 70-150mm zoom lens for 35mm SLR camera, F 3.8 CF, \$100. Call 474-3839, leave message.

Four roundtrip airline tickets to San Francisco, only \$138 each. Call Glenn, 488-6307 or 280-8727.

Musical Instruments

Acoustic steel string guitar, excellent condition, plus five free lessons, \$99; 10-speed men's bicycle, \$30. Call Raul Mejia, x6596 or 332-2364.

Ludwig drums, 5-piece set plus 2 cymbals, top hat, chair, very good condition, \$500. Call Gil, x3591 or 481-1172 after 5 p.m.

Kimball piano, 5'8" grand, pecan, French provincial, purchased 11/83, warranty transferrable, \$5,200. Call Stu, x7261 or 337-1935.

Gilruth Center News

Call x3594 for more information

Color yourself unique — Maximize assets and minimize your figure problems with wardrobe and accessory enhancement based on choosing your best color combinations. This class meets for four weeks, beginning July 11, from 6:30 to 8 p.m. The cost is \$20 per person.

Home maintenance & repair — Learn residential repair techniques through demonstrations and hands-on experience in this course which runs for six weeks beginning July 10. The class meets Wednesday nights from 7 to 9 p.m. at a cost of \$40 per person.

Tennis tourney — The first annual JSC Tennis Tournament will begin at noon July 20 at the Rec Center. The entry fee is \$10 per person and the Rec Center will supply the playing balls. Matches will be for men and women with a single elimination format used throughout. For more information, call Helen, x3594.

Aerobics — A specialized program for total fitness, this class meets Tuesdays, Wednesdays and Thursdays from 4:15 to 5:15 p.m. beginning July 30. The eight week course costs \$30 per person.

Ladies weight training — This popular course begins Aug. 5 and runs for four weeks. Class meets Mondays and Wednesdays from 7 to 8 p.m. The cost is \$20 per person.

Yoga — This popular course begins July 9 and runs for eight weeks. The class meets from 7 to 8 p.m. on Tuesdays and the cost is \$25 per person.

Defensive driving — Learn to drive safely and qualify for a 10% reduction in your auto insurance rates for the next three years. This class will be held from 8 a.m. to 5 p.m. July 20. The cost is \$20 per person.

Nutrition for better health — This three-week course covers basic nutrition, chemicals and preservatives, nutrition for stress reduction and behavior modification. The class meets Wednesdays from 5:30 to 6:30 p.m. beginning July 24. The cost is \$10 per person.

Horseshoe tourney — A singles horseshoe tournament for men and women will be held July 13 at 11 a.m. at the Rec Center. The registration deadline is July 11 and the cost is \$2 per person. Trophies will be awarded. Call Helen for details.

Cookin' in the Cafeteria

Week of July 1 — 5, 1985

Monday — Chicken Noodle Soup; Wieners & Beans, Round Steak w/Hash Browns, Meatballs & Spaghetti (Special); Okra & Tomatoes, Carrots, Whipped Potatoes. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday — Beef and Barley Soup; Beef Stew, Shrimp Creole, Fried Chicken (Special); Stewed Tomatoes, Mixed Vegetables, Broccoli.

Wednesday — Seafood Gumbo; Fried Perch, New England Dinner, Swiss Steak (Special); Italian Green Beans, Cabbage, Carrots.

Thursday — Independence Day Holiday.

Friday — Seafood Gumbo; Baked Flounder, 1/4 Broiled Chicken w/Peach Half, Salisbury Steak (Special); Cauliflower au Gratin, Mixed Vegetables, Buttered Cabbage, Whipped Potatoes.

Week of July 8 — 12, 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 — Seafood Gumbo; Liver & Onions, Baked Turbot, BBQ Ham Steak, Baked Meatloaf w/Creole Sauce (Special); Beets, Brussels Sprouts, Green Beans, Whipped Potatoes.

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.

AT BUILDING #3

On Wednesday we feature The Reuben: Corned Brisket, Swiss Cheese on a bed of Sauerkraut, Poupon Mustard on Rye and 1/4 Pickle. Delicious! Monday and Thursday check out our French Dip Sandwich.