

ROUNDUP

Lyndon B. Johnson
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Target date for first shuttle set for 9/79, barring delays

Sept. 28, 1979, is the new internal target date for the first manned orbital flight of the Space Shuttle (SS-1), according to testimony by John Yardley, transportation system manager, to the House Subcommittee on Space Science and Applications, Sept. 25.

Pacing item for the first flight is the shuttle main engine, and if no further problems arise in testing, the engine will be certified for flight in time.

Yardley said the schedule could be delayed further if unforeseen problems arise or the tests are not entirely successful. "However, NASA believes there is a good probability of flying the first shuttle flight during 1979," he said.

Funding could be another delaying factor, Yardley said, clarifying that additional requirements "are not due to any single element of the program." He said that the main engine, solid rocket booster, and cost growth on a number of contracts have caused the dollar amount to increase.

"The first manned orbital flight would slip an additional six months over the estimated September date, and produc-

tion orbiters could slip six months to one year," if no additional FY 1979 funds are made available, he testified.

"We estimate the total cost to the U.S. government for these additional slips to be \$600 - 800 million in direct Shuttle overruns plus another \$400 - 600 million

in other costs such as continuation of payloads designed for launch vehicles," he said.

Barring unexpected postponements, the current plan is to schedule the first operational flight (SS-7) for February 1981.



Solid rocket boosters (SRB's) separate from the shuttle in this artists conception. Marshall Space Flight Center completed six drop tests with the booster Sept. 12, confirming their reusability.

Test firing takes engine to breakthrough

A flight-configured developmental Space Shuttle engine has exceeded 5,000 seconds in test firing at NASA's engine test facility in Bay St. Louis, Miss.

That mark is the same as a production engine must meet in order for the Space Shuttle main propulsion system to be certified for manned flight.

In the period since Aug. 12, 1978, 7,800 seconds of testing have been accumulated on two engines, bringing the total time of engine testing to more than 25,000 seconds in 342 tests.

Of these tests, five consecutive runs of 520 seconds (the amount of time the engines must fire to place the Space Shuttle in orbit) were conducted on one engine at rated power level. Preliminary flight certification required 5,000 seconds on a flight engine and is expected in the spring of 1979.

Full duration testing of the complete main propulsion system, a cluster of three engines, is scheduled to resume in early 1979 when the first manned orbital flight configuration engines become available.

Chamber A ready for icy trials

Preparations for shuttle testing continued last week as technicians installed four radiator panels and a flash evaporator system (FES) in Chamber A of Bldg. 32.

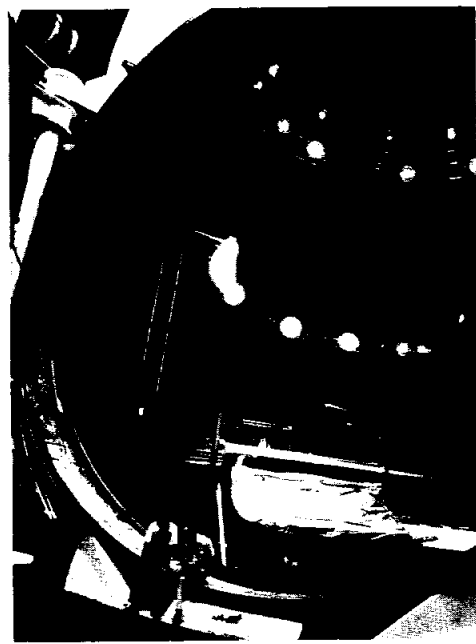
The panels will reject heat and maintain a living temperature for crews during shuttle missions.

Activity levels around Chamber A will increase dramatically in November when the heat rejection system goes into three test weeks, with 20 to 30 workers manning controls 24 hours a day.

"The system works a little like a subway system," said Bill Sevier, test manager. Freon 21 flows continuously through the loops, picking up heat throughout the ship and depositing cold. The heat is pumped to a central location where it is "dumped into space," he said.

Unfortunately, the heat cannot be reused, Sevier said, because the recycling process requires massive equipment. From 140,000 feet to orbit, the FES cools the ship. When orbit is reached, the panels open and, by the ship's maneuvering, reflect the heat with the FES supplementing.

During the coming test, the 120 foot high chamber is closed off. Liquid nitrogen pumps through tubes in the black walls dropping temperatures to



minus 320 degrees. Then infrared lamps create heat such as that expected in the shuttle in space.

In orbit, the heat comes from the sun, the flight gear, and human body heat.

The November run will be the first time all components of the system will be tested as a unit.

The Space Shuttle will be run like an airline. Capital investment will regenerate the space program, and the next step from here is a permanent manned space station. Center director Chris Kraft talks about the next 20 years in a special Roundup interview for NASA's anniversary. Read it on Page 4 of this issue.

Millionth visitor walks through JSC grounds, topping records

Fanfare was low-key but pride was high for public services personnel when the number of visitors to JSC passed the million mark the weekend of Sept. 23.

The last fiscal year when over a million persons came to tour the center was 1972. In 1977, 850,213 came.

"We've had a lot of publicity about the shuttle which has attracted people from around the country," explained Bob McMurrey of public services.

"Also, we saw a lot of camper vehicles from the Midwest this year," he went on. "It could be it was so cold, the first time it

thawed out they came south."

McMurrey said the fact that Houston is becoming more of a convention center also contributed to the growth of JSC's tours.

To compute a total, guards count the cars entering the gates without NASA decals, then multiply by a factor of four to account for variables.

March was the biggest month this year, with 8,468 visitors on the 12th. The number varies between 800 and 8,000 a day, with an average of 7,000 walking through the grounds on a Sunday in July.

Winners

Engineers praise space center practices, bestow GPD award

The Texas Society of Professional Engineers (TSPE) presented JSC with the 1978 Government Professional Development (GPD) Award, Sept. 15 in Austin.

The engraved plaque recognizes JSC as "the federal government unit in Texas which has made the most outstanding contribution to the advancement and improvement of the engineering profession through its employment practices."

Specific practices that won JSC the award include education, registration, recruiting and indoctrination, salary, pro-

fessional environment, and job classification.

Accepting the award for the space center was Dr. Maxime A. Faget, director of engineering and development.

The development award rotates annually among federal, state, and local levels of government. This year competition was among federal government units.

As winner of the 1978 award, JSC will compete for the national 1979 GPD award.



NASA's KC-135A aircraft, used for zero-g testing, passed a milestone in its career last month flying its 10,000th parabola during a test of the 1/10 shuttle external tank. The craft is the free world's only zero-g aircraft, and it was assigned to JSC in 1973. The USAF and Boeing initiated the test program in the 1960's.

Coming Activities at Gilruth Center

SPORTS:

Men's & Women's basketball is scheduled to start the week of Oct. 30. This will be a 7-week season running through Dec. 21. Another season, 10 weeks long will start the week of Jan. 8. A minimum of 4 women's teams are needed in order to run the women's program. The men's leagues will be divided into at least two separate competitive levels and possibly three if enough teams participate. Sign-up for the 7-week season will be held Oct. 11 thru 5 p.m. Oct. 19. Late entries will not be accepted. Rosters & entry fees are required for registration. Roster forms are available at the Recreation facility. Entry fees are: EAA teams - \$50.00, NON EAA teams - \$100.00.

RUNNING:

Details of the October Intercenter Running Competition have still not been announced. It is still slated for the later part of October. Keep running to stay in shape. We'll get details out as soon as possible. Make plans now, to participate. Also the following is a Bay Area Running Club schedule of area events. All NASA

employees are invited to join in on the fun:

Other Races:

The Recreation Center has received information on these other events, inviting NASA employees to take part:

Women's October Run Fest (10,000 and 5,000 Meters) When: Sat. Oct. 7 9 a.m. Where: College of the Mainland, Texas City. Who: Women, all ages, Categories: 14 & under, 15-19, 20-29, 30-39, 40 & up. Entry fee: \$3.00 per runner. Entry deadline: Oct. 1, 1978. Awards: T-shirts to all finishers. Contact: Physical Education Dept. College of the Mainland, 8001 Palmer Highway, Texas City, Texas 77590.

Rotary Village 5

When: Sunday, Oct. 29, 1978 3 p.m. Where: Memorial Senior High School, 935 Echo Lane. Course: 5-mile loop through the neighborhoods of Hedwig, Bunker Hill, Piney Point and Hunters Creek Villages. Organizers: Memorial-Spring Branch Rotary Club. Entry Fee:

\$5.00 per runner. Deadline: Monday, Oct. 23, 1978. Features: T-shirts (1st 1000 entrants), refreshments, prize drawings. Contact: Dr. Bill VanPelt 465-6076.

FISHING CONTEST:

NASA employees may participate in the National Industrial Recreation Association annual employee fishing contest. NASA Exchange is an active NIRA member. This membership covers JSC Civil Service employees. The company entry fee has been paid, there is no cost to the employee. The tournament will be open until Dec. 1, 1978. There are classes for fresh water and salt water divisions.

There are trophies & prizes to all winners. Also each entry makes you eligible for special door prizes. Enter as many catches as you wish. Entry forms and tournament rules are available at the Recreation Center or from your E.A.A. representative. Regrettably, Contractor employees are not covered on the JSC-NIRA membership. Contractors would be eligible to participate if their companies have a NIRA membership and have paid the company fishing contest entry fee. Interested contractors should contact their company employee club.

SPECIAL ANNOUNCEMENTS:

Wheel Chair Basketball Game scheduled for Recreation Facility.

A JSC All Star (and celebrity) team has been challenged by a bunch of Houston area basketball payers to an exhibition basketball game. The only thing a bit odd about this match is the challengers are a championship team on the wheel chair circuit. Mr. Clark, captain of the challenging team and coordinator for handicapped sports for U of H main campus says, "Wheel chair sports are a fast grow-

ing segment of the sports world and many sports that are played normally can be adopted to the wheel chair with only minor changes." He wants to use this opportunity to show NASA employees—just that.

The Equal Opportunities Programs office in cooperation with the Gilruth Recreation Facility are hosting the event, to be held at 6 p.m., Wed. Oct. 4, 1978, in the gym at the Recreation Center. Spectators are welcome. A short clinic and demonstration by the visiting team will begin at 6 p.m. Actual game time will be 6:30 p.m. Come root the JSC team on. They are liable to need the encouragement because the JSC All Stars will be bound to wheel chairs for that evening also.

The playing coach of the JSC team is L. J. Corcoran. Team captain and special advisor is Pat Lafferty. All team members are not yet selected. Players will be announced later.

CLASSES: Sign-up in person at the Gilruth Recreation Center. Payment is due upon registration and is non-refundable. Call x3594 for further information.

Auto Mechanics - Intermediate: Sign-up deadline is Oct. 4. Classes meet on Wednesdays, 7:15-9:15 p.m., Room 215, Oct. 11, 18, 25, Nov. 1. Labs will meet on Saturdays, Oct. 21 & 28. Fee \$45.00 per person.

Oil Painting: Classes will meet on Thursday nights, 6-8 p.m., Room 209, Oct. 19, 26, Nov. 2, 9, 16, 30. Classes will be held to a maximum of only 15 people. Cost is \$37.50; students furnish their own supplies. Sign-up deadline is Oct. 17.

Bay Area Running Club 1978 Schedule

Date	Time	Events	Location	Fee	Pre-registration	Contact	Phone
Oct. 7	9 a.m.	20 KM 5 KM 1 mile	Gilruth Recreation Center	3.50	1.50 Late entry penalty	N. Cooper	928-5261 W 482-7625 H
October 29	5 p.m.	4 mile 1 mile	Clear Lake High School	.50	Not Required	R. Arbaugh	482-0032
Nov. 26	3 p.m.	6 mile 1 mile	Gilruth Rec. Center	1.00	Not Required	R. Barton	474-2110
Dec. 17	3 p.m.	5 mile 1 mile	Clear Lake High School	.50	Not Required	R. Arbaugh	482-0032

EAA Attractions

COUNTRY WESTERN DANCE REGRETS

We regret that the decision to have two price tickets at the Fall country western dance has been reversed. There will be one ticket price, \$7.50/person, which includes dinner, drinks, and dancing. Doors will open at 7 p.m. Dinner will be served 8 to 9 and the band will play from 9 to 1. Where else can you spend an evening with your favorite cowgirl/boy for \$15.00? Make your plans now for Friday, Oct. 20. Tickets will be on sale at the Bldg. 11 store about Oct. 2.

HALLOWEEN AT ASTROWORLD

Astroworld is having a special Halloween opening on Tuesday, Oct. 31, from 4 to 10 p.m. All rides and attractions will be open and the price will be \$3. Keep your ghosts and goblins off the streets in a safe, fun environment. Tickets will be on sale at the Bldg. 11 store on Oct. 2.

SOUL DANCE

The Soul Dance has been rescheduled for Saturday, Nov. 4. Tickets will be up-

dated and put back on sale in Bldg. 11 Exchange store Oct. 2. Everything is the same except for the date change, so boogie on down to the rec cent on Nov. 4 and hear the super sound of The Down to Earth Denomination. \$8/person, includes dinner, drinks, and dancing.

CLARIFICATION

All EAA sponsored activities are identified as EAA projects when posted on bulletin boards and posters. Please contact the EAA office about EAA projects only. Thank you.

ON SALE AT THE STORE

- Disney Magic Kingdom cards - Free
- Astroworld-Six Flags Funseekers cards -Free
- Astroworld tickets - \$5.50 (reg. \$8.50)
- Six Flags tickets - \$6.75 (reg. \$8.50)
- Dean Goss Dinner Theater - \$8.00 single; \$16.00 double; good any night except Saturday
- General Cinema Theater \$2.40 (reg. \$3 to \$3.75)
- ABC Theatre tickets \$2.00



School days continue

Tech sergeant William Owens briefs astronaut candidates prior to survival training power sailing at Enid AFB in Oklahoma during late August.

Come on out, kickers

Some good tickets are still available for the Oct. 15 Huntsville Prison Rodeo. In order to get the 25% discount on the \$5 price, your money (\$3.75) must be turned in by Oct. 3.

Note: There will be no discount tickets available for purchase at the gate.

Turn in your ticket money to CG3/Sandra Burdsal, Bldg. 4, Room 242, before the close of business Oct. 3. Then

spit-shine your kicker boots and get ready for a good time.

Shrine Circus offers special discount for JSC employees

The clowns will come out in a performance of the Shrine Circus, at a special discount for space center and contractor employees Sunday, Oct. 15 at 6:30. Regular \$6.50 box seats, the best seats in

the house, will be sold for \$4.50 for this performance only.

Tickets are on sale through Oct. 7 at Bldg. 11 exchange store. Get there early for good seats.

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Editor: Kay Ebeling
Photographer: A. "Pat" Patnesky

Tribe arrives

Coushatta Indians to tour, perform; exhibits to be shown

Indians will perform a tribal dance in Bldg. 1 auditorium Oct. 10, as the space



center takes part in Native American Awareness Week. Members of the Alabama-Coushatta tribe will perform at noon, then tour the center.

Space center employees can add to their knowledge of Indian heritage throughout the day by visiting displays and exhibits set up by members of the New Trails Club. Through 4 p.m. in Bldg. 2, Indian artifacts, paintings, Navaho metal working, and a finger weaving exhibit will be on display.

Two films will show continuously in Bldg. 2 as part of the celebration. "The Long Road Home" is a panoramic film study of American history through Indian eyes. "Arrows" explores the mystical sensitivity of "the old ways" of the Indians.

In the Bldg. 45 library books on American Indians will be on display through the month of October. These books are available for checkout.

Two space center employees, Jerry Elliot and Joe Duke of the Shuttle Program Office, authored the original resolution, passed by Congress and signed by President Ford in 1976, that named a week in October as Native American Awareness Week.

On Oct. 10 the center will see how the nationwide project has evolved.

What's cookin' in the JSC cafeteria

WEEK OF OCT. 2 - 6

MONDAY: Beef & Barley Soup; Beef Chop Suey; Breaded Veal Cutlet w/cream gravy; Grilled Ham Steak; Weiners w/Baked Beans (Special); Whipped Potatoes; Brussel Sprouts; Buttered Rice; Standard Daily Items: Roast Beef; Baked Ham; Fried Chicken; Fried Fish; Chopped Sirloin; Selection of Salads, Sandwiches & Pies.

TUESDAY: Celery Soup; Frito Pie; Turkey a la King; Pork Chop w/Apple sauce; Chinese Pepper Steak (Special); Au Gratin Potatoes; Breaded Squash; Buttered Spinach.

WEDNESDAY: Clam Chowder; Fried Catfish w/hush puppies; Braised Beef Ribs; Mexican Dinner (Special); Spanish Rice; Ranch Beans; Buttered Peas.

THURSDAY: Green 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); Breaded Squash; Green Beans; Lima Beans; New Potatoes.

WEEK OF OCT. 9 - 13

MONDAY: HOLIDAY

TUESDAY: Split Pea Soup; Meatballs & Spaghetti; Liver w/onions; Baked Ham w/sauce; Comed Beef Hash (Special); Buttered Cabbage; Cream Style Corn; Whipped Potatoes.

WEDNESDAY: Cream of Tomato Soup; Cheese Enchiladas; Roast Pork w/dressing; Oven Crisp Flounder; BBQ Link (Special); Pinto Beans; Spanish Rice; Turnip & Greens.

THURSDAY: Beef & Barley Soup; Roast Beef w/dressing; Stuffed Flounder; Lasagne w/meat; Chicken Fried Steak (Special); Whipped Potatoes; Peas & Carrots; Buttered Squash.

FRIDAY: Seafood Gumbo; Fried Shrimp; Broiled Halibut; Beef Stroganoff; Fried Chicken (Special); Breaded Okra; Buttered Broccoli; Carrots in Cream Sauce.



Twelve employees won suggestion and invention awards in August. Pictured here: 1st row (left to right) Carole A. Boudreau, Sandra Burdsal, Nita Bouldin, and Eleanor Chady. Second row: Joseph DeCorte, William Wohnhaas, Harvey Myers, Bill Robertson, Kim Anson, Arthur Mandell, Jerry Poradek, and William Chanis.

Roundup Swap Shop

Cars & Trucks

'74 Luxury Lemans Sports Colonade, loaded, 54 K. mi., excellent condition, \$2595, 482-7017.

'73 Subaru, GL, 2 dr., AM/FM tape \$995, 485-1541.

'69 Mercedes 250, auto, air condition, AM/FM, Michelins, excellent condition. \$2795, 474-2981.

'75 Ford Super Cab, air, p/s, Camper shell. Patterson, 331-5550.

'70 Chevy Wagon, 3 seats, air, pwr steering, brakes, auto, AM/PB radio, steel bltd. radials, extra clean, runs like a top, great second family car or back to school special, surfer's special. \$1050, 333-3810 after 6.

'74 Chevy-Luv truck, excellent cond. w/low mileage, equipped w/nice custom camper top, CB radio. 554-6765 after 4:30.

'72 Vega Hatchback, 75,000 miles. \$400. Horton, 482-6617.

'73 Pinto, new motor, excellent body, take advantage of dropping price at \$895. 481-0095 after 6.

'77 Nova 6, AC, PS/PB, AM, 14,000 mi., excellent cond., \$3925. 534-2720 after 4:30.

'78 Dodge Magnum XE, 360, Air, Auto, P.S., P.B., Pw, cruise, vinyl top, buckets, factory warranty, 10,000 miles. \$5800. Ellis, 466-5127.

'73 Buick Electra 225, 2 dr., vinyl top, full pwr, A/C. \$1500. Dave, 486-4236.

'75 Datsun 710, 4 dr. sed., very good cond., 4 spd. A/C, AM radio, rear window defogger, low equity. Dunaway, 483-4161 or 332-1170.

'76 Pace Arrow 25' class A motor home. AM/FM stereo w/8 track, 4 burner propane stove w/oven, TV & CB, ant., 60 gallon fuel & fresh water tanks, large bath & shower, 4000 KW Onan generator, sleeps 6, 7 cu. ft. refrigerator, freezer, low mileage. New loan or assume. Excellent condition. Classens, 554-2755 after 4:30.

'74 Dodge Dart Swinger, Auto., Air, Radio, V-8, PS/PB, \$860. Firm. Martha, 946-0983 after 5:30.

Cycles

'78 Honda Moped, like new, 250 miles. \$400. 488-3961.

'72 Suzuki, TC 90 Dirt Bike. Clean w/service manual, license & helmet. \$85. 337-1436 after 4.

\$475. Suzuki GT 550. Call Martha, 946-0983.

Boats & Planes

Mercury 9.8 outboard motor, 1968, runs, call for more details. Parker, 481-4372 after 5:30.

Lido 14' Sailboat, 2 sets of sails, trailer, compass, etc. \$1500. Rocky, after 4:30 at 334-1072.

Household Articles

Apartment-size refrigerator. Works great. \$60. Hansen X4801.

2 washing machines. One needs repair to work. Second is for parts. \$40 for both. X4801 Hansen.

Portable clothes dryer. \$20. Cindy X7236.

Baby Crib, Simmons double drop sides plus Montgomery Wards firm coil spring mattress. Both excellent condition. Together only \$35. 488-2735.

Solid walnut king-size bed (complete), triple dresser, chest, 2 bedside tables, perfect condition. Brubaker, 554-5034.

Baby crib, (pale yellow ABC Simmons crib, mattress, crib guard) \$50, GM infant car seat w/belts, white vinyl \$15, English Pram (lg. wheel ABC baby carriage, makes portable car bed & stroller with canopy) \$50, umbrella \$5. Separately or all \$110. Joy Morris, 333-2910.

Twin bed, good cond., Wells, 554-6056.

6 - drawer desk, gray metal, excellent cond. \$75. 481-1469.

Dinette set/leaf, 4 chairs, \$60. Mahogany bedroom suite w/dresser & mirror, 2 twin beds, foot & headboards, night stand \$125. Carol Stager, 485-3403 after 6.

Wanted

Part-time attorneys and law students at JSC who would be interested in organizing a social club or discussion group, please contact Dick Regenburgh, 482-1156 after 6.

Need one more person for carpool, Pearland/Friendswood area to Bld. 1. 8:30 to 5:00 shift. R. Homer X5321 or E. Rogers X2657.

Used bicycle, any condition. 486-9205. P. Taylor.

Anyone interested in sharing the drive from Southwest Houston to NASA. 8:00 - 4:30. Paula X4660.

Pets

For Sale: AKC red Doberman pinscher. Mafé 5 months old. Some obedience training. Horton, 482-6617.

Baby ducks \$1 each. Peking variety (white). Cindy Nelson, 585-8162.

Excellent watch-dog, loves children, needs good home, male, approx. 2 years old. Free 483-8422. Barbara.

White German shepherd pups, not registered, born July 23, \$35. 534-4696 after 5:30. Mack Robinson.

Miscellaneous

For Sale: Ray Jefferson Model 510 depth finder. \$65. Horton, 482-6617.

For Sale: Wards Sea King Foot operated trolling motor. \$110. Horton, 482-6617.

Aquarium, 29 gallon & stand, complete w/motor, scenery, etc. New, 6 mos. old. Paid \$135. Asking \$65. 482-7017 after 6.

Green nylon, 2-man (5X7') floored tent, excellent cond. all poles & stakes. \$15. Dornback, 334-3459.

Coins: 1977P BU Dollar & half dollar. \$24.50 & 12.50 in square tube. V. Marks, 488-3354.

Two swivel pedestals (left & right side) for captains chairs in 1977 Ford Van. \$20 each or \$30 for both. Bauch, 333-3382.

500 Cook pair strips \$850. Also 820 13 cent postage stamps, \$100. Sugano, 482-5393 after 5.

Amateur radio: Regency HR-2MS, 8-channel scanning transceiver, \$150. Wheeler, 334-2765 after 5.

4 Steel radial tires w/rims, less than 50 miles, BF Goodrich, GR 60-14 \$200. 488-8583. Sam House.

Car radio from 1975 Ford Granada, like new, parker X4241, \$35.

Scuba fins, size large \$10. Miller - X3301.

15 ft. Travel Trailer. Sleeps family of 5. Ice box, L.P. stove & oven. Very good cond. \$1800. 482-7073.

Pool Table, 4 X 8, Auto return, new felt top, bumpers, cues, Belgian balls, 7/8" slate top. \$250. Dunn, 486-0808.

For Sale: Remington 270 rifle, 700 BDL, w/4X Redfield wideview scope, 2 carrying cases, excellent cond. \$200. 534-3243.

Wooden dog shipping crate \$10; 1 light summer blanket (for small horse or pony); 2 heavy winter horse blankets w/1 hood; 1 10 speed bicycle \$10; Lawnmower, needs work \$10; and Double size wooden headboard \$5. Cindy, 944-4896.

Floor model belt reducing vibrator. Very good cond. \$50. 482-7073.

Nimrod camper trailer, canvas top riviera, good cond. \$400. 944-6133 after 6.

2 pairs of skis \$15 each; Porto-Poti chemical toilet \$50 Brown, 482-1582.

Cameras & Stereos

Datsun AM/FM stereo radio, brand new, Craig under-the-dash 8 track tape player, with 2 surface mount speakers (used 4 mo.) Sanyo 8 track cassette player/recorder tape deck 10 mos. old. 869-8901.

Pioneer stereo amplifier, BSR turntable, stereo equalizer, 2 Omega 200-Watt speakers. All equipment brand-new. Ron, 488-1550.

Musical Instruments

B^b Clarinet, Leblanc Noblet, Hi-School quality, excellent cond. \$150. 482-7017 after 6.

Ludwig Snare drum and all accessories, excellent cond. \$100. 482-7017 after 6.

Bundy student flute. New, exc. cond. \$125 X4801 Hansen.

Hammond Spinnet organ, well cared for, reasonable. 481-8237.

Property & Rentals

Clear Lake City, Corner lot, 3 car garage w/opener, formals, den w/fireplace, morning room, pool, storage shed, four bedrms., 2100 sq. ft. 488-2309.

Fayetteville, 54 plus acres, all or part on county road off Hwy. 159, suitable for ranchette development, near new Lake Fayetteville Marina. 334-3202 after 5.

Gulf at your doorstep, exclnt. fishing at this cottage-by-the-sea, 15 minutes from Galveston Island. \$200 per week or \$60 per day (2 day Min.) Horton, 483-3734.

Vacation Lake Livingston, Cape Royale, beautiful resort community w/all amenities. Enjoy charming custom 3-2-1 compl. furn. home nestled among trees by the water. Rent wk/mo/yr. 488-4487.

Lease: University Green 4-2 1/2-2, new patio home. Available November. \$550/mo. plus deposit. 486-9305.

2 bdrm. home in Dickinson for rent. \$295 mo., Plus utilities. Yard w/fence, garage, Kids & pets welcome. Carolyn, 488-8730.

Deer Park, spacious 4-2-2, brick w/formal living and dining room, den. Near San Jacinto College. LaPorte schools 479-2686 after 5.

Rent: Lake Livingston Cottage, furn. A/C, on the Lake, by the week or day. 554-5093.

Rent: Lakeside vacation retreat at Cape Royale on Lake Livingston. New 3-bdrm., waterfront home compl. furn. Facil. inc. tennis, pool, golf, boat launch. Three day min. 488-3746.

Galveston-West Beach-Sea Isle, 3BR, house on Bay, w/fantastic view. \$230/Wk. off season, \$300 wk. in season. Cassetti, 474-2923.

Lease: Baywind, 2 br. condo. 1 1/2 bath, refrig., drapes, W/D connect. \$325 mo. plus deposit avail. Oct. 16. 486-9305.

Lease: Dickinson, Townhouse on Dickinson Bayou, 2-2 1/2-2 Fireplace, 2 porches, swimming pool, tennis court, boat ramp. 333-5419 after 5.

"The thing is gonna mushroom on us"

Kraft sees growing role of private industry in space

Private capital is "what it's going to take" to speed up development in the space program," Christopher C. Kraft, Jr. said last week.

"Production in space will become an important part of our competitive position, and have a great deal to do with the balance of trade," Kraft said.

The space center director was speaking in an interview for NASA's 20th anniversary, speculating on what JSC employees can expect in the next 20 years. NASA celebrates its 20th anniversary as a government agency Oct. 1.

On space industrialization, Kraft does not hesitate. He says he feels it's "highly probable" we'll see a well developed space industry "In the next ten years."

"I have an intuitive feeling that the thing is gonna mushroom on us," he said enthusiastically.

Kraft said the first major project for the space center will be to make the transportation system "operational."

"If we're going to make this thing a routine operation, it's got to go in a more matter-of-fact manner, more like an airline operation, than we've seen in the past."

Space center employees can expect the same level of activity as during Apollo and Skylab missions the first six or ten times the shuttle flies, he said. "But after that point we're going to have to phase into this new mode."

"I don't mean to imply that we're going

to hire an airline pilot to fly it (the shuttle)" he emphasized. "It will still require highly trained astronauts because it is a very complex vehicle."

However, with development of the transport system, we will see a new kind of astronaut. "Technicians will go into space very rapidly," he said. "The need for specific talent and skills will develop."

"The people who go (into space) will have very specific jobs to do that require specific training."

Kraft said he feels that in the next few years, "The U.S. will recognize a need for permanency of man in space."

"The best way to do that is with a space station. We will probably develop a permanent space station that would be carried up as modules in the shuttle."

Kraft feels quite certain that expansion into space will help the U.S. economy. "There's no question about it," he said. "As we begin to utilize space, it will have a great effect on technological development in the country."

Once the shuttle is in routine operation, "there will be a number of experiments on solar power development in space for use in space," he said.

"I'm talking about solar power for use in space now, not solar power satellites," he stressed. "I want to be able to discriminate between one and the other."

Kraft said, "There's no question about it," that solar power will be the main source of energy used in space. "I don't think there's any other way we can do it."

But before we can talk about industry in space, "We need to work on having man permanently in space, from a habitat



Christopher C. Kraft

Chris Kraft is to receive the 1978 Guggenheim International Astronautics Award on Oct. 2. The award is given each year to an individual who has made outstanding contributions to space research and exploration during the preceding five years.

Kraft was cited for his role in the design configuration of the space shuttle system and his contributions to the approach and landing tests in 1977, as well as for the continuing development of the shuttle.

Dick Johnston will accept the award for Kraft at the 29th International Astronautical Congress in Dubrovnik in Yugoslavia.

and environmental control point of view."

"We need to be spending more money on this life science problem, but not a lot more, in order to get going in that area," he said. "It will not take a great deal more than we are spending today to get us into that field, (man's permanency in space)."

Kraft took a moment to reflect on high points of the last twenty years.

"I think the greatest event of all was Apollo 8, the project, because of the risks involved and the gains to be made."

"Christmas of 1968," he said, leaning back and looking out over the space center ground. "The first flight to the

Moon where men orbited around the Moon."

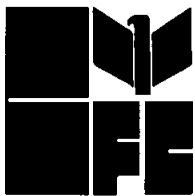
"Then Apollo 11, the landing of man on the Moon, and certainly the Skylab program, because of implications of man's capabilities in space."

"But, as far as JSC is concerned, Apollo 8 was the high point."

When asked if he had a 20th anniversary message for space center employees, Kraft said, "One thing I want to say is that we need an optimistic view of the future. The potential is there, but it won't go as rapidly as we in the space program want it to go. But it is going to happen."

- Oct. 1, 1958: First official day of NASA.
- May 5, 1961: First American manned space flight: Freedom 7 carries Alan Shepard 115 miles into space for a mission lasting 14.8 minutes.
- Feb. 20, 1962: John Glenn is first astronaut to orbit Earth, in Pioneer 7, mission lasting five hours.
- Mar. 23, 1965: Gemini 3 is first manned spacecraft to be maneuvered in orbit.
- June 3, 1965: Edward White, on Gemini 4, is first American to walk in space.
- July 16, 1969: The American flag is placed on the Moon by astronauts Neil Armstrong and Edwin Aldrin.
- Dec. 7, 1972: Apollo 17, final mission in the series, is launched.
- May 14, 1973: Skylab 1 launched with a 3-man crew.
- Nov. 16, 1973: The final Skylab mission begins.
- Oct. 26, 1977: Space shuttle completes its fifth and final free flight in approach and landing tests.

Give to
United
Fund



Once again the space center is gearing into its United Fund Combined Federal Campaign (CFC); this year's goal—\$211,174.

The target is up 3% over last year "because more and more people are coming into the Houston area and creating a bigger demand for services provided by United Way agencies," said Roy Aldridge, head of the space center campaign.

The goal is based on the number and average salary of employees in each directorate or office.

This year's campaign began Sept. 18 and will run through Oct. 13, with a bulletin board display tracking the center's progress in Bldg. 1. *Roundup* will run results each issue during the drive.

"The United Way is the only charitable fund drive permitted on federal property that is approved by the Civil Service Commission," Aldridge said. For CFC purposes, the United Way of Harris County is acting for National Health Agencies, International Service Agencies, and other United Way organizations in the Gulf Coast area, he said.

The United Way is a central funding organization that represents 54 local agencies providing over 280 services in the Houston area.

By conducting a concentrated once yearly effort, each agency keeps down its overhead and administrative expenses. Only 7 percent of money collected is used for campaign and year-round United Way expenses, with 93 percent delivered to the agencies.

"All employees are encouraged to give," Aldridge said. He added that the space center "has only twice failed to meet its goal in the past, and in all other years has exceeded it."

Hispanic Day enlightens crowd

"We can thank Spanish tradition for water laws and income taxes, among other things," said Dr. Manuel Urbina of the College of the Mainland.

Urbina was principal speaker at the Hispanic Heritage Day program put on for the space center Sept. 15, in Bldg. 2. Employees and visitors filled the auditorium to view slide shows, hear speakers, and be entertained by dancers and

singers in the Spanish tradition.

In one slide the flag of Mexico flew alongside the American flag, both projected on the auditorium stage. "Here we see the essence of Hispanic heritage," Urbina said. "These flags represent the cultural traits that make us able to unite our efforts and make these a grand United States of America."

Dr. Gerardo Cabrera and his company

followed Urbina with a presentation of *trajes* (dress) and lifestyles of Guatemala. One of his slides showed Guatemalan pyramids, once used "to look at the sky."

"I wonder if they didn't have their NASA, too," Cabrera said.

More slides portrayed women at work, children at work, and "transculturalization:" workers commuting by bicycles on dirt roads while listening to pocket radios, Guatemalans attending Latino churches in the morning and worshipping idols in the afternoon.

But the showstopper was the Ballet Folklorico de la Universidad. In white traditional costumes these "law students, chemical engineers, economics and business majors" tapped their feet dancing Hispanic percussion to music performed by a 3-piece band: harp, mandolin, and guitar.

The trio played "La Bamba" and with the dancers created the rhythm of a long-lived culture. Their tapping feet were an integral part of the music, and each song moved the audience to rich applause in appreciation.

When the Rondalla choir walked through the auditorium, an unexpected pleasure, their youthful voices and costumes completed the illusion of a trip to a far away land.

Saturday, Sept. 16, marked the anniversary of Mexico's independence from Spain, and Hispanic Heritage Week was designated by the President as a time for the U.S. to reflect on the history and culture of Latin America, and the contributions of Hispanic people to the hegemony of this civilization.

The space center program provoked consciousness of Hispanic roots in all who attended.

