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NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS

Friday July 22, 1977 VOL. 16 NO. 15



NEW ADMINISTRATOR AT JSC - NASA Administrator Dr. Robert A. Frosch, left, confers with JSC Director Dr. Christopher C. Kraft Jr. during Frosch's visit to the center

Monday and Tuesday. It was the first time Frosch has been at JSC and he was given tours of the facilities as well as briefings

## More than 8,000 applicants vie for 30-40 astronaut slots

applied for the 30 to 40 positions candidates.

day to apply and total application health and life insurance plans. numbers are still being tallied.

The astronaut selection board at JSC is now in the process of narrowing the selection to those best qualified in each category. From these, approximately 150 applicants will be selected for preliminary screening and physicals here.

Thirty to 40 candidates will be accepted for a two-year training and evaluation period at JSC. Pilot and mission specialist candidates will be notified of their selection by December.

The candidates will report for duty in Houston in 1978. Final selection as an astronaut will depend on satisfactory completion of the evaluation period.

The July 15 tally indicates that 8,079 men and women applied for the astronaut program. The mission specialist category had 6,818 applicants and the pilot category had 1.261 applicants.

Women applicants for the two astronaut positions numbered 1,544, more than 19 per cent of the

A total of 24,618 inquiries were received after the program was announced a year ago, and of these 20,440 requested and were sent application packets.

Pay for civilian candidates will be based on the federal government's General Schedule for pay scale from grades GS-7 through GS-15, with approximate salaries ropes and pulleys to descend from the Orbiter mock-up's

Candidates will be compensated opened for Space Shuttle astronaut based on individual academic To be eligible, applications had benefits include vacation and sick of overall Orbiter operations in the to be postmarked prior to midnight leave and participation in the fed-June 30. Many waited until the last eral government retirement, group ables usage and other activities af-

> Military candidates will be assigned to JSC but will remain in sponsor, mission specialists may active military status for pay, bene- assist in the management of payfits, leave and other military

> Currently, 30 persons are available as Space Shuttle crewmen, in-tinue in their chosen fields of recluding 10 scientists. Twenty-seven search and to propose, develop and of them are astronauts assigned to conduct experiments. JSC and three hold government positions in Washington, D.C.

maneuvers and landings and be re- be NASA employees.

systems.

Mission specialist astronauts will achievements and experience. Other be responsible for the coordination areas of flight planning, consumfecting payload operations.

At the discretion of the payload load operations, and may, in specific cases, serve as the payload specialists. They will be able to con-

Crews will consist of a commander, a pilot and may include a Pilot astronauts will control the mission specialist and payload spe-Shuttle during launch, orbital cialists. Payload specialists need not

## Third captive active test slated July 26

Orbiter "Enterprise" atop its 747 carrier aircraft is now scheduled for no earlier than July 26, at the NASA Dryden Flight Research Center, Edwards, California. Takeoff time of the 747/Orbiter is scheduled for 10 a.m. CDT.

Astronauts Fred W. Haise and C. Gordon Fullerton will be at the controls of the Orbiter during this 55-minute captive test flight which is a full dress rehearsal for next month's first free flight of the Orbiter.

If flight and test objectives are successfully accomplished during the July 26 flight, the first free flight will be no earlier than August

This is the second flight for Haise and Fullerton; their first flight was on June 18. Astronauts Joe Engle and Richard Truly were the Orbiter pilots during the captive flight on June 28.

The 747 will carry the Orbiter to More than 8,000 individuals from \$11,000 to \$34,000 per year, sponsible for maintaining vehicle a maximum altitude of 7,895 meters (25,905 ft. AGL) at which time the 747 will pushover in a practice run of Orbiter/747 separation.

> The Orbiter and 747 crews will perform all of the functions up to

The third manned flight of but not including actual separation. After pushing over the 747/Orbiter will descend for a landing at Edwards about 10 minutes later.

> The 747/Orbiter combination will make one circuit of the 135 by 39 kilometer (73 by 21 N-mile) racetrack.

> The two previous manned captive flights have been rated successful by Donald K. "Deke" Slayton, manager of the Approach and Landing Test. All test objectives were met during both flights.

### **Christmas** in July?

Center Operations asks all employees to keep in mind the JSC plans to close down to the extent possible during the Christmas Holiday season.

Four days of annual leave will yield an uninterrupted 10-day holiday period for the individual and also greatly support the energy-saving objective of the closure.

## President proclaims Space Observance

President Jimmy Carter pro- world, Carter said. claimed the period from July 16 States Space Observance.

to explore and understand the

"In our time, this spirit has led through July 24 as the United to the exploration of space. From single missions, designed to send Mankind has always felt an urge satellites into orbit and land men on the Moon, the United States space program has grown into a much broader range of endeavors," he declared.

> "Its purpose is not simply to study space, but to understand its relevance to life on Earth. Satellites now orbiting the Earth have helped us forecast weather patterns accurately, discover mineral deposits, detect sources of pollution and establish a global communications network," Carter said.

> "International projects such as Apollo-Soyuz have helped bring the people of the world closer together through coordinated research and the cooperative use of land and sea resources."

> Carter concluded the proclamation by calling for commemoration of "the achievements of the United States space program which demonstrate that advanced technology devoted to peaceful purposes can lead the way to a better life for people of all nations."



BREAK IN TRAINING - ALT crewmen C. Gordon Fullerton, left, and Fred W. Haise Jr. take a break during emergency egress training in Bldg. 9-A. The astronauts used

forward fuselage. Fullerton, pilot, and Haise, commander, will fly the third captive active ALT flight July 26 and the first free flight scheduled no earlier than Aug. 12.

### Summer employees plan August banquet

The annual Summer Employees' ruth Recreation Center.

Summer employees, including supervisors are invited to attend.

formance awards at the banquet.

for roast beef or \$2.90 for baked X-4623. chicken.

### Cafeteria Menu

#### **WEEK OF JULY 25 - 29**

MONDAY: Cream of Potato Soup: Weiners & Kraut; Stuffed Pork Chop: Potato Baked Chicken; Meat Sauce & Spagetti (Special); French Beans; Breaded Squash; Buttered Beans; Whipped Potato. Selection of Salads,

Sandwiches, & Pies Daily.
TUESDAY: Navy Bean Soup; Beef Stew; Shrimp Creole; Liver w/Onions; Smothered Steak (Special); Corn; Peas;

Cabbage; Rice.
WEDNESDAY: Seafood Gumbo; Roast Beef; Baked Perch; Chicken Pan Pie; BBQ Plate; Salmon Croquette (Special); Mustard Greens; Beets; Italian Green Beans; Shrimp Salad.

THURSDAY: Beef & Barley Soup; Pork Steak; Ham w/Limas; Stuffed Cabbage (Special); Beef Tacos; Brussel Sprouts; Lima Beans; Ranch Beans.

FRIDAY: Seafood Gumbo; Fried Shrimp; Deviled Crabs; Ham Steak; Seafood Platter; Salisbury Steak (Special); Green Beans; Carrots; June Peas; Whipped Potato.

#### WEEK OF AUG 1 - 5

MONDAY: Cream of Chicken Soup; Beef Burgandy w/Noodles; Fried 1/4 Chicken; BBQ Link; Hamburger Steak (Special); Corn; Carrots; Green Beans. Selection of Salads, Sandwiches & Pies

TUESDAY: Beef & Noodle Soup; Baked Meat Loaf; Liver w/Onions; BBQ Spare Ribs; Turkey & Dressing (Special); Broc-

coll; Squash; Spanish Rice.
WEDNESDAY: Seafood Gumbo; Baked Red Fish; Tamales w/Cnili; 8 oz T Bone Steak; BBQ Plate; Spanish Macaroni (Special); Beets; Spinach; Ranch Beans THURSDAY: Navy Bean Soup; Beef Pot Roast; Shrimp Chop Suey; Pork Chop; Chicken Fried Steak (Special); Carrots; Cabbage: Green Beans: Steamed Rice.

FRIDAY: Seafood Gumbo; Broiled Flounder; Fried Shrimp; Baked Ham; Seafood Platter; Tuna & Noodles (Special); Macaroni & Cheese; Turnip Greens; Stewed Tomatoes; Corn.

**JSC**rossword

(See answers, page 4)

**ACROSS** 

1. Orbiter Aeroflight Simulator

4. Retarding aerodynamic force

15. Half an em (printer's measure)

16. Controversial discussion or

(acronym)

7. Airfoils or vanes

9. Negative prefix

11. Rio \_\_\_\_ Janeiro

13. Spanish affirmative

22. Egyptian sun god

23. Fiddling emperor

24. Edwards Air Force Base (acronym)

12. First in space

10. Airbrake

18. Article

19. Verbal

25. Humor

Deadline to make prepaid reser-Banquet will be held on Friday, vations is 4 p.m. Aug. 12. Reserva-Aug. 19, at 11:30 a.m. in the Giltions may be made with one of the following, beginning Aug. 5:

Bldg. 1, Room 161B, Ana Summer Aids, VOE's, ICT's and Almaguer, X-6323; Bldg. 1, Room Junior Co-ops, their parents and 705, Teresa Turner, X-3844; Bldg. 7A, Room 129, Cynthia Ina, Some of the aids, VOE's and X-3691; Bldg. 9, Room 112, Karen ICT's will be receiving special per- Bryant, X-5827; Bldg. 15, Room 125, Patricia Quinney, X-3987, and Cost of the luncheon is \$3.80 Bldg. 17, Room 266, Diane Vega,

> Also Bldg. 30, Room 1013B, Sheryl Kossa, X-3976; Bldg. 32, room 299, Paulette Williams, X-2478; Bldg. 37, Room 189C, Lucinda Taylor, X-4086; Bldg. 45, Room 543, Genice Evans, X-3734; Bldg. 45, Room 115, Carla Ellison, X-2681, and Bldg. 350, Room 103, Cathleen Hedrick, X-4991.

Phoncille De Vore, X-3734.

### Club to show Colombia, eclipse films

The JSC Cultural Club will present films on Colombia and the total eclipse of the sun Wednesday, July 27, at 4:50 p.m. in the Gilruth Recreation Center.

The club has organized a trip to Colombia to view the eclipse the week of Oct. 9-16.

The tour package, at \$498, includes round trip air fare, seven days and six nights in luxurious hotels, sightseeing tours, airport transfers, tips and a memorable va-

Interested persons need not be members of the Cultural Club to heed the call of the Colombian Andes and the Caribbean Sea.

For information on the trip or the films, contact Gonzalo Abotteen (6-2, 6-3) Montoya, 488-5660.



CLOSEUP THOSE RANKS, SOLDIER - JSC's latest flock of ducklings seemed to be marching in military drill style

recently when this photograph was taken near the Building

## Firecracker Tennis Tournament For additional information about the banquet, contact attracts 113 participants at SJC

The JSC Tennis Club held its (6-3, 6-2) annual Firecracker Tennis Tournament over the three-day July 4 weekend, attracting 113 participants at San Jacinto College.

Court temperatures soared to 95 degrees, proving that the tournament was aptly named. There were nine events featuring men's and women's singles and mixed doubles.

A special attraction was the exhibition match by 10-year-olds Kelly Dorman and Kim Gaido who will play for state rankings in the 12-and-under category this year.

Below are the final results in each category of play:

#### **MIXED DOUBLES**

Masons (6-2, 6-3)

Advanced: Tiller/Holtman def Boor/Sanchez (6-3, 5-7, 6-2)

Intermediate: Barnett/Tiller def Kalpin/Magin (4-6, 6-4, 6-2)

#### **MEN'S SINGLES**

Advanced: Moolchan def

Intermediate: Kolpin def James

**WOMEN'S SINGLES** 

Novice: B. Zrubek def Brown (6-1, 6-0)

Over 35: Schornick def Seger (7-5, 3-6, retire)

Friday, July 22, 1977

Intermediate: Beavers def Watson (6-2, 2-6, 7-6)

Novice: Crouse def Caplan (6-2,

### Rollers take first place in mixed bowling league

The NASA Mixed Bowling Boyd Easterly, Hal Prior, Joe Smith League topped off its 1976-77 season last month with a banquet and social evening at the Lakewood Yacht Club.

Trophies were presented to the Husband & Wife: Schornicks def top three teams and 10 individual players.

> First place team was the Rollers, captain Tom Kaiser.

Men's individual trophies went to John Frederick, X-4361.

and Robert Cain.

Women's individual trophies went to Jean Norris, Norma Dell'Osso, Bettie Wilton, Rindy Dyer, Barbara Shrouds and Annie Frederick.

The league bowls on Tuesdays at team captain John Frederick; 6:15 p.m. at the Fairlanes in Clear second place, Ball Watchers, captain Lake City. Anyone interested in Joe McKeon; third place, Rejects, joining for the 1977-78 season may contact Teresa Sullivan, X-2403, or

### DSAD is congratulated for savings bond drive

The Data Systems and Analysis sion, 99.3 percent; Spacecraft Softparticipation in the recent U.S. sion Planning and Analysis Division, Savings Bond Campaign.

Henry E. "Pete" Clements, technical assistant to the center director, offered congratulations to DSAD for the outstanding showing.

The Office of the DSAD Director achieved 100 percent participation; Ground Data Systems Divi-

te achieved 93.75 per cent ware Division, 93.2 per cent; Mis-93.1 percent; Institutional Data Systems Division, 91 per cent, and Flight Simulation Division, 86.4 per

> Special thanks were given to Chris Critzos, Norris Taylor, Charlie Rudd, Ed Svrcek, Ed Kenyon and Tom Dorrough for making the outstanding showing possible.

#### 10 12 13 15 16 17 18 19 20 21 22 <u>23</u> <del>24</del> 25

#### DOWN

- 1. Deactivated
- 2. To be ill 3. Catch
- 4. Length of time, as a flight
- 5. Registered nurse
- 6. Orbiting Senator 8. Joint NASA/ESA Shuttle project
- 13. Beyond atmosphere 14. Charged particle
- 17. Haise & Fullerton or Engle
- & Truly 20. Aristotle's nickname
- 21. Fortune, destiny
- 22. Editor's initials

## ROUNDUP

**NASA LYNDON B. JOHNSON SPACE CENTER** 

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 JSC employees.

Editor: Richard Finegan

Photographer: A. "Pat" Patnesky

### **EAA ATTRACTIONS**

#### **TICKETS**

The following tickets are available at the Bldg. 11 Exchange Store Center. from 10 a.m.-2 p.m., Monday -

Astroworld - Adult & children tickets available for \$6.95 each. That's a \$1 discount.

Dean Goss Dinner Theater Comedy production, Agatha Christie Made Me Do It. Tickets \$16/couple available for any night except Monday, Saturday.

Disney Magic Kingdom Club -Free membership cards.

Sea-Arama Marineworld - Tickets on sale, \$3.75 for adults, \$2.50 for children. Open until dusk, year

Six Flags - Adult & children tickets, \$6.75 each. That's a \$1.20 discount.

#### NOSTALGIA DANCE DEADLINE

Get tickets by 2 p.m. today, Friday, at Bldg. 11 Exchange.

Spinning the "golden oldie" Magical Musical Road Show.

dance and all drinks. The fun lasts X-4921. until 1 a.m. Ticket sales end at 2 p.m., July 22.

#### **DEFENSIVE DRIVING**

26-29 from 6-10 p.m. at the 4-mile event will be run. Gilruth Recreation Center.

is scheduled for Sept. 19-20 from the day of the race will cost \$2. 10:30 a.m. to 1:30 p.m. in the Registration forms are available at center lobby.

#### SPORTS DEADLINES

played in a disco format will high- men's, women's and mixed league several categories.

light the Nostalgia Night dinner softball and for men's and women's dance which the EAA will hold league volleyball. Captains, sign up July 30 at the Gilruth Recreation your teams. Games start the week of Aug. 15.

JSC Superteams registration conplatters will be Ed Green with the tinues through July 27. Teams compete in basketball, volleyball, Doors open at 7 p.m. with tennis, relay race, softball, table breaded veal cutlet dinner served tennis and tug-o-war; \$45 for EAA between 8-9 p.m. Ticket price of teams, \$75 for non-EAA teams. \$7/person includes cost of meal, Call the center for information,

#### JSC/BAY AREA RUN

JSC and the Bay Area Running Club will jointly sponsor a run Aug. The EAA will be offering its 13 at the Gilruth Recreation next defensive driving course Sept. Center. A 1-mile novice race and

Advance registration is requested Registration, still a long way off, at \$1 per person. Registration on the center or from the club. They should be mailed to Dick Barton, Mail Code EX4.

Attempts are being made to have Registration will be held at the the race AAU recognized. Trophies Music of the '50s and '60s Gilruth Center July 25-Aug. 5 for will be awarded to top finishers in

#### MARIETTA'S JULY SPECIAL

Marietta's Dinner Theater, 7000 Southwest Fwy., is offering a special deal to NASA and contractor employees for the production, "Mary, Mary" which runs through

If you call 771-1311, say you are with NASA, make reservations and bring your NASA badge with you on the night of the performance you can get Tues-Thurs tickets at \$15/couple (\$5 savings), Sun tickets at \$16/couple and Fri-Sat tickets at \$18/couple (\$6 savings).

#### **ALLEY THEATRE**

The Alley Theatre Corporate Subscription program is again being offered to NASA and contractor employees. Season tickets are available for next year's five performances at a low price of \$19.95.

See your EAA representative for an Alley Theatre brochure which \$100 off. Call Jim King in CLC, will explain the program. The brochure contains an order form for subscriptions.

If you are planning to subscribe, fill out the form, enclose a check payable to Alley Theatre or indicate a charge plan on the form, and send to Cindy Kohrs, EG (X-4282).

Corporate Subscription coupon books will be mailed just prior to the opening of the 77-78 season in October. Deadline for placing orders under this special program is August 15, so don't delay.

#### **NAUTILUS DISCOUNTS**

For a limited time, Nautilus Health & Fitness Center is offering special membership prices through the EAA to NASA and contractor employees.

You must join by July 30. The center is at 1120 NASA Rd. 1, Suite 100. Facilities include Nautilus equipment, sauna, whirlpool and swimming pool.

Special rates are from \$75 to 333-4848, or Ray Waldvogel in Pasadena, 475-1267, for more information.

### Roundup Swap Shop

Swap Shop advertising is open to JSC federal and on-site contractor employees. Goods or services must be offered as

#### **CARS & TRUCKS**

72 Pontiac Grandville 4 dr HT. Orig owner, AM/FM stereo, vinyl top, all pwr, tilt whi, cruise, steel radis, etc. \$1,800. Sterling, X-4524 or 488-1380.

Buick Regal 350V8. AM/FM stereo & tape, 28K mi, It blue w/white int & white landau top, \$5,000, negotiable. 780-3003.

70 Cadillac Fleetwood. Sell at avg Ioan, Reid, 488-3187.

68 Dodge Dart GT. 2 dr HT, 6 cyl, auto, air, pwr steer, bukt seats, console, new paint, new batt, very clean, \$825. 487-3315.

72 Toyota Corolla. Tires, batt & other wear parts replaced past year. \$1,100, Hoyler, 334-2150.

66 Ford Country Squire Sta Wgn. Air, steel radis, new muffl, insp. \$600. Hoyler, 334-2150.

65 Chevy Impala 4 dr sedan. Pwr, air, auto, AM/FM, 327-V8, tint, good tires, clean. Runs good but needs some front end work. Crosier, X-5801 or 641-4941 74 Ford Pinto Sta Wgn. Must sell.

WITH YOUR

\$1,850, 485-3521 after 5.

prior to publication.

76 Granada. XInt cond, will sell below Blue Book retail price. Handley, 482-7041.

73 Pontiac Grandville 4 dr. All pwr, air, cruise, AM/FM tape, vinyl top, good tires, 59K mi. \$2,200. Daniel, X-5716 or

65 Olds Dynamic 88. \$200.

71 Grand Prix. New steel radls, paint, lifetime batt, muffl system, front end, brakes. Beautiful, perf cond, 76K mi, 1 owner. \$1,495. 944-9320.

73 Vega Sta Wgn. \$300. Taylor,

74 Toyota Corona 4 dr. Air, 4 spd,

dr sedan, pwr, air, AM/FM stereo, many

advertised, without regard to race, religion, sex or national origin. Non-commercial personal ads should be 20 words or less, and include home telephone number. Typed or scribbled ad copy must be received by AP3/Roundup by Thursday of the week

334-2129.

X-6101 or 471-2764.

low miles, good cond. \$2,350. Arnold. X-2703 or 481-2890.

77 Ford Granada in warranty. Silver 4

75

110

25

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6

xtras. \$5,395. MacLeod, X-3741 or 488-2838. 71 Buick Electra Ltd. 4 dr. loaded.

good tires, good cond. \$1.200. 482-1635.

76 Ford Pickup F-100 Explorer, Pwr, radio, air, under 25K mi. Rauch, 488-6692 after 5.

#### **CYCLES**

75 Honda 750. XInt cond, 6500 mi. \$1,295, 333-4840 or 488-5893.

72 Kawasaki 750 (H2), Good cond. adult owner, very low miles, just tuned. Kilbourn, X-4401 or 482-7879 \$795. evngs

Honda 350 Four, Lugg rack/ backrest, crash bar, 2 into 1 exhaust, runs xint, 10K mi. \$695. Womack, X-3611 or 488-6758.

Honda XR75. Racing cam tower, 82cc w/new rings, 22mm carb, xtnded swing arm, new seat. \$285. Grace, X-5381 or 482-7967.

72 Yamaha 650 X52. 13K adult mi, wndshid, rack, travel trunk, like new. \$725. Ward, X-4976.

75 Honda Z50. Good cond. \$150. Murtagh, X-4546. 69 Harley-Davidson Electraglide, 17K

xtras. \$2,500. State, many 482-7606, 10am-9pm.

Three CR125 Honda Elsinores, 250 uzuki Savage. 125 Penton. 175 XInt mech cond. Kinzler, 334-2449.

Misc Honda parts for 71 CL175 or CB100 M/C. Used kickstand, new handlebar switches, cost \$50, sell \$20. Smith, X-4468 or 488-3238.

#### **BOATS**

Will trade 14' Aqua Cat sailboat in very good cond for same cond Sunfish or (Storage problem). Deiterich, X-3856 or 482-1859.

Cal 229 sailboat. Diesel, wheel steer, press water, shower, dinghy w/OB, VHF radio, many xtras. \$24,000. MacLeod, X-3741 or 488-2838.

161/2' Wellcraft Airslot ('76) w/115HP Merc OB ('77) plus acces. XInt cont. \$3,950.474-3821.

21' Venture retractable keel sailboat w/trailer. Cabin sleeps 4, xInt cond. \$2.500. Babb, X-4401 or 474-2791 after

#### **PROPERTY & RENTALS**

Sale: Fairmont Park, 3-2-2. Fenced. 10219 Carlow. \$38,500. Nickerson, 944-8233 after 6.

Rent: Luvly 3 BR home w/firepl & all amenities. Walk to schools, Camino

South. \$450/mo. Allgeier, 474-3961. Vacation retreat for rent at Cape Royale, Lake Livingston. Tennis, pool,

boat launch, golf. By wk or mo. 488-3746.

Galveston West End. 2 BR By-the-Sea condo apt, full furn. \$180/wk off season, \$260/wk in season. Clements, 474-2622.

Luviy beachhouse for rent. By wkend, day, wk. Sleeps 8. Beautiful Gulf view. 737-2833 in Galveston

Sale: Islander East Condo, top floor efficiency unit. XInt Gulf view, balcony, tennis, beach, swim pool. Furnished.

481-3397 after 6. 3-2-2 in walk dist to Creek High. Fenced bkyd, Ig walkin closets, patio

cover. White, 554-2916, Lg Cty. Lease: New home, Middlebrook 3-2-2. Fenced, trees, dishwash, dubl oven, wet bar. Ready mid Sept. \$575/mo. Maley, X-6457 or 488-6871. Sale: 2 acre wooded lot, Dayton Lake

Estates. Access to hunting area, fishing lakes. Leach, X-3584 or 474-3386. Lease: New 3 BR, Sagemont area.

Firepl, etc, avail Aug 1. \$395/mo. 334-3202 after 5. Reserve for vacation now. Jamaica

Beach, Galveston. New 2 story. \$175/wk. 334-1640 after 5.

#### MUSICAL INSTRUMENTS

Gemeinhardt flute, Good cond. 488-2843 after 5.

New full-size cello, 333-4669.

2 beginner flutes, xInt cond. Signet. \$100. Gemeinhardt, \$175. 488-2309.

Piano lessons: Register for beginners lessons, adult & children. Accepting limited no. starting Aug 1. 333-4590

#### **RECREATIONAL VEHICLES**

Puma camper trailer. Sleeps 6, icebox, 3 brnr propane stove, water tank, hookups. White, 554-2916. LgCty.

Rent: New motorhome, 30' Midas. Compl self-contained w/all acces. Avail July 29. Rates on request. 481-2958 after 5:30.

#### **HOUSEHOLD ARTICLES**

23" color TV. Signature (Ward's). Gets picture fine but needs work. Cheap, make offer. Grace, X-5381.

Very attractive daybed, single-size w/pull-up frame for 2nd bed. Quilted coverlet & bolsters. Good cond. 488-8222 evngs.

Lg Span armoire (chest). \$115. 488-2652.

Port typewriter, Sears best, under 1 yr old, still in warranty. Cost \$100, self \$50. Labby, X-3704 or 554-6749.

Trundle bed. Like new w/mattress pads & spread, \$75. Occasional chair, \$15.482-2158.

Gas dryer. Sears coppertone, xint working cond. \$75. Osgood, 946-3404. Solid walnut dining table w/cntr leaf & 4 chrs, Danish mod. Mike, X-3534.

Early Amer sofa, chair, solid maple coffee table; mod 7 pc dinette. All good cond. Arnold, X-2703 or 481-2890.

#### **MISCELLANEOUS**

Siamese kittens. Box trained, 8 wks old. \$5. Wade, X-5961

35mm camera outfit. Pentax Spotmatic, 55mm f1.8, 28mm f2.8, 90-230 zoom, flash, 12 filters, much more. \$375 firm. Maley, X-6457 or 488-6871.

Craftsman 8" table saw & joiner, both for \$75. Ariens riding mower, \$100. Sampsel, 471-0172.

Four 14" Chevy (Malibu-type) tires, wheels, hubcaps & lugs, steer whl. \$15 total. Mayhew, 333-3291.

New Lennox central air. 26K BTU cooling plus heating coils, compl unit. \$450. Bohannon, 944-5868. New Sears 3-gal paint tank, \$25.

Back-to-back lay down boat seats, \$100. 471-2447. Unused interior doors. Three 24" 6-panel Colonials w/frames, six 24" 2-panel, set of 16" hollow core bi-folds

w/hdware, one 24" hollow core. Make offer. 334-3370.

Comb honey. \$1 per section. Farley, Sears riding mower. Elec start, 7 HP.

\$150, 485-3521 after 5. Child's car seat, \$10. Infant seat, \$5.

Speller, 482-6651 after 5 Class 1 trailer hitch (2000 lb max) for Pont Ventura, \$20. (3500 lb max) for 73 Olds Cutlass Supreme, \$30. Both for \$40. McCollum,

X-5031 or 488-4696.

#### **LOST & FOUND**

tost: Silver necklace medallion in area of Bldg. 45. Rusty, X-4047.

#### WANTED

Want two 16" girls' bikes. Also 2 sets training whis. Smith, X-2983 or 534-3885.

Need riders for carpool. Gulf Fwy near Monroe, 8-4:30. Friedman, X-5336 or 941-2131.

Boy's 26" 10-spd bike in good cond. White, 554-2916 Lg Cty.
Ride needed from Clear Lake Forest.

Will pay. Katherine, 334-2277. Need riders for carpool from W Loop. Fwy, Bellaire area, 8-4:30. McLaughlan, X-5536 or 661-2974.

#### LATE ENTRIES

72 VW Bus. XInt cond. \$2,195.

Sampsel, 471-0172. 69 Buick Le Sabre Delux 2 dr HT. Champagne gold/white vinyl top, pwr, air, auto, new tires. XInt working cond. clean, low miles. \$895. Cohen, X-5107 or 488-3171.

**COST REDUCTION** REPORTS (FORM 1105A) TO H.M. HUGHES, BH23 NOW!

## Spin sail, ion drive proposals compete

been selected by NASA as a candidate for Interplanetary Automated in the 1980s and beyond.

Its first use could be for a Halley's Comet rendezvous in 1986 if NASA selects this mission from among several possible options.

The heliogyro sail – to use its other name — employs a helicopter design concept with extremely long blades or sails. The 12 sails would be made of reflective aluminized plastic film and be deployed in two tiers of six each.

According to NASA's Jet Propulsion Laboratory (JPL), Pasadena, Calif., solar sailing development scientists, the 12 blades of the vehicle would be spun out by centrifugal force after being launched from the Space Shuttle.

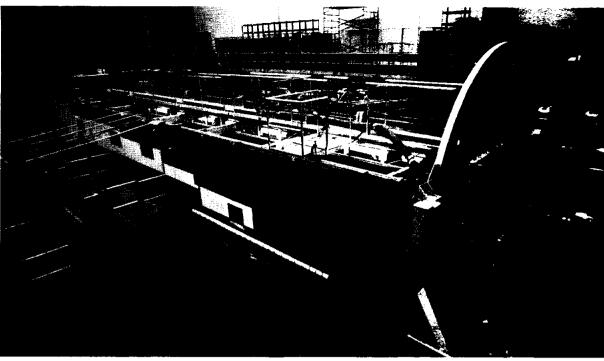
long and only 8 meters (28 feet) 1980s. California Institute of Techwide. The spacecraft and its scien- nology operates JPL for NASA.

A 12-bladed spinning solar sail tific payload would be mounted at spacecraft propulsion concept has the center of the heliogyro. The slowly spinning craft would be propelled by the Sun's photon radia-Shuttle use within the solar system tion and rotate once every three

> The spinning sail was selected over a square sail concept which would have used an 850-m (halfmile) square configuration. The spinning gyro concept was chosen because it was considered more practical by program engineers and

The spinning solar sail will now compete with a proposed ion drive (solar electric) spacecraft propulsion system for NASA consideration. NASA's final selection of one or the other of the concepts is expected about mid-August.

Several other NASA centers and a dozen industrial and research facilities are involved in the two efforts just get new meanings. The scientists say each blade to develop low-thrust, long-term



ORBITER 102 - Although it may be difficult to recognize, this is the mid-fuselage section of Orbiter Vehicle 102 now under construction at Rockwell International's Palmdale.

Calif., facility. OV-102 is scheduled for delivery in late

Millisecond

bile service structure

Pitch control motor

## Meanings may change with time Both solar sailing and ion drive programs are being studied by JPL. Several other NASA centers and a

Old acronyms never die, they manned programs.

could be 7.4 kilometers (4.5 miles) spacecraft propulsion for the might reach by reading over a colare reincarnated. The current mean- MSS - Multispectral scanner; Molection of old and new "astronym" booklets relating to various NASA some older definitions.

Below is a sample of Approach That is the conclusion which one and Landing Test acronyms which ing or meanings are followed by

> ACE - Automatic checkout equipment; Acceptance checkout equipment; Approach-correcting engine; Audio center equipment; PCM - Pulse code modulation; Attitude control electronics

> ASA – Aerosurface servo amplifiers; Amplifier switch assembly; **POS** – Position; Pacific Ocean ship; American Standards Association; Abort sensor assembly

CAS - Command augmentation system; Cluster activation systems; Crewman alignment sight

DA — Digital-to-analog; Data acquisition; Deployment assembly; Distribution assembly; Detector assembly; Dip angle; Russian for "yes" (ASTP)

**DPS** – Data processing system; Degree per second; Descent propulsion system

**DS** – Discharge; Descent system; Docking system; Display signal; Documented sample

**FCS** – Flight control system; Forward crew station; Food conment system

**IP** - Instrumentation/PCMMU; In-Instrument panel; Impact predic-

- Launch aft; Left axilla; Launch azimuth; Laser altimeter MC - Memory configuration; Message center; Manual control; megacycles; Midcourse correc- seminar slated tion

- Mission specialist; Meters/ MS

### Primary oxygen system; Positive PS - Pressure switch; Power sup-

ply; Payload specialist; Pressurization system; Propulsion system; Propellant system; Payload shroud

second; Mass spectrometer; Mo-

tion sensitivity; Meteroid shield;

tion sickness susceptibility; Mo-

countdown; No contact; Net-

Phasing correction maneuver;

NC - Normally closed; Network

work controller; Nose cone

RC - Rate command; Rotation controller; Remote control; Range command

SC - Signal conditioner; Soyuz commander; Spacecraft; Small chamber; Stowage container

SOP - Subsystem operating program; Systems operating procedure; Software operating program; Secondary oxygen pack; Standard operating procedure; Simulation operations plan

tainment system; Fecal contain- SP - Speed; Ship position (1&2); Static pressure; Solid propellant; Science pilot

put; Impact point; Initial point; SW - Software; Sea water; Switch; Status word; Short wavelength;

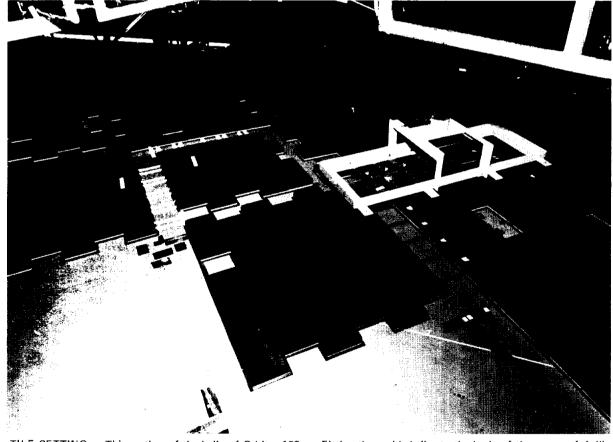
## Finance planning at Nassau Bay

A three-session financial planning seminar will be conducted at the Nassau Bay Motor Inn free of charge to JSC employees and their

Sessions will be held in the Madrid Room at 7 p.m. July 26, Aug. 2 and Aug. 9.

The seminar will be conducted by the Houston firm of Burkhart, Hall, Flake & Associates. There is no obligation.

Contact an EAA representative for additional details and registration information.



TILE SETTING - This section of the belly of Orbiter 102 shows black thermal protection tiles being set in place.

Fitting the molded tiles to the body of the spacecraft is like constructing a huge jigsaw puzzle.

### NASA publishes Skylab report

tific and Technical Information Office.

The illustrated, 180-page book provides a general introduction and overview of the Skylab mission its problems and triumphs.

Later volumes in the series will deal with detailed results of the scientific experiments and other facets of the mission in which numerous manned space records were set.

The book's ten chapters describe how Skylab was planned from

series on the historic Skylab mis- shortly after launch when the skill and knowledge to Skylab. sion, called "Skylab, Our First micrometeorite shield was lost Space Station" (NASA SP-400), has along with one of the space stabeen published by NASA's Sciention's solar panels; how the mission was saved from failure, and how three manned visits were successfully carried out — one of which set a manned space endurance record of 84 days, one hour and 16 min-

Skylab proved that man could live and work effectively for extended periods in a shirt-sleeve space station environment.

Belew, Skylab program manager, Government Printing Office, Washwrites, "This volume is offered in ington, D.C. 20402. Its stock numrecognition to those dedicated ber is 033-000-00670-5.

The first book in a planned existing technology; the agonies thousands who contributed their

"The wealth of information obtained during man's longest journey into space has provided the answers to many questions, as well as revealing new questions and knowledge, about the Sun, the Earth, space, and man himself. An adventure of today, Skylab was also an investment in tomorrow. Its results are a legacy for all forever."

"Skylab, Our First Space Station," is for sale for \$7 by the In his editor's note, Leland F. Superintendent of Documents, U.S.

#### JSCrossword answers (See puzzle, page 2)

7 H M 3 N A W 3 H Ð H