

Space Administration

Lyndon B. Johnson Space Center Houston, Texas



Complete fleet

On-orbit photograpy shows the STS-28 crew in action aboard Columbia, the last of the orbiters to return to flight. Photos on Page 3.



Translation, please

Work on the Crew Equipment Translation Aid is getting hot and heavy as designers prepare for a flight experiment. Photo on Page 4.



Vol. 28

September 15, 1989

JSC receives visit from 'Head of the Class'

By Kelly Humphries

Sitcom television came to JSC this week as actors and crews from ABC's "Head of the Class" began filming a two-part episode centering on STS-31

Filming began at the Mission Control Center on Wednesday, continued Thursday with crews roving the campus and shooting footage at Rocket Park and the front gate, and will end today with an all-day, all-night marathon of shooting in the Full Fuselage Trainer (FFT) and Space Station Freedom Mockup in Bldgs. 9A and 9B.

Burbank Studios in California.

"We're really here to shoot the things you can only get here, such as Mission Control," said Frank Pace, line producer for Eustis-Elias Productions, which produces the show in conjuction with Warner Bros. Television Inc.

The situation comedy is about a class of academic overachievers at Fillmore High in New York City, Pace said, and this episode will revolve around the class' two "science monsters," having their Student Involvement Program experiment fly aboard Dis-

Additional filming will be done at The covery on the Hubble Space Telsecope mission. The mythical experiment is called "Frogs in Space," and is a "clinical evaluation of regulated muscular activity by amphibia and anura rana catesbeiana in a weightless environment and its implications for homo sapiens."

Science whiz kids Arvid (played by Dan Frischman) and Dennis (played by Dan Schneider) come to JSC with teacher Charlie Moore (played by Howard Hesseman) during the mission, Pace said, which sets up interaction between the students, their

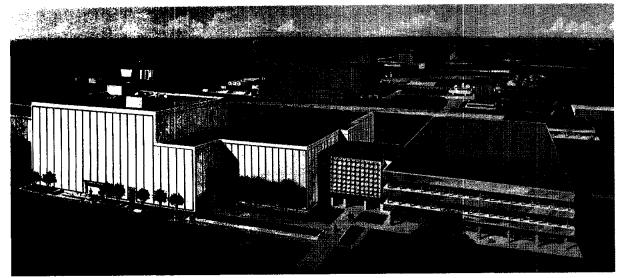
adviser, their teacher and flight controllers.

One of the students will try to take more credit than he deserves for the experiment, Pace said, which will provide an opportunity for their teacher to relate the moral of the episode, which is that it takes a lot of people working together to make large projects come together. One of several subplots will have Arvid catching a problem with data given to flight controllers during a simulation at the same time the flight controllers catch it, he added.

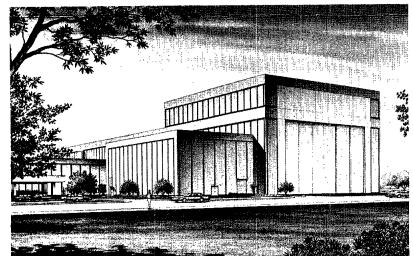
"All of us have gone through a renewed awareness and appreciation of the work that's being done here," he said. "We have put a lot of time and research into it.'

Some locally familiar faces may appear on the show as the extras were selected from the Houston area, he said, and former astronaut Buzz Aldrin will make a guest appearance during studio shooting.

The first part is scheduled to air during ratings sweeps week at 7:30 p.m. JSC time Wednesday, Nov. 1, and Please see **PRODUCER**, Page 4



The biggest rush of construction since JSC opened is set to begin in fiscal year 1990, pending congressional approval. Additions to Bldgs. 5, 9 and 30 are planned. Above: The \$10.5 million Space Station Control Center construction project would add 106,000 square feet to Bldg. 30. Right: The \$17.8 million addition to Bldg. 9 would provide 21,000 additional square feet of high bay, and 26,000 square feet of laboratory.



JSC planning biggest year of construction

By inda Copley

Construction projects at JSC planned for fiscal year 1990 will represent, "Without a doubt, the most construction at the center since its opening," according to Bob Kehoe, Facility Development Division.

Most of the construction is designed to usher JSC into the space station era, preparing the center and its people for their roles in training and controlling the assembly and operation of the first permanently manned outpost in space.

Although all the projects currently on the drawing board to begin next year still await Congressional approval, Kehoe said he is looking forward to the new capabilities the completed structures will provide.

"We're expanding in the areas of training and (mission) control, which is great since that's what we're here for," said Kehoe.

The planned construction projects, totaling just under \$40 million, include additions to Bldgs. 5, 9 and 30, as well

as rehabilitation of JSC's Central Heating and Cooling Plant, Bldg. 24, and a modification for expanded solar simulation in Chamber A of Bldg. 32.

As of Wednesday, the U.S. House of Representatives had approved a NASA appropriation that included \$384.3 million for construction of facilities agencywide, and the Senate subcommittee responsible for NASA funding had recommended a construction budget of \$341 million. NASA had requested approximately \$341.8 million. The full Senate was expected to act on the recommendation this week. If necessary, differences in the House and Senate bills would need to be settled in a conference committee before they could be sent to the White House for President Bush's signature.

The \$10.5 million addition to Bldg. 9 will be built on the east end of the Systems Integration and Mockup Laboratory, known as Bldg. 9A. The 21,000 square feet of high-bay area Please see CONSTRUCTION, Page 4

Atlantis' crew participating in countdown test

By Kyle Herring

The terminal countdown demonstration test (TCDT) involving the crew and flight controllers for the STS-34 mission was scheduled to be completed this morning as final month of preparations for the launch

as well as get in some training flights at the Shuttle Landing Facility adjacent to the launch complex.

Kennedy Space Center

The next time the crew goes to the

will be for the real thing

Also completed last weekend was the replacement of one of the igniter seals on the left solid rocket booster. The right booster igniter seal was changed last week.

On Sunday, engineers completed a test of the morning. The pad was cleared for the operation which was scheduled to be completed yesterday. During this event, hypergolic propellants will be loaded into Atlantis' orbital maneuvering system and reaction control system storage tanks. In

of Atlantis begins.

Crew members for the mission-Commander Don Williams, Pilot Mike McCullev and Mission Specialists Shannon Lucid, Franklin Chang-Diaz and Ellen Bakertraveled to the launch site Tuesday night to practice emergency crew egress procedures

three days before launch. In other work on Atlantis at Pad B, the payload end-to-end test was com-

pleted and communications were verified between ground controllers and the Galileo spacecraft and its inertial upper stage (IUS).

body flap to determine the amount of free play, which was well within specif-Galileo ications.

> Technicians received the call-to-stations for loading the orbiter's onboard storage tanks with hypergolic propellants Tuesday

addition, hydrazine will be loaded into the orbiter's auxiliary power units and the solid rocket boosters' hydraulic power units.

The Galileo spacecraft onboard science instruments were tested Wednesday and the probe was tested yesterday. Each test lasted 12 hours.

Three-month pilot extended

Mentor program chalks up successes

The Administration Directorate's mentor program, established in May for a three-month pilot period, has proven successful enough to request a six-month extension.

Grace Martinez, mentor program committee head, said the program was designed as a cross-divisional pairing of new employees with designated "mentors" managers at the GS-14 and -15 level from Administration divisions other than that of the new employees.

"In creating this program the committee realized that mentor relationships between new and more seasoned employees traditionally form naturally over time-that ours is an 'artificial' relationship," said Martinez. "But since about one quarter of our directorate employees have been here less than a year, we needed to find a way to speed up the process, to integrate these people

into the system at a faster rate."

Director William Kelly kicked off the program in May with a memo to all directorate employees. Twelve teams, each made up of a new employee and a manager were selected.

The mentor program committee, which developed the program, its guidelines and responsibilities, includes Martinez, Beth Beck, John Chisler, Alisa Cunningham, Dawn Hoyle, and Debra Johnson. The committee continued to track program progress throughout the summer by meeting with participants regularly and providing clarification when needed. All team members completed evaluations of the program, as well.

Initial evaluations have been favorable. However, team members noted difficulties in not being available to meet Please see **MENTOR**, Page 4



JSC Photo

Members of the Administration Directorate's mentor program committee discuss the program's progress in a brown-bag luncheon meeting.

JSC

Ticket Window

Dates & Data

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m. to 2 p.m. weekdays.

General Cinema (valid for one year): \$3.50 each.

AMC Theater (valid until May 1990): \$3 each.

Sea-Arama Marineworld, Galveston (valid until Oct. 17, 1990): adults, \$8.15; children

\$5.10.

Page 2

JSC

Sea World (San Antonio, year long): adults, \$17.25; children \$14.75: 55 Plus Mum Festival (Oct. 4) \$10 for 55 or older with coupon.

Palm Beach at Moody Gardens (valid through September 1989): adults \$2.75; children \$1.50.

Texas Renaissance Festival (open every weekend from Sept. 30 through Nov. 12): adults, \$8.95; children \$4.95.

Texas Renaissance Festival bus trips (Oct. 14 and Nov. 4), departs JSC at 8 a.m. and returns 5:30 p.m.: under age 5, \$6; ages 5-11, \$9; adults \$12.

Dallas Weekend Trip (departs Oct. 14 at 7 a.m., returns Oct. 15 at 10 p.m.) Includes Texas/OU and Cowboy/San Francisco football games and one night stay at the Reunion Hyatt in Dallas. Tickets are \$100 each (on sale Sept. 18).

Radio Music Theater (Thursdays, 8:30 p.m. or Saturdays, 10:50 p.m. through September): free comedy for NASA employees. Call 522-7722 for reservations.

JSC **Gilruth Center News**

EAA badges-Dependents and spouses may apply for a photo I.D. 6:30-9:30 p.m. Monday-Friday.

Defensive driving-Course is offered from 8 a.m.-5 p.m., Sept. 16 and Oct. 14; cost is \$15.

Taekwondo/Hapkido-Learn the Korean art of self-defense, mental and physical discipline. Classes held on Tuesdays and Wednesdays, cost is \$40 a month.

Weight safety-Required for use of the Rec Center weight room. Classes will be 8-9:30 p.m. Sept. 6 and 21; cost is \$4.

Aerobics and exercise-Both classes are ongoing: cost is \$24.

Tennis lessons—Beginning tennis lessons, Mondays 5:15-6:45 p.m. starting Sept. 11; six-week course is \$32.

SCUBA lessons-Class starts Sept. 18 and runs for five weeks; cost is \$45 at sign-up, plus additional fees.

JSC

Today

New Frontier Benefit Concert-Five Houston bands will perform at the Axiom night club, with benefits going to the Lunar Prospector Team, the Houston Space Society, and the Space Frontier Foundation. Contact Clifford Carley, 921-7532, or Jim Davidson, 482-7132, for information.

Cafeteria menu-Special: meat sauce and spaghetti. Entrees: baked scrod, liver and onions, fried shrimp. Soup: seafood gumbo. Vegetables: green beans, buttered broccoli, whipped potatoes.

Monday

Human factors symposium-JSC and the American Astronautical Society (AAS) present the symposium, scheduled to be held at Gilruth Recreation Center Sept. 18, from 1-4 p.m., and a social hour and dinner beginning at 6 p.m. Events will be held from 8:30 a.m.-4:45 p.m. daily Sept. 19-21, at the Nassau Bay Hilton. Speakers and panel members include Ben Rich, general manager of Advanced Development Projects, Lockheed Aeronautical Systems Co., and former astronaut and U.S. Sen. Harrison Schmidt. For registration information, contact Nellie Curtiss, 333-6232, or JoAnn Bertrand, 333-7450.

Cafeteria menu-Special: wieners with baked beans. Entrees: beef chop suey, breaded cutlet with cream gravy,

grilled ham steak. Soup: beef and barley. Vegetables: buttered rice, Brussel sprouts, whipped potatoes,

Tuesdav

Cafeteria menu-Special: pepper steak. Entrees: fried shrimp, pork chop with applesauce, turkey a la King. Soup: celery. Vegetables: au gratin potatoes, breaded squash, buttered spinach.

Wednesday

Cafeteria menu-Special: Mexican dinner. Entrees: fried catfish with hush puppies, braised beef ribs. Soup: seafood gumbo. Vegetables: Spanish rice, ranch beans, buttered peas.

Computer security expo-The Data Processing Systems Division (DPSD) will host a User Workstation Security Exposition from 9:30 a.m.-4 p.m. Sept. 20-21 in the Product Demonstration Facility (PDF), Bldg. 12, Rm. 112. Exhibitors will display anti-viral, file encryption, data storage, access control, keystroke auditing and Local Area Network security products. For more information, call the PDF at x37572.

Thursday

Space business symposium-The University Houston-Clear Lake's (UHCL) Management Association, Masters of Business Administration Association, and the Students for the Exploration and Development of Space will host a symposium entitled "The Business of Space: Case Studies," at

7 p.m, Sept 21, in the UHCL auditorium. Presentations from Barrios Technology, Space Services Inc., and Space Industries Inc. will be given, and a panel of several community industry leaders will critique the cases presented. A reception will follow in UHCL's Forest Room. The symposium is free to the public. Contact Peter Lange for more information at x30850 or 334-2081.

NCMA luncheon-The monthly National Contract Management Association meeting will be at 11:30 a.m. Sept. 21 at the Gilruth Rec Center. Dr. Jim Rand, chief executive officer, Wizen International, Inc., will speak on the applications of balloon technology to current exploration. Contact Liz Aldridge, x38518, or Shannon Romine, 282-1770 no later than noon, Sept. 15, for information and to make reservations.

Cafeteria menu-Special: hamburger steak with onion gravy. Entrees: corned beef with cabbage and new potatoes, chicken and dumplings, tamales with chili. Soup: split pea. Vegetables: navy beans, buttered cabbage, green beans.

Sept. 22

Cafeteria menu-Special: barbecue link. Entrees: deviled crabs, broiled codfish, liver and onions. Soup: seafood gumbo. Vegetables: buttered corn, green beans, new potatoes.

Windsurfer, Hi-Fly, 2 sails, fiberglass mast, \$550. Bill, 554-6242.

8 grinding wheels, honning and drill sharpening

attach., \$500, OBO. Kevin, x36650 or 482-2405.

Chain saw grinder, elec., rivet spinner, rivet press, bar rail closer, 25' of chain, asstd. link

kit, \$200. Kevin, x36650 or 482-2405. Free, reddish household bricks and scalloped

Bridal veil, candlelight color, never worn, fingertip length, pearls, flower headpiece w/ forehead band, \$40. x33185 or 996-8608.

Arcade style Ms. PacMan and Centipede video

Ping-pong table, 6 mos. old., complete, \$75.

Fiberglass camper shell, fits full-size short,

Luvs deluxe, boy's Ig., 32 count, two unopened

boxes, \$10; baby changing table, white wicker,

3 storage bins, folds for storage, \$20; diaper pail,

Double pedestal metal desk, 30" x 60", gray color, file drawer w/chair, \$85; Ready-Set-Go,

software pkg. complete w/documentation for

Synthetic marble vanity top, 22" x 31", \$20; standard med. cabinet w/mirror, \$10; misc. brass

3-motorcycle Sunco trlr., Ig. tool box attach.,

Thanksgiving Super Saver Flight, RT Okla-

Two 13K BTU window unit AC's, less than

yr. old, \$450 ea. or \$850 for both, neg. Youree,

Sansui 100 watt stereo receiver; 2 ex. lg. solid

wood enclosures w/15" and 12" multiple

speakers; gray belt-driven turntable, \$295. Bob,

homa City to Hobby (11/21) and return (11/26)

bath access., \$9. Joan, x36516 or 941-5908.

games, \$400, OBO. Glenn, x33402 or 922-1941.

7' "Ocean Magic" surfboard, \$175; 6' "Aussie" surfboard, \$75. 713-444-0293.

333-6179 or 326-3364.

wide box pickup, \$100. 480-3909.

yellow plastic, locking lid, \$5. 870-0990.

Apple Mac computer, \$125. 484-6261.

\$395. 333-6594 or 333-3725.

on AA, \$65. 488-3966

x37246 or 538-3055.

280-2636 or 723-7273.

border blocks, avail. for pickup. 946-7277.

Saw/tool grinder, Foley-Belsaw Model 1055,

wap_

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bidg. 2.

Property

Rent/Sale: Crystal Beach cabin, sleeps 7, A/ C, , \$200 dep., \$325/wk. \$190/wknd. or \$32K. (409) 832-2582 or (409) 755-1638.

Sale: Canyon Lake, TX, sleeps 2, 10/28 - 11/ 4/89, \$210. 280-9488. Sale: NE Dallas, TX, 2100 sq. ft. townhouse,

3BR/3BA, study, 2CCP, WBFP, formal DR, WBFP in MBR suite, balcony, \$94,500, FHA assum. w/qual., will hold 2nd with 10% down. (713) 280-9488.

Lease: Nassau Bay, 4-2.5-2, exec. home, fenced corner w/pool/spa, avail. immed., \$1,350 plus dep. 333-4623. Sale: Lake Livingston corner lot, on Hwy. 356.

x35096 or 488-2540. Sale: Seabrook, 3.29 acres w/cozy 2-1, quiet,

\$95K, owner fin. 532-4784. Rent: Condo, Bay Area Blvd., \$450/mo., 2-

2, FPL., W/D connections, brown carpet, no pets, avail. Oct. 1, 528-1884 or 480-1340.

Trade: Custom canyon view , 6 yrs. old, Austin stone, 4-3, off 360 west of Austin, want similar age, qual., w/in 20 min. of JSC. 471-8795 or 333-6083.

Lease: El Dorado Trace condo, 2-2, W/D, wet bar, 1100 sq. ft., \$475/mo, 333-6962. Sale: Heritage Park, 3-2-2, custom home, tile

entry, new deck, fence, new paint, \$58,500. Tony or Lori Emmons, 482-5139.

Sale: Heritage Park, 3-2-2 home, freshly painted exterior, spa. lg. deck, FPL., stainmaster carpet, 10.5% assum., \$69,500. x36619 or 996-0289.

Sale: A-frame house on 3 acres, 5 yr., furn.

carb., 4-spd., 139K mi., no A/C, body fair, \$600. Judy, x38455.

'86 T-Bird Turbo Coupe, red ext. w/red leather int, loaded, ave. B.B. loan value, BO. Jeff, 280-7720 or 486-5422. '85 Pontiac 600 LE, V-6, PS/PB, PW, cruise,

tilt, 33K mi., A/C, \$5,300. Matt, x34285 or 486-7260. '77 Datsun 280Z, 2 plus 2, \$2,750. Bobby,

280-8912. '78 Chev. Malibu, 4-dr., V-8, A/C, auto., P/

S, P/B, AM radio, \$1,200. x34214. 81 Buick Regal, A/C, auto., 2-dr., stereo cass., dk. blue, 100K plus mi., some rust, \$1K, OBO.

Chris, x37796 or 480-0277. '86 Ford PU, F250, 42K mi., 351 H.D. engine,

C-6 trans., auto., P/S, P/B, \$7,700, OBO. 485-6095

'82 Citation, V-6, auto., A/C, PW, clean, well maint, \$2,500. Bruce, x35571.

'84 Chrysler La Baron convert, "Mark Cross Edition," white, leather uphol., stereo/cass., AC, aded, 69K mi., \$5,300. x31172 or 332-2089.

'68 Chevelle SS, 350, 4-spd., red, \$2,800. Neal, 331-3525. '83 Lincoln Town car, 2-tone paint, leather,

full power, \$5,100. x32896 or 538-1443.

'85 Corvette, 2-tone bronze, bronze leather, auto., bose, Z-51, wood dash/console, \$16,500, x31064 or 334-1766 or 334-3433.

'84 Chevy Celebrity, 4-dr., auto., A/C, PW and locks, cruise, tilt, AM/FM/cass., metallic brown, \$5K. Edward, x36250 or 481-4889.

75 Ford, 1/2-ton fullsize PU, F-100 w/302 engine, auto., PS, PB, heat, no A/C, new muffler coil, driveshaft, tire, radio, seat cover, \$850, OBO. 339-1337 or 333-6558.

'86 Dodge Ramcharger Royal SE, 360, all power, air, custom wheels w/new Goodyear's, \$7,200, OBO. x36478 or 332-3928.

Boats & Planes

'82 Wellcraft, 18' Bowrider XLS, 197hp, runs like new, Sportsman trlr., \$5,500. x37432 or 480-7213.

Solid wood table w/2 18" leaves, 48" octagonal shape, \$100, 333-3254. Walnut dbl. bed w/matt. and springs, \$100;

matching five-drawer chest, \$75. 488-4915. Sectional pieces and tables, queen BR suite, matt., box springs, 4 breakfast chairs, BO. 941-

2495 Microwave cart w/storage, \$25. Judy, x38455. Beveled glass top rect. dining table, 1/2" thick

glass, faux marble base, 5' x 3', new, \$280. Katie, x33185 or 996-8608. BR dresser, Spanish or Mediterranean style

lg. mirror, \$40, OBO. x38889 or 480-1340.

Early American sofa, swivel rocker, coffee table and 2 end tables, solid wood; wood veneer linette set. Mike, 282-4573 or 326-2421. Velvet sofa/sleeper, queen size, avocado

gold, \$300; room size carpet, brown tones, \$25. 482-1535 Rock maple BR set, 2 twin beds, \$70 ea.;

chests, \$90 ea.; 2 matt. sets, \$60 ea.; 1 night table, \$35; sect. sofas, 4-pc. w/corner, 11' x 5', fair cond., \$220; Frigidaire side-by-side refrig./ freezer, 21 cu. ft. frostless, runs perf., \$225; dinette set, fruitwood, round 42" table w/2 18" ext. boards, 6 straight back padded chairs, \$300. Bob, 280-2636 or 723-7273.

G.E. built-in dbl. oven; 1 new Levelor miniblind, size 82" x 36", alabaster. 488-2822. Couch, Early American, brown tone, \$120. Ed,

x36250. 13 cu. ft. upright freezer, almond, 1 yr. old, \$200; wood 5' coffee table, \$75; wood hat rack,

10; wood octagon end table, \$60. 554-4781. 8' couch, wide-wale corduroy, beige, trad., \$100; almost new, free-standing wardrobes,

50/ea.; coffee table w/beveled glass insets, \$35; ex. dbl. bed frame, \$75. 283-5469 or 488-0397.

Photographic

Completre color dark room, \$800, OBO. Glenn, x33402 or 922-1941.

Pets & Livestock

or 487-2978.

Musical Instruments

Pearl, World Series drum set, 4-pc, vanilla, wood int., 2 cymbals, stool, heavy duty hdwd., like new, \$550, 485-5524.

Artley clarinet, \$300, OBO. x31593 or 480-6292.

Bundy cornet w/case, school-approved. Vern, x35970.

Baby grand piano, blk., \$1,200. Joe, x34538 or 338-2620.

Miscellaneous

coverage, \$75. 282-3155.

locator, \$75. 282-3155.

30 ea..r

BO. x31670.

2910.

Size 4 women's half-slip, petticoat for wedding dress, BO. x36796.

Approx. 75 sq. yds. brown carpet, good cond., you remove, \$150, OBO; white wedding gown and veil, cathedral train, custom veil, both \$175. Helen, x58413 or 554-2728. 15K gal. above ground pool, complete setup,

Lionel train set-up, 6' x 4' x 1" plyboard all

wired, 2 mounted tracks, on rollers, fits und./

dbl. bed, runs 2 trains; also Big 027 train set

w/transf., 8601 eng., never used, all \$60. 333-

Simpson Model 61 motorcycle helmet, full

Hummingbird LCR-2000 depth finder and fish

Kenwood 35W amp-tuner, \$75; Sanyo cass.

deck, \$75; Lloyd's record changer, \$45; realistic

5-band equalizer, \$45; 4 dinette chairs, \$50; Grandfather clock, elec., \$60; dressing chest,

G.E. hand mixer, \$5; Rival elec. can opener,

\$5; foldable wine rack, \$5; Vict. picture frame,

picture size approx. 22.25" x 28.25", \$50; Early

American reprod, mirror and sconce, hand-

crafted dk. pine, \$45; Santa Fe look DR set,

table w/extra leaf, 4 side and 2 arm chairs; 6' credenza, needs some work, \$350. 280-9488.

\$300; Emerson VCR, \$150. 482-3697.

incl., covered patio, metal bldg., fruit trees, near Crockett, TX, \$19K, 486-9760.

Rent/Sale: El Lago, 4-2 lg. fen. lot, \$895 or \$79,900. 532-4237.

Lease: Townhouse on Fairmont Parkway, 4-3-2CP, pool, W/D, ceiling fans, 1800 sq. ft., nonsmoker only, \$600 mo. plus sec. dep., avail. Oct. \$1,950. 282-3701. 1. Chuck or Gina, 487-2978.

Sale: Lg. custom 2-story, 4-2.5-2, formals, study, FPL, near Dobie H.S., \$79,900, 488-5210. or 483-8988. Sale: El Dorado Trace condo, 2-2, FPL, 16' Cobia o ceiling fan, avail. 2/28/90. \$39,500. Dan, 480-

6913

Rent: Pagosa Springs, CO., 2 BR house unit, sleeps 8, near Wolf Creek/Purgatory, 7 days, pick week (Sat. to Sat.), 7 Oct -23 Dec 89, \$350; 6 Jan - 26 May 90; \$550. x34614 or 334-2278.

Cars & Trucks

'78 Cadillac Fleetwood, 60K mi., \$3K. 482-3697.

'82 Chev. Impala, 4-dr., 6-cyl., 23K mi. 783-9164.

'77 98 Olds, 403 4 BBL, 80K mi., \$850, Mike or Alma, 532-1812. '84 Monte Carlo "SS", P/Wdw and locks,

cruise, tilt, white/blue int., \$6K. x36346 or 486-0389

'85 S-10 Blazer, 2.5 lt. eng., 4 cyl., A/C, good mileage; '77 Nova, manual, no air, new batt., good tires, 87K mi., \$1K nego. x35096 or 488-2540.

'87 Oldsmobile 98 Regency Brougham, 4-dr., metallic gray, wire wheels, AM/FM/cass., under warranty; 44K mi. 333-3254,

'86 Chevy Nova, 4-dr., std., blue, 45K mi., \$5,300. Patti, 470-8522 or 480-1225.

'80 Ford Pinto, new brakes/clutch, rebuilt

Hobie 16', multi-colored sails, custom sail box, galv. trir., many extras, stored indoors, like new, \$2,500, 538-1148.

16' day sailer and trir., no sail, fair cond., \$250. 333-6594 or 333-3725.

16' Hobie Cat, access, skipper and trir.

16' Hobie Cat, 2 sets of sails, harnesses, traps, life jackets, trlr. optional, BO. John, 482-6364

16' Cobia, center console, 70hp, galv. trir., bait well, \$1,900. Joe, x31057 or 488-3866.

Cycles Men's 23" 12-spd. Centurion Accord RD, acing/leisure bike, \$250. Paul, 282-2639 or 480-6147

'84 Honda V65-Magna, blk., 9K mi., \$1,800 firm. Paul, 282-4098 or 554-6366. Sears 3-wheel, 3-spd. bicycle, \$75. 488-5288. '86 Honda XR 100 dirt bike, \$600; trailer, \$300. Gary, x33786 or 499-5786

Audiovisual & Computers

Radio Shack Tandy EX, personal computer w/one ext. drive, DMP printer, color monitor, \$900, OBO, x39258.

Household

Oak china cabinet w/2 glass doors, light ins., shelves ins. and bottom, \$400, OBO. Mary L., 479-6862 or Becky, x36530.

2 Bedsit foam chair cushions, brick red locking tops, coord. throw pillows, \$55/pr. 280-9488.

DR hutch, yellow pine/oak stain, cupboard in bottom, shelves top, \$150; oak veneer T.V. cart w/doors/wheels, good cond., \$35. 554-2728.

German Shepherd, AKC, 15 mos. old, free, all blk., needs yd. to run in. 474-5966.

AKC Brittany Spaniel puppies, only 4 avail., \$100/ea. x34845 or 409-925-6636.

Colorful kittens, born Aug. 6, all males, free, avail. Sept. 16. Linda, x35969 or 554-2206.

Wanted

Want 4-spd. manual trans. for '67 Mustang. Jim. x31670.

Want wrought iron patio set, x36796.

Want reliable, neat, nonsmoking female to share my home, \$250/mo. plus 1/2 util., your housebroken dog is welcome, if compat, w/mine, Kathryn, 280-9040.

Want 2 roommates to share house in L.C. Newport subdiv., \$250/mo., split bills, nonsmokers only, sm. pets tolerated. Russ, 5543-5900. Family wants to adopt a Labrador or an English Setter puppy. 482-2741.

Want to join or form Montrose-Rice area carpool, work sched. is 7:30 to 4:30. Mary, x34802 or 528-4675.

Want to babysit in my Friendswood home, ages 2-4 yrs. 996-8138.

Want windsurfer transition board, approx. 10' w/dagger board, prefer w/sails. 280-9956. Want to buy full-size baby car seat. Linda, x35969 or 554-2206.

Riders wanted for vanpool, West Loop Park and Ride to NASA, Richard, x37557,

Want people to start AD&D campaign, esp. need ref. Joe, x34538 or 338-2620.

Want Pentax ME Super 35mm SLR camera and access., will consider cam transaction or trade for my German Shepherd. Frank, 474-5966.

Want '84 or '85 Olds 88 4-dr. Chuck, x34886

Tour Model III golf clubs 3-PW, \$145, metal 5514

neral weighter

Batman record, 1966, from T.V. series, 33 1/ 3 LP, BO, 280-9488.

Pair Technics SB-K40 3-way speakers, \$50; Sharp cass. deck, \$10, 13" B&W T.V., \$10; iron, \$5; food processor, \$20; drink mixer, \$10. Kelle, x31951

FF1700 Southwestern Bell cordless Freedom phone, \$75. Ted White, x30621 or 474-2214.

3-pc. LR set, \$250, OBO; RCA 25" color console T.V., dk. wood, \$225, OBO; Sony Sports Walkman w/AM/FM/cass. \$45. Jana, x31653 or 326-4030.

3-pc. couch, loveseat sect., 2 microwaves, 55gal. saltwater fish tank and king-size waterbed. 480-8274

2 beer barrel chairs; Hoover vacuum cleaner; record player w/adjust. spd.; cass, recorder; child carrier for bicycle; Spenco bicycle seat cover; baby gate; back chair. Carole, x31698 or 480-2467.

IBM Selectric typewriter, Model II, \$200. Bill Tomkins, 534-2276.

14K gold watch, Baume and Mericer, round face, \$800. Carri, x31985.

55-gal. fish tank w/wrought iron stand, \$150. Carri, x31985.

Hard bound NASA books, Earth Photographs from Gemini VI through XII (1968), Exploring Space with a Camera (1968), BO. Steve, 486 8716

26" Sony Trinitron T.V. console, modern, dk. wood cabinet, Matrix sound, remote, cable ready, \$450. Elyse, x37764

MacGregor woods, M65 Driver, \$50; Eye-O-Matic 4 wd. and 5 wd., 430 ea.; M/T 1 iron, \$25; wanted Wilson Staff tour blade irons. 487-1654

s., well-maint, AC/DC \$250. Bruce, x35571.

4-15" x 10" wide alum. rims, Champ 2 Progressive, from Chevy truck, 4 mos. old, \$300. Beverly, x34015 or 339-1432.

King size Springair back supporter grandeur matt. and box springs, \$300. Harris, 488-1048. Singer upright vacuum sweeper w/attach. \$50. 337-3808.

GMC shop manuals, X-8932 and X-8936 for light duty trucks, R/V, G, P models, \$25/set; PU topper, all alum., long bed, \$100. 482-5536 or 280-1579.

17 cu. ft. yellow refrig., 5 yrs. old, \$75, OBO; Ward's W/D, white, 1 yr. old, \$200, OBO. 946-6814.

Floor lamp, \$35; microwave stand w/chopping block, light, bottom cabinet, \$90; king-size Early Amer. headboard, \$150; baby playpen, \$30; baby swing auto., \$30, 554-4781

25 cu. ft. G.E. chest freezer, white, \$175, OBO. 474-5558.

1 Nintendo game player and 3 joysticks, \$45. 488-5288

Custom kingsize bedspread, \$45; pre-hung and unhung doors w/hinges and lock sets, \$10-\$20: carpet remnants, \$30. John, x38178 or 482-5837.

UT Austin football tickets, 2 ea. for Rice (10/ 7), Texas Tech (11/4), and TCU (11/18), \$30/ game. Henry, x39660.

Marine radar, needs work, Raytheon, model No. 2700, \$195. 280-8796.

Marine SSB radio, not working, \$145. 280-8796.

Antiques: Wheelchair; seed sowers; iron bed; old rec. player; sewing machine; spinning wheel; new upright freezer, G.E.; "1847 Wm. Rogers silver plate set of 63 pcs., serv. for 8. 783-9164.

COMPLETE FLEET

Crew returns Columbia to active flight status

On-orbit photography from the classified STS-28 mission was released last week. Clockwise from right: 1) A head-over-heels crew portrait shows the heads of Commander Brewster Shaw, Pilot Dick Richards and Mission Specialists Mark Brown, Dave Leestma and Jim Adamson and the heels of a stuffed tiger; 2) Adamson flips a shrimp while preparing to enjoy the rare opportunity to eat while weightless; 3) Richards gets to work in the pilot's seat as the tiger, the mascot of his alma mater the University of Missouri, checks his progress; 4) Brown assembles the various components of a meal on Columbia's middeck as Adamson looks on; 5) Richards, not one to belabor a point, sports a Mizzou T-shirt; 6) Leestma poses with a Navy pennant; and 7) Shaw shares the middeck with some beverage containers and a packet of wheat crackers.





Focus groups look at culture survey issues

By Linda Copley

Page 4

JSC employees selected at random by the Human Resources Office will participate during the next two weeks in focus group sessions that address issues raised in last spring's JSC Culture Survey.

"The results of the 154 questions of the survey for the center as a whole have been presented to senior staff, and reports have also been given to the individual directorates," said Chris Parker an organization development specialist for Human Resources.

"Now we are holding these focus

groups to ask a sampling of employees to help us understand better the most pressing questions highlighted by the survey, and to see what kind of recommendations they come up with."

According to Parker, the groups of 10-12 employees from a directorate will meet with a technical line manager from a different directorate who will serve as the moderator of the group, and a Human Resources representative who will serve as the recorder. Each session will take from 60-90 minutes.

The groups will focus on four issues

designated as particularly relevant to or negative factors associated with JSC according to culture survey results, as well as some directoratespecific concerns. The issues of interest centerwide include:

 Cooperation and teamwork: participants will be asked for examples of the lack of these qualities both on site and between JSC and other centers.

 Career development: employees will be asked to explain what that means to them, to indicate ways the current process could be improved, and to give their views on the positive

temporary assignments.

Level of decision-making: employees will be asked what their concerns are regarding this issue, which received less favorable responses this year than from JSC's first culture survey taken in 1987. Participants also will be asked to make suggestions as to how decisions can be made on lower levels within their organization.

. Workload: employees will be asked to what extent they are spending their time on worthwhile things; if they contact Chris Parker, at x35266.

feel they could accept more work; and where, if ever, they have experienced duplication of effort.

Parker said that once the directorate heads receive reports on the responses of the focus groups, a complete report of all the findings will be given to senior staff.

"We believe the results of the focus groups will help us come up with a concrete action plan to address each of these issues," Parker said. For more information on JSC's second culture survey, JSC federal employees may

a research plan for space human

factors for 1991 through 1995. The

research plan developed will be

submitted to the sponsoring NASA

offices to assist in planning future

of 10 topics, ranging from "Space

Station Mock-up" to "Man-Systems

Telerobotics Lab" to a "Computer Man-

Modeling Facility." Speakers from

NASA, industry, and academia will

provide presentations on state-of-the-

art and required future research

directions. Audience participation is

discussion groups will break away to

further cover each topic area. The

conclusions of the discussion groups will be presented at a final session the

last day of the workshop, and a

the NASA Headquarters personnel

sponsoring the workshop this winter,

will be prepared. Participants will also

other interested JSC employees in

participating. Copies of the workshop

agenda and additional information are

available by calling Dr. Howard

AAS members are invited to join all

A detailed plan, to be presented to

research plan will be outlined.

each receive a copy.

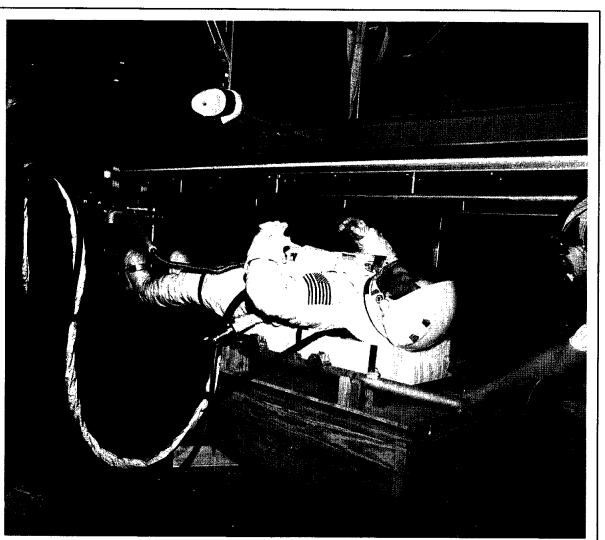
Schneider, x32380.

Following the formal sessions, small

A session will be devoted to each

human research programs.

encouraged.



JSC Photo by Jack Jacob

TRANSLATION, PLEASE—Test subject Charlie Armstrong puts a manually operated space station Crew and Equipment Translation Aid (CETA) through its paces on the air-bearing floor in Bldg. 9B. Assisting him is suit support technician Jack Coverdale, left. CETA is slated as a flight experiment on STS-37 in June 1990, and will test three possible methods of moving astronauts and their tools from one end of the space station to the other. Armstrong, who is also helping develop procedures for the flight experiment, is testing a "cart" that would require astronauts to propel themselves hand over hand. Another version would require the astronaut to work a mechanical lever. A third would call for the astronaut to rotate hand peddles, which would generate electricity and power an electric motor that would move the cart.

Producer hopes to boost space program

(Continued from Page 1) the second part will air at the same time Nov. 8.

bracket, to jump from 30 million to hope that what we do when we're

viewership, strong in the 14-45 age the space program," Pace said. "We program."

60 million because of sweeps week, here will create new enthusiasm "We hope we can stimulate more amongst high school students and Pace said he expects the show's interest among high school kids in the regular public for the space

Construction plans extensive

Human factors research will be symposium topic

Continuing research into the relation- in long-term space habitation and ship between humans and machines exploration, with the goal of establishing in long-term space exploration will be the focus of next week's gathering at JSC called "The Manned System—A Human Factors Symposium and Workshop."

The symposium, sponsored by the NASA Offices of Space Sciences and Applications and of Aeronautics and Space Technology and the Southwest Section of the American Astronautical Society (AAS), will be held from 1-4 p.m. Monday at the Gilruth Recreation Center.

Monday's symposium activities will set the stage for the three-day human factors workshop to follow. Dr. Alphonse Chapanis, president of Human Factors Consulting Co.; Lt. Col. Ted Wierzbanowski, director of planning for the National Aerospace Plane Program; and former astronaut and U.S. Senator Harrison Schmitt will speak at the symposium, and a panel discussion will follow.

Ben Rich, general manger of Lockheed's "Skunkworks," will be the speaker at a dinner beginning at 6 p.m. Monday at the Gilruth. Reservations for the dinner, which costs \$8.65, can be made by calling Bill Armstrong at 488-9005.

Human factors workshops will be held Sept. 19-21 at the Nassau Bay Hilton and will present issues involved

Meeting to kick off recycling effort

JSC will kick off its recycling pilot need for recycling and provide program with a Monday meeting to discuss how employees in the affected buildings can contribute toward conservation and environmental protection.

The meeting, scheduled from 1 p.m. in Bldg. 45, will be open to all Bldg. 45 and 227 division chiefs and a guest of their choice.

Astronaut John Young, special assistant to JSC Director Aaron Cohen for engineering, operations and safety, will discuss the general

information on the subject. Young's concern about the environment was the catalyst that inspired the reevaluation of paper recycling at JSC.

The first containers for recyclable paper will be distributed to offices in Bldgs. 45 and 227 on Oct. 2. By then, special hardware needed for the pilot project-such as water-tight dumpsters to hold the paper-will be in place, said Mike Scott, head of JSC's Special Purpose Maintenance and Services Office.

Clinic explains reason for backlog

backlog in scheduling annual physical astronaut candidate selection physiexaminations for civil service cals that will extend over five weeks

The JSC Clinic is experiencing a the tentative dates for the 1989

Space Station Control Center among three biggest projects

(Continued from Page 1) and 26,000 square feet of laboratory area will be used to support development, testing and flight qualification of space station assembly techniques and hardware. The added space will accommodate simulators and associated support equipment, and provide space for personnel in automated systems development. The project is expected to be completed in April 1991.

The high-bay addition will house several six-degree-of-freedom simulators, a 40-foot by 40-foot air-bearing floor, and static test areas for space station structures, components and test fixtures. Enlargement of the existing air-bearing floor is needed to accommodate the full-scale dynamics testing of the shuttle and Space Station Freedom remote manipulator system already planned for this location.

The three-story laboratory support area is required for technician work and staging, test and applications computing support, techniques development laboratories, transient mechanical equipment.

The addition to Bldg. 30 will house the Space Station Control Center (SSCC) a five-story structure with a second-floor mezzanine to accommodate ground-based automatic data processing equipment and associated systems to support space station operations.

The \$17.8 million project, scheduled for completion in July 1991, is needed to provide the initial and continuing basic ground support of the space station orbital assembly. The facility must be fully operational before the first space station element is launched, with sufficient time provided for systems installation, activation, testing and verification of procedures.

Proximity to the existing Mission Control Center (MCC) is needed so that common skills, personnel, equipment, communications and data may be shared. Engineering and maintenance tasks will be shared with the Space Transportation Systems (STS) programs. The

engineering support space and MCC will remain configured for and dedicated to STS operations through the 1990s.

> Like the MCC, the SSCC will be open 24 hours a day, and is expected to require 55 civil service and 190 contractor workers on the prime shift during regular space station operations. About two and a half times that number will be required for support during contingency operations.

The three-story \$3.8 million addition to the Bldg. 5 Simulator/Training Facility will contain 23,200 square feet of new floor space to accommodate space station crew trainers, ancillary support equipment and personnel. The addition will be on the south side of the existing south wing high bay. A secure wall with a security entrance will be provided between the existing high bay and the existing secure area of Bldg. 5.

The extra facility space will house the trainers needed for space stationunique systems, operations, and crew stations. Completion of the addition is currently scheduled for December 1990.

employees, but promises to get to evervone even though it may not be during their birth month.

The backlog was caused by the clinic's need to complete about 300 job-related physical examinations for an on-site contractor within a given time frame, according to Clinic Administrator Dolores Bellfore

The clinic also has been notified of



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Editor Kelly Humphries
Editor Kelly Humphries Assoc. EditorLinda Copley

this fall. These added examinations will cause a small increase in the backlog.

All civil service employees will be receiving a scheduled date for their physical examinations, but possibly not in their birth month.

Bellfore and the clinic staff expressed thanks to all employees for their cooperation and understanding.

Mentor pilot extended

(Continued from Page 1)

throughout the summer months because of leave schedules, and in finding enough time to pursue the program. This prompted the committee to ask for a six-month extension.

"The committee is also looking at changing a few things, like perhaps teaming the new employees with managers within their own divisions to ease the integration process even further," said Martinez.

"With BA Deputy Director Wayne Young, our management adviser's approval, we'll have another six months to work the bugs out of what looks to be a valuable program within BA.'