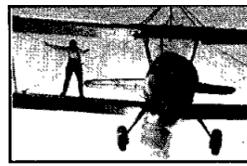




Open house

Astronaut Janice Voss autographs a prize for a youngster during the recent MOD Open House. Photos on Page 3.



Wing walkin'

This weekend's Wings Over Houston airshow promises daring performances and JSC aircraft displays. Story on Page 4.

Space News Roundup

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October 25, 1991

No. 42

Space Exploration '91 expo starts Tuesday

Truly, Cohen, Whitmire head list of conference speakers

By Kelly Humphries

NASA Administrator Richard Truly, JSC Director Aaron Cohen and Houston Mayor Kathy Whitmire will deliver the keynote addresses at next week's Space Exploration '91 Conference and Exposition, and JSC employees will be allowed to visit the exhibition for free.

Truly will speak at 1 p.m. Tuesday, Whitmire at 1 p.m. Wednesday and Cohen at 1 p.m. Thursday, all in the South Shore Harbour Resort and Conference Center at League City. Other Tuesday program highlights will include

a welcome by Dr. Robert Seamans Jr., chairman of the hosting NASA Alumni League, a "NASA Associate Administrators' Program Outlook" at 9 a.m., and sessions on the direction of space technology, Long Duration Exposure Facility results, Magellan results and Hubble Space Telescope results at 2 p.m.

The program outlook session will feature the Office of Space Flight's Deputy Thomas Utsman, the Office of Space Science and

Applications' Dr. Lennard Fisk, the Office of Space Operations' Charles Force and the Office of Aeronautics and Space Technology's Dr. Robert Rosen.

Wednesday's "Space Station Day" highlights will include a "Program Update on Industry Status by the Managers" and a session on assembly, systems verification and maintenance of the pressurized modules. The JSC chapter of the Alumni League will host a chapter and conference reception, open to all paying

conference participants, at 6:30 p.m. Wednesday in the Exhibit Hall.

Sen. Harrison "Jack" Schmitt, Apollo 17 lunar module pilot and the only scientist to walk on the Moon, will address the conference banquet at 8 p.m. Wednesday.

Thursday's sessions will focus on education and international space activities, featuring a Soviet delegation's presentation on lessons learned from the Mir space station.

All badged JSC government and contractor employees and NASA Alumni League Please see **EXPO**, Page 4



SLS-2 crew forming

Seddon to be payload commander

By Barbara Schwartz

Dr. M. Rhea Seddon has been named payload commander for Spacelab Life Sciences-2 on STS-58, scheduled for launch in July 1993.

The mission is dedicated to continued life sciences research on adaptation to microgravity in preparation for Space Station Freedom and future planetary exploration.

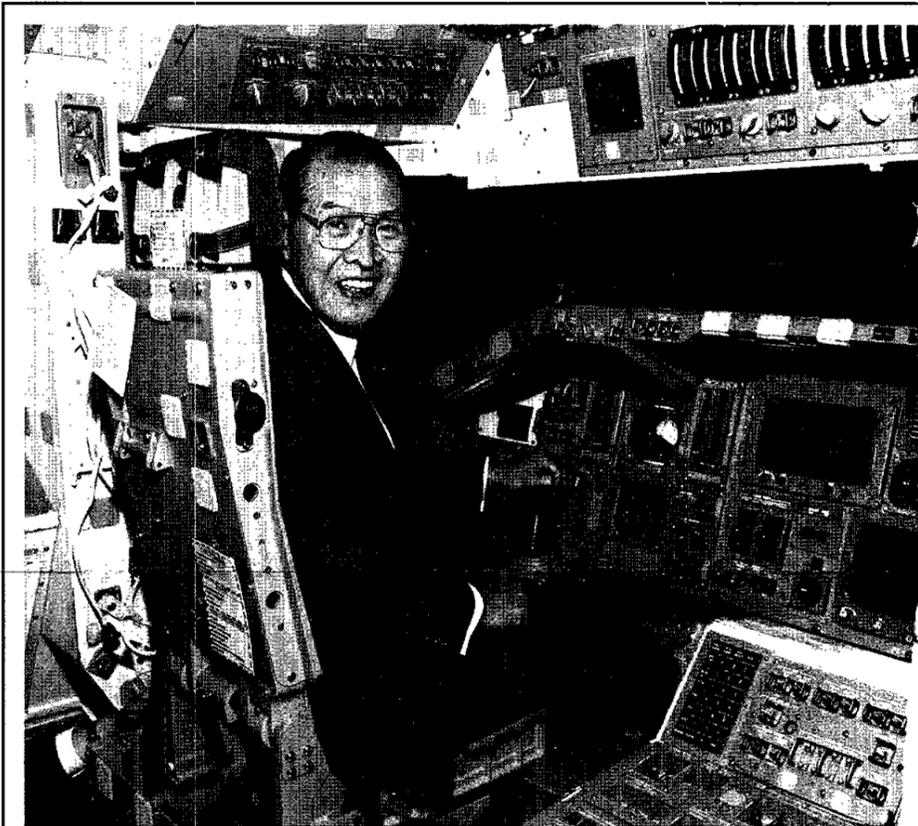


Seddon

Seddon will have overall crew responsibility for long-range planning and integration of payloads, providing expertise for the coordination of science activities.

Seddon has conducted medical research during two previous shuttle missions, STS-51D in April 1985 and STS-40 in June 1991. On STS-40, the first Spacelab Life Sciences mission, Seddon and fellow crew members Bryan O'Connor, Sid Gutierrez, Jim Bagian, Tammy Jernigan, Drew Gaffney and Millie Hughes-Fulford performed numerous experiments in life sciences, materials science, plant biology and cosmic radiation. They also tested hardware proposed for the Space Station Freedom Health Maintenance Facility.

Wednesday, Seddon joined Lennard Fisk, NASA associate administrator for space science and applications, in testifying before the House Committee on Science, Space and Technology's Subcommittee on Space regarding the Earth benefits of space biomedical research.



Masato Yamano, president of the National Space Development Agency of Japan, checks the fit of the commander's seat in the Bldg. 9 Full Fuselage Trainer.

JSC photo by Mark Sowa

NASDA president visits JSC

The head of the National Space Development Agency of Japan (NASDA) visited JSC last week, touring facilities and meeting with astronauts and managers.

Masato Yamano was accompanied by Norio Saito, NASDA deputy director of external relations; Yukio Haruyama, manager of NASDA's Earth Observation Program; Dr. Hideo Hasegawa, manager of the NASDA Houston liaison office, STS-47 backup Payload Specialist Chiaki Mukai and Takao Doi.

The group was here to meet JSC

Director Aaron Cohen and familiarize itself with JSC and the training facilities that are being used by Payload Specialist Mamoru Mohri and his backups as they prepare for their September 1992 Spacelab-J mission.

The group visited the Bldg. 9 Space Station Freedom mockup and Space Shuttle Trainers, the Mission Control Center, the Weightless Environment Training Facility, the Space Shuttle Simulator in Bldg. 5, the Spacelab Trainer in Bldg. 36, and Hangar 276 at Ellington Field.

Atlantis crew plans Halloween dress rehearsal

By James Hartsfield

Atlantis headed to Launch Pad 39A late Wednesday as preparations for a November launch of STS-44 continued to run smoothly in high gear.

The STS-44 crew — Commander Fred Gregory, Pilot Tom Henricks, Mission Specialist Story Musgrave, Mario Runco Jr. and Jim Voss, and Payload Specialist Tom Hennen — will travel to Kennedy Space Center next week for a Halloween countdown dress rehearsal, the terminal countdown demonstration test, one of the final milestones prior to launch. The mock countdown will conclude Friday.

This week, crew members, the flight control team and payload teams participated in the next-to-last joint practice session for STS-44. The secondary payloads integrated simulation on Tuesday put the mission specialists and payload specialist through their paces with experiments that will be on Atlantis' middeck. A final joint practice session scheduled for Nov. 4 will focus on deploying the Defense Support Program satellite.

Shuttle managers are scheduled to meet at KSC Nov. 7 to make a final, thorough review of all preparations for the mission and set an official launch date, a date that may be as early as Nov. 19.

Also this week, the primary payload for STS-44, DSP, was transferred to the launch pad's Payload Changeout Room, arriving there early Monday. DSP will be installed in Atlantis' cargo bay on Halloween.

Elsewhere, preparations of Discovery for a January launch on STS-42, carrying the International Microgravity Laboratory (IML-1), forged ahead as workers removed the orbiter's three main engines used on its last flight, STS-48 in September. Three new engines were to be installed beginning Thursday.

A major milestone in STS-42 preparations is looming as technicians begin final work toward installing the IML-1 module in Discovery's cargo bay on Nov. 18. In the Vehicle Assembly Bldg., work is under way to stack the STS-42 solid rocket boosters.

Please see **SHUTTLE**, Page 4



Conference to promote information systems interchange

Mission Ops to eye computer security

By Jeff Carr

JSC's Mission Operations Directorate will host a two and a half-day conference on security technology for automated information systems November 6-8.

The conference, co-sponsored by the Information Systems Security Association-Texas Gulf Coast Chapter and the University of Houston-Clear Lake, will focus on new security technology and concepts for enhancing the integrity of automated information systems.

JSC is responsible for providing AIS security for space shuttle and space station operations. MOD is in

the process of developing information systems and security concepts for Space Station Freedom.

The event is intended to promote an exchange of information among NASA and industry security professionals that will help assure that these systems are established with the best, most cost-effective security technology available.

"The systems we are developing for Space Station Freedom will be operational in 1995 and beyond. The challenge is to know which technologies to watch and when to choose them," said Mission Operations Director Gene Kranz.

"For this conference, we have assembled some of the best minds and technologies available," Kranz said. "Now is the time for sharing ideas, lessons learned, and for establishing visions for the future."

Keynote speakers will be Dr. David D. Clark of the Massachusetts Institute of Technology, author of "Consumers at Risk"; Richard Carr, manager of the NASA Headquarters Computer Security Program; and Dr. Rod Brown of UHCL.

The conference will be held at the Holiday Inn-Hobby Airport in Houston, and will operate in two disciplines. One will consist of papers

and panels discussing NASA specific topics and AIS security concepts, and the other of vendor demonstrations. Speakers will emphasize the application of new technology and concepts, NASA experiences and development efforts, system integrity, and AIS architectures. A vendor exhibition area will be open to the public.

NASA employees may register for \$195 by contacting Jane Kremer at x32601. Others should contact the Software Engineering Professional Education Center at 282-2223. Registration deadline is Nov. 1.

JSC

Ticket Window

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

- General Cinema (valid for one year): \$4.
 AMC Theater (valid until May 1992): \$3.75.
 Loews Theater (valid for one year): \$4.
 Texas Renaissance Festival (9 a.m.-6 p.m. weekends Oct. 5-Nov. 17, Plantersville): child (5-12), \$5.55; adult, \$9.25.
 Renaissance Festival bus trip (7:30 a.m.-5:30 p.m. Oct. 26 or Nov. 9, includes transportation and admission): child, under 5, \$7; child, 5-12 years, \$10; adult, \$15.
 NASA Night at Delta Downs (Nov. 16-17). Day trip (3:30 p.m.-2:30 a.m., includes transportation and admission to clubhouse): \$15. Overnight trip (12:30 p.m.-12:30 p.m., includes transportation, reception at Beaumont Hilton, accommodations, admission, brunch): \$50.
 Halloween Dance (7 p.m. Oct. 26, Gilruth Center, music by 4th Wave Rhythm, costumes encouraged, prizes best costumes): \$15.
 Wings Over Houston Air Show (8 a.m.-6 p.m. Oct. 26-27, Ellington Field): child (6-11), \$2; adult, \$7.
 Mulligan Golf Tournament (Oct. 25-26): \$19; season gallery badge, \$54.
 Entertainment '92 (coupon book): \$26 for FBA members' first book; \$27 for all others.

JSC

Gilruth Center News

Sign up policy — All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a badge or EAA membership card. Classes tend to fill up four weeks in advance. For more information, call x30304.

Defensive driving — Course is offered from 8 a.m.-5 p.m. Dec. 14. Cost is \$15.
Aerobic dance — High/low-impact classes meet from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is \$32.

Exercise — Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is \$24.

Weight safety — Required course for employees wishing to use the Gilruth weight room. The next class will be from 8-9:30 p.m. Nov. 7 and Nov. 21. Cost is \$5; preregistration required.

Aikido — Martial arts class meets Tuesdays 6:30-7:30 p.m. and Fridays 5:15-6:15 p.m. Cost is \$35 per month.

Country and western dance — Six-week course meets Mondays 7-8:30 p.m. for beginners and 8:30-10:00 p.m. for intermediates. Cost is \$20.

Intercenter run — Runners may turn in two-mile and 10-kilometer run times for competition among NASA centers throughout October. Participants must register at the Gilruth.

Fitness program — Health Related Fitness Program includes medical examination screening, 12-week individually prescribed education program. Call Larry Wier, x30301.

JSC

JSC

Dates & Data

Today

COD Chili Cook-off — The Center Operations Directorate's third annual chili cook-off will begin at 4:01 p.m. today at the Gilruth Center. Public tasting will begin at 7 p.m. Everyone is invited. Tickets are \$5 and will include entry, souvenir button, refreshments, tasting kit, voting token, entertainment and door prize drawing. Proceeds from "People's Choice - Worst Chili," which will be a monetary vote, will go to Crimestoppers Clear Lake, a non-profit organization. For more information contact Ginger Gibson, chairman, at x30596. For tickets contact Grace Ferris at x34026.

Cafeteria menu — Special: tuna and salmon croquette. Entrees: pork chop with yam rosette, Creole baked cod. Soup: seafood gumbo. Vegetables: Brussels sprouts, green beans, buttered corn, whipped potatoes.

Sunday

JSC Bike Club — The Lions Eye Bank of Texas and the JSC Bicycle Club are hosting the 13th Annual Texas Coastal Century at 8 a.m. Oct. 27 at the University of Houston-Clear Lake. Registration is \$20. The distance will be 25 miles, 34 miles, 62 miles, and 100 miles. All proceeds will benefit the Lions Eye Bank of Texas and its Sight Restoration Programs. For more information contact Tom Moore, 798-5509, or Mike Prendergast, 480-3330.

Monday

Gemini reunion — The Gemini Program office team will celebrate the 25th anniversary of the program with a reunion Oct. 28 at the South

Shore Harbour Resort and Conference Center. Call Emily Ertl, 481-5709, or Joan Taylor, 280-2707, for more information.

Cafeteria menu — Special: Italian cutlet. Entrees: braised beef ribs, chicken a la king, enchiladas with chili. Soup: cream of broccoli. Vegetables: navy beans, Brussels sprouts, whipped potatoes.

Tuesday

Space Exploration '91 — The NASA Alumni League will host the second annual Space Exploration '91 conference and exposition Oct. 29-31 at the South Shore Harbour Resort and Conference Center. Registration for NASA employees is \$195 and \$95 per day. Reception and banquet tickets are \$100 each. For more information, call Jane Kremer, x32601, or 1-800-765-7616.

Free enterprise lecture — A brown-bag luncheon will discuss "The Banking Crisis and Other Economic Problems" at 11:30 a.m. Oct. 29 in the Lockheed Plaza eighth floor Training Rm. Call Charles Campbell at 333-6107 for more information.

Cafeteria menu — Special: stuffed cabbage. Entrees: turkey and dressing, round steak with hash browns. Soup: beef and barley. Vegetables: corn cobbette, okra and tomatoes, French beans.

Wednesday

IEEE videoconference — The Institute of Electrical and Electronics Engineers will host a software testing and reliability videoconference at 11 a.m. Oct. 30 at the Gilruth Center. Registration is \$50 for members, \$70-80 for nonmembers and \$15 for students; to register, call Andy

Lindberg, x31474. For information, call Dr. Zafar Taqvi at 333-6544.

Cafeteria menu — Special: pepper steak. Entrees: catfish with hush puppies, roast pork with dressing. Soup: seafood gumbo. Vegetables: broccoli, macaroni and cheese, stewed tomatoes.

Thursday

Cafeteria menu — Special: chicken fried steak. Entrees: beef tacos, barbecue ham steak, Hungarian goulash. Soup: turkey and vegetable. Vegetables: spinach, pinto beans, beets.

Friday

Cafeteria menu — Special: tuna and noodle casserole. Entrees: liver and onions, deviled crabs, roast beef with dressing. Soup: seafood gumbo. Vegetables: whipped potatoes, peas, cauliflower.

Nov. 5

Free enterprise lecture — A brown-bag luncheon will discuss "Investment Problems Under Present Economic Conditions" at 11:30 a.m. Nov. 5 in the Lockheed Plaza eighth floor Training Rm. Call Charles Campbell at 333-6107 for more information.

Nov. 6

Quality, productivity conference — The eighth annual NASA/Contractors Conference and National Symposium on Quality and Productivity will convene Nov. 6-7 at the George R. Brown Convention Center. The event will address the current strategies in Total Quality Management. Code QB (FTS 453-8415) will act as a point of contact and handle the invitations.

Swap Shop

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. Ads may be run only once. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Property

Lease: Webster condo, 2-1, FPL, all appl, vaulted ceiling, mini blinds, pools, storage, W/D conn, \$450/mo. x31275 or 486-0315.

Rent: El Lago, The Landing condo, 2 BR, built over water, \$620/mo. x34308 or 326-4746.

Lease: Barringer Knoll, 2-1, new paint, W/D conn, ex cond, no pets, \$410/mo. 486-2048.

Lease: 3-2-2, remodeled, \$595/mo. Minh, 333-6806 or Oanh, 484-2456.

Sale: Pearland, Woodcreek, 3-2-2, fans, spa, wet bar, 1860 sq ft. 997-2508.

Sale: LC, Countryside, 2 story, 3-2.5-2A, lg fenced lot, 2 parks, no approval assume, \$15K down, \$692/mo. 554-7623.

Sale: Egret Bay condo, 2 story end unit, 2-2.5, wet bar, FPL, appl incl, \$49.9K. 326-2294.

Lease: Forest Bend, Laura Leigh townhouse, 2-1-2cp, new appl, carpet, \$450/mo, avail Nov 1. 283-5363 or 486-0462.

Lease: LC, Newport, 3-2-2, brick, \$750/mo. 488-6306.

Sale: Nassau Bay, Bayfront Towers condo, 2-2-2, LR/DR overlook Clear Lake/pool, immed occupancy, \$118K. 488-5290.

Lease: Friendswood, Wedgewood Village, 3-2.5-2, FPL, lg fenced yard, carpet, wet bar, both formals, 1800 sq ft, \$850/mo, avail 1-1-92; Friendswood, Wedgewood Village, 3-2-2, FPL, lg fenced yard, carpet, both formals, 1700 sq ft, \$750/mo, avail 12-1-91. 482-6744.

Sale: LC, Meadowbend, 3-2-2, FPL, fan, built-in microwave, \$65.9K. 282-5570 or 538-3458.

Lease: LC, mobile home, 3-2, private lot, new carpet, one child accepted, no pets, \$400/mo. 943-3842.

Lease: CL condo, 1-1, corner unit w/balcony, storage rm, lots of parking space, near pool, lighted tennis courts/club house, incl refrig, microwave, dishwasher, W/D, fans, miniblinds, good credit w/no pets preferred, avail Jan, 1992, \$375/mo plus dep. 333-6458.

Lease: Baywind I, 2-2, FPL, W/D conn, \$550/mo plus \$300 deposit. Keith, 333-7024 or 474-2571.

Sale: Camino South, 3-2-2, both formals, FPL, detached garage, \$78.5K assumption on VA mortg, \$12.5K equity, 480-4535.

Sale: Wooded waterfront lot, \$45K. x38039.

Rent: Heritage Park, 3-2-2, 1700 sq ft, new carpet, \$700/mo. Sonny, x38533 or 474-4198.

Rent: Galveston condo, furnished, sleeps six, cable TV, pools, wknd/wkly/dly. Magdi Yassa, 333-4760 or 486-0788.

Lease: Pipers Meadow, 3-2-2, FPL, blinds, fans, appl, \$795. x31826 or 480-9436.

Sale: Friendswood, 0.95 acre lot, all util, no flooding, \$42K. Ron, x37192 or 996-9724.

Cars & Trucks

'81 Celica GT, 120K mi, \$1.5K. 488-2652.
 '88 Chevy Beretta GT, V6, 5 spd, 47K mi, warranty, loaded, \$6.2K OBO. Steve, 333-7371.

'87 Suburban 3/4 ton, 454, white w/blue int, 67K mi, \$9.7K. Mike, 333-6821.
 '79 Oldsmobile Cutlass Custom Cruiser sta-

tion wagon, 100K mi, new A/C compressor, loaded, no dents/rusts, \$900; '76 Fiat X1/9 convertible hardtop, 55K mi, clutch slips, minor dents, no rust, \$750. x33335 or 326-2582.

'84 Volvo, Invader, V171, AQ125, loaded, ex cond, \$4.8K. Mark, x30160 or 326-3004.

'84 Ford EXP, tan, 5 spd, P/S, P/B, ex cond, \$1.6K. 282-2614 or 334-6208.

'88 Holiday Alumalite 34' motorhome, rear queen, 6.5 K.W. Onan leveling jacks, 23K mi, 454 Chevy, \$48.5; '82 Chevy Citation, hatchback, V-6, auto, A/C, good tires, med blue, \$1.1K. 283-6508 or 337-3696.

'90 Ford Escort GT, ex cond, low miles, \$7995. 280-2239 or 333-1017.

'76 Ford Elite, body/int in ex cond, \$1.5K. Jay, x33678 or 489-7494.

'74 BMW 2002, 4 spd, green w/tan int, new tires, new \$2K paint job, sun roof, AM/FM/cass, ex cond, \$8K OBO. David, x332791 or 488-9768.

'83 Honda Accord, 4 dr, 125K mi, \$2K. 470-8515.

'85 Chevy Cavalier, 4 dr, 4 cyl/2.0L, auto, 72K mi, new tires/brakes, ex cond, \$2.7K. 488-5522.

'80 Toyota SR5, AM/FM, A/C, good cond, \$1450. x30354 or 480-4160.

'74 VW Super Beetle, new eng, paint, int, brakes, sticker, 28 MPG, \$2995. 333-6963.

'85 VW camper, loaded, weekend package, 5K mi on new eng, \$6.5K OBO. 485-3490.

'90 Nissan extended cab, 22K mi, standard, ex cond, AM/FM/cass, A/C, 36K mi, warranty, \$8.2K OBO. 485-3490.

'87 Taurus station GL, AM/FM/cass, tilt, all pwr, loaded, ex cond, \$5.5K OBO. 493-1355.

'90 Volvo 240DL, 4 dr, standard transmission overdrive, 12.5K mi, sun roof, tape player, lt blue, ex cond, \$15K. 488-3953.

'84 Monte Carlo, champagne color, loaded, \$3750. John, x31882 or 480-3600.

'90 Chevy PU extended cab, 5.7L, V8, 19K mi, loaded, \$11.3K. 282-3215 or 480-9448.

'81 Oldsmobile Omega, 4 dr, white/red, A/C, \$1.5K. x32845 or 554-4949.

'80 Pontiac Phoenix, V6, A/C, 4 dr liftback, new \$900 auto transmission, AM/FM/stereo, lifetime battery, good cond, \$1450. x30092 or 481-3637.

'85 Fiero, blk, P/W, new tires, tinted windows, good cond, 82K mi, \$2K OBO. 337-3122.

'82 VW Rabbit, diesel, lt blue, \$1.5K. Kim, 947-3784.

'82 Honda Accord, parts car, runs, needs brakes, \$700 OBO. x37192 or 996-9724.

Cycles

'86 Suzuki Savage, 650cc single cyl, 6K mi, belt drive, pull back/flat bar handlebars, \$900. x33335 or 326-2582.

'75 Yamaha, DT125, enduro, new piston/rings, good cond, \$375. Trey, x36759 or 992-1076.

Trek 400 road bike, red, 12 spd, Suntour comp, ex cond, \$300. Ignacio, 282-4818 or 486-1078.

'85 Yamaha RZ 350, red/wht/blu, Kenny Roberts replica, 5K mi, \$1.2K OBO. Jim, 489-9558.

'88 Yamaha DT500CC, 2.2K mi, wht/red, fullmer helmet, \$700. Scott, x39378 or Marcie x31886.

Boats & Planes
 Lido 14 sailboat, sails/trlr, \$995. R. Hoover, x31360 or 996-7716.

Audiovisual & Computers

Apple II E, SW, \$300 OBO. Steve, 333-7371.
 IBM computer, 256K, 2FD, colored moni, \$250; printer, Daisy Wheel letter quality, \$100. 488-2652.

Video camera, not camcorder, plus portable VCR, \$300. 488-3747.

Commodore 64, DD, computer stand, SW, \$75; Sony 13" Trinitron, needs work, \$35; Technics cass deck, \$50. 475-0975.

45" computer display terminal w/external tuner, can be used as high density TV monitor. Ed or Sharon, 333-5848.

Send FAX/2400 baud external modem w/IBM and Mac SW, \$95. 484-1779.
 NEC powermate PC, 5x20/44 MB HD, VGA moni, 256K VGA card, 386 IBM clone w/windows, \$1.6K, x30643 or 488-4373.

Apple II E, 128K RAM, DD, moni, internal modem, printer, SW, flight stick, manuals, \$800 OBO, 482-1807.

Musical Instruments

Peavey classic guitar amp, two 12" speakers, new tubes, ex cond, \$350. 333-6963.

Korg DS 8 keyboard w/memory card, Korg portable 8 track sequencer, new, \$750 for both. 333-6458.

Lowery theater spinet organ, model H10, bench, 1 oct pedals, built in Leslie speaker, percussion, others, \$495. x31373 or 486-5005.

Pets & Livestock

Sheltie AKC male, sable/wht, shots, 3/mo, \$245. Bob A. x34409 or 393-1670.
 Rabbits, \$7/up. Gailo, 554-6200.

Free tabby cat, 8/mo, all shots, spayed, declawed. Elisabeth, 521-9442.

Springer Spaniel, male, 18/mo, liver/wht, AKC papers, \$150. 333-6963.

Free tabby kittens, 8/mo, one tiger striped male, one gray female, access inc. x34180 or 333-5113.

AKC cockers, 8/wks, declawed, \$175. 283-1802 or 332-9379.

Household

Brown tweed couch w/block oak sides, \$100; matching recliner, \$75. 488-2652.

2 bar stools, velvet, brwn, back, wood arms, wrought iron base, ex cond, orig \$175, now \$50/ea OBO. 538-1734

Upright freezer, wht, 21 cu ft, 3/yr, \$300 or trade for fridge. Mike, 333-6821.

Dinette w/4 chairs, \$110; 2 waterbed frames w/hdbd, super twin size, \$50/ea; double bed frame w/hdbd/dresser, \$75. 488-3747.

Queen sz sofa/bed, flexsteel, good cond, \$300. x37284 or 488-0876.

King sz bed w/frame, \$125. 482-6985.
 Antique oak recliner, Morris chair, ex cond, \$225. Bill, x34062.

Whirlpool power clean portable dishwasher, good cond, \$150; waterbeds, queen captains drwr plus frame, \$50/king frame, \$25; matching set of 3 bookcases, 1 free standing, \$100; plant stand, rough cedar 6x4 w/lights, \$50. 475-0975.

Stratford sleeper/sofa, rust, good cond, \$150. Mike, x34710.

Lane walnut BR set, double dresser w/mirror, 5 drwr chest, 2 night stands, full/queen hdbd w/frame, good cond, \$395. 333-2830.

Entertainment ctr, new \$80, now \$25. x37906 or 326-5805.

Computer work tbl, 60x30 in, w/lower shelf, teak finish, wide rollers, \$60. 286-5431 after 10/27.

Frigidaire w/d, heavy duty, lg capacity wht, ex

cond, \$525. Jon, 661-3430.

Hide-a-bed sofa, blue plaid Herculon, good cond, \$150. John, x31929 or 334-3422.

W&J Sloane loveseats, 60" long, light blue, walnut wood frame, \$295/both, \$195/ea. x31373 or 486-5005.

Solid oak dining tbl w/4 chairs, \$600; 2 solid oak tbs, \$250; solid oak entertainment ctr, \$550, all ex cond. 282-4675 or 480-1356.

Complete king sz BR suite, medium stain, solid wood, inc hdbd, 2 night tbs, triple dresser w/2 mirrors, chest, \$500. 488-6306.

Couch, \$125 OBO. 244-9691.
 Wards heavy duty W/D, almond, good cond, \$150 OBO. 480-3944.

Whirlpool W/D, wnt, \$300/set; Kitchenaid dishwasher, portable w/butcher block top. Kim, 947-3784.

Photographic

Canon AE-1 program w/FD 50 MM 1:1.8 lens, Addinar, 1:3.9 80 200MM lens, flash, carrying case, \$250. David, 282-3827 or 554-5514.

Wanted

Want used Little Tykes coupe, red/yellow. x38033.

Want female housemate to share my 3-2-2 home in The Landing, private 2 rms and bath, \$350/mo plus 1/2 util. 554-4944 or 332-1420.

Want baby crib, changing tbl, prefer dark wood. Jere, 992-3151.

Want male roommate to share 3-2-2 house in Bay Glen, nonsmoker, no pets, \$360/mo plus 1/2 util and \$175/dep. Brian, x30147 or 286-2011.

Want carpool from Woodlands or FM1960. Bill Bell, 333-6678.

Want little girls drivable Barbie car. (409) 986-6381.

Want riding lawnmower. 337-3122.
 Want 2 place shell w/oars. Sharon or Ed, 333-5848.

Want female roommate to share house in CL, nonsmoking, all furnished except BR, avail Nov 1, \$250/mo plus 1/3 util. Diana, x31512 or 286-9822.

Want to form or buy into a partnership in a Beechcraft Bonanza model 33. 500 ft hrs minimum and IFR rating required. 333-7353 or 532-1826.

Want 5hp riding lawn mower, good cond. Magdi Yassa, 333-4760 or 486-0788.

Miscellaneous

Golf clubs, four irons, 1-SW, \$16.95/club; metal woods 1, 3, or 5 woods, \$30/wood. David, 554-5514.

5 sheets of mint Apollo Soyuz US commemorative stamps dated 1975, \$15; 25 sheets of mint 8 cents commemorative stamps, \$99.50. Jeff, 333-7010 or 482-5393.

1 carat diamond heart pendant set in platinum w/matching chain, was \$1.6K, now \$1K



MOD's family affair

The Mission Operations Directorate held its second open house Oct. 19 drawing more than 1,000 employees and their families.

MOD Open House committee member Steven Gonzalez said the first open house was held in January 1988. The directorate hopes to hold the event every other year. Clockwise from left:

1. Everyone got into the fun which included a trip to the Weightless Environment Training Facility.

2. Information was available from the division's welcome center for

families' busy day of touring.

3. Open house committee members viewed the winning entries in a children's art contest with theme "Space is our future."

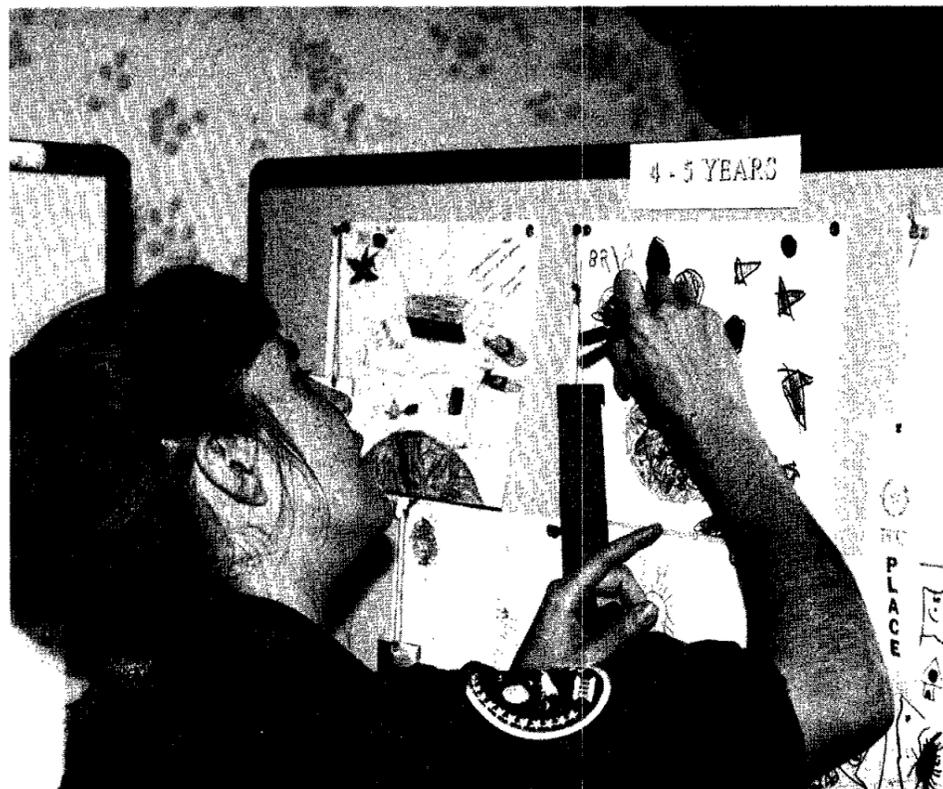
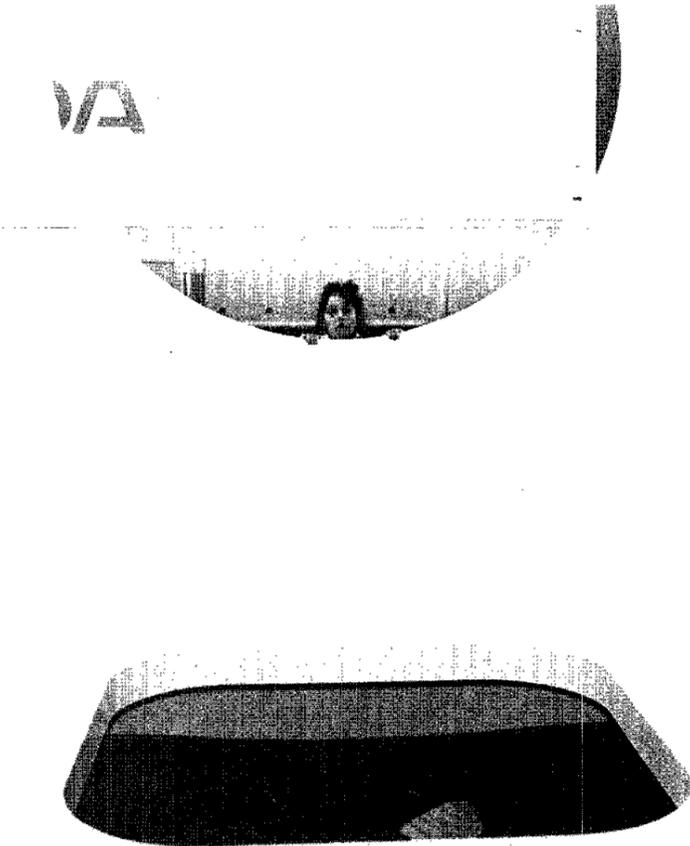
Committee members are (from left): Perri Fox, Rockwell industrial engineer; Tina Santizo, Space Station Systems Division engineer, Steven Gonzalez, Space Station Ground Systems Division computer engineer; and Tony Sang, Space Station Systems Division engineer. The art winners were: Christie Kochan, Stafford, 3 years and under age division; Maxwell Robinson, Seabrook, 4-5

years; Andrew Stephenson, Houston, 6-8 years; and Robbie Lee McCormac, Houston, 9-12 years.

4. A pint-sized demonstrator showed off gravity's effect on Earth-bound items as Space Station Ground Systems Division's Anthony Bruins looked on.

5. Astronaut Janice Voss signed autographs and art work for children at the open house.

6. "It's a wide, wide world out there" seemed to be the message this youngster was conveying as she peered through a Space Station mockup opening.



Photos by Jack Jacob and Bill Blunck

NASA to join search for extraterrestrial life

One year from this month, in October 1992, 500 years after Columbus' discovery of America, NASA will begin the most comprehensive search ever conducted for evidence of intelligent life elsewhere in the universe.

The NASA Search for Extraterrestrial Intelligence microwave observing project is a ground-based decade-long effort to detect microwave radio transmissions that may have been deliberately or inadvertently broadcast towards Earth by other civilizations.

Over the past few decades, scientific opinion has increasingly supported the theory that complex life has evolved on planets orbiting other stars

in our galaxy and the universe. In some cases, further evolution may have led to the emergence of intelligence, culture and civilization.

While various searches for extraterrestrial radio technology have been made over the past 30 years, NASA's SETI project will use a combination of state-of-the-art receivers in a systematic, long-range observing program according to Dr. John Billingham, SETI office chief at NASA's Ames Research Center. In the first few minutes of the project, more searching will be accomplished than in the combined total of all previous searches, he said.

The SETI project consists of two parts: a targeted search and a sky sur-

vey. The targeted search will use the largest available radio telescopes around the world and search over the frequency range from 1,000 to 3,000 megahertz (MHz), seeking patterns that may indicate the presence of an artificially generated signal. The targeted search will perform the most sensitive search ever conducted of stars similar to our Sun and less than 80 light-years distant.

In a complementary search, the sky survey will use the 34-meter antennas at NASA's Deep Space Network sites in the northern and southern hemispheres to scan the entire sky over the frequency range from 1,000 to 10,000 MHz. Because of the large increase in

the area of sky and frequencies covered, a signal will have to be stronger to be detected by the sky survey. But it could detect signals emitted in distant regions from directions that would be overlooked if the search were limited only to those stars included in the targeted search.

Oct. 12, 1992 — the quincentennial anniversary of Columbus' discovery of America — was chosen as the most appropriate time to inaugurate this next great exploration search for other places in the universe where biological and cultural evolution may have occurred, Billingham said.

The targeted search will be initiated on the world's largest radio telescope

at the National Science Foundation's Arecibo Observatory in Puerto Rico and the sky survey system will be launched at the Goldstone, Calif., DSN complex. Both elements of the SETI project will use specially developed digital signal processing systems capable of analyzing tens of millions of radio frequency channels simultaneously.

The SETI project is managed for NASA's Office of Space Science and Applications by the Ames Research Center, which also is responsible for the targeted search portion of the project. NASA's Jet Propulsion Laboratory is working with Ames and is responsible for the sky survey.

Equal Opportunity establishes black planning council

The Equal Opportunity Programs Office has formed a Black Employment Council that will coordinate and plan all official activities of the Black Employment Program.

The council is comprised of JSC and contractor employees who will serve a one-year term, with a second year option.

This year's members are Howard Renfro, manager of the Administration Directorate's Space Shuttle Program Control Office; Spurgeon Robinson of the Engineering Directorate's Tracking and Communications Division; Mark Falls of Engineering's Propulsion and Power Division; Baley Davis, Space Shuttle Management Integration Office; Denise Ghee of the Center Operations Directorate's Management Services Division; Tamyra Martin of the SR&QA Directorate's Quality Assurance and Engineering Division; Crystal Mullen, Bendix Corp.; Johnnie Lee, Boeing Aerospace; Katherine Coleman, Duall & Associates; Phashetha Allen, Jefferson Associates; John Moore, Rockwell; and Preston Lewis, Rockwell Space Operations Co.

For more information about the council, contact Charles Hoskins, Black Employment Program manager, at x30607.



JSC Photo by Bob Walck

FLUID FLOW — Student experimenter Constantine Costes, left, checks out his brainchild with STS-42 Commander Ron Grabe, Mission Specialist Bill Readdy and Integration Engineer Neil Christie on the middeck of a space shuttle trainer. Zero-G Capillary Rise of Liquid Through Granular Porous Media will investigate the capillary and forced flow characteristics of blue-tinted water in three glass tubes packed with three sizes of glass beads.

Missouri City School names auditorium for Ron McNair

The Ford Bend Independent School District's board of trustees has decided to name the new Willowridge High School auditorium for Astronaut Ronald McNair.

Ervin Grice of the JSC Information Systems Directorate's Software

Technology Branch spearheaded the Willowridge High Parent-Teacher Organization drive to name the \$2.8 million 1,200-seat auditorium for McNair, who died in the 1986 Challenger accident.

Willowridge High is in Missouri

City in eastern Ford Bend County, near the Christa McAuliffe Middle School.

The new auditorium is scheduled to be completed in time for the start of the 1992-93 school year. A formal opening ceremony is being planned.

Freedom contract extension awarded to McDonnell Douglas

By Pam Alloway

JSC has awarded McDonnell Douglas Space Systems Co. of Huntington Beach, Calif., an extension to the Space Station Freedom Program Integration Support contract.

The Schedule B contract involves the integration of space station components. JSC has a separate contract with McDonnell Douglas to provide hardware components for

Freedom, including the preintegrated truss, mobile transporter, airlock, integrated nodes and various subsystems.

The Schedule B modification extends the contract through December 2001. The modification was required following the restructuring of the space station program earlier this year that modified Freedom's design and pushed out the date for permanent manned

capability from July 1997 to September 1999.

The negotiated cost-plus-award fee amount for the modification was \$17,939,000. An additional option, providing for an incremental increase in the number of hours if additional work hours are needed, was negotiated for \$9,537,000.

The majority of the work will be performed at the McDonnell Douglas facilities in Houston.

Expo buses run regularly

(Continued from Page 1)

members will be allowed to attend the exhibition and escorted technical briefings for free.

To visit the exhibits, employees will need only to present personal and qualifying business identification at the "Exhibit Only Registration Desk" in the Exhibit Hall. The exhibition is open from 9 a.m.-4 p.m. Tuesday and Wednesday, and from 9 a.m.-6:30 p.m. Thursday.

The escorted technical briefings will be open free to qualified employees on Tuesday and Wednesday. Registration is between 8:15 and 8:45 a.m. and is limited to about 100 people each day. Tour groups will be escorted to eight 15-minute briefings by leading aerospace industry exhibitors and participants will receive

a ticket for the daily conference luncheon as a guest of the Alumni League.

The escorted briefings are being presented by The Boeing Co., Computer Sciences Corp., Digital Equipment Corp., IBM Federal Sector Division, Loral Space Information Systems, Martin Marietta Astronautics Group, Mitre Corp., and Rockwell International Space Systems Division.

Free shuttle buses will operate every 30 minutes between both JSC and local contractor facilities. Bus stop points will be marked with "Space Exploration Shuttle Bus" signs.

For more information, JSC employees may contact the expo headquarters at 334-1000.

Airshow promises daring performances

By Pam Alloway

Thousands of faces will turn toward the heavens Saturday and Sunday to witness thrilling performances by numerous aircraft during the seventh annual Wings Over Houston Airshow at Ellington Field.

Among this year's attractions is the first appearance in Houston of the Stealth Fighter aircraft. Dr. Everett Gibson, a JSC space scientist who seeks out military aircraft to display at the annual show and is a Confederate Air Force executive officer, said show organizers expect the Stealth to arrive at Ellington this afternoon.

Gibson said this year's show also featured the first landing of a B-52 aircraft in Ellington's history. The B-52 arrived at Ellington on Wednesday.

Other displays will include: a NASA Shuttle Training Aircraft and NASA T-38s; Iraqi-fired Scud Missile and Patriot; the Miss Expresss, an aerobatic sailplane flown by Steve Powell, one of only four professionals in North America who does aerobatic sailplane flying; Otto, the talking clown helicopter flown by Bob Hosking; wingwalker Gene Soucy's SHOWCAT with Teresa Stokes on the wings; and Double Take, an airplane that has landing gears on both its top and bottom side flown by Hollywood stuntman Craig Hosking.

Apollo 8 astronaut William A.

Anders, now chairman and chief executive officer of General Dynamics Corp., was presented with the Lloyd P. Nolen Lifetime Achievement in Aviation Award as part of the pre-show activities. The award has been bestowed by the air show's executive committee since 1989.

Gibson said the airshow has continued to grow over its lifespan both in the number of attendees and participants.

"We've had to turn airplanes down so much interest," Gibson said. "But we'll have 64 or 65 military aircraft at the show."



Anders

More than 150,000 people are expected to attend this year's event and Gibson encouraged attendees to take the Metro buses at Park and Ride facilities at Edgebrook, Bay Area Blvd., and San Jacinto Jr. College South.

The Confederate Air Force is one of the airshow's sponsors. Gates to the airshow will be open from 8 a.m. to 6 p.m. both Saturday and Sunday. Aerial performances will begin about 10 a.m. each day and the U.S. Air Force's Thunderbirds will perform at about 3 p.m. each day. Tickets are \$9 for adults and \$4 for children ages six years through 11 years. Children under six years will be admitted. JSC's Bldg. 11 Exchange Store also is selling tickets including a \$2 discount on adult tickets.

Goddard historical essay deadline is December 13

The National Space Club has opened the Robert H. Goddard Historical Essay Award Competition for 1991.

The essay award is the first literary competition devoted to historical affairs in the field of rocketry and astronautics. The annual nationwide competition, which carries a \$1,000 prize, is open to any United States citizen.

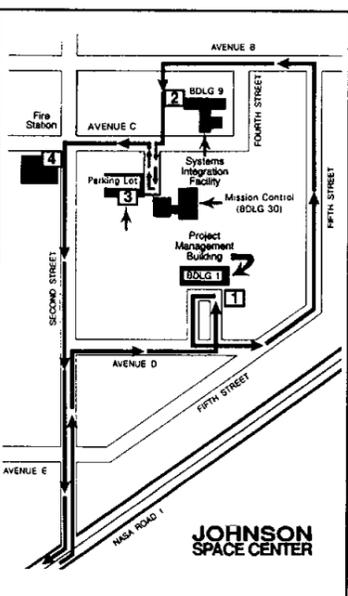
Essays may explore any significant aspect of the historical development of rocketry and astronautics and will be judged on their originality and scholarship. They may bring new information to light or may cast a new and different light upon events or individuals influencing rocketry and astronautics.

Entries should not exceed 5,000 words and should be fully documented. Essays must be typed, double-spaced, and submitted in duplicate.

Previously published essays are not eligible. All entries should include proof of U.S. citizenship. The name of the essay writer should not appear on the essay itself and each must have a motto selected by the author in addition to the title.

Entries must be submitted by Dec. 13 to the Goddard Historical Essay Contest, c/o National Space Club, 655 15th Street N.W., Suite 300, Washington D.C., 20005.

Winners will be announced in April. Judges are Fredrick C. Durant III, historian of astronautics; Dr. Tom Couch, chairman of the Department of Aeronautics at the National Air and Space Museum; R. Cargill Hall of the USAF History Office; Professor John M. Logsdon of George Washington University; and Frederick I. Ordway III, a rocketry historian.



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Editor Kelly Humphries
Associate Editors Pam Alloway
Kari Fluegel

Shuttle status

(Continued from Page 1)

The right booster assembly was about halfway finished this week.

On Endeavour, in Bay 1 of KSC's processing facilities, work this week continued on the tanks for hydrogen and oxygen that are used to generate electricity for the shuttle. Three sets of tanks have been installed so far. Checkouts were performed on the auxiliary power units, which generate power to drive the orbiter's hydraulic systems.