



JSC volunteers visit classrooms to promote science, math and engineering. Story on Page 3.



Jean Alexander talks about the challenge of suiting astronauts for space flight. Story on Page 4.

Space News Roundup

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No. 11

JSC joins elite group by cutting pollution in half

By Sandra Parker

JSC is now a member of Clean Industries 2000, the nation's largest statewide public-private partnership to address pollution, in recognition of its effort to reduce environmental hazards at the center.

JSC was invited to become a member by the Texas Natural Resource Conservation Commission, or TNRCC, because of the progress made in reducing the amount of hazardous waste the center generates.

Members of Clean Industries 2000 are committed to carrying out a pollution preven-

tion plan that will reduce the Toxic Release Inventory, chemical releases and/or the generation of hazardous waste by 50 percent or more from 1987 levels by the year 2000. JSC already has met the goal by reducing its hazardous waste generation by 50 percent.

"This year, JSC is the only federal facility that is a new member," said Center Operations Director Jim Hickmon. "Of the 147 current members, only five are federal facilities. This shows a significant commitment on the part of JSC, as a federal facility, to work toward a cleaner environment and

environmental excellence."

JSC and other new members will be honored by all three TNRCC commissioners during the Clean Industries 2000 annual event March 17. The function is being held at the Wyndham Greenspoint Hotel and includes a press conference and luncheon. The theme for this year's annual event is "Integrating Environmental Considerations into Business Strategy." The keynote speaker, Shaunna Sowell, vice president of Environment, Safety and Health at Texas Instruments, will discuss "Using Environmental

Health and Safety Strategies to Achieve Operational Excellence."

Clean Industries 2000 is a voluntary pollution prevention partnership between industry, local communities and the TNRCC. Participating organizations receive technical training programs along with support and guidance from the Waste Reduction Advisory Committee.

Employees who would like to learn more about JSC's Environmental Program, or the Clean Industries 2000 program, may contact the Environmental Services Office at x33120.



JSC Photo S97-03301 by Steve Candler

JSC workers move a replica of the International Space Station X-38 crew return vehicle into Space Center Houston. The 35-foot lifeboat will be unveiled to SCH visitors Saturday. The arrival of the full-scale mock-up is part of a variety of activities taking place at the visitors center this month.

X-38 debuts at Space Center Houston

A replica of the "lifeboat" astronauts will have available to them on the International Space Station is making its debut at Space Center Houston this Saturday while the staff gears up for Speed Week at the visitor center.

A replica of the X-38 vehicle will be unveiled Saturday. The 35-foot full-scale mock-up will provide insight on how International Space Station crew members could return to Earth in case of an emergency.

Visitors on Saturday also will have the opportunity to view the only Mars meteorite on display in Houston. Discovered in Antarctica, the Elephant Moraine 78001 is one of only 12 identified Mars rocks in the world.

The STS-82 astronauts also will be on hand at 11 a.m. next Friday, March 21, to talk about their recent mission to service the Hubble Space Telescope. The crew will sign autographs and

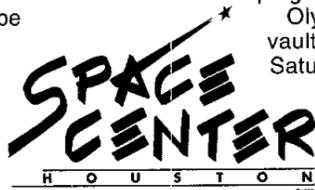
answer questions from visitors.

Speed Week begins March 24 at SCH and will feature the IMAX movie, "Speed." Speakers and speed machines also will be included in the program.

Olympic Gold Medalist Kerri Strug will vault into SCH with two appearances Saturday, March 29. Bruce Bohannon, who holds the world speed record for the fastest ascent in a push plane will be on hand March 24-26 to give daily briefings in the Mission Status Center. Visitors also will have the opportunity to view Bohannon's record-setting plane in the plaza.

Three Sports Car Club of America racers will zoom into SCH Thursday March 27 and cool their tires until March 29. Guests will be able to sit inside their race cars, view videos of actual races and talk with the drivers.

For additional information, call 244-2105.



Life on Mars tops science conference

The stimulating topic of possible primitive life on Mars will be one of the main topics next week as scientists from around the world converge at JSC for the 28th annual Lunar Science Conference.

Several researchers, including the JSC team that startled the world last year with possible evidence of life on Mars, will report new results from the study of the Martian meteorite at a press conference at noon Wednesday at JSC. The event will be covered live on NASA Television.

The conference, sponsored by NASA, JSC and the Lunar and Planetary Institute, will be held primarily at the Gilruth Center and LPI March 17-21.

Oral presentations will be held at the Gilruth beginning at 8:30 a.m. Monday and will end at noon Friday. Additional sessions and poster sessions will be held at LPI from 6:30 to 9:30 p.m. Tuesday and Thursday.

A special plenary session on the question of Mars meteorites and life will be held in Teague Auditorium at 1:30 p.m. Wednesday. The session will begin with the Masursky Lectures by W.A. Cassidy, University of Pittsburgh, and R.O. Pepin, University of Minnesota. Cassidy will speak about his association with the Antarctic Meteorite Program, and Pepin will discuss evidence and arguments that meteorites are chunks of Mars.

The "Symposium on New Results on the Possibility of Life on Mars" will follow the Masursky Lectures at 2:30 p.m. Six teams of researchers will present ongoing work on the Martian meteorite ALHA 84001 and implications for

finding ancient life in the rock.

The final session will be a panel discussion, "Life on Mars: Science Issues and Directions." Researchers will discuss how the question of Martian life affects their different areas of expertise and will suggest fruitful directions for future research on this intriguing possibility.

Scientists representing six teams of researchers will present papers on the question of ancient life in the famous Martian meteorite ALHA 84001 during conference sessions.

Among the papers will be one by JSC's David McKay and Everett Gibson and Kathy Thomas-Keprta of Lockheed Martin, Houston, along with colleagues C.S. Romanek and C.C. Allen, on possible biofilms—similar to thin films of organic polymers commonly produced by bacteria on Earth—in ALH 84001.

In a disorienting paper, J.P. Bradley and Ralph Harvey, Case Western Reserve University, and H.Y. McSween will report that magnetite crystals in the meteorite appear unlike magnetite crystals formed by bacteria.

In addition to the discussions of life on Mars, Torrence Johnson of NASA's Jet Propulsion Laboratory and other scientists working on the Galileo mission to Jupiter and its moons will appear at 2:30 p.m. Monday at the Gilruth Center. The special conference session is entitled "Galileo Mission Results: Overview and Io."

An Internet site that includes complete details of the week's activities and presentation abstracts is located at: <http://cass.jsc.nasa.gov/LSC97/>

NASA-ESA node agreement enhances space station

By James Hartsfield

The planned final configuration of the International Space Station will be enhanced under an agreement signed by NASA and the European Space Agency that will have ESA construct two station docking nodes in exchange for the planned NASA launch of the ESA-supplied Columbus laboratory module.

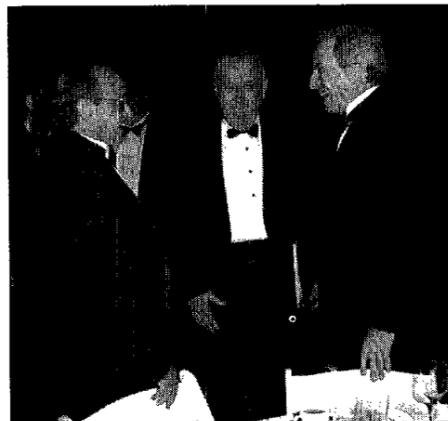
The launch-offset barter agreement, a type of agreement common within the International Space Station Program, exchanges ESA services to construct the nodes—one of which is a new addition—as payment to NASA for the launch of the Columbus module.

Under the agreement, ESA will supply Node 2, a docking node planned to be launched in mid-2000 and connected to the United States Laboratory Module, and Node

3, a new addition to the station to be launched after station assembly is complete. Node 3 will attach to the station's habitation module and provide valuable additional docking ports.

Construction of the two nodes will be delegated to the Italian Space Agency. Plans to convert the Node 1 structural test article, located at Boeing's facilities at the Marshall Space Flight Center, into the Node 2 flight article will be revised accordingly.

Although the construction of the two nodes by ESA is the primary service supplied to NASA under the agreement, the agreement also includes requirements for ESA to supply a crew refrigerator/freezer unit for the station's habitation module; a cryogenic freezer unit for the U.S. laboratory module; and a variety of other minor hardware.



JSC Photo 97-03304 by Vann Jones

JSC Director George Abbey, center, talks with NASA Administrator Daniel S. Goldin, right, and restaurant owner Giuseppe Camera, left, after Abbey received the Space Trophy last week during an awards banquet at Space Center Houston.

Boeing president to visit Houston aboard 'Triple 7'

The latest addition to Boeing's commercial jetliner fleet, the Boeing 777, will bring the company's president to Houston next week.

Boeing Defense and Space Group President Alan Mulally will arrive aboard the "Triple 7," at 2:30 p.m. Wednesday outside NASA's Hangar 990 at Ellington Field.

Mulally will speak with Boeing-Houston employees and International Space Station team members. After Mulally talks, the test version of the Boeing 777—the world's largest twin jet at a passenger capacity of up to 440 will be opened for tours until 4:30 p.m.

All JSC civil service employees, and contractor members of the ISS and space shuttle teams, are invited to attend. For details, check the Employee Information Service at x36765.

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday. For more information, call x35350 or x30990.

Bay Area Chorus: Spring Scholarship Concert at 4 p.m. April 27 at Clear Lake United Methodist Church. Tickets are \$10 for adults, \$5 for students and seniors.

Children's Easter Party: 11 a.m. March 22 at the Gilruth Center. Tickets are \$5 for children, \$2 for adults.

Disney on Ice: "Toy Story" noon April 5 at the summit. Tickets are \$12.

JSC Picnic: 11 a.m.-8 p.m. April 6 at Astroworld. Tickets are \$15 for the first 3,100.

EAA cruises: Seven-day cruise to Alaska for \$1,294 per person May 23-31. Seven-day cruise to Caribbean leaving from Houston in November. Prices vary depending on cabin choices. For more information call Dick McMinimy at x34037.

Astroworld season pass: \$56.75, early bird tickets are \$18.25.

Moody Gardens: Tickets are \$9.50 for 2 of 3 events.

Space Center Houston: Adult \$8.95; children (4-11) \$6.40.

Seaworld: Adult \$27.25; \$18.25 children(3-11).

Movie discounts: General Cinema, \$4.75; AMC Theater, \$4.50; Sony Loew's Theater, \$4.75.

JSC logo shirts: Polo style, \$23. T-shirt, \$10.

Stamps: Book of 20, \$6.40.

Orbit: The book "Orbit" by Jay Apt, Mike Helfert and Justin Wilkinson is on sale for \$28.

Metro tickets: Passes, books and single tickets available.

JSC

Gilruth Center News

New Hours: The Gilruth Center will now remain open until 2 p.m. Saturday and close at 9 p.m. Friday. **EAA badges:** Required for use of the Gilruth Center. Employees, spouses eligible dependents, NASA retirees and spouses may apply for photo identification badges from 7:30 a.m.-9 p.m. Monday-Friday; and 9 a.m.-1 p.m. Saturdays. Cost is \$10. Dependents must be between 16 and 23 years old.

NASA Fitness Challenge: runs through Aug. 31. Call x30301 for more information. **Complete Weight Control Program:** starts April 1 with sessions on Monday, Wednesday and Friday. For more information call x30301 or x30302.

Hatha Yoga: A stress relieving, stretching and breathing exercise routine to unite body, mind and spirit. Classes meet from 5:30-6:30 p.m. Thursdays. Cost is \$40 for eight weeks.

Nutrition intervention program: A six-week program to learn more about the role diet and nutrition play in health, including lectures, private consultations with a dietitian and blood analysis. Program is open to all employees, contractors and spouses. For more information call Tammie Shaw at x32980.

Defensive driving: One-day course is offered once a month. Pre-registration required. Next class is March 22. Cost is \$25.

Stamp club: Meets at 7 p.m. every second and fourth Monday in Rm. 216.

Weight safety: Required course for employees wishing to use the weight room will be offered from 8-9:30 p.m. March 25. Pre-registration is required. Cost is \$5. Annual weight room use fee is \$90. Additional family members are \$50.

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

Aikido: Martial arts class meets from 5:15-6:15 p.m. Tuesday and Wednesday. Cost is \$35 per month. New classes begin the first of each month.

Aerobics: Classes meet from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is \$32 for eight weeks.

Ballroom dancing: Beginner classes meet from 7-8:15 p.m. Thursdays. Intermediate and advanced classes meet from 8:15-9:30 p.m. Cost is \$60 per couple.

Country and Western dancing: Beginner class meets 7-8:30 p.m. Monday. Advance class meets 8:30-10 p.m. Monday. Cost is \$20 per couple.

Fitness program: Health Related Fitness Program includes a medical screening examination and a 12-week individually prescribed exercise program. For more information call Larry Wier at x30301.

Gilruth Home Page: Check out all activities at the Gilruth online at: <http://www4.jsc.nasa.gov/ah/exceaa/Gilruth/Gilruth.htm>

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Dates & Data

Today

Astronomers meet: The JSC Astronomical Society will meet at 7:30 p.m. March 14 at the Lunar and Planetary Institute, 3600 Bay Area Blvd. For more information call Chuck Shaw at x35416.

Cafeteria menu: Special: tuna noodle casserole. Total Health: broiled chicken breast. Entrees: deviled crabs, broiled pollock, liver and onions, broiled chicken with peach half, Reuben sandwich. Soup: seafood gumbo. Vegetables: Italian green beans, cauliflower au gratin, steamed rice, vegetable sticks.

Saturday

PSI workshop: The Professional Secretaries International will host a development workshop from 8 a.m.-1 p.m. March 15 at the Silver Moon Cafe at Space Center Houston. Late registration is \$75. For details call Elaine Kemp at x30556.

NTA meets: The National Technical Association will meet at 10 a.m. March 15 at Texas Southern University School of Technology, Rm. 316. For details call Pam Denkins at x35272.

Monday

ISO meeting: The ISO 9001 Office will conduct a "Town Hall Meeting" at 3 p.m. March 17 in Bldg. 30 Auditorium. For details call Leon Blum at X33681.

Cafeteria menu: Special: Italian cutlet. Total Health: herb flavored steamed pollock. Entrees: barbecue beef spare ribs, steamed pollock, baked chicken. French dip sandwich. Soup: black bean and rice. Vegetables: California mix, okra and tomatoes, vegetable sticks, beans.

Tuesday

Reservations due: The Institute of Electrical and Electronics Eng-

ineers will host a Professional Awareness Conference from 5:45-9 p.m. March 20 at the Hobby Airport Holiday Inn, 9100 Gulf Fwy. National and local speakers' topics include "The Communications Connection," "Intellectual Property Rights," "The Consulting Option" and "Retirement Planning and Investment Strategies." Cost is \$15 for members, \$20 for non members. Reservations are due March 18. For reservations and information, call Charlotte Garner 333-6131.

Cafeteria menu: Special: spaghetti with meatballs. Total Health: baked potato. Entrees: stir fry beef, liver and onions, beef cannelloni, ham steak French dip sandwich. Soup: split pea. Vegetables: winter blend mix, seasoned cabbage, breaded squash, lima beans.

Wednesday

Spaceland Toastmasters meet: The Spaceland Toastmasters will meet at 7 a.m. March 19 at the House of Prayer Lutheran Church. For more information call Jeannette Kirinich at x45752.

Spaceteam Toastmasters meet: The Spaceteam Toastmasters will meet at 11:30 a.m. March 19 at United Space Alliance, 600 Gemini. For more information call Pat Blackwell at 282-4302.

Astronomy seminar: The JSC Astronomy Seminar will be held at noon March 19 in Bldg. 31 Rm. 129. Jim Oberg will discuss "Mars 96 Debris in Bolivia: The Sequel." For details call Al Jackson at x35037.

ISO meeting: The ISO 9001 Office will conduct a "Town Hall Meeting" at 3 p.m. March 19 in Bldg. 30 Auditorium. For details call Leon Blum at X33681.

Scuba club meets: The Lunarfans will meet at 7:30 p.m. March 19 at the Redfish Restaurant under the

Kemah/Seabrook bridge, Seabrook side. For more information call Fred Toole at x33201.

Cafeteria menu: Special: smoked barbecue link. Total Health: roast porkloin. Entrees: cheese enchiladas, roast pork and dressing, baked chicken, steamed pollock, Reuben sandwich. Soup: seafood gumbo. Vegetables: Italian green beans, Spanish rice, turnip greens, peas and carrots.

Thursday

Directors meet: The Space Family Education board of directors will meet at 11:30 a.m. March 20 in Bldg. 45 Rm. 712D. For more information on this open meeting call Gretchen Thomas at x37664.

Cafeteria menu: Special: chicken fried steak. Total Health: roast beef with gravy. Entrees: steamed pollock, lasagna with meat, steamed pollock, catfish, French dip sandwich. Soup: cream of turkey. Vegetables: whole green beans, butter squash, cut corn, black-eyed peas.

Friday

ISO meeting: The ISO 9001 Office will conduct a "Town Hall Meeting" at 3 p.m. March 21 in Bldg. 30 Auditorium. For details call Leon Blum at X33681.

Cafeteria menu: Special: fried chicken. Total Health: vegetable lasagna. Entrees: pollock hollandaise, beef stroganoff, vegetable lasagna. Vegetables: steamed broccoli, carrots vichy, Italian zucchini, breaded okra.

March 23

Star party: The JSC Astronomical Society invites the public to view the evening sky at dusk March 23 at Challenger 7 Memorial Park. For more information call Bill Williams at x32272.

Swap Shop

Property

Sale: 1.9 acres off FM517 in Galveston Co. 281-338-2232.

Sale: Pearland, Oakbrook 4-2-2, 2.5 yrs old, ex cond, high ceilings, by owner, \$129.9k. x41933 or 281-992-8904.

Sale/Rent w/option to buy: Texas City 3-1-1, corner lot, appliances, security sys, wood fenced yard, cov patio, \$52k/\$575/mo. 713-831-6002 or 281-997-6291.

Sale: Bay Glen 2-2-5-2, immaculate, orig owner, \$114.9k will discount 3% w/o buyer's rep. Travis, 480-1846.

Lease: Shoreacres 4-2-2, 1600 sq ft, LISD, fenced back yard, C/AH, W/D connections, \$750/mo + deposit, x40038 or 281-461-9596.

Sale: Pointe San Luis West Beach lot #38, Blk 1, near best Galveston fishing grounds, utilities, paved streets, \$19,950. x34006 or 281-554-6200.

Sale: Art and Shell gift shop located near Port Lavaca, 3 blks from Magnolia Beach on state bird-watching trail, \$89k owner finance. x35180 or 326-3706.

Cars & Trucks

'84 Mazda RX7, 131k mi, clean, 5 spd, new AM/FM/cass, new brakes, \$1k obo. 281-486-8551.

'90 Plymouth Grand Voyager, V6, LE, blue, dual A/C, 60k mi, all pwr, \$6.2k. 286-4774.

'93 Cavalier convertible, V6, low mi, \$10k; '88 Pontiac Grand Prix, V6, new transmission, \$2k. 992-5859.

'86 Cadillac Fleetwood, very clean, well maintained, \$3.5k. x31997 or 992-3927.

'87 Corvette, red w/red int, loaded, auto, leather, needs paint and minor work, \$8.5k. Cindy, x31769 or 281-332-1054.

'86 Ford Country Squire station wagon, V8, auto, AC, all pwr, AM/FM/cass, tinted windows, runs great, maint records, \$4.9k obo. 281-280-9740.

'94 Ford Ranger XLT, 5 spd, 4 cyl, good cond, 61k mi, \$7.9k. 996-1655.

'93 Ford Ranger XLT 4x4, ext cab, camper shell, V6, less than 30k mi, auto, captain's chairs, sliding window, bed liner, garaged, ex cond, \$15k. Jeff, x48627.

'88 Ford F150 customized van w/wheelchair lift, 64k mi, \$10k obo. Frank, x48778 or 332-7383.

'91 Ford Ranger XLT ext cab w/topper, V6, 5 spd, AC, cruise, tilt, AM/FM/cass, 81k mi, \$6k. 338-1521.

'93 Ford Ranger XLT, 5 spd, Oxford white, ex cond, AC, AM/FM/cass, rear sliding window, 80k mi, \$5k. x37936 or 409-925-4244.

'92 Explorer XLT, 50k mi, one owner, \$10,950. 486-5132.

'88 Honda Civic wagon, dk blue, one owner, well maintained, 145k mi, no rust, \$2.5k obo. x41748 or 713-643-3413.

'91 Honda Accord DX, 2 dr, 5 spd, AC, stereo, new tires, 95k mi, ex cond, \$6.5k. Joe, x38851 or 488-1750.

'94 Honda Accord LX, ex cond, 30k mi, 4 cyl, white ext, tan cloth int, auto 4 dr, dual airbags, loaded, \$14.2k obo. Gus, x33425 or 286-3402.

'81 Chevrolet Silverado, AC, automatic, good cond, \$3k obo. James, 337-5583.

'92 Chevy Suburban Silverado, loaded, ex cond,

white w/maroon int, 120k mi, \$13.9k. Tom, x40048 or 334-2593.

'94 Chevy Cheyenne, wht, w/lockable tonneau cover, AC, AM/FM/cass, PW/PL, custom rims, new tires, 54k mi, ex cond, \$11.5k. x37703 or 538-1627.

'89 Ford Mustang LX, blk w/gray int, overhauled, PL/PW, brakes, steering, AC, cruise, auto, 69k mi, \$3.4k. x38853 or 488-5352.

'91 Mercury Sable LS 3.8l, V6, leather, AC conv to R134a, cruise, cass, auto, keyless entry, PW/PL, 94k mi, \$5.5k. Karen, x32688 or John, 368-4252.

'89 Lincoln Mark VII LSC, loaded, new tires and brakes, garaged, \$6.3k. x32827 or 538-2152.

'89 Ford Ranger XLT, SWB, V6, AC, auto, cassette, tint, new motor, ex cond, maintenance records, \$3,750. Billy, x31339 or 409-741-0083.

'84 Dodge Prospector Van, sleeps 2, mag wheels, stereo, dual AC, new interior, \$1,950. Rich, x33222 or 538-2870.

Boats & Planes

'88 McKee Offshore Fisherman, 17.5 ft, center console, 140 hp Johnson OB, Shorelander trailer, live well, trolling motor, dual batteries, ex cond, \$7.3k. Dan, x31716 or 488-3106.

Two stand-up jet skis, 750 SX, custom engine, 100 hp; 550 SX w/minor modifications, well maintained, garaged, custom trailer, \$5.5. 281-282-0669.

Half ownership in 28' Pearson sailboat, 3 sails, spinnaker, 30 hp, inboard atomic 4 eng, \$5K + \$100/mo maint/slip fee. x47806 or 538-1681.

Aluminum prop from 21' Mercruiser I/O 135 hp engine, \$50. Robert, x37739.

'97 Citabria 76C8C (Explorer), Lyc. 160 hp, full gyro pkg, NAV/COM, many extras, \$60/hr. x38879 or 281-482-8213.

Cycles

'93 Yamaha YZ125, good cond, lots of extras. 281-338-2232.

'95 Honda Shadow VLX, 600cc, 3500 mi, purple/pearl white, Honda stock backrest w/chrome "Shadow" backplate, small wind faring, 2 pearl white Shoei RFR helmets, \$4.5k. 244-8616 or 480-6320.

'96 Suzuki Intruder 800, Candy Teal, Corbin leather Gunfighter seat and matching leather sissy bar pad, Jardine exhaust pipes, windshield, engine guards, highway pegs, sm luggage rack, chrome radiator cover, 6.5k mi, \$5.5k. 281-334-1595.

'96 Virago 1100 Special Edition, limited edition two tone black and white paint w/extra chrome, American Travelcade seat, Jardine exhaust pipes, saddlebags, windshield, engine guards, highway pegs, 6.6k mi, \$7.5k. 281-334-1595.

'96 Harley Davidson 883 "Sportster Hugger" less than 1k mi, extra chrome and windshield, garaged, midnight blue, extra leather seat, ex cond, \$8.3k. 244-1791 or 488-1326.

Audiovisual & Computers

Quadra 605, 20Mb Ram, 270Mb HD, 1Mb VRAM, kybd, 14" Sony monitor, 4X CD ROM, S/W, 7.5.3, Doom II, Marathon, Hexen, Myst, Claris Works, \$850. Scott, x36244.

486DX2-66, 16Mb Ram, 1.3Gb HD, 5.25" and 3.5"

FDs, 3X CD, 28.8 fax/modem, sound, Win 95, 14" IBM SVGA, \$750; 14" SVGA, \$100. Kelley, x36818.

Mac Performa 6200CD, 16Mb RAM, 1GB HD, 8XCD, fax/modem, kybd, mouse, Power PC 603 processor, 75MHz, S/W, \$750; TV tuner card, \$125; Jazz external scsi drive for PC or MAC w/1Gb cartridge, \$425; 1Gb Jazz cartridge, \$75. Bobby, 244-2444 or 488-4382.

Nine ft dia solid satellite dish and electronics, I.O. Prism satellite receiver w/descrambler disk, remote arm needs replacement, \$500. Russ, x45989 or 332-1769.

Pets & Livestock

Arabian, good show horse, 12 yrs old, \$2.5k. 409-925-4668.

Quarterhorse, 6 yrs old, good kid's horse, \$950. 409-925-4668.

Musical Instruments

'86 Epiphone guitar by Gibson, Sheraton ASB hard case, Peavy special amp, \$550 firm. x36174 or Wade West, 281-593-0857.

Soctek 60 watt lead head guitar amp, used 4 times, ex cond, \$200. 332-5705.

Grate cabinet, 4 12" speakers, \$250. Angela, 281-332-7009.

Marshall 8100 Valvestate 100W head, 2 channels, effects, loop, reverb, channel/reverb footswitch and manual incl, like new, \$350. Angela, 281-332-7009.

Photographic

Minolta XD5 35mm SLR camera, Rokkor lenses, 50mm 1:1.4, 28mm 1:2.8, each lens includes a variety of filters; Minolta zoom lens 35mm to 105mm, 1:1.3-4.5; Quartzaray flash. x45121 or 992-1798.

Household

Game table, octagon shape, good cond, carom table, balls and cues, poker topped table and regular surface, \$250 obo. 332-5705.

Toddler bed w/mattress, \$15; infant car seat, \$15; vintage green w/beige trim sofa, \$40; matching high-back chairs, \$15 ea or \$60/set. Janey, x33086.

Kg sz waterbed, mirrored headboard and firm mattress, almond w/gold trim, heater and gold pedestal, \$350 obo. Scott, x36244.

Cherry wood triple dresser w/mirror, \$500 obo. 944-9267.

Kg sz waterbed w/oak headboard and light, semi motionless mattress, \$150; solid oak table, \$250. x37773 or 326-0081.

Kg sz semimotionless waterbed mattress, liner, new heater and thermostat, \$200 obo. 334-4836.

Pillow sofa, extra long, custom made, earth tones, ex cond, \$250. 283-950 x106, or 335-0641.

Glass top coffee table w/dark oak frame, ex cond, \$125; wooden entertainment center, 64" x 72" x 17"; fits 27" TV, \$100. x38799 or 992-2806.

Sofa/loveseat, \$150; entertainment stand, \$30; square coffee table, \$30; glass top end table, \$20; 2 glass top nesting tables, \$15; 4 dinette chairs, \$100 microwave oven, \$30; glass top vanity w/seat, \$30. x32633 or 643-7734.

Electric stove, working, \$40; dishwasher, \$40; children's clothes. 480-0831.

White, 42" round, kitchen table w/4 chairs, ex cond. Ron, x48200.

Kg sz waterbed w/conventional mattress, \$125 obo. Keith, x38952 or 486-6765.

Traditional Tomlinson sofa, neutral colors, good cond, \$100. 488-1910.

Antique rectangular kitchen table w/5 chairs, hand painted vine border, \$150; little girl's desk, cream color, Queen Ann legs w/hutch, light, matching chair, \$180; sm brass doll bed, \$10. 474-9747.

Heavy duty, white Kenmore washer, ex cond, \$135; heavy duty, almond GE washer/electric dryer set, ex cond, \$350. 281-332-5345.

Kg sz Monterey low motion waterbed, ex cond, \$125. Sharon, x37783.

Sleeper sofa and love seat, country blue, good cond, \$400. Randy, x48271 or 488-1672.

Dark blue sofa, 87"; \$100 obo. Tom, x40048 or 334-2593.

Ethan Allen entertainment center, \$600; Bassett living room set w/qn sz sleeping sofa, \$1.1k; GE refrig, 22.5 cu ft, \$300; oval solid wood table w/ex leafe, 6 chairs, \$900. 996-0152.

Dining table, \$100; electric washer, needs work, \$50. 482-0874.

Antique blond ornate mirror, 34" w x 24" h w/ shelves, \$100. 480-3424.

Wanted

Want a baby goose for a blind foster child for Easter. 409-925-2139.

Want Meyer to join existing 3 member carpool from Meyerland area to JSC onsite, 8 a.m. -4:40 p.m., non-smoking. Mel, x30116 or Al, x36603.

Want roommates to share 3 BR house in Webster, \$340/mo all bills paid except phone. 332-8417.

Want flute to beginning student. Charlie, x37832 or Pat, 668-9721.

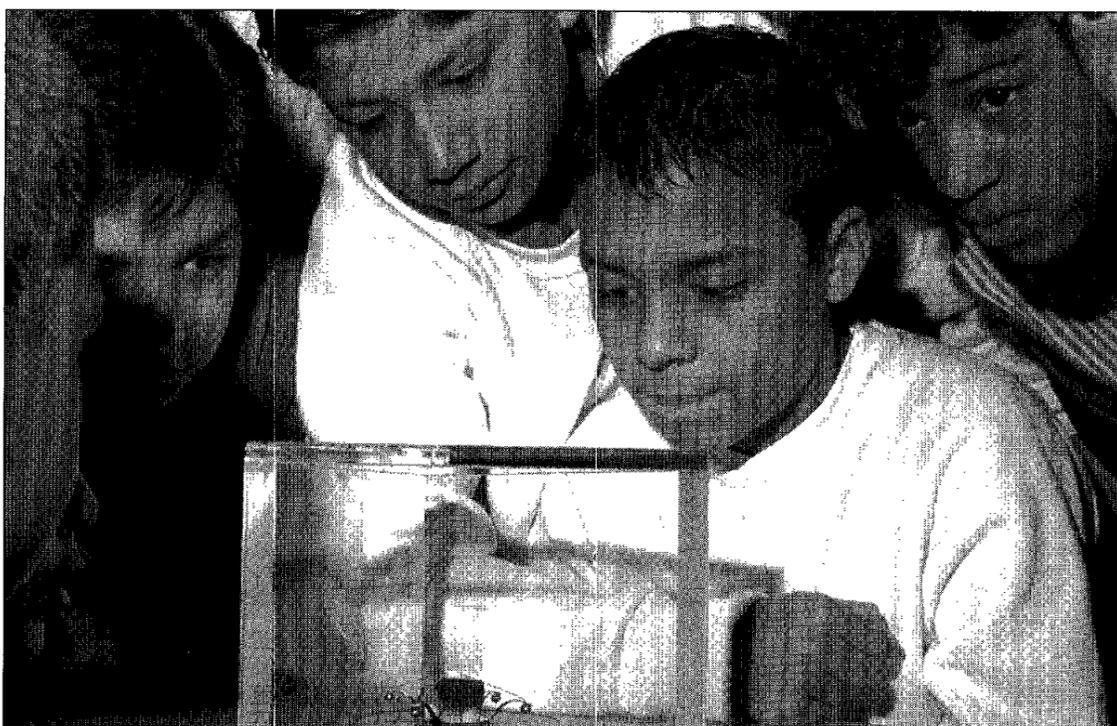
Want '72-'65 vehicle, car or truck, prefer any GM/FMC, body and frame must be OK, doesn't have to run, but must be all together, \$100 to \$200. Chuck, 282-3908.

Want home or condo, no approval assumption, and/or owner finance, any cond. 482-0874.

Want potter's wheel, electric only, tools, accessories, etc. Beth, x36696.

Want personnel working onsite to join VPSI Vanpool departing Meyerland Park & Ride at 7:05 a.m. for JSC. Loan Le, x36186.

Want non-smoking housemate to share 3 bedroom, 4k sq ft waterfront home on Taylor Lake, pool, boat dock, hot tub, own furnished BR and bath, \$600/mo bills paid. Leah, x34544 or 326-3759.



Stimulating Science

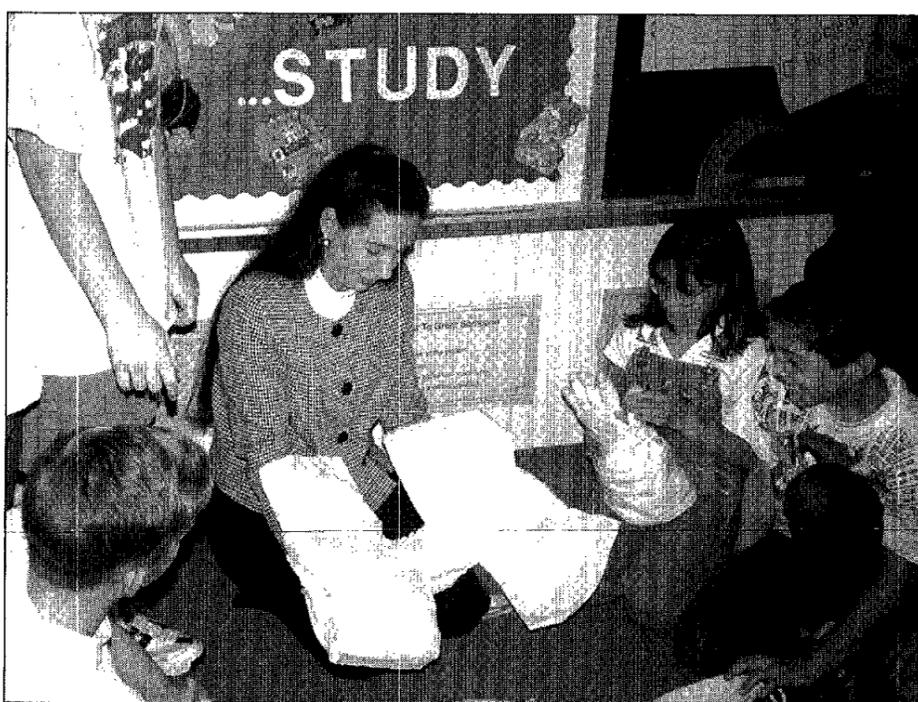
JSC workers visit classrooms to share engineering wonders

↑ Students at Golfcrest Elementary in the Houston Independent School District examine a Mars meteorite during National Engineer's Week. JSC's Equal Opportunity Program Director Estella Hernandez Gillette said she is "always amazed at how enthusiastic the children are when I go talk to them." Gillette was one of more than 225 professionals who visited classrooms in February during the nation event.

JSC Photo S97-01648

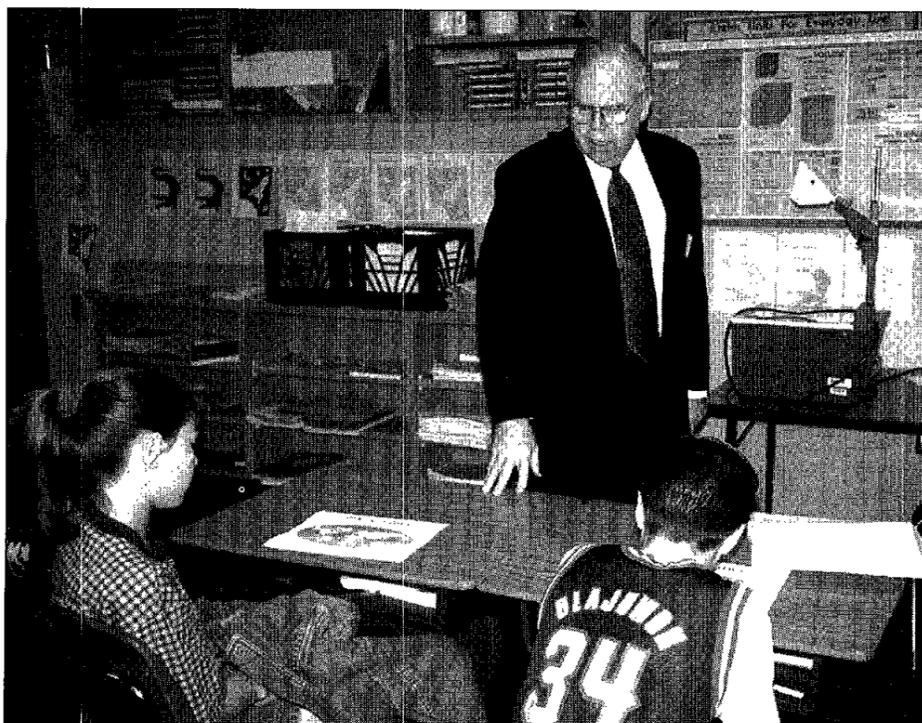
Cinda Chullen, technical manager for the Science, Engineering, Analysis and Test contract for the Engineering Directorate shows students at Rustic Oak Elementary how various components of space suits work.

JSC Photo S79-03240



Space Operations Director John O'Neill talks with students at Bales Intermediate in Friendswood Independent School District.

JSC Photo S79-03230



EOPO Director Estella Hernandez Gillette visits students in Ann Collum's fifth grade class at Golfcrest Elementary School. Professionals from JSC visited more than 350 classrooms to encourage students to pursue careers in engineering, science and technology as part of a national outreach program called Discover "E" ("E" for Engineering) during National Engineers Week. JSC's Education Outreach Program provides volunteers for schools in the local educational community throughout the year, and new volunteers are always needed. As a volunteer, employees can help educators reach students by participating as guest speakers, science fair judges, tutors, mentors and E-mail mentors. Time spent participating in an approved Education Outreach event is official duty time, and civil service employees may charge their volunteer time, up to 40 hours per calendar year, to a special education labor code. For more information about the Education Outreach Program, call x32929.

JSC Photo S79-01649

Inspiring future technical professionals was the task of more than 225 JSC employees in February and response from students and teachers indicates they did their job.

"By the time I was done with my presentation, over half of the class told me that they wanted to be engineers too and several of them informed me they wanted to be aerospace engineers," said Cinda Chullen, technical manager for the Science, Engineering, Analysis and Test contract for the Engineering Directorate about her visit to Ginny Royer's gifted and talented class at Rustic Oak Elementary in the Pearland Independent School District. "This was a great experience and opportunity to see our youth so enthusiastic about engineering and the space program."

Chullen, other JSC civil service and contractor employees, and JSC managers visited more than 350 classrooms to encourage students to pursue careers in engineering, science and technology as part of National Engineers Week. While the national program focuses on one week in February, JSC employees spent time with students during the entire month to give more students exposure to the space program.

"Every once in a while, we have the opportunity to share our thoughts and ideas with the people who, in years to come, will be working in the technical and engineering fields," said Jim Wade, an aerospace engineer in the International Space Station Independent Assessment Office. "I always enjoy going out to schools and talking to the kids about NASA and space. National Engineer's Week provides a focus for NASA and the schools to do some build-up prior to the appearance, so the kids are generally more focused."

Volunteers visited 117 schools in the Houston area and thank-you letters are pouring in from students and teachers.

"I have never seen the enthusiasm and comprehension among

students that your presentation accomplished," wrote Kylene Barnes, a science teacher at Baker Junior High School, to Bill Foster of United Space Alliance. "The students gained so much knowledge through demonstrations, audio-visual and discussions."

Students who wrote to Foster thought his demonstrations were "really cool" and expressed appreciation to him for taking time off from work to visit their class.

"The real reward comes from the feedback I get from teachers, parents and children," Wade said.

"Occasionally, a class will write thank you notes that eventually get forwarded to me. I'll read each letter, and there are usually several cases per class where you can tell that the child has been inspired and has become interested in science, engineering, or space. In one instance, I visited several schools while on a family vacation to Minnesota. One of those classes did a class project on space and won a science award

ENGINEERS Turning Ideas Into Reality.

NATIONAL ENGINEERS WEEK, FEBRUARY 18-22, 1997



and recognition by the state for their accomplishments. Their teacher sent me a copy of the newspaper article

which stated they were motivated to do their project by a visit from a NASA engineer. I didn't need to have my name in print to know that my appearance had a positive impact on a number of kids."

A majority of volunteers went to the classrooms equipped with science demonstrations, exhibits such as space food, Apollo lunar boots and gloves and videos about NASA and the space program. But more important, they brought real-life experiences and shared their unique space-related knowledge.

"I am always amazed at how enthusiastic the children are when I go talk to them, said Equal Opportunity Program Director Estella Gillette. "They are so curious about what we do. What I like most about speaking to the younger children is that they don't question why NASA does what it does. They simply accept the fact that we are here and that what we do is 'awesome,' as one child said to me recently." □



Women find new challenges at JSC

[Editor's note: This is the second of four articles on the women of JSC for Women's History Month.]

By Jessie Hendrick

After working as a secretary in both the Crew Systems Division and Safety Reliability and Quality Assurance, Jean Alexander was looking for a new challenge.

Fortunately for both Alexander and JSC, the arrival of female astronauts opened a whole new field for other women at JSC—equipment specialist. Alexander was one of about 70 applicants for the upward mobility position and one of about 20 women that were interviewed.

In 1980, she became part of the team responsible for the support of astronaut activities involving the use of space suits and equipment. The position included responsibilities for the preparation of space suits, troubleshooting, hardware maintenance and repair, fabrication of crew provisions and suiting female astronauts.

"Suiting women astronauts seemed like a big difference in the beginning, but now I know that we all work together to get ready for a training session, and the only difference is who goes into the dressing room for those few minutes of preparation," Alexander said.

Currently, Alexander is one of three NASA lead equipment specialists who head a team of contractor personnel who prepare space suits and help astronauts select equipment that fits properly and items they will use during flight, such as flashlights, pens and pencils. During training and the final launch phase, she is responsible for making sure that the right equipment is on hand for each crew member and has been properly tested and inspected.

One of her many accomplishments includes being heavily involved in the development of the Enhanced Life Preserver Unit. She helped design, test and redesign the unit until a working prototype was developed. This equipment guaran-

tees that should an astronaut be unconscious and in the water, his or her head will be held above water.

Part of her job includes actively supporting every third mission as the suit technician team lead. She helps to prepare equipment for training sessions and flight. Her last mission-related duty prior to launch is to enter the cockpit of the orbiter and strap the astronauts into their seats. The mission that holds the most meaningful memories for her was STS-1. She was able to watch Columbia land and then rode with Commander John Young and Pilot Robert Crippen back to crew quarters.

"I was so proud of them, the space program and America," Alexander said.

She has not lost that initial reaction of pride and enthusiasm for the space program.

"Every mission is unique and every flight has a different crew, my job is very interesting—and my grandchildren think what I do is neat," Alexander said.



Jean Alexander of Engineering's Crew and Thermal Systems Division suits up Astronaut Ken Cockrell before STS-56. Alexander is one of three NASA lead equipment specialists who head a team of contractor personnel who prepare space suits and help astronauts select equipment that fits properly and miscellaneous items they will use during flight, such as flashlights, pens and pencils.

Columbia makes trip to pad

Columbia took aim this week for 16 days in space carrying the first Microgravity Science Laboratory, rolling out to Launch Pad 39A early Tuesday.

Columbia remains on track for a launch at 1:01 p.m. CST April 3 to begin STS-83. The crew of Columbia includes Commander Jim Halsell; Pilot Susan Still; Mission Specialists

Janice Voss, Don Thomas and Mike Gernhardt; and Payload Specialists Greg Linteris and Roger Crouch. All of the crew members as well as astronaut Cady Coleman, who is training as a



possible backup for Thomas, were at Kennedy Space Center this week for a dress rehearsal countdown with the launch team. Thomas suffered a broken ankle in late January, but he is continuing training and is expected to fully recover from the injury.

Shuttle managers are scheduled to meet Thursday, March 20, for a final review of all preparations for STS-83, after which an official launch date will be announced.

Meanwhile, Atlantis is in KSC's Bay 3 processing hangar being readied for a mid-May launch on STS-84, the sixth Mir docking mission. Atlantis will bring home astronaut Jerry Linenger from his stay aboard the Russian Mir Space Station and drop off astronaut Mike Foale for a four-month stay.

This week, technicians performed a functional check of the orbiter docking system, completed installation of the main engines and finished checks of the forward reaction control system.

Elsewhere, Discovery is in KSC's Bay 2 hangar being prepared for a mid-July launch on its next flight, STS-85, carrying the CRISTA-SPAS free-flying astronomy satellite. Technicians conducted fuel cell voltage tests this week and prepared for the removal of the main engines, scheduled to begin on March 28.

Endeavour will be returning to the fleet this month after extended maintenance in Palmdale, Calif. Riding atop the Shuttle Carrier Aircraft, Endeavour is scheduled to land in Corpus Christi about noon March 25 and will be open to public viewing about one hour after landing. The orbiter - 747 combination will fly to Ellington Field in Houston about 9 a.m. CST March 26, refuel, and depart about noon. Public viewing will be allowed from 10 a.m.-noon.

Endeavour last flew in space in May 1996 on STS-77.



Thirty civil service and contractor employees visit Kennedy Space Center as recipients of the Space Flight Awareness Award. Front row from left are SFA staff member Mary Chesler, Janie Perez, Debbie Schaller, Denice Dingler, Liz Bauer, Juanita Gibson, Angie Prince and SFA National Panel member Lois Walker. Middle row from left are, Ron Diftler, James McKinnie, Dave Browne, Bob Smith, Doug Fuqua, Dave Ladrach, John Lewis, George Ashworth, Navin Patel and John Chladek. Back row from left are, Tim Early, Norman Knight, Bill Peacock, Jim Callen, Jeff Cullen, Gary Caylor, Lee Jordan, Jack Rainbolt, Howard Flynn, Ken Riga, Brad Peck, Newt Myers, Steve Hornung and Hector Saenz.

Employees honored at STS-82 launch

Thirty JSC civil service and contractor employees watched the night launch of STS-82 as recipients of the Space Flight Awareness Award.

The honorees also received a VIP tour of Kennedy Space Center and attended a reception to recognize their dedication to quality.

Civil service honorees included: Liz Bauer, John Chladek, Tim Early, Howard Flynn and Debbie Schaller of the Engineering Directorate; Norman Knight, James McKinnie and Angela Prince of Mission Operations; Jeff Cullen of the Business Management Directorate; Newt Myers of the Flight Crew Operations Directorate; Janie Perez from the Office of the Chief Financial Officer; Dave Ladrach from the Space Shuttle Program; Dave Browne of the Safety, Reliability, and

Quality Assurance Office; Juanita Gibson of the International Space Station Program; and Gary Caylor of the Space and Life Sciences Directorate.

Contractor honorees were: George Ashworth and Jim Callen, Lockheed Martin Space Mission Systems and Services; Ron Diftler, John Lewis and Navin Patel, Lockheed Martin Engineering and Science Services; Denice Dingler, GB Tech; Doug Fuqua, Johnson Controls World Services; Steve Hornung, AlliedSignal Technical Services; Lee Jordan, McDonnell Douglas Spacehab; Bill Peacock, DynCorp; Brad Peck, Boeing Aerospace Operations; Jack Rainbolt, Johnson Engineering; Ken Riga, Hamilton Standard Space Systems International; Hector Saenz, Rothe Development; and Bob Smith, The Aerospace Corporation.

Earth Day plans in full swing

New photo contest added to festivities

Planning for JSC's annual Earth Day celebration is in full gear with plenty of activities around the center, including a new photography contest.

The main event will be April 22 in Teague Auditorium. This year's theme is "Get Your Earth's Worth," and will feature exhibits, workshops and several new events.

A photo contest illustrating this year's theme, or other Earth Day-related ideas, such as photographs of national parks, conservation activities, or wildlife is being planned. The photographs must be no larger than 11- by-14-inches and rigidly mounted on cardboard or poster-type board. Black and white or color photographs will be accepted. All JSC and contractor employees are invited to participate. Judges from NASA's management will award

overall first, second and third place winners and Best Local Representation and Best Theme Representation. Photographs must be submitted by noon on April 18 to Melissa McKinley, Bldg. 45, Rm. 750, and will be displayed in Teague Auditorium on Earth Day. For a complete copy of the rules and for more information contact Melissa at x33127, Mail Code JJ2.

Also, an Earth Day 5K Fun Run and 2K walk is being sponsored by the Houston Federal Executive Board. The event is planned for 9 a.m. April 19 at JSC and will be open to all federal employees and their families. Snacks and beverages will be provided.

Volunteers are needed for both the Earth Day Planning Committee and the Fun Run. Please contact Jo Kines at x33218 for registration information and details.

Mir crew works to restore oxygen generation unit

Mir 23 crew members spent the week focusing on science investigations and troubleshooting a balky oxygen generation unit called the Elektron.

The unit is designed to separate oxygen from the onboard waste water and return it to the cabin atmosphere using the process of electrolysis. The unit has not been working properly.

Last Friday, Commander Vasily Tsibliev, Flight Engineer Alexander Lazutkin and U.S. astronaut Jerry Linenger were asked to activate another Elektron unit. They were able to activate the unit, but it was shut down because it produced excessive levels of hydrogen.

To keep oxygen at normal levels, the Mir trio is using solid fuel, oxygen-generating "candles," which burn lithium perchlorate and are used primarily for supplemental oxygen when more than three people are aboard. The crew burned several candles over the weekend and this week.

While flight controllers consider it desirable to restore the Elektron units to full operation, they are not considered critical and are not the only means of generating oxygen on board Mir. There are enough candles on board to supply oxygen for two months. The crew was told to position fans inside Mir to evenly distribute oxygen throughout the station's modules before activating additional oxygen canisters.

The Progress 233 resupply vehicle that undocked from the station Feb. 6 could not be redocked to the outpost as planned last week due to problems with the remotely operated rendezvous system. The main reason for redocking the expended Progress was to test the new remote-control rendezvous system as a replacement for the automatic docking system.

No further attempts to redock the Progress were made in order to protect propellant margins for its reentry which occurred Wednesday in the southern Pacific Ocean.

The next Progress resupply vehicle is scheduled to be launched April 6 with an automated docking scheduled for April 8. The new Progress is carrying the upgraded Orlan space suits that Tsibliev and Linenger will wear during their space walk, now scheduled for no earlier than April 16. The Progress also will carry to Mir repair equipment for the Elektron system and the Mir's television transmitter. Once docked, Progress 234 will be unloaded and undocked as the crew practices a manual docking using the rendezvous system at a range of up to 8,000 meters.

The Mir 22 crew members returned environmental samples of air and water gathered shortly after the oxygen generator fire in the Kvant-1 module on Feb. 23, which were analyzed by Russian and American toxicologists and found to contain no harmful ingredients.

American Heritage seeking volunteers for July celebration

JSC again will celebrate the wide diversity of its workforce during the annual American Heritage Week set for July 7-11.

The Heritage Week committee is finalizing details for daily performances and exhibits in the Bldg. 3 cafeteria, and for the grand finale to be held from 3-8 p.m. Friday at the Gilruth Center. Various local restaurants will serve free food and refreshments during the finale while cultural performers entertain.

The committee is looking for volunteers to make this year's event memorable. To volunteer or for more information, call the Equal Opportunity Program Office at x30601.

