National Aeronautics and Space Administration
Lyndon B. Johnson Space Center
Houston, Texas

Wonder years

JSC employees and retirees celebrate space milestones at Space Center Houston. Photos on Page 3.

Camp-O-Ree

The Boy Scouts of America learn teamwork skills during a weekend campout at JSC. Story on Page 4.

Space News Roundup

Vol. 35 | May 3, 1996 | No. 17

Cross training begins for U.S. astronauts

By Karen Schmidt

For the first time in formal flight training last week, American astronauts donned Russian space suits and simulated space walking.

Meanwhile, Cosmonaut Researcher Shannon Lucid completed the first of five months in space aboard the Russian Mir Space Station.

Astronauts Jerry Linenger — scheduled to replace the third American on Mir — and backup Mike Foale suited up in a Russian Orlan space suit last week and trained in the Hydrolab. The Hydrolab is Russia's equivalent to JSC's Weightless Environment Training Facility and simulates the weightlessness of space.

Russia is not the only place astronauts will wear the Orlan suit.

"The suit will be used to develop interoperable hardware for the International Space Station" said Don McMonagle, chief of the EVA Projects Office. As necessary, the suit can also be used to train astronauts."

Although there are differences in the Russian and American versions—sizing, suit pressure and range of motion—work is under way to develop common hardware for the space station.

"We will use the suit to verify suit compatibility with new hardware such as shuttle/Mir external experiments, station assembly and maintenance tasks and common EVA aids like foot restraints," said Richard Fullerton, Joint EVA Working Group co-chairman in the JSC EVA Projects Office. "Most importantly, it serves as a project where both sides work together to develop

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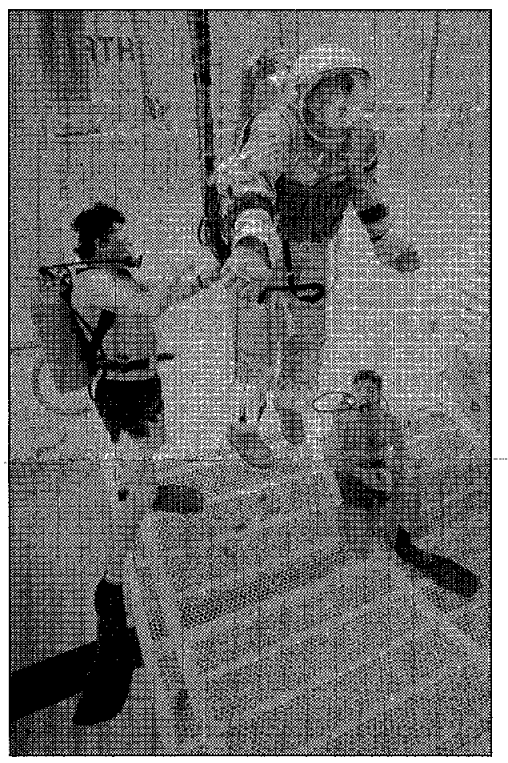

Above: From left, Roland Daley, Steve Anderson and Colin Campbell of Hamilton Standard watch as the Russian extravehicular space suit is lowered into the pool in Bldg. 29. The Orlan suit will be used to train astronauts and cosmonauts for the International Space Station. Left: Weightless Environment Training Facility Divers, Rod Stark, left, and Doug Begnaud of Johnson Engineering, monitor the Russian Orlan suit as it undergoes testing.

JSC Photos by Robert Markowitz and Mark Sowa

Testing shows payloads ready on *Endeavour*

On Launch Pad 39B at Kennedy Space Center, work on *Endeavour* continued this week, preparing the payloads of STS-77 for launch.

Shuttle managers plan to meet Tuesday for a final review of launch preparations and to set an official launch date. Launch is targeted for no earlier than May 16.

Endeavour Commander John Casper, Pilot Curt Brown and Mission Specialists Andy Thomas, Dan Bursch, Mario Runco and Marc Garneau, along with Lead Flight Director Wayne Hale and technical experts associated with the payloads, discussed the flight's objectives Tuesday in a series of press briefings on NASA Television.

Endeavour will deploy and retrieve two free-flying spacecraft, one a Spartan satellite with an inflatable antenna, and the other a PAMS-STU spacecraft, part of the Technology Experiments Advancing Missions in Space payload. In the cargo bay will be the pressurized Spacehab module containing a variety of experiments, and a dozen Get-Away-Special canisters sponsored by investigators from the U.S., Canada and Europe.

During the 10-day mission, astronauts will perform a total of four rendezvous operations with the two satellites—the most ever in a single space shuttle flight.

Spartan, which passed its interface verification tests this week, will carry the the Inflatable Antenna Experiment and measure the accuracy of the surface at a variety of internal pressures and thermal conditions. The shuttle crew will station-keep with the PAMS-STU satellite to investigate a new laser-based attitude control system.

"The Spartan is doing something new and unique this time," Hale said. "This time we are not using it for astronomy. This is an example of NASA's new philosophy on faster, cheaper, smarter payloads. We are using it as a construction site in space."

The IAE is a prime example of a low-cost technology validation experiment. The experiments are designed to inexpensively test the fundamental performance of technologies in the weightless, vacuum environment of space when it is impossible to do so on the ground. Inflatable systems cannot be evaluated on Earth due to the effects of gravity and atmospheric pressure on the balloon structure. They must be tested on-orbit and the results compared with analytical predictions to achieve the confidence necessary to allow their use in operational systems.

Four experiments are included in TEAMS payload. The Vented Tank Resupply Experiment will look at techniques for resupplying gases and liquids on orbit. The Global Positioning System Attitude and Navigation Experiment, will test both a receiver processor and an inertial reference unit being considered for use on the International Space Station. The Passive Aerodynamically-Stabilized Magnetically-Damped Satellite, actually a subsatellite, will test a laser-based attitude control system. And the Liquid Metal Thermal Experiment will test three liquid metal heat pipe designs.

"On this flight we will be performing four rendezvous," Casper said. "The techniques and procedures from the rendezvous will help future space shuttle flight particularly those flights that go to the International Space Station."

Endeavour also will carry the Brilliant Eyes Ten-Kelvin Sorption Crycooler Experiment, designed to evaluate the use of such cooling beds for use on future astrophysics, Earth-observing and surveillance satellite systems.

Elsewhere at KSC, payload verification tests are complete on *Columbia*, scheduled for the STS-78 flight on June 20. The external tank was mated with the solid rocket boosters today and plans to roll the stack to the Vehicle Assembly Bldg. are set for May 23. Space shuttle *Atlantis* is in preparation for the late July flight of STS-79, which is scheduled to dock with the Mir.

Process begins to establish institute

By Eileen Hawley

NASA took the first step Wednesday in awarding a cooperative agreement to establish a National Space Biomedical Research Institute to lead efforts in biomedical research with the release of a draft solicitation for proposals.

Using NASA's expertise in space life sciences, its unique facilities and engineering assets, the NSBRI will support a wide variety of basic and applied biomedical sciences designed to support the presence of humans in space and to use that knowledge to enhance life on Earth.

"The concept of the Biomedical Research Institute is in keeping with our plans to more closely bind NASA's scientific knowledge and our immense engineering and technical resources to the community," said JSC Director George Abbey. "This will reinforce our links with the external community and put NASA-driven technology in the hands of the business and academic community where it can be used to help people in everyday life."

A draft cooperative agreement notice to solicit proposals for establishing the NSBRI was issued Wednesday. The CAN is available electronically under business at URL: http://www.jsc.nasa.gov/bd2/

NASA will provide core funding, in addition to research opportunities funded through yearly competitions, to ensure a focused and successful endeavor. The overall period of the cooperative agreement will be 20 years, a five-year initial period, with the option of three five-year extensions.

The NSBRI is part of the NASA Science Institutes concept announced by NASA Administrator Daniel S. Goldin last year.

Employees reach out

Volunteers make difference by tutoring

By Mae Mangieri

When 100 seniors at Stephen F. Austin Senior High School received the daunting news last week that they might not be allowed to graduate because of low test scores, JSC volunteers were there to help.

Forty-three civil service and contractor employees sat down one-on-one with the students and tutored them in the math and reading skills they will need to pass the Texas Academic Achievement Skills Test, or TAAS, when they retook the test this week.

The effort was part of a comprehensive program to support the Houston Independent School District school. JSC's Education Outreach Program arranged for the intensive one-day tutoring session last Friday.

The students said they appreciated the extra help as well as the encouragement and support they received from their tutors.

"It was really great that the people of NASA took time out of their busy day to come out and motivate us to do our best on the TAAS test," wrote Jesse Gomez who received math tutoring from Ray Rodriguez of Hughes Training.

Ginger Kerrick from the Space Station Training Division tutored Monica Canales on the math section of the TAAS test.

"Ginger was very helpful and also very patient with me," wrote

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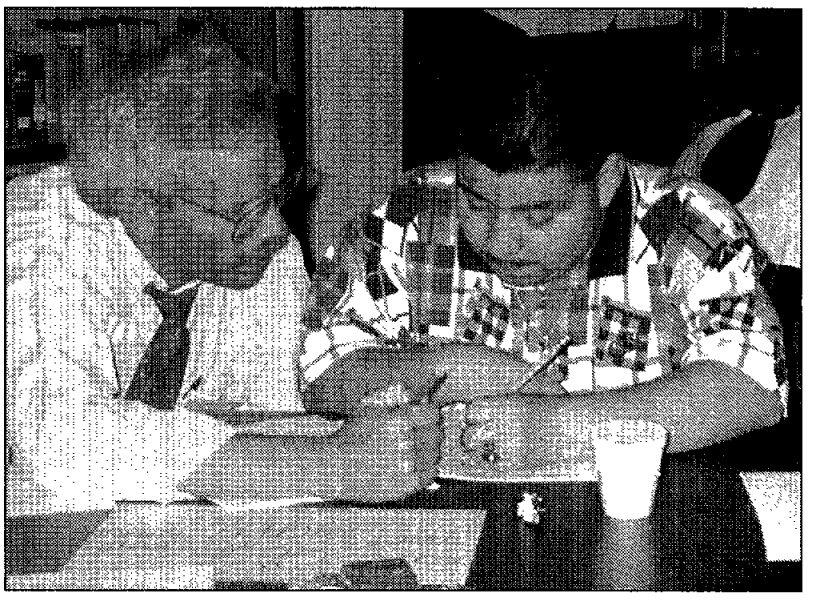

Photo by Dan Mangieri

Dennis Beckman of Mission Operations' Space Flight Training Division helps Austin High School student John Cerros study for the math section of the Texas Academic Achievement Skills Test.

Candidates named for '96 astronaut class

Thirty-five astronaut candidates will arrive at JSC on August 12 to begin a period of training and evaluation.

This year's class consists of 10 pilot and 25 mission specialist candidates selected from more than 2,400 applicants. The class of 1996 is the largest class selected since the first class of shuttle astronauts, also numbering 35, was named in 1978.

Following about one-year of evaluation and training, the astronauts will receive technical assignments within the Astronaut Office to further prepare them for shuttle flight assignments.

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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.

Arena football: Texas Terror vs. Florida 7:30 p.m. May 17 at the Summit. Tickets cost $11.50.

Home tour: Galveston Historic Home Tour May 4-5 and May 11-12. Tickets cost $13.50.

Astroworld: One day pass cost $17.25.

Fiesta Texas: One day pass cost $17.25.

Six Flags: One day pass cost $17.25.

Sea World: Adult tickets cost $24.50, Children (3-11) cost $17.25.

Space Center Houston: Discount tickets, adult, $8.75; child (3-11), $7.10.

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

Stamps: Book of 20, $6.40.

JSC history: *Suddenly, Tomorrow Came: A History of the Johnson Space Center.* Cost is $11.

Metro tickets: Passes, books and single tickets available.

Upcoming events: Caribbean Getaway Sept. 13-20. Cost is $359. Deposit of $200 due July 8. Mexico Cooper Canyon Trip Nov. 6-12. Cost is $995. Deposit of $200 due Sept. 6.

JSC

Gilruth Center News

EAA badges: Dependents and spouses may apply for photo identification badges from 7 a.m.-9 p.m. Monday-Friday; and 8 a.m.-4 p.m. Saturdays. Dependents must be between 16 and 23 years old.

Fitness challenge: 1996 Fitness Challenge runs to Aug. 31. Employees are eligible to win $100 gift certificates. For more information call Larry Wier at x30301.

Defensive driving: One day course is offered once a month. Cost is $25. Interested employees should call the Gilruth.

Stamp club: Meets at 7 p.m. every 2nd and 4th Monday in Rm. 216.

Women's self defense: Martial Arts training for women only from 5-6 p.m. Tuesdays and Wednesdays. Cost is $25 a month.

Weight safety: Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. May 9. Pre-registration is required. Cost is $5.

Exercise: Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays.

Aikido: Martial arts class meets from 6:15-7:15 p.m. Tuesday and Wednesday. Cost is $25 per month. New classes begin first of each month.

Aerobics: Class meets from 5:15-6:15 p.m. Monday, Tuesday and Thursday. Cost is $32 for eight weeks.

Ballroom dancing: Cost is $60 per couple. For additional information call the Gilruth Center at x33345.

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 examination screening and a 12-week individually prescribed exercise program. For more information, call Larry Wier at x30301.

JSC

Dates & Data

Today

Cafeteria menu: Special: baked meatloaf. Total Health: baked potato. Entrees: chicken fajitias, ham steak, pork and beef eggrolls, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: stewed tomatoes, seasoned spinach, cut corn, macaroni and cheese.

Monday

Cafeteria menu: Special: Italian cutlet. Total Health: roast beef au jus. Entrees: chicken a la king, enchiladas with chili, vegetable lasagna, steamed pollock, French dip sandwich. Soup: split pea and ham. Vegetables: Brussels sprouts, oriental vegetables, buttered carrots, lima beans.

Tuesday

ABWA meets: The American Business Womens Association, Clear Lake Area Chapter will meet at 5:30 p.m. May 7 at Bay Oaks Country Club. For more information call Nancy Hutchins at x34006.

NMA class: The Texas Gulf Coast Council of the National Management Association will host a 10-hour "Financial Strategies for Successful Retirement" seminar from 6-9 p.m. May 7,14 and 21. Cost is $50 per couple for members and $75 for non-members. For more information call 280-0444.

Cafeteria menu: Special: stuffed cabbage rolls. Total Health: roasted turkey. Entrees: turkey and dressing, country style steak and hash browns, beef ravioli, baked chicken, fried cod fish. Soup: tomato Florentine. Vegetables: Italian blend, okra and tomatoes, corn cobbette, navy beans.

Wednesday

Toastmasters meet: The Spaceland Toastmasters will meet at 7 a.m. May 8 at the House of Prayer Lutheran Church. For more information call Jeannette Kirinich x45752.

Awards luncheon: The Federal Executive Board and the Federal Business Association will host a Public Service Recognition Awards ceremony at 11 a.m. May 8 at the Gilruth Center. Tickets cost $14 and are available at the Exchange Operations Office in Bldg. 1 Rm. 840. For more information call Helen Harris at x38413.

MAES meets: The Society of Mexican American Engineers and Scientists will meet at 11:30 a.m. May 8 in the Bldg. 3 Cafeteria executive dining room. For more information call Michael Ruiz at x38169.

Astronomers meet: The JSC Astronomy seminar will meet at noon May 8 in Bldg. 31, Rm. 129. An open discussion meeting is planned. For more information call Al Jackson at x35037.

PSI meets: The Clear Lake/NASA Chapter of Professional Secretaries International will meet at 5:30 p.m. May 8 at the Holiday Inn on NASA Road 1. For more information call Juanita Woodfox at 286-3346.

Cycle club: The Space City Cycle Club will meet for a 25-mile ride beginning at 6 p.m. May 8 at the University of Houston Clear Lake soccer field. For more information on this ride and weekend rides call Mike Prendergast at x45164.

Cafeteria menu: Special: pepper steak. Total Health: stir fry pork with rice. Entrees: liver and onions, stir-fry pork with rice, steamed fish, western special, Reuben sandwich. Vegetables: steamed broccoli, yellow squash, macaroni and cheese, vegetable sticks.

Thursday

NPM meets: The National Property Management Association will meet at 5 p.m. May 9. For more information and meeting location call Marie-France Smith x39309.

Airplane club meets: The Radio Control Airplane Club will meet at 7:30 p.m. May 9 at the Clear Lake Park Community Bldg. For more information call Bill Langdoc at x35970.

Cafeteria menu: Special: chicken fried steak. Total Health: baked potato. Entrees: beef tacos, steamed pollock, baked chicken, catfish special. Soup: navy bean. Vegetables: spinach, cut corn, breaded okra, pinto beans.

Friday

Cafeteria menu: Special: tuna noodle casserole. Total Health: baked potato. Entrees: steamed salmon steak, baked chicken, fried cod fish, ham steak. Soup: seafood gumbo. Vegetables: French cut green beans, cauliflower with cheese, green peas, black-eyed peas.

May 10

Astronomers meet: The JSC Astronomical Society will meet at 7:30 p.m. May 10 at the Lunar & Planetary Institute 3600 Bay Area Blvd. For more information call Chuck Shaw at x35416.

May 15

Scuba club meets: The Lunarfins will meet at 7:30 p.m. May 15 at Redfish Restaurant under the Kemah/Seabrook Bridge, Seabrook Side. For more information call Fred Toole at x33201.

NMA class: The Texas Gulf Coast Council of the National Management Association will host a 10-hour "Financial Strategies for Successful Retirement" seminar from 6-9 p.m. May 15,22 and 29. Cost is $50 per couple for members and $75 for non-members. For more information call 280-0444.

JSC

Swap Shop

Property

Sale: Laporte/Creekmont, 3-2-2, FPL, new roof/carpet/linoleum/paint. $63.9k. 992-5080.

Sale: Webster condo, 2-2-2CP, upstairs flat, new A/C, kitchen & bathroom upgrades, wbfp, W/D conn, $37.5k. Pat, 488-2290.

Rent: Dickinson, garage/workshops, 15'x20', $100/mo; 15'x30', $115 mo. Larry, x33168 or Carol, 393-2820.

Sale: Taylor Lake Estates, wooded lot, 90'x135', can finance, $39.5k. Don, x38039 or 333-1751.

Rent: Bay Glen, 3-2.5-2, huge yard/shaded deck, close to elementary school/park/pool, $1.1k mo + dep. Tom, x33651 or 280-8084.

Sale: Clear Lake, Oakbrook West, 2-story, 4-2.5-2, pool w/jacuzzi, FPL, custom cabinetry, carpet allowance, warranty, $121.9k. x38275 or 480-4634.

Sale: Brook Forest, 4-2-2, 2300 sq ft, FPL, fence, new carpet/paint/tile, A/C/H, $135k. Brian, x32635 or 480-4351.

Sale: Waterfront lot, .5 acres Dickinson Bayou, recent bulkhead, wooded, $65k obo. x31370 or 334-7412.

Lease: Waterfront TH w/boatslip, 2-2.5-2, W/D, FPL, microwave, fridge, fans. x35268 or 326-4915.

Rent: Nassau Bay, 2 BDR apartment, renovated, pool, boat ramp, avail 6/1, $560 mo. George, x39543.

Sale: Wooded lot, Tomball area, 1+ acres, backs on clear running stream, paved streets, electric & water, terms avail, $9k. 333-4609.

Sale/Lease: Condo on Space Center Blvd, 1-1-1CP + study, W/D, french doors, nice view. 977-5763.

Sale: Wooded 10 acre retreat/homesite near Woodville, 3 BDR mobile home, shop/storage building, private lake, $32.5k. 482-7533.

Lease: Middlebrook, 4-2-2, both formals, den, FPL, fans, good cond, $900 mo. 486-8551.

Rent: Seabrook, 3-2.5, appli, W/D, garage door opener, alarm sys, $1k mo + dep. Jeri, 333-7552.

Sale: University Trace condo, 1 BDR + study, new paint/carpet, appli. 333-3925.

Lease: Condo, 1 BDR, W/D, FPL, alarm, cov'd parking, appli, upstairs. Jim Briley, 244-4632 or 488-7901.

Sale/Rent: Boat slip on Clear Lake w/roof & motorized boat hoist for power boats, access to water, $7.5k. 474-4922.

Rent: Corner penthouse condo, Vail, CO, sleeps 13, 3 baths, 7/6 - 7/13, $1.8k. Kristi, 334-1481.

Rent: Lake Travis cabin, private boat dock, cent A/C/H, fully equip, sleeps 8, spring/summer, $550/$650 weekly, $120/daily. 474-4922.

Sale: Clear Lake, Oakbrook West, 2-story, 4-2.5-2, pool w/jacuzzi, FPL, custom cabinetry, carpet allowance, warranty, $121.9k. x38275 or 480-4634.

Rent: Beach house, Crystal Beach, Galv Co, sleeps 10, furn, cable TV, FPL, wknd/wkly. 486-1888.

Cars & Trucks

'86 Honda Prelude Si, sunroof, red/black, tinted windows, auto, good cond, $3k. Lisa, x40213 or 554-4140.

'92 Pontiac Sunbird SE, auto, 4 cyl, tilt, cruise, A/C, AM/FM/cass, ex cond, 68k mi, $7.5k nego. K.D., x36228 or 409-848-1615.

'92 Chevy Lumina, Euro 3.4, black w/grey inter, all options, w/Delco Bose AM/FM/cass, alarm, 1 owner, garaged, ex cond, $9k. Ron, x33196.

'75 HD FLH, fully restored, super clean, $9k. Scott, x49854 or 282-9185.

'86 Honda Accord LX, 140k mi, A/C, AM/FM, cruise, $2.7k. Erica, x31999.

'72 Karman Ghia, ex cond, new interior, 19k mi on rebuilt engine, $4k obo. x31440 or 333-5693.

'87 Camero IROC Z, new paint, flame red, 110k mi, $3.8k, T-tops. x37441.

'64 Ford Galaxie 500, 4 dr, auto, 289V8, P/S, A/C, clean, driven daily, $1,950 obo. 280-9740.

'93 Ford Ranger Supercab, 4.0 V6, A/C, towing package, under warranty, $12k. x36027.

'90 Pontiac Sunbird conv, white/black top, A/C, auto, P/W, P/L, $6k. x36027.

'91 Jeep Renegade, low mileage, loaded, ex cond, white w/dark grey trim, $13.5k. 474-2233.

'85 Mercury Marquis Brougham, loaded, ex cond, $2.2k. Philip, x34092 or 488-8972.

'87 Honda Accord LX, 4 dr, auto, A/C, power everything, $4,850. 488-7771.

'85 Audi 5000S, 4 dr, 62k mi, ex cond, sunroof, A/C, P/L, P/W, $3.1k. x38151 or 532-1100.

'92 Cadillac Eldorado w/sunroof, red w/gold trim, 60k mi, ex cond, $18k. 474-2233.

'88 Grand Am, Quad 4, 4 dr, white w/grey int, tilt, cruise, AM/FM/cass, ex cond inside & out, $3,995 obo. Keith, x35191 or 996-8318.

'88 Honda Civic, 5 spd, A/C, AM/FM/cass, sunroof, $2,250 obo. 996-1287.

'70 Chevy Step van, rebuilt engine 350, new tires, camper conversion, 75% comp, roof & cabin, A/C, refrige, sinks, bunk wardrobe, $22.5k obo. 644-0315.

'94 Ford Ranger XLT, teal green, 21k mi, ext warranty, 2 alarms, tool box, $10k firm. 280-2039.

'88 Mustang GT 5.0, ex cond, lots of new parts, $6.5k. 338-6513.

'84 BMW 318i, 5 spd, sunroof, white, good cond, kept in garage. 991-0821.

'93 Toyota Tercel, 2 dr, 4 spd, AM/FM/cass, A/C, rear defogger, 37k mi, $6.1k. Brian, 486-9427.

'90 Dodge Shadow, white, 5 dr, auto, tilt wheel, ex cond, low mi, $4k. Roland, x48540 or 992-1430.

'92 Plymouth Grand Voyager LE, loaded, leather, carphone, 56k mi, $16.2k. x36515 or 992-5541.

'91 Ford Explorer, 4 dr, strawberry red, ex cond, $9.5k. Doug, x35914 or 286-7631.

'83 Berlineta Camaro, V8, A/C, T-tops, needs minor repairs, $1.3k obo. 992-9653.

'84 Corvette, auto, removable top, silver, good cond, $7.5k. 333-9113.

Boats & Planes

'95 Kawasaki 750 SS Wave Runner, trailer, life vest, ex cond, $4.8k. Rudy, 386-7702 or 283-9355.

Chrysler 22 sailboat, roller jib, new bottom paint, 5Hp Nissan O/B, 44.5k. x37441 or 339-2834.

8' inflatable boat, 2 seats, transom for small O/B, $125. x31600 or 482-1461.

'92 Kawasaki Jet Ski Super Sport, trailer, life vest, $3.5k. x32264 or 488-5962.

'78 35Hp Johnson O/B motor w/all controls, electric start, long shaft. 480-3839.

Cycles

'92 Suzuki DR350S Dual Sport motorcycle, aftermarket suspension, 4k mi, ex cond, $2,250 obo. Mike V., 780-0044 or 589-1076.

Nishiki 15 spd racing bike, 27", new tires, ex cond, $100. Karen, 486-1650.

Sport rider, ex cond, $150 obo. Jason, x41944 or 488-8462.

Two boys bikes, good cond, $40. 486-1888.

IBOC Mongoose Composite road bicycle, Shimano 105 STI Shifters. Kathy or Murray, x34221 or 338-1248.

Audio Visual & Computers

CompuAdd 386 w/1.2MB 5.25" drive, 40MB HD, 14" Sansung CVGA monitor, Genius mouse, Panasonic 24-pin dot matrix printer (KPX-1124i), some S/W, all/$500 obo. Richard, x31488 or 286-2411.

Pioneer stereo sys, tuner, equalizer, dbl cass, 100 watt, turntable/cabinet, 2 tower spkrs, $400 obo. K.D. x36228 or 409-848-1615.

Mac IIcx 17/700, Radius Pivot/LE 15" monitor, ext KB, mouse, ext NEC 1X CD-ROM, $900. Carl, x32563 or 527-8947.

Mac Performa, 635 CD, 8MB RAM, 16MB w/RAM Doubler, 250MB HD, CD-ROM drive, 58040 cpu @ 66MHz, Apple Hi-Res color monitor, latest MS Office, misc S/W, $850. Bobby, x42444 or 488-4382.

Mac IIci, 8 MB, 230 HD, no monitor, $975; PC monitor w/$15 adapter. 488-7771.

Laser Disc/CD player, Pioneer CLD-1070, $100; center ch speaker, Polk, CS350-LS, $200; Integrated amp w/surround sound, Yamaha AVC-30U, $150; inkjet printer, Canon BJ-200, $100. Andy, 282-7257.

GPS-Eagle hand held model, moving map plots route & ground track, stored Waypoints, Windows, ex cond, $325, x30750 or 585-8162.

Yamaha stereo sys 20 series, cass, phono, tuner, amplifier, 2 NS-A99 speakers w/matching dbl door cabinet, $350 obo. 966-0152.

1 MB memory 30-PIN 70 NS full parity simms, $15 obo; 4 MB memory 72-PIN 60 NS parity simms, $80 ea obo. x36862 or 992-2879.

IBM PS1, 286, 2 MB RAM, 30 MB HD, 3.5 & 5.25 FD, MS Works, dot matrix printer, monitor, $150. x38151 or 532-1100.

Musical Instruments

Armstrong flute, sterling silver open-hole, great shape, $500. Kelley, x39480 or 326-3375

Photography

Nikon; Pentax; Canon cameras; lenses; access; all in working cond, reasonable prices paid. Steve, x37152 or 992-7049.

Pets & Livestock

Chinese Shar-Pei, AKC, papers, female, cream color, 15 mos, has shots, dog house, $400. x38307 or 645-9637.

AKC Labrador puppies, chocolate & black, males & females, dewclawed 1st shots, ready 5/4, $275 - $350. Kim or Dan, 282-4701 or 489-4414.

Labs, AKC, 5 black, 2 yellow, ready 5/12, shots, wormed, $200-$250. x48123 or 409-925-7869.

Free 2 dogs w/doghouse, yellow Lab & Golden Retriever. Sid, x30216 or 332-7361.

Red-Lored Amazon, female, talks, very sweet, 3-4 yrs, $550. Kathi, x38674 or 332-2650.

Free, female dog, black & white Australian Shepherd/Retriever mix, spayed, shots current, house broken. 282-5324 or 488-8415.

Household

BDR set, full sz, antique green w/dresser, 5 drawers chest & 2 night stands, Italian design, great cond, $950. Magdi Yassa, 333-4760 or 486-0788.

Traditional maple dining room furn, table, buffet, china cabinet, 6 chairs, $300 obo; color TV 13", works great, $40 obo. Karla, x35384 or 286-0132.

Black vinyl recliner, ex cond, $75. x38151 or 532-1100.

Sofa bed & loveseat, $130; dresser w/mirror, $75; end table, $45; glass top coffee table, $40; D/W, $50; toddler bed & mattress, $60; sofa table, $55; all good cond. 486-1888.

Love seat, ex cond, $350; coffee table, ex heavy glass top over oriental stands, $350; 2 office chairs, adj, lg wheels, $50 ea. 488-5564.

Ethan Allen dropleaf dining table w/6 chairs, deacon bench, coffee table, $299; new dining table w/leaf & 4 matching chairs, $400. 326-5073.

Kenmore elect dryer, lg capacity, hvy duty, good cond, $150. 244-3045 or 334-5042.

Formal, maple colonial dining table w/6 chairs & 2 leaves, $600; hutch/dresser, $325; 4 TV trays, wood $35; lg sq coffee tables, $30 ea; end tables, $30; 2-8' horiz blinds, $85; 10 gal fish tanks, $10; stained glass lamp, $130. 282-3570 or 474-3820.

Sears lg capacity elect dryer, white, runs good, w/30A elect cord, $65. Ron, x41757 or 332-4302.

Sofa bed, qn sz, gold/white, $100 obo; hospital bed w/manually adj foot & head positions, $40 obo. x37066 or 286-4255.

Sofa, leather sect, almond color w/qn sz sleeper & recliner, $1k obo; kg sz mattress, good cond, $40 obo. x37066 or 286-4255.

Octagon shaped, glass topped dining table, w/4 chairs, $75 obo. Janine, x45084 or 482-7550.

Want Ads

Want personnel to join VPSI vanpool departing Meyerland Park & Ride, 7:05 a.m. for JSC, 8 a.m.-4:30 p.m. Don Pipkins, x35346.

Want personnel to join vanpool departing Sugar Land, Southwest Houston for JSC & contractors sites. Alice, x35234.

Want personnel to join VPSI vanpool, departing S. Braeswood Park & Ride at 6:50 am for JSC/Offsite locations, 7:30 - 4:30. Susan Gaynor, 282-5447 or Al Ruder, x34997.

Want ride to & from work, willing to pay gas expense, 7:30 a.m. - 4:00 p.m. x48871 or 472-5205.

Want non-smoking roommate, 3-2-2 in LC, $250 or $325 for private bath/mo + 1/2 utile. Rob, x41027 or 334-3529.

Want non-smoking roommate, to share 3-2-2, Bay Glen, CLC, $335 mo + $200 dep, 1/2 utile. Larry, x33168 or 488-7460.

Want female, non-smoking to share 3-2-2 w/ same, $300 mo +$350 dep includes all utile except phone. 322-8417.

Want children's water skies. 480-3839.

Want space memorabilia for private collection, flown items, e.g. utensils, clothing, autographs on photos, covers, letters, relating to Mercury, Gemini, Apollo, Skylab, shuttle. Richard, 481-8080.

Want house to rent for summer months, for summer faculty member & family. x36224.

Want to rent/lease to buy a house. 286-9561.

Want a full size station wagon, good cond, must run, preferably w/A/C. 280-9740.

Want 55 gal aquarium w/set up & stand. Vince, 482-0482.

Want 2 canoes & single spd beach cruiser type bikes. Gene, x38020 or 334-1505.

Miscellaneous

'90 Upper Deck, $50; '89 Upper Deck, $125; '87 Topps, $36; '86 Topps, $40; '85 Topps, $80; '80 Topps, $275; computerized treadmill, ex cond, $300, all obo. Tony, x47401 or 482-4156.

Four 6JX14 light alloy wheels & caps fit '89 Mustang or equiv car, $200 all; rabbit or guinea pig cage w/water feeder & pullout pan, $30; cage, hamster, $15; 2 suitcases, Samsonite, $40 both. 488-5564.

Two lg helmets, Shoei RF200 wineberry, new GL1500 Chrome Radiator, Grill & Ring of Fire. Jim, x38210 or 996-7854.

Oriental bamboo plant, elegant, small pot or large bush start at $3. David, x36140.

Oak drafting table, tilt top, 72"x42"x1.5", 2 drawers, $425; Ruger M-77, 338 Win Mag, 2 boxes ammo, $440. Charles, x37678 or 661-4789.

Elect stove, range broiler, port, $35; port-toilet, new $50; 2 Toyota chrome rims, $10 ea. 644-0315.

Kenmore W/D, $200 pr; custom cotton matt, single, $80; Panasonic Lap Top word processor, $100; comic book collection, call for list; stair stepper, Pro 5000, $50. 488-2652.

Water skis, $90; knee board, $65; ski tube, $20; ski vest, adult lg, $25. x30122.

Lg Mabe pearl pendant set, 14kt gold, $450; ladies dinner ring, 32 small diamonds surround lg diamond, 1.25 caret, 14kt gold setting, sz 8, $1k. Sylvia, 244-5101 or 337-3222.

Six-person above the ground spa, 27 jets, ozonator, 2 recliners, 4 seats, 220 elect, will assist in installation, $2.5k. Chuck, x30508 or 286-1470.

Chrysler, '94 service manual, Jeep Cherokee & Wrangler, 2 & 4 wheel drive, $25. Jim, x31600 or 482-1461.

King sz waterbed w/bookcase headboard, $200 obo; extensive doll collection, make reasonable offer. 537-8912 or 922-7507.

Stroller, Graco Brougham LXI, $50. x40038.

Soloflex, includes wooden bench w/pad, dip bar, all straps & clips, usage booklet, $300. x35891 or 526-9738.

Barefoot ski boom, $125; trick skis, $50; water skis, $35; GE microwave oven, ex cond, $55. Keith, x35191 or 996-8318.

Rent Pop-up camper, A/C, stove, refrig, sleeps 6, smoke free. 482-2921.

Aluminum wheels, set of 4 w/tires (worn), fits 5 bolt Ford, $225. x41974 or 286-0432.

Treadmill, ex cond, Lifestyler 8.0, 0 - 8mph, 1.25 Hp dc motor, $300; prickly pear cactus in matched pots, $20 pr. Bob, x33149 or 488-7036.

Desk, white, 65x30, $100; elect typewriter, $25; child's table w/2 chairs, $15; booster carseat, $15; 16" boys bike, $25; misc toddler toys, $10 ea. 487-1883.

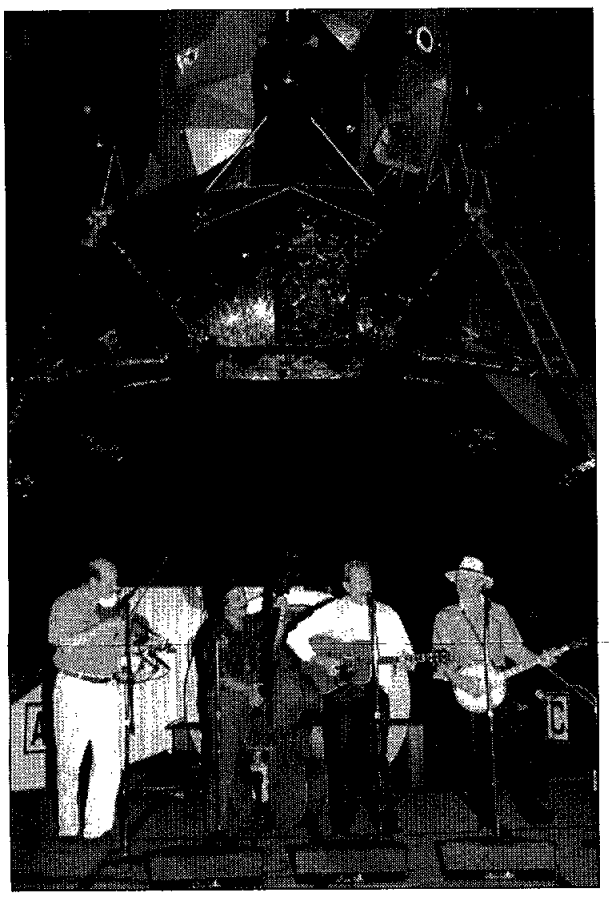
White beaded Victorian wedding dress, sz 10, fitted, v-back, drop pearls off shoulders, w/matching veil & bustled train, $500. Tanya, 988-1475.

Life Gear Stepper/climber, $95; child bike seat, $20; Fisher Price Nighttime bottle warmer, $18; soccer table, $25; Murray 5Hp self propelled lawn mower, $85. x37130.

Complete R/C biplane w/.20 sz eng & radio, $215; lg wood/iron fruit press, $250; 30 gal fish tank, filter, stand, $100; Postscript printer w/2MB memory, $1.2k; B/W video camera, $75; lg plastic garbage cans, $10. 282-3570 or 474-3820.

Celebrating Wonder Years

Space Center Houston hosts celebration of space exploration's formative years



More than 800 JSC employees and retirees, along with the Nassau Bay community, enjoyed an evening of music, reminiscing and visiting at Space Center Houston last month.

The event was a celebration of several milestones: the 15th anniversary of STS-1, the 35th anniversary of Yuri Gagarin's flight on Vostok 1 and the third year of the sister city relationship between the city of Nassau Bay and Star City, Russia.

The program consisted of welcoming remarks from JSC Director George Abbey, Nassau Bay Mayor Don Johnson and congressman Steve Stockman, R-Texas. Astronaut John Young shared some of his memories of the first launch of a reusable space vehicle.

Frank Culbertson, manager of the Phase 1 office, served as Master of Ceremonies and introduced a series of speakers who discussed the new partnership of the Russian and American space programs. After the speakers program, a music and dancing presentation by a Russian Dance troupe and Troika band was performed and to end the evening the Max-Q astronaut band regaled the audience with selected music.

From left to right, top to bottom:

1) Russian dancers dress in colorful costumes to entertain the many attendees of the celebration;

2) The Lone Star Blue Grass Band performs a variety of traditional bluegrass music;

3) Several individuals, some dressed in traditional Russian costumes, celebrate the Sister Cities relationship with Nassau Bay and Star City;

4) STS-1 Commander John Young reflects on the first flight of a reusable space vehicle;

5) With the help of Space Center Houston crew members, more than 800 JSC employees and retirees check into SCH to enjoy the celebration;

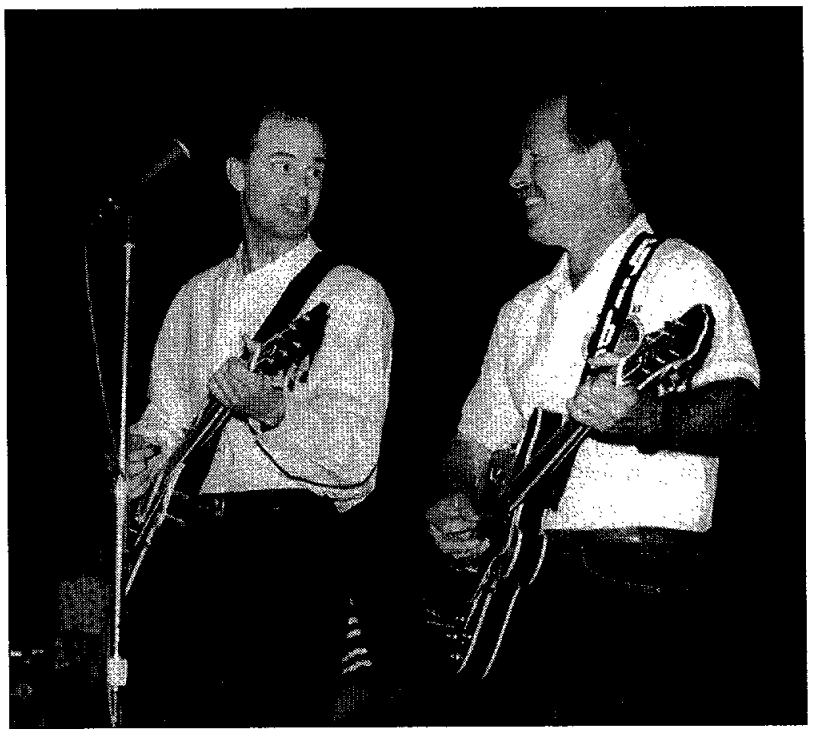
6) Party attendees check out an Andrew "Pat" Patnesky display of memorable STS-1 photos;

7) Food and drinks are plentiful during the party;

8) JSC Deputy Director Jim Wetherbee—a member of the Max-Q band—performs on the drums during the celebration;

9) Max-Q members Kevin Chilton, left, and Hoot Gibson, entertain the crowd with a variety of tunes;

10) Astronaut Chris Hadfield entertains the crowd with his performance during the celebration. ❑



JSC Photos by Benny Benavides

JSC volunteers tutor high school students for state test

(Continued from Page 4)

Canales. "Because of her help, I'm sure I'll pass the test."

Teacher representatives Norma Lopez and Jane Lozano of Austin High School expressed admiration at the voluntary commitment from the employees. "I was surprised to learn that some volunteers were taking a vacation or personal leave day to volunteer to tutor our students," Lozano said. "It says a great deal about the level of dedication and personal concern when you realize that these professionals are willing to sacrifice for the betterment of the community."

Minutes before meeting with their JSC tutors, the students received their TAAS scores and were told they would not be able to participate in graduation ceremonies unless they passed their TAAS test. The tutoring session was the students' last chance to receive help before re-taking the TAAS test.

"Having a room full of JSC tutors available to help them for the entire day was very motivating for the students," said Nancy Robertson, chief of the Education and Information Services Branch. "Our JSC civil service and contractor volunteers were truly inspiring."

Estella Gillette and Lupita Armendariz of the Equal Opportunity Program Office tutored at least 10 students on the reading section of the TAAS test. "I've never run into anyone who didn't have potential," said Gillette. "It just takes tapping into it."

Some volunteers returned to the school on Saturday to continue working with the students, while other volunteers gave their home phone numbers to the students in case they had questions while studying over the weekend.

"I've got telephone numbers for the students I tutored because I am really anxious to know how they did on their test," said Armendariz. "I think the tutoring session was worth it. It will make a big difference in the students' lives."

The Education Outreach Program expressed thanks to the volunteers for their hard work and their supervisors for providing time to devote to this effort. Volunteers include Estella Gillette, Lupita Armendariz and Jessie Hendrick of the Equal Opportunity Programs Office; Dan Mangieri and Kathleen Parma of the Human Resources Office; Kenneth Crouse, Jose Limardo, Moi Montez, Rafael Munoz, Carlos Parra, Carlos Ortiz-Longo, Angel Plaza, Rodney Rocha, Liana Rodriggs, George Salazar, Diana Schuler and Jenny Wagenknecht of the Engineering Directorate; Dennis Beckman, Bert Davila, Michael Engle, Steven Gonzalez, Francisco Hernandez, Ginger Kerrick, Debbie Trainor and Susan Torney of the Mission Operations Directorate; Dan Benbenek, Larry Hartley, Linda Kirbie, John Rosales and Vicki Salmones of the Business and Information Systems Directorate; Ralph Grau, Chau Hong and Jeff Theall of the Space Station Program Office; John Jurgensen and Stacey Morrison from the Office of the Chief Information Officer; Liz Cheshire of the Space Shuttle Program Integration; and Vivian Long from the Office of the Chief Financial Officer.

Contractors also participated in the activity including Ray Rodriguez from Hughes Training; Rebecca Morales and Fred Brown of KRUG Life Sciences; Brad Eckhardt of Lockheed Martin and Lorena Molina of Rockwell. In addition James McLeroy from Department of Defense Shuttle Payloads Office participated in the event.

Space shuttle program office reorganizes

Recent changes in JSC's role in the Space Shuttle Program have prompted streamlining in the Space Shuttle Program Office.

"With the recent announcement that JSC is now designated as lead center for all shuttle operations, the Space Shuttle Program has been reorganized to streamline and promote efficiency," said Space Shuttle Program Manager Tommy Holloway.

Jack Boykin, the contracting officer technical representative for the Space Flight Operations Contract, has been assigned to the Space Shuttle Program staff.

The Space Shuttle Program Office will absorb the previously separate Orbiter Project Office, which is renamed the Space Shuttle Vehicle Engineering Office. Former Orbiter Project Office Manager Jay Greene will manage the new SSVEO, with Clay McCullough as his deputy.

In addition, the Avionics and Software Office, Code MV2, Flight Crew Equipment Management Office, Code MV5, and the Remote Manipulator System Integration Office, Code MV6, become part of SSVEO.

Also under the SSVEO are the Operations Engineering Office, now Code MV3; the JSC Resident Office-KSC, Code MV7; and JSC Resident Office-Downey, Code MV8.

The Space Shuttle Systems and Cargo Engineering Office, headed by Manager Lambert Austin, has been renamed Space Shuttle Systems Integration Office, Code MS, and the Payload Integration and Engineering Offices becomes the Integration Engineering Office, Code MS2. The Engineering Products Office remains the same with the code MS3 and the Flight Dynamics Office has been renamed the Flight Systems Analysis Office, Code MS4. The Space Shuttle Chief Engineer/ISSA Integration Office is abolished and its personnel are now in the Space Shuttle Systems Integration Office.

Boy Scouts camping in the JSC pecan grove last week, learn team work during tug-o-war competition. With the help of JSC employees, the scouts learned valuable lessons in teamwork and other leadership skills.

Scouts camp out at JSC

More than 190 Boy Scouts from the Challenger District, Bay Area Council and 72 adult volunteers spent the weekend camping under the pecan grove at JSC and learning valuable lessons in team work.

The scouts spent the weekend in scout skill competitions including first aid, knot tying, plant identification, cooking and map reading and compass skills.

"The scoring system emphasized some other, more important skills," said Wayne Hale of the Mission Operation Directorate and camp coordinator. "Teams were graded on organization, teamwork, leadership and courtesy. The Boy Scouts really teaches those skills, good citizenship and values. The camping program is just the method that makes it all fun."

Hale reported that workers in public affairs, fire specialists, security people, safety individuals and other Center Operations employees made the camp out possible.

"The weekend was wonderful, with no untoward incidents noted anywhere—just lots of fun for the boys, I trust that those of you who helped us this weekend know that your effort made a memorable experience for those 194 boys, and helped them to learn what is really important in life," Hale said.

Several JSC employees, who are troop leaders, helped out during the two-day event. Employees from MOD included Tony Griffith, Greg Oliver, Mike Veres and Mark Fridye. Help from the Flight Crew Operations Directorate came in the form of Astronaut Rick Searfoss. In addition, Scott Smith of Unisys, Dave Dannimiller of Rockewell and Keith Hurley of Link helped to make the weekend safe and fun.

"All of these gentlemen spend many hours in volunteer service with the Boy Scouts of America," Hale said.

Winner of the Best Troop at the Camp-O-Ree, went to Troop 609 lead by Scoutmaster Fridye.

FOD Chili Cookoff set for next week at Gilruth Center

JSC will host its 18th annual FOD Chili Cookoff from 9 a.m.- 4 p.m. May 11 at the Gilruth Center, and is open to all JSC organizations.

More than 20 teams are expected to complete for best chili, showmanship and people's choice trophies. At the cook-off, there will be games, skits and a space trivia contest for all team members.

Showmanship once again will be judged on pre-cookoff propaganda and activities in which judges will expect displays of team spirit, unique flyers, unique dress, team skits and decorative storefronts. In addition, teams will compete in games including pyramid builds, grapefruit pass and other games that will show team work in action.

FOD stands for Flight Operations Directorate, but was divided into Flight Crew Operations and Mission Operations years ago. The chili cookoff has traditionally maintained the FOD to identify the event.

Anyone interested in entering a chili team may enter for a $40 fee by calling Fran Camp, X39961. Any directorate or office may enter a team.

Tickets cost $3 through today, $4 thereafter and may be purchased by calling Camp or Sandy Griffin, x31056. Ticket price includes beverages and a tasting cup for all chili.

Travel Fair set for this month

The Employee Activities Association is sponsoring a Travel Fair from 4-6:30 p.m. May 14 at the Gilruth Center.

The fair will feature more than 30 travel experts including airlines, tour companies and cruise lines. Door prizes will be awarded every 30 minutes beginning at 5 p.m.

"This is a great place to gather ideas for your next vacation," said Ginger Gibson, EAA president.

The grand prize is a round trip airfare for two. The tickets may be used for travel in the U.S., Canada, Mexico, Puerto Rico, U.S. Virgin Islands, Nassau or Bermuda.

Tickets for door prizes can be picked up at the Bldg. 11 Exchange Store. One ticket per badged employee. Only JSC employees—contractors and civil servants—are eligible for door prizes. For more information, call x35352.

Sign up to send names to space

The Cassini planetary probe set to launch in October 1997 will carry one million signatures and JSC employees may include their names as well.

NASA's Jet Propulsion Laboratory, in cooperation with the Planetary Society, is accepting signatures on postcards from individuals to fly on the probe destined for Saturn.

Each signature will be scanned from its postcard and stored on a CD-ROM. The CD-ROM will be placed inside the Cassini spacecraft, and launched on a Titan IV in October 1997 on its deep-space journey, with plans to go into orbit around the ringed-planet Saturn in the next decade.

Postcards will be accepted until Jan. 1, 1997, or until the CD-ROM is full. Notification will appear on the Cassini home page when postcards can no longer be accepted. Confirmation that a particular signature has made it onto the CD-ROM can only be provided if signatures are mailed with a self-addressed, stamped envelope. Cassini information can be found on the Internet at URL:

http://www.jpl.nasa.gov/cassini/

To get a signature onboard, sign a plain postcard, affix postage and mail to:

Suzanne Barber
MS 264-441
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109

Mir science to help build space station

(Continued from Page 4)

a common understanding and trust of each other's hardware, people and processes."

Fullerton added that the suit will be available to train for future missions such as STS-86 when two astronauts and two cosmonauts will conduct a joint space walk.

While Linenger and Foale spent time underwater, Jim Voss continued Russian language and familiarization training in Star City. John Blaha—who will replace Lucid on Mir in August—worked in the Mir simulators.

Meanwhile Lucid, Mir 21 Commander Yuri Onufrienko and Flight Engineer Yuri Usachev were busy unloading the Priroda module that docked last week with the Russian outpost.

The science module docked as schedule at 7:43 a.m. CST last Friday and the crew pivoted the Earth-monitoring module into its permanent position opposite the Kristall module Saturday. The crew spent the beginning of the week unloading and preparing the module for research.

"We are real busy right now reconfiguring the Priroda so we can get started working in it," Lucid said Tuesday during an interview with a Los Angeles television station. Priroda will be used to study the Earth for environmental and ecological purposes.

Once the Priroda is configured, the crew will begin to prepare for a Progress supply vehicle, scheduled to launch Sunday. The supply module will dock with Mir on Tuesday and carry a variety of supplies for the station residents.

The crew completed the Optizon/Liquid Phase Sintering Experiment on April 20. Once the samples are returned to Earth, scientists will determine if the melting of samples at high temperatures in microgravity can enhance Earth-based technology.

"We have finished 55 samples," Lucid said during a televised status report Tuesday. "This experiment will find out the effects of high temperature and will determine if new alloys can be formed."

Lucid added that the crew has been doing a lot of engineering evaluation of Mir to help design the International Space Station. "We have been looking at the quality of air, water and monitoring the microgravity environment."

The Space Acceleration Measurement System supported protein crystal growth in the Kvant Module last week by measuring slight changes in Mir. Scientists will be able to determine any change in the crystals and if they are associated with movements in space. "Scientists need to know what types of activities disturb this environment so they can plan better," Lucid said.

Today, Onufrienko and Usachev have spent 70 days in space and are expected to return to Earth sometime in July. Lucid has been aboard the Mir for 41 days.

Astronaut candidates named for '96

(Continued from Page 4)

The new class of astronauts includes:

Pilots: Maj. Duane Carey, USAF, 39, St. Paul, Minn.; Lt. Cmdr. Stephen Frick, USN, 31, California, Md.; Capt. Charles Hobaugh, USMC, 34, Lexington Park, Md.; Capt. James Kelly, USAF, 31, Las Vegas; Lt. Mark Kelly, USN, 32, Lexington Park, Md.; Lt. Scott Kelly, USN, 32, Lexington Park, Md.; Maj. Paul Lockhart, USAF, 40, Niceville, Fla.; Maj. Christopher Loria, USMC, 35, Newton, Mass.; Lt. Cmdr. William McCool, USN, 34, Anacortes, Wash.; Mark Polansky, 39, Houston;

Mission Specialists: Cmdr. David Brown, USN, 40, Arlington, Va.; Lt. Cmdr. Daniel Burbank, U.S. Coast Guard, 34, Manchester, Conn.; Yvonne Cagle, 37, Houston; Fernando "Frank" Caldeiro, 37, Buenos Aires, Argentina; Charles Camarda, 43, New York; Lt. Cmdr. Laurel Clark, USN, 35, Ames, Iowa; Capt. Edward Fincke, USAF, 29, Gifu, Japan; Lt. Col. Patrick Forrester, USA, 39, Houston; Lt. Cmdr. John Herrington, USN, 38, Wetumka, Okla.; Joan Higginbotham, 31, Titusville, Fla.; Sandra Magnus, 31, Smyrna, Ga.; Michael Massimino, 33, Dunwoody, Ga.; Richard Mastracchio, 36, Houston; Cmdr. Lee Morin, USN, 43, Pensacola, Fla.; Lt. Cmdr. Lisa Nowak, USN, 32, Lexington Park, Md.; Donald Pettit, 41, Santa Fe, N.M.; John Phillips, 45, Los Alamos, N.M.; Paul Richards, 31, Annapolis, Md.; Piers Sellers, 41, Greenbelt, Md.; Lt. Cmdr. Heidemarie Stefanyshyn-Piper, USN, 33, Rockville, Md.; Daniel Tani, 35, Centreville, Va.; Capt. Rex Walheim, USAF, 33, Palmdale, Calif.; Peggy Whitson, 36, El Lago, Texas; Maj. Jeffrey Williams, USA, 38, Middletown, R.I.; and Stephanie Wilson, 29, Los Angeles.

NASA-JSC