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

Eyes on Earth

The STS-68 astronauts will share what went on inside *Endeavour* with employees today. Photos on Page 3.

Serious business

JSC Emergency Reponse Team members get training on hazardous materials incidents. Photo on Page 4.

Space News Roundup

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Employees can help out flood victims

By Eileen Hawley

JSC's Employee Activities Association is spearheading a drive to allow employees to help coworkers affected by the recent rains and flooding that sent thousands in the Houston area to higher ground.

The drive will culminate this morning at the Gilruth Center, where the EAA will be accepting donations of non-perishable food, clothing and furniture from 7 a.m.-noon.

JSC employees who were flood victims can visit the Gilruth Center this afternoon to pick up needed items. Distribution will be on a first-come, first-served basis.

Any additional items will be distributed through the local United Way office on Egret Bay Blvd.

"Although there are many agencies set up to help people in emergency situations, the EAA/Exchange would like to facilitate obtaining help for members of the NASA family who were affected by the floods," said Harvey Hartman, chairman of the NASA Exchange Council at JSC. "We know NASA employees are compassionate and would like to help other NASA employees who need assistance in putting things back in order."

Employees can also help out by offering coworkers temporary transportation to and from work; providing labor to clean-up and repaint; the use of a truck to haul furniture or trash; or even baby-sitting services. Volunteers should call the Exchange Operations Office at x35774.

JSC employees who were affected by the floods and need help should contact the Exchange Support Office at x35774. The office will attempt to match the request with offers of support from other JSC employees.

Although there were no reports of flooding or damage at JSC, center management encouraged liberal leave policy and released civil service workers early on Oct. 18 so that they could make it home before a second wave of thunderstorms hit the area.

The Human Resources Office has since told supervisors they are allowed to grant up to 8 hours of leave for individuals who were prevented from coming to work or who, after coming to work, found it necessary to leave because of the threat of flooding or continued bad weather. This option does not apply to employees who already were on scheduled leave, sick leave or leave without pay status.

Employees with questions should call the Payroll Office, x34832, or their Human Resources representative.

NASA Photo

The STS-68 crew completes its terminal countdown demonstration test, a final rehearsal for the upcoming Nov. 3 launch of *Atlantis* from Launch Pad 39B at Kennedy Space Center. From left are: Don McMonagle, Scott Parazynski, Jean-Francois Clervoy, Ellen Ochoa, Joe Tanner and Curt Brown.

Atlantis nearly ready for return to Earth orbit

By Rob Navias

Technicians at Kennedy Space Center are putting the final touches on the Space Shuttle *Atlantis* in preparation for its first flight in more than two years, scheduled to begin with a Nov. 3 launch.

The countdown for STS-66, the final shuttle mission of the year, will begin at 3 p.m. CST Monday, just hours after Commander Don McMonagle, Pilot Curt Brown, Payload Commander Ellen Ochoa and Mission Specialists Joe Tanner, Jean-Francois Clervoy and Scott Parazynski fly to the launch site for final prelaunch preparations.

Atlantis is set to liftoff at 10:56 AM CST Thursday at the opening of a 1-hour, 2 minute launch window.

The 66th flight in shuttle program history will be highlighted by the operation of the Atmospheric Laboratory for Applications and Science. ATLAS-3, a suite of instruments in the cargo bay, will measure the composition of the Earth's atmosphere and its ozone layer. The ATLAS payload previously flew on STS-45 in March 1992 and STS-56 in April 1993.

The astronauts also will use *Atlantis*' 50-foot long robot arm to deploy and retrieve a satellite named CRISTA-SPAS, which will spend eight days flying free of the shuttle to employ a series of infrared spectrometers and telescopes to measure the level of radiation emitted from the planet's middle atmosphere.

"We think that the data we collect on this mission will answer some key questions about how our atmosphere is changing, and we think it's very important," McMonagle said in a preflight news conference held Monday.

The six-person crew will work in two shifts, conducting science operations around the clock during the planned 11-day flight, continuing NASA's Mission to Planet Earth studies of how the Earth's environment is changing and how human beings affect that change.

The remote sensing laboratory studies the Sun's energy output, the middle atmosphere's chemical make-up, and how these factors affect global ozone levels. ATLAS-3's highly calibrated instruments also will provide a check on similar instruments on free-flying satellites, allowing scientists to determine how much those instruments may have been degraded by the harsh environment of space.

The German-built Shuttle Pallet Satellite will carry two instruments—CRISTA, the Cryogenic Infrared Spectrometers and Telescopes for

Please see **STS-66**, Page 4

JSC earns OSHA honor for safety dedication

Evaluation team participants bring experience back to JSC

By Karen Schmidt

JSC has received a commendation from the Occupational Safety and Health Administration on behalf of the JSC at the 10th annual National VPPPA (Voluntary Protection Programs Participants' Association) conference in Phoenix.

Richard Holzapfel of JSC's Test, Operations, and Institutional Safety Branch accepted the commendation, in recognition of the center's dedication and commitment toward "fostering worker/management/government alliance to achieve workplace safety and health excellence."

Assistant Secretary of Labor for OSHA Joe Dear said the recognition reflects the commitment of highly qualified JSC safety and health professionals in the Test, Operations, and Institutional Safety Branch and the Occupational Health Office to serve on OSHA Voluntary Protection Programs evaluation teams.

"Your commitment and the efforts your JSC team members.... were instrumental in OSHA's increasing the number of participation in the VPP from 119 to 200 while decreasing the processing time of applications by 25 percent," Dear wrote in a letter notifying JSC of the award.

Holzapfel presented the commendation to Safety, Reliability, and Quality Assurance Director Charles Harlan earlier this month during an SR&QA Award Ceremony.

OSHA's Voluntary Protection Program initiative recognizes top quality safety programs in worksites throughout the nation. OSHA regularly makes site evaluation visits to ensure maintenance of the high level of safety and health.

During these evaluations, OSHA representatives determine if the site's safety and health program still reflects the high standards expected. This is where JSC became involved. Last year, SR&QA representatives participated in VPP site evaluations a learning experience to benchmark top safety and health programs in the nation and better understand OSHA's site evaluation process.

Gary Caylor, head of JSC's Occupational Health Office said "it was good to see excellence in industry...we got good ideas for our program here."

"The VPP evaluations were a unique opportunity for us to observe excellent safety programs in operation," said Karen Carter, who participated in two evaluations. "Since many of the elements of VPP participation similar to JSC's safety requirements, we can use these evaluation as a benchmark improvement of JSC's safety program."

According to Gary Jackson, "it was refreshing to see that all employees were very cognizant of, and place a high priority on safety."

Wind satellite to study solar wind, carry Russian instrument

NASA's Wind satellite is scheduled for launch Tuesday on a mission to study the enormous flow of energy and momentum known as the solar wind.

Wind is set for lift-off aboard a McDonnell Douglas Delta 7925-10 launch vehicle from Cape Canaveral Air Station in Florida at 3:31 a.m. CST Tuesday.

The spacecraft will take up a vantage point between the Sun and the Earth, giving scientists a unique opportunity to measure the basic properties of one of the most important interactions in the Solar System —the solar wind immediately before it collides with the Earth's magnetic field and atmosphere.

The solar wind emanates continuously from the solar atmosphere (or corona) and consists of electrically charged particles, mostly positively charged protons and negatively-charged electrons.

The interplay of forces resulting from the continual collision is responsible for dramatic global effects. One spectacular example of the effects of this interplay is in the Earth's polar atmospheres. The spectacular Northern and Southern lights, or auroras, are produced as a result. Other more indirect effects of the solar wind may be highly disruptive, such as electrical power system failures, radio communication disrup-

Please see **RUSSIAN**, Page 4

JSC Photo by Mark Sowa

DOCKING TARGET—Astronaut Hoot Gibson, left, checks out a shuttle-Mir docking target being fabricated in Bldg. 10 with John Kennedy, project manager, Ross Iacomini, design engineer, and Frank Jenson, lead technician.

Total Health marks birthday with pond party

JSC's Total Health Program is sponsoring a "pond party" on Thursday to mark the first anniversary of the program.

The party will be held 10 a.m.-2 p.m. in the lobbies of Bldgs. 1, 3, 4S, 8, 11, 30, and 45 and in colorful tents around the duck pond. Each table will promote aspects of health or safety.

Health education and health risk screenings have played a major role in health promotion, and contributions in the area of environmental health are helping ensure a healthy working environment. For additional information, contact Lynn Hogan, x37790.

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.

New Arts Six Concert: Nov. 6 at the Grand 1894 Opera House, Galveston. Cost to attend is $7.

Beauty and the Beast: Tickets are available for the Nov. 12 Walt Disney on Ice show. Cost to attend is $11.

The Nutcracker: Friendswood Ballet presents The Nutcracker, 7 p.m. Nov. 4 at the Grand 1894 Opera House, Galveston. Cost to attend is $21 special seating, $8.40 general seating.

Dance Company: David Parsons Dance Company & Billy Taylor Trio will perform Nov. 12 at the Grand 1894 Opera House, Galveston. Cost to attend is $19.

Wurstfest Bus Trip: Nov. 5. Cost is $20 adults, $16 children.

Renaissance Festival: Festival runs from first weekend in October to second weekend in November. Cost is $10.50 adults; $5.25 child (7-12).

Moody Gardens: Discount tickets for two of three different attractions: $9.50

Space Center Houston: Discount tickets: adult, $8.75; child (3-11), $7.10; commemorative, $9.55.

Metro tickets: Passes, books and single tickets available.

Movie discounts: General Cinema, $4.75; AMC Theater, $4; Loew's Theater, $4.75.

Stamps: Book of 20, $5.80

Upcoming Events: Travel Fair, Nov. 1;

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

JSC

Gilruth Center News

Sign up policy: All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a NASA badge or yellow EAA dependent badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

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.

Weight safety: Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. Nov. 2 and Nov. 17. Pre-registration is required. Cost is $5.

Defensive driving: Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is Nov. 19. Cost is $19.

Aerobics: High/low-impact class meets from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is $32 for eight weeks.

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

Aikido: Martial arts class meets from 5-7 p.m. Tuesdays and Wednesdays. Cost is $25 per month. New classes begin the first of each month.

Intercenter run: The month-long competition between NASA centers runs through Oct. 31. Walk or run 2 miles or 10k. For additional information, contact the Gilruth Center at x33345.

Tennis league: A Fall tennis league may be started if there is sufficient interest. Contact the Gilruth Center at x33345.

Country dancing: Beginners class meets from 7-9 p.m.; advanced class meets from 8:30-10 p.m. Partners are required. For additional information, contact the Gilruth Center at x33345.

Golf lessons: Lessons for all levels. Cost is $90 for six weeks. For additional information, contact x33345.

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

Crew briefings — The STS-68 crew will brief the public on its recent mission beginning at 11 a.m. in the Plaza at Space Center Houston, and employees at 3 p.m. in Teague Auditorium. For additional information call 244-2105.

Book signing — Nichelle Nichols will autograph copies of her autobiography *Beyond Uhura: Star Trek and Other Memories* from 4:30-6 p.m. Oct. 28 at Jeremy's Bookshelf. Jeremy's is located at 2441 Bay Area Blvd. For additional information, call 486-8028.

Cafeteria menu — Special: baked chicken. Total Health: roast beef au jus. Entrees: deviled crab, Creole baked cod, baked chicken, beef cannelloni, Reuben sandwich. Soup: seafood gumbo. Vegetables: seasoned carrots, peas, breaded okra, steamed cauliflower.

Saturday

Halloween Dance — The Employee Activities Association will host the annual Halloween Dinner and Dance at 8 p.m. Oct. 29 in the Gilruth Center ballroom. Cost is $17.50 per person. For more information, contact Mavis Ilkenhans, x49644.

Halloween Party—The Employee Activities Association will host the annual children's halloween party from 10 a.m.-noon in the Gilruth Center ballroom. Deadline to purchase tickets is 2 p.m. Oct. 27. For additional information, contract Katie Nguyen, x33185.

Monday

Cafeteria menu — Special: hamburger steak. Total Health: vegetable lasagna. Entrees: beef Burgundy over noodles, barbecue smoked link, vegetable lasagna, steamed fish, French dip sandwich. Soup: cream of chicken. Vegetables: buttered corn, steamed spinach, vegetable sticks, navy beans.

Tuesday

Cafeteria menu — Special: turkey and dressing. Total Health: roast turkey. Entrees: baked meatloaf, barbecue spare ribs, liver and onions, baked chicken, French dip sandwich. Soup: black bean and rice. Vegetables: steamed broccoli, California vegetables, breaded squash, savory dressing.

Wednesday

Cafeteria menu — Special: Mexican dinner. Total Health: ground turkey tacos. Entrees: Parmesan steak, beef cannelloni, catfish and hush puppies, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: peas and carrots, ranch beans, mustard greens, Spanish rice.

Thursday

Cafeteria menu — Special: smothered steak. Total Health: steamed pollock. Entrees: chicken and dumplings, corned beef and cabbage, broccoli cheese quiche, steamed fish, French dip sandwich. Soup: navy bean soup. Vegetables: steamed cabbage, cauliflower au gratin, buttered carrots, lima beans.

Friday

Cafeteria menu — Special: baked meatloaf. Total Health: lite macaroni and cheese. Entrees: baked scrod with Hollandaise, broiled chicken, pork and beef egg rolls, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: stewed tomatoes, seasoned spinach, cut corn, macaroni and cheese.

Nov. 2

Astronomy seminar — The JSC Astronomy Seminar will meet at noon Nov. 2 in Bldg. 31, Rm. 129. An open discussion meeting is planned. For more information, call Al Jackson at 333-7679.

Toastmasters meet—The Spaceland Toastmasters meets at 7 a.m. Nov. 2 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Darrell Boyd, x36803.

Nov. 3

Total Health — Total Health program will host its first anniversary Pond Party from 10 a. m.-2 p.m. in Bldgs. 1, 3, 4S, 8, 11, 30 and 45, and around the duck pond. For additional information contact Lynn Hogan, X37790.

Nov. 7

Fire Protection — The Safety Learning Center will host a fire protection seminar from 8 a.m.-4 p.m. Nov. 7-9 in Bldg. 226N Safety Learning Center. For additional information, contact x36369.

Nov. 8

AIAA seminar — The Houston section of the American Institute of Aeronautics and Astronautics will host an "Internet Seminar" at 7 p.m. Nov. 8 in the Hess Room at the Lunar and Planetary Institute. For information, contact Naz Bedrossian, 333-2127 or Bill Best, 282-6970.

Nov. 9

Astronomy seminar — The JSC Astronomy Seminar will meet at noon Nov. 9 in Bldg. 31, Rm. 129. Deborah Dominigue of LPI will discuss "UV Observations of the Galilean Satellites." For more information, call Al Jackson at 333-7679.

PSI meets — The Clear Lake/NASA Area chapter of Professional Secretaries International meets at 5:30 p.m. Nov. 9 at the Holiday Inn on NASA Road 1. For additional information, contact Elaine Kemp, x30556.

Toastmasters meet—The Spaceland Toastmasters meets at 7 a.m. Nov. 9 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Darrell Boyd, x36803.

JSC

Swap Shop

Property

Rent: Galveston condo, furnished, sleeps 6, Seawall Blvd & 61st St, wknd/wkly/dly rates. Magdi Yassa, 333-4760 or 486-0788.

Sale: Bay Glen, 2-story, 3-2.5-2, tile entry & kitchen, deck & covered patio, 5 yrs old. $101.9k. 486-4508.

Sale: Condo, 2-2, wet bar, corner unit, all appliances, FPL, ceiling fans. $43k. Lucky, x36198.

Lease: Scarsdale, 3-1.5-2, fenced, central air/heat, avail 10/1, $640/mo. 486-0315.

Sale: LC, The Wharf townhomes, 2-2-1, tri-level, approx 1300 sq ft, waterfront view, 2 patios, boatslips avail, $93k. Debbie, x33038 or 332-0479.

Sale/Lease: LaPorte area, house, 2-2-2A, new carpet, ceiling fans, lg backyard, garage door opener, $600/mo or $57k. 480-3839 or 891-9371.

Rent: Nassau Bay, 2 story, 3 BDR, townhome, dbl garage, new paint, $850/mo. Barbara Ewing, x38677 or 333-2950.

Sale: Baywind II condo,1-1, new carpet/fresh paint, W/D, fridge, DW, FPL, $24k. 486-8047.

Sale: University Place townhome, 2-story, 3-2-2, w/fridge, W/D, landscaped/tiled patio areas, ex cond. 437-3288.

Sale: Sterling Knoll, 3-2-2, approx 1300 sq ft. pool, FPL, extras, $69.9k. 486-9760.

Sale: Near 290 & 1960, 3-2-2A, new roof, heat pump, fresh paint/carpet, $65k. x31265 or 286-3161.

Sale: Camino South, 3-2-2A, pool, FPL, new carpet, reasonable. Mike, 480-0336.

Sale: Spring, TX, 3-2-2, beautiful house for couple or small family, double atrium, ceramic tile, cathedral ceiling, $73,990. 326-4973.

Lease: El Dorado Trace, lg 1 BDR condo, overlooks pool, W/D, covered parking-reserved, alarm, mini-blinds, 2 balconies, $425/mo + dep. Mark, 488-0056.

Rent: Tranquility Lake condo, 2-2, W/D, FPL, new carpet/paint, overlooks pool, $675/mo. 333-4667.

Sale: Dickinson, mobile home space, corner lot, runners & patio, utilities, 50' x 110', $10.9k, owner finance possible. 337-1311.

Sale: 2.5 acres, ready to build, Alta Loma/Santa Fe, mineral rights. 337-1311.

Sale: Lake Livingston, 2-1.5, house, 2 wooded acres, satellite dish & recv'r, $32k or $9k & assume note. Jim, x36932 or 554-5375.

Lease: Countryside North, LC, 3-2.5-2, 2-story, nice carpet, corner lot, avail now, $800/mo + dep. x33765 or 326-1390.

Rent: Lake Tahoe, 2-2, condo, avail March 18 - 25, 1995, fully equipped kitchen, sleeps 6. x33185 or x37990.

Rent: Pagosa Springs, CO, 2 BDR house, sleeps 8, 1 wk from Nov 19 - Dec 17 or Jan 7 - Feb 4, $700. Scott, x34614 or 334-2278.

Lease: Bed & Breakfast Cuernavaca, Mexico, couples, $40/person, dbl occupancy, singles $60/person, 3 day minimum. 326-4973.

Cars & Trucks

'87 Astro Van, dual air, V6, auto, seats 8, $3.5k. Barry, x47402 or 334-1103.

'93 Mazda 626, champagne, 21k mi, auto, $12k. 212-1294.

'84 Merc Cougar, lt blue, A/C, AM/FM/cass, pwr windows/locks, V8 5.0 liter, CB radio, $1.6k. 282-3570 or 474-3820.

'84 Mazda 626, auto, clean, looks good, runs good, $2k OBO. x47264 or 409-762-6823.

'92 Plymouth Grand Voyager LE, low miles, ex cond, quad capt chairs, dual A/C, all options, $15k. 532-1673.

'86 Ford Custom van, 62k mi, V8, ex cond, $7.5k. x30122.

'79 Pontiac LeMans, 2 dr, 78k mi, runs good, $950 firm. 484-0958.

'82 Mustang, 5.0 L GLX, 1 owner, new engine, 10k mi, T-tops, alarm, extras, $2.2k OBO. 337-5410.

'87 Pontiac Grand AM, V6, AM/FM/cass, tilt/cruise, A/C, 110k mi, $2.2k OBO. x32168 or 474-7982.

'90 DX Honda, less than 28k mi, 4 dr, A/C, stereo. Roger, 790-2189 or 488-7314.

'86 Chevy Capric Estate wagon, pwr, auto, air recent brake/cooling. Roger. 790-2189 or 488-7314.

'91 Peugeot 405S, ex cond, leather, ABS, pwr windows/doors, 70k mi, $7k OBO. Brandon, 554-4799.

'86 Toyota Celica GT, liftback, auto, air, cruise, good cond, runs well, $3.5k OBO. Tom x40048 or 992-2166.

'89 Ford Ranger LB, 5 spd, 69k mi, new tires, A/C, ex cond, $4k firm. Kirk, 333-7022.

'86 Mustang GT, modifications, $4.5k. 280-0285.

'87 Mazda truck B-2600, loaded, ex cond, low mi, $4,250. Lui, x38074 or 480-8099.

'87 Mazda B2000 SE5 PU, 5 spd, LWB, PS/PB, A/C, AM/FM/cass, Zbart, bedliner, toolbox, $3.1k. Ken, x38836.

'86 Mazda RX7 GXL, leather, A/C, pwr, sunroof, ex cond, 84k mi, $5.2k. x36604 or 482-7156.

Cycles

Women's 10 speed bike, ex cond, $45. 488-4412.

Men's Bianchi Sport SX, 14 speed bike, 25" rims, ex cond, $100 OBO. x40213 or 554-4140.

Boats & Planes

Wet Jet brand wave runner, 432 cc engine, 2-person, Sportsman galvanized trailer, custom cover, $4k OBO. Charles, 559-2331.

Heavy duty boat cover, oiled canvas for 20' boat, $25. Charlie, 488-4412.

Audiovisual & Computers

IBM PS2 model 25 8086 CPU & monitor, monitor needs adjustment, $30; Niscan hand scanner, $60; 2400 baud internal modem w/Procomm, $15; single spd CD-ROM kit w/sound card, $100; MS Works, $30; MS DOS 6.21, $35. Kelley, x36818.

Nintendo games $15/ea. Marie, 992-5535.

HP DeskJet 500 B/W InkJet printer, ex cond, cable included, $200; 2kbps Hayes Modem, w/cables, $30; lots of Amiga hardware; A200 w/HD, monitor, Cheap. Jeff, x48723.

Canon BJ-10E bubblejet printer, $125. Jim, x37486 or 286-3172.

Hafler 220w stereo amplifier, $200; apt pre-amp & cables, $400; Magna Planar SMG spkrs, $900; Technics 5L-P220 CD player,$80; Dennon TV-747 tuner, $75; entire system $1.5k. Coe, 286-0319.

Amiga 500 computer, color monitor, keyboard, mouse, w/Citizen 120D printer, SW, $300. David, x30834 or 334-3348.

Panasonic color monitor, .28 DP, SVGA, works good, $150. Charles, x36422.

Apple IIGS, 40 meg HD, modem, SW, monitor, $700. 280-5051.

Sega Genesis, all hook up equipment, 2 controllers, 3 games including Jurassic Park, $80. Joe, 554-5156.

EV-S3000 H.8 video tape recorder, $950; EV-C100 H.8 video tape recorder, $450. 332-3739.

Citizen printer, "CSX-140" w/GSX color option, $300. Magdi Yassa, 333-4760 or 486-0788.

Photographic

Mamiya-M645, 6 x 4.5 cm single lens reflex; PD-Prism Viewfinder; lens; 45 mm 2.8 Sekor; 80 mm 2.8 Sekor w/lens hoods; 120 & 220 roll film inserts; Delux "L" Grip; close up kit; flash bracket, aluminum case; instruction books, ex cond. John, 326-2461.

Darkroom equipment, enlarge w/color head & lens, digital enlarging timer, safelight, tanks, reels, trays, $350/all. Phil, x34532 or 538-1744.

Musical Instruments

Kohler & Campbell console piano, walnut, $550 OBO. 337-5410.

Lowrey electric piano/organ w/bench, music books, $200. 488-6917.

Ludwig student snaredrum, very good cond, $100. Sherry, x32064 or 474-5636.

Alvarez-Yairi acoustic guitar w/hardshell case, $450. Brad, x37653 or 488-4989.

Peavey CS-800 power amplifier w/400 watts, hi-amping capabilities, $400. James, x33571 or 337-5583.

Pets & Livestock

Field Spaniel, good disposition, loving & fun. 487-4705.

Free German Shepherd, beautiful, friendly, protective, dog house & 36 ft chain link fence incl. x47009 or 332-6754.

Household

Trundle bed w/matt, $200; living room chair, dk gn naugahyde, $75; wood-grain formica table/ desk w/letter drawer, $35. x30446 or 338-2625.

Hamilton gas dryer, good cond, lg drum, $50 OBO. x40213 or 554-4140.

Sectional sofa, 3 pcs, cream cloth covering, rectangular glass top coffee table, cream stone legs, $750/both. Donald Thompson, 334-3998.

Frigidaire refrigerator, w/ice maker, 20.6 cu ft, $450 OBO; Frigidaire W/D, family sz, $500/both OBO, Magnavox, TV/VCR, 1 unit, 20", $300. OBO. Shaw, 492-8369.

King sz waterbed, frame/mattress, heater, 6 drawers, hdbd, liner, $175. x31370.

Mitshubishi 25" console stereo TV, $325; Sony & Pioneer CD players, $50/ea; Audio/Video cabinets, 1-$35 & 1-$130. Paul, x47797 or 488-5077.

Sofa, $150; dining room table & 6 chairs, $325; 6 pcs bedroom suite, $300. Robert, x41058 or 286-4930.

Antique dining room table, Italian w/inlaid wood & drop leaf ext, 1 master chair w/4 side chairs, $950 OBO; oak & mahogany coffee square table w/2 drawers, $200; 45 gal aquarium w/stand, $195; sewing machine cabinet, $50. Marie, 992-5535.

Desk, white, 65" x 30", w/credenza & 3-drawer file cabinet, $100. x39588 or 487-1883.

Colonial sofa, ex cond, beige & blue, $100; wall-hugger recliner, light green, $60. Marian, x59021 or 483-9021.

Double bed frame, matt/box spring, maple hdbd & ftbd, all in good cond, $75. 471-3165.

Early American solid pine wood furniture, sofa, recliner, chair, tables, bar stools, bunk beds w/matt's, twin bed w/matt/boxspring; shelves, mirrors, dining table w/leaves & 6 chairs, kitchen table w/6 chairs, white canopy bed w/boxsprings/ matt, custom built walnut bar w/stereo cabinets, lamps etc. 474-3507.

Antique tiger eye oak round table, 5 chairs & matching buffet, $900. Jim, x38624 or 475-9671.

Girls BDR set, 6 pcs, yellow bamboo style, $600 OBO; sofa bed, qn sz, contempo style, cream w/large pastel flowers, $250. Ron, 480-4309.

Qn sz solid wood bed frame, hdbd & ftbd, $150. x32920 or 992-3014.

Round pedestal dining room table, 42" dia, ex cond, $120; Maytag W/D gas, large capacity, 2 speed, $700 OBO. Rita, x32686.

Wanted

Want personnel to join VPSI vanpool departing Meyerland Park & ride lot at 7:05 a.m. for JSC. Vanpool consists of on-site personnel working the 8 a.m./4:30 p.m. shift, currently have 15 good members, and looking for 2 to 3 more. Travis Moebes, x45765 or Don Pipkins, x35346.

Want carpool from 290 & Beltway to NASA/ JSC, 7:00 a.m. to 4:00 p.m., hours flexible. x39468.

Want used men's mountain bike or Mybrid, 2 - 5 yrs old, good quality priced $100 to $200 less than new bike. x32567 or 488-3314.

Want low priced school/work car or truck. 271-7011.

Want non-smoking roommate to share 3-2-2, League City house, $250/mo or $300 for private bath + 1/2 until. Rob, x41027 or 538-1449.

Want roommate non-smoking to share 4-2.5-2, CL/Bayglen house, $375/mo +util, 480-8194.

Want 12' step ladder. x39150.

Want non-smoking female roommate to share new house in League City, $400/mo all bills pd. 332-6178.

Want to swap retired & various pcs of Precious Moments figurines w/other Precious Moments collectors. Katie, x33185.

Want washer/dryer, refrigerator, hot tub. Bill, x39230 or 333-3078.

Miscellaneous

Southwest Airline passes, 2 roundtrip, go anywhere in USA, anytime, no blackout dates, good thru 9/95, $700/both or $375/ea. x38413.

Genuine brass qn sz bed/frame, $450; 20" lawn mower, runs good, $25; weed eater 5hp rear-tine tiller, $450; 250 sq ft grey marble 12" x 12" tiles, all or part, $3 sq ft; adjustable bedframe, $10. 997-2280.

Tropical plants, misc types & sizes, $5 & up. Bob, x33149.

Swimming pool filler, sand medium, fiberglass, good cond, 14 yrs, old, 36" dia, $125 OBO. x32567 or 488-3314.

Cobra LD-200 Laser detector, $25; Whistler 3 radar detector, $10. x30044.

Complete 50 gal, marine aquam setup, stand, lamp, pwr heads, filter, pump, heaters, coral, extras, $500 OBO. Dan, 282-4638 or 286-9008.

Rope bracelet, 14k gold, 3mm wide, 7" long, $65; sm 14k hoop earrings, $12.50; 14k gold shrimp earrings, $40 14k elephant charm, $20. Eric, x31917.

PC rolltop desk, very functional, new $1.4k sell $1k. Donald Thompson, 334-3998.

Love seat, couch, marble lamp; animal cages; fake xmas tree. x31883.

Wall hangings & wagon wheel fixtures, wine rack, desk chair, wrought iron & wooden garden bench. 474-3507.

Schwinn stationary exerciser bike, $85. x30446 or 338-2625.

Papassan chair, frame only, $35; exercise bike, $75. 280-0285.

Signature zigzag sewing machine, $60; SCM electronic typewriter, extras, $60. 946-3907.

White porcelain round sink, 19", $20; metal detector, needs repair, $50. 488-6917.

Graco Tot-Loc high chair, $10; L.L. Bean baby backpack, $70; white eyelet comforter, bumper pads & dust ruffle, $60. Sharon, x38506.

Formal dining table w/6 chairs, $1,350; electric dryer, $60; large fruit press, $290; lazy-boy chairs, $40/$30; large yellow chair, $60; king size bed & boxsprings, $200; queen size bed & boxsprings, $150; car ramps, $50; 10-speed bike, $25; RC biplane w/radio ready to fly, $260; student desk, $75. 282-3570 or 474-3820.

Stair climber, new $575 sell $400; rowing machine, $115. 335-6469 or 328-3840.

SC 8800 climber/stepper, excellent condition, $200. 486-0972.

Tail light fit '70-'74 Firebird; back glass to fit '75-'81 Firebird or Camaro; Lunati 00010 LK Bracket master cam & lifters for sm block Chevy 292, .480". Bobby, x38823 or 337-4134.

Dark wood, glass coffee & end table, $75; baby stroller, swing, walker, etc, box of girl clothes, $150/all. 488-0054.

Novatel cellular phone for car, ex cond, $50. Brandon, 554-4799.

Retired David Winter pieces at orig prices, Birthstone Wishing Well, $43; Audrey's Tearoom, $162; Fred's Home, $162. Katie, x33185.

Diamond wedding set, 1 carat, new $2.5k sell $800. Jim, x38624 or 475-9671.

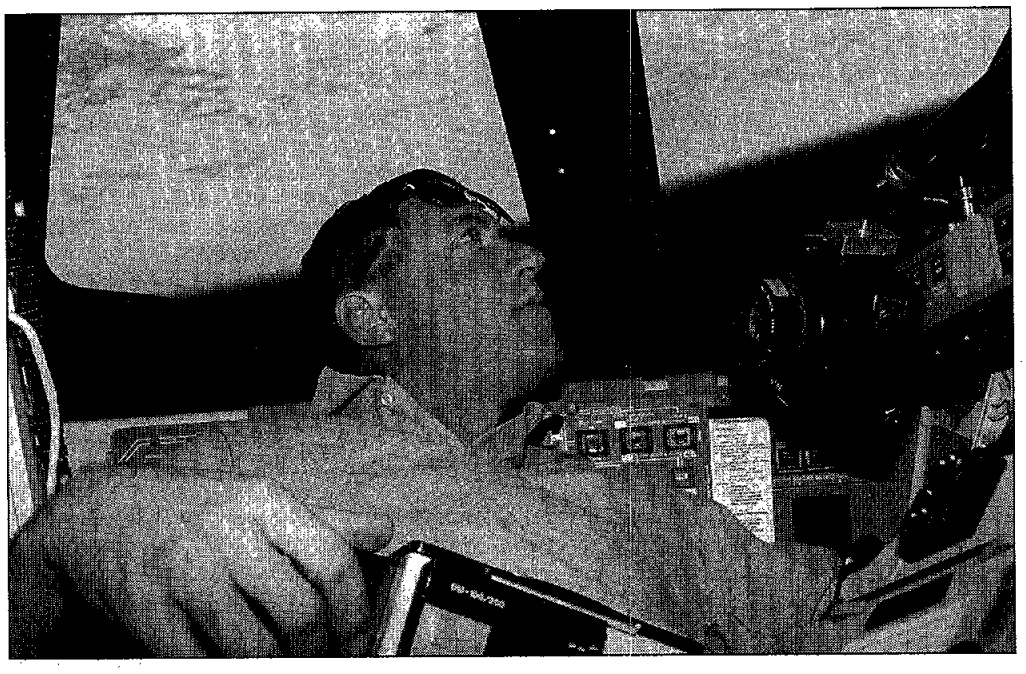
Pool table, 4' x 8' slate top, includes rack/balls/sticks & wall rack, $525. 332-3243.

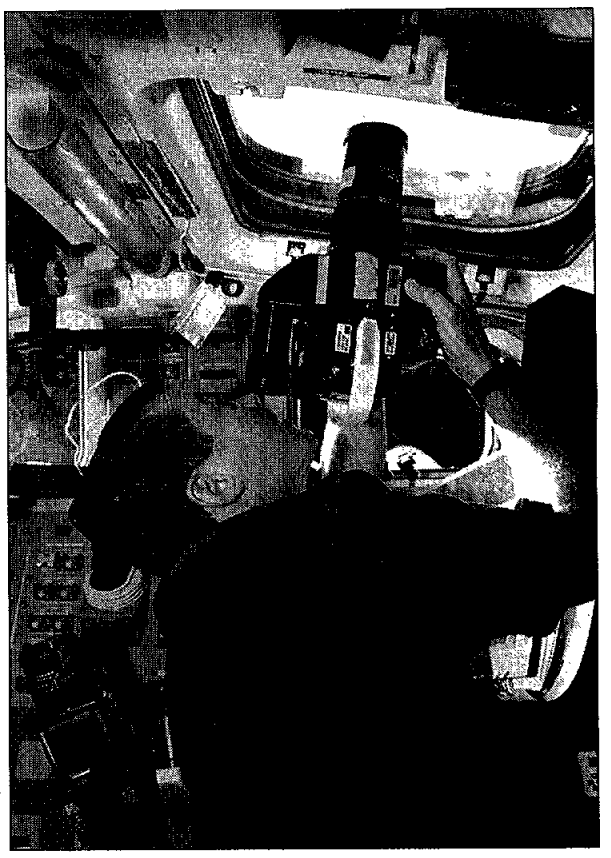
Toro outdoor lighting kit, 12 lights, $40. x32920 or 992-3014.

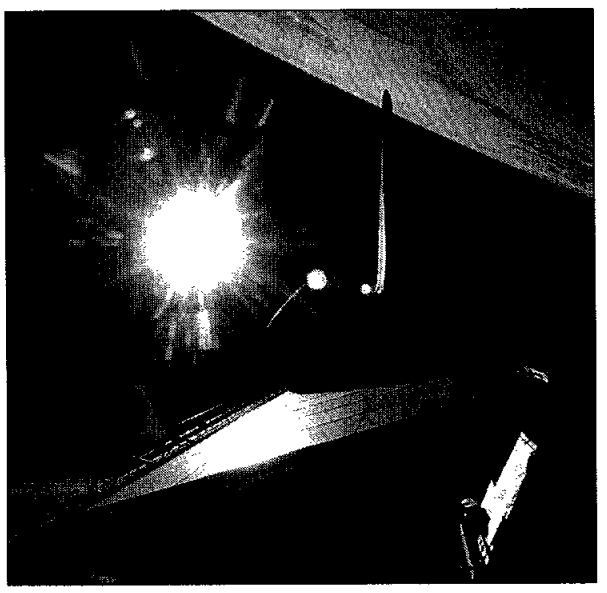
Oilers/Steelers, Nov 6, 2 tickets, upper box, 2nd row, $31/ea. Ray, x38030.

Fiesta, Texas tickets, expires 11/20/94, four $8/ea. Laura, x31303.

Steel wts, 135 lbs w/bar 7 bench, 2-45 lb Olympic type plates wo/bar, $100 OBO. James, x33571 or 337-5585.







Shutter Bugs

STS-68 crew finds time to document in-cabin work, too

Earth scientists are busy evaluating the data recorded on 67 miles of tape now that *Endeavour* is back on the Earth it observed for 11 days during the second Space Radar Laboratory mission.

Commander Mike Baker, Pilot Terry Wilcutt, Payload Commander Tom Jones and Mission Specialists Dan Bursch, Steve Smith and Jeff Wisoff will share their memories of the flight with Space Center Houston visitors at 11 a.m. today, and with employees at 3 p.m. today in Teague Auditorium.

In addition to the 14,000 Earth observations photographs taken for use by scientists working to interpret corresponding radar images, the astronauts also documented their work in the crew cabin.

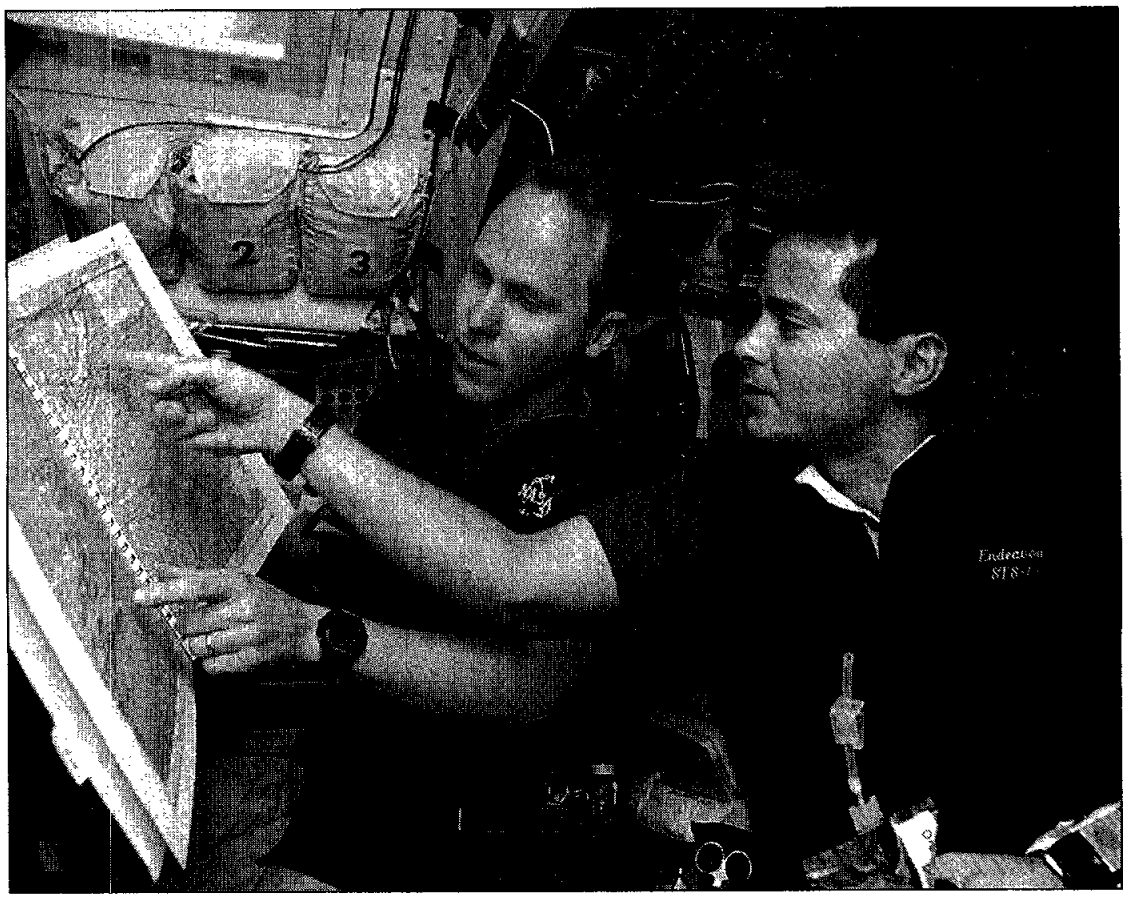
From left to right, top to bottom:

1) Baker eyes a photographic target of opportunity on Earth from *Endeavour*'s flight deck.

2) Bursch focuses a 70 mm camera on his home planet below.

3) The crew poses for its traditional in-flight portrait on *Endeavour*'s middeck with the flags of the three sponsoring countries—the United States, Germany and Italy—in the background. Clockwise from bottom right are Jones, Baker, Bursch, Wilcutt, Smith and Wisoff.

4) The Sun produced a flare above *Endeavour*'s payload bay in this 35 mm view. The large surface is the Jet Propulsion Laboratory-built Spaceborne Imaging Radar (SIR-C) antenna. The smaller antenna attached to its right edge belongs to the Synthetic Aperture Radar (X-SAR), built by the German and Italian space agencies. In the foreground at right is the Langley Research Center's Measurement of Air Pollution from Satellite instrument.



5) Wisoff, left, and Smith replace a malfunctioning Payload High Rate Recorder during the last days of the mission with an on-board spare. The PHRRs were used to record the majority of the radar data collected during the flight.

6) Wilcutt works with the Chromosome and Plant Cell Division in Space Experiment, which flew for the fifth time on STS-68 and investigated the effects of microgravity on plant growth

7) Bursch, top, and Smith juggle the support gear for one of the flights 15 detailed supplementary objective investigations. The instruments supported DSO 484, which is evaluating a technique for shifting their day-night schedules using bright lights. The wrist cuffs carried sensors that detected light levels and activity.

8) Jones, left, and Bursch coordinate their upcoming Earth observations targets using a color ground-track atlas. ❑

NASA helps pilots combat fatigue during long flights

Scientists from NASA's Ames Research Center say scheduled rest by pilots during long flights reduces fatigue and improves alertness and performance. The findings are the result of a new study involving commercial pilots in long-haul flights — those longer than 8 hours.

The study was co-sponsored by the Federal Aviation Administration, which allowed pilot rest periods in the cockpit during the study. "This report is an important part of the FAA's stepped-up research into human factors as causes of aviation accidents and adds vital information to our research efforts," said FAA Administrator David R. Hinson.

"This study shows that controlled rest is one countermeasure to fatigue and jet lag that pilots in fact can use to reduce human error," said Dr. James P. Jenkins, program manager for human-systems technology in NASA's Office of Aeronautics.

During the study, which began in 1990, NASA scientists studied cockpit rest during regularly scheduled trans-Pacific flights over a 12-day period aboard Boeing 747s. Scientists flew a total of 28 flight legs during the study and collected approximately 800 hours of data. During each 8 to 10-hour flight, two scientists sat in the cockpit to monitor the three crew members.

Twenty-one volunteer pilots from two commercial airlines participated . The pilots were randomly assigned to either a rest or no-rest group. Each pilot in the rest group took a planned in-flight nap of 40 minutes. Rest periods were rotated, with two pilots always in control of the aircraft.

During the study, strict safety procedures were followed. Pilots slept during low workload periods during cruise flight over water. Rest periods ended at least one hour before descent and landing.

"We found that when pilots get a nap, they maintain consistent performance," said Dr. Mark Rosekind, team leader of the Ames Fatigue Countermeasures Program. "Their performance was the same during the day and at night. Their performance also was the same at the end of the flight and after multiple flights."

Pilots in the no-rest group also were observed. Although instructed to continue usual flight activities, four pilots fell asleep (a total of five times) for periods lasting from several minutes to over 10 minutes.

Despite their findings, scientists say cockpit rest is not always recommended. "Safety is always first," Rosekind said. "Pilots would not use rest periods during a very busy flight or during bad weather," he said.

Pilot reports to the Aviation Safety Reporting System—which NASA manages for the FAA—was one important source that indicated the extent of sleep episodes in commercial airline cockpits. Because of the data, NASA and the FAA began systematically looking at a variety of fatigue countermeasures. Based partly on the results of this study, the FAA is currently reviewing a proposal to sanction controlled rest on the flight deck.

ASME seeking applicants for Freeman Scholar

The American Society of Mechanical Engineering is seeking applications for its 13th Freeman Scholar Program. Applications are due on Feb. 1, 1995.

Freeman Scholars, chosen for their ability and experience in some area of fluids engineering, receive an honorarium of $7,500 and an additional allowance to cover the cost of travel.

Applicants may be from industry, government, education, or private professional practice, and need not be a member of ASME.

They are expected to make major review of a coherent topic in their specialty, prepare a comprehensive statement of the state of the field, and suggest key research needs of the future. The scholar will be chosen by July 1, 1995, and the manuscript, to be completed by Oct. 1, 1996, should not exceed 120 double-spaced manuscript pages, or 30 journal pages, without special permission. The presentation will be at the 1996 Congress in Atlanta.

The winner also will need to be available to present the lecture at other sites of fluids engineering activity. Findings will be published in the ASME *Journal of Fluids Engineering*.

Applications should be submitted in quadruplicate by Feb. 1, 1995, to the ASME Committee on Honors, 345 East 47th Street, New York, N.Y. 10017. For more details, contact F.M. White at 401-792-2542.

JSC Photo by Jack Jacob

SCRUB DOWN—Joe Gerky of Aircraft Operations, in a level B contamination suit, gets a decontamination scrub down, from Jeff Baker of Center Operations, left, and John Dee of Hernandez Engineering. Behind them are Clark Weaver of Kesley Sebold, in a level A suit, and instructor Tommy Erickson. The practice session was part of an Incident Commander Training Course conducted by the Hazmat Training Association for JSC Emergency Response Team members.

UHCL conference eyes space technology ethics

Audience participation will be the focus of a free conference on "The Challenges of Space Technologies to Values" at the University of Houston-Clear Lake on Saturday.

The all-day conference begins at 9:45 a.m. at the University of Houston-Clear Lake Bayou Bldg., 2700 Bay Area Blvd.

Five nationally known panelists, including JSC's Astronaut Story Musgrave, will discuss ethical issues raised by current and future space technologies. The public conference is sponsored by the UHCL Project for Professional Ethics and funded by a grant from the GTE Lectureship Program in Technology and Ethics.

As Musgrave, a UHCL graduate who served as payload commander on the Hubble Space telescope servicing mission, shows slides, the panel of futurists, technologists, philosophers and environmentalists will provide commentary and offer observations on ethical issues.

Panelists will include Dr. Lawrence Hickman, director of the Center for John Dewey Studies, president of the Society for Philosophy and Technology, author of "John Dewey's Pragmatic technology and editor of "Technology as a Human Affair"; Dr. Paul Levinson, editor of the "Journal of Social and Biological Structures" and president of Connected Education Inc.; Robert McGinn, professor and associate chair of Stanford University's program in science, technology and society and former director of science, technology and society for Bell Telephone Laboratories; and Langdon Winner, professor of political science at Renseleer polytechnic Institute, and author of "The Whale and the Reactor" and "Autonomous Technology."

For more information, call UHCL's Dr. Mitchell Aboulafia at 283-3361.

Coops reach out to Clear Creek students

JSC's cooperative education students once again are reaching out to a Houston high school, relating personal experiences from school and the work place and showing the students how they can become involved in the space program of the future.

The visits, which began last week and continue through next week, are part of the Cooperative Education Program's High School Outreach Program, established in 1991 in an effort to channel high school students into science, mathematics and technology career paths, said Rick Francis, this year's coordinator.

Cooperative education students, or "co-ops," alternate between their college studies and rotations as full-time NASA employees, mixing their education with on-the-job training. Most JSC co-ops are engineering students, but some are studying business, English, science and other fields. Because of the similarity in age and status, co-ops are well suited to bridge the gap with high school students.

In their outreach presentations, they share information on NASA's past and future and relate that to the need for scientists, engineers and mathematicians, as well as to the high school students' current and future course work.

This fall, the Outreach Program is expected to reach about 2,000 students. In past years, co-ops have made presentations to about 7,400 students at the LaPorte, Dickinson, Deer Park and South Houston High Schools.

STS-66 to test new rendezvous approach

(Continued from Page 1)

the Atmosphere, and MAHRSI, the Middle Atmosphere High Resolution Spectrograph Investigation. The instruments will observe a variety of gases in the middle atmosphere and measure amounts of nitric oxide and hydroxyl in the middle atmosphere and lower thermosphere. Also onboard the satellite will be the small Surface Effects Sample Monitor, a materials-science experiment aimed at measuring decay of surfaces exposed to the near-Earth space environment.

For the retrieval of CRISTA-SPAS, *Atlantis* will use a new, more economical rendezvous approach being evaluated for use in rendezvous with the Russian Mir Space Station in 1995. The new approach may not only conserve propellant when approaching the Mir station but also could mean less braking thruster firings, reducing risk of damaging Mir.

Also flying in the payload bay will be the Experiment of the Sun for Complementing the Atlas Payload and for Education-II, a student-designed and developed payload engineered to gather data that will contribute to a better understanding of the Sun's radiative effects on the Earth's upper atmosphere.

ESCAPE II is expected to shed new light on how the Sun's extreme ultraviolet wavelengths affect the temperature and chemical composition of the upper atmosphere. In order to understand the magnitude of human-caused changes in the atmosphere, scientists first need to measure the variability of natural solar radiation.

Two collaborative experiments developed by NASA and the National Institutes of Health will be part of the mission. NIH-R-1 is a developmental biology experiment consisting of 11 tests that will study the effects of space flight on developing rats. These experiments will provide important insights into gravitational and space biology and gravity's effects on living organisms.

NIH-C-2 is comprised of two biomedical experiments that will make use of a computerized tissue culture incubator known as the Space Tissue Loss Culture Module to study the effects of space flight on cells from chicken embryos.

The Heat Pipe Performance-2 experiment will investigate the thermal performance and fluid dynamics of heat pipes operating with asymmetric and multiple heating zones under microgravity conditions. Thirty-five tests will be performed with 10 different axially grooved aluminum/ freon heat pipes.

During its two-year modification period, *Atlantis* underwent structural inspections and systems upgrades that include improved nose wheel steering, the installation of a drag chute, elevon cove repair, the addition of extended duration orbiter hardware and the installation of cables and wiring for a docking adapter that will be used next year to enable the revamped shuttle to link up to Russia's Mir Space Station.

Russian cargo flies on Wind

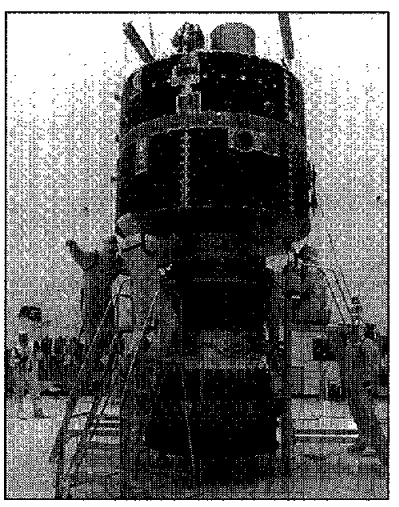
(Continued from Page 1)

tions and diminished performance and reliability of spacecraft.

The main scientific goal of the mission is to measure the mass, momentum and energy of the solar wind that somehow is transferred into the space environment around the Earth. Although much has been learned from previous space missions about the general nature of this huge transfer, scientists need a great deal more detailed information from several strategic regions of space around the Earth to understand the ways in which the planet's atmosphere responds to changes in the solar wind. The mission may eventually yield long-range benefits such as predicting when dangerous conditions will occure.

The launch also marks the first time a Russian instrument will fly on an American spacecraft. The Konus Gamma-Ray Spectrometer, provided by the Ioffe Institute, Russia, is one of two instruments that will study cosmic gamma-ray bursts.

"The historic first flight of a Russian instrument on an American spacecraft is the vanguard of more ambitious space science cooperation with Russia in the future," said Dr. Wesley T. Huntress, NASA's associate administrator for space science.



Workers mate the Wind spacecraft to the Payload Assist Module at Kennedy Space Center.

Child Care Center plans toy, book fairs

The JSC Child Care Center is planning toy and book fairs in November, and currently has an opening available for a 2-year-old in its day care facility.

The toy fair will be from 3-6 p.m. Wednesday at the Child Care Center. A variety of educational toys, books, games and computer software will be on display.

The book fair will begin at 4:30 p.m. Thursday and Friday. A variety of children's books will be avaliable.

Child Care Center hours of operation are 7 a.m.-5:30 p.m., with an extended care option until 6 p.m. For more information call Fran or Barbara at x34734.

Space News Roundup

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