



Space News Roundup

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No. 35

Metrics help U.S. compete

In answer to Congressional legislation, 1992 has become the watershed year for metric conversion as Federal agencies lead the way for manufacturing and other sectors of the business community.

The lack of metric usage in the United States has become a strategic impediment to products entering world markets, and awareness of the threat to American competitiveness has led to a growing acceptance of the metric system.

The Department of Commerce is responsible for overseeing Federal Agencies in developing and implementing metric transition plans, to cooperate on mutual concerns, and work with industry and user groups to establish realistic schedules for change.

Joining the conversion process is JSC and NASA, but the center and agency are not alone in the effort. About 19 out of 25 Federal agencies had developed guidelines for the transition and 17 already have firm transition plans.

The Federal effort is intended to catalyze U.S. industry to make the transition to the world market.

However, leading means more than switching the customary system of units such as inches and pounds. It includes leading the way in establishing product standards and preferred sizes that are accepted by industries and governments throughout the world.

By the end of the fiscal year, every new Federal grant, contract, and other business related activity, to the extent economically feasible, will employ the metric system of measurement.

Plans by NASA call for nine new facilities at nine field locations to be constructed using the metric system, with construction starting by 1994.

JSC will build the Metrology Laboratory Addition as a metric facility.

Half of NASA's shuttle payloads already employ the metric system, and NASA has targeted specific programs as metric candidates.



Though the dress rehearsal was in August, the STS-47 crew will be walking to the launch pad for the real thing Saturday morning. During the Terminal Countdown Demonstration Test, Commander Hoot Gibson leads, in order, Pilot Curt Brown, Mission Specialists Jay Apt, Jan Davis and Mae Jemison, Payload Specialist Mamoru Morhi and Payload Commander Mark Lee.

Child Care Center gets accreditation

Fulfilling a goal since its conception in April 1989, the JSC Child Care Center recently was accredited by the National Academy of Early Childhood Programs.

The endorsement puts the JSC Child Care Center among the first child care programs in the United States to be accredited by the national organization.

"Accreditation helps answer the question, 'What is a quality child care program?'" said Dr. Marilyn Smith, executive director of the National Association for the Education of Young Children which sponsors the academy.

"Most parents want the highest quality program for the children but

few know how to assess whether a program meets more than just the minimum standards required by state licensing."

To become accredited, the Child Care Center had to meet a variety of strict criteria proving the center was providing activities appropriate for the children being served. The requirements include having well-qualified and trained staff, having an adequate number of staff for the number of children, meeting stringent health and safety standards and demonstrating opportunities for parental involvement.

Child Care Center Director Georgia Strain said the process took over two years and was a coopera-

STS-47 ready to fly

Clock starts ticking for Saturday launch

Technicians at the Kennedy Space Center answered the traditional call to stations at 1:30 a.m. Central Wednesday as preparations for the 50th Space Shuttle mission began.

The countdown for STS-47/Spacelab-J picked up at 2 a.m. Central Wednesday, leading to a planned liftoff at 9:23 a.m. Houston time tomorrow.

Spacelab-J, the first Shuttle mission devoted primarily to Japanese-sponsored science, will carry 43 experiments in microgravity research and life sciences investigations.

The STS-47 crew departed Ellington Field early Wednesday morning and arrived at KSC at 7:30 Central.

"We are proud and happy to be taking Japan's first professional astronaut into space with us," Commander Robert L. "Hoot" Gibson said. "We're very excited."

Payload Specialist Dr. Mamoru Mohri will become the first Japanese citizen to fly aboard a U.S. spacecraft.

Other crew members are Pilot Curtis L. Brown, Payload Commander Mark C. Lee, and Mission Specialists Dr. Jay Apt, Dr. N. Jan Davis and Dr. Mae C. Jemison.

The countdown was able to commence after technicians repaired a leaky valve in *Endeavour's* main propulsion system oxygen umbilical. The two-inch line, which provides pressurization of the liquid oxygen that flows into the orbiter during ascent, had failed two leak checks. Technicians entered *Endeavour's* main engine compartment Friday and were able to tighten the valve and resolve the problem, KSC officials said.

Other work with *Endeavour* has proceeded on schedule, and at Roundup press time, the launch team was not working any issues that would constrain a Saturday liftoff. The flight is scheduled to last 6 days, 20 hours and 36 minutes, with a planned landing at Kennedy Space Center on Sept. 19.

Meanwhile, work continues in Bay 1 of the Orbiter Processing Facility on the *Columbia*, now being prepared for the STS-52/LAGEOS flight scheduled for mid-October. Close-out of *Columbia's* forward and aft compartments was in work this week, along with the main engine heat shield installation. Rollover to the Vehicle Assembly Building is scheduled for the middle of next week. The STS-52 external tank and boosters also were mated this week.

Child Care Center hosts clothes sale

Parents seeking bargains on children's clothes and toys could hit the jackpot Sept. 19 during the JSC Child Care Center's Semi-annual Clothing Fair.

Members of the Space Family Education Inc. will be selling used children clothes, toys and other child-related items during the event set for 9 a.m. to noon in the Child Care Center, Bldg. 210.

The sale is open to the public, but only foundation members may offer items for sale. All proceeds will go to the participating families.

For more information, contact Julie Kliesling at x31540.

EURECA begins nominal operations

ESA's European Retrievable Carrier, deployed from the *Atlantis* in July, is now fully operational, orbiting 508 km above the Earth, the European Space Agency recently reported.

EURECA, the heaviest satellite ever built in Europe, entered its routine operations phase August 18 after the ESA's Operation Center in Darmstadt, Germany, successfully completed the activation and check-out of all 15 instruments onboard.

EURECA's mission began the satellite was deployed during STS-46. since then, experiment operations have begun with a detailed mission plan which harmonizes the individual experiment resource requirements, such as power, cooling and data transmission, with the overall resources available onboard.

All instruments are now operating except the Multi-Furnace Assembly for which electrical power allocation will be planned later.

The five space science instruments are performing and Wide Angle Telescope has already recognized known celestial X-ray sources, thus confirming its proper functioning.

The three technology demonstration experiments are proving to be successful, ESA reported. The Inter-Orbit Communication experiment succeeded in establishing a telemetry and telecommand link to and from the ground via the ESA Olympus satellite, thus opening the possibility for a substantial increase in contacts between ESOC and the EURECA spacecraft.

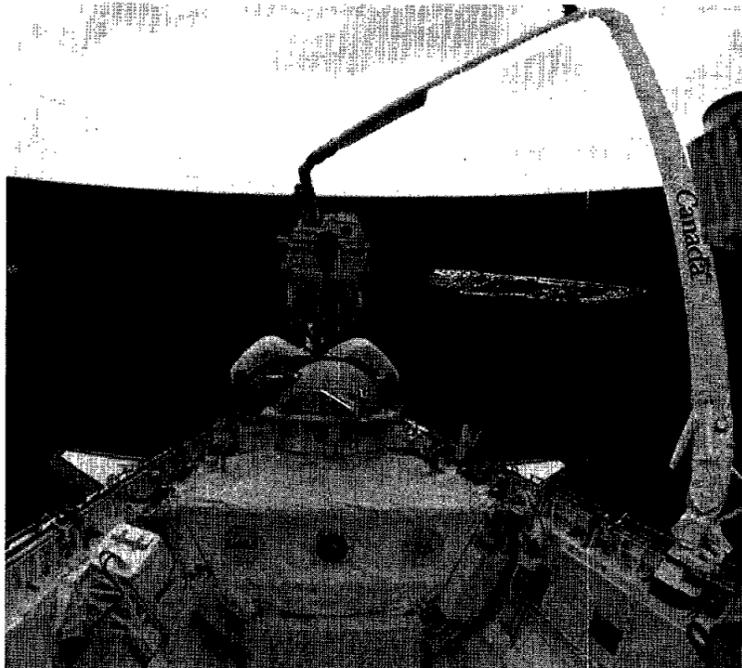
The Radio Frequency Ionization Thruster Assembly which has already been operated for a longer period is now stable at high thrust levels while the Advanced Solar Gallium Arsenide Array, already powered since August 5, has now started its second operation phase.

The performance of the EURECA platform and the ground segment is nominal.

Experiment results sent down from the spacecraft are made available to the users through the electronic Data Disposition Systems, thereby avoiding the conventional handling of the data deliveries to users on magnetic tapes. The DDS provides for the direct transmission of the user data to the computers of the remote institutes in Europe with least delays via Packet Switching Public Data Networks.

To date a total number of 7,650 data requests were satisfied by the DDS, resulting in the transmission of 922 megabytes of science data to the Microgravity User Support Center and other European institutes.

"I am particularly happy and proud to see EURECA's mission starting," said Jean-Marie Luton, ESA's director general. "I am sure that the following months will bring to experimenters positive results and I would like to thank all those, and particularly in ESOC, who have contributed to this successful mission."



The European Retrievable Carrier, now beginning its science operations, was deployed from the Space Shuttle *Atlantis* during STS-46. EURECA's 15 instruments have been checked and activated for its six to nine-month mission.

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m.-2 p.m. weekdays. For more information, call x35350 or x30990.

Lovin' Feelings Concert (7:30 p.m. Sept. 26, Summit): \$21.
Texas Renaissance Festival (9 a.m.-6 p.m. weekends Oct. 3-Nov. 15): Adult, \$9.25; child (5-12): \$5.55. Festival bus trip (Oct. 24, Nov. 7): One-day trip; adult, \$15; child (ages 5-12), \$10; child (under 5), \$7. On sale Sept. 14.

Astros vs. Padres (7:35 p.m., Sept. 30): Mezzanine level, \$7. On sale until Sept. 16.
Ski Sun Valley (Jan. 9-16, Sun Valley, Idaho): \$831 for first 37 people making \$100 deposit.

Metro tickets — Passes, books and single tickets available.
Fiesta Texas Park (San Antonio): Buy one, get one free. Adult, \$19.50; child 4-11, \$13.55.

Sea World (San Antonio): Adult, \$18.90 (child free with paying adult); child 3-11, \$13.55.
Astrorworld: \$16.95 and \$14.95 (child under 54 inches), \$44.95 (season pass) and Waterworld, \$9.50.

Six Flags: \$16.95 (one-day) and \$22.95 (two-day).
Movie discounts: General Cinema, \$4; AMC Theater, \$3.75; Loews Theater, \$4.

Stamps, Walt Disney Club memberships also available.
Upcoming events: Deep Sea Fishing Trip (Oct. 17): \$45 to fish, \$20 to ride. On sale Sept. 14.

JSC

Gilruth Center News

EAA badges — Dependents and spouses may apply for photo identification badges from 6:30-9 p.m. Monday through Friday. Dependents must be between 16 and 23 years old.

Weight Safety — Required course for employees wishing to use the Gilruth weight room is offered from 8-9:30 p.m. Sept. 23. Preregistration is required; cost is \$5.

Defensive driving — Course is offered from 8 a.m.-5 p.m. Sept. 19. Cost is \$19.

Aerobics — High/low-impact classes meet 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. Cost is \$24.

Aikido — Martial arts class meets Tuesdays from 6:15-8 p.m. Cost is \$15 per month.

Country and western dance — Country and western dance lessons for beginners will be offered from 7-8:30 p.m. Mondays beginning Sept. 14. Advanced classes will be from 8:30-10 p.m. Cost is \$20 per couple; classes run for six weeks.

Flag football — Officials are needed to work flag football games during the fall season. An officials instruction course will be offered Sept. 12. For details, call the Gilruth at x30304.

Sign language — Classes in the third-most used language in the United States will be offered from 6:30-8:30 p.m. Mondays beginning Sept. 14. Cost for the six-week course is \$55.

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

JSC

Swap Shop

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is the 5 p.m. every Friday, two weeks before the desired date of publication. Ads may be run only once. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Property

Rent: Cape Royal, Lake Livingston, Harbour Villa TH, near marina, redecorated, sleeps 6. 334-5818.

Lease: Friendswood condo, 3-2-2, attached garage, avail Sept 1, no pets, \$900/mo, equal dep, water paid. 482-1685.

Lease: Friendswood, Forest Bend, 3-2-2, formal DR, lg kitchen, refrig, new roof, FPL, New carpet, fenced, no pets, \$695/mo. 482-6609.

Sale: Taylor Lake 4-2.5-2, corner lot, private boat launch, both formals, \$116.9k. Charles, x33599 or 474-9259.

Lease: Webster condo, lg 2-1, FPL, patio, W/D, conn, storage area, \$475/mo. x31275 or 486-0315.

Rent/Sale: Baywind II condo, 1-1, W/D, refrig w/ice maker, new paint, dishwasher, avail Oct. Steve, 244-7474 or 486-8047.

Sale: Clear Lake Shores, contempo on island, 30 trees, waterfront, \$142k. 538-1849.

Lease: CLC University Green TH, 1327 sq ft, 2-2.5-2, high eff A/C, ceil fan, FPL, W/D, refrig, miniblinds, no pets, \$750. 488-1036.

Sale: Alvin, 2-1-1, 5 acres, fenced, lg oaks/magnolia, barn, horse stalls, pecan/pear orchard, \$98.8k. Scott, 331-6847.

Rent: Santa Fe horse stalls, lg covered arena; arena also avail at hrlt rates. (409) 925-1942.

Rent: TLV furn 1 BR eff on waterfront, pool, paid util except phone, \$425/mo, ref. x32799 or 532-1725.

Sale: El Dorado Trace condo, 1-1.5-1CP, appl, patio, balcony, FPL, fans, designer wallpaper/carpet, assum, low equity. Barbara, 488-3383.

Sale: Pipers Meadow 4-2-2-, 2-story, FPL, fans, new carpet, vinyl, wallpaper, \$74.9k. Greg, 286-0356 or 470-0433.

Sale: Pipers Meadow, 3-2.25-2, contemp, both formals, FPL, loft, master BR down, fans, garage dr opener, deck, landscaped, 2,070 sq ft, \$90k. Dennis, x34405 or 532-3312.

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

Sale: Galv Island beach house, 3-2-1, CA/H, furn. Ed Shumilak, x37686 or 326-4795.

Rent: Galv Beach house, D/W, C/A, furn. Ed Shumilak, x37686.

Rent: Lake Travis cabin, private boat dock, CA/H, fully equip, accom 8, fall/winter, \$325/\$80, wkly/dly. 474-4922.

Sale: La Moca ranch, 71 acres, Hwy 83, Webb Co north of Lored, TX, 2 ex deer blinds, 2 deer feeders, 2 BR house on 9 ft stilts, water well, elect pwr, mineral rights, \$120k. 326-1833.

Rent: Arkansas Lake cabin, furn, screened porch, accom 8, \$250/wk, \$50/day. x33005 or 538-4141.

Cars & Trucks

'84 S10 Blazer, 5 spd, 4x4, body has 66k mi, new motor and clutch, \$4200 OBO. 476-5035.

'84 Ford LTD, good cond, \$1800. x38373 or 554-4944.

'86 Chevy Caprice Classic Estate wagon, V8, 305 eng, loaded, \$4500. 992-5015.

'77 Cadillac Eldorado, ex cond, \$2500. x34347 or 486-4916.

'72 Triumph Spitfire, not running, new top and tires, BO. Mike, x37667 or 524-0251.

'91 Chevy S10 Tahoe, auto, A/C, PS/PB, carpet, garnet, 25k mi, \$7500 OBO; Sound Design turntable, dual cass, graphic equalizer, \$75 OBO. 481-8287.

'87 Toyota Corolla GTS, dk blue, 5 spd, tinted windows, ex cond, low mi, \$5800. 283-4491 or 997-1676.

'86 Pontiac Grand Am, V6, 4 dr, auto, cruise, tilt, new A/C compressor, \$3450 OBO. Jeri, 333-7552.

'84 Dodge Colt Vista wagon, good cond, \$1600 OBO. x35159 or 486-5247.

'84 Olds Cutlass Ciera, 4 dr, V6 tilt, cruise, 80k mi, \$1800. x37296 or 996-1240.

'87 Volvo 740 Turbo, low mi, sun roof, \$9k. Gloria, 332-3508 or 326-3022.

'86 Toyota Cressida, 4 dr lux sedan, all opt, ex cond, 103k mi. Pringle, 482-7160.

'87 Toyota Camry, 4 cyl, auto, A/C, AM/FM/cass, white, 61k mi, ex cond, \$6500. 480-7924.

'76 Plymouth Duster, mech restored, records, some parts w/warr, \$1250 OBO. x32799 or 532-1725.

'80 Toyota Tercel, runs, needs work, \$500. 283-5781 or 480-9716.

'79 Plymouth Volare wagon, 318 engine, runs good, needs minor body work. Magdi Yassa, 486-0788 or 333-4760.

'85 Chevy Cavalier wagon, auto, radio, 85k mi, \$2500. 523-1000.

'70 Mustang convertible, \$1k. Tamara, 282-4455.

Boats & Planes

16' Larson ski boat w/ski tow, Yamaha OB, 115+ HP, \$3500. 286-5531.

34' Hunter sailboat, IB diesel, roller-furl jib, VHF, depth/knotmeter, A/C, stereo, ex cond, \$34k. Dale, 334-3393.

16' Hobie catamaran w/sails and mast, trlr, \$850 OBO. 996-8821 or 486-1970.

Cycles

1 1/8 x 125 mm oversz alum mtn bike stem w/CROMO forks, \$30; Shimano Deore LX front derailer for oversz frame, \$10; Richie Mega Bie 2.1 cm tires, \$10; shock absorber saddle, \$15. Trey, x36759 or 992-1076.

Today

Pressure Systems Week — JSC will observe Pressure Systems Week Sept. 7-11, focusing on the use and safety of compressed gas cylinders. Short safety films aimed at preventing deadly mistakes will be shown from 2-3:30 p.m. Sept. 11 at the Bldg. 226 Training Center.

Cafeteria menu — Special: tuna and noodle casserole. Entrees: broiled codfish, fried shrimp, baked ham. Soup: seafood gumbo. Vegetables: corn, turnip greens, stewed tomatoes.

Monday

Blood pressure screening — The JSC Clinic and the American Heart Association will offer free blood pressure screening Sept. 14-17 at various times and locations around the center. For a detailed list of the times and places, see Page 4 or call the clinic at x34111.

Cafeteria menu — Special: meatballs and spaghetti. Entrees: wieners and beans, round steak with hash browns. Soup: chicken noodle. Vegetables: okra and tomatoes, carrots, whipped potatoes.

Tuesday

Toastmasters correction — The Spaceland Toastmasters Club will meet at 6:45 p.m. Sept. 15 rather than 6:45 a.m., as was previously printed. The meeting will take place at the Ramada Kings Inn on NASA Road 1. For reservations, call Steve Shields at x31941, or 474-5988 by Sept. 9. For more information, call Darrell Boyd at x36803.

Cafeteria menu — Special: fried chicken. Entrees: beef stew, shrimp creole, sweet and sour pork chop

with fried rice. Soup: beef and barley. Vegetables: stewed tomatoes, mixed vegetables, broccoli.

Wednesday

Texas Space Business Roundtable — The Texas Space Business Roundtable will meet Sept. 16 at the University of Houston Hilton, 4800 Calhoun. Guest speaker will be Gloria Hodges, a teacher at Booker T. Washington High School and the recipient of the Houston SBR education scholarship to the U.S. Space Camp. Registration begins at 11:30 a.m. followed by lunch at noon. Cost is \$18 for members and \$23 for non-members. Reservations are due by Sept. 14 and can be made by calling 280-0460.

Cafeteria menu — Special: Swiss steak. Entrees: fried perch, New England dinner. Soup: seafood gumbo. Vegetables: Italian green beans, cabbage, carrots.

Thursday

Cafeteria menu — Special: stuffed bell pepper. Entrees: turkey and dressing, enchiladas with chili, wieners and baked beans. Soup: cream of chicken. Vegetables: zucchini squash, English peas, rice.

Friday

Cafeteria menu — Special: Salisbury steak. Entrees: baked scrod, broiled chicken with peach half. Soup: seafood gumbo. Vegetables: cauliflower au gratin, mixed vegetables, buttered cabbage, whipped potatoes.

Sept. 23

Toastmasters meet — The Spaceland Toastmasters Club will meet at 7:15 a.m. Sept. 23 in the

Bldg. 3 cafeteria. For more information, call Darrell Boyd at x36803.

Sept. 24

AIAA meets — The American Institute of Aeronautics and Astronautics will meet Sept. 24 at the Gilruth Center. Astronaut Daniel C. Brandenstein will be the featured speaker, focusing on the INTEL-SAT Reboost Mission. The dinner meeting will begin with a social hour at 5:30 p.m. followed by dinner at 6:30 and the program at 7:30. Cost is \$10 for members and spouses; \$11 for non-members; and \$9 for students. Reservation deadline is noon Sept. 21. For more information, contact Frankie Hap at 333-6064; Ardell Broussard, 283-4214; Carroll Robinson, 283-6000; or Sarah Leggio at 282-3160.

SCS meets — The Society for Computer Simulation Bay Area/Houston Chapter will meet at 11:45 a.m. Sept. 24 in the Lockheed Plaza 3 first floor Pic Rm. R. Srinivasan of Krug Life Sciences will discuss "Computer Simulation of Physiological Systems in Space Flight Biomedical Research."

Sept. 30

IEEE video conference — The Institute of Electrical and Electronics Engineers Galveston Bay Section will present a video conference on "Emerging Technologies: Will Your Companies Be Ready?" at 11 a.m. Sept. 30 at the Gilruth Center. Cost is \$50 for members and \$15 for student members. Registration deadline is Sept. 24; for more information call Francoise Stephan at 942-8553.

Audiovisual & Computers

Fisher 3 way T-920 spkrs, 13" woofer, 20 watts, \$200. x36759.

7pc Kenwood stereo system, matching amp, dual cass tape deck, surround sound processor, tuner, equalizer, 6-disc CD changer w/VCR/TV/stereo remote, cabinet, 4 spkrs, \$1200 OBO. 474-4742.

Windows 3.0, \$15; OCR software, OMNIPAGE 386, V3.02, \$300; internal 2400 baud modem, ATI 2400 etc/i, V.42, V.42bis, MNP-5, \$55. x37137 or 482-8966.

Smith Corona personal word processor PWP2000, 10/12 pitch, word processor and tape modes, 2 daisy wheels, 3 correctable film ribbons, 2 lift-off correction tapes, 7 data disks, tutorial, \$225. Mike, x32292 or 925-3359.

Packard Bell PB8810 640k RAM dual diskette computer, fully IBM PC/XT compat, 5.25 FD, color monitor, SW incl, \$600 OBO. David, 286-8411.

Nintendo game system, 8 games, monitor, \$175. James, 997-9979.

Packard Bell 286 AT, 1.2M 5.25" FD, 16 MHz, 640k, 42M HD, ext kybd, VGA color monitor, graphics card, mouse, Panasonic printer, computer desk, hutch, printer stand, cables, setup video, pwr supply/surge protect, S/W, manuals, \$1k. Jennifer, x38668 or 286-0507.

Pets & Livestock

Rabbits, mimi lops and fuzzy lops. Gailo, 554-6200.

Blue front Amazon and red lored Amazon parrots, 1 lg cage, 2 reg cages, lg tree w/toys, and T-stand, was \$1500, now \$750 OBO. John, x39418.

Free kittens. Myron, x39409 or (409) 925-1942.

2 horses for sale, excellent trail riders. 554-6138.

Musical Instruments

Kawai 7' grand piano (GS-60), polished ebony, 2 yrs old, 10 yr full warr transf, \$13.5k OBO. Joe, 244-5731 or 946-8198.

60W bass amp, \$150; Korg 707 kybd, \$175; albums, songbooks. x31883.

Bach Silver Stradivarius trumpet, mod 37, ex cond, \$700. Kathy, x39190 or 332-6305.

Two-kybd console organ, needs work, \$200. x36552.

Lost & Found

Lost man's silver tie-clasp w/floral design, alligator clip. E. Rubenstein, x34807 or 532-2211.

Household

Motionless hibernation waterbed w/mirrored hdbd and attached drwrs, matching night stand and chest of drwrs w/mirror, all in contemp black lacquer w/blk trim, ex cond, \$1600 OBO. 474-4742.

Country French, whitewashed pine armoire, \$750. Donna, x31206 or 538-1147.
Qn sz waterbed w/padded rails, sheets, \$50; Leopold exec desk, \$250; 5 person portable hot tub w/top, \$1500. Mike, x37667 or 524-0251.

Miscellaneous

Kybds, \$75; Canon 35M T-50, \$150; Raleigh Beach Cruiser, \$200; Softside Lifesupport qn sz waterbed, \$400; alloy rims for '87-'88 Maxima, \$75; allow rims for '92 Honda Accord, ex cond. Tamara, 282-4455.

Sears lawn vacuum, ex cond, \$150; 3 spanish DR chairs, \$12 ea; books, over 100 hard back novels, \$35 for all. 474-2981.

Kirby classic vacuum cleaner w/all attach, \$50; Onieda 80 pc stainless serv, \$25; 2 sets 4 place setting stoneware, \$10; glass cake pedestal, \$10. Karen, x35466.

Swing set, metal w/tower, slide, overhead climber, \$50; sewing table, dk woodgrain, \$20; microwave cart, dk woodgrain, \$20. Carl, x32798 or Pam, 538-3291.

Remington 7400 30-06 and 3X9 scope, ex cond, \$450. Rex, x38579 or 286-6245.

Rem BDL 700 30-06 cal, super accurate, 4X scope w/some shells, \$265; Win 94 30-30 cal, pre 64, ex cond, appraised at \$450, sell for \$275. 991-5564.

Remington 700 ADL 30-06 bolt action rifle, Monte Carlo stock w/3-12 x40 mm Tasco scope, \$350. 484-6814.

Spare tire w/rim, 4 bolt pattern, \$30 OBO; tool box for mid-sz truck, lock, \$100 OBO. Youm, 283-4813.

Schwinn 12-spd, \$75; Wilson Staff irons, 3-PW, \$100; Canon AE-1 w/flash, \$150. x32340.

DP-AirCiser exercise bike, \$75; 2 36" wide unfinished solid fiberglass french doors. Theresa, x32625.

Gold clubs, Tour Model III, 1-SW, \$16.95/club and metal woods, 1, 3, or 5 wood, \$35/club. David, 554-5514.

TREKFEST! Presented by Starbase Houston, Sept 12-13, Star Trek authors and set director, dealers rm, videos, costume contest. x34457 or 527-WARP.

Left hand golf clubs, First Flite irons, 2 thru wedge, used, all for \$65. Dave Bruce, 480-9545.

'83 Layton travel trlr, 25 ft, self-contained, sleeps 8, 20 ft awning, ex cond, \$4800. x34902 or 996-9128.

Tickets to Oilers vs. KC, 9-20-92, 40 yd line, Rainbow seats of upper deck, BO. Mike, x38918.

Patio screen; Yamaha trumpet; black & brass coat rack; tri-level tackle box. x31260 or 488-2941.

2 sq dance/CW skirts, blue 7 white; 2 sq dance/CW skirts & matching blouses, 1 teal, one red w/white lace trim. x31260 or 488-2941.

Milwaukee Porta-Band band saw w/carrying case, \$100. 482-3428.

Men's 10 lb bowling ball, lt blue Ebonite-Rainbow, ex cond, \$50; used GM AM/FM car radio, \$25; new Emerson digital clock radio w/snooze, \$15. Ed, x36250.

New rear window for '92 S10 Blazer, defogger, tint, wiper w/motor, 4300 OBO. Todd Schafer, 480-6006.

Tutoring service, experienced teacher will provide tutoring service for students in grades kindergarten - 5th. Rachel, 480-2464.

Short sleeved white/coral dress, \$50. Sheila, x32902 or 480-0246.

Wanted female roommate for League City 3-2-2, \$275/mo +1/3 util. 554-4944.

Want 55 gal fresh water fish tank w/wooden stand and accessories. 286-0022.

Want backpacking equip, must be in good cond. David, x38990 or 338-2046.

Want donations of space posters or any other space trivia for a fourth grade class. Jeannette, x35816 or 488-2509.

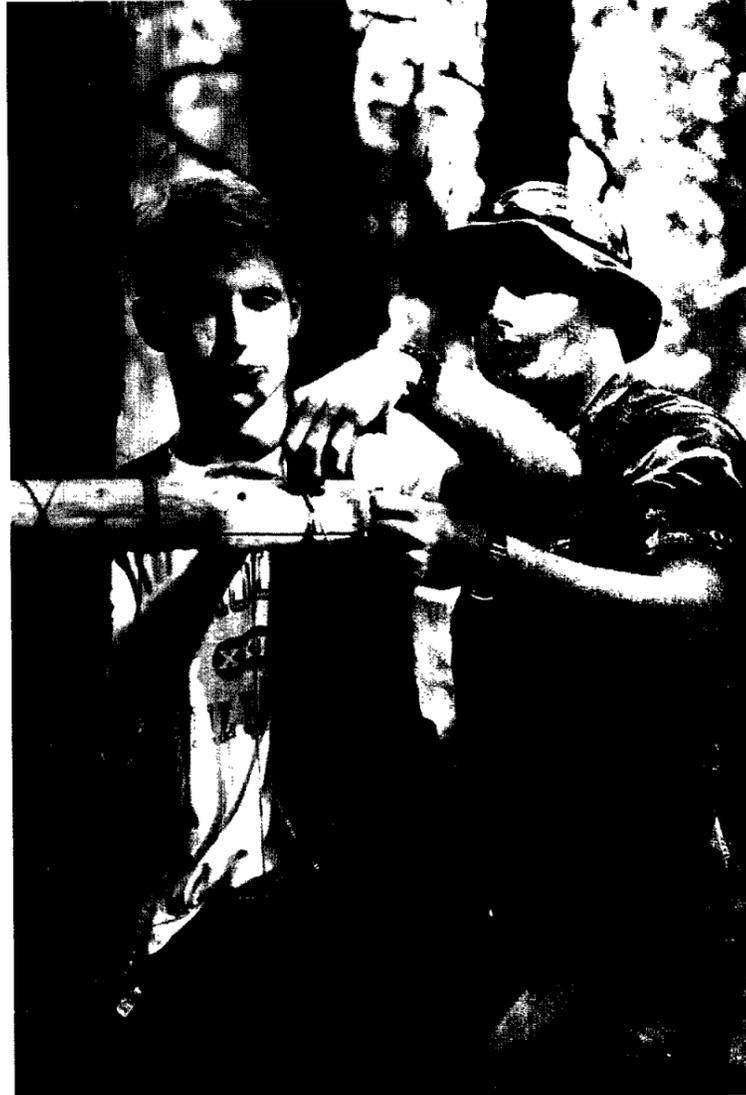
Want members to form East European Descendants' Association. 332-1614.

Want female roommate to share 3 BR in Lakeside, non-smoker, \$37/mo incl util. Ann, 282-3790.

Want good used family tent, 10x12 or larger, and gamp stove. Ken, x30921 or 554-6504.

Want Apollo or earlier space memorabilia, documents, Snoopy astronaut, etc. 480-9716 or 283-5781.

Want winter vacation rental for 2, prefer Breckenridge/Summit area of CO or Red River, NM for Mar 13-20, will consider other areas and dates. Janine, 283-7541 or 482-7550.



The Art of Survival

For three days and nights in August, the 1992 Astronaut Class tested their survival skills against the woods of north Washington as the 24 candidates continued their training.

Instructors from the U.S. Air Force Survival School at Fairchild Air Force Base taught the candidates various skills that might be needed in for a rescue operation.

Above: Airman First Class Emerson, right, of Fairchild AFB

assists Astronaut Candidate Mike Gernhardt in an exercise guiding a helicopter to a specific pick-up point.

Above right: Jerry Linenger puts together a make-shift shelter under Emerson's watchful eye.

Center right: Chris Hadfield with some music relaxes after the day's exercises.

Lower right: Prior to the exercises, astronaut candidates were briefed on the week's activities. Listening to the briefing are Cady Coleman, front

right, and Mary Ellen Weber, front left, and, the back row, from left to right, Mike Gernhardt, John Grunsfeld and Mike Lopez-Alegria.

Lower left: Jean-Francois Clervoy takes off his safety helmet after a drill during which he was lifted to a hovering helicopter.

Center left: From left to right, Dan Barry, Jerry Linenger, Scott Horowitz and Joe Tanner check their progress during a hike through Colville National Forest. □



Women in Aerospace honor Crews, Sullivan

Jeanne Lee Crews, manager of JSC's Hypervelocity Impact Research Laboratory, and former Astronaut Kathryn D. Sullivan will be honored next week by Women in Aerospace, a non-profit professional society.

Crews will receive the Lifetime Achievement Award for her significant contributions to NASA and JSC over the past 25 years for her hypervelocity impact research and for her support of Skylab flight experiments.

As manager of the lab, she oversees three hypervelocity guns capable of firing projectiles up to three-quarters of an inch at up to 26,000 feet per second in efforts to develop new and improved methods of shielding spacecraft from impacts from orbiting debris.

As manager of flight experiments for the Skylab flight crews, she was liaison between the flight crews and the engineers and scientists responsible for on-orbit experi-

ments. Following Skylab, she performed similar duties in the space shuttle program.

Sullivan, who left JSC last month to become acting chief scientist for the National Oceanic and Atmospheric Administration, received the Aerospace Explorer Award for her contributions to space flight on three space shuttle missions, including the first space walk by a woman.

The awards will be presented Wednesday at the group's seventh annual reception in Washington, D.C.

Hanley, Malarkey share STS-46 plaque honors

Jeff Hanley and John Malarkey shared the honor of representing their STS-46 flight control teams in hanging the plaque for the Tethered Satellite System and EURECA mission in Mission Control.

At the conclusion of the August



Crews

Sullivan

Hanley

Malarkey

Thornton

Shrum

flight, Malarkey, representing the flight dynamics team, hoisted the plaque using a rope and pulley while Hanley, representing the payloads team, climbed the ladder in Flight Control Room 1 and hung the plaque with a piece of the same material used for the TSS tether. Both are Rockwell Space Operations Co. employees.

"The integration process for tether operations was an enormous task," said Lead Flight Director Chuck Shaw. "We have never done anything like that before, so it was the development of an entirely new body of knowledge."

In addition, the coordination of customer support involved coordination with the Italian makers of TSS and the European Space Agency builders of EURECA. It also included the development of an entire team to coordinate with the remote Payload

Operations Control Center for EURECA in Darmstadt, Germany, and the TSS POC at JSC.

All the pre-flight coordination was put to the test when the flight control team had to think on its feet and deal with malfunctions in the operation of both payloads, Shaw said.

"The two teams meshed together really well," he said.

Thornton is Legion's Woman of Year

Astronaut Kathryn C. Thornton recently received the American Legion Auxiliary's 1992 Woman of the Year Award, presented last month at the group's 72nd annual convention in Chicago.

The award recognized Thornton for her accomplishments as "one of America's preeminent women scientists."

Shrum named top secretary

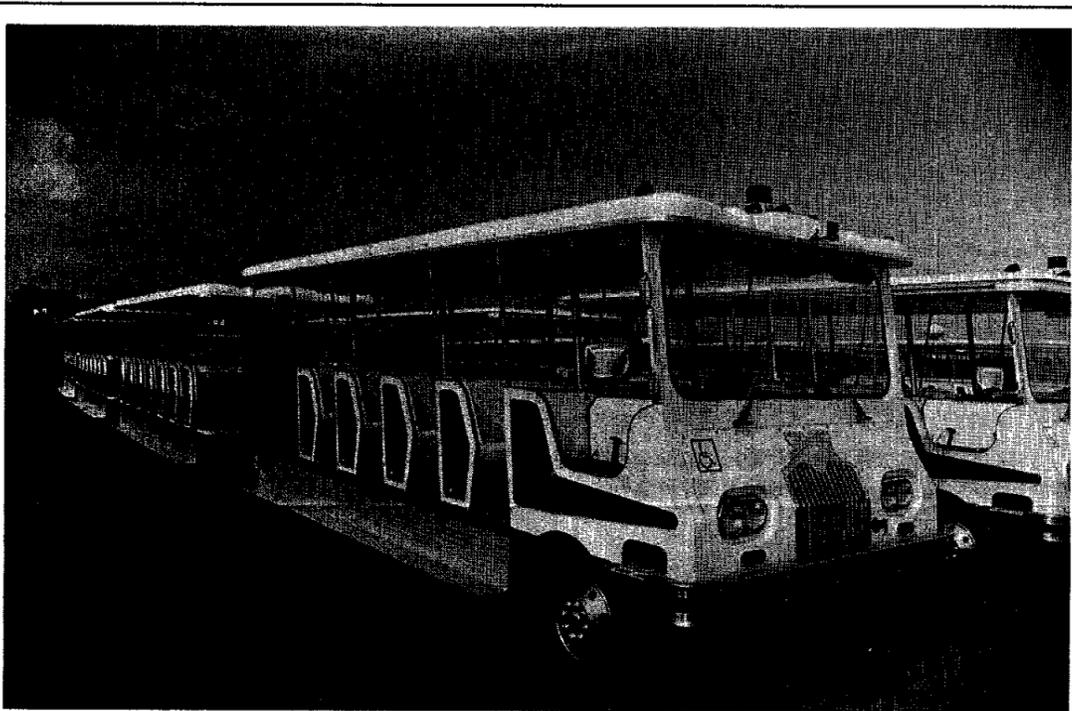
Merrylee Shrum, secretary to the chief of the Aircraft Operations Division in the Flight Crew Operations Directorate, recently received the Marilyn J. Bocking Award for Secretarial Excellence.

Shrum, who is often the first personal contact outsiders have with NASA or the division, was honored for being "an absolutely outstanding representative of NASA and the Aircraft Operations Division."

Shrum also was recognized for her ability to work calmly under pressure, and for her efforts to improve her knowledge of the aviation and aerospace field. Those efforts have included the completion of a private pilot's rating and continuing work on a commercial pilot's rating.

JSC

People



Hitting the Road — With the opening of Space Center Houston about a month away, training of tour guides and tram operators will enter a new phase next week. To facilitate with the training, traffic on Avenue E will be stopped intermittently each day after 3:30 p.m. beginning Monday. Flagmen will be posted at each curve of the temporary road to stop traffic for the trams due to the limited visibility from the tram tunnel.

JSC Clinic offers annual blood pressure screening

JSC contractor and employees will have an opportunity to check on their blood pressures during special screenings next week sponsored by the JSC Clinic.

The blood pressure tests are scheduled for various sites across the center, but the Bldg. 8 Clinic will offer screenings from 10 a.m. to noon and from 2 to 4 p.m. daily.

Other locations are Monday at Bldg. 1 from 8:30 a.m. - noon, Bldg. 7A from 1 - 2 p.m. and Bldg. 15 from 2:30 - 3:30 p.m.

On Tuesday, screenings will be offered at Bldg. 30 from 8:30 a.m. -

noon, Bldg. 16 from 12:30 - 2:30 p.m. and Bldg. 17 from 2:45 - 3:15 p.m.

Wednesday's locations are Bldg. 32 at 8 - 9 a.m., Bldg. 37 at 9:30 - 10:30 a.m., Bldg. 31 at 10:30 - 11:30 a.m., Bldg. 44 at 1 - 2 p.m. and Bldg. 14 at 2:30 - 3:30 p.m.

Thursday's sites are Bldg. 419 at 8:30 - 10 a.m., Bldg. 273 (Ellington) at 10:30 - 11:30 a.m., Bldg. 227 at 12:30 - 1:30 p.m. and Bldg. 325 at 2 - 4 p.m., and Friday's sites are Bldg. 45 at 8:30 - 11:30 a.m., Bldg. 9 at 12:30 - 1:30 p.m., and the Vanguard Bldg. at 2 - 3 p.m.

MCC viewing, cafeteria hours set for next flight

The Mission Control Center viewing room will be open to JSC and contractor badged employees and their families during portions of the seven-day STS-47 mission.

Based on a Saturday launch, employees will be allowed to visit the MCC Sunday, from 1-4 p.m.; Monday, from 11:30 a.m.-2:30 p.m. and 5-7 p.m.; Tuesday, from 11:30 a.m.-2:30 p.m.; Wednesday, from 11:30 a.m.-2:30 p.m. and 5-7 p.m.; Thursday, from 11:30 a.m.-2:30 p.m.; and Friday, from 11:30 a.m.-2:30 p.m. and 5-7 p.m.

Employees must wear their badges and escort family members through the regular public entrance on the northeast side of Bldg. 30.

Children under 5 will not be permitted. No flash photography or loud talking will be permitted at any time.

Because of the dynamic nature of shuttle missions, viewing hours may be changed or canceled without notice. For the latest information on the schedule, call the Employee Information Service at x36765.

Special cafeteria hours also will be in effect during the mission.

The Bldg. 3 cafeteria will be open from 7 a.m.-4:30 p.m. weekdays, except launch day, and from 11 a.m.-4:30 p.m. weekends. The Bldg. 11 cafeteria will be open from 6:30 a.m.-2 p.m. weekdays, except launch day, and 7-10 a.m. weekends.

ISD to host communications exhibit

The Information Systems Directorate is sponsoring a "Communications Expo" Sept. 17, hosted by the ISD Products Center.

Representatives from 15 vendors will demonstrate their communications related hardware and software during the day-long event.

Products being demonstrated include Dataproducts with XP-1 Ethernet Print Server, LANSprint PC LAN Solution and BARR High Speed Communication Devices (Token Ring, Gateway, RJE); DCA with DCA's 3270 communications solutions for

the DOS, MAC and Windows environments, DCA's IRMA products and the new RLN for remote LAN access; The Graphic Management Group with Aperture; Phoenix Data Systems with Fax Gateway for DOS and Windows, Modem Gateway for DOS Windows, Xyplex communications servers for DEC and UNIX and high speed modems; Shiva Corporation with Novell IPX and Macintosh Dial-Out and Dial-In data communications server, Fastpath 5, LocalTalk/Ethernet multiprotocol router and Apple Talk remote access server; Triad Com-

puter Products Inc. with PC network running Novell 3.11 and UNIX (Sparc) workstation interconnected using TCP/IP; UDS with analog modems, CSUs/DSUs, muxes, LAN modems, PC modems, fax modems and network management software; and US Robotics with modems — Courier, Sportster, Worldport (2400 bps - 14.4kbps) communications software — BLAST and LAN Product — modem sharing kits.

The expo will be held in Bldg. 12, Rooms 254 and 256. NASA badged personnel are invited to attend.

Senate vote endorses Freedom funding

The U.S. Senate continued support for Space Station Freedom on Wednesday, voting 63 to 34 in favor of a \$2.1 billion dollar funding measure to support the orbiting science laboratory.

The Senate rejected a proposal by Sen. Dale Bumpers, D-Ark., that would have slashed a Senate committee's \$2.1 billion budget for the station to \$500 million that would have been used to shut down the project.

NASA Administrator Daniel Goldin said the vote reflects a commitment by members in the Senate to invest in America's future.

"Funding for NASA is only 1 percent of the entire federal budget, but it is extremely important because it provides opportunity and hope for the future," Goldin said. "Space

Station Freedom is needed so we can learn how to keep humans healthy in space over long periods of time — a prerequisite for exploration of our solar system.

"But as NASA reaches for the stars, it produces cutting edge technology that creates new, high-quality jobs on Earth. Space Station Freedom will provide new medical technology to improve health care and inspire young Americans to remain and excel in school."

Freedom supporters in the House of Representatives earlier this year fought back similar efforts to kill the program, and the House approved a \$1.7 billion appropriation.

The Senate approved a total of \$14.17 billion for all NASA programs, while the House approved spending \$14.03 billion. A confer-

ence committee will now be required to work out the differences between the House and Senate spending plans.

The Senate package is part of an \$87.8 billion appropriations bill for Veterans Affairs, the Department of Housing and Urban Development and other independent agencies in fiscal 1993, which begins Oct. 1.

Sen. Barbara Mikulski, D-Md., the chairman of the appropriations subcommittee that has jurisdiction over NASA, said the project has generated 75,000 jobs and that scrapping it would be short-sighted and in the long run detrimental to the government's deficit reduction efforts.

"One of the best ways to cut the deficit is to approve programs that generate jobs today and jobs tomorrow," Mikulski said.

Space News Roundup

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Dates and Data submissions are due Wednesdays, eight working days before the desired date of publication.

Editor Kelly Humphries
Associate Editor Kari Fluegel

Correction

In the August 28 issue of the Space News Roundup, STS-47 Mission Specialist Mae Jemison was inadvertently omitted from a listing of crew members participating in the Terminal Countdown Demonstration Test at KSC.

The Roundup regrets the error.

Videos discuss safety reporting

Those concerned about a safety problem in their area, but not sure what to do about it will receive some guidance from a special video airing on the JSC Television System next week.

Safety officials believe employee involvement in reporting workplace hazards improve safety in the workplace.

The NASA Safety Reporting System is a headquarters-level reporting channel. After going through channels at the center-level, the NSRS is an anonymous system that allows safety concerns to be elevated to headquarters.

The one-hour program, scheduled to air at 10 a.m. and 2 p.m. Sept. 14, 15 and 16 on Channel 3, will discuss the safety reporting channels at JSC and about the NSRS.

Also featured is Astronaut John Blaha discussing safety issues.

Supervisors are encouraged to allow time for employees to view the program.