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

Moving forward

JSC and the Texas Medical Center are ready for another 30 years of close cooperation in medical research. Part 2 on Page 3.

JSC Metric

Write metric

It won't be long before JSC employees have to start writing as well as thinking metric. Story on Page 4.

Space News Roundup

Vol. 31 August 14, 1992 No. 32

Water tank gets environmentally safe paint job

The 240,000-gallon elevated water storage tank north of Bldg. 24 is going to get a new coat of paint starting Monday, but this time it won't be as easy as it has been in the past.

The 163-foot tank, which holds potable water, was last painted about 10 years ago — but that was before consideration for the environment was given such a high priority.

This time, a partial shroud will cover the work area while the old paint is removed and a new primer coat is applied almost simultaneously. A special process called vacuum blasting will use a magnetic hood to maintain contact with the side of the tank while steel grit blasts the old paint away and a powerful vacuum removes paint chips and the grit. The paint chips and grit will be separated, with the grit being reused and the paint collected and disposed of properly.

After the old paint is removed and a new coat of zinc-based primer is sprayed on, the painting subcontractor will roll on a two new coats of aluminum gray exterior paint.

Earthwatch

"We've painted the tank before, but not with the restrictions that this job is being done under," said Pat Kolkmeier, technical monitor for the Maintenance and Operations Support Contract. "The environment regulations have gotten a lot stricter over the past 10 years."

Subcontractor Don Owen Industrial Painting and Coatings Inc., Dallas, and Johnson Controls, JSC's maintenance support contractor, have worked closely with Kolkmeier and JSC Environmental Specialists Jo Kines and Liz Messenger to ensure that the process is as safe for the environment as possible. They're also working with representatives from Kelsey Seybold to make sure that the workmen and passers-by are kept safe from any harmful materials.

Texas Air Control Board regulations require that paint containing lead — the old paint on the tank contains 0.5 percent lead — must be removed with techniques that protect human health and the environment. In addition, the center is doing its best to make sure none of the overspray from the primer makes it onto buildings or cars.

The job is expected to take between 45 to 60 days to complete, depending on the number of rainy days, Kolkmeier said, and the new paint job should have a life of 10 and 15 years,

ISD works to improve processes

The Information Systems Directorate has taken the first step in a two-phase reorganization that is designed to improve its ability to help the center make the most of its information resources.

Arnold

The first phase of the reorganization establishes a senior position of assistant director for information technology and a new Information Resources Management Division. The second part of the refit should be complete in several months.

"This reorganization is one of the key elements, along with redesigned processes and a new support contract structure, in our attempt to completely reengineer how ISD does business in order to increase the return on investment the center makes in information technology," said ISD Director Ronald Berry. "Next year, when all of the reengineered components are in place, we should see significant improvements in the planning, development and delivery of information technology services at JSC."

Cools

John R. Arnold, formerly assistant to the director for engineering, becomes the assistant director for information technology, responsible for the day-to-day directorate-level management of ISD's development and services activities.

Please see **ISD**, Page 4

JSC Photo by Jack Jacob

STS-46 Payload Specialist Franco Malerba gets a big hug from his son, Mario, and wife, Michele, during welcome home ceremonies for the STS-46 crew at Ellington Field on Saturday. In the background are Mission Specialist Franklin Chang-Diaz and JSC Acting Director Paul J. Weitz.

Spirit powers STS-46 team

Crew applauds training, cooperation

By Kari Fluegel

Bells and trumpets greeted the seven returning astronauts Saturday as the STS-46 crew returned to Houston following its eight-day flight.

JSC Director Aaron Cohen welcomed the crew members horne and thanked them for the professionalism they demonstrated during the mission that included the deployment of the European Space Agency's European Retrievable Carrier and the test of the Italian Tethered Satellite System.

"You trained hard and in your flight you proved many aspects of engineering and physics," Cohen said. "We also learned that we have many things to understand from ground environment design to space design."

Commander Loren Shriver said it was probably impossible to thank all the people who contributed to the success of STS-46, but he started by thanking his crew, families, planners and trainers.

"For a couple of years we kind of had a second home in the SMS fixed base here at JSC and I know there are some times when it seemed a little excessive, but along about four or five days ago, let me assure you, there was not a minute of that time was wasted in the simulator," Shriver said.

"I think every hour that you drilled into us about what the tether can do and can't do and what the satellite can do and can't do and during me pounding my fist on the desk and saying it can't do that, it's physically impossible, I

Please see **STS-46**, Page 4

Spacelab-J worldwide in character

By James Hartsfield

The 50th shuttle crew — with its international membership and international cargo — Monday characterized its upcoming flight as another precursor to the worldwide cooperation to come in Space Station *Freedom*.

The seven-person STS-47 crew will conduct operations in the first Japanese-United States cooperative shuttle flight, Spacelab-J, currently planned for a Sept. 11 launch.

STS-47 GIBSON APT BROWN LEE DAVIS JEMISON MOHRI ENDEAVOUR

Commanding STS-47 will be Robert "Hoot" Gibson, with Curtis Brown serving as pilot. Jay Apt will be flight engineer and mission specialists include Mark Lee, payload commander, Jan Davis and Mae Jemison. Mamoru Mohri, a Japanese space agency astronaut, will be a payload specialist.

The crew will work in two 12-hour shifts during the flight to provide around-the-clock operations with 44 experiments in the Spacelab, 34 of them proposed and developed by Japanese scientists. Investigations will range from life sciences studies on the effects of weightlessness on humans, fish, chicken eggs and plant and animal cells to crystal growth and materials processing experiments, Mohri said.

In the cargo bay, Get Away Special canisters will contain experiments from France, Canada, Sweden, England and the U.S., Apt said.

"That makes a total of six countries represented on this flight," Apt added. "We're very excited about that because we think that's just the way the future is going to go for Space Station *Freedom*."

Endeavour is scheduled to be rolled over to the VAB early Monday to be mated with the fuel tank and solid rockets for STS-47. *Endeavour* is expected to be rolled to the launch pad about a week after it arrives in the VAB.

This week, technicians stowed *Endeavour*'s dish antenna used for high-data rate and television transmissions, made a final inspection of the cargo bay and

Please see **SPACELAB-J**, Page 4

JSC experts to help NASA, DOE cooperate

By Kelly Humphries

Four current and former JSC experts have been assigned to a senior management review group that will facilitate cooperation between NASA and the Department of Energy on space-related activities.

NASA Administrator Daniel Goldin assigned Jay Greene, deputy associate administrator of the Office of Exploration; Douglas Cooke, manager of the Exploration Programs Office; Dr. Donald Robbins, deputy director of Space and Life Sciences; and Mary Cleave, deputy project manager for Sea Viewing Wide Field Sensors at Goddard Space Flight Center, to the group this month.

Also assigned to the group were Dr. Kristin Hessenius, director of aeronautical research in the Headquarters Office of Aeronautics and Space Technology; Sam Armstrong, NASA associate administrator for human resources and education, and Richard Joseph.

Each will co-chair a joint team looking into one of seven prospective cooperation areas. The leaders met last week in Washington, D.C., and are now putting together their teams, drawing expertise from throughout both agencies to assess the possibilities for cooperation. A report is expected to be completed by Sept. 15.

Greene will co-chair the team on space nuclear power and propulsion with DOE's Alan Newhouse. The team will define options for a small, lightweight space nuclear reactor program for space, and lunar and planetary surface applications.

Cooke will co-chair the team on precursor space exploration missions with DOE's Dr. Everet Beckner. The exploration team will develop a joint small satellite program for exploring the Moon and planets, and, if possible, returning samples.

Robbins will co-chair the space radiation effects research team with Dr. Robert Wood. The team will develop a joint research program that includes construction of an experimental facility at the Brookhaven National Laboratory

Cleave, a former astronaut who left JSC last year, will co-chair the team on international space activities. The team will assess the impact of United Nations guidelines on the future use of nuclear power resources in space, and establish a process for assessing the application of foreign space technology to NASA and DOE space-related activities.

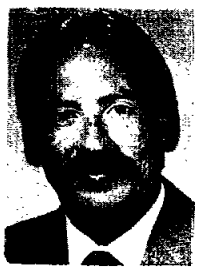
Joseph will co-chair the team on space-based remote sensing with Dr. Ari Patrinos. That team will define a joint technology development and demonstration program to lower the cost and improve the performance of sensors, and investigate remote sensing technologies

Please see **DOE**, Page 4

Robbins

Greene

Cleave



Cooke

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.

Metro passes, books, tickets available throughout August.

Fiesta Texas Park (San Antonio): 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.

Astroworld, $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: Lovin' Feelings Concert (7:30 p.m. Sept. 26, Summit): tickets on sale Aug. 31.

JSC

Gilruth Center News

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

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. Aug. 27. Preregistration is required; cost is $5.

Defensive driving — Course is offered from 8 a.m.-5 p.m. Aug. 29. 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 beginning Aug. 19. Cost is $24.

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

Ballroom dance — Ballroom dance lessons for beginners will be offered from 7-8:15 p.m. Thursdays beginning Aug. 13. Advanced classes will be from 8:15-9:30 p.m. Cost is $60 per couple.

Softball tournament — The Summer Sizzler Men's Open "C" Softball Tournament will be Aug. 22-23 at the Gilruth. Entry fee is $95; deadline is 7 p.m. Aug. 20.

Flag football — Officials are needed to work flag football games during the fall season. For details, call the Gilruth at x30304.

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

JSC

Dates & Data

Today

Cafeteria menu — Special: meat sauce and spaghetti. Entrees: baked scrod, liver and onions, fried shrimp. Soup: seafood gumbo. Vegetables: green beans, buttered broccoli, whipped potatoes.

Monday

UNIX meeting — The JSC UNIX Systems Administration Group will meet at 2 p.m. Aug. 17 in Bldg. 12, Rm. 256. Emily Lonsford of MITRE will discuss "UNIX Security." For more information, call Mark Hutchison, x31141.

Cafeteria menu — Special: wieners with baked beans. Entrees: beef chop suey, breaded cutlet with cream gravy, grilled ham steak. Soup: beef and barley. Vegetables: buttered rice, Brussels sprouts, whipped potatoes.

Tuesday

Expert systems workshop — JSC's Software Technology Branch and IBM Corp. are sponsoring a series of workshops on verification and validation of knowledge-based systems at the Gilruth Center. The next workshops will be from 8 a.m.-4:30 p.m. Aug. 18, 20, 25 and 27. For more information, call Chris Culbert, 283-8080; Bebe Ly, 283-8072; David Hamilton, 282-3857; or Scott French, 282-8346.

Cafeteria menu — Special: pepper steak. Entrees: fried shrimp, pork chop with applesauce, turkey a la king. Soup: celery. Vegetables: au gratin potatoes, breaded squash, buttered spinach.

Wednesday

Toastmasters meet — The Spaceland Toastmasters Club will meet at 7:15 a.m. Aug. 19 in the Bldg. 3 cafeteria. For more information, call Darrell Boyd at x36803.

Astronomy Seminar — The JSC Astronomy Seminars will present a videotape of "Astrophysical Properties of Jupiter" with Dr. A.J. Dessler will be shown at noon Aug. 19 in Bldg. 31, Room 129. For more information, contact Al Jackson at 333-7679.

Cafeteria menu — Special: Mexican dinner. Entrees: fried catfish with hush puppies, braised beef ribs. Soup: seafood gumbo. Vegetables: Spanish rice, ranch beans, buttered peas.

Thursday

Bowling league — An organizational meeting for the JSC Men's Bowling League is planned Aug. 20 at Alpha Bowl. Bowling season starts Aug. 27 and ends May 20, 1993. Five-man teams will bowl at 6 p.m. Thursdays. For details, call Roy Hatch at x32158.

Cafeteria menu — Special: hamburger steak with onion gravy. Entrees: corned beef with cabbage and new potatoes, chicken and dumplings, tamales with chili. Soup: split pea. Vegetables: navy beans, buttered cabbage, green beans.

Aug. 21

Cafeteria menu — Special: barbecue link. Entrees: deviled crabs, broiled codfish, liver and onions. Soup: seafood gumbo. Vegetables: buttered corn, green beans, new potatoes.

Aug. 25

BMC meets — The Bendix Field Engineering Corp. Management Club will host an open house meeting at 4 p.m. Aug. 25 at the Gilruth Center. For more information, call Jerry Stoner at 282-3862.

Aug. 26

Astronomy seminar — JSC Astronomy Seminar will be held from noon to 1 p.m. Aug. 26 in Bldg. 31, Room 129. For more information, contact Al Jackson at 333-7679.

Aug. 27

Metric courses — The JSC Metrication Committee and the Human Resources Development Branch are sponsoring several courses on using the metric system of measurement and writing with it. A three-day course for engineers, designers and technical/fabrication workers will be offered 8 a.m.-4:30 p.m. Aug. 24-26 at One Harbour Square on FM 2094. Two half-day courses designed for secretaries on rules for writing in metric parlance will be offered from 8:30 a.m.-noon and 1-4:30 p.m. Aug. 27 at One Harbour Square. For more information, call Glen Van Zandt at x33069.

Aug. 29

LLTV reunion — The Apollo Program Lunar Landing Training Vehicle Project will commemorate its 20-year anniversary with a reunion at 6 p.m. Aug. 29 at the Gilruth Center. All former LLTV team members and their guests are invited. Cost is $10 per person for food; reservations are required. For more information, call Herb Noakes at x34325, Peggy Zahler at x35511 or Ron Blilie at 244-3917.

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 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

Sale: Nassau Bay TH, 2-story, 2-2.5, FPL, patio, pool, ceiling fans, $75K. 333-9733.

Lease: Camino South, 3-2-2, fenced, avail late Aug, $795. x36212 or 286-1826.

Sale/Lease: Dickinson, 3-2-2, cathedral ceilings, lrg master BR, fenced, ktichen appl, assumable. 538-1217.

Rent: TLV 1 BR furn efficiency on waterfront, paid util, lease, ref, $425/mo. x32799 or 532-1725.

Sale: French Country Estate, 4-3.5-3D, spacious, located on 5.25 acre, $365K. x39250 or 996-8471.

Sale: Dickinson, 3-2.5 on 2 acres, $74.9K. Rick, x32695 or 559-2735.

Sale: 1/2 acre lot near Alvin High School, $18K. Bob, 283-5340.

Rent: Galv beach house, D/W, cent air, furn. Ed Shumilak, x37686.

Lease: Heritage Park, 4-2-2, ceiling fans, split BR, fenced, new paint in/out, $725/mo. 482-6609.

Sale: Pearland, 3-2-2, new appl, 1700 sq ft, 5 yr old roof/ac, open design, ceiling fans, microwave, $66.5K. x34771 or 480-9036.

Sale: Webster, 3-2-2, dishwasher, carpet, wet bar, new tiled hall/bathroom, new kitchen floor, ceiling fans, FPL, $79.9K. x34771 or 480-9036.

Sale: Pipers Meadow, 3-2.5-2, contemporary, formal living/dining, FPL, loft, master BR dwn, ceiling fans, deck, 2070 sq ft, $90K. Dennis, x34405 or 532-3312.

Rent: Galv condo, furn, sleeps 6, Seawall Blvd & 61st St, W/D rates. Magdi Yassa, 333-4760 or 486-0788.

Cars & Trucks

'71 Ford Explorer PU, good tires, needs some work, $800 OBO. Elaine, x33810 or 334-3398.

'87 BMW 325, low miles, new tries, brakes, batt, ex cond. x38947.

'59 Chevy PU, $950; '80 Chevy Van, $1.5K. 334-2335.

'84 Dodge Ram 1/2 ton PU, good tires, good cond, $2.5K. 282-3095.

'75 Chev Camaro, 350 eng, runs good, $850 OBO. Terry, 282-4777 or 474-5639.

'76 Plymouth Duster, mech restored, body/paint restoration, complete maint records, some parts w/warranties, $1.5K. x32799 or 532-1725.

'81 Chevy Citation, V6, silver/maroon, AC, auto, PS/PB, 119K mi, runs good, first $750. x39250 or 996-8471.

'84 Honda Accord LX, 3 DR hatchback, 5 spd, AC, AM/FM/cass, pwr steering, cruise, shop manual, good cond, $2K. Joe, 282-4845 or 286-8708.

'85 Honda CRX, 5 spd, AC, AM/FM/cass, new tires/brakes, 80K mi, ex cond. Larry, x33168 or 488-7460.

'78 Buick Century, 4 DR, one owner, good cond, $650. 488-5091.

'91 Chev Corsica, 24K mi, 4 DR, tilt, cruise, locks, AM/FM/cass, warranty, $8450 OBO. Ron, x34713 or 333-2273.

'84 Cadillac El Dorado, all pwr, AC, AM/FM/cass, leather seats, good cond, $4850 negotiable. Larry, x31794 or 481-9058.

'85 CJ7 Laredo Jeep, new paint, AC, 6 cyl, 5 spd, 86K mi, $6.5K; '89 Kawasaki Ninja 600, needs front colwing, $1K OBO. x35107 or 474-4742.

'64 VW Beetle, $1.8K; '67 VW Ghia, $2K. Jack, x31213 or 488-4019.

'83 Celica GT, loaded, needs eng work, good cond, $2.4K. Brian, 474-3553.

'84 Rabbit GL, 4 DR, auto, AC, PS/PB, runs, needs eng work, new radiator, starter, batt, transmission rebuilt, body in good cond, $450. Dean, 286-1143.

Dodge Colt Vista, well maintained, good cond, $1950 OBO. x35159 or 486-5247.

'81 Toyota Corolla SR5, 5 spd, AM/FM/cass, AC, runs great, $1.2K. Scott, 333-6333 or 337-2693.

'79 Chevy Impala, runs well, $700 OBO. Leah, x38687.

'91 Eagle Talon TSI AWD, records avail, ex cond, all options, $15K. David, 280-8693.

'90 Eagle Talon TSI, all wheel drive, turbo, AC, PS, AM/FM/cass, pwr windows/locks, $13.5K. 532-2059.

'90 Ford Probe LX, V6, pwr seats/locks/windows, AM/FM/cass, 5 spd, digital dash, trip computer, 35K mi, $10K. 286-1833.

Boats & Planes

15' boat w/trlr, 55 HP Chrysler O/B. 334-2335.

Connelly slalom SE wingtail/graphite waterskies, ex cond, $100; EP ST-360 trickski, ex cond, $50, both $135. John, x38178 or 482-5837.

17 Pitch, alum, prop, for 50-130 HP, outbd MerCruiser, $50. x35178 or 944-2391.

S-2 Tiara 2600 Cuddy Cabin, twin 150 HP Yamaha, gen, AC, auto pilot, loaded w/3 axle trlr, ex cond, $40K. x30378 or 333-3876.

16' Windmill, all wood, refinished, trlr, mainsail, jib, $700. Scott, 333-6333 or 337-2693.

'87 SeaRay Seville, OMC Cobra 130 I/O, Shorelander trlr w/chrome rims, ss prop, approx 60 hrs, ex cond, $6.5K OBO. Keith, x35191 or 332-5170.

'90 Kawasaki 650SX jet ski, incl ShoreLander trlr/cover, $3750. Brian/Lynda, 480-8357 or 534-2269.

6'3" Bessell Thruster surfboards, 2, good cond, $175; 6'0" Maxwell, fair cond, $100. Billy, x31339 or 286-5219.

17' polyurethane Coleman canoe, $250. Collins, 283-9323.

Cycles

Schwinn Sierra moutain bike, 15 spd, Shimano components, good cond, $300 OBO. Allen, x31188.

'90 Cannondale OM-1000 mtn bike, blk, needs front wheel/tire, 20", $250. 334-6725.

Racing go-kart, with starter, helmet, neck brace, gasoline jub, $1.5K OBO. Leti/John x36502 or 481-8858.

'89 Kawasaki EX 500, 6K mi, ex cond, $2.1K. Mike, 283-6100 or 332-5776.

'79 Suzuki GS550, 13K mi, runs well, $450. Mike, x34378 or 486-4983.

Audiovisual & Computers

Flight Simulator software for IBM comp, Falcon 3.0, A-10 Tank Killer, Aces at the Pacific, all complete, best offer. Mike, x38101 or 480-9414.

Genesis games $20, or trade. Fred, 485-1015.

Toshiba T1000 laptop computer, $400. x49667.

80386 computer, clone, 25 MHz, 80 MB HD, 5.25 FD, super VGA, DOS 5.0, 101 key keyboard some software, $900 OBO. 283-4286 or 480-9414.

Sega Genesis system w/2 control pads, 3 game cartridges, $115 OBO. Johnny or Daniel, 488-7489.

Realistic SCR-3010 AM/FM digital stereo/cass home receiver, ex cond, $50. David, 335-2482 or 335-1115.

Macintosh Classic, 4 MB, 40 MB HD, documentation, $850. Chuck, 283-5362 or 480-8452.

Pets & Livestock

Parakeets, home raised, blue & aqua marine, $5/ea. x32767 or 532-1725.

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

AKC chihuahua pups, fawn/chocolate, 2 males, 1 female, $200 cash. 534-3893.

Free 8 week old kittens. Collene, 480-5430.

Musical Intstruments

King trombone/case kit, good cond, $200. 486-7245.

Two keyboard console organ, needs work, $200. x36552.

Coronet King 603 w/case, mute, metronome, $200. Richard, 283-5430.

5 pc Fibes drum set w/stands, blk 24" Boss, 13", 14, 18" toms plus snare, good cond, $500. 482-6991.

Bach Silver Stradivanus Trumpet, Model 37, ex cond, $700. Kathy, x39190 or 332-6305.

Household

Handy ext. table, folds into sideboard/storage unit, $120. 333-9733.

Refrig, 20+ cu ft top freezer, $145; queensize waterbed, waveless, w/heater, liner, $100; Ruger mod. 77 30.06 rifle, Tasco 3 x 9 scope, refin. stock, $299, reloads, 30.06, $4-5 box. x36212 or 286-1825.

Danish modern couch, 6' long, blue, $50 OBO. 488-3545.

Dark green sofa, good cond, $130. Joanne, 283-5683 or 474-3517.

Solid wood student desk/chair, $200; beige loveseat, $100; oak table w/4 chairs, $200; antique white dresser, $100; matching vanity table, $75; VOIT stationary airbike, $150; all ex cond. 334-5291.

Overstuffed chair, gray velvet, good cond, $75 OBO. 538-3320.

Twin bed, $30; kitchen dinette set, $75 OBO; antique-like chandelier, $30. x32202 or 334-4211.

Waveless waterbed, dark wood frame, headboard, incl extra heater, comforters, sheets, ex cond, $250 OBO. Arny, 244-5576 or 286-3446.

CA king sz matt w/box springs, ex cond, $400. x32767 or 532-1725.

Twin bed w/matt/boxsprings, hdbd/ftbd, $95; wooden hall tree, $15. 244-5035 or 334-4124.

King sz waterbed, hdbd, heater, double set of drwrs, $165; Sears exercise bike, $25. 333-7170 or 409-938-3334.

LR loveseat, 2 chairs w/hassocks; glass-woodbras end tables & coffee table; sofa bed, lamps, triple dresser w/attached mirrors; desk, queen sz BR w/double dresser, nighttable; will accept best reasonable offer. Estelle, x31203 or 334-3667.

Gas dryer, 2 yrs old, $125; nonworking elec dryer, $20. Laura, x39434 or 474-2771.

Gray metal desk, $25; Ethan Allen sleeper sofa, $400; entertainment center cabinet, $200; Kenmore washer/dryer, $50/ea. 332-2089 or 282-4057.

Loveseat, tan fabric, 58" w by 32" deep, 7 yrs old, fair cond, $75. 286-5431.

Handsewn quilts, 60-75 yrs old. 482-9396.

Super twin sz waterbed complete w/heater, 3 padded rails, hdbd w/bookshelf, $275. Tom, x31710 or 538-1581.

Beige couch/loveseat, 8 yrs old, $100. x32168 or 474-7982.

32" wide wht storm dr, $50; 28" round 18" hi decorative table, $15; set of magnalite cookware, $45; alum 48" sliding screen dr, $15. 480-3424.

Glass top table, 60" x 36", w/brass base. 4 chairs, rock/swivel, ex cond, $250. 488-1051.

Two king sz waterbeds w/drwrs underneath, $100/ea. x37103 or 996-8425.

Solid dark blue 8 pc sectional sofa, good cond, $75. x39143 or 538-2067.

Wards upright vacuum, $35; 42" round dining table w/17" leaf, 4 chairs, $65; triple dresser w/mirror, $75; loveseat, $75. 482-7019.

Full sz bed matt, box springs, hdbd, ftbd, $40. x35785 or 280-8394.

LR set; sofa, chair, ottoman, coffe table, end table, 2 lamps, $250 OBO; dog pen 6x3x6 w/wood floor, wood roof, $50. x33814 or 486-9760.

Brown sofa, loveseat, chair, good cond, $150. John, x34390 or 282-3540.

Wanted

Want Bay Area Aero Club members for students or exp pilots. Earle, 283-5408.

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

Want patches from NASA and other space related organizations, old, new, unique, rare, will buy or trade. Andrew, 280-0647.

Want used, matching baby crib/dresser, changing table, ex cond. Janet, 335-2410 or 487-5267.

Want 12" G.I. Joe dolls and outfits. Don, x38606.

Want bicycle helmet for 5 yr old child. x38129.

Want roommate to share 2-2, W/D, sec gates, alarm, ceiling fans, appl, nonsmoker, no dogs, $315/mo. 238-5751.

Want generator in the 1 to 2.5 kilowatt range. Roy, x34094 or 488-6326.

Want childcare for 2 boys, ages 4 and 1.5, flex arrangements, approx 30 hrs/wk. Jonica Mangieri, 326-1192 or 335-2888.

Want to start vanpool from Baytown to JSC/Rockwell, hrs 7:15-4:00. Alma, 282-4940.

Want vanpool riders to NASA/contractors from S. Braeswood, S. Post Oak. Richard, x37557.

Want riders for vanpool from Westloop Park & Ride, 610 and Braeswood to NASA. June, x35585.

Miscellaneous

S&W .357 mag, 4" barrel nickle, target grips, adjustable target sights, $270 firm. Jim, 991-0533.

Riding mower, 8 HP, 38" cut, $275. 334-2335.

Texas Fiesta tickets, 1 adult, $19.50; 2 children, $15/ea, good until Nov. 8. Lam, x37223 or 280-9880.

Tuperware; remote control XCEll-60 helicopter w/Enya eng, assembled, $600. 480-3424.

Honda FTS500 motorcycle eng, needs work, can be used for parts, $15. Terry, 282-4777 or 474-5639.

Time Life Library of Photography, $70; Brittanica Great Works, 54 classics, golf leaf, $200; men's 14k gold wedding band, $30, variety of technical books, best offer. 282-4878 or 326-1837.

Two roundtrip tickets from Houston to England on British Airways, nonrestrictive, good thrugh 92. 334-2965.

Free Shuttle patches and decals to anyone who would like them. Andrew, 280-0647.

Futon bed, $150; Continental Airlines Gift Certificate, $25 off RTT costing, $200-$349 or $50 off RTT costing, $350, asking $10. Maureen, 333-4845.

Sm breakfast dinette set, 36" pedestal w/dropleaf sides, $75; exercise bike, $75; lg parrot cage w/access, $50; t-stand for parrot, $40; all in good cond. Betty, x37242 or 991-4825.

Keyboards, $75; Canon T-50, $150; Raleigh Beach Cruiser, $200; softside life support queen sz waterbed, $400, Nintendo w/8 tapes/case, $100; alloy rims for '87-'88 Maxima and '92 Accord. Tamara, 282-4455.

Car bra cover will fit '82-'83 Celica, $40. 486-1102.

Two BR condo, Kissimmee, Florida, sleeps 4, lg kitchen, dishwasher, W/D, 2 nights/3 days, rental good thru October 1, 1992, will sell for best cash offer, not a timeshare; RCA console color stereo tv, 27" screen, best cash offer over $400; black velvet & hot pink after 5 dress, sz 5, $75; pink, floor length after 5 dress, sz 5-7, $75; Kenmore floor cleaner/polisher, $125. Diane, 283-5618.

China, 3 boxed sets for 4 persons, $30/set or $75 for all, elec typewriter, $25; felt mexican hat, $2.00; kangaroo rug, 2'x3', $5.00. Nina, x31612 or 488-0664.

Professional Weider gym bench, complete w/110 lbs of weights, $130 OBO. Larry, x33168 or 488-7460.

Little Tykes play kitchen w/sink, micro, oven, good cond, $10. 282-4078.

4 lots, Cedar Pt. Lake Livingston, $20K; 17 ft Scotty travel trlr, sleeps 6, $1.5K; 15 ft bass boat, 50 HP, Mercury & trlr, $1.2K; 16' x 80' fleetwood mobile home, 3-2, $17K. 477-5958.

Satin/lace tea-length evening dress, sz 3-4, $60. Linda, 244-9658 or 486-6873.

Little Tykes activity gym, $75; Hirsch saw guide, $20. x39588 or 487-1883.

Hillary 3 man dome tent w/rain cover, $125; Ektlon GRC 3000 raquetball racket w/cover, $50. 996-1427 or 480-0223.

8' pool table w/balls, $150 OBO. 474-4742.

Glass jalousie windows, 7 @ 36 x 60", 3 @ 29 1/2 x 60", 1 @ 25 1/2 x 60", $60/ea, all for $550. 554-7083.

26" tv w/VCR, $400; microwave, $50; elec typewriter, $30; vacuum, $40; sofa w/coffee table, $300; dresser w/mirrow, $25; chests, $10-$25; writing desk, $20; lawnmower, $150; wood trimmer, $35, 2 full matt/w frame/hdbd, $40-$120.; wheel barrel, $20; fertilizer sprinkler, $15. Jonas, x36199 or 486-6073.

Litton microwave, $50; 2 shelf microwave stand, $35; ansaphone answering machine, $35. 482-7019.

Tool box for mid-sz truck, plastic, blk w/lock, $100; bowling ball, blue hammer, 14 lbs w/Columbia dual bag, $120. Youm, 283-4813.

Tunturi variable resistance stair climber w/computerized monitor, ex cond, $70; Sears Lifestyler 2200 multiaction rower, manual, fintness prog, good cond, $50; both for $100. Fran, 282-5266 or 922-7329.

Engagement ring, 18 k yellow gold, round dia solitaire, .68 carats w/6 round dia, .18 carats, $1K. x30874.

Putter, Tommy Armour Zapp, 6 mo, $45. x36324.

'71, 300 cu Ford 6 eng, 500 mi on overhaul, 4-bbl intake, headers, $900; '70, 170 cu Ford 6 eng, hi mi, ran, $75; '85 Chry leather seats, 2, $325/mo. 482-9681.

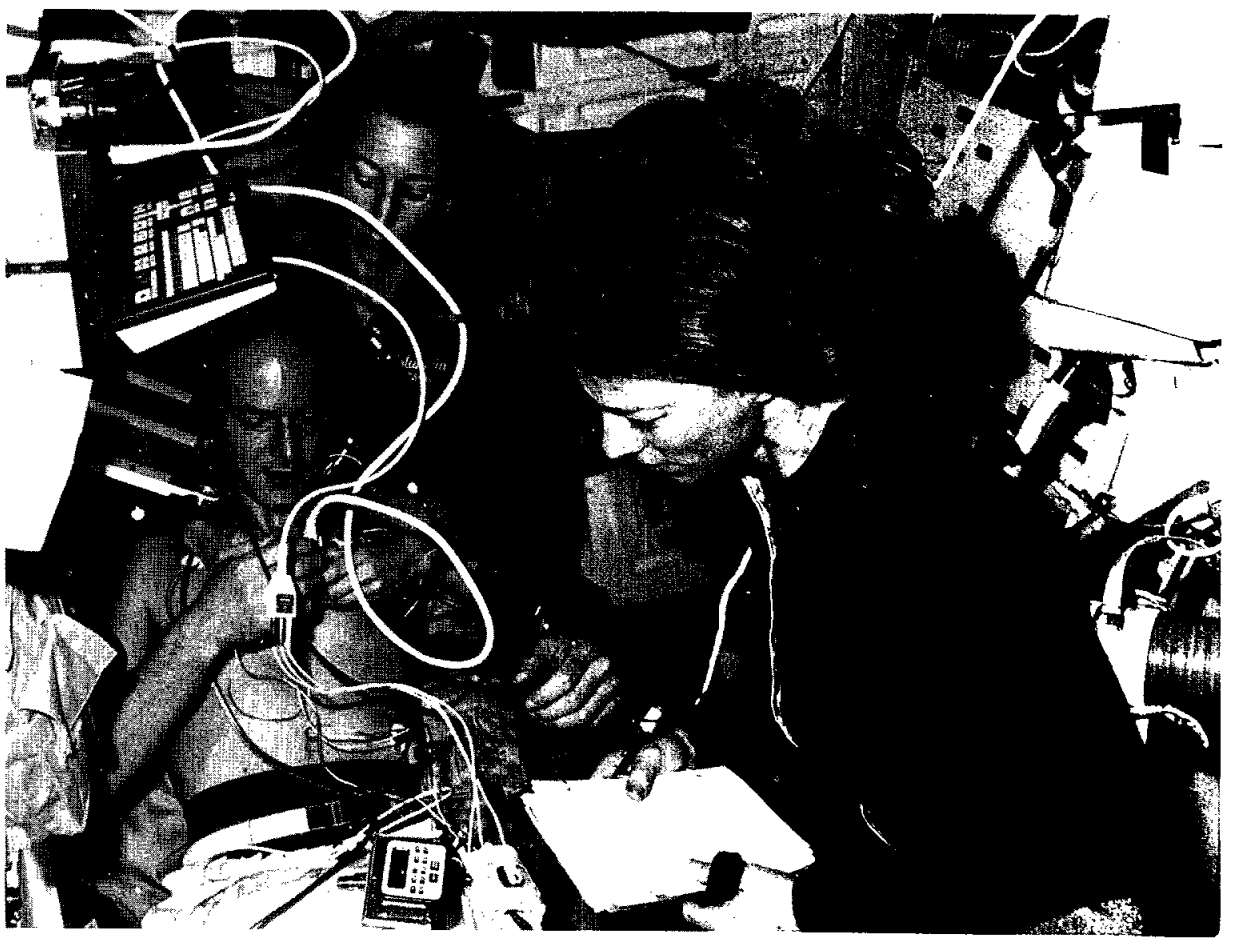
Southwest Airlines roundtrip ticket to anywhere in US, must be used by 5-31-93, best offer. x31497 or 554-4215.

Amber necklace. 538-1599.

Close Cooperation

NASA, Texas Medical Center poised to blaze new medical trails in disease prevention, treatment

[Editor's note: NASA's exhibit at the Republican National Convention in Houston's Astrodome will focus on the 30-year cooperative effort by JSC and the Texas Medical Center. This is the last installment of a two-part article by the managing editor of Texas Medical Center News that details the history of that cooperation, which has been an important asset in NASA's efforts to put humans to work in space and in TMC's work to develop dramatic advancements in heath care and medicine.]



By Rosanne Clark

Today, research being conducted aboard the space shuttle and ground-based laboratories to prepare humans for longer missions in space is expected to lead to an even greater understanding of health and disease here on Earth.

As Dr. Lawrence Dietlein, JSC's assistant director for Life Sciences, points out, "Examining the effects of zero-gravity on the human musculoskeletal, cardiovascular and neurophysiological systems is giving us data that could help improve the therapy for such vexing and serious problems as osteoporosis, orthostatic hypotension and neurovestibular/muscular disease states."

Osteoporosis, or loss of skeletal (bone) mass, is a phenomenon of the aging process that results in considerable disability and death in the elderly. Some 35 percent of skeletal mass is lost by age 70; in postmenopausal women, this loss is further increased by 28.4 percent. Because space accelerates the loss of bone mass by about 10 times the amount on Earth, microgravity is offering medical researchers like Dr. Adrian LeBlanc at Baylor College of Medicine and Dr. Victor Schneider at the University of Texas Medical School at Houston the opportunity to study this disease-producing process at a faster rate. It is also allowing them to explore preventive measures, such as exercise or drug therapy, with greater efficiency.

"We are interested in prevention," said LeBlanc, who is also exploring the use of magnetic resonance imaging to measure bone loss and physiological changes that occur within the bone. "If we can develop effective countermeasures for space flight, it's quite possible they will be effective for treating the clinical disease of osteoporosis. If nothing else, we'll be able to define the role exercise or lack of exercise has in the development of the disease."

Studies concerning why muscles atrophy in zero-gravity — like those being conducted by Dr. Frank Booth of the University of Texas Medical School at Houston — may provide a better understanding of other human muscular and neuromuscular disorders here on Earth.

As Booth points out, "Our space studies (which involve the use of exercise to prevent muscle atrophy in space) have opened up new avenues for studying ways to reverse the muscle loss that occurs with aging and to more effectively treat muscle-related diseases like muscular dystrophy."

The astronauts' tendency to faint following space missions is providing Dr. Carolyn Huntoon, director of space and life sciences at JSC, and Dr. Clarence Alfrey, medical director of the Gulf Coast Regional Blood Center and co-director of the hematology lab at Methodist Hospital, the impetus to investigate the impact of microgravity on red blood cell production. Searching for clues as to why the body "shuts off" the production of red blood cells in space, the two recently collaborated in an experiment that measured the red blood cells of four *Columbia* astronauts a few days before, during and following their June 1991 mission aboard the dedicated Life Sciences Spacelab (SLS-1); they will be continuing his study during a second mission, SLS-2, planned for 1993.

Alfrey said he believes the opportunity to study people in space is a "valuable adjunct" to understanding how the production of cells is controlled on Earth and could lead to a better understanding of and treatments for such diseases as megaloblastic anemia and certain types of leukemia.

For many years, Huntoon and Dr. Wadi Suki of Baylor College of Medicine have been investigating the endocrine control mechanisms of fluid and electrolytes in space, as well as renal hemodynamics (the regulation of the amount of urine excreted due to renal blood vessel activity). In the recent SLS-1 flight, their efforts culminated in important experiments that measured various aspects of renal function for the first time in space.

The most recent impetus for deriving medical benefits from space is the use of microgravity to advance various biotechnologies. The growth of large, well-formed protein crystals in space, for example, will enable scientists to develop new "designer" pharmaceuticals that could be more effective in deactivating enzymes and preventing viral spread.

On a recent *Columbia* mission, for example, astronauts actually initiated and monitored the growth of HIV-1 protease, a chemical substance involved in the transmission of AIDS. They also grew a number of other protein crystals on their flight that have potential applications in the treatment of leukemia, liver disease, high blood pressure, diabetes, and even a form of cancer found in dogs.

Another aspect of space research with exciting potential here on Earth involves a revolutionary new insight into how cells grow and replicate. Today's scientists — in their efforts to understand the human body — are limited to a two-dimensional understanding of how cells grow and replicate in the body. That is, they are limited as to how those cells can be grown in a petri dish, or by the laborious process involved during taking skin samples and growing new skin for burn patients. Now, thanks to a new device called a rotating-wall vessel or bioreactor that mimics some of the conditions of microgravity, scientists are beginning to learn how to grow cells as the body grows them — in three dimensions — in the form of tissue, rather than simply an agglomeration of cells.

The bioreactor was originally developed at JSC by a team led by Dr. David Wolf, now an astronaut, with the help of Dr. J. Milburn Jessup, formerly of the University of Texas M. D. Anderson Cancer Center, as a tool for emulating conditions aboard Space Station *Freedom*. Even though the space station is several years off, the bioreactor is already helping scientists pioneer research in lung and small intestinal development, skin and cartilage growth, colon cancer proliferation and brain tumor therapeutics.

Dr. Philip C. Johnson III of the University of Texas Medical School at Houston is currently using the bioreactor to grow the Norwalk virus, which causes gastroenteritis, a leading cause of death in children of Third World countries.

Some day it is even envisioned that the bioreactor could be used to grow and develop tissues for transplantation.

Dr. Charles A. LeMaistre, president and chief executive officer of M. D. Anderson, points to at least two areas where NASA scientists and cancer researchers can work together in the future: understanding what is happening to the ozone layer so that the "soaring" epidemic of skin cancer caused by exposure to UV-B radiation can be stemmed and understanding why humans living in isolation in space experience immune dysfunction. Both could lead to important clues about how cancer develops.

M.D. Anderson's first experiment in space, which will be carried on board STS-54, is designed to study the concept of failed immunity that can lead to cancer when lymphocytes lose their ability to reject invading malignant cells. Principal investigator is Dr. Neal Pellis.

Another area with major medical applications is robotics technology. NASA's research into the development of remote manipulation devices which can better simulate the "feel" of a human hand (and thus make it easier for astronauts to recapture and repair satellites) has direct applications to the development of prosthetic devices for individuals on Earth with disabilities.

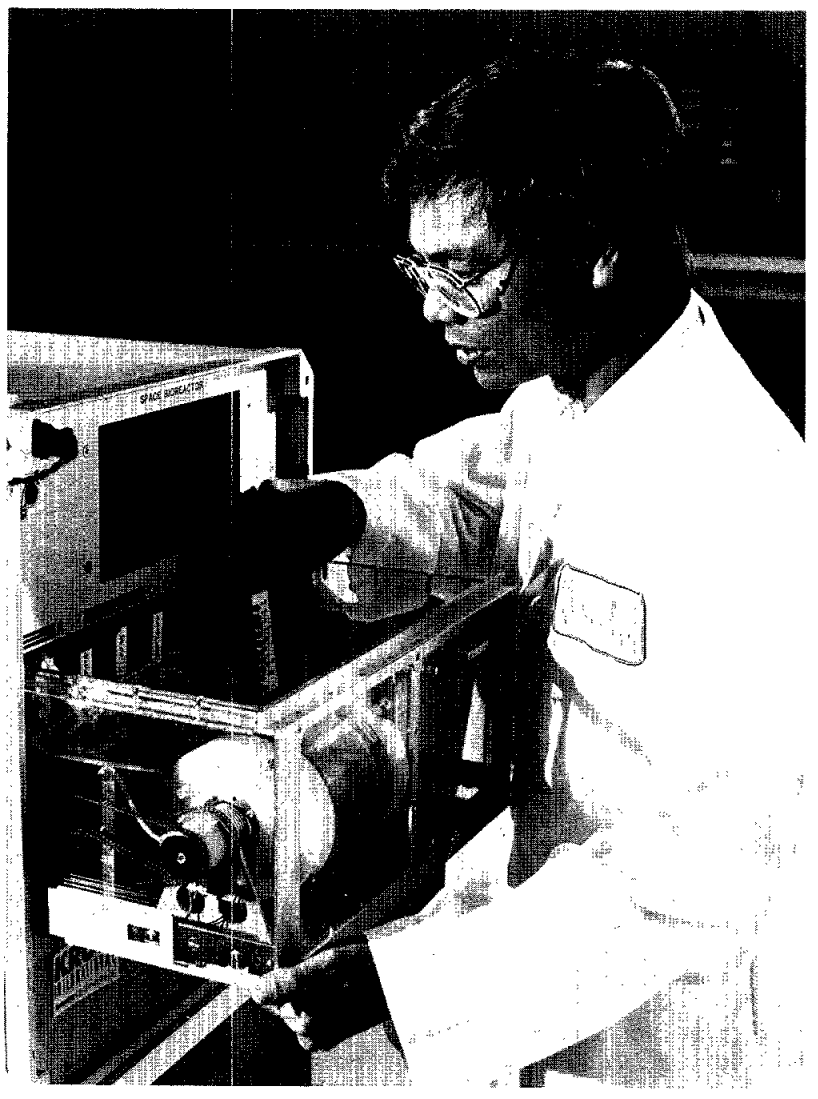
At present, researchers at NASA, Baylor College of Medicine, the Institute for Rehabilitation and Research, Rice University and the Limbs of Love Foundation are collaborating on a project known as "An American Initiative" that seeks the development of improved prosthetic devices for both children and adults in the United States. Most of these devices and components are presently manufactured in England, Canada and Switzerland. Overcoming the lack of feedback sensation in current prosthetic devices will be a major goal of this project.

Remote manipulation has other important non-prosthetic, medical applications as well, including remote microsurgery, in which very small instruments are used for delicate surgery in areas where a surgeon's hands are simply too large.

The future of biomedical research couldn't look brighter. Biomedical research is expected to be one of the major scientific activities aboard *Freedom*, providing scientists with a better understanding of the impact of extended duration in space on humans, and validating countermeasures to lessen the undesirable effects of microgravity on humans. Scientists also hope to increase their basic understanding of fundamental phenomena and processes related to the behavior of living organisms and apply that knowledge to the prevention and treatment of diseases and medical conditions here on Earth.

Although much more research into the effects of long-term space travel on the human body and the ability to actually deliver health care in space are needed before journeys to Mars or other remote areas of the universe can be undertaken, the remarkable strides made over the last 30 years — when even landing a man on the Moon seemed an unreachable goal — make anything seem possible.

And whether it's thousands of miles above the Earth's surface, or right here on our front doorstep, it is certain that the close, cooperative and rewarding efforts undertaken by both NASA and Texas Medical Center to benefit the health and well-being of mankind will continue. ❑



Top: STS-32 Mission Specialists Bonnie Dunbar, right, and Marsha Ivins monitor data on fellow *Columbia* crew member David Low as his body's reactions to the lower body negative pressure unit are monitored with the American Flight Echocardiograph, an off-the-shelf ultrasonic imaging system. Right: Tinh Trinh, a member of the JSC team that developed the rotating wall vessel, checks out the bioreactor in the laboratory. Medical investigators around the country already have used the patented bioreactor to pioneer research in lung tissue, skin growth, intestinal disease, cartilage growth, colon cancer, brain tumor growth and therapeutics.

NASA Photos

Spacelab-J another worldwide cooperation cornerstone

(Continued from Page 1)

closed the doors, installed sleep stations in the crew cabin and weighed the spacecraft.

The novelty of Mohri being the first Japanese astronaut to fly aboard a shuttle, of Lee and Davis being the first married couple to fly together in space, and of Jemison becoming the first black female to fly in space will be in the background as the crew sets to work on an amibitious slate.

"You're talking about a black female, a Japanese, a married couple," Lee explained. "That really doesn't mean much to the crew because we are all members of the same team."

With their variety of backgrounds, however, crew members did say they see themselves as a sign that space flight is a possibility for all cultures and nationalities.

"From Earth orbit, I will have the opportunity to speak to Japanese students during a youth conference," Mohri explained. "During this space classroom, I'll explain weightlessness to the children of Japan in their own language. I know how much I was inspired as a young student by watching American astronauts in space and reading about space exploration. I'm sure that many young Japanese students will be similarly inspired by the challenges and potentials of space exploration."

Several members of the crew have spent time in Japan training for the flight, an experience they said was extremely rewarding. "I think there's lots of encouragement for our two countries to work together into the future," Jemison said.

"We are proud of the splendid cooperation that has always been a part of Spacelab-J," Mohri added. "We hope this cooperation will be a cornerstone on which future missions are built."

Jemison said she hopes her presence on the flight will serve as an inspiration as well. "All around the world people have special talents, skills and abilities and we have to face up and allow people to use those talents, those skills and those abilities," she said. "I think this is a positive step toward that."

Gibson said the future of the shuttle remains bright but will require continued work and diligence.

"I've been with the shuttle program since before the first flight, and we've had some very high points and some very low points in 50 flights," he explained. "I think to ensure flight number 100 will be approached with all of the attention to detail and safety as has the 50th flight."

LLTV reunion planners move date forward

Individuals who worked on the Apollo's Lunar Landing Training Vehicle Project will gather at the Gilruth Center later this month for a 20th Anniversary celebrations.

The LLTV, affectionately known as "the flying bedstead" was used to test the control and landing characteristics of lunar landers on Earth and to train lunar module pilots for their Apollo missions.

The reunion has been scheduled for 6 to 10 p.m. Aug. 29. Previously, the gathering had been set for September.

Activities will include a social hour of reunion activities from 6 to 8 p.m. with dinner following. The evening will conclude with a roast and toast beginning at 9 p.m. Cost is $10 per person plus a cash bar.

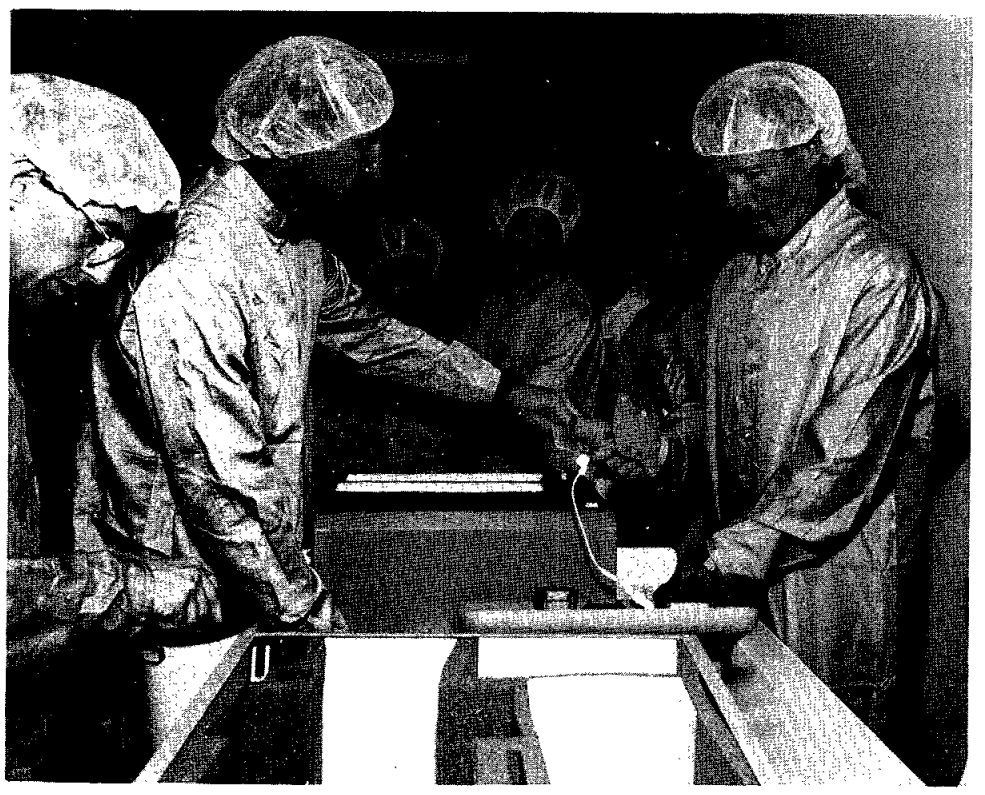
All personnel with the LLTV program are urged to make reservations as soon as possible. Please contact Peggy Zahler at x35511, Herb Noakes at x34325 or Ron Blilie at 244-3917.

CLANG meeting looks at Novell networks

Novell's Michell Riley will discuss "Novell's Integrated Computing Architecture" at the Clear Lake Area Network Group's meeting Wednesday.

The meeting begins at 7 p.m. at the South Shore Harbour Country Club, 4300 South Shore Blvd.

Cost for the buffet dinner is $12 for members, $13 for non-members. Reservations are due to BeBe Kelly-Serrato, x35136 or 480-2496, by 9 a.m. Monday.



JSC Photo by Benny Benavides

BENCH REVIEW—STS-47 crew members check out the equipment they will be using on the upcoming Spacelab-J mission at Boeing's flight equipment processing facility. In the foreground, from left, are Mission Specialist Jay Apt, Pilot Curt Brown, backup Payload Specialist Chiaki Naito-Mukai, Payload Specialist Manoru Mohri, Mission Specialist Jan Davis and Commander hoot Gibson.

Classes teach proper use of metric terms

Now that JSC employees are going to have to start thinking metric, it stands to reason that they'll also have to learn to write using the proper metric terms.

For example, did you know that you should leave a space between a numerical value and metric symbols? Examples: 37° C, not 37°C; or 9 mm, not 9mm.

Did you know you should write letter unit symbols in lower case unless the name has been derived from a proper name (L for liter is the exception)? Examples: 9 mm, not 9MM; but 8 L.

Think JSC Metric

To help employees get a measure of this new skill, the JSC Metrication Committee and the Human Resources Development Branch are sponsoring several courses on using the metric system of measurement and writing with it.

A three-day course for engineers, designers and technical/fabrication workers will be offered from 8:30 a.m.-4:30 p.m. Aug. 24-26 at One Harbour Square on FM 2094.

Two half-day courses designed for secretaries on rules for writing in metric parlance will be offered from 8:30 a.m.-noon and 1-4:30 p.m. Aug. 27 at One Harbour Square.

For more information, call Glen Van Zandt at x33069.

Pearson appoints tethered satellite review panel

Associate Administrator for Space Flight Jeremiah Pearson this week appointed a board of investigation to assess the problems that occurred during the first mission of the Tethered Satellite System during STS-46.

The board is chaired by Darrell Branscome, chief engineer at Langley Research Center, and includes one JSC representative, John Wegener of the Mission Operations Directorate.

Other members include: Gianfranco Manarini, Italian Space Agency; Bill Comer, Office of Safety and Mission Quality, Headquarters; William Mahoney, Payload Operations, Kennedy Space Center; James McMillion, Flight Systems, Marshall Space Flight Center; and Thomas Stuart, Office of Space Flight, Headquarters, an observer.

"The board is authorized to take all necessary action to review the anomalies associated with the TSS problems to determine the probable cause and recommend corrective measures to prevent reoccurrence," Pearson said.

An initial report of the review findings, supporting data and analysis are to be submitted to Pearson by Aug. 28.

All relevant flight hardware and data are being maintained in the "as flown" condition. TSS hardware removed from Atlantis following its landing is being kept in a secure location at KSC.

STS-46 crew says learning as important as achieving every goal

(Continued from Page 1)

was wrong. It's possible."

Shriver's thanks were echoed by Pilot Andy Allen and Mission Specialist Franklin Chang-Diaz.

"The flight was all the things that I ever signed up for it to be," Allen said. "It had all the challenge and excitement anyone could ever want.

"The space exploration business is kind of an all or nothing game. We set pretty major goals for ourselves and we don't always achieve them. But I think that's what space exploration is all about. We pick up the lessons learned and we go out and work it. All the things that we learn are marvelous things to learn and it's all things we can put to the task. "

Mission Specialist Marsha Ivins said she was proud and honored to be a part of the STS-46 team.

"The human element is the foundation of our manned space program," Ivins said. "When it's powered and running it knows no red-line limits. It's infinitely flexible and it has a resilience and a reliability and a strength that no mechanical system can match. We call that machinery a team, and we power it with spirit. In the past couple of months and in particularly the past couple of days it was certainly put to the test and this team would not be undone."

Franco Malerba, STS-46's Italian payload specialist, said his first flight into space was a true adventure and expressed an appreciation for "this beautiful flying machine that is the American space shuttle."

"A couple of times Claude (Nicollier) and myself found ourselves alone in flying the shuttle, not quite on the commands, but still the only people in the flight deck while Andy was working at some other activity with the shuttle systems. We felt like the American space shuttle was in the hands of aliens which was quite an novelty all together."

Nicollier said the sights of the Earth and the stars from orbit was breathtaking.

"When you were well adapted to darkness the sky was absolutely incredibly beautiful," he said.

Nicollier, the first ESA mission specialist, represented Switzerland on a mission with three space agencies and four nationalities.

"I thought it was great to have these people of various countries working together not only onboard the shuttle but on the ground and for the preparation of this flight," he said. "I think all the teams of these agencies and industrial teams of the various countries worked very well together. This has been done in the past of course, but I think this is a good sign for the future — to go and explore space together."

Hoffman said STS-46 was the kind of flight that makes all those involved proud to be part of NASA and the Space Shuttle Program.

"We know why we're here and we're all engaged in space exploration," he said. "We're willing to take some chances and go out and do things that no body has done before and we're willing to work long hours to make things happen."

DOE, NASA team working on plan

(Continued from Page 1)

and concepts for space-based environmental applications.

Armstrong will work with Dr. Warren Chernock on the advanced space technology team, which will define a plan and process for integrating DOE National Laboratory technology into NASA space activities including renewable energy, robotics, microelectronics and advanced manufacturing.

Hessenius will co-chair the team on high-performance computing with DOE's David Nelson. That team will define a process to coordinate DOE and NASA space-related high-performance computing activities.

Space News Roundup

The **Roundup** is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every Friday by the Public Affairs Office for all space center employees.

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

Editor .....Kelly Humphries
Associate Editor .....Kari Fluegel

ISD begins two-phase reorganization

(Continued from Page 1)

Arnold will be over the Service Management Division, which manages services such as the Help Desk, computer equipment orders and maintenance, and telephone installation and repair. He'll also direct the work of the Information Technology Division, which develops new technology, software, networks and communications capability.

John E. Cools will head up the new IRM Division charged with getting the center the information technology it needs — whether provided by ISD or other JSC organizations — for the lowest possible cost.

The new division will look at everything from telephone systems to host computers, computer networks, workstations and applications development. It also will look at providing top-quality information technology services efficiently and effectively.

One key element will be the establishment of a set of IRM Planning Representative positions. ISD will assign an IPR to each JSC organization to act as liaison for the various IRM functions and services at the center, and to help establish a dialogue that crosses directorate lines.

This "radical redesign of business processes" within ISD's organization is an outgrowth of a 1991 decision to completely reengineer the way ISD supports the center, Cools said.

Each of the IPRs will work within their assigned organizations, learning their missions and needs in an effort to help JSC increase its return on investment in information technology. The IPRs will work together to enable dialogue between directorates, eliminating redundant efforts and taking advantage of economies of scale.

The new IRM Division includes Elena Huffstetler's IRM Services Office, which has been renamed the Federal Information Processing Resources Management Office, and the new IRM Planning Office, which does not yet have a leader.

Larry D. Hartley will replace Cools as chief of the Service Management Division. Hartley will take over after a temporary special assignment ends later this year. Arnold will serve as acting chief until Hartley returns.

NASA-JSC