



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



Surfing the net

The final segment looks at how the Internet is being used to help construct the space station. Story on Page 3.



Helping hand

JSC employees generously give to their needy neighbors during the holiday season. Story on Page 4.

Space News Roundup

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No. 1



The STS-72 crew takes a break during the Terminal Countdown Demonstration Test at Launch Pad 39B at Kennedy Space Center. From left are, Mission Specialists Winston Scott, Koichi Wakata and Daniel Barry; Commander Brian Duffy; Pilot Brent Jett and Mission Specialist Larry Chiao. During the eight-day flight the crew will retrieve the Japanese Space Flyer Unit, deploy and retrieve the OAST-Flyer and conduct two space walks to test space station tools and techniques.

First flight of '96 uses variety of shuttle assets

By James Hartsfield

The countdown toward launch of the first shuttle flight of 1996—a flight that will highlight almost all of the unique assets of the shuttle with a varied mix of orbital tasks—began on time Monday headed toward a liftoff early Thursday.

At Launch Pad 39B, technicians started the clock ticking toward the start of STS-72 early Monday, leading to a planned launch at 3:18 a.m. CST Thursday. Endeavour will retrieve a Japanese satellite that has spent more than half a year in orbit, deploy and retrieve a NASA science satellite and host two space walks laying a foundation for construction of the International Space Station.

As of mid-week, the countdown was proceeding smoothly and weather forecasters predicted a 80 percent chance of favorable conditions for an on-time launch. The crew—Commander Brian Duffy, Pilot Brent Jett and Mission Specialists Dan Barry, Leroy Chiao, Winston Scott and Koichi Wakata—arrived at KSC about 8:30 a.m. Monday to prepare for the launch.

With an on-time launch, the crew will be awake during what equates to

a night shift in Houston. The retrieval of the Japanese Space Flyer Unit satellite is planned for Day 3, at about 3:38 a.m. CST Saturday. The SFU was launched in March 1995 by Japan aboard an H-2 rocket and has carried out a variety of long-term orbital experiments ranging from aerospace technology studies to life sciences investigations.

On Day 4 of the flight, the crew will deploy the NASA OAST-FLYER satellite, a package of space technology experiments mounted on a Spartan platform. OAST-FLYER will fly free of Endeavour for about 48 hours to perform investigations before it is retrieved. The next day, Chiao and Barry will perform the first of two

space walks planned, a six and a half-hour activity planned to begin at about 11:03 p.m. CST Sunday. The space walks will test a variety of construction methods and techniques planned for the station, such as fluid and electrical connections, umbilicals and assorted tools. OAST Flyer will be retrieved on Day 6, with a capture of the satellite planned at 3:50 a.m. CST Tuesday. The second space walk, performed by Chiao and Scott, will be on Day 7, starting at about 10:33 p.m. CST Tuesday.



JSC reopens after 21-day furlough

A series of spending bills brought JSC civil service employees back to work Monday and ended a 21-day partial government shutdown brought on by differences between the White House and Congress over the balancing of the federal budget.

"The exempted NASA employees and our contractor team did a great job of holding down the fort during the past three weeks," said Acting JSC Director George Abbey.

"We owe all of those who worked a hearty pat on the back for keeping us on schedule for this week's STS-72 launch and our other critical programs such as building the International Space Station.

"Now that we're all back together, we have a lot of work to do to keep on track and meet the challenges of this exciting new year," he added. "We can't afford to be distracted by the continuing efforts in Washington

to resolve the budget issues. We're doing work that is crucial to the future of our country and the world, and we can't let other issues sidetrack us."

The accord came after House Republicans agreed to return federal employees to work with full pay, and President Clinton offered a seven-year balanced budget proposal using Congressional Budget Office

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Space Station office makes managerial changes

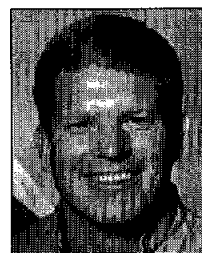
Space Station Program Manager Randy Brinkley announced last month that, effective immediately several managers will fulfill new roles in the space station program.

Bill Shepherd has been named deputy manager for Space Station International Affairs. Shepherd has served as the deputy program manager since January 1994.

"Initially in his new position as deputy manager for Space Station International Affairs, Bill will lead the integration of all Russian issues for the station," Brinkley said.

Douglas Cooke has been named acting deputy manager for the program. He has been with NASA for 22 years and has

served in several senior technical and managerial positions at JSC. Most recently he served in the Space Station Program Office as manager of the Vehicle Office.



Shepherd

"In his new position, Mr. Cooke will assist me in the overall, day-to-day direction of the program," Brinkley said.

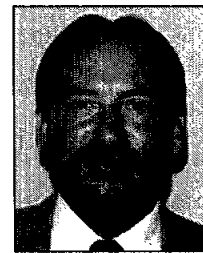
Jack Bullman has taken on the duties of technical assistant to Brinkley. Bullman has been with NASA for 14 years and served in several key positions at both

Marshall Space Flight Center and the SSPO. Most recently he served in the SSPO as the deputy manager of the Vehicle Office.

"In this new position, Mr. Bullman will pro-

vide me with technical advice, guidance and integration on a wide range of program-wide issues," Brinkley said.

Denny Kross has been named acting manager of the Vehicle Office. Kross has been with NASA for 28 years and served in several senior technical and managerial positions at the MSFC. Most recently he led an agency review/ redesign of the SSPO's configuration management process. For the past year, he has served as deputy to the MSFC



Cooke

assistant director for space station and as lead engineer for the space station director at NASA Headquarters. As acting manager of the Vehicle Office, he will be responsible

for leading the design, development and manufacturing of space station hardware and software.

Lauri Hansen is taking on the responsibility of acting deputy manager of the Vehicle Office. Hansen has been with NASA for 11 years and most recently served as the technical manager of the Vehicle Analysis and Integration Team within the SSPO.

She also chaired the Space Station Freedom Level II Integrated Performance Panel in the Systems Engineering Division at JSC. As the acting deputy manager of the Vehicle Office, she will assist Kross in leading the day-to-day operations of the Vehicle Office.

Still photo library moves

The JSC Still Photo Library, has been moved from Bldg. 2 to Bldg. 423, joining the Film/Video Distribution Library which was moved to the same building in November.

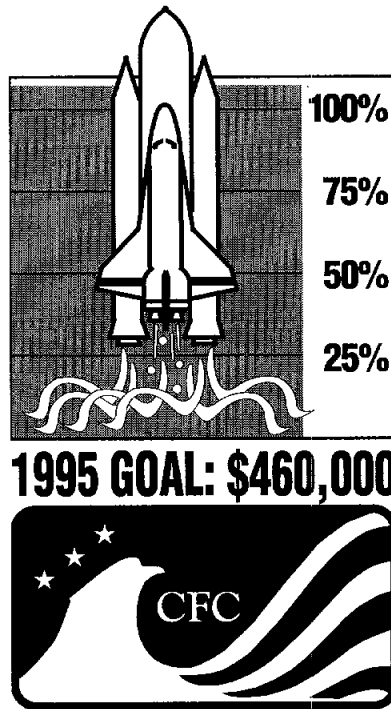
"By combining these two valuable public information sources in one on-site location, we are just beginning the process of integrating our audiovisual customer services," said Jeff Carr, acting director of Public Affairs. "The new Media Resource Center will allow us to realize greater efficiency in these services by streamlining and modernizing of our customer support processes in addition to the savings of off-site lease and utility costs."

The SPL has been closed since Dec. 13 to accomplish the move of thousands of image products and will reopen Jan. 29 in its new location.

The two combined libraries will make up the JSC Media Resource Center, providing one-stop shopping for JSC customers seeking feature and educational films, video productions and selected still photographs which best illustrate and tell the story of the human space flight program, its missions and its people. Products are available for loan to the news media and to educational, civic, industrial, professional and other government organizations.

The FVDL currently stocks more than 35,000 films and video products, dating back to the beginning of the space program, which are viewed by more than 1.5 million people in any given month. The SPL stocks more than 10,000 views and over 100,000 products encompassing NASA's space program. The

Please see **RESOURCE**, Page 4



CFC exceeds goal for '96

JSC employee contributed more than \$470,220 during this year's Combined Federal Campaign.

This total is three percent above last year's contributions and represents contributions from 65 percent of JSC employees. Eleven organizations gave more than 100 percent of their 1995 goals.

There were 370 employees who contributed 1-hour's pay per month and 173 employees who contributed 2-hour's pay per month; and of these, 159 employees contributed over \$600 per year. The offices that exceeded their goal were Office of the Director, Human Resources Office, Office of the Chief Information Officer, Equal Opportunity Programs Office, Legal Office, Technology Transfer and Commercialization Office and Phase 1 Program Office.

Transfer and Commercialization Office, Space Shuttle Program Office and Phase 1 Program Office.

A total of 2,209 out of 3,375 civil service employees participated in the CFC effort. The Office of the Director, Office of the Chief Information Officer, Equal Opportunity Programs Office, Legal Office, Technology Transfer and Commercialization Office and Phase 1 Program Office all reported 100 percent or more participation.

The Engineering Directorate contributed the largest dollar amount, with \$128,108.68 or 107 percent of its goal and the Mission Operations Directorate contributed the next largest amount, \$83,319.30 or 116 percent of its goal. The JSC Exchange Operations Office will continue to take donations and can be reached at x39168.

JSC

Ticket Window

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

Ice Hockey: Houston Aeros vs. Fort Wayne Komets 4 p.m. Feb. 4 at the Summit. Tickets cost \$12.50.

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

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

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

Stamps: Book of 20, \$6.40.

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

Metro tickets: Passes, books and single tickets available.

Upcoming events: Rodeo Carnival Packages includes 28 rides for \$10.

JSC

Gilruth Center News

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

EAA badges: Dependents and spouses may apply for photo identification badges from 7 a.m.-9 p.m. Monday-Friday; and 8 a.m.-4 p.m. Saturdays.

Dependents must be between 16 and 23 years old.

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

Aerobics: Classes meets 5:15-6:15 p.m. Tuesday, Thursday and Friday and 9:30-11 a.m. Saturdays. Cost is \$35 for 11 weeks.

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

Weight safety: Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. Jan. 11 and Jan. 25. Pre-registration is required. Cost is \$5.

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

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

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

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

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

JSC

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Dates & Data

Today

Astronomers meet: The JSC Astronomical Society will meet at 7:30 p.m. Jan. 12 at the Lunar & Planetary Institute 3600 Bay Area Blvd. For more information call Chuck Shaw at x35416.

Cafeteria menu: Special: meat sauce and spaghetti. Total Health: baked potato. Entrees: rainbow trout, liver and onions, beef cannelloni, ham steak, fried cod fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: steamed broccoli, breaded okra, cut corn, black-eyed peas.

Monday

Cafeteria menu: Special: turkey and dressing. Total Health: herb flavored steamed pollock. Entrees: breaded veal cutlet, chicken fajitas, steamed pollock, beef, French dip sandwich. Soup: beef and barley. Vegetables: Brussels sprouts, mixed vegetables, egg plant casserole, winter blend vegetables.

Tuesday

Cafeteria menu: Special: pepper steak. Total Health: barbecue chicken. Entrees: baked lasagna, pork chop and fried rice, turkey a la king, baked chicken, fried cod fish, French dip sandwich. Soup: black bean and rice. Vegetables: breaded squash, steamed spinach, baby carrots, navy beans.

Wednesday

Toastmasters meet: The SpaceLand Toastmasters Club will meet at 7 a.m. Jan. 17 at the House of Prayer Lutheran Church. For more information call Jeannette Kirinich x45752.

Astronomy seminar: The JSC Astronomy Seminar will present an open discussion meeting at noon Jan. 17 in Bldg. 31, Rm. 129. For more information, call Al Jackson at 333-7679.

Cycle club: The Space City Cycle Club will meet at 5 p.m. Jan. 17 at

the Grumman Bldg. at Ellington Field. For more information call Mike Prendergast at x45164.

Cafeteria menu: Special: Mexican dinner. Total Health: steamed pollock. Entrees: broccoli cheese quiche, spare ribs and sauerkraut, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: Spanish rice, pinto beans, peas, broccoli.

Thursday

Directors' meet: The Space Family Education board of directors will meet at 11:30 a.m. Jan. 18 in Bldg. 45 Rm. 712D. For more information on this open meeting call Gretchen Thomas at x37664.

PMA luncheon: The NASA Houston Chapter of the Performance Management Association will host the third in a five-luncheon series on the implementation of Earned Value Management Systems at JSC at noon Jan. 25 at the Gilruth Center. Representatives from several contractor organizations will discuss the contractor perspective of earned value management. Reservations must be made by Jan. 19 For more information, call Susan Widmer at x34299.

Radio club meets: The JSC Amateur Radio Club will meet at 7 p.m. Jan. 25 at the Nassau Bay City Hall Bldg. For more information call Larry Dietrich at x39198.

Cafeteria menu: Special: hamburger steak with onion gravy. Total Health: baked potato. Entrees: corned beef, cabbage and new potatoes, chicken and dumplings, meat ravioli, French dip sandwich. Soup: broccoli cheese and rice. Vegetables: navy beans, cabbage, cauliflower, green beans.

Friday

Cafeteria menu: Special: tuna

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

Jan. 23

Blood drive: Loral will host a blood drive from 8 a.m.-noon Jan. 23 at 1322 Space Park Dr. For information call Ed Barela at 335-5023.

Jan. 24

Blood drive: Loral will host a blood drive from 8-11 a.m. Jan. 24 at 3700 Bay Area Blvd. and from 1:30-2:30 p.m. Jan. 24 at the Marina Plaza Bldg. For more information call Ed Barela at 335-5023.

Jan. 26

Gemini anniversary: The Gemini program will celebrate its 30th anniversary at 5 p.m. Jan. 26 at the Gilruth Center. Tickets cost \$5. For information call Jo Carey at x30546.

Jan. 30

Blood drive: JSC will host a blood drive from 7:30-11:30 a.m. and 1-3 p.m. Jan. 30 at the Gilruth Center. For more information call Marty Demaret at x36007.

Feb. 1

Warning system test: The site-wide Employee Warning System will under go its monthly audio test at noon Feb. 1. For more information call Bob Gaffney at x34249.

Feb. 6

ABWA meets: The American Business Womens Association, Clear Lake Area Chapter will meet at 5:30 p.m. Feb. 6 at Space Center Houston's Silver Moon Cafe For information call Nancy Hutchins at x34006.

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 AP2, or deliver them to the deposit box outside Rm. 181 in Bldg. 2. No phone or fax ads accepted.

Property

Sale: Wooded lot 90' x 135', Taylor Lake Estates, \$39.5k can finance. Don, x38039 or 333-1751.

Sale: League City, Bayridge subdivision, 3-2-2, cul-de-sac, new roof, \$55.k. James, 286-1934.

Sale: Alvin, 10 acres, cleared, new barn, located on major road. 532-4237.

Rent: Duplex, Santa Fe, TX, 3-1-5, living room, dining room, appliances, central air/heat, brick exterior, W/D conn, small yard, non-smokers, no pets, \$500/mo + security deposit. 244-0250.

Lease: Meadowbend subdivision, LC, 3-2-2, appliances, W/D, FPL, avail 2/01/96, \$800/mo + deposit. Mark, 522-5984.

Lease: Bay Glen, 3-2-5-2 + study/formal dining room, 1600 sq ft, huge covered patio, big back yard, cul-de-sac, non-smokers, \$1,150/mo. Leah, x34544 or 480-8780.

Sale: LaPorte/San Jac, 3-2-2A brick, 1534 sq ft, alarm system, ceiling fans, fenced, very clean, \$84.9k. Kelli, x31160 or 478-5509.

Rent: Beach front condo, CanCun, Mexico, sleeps 4, full bath, kitchenette, daily maid service, available year round, \$300 per week. x37990 or x33185.

Rent: Beach cottage, Crystal Beach, Galveston County, ocean view, furniture, FPL, cable/TV, sleeps 10, weekly/weekends. 486-1888.

Rent: South Lake Tahoe cabin, sleeps 8, cable TV/VCR, microwave, 3-2, modern kitchen, W/D, \$75/nightly, weekly & holiday rates. x41065 or 326-2866.

Lease: Lake Travis cabin, private boat dock, central air/heat, fully equipped, sleeps 8, \$550/weekly/\$120/daily. 474-4922.

Cars & Trucks

'91 Toyota Pickup, 4 cylinder, 5 speed, A/C, AM/FM/cass, ex condition, \$6.5k. 554-2879.

'87 Honda CRX, new motor, 5 speed, AM/FM/cass, very good cond, \$3.2 obo. Steve, 992-2841.

'72 Ford F100, 240 6 cylinder, like new blue, \$3.8k. 996-5006.

'86 Pontiac Parisienne Brougham, ex cond interior & body, owner non-smoker, new tires, 8 cylinder. 480-1800.

'83 Cadillac El Dorado, good cond, rebuilt engine, new A/C, AM/FM/cass, \$1.5k obo. Steve, 992-2841.

'82 Oldsmobile Delta 88, white, 4 dr, clean, runs good, A/C, works well, new tires/water pump/battery, \$1.6k. 554-5492.

'90 Mercury cougar, 6 cylinder, auto, 64k mi, loaded, sun roof, JBL CD stereo, power, 4 wheel disk anti-lock brakes, new tires, garage kept, \$7.5k. x32827 or 538-2152.

'93 Dodge Ram D-150 exterior cab pickup, 360 V8, gas, 2 WD, loaded, camper shell, 29k mi, book \$14.3k selling \$13.2k. x41065 or 326-2866.

'79 Datsun 280 ZX coupe, 5 speed, A/C, 97k mi, \$1.9k obo. 280-8608.

'87 Buick Park Ave, T-type, dark blue, P/D & P/W, new equipment, 124k mi, \$4,495 obo. Ginger, x38493 or 332-7908.

'88 Ford Ranger pickup exterior cab, 6 cylinder, 5 speed, camper, 104k mi, very clean, \$4,250. 480-7401.

'87 Mazda CabPlus truck LX, ex condition, 1 owner, rebuilt engine, long block w/warranty, new clutch, \$3.7k. x36531 or 326-6420.

Boats & Planes

Loran-Apelco, used 1 time, \$125. 480-7901.
Hummingbird 3004 depth/fish finder, ex condition, \$50. Charlie, 499-4412.

Sovereign, 24' ready to sail & in ex condition, main, jib, 125% genoa, depth sounder, head, stove, electric start Johnson OB, \$5.7k. Mike, 282-1691 or 286-1691.

Procraft Bass boat, 15', 85HP Evinrude, stainless steel propeller, 12/24 trolling motor, depth finder, 2 live wells, garage kept, good condition, \$2.5k. David, 478-2974.

Cycles

'94 Suzuki 50 Jr. low hours, \$750. Carl, x45159 or 328-6663.

Audiovisual & Computers

386 MB, \$25; 286 MB, 40 MHz, 128K cache w/co processor, \$35; NEC P6 printer, \$35; super VGA 1 MB video card, \$25; IDE multi-function card, \$15; Quadro Pro for Windows, \$20. Charlie, 488-4412.

CompuAdd 386 computer w/1.2 MB 5 1/4" drive, 40 MB HD, 14" Samsung CVGA monitor, mouse, & misc S/W, Panasonic KX-1124 24-pin dot matrix printer, \$500. Richard, x31488.

Mac computers, Photoshop LE, Kodak CMS LE, \$60 obo; Windows 95 Office CD ROM, no books, \$100; DOS game Mantis CD ROM, \$10. Terry, x36351.

286 w/monitor/printer, ex working condition, 6,22 DOS, \$150 obo. 488-7318 or 763-0663.

Pentium 75, 100 & 133 complete system, full warranty, \$1,125/\$1,225/\$1,535; 286 CPU only, \$50; 386 w/color monitor, \$365; 486 w/color monitor, \$595. Don, x38039 or 333-1751.

IBM PCjr, w/expansion chassis; IBM color monitor, 640k memory, 2 5.5" drives, in working

condition, \$100 obo. Richard, x31488 or 607-5364.

Nintendo system w/8 games, \$100; electronic Chess Board, \$30; 2 Pioneer Bass-reflex TS-X200 speakers, \$25; Audiovox 50W cassette car stereo, \$25. Shelly, x39450.

Kawai K-4 Synthesizer, ex condition, \$600. John, x48050 or 482-7616.

JVC 5-disc CD player, \$80. Leonard, 333-5576.

Musical Instruments

Estey console piano, ex condition, \$450. 474-2214.

Pets & Livestock

Boa constrictor, 2', 1.5 years, \$100; 55 gal tank, \$30. Jeri, 333-7552.

Doberman pups, pure bred, tail docked & wormed, colors, red, blue, fawn, black/tan, \$50 each; Congo African Greys & Amazons, Mexican Red-head, others seasonally, Pat, x45384 or 409-925-6405.

AKC Miniature Schnauzer puppies, salt/pepper, shots & wormed, \$200/\$225. Derek, 244-1000 or 997-9263.

Household

Gas dryer, \$75 or trade for freezer. 997-0756.
Super single waterbed, \$65. x36531 or 326-6420.

Wood frame daybed w/trundle bed, no mattress, \$75. Richard, x31488 or 286-6915.

7 piece black lacquer bedroom set, 2 night stands, dresser w/mirror, chest, headboard, ceiling fan. DJ, x31960 or 488-5525.

Queen size waterbed, semi-waveless, bookcase headboard, sheets, heater, etc, ex cond, \$100 obo. x30845 or 474-3760.

King size wooden waterbed frame, mattress pad, sheets, heater, \$50 obo. x32564 or 480-5026.

Formal dining room table, 6 chairs, Queen Anne, cherry, ex condition, \$1.k. 882-0405.

Sofa, cream w/splashes of color, contemporary, 8', \$300 obo. x47117 or 334-2253.

China cabinet, \$500 obo. Warren, x34204 or 480-2954.

Chest of drawers, desk w/hutch, both in ex condition, Queen Anne style, obo. 474-9747.

23k/24k gold plated flatware, 70 pc service for 12, new, storage case, Vienna pattern, dishwasher safe, \$140. Cliff, 486-8810.

New bathtub enclosure w/clear glass doors, frame bronze teal, 58.5"H x 58"L, original, \$380 sell \$180. 488-6227.

Ward's compact dorm size frig/freezer, 1.6 cu ft, \$65; Sears Craftsman wet dry vacuum, 16 gal, 2.25 peak H.P. double insulated, \$60; Sears Coldspot upright freezer, approx 10 cu ft, 24" wide, \$75. 326-2633.

Wanted

Want female roommate to share house, quiet, non-smoker, no pets, near I-45 & 518, \$300/mo + 1/2 utilities. x35501 or 554-6960.

Want responsible roommate to share 3/2/2 house w/owner, \$300 + 1/2 utilities, Ellington area, non-smoking, no pets, female preferred. 484-8640.

Want non-smoking, female roommate to share 3 bedroom house in El Lago, 5 minutes from NASA, \$325/mo + 1/2 utilities. Brenda, x36037.

Want non-smoking housemate to share 3 bedroom, 4.4 sq ft, gorgeous waterfront home on Taylor Lake, pool, boat dock, hot tub, own furnished bedroom & bathroom, \$600 mo w/bill paid. Leah, x34544 or 480-8780.

Want personnel to join VPSI vanpool departing Meyerland Park & Ride at 7:05 am for JSC. Van pool consist of on-site personnel working 8 am/4:30 pm shift. Don Pipkins, x35346.

Want personnel to join VPSI vanpool departing South Braeswood Park & Ride lot at 6:50 a.m. for JSC & offsite locations, 7:30 - 4:30 shift, Susan Gaynor, 282-5447 or Al Ruder, x34997.

Want Wilton cake decorating supplies, pans, tips, equipment, good condition. Rose, x30331.

Want low priced Japanese car or pickup for college aged daughter. 771-0955.

Want fixer upper house, \$10.k - \$50.k. 992-5080.

Want sz 4 or 5 child's ski apparel, jacket, pants, thermal undies, gloves, hat goggles etc, for boy/girl. Laura, x31969 or 996-5107.

Want bunk bed for children in good condition for a reasonable price. 244-0250.

Want cheap sofa & dog house, sm-med sz. x35501 or 554-6960.

Want computer 386 or 486, w/color monitor, keyboard, mouse, minimum of 4 MB RAM & 80 MB HD, 1.44 M FD, reasonably priced. Michael, 282-2787.

Miscellaneous

Snorkel gear, weight belt, weights, mask, snorkel & fins. 488-6521.

Industrial tool box, 5'x2'x2', \$125; Nissan pickup tailgate, new, black, \$100; bumper, rear step w/ball, chrome, \$75. 271-7011.

Entertainment center, \$50; stroller, \$15; crib w/mattress, \$50. 282-3869 or 486-1112.

Sharp 650W microwave w/cart, \$75; tan naugahyde chair w/stool, \$30; desk 55" w/7 drawers, \$50; white dinette table, \$25; exercise cycle, \$30; designer rug 9 x 6, peach/brown/green, \$50; misc art deco & tropical art work, \$1 - \$25; blue floor lamp, \$8. x31370 or 662-2977.

Wards commercial riding lawn mower 11 hour, 38" cut, \$350; BMX bikes, 2-mini 20", \$300 both or \$175 each. Carl, x45159 or 328-6663.

Duck decoys by Flambeau, 9 hens & 9 drakes w/bag for transportation, \$20. Ted, 474-2214.

Bear Alaskan bow w/accessories, \$100; Red dyed Studio 9 pumps, sz 8, \$15. Shelly x39450.

Standing pitching flap, new \$100 sell \$50; Lobster tennis ball machine, \$350. 280-2039.

Hot tub, portable, 6' x 7' w/cover, fair condition, needs work, U-haul, \$250 obo. 244-1082 or 480-5026.

Radio control gliders, Electra, 78" span & Paragon 115" span, \$100 both; big box of Balsa; Colt Diamondback .22 cal 6" barrel, like new, in box w/papers, \$350. x33565.

Wedding dress, beautiful, white, size 3/5, w/petticoat & veil, \$200. 882-0405.

Pyrometer 0-800°F rigid arm thermocouple type, \$75. Tom, x36309.

Ski/rowing machine, \$25; Christmas tree stand, heavy gauge plastic, trees up to 9', \$10. Warren, x34204 or 480-2954.

10 speed Mountain bike, very good condition, \$75. x41096 or 326-5184.

Suzuki Samurai chrome bumper set, ex condition, new \$385 make offer. 480-5404.

4 ton condensing unit with coil and electric furnace approx 5-6 years old, \$260; commercial aluminum power ventilator exhaust fan, 18", 1 year old, \$140. x37837 or 332-7658.

Bally's President & First Lady membership, \$700 obo, all extra's are free. \$100 transfer fee plus \$6.30 fixed monthly renewal fees. ted, x39172 or 409-935-8060.

Misc building supplies, 3 sliding glass doors, 1-3'x5' mirror; mail box w/post, fencing material, other misc. Ken, x30921.

Men's black leather coat, full length, size 42, removable liner, ex condition, \$200 obo. 332-7427.

Stair stepper, \$50. 480-9448.

Howa rifle, formerly Smith & Wesson 1500, bolt action, .223 cal, new in box, \$300; Browning .22RF A-bolt, new in box, \$300. x37346.

9.6 Milwaukee professional cordless drill/driver, w/battery, charger & case, \$70. x37346.

Solid oak babybed, \$65; Sega Genesis game, \$60; Sega Genesis games, \$12 each; Sega plus 11 games, \$150. 992-5080.

Wet suit, full length, size large, like new, \$100. 882-0405.

Mixed firewood, \$55 cord. 996-6814.

Due to the furlough of government employees Roundup has not been published since Dec. 15. Swap Shop ads submitted for publication on Dec. 22 have been discarded. If you submitted an ad for that issue and still want it printed please resubmit it in the usual manner.

Integration Engine

International Space Station's Web pages make ties that bind development effort

[Editor's note: This is the final installment in a three-part series about how JSC and its organizations are taking advantage of the Internet as a tool for public outreach and internal program management.]

By Bridget Mintz Testa

Many people and organizations think of the new information-sharing technology embodied by the World Wide Web solely as a vehicle for marketing their products and services, and by and large that's the approach most of NASA has taken.

The International Space Station Program is focusing its use of the Web as a tool for managing the program and building a vehicle—perhaps the most complex one ever conceived. As the information integration engine of the program, the station Web is a vital aid in storing, sharing and tracking everything from design specifications to assembly sequences, according to Deputy Program Manager William Shepherd.

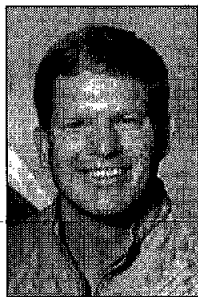
"The Web is marketing, glitz, but it has not been used in the mainstream of development to tie people together," Shepherd says. "That's what we're trying to do. We're using it for schedules, agendas, minutes of meetings, locations of key managers and as a reference for all major flight elements and subsystems of the station. The Web page is the 'front-end' for large repositories of data that people need access to."

As such, the station Web concept enforces the use of consistent data across the far-flung program. The power of this method is in its ability to gather information produced by hundreds of people in their day-to-day work in a common storehouse with very little added effort and virtually no additional cost. The owners of each segment of data stored on the station Web pages (http://issa-www.jsc.nasa.gov/ss/SpaceStation_homepage.html) are required to keep that information accurate and up-to-date so that others in the program can rely upon it in doing their jobs.

This unusual, if not unique, use of the station Web was at first unforeseen. Phil Padgett of Lockheed Martin recalls meeting in December 1993 with Shepherd and Paul Bolden (then NASA's technical monitor for Space Station

Information Systems) to discuss a Department of Defense tool for getting information online. The Internet technology was still very new. "We didn't know much about it at that time," Padgett says. "I got an action to develop an understanding of it and prepare a demo for program management in January."

Padgett's demo of the Web software was a success. "Shep loved it," he said. "Then I was given a mission to establish a space station presence on the Web, organize data, set up policies and procedures, content and distribution of information via this new medium."



Shepherd

'We don't have a special group to manage the database: the groups do it themselves. For integrating a large, dispersed program it's a very powerful concept.'

—William Shepherd
International Space Station
Deputy Program Manager

One of the benefits of this work was the realization that the station Web could be more than a public relations vehicle. Shepherd says, "Browser technology lets you have virtual connections to distributed databases. When we looked at all the things we do, involving engineering and management, we had two choices. We could create a self-contained hierarchical database or we could go to a distributed database. We've developed our Web browser to be the engine of a very large integration task."

The Space Station Web went online in March 1994, using the JSC Web page server—"Krakatoa"—as its host. It stayed there until October 1994, when it had to move to a larger machine dedicated to space station due to the massive traffic. "(Krakatoa) was overloaded," Padgett says. "There were so many attempts to connect that people couldn't even get through."

The current ISS Web server is not likely to meet the same fate because it is four times as large and has about 10 times the storage space as the original server. Bert Beals, System

section describes NASA, JSC and station online publishing guidelines, as well as Station Automated Information System policies.

There also are links to pages created by each of the international partners—the Italian Space Agency, Canadian Space Agency, European Space Agency, NASDA and Russian Space Science Institute—that describe their organizations, projects, plans, histories and archives.

Dan Duncavage, of the Phase 1 Program Office developing interfaces with the Russian space program, considers his Phase 1 page a resource. Also located in the Program Team section, this area describes Phase 1 activities, schedules, the program office and history. It also includes the shuttle-Mir icon and Mir images. "Making use of Phase 1 is crucial," Duncavage says. "The station is developing many plans for working with the Russians. We've never done that before. The Russians are very different from us. They think differently, do things differently." He feels the page also is a means to help station engineers transition from Phase I to Phase II.

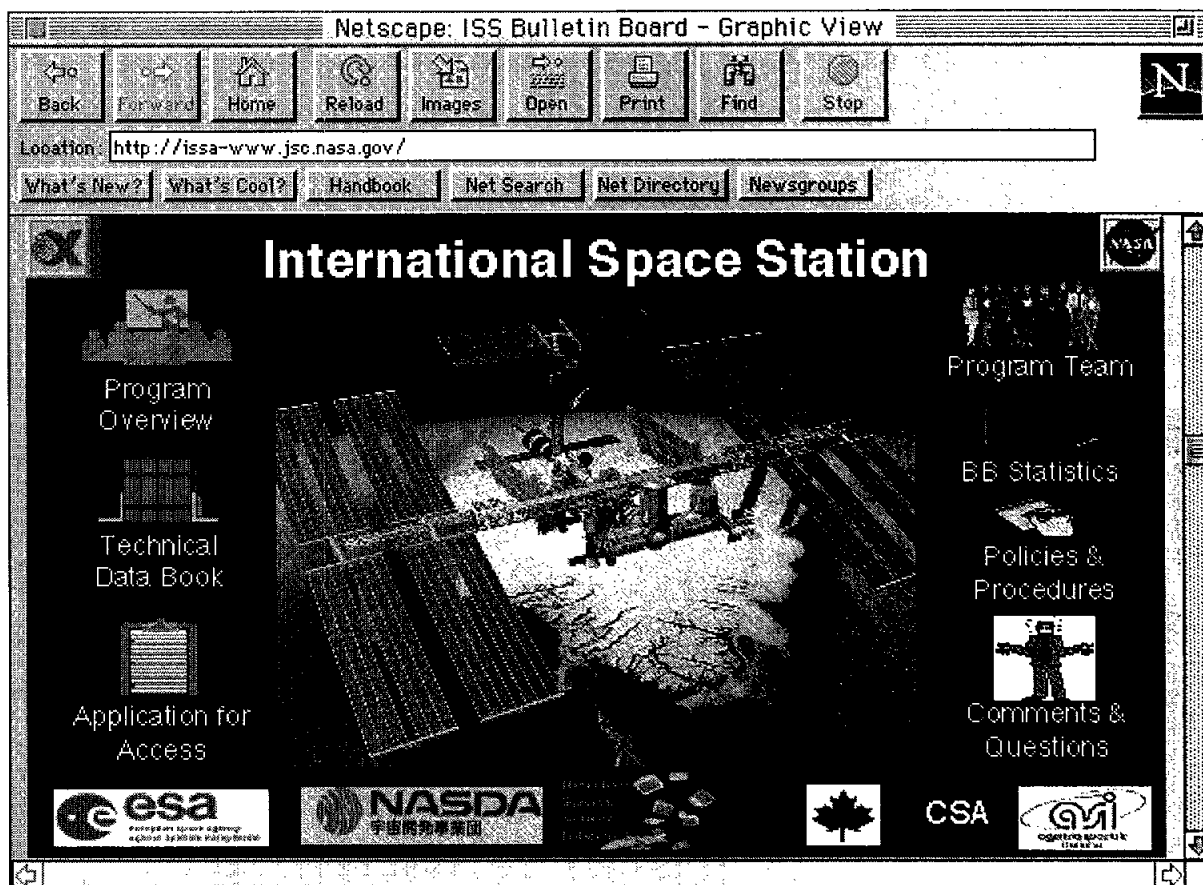
A diverse group developed the original content. Ed Stanton, an engineer in the program office, was assigned to coordinate the initial population of the Program Overview and Technical Data Book sections. He developed a hyperlinked matrix that cross-references flight segments and engineering disciplines. The intersecting cells are links to the specific data for each flight. A click on each cell takes visitors to pages of introductory text, configuration information, a mission summary and each of the station's 13 major subsystems. Clicks on the assembly thumbnail images produce larger, downloadable versions. Stanton created the matrix using image-mapping—a process by which an area in an image is given specific coordinates. When such an area is clicked, the coordinates are read by the World Wide Web hypertext markup language and interpreted as a link to another page location.

However, Stanton didn't collect the data for the matrix pages himself. "By May of 1994," he says, "we had worked with the Astronaut Office to get five Navy ensigns (a sixth was here for two weeks). They did all the legwork and all the data entry. I could not have done that by myself. They had one specific task to do and they really went out and shook the bushes and trees." The ensigns left as permanent assignments with the Navy came in, taking with them not only thanks, but a JSC commendation as well.

The Space Station Web's technical monitor is Stephen Hunter, a data systems engineer with the Program Office and Information Analysis and Integration Team. Hunter views the Web as part of the program office's long-range planning for data communications. He says, "We knew we wanted to show what station looks like: history, differences from Freedom, a mix of literature about the program and technical data in support of the literature."

Apparently, it's working: the Web page sustained an average of about 140,000 hits per month from around the globe over the past 13 months.

Next on the agenda is expanding the page's scope to include virtual meeting rooms, virtual classrooms for the public, and a make-over to satisfy the novelty-hungry Web crowd. The Web also will be used to manage Integrated Design Review 2, showcasing its capabilities as an integration tool. Shepherd says, "The key point is that instead of a closed, firewalled database, the Web browser is a shell over many different data locations. The group's data is part of the database. We don't have a special group to manage the database: the groups do it themselves. For integrating a large, dispersed program it's a very powerful concept. If you took it all away, it would be a significantly lesser program." □



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Top: The International Space Station Web provides information for the public, but its primary purpose is to integrate the information being used by the program to design and build an orbiting outpost. Above: The Technical Data Book includes a matrix of the baseline assembly sequence. Visitors may choose to look at more details on any topic simply by clicking on a gray or white square in one of the tables.

Architect for Space Station Information Systems, says, "One of the reasons we went with this technology was that it was massively expandable and still inexpensive." The vast quantities of information the server contains, as well as its function as a critical tracking tool, make its high speed and large capacity necessary.

The first all-text ISS Web page included a station personnel phone book and a program overview. Today's pages include text and graphics for all major aspects of the program and links to five international pages at other Web sites. The information is broken into areas that contain completed information products that are available to the public, and a development area that contains work in progress being used by NASA and its partners as a tool for achieving program goals.

The publicly accessible section, called "Program Overview," includes station white papers, movies, pictures and other materials. Its companion, the "Technical Data Book" features detailed information on each station component and its place in the assembly sequence.

The development area, labeled "Program Team," includes information produced by and for Integrated Product Teams, Analysis and Integration Teams and Incremental Design Reviews, as well as the Program Control Book, all of which are critical parts of the management strategy for designing, building and maintaining the International Space Station.

The Program Control Book summarizes the International Space Station Program by creating a computerized counterpart to the Management Information Room in Bldg. 4S. The page is used by everyone from managers to engineers to budget analysts, and has a side benefit of allowing Congress to explore the program, Shepherd says.

"The concept is that if a Congressman visits, he/she can visit the MIC Room and get an overview of the program," says Roger Johnson, who is responsible for maintaining the MIC and the PCB, both of which use graphics extensively. "You can't glean anything from walls of text," Johnson explains. "You'd have to be a hard-core engineer to get anything out of it. That automatically leads to the PCB because it's the graphic display in electronic form."

To help the contributors who "feed" this distributed database, a "Policies and Procedures"

Joggers take note, coral snakes seen on new jogging trail

By Tom Marshburn

Since the opening of the new jogging trail, coral snake sightings at JSC have increased.

Typically two-three feet long, these brightly colored snakes have a characteristic color pattern of red stripes bordered by yellow bands. They like warm, dry surfaces near creeks or lakes, and have been spotted by joggers under or near leaves on the paved

running surface near the Gilruth Center, the perimeter fence trail in particular. They are secretive, and do not bite unless handled or provoked.

While the bites are typically not very painful, the venom is dangerous. It may produce a sensation of numbness and tingling near the bite site in 30 minutes to 24 hours. Any bite may contain venom, and may require immedi-

ate treatment with anti-venin. Treatment can begin at the JSC Clinic or the nearby hospital's emergency departments. Attempts to suck out the venom with or without an incision may do more harm than good, and can delay proper medical care. This advice applies to a bite from any venomous snake. If bitten by a coral snake, it is important to seek medical attention right away. Emergency help is

always accessible by calling x33333.

Coral snake envenomation is very rare, and accounts for only .5 percent of snake bites in the U.S. Still, as always, the best treatment is prevention. So, keep an eye out when on the JSC jogging trails, especially in the afternoon during the spring and fall, and if a coral snake is seen lying around, it is best to leave it alone.



JSC Photo by Mark Sowa

Above: Acting JSC Director George Abbey, right, places the first toy in the Bldg. 3 cafeteria barrel to kick-off the "Toys for Tots" program at JSC. Joining Abbey from left are Capt. Christopher Ashby, astronaut candidate Rick Sturkow, Sgt. Todd Saxon, Gunner Sgt. Samuel Helms and Santa Claus (a.k.a. Clay Anderson, chief of the Flight Design Branch in the Flight Design and Dynamics Division). Staff Sgt. Mark Chamberlain, not pictured, also joined the other Marines to help kick-off the program.

Bottom: Pioneer Contract Services employee Dorothy Harryman, right, and Judy Guy of the Support Operations Division check gifts collected in Bldg. 419. Gift request provided by Bank One were given to employees of children ranging in age from infant to teens. Clothes and toys were collected and delivered to the bank for distribution.



JSC generosity abundant to local community

By Karen Schmidt

The spirit of the Christmas season was abundant within the JSC workforce this year.

While holiday decorations adorned nearly every building and some areas of the JSC grounds, both civil servants and contractor employees opened their hearts to needy families in the community.

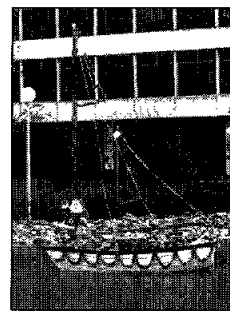
Employees found several ways to adopt-a-family or buy presents for needy children. The "Toys for Tots" program collected more than 100 toys in the Bldg. 3 cafeteria in just over a week for the U.S. Marines to distribute around Houston.

The Environmental Health staff of Kesley-Sebold adopted a family of seven through The Bridge and collected a variety of toys clothes and personal items to brighten the family's holiday season.

Employees in the Mission Operations Directorate Business Management Office found a family in LaMarque through the United Way. This family of four children lived with their grandparents because their mother was murdered last year. The children—ranging in age from 12 months to 17 years—received toys, clothes and food. The 8-year-old boy of the family received a bicycle from the JSC workers.

The entire third floor of Bldg. 7A filled wish lists from the Salvation Army Wish Tree. Employees from the Crew and Thermal Systems Division, Hamilton-Standard, ILC and Lockheed employees gathered 60 presents to donate to children in the Houston area.

The Space News Roundup staff was informed by a source at the North Pole that other employees also donated their time, money and gifts to others in need around Houston. While the SNR was unable to learn all the details, the source commended all JSC employees on their generous spirit during the holiday season.



Santa's dinghy



Astronaut Steve Smith and daughter

Mission control open for viewing

The Mission Control Center viewing room will be open to JSC and contractor badged employees and their families during portions of the STS-72 mission.

Employees will be allowed to visit the MCC from 1-5 p.m. Saturday and 11:30 a.m.-2:30 p.m. Wednesday.

Employees must wear their badges and escort family members through the lobby of Bldg. 30 South. Children under five will not be permitted. No flash photography or loud talking will be permitted at any time. Because of the dynamic nature of shuttle mission, viewing hours may be changed or canceled without notice.

For the latest information on the schedule, call the Employee Information Service at x36765.

New device removes deadly carbon monoxide

Homeowners everywhere someday soon may be protected from deadly carbon monoxide fumes, thanks to a device invented at Langley Research Center.

The device uses a new class of low-temperature oxidation catalysts to convert carbon monoxide to non-toxic carbon dioxide at room temperature. It also can remove formaldehyde fumes. The catalysts initially were developed for research involving carbon dioxide lasers.

Industry already has shown an interest in the device. Rochester Gas and Electric Co. in Rochester, N.Y., has an agreement with Langley to develop a product for use in homes, cars and aircraft.

The Mantic Corp. of Salt Lake City plans to use them in breathing apparatus, such as firefighter masks. The catalysts also have applications as trace-gas detectors and in cold-engine emission control.

To work, the catalysts are applied to a surface; air passing over the surface reacts with the catalysts, transforming carbon monoxide and formaldehyde. The device requires no energy for operation, doesn't need to be plugged in, has no moving parts and lasts a long time.

Russian language classes available

Russian language classes from basic beginners to advanced classes are now available.

The classes are conducted in the evenings at Clear Lake United Methodist Church, 16335 El Camino Real. The cost is \$108 for 10 weeks. Beginner class meets at 6 p.m. Mondays and Wednesdays. Advanced Beginner, Intermediate and Advanced classes meet one night each week for two hours. New students may enroll through the week of Jan 22. For information, call Susan Crippen at x42245.

Government leaders continue to discuss budget this week

(Continued from page 1)

economic forecasts. His plan would cut \$102 billion from Medicare—about half what Republicans proposed—and offer a tax cut of only \$87 billion, compared to \$240 billion in the GOP plan. The White House would increase the size of its proposed tax cut if the economy performs well.

Although the President had delivered a concrete balanced budget plan, Republicans have expressed opposition to the specific spending allocations. They warned that without a completed budget deal, they again may shut down parts of the government when the continuing resolutions expire on Jan. 26. Talks between President Clinton and

Congressional leaders resumed Monday.

The Office of Personnel Management issued a detailed set of instructions Jan. 6 that will guide all federal agencies in the way they handle timekeeping and payroll issues. Detailed instructions are being prepared for center timekeepers to support payroll process-

ing activities.

Employees who were directed to stay at home during the furlough will be paid "as though they had performed work for the agency during all periods of regularly scheduled duty."

During the furlough, employees were advanced the money they earned during the first week of the

Dec. 11-22 pay period. All civil servants are expected to receive the remainder of that pay period's salary, minus normal deductions such as taxes and insurance, by today. The following pay period's checks, which normally would have been mailed out or deposited electronically by Jan. 16., will be delivered no later than Jan. 18.

Gemini 7-6 celebrates 30th anniversary

The 30th anniversary of Gemini 7-6, and the first rendezvous and docking of two manned spacecraft, will be celebrated Jan. 26 at the Gilruth Center.

Coordinator Bob Legler is seeking help in locating individuals that worked on Gemini 76 and the Gemini program, including operations, program and engineering.

"We are asking everyone to search their archives for trivia that we may

show at the party," Legler said. "Also I have video and slides that will run continuously around the ballroom."

A short program that recognizes various groups of people is planned and coordinators are offering short time slots for representatives from each group to say a few words, present slides or recognize individuals who were significant to the success of the rendezvous.

Tickets are now on sale for \$5 and

may be purchased from the following volunteers: Bob Becker 282-2794, Ken Young 335-6095 and Bob Legler x35406 located in Bldg. 1, Rm. 878; Jo Corey Bldg. 4N, Rm. 153; Alice Van Guilder Bldg. 4N, Rm. 309; Oma Cross Bldg. 30A, Rm. 1012A; Norma McMinimy at the Loral Bldg. behind the old Sakowitz mall and Ken Young of Rockwell at 600 Gemini. For more information call Legler at x35406.

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.

Resource center to be open daily

(Continued from page 1)

combined staff offers research assistance and are operated by Media Services Corp.

The JSC Media Resources Center will be open from 8 a.m.-5 p.m. Monday-Friday. Off-site customers will access the MRC through the main gate, where they will be badged and directed to Bldg. 423. For information call x34231.