National Aeronautics and

Space Administration

Lyndon B. Johnson Space Center Houston, Texas



Galileo gang

The crew of STS-34 brings home a photographic record of its mission to dispatch Galileo to Jupiter. Photos on Page 3.



Play-by-play

Space Center Houston launches its Mission Status Center to give visitors timely updates on space missions. Story on Page 4.

Space News Roundup November 3, 1989 Vol. 28

Excellence award goes to Lockheed

A JSC contractor, Lockheed Engineering and Sciences Co. (LESC) of Houston, is the 1988-89 recipient of the NASA Excellence Award for Quality and Productivity.

NASA Deputy Administrator J.R. Thompson announced the selection Tuesday night at the sixth annual NASA/Contractors Conference in Huntsville, Ala. He said that, for well over 23 years, LESC has applied the highest level of talent, proficiency and consistency in supporting all the major manned space flight programs.

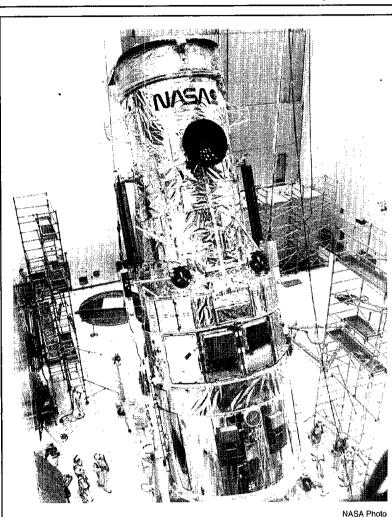
LESC was structured to provide high-technology engineering, science, management and technical support for government programs. The award reads that LESC has continually improved operations, primarily as a support contractor for JSC, and that the company has a long track record of sustained excellent performance, coupled with continuing innovative programs-setting the standard for the service industry as a leader in quality and productivity.

LESC was selected by the NASA Quality and Productivity Steering Committee and endorsed by the administrator based on review of the findings report and recommendations of the Excellence Award Evaluation Committee.

Three other JSC contractors were among the finalists: Barrios Technology Inc., Houston; Computer Sciences Corp., Houston; and Rockwell International, Space Transportation Division, Downey, Calif. Other finalists were: Bendix Field Engineering Corp., Columbia, Md.; Boeing Computer Support Services (CMS), Huntsville, Ala.; EG&G Florida Inc., Kennedy Space Center, Fla.; and Grumman Technical Services Division, Titusville, Fla.

"Each of these firms has demonstrated admirable performance in attaining a level of quality and productivity that commands our respect and deep appreciation," said George Rodney, NASA associate administrator for safety, reliability, maintainability and quality assurance.

Award criteria, developed by NASA in conjunction with the American Society for Quality Control, Milwaukee, Wis., were used to judge nominees on performance achievements and improvements in customer satisfaction, quality and productivity levels. Emphasis also was placed on management commitment, goals and measures, commun-Please see **EXCELLENCE**, Page 4



The Hubble Space Telescope is lifted into the vertical position in Kennedy Space Center's Vertical Processing Facility. The telescope, which will be able to view 97 percent of the known universe from orbit, was powered up Oct. 28.

Hubble Space Telescope powered up for testing

(HST) has passed a significant milestone toward launch with the first "power-up" of the spacecraft at Kennedy Space Center.

The power-up initiates a series of functional checks of onboard science instruments and systems which are scheduled to continue through the end of January.

Power was applied to the telescope via satellite from the HST control facility at Lockheed in Sunnyvale, Calif., at 11:15 a.m. CDT on Oct. 28. The link terminates at a 30-foot receiving antenna especially installed at KSC's Vertical Processing Facility to support the upcoming telescope testing. A return data stream confirmed to controllers that the

The Hubble Space Telescope ments, the telescope's pointing control system, fine guidance sensors, the communications and data handling system with associated tape recorders, and the power system.

In addition, another 12 days of tests are scheduled with the HST Payload Operations Control Center at Goddard Space Flight Center. They will directly simulate onorbit activity using the telescope via the satellite link.

Finally, the telescope will undergo the routine tests for payloads flown on the space shuttle, verifying its readiness to be integrated with the space shuttle Discovery. These tests will take about four days.

Based on the current manifest, power was on, and that the satellite the Hubble Space Telescope is link will be returning test data to scheduled to be transported to the Sunnyvale during a total of 35 launch pad on March 9, 1990; placed in the payload bay of scheduled test days. Discovery on March 12; and Undergoing performance evaluation are five science instru- launched no earlier than March 26.

Congress OKs \$12.4 billion **NASA** budget

By Kelly Humphries

Congress gave final approval this week to a \$12.4 billion 1990 budget for NASA, an 11.9 percent increase over last year's budget but 6.7 percent less than President George Bush requested.

The U.S. Senate gave final approval to the conference committee compromise on the HUD and independent agencies budget that includes NASA funding last week, and the House of Representatives approved the bill on Tuesday. It now goes to President Bush, who is expected to sign it next week.

'It is too soon to tell the specific impacts of this budget on the programs at JSC," said Wayne Draper, the center's comptroller. JSC received \$1.9 billion of last year's NASA budget.

'We are very concerned, however, with the apparent reduction the center will be required to take in institutional base operations. It appears that the approved budget in this area is \$20 million less than our submitted requirements. We are still in the process of evaluating the potential impacts of this reduction." Institutional base operations are

those that provide for the operation and maintenance of the center.

NASA has been operating under continuing resolutions since Oct. 1, the beginning of the 1990 fiscal year, said Rick Arbuthnot, special assistant for external affairs to the JSC comptroller.

The budget includes \$1.8 billion for Space Station Freedom, which is double the \$900 million that was received in 1989. It allows \$4.5 billion for space flight control and data communication, which is made up primarily of space shuttle spending. Research and program management received a total of \$1.9 billion.

Construction of facilities received \$592 million, Arbuthnot said. The NASA budget contains provisions for construction money transfers of up to \$85 million to the shuttle program, \$67 million to research and program management and \$25 million to the National Aerospace Plane.

The research and program management portion of the budget includes money for a 3.6 percent salary increase for civil servants that will take effect Jan. 1, 1990.

Discovery shaping up for November mission

By Kyle Herring Preparations for *Discovery*'s 10th space mission continue to proceed smoothly toward a launch no earlier than Nov. 20 from Kennedy Space Center's launch

pad 39A. Monday marked the successful conclusion of the Terminal Countdown Demon-

stration Test with a simulated engine cutoff at the T-4 second mark at about and the pad was cleared of all 10:04 a.m. CST. The STS-33 flight nonessential personnel while nitrocrew-Commander Fred Gregory, gen tetroxide and monomethylhydra-Pilot John Blaha and Mission Spe- zine were loaded in the orbital cialists Sonny Carter, Story Musgrave maneuvering system and reaction and Kathy Thornton-returned to control system storage tanks. JSC that afternoon and will not return to the launch site until three days before launch.

Kennedy on Monday and Tuesday for the Flight Readiness Review to assess the readiness of all shuttle components for the STS-33 mission. An official launch date is expected

to be announced at the conclusion of the review Tuesday.

Operations to load the hypergolic propellants

aboard Discovery began this week Also during this operation, hydrazine was loaded for Discovery's auxiliary power units and for the solid Please see **DISCOVERY**, Page 4



Shuttle managers will meet at

Germany heads orbiter projects Colonna says g'day mate to JSC for two years

By Kyle Herring

Escaping from the everyday, Richard Colonna, manager of the Orbiter and GFE Projects Office, is

headed for the outback to become NASA's representative in Australia. He will be replaced by Dan Germany, deputy manager of the office since 1987.

Effective at the conclusion of Discovery's Defense Department mission later this month, Germany will be acting manager of the orbiter project until Headquarters makes his assignment permanent.

Colonna said he will be leaving the job in the capable hands of Germany. He "will make a very fine project manager," Colonna said, adding that "he'll put his own personal touch" on the job and "be able to make



improvements. I'm confident he'll keep the project on track.'

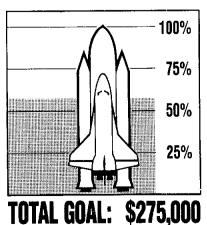
In his new position as NASA's representative to



Australia, Colonna will be based in Canberra for two years and work with the space community there. Assigned to NASA Headquarters, he will be the chief liaison between Australia and NASA's Jet Propulsion Laboratory for tracking station activity in the region, including the Deep Space Network activity at Tidbinbilla and the Parkes Observatory.

As manager of the orbiter office,

Germany will be responsible for management of all hardware and software projects for each orbiter. This includes technical and business activities associated Please see GERMANY, Page 4





Payload specialists appointed for two **Spacelab missions**

Two Spacelab payload specialists have been appointed by Dr. Lennard A. Fisk, NASA's associate administrator for space science and applications.

Dr. Millie Hughes-Fulford will be a prime payload specialist for Spacelab Life Sciences-1 (SLS-1) and Dr. Stanley N. Koszelak will serve as the U.S. backup payload specialist for Spacelab-J.

Hughes-Fulford, 43, previously assigned to SLS-2 as the prime payload specialist, has been reassigned to SLS-1 to replace Dr. Robert W. Phillips, 60. Phillips is stepping down because he did not meet the Please see PAYLOAD, Page 4

and noodle casserole. Entrees: liver

and onions, deviled crabs, roast beef

with dressing. Soup: seafood gumbo.

Vegetables: whipped potatoes, peas,

Cafetería menu-Special: breaded

cutlet. Entrees: beef chop suey, Polish

sausage with potato salad. Soup:

French onion. Vegetables: okra and

Cafeteria menu-Special: fried

chicken. Entrees: Salisbury steak,

shrimp Creole, Soup: split pea. Vege-

tables: mixed vegetables, beets,

Cafeteria menu-Special: stuffed

bell pepper. Entrees: fried catfish with

hush puppies, braised beef rib, bar-

becue plate, wieners and beans,

shrimp salad. Soup: seafood gumbo.

Vegetables: corn O'Brian, rice, Italian

Cafeteria menu-Special: bar-

becue smoked link. Entrees: beef

Stroganoff, turkey and dressing.

Soup: chicken noodle. Vegetables:

Lima beans, buttered squash, Span-

Cafeteria menu-Special: meat

sauce and spaghetti. Entrees: baked

scrod, liver and onions, fried shrimp.

Soup: seafood gumbo. Vegetables:

green beans, buttered broccoli,

Supercomputing symposium-

Supercomputing: Parallel and

Numerically Intensive Computing"

will be the focus of the next Research

Institute for Computing and Informa-

tion Systems (RICIS) series Nov. 6-

and Convention Center. Co-

sponsored by RICIS and JSC, ses-

sions will consider supercomputer

design; major issues of supercom-

puting; innovative computing and

experimental architectures; image

processing, graphics and simulation;

and computational fluid dynamics.

Today

cauliflower.

Mondav

Tuesday

whipped potatoes.

Wednesday

green beans.

Thursday

ish rice.

Nov. 3

Nov. 6

whipped potatoes.

tomatoes, green peas.

November 3, 1989

JSC **Ticket Window**

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m. to 2 p.m. weekdays.

General Cinema (valid for one year): \$3.50 each.

AMC Theater (valid until May 1990): \$3 each.

Sea World (San Antonio, year long): adults, \$17.25; children \$14.75.

Texas Renaissance Festival (open weekends through Nov. 12): adults, \$8.95; children \$4.95.

Snoopy's World of Magic (Nov. 4, 11 a.m., Summit): \$7.50.

'Step on a Crack" (Nov. 11, 2:30 p.m.,UH-Clear Lake Bayou Theatre) a family play \$3.50.

Delta Downs Bus Trip (Nov. 19): includes transportation, continental breakfast and drinks, and clubhouse admission: \$29 per person.

Delta Downs Overnight Trip (Nov. 18-19): includes transportation, light lunch and drinks, magarita reception at Luxury Hotel Inn, clubhouse admission, lodging, and breakfast buffet: \$59 per person.

Powderhorn Colorado Ski Trip (Jan. 23-27): includes chartered air fare from Hobby to Grand Junction, air transfer, and lodging for 3 days, 4 nights. Trip package must be purchased by Nov. 10: \$410 per person (based on double occupancy).

Dickens on the Strand (Dec. 2-3): adults, \$4; ages 6-12 and over 65, \$2.

20th Anniversary of the First Lunar Landing Speakers Program, and The Moon As Seen By Apollo Astronauts videos are available in the Bldg. 11 Exchange Store, \$20 each.

Page 2

Gilruth Center News

Sign up policy—All classes and athletic activities are first come, first served. To enroll, you must sign up in person at the Gilruth Recreation Center. Everyone will be required to show a badge or EAA membership card. Payment must be made in full at the time of registration. Classes tend to fill up four weeks in advance

EAA badges-Dependents and spouses may apply for a photo I.D. 6:30-9:30 p.m. Monday-Friday.

Defensive driving-Course is offered from 8 a.m.-5 p.m., Nov. 18 and Dec. 16; cost is \$15.

Weight safety-Required for use of the Rec Center weight room. Classes will be 8-9:30 p.m. Oct. 25, Nov. 7 and Nov. 29; cost is \$4.

Aerobics and exercise—Both classes are ongoing: cost is \$24.

Taekwondo/Hapkido-Learn the Korean art of self defense, mental and physical discipline. Classes held Tuesdays and Wednesdays, fee is \$40.

Intercenter run-The 10-kilometer and 2-mile races for the annual Fall Intercenter Run will be held throughout October. Runners may submit their times at the Rec Center.

Country and western dance-Lessons begin Nov. 6 and held every Monday for six weeks; cost is \$20 per couple.

Beginning tennis lessons-Lessons begin Nov. 6 and are held each Monday for six weeks, 5:15-6:45 p.m.; cost is \$32. Sign-ups begin immediately. The October men's open "C" softball tournament has been cancelled.

Listen!

The Employee Information Service carries all the latest details on space shuttle launches, landings and welcome home ceremonies. For the most up-to-date information call: 483-6765

JSC

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. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2.

Property

Rent: 1 wk. condo, Kauai's north shore, sleeps 6, avail. now thru 12/31/89, \$395, OBO. 283-5332 or 991-7439. Sale: Taylor Lake Estates, 90' x 135' lo

Paul, 282-4098 or 554-6366. '86 Nissan 300ZX, burgundy red, auto., T-tops, 15K mi., new tires, one owner, immac., \$12,500. x36518 or 486-1766. '83 Chevrolet Caprice classic, one owner,

loaded. x37909 or 930-1509. '71 Chevy PU, A/C, runs well, needs tires and inspec., \$500. Dennis, x36332 or 335-1004.

seats, AM/FM radio w/tape deck, metallic brn., \$4,000. Edward, x36250 or 481-4889.

'84 Honda V65-Magna, blk., 10K mi., \$1,800.

78 Oldsmobile Delta 88, \$500. Paul, x34462 Household or 488-5183.

PDL, cruise, tilt, deluxe cloth uph., recl. bucket lots of software, disks and case, great for school, \$540. 333-6458. IBM PC comp. equip., Samsung 12" mono

chrome monitor (MA 2565), \$65, MGPH card (mono-graphics and printer ports), \$50, fully programmable serial card, 1 port, \$30, Commodore 64 computer, \$50. Brad, 282-3570 or 331-2693.

AT&T display enhancement bd., 640 x 400, 16 color, wks. w/reg. AT&T color monitor, \$100, OBO. x30852 or 996-0981,

Rattan couch, loveseat, chair, \$200; lg. microwave, many features, \$125; VCR,

at Barringer Knoll Condos, Hwy. 3. 283-5616 or 30' plus cabin cruiser. 337-4051. 488-3595.

Photographic Minolta Maxxum 7000 camera, wide-angle lens, telephoto lens, zoom flash, other lenses plus filters, beaut. carrying case, was \$1,200 new, used 3 times, now \$500. x30180.

Minolta XG-M 35mm camera, Minolta f-1.4x58mm lens. Vivitar f-2.8 55 to 135mm zoom lens, Vivitar 292 rechrg. flash, Vivitar 125 flash, cases, ex. cond., \$195. Larry, x35586.

Complete photography dark room equip., including Beseler: 23CII enlarger w/dual dichro colorhead, PMIA color analyses, timer, stabilized power supply, and 50mm F3.5 lens; Nikon: 50mm F4, 75mm F4 enlarger lenses; Unicolor: color drum roller w/8x10 and 11x14 drums; Acculight: transparency editor, all for \$800, Brad Bell, x3-8102 or 480-6316.

Miscellaneous

New Epson elec. memory typewriter, used once, paid \$200, sell for \$145, OBO; double bed, incl. comforter, pillows and 2 sets of sheets, \$190. Valerie, x38385.

Trap Shooter II radar detector, \$50: 20" girls bicycle, new, \$75. Joe, x38851 or 944-7042. Bell Pro-Star motorcycle helmet, beaut., red,

white, blue des. w/visor, like new, \$90. x31588 or 488-1326.

Engagement ring, 18-K, yellow gold, round diamond solitaire, .68 carats w/6 round diamonds, .18 carats, orig. cost \$1,500, asking

Dates & Data Cost is \$195 for university and plans available will be participating. government workers or \$275 for Cafeteria menu-Special: tuna others. NASA employees should

Asian-Pacific meeting-The JSC Asian-Pacific group will meet at 11:30, Nov. 6, in the Gilruth Recreation Center executive room, second floor. Meeting participants will set the date for the next annual event, select committee chairmen, guest speakers, etc. For additional information, contact Sophia LeCour at 282-3798.

contact Glen Van Zandt, x33069.

Nov. 7

Photovoltaic conference-NASA's Lewis Research Center will host the 10th Space Photovoltaic Research and Technology Conference to assess the progress the program has made to increase the end-of-life performance of solar cells and arrays. . For information, contact Clifford Swartz (216) 433-2232.

Nov. 8

Astronomy Seminar—Dr. A.A. Jackson will report on the 21st division of the Planetary Sciences' meeting from noon to 1 p.m., Nov. 8, in the Bldg. 31 Conference Room. For information, contact AI Jackson, x33709.

Nov. 9

Education Conference-The Space Center Houston Chapter of the National Contract Management Association (NCMA) will sponsor a one day Education Conference on Ethics and Integrity in Contracting on Nov. 9. Registration and a continental breakfast will be at 7:30 a.m. at the South Shore Harbour resort in League City. The registration fee is \$100 for NCMA members and \$125 for non-members. For registration, NASA personnel should call Sue Garman at x34142, contractors call Sandra Allen at 280-2361. Contact Joanne E. Kirbie at 333-6319 for general information.

7 at the South Shore Harbour Hotel Nov. 13

Health Fair—To assist employees in making changes to their federal employees health benefits during open season (Nov. 13-Dec. 8), a Health Fair will be held on Monday, Nov. 13, from 9 a.m.-2 p.m., in the Gilruth Recreation Center ballroom. Representatives from all the health

Contact Employee Services at x32681 for additional information.

Nov. 14

Space technology-The third annual "Space: Technology, Commerce and Communications" conference will be Nov. 14-16 at the George R. Brown Convention Center in Houston. This year's theme is Space Business: Charting the Courts Into the Next Decade." Cosponsored by the Space Founcation, SPACE Magazine and Washington Technology, the conference will include keynote speeches by Donald Beall, Rockwell International chief executive, NASA Deputy Administrator J.R. Thompson, and JSC Director Aaron Cohen. Government and contractor employees may present their NASA badge or government identification for free admission to conference exhibits. Free shuttle bus service from JSC to the Convention Center and back will pick up at JSC on the hour from 10 a.m. to 4 p.m. on Nov. 14, from 9 a.m. to 3 p.m., Nov. 15, and from 9 a.m. to 1 p.m. Nov. 16 at Ave. D, south of the Visitors Center. For more information, contact John McLeaish, 480-7445.

Nov. 17

Voyager: The Grand Tour Comes to a Close—This "wrap-up" presentation of the grand tour of Voyager and Pioneer spacecraft of the outer planets of the solar system will be at 7:30 p.m., Nov. 17 in the World Affairs Lounge, University Center Underground, University of Houston. Plantetologists Dr. Stephen Clifford and Dr. Steven Williams of the Lunar and Planetary Institute and Dr. Faith Vilas, JSC's Solar Exploration Branch, will preside at the event, which is free and open to the public. Call 639-4221 for additional information.

Nov. 28

BAPCO meeting—The Bay Area PC Organization (BAPCO), a PC users' group, will meet at 7:30 p.m. Nov. 28 at the League City Bank and Trust. For additional information, contact Earl Rubenstein, x34807 or 326-2354; or Ron Waldbillig, 337-5074.

\$36,500. Don, x38039 or 333-3313.

Lease/Purchase: Texas A&M townhome, Ig. 2-1, walk to campus, \$38K. 333-4182. Lease: Piper's Meadow, clean, 3-2-2A, drapes, fenced, vaulted ceiling, ceiling fan, all brick, high-eff. A/C, \$650.mo. 486-0315.

Sale: Wooded lot in Westwood Shores, near Lake Livingston, 2 blks. from 14th TEE, \$7,500 cash or \$2,500 dn., owner fin., remainder at 10%. 538-3318.

Sale: Res. acreage, woodlands area, all util., \$6,000. Rob, x32121 or 481-1813.

Bent: Beachfront cabin on Crystal Beach wknd. rentals, \$150, sleeps 8 adults. Joel, 333-5310.

Bent: Santa Fe mobile home, 2-1.5, 3.8 acres. w/fence and pond, \$275/mo. Kelly, x36168 or (409) 925-1819.

Sale: Two res. lots, ea. approx. 70' x 185' in Wedgewood Village subd., Friendswood, owner fin. w/10% down. 482-5226.

Bent: Lake Livingston waterfront house, 3-2. new cond., furn., covered decks, pier, fishing/ swimming/skiing, wknd./wk. rates. 482-1582.

Sale: El Campo, TX 2-story house, well built, on 1.5 lots, 2 big pecan trees, peach, pear and fig trees. 783-9164.

60 acres 3 mi. from Karnes City, TX, on Hwy. 80, 50 mi. from San Antonio. 783-9164.

Cars & Trucks

Util. trailer, fully enclosed, waterproof, 60 cu. ft., good cond., \$500, OBO. x34784 or 482-5190.

'86 Mazda RX7, red, fully loaded, low mi., 28K, sunroof, alarm system, telephone hook-up, \$10K. Virginia Jordan, 773-7368.

'81 blue T-Bird, clean, good cond., 85K plus mi., \$2,300. Frank, 892-6983 or 486-5207.

'84 Chevy Celebrity, 4-dr., auto., A/C, PW,

'83 Honda Prelude, A/C, auto., moon roof, top cond., new Pirrelli tires, clean, \$4,995. 486-5659. '82 Ford F-150, 1/2 ton PU, 2-tone red w/ shell, rebuilt 302 V-8 and trans., 4bbl Holley, dual exhaust, bucket seats, new tires, \$4,500. 280-1692

'84 Mitsubishi Cordia turbo, one owner, 98K hwy. mi., new timing belts, C.V. joints, more, \$2,000 in receipts, looks like new, \$2,950, OBO, 484-5149.

'79 Cadillac sedan deVille, 61K orig. mi., fully loaded, leather seats, ex. cond., \$3,200. 484-5149

'80 Chevy LUV truck, 4-spd., new front tires, good wk. truck. 782-8398 or 554-2627.

'85 35' Mailard motor home, loaded, low mi., \$36K. 337-4051.

'86 Celica, loaded, creampuff, jet blk., \$500 below blue book. 474-2384. '87 Mercury Sable LS, fully loaded, plush int.,

prem. sound sys., 4-dr., 42K mi., \$9,400 or \$500 and assume payments. Sue, x35357 or 333-9197

'88 Hyundai Excel, 5-dr., AM/FM stereo, cass. player, cruise cont., A/C. Susan, x37424 or 326-4387

Boats & Planes

19' Prindle Cat. fully race rigged, new jib, beach wheels, cust. trir. w/sail box. Mike T. 333-6246 or 474-7217.

Cycles

79 Suzuki wetbike, 44.1 cu. in., 50hp, new batt., trir. incl., ex. cond., \$950. 333-6119 or 326-1254

Audiovisual & Computers

Apple II C computer w/2 disk drives, ImageWriter printer, monitor and mouse, 20 manuals, \$125, 488-7750.

Couch, ex. cond., lt. tan, \$75. Ed, x36250. Chromecraft dinette set, modern, exec. walnut table, 4 diamond tufted blk. vinyl chairs, \$220. Boyd, 488-8806.

Smoked-glass/oak DR table w/2 chairs and bench. \$150; 4 cream vinyl bar stools, \$20/ea.; Kenmore .8 cu. ft.-600 W. microwave, \$125; 8sleeper sofa w/watching loveseat, \$200; new wedding veil, \$45; 3/4 blue-fox jacket, \$200. Cheryl, 333-1427 or 335-6403.

Boys clothing sale, 7-yr. accum. sz. 0-7. Bill, 538-1849.

Kenmore Ig. microwave, perf. cond., \$100. 480-7257.

'89 Craftsman lawnmower, 3hp, 20" cut, rear bag, used approx. 5 times, \$175. Darren, 333-7593.

Presto round heat, 5,000W, elec. w/fan, \$10. Bauch, 333-3382.

Victrola, unfin., \$200; butcher-block look kitchen table w/4 wicker and chrome chrs., \$150: lg. freezer chest, needs paint, \$75; 2 hard-rock maple end tables, like new, \$100/ea.; stereoradio-rec, player, 48" x 16", \$25: children's single bed, white, \$40; single matt. and box spring, \$15; 2 dressers w/mirrors, \$75/ea.; upright piano, needs refin., \$200; Sears frostless refrig., 5' x 31", \$175. Judy, x38182 or 996-0788.

Drop-leaf table, \$175; dresser w/stool and beveled mirror, \$219; desk, \$195; washstand, \$185; curio cab., \$215. 283-5616 or 488-3595. Kg.-sz. wtrbd. w/drawers, semi-motionless, pads and heater, new, \$600. Laura, x31312. DR table, round w/2 captain's chairs, \$50. Teresa, 280-2671 or 996-7422.

Lost & Found

Reward/lost, blk. poodle (Woochie), last seen

Pets & Livestock

One-yr. old fem. beaut. blk. and white cat, neutered, all shots, very affectionate, free. 280-0861 or 283-5749.

Springer Spaniel pups, pedig. bitch, Lab. sire, od. Springer markings, liver and white, \$25 to pay for bills. Steve, x36725.

2 spec. Cocker Spaniels, 2 1/2 vr. male, and 1 1/2 yr. fem. Chervl, x39695.

Wanted

Want reasonably priced treadmill, sail for 12' sailboat, carpet steam cleaner and pressure washer. Don, x38039 or 333-3313.

Trade: Canyon View custom 4 BR, 3B off 360 west of Austin, prefer 5 yr. old, open plan within 20 min, of JSC. 471-8795 or 333-6083. Want Starwars spaceships, toys, fig. and

books, Ron, 482-1385. Want Volvo 15-in. Turbo Wheel, 4 spokes,

in good cond. Vincent, x30874 or 333-1316. Want '77 thru '81 Honda Accord for parts.

David, 486-5259.

Will the gentleman from Bldg. 1, who bought the child seat carrier for a bicycle from me, please call me. I found the shield part to cover the spokes of the bike. Carole, x31698 or 980-2467

Will trade my riding lawntracker needing repair for your motorcycle needing repairs or cleanup. Bob, x37664 or 554-2476.

Want to trade concert/church elec. organ for

\$1.300. OBO. x30874 or 333-1316.

Wonder hobby horse w/whinny, \$45; Avon coll.r steins, western, tan cowhide fringe coat, sz. 40, like new, \$75; Philco Mod. 60B antique cathedral radio, res., \$125, OBO. Boyd, 488-8806.

Great Christmas presents to get highschoolers into hobbies: microscope, 4-way and 2-way Futaba BC transmitter, all in ex. cond. Joe, x35896 or 488-7982.

Queen-sz. waterbed, \$150; Sears Roebuck stereo system, \$25; Brother EP-20 pers. typewriter, \$75. Lea Rehm, 333-7306.

Audiovox radar detector, \$100; Radio Shack pre-amp, \$20; Slaughterhouse Five prerecorded video tape, \$15; Audec voiceactivated autodial phone w/alarm clock, needs switch hook, \$50: Sony dream machine clock radio, \$25. Kevin, x30003 or 486-6546.

Remington 870 Wingmaster shotgun, mint cond., fancy grade stock w/28" vent rib barrel, 3" magnum chamber. x34727 or 480-7257.

26-in. Huffy girls 10-spd. bike, like new, less than 30 mi., \$65. Laurie, 532-1586. Golf clubs, Tour Model III, periph. wght., 1-

9, PW & SW, #18.20/club, metal woods 1,3,4, \$30/ea. David, 282-3827 or 554-5514.

Alum. camper top, fits sm. long-bed PU, rollout win., ex. cond., \$75. 282-2731 or 482-0547.

Lg. set of Amber Sharon Cabbage Rose depression glass, collectors item, ex. cond., will sell pieces, BO. Alison, x34314 or 332-0298

'88 Sears 12hp riding lawnmower, \$750. x31363 or 479-5594.

Blackjack headers for sm. block Chev., 283-350 C.I.D. brand new, \$40. Andy, 333-6671 or 333-9105.

1847 Wm. Rogers silverplate set of 56 pieces plus 7 extra pieces, serves 8. 783-9164.



P.C. RA D Onboard photography reveals 'stowaway'

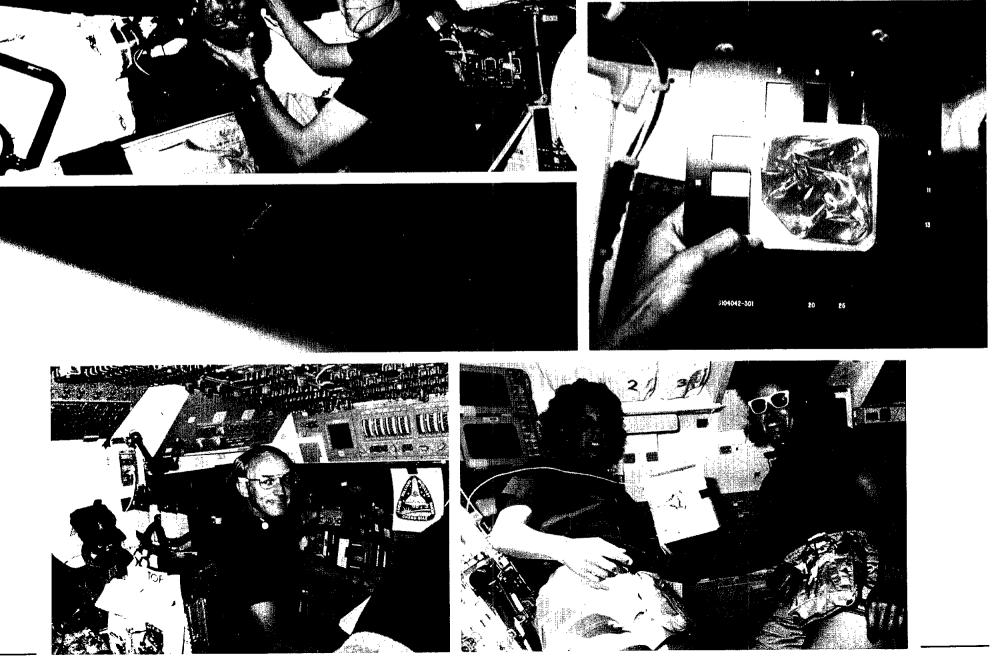
time the rascally rodent was of the stuffed variety. P.C. Rat, and McCulley appear to enjoy their first meal in zero-gravity; the STS-34 mascot, was carried on the Galileo mission in honor of the crew's Shuttle Mission Simulator (SMS) training team. It was named after the simulated "ratty communications" the crew sometimes had to deal with in the SMS. Clockwise from above: 1) Mission Specialist Franklin Chang-Diaz holds P.C. Rat as he and (from left) Commander Don Williams, Mission Specialists Ellen Baker and Shannon Lucid,

Shuttle crews have taken rats into space before, but this and Pilot Mike McCulley pose for a crew portrait; 2) Baker 3) an experiment module helps the crew test the iodine content of Atlantis' fuel-cell produced water; 4) Lucid dons sunglasses as she and Baker prepare for their roles in Galileo's deployment; 5) Williams takes a seat at his command station; 6) the spent external tank reflects earthshine as it falls toward Earth; and 7) Baker fulfills her role as physician by monitoring Chang-Diaz' blood flow.









Hardee heads NSTS Avionics Office

S. Nat Hardee Jr. has been JSC appointed manager of the National Space Transportation System (NSTS) Avionics Office.

Hardee, who previously was manager of the Reconfiguration Management Office in the Mission Missions Office, Science Mission Operations Directorate (MOD), is now responsible for space shuttle integrated avionics and flight software.

He replaces Jack Boykin, who has been doubling as acting manager of the Avionics Office since his September appointment as deputy manager of the NSTS Engineering Integration Office.

Hardee came to JSC in 1964 as a co-op, and had worked in several areas of the science directoratethe Space Physics Division, Lunar



Support Division, Planetary and Earth Sciences Division and Science Payloads Division. He was hardware/software manager for the remote manipulator system and payloads in the Orbiter Project Office before joining MOD.

Simanton information management leader

Donald F. Simanton has been appointed assistant director for

information resources management data processing, (IRM) in the Mission Support Directorate.

Simanton will be responsible for carrving out the Mission Support Directorate's responsibilities for managing information, especially that which can be processed on institutional equipment such as personal or mainframe computers and their connecting networks.

Simanton will represent JSC on the NASA Automated Information Management Council, and will continue as chairman of the IRM Steering Committee and JSC's computer security officer.

Simanton previously was chief of the Data Processing Systems Division. He has been with JSC since 1966, working in all phases of

operations, applications development, systems analysis and systems engineering.

Liput new systems development deputy

Hardee

James J. Liput has been named deputy chief of the Systems Development and Simulation Division in the Engineering Directorate.

Liput fills the vacancy created when Irvin Burtzlaff became division chief after the retirement of Pat Kurten.

Liput, who joined JSC in 1964, served in the Structures and



Simanton

Liput

Mechanics Division, the Lunar Surface Project Office, the Avionics Systems Engineering Division and the Shuttle Avionics Integration Division, which was renamed the Systems Development and Simulation Division. He has been manager of the Resident ALSEP Project Office, senior integration engineer and test manager for the SAIL Project Office, chief of the Avionics Integration Branch and head of the Project Integration Office.



HALLOWEEN HILARITY—A professional "ghostbuster" puts on a show for children of JSC employees at Monday's Children's Halloween Party in the Gilruth Recreation Center. The kids were treated to magic, games and treats as well.

Space conference open to JSC employees

JSC employees are invited, as work schedules permit, to visit the third annual SPACE: Technology, Commerce and Communications Conference and Exposition. The conference is scheduled for Nov. 14-16 at the George R. Brown Convention Center in downtown Houston.

This year, both JSC civil service and contractor employees will be granted free admission to the exhibition area of the conference, using their NASA badge or government identification for admission. Exhibit hours are: 11 a.m.-7 p.m. Nov. 14; 10 a.m.-5 p.m. Nov.

15; and 10 a.m.-3 p.m. Nov. 16. Free shuttle bus service from JSC (loading on Ave. D south of the Visitors Center) to the Convention Center and return will be available at the following times: departing JSC on the hour on Nov. 14 from 10 a.m.-4 p.m., on Nov. 15 from 9 a.m.-3 p.m., and on Nov. 16 from 9 a.m.-1 p.m.

The buses will depart the Convention Center back to JSC on the hour on Nov. 14 from noon-6 p.m., on Nov. 15 from 10 a.m.-4 p.m., and on Nov. 16 from 9 a.m.-1 p.m.

The theme of the three-day con- Tully, 862-7174.

ference is "Space Business: Charting the Course into the 1990's." The event is cosponsored by The Space Foundation, SPACE Magazine, and Washington Technology.

About eighty speakers are scheduled. Keynote speeches will be delivered by NASA Deputy Administrator J.R. Thompson, Nov. 14; JSC Director Aaron Cohen, Nov. 15; and Donald Beall, chairman, Rockwell International Corp., Nov. 16.

For more information, contact John McLeaish, 480-7445, or Roseann

Space Center Houston plans status center

behind-the-scenes view of astro- nauts and Mission Control will be nauts and NASA

flight controllers at work.

The unveiling by the Manned Space Flight Education Foundation inc. (MSFEFI) at the

accompanied by the announcement that Southwestern Bell Corp. has become the first official sponsor of the \$50 million "experience center" to be built just west of JSC's main gate.

Harold S. Stall, JSC's public affairs director and MSFEFI president, said the Mission Status Center will display live video from Kennedy Space

Space Center Houston unveiled Center launch pads, JSC's Mission plans Thursday for a Mission Status Control Center and space. Voice Center that will provide visitors a rare communication between the astro-

> monitored continuously, he said, and a briefing officer will provide "play-byplay" explanation of events as they unfold.

Southwestern announced his company's \$1.5 million commitment.

Stall said construction of Space Center Houston is expected to begin in February. The center, designed by Walt Disney Imagineering, is expected to open to the public in the summer of 1991, said General Manager Vance Ablott.



Child Care Center plans garage sale

JSC Child Care Center volunteers Allen, 33087; or Mary Lee Meider, are holding a garage sale from 9 a.m.- x39862, to arrange for pickup. It is also 4 p.m. Nov. 18, at the Gilruth Recrea-

tion Center, new pavilion area. The garage sale is open to all employees and the public.

Proceeds from the sale will help raise the initial operating funds the employee facility must have

prior to its planned May 1, 1990, opening.

Employees with items to donate to the sale may contact the following: Estella Gillette x33077; Mike Evans x37667; Jessie Gilmore, 32739; Mary



possible to arrange pickup of larger items, such as furniture and appliances, by calling one of the contact people. Donated items also may be dropped off at the **Gilruth Recreation** Center, from 9 a.m.-2 p.m., on Nov. 10 and 11.

Volunteers to work during the garage sale also are needed. Anyone who wishes to help the child care center with donations of sale items, or to volunteer their time, or both, is urged to call today.

ermany takes Orbiter and GFE Project Office reins (Continued from Page 1) with systems development; vehicle production and modifications; ground support equipment development; avionics software development and mission configuration; crew equipment, flight preparation and maintenance; and engineering support for orbiter operations.

establish "a management process Orbiter and GFE Projects Office's

a month as well as maintain a four years, Dick has guided the continuing evolving hardware design to meet the needs of the 1990s and the 21st century.'

Colonna has been manager of the office since 1985. He was a member of the Space Task Group formed after the National Space Act of 1958.

Germany said Colonna's leader-Germany said his goal will be to ship is going to be missed. "As the that's going to allow us to fly once number one quarterback for the last

project and program through a very tumultuous period (that is, through the 51-L accident and the recovery period). His leadership is going to be missed and his personal dedication is something that I hope we can all exemplify.'

Colonna has held positions with increasing responsibility with the Manned Spacecraft Center, then JSC since 1962. Some of those jobs included working on Project Mercury, NASA Headquarters from 1978 to Apollo, Skylab and the Space Shuttle Program. Colonna began his career in aerospace as an engineer in North American Aviation's Structures Group in 1956.

Germany has been with NASA for more than 29 years, beginning his career in 1960 at the Marshall Space Flight Center. He directed the Orbiter Programs Division in the Shuttle Transportation System Office at

1981.

Germany moved to Houston and JSC as assistant manager in the Orbiter Projects Office before becoming manager of the Shuttle Flight Equipment Office from 1983 to 1985.

Prior to becoming deputy manager of the orbiter office, he was deputy manager of the Space Station Proiects Office.

Payload specialists assigned

(Continued from Page 1) medical standards for a payload specialist. He will continue his duties as an SLS-1 mission support team member

professor of biochemistry at the University of California Medical Center, San Francisco, and a medical researcher at the Veterans Administration Medical Center there.

SLS-1 is the first mission to use Spacelab as a biological research facility. The 20 scientific investiga-

tions onboard will help answer critical questions about the way humans adapt to microgravity and readapt to Earth's gravity.

Koszelak, 36, is an assistant Hughes-Fulford is an associate research biochemist at the University of California at Riverside.

SLS-1 is scheduled to fly in August 1990 and is managed by JSC for NASA's Office of Space Science and Applications (OSSA). Spacelab-J, scheduled to fly in June 1991, is managed by Marshall Space Flight Center for OSSA.



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| Editor | Kelly Humphries |
|------------------|--------------------|
| Associate Editor | ••••• Linda Copley |

Discovery hydraulic power unit replaced

(Continued from Page 1) rocket boosters' hydraulic power units. One of the two hydraulic power units on the left hand solid rocket booster was replaced last week after it was discovered that the unit came

from a lot that produced at least one unit with a cracked housing.

This unit was scheduled to be hot fired after the propellant loading operation which was expected to continue through this morning.

Excellence award goes to JSC contractor

(Continued from Page 1) ication, health and safety, work force training, award recognition and subcontractor involvement.

Key goals of the NASA Excellence world.

Award are to institutionalize quality and productivity practices, not only throughout NASA and the agency's contractors, but also the rest of the industrial