



The manifest reflecting shuttle flights through 1997 has been put into a handy reference format. See Page 3.



JSC employees and local leaders participate in a forum to celebrate Black History Month. Photo on Page 4.

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JSC director urges team to keep eye on ball

Huntoon addresses issues, concerns in wide-ranging interview

[Editor's note: This is the edited text of an interview conducted by Space News Roundup with JSC Director Dr. Carolyn L. Huntoon on Feb. 24, 1995.]

Q: Dr. Huntoon, it seems that all we've been hearing lately is bad news... more budget cuts, shuffling work among centers, untold job losses. What can you tell us about what's going to happen at JSC?

A: Believe me, I understand the frustration that many employees feel in the face of questions for which there are few clear answers. And exactly

how the NASA budget is going to influence further changes at JSC is certainly one of those questions. Let me say a few words, though, about what's already happening now at JSC. True, we have been experiencing some tough times of late. We've cut our budget by 30 percent since '93, we've reduced our support contractors, downsized our civil service workforce, and now our 5-year budget plan is \$5 billion less than last year's. But let's not lose sight of what we're really here to do and have recently accomplished. In the last year, we've flown eight

highly productive science and technology missions aboard the shuttle, the first Russian cosmonauts flew aboard U.S. spacecraft, we successfully conducted the first joint mission with the Russians in over two decades, we supported the complete restructuring of the space station program as a model for future programs, produced some 30,000 pounds of space station hardware and played a major role in keeping the program on schedule.... That's what we're about here at JSC, and that's what I expect to continue to happen.

Q: NASA Administrator Daniel S. Goldin says we're going to totally restructure the agency and that everything is on the table. How is this going to happen? How will JSC participate?

A: At this point, information is still being gathered from across the agency through a number of processes and reviews. The NASA zero-based review team, which will be visiting each center over the next month, will be responsible for factoring all of this information into its final recommendations. Those recommendations will then be reviewed by senior management. So each

center will have direct input to the recommendations and review process. And, although the details and timeline for that process aren't entirely clear, yet, Dan has already identified some guiding principles for the effort.

The goals are to eliminate unnecessary duplication and overlaps among centers, identify work that the government should not be doing and leave it to others, privatize and commercialize those aspects of our work which are feasible, focus more on high-level research and development, Please see **HUNTOON**, Page 4

Books close on Operation Lighting Strike

By Jeff Carr

All cases are closed, or are being closed, with no unresolved issues. That was the message delivered to senior JSC managers this week by a man who lived at the heart of Operation Lighting Strike, a secret sting operation aimed at potential contractor fraud and mismanagement, from mid-1991 to the time it became public in late 1993.

"The good news is that the last critical interview was on Friday, and there are no unresolved issues regarding NASA government personnel," said Doug Smith, Investigative Manager for JSC's Office of the Inspector General.

The declaration came as Smith recounted just how his office had collaborated with the FBI to root out potential crime and corruption in the JSC contractor community. In doing so, he peeled back the layers of a complex scheme hatched between his office and the governmental fraud unit of the FBI to test individuals whose names had come up in complaints or allegations on the ledgers of JSC and DOD investigators. Those investigators had been unsuccessful in resolving some 80 complaints, many of which stemmed from the simple appearance of wrongdoing, according to Smith. By FBI standards, that was enough to make the situation a candidate for undercover operations.

"Based on the projected cost, it qualified as a Group-1 undercover operation," said Smith. "As such, it was subject to approval at the highest levels." Smith claims that the cost of the operation was just under \$1 million not including salaries.

Please see **STING**, Page 4



NASA Photo

The STS-67 crew, seen here during the terminal countdown demonstration test at Kennedy Space Center, will work in two shifts around-the-clock during the 15 1/2 day Astro-2 mission to study the mysteries of ultraviolet radiation emanating from distant galactic objects such as quasars, stars and galaxies. From left are: Mission Specialist John Grunsfeld, Pilot Bill Gregory, Payload Specialist Ron Parise, Commander Steve Oswald, Mission Specialist Wendy Lawrence, Payload Specialist Sam Durrance and Payload Commander Tammy Jernigan.

Astro-2 scientists hope to triple data on two-week flight

By Kelly Humphries

Shuttle managers were waiting for weather to clear this week as they continued to shoot for an on-time launch Thursday of the record-setting STS-67 astronomy mission.

The same cold front that brought thunderstorms and showers to the JSC area early this week pushed through the southeastern United States late this week. But the cloud cover was expected to separate into bands and the launch team at Kennedy Space Center hoped to thread the needle at 12:37 a.m. JSC time Thursday.

Commander Steve Oswald, Pilot Bill Gregory, Mission Specialists Tammy Jernigan, Wendy Lawrence and John Grunsfeld, and Payload Specialists Ron Parise and Sam Durrance arrived at Kennedy Space Center late Sunday and were sleeping in two shifts, adjusting to their hours for the round-the-clock mission.

"We're looking forward to a very exciting science mission on STS-67, Space Shuttle Program Director Brewster Shaw said Tuesday. "It will be the longest flight we have planned so far at 15 days, 15 hours and some minutes. In that time, we expect to gather a great deal of scientific data."

Endeavour is ready for the flight, despite several issues that cropped up during processing. Among those were two minor leaks discovered in the Freon lines of the flash evaporator

cooling system. Technicians overpressured the lines to make sure that the ascent vibrations, loads and pressures wouldn't cause the leaks to increase.

"With that test and the fact that we have plenty of Freon on board to support the mission even with about 10 times the current leak rate... we're ready to go fly," Shaw said. "We've worked all the issues we've been

aware of as we've prepared for flight and we think we're ready to go."

The primary payload for STS-67 is the Astro-2 trio of telescopes that will study the mysteries of ultraviolet radiation emanating from distant galactic objects.

Ed Weiler, NASA's chief of ultraviolet and visible astrophysics, said the Hopkins Ultraviolet Telescope, Ultraviolet Imaging Telescope, Wisconsin Ultraviolet Photo-Polarimeter Experiment all are ready for launch as well.

Two of the three telescopes are virtually unchanged since Astro-1, but the HUT received a new silicon carbide coating on its mirror that will increase its efficiency.

"It's almost like launching a telescope twice as big as the original HUT," Weiler said.

Weiler said the original plan was to fly Astro three times, but that because of the length of this flight scientists should be able to accomplish two flights worth of research, meeting the original Astro commitment.



Electrical Safety Fair to be held next week

By Bette Rogers

JSC, in cooperation with Houston Light and Power, will be hosting an Electrical Safety Fair from 10 a.m.-3 p.m. Tuesday at the Gilruth Center.

The fair is designed to better educate civil servants and contractors about electrical safety. Both residential and work related electrical safety issues will be covered. The fair will feature booths and classes on electrical characteristics and safety issues.

Stacey Nakamura, chief of Health, Safety and Environmental Compliance, sees the fair as an educational tool of the utmost importance.

"We all use electrical power, every day, and most of us take it for

granted that we do not need safeguards," he said. "The fair will provide an effective way of reminding folks that electricity is dangerous."

"Electrical safety is a top priority at JSC. Improper use of electricity or carelessness around electric lines and power sources can result in serious injury or even death," Nakamura said. A single home outlet or electrical appliance has 110 volts of current running through it. That amount of current, if taken into the body can have devastating results he added.

Several 30-minute classes will be held throughout the day including, HL&P arc truck demonstrations, tabletop arc demonstrations, Mr. Electricity, the power of electricity,

energy management, weathering the storm: hurricane safety tips and energy and the environment.

Booths will be sponsored by various organizations, including Hazard Hamlet, the Emergency Preparedness Office, HL&P, Total Health, Plant Engineering, and the Center for Excellence of Occupational Safety.

Nakamura reminded employees that electricity is an important safety issue. "Electricity travels through

the path of least resistance to ground. Normally, an electrical circuit flows from a socket, through an appliance and back to ground through the socket, said Nakamura. "If a body interrupts the path taken, electricity can choose to pass

through the body on its way back to ground. The body is more than 98 percent water and water is an excellent conductor of electricity. To put the power of electricity in perspective, 15 milliamps of electricity can kill and a normal 100 watt light pulls 1,000 milliamps," he added.

"Most of us don't have enough respect for the hazards involved in working on and around electricity, especially home appliances," said William Roeh, chief of the Plant Engineering Division.

Employees who work around high voltage and others who are concerned about electrical safety are encouraged to attend the fair. For more information on electrical safety or the upcoming fair, contact Bette Rogers at 244-5078.



An HL&P employee will conduct demonstrations on the effect of electricity on different products with the electrical arc truck.

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.

Musical concerts: Cats at 8 p.m. April 14 at Jones Hall. Tickets cost \$36, on sale through March 10. Miss Saigon at 8 p.m. July 21 at Jones Hall. Tickets cost \$58, on sale through March 8.

Ice hockey: Houston Aeros vs. Milwaukee at 7 p.m. March 25 at the Summit. Lower level tickets cost \$11. On sale through March 15.

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.

Metro tickets: Passes, books and single tickets available.

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

Stamps: Book of 20, \$6.40.

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

Upcoming events: Houston International Festival from April 20-30. Tickets cost \$3. Houston Rockets vs. Milwaukee at 7:30 p.m. April 1. Tickets cost \$11 and \$16.50. Loving Feelings Concert at 7 p.m. Sept. 30. Tickets cost \$32.50.

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Gilruth Center News

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

EAA badges: Dependents and spouses may apply for photo identification badges from 7 a.m.-9 p.m. Monday-Friday; and 8 a.m.-4 p.m. Saturdays. Dependents must be between 16 and 23 years old.

Weight safety: Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. March 14 and March 30. Pre-registration is required. Cost is \$5.

Defensive driving: Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is March 4. Cost is \$19.

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

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

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

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

Spring softball: Registration for spring softball league will be at 7 a.m. from March 7-10. Mixed B may register March 9. Mixed C may register March 7. Men's A may register March 10. Men's B may register March 9. Men's C may register March 8. Men's over 40 may register March 10.

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.

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Dates & Data

Today

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

Monday

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

Tuesday

Electrical fair: JSC will host an Electrical Safety Fair from 10 a.m.-3 p.m. March 7 at the Gilruth Center. For additional information call Bette Rogers at x45078.

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

Wednesday

PSI meets: The Clear Lake/NASA Area Chapter of Professional Secretaries International meets at 5:30 p.m. March 8 at the Holiday Inn on NASA Road 1. Dr. Gloria Goldstein will present "Living in the NOW; No More Procrastination." For additional information, contact Elaine Kemp x30556.

Astronomy seminar: The JSC Astronomy Seminar will meet at noon March 8 in Bldg. 31, Rm. 129. An open discussion meeting is

planned. For more information, call Al Jackson at 333-7679.

Toastmasters meet: The Spaceland Toastmasters will meet at 7 a.m. March 8 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Darrell Boyd, x36803.

Bike ride: The JSC Bicycle Club will meet for a 1.1- and a 1.6-mile loop at 5:30 p.m. March 8 behind the Grumman Bldg. at Ellington Field. For additional information call Juliette Wolfer at x38459.

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

Thursday

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

Friday

Alumni conference: The JSC alumni of the Professional Development Program and the Career Development Program will host a video conference from 10 a.m.-1 p.m. March 10 in Bldg. 17 Rm. 2026. Acting NASA Deputy Administrator Gen. John Dailey will discuss his "View from the Top." For additional information call Wayne Ordway at x36626.

Cafeteria menu: Special: baked meatloaf. Total Health: baked potato. Entrees: chicken fajitas, ham steak, pork and beef eggrolls, steamed fish, Reuben sandwich.

Soup: seafood gumbo. Vegetables: stewed tomatoes, seasoned spinach, cut corn, macaroni and cheese.

March 11

Star gazing: The JSC Astronomical Society will host viewing of the spring skies through telescopes from dusk-10 p.m. March 11 at Challenger 7 Memorial Park. For additional information call Bill Williams at 339-1367.

March 15

Contract seminar: The Space Center-Houston Chapter of the National Contract Management Association will host a Spring National Education Seminar from 8:30 a.m.-5 p.m. March 15 at the University of Houston Clear Lake Bayou Bldg. auditorium. The seminar will address the fundamentals of contract costs. Registration for members is \$135, nonmembers \$185. For registration information civil servants should contact Richard Regenburgh at 244-5973, contractors should call Kathleen Martins at 333-7191.

March 30

AIAA workshop: The American Institute of Aeronautics and Astronautics will host a real-time workshop on MATLAB from 9 a.m.-4 p.m. March 30 at the LPI Lecture Hall. For additional information call Naz Bedrossian at 333-2127.

March 31

Alumni league: The NASA Alumni League will hold its annual dinner/dance beginning at 6 p.m. March 31 at the Gilruth Center. Tickets cost \$7.50 for members, \$15 for nonmembers. For additional information call Al Richmond at 280-7777 or Jerry Craig at 420-2936.

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

Rent/Sale: Egret Bay waterfront condo, 1-1, FPL, fans, appl, \$530/mo + dep. Karl, x33031 or 334-1164. Sale/Lease/Trade: Near 290&1960, 3-2-2A, new roof/paint/carpet, \$65k. x31265 & 286-3161. Sale: Heritage Park, 3-2-2, 2,000 sq ft, new appl/roof, A/C, new paint/floor, \$87k/obo. 996-6062. Sale: San Leon, herb farm, 2.5 acres, 16 x 80, 3-2, mobile home, garage, pond, fenced, 333-6277 or 339-3562.

Sale: Santa Fe/Alta Loma, Ave E., 2.5 acres, mineral rights, 220' x 495', \$20k. 337-1311. Sale: Waterfront 1/2 ac lot on Dickinson Bayou, new bulkhead, \$85k. x31370. Sale: Camino South, 3-2-2A, FPL, pool, appliances, \$75k. Mike, 480-0336. Sale: L.C., Bayridge subdiv, 3-2-2, brick, C/AC ceiling fans, lg cul-de-sac yard, \$55k. 286-1934. Sale: Sterling Knoll, 3.5-2-2, open floor plan, ex cond, landscaped, w/in-ground pool. 486-4837. Lease: Clear Lake condo, lg 2 BR, new paint, W/D conn, ceiling fans, pool, \$475/mo + dep. 326-6537. Lease: Nassau, Seabrook, 3-2-2 house, formals, newly remodeled, \$800/mo neg. 474-2857. Sale: Cloister condo, 1-1 w/study, covered parking, access gates/alarm, french doors. 286-9478. Sale: Timeshare in Acapulco, 1 week RCI member, \$2.5k. 335-5357.

Cars & Trucks

'89 Chrysler LeBaron, convertible, GT Turbo, \$5.9k. x38609 or 338-2292. '83 Olds Tornado, 307, V-8, all power, \$2k/ nego. Steve, 947-3270. '80 Corvette, PS/PW/door locks, 350 auto, needs carpet, \$6.5k firm. Steve, 947-3270. '86 Chevette, auto, A/C, clean, 1 owner, 78k mi, \$1.3k. Juan, x38833 or 333-0406. '84 Olds Calais, 5 spd, A/C, good cond, 4 cylinder, \$1,850/obo. 991-0821. '93 Ford Probe GT, auto, A/C, AM/FM/cass, leather, ex cond, \$14,750. x30745 or 992-4043. '88 Nissan Sentra, 2 dr, red, 5 spd, A/C, AM/FM/cass, 90k mi, \$2k/obo. Walt, x47392. '82 Chevy-Chevette, runs great, good work car, \$600/obo. 485-4008. '87 Mazda RX7 Turbo, 5 spd, 16" Momo rims, rear spoiler, low miles, stereo, \$6.5/obo. 280-0285. '80 Honda Civic, 2-dr hatchback, white, reliable, new tires/brakes/exhaust system, 150k mi, \$1k/obo. x39011 or 474-2857. '89 Acura Integra, \$3.5k/obo. 867-8820. '86 Nissan Sentra, blue, 5 spd, A/C, AM/FM, 77k mi, \$1,750/obo. G. Moore, x31116. '86 Pontiac Firebird, SE, auto, AM/FM/cass, P/S, T-tops, V8, pwr seats/windows, \$4.4k/obo. x48911.

'86 Pontiac Fiero 2M4, gold, auto, AM/FM, 80k mi, good cond, runs great, \$2k. David, x34700. '94 Eclipse, 4 cyl, 5 spd, ex cond, puffy loan, \$11,800. 534-2551. '84 Chevy Celebrity, AT, PS/PB, new paint, good work car, \$2.5k/obo. 337-3858. '88 Honda Accord LX1, white, hatchback 2-dr, A/C, AM/FM/cass, security system, ex cond, \$4.3k. x36486 or 488-2276. '84 Chevy Citation, \$1.1k. 867-8820. '85 Mazda 626, 2 dr, A/C, auto, AM/FM/cass, looks/runs great, \$2,495. Ken, x48267 or 474-3500. '83 Honda Accord hatchback, 5 spd, A/C, 98k mi, ex cond, \$1.8k/obo. x30116 or 988-4445. '25 Travel trailer, \$3,250. 554-6138.

Cycles

Trek 560, bicycle, w/Shimano gears, gel seats, \$275 firm; Rhode Gear car bike rack, \$45. 488-8409. Girl's 20" bicycle, \$35; boy's 16" bicycle, \$30. 482-7546. Bianchi Grizzly mountain bike, 21" ultralite frame, rock shocks, custom built wheelson Mavic rims, DX components, \$695. Elliot Leboe, 488-6156. Adult 3-wheel bicycle w/basket, ex cond, \$150. 482-3681. Boy's Free style bike, black, new \$350 sell \$150. 480-7924.

Boats & Planes

'92 Baymaster 18'6", 115 hp Johnson, detachable tongue trailer, garaged, ex cond, Motorguide salt water trolling motor, fish finder/depth sounder, \$10k. Steve, x47698 or 482-3696. '86 Celebrity Bowrider, 19', Merc I/O, fully outfitted, Sportsman trailer, ex cond, \$10.9k. Charlie, 488-4412. Sailboard, Bic Rock, 9'8" w/straps, It air slalom, ex cond, \$300; Bic Presto, 9'4", w/straps, course slalom board, ex cond, 4300; Bic Rap, 9'4", w/straps, medium to high wind, slalom board, ex cond, \$300. Elliot Leboe, 488-6156.

Audiovisual & Computers

Pioneer 100watt speakers, \$50. John, x33662 or Kathy, 337-5622. Sony Sports digital radio headphones, model SRF-M50, \$20 firm. John, x31114 or 486-0898. Infinity SM120 200W 3-way speakers, \$475/pair/ obo. Chris, 280-4394 or 474-7263. Disney Lion King animated story book program on CD-ROM, \$18. Darrel, x47511. Brother Word Processor, #WP2200, spreadsheets, framing function, grammar check, \$150. 554-6138. Seagate HD, 340 MB, 12 millisecond access time, \$130. x45131. 486DX 40MHz 4MB, 120 MB HD, 14" SVGA NEC monitor, sound blaster, \$650. 482-0909. Nintendo video game deck & 10 games, \$25. 554-6138.

Photography

Konica TC 35mm camera, extra lenses & equip-

ment, \$275. 286-5114. Canon video camera w/auto focus, camera bag access, \$185; Panasonic portable VHS recorder w/batt & charges, \$125; all for \$260/obo. Pete, x31694 or 481-8561. Nikor lenses, 43-86mm 3.5, 50 mm 2.0, 24mm 2.8, 500mm 8.0, TC16A autofocus converter, Mamiya 645 80mm 2.8 lens. Steve, x30419.

Musical Instruments

French horn, \$215. x31883. Balwin organ, \$600. 992-8764. Conn organ, ex cond, extras, \$300. x38484 or 334-4124.

Pets & Livestock

AKC miniature Schnauzer, male, \$200. 482-1505. Parakeets, gold, blue, white, green w/cage & food, \$45/obo. Pete, x31694 or 481-8561.

Household

Basset sleeper/sofa, qn sz matt, blue, \$250. John, x33662 or Kathy, 337-5622. Free Zenith 25" color console TV, oak, erratic on/off, you pick it up. 488-5058. Love seat, brown velour, contemporary style. x40250 or 941-3262. Chrome & Glass dining room set, 5', maroon seats, \$75/obo. Mark, x37591 or 488-0056. Tappan gas built-in oven, upper oven & lower broiler, black glass front panels, \$250/obo. Dennis, x34405 or 532-3312. Twin sz frame & boxspring w/red tube headboard, \$50. John, x39357. Futon frame, black, \$40. 486-9605. 19" color TV & VCR w/remote, \$80/both/obo. Susan, 282-3892 or 332-3986. Loveseat, brown velour, \$50. x35785 or 212-1358. Baby swing, \$15; walker, \$10; infant carrier w/cover, \$5; playpen, \$15; Sesame Street infant gym, \$5; white wicker bassinet w/matt & skirt, \$15; 12" child's bike, w/training wheels, \$10. Jan, x33022 or 992-3522. White drafting table approx 30" x 40", collapsible w/utility tray, \$60. Carmen, x30452 or 332-0200. Rainbow vacuum cleaner w/shampooer & all attachments, \$800. x35434 or 280-9274. King sz Kincaid cherry rice bed/frame, \$500. x33843 or 338-1065. 2 single sz waterbeds, wooden frame, w/3 drawers & bookshelf headboard, ex cond, \$200. Mike, x48734 or 532-1051. Signature, 18 cu ft, chest deep freezer, \$275/obo. Kathy, x38193 or 409-267-3750.

Wanted

Want 5-6 drawer maple dresser in good cond. Carmen, x30452 or 332-0200. Want personnel to join VPSI vanpool, West Loop Park & Ride lot at 6:50 a.m. to NASA/Contractors. Richard, x37557 or Ed, x36124. Want personnel to join VPSI Vanpool departing Meyerland Park & Ride lot at 7:05 a.m. for JSC, vanpool consists of on-site personnel working the 8

a.m. 4:30 p.m. shift, looking for 2 - 3 more. Travis Moebes, x45765 or Don Pipkins, x35346. Want Royal Albert "Christmas Magic" fine china pieces. 337-5392. Want clean, safe, garage apt or private living area in CL, have sm dog. Becki, 480-9376. Want Vita-mixer. 480-7924. Want used air compressor. Greg, x34242. Want used mobile home, '76 & up. 409-925-2330. Want nanny to care for 2 boys, ages 1 & 5 yrs, South Shore Harbour, Mon-Fri 7:15 am - 4:45 pm, \$640/mo. x38484 or 334-4124. Want good used piano. 337-3977. Want used scaffold wrench, reasonable, good cond. Roger, 331-3304.

Miscellaneous

Motorcycle attire, jacket, chaps & vest, man's large, ladies medium, \$150/set. Karen, x38784 or 291-9100. Precor 620 rowing machine, \$60. 280-7406 or 488-8409. Sliding glass patio door in tact w/frame, 6', good cond, \$30. x30599 or 280-2230. Browning Citri, 12 ga, extra tubes, ex cond, new \$1k sell \$850. Roger, 331-3304. Moving boxes, wardrobes, \$3/ea. Ray, x53954 or 963-0074. Basketball goal, portable acrylic, ex cond, \$150. 333-6456 or 480-8682. Craftsman lawn mower, rear bagger, \$90; Kenmore washer/dryer, \$250; wrought iron kitchen set, \$100; 4 kitchen chairs & 2 bar stools, brown upholstery w/gold metal legs, wheels, \$150; metal equip rack, 3', \$75; coffee table style wood entertainment center, \$50. John, x48050 or 482-7616. Briefcase, burgundy, \$50/obo; roller blades, sz 8, ladies, \$100/obo. Lisa, x40213 or 554-4140. Diamond Bridal set, 12 baguet/12 brill surrounding a .5ct, SI1-H marquis, approx \$4.5k sell \$2k. 280-8233. Electric boat winch, 12UDC, \$65; Sears carpet cleaner, \$135; 4 drawer file cabinet, \$40; 409-925-2330. Bumper hitch, "Draw Tight" class II for Lincoln, Ford, or Mercury, rear wheel drive cars, \$85/obo. Walt, x47392. InterTec 25 cal, auto 8 shot, \$75; Raven 25 cal, auto, \$50. 286-5114. Presidents First Lady Gold charter membership, \$550. x35753 or 337-2002. Crib/chest/youth bed including mattress, \$175. 488-7387. Dolls, porcelain, vinyl, plastic, ex cond; doll reader, magazines. 488-6521. Southwest Airlines "Friends Fly Free" partner to travel to Dallas on wkends. Matt, x47014 or 486-7417. Wedding ring set w/diamonds, M/F, \$149; man's bracelet, gold, \$30. x36199 or 488-7192. Miss Saigon tickets, 2-1st row Mezz. left center, July 21, Fri 8:00 pm, \$95/pr; Les Miserables tickets, 2-5th row Mezz center right, Mar 26, 2:00 pm, \$95/w. John, x39357. Colt Ar-15 light wt sporter, new model, 7.62 x39,

3-30 round clips, 200 rnds, \$1,150; N-gage train layout, lots of scenery, bridges, etc. \$100. Tim, x36370 or 859-8773. 38 super high capacity para ordinance w/ambidextrous safeties, extensoo mag release, propoint 3 scope, Weigano low profile mount & more, \$2,250/ obo. 280-0285. Futon couch/dbl bed, solid wood blond frame, blue/white cover, \$150; Realistic AM/FM stereo receiver/video controller w/cable ready TV reception, remote controller, \$75. Sheri, x33095 or 480-1960. All wood, new 6' x 10' storage shed, you pick up & move, \$750; 100 watt Pioneer lg floor speakers, \$75. 334-5519. Infant carrier/car seat; bedding for cradle; diaper stacker; girl's baby clothes; 1 case of Similac formula. Shawn, 947-0656. Quality infant boys clothing, Gymboree, new born & infant, Osh Gosh, Carter & others, sz 6 - 18 mos. 488-3314. 10 spd bike w/ hand pump, \$100; green nought-ahide living room chair, \$75; office table, \$35; shop vac, \$55; aluminum easel, \$75; electric flush stapler, \$25; studio light on tripod, \$40. 338-2625. 6 silver Franklin mint coins ea showing a historical flight scene, \$35; 40 Pre 1965 silver quarters, \$40. Ted, x34116 or 482-8827. Mir/Orbiter commemorative T-shirt for Rendezvous and Docking on back, \$7.50. 282-3479. Regulator oak wall clock, chimes, \$20; solid wood TV trays, 4, \$20; stoneware, 32 pcs, \$10; Mercury vapor light, \$5; 6' artificial Christmas tree, \$25. Jan, x33022 or 992-3522. PSE Pulsar Express cam bow w/case, arrows & access, \$115/obo; TUSA Scuba regulator/gauges, tank, j-valve, neoprene weight belt, obo. Mike, x31239 or 992-3522. Car cover, "Wolf" brand, \$50/obo. Jeff, 486-5763. Stamp collectors, mint NH, OG, F-VF, & used stamps at up to 50% off cata log prices. Pete, 532-2040. Exercise bicycle, electronic timer, \$50. 338-0205 or 538-8890. Graco walker, \$25; Century activity seat/rocker, \$25; Kanga-rocka-roo, \$10; Fisher Price jump up, \$30; Fisher Price mobile, \$15; crib activity center, \$15; Fisher Price nighttime bottle warmer, \$20; boys clothes, newborn - 12mos, like new cond. x38484 or 334-4124. Simmons honey ash crib w/mattress, Baby Tenda feeding table. 996-0100. Coats, jackets, sz 10 - 12, quilts, W Rodgers, set for eight, 783-9164. Computer desk; Stainless steel kitchen sink & faucet; stereo equipment; bassinet; steel cable; boat ladders; wire shelves; 2-15" mud tires & rim; French horn; infant girl clothes. x31883. Snorkel, mask, Jeffins, \$40/all. Cliff, x40230 or 534-4145. Prom/pageant long beaded dress, royal blue & silver, sz 13 matching silver shoes, \$150/obo. Margaret, x33666. 1990 Upper Deck; 1989 Upper Deck; 1987 Topps; 1986 Topps; 1985 Topps; 1990 Topps; all 6 sets \$600/obo; sparkling water/juice carbonation unit, \$20/obo. Tony, x47401 or 482-4156.

1995 SPACE SHUTTLE MANIFEST

Mission:	71	70	69	73	74	72
Date:	June	June	August	September	November	December
Orbiter:	<i>Atlantis</i>	<i>Discovery</i>	<i>Endeavour</i>	<i>Columbia</i>	<i>Atlantis</i>	<i>Endeavour</i>
Payload:	S/MM-01 SL-M	TDRS-G	SPTN 201-03 WSF-02 IEH-01 CAPL-02/GBA (6) EDFT-02	USML-02 OARE-06	S/MM-02 DM ICBC-05 GPP** GAS (2)**	SFU-RETR OAST-FLYER SSBUV/A-05 LACIE/GAS (2) EDFT-03
Inclination:	51.6°	28.4°	28.4°	39°	51.6°	28.4°
Attitude:	160	200	160	150	160	250
Duration:	10 + 1	8	11	16	6 + 1	10
Crew CDR:	Robert Gibson	Terence Henricks	David Walker	Kenneth Bowersox	Kenneth Cameron	Brian Duffy
PLT:	Charis Precourt	Kevin Kregel	Kenneth Cockrell	Kent Rominger	James Halsell	Brent Jett
MS:	Ellen Baker Bonnie Dunbar Gregory Harbaugh Norman Thagard Vladimir Dezhurov Gennadiy Strekalov Nikolai Budarin Anatoliy Solov'yev	Nancy Sherlock Donald Thomas Mary Ellen Weber	James Voss (PLC) Michael Gemhardt James Newman	Kathryn Thornton (PLC) Catherine Coleman Michael Lopez-Alegria	Chris Hadfield (Canada) William McArthur Jerry Ross	Daniel Barry Leroy Chiao Winston Scott Koichi Wakata (Japan)
PS:	*Crew exchange mission		Fred Leslie Albert Sacco	**Payloads under review for addition		

1996 SPACE SHUTTLE MANIFEST

Mission:	75	76	77	78	79	80	81
Date:	February	April	May	July	August	November	December
Orbiter:	<i>Columbia</i>	<i>Atlantis</i>	<i>Endeavour</i>	<i>Columbia</i>	<i>Atlantis</i>	<i>Columbia</i>	<i>Atlantis</i>
Payload:	TSS-1R USMP-03 OARE**	S/MM-03 EDFT-04**	SPACEHAB-04 TEAMS SPTN207/IAE GBA (12)	LMS	S/MM-04 SPACEHAB-05**	ORFEUS-SPAS-02 SPTN 201-04 IEH-02 EDFT-05	S/MM-05
Inclination:	28.4°	51.6°	28.4°	28.4°	51.6°	28.4°	51.6°
Attitude:	160	160	160	160	213	160	213
Duration:	13	10 + 1	9	16	10	16	10
Crew CDR:	Andrew Allen	Kevin Chilton + 5	6	7	William Readdy + 5	5	6
PLT:	Scott Horowitz						
MS:	Franklin Chang-Diaz (PLC) Maurizio Cheli (Italy) Jeffrey Hoffman Claude Nicollier (Switzerland) Umberto Guidoni (Italy)						
PS:	**Payloads under review for addition	**Payloads under review for addition	**Payloads under review for addition		**Payloads under review for addition		**Payloads under review for addition

1997 SPACE SHUTTLE MANIFEST

Mission:	82	83	84	85	86	87	88
Date:	February	April	May	July	September	October	December
Orbiter:	<i>Discovery</i>	<i>Columbia</i>	<i>Atlantis</i>	<i>Discovery</i>	<i>Atlantis</i>	<i>Columbia</i>	<i>Endeavour</i>
Payload:	HST SM-02 or S/MM-08**	MSL-01	S/MM-06	CRISTA-SPAS-02 JFD SPACEHAB-06** SEDSAT/SLA-02/CVX IEH-03 or S/MM-09**	ENERGY MODULE EDFT-06	USMP-04 EURECA-2L** SPACEHAB-07**	SSAF-01-2A NODE 1 PMA1 PMA2
Inclination:	28.4°	28.4°	51.6°	57°	51.6°	28.4°	51.6°
Attitude:	310	145	213	160	213	160	190
Duration:	10	16	10	11	10	16	7 + 1
Crew CDR:	7	7	6	5	6	5	5
PLT:							
MS:							
PS:	**Payloads under review for addition			**Payloads under review for addition		**Payloads under review for addition	**Payloads under review for addition

SPACE SHUTTLE MANIFEST GLOSSARY

ASTRO	Ultra-Violet Astronomy Telescope	OAST	Office of Aeronautics and Space Technology
CAPL	Capillary Pump Loop Experiment	ODERACS	Orbital Debris Radar Calibration Spheres Project
CRISTA	Cryogenic Infrared Spectrometer Telescope for Atmosphere	ORFEUS	Orbiting and Retrievable Far and Extreme Ultra-violet Spectrometer
CVX	Critical Viscosity of Xenon	PMA	Pressurized Mating Adapter
DM	Docking Module	SEDSAT	Students for the Exploration and Development of Space Satellite
EDFT	EVA Demonstration Flight Test	SFU-RETR	Space Flyer Unit Retrieval
ENERGY MODULE	Russian Functional Energy Block	S/MM	Shuttle Mir Mission
EURECA	European Retrievable Carrier	SLA	Shuttle Laser Altimeter
GAS	Get Away Special	SL-M	Joint U.S./Russian Mir Docking, Spacelab Life Sciences
GBA	Gas Bridge Assembly	SPACEHAB	Commercial Middeck Augmentation Module
GPP	GLOW/PASDE Payload	SPAS	Shuttle Pallet Satellite
HST	Hubble Space Telescope	SPTN	Shuttle Pointed Autonomous Research Tool for Astronomy
IAE	Inflatable Antenna Experiment	SSAF	Space Station Assembly Flight
ICBC	IMAX Cargo Bay Camera	SSBUV	Shuttle Solar Backscatter Ultraviolet Instrument
IEH	International Extreme-UV Far-UV Hitchhiker	TDRS	Tracking and Data Relay Satellite
JFD	JEM Manipulator Flight Demonstration	TEAMS	Technology Experiments Advancing Mission in Space
LACIE	Laser Altimeter Camera Irim Experiment	TSS	Tethered Satellite System
LMS	Life and Microgravity Spacelab	USML	United States Microgravity Laboratory
MSL	Microgravity Science Laboratory	USMP	United States Microgravity Payload
NODE	Structure Used to Connect Space Station Modules or For Docking	WSF	Wake Shield Facility
OARE	Orbital Acceleration Research Experiment		

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Hubble finds oxygen atmosphere on Jupiter's moon Europa

Astronomers using NASA's Hubble Space Telescope have identified the presence of an extremely tenuous atmosphere of molecular oxygen around Jupiter's second moon, Europa.

The planets Mars and Venus are the only two other solar system objects beyond Earth known to have traces of molecular oxygen in their atmospheres.

"Europa's oxygen atmosphere is so tenuous that its surface pressure is barely one hundred billionth that of the Earth," said Principal Investigator Doyle Hall, of Johns Hopkins. "If all the oxygen on Europa were compressed to the surface pressure of Earth's

atmosphere, it would fill only about a dozen Houston Astrodomes. It is truly amazing that the Hubble Space Telescope can detect such a tenuous trace of gas so far away."

Scientists had predicted previously that Europa might have an atmosphere containing gaseous oxygen, but had to wait for Hubble's sensitive instruments for confirmation. The HST researchers caution that the detection should not be misinterpreted as evidence for the presence of life on the small, frigid moon. Located 490 million miles from the Sun, Europa's surface is too cold, measured at -230 degrees Fahrenheit, to support life as we know it.

Unlike Earth, where organisms generate and maintain a 21 percent oxygen atmosphere, Europa's oxygen atmosphere is produced by purely non-biological processes. Europa's icy surface is exposed to sunlight and is impacted by dust and charged particles trapped within Jupiter's intense magnetic field. These processes cause the frozen water ice on the surface to produce water vapor as well as gaseous fragments of water molecules.

After the gas molecules are produced, they undergo chemical reactions that ultimately form molecular hydrogen and oxygen. The lightweight hydrogen gas escapes into space,

while the heavier oxygen molecules accumulate to form an atmosphere which may extend 125 above the surface. The oxygen slowly leaks into space and must be replenished.

Europa is about the size of Earth's Moon, but its appearance and composition are markedly different.

Of the 61 identified moons in the solar system, only three other satellites are known to have atmospheres: Jupiter's volcanically active moon Io (sulfur dioxide), Saturn's largest moon Titan (nitrogen/methane) and Neptune's Triton (nitrogen/methane).

The detection was made possible by HST's Goddard High Resolution Spectrograph.

MCC 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-67 mission.

Based on an on-time March 2 launch, employees will be allowed to visit the MCC from 1-3 p.m. March 7, 11:30 a.m.-1:30 p.m. March 9, 1-5 p.m. March 11 and 11:30 a.m.-1:30 p.m. on both March 14 and 16.

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

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

Because of the dynamic nature of shuttle missions, viewing hours may be changed or canceled without notice.

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



JSC Photo by Jack Jacob

BLACK HISTORY—JSC Director Dr. Carolyn L. Huntoon joins in the opening ceremonies for the "Affirmative Action and Beyond" forum held last Friday at the Gilruth Center. Huntoon sang the Negro National Anthem with, from left, Debra Johnson, manager of the Information Systems Business Management Office; Justin Robinson Jr., Houston City Council member; Charles Hoskins, Black Employment Program manager; Damon Wilson, deputy manager of the Space Station Program Integration and Risk Management Office; and Shirley Price, equal opportunity specialist.

JSC welcomes 1995 astronaut candidates

By Karen Schmidt

Hogs, Hairballs and Maggots have all found a place in JSC history books. The 1995 astronaut candidate class will arrive Monday to begin training and find its own unique name to place in those same books.

The 10 pilots, nine mission specialists and two international mission specialist candidates have a full plate of activities to keep them actively challenged during their first year.

The 1995 astronaut candidate class includes pilots Scott Altman, Jeffrey Ashby, Michael Bloomfield, Joe Edwards, Dominic Gorie, Rick Husband, Steven Lindsey, Pamela Melroy, Susan Still and Frederick Sturckow and mission specialists Michael Anderson, Kalpana Chawla, Robert Curbeam, Kathryn Hire, Janet Kavandi, Edward Lu, Carlos Noriega, James Reilly and Stephen Robinson.

The candidates will be joined by international mission specialists David Williams from the Canadian Space Agency and Takao Doi from

the National Space Development Agency of Japan.

The candidates will train together on a host of activities until mission specific assignments are determined. During the first year the candidates will become familiar with each JSC directorate, attend media training and Russian language classes. Hands-on training will encompass T-38 aircraft, high altitude flight-ground egress, parasail flight and scuba lessons.

Several briefings also will take up a majority of the candidates' time, including applied sciences, orbiter systems, space station systems, a variety of Earth and planetary briefings and space and materials science briefings.

The candidates also will be required to attend general civil servant training including sexual harassment and AIDS training. Land and water survival training will take place this month, and in June the candidates will travel to the various NASA centers to learn each of their functions.

Huntoon urges employees to stay focused on space flight work at hand

(Continued from Page 1)

and continue to find ways to safely streamline operations. Our relationships with prime contractors will be a key focus in the effort as we work to find the most efficient way to get work done. It will be our job to contribute to the effort with an honest and aggressive assessment of our own activities that will support good decisions, and to contribute reasonable suggestions to the process, as well. But we will never succeed by clinging to the past. We'll succeed by meeting tough times with tough strategies and making smart decisions today.

Q: What about jobs? What are the target numbers for downsizing?

A: Mr. Goldin has yet to identify a firm goal for near-term reductions. What is clear, however, is that the previous civil service employment target of 21,000 by fiscal year 1999 is no longer supported by the current 5-year budget plan. We'll have to do better. Obviously, the voluntary approach is preferred from all points of view and we are doing fairly well with the buyout. Just how many will be wearing NASA badges at JSC by the end of the decade will depend largely on how the long-term restructuring efforts develop.

With regard to contractor jobs, I don't know of a specific number. But let's be honest—funding cuts always translate directly to the contractors,

since 90 percent of our money is spent on them. Although we are working with the contractors to find other ways to achieve efficiencies, the reality is that we will have less money to spend on jobs. It's already been said that NASA has been cut to the bone. But, when you talk to me about the people that make up this center—NASA and contractor—you're down to the heart and soul. No matter what the numbers wind up being, we're going to do everything in our power to manage reductions in a sensitive, responsible manner that treats our people with the respect and dignity they have earned.

Q: If a Reduction in Force is required, how do you think it will be carried out?

A: I don't want people to start worrying unnecessarily about how a RIF might be conducted. Until the buyout and the restructuring effort are over we won't truly understand what further reductions might be necessary. It's just too soon to reach any conclusions about whether or not we will even need a RIF. Ultimately, that will be a Headquarters decision.

I know there is a lot of anxiety about jobs in our work force, but the most important thing that all of us can do right now is to remain focused on the work we have immediately ahead of us. There are many important jobs that we must continue to do well. We are responsible for carrying out an impor-

tant part of NASA's overall mission, and the best thing we can do for the future of the center is to do our jobs well today.

Q: What do you see for NASA and JSC in the new millennium?

A: Before we make that quantum leap, let's take care not to trip over the tremendous challenges and opportunities that lie ahead in the coming months. We have just embarked on one of the most historic years in the history of human space flight. The Astro-2 mission will set a new endurance record for the shuttle program, providing unprecedented time in orbit with a view of the universe unrivaled on Earth. In only a few months, we will once again meet and shake the hands of our Russian counterparts in orbit. Only this time, we will stay and work together to begin building a future that will join many nations around the world in peaceful research and exploration. On the ground, we will play a critical role in helping the International Space Station turn the corner from development to production and operations—on time and within budget. We have important science missions to carry out, as we continue to build a foundation for work aboard the space station. As we meet these challenges, it will be everybody's responsibility to assure safety—in space and on the ground.

We can talk about the future and we

should. But let's also keep our eye on the ball, here. Some of the most exciting and important things ever to happen in this business are right in front of us. Let's make sure we do it right and do it safely.

As for the year 2000 and beyond, we will surely be a different agency. Reality dictates as much. And I think that's good... we should change, we need to reinvent... not just because the budget says so, but because that is the right thing to do if we are going to remain in the forefront of science, technology and exploration.

Mr. Goldin has described a NASA of the future that will measure success by output... by scientific results and the product of our R&D. We'll be catalyzing growth and innovation in this country's aeronautics and aviation industries. We'll be sending a new breed of smaller, affordable spacecraft to the planets and beyond. We'll be better educating all citizens of Earth about the state of our planet. We'll continue to unlock the mysteries of the universe.

Here at JSC we will continue to lead the world in human space flight. We will have set new standards for space flight command and control. We will be pushing the boundaries of human knowledge aboard the International Space Station. We will be working with industry, academia, and the entrepreneurs of America to develop mean-

ingful and productive roles for the private sector in established space operations. We will be delivering on the promise to be relevant and responsive to the needs of Americans.

To imagine such a future in this budgetary climate is hard enough. To achieve it will take courage and commitment... we must be able to free ourselves from the past and make it happen.

Q: What words of encouragement do you have for employees as we face this period of unprecedented change?

A: Keep your eye on the ball. It's an honor and privilege to work at the Johnson Space Center and it's up to all of us to keep it that way. Despite the uncertainty and difficult times, we are going to have a bright future. We still have good bipartisan support in the Congress that reflects the desire of the American people for a strong human space flight program.

I believe that, over the coming months and years, the American space program will produce a new breed of space pioneers. They will be engineers, scientists, physicians, astronauts, researchers, technicians, and administrators... all of whom have the courage to free themselves from the past and think the unthinkable and to try the impossible. These reinventors of the future will change the face of the space program forever, and many of them are here at JSC.

Sting results don't indicate widespread corruption at JSC

(Continued from Page 1)

Other sources have cited costs as high as \$6 million.

Although the initial cover used in the operation was a packaging company, that didn't pan out as well as they had hoped, according to Smith. Instead, a proposal to build and fly a bogus medical device aboard a shuttle mission was developed and used in a classic sting operation to catch those who had been identified as "predisposed to commit crime." The temptation would be the illegal use of influence and information for easy personal gain.

After constructing a web of informants and undercover operatives,

the investigators succeeded in catching some individuals committing crimes ranging from bribery to contractor fraud. The end result was that although some individuals were caught in wrongdoings, the bogus proposal was repeatedly rejected. The JSC unsolicited proposals system worked as it should.

"The proposal came into NASA several different ways," said Smith. "It was rejected... it was not approved for funding, although there were attempts made to pressure the decision." He then explained how those who attempted to exert influence were caught and confronted by investigators in a warehouse downtown.

"The story you've all heard about the meetings in the warehouse is true. These people were told that if they did not cooperate, they would be prosecuted to the fullest extent of the law," Smith said.

According to Smith, some of those individuals were persuaded to wear "wires" to record discussions with colleagues in efforts to further the operation. The effort accumulated more than 3,000 audio tapes and 400 video tapes. Smith emphasized, however, that there were no unauthorized taps of telephone lines.

In all, Operation Lightning Strike netted 16 guilty pleas, \$42,000 in criminal fines, and a \$1 million set-

tlement with one major aerospace contractor. One final case is set for trial in April.

In contrast to the view that the sting may have brewed mistrust among employees, Smith finds the real "immeasurable" results to be the "deterrent effect" on the contractor and NASA community. He readily admits, though, that the results don't indicate widespread corruption at JSC.

"The people who were convicted were just the ones who actually accepted the opportunity to commit crimes. There were many others who, when presented with the same opportunity, turned us down flat."

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