



Nice atmosphere

Photographs from Atlantis, inside and out, tell the story of STS-66. Photos on Page 3.



Seemore clause

The Institutional Safety and Quality Division has put together a brochure of holiday safety tips. Story on Page 4.

Space News Roundup

MOD helps promote ways to innovate

By Karen Schmidt

JSC's Mission Operations Directorate is taking steps to help engineers, scientists and managers change the way they conduct business, developing a rapid prototype laboratory and a training program for innovation techniques.

The Rapid Prototyping and Interface Development Lab is in its final stages of completion, and a pilot program in innovation techniques is in the works.

The RAPID lab is a test bed of hardware and software and a team of experts who will be available to provide innovative techniques and expertise to all organizations at JSC interested in development of flight and ground system displays and display software. It is on the third floor of Bldg. 30, scheduled to open in January.

"The center director gave us a challenging project and we are very excited about it," said John Whiteley, deputy division chief for MOD's Reconfiguration Management Division. "We were asked to create a rapid prototype laboratory for developing state-of-the-art on board and ground displays."

The lab will help engineers and scientists by applying a collected knowledge of flight control and onboard displays.

This lab will be a focal point for JSC, benefiting all organizations interested in display and control prototyping or development. This activity will cover both shuttle and station and all future programs. We are developing a team of highly motivated personnel who are on the leading edge of display and control development technology," Whiteley

"It is something we really need at JSC in terms of engineers being innovative and not being afraid of failure and change." said Cliff Farmer, chief of the Display and Control Development Office.

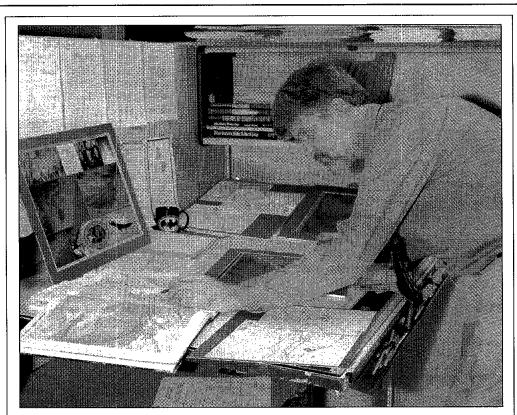
During the development of the lab, Tony Bruins, an engineer for the RAPID lab, saw a need for training employees in innovation techniques.

This idea was based on the fact that JSC will be either on the leading or bleeding edge of technology,' Bruins said . "If we are on the bleeding edge, we will be forced to change because of budget cuts. I saw the need to educate employees on creative and innovative tech niques."

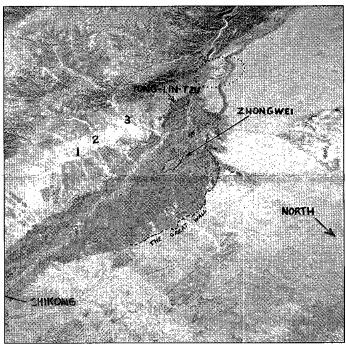
Bruins approached his division chief, who in cooperation with the Space Flight Training Division, supports the idea for training.

"We are really interested in sparking the JSC creative spirit, "said

Please see INNOVATION, Page 4



Above: Dave Russell of the Information Services Directorate's **Center Publications** and Graphics team works on an overlay for an Earth observations photograph des-tined for 12-year-old brain cancer patient Gregory De Lorenzo.
Right: The photograph, taken during STS-68 and enhanced with the help of a hand-drawn overlay, shows exactly where the Great Wall of China can be seen.



Images for imagination

Gift slakes cancer patient's thirst for knowledge

A 12-year-old brain cancer patient from Dix Hills, N.Y., received a special holiday gift this year from friends at JSC who have put together a package of shuttle images of the Great Wall of China.

Gregory De Lorenzo, who has been going through a series of radiation treatments this fall, voiced an intense interest in America's space program to his aunt and uncle, Mario and Marie Suriano. They are friends with Alan S. "Bud" MacKenzie, a program manager at ISC, one of the Information Services Directorate's prime contractors.

MacKenzie wrote a letter to ISD Deputy Director Ron Berry telling him about De Lorenzo and his interest in images of the Great Wall of China taken from space and asking for help in raising the boy's spirits.

"Gregory's strong interest in gaining knowledge about the world around him through space exploration really struck a responsive chord with a lot of us here at JSC-especially given the very difficult situation in which he finds himself," Berry said. "It underscores on a very personal level

what we're all about around here." ISD's Sheri Dunnette coordinated the project, which involved the production of an STS-68 photographic montage, a set of navigation charts and Earth observations photographs that detailed exactly where the Great Wall is, and a short video that included a downlink discussion by astronauts viewing the wall from orbit.

"Overall, the package we put together for Please see ISD, Page 4

Kraft names review team participants

Former JSC Director Chris Kraft has named the members of the independent review team that will develop a proposal that includes innovative concepts and tools for managing the shuttle program.

The team, made up of aerospace executives, business leaders and current and former NASA officials, was chartered by NASA Administrator Daniel Goldin. The team is expected to present its results by March 15.

The five-member team includes: Frank Borman, former

Eastern Airlines chief executive officer and retired astronaut; George Jeffs, former president of Rockwell International's North American Aerospace Operations; Robert Lindstrom, former senior vice president and general manager for space operations at Thiokol Corp. and retired manager of the Space Shuttle Projects Office at Marshall Space Flight Center; Thomas Maultsby, General Research Corp. vice president and former senior Department of Defense representative to NASA Headquarters; and Isom Rigell, former vice president, Florida operations for United Space Boosters Inc., and retired director, shuttle payloads and former director, launch vehicle operations at the Kennedy Space Center.

Technical advisers to the team will include: Jay Honeycutt, director for shuttle management and operations at KSC; Dave Leestma, director of Flight Crew Operations at JSC; William Mackey, Houston businessman and former chairman of the board of Lifemark Corp.; John O'Neill, director of Mission Operations at JSC: George Page, former KSC deputy director; Cary Rutland, Solid Rocket Booster Project manager at MSFC; and Bob Sieck, launch director at KSC.

The team met Monday with NASA managers and contractors at KSC. They will meet next week at JSC with NASA and contractor personnel involved with shuttle management and operations from both JSC and MSFC.

Discovery crew checks payloads for mission

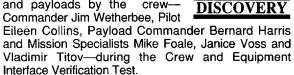
By James Hartsfield

With payloads now aboard, work to ready Discovery for launch in early February 1995 remains on track in Kennedy Space Center's Bay 2 shuttle processing

Integrated tests were performed this week on the connections between the Spacehab module and

Discovery and between the Orbital Debris and Radar Calibration Spheres experiment and the shuttle. Checks of connections with the Shuttle Pointed Autonomous Research Tool for Astronomy satellite were completed as well.

Other work on Discovery included an inspection of the cargo bay and payloads by the crew-



Elsewhere, work on Endeavour in preparation to carry ASTRO-2 aloft on STS-67 included installation of cryogenic lines for the extended duration orbiter pallet connections. Preparations also are under way to install the ASTRO-2 astronomy observatory in the cargo bay.

JSC engineers heading for classrooms again

JSC employees will spread to the four winds to talk to students in area classrooms as part of JSC's observance of National Engineers Week,

which runs Feb. 19-25. Through JSC's Educational Outreach Program, employees will visit classrooms to accomplish several objectives. As many children think an engineer runs a train, the younger ones will be acquainted with what engineers at JSC do. Older children need to know how their studies will apply in real life. Young adults may be unsure of career directions and want information about why people choose to be engineers and exactly what paths were taken to accomplish the goal of becoming an engineer.

JSC Director Dr. Carolyn Huntoon plans to visit a classroom during National Engineers Week and is encouraging wide participation among JSC management and employees.

The 1995 JSC program goal is to recruit more volunteers to go into classrooms and reach even more students than in past years. JSC already has exceeded last year's number of requests and they are still coming in.

"Whose responsibility is our children's education?" asked Norma Rhoads, JSC Educational Outreach Program manager. "Is it just the

schools; just the teachers? Or, does the responsibility rest on all of us? The responsibility of 'our' childrens' education rests on each of us. It is a shared responsibility. By taking part, we enhance the school curriculum and maybe even inspire some of the children, but also we enrich our lives by giving back to the community."

Resources such as hands-on activities, exhibits, videos, and handout materials will be available to vol-

Educational Outreach Program is part of JSC's commitment to the community and our school chil-

Please see EMPLOYEES, Page 4



ENGINEERS Turning Ideas Into Reality

National Engineers Week, February 19-25, 1995

Hubble rules out leading dark matter explanation

Using images from the Hubble Space Telescope, astronomers have ruled out the possibility that red dwarf stars constitute the invisible matter, called dark matter, believed to account for more than 90 percent of the universe's mass.

Until now, the dim, small stars were considered ideal candidates for dark matter. The dark matter's gravitational pull determines whether the universe will expand forever or someday collapse.

"Our results increase the mystery of the missing mass. They rule out a popular but conservative interpretation of dark matter," said Dr. John Bahcall of the Institute of Advanced Study, Princeton, N.J.

A team, led by Bahcall and Andrew Gould of Ohio State University, showed that faint red dwarf stars, which

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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

Rockets tickets — Rockets vs. Phoenix 7 p.m. Dec. 22 at the Summit. Cost is \$16.50 upper prom

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. December special buy one get one free.

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, \$5.80

Upcoming Events — Children's Christmas Party from 8 a.m.-noon, Dec. 17 at the Gilruth

Center. Cost is \$4 child, \$1 adult. Shuttle music — MACH 25 a humorous shuttle music tape. Cost is \$7.50.

JSC history -- Suddenly, Tomorrow Came: A History of the Johnson Space Center.

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 informa-

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. Dec. 14 and 29. Pre-registration is required. Cost is \$5.

Defensive driving: Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is Dec. 17.

Aerobics: High/low-impact class meets from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is \$32 for eight weeks.

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

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.

Flag Football & Soccer: Registration for Flag football and Soccer leagues will be held on Dec. 12-16. Outside teams will register after 4:30 p.m. Dec. 16. For additional information call 483-3345.

Tennis league: A fall tennis league may be started if there is sufficient interest. Contact the Gilruth Center at x33345.

Country dancing: Beginners class meets from 7-9 p.m.; advanced class meets from 8:30-10 p.m. Partners are required. For additional information, contact the Gilruth Center at x33345. Fitness program: Health Related Fitness Program includes a medical examination screen-

ing and a 12-week individually prescribed exercise program. For more information, call Larry Wier at x30301.

Dates & Data

Today

JSC

Free Seminar: Carl Sagan will discuss his new book, "Pale Blue Dot" from 6:30 to 7:30 p.m. today at University of Houston Clear Lake, Bayou Bldg. Free admission. For information call 486-8028.

IMAX movie: Space Center Houston will feature screenings of "Destiny in Space," the latest IMAX offering, at 8 and 9 p.m. Dec. 9. Tickets are \$5 adults, \$4 children 3-11 and senior citizens. For additional information call 244-2105.

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

Christmas music: The Lockheed Choir and Brass Band will perform sounds of the Christmas season from 11:30- noon Dec 13, in Bldg. 3

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

Astronomy seminar: The JSC Astronomy Seminar will meet at noon Dec. 14 in Bldg. 31, Rm. 129. An open discussion meeting is planned. For more information, call Al Jackson at 333-7679.

PSi meets: The Clear Lake/ NASA Area chapter of Professional Secretaries International meets at 5:30 p.m. Dec. 14 at the Holiday Inn on NASA Road 1. For additional information, contact Elaine Kemp, x30556.

Toastmasters meet: The Spaceland Toastmasters meets at 7 a.m. Dec. 14 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Darrell Boyd, x36803.

SSFF meet: Space Station Future Fighters will meet at noon, Dec. 14 at the Freeman Library, 16602 Diana. For more information call David Cochran at 335-0185.

Christmas Lunch: The cafeteria will host a lunch special from 11 a.m. - 2 p.m., Dec 14. Dinner will include, Waldorf salad, turkey and dressing, giblet gravy, cranberry sauce, Italian green beans almondine, candied yams, roll and butter. Apple and mince cobbler will be available for \$.75.

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

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: tomatoes, seasoned stewed spinach, cut corn, macaroni and cheese.

Dec. 21

Astronomy seminar: The JSC Astronomy Seminar will meet at noon Dec. 21 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 meets at 7 a.m. Dec. 21 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Darrell Boyd, x36803.

Dec. 26

Christmas Holiday: Most JSC offices will be closed in observance of the Christmas Holiday.

JSC

Swap Shop

Property

Sale: Pipers Meadow home, 2-2-2, 1165 sq ft, \$61.9k. Tracy, 244-7120 or 486-3946.

Sale: Baywind II condo,1-1, new carpet/fresh paint, W/D, fridge, DW, FPL, \$23k. 486-8047 Rent: El Dorado Trace 2-2, W/D, furnished,

\$675/mo + elec. 333-8126 or 488-1327. Rent: Taos, NM, house, handy to town & Ski

Valley, 486-5679. Rent: Winter Park, Colorado, condo, 2-2, fully

furnished, sleeps 6. 488-4453. Rent: Condo. Galveston Seawall, 1 bdr, furmished, 24 hr security, 6 mos liease min,

\$410/mo. x30737. Sale: Santa Fe/Alta Loma, 2.5 acres, mineral rights. 337-1311.

Sale: University Green, Patio home, 2bdr, w/study, lg covered deck, greenhouse, ex cond. Sale: Taylor Lake estaes, residentail lot 90' x

135' in wooded waterfront subdiv, \$42.5k/obo. owner finance. Don, x38039 or 333-1751. Rent: Galveston cond, furn, sleeps 6, Seawall Blvd & 61st St, wknd/wkly/dly rates. Magdi Yassa,

Sale: Property, 1.9 acres, Pont Blank, Texas, 7

min for Lake Livingston, 326-2307.

Cars & Trucks

'88 Chevy Blazer S10, 2 dr, black/silver, A/C auto, tow pkg, Tahoe pkg, power, AM/FM/cass, 1 owner, 86k mi, \$6k. x48788 or 488-6925.

'92 Toyota Corolla, FWD, 5 spd, A/C, AM/FM/cass, 35k mi, ex cond, \$6.9k, Ray, x38876 or 338-1065.

'85 Corvette, red/tan, removable roof, 103k mi, ex cond, \$9.5k. 538-3434.

'91 Honda Civic DX, 5 spd, 3 dr, A/C, AM/FM/cass, 48k mi, new tires, \$6.5k/obo. x33425 pr 480-8718.

voyager power, 1 owner, good cond, 78k mi, \$3k. Ed, x38309 or 409-925-8051.

'87 Chevy S10 Blazer, 4 spd, man trans, A/C, new tires, 100k mi, \$4,250/obo. Steve, x30671. '79 Alfa Romeo Spyder Veloce, 90k mi, Weber conversion, yellow/black, good cond, \$1.9k. Mark,

x37370. '93 Subaru Impreza L, 4 dr, power, 5 spd, emerald green, AM/FM/tape, alarm, 17k mi,

\$12.3k. 333-6415 or 482-2942. '89 Olds Cutlass Supreme, red, 60k mi, 1 owner, good cond, loaded w/extras including car

phone, \$6k/obo. Jim, 9991-0533. Nissan certificate for new or used Nissan vehicle from any Nissan dealer, \$750 value for \$400.

Cycles

89 Honda Cr 250, runs great w/access, \$15k firm. Greg Sims, x35560 or 474-7634.

'92 TREK 1200 racing bike, 25cm aluminum frame, slip-on pedals, less than 100 mi, includes Scott bar, new \$800 sell\$400; 2 mens 10 spd bikes, \$50/ea. 488-0484.

Yamaha DS 80 dirt bike, good cond, 283-7545 or 409-943-5232.

Go-cart, 2 seater, 3.5 hp, good cond, \$150. Steve, x48618 or 488-5105.

Boats & Planes

Wind Surfer, Mistral, ex cond, \$250. x30737. '85 sailboat, 20' w/trailer, '91 9.9hp Evinrude outboard, \$3k. Carlos, 870-9512.

Boat propellers, stainless steel for Johnson V6 15 OD x 17 pitch; 14.25 OD x 21 pitch, \$150/ea/obo. 332-9105.

Two Kawasaki 440 cc Jet Skis w/trailer, ex cond, \$3.5k. Joe x32464 or 486-4026

'90 VIP Valiant, 19'; '93 115 hp Merc O/B, ex cond, includes access, cover & canopy, \$11.5k. Jerry, x38058.

Audiovisual & Computers

Sega Genis, 4 games, boxes, \$70. 480-6541. RCA Camcorder, all attachments, ex codd, \$325; Jazz records, \$2/ea. Howard, x48947 or 486-6183

CD player, Techniques SSL-P310 single disc with remote control, incl paper work, \$50. Mark, 488-0056.

Commodore 64. w/modern, joysticks, software vill separate, \$75/obo; Epson dot matrix printer, \$100/obo. Sandy, x33315 or 334-7542. Memory card to rIBM PS/1 or compatible, 4 mb

Simm 72 pin, \$125. Dennis, x47003. Citizen printer, "CSX-140" w/GSX color option slightly used, \$250. Madgi Yassa, 333-4760 or

Commodore 120 computer, keyboard, color monitor, 4.25 floppy drive, printer, software, \$150. x33190 or 482-3069

386DX/25. SVGA monitor, 90 mb HD, 5 mb RAM, keyboard, mouse, DOS 6.2, Win 3.1, MS Works, Quicken, \$400. Rusty, x38167 or 992-

Photographic
Mamiya-M645 PD Prism Viewfinder, 45 mm 2.8, 80mm 2.8 Sekor lens, aluminun case, John, 326-2461.

Musical Instruments

Yamaha Y-23 alto saxophone, music stand. digital metronome, pitch pipe, approved for Clear Creek & surrounding schools, New \$1,060 sell \$500/obo, x48618 or 488-5105

Pets & Livestock

Dalmation, full-blood, no papers, female, 15 mos, spayed & current shots, \$75. 331-0627.

Rottweiler, female, 5 ys, obedience trained, good with children, house trained. Bobby, x38823 or 337-4134.

Free to good home, 3 yr, wht, long-haired female cat, not to friendly to children. x49702 or 332-7168

Free cats, 2, calico & tortise markings, spayed & declawed, 4 yrs, all shots, owner moving. 992-

Household

Stand-up bar, \$25; couch & chair set, off-white, \$50; twin bed, complete, \$50. Brian, 480-5430. Gas oven w/microwave, \$100, Jeff, x49860 or 554-2869.

Comtemporay sect, 3 pcs, w/2 matching chairs & ottoman, med brn fabric/wood trim, coffee table, \$1.2k. James, 282-3586

GE electric dryer, model DDE6500G, ex cond, \$225/obo. 996-6062. Bedroom set, dresser w/mirror, night stand, qn

sz hdbd & bedframe, \$200; sm entertainment center/TV stand, \$50. Jeff, x33143 or 280-8177. Leather sofa, loveseat, chair, brown, \$700. x37124 or 335-5357.

Kenmore electric dryer, \$30; 4-P225 60VR 15 Faulken tires \$50/all 554-2879 Bassett maple crib & changing table & 280 coil

Kolcraft mattress. ex cond, \$375/set. Sharon, x38506.

Childcraft oak crib w/mattress & matching 4drwr dresser changing table, ex cond. 486-5239. Black simulated leather qn sz sleeper sofa, ex

cond. \$225: Hoover canister vacuum cleaner w/attachments, \$15; bike rack fits on back bumper, \$10, 488-4367. GE 4-burner electric stove top, conpertone.

matching vent hood, ex cond, \$75, 484-0987. Twin size box spring, \$30. 992-3014. Couch & love seat, navy velour, \$150/obo:

laundry center shelf unit, \$20. Sandy, x33315 or Black wrought iron bunkbed, dbl sz on bottom. twin on top, 6 mos old, \$75. x33946 or 488-7647.

cond, \$100; row & peddle exercise bicycle, \$45. Bed, dresser, couch, loveseat, tables, dinette 335-0608.

Love seat, brown/gold tone velour print, good

Sofa, blue & cream colored, ex cond, \$250. x48928 or 996-9690.

Kg sz waterbed, frame, mattress, heater, 6 drawers, headboard, liner, \$175. x31370.

Kg sz waterbed, mirrored headboard, footboard. 6-drawer under-dresser. mattress/heater/liner, \$200. 280-5848 or 338-Black vinyl sofa bed, good cond, \$60; 2 roof

wind turbines, heavy duty, \$10. Rudy, x33836 or 946-7028. Private collection quality antiques, 100 yrs -200 yrs old, chairs, clocks, tables, porcelain etc.

Large sofa, loveseat, w/lacquer trim & lacquer center table & lamp table, \$600/all. x36339 or

997-7246. Hardwood dressers, 2-6 drawer upright & 8 drawer w/cabinet & mirror, ex cond, \$300/both.

Kg sz lacquer air bed, \$150; kg sz ortho mattress boxsprings/ & frame, \$500. Joe, x32464 or 486-4026.

Maytag W/D, large capacity, 2 spd, \$700/obo. Rita, x32686 Waterbed, kg sz, nego price. 282-4271 or 996-

9646. Qn sz sleeper sofa, ex cond, \$85; child's wood-

en desk w/bookcase, \$60, 488-1537 Contempo birch kitchen tbl w/4 matching chairs, \$85; antique wood/cane armchair, \$55; kitchen/work tbl w/extensions, \$30; sm chest of drws, \$25; Oxford rolling file cabinet, \$20. Jenny,

PC rolltop desk honey color, solid oak, \$900; Lady Kenmore washer, 2 spd, lg cap, \$125; Panasonic microwave, 700 watts, 1.5 cu ft, \$75; sectional sofa, 3 pcs, rectang glass top table, \$750/both pcs. Donald Thompson, 334-3998.

474-7370.

Want non-smoker to share 3 bdr condo, CL, all appliances, 2 pools, Hank, x32010 or 338-5068 Want low priced school/work car or truck. 271-

Want non-smoker carpoolers from Sugarland, 59 & Hwy 6 area to JSC, 7:00 a.m. to 3:30 p.m. Norman, x31970 Want to buy '78 - '82 Honda Accord for parts.

or running, 867-8820. Want parts for Magic Chef washing machine, inner tub & acitator, 475-9671 Want new/used lumber, 2x4's, 1x6's, exterior

plywood, shingles, windows, exterior doors. Tim, Want a person who reads Japanese, have 3 workblock prints, would like to know who the artist

Want to swap retired/suspended Precious Moments pcs w/other collectors. Katie, x33185. Want to talk to someone who has tried Mega

is. x34210 or 947-9860.

Memory course. Jackie, x37112 or 339-1367 Want inclosed trailer similar to horse or U-haul, minimum sz, 4' x 8' . Bob, x30825 or 998-7372. Want set of metal TV trays. x34100.

Want Nintendo game, "Thunder & Lighting". Faye. 470-1455. Want paintball rifle, prefer semi-automatic.

Miscellaneous

Evenflo car seat, ex cond, \$60. x37113 or 286-

Ruger 1B 7 mm Win mag scope rings included, ex cond, \$425. George, x31228 or 485-1509. Portable basketball goal, acrylic backboard, ex

cond, \$225. 333-5456 or 480-8682 Steel wts w/bar & bench, 135 lbs; 2-45 lb olympic plates w/o bar, \$100/obo. James, x33571

Slate top pool table, 4'x8', access, \$525. 332-

Southwest Airlines round trip ticket, good anywhere SW flies, \$250 cash/neg. x45715 Pappasan couch, \$50; baby bed, \$25; 19" white porcelain sink, \$20; electric piano, \$200.

Golfclubs, Big Bertha & Ping Zing2 metal wood clones, \$75/ea; Ping Zing2 & King Cobra iron clones, \$160; Bullet B-52 oversized irons, \$225; putters, Big Bertha Tuttle clone, \$40; Ram Zebra,

\$30. Ken, 283-9233 or 473-2602. Wedding dress, sz 6, w/slip & veil, short eves, long train, \$375. x37124 or 335-5357.

Wieder wt bench w/stairstepper, \$150/obo; men's Huffy mountain bike, 10 spd, \$100/obo; Nissan LW bedliner, \$40; blk poly 2 compartment

tool box for PU, \$50/obo. x46121. Sears Kenmore 24', frostless refrig w/ice maker, almond, \$225; Weatherby Mark V 7mm Weathrby Mag hunting rifle w/ 3x9 Weatherby scope, \$650. Frank, x38393 or 992-4703.

Bedliner, GM shortbed PU, \$100/obo. Dick, x34037 or 922-5124. Canon Typestar 110 typewriter, \$100. 486-

Whit french provifull bed, hdbd/ftbd/rails, dresser w/ mirror, 5 dwr chest, \$350; elect mower, \$50; Weber kettle grill, \$25; sm pet taxi, \$12; DP rowing/multiuse machine, \$40, x47780 or 486-4668. Set of 5 all terrain 15" truck tires, less than 4k

mi. \$250/obo. 480-6379 Victorian style wht wedding dress, long sleeve, w/small train, sz 5-8, head piece, veil, shoes, \$325, 333-2366.

Tropical plants, all in permanent pots, Ig to sm szs, various kinds, \$5 & up/nego. Bob, x33149. Trailer hitch for Jeep Wrangler, Draw Tite model, \$50. John, x31114 o r 486-0898.

Coleman rooftop A/C w/heater, \$295, 334-3320. Wedding dress, wht, sz 6, long sleeve, offshoulder, & headpiece, \$300/obo. Pam, x30646

or 335-0373. Slicks, Mickey Thompson ET drag, 25.0/10/0-15, \$100/pr. Faye, 470-1455. Dolls, porcelain, vinyl, plastic, ex cond, Doll

Reader magazines. 488-6521.

Rifle with redfield scope, Marlin 336-30/30, 2.75 scope sited, ex cond, \$275. 944-9152. Free Mark IV MHF aircraft radio, covers 2-10 MHz, 6 crystal control channels. Ted, x30621 or

Pres First Lady Premier Plus membership, \$550/ obo. x30169 or 733-2819.

Graco stroller, \$20; Evenflo Joyride infant carrier, \$5. x34749 or 645-5746. Baby blankets, \$3/ea; baby quilts, \$12/ea; full

sheet sets, \$3/ea; twin sz Ninja Turtle bed set, curtains/comforter, \$25/set; 16" boy's bike, \$20; 20" boys bike, \$30. Sam, 332-3168. Apple lie computer w/printer & software,

\$200/all; FPL vacuum, \$100; babyjogger walking stroller w/ canopy & bag, \$185; carseat, \$20; etc. Browning A-Bolt Stalker, 7 mm Rem Mag, 3x9

Leupold scope, \$600. x47698 or 482-3696. 50-in-1 Fitness Center, similar to Soloflex, per form variety of exercises, \$200, x39239. Exercise equip, stair climber, \$390; rowing

machine, \$105. 335-6409 or 328-3840. Seaclear acrylic aquariums, 55 gal, \$115; 35 gal, \$75; fish, Blue-eyed pleco, \$25; Calico fantail goldfish, \$15. David, x40211 or Robynn, 488-

Soloflex home gym w/leg extensions & butterfly attachments, \$650. Bob, 488-3717. Oilers/Arizonia, 12/4, Seattle, 12/11, Jets. 12/24; 2 tickets, \$31/ea, upper box, 2nd row. Ray,

x38030 Shotgun 20 gauge, single shot great cond,

\$100. Bill, 938-1655. Set of 4 Chevy wire spoke hubcaps with locks, \$95/obo. 484-0987.

Antique oak table, 48"x48", \$350; Walton exercise cycle, \$50, 488-5564. Wicker changing table, \$15; black Halogen torchiere lamp, \$12; Beatrix Potter comforter, \$10;

RCA 19" color TV, \$75, 286-8060. Outdoor lighting kit w/12 lights, all wiring, \$30.

Antique box camera, \$50; old Remington portable typewriter, \$50; 3-gage barometer, \$10; plants, alivera, pencil, banana, fern, \$6-\$8. 488

Free river rocks, you pick up. 480-3424. Midwest metal dog crate, 19'x36"x22", \$50. 280-0285.

Fisher Price sandbox, w/lid, red/yellow/blue, good condition, \$20.922-1768. Horse tack, saddles, blankets, bits, wooden

stands, lead ropes, etc. Jim, 991-0533. Handcrafted xmas trees, made from recycled baby food jars, decorated w/lights, tinsel & ribbon. \$ on display in bldg, 16 rm 232, B17 rm 268, B44 rm 216A, \$20/ea, Shelia, x34772 or 286-0219.

Dog kennel, 6x6x12 w/12x12 cement blocks. \$250. Greg Sims, x35560 or 474-7634. Ping pong conversion table, fits on any sz pool

table, net incl, \$65. Tony, x32305 or 554-2690. Large under-counter microwave, \$200; toaster oven, \$25; Pres & First Lady lifetime membership. \$300. Marla Clark, 326-1695.

Floursent lights, 4', \$25/ea; 2-8' horz blinds, \$100; 2-bolster pillows, \$30/ea; lg purple dragon head mask, \$60; elec dryer, \$60; full bed, \$150; dbl bed, \$30; 55-gal fish tan, w/stand, \$150; car ramps, \$40; oak dining table, w/6 chairs, \$900; student desk, \$60. 474-3820.

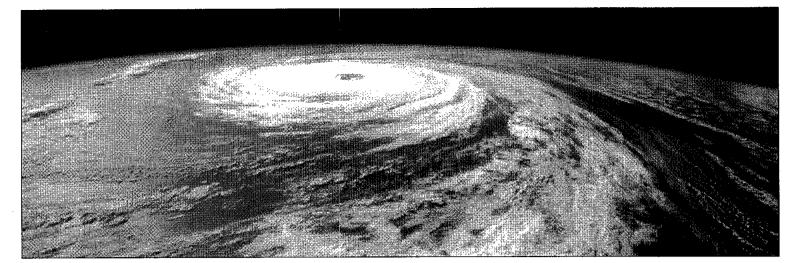
Entertainment center, solid wood, good cond, \$150, Kellve, x38515.

Ruger Super Redhawk, .44 mag DA, SS finish w/9" barrel; Stainless Lenpold 4x scope, hardshell case & shoulder holster, 1 bx ammo, \$625 firm. Stacy, 331-0627.

Pet Porter travel cage, \$30; 4 x 4 x 8, dog pen w/gate, \$35, 480-6541.

Parachute gear, '76 Stratoscloud, red/white/ blue canopy, '74 blue mini system harness w/containers & repcords, \$300/obo. 488-0484.

'88 Fleer, '88 Donruss, '89 Donruss, '90 Donruss, '90 Score, '90 Bowman, '91 Donruss unopened factory sets, \$100/all; 9 1909-1911 Tobacco baseball cards, \$100. Tony, x47401 or 482-4156.



ATLAS-3 mission measures atmosphere

STS-66 crew works around the clock for Mission to Planet Earth

tlantis and its six-member crew worked around the clock on the third Atmospheric Laboratory for Applications and Science mission.

Commander Donald McMonagle, Pilot Curt Brown, Payload Commander Ellen Ochoa, and Mission Specialists Scott Parazynski, Joe Tanner and Jean-François Clervoy collected invaluable data from several experiments on board during the 11 day flight.

Top to bottom, left to right:
1) Hurricane Florence in the Atlantic
Ocean, about 400 miles from Bermuda,
was one of a number of storm systems
the astronauts captured detail on around
the globe.

2) McMonagle works with the Heat Pipe Performance experiment. HPP-2 was flown to investigate thermal performance and fluid dynamics of heat pipes, which are being examined to help design systems for removing excess heat from future spacecraft and space stations.

3) Using the shuttle's robot arm, the crew deploys the Cryogenic Infrared Spectrometers and Telescopes for the Atmosphere and its Shuttle Pallet Satellite. The crew deployed CHRISTA-SPAS Nov. 4 and retrieved it Nov. 12.

4) The crew poses for the traditional inflight crew portrait on *Atlantis*' flight deck. Counterclockwise from upper left are Ochoa, Tanner, McMonagle, Parazynski, Brown and Clervoy.

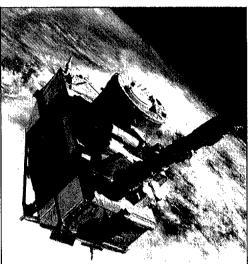
5) Parazynski works at the Vapor Diffusion Apparatus which supported the Protein Crystal Growth experiment. Crystal growth experiments are helping scientists study the structures of proteins and other macromolecules such as viruses.

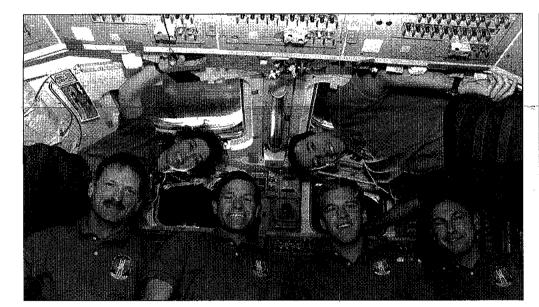
6) Clervoy, from the European Space Agency, moves a platform for the recumbent seat device. The seat, which reclines, is being tested for use by astronauts who are returning to Earth after long stays aboard Russia's Mir space station.

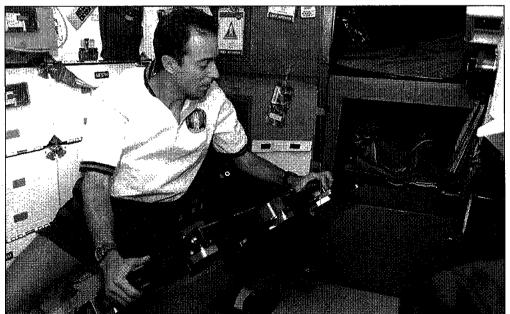
7) Ochoa checks out a pair of 8mm video tape recorders that support the Atmospheric Trace Molecule Spectroscopy experiment, which measured the chemical and physical composition of the middle atmosphere.

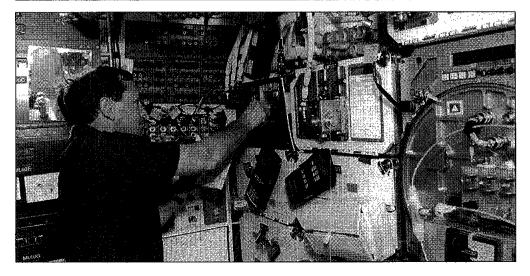
8) Brown works with the Space Acceleration Measurement System. SAMS supports PCG experiments by collecting and recording data to characterize the microgravity environment on the shuttle middeck.

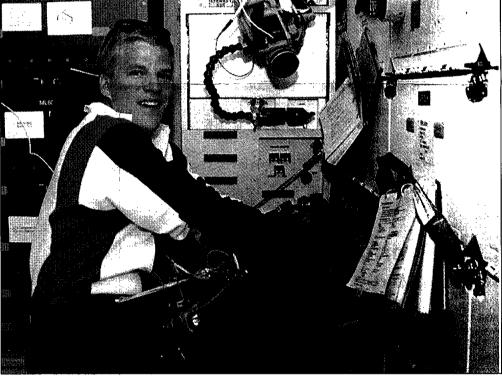














Astronomers count red dwarf stars like pebbles on beach

Observations with Hubble Space Telescope show Milky Way has relatively few such faint, low-mass stars

(Continued from Page 1)

were thought to be abundant, actually are sparse in the Earth's home galaxy, and in the universe.

Another team, led by Dr. Francesco Paresce of the Space Telescope Science Institute in Baltimore, determined that the faint red stars rarely form and that there is a cutoff point below which nature does not make this type of dim, low-mass star.

The space telescope observations accurately count stars and gauge their brightness. The observations overturn several decades of conjecture, theory and observation about the typical mass and abundance of the smallest stars in the universe.

In our own stellar neighborhood, there are almost as many red dwarfs as there are all other types of stars put together. The general trend throughout our galaxy is that small stars are more plentiful than larger stars, just as there are more pebbles on the beach than rocks. This led many astronomers to believe that they were only seeing the tip of the iceberg and that many more

ground-based instruments.

Over the past two decades, theoreticians have suggested that the lowest mass stars also should be the most prevalent and therefore might

extremely faint red dwarf stars

were at the limits of detection with

provide a solution for dark matter. This seemed to be supported by previous observations with ground-based telescopes that hinted at an unexpected abundance of what appeared to be red stars at the faintest detection levels achievable from the ground.

However, these prior observations were uncertain because the light from these faint objects is blurred slightly by Earth's turbulent atmosphere. This makes the red stars appear indistinguishable from the far more distant, diffuse-looking galaxies.

Hubble's capabilities made it possible for the team of astronomers led by Bahcall and Gould to observe red stars that are 100 times dimmer than those detectable from the ground—a level where stars can be distinguished easily from

galaxies. Hubble Space Telescope's extremely high resolution also can separate faint stars from the much more numerous galaxies by resolving the stars as distinct points of light, as opposed to the "fuzzy" extended signature of a remote galaxy.

Bahcall and Gould, with their colleagues used images of random areas in the sky taken with the HST Wide Field Planetary Camera 2 while the telescope was performing scheduled observations with other instruments. By counting the number of faint stars in the areas observed by HST, the scientists demonstrated that the Milky Way has relatively few.

The HST observations show that dim red stars make up no more than 6 percent of the mass in the halo of the galaxy, and no more than 15 percent of the mass of the Milky Way's disk. The halo is a vast spherical region that envelops the Milky Way's spiral disk.

The HST findings are the latest contribution to a series of recent, intriguing astronomical observations that are struggling to pin down the elusive truth behind the universe's "missing mass."

Workers avert water damage

Quick action by Space Station Integrated Training Facility workers averted expensive damage last week when a vent hose bib covering a drain pipe for chilled water burst under pressure in Bldg. 5 South.

The cover burst under the raised computer floor about 4:40 p.m. Dec. 1, when no one was on the third floor.

Isaac Stubbs, of CAE/Link had taken the elevator up to the second floor and noticed water running out from the ceiling. Stubbs immediately notified authorities, who dispatched a response team and contacted Center Operations.

While Johnson Controls workers worked to isolate the leak, SOC maintenance and operations personnel began disaster response procedures to protect the computer equipment on the first floor.

The computer equipment is being used to develop simulation applications for the ISSA Integrated Training Facility. Damage could have resulted in significant delays in ISSA ITF development deliveries. The equipment itself has a replacement cost of several million dollars.

SOC personnel who helped prevent damage to the computer equipment included Allied Signal Technical Services employees E.J. Emery, Jack Wright, Jim Svehla, Carl Edmonson, Curtis Tater, Mark Burns, Ray Gonzales, Vance Jow, Shawn McFerrin, Marjerie Filler, Sam Parker, and Joe Reyna.

Choirs perform for employees

The JSC cafeteria and Public Affairs will host choir programs next week for JSC employees.

The Lockheed Choir and Brass Band will perform sounds of the holiday season at 11:30 a.m. Tuesday in the Bldg. 3 cafeteria. The fourth and fifth grade choir from McWhirter Elementary will sing carols at 12:30 p.m. Thursday in Teague Auditorium.

Space Center Houston will host choirs beginning Saturday. Several choirs will perform at noon Saturday and Sunday. There will be one performance at 1 p.m., Dec. 16, two at noon Dec. 17, and one at 1 p.m. Dec. 22. There is no additional charge.



Natasha Doroshenko, left, receives a Silver Snoopy Award from Bill Readdy, NASA's manager of operations activities at Star City, Russia. She is the first Russian to earn the coveted award.

Snoopy salutes Russian effort

Silver Snoopy Awards have been around the world many times, as each one is flown aboard the shuttle before it is presented, but Snoopy's recent landing in Russia was a first.

The astronaut corps' personal recognition of excellence in support of the space program recently was presented to Natasha Doroshenko, an administrative assistant and secretary for NASA's Operations Office in Star City, Russia.

"Natasha has rapidly established herself as a vital part of our NASA team in Star City," said Bill Readdy, NASA's manager of operational activities. "We're awfully lucky to have someone with her talents and 'can do' attitude."

Doroshenko is an employee of Tech Trans International, the company providing translation and support services to JSC and other NASA employees at the Star City training facility in Russia. In addition to supporting technical needs at Star City and translating technical documents, Doroshenko helps JSC employees and their families feel at home.

"Natasha has selflessly dedicated evenings and weekends to ensure that crew members, technical specialists and family members are properly taken care of," Readdy said. "Without her dedication and team spirit, we would not be able to accomplish our mission in Star City."

Lynn named first NASA Chief Information Officer

John Lynn has been named to head the new office of Chief Information Officer within the Office of the Administrator at NASA Headquarters.

The CIO will provide leadership in the development of information resource management strategies and will ensure that information and related technologies are managed and utilized to support agency priorities. He'll work closely with CIOs at NASA's field centers, including Jack Garman at JSC.

Lynn will be on detail from the Marshall Space Flight Center, where he has been serving as the deputy director of institutional and program support. He will begin his new duties Feb.1. At Marshall, he was responsible for assisting in management of MSFC's facilities, environmental and information systems offices. He is currently the center's senior installation information resources manage-

ment official and chairs the MSFC Information Resources Oversight Council.

Prior to 1989, Lynn was director of the MSFC Information Systems Office. He has been the chair of the NASA Information Resources Management and Technology Exchange Council since 1982.

The NITEC provides agency wide coordination of information technology activities and consultation to NASA management. The NITEC has been responsible for the formation of teams and studies leading to the creation of efforts such as the Inter-Center Committee on Networking, the Automated Information Management Program and the NASA Information Resources Strategic Plan.

Lynn has earned the NASA Exceptional Service Medal and the NASA Outstanding Leadership Medal.

Holiday safety brochure here

The Institutional Safety and Quality Division has put together a brochure of holiday safety tips for employees. Seemore's Safety Workshop offers safety tips on shopping, fireplace operation, cooking, decorating and more.

One way to help keep your holiday safe is to fireproof your fresh Christmas tree. Fill a two-gallon container nearly to the top with hot water, add two cups of Karo syrup, two ounces of bleach, two pinches of

Epsom salt, 1/2 teaspoon of Boraxo and one teaspoon of chelated (available at plant stores). Make a fresh cut about an inch above the bottom of the tree. Place your tree in a stand immediately and pour the mixture in the stand. Water your tree everyday with this mixture.

If you have an artificial tree, make sure it is flame resistant.

For additional information, contact the Safety Learning Center at x36369.

ISD employees put together package for cancer patient

(Continued from Page 1)

this was outstanding," Dunnette said. "The people involved were obviously very touched by Gregory and really put a lot of effort into this project."

Barry Schroder, an image analyst with RMS Photographic Services in the Imagery Services Branch gathered film from several shuttle missions in which photographs of the Great Wall could be found. Two were selected and compared to maps of the area.

Dave Russell, a graphic artist with Hernandez Engineering in the Publications and Administrative Support Branch, took a deep interest in De Lorenzo and his illness, working beyond the call of duty to put together the montage that the STS-68 crew signed, Dunnette said.

The montage included two pictures of the Great Wall, as well as photos of the crew, launch, landing, and De Lorenzo's hometown on Long Island. In addition, Russell mounted color copies of the charts

with detailed annotations showing exactly where the Great Wall was in the photographs. He also used large prints of the two pictures from the montage to *reate an interactive photograph with an acetate overlay illustrating the location of the Great Wall.

Dunnette also worked with scene listers in the Imagery Services Branch to select footage taken during STS-68 that included the voices of two crew members talking excitedly about the Great Wall.

The package was shipped to De Lorenzo on Dec. 1, just in time for the start of the holidays.

"On behalf of Gregory and his parents, I would like to thank all of the NASA/JSC people who have reached out uniquely to touch Gregory and his family, and who have succeeded in giving them much hope for the future," MacKenzie said. "You should all be commended for your tremendous outpouring of good will and support to our new friend, Gregory De Lorenzo."

Employees share experience, dreams

(Continued from Page 1)

dren, in particular, Rhoads said. Part of NASA's mission is education, and NASA employees have a unique opportunity to use space exploration to capture the interest of young people.

NASA Administrator Daniel Goldin also challenged each NASA employee to do his or her part:

"Our nation is facing many social problems and each of us has a responsibility to get involved. NASA, as a member of the federal community, must do its part to foster the spirit of community service."

Our responsibility is to capture our young people's interest, help them develop self-confidence and self-esteem, challenge the limits of their knowledge, and assist them in turning their dreams into reality.

To participate in JSC's Educational Outreach Program and National Engineers Week, or in any other Educational Outreach Program activity, complete and return by Dec. 16 the application form enclosed in Huntoon's letter to each JSC employee. Help is needed to fulfill requests for visits to more than 500 classrooms in some 80 schools.

Assignments are expected to be completed by mid-January. An orientation meeting for participants will be held at 11 a.m. Jan. 23 in Teague Auditorium. Terry Brandhorst and Julia Haan of Clear Creek Independent School District will speak, and hands-on activities will be demonstrated in the lobby following the meeting.

For information, contact Norma Rhoads, AP2, x30235.

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.

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Electronic mail messages should be sent to the editor, khumphri@gp301. jsc.nasa.gov or the associate editor, kschmidt@ssf1.jsc.nasa.gov.

EditorKelly Humphries Associate EditorKaren Schmidt

Innovation classes available to help employees help themselves improve

(Continued from Page 1)

Frank Hughes, chief of the Space Flight Training Division. "We want to make sure all of the innovation that is possible is being turned lose on our projects here at the center. This training will provoke that kind of response."

In cooperation with Human Resources and Dr. Jack Matson of Penn State University, a pilot workshop is being developed to promote innovation. The pilot program will feature two different classes, one aimed at engineers and scientists and one designed especially for managers.

Data was collected by Bruins and Matson from several MOD division chiefs and Human Resources

to develop the program. With this information, and aid from the Space Flight Training Division, specific exercises for the engineers and managers were developed.

"I am very excited to see the

classes brought to JSC because principles behind them are just what we need with the huge challenges all of us at JSC face today," said Bob Holkan, chief of the Simulator Operations and Technology Division. Holkan helped prepare the exercises for the training classes.

For more information on the RAPID lab contact Cliff Farmer at x39529. Training class questions should be directed to Beth Hall at x33078.

NASA-JSC