



Lunar gathering Top scientists gather at JSC for the

25th Lunar and Planetary Science Conference. Story on Page 3.



Exceptional efforts

JSC employees are honored for their contributions to space station redesign activities. Photo on Page 4.

Space News Roundup

Remote link puts JSC in . driver's seat

By Kelly Humphries

Scientists and engineers extended a hand of cooperation—a robot hand-this past week, helping operate a Russian-built automated rover at the Amboy Crater in California from a control room at JSC

The Marsokhod rover, with its six conical shaped, independently driven wheels, was tested in both Mars and lunar exploration modes from the Space Station Operations Control Room in Bldg. 30S, demonstrating the capability to provide remote command and control over vast distances.

Carol Evans, Lynn Vernon and Tim Flannery of the Mission Operations Directorate, Mike Duke, Kent Joosten and John Conally of Space and Life Sciences' Solar System Exploration Division, and Scott Askew of Engineering's Automation and Robotics Division participated in the telerobotic testing.

A team of Russians worked with the rover in the field and at field control centers in Huntington Beach and Anaheim, Calif.

'We thought it was a great experience," said Duke, who served as overall coordinator for the JSC activities. "We were able to operate both the Russian rover and the McDonnell Douglas rover for extended periods. We had very good experience with the three-way communications link between the field, the operations control centers in California and our control center. It really didn't matter who was controlling the vehicle, we were all working together.'

The test was organized by a consortium that included Ames Research Center, which has been developing teleoperation technology; McDonnell Douglas Corp., which is working with the Russians to add robotic manipulation to their rover chassis; and the Planetary Society. which has helped bring the international group together.

In the Mars operation mode, a scene from the rover cameras was transmitted to the Space Station Operations Control Center every few minutes, followed by transmission of a new set of driving instructions to the vehicle. As the rover complete each function, it transmitted a new scene, simulating the delay time in transmitting radio signals back and forth between the two planets.

For the lunar simulation, near realtime television images were transmitted, allowing operators here to see a three-dimensional representation of the view from the rover cameras and drive the vehicle from the

Please see JSC. Page 4





Top: Kent Joosten and John Conally drive the Russian rover Marsonkod from the Space Station Operations Control Center at JSC as observers from Mission Operations, Space and Life Sciences and Engineering monitor their progress. Bottom: Joosten and Conally don goggles that provide a stereoscopic, simulated 3-D image from the

Main engines OK, Endeavour aims for launch today

ENDEAVOUR

By James Hartsfield

After a 24-hour hold to allow precautionary inspections of pump housings in the main engines, preparations of Endeavour at KSC picked up full steam Wednesday aiming toward a liftoff early today on STS-59.

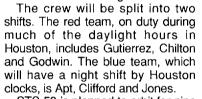
The launch has been targeted for 7:06 a.m. CDT, however, managers

were scheduled to decide Thursday if it would be advantageous to move the launch time earlier by one hour to gain better weather in Florida. As of midweek, the weather forecast called for only a 40 percent chance of acceptable conditions for liftoff, with the possibility of rain, low clouds and strong winds at KSC today.

Commander Sid Gutierrez, Pilot Kevin Chilton and Mission Specialists Jay Apt, Rich Clifford, Linda Godwin and Tom Jones arrived in Florida early Monday, and the countdown for Endeavour began a few hours later. Tuesday, shuttle managers held the count for one day to inspect metallic vanes, or ridges, in the oxidizer preburner housings of the high pressure oxidizer turbopumps in the main engines. The vanes on similar pump housings being prepared for a future flight at Rocketdyne, the main engine manufacturer, had been found to be slightly below specified measure-

Endeavour's inspections were completed late Tuesday without any problems noted, and managers decided to proceed toward a launch

today. Endeavour is planned to reach a 120 nautical mile, 57-degree inclination orbit which will allow its groundtrack to cover a majority of the Earth's surface. Space Radar Laboratory-1 will study the environment, oceans, atmosphere, topography and geology of a multitude of sites around the globe.



STS-59 is planned to orbit for nine days, however, an extra day may be added if supplies allow once the mission is under way and scientists could benefit from the extension.

Shuttle veteran Grabe to depart JSC

Grabe

By Kyle Herring

Four-time shuttle veteran Ron Grabe will leave NASA and the Air Force Monday to become vice president of business development for Orbital Sciences Corp.'s Launch Systems Group effective April 11.

At OSC, Grabe will assist in the development of launch vehicles and marketing strategy. He will also serve as the link with customers on future projects.

"We will certainly miss Ron. Not only is he a superb shuttle commander, but he is a great technical manager as well," said Dave Leestma, director of Flight Crew Operations, "It's a credit to the dustry that Ron's wealth of experience and knowledge will not

Selected as an astronaut in 1980, Grabe's first shuttle flight was STS-51J, a dedicated Department of

Defense mission in October 1985. STS-51J marked the maiden voyage of Atlantis. His second flight in May 1989, also on board Atlantis,

was STS-30. During that mission, the crew deployed the Magellan probe, which has mapped more than 95 percent of the surface of Venus since arriving at the planet in 1990.

In January 1992 Grabe commanded STS-42, the first International Microgravity Laboratory mission on board Discovery. The crew worked in two shifts around the clock in

the pressurized Spacelah module investigating the effects of microgravity on materials processing and life sciences in the course of more than 80 experiments.

In June 1993, Grabe served as

commander of the STS-57 mission on board Endeavour. The multifaceted mission included the first flight of the pressurized Spacehab module carrying 22 flight experi-

ments in materials processing and life sciences. In addition, Grabe's crew retrieved the free-flying European Retrievable Carrier previously deployed during the STS-46 mission in August 1992. A spacewalk was conducted during the flight to evaluate various techniques for use on future missions.

cently. Grahe has served as a member of the Vehicle Review Board for the International Space

"Ron has been a talented and insightful team member from the early days of space shuttle through four highly successful space flights as a crew member," said Robert "Hoot" Gibson, chief of the Astronaut Office. "He has contributed greatly to our nation's space efforts and we wish him every possible success in his future endeavors."

Grabe will retire from the Air Force with the rank of colonel. Prior to joining NASA, Grabe was an instructor at the U.S. Air Force Test Pilot School at Edwards Air Force Base, Calif. Grabe has logged more than 5,500 hours flying time in aircraft that includes the F-100, F-111

Grabe flew 200 combat missions hile assigned to the third Tactical Fighter Wing at Bien Hoa Air Base in Vietnam. He also served as a Royal Air Force Exchange Test Pilot while in Boscombe Down, England.



Carolyn L. Huntoon

Six honored for achievements

Six JSC managers are among the NASA employees who will receive the agency's highest honors at a ceremony May 3 in Washington.

The Presidential Rank Awards recognize exceptional performance by members of the Senior Executive Service throughout the government. Center Director Dr. Carolyn Huntoon and Director of Safety, Reliability and Quality Assurance Charles Harlan will receive the Distinguished Executive Award.

This honor is bestowed on employees for "sustained extraordinary accomplishment" and is limited to one percent of career SES members government wide.

The Meritorious Executive Award will be presented to four JSC employees in recognition of their "sustained accomplishment." Receiving this award will be: Procurement Director Gene Easley; Comptroller Wayne Draper; Center Operations Director Grady McCright; and Deputy Engineering Director Chet Vaughan.

Huntoon was cited for "leadership, personal dedication and initiative" during her 27-year career within the manned space flight program. According to the award nomination, Huntoon "demonstrates outstanding capabilities as a leader and manager, and as a scientific contributor and innovator in her own right.'

The award nomination also recognizes her work in establishing cooperative research agreements between JSC and a variety of hospital and health organizations.

Harlan 's efforts to return the shuttle program to flight, and his dedicated service to the human space flight program over three decades are among the accomplishments cited in his award nomination.

Harlan's involvement with human space flight activities spans the Mercury, Gemini, Apollo, Skylab and shuttle eras. The nomination praises his "sincere and deep personal commitment to excellence, efficiency, and timely performance" in support of NASA programs.

Easley was nominated for the Meritorious Executive Award based on a "career marked by commitment to quality and efficiency in all areas

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Charles S. Harlan

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

NASA Night at Astroworld: Visit Astroworld from 6 p.m.-midnight, April 8. Cost is \$11.95 for first 5,000 tickets sold, then price increases to \$12.95. Receive a free Waterworld ticket upon entrance. Astroworld Early Bird: Tickets available for one-day admission for 1994 season. Cost is \$16.85 per person. Tickets must be purchased by May 31.

Seaworld of Texas: Discount tickets: adult \$20.95; child (3-11), \$14.25. Fiesta Texas: Discount tickets: adult \$18.95; child (4-11) and seniors (55+), \$14.25. Moody Gardens: Discount tickets for two of three different attractions: \$9.50

Entertainment '94 Coupon Books: Bay Area/Galveston/Downtown or FM 1960/Downtown: \$30 each. Gold C Books: \$8

Space Center Houston: Discount tickets: adult, \$7.95; child (3-11), \$4.75; commemorative,

Metro tickets: Passes, books and single tickets available

Movie discounts: General Cinema, \$4.75; AMC Theater, \$4; Loew's Theater, \$4.50. Stamps: Book of 20, \$5.80

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

Upcoming Events: NASA Picnic, May 7.

JSC

Gilruth Center News

EAA badges — Dependents and spouses may apply for photo identification badges from 6:30-9 p.m. Monday-Friday; 9-11 a.m., 1-3 p.m. and 6:30-9 p.m. Wednesdays; 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. April 21. Pre-registration is required. Cost is \$5. Defensive driving — Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is April 9.

Scuba class — New class begins April 14. For additional information, contact Bernie Ehlers,

Creative writing — Five-week basic creative writing class meets from 6:30-9 p.m. For addi-

tional information, contact Barbara Reeves, 473-0748. 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. Cost is \$24 for eight weeks.

Aikido — Martial arts class meets from 5-7:30 p.m. Tuesdays and 6:15-8:15 p.m. Wednesdays. Black Belt class from 6-8 p.m. Fridays, requires instructor permission. Cost is \$25

Basketball league — Registration for Spring basketball league is April 14.

Volleyball league — Volleyball Mixed C Spring League registration is April 12 and Mixed B

registration is April 13.

Intercenter run — The Spring Intercenter Run continues through April 30. Run or walk a two-mile or 10K course and submit times to the center. Stamp club — JSC Stamp Club will meet from 7-9 p.m. every other Monday. For more infor-

mation, call Dianne Kerkhove at 554-2764 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.

Sailing club — A start-up meeting is planned for 5:15 p.m. April 8 & 15 at the Gilruth Center. Sailing lessons are planned for May and June. For information, contact Richard Hoover,

Dates & Data

Today

JAS meets — The JSC Astronomical Society will meet at 7:30 p.m. on April 8 in the auditorium at the Lunar and Planetary Institute. Charles Hudson will discuss binoculars and their application to astronomy. For additional information, contact David Portree at x36707.

Cafeteria menu — Special: baked meatloaf. Total Health: lite macaroni and cheese. Entrees: baked scrod with Hollandaise, broiled chicken, pork and beef egg rolls, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: stewed tomatoes, seasoned spinach, cut corn, macaroni and cheese.

Monday

Cafeteria menu — Special: Italian cutlet. Total Health: roast beef au jus. Entrees: chicken a la king, enchiladas with chili, baked lasagna with meat, steamed fish, French dip sandwich. Soup: split pea and ham. Vegetables: Brussels sprouts, oriental vegetables, buttered carrots, lima beans.

Tuesday

Cafeteria menu — Special: stuffed cabbage rolls. Total Health: roasted turkey. Entrees: turkey and dressing, country style steak and hash browns, beef ravioli, baked chicken, French dip sandwich. Soup: tomato Florentine. Vegetables: Italian blend, okra and tomatoes, corn cobbette, navy beans.

Wednesday

Freedom Fighters — The Space Station Freedom Fighters will meet at noon and 5 p.m. April 13 at the

Freeman Memorial Library. For additional information, contact David Cochran, 482-7005

Astronomy seminar - The JSC Astronomy Seminar will meet at noon April 13 in Bldg. 31, Rm. 129. The video tape "Galileo, Earth and Moon Encounters" will be shown. For more information, call Al Jackson, 333-7679.

PSI meets — The Clear Lake/ NASA Area chapter of Professional Secretaries International meets at 5:30 p.m. April 13 at the Holiday Inn on NASA Road 1. For additional information, contact Elaine Kemp, x30556 or Diana Peterson, x30390.

Cafeteria menu — Special: pepper steak. Total Health: stir fry pork with rice. Entrees: liver and onions, catfish and hush puppies, stir-fry pork with rice, steamed fish, Reuben sandwich. Vegetables: steamed broccoli, yellow squash, macaroni and cheese, vegetable sticks.

Thursday

Russian speakers — Practice Russian language skills from 11 a.m.-1 p.m. April 14 in the Bldg. 3 cafeteria. For more information, call Jack Bacon, x38725, or Amy Mendez x38066

Cafeteria menu - Special: chicken fried steak. Total Health: fat-free vegetable soup. Entrees: beef tacos, scrod with Hollandaise sauce, steamed fish, French dip sandwich. Soup: navy bean. Vegetables: spinach, cut corn, breaded okra, pinto beans.

Friday

Cafeteria menu — Special: tuna noodle casserole. Total Health: steamed salmon steak. Entrees: steamed salmon steak, roast beef, baked chicken, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: French cut green beans, cauliflower with cheese, green peas, black-eyed

April 20

Astronomy seminar — The JSC Astronomy Seminar will meet at noon April 20 in Bldg. 31, Rm. 129. For more information, call Al Jackson, 333-7679.

Lunch meeting — The Materials, Structures and Dynamics Committee presents a lunch and learn seminar at 11:30 a.m. April 20 at Lockheed Plaza I. Steve King and Steve Solomon will discuss Space Mechanism Analysis using DADS. For additional information, contact Gillian Parker, 333-6239.

April 21

Russian speakers — Practice Russian language skills from 11 a.m.-1 p.m. April 21 in the Bldg. 3 cafeteria. For more information, call Jack Bacon, x38725, or Amy Mendez, x38066.

April 27

Astronomy seminar — The JSC Astronomy Seminar will meet at noon April 27 in Bldg. 31, Rm. 129. For more information, call Al Jackson, 333-7679.

April 28

Russian speakers — Practice Russian language skills from 11 a.m.-1 p.m. April 28 in the Bldg. 3 cafeteria. For more information, call Jack Bacon, x38725, or Amy Mendez, x38066.

JSC

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Ads may be run only once. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Property

Sale: Nassau Bay, house, 4-2-2, \$113,950. 333-3876.

Lease: Webster, Ig condo, 2-1, FPL, appl, upstairs, \$495/mo. x31275 or 486-0315.

Rent: Galveston beach house, wkly/wknd, sleeps 10. James, x36666 or 487-5730.

Sale: Sterling Knoll, 3-2-2, approx 1300 sq ft, FPL, pool, \$69.9k. 486-9760. Sale: Lake Livingston, 2 lots, \$5k, owner

finance. James, x36666 or 487-5730. Rent: Colorado condo, furn, sleeps 6, sum-

mer/fall rates. 488-4453. Lease: Nassau Bay townhouse, 4-2-2.5, 2000 sq ft, lg garage, deck, atrium, non-smoker. Jerry, x38922 or 488-5307.

Sale: Taylor Crest, 4-3-2.5D, 3200 sq ft pool/spa, balconies, art studio, \$282.5k. Richard, x30271 or 326-4963.

Sale: Ft Lauderdale, FL, condo, have video & floor plans, \$12k. Donald, x36851 or 332-8017. Rent: Freeway Manor, 3-1-1, fenced bkyd,

ceiling fans, \$500/mo + dep. Bill, 332-3649. Sale: Middlebrook, 4-2-2, ex cond, \$105.5k Sean, x37898 or 280-0403.

Lease: Pipers Meadow, 3-2-2, FPL, fans, W. avail 4/ \$845/mo + den Lease: Forest Bend townhome, 2-1.5, 2-story,

ceiling fans, patio, carport, \$450/mo. B. Craig, Sale: 2.69 acres. Friendswood, city util avail.

150' front on paved road. x37346 or 488-2649. Sale: Friendswood, 4-2.5-2, jacuzzi in master BR. gameroom, \$175.7k. 482-8595.

Cars & Trucks

'82 Camaro, A/C, auto, 2.8L V6, AM/FM/ cass, brn/beige, ex cond, \$2.5k OBO. 991-5280. '84 Toyota Supra, 91k mi, \$3.4k OBO. Mike, x30993 or 333-1856.

'92 Toyota Paseo, 5 spd, moonroof, cass, 58k mi, \$9k OBO. Suresh, x49659 or 488-5329. '87 Honda Accord, 3 dr, 5 spd, A/C, AM/FM/

cass, 59k mi, ex cond, \$4.5k. x32774 or 480-5232

'72 Chevy Cheyenne, LWB, Fleetside, PS/ PB, A/C, \$8.5k. 485-1967. 189 Honda Civic DX, 3 dr. 5 spd. A/C. AM/ FM/cass, dark red, ex cond, \$5.8k OBO. 334-

'86 Toyota Camry LE, 5 spd, 70 k mi, \$3750. x31421 or 482-0447.

'86 Olds Cutlass Ciera, 4 dr, A/C, PS/PB, AM/FM/cass, 88k mi, \$3k. 480-9431. '81 Pontiac Grand Prix good parts car runs

need repair, \$150. x38837 or 538-2298. '87 Chevy S-10 Blazer, 2 dr, 4WD, V6, ex cond, \$7.2k. x37010 or 334-2612.

'86 BMW 528E, sunroof, AM/FM, \$6.5k. Charles, 426-2039. '80 Toyota Celica, \$250 OBO. Jim, x48963 or

'76 Dodge Aspen station wagon, 80K mi,

\$480, x37346 or 643-9473.

'85 Mercury Marquis Brougham, 85k mi, auto,

A/C. \$2.5k. x35277 or 440-1659. '91 Toyota Corolla DX, 4 dr, auto, A/C, AM/ FM, 36k mi, ex cond, \$7895. 333-7167. '72 240Z w/280 eng, \$3.9k. Russ, x45979 or

332-1769. '84 Mitsubishi Turbo Colt, 5 spd, A/C, needs

eng, \$325, 488-2652. '91 Ford 1/2 ton extended body van camper, 110v-12v refrig, 110v microwave, A/C, 22k mi. 339-2181

'67 Ford Mustang, dk green, ex recond. 955-'85 Ford Crown Victoria, all pwr, 82k mi, ex cond, \$3.5k OBO. x38486 or 332-0746.

'84 Ford F150 LWB, 300 I6, auto, PS/PB, AM/FM, 92k mi, \$2.1k OBO. Nelson, x38486 or

Boats & Planes

Chrysler 22' Sailboat, sleeps 6, w/galley/ head, fixed keel, 5 hp outboard, mainsail & 2 jibs, ex cond. \$2.8k. 282-1727.

VIP Vision, 18', 130 hp/OMC/I/O, ex cond, \$9.75k OBO. Jennifer, x38668 or 286-0507. Grumman alum canoe, 17', 2/life vest, 2/paddles, anchor, ex cond, \$300. 486-9760.

U.S. Yachts 22' sloop, w/4.5 hp, o/b motor, 2 sails, galley, sleeps 5, ex cond, \$4.5k. Russ, x45979, or 332-1769.

Seawind catamaran, 24', VHF/DF, 9.9 hp Yamaha electric starter, 16' beam, \$12k OBO. x37124 or 532-2370.

Windsurfing equipment, boards, sails. David,

Ski Brendella Super Comp, '91-20' inboard, er and skis. \$14.3k, x34736 or 326-3724.

Cycles

86 Yamaha YZ 125 dirt bike, ex cond, \$1k. Brad, 326-6228.

'81 Honda SL 125 motorcycle, 23k mi, \$500. Joan, 479-3572.

Audiovisual & Computers

US Robotics Courier HST Dual std cellular Fax modem, V.32 Terbo at 19.2k bps, V.17 group III Fax at 14.4k bps, new, \$550. Tony, x47401 or 482-4156.

Lotus 1-2-3 ref. 4.0.1 for Windows & Lotus Write ref.2.0, \$100/both. 486-5500. IBM compatible, NEC-286 computer, 640k RAM, 44MB HD, 2 FD, color moni, kybd, soft-

ware, \$400. Earl Rubenstein, 480-1998. Pioneer recvr, 40 watt, cass deck; Technics CD player; Realistic 10 band equalizer; Advent tower spkrs, \$400. 941-5288.

Sony CPD-1304 14" monitor, multi-sync, .25 dot pitch, \$450, Howard, 332-2340 or 282-3841. Macintosh II fx, 40 mHz 68030 w/68882 math coprocessor, 20 meg ram, 1.44 FD, 80 MB HD, \$1.5k/all or parts. Dennis, 39012 or 992-5285.

386 SX 20 mHz computer w/1MB RAM. 200MB HD, multi I/O controller w/all ports, pwr supply: Panasonic KXP-1123 printer, \$475. Howard, 282-3841or 332-2390.

Panasonic dual cass stereo w/spkrs & cabinet. ex cond. \$165, 992-1466. AM/FM stereo receiver, 25 wpc w/bass reflex

spkrs, \$45. Donald, x36851 or 332-8017. Yamaha T-760 stereo tuner, ex cond, w/programmable memory, OBO. x32944.

HP LaserJet Printer IIp w/1MB + 250 pg lower

cass & Parallel/pwr cables, \$500; HP ScanJet-Plus scanner & auto document feeder + I/F card. Parallel/pwr cables, software, \$750. Dennis, 943-1894.

Musical Instruments

Gemeinhardt flute, sliver plated, ex cond. \$250; Yamaha kybd, sm, ex cond, \$95. Kathy, 486-9606 or 286-1767

Bradbury spinet piano, \$500 BO. Judy, x33626 or 559-2331.

Pets & Livestock

Free cat, female. x39159 or 554-2532 EMU chicks, \$2.5k/ea, & breeders, 5 yr old

female, 482-0874. AKC reg black Labs, M&F, \$150-\$200. Rob, 538-1449.

Free dog, male, neutered, corgi-mixed. x38088 or 480-0443. AKC reg Siberian Husky, female, \$150 OBO.

Lost & Found Lost: keys at Gilruth Center, Black & Decker

tape meas key chain. Chris, x38956 or 335-

991-5280.

Waterbed, kg sz w/8drwrs, 3/cabinet pedestal, full dresser w/mirror, chest of drwrs, nightstand w/lamps, sell \$600 OBO; Sylvania 40" projection TV, \$1.1k; contemp lounger, \$40; Hoyt compound bow, \$125 OBO; Cannon gun safe 61"x25"x19", \$550. Mike, x30993 or 333-1856.

Kenmore automatic washer & electric drver. gold, \$40/ea; Sears freezer, 20 cu ft upright, ex Dinette set, 5 pc, round, \$200.482-6651.

TMK 13" color TV, 13-channel remote, \$35 OBO. David. x40210. Mikasa Imperial Lapiz china, 5 pc place set-

tings, \$65/ea; oval platter, \$120/ea. 480-2584. Contemporary solid wood baby furn, crib/4 drwr dresser w/flip top changing table, \$300/ both. Neil, x45790 or 488-2742.

Waterbed kg sz, heater & pads, solid oak frame, ex cond, \$200, Ineke, 488-0403 or Melody, 748-1604. Refrigerator, 19 cu ft, ice maker. Lynn, x35974

or 992-1052. Formal dining room table & six chairs, \$350. 992-1466.

Kenmore 27 cu ft side-by-side refrig/freezer, ice & water in dr, \$975. Vera, 282-3561 or 721-5743. Country style bar stools/2, ex cond. \$50. Bill,

x47159. Waterbed, on sz. 2 armories, 4 dwr pedesta, \$400; exec desk, \$500; upright freezer, 16 cu ft, Kenmore, \$275; drafting tbl, w/tools, \$75 OBO.

Sm one drwr sz file/locking top, \$7.50; 2-3"x5" card cabinets, \$5/ea; misc plants, \$6/ea; Love seat. \$250: 2-capt chairs, \$35 both; Peruvian rug, lg or wall hanging, \$50; beveled glass mirror, 30"x39", \$50; laundry hamper, \$10. 488-Couch & loveseat both built-in recliners,

534-2419 or 280-2171.

\$400/both; blk lacquer coffee tbl & end tbl, \$25 ea. Mike. x30636 or 992-2186. Dishwasher, Tappan, under counter, \$75 OBO. Dan, x35761 or 480-6557.

Maytag Frost-Free refrigerator, \$150, x31304. Microwave, \$50; refrigerator, \$50; antique

sewing machine, \$75. Kelly, 282-2586 or 337-2493.

Waterbed kg sz, wht vinyl 1/2 moon HB, \$275. Lavenia, x36171 or471-5428. King sz mattress/box springs by Stearns &

Foster, \$300. Mark, x30131 or 488-0056. Tan sofa 90", \$100; oak coffee & end tbls, \$50/ea; formica/chrome round tbl, \$30; dining tbl w/4 chairs, \$40; twin bed, \$50. Jim, x39229 or 482-7873

Couch & Ottaman, bl/grey, \$300. Bonnie, x37933 or 334-6738.

Dining rm rect tbl w/4 chairs, glass top, 2 matching bar stools, \$300. Michele, x33369.

Wanted

Want riders for Van Pool, North West Houston to NASA area. Wendell, 333-6050 or 466-3203. Want non-smoking roomate, female, 3 BR house, LC, \$250/mo + util, avail 4/1. Dora. 332-

Want babybed, dresser, changing table, baby comforter set, maternity clothes reasonable

price. 280-5058. Want roommate to share home, LC, \$325/ mo 1/2 util. Rob, 538-1449.

Want inexpensive car or truck some repairs ok. 771-0955 Want Lenox Autumn individual or serving pieces. Riley, x37752 or 280-9424.

Want kids BRIO wooden train set, or equivaent. Dan, x35761 or 480-6557. Want 2 orig copies of Walt Disney Cinderella

movie. Alicia, x37918 or 643-9885. Want bike trailer for 2 children. Siders,

Want Tiffin Killarney Crystal Stem, #17394. 878-3082 or 486-7139 Want summer housing for JSC summer faculty, 2 adults, 1 child, appt from 6/10 - 8/15. Rick

ocki, x35317 or 286-4538. Want NASA publications, SP4201 "This New Ocean" or any "SP" publication. Ron, 333-6952

or 482-1385. Want non-smoking roomate, 3 BDR, El Largo. \$350/mo + 1/2 util. Brenda, x36037.

Want dresser, ironing board, sm color TV, old

Miscellaneous

paintings or prints. x34927 or 486-9783.

50 plate "Collectables" various artists, \$15 ea or 2 for \$25. Earl Rubenstein, 480-1998.

French provincial desk/dresser; 6 drwr dress er/mirror: 6 AMP batt charger; floor polisher; 13" B/W TV; TI 99-4A; computer desk; stuffed animals; Prom dress. Fred, 944-3523. Pres & First Lady Charter Gold membership.

\$600; DP exercise bike, \$35. Denise, x30455. Pres & First Lady Charter Gold membership, \$500, 283-7530. Jacuzzi, rust colored, 6 person cap, \$350; Gaffers & Sattler dishwasher, needs work, \$50;

answering mach, \$35; Sunbeam, 12 spd tbl top

mixer w/bowls, attach, ex cond, \$100. Gloria, x31891 or 538-2283. Infant girl clothes, dress & gowns, sz sm - Xlg, girls Gunne Sax dress, pink, sz 12, ex cond, \$3 -\$25, 488-6521.

Hartoo wood parquet floor tile, 3 boxes, bran color, 25 sq ft per box, 333-6277 or 339-3562.

Sanyo AM/FM/cass w/Jensen & band equalizer. \$100; car spkrs. Jensen 160 watt. \$65; Eureka canister vacuum, \$50; waterbed, qn sz, grey/black, \$50; coffee maker, Europa 10 cup, \$20: Espresso/Cappicino maker, \$50. Mark.

Tauturi Air E702 exercise bike, ex cond. heart/ spd/time/dist monitor, \$225. x38079.

Marina village camping membership, Lake Livingston, \$1.5k. Joan, 479-3572.
Smith Corona PWP-55D elect typewriter/ word processor, dictionary, auto-correction,

spell-checker, display, memory, new \$349 sell \$150. Ray, x33954 or 487-4889. Shrimp net, 25', w/boards, \$100. Phil, x30220.

Bally's club membership, \$20/mo. x36267. Rear step bumper for GMC/Chevy full sz Fleetside P/U, blk, \$125; tailgate for GMC full sz Fleetside P/U, \$250. Curtis, 333-7027.

Camper top full sz, alum, ex cond, \$175. Don,

x37553 or 946-7860. Live oak tree, 4" dia in 50 gal pot, \$125. Dennis, x39012 or 992-5285. Bridal veil, white w/sequined headband &

pearls, \$100, 332-8017.

Blk Brahma camper shell, full sz P/U, \$500. Antiques, primitive corner cupboard, \$350; primitive meat safe, \$200; primitive trunk, \$40; trunk, \$75; school desk, \$35; primitive desk, \$150; chrs, \$10/ea; plow, \$125; Jenny Lind crib & matt, \$100; rocking horse, \$40; wedding dress

sz 8, \$300; longhorns, \$45; tools; assorted baby items. 996-1442. Wilson "Agressor" graphite tennis racket, \$25; jack, tire tool & 4-way, \$10; 14" locking wire wheel covers from Grand Prix, \$25; "Cross walk", motorized treadmill & cross-trainer, \$400. x38837 or 538-2298.

Microwave stand, \$25; student desk, \$60; portable dog cage, \$80; 3 Pal alarms, \$20/ea. Faye, 470-1455.

Schwinn Airdyne exercise bike, ex cond. \$200. x48915 or 521-4776. BEL 6455Ti Plus radar detector, front/rear, \$350, x38079.

Child's play house, 4 windows w/shutters, 2 flowerbed boxes, 50"x50", ht 62". Vivian, x32136 or 486-5619.

tive plates; U.S. divers knife/holder; OACOR wrist depth gage & wt belt, OBO. Ron, x30887. Easton Graphite softball bat, 30 oz, new \$85, sell \$40: Yakima Rooftop rack, \$100; streatch kit,

Set of 4 25th Annver Star Trek commemora-

fits all trucks & cars, \$65. 2823215 or 480-9448. Kids 12v Suzuki bike; tail lights for '74-'78 Firebird: back glass for '75-'81 Firebird or Camaro; rear spoiler corner pcs for '74-'78 Firebird. Bobby, x38823 or 337-4134.

Camaro custom car cov. ex cond: redwood picnic table & benches; silver trays; Pioneer CD player. Vicky, x32395 or 481-5306.
Wards 17 cu ft, refrig, \$100; kg sz waterbed

frame & HDBD, \$25; radio fits '91 Ford truck AM/FM stock equip, \$30. Warren, 212-1458 or

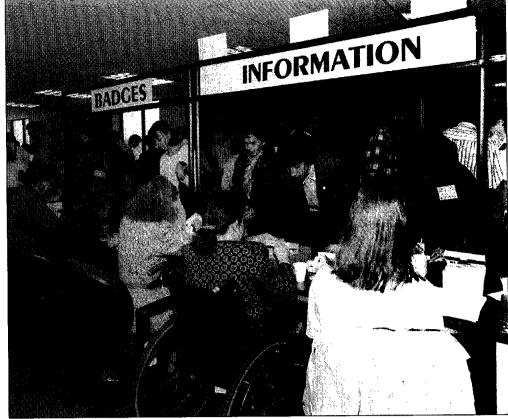
'88 Trail Seeker travel trailer, 26 ft, ex cond, loaded, \$11k, 554-6677. Hobbie horse, \$25; TV/microwave table, \$20;

8 pt deer head OBO. Sam, 332-3168. Captains chairs, 2, center console for Ford full sz P/U, It blue, ex cond. Ron, x34072 or 409-925-4668

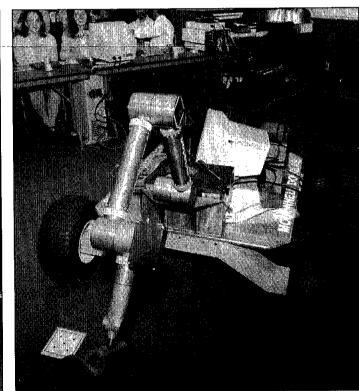
Aluminum PU camper top, 8', walk-in back dr, \$165 OBO: 8' fiberglass camper top, \$100 OBO; full sz bed w/frame, \$150. Jim, 480-3261 or 335-0170 RX7 Mazda nose bra, \$50. Patti, 282-4221.

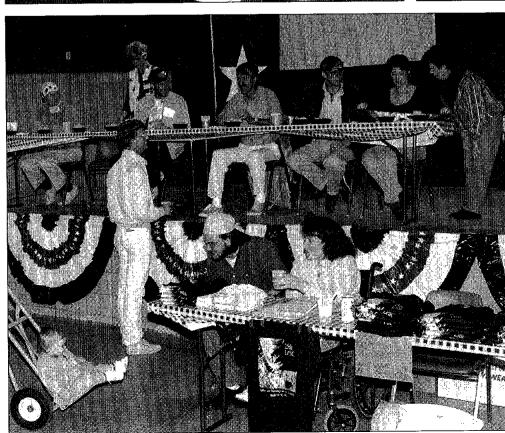
Stair Stepper, full frame, computer, best offer x36037.













Discoveries, fun both part of conference

JSC was the site of serious scientific discussion and not-so-serious chili cookoff competition during the 25th annual Lunar and Planetary Science Conference, held March 14-18 at the Gilruth Center.

ference, held March 14-18 at the Gilruth Center.

"The Clementine data was particularly exciting,"
said Doug Blanchard, chief of the Solar Systems
Exploration Division. "That was brand new stuff."
The Clementine probe is completing a two-

The Clementine probe is completing a twomonth survey mapping the surface of the moon. In addition to its lunar mapping mission, discussion on the Clementine probe centered around its study of lunar horizon glow. The study, being conducted by Herbert Zook and Drew Potter of JSC, measures how much lunar dust is levitated off the surface of the moon

The horizon glow was first observed by astronauts on board Apollo 17 in 1972 as the sun began to rise from behind the moon. The glow phenomenon puzzled researchers who believed the lack of any real atmosphere on the moon lacked material sufficient to create a glow. Zook said one model to explain the glow involves sunlight striking the moon and stripping atoms of their electrons. These ionized atoms and electrons then impart a charge to lunar dust particles that then rise several kilometers above the moon, creating the horizon glow by scattering light.

According to Clementine project scientist

According to Clementine project scientist Eugene Shoemaker, the probe has succeeded in photographing the glow in an image taken by one of its star-tracker cameras.

In addition to the excitement generated by the discoveries of the Clementine lunar mapping mission, conference attendees learned about the discovery of a Martian satellite that previously had been misclassified.

Known as the Allen Hills meteorite, the rock has been maintained in a nitrogen-filled cabinet at JSC since its discovery in 1984. Recently, however, David Mittlefehldt, of Lockheed Engineering and Sciences Co., reexamined the meteorite and reported its point of origin was Mars.

The Lunar and Planetary Science Conference is co-hosted by JSC and the Lunar Planetary Institute every year and attracts some of the world's top scientists.

Clockwise from left

1) Associate Center Director Paul Weitz, David Black, director of the Lunar and Planetary Institute, and Doug Blanchard, chief of the Solar System Exploration Division watch as an anniversary cake is cut to celebrate the start of the 25th Lunar and Planetary Science Conference held March 14-18 at the Gilruth Center. Cutting the cake are Bob Clayton, from the University of Chicago; Eugene Shoemaker, from the U.S. Geological Survey; and George Wetherill of Carnegie Institute.

2) Crowds line up to register for the conference during opening day activities at the Gilruth.

3) The main ballroom of the Gilruth Center is filled with people attending scientific briefings

during the conference.

4) DAVE, a Mars rover developed by McDonnell Douglas was on display as part of activities surrounding the lunar and planetary conference. A JSC-developed Mossbauer Spectrometer is on the end of DAVE's robot arm.

5) Some conference attendees take a break from the scientific discussions of the conference to compete in the chili cook-off fun.

6) A panel of "experts" on stage carefully study the various contributions from the chili cook-off teams. In the foreground, other conference attendees try to sell memorabilia to a young visitor at the festivities.

7) Back to work, three scientists prepare slides for use during presentation at the conference. \Box

Executives earn highest honors

(Continued from Page 1)

of procurement." Easley's efforts have resulted in a streamlined and efficient procurement organization and a number of significant cost saving accomplishments.

Draper joined NASA more than 30 years ago and "has had an outstanding record of contribution to the nation's space program," according to his award nomination.

In addition to his responsibilities as Comptroller, Draper serves on a number of agency panels, including

prepare fun,

It is once again time for JSC employees to hone those chili-

The competition takes place between 9 a.m.-5 p.m. April 30 at

the Gilruth Center, with official chili

According to Bob Legler, chairman of the FOD Chili Cookoff

Committee, all JSC personnel.

support contractors, and families are

invited to attend the event and

fun and we expect that this year will

be another history-making event,"

said Legler. "We hope to see a large

number of competitors and spec-

tators at the Gilruth Center that day,

and we're sure a good time will be

competing in a number of categories

including cooking, team show-

manship, and games. Employees

interested in entering a team in the

cookoff activities should contact

reorganized several years ago, the

cookoff retains the FOD name,

dating back to the time when all flight

operations were assigned to the

person until April 22, when prices

center. For information on ticket

sales locations, contact Sandy

Griffin, x31056. Ticket prices include

admission to the cookoff, a chili

sampling kit, and beer and soft

Tickets are on sale for \$3 per

Tickets will be sold throughout the

"Flight Operations Directorate."

Although the directorate was

Prizes will be awarded with teams

The chili cookoff is always a lot of

judging set to begin at 3 p.m.

sample the chili offerings.

had by all.

Legler at x35406.

increase by \$1.

cooking skills as the 16th annual Flight Operations Directorate Chili Cookoff takes place April 30.

Chili chefs

hot stuff

the Executive Development Education Panel and the NASA Professional Development Panel. He also is treasurer of the Manned Space Flight Education Foundation.

McCright's "demonstrated outstanding initiative and innovation" were cited in his award nomination.

McCright has been "instrumental in reducing costs by implementing total quality management and continuous improvement measures throughout his organization and the center." McCright's Center Operations group supports JSC programs by providing critical services in facility design, construction, maintenance and operations.

Vaughan will be recognized for his achievements in the fields of spacecraft propulsion, thermochemical testing and senior management.

According to the award nomination, Vaughan "has made outstanding technological innovations in the development of propulsion, power and control systems" since the earliest days of the U.S. space pro-



Vaughan

gram. Vaughan was also cited for

his excellent management style and

The Presidential Rank Awards

are presented annually to employ-

ees whose contributions greatly

empowerment of his employees.



McCright



Easley

SES level.

exceed "doing the job well." To be eligible for the award, an employee must hold a career SES appointment and have completed three years of career civil service at the

Reinventing government

NASA in position to meet strategic challenges today

Editor's Note: The following article is a message to all NASA employees from Acting Deputy Administrator General John Dailey. It is the first in a planned series of articles.

"Reinventing Government" has been a major theme of President Clinton and his Administration.

The National Performance Review laid the cornerstone for the President's Government reform program. The goal of the Administration is to make government simultaneously work better and cost less. The objectives presented in the NPR Report are to "Cut Red Tape, Put Customers First, Empower Employees to Get Results. and Cut Back to Basics.'

In addition, Congress has recently passed "The Government Performance and Results Act of 1993," that establishes new requirements for federal agencies to undertake strategic planning, to plan and measure program performance, and to report the outcomes of their activities to the White House and Congress.

Upon first review, these requirements might appear to be quite imposing. However, NASA is actually well positioned to take on these new challenges. Over the past 18 months, the agency has undertaken internal management improvement initiatives synergistic with the the Administration and Congress.

The new NASA Strategic Plan represents a significant step toward the reinvention of NASA. It underlines our commitment to strategic management and establishes a framework for making key management decisions.

As the Administration, Congress, and NASA all move forward with the reinvention of government, it is essential that the men and women of NASA participate in our own internal management improvement activities.

To keep you informed, we will begin including a "Strategic Management" section in the headquarters and center news publications on a periodic basis. In future issues of these publications, this new section will include further details on NPR, GPRA, the NASA Strategic Plan, the strategic management process, and other key NASA management improvement initiatives. In addition, we will use the existing strategic planning and total quality management networks to further facilitate agencywide communication of federal and NASA management improvement initiatives.

We all recognize that the reinvention process is a challenge; however, the federal government and our agency will benefit from our current investment in change. With our ongoing initiatives, we are ideally postured to take a leader-



REDESIGN RECOGNITION—Lois Lenox, a management analyst for space station, receives her Superior Accomplishment Award from Associate Administrator for the Office of Space Flight Jeremiah Pearson and Deputy Center Director George Abbey. Lenox was among the 40 employees honored at an awards ceremony March 31 at Teague Auditorium. The awards acknowledged exceptional efforts in support of space station redesign and transition activities.

'Texas Proud' theme for annual JSC Picnic coming up May 7

JSC employees can expect to be Texas Proud" for the May 7 JSC Picnic at the Gilruth Center.

This year's picnic, which will run from 11 a.m. to 5 p.m., will include music by 4th Wave Rhythm, carnival rides and games, a petting zoo, a magician, face painters, a dunk tank, video games.

bingo, astronaut autographs, popcorn, snow cones, cotton candy, ice cream and a barbecue dinner.

Tickets are on sale now in the

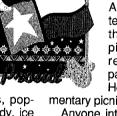
Bldg. 11 Exchange Store. Until April 29, the prices are \$5 for adults and \$3 for children. After April 29, prices

rise by \$1.

Monica Hughes of the Astronaut Office submitted the winning theme for the annual "name-thepicnic" contest and will receive two season passes to Space Center Houston and two compli-

mentary picnic tickets.

Anyone interested in helping with the picnic should call Dorothy Rasco



new requirements developed by **Employees honored for commitment**

Sixteen JSC employees and 15 contractor employees witnessed the March 3 launch of Columbia from Kennedy Space Center as recipients of the Manned Flight Awareness Award.

These 31 people received the award for their ongoing commitment to mission success and flight safe-

ty. In addition to watching the launch of STS 62, the honorees were given a tour of KSC and were guests of honor at a top-level reception. At the reception, shuttle astronaut Bob Cabana presented each honoree with a certificate and pin acknowledging their accomplishment.

Civil service honorees were: Tim Baum and Oma Cross, Mission Operations; Pat Burke, EEO Programs; Kevin Dunn, Lisa Leonard and Joey Marmolejo, Engineering; Roy Glanville, Safety, Reliability, and Quality Assurance; Gerry Griffith, Flight Crew

Operations; Dot Hailey, Space Station Project; Nancy Kennamer, Administration Directorate; Vivian Long, Comptroller; Mike Odaka, Orbiter and GFE Projects; Lorraine Otten, Space Shuttle Program; Mike Stewart, Human Resources; Bill Waldrip, White Sands Test Facility; and Henry Wyndon, Center Operations.

Contractor honorees were: Billy Crocker, Boeing Aerospace Operations; Jeanni Eckel and Ray Kohring, IBM; Kent Gaylor, LinCom; Bruce Hawes, McDonnell Douglas; Bill Jackson, Mike Penney, and Don Warden, Loral; Gene Jost, Boeing

Information Services; Kitty Marquardt, Lockheed; Erin Orgeron, Metrica; Martha Pitts, DMS; Lee Scruggs, Rothe; Reta Warren, Kelsey-Seybold; and Sharyn Willis,

The next Manned Flight Awareness event is set for the launch of STS-65 in July.



Honorees of the Manned Flight Awareness program gather for a photo during their visit to Kennedy Space Center in March. The group witnessed the STS-62 launch of the Space Shuttle Columbia.

JSC operators drive Russian rover

(Continued from Page 1) remote work station.

JSC operators were able to drive the rover for a total of about 10 hours, taking it over fairly steep ter-

"We learned a lot more about how easy or difficult it is to operate in those circumstances," Duke said. "We learned some things and probably made some opportunities for ourselves in the future.'

The tests confirmed that an improved understanding of the range of teleoperation capabilities is needed, he added, and that the operability of the rover could also be improved.

The scientists also were interested in how the rover could manipulate a mock-up of an instrument built by JSC to analyze the composition of surface materials on the Moon or Mars, sending the information back to the control center. The scientists used the remote control system to put the mock-up on the ground or on a particular rock, allowing the sample and some of its visual properties to be assessed in conjunction with the Mossbauer Spectrometer's data about the sample's chemical composition.

JSC's long-term interest is in how telerobotic systems can be used to

assist human exploration of the Moon and Mars. The tests being conducted now may serve as precursors for later human explorations, when explorers are assisted by robotic systems from Earth. For Mars exploration, the teleoperation capability would allow crew members on Mars to operate the rovers from within a Mars outpost, substantially increasing their exploration range.

The international cooperation involved could someday lead to an expedition that would involve the launch of the Russian rover aboard an American spacecraft.

Space News

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

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

Editor	Kelly Humphries
Associate Editor	Kari Fluegel
Associate Editor	Eileen Hawley

STIC closes for upgrade

The Scientific and Technical Information Center in Bldg. 45 will be closed Tuesday to facilitate changes to improve customer service.

The library, run by JSC's Center Operations Directorate, will reopen Wednesday.

In the meantime, the satellite libraries—the Medical Sciences Library in Bldg. 37, the New Initiatives Office Library in Bldg. 1, and the Space Station Library in Bldg. 4S-will remain open.

For additional information, contact the STIC at x34049 or x34609.