

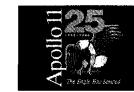
National Aeronautics and Space Administration

Lyndon B. Johnson Space Center Houston, Texas



JSC employees and their families brave the Houston heat to have fun at the annual JSC Picnic. Photos on Page 3.

Texas Proud



Splash bash

An Apollo 11 25th anniversary "splashdown" party is set for July 21 at the Gilruth Center. Story on Page 4.

Space News Roundup

NASA stalls work on Polar spacecraft

NASA has discontinued work on the Polar spacecraft, one-half of the U.S. contribution to the Global Geospace Science Program, due to schedule and cost problems associated with the program.

Pre-launch activities on the Wind spacecraft will continue. Together, the Wind and Polar spacecraft were a part of the International Solar-Terrestrial Physics Program involving several spacecraft from the U.S., Europe and Japan in a study of the interaction of the solar wind and

Earth's magnetic field NASA Administrator Daniel Goldin announced on May 12 that the agency will resume work on Polar only after the Wind spacecraft has been successfully operated onorbit and a re-evaluation of the resources required for the completion of the GGS Program is completed within the context of overall budget constraints.

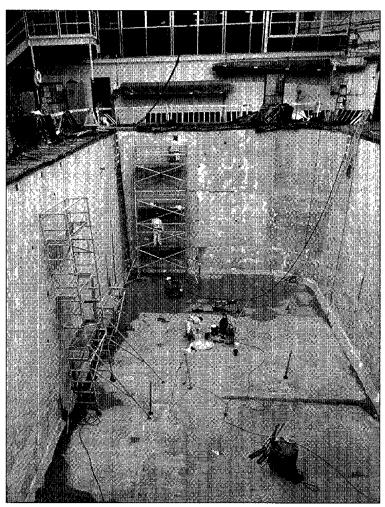
In February, NASA announced the delay of the launches of both missions to examine potentially defective materials and processes used by the contractor to build components on the two spacecraft as well as to review the overall pro-

The launch date for the Wind spacecraft has not been firmly established pending completion of retest activities. The launch of the Wind spacecraft is expected to occur prior to the end of this year.

In addition, NASA is developing a set of critical program milestones to be used in monitoring contractor performance through the launch of the Wind spacecraft. The performance of the contractor in meeting these milestones will be closely monitored by NASA.

If contractor performance on the Wind spacecraft is satisfactory and Polar is authorized to proceed, then critical program milestones will be developed to monitor the Polar spacecraft through the completion of its development and launch. Additionally, NASA is in the process of totally restructuring the contractor award fee so that the contractor will receive no fee until on-orbit performance is satisfactory.

The spacecraft contractor is Martin Marietta Astro-Space.



Anchor Inc. workers bare the concrete walls of the Weightless Environment Training Facility pool as they prepare to apply a new high-tech solvent free epoxy coating.

They said it couldn't be done

Team drains, resurfaces astronaut training pool

They said it couldn't be done. At least that seemed to be the opinion of many who had been around long enough to remember the huge hole in the old centrifuge rotunda that nearly swallowed up Bldg. 29.

But a team of workers under the direction of JSC's Special Purpose Maintenance and Services Office recently completed draining and refinishing the Weightless Environment Training Facility pool.

There has been discussion regarding the resurfacing of the pool for several years, said Mike Scott, chief of Center Operations' maintenance office, but any serious discussion about draining it seemed to make everyone shudder. Some thought the entire pool would come lurching out of the

ground, some were convinced it would collapse, but a few felt it could be done.

The reason for cynicism involved problems encountered when the WETF was constructed in 1979. Before the concrete could be placed in "the big hole," the supporting piers began to shift, the soil beneath the north area of the rotunda began to slough into the excavation, and the rotunda floor began to "sink." With rapid response and creative re-engineering, the project was saved, but not without a multitude of horror stories about the giant sinkhole.

Underwater painting was an option, but the resurfacing team felt a better job could be done after

Please see POOL, Page 4

Astronauts, cosmonauts train at JSC

Two of JSC's own returned this week when astronauts Norm Thagard and Bonnie Dunbar arrived from Russia for three weeks of life sciences training in support of joint U.S.-Russian space flights.

Accompanying Thagard and Dunbar were their cosmonaut crew mates Vladimir Dezhurov, Gennadiy Strekalov, Anatoly Solovyev, Nikolai Budarin, Yury Onufrienko

and Alexandr Poleshchuk. Thagard, Dezhurov and Strekalov will be launched to Russia's Space Station Mir early next year for a three-month stay on orbit, a mission known as Mir 18. Dunbar, Solovyev and Budarin are training as

backups for Mir 18 Solovvev and Budarin will ride the Space Shuttle Atlantis to Mir on STS-71 to serve as the Mir 19 crew. Onufrienko and Poleshchuk are training as backups for the Mir 19 cosmonauts.

Thagard and Dunbar have been in Russia train-

ing for more than two months. The majority of their training has focused on developing the language skills required for the joint space flights.

"We're not only learning the language to converse, we're learning the technical language needed to do space flights," Dunbar said.

The two astronauts also have completed winter survival training and started studying the Soyuz vehicle systems. They will begin studying the Mir systems in the near future.

"Norm and I have several flights behind us, so we have a certain amount of comfort with the whole concept of going into space and what to expect," Dunbar said. "We expect to learn a great deal, though, about how to function for a long duration period of time in orbit, learning about the dynamics of experimentation and living on board the Mir. That phase of training will become more intense as we proceed through the summer."

Thagard said the fundamental difference between training for a shuttle mission and training for a longduration mission is the time spent "rehearsing" the activities prior to flight. A long-duration mission cannot be practiced to the extent of a shorter flight, he said.

Thagard also said the living conditions at Star City are exactly as he expected. Star City is a military base and living there is like living on a U.S. military base, he said. To purchase items such as fresh fruits and vegetables requires an hour long trip to Moscow, but Thagard said expected that as well.

"In general, I've been satisfied with what I've found," he said. "I have not found that we've had any particular tensions with the Russians. I think we get along quite well. ... We're doing just fine.'

Dunbar said anyone going from the U.S. to a foreign country will find cultural differences which is why cross-cultural training is necessary.

"The important point is that where there are differences, we are bringing them to the table, and we are discussing them," she said. "That is the important facet of marching ahead together in a cooperative program."

Such cooperation is something necessary for the future because space flight is expensive, Strekalov said. Sharing the data from experiments and familiarizing each other with the training, space flight equipment and scientific payloads also are an important benefit of cooperation.

"You have to pay for new science and new knowledge," he said. "But it is possible to pay in such a way that each party, each country will pay less than they were going to have to pay."



I think we get along quite well.

—Norm Thagard

Columbia crew in Florida to check interfaces for International Microgravity Laboratory-2

COLUMBIA

By James Hartsfield

Technicians this week began packing experiments aboard the International Microgravity Laboratory-2 in Columbia's cargo bay as preparations for an early July launch of STS-65 continued smoothly.

On Columbia, in Kennedy Space Center's Bay 2 shuttle processing hangar, other work included leak checks of the crew cabin and Spacelab tunnel adapter; securing of the recently installed three main engines; and corrosion checks of the wing leading edges. The STS-65 crew — Commander Bob Cabana, Pilot Jim Halsell, Mission Specialists Rick Hieb, Carl Walz, Leroy Chiao and Don Thomas, and Japanese Payload Specialist Chiaki Mukai — traveled to KSC this week to inspect Columbia's cargo bay for the Crew Equipment Interface Test. Columbia's mid-

body and aft engine compartment are entering final closeouts prior to the orbiter being moved to the Vehicle Assembly Bldg, to be mated with the STS-65 solid rockets and fuel tank early next month.

Endeavour, which will be next up following Columbia on STS-68 in August carrying the Space Radar Laboratory aloft for a second flight, is in KSC's Bay 1 hangar. Work this week included removal of the main

engines, draining of residual propellants, removal of the radiators, and checks of the forward reaction control system steering thrusters.

Discovery, in the Bay 3 hangar, is being readied for a September launch on STS-64 to loft the Lidar in Space

Technology Experiment-1, a type of laser radar that will study the atmosphere. Work this week included installation of the auxiliary power units, servicing of the freon coolant loops, main propulsion system testing, drag chute installation and checks and preparations for a temporary move of *Discovery* to the Vehicle Assembly Bldg. to make room for

Atlantis is expected to return to KSC from well over a year spent at Rockwell's Palmdale, Calif., shuttle factory undergoing modifications and inspections, late this month.

Atlantis will be moved into the Bay 3 hangar for a short period following its arrival. Its next flight will be STS-66, planned to launch in late October with the Atmospheric Laboratory for Applications and Sciences-3. The modifications to Atlantis, in addition to upgrades that already had been performed on the rest of the orbiter fleet, include work that will allow it to perform the first docking of a shuttle with Russia's Mir space station.



ASIAN AWARENESS — Houston Police Officers M.M. Pak, Sunny La and K. Chu, from left, talk with Kamlesh Lulla, chairman of the Asian Pacific American Program Council during heritage month activities in Teague Auditorium last Friday. The program involved cooperation by the Asian American Heritage Association of Greater Houston, the Space City Professional Association, the Indian Culture Center and the Vietnamese Space Technology Association. Ames Research Center Director Ken Munechika speaks Thursday.

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

Astros Games: Tickets for the June 12 Astros vs. Atlanta Braves game are on sale until May 25. Cost is \$12 for mezzanine seating. Game begins at 1:35 p.m. Tickets also are available for the Astros vs. Cubs game at 1:35 p.m. July 3. Cost is \$14 for field level seating. Tickets are on sale until June 17.

Six Flags: Tickets available for one-day weekend and weekday admission. Cost is \$20.95 for weekend and \$16.75 for weekday. Two-day admission, either weekend or weekday, is \$27.25.

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

Splash Town: Discount tickets, \$11.05.

Waterworld: Discount tickets, \$10.50.

Astroworld Early Bird: Tickets available for one-day admission for 1994 season. Cost is \$16.75 per person. Tickets must be purchased by May 31.

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

Space Center Houston: Discount tickets: adult, \$7.95; child (3-11), \$4.75; commemorative, \$9.55.

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.

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. June 2. Pre-registration is required. Cost is \$5.

Defensive driving—Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is June 11.

Country dance-Country & western dance lessons begin June 6 at the Gilruth Center. 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, x33345 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

per month. New classes begin the first of each month Sailing Club-Sailing lessons are planned for May and June. For information, contact Richard Hoover at x31360 or 996-7716.

Golf lessons-Lessons for all levels. Cost is \$90 for six weeks. For additional information, contact x33345.

Basketball tournament—Three-on-three basketball tournament is June 4. Cost to register is \$40 per team. For additional information, call x33345.

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.

Dates & Data

Today

Cafeteria menu — Special: baked meatloaf. Total Health: light 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

Tuesday

Blood drive — McDonnell-Douglas will host a blood drive from 8-11:30 a.m. at 16055 Space Center Blvd. For additional information, contact Teresa Esquivel, 212-5036.

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

NMA meets — The NASA JSC Chapter of the National Management Association will meet at 5 p.m. May 25 in the Gilruth Center Ballroom. Former Houston Mayor Kathy Whitmire will be the guest speaker. For ticket information, contact Allison Kruest, x47115.

Astronomy seminar — The JSC Astronomy Seminar will meet at noon May 25 in Bldg. 31, Rm. 129. Al Jackson will speak on "Comet Shoemaker/Levy Hits Jupiter in July." For additional information, call Al Jackson, 333-7679.

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

Thursday

SOLE meets — The Houston Chapter of the Society of Logistics Engineers will meet at 5:30 p.m. May 26 at the South Shore Harbour Country Club. Cost for the dinner meeting is \$8. For additional information, contact Richard Wolfe, 283-6863; Mike Goodall, 244-4674; Mike Elliott, 483-0244; Ken Zingrebe, 244-0085; Lee Graham, 483-0913; or Dennis Wise, 483-3661.

Russian speakers — Practice Russian language skills from 11 a.m. -1 p.m. May 26 in the Bldg. 3 cafeteria. For more information, call Jack Bacon, x38725, or Amy Mendez, x38066.

Blood drive — JSC will host a blood drive from 7:30-11:30 a.m. and 1-3:30 p.m. at the Gilruth Center. For additional information, contact Dan Mangieri at x33003.

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

Blood drive — JSC will host a blood drive from 7-11:30 a.m. and 1-3:30 p.m. in front of Bldg. 30. Appointments are required. For additional information, contact Dan Mangieri at x33003.

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 peas.

May 30

Memorial Day — Most JSC offices will be closed in observance of the Memorial Day holiday.

June 8

PSI meets - The Clear Lake/ NASA Area chapter of Professional Secretaries International meets at 5:30 p.m. June 8 at the Holiday Inn on NASA Road 1. For additional information, contact Elaine Kemp, x30556 or Diana Peterson, x30390.

July 4

Independence Day — Most JSC offices will be closed in observance of the Independence Day holiday.

July 21

Apollo anniversary — A 25th anniversary splashdown party is planned from 4:30-7:30 p.m. July 21 at the Gilruth Center. Cost is \$3 per person. For additional information, contact the Gilruth Center, x33345.

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.

Sale: Lake Livingston, 30 x 70 lot, paved roads, util avail, \$3k OBO. Walt, 422-6369.

Lease: Heritage Park, 3-2-2A,FPL, fans, dishwasher, microwave, refrig, W/D, avail 7/1, \$850/ mo. x46315 or 280-0031

Sale/Lease: 3-2-3, Friendswood, both formals, appli, over sz corner lot, \$69.9k. Gary, x31059 or 480-9716.

Sale: Friendswood, 4-2.5-2+, 2137 sq ft, FPL, jacuzzi, formal dining, ceiling fans, sec sys, \$105.9k. 992-1466.

Sale: 10 acres, Hill Country. 409-925-8770. Sale: Waterview home, 2-story duplex, appliances, \$89.5. John Postell, 559-1574.

Lease: Condo, 1 BR, W/D, FPL, sec alarm, appliances, upstairs. Jim Briley, 244-4632 or 488-7901.

Sale: Nassau Bay, house, 4-2-2, \$110.5k. 333-3676.

Lease/Sale: Seabrook, Pebblebrook condo. 2-2, all appli, FPL, \$500/mo + dep or \$34.9k.

Sale; Oakbrook West, 4-2-2, lg yard, many trees, \$99.5k. Denise, x31846 or 486-5146. Sale: Nacogdoches, Tx, 3-2.5-2, 3013 sq ft, 3/4 acre, GHA, FPL, screened patio, 20

workshop w/garage & storage shelter, \$110k. 486-9206 or 409-560-6537 Sale/Lease: Friendswood, 3-2-2. 482-0874.

Sale: El Dorado Way, condo, 2-2, W/D/refrig, ex cond, \$40k, Robert, x31630 or 480-8381

Sale: Bay Glen, Clear Lake, 2 story, 4-2-2.5, 2100 sq ft. \$119k, 286-5248.

Sale: Bay Glen, 3-2.5-2, jacuzzi bath, FPL, \$104k. Ruben, x47119 or 486-0817. Sale: Dickinson, 4/3-2-1, 2100 sq ft, 3 lots, trees, \$69k. Cindy, 282-4286.

Sale: The Landing, waterview condo, 2-1, W/D, all appliances, \$49.5k. 326-3449.

Sale: Baywind I. condo. 2-1.5, immed occ. W/D, diswasher, ex cond, \$35k. Tom, 333-3992. Rent: Lake Livingston waterfront home, 3-3, fully furnished, tennis courts, boat launch, 24 hr security, \$650/wkly \$340/wkend. 409-762-6601.

Cars & Trucks

'88 Honda Prelude, A/C, AM/FM/cass, 5 spd, sunroof, 63k mi, PS/PB, ex cond, \$6750. L.D.,

'84 Mercury Brougham SW, PS/PB, A/C, AM/ FM tape, \$1.7k. L.D., x48767 or 480-5681.
'85 Honda Accord LX-Xmsn, PS/PB, air,

cruise, AM/FM stereo/cass, low miles, gray, \$3250. Rav. x33954 or 487-4889. '84 Toyota Supra, 91k mi, \$3.4k OBO. Mike,

'89 Ford F-150 Super Cab, electric windows/ doors, capt chairs, sliding rear windows, tint, ex

cond, \$8.5k. Kirby, 554-6741. '78 Chevy Blazer, bwn&wht, 350 V8, AM/FM/

'89 Hyundai Excel, 4 dr, auto, PS/PB, A/C, sunroof, Sony CD player, 66k mi, \$2k. Kirk or Shuranda, 486-6670.

'87 Chevy S10 PU, ext cab, 5 spd, A/C, 32k mi, \$4.9k. 333-3071.

tops, extras, \$2.5k OBO. Chris, 337-5410.

'85 Saab Turbo, 4 dr, new tires, shocks, brakes, ex cond, \$3.5k. 474-9156.
'80 Chevy SWB PU w/matching color top, V8,

auto, sunroof, \$1.9k. Jim, x39712 or 338-2332. '86 Nova, 4 dr, sunroof, A/C, \$900 OBO. David, x45381.

'77 Cadilac Coupe Deville, auto, A/C, pwr, good cond, \$700. Tony, x36480 or 280-8376.
'74 Triumph Spitfire, w/removable hard top,

'67 Mustang, green, straight six engine, 3 spd. 955-5229.

'92 Toyota Tercel, red w/blk/gray vinyl int, 4 spd, AM/FM/cass, A/C, 2 dr, ex cond, 107.k mi. Steve x33521 or 554-6583

24k mi, ex cond, \$15499 neg. 286-0357. '88 Chevy PU C-100, 350, 100k mi, custom

interior & pin stripping, stereo, \$6.5k. Patty, 488-

Boats & Planes

PT/T, Motorguide trolling motor, \$10.5k. Gary, x37069 or 534-3080.

\$10.333-3071. '90 Hunter 30' aux sloop, A/C roller furning,

VIP Vision, 18', 130 hp/OMC/I/O/, trlr, access, ex cond, \$9.5k. Jennifer, x38668 or 286-0507. Prindle Catamaran, 16', w/trlr, good cond.

centerboard, OBO. Jerry, x35226 or 333-2778.

OB, like new, \$8k, 326-2805 or 409-653-4827. '87 Marlin 22' Empress, 260 hp Merc, cutty cabin w/cabinet, dual battery system, twin 40 gal

Capri sailboat 14.2, main, jib, trailer, seats 4, good cond, \$1.5k. Craig, x36206 or 280-0176. Wet Jet, jet ski, 432 cc eng, 2-person water-craft, w/trlr, \$5k. Judy, x33626 or 559-2331.

'92 Susuki DR-250, dual sport, ex cond, \$2.7k. Robert, x31630 or 480-8381

x47536 '82 Honda Goldwing, 37k mi, \$3.5k. 486-

Bridgestone MB-1 frameset, includes Ritchey seatpost, 135 mm, rise control tech stem, Ritchey fork, Ritchey headset, Shimano cartridge BB, & svelt seatpost pin, frame sz 21". \$350; Ritchey Vantage Pro rims, \$40; Mavic 32H Hubert, \$120. Jamie, x40214 or 286-3105.

Audiovisual & Computers

CITOH8510 dot matrix printer, \$75; Flight Sim control wheel, \$15; 9600 baud internal fax/2400 baud modem, \$45; Dexxa mouse, \$10. Philip, x38805 or 488-4453.

IBM AT, 1MB/20MB HD, 1.2 MB FD, 14" col monitor, \$350. Kelley, x36818 or 488-8194. Magnaplanar, 1 pr, MG-l speakers, make

Proneer CS-88, \$200/pr. x36813 or 332-1725. Canon BJ10E bubble jet, \$100; Borland Turbo Crt 3.1, \$50; Syndicate, \$20; F117A, \$20; other PC games. Jim, x37486 or 286-3172.

Fisher ST-828 speakers, Ig woofer, tweeter, impedance 8 oms, input pwr 10-100 watts, ossover frequency 1.5/6kHz. 326-5518.

Denon recvr, 40 watt, audio/video inputs, ex cond. Don, 282-6811 or 532-1361.

Pioneer 40 watt recvr, cassette deck, Technics CD player, Realistic 10 band equalizer, Advent tower speakers, \$400 OBO. 941-5288.

Computer, '88 Epson Apex w/color monitor, 10 function kybd, 2-5.25" drives, Epson LX-800 NLQ Printer w/stand, software, \$250; Apple IIe computer w/extended memory, Apple III monitor, 2-5.25" drives, joystick, mouse, modem, manuals, software, Epson MX-80 Printer, \$250.

IBM compat NEC-286 computer, 640k RAM, 44MB HD, 2 FD, 3 & 5, color monitor, kybd, software, \$400. Earl Rubenstein, 480-1998.

Trade new fax modem, 19200 bps V.32 Tony, x47401 or 482-4156.

559-2331.

ately, Paul, 283-1256 or 480-7607. Bradbury spinet piano, \$500. Judy, x33626 or

Pets & Livestock

Free female black Labrador, 3 yrs.Susi or John, 482-0647. Dog carrier, wire, collapsible, 42Lx2Hx22W, \$50 OBO. Doug, x33399 or 480-2929.

Household

Mike, x30993 or 333-1856.

Lg upright model freezer, \$35; single bed w/ metal frame, \$25; antique oak rollton desk \$450; Ig walnut circular contemp coffee table, \$95. Philip, x38805 or 488-4453.

table, \$700; modular wall unite adj shelves, storage, \$200; Panasonic microwave 700 watts, \$90, Donald, x36851 or 334-3998. GE white, 2 spd, washer, \$125; dryer, \$25

chair, \$10; wedding reception plastic cups & table cloths. Kirk or Shuranda, 486-6670.

Sesame Street ensemble, twin comforter, sheets, drapes, border, wall figurines, book/toy chest, chair, light switch & laminated posters, ex cond, \$75/all. Cathy, x33851.

Dresser w/mirrors attached, desk, \$25/ea 333-6456 or 480-8682.

Electric combined range/oven/microwave, almond, good cond. x48022 or 482-8574. Contemporary oak & glass dining table

King sz bed/frame, Stears & Foster, \$200.

Mark, 488-0056. GE 12" color TV, \$50; waterbed stand for TV, \$25. 326-5518.

cond, \$120. x34121 or 482-6651. Dining room table w/6 chairs, new \$700 sell \$350 OBO; Panasonic dual cass stereo w/spkrs

King sz motionless cream colored waterbed. w/heater, satin champagne comforter set & pillows included, \$315 OBO. 286-0357.

Wanted

Want vanpool riders from North West Houston to NASA area. Wendell, 333-6050 or 466-

Want inexpensive car or truck, 771-0955. Want piano or keyboard. Karen, x37389 or

Want van riders from Sugar Land, South West Houston, to JSC area. Alice, 483-5234 Want carpool from Champion/FM1960 to JSC or Clear Lake area, 8 a.m. - 4:30 p.m., but

hrs 8 a.m./4:30 p.m. shift. Travis Moebes, x45765 or Don Pipkins, x35346.

Want to buy "Lucky 13" fishing lures, for fishing. Jay Legendre, 333-1976. Want housemate, Bay Glen, CLC, 3-2-2, non-

Want walker w/front mounted wheels for parent in nursing home. Bob, x32193 or 326-3984. Want to clean two homes in Nassau Bay/El Lago area, ex references. Ann, 532-1341.

Want non-smoker roommate to share house.

Kemah, no pets, \$300/mo +util +dep. Jeri, 333lg South Shore home. Tim, x31456 or 334-6118. Responsible M/F roommate to share 4-2-2,

or 992-3783. Want housemate, non-smoking to share 4-2-2, CL, \$285/mo + 1/3 util. Lynn, 480-9591.

3-3-3 house in Meadowbend, LC, no pets, \$350/mo + 1/3 util. Gloria, x31891 or 538-2283.

Ocean" or any "SP" publication. Ron, 333-6952 or 482-1385

Want to buy specialty bird houses. x36337 or 538-3395

Want Franciscan china, Ivy pattern, all pcs, to

White metal tubular bunk bed, bottom full sz. top twin sz, \$359 OBO; sparkling water carbonation mach, \$75 OBO; Ig high power microwave, \$75 OBO. Tony, x47401 or 482-4156.

kennel 23Wx35Lx25H, \$45. Cathy, 334-5259. Shot gun shells, 12, 16, & 28 ga. 333-3071. Couch, brown/gold stripe, \$50; pecan end

table, \$25; 2-floor lamps, gold w/white shades, \$10 & \$15; girl's 24" 10 spd bike, \$50. Ray, x33954 or 487-4889. SLR Petri FT camera, 35mm, 55mm/135mm lenses/case/filters, \$50; hand held 40 chan 4

graphite head/shaft, Philip, x38805 or 488-4453. Soloflex muscle machine w/instruct video, \$400. Eric, x39491. Sears carpet cleaning machine, new \$350 sell

\$200; paint sprayer w/2 gal pot & regulator, \$65; child car seat, \$10. x39491 or 409-925-2330. machine, \$35, 486-5217.

phone, \$30. Jim, x38624 or 475-9671. Tunturi E702 Air exercise bike, ex cond, heart

/spd/time/dist monitor, movable arms, \$250

Baby playpen, w/pad, folding, \$40. 333-2263. Oak veneer table w/2 chairs/on rollers, \$60; 20 gal aquarium w/pump/filter & lighted hood,

Telephone w/answering machine, \$40; fourcup coffee maker, \$10; Northridge china, \$40; RollerBlade brand in-line skates, mens sz 6

Electric lawn mower, \$20; 9 drawer dresser, no mirror, \$50. tony, x35966.

Exercise bike, \$20; Olympus OM10 35 mm camera, \$75; full face motorcycle helmet, \$75; rims/tires for full sz Chevy truck, \$100; luggage suit cases for Yamaha FJ1200 BO. 332-9105.

Nissan rebate certificate, \$750, good thru 12/31/94 for new or used Nissan vehicles, \$550. Jeff, 333-7010 or 482-5393.

Cedar fence, 65 linear ft of 4" picket w/posts & rails. 482-4482.

3, 5, 7) \$70/ea; Square 2 irons (1-LW), \$160; Tour Model III irons (2-LW), \$150. Ken, 283-9233 or 473-2602. Black & Decker 17" electric weeder, \$35.

Bob. x32193 or 326-3984. McCulloch gas blower, \$75; gas trimmer, \$50;

x45652 or 532-1182. Herb plants both container/fresh cut; 3 boxes

box, \$55/per box. 339-3562 or 333-6277.

x48767 or 480-5681.

x30993 or 333-1856.

cass, A/C, ex cond, \$2.6k. Ed, 481-4889. '85 Volvo 740 GLE Turbo, 4dr sedan, A/C, auto, pwr, sunroof, premium cass w/EQ, black,

\$4.5k, x35296 or 992-3004.

'82 Mustang 5.0L, 8k mi on rebuilt engine, T-

'90 Nissan PU, ex cond, 2 WD, shortbed, A/C, AM/FM, \$4.9k. Pete, 532-4237.

spare eng, \$1.9k. Craig, x36206 or 280-0176. '80 Pontiac Phoenix, 4 door hatchback, It tan, ex cond, \$1k. Steve, x37626.

'78 Chevy PU, rusty, \$700 neg. 470-2068. '47 St VW Beetle, runs/needs some work, \$750 OBO. Debra, x36577 or John, 332-5705.

'92 Ford Explorer, white, 2 dr, sport standard,

boat, '93 135 hn Canoe alum 17 ft, + access, \$260; crab trap,

full batten main, digital knot/depth/wind, auto pilot, bimini, ex cond, \$49.5k. 980-7481.

\$700 OBO. x37549. Laser Sailboat, 13'-11" L.O.A., 76 sq ft sail, '92 Pontoon boat w/trailer, 20', Nissan 70 hp

tanks, w/trlr, \$9k. Phil, 212-1339 or 337-6614.

Bright orange bike, 3 spd, \$20. Tracy,

'84 Susuki GS1100GK touring bike, ex cond, 24k mi, \$2.2k. Jim, x38210 or 996-7854.

offer. Rose, x37625.

MS-Word for Windows, v. 6.0, \$75; NS-Excel for Windows v. 5.0, \$75; MS-Powerpoint for /indows v. 4.0, \$75. 992-1466,

x34058 or 992-5161.

Peavy Bass & amplifier, 75W, 7-Band EQ, Pre/Post, Gains, Effects Loop & head phone jack, both ex cond, \$425/pr, neg/will sell seper-

King sz waterbed w/8 drawer pedestal, \$125.

King sz flotation column bed & frame, \$500 OBO. x35484 or 486-5286. Sectional 3 pcs sofa, cream, coffee table, end

firm, must take both. Jerry, x38922. Oak computer desk, \$100; kneeling computer

Kitchen/dining room table, dk pine, round 48" dia, 2 leafs, 12"x48", 6 chairs, ex cond. Tom, 244-7255 or 488-8163.

Sofa, sleeper, dk blue, \$180. Kevin, x30867. Matching coffee table 58"x22" & end table 29"x22", oak w/pecan finish, both \$75. x38981

or 333-2476 Black laquer coffee table & two end tables, good cond, OBO. Tom, x36309 or 474-9747.

62"x41", 2-18" ext leaves, 6 matching brown suede & oak chairs, matching china cabinet, all good cond, \$650. 326-2307.

Sofa/love seat, cream w/pale neutral colors, new \$1k sell for \$600. Susi or John, 482-0647. Solid oak 46" round table w/pedestal base, ex

& cabinet, ex cond, \$150 OBO; Eureka upright vacuum cleaner, \$55 OBO. 992-1466.

992-3783.

adjustable, non-smoker. x35277 or 440-1659. Want personnel to join VPSI vanpool. Meyrland Park & Ride lot at 7:05 a.m. for JSC,

smoking, \$300/mo + \$200 dep +1/2 utili. Larry, x33168 or 488-7460.

Want M/F non-smoking roommate(s) to share

non-smoker, \$295/mo + 1/2 util. Karen, x37389

Want non-smoking female roommate to share

Want Simmons or Childcraft juvenile furn, dresser, chest, bed, and/or desk in "natural" or similar color. Shari, 486-6691.

Want NASA publication SP4201 "This New

Want floor sander/refinisher, square-D type finish sander, vibrational not rotation, Gary, x31059 or 480-9716.

complete set. 474-3473. Miscellaneous

Snapper riding mower, 8 hp, \$400; wire dog

watt CB radio, \$40; 2000# elect winch, \$20; Wilson irons w/ #1-#5 woods, \$80; Tommy Armour 845 driver, \$65, clone of ADX driver,

RCA microwave, \$50; DP fitness weight Code-a-Phone telephone answering system

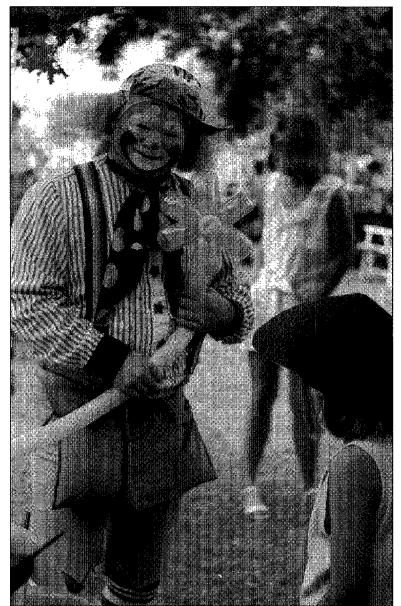
OBO. x38079. \$30. Karen, 484-4903.

(women's sz 7.5), \$45. x38871 or 538-1887.

Golf clubs, Ping Zing & King Cobra clones, (3-PW), \$150; Big Bertha & Taylor Made clones (1,

24 ft alum ext ladder, \$100; ping pong table & equip, \$100; Sony CD player, \$90 all OBO.

Hartco wood parquet flr tile, Bran, 25 sq ft per





'Texas Proud' draws a crowd

Picnickers enjoy food, fun and most of all, shade, at annual event





JSC employees and their families enjoyed a hot time at the old Gilruth Center during this month's annual JSC Picnic, but the fun transcended the soaring temperatures.

Because of the heat and some mud leftover from a preceding rainstorm, one of the favorite

activities of the May 7 picnic was the dunk tank, where JSC managers — and some on-the-spot volunteers — took turns being doused.

Among the other favorites of the 2,400 people who attended were the children's Batman show and entertainment provided by the 4th Wave Rhythm Band and the Stars of Texas children's singers and dancers.

From left to right, top to bottom:

 Uncle Buck the clown prepares an inflatable flower for a young picnicker.

2) Astronauts Andy Thomas and Lacy Veach sign

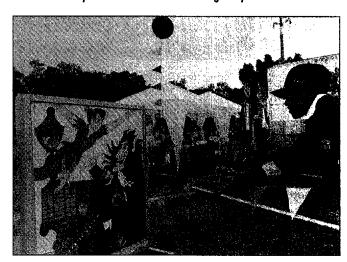
photographs for young admirers. The astronaut autograph booth was a big hit among young and old.

- 3) Although this young eater went heavy on the chicken and pickles, she appears to be steering clear of the jalapeño peppers. Another favorite of this year's "Texas Proud" celebration was the barbecue dinner.
- 4) Face painting was the "cat's meow" for some of the
- 5) Shade was a valuable commodity, especially when it was time to catch a little shuteye.
- 6) A Peter Pan-themed bean bag toss drew many youngsters looking to win prizes.
- 7) JSC Deputy Director George Abbey, Mission Operations' Ron Epps and JSC Director Dr. Carolyn Huntoon and Hank Hartsfield, standing from left, were joined by Peggy Epps and Judy Hartsfield.
- 8) A perennial favorite of the picnic is the children's petting zoo, which included a turkey this year. \square

Photos by Dale Martin and Ronnie Montgomery











Astronomers prepare for comet's Jupiter plunge

The latest image of Comet Shoemaker-Levy-9, the "string of pearls comet" that will collide with Jupiter this summer was released Wednesday as scientists involved in worldwide NASA/National Science Foundation program discussed how they will study the event.

NASA's Jet Propulsion Laboratory also released images depicting how the collision is expected to look from the viewpoints of Earth, and the Galileo and Voyager 2 spacecraft.

The fast-approaching collision of the comet with Jupiter has piqued the interest of professional and amaastronomers worldwide. Scientists expect a spectacular fiveday event from July 16-22 and anticipate some observations.

For the first time in history, astronomers such as Eugene Shoemaker, of the U.S. Geological Survey, and co-discoverer of the comet; Heidi Hammel, of the Massachusetts Institute of Technology; Lucy McFadden, of the University of Maryland, College Park; and Harold Weaver and Melissa McGrath, of the Space Telescope Science Institute, have advance notice of such a collision and the technical capabilities to observe.

Astronomers predict the comet's 20-plus segments will hit Jupiter's dark night side, where they will be hidden from telescopes on Earth. Some observers may be able to view the phenomenon indirectly in light reflected from Jupiter's inner

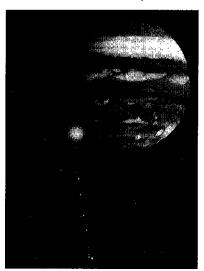
moon or off ring particles. Other observers anticipate viewing the impacts and expected explosions through observations from NASA's Galileo and other spacecraft or by studying the aftereffects on Jupiter's atmosphere.

Thousands of planet watchers are preparing observatories on the ground and in space for what they will be a remarkable encounter. The discoveries made about the nature of comets and the makeup of Jupiter's atmosphere and magnetosphere may help scientists explain similar high-energy events on Earth.

The fragmented comet was discovered by Gene and Carolyn Shoemaker and David Levy on

March 24, 1993. They identified the comet through a photograph taken with the 18-inch Schmidt telescope at Mt. Palomar Observatory near Los Angeles.

The comet probably split apart during July 1992, when scientists think it traveled within 113,000 kilometers of Jupiter's center. During this pass, the planet's tidal forces tore it apart. Its fragments vary in size, with about six relatively large pieces, a dozen medium-sized ones, and assorted smaller debris. The average chunk is estimated to be 2 kilometers in diameter, although no one knows for certain. The mass of the fragments will determine the nature of their impact on Jupiter's atmosphere.



This artist's conception of comet Shoemaker-Levy 9 colliding with Jupiter depicts the vantage point of the Galileo spacecraft.

Employees' children

receive scholarships The children of 29 NASA employees were selected to

receive grants from the 1994 NASA College Scholarship

selected from JSC are: Mark Perantie, son of Thomas

Perantie, manager of the Space Shuttle Production

Assessment Office; Jennifer Chee, daughter of Herbert

Chee, Jr. of the Legal Office; Vinaya Valloppillil, daugh-

ter of Vincent Valloppillil of the Analysis and Risk

Assessment Branch of the Space Station Safety and

Mission Assurance Division; Elizabeth Shack, daughter

of Paul Shack of the Electromagnetic Systems Branch of

the Tracking and Communications Division; Jessica

Burgett, daughter of Frank Burgett of the Systems Test

Branch of the Crew and Thermal Systems Division; and

Sara Blanchard, daughter of Doug Blanchard, Chief of

other field centers and NASA Headquarters with two

recipients from Ames Research Center; six from

Goddard Space Flight Center; one from Headquarters;

four from Kennedy Space Center; one from Langley

Research Center; seven from Lewis Research Center;

One scholarship was awarded in honor of former

NASA administrator James Webb by the JSC Chapter of

the NASA Alumni League. Twenty-five were awarded as the result of a contribution by the Freedom Forum on

behalf of the STS-61 crew and to commemorate the

lished in 1982 through an endowment by Pulitzer Prize

winning author James Michener. Employees throughout

the agency also have contributed significantly to the fund

through Combined Federal Campaign donations.

The NASA College Scholarship Fund, Inc. was estab-

Scholarship recipients also were selected from the

the Solar System Exploration Division.

and two from Marshall Space Flight Center.

25th anniversary of the first lunar landing.

The 29 recipients were selected from a total of 170 applications for the scholarships. The six students

Lunar party a 'splash'

A celebration in honor of the 25th anniversary of the first lunar landing is set for July 21 at the Gilruth

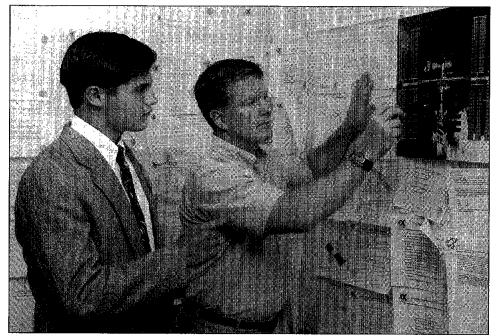
The "splashdown" party, in the tradition of the Apollo era, will run from 4:30-7 p.m. All JSC civil service employees, retirees, and NASAbadged contractors and families are invited to attend the festivities which will not be open to the general public.

Work or family groups may request specially-designated "reunion areas" on the grounds of the party. Requests must be submitted in writing to AP4/Community Affairs or by calling ext. 34322. Maps will be posted at the party site showing the location of the reunion areas.

Tickets will be sold at the Bldg. 11 Exchange Store June 1 through July 15. Cost is \$3 and includes drinks, potato chips and peanuts.

A number of other events also are planned to mark this historic occasion. For information on these other anniversary celebrations, contact Brian Archimbaud at Spaceweek, 333-3627; Diana Dornak with the Lunar Rendezvous Festival, 332-1541; or Mike Flory with the "Legacy Lives On" symposium and exposition benefiting the Challenger Center, at

Anniversary events also will be carried in the Space News Roundup and on the Employee Information Service, x36765.



CAREER DAY --- Friendswood High School sophomore Daniel Knight gets a look at the International Space Station Alpha Program's "war room" during the honor student's recent career day visit to JSC. Space Station Program Deputy Manager Bill Shepherd explained the station's configuration and the use of the room to review upcoming presentation materials.

JSC employees earn spot in fall Project IQ program

Eight JSC employees have been selected to participate in the fall 1995 "Project Increased

Participants for the fall semester are Candace Hunt, Maria Aguilar, Karen Schmidt, Terry Lee-Lamkins, Yaranet Gonzales, Christi Garcia, Marie-France Smith and Venessa Henry.

week to attend college classes in pursuit of undergraduate degrees.

Tuition fees and textbook costs are paid for by the agency. This program helps employees improve their skills and qualifications, helping them become more productive in their present

up to eight hours of administrative leave per

Qualification Program.'

Through the program, employees are permitted

Tickets go on sale June 1 for country western dance

JSC employees can show off their line dancing skills at the country and western dinner dance planned for June 25 at the Gilruth Center.

The evening begins with a social hour at 7:30 p.m. followed by a Texas-style barbecue buffet dinner at 8 p.m. Dancing begins at 9 p.m. with music by Lisa Cole & The Last Chance Band in the old gym.

Partygoers can expect to hear both old and new country and western music through midnight. Tickets for the dinner and dance go on sale at 8 a.m. June 1 in the Bldg. 11 cafeteria. No tickets will be sold after 2 p.m. June 22. JSC employees, retirees and NASAbadged contractors may purchase one table of 8 or

12 seats. For additional information on the dinner dance, contact Mavis Ilkenhans at x49644.

Pool refinishing team contends with water, snake

(Continued from Page 1)

draining the pool.

Scott said the team had to be "creative" to pump the nearly half-million gallons of water out of the 25 foot deep pool in a relatively short time. Since it is easier to push water than pull it, the team suspended a pump from the overhead crane, ducted its exhaust outside, then lowered it to the surface of the

"It was crude, and left onlookers shaking their heads in disbelief, but it sure moved some water." Scott said.

There were a few surprises as Johnson Controls workers tried to keep the ground

water around the building below 25 feet so the pool would not become buoyant. Even though five dewatering wells placed around the WETF when it was built were reconditioned prior to the project, one failed just before the pool was drained. And on Sunday, May 1, a rattlesnake crawled into some electrical switch gear and all power to the dewatering wells was lost while the pool was entirely empty. Plant Engineering Division and Johnson Controls workers had the power restored in just over an hour. Still, the ground water level came up enough to make things a little exciting, Scott said.

Once the pool was drained, Anchor Inc.,

the painting contractor, worked around the clock to control the ground water, blast the old coating from the concrete pool and apply a new high-tech solvent free epoxy coating. "With some invaluable assistance by peo-

ple like Charles Lauritzen of the Facilities Development Division and Ron Stone of the Plant Engineering Division's Construction Branch, both of whom were instrumental in the design and construction of the WETF, we managed to pull this thing off," Scott said. "When they say it can't be done, it affords a little extra challenge — and makes such a project's successful completion taste just that much sweeter.

National Performance Review aims at results, not rules

Editor's note: This article is the second in a series of messages prepared by NASA Headquarters for all NASA employees.

By Gary Steinberg and Chris Williams

In March 1993, President Clinton asked Vice President Gore to conduct a six-month study of the federal government.

The purpose of the study, known as the National Performance Review, was to create a new vision for the government that would move us from a government of red tape and bureaucracy to an entrepreneurial government that works better and costs less.

The NPR summary report, From Red Tape to Results, Creating a Government that Works Better and Costs Less, was published in September 1993. The report identified 384 recommendations and 1,222 actions designed to begin this journey of change. Seventy percent of these recommendations and actions are already being implemented across the federal government.

The goal of the NPR is "not simply to weed the federal garden; it is to create a regime that will keep the garden free of weeds. It's not simply to trim the pieces of government, but to reinvent the way the government does everything." The review, which involved federal employees as well as outside experts, studied examples of successful state and local governments. The NPR report's conclusions are captured in four major

Cut red tape: To create an entrepreneurial government, we will need to shift from a system in which people are accountable for following the rules to one in which they are accountable for achieving results. To this end, the NPR recommended streamlining systems and stripping away layers of unnecessary regula-

tions that stifle innovation. In place of rules and regulations, we need guiding principles and a system that empowers employees to perform their missions and holds them accountable for results.

Put customers first: The NPR report states that "effective entrepreneurial governments insist on customer satisfaction." The NPR focuses on the need to listen to our customers and restructure our operations to meet their needs. The report also recommends using market dynamics to put customers first.

Empower employees to get results: In successful governments. authority is decentralized. They use the strength, ideas, energy and creativity of all employees, not just a select few at the top. To reach this end, front-line employees and supervisors need to be trained and empowered to make decisions and solve problems.

Cut back to basics - produce

better government for less: An entrepreneurial government is constantly reevaluating itself and finding new ways to work better and cost less. To do this, we need to abandon the obsolete, eliminate duplication, embrace new technologies, engage in quality management, cut costs and increase productivity.

In addition to the NPR summary report, there are 38 additional reports that provide background and guidance on the recommendations. The agency-specific reports provide detailed recommendations intended to support the reinvention of federal agencies.

Other reports on cross-cutting systems cover issues that affect every agency, such as personnel and procurement.

Each of us ultimately has the opportunity and responsibility to contribute to the reinvention of NASA. Given our current budget constraints, we must all find new ways to make the agency work better and cost less. Over the next several months, all NASA employees will receive basic training on quality management principles and how they relate to the government's reinvention efforts. This training has been mandated by the vice president and developed by the Federal Quality Institute to support federal agencies' reinvention initiatives.

Directing NASA's reinvention efforts is the Quality Steering Team chaired by Acting Deputy Administrator John Dailey.

The Office of Continual Improvement (Code T) supports the QST and is responsible for coordinating the implementation of NPR recommendations and tracking the agency's progress.

For additional information on NPR activities, NASA's reinvention, or how you can contribute, contact JSC's Management Analysis Office at x34216.

NASA-JSC