



Ready to roll

The Emergency Response Team is prepared to handle all types of incidents at JSC. Story on Page 3.



Survival studies

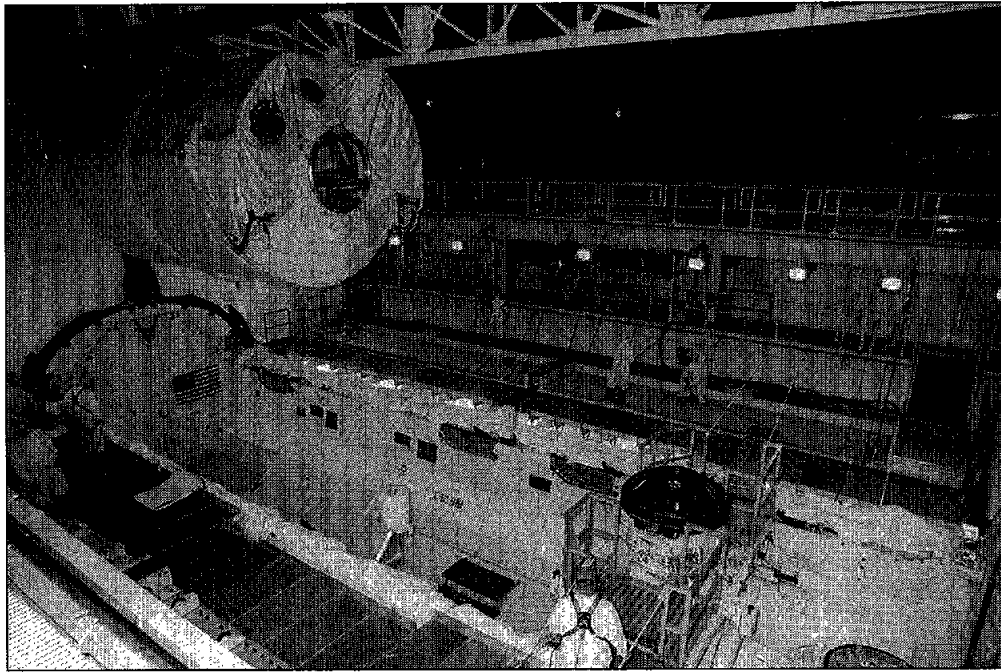
The 1995 astronaut candidates recently spent time learning land survival techniques. Photo on Page 4.

Space News Roundup

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No. 16



NASA Photo

Engineers at Kennedy Space Center install the Spacelab/Mir Laboratory in *Atlantis*' payload bay. The module will connect to the Orbiter Docking System already in the payload bay.

Earth Day festivities Saturday

JSC highlights efforts to protect environment

Saturday marks the silver anniversary of Earth Day, and JSC along with millions of citizens across America will demonstrate its concern about air and water pollution in a variety of ways.

Communities across the U. S. will hold Earth Day activities that will promote protection and enhancement of the environment. In keeping with its history, Earth Day is a grassroots, voluntary occasion. No federal agency directs Earth Day activities, however the EPA is participating in numerous activities. Many other

local, state and federal agencies, will have their own Earth Day celebrations.

Armand Bayou Nature Center is hosting a variety of Earth Day activities that will be held from 10 a.m.-4 p.m. Saturday. Activities will include exhibits by environmental organizations, children's crafts, "green living" demonstrations and pontoon boat rides.

JSC management and personnel are committed to protecting the environment by including environmental considerations into many

Please see **SILVER**, Page 4

Discovery to fly new engine

Technicians mate *Atlantis* to fuel tank

Engineers continued preparations for the launch of two shuttle missions, perhaps within weeks of each other, while work remained on track for two other shuttles for launches later in the year.

With the arrival of *Columbia* back at the Kennedy Space Center on April 14, all four shuttles are at their homeport in various stages of preparation for upcoming flights.

Technicians installed the three main engines in *Discovery* this week for its launch on the STS-70 mission, including the first Block One engine, No. 2036. The Block One engines are part of a major NASA effort to improve safety margins while reducing maintenance through the use of a new high pressure liquid oxygen turbopump built by Pratt & Whitney and a new hot-gas manifold designed by the main engine's prime contractor, Rocketdyne. Only one Block One engine will be used to lift *Discovery* along with the use of two older version engines, while *Columbia*'s next flight, STS-73 in September, is expected to use three Block One engines.

The major objective of *Discovery*'s flight is the deployment of the newest NASA Tracking and Data Relay Satellite to join the constellation of relay stations already in orbit.

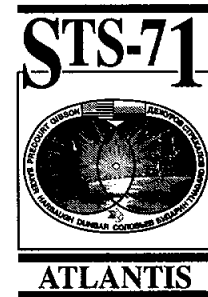
Atlantis, meanwhile, was rolled from its maintenance facility at KSC to the Vehicle Assembly Building to be mated to its solid rocket boosters and fuel tank for its trip to Launch Pad 39A around April 26 in advance

of its liftoff in late June. The STS-71 mission, the first flight to dock a shuttle to the Russian Space Station Mir, will launch five NASA astronauts and two Russian cosmonauts to link up to Mir. The crew will conduct a count-down dress rehearsal on May 17.

NASA officials continue to discuss options for launch dates with Russian managers. The options involve the upcoming launch of the science module Spektr, which contains scientific hardware and four solar panels designed to augment the space station's power supply. It is anticipated that Spektr will be ready for launch from the Baikonur Cosmodrome around the third week in May, clearing the way for *Atlantis* to blast off around 26-30 days later.

It will take a week for Spektr to dock automatically to Mir and additional time for the Mir 18 crew to activate Spektr's systems, reposition Mir's solar arrays and existing science modules and to move docking port equipment for the arrival of *Atlantis*. Four space walks will be conducted by Commander Vladimir Dezhurov and Flight Engineer Gennadiy Strekalov to accomplish that work while U.S. astronaut Norm Thagard monitors Mir's systems during the EVA activity.

NASA managers are deciding whether to launch *Discovery* first on the STS-70 mission, or whether to launch *Atlantis* first on the Mir docking flight. The processing of the two shuttles will permit either scenario to take place without affecting other flights.



NASA managers discuss Zero-Base Review

Senior NASA managers from around the country convened in Washington, D.C., this week, to consider and discuss the initial findings of the Zero-Base Review Team led by Deputy Associate Administrator for Space Flight Richard J. Wisniewski.

The team submitted a draft of the findings to center directors late last week as a basis for preparing feedback and discussion points for the Tuesday meeting at NASA Headquarters.

NASA Administrator Dan Goldin

set up the team last fall to look for innovative ways to restructure the agency and to meet impending budget cuts while continuing to deliver quality and balance in the programs. With a recent White House request for additional reductions, the team's work took on added importance.

Using an internal "white paper" as a starting point for discussion, the team visited each NASA center to consider various strategies and recommendations for meeting the new reduction goal—\$8 billion in spending over five years. Having the benefit of

the centers' recommendations plus the results of preceding review efforts, the team compiled its initial findings and forwarded them to the centers for comments and concerns. Those comments and concerns were aired among senior management meeting in the first collaborative review of the team's efforts.

JSC Director Carolyn Huntoon and Deputy Director George Abbey represented JSC in the discussions.

"The intent was to facilitate an open peer review of each Center's response to the team's initial find-

ings," Huntoon said. "These kinds of discussions are difficult but extremely valuable. We have opened an important new part in the process of defining our future."

Tuesday's talks kicked off a senior management review phase that will contribute to the formulation of the fiscal year 1997 budget and a plan to restructure the agency.

"No final decisions have been made, at this point. It's clear that we have a monumental task before us," Huntoon said. "Defining future roles and missions among centers in a

way that best supports a vision for the future of NASA may not necessarily fall along traditional lines. We will continue to support the process with the very best and honest analyses and recommendations that we can make." Although the team is due to submit draft recommendations to Goldin next month, there is not yet a definitive timetable for establishing the final restructuring plan. NASA's fiscal 1997 budget recommendations are due to be submitted to the White House Office of Management and Budget this fall.

Ten fill out third, fourth docking mission crews

By Kyle Herring

Two commanders—STS-76's Kevin Chilton and STS-79's Bill Readdy—now have full crews to prepare for the third and fourth shuttle dockings with the Mir Space Station.

Five astronauts have been selected to join Chilton on STS-76 next March, *Atlantis*' third flight to dock with Russia's space station. The flight also will include a space walk and drop off of an astronaut to stay five months on the orbiting laboratory.

Joining Chilton are Pilot Richard Searfoss and Mission Specialists Shannon Lucid, Linda Godwin, Rich Clifford and Ron Sega.

A crew of five astronauts will join Readdy on the fourth shuttle docking mission with Russia's space station Mir in August 1996.

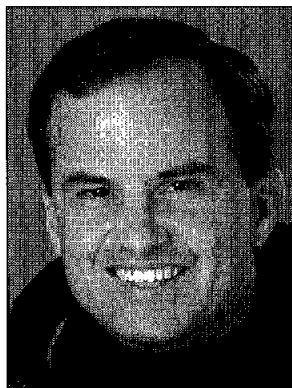
Readdy was named STS-79 commander in November 1994 and will be joined by Pilot Terrence Wilcutt and Mission Specialists Tom Akers, Jay Apt and Carl Walz. Astronaut

Jerry Linenger will launch aboard *Atlantis* and switch places on Mir with astronaut Shannon Lucid. Linenger's stay on Mir is expected to last four months.

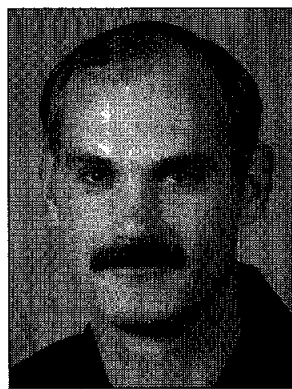
During STS-76, a 10-day mission, *Atlantis* will be docked to Mir for five days during which 1,300 pounds of water and 1,900 pounds of logistical equipment will be transferred to the space station. When *Atlantis* undocks, Lucid will remain on board for a five-month stay to conduct a variety of experiments. She will return to Earth on *Atlantis*' next visit to Mir, STS-79, in August. Lucid and her backup, John Blaha, have been training since February in Star City, Russia.

While docked to the space station, Godwin and Clifford will perform a space walk to transfer three experiments to the Mir. Hardware for the international space station, slated for assembly starting in 1997, also will

Please see **VETERANS**, Page 4



Chilton



Readdy

Mir-18 crew completes first full month in orbit

Commander Vladimir Dezhurov, Flight Engineer Gennadiy Strekalov, and U.S. Astronaut and Cosmonaut Researcher Norm Thagard have completed a one-month stay on the Mir Space Station and are continuing with their investigations into how the human body adapts to a weightless environment.

The beginning of the week saw Thagard and Dezhurov involved in more pharmacokinetics activities designed to evaluate how quickly medicine ingested by the crew is absorbed into the blood stream. This week's experiment has involved Hepatic Protocol (liver studies).

Monday, Thagard and Dezhurov took a dose of Antipurine, a metabolic tracer and they are collecting saliva and urine samples over a 48-hour period.

Tuesday, Thagard performed another download of data from the Tissue Equivalent Proportional Counter, a radiation dosimeter that runs continu-

ously during the flight measuring the environment of the station. The data from TEPC is downloaded every two weeks to optical disks which will be returned during the STS-71 mission.

More work was done Wednesday with the PILOT experiment designed to evaluate a person's visual perception and motor dexterity control. The PILOT system uses computer equipment and displays to allow the operator to fly a simulated approach and docking to the station. The system is similar to the one used by the shuttle pilots during long missions to maintain their approach and landing skills. Also Wednesday, Thagard gave a televised status report of the Mir 18 crew's efforts to date and discussed upcoming activities in preparation for the arrival of the Spektr science module.

Last Thursday, in addition to unloading items from Progress M27, the crew set up and checked out an incubator system that will support a

Please see **MIR**, Page 4

JSC

Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Store from 10 a.m.-2 p.m. Monday-Thursday and 9 a.m.-3 p.m. Friday. For more information, call x35350 or x30990.

Houston Rockets: Tickets for the first Houston Rockets playoff game cost \$23.50.

Mystery Dinner Theater: 7 p.m. May 5 at the Gilruth. Tickets cost \$18.50.

Gershwin songs: Celebrate the songs of Gershwin at 8 p.m. April 28 at Clear Lake Presbyterian Church. Tickets cost \$8 for adults and \$5 for students and seniors.

Houston International Festival: April 20-30. Tickets cost \$3.

JSC Picnic: April 22 at Astroworld. Tickets cost \$20. Includes all attractions and all-you-can eat barbecue dinner.

Home Tour: Galveston Home tour May 6, 7, 13 or 14. Tickets cost \$13.75.

Ice Skating: World Championship Ice Skating 8 p.m. June 15 at the Summit. Tickets cost \$30.50 for upper promenade, \$45.50 for lower promenade.

Loving Feelings: Concert at 7 p.m. Sept. 30 at the Summit. Tickets cost \$32.50.

Schillerbahn: Tickets cost \$17.80 for adults and \$15.30 for children 3-11.

Seaworld: Tickets cost \$23.50 for adults and \$16.25 for children 3-11.

Astroworld: Early bird tickets cost \$14.70. Season passes cost \$45.50.

Six Flags: Tickets cost \$23.70 for a one day pass, \$31.75 for two day pass and \$20.30 supersaver not valid on weekends in June, July and August.

Fiesta Texas: Tickets cost \$20.35 for adults and \$15.80 for children 4-11 and senior citizens over 55.

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

Space Center Houston: Discount tickets, adult, \$8.75; child (3-11), \$7.10.

Metro tickets: Passes, books and single tickets available.

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

Stamps: Book of 20, \$6.40.

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

Upcoming events: Splashtown tickets available soon.

JSC

Gilruth Center News

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

Weight safety: Required course for employees wishing to use the weight room is offered from 8-9:30 p.m. April 27 and May 9. Pre-registration is required. Cost is \$5.

Defensive driving: Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is May 13. Cost is \$19.

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

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

Country dancing: Beginners class meets from 7-8:30 p.m. Mondays; intermediate class meets from 8:30-10 p.m. Mondays. Partners are required. For additional information, contact the Gilruth Center at x33345. New class begins April 24.

Ballroom dancing: Classes cost \$60 per couple. New class begins May 4. For additional information call the Gilruth Center at x33345.

Intercenter run: The Spring Intercenter Run begins April 1 and continues to April 30. Walk or run a 2-mile or 10K course and submit times to the center. T-shirts for participants cost \$2 and must be paid by May 1.

Spring softball: Tournament will be held April 29-30. Cost is \$100 per team. Registration deadline is April 26.

Sailing class: NASA Sailing Club will hold classes from 9 a.m.-noon Saturdays from May-June. For more information call Richard Hoover at 996-7716.

Golf lessons: Golf lessons will be given at the Clear Lake Golf Course. Cost is \$100 for six weeks of lessons.

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.

JSC

Swap Shop

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, two weeks before the desired date of publication. Ads may 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

Rent: League City, Pecan Forest, 3-2-2, FPL, no pets, very clean, \$795/mo + deposit. 554-6200.

Rent: Horse barn on 15 acres, 7 stalls, tack room, League City-Dickinson area, \$300/mo. 544-6138.

Sale: 290 & Huffmeister, 3-2-2A, new carpet, paint kitchen, CF, deck, assumable \$393/mo; possible trade for equity, \$65k. 992-3662 or 286-3161.

Sale: San Leon, herb farm, 2.5 acres, 3-2, new 16x80 mobile home, 30x50 green house, 30x30 gar, large pond, fenced. 333-6277 or 339-3562.

Sale: 22 acres 12k mi out of Seguin, Tx, 20 min from San Antonio. x37426 or 484-5860.

Rent: Galveston condo, furniture, sleeps 6, Seawall Blvd & 61st St, wknd/wkly/dly rates. Magdi Yassa, 333-4760 or 486-0788.

Rent: Arkansas Cottage on Blue Mt Lake, stone FPL, \$250/weekly or \$50/dly. Corcoran, x33005 or 334-7531.

Sale: Taylor Lake Estates wooded lot 90' x 135', can finance, \$39.5k/obo. Don, x38039 or 333-1751.

Lease: Condo on Clear Lake, 2-2.5-2, W/D, refrig, sec gates, \$875/mo. 474-4922.

Sale: Egret Bay condo, 2-1-2CP, 2 storage closets, FPL, W/D, all appliances, new carpet/tile/roof, boat launch, \$45k. x41036 or 333-4577.

Sale: 11.5+ acres, 669.72' on FM 270 extension between Webster & Austin St., League City, cleared, fenced, \$300k. 554-4316.

Rent: Boat slip on Clear Lake w/roof & motorized boat hoist, \$125/mo. 474-4922.

Sale: Travel trailer, 25' Avion, good condition, \$3k. 554-6138.

Rent: Seabrook, 2 rooms, 2 story house, 4-2.5-2, sep living areas, W/D, \$350/mo. 474-4742.

Cars & Trucks

'84 Nissan 300ZX Turbo, 5 spd, T-tops, loaded, ex cond, \$3.4/obo. 333-6224 or 480-1767.

'93 Honda Accord LX, warranty, auto, green, spoiler, low mi, \$13.9k firm. x44839 or 334-7238.

'80 Corvette, pwr windows/locks, 350 auto, needs carpet, \$6.5k firm. Steve, 947-3270.

'83 Olds Toronado, 307 V8, all power, \$2k/neg. Steve, 947-3270.

'85 Olds Calais, 5 spd, 4 cyl, A/C, 146k mi, good cond, \$1,650. 991-0821.

'90 Honda Prelude, 2.0S, red, auto, sunroof, cass, 5 spd, 70k mi, \$8k. 487-2383.

'87 Honda Accord LX, 4 dr, auto, A/C, cruise, pwr windows/locks, tilt, stereo cassette, \$4,850. 488-7771.

'77 Buick Park Avenue, all pwr options, A/C, dependable work/school car, 41k/obo. Glenn, x38067 or 480-7019.

'82 Volvo, DL & DR, \$2,250. x37441.

'88 Ford T-bird, V8, power, low miles, ex cond, \$4k/firm. 554-6138.

'91 Mustang LX, pwr mirror/windows/locks, 48k mi, 4 cyl, maroon ext/red int, \$6.5k. 332-8070.

'78 Chevy Blazer, auto, tint, A/C, gray, AM/FM, ex cond, 130k mi, \$2k. 483-5399.

'85 Chrysler 5th Ave, 4 dr, 81k mi, blue/grey, loaded, ex cond, \$2.4k. Bob, x33149 or 488-7036.

'92 Toyota Celica ST, teal, power steering/brakes, auto, 55k mi, ex cond, \$9,990. 409-925-2372.

'87 Chevy IROC Camaro, 5.0L, 4 BBL, \$3.5k. Ken, x34448 or 482-9524.

Ford Escort, ugly but runs good, \$350. David, 480-5570.

'92 Mitsubishi 3000GT. 5 spd, A/C, charcoal gray, 20k mi, sunroof, \$15.2k. Mark, x47112.

'82 Pontiac Grand Prix, \$650/firm. Joe, 409-948-4931.

'94 Chevy Silverado, red, auto, Travel Time conversion pkg interior/exterior, \$23.5k. 902-9209.

'70 Jaguar XKE convert, white, good cond, runs great, 20k mi, \$18.k/neg. Dan, 335-6970 or 286-9745.

'81 Oldsmobile Cutlass, 4 dr, runs good, needs tags, \$850/obo. 488-23354.

'85 Toyota motor home, fully self contained, \$11.5k. Roy, x34094 or 992-5414.

Cycles

'86 Kawasaki Ninja 1000R, 17k mi, red/blk, ex cond, original/no modification, new rear tire/chain & sprocket, tuneup, \$3.5k. x37363.

'73 Harley Sportster, black, 1000cc, great cond, new parts, \$4.5k. x35399.

Boats & Planes

'88 Invader, 210 cuddly cabin, 1/0 200 hp Merc, galvan trailer, loaded great cond. 997-6141.

Hobie Cat 16', sailboat, trailer, mesh trampoline, double trap, extras, \$1,150. 996-5739.

Sovereign, 24', ex cond, extra jib, depth sounder, head, stove, sleeps 4, electric start Johnson OB, recent bottom job, make offer. Mike, 282-2787 or 286-1691.

Bass Tracker 17', Bimini top, fish finders, extras, \$7.9k. 534-3046.

'76 Fiberglass sailboat, 22', 5hp Nissan OB, salon w/dining table & sleeping cushions, potty, \$2,750. x37441.

Laser 2 sailboat w/trailer, spinmaker rigged, trap, vests, \$1.2k. x41095 or 486-8185.

Audiovisual & Computers

Apple IIc, 128 KB RAM, ext disk drive, mono monitor, mouse, TV adapter, w/software & manuals, \$250. x48232 or 486-4613.

Mac II, 8 MB RAM, 130 MB HD, color monitor, mouse, \$700; 286 computer, 1 MB RAM, 40 MB HD, extras, \$200. 996-5739.

Citizen printer, "CSX-140" w/GSX color option, \$225. Magdi Yassa, 333-4760 or 486-0788.

Gateway 2000, 486-DX2, 66 MHz, 8 M RAM 128 cache, 340 MB HD, 2 FD's 5.25 and 3.75, 15' color monitor, software included, Windows, MDS-Word, DOS 6.0, \$1,150. M. Rubenstein, 241-0087.

PC system, 286 cpu w/2 MB RAM, 40 MB HD, color monitor, Gemini NX1000 Printer, ex cond, \$300. Steve, x37626.

286 Clone, 40 MB HD, 2 FD, color monitor, w/printer, \$175; PS2/386SX, 2 70 MB HD, 1.44 FD, VGA monitor, w/printer, \$275. x35549 or 554-7104.

JSC

Dates & Data

Today

Cafeteria menu: Special: baked meatloaf. Total Health: baked potato. Entrees: chicken fajitas, ham steak, pork and beef eggrolls, steamed fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: stewed tomatoes, seasoned spinach, cut corn, macaroni and cheese.

Saturday

JSC picnic: The Employee Activities Association will host the annual JSC family picnic from 11 a.m.-4 p.m. April 22 at Astroworld. Tickets cost \$20 and include all you can eat barbecue and foot long hotdogs, unlimited soft drinks, ice tea, ice cream, beer, all rides and attractions and a return ticket to Astroworld. Highlights include facepainters, caricature artist, bingo, volleyball, tetherball, tug-of-war, horseshoes and visits with the Looney Tune Characters. For more information call the Exchange Store at x35350.

Monday

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

Tuesday

Astronomy seminar: The JSC Astronomy Seminar will meet at noon April 26 in Bldg. 31, Rm. 129. An open discussion meeting is planned. For more information, call Al Jackson at 333-7679.

Blood drive: Barrios will host its annual blood drive from 8-11 a.m. April 25 at the Barrios Bldg. at 1331 Gemini. For more information call Tom Hanson at 244-7473.

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

Wednesday

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

Thursday

Blood drive: Lockheed will host its annual blood drive from 8-11:30 a.m. and 1-3:30 p.m. April 27 at the Lockheed Bldg. at 2450 Nasa Road 1. For additional information call Gayle Brown at 333-6514.

Cafeteria menu: Special: chicken fried steak. Total Health: baked potato. Entrees: beef tacos, steamed pollock, baked chicken, catfish special. Soup: navy bean. Vegetables: spinach, cut corn, breaded okra, pinto beans.

Friday

Cafeteria menu: Special: tuna noodle casserole. Total Health: baked potato. Entrees: steamed salmon steak, baked chicken, fried cod fish, ham steak. Soup: seafood gumbo. Vegetables: French cut green beans, cauliflower with cheese, green peas, black-eyed peas.

April 25

Abstracts due: Abstracts are due April 25 for papers to be presented at the Annual Technical Symposium to be held May 19. The focus of the symposium is the International Space

Station. For more information call Kamlesh Lulla at x35159.

April 27

SOLE meets: The Society of Logistics Engineers will meet at 5:30 p.m. April 27 at the South Shore Harbour Country Club. Charlie Elghary will discuss "Analysis of the Proposed High Speed Ground Transportation System." For information call Chuck Howard at 448-8180 or Mike Goodall at 244-4674.

AIAA meet: The American Institute of Aeronautics and Astronautics will host a dinner beginning at 5:30 p.m. April 27 at the Gilruth Center. Richard Allen will discuss "Space Center Houston." Cost is \$10 per couple for members and \$11 for nonmembers. For information call Tanya Bryant at x31175 or Sarah Follett at 292-3160.

May 9

NMA class: The National Management Association will host a class from 6-9 p.m. May 9, 16 and 23 at the Gilruth Center. "Financial Strategies for Successful Retirement" is the focus of the 10 hour class. Cost is \$50 per couple for members and \$75 for nonmembers. For information call Richard Hergert at 280-0444.

May 10

PSI meets: The Clear Lake/NASA Area Chapter of Professional Secretaries International meets at 5:30 p.m. May 10 at the Holiday Inn on NASA Road 1. For additional information, contact Elaine Kemp x30556.

May 17

Mechanisms symposium: The 29th Aerospace Mechanisms Symposium will be held May 17-19 at South Shore Harbour Resort and Conference Center. For additional information call Dorothy Daigle at 333-7390.

blue sleeper sofa E/C, \$150; matching recliner chair, E/C \$50; blue swivel rocker, E/C \$50. Mario, x48172 or 538-1918.

Hoover Celebrity QS vacuum cleaner w/carpet power nozzle, ex cond, \$50. David, x34395 or 488-8930.

Microwave, Goldstar turntable w/probe, 750 watt, 2.5 cu ft, white, \$145; dining room table & 4 chairs, wood w/foldout leaves, 2 inserts/seat 8, \$225; refrig, GE 21.7 cu ft, no-frost, icemaker, white, \$825/obo. x45507 or 486-5745.

Bassett solid maple changing table, \$100; matching crib w/Kolcraft mattress, \$175. Sharon, x38506.

Ray-z-boy recliner, mauve, ex cond, \$100; full sz Kenmore gas dryer, \$75. Shane, x45422 or 480-8987.

Stereo cabinet, very lg solid teak TV/stereo cabinet, 4 Tambour doors, \$450. 286-8060.

Bassett couch & loveseat w/matching throw pillows, 1 yr, country style, green/off white, painting goes over couch, \$400. 335-6941.

Dining table, dark wood oval, 4 chairs, \$300. x48232 or 486-4613.

NECCHI Supernova Julia #534 sewing machine w/desk type cabinet & access. \$150. Guss, 482-7073.

Kg sz oak waterbed w/semi-motionless mattress, 6 drawers, headboard w/mirror & shelves, \$250/obo. 280-0285.

Large blue leather couch, ex cond. 326-2307.

Oak TV/VCR cabinet w/doors, \$400. Carol. x30281 or 326-5689.

Freezer, Kenmore, white, 14 cu ft, \$250. 532-1509.

Whirlpool hvy duty, 2 spd, 3 cycle washer, 3 water-levels/temp settings, works, needs solenoid, white, \$25. Michael, x38169 or 482-8496.

Antique Tiger Eye oak round table w/5 chairs & matching buffet, \$750. Jim, 475-9671.

Wanted

Want carpools from Garden Villas/Hobby airport area. 641-4941.

Want personnel to join VPSI Vanpool departing Meyerland Park & Ride lot at 7:05 a.m. for JSC, on-site personnel working the 8 a.m. - 4:30 p.m. shift, Travis Moebes, x45765 or Don Pipkins, x35346.

Want metal detector, salt water type preferred, regular type ok; Jon boat and/or motor. 482-0874.

Want clean safe garage apt or living area, CL, have small dog, no furniture needed. Becki, 480-9376.

Want Nanny to care for infant in our Clear Lake home, must have previous experience w/child care, references required. x38614 or 480-4028.

Want low priced school/work car or truck. 271-7011.

Want member for carpool from Meyerland & Braeswood area, non-smoking, 8:00 a.m. - 4:30 p.m. on-site personnel. Bob, x37340 or Al, x36603.

or Ed Rangel, x36124.

Want introductory violin lessons for a 6 yr old, evenings. Keith, 487-2741.

Want someone to clean house in Pearland once every other wk on reg basis, ref requested. 997-2280.

Miscellaneous

Victorian wedding gown, beautifully detailed, off-the-shoulder, fitted waist, lovely bustle & long train size 5-6, new \$950 sell \$250. 337-4182.

Aquarium, 20 gal, underground filter, air pump, heater, gravel, access, good cond, \$85. 480-3424.

2 President & First Lady Charter Gold memberships, \$700/both or \$400/ea. Roger, x31928 or 996-7674.

NordicTrac walk fit w/workout computer, ex cond, new \$600 sell \$350. 486-7442.

Southwest Airlines Friends Fly Free partner to travel to Dallas on weekends. Matt, x47014 or 486-7417.

Moving boxes, various sizes. K.K., 488-8078.

Dining table w/5chairs, \$100; solid wood desk, \$75; antique postal scale. x38843 or 409-925-5011.

Camper shell 1/2 ton PU, \$100; Kangaroo Caddie cart E/C, \$100; golf clubs, sets & assorted clubs. Mario, x48172 or 538-1918.

Momo Ideaz, set four, \$700/neg. Martin, x39515 or 923-1110.

President & First Lady Premier Plus membership, \$500. Bonnie, 283-6840 or 338-1825.

UVC, AM/FM auto reverse car radio, \$80; 2 Pioneer 6x9, 80 watts, \$65; 2 15" sub-woofers, \$40; 2 5.75 door spkrs, \$35; 2 remote control cars, \$20/ea; Simmons drum module, AX-60 kybd, \$275; 4 track sequencer, \$45; video camera & portable VCR, \$300/obo; color TV, 13", \$10; car amp 80 watts, \$80. Mr Quinn, x38575 or 820-3647.

Green naugahyde living room chair, \$75; office table, \$35; '60's Zenith console radio & record player, \$200. x30446 or 338-2625.

Monkey grass, 1 gal containers, \$2.50/ea or 5 for \$10. x30974 or 554-7083.

STS-71Mir/Orbiter T-shirt, \$7.50. 282-3479.

Craftsman table saw, cuts all angles, bevels, 10" carbide blade, \$300. 947-9755.

26" Huffly 18 spd mountain bike w/access, ex cond \$150; solid wood bookcase, white, \$45. 946-7028.

Light oak dresser, \$125; med round kitchen table, \$90; med wood hutch, \$350; formal oak table w/2leaves & 6 chairs, \$750; coffee tables, \$40/ea; end table, dark wood, \$30; 55-gal fish tank w/stand, top, \$200; 10-gal tanks, \$20/ea; 30-gal tank w/stand, top, \$130. 282-3570 or 474-3820.

Nordic Track Achiever, tension gauge, computer readout, custom grips, ex cond, New \$830 sell \$600/obo. Janine, x45084 or 482-7550.

Antique DR table, 45x70, oak/pine inlay, \$550; model train table, 4x7, \$60; mink coat, sz L, \$1k; antique white iron baby bed, \$225. 488-3588.

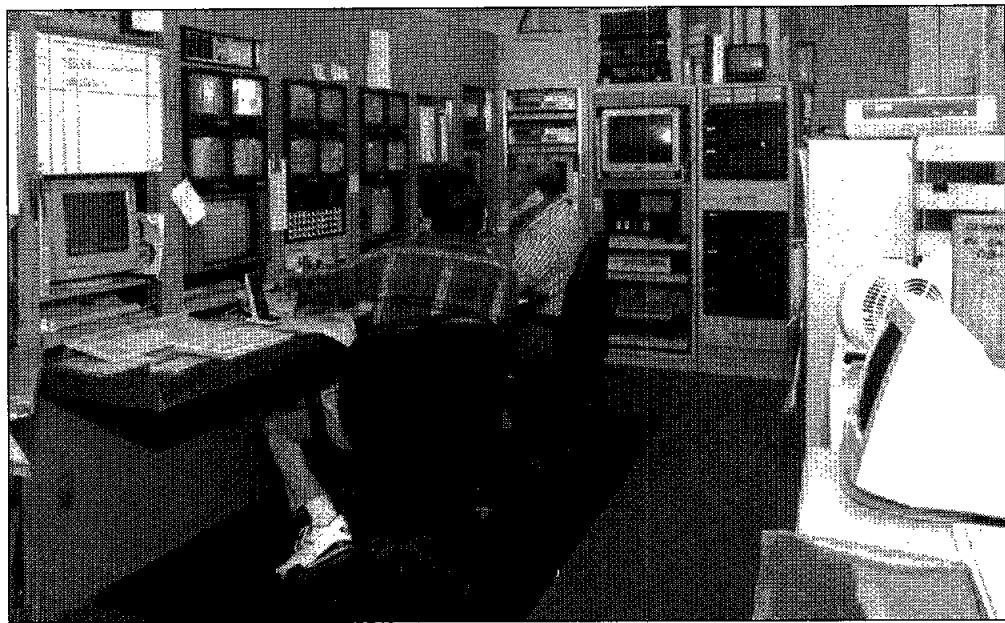
Luggage set, 4 pcs, \$75/obo; 2 channel cordless telephone, ex cond, \$30; answering machine w/remote access capabilities, \$20. Samantha, x45877.

Demetrios wedding gown, white, sz 12-14, beaded bodice & train, \$500. Jim, x38624 or 475-9671.

Coleman rooftop air conditioner w/heater, \$225. 554-6138.

Unmounted Opal approx 9 carats, \$300. Heidi, x30756.

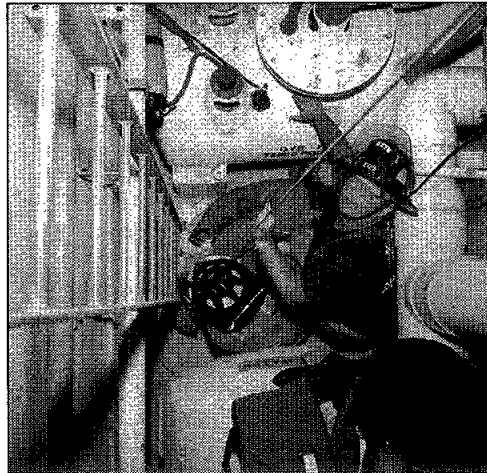
8-track tapes, Dylan, Denver, Walker, 23 total, \$3/ea. Keith, 482-2741.



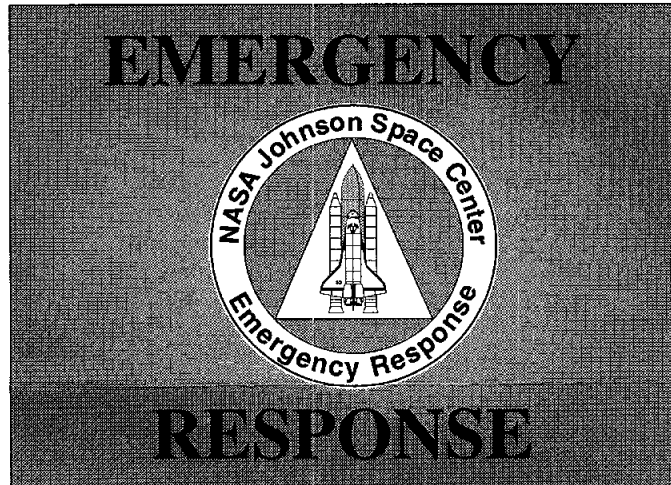
JSC Responds

Emergency Response Team protects lives, environment

By Karen Schmidt



Each Emergency Response Team member has numerous responsibilities in an emergency situation, but all work together in a support system that ensures each aspect is handled by qualified individuals. The team regularly conducts drills to improve individual and teamwork skills, such as a recent exercise simulating a confined space rescue. Top: Mason & Hanger's Mark Snedden, left, and Bill Brunson coordinate emergency efforts in the Bldg. 30 Emergency Operations Center. Above left: Houston Fire Department Station 72 firefighter Ronn Willard enters the confined space to assess the injuries of the worker as David Lehmann assists. Above right: Firefighter Merle Jones helps Willard prepare to lift the victim from the space. Right: The victim (a dummy) is lifted out of the confined space by Kenneth Wheeler, left, and Gary Wright of Johnson Controls World Services after medics secure his broken leg. Julie Stone, a Kelsey-Seybold Industrial hygienist, observes. Below: Jones transports the victim to an awaiting gurney as exercise coordinator Sean Keptra of JSC's Health Safety and Environmental Compliance Office, left, looks on with Fire Protection Specialist Rudy Cline, center, and HFD Capt. Dennis Celsor, right.



Although JSC is doing its utmost to protect against serious accidents, the possibility is still real. With the diverse work taking place at JSC and Ellington Field, unexpected events, some of them emergencies, can and do occur.

Depending on the level of the emergency, several organizations must coordinate the response, control the scene, remove the hazard, ensure employee safety and report the incident to appropriate authorities.

"JSC's emergency response team is prepared to handle all types of emergencies," said Keith McQuary, JSC's emergency preparedness manager in the Center Operations Directorate. "Nearly all JSC organizations must come together, no one goes off to do his own thing."

Emergencies can involve Flight Crew Operations, Center Operations, Safety Reliability and Quality Assurance, Information Systems, Space and Life Sciences, the NOAA-National Weather Service and the Office of Public Affairs.

People from these different backgrounds must work in harmony to protect employees, with each Emergency Response Team member performing their duties effectively to deal with the emergency.

JSC uses an Incident Command System similar to those used by large cities to control emergency situations. The team consists of a commander, an operations officer, an information officer and a host of support personnel.

McQuary takes the commander role and immediately establishes liaison with Hernandez Engineering Fire Protection Specialists and the Houston Fire Department. Depending on the type of emergency, another team member assumes the operations officer position. The operations officer takes action to control the emergency, coordinating with the fire protection specialists, security, medical personnel and the Johnson Control Spill Response team.

McQuary coordinates with the Security Branch to assure an emergency area is kept free of spectators and evacuations are safe and orderly. He receives a briefing from the Plant Engineering Division on the potential environmental impact when chemicals are involved. He also ensures the Medical Sciences Division gets priority support to provide medical care for individuals who may be injured and provides updates to the information officer so the Office of Public Affairs can provide details to media and surrounding communities concerning the event.

In weather-related emergencies McQuary's office coordinates with the on site NOAA-National Weather Service Office. If employees need to be informed of threatening weather, McQuary contacts the Technology Systems Division in the Information Systems Directorate to establish on-site communications.

"All members of the Emergency Response Team have been through more than 40 hours of training on how to effectively coordinate immediate response to an emergency situation," McQuary said.

The ERT is made up of representatives from most of the above organizations. The team helps McQuary to develop plans to ensure the safety of employees and how to handle emergencies. The ERT meets weekly to talk over all types of issues from non-threatening emergencies to public affairs protocol. Practice drills are conducted to ensure each individual knows his or her job within the team. Efforts are coordinated to establish plans and guidelines in dealing with any type of an emergency, McQuary said.

Generally an emergency that is not life threatening does not call for invoking ICS. Such emergencies are no less important to the team, he said. Each member has responsibilities outside the team to protect employees and property from hazards.

McQuary, as the emergency preparedness manager, is the focal point for all types of emergencies, plans, procedures, drills and training. The Occupational Safety and Health Administration requires emergency personnel certifi-

cation and hazardous situation reporting. McQuary's office also works with local, state and other federal agencies to assure community awareness and JSC's emergency preparedness program.

The safety engineer monitors emergency calls coordinates with Houston Fire Department. Once the emergency is over, the safety engineer in coordination with security protects the scene to preserve evidence for mishap investigation purposes until relieved by the investigation board chairman.

All emergency response operations originate in the Emergency Operations Center in Bldg. 30 and are operated by the Security Branch. The EOC must be able to receive critical incident information and notify the proper personnel for an emergency. Security must respond to the accident and ensure an area is clear of spectators and establish a marked entry control point. They must coordinate, prioritize and ensure evacuation procedures.

The Medical Officer and the Occupational Health Officer must oversee medical emergency and environmental health procedures. This could be setting up a triage center to help the injured or evaluating the air to determine chemical contamination.

Public Affairs also must respond to emergencies. The emergency information officer keeps PAO managers and the JSC newsroom informed of what is happening at the scene so that accurate information can reach the media, employees and the public in a timely manner. The PAO representative also coordinates media access to the command post and the incident scene.

If an emergency occurs at Ellington Field, aviation safety officers in Flight Crew Operations must determine the level of emergency and whether to call on neighbors for help. The safety officers can call the Texas Air National Guard, the City of Houston, the Coast Guard or the Army National Guard for help. For a crash, fire or rescue, the Ellington Field Fire Department will respond and assume command of the incident until the area is safe. Once the area is safe, the aviation safety officer takes charge of the accident scene. Emergencies may require Flight Crew Operations to call on-site offices such as transportation, environmental services, photo coverage or the JSC Spill Response team to help document or clean up the mishap.

With more than 40 aircraft varying in models and types, the Ellington Field safety office must have a diverse emergency team.

"We have people specialized in emergency response for each type of aircraft," said John Starnes, aviation safety officer in the Flight Crew Operations Directorate.

The on-site National Weather Service Office also must chip in during emergencies. The Spaceflight Meteorology Group monitors weather conditions affecting the JSC area. Primary tools include the Meteorological Interactive Data and Display System, the NEXRAD (Next-Generation Radar) Doppler radar. When severe thunderstorms, tornadoes, heavy rains, winter weather, or hurricanes/tropical storms threaten, SMG notifies the emergency preparedness manager, the data systems supervisor, the Energy Systems Test Area, the space antenna project, Space Center Houston and Ellington Field Aircraft Operations. During a shuttle mission, the flight director also is notified.

For hurricanes and tropical storms, SMG begins advising JSC when the storm is 72 hours away. Around-the-clock support starts when the storm is 36 hours out, and/or a hurricane watch is issued for the upper Texas coast. Briefings are given to emergency planning representatives, facilities managers and the center director as needed.

"SMG coordinates closely with the National Hurricane Center in Miami and the local National Weather Service office in League City when a hurricane or tropical storm threatens the Gulf Coast," said Frank Brody, chief of the SMG. "SMG weather forecasts and advice are a critical part of center closure decisions." □

JSC Photos by Benny Benavides



Reiley honored for integration success

Keith Reiley of the Space Station Program Office recently received the NASA Exceptional Service Medal for his contributions to the space station vehicle office and the success of the integration of the Russian segments into the International Space Station.

Reiley, the Vehicle Office Launch Package manager for the Russian segments of the station, was praised for his tireless work in the complex and critical engineering integration of Russian elements and his selfless devotion to the station program.

A veteran of the Space Station Freedom Program, he also was cited for his work to ensure that lessons learned in the Freedom effort were applied to the new baseline of the new station design.

JSC

People

Stone receives public service award

Doug Stone of Boeing Defense and Space Group's Missiles and Space Division recently was awarded the NASA Public Service medal for his contributions and technical leadership in the international Space Station Program Office.

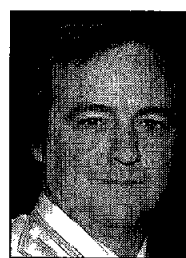
Stone, Boeing's vehicle manager and the NASA co-vehicle manager, was instrumental in Boeing's imple-

mentation of the Integrate Product Team approach to developing the station. He was honored for his ability to move quickly to the core of tough technical and operational issues and for his insight and judgment in resolving problems crucial to the success of the program.

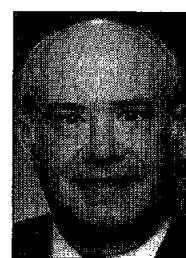
Heflin new deputy for EVA Integration

J. Milt Heflin has been assigned as deputy manager for EVA Integration in the JSC Projects Office.

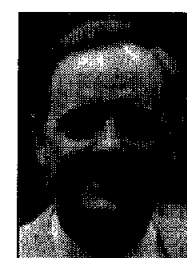
Heflin will be responsible for ensuring that all agency elements supporting development of EVA resources are focused as a team to meet the future space walk challenges of the space shuttle and



Reiley



Stone



Heflin



Norman

International Space Station Programs.

Heflin has 28 years of service with JSC, all with the Mission Operations Directorate. Since 1983, he has served as a flight director for 20 shuttle flights, acting in the lead capacity for seven of those flights, including the first Hubble Space Telescope servicing mission, STS-61.

Norman honored for Secretarial excellence

Diana Norman of the Space and Life Sciences Directorate recently received the Marilyn J. Bocking award for secretarial excellence. Norman was honored for her quality work, personal initiative and determination in dealing with scientists and co-workers.

Employees receive Space Act Awards

JSC Director Dr. Carolyn L. Huntoon will honor several JSC employees Thursday with Space Act Awards.

Space Act Awards recognize employees in a variety of aspects including NASA Tech Briefs, patent applications, Cosmic software applications and scientific or technical contributions in aeronautical and space activities.

Tech Briefs Awards recipients include Engineering Directorate's Scott Swan, David Altmer, Ernest Murry, Larry Li, Dennis Wells, S. Michael Goza, George Salazar, Dena Haynes, George Arndt and Thanh Nguyen; Information Systems Directorate's Mark Rorvig and Robert Shelton and Space and Life Sciences Directorate's Duane Pierson and Richard Sauer.

Patent application awards will be presented to Naveed Quraishi and Steven Koontz in Engineering; Lui Wang of ISD and Thomas Goodwin and Laurie Aten of Space and Life Sciences.

Software application honors include Royce Forman and James Smith of Engineering and Robert Anderson of ISD.

Special Space Act awards for scientific and technical contributions will be presented to Sharon Goza, S. Michael Goza, Yuan-Chyau Chang, Donald Curry and Christopher Hansen of Engineering. The Software of the Year JSC nominee is Robert Shelton of Engineering.

Lockheed Martin hosts chili cookoff

Lockheed Martin will host its first annual chili cookoff from 10 a.m.-5 p.m. May 6 at the Lockheed Bldg. located at 2400 NASA Road 1.

Anyone with a chili team may enter for a \$10 fee. Prizes for the best chili, showmanship and people's choice chili will be awarded. Entertainment will be provided by KKBQ 93Q Country.

For more information and entry forms call Sheila Mattulat at 333-6492 or Pam Lane at 333-7397.



ASCANS SURVIVE—From left to right: Jean-Loup Chretien of the Canadian Space Agency, Stephen Robinson and Dave Williams prepare beef jerky during land and water survival training at Pensacola Naval Air Station in Florida. The 1995 astronaut candidate class spent several days in the wilderness.

JSC Photo by Jack Jacob

Veterans to link up with Mir

(Continued from Page 1)

will be evaluated during the spacewalk. Throughout the mission, life and materials sciences experiments will be conducted in the Spacehab module mounted in *Atlantis*.

STS-79 also is a 10-day mission and will be carried out in two Spacehab pressurized modules joined together in *Atlantis*' payload bay. The modules also will house logistical equipment which will be transferred from the orbiter to Mir during the five days of docked operations. Another 1,300 pounds of water and 1,900 pounds of supplies will be transferred to the station.

Chilton, 40, has flown twice aboard *Endeavour*, STS-49 in 1992 and STS-59 in 1994.

Searfoss, 38, flew on the STS-58 life sciences mission of *Columbia* in 1993.

Godwin, 42, flew on *Atlantis*' STS-37 mission in 1991 and *Endeavour*'s STS-59 in 1994. She currently is deputy chief of the Astronaut Office.

Lucid, 52, has flown four times aboard the shuttle. She was a mission specialist on STS 51-G in 1985, STS-34 in 1989, STS-43 in 1991 and STS-58 in 1993.

Clifford, 42, has flown twice on the shuttle—aboard *Discovery* on

STS-53 in 1992 and on *Endeavour*'s STS-59 mission as a crewmate of Godwin's.

Sega, 42, flew on *Discovery*'s STS-60 mission in 1994, the first joint U.S./Russian space shuttle mission. He recently returned from Star City, Russia, where he was NASA manager of operational activities supporting training and preparation of astronauts at the Gagarin Cosmonaut Training Center.

Readdy, 43, has flown on two shuttle missions, STS-42 in 1992 and STS-51 in 1993—both aboard *Discovery*. He recently served a tour in Star City, Russia, as NASA manager of operational activities.

Wilcutt, 45, was pilot on *Endeavour*'s STS-68 mission in 1994.

Akers, 43, flew on STS-41 aboard *Discovery* in 1990 and STS-49 and STS-61 aboard *Endeavour*. He most recently has been the deputy director of the Mission Operations Directorate at JSC.

Apt, 45, has flown once on *Atlantis* and twice on *Endeavour*—STS-37 in 1991, STS-47 in 1992 and STS-59 in 1994.

Walz, 39, flew on *Discovery*'s STS-51 mission in 1993 and *Columbia*'s STS-65 mission in 1994.

Linenger, 40, flew on *Discovery*'s STS-64 mission in 1994.

Loral awarded SR&QA contract

By Jovan-Justine Love

JSC recently signed a new one-year multi-million dollar contract with Loral Space Information Systems to provide safety, reliability, and quality assurance support services for space shuttle and space station activities.

The cost-plus-award fee contract is a basic one-year contract, and carries with it one-year, three-year and five-year options. The basic period of performance is April 1, 1995, to March 31, 1996.

The dollar value for the basic contract is about \$26.3 million, and if all options are exercised, could total about \$279 million.

The majority of the work will be performed at JSC. However, some resident support is required at other locations which currently include White Sands Test Facility, Downey, Calif., and Kennedy Space Center.

Other bids for the contract were submitted by Calspan Corp., Service Contracts Division, and Martin-Marietta Services.

Texas schools earn NASA grants

NASA Administrator Daniel S. Goldin announced the selection of eight universities, including two in Texas, to receive three-year grants for educational outreach projects called Precollege Awards for Excellence in Mathematics, Science, Engineering, and Technology.

Each university will receive up to \$300,000 over the three years of the grant based on performance and availability of funds under the Precollege PACE/MSET program.

The grants are intended to help students who have historically been underrepresented in college-preparatory mathematics and science classes and who graduate from high school with the skills and interests

necessary to pursue science, engineering and related fields in college.

The two Texas schools are the University of Texas at El Paso and Jarvis Christian College of Hawkins. Other universities selected to receive grants include Lincoln University, Bennett College, Stillman College, Jackson State University, National Hispanic University and Fort Belknap College.

The program targets institutions of higher education, especially historically black colleges and universities and Hispanic serving institutions, as well as tribal colleges and other minority universities whose student enrollment of underrepresented minorities exceeds 50 percent.

Silver anniversary for Earth Day

(Continued from Page 1)

decisions. Employees have expanded recycling programs to include paper, cardboard, scrap metal, toner cartridges, precious metals from photoprocessing and aluminum cans.

Efforts to reduce the amount of hazardous waste generated at JSC are paying off, according to Jo Kines of the Environmental Services Office. The amount of hazardous waste generated from 1993 to 1994 was reduced by 17 percent. The energy program has resulted in a saving of 30 million kilowatt hours since 1991. This amounts to a reduction of 50 million pounds of carbon dioxide.

Plans are under way to develop a written Pollution Prevention Plan that will define goals and activities to reduce wastes and air emissions by another 40 to 50 percent by the year

2000. Most of the easiest actions to reduce waste already have been taken and it will take more effort to achieve future reductions. JSC has formed several working groups to further promote pollution prevention including the Photographic Waste Working Group and the Surface Coating Working Group. The Affirmative Procurement Working Group is developing a policy to comply with Executive Order 12873 which mandates that all federal agencies procure items with recycled content.

Household hazardous waste collection will take place from 9 a.m.-3 p.m. Saturday at the University of Houston-Clear Lake. Look in the weekend section of the paper for activities that are planned in Houston or call x33117. For answers to environmental questions call x33123.

Mir crew talks with young students

(Continued from Page 1)

Japanese quail egg experiment. The 48 quail eggs, which were part of the Progress payload, were fertilized shortly before launch. The eggs were transferred from Progress to the incubator. Each of the eggs will be fixed at various points in the flight to allow researchers to examine how the developmental process is affected in a weightlessness condition. None of the eggs for the Mir 18 experiments will be developed to full term and all the samples will return aboard *Atlantis*.

Last Friday, Dezhurov and Strekalov were involved in the same Fatigue and Sports Protocol activities that Thagard was involved with earlier in the week. The fatigue portion involves the

test subject using bungee cords to test the number of repetitions a crew member can perform or how long the crew member can hold the cords in one position before becoming tired. The sports protocol portion involves running on a treadmill at various speeds for aerobic conditioning.

Also last Friday, Thagard and Dezhurov were involved in pharmacokinetics experiments. These investigations are designed to evaluate how quickly medicine ingested by the crew is absorbed into the blood stream. For the experiment, they took acetaminophen (generic Tylenol) and Lactulose (a large sugar molecule that is not metabolized) and then at prescribed times took breath and saliva samples to see how soon before traces of

these substances appear in the sample. Understanding the speed with which medicine is absorbed by the body in space is important because researchers suspect that the ability of the body to use medications that are taken is altered by the physiological changes that occur in space flight.

The crew spoke to students with the Global Learning and Observations to Benefit the Environment project. GLOBE is an international partnership program that involves students and schools from different countries conducting scientific investigations and monitoring the Earth's environment. The students who talked to the Mir 18 crew were at the Mission Control Center-Moscow and at NASA Headquarters in Washington, D.C.



NASA Photo

The Mir 18 crew takes time out to talk with the press about its first month aboard the Russian Mir Space Station. From left to right: U.S. Astronaut and Cosmonaut Reseracher Norm Thagard, Commander Vladimir Dezhurov and Flight Engineer Gennady Strekalov.