



# Space News Roundup

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No. 15

## Tillet retires; White Sands gets Colonna

By Kari Fluegel

Personnel changes are under way in the manager's office of the White Sands Test Facility as Rob R. Tillet retires and Richard A. Colonna takes his place.

Tillet, WSTF manager since 1981, began his career in Houston in 1963 as acting chief of the Program Planning Branch in the Apollo Spacecraft Program Office. He was assigned to White Sands in 1964 and had since held several managerial positions including chief of the Propulsion Test Office, senior operation director for the Apollo Spacecraft Propulsion Systems and deputy chief of the Propulsion Engineering Office.

During his career, Tillet has received many honors, including the JSC Certificate of Commendation, the NASA Outstanding Leadership Medal and the NASA Exceptional Service Medal.

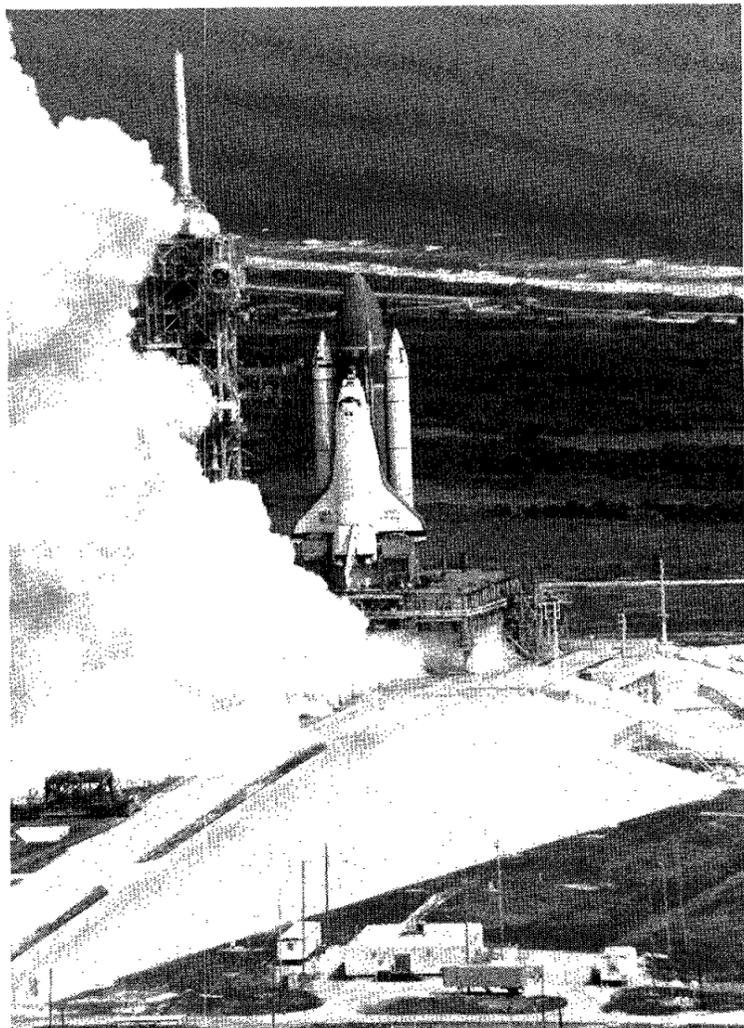
Colonna currently is the NASA Headquarters representative in Australia.

He began his career at Langley Research Center in 1958 and later joined the Space Task Group as a test engineer for the Mercury Program.

He has held a variety of technical and managerial positions at JSC including manager of the Program Operations Office and deputy manager of the Space Shuttle Projects Office. Prior to his Australian assignment, Colonna was manager of the Orbiter and GFE Projects Office.

Colonna's assignment at White Sands becomes effective June 1.

In the interim, Joseph Fries, deputy manager of WSTF, will serve as acting manager to give continuity during the transition period.



NASA Photo

The Space Shuttle *Endeavour* fires its three main engines for the first time Monday on Kennedy Space Center's Launch Pad 39B. The standard test-firing for a new orbiter looked good at first, but a detailed inspection turned up minor abnormalities that have spurred program officials to replace all three engines before the Syncom VI satellite retrieval and reboost mission.

## Crew says innovation will be flight's hallmark

By Kelly Humphries

Innovation will be one of the hallmarks of STS-49 and the first flight of *Endeavour*, crew members said Wednesday.

In addition to a new orbiter, the flight will feature a number of space shuttle firsts including the first triple space walk on a single mission, the first rendezvous with a satellite that has been moved after the shuttle's launch and the first use of lasers to track a rendezvous target.

"This will be a complex mission from the get-go," said Mission Specialist Bruce Melnick, who will operate *Endeavour's* robot arm dur-

ing both the Intelsat VI retrieval and the Assembly of Space Station by EVA Methods space walks.

Commander Dan Brandenstein said training for the mission has been extensive and that he and his crewmates have become a tightly knit group even though highly specialized training for the space walkers has kept them somewhat apart.

"We feel we are trained and ready to go for this mission," he said.

Mission Specialist Pierre Thuot, who will step onto the robot arm and be lifted out of the payload bay to grapple the stranded Intelsat some 200 nautical miles above the Earth,

No major delay expected

## *Endeavour's* main engines to be replaced

By James Hartsfield

Shuttle managers have decided to remove and replace *Endeavour's* three main engines before STS-49 lifts off in early May.

The decision followed a final review of information from *Endeavour's* flight readiness firing that found two irregularities in two engines.

Replacing the main engines adds, at most, one or two days of work to the launch preparations already under way, and a launch of STS-49 in the first week of May is still anticipated. An official date will be announced by managers following the April 21 flight readiness review.

The irregularities would not have been a safety concern had *Endeavour's* engine test been an actual launch, and it is believed all three engines would have performed well under such circumstances.

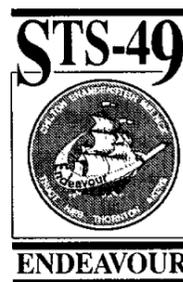
The decision to replace the engines was dictated by prudence and the fact that the work will have little impact on the launch preparation schedule, managers said.

The irregular items included a build up of pressure in the liquid oxygen preburner seen just after shutoff of engine number one. Such pressure build-ups have been seen before and usually occur only after an engine shut down at a sea-level altitude. However, the build up requires that the engine's oxidizer preburner face plate be inspected for any deflections it may have caused.

On engine number two, a slightly elevated frequency in the vibrations of ball bearings in the high pressure oxidizer turbopump indicated the possible beginnings of wear in the bearings. However, the indications of wear are not sufficiently great to cause a concern that the engine would not have operated well for the eight and half minutes required during launch.

Although there is an additional amount of work in replacing the engines, managers are optimistic the replacement may not impact the current target launch date.

Please see *ENDEAVOUR*, Page 4



Tillet



Colonna

## Atlantis crew tells supporters they, too, were part of first Mission to Planet Earth

Returning STS-45 crew members told friends, family and co-workers who welcomed them home at Ellington Field that they all should feel a part of the Mission to Planet Earth because their expertise and support were what made the mission a success.

"As I look around here, I see the faces of friends, co-workers, people who forced bits of data into our brains, those who looked over our shoulders, caught our mistakes and gently urged us to do the correct things," said Pilot Brian Duffy. "I'd like to personally thank you all."

JSC Acting Director Paul J. Weitz said the STS-45 crew is "going to set the standards for all

the flights to follow" in the 11-year Atmospheric Laboratory for Science and Applications study.

Commander Charlie Bolden told the people inside Hangar 990 that to him one of the most important things the crew did was to talk with and try to motivate young students back on the Earth. Bolden was especially complimentary of the job done by Duffy, who ran the crew's blue shift, and Mission Specialist Dave Leestma, who ran the red.

"These guys worked their little fannies off. Everybody did, but these two did in particular because they ran the orbiter, they helped with the payload, they just kept things going."

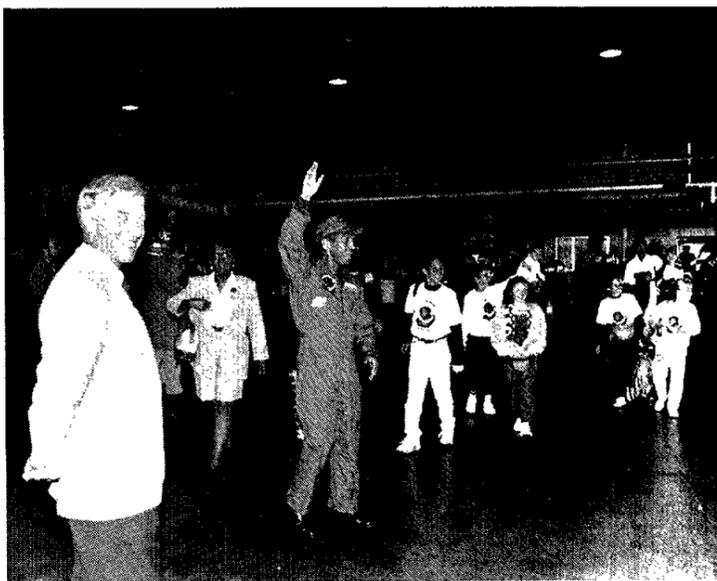
Leestma said he was pleased to have helped fly *Atlantis*.

"What a space ship!" he said. "We didn't have a single failure. Brian and I were bored to tears up there."

Payload Specialist Byron Lichtenberg said the training he received in Houston and the smooth interaction of the JSC team with the science team at Marshall Space Flight Center made the success of the mission possible.

"When you look over the Earth, it's beautiful and the atmosphere is very thin. And it's the one common bond that ties us all together as people," Lichtenberg said. "Hopefully we in some very small way have been able to advance the knowledge about our Earth, about our environment and about our atmosphere on which we all depend."

Payload Commander Kathy Sullivan said, "I could use every word in my vocabulary and I Please see *STS-45*, Page 4



JSC Photo by Robert Markowitz

JSC Acting Director Paul Weitz welcomes STS-45 Commander Charlie Bolden and his wife, Jackie, as the rest of the crew and their families file inside Ellington Field's Hangar 990. Overcast skies forced the April 2 homecoming ceremony indoors.

JSC

# Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m.-2 p.m. weekdays. For more information, call x35350 or x30990.

EAA NASA Night at Astroworld (6 p.m.-midnight, April 24): first 5,000, \$8.50; rest \$10.50. Limit eight per badged employee.

EAA Deep Sea Fishing (April 25, Galveston): \$45 to fish; \$20 to ride.

EAA Country Western Dance (7 p.m. April 18, Gilruth): \$12.50.

Shrine Circus (5:30 p.m. April 12, Astroarena): \$4.

Galveston Historical Home Tour (May 2, 3, 9, 10): \$11.

Sea World, \$18.90; Astroworld, \$16.95; Waterworld, \$9.50; and Six Flags, \$14.95. Movie discounts: General Cinema, \$4; AMC Theater, \$3.75; Loews Theater, \$4.

The following discount tickets will be available soon:

JSC Picnic, May 2.

JSC

# Gilruth Center News

**EAA badges** — Dependents and spouses may apply for photo identification badges from 6:30-9 p.m. Monday through Friday. Dependents must be between 16 and 23 years old.

**Weight Safety** — Required course for employees wishing to use the Gilruth weight room is offered from 8-9:30 p.m. April 14 and April 29. Cost is \$5.

**Defensive driving** — Course is offered from 8 a.m.-5 p.m. and April 18. and May 9. Cost is \$19.

**Aerobics** — High/low-impact classes meet from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is \$32.

**Exercise** - Low-impact classes meet from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is \$24.

**Aikido** — Martial arts class meets Tuesdays and Fridays. Cost is \$35 per month.

**Scuba** — Scuba classes will meet at 6:30 p.m. Tuesdays and Thursdays beginning April 9. Cost is \$190 plus \$20 for the open water dive trip. Personal equipment costs about \$90.

**Almost Anything Goes** — Six co-ed teams needed for JSC Picnic May 2. teams consist of three men and three women. Entry fee is \$10; deadline is April 24. Each participant receives a T-shirt.

**Intercenter Run** — Runners in the 10-kilometer or 2-mile races may turn in their times for the annual Intercenter Run at the Rec Center throughout April. Fall Intercenter Run T-shirts can be picked up in Rm. 146.

**Volleyball sign-ups** — Registration will be April 13 and 14.

**Basketball sign-ups** — Registration will be April 15 and 16.

**Country and western dance** — Six-week class will meet Fridays beginning April 17, or Mondays beginning April 27. Beginner classes meet from 7-8:30 p.m.; intermediate from 8:30-10 p.m. Cost is \$20 per couple.

**Fiction workshop** — Five-week class on fiction writing basics is offered from 6:30-9 p.m. Wednesdays beginning April 15. Cost is \$80.

**Fitness program** — Health Related Fitness Program includes medical examination screening, 12-week individually prescribed exercise program. Call Larry Wier, x30301.

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# Dates & Data

## Today

**Cafeteria menu** — Special: tuna and salmon croquette. Entrees: pork chop with yam rosette, Creole baked cod. Soup: seafood gumbo. Vegetables: Brussels sprouts, green beans, buttered corn, whipped potatoes.

## Saturday

**Star party** — The JSC Astronomical Society will sponsor a public star party from dusk until 10:30 p.m. April 11 at Challenger 7 park, if the sky is clear. Observations of the Moon, Jupiter and the Orion Nebula are planned. For more information, call Bill Williams, 339-1367.

**PSI meets** — The Clear Lake/NASA Area Chapter of Professional Secretaries International will present its third annual seminar "Making the Most of You" at 8 a.m. April 11 at San Jacinto College, South Campus Student Center, 13735 Beamer Rd. Cost for members is \$30; guests \$35. Frankie P. Swenholt, a human resources development specialist, will discuss self esteem. For more information, call Elaine Kemp at x30556 or Bernice Woolsey at 334-5474.

## Monday

**Cafeteria menu** — Special: Italian cutlet. Entrees: braised beef ribs, chicken a la king, enchiladas with chili. Soup: cream of broccoli. Vegetables: navy beans, Brussels sprouts, whipped potatoes.

## Tuesday

**STS-45 briefing** — The STS-45 crew will brief employees on the activities of the recent mission at 3 p.m. April 14 in Teague Auditorium. Supervisors are encouraged to allow as many employees as possible to attend.

**ISSA meets** — The Texas Gulf Coast Information System Security Association will meet at 11:15 a.m. April 14 at the Holiday Inn on NASA Road 1. Jack Garman, JSC Information Systems deputy director, will speak on the "Senior Management View of AIS Security." Cost is \$10 for members, \$12.50 for guests. For information or reservations, call Emily Lonsford, 333-09222.

**Cafeteria menu** — Special: stuffed cabbage. Entrees: turkey and dressing, round steak with hash browns. Soup: beef and barley. Vegetables: corn cobbette, okra and tomatoes, French beans.

## Wednesday

**NASA Honor Awards** — The NASA Honor Awards Ceremony will be at 2:30 p.m. April 15 in Teague Auditorium. A reception for award recipients and their guests will be held in the lobby following the ceremony. All employees are invited to attend as their workloads permit.

**Space Business Roundtable** — The Houston Space Business Roundtable will meet at 11:30 a.m. April 15 at the University of Houston Hilton, 4800 Calhoun. Francis Dibello, partner in charge of KPMG Peat Marwick's Space and High Technology Practice, will speak. Cost is \$18 for members, \$23 for guests; deadline is April 13. For more information, call Brian Barnett, 280-0460.

**Cafeteria menu** — Special: pepper steak. Entrees: catfish with hush puppies, roast pork with dressing. Soup: seafood gumbo. Vegetables: broccoli, macaroni and cheese, stewed tomatoes.

## Thursday

**Cafeteria menu** — Special: chicken fried steak. Entrees: beef tacos, bar-

becue ham steak, Hungarian goulash. Soup: turkey and vegetable. Vegetables: spinach, pinto beans, beets.

## April 17

**UNIX meeting** — The JSC UNIX Systems Administration Group will meet at 2 p.m. April 17 in Bldg. 12, Rm. 256. Dan Benbenek will discuss "Connecting to JESNET." For more information, call Mark Hutchison, x31141.

**Cafeteria menu** — Special: tuna and noodle casserole. Entrees: liver and onions, deviled crabs, roast beef with dressing. Soup: seafood gumbo. Vegetables: whipped potatoes, peas, cauliflower.

## April 20

**UHCL seminar** — The American Institute of Aeronautics and Astronautics will present a seminar on "Programs in the School of Natural and Applied Science at UH-Clear Lake" at 10:30 a.m. April 20 in the Gilruth Center. For reservations, call Frankie Happ at 333-6064.

## April 21

**Picnic committee meets** — The 1992 JSC Picnic Committee will meet at 4:30 p.m. April 21 at the Gilruth Center. For more information, call Ginger Gibson, x30596.

## April 22

**Earth Day Celebration** — JSC's Environmental Services Office is sponsoring a tree-planting ceremony at 9:30 a.m. at the JSC Child Care Center followed by an Earth Day Expo at the Gilruth Center. Local organizations and companies will provide information on environmental and ecological subjects. All civil service and contractor employees are welcome. For more information, call Jo Kines at x33218 or Ginger Gibson at x30596.

# Swap Shop

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

## Property

Sale: Bacliff, mobile home, 3-1, single wide, 100' x 125' lot, 20' x 30' warehouse, boat stor, 8' ceilings, fans, new C/AH, carpet, paint, partially wood fenced, double wide 6 car driveway, \$18.5K or M.H. \$6K. 339-1337.

Lease: LC, The Landing, 3-2-1, blinds, deck, hot tub, area pool and tennis, avail 6-1, \$750/mo. 332-3516.

Sale: Howard & Hwy 3, 4 BR, 1/2 acre crnr lot, FPL, new carpet, fenced. \$40K OBO. 481-3454.

Lease: Univ Trace, 1 BR, study, W/D, microwave, \$450/mo. 333-3925.

Rent: Barringer Way, 2-1, W/D conn, pool, stor area, no pets, ex cond, \$425/mo. 486-2048.

Sale: Shoreacres, 2 lots, \$3K/ea OBO for both. Frank, 471-2934.

Sale: Pipers Meadow, 3-2-2, new carpet & paint, fans, custom blinds, FPL, 1650 sq. ft. Mid \$70K. Mike, 282-3156 or 286-2387.

Sale: Bay Glen, 2-story, 3-2.5, lg lot, assum, \$155K. Richard, (409) 925-4463.

Sale: CL, 3-2-2, FPL, C/AH, gas grill, island kitchen, optional W/D & refrig, fenced, pets ok, \$875/mo. plus dep. 244-4157 or 529-6542.

Lease: NASA 1 & Egret Bay TH, 2-2.5-1, 2-story, FPL, gar w/opener, fenced patio, 1500 sq. ft. \$680/mo. 3-7008 or 452-3361.

Sale: Friendswood residential lot, CCISD, 1/3 acre, owner financing w/10% dn. 482-5226.

Sale: Meadowgreen, 3-2.5-2A, vinyl siding, lg yard, formals, built-ins, game room, low util. Tom, x30681 or 480-5309.

Sale: Countryside, 3-2.5-2A, 2-story, lg lot, cov deck, all BR up, int util, CCISD, \$66.9K, 554-7623.

Lease: NASA, 2-2.5 TH, gar, FPL, \$750/mo. Dave, x31856 or Eric, x38420.

Lease: Webster condo, 2 BR, W/D conn, carpet, \$475/mo. Dave, x38156 or Herb, x38161.

Rent: Condo, 1 BR, W/D, refrig, FPL, lg walk-in closet, pool. 554-2912.

Sale: '87 Oakridge Mobile Home, 16' x 80', 3-2, skirting, fenced, lg cov deck, \$25K. Greg, x31580 or 997-2250.

Sale: Meadowgreen, 3-2-2, 1930 sq. ft., cut-de-sac, new carpet/vinyl flooring, custom drapes/blinds, sec sys, lg country kitchen, \$93.5K. x30671 or 280-9868.

## Cars & Trucks

'86 BMW 325, 4 DR, auto, ABS brakes, sun roof, ex cond, \$7.5K. Bill, 992-5415.

'68 Mustang, 289, no rust, auto, factory A/C, AM/FM/cass, new trans, new int, tires, paint, radiator, brakes, fuel pump, rebuilt carb, \$3750 OBO. Kenny, x36566 or 777-1861.

'88 Chev Silverado PU, loaded, custom int/ext, low mi, runs well, \$9K OBO; '74 CJ5

jeep, no salt damage, clean, runs great, \$3.2K OBO. 489-7286.

'86 Ford Taurus, 3.0L, auto, w/OD, loaded, tint, tow bar, \$2.8K. 474-4742.

'82 BMW 320i, silver, 5-spd, alarm, AM/FM/cass, tint, no rust, ex mech cond, \$3.4K. John, x53092 or 488-2756.

'78 Corvette L82, 35K mi, ex cond, \$13K. Hank, 228-5381.

'90 Dodge Dakota convert, all pwr, alarm sys, rust protect, serv contr, 13K mi, ex cond, \$13.5K OBO. x49744 or 333-9742.

'91 Mitsubishi Gallant, auto, air, sunroof, all pwr, 25K mi, \$9.8K. Jerry, x33804 or 482-9277.

'78 Porsche 928, brwn w/leather int, auto, ex cond, 75K mi, \$8.9K. Bill, x39980.

'53 Chevy PU, orig, \$1.9K OBO. 534-6750.

'84 Cadillac Sedan DeVille, gray w/maroon velour int, 73K mi, good cond, \$2.9K. Don, x37319.

'71 VW Karman Ghia, needs minor repairs, ex cond, \$3.5K. 244-9702 or 486-5117.

'75 Buick LeSabre, custom, 4 DR, clean, ex running cond. 480-1074.

'91 Ford XLT, 150, ex cond, 24K mi, \$15K OBO, willing to trade for '89-'90 Astro van. 244-9671.

'89 Toyota Corolla SR5, loaded, 55K mi, ex cond, \$7.5K OBO. Joel, 992-4259.

'87 Mazda SE5 PU, A/C, P/S, stereo tape, cloth seat, new tires, ex cond, \$5250. David, x36090 or 488-7427.

'84 Mustang, \$1.5K OBO. 335-6710 or 482-6744.

Nomad travel trlr, 28' x 8', 2 DR refrig, gas stove, full sz bed, bath, \$4.9K. Bill, x39376 or 487-4537.

'19' Air Flow travel trlr, rebuilt, new tires, tandem axle, A/C, self-contain, ex cond, \$3.2K. Frank D., x33838 or 581-2846.

## Boats & Planes

'76 Catalina sailboat, 27', 3 sails, 1/B diesel, bimini, wheel, updated int, 2 batt, depth & knot meter, \$12.5K OBO. Ken, x30921 or 554-6504.

Glastron, 18.5' ski & fishing boat, tri-hull, 135hp Johnson O/B, walk thru windshield, SS prop, new tune up, recond galv drive-on trlr, new batt, non-marine radio, ex cond, \$3495. 488-7280.

Rent boat slip on CL w/roof & motorized boat hoist for pwr boats, \$125/mo. 474-4922.

'19' boat trlr, 2.5K lbs, \$450. 534-2179.

'17' Dolphin sloop w/main and jib sailboat, incl acces and trlr, ex cond, \$1650. 474-4136.

'17' Sovereign w/4hp Johnson motor & trlr, \$1250. Wayne, 282-3118.

Small O/B motor, 6hp, good cond., \$175. 485-7629.

'83 Renken 18 sailboat, roller furling jib, 4hp aux, galv trlr, sleeps 4, good cond, \$3.4K. 339-3476.

## Cycles

'86 Yamaha Radian 600, ex cond, \$1.3K. 326-1526.

'87 Suzuki, 4-wheeler, 125cc, good cond, \$1.5K. 280-9861.

'73 Honda CB500, 4, header, new batt, red, helmet, 12K orig mi., \$500 OBO. x34754 or 554-7116.

'84 Honda XL200R, trail bike, no lights or horn, good cond. \$500; '85 Kawasaki KDX200, ex cond, \$850. Frank, x39924, 992-3515.

'91 Suzuki Bandit, 400cc, low mi, garaged,

\$2.9K. 480-6713.

'85 Honda Shadow, water cooled, shaft drive, good cond, 6K mi, \$1250. Wayne, 282-3118.

## Audiovisual & Computers

Sharp RT310 stereo cass deck, auto reverse, record from tuner, phono, microphone, dubbing, ex cond. \$45. Jim O'Kane, x39229 or 482-7873.

'386SX 16MHz, 1M ram, 40M HD, mouse, 1.4 meg floppy, VGA card, \$650 OBO. Mike, x37525 or 996-0099.

Commodore Amiga 500 computer, 1084S color moni, 20 meg HD, 2nd FD, mem expansion to 1M, Mousemaster switch, 2 joy sticks, all SW & books, \$600; hardwood computer table, butcher block style, \$100. Steve, x37626.

Pilot headsets, Softcomm C-40, \$95; C-60 silver ed, \$145. Ed, x32586.

Atari Mega ST2, mono moni, 30M HD, 2M RAM, SW, \$500. Jeff, x35534.

IBM PS/2 model 50Z, 2M RAM, coprocessor, color VGA, 5-1/4" & 3-1/2" HD, mouse, \$850 OBO. John, x36814.

Panasonic RQ44A cass recorder, w/Panasonic AC adapter, \$15. 333-2830.

Sega Genesis game cartridges, \$20/ea OBO. Ed, x36615 or 286-3320.

'386SX, 1M RAM, 40M HD, SVGA, 2400 modem, 5-1/4" & 3-1/2" HD, \$750. Wayne, 282-3118.

IBM PC Jr, 640K, color, 2 joy sticks, Lotus 1-2-3, Dbase, \$150. Mike, 488-2157.

## Photographic

Minolta Maxxum 8000i, pearl wht finish, 80-200 lens, 5200i flash, access, \$800; Nikon FG body, ex cond, \$130. Jim, 480-9793.

## Musical Instruments

Panasonic 61-key kybd w/pwr supply, \$100. 480-6713.

Antique player piano, good cond, price neg, nothing over \$100. 482-8921 or 482-5704.

Orig Fender Jazz Bass, good cond, \$350; Collector's Mossman Acoustic guitar, dreadnought sz w/Herringbone inlay, ex cond, \$750. Mark Irving, x37353 or 286-3515.

Yamaha Electone organ model EL-90, 10 mo old, was \$20K, now \$12K. x33399 or 488-9719.

## Pets & Livestock

Cockapoo puppies, blk, males/\$50, females/\$75, avail 4-6. 996-0981.

AKC Lab pups, born 3-13-92, blk & yellow, sire & dam hunters, FTC bloodline, \$300. 244-9682.

AKC Chihuahua puppy, 3 mo old, shots, wormed, dipped, male, fawn & wht, \$200. x36461.

## Household

Queen sz waterbed, dark wood hdbd, 2 sheet sets, comliort, \$140. Bill, x38378 or 992-5415.

Early Amer qn sz sleeper sofa, fall colors, ex cond, \$150; 2 rust colored swivel rockers, good cond, \$30/ea or both \$50. Alex, 992-3876.

Desk, L-shaped, teak finish, ex cond, \$175. Kevin, x31592 or 480-6751.

Kitchen Aid mixer, access & instructions, was \$300, now \$125 OBO. 337-5712.

China buffet, country French, light finish,

orig glass, ex cond, \$300; rattan living rm set, sofa, swivel rocking chair, coffee table, open wall unit, ex cond, \$300. 992-5745.

King sz waterbed, hdbd, new heater, \$100. 488-0171.

King sz waterbed, mirrored canopy, hdbd, pedestal base, w/7-dwr stor, lights & shelving, ex cond, \$650. Larry, 474-9161.

Youth yellow/wht BR furn, 3-dwr dresser, 2-shelf corner table & desk/vanity w/chair, good cond, \$150. or \$60/ea. Kelley, x32631 or 326-3375.

Bassett sofa & recliner, slate blue w/oak trim, ex cond, \$300. 326-1267 or 997-9247.

King sz waterbed, solid oak, 2 yrs old, ex cond, built-in drawers, pad incl, \$250. 996-1614.

Kenmore heavy duty elec dryer, ex cond, \$30. 283-5514.

Mr. Maxwell heavy pine LR suite, couch, chair, rocker, coffee table & end table, \$1.2K. Roy, x39162 or 554-7385.

Sofa and love seat, burgundy, 2-1/2 yrs old, \$175. 938-7157.

## Wanted

Want guitar lessons. Can trade piano/art/photo or bowling lessons in exch, also like to learn tennis. 335-2824 or 280-9740.

Want rider(s) for carpool from Southwest Alief to CL/JSC. James, 333-6458.

Want used VCR & CD player, nonworking preferred, will pay up to \$25. Dale, x39441 or 286-4624.

Want roommate to share 2-2 condo, El Dorado Way, own room & bath, \$250/mo, 1/2 util. Kyle, 280-4422 or 286-3628.

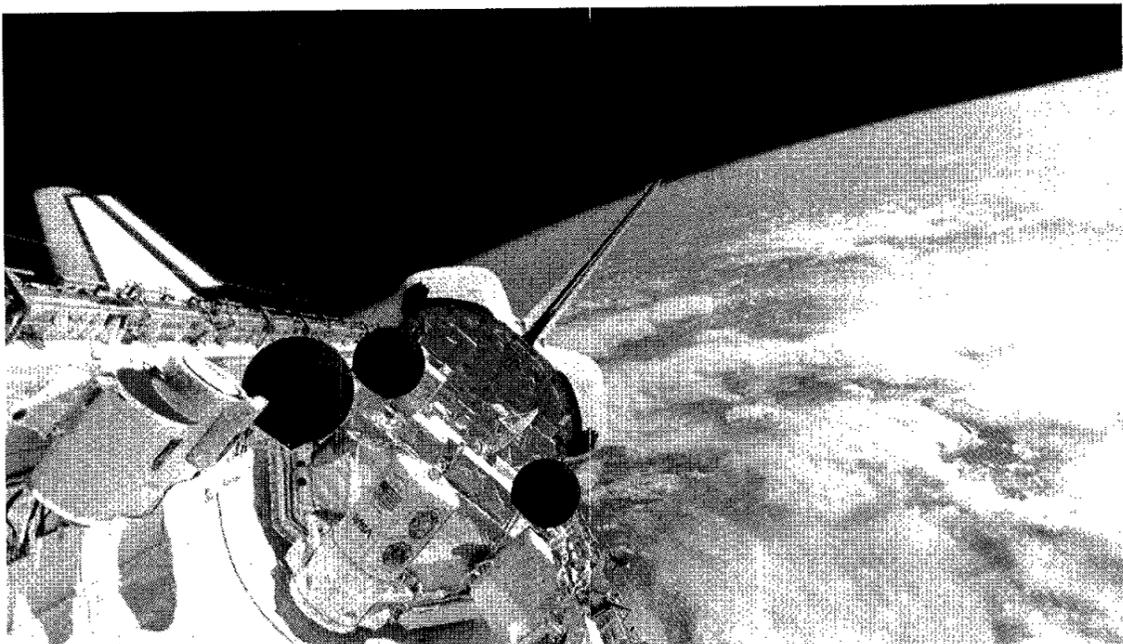
Want roommate to share furn home, 3-2-2 in Heritage Park, quite neighborhood, cleaning service provided, \$245/mo plus 1/3 util. Ted, x35814 or 992-3149.

Want entertainment center, 2 bay. Fred, 944-0493.

Want roommates to share home, 4-2.5-2, fenced, separate phones, pool table, close to NASA in Seabrook, \$300/mo. 474-4742.

Want tax deductible donations to a local Boy Scout troop, need old uniforms, camping gear, & trlr. x30852.

Want double box springs and frame. Susan, 3

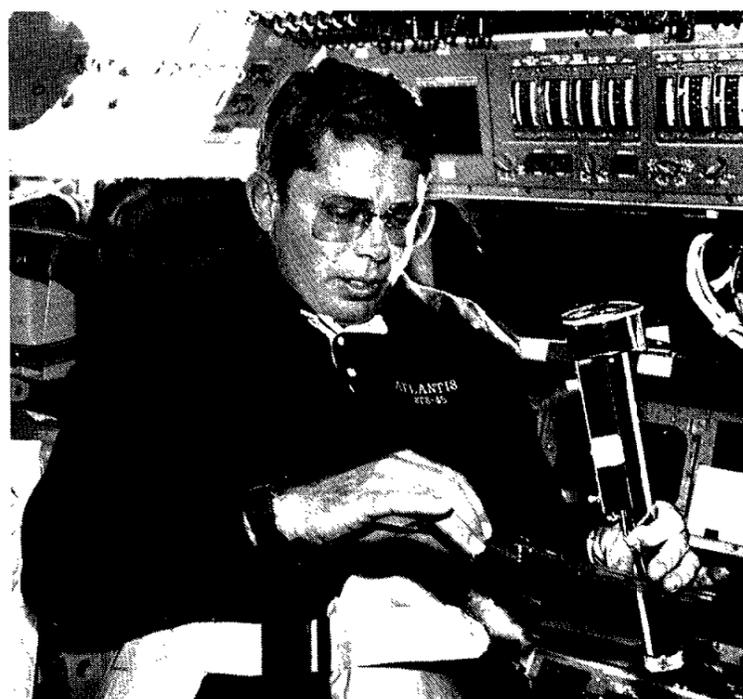
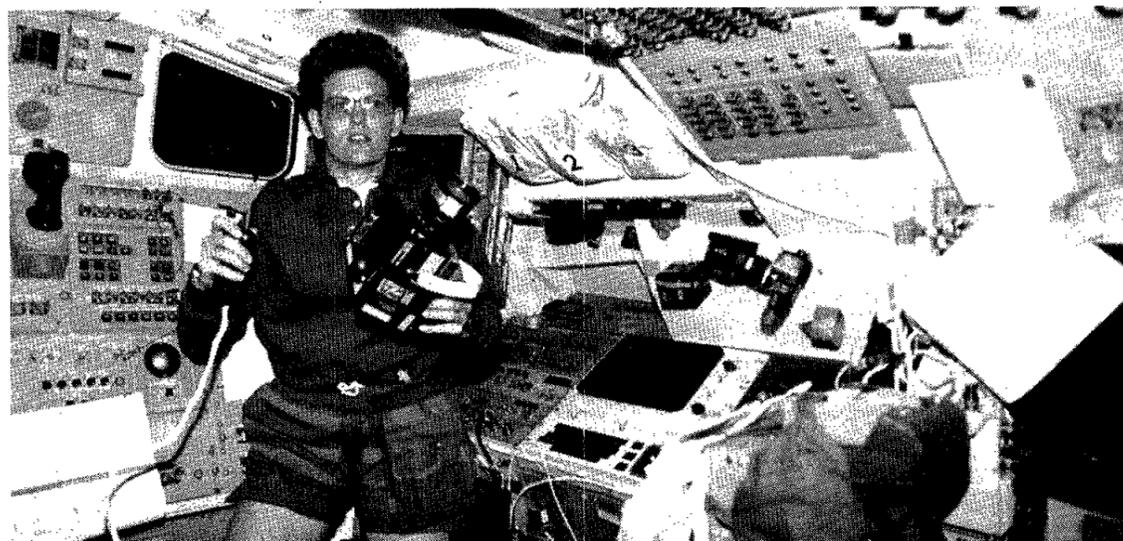


## Blazing trails above the air

**T**he STS-45 mission blazed new trails in atmospheric research, including some spectacular ones as seen from orbit. Counterclockwise from above right:

- 1) A study of the Aurora Australis turns up a spiraling effect in one display of the Southern Lights.
- 2) The crew prepares to train the Atmospheric Laboratory for Applications and Science payload bay instruments on the Earth below.
- 3) The STS-45 crew, from left: Mission Specialist Dave Leestma, Pilot Brian Duffy, Payload Commander Kathy Sullivan, Payload Specialist Byron Lichtenberg, Commander Charlie Bolden, Payload Specialist Dirk Frimout and Mission Specialist Mike Foale.
- 4) Frimout, left, and Foale prepare to ingest Florinef as part of a medical experiment to test the drug's ability to counteract the lightheadedness experienced by many astronauts upon their return to Earth's gravity.

- 5) Sullivan demonstrates 70 mm Hasselblad camera usage and Earth observations during a television downlink tour of in-flight operations.
- 6) Duffy floats in the foreground as Frimout works with the European Space Agency's spectrometer and Bolden retrieves an infrared filter pouch before taking photographs.
- 7) Leestma tests the atmosphere of *Atlantis'* flight deck using the microbial air sampler, an instrument designed to verify onboard air monitoring equipment and establish crew health and safety baseline levels.
- 8) Duffy uses an inflatable globe to demonstrate Earth observations for an educational program for which the crew shot scenes during the flight.
- 9) Lichtenberg talks into a cassette deck, recording observations following a science run on the Atmospheric Emissions Photometric Imaging experiment.



NASA Photos

# Air scrubber gets human test

## Seven men, seven women give new system 16-day workout

By Kelly Humphries

Seven men and seven women put their lives on hold for a week in the 11-foot chamber of JSC's Bldg. 7 over the past 16 days, testing a new air scrubber system for long-duration shuttle missions.

The test of the Regenerable Carbon Dioxide Removal System for Extended Duration Orbiters ended Thursday, and Test Director Jim Skipper said the new system appears to have worked fine. Detailed results of the study won't be complete for about two months.

The test was designed to determine whether the new system could handle the metabolic output of seven humans living and working in a closed environment about the size of the shuttle cabin for 16 days.

The first group—the women—entered the chamber on March 24 and got out March 29. The men went in about 30 minutes after the women came out, and stayed until noon Thursday.

"It's kind of like a camping trip," Skipper said. "They make their beds, fix their food and go through two exercise periods a day. We're putting an extra load on the system to thoroughly test its limits."

The test subjects kept themselves occupied by going through a computerized test of their cognitive powers during long-term confinement, and by watching television, listening to radios and CD players, and playing computer games.

This first test of the new air scrubber was done under the nor-

mal shuttle pressure of 14.7 pounds per square inch, Skipper said, but later tests will evaluate its performance at 10.2 psi, the pressure at which shuttle crews pre-breathe before space walks.

Fred Ouellette, subsystem manager for the Shuttle Cabin Air Revitalization System, said the new scrubber is to be used for the first time on STS-50, the U.S. Microgravity Laboratory-1 mission scheduled for launch in June.

Test subjects were Debra Snow, Carla Armstrong, Bridget Vanfossen, Heather Engel, Sheryl Bishop, Barbara Richardson, Barbara Farris, Gary James, Rod Aschcraft, Charles Sampong, Walter Frerck, Jim Skipper Jr., Tony Washington and Steve Ladner.

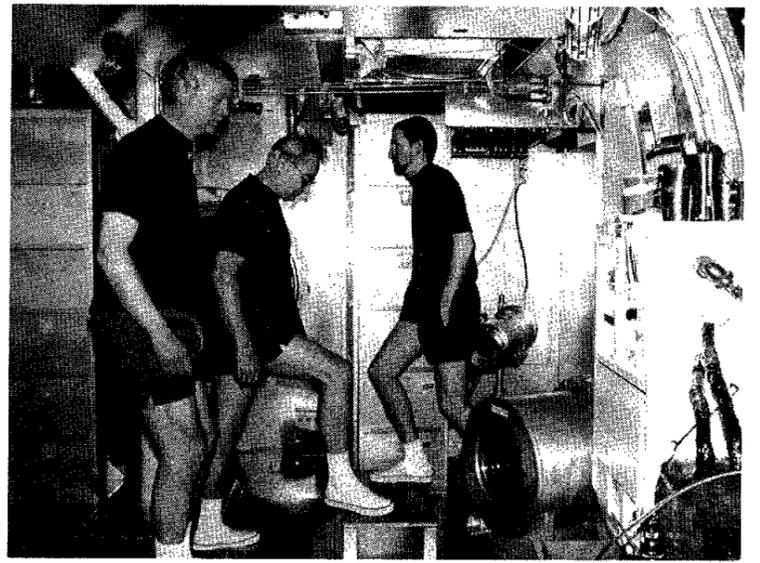


Photo by Charles Sampong

Walt Frerck, Rod Ashcraft and Jim Skipper Jr., from left, go through a step-up exercise period in this week's test of a new Regenerable Carbon Dioxide Removal System for Extended Duration Orbiters in Bldg. 7's 11-foot pressure chamber.

## Students to get taste of JSC life

Six teachers and 24 students from area high schools will get a taste of life at JSC during a day-long observance of National Management Experience Day.

Students from Clear Brook, Clear Creek, Dobie, Milby, Ball and B. T. Washington high schools will "shadow" designated managers throughout the afternoon to experience an authentic work situation.

"This program continues to be an exciting one for the students and faculty members," said Freda Marks, deputy director of Equal Opportunity Programs. "Again this year we have such notables as Gene Kranz, Don Puddy, Carolyn Huntoon, Harv Hartman and Grady McCright who have volunteered."

Students and faculty members are nominated by their principals. Students are judged on interpersonal skills, potential leadership and must plan to attend college.

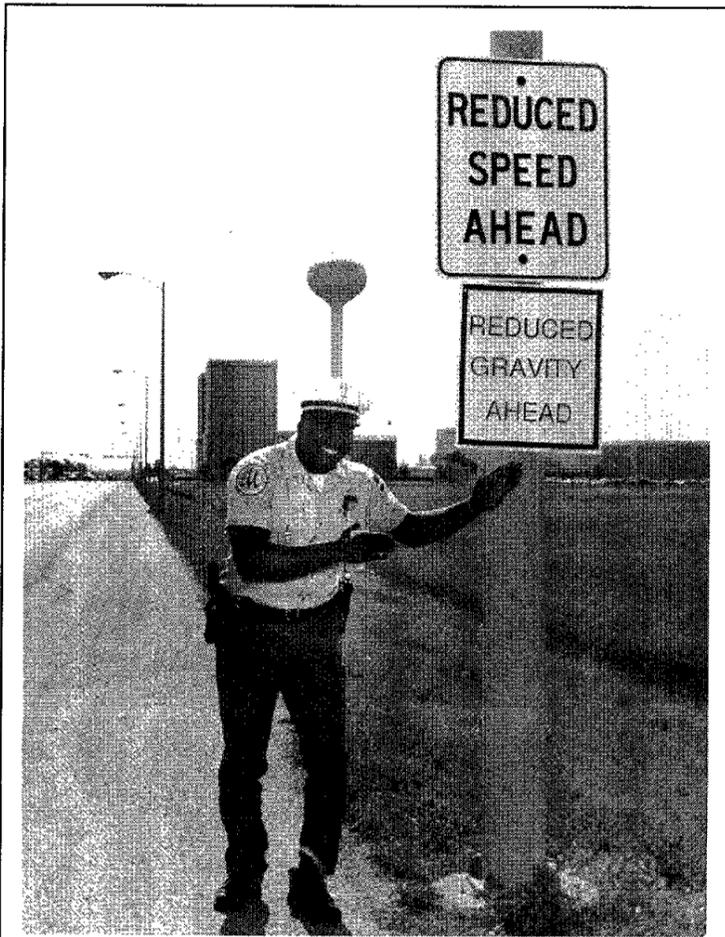
## Computer help will be just touch-tone away

Users of the Information Systems Directorate's Help Desk soon will be greeted by a new automated phone answering system when calling for assistance, ISD recently announced.

Callers will still be able to talk immediately with a Help Desk representative, but the new system allows users the option of forwarding their calls to the appropriate ISD support area with only a few button punches on their touch-tone telephones.

Upon calling the Help Desk at 483-4800, caller will hear a recorded to guide them through the system options. Monday through Friday from 7:30 a.m. to 5 p.m., option "0" transfers the call directly to Help Desk personnel, "1" will allow callers to recycle their logical unit (LU) number, and "2" will access a choice of ISD facilities such as the ISD Products Center, the ISD Training Facility and the User Manual Library with an additional touch.

After hours, weekends and holidays, dialing "0" after calling the Help Desk will allow callers to either access Network Control or leave a message for the help desk. The system will be in place for use beginning April 20.



JSC Photo by Robert Markowitz

**SIGN OF THE TIMES?—Jesse Lee Rollins Jr., for years one of JSC's most colorful security guards, gives one of his renowned hand signals near a sign put up as an April Fool's Day prank on Avenue B. The "Reduced Gravity Ahead" sign appeared the same week that Rollins was scheduled to disappear from JSC; his last day was April 3. Rollins has accepted a job as an operator in a chemical plant in LaPorte.**

## STS-45 crew thanks supporters

(Continued from Page 1)

wouldn't come near telling you how stupendous it is to look down on this planet and see all the scales and colors, shapes and forms our planet has, or the opportunity to be a part of the team."

Mission Specialist Mike Foale added his thanks to the ground support teams, and to his crewmates.

"This was my first flight and it was a very emotional experience for me," he said. "The beautiful thing about this flight is that it was with a team of

people who all got on really well."

Belgian Payload Specialist Dirk Frimout said he felt fortunate to have worked with the ATLAS-1 experiments on the ground and in orbit.

"I have worked with these experiments since a long time and it was unbelievable for me, fantastic that I could see these experiments work in space," he said. "We have really gathered a lot of good data and this all will contribute to better understanding of what is going on in our atmosphere."

# STS-49 will be 'complex mission from the get-go'

(Continued from Page 1)

will occur 40 minutes after main engine cutoff, as part of the very first on-orbit burn. Meanwhile, Intelsat will make four critical burns to bring it within range.

"The spot in the sky that we've decided to come together at is called the 'control box,'" Chilton said. The rest of the rendezvous will be similar to previous ones, with Brandenstein using radar data and visual cues to move within reach of the robot arm. Mission Specialist Kathy Thornton also will evaluate two laser range-finding devices.

During the final rendezvous phase,

Thuot and Mission Specialist Rick Hieb will be in the payload bay.

"When Dan is doing some of his burns to close in on the satellite, these guys are going to be outside hanging on and getting ready to capture the satellite," Chilton said.

The crew will be "hot miked" inside Endeavour's cabin and outside in the payload bay during the rendezvous, so people on the ground will be able to hear the interaction of the crew as they capture Intelsat.

"It's always a big relief after you've caught it," Brandenstein said. "This one is a little bit different in that on this one we have a human between

the vehicle and the satellite so it will probably be a little more tense."

Melnick said the robot arm operations will be extensive on all but the first and last days of the seven-day flight. Checkout will begin on the second day, and he, Mission Specialist Kathy Thornton and Chilton will check the dynamics of operating the arm in the payload bay, something they have been unable to simulate on Earth. On the third day, Thornton will put the arm over the side and use its camera to watch a simultaneous waste and supply water dump.

On the fourth day, "We take Pierre on an elevator ride with the RMS and

put him up into position, getting ready for him to attach the capture bar to the Intelsat," Melnick said.

After the satellite has been captured, mated to its perigee kick motor and released into space, the first pair of space walkers will return to Endeavour. The next day, Thornton and Mission Specialist Tom Akers will begin ASEM exercises.

Thornton said ASEM won't be a test of hardware for Space Station Freedom, but it will develop space walk techniques that will be used in constructing and maintaining it. ASEM will demonstrate the capability to: perform three separate space

walks, position and install a large mass analogous to some replacement units on station; use verbal guidance and helmet-mounted television cameras to help the arm operator with positioning both in the payload bay in the station assembly area over the shuttle's nose.

Akers said the EVA crew members also will test five hardware candidates for crew self rescue—a 20-foot "Astrorope," a 12-foot telescoping pole, a 12-foot inflatable pole, a 12-foot electrically powered bi-stem pole, and a redesigned gas-powered hand-held maneuvering unit.

## Seventeen Manned Flight Awareness winners see launch

Seventeen JSC civil service employees recently watched the Space Shuttle *Atlantis* roar off the launch pad as part of the Manned Flight Awareness Program.

The group watching the launch of STS-45 was the first to witness a lift-off since STS-26. Previous MFA groups were denied a similar opportunity by launch scrubs or postponements.

Honorees were Bob Abbott, Orbiter and GFE Projects Office; Cathy Boyd and Harry Black, Mission Operations Directorate; Jill Brigham, Flight Crew Operations Directorate; Linda Chauvin, New Initiatives Office; Ruth Elder and Roy Powell, Administration Directorate; Anne Fox, Safety, Reliability and Quality

Assurance; George Glenn and Joseph Prather, Engineering Directorate; Paul Graf, Space Shuttle Integration and Operations Office; LeRoy Luchini, White Sands Test Facility; Kam Lulla, Space and Life Sciences Directorate;

Sandra Parker, Center

Operations Direc-

torate; Doris

Roberts, Infor-

mation Systems

Directorate; Tom

Snedecor, Space

Shuttle Engineering

Integration Office; and

Glen Van Zandt, Human Re-

sources Office.  
The MFA award recognizes outstanding achievement in support of NASA's manned space flight efforts. The JSC group and about 225 honorees from other NASA centers.



## Cultural awareness tapes available

Employees interested in increasing their overall cultural awareness now have access to a library of educational videotapes from the Equal Opportunity Programs Office.

The library was created to provide a training alternative for those employees who would like to become more aware of workforce diversity and sensitized to the needs of a culturally diverse group.

The tapes, coupled with the "Workforce 2000: Managing Diversity Orientation Program" offered by the Human Resources Development Branch, are designed to raise cultural literacy within the JSC workplace.

A catalog is available detailing the list of videotapes available. For more information, contact the EOP Office at x34831.

## Space News Roundup

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Editor ..... Kelly Humphries  
Associate Editor ..... Kari Fluegel

## Endeavour readied

(Continued from Page 1)

Endeavour's engines will be removed this weekend and the new engines will be installed next week. Following that, much of the work required is identical to what would have been done to prepare the old engines for launch following a test firing.

The engines that will be installed in Endeavour were originally scheduled for installation in Atlantis later this spring.

A dress rehearsal countdown remains scheduled for April 17.