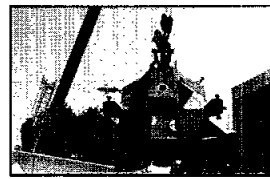




JSC's annual picnic made gave more than 3,000 employees a chance to relax and share in the fun. Photos on Page 3.



Artifacts have been removed from the Visitor's Center for refurbishment for Space Center Houston. Photo on Page 4.

# Space News Roundup

Vol. 31

May 15, 1992

No. 20

## Historic EVA grab rescues INTELSAT-VI

By Kari Fluegel

"Houston, I think we've got us a satellite."

No other words could have been more welcome than those from STS-49 Commander Dan Brandenstein when Mission Specialists Pierre Thuot, Rick Hieb and Tom Akers grabbed onto INTELSAT-VI Wednesday afternoon.

The trio made the careful, but dramatic grab of the satellite after two previous days of unsuccessful capture attempts.



*Endeavour* with its crew roared off the launch pad on its maiden voyage at 6:40 p.m. Central May 7, with the goal of strapping a new rocket motor on the stranded satellite and performing two EVA's to test space station assembly tasks.

The plan changed, however, when INTELSAT proved more sensitive to motion than expected.

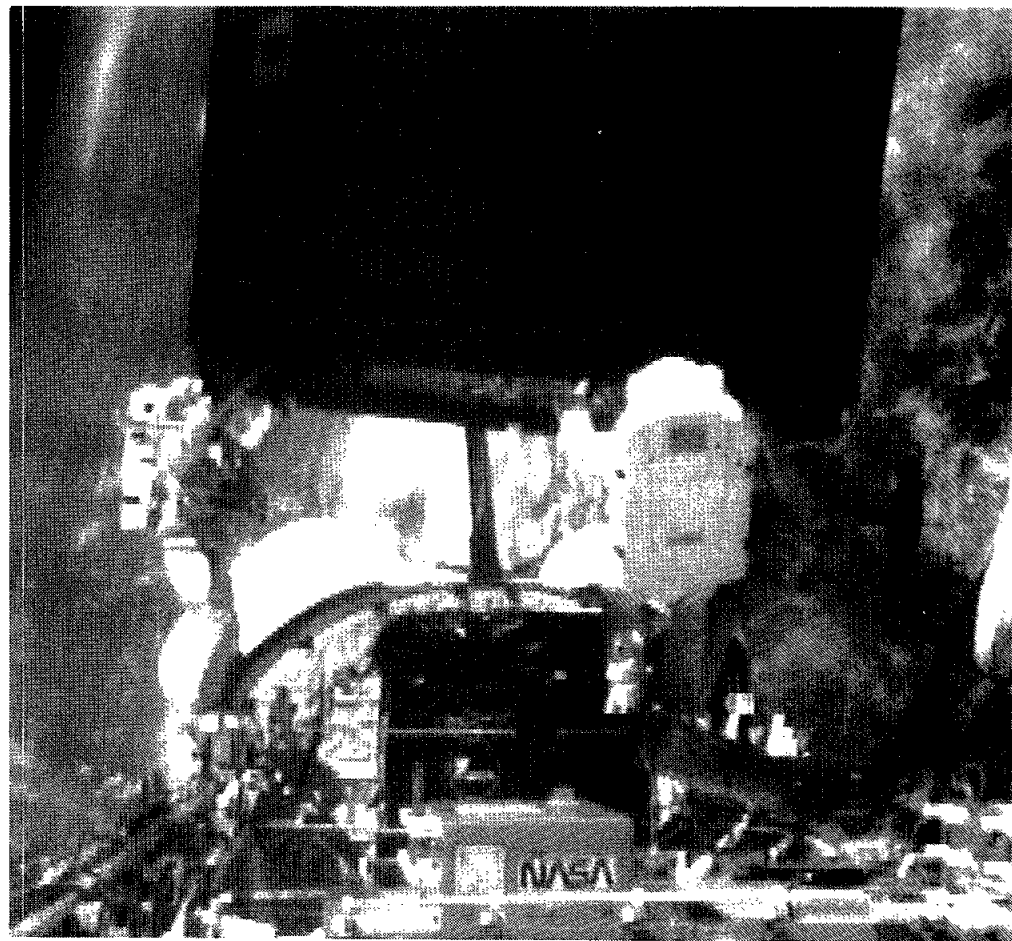
Thuot made the first attempt to attach the capture bar Sunday afternoon. That try, however, ended in putting the communications into a spinning wobble, an attitude that was too unstable for another capture attempt that day.

Brandenstein, assisted by Pilot Kevin Chilton, brought *Endeavour* into INTELSAT's proximity again Monday, giving Thuot and Hieb their second chance at attaching the capture bar. Mission Specialist Bruce Melnick positioned the robot arm carrying Thuot near the satellite for five attempts at attaching the bar, but the latch mechanism failed to grab onto the sensitive satellite.

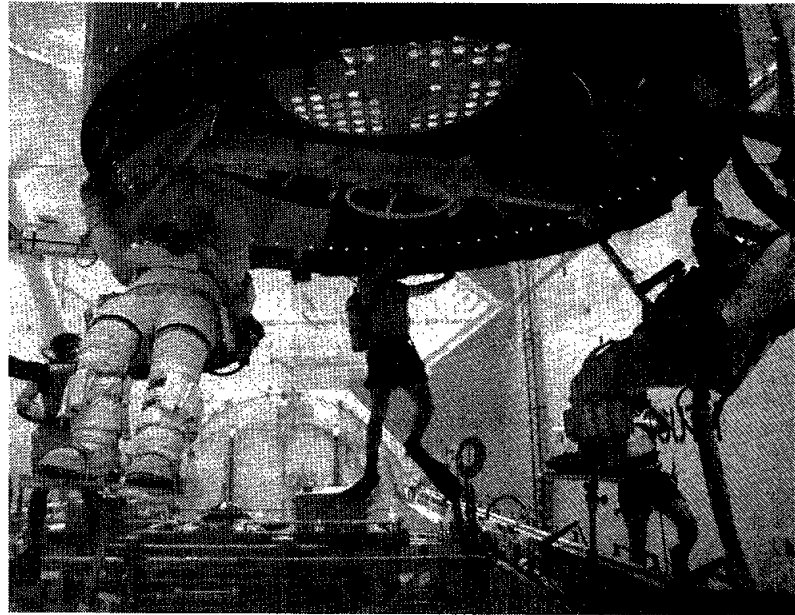
Controllers then opted to give the *Endeavour* crew a day off and give themselves additional time to develop alternate plans for the capture.

The plan was one for the history books — the first ever three-person EVA. A special team led by Flight Director Ron Dittmore spent Wednesday brainstorming, testing and putting to rest all issues for the historic space walk, and Astronauts Rich Clifford, Story Musgrave and Jim Voss spent several hours in the Weightless Environment Training facility testing

Please see **ENDEAVOUR**, Page 4



**Above: Mission Specialists Rick Hieb, left, and Pierre Thuot, right, install the capture bar on INTELSAT as Tom Akers, center, keeps a grip on the satellite. Right, Astronauts, from left to right, Story Musgrave and Rich Clifford practice the same procedure in the WETF.**



NASA Photos

## Public offers suggestions for STS-49

By Kari Fluegel

The task of capturing INTELSAT-VI had more than just NASA engineers brainstorming this week.

The American public got in on the game as phone calls and faxes arrived at JSC offering helpful suggestions for retrieving the slippery satellite.

Suggestions ranged from the silly to the sophisticated. Some took time to draw their plans, while others called just long enough to announce "use bungee cords" before hanging up.

Lassoing the satellite was the most frequent suggestion. Many assumed astronaut training based in Texas had to have included lessons in flinging a 1,500 foot rope in microgravity.

Another alternative commonly submitted was to use magnets to attach a grapple fixture or a tether line to the satellite, but one individual recommended the spacewalkers strap the magnets to their feet and raise their feet up to attract the errant INTELSAT.

One concerned and creative citizen suggested INTELSAT be captured with a large glove-like device carrying inflatable airbags inside. Once the glove was in position, the airbags would inflate and gently stop the rotation of the satellite. Yet another suggested the crew "squirt some glue" on the satellite so a grapple fixture could be applied.

Using fish hooks, nets, NASA-sized plungers, David Letterman's velcro suit and something called a "land harpoon" seemed like obvious solutions to some and one only slightly more practical solution was to have Rick Hieb hold Pierre Thuot above his head and slowly rotate Thuot carrying the capture bar to match the rotation of the spinning satellite.

## Goldin visits JSC, stresses need for focused priorities

By James Hartsfield

NASA Administrator Daniel Goldin said he was impressed and all ears during his first visit to JSC Monday, but stressed the need for NASA to focus its priorities and more coherently combine its unmanned and manned space programs.

Goldin has been on the road for much of the first weeks spent in his new position, touring NASA's field centers and meeting with center management at each.

"I had a very, very interesting

evening last night and all day today," Goldin told reporters. "I spent most of my career in the robotic field and coming to NASA-Johnson has allowed me to get a much better understanding of the life sciences and the human factors aspect of the total civil space program. I find the people here at Johnson to be energetic and visionary."

But Goldin said JSC is part of an agency-wide problem, part of a NASA that often lacks a combination of all the various efforts and

projects under way throughout it. NASA's unmanned and manned programs should be more of a complement to one another, he said.

"I think that JSC will be the center of excellence in the world in human space flight and space flight operations, but what I'd like to see is JSC integrated into the total NASA team," Goldin said. "We've got to have an understanding of where we're going in robotic spacecraft missions and space science missions and astrophysics missions,

and couple that into what we're doing here. That coupling is non-existent right now, because each center does their thing, and each associate administrator does their thing.

"If I could accomplish one major objective in my tenure as administrator that's to get this close coupling, because I think it will allow us to be much more efficient with the U.S. taxpayer's dollars and get results much sooner," he added.

The recent budget battle for

authorization was evidence that NASA must better outline its priorities, Goldin said.

"NASA has to learn to (set priorities) itself, and if NASA doesn't do it, the message is that Congress will do it for NASA," he said. "We have a lot of good people and we've got to get them to work as a team rather than saying, 'I want my project, I want my project.' That's a process that you can't change overnight ... I appreciate the

Please see **GOLDIN**, Page 4

## Agency announces plan for small planetary missions

NASA last week delivered a report to the U.S. Senate outlining a shift in emphasis towards smaller, lower cost and more frequent planetary missions.

The Small Planetary Mission Plan, which was requested by the Senate Committee on Appropriations, Subcommittee of VA, HUD and Independent Agencies chaired by Sen. Barbara Mikulski (D-Md.), describes two proposed missions that NASA has selected for preliminary studies leading to launches in 1996 and 1998.

The two missions — part of the *Discovery* program — are the Mars

Environmental Survey Pathfinder, planned for launch in 1996, and the Near Earth Asteroid Rendezvous, planned for a 1998 launch.

Phase A studies of the MESUR Pathfinder mission have been awarded to NASA's Jet Propulsion Laboratory, Pasadena, Calif. The Applied Physics Laboratory of Johns Hopkins University, Baltimore, Md., has been awarded Phase A studies of the NEAR mission.

"We're very excited about this plan," said Dr. Wesley T. Huntress, Jr., director of NASA's Solar System Exploration Division. "It will enable more opportunities for planetary

exploration without a large budget impact. It will allow us to more effectively take advantage of emerging technology and to quickly — and relatively cheaply — undertake new missions of discovery. A significant benefit will be increased student involvement because the shorter project time-frames fit nicely with most academic degree programs."

Small planetary missions, described in the report as the centerpiece of NASA's new planetary programs for the 1990's, are designed to proceed from definition to flight in less than three years, combining well-defined objectives, proven

instruments and flight systems, strict cost limits and acceptance of a greater level of risk.

The first *Discovery* mission, MESUR Pathfinder, is envisioned as a technical demonstration and validation flight for the MESUR program, scheduled to begin in 1999. The MESUR program calls for building a network of about 16 small automated surface stations widely scattered around Mars to study the planet's internal structure, meteorology and local surface properties.

A second concept under study, NEAR, would spend up to a year station-keeping with a near-Earth

asteroid. The NEAR spacecraft, probably carrying only three instruments, would assess the asteroid's mass, size, density and spin rate, map its surface topography and composition, determine its internal properties and study its interaction with the interplanetary environment.

Other candidate *Discovery* missions listed in the report include a Venus atmospheric probe, Earth-orbiting planetary telescopes, multiple asteroid/comet flybys and comet reconnaissance missions, a Mars orbiter to study the planet's upper atmosphere and missions to Mars' moons.

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.

Fiesta Texas Park, \$19.50 (adult) and \$13.55 (child, 4-11).

Sea World, \$18.90 (child free with paying adult) and \$13.55 (child, 3-11).

Astroworld, \$16.95 and \$14.95 (child under 54 inches), \$44.95 (season pass) and Waterworld, \$9.50.

Six Flags, \$16.95 (one-day) and \$22.95 (two-day).

Movie discounts: General Cinema, \$4; AMC Theater, \$3.75; Loews Theater, \$4.

Stamps: \$5.80 (Book of 20).

Upcoming EAA Events: River Raft Trip (June).

The JSC Employee Information Service has the latest word on what's happening at JSC. A recorded announcement, updated every day at 9 a.m., can be reached by calling **483-6765**.

JSC

# Gilruth Center News

**Sign up policy** — All classes and athletic activities are first come, first served. Sign up in person at the Gilruth Center and show a badge or EAA membership card. Classes tend to fill up four weeks in advance. For more information, call x30304.

**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. May 27. Cost is \$5.

**Defensive driving** — Course is offered from 8 a.m.-5 p.m. June 6. Cost is \$19.

**Country and Western Dance** — Course meets Mondays for six weeks beginning June 15. The beginner class meets from 7-8:30 p.m. The intermediate class follows from 8:30-10 p.m. Cost is \$20 per couple.

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

**Aikido** — Martial arts class meets twice weekly. Cost is \$35 per month.

**Tennis lessons** — Beginner lessons will be held Mondays beginning June 1. Cost is \$32. Beginner-advanced lessons will be held Wednesdays beginning June 3.

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

**Softball tournament** — A Men's Spring Fling Open "C" Softball Tournament will be played at the Gilruth May 16-17.

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 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

Lease: Univ Trace Condo, 1 bdrm, study, W/D, fans, alarm sys, cable hookup, pool, exerc rm, avail Aug 15. 488-2946.

Sale: Gulf Meadows, Fuqua, redecorated 3-2-2, den, new roof, reduced \$54.9K. 333-6127 or 337-3406.

Sale: Brazoria County, Alvin ISD, 1 acre + 3-2 dbl wide mobile home, lg trees, \$10K OBO. x34563.

Rent: Santa Fe, 12 x 50, 1 bdrm, furn mobil home, plus 1 detached rm on 1 acre, \$325/mo. Larry, x30428 or 326-1159.

Lease: Friendswood/Forest Bend, 3-2-2, formal, lg kitchen, refrig, FPL, new carpet, fenced, \$695/mo. 482-6609.

Lease: Clear Lake, Oakbrook West, 4-2-5-2, both formals, family rm w/FPL, fans, new AC, fenced, no pets, \$985/mo. 488-5210.

Lease: Univ Green, 3-2-2 townhome, 2 story, 2100 sq ft, new E/D/refrig, avail May 5, \$1,150/mo. x34181 or 286-6254.

Sale: Egret Bay Villa Condo, 2 bdrm, FHA approved, ex cond, waterfront community, \$52K. 333-9395.

Sale: Friendswood, 1/3 acre lot, owner finance w/10% dn, \$16K. 482-5226.

Sale: Colorado County, 12.95 acres w/30 ft travel trlr, wooded, deer, paved road. Charley, 941-3939.

Sale: Friendswood, residential lot, 1/3 acre w/city util/gas, \$34.9K. David, 283-5374 or Laurie, 483-3748.

Sale: Lake Livingston at Westwood Shores, 60 x 115 corner lot, near lake, util avail, country club w/golf, pools, \$9.5K OBO. x30032 or x31834.

Sale: Hilltop Lakes lot, 90 x 105, lg oak trees, ir strip, golf course, spring-fed lake, \$5K OBO. x34563.

Lease: League City, The Landing, private rm w/kitchen privileges. 554-4944.

Lease: Webster/Ellington, 2-1 condo, extras, \$450/mo. Dave, x38156 or Eric, x38420.

Rent: Galveston condo, furn, sleeps 6, pools, cable, wkend/wkly/daily rates, Magdi Yassa, 333-4760 or 486-0788.

Rent: Nassau Bay TH, 4-2-2, master dn, 2000 sq ft, lg gar, deck, remodeled, \$1290/mo or \$119.9K. Jerry, x38922 or 488-5307.

## Cars & Trucks

'78 Porsche 924, 64K, 4 spd, red w/blk int, ex cond, \$3,795K, x35180 or 326-3706.

'88 Toyota PU w/camper, 5 spd, low mi, silver, runs great, clean, extras. 335-2074 or 280-9740.

'89 Chevy PU for restoration or parts, '80 Chevy cargo van, good cond, '76 Datsun B210, 2 dr, sedan. 771-1012.

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

'89 LeBaron Coupe, blue, PS/AC, AM/FM/tape deck, 2.5 turbo, 5 spd, 67K mi, good cond, \$7K. Jim, x30079 or 286-0303.

'79 Datsun 280ZX, new paint, 92K mi, \$2.2K, x37892 or 333-9518.

'81 Honda Civic Sedan, drives well, AC, needs clutch, \$750 OBO. Mark, x35597 or 538-3001.

'82 Dodge Colt, 4 spd, 77K mi, silver w/tint window, \$1K. 996-8020.

'84 Nissan PU, auto, white, good work truck, \$1.3K OBO. Mike, x38169 or 482-8496.

'84 Audi 5000 Sedan, 4 dr, 45K mi, ex cond, \$5.5K OBO. 480-8721.

'87 BMW 325 es, all options, leather int, ex cond, new eng, 16K mi, new brakes/tires. 524-8908.

'80 Toyota Corolla, eng needs work, 2 new tires, \$475 OBO. Al, x31293 or 996-0054.

'74 Triumph Spitfire 1500 convertible, 77K mi, burgundy, runs well, \$2.8K. Will, x36050 or 334-4415.

'85 Chevy Cavalier, 4 dr, 4 cyl/2.0L, auto, new tires, brakes, 75K mi, ex cond, \$2.4K. 488-5522.

'86 Chrysler Laser, light blue, clean, \$3K. 471-4100.

'69 Buick Skylark, 4 dr, good cond, one owner, no wreck, \$1K. Guess, 649-5092.

'88 Ford Bronco 2, Eddie Bauer, auto, V6, loaded, lwo mi, \$7,950 OBO. 946-1428.

**Boats & Planes**

Sailboat, 14 ft, w/trlr, missing sail. Andy, x36622.

Sailboat, Dolphin 17 ft sloop w/main and jib, accessories, trlr, ex cond, \$1,650. 474-4136.

12 ft O'Brien Sensation Sailboard, complete rig, great beginners board, \$275. 480-9448 or 282-3215.

16' Ebbtide Walk Tru-Windshield, T&T, 90 H.P. Mercury, Sportsman galv trlr, SST & alum prop, gar kept. 332-9707.

Chris Craft Scropan, 19' cuddy, 305 hp, trlr, completely redone, ex cond, \$7K. 474-7828.

**Cycles**

'89 Kawasaki Ninja 600, runs and looks great, \$3K. Jeff, x39976 or 486-3946.

Schwinn boys blk mountain bike, \$150. 996-8020.

**Audiovisual & Computers**

Apple IIe, 128K RAM, 2 FDDD's, serial, parallel, I/O, mono monitor, modem, software, books. \$300. 484-4465.

Prototype boards, wirewrap boards & gun,

JSC

# Dates & Data

## Today

**AIAA meets** — The American Institute of Aeronautics and Astronautics will present a special International Space Year luncheon at 11 a.m. May 15 in the Gilruth Center. Aerospace author James Oberg will discuss the use of active technological intervention to help repair human damage to the environment. Call 333-6064, 283-4214, 283-6000 or 282-3160.

**UNIX meeting** — The JSC UNIX Systems Administration Group will meet at 2 p.m. May 15 in Bldg. 12, Rm. 256. Dan Benbenek will discuss "Connecting to JESNET." For more information, call Mark Hutchison, x31141.

**SimTec '92** — The 1992 International Simulation Technology Conference co-sponsored by JSC will be Nov. 4-6 at South Shore Harbour Convention Center. The deadline for papers on aerospace, life and physical sciences, and intelligent systems is May 15. Full papers should be sent to Technical Editor and SCS Representative Mary Lou Padgett, Auburn University, 1165 Owens Road, Auburn, Ala., 36830. For more information, call Padgett at 205-821-2472.

**Cafeteria menu** — Special: Salisbury steak. Entrees: fried shrimp, deviled crabs, ham steak. Soup: seafood gumbo. Vegetables: buttered carrots, green beans, June peas.

## Monday

**Cafeteria menu** — Special: hamburger steak. Entrees: beef Burgundy over noodles, fried chick-

en. Soup: cream of chicken. Vegetables: buttered corn, carrots, green beans.

## Tuesday

**Cafeteria menu** — Special: turkey and dressing. Entrees: baked meatloaf, liver and onions, barbecue spare ribs. Soup: beef noodles. Vegetables: Spanish rice, broccoli, buttered squash.

## Wednesday

**AIAA technical symposium** — The 17th annual Technical Symposium co-hosted by the Houston Section of the American Institute of Aeronautics and Astronautics and the University of Houston-Clear Lake's High Technologies Laboratory will be May 20 at the University of Houston-Clear Lake. For more information, call Bill Best at 283-0261.

**Houston Space Business Roundtable** — Sen. Chet Brooks will share his views on the role of Texas in America's space program at the Houston Space Business Roundtable at 11:30 a.m. May 20 at the University of Houston Hilton, 4800 Calhoun. Cost is \$18 for members and \$23 for non-members. For reservations, contact Brian Barnett at 280-0460.

**Astronomy seminar** — JSC Astronomy Seminar will be held from noon to 1 p.m. May 20 in Bldg. 31, Room 129. For more information, contact Al Jackson at 333-7679.

**Cafeteria menu** — Special: Spanish macaroni. Entrees: broiled fish, tamales with chili. Soup:

seafood gumbo. Vegetables: ranch beans, beets, parsley potatoes.

## Thursday

**Cafeteria menu** — Special: chicken fried steak. Entrees: beef pot roast, shrimp chop suey, pork chops. Soup: navy bean soup. Vegetables: carrots, cabbage, green beans.

## May 22

**Cafeteria menu** — Special: tuna and noodle casserole. Entrees: broiled codfish, fried shrimp, baked ham. Soup: seafood gumbo. Vegetables: corn, turnip greens, stewed tomatoes.

## May 27

**NMA meeting** — The National Management Association will meet at May 27 at the Gilruth Center Ballroom. Program for the meeting will be a panel discussion on "Cultural Diversity in the Workplace in the '90s." The social hour will begin at 5 p.m. with dinner following at 6 p.m. For more information, contact Carol Turner, x34182.

**BANN Meeting** — Dr. Joanne V. Lichten, nutritionist and author, will be the guest speaker at the Bay Area NAFE (National Association of Female Executives) Network meeting at 11:30 a.m. May 27 at South Shore Country Club. For more information, contact Sharon Westerman at 486-8927.

**Astronomy seminar** — JSC Astronomy Seminar will be held from noon to 1 p.m. May 27 in Bldg. 31, Room 129. For more information, contact Al Jackson at 333-7679.

1000's of ICs, components, power supplies, transformers, S-100 boards, freq meter. Gunter, x38106 or 485-8398.

Toshiba T1000SE laptop, 3 MB mem, 1.44 MB 3.5" floppy, 2400 baud internal modem, cordless mouse, no hard disk, \$700 OBO; 60 MB IBM ESDI hard drive/controller for IBM PS/2 model 50/50Z, \$200 OBO. David, x37056 or 486-9751.

AT&T 6300 plus w/out disk drives, color monitor, may need work, \$250 OBO. 283-4170.

Fortran 77+ compiler/debugger, \$149; FileMaker Pro database, \$99, Turbo Pascal system (compiler, Database & Numerical Methods Toolboxes, TurboTutor, \$99. Peter, x31624.

Mac SE 4/30 w/floppy, full pg monitor, Imagewriter II printer, travel bag, System 7.0, Microsoft Office, \$1,650 OBO. 480-5545.

## Photographic

Complete blk and white darkroom setup; Omega B66XL enlarger, trays, bottles, tongs, \$400. Betty, 470-2086.

## Pets & Livestock

1 year old mae basset, AKC, neutered, free to good home. 480-1248.

Rotweiler, male, AKC registered, extra lg, to breed for pick of litter. 484-0987.

Puppies, Australian shepherd, brwn/white or blk/white, 10 wks old, \$50/ea. Penny, 474-7137.

## Musical Instruments

Story and Clarke spinet piano, ex cond, \$700. 946-7587.

Yamaha, PSR-48 kybd, five octaves, good piano sound, 100 voices, 100 rhythms, \$300 OBO. Mike, x30758 or 480-5903.

Kimball Swinger 300 organ w/enter kit, background music, music chair and organ music incl. \$750. Bob, x31143 or 488-4415.

## Household

Walnut baby bed w/matt, \$110; off-white couch, \$250; oriental screen, \$150; lg batik picture, \$50; 3 sets of golf clubs, \$30/ea, painted milk pail, \$40; walnut tea cart, \$125. Brook, 781-3575.

Sofa, contemporary, off-white w/striped pastel colors, 3 yrs old, \$125 OBO. 474-3438.

Tan sofa and loveseat, coffee table and end table, sell separate or as set, make offer. Lea, 554-2364 or 333-7306.

Traditional dining table w/6 chairs, \$540; lighted/mirrored china cabinet, \$600; tv cabinet, \$220; french-style loveseat/sofa/chair, \$650, Yamaha piano contemporary w/bench, \$1.9K; framed batiks, all items less than 2 yrs old. Marli, 286-0301.

GE refrig, works well, \$200; Sears radial arm saw, \$375. 474-2857.

Simmons crib w/matt, maple head/foot board, full siz, Graco stroller. 286-3266.

2 oak bookcases, 72 x 36 x 14, antique, each shelf w/solid pulldown door, \$450 ea OBO. 488-5092.

Kitchen table, 36 x 60, solid wood, cargo brand furn, w/4 chairs w/cloth seats and back, ex cond, \$250. 480-5060.

Entertainment center, solid wood cabinet, w/dk cherry finish, 76 x 21 x 36, ex cond, was \$1.1K, now \$400 OBO. Kathy, 334-1445.

Westinghouse W/D, white, \$300; white pine casual end table, \$50, all negotiable. Gunter, x38106 or 485-8398.

Refrig, 22 cu ft, side-by-side, \$250; 21 cu ft freezer on top, \$150; both are gold, floral peach loveseat, ex cond, \$75. Andy, x32503 or 334-4988.

Lt wood dining rm set, table 40 x 60 w/insert leaf and pad, 4 chairs, 4 lg drawers and side panels, china closet w/2 glass doors, \$150; 3 matching pieces, 1 yr old sofa, loveseat and chair, all beige background w/peach and green floral pattern, \$150; 3 matching tables, dark wood, mirrored glass, inserts, brass trim, \$100; two Fisher stereo speakers, one needs new woofer, \$50. Marianne, x33706 or 554-5818.

Sofa and chaise lounge, charcoal gray, ex cond, \$1.2K. 795-5962.

Lg panel storage chest, 2 x 4, ex cond, \$99; small round kitchen table, solid wood, good cond, \$40. 332-1614.

## Wanted

Want working and nonworking appli, refrig, W/D, lawnmowers, air cond. 479-1608 or 476-0612.

Want twin sz bed w/bookcase/headboard. 480-3424.

Want female to share house in League City, Newport Subd, big yard, trees, private rm/bath, \$300 mo + 1/3 util. 283-1050 or 332-4177.

Want mature mother for inhouse daycare of a 1 yr old baby girl, prefer a Seabrook to Clear Lake location, will pay current day care fees. Claude, x37336 or 474-2700.

Want leaf shredder or chipper-shredder. Gay, x33092 or 488-2756.

Want children's puzzles for ages 2-3, 996-0788.

Want children's outdoor play equip, plastic slide, trampoline, etc. Terry, 280-8608.

Want used portable air compressor, 3 + hp, 12 + gallon tank, \$100 in good cond. 326-1427.

Want nonsmoking roommate to share 3-2 house in Friendswood, \$275 + 1/2 bills, must like cats. 482-3460.

Want nanny, christian home desires woman to care for 2 boys, ages 11 & 4, during summer, incl housekeeping duties, ref req. Wayne, 282-4349 or 480-3157.

## Miscellaneous

Blade runner in-line skates, men's size 6, \$30. Mary, 282-4248.

Indy 500 tickets, two seats in Southwest Vista off turn 1, \$90/ea, Memorial Day wknd. 326-5150.

Leather luggage, \$125; language translator, \$65; auto sec alarm sys, radar detector, \$55; 35mm camera w/flash unh & tripod, \$65; flight jacket, \$46. 488-2946.

Free mini spare tire, fits Ford 5 bolt lug pattern. 335-2074 or 280-9740.

Brass fire screen, 31" high, 40" wide, \$20. 480-3424.

Gas bbq/cart, \$20; woman's 3 spd, \$10; sewing mach, \$10; kitchen chairs, \$10/ea; king matt/box, \$75; 20 kw elec furnace, \$100; Agatha Chrities, .25 ea. 333-6127 or 337-3406.

Rowing machine from Oshmans, \$60. Dorothy, 482-1505.

New Tesoro Bandido metal detector, still in box, \$250. Ted, 482-8827.

Lawnmower, 3.5 hp Murrah Rearbagger, \$75. 280-0850.

Free outdated encyclopaedias, small freezer chest. 996-0788.

Moving boxes, various sz, folded flat & ready to go. Fifty cents ea, ex cond. 488-5092.

Ryobi radial arm saw, 8.25" w/carbide blade and cabinet stand, \$150. Howard, x37346.

Honda EX800 portable generator, \$300; Leer fiberglass top/siding front & side windows, fits Ford Ranger, \$375. 471-3772.

Solid oak dr table, \$150; cb radio, 1 yr old, \$55; Soma matt, \$300; lg dog kennel, \$60; corner unit bunk beds, \$250; 2 infant car seats, \$25/ea, baby clothes to 2T. 480-8721.

French doors for 5.5' entry, \$75. 480-9448 or 282-3215.

Solid wood bunk beds, \$50; Solomon ski boots, Fisher 205 ski's & poles, \$85; Dynafit boots, Atomic 180 skis & poles, \$75; Baichie boots, Authier 160 skis & poles, \$75. 996-9690.

Alum camper shell, blue, w/sliding and tinted windows, \$75. David, 283-5374 or Laurie, x33748.

High School version of "Where There's a Will, There's an A", \$50. Dale, x39441 or 286-4624.

Private comic book collection, over 2000 DC nd Marvel titles, priced at current Comic Value Monthly prices. Lee, x31839 or 474-3176.

Sears router w/table, one 30" high wooden bar stool w/back, \$15, white storm door, ex cond, metal shelves, 8 ft high, 3 ft wide,



# A Family Endeavour



Sunny skies and warm breezes made family fun the order of the day when JSC employees, contractors and their families recently gathered at the Gilruth Center for the JSC Picnic.

Almost 3,000 people attended the annual event, this year carrying the theme "A Family Endeavour" submitted by Richard Glover of the Training Division.

"Thanks to the weather and the committee we had one of the best picnics that JSC has ever had," said Melody Nation, picnic co-chairperson. "We are already hoping that the weather will cooperate for next year too."

Activities included plenty of food for all plus face painting, a petting zoo, horse shoe tournament, bingo, cloggers, a dunking tank and a golf driving range. Parachutists also dropped in, getting a bird's eye view of the activities.

To volunteer for the 1993 JSC Picnic Committee, contact Nation at x33152.



# Historic spacewalk recovers satellite

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the plan. Finally, at 6:59 p.m. Central, Hieb said "Let's do it," and the trio made the grab.

Flight controllers in Houston responded with applause and cheers when the slowly spinning satellite was stopped and safely clasped in the hands of the mission specialists.

After the initial catch, the trio delicately positioned the satellite so Hieb and Thuot could manually install the bar that would allow Melnick to grapple the satellite with the orbiter's robot arm and position it above the waiting rocket motor.

"You can see that great team work really pays off," Brandenstein said when the capture bar was installed at 8:33 p.m. Central.

The team then spent the next several hours strapping the new perigee kick motor on the satellite that has spent almost two years in a uselessly low orbit. The stack was redeployed at 11:53 p.m. Central Wednesday and the motor was successfully fired at 12:25

p.m. Central Thursday.

Wednesday's EVA was the third for Thuot and Hieb — a record for shuttle astronauts on a single mission — and the first for Akers. At presstime Thursday, however, Akers and Mission Specialist Kathy Thornton were preparing for the mission's fourth spacewalk, this time to test space station assembly techniques.

Originally the Assembly of Station by EVA Methods activities were scheduled for two separate trips into the payload bay. Due to the extra spacewalk for INTELSAT, however, the highest priority ASEM tasks were combined into Thursday's EVA.

Throughout the mission the new orbiter has performed very well with no major systems anomalies.

*Endeavour* completes its maiden voyage Saturday around 4 p.m. Central with a scheduled landing at Edwards.

The seven-member crew will return to Ellington Field Sunday at approximately 3 p.m. Welcoming ceremonies are open to the public.



**LIFT OFF** — Removing the spacecraft artifacts from the Visitor's Center was a delicate task last week. To remove the massive Lunar Module workers had to painstakingly place the module on rollers, remove a section of the wall, push it outside and disassemble it so cranes could lift the sections over the breezeway. The module will next be seen when Space Center Houston opens this fall.

## Badging policy changes for unofficial visitors

Bringing unofficial guests into an employee's workplace will get a little easier today when JSC's Security Division initiates a new badging policy for unofficial visitors.

The new policy puts Escort Required Visitor Badges in the hands of directorate or division offices. Any badged employee who wishes to escort personal visitors into non-public buildings or areas of JSC will be required to check out one of the new badges beginning today.

The badges will allow employees to escort their visitors into any JSC building, but prior approval is still required for visits to any areas outside the employee's own normal work area.

Special access areas which require approval from the support-

ing offices are the Space Station and Shuttle Mockup Area, Bldg. 9N; the Weightless Environment Training Facility, Bldg. 29; Space Station Control Center, Bldg. 30S; Mission Control Center, Bldg. 30; the MCC Viewing Room, Bldg. 30; and the Shuttle Simulator, Bldg. 5.

Employees also should remember that only United States citizens or resident alien card holders are allowed in non-public buildings and that unofficial visitors won't be allowed in the Mission Control Center during missions.

The policy change means that the badging offices in Bldgs. 100, 1 and 30 will no longer issue badges for unofficial visitors after May 15.

Questions should be directed to the Security Division, x34441.

## JSC fellowships granted to five

Five center employees recently were selected as the 1992 participants in the JSC Fellowship Program.

The program allows the participants to work on graduate degree programs for one year while on leave with pay.

This years recipients, their area of academic interest and university

are Steve Swanson, computer science, Texas A&M University; Bill Gerstenmaier, aeronautical engineering, Purdue University; Marc Reagan, astronautics and aeronautics, University of Colorado; Eric Dimpault-Darcy, chemical engineering, University of Houston; and Carlos Ortiz Longo, materials engineering, University of Houston.

## Employees receive Space Act Awards

More than 40 JSC employees recently were honored at special ceremonies for the Space Act Awards.

The awards, which carry with them various monetary stipends, are given periodically to patent applicants and Tech Brief authors.

During the most recent ceremony, the productivity improvement award went to Boyd E. Wells, Leroy D. Villarreal and Charles R. Mains for Unisys Consolidation.

Tech Brief Awards were presented to George F. Parma for Hammer-Head Friendly Truss Joint; Robert O. Shelton and James A. Villarreal, A Space-Time Neural Network Architecture; Lakshmi Putcha, Intranasal Scopalamine Drops; Richard L. Sauer, High Capacity Crystalline Iodine Bed for Water Iodination; Eric L. Christiansen, Mesh Double-Bumper Meteoroid/Debris Shield; and Eric L. Christiansen, Jeanne L. Crews and Burton G. Cour-Palais, Impact Hardened Thermal Protection System Tile.

Patent Application Awards went

to David A. Wolf, Horizontally Rotated Cell Culture System and A Culture Vessel with Large Perfusion Area to Volume Ratio; Steven L. Koontz, Gas Phase Chemical Kinetics Under Tropospheric Conditions without Wall Effects; Hatice S. Cullingford, Apparatus and Method for Cellulose Processing Using Microwave Pretreatment; Brian G. Morris, Method and Apparatus for Providing Real-Time Control of a Propellant Rocket Propulsion System; and Thomas A. Sullivan, Method for Producing Oxygen from Lunar Materials.

Awards for inventions and contributions went to Scott A. Swan, Bidirectional Drive and Brake Mechanism; Jose A. Marmolejo, Extravehicular Mobility Unit Helmet-Mounted Display; Kornell Nagy and Clarence J. Wesselski, Preloaded Latching Device; Wallace C. Tuthill Jr., High Velocity Gas Particulate; Horacio M. de la Fuente, Kornell Nagy and Clarence J. Wesselski, Energy Dissipator; Mark E. Rorvig, General Method of Pattern Classification Using the Two Domain

Theory; Richard D. Juday, Optical Joint-Correlation for Real-Time Tracking; Leo G. Monford Jr., Electromagnetic Attachment Mechanism; Sharon P. Goza, David L. Shores and Bradley N. Bell, Generation of Animation Sequences of Three-Dimensional Models; and Joseph E. Rogers, NASA Device Independent Graphics Library.

Suggestion Awards went to Lisa Buswell and Arturo Vasquez, Hardcopies of Thermochemical Test Area General Operating Procedures Manual/File Server Access to TTA GOPM; James P. Bagian, Removal of Personnel Foot Restraints; Bobby Bragg and Eric C. Darcy, Alternative Battery for the Extravehicular Mobility Unit Personal Life Support System; John E. Frederick Jr. and Lenox A. Brewer, Equipment Maintenance Cost Reduction; John Narog, Computer Assisted Cost Estimating; Lili C. Moore and Gerald J. Reuter, Solid Rocket Booster Rate Gyro Assembly Refurbishment; and Ronald J. Zaguli, Portable Foot Restraint Attachment Device.

## Savings Bond Campaign to focus on security

Building security while fulfilling dreams is the theme of JSC's annual U.S. Savings Bond Campaign starting this week.

"This campaign is particularly important to the well-being of the nation's economy and the personal savings will make a real impact on the fiscal stability of our nation," said JSC Acting Director Paul J. Weitz.

Weitz added that the center's goal for the 1992 campaign is 50 percent participation. Current participation is 40.9 percent and 333 more individuals must enroll to meet the 50 percent mark.

The variable rate on savings bonds is market based with an interest floor of 6 percent on bonds held five years or longer. Although interest rates on savings bonds are

5.58 percent, the 6 percent interest floor is still in effect.

Series EE Bonds are exempt from state and local income taxes and federal tax liability may be deferred until redemption or final maturity, whichever is first. Bonds redeemed for financing higher education are tax free.

For more information, contact payroll at x34832.

## New administrator visits JSC, discusses setting priorities

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frustration of the Congress in wanting to get NASA to step up to their priorities."

Goldin said he will be taking action to begin an effort for NASA to set better priorities agency-wide and find programs that benefit one another and work together whenever possible.

"NASA has a very broad range of things on their plate, and many of the programs we have don't have a very clearly stated tie to the other programs. And when one has a situation like that, sometimes you find

that maybe we don't have to do everything, and, if we can get more focused ... we can be much more efficient in our expenditures," he said. "So we have a process that we're about to set in place that is going to involve a good portion of the senior management and junior management at NASA that will take a good, hard look at this integration process and the focus process."

But, Goldin warned, the changes needed are cultural changes and they cannot be made rapidly. "Cultural changes don't take months; they take years," he said.



**Ukrainian President Leonid Makarovich Kravchuk, right, accepting a gift from Acting Center Director Paul J. Weitz, left, visited JSC last week and was given a personal tour of the space shuttle and space station mockups as well as an impromptu opportunity to speak with *Endeavour's* crew from Mission Control.**

## Space News Roundup

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