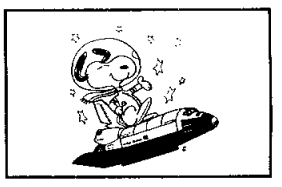
NASA
National Aeronautics and Space Administration
Lyndon B. Johnson Space Center
Houston, Texas

STS-42 up close

Crew photos focus on the activities of the International Microgravity Laboratory mission. See Page 3.



Snoopy lands again

Astronauts present Silver Snoopy awards for mission success and flight safety to 42 JSC employees. Story on Page 4.

Space News Roundup

Vol. 31 February 21, 1992 No. 8

ATLAS-1 to play large role in environmental study

Crew's observations will complement those of a dozen instruments

By Kelly Humphries

The prospect of looking out the windows for eight days is something almost any space shuttle crew would relish, and members of STS-45 crew said Friday they are no different.

The crew's 14 eyes will make their observations in concert with the dozen instruments of the Atmospheric Laboratory for Applications and Science (ATLAS-1) package in *Atlantis*' payload bay.

Commander Charlie Bolden, Pilot Brian Duffy, Mission Specialists Kathy Sullivan, Dave Leestma and Mike Foale, and Payload Specialists Byron Lichtenberg and Dirk Frimout are scheduled to lift off from Kennedy Space Center's Launch Pad 39A at 7:01 a.m. CST March 23. The flight will be the first of a series of annual missions to study the Earth, its atmosphere and their relationship with the Sun.

The mission will involve 180 maneuvers to point the shuttle's payload bay instrument package in the direction of the observations to be made, laser pulses that light up the night in an artificial aurora and long periods of daylight observations along a 57-degree inclination that will cover much of the surface of the Earth.

"We have a very big role, I believe, to play in understanding the global environment and all of its interactions with solar system forces," said Sullivan, the payload commander and a veteran of two previous shuttle missions.

Lead Flight Director Rob Kelso said he expects the flight to break new ground with detailed science investigations from the United States, Belgium, France, Germany, Switzerland and Japan.

"STS-45 is the first Spacelab flight that is dedicated to NASA's Mission to Planet Earth," he said. "It's also the first in a series of space flights with the ATLAS complement to do extensive study of the Earth's atmosphere and how it's affected by the Sun over the 11-year solar cycle.

"The objective is to measure the variation in the output of the Sun across the Earth's atmosphere. We're doing a lot of pointing with

Please see **STS-45**, Page 4

MOD makes key personnel assignments

The Mission Operations Directorate announced several key personnel changes prompted by recent activities within the Space Shuttle Program.

Tommy W. Holloway, formerly the assistant director for shuttle in MOD, will now assume the job of associate director of the Space Shuttle Program and will be responsible for integration and operations.

Holloway

Replacing Holloway in MOD as assistant director for shuttle is Brock R. (Randy) Stone. In his new capacity, Stone will have chief responsibility in MOD for planning, scheduling, and space shuttle flight operations support.

Alan L. (Lee) Briscoe will now fill the post of chief of the Flight Director Office, responsible for integrating all planning and directing space flight operations within MOD.

Holloway has held several key management positions in MOD including posts in the Flight Activities Branch, Flight Planning Branch, Flight Directors Office, and has served as assistant director for Space Shuttle Program. He will remain at JSC in his new capacity.

Stone also has had several key MOD positions including chief of the Flight Directors Office; acting deputy chief of the Flight Design and Dynamics Division; and has had several lead flight director assignments.

Briscoe has served as deputy manager of Space Shuttle Operations; ascent/entry flight director; and an Instrumentation and Communications Officer.

JSC photo by Jack Jacob

NEW ERA IN OPERATIONS — Mission Operations Director Gene Kranz dedicates the new Space Station Control Center during special ceremonies last week. JSC Director Aaron Cohen and Associate Administrator for Space Systems Development Arnold Aldrich joined in the commemoration of the new 102,000-square-foot facility adjacent to the Mission Control Center.

Engineers go back to school to relate work experiences

More than 225 engineers are traveling to about 75 schools this week to relate their work experiences as JSC's part of the NASA-wide observance of National Engineers Week.

More than 400 teachers representing 10 school districts responded to the invitation for speakers. The response was so great, in fact, that presentations may continue into the next month, said Norma Rhoads of the Public Services Branch.

This year's participation is significantly higher than 1991 when 150 engineers made presentations at 30 schools in 12 districts, Rhoads said.

Engineers making the presentations represent NASA, Barrios, Calspan, Lockheed, Loral, Krug Life Sciences, Link, Paramax/Unisys and Rockwell Shuttle Operations. NASA representatives include several astronauts and flight directors and Engineering Director Henry Pohl.

Rhoads said the presenters are trying to relate what the students are currently studying to their own personal work experience to demonstrate that classroom lessons are applicable in the real world.

Engineers Week is sponsored annually by several national engineering societies. Those organizations include the American Society of Mechanical Engineers, American Association of Engineering Societies, American Consulting

Please see **ENGINEERS**, Page 4

Cohen to be acting deputy administrator

NASA Administrator Richard H. Truly announced Thursday the appointment of JSC Director Aaron Cohen as acting deputy administrator.

"Aaron Cohen's appointment, which has been closely coordinated with the White House, is one that pleases me greatly," Truly said. "Aaron's long experience as a top-flight engineer and manager will assist me greatly in the day-to-day operations of the agency until my departure on April 1, 1992, and also provide for continuity in the transition period as the President nominates, and the Senate confirms, a new administrator and deputy administrator."

Cohen

Cohen has been JSC director since October 1986. He came to NASA in 1962 in the Apollo Spacecraft Program Office at what was then the Manned Spacecraft Center. He served in various capacities at the center before being named center director.

"I am honored today to have been asked by the administrator to serve as acting deputy administrator of the National Aeronautics and Space Administration," Cohen said.

"Over the last 30 years, it has been my privilege to have participated in our nation's most spectacular successes in manned space flight," he added. "It has also been a very humbling experience to have been involved in its most tragic failures. Through good times and bad, there have been valuable lessons learned. These lessons have helped to prepare me for the job at hand.

"I did not seek this task, but having been asked to do it, I accept the challenge with enthusiasm and commitment. It has been my privilege and pleasure to have worked with and for Richard Truly. I look forward to working closely with him in Washington during the remainder of his tenure and in a transitional capacity with the next administrator if need be."

Please see **COHEN**, Page 4

Eagle award given to JSC engineer

Calvin H. Seaman, an engineer in the Crew and Thermal Systems Division, was named the 1992 recipient of the National Space Club's Eagle Manned Mission Success Award.

Seaman, who is the Engineering Directorate's representative for extravehicular activity mission integration, is receiving the award for his "excellence and thoroughness in developing, verifying and documenting Shuttle EVA mission requirements," according to the citation.

The success of Seaman's efforts were most recently exemplified by the unscheduled space walk during the deployment of the Gamma Ray Observatory high gain antenna during STS-37. Astronauts Jerry Ross and Jay Apt left the crew compartment of *Atlantis* to shake loose the stuck antenna.

The EVA's success "directly resulted from (Seaman's) diligence in conducting proper pre-flight interface tests," the citation says.

According to the nomination, Seaman established a requirement to fit check the EVA tools, and, as a result of this requirement a discrepancy was found with the 7/16-inch tool that resulted in the re-manufacturing of several GRO bolts prior to flight. He also was instrumental in establishing the procedures used by Ross and Apt during the EVA.

The Eagle Manned Mission Success Award has been presented 10 times since 1985. JSC teams or individuals have received it twice prior to Seaman's award. It is designed to award individuals at "the working level."

Seaman will be honored April 10 at the annual Goddard Memorial Dinner in Washington, D.C. Besides a plaque, he will receive a cash stipend.

The award was established through a gift to the National Space Club Scientific and Educational Foundation from the International Technology Underwriters.

JSC Photo by Mark Sowa

Pat Scott, chairperson of the 1992 Eagle Manned Mission Success Award, congratulates Joe Seaman for receiving the National Space Club honor.

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:

EAA Houston Livestock Show & Rodeo (Feb. 21-March 1, Astrodome): $9.

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

Metro bus tickets and passes: 7 percent off.

The following discount tickets will be available soon:

EAA Walt Disney's Ducktales, March 24-29.

EAA JSC Picnic, May 2.

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. The next class will be from 8-9:30 p.m. March 18 and March 31. Cost is $5.

Defensive driving — Course is offered from 8 a.m.-5 p.m. March 21 and April 18. Cost is $19.

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

Exercise — Low-impact class meets from 5:15-6:15 p.m. Mondays and Wednesdays. Cost is $24.

Ballroom dance — Eight weeks of professional instruction in beginning, intermediate and advanced ballroom dancing. Beginning and advanced classes meet from 7-8:15 p.m. Thursdays beginning March 5. Intermediate class meets from 8:15-9:30 p.m. Thursdays. Cost is $60 per couple.

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

Scuba — Scuba lessons will be offered Tuesdays and Thursdays beginning at 6:30 p.m. April 9. Cost is $190 for the course, plus $20 for the open water dive trip. Needed equipment costs about $90.

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

JSC

Dates & Data

Today

Black history — The 1992 JSC Black History Committee will present the Ensemble Theatre production of the off-Broadway play "Do Lord Remember Me" at 11:30 a.m. in Teague Auditorium.

JAS meets — The JSC Astronomical Society will meet at 7:30 p.m. Feb. 21 at the new Lunar & Planetary Institute on Bay Area Blvd. LPI Director David Black will speak on "Completing the Copernican Revolution." For more information, call Chuck Shaw at x35416.

HSS meets — The Houston Space Society will meet at 7:30 p.m. Feb. 21 in Rice University's Space Sciences Bldg., Rm. 106. Dr. David Talent, principal scientist for Lockheed Engineering Services, will discuss "Garbage in Orbit." For more information, call Clifford Carley, 923-7221.

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.

Saturday

Lunar New Year — The NASA/JSC Asian Pacific American Program will host a Lunar New Year celebration at 6 p.m. Feb. 22 at the Gilruth Center. The festivities will include a social hour, dinner and dancing. Entertainment will be provided by White Shadow, playing mixed popular music. For more information, call Thuy Mai at 282-3574.

Monday

Cafeteria menu — Special: breaded cutlet. Entrees: beef chop suey, Polish sausage with potato salad. Soup: French onion. Vegetables: okra and tomatoes, green peas.

Tuesday

Cafeteria menu — Special: fried chicken. Entrees: Salisbury steak, shrimp Creole. Soup: split pea. Vegetables: mixed vegetables, beets, whipped potatoes.

Wednesday

AIAA lunch and learn — The AIAA Structures & Dynamics Technical Committee will present a lunch and learn meeting on "The Orbiter's EDO Trash Compactor" at 11:30 a.m. Feb. 26 in Lockheed Plaza 1 Rm. 12C. Fred Abolfathi of Lockheed will speak. For more information, call Tim Powell, 333-7311.

NMA meets — The JSC chapter of the National Management Association will meet at 5 p.m. Feb. 26 in the Gilruth Center. Debbi Brown, project manager for Space Center Houston, will speak. Reservations are due by noon Feb. 19. For more information, call Valerie Burnham at x34210.

Cafeteria menu — Special: stuffed bell pepper. Entrees: fried catfish with hush puppies, braised beef rib, barbecue plate, wieners and beans, shrimp salad. Soup: seafood gumbo. Vegetables: corn O'Brian, rice, Italian green beans.

Thursday

AIAA dinner — The American Institute of Aeronautics and Astronautics will host the Houston Section 30th Anniversary Dinner at 5 p.m. Feb. 27 in the Gilruth Center ballroom. Cost is $15 for members and spouses, $18 for non members and $12 for students and young members. For more information, call 333-6064, 283-4214, 283-6000 or 282-3160.

NCMA meets — The National Contract Management Association Space City-Houston Chapter will meet at 11:30 a.m. Feb. 27 in the Gilruth Center. Tony Macina, general manager of IBM Federal Sector Division-Houston, will discuss how the data processing industry is reacting to the downturn in fedeal spending. Cost is $4 for members, $7.50 for non members; reservations are due Feb. 21. For more information, call John Trahan, x30543, or Theresa Borrego, 282-6679.

AFCEA meets — The Armed Forces Communications and Electronics Association will meet at 11:30 a.m. Feb. 27 at the Lakewood yacht Club on NASA Road 1. Cdr. Gerry Hunt, Col. Donna Mooney and Cdr. Peter Gladziejewski will discuss the "Future of NATO." Cost is $12 for members, $14 for non members. Reservations are due by noon Feb. 25. for more information, call Veronica Mullins at 283-7342.

Cafeteria menu — Special: barbecue smoked link. Entrees: beef Stroganoff, turkey and dressing. Soup: chicken noodle. Vegetables: Lima beans, buttered squash, Spanish rice.

Feb. 28

Black history — The 1992 JSC Black History Committee will present former Philadelphia Mayor Wilson Goode as the keynote speaker of the formal Black History Month program at 1:30 p.m. Feb. 28 in Teague Auditorium.

Cafeteria menu — Special: meat sauce and spaghetti. Entrees: baked scrod, liver and onions, fried shrimp. Soup: seafood gumbo. Vegetables: green beans, buttered broccoli, whipped potatoes.

Swap Shop

Property

Sale: Countryside, 3-2.5-2A, two story, corner lot, cov deck, int util room, $66.9K. 554-7623.

Sale: Friendswood, 2 lots, 0.95 acre, all util, $30K/$35K or $55K/both. Ron, 996-9724.

Sale: Shoreacres, 2 lots, $3.2K/ea or reduced for both. Frank, x34185 or 471-2934.

Lease: Webster/Ellington condo, 2 BR, $475/mo. Dave, x38156 or Eric, x38420.

Lease: Tranquility Lake condo, 1 BR, 700 sq ft, microwave, W/D, fans, FPL, boat ramp. 332-3798.

Lease: Seabrook, Seascape I, 4-2, 1.5 story, fenced. 474-2052.

Sale: Countryside, 4-2-2, cul-de-sac, ex cond. Dennis, x39012 or 992-5285.

Sale/Lease: Baywind II condo, 2-2-2, split design, fans, dishwasher, appli, W/D, FPL, $38K/ $500/mo; sale: Baywind I condo, 1-1-1, fans, dishwasher, range, refrig w/icemaker, $28K. Bill, x39376 or 487-4537.

Sale: Baywind II, 2-2-2, $39.5K; University Trace, 1-1-2, fans, appli, W/D, FPL, $29.5K. Gilbert, 333-4306.

Sale: Heritage Park, 3-2-2, new kitchen tile, alarm, fans, blinds, cul-de-sac, $73.5K. 283-4491 or 996-9396.

Sale: Large 1 BR condo, appli, fans, new carpet and linoleum, vert drapes, FPL, sec sys, equity $3.2K, assum loan, $30.3K. 892-4920 or 280-8196.

Rent: Arkansas Lake cabin, furnished w/antiques, screened porch, accom 8, $250/wkly, $50/dly. 338-2517.

Rent: Unfurn rooms, new 2 story, 4-2.5-2, fenced, separate phones, $300/mo. 474-4742.

Rent: CLC, Oakbrook West, 3-2-2D, 1.8K sq ft, lg patio/pool, fans, indoor laundry rm, $1K/mo. 480-3260.

Sale: Custom Victorian, 3-2-2, cul-de-sac, FPL, garden windows/bath, deck, $88K. 480-5146.

Lease: Sycamore Valley, 4-2-2, 2 story, 2000 sq ft, hot tub, cul-de-sac. 992-1338.

Rent: Townhouse, 2-2.5-2CP, FPL, patio, balcony, storage, nearly new gray carpet/paint, $750/mo. 289-6777.

Rent: Galveston beach house, C/AH, furnished, dly/wkly/mo. Ed Shumilak, x37686.

Lease: CLC, Meadowgreen, 4-2.5-2D, approx 2350 sq ft, custom drapes/blinds, fans, FPL, garage door opener, $1150/mo plus dep, avail 3/1. 335-2996 or 486-5621.

Rent: Galveston, 2-2, appli, pool, hot tub, dry sauna, weight/steam rms, $450/wk. (409) 938-0302.

Sale: '87 Cedar Ridge 16' x 80' mobile home, 3-2, lg covered deck, fenced/skirted, $25K. Greg, x31580 or 997-2250.

Sale: Dickinson, double wide mobile home on priv lot, has income-producing apt, now rented. 337-5712.

Sale: Bacliff, 14' x 66' mobile home on 100 x 125 lot, 3-1, 20' x 30' x 12' warehouse in back, partially wood fenced, $17K. 339-1337.

Cars & Trucks

'82 Honda V-45 Magna, wrecked from behind, shop manual, $75. Susan, x32858 or 534-3649.

'82 Chevy Blazer, P/W, P/L, new trans, 4 extra tires, rims, beauty rings, AM/FM, tilt, $2.8K OBO. x35572 or 484-8528.

'82 Corvette, new int, paint, mirror T-Tops, loaded, ex cond, $8.2K OBO. 943-2773.

'78 Volvo 264 GL, 84K mi, good cond, $3.5K. Gary, 283-5781 or 480-9716.

'90 Honda Civic EX, 4 dr, 20K mi, A/C, loaded, $10.5K. 283-1191 or 486-1831.

'87 Suzuki Samurai JX, 4x4, wht, A/C, 5 spd, AM/FM, soft top, $3850. 333-6509 or 486-1750.

'81Honda Accord, 4 dr, 5 spd, tinted windows, A/C, AM/FM/cass, 93K mi, ex cond, $1.2 OBO. Tony, x30028 or 486-5707.

'90 Plymouth Voyager SE, 3.0 liter V-6, loaded, 34K mi, ex cond, $10.5K OBO. Jeff, 337-2784.

'77 BMW 530i, wht w/blue leather int, BBS rims, auto, ex cond, $5K OBO. x38841 or 326-5446.

'89 Taurus GL, loaded, premium sound, new brakes/tires, 64K mi, good cond, $5K. x37045 or 334-3827.

'84 Nissan 300ZX, 2+2, auto, A/C, stereo cass, cruise, elec mirrors, $4350. 481-3637.

'88 Toyota MR2, blk, A/C, moon roof, all pwr sport pkg, low mi, $8K OBO. John, x35547 or 338-9990.

'84 Chevy Monte Carlo, V-8, loaded, ex cond, $2750. Bruce, 485-5970.

'82 Vanagon L camper, rebuilt, remodeled, 10K new mi, $7.8K; '85 Ford Escort, sunroof, A/C, 70K mi, ex cond, $2.1K. Mike, 283-5890 or 868-5132.

'80 Pontiac, V-6, A/C, 4 dr liftback, auto, AM/FM/stereo, good cond, $1350. 481-3637.

'84 Pontiac 6000, A/C, no rust, ex cond, $1795. x32166 or 480-6050.

'84 Volvo GL turbo, auto, leather int, sun roof, new stereo, ex cond, $5.8K. Cyndi, 333-7761 or 482-8224.

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

'84 Chrysler Le Baron, 2 tone brwn, auto, 4 dr, 2.6 liter 4 cyl, cruise, A/C, AM/FM/stereo, no rust, $2.4K. 337-6430.

'88 Isuzu PU, 4 spd OD, A/C, AM/FM/tape, 38K mi, $4.5K. 482-7156.

'91 Sonoma PU SL, 1/2 ton, A/C, 5 spd, ex cond, $9.8K OBO. Leonard, 946-2975.

'74 Corvette Stingray, competition orange w/saddle int, numbers match, eng needs minor repair, ex cond, $8K. 474-4119.

'77 Cadillac Sedan De Ville, vinyl top, A/C, loaded, Clarion stereo cass w/200w equalizer/amp, $880. 286-3320.

'84 Ford Mustang GT, maroon/velour int, 5 spd, P/W, P/L, tinted windows, A/C, 302 eng, new AM racing wheels, new tires/paint, 87K mi, good cond, $4.5K. Scott, 333-7637 or 538-2067.

'78 Riviera, blk/gray w/leather int, 403 V-8, ex cond, $1695. x35180 or 326-3706.

'67 Chevy II Nova SS, auto, 2 dr, new 6 cyl 250 eng, $2.7K OBO. Geno, 280-1505 or 992-2156.

'89 Ford Thunderbird LX, leather, JBL stereo, 40K mi, $8.7K. Jay, x33693 or 334-4974.

'88 Toyota Celica GT, loaded, ext warr, ex cond. 282-2743 or 466-1038.

'83 Mazda RX7 GSL, leather, beige/maroon, new paint, loaded, ex cond, $3K. 790-4671 or 472-5079.

'76 GMC PU, 3/4 ton, good tires, needs work, $600 OBO. Dennis, x39012 or 992-5285.

'86 Plymouth Voyager LE, loaded, new eng, ex cond, $5K. Tom, x31252 or 482-2425.

19' Air Flow travel trlr, tandem axle, self-contained, A/C, new tires, ex cond, $3.5K. Frank D., x33838 or 581-2846.

Aluminum camper shell, fits lg body, mid-size PU, clean, dry, BO. 283-4087 or 480-3110.

Boats & Planes

'75 Oachita 16' bass boat w/85hp Johnson, Holsclaw tilt trlr, depth finder, ex cond, $1650. x34784 or 482-5190.

'82 bass boat, 17.5 ft, 115hp Evinrude, loaded, 12/24 troll motor, 2 flashers, ex cond, $4250. 482-1582.

'83 Hunter 34' sloop, A/C, bimini, VHF, knot/depth, stereo, ex cond, BO over $34.8. Dale, 334-3393.

'82 Wellcraft center console Fisherman, 18', 115hp Mercury, '86 drive-on Sportsman trlr, $5.7K. x34507 or 992-4821.

24' S-2 sailboat, 3 sails, 7.5hp Evinrude O/B, 15 gal fresh water tank, 2 burner alcohol stove, marine radio, 2 marine batt with A/C pwr converter, bimini, was $13.5K, now $11.5K. John, x39378 or 486-9431.

Cycles

Kawasaki EX500 sport bike, blk/red, 3K mi, alarm w/remote and lower faring, $3K OBO. x38841 or 326-5446.

Giant Quasar touring bike, 12 spd, 23" frame, quick release hubs, index shifting, $175. Todd, x34063.

Audiovisual & Computers

Commodore Amiga 500 computer, 1084S color moni, Xetec HD, second FD, A501 memory expansion to 1 MB, Mouse master switch, 2 joy sticks, SW and books, $800; hardwood computer table, contemporary butcher block style, $100. Steve, x37626.

Video capture for Mac, Koala MacVision, 640 x 480 x 8-bit gray, $150; 1200 baud modem, $40. Doug, 488-8806.

New IBM PS/I, 512K, modem, KB, blk/wht moni, DOS, Microsoft works, Prodigy, DD, $400. 333-6753.

PC 80286, 12 mhz, AT, 1 MB RAM, math coprocessor, 3.5" floppy, 65 MB HD, VGA moni ad card, standard AT case, 1200K baud modem, $1.2K OBO; 19" stereo TV, $150. Robert, x35442 or 992-2304.

Musical Instruments

Peavey 6 chan powered mixer w/Reverb and EQ, $375; 2 Cerwin Vega speakers, 15" bottom w/horns, $400; misc cables/stands, $80, $800/all or separate. Todd, 280-2533 or 869-7162.

Photographic

Nikon FG camera, MD-E winder, Kiron 80-200 f/4 zoom lens, Kiron match-mate 2x tele converter, $350/all or part. Stacey, x32649 or 480-9793.

Phillips PCS2000 Dichroic color enlarger, $450; Yashica Samurai, 35mm camera, all pwr, auto, $150. Doug, 488-8806.

Pets/Livestock

Mini lops and new American fuzzy lops rabbits, all young juniors. Gailo, 554-6200.

AKC Siberian husky puppies, 2 males, 3 females, blk/wht, 6 wks old, $200/ea. 991-5280.

Free cocker spaniel, tri-colored male, shots. 471-4843.

AKC cocker, blonde/red, 10 mos old, $150. x35896 or 488-7982.

Free sm stray female cat. 488-6917.

Dalmations, one 2 yr old female, one 1 1/2 yr old male, both fixed. 282-2739 or 486-3980.

Free puppies, 1/4 husky, 1/4 shepherd, 1/2 golden setter, 4 males, 2 females, blk/wht/brwn. Greg, x31580 or 997-2250.

Household

Queen sz sleeper sofa, $100; 2 rust colored rocking chairs, $25/ea. 992-3876.

King sz waterbed, solid oak, 2 yrs old, built-in drwrs, incl pad, ex cond, $450; sofa/love seat set, dark brwn, $150. 996-1614.

Blue and peach sofa/love seat, $375 OBO. Delia Saenz, 996-1163.

Sofa and chair, beige and brwn pattern, pictures avail, $12 both. Doc Pepper, 282-3130.

Refrigerator, 1.8 cu ft, good cond, $50. Jim, x38861 or 488-0658.

Glass top dinette table w/six chairs, ex cond, $100. Mary, x36530 or 479-6393.

Blue and rust plaid sleeper sofa, ex cond, $400. 538-4630.

Contemporary style L-shape sectional sofa, blue/gray, ex cond, $200; king sz fabric cov hdbd, matching bedspread, peach color, $150/both, hdbd only $125. 480-9184.

Full sz matt/box springs/frame, $50; qn sz frame w/hdhd and ftbd, $25; rust velour loveseat, $50 OBO. 286-3114.

Wanted

Want non-smoking female to share 2 BR condo in Webster, must love cats, $300/mo plus 1/2 util. 286-7263.

Want riders for vanpool from West Loop Park and Ride to NASA. Richard, x37557.

Want used elec dryer, will pay $50. Lane, 333-6456 or 480-8682.

Want floor sander for finishing wood floors. Gary, 283-5781 or 480-9716.

Want non-smoking roommate, El Dorado Way condo, own bath/BR. Kyle, 280-4422 or 286-3628.

Want '86 or newer complete encyclopedia set for elementary level. 482-5393.

Want sm trlr to haul 12' Quachita boat with O/B, fresh water usage preferred. x33611 or 337-7082.

Want matching full sz W/D; apartment sz washer or stackable W/D. 289-6777.

Want riders for vanpool from Sugar Land Westwood Mall and Loop 610 Park and Ride to NASA area. Alice, x35234.

Want alum topper for Chevy fleetside longbed truck. 482-2157.

Want female roommate to share 3 BR house in Pasadena, $275/mo incl util. 487-6533.

Want non-smoking roommate to share 3-2 house in CLC, $340 plus 1/2 util, avail 3/1/92. Katy, x34546 or 280-0951.

Want female dance partner for country/western dancing, ballroom dancing lessons, André, x31537 or 280-0370.

Want Nikon 8008 auto focus camera; exposure meters and background equip. J. D. Moore, 943-1952.

Miscellaneous

Two door legal sz file cabinet, ex cond, was $200, now $100. x30874 or 333-1316.

New qn sz heavy duty bed frame, $45; approx 50 8-track tapes, BO; decorated sweatshirts, ceramic items or place order. 943-1694.

Hogan Apex golf clubs, 2-PW, $200. Mark, x30918.

Window and wood mouldings. Don, x38039 or 333-1751.

Home furnishings, clothes, tools, baby items. 332-6966.

President/First Lady Charter Gold membership, $750. George, x30434 or 480-2645.

Timeshare condo for rent, $650/wkly, you choose date and location almost anywhere in world. x37990 or x33185.

Thirty Nintendo games, light zapper gun. Tom, x31791 or 474-9384.

Matching exec desk, glass-top, credenza, chair, w/pad, ex cond, $500. 488-2429 or 282-3543.

Tunturi Executive Ergometer exercise cycle, accurate physiological measurements w/calorie counter, ex cond, $175. 282-3300 or 332-3290.

Sideboard extension table, dark finish, $120; full length bridesmaid dress, lavender, sz 8, $30. x36665 or 333-9733.

President/First Lady Executive Gold family membership, $950 OBO. 532-2163.

Sapphire engagement ring w/2 diamonds, sz 7, was $1.1K, now $600. John, x35547 or 338-9990.

Two pair of Bose speakers w/pedestals, 901 Concerto limited edition, $1.6K OBO. 339-1793.

Shoei Brite stripe full face motorcycle helmet, medium, wht, $75. x39572 or 480-4780.

Jacket length blue fox coat, ex cond, $275. Deborah, 333-7504.

Tyronsea 300 windsurfer intermediate board, $350, board only. Greg, 474-5645.

Figaro bracelet w/padded case, 14K gold, was $300, now $275 OBO. 337-4440.

Radio Shack portable phone, good cond, $35. x38624 or 475-9671.

Ladies Vista Silver Shadow 12 spd bicycle, $90. Tom, x31252 or 482-2425.

Wedding gown, wht w/picture frame neckline, lace and pearls bodice/sleeves, chapel length train, sz 10, was $600, now $300. 488-7387.

Prom dresses, southern bell, light blue and wht lace, wht lace gloves and full petticoat, sz 10-12, $175; full length strapless, apricot/metallic color and petticoat, sz 7-9, $100. 283-8213 or 482-6236.

Revere silver-plated 6" serving bowl, $12; Schrade 4" collector's knife, Scrimshaw Kachina and custom leather sheath, ex cond, $20. 486-8716.

Fed ordinance M-14/M1A1 semi-auto rifle, 7.62 NATO, .308 caliber, all-American parts, new in box and papers, $560 OBO; Golden Eagle Formula 3-D compound bow w/sights, light and level, dozen xx75 arrows, quiver, hard case, ex cond, $365 OBO. 283-1226 or 286-7828.

Two new lg sweaters, $5/ea; 4 dress pants, 36x36, $5/ea; 3 new cotton pants, 36x36, $7/ea; 3 LSAT prep books, ex cond, $3/ea; 2 XL NASA jackets w/crew patches, $30/ea; XL parka, $30; ties, $1/$3. Greg, 333-6672 or 484-4979.

High performance car stereo, Sony XR-7050 tape deck, $230; Sony XM-3040, $150; Punch 75 amp, $230; AR 1703 plate speakers, $100; Alpine 6396 6 x 9 speakers, $180; Kicker woofers. Brian, 333-6059.

Microgravity: The name of the game

STS-42 crew puts heart, soul into international mission

Microgravity research was the name of the game on the recently completed STS-42 International Microgravity Laboratory-1 mission. Crew members and the ground support teams stayed busy throughout the eight-day flight researching the effects of microgravity on everything from plant roots to frog eggs.

Counterclockwise from above right:

1) The STS-42 crew poses amid the busy clutter of the Spacelab module during a break from their IML-1 research duties. Clockwise from lower right are Pilot Steve Oswald, Payload Specialist Ulf Merbold, Commander Ron Grabe, Payload Commander Norm Thagard, Payload Specialists Roberta Bondar, and Mission Specialists Bill Readdy and Dave Hilmers.

2) Bondar, the Canadian payload specialist, and Thagard take advantage of a rare opportunity to look out the window at the Earth and space from the aft flight deck windows of *Discovery*.

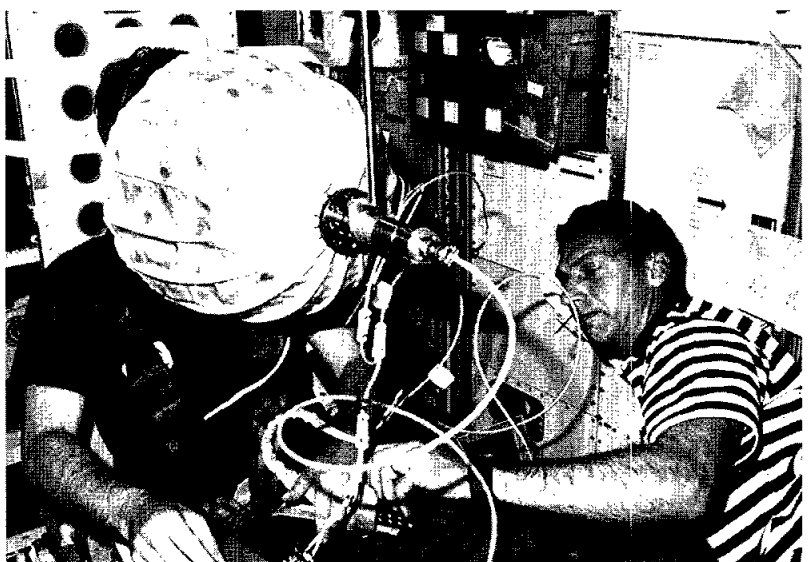
3) Readdy measures the veins in his lower right leg on the middeck of *Discovery*. He's using an electronic monitor and a pair of large blood pressure cuffs that encircle the thigh and calf. Changes in blood volume are determined by inflating the cuffs, which alter the blood pressure. The tone of the veins was monitored before, during and after flight.

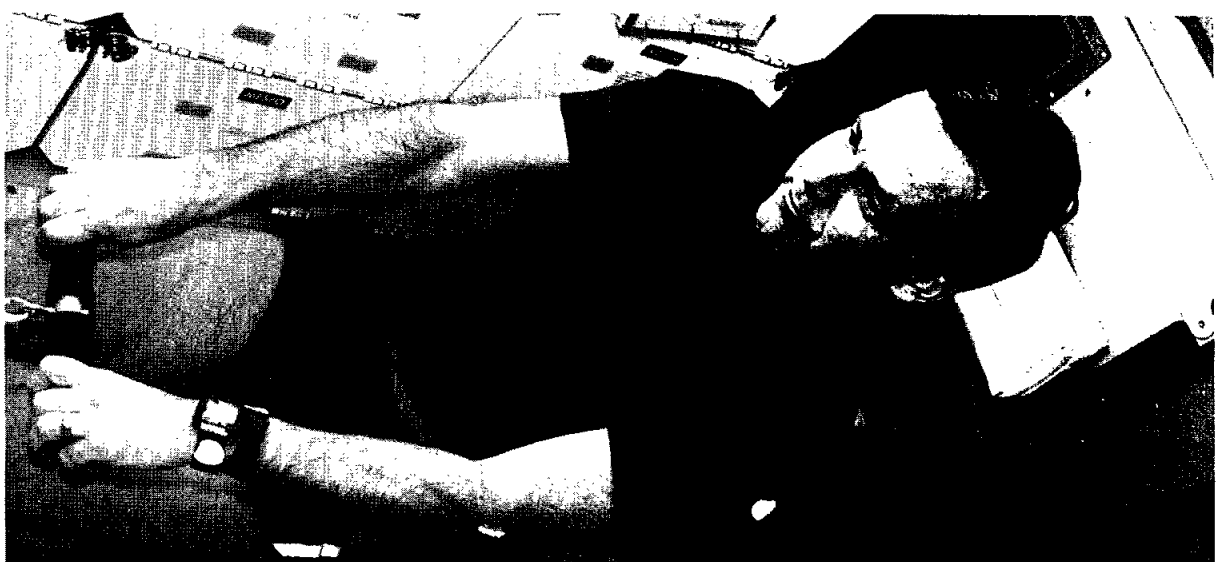
4) Hilmers helps Merbold, the European Space Agency payload specialist, with the Visual Stimulator Experiment on *Discovery*'s middeck. The test measured the relative importance of visual and balance organ information in determining body orientation as part of the ongoing study of the Space Adaptation Syndrome. While sitting on a stationary mini-sled. Merbold stared at an umbrella-shaped rotating dome with a pattern of colored dots on its interior. While observing the dome, he turned a knob to indicate his perception of body rotation.

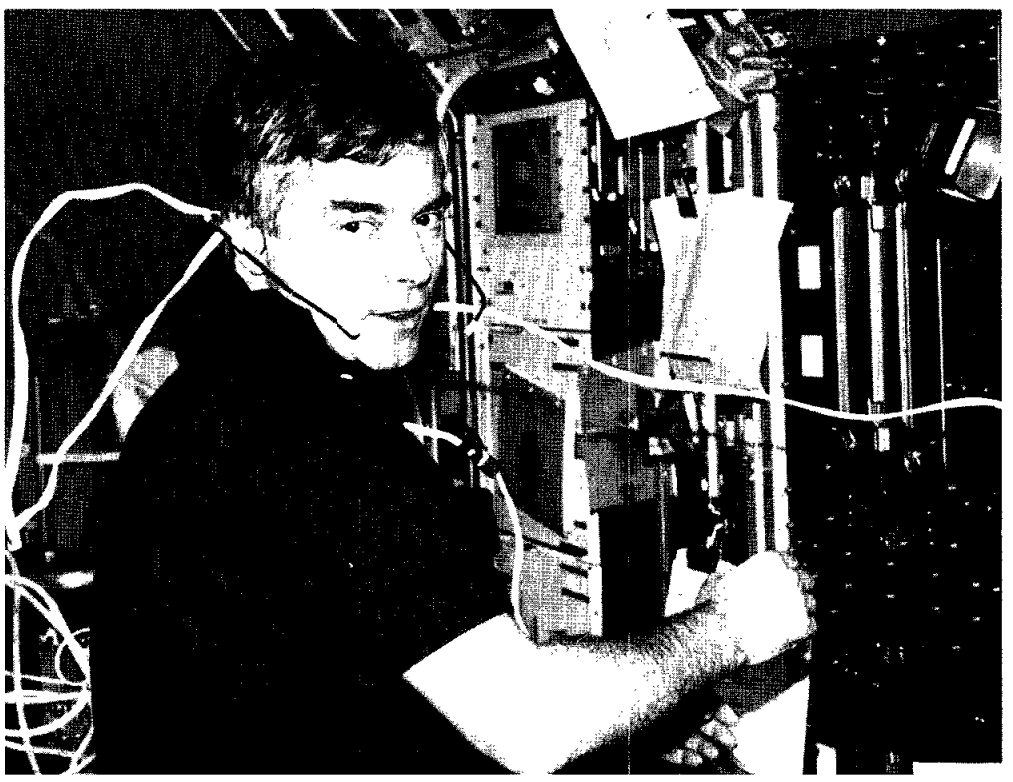
5) Merbold, with sensors connected to his head, gets ready for a session with the JSC-managed Microgravity Vestibular Investigation. After hooking up the electrodes, Merbold donned a helmet-mounted camera that measured eye responses while he turned in a rotating chair.

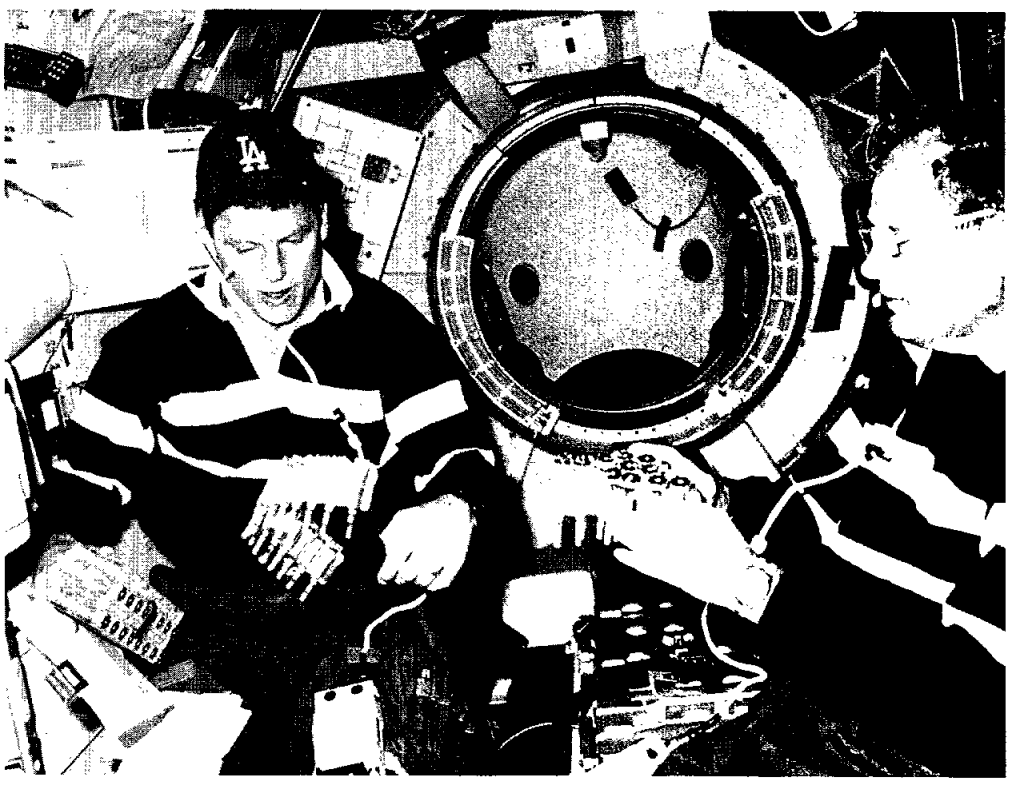
6) Oswald, left, and Thagard handle ampules used in the Mercuric Iodide Crystal Growth experiments inside the Spacelab module. Oswald is wearing a Los Angeles Dodgers baseball cap in tribute to the late astronaut Sonny Carter, who had been scheduled to fly on the IML-1 mission before a commuter airline crash took his life in 1991. The crew members took turns wearing the cap. Carter was an avid Dodgers fan.

7) Grabe works out with a rowing machine on the middeck as part of an assessment of two exercise methods designed not to perturb the microgravity environment when sensitive experiments are being conducted. The rowing machine seemed to work more smoothly than the bicycle ergometer.









NASA tests 'telepresence' for role in exploration

Astronauts may someday explore Mars without leaving their base camp using "telepresence," a unique mix of science and engineering NASA now is developing.

Many scientists think that telepresence will play a major role in future planetary missions, particularly the Space Exploration Initiative to return humans to the moon and then later journey to Mars.

"When we begin to explore Mars, it won't be easy for the astronauts to travel far from their base to gain access to the whole planet," said Dr. Geoffrey Briggs, scientific director of the new Center for Mars Exploration at NASA's Ames Research Center. "Telepresence will allow humans to project themselves, by way of a suitably equipped robot, into a remote environment without endangering themselves. It's a very powerful research technique."

Telepresence lets a researcher, wearing a video headset, see remote locations through cameras mounted on a remotely- operated robotic vehicle. The researcher points the camera by moving his or her head and steers the vehicle with a pair of joysticks or with body motion. Manipulators on the robot relay the "feel" of an object's weight and texture.

Telepresence is similar to "virtual reality," another computer science innovation that has a video headset, input devices to control movement and ways to create tactile feedback. While virtual reality allows a user to see and interact with a computerized video image, telepresence lets a researcher see what a robot sees and to do actual tasks in a real environment.

"The difference between telepresence and virtual reality is with telepresence we're trying to give users the feeling that they're in a remote location," said Owen Gwynne, Telepresence Project Engineer at Ames.

Ames scientists are now testing telepresence as a way to control a robot for underwater scientific research. The advantage of studying the technology in this setting is that mobile submersible robots already are available. Deep Ocean Engineering Inc., San Leandro, Calif., built the rover that NASA is using in its experiments.

Although remotely-operated vehicles have done jobs from commercial diving ventures to nuclear power plant cleanup after an accident, the NASA studies are the first using telepresence to control robotic devices to accomplish science outside the laboratory. Briggs called the research technique "revolutionary" because it is an opportunity to simulate planetary studies in hostile Earthly environments, such as the frigid waters of Antarctica, and eventually to perform real research on the moon and Mars.

Dr. Carol Stoker is the Telepresence Project Manager at Ames. Ames researchers Dr. Michael McGreevy and Dr. Christopher McKay, Dale Anderson of Lockheed Engineering and Sciences Co., Sunnyvale, Calif., and Dr. Robert Wharton of the Desert Research Institute in Nevada also are participating.

Atlantis flow smooth as orbiter moves to launch pad

By James Hartsfield

Following the quickest launch preparations ever, *Atlantis* took position at Pad 39-A late Wednesday in preparation for the launch of STS-45 perhaps as early as March 23.

Atlantis spent 55 work days in KSC's processing hangar, the shortest processing flow ever.

At the pad, a dress rehearsal of the STS-45 countdown for the crew and launch controllers is planned to begin next Wednesday and be completed Thursday. Shuttle managers are scheduled to meet March 10 for the STS-45 Flight Readiness Review.

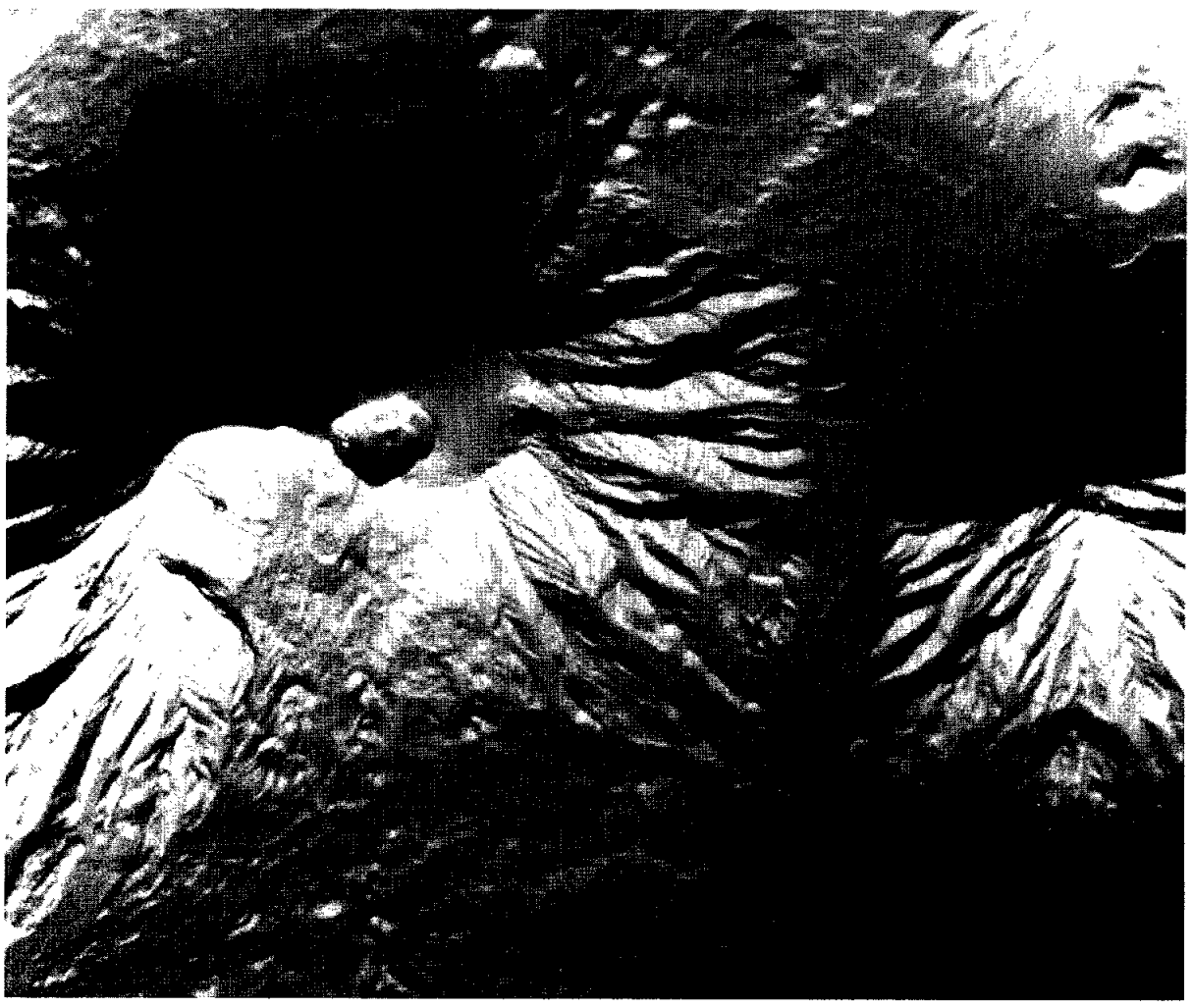
Also this week, *Discovery* arrived at KSC atop the Boeing 747 Shuttle Carrier Aircraft, completing a two-day flight from Edwards Air Force Base, Calif., where *Discovery* landed after STS-42. *Discovery* is now in Bay 2 of the processing hangar and technicians are removing the ferry flight hardware and preparing the spacecraft for about six months of thorough structural inspections and updates.

On *Endeavour*, being readied for a May launch on STS-49 to rescue the stranded Intelsat VI communications satellite, work this week centered on tests of the tactical air navigation (Tacan) system, hooking up the electricity-generating fuel cells and installing equipment for the mission on the aft flight deck.

STS-49 crew members are scheduled to travel to KSC this weekend for a check of equipment and a pre-flight inspection of *Endeavour*'s payload bay.

Work has begun in earnest in preparing *Columbia*, in the third processing facility, for the longest planned shuttle flight ever, a 13-day mission, set for June.

This week, technicians tested the radiators and removed the mock orbital maneuvering system pods used for *Columbia*'s ferry flight from California.



NASA Electronic Photo

VOLCANIC CRATER — STS-42 crew members used the Electronic Still Camera to photograph the mid-afternoon sun on the Kamchatka Peninsula volcanoes. The central, flat-topped volcano with the sharp summit crater is Tolbachinsky, over 3,085 kilometers high. The digital images taken with the ESC were stored on disks and brought home by astronauts for processing. The ESC was developed by JSC's Man-Systems Division.

Silver Snoopy visits 42 employees

Silver Snoopy, the astronauts' award for outstanding contributions to mission success and flight safety, recently was presented to 42 JSC civil service employees.

The Silver Snoopy Award is awarded to less than one percent of the entire NASA and contractor work force annually.

The latest Silver Snoopy recipients are George Moran, Sidney Schmidt, Cathy Claunch and Virginia Willis of the Administration Directorate; Bob Nooney and William Coward, Center Operations; Fred Ouellette, Patrick Wilson, Edith Taylor, Donna Fender, Douglas Lee, Carlos Ortiz-Longo, Robert Davis, Victor Studer, and Nanci Olson, Engineering; Mary Lee Meider, Gloria Demers and Colleen Crawford, Flight Crew Operations; Teresa Gomez, Human Resources; Linda Kirbie, Information Systems; and Ann Madison, Richard Owen, Edgar Walters, Sharon Conover, Keith Walyus, and Frank Trlica, Mission Operations.

Also, Bob Giescke, New Initiatives; Connie Critzos and Dave O'Brien, Orbiter and GFE Projects Office; Gary Priest, Safety, Reliability and Quality Assurance; Thomas Rathjen, Monty Moncrief, Victor Whitehead, Jeffrey Davis, Douglas Holland and Richard Jennings, Space and Life Sciences; Douglas Ardoin, Harold Battaglia, Larry Williams and Lee Norbraten, Space Shuttle Program; and Ronald Lerdal and Harry Johnson, White Sands Test Facility.

Three courses to be televised

Three satellite courses focusing on increasing individual and team performance are being offered via the JSC Television Distribution System during March, April and May.

The courses, offered by the Human Resources Development Branch in conjunction with National Technological University, a consortium of 30 universities, may be viewed on any television monitor or in reserved seats in Bldg. 45.

Personal Empowerment will be shown from 10 a.m.-noon March 9; Team Decision-Making will be aired from 2-4 p.m. April 13; and Generating Opportunities will be shown from 10 a.m.-noon May 11. To reserve a seat in Bldg. 45, call Sheryl Gates at x33074. For more information, call Stacy Jackson at x31999.

Cohen named acting deputy

(Continued from Page 1)

Upon completion of this assignment, Cohen will return to his permanent position as JSC director. During his absence from JSC, Deputy Director Paul J. Weitz will be acting director.

"Officially I remain director of the Johnson Space Center and it is my intention to return to that post as soon as possible," Cohen said. "In my absence, Paul Weitz will be acting center director and he does so with my complete confidence."

Stennis Space Center Director Roy S. Estess will remain in his temporary role as special assistant to the NASA administrator.

Engineers visit school

(Continued from Page 1)

Engineers Council, American Institute of Aeronautics and Astronautics, American Institute of Chemical Engineers, American Society of Civil Engineers, Institute of Electrical and Electronics Engineers, and the National Society of Professional Engineers.

STS-45 crew prepared for ATLAS observations

(Continued from Page 1)

these 180 maneuvers during the course of the flight," he added.

The commander said the recent announcement that NASA Administrator Richard Truly will step down following the mission poses no threat to the mission's safety. The crew has had numerous meetings with its support workers, including some in the middle of the night shift, and everyone has been forthcoming about any concerns.

"I feel very, very confident about the vehicle, about the payload," Bolden said. "The team has worked very well in solving every problem we've encountered and I'm very confident of going to fly. I think the process that's in place for managing safety and making sure that things are done properly is pretty good."

The ATLAS observations, which originated in 1984 under the guise of the Earth Observing Mission, will be grouped into four disciplines — solar physics, atmospheric chemistry, space physics and astrophysics.

Most of the observations will involve little direct crew involvement with the ATLAS-1 package, but two — the Atmospheric Emissions Photometric Imaging and Space Experiments with Particle Accelerators — will require the payload crew's judgment and scientific skills to adjust the observations.

AEPI is a very sensitive television camera that will look down at the atmosphere at night in particular color wavelengths to study what goes on as energy coming from the Sun is coupled with Earth's magnetic field and produces aurora.

SEPAC will use a stream of electrons sent from *Atlantis* into the lower atmosphere to measure the light coming out and gain a better understanding of the atmosphere's composition.

Lichtenberg, a European Space Agency payload specialist making his second shuttle flight, and Frimout, a Belgian payload specialist making his first, have been involved in the mission since its inception along with Drs. C. Rick Chappell and Michael Lampton, both of whom Bolden considers a part of the crew and will be participating in the mission from the Payload Operations Control Center at Marshall Space Flight Center.

Leestma and Duffy will be in charge of maneuvering *Atlantis* to the proper position for its observations.

"We need to look at the Sun, we need to look at the stars, we need to look at aurora, and also the atmosphere, in particular the limb of the atmosphere," Foale said.

"Our challenge," Sullivan said, "is going to be the precision with which the payload crew and the orbiter crew have to keep all this dovetailed and working smoothly at 18,000 miles an hour."

Atlantis also will be carrying the Space Shuttle Backscatter Ultraviolet experiment in a Getaway Special can in the payload bay. SSBUV, which has flown on STS-34, STS-41 and STS-43, will take measurements that can be used to calibrate instruments on orbiting satellites that study the Earth's atmosphere on a daily basis.

A host of detailed test objectives and detailed supplementary objectives will round out the mission.

One of the DTOs may provide a spectacular trail for ground observers to watch as *Atlantis* returns to land at KSC's Shuttle Landing Facility. In an effort to learn whether reaction control system propellants can be jettisoned during abort maneuvers, the flight crew will fire its forward RCS jets for 10 seconds at a time between Mach 4 and 2.6 at the same time they are pulsing the rudder, elevons and ailerons.

On top of all that, the crew also will take time to shoot scenes for a 20-minute educational video aimed at junior high-level audiences and designed to focus on the fun, challenge and importance of scientific detective work.

"We're all very keenly aware and believe very much that it's important for young people to consider all the different environmental issues, climate issues, Earth science issues in a very broad sense that are swirling around public consciousness today and that indeed are the underpinnings of our mission," Sullivan said.