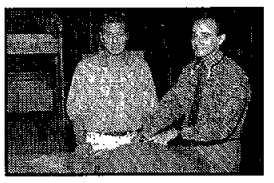
National Aeronautics and Space Administration
Lyndon B. Johnson Space Center
Houston, Texas

Cosmic ballet

The crew of STS-71, Mir 18 and 19 share historic flight photos. Photos on Page 3.



SHARP kids

Local high school students participate in an eight-week long mentor program. Story on Page 4.

Space News Roundup

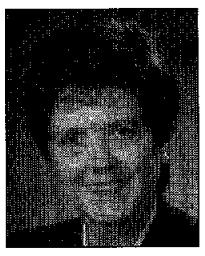
Vol. 34 | July 21, 1995 | No. 29

Huntoon earns Silver Knight

By Kathleen Kaminski

JSC Director Dr. Carolyn L. Huntoon received this year's Silver Knight of Management Award, presented by the JSC Chapter of the National Management Association.

This award, the highest award an individual NMA chapter can grant, recognizes Huntoon's leadership as JSC director and her ability to inspire members of the JSC community toward achievement of the objectives of the NMA.

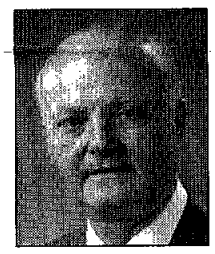


Huntoon

The Silver Knight of Management Award was presented to Huntoon at the JSC NMA's Annual Award Meeting held at the Gilruth Center on June 29, the same day as the historic docking of the Space Shuttle *Atlantis* with the Russian Mir Space Station.

Deputy Director of Engineering Chet Vaughan also was recognized as Manager of the Year for his continuing contributions to JSC, NASA as a whole, and the JSC NMA Chapter.

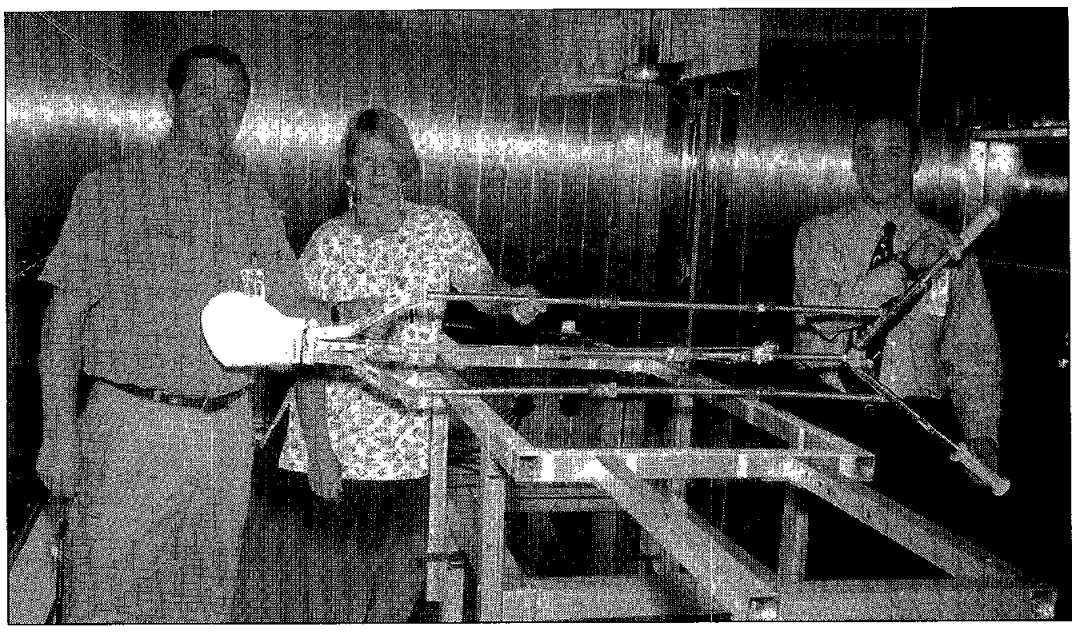
Kevin Candee of the Financial Management Division received the chapter's Leadership Award for his work as co-chair of the programs committee.



Vaughan

The newly elected officers of the NMA-JSC Chapter include President, John Cools; Vice President, Tom Diegelman; Secretary, Thadd Bowers and Treasurer, Dave Kissinger.

The NMA is dedicated to the development and recognition of management as a profession and the promotion of the American Enterprise System. It is the largest professional association of its type in the world, with approximately 70,000 members in 265 chapters. The JSC NMA offers all NASA employees the opportunity to develop leadership skills and team-building experiences through monthly meetings, professional development courses, seminars and other activities. For further information, contact Kathleen Kaminski at x38706.



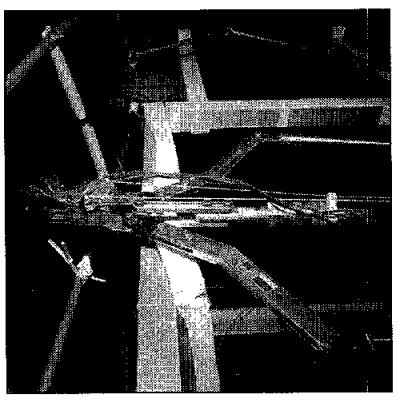
JSC Photo

From left are W. B. Wood of the Crew and Thermal Systems Division , Christie Hartmann of Lockheed and Matt Leonard of the Extravehicular Activity and Crew Equipment Projects Office with the cutting tool used by cosmonauts to repair the Spektr solar panel.

Team work helps repair Spektr solar array panel

By Karen Schmidt

When an auxiliary solar panel on the Spektr science module would not unfurl due to a retention bar failure and tools aboard Mir were unavailable, U. S. and Russian managers wanted to send help via *Atlantis*.



The U. S. agreed to develop the tool and Phase One Program Director Tommy Holloway formed a team.

The Extended Length, General Purpose Cutter's largest obstacle was that they only had six days to develop and test a tool that would cut the array from five feet away.

"The response from the team was outstanding. In record time, a tool was developed that allowed the cosmonauts to accomplish the task," Holloway said.

Team members Matt Leonard and Richard Fullerton of the Extravehicular Activity and Crew Equipment Projects Office, together with Cindy Begley, and Wayne Wedlake of the Mission Operations Directorate, and W.B. Wood of the Crew and Thermal Systems Division designed and developed requirements for the tool using an existing portion of a tool provided by Donald Giles of Porter-Ferguson Inc. The cutting portion of the tool is normally used as a steering wheel cutter by rescue personnel to remove trapped people from automobile accidents. Gary Krch of ILC and Christie Hartman of Lockheed also aided in the initial concept design of the cutter.

The team expanded quickly to include support from tech services as the design began to solidify. Tech services machinists Michael Balbi, William Bowen, Ricardo Gonzalez, Lyle Gurnsey, and Gilbert Majia all Rothe Development employees led by Keith Day, Joseph Riccio, and Larry Zielke of the Manufacturing, Materials and Process Technology Division were busy taking the designs and turning them in to real hardware. As fabrication continued, Chris Morin, aided by Wayne Basiliere, both of Hamilton Standard Management Services set up a computer and began incorporating parts into drawings necessary for the hardware.

All through the weekend the team worked at a hectic pace to integrate the operations requirement of cutting from five feet away with the actuation required to operate the cutting head. Throughout the process, Karl Hamelmann of GHG supporting Safety and Mission Assurance, and Johnny Porter of Loral supporting quality engineering provided inputs to ensure safety and quality. Jay Bennett of the materials section of Tech Services provided inputs that allowed the team to use the appropriate materials from those

Please see **JSC**, Page 4

Discovery returns to Kennedy

Discovery's five astronauts packed up their gear and prepared for their supersonic entry back to Earth today as another shuttle crew geared up for the final stage of their training prior to launch next month.

With all of their mission's objectives completed, STS-70 Commander Tom Henricks, Pilot Kevin Kregel and Mission Specialists Don Thomas, Nancy Currie and Mary Ellen Weber prepared for their return home today.

The Tracking and Data Relay Satellite deployed from *Discovery* just hours after launch on July 13 reached its final station on orbit more than 22,000 miles above Earth earlier this week and was pronounced in excellent shape by engineers who are ready to add the TDRS-G satellite to complete a network of orbiting relay stations.

During the mission, *Discovery*'s crew downlinked video images of bioreactor tissue cultures that were described as better than any seen before by investigators who are working to qualify the machinery for use on orbit. Bioreactors are extensively used on Earth to grow three-dimensional cell cultures that cannot be produced by traditional culture methods. The Bioreactor Development System is being used to determine how effective the equipment is for supporting tissue growth with minimal cell damage. Other experiments ranged from the HERCULES camera, a camera that can imprint the latitude and longitude of areas photographed, to the Windex, a study of the glow created as the shuttle surfaces interact with atomic oxygen in low Earth orbit.

"This has been the smoothest mission of any we've ever flown," said Henricks, who is completing his third flight into space. "Every step of the way, from the TDRS deploy to our in-cabin experiments, have been conducted flawlessly, a real tribute to those who put this mission together."

The flight marked the first use of the new Mission Control Center down the hall from the old MCC, which still is supporting launches and landings until early next year.

"Our first flight in the new Flight Control Room has been a dream," said John Muratore, the Chief of Control Center Systems.

"We'll find a few things to tweak before we fly STS-69 next month, but all in all, the debut of the new control room has been exceptional," Muratore said.

Please see **STS-70**, Page 4

Galileo releases Jupiter probe

Packed like an interplanetary paratrooper, the atmospheric probe with its payload of scientific instruments aboard NASA's Galileo mission successfully sprang loose from the main spacecraft last week and began its long, five-month free-fall toward Jupiter.

"We're delighted to have successfully released the probe on its Jupiter atmospheric mission after having carried it for almost six years," said William O'Neil the Galileo project manager at the Jet Propulsion Laboratory.

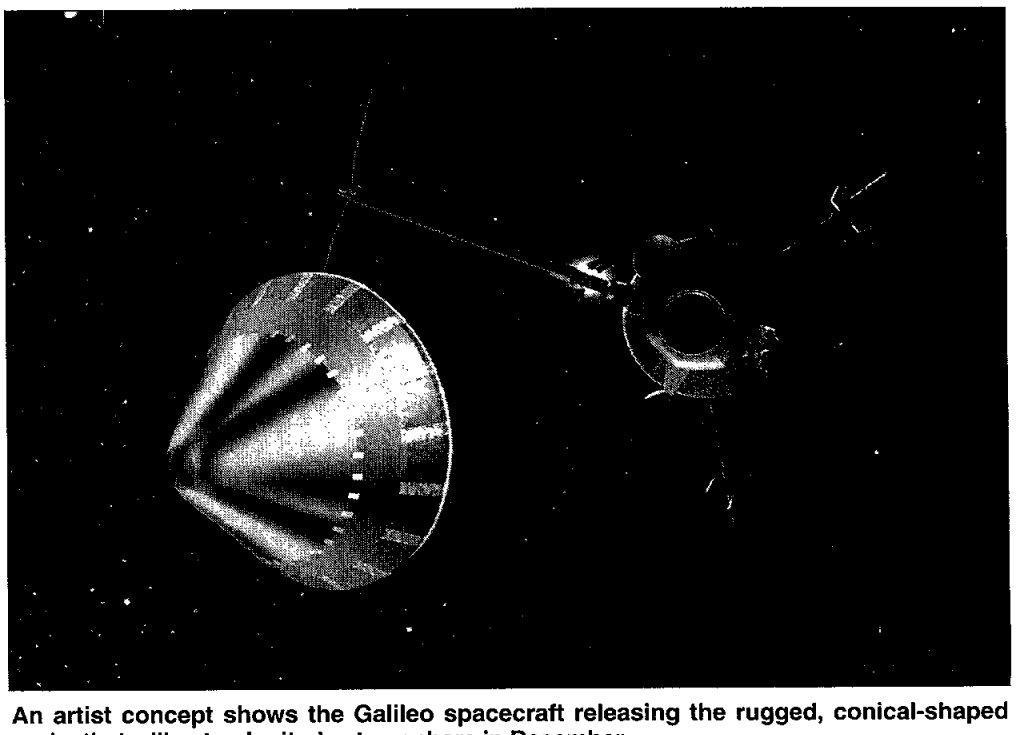
Data from Galileo confirmed that the rugged, conical-shaped probe was released as planned.

"The probe is configured for its encounter with Jupiter and is on its way," said Marcie Smith, manager of the probe mission at Ames Research Center. "We're very excited to have the probe mission underway."

Next week, Galileo will fire its main engine to deflect its own course toward an orbit high above Jupiter's cloud tops. The probe and main spacecraft will communicate again on Dec. 7 as the descending probe, after traveling its remaining 51 million miles, transmits its data to the Galileo spacecraft, where it will be recorded for later broadcast back to Earth. After hitting the top of Jupiter's atmosphere at the highest impact speed (106,000 mph) ever achieved by a human-made object, the rugged probe will unfurl its main parachute and float downward. Seven onboard instruments will directly measure for the first time Jupiter's chemical make-up, winds, clouds and lightning. The probe will radio its data to the Galileo spacecraft for up to 75 minutes.

Before the probe was released, controllers lined up Galileo's spin axis so that it was pointed along the path the probe will take as it enters Jupiter's atmosphere. Controllers then spun up the combined spacecraft and probe to 10.5 rpm. The spin stabilized the probe's attitude, or orientation in space, as it flies toward Jupiter. Ground controllers and Galileo's onboard systems sent a series of commands to prepare the

Please see **PROBE'S**, Page 4



An artist concept shows the Galileo spacecraft releasing the rugged, conical-shaped probe that will enter Jupiter's atmosphere in December.

JSC

Ticket Window

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

Justin World Bullriding Championship: at the Summit. Tickets cost $10 for 8 p.m. Aug. 18, $15 for 8 p.m. Aug. 19 and $18 for 4 p.m. Aug. 20.

Country and Western Dinner/Dance: 7:30 p.m. July 29 at the Gilruth Center. Tickets cost $12.

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

Sea World: Tickets cost $23.50 for adults and $16.25 for children 3 -11.

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

Astroworld: Tickets cost $18.10.

Splashtown: Tickets cost $11.05.

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

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

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

Metro tickets: Passes, books and single tickets available.

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

Stamps: Book of 20, $6.40.

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

Upcoming Events: Sam Houston Raceway Park discount packages available soon.

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 NASA badge or yellow EAA dependent badge. Classes tend to fill up two weeks in advance. Payment must be made in full, in exact change or by check, at the time of registration. No registration will be taken by telephone. For more information, call x30304.

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

Softball: Registration for Mixed B is July 27, Mixed C is July 25, Mens A July 28, Mens B is July 27, Mens C is July 26 and Men over 40 July 28.

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

Defensive driving: Course is offered from 8:15 a.m.-3 p.m. Saturday. Next class is Aug. 5. Cost is $19.

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

Aerobics: High/low impact class meets from 5:15-6:15 p.m. Tuesdays and Thursdays. Cost is $32.

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

Ballroom dancing: Cost is $60 per couple. For additional information call the Gilruth Center at x33345.

Fitness program: Health Related Fitness Program includes a medical examination screening and a 12-week individually prescribed exercise program. For more information, call Larry Wier at x30301.

JSC

Dates & Data

Today

Spaceweek lectures: The Galveston Bay Section of the Institute of Electrical Engineers will host a noontime seminar on "Shuttle/Mir Docking," in the Teague Auditorium. STS-71 Flight Director Bob Castle is the featured speaker. For more information call Cliff Mason at 335-6897.

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

Monday

Cafeteria menu: Special: breaded cutlet. Total Health: crispy baked chicken. Entrees: stir fry pork and rice, baked chicken, smoked sausage with German potato salad, French dip sandwich. Soup: cream of broccoli. Vegetables: okra and tomatoes, peas, navy beans, baby carrots.

Tuesday

BAPCO meets: The Bay Area PC Organization will meet at 7:30 p.m. July 25 at League City Bank. For additional information call Guy Thibodeaux at 333-5340.

Cafeteria menu: Special: fried chicken. Total Health: vegetable lasagna Entrees: Salisbury steak, steamed pollock, vegetable lasagna, French dip sandwich. Soup: split pea and ham. Vegetables: mixed vegetables, French cut green beans, pinto beans, vegetable sticks.

Wednesday

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

Toastmasters meet: The Spaceland Toastmasters will meet at 7 a.m. July 26 at House of Prayer Lutheran Church on Bay Area Blvd. For additional information, contact Elaine Trainor, x31034.

Cycle club: The Space City Cycle Club will meet for a 25-mile ride beginning at 6 p.m. July 26 at the University of Houston Clear Lake soccer field. For more information on this ride and weekend rides call Mike Prendergast at x45164.

Cafeteria menu: Special: stuffed bell pepper. Total Health: baked potato. Entrees: stir fry chicken & rice, wieners & beans, fried fish, western special, beef, chicken sausage, Reuben sandwich. Soup: seafood gumbo. Vegetables: buttered rice, Italian green beans, corn O'Brien, peas and carrots.

Thursday

NASACOM meets: The NASA Commodore's User's Group will meet at 7:30 p.m. July 27 at the Clear Lake Park Bldg. For more information call Glenda Souliere at x31764.

Radio club meets: The JSC Amateur Radio Club will meet at noon July 27 in Bldg. 16 Rm. 253. For more information call Larry Dietrich at x39198.

Cafeteria menu: Special: barbecue smoked link. Total Health: roasted turkey breast. Entrees: turkey and dressing, beef stroganoff, steamed pollock, French dip sandwich. Soup: tomato Florentine. Vegetables: Spanish rice, lima beans, buttered squash, oriental vegetables.

Friday

Cafeteria menu: Special: meat sauce and spaghetti. Total Health: baked potato. Entrees: rainbow trout, liver and onions, beef cannelloni, ham steak, fried cod fish, Reuben sandwich. Soup: seafood gumbo. Vegetables: steamed broccoli, breaded okra, cut corn, black-eyed peas.

Aug. 1

ABWA meet: The Clear Lake Area Chapter of the American Business Women's Association will meet at 5:30 p.m. Aug. 1 at Space Center Houston's Silver Moon Cafe. For more information call Nancy Hutchins at x34006.

Aug. 9

SSFF meets: The Space Station Future Fighters will meet at noon Aug. 9 at the Freeman Memorial Library 16602 Diana. For information call David Cochran at 335-0185.

MAES meets: The Society of Mexican American Engineers and Scientists will meet at 11:30 a.m. Aug. 9 in the executive dining room in the Bldg. 3 cafeteria. For more information call Michael Ruiz at x38169.

Aug. 10

Airplane club meets: The MSC Radio Control Airplane Club will meet at 7:30 p.m. Aug. 10 at the Clear Lake Park Community Bldg. For more information call Bill Langdoc at x35970.

Aug. 15

NAT meets: The National Technical Association will meet at 6:30 p.m. Aug. 15 at Texas Southern University School of Technology Rm. 316. For additional information call Carrington Stewart at x31404.

Aug. 22

BAPCO meets: The Bay Area PC Organization will meet at 7:30 p.m. Aug. 22 at League City Bank. For more information call Guy Thibodeaux at 333-5340.

Aug. 23

NMA meet: The National Management Association will meet at 5 p.m. Aug. 23 at the Gilruth. For more information call Kathy Kaminiski at x38706.

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 AP2, or deliver them to the deposit box outside Rm. 181 in Bldg 2. No phone or fax ads accepted.

Property

Rent: BayWind II condo, 2-2, spilt plan, FPL, W/D, $585/mo. Pete, x38614 or 480-4028.

Sale: Egret Bay condo, 2-1-2CP, FPL, W/D, CF, D/W, micro, refrig, boat launch, new carpet/tile, $45k. x41036 or 333-4577.

Lease: Pipers Meadow, clean house, 3-2A, fenced, carpet, ceiling fans, brick, $760/mo. 486-0315.

Lease: Pipers Meadow, lag 3-2-2A, FPL, deck, fenced, huge game room, $880/mo. 486-0315.

Rent/Sale: Waterfront condo, Lake Livingston at Cape Royale in Coldspring, sleeps 6, 2-2, fully equipped, wkend/wkly/dly rates. Barbara, 337-1494 or 1-800-367-2256.

Rent: Condo off El Dorado between Hwy 3 & I-45, W/D, kitchen appl, upstairs, w/priv entrance, immed occup, $330/month + $250 dep, ref req. Richard, x31488 or 286-6915.

Rent: Arkansas cottage on Blue Mt Lake, stone FPL, screened porch, $250/wkly, $50/dly. Corcoran, x33005 or 47531.

Sale: Canyon Lake, Village West, elevated 3-2, .25 ac, gazebo, waterfall, $130k. 210-899-3447.

Rent: Winter Park Co, 2-2, fully furn, heated pool, hot tub, sleeps 6, low summer rates. 488-4453.

Rent: Lakeside, 3-2.5 house, W/D, refrig, alarm, jacuzzi, $1,250 + dep. Ann, 282-3638.

Sale: Santa Fe, 2 acres, no restrictions. 409-943-5232.

Sale/Lease: Dickinson, 3-1.5-1 w/det garage/workshop, almost 1 ac, trees, hardwood floors, $87k assume. x47180 or 301-1480.

Rent: Beach house near Galv & the Strand, 4-2, sleeps 12, completely furn, lg deck. x32805 or 409-684-4419.

Sale/Rent: University Trace condo, 1 BDR, 832 sq ft, upstairs/downstairs unit, FPL, W/D, ready 8/1, $32k or $450/mo. 286-1934.

Cars & Trucks

'74 VW thing, white, new engine/battery, good tires, $3k obo. Dick, 335-6842 or 286-4444.

'86 Mercedes 190E 2.3 cabernet, auto, sunroof, 131k mi, maintenance records, good cond, $7k. Polly, 337-5392 or 244-8928.

'86 Ford F150, 8 pass van, looks & runs good, $4.2k. 333-3127.

'94 Nissan Sentra SE-R, loaded, ex cond, 10k mi, $14.5k. Brian, 333-6691.

'64.5 Mustang 289, red, looks & runs good, $3k obo. 486-0972.

'82 Pontiac Gran Prix, $650 firm. Joe, 409-948-4931.

'94 Eclipse, alarm sys, AM/FM/cass, ex cond, low mi, 5 spd, $10.9k. 534-2521.

'86 Hyundai Excel GLS, 2 dr, htchbk, sunroof, good cond, low mi, $750 obo. 639-4144.

'84 Mazda RX-7 GSL-SE, black/red, sunroof, AM/FM/cass, ex cond, $2,950. 582-0415.

'80 Cadillac Coupe deVille, white, AM/FM, all pwr, A/C, nice auto, $1.6k. 333-95.

'89 VW Jetta, auto, A/C, cass, sunroof, $4k. x39140 or 280-9105.

'81 Olds Delta 98, $800. Bryan, 286-7227.

'87 Nissan 200-SX XE htchbk, red, ex cond, auto, all pwr, sunroof, AM/FM/cass, 97k mi, 1 owner, w/records, $4.2k. 282-3229 or 286-4547.

'90 Pontiac Bonneville LE, dk blue, cruise, AM/FM/cass, 89k mi, 1 owner, serv records, $6.2k. x30038 or 488-3353.

'85 Plymouth Voyager mini-van, auto, 7 pass, 1 owner, 78k mi, runs well, $2.5k. Ed, x38309 or 409-925-8051.

Cycles

'82 Honda XR500R, titled, 3k mi, good cond, $375 obo. 486-6651.

Boats & Planes

'93 Crownline 20', 5.7 liter OMC, I/O, depth finder, AM/FM/cass, auto, McClain galv trailer, $13.5 obo. Bob, 224-4431 or 286-9902.

'86 Ski Centarion, 19" tournament approved ski boat, teak trim & platform, new inter, 351 Ford eng, runs great, stereo, garaged, easy on trailer, $7,950. Gregg, x31250 or 474-4271.

'59 Fishmaster 15' all wood boat, mahogany w/live well, 50 hp Johnson O/B, depth finder, trailer, needs a little work, $1.8k. Allen, x34738 or 486-6681.

'88 Invader, 210 cuddy cabin, I/O 200Hp Merc, galv trailer, loaded, great condition. 997-6141.

Laser 2 sailboat w/trailer, spinnaker rigged, trap, vest, $1k obo. x41095 or 486-8185.

Audiovisual & Computers

TI-6400 computer, kids/teens software. Fred, 944-3523.

Zenith 8088 PC, IBM compatible, monochrome monitor, Epson printer, 20 Mb HD, mouse, Dos 3.1, MS-Word, Lotus 123, games, $75. John, x38818.

NEC P6 Dot matrix printer, $60. 488-4412.

486/50Lexmark SE-10 subnotebook, 4 Mg, 210 Mg HD, 3.5" floppy, type II PCMCIA, IBM thinkpad twin w/access & S/W, $950. 998-3398.

Infinity SM120 200W 3-way speakers, $475/pr obo. Chris. 280-4394 or 474-7263.

HP520 Deskjet printer for PC, 600 x 300 dpi printing, $160. Judy, x30938 or 334-3603.

386 SX-33, EGA, color monitor, modem, dot matrix printer, MS Word-4, $250; IBM XT clone, monitor, modem, dot matrix printer, $125. 244-5792.

486 DX25, 4 Mb RAM, 540 HD, 14" monitor, $675; Compaq 286/12Mhz, EGA, printer, $175. x35549 or 554-7104.

386 DX40 motherboard w/128k cache, $80; MacIntosh Classic accelerated to 25 MHz, 8 Mb RAM, 15' B/W monitor, modem, laser printer, S/W, books, ex cond, $900. Joe, 996-1667.

Apple MacIntosh LC, 4 Mb RAM, 40 Mb HD, kybd, mouse, 12" color monitor, 1.4 Mb disk drive, books, ex cond, $1k. 996-8357.

Upgradeable 286, 2 HD, 5.25" & 3.5" drives, modem, $250; voice mail & message delivery computer card. $80. x38808.

Super Nintendo World Cup soccer, $17; Quicken Special Edition, $12; Wordperfect Works CD, $12; Bruce Springsteen Live CD, $6. x37130 or 334-4124.

AIWA #AXR-004 stereo audio/video recvr w/remote, $120 obo; Sony CD player w/remote, $75 obo; Sanyo VHR 9370 dbl azimuth, 4-head, VHS VCR w/remote, needs service, $35 obo; MTX 5-way 250 watt, 15" woofer, home spkrs, 4 ohm, $150 obo; Pioneer KEHM-5500 detach face full function cass player w/CD changer controller; Pioneer CDXM30 6-disc CD changer, $225/set will sell sep. Lisa, x40213 or 554-4140.

Photography

Konica 135 mm/3.2 lens, $50; 50 mm/1.7, $35; 28 mm/3.5, $35; Vivitar Tele, $15; Konica TC body needs work, $25 or $135/all. 488-4412.

Canon Ef Zoom lens 80-200 MM for Eros cameras, $155. Jim, 991-0533.

Bronica S2A, 2.25 x 2.25 single lens reflex, Nikkor 50 mm 3.5, 75 mm 2.8, 135 mm 3.5 lens, focusing hood & prism viewfinder, close up attach, 2 Sunpak flash units, manual, hard case, es cond. John, 326-2461.

Pets & Livestock

AKC blk Chow puppies, 5 males/1 female, 5/25/95 avail after 7/13/95. Debbie, 334-5987.

Umbrella cockatoo, 7 yr male, hand-fed, w/cage, $1.5k or trade for piano of comparable value. Larry, x47004 or Shirley, 930-8393.

Lost & Found

Man's sport coat found in Bldg 1, Rm 560, call to claim. x30479.

Household

Amana refrig, 24 cu ft, side-by-side, ice/water door dispensers, almond, $495. 471-9432.

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

Dining table, 7 pcs, w/matching sectional, black w/print, $550; marble coffee table, $60. x38835 or 482-5531.

G.E. 27" coppertone built-in wall mount electric oven, works great, $50. Linda, 484-0987.

Sofa, chair & ottoman, $200; dinette set w/4 chairs, $100 obo. x32603 or 470-7865.

Queen bed set, therapeutic mattress w/pillow top, box spring, frame, $200 obo. Vicki, x34047.

Kenmore W/D, $100 ea. x32567 or 488-3314.

Solid golden oak entertainment center/bookshelf, $300 obo; plaid loveseat sleeper, $75 obo; Kenmore microwave, $50 obo; antique wood vanity, $100obo; glass brass 3-tier coffee table, $75obo. 286-8554.

Curio cabinet, stained finish, 60"x36"x16", $250 obo. Faye, 470-1455.

Solid wood desk w/top-mounted bookshelf, $35; bunkbed set frame, $75. Jim, X48531.

Wanted

Want STS-71 Spacelab Mir Microgavity & Life Sciences cloth patch or decal. Andrew x34312 or 280-0647.

Want house in Heritage Park, assumable w/low equity. 480-9468.

Want female roommate for 3-2.5 townhome, non-smoker & like cats. Lisa, 286-3828.

Want a reliable computer for college student, willing to spend $700-$720. Leon, x48390.

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

Want personnel to join van pool departing Southwest park & ride lot at 6:50 a.m. for JSC & offsite locations, 7:30 a.m. - 4:300 shift. Susan Gaynor, 282-5447 or Ed Rangel, x36124.

Want Mickey Mouse cookie jar, $10 - $15; piggy bank, $5 - $8. Bea, 31094 or 948-0282.

Want clothes & toy donations for needy family of 5, all girls, twins age 4, 1yr old, infant girl, mother sm frame. Bea, x31094 or 409-948-0282.

Want roommate(s), 3-1.5-2, pets okay, lg yard, workshop, W/D, hardwood floors, Dickinson. x47180 or 301-1480.

Want set of left handed golf clubs. Bruce, 286-5677.

Want wooden Tinker toys & Lincoln logs, new or used, tricycle & wagon, good cond. Rebecca, x36326.

Miscellaneous

TUSA "Liberator" BC, lg, new, $150; U.S. divers "Escort" BC, lg, used but in good cond, $75. Andrew, x34312 or 280-0647.

Water lilies, hardy & tropical, day & night bloomers, $3/$10/$14/$22; Umbrella palm, parrots feather, much more, $1 - $2. 337-5392.

Ruger super Blackhawk .44 Magnum revolver, leather holster & belt, loading press/dies/powder drop, scales, caps, powder, shells/bullets, ex cond, $500/all; Remington 16 gauge pump shotgun, $150; Winchester .22 cal pump rifle, ex cond, $150. 486-8266.

14kt gold dia-cut rope necklace, 1.5 mm wide, 18" long, $60; 14 kt dia-cut rope bracelet, 2.5 mm wide, 8" long, $55; Day-Timers planners w/zipper notebook, 8.5x11 sz, desk paper punch, filler thru Sept '95, $55. Eric, x31917.

Queen sz comforter, ivory w/lace trim, $35; black strapless cocktail dress, semi-formal, sz 11/12, ex cond, $50; 2 twin sz Sesame Street comforters w/matching sheets & pillowcases, $30/ea set. 992-1768.

Remington ADL .270 cal bolt action deer rifle w/scope, sling, case, 65 rounds, $500. John, x38818.

Joelle designer wedding dress, short train, white, sz 8, veil & krenelin, $500; blk leather car mask for Honda CRX, $50; car cover for med sz cars, $25; brass floor lamp, 410; navy sheet set, queen sz, $15. x45722.

Ladies sz 8 formal gown, white w/gold sequin & beading, $250 obo. x31056 or 486-5500.

Used wooden rabbit hutch, good shape, $10; metal rabbit run, 7-section galvanized fence, $20. Bob, x33149.

Winchester 12 ga semi-auto shotgun, model 1400 MkII, 28" barrel vented, $245. Jim, 991-0533.

Ariens riding mower 8 Hp, good cond, $375; exercyle, $35; easy chair, beige, ex cond, $40. 486-4413.

Moving boxes, all sizes. Ray, x33954 or 665-8808.

Winchester pre-64 Model 70 Target rifle, 30.06, $1,250; 2 Winchester model 75T Target rifle, $350/ea or $600/both; leather shooting jacket, 44 long, $75; Tasco shooting scope & stand, $50. 531-3013.

Arneson swimming pool cleaner w/leaf bagger, $175. 333-3127.

Portable gas BBQ, $50. Bob, 244-4431 or 286-9902.

Tow bar for VW Beetle, not super, $45. 532-3013.

Sears Craftsman Eager lawn mower, selfpropelled, 4.0 Hp eng, solid state ignition, single pull start, adj pitch & cut ht, $150. Mary, x31911 or 532-3309.

Men's road bike, Giant Allegre, white, 56 cm frame, infrequently ridden, new $400 sell $275 cash. Brian, 554-4839.

Excellent spare tire P215-70R15; large assortment of stuffed animals. Fred, 944-3523.

Full sz BDR set, $250; computer desk, $150; weightlifting "Circuit" set, $125; 10 spd Ross bike, $50. Lee, x37038 or 333-2938.

Table saw, belt drive, cast iron table, w/4" planner/joiner, 8" blade, 1 Hp, $280. x32567 or 488-3314.

Frostless refrigerator, $150; weight bench a K-tron free wts, $50. x38808.

Olympia Seahorse spa, navy, 500 gal cloverlounge holds 8 people, 8'wx41"d, cover included, ex cond, $1.7k. 337-4182.

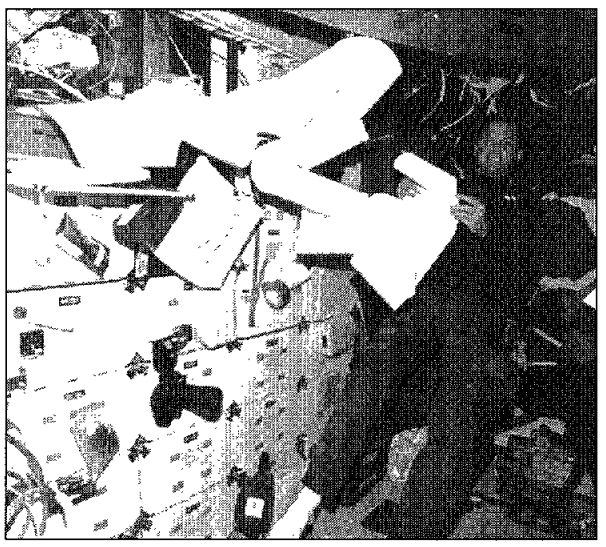
Little Tykes hi chair, $50; Oshkosh blue jean shortalls, sz 2T, $6; other name brand clothes, sz 12 mos to 2T, Playtex bottles set of 10 w/disposable liners, $10; butcher block style dinette, $100. x37130 or 334-4124.

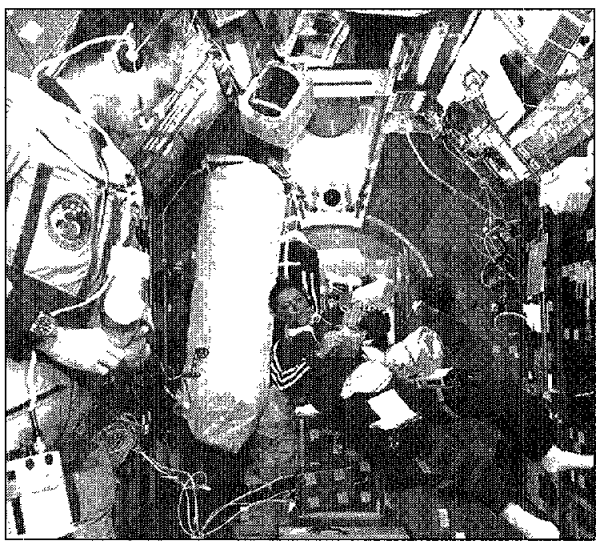
Wooden shop table, 4x8, $20; Kirby vacuum attachments. John, 482-7616.

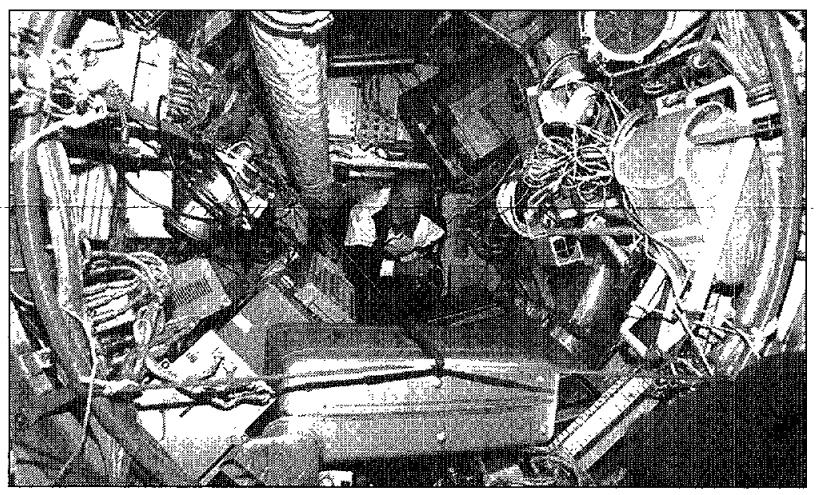
Free to good home, empty baby formula & coffee cans. Rebecca, x36326.

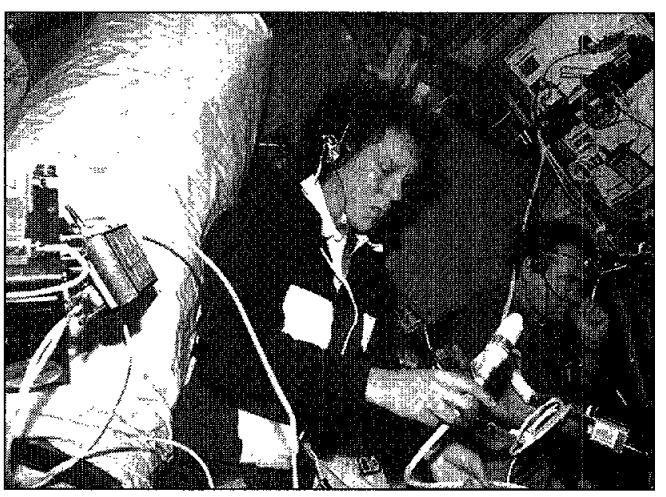
Cosmic Ballet

STS-71, Mir 18 and Mir 19 crews advance space science









The historic mission of *Atlantis* docking with the Russian Mir Space Station will be remembered as the start of establishing an international outpost.

Through the mission the crew collected photos to share. From left to right, top to bottom:

1) The traditional in-flight crew portrait features clockwise starting at the six o'clock point, Mission Specialist Greg Harbaugh, Commander Hoot Gibson, Mission Specialist Charlie Precourt, Mir 19 Flight Engineer Nikolai Budarin, Mission Specialists Ellen Baker and Bonnie Dunbar, Mir 18 Cosmonaut/Researcher Norm Thagard, Mir 18 Commander Vladimir Dezhurov, Mir 18 Flight Engineer Gennady Strekalov and Mir 19 Commander Anatoly Solovyev.

2) Harbaugh checks out data uplinks in *Atlantis'* middeck.

3) Thagard, left, and Dunbar work in the Spacelab.

4) Thagard shows off his Mir 18 flight suit that he wore during his American record-breaking stay of 115 days on Mir.

5) Precourt floats from *Atlantis* into the Kristall Science Module.

6) From left, Thargard, Dezhurov and Strekalov enjoy hot fudge sundaes.

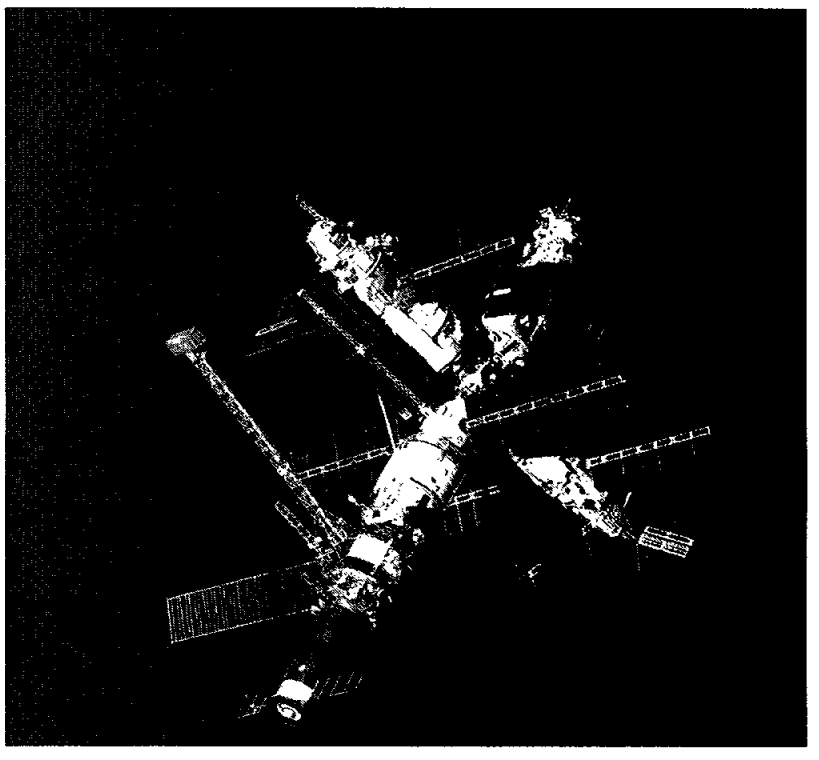
7) Solovyev, left, and Budarin perform a communications check on the Soyuz in preparation for undocking to capture pictures of the *Atlantis*/Mir undocking.

8) Baker monitors Strekalov during a treadmill run.

9) From left, NASA Administrator Daniel S. Goldin talks with Gibson, Precourt, Dunbar, Harbaugh and Russian Space Agency Director Yuri Kopev under *Atlantis* after landing.

10) Gibson removes the docking target that was on the Kristall module.

11) A close-up view of the Mir reveals each of its modules. The bottom portion is the Soyuz spacecraft attached to the Mir core module, the right-side of the station houses the Spektr module, the upper section is the Kristall module and the left-side section is the Kvant-2 module. ❑



NASA names first rover to explore the surface of Mars

On the 30th anniversary of robotic exploration of Mars, NASA has selected the name "Sojourner" for the first rover slated to explore the red planet.

The 25-pound, six-wheeled robotic explorer is now being readied for launch, and will be deployed to roam across an ancient Martian flood plain after the Mars Pathfinder lander touches down on the planet's surface on July 4, 1997.

The U.S. spacecraft Mariner 4 initiated humanity's study of the red planet 30 years ago when it flew by Mars at a distance of about 6,000 miles on July 14, 1965, taking the first close-up images of another planet.

The name Sojourner was chosen for the Mars Pathfinder rover after a year-long, worldwide competition in which students up to 18 years old were invited to select a heroine and submit an essay about her historical accomplishments. The students were asked to address in their essays how a planetary rover named for their heroine would translate these accomplishments to the Martian environment.

Initiated in March 1994 by The Planetary Society of Pasadena, Calif., in cooperation with the Jet Propulsion Laboratory, the contest got under way with an announcement in the January 1995 issue of the National Science Teachers Association's magazine "Science and Children," which is circulated to 20,000 teachers and schools across the nation.

Valerie Ambroise, 12, of Bridgeport, Conn., submitted the winning essay about Sojourner Truth, an African-American reformist who lived during the Civil War era. An abolitionist and champion of women's rights, Sojourner Truth, whose legal name was Isabella Van Wagener, made it her mission to "travel up and down the land," advocating the rights of all people to be free and the rights of women to participate fully in society. The name Sojourner was selected because it means "traveler."

JPL scientists and engineers working on the Mars Pathfinder project and Planetary Society staff members reviewed the 3,500 total entries received from all over the world, including essays from students living in Canada, India, Israel, Japan, Mexico, Poland and Russia. Nearly 1,700 of the essays were submitted by students aged five to 18 years old.

The selection of winners from this group by representatives from JPL and NASA Headquarters was based on several factors: the quality and creativity of the essay; taking into consideration the age of each contestant; the appropriateness of the name for a Mars rover and the knowledge of the heroine and the understanding of the Pathfinder rover's mission conveyed in the essay.

The second place prize winner was Deepti Rohatgi, 18, of Rockville, Md., who proposed naming the rover after Marie Curie, a Polish-born chemist who won the Nobel Prize in 1911 for her discovery of the elements radium and polonium. The third place prize went to Adam Sheedy, 16, of Round Rock, Texas, who chose the late astronaut Judith Resnik as his namesake for the new rover.

Other popular names included Sacajewea, who explored North America with Lewis and Clark; Amelia Earhart, one of the first female aviators; Athena, the Greek goddess of wisdom; Harriet Tubman, a 19th-century African-American writer and political reformist; and Thumbelina, the tiny fairy tale character created by Hans Christian Andersen.

The Mars Pathfinder lander and rover will be launched in December 1996 aboard a Delta rocket and then will spend seven months cruising to Mars. The mission will demonstrate a new, low-cost way of entering a planetary atmosphere and landing, through a combination of parachutes, rockets and shock-absorbing airbags designed to slow the spacecraft's descent and place it safely on the surface.

Once Mars Pathfinder lands and opens its exterior panels, the solar-powered rover will be sent off to explore the chemistry of rocks in the area and other features of the planet's rocky surface.

Need aerobic test subjects for study

By Barbara Tomaro

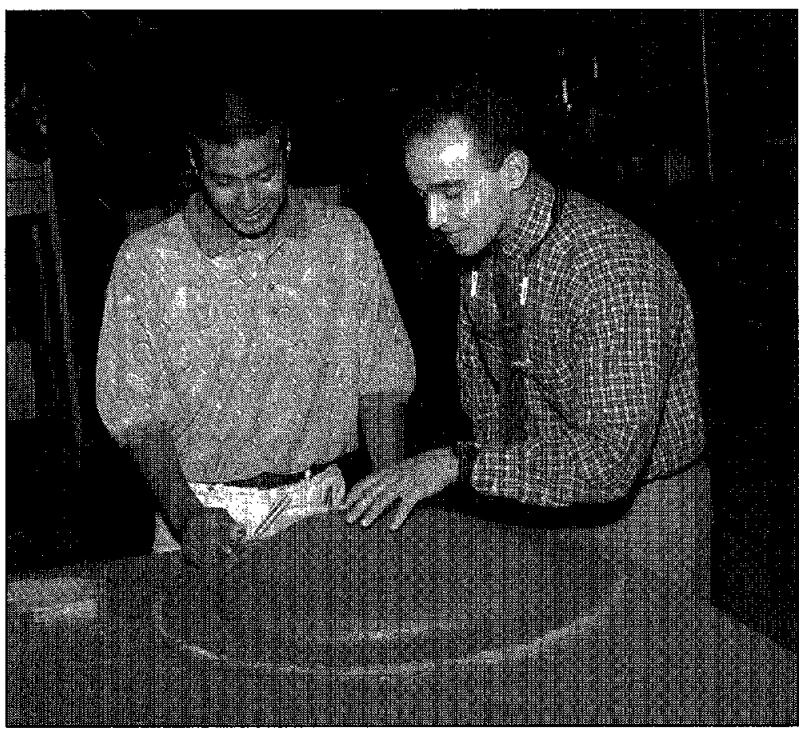
Interested in donating your body to science? Employees may not ready for a permanent donation, but how about a loan? The Exercise Physiology Lab is seeking male athletes with established aerobic routines for an Aerobic/Anaerobic Capacity and Power Study.

According to Physiologist Steve Siconolfi, "Astronauts who do not exercise during space flight have a decrease in aerobic capacity. However, effects of space on anaerobic power or anaerobic capacity is unknown. The relationship among aerobic capacity, anaerobic power and anaerobic capacity is not clearly understood even in earth bound athletes. One factor that may relate these measures of performance is blood volume. Decreases in blood volume lowers aerobic capacity. The relationship to anaerobic power also remains a mystery. This study will examine the relationship among these variables in athletes who train for anaerobic power, anaerobic capacity and aerobic capacity."

The aerobic capacity of test subjects will be assessed using a graded supine bicycle test. Subjects will pedal a stationary bike from a reclining position with a constant increase. Anaerobic testing will include a Wingate Anaerobic Power test and a treadmill test. Blood and plasma volume testing will be conducted at University of Texas Medical Branch in Galveston. A non-invasive BERS test for plasma volume will also be conducted using electrodes attached to the subject.

"The MIR 18 crewmembers completed the aerobic test. We would like to examine the data and predict the amount of decrement in anaerobic power. This has been done with treadmills but not with cycles. The information from this study will help develop the technique for cycling testing and reduce the work load on astronauts," Siconolfi said.

Potential test subjects can contact registered nurses Beth Johnson, or Linda Byrd at x37284.



JSC Photo by Benny Benevides

Rocky Medina, a SHARP participant, works with David Altermir of the Manufacturing Process Development Branch in the model and plastic shop in Bldg. 9.

Kids get 'elbow's eye-view'

By Howard Bruce

Eleven energetic students from nine area high schools were given the opportunity to working along-side NASA engineers at JSC for eight weeks this summer.

Each of the students were selected to participate in an eight-week intensive science and engineering program, the Summer High School Apprenticeship and Research Program. SHARP is designed to give students an "elbow's eye-view" into careers with NASA. Interns include, Remicha Carter from Forest Brook High working in navigation control and aeronautics, Christopher Cerf from Washington High working in the structures and mechanics, Jamal Fontenot from Forest Brook High in avionics process engineering, Clarissa Hernandez from Channelview High assisting in simulator operations and technology, Corey McGowen in technology computer systems, Rocky Medina from Austin High learning in manufacturing process development, Thuan Nguyen from South Houston High interning in life support and thermal systems, Salil Patel from Clear Lake High assisting in earth science and solar system exploration, Joseph Peters from Milby High in propulsion and power, Sherry Sendelbach from Mt. Carmel High in space biomedical research and Rodney Wimberly from LaMarque High in facility development.

The SHARP Program is designed for high school students who have demonstrated an interest in space, science or engineering. The 1995 SHARP class was matched based upon science interest with a JSC engineer mentor. Students will work closely with their mentors on a variety of technical and space science projects. Students will complete a research paper and make oral presentations to the SHARP group and mentors. They receive instruction in technical presentations using viewgraphs and diagrams. The action-packed summer concludes with a banquet for the students, their parents and mentors. For information call Nancy Garrick 483-3076.

Fellowship program participants sought

Human Resources is now taking nominations for participants in the JSC Fellowship Program.

JSC employees—primarily in the grade 13 to Senior Executive Service levels—are invited to apply. Participants in the NASA fellowship programs are selected from across the agency on the basis of their educational and developmental records, significant recognition and accomplishments, reasons for participating in the program and supervisor and management endorsements.

Directorate nominations are due to the Human Resources Office by Aug. 21, employees interested are encouraged to immediately talk to their supervisors, who must recommend nominees to each organization's director. For more information, call Erica Vandersand at x31999.

Station employees 'Adopt a Kid'

Space Station Program Office employees are organizing a first ever "Adopt-A-Kid" night at Space Center Houston.

This grass roots team of volunteers is organizing an evening space camp, Aug. 11, for 100 inner-city youth, to provide them a night of growth, fun and learning about space. These young people are part of Houston's poverty structure.

Participants will lead the kids through space experiences including eating; brushing teeth; showering; picking up rocks with space gloves; building a glider and other space activities. The film "Discovering Life in Space" will add to their insight into everyday life on the final frontier of space. Space Center Houston is providing the program, skits, projects, movies, demonstrations, food and drink.

JSC community volunteers are needed, to work as mentors, donate space memorabilia for souvenirs and bake cookies. Cash donations are also needed for the "Adopt-A-Kid" program. A donation of $25 sponsors one child for an evening of growth, fun and learning.

If you are interested in participating in this effort, or would like to donate time or money contact Steve Berry at x48568.

JSC tool aids cosmonauts

(Continued from Page 1)

available on-site and thermally capable of the job. Roy Mayfield of Dyncorp, supporting aircraft operations, supplied a cable necessary for operation of the tool. The team called on Raul Zepeda and Brenda Lotz of crew and thermal systems, to provide a cover to keep the cutting edge from damaging a suit. William Spenny of crew and thermal systems evaluated whether the Russian suit would be able to perform motions to operate the tool. As fabrication progressed, Dave Elmore of Loral provided quality assurance to build two flight units. After manufacturing, the team quickly moved to thermal testing. David Staat of Lockheed provided test necessary to ensure the tool could work in space. With a successful test at minus 150 degrees, the tool was prepared for shipping. A second tool was shipped to Russia for evaluation.

The final step was to brief the cosmonauts, Mir 19 Commander Anatoly Solovyev and Flight Engineer Nikolai Budarin on the assembly and operation of the cutter. The tool was then shipped to be stowed on *Atlantis.* During their space walk on July 14, Solovyev and Budarin had a choice to use the JSC developed tool or one made in Russia. The cosmonauts chose to try the U. S. made tool and successfully cut the tubing and unfurled the solar array.

Many others contributed to the success of the project and allowed JSC personnel to show their ability to respond when called upon.

Probe's fate will be determined by Jupiter's atmospheric pressure

(Continued from Page 1)

probe for its mission. These included programming the probe's coast timer, an onboard clock that will "wake up" the probe's systems and scientific instruments six hours before it enters Jupiter's atmosphere. After completing checks of command, data, power and other subsystems, a built-in cable cutter severed the umbilical between the atmospheric probe and Galileo. Before deployment, small explosive charges on nuts that secured the probe to Galileo detonated to free the probe. Three small springs then gently pushed the probe away from the main spacecraft, sending it on the last leg of its voyage to Jupiter.

The probe mission is likely to end when the main Galileo spacecraft passes beyond radio contact with the probe as the spacecraft enters Jupiter orbit. The ultimate fate of the probe may be determined by its battery lifetime, or it may first succumb to the immense pressure of Jupiter's atmosphere and be crushed. Galileo, meanwhile, will begin two years of close-up studies of Jupiter, its moons, rings and powerful magnetic environment.

Galileo was launched in October 1989 aboard the Space Shuttle *Atlantis,* and has flown by Venus, Earth (twice), and two asteroids during its trip to the outer solar system.

Space News Roundup

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Editor .....Kelly Humphries
Associate Editor .....Karen Schmidt

STS-69 to launch in August

(Continued from Page 1)

As the STS-70 mission drew to a close, the STS-69 astronauts spent the week at the Kennedy Space Center conducting a dress rehearsal for their launch early next month.

Commander Dave Walker, Pilot Ken Cockrell and Mission Specialists Jim Voss, Jim Newman and Mike Gernhardt climbed aboard *Endeavour* on Thursday for the final hours of a simulated countdown like that which will lead to their liftoff on an 11-day mission to deploy and retrieve two science satellites and to conduct a space walk to test space station construction techniques.

On Tuesday, NASA managers met at KSC and set Aug. 5 as the official launch date for *Endeavour.* The shuttle is expected to blastoff at 9:45 AM CDT at the opening of a 2 1/2 hour launch window. Gernhardt will deploy the SPARTAN solar science satellite from the end of *Endeavour*'s robot arm and will retrieve the boxy satellite two days later. Operations with the saucer-shaped Wake Shield Facility will begin the day after SPARTAN is placed back in the cargo bay.

Newman will man the robot arm to lift WSF out of its truss platform in the bay and will deploy it after it has had a chance to be oriented into a position to "cleanse" itself of atomic oxygen present in low Earth orbit.

Once it is released, a small nitrogen gas thruster on WSF will propel it away from *Endeavour* to prevent it from being contaminated by shuttle jet thruster firings.

NASA-JSC