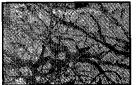


National Aeronautics and Space Administration Lyndon B. Johnson Space Center Houston, Texas



Surfing survey

The Space News Roundup conducts a survey on how the Internet helps employees on the job. Story on Page 3.



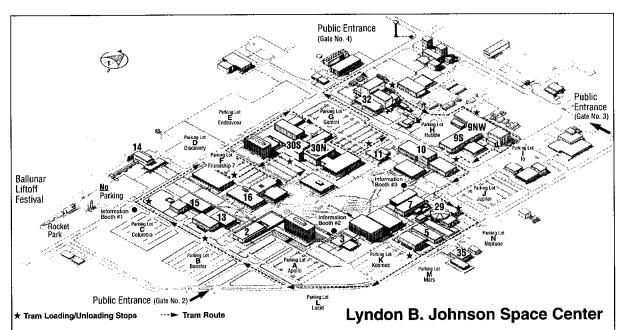
Icy Europa

Images from Galileo spacecraft show possible liquids on Jupiter's moon Europa. Story on Page 4.

Space News Roundup

Vol. 35

August 16, 1996



Visitors to JSC's open house will have access to more buildings this year. Buildings that will be open are numbered in the map above. Trams will circle JSC and stop at designated locations. Presentations in Teague Auditorium will focus on Americans in Space, Building for the Future. Guests also will have access to Ellington Field and the Neutral Buoyancy Laboratory at the Sonny Carter Training Facility.

Atlantis rolls to pad next week

Remating complete as crew gears up for dress rehearsal

With blastoff of the fourth Mir docking flight on track for next month, engineers at Kennedy Space Center this week finished remating the shuttle Atlantis to a new set of solid rocket boosters and fuel tank, setting the stage for its return to Launch Pad 39A next Tuesday.

Atlantis was outfitted with new boosters and a tank after NASA managers decided last month to delay the STS-79 mission to replace suspect boosters and

increase the margin of safety. After it is rolled back to its launch pad, Atlantis will await the arrival of STS-79 astronauts on Aug. 28 for a dress rehearsal of the countdown that will lead to their launch around Sept. 12.

Commander Bill Readdy, Pilot Terry Wilcutt and Mission Specialists Jay Apt, Tom Akers, Carl Walz and John Blaha will fly to KSC on Aug. 25 for Terminal Countdown Demonstration activities.

Blaha spent the week back in Russia, brushing up on Mir systems and language training, as he prepared for a four and a half

month stay on Mir to succeed Shannon Lucid, who is wrapping up her 21st week in space.

Blaha flew to Kazakstan and the Baikonur Cosmodrome Thursday to view Saturday's scheduled launch of his future crew mates, Mir 22 Commander Valery Korzun and Flight Engineer Alexander Kaleri, who, along with French Researcher Claudie Andre-Deshays, will blastoff on a Soyuz TM-24 rocket for a docking with Mir on Monday.

Korzun and Kaleri will join Lucid aboard Mir and then will be joined by Blaha once Atlantis reaches Mir next month. Andre-Deshays will return to Earth on Sept. 2 with Mir 21 Cosmonauts Yuri Onufrienko and Yuri Usachev after two weeks of scientific research. Lucid will return home with the STS-79 crew at the completion of Atlantis' joint docking mission, leaving Korzun, Kaleri

and Blaha aboard Mir for the rest of the year Meanwhile, Columbia is receiving refurbished main engines as preparations continue for its launch around

Oct. 31 to deploy a pair of satellites and to conduct a pair of space walks. Columbia's five-person crew—Commander Ken Cockrell, Pilot Kent Rominger and Mission Specialists Tammy Jernigan, Tom Jones and Story Musgrave-will spend 16 days in orbit.

STS-80 will mark the third flight of the Wake Shield Facility that flew on STS-60 and STS-69 and the second flight of the Orbiting Retrievable Far and Extreme Ultraviolet Spectrometer, or ORFEUS-SPAS, satellite which flew on STS-51. The saucer-shaped WSF is designed to fly free of the shuttle, cre-

ating a super vacuum in its wake to grow thin film wafers for use in semiconductors. The ORFEUS-SPAS will study the origin and makeup of stars.

Astronauts Jernigan and Jones will conduct a space walk to test hardware aimed at refining assembly techniques for the International Space Station.

Discovery is undergoing routine work as technicians ready it for launch next February on the second Hubble Space Telescope servicing mission. Discovery's astronauts continue space walk training and mission research, led by veteran Commander Ken Bowersox.

JSC open house provides close up look of space

By Steve Nesbitt

JSC employees will open the doors of NASA's laboratories, training facilities and Mission Control Center and welcome the Houston community behind the scenes of the nation's space program during the second annual JSC Open House on Aug. 24.

The JSC Open House is a oncea-year opportunity for the public to get a close-up look

at the space program's activities and operations. This year, 18 onsite buildings, plus JSC's aircraft operations at Ellington Field and the new Sonny Training Carter Facility, will be open for inspection. Favorite activities from last year



JOHNSON SPACE CENTER

1996

a.m.-4 p.m., is free to the public. Visitors may enter the center through three gates not normally open to the public-on NASA Road 1 just east of Saturn Blvd., on Space Center Blvd. near Bay Area Blvd. and on Space Center Blvd. near NASA Road 1. Parking in JSC lots

Open House guests will be able to see the simulators where astronauts train to fly the space shuttle and work aboard the International Space Station; tour the new Mission Control Center; inspect aircraft at Ellington Field; see the new Neutral Buoyancy Lab in the Sonny Carter Training Facility where astronauts will practice space walks for future missions; watch a demonstration of the suits used in space walks by both the U.S. and Russian space programs; and view a Martian meteorite.

Also during the day, JSC astro-

nauts, engineers and scientists will give presentations highlighting JSC's achievements since the 1995 Open House. All presentations will be in the Teague Auditorium. The schedule is:

9:30 a.m. "Go for Orbit Ops: Shuttle Highlights from the Past Year." Astronaut crew members from six different shuttle missions discuss their missions.

10:30 "Close Encounters in Space: Shuttle/ Mir Rendezvous Highlights." Astronauts and flight directors discuss the most recent shuttle missions to rendezvous with the Russian Mir Space Station. 11:30 a.m. "Liv-

a.m.

No. 32

ing and Working on Mir: Space Station Phase I.' Program managers and crew members discuss

the first step toward the International Space Station — the flight of Astronauts on the Russian Mir Space Station.

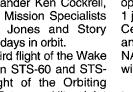
1 p.m. "Life Out There: Findings from a Martian Meteorite." The scientists who recently discovered evidence of primitive life in a Martian meteorite will discuss their work.

2 p.m. "Space Technology in Your World: Real-Life Applications of NASA Technology." Dr. Michael DeBakey from the Texas Medical Center joins other scientists and engineers in discussing the impact of space technology on the field of medicine and in other areas of daily life.

3 p.m. "The Road Ahead: Exploration and Development." Space Veteran John Young and others discuss returning to the moon and future space exploration.

Other events include educational activities for children, autographing Please see OPEN, Page 4

have returned and more interactive demonstrations have been added. The Open House, scheduled for 9



will be available at no charge.

Mir 22 backup crew to launch

to life science mission

Two mission specialists have been named to a 16-day space shuttle mission dedicated to gather information on how humans and animals adapt to space and the ability of humans to survive in a microgravity environment for an extended period of time.

Astronauts Rick Linnehan and Dave Williams of the Canadian Space Agency are the first crew members named to support the STS-90 Neurolab mission. scheduled for launch in March 1998. The remaining crew members will be named at a later date.

Investigations during the Neurolab mission will focus on the effects of microgravity on the nervous system. Specifically, experiments will study the adaptation of the vestibular system and space adaptation syndrome, the adaptation of the central nervous system and the pathways which control the ability to sense location in the absence of gravity, and the effect of microgravity on a devel-

oping nervous system.

Selected by NASA in March 1992. Linnehan was assigned to flight software verification in the Shuttle Avionics Integration Laboratory. He was subsequently assigned to the Astronaut Office Mission Development Branch, working on payload and mission development flight support for future space shuttle missions. Linnehan flew previously on Columbia's record setting 17-day Life and Microgravity Science mission in June-July 1996.

Williams was selected by the Canadian Space Agency in 1992 and appointed manager of the Missions and Space Medicine Group within the Canadian Astronaut Program. In January 1995, Williams was selected to join the international class of NASA astronaut candidates. Williams is presently working technical issues for the Payloads Habitability Branch. Williams will be making his first flight into space.



Linnehan



Williams

LUCID

Mir

The Mir 22 backup crew will be pressed into service for a Saturday launch to the Russian Mir Space Station after doctors diagnosed a possible health problem in primary Commander Gennady Manakov.

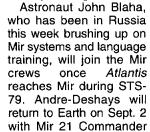
Mir 22 Commander Valery Korzun and Flight Engineer Alexander Kaleri replaced Manakov and Pavel Vinogradov after Manakov failed to pass a preflight electrocardiograph test for unspecified reasons. Vinogradov now becomes the flight engineer for the Mir 24 mission next June and will

be joined by vetera Commander Yuri Gidzenko. be veteran

Korzun and Kaleri, along with French Researcher Claudie Andre-Deshays, will blastoff on a Soyuz TM-24 rocket approximately 8:18 a.m. Saturday from the Baikonur launch site in Kazahkstan, docking with Mir on Monday.

"That will be a very exciting time here on station Mir," said Cosmonaut Researcher Shannon Lucid in an interview earlier this week. "French Cosmonaut Andre-Deshays will be here and we will be doing all

of the various French experiments, and that will be very exciting."



Yuri Onufrienko and Flight Engineer Yuri Usachev after two weeks of scientific research. Lucid will return home with the STS-79 crew at the completion of Atlantis' joint docking mission, leaving Korzun, Kaleri and Blaha aboard Mir for the rest of the year.

Please see LUCID, Page 4

JSC **Ficket 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.

EAA Belize Resort Trip: Available Sept. 1-Dec. 15, \$472 double occupancy, \$100 deposit required, final payment due 30 days before departure.

EAA Caribbean Getaway Cruise: Jan. 3-13, \$1198 double occupancy with airfare, \$999 cruise only, deposit due by Sept. 5, final payment due Nov. 4.

Sam Houston Race Park Track Pack: \$10 value pack for \$5.25, includes Club Level seating, program, tip sheet, admission, preferred parking and gift shop discount. Splashtown: One day pass cost \$14.25.

Schlitterbahn: One day pass cost \$19.75 for adults, \$16.95 for children.

Astroworld: One day pass cost \$22.75, two day pass cost \$34.25.

Fiesta Texas: One day pass cost \$22.75, two day pass cost \$34.25.

Six Flags at Arlington: One day pass cost \$22.75, two day pass cost \$34.25.

Sea World: Adult tickets cost \$24.50, children (3-11) cost \$17.25.

Space Center Houston: Discount tickets, adult, \$8.75; children (4-11), \$6.25, annual membership, \$22.95, family membership, \$59.95.

Movie discounts: General Cinema, \$4.75; AMC Theater, \$4.50; 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

Metro tickets: Passes, books and single tickets available.

JSC

Page 2

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 7:30 a.m.-9 p.m. Monday-Friday; and 8 a.m.-4 p.m. Saturdays.Cost is \$5. Dependents must be between 16 and 23 years old.

Defensive driving: One day course is offered once a month. Cost is \$25. Interested employees should call the Gilruth.

Stamp club: Meets at 7 p.m. every 2nd and 4th Monday in Rm. 216. Women's self defense: Martial Arts training for women only from 5-6 p.m. Tuesdays and

Wednesdavs, Cost is \$35 a month. Weight safety: Required courses for employees wishing to use the weight room is offered from 8-9:30 p.m. Aug. 22. Pre-registration is required. Cost is \$5.

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

Aikido: Martial arts class meets from 6:15-7:15 p.m. Tuesday and Wednesday. Cost is \$35 per month. New classes begin the first of each month.

Aerobics: Classes meet every Monday, Tuesday and Thursday

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

Country and Western dancing: Beginner class meets 7-8:30 p.m. Monday. Advance class meets 8:30-10 p.m. Monday. Cost is \$20 per couple.

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

Leagues: Registration for basketball, flag football, volleyball and soccer leagues will be Aug. 19-30. Call the Gilruth for registration information.

Today

JSC

Cafeteria menu: Special: tuna noodle casserole. Total Health: broiled chicken breast. Entrees: deviled crabs, broiled pollock, liver and onions, broiled chicken with peach half, Reuben sandwich. Soup: seafood gumbo. Vegetables: Italian green beans, cauliflower au gratin, steamed rice, vegetable sticks.

Monday

Cafeteria menu: Special: Italian cutlet. Total Health: herb flavored steamed pollock. Entrees: harbecue beef spare ribs, steamed pollock, baked chicken. French dip sandwich. Soup: black bean and rice. Vegetables: California mix, okra and tomatoes, vegetable sticks, ranch style beans.

Tuesday

Cafeteria menu: Special: spaghetti with meatballs. Total Health: baked potato. Entrees: stir fry beef, liver and onions, beef cannelloni, ham steak French dip sandwich. Soup: split pea. Vegetables: winter blend mix, seasoned cabbage, breaded squash, lima beans.

Wednesday

Toastmasters meet: The Spaceland Toastmasters will meet at 7 a.m. Aug. 21 at the House of Prayer Lutheran Church. For more information call Jeannette Kirinich x45752.

Astronomy seminar: The JSC Astronomy Seminar will meet at noon Aug. 21 in Bldg. 31, Rm. 129. An open discussion meeting is planned. For more information call Al Jackson at x35037.

Scuba club meets: The Lunarfins will meet at 7:30 p.m. Aug. 21 at Redfish Restaurant under the Kemah/Seabrook Bridge, Seabrook side. For more information call Fred Toole at x33201.

Cafeteria menu: Special: smoked barbecue link. Total Health: roast porkloin. Entrees: cheese enchiladas, roast pork and dressing, baked chicken, steamed pollock, Reuben sandwich. Soup: seafood aumbo. Vegetables: Italian green beans, Spanish rice, turnip greens, peas and carrots.

Dates & Data

Thursday

NASA open forum: NASA will conduct an open forum meeting to solicit responses concerning NASA's procurement policies and practices from 2-4 p.m. Aug. 22 at the Teague Auditorium. For more information call the JSC Industry Assistance Office at x34511.

Cafeteria menu: Special: chicken fried steak. Total Health: roast beef with gravy. Entrees: steamed pollock, lasagna with meat, steamed pollock, catfish, French dip sandwich. Soup: cream of turkey. Vegetables: whole green beans, butter squash, cut corn, black-eyed peas.

Friday

Cafeteria menu: Special: fried chicken. Total Health: vegetable lasagna. Entrees: pollock hollandaise, beef stroganoff, vegetable lasagna. Vegetables: steamed broccoli, carrots vichy, Italian zucchini, breaded okra.

Aug. 27

NCMA golf, tennis day: The National Contract Management Association will have its Golf and Tennis Day Aug. 27 at the Bay Oaks Country Club. Golf, tennis and a barbeque dinner are included. Registration due by Aug. 21. For details call Nacy Liounis at x31865.

Aua. 29

PMA workshop: The Performance Management Association, Houston chapter, will host a lun-

cheon workshop on the Implementation of an Earned Value Management System at 11:15 a.m. Aug. 29 at the Ramada Inn on NASA Road 1. The discussion will focus on "Work Authorization and Budget Drivers." Cost is \$13 and includes lunch. For more information call Susan Widmer at x34299.

Radio club meets: The JSC Amateur Radio Club will meet at 7 p.m. Aug. 29 at Nassau Bay City Hall. For more information call Larry Dietrich at x39198.

Sept. 3

ABWA meets: The American Business Womens Association Clear Lake Area Chapter will meet at 5:30 p.m. Sept. 3 at Bay Oaks Country Club. For more information call Nancy Hutchins at x34006.

Sept. 5

Warning system test: The sitewide Employee Warning System will under go its monthly audio test at noon Sept. 5. For more information call Bob Gaffney at x34249.

Sept. 10

BAAC meets: The Bay Area Aero Club will meet at 7 p.m. Sept. 10 at the Houston Gulf Airport in League City. For more information call Jerry Adair at x38058.

Sept. 11

MAES meets: The Society of Mexican American Engineers and Scientists will meet at 11:30 a.m. Sept. 11 in the Bldg. 3 Cafetera executive dining room. For details call Michael Ruiz at x38169.

Sept. 12

Airplane club meets: The Radio Control Airplane Club will meet at 7:30 p.m. Sept. 12 at the Clear Lake Park Community Bldg. For more information call Bill Langdoc at x35970.

VitaMaster stationary bike, includes monitor for

dist/spd & calories/time odometer, \$200 obo. 332-

Series #1 of Space shots, Kathleen, 480-1024

minum mag rims, good cond, \$250 obo. Steve, x37152 or 992-7049.

Two 3'x6' folding tables, \$25 ea; 6 blocks, \$3 ea; wooden ladder, 6', \$20; golf pull cart, \$25; cooking

Nordic Track Walkfit treadmill, ex cond, electron-

Smith & Wesson K-22, mod 17, masterpiece, 22

Car top luggage carrier, ex cond, \$50; baby crib

Stairmaster by Flexstep, Spirit, \$200 obo. Pat,

Browning Citori, several choke tubes, 12 gauge,

Lawnmower, 3.5Hp self prop, Murry w/rear

grass catcher, runs, needs some work, \$25. Mark,

Solitaire engagement ring, .45 ct, SI1 clarity, I color, appraisal \$1,095, \$525. 482-5531.

ic readouts, \$250. Robert, x36402 or 286-0434.

cal. 8 3/8" bbl. \$325. x38356 or 488-3966

ill, \$10. x32264 or 488-2184.

w/mattress, \$55. Howard, x37346.

ex cond, make offer. Roger, 331-3304. Full size PU, bedmat, \$25. 996-9820

x30131 or 488-0056.

Q-Healthclub membership, Galleria. Tom, 335-

Two mud traction LT325/60R15 tires & alu-

ing fan's. Steve, x37152 or 992-7049.

Miscellaneous

9094

8673.

x31105.

<u>Swap Shop</u>

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

Property

JSC

Sale/Lease: Clear Lake condo, 1-1 w/study, carport, french doors, high ceilings, alarm, gate. 977-5763

Rent: El Dorado Trace townhouse, 1200 sq ft, 2-2.5, 2 cov'd parking, full size W/D, FPL, \$675 mo, x34696 or 486-3980

Sale: Meadowbend, 3-2-2, 1/4 acre on cul-de-sac, new A/C, 1184 sq ft. Kevin, 333-3703 x 121 or 538-3141

Sale: Heritage Park, 3-2-2, brick 2-story home, by owner, below appraised value, \$77.5k. 482-8845. Sale: Wooded lot 90' x 135' in Taylor Lake Estates, can finance, \$39.5k obo. Don, x38039 or

333-1751 Rent: University Trace, 2-2, no pets/non-smoker,

refrig, indoor W/D conn, cov'd parking. x38889 or Sale: CLC, Oakbrook West, 4-2.5-2, 2 story w/bal-

cony, landscaping, new carpet/flooring, pool w/ jacuzzi, home warr, \$119.5k. x38275 or 480-4634.

Sale/Lease: Seabrook condo, 1-1, W/D, FPL, pets

cond, best offer over \$2k. Chuck, 282-4744. '78 Buick Rivera, 75th Anniversary car, silver/black w/leather inter, 403 cu in. V8, \$800. x35180 or 326-3706

'82 Oldsmobile Delta 88, 4 dr, 307 cu in., clean, dependable, \$1.5k obo. Tom, 841-3604. '92 Nissan kingcab, auto, A/C, P/S & P/B, bedlin-

er, Kenwood stereo/cass, bucket seats, 82k mi. \$7,250. 332-2039. '80 Toyota 4x4 PU, 1 owner, never wrecked,

dependable, \$1,850 obo. Mark, x33165 or 332-

'91 Chevy Beretta, blue, Iow mi, 3.1 V6, air bag, ex cond, \$6.8k obo. Dan, x34640 or 482-7550. '88 Buick Regal, 2 dr, ex cond, A/C, AM/FM/cass,

auto, new tires, \$4k. 263-6654 or 578-0636. '88 Pontiac LeMans, 4 dr. silver, most parts are fairly new to new, good cond, \$2k. 282-4418 or

286-4681 '90 Nissan 300ZX, gray/gray, 5 spd, ex cond,

41k mi, numerous extras, 1 owner, \$18k. x30081 or 332-0036. 86 Chevy PU, custom deluxe, short bed, 6 cyl,

no rust, ex cond, \$4.2k. 471-3673.

'74 Ford Bronco 4x4, orange/white, auto, A/C, good cond, \$6.3k obo. Tim, x38146.

'89 Pontiac Sunbird, 4 dr, auto, cold A/C, ex cond, new tires, \$2,795 obo. Avub Khan, x39199.

'94 Honda Passport LX 4x4, V6, auto, tint, A/C, ex cond. 23k mi. \$18k. 334-3941. '90 Crystal blue Ford Probe, ex cond, 15" alloy

wheels, new tires, CD player, 5 spd, A/C, 1 owner, \$5,499. Scott, x48952 or 480-7579.

Mac Performa, 450, 25 MHz, 4 Mb RAM, 512 Mb HD, 14' color monitor, keyboard, 1.4 Mb FD, ex cond, \$600. 244-1791 or 488-1326.

250 Mb IDE Internal HD removed form Macintosh, should work w/PC or Mac that uses IDE type drives, \$40; 72 pin Simm, 4 Mb from Mac 630, \$20. Bob, x37300 or 482-7529

Brother electronic typewriter, 15k memory, 40 character display, ex cond, \$125. 244-8045 or 334-5042

DX2-66 & Dx4-100, 8Mb/850Mb, mini tower. 4" monitor, \$695/\$745; Pentium 75-100-133-166, 16Mb/850Mb, 14" monitor, \$895-\$969-\$1069-\$1249, all have Win 3.11 or Win95+ Office & other S/W. Don, 333-1751.

Packard Bell 386, 4 Mb RAM, 540 HD, 14" color monitor, Win 3.1, Lotus Smi-pro, misc S/W, \$325; Musgrove, x38356 or 488-3966.

486 DX-4 Plus, 120MHz, 16Mb RAM, VGA monitor, 2 Mb Trident TVGA, 133 Meg HD, modem, & 5.25" FD, ex cond, \$680 obo. Dennis, x31232 or 471-3612.

Atari 520 w/color monitor, \$150; Atari 1040 w/color monitor, \$200 or both for \$300; free Atari modem w/1040. Jeff, 482-5393.

Kenwood stereo system includes AM/FM tuner. amplifier, equalizer, 5 disk CD player, dual cass deck, cabinet & 2 speakers, \$400 obo. Connie, x39468 or 326-2481.

486 DX2/80 MHz mother board w/AMD Processor, \$100 obo; Panasonic 24 pin color capable dot matrix printer, \$25. 286-7002.

cond, \$450. 335-0929.

488-3341.

1994.

9366.

or 480-4351.

Whirlpool Thin-Twin stack W/D, almond, ex cond. \$300, 488-4463.

Dresser w/mirror, \$50 obo; ceiling fan w/lights, \$25; 3 piece unfinished pine table set, \$30; swivel rocking chair, \$50. Lisa, x40213 or 992-7302.

Kenmore washer & electric dryer, white, works good, \$130 set or \$75 ea. 332-3168 Rattan end table, \$50; coffee table, \$70; rattan

chair w/ottoman, \$200; obo. Deanna, x31148 or

Two beige Broyhill sofas, ex cond, \$200 ea or \$350 both. 486-5843.

top; men's Bassett 5 drw, walnut dresser w/glass top & mirror; student's 21" desk lamp, white desk

chair; 2- 34" table lamps, early American & con-

temporary; olive green velvet lounge chair. 532-

King size bedspread, quilted, Bone w/brown &

Five pcs dining room set, table w/1 leaf, chairs

Off-white sofa, good cond, \$300. Kari, 282-

GE 2-cycle gas dryer, \$200 obo. Brian, x32635

Love seat, \$150; ceramic top end tables, \$50;

Kenmore gas dryer, ex cond, \$200. James,

roll, swivel & rock, \$275. Kathy, 337-5622.

rust palm print, ex cond, \$35. x35804. Sofa, light tan/pastel, ex cond, new \$800 setl

\$630. 244-8665 or 486-8795.

Lady's Bassett 6 dwr, walnut dresser w/glass

UK, \$21k or \$425 mo. 333-5232

Rent: Beach house, West Galveston, Jamaica Beach, 2nd row on beach, amenities, sleeps 7, weekend/weekly rates, avail Labor Dav week, 488-6796.

Rent: Beach house, Crystal Beach, Galveston County, sleeps 10, Cable TV, FPL, weekend/weekly rates. 486-1888.

Sale: South Park Memorial Cemetery, lot, Sec J, 3 spaces, monument priv, \$2.5k. x35804 or 334-7845

Cars & Trucks

'84 BMW 318i, 5 spd, 4 cyl, sunroof, good cond, \$3,850. 991-0821.

'50 Chevrolet 3/4 ton truck, \$2.2k. 286-5971.

'90 Acura Integra, white/black, 5 spd, 33k mi, stereo/cass, sunroof, spoiler, new tires, ex cond, \$12.k. Bill, x31926 or 992-2917.

'95 Honda Civic, 3 dr hatch, pwr windows, alarm, A/C, 5 spd, stereo, Alba Chrome rims, 17k mi, \$13k. Will, x481-0570.

'85 Buick LeSabre, collector's edition, 2 dr, V8, A/C, P/W & P/L, cruise, good cond, \$2,895. Wayne, x31338 or 482-9142.

'96 Saturn SC1, 16k mi, P/W & P/L, upgrade stereo, extras, ex cond, keyless entry, cruise. 283-5498 or 992-3417.

'95 Nissan Sentra XE, 4 dr, grey, auto, A/C, 21k mi, AM/FM/ cass, \$11,750 obo. Walt, 244-8678.

'80 VW camper, new tires/brakes, stove & icebox, 2 beds, good cond, A/C, \$2,950; rebuilt VW motor, \$650. 470-9322.

'93 Chevy Sierra C-1500, ext cab, long bed w/liner, 350 V8, P/S & P/B, tilt cruise, A/C, maroon, good cond. Les, x30090 or 331-5951.

'85 Mercury Cougar, A/C works, 87k mi, good

'88 Mazda 323, 4 dr, sedan, std, good cond, sell cheap. 333-2751

'85 Mazda RX7 GSL, all pwr, leather, white/red, drives perfect, \$3.1k. 480-5430.

'89 Eagle Premier ex cond, leather inter, loaded, P/W & P/L, A/C, \$3.2k firm. 332-8468 or 482-9177.

'93 Nissan Sentra XE, AT, P/S, A/C, cruise, white, 2 dr, AM/FM/cass, 44k mi, \$7.5k. Richard, x33184 or 482-8230.

Boats & Planes

'88 Sea Ray Seville 18' bowrider, 130Hp I/O, pwr, trim/tilt, P/S, steel spd prop, swim platforms, bimini top, AM/FM, under seat cooler, 1 owner, incl pr of skis/tow rope, & coast guard vest, galv trir, ex cond, extras, \$8k. x48959 or 532-1673

'84 SeaRay, 21' bowrider, 260 Hp Mercruiser V8, '96 Alpha I O/D & Stiletto stainless steel prop, complete restoration, stainless steel hardware, ex cond, \$8.7k obo, Keith, x35191 or 996-8318

Cycles

80 Suzuki GS550L, runs good, 12.7k mi, new battery, recently cleaned carbarators & overhauled, \$450; helmet, \$50. Dave, x38990 or 332-8041. '90 Yamaha Radian 600, runs great, looks great, \$1.8k, James, 286-1934.

'96 Harley Davidson Sportster Hugger, blue, low miles, incl \$2k in extra chrome, windshield. 482 9177 or 488-1326.

Audio Visual & Computers

Luxman model L450 integrated amplifier, \$250; Marantz model 112 tuner, \$50. Mark, x35211 or 561-7768

Oscilloscope B&K model 1431, portable triggered, DC-10 MHz, ex w/manual, \$175 obo. 996-

Musical Instruments

Audio-Technica DR-3000 wireless guitar sys, ex cond, \$140. Dave, 38990 or 332-8041.

Trombone, King beginner model w/case, Metronome & music stand, \$225. Robin, x31671 or 482-8934.

Antique upright piano, pre-1900s, \$450; antique organ, \$850. 286-2235.

Lost & Found

Lost gold necklace w/2 charms, #1 mom & Olympics. Pat, 31105.

Pets & Livestock

Siberian Husky puppies, AKC reg, 2 males, 1 sable, 1 black/white, born 5/13, shots, champion sire, \$300. Lisa, x40213 or 992-7302.

Free kittens, black, 3 mo old, 1 female, 1 male. x38603 or 332-1354.

Household

Upright freezer, ex cond, \$100; solid mahogany entry door w/leaded glass, handcrafted, \$750. 332-8468 or 482-9177.

Vent hood for kitchen range top, very good cond, \$30. 482-5837.

Modern style off-white sofa, ex cond, \$70, 24 cu ft refrigerator, ex cond, \$50. 996-0697.

Ge Spacemaker microwave, ex cond; double bed mattress, 283-5498 or 992-3417.

Misc Waterford sternware, Lismore pattern, \$30. x31057

Whirlpool, beige, stackable apart size W/D, ex

Credenza, good shape, \$40; secretary, \$60. 332-3168.

Wanted

x39679.

Want non-smoking female roommate to share 4BDR house, LC, \$300 mo, bills pd. 332-6178. Want non-smoking roommate to share 4-2. Friendswood, cable, W/D, microwave, house privileges, \$250 mo, no dep, bills pd. Michael, x38169 or 482-8496.

Want non-smoking roommates to share 3-2-2, Webster, \$340 all bills except phone, prefer students. 332-8417.

Want professional non-smoking, male, roommate to share 2-2 townhouse, Pearland, \$350, 1/2 utile. John, 997-8796.

Want non-smoking roommate to share house, Clear Lake, \$270 mo + utile, 286-5248.

Want non-smoking housekeeper from 2:30 -4:30 pm, 5 days per wk, 1hr house cleaning & 1hr childcare for 7yr old. x47049 or 480-3424.

Want miniature table saw for hobby work, Dremel, etc. 534-4645

Want rear eng vehicle, VW Beetle; Pontiac Fiero; to be used in building a trike, must have auto trans, price range \$300 - \$700. Keith, x35191 or 996-8318.

Want a hydraulic floor jack handle bar; your nonworking mower, edger. x31883.

Want good reliable pickup for farm. Jim Bates. 244-7031 or 944-4687.

Want leg extension unit for Soloflex. 282-4609 or 488-2735.

Want fish aquarium, 10-50 gals, filter, etc,. X30737

Want plans for making portable generator from lawn mower engine; also need help installing ceil-

Russian Matryoshka dolls, limited traditional political, sports & animated dolls, \$25 set. 482-5531.

Thule roof racks for gutterless mount, \$80. obo; Drawtight drawbar w/ball, \$20. Walt, 244-8678. Cardio Glide, \$100. James, x39679.

Child's roll-top desk, \$55; off white rabbit fur jacket, \$90. 286-2235.

Wood swing set w/3 swings, rope ladder, 6' slide & covered fort, \$175. x37130.

Dillon 450 reloading press, progressive 4 station, will load rifle/pistol cartridges, \$150. Jim, x34318 or 922-6628.

W/D, \$100; beer making kit, \$100; 10 spd bike, \$35; electric fence charger, \$20; Pioneer turntable. \$10; wetsuit, \$20; assort record albums, .50 ea; scuba regulator w/gauges, \$125. Kevin, 333-3703 x121 or 538-3141.

Ski Italian, French Alps, Mt Blanc, Chamonix stav Courmaveur. 7 nights/6 days, includes round trip, HOU-Milan, daily breakfast, \$1.1k. x38274 or 486-5072.

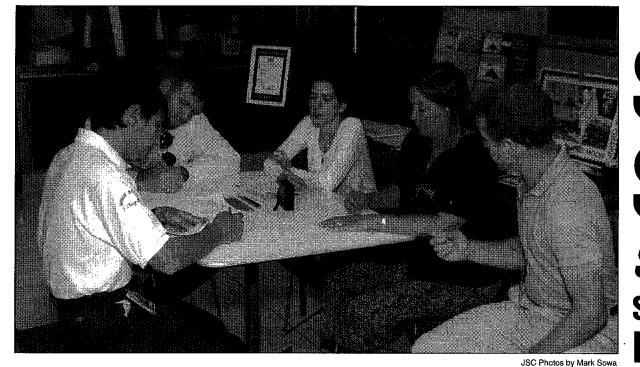
Century Quick-Fix wire feed welder, 120 volts, ex cond, incl mask/glove/wire, \$400. 991-0821.

Pet/reptile cage, 4 tempered glass sides, formica over plywood floor, elect cord, access, \$125 obo. Dan, 482-7550.

One pair rear view mirrors, fits Chevy truck, \$40; 1 Chevy truck bed mat, \$40; 1 pr of mag wheels w/new tires, \$300. 998-2293.

Samsung compact microwave, \$35; Samsonite hard case brief case, charcoal, \$65; bread slicing machine, ex cond, \$25; rear window for Nissan PU, \$10; bathroom sink, white, wall mount, \$10; shower door, glass w/silver trim, \$15. 334-1119.

Ruger KP90D, 45 auto, stainless w/decocker, 2 clips, case, 2 boxes of ammo, \$375. Charles, x37678 or 661-4789.



The *Space News Roundup* editors conduct a survey in the Bldg. 3 cafeteria on how the Internet helps employees on their job. From left are Astronaut Franklin Chang-Diaz, Ken Jenks of Engineering, Natasha Calder and Karen Schmidt of the Roundup and Steve Sokol of the Spaceflight Meteorology Group.

By Karen Schmidt

Surfing the net does increase productivity according to JSC employees who completed a recent *Space News Roundup* survey.

SNR editors spent time recently in the JSC cafeterias asking employees how the Internet helps them on the job. Results on the 75 surveys collected were overwhelmingly positive that the variety of Internet services help engineers, scientists,

secretaries and managers perform their job tasks more efficiently than in the past.

"I have quite a lot of contacts world wide," said Astronaut Franklin Chang-Diaz. "The Internet helps work payload and other space related issues quickly."

The majority of employees said they use the Internet for research on a wide variety of topics including emergency management, legal, directives, specifications, data bases and project status.

Surprisingly, the most popular feature at JSC is the electronic phone book. When asked how they use the net, "looking up phone numbers for JSC employees," was the most frequent answer employees gave. The second most popular item on the Internet with employees that were surveyed was the Shuttle Web Home Page. Employees use the web site to obtain information about past, current and future flights.

"I can check newspapers at remote locations and get first hand knowledge of emergency situations," said Bob Gaffney, emergency coordinator at JSC. "It's helpful to review other emergency response teams' incidents so that we learn from their experience."

A majority of employees surveyed use the Internet to exchange information with other NASA centers.

"During STS-78, payload support activities required fast coordination of documents with Marshall Space Flight Center," said John McKenna, a USA engineer that supports Payload Operations in Mission Operations. "Using the Internet we had a very quick turn around with checklist updates, payload flight data file changes, experiment updates and procedure updates. It was much faster than the old

Express

method we

used to use."

Secretaries

use the Internet

to obtain travel

per diem rates,

check informa-

tion on hotels,

access the on-

line supply cat-

alog and order

forms for their

also are able to

check sched-

office. They

Thave to do extensive research on advanced imaging techniques. The Internet is where the latest technology information is. It is an extremely useful tool that dramatically speeds up research.'

> -Dan Willett Information Systems Office engineer

ules for other managers and

calendars for conferences. Other employees who took the time to fill out the survey

gave specifics on their job and how the Internet helps to reduce time and provide the latest technological information on their discipline.

"I have to do extensive research on advanced imaging

techniques," said Dan Willett, an engineer in the Information Systems Office. "The Internet is where the latest technology information is. It is an extremely useful tool that dramatically speeds up research."

"I no longer have to wait days or even weeks for new releases of evaluation software I am testing," said Tammy Hoke, an electronic forms specialist for Hernandez Engineering. "Now I can usually access vendor websites and download test software immediately. Here on site, I can also search an on-line listing of official JSC forms, and even download and fill in some of them right from the web. Internet access has tremendously enhanced my work efficiency.'

"I now have access to the most up-todate electronics industry services and parts specifications," said David Smith, a printed circuit designer for Rothe Development. "By having this access, I can reduce or eliminate re-work by obtaining exact layout data for thousands of new components."

Other employees use the Internet for interactive discussions with others in their field, document storage and even use it as an encyclopedia. More than 50 different reasons were given for how the Internet helps

employees do their job better.

The survey consisted of 11 questions pertaining to the employee and the Internet. The survey asked how many employees use the Internet, with only 19 percent responding they never use it. An overwhelming 81 percent use it in one

form or another. Of that 81 percent, 57 percent said

weeks for new releases of evaluation software I am testing. Now I can usually access vendor websites and download test software immediately. Internet access has tremendously enhanced my work efficiency.'

> ---Tammy Hoke Hernandez Engineering electronic forms specialist

survey asked how often employees log on to JSC's Home Page. Results determined that 31 percent said they log on daily, 57 percent weekly, 4 percent monthly and 8

Surfing Survey *Space News Roundup survey results show Internet helpful on the job*

percent did not give a response. The survey also asked how often employees log on to other NASA centers and 22 percent said daily, 51 percent weekly, 7 percent monthly and 20 percent did not give a response.

Employees also were asked what other Internet services—besides the World

I now have access to the most upto-date electronics industry services and parts specifications. By having this access, I can reduce or eliminate re-work by obtaining exact layout data for thousands of new components.'

mponents.' *—*David Smith *Rothe Development printed circuit designer*

Mail, File Transfer Protocol and Usenet. Results showed the majority of those who use the Internet use e-mail, slightly less use FTP and only a few use Usenet. Some employees used more

Wide Web-

they use. The

survey provid-

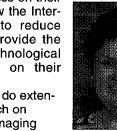
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than one of these services while others used none.

Employees also were asked to provide final comments at the end of the survey. Responses varied from requests that calendars, schedules and travel information be kept more up to date, to requests for updated equipment so that employees could more fully use the services the Internet provides. Employees also asked for direction and/or rules on how they can use the services without violating any laws or JSC directives, and get the most out of the time spent on the Internet.

The majority of survey responses were positive and employees commented that they may not have access to some information if it were not for the Internet. They also felt it saved time and money by increasing their productivity and research skills. JSC's Management Directives Officer Alice Ayala summed up her survey best, "Utilization of the Internet is helping us become a paperless office."





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daily basis, and

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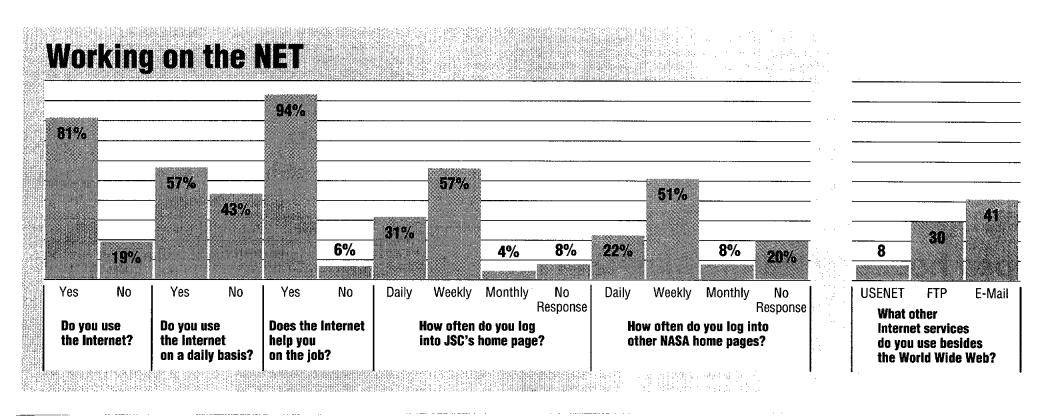
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Europa harbors possible 'warm ice'

Tantalizing images of Jupiter's moon Europa from NASA's Galileo spacecraft indicate that "warm ice" or even liquid water may have existed, and perhaps still exists today beneath Europa's cracked icy crust.

These fantastic new images of an icy moon of Jupiter are reminiscent of the ice-covered Arctic Ocean on our planet," said NASA Administrator Daniel S. Goldin. "The lack of craters, the cracks and signs of movement, all indicate that this might be young ice on a dynamic surface. It raises the possibility of a liquid ocean on Europa, the only other place in our solar system where we suspect such an ocean might exist.

The pictures are exciting and compelling, but not conclusive. The potential for liquid water on Europa is an intriguing possibility, and

another step in our quest to explore the solar system, the stars, and the answer to the great mystery of whether life exists anywhere else in the cosmos," Goldin said.

Galileo scientists are poring over images that show places on Europa resembling ice floes in Earth's polar regions, along with suggestions of geyser-like eruptions and details of long dark bands centered with white stripes that stretch like interstate highways across Europa's face.

'This moon is a marvelous place," said Ronald Greeley, an imaging scientist and a geologist at Arizona State University. "We're seeing evi-dence of a lot of geological activity on Europa. In some areas, the ice is broken up into large pieces that have shifted away from one another, but obviously fit together like a jigsaw puzzle," Greeley said. "This

shows the ice crust has been or still is lubricated from below by warm ice or maybe even liquid water.'

The results bring scientists closer to determining whether Europa has "niches" warm and wet enough to host life, Greeley said. Europa is about the size of Earth's Moon and is covered with smooth white and brownish-tinted ice, instead of large craters like so many other bodies in the Solar System. Scientists believe its cracked cue-ball appearance is due to stressing caused by Jupiter's strong gravity. They speculate that the warmth generated by tidal heating may have been sufficient to liquefy some portion of Europa's icy covering. Europa has long been considered by scientists as one of the handful of places in the Solar System where primitive forms of life could possibly exist.



ASCANS ARRIVE-Forty-four astronaut candidates arrived at JSC Monday to begin a period of training and evaluation. This year's class, the largest in the history of shuttle astronauts, consists of 10 pilot and 25 mission specialist candidates selected from more than 2,400 applicants. In addition, a cadre of international astronaut candidates, representing the Canadian, Japanese, Italian, French, German and European Space Agencies, are included in the '96 class. Following a year of evaluation and training, the astronauts will receive technical assignments within the Astronaut Office to further prepare them for shuttle flight assignments. Back row from left are, Christopher Loria, Umberto Guidoni of the Italian Space Agency, Christer Fuglesang of the European Space Agency, Mamoru Mohri of the Japanese Space Agency, Stephen Frick, John Herrington, Philippe Perrin of the French Space Agency, Paul Lockhart, Lee Morin, John Phillips, Donald Pettit, Scott Kelly, James Kelly, Paul Richards and Daniel Burbank. Middle row from left are Fernando Caldeiro, William McCool, Jeffrey Williams, Rex Walheim, Lisa Nowak, Soichi Noguchi of the Japanese Space Agency, Duane Carey, Charles Camarda, Richard Mastracchio, Daniel Tani, Piers Sellers, Mark Kelly, David Brown, Patrick Forrester, Michael Massimino and Gerhard Thiele of the German Space Agency. Front row from left are Charles Hobaugh, Edward Fincke, Stephanie Wilson, Laurel Clark, Heidemarie Stefanyshyn-Piper, Mark Polansky, Peggy Whitson, Yvonne Cagle, Joan Higginbotham, Steve MacLean and Julie Payette of the Canadian Space Agency and Sandra Magnus. Pedro Duque of the European Space Agency is not pictured.

Lucid, crew mates discuss life on Mars

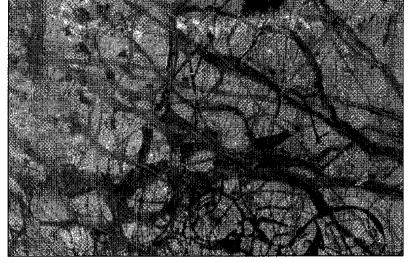
(Continued from Page 1) Lucid also said this week that the news of scientists discovering evidence of ancient life on Mars has her and her Mir 21 crew mates talk-

experiments for the trip home and setting up experiments in preparation of the arrival of the Mir 22 crew.

Before Monday's interview, Lucid

planted the seeds Monday, and is already beginning to see results.

"We got the wheat seeds planted and now we can see the tiny little plants beginning to grow," Lucid



Jupiter's moon Europa displays features in some areas resembling ice floes seen in Earth's polar seas. Europa, about the size of Earth's moon, has an icy crust that has been severely fractured, as indicated by the dark linear, curved and wedged-shaped bands. These fractures have broken the crust into plates and areas between are filled with material that is probably icy slush contaminated with rocky debris.

New training initiative to enhance secretarial skills

JSC has implemented a new training and development initiative for JSC secretaries.

Designed to focus on basic skills, this initiative outlines a comprehensive approach to training, enabling secretaries to become more versatile in their skills, remain proficient in leading edge office technologies and increase their competitiveness for future positions.

Members of senior staff, the secretarial council-comprised of directorate-level secretaries-and training coordinators were briefed in separate presentations on the newly designed training program. It includes a revamped training curriculum and a new program called the Communication Skills Building Blocks series. The new training curriculum emphasizes basic skills development, enhancement and refinement, and features required core courses as well as optional supplemental courses.

The Communication Skills Building Blocks series is designed to ensure that secretaries possess the basic grammar and composition skills necessary to meet current and emerging demands. It consists of 14 three-hour modules, that all secretaries will be required to take. Those who feel they already possess the skills covered in one or more of the modules, may place out of courses by completing a skills assessment.

Nancy Garrick of the Human **Resources Development Branch will** be contacting organizations over the next several weeks to schedule secretaries for this series as well as to provide more information about the placing-out process. Employees who have questions regarding the new training and development initiative for JSC secretaries can call Garrick at x33076.

Two former employees die

Two former JSC employees, Scott Simpkinson and Carl Huss, died last week. Services for both were Wednesday.

Simpkinson died Aug. 8 after a lengthy illness. He was a former assistant program manager of the Apollo Spacecraft Program and author of several papers on the Apollo and Gemini programs. He received more than 30 awards for his extra efforts during the manned and unmanned U.S. space programs including NASA's Outstanding Leadership Award and Exceptional Service Medal. He retired in 1982 after 38 years of service.

Donations may be made on Simpkinson's behalf to Ed White Memorial Youth Center at P.O. Box 992 Seabrook, Texas 77586.

Carl Huss died Aug. 8 of natural causes in Nashville, Tenn., assisting the Confederate Air Force Gulf Coast Wing on its summer tour. Huss was the original retro fire officer in the Mercury Program. He also worked in the Mission Planning and Analysis Division. He retired from JSC as chief of the Institutional Data Systems Division in 1982. Huss earned many awards including the Presidential Medal of Freedom and NASA's Outstanding Leadership Medal.

Donations on behalf of Huss may be made to the Confederate Air Force, Gulf Coast Wing c/o Jack Amuny 16323 Craighurst Houston, Texas 77059.

Langley gets new director

named director of NASA's Langley announced that he would step down

Jeremiah Creedon has been who after 36 years at Langley,

ing about the possibility of numans going there to investigate in person.

"When the ground told us, we were really excited," Lucid said in an interview with CBS on Monday. "It filled up our whole conversation at supper time. We talked about the possibility of life on Mars, and understandably, our conversation turned to the possibility of taking trips to Mars, and how we hoped Americans and Russians and other nations will be able to work together and develop a means of making a trip. We think that would be absolutely fantastic.'

Lucid, Onufrienko and Usachev spent this week packing up their

had a chance to reflect on her mission, now in its 21st week.

"Things are going real well here on Mir. We are beginning to think about wrapping up this mission and getting ready for the next mission," Lucid said. "We started off my phase of the flight with Quail eggs, developing little baby birds inside the eggs and watching the development, and we are ending up the flight growing wheat seeds. I think it is real interesting.

Over the past three weeks, the Mir crew has set up the greenhouse needed to grow wheat seeds, installing sensors and probes, watering and testing the unit. The crew said.

The Mir 21 crew started work on the Greenhouse Experiment, originally planned for the next mission, so the plants can be harvested as originally scheduled. The experiment is designed to see how plants grow in microgravity.

Overall, Lucid and her crew mates are happy with the way their mission has turned out thus far.

"We finished up everything that was planned for this flight, and I think it always makes you feel really good to get everything finished up,' Lucid said. "And of course, right now, we are looking forward to the Mir crew that's coming next week."

Research Center.

"NASA is fortunate to have a man of Dr. Creedon's caliber to take the helm of the Langley Research Center," said NASA Administrator Daniel S. Goldin. "I am confident Dr. Creedon's extensive experience and first-hand knowledge of aeronautics research will serve him well in this new position."

Creedon succeeds Paul Holloway,

as director as soon as a replacement was found.

Creedon, 56, is the seventh director of Langley since the center was established in 1917. Prior to being named director, Creedon was director of the Airframe Systems Program Office. Until February 1996, he was director of the Aeronautics Program Group, a position he had held since February 1994.

NASA bowling league starts soon

The NASA mixed bowling league begins its 1996-97 season this month, running from Aug. 27-May 6. The league, which currently bowls at 6 p.m. on Tuesdays at the Alpha Bowl on Bay Area Blvd., has a splitseason with two 17-week halves. The winners of each half of the season bowl in a play-off to determine first and second place.

Last season the league was comprised of 18 teams with five bowlers per team. The majority of the league members are active or retired NASA employees or immediate family

members or contractors.

In this handicap league, prizes are awarded to the first, second and third place teams and to individuals for high series and high game. Point money also is awarded to each team based on total points won at the end of the season

For more information, interested bowlers may contact any of the league officers for the upcoming season: President Dennis Perrin at x33134, Vice President Vanessa Buster at 282-3642 and Secretary/ Treasurer Leona Kain at 282-2544.

Open house to feature Max-Q in Bldg. 9

(Continued from Page 1) sessions by JSC's astronauts, construction of a full-size model of a new generation moon lander and tours around the closed chambers where volunteers lived during a recently completed 30-day study to test methods of supporting human

life on long space expeditions.

The astronaut band, Max Q, also will perform amidst the shuttle mockups in Bldg. 9 at 1 p.m. and 3 p.m.

The JSC Open House coincides with the annual Ballunar Liftoff at nearby Space Center Houston. Ballunar Liftoff features dozens of

hot air balloons, parachute demonstrations and other attractions near JSC's Rocket Park. It runs over three days beginning Aug. 23. Last vear more than 70,000 people attended both events.

For more information on JSC's Open House call x35111.