



JSC scientists are looking at using Antarctica as a test-bed for planetary base technology. Story on Page 3.



NASA is soliciting names of prominent females to give geologic formations on Venus. Story on Page 4.

Space News Roundup

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No. 11

Honor awards recognize JSC achievers

Desert Storm soldiers will receive special certificates for war efforts

Special awards will go to the employees who served in Operation Desert Shield/Storm as the JSC Honor Awards Ceremony recognizes more than 150 JSC and White Sands employees next Friday.

JSC's winner of the NASA Distinguished Service Medal, presented at NASA Headquarters, is two-time shuttle commander Daniel C. Brandenstein. Rockwell International's Roy H. Beat earns the NASA Dis-

tinguished Public Service Medal, which also is presented at Headquarters.

NASA Outstanding Leadership Medals, to be presented at the 2 p.m. March 22 gathering in Teague Auditorium, will go to John O. Creighton, Charles F. Deiterich, Henry W. Flagg Jr., J.D., Richard N. Richards, Loren J. Shriver, Harold S. Stall and Dwayne P. Weary.

The specially designed certificates

for those who reported for duty in support of Operation Desert Shield/Storm will be presented to the reservists if they have returned to JSC, or to a designated family member, colleague or supervisor. Recipients are: John D. Breitenbach, Valerie A. Burnham, Lance G. Carrington, William J. Clark Jr., Bobby S. Crow, David A. Davenport, Rodney J. Etchberger, Arturo Fierro, Larry J. Glenn, E. Paul Hornyak, M.D., Nina

K. Kohler, Frederick T. LaRochelle, M.D., Robert L. Martin, Elizabeth J. Meyer, Harold A. Moffitt II, Gary L. Priest, W. Preston Smith, Michael P. Stewart and Stephanie A. Wells.

Other award winners include:

NASA Exceptional Scientific Achievement Medal: Guatam D. Badhwar, Ph.D., and James M. Waligora.

NASA Exceptional Service Medal: Joseph S. Algranti, John H. Beall, Charles F. Bolden Jr., James R. Brandenburg,

Warren L. Brasher, Linda K. Bromley, Willard L. Castner, Bennie R. Cole, Bonnie J. Dunbar, Ph.D., Edward K. Fein, J.D., Saverio Guadiano, John W. Griffin Jr., Steven A. Hawley, Ph.D., James M. Heflin Jr., David C. Hilmers, Richard H. Holzapfel, J. Robert Jones, Josephine J. Jue, John H. Langford, Edgar C. Lineberry Jr. (presented posthumously), James R. Martin, Richard E. Matthews, Bruce McCandless II, Harold J. McMann, Garland B. Moreland, Richard M. Mullane, Please see **AWARDS**, Page 4

New views to highlight conference

By Kari Fluegel

Investigating Venus, Earth and the Moon through the eyes of Magellan and Galileo will be just one of the many highlights of the 22nd Lunar and Planetary Science Conference here next week.

More than 750 scientists and researchers from around the world will focus on the latest discoveries and investigations of our universe during the week-long conference starting Monday at the Gilruth Center.

Magellan, launched in May 1989, is now in orbit around Venus, mapping the planet, while Galileo, launched in October 1989, has completed gravity assist maneuvers around Venus, the Moon and Earth and is on its way to Jupiter.

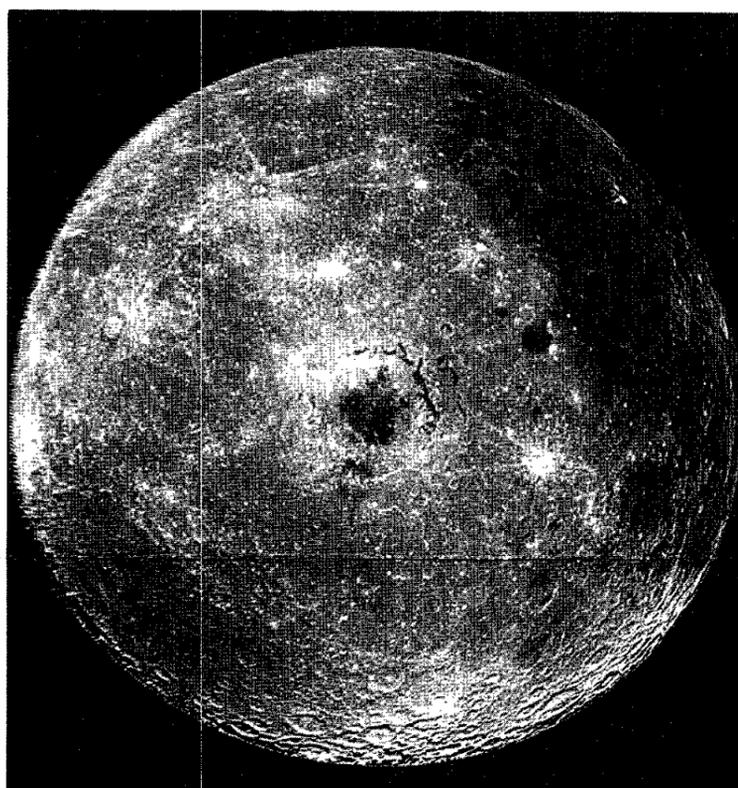
Within the past year, the two probes have returned numerous photographs and spawned countless discoveries on their journeys.

Wesley Huntress, director of NASA's Solar System Exploration Division, will lead a special session Wednesday on "Venus, Earth and Moon: New Views from Magellan and Galileo." The session will feature the latest pictures from the spacecraft.

Earlier in the week, senior NASA officials will discuss the agency's exploration initiative and the recent findings of the Advisory Committee on the Future of the U.S. Space Program chaired by Norman Augustine.

That session, "Science Exploration and the New NASA," set for Monday evening, will be led by Dr. Carolyn Huntoon, director of Space and Life Sciences at JSC, and Dr. Michael Duke, Lunar and Mars Exploration Program Office program scientist. Panel participants will be JSC Director Aaron Cohen; Chief

Please see **LUNAR**, Page 4



NASA Photo

Scientists visiting JSC for the 22nd Lunar Planetary Science Conference next week will be able to view the Moon through the eyes of Galileo. This digitally processed image was taken at a range of about 350,000 miles. In the center is the Orientale Basin, formed about 3.8 billion years ago by an asteroid impact.

Atlantis prepares for journey to pad

By James Hartsfield

Atlantis, scheduled to leave for Kennedy Space Center's Launch Pad 39B early this morning, is going into the final leg of preparations for STS-37, possibly launching as early as April 6.

Meanwhile, Discovery was moved from the Vehicle Assembly Bldg. to the processing hangar Thursday for repairs of cracks in the supporting metal of mechanisms that close the spacecraft's fuel line doors. The repairs are expected to take about two weeks, with a launch of Discovery on mission STS-39 perhaps in late April.

Atlantis' crew — Commander Steve Nagel, Pilot Ken Cameron, and mission specialists Jerry Ross, Jay Apt and Linda Godwin — will travel to KSC next week for a dress rehearsal of the STS-37 countdown Tuesday and Wednesday. The flight readiness review, a thorough check by management of the status of manpower

and equipment for the flight, is scheduled for March 26-27. An official launch date for Atlantis will be set following that review.

The current schedule calls for Discovery to remain in the processing hangar undergoing repairs until March 28, when it will be taken back to the VAB to be connected with the solid rockets and external tank for STS-39. The repairs have been planned to replace the closing mechanisms now on Discovery with new mechanisms removed from Endeavour and taken to Kennedy this week.

However, an inspection of the Endeavour fittings that arrived at KSC found at least one very small fatigue crack in one of the four fittings to be used. As of Thursday, managers were assessing any impact the finding may have on Discovery's repair plans. Last month, two-inch cracks were found through the metal plates on which supports for

Please see **ATLANTIS**, Page 4



Top managers to huddle on Total Quality

JSC's senior management staff Monday afternoon will kick off a two-day retreat to discuss Total Quality Management and how to make it work at this center.

The retreat will begin Tuesday morning at the Holiday Inn on NASA Road 1. At the kick-off, JSC Director Aaron Cohen and his top staffers will discuss what they hope to get out of the retreat, and selected issues such as sustaining engineering for the space shuttle, integrating the shuttle, Space Station Freedom and the Space

Exploration Initiative and providing sufficient resources for these efforts.

For the past six weeks, managers have been looking at JSC strategic planning goals and objectives, studying quality management concepts and developing vision and values statements, said Les Sullivan, chief of the Management Analysis Office and retreat coordinator.

The retreat will focus on understanding the Total Quality framework, reviewing program interdependencies, setting priorities, exploring options and

developing an action plan.

TQM is a set of principles, processes and techniques designed to help make good organizations better. It draws on the personal involvement of all employees in planning, training, measuring performance and systematically searching for ways to improve.

In a recent letter to directors of field centers, NASA Administrator Richard Truly indicated he plans to have NASA conduct an internal TQM assessment this year, based on the criteria used to determine the winner of the Pres-

ident's Award for Quality and Productivity Improvement. The exercise is designed to prepare NASA to compete successfully in 1992.

"The very nature of our programs demands that only the very best is good enough," Truly wrote. "To focus our attention on the goal of aggressive self-improvement, we must use this NASA-wide TQM program to build a quality culture and business approach."

The results of the assessment will be discussed at the fall 1991 NASA Senior Management Meeting.

Women's History Month looks at nurturing tradition, change

The contributions of women in American society will be the focus of National Women's History Month activities scheduled through the end of March at JSC.

March was officially designated by Congress as the month to examine women's role in history. The theme for the national observance is "Nurturing Tradition, Fostering Change."

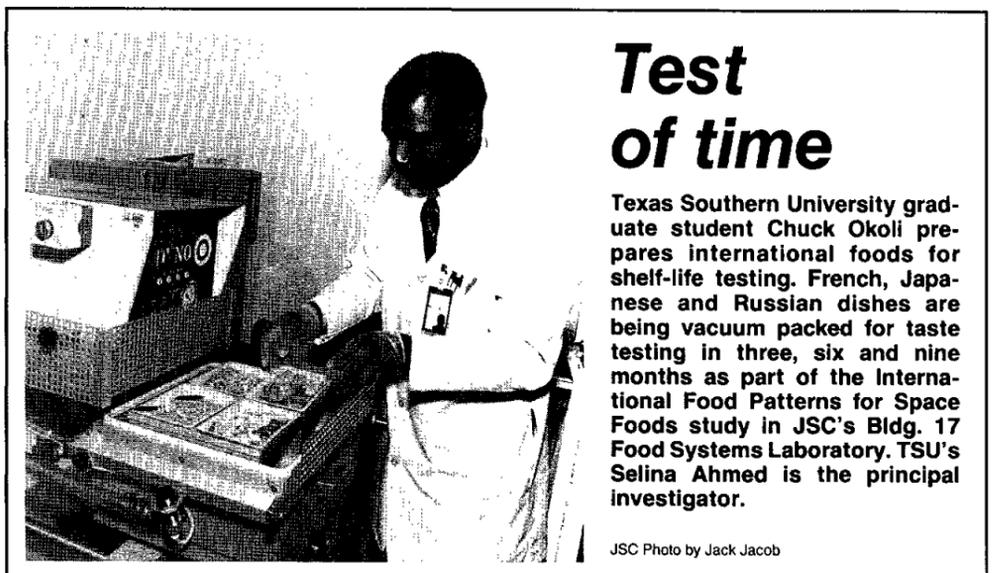
Here, a luncheon with Houston Police Chief Elizabeth M. Watson will be the culmination of a variety of activities scheduled throughout March. Watson will be the keynote speaker at the luncheon set for 11:30 a.m. March 29 in the Gilruth Center banquet room.

Tickets cost \$7 and must be purchased by March 26 from a member of the Federal

Women's Program Working Group: Freda Marks, Bldg. 1; Patricia Ashmore and Janice Fearer, Bldg. 8; Bridget Guidry, Bldg. 9; Grace Martinez, Bldg. 45; Rhonda Moore, Bldg. 16A; Katie Nguyen, Bldg. 45; and Dawn Ward, Bldg. 30A.

Additionally, four 15-17 minute videos on "Women in American Life" will be broadcast on the JSC Television Distribution System during the noon hour through March 29. The video documentary features more than 500 historical photographs from archives throughout the country. A selection of books on women's history also is available in the JSC Technical Library.

For more information, contact Marks, Federal Women's Program manager, at x30603.



Test of time

Texas Southern University graduate student Chuck Okoli prepares international foods for shelf-life testing. French, Japanese and Russian dishes are being vacuum packed for taste testing in three, six and nine months as part of the International Food Patterns for Space Foods study in JSC's Bldg. 17 Food Systems Laboratory. TSU's Selina Ahmed is the principal investigator.

JSC Photo by Jack Jacob

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Ticket Window

The following discount tickets are available for purchase in the Bldg. 11 Exchange Gift Store from 10 a.m. to 2 p.m. weekdays.

General Cinema (valid for one year): \$4 each.
 AMC Theater (valid until May 1992): \$3.75 each.
 Loews Theater (valid for 1 year-can be used two weeks after movie premieres): \$4 each.

Children's Easter Party (10 a.m.-noon, March 23, Gilruth, includes refreshments, picture with Easter Bunny, egg hunt, jugglers, face painting and clowns): children: \$4; adults: \$2.

Bluebonnet Trail Trip (April 6 or 7, one trip includes tours of Independence and historic church, the Rose Carousel, Miniature Horse Ranch, Rose Emporium and lunch; the other includes the Bluebonnet Festival, miniature horse race, antique carousel and lunch): \$18.

Deep Sea Fishing Trip (7:30 a.m.-7:30 p.m. April 13, includes bait, tackle and crew to help during trip): \$45 to fish, \$20 to ride, on sale at 7:30 a.m. March 15.

Clear Lake Metropolitan Ballet's Sleeping Beauty (8 p.m. March 15-16, 2 p.m. March 16-17, University of Houston-Clear Lake): \$7.

NASA Night at Astroworld (6 p.m. April 5, Astroworld): first 5,000, \$8; next 5,000, \$10.
 Rockets vs. Utah Jazz (7:30 p.m. April 6, Summit): \$5.50.

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Gilruth Center News

EAA badges—Dependents and spouses may apply for a photo I.D. 6:30-9 p.m. Monday-Friday. Cost is \$5.

Defensive driving—Course is offered from 8 a.m.-5 p.m., May 18 and June 15. Cost is \$15.

Aerobic dance—Eight-week session meets 5:15-6:15 p.m. Tuesday and Thursday nights. Cost is \$24.

Exercise class—Class meets 5:15-6:15 p.m. Monday and Wednesday nights. Cost is \$24.

Weight safety—Required course for employees wishing to use the Gilruth weight room. The next classes will be from 8-9:30 p.m. March 28, April 10 and April 25. Cost is \$4.

Country and western dance—Beginner only class meets 7-8:30 p.m. Friday nights for six weeks beginning April 5. Beginner or intermediate class meets Mondays from 7-8:30 or 8:30-10 p.m., respectively, for six weeks beginning April 22. Cost is \$20 per couple.

Scuba—Four-week course meets from 6:30-9:30 p.m. Thursdays. Cost is \$50 plus additional fees. Free introductory session meets 6:30 p.m. March 28, Gilruth Rm. 222.

Fiction workshop—Classroom sessions meet for five weeks from 6:30-8 p.m. Wednesdays beginning April 3. After class readings will be from 8-10 p.m. Cost is \$80.

Aikido—Martial arts class meets from 6:30-7:30 p.m. Tuesdays for six weeks beginning April 2. Cost is \$30.

Basketball sign-ups—Basketball league sign-ups will be March 27-28 at the Gilruth.

Volleyball sign-ups—Volleyball league registration will be March 26 at the Gilruth.

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Dates & Data

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

Sunday
Chorus auditions—The Bay Area Chorus will hold scholarship auditions for graduating seniors at 3 p.m. March 17 at Webster Presbyterian Church. A Scholarship Concert is planned at 8 p.m. April 20 at Clear Lake United Methodist Church. For more information contact Jennifer Chacon, 684-6030.

Monday
AIAA meets—The American Institute of Aeronautics and Astronautics will host a Computer and Software Systems Technical Committee meeting at 11:45 a.m. March 18 at Franco's Restaurant. "Artificial Intelligence with Hypercard" will be discussed by Stephen Desrosiers of McDonnell Douglas. Call Karen Lee-Taylor at 283-1961 for more information.

Lockheed NMA meets—The Lockheed National Management Association will present a brown bag luncheon at 11:40 a.m. March 18 in the Lockheed Plaza 4, Rm. 44F. "Inflation and Depression," will be the topic. For more information contact Charles Campbell at 333-6107.

Cafeteria menu—Special: Italian outlet. Entrees: braised beef ribs, chicken a la king, enchiladas with chili. Soup: cream of broccoli. Vegetables:

navy beans, Brussels sprouts, whipped potatoes.

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

Wednesday
Astronomy seminar—The JSC Astronomy Seminar will meet at noon March 20 in Bldg. 31, Rm. 129. Jim Oberg will provide an update on the Soviet Mir space station. Call Al Jackson, 333-7679, for more information.

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

Thursday
NCMA seminar—The National Contract Management Association's semi-annual conference will be March 21 at the Moody Civic Center, Galveston. The conference theme is "Managing Contracts for Peak Performance." Registration fee is \$125 for NCMA members, \$175 for nonmembers. For more information contact Lucy Yates, x31864 or Sue Garman x35998.

Computer workshop—JSC and University of Houston-Clear Lake will cosponsor a workshop, exhibits, and conference March 21-22 at the University of Houston-Clear Lake. The theme is "X in Space '91: Aerospace Appli-

cations and Directions with the X Window System." For more information or registration contact SEPEC at 282-2223, or Jane Kremer at x32601.

Cafeteria menu—Special: chicken fried steak. Entrees: beef tacos, bar-becue ham steak, Hungarian goulash. Soup: turkey and vegetable. Vegetables: spinach, pinto beans, beets.

March 22
Honor awards—A NASA/JSC Honor Awards ceremony will be held at 2 p.m. March 22 in Teague Auditorium. For more information, call the Human Resources Program Support Branch, x38414.

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

March 23
Messiah sing—The Bay Area Chorus will start the 1991 season with its annual Messiah Sing at 7:30 p.m. March 23 at Webster Presbyterian Church. Music will be furnished or bring your own. Cost is \$5. Call 684-6030 for more information.

March 25
Lockheed NMA meets—The Lockheed National Management Association will present a brown bag luncheon at 11:40 a.m. March 25 in the Lockheed Plaza 4, Rm. 44F. "The Correlation of Economic Freedom and Living Conditions," will be the topic. For more information contact Charles Campbell at 333-6107.

Swap Shop

Property

Rent: Lake Livingston, waterfront, 3-2, CA/H, FPL, covered deck, pier, good cond., furnished, wknd/wk. 482-1582.

Rent/lease: Clear Lake marina condo, three level, all appli, FPL, 2-2.5-2, \$950/mo. 474-4922.

Sale/lease: Clear Lake, Middlebrook, 4-2, new A/C, roof, furnace and paint, \$89.9K, or \$990/mo. 486-5247.

Rent: Lake Travis cabin, private boat dock, C/AH, fully equipped, accom 8, wkly/dly, \$325/\$80. 326-5652.

Sale: LC, Meadowbend, new section, 3-2-2, ex cond, pool, deck, patio cover, 10% assum, \$75.8K. John Gillman, 280-7461 or 538-2072.

Sale: LC, Countryside, 3-2-2, lg cul-de-sac, covered patio/deck/spa, new A/C, FPL, \$74.9K. x35027 or 332-1410.

Lease: Galveston condo 2-1, all appli, FPL, covered parking, \$525/mo. 289-6777.

Sale: Lake Livingston, Waterwood, modern 2-story, 1-4 acre cul-de-sac, CA/H, vac/wknd. Robert Kline, 870-0090.

Sale: Clear Lake 2-story condo, 1-1.5, patio, balcony, all appli, fan, FPL, \$38K assum. 486-0508.

Sale: Bay Knoll, 2599 sq ft, 4-2.5-2, formals, game rm, family rm, cul-de-sac, \$159K. 480-5473.

Sale: Lake Livingston lot, 70' x 140', water, elect, club house, boat ramp, Stephens Creek, restricted, \$1850 OBO. T. Ward, 488-5445.

Sale: The Landing, 4-2-2, 1-story, new carpet, fenced, new deck, rock FPL, miniblinds, fans, approx 1500 sq ft, \$61K. 334-1445 or 282-2691.

Rent: Friendswood, enclosed RV storage stall, 40' deep, lights/pwr. 482-9396.

Sale/lease: Completely remodeled Univ Green patio home, 2 BR, study, \$99.5K or \$990/mo. Marilyn Bein, 333-1700.

Lease: Pebblebrook condo, 2-1.5, new paint, carpet, blinds, FPL, all appli, \$475/mo plus dep. Lori, x34718 or Mike, 554-2601.

Sale: Middlebrook, 3-2-2, cul-de-sac, new paint, carpet, and ceramic tile, new A/C in '89, \$89K. 538-1051.

Sale: South Park Memorial Cemetery lots, Sec J, Lot 39, perpetual care, were \$550 ea, now all 3 for \$1000. 474-5610.

Sale: Bay Glen, 3-2-2, 2050 sq ft, great rm, formal DR, \$122.5K assum. 480-0527.

Lease: Pipers Meadow, 3-2-2, study, FPL, 1600 sq ft, fenced yard, short term lease OK, \$825/mo. Jon, 661-3430.

Sale/lease: San Leon, 3-1-1.5, lg lot, frame, vinyl, c/gas heat, \$42K or \$350/mo. Frank, x32825 or 332-7383.

Rent: Galveston condo, furn, sleeps 6, Seawall and 61st St, wknd/dly/wkly. Magdi Yassa, x38470 or 486-0788.

Sale: LC, Brittany Bay, 4-2.5-2, \$102.5K, assum 8%, bal of \$82K. 332-0047.

Sale: Splendor, wooded 2 acre corner lot, 50 mi NE, \$2K dwn, \$12K bal at 8%. 332-0047.

Sale: Pipers Meadow, 3-2.5-2, formals, FPL, loft, wet bar, fans, gar door opener, deck, landscaped, new paint, \$92K. Dennis, x34405, 480-5076.

Sale: Wedgewood Village, 3-2, ex lg master BR, \$72.9K. Janet, x35000 or 482-2514.

Cars & Trucks

'84 Ford van, XLT Club Wagon, loaded, new tires, clean, \$6500. 482-1582.

'82 BMW 320i, \$3600. Wade, 482-2810.

'80 Olds Cutlass LS, runs good, good tires, well maintained. 649-5092.

'88 Ford Mustang LX, 2.3L, 4 cyl, 2 dr, sedan, auto, w/overdrive, loaded, 39K mi, ex cond, serv wvr w/ \$25 deduct and lifetime rustproof transfers, was \$6800, now \$5500. Brenda, x37747 or 554-7767.

'85 Cadillac Sedan DeVille, lt brown metallic, tan leather int, ex cond, new tires, 63K mi, \$6995. Mike, 333-6821 or 332-6917.

'87 Toyota Celica, white, 3 dr hchbk, A/C, auto, AM/FM stereo, 48K mi, ex cond, \$7600. 639-3455.

'83 Nissan Stanza, ex cond, auto, A/C, pwr doors and windows, 83K mi. 333-2717.

'87 Toyota Supra, white w/maroon int, ex cond. Gary, x37896 or 333-2751.

'82 Toyota Celica Supra, 92K mi, new trans, brakes,

exhaust, loaded, \$2000 OBO. 474-4084.

'80 Corvette, white, camel leather int, ex cond, 67K mi, loaded, \$9000. 446-6425.

'89 Firebird, A/C, stereo, cass, V6, Maui blue, ex cond, 14.5K mi, \$8500. Carrie, x38506 or 333-4089.

'80 Chevy Citation, 42K mi, 4 dr, good cond, \$1700. 334-4604.

'88 Mustang, 5.0L, auto, 28K mi, A/C, sunroof, all pwr, black, \$8900 OBO. Tom, x39592 or 532-1518.

'77 Pontiac Grand Prix, sunroof, P/S, P/W, \$1500; '82 Ford van, 56K mi, ex cond, \$5000. x36604 or 482-7156.

'86 Ford F150 Lariat Super Cab, 5.0 V8, auto., PS/PB, PW/PL, A/C, cruise, tilt, AM/FM/cass, dual tanks, towing pkg, \$4500. 485-7167.

'77 Mercedes-Benz 240D, 4 dr, rebuilt eng, AM/FM, A/C, pwr windows, leather int, \$4250. 480-4535.

'89 Toyota SR5 PU w/cab and camper, deluxe interior, AM/FM/cass, A/C, \$8900. 480-4535.

'87 Ford Tempo GL, black w/ired int, 4 dr sedan, 75K mi, ex cond, \$4000. 538-1051.

'88 Mercury Sable LS wagon, 47K mi, 100K mi warr, loaded, \$9000 OBO. Terry, x36351 or 916-9164.

'87 Toyota Supra, wht/blue, ex cond, 48K mi, 5 spd, custom stereo, \$12K. Tim, x34333 or 486-6143.

'90 Mitsubishi Mirage, 2 dr hchbk, auto., P/S, P/B, A/C, stereo, cass, ex cond, \$6800 OBO. 771-0955.

'82 Ford Anaheim custom van, P/S, P/B, AM/FM stereo, 4 capt chairs, sofa/bed, 2 A/C, 2 tanks, CB, cruise, tilt, BO. 488-3191.

'83 Blazer, full sz, 4WD, new tires, batt, carb, exhaust, trans, \$4900. Marci, x32810.

'81 Linc 2 dr T/C, 60K mi, ex cond, \$4800. Frank, x32825 or 332-7383.

'77 Subaru wagon, 4WD, new engine, AC, AM/FM, \$600. 334-3185.

'80 Pontiac Phoenix, V6, A/C, 5 dr hchbk, auto, AM/FM stereo, good cond, \$1950. x30092 or 481-3637.

'82 Pontiac Bonneville wagon, ex cond, all pwr, cruise, tilt, AM/FM/cass, A/C, V8, \$1700 OBO. Glenn, x38067 or 484-4709.

'82 4WD Jeep Eagle wagon limited, 6 cyl auto, pwr wind/locks, 73K mi, \$3000 OBO. x34213 or 286-7149.

'88 Mazda 323 SE, 47K mi, A/C, AM/FM/cass, sun roof, new tires, \$4300. x31027 or 332-8743.

'89 Honda CRX Si, black, pwr sunroof, A/C, stereo/cass, 5 spd, lint, ex cond, \$9200 OBO. Rick, x38088.

'88 Chev, ext cab suco, V8, 72K warr, alarm, new tires, \$8900. 480-8682.

'87 Chev Cavalier, white, 4 dr, auto., A/C, 38K mi, ex cond, warr, \$4250 OBO. Dave, x39579 or 482-6187.

Cycles

'84 YZ125 off-road motorcycle, ex cond, water cooled, \$750. 482-1633.

Sears Free Spirit 10 spd bicycle, \$40. Ronne, x32539.

'81 Honda 750 custom, ex cond, low mi, \$850. Bruce, 485-0396.

Miscellaneous BMX racing bike parts. Shawn, 938-8675.

'83 Honda 250R 3 wheeler, \$500 OBO. x34155.

Raleigh Tri-Lite 19" racing bike, 12 spd, indexed gear shifter, ex cond, was \$425, now \$250 OBO. x49755 or 335-1862.

'84 Kawasaki GPZ 750 motorcycle, 8K mi, \$2000. Shannon, x32646 or 484-5412.

'80 Honda CB750 custom, \$500. x32949.

Boats & Planes

'86 31' Chris Craft Sportsman, twin Mercruiser eng, low eng hrs, shower, toilet, refrig, sleeps 6, ex cond. 339-1197.

Clear Lake Boat slip w/roof and motorized hoist for pwr boats, \$125/mo. 474-4922.

'70 Coronado 25, new mainsail, cover, depth sounder, 2 jibs, 7.5 hp motor, good cond, \$5500. John, x30217 or 484-0395.

Mistral Malibu windsurfer, intermediate level, board only, \$300 or w/complete rig \$475; wet suit, 2 pc, man's X-1g, plush, \$85. Ron, x32756.

'80 Glastron boat, 17', open bow, 80 hp Mercury, sport trlr, \$3600 OBO. 929-7334 or 578-7118.

Challenger raft, paddles, life jackets, air pump. Liz, 283-0439 or 486-3991.

24' Chapparral, center console, twin 150 hp Mercury OB, trlr, electronics, \$16.9K OBO. Paul, x30381 or 996-8326.

'76 Gougeon Tornado, 20' catamaran, US626, hull #006, wt competitive, 2 mains, 3 jibs, \$4500 OBO. 333-3509 or 524-3355.

'14' bass boat, 35 hp Evinrude, trlr, needs work, \$500 OBO. David, x38102.

'83 Renken 18' sailboat, roller furling jib, 4 hp aux, galv trlr, sleeps 4, good cond, \$4000. 339-3476.

'87 Lowe Delux 12' aluminum Jon boat, 9.9 Suzuki motor, custom trlr, 2 spare tires, gas tank, battery, running lights, \$1000. Warren, 488-7352 or 332-6065.

'87 19' Bass Cat Pantera, fully equipped, 200 hp Suz, low hrs, ex cond, \$11K. Marci, x32810.

'14' aluminum Jon boat w/Sears 7 1/2 hp OB, \$500. Tony, x35966 or 488-3238.

Audiovisual & Computers

GE 25" color console TV, needs work, \$35. 554-6082.

Commodore 128 PC, 1571 disk drive, 1902 color video monitor, joy-sticks, over 35 games, programs, etc, 128 also runs 64 mode, \$550. Edward, 486-1093.

Pair of Advent Prodigy Tower speakers, \$275; pair of Baby Advent speakers, \$175; Mitsubishi Electric, MGA stereo component sys, integrated amp, tuner, turntable and speakers, \$350. Jimmy, x33572 or 996-1382.

Peavey Bandit 65 amp, ex cond, \$165. Kevin, x31592 or 480-6751.

IBM PCjr, 128K, single floppy, IBM color monitor, docum, plus other equip, BO. 326-4316.

Sanyo CD player, repeat, program and memory functions, \$75. Lisa, x39202.

Computer and accessories, T199-4A w/SW, \$150; all wood table and chair w/fabric seat and back, \$100. Tim, x32519 or 488-6227.

Commodore 64C computer, disk drive, color monitor, Mannesman printer, modem, WP/graphics/games SW and all manuals, \$450. Cecil, 488-0719.

Crestline Special slide projector, manual, ex cond \$50. 474-5610.

AT&T 6300, XT compat, 640K, 1 FD, 20 MB HD, optical mouse, high ras mono monitor, ex cond, lots of SW, \$725 OBO. Jon, 661-3430.

IBM XT computer, 640K, 30 MB HD, 2 FD, color monitor, \$975. x30092 or 481-3637.

IBM PCjr computer, 640K, CGA color monitor, external 300 baud modem, 1 FD, 2 joy sticks, \$350; AT&T 6300 computer, 2 FD, color monitor, internal 1200 baud modem, 8MHz clock, 8086 CPU, 640K, \$650. Mike, 488-2157.

Musical Instruments

Yamaha ME-10 electric piano keyboard, ex cond, \$800. 559-2325.

Yamaha PSR-6 keyboard w/anvil case, full sz keys, \$200. Sharon, x36534 or 480-0622.

Pets & Livestock

Baby cockatiels, handled. Linda, 484-7834.

AKC toy poodle, fem, silver, 1 yr old, \$100; Collies, AKC, breeding pair, golden sable and white, champion background, \$200/pair or \$150 ea. x36182 or 466-3203.

AKC toy/leapud poodle, female, 8 wks old, shots, black/white, \$325. Cindy, 333-4907.

AKC scottie puppy, male, brindle, shots, born 10/29/90, \$150. x35405 or 332-0461.

Mini-lops and New Zealand rabbits. Gailo, 554-6200.

Hand fed blue/gold macaw w/cage, talks, \$1000; lessee sulphur cockatoo w/cage, does tricks, talks, \$850. Donna, 283-5453 or 337-3838.

Registered exotic miniature Vietnamese pot bellied pigs, \$300-\$2000 ea; exotic doves and finches, \$5 ea. James, 335-6710 or 482-6744.

Personal

Bay Area Tall Texans social organization for tall men and women, min height, men 6'2", women 5'10". Lisa, x31450 or Susan, 472-3213.

Photographic

Bell and Howell super 8 mm sound camera,

projector and screen, \$150. Sharon, x36534 or 480-0622.

Household

Antique lg diam bent brass double bed, w mattress, \$300. Samouca, x35053 or 482-0702.

Sanitaire vacuum cleaner, all attachments, \$75 OBO. 488-6549.

Ethan Allen solid cherry Queen Anne dining room set, oval table extends to 10 ft, two armchairs, two side chairs, ex cond, \$2150. Glenn, 280-8580.

Wards 35" color table top TV w/remote, ex cond, \$175; metal typewriter table, ex cond, \$20. 2 matching sm blackboards w/erasers, \$15 both; child's table, refinished, old maple, \$25; custom drapes, 2 lg windows, beige, \$100; 4 bentwood antique chairs w/30" round table, ex cond, \$125; child's rocker, \$25; doll highchair w/doll, \$10. 488-5654.

Queen sz waterbed, semimotion, ex cond, \$200 OBO. Scott, 282-3985 or 286-3922.

Electric dryer, 1 yr old, ex cond, \$250. MaryAnn, 941-6156 or Becky, x36530.

Two black vinyl couches, one black vinyl chair w/matching ottoman, \$125. Kim, 334-1496.

Queen sz futon pad and frame, ex cond, \$180. John, 282-3277.

Three window covering blinds, 36" x 49", orange-brown, \$20. Jeff, 333-7010 or 482-5393.

Amana microwave, model RR4D, ex cond, \$50; 19" Sony solid state portable TV, fair cond, \$50. 282-5325 or 488-8493.

Pair sz wtrbd, dark oak, w/bookcase, padded rails, liners, htr, pad, sheets, filler kit, ex cond, was \$260, now \$160; Eureka vacuum cleaner 3.2 hp, w/acc, ex cond, \$125; steam iron, ironing table, Kitchen Mate food prep, baby high chair, car seat, trainer, stroller, BO. Gilles, x36267 or 480-7816.

Rollaway bed, 3/4 sz, \$50. x36080 or 482-5621.

Recliner, ex cond, green, very comfortable, \$50. Edward, x36250.

Antique oak china cabinet, \$375. Rhonda, x32883.

Antiques, walnut Renaissance Victorian bedroom suite, oak tables, chairs, roll-top desk, matched gold-leaf mirrors, x35732 or 486-2659.

Two leather sided glass top coffee tables, \$50 ea; two 15" wire wheel covers, \$25 ea. James, 335-6710 or 482-6744.

Bedroom suite, antique green, full sz bed, mirrored dresser, 5-drawer chest, 2 night stands, \$675; G.E. dishwasher w/Potscrubber, built-in, almond, works, needs minor repair, \$60. Magdi Yassa, x38470 or 486-0788.

Wanted

Want van pool riders from Greenport Mall to JSC area. Bill Bell, 333-6678.

Want Jamaica Beach prop w/assum loan and/or owner fin avail. Ed, x31782.

Want '75-'80 Ford Pinto, auto, no pwr, no A/C, body not important, must be towable. Trey, 280-4275 or 484-7834.

Car pool needed to share dr from West Houston, I-10 & Hwy 6, to NASA or Ellington, 7 a.m. to 4 p.m. 578-7118.

Want high chair in good cond and sewing machine or serger. Dallas, 488-4194 or 486-9520.

Want beginning riders to form motorcycle trail riding group, cycle maint and safe riding taught. (409) 925-8593.

Want fem, non-smoking roommate to share 2-2-2 in Pipers Meadow, separate phone line, \$280/mo plus 1/2 util. Tracy, x32526 or 486-3946.

Want riders for vanpool starting from SW side and Braeswood-610 locations to CL/JSC. Keith, x30222 or 879-0903.

Want gns, boat, Stelling of Gibson 5-string banjo, Martin guitar, or whatever traded for '79 Dodge Omni, 75 Lincoln Towncar, or '79 Datsun wagon. 283-4402.

Want roommate to share 3-2.5-2 in new area of CL, \$300/mo plus 1/2 util. 282-3215 or 480-9448.

Want old mechanical wrist watches, and cond. x30186.

Want Fisher-Price car seat. Gretchen, 283-0446 or 482-6744.

Want van pool rider for three months, March-May, from Loop 610 Post Oak Park & Ride to JSC. x37232.

Need loving, mature woman to give lots of TLC

for a 3 month baby girl, M-F, 8:30-4:30, ref req. 480-7774.

Miscellaneous

Johnson sail boat motor, 15 hp, elec start, long shaft, \$425; Evinrude 90 hp w controls, \$250; Lawnboy lawnmower, \$35. 334-6515.

Avon collector bottles from '60s and '70s. ex cond. Janet, x35000 or 482-2514.

Step bumper, class II hitch for Chev S-10 PU, 41" between mounting plates, black, \$50. Samouca, x35053 or 482-0702.

Steel-belled radial WSW tire, new, on 5-lug steel wheel, 215-75R15, \$50. Dave, x39579 or 482-6187.

Polynesian portable spa w/redwood ext enclosure, extra foam insulation, cover, you move, \$500. Wade, 482-2810.

Marcy Easyrider recumbent exercise bike, ex cond, \$75 OBO. Kim, 244-9699 or 480-0843.

Xerox 590 electric typewriter, self correcting, legal sz carriage, \$75; oval mirror, gold-leaf frame, 20.5" x 28", \$25; child's bamboo and wicker rocker, stained dark, ex cond, \$20; ladies leather boots, sz 7 1/2, 2" heel, light brown, \$25. 280-8746.

Ivory tea length formal, off the shoulders, lace-satin, was \$200, now \$100. Colleen, x39584 or 966-1732.

Four 33 x 12.5-15 tires on 10 inch rims, 2 mos old, \$600. Henry, 283-6380.

Ping Eye 2, 2-PW, black dots, \$375. Joe, 283-4825 or 480-2279.

'80 Corvette front end clip, ex cond, \$1800 OBO; '80 280ZX front end brau, black. Joe, x33979.

Gun cabinet, lockable, glass doors, one drawer, needs one pane, \$30; double bed headboard w/bookshelf, paint partially removed, \$20. Ronnie, x32539.

Remington 30-06 model 700 ADL centerfire bolt action rifle, Monte Carlo stock w/sling, 3X12 Tasco scope, \$425. 484-6814.

Chevrolet bowtie slant plus heads for sm block engine, ex cond, \$500. Bruce, 485-0396.

'74 Yamaha 650 twin, \$750; windjammer, \$50; aquarium w/cedar stand, \$75; JVC stereo cabinet, \$75; Franciscan apple pottery, \$75; Braun 10-cup coffee pot, \$25; Hamilton Beach cordless iron, \$25. 280-1118 or 479-7940.

Airline tickets to San Jose, Calif, two round-trip, depart IAH 16 May 91 6:50 AM, arrive SJ 10:43 AM, depart SJ 21 May 91 AM, arrive IAH 4:16 PM, \$300. Doug, x32860 or 486-7412.

Man's gold and diamond ring, Liz, 283-0439 or 486-3991.

Ceramic molds, various sizes, \$10-\$50. Bersa 380-9mm, \$175; Whirlpool washer and dryer, \$100. Sharon, x36534 or 480-0622.

Singer portable sewing machine, \$75. 488-5445.

'90 Schwinn Airbyte exercise bike, ex cond, \$500 OBO. Mary, x31120 or 996-0199.

Spalding golf bag, lightweight carry w/feet, green/black, \$25. x36324.

Wedding dress, gloves, hat, shoes, all sz 8, cream colored, short sleeves, tea length, Southern Belle style, \$150. Sheryl, 481-4889.

Man's Rockport shoes, 2 pair, 13N, one tie up, one loafer, both brown, ex cond, were \$180, now \$75 OBO. x32519 or 486-6227.

Bridal attire, new never worn, wedding gown, sz 4, veil, under attire, \$800/all or will sell separately; man's wedding ring, yellow gold, sz 9, 5 sm diamonds. 455-3463.

Guns, S&W Mod 61, Hi-Std Derringers, Colt pocket 25, Beretta Mod 950B, M1 carbine, Ruger 10/22, Ruger Old Army .44, S/N 1633. Gary, x31361 or 554-4109.

Clothing, mostly couture and designer labels, sz 4-10, shoe sz 7-7 1/2, new or unused, x35732 or 486-2659.

Boxing memorabilia, Duran, Hagler, Leonard, Tyson, Holmes posters, tickets, programs, etc, boxing newsletter. John R. Cobarruvias, x39357 or 486-5203.

New windows, wkr moldings and decorative cabinet pulls. Don, x38039 or 333-1751.

Tennis racquets, Wilson Profile 2.7, 5/8 grip, midsize, \$120 OBO; Wilson Sting 1/2 grip, midsize, \$50 OBO. Kyle, x38653 or 532-1130.

Lg black metal exec desk w/wood grain top, \$200; matching credenza w/2 file dwsr, center bookcase w/ doors, \$125; two shelf bookcase w/adjust shelves, \$40. Dennis, x34405 or 480-5076.

Moving boxes, \$1 ea. Mark, x32832 or 538-3444.

Southern Exposure

NASA scientists consider Antarctica as life-support technology testbed for lunar and Mars outposts



JSC scientists have been visiting Antarctica for years in search of meteorites, but they may soon begin venturing there to test life-support systems for planetary bases. Left: A photo taken during Dr. John Annexstad's 1980 expedition. Below left: JSC astronomer Dr. Faith Vilas stands above the barren continent atop Mt. Achernar during her 1987-88 expedition. Below right: While Antarctic bases enjoy an abundance of breathing air, lunar bases will need to collect and process lunar soil to make oxygen. Lunar and Antarctic bases will share other life-support technology needs such as non-polluting power generators, waste recycling systems and heating systems.

By Kelly Humphries

When NASA people picture a remote human outpost they often think in terms of a gray lunar landscape or a ruddy red Martian vista. But the outpost where they get their first experience in longterm isolation could be in the stark white of the Antarctic.

Folks at JSC have been at the heart of discussions that culminated recently in an agreement between NASA and the National Science Foundation to use that barren continent as a testbed for technologies and systems that could eventually be used on the Moon or Mars. And JSC workers could be among the people inhabiting the testbed.

Barney Roberts, manager of the Planet Surface System Office in New Initiatives, has been among those leading the effort.

"It's kind of an evolutionary idea that grew out of a workshop we had back in 1983 where we were talking with some representatives of the state of Alaska," he said. "They mentioned there were needs for completely self-contained outposts that would permit people to go to the Northern Slope for drilling or oil exploration. They also talked about application of space technologies to solve some of their living problems in remote, environmentally sensitive areas.

"From there, it began to grow into 'Where are other places we might consider as reasonable places to get some systems and operations experience for planet surface systems?' The kind of experiences we need are those that give us experience with systems having to operate for very long periods of time with little or no engineers or resupply if something breaks."

Roberts said his group began talking to the National Science Foundation, which operates Antarctic bases.

"They somewhat overwhelmed us with their enthusiasm to solve some of their problems," he said. NSF bases use low-level technology such as polluting diesel generators, and they dump waste into holes in the ice or store it in stacked drums. Eighty percent of the bases' budgets are dedicated to logistics, he said.

"They see they could become more efficient with space-age technology, that they could solve their logistics problems and some of their pollution problems."

The agencies have signed a memorandum of agreement that will benefit NSF's operations in Antarctica and enable NASA to conduct basic scientific research and test systems for supporting human life. The activities will build on NSF's 33 years of experience in the harsh Antarctic environment.

Signers of the agreement include representatives of NSF's Directorate of Geosciences and NASA's Office of Aeronautics, Exploration and Technology and Office of Space Science and Applications.

Under the agreement, NASA and NSF will pursue a broad range of research in areas related to space science, and will demonstrate technologies in such areas as life support and environmental control; energy generation and storage; automation and robotics; telescience; and human behavior and performance.

NASA scientists and engineers believe that Antarctica's climate, terrain, temperature and isolation provide an environment on Earth that most closely parallels the conditions of isolation and stress to be faced on long-duration human missions in space.

"The science side of the house wants to learn how to do

Mars science research by practicing and learning terrestrial lessons," Roberts said. "The Human Factors people want to study how humans behave and govern themselves in isolated, remote environments — how they manage themselves and interface with their equipment.

"We're in the process of planning where we go next. My three thrusts are to begin to transfer knowledge and experience in operations and logistics into my activity. We want to take things down there like non-

polluting power systems, life support systems, robotic systems to get long lifetime failure and operation histories. We want to begin to build a database so we can understand what kind of failures to expect and how to respond."

The last phase will be complete verification and certification testing, he said.

"We'll take a completely integrated habitation system and immediate supporting systems to a high plateau where there is no base and there is a unique astronomical observation area. We'll supply a habitation system and we'll get our data while the NSF uses the system to do its research," he explained.

As to whether JSC people should participate, Roberts is all for it.

"I think we ought to have people down there," he said. "We're planning on conducting NASA and NSF working sessions and sensitivity sessions. We are proposing that some of these sessions actually be conducted in Antarctica so we can understand the problems first-hand."

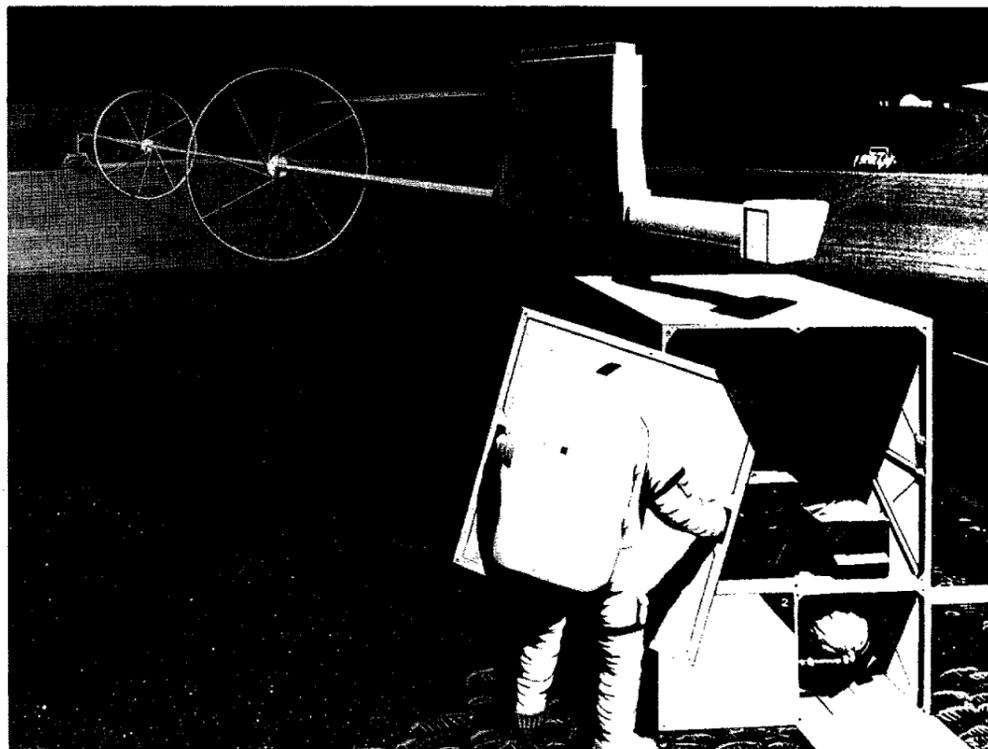
NASA and NSF have a long history of cooperative research projects in Antarctica including programs ranging from meteorite recovery to cosmic microwave background observations. The two agencies also have done cooperative research on the origin of microbial ecosystems in the ice-covered lakes of Antarctica's dry valleys. This research relates to studies of the possible evolution of life on Mars in the distant past.

Roberts said other test beds are being investigated. Candidates include undersea bases developed with the National Oceanic and Atmospheric Administration and construction laboratories at various other national, state and academic facilities.



The kind of experiences we need are those that give us experience with systems having to operate for very long periods of time with little or no engineers or resupply if something breaks.'

—Barney Roberts



Bluford 'Black Engineer of Year'

Astronaut Guion S. Bluford Jr. was named 1991 Black Engineer of the Year by U.S. Black Engineer Magazine, Mobil Corp., and the Council of Engineering Deans of the Historically Black Colleges and Universities.

Bluford received the honor at the fifth annual awards ceremony March 2 at the Baltimore Convention Center.

An Air Force colonel and mission specialist on the upcoming STS-39 flight, Bluford received the award for his "talent, commitment and broad achievements which offer leadership and inspiration to others."

Bluford, 49, was the first black astronaut to fly in space. He holds master's degrees in aerospace engineering and business administration, and a doctorate in aerospace engineering. He is a charter member of the Advisory Committee for the Minority Engineering Activities in

Pennsylvania State's College of Engineering.

JSC

People

Simanton represents JSC on advisory panel

Don F. Simanton, assistant director for information resources management in the Information Systems Directorate, has been designated as the primary JSC representative to the NASA Information Systems Advisory Committee.

John E. Cools, chief of ISD's Service Management Division, is his alternate.

Simanton also has been appointed the JSC Center Computer Security Manager. E. Lee Snapp has been

designated JSC Computer Security Coordinator.

Hanh chairs Asian Pacific council

Hanh Nguyen-Xuan has been elected 1991 chairman of the Asian Pacific American program council.

Hanh is subsystem manager for the workstation and display control system in the Mission Control Center.

The program council advises the Asian Pacific American Program manager on issues that have center-wide implications and are related to the employment, training or advancement of Asian Pacific Americans. The council also promotes the group's contributions to U.S. History and America's space program, organizes events that highlight those achievements and promotes awareness of



Bluford



Simanton



Hanh



Guidry

Asian Pacific Americans' culture, work ethic and behavior.

Hanh's co-chair is Sophia LeCour of Rockwell Space Operations Co.

Guidry top secretary

Lisa A. Guidry, secretary to the deputy chief of the Man-Systems Division in the Life Sciences Directorate, has received the Marilyn J. Bocking Award for Secretarial Excellence.

Guidry, who was promoted to her current position after progressing through the Office Education and Work

Training Opportunity programs at JSC, was temporarily thrust into the position of senior secretary for the division because of a retirement and budget constraints.

"To say that Ms. Guidry rose to the occasion in an outstanding manner is a gross understatement," her nomination reads.

Guidry was specifically cited for meeting this demanding workload during the Space Station Freedom Program preliminary design review without missing a milestone.

She receives a \$500 stipend and a plaque.

Women's names sought for Venusian features

Scientists of NASA's Magellan Project, in association with the U.S. Geological Survey, are inviting the public to propose names of notable women for the many impact craters and large volcanic vents being discovered on Venus by the Magellan spacecraft's imaging radar.

"We want everyone, especially students, to share in the adventure of discovery," said Magellan Project Scientist Steve Saunders. He said that the impact craters on Venus are some of the most beautiful features in the solar system. They form somewhat randomly in time and space when an asteroid or very large comet collides with Venus' surface.

Names sent to the Magellan Project offices at NASA's Jet Propulsion Laboratory will be compiled for the Working Group for Planetary System Nomenclature, a committee of the International Astronomical Union (IAU). The IAU gives final approval to names for bodies in the solar system.

Names newly proposed for Venusian features will not be formally considered until a meeting in 1994, but may be used on published maps and in articles, pending final approval.

Scientists at the USGS's Flagstaff, Ariz., field office said they expect names for 4,000 or more features on Venus are likely to be required in the

coming decade. Many features on Venus, by international agreement, are named for goddesses of ancient religions and cultures. But at least 900 craters and volcanic calderas or vents will be named for actual, notable women.

"The mapping of Venus is unique in the history of cartography," said USGS cartographers Ray Batson and Joel Russell. "Never has so much territory been discovered and mapped in so short a period of time."

There are restrictions. The women must have been deceased for at least three years and must have been in some way notable or worthy of the honor. Names of military or political figures of the 19th and 20th Centuries are specifically forbidden under rules of the IAU, as are the names of persons prominent in any of the six main living religions. Names of a specific national significance also are not allowed.

When the name is submitted, her birth and death years and a one or two sentence written rationale for the honor should be given, along with a reference book citation, if available.

The Magellan project members ask that submissions be sent to: Venus Names, Magellan Project Office, Mail Stop 230-201, Jet Propulsion Laboratory, 4800 Oak Grove Dr., Pasadena, Calif., 91109.

Atlantis ready to roll to pad

(Continued from Page 4)

Discovery's door-closing mechanisms are mounted, prompting managers to remove the spacecraft from the launch pad for repairs.

Columbia, currently occupying the second processing hangar as it is prepared for a May launch on STS-

40, also is to undergo repairs of its door-closing mechanisms, incorporating redesigned and newly manufactured mounts for those fittings to alleviate the stress that is the root cause of the cracks. All other preparations for STS-40 are proceeding smoothly and on schedule.



JSC Photo by Jack Jacob

APOLLO ALUMNI—Dr. Joseph Shea, center, manager of the Apollo Spacecraft Program Office from 1963 to 1967, visits with JSC Director Aaron Cohen and Administration Deputy Director Wayne Young during a recent visit here. Shea, now a professor of aeronautics and astronautics at the Massachusetts Institute of Technology, visited a number of JSC facilities and met with senior managers and young engineers.

Lunar conference sign-in begins Sunday

(Continued from Page 1)

Scientist for Martin Marietta Noel Hinners; Jet Propulsion Laboratory Director Edward C. Stone; and Assistant Administrator for the Office of Space Science and Applications Lennard Fisk.

Both programs begin at 8 p.m. in Teague Auditorium and are open to the public free of charge.

Topics for the 36 seminars scheduled throughout the conference were drawn from a total of 791 abstracts submitted to the Lunar and Planetary Institute.

The concurrent technical sessions begin at 8:30 a.m. and at 1:30 p.m. Monday through Thursday. Friday's sessions begin at 8:30 a.m. only.

The conference begins with a ses-

sion on Magellan at Venus. Other topics to be examined include interstellar grains, Venus tectonics, remote sensing on Mars, cosmic dust, lunar resource usage, terrestrial impact structures, Mars geology, chemistry and mineralogy, solar nebula physics and chemistry, lunar highlands, planetary geological processes and Phobos.

A variety of other activities also are scheduled during the conference. The on-line and remote access capabilities of the database system used at LPI will be displayed in the coffee area during regular business hours.

Sunday, a workshop on "Mars Surface and Atmospheres Through Time" will be held in the Berkner Conference

Room at LPI from 8 a.m. to 4 p.m. Wednesday, James Oberg will present an update on the Soviet space station Mir in Bldg. 31, Room 193 at noon.

The annual Barbecue and Chili Cookoff will occur Tuesday on the LPI grounds after the completion of the day's sessions. Team entries are still being accepted. Paid conference participants are welcome and tickets for guests will be available at the registration desk.

Registration begins at 6 p.m. Sunday at LPI and continues throughout the conference on the second floor of the Gilruth Center.

All activities, unless otherwise specified will occur at the Gilruth.

Awards ceremony set next Friday

(Continued from Page 1)

Robert A. Rivers, Richard W. Rodriguez, Humberto Sanchez, Indulis Saulietis, Robert T. Savely, Jack W. Seyl, William M. Shepherd, Darrell E. Stamper, Kathryn D. Sullivan, Ph.D., James A. Taylor, Lois D. Walker and Douglas K. Ward.

NASA Exceptional Achievement Medal: Mary C. Allen, Beth D. Caplan, Barbara A. Dubcak, Patricia R. Garza, Estella H. Gillette, Merri J. Sanchez, Michael J. Scott, Robert L. Shuler Jr. and John T. Sims III.

NASA Space Flight Medal: Thomas D. Akers, Charles F. Bolden Jr., Daniel C. Brandenstein, Robert D. Cabana, John H. Casper, John O. Creighton, Bonnie J. Dunbar, Ph.D., Steven A. Hawley, Ph.D., David C. Hilmers, Marsha S. Ivins, G. David Low, Bruce McCandless II, Bruce E. Melnick, Richard M. Mullane, Richard N. Richards, William M. Shepherd, Loren J. Shriver, Kathryn D. Sullivan, Ph.D., Pierre J. Thuot and James D. Wetherbee.

NASA Equal Employment Opportunity Medal: Howard L. Renfro and Carrington H. Steward.

NASA Public Service Medal: Richard E. Thomas, Rockwell International.

NASA Certificate of Appreciation: Carla J. Armstrong, Barrios Technology.

NASA Group Achievement Award: Ground Systems/Software Production Facility Support Team, Barbara Freeman; Hand Controller Commonality Test Team, Dean Jensen; Medical Sciences Group, Richard Jennings; Microgravity Disturbance Experiment Team, Don Thomas; MOD Space Station Freedom Program Preliminary Design Review team, Dennis Webb; Shuttle Carrier Aircraft Modification Program Team, Lou Guidry; Shuttle Training Aircraft Modification Program Team, Joe Gerky; Shuttle Mission Simulator Visual Systems Upgrade Team, Isaac Moore; Spacelab Mission Training Team, Bruce Keese, Rockwell; Space Station Freedom Program Data Management System Scrub Team, Carroll Dawson; Space Station Thermal Test Team, Timothy Brady; and Voice Command System Flight Demonstration Development Team, George Salazar.

NASA Public Service Group Achievement Award: Mac Integrated Real-Time Acquisition Ground Equipment (MIRAGE) Development Team, Hasan Rahman, General Electric; and Space Station Projects Office Review Item Discrepancies Control Center Team, Maria Montemayor, McDonnell Douglas.

JSC Certificate of Commendation: Andrew F. Algate, James M. Allen, Mark

E. Anderson, Karon S. Baker, Timothy E. Baum, Gregory C. Blackburn, Wilber R. Boykin, Ph.D., Allan E. Brandli, Mark N. Brown, Anthony C. Bruins, Carla F. Burnett, Zack H. Byrns, Richard H. Campbell, Sandra L. Cargill, Lewis O. Casey, Daryl W. Chilcutt, Paula K. Copeland, Michael E. Corbin, Clarence M. Crawford, Lynn M. Cross, Christopher J. Culbert, Diane D. DeTroye, John F. Donnelly III, Wayne A. Eaton, Anne F. Ellis, Duane Emmons, Fernando J. Fabbri, William C. Farries, Ben E. Ferguson, George A. Fiedler, William H. Gerstenmaier, Jessie M. Gilmore, Charles J. Gott, Richard E. Hall, Angus G. Hendrick III, Richard P. Heydorn, Ph.D., Lawrence A. Kenyon, John C. Lamb, Charles K. LaPinta, M.D., Janet L. Lauritsen, Mary Margaret Lobb, Frank J. Marlow, Kenneth R. Martindale, Linda F. Massey, Thomas M. Matuszewski, Donna K. McAllister, Michelle S. Miller, Francis J. Monahan, Graydon E. Owens, Frank W. Parker, Malcolm C. Perry, Charles R. Price, Tressa A. Pulliam, Dorothy S. Rasco, Lorraine E.P. Rice, Gary D. Riley, Elena L. Salsitz, Michael J. See, Bill R. Sheegog, Jasper C. Smith Jr., Elbridge L. Snapp III, Michael P. Stewart, Steven R. Swanson, Wanda M. Thrower, Brian K. Todd, William E. Waldrip, Clyde O. Waters, Ronald A. Weitenhagen, Douglas S. Whitehead and Ronald C. Woods.

Space News Roundup

The Roundup is an official publication of the National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, and is published every Friday by the Public Affairs Office for all space center employees.

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. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Editor Kelly Humphries
Associate Editors Pam Alloway
Kari Fuegel

Saturday parade to close main gate

JSC's main gate will be closed to employees and visitors Saturday morning because of the annual St. Patrick's Day parade on NASA Road 1.

The back gate on Space Center Blvd. at the northwest corner of the center will be open from 9 a.m. to noon to allow both visitors and employees to enter, said Dick McMinimy of JSC's Security Operations Branch.

The parade starts at 10 a.m. at El Camino Real and will end about noon at Clear Lake Park. JSC's main gate will be closed from 9:45 a.m. until the end of the parade has passed the entrance, which is expected to be about 11:30 a.m.

Correction

The telephone number for employees to call about volunteering for the upcoming Management Experience Day was incorrectly reported in the March 8 edition of Space News Roundup. Volunteers should call Freda Marks at x30603.