



Space News Roundup

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No. 3

New JSC strategic plan out soon

By Kelly Humphries

JSC's new strategic plan is at the printers and should be delivered to all civil service employees by the last week of January.

Space News Roundup begins a four-part series of excerpts from the new plan on Page 3 of this issue.

The 1992 plan, entitled "Pioneering Space Exploration: The JSC Strategy," is written in plain English and intended to bring about a common vision of the center's primary goals and aspirations.

In the making since last April, the plan is the product of a series of top-level meetings in which JSC's senior management dug down to the

bedrock of the center's past and present activities before settling on an architecture for the future. All 45 of the participants signed the document.

"This new plan was developed to allow us to meet head-on the responsibilities and challenges we have today while assuring that we are well prepared to meet the opportunities and challenges of tomorrow," JSC Director Aaron Cohen said.

"In developing our strategy for the center, we carefully considered all the various advisory group recommendations," Cohen added, referring to the recent Synthesis Group and Augustine Committee reports. "The

time had come, however, for us to define our own vision, to define a consistent and clear plan of action — a plan that will be read and acted on."

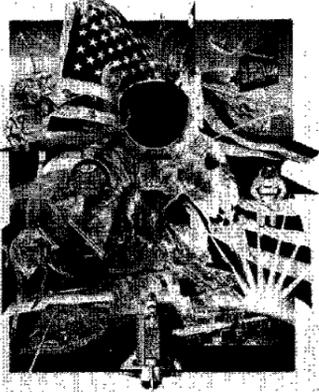
The fairly plain document appears less formal than most JSC publications, using a three-hole-punched format to encourage its use as a working document to be read with pen in hand.

"A strategic planning process that supports the agency's role in building our country's future in space also builds the career potential for the members of our team, civil servants and contractors alike. That is who this plan is for: It is for you, a member of the JSC team."

The 1992 plan marks a significant departure from the 1987 JSC Strategic Game Plan, said Mission Operations Deputy Director John O'Neill, who chaired the strategic planning effort.

"It is more action-oriented, more specific in the goals we've set for ourselves," O'Neill said. "It's also more far-reaching because of the events that have unfolded since 1987."

The New Initiatives Office provided support for the strategic planning process under the direction of Lyn Gordon-Winkler, manager of the Project Planning and External Affairs Office.



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Pioneering Space Exploration
The JSC Strategy

Magellan again mapping Venus using backup

The Magellan spacecraft will use its backup transmitter to resume mapping the surface of Venus with imaging radar next Friday, following a week of routine battery recharging, project officials at NASA's Jet Propulsion Laboratory said Wednesday.

The primary transmitter failed Jan. 4, and a backup transmitter had been turned off since last March because of a noise problem that interfered with the data.

Mission Director Doug Griffith said tests over the past several days, however, have confirmed that mapping data can be received well by using the backup transmitter at a lower rate.

"One small uncertainty remains with respect to some noise in the downlink mapping signal," he said. "To account for this, the signal is being reduced to 115 thousand bits per second, 43 percent of the normal rate. Despite this uncertainty, we're confident that Magellan will be operating in a routine mapping mode by the 24th of January."

Project Scientist Steve Saunders said his team is anxious to resume mapping and plans to gather images from northern latitudes missed during the spacecraft's first cycle.



STEELY SILHOUETTE — Steel workers put together the girders on Bldg. 4 South. Despite uncooperative weather, construction is 25 percent done, said Tom Khalili, JSC's construction manager for the project. The energy-efficient building is scheduled to be completed by late October and ready for occupancy by December. Pepper-Lawson Construction Inc., Houston, is the prime contractor.

JSC Photo by Robert Markowitz

Countdown begins Sunday for *Discovery*

By James Hartsfield

Preparations to launch *Discovery* at 7:53 a.m. CST Wednesday continued to forge ahead smoothly this week, with the terminal launch countdown scheduled to begin at noon Sunday.

The STS-42 crew — Commander Ron Grabe, Pilot Steve Oswald, Mission Specialists Norm Thagard, Bill Readdy and Dave Hilmers, and Payload Specialists Roberta Bondar and Ulf Merbold — are scheduled to fly to Kennedy Space Center early Sunday.

Work this week at Pad 39A included the replacement of an electrical wire leading to a valve between a helium supply tank and *Discovery*'s No. 3 main engine. Tests had revealed a short in the electrical supply to the valve. Testing of the new wiring was successful and the additional work had no impact on launch preparations.

The engine compartment was closed for flight early today. Also, two space suits were installed in the airlock, and final ordnance operations were performed on the shuttle Thursday.

Elsewhere, *Atlantis* is in Bay 2 of KSC's processing hangar being readied for a March flight



Please see SHUTTLE, Page 4

NASA's Great Observatories report discoveries

Hubble scientists find rare element in ancient star

Astronomers announced this week that they have detected new clues to the origin of the universe using a unique capability of NASA's Hubble Space Telescope.

The scientists — Dr. Douglas Duncan of the Space Telescope Science Institute, and Drs. David Lambert and Michael Lemke of the University of Texas, Austin — reported their discovery of the rare element boron in an ancient star at the 179th meeting of the American Astronomical Society in Atlanta this week.

The element may be "fossil" evidence of energetic events that accompanied the birth of the Milky Way galaxy, or even older, dating from the birth of our universe. If so, then the HST findings may force some modification in theories of the Big Bang itself.

Using HST's Goddard High Resolution Spectrograph, the researchers detected traces of boron in a yellow 7th magnitude star called HD 140283, 100 light-years away in the constellation Libra. At an estimated 15 billion years, the star is one of the oldest known.

Predictably, HD 140283 contains mostly primordial elements synthesized in the Big Bang, such as hydrogen, helium and traces of lithium. Heavier elements such as carbon, nitrogen, oxygen and others found in the Sun, the Earth and Solar System planets are thought to have been built up during the lifetime of the galaxy by nuclear reactions in successive generations of stars. The discovery of boron comes as a sur-

prise, however.

The currently accepted version of the Big Bang says that the early universe was uniformly hot and dense. More recent theories suggest that the Big Bang developed some structure even during the first few minutes. These new theories differ from the traditional one in predicting that small but detectable amounts of beryllium and boron might be created.

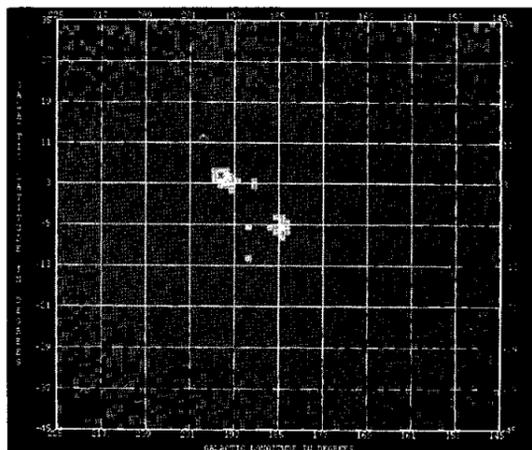
To confirm these results, the astronomers plan additional HST observations of an even older star later this year. If the boron was produced by cosmic rays within the young Milky Way, it should diminish the farther back in time the astronomers look, hence closer to the birth of the galaxy. If, instead, astronomers find the same amount of boron in the older star, rather than less, the finding will support the

Please see HST, Page 4

Gamma Ray Observatory finds new quasars

NASA's Compton Gamma Ray Observatory has found three new gamma-ray quasars, detected more than 200 cosmic gamma ray bursts and captured the best ever observation of the glow of gamma radiation from the disk of the Milky Way galaxy.

Goddard Space Flight Center's Dr. Carl Fichtel, principal investigator for the Energetic Gamma Ray Experiment Telescope, one of four instruments on the Compton Observa-



This Compton Gamma Ray Observatory image is a sky map of the Gemini and Taurus constellations taken with the Energetic Gamma Ray Experiment Telescope.

tory, reported his findings at the 179th meeting of the American Astronomical Society in Atlanta.

"The luminosity or total energy emitted by these sources is approximately 10 to 100 million times the total gamma-ray emission of the Milky Way galaxy," he said.

The EGRET team reported three sources of intense localized gamma radiation,

quasars in the constellations of Eridanus, Hercules and near the Crab Nebula, some 10 to 20 billion light years from Earth.

In addition to the quasar observations, EGRET scientists released an image of the June 11, 1991, solar flare made by the telescope. "It is very unusual to see the high energy gamma-ray emissions from a solar flare," Fichtel said. "We were very surprised by this observation."

Dr. Gerald Fishman, principal investigator for the Burst and Transient Source Experiment, reports that his team has detected more than 200 cosmic gamma-ray bursts since Compton's launch. BATSE is designed to study the mysterious phenomenon of gamma-ray bursts.

BATSE scientists announced last September indications of an apparent random distribution of the bursts in the sky. More recent observations by the BATSE team have further confirmed the earlier observation with almost twice as many bursts as the original report.

In addition to their work on the enigmatic gamma-ray bursts, BATSE scientists have revealed the presence of gamma-ray pulses from a previously known radio and x-ray pulsar. The object is known as PSR 1509-58 or the Circinus Pulsar. "This is only the third known example of a gamma-ray pulsar and

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JSC

Ticket Window

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

- General Cinema (valid for one year): \$4.
- AMC Theater (valid until May 1992): \$3.75.
- Loews Theater (valid for one year): \$4.
- Stamp Book, (20-29-cent stamps): \$5.80.

JSC

Gilruth Center News

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

Weight safety — Required course for employees wishing to use the Gilruth weight room. The next classes will be from 8-9:30 p.m. Jan. 29, and Feb. 6 and 20. Cost is \$5.

Defensive driving — Course is offered from 8 a.m.-5 p.m. Feb. 29 and March 21. Cost is \$19.

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

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

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

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Technical Library News

The following selections are now available in JSC's Technical Library, Bldg. 45, Rm. 100.

Managing People. Shawnee Mission, KS; Overland Park, KS: Padgett-Thompson, c1987. HF5549 .M36 1987.

A Guide for Career Development Practitioners: Up is Not the Only Way. Beverly L. Kaye. San Diego, Calif.: University Associates, c1985. HF5549 .K39 1985.

Report of the Committee on the Peaceful Uses of Outer Space. New York, N.Y.: United Nations. 1986. JX5810 .R46 1986.

Total Solar Eclipse of 11 July 1991. John A. Bangert. Washington, D.C.: U.S. Naval Observatory, 1989. QB4 .W34 No. 174 1989.

Exploring the Universe with the Hubble Space Telescope. Washington, D.C. NASA 1990. QB500.268 .E96 1990.

JSC

Swap Shop

Swap Shop ads are accepted from current and retired NASA civil service employees and on-site contractor employees. Each ad must be submitted on a separate full-sized, revised JSC Form 1452. Deadline is 5 p.m. every Friday, Two weeks before the desired date of publication. Ads may be run only once. Send ads to Roundup Swap Shop, Code AP3, or deliver them to the deposit box outside Rm. 147 in Bldg. 2. No phone or fax ads accepted.

Property

Sale/Lease: Egret Bay villa, waterfront, 1 bdr, FPL, W/D, microwave, ice maker, ceiling fans, free boat w/ purchase, \$43,000 or \$600/mo. Sean 283-9323 or 996-7693.

Lease: Barringer Way, 2-1, W/D conn, pool, storage area, no pets, \$425/mo. 486-2048.

Lease: CLC, 1 BR condo, covered parking, FPL, microwave, W/D, appli, security sys, avail Feb 1st, Jim Briley, 335-4389 or 488-7901.

Rent: Galveston condo, furnished, sleeps six, Seawall Blvd and 61st St, pools, cable TV, wknd/wkly/dly. Magdi Yassa, 333-4760 or 486-0788.

Sale: Egret Bay condo, 2-2, covered parking, all appli, FPL, blinds, fan, patio, storage, pools, boat ramp, \$39.5K. 333-9281.

Lease: Univ Green townhouse, 2-2.5-2, FPL, W/D, refrig, pool, no pets, \$750/mo. 488-1036.

Lease: Webster/Ellington condo, 2-1, \$475/mo. Dave, x38156 or Eric, x38420.

Sale: Sageglen, 4-2-2, 2650 ft, 2 car detach garage, \$96,500. 333-7772 or 480-6980.

Rent: Ski area house, Taos, NM, near town, mountain view, sleeps 4, wkly rentals. 532-2082.

Cars and Trucks

'80 Pontiac, V6, A/C, 4 dr liftback, auto, AM/FM/stereo, good cond, \$1450. 481-3637.

'85 Nissan 300 ZX, T-top, 5 spd, AM/FM/cass, cruise, 88K mi, \$5.9K OBO. 280-0410.

'53 Chevy PU, \$1.9K OBO. 534-6750.

'88 Ford Tempo GL, 2 dr, blue, ex cond, 22K mi, \$4.8K. Harris, 488-4251.

'84 Nissan 300ZX 2+2, auto, A/C, stereo cass, \$4950. 481-3637.

'85 Honda Accord LX, 4 dr, gray,

auto, ex cond, 70K mi, \$4.1K. 286-4721.

'82 Mazda RX7, sports package, good cond, 72K mi, \$4.8K. Cindy, x33251 or 486-4579.

'78 Buick Rivera, blk/gray, 403 V8, good cond, \$1695. x35180 or 326-3706.

'85 Audi 4000S, 5 spd, P/W, sunroof, P/L, new tires/checkup, ex cond, \$3.5K. Mark, x36121 or 538-3441.

'86 Pontiac 6000, 6 cyl, auto, A/C, sunroof, ex mech cond. Brian, 283-4079 or 488-0756.

'78 Chrysler LeBaron Town & Country wagon, 106K mi, good cond, \$500 OBO. x35831 or 538-2107.

'72 VW Beetle, good cond, needs work. Todd, 480-6006.

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

Boats/Planes

'78 36' Islander Freeport sloop, new eng., new trans, new upholstery, new electronics, new bottom, new lighting, 3 sails, 2 TV's, h/c press water, marine a/c, heat, Zodiac dinghy, EPIRB, eng. spares, redone throughout, \$64,500. James x34934 or 554-4353.

'85 Sea Ray sedan cruiser, 30', fly bridge, twin station, twin 260hp I/B, 6.5 kw gen, A/C, Halon, refrig/freezer, ice maker, microwave, stove, canvas, anchor winch, Loran, 2 VHF's, stereo, ex cond, \$53.5K. Sterling, 335-2123 or 538-4480.

Boat tank, 23 gallon, \$40. 332-0365.

18' Prindle, double trapeze, new sails, ex cond, \$1.8K; 22' 4" Gulf Coast sailboat, main jib & spinnaker, new upholstery, ex cond, \$2.5K. Greg, x32259 or 474-7634.

Cycles

'74 Yamaha 650 twin, \$650. 280-1118 or 479-7940.

'84 Honda Interceptor 500, blue/wh/red, \$1.6K; '88 Yamaha YZ 125, red/wh, \$1.3K, both in ex cond, many new parts. Andy, 333-6671 or 332-9105.

Audiovisual & Computers

SW, Windows 3.00A, resource kit, \$40; Turbo Pascal, assembler, debugger, profiler, \$50; Turbo C, assembler, debugger, profiler, \$50; Quicken Vers 4.0, \$20; Norton Utilities, Vers 5.0, Norton Antivirus, Norton Backup,

JSC

Dates & Data

Today

JAS meets — The JSC Astronomical Society will meet at 7:30 p.m. Jan. 17 at the Lunar & Planetary Institute facility near IBM on Bay Area Blvd. Andy Saulietis will discuss the 32-inch Aggie-Scope. For more information, call John Erickson, 335-4278.

HSS meets — The Houston Space Society will meet at 7:30 p.m. Jan. 17 in the Space Sciences Bldg., Rm. 106, at Rice University (Entrance 8). Dr. Peter Jakes, visiting professor at the University of Houston, will discuss "Building with Asteroids." For more information, call Clifford Carley, 923-7221.

Cafeteria menu — Special: fried chicken. Entrees: fried shrimp, baked fish, beef stroganoff. Soup: seafood gumbo. Vegetables: okra and tomatoes, buttered broccoli, carrots in cream sauce.

Monday

MLK holiday — Most JSC offices will be closed in observance of the Martin Luther King Jr. holiday.

Tuesday

Cafeteria menu — Special: smothered steak with dressing. Entrees: beef stew, liver and onions, shrimp Creole. Soup: navy bean. Vegetables: buttered corn, rice, cabbage, peas.

Wednesday

NMA meets — The JSC chapter of the National Management Association will meet at 5 p.m. Jan. 22 at the Gilruth Center. Discussion will focus on the upcoming

American enterprise speech competition. For more information, call Valerie Burnham, x34210.

Astronomy seminar — The JSC Astronomy Seminar will hold an open discussion meeting at noon Jan. 22 in Bldg. 31, Rm. 129. For more information, call Al Jackson, 333-7679.

BANN meets — The Bay Area NAFE (National Association of Female Executives) Network will meet at 11:30 a.m. Jan. 22 at the South Shore Harbour Country Club. Cheri Weismuller, a certified public accountant, will discuss tax law changes. Luncheon cost is \$10 for members, \$12 for non-members. Program only cost is \$3 for members, \$5 for non-members. Reservation deadline is Jan. 17; call Sharon Westerman, x68927, or Wanda Spain, x31025.

Cafeteria menu — Special: salmon croquette. Entrees: roast beef, baked perch, chicken pan pie. Soup: seafood gumbo. Vegetables: mustard greens, Italian green beans, sliced beets.

Thursday

AIAA meets — The Houston section of the American Institute of Aeronautics and Astronautics will meet at 5:30 p.m. Jan. 23 at the Gilruth Center. Dr. Virgil Sharpton of the Lunar and Planetary Institute will present "Venus Revealed: Magellan Results." Cost is \$9 for members, \$10 for non-members and \$8 for students and young members. Dinner reservations are due by noon Jan. 20. For more information, call 333-6064, 283-4214, 283-6000 or 282-3160.

Cafeteria menu — Special:

stuffed cabbage. Entrees: beef tacos, ham and lima beans. Soup: beef and barley. Vegetables: ranch beans, Brussels sprouts, cream style corn.

Jan. 24

UNIX group meets — The JSC UNIX Systems Administration Group will meet at 2 p.m. Jan. 24 in Bldg. 12, Rm. 246. Jerry Ivy of Control Data Corp., will demonstrate implementation of the Kerberos UNIX network authentication system. For more information, call Mark Hutchison, x31141.

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

Jan. 29

AIAA/IEEE seminar — The local sections of the American Institute of Aeronautics and Astronautics and the Institute of Electrical and Electronics Engineers will present a special seminar on "Space Activities in the College of Engineering at the University of Houston" from 10:30 a.m.-12:30 p.m. Jan. 29 at the Gilruth Center. For reservations to the free seminar, call Frankie Hap, 333-6064.

Jan. 30

Lunch and learn — The AIAA's Ground Testing and Simulation Technical Committee will present a lunch and learn meeting at 11:30 a.m. Jan. 30 in the Bldg. 3 cafeteria. Jeanne Crews and Eric Christiansen will describe the JSC Hypervelocity Impact Testing Facility. For details, call S. Arepalli at x35910.

V.1.2, \$110. 339-1337.

AT&T PC, 2 FD, SW; TRS-80 computer, prtr w/acoustic cover, rel 3 Lotus. 334-3104.

Sony Trinitron 19" color TV, wood cabinet, \$100 OBO. x38801 or 486-5668.

386/20 IBM clone, 2 M RAM, 1.2 FD, 1.44M FD, 40M HD, dual mode VGA to 1024x768 w/Seiko 13" moni, MS Excel, Word SW, \$1.2K. 482-5536 or 280-1579.

Photographic

Minolta XG-1 35mm SLR camera; ROKKOR-X 50mm, Celtic 28mm, Celtic 135mm lenses; Vivitar 2600 flash, manuals, carrying case, \$275. Dale, 280-1936 or 488-5416.

Musical Instruments

Yamaha RX-15 drum machine, \$125; Korg poly six synth, \$150; Rhoades elec piano, amp, \$150. x34421 or 480-5026.

Sunn SPL 2216 mixer, \$600; Hammond M-3 organ w/bench, \$550; keyboard stand, \$40; Roland chorus echo RE-501, three tapes, \$300; four DBX 150's, \$175/ea, all equip good cond. Ron, 474-3612.

Pets/Livestock

AKC siberian husky pups, 4 males, 4 females, blk/wh, ready 1/23/92, \$200 deposit. 991-5280.

Free kitten, access, 4 mo old male tabby, indoor/outdoor. Jennifer, 334-6220.

Three horse stalls, pasture for rent, full/partial boarding svc. Scott, 283-5611 or 331-6847.

Household

Smoky blue, six piece glass top dining set, 8 yrs old. 481-1958.

Fisher Price high chair, \$25; low back camel group set w/solid oak wood, was \$1.8K, now \$300. 332-0365.

Magic Chef gas stove/oven, 2 yrs old, \$250 OBO. Clovis, 282-4271 or 996-9646.

GE washer/gas dryer, needs repair, \$60. Kirk, 282-2911 or 332-5876.

Kenmore refrig, side by side, wht, ice/water dispenser, 2 yrs old, \$500. x32428 or 471-2133.

Lost/Found

Lost: Little Playmate cooler in MCC on 12/1/91, red/wh, Terri, x30623.

Wanted

Want good samaritan who loaned me jumper cables at JSC Xmas tree sale. Dennis, x32418.

Want 20 cu ft refrig in good cond; six undercounter cabinets, good cond, both items reasonable. T.J., 333-5107.

Want boys 20" bicycle in good cond, reasonable; garage dr opener in good cond, 1/2hp and remote control. Jeff, 282-7744 or 996-1907.

Want information about priv elem schools, son will be in 1st grade. Ron, 335-8581 or 480-1491.

Want '78 or newer Chevy or GMC PU w/350 V8, or Dodge PU w/318 or 360, no more than 80K mi, 3.42 towing axel, 1/2, 5/8, or 3/4 ton, long wide bed, any cab, no body work, minor mech ok, up to \$3.5K. 339-1337.

Want non-smoking roommate to live in my 4-2 Friendswood home, cable, W/D, microwave, VCR, gas grill, all privileges, \$200/mo, all bills pd. Michael, x38169 or 482-8496.

Want non-smoking roommate to share house in CLC, \$250/mo plus 1/3 util. 286-5248.

Want roommate to share 3-2 tri-level home in Seabrook, FPL, decks, lg storage area, have 2 children half time, \$350 plus partial util. 333-6821 or 532-1883.

Miscellaneous

IBM Selectric II, \$300; DB300 Antograph, \$300; bike rack for car roof, \$100. All excellent cond. 334-4894.

Two President/First Lady Gold Charter memberships, \$600/ea OBO. Andy, 482-3078.

O'Neil "Reactor" wetsuit, ex cond, \$100. Bill, x36650, David or Bill, 554-6242.

"Karen Silton" long brown leather coat, ex cond, \$150. T.J., 333-5107.

Roundtrip Northwest Airlines to anywhere in U.S., must use by 3-22-92, \$250 OBO; two formal dresses, sz 8/10, worn once, \$50/\$75 OBO. x31497 or 554-4215.

New M-14 semi-auto rifle, Federal Ordinance 7.62 NATO, .308 caliber, all parts Amer made, ex cond, \$680 OBO. 283-1226 or 286-7828.

Lawn Boy 19" lawn mower, \$75. Andy, 333-6671 or 332-9105.

Little Tykes fort w/slide, \$35; boys 20" freestyle bike, \$40; free mature plants, you dig Ligustrums, Pitisporums, Junipers, Crape Myrtles. Michele, 482-9576.

Bottled water machine, \$100 OBO; Everex 286/16 MHz machine, \$1K; new baseball card factory sets, \$25/ea. Tony, 335-4299 or 482-4156.

New cond, EE text books, UH Central ELEE 6370/5440 Adv Digital Design. Youm, 283-4813.

Executive desk, chair, \$150, 15 gal aquarium w/cedar cabinet, \$50. 280-1118 or 479-7940.

Record player, \$20; sm oak breakfast table, \$35; Visions cookware, \$20; bedside tables, \$5/ea; sm wht dresser, \$15. David, 282-3972 or 488-4207.

Professional manicurist table w/light, chair, \$400/OBO; recliner, olive vinyl, \$75 OBO; 2 motorcycle helmets, sm/lg, \$40/ea; IBM elec typewriter, \$25/OBO; Wicker Queens chair, \$10; manual typewriter, \$15, Tami, 326-1106.

Round diamond solitaire, .75 carat, JSI quality, was \$4K, now \$2K OBO. Peter, x38429 or 286-8346.

Folding ping pong table on wheels, access, \$75. Jody, 282-3155 or (409) 948-6128.

Designer wedding gown, lissa by Demetrius satin sheath gown w/cathedral train, french lace, beading on bodice, sleeves, hem, veil, sz 10, \$700. x31495 or 326-4991.

New blue 42L sportcoat, \$15; two leather ties, wht/blk, \$3/ea, assorted cloth ties, \$1-\$3/ea, dress pants 36x36, \$3. Greg, 333-6672 or 484-4979.

New Space Station Pilgrim Observer model kit w/nuclear powered interplanetary spacecraft, made by MPC in 1970, \$15. 464-8694.

One pair "Hi Tec" hiking boots, women's sz 7 1/2, teal color; two pairs of women's ASCII running shoes, sz 8, \$25/ea. Suzanne, 335-2896 or 527-9070.

New Smith and Wesson 357 magnum, model 27, Ginch barrel, blue, \$300; two office waiting chairs, \$20/ea. Richard, x36481.

Bridgestone MB-4 mountain bike; course Slalom Dynastar skis w/ Salomon bindings 200", \$200; atomic ARC worldcup HV skis w/Geze binding, 195", \$200; Lange racing boots, sz 12; 3 steel plated anvil cases w/padding; belt tension exercise bike, \$40; Marketing, Stats, Econ & Org Behaviors Intro textbooks, \$20/\$30 from UHCL; Fooseball table, \$95 OBO. Bob, x35542 or 334-3104.

Pioneering Space Exploration

The JSC Vision



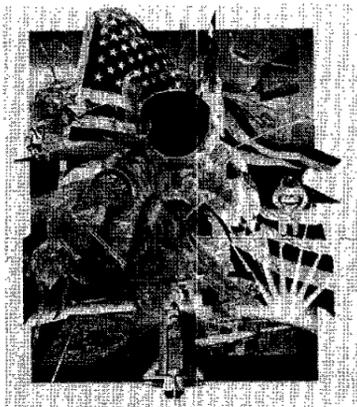
Editor's note: In this, the first episode of a four-part serialization of the new JSC strategic plan, "Pioneering Space Exploration: The JSC Strategy," the premise of the plan, JSC's guiding principles and the basic strategy behind the plan are discussed. Next week: What we're going to do and how we're going to do it.

The strategy presented in this plan is based on an exploration-focused future for JSC. Exploration, after all, is a fundamental element of our nation's heritage. It is the heritage of this country's space program, and it is most certainly the heritage of JSC. Exploration is what NASA has been about for the last 30 years. It is our past. And it is our future. NASA has a presidential mandate telling us that we will continue to uphold that heritage. We will return to the Moon—and this time to stay. And we will continue on with a manned journey to Mars.

If we as a nation are to continue to remain leaders on a global scale, we must stretch our scientific and technical capabilities to their limits. We must enhance this country's intellectual wealth and improve our economic health. We must stimulate new commercial ventures and provide a forum for increased international cooperation. We believe that the exploration of space is one of the best ways to achieve these things.

With our experience and requisite expertise as the center that has led this nation's manned space flight activities, JSC is the right center to lead this country's human space exploration endeavors. By incorporating an exploration focus into our strategic planning process, we can look beyond the near-term challenges associated with the shuttle and space station. We can be adequately prepared for our role in NASA's future.

We know that, right now, we have to be extremely successful in fulfilling our role in the shuttle and space station programs. Our emphasis on



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exploration enables us, however, to define a strategy that integrates all our responsibilities. It results in a clearer picture of the long-term role JSC can and should play for the agency. Our emphasis on an integrated exploration strategy also reinforces our commitment to improving our current program processes as a means of finding the resources required to pursue that future.

Pioneering Space Exploration: *The JSC Vision*

As a direct result of our nation's commitment to a civilian space program, we possess a far greater understanding of our planet and universe than we had only 30 years ago. Every American has had some element of their day-to-day life enhanced

by the U.S. space program. This country's manned space flight program was initially fostered by a national interest in maintaining scientific and technological preeminence in the world. It was founded on a pioneering spirit manifested in that basic human desire to explore the unknown and to search for means to improve the condition of our lives. The essence of that pioneering spirit is still very much with us as this country prepares to extend the boundaries of the space frontier and open new opportunities for America.

Pioneering Space Exploration: These three words succinctly summarize our vision of JSC's role in the future of the U.S. space program. At JSC, we are all pioneers charged with the enviable task of implementing the dreams that not too long ago existed only in the world of science fiction. JSC is homebase to the explorers of the new frontier—a frontier that continues to surprise and astound us, but also presents us with unimaginable opportunities to learn more about the universe in which we live and, hence, our home planet and ourselves. JSC will provide direction in the expansion of human activity in the exploration and utilization of space. We will continue to support and to improve the ways that we transport people to and in space. And we will provide the leadership for establishing frontier outposts where we will learn to use the resources unique to those environments.

We know all too well that the risks associated with this pioneering venture are great, and possibly costly. But, historically, the benefits have

always been ultimately far greater and enriching. We at JSC stand willing to take the risks in what we see as our destiny—our destiny to reach out and explore the unknown, to bring back the returns on our investment in space to benefit the American people.

Our Guiding Principles

The mission of the Johnson Space Center is the expansion of human presence in space through exploration and utilization for the benefit of all.

The JSC mission is without a doubt incredibly challenging and broad reaching. And it is so intentionally. Historically, JSC has served as the proponent and leader for this country's manned space flight activities. We have the know-how to do manned space flight and to do it well. Our astronauts have flown every mission. We have excelled in engineering and science, mission operations, and project and program management. We are prepared to continue that leadership role as this country expands the presence of humans in space. That is JSC's mission.

At JSC, as we pioneer space exploration, we will strive to keep the following fundamental principles always to the fore.

Pursuit of Excellence

We will pursue excellence in all our efforts, striving to develop innovative, more effective approaches to managing and operating our programs.

We will emphasize safety in space and on the ground, while working to reduce the cost of space operations.

We will share our specialized expertise and facilities to assist other NASA centers, and rely on the specialized expertise and facilities of other NASA centers to aid us in our endeavors.

Respect for the Individual

We will enhance the experience level of our civil service staff.

We will foster individual empowerment and accountability.

We will provide avenues for open communication throughout our organization.

Public Trust

We will conduct a space program that benefits the U.S. public and promotes the transfer of technology and

science to U.S. industry.

We will enhance our working relationships with other government agencies, academia, and industry.

We will inspire and support efforts to educate and prepare the U.S. work force for the future.

We will respect the environment of Earth, space, and other planets.

We will conduct the business of JSC in accordance with integrity and the highest professional standards.

Our Basic Strategy

As a vital part of the agency, as the leader in human exploration activities, JSC has the potential for an incredibly exciting and rewarding future. In building that future, we as a center are faced with one of our biggest challenges. We no longer have one specific flight program. We have multiple programs and several jobs to do. And we must do them all well.

Supporting several programs at various stages of development and operation is something that is still relatively new to us. If we are to do these multiple tasks well and support our larger exploration-focused mission successfully, we must seek opportunities to improve the way we currently manage our work and handle our responsibilities. We must think in terms of multi-program processes.

We must plan and implement our work using processes that are not simply one-program specific, but that can be applied across a range of activities, all of which support our exploration focus. We must link our efforts together and evolve, not just transition. That is a simple statement for such a complex task, but it is fundamental to the future success of our manned exploration endeavors. And it is a new way for us to think and act at JSC.

We must begin to evaluate current and future strategies and options in terms of their usefulness across all program elements. We must find ways to perform new work with our available resources because increases in NASA's funding level are likely to be limited over the next several years. We are also likely to receive no major increase in our civil service work force. We must train and prepare the people we have to do the job.

Obviously, making adjustments like these in the way we operate as a center is not going to be an easy task. It is going to take hard work and commitment on the part of everyone who works here.

Exploration is not a program ...it is an orchestrated process ...designed to probe and use space for the benefit of all citizens of the United States and the Earth.



Mandell new Exploration deputy

Humboldt C. Mandell Jr. has been appointed deputy manager of the Exploration Programs Office, formerly the Lunar and Mars Exploration Program Office.

Mandell, who most recently served as manager of the Lunar and Mars Exploration Program Development and Control Office, will share the responsibilities of directing the office's activities with Manager Doug Cooke.

Mandell joined JSC in 1962 as a design engineer with the Engineering and Development Directorate. He has served as manager of Space Station Project Control, and manager of the Resources Management Office for the Space Shuttle Program.

Tsai earns recognition from co-op co-worker

Ted Tsai, a senior engineering analyst working in Engineering's

Structures and Mechanics Division Mechanical Design and Analysis Branch, recently earned the Co-op Certificate of Appreciation Award.

Tsai was nominated by co-op Chris Hansen for his outstanding efforts in the education and enjoyment of the co-op experience. He and Hansen worked together on several computer

JSC

People

structural analysis projects.

The award, given to only a few of the nominees by the JSC co-op office, was created two years ago at the request of a student who wanted a formal way to recognize co-workers and supervisors who made an extraordinary effort to help co-ops

and the co-op program.

Co-op's paper goes far

Tim Woeste, a JSC co-op student from January 1988 through September 1990 has written a paper that has gone to high places and brought him plenty of attention.

Woeste, a University of Cincinnati engineering student, wrote the technical paper about the Shuttle Air Data System while working as a co-op in the Navigation Control and Aeronautics Division's Aeroscience Branch.

The paper caught the judge's attention when Woeste presented it at the American Institute of Aeronautics and Astronautics regional student conference at Purdue University in March, and it took first place in the Midwest region.

In October, Woeste presented his



Mandell



Tsai



Woeste



Damien

paper at the International Astronautical Federation Congress in Montreal, where it won first place in the undergraduate student division over 21 other papers from eight countries.

Since writing the paper, Woeste has graduated and become a technical intern in the Guidance and Control Systems Branch.

Damien top secretary

Yvette H. Damien recently earned the Marilyn J. Bocking Award for Secretarial Excellence.

Damien, the secretary for the Solar

System Exploration Division, manages the division office and coordinates the work of the other branch and office secretaries that support the division's 54 civil servants.

"Her willingness to go the extra mile has been especially critical in the last year during which there have been changes in the division and branch management of SSED and losses of continuity in the shorthanded secretarial staff," according to the nomination. "Her extra effort has enabled SSED to continue to accomplish its mission."

Shuttle status

(Continued from Page 1)

on STS-45. Work this week included tests of the orbital propulsion systems, water spray boilers, waste containment system and the inertial measurement units.

Endeavour, located in Bay 1 of the processing hangar, continues to be prepared for a Spring launch on its first space flight. Work this week included leak checks of the crew cabin, closeouts of the mid-fuselage and installation of heat-protection tiles.

Columbia, located at Rockwell's Palmdale, Calif., facility, is nearing the completion of major upgrades and structural checks that have been performed for several months. The spacecraft is planned to begin a trip back to KSC perhaps as early as Feb. 7.

Work this week included tests of the auxiliary power units, the environmental control system, and installation of the regenerable carbon dioxide removal system. In addition, installation of the drag chute is under way.

A pallet that will fit in *Columbia*'s payload bay, holding tanks of hydrogen and oxygen to allow the spacecraft to stay in orbit longer, was shipped to KSC this week. Additional hydrogen and oxygen will increase the amount of electricity *Columbia* can generate, thus allowing longer space flights. *Columbia*'s first flight after it returns to KSC, STS-50 in June, is planned to be 13 days long, the longest shuttle mission ever.



JSC Photo by Pat Patnesky

Payload Specialist Roberta Bondar of Canada prepares for an STS-42 water survival training exercise in the Weightless Environment Training Facility.

Mission Control viewing room hours set

The Mission Control Center viewing room will be open to JSC and contractor badged employees and their families during portions of the STS-44 mission.

Based on a Wednesday launch, employees will be allowed to visit the MCC Thursday, from 11:30 a.m.-2:30 p.m.; Friday, from 11:30 a.m.-2:30 p.m. and 5-7 p.m.; Saturday and Sunday, from 1-4 p.m.; Monday, from 11:30 a.m.-2:30 p.m. and 5-7

p.m.; and Tuesday, from 11:30 a.m.-2:30 p.m.

Employees must wear their badges and escort family members through the regular public entrance on the northeast side of Bldg. 30. Children under 5 will not be permitted. No flash photography or loud talking will be permitted at any time.

Because of the dynamic nature of shuttle missions, viewing hours may be changed or cancelled without

notice. For the latest information on the schedule, call the Employee Information Service at x36765.

Special cafeteria hours also will be in effect during the mission.

The Bldg. 3 cafeteria will be open from 7 a.m.-4:30 p.m. weekdays, except launch day, and from 11 a.m.-4:30 p.m. weekends. The Bldg. 11 cafeteria will be open from 6:30 a.m.-2 p.m. weekdays, except launch day, and 7-10 a.m. weekends.

distribution of material in the universe.

The results provide information on objects such as stars and galaxies that can be detected with telescopes as well as non-luminous material or "dark matter" that could provide new information about the large-scale structure of the universe.

Bahcall cautions, however, that the Snapshot Survey will not offer insights into competing Big Bang models. "The results tell us about the denizens of the universe but not how they got there."

HST findings will test Big Bang theories

(Continued from Page 1)

alternative explanation that boron was produced in the Big Bang.

"Either way, this will be an exciting test to show which of the possible explanations is correct," concluded Duncan. "We know that our picture of the beginning of the galaxy and the beginning of the universe is undoubtedly oversimplified, and it is satisfying to be able to add a little more detail."

Astronomers also reported surprising results from an HST "Snapshot Survey" of several hundred quasars.

Using HST's extremely high resolution images, the program has sought to detect evidence on gravitational lensing at a level of detail not obtainable with ground-based telescopes.

Drs. Bahcall, Dan Maoz, Donald Schneider and Brian Yanny, all of the Institute for Advanced Study; Rodger Duxsey, Space Telescope Science Institute; Neta Bahcall, Princeton University Observatory; and Ofer Lahav, Institute for Astronomy, Cambridge, England, reported results, that set new limits on the nature and

GRO locates extremely powerful pulsars

(Continued from Page 1)

only the second one to be observed in the low energy gamma-ray region," Fishman said.

Pulsars are rotating neutron stars which are thought to be formed from the core of a massive exploding star or supernova. A

neutron star is composed of super dense matter, a cubic centimeter (about the size of an ordinary sugar cube) which would weigh over 10 million tons. Scientists theorize that a neutron star only 10 miles in diameter would have about 1-1/2 times the mass of Earth's Sun.

The Oriented Scintillation Spectrometer Experiment (OSSE) captured, in September of this year, the best ever observation of the glow of gamma radiation from the disk of the Milky Way galaxy. The glow was caused by matter and antimatter annihilating each other.

Mullane to give Space Trophy keynote address

Astronaut Mike Mullane will recount his adventures in space as keynote speaker for the Rotary National Award for Space Achievement Foundation dinner Feb. 13 at the Hyatt-Regency Downtown.

During his presentation titled "The Ten Thousand Night Dream," Mullane will share a personal account of astronaut experiences in the final 36 hours before a mission. Donna Mullane, his wife, will share brief readings from her diary to provide the audience a glimpse of the emotions an astronaut spouse experiences.

Mullane was selected as an astronaut in 1978 and served as a

mission specialist on three shuttle flights. He logged 356 hours in space before retiring from NASA and the Air Force in August 1990.

The Rotary dinner is an annual event at which the National Space Trophy recipient is honored. This year's recipient is Norman R. Augustine, chairman and chief executive officer of Martin Marietta, and the man who chaired the Advisory Committee on the Future of the U.S. Space Program.

The evening also will include the presentation of a special recognition award to former JSC Director Robert Gilruth.



Mullane

Scholarship applications being accepted for JSC dependents

Applications are now being accepted for two scholarship programs to assist dependents of JSC employees in continuing their education after high school.

Both the JSC Exchange Scholarship Program and the NASA College Scholarship Fund Inc. are accepting applications until March 31.

The JSC Exchange Scholarship Program has provided financial assistance to 65 dependents of center employees since the fund was established in 1967.

The Exchange Scholarship provides up to \$1,000 per year for four years at any college or university. Three such awards are planned for 1992.

Applicants must plan to graduate from a public, private or parochial high school in 1992 or must currently be enrolled in college with good academic standing. Applicants must have a high school grade average of 2.5 on a 4.0 scale or the equivalent. They must be dependents of JSC employees who have been with the center or its field activities for at least two years.

Applications are available in Bldg.

45, Room 706, or by contacting Nicky Dinick at x33161.

The NASA College Scholarship Fund, now in its tenth year, will be awarding four scholarships of \$1,500 each. The scholarship is renewable for six years, not to exceed \$6,000.

Applicants must be pursuing a course of study that will lead to an undergraduate degree in science or engineering at an accredited college or university in the United States.

Applicants also must be dependents of current or retired NASA employees who have been employed by NASA for two years as of January. They will be ranked in academic standards including all high school and any college grades, high school rank and pattern of courses, school activities, community activities, aptitude test scores, written recommendations and a one-page statement of academic purpose written by the applicant.

Applications are available in Bldg. 1, Room 840. Completed applications may be mailed to JSC; the NASA Scholarship Fund Inc.; Mail Code AH12/Scholarship Committee; Houston, Texas; 77058.

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Editor.....Kelly Humphries
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Picnic planners looking for theme

Though cold weather blankets JSC today, planners of the annual JSC Picnic are hot on the trail of a new theme as preparations continue for the event currently scheduled for May 2.

Under way now is the yearly contest to choose a theme for the picnic. Past themes have included "JSC Proud," "Back to the Future," "Gateway to the Stars," "Decade of Discovery" and "A Stars and Stripes Picnic."

Individuals wishing to enter to contest should submit their suggestions to Melody Nation, Code JD4, by Feb. 12. Participants are limited to three entries per person.

Winners will receive a round-trip ticket to any continental United States location on American Airlines and two tickets to the picnic.