Space Administration

Lyndon B. Johnson Space Center Houston, Texas



Worthy cause

Combined Federal Campaign donations help fund the United Way Service Center, Bay Area. Story on Page 3.



Above the call

Three JSC security officers are receiving special thanks for helping an airport police officer at Ellington Field. Story on Page 4.

Space News Roundup

October 12, 1990

Discovery's flight 'near perfect'

Ulysses speeding toward rendezvous with Jupiter and the Sun

Ulysses

By Kari Fluegel

"Near perfect" were the words most commonly used to describe the launch, landing and on-orbit operations of STS-

"If you criticize our mistakes, you must also acknowledge our successes, and the mission of the Discovery for the development of Ulysses was indeed a success," Robert Crippen, director of the space shuttle program, said Wednesday at the post-landing press conference.

"It's due to the dedication and hard work of thousands of people asso-

ciated with the National Aeronautics and Space Administration and its ing extremely well, speeding toward aerospace contractors. They know Jupiter at the fastest ever Earth-orbit how to do it and did this one right. I'm escape velocity. The first trajectory very proud of

Discovery and its five-man crew left Launch Pad 39B 6:47 a.m. CDT Saturday, and, after achiev-

them.

to deploy the Ulysses spacecraft on schedule six hours later.

At last report, Ulysses was perform-

correction burn will take place either Monday or Tuesday.

During remainder of the STS-41 mission, Commander Dick

ing its 160 nautical mile orbit proceeded Richards and his crew exercised the secondary experiments, all of which, again, were "near perfect"

Seven secondary payloads occupied the Discovery's middeck while two were carried in the cargo bay. Middeck payloads were the Voice Command System, a system that maneuvers shuttle cameras with verbal com-mands; CHROMEX, a study of plant food formation in microgravity; Solid Surface Combustion Experiment, investigation of flame spread in the absence of gravity and gravity induced forces; Investigations into Polymer Membrane Processing, a study of the formation of polymer membranes in the

Please see **DISCOVERY**, Page 4



Discovery is seen by the Edwards Air Force Base long-range tracking camera as it glides toward landing.

Companies show Team **Excellence**

JSC Director Aaron Cohen has chosen the four recipients of JSC's Team Excellence Awards for 1990.

Barrios Technology Inc., Houston; Honeywell Inc., Space and Strategic Systems Operation, Clearwater, Fla.; Rockwell International Corp., Space Systems Division, Downey, Calif., and UNISYS Houston Operations will receive the awards at their facilities during this National Quality Month.

'These four companies have demonstrated exemplary technological performance by consistently providing our JSC team with high-quality products and services vital to the success of this nation's space program," Cohen said. "The Johnson Space Center applauds the contributions of these companies, and their employees for their leadership and commitment to continuous quality and productivity improvement.

The winners also will be among nine finalists vying for the 1989-90 NASA Excellence Award. NASA Administrator Richard H. Truly will present that award during the seventh annual NASA/Contractors Conference on Quality and Productivity Oct. 24-25 in Grenelefe, Fla., near Kennedy Space Center.

Barrios, winning the award for the second time, furnishes engineering and administrative services for the space shuttle, space station and mission operations; conducts metrology and calibration services; and provides administrative support to the Assured Crew Return Vehicle project

Rockwell's Space Systems Division, which has won all three years Please see **TEAM**, Page 4



STEELY SILHOUETTE-William "Cowboy" Butler, a welder for ET Services, Houston, is suspended from the Bldg. 9C structural steel during the final phase of its fabrication. The high bay structure was "topped out" with a small tree attached to the highest point, a tradition among steel workers. The \$5.9 million addition to Bldg. 9A-9B is now 40 percent complete. The exterior aggregate panels have been installed on the hydraulic pump room. Spaw Glass/Cahaba Constructiuon Co. is the prime contractor.

Ready to roll, Atlantis dodges tropical storm

By James Hartsfield

The shuttle Atlantis suffered only minor damage from a 9-foot-long I-beam that was inadvertently left in its engine compartment as it was hoisted vertical in Kennedy Space Center's Vehicle Assembly Building

After an assessment showed that the damage caused as the yellow beam shifted could be fixed with

Atlantis in a vertical position, the orbiter was scheduled to be rolled out to Launch Pad 39A early

this morning. The spacecraft originally was scheduled to be moved to the pad on Tuesday, however the threat of strong winds and rain from tropical storm Klaus delayed the move.

Atlantis will carry Commander Dick Covey, Pilot Frank Culbertson and Mission Specialists Bob Springer, Carl Meade and Sam Gemar on the STS-38 Department of Defense mission in early November.

"We lucked out on that one (the beam incident). We did not get any significant damage," said Shuttle Program Director Robert Crippen. "There were a couple of lines that had some minor damage. At this time, it appears that none of the problems on the launch."

Launch Director Bob Sieck said now under way at Edwards.

the I-beam made contact in about 25 places when it fell through the aft compartment as the orbiter was being moved. None of the impacts was expected to be difficult to repair.

The shuttle interface test, a check of connections between the solid rocket boosters, external tank and orbiter, was completed on the Atlantis stack Tuesday.

Columbia, formerly on Pad 39A,

was moved to Pad 39B on Monday and subsequently moved back to the VAB due to the threat of bad

weather. Since work in Columbia's aft fuselage to locate its hydrogen leak may proceed more smoothly in the VAB than on the pad exposed to rain and wind, the vehicle isn't scheduled to go back to Pad 39B until

Tanking tests with liquid hydrogen are planned at both launch pads on each respective vehicle this month. However the exact dates for those tests haven't been set yet.

Discovery, fresh from space after landing at Édwards Air Force Base to complete STS-41, may be back at KSC's Shuttle Landing Facility as early as Monday. The return date for Discovery depends on weather caused by that will have any impact encountered during the flight and the progress of preparations for that flight

Full-scale mental warfare part of quitting

Smoking cessation class logging smokes, reporting 'triggers'

By Brian Welch

The great 19th Century editor Horace Greeley, who once described the act of smoking as "a fire at one end and a fool at the other," would really get a kick out of this.

I would like to have a cigarette, you see, but there is some business to take care of first.

I pull out my trusty Methodist Hospital/Sid W. Richardson Institute for Preventive Medicine stop smoking logbook and turn to page whatever. I log the time, 8:20 a.m., and write a "C" in the next block (for cigarette) as opposed to "U" for urge. (There's not enough paper on this Earth to log the cigarettes and the urges.)

Next I note the "trigger," that is, the who, what or where that made me want the cigarette. These notations vary, of course, but often consist of such terse entries as "1st cup of coffee," or "phone call," or "the ride to work." In this case, since I'm already four paragraphs into this and

almost always have a cigarette going when I sit at the keyboard and write, I enter the calm and collected passage, "wanted one, dammit," and move on to the next block. Remember, I have to fill in all of this before I can light up. The final block is where we note the strength

of our urges. A "1" is for those very mild urges, where you shake one loose from the pack and light up almost without thinking about it. A "10," as our instructor Larry Laufman told us, "is for those

cigarettes you would com-

mit an immoral act to smoke." In this instance, I enter a "7," which is honest enough for government work, and within seconds I'm burnin'

If this sounds like a mind game, it is, but on

a vast scale. This is full-scale mental warfare. my friends, a desperate conflict in which the divisions of air, land and sea have been fully committed for possession of the mind, the body and the soul. The final outcome, for me anyway, is still in doubt, and Q-Day is less than two weeks

> Q-Day, of course, is quit day. October 23, 1990. The two smoking cessation classes at JSC have already hit that beach in a practice run, you'll remember, when we were asked to give up cigarettes

for a 24-hour period two weeks ago. Only 9 of the 28 people in my class really made it through the 24 hours. Some made 22 hours, some made 23, and some made it for a few hours. One man had minor surgery and chose that day to refrain

from smoking. He was completely successful. but he also was completely medicated, which clearly is not a good strategy for the long haul.

Another of my classmates castigated herself for allowing a pack of cigarettes to remain in her house while trying to make it through the 24 hours. She wasn't able to resist that siren's song, of course. "Hell, honey," another said. "Don't dump all that guilt on yourself. I'd have gotten up in the middle of the night and robbed a Stop 'N Go if I had to." Hmmm.

So we continue the struggle. Two people in my class have quit already. Almost all of us have cut down. This week, at Session 3, we began the process of logging our smokes and gradually ramping down the number we consume each day. Less than two weeks from now, all of us will be down to a relative few on the day before

Deep breath. Sherman was right. War is hell.

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): \$3.75 each. AMC Theater (valid until May 1991): \$3.50 each.

Sea World (San Antonio, year long): adults, \$17.25, (2-day \$21.95); children (age 3-11) \$14.75, (2-day \$18.95).

Texas Renaissance Festival Bus Trips (Oct. 13 or Nov. 10 - includes transportation and tickets): child under 5, \$6; child, \$9; adult, \$12.

Texas Renaissance Festival (Saturdays and Sundays Oct. 6-Nov. 18): child, \$4.95; adult, \$8.95.

Children's Halloween Party: (11 a.m. Oct. 27, Gilruth Center); child \$4; adult, \$1.

Halloween Dance: (7 p.m. Oct. 27, Gilruth Center, includes dinner and music by Fourth Wave Rhythm, costumes encouraged); \$12 per person.

Gilruth <u>Center News</u>

Sign up policy—All classes and athletic activities are first come, first served. To enroll, you must sign up in person at the Gilruth Recreation Center. Everyone will be required to show a badge or EAA membership card. Payment must be made in full at the time of registration. Classes tend to fill up four weeks

EAA badges-Dependents and spouses may apply for a photo I.D. 6:30-9:00 p.m. Monday-Friday.

Defensive driving—Course is offered from 8 a.m.-5 p.m., Nov. 17 and Dec

Weight safety-Required for use of the Gilruth Center weight room. The next class will be from 8-9:30 p.m. Oct. 25. Cost is \$4.

Aerobics and exercise—Both classes are ongoing.

Fall run-The 10km and/or 2 mile races for the annual Intercenter Run will be held throughout October. Runners may submit their times at the Gilruth

Softball sign-ups-Winter softball league sign-ups will be Oct. 16-18 at the Gilruth Center.

Country and western-Dance lessons begin Oct. 29. The six-week class meets Mondays. Cost is \$20 per couple.



New way to start your day!

The JSC Employee Information Service now is updating its reports at 8:30 every morning.

For the latest information on what's happening at JSC, from seminars to crew return ceremonies, the JSC Employee Information Service has what you're looking

The recorded announcement can be reached by calling:

483-6765

Dates & Data

Today

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

Cafeteria menu-Special: meat sauce and spaghetti. Entrees: franks and sauerkraut, sweet and sour pork chop with fried rice, potato baked chicken. Soup: cream of potato. Vegetables: French beans, buttered squash, lima beans.

Tuesday

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

Wednesday

AIAA meets—The American Institute of Aeronautics and Astronautics will meet at 5:30 p.m. Oct 17 at the Gilruth Center. Charles Price, chief of JSC's Robotic Systems Development Branch, will discuss Space Station Freedom Robots and Their Role in Maintenance." Dinner reservations deadline is noon Oct. 12. Call 333-6064 or 283-6000 for more information or to make reservations.

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

NCMA workshop—The National Contract Management Association Houston Chapter will hold a workshop and luncheon Oct. 18. The workshop, featuring Phil Shannahan and James Wilcox of Vision Analytics Inc., will look at budget forecasting and cost control from 8:30-11:30 a.m. at the McDonnell Douglas Tower,

speech by JSC Procurement Director Gene Easley, starts at noon at the Gilruth Center. Deadline for luncheon reservations is noon Oct. 12. For more information, call Nancy Liounis at x31838.

NPMA meets-The National Property Management Association will hold a dinner meeting at 5 p.m. Oct. 11 in the Gilruth Center. For more information contact Sandra Pierce at 282-4151.

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

Oct. 19

Houston Space Society-The Houston Space Society will meet at 7 p.m. Oct. 19 at the University of Houston, Center Underground, Pacific Room. James Davidson, a member of the National Space Society board, will talk about "Ulysses: The Environmental Mission to the Sun." For more information, call 639-4221.

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

Oct.20

Wings Over Houston—The 1990 Wings Over Houston Airshow will be Oct. 20-21 at Ellington Field. The U.S. Marine Corps' vertical take off and landing jet, the Harrier, will participate and the Confederate Air Force will celebrate the 50th Anniversary of the Battle of Britain with its WWII airpower demonstration. Contact Col. Ray Jones, 850-7545, or Lu Lewis, 784-5200, for more information.

Oct. 22

LDEF conference—The first Post-Retrieval Long Duration Exposure Facility Conference is planned Oct. 22-26 at the Williamsburg Hilton Rm. 160. The luncheon, featuring a Hotel, Williamsburg, Va. The first Prendergast at 335-2505 for details.

three days will be an open symposium including reports of each of the principal investigators and Special Investigation Group chairmen. The Investigator Working Group will meet Oct. 25-26. Attendance will be restricted to those actively involved in LDEF data analysis. For more information, call (804) 722-0330 or (800) 868-0330.

Oct. 23

BAPCO meeting—The Bay Area PC Organization will meet at 7:30 p.m. Oct. 23 at the League City Bank and Trust. For more information contact Earl Rubenstein, x34807, or Tom Kelly, 996-5019.

Oct. 25

Amateur Radio Club — The JSC Amateur Radio Club will meet at noon Oct. 25 in Bldg. 16, Rm. 253. For more information, call Gil Carman x38031.

NASACOM meets-NASACOM a Commodore users' group, will meet at 7:30 p.m. Oct. 25 at the Clear Lake Park Bldg., 5001 NASA Road 1. For more information, contact Glenda at x31764.

SCS meets-The Houston Chapter of the Society for Computer Simulation will meet at 11:45 a.m. Oct. 25 at Lockheed Plaza 3 Pic Rm. Ed Smith, Lockheed Systems engineering Department operations manager, will discuss the "Role of JSC Engineering Simulation in Apollo and Shuttle." For more information call Robin Kirkham, 333-7345, or Wade Webster, 486-6450.

Oct. 28

Bicycle ride—The Texas Coastal Century bicycle ride, a comprehensive tour of the greater Bay Area, will be from 8 a.m.-5 p.m. on Oct. 28, starting at the University of Houston-Clear Lake. Proceeds will benefit the Houston Food Bank and University of Houston-Clear Lake recreation and sports. Registration is \$15. For applications and more information, visit the Gilruth Center. Call Mike

JSC

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.

Property

Sale: Orlando, FLA. ret. home, golfers dream, 2-2 w/den and Florida room, incl. golf cart, on 18-hole course, furn., \$49,900. 280-2523 or 333-1762.
Rent: Baywind I, 1 BR condo, new carpet/paint/

wallpaper, \$350/mo., avail, Nov. 1, x36353 or 480-9280 Sale: League City, Meadowbend, 3-2-2, cul-de-sac, FPL, fans, miniblinds, gar. opener. 480-7100.

Rent Lake Livingston wrfrint, house, 3-2, CA/H, furn., cov. decks, pier, new cond., wk/wknd rates. 482-1582. Sale: 1 acre in Friendswood, Fox Meadows, off FM 528, over 60% is heavily wooded. Laurie, x33748 or Dave, 283-5374 or 338-2368.

Sale: .86 acre res. restricted, all util. avail., Magnolia/ Woodlands area, \$10K, OBO, Rob, x33484 or 481-

Lease: El Dorado Trace condo, 2-2, W/D, wet bar, fans, 1,100 sq. ft., \$495/mo. 333-6962.

Sale: Friendswood, Mustang Meadows, 2.03 acres, util. avail, 481-4187.

Lease: CL, Oakbrook West, 4-2-2, lg. paneled LR, fans, FPL, DR, refrig., W/D, no pets, \$1 K/mo. plus dep. 486-8835 or 486-8605.

Sale: Friendswood, Wedgewood Village, 3-2-2D, contemp., atrium, FPL, whirlpool, decking, trees, \$93K. Sale: Kerrville, 12x60 mobile home, turn., good cond., lg. CP, lg. cov. patio, \$7,500. 333-6150 or 326-1254.

Sale: Hot Spring Village Arkansas, wooded lot, util. and improvements, \$13K, OBO. 326-1254 or 333-6150. Sale: Limestone County, 40 acre pastureland on paved road, fenced, ponds, barn, corral, catch pen, 2-

2 mobile home, sell by owner, \$68K. 479-3965. Sale: Lake Livingston, mobile home, furn., gar., 4 wooded lots, \$19K. (409) 945-7582. Sale: 2.5 acres, Alvin, on County Rd. 761, fenced,

Sale: Seabrook townhouse, 3-2,5-2C, must raise den. for new home, first \$22K cash, 333-7345 or 474-2335 Lease: CLC condo, 1 BR, FPL, all appli., fan, W/

D conn., avail. now. Jim Briley, 488-7901. Sale: Lakeside condo at The Landing, 2-1, 25' sailboat slip, \$44K, fin. avail w/20% down. Carol, x49647

Lease: CL Shores, 3-1, all appli., W/D stor., wooder oak floors, trees, deck, fenced, \$675/mo. 538-1849.

Rent: Galv. condo, Seawall and 61st, sleeps 6, furn., dal/wknd/wkly rates, cable, x33479 or 486-0788.

'77 Gran Prix, good cond., less than 100K mi., new trans./tires/radiator, \$1,795, OBO. David, 282-3827 or '66 Mustang, 302 V8, auto alarm w/remote, mag

wheels, AC, \$4K, OBO, Bob, 471-6189. '82 Honda Civic 1500, auto., AC, recent paint/tires, new muffler/brakes/batt., \$2,750. 481-3105. '87 Chev. Cavalier, 4-dr., auto., 37K mi., AC, ex. cond.,

73 Int. Scout II, \$1K. 332-6201 or 643-0331.

'69 TR6 OD, AC, reb. eng., low mi., ex. cond., \$4,500. x34818 or 480-8335.

'88 Chevy Beretta GT, loaded, good cond., 57K mi., OBO. Jim, 333-9410 or 333-6405.

'89 Chev. Beretta, 4 cyl., 19K mi. x30467 or 876-

'85 F150 Supercab, loaded, 63K mi., \$6,500, OBO.

'89 Acura Legend "L", trans. warr., ex. cond. 485-

'86 Pontiac 6000 STE, good cond., PW, digital dashbd., \$5,900. 282-3213 or 334-1705 '84 Camaro Z28, loaded, 5-spd., T-tops, V8, \$5,200.

'90 GMC Crewcab, 1-ton long bed, 5-yr. warr. trans., 20K mi., \$20K. Rick, 332-9221. '87 VW Vanagon GL, 36K mi., AC, dealer serv., 7

pass. 728-9716. 72 Chevy truck, ex. cond., LWB, auto., 350 eng., 4-barr., \$1,400. 947-9755.

'88 Nissan PU, AC, 5-spd., 37K mi., ex. cond., \$5,990.

'87 Cutlass Supreme, 2-dr., 305 V8, auto., ex. cond., 38K, \$7,200, OBO, 332-8103 or 765-1460. 85 Mazda RX-7/GSL, loaded, sunroof, new tires, ex. cond., \$6,500. Cindy, x38801.

'68 Plymouth Fury II, 318 eng. starter/coil/batt., reb. carb., good cond. 946-4867.

'79 VW Wesfalia camper new tires serv rec. stove , 2 beds, ex. cond., \$3,750. 332-4383 or (409)

'89 Honda Accord LX-I Coupe, ex. cond., 17K mi., 5-spd., warr., \$13,500, OBO. 333-6818 or 486-6859 '69 Mustang fast back, AC, auto., 351 eng., 80% restored, \$2,700. Henry, 480-3908.

Triumph Spitfire sport conv., \$2,750. 331-3954. 76 Chrysler Cordoba, new carb./radiator/trans./ brakes, \$1K, OBO, x36655. '84 Linc. Cont., V8, 74K mi., loaded, \$7,250, OBO.

'90 Mazda 626 DX 4-dr needs body work 761 mi \$4,800; '89 Suzuki Sidekick conv., 4 WD, 5-spd., 12.5K mi., \$6,900. 332-3775. 79 Int. Scout Terra PU, 4x4, 304 V8, under 60K mi.,

\$3K. Wilson, 333-7403 or 332-2143.

'90 Plymouth Colt GT, 5-spd., 12K mi., ex. cond., \$8,200. Bob, x37002 or 331-5069. '81 Buick Regal, V6, auto., AC, 2-dr. 996-9646.

'89 Chev. Cavalier, loaded. Bob Wirt, x39378 or 332-'79 Int. Scout, 4 WD, fac. Rally Pkg., V8, 345, 4 bbl., \$3,500, OBO. Wayne, 283-6514 or 337-5990.
'88 Ford T-Bird TC, 26K mi., std., ex. cond., \$11K.

Rich. 480-2570.

87 Kawasaki KLR-650, multi-purpose, 6K mi., lio. cooled, elec. start, ex. cond., \$1,900. Nicolas; 282-3307 or 486-4016. Schwinn Le Tour 10-sod., Shimano derailers, Zefal.

pump, good cond., \$95. Ruben, x33829 or 486-0817. '74 Yamaha 650 motorcycle, new batt., runs strong, \$650, 282-3452 or 479-7316 '86 Honda Elite, 80cc, 7,400 mi., runs good, \$700,

OBO. Dave, 486-2451.
'81 Honda CB 900 F motorcycle, sport model, well

maint, fresh Avon tires, helmet incl., 13K mi., \$1K, OBO. Wayne, 283-6514 or 337-5990. '75 Honda 550, 4 cyl., runs good, \$675, OBO. x30686 other peripherals w/SW, \$450, 286-3631

or 480-3260.

Boats & Planes Alum. canoe w/paddles, \$400, OBO. x30122. Slalom ski 67" Ebonite shuttle, ultra pro ski rope, anchor line, oar, etc., \$75, OBO; camper/boat hitch,

draw-tite 3,500 lb. cap. hitch w/remov. recep., 2" chrome ball, 1 yr. old, ex. cond., \$100, OBO. 486-4963. Challenger raft, oars, pump, 2 life jackets, ex. cond.,

\$90. Liz, 282-2511 or 486-3991.
Windsurfer, Mistral competition, compl. rig w/5.2 sq. meter sail, \$500. Mike, 283-5890 or 280-9005.

LIDO-14 sailboat, sails, trir., cntrbd. sloop, loaded, ex. cond., lessons incl. if needed, \$2,100. R. Hoover, x31360 or 996-7716. Aircraft propeller, Sensenich 74DM6-0-58, fits some Beech, Piper PA-18, PA-22, PA-28 series aircraft, \$900.

'83 27' Chaparral cabin cruiser, new elec., swirr platform, full galley/head, AC, etc., sleeps 6. x31833

or 534-6073. 25'6' Roballo cent. console, twin Yamaha OB, 150hp

ea. ('86), BO. 482-3727.

'79 Renegade 16' ski boat, 140hp Evin., SST props, trir., new carpet/paint/gn. sys., 45 plus mph, ex. cond., \$2,600, OBO. mike, 333-6868 or 486-7846.

18' Jensen canoe w/Keylar cross-rib coi

front/rear slider seats, alum. trim, bent shaft paddles, \$900. Randy, 326-1775. 17' Deep Vee Lamar, ship/lap fiberglass, SST prop, Sportsman galv. TiH trir., ex. cond., \$3,200. x35214 or

Audiovisual & Computers

Osborne port. comp., ext. monitor, Epson printer, SW, \$250, OBO. x30122.

DX-11 Yamaha synth., MIDI compat., new, hard prof. case, \$650, OBO, 488-0345. big screen TV, Philco, \$800. Donna, 283-5453

Pigneer CT-F750 ster, cass, tape deck, Fisher XP-85 spkrs., Acoustic Research XB-91 turntable, Kenwood KR-4400 AM/FM rec., \$75/ea. x39588 or

Wyse 50 terminal, printer, Hayes compat. 1200bps modem, S-100 comp., 2 drives, w/CP/M & Z3CPR OS, WordStar, CalcStar, Turbo-Pascal, manuals, documen., BO all or part. Keith, x38952 or 486-5072.

IBM PS2 Personal Sys. Model 25, Type 25-001 w/kybd., CPU, single 3.5 drive, IBM Proprint, carr. spreadsheet, XL printer, Hayes Smart Modern, \$1,500. Brenda, x38183 or 474-7262. Video camcorder batt. for Canon 8mm (four) CM 1060

Nickel-Cadmium batt., 6V 1000 mAh, \$50/ea.; ster. cass./rec. player/AM/FM radio, \$50. Patrick, x32635 Scuba dive comp., U.S. Divers Data Scan III, 1 mo.

old., 1 yr. warr. replaces depth gauge, press. gauge, timer, \$550. Patrick, x32635 or 488-1079. Tandy 1000 SX 384 exp. to 640, 360 K floppy dos 3.L. RGB color monitor, deskmate IBM Write, games,

Commodore 64, 1541 floppy drive, modem. SW.

compl. documen, \$400, OBO, Rob. 485-7627

\$175, x38265 or 482-1633. PC printer, Panasonic Model KPX1124, less than 1 yr. old, ex. cond., \$200. Mike, x34083 or 488-2185. Commodore 128 printer, 2 disk drives, RGB monitor, **Musical Instruments**

Artley clarinet, ex. cond., \$250, OBO. x31593 or 480-6292. Yamaha acoustic guitar, ex. cond., \$150. Tim, x38843

Pets & Livestock

Baby cockatiels, cinnamons, handfed. Linda, 484-

2 pure bred all white Spitz pups, 12 wks. old, \$100/ea. Tina, 282-4686 or 333-9216. Free, 1 pr. Fisher lovebirds, 2.5 yrs. old, cage, stand.

Dennis, 333-0907 or 480-6871.

Rabbits, New Zealands, Minilops. Gailo, 554-6200. Collie pup 5 mos old fem_sable/white \$100 OBO: Collie, 3 yr. old, male, tricolor, \$200; free blk. kittens.

Dachshund pups, AKC, standard, smooth, blk./tan, shots, wormed, Ch. bloodlines, born 7-6-90, \$200. Emelle, x37234 or 489-1390.

Household

Dinette table, 4 chairs, \$35. x39588 or 487-1883. Antique walnut DR table, drop leaf, 8 leg, \$395; sm. antique liquor cab., \$75; old childs table, \$25; rope bottom sewing rocker, antique, \$50; antique French bench, \$150; antique Queen Anne stool w/needle point top, \$150; metal typing table, \$10; desk light, \$12.50; table lamp, \$15; pr. stools, refin., \$20; family scale, sm., \$10. 488-5564.

Canister vacuum cleaner, \$20; set of glasses, \$10; pots/pans, \$10; ans. mach., \$5; toaster, \$3. Shane, x35916 or 326-2344.

Comfy sofa, off-white uphol., zips/snaps off for washing, ex. cond., \$200, OBO; Ig. oriental rug, cream/ gray/dk. navy/rust, \$450, OBO. Anne, x34493 or 286-

Miniblind, navy, 35x35, \$10; stove exhaust fan, blk., \$10. x39588 or 487-1883. 5-pc. sect. w/recliners, hide-a-bed, brn., \$1,200. 282-3452 or 479-7316.

W/D, 1.5 yrs. old, lg. sz., white, rustproof tub, ex. cond., \$500. John, 488-4102 or 333-9897 Full sz. box spring/matt., \$100, OBO. x38896 or 482-

Queen Anne DR table, 6 chairs, incl. 1 arm chair, ext. to 5', ex. cond., \$1,400, OBO. 333-6150 or 326-1254. China cab w/lt. shelves, \$130; 3 cushion sofa, beige/ brn./gold plaid, \$160; two 29" lamps, beige/rust, \$25/ ea. \$45/or: white 2-down dresser \$25, 280-2523 or 333-

Wanted

Want '75-'80 Ford Pinto, auto., no PS/PB/AC, body not important, does not need to run, must be towable. Trey, 280-4275 or 484-7834.

Want color monitor for Commodore 128, 482-7693. Want roommate to share 2-2 condo, Eldorado Way, male, non-smoker, \$225/mo. plus 1/2 util. James, 486-

Want roommate to share lg. new house, 10 min. to JSC, \$325/mo. plus 1/3 util., no smokers, no pets. Carol. 474-5106. Want 4 yr. old girl, companion for same, 9-5. Pam,

286-1107. Want economical VCR cleaning/service. Doug, Want 2 shelf bookshelf, approx. 3x3, prefer walnut in color, good cond. Pat, x33702

Want riders starting from SW side and Braeswood Chau, 933-2395.

Miscellaneous Complete set (4) of green Tiara glassware, \$40. Cindy,

944-4882 or Becky, x36530. 55 gal. fish lank w/wooden stand w/bookshelf, access. \$200. Bob, 471-6189.

Treadmill Health Walker, \$100, 481-3787. Ladies 14K gold wedding set w/Marquis solitaire, \$750, OBO. Ed, x35571 or 484-0959.

12 gauge shotgun, Beretta AL2, ex. cond., \$400, OBO. (409) 925-8192. Men's 14K gold diamond ring, \$350, OBO. Liz, 282-

2511 or 486-3991. Nagel prints, Patrick nagel commemorative prints, #5-#15, from \$200. Mike, 283-5890 or 280-9005.

Jobst extremity pump with gauntlet, ex. cond., \$100. Earl, x34807 or 532-2242. Fiberglass camper for short bed, \$300; VCR VHS

carrier, \$75, x36514. Golf clubs, Tour Model III 1-SW, \$16.95/club and metal woods, 1,3, or 5 at \$25/club. David, 554-5514. Tiara glassware, amber, 8 place setting, ext. pcs. Diane,

2 rattan chairs, high back, \$50/both; 4 used tires, idgestone steel 480-1340.

Diamond, Emerald cut, 1/2 carat, .56 points, \$1,500. Mary, x31120 or 996-0199. Intake and exhaust manifold, carb., alt. for 20R or 22R Toyota, Ben, x31271 or 649-7715

05 mint U.S. postage for \$25. Jeff, 333-7010 or 482-Ruby/gold wine set, Italian made, \$1,200, OBO. 488-White iron patio set, table, 4 chairs, \$175, 333-7180

or 333-9581 Treadmill, timer, speed, etc., \$125; DP exer./rowing mach., \$65. 333-7180 or 333-9581. Car cover, fits '82 Honda Accord or similar car, ex.

2 helmets, white, \$15/ea. Donna, 283-5453 or 337-3838.

100 gal. aquar., compl. Dan, x31986 or 996-7868 Man's gold watch, Rado Diastar, Swiss made, \$250.

334-2963. Bow/arrow set, 15 lb. pull w/5 bear arrows, \$20. Aaron Brown. 944-0493.

DP 2500 stomach/hack exer_mach_\$75_OBO_554-Craftsman buffer/polisher for auto, \$38: Atari video game w/Pac-Man, etc, \$45; 18" sport-type bike, \$25.

x33182 or 486-2622 Moving boxes, sell for 1/2 comm. prices; 2 uphol. matching chairs, \$35/ea.; oil painting, \$75; lg. cast alum. decor. lions, \$20/ea.; girls clothes. 486-2622.

1-way Delta airline ticket to Washington, D.C., dep. 10-16 9:45 a.m., arr. 5:20 p.m., \$95, OBO. 282-6684. Beer keg refrig. w/tap on top, ex. cond., \$150. Tim, x38843 or 332-6153.

Bird Aviary, 6x4x2, \$90, 484-7583. 8x3 lgtd. sign w/letters, legs, above arrow, \$175, OBO.

Gold diamond dinner ring, 2.5 carats; gold diamond dinner ring, cluster. (409) 925-1468. Diamond ring, 2.60 total carat CCS-1, 1.09 carat radiant

cut center stone, 22 quad. cut stones, \$6K. Angela, 280-1916 or 332-1955.



JSC Deputy Director Paul J. Weitz visits with, left to right, Rose Kline, Octavia Blanchard, **United Way Service Center Bay Area Director Steve** Waldner, and Marguerite Ashabranner. The afghan was made by Ashabranner and will be auctioned to earn money for the Senior Day Activity

JSC Photo by Jack Jacob

Service center's roots run deep in JSC

Combined Federal Campaign donations go to United Way services

By Kelly Humphries

rnever knew all this was here," said JSC Deputy Director Paul J. Weitz as he toured the United Way Service Center, Bay Area.

Weitz, this year's chairman of the Texas Gulf Coast Combined Federal Campaign, was talking to Mae Gunderson, one of the 25 regulars at the Senior Day Activity

"It's wonderful to be able to come here and talk to these nice people," she said.

"We enjoy having company once in a while," Marguerite Ashabranner told Weitz with a smile.

The senior center is part of United Way's Neighborhood Centers program, which is just one of 54 programs run by 17 agencies at the service center at 18301-A Egret Bay

CFC contributions help fund the center, and many of the people served by these agencies work for JSC or its local contractors, or are connected to them through family, friendship, work or other activities in their daily lives.

JSC Administration Director William Kelly led the United Way's Bay Area needs assessment committee in 1978. The committee, which included local business, church and school activists, talked to everyone it could think of who might come in contact with people in need. The list included schools, police departments, churches and hospitals.

The committee overwhelmingly supported the need for a service center in the Clear Lake area, Kelly said. The United Way board accepted the recommendation and in time rented space and began moving service providers to the area. The service center moved to its current location in 1984.

Kelly was on the service center advisory committee until two years ago, when he had to resign because of his new commitment as president of the Manned Space Flight Education Foundation Inc., one of the groups supported by the Combined Federal Campaign. The board stated that it would not accept his resignation and made him an ex-officio member.

"An awful lot of us have used United Way services and don't know we have," Kelly

Kelly said his family received critical help during the flood of 1979, when they found themselves without shelter, food, clean clothes or cash. The Red Cross, a United Way-funded agency, provided vouchers for all of those in the Kelly family and many others in the area regardless of income.

Today, the Red Cross has a paid staff of three pople and a 200-member volunteer disaster team. Curtis Collins of JSC's

Human Resources Office, is chairman of the Red Cross Advisory Committee, which reviews the Bay Area services and budget, suggests plans, programs and goals, and advises Manager Shirley Lindquist.

Collins has officially represented JSC on the board for five years. He said the Red Cross is "critical" to this area because it provides extensive human service training courses such as life saving, swimming and cardiopulmonary

bere's such

L a need,

it's overwhelming

—Steve Waldner,

Bay Area.

at times.

"If a hurricane came through or an apartment complex burned down, the Red Cross volunteers would set up emergency shelter and provide necessities to those affected,' Collins said.

resuscitation.

Of recent interest is the Red Cross' role in providing support for the families of soldiers and helping them stay in communication. Several JSC reservists have been called to active duty because of the Persion Gulf

situation, and the Red Cross is there to help

their families if needed, Collins said.

Steve Waldner, director of the Bay Area service center, also has a connection to JSC. He worked for Wackenhut Security, which then held JSC's security contract, from 1971 to 1973. He sees many of the people he used to work with when he gives the annual campaign talk to Mason-Hanger employees.

7 aldner said the number of agencies and programs that provide services in the Bay area has grown remarkably since the center's inception in 1978. He has been with the Bay Area center eight years, although for the first five he divided his time between it and the Fort Bend County center.

"Different things keep arising that we have to provide services for," Waldner said. "For example, several years ago we had six teenage suicides in a three-week period. The community was on the verge of a

That's when the Houston Child Guidance Center brought two staffers out to counsel young people and their families. Today, the center has seven full-time therapists, one part-time therapist and three fellows.

"This shows the enormous growth of this area and the need for psychological services for kids," he said.

Another agency that is helping more and more young people is the Bay Area Council on Drug and Alcohol Abuse. Last year, Waldner said, the council worked with a 6 year old who was addicted to cocaine. The child's parents apprently used the drug, and left it out when they went to bed. When the child awoke without supervision, he discovered the drug and started using it because he had seen his parents use it.

Waldner said the council does not provide medical treatment for drug abusers. Instead, it concentrates on counseling and teaching people how to cope with the temptation of drug and alcohol abuse.

'If we don't start developing

their coping skills now," he said of the area's young people, "We could lose them."

He said the council's goal is to make it possible for every Bay Area young person to graduate from high school drug free. Two years ago, the council had seven full-time staffers; now, it has 26 staffers and 45 volunteers to meet the increasing demand for services. Last year they saw 46,000 people, counting those who attended sci assemblies.

Currently, 40 people are attending an ongoing 8-hour program that teaches people how to look for signs of drug abuse in themselves and in others. The course also teaches people what to look for in drug and alcohol rehabilitation-programs, and what to expect from them. The "One in Three" course is based on the knowledge that, statistically, one in every three families has some kind of a drug or alcohol problem. To Waldner, that is frightening.

'There's such a need, it's overwhelming at times," he said.

Another agency that has touched the lives of people in this area is the Crisis Hotline, 333-5111. The hotline, staffed by trained local counselors from 10 a.m. to 10 p.m. daily, handles an average of 10,000 calls a year. It provides information to the lonely and suicidal with the help of 34 volunteer counselors, who go through a 65-hour training course and internship.

Bridge Over Troubled Waters, known as "The Bridge," provides counseling for battered wives and survivors of sexual assaults. With a two-person staff and four volunteers, The Bridge follows victims

through every step of their post-attack ordeals. Trained volunteers accompany the victims to the hospital, providing support and answering questions, and discuss with them their legal options and the consequences of their decisions.

Because of the confidentiality required, the Catholic Charities and Depelchin Children's Center use only paid staffers. They provide adoption services for the area, averaging about two each month. There's a waiting list of 70 couples now.

erhaps the easiest program to volunteer for is the Sheltering Arms L Telephone Reassurance Program, Waldner said. Volunteers agree to "adopt" an elderly person in the area and to call them every morning and chat for five minutes, just to reassure them that someone cares. Often, he said, the relationship blossoms into one of surrogate grandparenting. Prospective volunteers should call 956-1888.

Sheltering Arms also provides free homemaking service for elderly people, and the Friendly Visitors program sends volunteers to see nursing home patients on a regular basis.

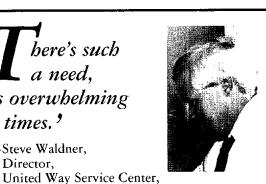
The new priority of the Bay Area service center is a door-to-door transportation system that is being coordinated with the Metro public transit system. After the Clear Lake-area shuttle buses were discontinued, Waldren said, the gap needed to be filled. As envisioned, the new system will consist of several vans that will pick people up at their doors, deliver them to their destinations and return them home. It would be available to anyone, but with a 48-hour notice required, it would be most useful to those who have no other form of transportation. The service probably will cost \$2 to \$2.50

Of the 82 agencies that benefit from United Way and CFC donations, 17 are available at the Bay Area service center. The service center itself becomes the 18th, since through its 333-HELP number, it is a referral service for the others, Waldner said.

Last year, United Way spent \$1.1 million in the Bay Area. The Bay Area provided \$1.4 million in donations. The donations also help fund agencies that are not available in the Bay Area but that Bay Area residents can use in Houston, such as the Center for the Retarded, Lighthouse for the Blind and Star of Hope Mission.

"The Bay Area is its own community now." Waldner said. "More people are aware of what we're doing and how we're

Anyone who is interested in volunteering their time, or who would like to refer a friend may do so by calling 333-9700.



Hernandez receives entrepreneur award

and chief executive of JSC contractor Hernandez Engineering Inc., has been named the winner of the 1990 Entrepreneur award by the Hispanic Engineer National Achievement Awards selection committee.

Hernandez founded his company, which provides engineering and technical support to JSC, in 1983.

Hernandez is one of 17 outstanding Hispanics who will be honored for their contributions in science, engineering, education and technology at the Hispanic Engineer

Miguel A. Hernandez Jr., president National Achievement Awards Con- has received Northeastern Universi- Crew and Therference banquet Oct. 20 at the Hyatt Regency in Houston.

> JSC **People**

Aldrich receives top alumni award

Arnold Aldrich, associate administrator for NASA'S Office of Aeronautics, Exploration and Technology, ty's Outstanding Alumni Award in the mal Systems field of Science and Technology.

Aldrich, formerly a prominent mission operations, project and program manager at JSC in the Mercury, Gemini, Apollo and Space Shuttle programs, graduated from Northeastern in 1959 with a bachelor of science in electrical engineering. He joined NASA later that

Schaller earns honors

Debra A. Schaller, secretary to the Robotics Division.

Division, recently ceived the Marilyn J. Bockting Secretarial Excellence Award.

Schaller, who is responsible for assisting the division chief and his staff, was nominated for the award by her former boss, Walt Guy, who now heads the Automation and



Hernandez



Schaller was recognized for the

ease with which she filled the needs of the division office and its chief by displaying skill, initiative and dedication. She received a plaque and a \$500 stipend.

Commendations

JSC officers assist airport police officer

Three JSC security officers recently received thanks from a Houston Airport Police officer and a commendation letter from JSC Direc-



tor Aaron Cohen for helping subdue a violent suspect at Ellington Field.

Ernest Villanueva, Joe Flores and Michael Warren, all Mason-Hanger employees, helped Airport Police Officer Britt Stenger

and Sgt. B. Westbrook about 3 a.m. Saturday, Aug. 25.

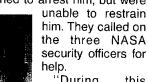
Villanueva said he saw the man, who claimed he wanted to join the



Warren

National beating up a pay telephone across the street from the NASA facilities at Ellington. They reported the incident and Stenger Westbrook and came to check out the situation.

Suspecting the man was under the influence of drugs, the two airport officers tried to arrest him, but were



'During struggle the suspect kicked, bit and struck all of us," Stenger wrote in his letter. "When the

suspect was placed in a cell at the city jail it took eight officers ... I thank these officers for their assistance, we could not have made the arrest without their help."

Villanueva said the trio's Mason-Hanger advanced security training helped them deal with the situation effectively.



JSC Electronic Photo by Robert Markowitz

STS-41 Commander Dick Richards, upper left, and Mission Specialist Bruce Melnick sign autographs at Wednesday evening's welcome home ceremony.

'NASA back on winning track'

(Continued from Page 4)

absence of convection; Physiological Systems Experiment, an investigation into the effect of a proprietary protein molecule on animal physiological systems in microgravity; Radiation Monitor Experiment, a measure of ionizing radiation in the crew compartment; and the Air Force Maui Optical Site, an on-going groundbased observation of the orbiter.

In the payload bay, Discovery carried the Shuttle Solar Backscatter Ultraviolet Experiment, used to calibrate ozone measuring satellites, and the IntelSat Solar Array Coupon, a witness plate carried on the arm to determine the effects of atomic oxygen on the stranded satellite's solar panels.

In exercising the VCS, mission specialists Bill Shepherd and Bruce Melnick experienced some problems. On the first two tests, the system did not respond to several words in the 31-word vocabulary when used by Shepherd, but did better when used by Melnick. On the third and final test, however, both astronauts reported 100 percent success.

Discovery landed at 8:57 a.m. CDT Wednesday on Runway 22 at Edwards Air Force

"We did it." JSC Director Aaron Cohen told more than 400 wel-wishers at Ellington Field

later in the day. "We showed the world that the shuttle and NASA are reliable and can meet their commitments. And to all of you who made that happen I have a great deal of appreciation and thanks.'

Richards said he compares the recent difficulties to "a losing streak that all great teams, like NASA, sometimes go through.

"When you go through these things sometimes you re-examine yourself. You ask vourself questions like 'Are we doing the right things?' 'Do we have the right people in place?' We've done all that and we knew we had the right people, we were doing the right things and we knew we were making the right decisions. It was just a question of time before it all turned around.

"Today, the losing streak is over," he said. Pilot Bob Cabana thanked the entire NASA and contractor team for support.

"We could not have done it without you," he said. "It's great to have America back in space where we belong."

Melnick thanked the people who worked behind the scenes with the secondary payloads. Shepherd and Akers added their thanks.

"NASA is back on the winning track," Akers said, "and nothing feels better than being on a winning team."

Stopgap measure again forestalls furloughs at JSC

JSC employees and other federal workers received another temporary reprieve from furloughs last week as Congress and President Bush agreed on another continuing resolution to keep the government operating until Oct. 19.

"After that, if we don't have a budget or another continuing resoultion, we might still have to furlough people," said JSC Human Resources Director Jack Lister.

A temporary shutdown of some government operations occurred over the holiday weekend while Congress struggled to pass the stopgap measure, but JSC operations continued as normal during the STS-41 mission.

The latest budget measure temporarily waived Gramm-Rudman-Hollings sequestration. Automatic sequestration cuts had been scheduled to go into effect Oct. 1 if budget deficit targets had not been reached by Congress and signed by the President.

Congress has since passed two continuing resolutions that keep the government running while it continues to attempt an agreement with Bush on how to trim the deficit.

The Human Resources Office has delivered "decision letters" to most civil service employees, but delivery of the rest has been put on hold because of the continuing resolution. The letters are notification that employees could be furloughed for up to 22 nonconsecutive or 30 consecutive furlough days if the cuts go into effect.

Any significant developments in the furlough situation will be reported daily and on weekends on the recorded JSC Employee Information Service, x36765.

National workshop brings information for inventors

Two JSC employees are helping put together a National Innovation Workshop Nov. 2-3 to provide inventors and entrepreneurs with basic non-technical information needed to develop and commercialize new

Ed Fein, JSC's patent counsel, is a member of the steering committee, and Grady Henderson of the New Initiatives Office is to be one of the workshop speakers.

The workshop is being sponsored by the University of Houston Small Business Development Center. It will bring inventors face to face with licensing experts. patent attorneys, investors and others who can help them successfully complete the commercialization

Registration is \$99 for both days, \$60 for one day. The registration deadline is Nov. 1. For more information, call Susan Adams at 752-8400.

X-ray imager returns successful first light pictures

The NASA High Resolution Imager instrument aboard the German Roentgen Satellite (ROSAT) has demonstrated its successful operation by sending back to Earth impressive first

One photograph is of Cygnus X-2, believed to be a neutron star orbiting a normal stellar companion, about 3,000 light years from Earth.

A second photograph shows the with the surrounding interstellar matesupernova remnant Cas A, in the constellation Cassiopea. The remnant is the result of a supernova explosion which occurred in the Milky Way galaxy about 320 years ago. The Xray images represent emissions from strong X-ray emitters. The emission a hot plasma cloud of several million originates in the hot gas which is swept degrees produced by the interaction

rial. The remnant is about 9,000-10,000 light years from Earth.

The third photograph shows a cluster of galaxies known as Abell 2256. Galaxy clusters are traditionally out of colliding galaxies and accumof the blast wave from the supernova ulates between the galaxies. These

gasses are typically tens of million Germany and Great Britain, was degrees in temperature.

The spacecraft is currently in a circular orbit at an altitude of about 358 miles, at an inclination of 53 degrees. It was launched from the Cape Canaveral Air Force Station, Fla., aboard a Delta expendable launch vehicle.

ROSAT, a cooperative program between the United States, West

launched June 1, 1990 to study cosmic X-ray emissions. X-rays are the signature of high energy processes (greater than about one million degrees). Scientists are interested in X-ray images because they specifically highlight regions in celestial systems where high energy phenomena exist.

Pilot program targets professional women

women will participate in a pilot program called "Managing for Excellence" at Columbia Lakes next week.

The four-day program, cosponsored by the Federal Women's Program and the Human Resources Development Branch, is part of the JSC initiative to advance, recognize and retain women professionals in the organization.

Federal Women's Program Man-

Twenty-four JSC professional of women professionals in a way that professionals." improves morale and productivity. and enhances organizational missions

"The overall purpose of the program is to provide a forum for enhancing development, interaction and effectiveness of women professionals to ensure greater control of their life options," she said. "While the emphasis is on women, the focus for excellence is on better management ager Freda Marks said the program of gender dynamics in order to will systematically address the needs provide greater support for women

Organization Development Systems Inc. will conduct the course, helping the women analyze the cultural dynamics that tend to keep women isolated, unencouraged and powerless, she said.

If the pilot is successful, JSC may offer the program to all of the center's professional women in science and engineering positions, GS/GM-14/ 15, and professional administrative positions, GS/GM-13/15. For more information, contact Marks at x30606.

Space News

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.

EditorKelly Humphries Associate Editors Pam Alloway Kari Fluegel

Team excellence

(Continued from Page 1)

the award has been presented, builds the space shuttle, supports missions, integrates shuttle elements and provides engineering services to the shuttle program.

Honeywell's Space and Strategic Systems Operation, a subcontractor to Rockwell, supports the guidance, navigation and control systems for the orbiter.

UNISYS provides software analyses, systems engineering and systems software engineering support for JSC's shuttle ground facilities. NASA-JSC