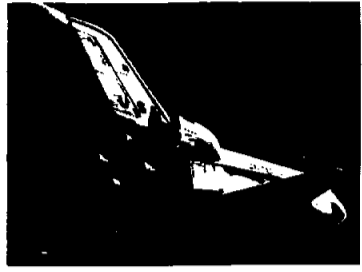


Photos from television monitor show smooth takeoff of Orbiter/747 during first captive inert flight at Edwards AFB (more inside)



# ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

HOUSTON, TEXAS

VOL. 16 NO. 5

Friday, March 4, 1977

## Successful flights mark captive inert test series

Shuttle Approach and Landing Test program officials were predicting at *Roundup* press time that last Wednesday's fifth scheduled captive inert flight of the 747/Orbiter would conclude ALT Phase 1.

A sixth test which had been scheduled for Friday would not be necessary if the Wednesday flight was as successful as the previous four.

Observers called last Monday's test at NASA's Dryden Flight Research Center a "text book flight."

NASA pilot Fitzhugh Fulton was at the controls of the jumbo jet during that flight, which began at 8 a.m. (PST) and concluded with a 10:11 a.m. (PST) landing. Monday's mission included some of the most intricate maneuvers yet attempted during this first phase of the ALT.

Some of the test objectives which were successfully completed included a simulated emergency descent, a missed landing approach and maneuvers required when the 747/Orbiter enters the free flight phase of the program later this summer.

Included in Monday's events was the evaluation of engine performance at increased thrust during which time the 747 reached an altitude of 28,565 feet, the highest yet attained by this combination of aircraft and spaceplane. This flight raised the flight time in the inert phase to a total of more than 10 hours.

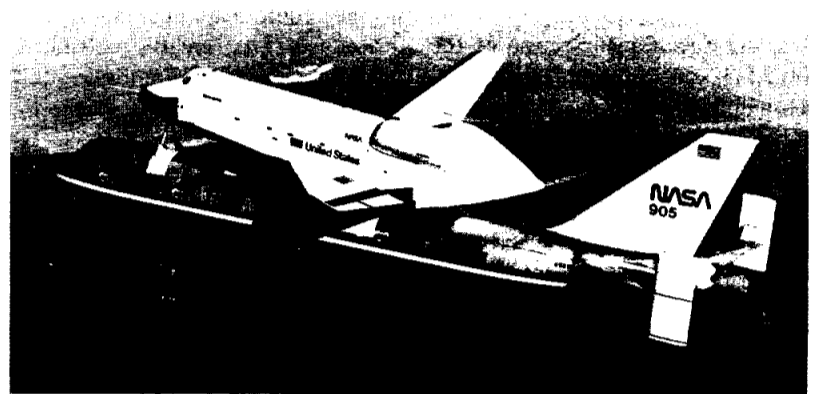
Near the end of the flight plan, the crew carried out a planned emergency descent from 22,000 feet to 16,000 feet. Power on all four engines was reduced to idle during this phase of the flight.

At the close of the 2 hour and

11 minute flight a scheduled missed landing approach was successfully performed. The huge aircraft flew over the runway to within several feet of the ground and then was powered back up and was flown around for its final approach and landing.

Full braking was used for the first time today as a means of evaluating if the 250 ton vehicle will be able to come to a stop on shorter runways than are used at DFRC.

Previous successful flights in the captive inert (mated and unmanned) series were flown on Feb. 18, 22 and 25. First manned captive flight is scheduled for May 26.



IT REALLY FLIES! — Seeing the ungainly mated configuration of the 747/Orbiter on the ground during taxi tests, it seemed almost impossible that the two vehicles could get off the ground. Cheers and applause could be heard around TV monitors at JSC Feb. 18 following the picture perfect takeoff for the first captive inert flight. This photo shows the pair in-flight as seen from one of the T-38 chase planes.

## Viking lander to dig deepest Mars trench

Commands are being sent to the Viking 1 lander on Mars to dig a foot-deep trench in the soil and distribute samples to three instruments.

The trench — the deepest yet — is being dug to help Viking biologists understand the complex soil chemistry, and to see if large amounts of oxygen that were observed in surface samples also occur at depth.

The command sequence will continue through March 15 and will include a series of pictures taken by the lander to show mission controllers how it is progressing. It began Feb. 10.

On March 13, the first sample

from the deep trench will be placed in the inorganic soil-analysis experiment.

The final sample, from the bottom of the trench, will be placed in the biology instrument's gas-exchange experiment in early April, according to current plans.

A shallower trench will be dug by Viking Lander 2. The operations began with an attempt to build a rock pile that would have been placed in the inorganic soil analysis instrument. However, scientists were unable to find any pebbles and have concluded that the area where the dig took place has only fine materials and lightly cemented soil grains.

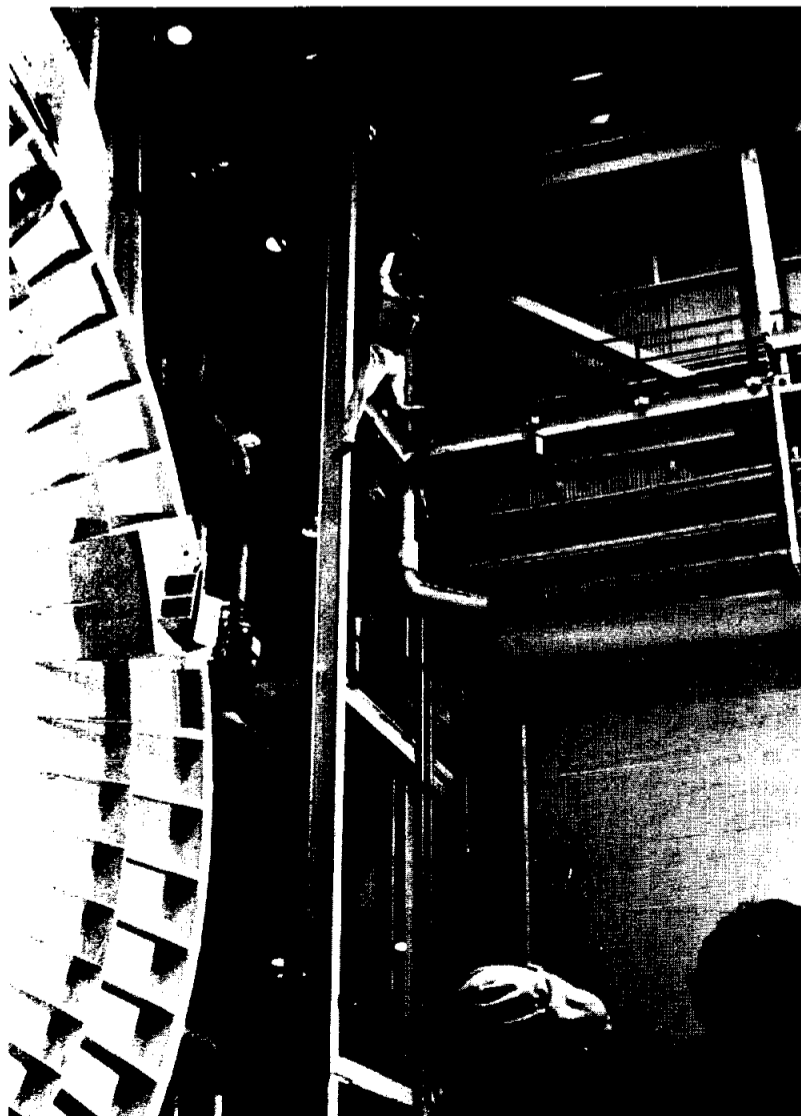
## Astronaut applicants total 1545

The Astronaut Candidate Program Office reported Feb. 28 that 1,545 applications have been received for civilian astronaut pilot and mission specialist candidate positions.

Mission specialist applications totaled 1,267. There were 278 pilot applicants. Of all applications returned, 198 were from women.

Of a total 13,119 applications and announcements mailed out by request, 223 went to JSC employees.

Civilian applications must be postmarked no later than June 30, 1977. For information, write the Astronaut Candidate Office, Code AHX.



HANG IN THERE — Stunt Coordinator Gary Combs hangs about 30 feet from the floor of Bldg. 32 in front of Chamber A during the shooting of a climactic scene from the CBS-TV movie "Red Alert" being shot at JSC. Combs is supported by a harness inside his suit which hooks over the hoist of the 50-ton bridge crane. "Red Alert" is about a sabotage attempt on a nuclear plant. Its stars include William Devane, Ralph Waite, Adrienne Barbeau and Michael Brandon.

## Black struggles: Freedom, citizenship

By Bruce Bennett

The struggles of blacks to gain freedom, equality and full citizenship in this country were discussed by both keynote speakers at JSC's Feb. 18 observance of Black History Month.

NASA Federal Women's Coordinator Ocela Hall and Houston City Attorney Otis King addressed the general session audience on the theme, "Heritage Days: The Black Perspective."

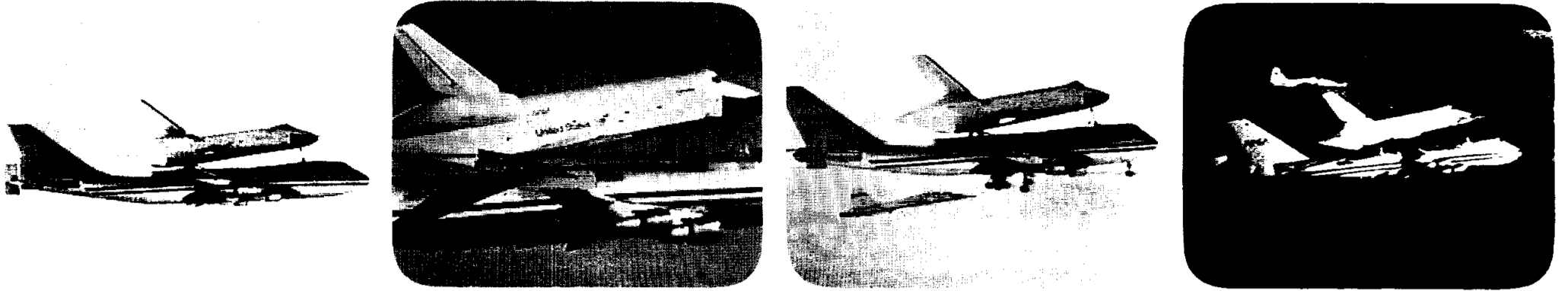
King noted that a heritage belongs to one by reason of birth. All

Americans are members of a particular family and ethnic group. They also share a natural heritage by birth in a particular country.

Thus, we are all Americans and we share that in common in spite of other heritages. This is the greatest source of strength in this country, King said.

America "is composed of persons of many colors, races and national origins who have come together under one common heritage, that of citizenship," he added.

(Continued on page 4)



Mated 747 and Enterprise fly high above California's Mojave Desert and Tehachapi Mountains under escort of T-38 chase planes

## Mark Schmalz chosen JSC Co-op of Month

Mark Schmalz, a junior electrical engineering major from the University of Cincinnati, has been named JSC Co-op of the Month for March.

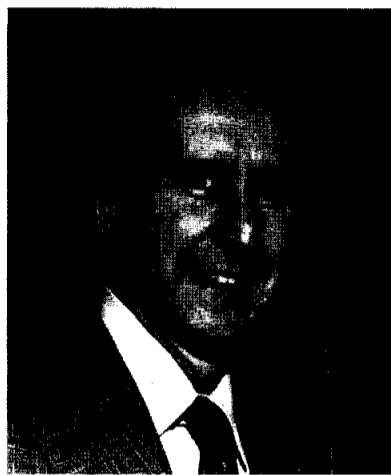
Schmalz has been assigned to the Systems Techniques Section of the Tracking and Communications Development Division for three calendar quarters. He was nominated for the award by his section head, Jack W. Seyl.

"Mark has shown outstanding advancement," Seyl said. "He possesses a unique ability to grasp advanced technical concepts and a willingness to accept difficult assignments even though his formal technical education is still in relatively early stages."

"In the short time he has been involved in design evaluation testing of the Orbiter-ground communications system in the Electronic Systems Test Laboratory, he has become a proficient member of the test team," Seyl said.

"Mark's overall contribution in

configuring system breadboards for testing, performing system tests, evaluating test data and recommending more efficient operations of test equipment and laboratory procedures has greatly enhanced the ESTL Shuttle communications system design evaluation test program."



Joseph Loftus Jr.

## Business Women pick Loftus 'Boss of Year'

Technical Planning Office Chief Joseph P. Loftus Jr. received the "Boss of the Year" award Feb. 12 from the Mimosa (Alvin) Chapter of the National Business Women's Association.

Loftus was nominated for the honor by his secretary, Bonnie Smith, who is a member of the chapter.

Boss Night Committee Chairman Virginia Johnston presented the award, including a trophy, during a dinner meeting at the Sheraton King's Inn on NASA Road 1. Dr. W. E. "Dutch" Holland was guest speaker at the meeting.

Loftus has worked for NASA since 1962. He was graduated cum laude from Catholic University and received a master's degree from Fordham University.

Following are excerpts from Smith's letter of nomination:

"My boss of four years is a highly motivated individual and encourages initiative, exhibiting standards of integrity that enable personnel under his supervision to make significant accomplishments."

"He takes sincere interest in each employee, insuring maximum utilization of their capabilities and, with his positive attitude, maintains excellent relationship with the working force."

"Mr. Loftus is a dedicated, hard-working civil servant with a quality that inspires loyalty of employees and he is consistently willing to take time to assist others."

"I heartily endorse my boss for 'Boss of the Year'," Smith concluded.

## Credit Union election, meeting set March 11

A drawing was held Feb. 28 to determine ballot position of candidates for three positions on the JSC Federal Credit Union board of directors and one vacancy on the credit committee.

The election will be held March 11, same day as the Credit Union's annual meeting to be held at 7:30 p.m. in the Bldg. 2 auditorium.

Following are candidates for the board of directors as their names appear on the ballot (vote for three): Ron Gerlach, Gene Holloway, Ed Campagna, Ed Stelly, Ed Jung Jr., Bud Hyatt, Jim Ragan and Samuel Stewart.

Following are candidates for the credit committee as their names appear on the ballot (vote for one): Jim McBride, Ed Lemons, J. Marvin Walker, Gerald Reuter and Stu Lenett.

The poll will open at 8 a.m.

March 11 at the Credit Union Bldg. It will close at 2 p.m. and reopen at 4 p.m. at the Bldg. 2 auditorium where it will remain open until the annual meeting is called to order.



TECH BRIEF WINNERS — These JSC employees received awards of \$50 each last month for outstanding technical briefs. Standing, l to r, are Jack Kinzler (Suggestion Committee chairman), Arthur Mandell, Dr. G. W. Hoffler, William E. Perry, Kent D. Castle, Donald R. Segna, Pat. B. McLaughlan, William K. Creasy, Calvin F. Herman, Daniel E. Supkis,

Sydney P. Bradfield III, Dr. Richard J. Williams, Dr. James F. Pawlowski, Robert G. Richmond, Gary R. Primeaux, Clarence J. Wesselski, Thomas G. Price, Johnny L. Parker, and Dr. Winston D. Goodrich. Seated, l to r, are Salvador Villareal, Stuart D. Lenett, Herbert S. Kobayashi, Ronald H. Gerlach and Dr. Donald M. Curry.

### JSCrossword

(See puzzle, page 3)

W	U	C	S		R	A	E	B
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T	L	A	T		P	R	G	A

# Awards for tech briefs given to 23 employees

Cash awards of \$50 for outstanding technical briefs were presented last month to 23 JSC employees.

Herbert S. Kobayashi, Tracking & Communications Development Division, and Robert G. Richmond, Space Environment Test Division, received awards for work on two briefs each.

Kobayashi co-authored "Unbalanced Quadrature Demodulator" with division co-worker Sydney P. Bradfield III. He co-authored "Technique to Receive and Track Phase-Modulated Signal from 0-360 Degrees Phase Shift" with Stuart D. Lenett and Salvador Villarreal, Tracking & Communications Development Division, and Dr. James F. Pawlowski, Avionics Systems Engineering Division.

Richmond wrote "Simple Time-Averaging Technique for Digital Measurement of Low Current/Voltage Signals" and "Vapor Effusion Source."

Other award recipients and the titles of their briefs were:

Kent D. Castle, Control Systems Development Division, for "Lightning Activated Electrical Cable Shield Ground."

William K. Creasy, Spacecraft Design Division, for "Vehicle Load Equalization System."

Dr. Donald M. Curry, Structures & Mechanics Division, for "Determination of Surface Heat Flux

Using a Single Embedded Thermocouple."

Ronald H. Gerlach, Experiment Systems Division, for "DC Drive System Without Brushes or Clutch for Application to Cine/Pulse Cameras."

Dr. Winston D. Goodrich, Structures & Mechanics Division, for "Plated Slab Heat Transfer Model Method."

Calvin F. Herman, Avionics

Systems Engineering Division, for "Differential Pulse Code Modulation."

Dr. G. W. Hoffler, Space Research & Operations Division, for "Occlusive-Cuff Controller." Recognition was shared with W. Hursta of Technology Inc.

Arthur Mandell, Bioengineering Systems Division, for "Rocking Motion Sensor for the Blind." Recognition was shared with Joseph E. Morgan and John T. Polhemus of Martin Marietta Corp.

Pat B. McLaughlan, Crew Systems Division, for "Self-Contained Breathing Apparatus with Automatic Redundant Gas Pressure Control." Recognition was shared with personnel of Scott Aviation and Martin Marietta Corp.

Johnny L. Parker and Thomas G. Price, Ground Data Systems Division, for "LACIE (EREPS)." Recognition was shared with David King of IBM Corp.

William E. Perry, Tracking &

Communications Development Division, for "A Concept for a Simple Mechanical Conversion of Black & White Television to Color Television."

Gary R. Primeaux, Bioengineering Systems Division, for "Meal System for the Elderly."

Donald R. Segna, Integration Division, for "Oriented Facets and Colored Liquid Solar Collector Panels."

Daniel E. Supkis, Structures & Mechanics Division, for "Refurbishment of NASA Aircraft with Fire-Retardant Materials."

Clarence J. Wesselski, Structures & Mechanics Division, for "Low Onset Rate Energy Absorber." Recognition shared with former JSC employee William H. Keathley.

Dr. Richard J. Williams, Lunar & Planetary Sciences Division, for "A System Using Solid Ceramic Electrolyte Cells to Measure Oxygen Fugacities in Gas-Mixing System."

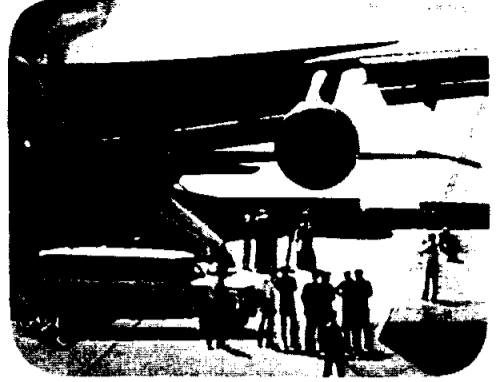
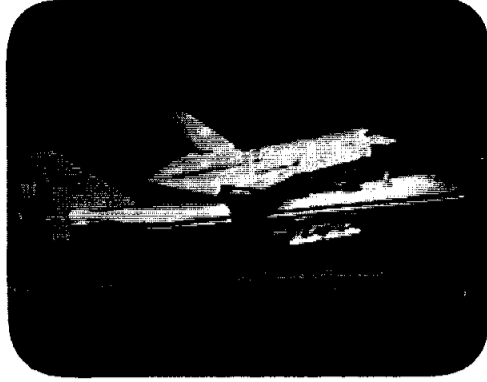
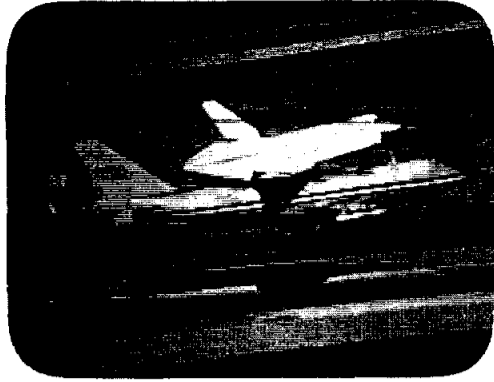
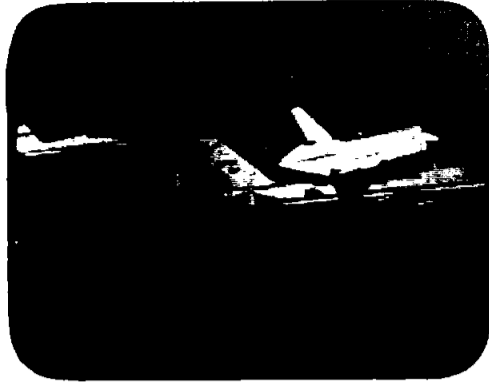
## ROUNDUP

NASA LYNDON B. JOHNSON SPACE CENTER

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

Editor: Richard Finegan

Photographer: A. "Pat" Patnesky



Near perfect approach and landing mark successful completion of the Orbiter's first captive inert flight during Phase 1 of ALT

# EAA ATTRACTIONS

### TICKETS

The following tickets are available at the Bldg. 11 Exchange Store from 10 a.m.-2 p.m., Monday - Friday:

**Houston Aeros** - EAA discount gift coupons may be exchanged at the Summit box office for "live" tickets on the night of the game. A \$6.50 coupon gets you an \$8 ticket. \$5.50 gets a \$7.50 ticket and \$4 gets a \$5 ticket. Aeros play St. Paul, March 8; Cincinnati, March 11; Indianapolis, March 13; Quebec, March 15; Phoenix, March 18, and Calgary, March 25.

**ABC Interstate Theaters** - \$1.50 admission tickets, available after March 14.

**Dean Goss Dinner Theater** - Comedy production, *The Babysitter*, \$16/couple. Tickets available every night except Monday, Saturday.

**Disney Magic Kingdom Club** - Free membership cards. Also avail-

able is Disneyland passport, good any day through May, which allows unlimited use of all Disneyland attractions. Adults, \$7.50; juniors, \$7; children, \$6.

**Sea-Arama Marineworld** - Tickets on sale, \$3.75 for adults, \$2.50 for children. Open until dusk year-round.

**Marietta's Dinner Theater** - Royal Coach Inn, Southwest Freeway. Tickets \$8/person good Tues/Weds/Thurs/Sun. Call Ms. Royal, 621-5957, tell her you're from JSC. Get ticket and pay at theater on night of play.

**Astroworld** - Reopens week-ends March 12. Tickets available March 7 at \$6.95 for adults and children. That's a \$1 discount.

**Six Flag** - Open weekends beginning March 19. Adult and children tickets, \$6.75 each.

### DEFENSIVE DRIVING

Registration has been postponed until March 21-22 in the Gilruth

Recreation Center lobby for the next EAA-sponsored defensive driving courses.

The courses are now scheduled for March 28 and 30 and March 29 and 31. Each course runs two nights 6-10 p.m., and costs \$10/person.

### NASA BUSINESS CARDS

Business cards with the new NASA logo are now available at the JSC Exchange Stores. Samples may be viewed at either store, Bldg. 3 or 11.

Also available is a limited supply of cards with the blue NASA seal. Both logos sell for \$7.50 per package of 250 cards.

### STOP SMOKING COURSE

A Five Days to Stop Smoking course is being offered at Clear Lake Hospital, March 21-25. All interested JSC employees and contractors are invited to attend. This

is the same course offered by EAA on-site last year.

The class will be in the hospital cafeteria from 7:15-9:15 p.m. Mon-Fri. Cost is \$10. Call Joanna Sharp at CLH, 332-2511, X-462 to register.

### BASKETBALL STANDINGS

Finals of the Jan-Feb season: Association won A League with 6-0 record; P.I.S.S. won Monday B League, 7-1; Rockwell won Thursday B League, 6-2; Slam Dunks won Monday C League, 5-2.

Rockwell emerged as overall B League champs Feb. 22 with a 46-45 overtime victory in the play-off against P.I.S.S.



SOFTBALL

Mens Softball will start the week of April 25. Sign-up for both leagues will start April 4. Team captains must have their rosters and entry fees turned in no later than April 12.

Entry fees vary according to which league a team enters. Fees

are as follows: Mens A, \$72.50; Mens B, \$65; Mens C, \$62.50; Womens, \$65.00. These prices are without EAA subsidy. Eligible teams (players all EAA members) will pay \$30 less.

Softball Umpires: Employees interested in working games for the Gilruth Rec. Facility should contact Tim Kincaid, X-3594. All umpires will be required to attend a meeting on "ground rules" on Thur, March 31 in Room 204, from 6-7 p.m.

Officials without a current ASA sanction will, in addition have to attend a meeting on Tues, March 29 in Room 204 from 6-9 p.m., and take a test on materials covered in both meetings. Those passing the written test will then be required to attend a field clinic at 5:30 p.m. April 5.

### ADDITIONAL CLASSES

Two new classes have been added to the schedule published Feb. 4. Bridge lessons will be offered for \$18/person, beginning March 7. Contact Rec Center, X-4921, right away. Plant propagation (care and selection, etc) class will meet Mon & Wed night for five weeks. Cost is \$20. Register at the rec center March 7-16.

## Roundup Swap Shop

Swap Shop advertising is open to JSC federal and on-site contractor employees. Goods or services must be offered as advertised, without regard to race, religion, sex or national origin. Non-commercial personal ads should be 20 words or less, and include home telephone number. Typed or scribbled ad copy must be received by AP3/Roundup by Thursday of the week prior to publication.

### CYCLES

- 71 Honda CL 175. Xint cond, low miles, adult owned. \$225. Smith, X-4468.
- 71 Honda CB 100. Good cond, low miles. \$150. Smith, X-4468.
- 74 Yamaha 360 MX (trailbike). Low miles, mint cond, never raced. \$525. 991-4626.

### CARS & TRUCKS

- Credit Union repos: 74 Flat, 73 Maverick, 70 Pontiac, 74 Olds Cutlass, 75 Chevy Sta Wgn (\$3,000), 74 Datsun (\$1,400), 72 Camaro. Cars shown Mar 7-9, 10 am-2 pm by appt only. Bids open Mar 10. We reserve right to refuse all bids. For appt, call Collecti on, 488-7070.
- 64 Olds Cutlass. Good transportation. 334-2261.
- 66 Mustang. Std, air, radio. \$695. Foster, 487-0155.
- 76 T-Bird. White w/tan vinyl top & interior, loaded, low miles. Write M. Reim, 139 Princess, Houston 77034, for price & details.
- 68 Pontiac Bonneville 3-seat sta wgn. AM/FM stereo, maroon, lugg rack. \$550. 481-1837.
- 73 Buick Century. 2 dr. pwr, air, radio. \$2,200 or make offer. Beckham, X-4227 or 482-1378.
- 64 Pontiac GTO. New eng & drive train, good body, new paint & carpet. 488-6310.
- 75 Toyota pickup. Air, radio, rear bumper, 18K mi, xint cond. \$3,095. Lewis, 488-3265.
- 65 Mustang. 289-V8, 3 spd, hi-perf trans, mag whls, red, good body. \$300. Jackie, X-3738 or 733-8209.
- 73 Ford Maverick. 2 dr. 302-V8, auto, fac air, pwr strg, 37K mi. 482-7073.
- 72 Ford Grand Torino Sport. V8, pwr, air, 41K mi, xint cond. Must sell. Best offer. 481-0066 after 6.
- 69 Olds. 4 dr, auto, air, radio, pwr, new tires/battery. Clean, runs xint. \$875. Hoffman, X-5961 or 331-0187.
- 74 Vega GT: Low miles, air, good cond; \$1,475. 73 Plym Gran Fury: 4 dr HT, full eqipt; \$1,750. Call 482-7029 after 5.
- 75 AMC Pacer. 24K mi, 258 cid 6 cyl, air, auto, pwr, lots xtras. \$2,950. Stagg,

- X-4476 or 481-3086.
- 69 Pontiac LeMans. 6 cyl, air, man trans. \$525. Jones, X-5441 or 481-2958.
- 22' Cobra - Cadillac of mini-motorhomes. 26K mi, loaded, xint cond. 488-3170 or 488-3377 after 5.

### PROPERTY & RENTALS

- Lot on Lake Travis near Austin. Lago Vista sub-div. Tom Taylor, 2610 Rosemead, Pasadena 77506, X-5341 or 473-5125.
- Bayou Vista canal lot. On Gulf Fwy at Galveston, Lot No: 874, all undgrd utils, bulkheaded. \$6,995. Discount for cash or terms by owner. Ben Chapman, NASA/Boeing Downey, AA36. Home (714) 636-8788. Work (213) 922-1871.
- Galveston West End. 2 bdrm By-the-Sea Condo apt, full furn. \$180/wk off season, \$260/wk in season. Clements, 474-2622.

### STEREOS & CAMERAS

- 2 Fisher speakers. Good cond, 3-way system. 12" woofer, 5" midrange, 2-1/2" tweeter. 946-8448 after 7.
- EICO RP100 stereo reel-type tape deck. Dual meters, pre-amp inputs, mike inputs. \$75. Biggs, 471-2745.
- 2 Wald Sound 3-way speakers. \$150 pr. Baldemar Gil, X-4576.
- Stereo cassette deck. Panasonic auto reverse, top load w/Dolby & chrome switch. Newly refurbished. Glines, X-3511 or 861-5278.
- 35mm SLR camera: Canon FT-QL, black w/f1.4 lens, just cleaned & calibrated, like new; \$125. Vivitar 28mm wide angle lens, f2.5; \$40. Stanley, 488-5506.

### HOUSEHOLD ARTICLES

- Sofa, black tufted naugahyde w/blt-in wood end tables, contemp style w/black-white houndstooth fabric cushions. 96" wide. Glines, X-3511 or 861-5278.
- Whirlpool electric dryer, good cond. \$100. 946-9192 after 6.
- Old furniture for 2 bdrm flat, \$250. Crib, stroller, etc., \$35. Leaving, must sell by March 2. 488-5457.
- Frigidaire deluxe mangle iron, like new, \$35. Lg fireplace grate & gas jet, \$15. Double bed head & foot board, \$10. 334-2261.

- GE refrige/freezer & Hardwick gas range. Good for camp or summer home. \$200 both. Toni, X-4748 or 649-1274.

### MISCELLANEOUS

- 12' Sears aluminum boat. 7 HP Golden jet motor. \$200 or best offer. Everett, X-3133 or 925-3470.
- 1956 Les Paul Model Gibson guitar. First \$400 takes. Taylor, X-5341 or 473-5125.
- AM/FM car radio, new, \$50; 8-band radio, \$40; Goodyear Polysteel radial tire, new, GR78-15, \$55; camera carry case w/strap, used once, \$15. Bennett, 488-3579.
- Realistic Navaho TRC-30A CB transceiver. 334-3092 after 6.
- Hvy duty pickup camper accessories: air suspension Ride Rites, \$75; two 10X15 cargo camper tires & rims, \$60; 10X84" extended bumper, \$50; 4 bed stake tiedowns, \$25. McCreary, X-4688 or 488-7636.
- Golf clubs, Spaulding, registered, 9 irons, 4 woods & bullseye putter. \$50. Gorman, X-4576.
- Car jack, triangle stand, \$7.50; color console TV, xint cond, \$175; 5-drawer letter size file w/lock, like new, \$85; IBM Selectric typewriter, 11" carriage, xint cond, \$295; Green vinyl arm chair, \$15; chassis shop manual, body manual, AC manual for 65 Pontiac, \$5. 488-1028.
- Interarms Mark X Mauser, 30-06, Weaver 4X scope, sling, case, 100 rds fact ammo, mint cond. \$185. 488-3966.
- Tire & wheel (H78-14) mounted, almost new \$15. Jim, X-4339.
- Load equalizer trailer hitch, complete. \$65. Prince, X-4823 or 991-4537.

### WANTED

- Square end canoe, 16-17 foot. Roberts, X-4768.
- Small boat trailer suitable for canoe. Campbell, X-3319 or 334-3071 after 6.
- Need riders for carpool for W Loop, SW Fwy, Bellaire area, 8-4:30. McLaughlan, X-3771 or 661-2974.

### LOST

- Brown jacket at Recreation Center. If found, please contact Jackie, X-3738 or 3739.

1	2	3	4	5	6	7	8
9				10			
11				12			
			13				
14	15	16			17	18	19
20					21		
22					23		

## JSC crossword

### ACROSS

- Dress
- Map or chart
- Love (Span.)
- Norwegian city
- Orbiting body
- Candlenut tree fiber
- Support crew member for all 3 Skylabs (2 wds)
- Pain
- Preposition
- A "smokey"
- Slimy film

### DOWN

- Fuel

- Physician's organization (acronym)
- Decompose
- Interrupting modulator (CB jargon)
- North Star or missile
- Lunar Science Institute (acronym)
- Approach & Landing Tests (acronym)
- Foot digit
- Allow
- Small gob
- Hard water
- Half a Latin dance
- Aunt's husband (colloq.)
- Lift-off Time & Update (acronym)
- Kippur

(See answers, page 2)

# Black History observance...

(Continued from page 1)

Blacks, however, have not always shared that heritage of citizenship with its birthright of freedom. Moreover, he said, blacks have had the most difficult time in attempting to search out all the threads of their heritage because of the manner in which most were brought to this country.

King noted that the status of blacks in the United States was not defined until after the Declaration of Independence and the Constitutional Convention of 1787.

Unlike other ethnic groups, blacks were given no rights in the original Constitution.

The Supreme Court's Dred Scott decision stated, "Blacks, whether slaves or free, were not acknowledged as a part of the people or intended to be included in the general words used in the memorable document," King said.

It took the Civil War and the passage of the 13th, 14th and 15th Amendments to give blacks citizenship, at least on paper; 95 years later, with the passage of the 1965 Voting Rights Act, blacks in the South were able to effectively claim full citizenship by exercising their right to vote, King said.

Blacks will continue to search and struggle "for full participation in our heritage of Constitutionalism and the rights of free and full citizenship," King said.

"We do fully expect for the search to involve struggle," he noted. In closing, King quoted the words of former slave Frederick Douglass, "If there is no struggle, there is no progress."

Also referring to the bitter struggles of blacks in her speech, Hall said, "We must draw lessons from the past to mold the future."

There are many Executive Orders and Public Laws on the books. Laws are valuable, but the search for true equality lies beyond the courts, she said.

"Blacks have systematically

denied participation in the mainstream and in many cases the side-streams of America's social, political and economic life," she said. "But we must not only see what has not been, but what can be.

"Can we, over this next crucial decade...change not only negative attitudes but our policies of disparate treatment?" she asked.

"Can we pass from a formal submission of Affirmative Action Plans to achieving affirmative results?"

Addressing blacks who feel they have achieved personal success, Hall left them with "the challenge of not becoming complacent because just when you think you have it made...you have a price to pay. Eternal surveillance is the price you pay for liberty."

## Lunar Conference to cover 7 topics

The 8th Lunar Science Conference March 14-18 begins Monday at 8:30 a.m. with an "outlook for space science through 1978" by Dr. Noel Hinners, associate administrator for the Office of Space Sci-

ence.

Dr. Hinners' views will be followed by a presentation of Luna 24 samples by representatives of the Academy of Sciences of the USSR.

This year's conference will feature three special sessions in addition to scheduled concurrent sessions covering the seven conference topics.

The special sessions are on Mars, chaired by Viking team leader Dr. Thomas A. Mutch; new representations of orbital data on terrestrial planets chaired by Dr. Harold Masursky, USGS Flagstaff office, and "New Moons: Towing Asteroids into Earth Orbits for Exploration and Exploitation" chaired by Drs. G. Arrhenius and David Criswell.

About 235 presentations will be made during 19 sessions through Thursday. On Friday the seven topics will be summarized during the general session.

The conference is sponsored annually by NASA through JSC and the Lunar Science Institute (Universities Space Research Association).

## AIAA mini-symposium scheduled March 22

The Houston Section of the American Institute of Aeronautics and Astronautics will hold its second annual Technical Mini-symposium from 1-6 p.m. March 22 at the Gilruth Recreation Center.

Registration for the event, which includes a \$1 fee, begins at noon that day in the lobby of the center. Registrants will receive a copy of the abstracts for all papers.

Aleck C. Bond, assistant director of Engineering and Development, is general chairman of the symposium.

The format consists of four concurrent sessions: Space Shuttle (Ken

Kleinknecht, chairman); Programs (Allen J. Louviere, chairman); Technology (Jules Dishler, chairman), and Science & Applications (Richard S. Johnston, chairman).

Each session will be broken into three sub-sessions during the afternoon. A total of 50 papers will be presented by JSC and contractor employees. All are welcome to attend.

A banquet will follow the symposium at 7 p.m. Dr. Krafft Ehrliche of Rockwell International will speak on "Space Industrialization." Reservations for the banquet may be made through March 18 by calling Lillian Hudson, X-4991.

## Landsat 'atlas' now available

The most comprehensive and detailed "space photo album" of the world's natural and cultural features has been prepared with images from NASA's Landsat Earth resources satellite.

Titled *Mission to Earth: Landsat Views the World*, the atlas-size publication contains some 400 Landsat images — most of them in color and near full page size.

Landsat images are used extensively by scientists around the world as a tool in monitoring crop yields, mapping terrain features and detecting urban growth for census applications.

Others use the imagery as an aid in mineral and fuel exploration, water resource monitoring and control and inventorying strip mining

operations as well as flood and pollution damage.

*Mission to Earth* should now be available through the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C. 20402, at \$14 a copy. The stock number is 033-000-00659-4.

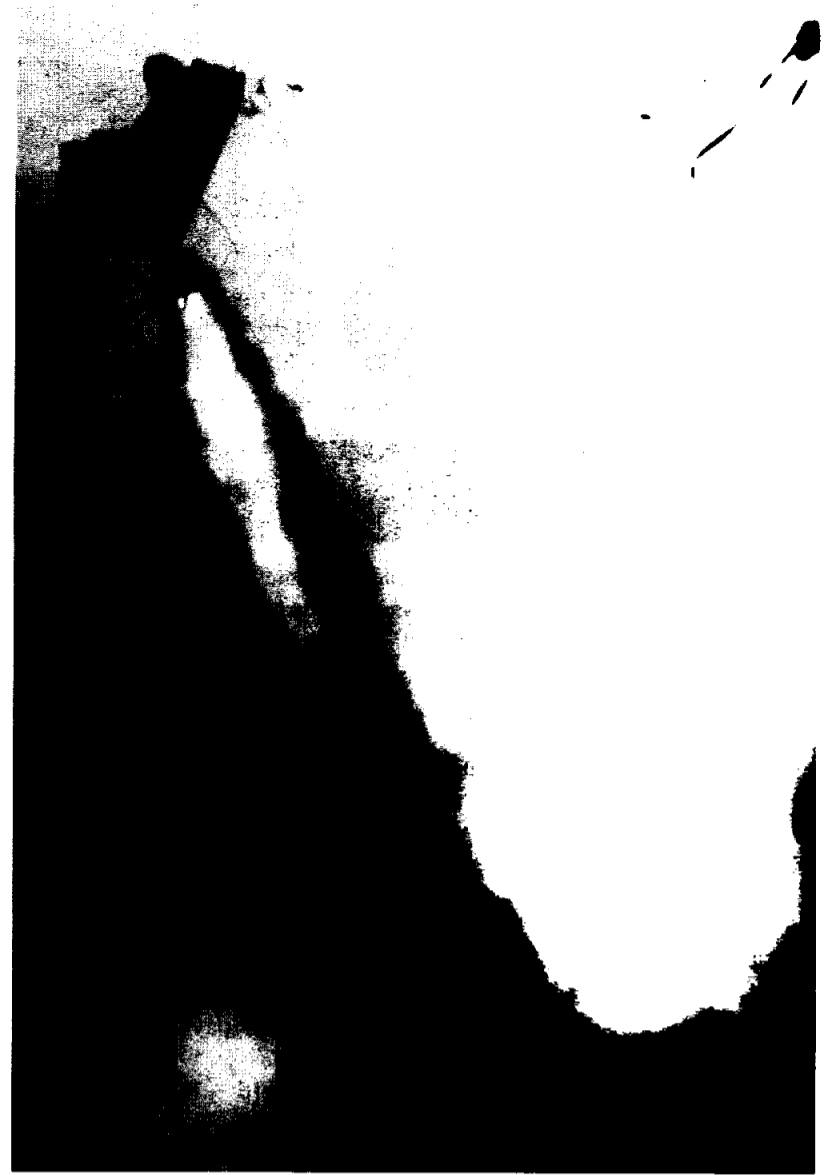
The new book was authored by Drs. Nicholas M. Short, Paul D. Lowman Jr., and Stanley C. Freden of NASA's Goddard Space Flight Center, Greenbelt, Md., and Dr. William A. Finch Jr., of the San Diego State University.

They designed the book for wide readership appeal. It is a reference atlas, a teachers' guide, a text book and a supplemental tool for the resource specialist.

Although the new book covers the world with representative images, preferential coverage is given to the United States. Approximately 40 per cent of the images are devoted to the 50 states.

The heart of the book consists of a variety of Landsat mosaics, montages, enlargements and standard images. In some cases, the standard images have been repeated to reflect seasonal changes. Standard Landsat images cover 185 kilometers (115 miles) on a side and encompass about 34,000 square km (13,000 square mi.). They are normally printed at a scale of 1:1,000,000.

One special feature of *Mission to Earth* is the use of expanded captions to summarize the basic story



ROCKET CHAIR? — No, this isn't a scene from the "6 Million Dollar Man." It's a mannequin in an ejection seat being blasted safely clear in a successful test of the Orbiter's crew escape system recently conducted by the U.S. Air Force's 6585th Test Group on the sled track at Holloman AFB, N.M.

## White Sands tests set 2 site records

White Sands Test Facility set two new site records Feb. 23 while performing endurance testing on the Space Shuttle Orbital Maneuvering Engine (OME).

The OME was fired 152 times and the WSTF altitude simulation system was run continuously for 31.1 minutes, maintaining a partial vacuum equivalent to an altitude of 110,000 feet.

Longest previous run on the altitude simulation system, which consists of a chemical steam generator burning alcohol and liquid oxygen and a two-stage, 9-foot diameter

steam ejector was approximately 23 minutes.

Plans were under way at Round-up press time for an even longer test sequence which would attempt 176 firings of the OME.

The test program now in progress will perform 1,000 engine start cycles at the simulated altitude. The Feb. 23 firings included 151 three-second firings with an eight-second coast time between each firing and one 20-second performance measuring test.

That accumulated a total engine time of 473 seconds. All tests were successful, according to I. D. Smith, the NASA operations director for this test program.

The altitude simulation system with its one million horse power steam engine was modified at WSTF from its original configuration for performing Apollo Lunar Module propulsion system engine testing to perform long duration tests.

## JSC, Northrop sign contract

JSC has signed a contract with Northrop Services Inc. for operation and maintenance of life sciences and engineering laboratories and the Lunar Curatorial Laboratory at the center.

Now in effect and expiring Jan. 31, 1978, the cost-plus-award-fee contract is valued at \$9,083,393. The total estimated value of the Northrop contract is approximately \$46,230,135.