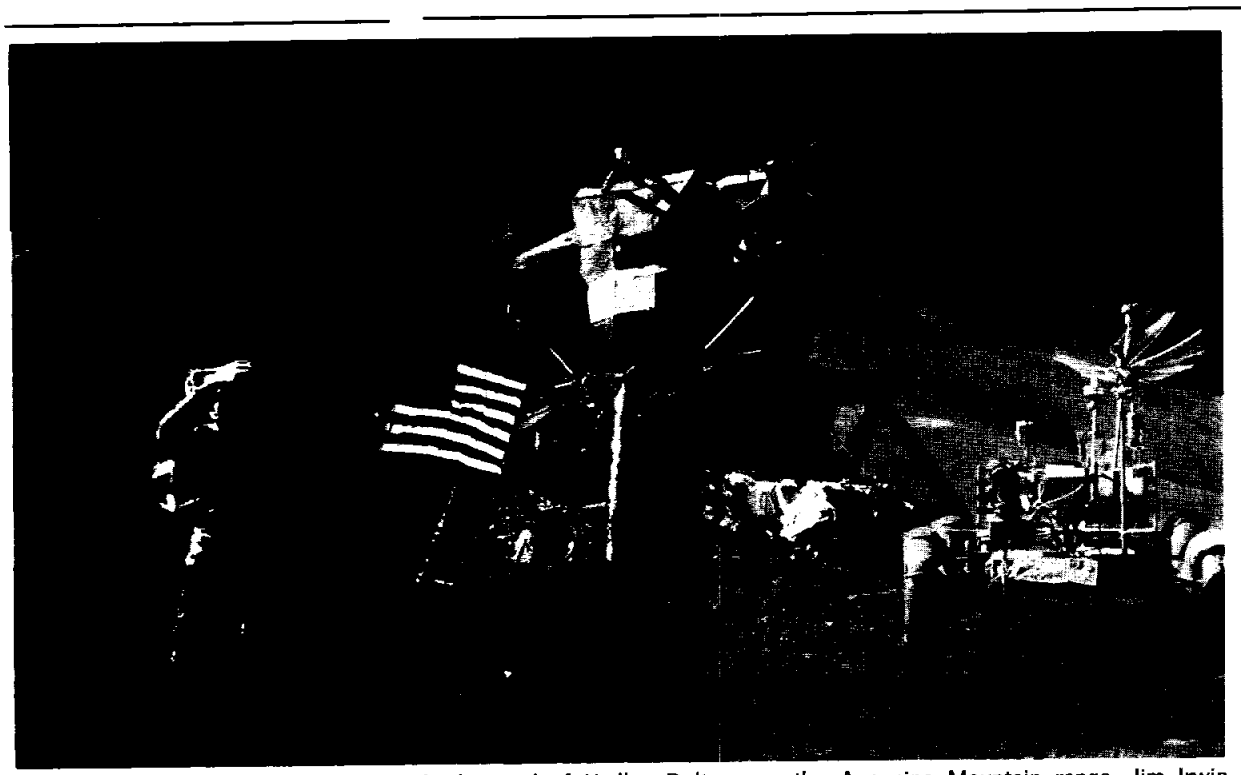
SPACEMOBILE AT MUSEUM OF NATURAL SCIENCE THRU AUGUST

# ROUNDUP

NASA MANNED SPACECRAFT CENTER HOUSTON, TEXAS

VOL. 10 NO. 20 August 13, 1971

NEW TEXAS LAW REQUIRES IMMUNIZATION



HOME ON THE RANGE—Against the background of Hadley Delta, near the Apennine Mountain range, Jim Irwin salutes the flag in the front yard of the lunar module home. The moon car "Rover" is parked in the driveway. What, no garage?!

# Moon crew, investigators delighted with scientific return from Apollo 15

Despite a harder-than-expected splashdown in the Pacific, Apollo 15 crewmen Dave Scott, Al Worden and Jim Irwin emerged smiling from the command module Endeavour last Saturday after their million-plus mile, 12-day journey into space.

One of the Endeavour's three main parachutes failed during the spacecraft's descent, causing the moonship to hit the water slightly faster and harder than it would have with all three chutes operating normally.

After medical examinations, a meal, and a night's rest onboard the recovery ship USS Okinawa, the astronauts helicoptered to board a C-141 aircraft for Ellington Air Force Base, where they arrived last Sunday night.

The first lunar landing crew not having to face a 21-day quarantine, the men were reunited with families and friends at Ellington.

The 175 pounds (approximately) of lunar samples, including a deep core sample and rocks and soil from the Hadley-Apennine region of the moon, have been delivered to the Lunar Receiving Lab here, where scientists have already begun the intricate and lengthly process of analysis.

One rock already being analyzed weighs over 21 pounds. It is the largest yet returned from the moon. Another interesting specimen is a piece of dark glass-like material, one foot long and three inches thick.

Also included among the samples is a so-called "Genesis rock," which Irwin and Scott picked up near Spur Crater. Described as crystalline in composition, it may date back over four billion years and may, therefore, unlock the mystery of the moon's origin.

Speaking of Scott's difficulty in trying to recover the drill core sample, Scientist Astronaut Jack Schmitt, LM backup pilot for Apollo 15, said during a geology briefing following the third lunar EVA, "This was our first really, nearly complete record of the nature of the lunar regolith we were going to have the opportunity to obtain.

"This regolith, this soil layer on the moon (is) where we expect to find the record of the sun,'s radiation and the sun's magnetism . . . And that record is an exceedingly important part of our total lunar exploration program."

In addition to the rock and soil samples, the crew also brought back thousands of feet of still and motion picture film with photos taken from lunar orbit and on the moon's surface. Al Worden performed a 40-minute EVA in deep space, some 200,000, miles from Earth, to retrieve film from the SIM (Scientific Instrument Module) during the journey back to Earth.

The cameras in the SIM included a 24-inch panoramic camera, which gathered stereo and high-resolution photographs of the lunar surface, and a 3-inch mapping camera which combined pictures of starfields with surface terrain mapping capabilities.

The subsatellite, nicknamed "Peanut" by the crew, was jettisoned into lunar orbit from the SIM. It is expected to remain in orbit, collecting scientific data, for the next year.

Television viewers around the world were treated to the clearest live pictures yet seen from the moon's surface. Attached to the Rover, the TV camera was operated remotely from the Mission Control Center here.

The camera was left on the Rover, and for the first time, there was an opportunity to see the colorful spectacle of the lunar module's ascent from the moon.

The crew's activities since their return to Houston have included thorough medical examinations and technical de-briefings. Scott and Irwin have also spent time with the lunar sample investigators, observing the rocks

*(See APOLLO, page 2)*

# Water discussions are now underway

MSC and the Clear Lake City Water Authority announced last week the beginning of detailed discussions leading to a long term contract whereby the Water Authority would provide treatment of MSC's wastewater.

The Water Authority's treatment plant, approximately 300 feet from the MSC boundary, would connect with the Center by pipeline. MSC has initiated a contract to provide for its connecting pipeline plans and specifications.

In March 1971, the Water Authority proposed that it provide the advanced treatment of MSC wastewater to meet more stringent effluent standards as required by the Texas Water Quality Board and the Environmental Pro-

*(See WATER, page 3)*

# Center particiates in a Study of Trinity Bay

MSC took part last week in concentrated observational program to determine how the cooling water of an area power company affects the flow and temperature characteristics of Trinity Bay.

The Trinity Bay study is part of an on-going cooperative program with numerous other agencies and is also designed to determine how well mathematical models can predict changes in water temperatures.

Participating in the study in addition to MSC are the Environmental Protection Agency, U.S. Coast Guard, U.S. Army Corps of Engineers, U.S. Naval Research Laboratory, Texas Water Quality Board, Texas Department of Parks and Wildlife, Texas A&M University, and the Houston Lighting and Power Company.

Aircraft of MSC's earth observations program flew last Friday over the area of Cedar Bayou near the cooling water outlet of the Houston Lighting and Power Company's Cedar Bayou plant.

Because the Cedar Bayou plant was shut down during the early part of August, this observational program may have provided the last opportunity to observe the bay in its unaffected state.

Last week's program will provide a data base for comparison to observations taken later during plant operation and will also supply data to be used in tests of hydrodynamic models of the bay in its unaffected state.

In addition to remote sensing equipped aircraft, eight surface vessels, a ground meteorological station, ground transit team, and a helicopter provided by the Aircraft Operations Office also took part in last week's study.

Temperature, salinity, turbidity, and water velocity were measured. Drogues and current meters were used to measure water velocity. A non-toxic fluorescent dye was used for the first time in the Trinity Bay project to determine both the currents and diffusion properties of the bay.

Dr. Victor Whitehead of the Earth Observations Division has spoken of the very good working relationship between all of the participants in the study. He said that findings of last week's observations will be available in early September.

# RIF Notices go out today

Center Civil Service employees today began receiving notices informing them that they will either be reassigned to jobs in lower grades or released outright.

The Reduction in Force (RIF) notices are the result of cutbacks in the work force at the Center due to decreased space funding.

While some 212 positions are to be eliminated, by next June the number of employees being separated now is smaller because of resignations and retirement, a spokesman in the Personnel Division said.

A year ago during MSC's forced reduction of Civil Service, employees, 175 persons were released, and an additional 185 workers were re-assigned or placed in jobs at a lower grade.

An Outplacement Center, to open August 18, has been set up in Room 556 of Building 5 to assist employees affected by the impending reduction in force.

Outplacement counselors will assist affected employees in such areas as developing potential sources of employment, referring

*(See Outplacement, page 3)*

A STUDY IN CONCENTRATION—Scientist-Astronaut Joe Allen, an Apollo 15 capsule communicator, sits at his console in the Control Center during Scott's and Irwin's second lunar EVA. He is holding a photo of the Hadley-Appenine landing site. Allen, who has a Doctorate is Physics from Yale University, was selected for the astronaut program in August 1967.

AN APPRENTICE NO LONGER—Linda Campos receives her Certificate of Completion of Apprenticeship from Joseph O. Piland, Director of Center Cperations, as Jack Kinzler, Chief of the Technical Services Division, looks on approvingly.

# Linda is lst woman apprentice grad

Linda M. Campos, an electronic technician with the Technical Services Division, is a recent graduate of the MSC Apprentice Program. She has the unique distinction of being the first woman to complete an apprenticeship within NASA.

Linda entered the program in May 1967. Her apprenticeship as an experimental electronic instrument maker covered four years and combined rigorous training on the job with college course work.

Linda traces the start of her interest in electronic technology to an assembly line job she held for three months in an electronics firm. She became curious about the component parts with which she was working and decided to find a job in which she could learn more about the "why's" of electronics.

During her apprenticeship here, Linda was sponsored in two courses each semester at the College of Technology at the University of Houston. Taking such courses as Technical Mathematics, Vacuum tubes and transistors, and Antenna theory, she has earned 55 semester hours toward a Bachelor of Science in Electronic Technology.

When interviewed recently, Jack Kinzler, Chief of the Technical Services Division, commented that the Apprentice Selection Committee had initally been concerned about selecting a woman for the Apprentice Program.

"Linda's performance has confirmed the validity of our decision to hire her," Kinzler said.

"We are delighted with her progress and feel that she has demonstrated her ability to succeed in a field that has been traditionally dominated by men."

Linda received her practical shop training in the Electronic Branch of Technical Services Division. She repaired and constructed a variety of electronic equipment during her apprenticeship. She has worked on components used in the infrared camera, Skylab Trainer, digital attenuater, EVA back packs, and the reduced gravity trainer units.

Linda's most recent assignment has been in the Director's Conference Room on the ninth floor of Building 2 where she is responsible for operation of the audio-visual equipment.

Responsibilities accompanying her role as wife and mother don't allow Linda much time for hobbies, but she does enjoy photography, motorcycling, sewing, and cooking.

KUDOS TO FLIGHT SUPPORTERS — James C. Stokes, Jr., Chief of the Flight Support Division, recently presented Sustained Superior Performance awards or Quality Step Increases to six members of the Division. Pictured (l. to r.) at the ceremony are Stokes, Gunter R. Sabionski, Jimmy E. Beaves, Thomas M. Conway, Thomas W. Sheehan, Dan R. Kirbie, and Jimmy C. White.

ROUNDUP

NASA MANNED SPACECRAFT CENTER HOUSTON TEXAS

The **Roundup** is an official publication of the National Aeronautics and Space Administration Manned Spacecraft Center, Houston, Texas, and is published every other Friday by the Public Affairs Office for MSC employees.

Editorial Staff: Sydni Shollenberger, A. "Pat" Patnesky

# Apollo 15 returns

*(Contiued From Page 1)*

and answering questions posed by the geologists. The three astronauts met with the news media yesterday for their first back-to-Earth press conference.

Dr. George Low's comments after the Apollo 15 recovery summarize the feelings of many people.

"We heard and watched two explorers at work. We were able to participate with them in a way that man had never before participate with them in a way that man had never before participated in an epic scientific voyage. And millions of people on earth were willing to—wanted to—participate, simply because the human spirit needs, and responds to; the stimulation of new knowledge.

"While listening and watching, man on earth realized that his nearest neighbor is not so inhospitable, that some day his offspring may seek the resoures of his sister planet, as well as those of his own."

## NSA sets meeting

The NASA-Clear Lake Chapter of the National Secretaries Association will hostess a panel discussion on "Career development for Secretaries" on Tuesday, August 24 at the Sheraton Kings Inn.

Participating in the discussion will be Billie Schmidt of Personnel Division; Marilyn Bockting, Flight Crew Operations; and Dorothy Newberry, Institutional Resources and Procurement.

All MSC secretaries are invited to attend. The discussion will be preceded by a social hour beginning at 5:00 p.m. and dinner at 5:30 p.m. Call Virginia Thompson, x5473, for reservations.

## Footballers to hold Session today

The 1971 flag football organizational meeting will be held at 5:30 p.m. today at the Ellington Air Force Base NCO Club.

The meeting will establish a league which will begin playing in September.

For more information, call Jeri Brown, x3681.

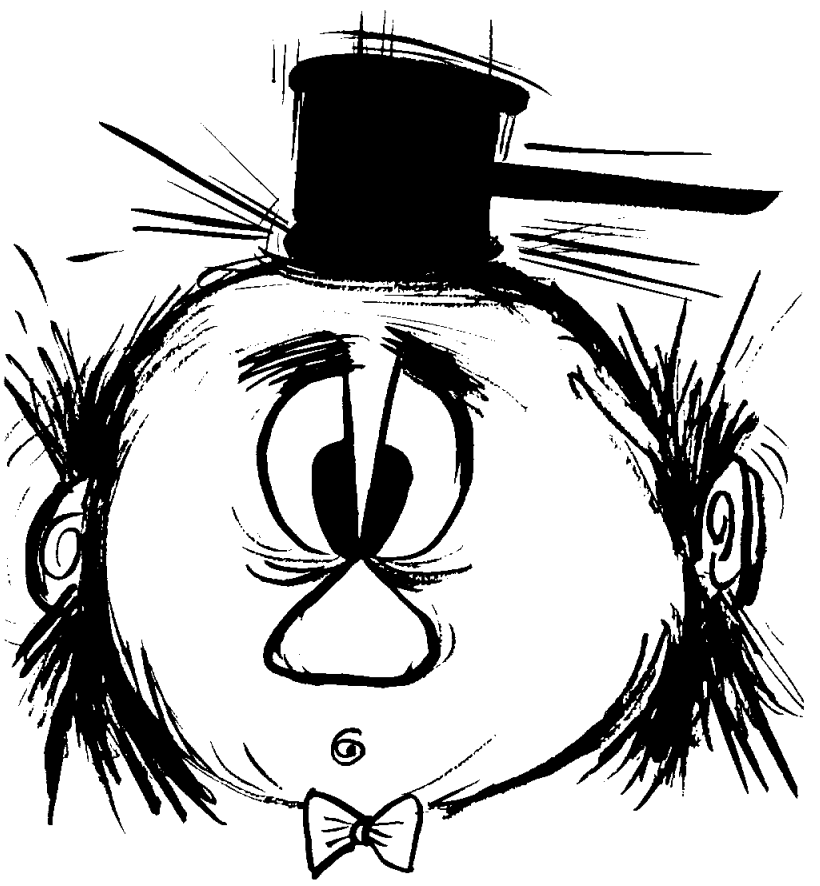
## A&I alums sought

Former students and graduates of Texas A&I University are invited to join the Galveston Bay Area A&I Alumni Club.

The club will meet biannually. There will be no dues or membership fees.

At its first banquet, on Saturday, September 11, the club will be formally chartered. The dinner is scheduled for the Galvez Hotel in Galveston, beginning at 7:00 p.m.

For more information on the club and banquet, call Jerry Kilpatrick, x4704.



A GENTLE REMINDER

**!! SUGGEST !!**

## State passes strict immunization law

During its last session, the Texas legislature passed a mandatory immunization law which applies to all schools in the state.

The new law requires that all children entering Texas elementary or secondary schools or institutions of higher education be immunized against diptheria, tetanus, polio, measles, rubella, and smallpox.

This law applies to all students attending public, private or parochial schools. Included are kindergartens associated with elementary schools, elementary or secondary schools, academies, colleges, universities, and schools for the blind, deaf, mentally ill, and mentally retarded. All children in licensed day care facilities must also comply with the immunization requirements.

The Houston City Health Department's five clinics offer free shots. The clinics are open from 8:00 a.m. to 4:00 p.m., Monday through Friday. In addition, for the convenience of working parents, they will be open Thursday, August 19 and 26, from 5:00 p.m. to 8:00 p.m. The clinics will also administer the TB skin test.

The Health Department asks that you bring your children's shot records to the clinic. No child may receive an immunization unless accompanied by his parent or the written permission of his parent.

## Legion announces Premiere dance

The newest American Legion Post in Harris County, Pan American Post 620, will hold its first dance on Friday, August 20 at a night club in Houston. The donation is $3 per person.

Arturo T. Lozano of the Computation and Analysis Division is the Post Commander. For additional information on the social event, call Lozano at 926-2557 after 5:00 p.m.

SILVER ANNIVERSARY—Recipient of her 25 year service award is Alene L. Langford. Anthony J. Calio, Director of Science and Applications, is shown making the presentation.

# Roundup Swap-Shop

Deadline for Swap Shop classified ads is Thursday of the week preceding **Roundup** publication date. Ads are limited to MSC civil service employees and assigned military personnel. Maximum length is 20 words, including name, office code and home telephone number. Send ads typed or legibly written, to **Roundup** Editor, AP3J.

MISCELLANEOUS

Baby's crib mattress, high chair, and car seat, xln cndn. $25 for all. Allen, 723-6286.

Non-profit aero club, LaPorte Airport. $12 mo. dues; 250 Comanche $17 hr. Yankee $8/hr. T-Craft $6 hr. Skyhawk $14 hr. Dorron, 482-7829.

Pool table, 4 x 8 feet, xln cndn, w/four cues and all accessories. $200. Horsman, 591-2185.

Danish style breakfast table w four chairs and leaf, $15. Seyl, 591-2366.

Aquariums, 10 and 20 gallon, lights, filters, stand, pump, plants, everything including fish, $40. Clanton, 482-7187.

Sawyer slide projector/viewer with spare bulb, $20. Campbell, 591-3368.

Portable sewing machine, straight stitch, good cndn, good for beginner, $15. Garza, 472-5243.

Refrigerator/Freezer combination, xln cndn, $100. Thompson, 932-3653.

Clarinet, Bundy Selmer, mint cndn, cost $185, asking $100. Sponholz, 488-2327.

Golf clubs, RAM, Doug Sanders, 2-9 iron; 1, 3, 4 woods. Brand new (still in box), $65. Richmond, 481-2791.

Typewriter, SCM Coronet 10 electric portable w/carrying case; 2 months old, $90. 585-8093.

Dryer, gas, Whirlpool, good cndn xcept need new valve, $25. Handley, 482-7041.

Vox Jaguar organ, used very little and in perfect cndn, $350. Falbo, 645-7093.

White French provinical combination baby crib and youth bed, $30. 585-8093.

Martin tenor sax in good cndn, perfect for beginners or advanced musicians, $250. Courpalais, 877-1045.

Alto sax, King Cleveland, used one school year, xln cndn, $200. Jacobsen, 487-0792.

Tent, cabin type, 9'x12'x7.5' with sewn-in floor, used 3 months, xln cndn, $45. Jacobsen, 487-0792.

Alto sax — Buescher — good cndn, $125. Jones, 479-4653 after 6:00 p.m.

Keyhole desk, antique white, traditional, w/matching chair w/gold cushion, both for $25. Brown, 488-0649.

Italian Provincial bedroom suite, full size head & footboard, 2 night stands, dresser w/mirror, 4-drawer chest, bed frame, slats, all in antique white, good cndn, $100. Brown, 488-0649.

Clarinet B-flat, Selmar soloist, professional caliber instrument. Used 2 years by high school band student, xln cndn. Original cost $285. Sale price, $175. Rubenstein, 877-3288.

9 x 12 area rug, gold, fringed, geometric design, decorator item, $50. Milligan, Dickinson 534-9733.

Roller skates, ladies, white, size 6. Used 3 times, $10. Underwood, 932-4610 after 7 p.m.

Nint stand, heavy solid maple, drawer like new, $35. Underwood 932-4610 after 7 p.m.

Night stand, heavy solid maple, drawer, Modern lamps, end tables and coffee table, recliner, rocker, dry sink, room divider. Talbert, 643-9206.

VEHICLES

66 Corvette convertible, air, radio, flared fenders, 327, 4-speed. $1800. Henderson, 723-0937.

64 Chevy wagon, 9-pass, all power, factory air, new tires, $550/offer. Minar, 877-3028.

59 VW Karmann Ghia, new engine and transmission, $350. Henderson, 723-0937.

68 VW, radio, good cndn, one owner, $950. Henderson, 723-0937.

70 Torino squire, 351 V8, automatic, A/C, elec rear window, delux luggage rack, tinted glass, Ziebart rustproofing, radio, disc brakes, clean, 20,000 miles, trade maybe? Underhill, 488-2781.

60 Chevy El Camino truck, $300. Young, 925-3312.

68 VW Camper, pop-top, factory tent, carpet, AM/FM, engine completely overhauled, good tires, $200 under blue book. Walker, 591-3713.

69 Austin America, low mileage, clean, xln cndn. Best offer over $795. Falbo, 645-7093.

Bicycle, 20-inch boys, good cndn, $15. Handley, 482-7041.

70 gold CB-750-Four, xln cndn, 1 full helmet. Brovey, 483-5968.

Mini-Bike, 4 HP, 2 months old, xln cndn, $120. Jones, 479-4653 after 6:00 p.m.

71 BMW motorcycle, white, 360/5, about 1600 miles, $1450. Heath, 482-3052.

69 Dodge Super Van, V-8, mag wheels, heavy duty bumpers & bike rack, xln cndn. Brovey, 483-5968.

71 and ½ Honda CB-350-K3, less than 2,000 miles, xln cndn. Adult owner. $795. Kubicki, 471-3174.

69 El Camino Custom, V-8, automatic transmission, A/C, power brakes, steering; new tires, battery. Very clean. Selling at book price, $2525. (Alvin) 585-6227.

$85 will buy fine work car. 60 Dodge w/air, 6-cylinder stick. Peters, 534-3264.

65 Fury III, 2-dr HT, good cndn, one owner, 60,000 miles. $795. Newman, 474-3497.

Benelli minicycle, 50cc minibike, xln cndn, $150. (Benelli's are sold and serviced by Penneys). Laurenzo, 433-2483.

62 Tempest, 4-dr, 4 cyl, $150. McKee Baytown 424-7927.

61 Chevy, 4-dr, Bis., 6-cyl auto trans, A C, radio, heater. Engine, body in good cndn; white, xln transportation, $295. Girala, WA 1-7212.

BOATS

15' Snipe sailboat, like new, with trailer, $800. Holzaepfel, 483-4401.

Catamaran, DC-14, fiberglass, sloop rig, tilt trailer, many xtras, $850. Minar, 877-3028.

12' V-bottom aluminum boat and trailer w/winch, 4 hp engine; all for $150. 944-0837 after 4:00 p.m.

16' Larson Trihull (1969), 55 HP Johnson; trailer plus safety equipment. Bond, 877-4103.

REAL ESTATE & RENTALS

Beach home for weekly rental at Spanish Grant, West Galveston. On beach, well-furnished, all but linens. Wasson, 488-2722 after 6:00 p.m.

Lake lot 50 x 100' on Lake Whitney, $300. Nassiff, 482-7546.

Cabin, 10' x 20', w/electricity, on one beautifully wooded acre close to Trinity River. Xln for weekends. Priced to sell. Jacobsen, 487-0792.

Seabrook rental, 605 Bradley Street, 3-1½-1, central air, fenced. $165 plus deposit. Whelan, 534-2390 after 5:00 p.m.

Fairmont Park, 3-2-2 brick, living room, den, central air, all built-ins, fenced yard, low equity. Bronson, 471-4509.

Lot on Lake Livingston, Point Lookout, 75 x 137, power, water, restricted, $3500. Richardson, 946-7587.

Two lots, 1½ hour Houston. Private subdivision, salt/fresh water fishing, stocked lake, lighted pier, Gulf access. Pool, club, boat ramp, park, utilities. Discounted. Underwood, 932-4610 after 7 p.m.

PETS

Borzoi puppies, AKC reg, world's most elegant dog. Young, 925-3312.

Manx kittens, ACFA reg, tailless with personality. Young, 925-3312.

Wire fox terrier pup, AKC, $30. Pereboom, 485-4995.

Great Dane registered fawn pups, 2 males, championship lineage. Lindsay, 877-1141.

WANTED

Airplane (J3, Aeronica, Taylor craft, etc.) to rebuild. Buy or trade for sailboat. Holzaepfel, 483-3301.

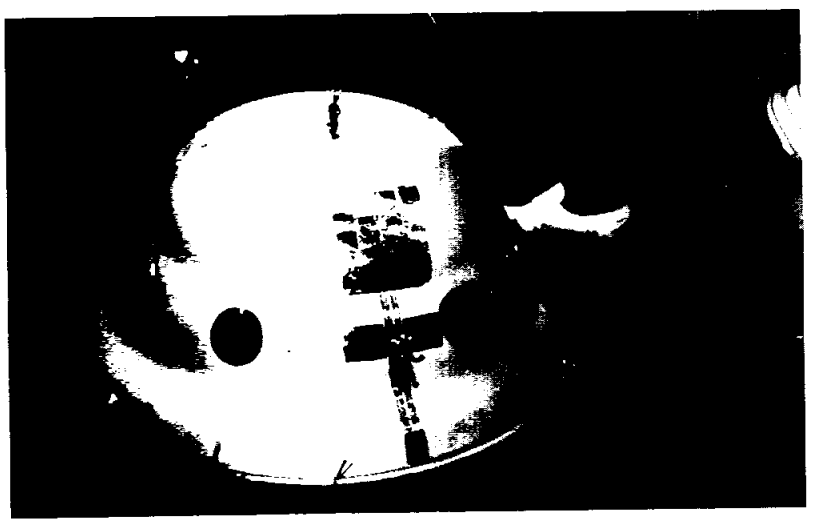
Nancy Drew books, good cndn, and man's 26" bicycle, cheap. Seyl, 591-2366.

Amateur radio receiver, transmitter, accesories. Witt, 667-2733.

Family or couple who will occasionally keep a friendly boxer for short durations. Will pay. Giuli, 474-4390.

Exchange rides from Southwest Houston (off SW Freeway between Richmond/Westheimer, near Post Oak Shopping Center). Chaviers, 483-3846.

Used VW, will consider paying up to $1,000 for reliable transportation. Ervin, 748-6862.



## "Hey! Look, Ma, it's a . . ."

A ventilator cover became the vehicle for some comic-drama recently outside Building 15.

The cover came off the roof during a storm some months ago and landed on the grass near a sidewalk where it became the object of many curious stares.

Leroy Proctor of the Information Systems Division observed the passerby who stopped to look or wonder and, in some cases, widen their path about the object. Why not, he thought, really give them something to stare at.

With some miniature foil portholes, metal strips, entrances, some authentic-looking antennae, and a ladder crawlway, Proctor created a very convincing looking flying saucer. His crowning touch was the addition of two small (plastic) men, also with antennae, working on the outer surface of the "craft."

The result? More stares than ever. Mothers scolding youngsters, who seem especially drawn to the creation. And groundskeepers with worried looks, consulting among themselves on what to do about cutting the grass beneath the object. (Their solution: carefully move it to the sidewalk and then return to its original position after mowing the grass.)

I wonder what the reaction would be if the saucer were gone some morning, the only trace left, a bit of burned propellant?

## Water Contract

*(Continued From Page 1)*

tection Agency.

Both federal and state pollution regulatory agencies have endorsed the Clear Lake City Water Authority proposal and recommend the expanded use of municipal or regional facilities for reducing water pollution.

A stated long range goal of the Texas Water Quality Board is to ultimately divert all effluent from Clear Lake. The proposed contract between MSC and the Water Authority will facilitate accomplishing this goal.

Even though MSC must install a connecting pipeline, there will be a considerable cost savings by not having to improve the existing MSC treatment facilities.

Because of a higher processing volume, the operating costs to jointly process MSC and Clear Lake City wastewater should be significantly less than if each proceeded on an independent basis.

## Lunarfins Schedule Classes for Fall

Have you been longing for aquatic adventures? Harboring a desire to explore the deep?

If so, why not join the MSC Lunarfins Skin and Scuba Diving Club's training course, scheduled to begin on Thursday, September 9 at 7:00 p.m. in Building 336, Ellington Air Force Base.

The cost of the course is $45, with $15 due at registration and the balance to be paid at the first class.

Included in the enrollment cost are pool fees, an instruction manual, a year's membership in the Lunarfins, boat fees for an open water Gulf dive, use of club equipment during training and open water checkout dive; certification diploma, card, and patch; and reduced boat charter and equipment purchase and rental rates.

Classes will meet twice a week for six weeks. They will consist of lectures on the applied theory of scuba diving and pool exercises designed to build the student's confidence in himself and in his equipment.

Enrollment is limited to the first 20 people who apply. So, if you're interested, better hurry and call Bill Moran, x2041; Fred Toole, x2733; or R. L. Stubblefield, x2791 for more information.

**NEWS MEDIA** representatives gathered 596 strong at MSC during the Apollo 15 mission. U.S. newsmen and newswomen accounted for 459 of the total. Foreign coresrpondents from 22 countries, including Tunisia, New Zealand, Denmark, Korea, and Australia, numbered 137.

## Out placement Center to Open

*(Continued From Page 1)*

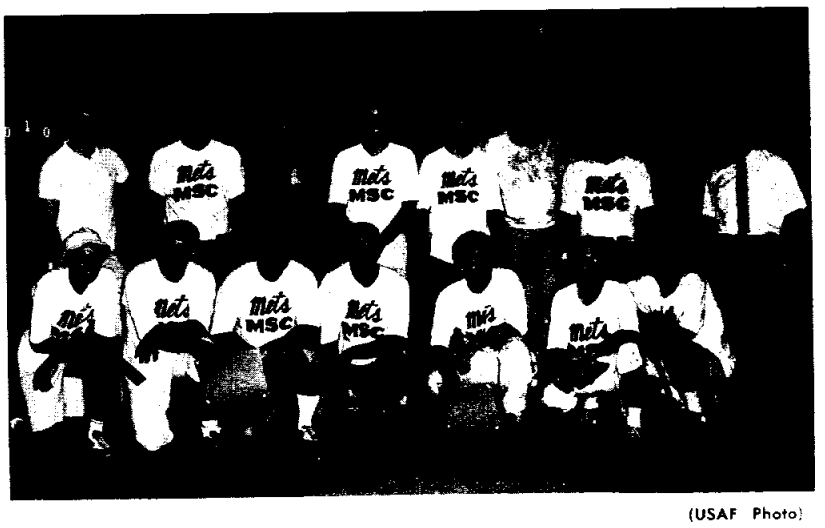
employees to appropriate job vacancies, and explaining regulatory (Civil Service) reemployment rights.

So that potential employers may be made fully aware of the very high level of experience and ability of those persons affected by the reduction in force, all MSC employees are asked to exert a concentrated effort to refer any job leads, known or suspected, to the Outplacement Committees. All leads developed will be made available to employees registering with the Outplacement Center.

To reach the Committee or to make an appniotment for outplacement counseling, call extension 3486.

## Athletes par excellence

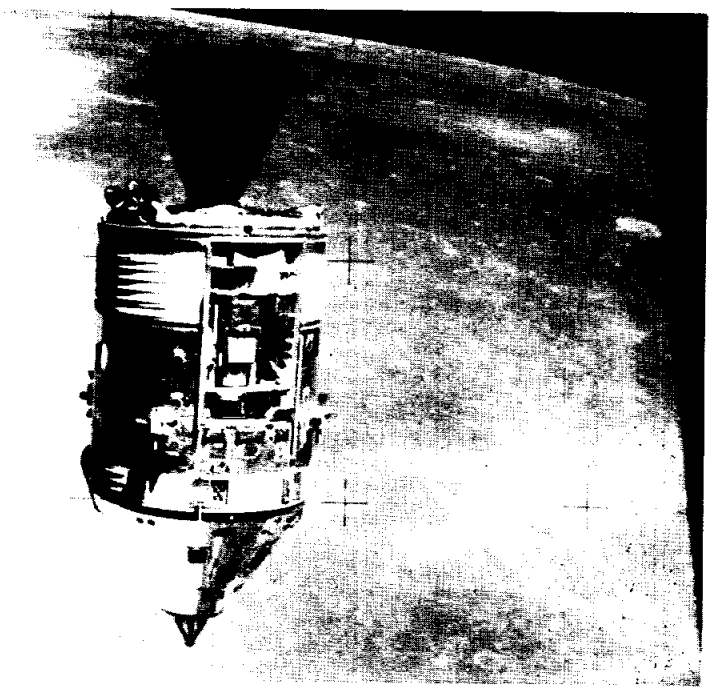
The National A League slow pitch all star team pictured here was selected by all team managers. The men have been representing the Center as the MSC All Stars and have won 4 of 5 games in the Houston Metropolitan Amateur Softball Association championship playoffs. The All Stars are (Row 1, l. to r.) John Kaderka, Dennis Waggett, Skip Robbins, Phil Shannahan, Gene Ricks, Bailey Corbett, (Row 2) Bob Barnes, Al Morrey, Bob Merriam, Jeri Brown, Bill Jackson. Missing from the picture are Al Dupont, Larry McWhorter, Jim Smith, Terry Neal, and Lee Norbraten.

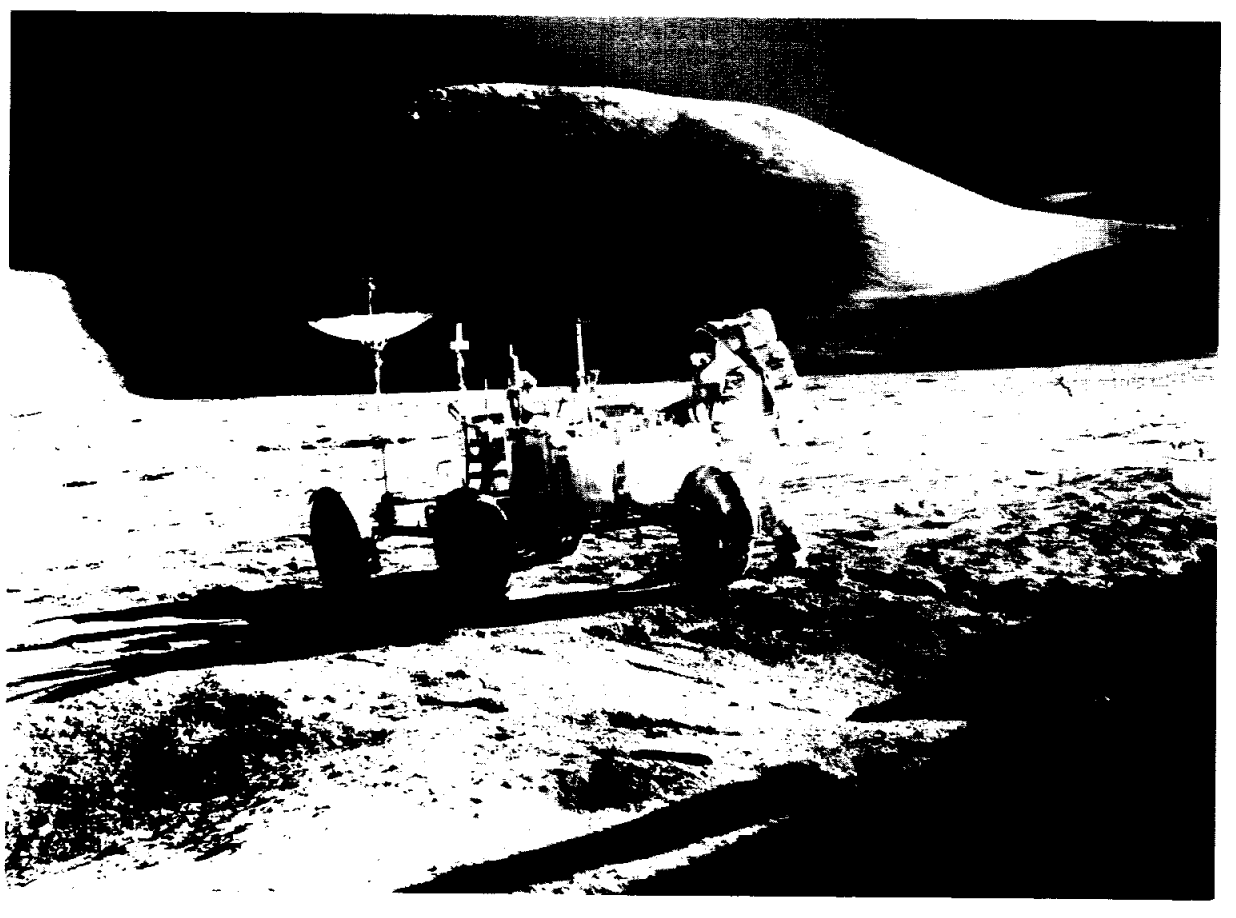



(USAF Photo)

The A League slow pitch playoffs were held at Ellington Air Force Base in mid-July. Competing were the Mets, Animals, Supermen, and Lockheed Judges. The Judges defeated the Mets of MSC 11 to 5 in the final game. They were led to victory by the pitching and hitting of Craig Raymond, named the most valuable player of the playoffs. The National League champion and playoff runner-up Mets are (Row 1, l. to r.) Lyle Jenkins, Tom Mancuso, Jim Smith, Dick Kohrs, Dennis Waggett, Bud Henderson, Bob Allen, (Row 2) Bob LaMere, Jack Kochner, Lanny Bown, Pat Nobles, Wayne Whittington, Charles Johnson, Bob Barnes, Jim Schaefer, and Lt. Col. Halverson, Ellington Executive Officer.

# A Photo Album of Apollo 15



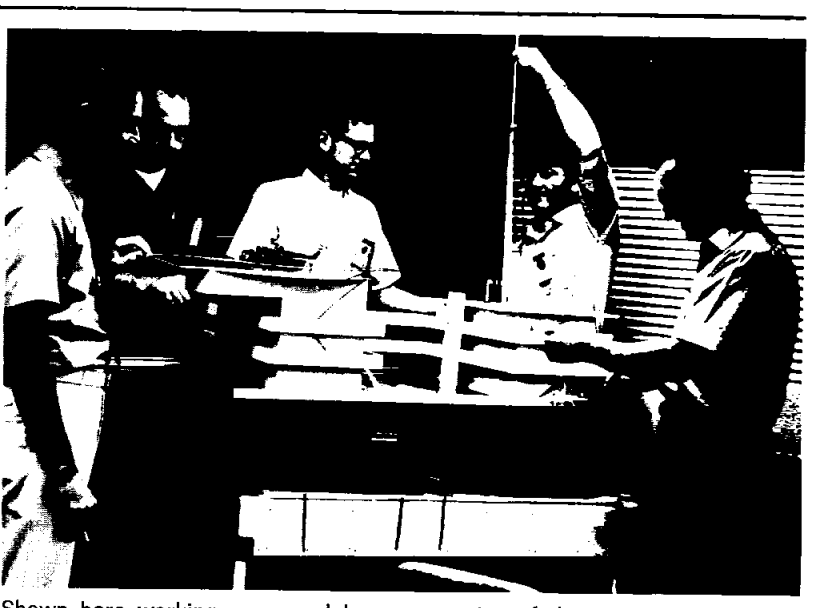


In the top picture, taken from the lunar module, the command and service modules are shown in lunar orbit. The Scientific Instrument Module (SIM), from which Al Worden later retrieved valuable film cassettes during a deep space EVA, is clearly visible.

In the second photo, the lunar module Falcon stands alone with Hadley Delta and the Apennine Front in the background. Rover tracks and footprints left by Dave Scott and Jim Irwin surround the lonely Falcon.

The subject of the third picture resembles somewhat a dried mudhole through which a herd of cattle have tromped. Actually, it is the close-up view of a portion of a rock strewn, "relatively fresh" crater not far from the Falcon's landing site.

The final photo shows Jim Irwin at the Rover preparing to remove some equipment. The shadows of the lunar module in the foreground and the shadowed, haloed effect on Mt. Hadley in the background, make this photo one of the most dramatic of the first series of Apollo 15 surface pictures to be developed.



Shown here working on a model representative of the Tektite platform are design group members (l. to r.) Don Hunter, Ron Carmichael, Bob Helfinstine, A. D. Alley, and Charles Dalton.

(Photo By David Howes)

## Group explores ocean project design

Sixteen professors of engineering have been devoting their talents this summer to a design and systems integration study of the Texas Tektite Project, an ocean research center to be located in the Gulf of Mexico.

The Project is administered by the Marine Biomedical Institute, composed of elements of the University of Texas and Texas A & M University Systems. For the past several months, MSC has been lending advisory support to Texas Tektite.

James Tomberlin, William Molnar, and James Covington of MSC have been working with Tektite planners and have also worked with the ASEE (American Society of Engineering Education) group this summer. David Howes of Engineering and Analysis Division is technical coordinator for the group.

The 1971 NASA/ASEE Summer Faculty Fellowship Program in Engineering Systems Design includes scholars from twelve universities. The MSC University Affairs Office and the University of Houston jointly administer the program. Dr. Jack Howell is the coordinator for the University of Houston.

The goal of the summer program, according to Dr. Howell, is twofold: to teach methods of systems engineering and to carry out a specific design project.

The group's work so far has involved study of the design, sizing, and costing of the marine research center which is to be built at the edge of the Flower Gardens Reef, some 120 nautical miles southeast of Galveston in the Gulf.

In developing design plans, the men have had to consider the future center's facilities for marine science, environmental research, ocean engineering, and educational activities. They have further considered such important overall factors as safety, dependability, longevity, versatility, and ecological soundness.

The Tektite project will consist in part of two platforms above the water's surface, one to house the machinery needed to operate the facility and the other to hold living quarters, laboratories, and classrooms for the engineers, scientists, and educators who will conduct research at the site.

One problem with which the ASEE group has grappled is how to establish a stable platform on a coral base. There are few precedents for building in water on a coral foundation.

Another basic problem is designing a platform to withstand hurricanes. That problem is compounded because there is a dearth of measurements of wave heights and wind velocities on the open seas during hurricanes.

Other concerns include determining the least expensive way to supply electric power to the sea center—to run a cable from the shore or to generate power on one of the platforms. The men have also considered many ways to dispose of wastes, ways which must not endanger the ecology of the reef.

The group's final presentation of findings will take place on Tuesday, August 17 at 9:00 a.m. in the Building 30 Auditorium. All interested employees are invited to attend.

## G.E. Boeing to enter competition

NASA has selected Boeing Co. (Space Division) Houston and G.E. (Apollo Systems) Houston for competitive negotiations leading to final selection for the award of a contract which will provide reliability, quality assurance and flight safety engineering at MSC.

The contract will be for one year and will contain provisions for two additional one-year extensions.

Reliability and quality assurance engineering include quality assessments of spacecraft systems, reliability program support for equipment, providing a parts and materials data system for equipment, and assessment of flight readiness of spacecraft and related equipment.

Flight safety engineering includes analyses of operational procedures, plans and activities, evaluations of test requirements and test operations, and performance of flight readiness assessments.