Apollo 15 Crew Views Canadian Crater Blast

By Doug Ward

Fourteen astronauts, including the Apollo 15 prime and backup crews, observed a lunar-type crater in the making at the Canadian Defense Research Establishment near Suffield, Alberta, Canada where 500 tons of TNT were exploded in a point international test July 23.

The blast produced a crater 230 feet in diameter, fifteen feet deep and having a central uplift or peak similar to that observed in many lunar craters.

Apollo 15 commander David R. Scott said the test provided an excellent opportunity to view firsthand the processes involved in crater formation. He noted that many of the crater's features bore a striking reserblance to impact craters observed on the moon.

Scott and fellow-crewmen Alfred M. Worden and James B. Irwin; Apollo 15 backup crewmen Richard F. Gordon, Jr., Vance D. Brand, and Harrison H. Schmitt and astronauts John W. Young, Charles M. Duke, Jr., Robert A. Parker, Joseph P. Allen, Gerald P. Carr, William R. Pogue, Anthony W. England, and Fred W. Haise observed the blast from a distance of about 10,000 feet. Immediately after the explosion the astronauts were taken to the crater for a close-up inspection of its interior and the surrounding ejecta. The crater and surrounding area were blanketed with a fine black carbon dust, giving an appeearance similar to lunar craters and masking the color and detailed mineral structure of individual samples.

The blast crater also exhibited other similarities to certain lunar craters such as large angular blocks distributed evenly on the crater floor and rims and becoming progressively smaller outward from the crater, and ejecta which was thrown from the crater in rays or lobes rather than in concentric rings. The central peak was six feet high, or about a third the height of the rim ---similar to proportions observed in lunar craters. And small glass spheres which were formed in the fireball were sprinkled over the crater and its ejecta.

The test site is located about 35 miles from the nearest settlement on rolling Canadian plains populated by rattlesnakes and pronghorned antelope.

(Continued on page 2)



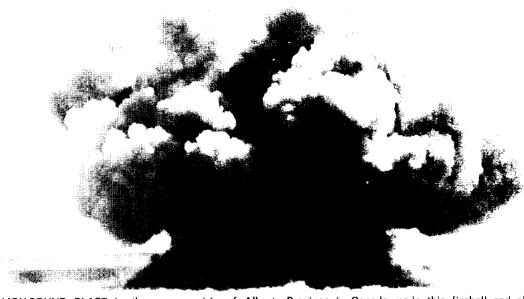
NASA Administartor Thomas O. Paine Tuesday announced his resignation and return to industry after 21 months as head of the agency. His resignation will be be effective September 15.

Paine said that he was leaving his post with great regret but that he thought it was an appropriate time to make the change. He will return to the General Electric Company, the firm for which he worked when named Deputy Administrator in January 1968.

Paine emphasized in a press conference that his reasons for leaving were not cutbacks in the FY71 budget nor any lack of harmony with the President, but that he had fulfilled the two goals he had set for himself when he accepted the job as NASA Administrator-seeing through the US manned luner landing in the decade of the sixties and laying out the programs of the seventies. His decision to leave NASA and accept the GE offer was made July 25. Describing himself as "not a professional or amateur politician," Paine said that he nonetheless has a good relationship with Congress and the committees dealing with NASA operations. The new NASA aministrator will be appointed at a future date by the President with the advice and consent of the Senate.

In a letter to all NASA employees, Paine stated, 'I know that all of you shade my pride in having been a part of the NASA team on that unforgettable 20th day of July in 1969 when man first walked on another world. It was indeed a 'giant leap for mankind,' and a milestone for NASA that insured our program a permanent place in American life . . .

"With your support," Paine continued, "we are well underway in the difficult transision from lunar landing oriented 1960s. to the diversified and balanced US space program of the 1970s. When our current reductions are completed, I hope and expect that NASA will have reached its minimum size and that the future will see a gradual upturn . . .



MILLION-POUND BLAST in the open prairie of Alberta Province in Canada made this fireball and cloud. The explosion, observed for its crater-making effect by the Apollo 15 crew and other astronauts, was created by detonation of a 27-foot diameter sphere of 32-pound blocks of cast TNT laid brick-wise on a base of plywood and styro-foam.

ROUNDUP

VOL. 9 NO. 20

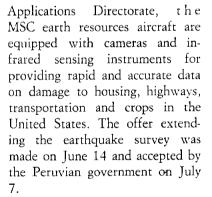
July 31, 1970

MSC Aircraft Earthquake Photos To Go To Peruvian Officials

Photos of earthquake-damaged areas of Peru yesterday will be turned over to the Peruvian charge d'affaires in Washington, in the near future. The photos were made during survey flights by an MSC earth resources aircraft which was available to help assess damage from the May 31 disaster.

NASA Deputy Administrator George M. Low, recalling previous disaster surveys made by MSC surveys made by MSC earth resources aircraft when he was assigned to MSC, suggested that NASA offer similar assistance to Peru. Earlier, MSC-based aircraft surveyed damage to the Mississippi Gulf Coast by hurricane Camille in August 1969, and the devastation in Lubbock, Texas caused by a tornado May 11, 1970.

Operated by the Earth Orbital Missions Office of the Science and



Mission planning was immediately begun and a preliminary flight plan was prepared based upon discussions with US Geologic Survey geologists who had been in the earthquake-damaged area. Help in planning the mission was also got from the US representative on the Inter-American Geodetic Survey in Peru. Plans were coordinated with the Peruvian Military Geographic Institute, the National Aerophotographic Service of the Peruvian Air Force and the Peruvian National Reconstruction Committee. Mission manager was Frank Newman.

The Lockheed P3A Electra left Houston July 11 with a flight crew of five and six scientists and technicians. Survey equipment included two color and color infrared cameras, multi-band camera (Continued On Page 3)

Personnel Opens RIF Info Center

Personnel Division Tuesday opened an Information Center for MSC employees on all aspects of the reduction-in-force made necessary by cutbacks in the NASA FY71 budgets.

Located in Room 462 Bldg 2, the Information Center has brochures summarizing RIF regulations and procedures as well as reference documents such as the Federal Personnel Manual.

(Continued on page 3)

Running for Office?

MSC employees who now hold or plan to run for non-partisan community elective or appointive offices this fall are urged to contact the MSC Public Information Office. An agency-wide feature story with photos is planned showing involvement in community affairs by NASA employees. The PIO extension is 5111.



HER MAJESTY Queen Elizabeth, the Queen Mother, examines an Apollo 11 lunar sample at an exhibit during the Royal Society meeting in June. Holding the sample is Dr. S. O. Agrell of the Cambridge University Department of Mineralogy and Petrology. Royal Society president Prof. Blockett stands center.

Personnel Division chief Jack Lister, in a letter to MSC employees, pointed out that the Center is "intended to provide preliminary information regarding general procedures and policies and *not* to discuss individual bumping rights."

When RIF notices are sent out, the letter said, individual counseling and assistance will be provided RIFees. RIF notices are expected to go out within the next several weeks. The RIF is scheduled to be completed by October 1, 1970.



CANADIAN BLAST

Continued From Page 1

The July 23 blast, code named "Dial Pack", was the second 500ton detonation in a series of tests conducted at the Canadian Defense Research Establishment in Alberta since 1957. Military and civil defense organizations from Canada, the United States, Great Britain and Australia conducted experiments for the test to determine the effects on military equipment and civilian shelters o blast forces and ground shock from a small tactical nuclear weapon.

Dr. David Roddy of the U. S. GeologicalSurvey and Dr. Gareth Jones of the Canadian Defense Research Establishment briefed the astronauts prior to the explo-

their field study of the crater and ejecta. Jones, an internationally recognized expert on impact cratering, likened the process to a high-speed projectile striking a flat surface. Where the eprojectile velocity is high enough or where its density is low enough he said, it will tend to vaporize on impact with very little penetration below the surface. Dr. Jones believes many lunar craters were formed by high velocity bodies which vaporized with explosive force on striking the moon, producing craters in much the same way as a surface blast of TNT.

sion and accompanied them on

When in Rome...

On military bases, Ellington AFB included, Retreat is a solemn ceremony at the end of the day in which the national flag is lowered while Retreat is bugled.

Ellington holds Retreat at 5 pm each day at the flagpole near the main gate, and the amplified Retreat bugle call is audible in the Base Headquarters, Officers Club and gate areas. Military custom is for those in uniform to stop cars and get out and salute until the flag is down.

People in civvies normally stop, get out of the car and face the flagpole — all except the driver, who remains seated behind the wheel.

MSC employees at Ellington AFB are urged to follow thecustom of the Retreat ceremony when leaving the base through the main gate. To paraphrase the hackneyed adage, "When at Ellington, do as the Ellingtonites do."

Service Award



Alma Scarborough 20 Years Biomedical Laboratories Division



Fred E. Stockum Henry V. Huber 25 Years 15 Years Science and Applications Directorate

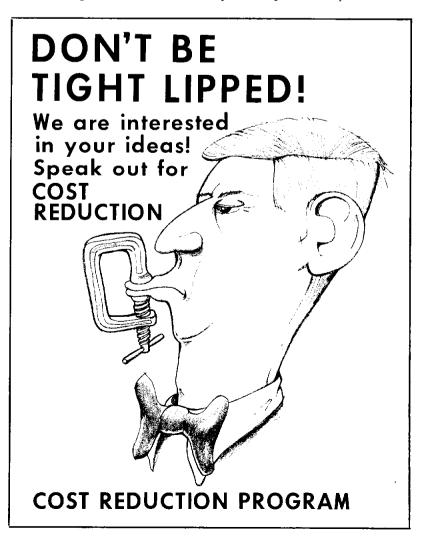


ANOTHER WAY of observing the first anniversary of the Eagle's landing at Tranquility Base was found after work July 20 when members of the White. Green, Black and Maroon flight controller teams met at the Hofbraugarten Bierstube. Sharing the Gemutlichkeit are, left to right, Ouarance Patin, Fred Frere, Gary Watros, Hugh Davis, Jack Neubauer, Larry Minter and Jim Hannigan.

L C Jaycees Hold Rodeo

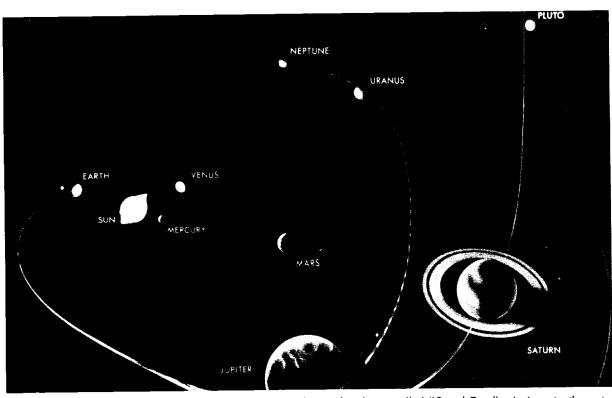
MSC employees are invited to attend the League City Jaycees second annual Parada del Rodeos August 21-23 at Galveston County Park in League City.

Performances are scheduled at 8 p.m. on Friday and Saturday, and a 2:30 p.m. matinee on Sunday. Rodeo producer Frank Harris said that some of 'the finest rodeo stock in the state" will be used in the rodeo, and that many of the top cowboys in the Southwest Rodeo Association will compete for prize money.





AFTERMATH of an explosion of 500 tons of TNT on the Canadian prairie July 23 are examined by MSC astronauts observing the blast. Water in the subsurface strata welled up after the explosion to form pools in the crater. The resulting 230-foot diameter crater had many features similar to lunar craters.



NO ONE'S SELLING TICKETS yet, but this is the road map for the so-called "Grand Tour" missions to the outer planets planned for the late 1970s. One mission would fly by Jupiter, look in on Saturn and sail on past Pluto and out of the solar system. The other mission would go by way of Jupiter, Uranus and Neptune. Jupiter would serve in both missions as a sort of accelerator with its gravitational field, and Pluto could be reached in 7-8 years com-pared to 41 years by direct flight, and Neptune in 8.9 years compared to 18 years in direct flight.

MISSION TO PERU-(Continued From Page 1)

system consisting of four blackand white comeras-each filtered to record a specific spectral region, and a thermal infrared scanner for detecting vegetation changes and disrupted linements. The cameras have a resolution of 3-5 feet from an altitude of 28,000 feet.

En route to Peru, the aircraft stopped in Mexico City to pick up two Mexican remote sensing experts. The Mexicans had been working in a Mexico-US aircraft remote sensing project proposed by NASA and agreed to by the Mexican Space Commission in 1968

The aircraft arrived in Lima, Peru July 12. Good weather and absence of interfering cloud cover allowed completion of the flights over the damaged areas by July 16. The aircraft left Lima July 18 and arrived in Houston the fellowing day with several thousand photos of devastated and potentially hazardous areas.

Processing of the photographic and thermal imagery was completed at MSC and data provided to the Peruvian government in

Security Moves Ellington Keys

Lima for analysis. MSC earth resources specialists are confident that the returned data will not only prove valuable to Peruvians concerned with restoration of carthquake damaged areas, but will further advance remote sens-

"From a strictly professional point of view, there's obviously enough exitement and challenge and opportunity to serve in the future space program to almost compel me to continue in NASA despite the growing demands of a family of four teenagers."

Apollo 11 New Mineral Dubbed 'Armalcolite'

One of the new minerals found in samples returned in America's first lunar landing has been named "Armalcolite" in honor of the Apollo 11 crew, Neil A. Armstrong, Edwin Aldrin, and Michael Collins.

The new mineral name incorporates the first few letters of each name with "ite" added Armalcolite. All modern mineral names must end in "ite."

Announcement of the new mineral name came nearly one year to the day the Apollo 11 lunar module landed in the Moon's Sea of Tranquility on July 20, 1969. Armstrong and Aldrin collected and returned approximately 47 lbs. of lunar material from their historic flight.

The mineral is a solid solution of ferrous iron titanium oxide and magnesium titanium exide end members where the number of atoms of ferrous iron and magnesium in the molecule are approximately equal.

The pure end members are yet to be found in nature and the suggestion has been made that they should be referred to as ferroarmalcolite and magnesium armalcolite.

Announcement of the mineral name is included in the just released Proceedings of the Apollo 11 Lunar Science Conference of Geochemica et Cosmochemichia acta. The Geochemica publication is also dedicated to the Apollo 11 crew. The mineral name has been approved by the Nomenclature Committee of the International Mineralogical Association.

Also approved by the committee is the name of pyroxferroite which is a new iron-rich calciummagnesium-iron bearing silicate.

Lunar samples scientists who discovered the new mineral and named it in honor of the Apollo 11 crew are Drs. A. T. Anderson, University of Chicago; T. E. Bunch, Ames Research Cnter; E. N. Cameron, University of Wisconsin; S. E. Haggerty, F. R. Boyd, and L. W. Finger of Geophysical Laboratories, Washington; O. B. James, U. S. Geological Survey, Washington, D. C.; K. Keil and M. Prinz, University of New Mexico; and P. Ramdohr and A. AlGorsi, Max Planck Institute, Heidelberg, Germany.

The new mineral was found both in the fine grain material as well as the rock samples returned by the Apollo 11 crew.

Ould Retires

J. W. "Wally" Ould, MSC Chief Counsel for the past eight years, starts his retirement today. He and his wife, Anne, plan to spend the rest of the summer and fall at their Galveston beach house before moving to their Tempe, Ariz. house for the winter.

ing state of the art.

Roundup Swap-Shop

(Deadline for Swap-Shop classified ad is Thursday of the week preceding Roundup publication date. Ads are limited to MSC civil service employees and assigned military personnel. Maximum length is 15 words, including name, Send ads in writing to Roundup Editor, AP3.) office code and home telephone number.

MISCELLANEOUS

15-hp Michigan Marine Senior Twin engine, Paragon gear, starter & generator reed repair. White, 932-4472.

- Two 6.50x16 mud/snow tires, good mileage remaining, \$15 for both. Day, 664-9472 evenings. Conn. cornet. w/case, like new, \$75. Herbert, 944-3026.
- Silvertone solid-state bass 150, amp. spkrs and cabinet, \$200. Maloney, 482-7638. Gulf Coast 20 sailboat w/trailer, \$2550. Two
- surfboards, \$20 each. Maloney, 482-7688. Beautiful silk organza wedding gown with
- mantilla train. Speller, 932-5653 after 5. Penguin sailboat, \$275. Organ, \$200. Speaker,
- \$35. Andries. 483-2731. Three-speed monoaural tape recorder, good condition, \$25. Williams, 485-1729 after 5.
- 15-ft Snipe sailboat w/trailer, \$800. Sears 4-in-1 exercycle, cost \$65, sell \$45. Holzaepfel, 483-4401.
- Fiberglass sailboat, \$80. Walker, 488-0341. Free part-Persian kittens, 2 black and 2 yellow. Schulze, 422-5636.
- 18-ft self-contained travel trailer, air and carbets, 3 yrs old, one owner, sleeps 6, \$2300. 932-5411
- Free 8-wk old kittens, see at 1411 Ramada Drive, CLC. Warner, 488-1764.
- Cornet w/case, mute, good condition, \$70. 591-4168 or 591-3359.

Dam perfectly marked, good on birds. \$35 and \$25. Ward, 946-5182.

Bundy clarinet w/case, like new, used 3 mos. \$100. Ward, 946-5182.

White baby bed, 3 yrs old, \$12.50. Heflin, 932-4488

Mobile Scout camper trailer, 13 feet, sleeps four. Walter, 877-1818.

Like-new medium auburn synthetic stretch wig, \$15. Croom, 944-5624.

Gibson RB-175 5-string banjo, long neck, arch top, hardshell case. Grayson, 488-0616. Outside aluminum frame 9x9 tent, used once, \$40. Redwood picnic table and benches,

\$10. Wells, 932-3145 after 5:30. Siamese kittens free to good home. Bates,

944-4687 72-in Penn Colony Harvest Table, Salem finish \$50. Old-fashion clothes armoire, mahogany trim, \$40. Cavillo, 482-7031.

AUTOS

67 Dodge camper van, autotrans, air, sleeps 4. NADA whisi. Rippey, 877-1859.

66 41dr Falcon Futura, xcint gas mileage, family has outgrown. Jack, 938-8237 LaMarque. 64 Fairlane V-8 station wagon, autotrans, air, radio, good condition, \$700. Wilson, 483-5800.

68 VW airconditioner w/mounting brackets, good condition, \$50. Scheffler, 591-3709. 69 Toyota 4-dr Corona, autotrans, air, R&H,

lean. Garrison, 877-4697.

68 Buick LeSabre custom 2-dr hardtop, 41K miles, power, air. Blume, 591-2428.

66 Chevrolet Super Sport, 327 V8, autotrans, air, pwr steer, radio, blue w/white int, xclnt condition. \$1575. Peter, 488-4367.

REAL ESTATE

4-21/2-2 in El Lago, 61/2%, \$10,300 equity, Lousma, 877-2160.

3-2-2 colonial in El Cary Estates, fenced, kennel, professionally landscaped, \$22,000 or refinance. Morrar, 877-1229. 3-2-2 Spanish in Clear Lake Forest, large

family room, fireplace, covered patio, wooded. assume 71/2% Ioan, small equity. Owner, 474-2123 60x100 Terramar Beach corner lot. 591-4168 or 591-3359.

Furnished 2-bdr for rent in Clear Lake Shores, air, fenced, rent to responsible couple Scheenberg, MI 9-1805 or MI 3-3798 after 6. 2-1-1 colonial in Post Oak Manor, carpet fenced, trees, air/heat, 5¼% loan, equity Boykin, 723-4417.

Jamaica Beach, 1200 sq ft, custom features, big lot, view, protected, lower twenties, moving. Ould, Galveston 744-4107 weekends, 591-4712 midweek

WANTED Shredder-Composter. Jones, 488-3976.

Upright freezer, Casco net playpen and child's feeding table in good condition. Dunham, 485-4685 after

(Continued From Page 1)

PAINE RESIGNS-

deputy administrator in January 1968, and became acting administrator in October of that year with the retirement of Administrator Jame Webb. Paine was confirmed as administrator in March 1969.

Paine, 49, was appointed

Keys to locked MSC-ocupied buildings at Ellington AFB have been relocated to Bldg. 100. Employees with a need to enter one of these buildings during normal working hours should pick up keys at the new location. Bldg. 100 is the small building adjacent to the MSC main gate housing the Visitor Control Center and the Small Business and Industry Assistance Office.

During after-duty hours, call the communications dispatcher at 483-4568 and a roving patrol will unlock the Ellington building desired.

67 Honda 150 Super Hawk, xo nt condition, 1350 miles, \$375. Stockholm, 932-3753. Sears 2-seater go-cart, motor and centrifugal cutch, \$50. Perkins, 932-4777. August hunt in B.C. Canadaa for stone sheep, goat, moose, caribou, grizzly, wolverine, fishing, one opening. Millican, MI9-7272. Free pair rabbits w/hutch. Baby gerbils \$1

each. Denny, 944-3640. Free mixed terrier, short hair, 2-yrs old,

xcint pet, needs good home, 488-3588. Pool table w/accessories, $6\frac{1}{2}$ -ft, good condition, \$55 firm. 488-3588.

14-ft runabout w/45 Mercury electric, new trailer, \$275. Nelson, 483-3827

Briggs-Stratton 2-hp 4-cycle horiz shaft engine. Mark, 488-5037.

Listing of used Lido 14 sailboats, where, price, condition, etc. Hoover, 877-3366. Car-top carrier w/tarp. Thompson, 932-3653. Size 8 formal fall wedding gown, \$65, 483-4451. 66 Honda 50, runs well, \$80. Rippey, 877-1859. 15x20 oval rug, \$40. Habashi barbecue pit, used few times, \$30. 649-2569.

Auminum tennis racket, 4% grip, used four times, \$15. Rosenbaum, 474-438ó. Pointer puppies, Sire SKC Gunsmoke line,

69 dunebuggy, VW engine, red metal flake, wide tires, top and curtains. Streit, 482-1559. 60 Metropolitan convertible, good work car Fink, 877-3007

61 Bugeye Sprite, good engine, \$300.60 VW bus, 64 engine, 63 transaxle, \$300. Walker, 488-0341

64 Olds F-85 4-dr V-8 sedan, autotrans, air, pwr steer, good tires, \$700. Nieder, M13-4889 after 6

70 Cougar XR-7, all xtras incl FM stereo, gold with hound's tooth interior, 5 mos old, \$1100 off list or trade for new model 3/4-ton pickup or carryall. Pedersen, 474-2123. 63 Falcon van, rebulit engine, new clutch, bearings, U-joints, rebuilt radiator and generator. Make offer. Rosenbaum, 474-4386.

67 Triumph GT6, wire wheels, low mileage, \$1595. Freeman, 682-7772 after 5

61 Falcon 4-dr and 62 Ford Galaxie, \$200 each. Nelson, 482-1817.

69 Camaro 327-V8, autotrans, air, pwr steer, radio, new 4ply polytires, 19,000 miles, one owner, \$2500. Kline, 523-3185.

. 67 Mercury Colony Park wagon, 6-pass, air, power, \$1585 or trade for pickup. Presnell, 482-7786

Ride for wife to downtown Houston, 8-5 daily. McHenry, 643-0587.

Furnished room or efficiency apt within 10 mi MSC start Sept 26. McCandless, 483-3261 Reel-type power lawnmower. Presnell, 482-7786.

Automatic defrost refrigerator. Heflin, 932-4488.

FOUND

Lady's watch in Bldg 12 parking lot. See Pat Day, Bldg 12/119B, Ext 3296.

PERSONALS

I wish to extend my personal thanks to all MSC and contractor employees of the P. R. Control Center and Crew Systems, with a very special thanks to the Materiel Management Branch and ITT durng the recent illness and death of my wife, Dorothy Fox, formerly employed by ITT in Bldg 419. In reply to numerous requests concerning donations, checks should be made payable to: M. D. Anderson Hospital, Attn: E. R. Gilley, Business Office, in memory of Mrs. Dorothy Fox 10535 Seaford, Houston, Texas. William J. Fox / BF941.

Espanol, Anybody?

Plans are underway to have another Spanish class taught by Emilio Gonzales this coming fall. Classes will begin the week of September 7 and run through November 30 excluding the week of Thanksgiving.

Classes will meet 2 nights a week for 12 weeks and will average about 11/2 hrs per night. The fee for the Spanish classes will be \$25. A Spanish I beginners class will be taught, and if desired a Spanish II course will also be offered.

July 31, 1970



More than 75,000 persons attended the July 18-20 MSC first lunar landing anniversary open house to look at special displays and exhibits with an Apollo 11 theme. The Saturday crowd was conservatively estimated at 28,-500, Sunday at 32,500 and Monday at 26,200 for a three-day total of 87,200.

Facilities in addition to the auditorium exhibit hall which were open to visitors were the Mission Simulation and Training Facility, Life Systems Laboratory, Central Data Office, Anechoic Chamber, Centrifuge, Mission Control Center, Space Environment Simulation Laboratory and the Lunar Receiving Laboratory.

One of the highlights of the three-day anniversary open house, and a program repeated July 23 for MSC employees, was a recreation of the displays and communications between Mission Control Center and Apollo 11's Eagle during the landing phase at Tranquility Base. The 20-minute program was run in the third-floor

auditorium Fi

Mission Operations Control Room (MOCR 3) each half hour. Flight Support Division chief Lynwood Dunseith, Sam Sanborn, John Frere, Earl Leach and other FCD employees began planning the presentation about a week before the open house, and had the polished program ready to go by mid-week prior to the open-house.

More than 12,000 attended 42 runs of the MOCR 3 presentation.

Across the parking lot from the Mission Control Center, Jim Mc-Lane of the Space Environment Simulation Laboratory and several employees of his group were explaining to visitors the function of the giant 65x120-foot Chamber A—largest vacuum chamber in the free world. McLane and his associates had "Ask Me" decals affixed to their hardhats.

Mounted in Chamber A in preparation for a series of thermovacuum tests soon to begin was a boilerplate model of the Skylab Telescope Mount.

Over in the Life Systems Laboratory, Crew Systems Division chief Ed Smylie and his people

They came to see where the 'giant leap' started

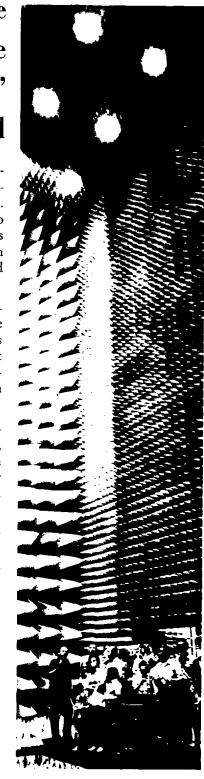
were demonstrating Apollo pressure suits and other CSD-developed systems to open house visitors. Included on display was Apollo 12 commander Pete Conrad's pressure suit still smudged with lunar dust from the area around the Surveyor III crater.

Next door, in the Flight Acceleration Facility, visitors were briefed by Art Hinners and others on the operation of the 50-foot manned centrifuge in which Apollo crews are subjected to launch and reentry g-loads.

In the Lunar Receiving Laboratory vacuum lab viewing room, LRL manager Bryan Erb had on display a second sample of lunar rock in addition to the sample in the auditorium lobby.

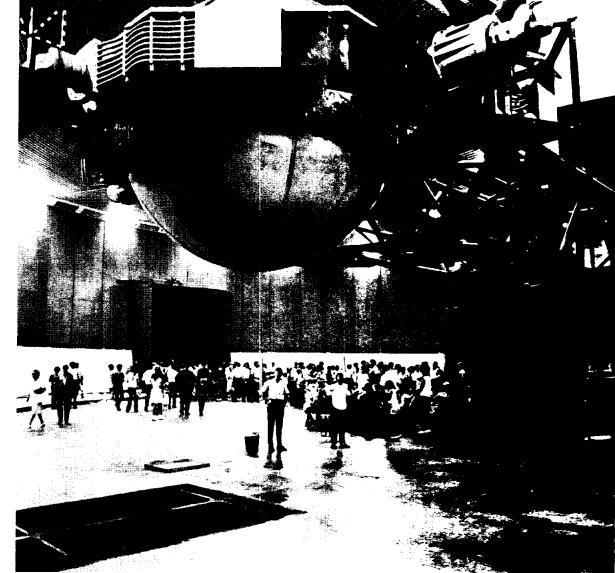
In the three-days of hosting the public, only two mishaps were reported: a child stumbled and skinned a knee, and a teen-age girl fainted in Mission Control Center. Her mother said that the girl probably fainted from the excitement of visiting the Control Center and from missing a meal that day.

Security tallied a total 18,867 cars and 14 buses passing through the gates during the open house weekend.



They saw everything from moon rocks to a manned centrifuge and a room with no echoes





Page 4