

First Earth - Moon telephone message sent by President

The first Earth-Moon telephone conversation took place at about 10:45 p.m. CDT on July 20, several minutes into the lunar surface activities of Apollo 11 crewmen Edwin Aldrin and Neil Armstrong.

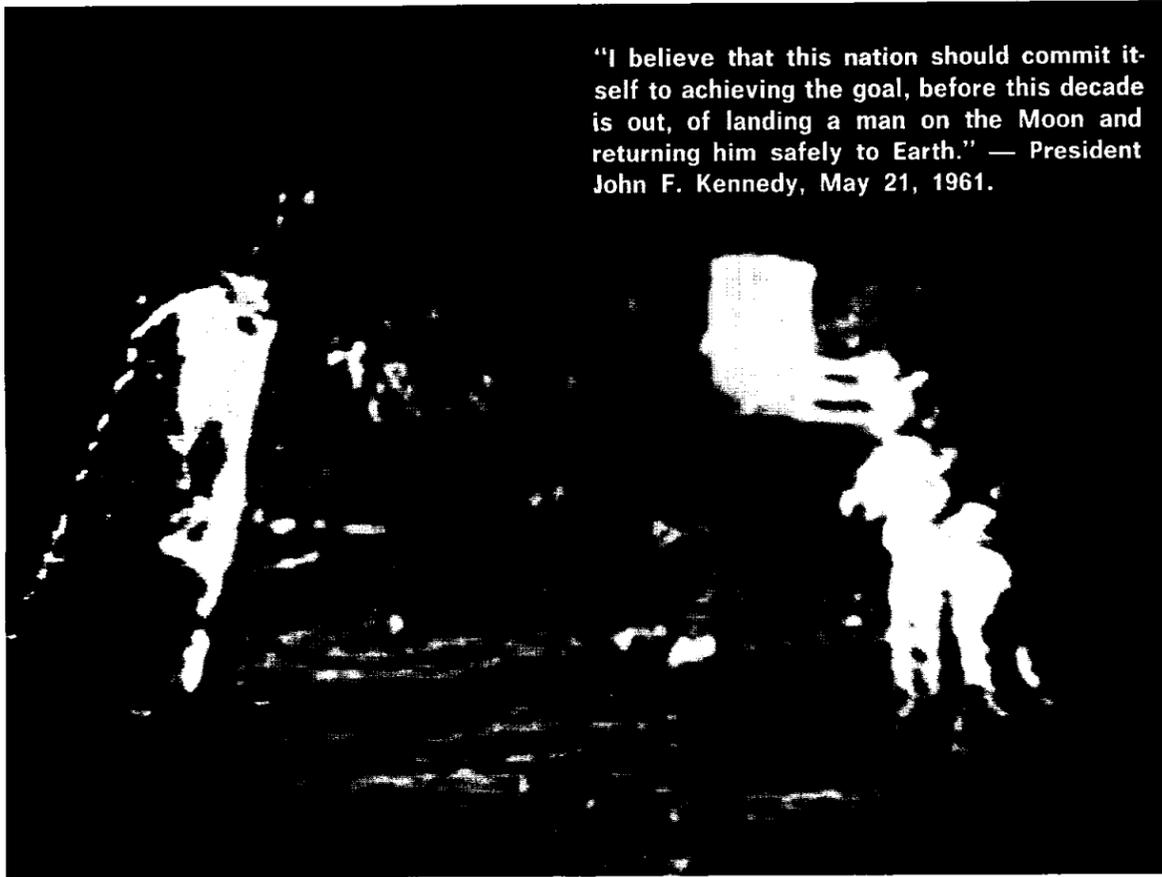
Richard M. Nixon, President of the United States, placed the call from Washington, D. C. to Tranquility Base, Moon via the Manned Space Flight Network.

NIXON — "Neil and Buzz, I am talking to you by telephone from the Oval Room at the White House. And this certainly has to be the most historic telephone call ever made.

"I just can't tell you how proud we all are of what you have done for every American.

(Continued on Page 4)

"I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to Earth." — President John F. Kennedy, May 21, 1961.



Kennedy, Goddard provide inspiration for landing mission

July 20, 1969 came eight years after an American President, John F. Kennedy, committed his nation to a manned landing on the Moon; it came just four decades after aerospace pioneer and prophet, Robert Goddard, predicted the technological ability to achieve a safe landing; and it came centuries after man first stared up at the large glowing orb in the night sky and wondered what miracle might take him there.

On July 20, 1969, the people of Earth witnessed the culmination of that technological "miracle" as Neil A. Armstrong lowered himself from spacecraft to lunar surface and took "one small step for man, one giant leap for mankind."

WELCOME BACK
TO EARTH
COLUMBIA!

ROUNDUP

NASA MANNED SPACECRAFT CENTER

HOUSTON, TEXAS



BLOOD DRIVE
SCHEDULED
AUGUST 6 AND 11

VOL. 8 NO. 20

JULY 25, 1969

Triumphant Apollo 11 returns safely to Earth

An estimated 528 million people, one million of them at Kennedy Space Center, witnessed the launch of America's Apollo 11 Moonship which was to carry its crew to a successful touchdown on lunar soil on July 20, 1969.

Liftoff took place only 724 milliseconds after the scheduled 8:23 a.m. on July 16, pushing the spacecraft into a near-circular Earth parking orbit.

Translunar injection was accomplished at 11:16 a.m. and the

successful docking and separation from the S-IVB stage were confirmed shortly after noon.

On the first day of their lunar journey, the crew busied themselves with navigational star sightings and systems checks which have become somewhat routine since the successful lunar missions of Apollo 8 and Apollo 10.

An afternoon attempt to transmit a color television signal was unsuccessful, however a second

The Moonship Columbia splashed down safely in the Pacific Ocean at 11:50 a.m. yesterday, and is now on its way to a 21-day quarantine in MSC's Lunar Receiving Laboratory.

try at about 7 p.m. through the 210-foot antenna at Goldstone, California gave good pictures of the West coast, Mexico and the Pacific.

At the beginning of the crew's first sleep period, about 10:30 p.m., the spacecraft was placed in a flight mode where small thrusters would be fired whenever there was a variation from the desired flight attitude of more than one half degree.

At 7 a.m. Thursday the Apollo 11 crew began their second day of translunar coast, filling their morning with housekeeping chores, cislunar navigation checks, a weather summary from Command Module Pilot Michael Collins and the only translunar mid-course correction, made at 11:17 a.m.

During the slow afternoon the crew beamed down an unscheduled television broadcast which was taped for later transmission.

The second scheduled television broadcast began at 6:30 p.m., during which Commander Neil A. Armstrong, after warning "hold onto your hat world", gave Earthlings a dizzying view of rolling in weightlessness. The transmission, scheduled to last only 15 minutes, took more than half an hour.

The crew then had supper and prepared for another 10-hour sleep period.

The major event in Friday's schedule began about 3 p.m. when Armstrong and Lunar Module Pilot Edwin E. Aldrin, Jr. entered the LM for a preliminary checkout of the Eagle's systems.

The television transmission scheduled for that afternoon fea-

(Continued on Page 4)

'The Eagle has landed . . .'

We did it!

"Tranquility Base here. The Eagle has landed," announced the flawless lunar landing of Apollo 11 at 3:18 p.m. on July 20, 1969.

And when Armstrong's heart rate rose to 156 at touchdown, there were similar reactions on Earth as pride, awe and humility struck the hearts of administrators, flight controllers, programmers, contractors and everyone who had played a part, however small, in the accomplishment.

Communications were good during the landing as Armstrong took over control of the Eagle during the final seconds and maneuvered it past a football-field-sized crater filled with boulders to a smoother area at the Southern edge of landing site number 2 near the Sea of Tranquility.

Immediately after touchdown, he and Edwin Aldrin, lunar module pilot, conducted a checkout of the LM for contingency takeoff and gave a brief description of the lunar surface.

After verifying all systems as "go" for ascent staging and lunar stay, the crew requested permission from Mission Control to begin their Moonwalk five hours earlier than planned.

Request granted, the landing crew began donning their Extravehicular Mobility Units, depressurizing the LM and otherwise preparing for exploration of Tranquility Base, Moon.

This EVA preparation took somewhat longer than anticipated—causing a delay in the modified flight plan of about 12 minutes.

The Eagle's hatch opened at 9:39 p.m. At 9:51 Armstrong slid out onto the front porch,

released the Modularized Equipment Stowage Assembly and started the black and white television camera that was to record man's first lunar surface activity for the people of Earth.

He then came slowly down the LM ladder, bounced once between the last rung and Eagle's large footpad and, at 9:54 p.m., placed his left foot firmly on the surface of the Moon.

Major events progressed rapidly from that point as Armstrong took pictures of the LM, gathered his contingency sample and familiarized himself with the lunar environment.

A short Moon landing ceremony was conducted by the two crewmen, beginning with the unveiling of a plaque on the LM which carries the words "Here men from the planet Earth first
(Continued on Page 3)

Gilruth led the way

During the Apollo 11 Post-Recovery Press Conference Thursday, July 24, 1969, George Low, manager of the Apollo Spacecraft Program Office, speaking for Manned Spacecraft Center employees and for many others in the space program, cited the contribution to manned space flight by one individual, a citation we wish to repeat here:

"... there is one individual I would like to single out and say just a few words about. This is the man who started Project Mercury, who started manned space flight in this

country, who led us through that with the first American manned space flights, who led us from that into Gemini with 10 successful flights where we learned how to operate in space, and who taught many of us here all we know today about how to fly men in space—and that is the Director of this Center, Bob Gilruth.

"Bob, I think I speak for all of us here in Houston and the entire country in saying that without you, the events of the past week just would not have been possible. Thanks a lot."



APOLLO APPLICATIONS PROGRAM PERSONNEL RECEIVE AWARDS FOR SERVICE

Members of the AAP office were presented awards for their various contributions at a recent ceremony. They were: A. A. Verrengia, Cost Reduction Award; T. Kloves, P. H. Allen, Jeanette Beck and H. E. Whiteacre, Sustained Superior Performance Awards. Robert F. Thompson, AAP manager, made the presentations. Those not present to receive their awards were C. J. Hall, Quality Service Increase and H. D. White, SSP.

Blood Bank releases guidelines for donating to August drive

The MSC Blood Bank has requested the cooperation of all Center employees on August 6 and 11 to make this year's Blood Drive a success.

The Houston Bloodmobile will be situated at bldg. 8 between 9 a.m. and 3 p.m. on these dates and time for participation will be charged to excused absence.

The following guidelines should be followed by all those preparing to donate:

- Anyone between the ages of 18 and 60 may donate. However, those between 18 and 21 must have written consent of a parent or guardian unless they are married or in the military.

- Donors must weigh at least 110 pounds. Extremely overweight individuals should not give blood without written consent from a private physician.

- It is requested that one avoid fatty foods and dairy products during the four hours preceding donation, however it should not be more than 12 hours since solid foods have been consumed

- There must be an interval of at least eight weeks between donations with a maximum of five donations during any 12-month period.

- A person should never give blood if he has a history of: viral hepatitis, syphilis, tuberculosis, heart disease, epilepsy, rheumatic fever, frequent fainting spells, severe head injury, convulsions, kidney disease, severe allergy, abnormal bleeding, drug addiction or diabetes requiring special diet or insulin.

- Anyone with a recent history of any of the following should postpone his donation: major surgery, blood transfusions, pregnancy, malaria, immunization, severe injury, alcoholism, prolonged fever, tattoo, excessive weight loss, persistent cough, chest pains, shortness of breath, edema or close contact with someone who has hepatitis.

- Postponement is also suggested for those experiencing the following: severe cold or sore throat, skin disease, arthritis, hay fever or asthma, and for those taking medicine for any illness.

- Individuals who operate power machinery, trucks, buses, emergency vehicles or trains, or

who climb poles, ladders, scaffolds, etc., should not give blood if they must engage in these occupations within 12 hours after donating.

Routine tests for temperature, pulse, blood pressure and hemoglobin will be made on each prospective donor to insure that he can give blood and experience no ill effects.

Those interested in participating should make an appointment with Les Wynn, X6121, or Barbara Freeman, X3296.

Pressmen register in record numbers for Moon mission

Approximately 3500 newsmen—over 800 of them from 54 foreign countries—were accredited by NASA to cover the Apollo 11 lunar landing mission.

Nearly 2000 watched the launch from the press site at Kennedy Space Center on July 16 and many of these later moved to MSC to be part of the 1,153 who registered here.

Of the foreign delegations, the largest is 111 from Japan. The next largest is 81 from Italy, then 64 from Great Britain, 57 from France, 44 from Germany, 38 from Argentina and Mexico, 32 from Canada, 21 from Australia, 20 from Spain and 19 from Brazil.

Three Eastern Bloc countries are represented: Czechoslovakia with seven, Yugoslavia with three and Rumania with two.

Other countries represented are: Angola, Austria, Belgium, Bolivia, Chile, Colombia, Costa Rica, Denmark, Ecuador, Egypt, Finland, Guatemala, Greece, Haiti, Honduras, Iceland, India, Iran, Ireland, Israel, Korea, Lebanon, Luxembourg, Malta, Monaco, Netherlands, New Zealand, Nicaragua, Norway, Panama, Peru, Portugal, Rhodesia, Somalia, South Africa, Sweden, Switzerland, Turkey, Uruguay and Venezuela.

A spokesman for the United States Information Agency said that the foreign journalists and Voice of America broadcasters were reporting the Moon landing in 33 languages.

SPACE QUOTES

Vice-President Spiro T. Agnew—"The manned lunar landing will be one of man's boldest steps, a step which will have a profound effect on our thinking and our actions for generations to come."

"Our young people will inherit the fruits of this effort and will be charged with seeing that this and future generations wisely use the new knowledge we can expect to gain."

Dr. Thomas O. Paine, NASA administrator—"While the Moon has been the focus of our efforts, the true goal is far more than being the first to land men on the Moon, as though it were a celestial Mt. Everest to be climbed."

"The real goal is to develop and demonstrate the capability for interplanetary travel."

Dr. Paine—"No serious student of the problem of National security in the broadest sense can doubt that the space program of the United States is contributing in a major way to our world position today."

"The openness of NASA's program has brought home to people of all nations the nature of our free society, the scientific and technological power of the US, our governmental and industrial ability to organize and apply this power and our intention to do so in beneficial ways which do not threaten the security or vital interest of other nations."

Dr. Robert C. Seamans, Jr., Secretary of the Air Force—"Clearly, there is a continuing requirement to justify our expenditures in space."

"Those of us who have been involved personally know the relevance and importance of our work. But . . . we must also realize that necessary support can come only from a public understanding of the great value of these activities."

"Man is unique among creatures in that he not only adjusts to his environment, but actually

changes it, within limits, to suit his needs.

"Our history is the unfinished story of the realization of our potential as men. As President Kennedy said: ' . . . the power of science and the responsibility of science have offered mankind a new opportunity not only for intellectual growth, but for moral discipline; not only for the acquisition of knowledge, but for the strengthening of our nerve and our will.'

"But spiritual growth is possible only when our basic human needs are met. Much remains to be done. We are faced with complex problems of rapidly increasing population, urban congestion and pollution of our environment."

"Space research gives us new perspectives and the promise of useful solutions."

Federal Electric gets contract

The Houston-based Federal Electric Corporation has been awarded a one-year cost-plus-incentive-fee contract for support services at MSC.

Under the contract, Federal Electric is responsible for real-time mission support, flight control documentation, technical editing and writing, engineering documentation, library materials processing, graphic illustrations, satellite quick-copy operation, microform services, publications and forms distribution, supply functions and moving and hauling services.

The contract provides for direct and indirect support to all administrative operations and research and development programs at the Center.

Your Job in Focus

Headquarters announces promotion program

Headquarters has issued a NASA-wide Merit Promotion Plan effective for all actions initiated on or after July 1, 1969.

The new program, which affects all Centers, will replace the MSC plan in MSCM 3000. Copies are being reproduced and will soon be distributed to all employees.

Social Security benefits

Several employees have inquired about social security benefits which may have been earned through prior civilian employment or while in the military service.

The Social Security Office in Pasadena has advised that it will be glad to answer individual questions concerning benefits available under the Social Security System.

Their office is located at 1416 East Southmore, phone 477-1561.

Salary increase waiting periods

Under Civil Service regulations the awarding of a "quality increase" does not constitute an "equivalent increase" so as to require a new waiting period for the periodic within-grade increases.

However, the timing of a quality increase may affect the length of the waiting period itself.

For example, when an employee serving in a 104-week waiting period at step #6 is advanced by a quality increase to step #7, his waiting period is increased to the 156-week waiting period required for advancement to step #8.

However, all the time spent in step #6 is counted toward the longer waiting period.

ROUNDUP

NASA MANNED SPACECRAFT CENTER HOUSTON, TEXAS



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PRIME RECOVERY SHIP USS HORNET SPEEDS TO MID-PACIFIC SPLASHDOWN SITE
Apollo 11 was to have landed at 12:46 p.m. Thursday, 1040 nautical miles Southwest of Honolulu, Hawaii.

Apollo 11's quarantine started on the Moon

In order to protect the Earth against possible contamination from unknown organisms of lunar origin; the Apollo 11 crew, their Moon specimens and their spacecraft are undergoing some of the most stringent biological restrictions ever devised by man.

Procedures leading up to the scheduled 21-day quarantine in MSC's Lunar Receiving Laboratory actually began on the Moon.

Before leaving the lunar surface, Neil Armstrong and Edwin Aldrin packaged approximately 70 pounds of the controversial lunar rock in two vacuum-sealed Sample Return Containers which are designed to isolate the material completely until it is opened in the LRL.

After lunar module ingress the landing crew established a positive airflow to prevent LM dust particles from entering the command module.

Certain equipment, such as portable life support systems,

cameras and lunar surface tools, all covered with lunar dust, were left on the Moon.

Then, before the LM crew re-joined Michael Collins in the CM, they thoroughly vacuumed the remaining equipment, the inside of the Eagle and themselves to lessen the possibility of contamination transfer.

Throughout the rest of the flight the CM's environmental control system filtered the air within Columbia so that the cabin would be essentially free of lunar dust at splashdown.

Recovery procedures called for the three crewmen to remain in their spacecraft after splashdown until a swimmer reached them with Biological Isolation Garments.

After donning the BIG's, the crew was to be taken by helicopter to recovery ship USS Hornet where, accompanied by a doctor, they were to enter the Mobile Quarantine Facility.

The MQF is a modified, 35-foot long, converted house trailer which houses the crew and medical staff from the time they reach the Hornet, approximately 90 minutes after recovery, until they are delivered into the LRL on Sunday.

Precautionary measures for handling the CM call for the hatch to be closed off as soon as the crew egresses and for the outside surfaces to be decontaminated with a liquid spray agent.

After recovery, the module was to be placed at the end of the transfer tunnel attached to the MQF and sealed.

Tapes, lunar sample boxes, film and other items were to be carried to the MQF, sprayed and deposited in special containers for the transfer.

Orbiting workshop to use Saturn V

NASA announced plans Tuesday to launch its first orbital workshop in 1972, using the first two stages of a Saturn V as the launch vehicle.

Use of the Saturn V stages will allow full outfitting of the workshop on the ground and will permit launching of the facility with an Apollo Telescope Mount attached.

At an earlier date, NASA announced plans to use the second stage of a Saturn IB as its first orbital workshop and scheduled the launch for 1971.

After its initial use as a propulsion system to reach Earth orbit, the spent stage was to have been prepared by astronauts, while in orbit, for the conduct of scientific and biomedical experiments. The Apollo Telescope Mount was to be launched by another Saturn IB, with automatic rendezvous and docking to the workshop after arrival in orbit.

Present plans are to use the launch capability of the larger Saturn V to send the workshop and ATM together. The workshop will be outfitted on the ground and will arrive in orbit

equipped for immediate occupancy by a crew.

Basic program objectives remain the same as those originally announced. The purpose of the workshop is to provide an environment in which man can live and work in space under controlled conditions for extended periods of time—beyond those provided by the Gemini and Apollo Programs.

Workshop experiments will study man's physiological and psychological responses to space environment and provide more detailed information on his capabilities for extended manned flight.

The orbiting ATM will permit astronomers to make observations free from the Earth's atmosphere and will provide a platform for demonstrating man's ability to perform scientific experiments in space by operating a high resolution astronomical telescope.

The Saturn V workshop will be launched unmanned from Kennedy Space Center. About a day later, a three-man crew will be launched in an Apollo spacecraft atop the smaller Saturn IB ve-

hicle.

The spacecraft will rendezvous and dock with the workshop and crewmen will occupy it for up to 28 days during which time ATM experiments will be conducted. Later, revisits of up to 56 days duration will be made using the Saturn IB-Apollo combination.

Lunar surface activity--

(Continued from Page 1)

set foot upon the Moon July, 1969 A. D. We came in peace for all mankind."

At 10:40 p.m. Armstrong planted the flag of the United States in the lunar surface and a few minutes later President Nixon placed the first Earth-Moon telephone call, thanking the men on behalf of all Americans.

During their stay, the lunar astronauts collected about 50 pounds of bulk rock samples, about 20 pounds of documented samples and several core samples of lunar soil.

They also deployed the Early Apollo Scientific Experiments Package containing a passive

seismic experiment package and a laser ranging retro-reflector.

The crew described the area around the landing site as being covered with a fine powder which had quite a lot of cohesiveness.

Aldrin said that the rocks seemed to be slippery because of the powder. He also reported finding a purple rock similar to types of mica found on Earth.

At 12:12 Monday morning the triumphant lunar landing crew, with samples, film and a storehouse of personal observations, reentered the Eagle, slammed the hatch and prepared to rejoin Collins in Columbia for the trip back to Earth.

Roundup Swap-Shop

Deadline for Swap-Shop classified ads is the Friday preceding Roundup publication date. Ads received after the deadline will be run in the next following issue.

REAL ESTATE

- West Galveston Island Beach House, gulf view, all electric, 1 block to water, sell or rent, Green, 932-3426.
- Taylor Lake corner lot, wooded, lake view, \$1000 down, balance at 7%, owner, 591-4632.
- Nassau Bay 4-2-2, fenced assume 6 1/2% loan, X7255.
- Seabrook (Miramar) 3-2-2, paneled den, carpet, central A/H, built-ins, fenced, assume 5 1/4%, \$120/mo, immediate occupancy, Culling, 479-5722.
- Seabrook, Baywood 4 bdr on wooded lot, 2000 sq ft, quiet street, pier privileges, \$26,000, equity, assume 6 1/4% loan or owner finance, Stamps, 474-2374.
- Pearland, 1 1/2 acres, corner, 30 small pines, residential development, sacrifice \$4000, Plauche, 474-2660.
- West Galveston Island (Spanish Grant) house for rent, 3-2, air, furnished, gulf view, \$175/wk, J. Small, 591-2315.
- Wedgewood Village 3-2-2, colonial, \$1000 equity and assume \$169/mo at 6 1/4%, 15423 Blackhawk, Friendswood, McCoy, 482-1669 or 483-2976.
- Council Creek Village on Lake Buchanan, 165' x 75' lot, 1 block to water, will finance, B. Stephenson, 946-4286.
- Alameda Mall house for rent, 3-1-1, covered car port, 1-yr lease at \$135/mo or \$150/mo, J. Vick, 487-3844.
- Alameda Mall house for rent, 3 bdr, central A/H, huge den, fenced, built-ins, draped &

AUTOS

- car seat, \$200/mo, Caribbean St., W. Colburn, 748-2020.
- 65 VW sunroof sedan, radio, red w/black vinyl interior, \$1550, J. Sutton, 932-3979.
- 66 Simca BLS 1030, 4-dr, full financing arranged, \$775, consider trade, F. Turner, 733-7667.
- 65 Allstate Mo-Fed, motor in good cond, \$50, D. Murphy, 479-1942.
- 66 Porsche 911, 14,000 mi, new radia tires, AM/FM, deluxe int, R. Schweickart, 591-2439.
- 62 Galaxie, air, new auto trans w/6-mo guarantee, \$495, L. Arnold, 785-5915 nights & weekends.
- 64 Buick Special, 4-dr, 8 cyl, air, power steering, automatic, excellent cond, E. Simon, 488-4043.
- 64 Olds F-85, 4-dr, 8 cyl, air, R/H, standard, excellent cond, E. Simon, 488-4043.
- 67 Camaro, power steering, automatic, air, radio, 327, M. Pingnot, 667-9596 after 5.
- 68 VW, radio, vinyl interior, whitewalls, \$1300 firm, A. Thies, X2331.
- 68 Fiat 124 Sport Coupe, AM/FM, air, excellent cond, K. Berry 658-8862.
- 66 VW transporter, overhead rack, ideal for camping, 53,000 mi, \$1000, perfect, 483-4021.
- 62 Corvair Monza interior & exterior body parts, hub caps, tinted glass, 477-4448.
- 68 Gold GTO, automatic, air, AM/FM stereo, \$2850, S. Spaeth, 944-3170 after 5.

BOATS

- 64 GTO, owner, excellent cond, new tires, only 48,000 mi \$850, N. Lamb, X5451.
- 65 Corvette Coupe, 355, air, power brakes & windows, new polyglass, J. Lewis, 642-2116.
- 61 Sunbeam Alpine, excellent cond, new top & tires, mechanically sound, \$600 firm, J. Koehner, 488-2390.
- 65 Pontiac Catalina HT, standard, air, radio, burgundy vinyl interior, R. Colonna, 474-2447.
- 66 Simca 4-dr, R.H. 32 mag, excellent work or second car, \$495, R. Lindemuth, 482-1086.
- 67 VW cammobile, DPD air, pop-up top, tent, luggage rack, 20 mag, whitewalls, excellent, \$2200, L. Corcoran, 488-5331.
- 64 Chrysler Newport, fully equipped, 4-dr HT, will sell at loan value, 677-1070.
- 19' x 6' bay day cruiser w/trailer, fiberglassed hull & decks, excellent cond, \$750, engine not included, W. Mallary, 482-7081.
- New, GC-15 class sailboat w/trailer, \$1100, S. Ruple 487-3927.
- 13' 9" Scorpion board sailboat, new, fiberglass, 15' 3" Demon centerboard sailboat, used, fiberglass, SA 115 sq ft, trailer, B. Ward, 591-2182.

MISCELLANEOUS

- 3 piece corner sleeper couch set w/table, \$100 or best offer; modern walnut dining table w/leaf, \$40 or best offer, J. Bates, 944-4687.

- 23" RCA color TV, 6-mo-old, retail for \$675, sell for \$475, antenna included, 488-0044.
- Garcia classical guitar w/hardshell lined case, made in Madrid, brand new, \$120, Canin, 534-3721.
- Twinstroller, \$7; Cosco net playpen, \$6; Zenith stereo, \$25, 474-2049 mornings only.
- Fly retractable w/Aero Club, Inc. for MSC and contractors, P & K Bonanzas, IFT, 195 mph \$17/hr wet, Cessna 172 \$9/hr; 150 \$8/hr; instructor \$5/hr, B. Ward, 677-3187.
- Will fly persons on weekend for cost, F. Blankenship, 944-0750 after 5.
- 58 Mooney M20A, 1550 TT, 600 SMOH, Genave navcom, good paint and interior, April annual, \$5950, D. Frills, 944-5000.
- Trailer hitch for 1964 Gaaxie 500, complete, \$7, R. Hill, 471-4305.
- Car radios: 50 Chevy, \$10; 62 Corvair, \$20; transistorized Allstate under dash \$10, 474-4448.
- Electric motors, FHP, \$10 each, 474-4446.
- Tricycle, pegal car, 3-wheel X-15, \$3 each, L. McBride, 488-0686.
- Silverstone AM/FM table radio, brand new tube, mahogany, \$18, D. Kaiser, 645-3964.
- Stereo amplifier, 30 watts each channel, excellent cond, \$45, Bullock, X3242.
- Set of left-handed golf clubs for beginners, good cond, R. Nugent, 488-3136.
- Metal cutting lathe, Sears, 6" x 18" w/thread cutting gears, \$65, G. Koepke, 488-2797.
- AM/FM Hi-fi console w/reverb & stereo player, amplifier built in, \$75, 488-2797.
- Light portable belt sander, \$12; Bundy clarinet, \$50; 1/2 & 1/4 hp motors, \$10 each, 6/12

- volt, 1/2 amp power supply, \$5, 488-2797.
- Honda 305 Super Hawk, luggage rack, windshield, saddlebags, helmet, 1200 mi, make offer, 488-1028.
- Free: Part-Persian kittens, pretty & gentle, 6 wks old, J. Lamoreux, 488-4459.
- Roberts model 770 4-track stereo recorder, 2 mikes, input-output patch cords, good cond, \$150, E. Walters, 649-2838.
- Wurlitzer spinet piano w/bench, very good cond, ebony, Carlisle, 932-2836.
- 2 Allied stereo 12" speakers, walnut cabinets, \$70 each, S. Spaeth, 944-3170 after 5.
- Portable Silverstone Hi-fi record player, \$20; portable Columbia stereo record player, \$35, 941-0084.
- GE washing machine, \$15, L. Moore, 488-5132.
- Argus 35mm camera, variable shutter operation, light meter, flash, case, excellent cond, \$20, L. Moore, 488-5132.
- Old English Sheepdog puppies, sire imported from England, require much love & attention, F. Patterson, 944-3634.

WANTED

- Outboard motor in good cond, 7.5 to 10 hp, prefer Evinrude, Johnson or Mercury, R. Hill, 471-4305.
- Air conditioner for VW Beetle, preferable 5 volt, M. Trichel, 668-6924 after 5:30.
- Throw away "junk" TV, Hi-fi components, etc. will pick up, J. Samouco, 488-0406.
- 10-speed racing bike, K. Lumpkin, X5111.

Car-like vehicle planned for use in later landings

Lunar exploration by the Apollo 11 crew was limited, both by time and mobility, to a relatively small area around their landing site.

Subsequent Apollo missions, however, may carry a lunar rover, similar to a small car, to increase that mobility.

A request for proposals on the design, development, test and delivery of four flight models has been released from Marshall Space Flight Center, Huntsville, Alabama.

The lunar rover vehicle is scheduled for use in 1971 Apollo flights, after planned improvements have been made to the lunar module, command module and astronaut life support equipment.

The vehicle, actually much smaller than a conventional automobile, will have four wheels and weigh about 400 pounds.

It will provide lunar surface transportation for two crewmen, their hand tools, collected lunar samples and other equipment and experiments.

The vehicle will increase the scope of lunar exploration by conserving time and thus providing a greater scientific return for each mission.

Marshall has been conducting research and planning toward a lunar roving vehicle since 1964.

Phone call--

(Continued from Page 1)

This has to be the proudest day of our lives.

"And for people all over the world, I am sure they, too, join with Americans in recognizing what a feat this is.

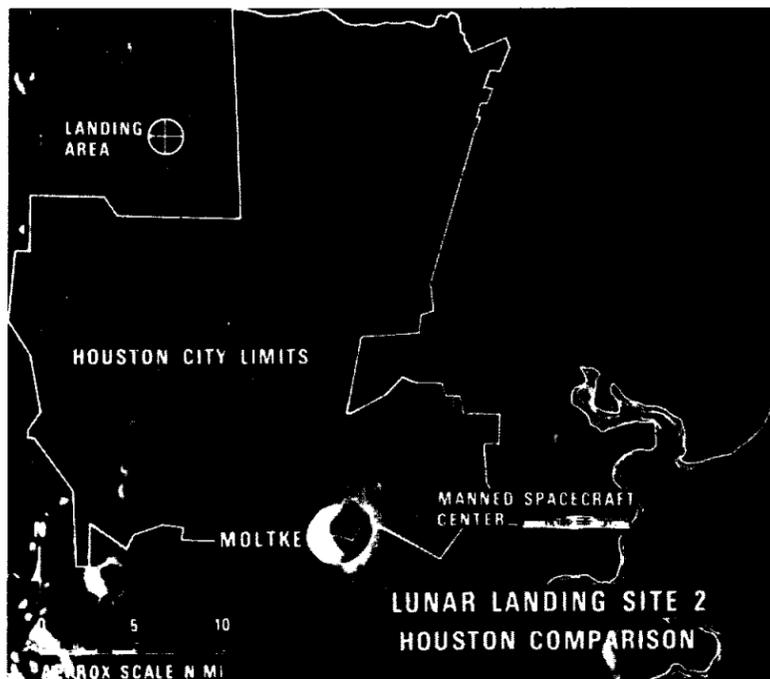
"Because of what you have done, the heavens have become a part of man's world. And as you talk to us from the Sea of Tranquility, it inspires us to double our efforts to bring peace and tranquility to Earth.

"For one priceless moment in the whole history of man, all the people on this Earth are truly one. One in their pride in what you have done, and one in our prayers that you will return safely to Earth."

ARMSTRONG—"Thank you, Mr. President. It's a great honor and privilege for us to be here representing not only the United States, but men of peace of all nations. And with interest and a curiosity and a vision for the future, it's an honor for us to be able to participate here today."

NIXON—"And thank you very much and I look forward—all of us look forward to seeing you on the Hornet on Thursday."

ALDRIN—"I look forward to that very much, sir."



IT'S HOUSTON ON THE MOON!
Photographic illustration compares size of Houston with Apollo 11 landing site.

Moon mission encounters few problems--

(Continued from Page 1)

tured Aldrin's guided tour of the LM interior, including close-ups of the module's intricate controls and of the equipment to be worn on the lunar surface.

After the crew had entered their third sleep period at about 9:30 p.m., Flight Surgeon Dr. Charles Berry announced the crew's physical shape as "excellent" and said that they had been sleeping very well.

A cancellation of the fourth mid-course correction allowed the crew to sleep until 7:30 a.m. instead of the scheduled wakeup time of 5:30 on Saturday.

During the morning, Mission Control read through flight plan updates and issued instructions for reorienting the spacecraft as Apollo 11 steadily gained speed in relation to the Moon.

Lunar orbit insertion was accomplished at about 12:30 Saturday afternoon, the engine burn placing Columbia in a 70 by 195 statute mile elliptical orbit.

Armstrong reported that he could easily pick out Moon craters and mare as the spacecraft orbited the Moon for the first time.

A second firing of the Service Propulsion System engine at about 4:45 p.m. changed Columbia's orbit to a near-circular one of 62 by 75 statute miles above the lunar surface.

Another checkout of the LM and a dramatic telecast of Moon pictures were completed before the crew bedded down for the night.

The crew was awakened Sunday at 6:05 a.m., and, after a quick breakfast, began the busiest day of their mission—preparations for landing.

In the morning newscast they were told that church services around the world were mentioning Apollo 11 in their prayers.

As Apollo 11 emerged from the back of the Moon on its 11th revolution, Aldrin was in the LM going through his familiarization routine.

At 9:23 a.m. he was joined by Armstrong and together they prepared the LM for separation from the command ship and for the trip to the lunar surface.

Then, they donned their space suits and continued systems checks while Collins conducted landmark tracking exercises.

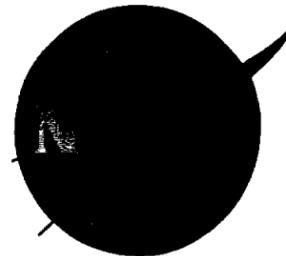
The Eagle began its descent to the lunar surface at 2:30 p.m. with an engine burn of slightly more than 29 seconds.

As the LM moved into a slowly descending orbit with Armstrong and Aldrin strapped at their respective control panels, Michael Collins, in CM, began his 28-hour virgil.

After the successful landing and lunar surface activity, and following a night of fitful rest in the cramped quarters of the LM, Armstrong and Aldrin were awakened on the Moon to prepare for their trip home.

The three crewmen spent Monday morning preparing for the ascent staging and docking maneuver and Collins continued his unsuccessful attempts to spot the Eagle on the lunar surface.

news from around



GODDARD—Goddard Space Flight Center's sixth Orbiting Geophysical Observatory, OGO-6, launched June 5 from the Western Test Range, is living up to the project's record for high performance with all of its 25 experiments operating as planned.

The last and largest of the OGO series is designed to study the interaction of radiation from the Sun with the upper reaches of the Earth's atmosphere and its magnetic field.

LOCKHEED—The world's largest airplane, Lockheed's new C-5 Galaxy, recently broke all weight records, lifting 762,000 pounds.

Despite higher costs, said a company spokesman, the C-5 transport "will give the US superiority in airlift, a capability and a versatility far greater than heretofore imagined."

TRW—TRW's California Branch has recently acquired a drafting machine which produces perspective drawings in 30 to 90 per cent less time than it takes an illustrator.

The device is a logic machine and refuses to accept anything illogical, thus checking the accuracy of original drawings as it translates them into three dimensions.

EASEP functions well; begins to send data

Even before the Apollo 11 landing crew returned to their spacecraft Sunday evening, scientists on Earth had begun to receive information from the first in a series of experiments designed to tell them more about the Moon.

These first experiments, contained in the Early Apollo Experiment Package, hopefully will solve some of the mysteries that have puzzled students of our natural satellite:

What is the internal make-up of the Moon? Does it have a molten core? Is it a solid rock

all the way through? Is it gradually cooling off? Does it have a mantle like Earth? What is the composition of the surface features and how did they get there? What is the actual distance between the Earth and the Moon?

The EASEP consists of two basic experiments which were deployed by crewmen Neil A. Armstrong and Edwin Aldrin, Jr., and left on the Moon. These are the passive seismic experiment package and the laser ranging retro-reflector.

A third effort, the solar wind experiment, was a short duration test, set up early in EVA and removed before EVA termination, to be brought back to Earth.

The PSEP, much like the the seismometer used to measure earthquakes, will record for Earth scientists not only lunarquakes but also meteoroid impacts, their frequency and effect.

It will also measure the lunar gravity vector, showing changes in the Moon's gravity as it follows in orbit and is affected by the Sun and Earth.

An isotopic heater system is built into the PSEP and will protect the seismic recorder during frigid lunar nights.

The Apollo Lunar Radioisotopic Heater, developed by the Atomic Energy Commission, will be the first major use of nuclear energy in a manned space flight.

Each of the two heaters is fueled with about 1.2 ounces of plutonium 238. Heat is given off as the well-shielded radioactive material decays.

The LRRR is a retro-reflector array, built of cubes of fused silica and connected to a folding support structure for aiming and aligning the array toward Earth.

Laser ranging beams from Earth will be reflected back to their point of origin for precise measurement of Earth-Moon distances, motion of the Moon's center of mass, lunar radius and Earth geophysical information.

Earth stations which will beam lasers to the LRRR include the McDonald Observatory at Ft. Davis, Texas; Lick Observatory, Mt. Hamilton, California; and the Catalina Station at the University of Arizona.

The other experiment, designed to measure solar wind particles, is made from a thin sheet of aluminum foil. The foil was framed and set up on the lunar surface in such a manner as to catch solar particles molecularly in the aluminum.

It is being returned to the Lunar Receiving Laboratory for analysis.