



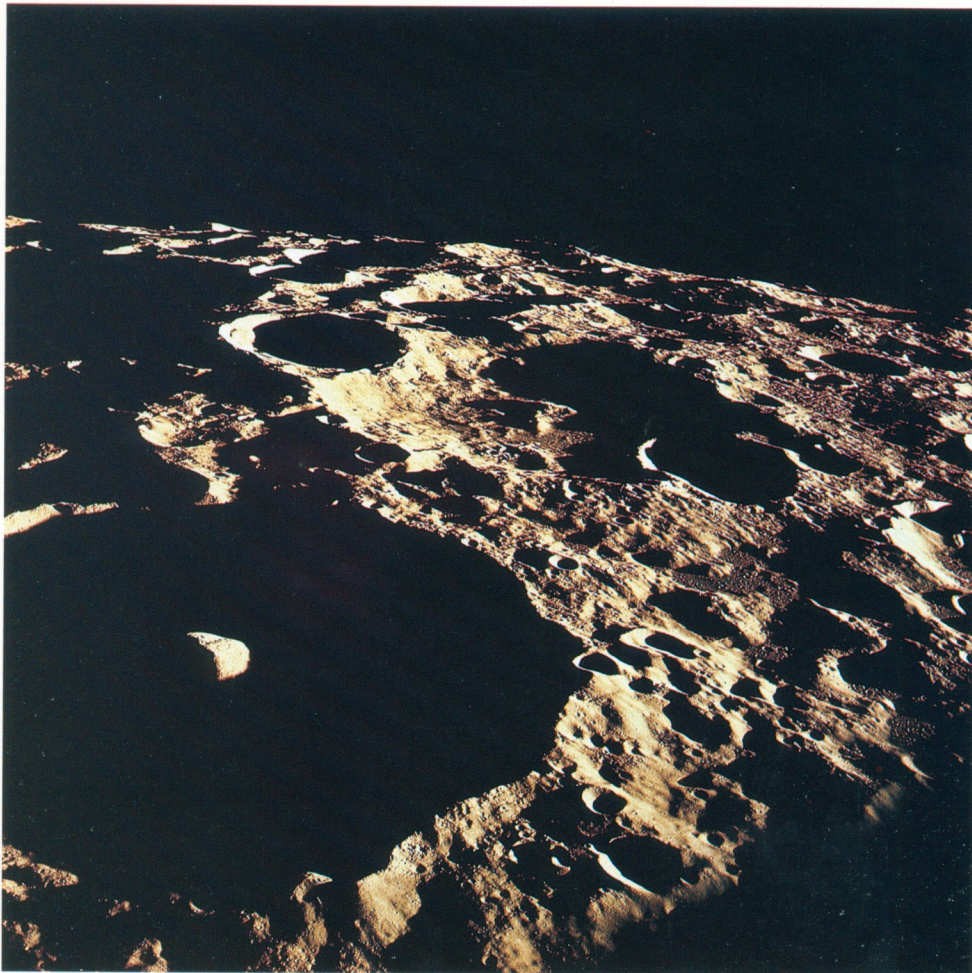
10 YEARS ON THE MOON 1969-1979

HASSELBLAD[®]

10 Years on the Moon

Twelve modified Hasselblad 500EL cameras remain on the moon. They are to be found on the Mare Tranquillitatis (Apollo 11), the Oceanus Procellarum (Apollo 12), close to the Fra Mauro massif (Apollo 14), near the Hadley Rille in the Apennine Mountains (Apollo 15), at the Descartes landing site (Apollo 16) and between the Taurus Mountains and the Littrow Crater on the edge of the Mare Serenitatis (Apollo 17). All cameras are fitted with Zeiss lenses, but lack film magazines. Unless damaged by meteorites they should all be in good shape. And free for the taking.





Ten years on the moon! 1979 will mark the tenth anniversary of the moment when man first set foot on the moon. Our lunar satellite circles the earth at a mean distance of 238 857 miles. On July 20, 1969, Apollo 11's lunar module Eagle was the first manned spacecraft to touch down on the moon. Four more landings were made before the Apollo project was terminated in 1972. The lunar camera was the Hasselblad Data Camera with Reseau plate (HEDC), based on the Hasselblad 500EL/M.

“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. No single project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish.”
President John F. Kennedy to the American Congress on May 25, 1961.

In 1969, the first pictures were taken on the moon—with a Hasselblad camera!

This booklet is being published as a modest tribute to all the participants in that gigantic team effort culminating in the successful execution of the Apollo Project. Two lunar landings were made before the end of the decade. Another four were made in the next two years. Apollo 11 landed on the moon on July 20, 1969. Here, man took pictures on the moon for the first time, and the camera was a Hasselblad. The moon mission became historic. And the pictures taken were unique. Some of them will be found in this booklet. We are proud of their success. This year marks the tenth anniversary of the year when the first pictures from the surface of the moon were circulated all over the world.

The now famous, time-tested and reliable Hasselblad 500EL, the system's electric motor-driven camera, made its debut in 1965. It was a decade ahead of its time. At the simultaneous introductions in Göteborg, Hamburg and New York no one could have dreamed that a modified

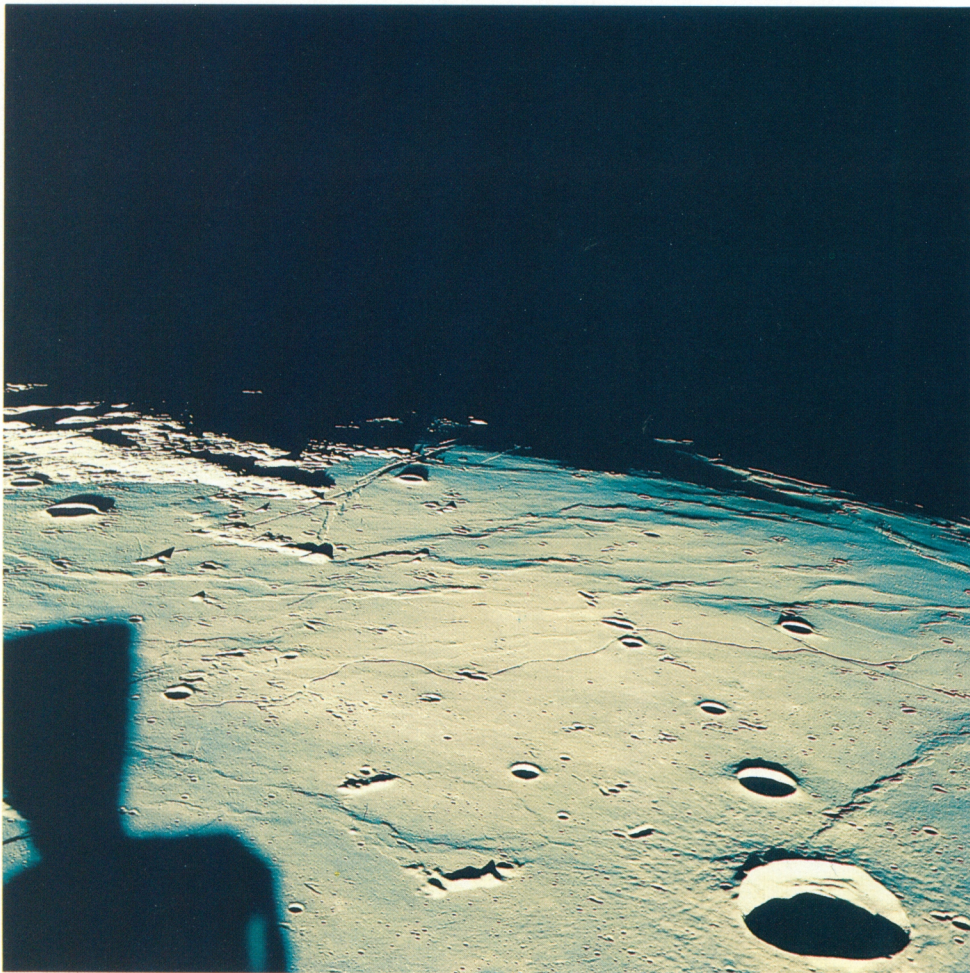
version of this camera would become the Hasselblad Data Camera, popularly referred to as the “moon camera,” the first still camera on the moon.

From October 1962 with the Mercury Sigma 7 and astronaut Walter M. Schirra, throughout the entire Gemini program right up to Apollo 7 with the same astronaut as mission commander, the American astronauts worked with Hasselblad 500C and SWC cameras. On the 8, 9 and 10 missions at the end of 1968 and beginning of 1969, still camera equipment was augmented with the motorized Hasselblad Electric Camera (HEC), the first version of a modified 500EL. Following exhaustive testing, a Hasselblad Data Camera with Reseau plate (HEDC) was selected for lunar surface photography on the historic first flight to the moon with Apollo 11 in July 1969. Two motorized HEC's were also taken along, one of which used exclusively in the command module.

Five of the six American manned space flights during the Apollo program from 1969 to 1972 resulted in successful landings. Data Cameras were employed for “outdoor” use and the HEC for photography from and inside the lunar modules and command modules. Twelve Data Cameras with specially made Carl Zeiss 60mm f/5.6 Biogon and 100mm f/3.5 Planar lenses were left behind on the moon. Where they can be picked up free of charge. Moon rocks of the same weight replaced them on the journeys back to earth. However, there's no point in looking for any film magazines for 70 mm thin-base, thin-emulsion film (180 frames per roll) up there. The Hasselblad pictures in them

The lunar module Eagle just after separation from the command module. Michael Collins in Columbia watches his fellow-astronauts depart for the moon. Commenting on their lunar module, he noted: "It is the weirdest-looking contraption ever to invade the sky, floating there with its legs jutting out above a body which has neither symmetry nor grace." On the intercom to Armstrong in the Eagle, he remarked: "You've got a fine-looking flying machine there, Eagle, despite the fact that you're upside down." "Somebody's upside down," Armstrong retorted. "See you later."





Orbiting 70 miles above the moon, Eagle's astronauts survey their shadowy landing site. The site near the dawn line was selected so the men would have the sun behind them and low enough to show surface features in sharp relief. The landing site chosen was on the edge of the lunar plain referred to as the Sea of Tranquility. One of the Eagle's thrusters created the shadow to the left.

with exposures made on the surface of the moon were as unique as the lunar rubble and as invaluable to scientists down on earth. A very small selection of these pictures—all from the first lunar mission with Apollo 11, will be found in this booklet, published to commemorate the 10th anniversary in 1979 of the first time man left his planet to pay a visit to the moon. All were taken during the mission from July 16 to 24, 1969 which resulted in man's first landing on the moon. "One small step for a man, one giant step for mankind," said astronaut Neil Armstrong. It is dedicated to the U.S. National Aeronautics & Space Administration (NASA) and the vast team behind the fantastic expedition of the three lunar pioneers, astronauts Neil A. Armstrong, Michael Collins and Edward E. Aldrin Jr. With an undeniable sense of pride, we will be sending this brief commemorative booklet to Hasselblad owners all over the world. The Hasselblad 500EL was the model upon which those lunar cameras were based, which operated flawlessly in documenting history.

Words and images will now be used to depict episodes from the first momentous mission to the moon from July 16—24, 1969.

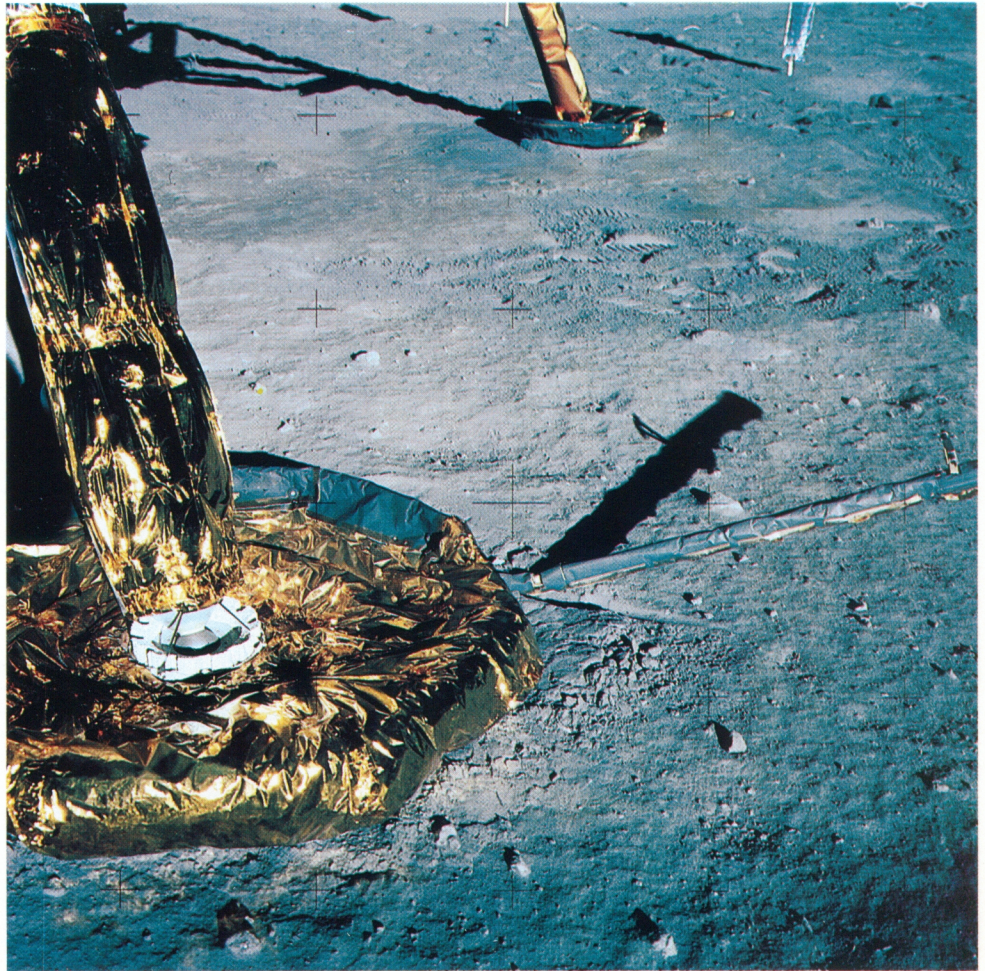
Round trip to the moon

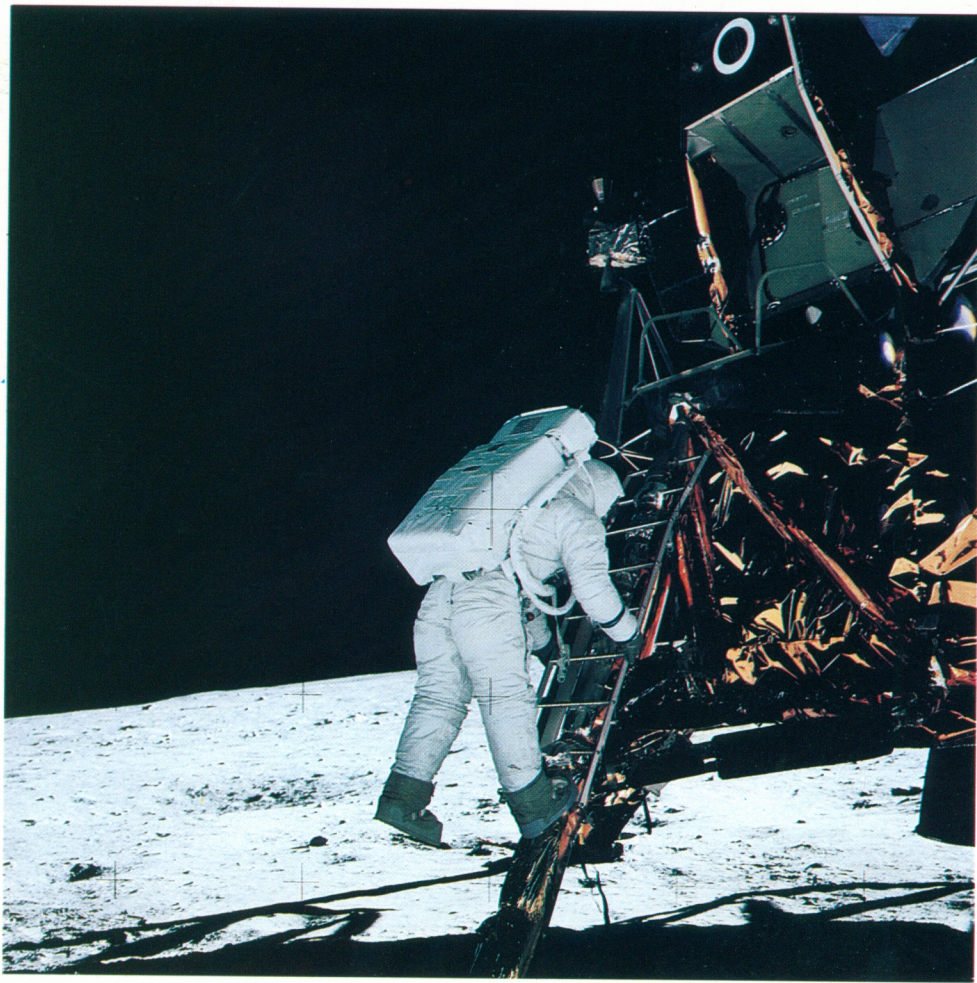
"Landing a man on the moon and returning him safely to earth before the end of the decade" — these were the words of President John F. Kennedy to the American Congress on May 25, 1961. He never lived to see that goal fulfilled, but it was fulfilled—and with time to spare. On July 20, 1969 astronaut Neil Armstrong beamed a laconic report

across space, "Houston, Tranquility Base here. The Eagle has landed." When he became the first man to set foot on the moon he made history. What was in the mind of the millions of people down on earth who overheard him? What were his two colleagues thinking about up there? And his family, thousands of NASA technicians in the Apollo Project, scientists, religious people, historians, newsmen and many, many others? Not to mention all the people concerned about the operation of minor components? Like the people aware that a Hasselblad camera was hitched to Armstrong's chest. It had been subjected to scrupulous testing. But still. Would it work in the unrelenting cold? Temperature differences between shadow and sun are very hard on materials. Would we get the first still pictures ever taken on the surface of the moon? What about exposure? And focus? It was a great moment in history, one of the greatest to date.

A major disaster struck NASA right at the start of the Apollo Project. A fire broke out in the oxygen-filled command module of Apollo 1. Three astronauts died from the flames and fumes generated by burning insulation and other plastics. NASA then tightened up demands on the non-metallic materials in all equipment, including cameras. Technical specifications for the lunar camera were made more stringent, and everything was subjected to approval. By the end of the Gemini Project at the close of 1966, NASA had found that the manually operated Hasselblad 500C and SWC cameras were causing the astronauts some problems, especially for sequence shots. But there was an answer: The Hasselblad 500EL.

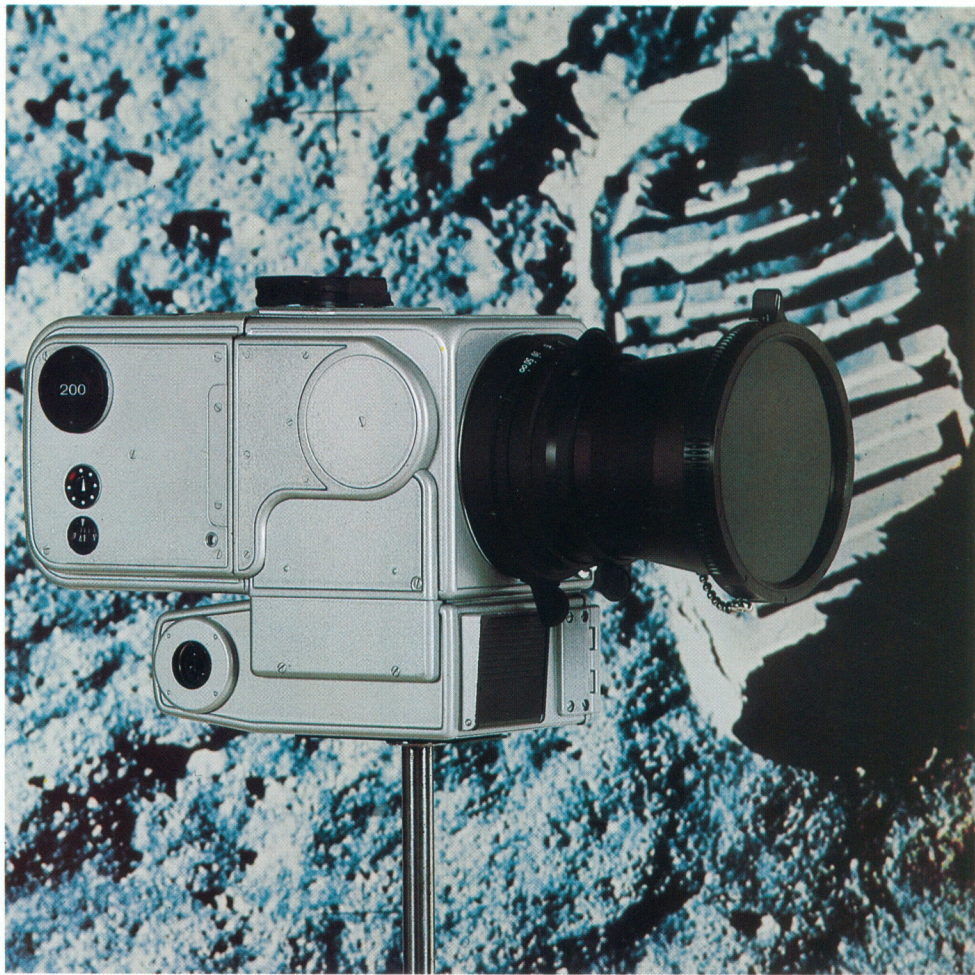
Two of the Eagle's landing struts firmly planted on the surface of the moon. The consistency of that surface was not known prior to the lunar landing. So the landing gear was fitted with sensing probes. The surface proved to be hard but covered by a thin layer of dust. The probes were designed to sense contact with the ground, thereby facilitating landing. Equipment for solar wind experiments, only one of the experimental instruments deployed by the astronauts on the moon, can be seen in the background.

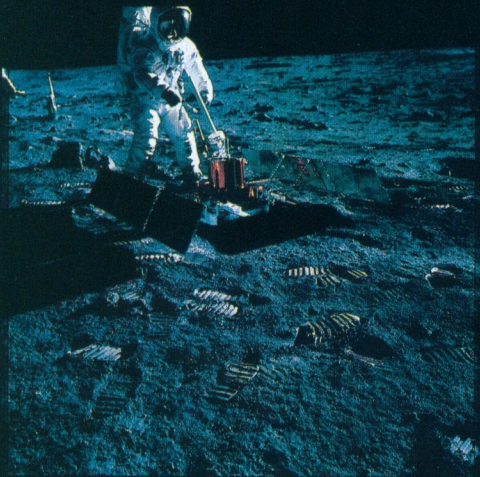
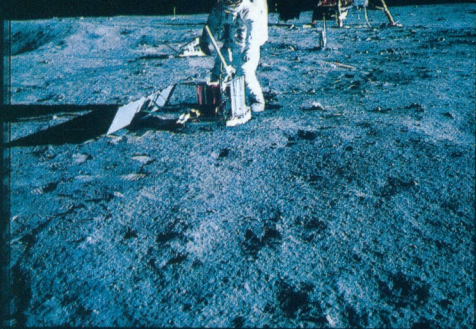




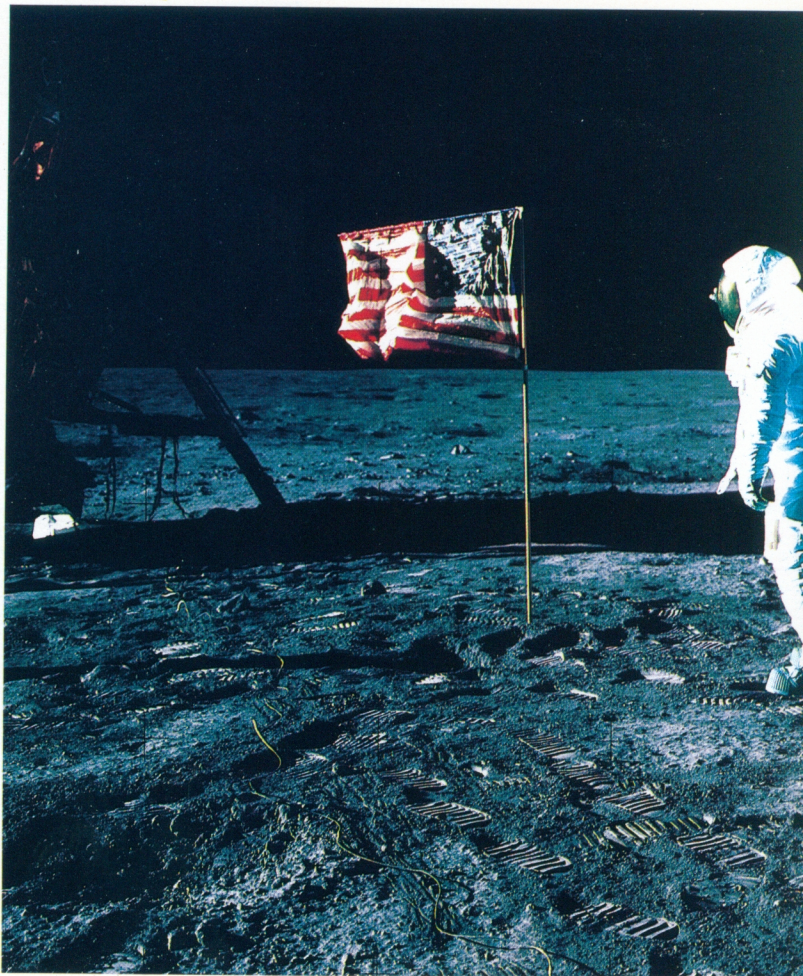
The first man on the moon was the commander of Apollo 11, astronaut Neil A. Armstrong. He was also the first Eagle crewman to work with a chest-mounted Hasselblad Data Camera with Reseau plate (HEDC) and took all the pictures on the surface of the moon. (Each astronaut had his own HEDC on the four subsequent lunar landings.) An eager Aldrin joined Armstrong on the moon 19 minutes later. On his back rides a portable life-support system with oxygen for breathing, water for cooling, an electric power supply and radio equipment.

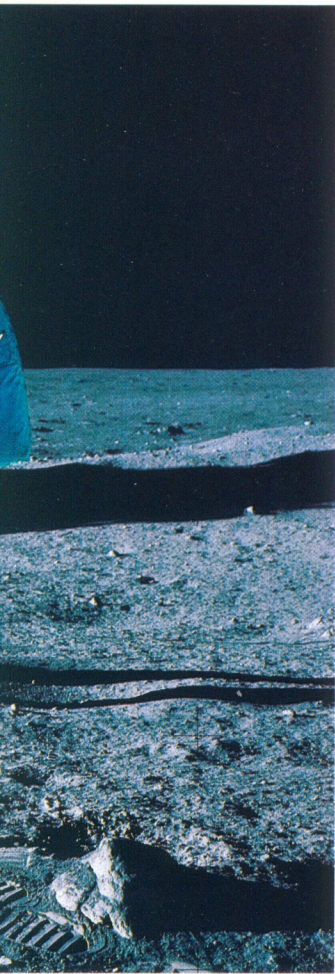
The picture was taken in a studio setup. Neil Armstrong's own photograph of his first footprint on virgin lunar soil serves as a backdrop. The lunar camera, a Hasselblad Data Camera with Reseau plate, fitted with a 70 mm film magazine, 60mm f/5.6 Zeiss Biogon data lens and a filter, is in the foreground. Its close kinship to the Hasselblad 500EL/M is obvious.



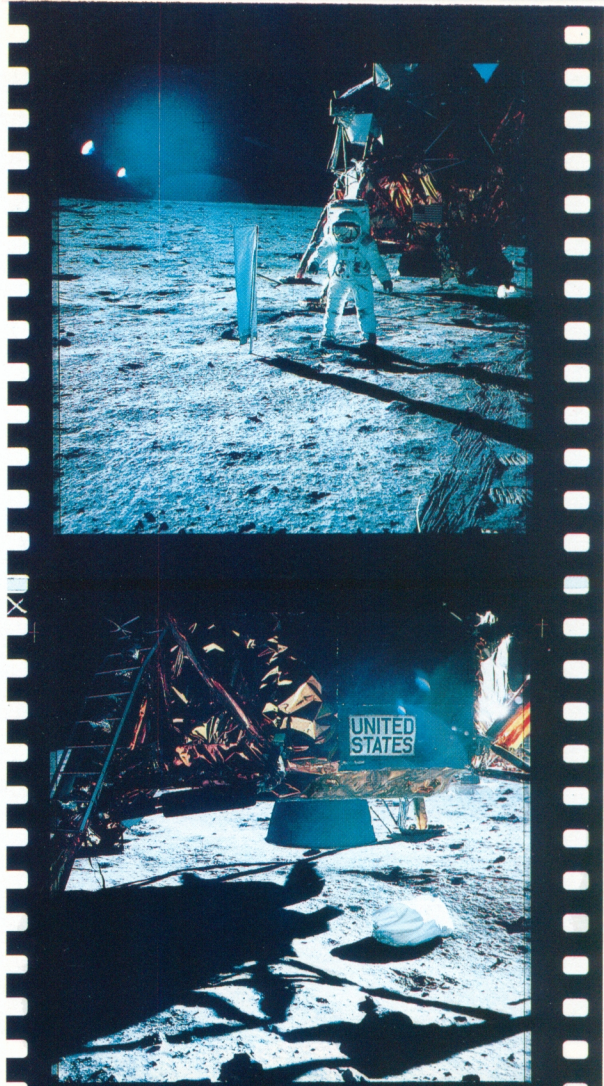


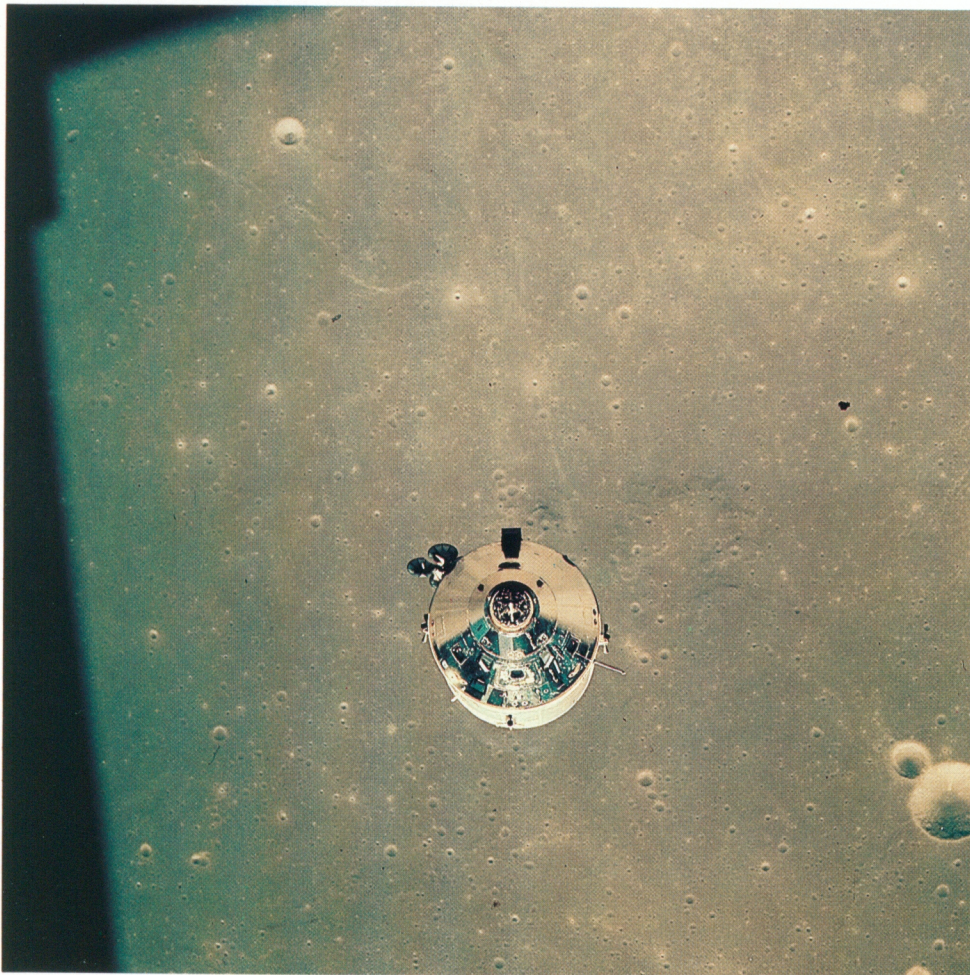
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The prime mission of Apollo 11 was stated tersely, "Perform a manned lunar landing and return." That was easier said than done, but Apollo 11 pulled it off. Neil Armstrong and Edwin Aldrin had a jam-packed program to complete in the 2 hours and 40 minutes they spent on the surface of the moon. Scientific instruments were deployed according to a carefully drawn up plan, lunar rubble was collected for geologists back on earth, ceremonies were performed and pictures taken. The Hasselblad camera worked without a hitch.



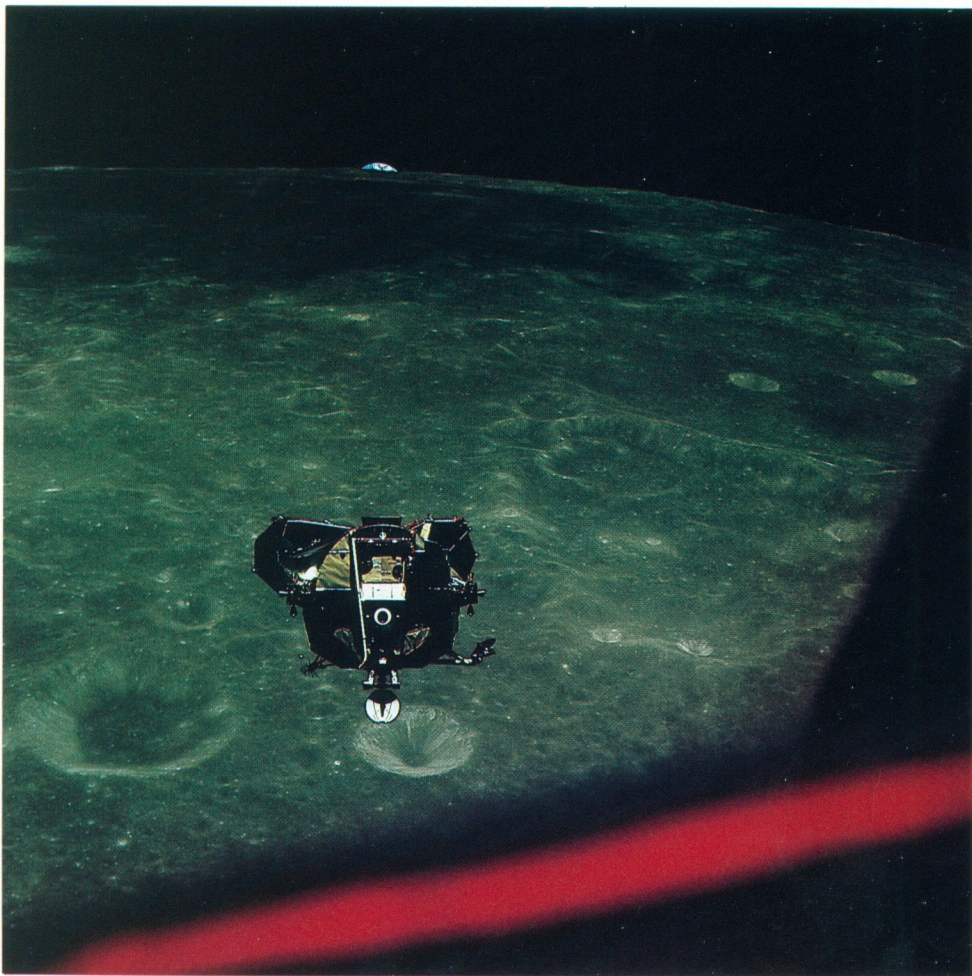


The command module Columbia solo-piloted by astronaut Michael Collins, remained in orbit at an altitude 316 600 ft above the surface of the moon. One orbit of the moon took 13 minutes. The Columbia made 30 such orbits. Collins was in constant radio contact with Houston and with the Eagle down on the moon. He was also able to overhear the radio traffic between Houston and the Eagle. In his book, "Carrying the Fire," Collins described some of the thoughts crossing his mind during his lonely vigil. He repeatedly ran through the complicated operations required when the Eagle returned — if it returned — to dock with the command module.

Lunar Camera

After many conferences between NASA and Victor Hasselblad AB, a contract was signed for development of the Hasselblad 500EL into a "lunar camera." The reliability of the Hasselblad 500EL was never in question, but some special demands were imposed on a model for use in space. Some of the demands were dictated by the Apollo 1 disaster. All non-metallic materials, such as various plastics, cement, lacquers and insulation had to be approved by NASA. For example, all switches and the tiny DC motor had to be provided with maximum suppression of sparking, etc. It was decided that certain photogrammetric equipment was needed for the lunar module cameras and, thus, even a new lens. The latter problem was turned over to Carl Zeiss, the West German manufacturer of the quality Hasselblad optics. That company succeeded in turning out a completely new lens in less than 6 months. Work at the Hasselblad Plant was intensive, and the final version of the lunar camera was completed by September, 1968.

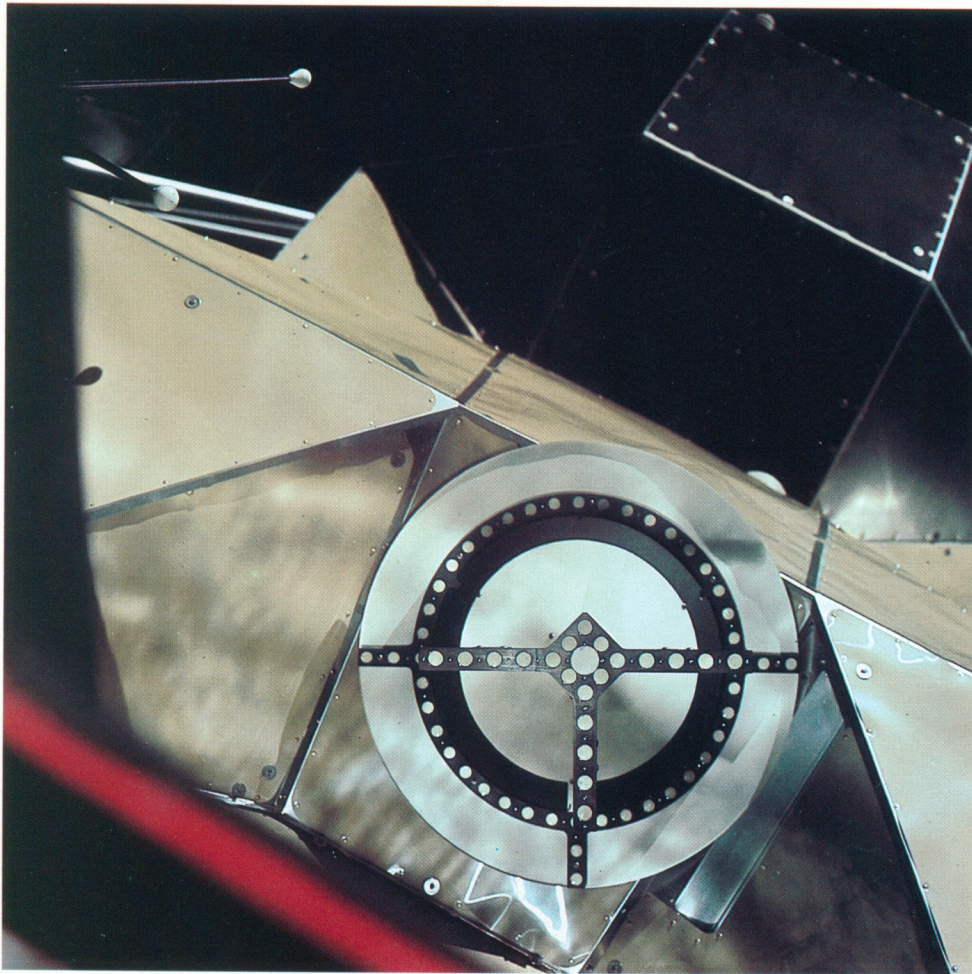
As most people already know, a terrestrial Hasselblad is not merely a camera. It is part of a complete system. The Hasselblads on the moon are also part of a camera system, the Hasselblad EL Data Camera System. Specifications for it were frozen as late as February, 1969. The first components in that system made their debut with Apollo 11, the first manned space flight to put a man on the moon. The mission had been planned down to the last detail, but anything could happen up there. The period from July 16 to 24, 1969 (the tenth anniversary will be celebrated this year), when Apollo 11 made its flight to the moon and



“My secret terror for the last six months has been leaving them on the moon and returning to earth alone. . .” — “They came up from below as if riding on a rail.” — “The earth is coming up; it’s fantastic. I grab for my camera to get all three actors (earth, moon, Eagle) in the same picture. Too bad Columbia will show up only as a window frame, if at all.”

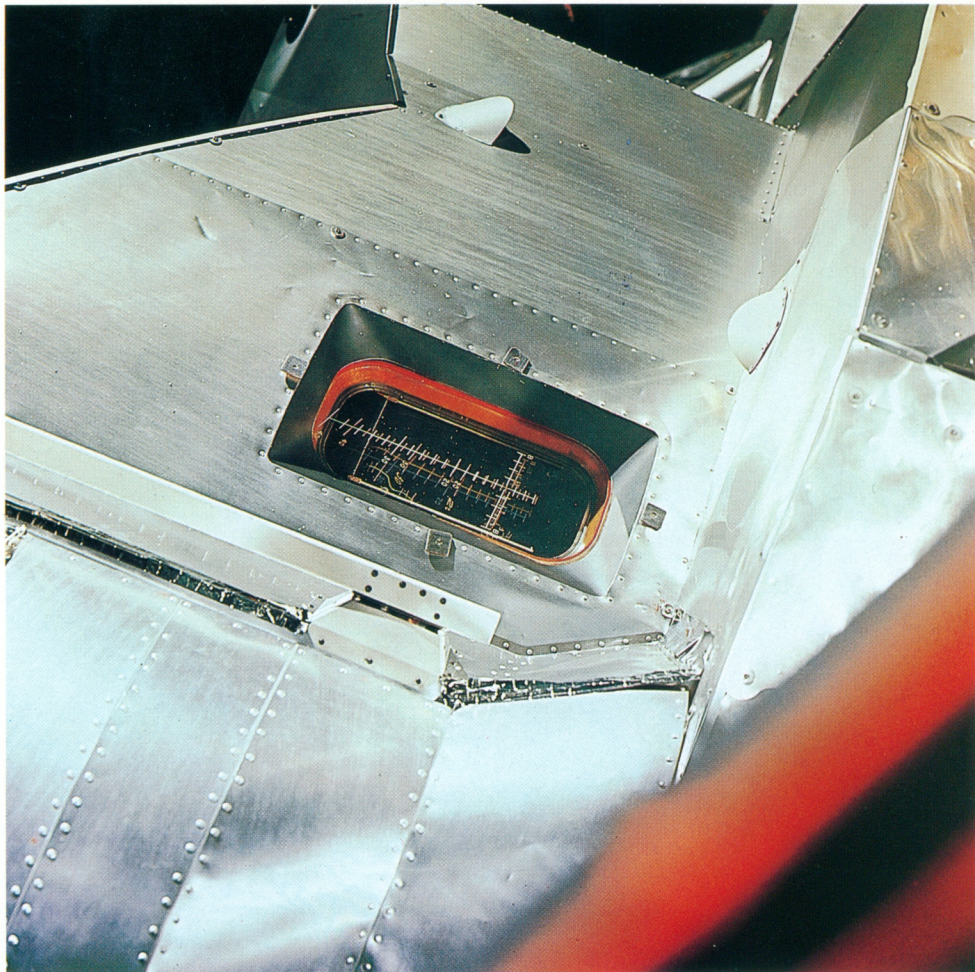
back, was extremely exciting. Millions of people followed the mission on radio and TV. Hasselblad staff were among them and prayed that the camera system would work as well as the basic 500EL camera system.

NASA had decided that only one camera was to be used on the surface of the moon. The Hasselblad Data Camera with Reseau plate, a 60 mm f/5.6 Zeiss Biogon lens with polarizing filter plus two magazines loaded with 70 mm thin-base, thin-emulsion color reversal film. Astronaut Neil Armstrong could not have it on his chest when he climbed down from the lunar module, it was said. The idea was to slide it down the module's ladder. The result would have been pretty rough treatment for the camera. Every professional photographer works with at least two cameras. And here man's first trip to the moon was to be documented with one! No small wonder the Hasselblad people were nervous. It was finally decided to lower the camera by rope down to Armstrong instead of sliding it down the ladder. Just one minor detail in the great adventure. Anyway, everything turned out just fine. A Hasselblad Electric Camera with an 80 mm f/2.8 Zeiss Planar and two 70 mm magazines was used inside the lunar module and through its windows. Astronaut Collins on board the command module worked with a Hasselblad Camera with an 80mm f/2.8 Zeiss Planar lens, a 250mm f/5.6 Zeiss Sonnar lens plus two 70 mm magazines.



*“Bigger and bigger the LM gets in my window until finally it nearly fills it completely. I haven’t touched the controls.” — “For the first time since I was assigned to this incredible flight six months ago, for the first time I feel that it is going to happen. Granted we are a long way from home, but from here on, it should be all downhill.”
(Michael Collins)*

Collins photographed the final phase of docking. His pictures are razor-sharp; even numerals on the tiny instrument panel are completely legible. Just prior to docking, the Eagle began to rotate violently, but this rotation ceased spontaneously after a few nervous seconds. Collins floated through the docking tunnel to welcome his friends. A short time later 48 lb of precious moonstuff and the equally precious Hasselblad film magazines had been transferred to Columbia.



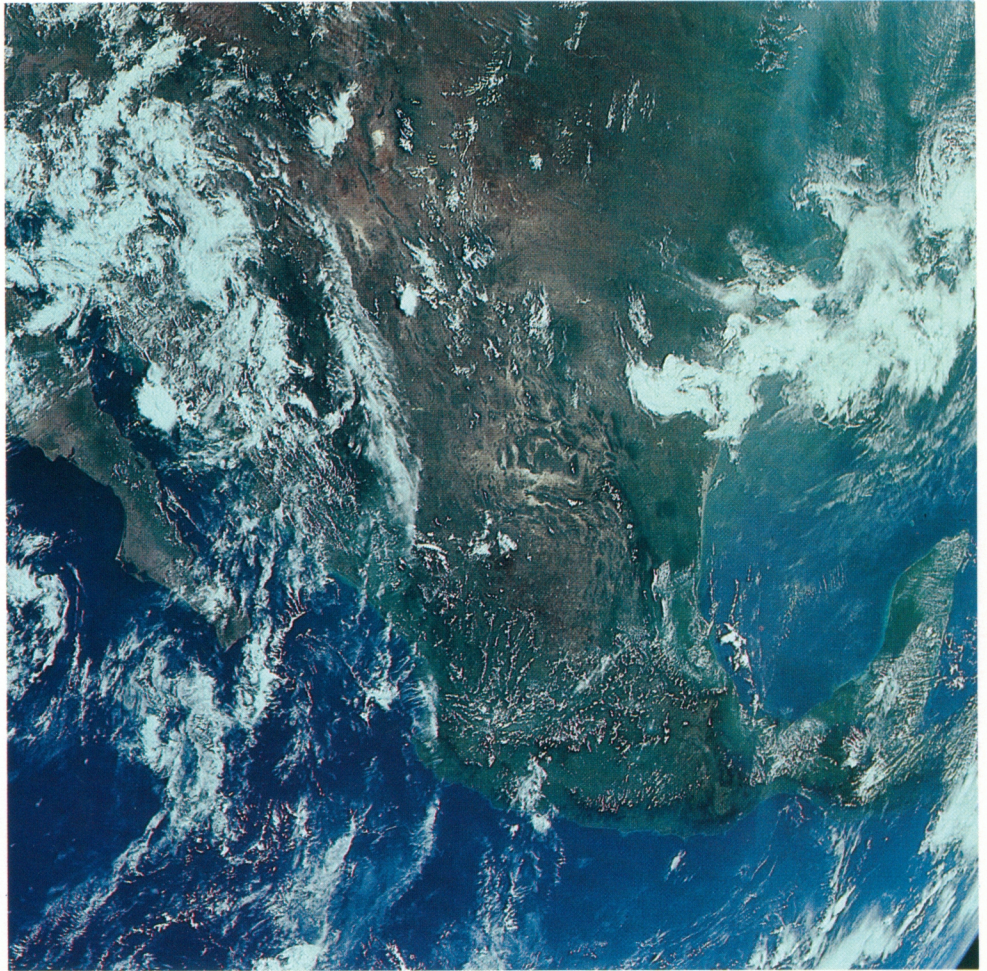


After one orbit of the moon during which the Eagle was jettisoned and abandoned forever, the service propulsion system was fired.

The spacecraft then accelerated to a speed of 5 300 miles/hr, freeing itself from the gravitational field of the moon. Destination: splashdown in the Pacific back on earth.

During the flight home, the astronauts were at last able to get some rest after their nerve-racking adventure. Mission control at Houston let them sleep for ten hours. Columbia's return flight was under computer control.

The glittering planet earth, growing larger and larger by the hour. During the final phase of the Apollo 11 mission the astronauts passed across the California peninsula and Central America. Houston began transmitting weather reports on conditions at the landing site in the Pacific where the aircraft carrier Hornet waited on station. The three astronauts speculated about the splashdown. Collins was an optimist, he bet Armstrong a beer that the command module would land on an even keel.



Pictures from the moon and space

Dr. Victor Hasselblad personally brought the first transparency duplicates back to Sweden. In the midst of the Swedish summer, we sat in his home and cut the long 70 mm rolls into 4-frame strips. Working with great care. The transparencies were indeed duplicates but seemed like originals to us, the first pictures from the moon—taken with a Hasselblad. Dr. Hasselblad seldom openly displayed enthusiasm about anything. But he did this day in late July 1969.

“How will I ever be able to thank all the people who made this possible?” he exclaimed. “And just wait and see. This is just the beginning!” His prediction came true. Apollo 11 was succeeded by six more missions to the moon up to December 1972. Five of them were round trips. One made an unsuccessful landing but still managed to get back to earth with pictures taken nervelessly throughout the drama.

The Apollo Project was followed by Operation Skylab. The space laboratory, as big as a four-room house, was launched in May 1973 and was visited by three different crews. Electric motor-driven Hasselblad cameras were on board. In July 1975, Americans and Russians made their famous space rendezvous with the docking of an Apollo capsule and a Russian Soyuz spacecraft. So Hasselblad equipment has been used on every single manned American space flight since October 1962. One camera was accidentally dropped during a space walk. 12 are still on the moon. Every one of them has worked without a hitch. We are pleased at having been able to provide space photographers with a useful instrument. Let this booklet serve as our tribute.

The landing on the moon on July 29, 1969 was a historic event. The Hasselblad photographs received extensive coverage in the world's newspapers. And they were on the covers of every leading picture magazine and in multipage feature stories. The flight to the moon was equated with the discovery of America or, as President Nixon remarked to the three astronauts on board the aircraft carrier Hornet, "This is the greatest week in the history of the world since Creation. . ."





The three astronauts on Apollo 11, Neil A. Armstrong, Michael Collins and Edwin E. Aldrin Jr.

Armstrong touched down on the moon at 10.56 p.m. on July 20, 1969, followed by Aldrin. Their activities were viewed live around the world by the largest television audience in history. The returning spacecraft splashed down at 12.51 p.m. on July 24th after a mission lasting 8 days, 3 hours and 19 minutes. Scientific instruments were left behind on the moon and samples of the moon's soil and rocks were brought back, along with Hasselblad-exposed film and movie film.

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