

## How the 1969 Apollo 11 Mission to the Moon Was No Hoax — the Skeptics Are Wrong



Figure 1. Apollo 11 mission logo (Kremer, 2012).

Abstract: The Apollo 11 moon landing was the biggest step forward for America in the 1960s. With the Cold War, and rivalry with the Soviet Union especially in the “space race,” America was motivated to become victorious against **it's** opposing forces. Kennedy set the ambitious goal to send a man to the Moon and return home within the decade, and it was fulfilled with the Apollo 11 mission.

However, with this unfathomable event came skeptics, non-believers, and conspiracy theorists. Many people find that it would be more plausible that the U.S. government would have simply staged this event in order to appear victorious. There are infinite claims against the validity of the event, as well as many different conspiracy theories developed, but the only real scientific evidence that can be proven are with the actual events that occurred.

On May 25, 1961, just four months after being sworn in as president, President John F. Kennedy gave a historic speech before Congress, announcing the ambitious goal of sending an American to the moon before the end of the decade in the Apollo 11

mission (Wall, 2011). Quoting Kennedy himself in this speech, “I believe 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.” Kennedy felt great pressure at this time for the United States to overtake the Soviet Union, especially from suffering Cold War defeats. With the Bay of Pigs fiasco on Kennedy’s shoulders, as well as falling behind in space exploration, such as with the USSR cosmonaut Yuri Gagarin being the first human to reach space, as well as motivations from the origins of the “space race” starting with the launch of Sputnik I, the world’s first artificial satellite in 1957. Kennedy was determined to push our country to victory over the Soviets. His decision ignited the NASA program with a very challenging technological feat for humans to step foot on the moon (Garber, 2013).

On July 16, 1969, a world-wide television audience, nearly one million eyewitnesses, with at least half of the members of the United States Congress including President Lyndon Johnson, and nearly 3,000 news reporters from 56 different countries gathered at Cape Kennedy Florida at 9:30 a.m. to witness the Apollo 11 mission launch,



Figure 2. President Lyndon B. Johnson watches the launch of Apollo 11 along with other spectators (Cecil, 2015).

led by Commander Neil Armstrong, Command Module Pilot Michael Collins, and Module Pilot Edwin “Buzz” Aldrin. After approximately 240,000

miles travelled in 76 hours, Apollo 11 entered a lunar orbit. The following day, July 20, astronaut Michael Collins remained with the command module after separating from the lunar module, Eagle, where Armstrong and Aldrin remained to descend on to the lunar surface near the southwestern edge of the Sea of Tranquility. Nearly 530 million people watched as Armstrong was broadcast on television and communicated the messages that “the Eagle has landed,” followed with the first step on the moon by a human,



Figure 3. Neil Armstrong after taking the first steps on the moon, standing next to the American flag that was placed in the Moon (Hofstadter, 2011).

famously saying “that’s one small step for man, one giant leap for mankind” (Loff, 2015). In 2015 a NASA administrator noted that “They leave behind an American flag, a patch honoring the fallen Apollo 1 crew, and a plaque on one of Eagle’s legs. It reads,

‘Here men from the planet Earth first set foot upon the moon. July 1969 A.D. We came in peace for all mankind.’” On July 22, Apollo 11 began its journey back home and arrived in the Pacific Ocean on July 24 at 12:51 p.m. (History.com Staff, 2010). This challenge to put a man on the moon and return him safely before the end of the 1960s was an unfathomable endeavor at the time, but Kennedy’s goal was fulfilled. However, the feeling that this goal was unfathomable at the time still resonates today, nearly a

half century after the event, with a widespread belief, that is not uncommon to believe, that the 1969 Apollo 11 Moon landings were a hoax performed by the United States government, but with simple research it can be proven that the Apollo 11 Moon Landings truly did occur.

As many as 10-25% of the United States population believes that NASA faked the evidence that man landed on the Moon in 1969. The widespread belief that this moon landing was a hoax performed by the United States government has grown immensely in the 21st century, with numerous media sources such as magazines, journals, websites, and television programs now presenting that this event is generally understood as a hoax. These statistics grew especially after Fox TV produced a “docudrama” called *Conspiracy Theory: Did We Land on the Moon?* This show was presented as “breaking news,” in which researchers had developed new evidence that proved the lunar landings were faked, including interviews with different experts in their personal field who could not fathom how NASA completed this mission of sending men to the Moon and returned them to Earth (Bowdley, 2003). The program presented a collection of pieces of “evidence” that support their argument that the moon landings were a hoax. They point out occurrences in pictures taken that show “incorrect shadows” on the Moon, how no stars are seen in the sky, and many more instances of finding details that supposedly prove that the moon landings have been faked (Cain, 2014). However, the amount of scientific evidence provided for any claims simply is not there. This docudrama was not the first occurrence of the conspiracy being presented over the media. In 1978, Peter Hyams directed *Capricorn One*, which tells the story of



how NASA faked a manned landing on Mars, obviously nodding to people's suspicion about the Apollo moon landings. With the media blowing up over what is believed to be

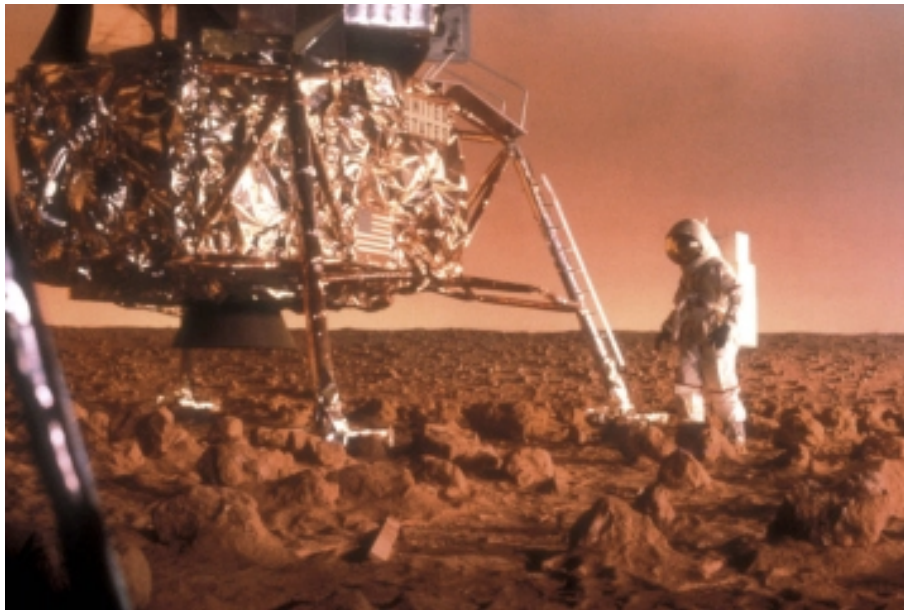


Figure 4. Movie still from Capricorn One, showing a scene very similar to the Apollo 11 moon landing (Susman, 2013).

the biggest cover-up of all time, it is hard to change people's minds, whether or not there is concrete scientific evidence available showing that the Apollo 11 missions were not

faked.

It is generally believed by these non-believers that the moon landings were created in a film studio to fake the evidence for the Moon landing. Some evidence collected against the reality of the Apollo 11 missions is through photos, revealing the “flubs” that were made in the studio that do not follow what would be possible on this mission to the Moon. Dozens of photos are collected showing that the shadows of astronauts, flags, or rocks, are impossible without secondary lighting, which was not brought to the moon. The source supports their claim by saying that the “only light is the sun coming from one direction which casts all shadows in one direction, not two.” They mock NASA in a sense, saying that for billions of dollars, NASA should have provided better fake photos than what they did. More “evidence” that is discussed in this source

is that in the video it can be seen that Aldrin changes from white gloves, to dark gray gloves multiple times, as well as that the Apollo 11 Eagle looks “uncannily like

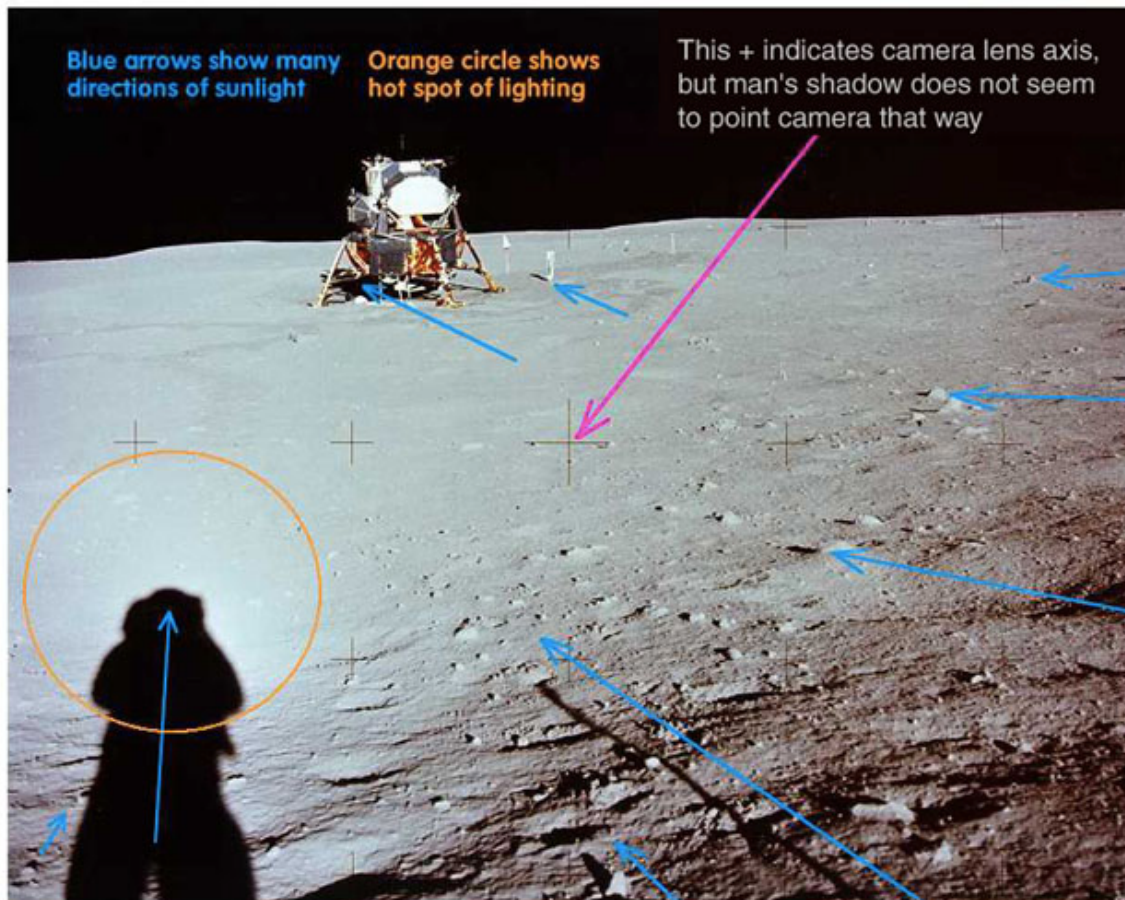


Figure 5. Photo evidence of how the Moon landings were supposedly staged with shadows that are only possible with stage lighting (ericdubay, 2009).

cardboard, construction paper, scotch tape, and wires.” Another piece of evidence given by these skeptics is that NASA made all networks record their feed for TV broadcast, resulting in only seeing a grainy “recording of a recording” on TV, and that they “lost” the original video, so it cannot be verified, which is suspicious to the non-believers. Another

claim is that “there are no stars in any of the moon pictures/video, just complete darkness; they couldn’t make a perfect model in a studio, even a planetarium layout can only be seen in absolute darkness, spotlighting from the “sun” would block out the “star” lighting; so they cover this by saying the sun is SO bright on the moon that the astronauts couldn’t remember seeing stars either.” Claims that it is possible to see the effects of studio lighting, reflections of the cast, fake props, etc. are also made. They ponder the validity of Apollo 11 mission with questions such as, “Why didn’t NASA make

### Camera pointed at studio lights causes lens flare.

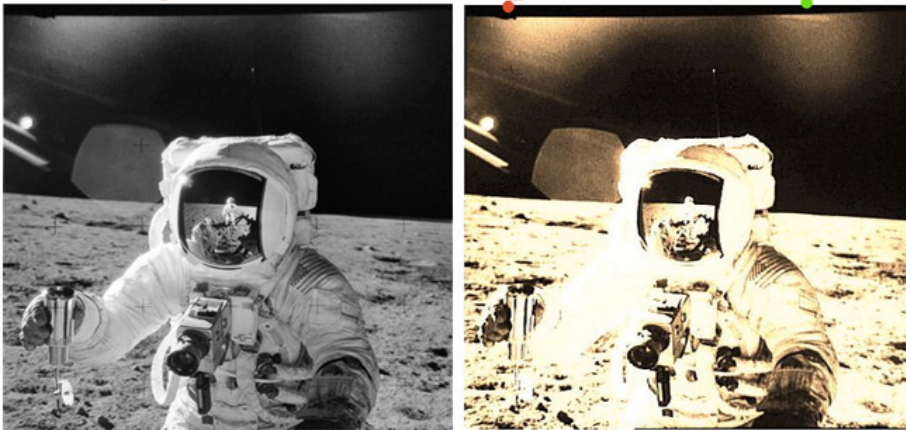


Figure 6. Supposed “studio” lighting caused the lens flare in this photo evidence (ericdubay, 2009).

some sort of  
light/flare display  
from the moon  
that people could  
see without their  
TVs to prove  
they were  
there?” and “Why  
no color video on

Apollo 11 when we know the astronauts had a color camera with them?” (ericdubay, 2009). There are infinite amounts of “evidence” gathered against the validity of the moon landings. People are able to come up with the wildest scenarios of what *actually* happened, and there is no way to prove them wrong. So, instead of looking at what could have happened, it is necessary to follow the actual tangible evidence that is readily available that proves the moon landings actually did happen. Even the most well

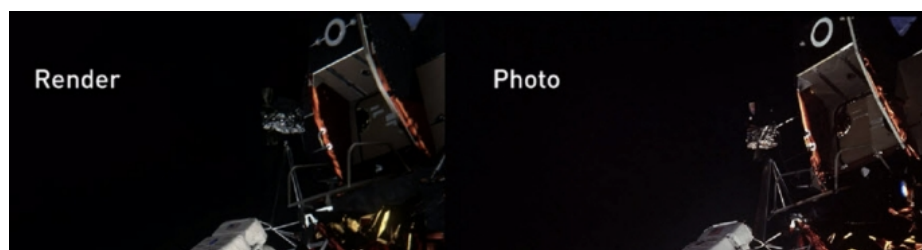
known pieces of evidence against the moon landings, such as the American flag seen as flapping in the wind, can be proven completely valid. The evidence that is gathered against the Apollo 11 mission has no actual scientific reinforcement to support their claims, and can be categorized as pseudoscience, where claims are falsely regarded as being based on the scientific method, as well as easily being easily debunked with research about the actual events that occurred.

One wild theory that Jay Weidner, a conspiracy theorist, developed in 2009 follows that Stanley Kubrick faked the Apollo moon landings. Weidner takes a “third position” perspective on the issue, rather than falling into one of the two belief groups that either “accept the fact that NASA successfully landed on the moon...” or that “we never went to the moon and the entire thing was faked.” His “third position” on the issue falls between the two assertions, where he believes that humans did go to the moon, but what we saw on TV and in photographs are faked. He concluded with extensive development on his theory, that filmmaker Stanley Kubrick is the director of the hoaxed landings. His “research” has produced the following theory: The motivations for faking the moon landing are due to Nazi scientists developing advanced flying saucer technology as early as 1943, and the US government brought these Nazi scientists to the country to build the flying machines for us, as they could solve many “pressing problems of the world.” Kennedy made his famous speech about NASA landing a man on the moon, but it was actually a ploy to get NASA and the “secret government” to release these technologies. With Kennedy’s assassination, NASA and the “secret government” had an opportunity to keep the technology secret, but make it look as if



man had made it to the moon and back. After Weidner developed this backstory, he went on to acknowledge the key director behind the conspiracy, who is Stanley Kubrick. He concluded that Kubrick was “compromised” to be the director of the Apollo landings, and that he was rewarded for faking the moon landings with an unlimited budget to make his famous science fiction film: *2001: A Space Odyssey*, and the ability to make any film he wanted for the rest of his life. Weidner goes on to explain his theory and shows Hollywood’s trickery used to fulfill this hoax. This theory is well developed, but it shows no real evidence for it to be considered a valid argument. The conspiracy that he put together is merely just a step up from a science-fiction novel, where he presents the details of his theory as “research” rather than a story. With simple research on the actual events that occurred, there would be no dispute that the U.S. Government was hiding the real story.

With the wild theories that are developed by skeptics, it is necessary to differentiate between the pseudoscience and actual events that occurred. Conspiracy theorist pull proof of a hoax out of anything, including the actual photo evidence of the Apollo 11 moon landings. One of the biggest arguments is that since the sun was hidden behind the other side of the spacecraft, it appears that the scene is too bright and the shadows don't follow with the direction of the sun. The only answer to the skeptics is that this must be a result of the artificial studio spotlights. One study done to debunk this was by a computer graphics chipmaker, Nvidia. Their goal was wanting “to take on the challenge of showing the single light source of the sun was actually able to light Buzz Aldrin even though he’s in the shadows,” says Mark Daly, the senior director



of content development at Nvidia. Using a simulator of real-time properties of light, they created a three-dimensional lighting model of the Apollo 11 landing site. Reflective properties were extensively researched from the moon dust to the fabric of the spacesuits to create the digital simulation. In their simulation they concluded that the reason that there appears to be artificial spotlight in their scene was from Armstrong's white spacesuit being so reflective of the sunlight that he was the light source on the scene (Klein, 2014).



Figure 8. Lens flare and the absence of stars are seen as studio flubs (Rundle, 2015).

Another famous claim from conspiracy theorists is the absence of stars in the sky in the Apollo photographs. They argue that the studio left them out because they could not fabricate the “position of the stars from various angles so they simply ignored them” (Klein, 2014). This is simply explained by the fact that the moon reflects so much of the sun's light and

cameras could not pick them up as they were washed out. In addition to the claims

that  
is



about flubs on set, people also argue the American flag was seen as flapping in an upright position, which seemingly impossible on the moon

which has no wind. However this is completely possible as the fabric of the flag was moved as the pictures were taken, and there is a pole along the top of the flag to keep it in an upright position, otherwise it would hang straight down (Holt, 2009).

Some more concrete evidence that proves that we did actually complete the Apollo 11 mission is that we can see the Apollo 11 landing site. Claims are often made that “if the Lunar landings were real, we could see them from the Earth. However, this is a false claim as they are simply too far away. But, the landing sites are captured on the Lunar Reconnaissance Orbiter. One

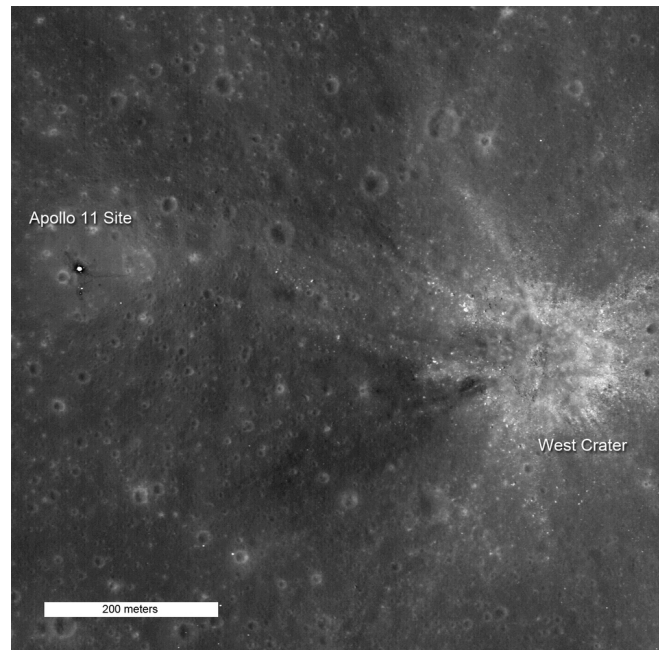


Figure 10. Location of the Apollo 11 landing site as seen from the Lunar Reconnaissance Orbiter (Rundle, 2015).

frequent question that comes up is that the Apollo 11 mission included pictures that were impossible to take where both astronauts were captured in one photo. However, there were cameras in the chests of the spacesuits as well as on the Lander (Rundle, 2014).

One of the most important pieces of evidence that we did actually go to the moon on the Apollo 11 mission are the Lunar rocks brought back from the mission. How do we really know the rocks are from the Moon? Well, Dr. David McKay, Chief Scientist for Planetary Science Exploration at NASA’s Johnson Space Center says “Moon rocks are absolutely unique, they differ from Earth rocks in many respects.” Lunar samples have

no water in their crystal structure, and substances that are common on Earth, such as clay minerals are absent in Moon rocks. Dr. Marc Norman, who is a lunar geologist at the University of Tasmania also adds the fact that "We've found particles of fresh glass in Moon rocks that were produced by explosive volcanic activity and by meteorite impacts over 3 billion years ago, the presence of water on Earth rapidly breaks down



Figure 11. Moon Rock from Apollo 11 moon landing (State Archives of Florida, Moon rock from Apollo 11 Moon Landing).

such volcanic glass in only a few million years. These rocks must have come from the Moon!" More evidence supporting the moon rocks is that they are filled with craters from meteoroid impacts, and this could only happen with rocks with no

atmosphere (Phillips, The Great Moon Hoax). Not only is there direct evidence straight from the Moon, but also that other countries have also contributed to proving the reality of the Apollo 11 mission. The Apollo landings have been spotted by other country's expeditions in space exploration. China's Chang'e 2 lunar probe as well as the Indian Chandrayaan-1 probe have both spotted the site of the Apollo 11 landing (Holt, 2009).

With all of the evidence supporting it there should be no question if the Apollo Moon landings are real or not. Not only did they bring America a victory in the space race against the Soviet Union, but also an additional five missions were successfully landed on the Moon, with twelve people walking there. Nearly \$24 billion was spent at the time on space exploration, it employed nearly 400,000 people, and was backed by about 20,000 companies and research institutions. However some people are not convinced that this evidence proves anything, but for 400,000 people to have kept quiet about one of the greatest cover ups in history is hard to believe (Cain, 2014).

So, why are people so skeptical of such a historic event that opened a door to a new era of space exploration? A great amount of success was achieved on the incredible day in July, 1969, with many more journeys into space that extended the world's research to space exploration. It is easy to question such an unfathomable event in history, and it would make more sense that the U.S. Government would just simply stage this event as an easy way to win the "space race" against the Soviet Union. Some people also experience a fear of the unknown, therefore find it difficult to accept something so incomprehensible as outer space and space exploration, so the only rational conclusion, in that people actually have reached these levels of exploration, would be that these events were staged. Nearly every moment in our modern history inevitably generates a web of conspiracy theories, and the Apollo moon landings are one of the most resonated conspiracy theories that skeptics have continued to question. Despite the overwhelming amount of evidence to the contrary proving there is no conspiracy, it is general conclusion that the Apollo 11 mission was a



staged event by the U.S. government in order to emerge victorious in an easy way out against the Soviet Union in the 1960s (Klein 2014). However, with research on the actual events that occurred, it is easily proven to be an even that not only was one of the greatest feats of America's history, but also proved to be a giant leap for mankind, that pushed the bounds of our own Earth and expanded reality to outer space.

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