On a steamy July day in 1969, those gathered in the control room of what is now the Johnson Space Center in Houston, Texas, held their collective breath. Hearts were pounding. Brows, perspiring. More than 380,000 kilometres away, close to the surface of the Moon, the object of their concern and anticipation — a strange-looking spacecraft named Eagle — was possibly in difficulty. Alarms were sounding from its in-flight computer as the crew attempted to land it amongst the strewn boulders of the Moon’s Mare Tranquillitatis. Fewer than 30 seconds’ worth of fuel remained.
The tension among NASA’s ground staff in the control room was absolute and unbearable, but eight words from mission commander Neil Armstrong punctured that anxiety. “Houston, Tranquility Base here. The Eagle has landed.”

The immediate response from one of the controllers back at base said it all. “You got a bunch of guys about to turn blue. We’re breathing again. Thanks a lot.”

As heroic as it sounds, “The Eagle has landed” wouldn’t be the most-quoted statement Armstrong would make that day. This he reserved for the moment at which he planted the first human foot on the loose lunar surface. “It’s one small step for man,” he was heard saying down an understandably crackly line, “one giant leap for mankind.” The 650 million TV viewers who were tuned in at home could forgive him for slightly fluffing his lines; he should have said “one small step for a man”. Armstrong later maintained he had said it.

Armstrong and his colleague Buzz Aldrin then spent a couple of hours exploring the lunar surface, which the latter described as “magnificent desolation”. Before embarking on the return leg of their journey, the pair planted a US flag into the rocky ground, as well as affixing a plaque to one of the legs of the soon-to-be-abandoned Eagle: “Here men from the planet Earth first set foot upon the Moon. July 1969 AD. We came in peace for all mankind.”

THE RACE TO SPACE

“All mankind” might be debatable. There was a definite political edge to the US’s determination to put a man on the Moon, with the accelerating Space Race being a key (and conspicuous) tenet of the Cold War. Just a month after the Soviets successfully propelled Yuri Gagarin into space to take the advantage, US President John F Kennedy delivered his ‘moonshot’ speech to Congress, outlining his vision of landing men on the Moon and returning them to Earth “before this decade is out”. For him, the US needed to be the leading party in conquering this final frontier, these uncharted waters. “Only if the United States occupies a position of preeminence,” he observed during another speech, this one in September 1962 at Rice University in Houston, “can we help decide whether this new ocean will be a sea of peace or a new, terrifying theater of war.”

Kennedy was also driven by the idea of creating history, of titanic accomplishment. “We choose to go the Moon in this decade and do the other things, not because they are easy, but because they are hard; because that goal will serve to organise and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one we intend to win.”

The subsequent Apollo programme, which ran until 1972, consisted of both manned and preparatory unmanned missions. It wasn’t an unqualified success. In January 1967, the Apollo 1 mission ended in tragedy when a fire in the command module during a launch rehearsal killed the three-strong crew. Three years after the tragedy, and nine months after the successful Apollo 11 mission, the explosion of an oxygen tank on its outward journey denied the crew of Apollo 13 the opportunity to land on the Moon. Their safe passage back to Earth was a dramatic, touch-and-go affair.

For those first men on the Moon, their short walk was a profound one. Buzz Aldrin later recalled the experience of gazing back at his home planet. “From the distance of the Moon, Earth was four times the size of a full Moon seen from Earth. It was a brilliant jewel in the black velvet sky. Yet it was still at a great distance, considering the challenges of the voyage home.” The third member of the Apollo 11 mission, Michael Collins, never got to feel moondust under his feet. His experience was seen through the window of the command module Columbia, orbiting solo around the Moon while Armstrong and Aldrin got to stretch their legs. He would report that he was neither lonely nor disappointed by this, detailing his emotions as being “awareness, anticipation, satisfaction, confidence, almost exultation”.

A STEP TOO FAR?

But was this extraordinary achievement by these three men actually an achievement? Did the 1969 Moon landing really happen? Conspiracy theorists, seeking a new cause célèbre six years after John F Kennedy’s assassination, poured scorn on the idea that science was able to accomplish a feat as far-fetched as landing a spacecraft on this distant natural satellite.
These doubters believed NASA falsified the landings, filming fake footage to trick people into believing that the Space Race had been won. While up to a fifth of US citizens continue to subscribe to this notion half a century later, substantial third-party evidence has been produced to debunk the theory, including subsequent photographs showing the tracks made by various Apollo crews, as well as the flags that each mission left behind.

The Apollo missions were far more than flag-planting, strength-showing exercises. After Armstrong and Aldrin set foot on the lunar surface, ten more astronauts did likewise over the following three-and-a-half years as five further missions successfully reached their destination. They returned to Earth with the data gathered from extensive experiments – both geological and meteorological – along with an accumulated 382 kilograms of rock samples. But did their findings justify the stratospheric expense, the $25.4 billion outlay that was reported to Congress in 1973?

When Kennedy had announced the Apollo programme, his predecessor in the White House, Dwight Eisenhower, had dismissed it as “just nuts”. But the country wasn’t with old Ike. They were dreaming. As Andrew Smith, author of Moondust: In Search Of The Men Who Fell To Earth, points out: “For one decade, and one decade only, Americans appeared happy, even eager, to place their trust and tax dollar on the collection plate of big government and its scientist priests”. And they got what Kennedy had promised them. Footprints on the Moon. And one giant leap.

“Apollo was far more than a flagplanting exercise”