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To boldly go

As we celebrate four decades since the Apollo 11 moon landing, Drew Warne-Smith explores the attraction that has never waned | July 18, 2009

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MORE than 500 million people tuned in when Neil Armstrong clambered down the ladder from Apollo 11's lunar module, hesitating for a moment to paw at the powdery surface with his boot, before stepping into history.

He might have fluffed his lines -- "That's one small step for man," Armstrong uttered, instead of "a man" as planned -- but no one was accusing the astronaut of hyperbole.

A human being left one world and set foot on another. And one-fifth of the Earth's population -- then the largest television audience recorded -- was able to witness it, to share in the wonder, in lounge rooms and classrooms, cafes and hotels, on street corners and through shop windows.

This was a giant leap in technology, and in dreaming as well. Against the backdrop of the Vietnam War, conscription and the assassinations of Martin Luther King, US president John F. Kennedy and his brother Bobby, it was also a universal moment of hope for a generation starting to question humanity's course.

But if people across the globe were transfixed by these grainy, black-and-white images, played at just 10 frames a second, another world away, in the undulating hills south of Canberra, a group of Australian technicians was rather less awe-struck by the unfolding of history.

"I was mostly thinking about the office sweep," laughs John Saxon, who was then the operations supervisor at NASA's Honeysuckle Creek Tracking Station, which captured and relayed the TV signal used for broadcasting Armstrong's momentous first step.

"Armstrong had bugged me up by deciding to walk earlier than scheduled and I remember watching the monitor on the console just to check the exact time for the sweep."

For Saxon and the team there was no time to take in the big picture and what it all meant. "To be honest, I can't remember anyone even cheering when he stepped on to the lunar surface," Saxon says. "We were more concerned with monitoring the astronauts' biomedical data, the telemetry, voice communications. I guess we were just a bunch of engineers flat out doing our job." It's that job -- the critical role played by Australia in the Apollo 11 mission -- that is the focus of a new BBC Knowledge documentary, *One Small Step: The Australian Story*, which airs on Monday as part of a week-long series on space exploration that celebrates the 40th anniversary of the moon landing.

In Australia, NASA's Apollo program was supported by two tracking stations in the ACT, at Honeysuckle Creek and Tidbinbilla. These stations were able to collect the critical data from the spacecraft -- from its flight speed and positioning to the heart rates of those on board -- and feed it to NASA headquarters in Houston. The radio telescope at Parkes in NSW was also drafted to help on the Apollo 11 program.

But if the TV signal was originally regarded as a lesser priority by the Australian engineers (and even the astronauts initially argued against having TV cameras on board because of the excessive cost of taking every extra kilogram into space), 40 years on the issue of precisely which station delivered the historic moment to the world remains a sore point.

In 2000, in the hit Australian film *The Dish*, it was the huge telescope at Parkes that defied gale-force winds and a power failure to bring the images of Armstrong's moonwalk to the world. The reality, however, was somewhat different, if ultimately no less dramatic.

NASA's original plan had been for Tidbinbilla -- which still operates as the Canberra Deep Space Communications Complex -- to convey the TV signal from Australia, alongside one from the Goldstone Station in California, with Houston choosing which stream to pass on to the networks. But just days before the landing, the transmitter's power supply blew up, says Tidbinbilla's station director Don Gray. "The technician, Alan Blake, was ex-navy and had been on the *Voyager* when it sank, and he suffered from claustrophobia," Gray recalls. "But he worked inside that little building and completely rebuilt it in about 12 hours."

Despite it being back on the air in time, NASA deemed Tidbinbilla too risky and ordered Honeysuckle Creek to add the TV signal to its brief. With Goldstone experiencing technical problems, and a former ABC boffin successfully tweaking the Australian images, it was Honeysuckle Creek that carried the day.

Parkes was on board, too. Boasting the largest and most powerful telescope in the southern hemisphere, it ultimately produced the best pictures. But because of the size of the dish, the moon needed to be higher in the sky before it came into full view. So when Armstrong decided he'd waited inside the lunar module long enough, he also ensured that the crystalline images from Parkes would not be broadcast until eight minutes after he switched on the TV camera and six minutes after his one small step.

All of which, perhaps unsurprisingly, proved a bit muddy for the filmmakers behind *The Dish*, the acclaimed Working Dog team of Rob Sitch, Jane Kennedy, Santo Cilauro and Tom Gleisner. Only Saxon, who had agreed to be a technical adviser to the film, was more than a little miffed when he discovered the plan to write Honeysuckle Creek and Tidbinbilla out of history for the sake of narrative clarity. "It's a good little movie but it's a fine illustration of how one fun movie can change people's perception of what really happened," he says.

One Small Step's director Glenn Krawczyk concedes that in part his motivation was to "set the record straight", to correct the misconceptions planted by *The Dish*. But in essence, and in spirit, the projects are not so far removed. They are about reacquainting Australians with a wondrous time when humanity seemed on the verge of a new frontier, when space exploration was not bedevilled by conspiracy theories, ennui and concerns over rising costs.

"It's such a positive story," Krawczyk says. "Whenever people talk about getting man on to the moon, they say we got man on to the moon. It was an achievement of all humanity. It was about teamwork and ingenuity. And it inspired people's imagination. People dreamed of a better future as a result."

We have become so familiar with the notion of landing on the moon that this remarkable episode can feel almost hackneyed, as dated as those comical Michelin men suits and the Cold War that fuelled the space race. But back in 1969 its impact on our psyche and our culture could hardly be overestimated.

From time immemorial the Earth's only natural satellite had held a seductive power as it hovered in the heavens

above. A goddess in classical Greek and Roman mythology, Luna -- as it was known in Latin -- not only dictated our tides but seemingly our moods, too. In legend the moon was responsible for bouts of mental illness, hence the terms lunacy and lunatic.

It was Greek satirist Lucian, in the second century AD, who wrote what amounts to the first work of science fiction, *True History*, a fantastical tale of a group of adventurers swept up to the moon by a giant waterspout. A cavalcade of writers would follow, from Cyrano de Bergerac to Edgar Allan Poe, Jules Verne, H.G. Wells and Arthur C. Clarke.

French film pioneer Georges Melies is credited with making the first science fiction movie, the 14-minute feature *Le Voyage dans la lune* (*A Trip to the Moon*), in 1902. Based on stories by Verne and Wells, it presciently features a lunar landing and astronauts watching the Earth rise above the moon. Always it seemed there were no more distant place: this pale orb hung at the outer limit of our imagination.

As a motif in the arts it came to signify the unattainable and unpredictable, a place that held romance but also mystery; and it was inherently female. As Shakespeare had Juliet declare to Romeo: "O swear not by the moon, the fickle moon, the inconstant moon, that monthly changes in her circle orb, lest that thy love prove likewise variable." There's a lyricism even in its topographical nomenclature. After Galileo first trained his telescope on the moon in 1609 and revealed its ghostly patterns, lunar maps would identify these shadows as seas: the Ocean of Storms, the Lake of Dreams and, Apollo 11's landing site, the Sea of Tranquillity. Little wonder then that by the time the 1960s rolled around, with the Soviets and the US reaching for the stars with almost indecent haste, the zeitgeist was humming with references to this far-flung sphere.

As Andrew Smith notes in his 2006 book *Moondust*, when the emerging pop art school held its first big show in New York in 1962, Andy Warhol declared: "I feel very much a part of my times, of my culture, as much as a part of it as rocket ships and television." Two years later, when he opened his studio, the Factory, Warhol decked it out in silver, explaining that "silver was the future, it was spacey, the astronauts".

This was a rich vein for artists no matter how they cut their cloth. The psychedelic newcomer David Bowie had his first real smash with *Space Oddity* while the satin-smooth Frank Sinatra would successfully rehash *Fly Me to the Moon* with Quincy Jones (a track astronauts played on board the Apollo 10 spacecraft) and release an album dedicated to the theme, *Moonlight Sinatra*.

Then there was Stanley Kubrick's enigmatic masterpiece, 2001: *A Space Odyssey*, which he co-wrote with Clarke. Released in April 1968, barely eight months before the Apollo 8 mission that orbited the moon for the first time, it was a Homeric story of evolution that seemed to confirm we had reached the next great and ominous juncture in our history.

But on July 20, 1969 (July 21 in Australia), all these myths and visions that had filled the void of our experience would be rendered redundant. The future had arrived. Here was Armstrong standing at the foot of a ladder, 385,000km from home, calmly describing to mission control the fine-grained powder beneath his feet. He was actually there. We had done it.

Such was the mania back on Earth that when Edwin "Buzz" Aldrin later saw the coverage of the event, he turned to Armstrong and quipped: "Neil, we missed the whole thing."

On closer inspection, it's a feat that grows more extraordinary, not less. As Gray notes, there is more computing power in a desktop PC than there was in the Tidbinbilla and Honeysuckle Creek tracking stations combined back in 1969. Disaster was only a hair's breadth away. Having missed the designated landing zone, Armstrong landed the lunar module Eagle with less than 30 seconds of fuel left. So primitive was the instrumentation, when Aldrin accidentally broke the switch that ignited the Eagle's ascent engine, seemingly stranding the pair on the moon and condemning them to death, he jammed a pen into the switch instead. It worked.

And consider this: it took the US eight years to realise JFK's ambition to put man on the moon. But in 2004 -- a vantage point from where 1961 seems like the Stone Age -- George W. Bush estimated we couldn't return to the moon until 2020. That's twice as long.

But there is a deep irony here, too. For mankind's finest achievement arguably also marked the beginning of the end of our love affair with space exploration. When Armstrong, Aldrin and Mike Collins returned, it was as if the dreaming of centuries started to melt away. The allure, the mystery, burned up on re-entry.

In part it was a result of what they found up there. Not much, or so it seemed. It was a barren, airless, lifeless shell. When Aldrin joined Armstrong on the surface, he famously described it as "magnificent desolation".

And the American taxpayer -- who had to foot the bill for a program that cost \$US25 billion in 1969 -- began to have serious doubts about the value for money.

"You just imagine the Americans saying, 'It doesn't look like Palm Springs, honey,'" Krawczyk says with a laugh. "It was a dry, dusty inhospitable place. Why bother? And essentially America had achieved what it wanted to achieve and that was show it could be done."

As Creedence Clearwater Revival warned in September 1969, a bad moon was rising.

The Apollo program would last only another three years before it was cancelled three missions early. But for the incredible drama played out on Apollo 13 (when an oxygen tank exploded, leading to the lunar module acting as a lifeboat to tow the crippled command module back to Earth), it might have been cut short sooner. And when the new shuttle program was launched in 1977, beyond the flash and roar of lift-off it seemed pedestrian by comparison, restricted to the Earth's orbit.

The Simpsons, as ever, found the nerve. In *Deep Space Homer*, Homer can't bear the tedium of watching a shuttle launch on TV -- a mission devoted to the study of weightlessness on tiny screws -- so he changes the channel. The episode also featured Aldrin, sending up his own notoriety as the second man on the moon. ("Second comes right after first," he says.)

And you don't need a Parkes-sized telescope to find the cynicism. One thing the moon landing led to was the most enduring conspiracy theory to be concocted.

Even Hollywood latched on. In the 1978 movie *Capricorn One*, NASA's first manned mission to Mars was faked on a sound stage.

Twenty years later a Gallup poll in the US found 6 per cent of the population still thought the moon landing had been filmed on a dusty backlot in California. As recently as 2001 the Fox News channel showed a program that aired the doubts, refuted before and since, all over again.

But even disregarding the hoax claims, the question remains. What exactly had we achieved apart from convincing ourselves of our own omnipotence? And could anything be more dangerous? It was Bob Dylan who sang, in *Licence to Kill*, "Oh, man has invented his doom, first step was touching the moon."

Were Velcro, faster computers and the unifying power of TV the most we could claim?

But perhaps, as Smith contends in *Moondust*, judging the Apollo program's practical worth misses the point. Perhaps the value was in being able to see where we had come from, not where we were headed.

Standing on the moon, the most breathtaking, iridescent sight was of Mother Earth, so fragile and full of life.

It was a vision that moved even the cool, no-nonsense commander Armstrong when he caught sight of this "tiny pea, pretty and blue". Shutting one eye, Armstrong put his thumb up and blotted the Earth from view.

"I didn't feel like a giant," he remarked later. "I felt very, very small."

During the Apollo 8 mission, on Christmas Eve 1968, astronaut William Anders took the heart-stopping photograph of the Earth rising over its colourless satellite. That image, *Earthrise*, is credited with helping to spawn the environmental movement. "We came all this way to explore the moon," Anders said. "And the most important thing is that we discovered the Earth."

Forty years on, it's a lesson not lost on those hardy Australian engineers who brought the footage of the moon landing to the rest of mankind and who this weekend will gather to celebrate their role in this most remarkable chapter. "It's great we can look out into space using the Hubble telescope and learn about the universe," Tidbinbilla's Gray says.

"But, really, I think we should learn more about this funny little ship we're on."

One Small Step: The Australian Story, BBC Knowledge, 7.30pm, Monday.

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