

PATTERN RECOGNITION BY TOBY SHAPSHAK



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A giant leap that's still in midair

The scientific advances of the lunar landing project are still driving human progress

Fifty years ago this week astronauts landed on the moon. It was a pivotal moment in human history that shaped our views about humanity and our place in the universe.

Stepping onto the surface of another planetary body was an epoch-defining point in our evolution.

In the politically heated Cold War years of the 1960s, the moment was charged with more than just scientific significance. Neil Armstrong and Buzz Aldrin landed the lunar module from Apollo 11 on July 20 1969, in the culmination of a decade-long space race between the US and the Soviet Union.

This first landing might have begun with political bravado, but it was a triumph for science. Innumerable breakthroughs in the race to the moon have benefited humanity. These include not just the materials and equipment needed, but the actual computer that was used to land the lunar module, Eagle, on the moon's surface.

Computing in the 1960s involved monstrous, room-sized machines. The integrated circuit used would become the precursor to today's microchips and could be fitted to the ship – amazingly, some of the circuits were literally sewn into strips and woven into the chassis of the Eagle. Software didn't exist before the space programme, nor did the now commonplace job of software engineer.

Other frequently cited technology breakthroughs include cordless tools and the spongy rubber soles that would ultimately be used in takkies.

SA's contribution was most famously Pratley Putty, "the glue that went to the moon".

A lesser-known but equally important breakthrough was the ability to administer precise medication doses to astronauts. This has evolved into the insulin pump now used by people with type 1 diabetes.

But it's the human story that ultimately resonates. This was a grand adventure into the great unknown. With television already ubiquitous, the world (except SA) was able to watch the triumphant moment when Armstrong stepped onto another celestial body.

Earlier Apollo missions had flown around the moon, taking that famous "blue dot" picture of the Earth in space, but it was the landing and returning that truly made humanity a space-faring species.

There has been a flood of media attention in the lead-up to this half-century anniversary, including an excellent BBC podcast called "13 Minutes to the Moon". It chronicles the final 13 minutes of Apollo 11's flight before Eagle touched down in the Sea of Tranquility and is a must-listen.

Like all space geeks I am transfixed not just by the moon landing itself – and the spectacular engineering feat it represented – but the impact on civilisation since. Armstrong and Aldrin spent only 21½ hours on the lunar surface, but it took tens of thousands of smart people nearly a decade to get them there. The impact of that small step is still being felt. ✕

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