

An inspiring new race to the Moon

Four intrepid astronauts are spending this Easter weekend speeding into outer space at thousands of kilometres per hour. Their Artemis II flight around the far side of the Moon takes place in the context of intense geopolitical competition, with the US keen to achieve a new lunar landing before China gets there. But success could help rekindle public enthusiasm for human space exploration — and science and technology more broadly.

This mission is unlikely to arouse quite as much interest as its equivalent in the Apollo programme, which took astronauts around the Moon over the Christmas holiday in 1968 in preparation for Neil Armstrong's "giant leap for mankind" the following July. But over the next few days Nasa's formidable public relations machine will provide a receptive global audience with real-time audio and video coverage from Artemis II of a quality unimaginable in the Apollo era.

The fact that a dozen men walked on the Moon more than 50 years ago should not induce a feeling of "been there, done that", either today or if the Artemis IV mission lands as planned in 2028. We can enjoy a sense of adventure about returning under very different circumstances today. Less than 20 per cent of the world's current population was alive during the last lunar landings.

For the first few landings, the excitement will lie in arriving safely and exploring the lunar surface. Later, according to plans for the 2030s, Moon bases will be built for longer-term human habitation, including visits by wealthy tourists. A rudimentary "lunar economy" is likely to emerge, with construction, mining, communications, hospitality and agriculture sectors.

Although the 1967 Outer Space Treaty forbids any terrestrial nation from claiming or owning territory beyond Earth, new international rules are urgently needed to ensure that activities such as construction and resource extraction can take place without aggressive competition for lunar land.

While geopolitical rivalry is the primary force driving the US and China to commit tens of billions of dollars to Moon missions, as it was during the Soviet-US space race in the 1960s, Nasa is commendably more

open to international collaboration today. European, Japanese and Canadian partners play an essential role in the Artemis programme. The US must live up to the last words of Artemis II mission commander Reid Wiseman before Wednesday's launch: "We go for all of humanity."

Planetary scientists look forward to big research dividends from future lunar expeditions. They will be able to investigate the Moon far more thoroughly than has been possible during the brief Apollo visits and subsequent uncrewed landings. In the absence of an atmosphere, its soil and rocks retain an almost pristine record of the solar system's past, preserving evidence of bombardment by meteorites over billions of years. Additionally, the lunar far side, permanently shielded from Earth's radio noise, is a perfect location for observing the distant universe.

Some scientists and astronomers argue that humanity will soon be able to do everything it wants on the Moon without the risk and cost of sending people there, using robots equipped with advanced AI. Not everyone agrees that machines will achieve the flexibility and adaptability of human thought in the foreseeable future. Yet even if they do, the symbolic and emotional value of keeping real humans involved is immeasurable, not least if we want to inspire young people to pursue careers in science and technology. Colonies of robots would hardly have the same appeal.

We should see the Artemis missions partly as joyrides, in the best sense of the word. You don't have to be an American to say "Go Artemis!"