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Quentin Parker

## Space race, new Cold War or a bit of both

**N**ASA has delayed the launch of the Artemis I new moon program until at least Sept 19 after cancelling a planned launch on Saturday. The decision on Saturday was the second time in a week that the launch was scrapped.

The first time it was cancelled was on Aug 29 because one of the four engines was not "cold enough" for take-off minutes before Artemis I was set to blast off to the moon. The "fault" was detected as part of vital systems verification and testing. With high-end engineering and technologies such as this, "hiccups" are to be expected.

Since close to nothing as is humanly possible should be left to chance, especially when the Orion space capsule on top of the rocket is scheduled to carry human cargo in 2024, it was the correct decision to postpone the launch of Artemis I. These are exciting times in global space endeavors with the moon missions seen now as stepping stones to humans' landing on Mars.

So 50 years after the Apollo program that put "man" on the moon the United States is again trying to carry humans to a celestial body. But this time there is powerful competition from China.

Today, the geopolitical motivations of the 1960s, that spurred the US onto a space program unprecedented in human history, are very different. Back then, it was the height of the Cold War. But today the Soviet Union no longer exists. The Russian bear still has claws, although they may have been a bit blunted by the Ukraine-Russia conflict.

Lately, however, against the backdrop of an increasingly unstable international order, rising global inflation, an energy crisis in Europe and a looming climate catastrophe (as the unbelievable current flooding in Pakistan highlights), there has been increasing talk — at least from the Western "commentariat" — of a new Cold War. This is often mentioned in the same breath as a new space race.

But a new Cold War, not an exaggerated beat-up from the Western press that does not, at least not yet, exhibit the serious risks and dangers posed by the last one, is the last thing humanity and our planet needs now, with the Taiwan question providing the context.

What we need is real and deep cooperation across many fronts to fight the one big, serious issue affecting us all — the increasingly obvious and increasingly unpredictable climate emergency, which is not the elephant but a herd of elephants in the room.

Here space activities play a key role in providing ever more detailed remote sensing of our planet via a swarm of scientific satellites that help to monitor our oceans, ice-caps and land masses with unparalleled clarity — all feeding into our climate models and predictions.

International cooperation and data-sharing here are essential to inform the fight against climate change, but what about competition in space?

So let's consider the "space race" paradigm. Is a race a bad thing in itself? Maybe not.



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A typical race is a competition entered into by several participants with a view to winning something like fame, fortune but also often for fun and to test oneself against the best. It is to strive to be better through associated training, determination and focus, ideally with an adequate support process also in place.

In a national framework the term can have negative connotations, though, like the concept of a "race to the bottom" but for space the term elicits memories of the Cold War space race between the then two superpowers, the Soviet Union and the US. The superpowers were such in terms of military capability and sheer size (like the number of nuclear weapons) and not, for the Soviet Union, in terms of economic clout.

This time the situation is very different. While it is true that China has modernized and expanded its military over the last 20 years, with one of the largest navies in the world, it is on the economic front where China has excelled.

This is being matched too in terms of science and technology where China now produces more scientific outputs than the US, having already taken the top spot on the number of annual patents awarded

over the last few years. It is the massive investment in research and development, education and research infrastructure that is facilitating China's emergence as an economic and military superpower to rival the US. The world has noticed it, and is responding to it, not always appropriately.

This is true now in space in which China has made incredible advances and achieved remarkable successes. For example, last year China broke the world record for the number of successful rockets launched by any country. It is poised to break its own record again this year.

More importantly, the Chinese presence is peaceful and cooperative, as espoused in its recent white paper. It is not a question of taking such a document at face value, it is about the accompanying actions speaking to the truth of it. China's space program is open for business, for partnership but also not afraid of competition. If it is a space race it is a multi-faceted and complex one on many fronts and not just about the moon.

China recently announced it is looking at partnering with Russia for missions and bases on the moon. Given

what is happening, this has not gone down well in some quarters.

I suspect other countries could join in to add and meaningfully contribute to the development of space exploration. Competition is not a bad thing if fair and regulated. It is also important to prevent monopolies from emerging which can stifle progress and lead to price gouging and complacency.

So, an internationally competitive space program with China, Europe and the US on podium positions but with India, Japan, the Republic of Korea and some other countries jostling in the pack can foster accelerated technological breakthroughs and promote exciting new developments. The large-scale moon mission's programs are merely a blue-ribbon event to a large extent that can capture, enthral and inspire millions across the globe.

So, I say "bring it on" and help all of humankind win.

*The author is a professor in the Faculty of Science at the University of Hong Kong and the director of its Laboratory for Space Research. The views don't necessarily reflect those of China Daily.*