

By Invitation

Who gets to call the shots in space?

As big powers and private companies take their terrestrial rivalry to the Moon and the stars, new rules are needed for the final frontier.



C. Raja Mohan

For *The Straits Times*

A series of recent developments have underlined at once the urgency and difficulty of writing new rules for governing outer space. The growing number of players, new commercial possibilities and the temptation of turning ploughshares into swords are making the final frontier an increasingly attractive and a deeply contested domain.

Consider the following: Last month, India used a missile system to shoot down a satellite orbiting Earth at a low altitude. This week, a privately funded Israeli lunar rover crash-landed on the Moon. Although the mission ended in failure, Israeli sponsors claim it is “by far the smallest, cheapest spacecraft ever to get to the Moon”. The venture came out of a space prize competition launched by Google in 2007. If the rover had soft-landed, Israel would have become the fourth member of the lunar-lander club. India, meanwhile, was only the fourth country to test an anti-satellite (Asat) weapon.

The United States, Russia and China are the leading space powers that have done both. In the 20th century, space was the exclusive preserve of rival superpowers America and Soviet Union. Now, a large number of nations – from Japan to the small but ambitious United Arab Emirates – are either members or aspiring to join the club. Call it diffusion of technological capabilities or democratisation – outer space is getting crowded by the year.

COMMERCIAL INTERESTS

As the failed Israeli initiative showed, private players, too, are entering the game in a big way. Amazon is reportedly planning to launch a constellation of 3,236 satellites as part of Project Kuiper, which wants to deliver a global satellite-based Internet service. Mr Elon Musk branded Amazon boss Jeff Bezos a “copy cat” on news of the plans this week. No surprises there as it would rival the Starlink project by Mr Musk’s SpaceX. The original idea for a satellite constellation to provide universal Internet access came from another private entrepreneur, Mr Greg Wyler, who founded OneWeb. As American private companies

lay out ambitious plans for the commercialisation of space, China is eyeing the Moon and dreaming of mining extraterrestrial resources. Its plans to develop a lunar settlement have drawn attention in Washington, adding a new twist to the US-Chinese rivalry. Fifty years after it landed the first man on the Moon, the US National Aeronautics and Space Administration (Nasa) is under orders from President Donald Trump to plan for a return visit.

That brings us to another important trend. Even as outer space turns into valuable commercial “real estate”, the rapid advances in space weapons introduce huge new risks.

SATELLITE KILLERS

India’s test of Asat weapons, for example, invited a harsh reaction from Nasa administrator Jim Bridenstine, who called the test “unacceptable”. He pointed to the dangers of the debris created by the break-up of the satellite and the threat the orbiting fragments could pose to other satellites, as well as the International Space Station.

On its part, New Delhi pointed to the fact that its test was carried out responsibly at a lower altitude of about 280km to ensure the debris would quickly descend to Earth. The “satellite killer” system, India’s defence scientists say, had a far higher reach of 1,000km.

Indian analysts justified New Delhi’s decision by pointing to Asat tests by China, Russia and the US, and India’s need for deterrence against threats to its own growing number of space assets.

India has since offered to join the international community in drafting new rules for keeping outer space free of weapons. The US government was far more muted than its space agency in its response

THE WAY AHEAD

The task for the United States, if it wishes to influence how space is developed and utilised, is to create attractive projects and frameworks in which other nations choose to align themselves and their space activities with us, as opposed to others.



MR SCOTT PACE, executive secretary of the US National Space Council.

to the test. The State Department instead reaffirmed that space cooperation will continue with New Delhi, which is now a major strategic partner for Washington.

There is no doubt that widespread deployment of Asat weapons threatens the prospects for the commercialisation of the low-earth orbit.

India is also unlikely to be the last to test Asat weapons. Many other countries have the capability. The growing sophistication of missile defence systems will lend itself to the diffusion of Asat weapons.

The near-term challenge to a peaceful outer space, however, comes less from Asat tests of middle powers such as India.

SPACE FORCE

It comes from the escalating military dynamic involving the US, China and Russia. In February, a US Defence Intelligence Agency report on challenges to space security stated that China and Russia view “space as important to modern warfare and view counter-space capabilities as a means to reduce US and allied military effectiveness”.

It added that both Beijing and Moscow are developing new space weapons and strengthening their ability to conduct effective military space operations.

Earlier this week, Acting US Defence Secretary Patrick Shanahan warned that if the US does not get its act together, China will end the US’ longstanding dominance in outer space. Referring to the renewed great-power rivalries, Mr Shanahan said “the next major conflict may be won or lost in space”.

“We are not going to sit back and watch – we are going to act,” he added. “We are going to deter conflict from extending into space and ensure we can respond decisively if deterrence fails.”

Towards this end, Mr Trump has signed a space policy directive ordering the Pentagon to establish the Space Force as the sixth branch of the United States military, to go along with the Army, Navy, Air Force, Marines and Coast Guard. Its mission: to secure and extend American hegemony in space.

SPACE TREATY

The simultaneous developments on the commercial and military fronts in space, along with the diffusion of technological capabilities to medium powers and private actors, are generating new pressures on the legal regime centred on the Outer Space Treaty (OST) of 1967.

The treaty bans the deployment of weapons of mass destruction in Earth’s orbit and states that the Moon and other celestial bodies

should be used exclusively for peaceful purposes. But the treaty has never stopped nations from using space for military purposes, nor does it explicitly prohibit the use of all weapons in outer space.

As the major powers race to develop space weapons, there is a growing body of international opinion that the “weaponisation of space” may now be “inevitable”. Mr Trump has repeatedly called outer space a “war-fighting domain”.

If and when it makes sense to deploy military capabilities on the Moon, it is entirely possible that the great powers will walk away from any presumed obligations under the OST.

Some experts argue that rather than a blanket ban on weapons in space, it might be more sensible to regulate the development and deployment of space weapons through arms control agreements that can stabilise deterrence among major powers.

Given the recent developments, the hope for keeping outer space as a sanctuary free from weapons is slowly but surely fading away. The OST also states that “outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means”. This provision, too, might come under great strain as commercial benefits from the exploitation of space become significant. Drafted at a time when

the role of the private sector in outer space was not taken seriously, the treaty opens legal loopholes for private companies to move in.

Moreover, the US Space Act of 2015 has opened up possibilities for American companies to mine asteroids and the Moon. Other powers, especially China, are unlikely to restrain themselves as the US companies take advantage.

As global space commerce grows rapidly from the current estimated level of around US\$350 billion (S\$474 billion), the question of property rights in outer space will acquire ever greater salience.

TRAGEDY OF THE COMMONS

Finally, the idea of space as a “common heritage” of mankind that belongs to all is taking a beating.

Many in the US insist that thinking about outer space as a “global commons” is not very helpful. As Mr Scott Pace, executive secretary of the US National Space Council, put it at the end of 2017: “To unlock the promise of space, to expand the economic sphere of human activity beyond the Earth, requires that we not constrain ourselves with legal constructs that do not apply to space.”

Around the world, there is a growing concern that space might be ripe for the “tragedy of the commons” – over-exploitation and destruction of a shared resource.

It must be noted, however, that the US is not rejecting the case for a normative order in outer space. It

recognises that no one state can unilaterally impose rules on outer space and is sceptical that a single space authority can overcome competing national interests.

Said Mr Pace: “The task for the United States, if it wishes to influence how space is developed and utilised, is to create attractive projects and frameworks in which other nations choose to align themselves and their space activities with us, as opposed to others.”

WHO GETS TO MAKE THE RULES?

He suggested that the US is ready to negotiate outer-space norms that build on the “best practices” developed from the bottom-up and top-down confidence-building measures with other leading space actors.

Mr Pace argued that outer space is very much like other frontiers such as the high seas, the polar regions and cyberspace. In his view, “it is those who show up, not those who stay home, who create the rules and establish the norms in new areas of human activity”.

Credible space-faring capability, then, is a precondition for those who want to shape the new rules of outer space.

stopinion@sph.com.sg

• Professor C. Raja Mohan is director of the Institute of South Asian Studies, National University of Singapore.

