

# Speech

**Presented by HE Mr YAMAGAMI Shingo, Ambassador of Japan to Australia  
On the Occasion of the Southern Space Symposium  
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James, distinguished guests, ladies and gentlemen.

Thank you for that kind introduction.

I would also like to thank the Australian Space Agency, and its head Mr Enrico Palermo, as well as the Space Industry Association of Australia for hosting this symposium. I am grateful for the opportunity to speak with you today concerning Japan's space programme and the prospect for further cooperation in this field with Australia.

Australia has a long involvement in space exploration and discovery. How do I know this? I watched The Dish.

It introduced me to the Parkes telescope and the idea of Dish cricket. But don't worry – there'll be no comparisons with basketballs in this speech.

## **1. The expanding use of space and its potential**

On that note, allow me to turn to our subject for today – space, and its boundless potential.

It is evident to anyone with even a passing interest in space that the role played by space systems in security and the economy is rapidly expanding.

To paraphrase a well-known phrase from Star Trek, space is another frontier for the development of scientific technology and is a driving force for economic growth.

Technology developed for space can be put to use across a great many areas, providing vital infrastructure for government and industry alike.

Hence space and its use are steadily growing in importance.

Japan-Australia space cooperation has already produced successful results.

Many of you would be aware that in December last year, the “Hayabusa 2” capsule made its spectacular return to Earth, where it was collected at the Woomera Test Range in South Australia.

Furthermore, during the 2019-2020 bushfires, data from Japan’s Himawari satellite was used by Australian authorities to monitor the situation on the ground.

This is the most symbolic representation of Japan-Australia space cooperation, but there are others.

For example, JAXA used the Japanese laboratory “Kibō” (or Hope) in the International Space Station (ISS) to arrange an experiment for school-children.

This involved seeing how the Golden Wattle flower, the national flower of Australia, would fare in a zero-gravity environment.

Both countries also collaborated in operating a robot in the “Kibō” laboratory as part of an international competition involving puzzle solving.

In this session, I’d like to expand on the future of our cooperation in this cutting-edge field, for it’s a Sirius-ly exciting time for our relationship.

## **2. Space and security**

The security aspects of space usage grow ever-more important, given the vital place that space plays in national security.

Centred around the concept of C4ISR, the use of space for security purposes is deemed essential to ensure military supremacy for one's own country.

Technological innovation taking place in militaries across the globe is accelerating these trends.

Space has become an important domain for a variety of technical fields, be they AI, space computing, fibre-optic (lightwave) communication, quantum cryptographic communication, and advanced sensors.

However, unfortunately there are also some practices that threaten the stable use of space.

Information has come to light revealing that a number of countries have been developing their own forms of ASAT (anti-satellite) weaponry, designed to directly attack and destroy the satellites of other countries.

Other ASAT weaponry is being developed to disrupt satellite functions (so-called killer satellites) using lasers and signal jammers.

Japan is concerned about recent irresponsible behaviour surrounding a Russian ASAT test which generated a large amount of space debris.

This sort of test undermines the sustainable and stable use of outer space. Japan calls on Russia not to conduct this kind of test in the future.

In May of this year, China's Long March 5 rocket broke apart, scattering widely over the Indian Ocean. Japan believes it is vital for space activities to ensure safety, transparency, and to be done responsibly.

International rulemaking and norms are very important. Countries must work together to ensure stability, not only in the East China Sea and South China Sea, but also in space.

### **3. Japan's measures to ensure space security**

So, what steps is Japan taking to make its space ambitions a reality?

Firstly, Japan aims to become an "independent space power". What this means is that Japan will strengthen the industrial, scientific, and technological foundations of its space activities and expand its use of space, thereby creating a virtuous cycle of strengthening the foundations of and expanding the use of space.

This activity includes the establishment of space security, contributing to disaster response and solutions to global problems, creating new knowledge through space science and exploration, and using space to drive economic growth and innovation.

Among all of these measures, our space security efforts to ensure stable use of space are the most urgent, in light of the seriousness of the risks I mentioned earlier.

In order to respond to threats emerging in space, there needs to be an all-of-government approach in Japan that transcends the agencies of the Ministry of Defence, and which combines the talents of government and industry to improve capabilities across a variety of areas.

For example, space situational awareness (SSA) is vital to comprehend moves to hinder the operation of your own satellites or judge the risk from space debris.

The Japan Self-Defense Forces aim to strengthen their capability in SSA, given its importance.

As such, they are moving forward on the creation of an SSA framework, including the installation of radars, in cooperation with partners such as JAXA and other relevant organisations, as well as the United States.

Japan has also commenced developing satellites that will allow it to observe space from space itself.

Meanwhile the JASDF is working on to enhancing itself as an organization in order to strengthen its capabilities in space.

In 2019, the then Prime Minister ABE Shinzo announced a policy of emphasizing space as part of Japan's defense strategy.

He told SDF officers that in the future, the JASDF would become a combined Air and Space Self Defense Force.

This is already producing results.

The Air Self-Defense Force established a new Space Operations Squadron in May 2020, and recently the formation of a 2<sup>nd</sup> Space Operations Squadron was announced, to be established in FY2022.

Japan also continues to launch intelligence gathering satellites, communications satellites, and positioning satellites.

As these examples demonstrate, Japan is very actively contributing to the creation of a stable space environment.

As space exploration and the commercialisation of space-based enterprises continues, Japan will increase its involvement in this field to help protect the peaceful use of outer space and security.

#### **4. Cooperation with likeminded partners**

On the other hand, there is a limit to what one country can achieve alone.

I mentioned earlier, international rulemaking is essential for the stable use of space, and this requires the cooperation of likeminded partners.

At the Quad Leaders' Meeting held in September, we agreed to consult on rules, norms, guidelines and principles for ensuring the sustainable use of outer space. We need to further promote such cooperation.

In addition, just getting to space is an expensive business. This is another reason why cooperation with partners and allies is so important.

Back in 1961, the year I was born, the Apollo programme was announced by President John F. Kennedy. It was the dawn of a new age. I still vividly remember the ambition that this programme inspired in members of my generation.

So I am pleased to see the recent revival of the lunar exploration programme, known as Artemis, launched by the United States, and in which Japan and Australia are both participants.

In fact, the Moon has a special meaning for the Japanese people.

The oldest Japanese literary tale, the Tale of the Bamboo Cutter, was written in the late 9<sup>th</sup> or early 10<sup>th</sup> century, with the Moon as its central theme. We also say 'the Moon is beautiful' in Japanese as another way to say 'I love you'.

I cannot wait to see a future in which Japan and Australia jointly fly to the Moon and play among the stars, as Frank Sinatra famously sang.

## **5. Japan-Australia space cooperation and future developments**

The Japan-Australia relationship is a "special strategic partnership". So it is quite natural for strategic partners to cooperate in the field of space.

For Japan, there are other geographical reasons for wanting to pursue further cooperation with Australia in space. Australia's position in the Southern Hemisphere has a lot of merit.

For example, during the launch of Epsilon rocket No.5 earlier this month, JAXA was able to monitor the flight of the rocket using the SSC Australia space tracking station located at Mingenew in Western Australia.

Another latent advantage is the fact that Japan and Australia lie on almost the same longitude, which means that satellite information can be shared in real time, which greatly assists the success of missions.

For example, Japan has a system of positioning satellites known as the Quasi-Zenith Satellite "Michibiki" which complements the US GPS system.

GPS is an incredibly useful system used by car navigation system and the like, but it is not always that reliable in areas with many high obstacles like mountains and skyscrapers.

"Michibiki" can be used in conjunction with GPS, and has merit as both a stable and high-quality positioning system. The positioning accuracy of smart phones in Japan is incredibly high.

The Government of Japan plans to expand the current “Michibiki” system of 4 units to 7 units in 2023. In Australia, given its close longitude to Japan, it will also be possible to make use of this service.

In March this year, Hitachi Solutions made use of the “Michibiki” positioning technology for the preliminary groundwork on the Western Sydney International Airport in New South Wales.

By using their smart phone to conduct assurance tests measuring the volume of soil, they proved the efficacy of this system.

This technology can not only be used in car navigation, but can also be used for improvements in the productivity of construction sites and the safety of automated driving technology. I expect that it will be put to use in Australia as well.

What all this illustrates is the cooperation currently underway between Japan and Australia in science and technology to develop the talents of the next generation of scientists and engineers.

This is just one part of a much larger story, one that is in the process of being written.

Japan is a tremendous partner for space exploration, for our rocket launches are very reliable. Mitsubishi Heavy Industries' H-2A rocket has been successfully launched 41 out of 42 times.

Its successor, the H-2B rocket, has succeeded in all nine of its launches.

In addition, IHI's Epsilon rocket has also succeeded in all five of its launches.

The Japan-Australia Defence Technology Sharing Agreement already provides a framework for greater cooperation between us, and expectations are growing for further progress in this area.

For example, the Epsilon Launch Vehicle No. 5 that I mentioned earlier had a Vietnamese satellite on board. Using Japanese technology, that satellite is now in space orbit.

What this shows is that cooperation between Japan and Australia could begin with an Australian satellite being carried into space by a Japanese rocket.

Furthermore, one of my dreams is to see a rocket launched from Australia using Japanese technology.

That dream could easily become a reality, with an Australian company launching a rocket from Australian soil using Japanese technology.

## **6. Closing remarks**

So, ladies and gentlemen, this is the situation before us. While technical and legal challenges remain, these can be overcome through cooperation both in space and here on Earth.

I am often quoted as saying that the “sky’s the limit” when it comes to the Japan-Australia relationship. But let me expand on that by saying – let’s shoot for the moon!

Without doubt, the development of cooperation between Japan and Australia, and the Japanese, Australian, and American governments and industry in space has been and continues to be incredibly important.

Japan will push ahead to actively promote this cooperation and do everything it can to realise our shared ambitions.

If we 'planet' well, it will eclipse everything before it.

And it will give me more opportunities to crowbar equally fantastic puns into my speeches in the future.

Thank you.