

# Submission on developing the Aotearoa New Zealand Aerospace Strategy

## Your name and organisation

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Organisation (if applicable)	Royal Astronomical Society of New Zealand

## Overview of the Aerospace Strategy

Do the four areas above provide the right basis for the Aerospace Strategy?  
What are the critical factors that you see for aerospace sector development?  
How would an Aerospace Strategy help you?

**Please type your submission below. If applicable, please indicate the question(s) to which you are responding.**

Sustainable Aerospace activities must not limit other uses of space including ground-based research, cultural and heritage values, aesthetic coherence, atmospheric purity.

RASNZ represents the interests of over 2,000 persons and a number of diverse institutions.

In particular, supporting and promoting all astronomic activities in-NZ fall within the scope of RASNZ and its specialist sub activity through its Dark Sky Group supports the general public's naked eye access to the night sky from dark sky locations and the protection of biodiversity in those locations.

For the goals and strategy to be truly inclusive, it is important that they reflect the interest of the diverse stakeholders involved viz.

- (i) The continued accessibility of night skies for naked eye observations for cultural and historic reasons (which RASNZ has practically observed to have increased manifold following the impact of Matariki becoming a NZ public holiday this year) and one that adapts mitigations to minimise the impact of exponentially increasing number of satellites as proposed to the United Nations' Committee on the Peaceful Uses of Outer Space (COPUOS) by the Dark and Quiet Skies Working Group of the International Astronomical Union (IAU) - see <https://noirlab.edu/public/media/archives/techdocs/pdf/techdoc022.pdf> ; full report can be downloaded from <https://doi.org/10.5281/zenodo.5874725> . **Note:** A member of RASNZ Management Council was an integral member of the Dark and Quiet Skies Working Group and, among other things, represented the interests of NZ.
- (ii) Find through setting appropriate limitations in the freedoms exercised by other actors so as to allow for the general freedom to access aerospace and its use by all be it astronomers or the general public of NZ for cultural, historic, educational or scientific research reasons.

Given that the night sky is a critical cultural taonga needing preservation and protection and NZ's leading position within the developed world as possessing vast areas of very accessible natural night

skies (i.e. dark skies), NZ has the unique opportunity to demonstrate leadership achieving a balance between economic growth and environmental concerns. This can be achieved by supporting the recommendations of the IAU submission to COPUOS referred to above (see Clause 20 and 21 in particular) as part of NZ's aerospace policy.

Dark Sky Tourism or Astro-tourism has been identified as the pre-eminent growth trend, especially post-Covid, by Lonely Planet, Airbnb and National Geographic. MBIE is well aware of the dominant role of tourism on exports, GDP and employment. Potentially losing the quality of viewing from NZ's natural night skies through a space policy that is not well balanced could have a negative economic impact New Zealand. The benefits of Astro-tourism accrue to numerous parties primarily located in rural areas and inclusivity and equity considerations require their needs to be balanced against a handful of private sector actors and elitist supporting institutions that derive economic benefits from a less balanced space activities focused policy.

On 13 October 2022, at the specific request of MBIE's Tourism Operations and Partnerships Team, the submitter and associates from RASNZ made a presentation through their Tourism Industry Webinar with a reach of hundreds of direct and indirect tourism participants. The MBIE team were of the view is that this new Kaupapa and the pursuit of over 20 communities of NZ (from Far North to Stewart Island to Chatham Islands) for NZ to become the first Dark Sky Nation in the OECD was important for the tourism industry.

A balanced aerospace strategy taking into account the needs and views of all stakeholders (given that astronomy and all its related segments constitute a legitimate form of accessing, exploring and using aero/outer space) is critical to ensure that the benefits and sustainability of other segments of the space exploration eco system are not adversely impacted.

## Area One - A strategy for building our aerospace sector

Is the 2030 Future State set out in a way that enables New Zealand to build on its existing advantages to develop a leading place in the global aerospace economy?

Will the 2030 Future State support your ambitions for growth and participation in the sector?

What barriers are there to optimising sector growth?

How could the government and the sector work together to achieve the 2030 Future State?

How can the Government enable Māori ambitions for the sector?

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Achieving balance between aerospace activities and astronomical and dark sky activities will enable the government to work together with the stakeholders especially as Maori ambitions in the dark sky sector (e.g. Ngai Tahu as a leading player in the Aoraki Mackenzie International Dark Sky Reserve through their vehicle, the Dark Sky Project) and within astronomy (well demonstrated by achieving Matariki as a NZ public holiday which is not the end but the start of the journey to rejuvenate Maori astronomy and to integrate it with Western astronomy). This should not be seen as a potential barrier but as an opportunity to “optimise” growth taking into account the interests of all stakeholders.

## Area Two - Building strong foundations (Three Pillars)

What do you think of the Three Pillars and do you think they will support the 2030 Future State?

What else would you like to see in the Three Pillars?

What actions and initiatives could the sector focus on to support the Three Pillars?

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A Fourth Pillar on the Aerospace sector being a part of the wider eco system embracing astronomy (both Maori and western) - dark skies - space sector - would be appropriate as it appears very one sided as it currently stands.

The pursuit of 'NZ as a Dark Sky Nation' has been in the pipeline since it was first envisaged in 2017 and was endorsed by more than a dozen communities around NZ at the International Starlight Conference in 2019 which was supported by Aoraki Mackenzie International Dark Sky Reserve.

The night sky is a priceless cultural taonga and is of vital historic important to how NZ came to be inhabited by both the Polynesian navigators and by later immigrants triggered by Captain Cook placing NZ on the world map with his journey also motivated by the observation of the astronomical event Transit of Venus in the South Pacific. At present, NZ dark night skies are the best in the world for accessibility and enjoyment and over 20 communities all around NZ are working to protect their night skies for future generation through being accredited by the International Dark Sky Association (IDA) – <https://dsnnz.org/dark-sky-places/>

### Area Three - Goals for 2030

What do you think of the Goals for 2030?

Are the goals framed in a way that will enable New Zealand to build on its strengths and comparative advantages to achieve the 2030 Future State?

What activities and milestones can help us achieve these Goals?

Where do you see yourself in realising these Goals?

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Once again, the goals should reflect the activities and aspirations of all the stakeholders.

Actively “supporting a permanent human presence in space” should not come at the cost of the cost to the pursuits and aspirations of the human presence on land in NZ.

The goals are too focused on the aerospace industry and does not seem to recognise that it is a part of a wider eco system that has been operating for thousands of years and since the occupation of NZ by humans even facilitating their passage and as integrated into various Maori cultural practices.

## Area Four - Pathway to the 2030 Future State

What policies, ideas, actions, and/or initiatives would you like to see in the Action Plan to help achieve the ambitious 2030 Future State?

What would be the benefits of these actions and how would they help grow the New Zealand aerospace sector?

How would you like to be involved in the delivery of the Aerospace Strategy?

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2030 is just 8 years away and while it is good to be “ambitious” with respect to the NZ aerospace sector, these ambitions and goals should be balanced within the wider eco system where other sub segments (e.g. Maori taonga, astronomy, dark skies, Astro-tourism) can be seriously adversely impacted unless policies and regulations for the aerospace sector incorporate the various available mitigations addressed to minimise the impact of exponentially increasing activities, especially in Low Earth Orbital space made to the United Nations’ Committee on the Peaceful Uses of Outer Space (COPUOS) by the Dark and Quiet Skies Working Group of the International Astronomical Union (IAU) - see <https://noirlab.edu/public/media/archives/techdocs/pdf/techdoc022.pdf> ; full report can be downloaded from <https://doi.org/10.5281/zenodo.5874725>.

RASNZ represents the interests of various parties viz. professional and amateur astronomers (over 2,000 individuals), the education sector (all NZ universities, observatories and other educational endeavours including Maori educational entities and efforts), dark sky communities (over 20 at present across the length and breadth of NZ) and general and specific interested parties in space. A key member of RASNZ Management Council was an integral member of the Dark and Quiet Skies Working Group of the International Astronomical Union (IAU) referred to above. As such, RASNZ would make its expertise and network available to further a well balanced and successful aerospace strategy. RASNZ would like to be kept advised of the evolution of the aerospace strategy as it goes through the next stages of its development.