

AUSTRALIA, Item 18

59th Scientific and Technical Subcommittee

Agenda item 18 – General exchange of views on dark and quiet skies for science and society

Thank you Mr Chair, distinguished delegates.

Australia appreciates this opportunity to share its views on the topic of dark and quiet skies for science and society.

Australia has both a growing civil space industry sector, and strong research capabilities in astronomy, supported by world-class infrastructure.

We offer the following observations, based on our experiences, of the practical ways in which the Australian Government, and state/territory governments, seek to ensure the protection of observing conditions for radio and optical astronomy. We will also outline our early views of the Working Paper on the Protection of Dark and Quiet Skies, prepared by Chile, Slovakia, Spain, the International Astronomical Union, the Square Kilometre Array Observatory and the European Southern Observatory.

Civil space and astronomy

Mr Chair,

The Australian Government has tasked the Australian Space Agency with implementing the measures and conditions necessary to triple the size of Australia's civil space sector and create up to 20,000 additional jobs by 2030.

Similarly, Australia has made considerable investments in optical and radio astronomy and their underpinning ground-based infrastructure. Australia entered into a Strategic Partnership with the European Southern Observatory in 2017. Australia is also a member of the Square Kilometre Array Observatory under a treaty-level agreement, together with China, Italy, The Netherlands, Portugal, South Africa, the United Kingdom and Switzerland. The Square Kilometre Array Observatory is driving intergovernmental efforts to build the world's largest and most capable radio telescopes, with one telescope to be located in the Mid West region of Western Australia. Preparation for on-site construction in Australia is underway.

Protecting observing conditions for astronomy

Mr Chair,

Australia strives to develop and implement 'best practice' measures to protect observing conditions and safeguard its publicly-funded infrastructure investments in both optical and radio astronomy in defined zones.

Australia's national ground-based optical astronomy capabilities are centred in Siding Spring Observatory, near Coonabarabran [*KOO-na-BA-ra-BRAN*] in New South Wales. In an effort to preserve dark night sky conditions around the Siding Spring Observatory, the Government of New South Wales enacted protective legislation in June 2016 and published an associated Dark Sky Planning Guideline. The Guideline informs stakeholders about the management of light in the surrounding region, and provides guidance and technical information on good lighting design. It also informs development decisions in the four local government areas within the declared 'Dark Sky Region'.

Similarly, the Government of Western Australia recently released its position statement on the provision and designation of dark sky locations. It provides the information needed to enable the management of artificial light, including evidence-based decision-making regarding development and lighting design.

Australia has over 60 years of experience in managing radio telescopes, mainly in the eastern states. These are protected by notification zones, which allow negotiation over potential interference issues. Australia's newest radio astronomy capabilities are centred in the Mid West of Western Australia, where a Square Kilometre Array telescope will be hosted. The Australian Radio Quiet Zone Western Australia works to minimise the impacts of radio interference on astronomy research. It comprises an Inner Zone of a 70km radius, an Outer Zone from a 70km to 150km radius, and Coordination Zones up to a 260km radius.

Under regulations implemented by the Australian and Western Australian Governments, there are requirements regarding the use of radiofrequency spectrum for each zone. In the Inner Zone, radio astronomy is the primary user of radiofrequency spectrum. In the Outer Zone, the goal is for radio astronomy and other activities to co-exist in a way that also maximises opportunities in the region. Consultation between government, industry and the scientific

community enables continued development and viability of other economic activities. This approach of fostering consultation with a view to maximising opportunities illustrates that co-existence of astronomy with other activities is achievable.

Australia would be pleased to provide further information on the Dark Sky Planning Guideline and the Australian Radio Quiet Zone Western Australia, if requested.

Dark and quiet skies at COPUOS

Mr Chair,

Australia continues to be supportive of discussions that bring together stakeholders in the spirit of collaboration to develop practical solutions that seek to address unintended impacts of satellite constellations on astronomy.

Australia acknowledges the success of the 2020 and 2021 conferences on the topic of “Dark and Quiet Skies for Science and Society”, which were attended by hundreds of participants from across astronomy, industry and governmental organisations.

We thank the conference participants for their diligence and expertise in producing the conference reports. We also thank the International Astronomical Union, in partnership with the United Nations Office for Outer Space Affairs, for the consultative approach taken in their leadership of this process to date.

My delegation recognises that the Working Paper currently before the Subcommittee draws on important insights from conference participants and internationally-recognised experts to produce proposed actions which seek to avoid or mitigate these impacts.

Australia is continuing to consider these proposed actions. In particular, we are working with our astronomy community and space sector to understand the feasibility of implementing the measures as outlined in the Conference Reports. This will involve a review of current national measures for the protection of observing conditions to assess Australian practices against the proposed measures. We look forward to sharing the results of this review.



Australian Government



Australian
Space Agency

Conclusion

Mr Chair,

It is Australia's hope that the observations we have provided today, based on national experiences, will be of value in encouraging further dialogue on the topic of dark and quiet skies.

Australia is supportive of further discussions to raise awareness, and bring together relevant stakeholders to inform further investigation of practical solutions for this issue.

Thank you.