SKAO, Item 8

STATEMENT BY THE SQUARE KILOMETRE ARRAY OBSERVATORY

The 64th Session of the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space

AGENDA ITEM 8: General Exchange of Views on Potential Legal Models for Activities in the Exploration, Exploitation and Utilization of Space Resources

Read by either:

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Mr Tim Stevenson (SKAO Director of Assurance)

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Chair, distinguished delegates,

We appreciate the opportunity to contribute to this important exchange on legal models guiding the exploration, exploitation, and utilisation of space resources.

Space is humankind's most important natural laboratory for understanding our place in the cosmos. For tens of thousands of years, humans have looked skywards and questioned the nature of the Universe and in the last century our study has evolved with hugely sophisticated ground- and space-based instrumentation now able to probe the Universe in unprecedented detail.

In this context, we highlight the importance of protecting the value of space as a tool for science, particularly the preservation of ground-based astronomy at all wavelengths.

The Square Kilometre Array Observatory (SKAO) represents the most ambitious effort in radio astronomy to date. A global collaboration currently with twelve member States, with telescope sites in Australia and South Africa and its headquarters in the United Kingdom, the SKAO will probe the early universe and enable transformative discoveries. However, its success, and that of other radio observatories worldwide, depends on maintaining low-interference environments on Earth and in space. As a passive observational science, radio astronomy is uniquely vulnerable to interference from artificial signals, especially those emitted by orbiting satellites. These signals, even when unintentional, can create significant interference that undermines our ability to collect clean astronomical data.

As the number of satellites and general level of activity in space, increases, it becomes increasingly important to ensure that their operations do not disrupt or negatively impact

critical scientific infrastructure. This concern is not unique to SKAO but reflects a broader need to balance commercial and scientific uses of space.

We therefore propose that any legal models under consideration to govern the exploitation of space resources should acknowledge the growing impact of satellite-based emissions on passive scientific services which include radio astronomy and should incorporate safeguards and coordination mechanisms to minimise electromagnetic interference.

These could include a global framework to protect observations of international scientific value; the establishment of radio quiet zones in space such as the one in the Shielded Zone of the Moon; strengthened frequency co-ordination through the ITU; development of unintended emissions limits and standards; and the introduction of Impact Assessments on Dark and Quiet Skies as part of mission planning and approval processes.

Legal models should also promote transparency in satellite operations, particularly with respect to frequency usage and emissions which would allow for early identification and mitigation of potential interference.

These approaches could foster a culture of respect and co-existence between commercial actors and the scientific community, providing legal certainty to support the parallel development of both sectors.

Such measures will help ensure that the advancement of space resources does not come at the cost of scientific discovery.

In furtherance of the SKAO's position regarding the need for practical legal frameworks, the Observatory, together with UNOOSA, will be organising a workshop in December this year, here in Vienna. A day will be dedicated to legal and regulatory matters and there will be additional sessions to enable capacity building in these areas.

Chair, science, and in particular radio astronomy, has played a foundational role in humanity's understanding of the universe. As we consider the rapid expansion of human activity into space, it is essential that future legal frameworks and the framework for space governance upholds the principles of sustainability, cooperation, and the long-term interests of the global community.

I thank you Chair.