



**STATEMENT BY THE SQUARE KILOMETRE ARRAY OBSERVATORY**

The 59th Session of the Scientific and Technical Subcommittee of the United Nations  
Committee on the Peaceful Uses of Outer Space

**AGENDA ITEM 11: Space Weather**

**Read by: Theunis Kotze (SKAO Head of Legal)**

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Chairperson,

Thank you for allowing me the floor.

On behalf of the Square Kilometre Array Observatory, I am pleased to address the 59<sup>th</sup> session of the Science & Technology Subcommittee and for the first time as a Permanent Observer to the United Nations Committee on the Peaceful Uses of Outer Space.

Chair, our congratulations on your election and I wish to assure you of the Square Kilometre Array Observatory's cooperation during this session.

Chairperson,

The Square Kilometre Array Observatory welcomes the *draft Final Report of the Expert Group on Space Weather, towards improved international coordination for space weather services*, and the recommendations, contained in document A/AC.105/C.1/L.401.

Chairperson,

The impact of space weather events on the Earth environment, in the risk they present to space or ground-based infrastructure are a matter of considerable interest and concern. In a global society, reliant on systems that have the potential for impact ranging from the inconvenient through to consequences which present a threat to life, it is critical to ensure that there are systems in place to monitor, understand and then react to events in a timely manner. As the report from the Expert Group emphasises, international coordination and engagement between States and expert organisations and agencies is imperative. COPUOS has an important role to play in encouraging and facilitating such engagement and actions, and the focus from the Expert Group in bringing together expert agencies such as COSPAR, ISES and the WMO, helps to ensure that the evolution towards acceptance of space weather as a service alongside meteorology, accessible and visible to all areas of society, is achieved.

Chairperson,

Enabling space weather services as a tool, and thus enhancing our resilience and preparedness for the impact of solar events, relies on the coordination of systems at a global scale, with a range of complexities in play, as the report from the Expert Group notes. But all such services rely on an underpinning understanding of solar-terrestrial science, and developing our understanding of the physics of the sun-earth system, ranging from pure heliospheric physics and underpinning mechanisms that drive solar events, understanding the dynamics and physics of the solar wind its interaction on Earth's magnetosphere, through to study of the upper atmosphere, the ionosphere.

Chairperson,

Radio astronomy, often working in tandem with space-based observatories and facilities, have a unique part to play in the study of space weather. The sun, as our nearest star, is easily probed by radio observatories and has been for decades. Our understanding of the physics of the solar activity cycle, the mechanisms by which solar flares and coronal mass ejections are generated and then travel through the interplanetary space to Earth are ideally studied by radio astronomy facilities. The current and next generation of radio astronomy observatories, including those that will be online in the coming years with the Square Kilometre Array, will work in tandem with new advanced optical observatories on the ground to enhance our understanding of the physics behind space weather.

Among others, radio astronomy through facilities such as the Jansky Very Large Array in the USA, the International LOFAR Telescope in Europe and at the Square Kilometre Array Observatory sites in Australia and South Africa, the Murchison Widefield Array, and MeerKAT, respectively offer unique high resolution study of solar activity, the detailed dynamics of solar events, and their impact on the ionosphere and terrestrial systems.

Chairperson,

In the future, the SKA will provide the most capable ground-based probe of solar physics from a radio observatory, anywhere in the world. In preparation for this, we are working with the global solar science and solar-terrestrial physics community to ensure that the facility will enable space weather science as a core component of its science case. This alone will contribute to the global endeavour highlighted in the Expert Group report

through the provision of a supporting dataset of the highest quality, the opportunity for ongoing routine monitoring of the Sun-Earth environment.

Chairperson,

In addition to this emphasis on the underpinning science, the SKAO has an opportunity, as a consequence of its operations, to enable and support space weather monitoring as a service and as part of the future network of infrastructures that will enable the aims identified in the discussions at COPUOS level, through its ability to monitor the Sun and upper atmosphere.

Chairperson,

Therefore, the SKAO associates itself with and supports the recommendations made by the Expert Group. Furthermore, we offer the support of our organisation and of the radio astronomy community in support of the recommended broader engagement between international intergovernmental organisations, where we will continue to advocate for the criticality of the field of space weather, including further research on the underpinning science, and the establishment of globally-coordinated monitoring and reaction service.

Chairperson,

Lastly, I wish to remind all delegates of the SKAO technical presentation tomorrow, which will be on the **SKA Observatory, Exploring Space in Radio Frequencies**.

I thank you.