

## **IAU statement to be delivered at the 66<sup>th</sup> COPUOS session under the Agenda Item 4 – General Exchange of Views**

Mister Chair, distinguished Delegates,

The International Astronomical Union welcomes the admission of the European Astronomical Society as a new permanent Observer of COPUOS: together with the European Southern Observatory, the Square Kilometre Array Observatory and the IAU, the astronomical presence in the Committee is further consolidated.

Indeed the theme of the protection of the science of astronomy from the interference of satellites in LEO has gained high relevance in the Agenda of COPUOS and of its Sub-Committees as it has been recently acknowledged in the recent Report of the Summit of the G7 Science and Technology Ministers, which reads:

"We recognize the importance of continued discussion, in the UN COPUOS and International Telecommunications Union (ITU) frameworks, as well as with the International Astronomical Union (IAU) on the impact of large constellations of satellites on astronomy for the protection of the dark and quiet sky."

Similarly, the Document "Fair and sustainable use of space", by the European Council reads:

" [The Council] Acknowledges that the effects of light pollution and electromagnetic interference in particular from satellite constellations must be taken into consideration and mitigation measures put in place to minimise negative impacts on astronomical observations and research worldwide; [It] Welcomes the efforts of the United Nations Committee on the Peaceful Use of Outer Space (UN COPUOS) in this regard;"

We are therefore encouraged to continue our joint effort in studying and implementing, in a spirit of cooperation with all stakeholders, all measures that can mitigate the impact of the satellite constellations on the science of astronomy and on the visibility of the pristine night sky. We are looking forward to the contribution that the European Astronomical Society will offer in this regard.

Mister Chair, distinguished Delegates,

At the 65<sup>th</sup> Meeting of COPUOS, the International Astronomical Union announced the creation of its new Centre for the Protection of the Dark and Quiet Sky from Satellite Constellations Interference” or CPS. We are glad to report that the Centre, which began its operation in April 2022, has achieved a number of important results in all its four areas of activity: Satellites, Policy, Community Engagement and Industry and Technology.

Successful observing campaigns of constellations’ satellites have been organized and the most relevant data to be published soon. These observations are instrumental in modeling and verifying the apparent luminosity of the satellites at various altitude angles. These data have been specifically requested by some companies with the aim of testing their strategies for reducing the reflected light by the satellites towards the observers.

Discussions were undertaken with various private companies with the goal of lowering the brightness of satellites and of obtaining the position of all satellites with an accuracy that would allow astronomers to dodge their trails from the field of view of the telescope. An agreement between the US National Science Foundation and SpaceX has been signed, with future aims at converting the current prototype solutions into a global service to be offered to the astronomical community. Other major satellite companies will also be signing similar agreements in the near future.

The possibility of switching off the microwave emission by the satellites when they are in the proximity of the large radio astronomical observatories has been discussed with the companies that are currently launching and operating the communication constellations. Preliminary conclusions indicate that such a mitigating measure might be implemented, at least in the case of the larger radio astronomical facilities.

The Community Engagement team has designed and is implementing a series of high quality video clips that describe in an accessible way, but with scientific accuracy, how the communication satellites operate and how their impact on the space environment can be mitigated.

In general, we can conclude that these initial achievements indicate that it would be possible to reach a reasonable compromise between the technological progress in space communication and the need to maintain open the astronomical window on the cosmos. However, a stable solution to the interference of the satellites requires the collaboration and commitments of all the stakeholders, in particular of the companies and nations that are currently engaged in the design of future constellations. In this regard, the role of COPUOS and of its Sub-Committees will be essential in fostering international cooperation on the matter and in encouraging the adoption of best practices for the protection of a Dark and Quiet Sky.

The International Astronomical Union remains hopeful that the proposal of maintaining a dedicated Agenda Item on Dark and Quiet Sky and of the creation of an Expert Group on the subject could achieve the consensus of the Committee. In any case, please be assured that the IAU, through its dedicated Centre CPS, will continue to explore mitigating measures and best practices in the most genuine spirit of inclusiveness and international cooperation. The IAU, in its capacity of Permanent Observer, will regularly report about the progress in this field to the COPUOS and its Sub-Committees under the most suitable Agenda Item. In this respect, you are all warmly invited to participate in the IAU Symposium 385 "Astronomy and Satellite Constellations: Pathways Forward" that will take place in the Island of La Palma from October 2 to 6, 2023.

Mister Chair, distinguished Delegates,

Thank you for your attention