

Statement by the International Astronomical Union (IAU)

The 60th session of the Scientific and Technical Subcommittee of the United Nations
Committee on the Peaceful Uses of Outer Space

AGENDA ITEM 17: General Exchange of Views on Dark and Quiet Skies for Science and Society

Read by: Piero Benvenuti (IAU CPS Director)

Mister Chair, distinguished Delegates,

At the 65th Session of the COPUOS last June, the International Astronomical Union announced the creation of the IAU “Centre for the Protection of Dark and Quiet Sky from Satellite Constellations Interference” or CPS in short.

The Centre is a manifestation of the recommendations contained in the Report of the 59th Session of the STSC which encourages all stakeholders, in particular the astronomical community, space industry and the constellations’ companies, to collaborate in studying and implementing all possible measures that can mitigate the negative impact of the constellations on astronomy and on the visibility of the pristine night sky.

The Centre, which officially started its operation on April 1st, 2022, coordinates collaborative multidisciplinary international efforts to help mitigate the negative impact of satellite constellations. The Centre counts on the collaboration of more that 230 external members, individuals or representing groups, institutions and private companies, who contribute to the activity of the four main areas, or hubs, of the CPS: the Satellite hub, the Policy Hub, the Industry and Technology hub and the Community Engagement hub.

I am happy to report that substantial achievements have been reached in all the four areas of activity.

SatHub organized in an effective way several optical observing campaigns of LEO satellites, in some cases in close coordination with the constellations’ companies: accurate measurements of the satellite apparent luminosity, as a function of their orbit and attitude,

are essential for evaluating the effectiveness of the adopted mitigating measures. Useful conversations were held with the operator of the satellites and a paper that analyzes the results of the observing campaign has been already submitted to a major science journal.

SatHub made also substantial progress in evaluating different approaches in the determination of accurate satellite positions to be used for dodging the satellites' trails from astronomical observations. Three private companies specialized in the Space Situational Awareness have been contacted and collaborative agreements established. Also in this case, the constellations' companies have been involved in the discussion.

The Policy Hub has begun a thorough comparative analysis of current national policies, international law, and sustainability policies which will eventually become a useful reference when proposing voluntary guidelines and best practices. It also established expert panels to advise the Space Sustainability Rating team of the École Polytechnique Fédérale de Lausanne (EPFL) on astronomy issues.

The Industry and Technology Hub began inviting and enlisting satellite constellation operators, manufacturers, and other stakeholders to participate and collaborate. Some ten companies and three associations were contacted and active interactions took place with 4 major operators. The Hub is collecting and sharing best practices and encouraging innovative lines of research on new materials and operational strategies that can reduce the satellites' reflected light. In collaboration with radio-astronomers the Hub is compiling a list of quiet zones around the major radio-astronomical observatories to assist operators willing to voluntarily protect them from strong microwave emission.

The Community Engagement hub is creating a venue in which all stakeholders may be heard and feel safe expressing their opinions and views on the topic. It is developing an information package on the current space technological evolution and is collecting the opinion of different communities about what that means to their cultural heritage.

The significant achievements in all the four areas of CPS activities encourage us to continue along this line and confirm that the cooperative approach suggested by the STSC is an effective way to reach a satisfactory equilibrium between the space technological evolution and the need to protect the science of astronomy and the pristine visibility of the night sky.

We believe therefore that the promising results so far achieved by the IAU Centre should be considered and discussed at a higher international governmental level. For this reason the IAU is a co-signatory of the Conference Room Papers presented by the Delegations of Chile, and others, [Spain, Slovakia, Bulgaria, The Dominican Republic, South Africa, IAU, ESO, SKAO (CRP A/AC.105/C.1/2023/CRP.18) which proposes the creation of an Expert Group on Dark and Quiet Sky.

The Expert Group represents the ideal forum where all COPUOS Delegations can present their position both from the point of view of their government and of the private sectors of their Countries. It should be highlighted once more that the specific voluntary mitigating measures must be identified in the short term in order to be effective: assigning them to the Long Term Sustainability W/G would nullify their main purpose. Moreover, by discussing in advance the Dark and Quiet Sky matters in the Expert Group and presenting the results in a single document to the STSC, Delegations will save precious time under the specific Agenda Item in the Subcommittee. The Expert Group will not require additional resources by the UNOOSA Secretariat.

The Expert Group will not duplicate the work of the IAU Centre, but it will be supported by the latter which can offer to the EG its findings for its consideration and discussion.

Mister Chair, Distinguished Delegates,

Please be assured that the IAU will continue to support the STSC and COPUOS in all their initiatives aimed at the most responsible utilization of the space environment for the equitable progress of all peaceful human activities.

Thank you for your attention.