

Check against delivery

ITEM 18 Dark and Quiet Skies
Austria, Chile, Dominican Republic, Slovakia, Spain, ...
Statement delivered by Permanent Representative of Chile, Ambassador Belen Sapag

Mr. Chair, Distinguished Delegates,

1. The Delegations of Austria, Chile, Dominican Republic, Slovakia, Spain, ... together with the International Astronomical Union, the European Southern Observatory and the Square Kilometer Array Observatory as Observers, are pleased to present the Working Paper A/AC.105/C.1/L.396 “Protection of dark and quiet skies”.

2. The protection of the astronomical observations from the interference by the communication satellite constellations was presented during the 58th Session of the STSC in the Conference Room Paper #17. The Report of the SubCommittee recommended that the matter should be further discussed involving all stakeholders and the results presented to the current STSC Session. The Report also identified the Conference “Dark and Quiet Skies for Science and Society - II”, to be organized by UNOOSA in collaboration with IAU and the Spanish Government, as an important opportunity for assessing the impact of the constellations on astronomy and propose viable mitigating measures.

3. The Conference took place in October 2021 and its detailed results are reported in the STSC document A/AC. 105/1255. The recommendations contained in the Working Paper stem from the outcome of the Conference, as well as from one year of fruitful interaction between the astronomical community and the space Industry. Indeed the major difference between last year's Conference Room Paper and the current Working Paper, is the involvement of Industry in defining mitigating measures that are feasible and acceptable by the companies operating the constellations.

4. A first conclusion of the Working Paper, for which we respectfully ask the consensus of the Delegates, is the recognition that astronomical observations are an essential asset of space activities. For example, the exploration of solar system bodies, from asteroids to planets, critically depends on detailed observations from ground- and space-based astronomical facilities. Astronomical data are used to build and refine global reference frames which are essential for space navigation. Observations of Near Earth Objects are instrumental to plan and test space missions that may deflect dangerous asteroids. It is therefore in the interest of the entire international astronomy community to protect global astronomical observing capabilities from adverse and significantly disruptive artificial interferences, caused by the Artificial Light At Night or ALAN as well as by the satellite constellations.

5. For protecting ground based astronomical observations from ALAN, we invite all Delegates to convey the recommendations contained in the mentioned Conference Report to their governmental authorities. The negative effects of ALAN can be substantially reduced by adopting simple energy saving regulations or guidelines on urban illumination. Several countries have already successfully

implemented such policies and we strongly encourage all nations to follow their example.

6. The mitigation of the impact by the satellite constellations is a more difficult issue to tackle, because it is a multidimensional problem. The number of the satellites in constellations, their orbital altitude, their apparent luminosity, the attitude of their solar panels with respect to the ground observer and the cumulative microwave emission of the constellation are all factors that concur in creating potentially disruptive interferences to both optical/infrared and radio telescopes.

7. Mitigation measures can either be implemented by industry, acting on the combination of the above mentioned parameters, or by the astronomers, adopting observing strategies and post-processing procedures. In both cases, the collaboration between industry and the astronomical community is essential. The mentioned conference, in the industry-related section of its report, concluded that satellite operators were more likely to adopt voluntary practices or mitigation tools if they engaged with astronomers early in their project cycle, before spacecraft designs were finalized and when modifications to architecture, spacecraft design or operations could be introduced with less cost or schedule impact.

8. Hence we respectfully invite the Delegates to convey the set of best practice guidelines that are summarized in the conference report to the space Industries and space operators in their countries, asking them to adopt them at a very early stage of the design of a new constellation. The recently constituted IAU Centre for the Protection of the Dark Sky from Satellite Constellation

Interference will produce and disseminate new data and information on the satellite impact on which Industry and any stakeholder group will be able to draw.

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9. We do hope that the simple and constructive recommendations presented in the Working Paper could encounter the consensus of the STSC. We also believe that the new situation created by the large satellite constellations in LEO is in rapid evolution and hence the ongoing exchange of views on the topic of dark and quiet skies should continue.

Thank you for your attention.

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