

**Statement by Ms. Ashley VanderLey, United States Representative,
on Agenda Item 17, “Dark and Quiet Skies,” February 10, 2023**

Thank you, Chair. The United States appreciates this important topic being included again on the agenda for this year’s Subcommittee. There are now close to one million people receiving broadband internet services from satellites in low-Earth orbit, and we recognize the growing opportunities this new technology enables for scientific research and development, weather monitoring and emergency preparedness, and disaster response. At the same time, construction is nearing completion for the National Science Foundation’s Vera C. Rubin Observatory, and we recognize the challenges these constellations pose to astronomy and the importance of close collaboration between satellite owner-operators and the astronomical community to mitigate impacts that could hinder scientific discoveries in the coming decade for this telescope and other world-class observatories, such as the International Gemini Observatory, for which the United States is a proud partner with Canada, Chile, Brazil, Argentina and the Republic of Korea. We are appreciative of the opportunity to provide a short update on work within the United States on this topic.

The National Science Foundation’s NOIRLab is a co-host of the International Astronomical Union’s new Center on the Protection of Dark and Quiet Skies, or IAU CPS, along with the Square Kilometre Array Observatory, and many people from the United States have participated in the IAU CPS this past year, including in leadership roles. The approach taken by the Industry and Technology Hub of the IAU CPS to work on a set of best practice guidance is an important development, and the United States encourages the voluntary implementation of the guidance in satellite design and development. We also encourage implementation of the IAU CPS recommendations on the many steps astronomical observatories can take to mitigate these challenges including software development and tools for image processing and developing more robust receivers and enhanced detector technologies. The United States is proud of the fact that U.S. companies are working with the National Science Foundation and its astronomical observatories to negotiate coordination agreements with commitments to not only align with guidance developed through processes facilitated by, and reflected in the Recommendations of, the International Telecommunication Union Radiocommunication sector, but also commitments to do more. One company has already signed such an agreement with NSF, and the United States is

encouraged by the prospect that others may soon take similar steps. These U.S. companies are deciding to continue to work towards following the recommendations from the IAU Dark and Quiet Skies best practice guidance, including working to reduce optical brightness to 7th visual magnitude or fainter by physical design changes, attitude maneuvering, or other ideas to be developed, and providing orbital information publicly that astronomers can use for scheduling observations around satellite locations for telescopes with narrow fields of view. These and other best practice guidance implementation efforts will be discussed in a technical presentation this afternoon. Additionally, some U.S. companies are committing to coordinate dynamically with impacted United States radio astronomy facilities, to avoid main beam illumination. As with optical mitigations, these are steps that have been undertaken proactively and cooperatively. The National Science Foundation's National Radio Astronomy Observatory has undertaken a series of field tests and has more planned in the coming year to verify that radio astronomy observations are not impacted.

The United States appreciates the work by Chile, Spain, Slovakia, Bulgaria, the International Astronomical Union, the European Organization for Astronomical Research in the Southern Observatory, and the Square Kilometre Array Observatory in preparing another Working Paper on the Protection of Dark and Quiet Skies (A/AC.105/C.1/2023/CRP.18). The United States strongly supports the intention and spirit of this Working Paper, including the recognition of the boundaries between responsibilities of the Subcommittee and the International Telecommunication Union Radiocommunication sector.

The United States supports the proposal to create an Expert Group on "Dark and Quiet Skies Coexistence with Satellite Constellations." We would encourage this Expert Group to focus on promoting awareness, synthesizing and reporting back to the Subcommittee on best practice guidance, and enabling communication and cooperation between Committee Members and stakeholders, all while leveraging the excellent work and organizational structure already being implemented by the IAU CPS. The United States also supports the proposal of another single-issue Agenda Item on "General Exchange of views on Dark and Quiet Skies" for there to be a focused place for discussion and exchange of views at the 61st session of the Subcommittee in 2024. We strongly believe that by working together to synthesize and implement best practice mitigation measures, we can promote astronomy activities worldwide.

In conclusion, the United States is proud of the leadership from both astronomers and members of the commercial sector to identify and address challenges, improve communication between satellite owner-operators and the astronomical community, and to lead technical solutions. We look forward to continuing engagement on this issue.

Thank you, Chair.