

Annual Report from IAU Dark & Quiet Skies Executive Committee Working Group

EC WG members: Piero Benvenuti (OC), Laura Ferrarese, David Galadi-Enriquez, Richard Green (OC), John Hearnshaw (OC), Harvey Liszt, Ramotholo Sefako, R. Chris Smith, Diane Turnshek, Constance Walker (Chair+OC), and Yongheng ZHAO

Various members of the IAU Dark & Quiet Skies (D&QS) Executive Committee Working Group (ECWG) have been active in representing the interests of IAU in several major areas:

- In organizing and executing its third successful Focus Meeting during the last three IAU General Assemblies. With the 2018 GA taking place in Vienna, C.B7 and the ECWG took the opportunity to strengthen the relationship with CIE.
- *(EC Chair/B7 President and C.B7 VP and ECWG Member/C.B7 Advisor:)* In organizing and executing a successful special session on light pollution, radio interference and satellite constellations for each of the last three years at the January American Astronomical Meeting (AAS). The January 2020 AAS meeting [special session on satellite constellations](#) had a VP from SpaceX as a guest speaker.
- In developing a new set of webpages. The webpages for B7 are almost complete. The webpages for the D&QS ECWG are being developed.
- In writing and publishing two IAU press release statements ([June 2019](#), [February 2020](#)) and an [IAU theme](#) in the last 11 months to spread awareness on the impact of satellite constellations on the field of astronomy and what IAU B7 was doing to address it.
- In requesting half dozen astronomers from Europe, Chile and the USA to discuss modeling the impact of satellite constellations and share results. A few papers have resulted. One from B7's secretary, [David Galadi-Enrique](#) (Observatorio de Calar Alto) (see below). Another from [Olivier Hainaut](#) included in the link (ESO).
- In requesting (with other institutions) groups (Las Cumbres Observatory, CTIO, and the Universidad de Antofagasta) to observe Starlink's DarkSat; an [A&A paper](#) by the last group has been published so far.
- *(EC Chair/B7 President and C.B7 VP:)* In holding 10 calls with SpaceX through the [AAS](#) in as many months to understand each others' culture and work toward solutions on the impact of satellite constellations on astronomy.
- *(EC Chair/B7 President & WG Co-Chair M. Metaxa:)* In working with educational organizations to spread awareness of and solutions toward light pollution, radio interference and satellite constellations: 1) co-chairing the IAU100 [Dark Skies for All Global Project](#) and helping to make the IAU100 Dark Skies Ambassadors into the [IAU Dark Skies Ambassadors](#) to continue their great work; 2) heading the [International Dark Sky Association](#) (IDA) Outreach Committee and partnering with the IDA on International Dark Sky Week; 3) partnering with [Citizen Science Association](#), [Astronomers Without Borders](#), and [SciStarter](#) on the [Globe at Night](#) light pollution measuring campaigns; 4) partnering with Laser Classroom to manufacture the IAU IYL [Quality Lighting Teaching Kit](#) as the [Turn on the Night kit](#) (at no profit); and 5) organizing and holding a few international education events (e.g., including the 3 presentations as workshops or a talk

before the IAU GA hosted by Global Hands-on Universe, Galileo Teacher Training, and Commission C1 and first [e-Light pollution exhibition](#) during the IAU GA 2018 and this year a [world-wide children's art campaign on light pollution](#), the latter two through the efforts of Margarita Metaxa and the first three through Connie Walker, co-chairs of the B7 WG on Achieving Sustainable Development within a Quality Lighting Framework).

- *(EC Chair/B7 President:)* In compiling a technical paper on modeling sky glow as part of IES's Sky Glow Calculation Technical Committee. Available later this year.
- *(ECWG Member/Advisor, ECWG Members & EC Chair/B7 President:)* In co-organizing a conference (most likely virtual) with IAU, COPUOS and IAC on "[Dark and Quiet Skies: Science and Society](#)" to be held October 6-9, 2020. A slack workspace has been organized to enable organizing among the SOC members. Working groups are being defined to tackle key issues in advance, including satellite constellations. The event will result in a document that describes what measures Governments and private enterprises can adopt to mitigate the negative impact of technological implementations on astronomy without diminishing the effectiveness of the services they offer to citizens. The final document will be presented to COPUOS for endorsement, to become a reference for regular future analysis of the situation.
- *(EC Chair/B7 President, C.B7 VP, and ECWG Member/C.B7 Advisor:)* In co-organizing a workshop (now virtual) with NOIRLab and AAS on satellite constellations impact and solutions to be held June 29-July 2, 2020. A slack workspace has been created to enable organizing among the SOC members. Working groups are being defined to tackle key issues in advance of the workshop. The workshop goal is to assemble solutions the satellite constellation companies and various observatories can implement to lessen the brightness of the satellites.
- *(EC WG member, David Galadí)* In calling the attention of the industry, institutions and general public on the importance of spectral composition of the light in the context of light pollution and, mainly, on the need to measure and to limit the amount of blue light. This led to technical proposals at several instances, and to a scientific paper on synthetic photometry of artificial light.
- *(EC WG member, Harvey Liszt)* Continued as NRAO Spectrum Manager and Chair of IUCAF, representing radio astronomy views at ITU-R WRC-19 in Sharm El-Sheik (10/25/20 - 11/22/20) and during seven weeks of other ITU-R meetings in Geneva. Attended RFI2019 in Toulouse. Co-chaired the organization of SM2020, the 5th International IUCAF Spectrum Management School, Stellenbosch SA, March 2-6, 2020. Participated as a member of the AAS Comm. on Light Pollution, Radio Interference & Space Debris.
- *(EC WG member, John Hearnshaw)* Chaired the OC and organized a conference in New Zealand in October 2019 on dark skies and light pollution. This was the New Zealand Starlight Conference and it was registered as an IAU100 event. The proceedings have been published on-line at <https://starlightconference.org.nz>.
- Please note that Piero Benvenuti and John Hearnshaw do more beyond this report than can be recounted here.