



Presidente

Roma 30 Marzo 2023

Prime Minister Giorgia Meloni
Sherpa Ambasciatore Luca Ferrari
Sous-Sherpa Dr. Fausto Panebianco
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RE: Concerns on the impact of large satellite constellations on astronomy

Dear Prime Minister, Gentile Presidente,

I am writing to you on behalf of the Italian Astronomical Society, which represents about 300 professional astronomers and teachers in Italy. Our Society is affiliated to the European Astronomical Society (EAS), with a membership of close to 5,000 across the continent.

The ongoing deployment of the SpaceX Starlink system and of OneWeb is set to be followed by the Amazon Kuiper satellite constellation. The European Union has recently announced plans to establish their constellation, as have a number of other players. These and other planned systems could see the population of satellites in Low-Earth Orbit (LEO) rise from 5,000 (the current value) to more than 400,000 by the end of this decade.

There are a number of concerns associated with this unprecedented change in the use of LEO, such as the management of space traffic and debris, and for our community the direct and potentially very serious effects on astronomical research at both optical and radio wavelengths. The latter are covered in detail in the International Astronomical Union Dark and Quiet Skies Reports^[1], to which the EAS contributed, which are under consideration by the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS)^[2].

In short, such a large population of satellites could seriously compromise the work of new and existing astronomical facilities on the ground and in space. These include the Vera Rubin Observatory and the Square Kilometre Array Observatory, where Italy is making substantial investments, both of which are set to begin operations later this decade. Recent work by ESA scientists also documents a similar impact on orbiting observatories like the Hubble Space Telescope.



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The astronomical community is actively engaging with industry, funding agencies and regulators to prevent serious harm to our science. This engagement has been very positive so far, finding industry receptive to our concerns and actively looking to develop and implement mitigation strategies.

The upcoming G7 Science & Technology Ministerial in Sendai (12-13 May) will also address space matters, offering an important opportunity to include wording on Dark and Quiet Skies in the final Communiqué.

We were recently made aware that, in preparation for the G7 meeting in Sendai, the European Commission has proposed to include a reference on mitigating the impact of large satellite constellations on astronomy.

We urge you to the summit to support this measure, to help protect the science of astronomy and our shared ownership of an unfettered night sky. A high level statement from the G7 in support of this aim would be a powerful incentive for governments and private companies worldwide.

If you need further information, I can provide contacts to experts from the research community and representation from major astronomical facilities who will be happy to assist you.

Yours sincerely,

Prof. Roberto Buonanno, President

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^[1]<https://www.iau.org/news/announcements/detail/ann22002/>

^[2]https://www.unoosa.org/res/oosadoc/data/documents/2022/aac_105c_11/aac_105c_11_394add_7_0_html/AC105_C1_L394Add07E.pdf (p.3-5)