

Losing the night sky due to tens of thousands of satellites

When we look up to the heavens, we largely see the same view that captivated and inspired our ancestors. The constellations, the Milky Way, shooting stars, and the night sky are woven into the fabric of our society, culture and religion.

We are on the precipice of losing the night sky.



Figure 1: Starlink satellites (band of parallel streaks) fill the sky on this stack of images taken by the Global Meteor Network from the Canary Islands. Arcs in the background are the trailing stars.

Right now, SpaceX and other companies are **planning to launch tens of thousands of bright satellites in orbit around the Earth** [refs 1,2,3]. In fact, SpaceX has already launched 120 satellites, and expects to launch another 60 every other week. If this continues, the familiar constellations will be constantly crisscrossed with the streaks of satellites [refs 0,9], which will outnumber the naked-eye stars. **It is only a matter of a few years before the sky as we know it — and as our ancestors have known it for millennia — will be irretrievably lost.**

The night sky is one of the most inspirational views that our planet offers. Pondering the vastness of the universe provides inspiration to children, artists, scientists, and religious thinkers. The night sky is also an integral part of nature. For example, migrating birds navigate using the stars [5], which may be disrupted by these bright satellites swarming the sky [0,6]. In addition, the satellites are already causing very serious damage to ground-based astronomy [6,8].



Figure 2: Starlink satellites march across the sky on this photo taken by Egon Filter from Brazil.

SpaceX's capability to launch so many satellites does represent a technological breakthrough. The goal of providing Internet service to billions of people may have merits, and Elon Musk has been an influential leader and supporter of science and technology. But the potential for SpaceX's Starlink network of satellites to degrade the night sky seems to be a blind spot in Musk's field of view. He wants humanity to travel to Mars, an ambitious and inspiring goal. But do the people of Earth want to pay for this adventure by despoiling their night sky?

The power to launch so many inexpensive satellites relies on a legal lacuna. There is no comprehensive space law prohibiting or even regulating light pollution [7] from space. The heavens should not be for sale. The natural world, the planet Earth, and the sky above us are not mere commodities to be branded and bartered amongst the elite. They go beyond our definitions of monetary value, forming a fundamental part of who we are. The sky must not be lost.

ACTION NEEDED

Please sign this petition to help us tell the Federal Communications Commission not to give permits (or withdraw such permits) to SpaceX and other companies for launching additional satellites that will potentially harm our view of the night sky. Let's send a message to SpaceX that such an uncoordinated launching of satellites must be immediately stopped. The satellites, their visual appearances, numbers or orbits, must be changed upon consultation with astronomers and other guardians of the skies. Let this petition also serve as a basis for establishing international space law governing the degradation of our view of the night sky.

[0] <https://www.iau.org/public/images/detail/ann19035b/>

[1] <https://www.nytimes.com/2019/11/11/science/spacex-starlink-satellites.html>

- [2] <https://www.space.com/see-spacex-starlink-satellites-in-night-sky.html>
- [3] <https://www.popsi.com/story/space/spacex-starlink-constellation-satellites-light-pollution/>
- [4] https://en.wikipedia.org/wiki/Space_advertising
- [5] <https://www.allaboutbirds.org/news/the-basics-migration-navigation/>
- [6] <https://institutions.newscientist.com/article/2223962-spacexs-starlink-satellites-are-interfering-with-astronomy-again/>
- [7] <https://www.darksky.org/starlink-response/>
- [8] https://www.speculoos.uliege.be/cms/c_5368959/en/the-starlink-project-in-the-astronomers-sight
- [9] <https://www.spaceweather.com/archive.php?view=1&day=23&month=11&year=2019>
- [10] <https://www.astro.princeton.edu/~gbakos/satellites/index.html>