

Have you ever seen the glow from a brightly lit football stadium? Its light can be seen from many miles away. Now imagine if there were 650 of these glowing stadiums clustered together in a large circular area, and up to tens of thousands of such glaring circles distributed on the surface of the Earth, all lit from space.

This is the plan of Reflect Orbital, which proposes using giant space mirrors to reflect sunlight from space back to Earth, delivering it on-demand. The reflectors would be mounted on satellites in space, with ambitions to launch a constellation of more than 50,000 by 2035. This service would beam sunlight onto spots of 5km or larger in diameter on Earth's surface, for the supposed purpose of clean energy and lighting. As seen from Earth, each of these satellites would appear much brighter than the full moon, but squeezed into the scorching glare of a bright star – painful to look at with your eyes.

When one or multiple mirrors light a circle of 5km in size, this covers roughly 19.6 million square metres. This is equivalent to around 650 football stadiums, each 30,000 m<sup>2</sup>. Imagine the atmospheric glow from 650 stadiums shining overhead. At full-scale capacity, this constellation could bathe many such target areas at levels far exceeding the brightness of the full moon, or fewer areas at even higher light levels.

This sounds like an abstract futuristic concept, but it is not. The Federal Communications Commission (FCC) of the United States is currently reviewing an application for the first satellite of this constellation to test its orbital illumination system. The period for public comment is open. The deadline is imminent.

If scaled, this technology could introduce sustained artificial dusk and dawn conditions across landscapes, in addition to hours-long bursts of daytime brightness. The concern is clear:

If orbital illumination increases skyglow or creates persistent artificial twilight near protected areas, it degrades or completely shuts down nocturnal ecological processes. For those in nature-based tourism, these are processes that underpin the tourism value of the wilderness. In addition, the adverse health effects of light pollution for humans have been clearly documented in the past 20 years; inhabited areas exposed to such glow would experience increased rates of depression and cancer, among others.

It has become a luxury to experience a truly dark sky: light pollution means most people never see the stars or the Milky Way in their full magnificence. Moreover, dark skies are not just an aesthetic luxury: they are ecological infrastructure for nocturnal wildlife, an operational necessity for astronomy, and a core asset of the wild.

Astrophysicist Gáspár Bakos, a professor at Princeton University, has publicly warned that this is a pivotal moment. Once large constellations for public lighting are approved for launch, it is difficult to reverse and sets the stage for other companies and countries to build their own. This first satellite application sets a precedent for the rest of the system.

Two realities we must face:

1. Light pollution from satellites cannot be zoned away like ground-based lighting, and it does not discriminate. Light will simply fall on anything within the huge circle of illumination - on your roof, your backyard, your local forest, and beyond.
2. Once thousands are in orbit, the precedent for this technology to exist is set.

This FCC comment period is a narrow window for informed public engagement before regulatory decisions are made, and every voice counts.

If you value dark skies, ecological integrity, human health, or astronomy, here are steps you can take:

1. Sign the open letter by DarkSky International opposing Reflect Orbital. Read the statement and sign here:  
<https://darksky.org/news/organizational-statement-reflect-orbital/>
2. Read their statement on the FCC public comment period:  
<https://darksky.org/news/two-satellite-proposals-threaten-the-night-sky-the-window-to-act-is-now/>
3. Sign this petition:  
<https://www.change.org/p/stop-space-mirrors-protect-the-night-sky-and-our-health-and-survival>
4. Share all of the above widely.
5. Submit a public comment to the FCC before Monday 9th of March 2026.
  - a. A template and instructions on how to submit can be found at the link in #2 above (see specifics within for Reflect Orbital SAT-LOA-20250701-00129)
6. Engage with credible media platforms that work to understand and discuss environmental protection topics.

This is not about being anti-innovation. It is about governance before scale. Approving new infrastructure without first assessing the risks opens the door to preventable harms. Innovation is not a reason to fast-track these procedures.

The night sky is our shared heritage with substantial cultural, ecological, and scientific value. The night sky is a global commons. Decisions made now will define whether it remains one.



*Impression of the Namibia Desert in its current state (left) and with a ReflectOrbital satellite beaming light on it (right).*