

SpaceX satellites pose new headache for astronomers

May 29 2019, by Issam Ahmed



In this screengrab taken from a video shot by Marco Langbroek, a group of SpaceX Starlink satellites passes over Leiden, Netherlands on May 24, 2019

It looked like a scene from a sci-fi blockbuster: an astronomer in the Netherlands captured footage of a train of brightly-lit SpaceX satellites ascending through the night sky this weekend, stunning space enthusiasts across the globe.

But the sight has also provoked an outcry among astronomers who say the constellation, which so far consists of 60 broadband-beaming satellites but could one day grow to as many as 12,000, may threaten our view of the cosmos and deal a blow to [scientific discovery](#).

The launch was tracked around the world and it soon became clear that the satellites were visible to the [naked eye](#): a new headache for researchers who already have to find workarounds to deal with objects cluttering their images of deep space.

"People were making extrapolations that if many of the satellites in these new mega-constellations had that kind of steady brightness, then in 20 years or less, for a good part the night anywhere in the world, the [human eye](#) would see more satellites than stars," Bill Keel, an [astronomer](#) at the University of Alabama, told AFP.

The satellites' brightness has since diminished as their orientation has stabilized and they have continued their ascent to their final orbit at an altitude of 550 kilometers (340 miles).

But that has not entirely allayed the concerns of scientists, who are worried about what happens next.

Elon Musk's SpaceX is just one of a several companies looking to enter the fledgling space internet sector.

To put that into context, there are currently 2,100 active satellites orbiting our planet, according to the Satellite Industry Association.

If another 12,000 are added by SpaceX alone, "it will be hundreds above the horizon at any given time," Jonathan McDowell of the Harvard Smithsonian Center for Astrophysics told AFP, adding that the problem would be exacerbated at certain times of the year and certain points in

the night.



This screengrab taken from the SpaceX webcast transmission on May 23, 2019, shows a SpaceX Falcon 9 rocket with 60 Starlink satellites lifting off from Space Launch Complex 40 (SLC-40) at Cape Canaveral Air Force Station, Florida

"So, it'll certainly be dramatic in the [night sky](#) if you're far away from the city and you have a nice, dark area; and it'll definitely cause problems for some kinds of professional astronomical observation."

Musk's puzzling response

The mercurial Musk responded to the debate on Twitter with contradictory messages, pledging to look into ways to reduce the satellites' reflectivity but also saying they would have "0% impact on

advancements in astronomy" and that telescopes should be moved into space anyway.

He also argued the work of giving "billions of economically disadvantaged people" high-speed internet access through his network "is the greater good."

Keel said he was happy that Musk had offered to look at ways to reduce the reflectivity of future satellites, but questioned why the issue had not been addressed before.

If optical astronomers are concerned, then their radio astronomy colleagues, who rely on the electromagnetic waves emitted by celestial objects to examine phenomena such as the first image of the black hole discovered last month, are "in near despair," he added.

Satellite operators are notorious for not doing enough to shield their "side emissions," which can interfere with the observation bands that radio astronomers are looking out for.

"There's every reason to join our radio astronomy colleagues in calling for a 'before' response," said Keel.

"It's not just safeguarding our professional interests but, as far as possible, protecting the night sky for humanity."

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