# New Scientist

**WEEKLY** September 19–25, 2020


**EVIDENCE FOR ALIEN LIFE?**

*'It's basically either not a big deal, or we just found Venusians and that's incredible'*

**An extraordinary discovery in the atmosphere of Venus**

CORONAVIRUS SPECIAL

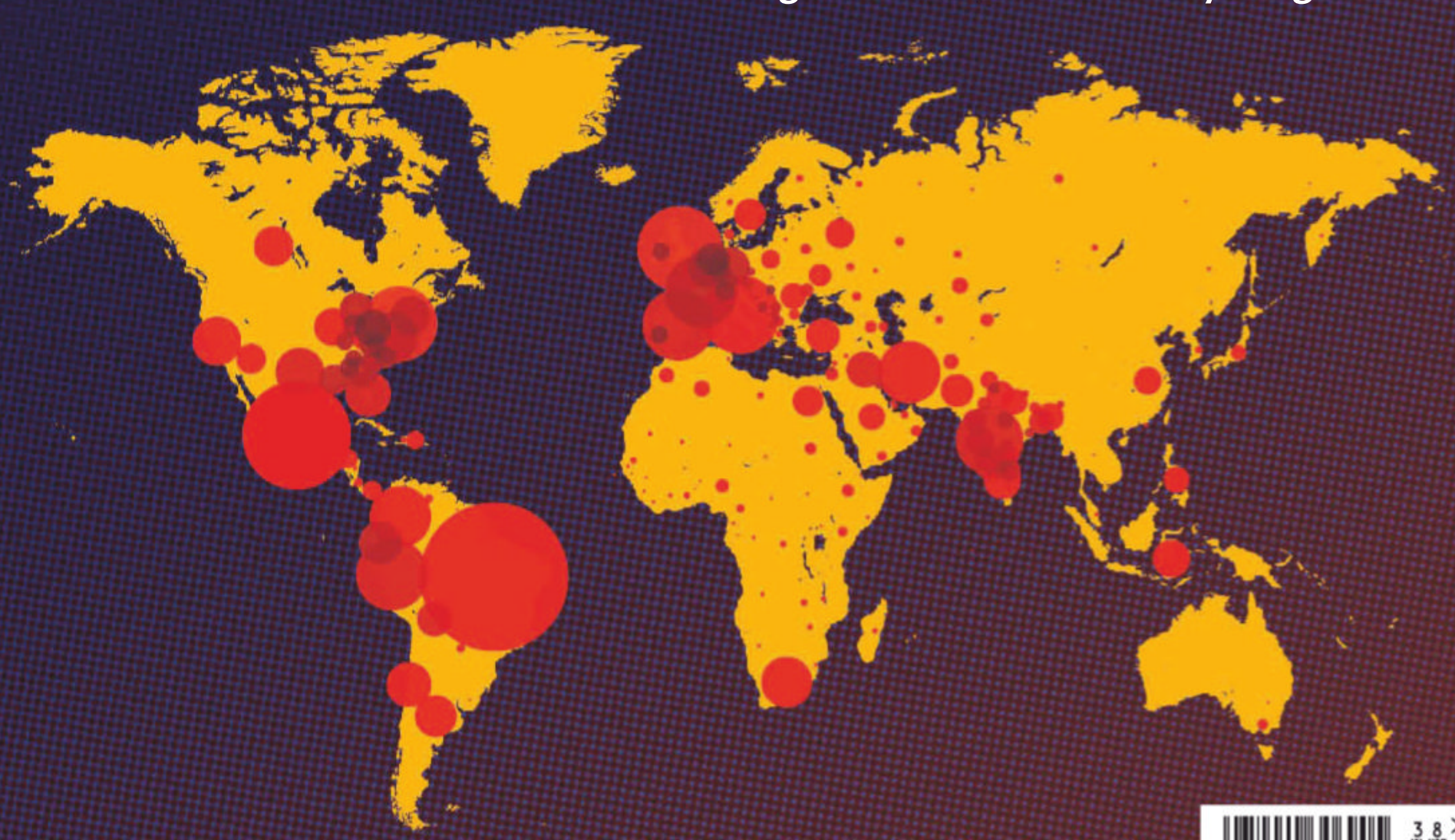
# ONE MILLION DEATHS

As the world approaches a grim milestone

**THE DATA**
**Can we trust the numbers?**

**THE VIRUS**
**How is it mutating?**

**THE FUTURE**
**Will a vaccine solve everything?**



**PLUS** FIRE IN ZERO GRAVITY / **VERY COLD HUMMINGBIRDS** / **YOUR UNIQUE GAIT** / BEST PET FOR AUTISTIC CHILDREN

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# The back pages



**Maker** Stargazing at home

# Spotting satellites

There are hundreds of SpaceX satellites in the sky. A successful sighting just requires a bit of luck, writes **Abigail Beall**

Abigail Beall gazes at the stars from her home in Leeds, UK. She is the author of *The Art of Urban Astronomy* @abbybeall

## What you need

**The Find Starlink website or something similar**
**A spot of sky viewed away from light pollution**

OUR skies are filling up with satellites. Starting in May 2019, the firm SpaceX has deployed around 700 Starlink satellites into Earth orbit over 11 launches. SpaceX plans to deploy 12,000, and perhaps later 42,000, satellites with the aim of providing internet access to the entire world.

These satellites have the potential to change the way that the night sky looks. For comparison, there are only around 2600 satellites currently orbiting Earth. These days, spotting a few satellites in the sky is still an exciting activity.

The Starlink orbits vary and change at the last minute, so it is difficult to predict too far in advance when they will be visible. But as there are so many of them, the chances of seeing one are high.

Most satellites orbit at an altitude of 1000 kilometres, but Starlink satellites orbit at just 550 kilometres, making them more visible compared with others of the same size. This has been a problem for astronomers attempting to take photos of the night sky, as the satellites have shown up as intrusive bright streaks (see photo). As of the ninth launch, the Starlink satellites have had sunshades, making them slightly less visible.

There are many online tools available to predict when you might get a glimpse of a Starlink satellite. One, called Find Starlink, takes your location and tells you what time and where in the sky to look. Even with the help of a tool it can still be a game of chance, though, but if you try a few times, you will eventually see something.

DENISE TAYLOR/GETTY IMAGES

To get the best chance of seeing a Starlink satellite, or a few of them that follow each other relatively closely, pick a clear night. Try to get away from light pollution by going to a park or an open field, for example. Let your vision adjust to the darkness, then keep an eye out for moving sources of light in the sky. Satellites are only visible when they reflect sunlight back to Earth. Because of this, the best time to look is just after sunset or just before sunrise, when sunlight is still reflecting off the satellites but it is dark enough to see them.

If you can't tell whether what you are looking at is a satellite or something else, there are a few simple rules to tell the difference. If a point of light is steady and not moving compared with everything else, it is a star. If it is a bright light moving slowly compared with the stars, it is a planet. If it is a bright flash moving extremely quickly across the sky in seconds, it is a meteor.

Satellites lie somewhere in between. They are steady points of light that move across the sky in minutes. Planes also move at this speed, but they have flashing red lights that give them away.

Stargazing apps will be able to show you the location of the planets, stars and big satellites like the International Space Station. But smaller satellites, like the Starlink ones, won't appear.

**Maker projects are posted each week at newscientist.com/maker**

## Next week

Science of gardening