

Image: Visualization of orbital space debris

14 February 2019



Credit: European Space Agency

This Valentine's Day, look to the skies at night and you'll see stars twinkling, a glistening Moon and perhaps even an orbiting science lab passing by, the International Space Station.

What you can't see is the thousands of bits of [space debris](#) that circle our planet – remnants of past scientific and technical endeavours, evidence of five decades spent in [space](#).

This last half century has seen a revolution in how we live, work and communicate, with about half the world's population now accessing the internet, a percentage that is rapidly increasing as more and more countries get connected.

This and other vital services, including meteorology, climate research, telecommunications, broadcasting and navigation depend on satellites in space – yet their environment is becoming ever more crowded and unsafe due to space debris.

As of January 2019, the number of debris objects estimated to be in [orbit](#) are:

- 34 000 objects larger than 10 cm in diameter
- 900 000 objects ranging from from 1 cm to

10 cm in size

- 128 million objects from 1 mm to 1 cm

Most of these pieces have the potential to damage functioning satellites or even destroy them altogether.

If we continue as we are, without measures to tackle this technological trash, the most useful orbits around Earth will become inhospitable to our critical space infrastructure.

To protect the planet we love, teams at ESA are working to tackle the pollution of space, as part of the Agency's [space safety activities](#).

ESA's Clean Space initiative is working to prevent the creation of space debris in orbit and to minimise the effect of space missions on our environment, and is planning a future mission to remove a 'piece' of debris from orbit (find out more in the [Clean Space blog](#)).

ESA's Space Debris Office constantly monitors more than 20 000 debris objects in orbit, issuing warnings and guidance to the operators of ESA spacecraft.

Provided by European Space Agency

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