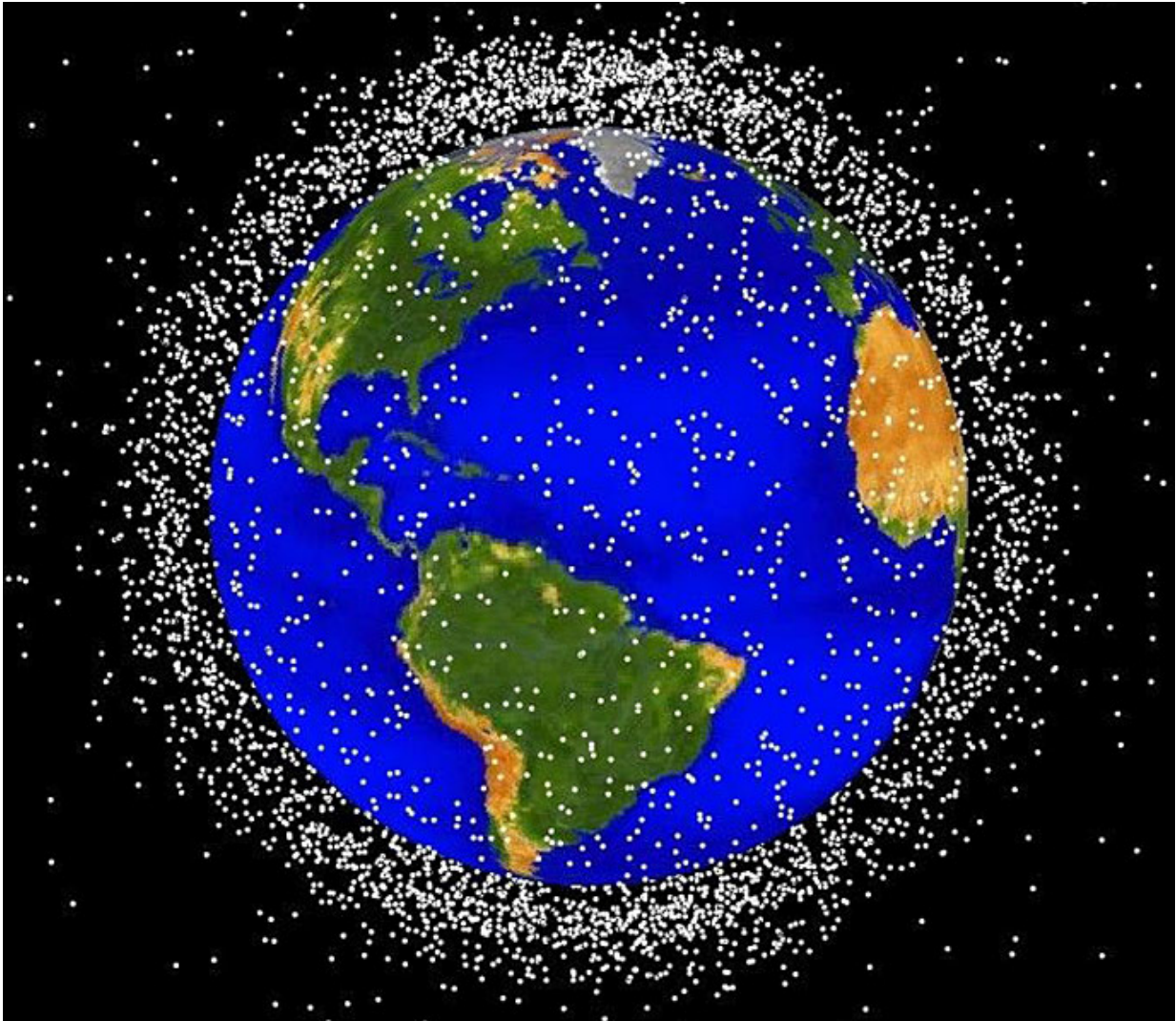


# Zapping away space junk

April 27 2015, by Pat Brennan

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Thousands of tons of space debris encircle the planet. Credit: NASA

Planet Earth is surrounded. Thousands of tons of dangerous space debris circle in low orbit, threatening serious damage, even death, if any were to strike the International Space Station. A proposal by a research team that includes UC Irvine could be the answer.

In a paper to be published Friday (April 24), the scientists describe a device that would sweep the debris away—and in a spectacular fashion: shooting at it with a laser mounted on the space station itself. The laser would be guided by a telescope to pick out the often tiny pieces of [space junk](#), said UCI physics & astronomy professor Toshiki Tajima. Then, with a few quick zaps, the laser would slow down the hurtling bits, causing them to fall and burn up in the Earth's atmosphere.

In their paper for the science journal *Acta Astronautica*, Tajima and his colleagues suggest a kind of technological tag team. A telescope previously proposed for the space station to detect high-energy cosmic rays would, part of the time, work in tandem with the laser to knock out [space debris](#).

Such a project is years away, Tajima noted. First, a [laser](#) system that he and his team invented—which, potentially, could shoot coherent beams with enough power to get the job done—must be scaled up. Then a space agency would have to back the proposal, load the necessary components onto a rocket and send them to the space station.

"The concept shows it is possible," Tajima said. "It has to be demonstrated; there's still a long way to go."

**More information:** Demonstration designs for the remediation of space debris from the International Space Station, *Acta Astronautica*, [DOI: 10.1016/j.actaastro.2015.03.004](https://doi.org/10.1016/j.actaastro.2015.03.004)

Provided by University of California, Irvine

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