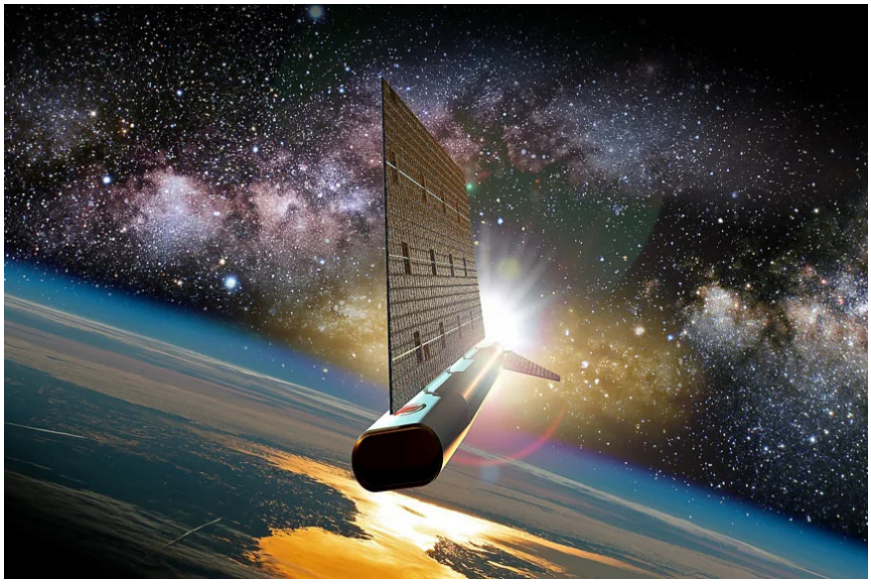
# Sky skimmers: The race to fly satellites at the lowest orbits yet



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Sky skimmers: The race to fly satellites at the lowest orbits yetThere's a new race in space, but it's not where you might think. It's happening close to home – in the nearest bit of space, right on the edge of Earth's atmosphere. High in the skies of Earth, a new space race is underway. Here, just above the boundary where space begins, companies are trying to create a new class of daring satellites. Not quite high-altitude planes and not quite low-orbiting satellites, these sky skimmers are designed to race around our planet in an untapped region, with potentially huge benefits on offer.

planet right now, at speeds of up to 17,000mph (27,000km/h). Every one of these delicate contraptions is in constant free-fall and would drop straight back down to Earth were it not for the blistering speeds at which they travel. It's their considerable sideways momentum, perfectly stabilised against the Earth's gravitational pull downwards, that keeps satellites in orbit.

A new class of satellites are aiming to push the limits of this balancing act and plough a much more precarious, lower orbit that would skim the top of Earth's atmosphere. Known as Very Low Earth Orbit (VLEO), spacecraft at these altitudes have to battle against the significantly greater

When you start describing it to people, it starts to sound like a perpetual motion machine," says Spence Wise, senior vice-president at Redwire, an aerospace firm in Florida. A perpetual motion machine is not meant to be possible. But it almost is, in this instance.