

Firing lasers at clouds to change the Earth's albedo

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A recent paper in the [“Science Advances” journal](#) describes research that has been conducted into the possibility of firing lasers at clouds to change their albedo, and hence reflect more light away from the Earth.

Here’s an explanation of the science behind it, from an [article by Neel V. Patel in Inverse](#):

...the study shows how the research team built a lab-controlled environment that recreated clouds formed in high-atmosphere conditions (a.k.a. cirrus clouds). Then they zapped those clouds with powerful blasts of lasers.

Here’s where things get really interesting: when the frozen ice particles hanging in those clouds are hit with lasers, an extremely hot plasma forms at the center, crushing into a shockwave that ripples through and breaks the ice particle up. Whatever water vapor is left quickly freezes into smaller ice particles.

Smaller ice particles can populate more of the surface area of clouds in a way that allows them to collectively reflect more sunlight than heavier particles can.

It sounds like a crazy idea and part of that reason is because we don’t have the laser technology to actually shoot powerful lasers up into the sky and blow frozen crystals in the clouds into smaller fragments.

This is probably one of the least sensible climate mitigation suggestions we’ve come across, in case you were wondering!