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Scientists reveal shocking finding: greenhouse gas emissions are shrinking Earth's stratosphere

The atmospheric layer is located about 12 to 30 miles above Earth's surface.

Story at a glance

- Researchers estimate the stratosphere has contracted about 0.25 miles since the 1980s.
- Over the next six decades the atmospheric layer could further decline by about 0.8 miles unless there are major cuts in greenhouse gas emissions.
- Experts fear the reduction of the stratosphere could have a devastating impact on satellite operations across the globe.

A new study suggests that human-produced greenhouse gas emissions are shrinking the Earth's stratosphere.

The study by a group of international researchers published in the journal Environmental Research Letters estimates the stratosphere, a layer of the atmosphere that stretches from about 12 to 30 miles above the Earth's surface, has contracted about 0.25 miles since the 1980s.

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Researchers predict over the next six decades the atmospheric layer will further decline by about 0.8 miles unless there are major cuts in greenhouse gas emissions.

Scientists decades ago discovered greenhouse gas emissions were causing the troposphere — the lowest atmospheric layer where people live and weather occurs — to heat up and expand, pushing the lower boundary of the stratosphere. When carbon dioxide enters the stratosphere it cools the air and causes it to contract.

The stratosphere starts just above the troposphere and contains the ozone layer which absorbs and scatters the solar ultraviolet radiation.

Experts fear the reduction of the stratosphere could have a devastating impact on satellite operations across the globe.

“It may affect satellite trajectories, orbital life-times, and retrievals, and via indirect influence on ionospheric electron density, the propagation of radio waves, and eventually the overall performance of the Global Positioning System (GPS) and other space-based navigational systems,” the study's authors wrote.

The research is a recent example of how greenhouse gas emissions are changing the planet. A study released last month found that glacial melting due to global warming has caused shifts in the Earth's axis of rotation since the 1990s.

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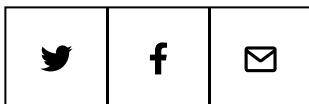
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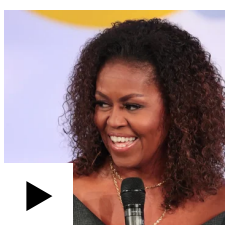


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