Researchers gaze at cloud formations

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Finnish researchers analyzing cloud formations say ozone destruction in the Earth's stratosphere might be occurring at a faster pace than thought.

Anatoli Bogdan and colleagues at the University of Helsinki say they reached that conclusion after studying low-temperature thin and subvisible cirrus, or SVC.

SVCs cover about one-third of the planet and affect global temperatures by reflecting sunlight back into space and preventing terrestrial heat from escaping into space. In addition, the scientists say ice particles in SVCs have a drying or dehydrating effect on the upper troposphere.

"Here we show, to our best knowledge for the first time, that the small ice particles are not completely solid, as is usually believed, but rather coated with a sulfuric acid/water overlayer," the researchers said.

The coating reduces the rate at which ice particles grow and remove water vapor -- a key greenhouse gas -- from the upper troposphere. That leaves more water vapor to contribute to the greenhouse effect.

The coating further affects greenhouse warming by slightly increasing reflection of sunlight back into space and reducing the escape of terrestrial heat.

The study appeared in the Nov. 16 issue of the Journal of Physical Chemistry A.