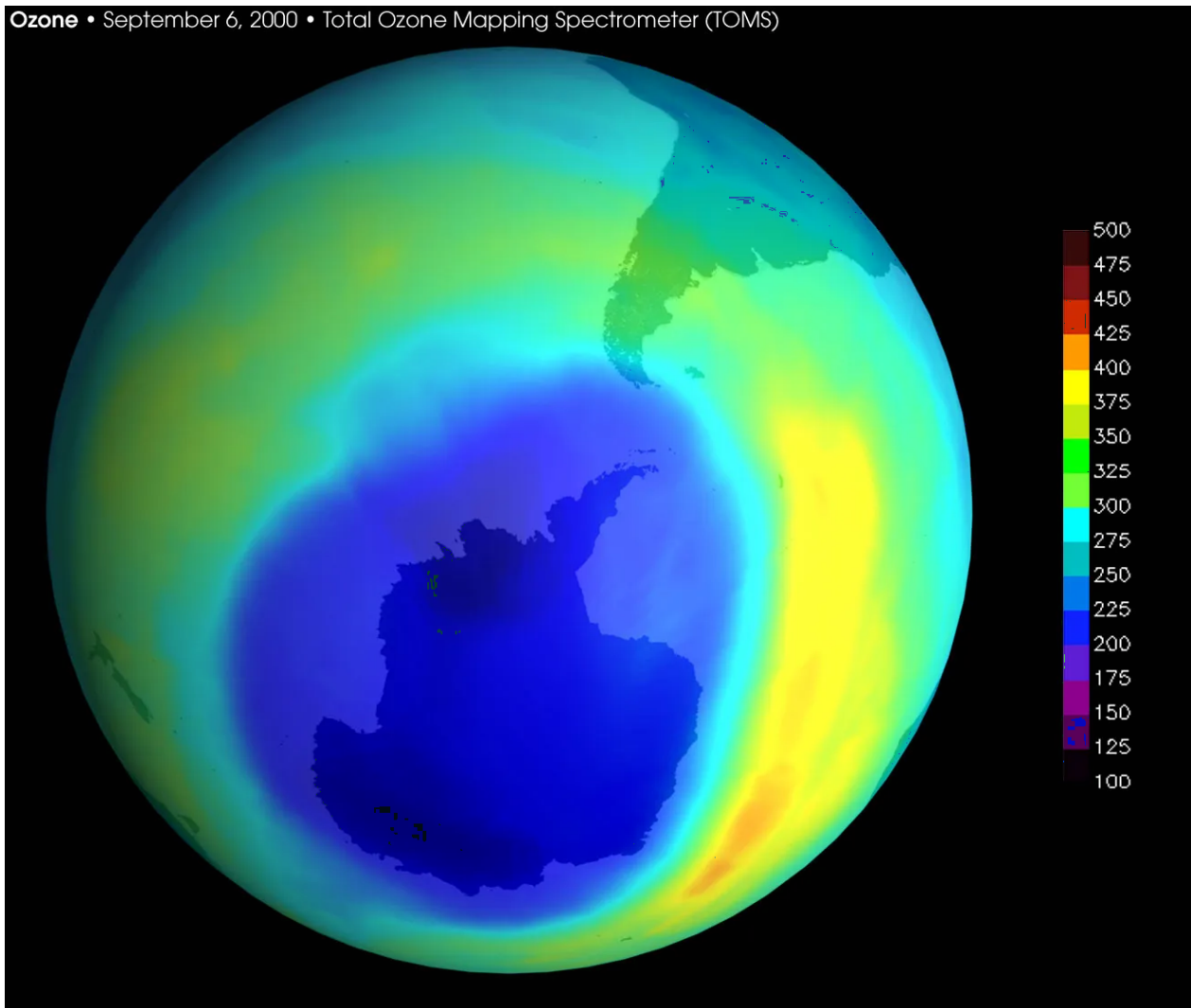


Ozone layer

By Lennart Kiil



The ozone hole over Antarctica on 6 September 2000, the largest measured until then. Blue and purple show low ozone values, measured in Dobson units.

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A layer in the atmosphere rich in ozone, which prevents [ultraviolet rays](#) from reaching the Earth.

The ozone is produced in a reaction between oxygen molecules and the Sun's ultraviolet light ([read more](#)).

The ozone layer is very efficient at absorbing the Sun's short wave ultraviolet light, and because of it only about 1-7 percent reaches the Earth's surface. This protects living organisms on Earth from the harmful effects of this type of UV-light.

UV-light damages the DNA, and can therefore affect all living organisms. Without the ozone layer's protection, the UV-light would cause many more cases of skin cancer and damaged eyes in humans. But the damaging effects of shortwave UV light would also affect other organisms. The amount of plankton in the oceans would decrease, which could have large consequences for the entire food chain.

Ozone is an unstable molecule, and even without UV-light some of it will automatically convert to ordinary oxygen molecules: $2 \text{O}_3 \rightarrow 3 \text{O}_2$

Ozone also reacts readily with a number of other atoms and molecules.

$\text{O}_3 + \text{X} \rightarrow \text{O}_2 + \text{XO}$ (where X may be a range of molecules)

Even though such reactions occur naturally, humans have been polluting the [atmosphere](#) with substances that have accelerated the breakdown of ozone. An example is freon, which was previously widely used for cooling in refrigerators.

The breakdown of the ozone layer by such substances have resulted in holes over particularly the North and South Pole.

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