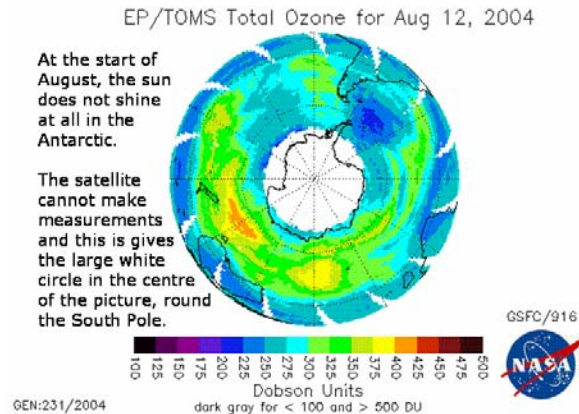


Antarctic 2004 Ozone Hole Presentations

Herewith two Ozone Hole presentations, useful to explain the development of the Antarctic Ozone Hole in 2004.



[The first presentation](#) (834 KB) contains Ozone snapshots of the Antarctic Ozone Hole in 2004, showing its extent from August 12 to November 30 (Austral Spring).

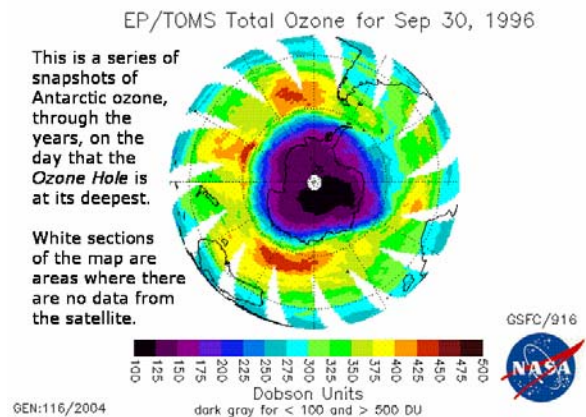
The snapshots series shows that, at the start of August, the sun does not shine at all in the Antarctic, and the instrument on the satellite cannot make measurements. The areas that the instrument does not see appear on the pictures as the white circle around the pole and the white streaks towards the equator. Later, the Sun shines on more of Antarctica, the vortex holding the stratospheric air round the South Pole gets stronger and the ozone in it starts to be depleted. By September, the edge of the vortex is well defined and the stratospheric air within it becomes more and more depleted in ozone.

In the latter part of September, the Ozone Hole is at its deepest but the vortex is becoming less stable, as it is warmed by sunlight, and is no longer circular.

During October, the vortex shrinks and so the Ozone Hole becomes smaller and less intense, and, by the end of November, the Antarctic stratosphere is almost back to normal.

[The second presentation](#) (208 KB) presents historical snapshots of the Antarctic ozone, from 1996 to 2004, on the day that the Ozone Hole is at its deepest.

Each year the Ozone Hole reappears at roughly the same size, shape and depth. However, 2002 was an exceptional year, the stratospheric vortex around the South Pole was very weak, and so the conditions that cause ozone depletion did not persist. In 2003 and 2004 the vortex seemed to be behaving "normally", consequently the Ozone Hole was as extensive as normal.



All pictures are from the Total Ozone Mapping Spectrometer archive at <http://toms.gsfc.nasa.gov/>

(January 2004)