



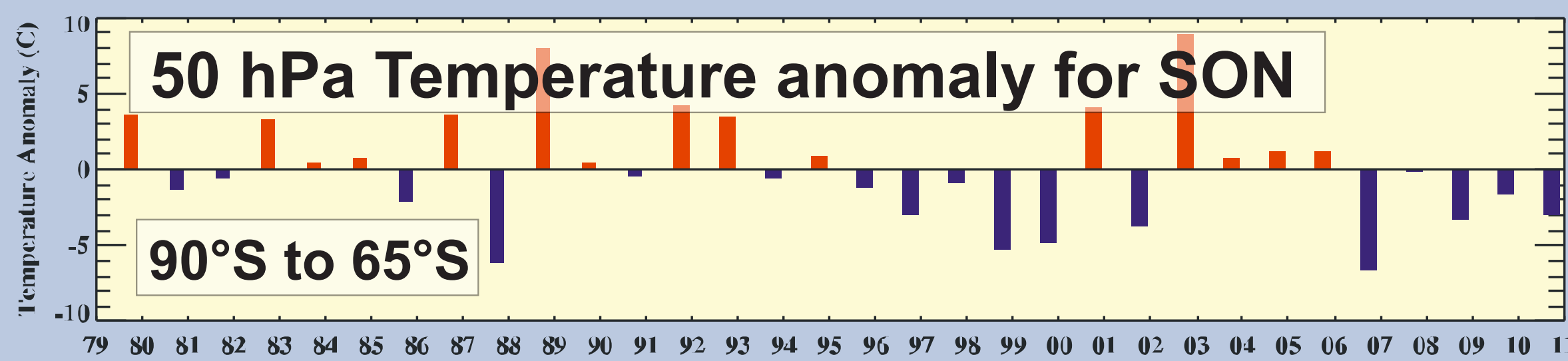
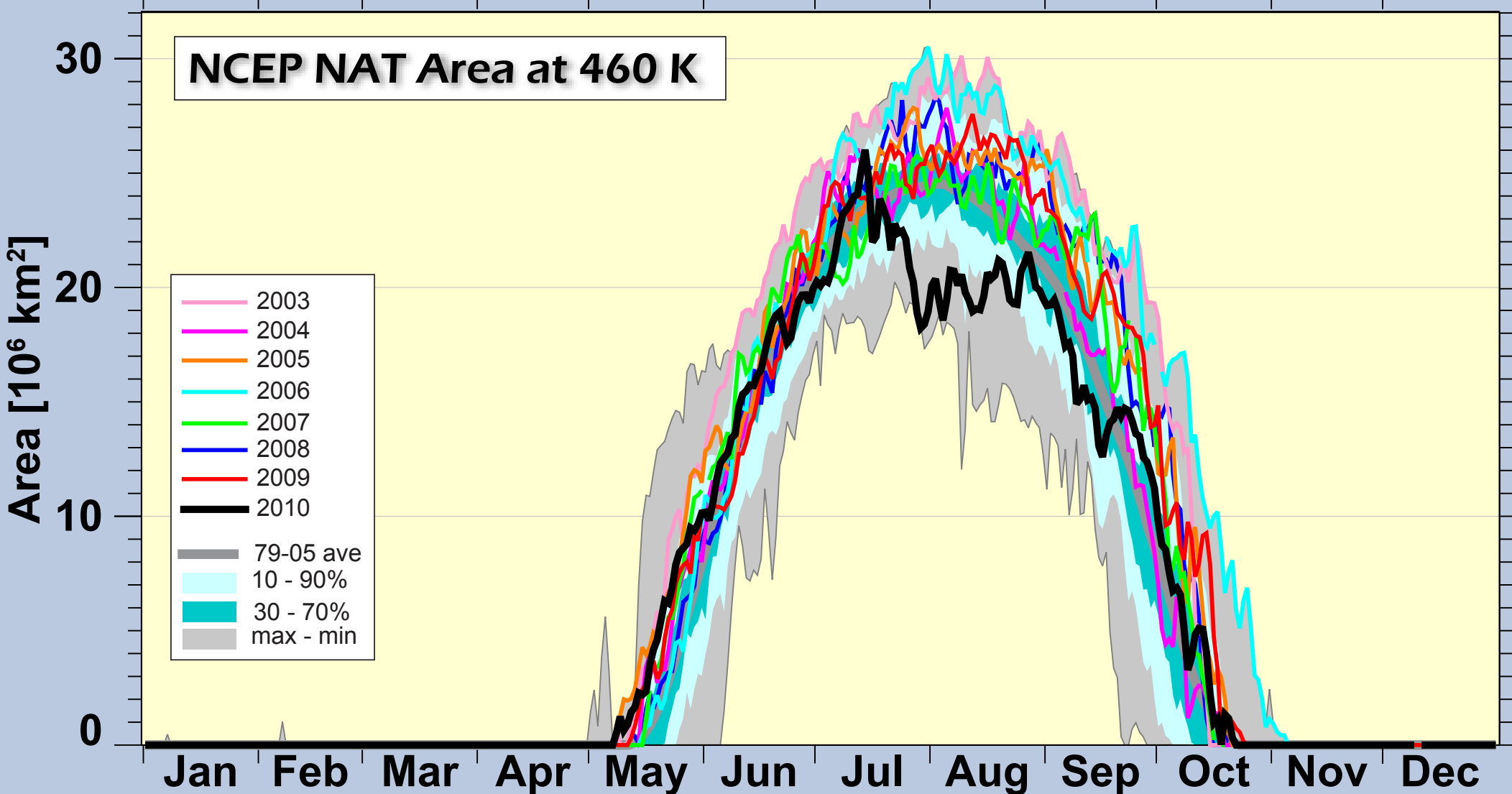
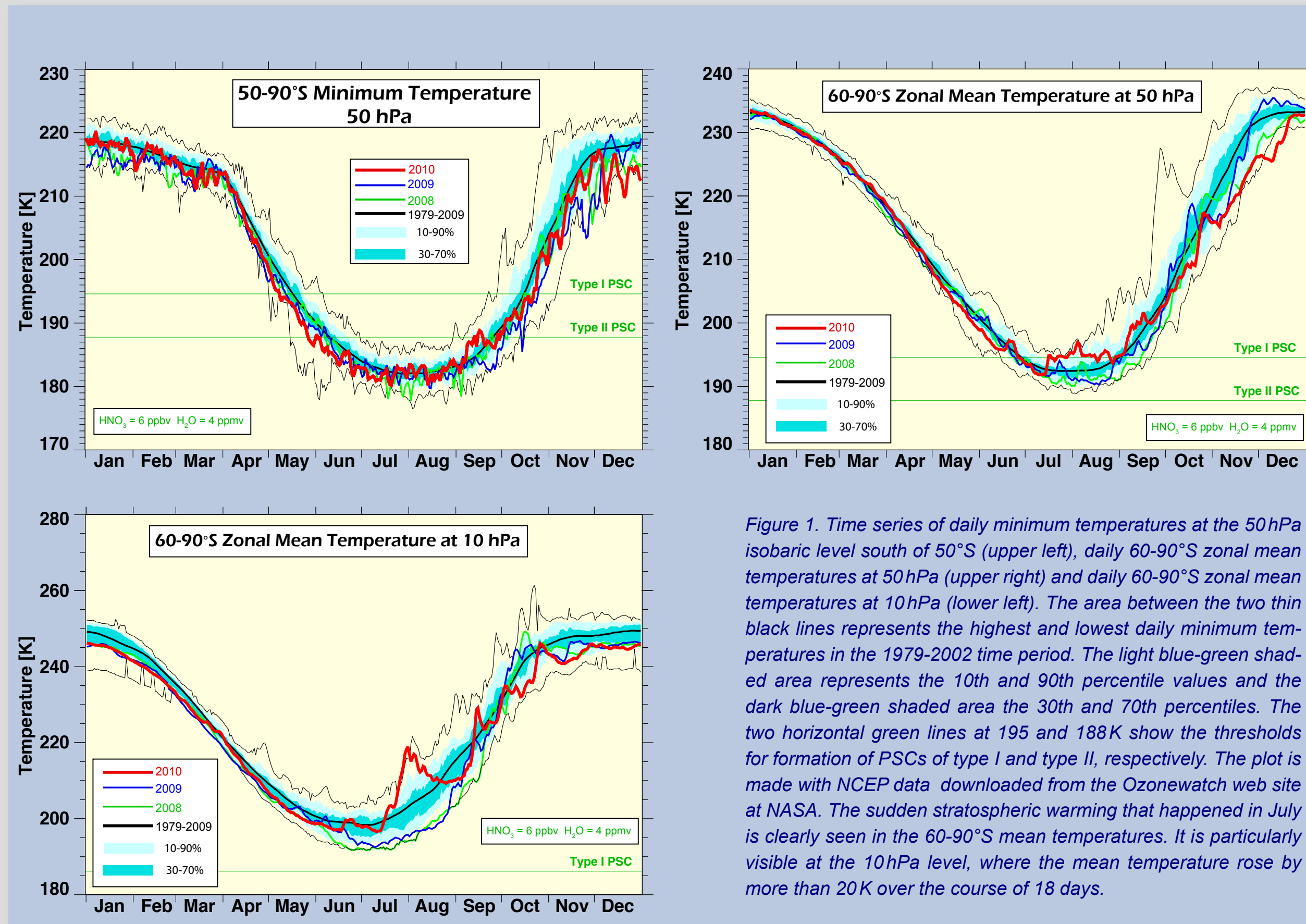
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Observations of the Antarctic ozone hole from 2003 - 2010

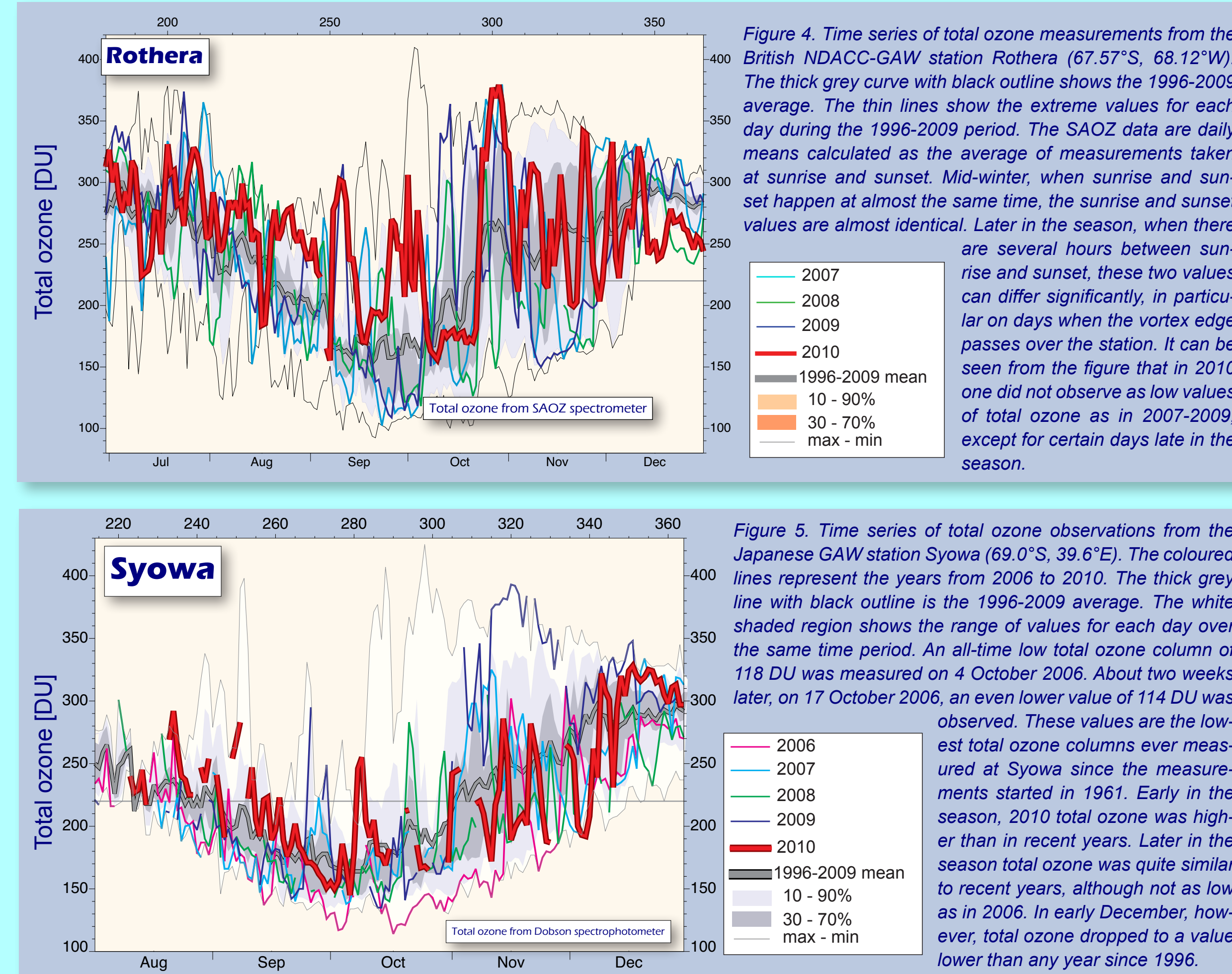
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Meteorology



Ground-based observations



Ozonesonde observations

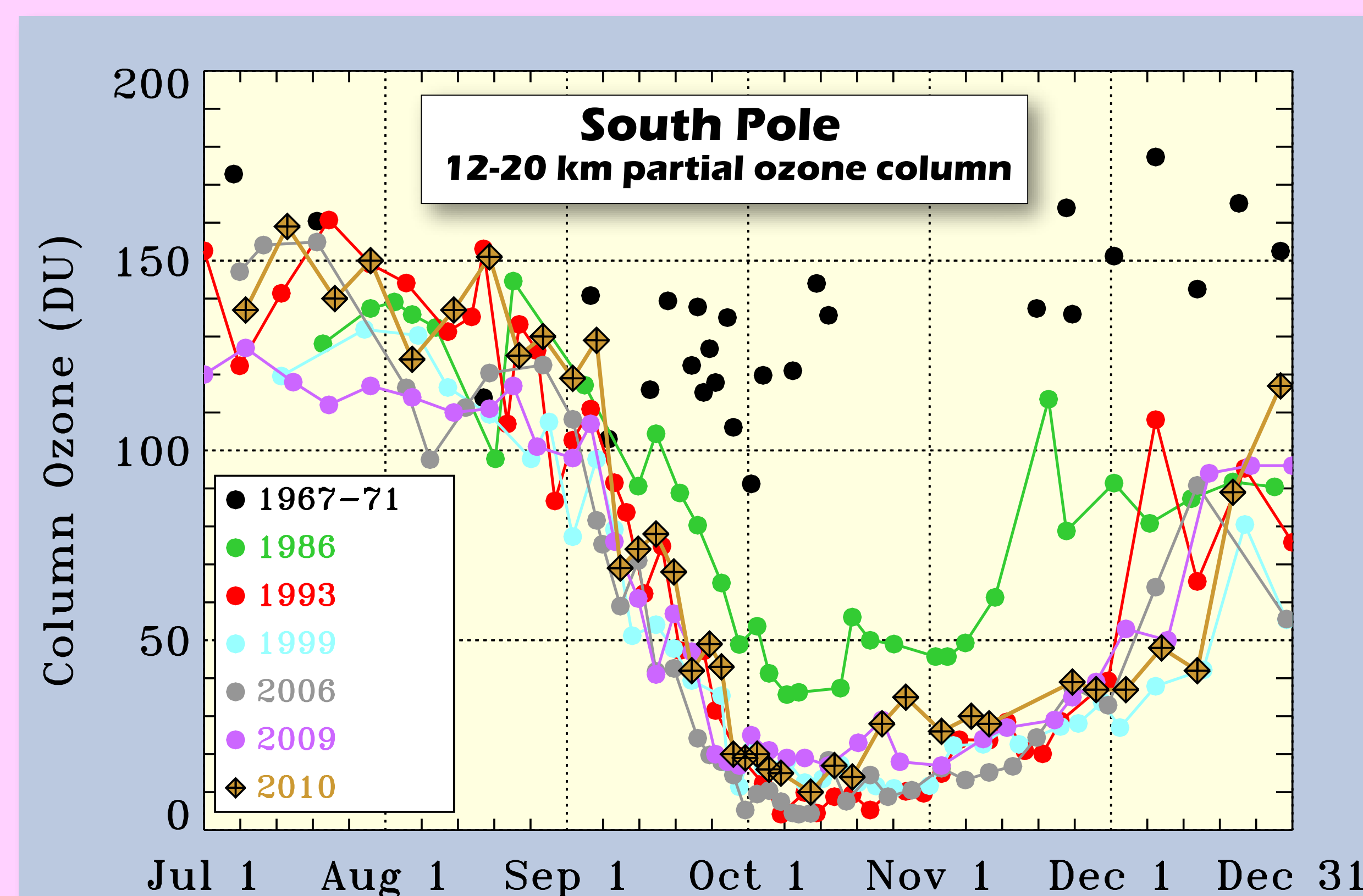


Figure 6. Ozonesonde observations from the NOAA-operated NDACC-GAW Amundsen-Scott station at the South Pole. Partial ozone columns for the altitude range 12-20km are shown. Data for the last two ozone hole seasons are shown together with some other characteristic years. The black dots are from the period 1967-71, before the appearance of the first ozone hole. 1986 was the first year of continuous soundings at the South Pole. In 1993 one observed a record deep ozone hole related in part to the eruption of Mt. Pinatubo, particles from which augmented polar stratospheric clouds in the lower stratosphere. Ozone was nearly totally destroyed in the 12-20 km region through much of October of 1993. In 2006 one observed the most severe ozone hole so far. In 2010 ozone destruction was less severe than in many recent years, but quite similar to the loss experienced in 2009.

Satellite observations

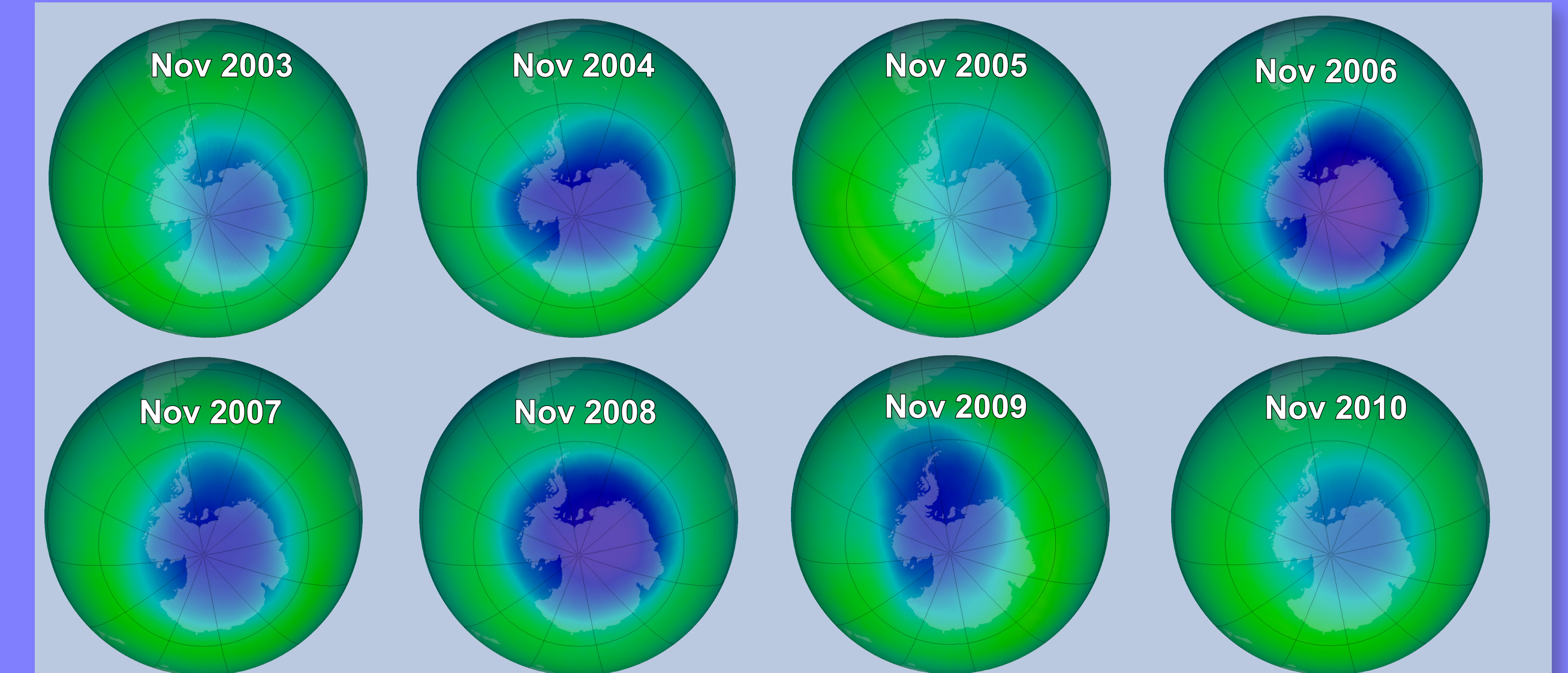


Figure 7. Average total ozone maps for the month of November for the time period 2003 to 2010 based on data from OMI on board the AURA satellite. The data are processed and mapped at NASA. It can be seen that November 2010 ozone depletion was less severe than in four previous years (2006-2009).

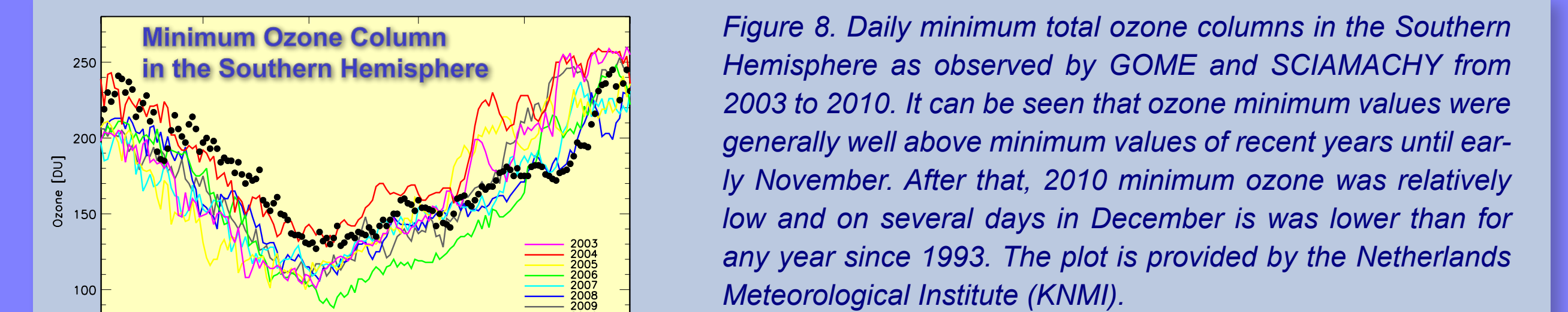


Figure 8. Daily minimum total ozone columns in the Southern Hemisphere as observed by GOME and SCIAMACHY from 2003 to 2010. It can be seen that ozone minimum values were generally well above minimum values of recent years until early November. After that, 2010 minimum ozone was relatively low and on several days in December it was lower than for any year since 1993. The plot is provided by the Netherlands Meteorological Institute (KNMI).

Ozone hole statistics

