

"Remote measurements of ozone loss, chlorine activation,
and denitrification during the Arctic winter of 1999-2000",

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Abstract

The JPL MkIV instrument made two balloon flights and took 22 days of ground-based observation from Esrange, Sweden, during the SOLVE/THESEO campaign. The first balloon flight on December 3rd 1999, was made before the onset of widespread heterogeneous activity. The second flight, on March 15th, occurred after the cessation of heterogeneous activity. The ground-based column observations mostly covered the period from late January to mid March. The combined results show that over the winter there were large perturbations to the chemical composition of the vortex in the 17-27 km altitude range, and that most of these changes peaked at 19 km altitude. Specifically, chlorine activation, denitrification, and ozone loss were observed, with these perturbations all peaking at 19 km altitude.