SOUTHERN VORTEX SPLIT AS SEEN WITH OSIRIS AND GOMOS DATA ASSIMILATION


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In September 2002, the stratospheric polar vortex of the southern hemisphere split in two during a major warming, leading to a corresponding split in the ozone hole. Such an event has not been witnessed before in the SH and this kind of event is rare even over the northern hemisphere. What caused the split and what happened during the split are interesting questions in the stratospheric research.

GOMOS is a stellar occultation instrument on board ENVISAT. OSIRIS is a limb viewing instrument measuring scattered solar light on board Odin satellite. OSIRIS measures during daytime and GOMOS measures mainly during night, although day measurements are also possible. Because of different measurement principles and coverages these two instruments complement each other. Together they give a very good global coverage with a very good vertical resolution.

Assimilation of high resolution profiles is quite a new possibility. OSIRIS and GOMOS are the very first instruments to provide that kind of data with global coverage. In this work we describe the assimilation scheme used and then the results. The assimilation time period covers the southern vortex split in September 2002.