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Interactive comment on "GOMOS data characterization and error estimation" *by* J. Tamminen et al.

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This paper interestingly discusses the quality of GOMOS data for O3, NO2, NO3 and for aerosol extinction and provides estimations of measurement precision. This is a very important issue about a star-pointing instrument with level-1 data rather tricky to approach for unaware scientists.

My only objection is that no references about previous validation work of this specific data are given in the manuscript. The reader may have the feeling that it is the first time that the quality of GOMOS data is investigated after its launch on March 2002. Yet extensive validation work using balloon instruments in dedicated international validation campaigns was done and published two years ago (Renard et al., JGR, 2008). I am aware that both studies cannot be thoroughly compared mainly because the Tammi-

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nen et al. paper particularly focuses on precision estimation issues (accuracies given by Renard et al.) and because the Renard et al. (2008) paper is based on the study of several individual profiles. However some aspects have already been investigated by Renard et al. (2008) and it is valuable to refer to these common points in the manuscript, both studies being considered as complementary.

For example the effect of scintillation and of aerosol retrieval on the O3 and NO2 species retrieved profiles, the stratospheric altitude ranges of validity for theses compounds are discussed in the Renard et al. paper. Then at least, in the introduction I recommend to provide the inferred accuracies from the balloon validation work given by Renard et al.: 10% for ozone and 25% for NO2 in the middle stratosphere altitude range on which this study is focussed. Also, it is worth adding in the manuscript (section 6.1) the similar valid altitude ranges found between both studies for O3 and NO2 (above 17 km for O3, 20 km for NO2 in agreement with the Tamminen et al. results which is an important point) keeping in mind that the Renard et al. paper validates GOMOS over the limited altitude range covered by stratospheric balloons, namely below 40km.

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 6755, 2010.