

Interactive comment on “Spatial and temporal characterization of SCIAMACHY limb pointing errors during the first three years of the mission” by C. von Savigny et al.

C. von Savigny et al.

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Reply to comments by Referee #3 (J. van Gent’s comments)

1) The reviewer requested a more detailed discussion of the physical origin of the TH offset variations, particularly the remaining seasonal variations after the December 2003 orbit propagator model update.

The reviewer rightly states that the description of the TH variation is phenomenological to some extent. Referee #1 also criticized this. We now included a description of possible sources for the pointing problem together with a pre-launch pointing error budget in the introduction section. Furthermore, the changes made to the orbit propagator model

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in December 2003 are explained in more detail in the results section. See also reply to comments 1 and 6 by referee #1.

2) The reviewer requested a discussion as to what extent differences between the climatological and the actual ozone profile may cause the seasonal TH offset variation after the December 2003 orbit model update

This point was also validly raised by referee #1. Please see response to comment 6 by referee #1.

3) Specific comment, page 3703, line 25:

We really meant to express that ozone concentrations drop off with a smaller scale height in the mesosphere compared to the stratosphere, at least within the altitude range relevant here. The reviewer is right that the ozone concentrations may be almost constant near the mesopause below the secondary ozone peak, but below about 65 km the mesospheric scale height is indeed smaller than the stratospheric scale height. We made the statement more specific by explicitly talking about ozone in the lower and middle mesosphere.

4) Specific comment, page 3710, line 22:

A small paragraph was added to discuss the possible impact of the 12 hour time difference on the comparison.

5) Technical correction, Page 3708, line 9:

Thanks, 'an period' was changed to 'a period'

We wish to thank all three referees for really good and constructive reviews and hope that our changes have improved the manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 3701, 2005.