

## ***Interactive comment on “Assessment of Odin-OSIRIS ozone measurements from 2001 to the present using MLS, GOMOS, and ozone sondes” by C. Adams et al.***

**Anonymous Referee #1**

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Generally this paper is very complete in the analysis of the differences between OSIRIS and GOMOS, MLS and sondes and is quite well written and should be published after a few minor changes are made.

This reviewer is having some trouble sorting out the effect of the temperature and ascending/descending orbits on the ozone retrievals. Plots such as figure 12a (or 2g) comparing to MLS showing the ascending data and the descending data separately would help. Or text describing the differences (or similarities) and a discussion recommending to the reader if one orbital geometry yields superior results (or not). Figure 7 does a good job, but a single (global) line plot would help. What percentage of the

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matchups are ascending vs descending? Figure 3e and Figure 7e&f seem to indicate that almost all the measurements are on the ascending node.

GOMOS/MLS also measures aerosols. It would be useful to see a plot (or short discussion, reference) showing/describing comparisons to OSIRIS aerosols as figure 8 explains nothing on how good the aerosol retrievals are in an absolute sense. Figure 9b isn't very informative. Suggestion: a figure similar to 9a for OSIRIS-MLS for ascending & descending.

The following are a few specific comments:

Page 3822 Line 5 Please define 'SPIN'

3824 Line 15 . . . "conclusions about OSIRIS quality is improved". Compared to what? Previous conclusions from earlier papers??

3835 Line 18 "the word "relative" needs to be removed

3836 Lines 17-23 Please re-word that paragraph when discussing the drifts. It is written as if all the drifts are within the 3% envelope. Suggestion: "relative drifts including error bars are all within +/-3%"

Figure 2: Change (Right) to (Bottom)

Figure 3: Fix tropopause line on figure 3d

Figure 4b: Please define red & blue lines

Figure 5a At ~17km the OSIRIS/MLS differences look slightly negative. But figure 3a says it should be very negative. Why the difference? Are all the points in fig 3a from 60S to 40N at the same temperature (~14C)? If so, this needs some discussion because it is not obvious what is going on. Fig 5b and 3c look consistent. But where are all the negative values seen in fig 3e in 5c?

Figure 10: Caption says 32.5km. . . .

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Figure 11: Fix tropopause lines.

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