

## ***Interactive comment on “Trend Quality Ozone from NPP OMPS: the Version 2 Processing” by Richard McPeters et al.***

**Anonymous Referee #2**

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The paper "Trend Quality Ozone from NPP OMPS: the Version 2 Processing" by McPeters et al. describes the latest version (2) of the OMPS Ozone column retrieval and a comparison to existing data sets mainly the SBUV/2 on NOAA 19. The data agree well and the remaining differences are small and cause further investigations. Despite the small difference the data reached a sufficient quality for trend analysis.

The paper is well written and clearly structured in sections containing comparisons of total columns, nadir profiles and tropospheric data. However the paper's title "version 2 processing" indicates that the algorithm is described in detail, but this section is rather short. The basic algorithms have been described in previous publication and it is well referenced here. Despite the reference a short summary of the algorithms should be given here. If I understand the paper correct the key improvement to the version 1

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processing is the soft calibration that is applied now. The description of the calibration algorithm is short and some more details can be added.

Minor comments:

The AMT guidelines recommend adding a short summary of the paper and the sections at the end of the introduction. The authors may extend the last section of the introduction for this purpose.

Line 83: "An algorithm uses . . . ", add a reference to section 3.

Line 84: ". . . OMPS NM makes 400 individual scans per orbit with 35. . ." please add the resulting resolution in both dimensions (20000km / 400 scans ~ 50 km)

Line 132: ". . .so NOAA 19 comparisons can be used for validation." This validation is not shown, please add.

Lines 222ff: "Looking at ground based comparisons of ozone in the lower stratosphere first, . . ." Are sondes really "ground based" measurements?

Line 244 f: "There is no evidence of a significant time dependent difference." I am sure the authors did some linear fits to the data and found the trend to be insignificant, however when looking at figure 8 it seems there is small decrease in the upper stratosphere and an increase in the lower stratosphere. So this statement might be clarified.

Line 250 f: "Selecting a single month for this comparison allows us to see any seasonal effect . . ." this sounds strange, a seasonal effect can only be seen if you use several months (minimum 4), and compare them to each other.

Line 294: The paper focuses on total column nadir profile so this section on tropospheric column can be seen as an "attachment" to illustrate the potential power of the dataset. Nevertheless the data might be compared to sonde data as well. The selected places for the comparison of the tropospheric columns are sounding stations for ozone sondes.

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Line 295 “ozone from the NP plus LP combination” is it really the nadir profiler (NP) that is meant here not the nadir mapper (NM) as mentioned in line 287.

Line 316 “the drifting orbit” shall be mentioned earlier in the paper as a possible cause for the observed inconsistency.

Figure 3: Throughout the paper NOAA 19 is used as the key reference, for various comparisons. The validation of NOAA 19 is of course not subject of this paper, but nevertheless it might be nice to have the NOAA 19 data included in the comparison to the ground based observation.

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