

Interactive comment on “Ozone Comparison between Pandora #34, Dobson #061, OMI, and OMPS at Boulder Colorado for the period December 2013–December 2016” by Jay Herman et al.

Anonymous Referee #2

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This paper presents comparisons among column ozone measurements at Boulder Colorado from two ground-based instruments and two satellite instruments. Daily data are analyzed for three years, and the focus of this short paper is to evaluate absolute differences among the measurement systems and quantify possible drifts (or trends) over the three years. I suppose the analysis is especially focused on evaluating the (relatively new) Pandora ozone measurements, although this is not explicitly stated. The results show small mean biases among the systems ($\pm 1\text{--}2\%$), and excellent correlations for day-to-day and seasonal variability. The calculated difference trends show

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small drifts (0.2 to 0.6 %/year) among the various measurements, and these drifts turn out to be statistically significant based on the results shown (Fig. 3). Note that the satellite comparisons suggest the largest drifts are associated with Dobson measurements. However, the authors downplay these significant trends and conclude that ‘there is long-term stability in all four instruments’. In my opinion this summary statement needs to be better qualified in light of the significant trend results; I appreciate that the trends are derived from a short time record with arbitrary end points, with corresponding large uncertainties (the results look to be strongly influenced by the early 2014 data). But wouldn’t drifts of magnitude $\sim 6\%$ /decade (as derived here) be troublesome if observed over a longer time record? I suggest that this detail needs some further discussion. Aside from this, I believe this short paper is a useful contribution to evaluating the Pandora ozone measurements, and is appropriate for AMT.

Minor comment: In line 40, Ozone Measuring Instrument should be Ozone Monitoring Instrument.

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