We would like to thank Dr. Meiyun Lin for her interest in our manuscript. Our comments are in green below.

This is an interesting paper. The join record of tropospheric ozone from TES and IASI presented in the present paper will be very useful for understanding tropospheric ozone variability and evaluating models.
Please consider discussing and citing the findings from the following papers in your literature review on the drivers of observed tropospheric ozone changes, including the influence of decadal circulation shifts [Lin et al., 2014; Nature Geosci], rising Asian emissions [Lin et al., 2015a; GRL], and stratosphere-to-troposphere ozone transport [Lin et al., 2015b; Nature Communications].
These papers are also highly relevant to your discussions of western US tropospheric ozone time series (Figures 7 and 8). Is inter-annual variability of springtime free tropospheric ozone over western N. America measured by TES and IASI consistent with those presented in Figures 2, 5, and 6 of Lin et al. (2015b) based on in situ measurements and model hindcasts?
I also believe that it will be extremely helpful, particular with regard to the credibility of the TES/IASI record, if you can conduct comparisons with the in-situ free tropospheric ozone record at Mauna Loa Observatory. If the TES/IASI record is good enough, it should be able to see the influence of large-scale circulation variability as measured at Mauna Loa [Lin et al., 2014].

We included a figure in the revised manuscript that shows the ozone over Hilo, Hawaii from sonde measurements averaged over the same pressure range as the TES/IASI record. This data shows the same step in 2011 data as for our Asian ROI.

We thank Dr. Lin for raising this interesting question about interannual variability. There seem to be similarities between Fig 5 and Fig. 6b from Lin et al. (2015b) with our deseasonlised ozone time series over the Western United States. We have not specifically analysed springtime-only data as in Fig 2 of Lin et al. (2015b). This could be an interesting avenue for the future. However, a thorough discussion of the causes of the ozone variability in our Figures 7 and 8 is beyond the scope of this particular manuscript.

We added to results section:
For any given region, long-term variations in free tropospheric ozone can be affected by changes in local emissions of ozone precursors, changes in long-range transport within the troposphere and downward transport from the stratosphere (see e.g. Lin et al., 2012, 2014).

The combined TES/IASI time series presented here have the potential to be used to aid attribution of the relative contributions from these effects, although such a study is outside the scope of this paper.

References:

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