

## Reviewer #1

I thought this paper was very well written and an excellent research topic. The paper is clear, concise and well thought out. This paper points out the continued need for aircraft based observations even with the abundance of satellite observations which is an important concept for the global weather community to recognize.

We thank you for the strong words of support for our work.

A few minor comments:

1. Line 224 spelling issue at the start of the sentence "lit"

Thank you for catching this typo. It has been fixed.

2. Figure 1, 5 both say 2019 but paper states 2017

We have updated the captions with the correct dates. Thank you.

3. Line 149. WVSS-II sensor, a tunable diode laser absorption spectrometer.

We have updated the language here.

Wondering if any of the biases with WVSS-II could be off due to the accuracy range of the sensor which is  $\pm 50$  ppmv or  $\pm 5\%$  of reading, whichever is greater.

We did consider this possibility in the text, and in Section 4.1 we noted that the sign of the bias and magnitude of the uncertainty is consistent with prior WVSS-II/radiosonde validation studies (Wagner et al. 2021, Williams et al. 2021, see paper for full references).