The Authors have carefully considered all my comments and provided satisfactory replies to each of them. They have made the corresponding changes in the revised manuscript, and I appreciate their efforts in incorporating as many of my suggestions as reasonably doable, given the limitations of the dataset and the constraints on manuscript length. Overall, I am satisfied with this new version.

I am therefore glad to recommend this manuscript for publication in ANGEO Communicates, pending a few very minor comments and suggestions are considered.

Thank you very much for your comments and suggestions. We feel that the manuscript has greatly improved thanks to them. Below, we give detailed replies to each minor comment.

– l. 93: In section 3, the IR1 filter is now briefly mentioned. It could be worth adding in parenthesis its central wavelength (presumably 762 nm?), as well as a brief explanation why this channel was preferred over IR2 for the detection of auroral emission.
Regarding the choice of filter, there is no specific reason why we chose IR1 for the detection of the aurora. Both channels have reliable data, and in the beginning, we started analyzing the images taken with the IR1 channel. Later on, we realized that for the analysis of the auroral intensity, it might be better to use IR2, since IR1 might miss some part of the spectra, and we used IR2 for the auroral cases detected with IR1. We have modified the last paragraph in the discussion to reflect this. We have also added the wavelength and bandwidth of IR1. Thank you for pointing out that it was missing.

– Fig. 2 caption: I think a word is missing: “The solid *line* represents a fit of the data”. I can also suggest adding that this is a *linear* fit for completeness.
The typos in Figure 2’s caption have been corrected. Thank you for noticing.

– l. 147–152: I appreciate the more careful phrasing of the description of the relation between auroral intensity and altitude (Fig. 3b), although I still find the trend difficult to see convincingly. Would it help visualising it if, for defined auroral intensity bins, you added the mean (or median) altitude together with a measure of the spread of the data (standard deviation or interquartile range, as appropriate)? I am thinking that linearly or logarithmically spaced intensity bins could be tried out, since the majority of the data points are concentrated around the lower end of the range of values. I leave it to you to decide if this is at all helpful and worth adding to the figure; if the result does not look convincing, it is also fine to keep the figure and text as they are.
Following your suggestion, we have added in Figure 3b the median of three auroral intensity bins: from 0 to 550, 550 to 1000, and above 1000 kR. The dots have also been plotted at the median intensity value within each bin. The error bars indicate the 25 percentile range around the median. We think these dots make what we wanted to describe clearer.

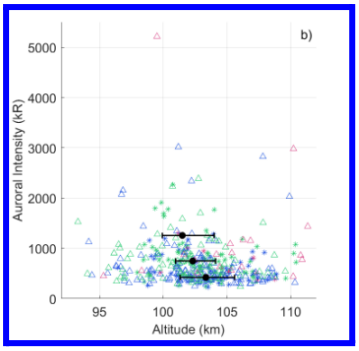

Figure 3. a) Average altitude of events occurring within the same one-hour bin as a function of MLT. Asterisks represent the northern hemisphere, while triangles represent the southern hemisphere. Blue includes events with Kp-index between 0 and 3, green between 3+ and 6, and red between 6+ and 9. Error bars indicate the standard error of the mean. Horizontal dashed lines indicate the averaged altitude of all events in each of the Kp-index bins. The mean values are indicated in the legend together with the uncertainty of the mean. b) Intensity as a function of altitude for all events analyzed. Colors and markers follow the same pattern as in a). The black dots with error bars represent the median and ± 25% altitude range of the data divided into three auroral intensity bins: from 0 to 550 kR, from 550+ to 1000 kR, and above 1000 kR.

Figure 3b shows a scatterplot of the peak intensity vs the peak altitude for all events analyzed, with different colors and markers for different bins of Kp-index and hemispheres, respectively. Most events have altitudes between 95 and 110 km, and the intensities range between 200 and 5500 kR. In addition, the data points have been divided into three bins according to their intensity, and the median altitude of each bin has been plotted together with the ± 25% range of the data from the median point. The dots have also been plotted at the median intensity within each bin.

In Figure 3b, the spectral intensity was plotted as a function of altitude. While events with low auroral intensities seem to have peak altitudes evenly spread between 95 and 110 km, events with high auroral intensities seem to decrease with increasing altitude, as evidenced by the median values. The Knight relation (Knight, 1973) demonstrates that field-aligned electron beams

– l. 176–178: Please consider whether this statement can be enhanced by reflecting that the detection algorithm used the IR1 channel.
We have modified this paragraph in the following way:

~~We used the~~ While the initial detection of aurora was done using the IR1 filter, the intensity analysis was performed using IR2 ~~channel data in this work~~to capture the entire auroral emission surrounding the 762 nm wavelength. This filter~~is centered at 763~~'s bandwith is 8 nm and captures the whole (0,0) band~~. Its bandwidth is 8 nm~~, which can also lead to some pollution from other wavelengths. In future analysis, combining all four IR limb imaging channels can be used to increase the accuracy of the measurements.

– l. 184: Please update the upper limit of auroral intensity (now stated to be 5500 kR in the earlier sections).
The upper limit of the auroral intensity has been corrected.

– Data availability: Please add how the SME index data can be retrieved.
The data availability statement has been updated with the retrieval information on the SME index and Kp index.

– Acknowledgements: Please add an acknowledgement to SuperMAG for the use of SME. A standard statement according to their rules of the road (see https://supermag.jhuapl.edu/info/?page=rulesoftheroad) is as follows: “We gratefully acknowledge the SuperMAG collaborators (http://supermag.jhuapl.edu/info/?page=acknowledgement).”
The acknowledgements have also been updated for the SuperMAG, thank you for letting us know how this should be done.