Reviewer Comment

The authors have responded well to the constructive criticism from me and the other reviewers. I am much happier with the manuscript now and I support publication. However, I have one final comment for the authors to consider.

At first, I was unsure why the authors had introduced new methods (partial correlation and multiple linear regression) to quantify the contribution of AA to uncertainty in the timing of passing the Paris warming targets. My initial thought was why not just compare the model/ensemble spread between the case with 'true' global mean (with AA) and the case excluding the Arctic (without AA). On closer inspection, I realised that this comparison (although not mentioned in the text) can be seen from Fig. 1c. Fig 1c shows that the uncertainty is larger without AA, with might seem counterintuitive: if AA contributes disproportionately to the uncertainty, why would the uncertainty increase when excluding AA? I think the explanation is that by excluding the Arctic, the forced warming signal is reduced and thus, the uncertainty is in the timing of crossing temperature thresholds is larger. Do the authors agree with this interpretation? It might be worth commenting on this in the text to help the reader reconcile the results shown in Fig 1c with the numbers coming out of the new correlation analysis.

Author Response to Reviewer Comment

We thank the reviewer again for this useful additional comment. We agree with their interpretation. There is greater spread in the crossing year for the case without Arctic amplification in Figure 1c because the warming signal is reduced, so that the warming to date, which is forced to match observations, is lower, and there is greater opportunity for models to diverge before crossing thresholds. Our updated version of the manuscript has a sentence added at line 64 to reflect this. We have also added an additional sentence to the abstract summarising the findings of the uncertainty analysis.