Answer to the referee report

Referee Report

I'd like to thank the authors for their thorough implementation of my previous suggestions. The paper now comes across as well written with a comprehensive analysis and I am happy to suggest it be published without further referee involvement. I have only minor comments on the manuscript as follows.

For the most part the use of language is now of far higher quality, however there remain several sentences with grammatical errors which can complicate their intended scientific interpretation (ex. page 7 "and find a factor equal of 1.45" etc). These need to be clarified.

On the beam: The numbers included by simulating the effects of the intrinsic angular size of Uranus justify your discarding of the effect. However, in the plot shown in the supplementary material supplied to me it is clear that there is a large difference in the integrated solid angle between this more recent beam model, the Gaussian fit and the measured profile from Uranus. In the text on page 7 you appear to address this and quantify it as a 32% effect. It is not clear to me what the additional 45% correction comes from or the difference between these numbers. I don't understand your necessity for an external beam model, in particular one that you have shown to be a poor description of the measurement. Why not just use the Uranus measurement or a parameterized fit to that data? I appreciate the expanded paragraph on this effect but think it could still use more clarification as to why the models are used.

Figure 4: The inclusion of the input map and residuals have improved this figure substantially. I think it would be well served by labeling the thumbnails to refer to in the caption. The bottom two panels are not discussed in the caption and it is not clear what they are showing.

The quantification of the recovered parameters of simulated clusters has drastically improved the section on pipeline Validation.

Figure 8. I think the noise map figure which you supplied to me in the response would be a useful addition as a panel in this figure to convey this information to the reader as well. You have already done the calculation, why not include it in the paper?

Answer:

Dear Editor,
We thank the referee for these additional corrections. We list below what has been done to include them.
- We have revised the manuscript to improve the grammar.
- Concerning the beam, we have clarified the corresponding paragraph. The 32% factor is estimated on Uranus up to 100 arcsec where the signal is recovered and the signal to noise high enough. Since we want to account for the beam further (180 arcsec), we extrapolate this 32% factor to 45%. We use the IRAM beam model because we expect it to be realistic at these scales. Nevertheless, using a parametric modelling of the beam gives corrections that are in agreement within the uncertainties (factor of 1.45 +/- 0.1).
- We have labelled the 8 panels of Fig. 4 and refer to them as C1-4 and D1-4 for the compact and diffuse cases respectively.
- The standard deviation map has been added and slightly commented.
Regards.
Rémi Adam, Barbara Comis and Juan-Francisco Macías-Pérez