Replies to Comment CC1

'CC1: Comment on angeo-2021-24', Olivier Witasse, 06 Jun 2021

This is a well written paper. Good to see some results at Venus from Bepi Colombo. I have a few comments:

Figure 12 shows data from the radiation monitor. The period of the Venus tranit seems to be characterised by a small drop in the radiation level. it would be interesting to have a comment in the paper. Possibly to be compared to the findings of Honig et al. Ann. Geophys., 37, 903–918, 2019 https://doi.org/10.5194/angeo-37-903-2019, a drop of 8% in the radiation data near comet 67P.

Answer: Thank you so much for pointing out this decrease. It is difficult to conclude whether this decrease is consequence of a similar mechanism at Venus and comet 67P, or it is an effect of the solid angle. In any case, it is indeed very interesting and timing that similar decreases are observed at both unmagnetised bodies (∼8% at Comet 67P and ∼12% at Venus). The following sentence has been added:

In addition, we also note that during the closest approach (starting and ending right before and after the Venus inbound and outbound, respectively), the radiation monitor BERM detected a moderate reduction of 12% in the GCR flux proxy. The reason for this reduction is unknown and could be consecuence of a solid angle effect from Venus, although we note that the flux level is mantained nearly constant during the flyby at the same time than the BepiColombo-Venus distance changes, and so, the solid angle. Interestingly, Rosetta also saw a similar reduction in the GCR flux of 8% in the vicinity of the comet 67P/Churyumov-Gerasimenko which could not be attribuited to any known mechanisms [Honig et al., 2019] .

Can the BERM observations help to figure out when you leave the tail (14:00 ? in the text)?

Answer: This is an interesting observation. Although the recovery at 14:00 on 15 October could be a sign for exiting the tail, it could also be consequence of Venus blocking less GCR flux as soon as BepiColombo goes further. Since the reason is unkown, we prefer to not make further comments in the manuscript.

Fig 2: it is not standard to have the Y axis labels either on the left or on the right side in the same figure! The color bar explnation is not given the caption.

Answer: In order to avoid overlapping Y-axis labels it has become standard to alternatingly have the labeling on the left and the right side of the figure. We have added the description of the colour bar in the caption of the figure.

Fig 11, d-e: what are the yellow bubbles? Not explained in the caption.

Answer: This is a small color misunderstanding! We referred to them as "greenish blobs" in the caption. However, it is true that they look more like yellowish. The caption has been updated.

References

Honig, T., Witasse, O. G., Evans, H., Nieminen, P., Kuulkers, E., Taylor, M. G. G. T., Heber, B., Guo, J. and Sánchez-Cano, B. [2019], 'Multi-point galactic cosmic ray measurements between 1

and 4.5 au over a full solar cycle', Ann. Geophys. **37**, 903–918.