



## **Solar wind precipitation - a comparison between Mars and Venus**

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Mars and Venus both have atmospheres but both lack a substantial intrinsic magnetic field. Hence, their interaction with the solar wind is similar. Due to currents set up in the ionospheres the interplanetary magnetic field embedded in the solar wind drapes around the planets forming induced magnetospheres.

The plasma instrument packages ASPERA-3 and ASPERA-4 on the two spacecraft Mars Express and Venus Express are very similar and invite to a comparison between the two plasma environments. In this study we used the Ion Mass Analyser (IMA) on both spacecraft to investigate the solar wind precipitation onto the upper atmospheres. We focus on the differences between the two planets. We conclude that on Mars we regularly observe precipitating solar wind ions ( $H^+$  and  $He^{2+}$ ) inside the induced magnetosphere boundary (IMB). The precipitation is clearly guided by the solar wind convection electric field and  $He^{2+}$  and  $H^+$  are seen independently of each other. On Venus precipitation of  $He^{2+}$  is only observed close to the IMB and always together with  $H^+$ . The precipitation events on Venus have no clear correlation with the solar wind electric field.