

## X-ray observation from Venus upper atmosphere by HINODE

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Venus transit across the Sun will occur on 5 June, 2012. X ray is emitted by the charge exchange of the high charge state solar wind ions due to electron capture from Venus corona. In this study, the X-ray emission from Venus corona is estimated and the possibility of the observation by HONODE satellite is discussed.

The solar wind ions impact on the ionspheric particles happens to charge exchange to result into the excited emission. Emission lines of charge exchange are 1.7-2.21nm of O<sup>7+</sup>, 2.7-4.1nm of C<sup>6+</sup>, 2.6-3.38 nm of C<sup>5+</sup>. We estimated that the intensity of the charge exchange emission is totally estimated  $2.30 \times 10^{-7}$  photons/cm<sup>2</sup>/sec at limb. The X-ray emissions from Venus corona will be detected by observation for at least 13 hours. Venus nightside X-ray image let us know the distribution of the neutral corona.

The solar wind particle induced to the ionosphere has asymmetry with north and south direction. The short length band of EIS includes 18.4nm emission lines of O<sup>6+</sup> charge exchange and 19.3nm emission line of O<sup>7+</sup>. The emission of 18.4nm(O<sup>6+</sup>) is  $1.51 \times 10^{-7}$  photons/cm<sup>2</sup>/sec and the luminosity is 6.8W.

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