# 地球外圏からのX線放射：ジオスペース撮像の可能性

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# Global Imaging of Geospace via soft X-ray emissions.

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We present calculations of the geosapce solar wind charge-exchange (SWCX) emission and discuss the possibility of the global imaging of Geospace by the X-ray observations. The emission of O6+ is simulated using the GEMSIS-GM global MHD model as the magnetospheric plasma population and the empirical atmosphere model as the ambient geocorona. The significant SWCX emission can be seen in the magnetosheath where the plasma density is high. The strong emissions are also seen in the cusps in both hemisphere because of high geocorona density. Our results suggest that the SWCX emissions can be used for the global imaging of Geospace. For example, the structure of the bow shock, magnetopause, cusps can be visualized as the global X-ray image. These observations strongly contribute to our understanding on the Sun-Earth connection as well as the space weather. Considering the simulation results, we start the design study to observe SWCX from the lunar orbit. Some results of the design and feasibility studies will also be presented.