

Estimation of solar ultraviolet radiation and the effect on the upper atmosphere based on solar images

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We report on the estimation of long-term variations of solar UV/EUV emissions, which affect on the upper thermosphere, by using full-disk solar images. The SOHO/EIT has shown us full-disk features of the sun in EUVs over 15 years. These data enable us to derive the, spatially resolved, long-term variation of area, brightness of coronal holes, active regions, and so on. On the other hand, ground-based chromospheric observations also give us another indicator of solar UV emission, since solar UV radiation mainly comes from the chromosphere. From these data, we try to derive the main features on the solar surface that affect on the upper thermosphere and to estimate the long-term UV/EUV variations.

Keywords: Solar Activity, Solar UV Radiation, Solar Chromosphere, Sq Variation