

Long-Term Variation of Solar UV/EUV Radiation Examined by Full-Disk Solar Images

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We report the estimation of long-term variations of solar UV/EUV radiations, 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. In this work we examined the EUV 304 A emission in different latitudes by using full-disk images taken by SOHO/EIT.

By comparing the EUV 304 A emissions at solar minima, we found that the EUV emission at low (high) latitude is darker (brighter) at the solar minimum 23/24 than those at the minimum 22/23. We also discuss the relation between the abnormal behaviors at the solar minimum 23/24 and the magnetic field structure by using magnetograms obtained by SOHO/MDI and

by Wilcox Solar Observatory. 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 Cycle, Long Term Variation, UV/EUV Radiation