

## Data archiving of 44-year synoptic observation of solar chromosphere

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Solar activity is known to cyclically change in 11 years. However, the amplitude of the variation is not constant but modulated in long term span. The long term variation of solar activity is thought as one of the origin of the global warming or cooling of the earth. In Kyoto University, a continuous synoptic observation of solar chromospheres in CaIIK monochromatic light had been done during the years 1926-1969. The images were taken on photographic plates. Last year we have started a research project to build a digital image database of these photographic plates and study the long term variation of the solar chromospheric activities. The project steps are as follows. (1) Compile the meta-data database and open to the public through IUGONET (Inter-university Upper atmosphere Global Observation NETwork). (2) Digital scanning of all the plates and open to the public similarly as the meta-data. (3) Study the origin of solar cyclic variation by searching for the similarity and difference between sunspot number and CaIIK index. (4) Apply the database analysis to the study of heating variation of the terrestrial upper atmosphere by using the CaIIK irradiation as a proxy of solar UV irradiation to the earth. In this paper, we will report the present status of the project and discuss some scientific prospects with reference to the research trends in the world. We will be very happy if specialists of geophysics give us suggestive discussions to our project.

Keywords: solar activity, chromosphere, UV irradiation, Upper atmosphere heating