Statistical study of auroral absolute intensity: a survey using multi-color scanning photometer observed at Zhongshan Station

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Statistical studies of absolute value of auroral photoemission and their occurrence rate versus intensity are important not only to examine the average characteristics of auroral behavior but also to design suitable gain of instruments at a selected observatory. For this purpose, we carried out a statistical study of occurrence rate of absolute auroral intensity along with magnetic local time (MLT) using the data of multi-color scanning photometers observed at Zhongshan Station (magnetic invariant latitude is 74.5S) in Antarctica. Most frequently observed intensity was 61R for 427.8nm, 203R for 557.7nm and 203R for 630.0nm, respectively. The dynamic range of auroral intensity was over the order of six.

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