

Observation of aurora and airglow with aurora spectrograph in the arctic

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The aurora spectrograph was installed in Spitzbergen in March 2000. It is an imaging spectroscopic instrument which can obtain auroral spectra along a magnetic meridian with a FOV of 180 degree. Observation in the winter season of 2000 was commenced in the end of October and is planned to be terminated in the middle of March 2001, and we expect to get the entire data during the season. We have developed a method to obtain absolute values of emission intensity from raw image data. In this talk, we will discuss comparison of OI557.7nm intensity against nitrogen first positive band regarding emission mechanism of auroral OI557.7nm based on the obtained spectral data. Also, we will discuss extraordinary low intensity of airglow OI557.7nm, which was found in March 2000 data.

Aurora spectrograph was installed at Aurora Station at Longyearbyen in Spitzbergen in March 2000, and observation was started immediately. The aurora spectrograph is an imaging spectroscopic instrument, using a grism as a dispersive element. It can obtain auroral spectra along a magnetic meridian with a field of view of 180 degree on a CCD chip of 512 x 512 pixels over 450nm-760nm spectral range with a wavelength resolution of 1.5nm.

Observation in the winter season of 2000 was commenced in the end of October, and it is now possible to check the data in real time and to operate the instrument in Japan through internet. This season's observation is planned to be terminated in the middle of March 2001 and we expect to get the entire data during the season. On the other hand, we have developed a method to obtain absolute values of emission intensity from raw image data. Therefore, we will discuss comparison of OI557.7nm intensity against nitrogen molecule first positive band intensity regarding emission mechanism of auroral OI557.7nm based on the spectral data obtained the winter season of 2000. Further, we will discuss extraordinary low intensity of airglow OI557.7nm, which was found in March 2000 data.