

Development of a New Spectrograph for Aurora Observation

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A new spectrograph, which has a FOV of 180 degree, wavelength range of 420-735nm, wavelength resolution of 1nm, and sensitivity of 0.061cts/R/sec/pixel at 558nm, has been developed. The spectrometer will be deployed in Longyearbyen, Spitsbergen in March.

A new spectrograph has been developed at NIPR for observation of auroral spectrum. The instrument consists of a fish-eye lens (F1.4, $f=6\text{mm}$) with 180-degree FOV, a slit on which a meridian is projected, a collimating optics, a grism with 600gr/mm, an imaging optics, and a cooled CCD camera.

Actual performance of the spectrometer (wavelength range of 420-735nm, wavelength resolution of 1nm, and sensitivity (at 558nm) of 0.061cts/R/sec/pixel) was obtained through calibration performed using NIPR calibration facility.

The spectrograph will be deployed in Longyearbyen, Spitzbergen for aurora observation in March.