

Spectral observations of aurora and artificial aurora in EISCAT radar site, Tromsø, Norway.

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We have developed a compact spectrograph, which is capable of measuring optical emission intensity in visible range from ~480 nm to ~880 nm with a resolution of ~1.6 nm. The aperture, i.e. F-number, is ~4, and the data sampling rate is 1 Hz. We installed the spectrograph in European incoherent scatter (EISCAT) radar site, Tromsø, Norway (69.6N, 19.2E), and started unmanned nighttime operation on 4 October 2016. The field-of-view (FOV) of the spectrograph is pointed at magnetic field-aligned direction. Since then, aurora observations have been done continuously during this winter. In addition to the aurora observations, we plan to conduct EISCAT heater experiments for artificial aurora observations in February and March 2017. In the presentation, we will introduce spectral observations of aurora and artificial aurora in EISCAT Tromsø site.

Keywords: Spectrograph, Aurora, Artificial aurora, EISCAT