

Characteristics of the corotating aurora observed at Poker Flat Alaska

Saori Toyoshima[1], Hiroshi Fukunishi[2], Naofumi Yoshida[1], Minoru Kubota[3], Yasuhiro Murayama[3]

[1] Science, Tohoku Univ., [2] Department of Geophysics, Tohoku Univ., [3] CRL

<http://pat.geophys.tohoku.ac.jp/>

As part the CRL-UAF cooperative project on middle atmosphere research, monochromatic imaging observations of aurora and airglow have been carried out at Poker Flat (65.1N, 212.6E; 65.6MLAT: MLT = UT- 13 hours) on the routine basis since October 2000. Monochromatic images of 10 emission lines are obtained every 5 minutes using two sets of all-sky imagers. The characteristics of the 'corotating aurora' found by Kubota and Nagatsuma [2001] has been investigated in detail using 13 events obtained in the period from October 2000 to April 2001. Although the imaging observations can cover the nightside from 14 to 07 MLT, this type of aurora is observed only in the dusk to midnight sector (14 - 00 MLT) on geomagnetic quiet conditions ($K_p=0 - 1+$) after the decay of substorm activity. Another important characteristic is that the fine structure is observed only in OI 557.7, N₂⁺ 427.8 and OI 844.6 nm emission, and not in OI 630.0 and H β 486.1 nm. Using coincident spacecraft data, the sources of this aurora will be discussed.