Proton aurora observation in the cusp and cleft region with a monochromatic all-sky imager - CAPER campaign -

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To investigate the ion acceleration mechanisms in topside cleft ionosphere, CAPER (the Cleft Accelerated Plasma Experimental Rocket) campaign was carried out in Norway in January 1999. We conducted a proton aurora observation with a monochromatic all-sky imager at Longyearbyen(78 ILAT) on January 12-21 1999. It was the first attempt to observe proton aurora images in the dayside cusp/cleft region. We obtained all-sky proton images for 4 days during the campaign. A sounding rocket was launched at 06:14 UT on January 21 from Andoya, Norway and the attained apogee was 1360 km. All-sky imaging and photometric observation show that diffuse proton aurora and discrete electron aurora moved northward and diffuse proton aurora was located at 75 MLAT when the rocket traversed over Longyearbyen.

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