

Ground-based optical observation of proton aurora at Athabasca, Canada (MLAT=62.6N)

Kaori Sakaguchi[1]; Kazuo Shiokawa[1]; Akimasa Ieda[2]; Tadahiko Ogawa[1]

[1] STELAB, Nagoya Univ.; [2] STEL

We installed a meridian-scanning filter-tilting photometer at Athabasca, Canada (geographic lat.=54.7N, long.=246.7E and magnetic lat.=62.6N) with an all-sky imager (filter : 557.7nm, 630.0nm, OHband, 486.1nm, 844.6nm and 589.3nm) and an induction magnetometer in 3 September 2005. The Athabasca station is located at a subauroral zone where measurement of proton aurora has not been done well. The wavelength of Hbeta (486.1nm) emission in proton aurora shows Doppler shift by precipitation of hydrogens. Our photometer can search peak Hbeta emission from 486.7nm to 484.7nm by tilting a filter and can give a characteristic energy of precipitating hydrogens.

In 5 September 2005, we observed a strange auroral arc at Athabasca, Canada. The arc appeared in the southern sky over 2 hours (2000-2220LT) and was completely separated from the auroral oval, which were observed in the northern sky of Athabasca. In this presentation, we will show detailed analysis of this strange proton aurora. We also show some other proton auroras observed at Athabasca. We add Prof. Martin Connors as a coauthor of this paper.