

Comparison of auroral dynamic images with plasma characteristics at the geostationary orbit

Yuichiro Nogawa [1], Kanji Hayashi [2]

[1] Earth and Planetary Sci., University of Tokyo, [2] Earth and Planetary Phys., Univ. of Tokyo

For finding evidences of magnetosphere-ionosphere coupling effects pin point comparisons are continued by means of cross-correlation analysis between dynamic pattern of auroral images taken by high sensitive all-sky TV cameras and plasma characteristics in reference of key parameters observed by LANL 1989-49 satellite at the geostationary orbit whose foot print is about at 300 km in the west of the all-sky TV camera site, Dome 2 nearby Dawson City. Yukon. In this study arrangement of analyzed results is specially focused to classification of motion in auroral patterns. Topics are also expected from the latest observation campaigns in January and February 1999 in which we had strong and medium magnetic storms in the up-going phase of the solar activity after a couple of the quietest years.

For finding evidences of magnetosphere-ionosphere coupling effects pin point comparisons are continued for testing by means of cross-correlation analysis between dynamic pattern of auroral images taken by high sensitive all-sky TV cameras and plasma characteristics in reference of key parameters observed by LANL 1989-49 satellite at the geostationary orbit whose foot print is to be located about at 300 km in the west of the all-sky TV camera site, Dome 2 nearby Dawson City. Yukon. Total light images taken by a camera with photo sensitive surface with multi-alkali material which is more sensitive in red lights are mainly used because of its good sensitivity without losing time resolution and with less quantum noises. Another all-sky TV camera which is selectable a spectral line of 557, 630, 656, and 670 [nm] is used to obtain gross features of energy and species of precipitation particles exciting auroral lights despite of the low time and/or spatial resolution of data due to frame integration for smoothing out quantum noises. In this study arrangement of analyzed results is specially focused to classification of motion in auroral patterns. Topics are also expected from the latest observation campaigns in January and February 1999 in which we had strong and medium magnetic storms in the up-going phase of the solar activity after a couple of the quietest years.