

Airglow Studies in the South American Low Latitude Region

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Systematic airglow observation has been carrying out, at Sao Joao do Cariri (7 S, 37 W), and at Cachoeira Paulista (23 S, 45 W) in Brazil since 1998. Zenith intensity and all sky image of the OI5577, OI6300, OH, and O2 atmospheric (0,1) band emissions made it possible to investigate dynamical processes in the upper mesosphere and lower thermosphere (MLT) region, and in the ionosphere. It is revealed that the atmospheric waves in the MLT region are responsible for their periodic nocturnal and day to day variations. Development and W-E drift motion of the Ionospheric plasma irregularities (bubble) were monitored by OI 6300 all sky imager. It was observed that during a strong magnetic storm period, the normal W to E drift was prohibited and even drifted to westward.

Systematic airglow observation has been carrying out, one at near the equator, Sao Joao do Cariri (7 S, 37 W), and the other at Cachoeira Paulista (23 S, 45 W) in Brazil since 1998. Large amount of database of the zenith intensity and all sky image of the OI5577, OI6300, OH, and O2 atmospheric (0,1) band emissions made it possible to investigate dynamical processes in the upper mesosphere and lower thermosphere (MLT) region, and in the ionosphere. It is revealed that the atmospheric diurnal tidal oscillation and planetary waves (Rossby-gravity waves and Kelvin waves) in the MLT region are responsible for their periodic nocturnal and day to day variations. Development and W-E drift motion of the Ionospheric plasma irregularities (bubble) were monitored by OI 6300 all sky imager. It was observed that during a strong magnetic storm period, August 26, 1998, the normal W to E drift was prohibited and even drifted to westward. Some topics concerning these observational evidences are presented and discussed.