

## Optical observation at Brazilian geomagnetic anomaly region

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Upper Atmosphere Observation was started in 1996 at Southern Space Observatory, INPE, Brazil (29.70S,306.18E). We summarized typical optical phenomena as follows:

(1) Multiple bands type

Multiple bands structure extending from north-south direction and moving to eastward. This phenomena may relate to the gravity wave disturbance as observed at midl-atititude.

(2) Diffuse structure type

Isolated cloud structure appear from northward and develop to southward

(3) Faint glow type

Very faint multiple bands structure emission. This phenomena is appears at the hoigh latitude side and slightly move to eastward.

Upper Atmosphere Observation was started in 1996 at Southern Space Observatory, INPE, Brazil (29.70S,306.18E). We installed several detectors for observation of electro-magnetic wave and optical emission in the Brazilian geomagnetic anomaly region. We found several typical optical phenomena obtained in August 1999.

They are separated into three types as follows:

(1) Multiple bands type

Multiple bands structure extending from north-south direction and moving to eastward. Assuming the altitude of this emission region is 90km, the width of band is a few km (less than 10km) and moving speed is about 150m/s. This similar phenomena is observed at twice during one week observation period. This phenomena may relate to the gravity wave disturbance as observed in Japan and midl-atititude region.

(2) Diffuse structure type

Isolated cloud structure appear from northward and develop to southward. The emission region gradually move to the eastside. slightly and moving speed is 170m/s. this phenomena is observed only one time during one-week observation period.

(3) Faint glow type

Very faint multiple bands structure emission. This phenomena is appears at the hoigh latitude side and slightly move to eastward. This phenomena stable exists more than one hour. Assuming the altitude of this emission region is 90km, the width of band is a few km. This similar phenomena is observed at twice during one week observation period.

These phenomenons are obtained by panchromatic CCD camera. Therefore it is difficult to determine whether the emission was excited by precipitrating particle or molecular vibration band emission related to temperature. Further more, since we used wide angle lens instead of fish eye lens, emission region sometimes moved out of the detector range of this lens.

We renewed CCD camera with the monochromatic filter (5577nm/6300nm) and fish- eye lens. Optical observation will be carried out on March 2000. Unfortunately, this observation was not done yet at this moment (Feb.24,2000), thus we will present observation results at the meeting.