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PEM031-P03

Room:Convention Hall

Time:May 26 14:00-16:30

## Analyses of aurora images observed from a cockpit of jet airliner

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We present a possibility of optical observations of aurora from a jet airliner flying along polar routes with an altitude of 12km. The aircraft-based optical observation from such a high altitude has several advantages comparing ground observations. The visibility above the tropopause is extremely high because of the clear and rarefied air. It is possible to detect the light of aurora down to an elevation of -2 degrees below the horizon. It means that very clear images of aurora in wide area can be observed from the aircraft.

Thousands of pictures were taken by a still camera installed just inside of a cockpit rear window of the jet airliner in the period of September 1999 to March 2005. The pictures were taken automatically every 20 seconds during night flights over the polar region. We select a number of pictures in which aurora and stars are clearly taken. Assuming an altitude of 100 km for the bottom of aurora, positions of aurora can be calculated from azimuth and elevation angles obtained from stars in the picture. We present very interesting aurora images from the cockpit, and compare them with conjugate data observed by the FAST satellite.

Keywords: aircraft observation, aurora, the FAST satellite