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Time Variations of Oxygen Emission Lines and Solar Wind Dynamic Parameters in Low Latitude Region

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Aurora phenomenon is an effect of collision between precipitating particles with gyromotion along Earth's magnetic field and Earth's ionospheric atoms or molecules. The particles' precipitation occurs normally around polar regions. However, some auroral particles can reach lower latitude regions when they are highly energetic. A clear emission from Earth's aurora is mostly from atomic oxygen. Moreover, the sun's activities can influence the occurrence of the aurora as well. This work studies time variations of oxygen emission lines and solar wind parameters, simultaneously. The emission's spectral lines will be observed by Medium Resolution Echelle Spectrograph (MRES) along with 2.4-m diameter telescope at Thai National Observatory, Intanon Mountain, Chiang Mai, Thailand. Oxygen (OI) emission lines will be calibrated by Dech-Fits –spectra processing program and Dech95 –2D image processing program. The correlation between oxygen emission lines and solar wind dynamics will be analyzed. This result could be an evidence of the aurora in low latitude regions.

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