

Observations of O, Oh, And O₂ airglows from the FORMOSAT 2 Satellite

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The FORMOSAT 2 satellite was launched in May 2004 to a sun synchronous orbit of about 890 km with a scientific purpose to measure optical emissions in the upper atmosphere. This was made possible by using the instrument ISUAL, which consists of a CCD imager, photometers, and array detectors combined with several filters centered at the wavelengths 427.8 nm, 557.7 nm, 630 nm, 762 nm, and 630-750 nm. The CCD imager and its narrow and broad band filters is useful to map global airglow distributions produced by O, O₂, and OH in the height region 80-200 km. Observations for these airglows made during the 1st six months showed various atmospheric processes. For example, the 630 nm filter has measured airglows from O(¹D) at 200 km and OH at 90 km simultaneous, and found height and latitude variations related with upper level dynamics in the tropical regions. Gravity wave activities have also been observed by using the O₂ filter at 762 nm. Results of these observations will be reported.