

O(¹D) and OH airglows observed at 630 nm from the FORMOSAT 2 satellite

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Emissions at 630 nm in the upper atmosphere produced by oxygen atom and OH have been respectively measured by the instrument ISUAL on board FORMOSAT 2 satellite which was launched in May 2004 to a sun synchronous orbit of about 890 km. A CCD imager and photometers combined with several filters on board the satellite have investigated airglows in the upper atmosphere. Observations have been made by using filters centered at the wavelengths 557.7 nm, 630 nm, 762 nm, and 630-750 nm corresponding to emissions produced by O(¹S), O(¹D), O₂(b¹Σ_g⁺), and OH in the height region 80-200 km. By using the 630 nm filter, airglows from O(¹D) at 200 km and OH at 90 km have been both measured separately and simultaneous in October, 2004. Results in the tropical regions show various dynamic processes such as tidal influences. Modeling simulating airglow observations by including global temperature (MSIS), horizontal wind, as well as a gravity wave will be discussed.