Mesospheric temperature measurement using a Spectral Airglow Temperature Imager (SATI)

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The Optical Mesosphere-Thermosphere Imagers (OMTI) had been developed at the Solar-Terrestrial Environment Laboratory and was installed at the MU radar observatory in Shigaraki. One of the instruments, The Spectral Airglow Temperature Imager (SATI) can measure rotational temperature by observing nightglow emission of OH and O2. We have continuously operated SATI since its installation in November, 1997. Intensive observations of nightglow emissions over Shigaraki, Japan, was carried out between January and March, 1998 as a part of the Planetary Scale Mesopause Observing System (PSMOS) campaign. In this study, we used the rotational temperature observed by SATI during this period. Observed results show apparent semidiurnal oscillations. Derived wave parameters will be discussed in the paper.

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A collaborative MU radar and imaging observations of nightglow emissions over Shigaraki, Japan, was carried out between January and March, 1998 as a part of the Planetary Scale Mesopause Observing System (PSMOS) campaign. In this study, we used the rotational temperature observed by SATI during the PSMOS campaign. The temperature variations show apparent semidiurnal oscillations. Derived wave parameters will be discussed in the paper.