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Longitudinal Variations in the OI 5577A Green-Line Emission Observed by UARS/WINDII

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Measurements of the OI 5577A green-line emission were conducted by the WINDII instrument on the Upper-Atmosphere Research Satellite (UARS) between 1991 and 1997. This paper analyzes multi-year mean emission rates (1991-1993, medium to high solar activity; 1994-1997, low solar activity) to reveal significant longitudinal variability of these emission rates as a function of height, latitude and month of the year. The observed variability may be related to latitude-longitude variability of vertical mixing and/or vertical transport due to tides. The number of maxima in emission rate with respect to longitude, however, are often not what is expected based on temperature and wind measurements from UARS and TIMED observations, and reasons for this are discussed.