J O U R N A L C L U B

Observations of Polar Mesospheric Clouds from the Student Nitric Oxide Explorer

by

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ABSTRACT

Polar Mesospheric Clouds (PMCs) are a high latitude phenomenon known to occur at altitudes near 83 km at times near the summer solstice and are related to the phenomenon of Noctilucent Clouds (NLCs). The first recorded sighting of an NLC occurred in 1885 and there is evidence that the frequency of occurrence of NLCs is increasing. This increase suggests that there is long-term change occurring in the mesosphere.

The Student Nitric Oxide Explorer (SNOE) observes the Earth's UV limb radiance to measure nitric oxide and serendipitously also observes PMCs. SNOE was launched on February 27, 1998 and continues to operate. To date SNOE has observed four northern and three southern PMC seasons. The SNOE observations have shed new light onto the processes that govern PMC formation. In this talk we will describe the SNOE observations and their implications concerning PMC formation and variability.

A new NASA mission, the Aeronomy of Ice in the Mesosphere, is under study. AIM will be the first mission dedicated to understanding PMCs. The AIM objectives and planned observations will also be briefly discussed.

Friday, March 1
Globe Room
3:45 pm