

EIGHT YEARS OF PMC OBSERVATIONS FROM ODIN/OSIRIS

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The Optical Spectrograph and InfraRed Imager System instrument (OSIRIS) on the limb-viewing polar orbiting Odin satellite observes Polar Mesospheric Clouds (PMCs) in both hemispheres since November, 2001. The orbit period of Odin is 96 minutes and the maximum latitudinal coverage in the orbit plane is between 82.2 N and 82.2 S. OSIRIS measures the limb-scattered sunlight between 280 and 810 nm with the spectral resolution of about 1 nm. The OSIRIS PMC dataset contains cloud's geographic location, altitude, time of detection, and calibrated radiance at peak. As the high-latitude measurements are performed at similar solar scattering angles in both hemispheres, an interhemispheric comparison of PMC properties is straight-forward. OSIRIS spectral measurements in the UV region, 290-305 nm, are also used to retrieve the Angstrom exponent and particle sizes for bright clouds.

In this work, the interseasonal, interhemispheric, and interannual variability in PMC occurrence frequency, brightness, and altitudes measured by OSIRIS from November 2001 until July 2009 will be presented. The effect of orographic gravity waves on PMC occurrence and brightness in both hemispheres will be discussed. Latitudinal and interhemispheric variability in cloud particle sizes with respect to other PMC parameters measured by OSIRIS, as well as with respect to the 11-years solar cycle will be analyzed.

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