

Abstract Submitted
for the 4CF07 Meeting of
The American Physical Society

Analysis of atmospheric data to measure occurrences of Polar Mesospheric Clouds SHANA COFFEY, Northern Arizona University, MICHAEL STEVENS, CHRISTOPH ENGLERT, DAVE SISKIND, U.S. Naval Research Laboratory, NRL COLLABORATION — Polar Mesospheric Clouds (PMCs) are high altitude (about 80 km) clouds that occur in the summer in the polar regions and are believed to be increasing in brightness over the last hundred years. This recent increase may be related to global climate change, but may also be correlated, in part, to increased shuttle launches. In this talk I will discuss the work of my summer internship at the U.S. Naval Research Laboratory (NRL), where I analyzed the calibrated spectral data of the upper atmosphere from a new type of interferometer, SHIMMER. The SHIMMER interferometer was developed at NRL and, using a new optical technique called spatial heterodyne spectroscopy, can measure with high sensitivity and high spectral resolution over a narrow passband. I used data from SHIMMER to look for PMCs by calculating the integrated spectrum at each altitude of the observed region. The altitude profile was then compared to a model profile of the atmosphere to see if there was an increase of photon scattering at any one altitude. The distribution of PMCs at local solar time will be discussed. Future research will compare the observed PMCs in the northern and southern hemispheres.

Kristopher Anderson
Northern Arizona University

Date submitted: 18 Sep 2007

Electronic form version 1.4