610

THE AERONOMY OF ICE IN THE MESOSPHERE (AIM) SATELLITE MISSION

M.J. Taylor[1], J.M. Russell, III[2], S. Bailey[3], K. Nielsen[1]

[1]Utah State Univserity, Logan, Utah, United States, [2]Hampton University, Hampton, Virginia, United States, [3]University of Alaska, Fairbanks, Alaska, United States

The Aeronomy of Ice in the Mesosphere (AIM) mission is a NASA Small Explorer satellite scheduled for launch in September of 2006. The overall goal is to study why Polar Mesospheric Clouds (PMC) form and why they vary. Models of PMC formation suggest that super-saturated conditions must be present before cloud nucleation occurs. However this basic hypothesis remains untested because we have no comprehensive knowledge of the chemical/ thermal environment in which PMC form. AIM will obtain the first simultaneous measurements of mesospheric temperature, H_2O, PMC (and other trace gasses and aerosols) at high-latitudes essential for quantifying cloud formation. This mission is especially timely in view of the upcoming International Polar Year and the much heightened scientific and public interest in Noctilucent Clouds (NLC) due to recent observations at significantly lower latitudes than expected, and their possible association with rocket exhausts. AIM will carry two main instruments: SOFIE (Solar Occultation For Ice Experiment), an IR solar occultation differential absorption radiometer and CIPS (Cloud Imaging and Particle Size experiment), a panoramic UV imager. A third instrument CDE (Cosmic Dust Experiment) will be used for in-situ dust detection. In this talk I will summarize the AIM mission focusing on the basic science themes. AIM's first seasonal measurements will be made in the southern hemisphere (Oct. 2006-March 2007) and coordinated ground-based measurements are most desirable.