

**[ATM-01] Diurnal Variations of Sporadic Meteor Flux Observed by SKYiMet Meteor Radar**

Devulapalli Venkata Phanikumar<sup>1</sup>, Khan-Hyuk Kim<sup>1</sup>, Amit Kumar Patra<sup>2</sup>, Young-Sil Kwak<sup>1</sup>, Ganji Yellaiah<sup>3</sup>, Karanam Kishore Kumar<sup>4</sup> and Iain Reid<sup>5</sup>

<sup>1</sup>*Korea Astronomy and Space Science Institute, Daejeon, Korea*

<sup>2</sup>*National Atmospheric Research Laboratory, Gadanki, India*

<sup>3</sup>*Department of Astronomy, Osmania University, Hyderabad, India*

<sup>4</sup>*Space Physics Laboratory, Trivandrum, India*

<sup>5</sup>*Department of Physics, University of Adelaide, Adelaide, Australia*

Meteors are the important source of metallic atoms in the ionosphere. The sporadic meteors penetrating in 80-100 km altitudes provide a long term effect on the metallic ion layer formations. Earlier studies have shown that the sporadic meteor flux is not constant throughout the globe. However, recent studies showed that they are not random, but follow certain periodic diurnal and seasonal pattern. For a better understanding of meteor origin, it is important to know precisely the global annual, seasonal and diurnal variation of meteor flux. In the paper we study the diurnal variation of meter flux rate at different latitudes using observations from Thumba, India, Darwin, Buckland Park, Davis. We observed a secondary peak occurring at 0300 LT in addition to a morning peak occurring at 0600 LT at Thumba. At other latitudes only one peak occurring at 0600 LT is observed. Interestingly, this secondary peak has a clear seasonal variations. In summer (winter), the primary (secondary) peak is larger than the secondary (primary) peak. However, the primary and secondary peaks are comparable in equinoxes. Comparing with the observations from low to high latitudes, we conclude that the secondary peak is strongly limited in the region of the equator. We suggest that the secondary peak could be due to sporadic meteor sources located around apex, which may not be associated with Helion and Antihelion sources.