

IAF SPACE EXPLORATION SYMPOSIUM (A3)  
Mars Exploration – missions current and future (3A)

Author: Ms. Anusha Santhosh  
United Arab Emirates, anusha\_2011@hotmail.com

Ms. Rameela Ramesh  
United Arab Emirates, rameela.workmail@gmail.com

THE STUDY AND ANALYSIS OF MARTIAN ATMOSPHERE USING THE DATA FROM EMIRATES  
MARS ULTRAVIOLET SPECTROMETER (EMUS)**Abstract**

The Emirates Mars Mission (EMM) - Hope Probe - was designed to efficiently comprehend Mars atmosphere interactions and patterns in a low inclination orbit which provides extraordinary coverage of the planet. The Emirates Mars Ultraviolet Spectrometer (EMUS) is one of the Hope Probe's three payloads that acts as a spectrograph for visualizing ultraviolet light. It targets sub-seasonal timelines to determine the prevalence and geographic variability of critical neutral species in the thermosphere and exosphere. The reaction of the Martian atmosphere and neutral escape rates to solar flares will be analyzed using EMUS. This paper explores the EMUS data archives through the Aladin program. Aladin allows users to see digitized astronomical pictures, overlay entries from astronomical libraries or databases, and interact with relevant data and material from repositories for all known sources in the field. The input generated by EMUS can be fed into the software which will display graphical results. These results will play a critical role in analyzing the fundamental mechanisms that drive atmospheric structure and dynamics, including the links between the upper and lower atmospheres and their effects on atmospheric escape measurements. The analytics can then be improved and put to use for conducting further research and experimentation to better understand the conditions of the planet. Exploring more into the parametric aspects of the derived results will help understand the Martian atmosphere from a different view that has never been observed before.