

The investigation on local time dependency of dust storm initiation in the Solis Plunum - the Valles Marineris region

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The Solis Planum - Valles Marineris region is famous for its unique and strong dust activities. They sometimes affect the Martian atmosphere in global scale (Battalio 2019).

In this study, we investigated the occurrence time of dust storms in the region by using the data collected by Emirates eXploration Imager (EXI) onboard HOPE probe. HOPE is orbiting in a near equatorial orbit and the orbital period is 55h. It can get the picture of the Martian atmosphere on diurnal and sub-seasonal timescales (Almatroushi et al 2020). EXI has several observational wavelengths in ultraviolet and visible bands. We used three kinds of images in visible bands, 437nm, 546nm and 635nm. We visually inspected the images in the region and extracted dust storms. We found 37 storms which we can discuss occurrence times. The result suggests that it is likely to occur frequently around LT1200 in the southern winter, and LT0900 in southern spring. We are not able to see the local time dependency in other seasons because of the small number of detected storms.

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