

# The 3rd National Mars Science Seminar

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## *Volcanic airfall deposits in Noctis Labyrinthus*

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While there are many evidences of past effusive volcanism on Mars (e.g. lava flows), only a few examples of past explosive eruptions exist. This asymmetry is surprising as explosive eruptions should be more frequent on Mars due to its relatively low atmospheric pressure compared to Earth, for the same volatile content. Here, we sought pyroclastic fall deposits in the vicinity of Tharsis and found up to hundreds of meters thick layered deposits covering Noctis Labyrinthus plateaus and walls. Using available datasets, we mapped their extent to study their depositional characteristics. On walls, the deposits have been reworked by wind forming aeolian bedforms which morphometrics were studied using stereo-derived DTMs from CaSSIS and HiRISE images. Our results suggest that these deposits consist of an accumulation of airborne material which predates the Noctis Labyrinthus fracture system opening. Following chasmata formation, the remaining material on plateaus was transported on walls.



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