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Distribution and time-variation of specific dark wind streaks at Pavonis Mons

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Recent high-resolution observations have revealed several features, which are not compatible with existing models of erosional streaks. Here we report on the streaks named "Spire Streaks" at Tharsis volcanoes. We investigated images obtained by the Context Camera (CTX) on the Mars Reconnaissance Orbiter (MRO) for the spire streaks at Pavonis Mons in Tharsis to document the spire streaks. We also investigated the images obtained by Viking, Mars Odyssey, Mars Global Surveyor (MGS) and MRO for the spire streaks at Pavonis Mons to see its time-variation. The morphology of the spire streaks cannot be explained with existing erosional processes. Nighttime slope wind that blows under extraordinary conditions seems to be responsible for the formation of the spire streaks.

Keywords: Mars, wind streak, surface-atmosphere interaction