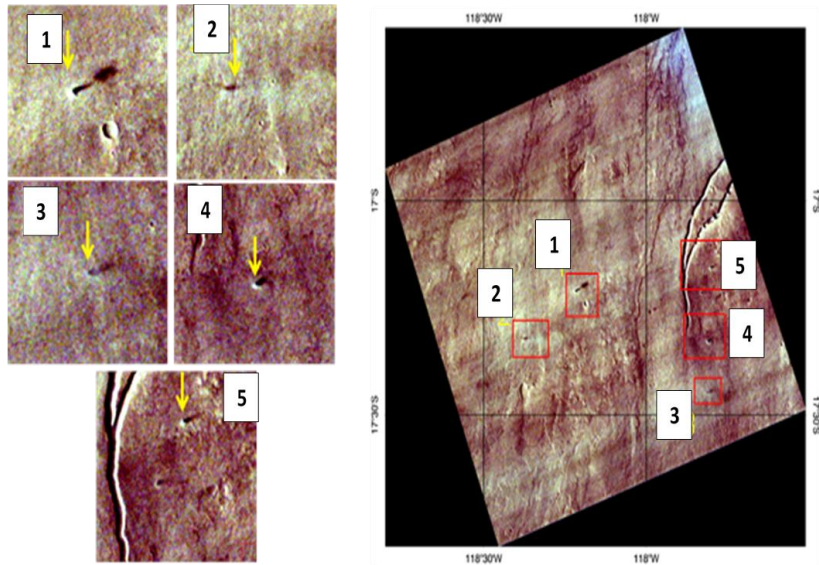


Martian Dust Devils detected by Mars Colour Camera onboard Mars Orbiter Mission



Right Image – A unique swarm of five dust devils detected in a single frame of MCC image of 7 November 2016 (box) in the southern hemisphere of Mars during summer season. **Left Images** - 1: A large dust devil with S-shaped shadow 2: A medium sized dust devil with a tilted dust column. 3: A smaller dust devil with shorter shadow & 4, 5: Well developed medium scale dust devils having bright spectacular dust column with an elongated sharp shadow. The dust devil column is strongly tilted to the right which is reflected in the shadow.

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Dust devil are whirlwinds that result from solar warming of the ground, prompting convective air to rise into the atmosphere. They are observed on Earth and Mars, both. The dust devils on Mars are relatively larger in proportion. Mars Colour Camera (MCC) onboard Mars Orbiter Mission (MOM) captured this spectacular weather phenomenon on 7 November 2016 at 12:08:56 UTC with spatial resolution of ~25 m at a spacecraft altitude of ~490 km in the southern hemisphere of Mars. This is an exclusive observation as five dust devil are captured in a single frame of Mars Colour Camera. On Mars, the Solar longitudes (Ls) are used for keeping track of seasons. The time of MCC imaging corresponds to solar longitude (Ls) of 256.83°, which corresponds to Southern Summer season on Mars. First dust devil (No. 1) is most evident as depicted in the figure. Altitude of dust devil have been estimated using Sun-sensor geometry and shadow method. The altitude of these dust devils vary from ~0.5 to 1.9 km. The image represented here was converted to top of atmosphere reflectance (I/F).

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