Thermal structure and dust clouds during the 2018 dust storm from ACS-TIRVIM onboard ExoMars/TGO

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The ExoMars Trace Gas Orbiter (TGO), a mission by ESA and Roscosmos started its operational scientific phase in March 2018. The Atmospheric Chemistry Suite (ACS) is a set of three spectrometers (NIR, MIR, and TIRVIM) designed to observe the Martian atmosphere in solar occultation, nadir and limb geometry. The thermal infrared channel — TIRVIM is a Fourier-transform spectrometer covering the spectral range of 1.7–17 μm with a spectral resolution of 0.8 cm^{-1} for nadir observations. In nadir operation mode, the primary goal of TIRVIM is the long-term monitoring of atmospheric temperature and aerosol (dust and ice clouds) state from the surface up to approximately 60 km. In June 2018 a global dust storm enshrouded Mars for more than a month. We present the evolution of the thermal structure, dust content and optical properties during this period.
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