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Seasonal variation of ozone vertical profiles from ExoMars TGO and comparison to water

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The Ultraviolet and Visible Spectrometer (UVIS) channel [1] of the Nadir and Occultation for Mars Discovery (NOMAD) instrument [2] aboard the ExoMars Trace Gas Orbiter has been making observations of the vertical, latitudinal and seasonal distributions of ozone. Here, we present ~1.5 Mars Years (MY) of vertical profiles of ozone, from $L_S = 163^\circ$ in MY34 to $L_S = 320^\circ$ in MY35. This period includes the occurrence of the MY34 Global Dust Storm. The relative abundance of both ozone and water (from coincident NOMAD measurements) increases with decreasing altitude below ~40 km at perihelion and at aphelion, localised decreases in ozone abundance exist between 25-35 km coincident with the location of modelled peak water abundances. High latitude ($> \pm 55^\circ$), high altitude (40-55 km) equinoctial ozone enhancements are observed in both hemispheres ($L_S \sim 350 \square 40^\circ$). Morning terminator observations show elevated ozone abundances with respect to evening observations, most likely attributed to diurnal photochemical partitioning along the line of sight between ozone and O. The ozone retrievals presented here provide the most complete global description of Mars ozone vertical distributions to date as a function of season and latitude

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