Supplement of

SAGE III/ISS Ozone and NO_2 Validation using Diurnal Scaling Factors

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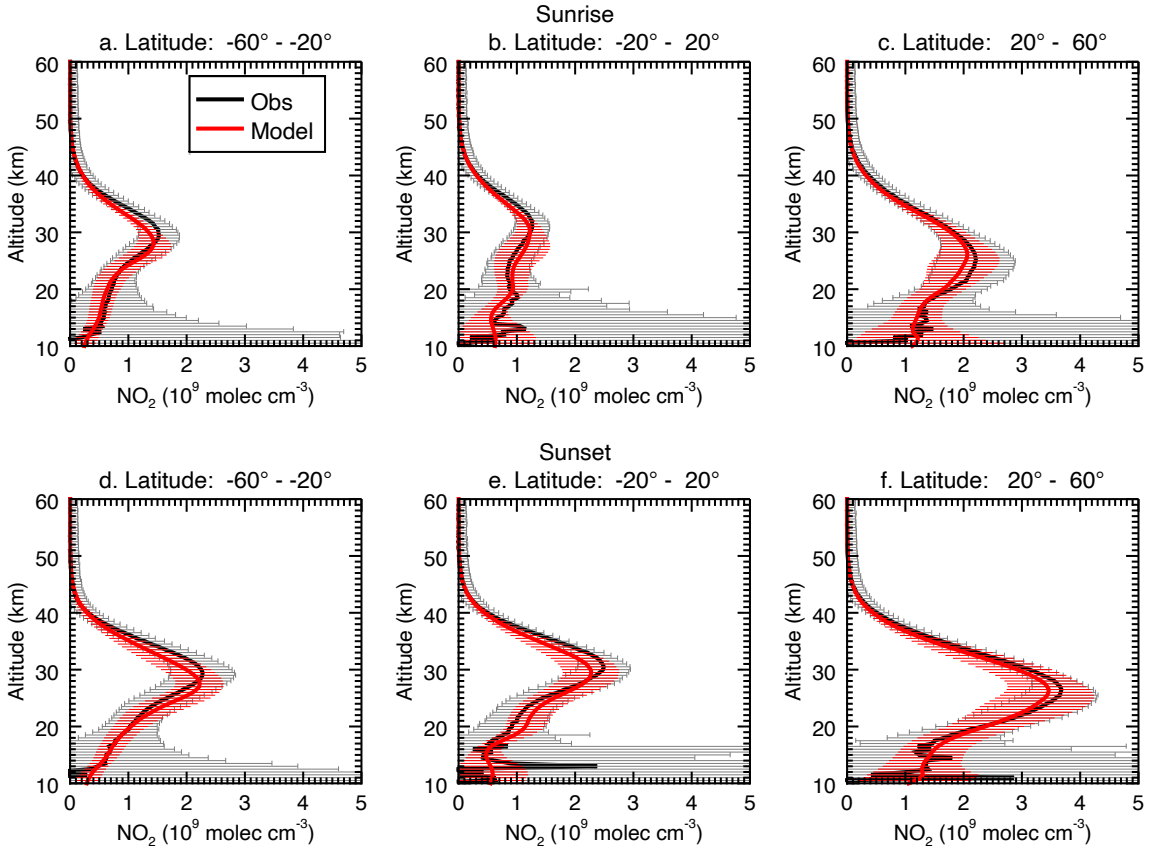

Fig. S1: Comparison of the model simulation (red) to SAGE III/ISS (black) sunrise (top) and sunset (bottom) NO_2 vertical profile observations for June-Aug. of 2017-2020 averaged over three different latitude bands. Error bars represent the standard deviation within the latitude band.

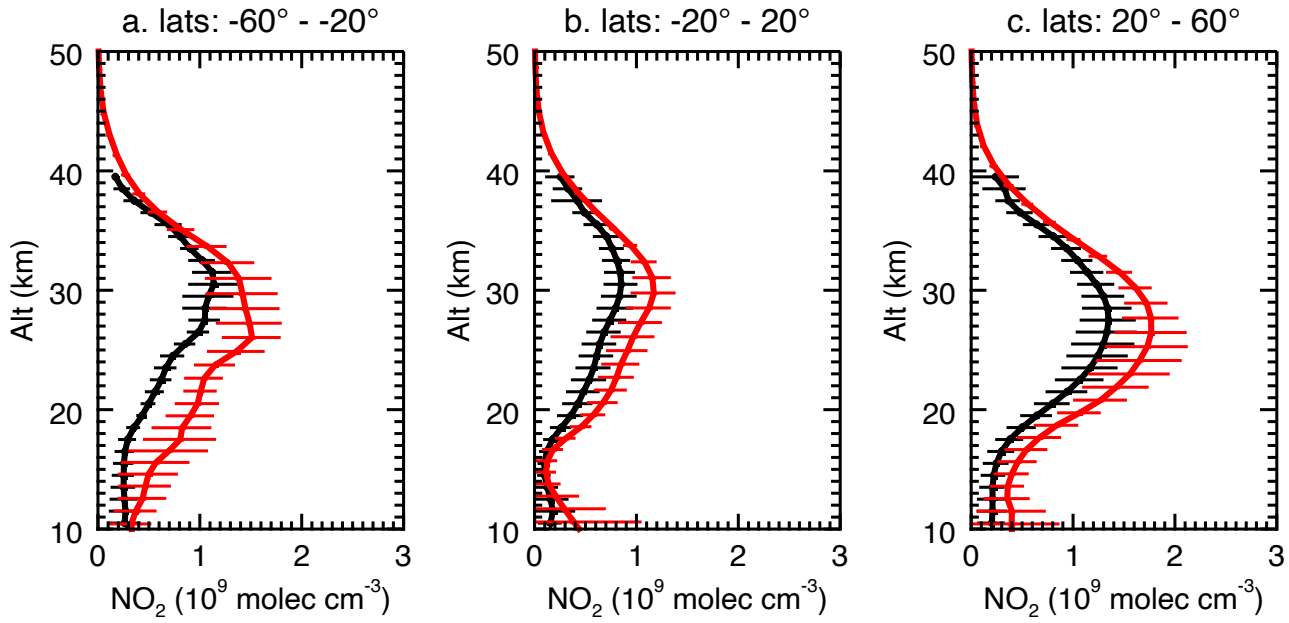

Fig. S2: Comparison of simulated NO_2 (red) to OSIRIS observations (black) for July-Aug. 2017-2018 averaged over three latitude bands. Error bars represent the standard deviation within the latitude band.

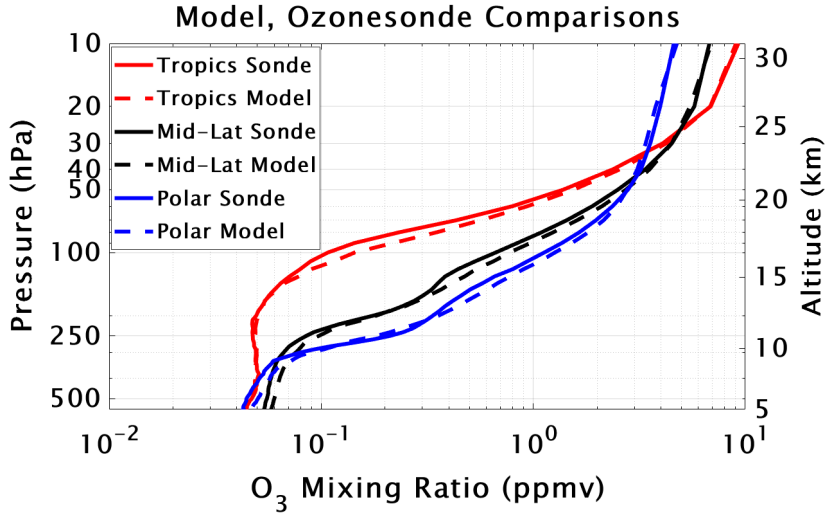

Fig. S3: Ozonesondes (solid lines) and corresponding simulated O_3 profiles (dashed lines) averaged over the tropics (red), mid-latitudes (black), and polar latitudes (blue).

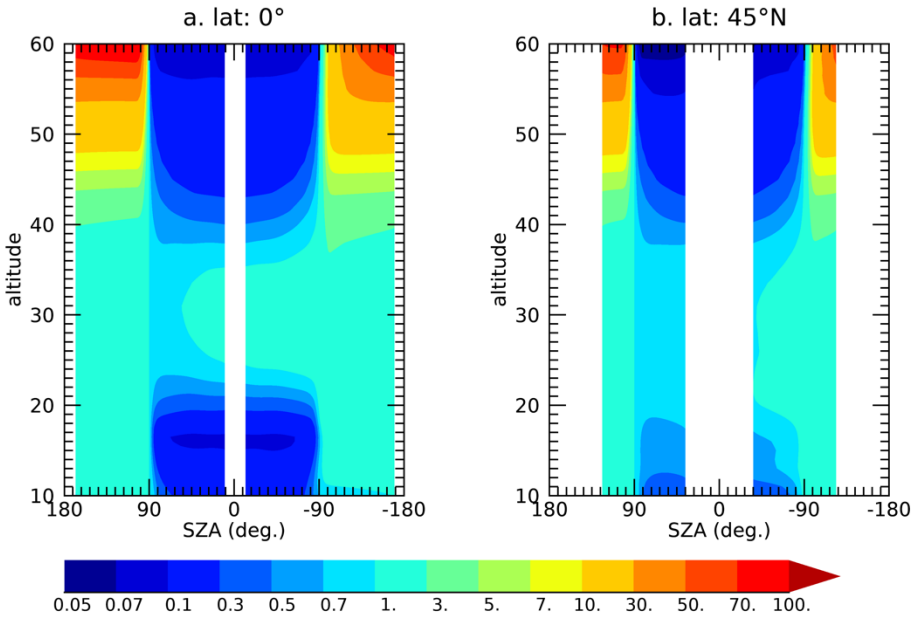

Fig. S4: April sunrise scaling factors (unitless ratio) for NO_2 as a function of signed SZA and altitude for a. the equator and b. 45°N. White areas indicate SZA values that do not occur in the given monthly means.

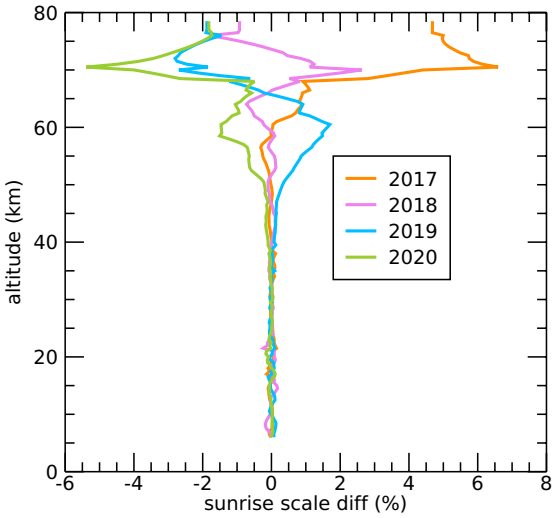

Fig. S5: Annual anomalies compared to the 2017-2020 climatology for the October sunrise scale factors for O_3 at the Equator for SZA=60° as a function of altitude.