

Supporting Information for:

**COVID-19 Induced Fingerprints of a New Normal Urban Air Quality in the United States**

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**This PDF file includes:**

Figures S1 to S4

# Supplemental Figures

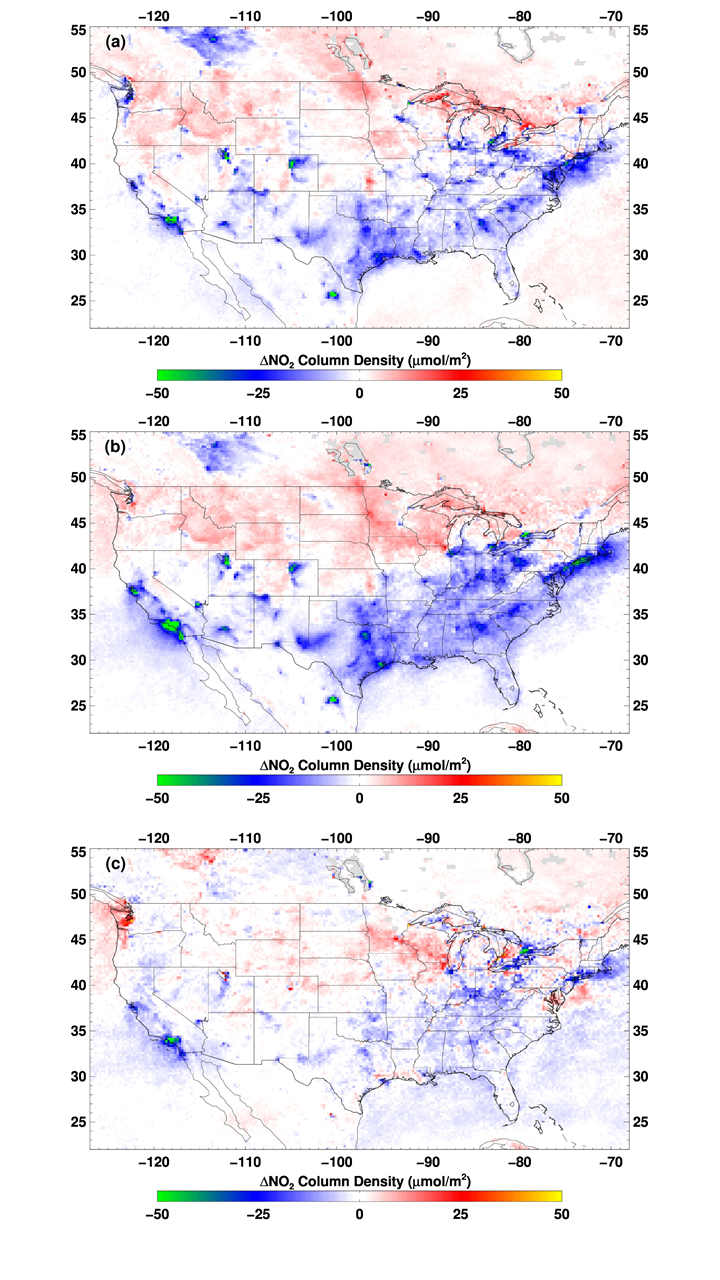


Figure S1. tropNO2 changes between pre-lockdown period (1 January to 15 March) and lockdown period (16 March to 30 May) for (a) 2019∆NO2, (b) 2020∆NO2, and (c) the difference between 2020∆NO2 and 2019∆NO2. The double differencing is expected to minimize the seasonaldifferences and provide a realistic estimate of change in tropNO2 due to emissions changes.

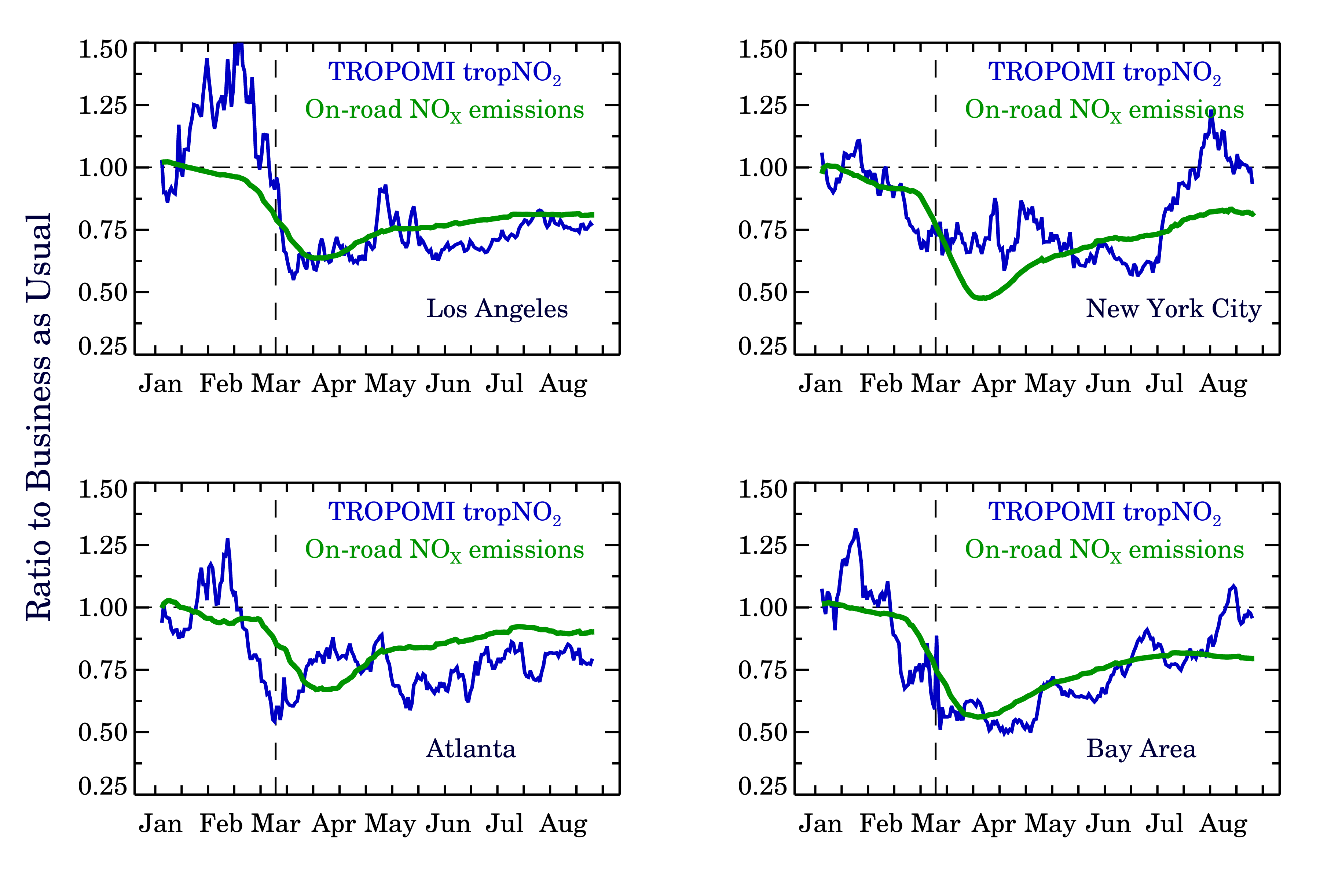


Figure S2. Trends in TROPOMI tropNO2 and on-road NOx emissions since January 1 2020 after normalizing the data for typical meteorological conditions and sun angles as in Goldberg et al. (2020). Both NOx emissions from traffic and TROPOMI tropNO2 data show a decline with the onset of the lockdown and the recovery after the lockdown is lifted in May in most of the US. Data for four different locations are shown.

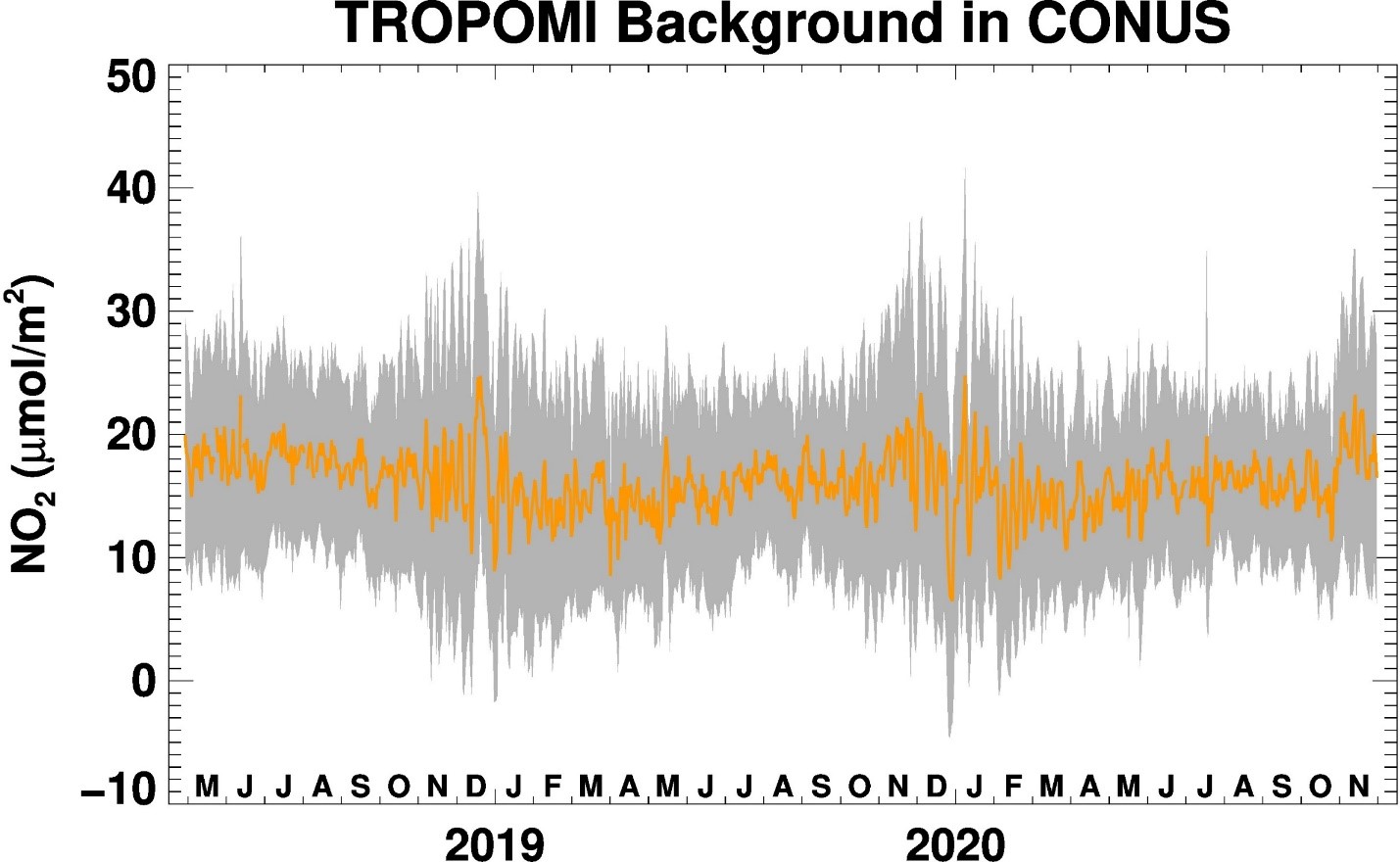


Figure S3. Time series of TROPOMI tropNO2 representing background tropospheric column NO2 derived using Silvern et al. (2019) method. The shaded region is the standard deviation of the daily mean tropNO2.

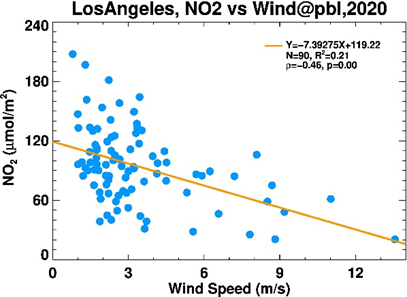


Figure S4. Correlation of daily mean tropNO2 with planetary boundary layer wind speed (ERA5) for Los Angeles.

## References

Goldberg, D. L., Anenberg, S. C., Griffin, D., McLinden, C. A., Lu, Z., & Streets, D. G. (2020). Disentangling the impact of the COVID‐19 lockdowns on urban NO2 from natural variability. *Geophysical Research Letters*, 47, e2020GL089269. <https://doi.org/10.1029/2020GL089269>

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