Air Quality Changes in Response to COVID-19 Mitigation Efforts

- Nitrogen dioxide (NO$_2$) is a pollutant that is unhealthy to breathe and contributes to the formation of unhealthy levels of surface ozone pollution. It is primarily emitted from tailpipes and smokestacks.

- Aura Ozone Monitoring Instrument (OMI) and ESA TROPOMI data show large decreases of NO$_2$ in areas where COVID-19 mitigation measures have been introduced. Ongoing observations of air quality have helped provide immediate examples of how Earth’s systems are responding to these changes in human behavior.

- The NASA OMI team created a portal to provide scientists an easy way to see how satellite NO$_2$ has changed in 2020 compared to the 2015-2019 average for the same 14-day period: https://so2.gsfc.nasa.gov/no2/no2_index.html

Decreases in air pollution, specifically tropospheric nitrogen dioxide (NO$_2$), over the Northeast United States due to COVID-19 response.

*Credits: NASA/Science Visualization Studio*
Earth Venture Instrument-1: Tropospheric Emissions: Monitoring of Pollution (TEMPO) “Monitoring the air we breathe, hour by hour”

- **TEMPO is a pathfinder to using hosted commercial payloads from GEO**
- Tropospheric pollution observations from Geostationary Orbit
  - Ozone, NO$_2$, and CH$_2$O.
- Forms a global Air Quality constellation in GEO with Copernicus Sentinel 4 and Korean GEMS.
- The US EPA and NOAA are part of the science team.
- Instrument delivered in 2018; Launch 2022

http://tempo.si.edu/overview.html
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