



20 Years of Health and Air Quality Applications Enabled by OMI Data

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Nitrogen Dioxide (NO₂)

OMI has witnessed vast changes in air quality around the world.

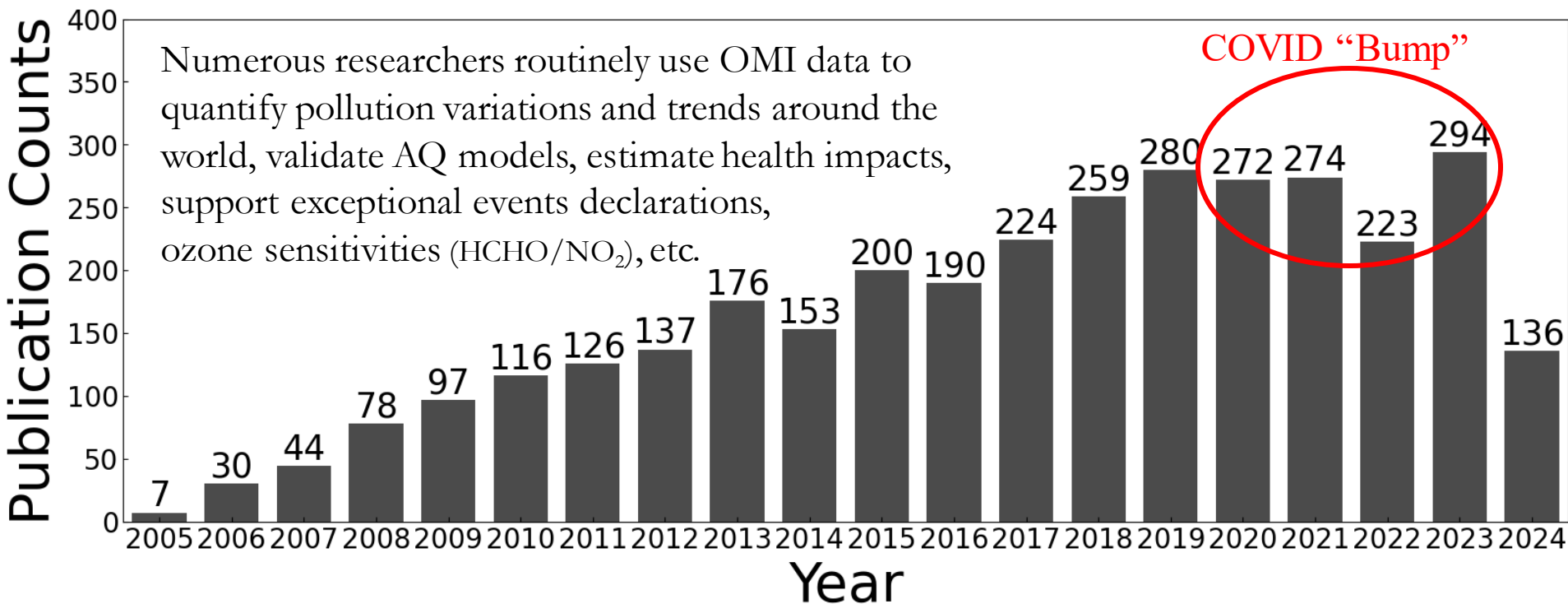


Video courtesy NASA Science Visualization Studio

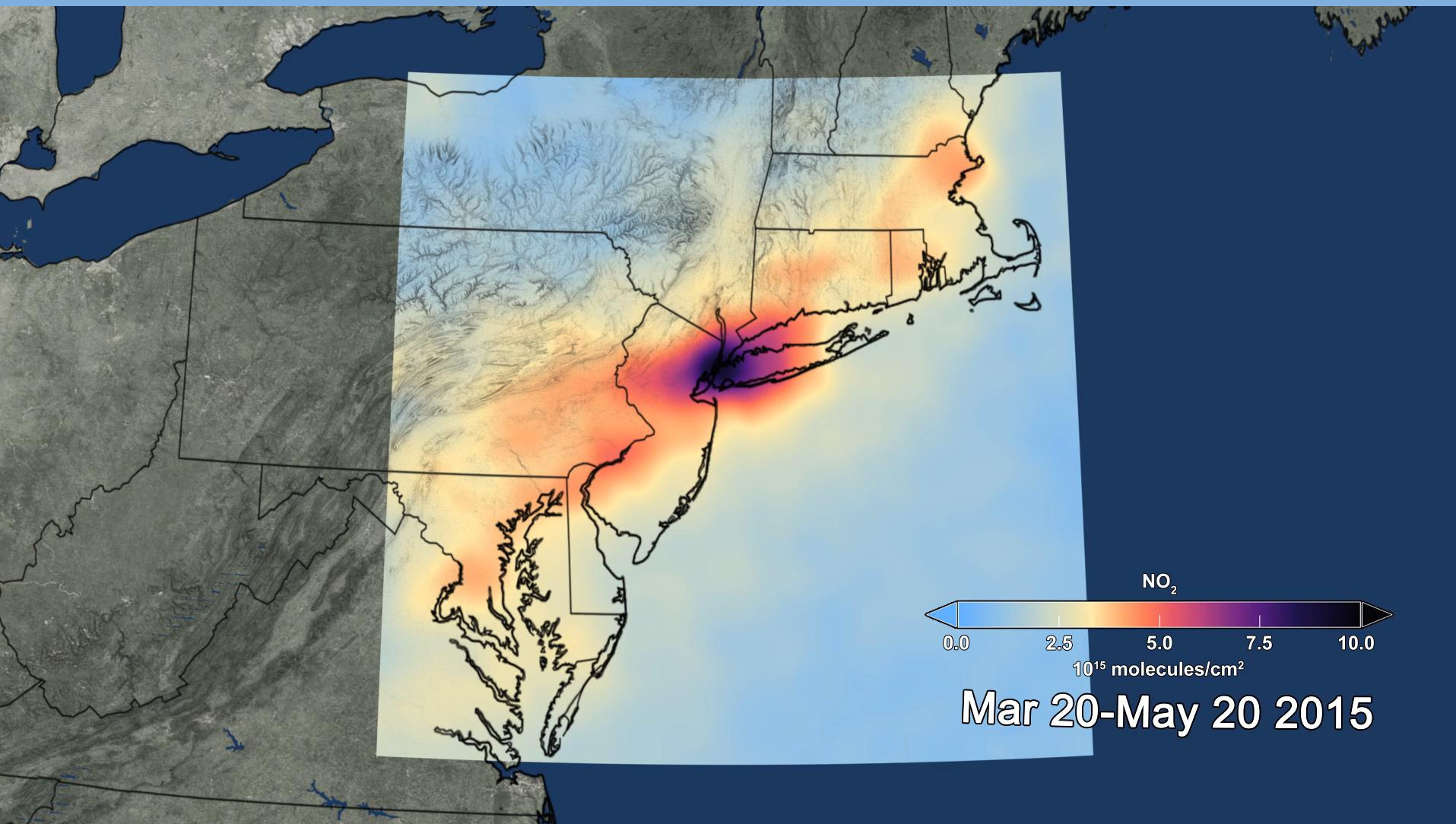
Going Strong at 20 Years!

OMI's almost two decades of trend quality observations are being continued by ESA's TROPOMI and NASA's TEMPO. Nevertheless, OMI data are still in demand.

OMI Total # of Publications: 3316



COVID “Bump”



OMI Long-Term Data Record

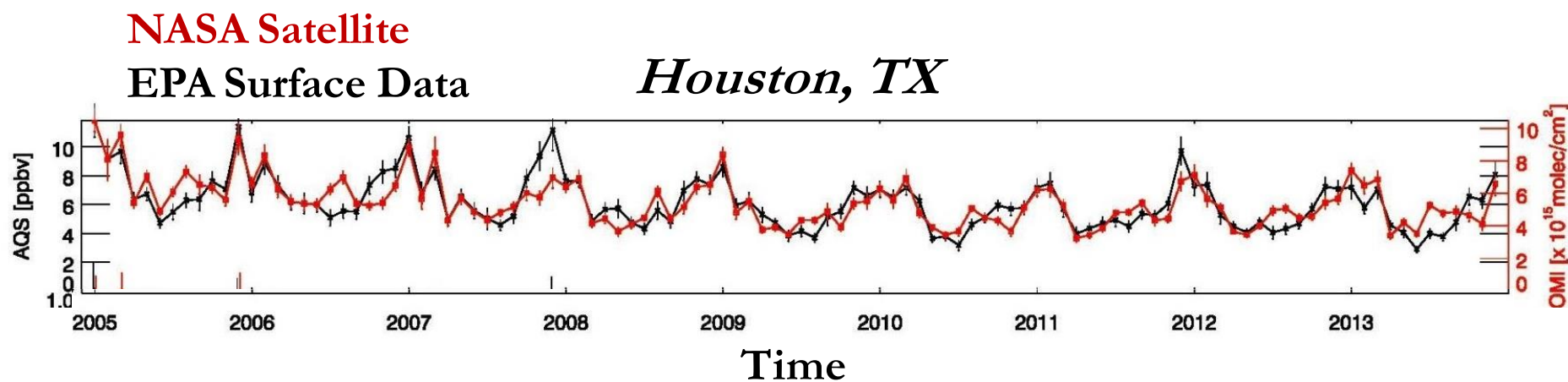
OMI is aging gracefully, though remains one of the most stable UV/Vis instruments over its nearly two decades of data collection – a testament to overachieving engineers.

Therefore, OMI data are instrumental in supporting health and AQ applications:

- NO₂ trends monitoring, including for inferring trends of co-emitted species (e.g., CO₂, CO, some VOCs).
- Validation of new satellite instruments (TEMPO, PACE).
- Burden of disease studies (e.g., [GBD, May 2024](#) – NO₂ was added as a new risk factor, which resulted in the addition of one associated risk–outcome pair: NO₂ air pollution–asthma.)

Nitrogen dioxide (NO_2) measurements: Satellite vs EPA surface data

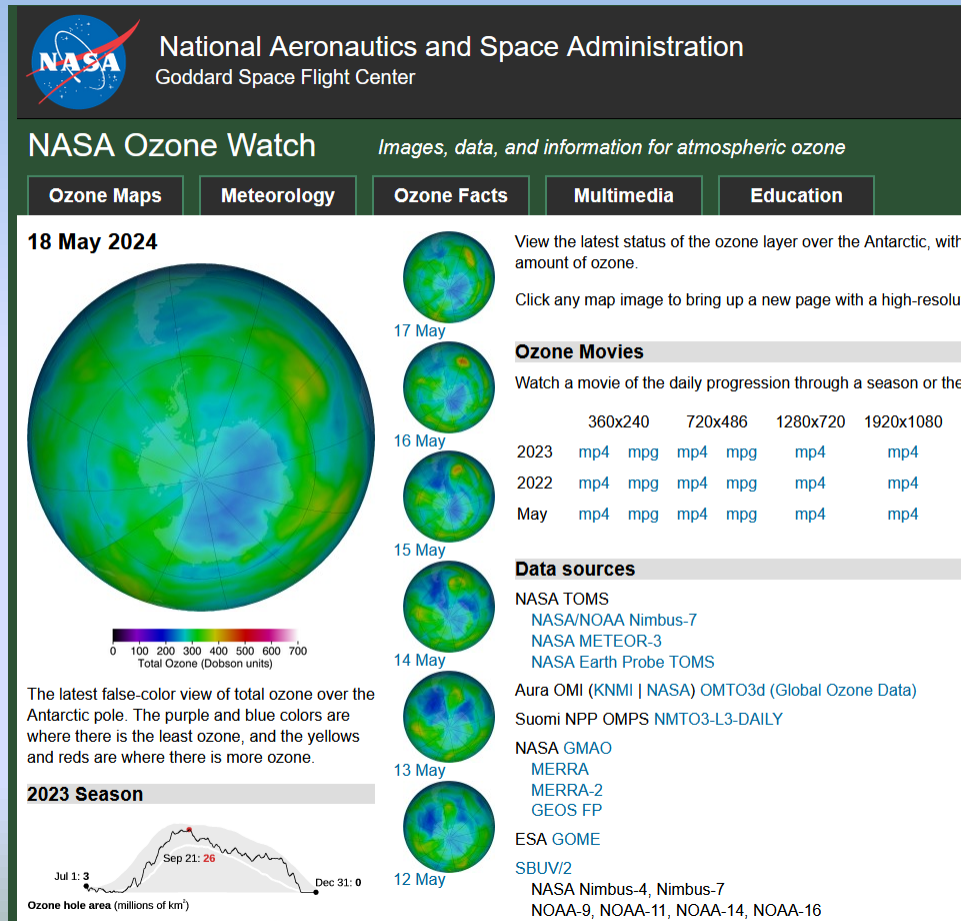
Moving from qualitative to quantitative.



Thanks to the efforts of the OMI Retrieval Team!

More than just NO₂ for Applied Science

Aura's suite of instruments were designed to monitor the health of the stratospheric ozone layer. Aura's data support international policy decisions.



Screen capture of NASA Ozone Watch landing page.

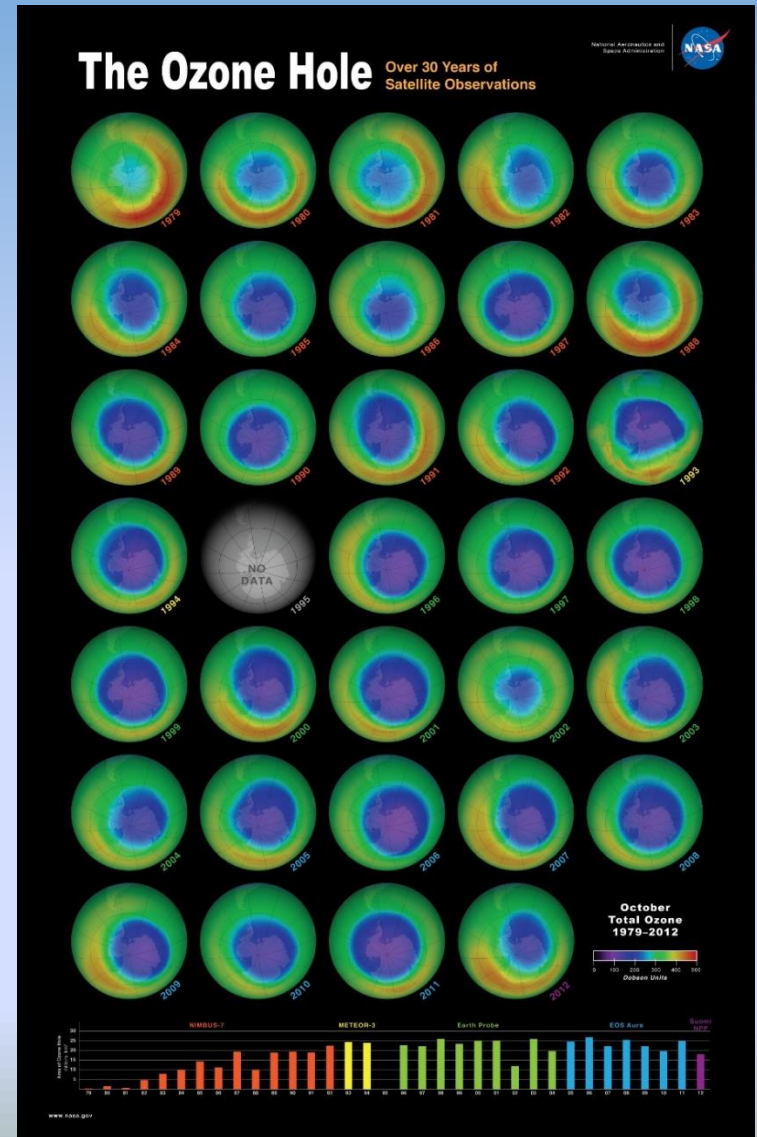
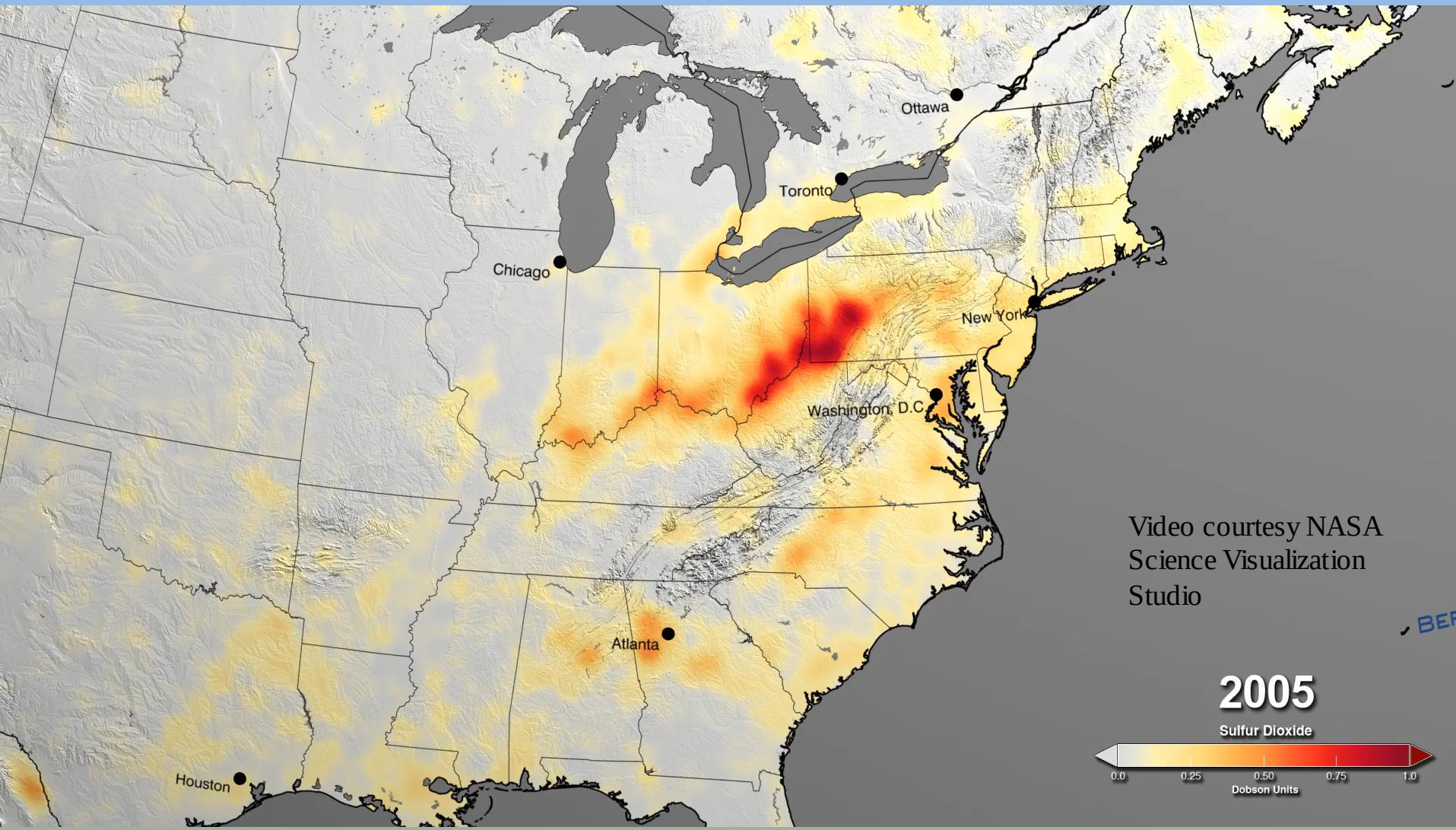


Image courtesy Ginger Butcher (NASA)

More than just NO₂ for Applied Science

OMI witnessed the great progress the US made on reducing sulfur dioxide (SO₂) from power plants.



Microwave Limb Sounder (MLS)
Ozone Monitoring Instrument (OMI)



**(Hopefully) Two More Years of Aura
Operations!**

Aura Launch	: July 15 th , 2004
Scheduled End of Science	: May 27 th , 2026

Resources

- Air Quality: Observations from Space: <https://airquality.gsfc.nasa.gov>
 - NO₂ trends & variations, including for cities:
<https://airquality.gsfc.nasa.gov/no2>
- Global NO₂ Monitoring Page: https://so2.gsfc.nasa.gov/no2/no2_index.html
- Aura Website: <https://aura.gsfc.nasa.gov/>
- HAQAST Website: <https://haqast.org>
- NASA Ozone Watch: <https://ozonewatch.gsfc.nasa.gov/>
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