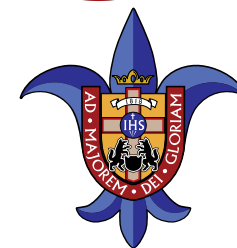
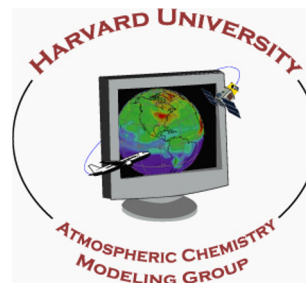
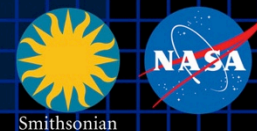


# Additional material



SAINT LOUIS UNIVERSITY



THE UNIVERSITY OF ALABAMA IN HUNTSVILLE



CSIC

CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS



THE UNIVERSITY OF IOWA

YORK UNIVERSITY



FINNISH METEOROLOGICAL INSTITUTE



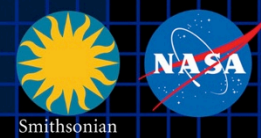
NCAR  
KNMI



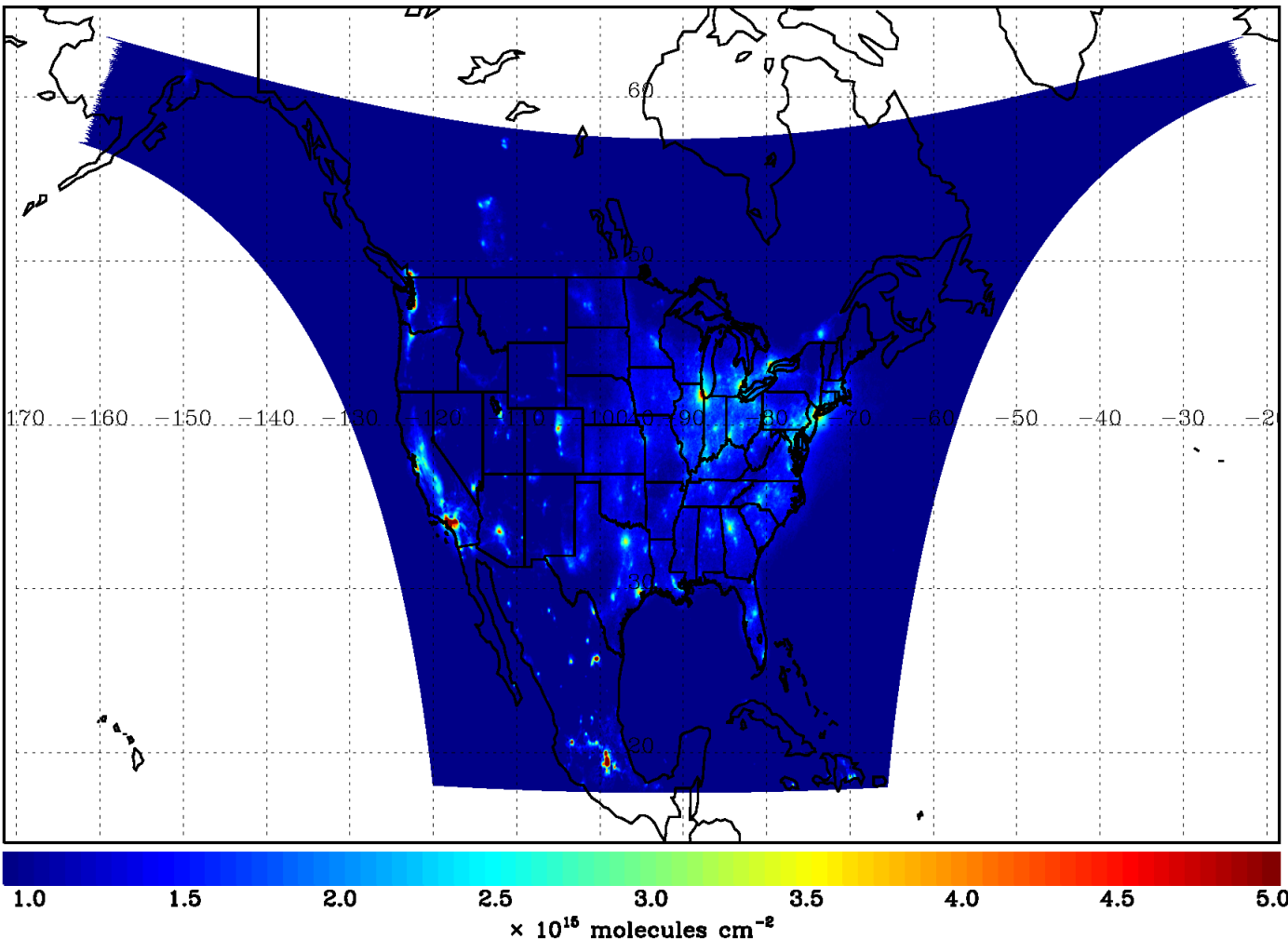
Environment and Climate Change Canada

Environnement et Changement climatique Canada

# TEMPO hourly sweep (GEO @ 91W)



TROPOMI NO<sub>2</sub> in 2018 over TEMPO FOR

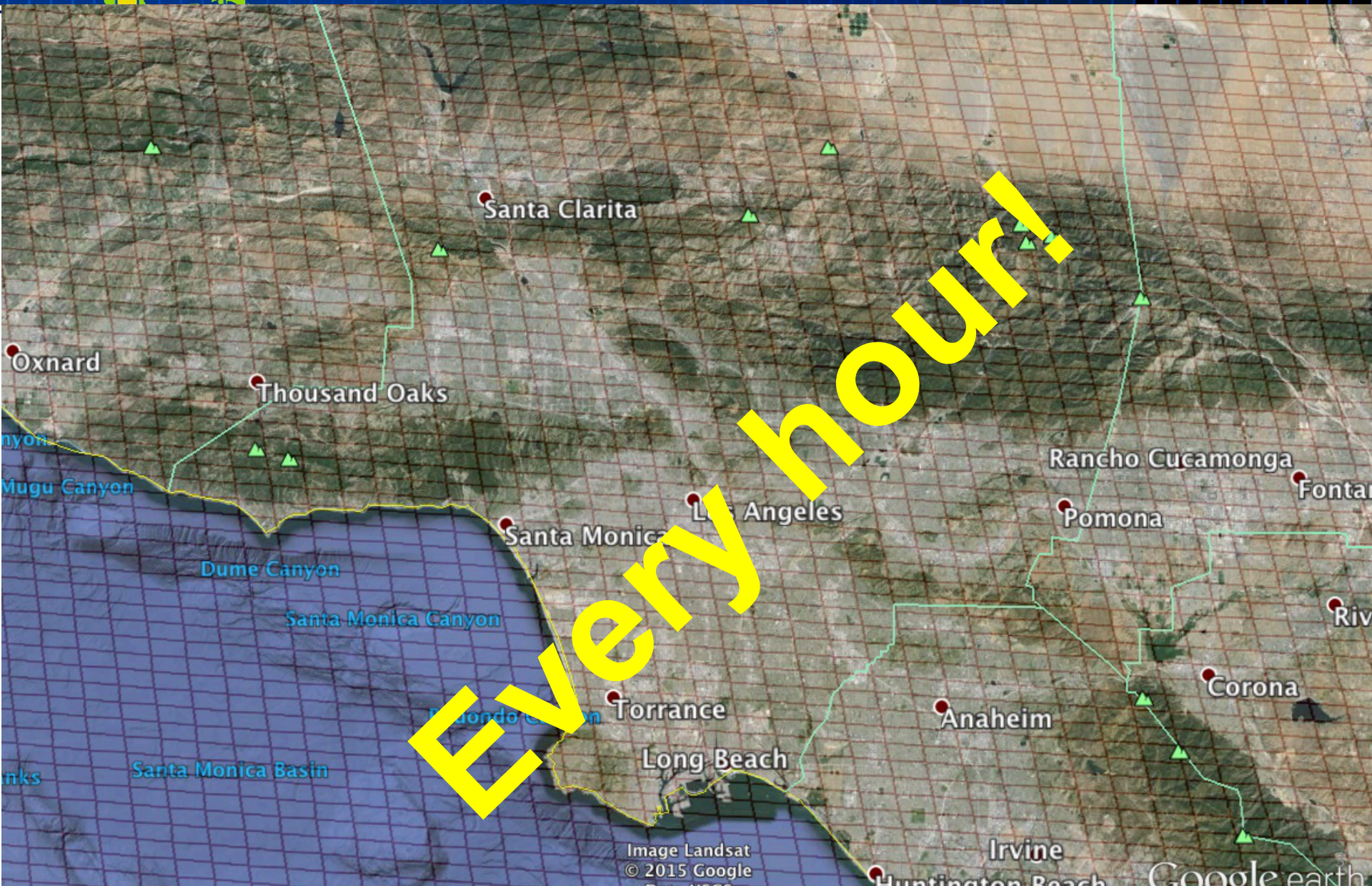
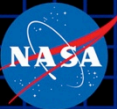


- Boresight: 33.7°N, 91°W
- ~ 2035 good N/S pixels
- ~ 1226 steps/hr
- ~ 2.5 M pixels/hr
- # spatial pixels ~TROPOMI
- 2 x 4.75 km<sup>2</sup> @center FOR
- FOR: N/S +/-210 pixels,  
E/W +230/160 pixels

- Field of regard is optimized to cover both Puerto Rico and Canadian tar sands.
- S5p-TROPOMI NO<sub>2</sub> product oversampled by Kang Sun.



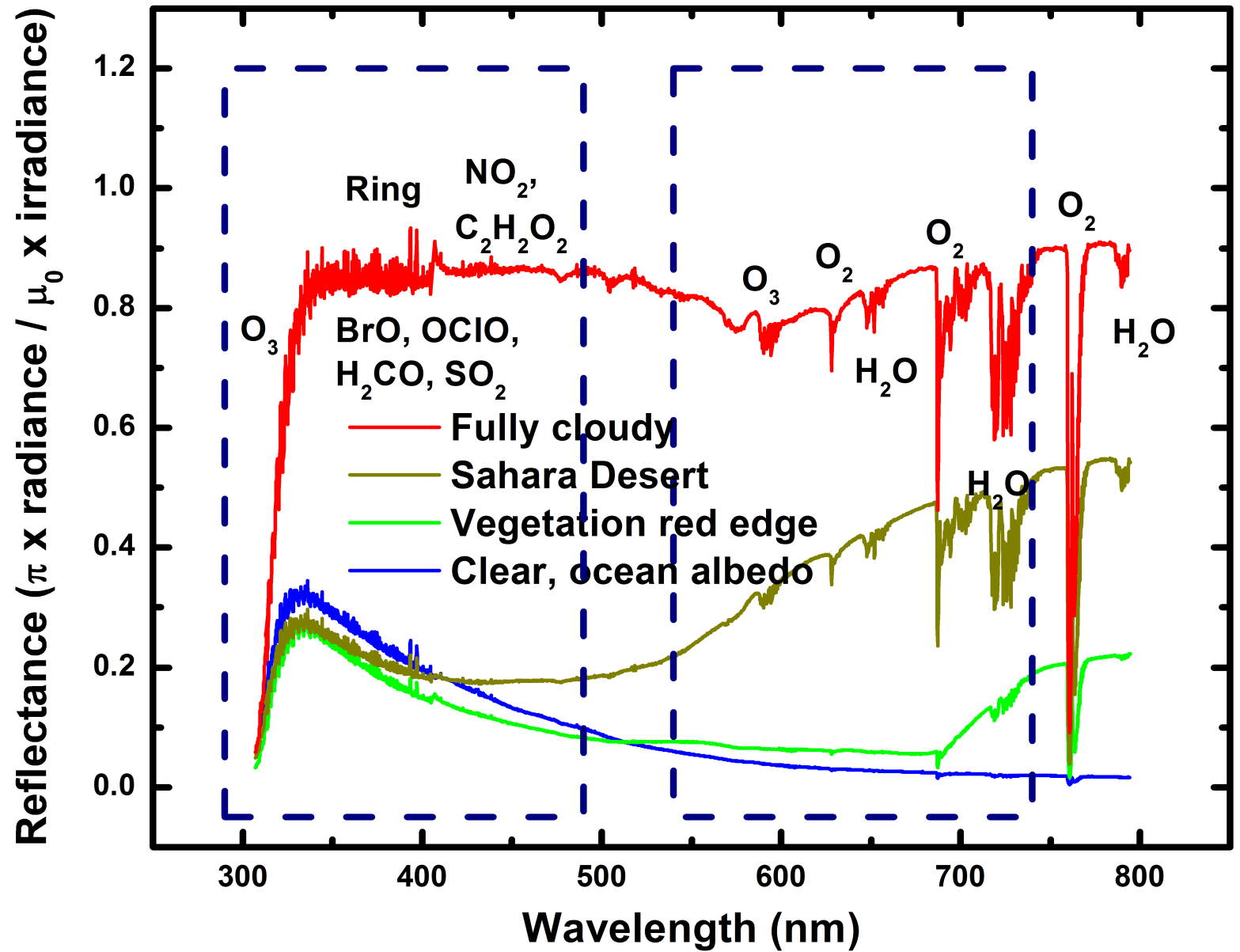
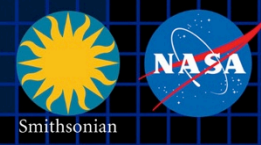
# Los Angeles coverage



Every hour!



# Typical TEMPO-range spectra (from ESA GOME-1)



## Chemistry, physics, and meteorology experiments with the Tropospheric Emissions: Monitoring of Pollution instrument

Now at: <https://www.cfa.harvard.edu/atmosphere/publications.html>

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<b>NORMAL TIME RESOLUTION STUDIES</b>	<b>Volcanoes</b>
<b>Air quality and health</b>	<b>Socio-economic studies</b>
<b>Ultraviolet exposure</b>	<b>National pollution inventories</b>
<b>Biomass burning</b>	<b>Regional and local transport of pollutants</b>
<b>Synergistic GOES-16/17 Products</b>	<b>Sea breeze studies for Florida and Cuba</b>
<b>Advanced aerosol products</b>	<b>Transboundary pollution gradients</b>
<b>Soil NO<sub>x</sub> after fertilizer application and after rainfall</b>	<b>Transatlantic dust transport</b>
<b>Solar-induced fluorescence from chlorophyll</b>	<b>HIGH TIME RESOLUTION EXPERIMENTS</b>
<b>Foliage studies</b>	<b>Lightning NO<sub>x</sub></b>
<b>Mapping NO<sub>2</sub> and SO<sub>2</sub> dry deposition at high resolution</b>	<b>Morning and evening higher-frequency scans</b>
<b>Crop and forest damage from ground-level ozone</b>	<b>Dwell-time studies and temporal selection to improve detection limits</b>
<b>Halogen oxide studies in coastal and lake regions</b>	<b>Exploring the value of TEMPO in assessing pollution transport during upslope flows</b>
<b>Air pollution from oil and gas fields</b>	<b>Tidal effects on estuarine circulation and outflow plumes</b>
<b>Night light measurements resolving lighting type</b>	<b>Air quality responses to sudden changes in emissions</b>
<b>Ship tracks, aircraft tracks, drilling platform plumes.</b>	<b>Cloud field correlation with pollution</b>
<b>Water vapor studies</b>	<b>Agricultural soil NO<sub>x</sub> emissions and air quality</b>