

# THE TOTAL CARBON COLUMN OBSERVING NETWORK

Debra Wunch

with Nicholas Deutscher, Thorsten Warneke,  
Geoffrey Toon, Coleen Roehl, David Pollard,  
Dietrich Feist, Joshua Laughner, Paul  
Wennberg, David Griffith, Justus Notholt and  
the TCCON Partners

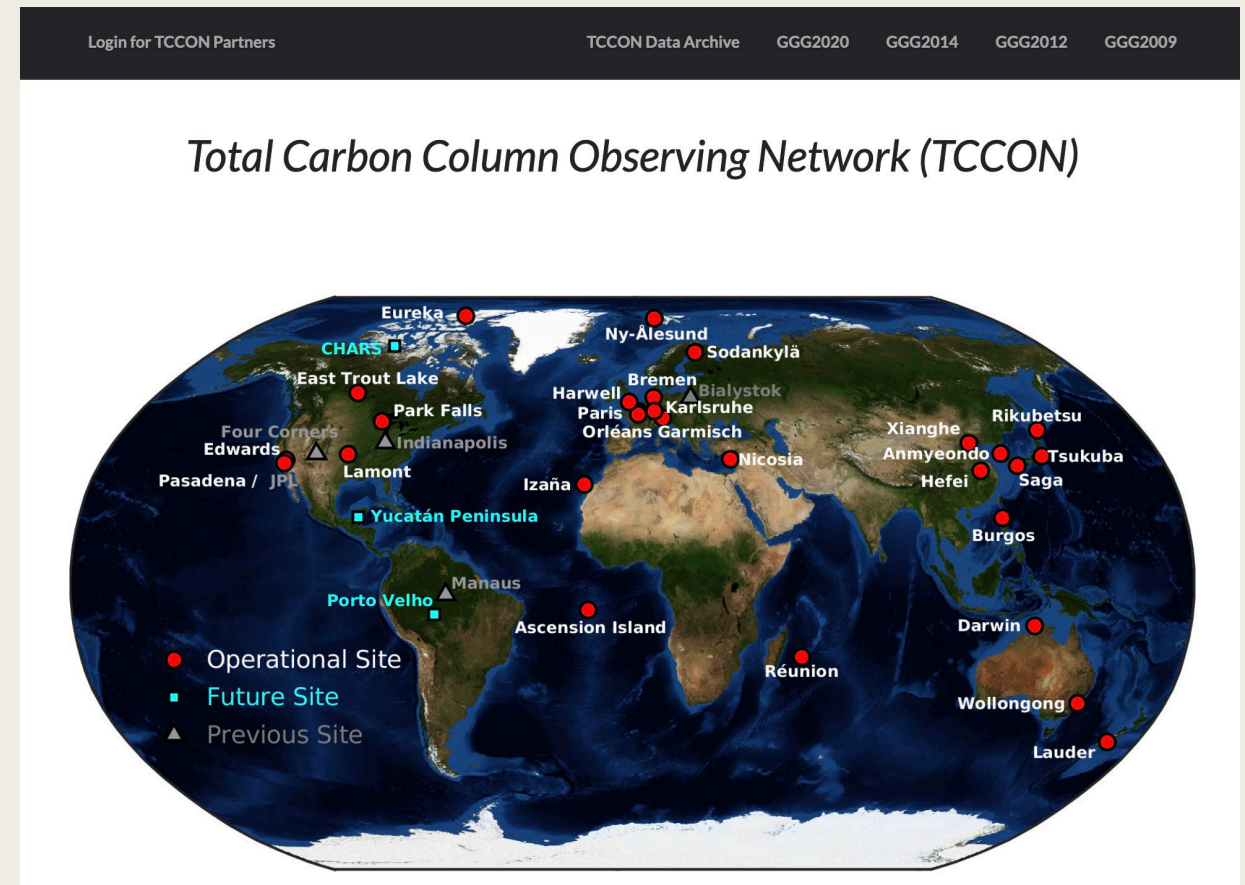
# Total Carbon Column Observing Network (TCCON)



# TCCON Data & Availability

- Latest version of our retrievals: GGG2020
- A priori profiles: Laughner et al.: A new algorithm to generate a priori trace gas profiles for the GGG2020 retrieval algorithm, Atmos. Meas. Tech., 16, 1121–1146, <https://doi.org/10.5194/amt-16-1121-2023>, 2023.
- GGG2020: Laughner et al.: The Total Carbon Column Observing Network's GGG2020 Data Version, Earth Syst. Sci. Data Discuss. [preprint], <https://doi.org/10.5194/essd-2023-331>, in review, 2023.

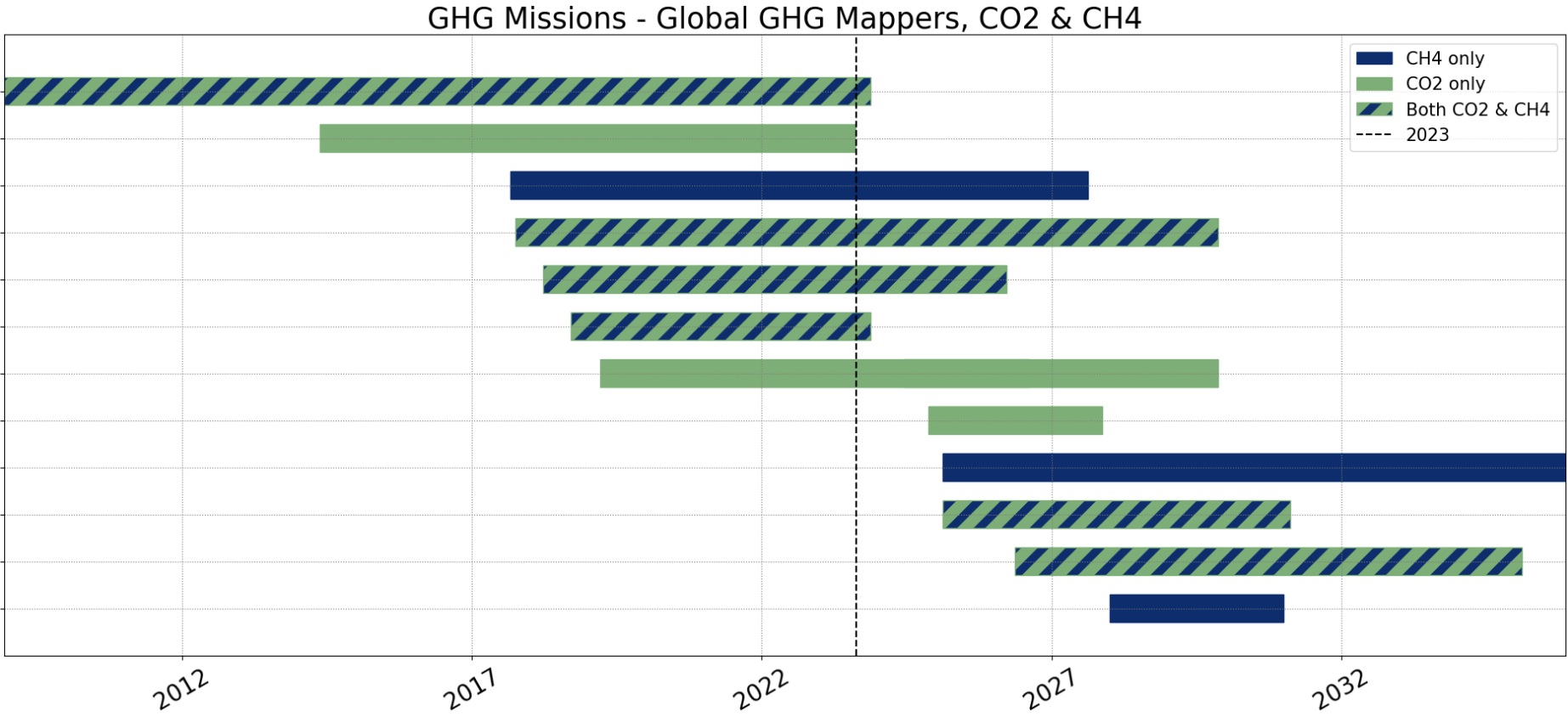
TCCON data archive: <https://tccondata.org>



# The role of TCCON in GHG Satellite Missions

## - Global Mappers of CO<sub>2</sub> and CH<sub>4</sub>

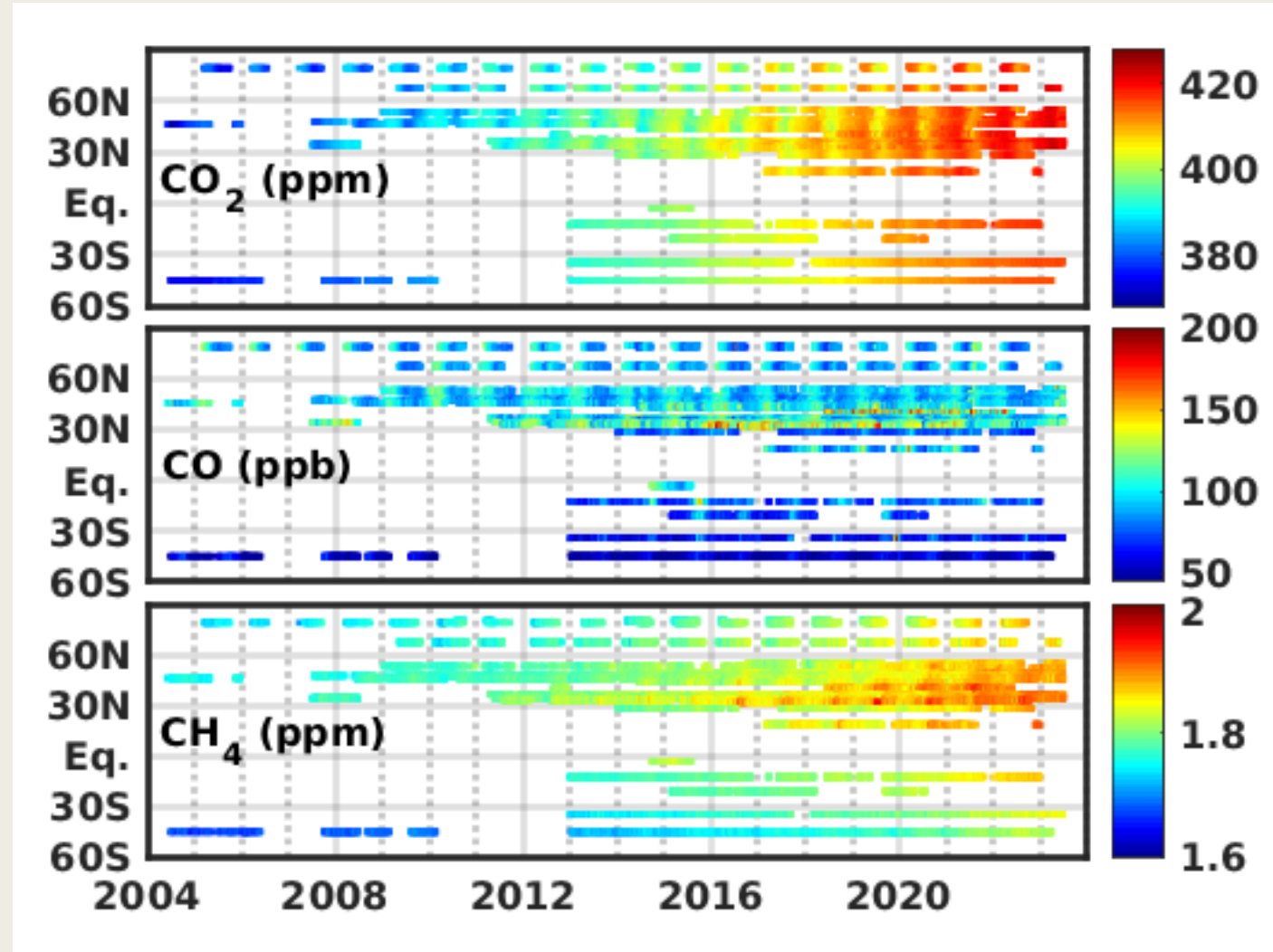
- GOSAT
- OCO-2
- S-5P (TROPOMI)
- FY-3D, FY-3H
- GF-5
- GOSAT-2
- OCO-3
- MicroCarb
- Sentinel-5
- GOSAT-GW
- CO2M
- MERLIN



<https://database.eohandbook.com/ghg/>, accessed Oct 12, 2023

# TCCON Funding

- Despite its importance, there is no centralized funding for TCCON
- Each site PI must obtain their own funding, typically from their local/national funding agencies
- This lack of secure and predictable funding has caused data delivery delays, data gaps due to hardware failures, lack of personnel, etc.





# THANK YOU

Contact: [dwunch@atmosp.physics.utoronto.ca](mailto:dwunch@atmosp.physics.utoronto.ca)