

The S5Pval-DE-Ruhr campaign

Quick report on current status



SVANTE / QA4EO progress meeting
June 17th, 2021
- online -

QA4EO/CCN
WP7000

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François Hendrick (2), Kai Krause (1), Vinod Kumar (3), Bianca Lauster (3), Alexis Merlaud (2), Maria Razi (3), André Seyler
(1), Frederik Tack (2), Katharina Uhlmannsieck (3), Folkard Wittrock (1)

(1) IUP Bremen, (2) BIRA, (3) MPIC, (4) FU Berlin, (5) ESA

Airborne instruments

- AirMAP imaging DOAS
- Avantes (nadir only Avantes)

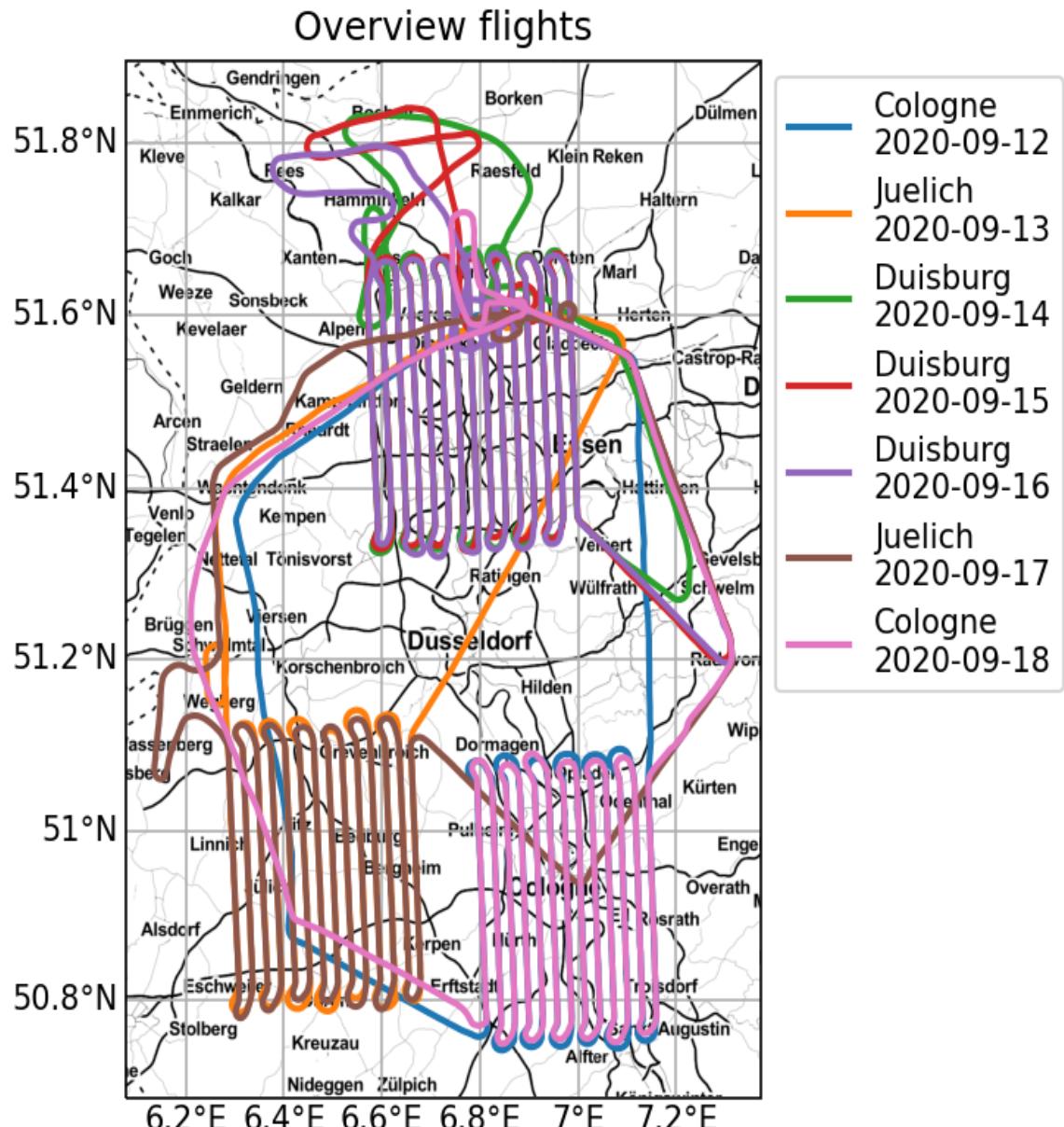
Mobile instruments

- 3 car DOAS instruments
(by IUP-HB, MPIC, and BIRA)

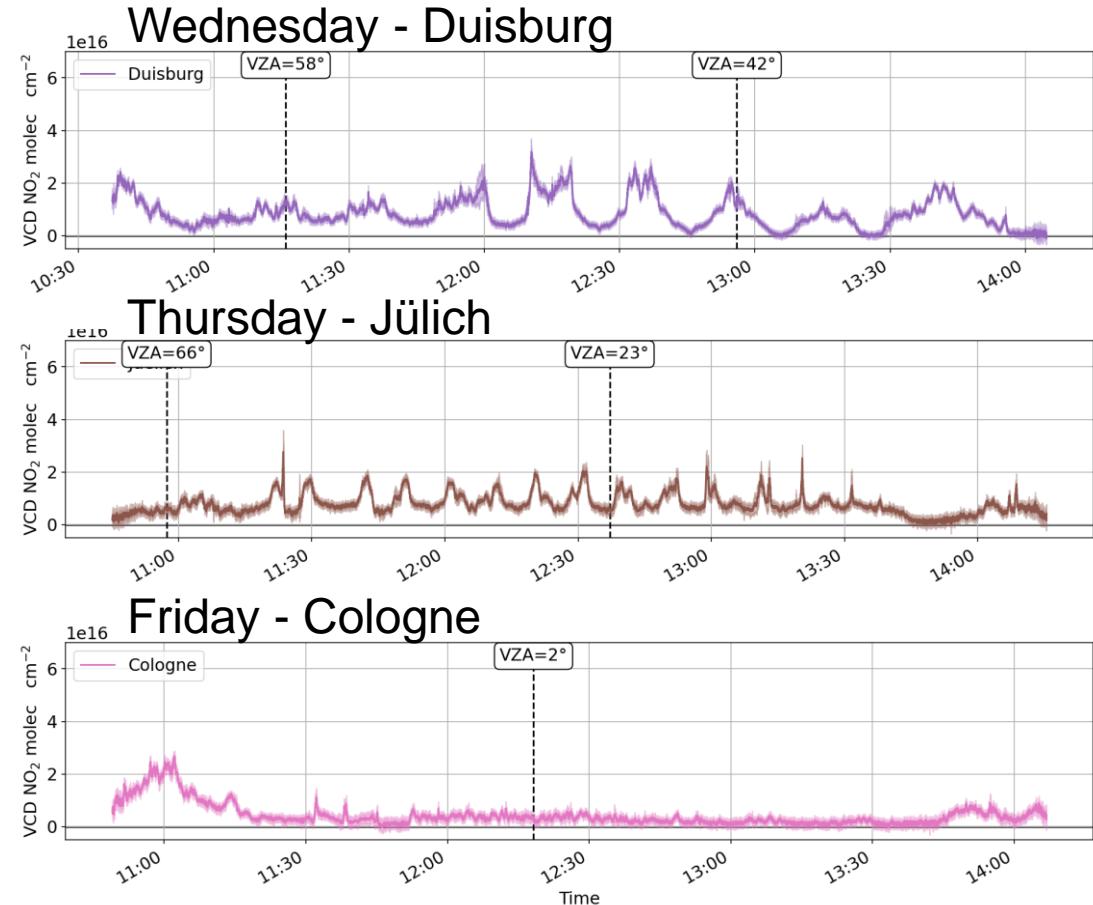
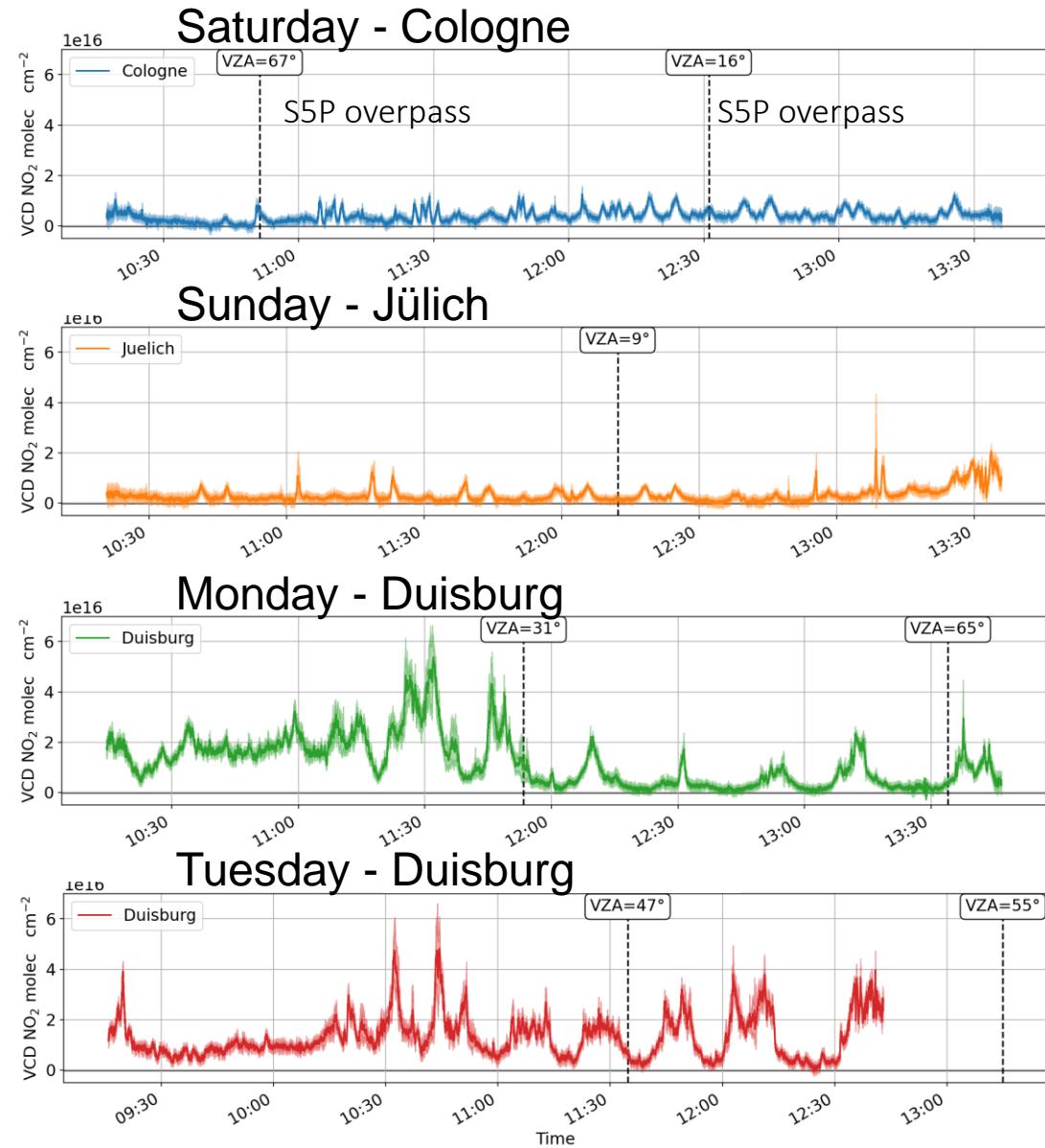
Stationary instruments

- 6 ground-based spectrometers at 5 locations
 - 2 zenith-sky AVANTES (IUP-HB)
 - 2 MAX-DOAS (IUP-HB, and BIRA)
 - 2 Pandora instruments
- Long-term measurements: still ongoing

Seven Golden Days:
12. – 18. September 2020



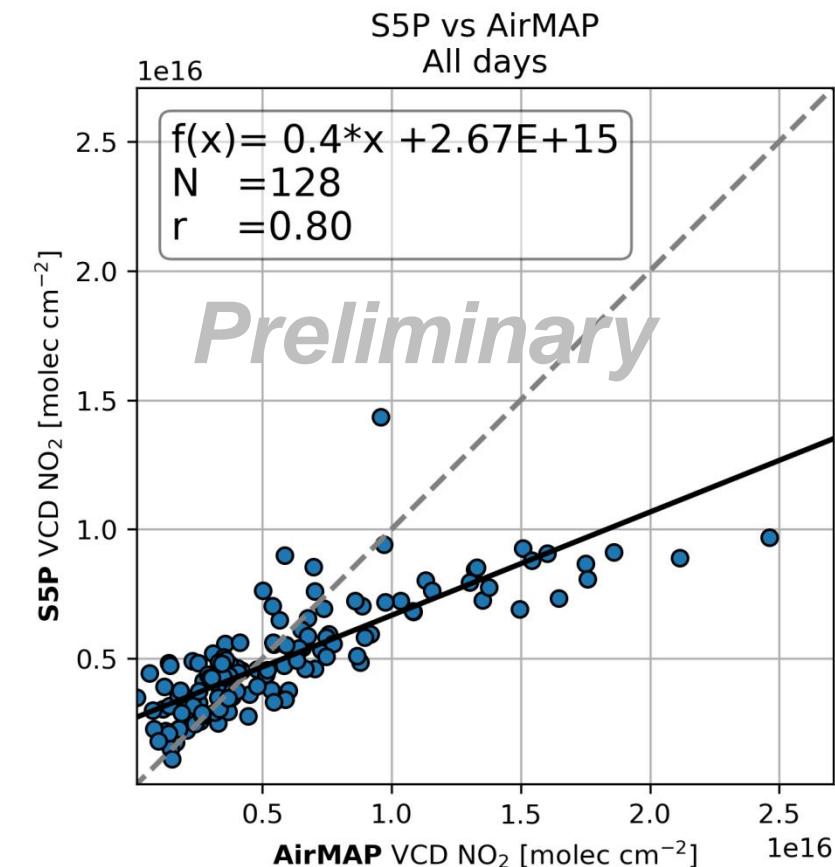
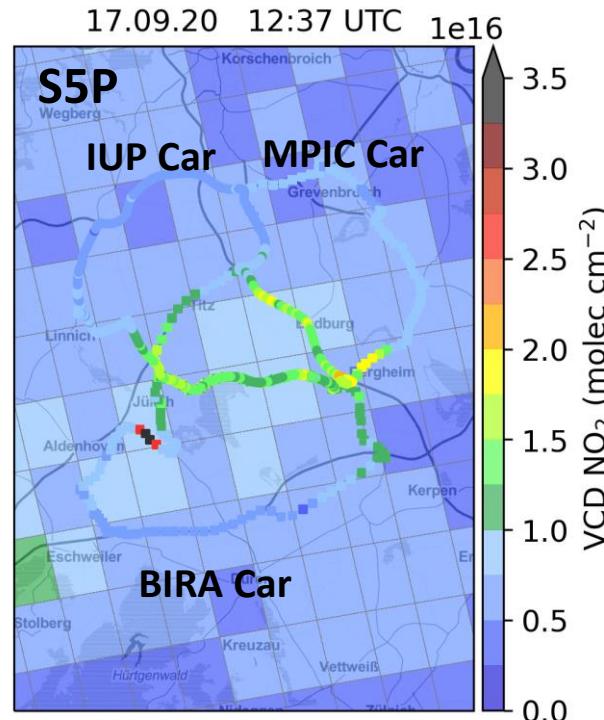
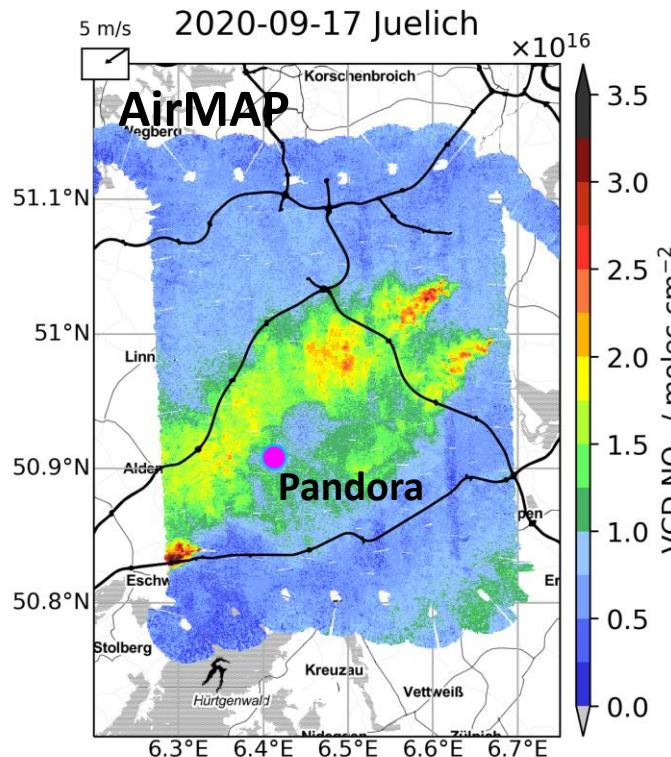
AirMAP timeseries of NO₂



AirMap timeseries (mean over the 35 viewing directions with standard deviation) of the seven flight days show strong variability from day to day (weekday vs weekend) and between the different target areas.

Preliminary NO₂ VCDs from AirMAP / car DOAS / TROPOMI

Thursday 2020-09-17 Jülich – S5P overpass 12:37 UTC



- Consistent measurements of AirMAP and car DOAS
- Good correlation of S5P and AirMAP measurements
- Lower S5P TROPOMI NO₂ data (30% to 45%), varying magnitude for different days and areas

Further advancing the AirMAP data analysis

- Update applied auxilliary information such as albedo or a priori profiles and others

Investigating difference between AirMAP and TROPOMI NO₂

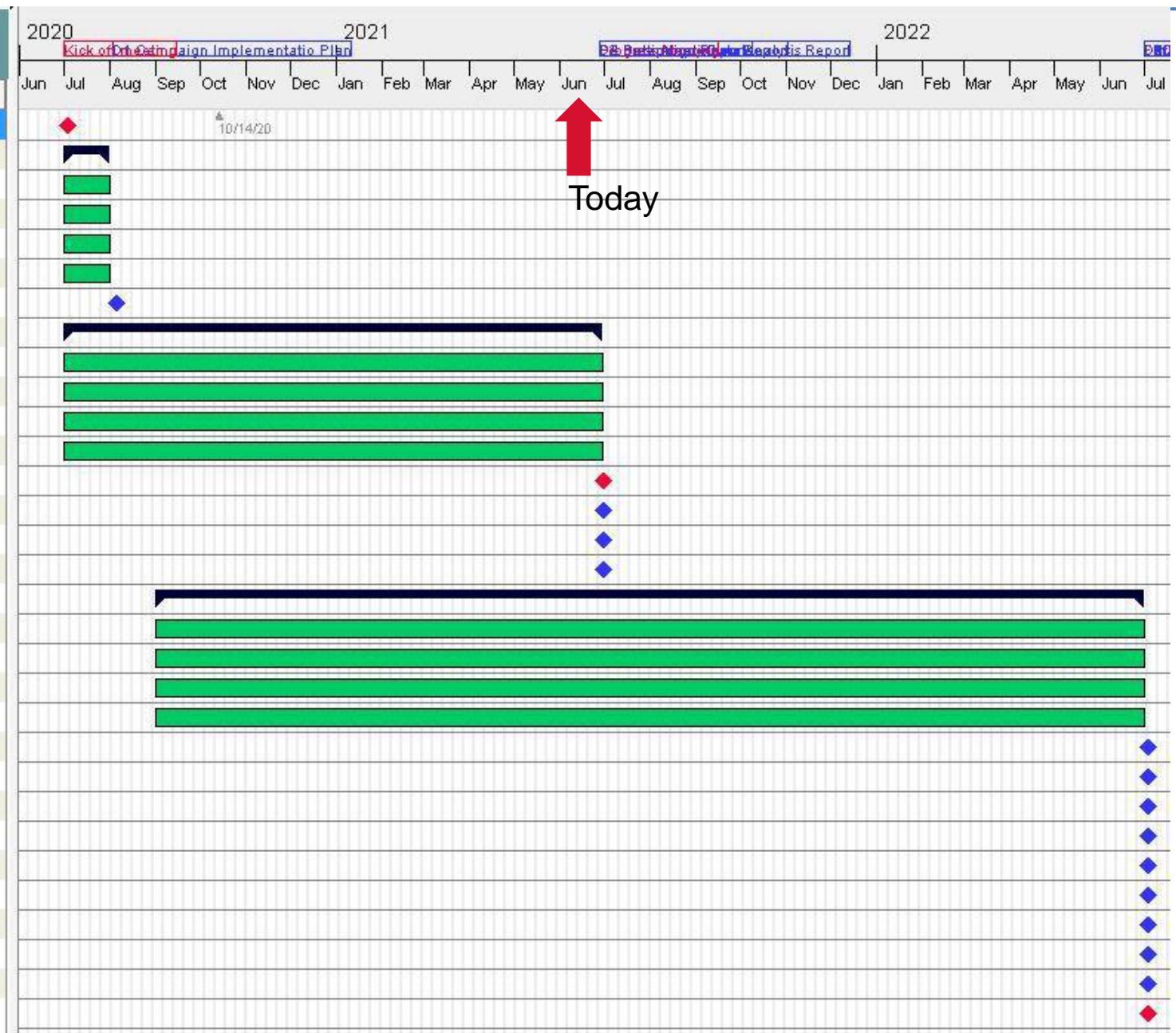
- Comparison of campaign data with custom TROPOMI NO₂ products
- Evaluate influence of different auxiliary data on the TROPOMI product (again albedo, profiles, cloud information, and others)
- Evaluate influences (esp. aerosols) on AirMAP measurements

Reporting

- Prepare input for D2a (Campaign Report), D3a (Preliminary Data Analysis Report), D4a (Data Acquisition Report) - QA4EO/CCN deliverables

QA4EO/CCN time table

Name	
Kick off meeting	
Task A CIPs Review	
Task 7100 Campaign Preparation Ruhr part 2 - UnivBerlin	
Task 8100 Campaign Preparation Brazil - BIRA	
Task 9100 Campaign Preparation ACCLIP - CNR-INO	
Task 10200 Campaign Preparation HyTES - BIRA	
D1 Campaign Implementation Plan	
Task B Preliminary Results Review	
Task 7200 Campaign and Data Acquisition - UnivBremen	
Task 8200 Campaign and Data Acquisition - BIRA	
Task 9200 Campaign and Data Acquisition - CNR-INO	
Task 10300 Campaign and Data Acquisition - BIRA	
Progress Meeting	
D2 Campaign Reports	
D3 Preliminary Data Analysis Report	
D4 Data Acquisition Report	
Task C Data Processing and synergy	
Task 7300 Data processing and analysis - UnivBremen	
Task 8300 Data processing and analysis - BIRA	
Task 9300 Data processing and analysis - CNR-INO	
Task 10400 Data processing and analysis - BIRA	
D6 Complete and Consolidated field study dataset to the agency, including documentation	
D7 Field study datasets in format compatible with EVDC, including documentation	
D8 Technical note for relevant data analysis – “Ruhr”	
D9 Technical Report including Data description and user manual – “Brazil”	
D10 Technical Report including Data description and user manual – “ACCLIP”	
D5 Final Report	
Data8 Airborne and ground based data products – “Ruhr”	
Data9 Ground based data products – “Brazil”	
Data10 CO Data products – “ACCLIP campaign”	
Final meeting	



Thank you
for listening.