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P3.3.1 (Aerosols & Surface)

Thursday, 25 Nov 2021

Title: Satellite Monitoring of the Biomass-burning Aerosols during the Wildfires of August 2021 in Greece

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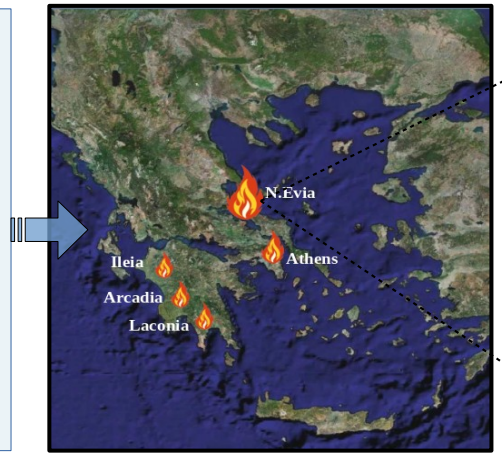
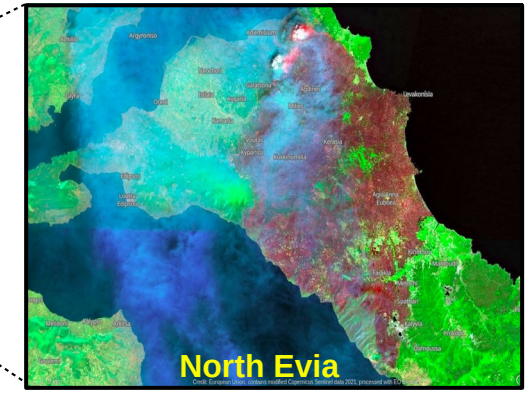
Satellite Monitoring of the Biomass-burning Aerosols during the Wildfires of August 2021 in Greece

- In the first two weeks of August 2021, Greece has suffered a series of wildfires that have burned a large area of the island of **Evia** and several areas of the **Peloponnese** and **Attica**.
- High concentrations of biomass-burning aerosols and large spatial extent of the biomass smoke.
- North Evia burned area: **50,000 hectares**
- This work aims at analyzing the impact of these fire events over Greece on atmospheric aerosol load using satellite data.



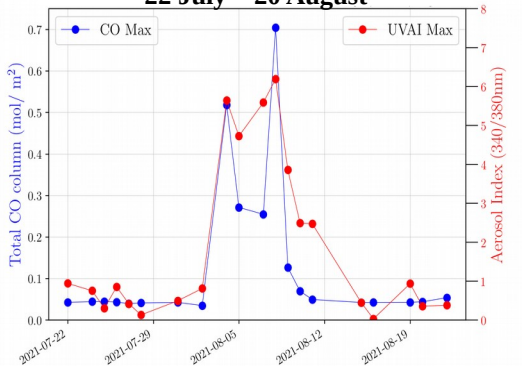
Copernicus Sentinel -2



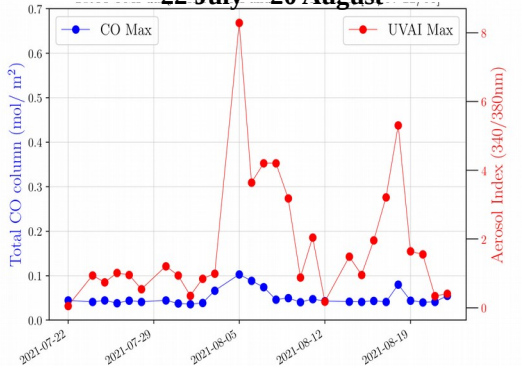
Data used in the study:

- **Aerosol Index (340/380nm)**
- **Total CO column**
- **Aerosol Layer Height**
- **Sunphotometer AERONET**
- **Ground-based Lidar**

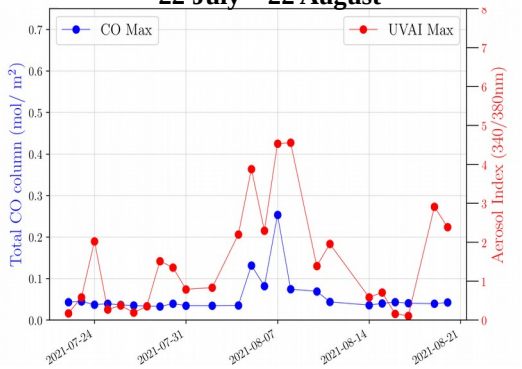
TROPOMI CO/UVAI – Evia
22 July – 20 August



TROPOMI CO/UVAI – Attica
22 July – 20 August



TROPOMI CO/UVAI – Peloponnese
22 July – 22 August



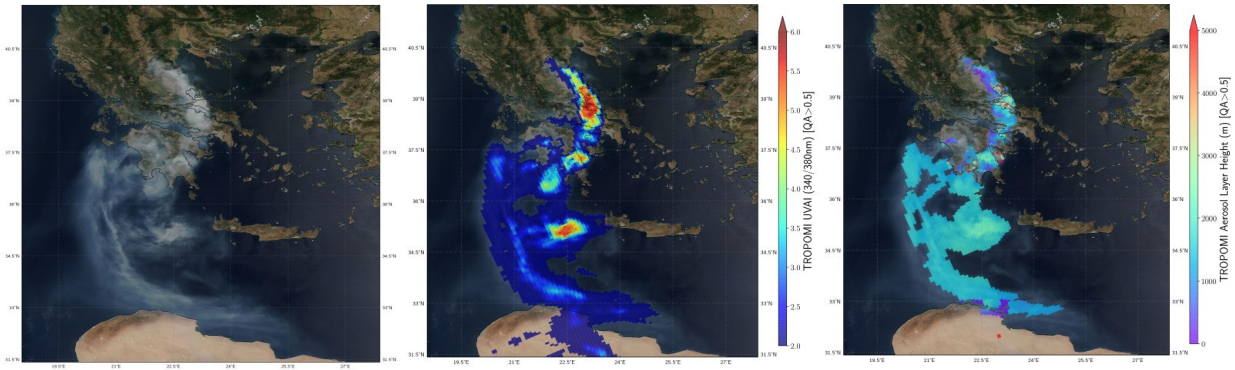
S5P data: https://s5phub.copernicus.eu/dhus/

Satellite Monitoring of the Biomass-burning Aerosols during the Wildfires of August 2021 in Greece

8 Aug 2021

The dispersion of the smoke plume is clearly visible by TROPOMI!

VIIRS/S-NPP RGB | **TROPOMI UVAI** | **TROPOMI ALH**

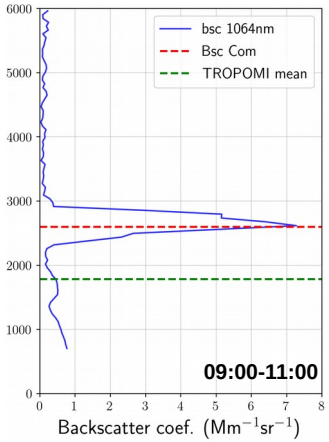


- *No clouds detected*
- *High UVAI values (~7.0)*
- *ALH ranging 1.2-2.5 km*
- *High AOD values (MODIS)*

PollyXT 24/7 lidar system

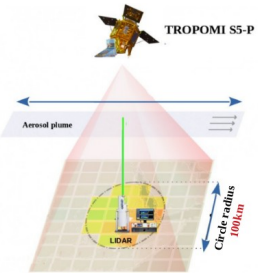
PANGEA station

Backscatter Profile (1064nm)

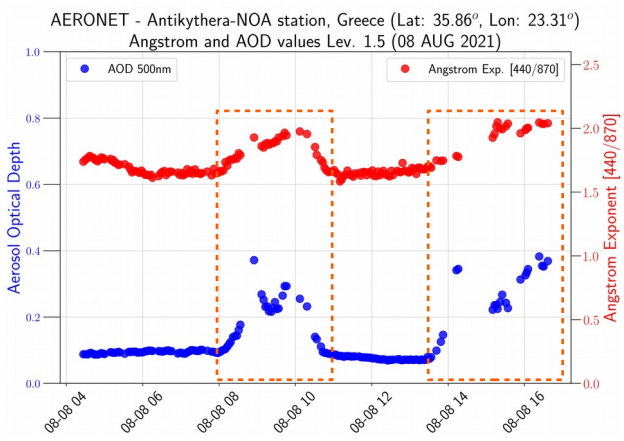


Collocation - Averaging scheme

- Lidar ALH$_{bsc}$: 2590m
- TROPOMI ALH: 1790±237m
  [min:1355m - max:2355m]



*GOME-2/MetOp AAH : 1680±450m



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(**Validation ALH** paper in preparation Michailidis et al. 2021)

Details in Poster!