

# Analysing CME deflections

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3. Royal Observatory of Belgium

IATE/Argentina ↔ ROB/Belgium – November 13, 2018



# Objectives

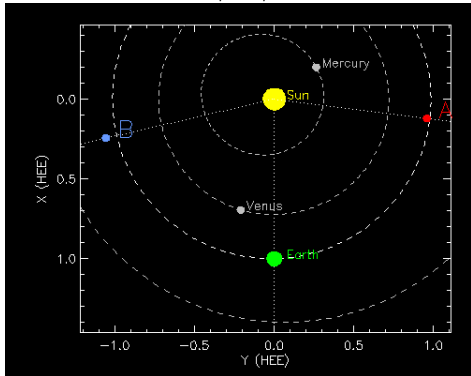
## Objective of the project

Study the influence of the coronal environment in the early development of CMEs to better understand the deviation between the source region (filament or active region) and the non-radial direction of propagation of CME (i.e. deflection).

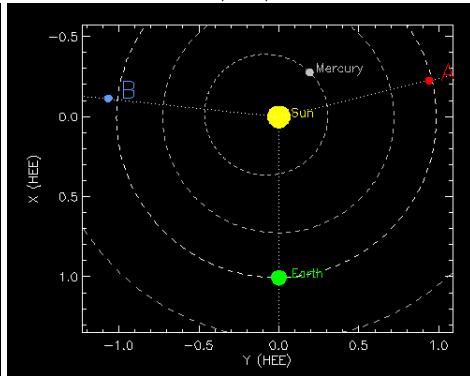
# Analyzed period of time

- STEREO's locations

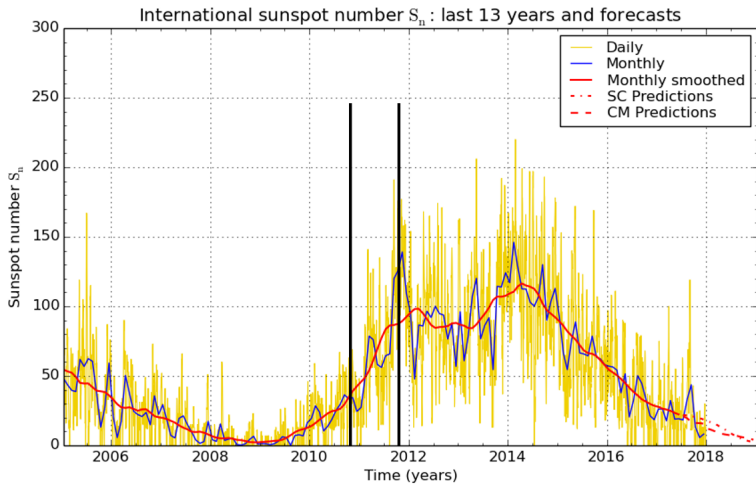
2010/10/01



2011/10/01



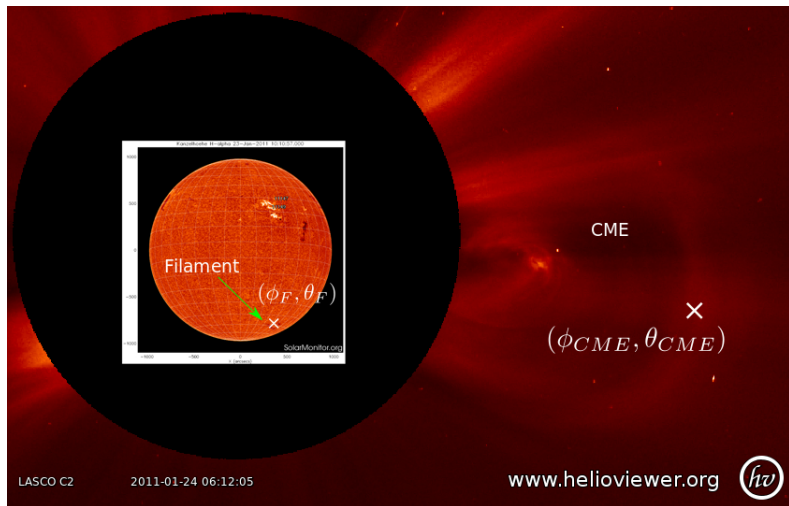
# Solar cycle



SILSO graphics (<http://sidc.be/silso>) Royal Observatory of Belgium 2018 January 1

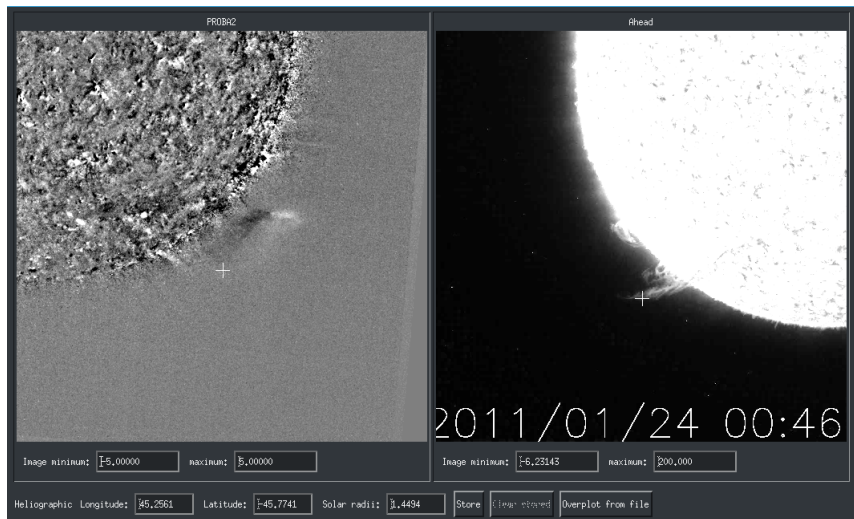
# Deflection

- CME deviation from the source region (filament)



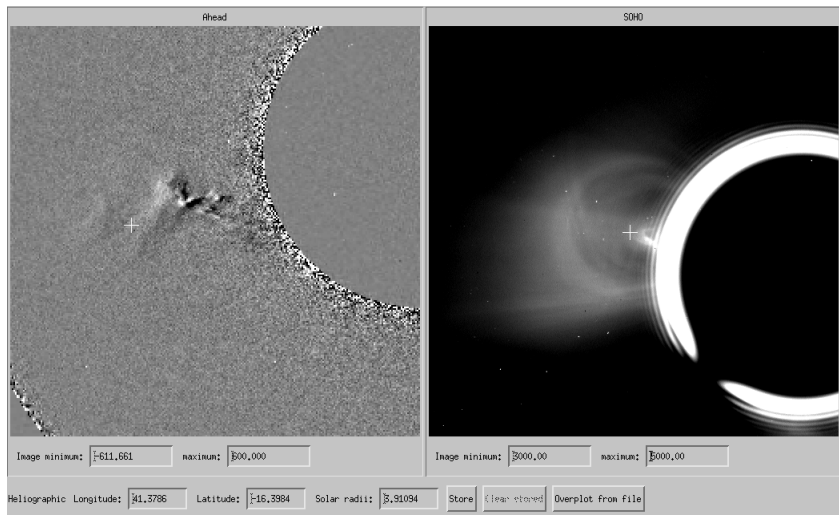
# Analysis: Triangulation

- Prominence in SWAP & EUVI A



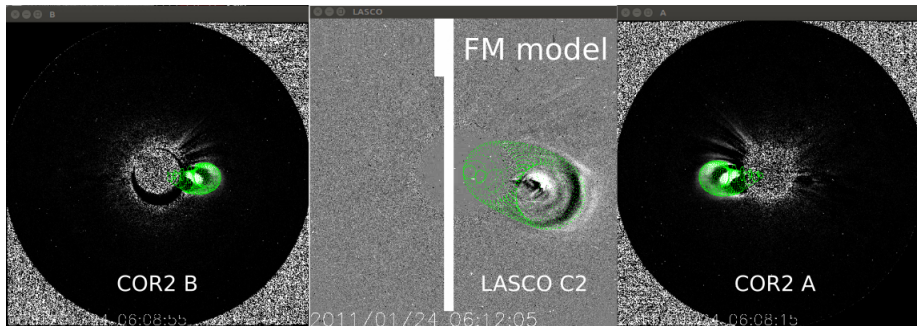
# Analysis: Triangulation

- Core of the CME in LASCO C2 & COR1 A



# Analysis: Forward Modeling

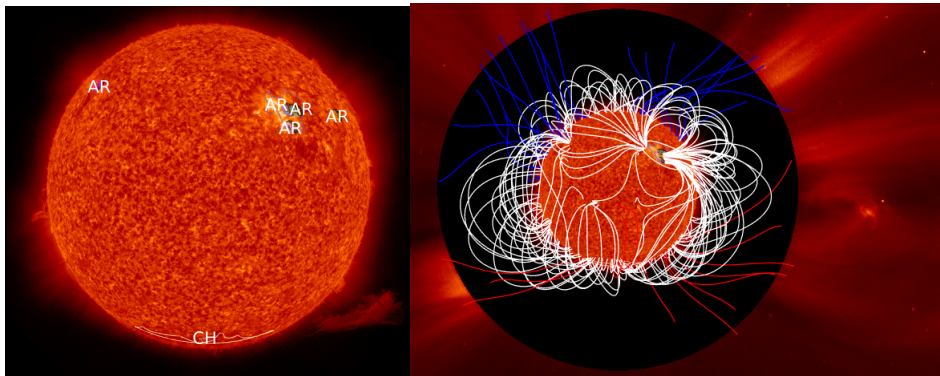
- CME in COR2 B & LASCO C2 & COR2 A





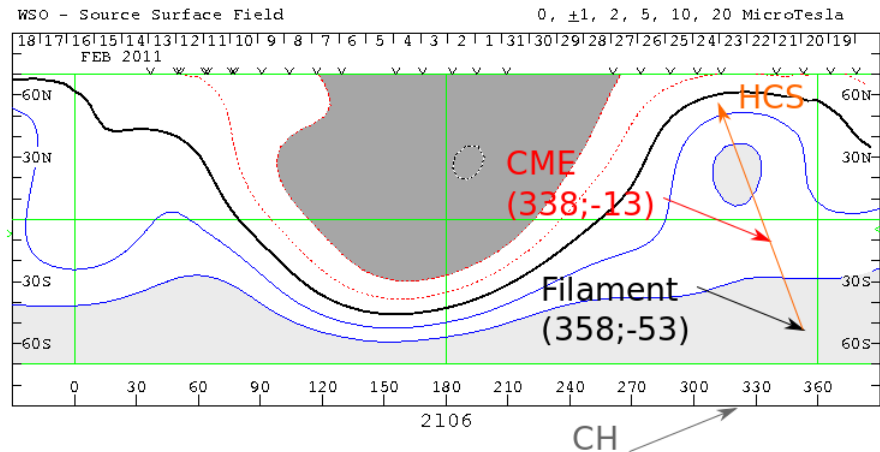
# Analysis: Magnetic environment

- Presence of CHs and ARs and PFSS



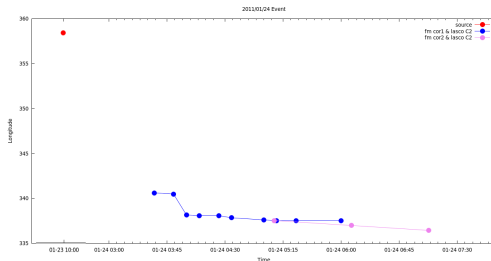
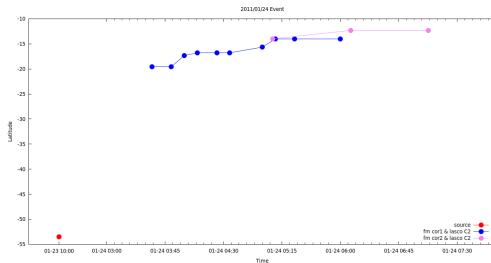
# Analysis: Magnetic environment

- Carrington map



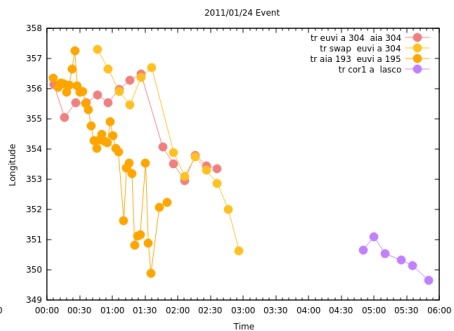
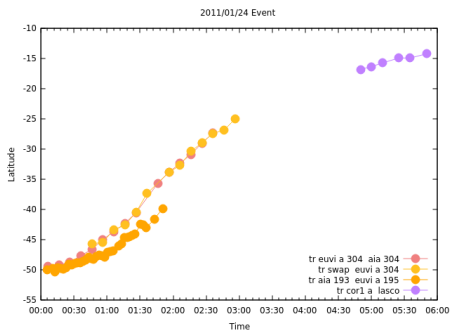
# CME deflection

- Latitude vs time & Longitude vs time



# Prominence

## ● Latitude vs time & Longitude vs time



# Preliminary results

- The magnetic environment affects the dynamics of the CME:
  - CHs
  - Streamers
- The evolution of the prominence morphology may or may not accompany deviation of the CME.

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## Work in Progress:

- We are analyzing 10 more deflection events to understand related conditioning factors.

Thank you!