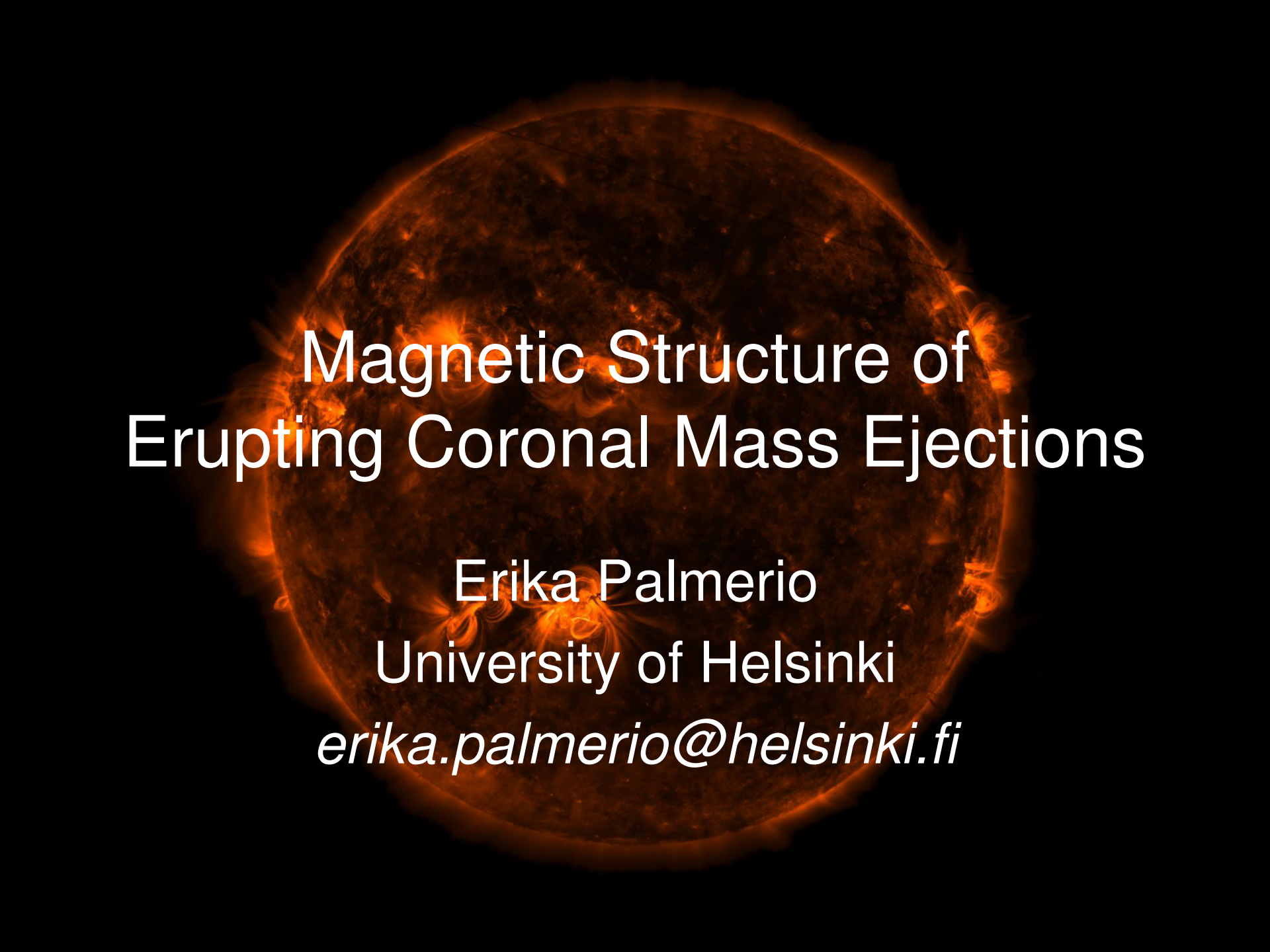

Magnetic Structure of Erupting Coronal Mass Ejections

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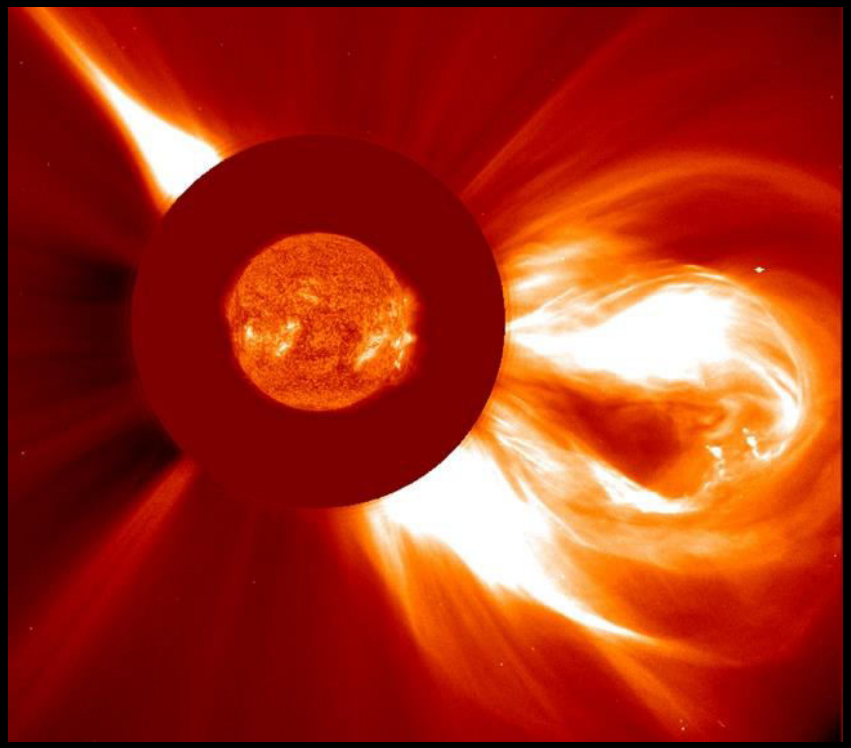
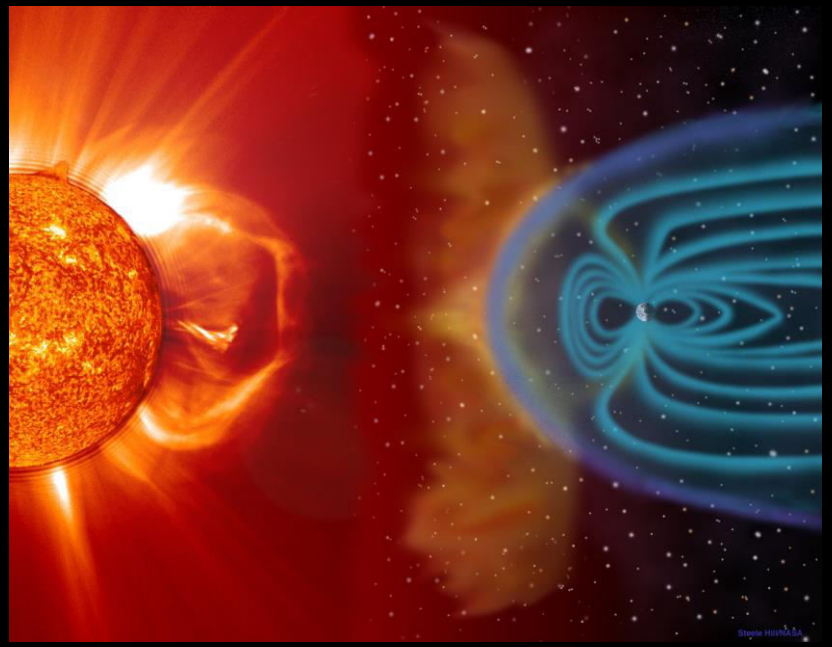
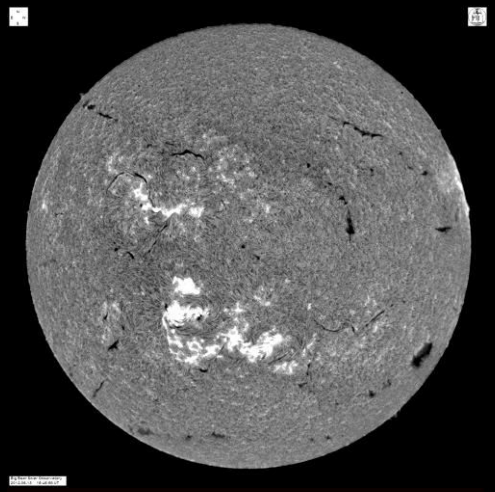
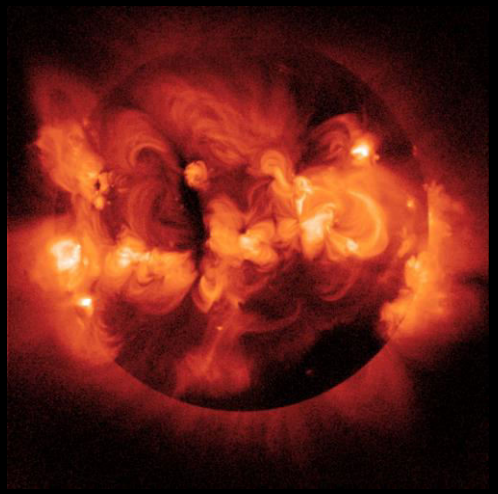
Coronal mass ejections (CMEs) are powerful solar eruptions that contain a large amount of plasma and magnetic flux that are expelled from the Sun into the heliosphere. They are the most violent and spectacular phenomena that take place in the solar atmosphere and are the main drivers of magnetic storms and intense space weather disturbances.

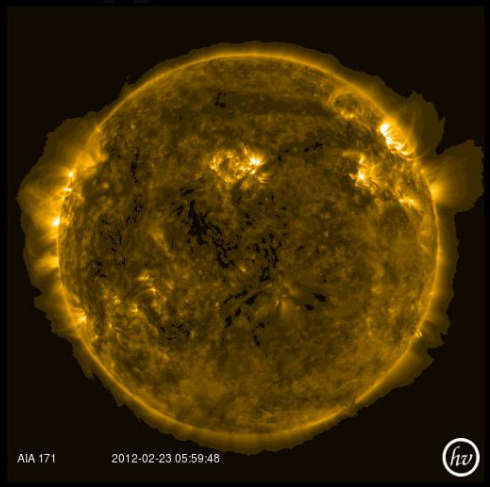


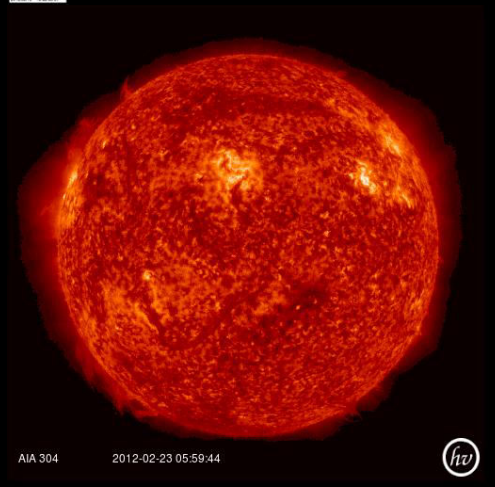


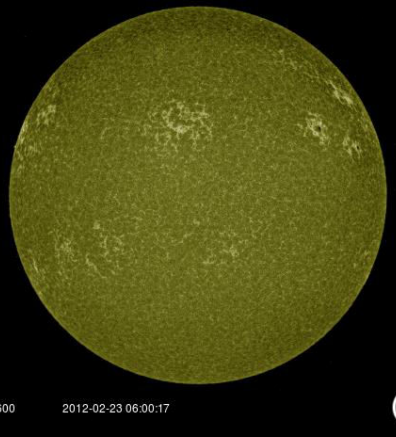
The ultimate goal of my PhD project is to estimate the magnetic structure of a CME from the point of the eruption to its detection in situ through its coronal evolution, in order to improve the current capabilities of space weather forecast.



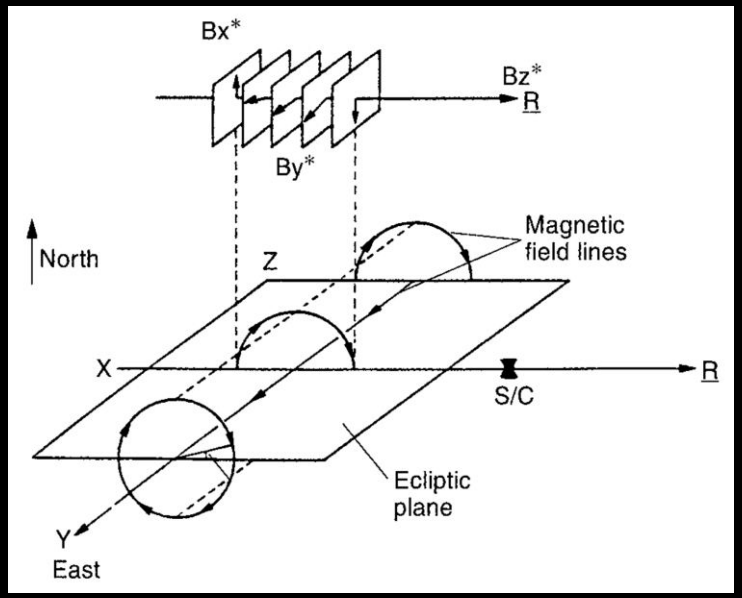


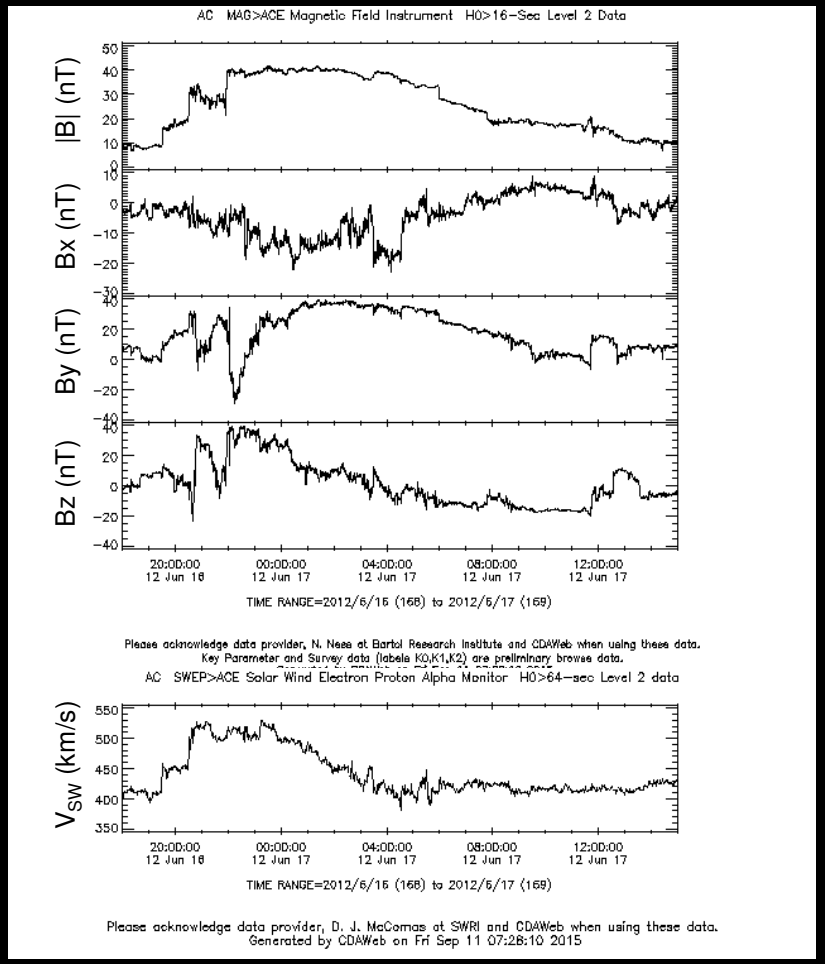






The remote sensing observations are therefore compared with the magnetic structure of CMEs that hit Earth.





Goal: estimate the amount of southward fields that are able to trigger magnetic reconnection in the magnetosphere, enhance the ring currents are be geoeffective.

Thank you.