

Paper Review

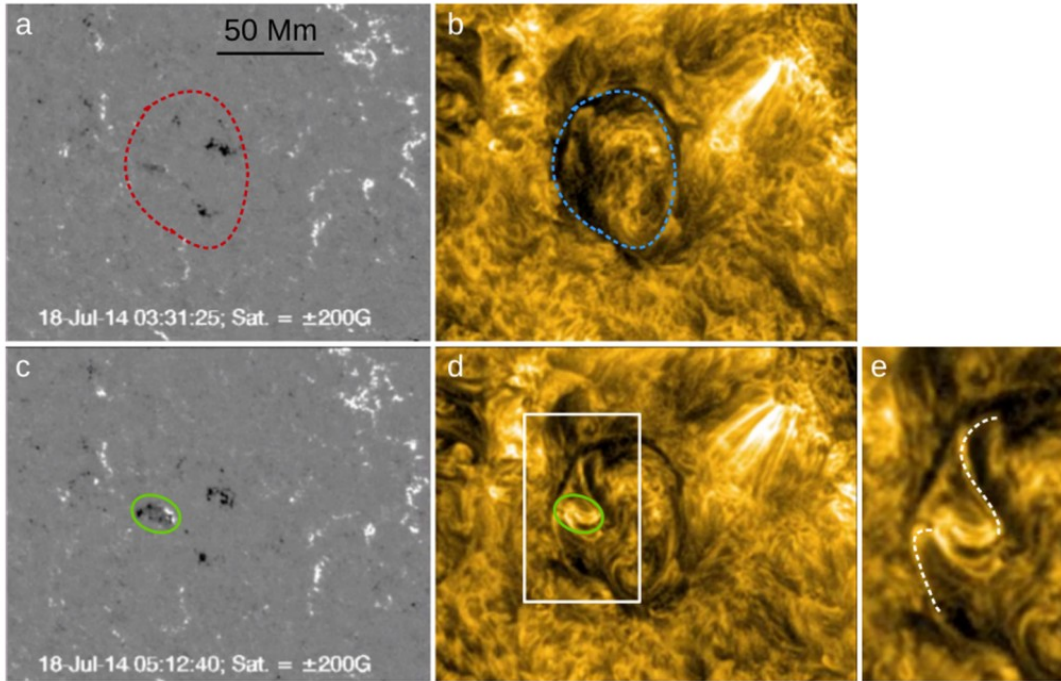
Sequential Eruptions Triggered by Flux Emergence: Observations and Modeling

S. Dacie et al. 2018

Outline

- Events Observation and discussions
- Numerical modeling analysis
- Conclusions
- GST Observation of small fluxes

Review of events: Filament splitting



NOAA 12119

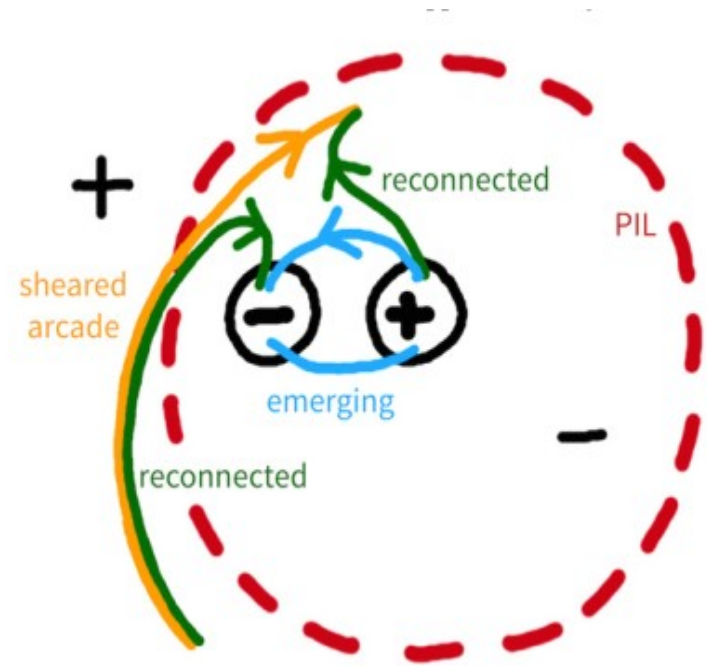
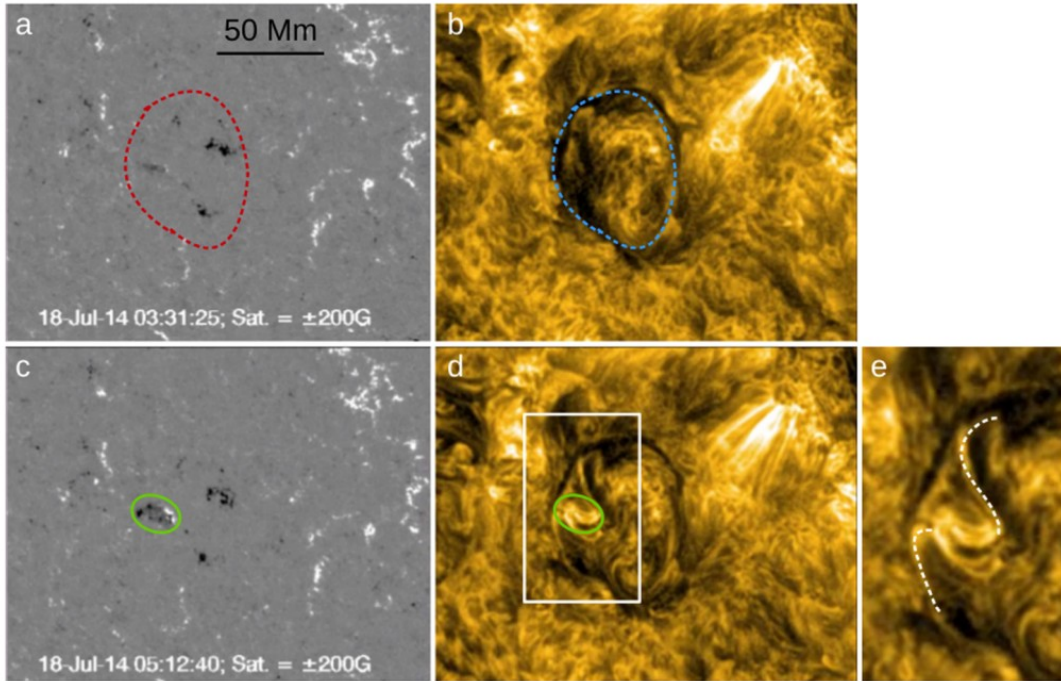
AIA 171 193

HMI magnetograms

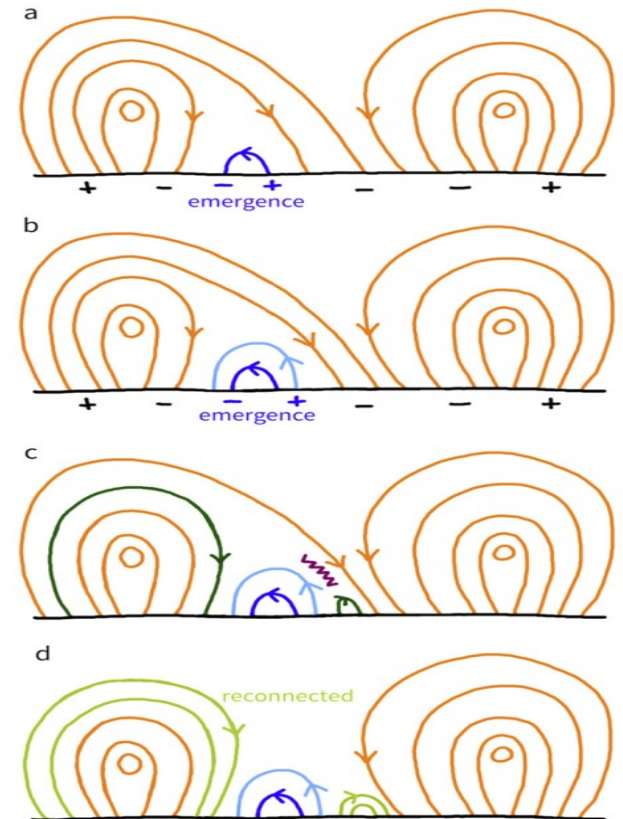
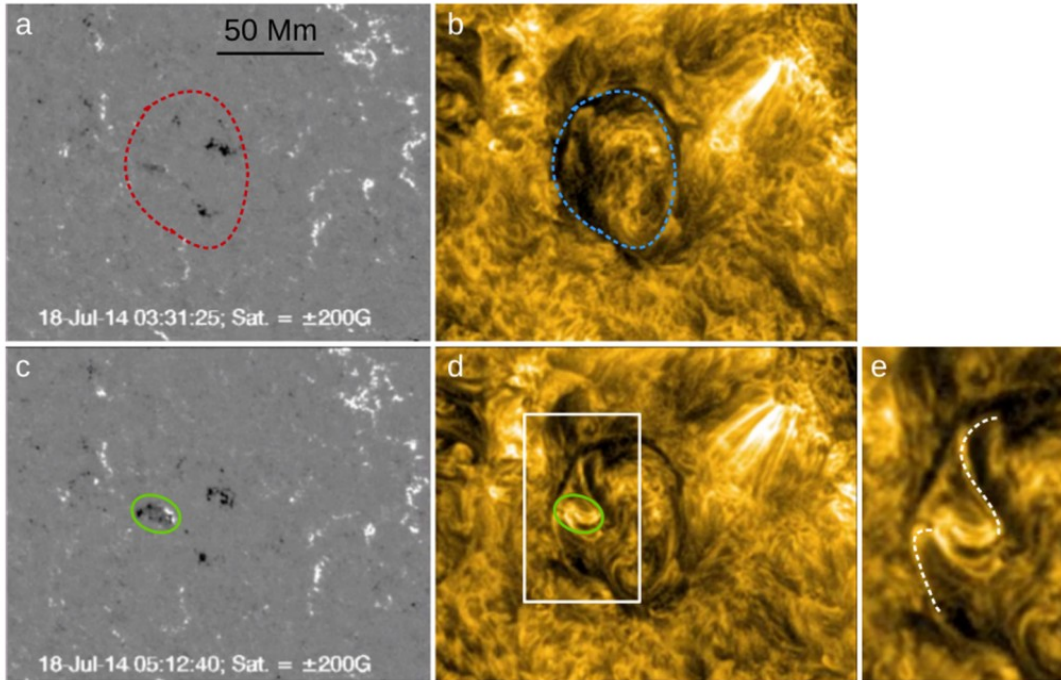
Emerging bipole appear at 03:30 UT

Eruptions at 7:45 UT and 10:30 UT

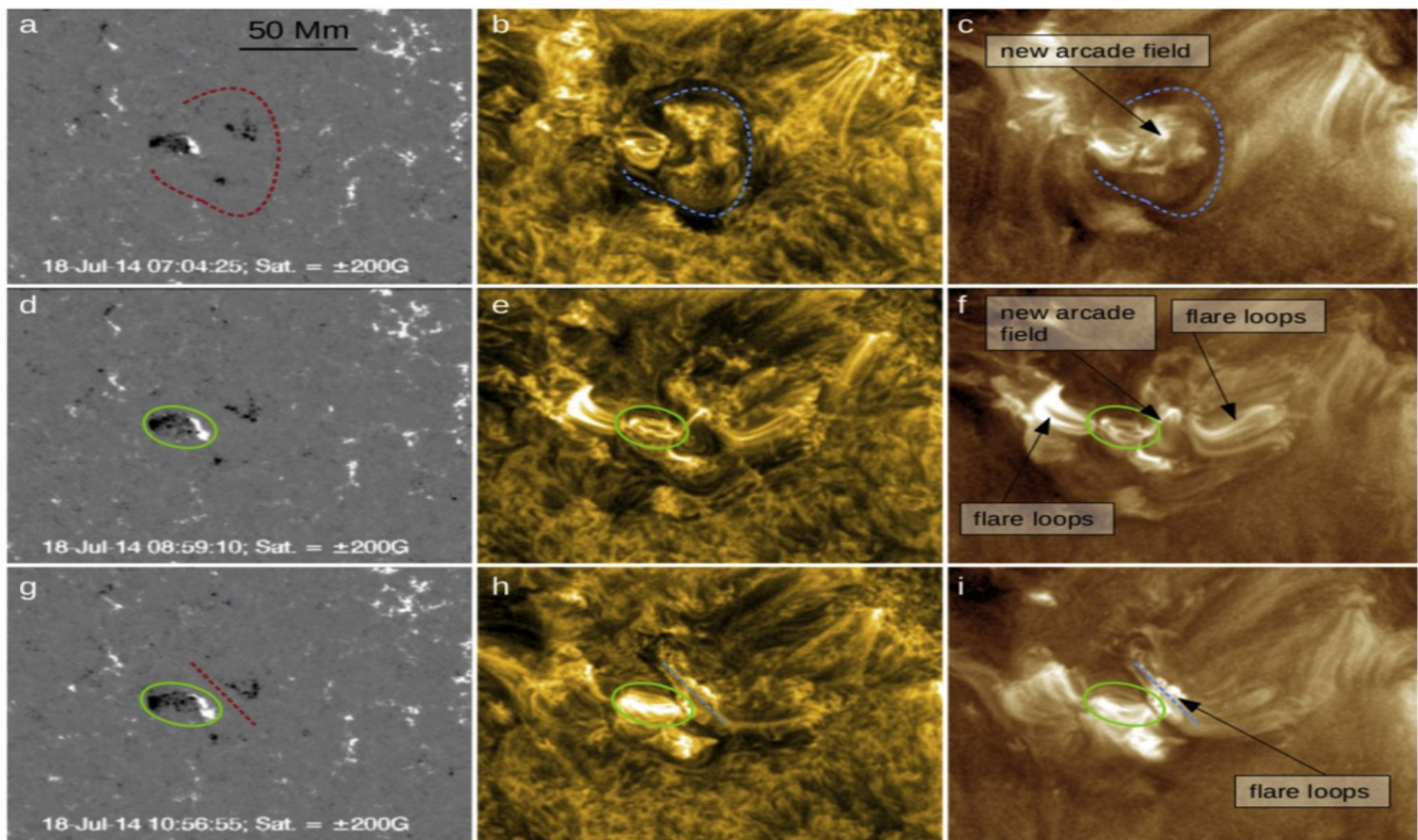
Review of events: Filament splitting



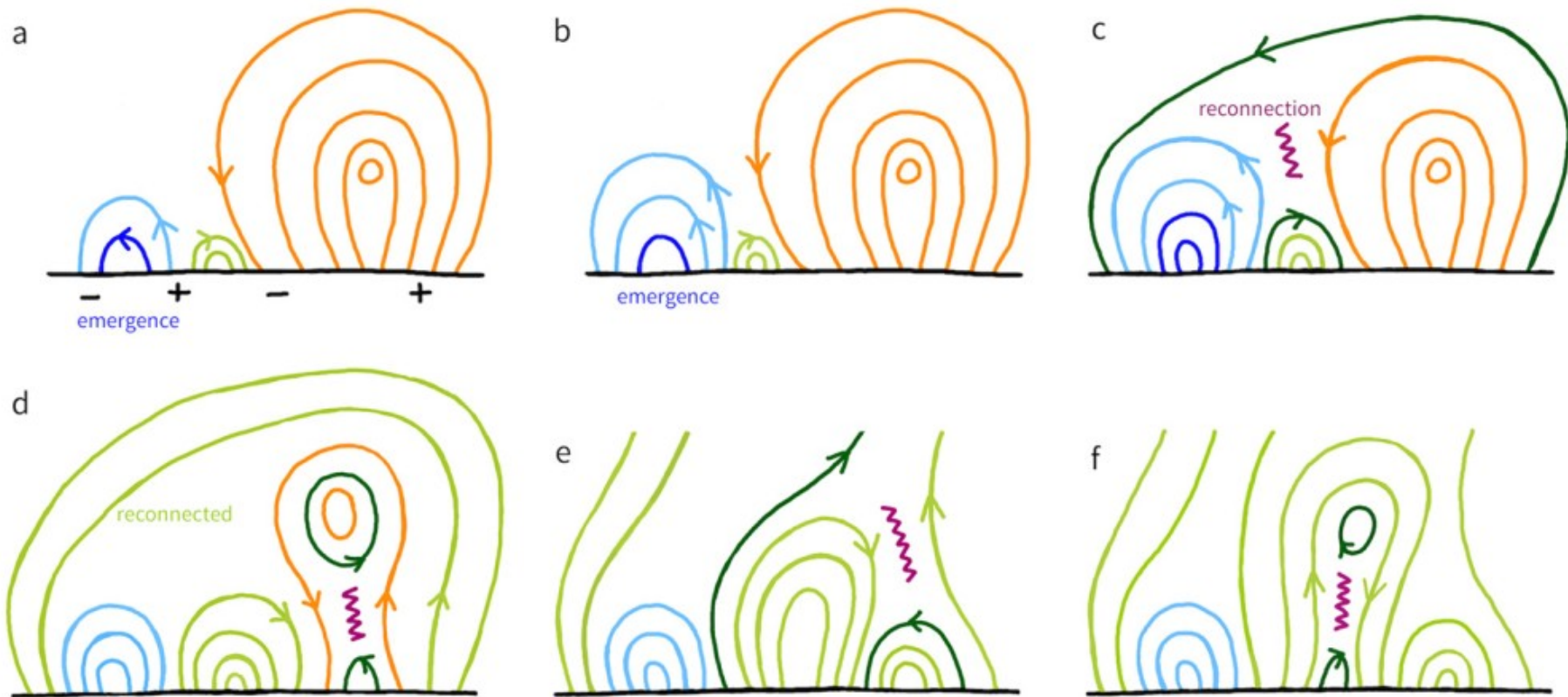
Review of events: Filament splitting



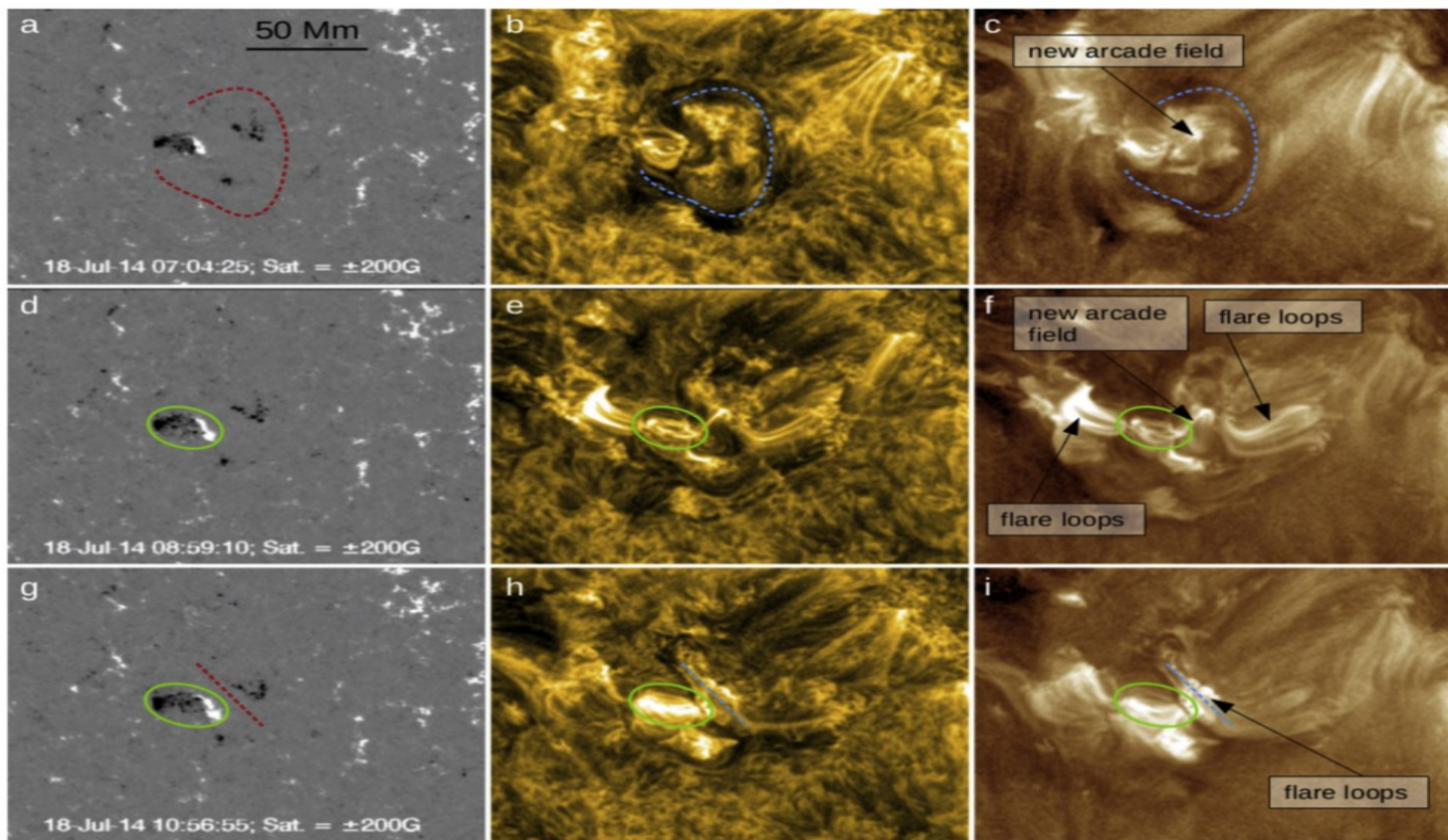
Review of events: First eruption



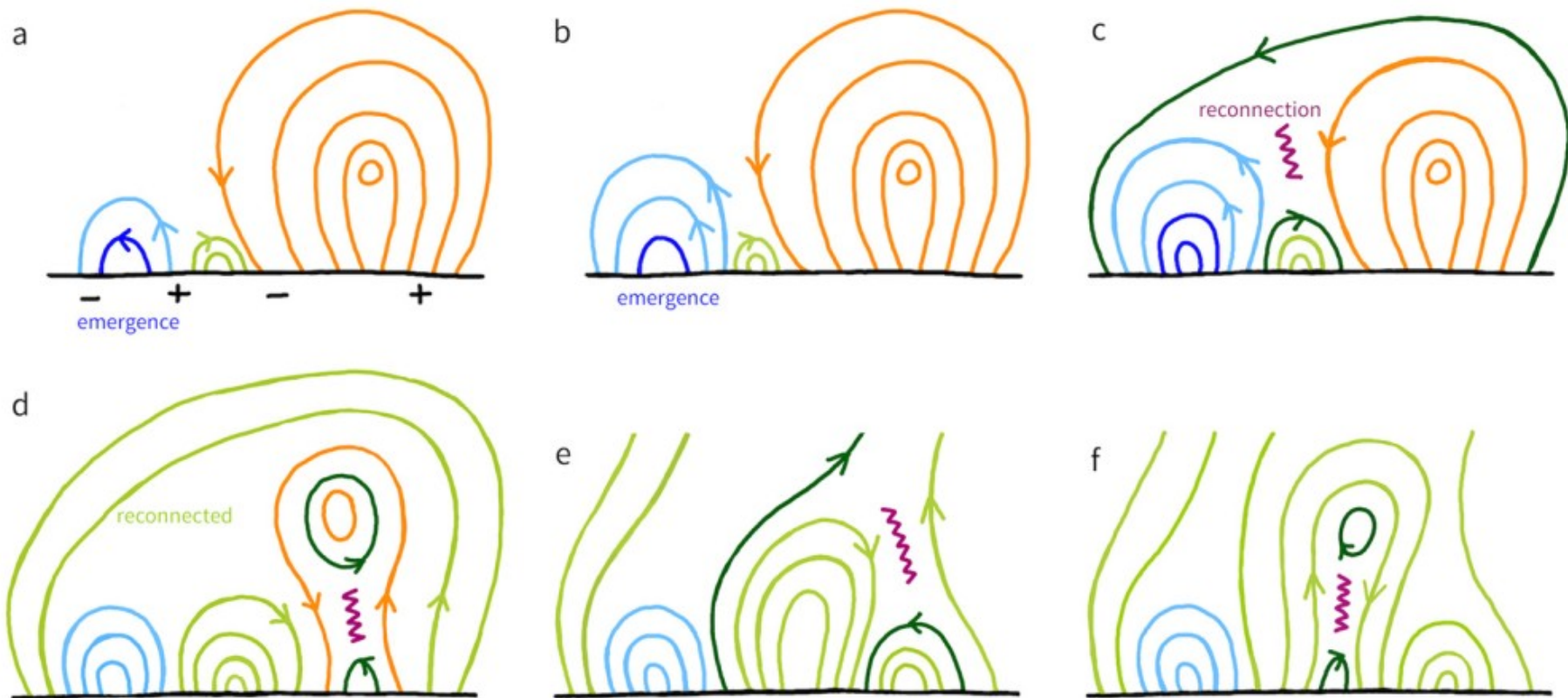
Review of events: First eruption



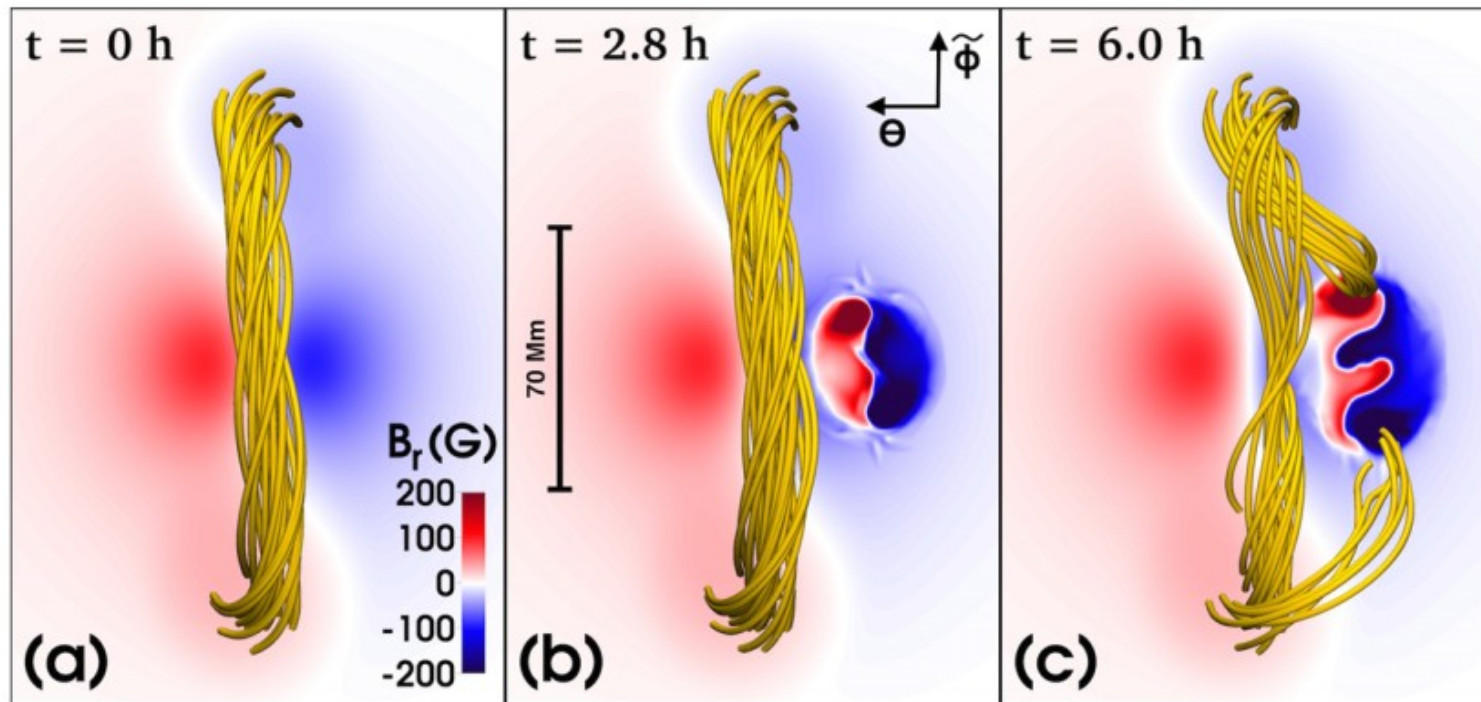
Review of events: Second eruption



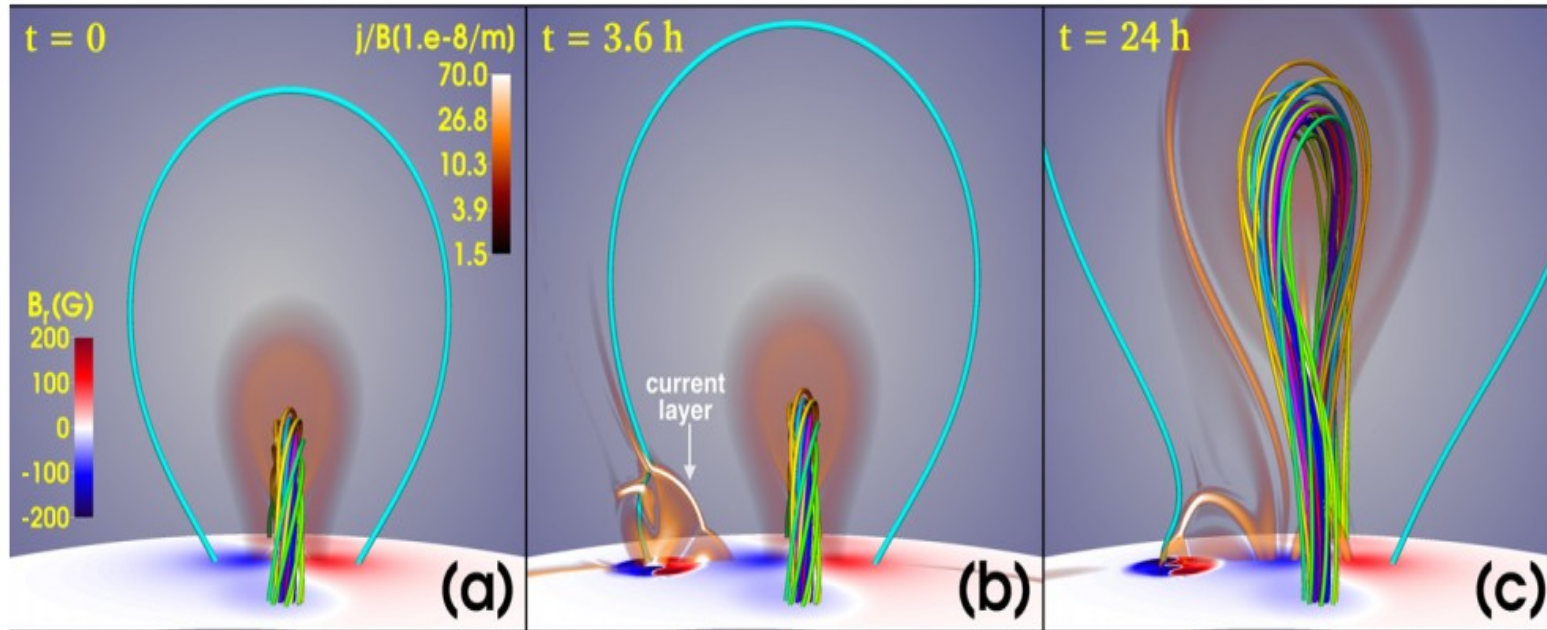
Review of events: Second eruption



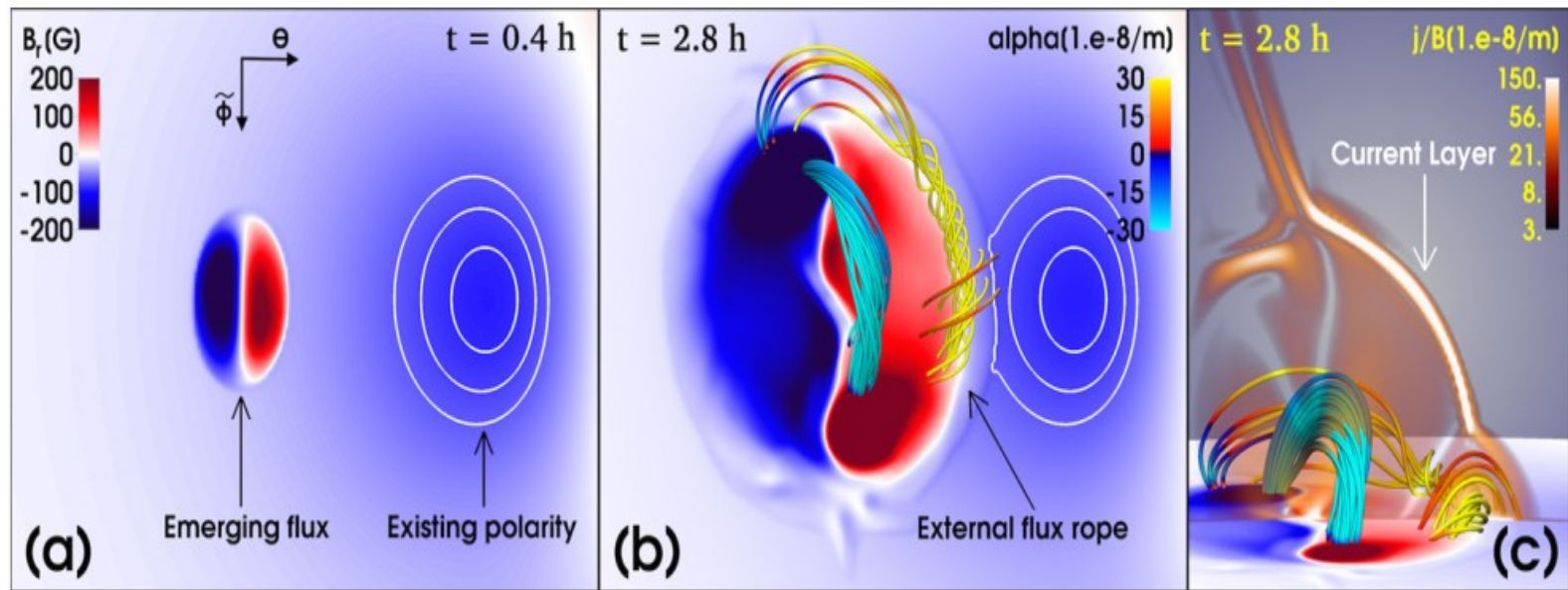
Modeling for the events



Simulation for eruptions



Flux rope formation



Conclusions

- Bipole emerges within the arcade field of adjacent filament. Reconnection leads to breakage of surrounding field and stabilizes the core field.
- Continuous emergence and drift of leading polarity of the bipole concentrate the shear of new arcade and the speculations of formation of highly twisted flux rope before second eruption is confirmed by modeling.
- Position of emerging bipoles with respect to background magnetic field configuration is crucial factor for the interactions and evolution.