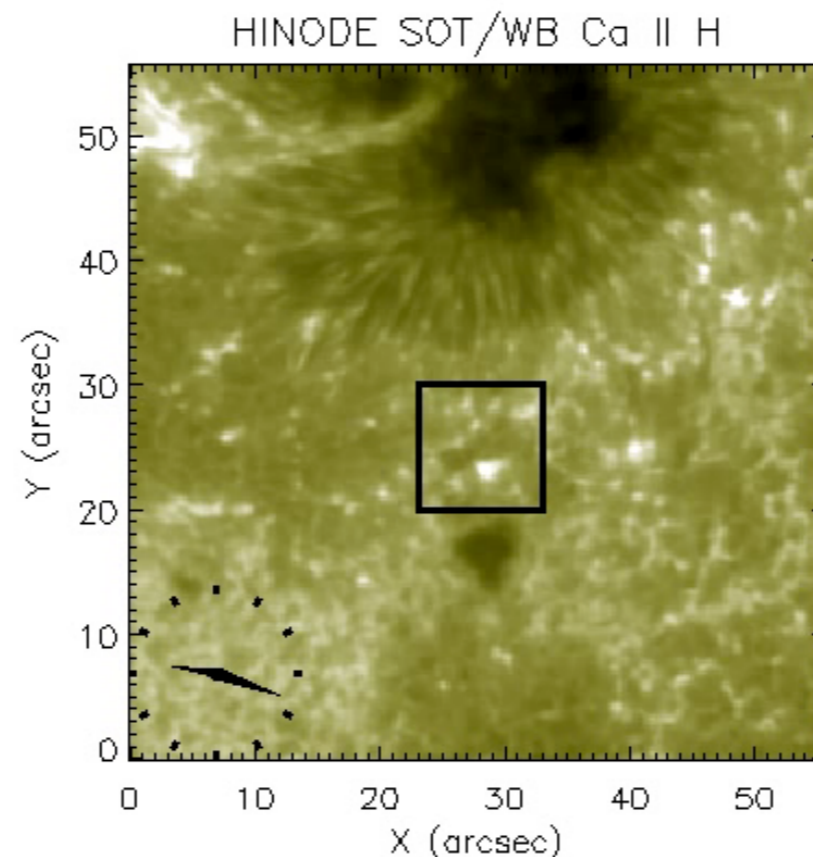


# Chromospheric response to prolonged small-scale reconnections

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<sup>1</sup>Max Planck Institute for Solar System Research ([\\*chitta@mps.mpg.de](mailto:*chitta@mps.mpg.de))

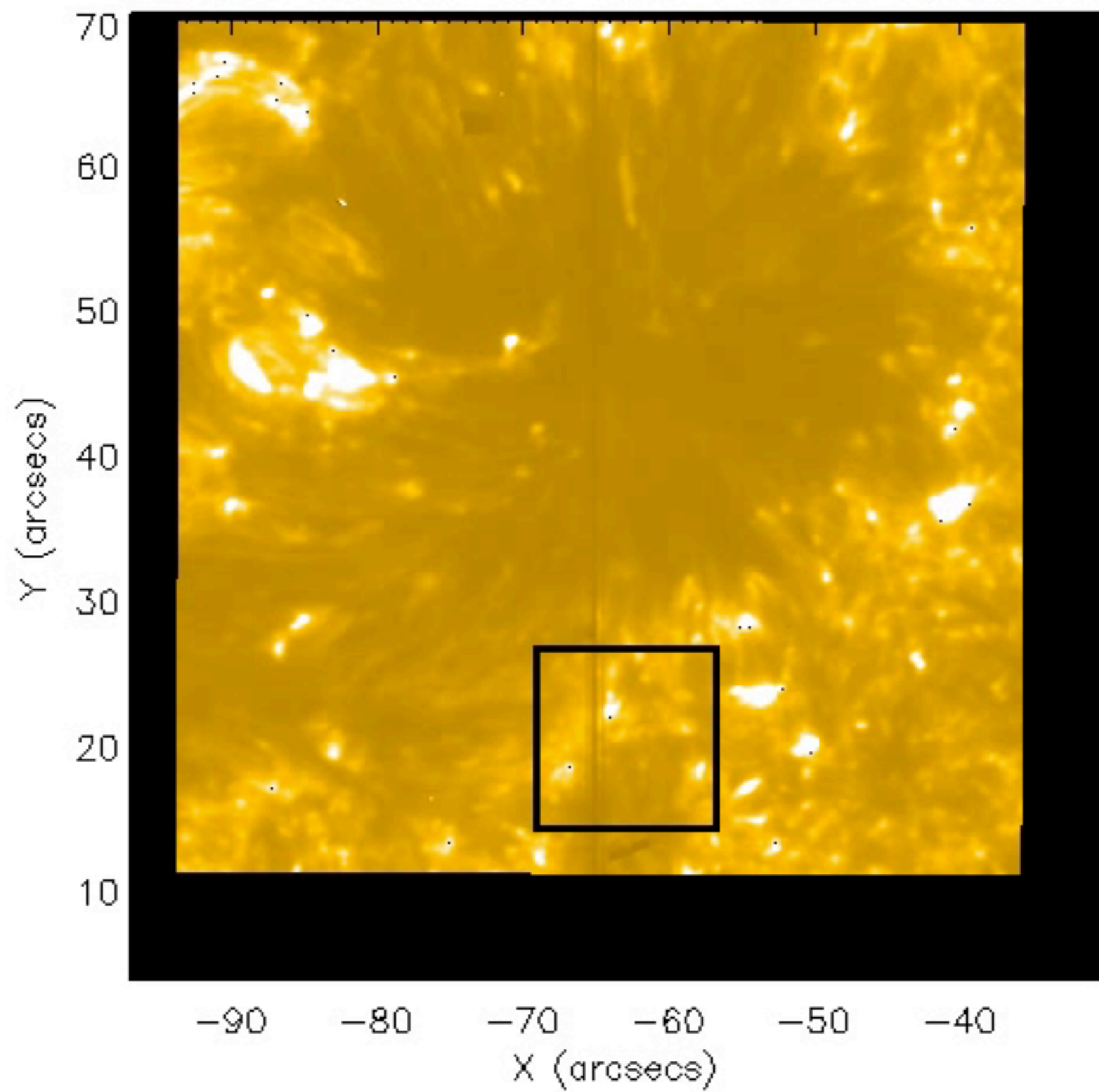
<sup>2</sup>George Mason University



IRIS-6: The Chromosphere

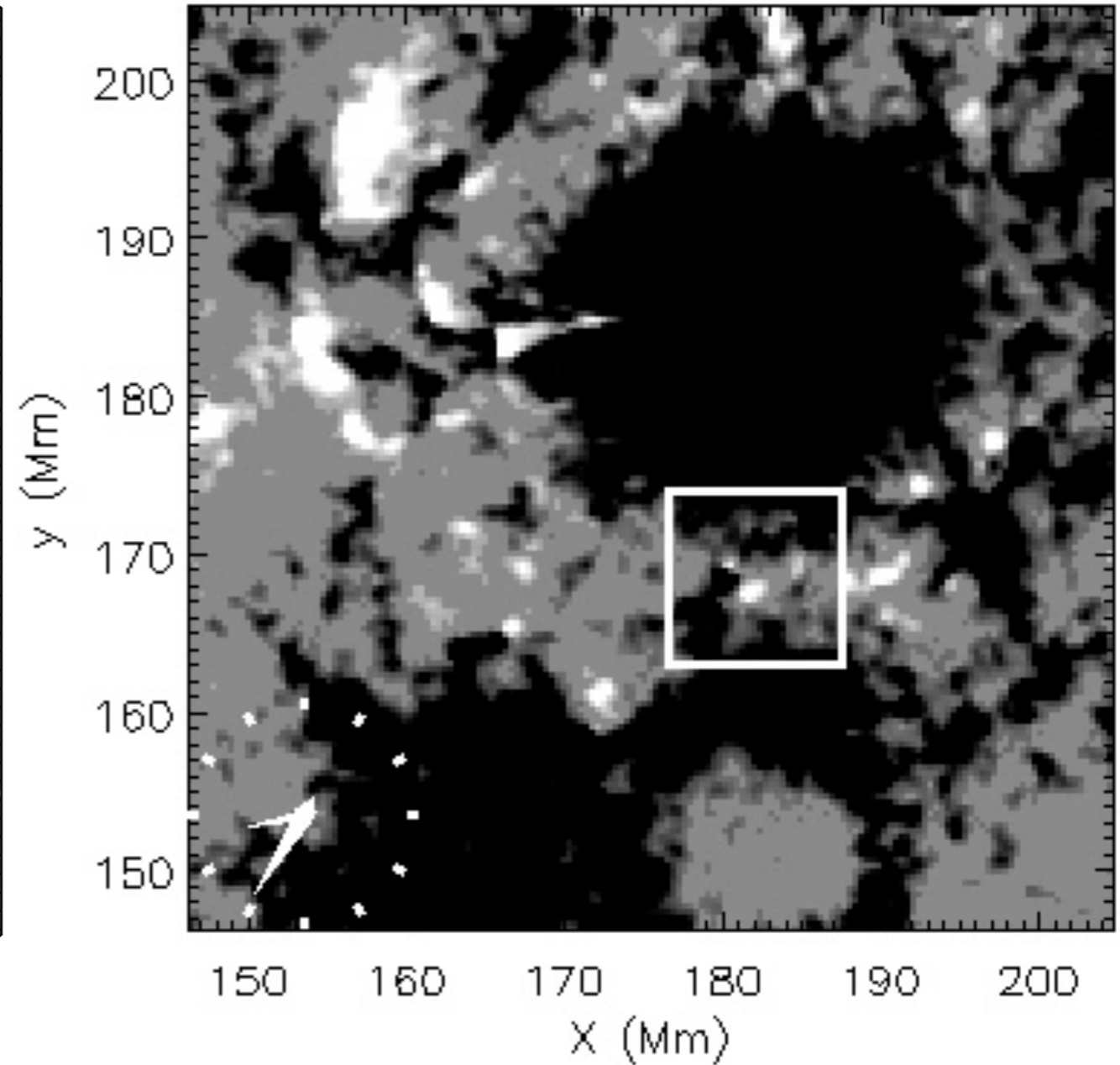
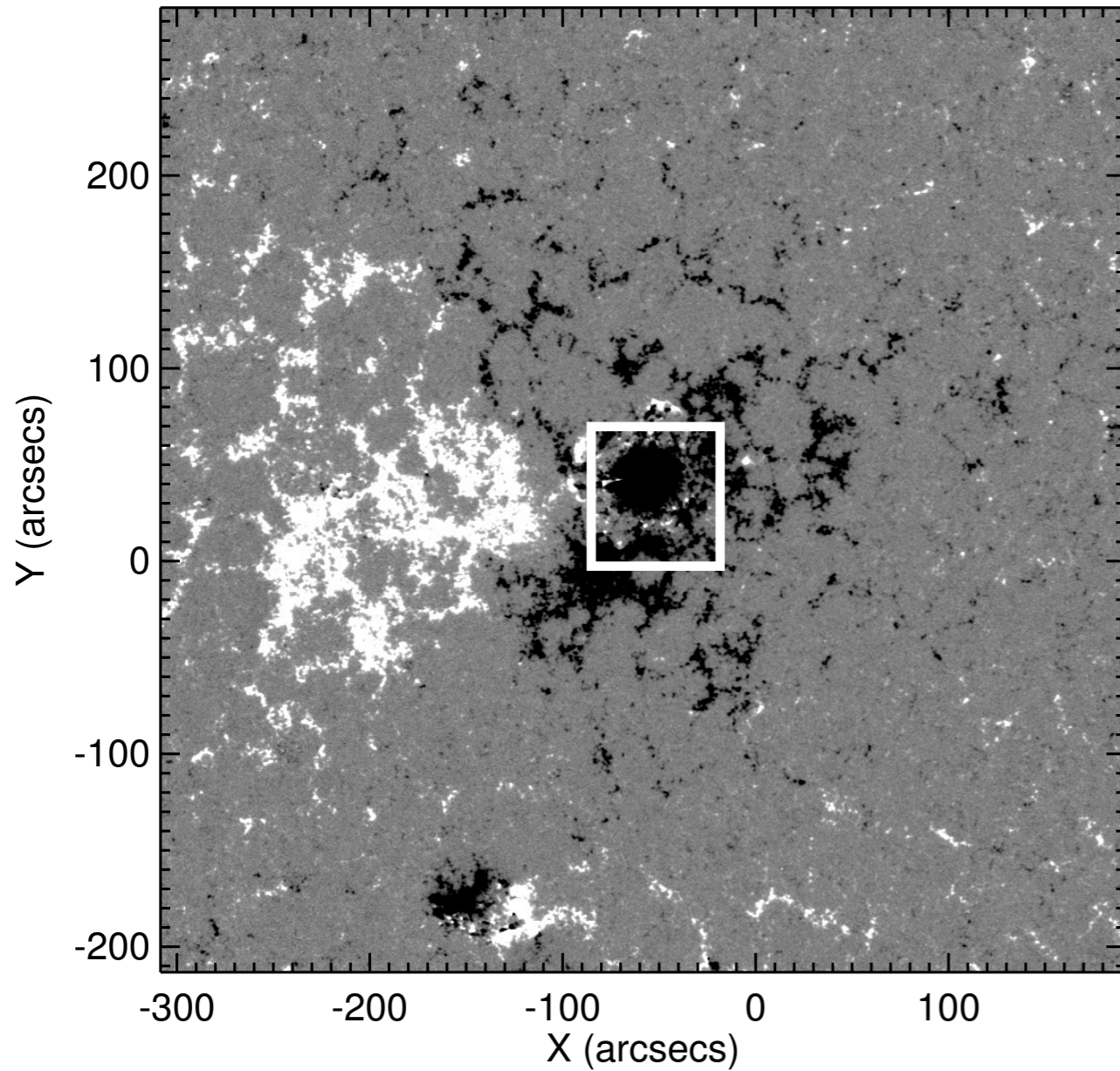
23 June 2016

IRIS SJI SDO 27-Jul-2014 20:04:44.990 UT



# Photospheric magnetic field

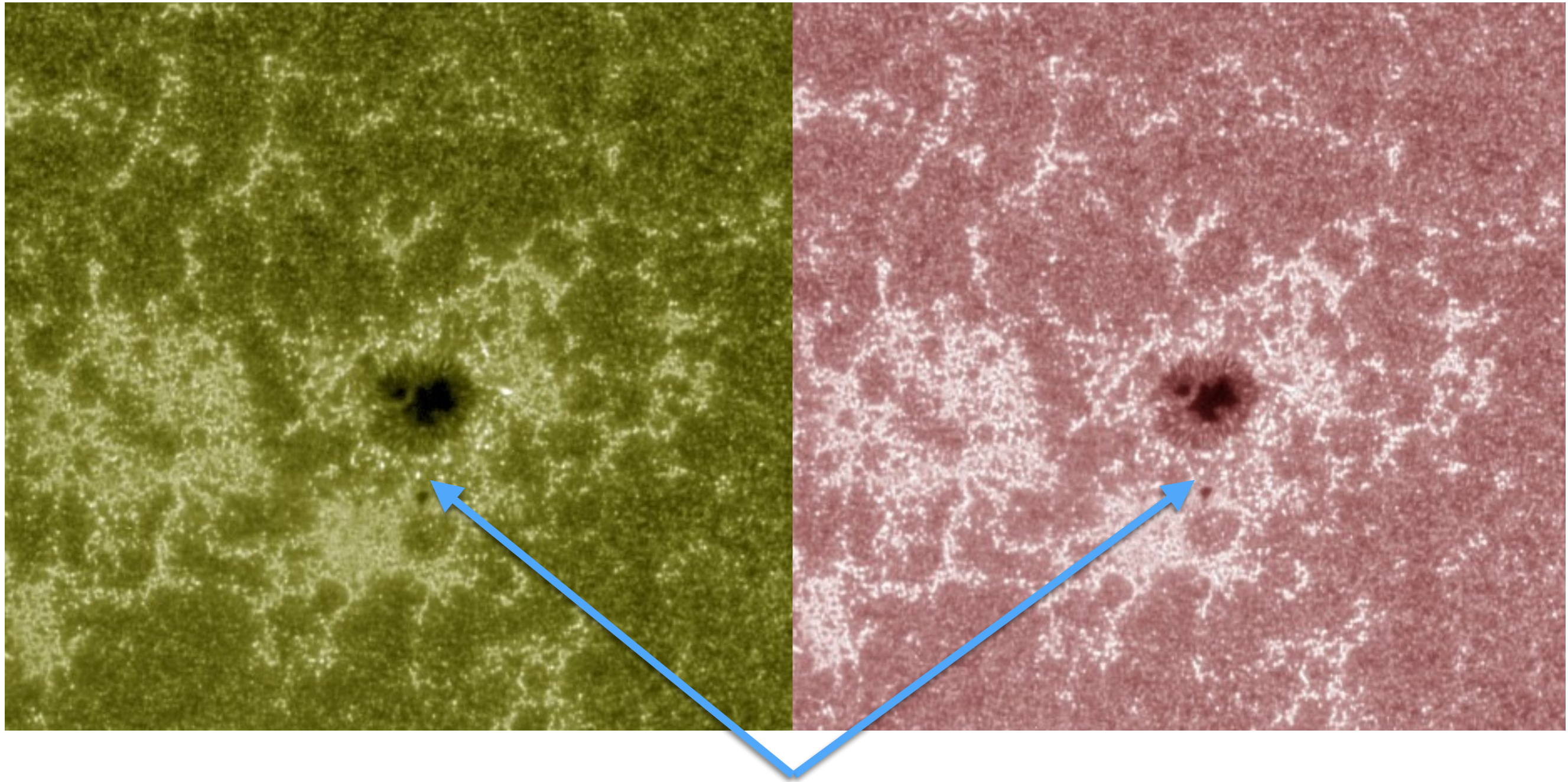
SDO HMI 27-Jul-2014 20:36:40.000 UT





AIA 1600 Å

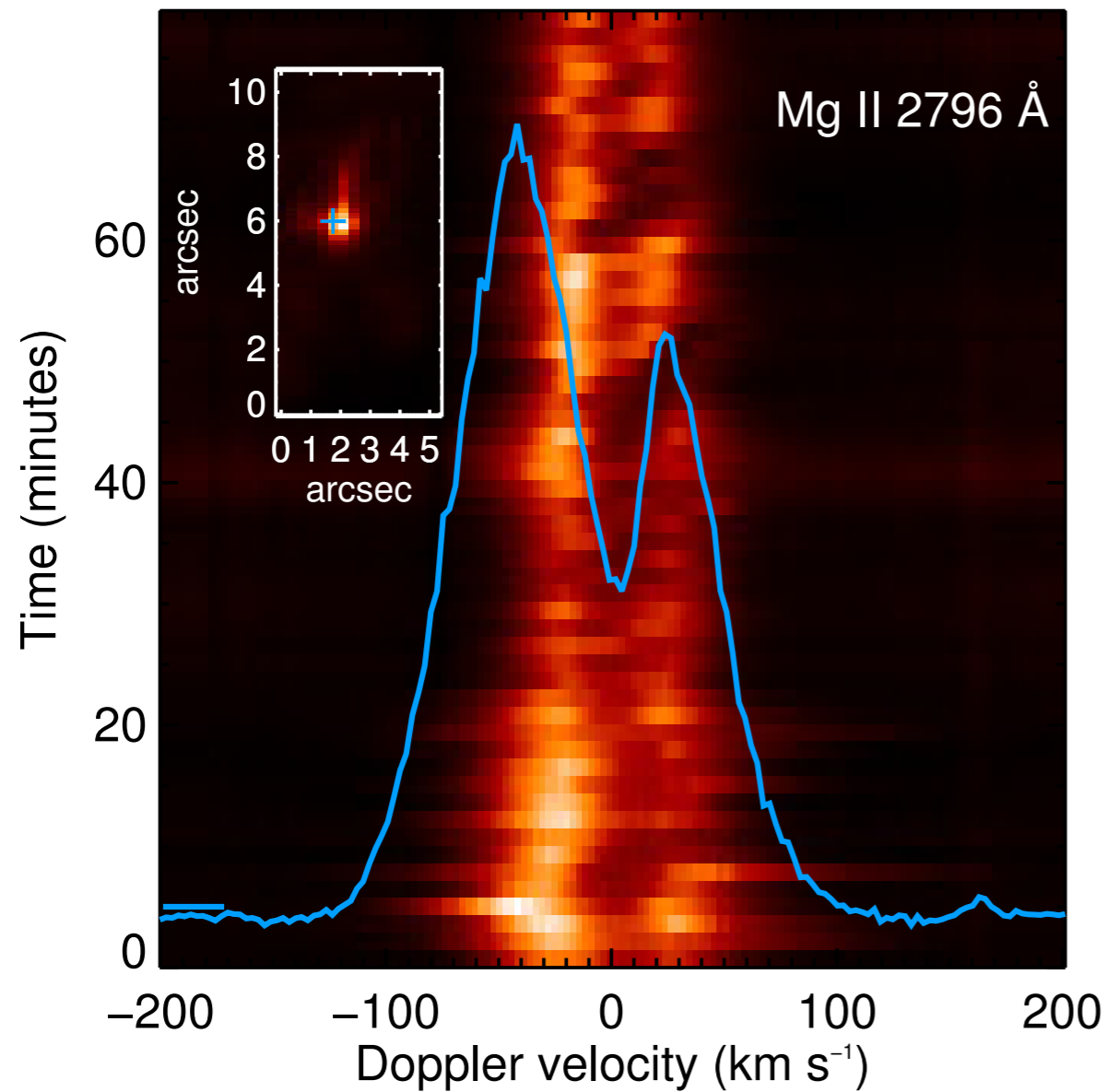
AIA 1700 Å



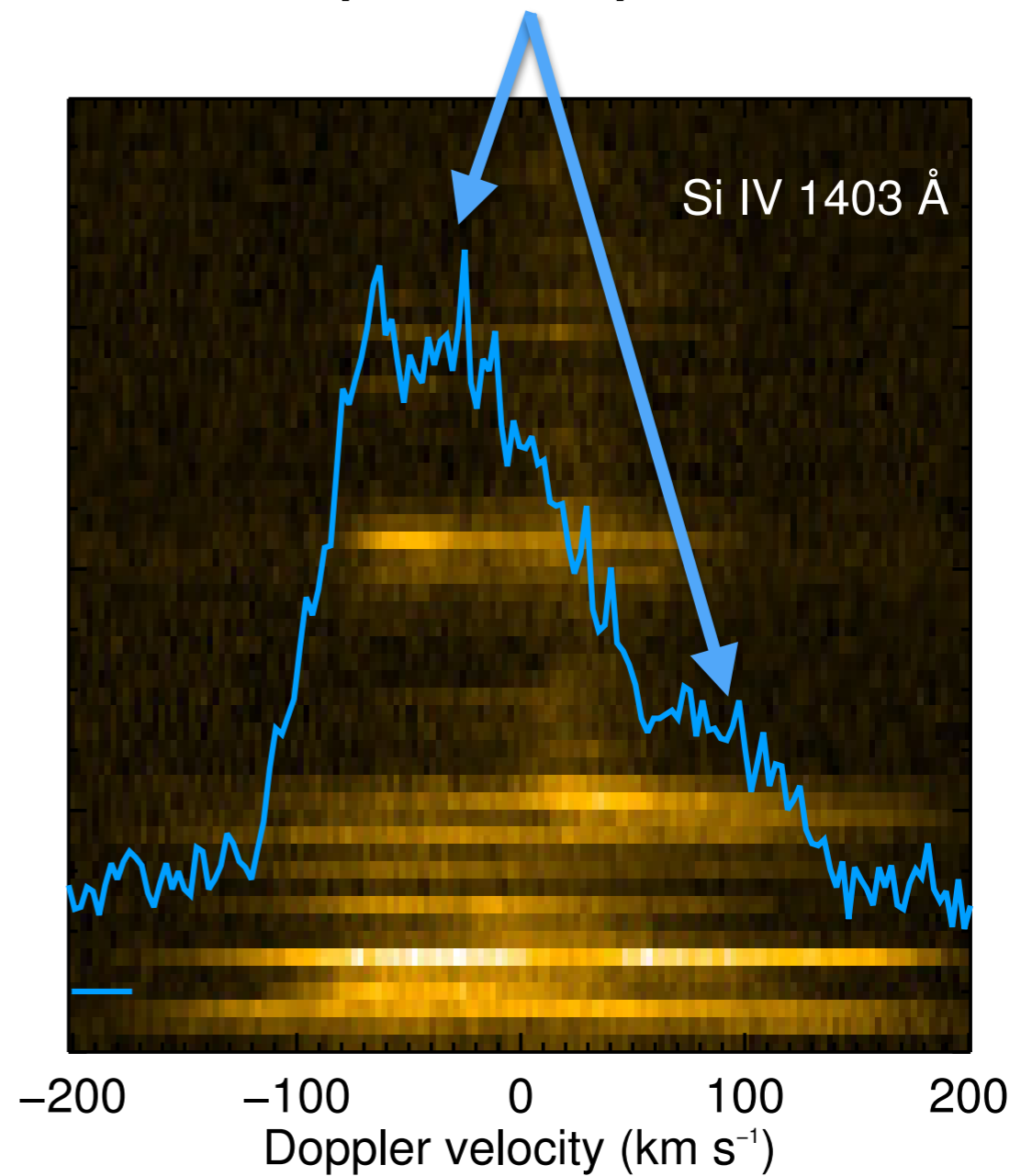
Features observed in AIA 1600 and 1700 channels



# Line profiles



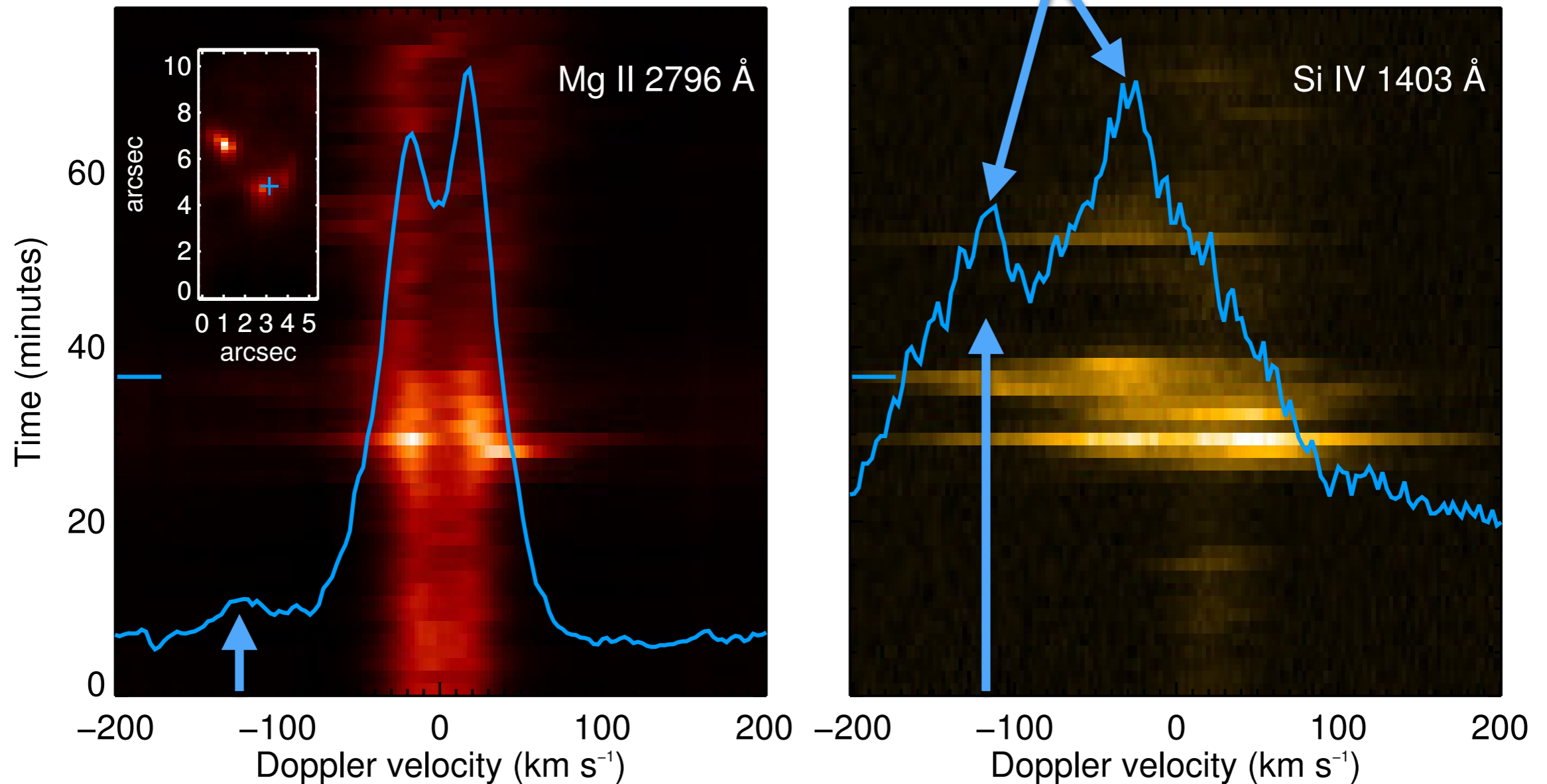
## Multiple components



Broad line profiles

# Line profiles

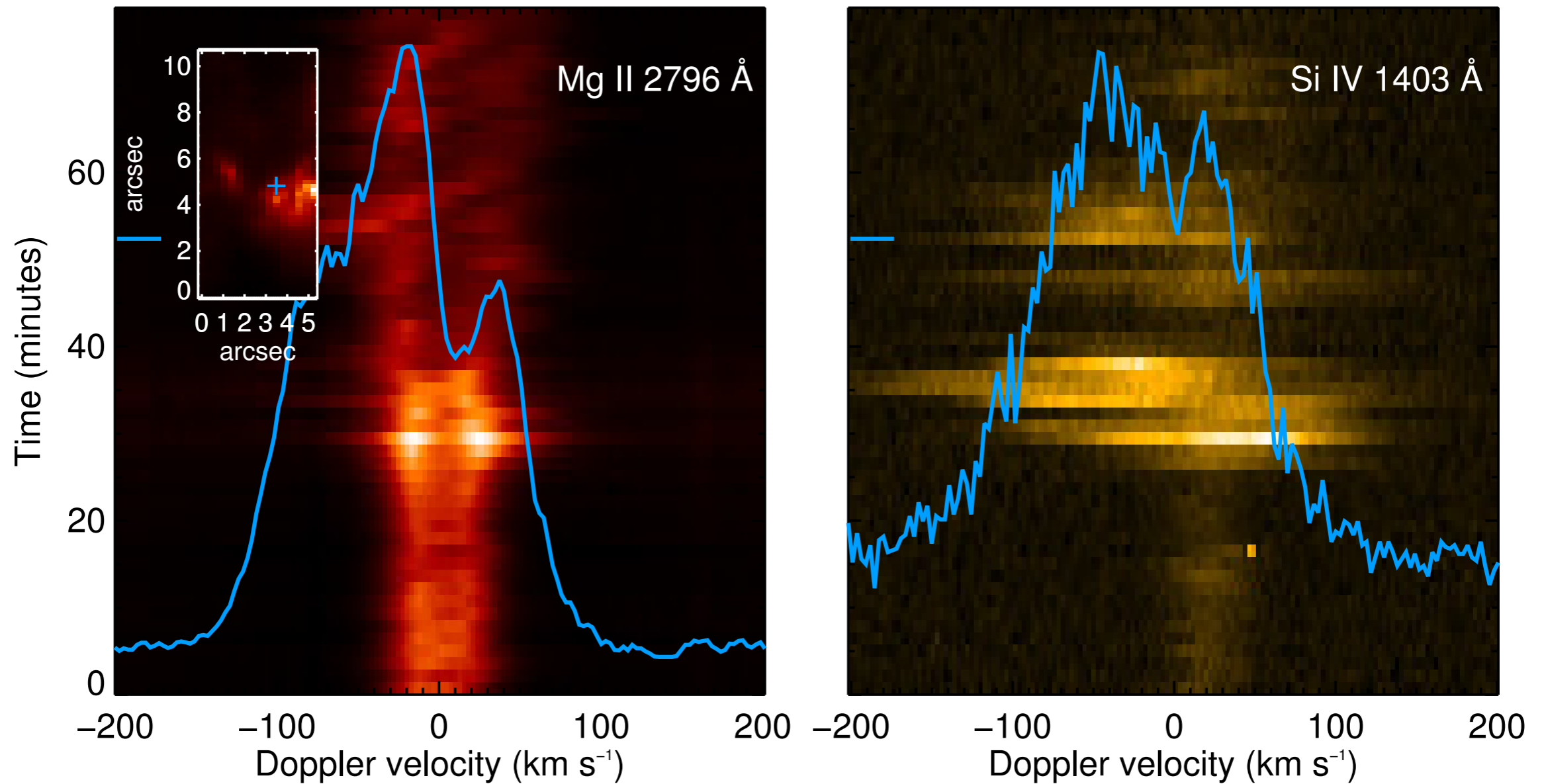
Multiple blue-shifted components  
in the line-of-sight



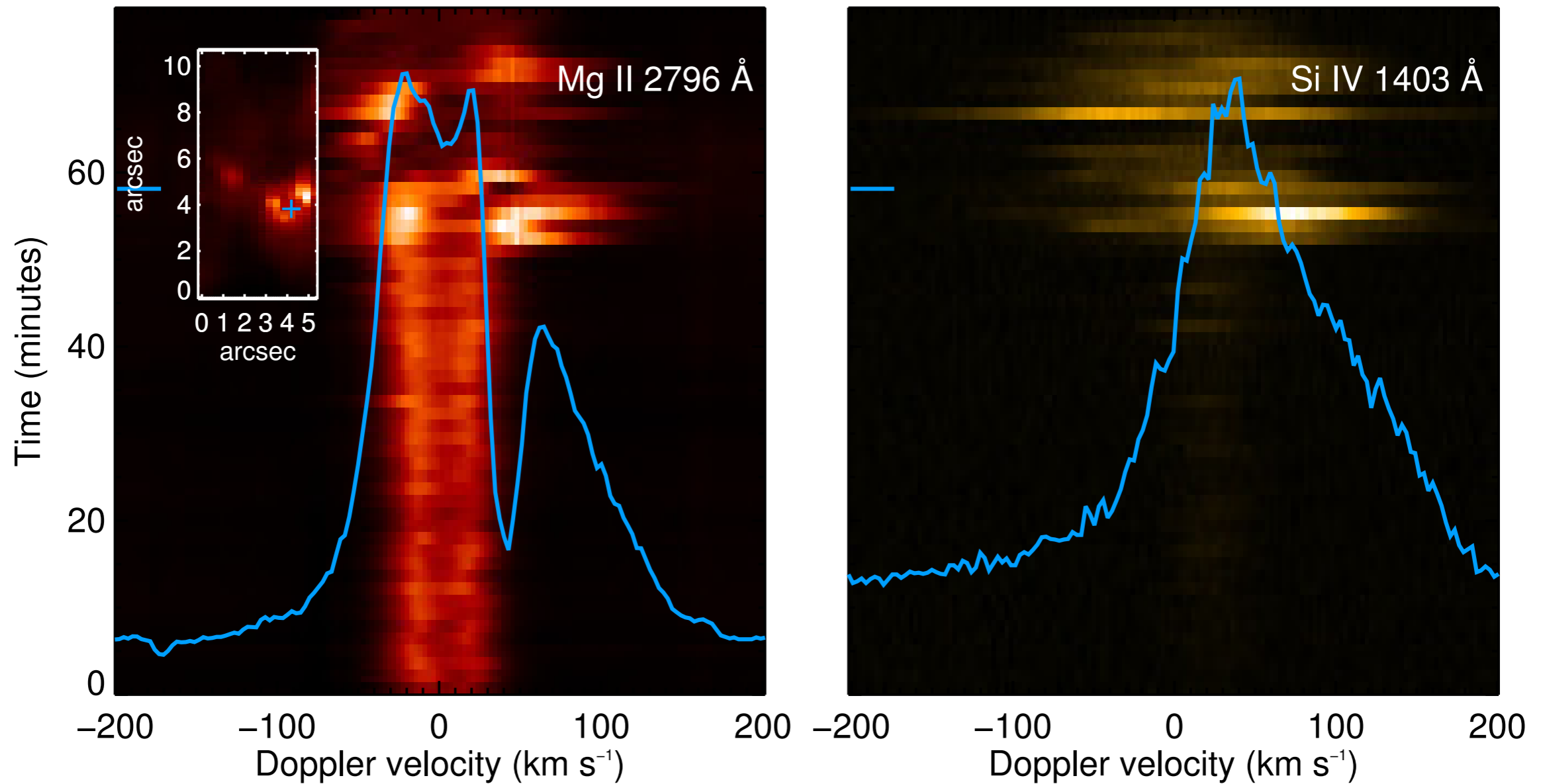
Corresponding faster upflows in Mg II and Si IV profiles



# Line profiles

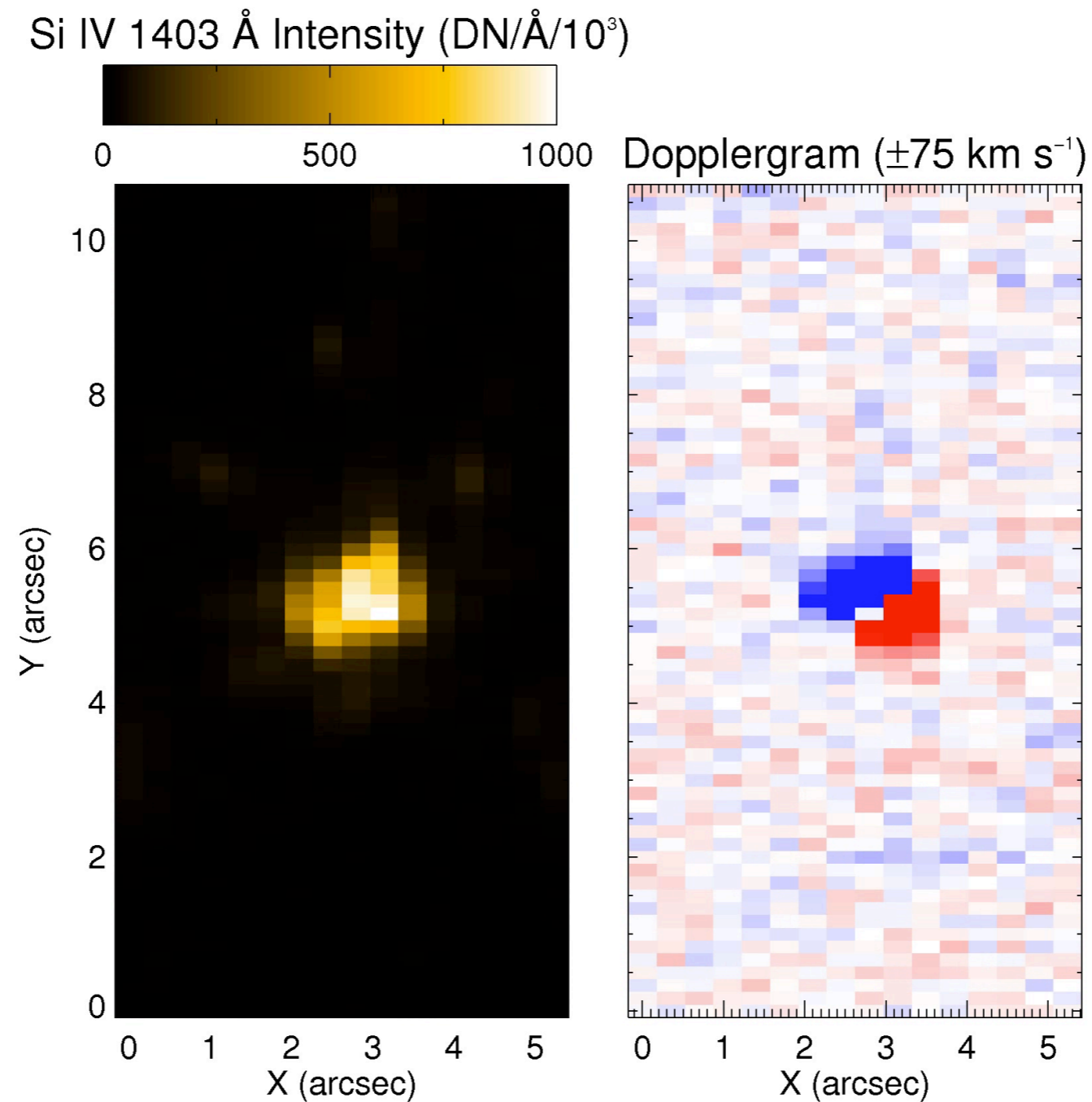


# Line profiles



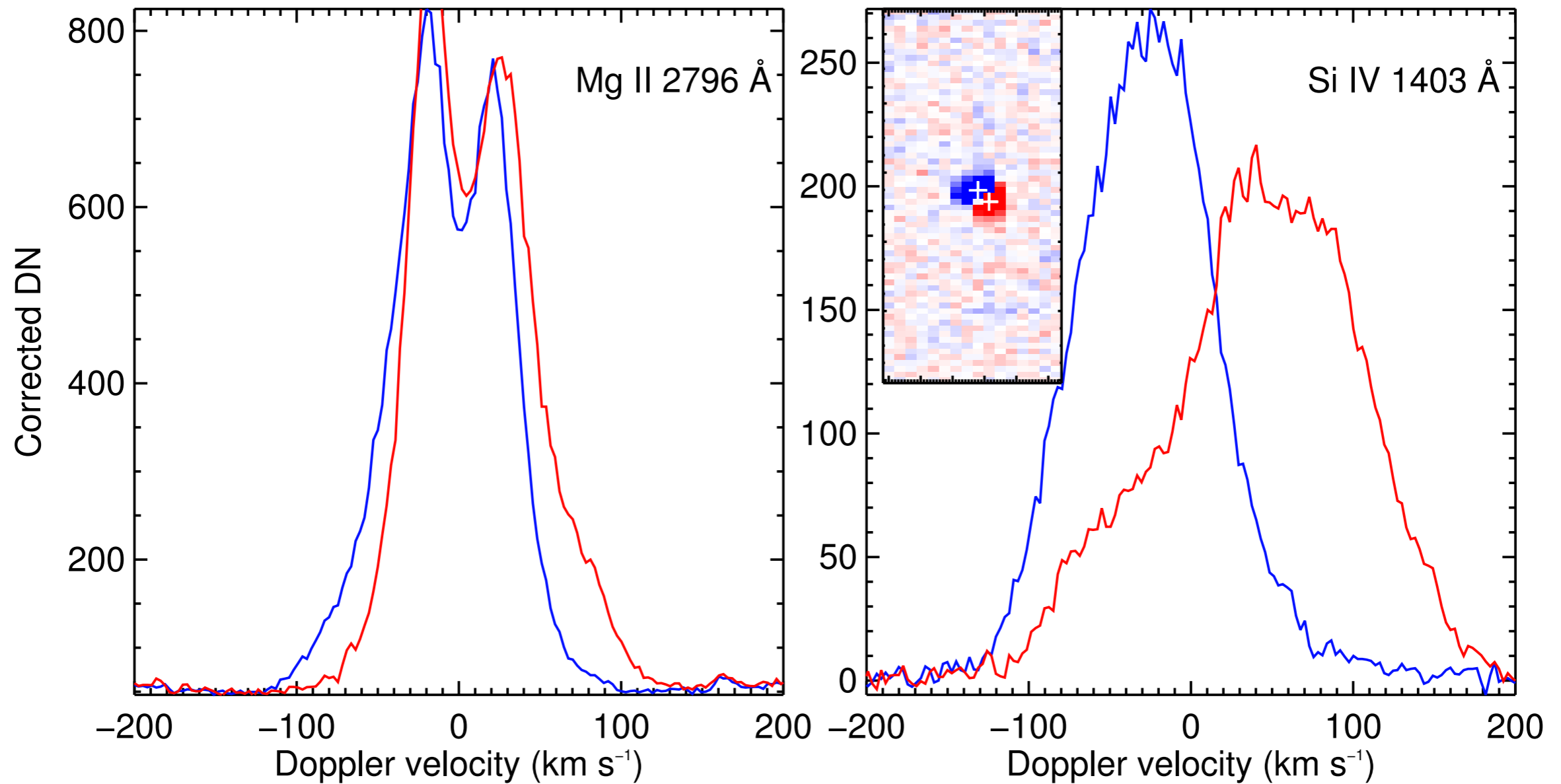


# Evolution of intensity and flows



Compact intensity and flow domains

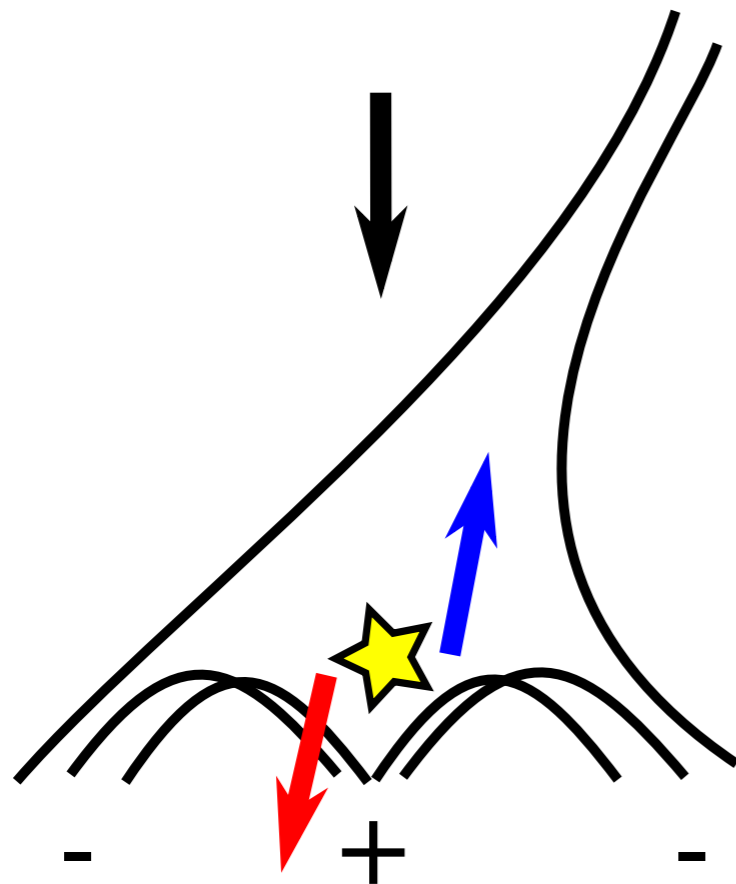
# Coherent domains of up- and downflows



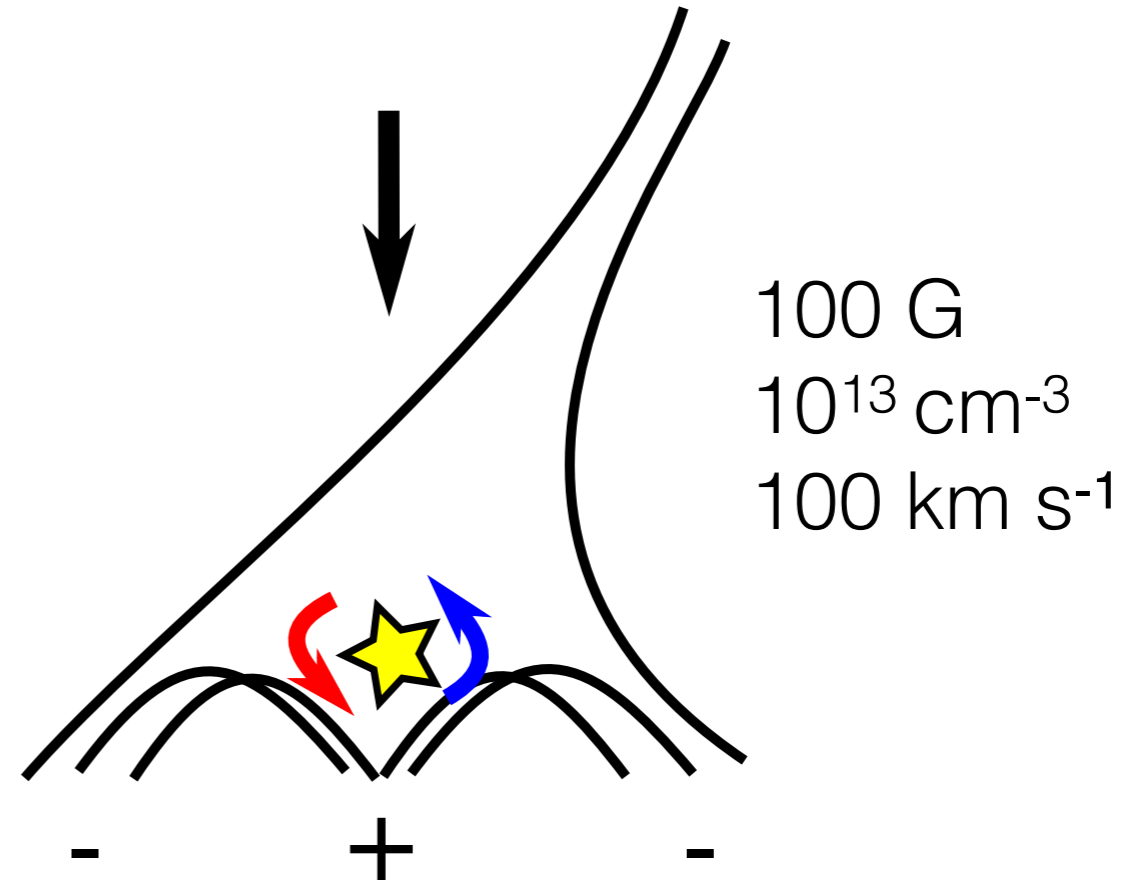


# Coherent domains of up- and downflows

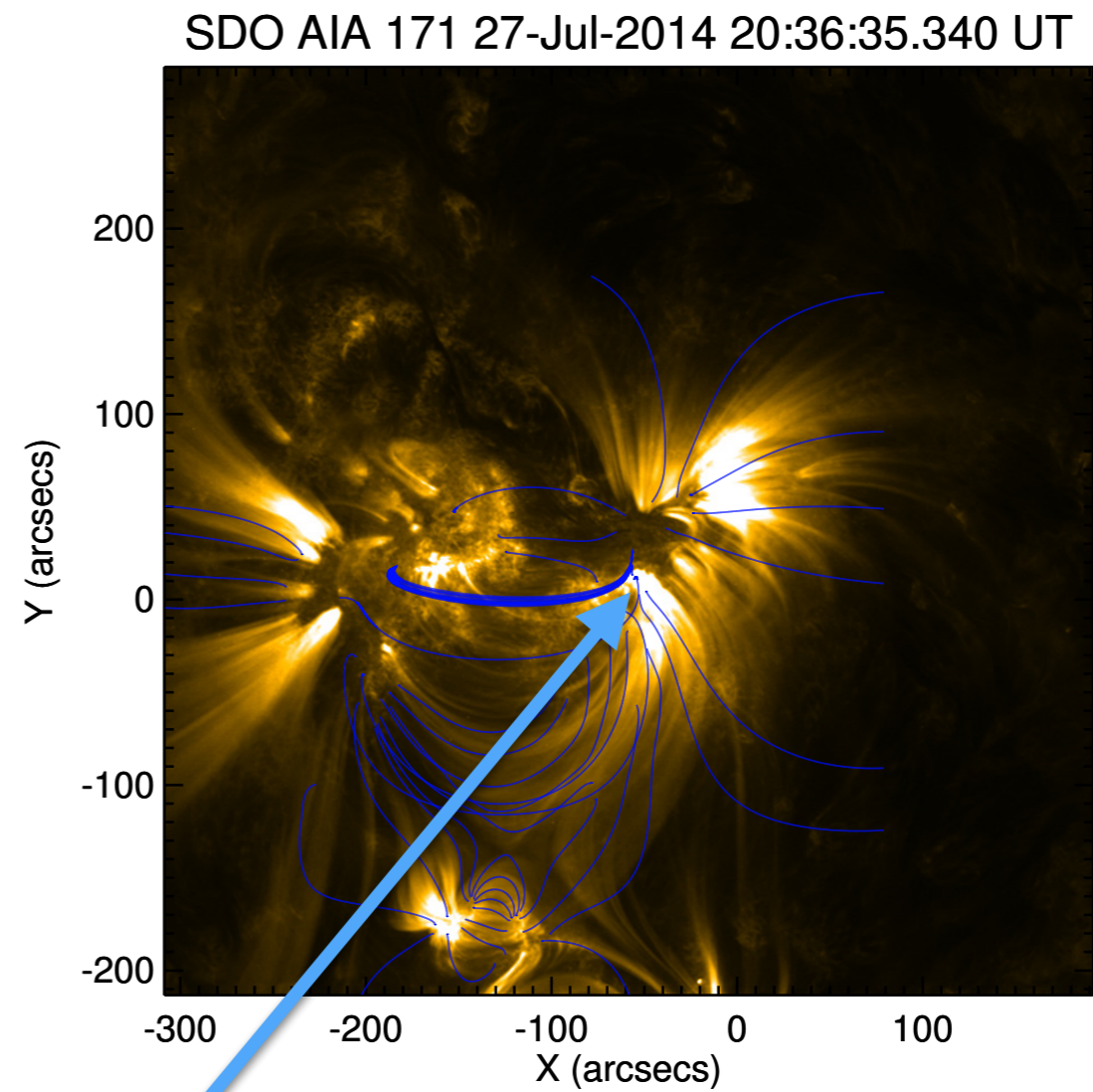
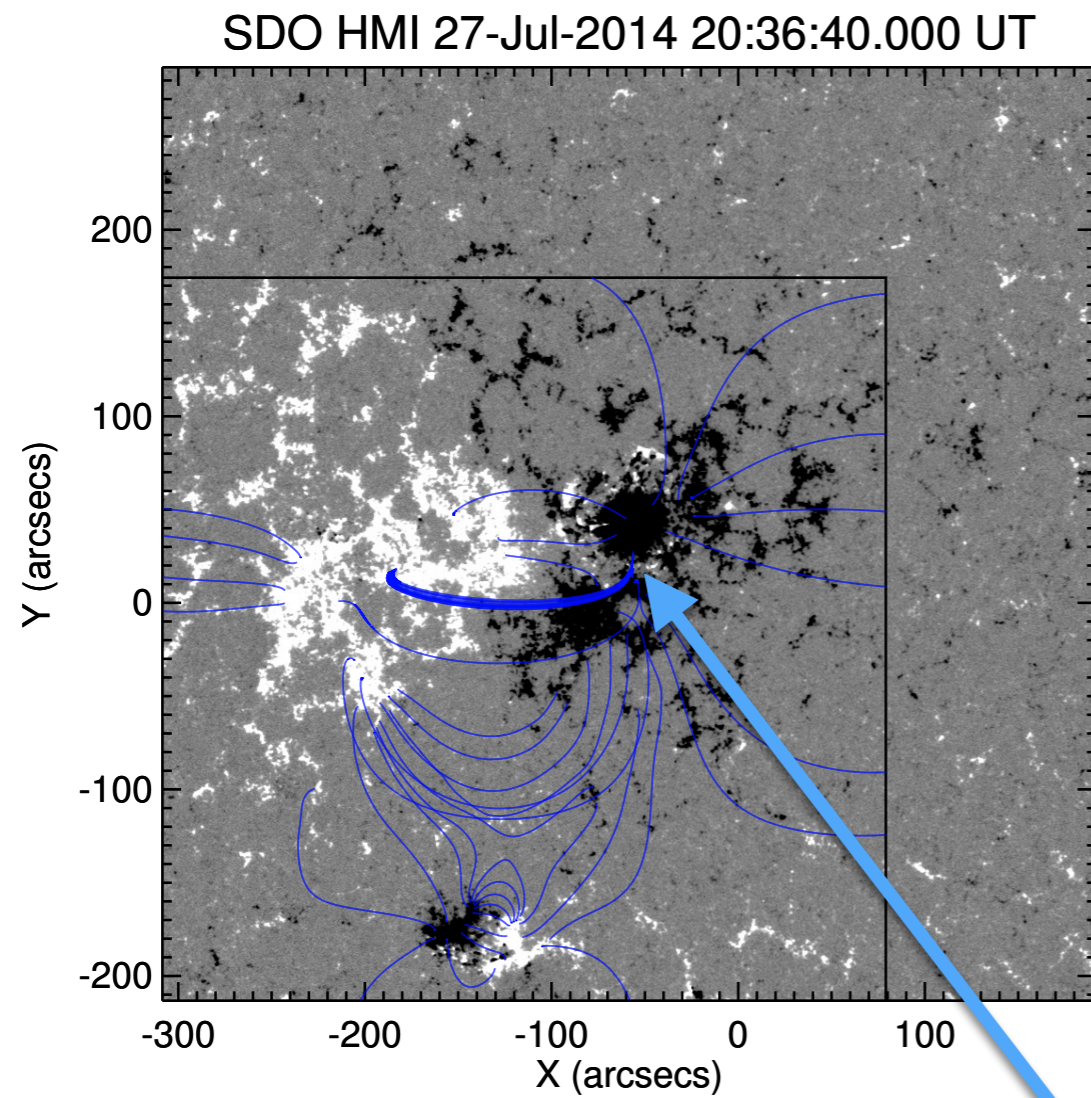
**(a) Jets**



**(b) Rotating plasmoids?**

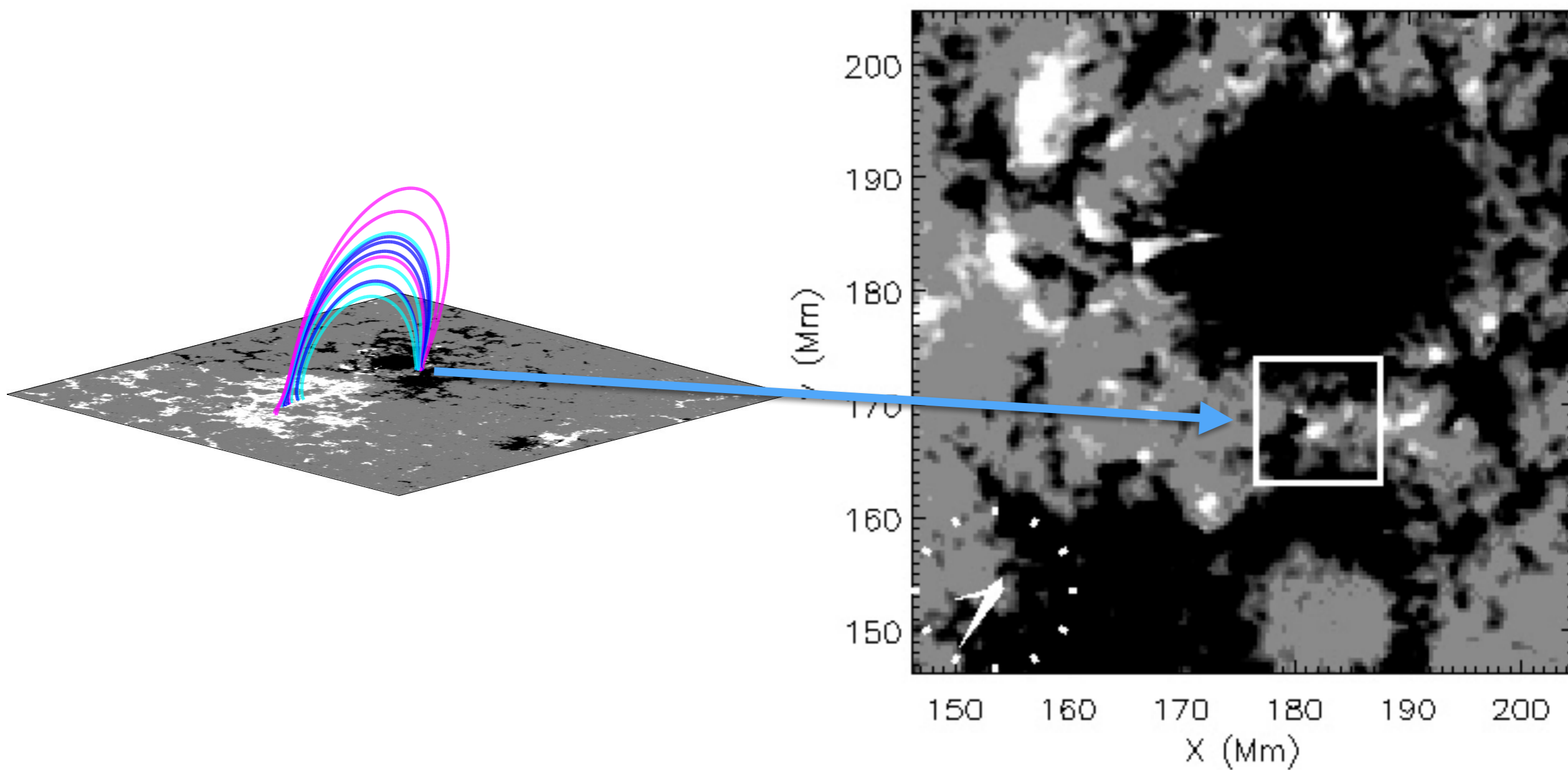


# Magnetic modeling



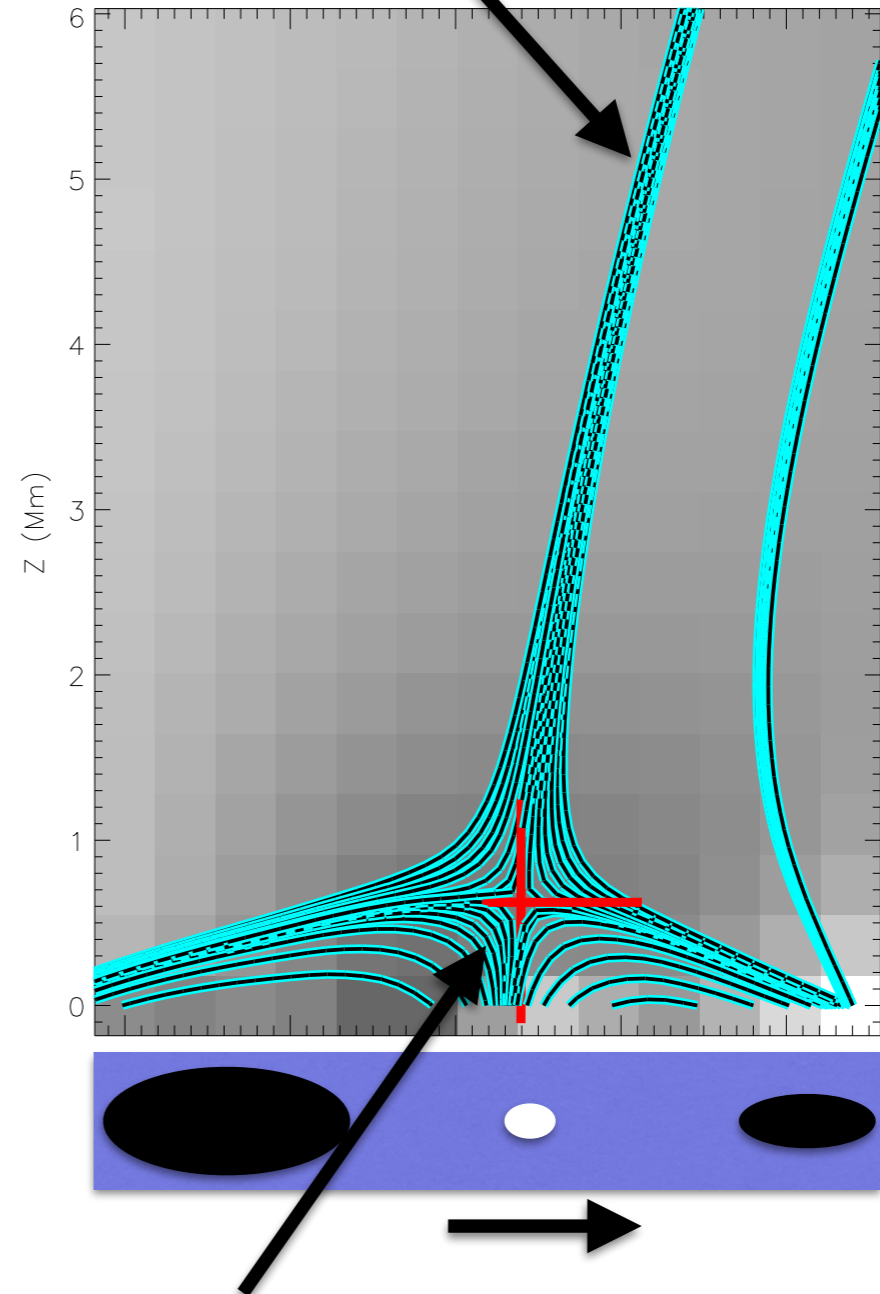
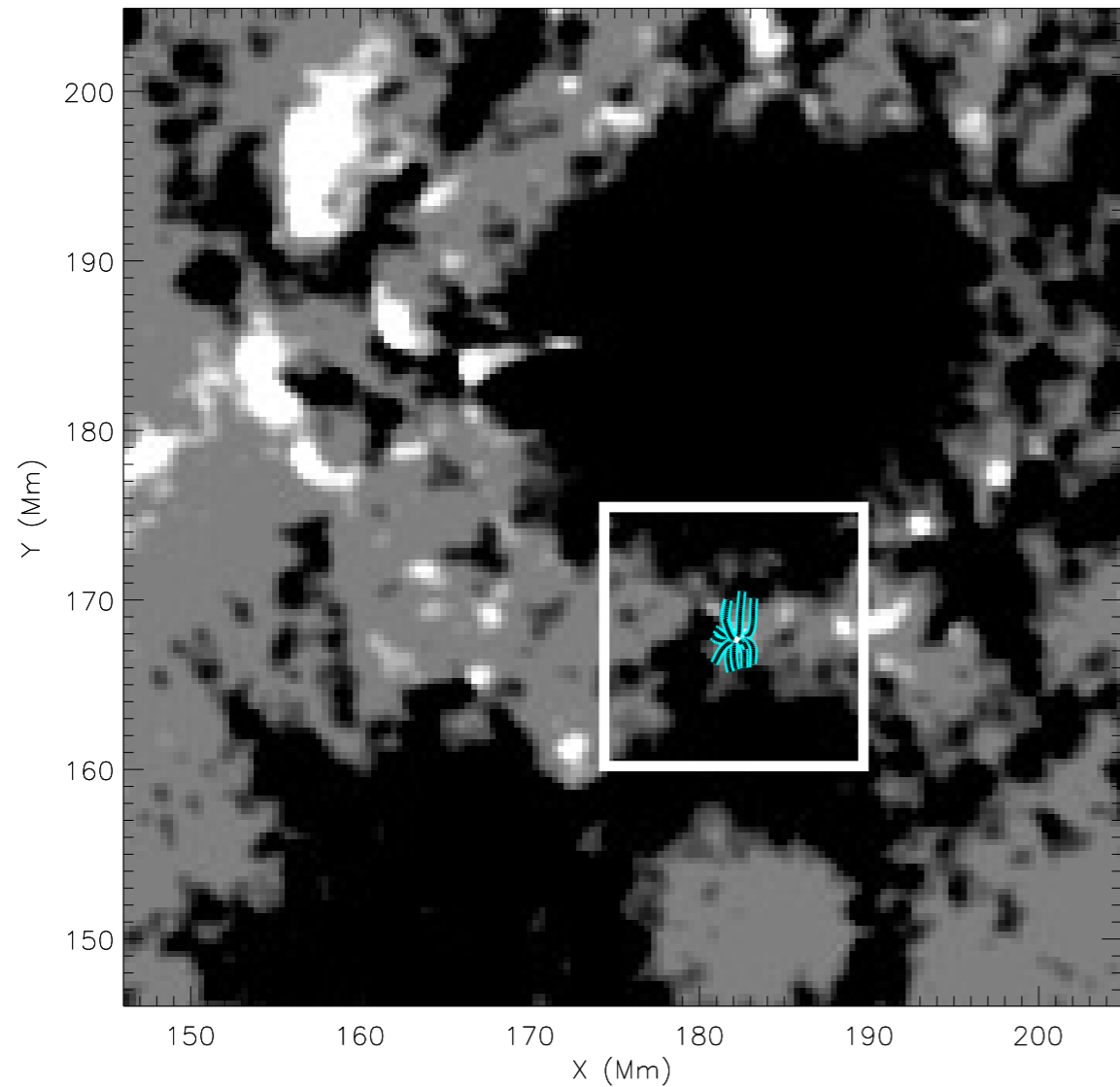
Location of IRIS event

# Magnetic modeling



# Magnetic modeling

Spine field lines as stable coronal loops

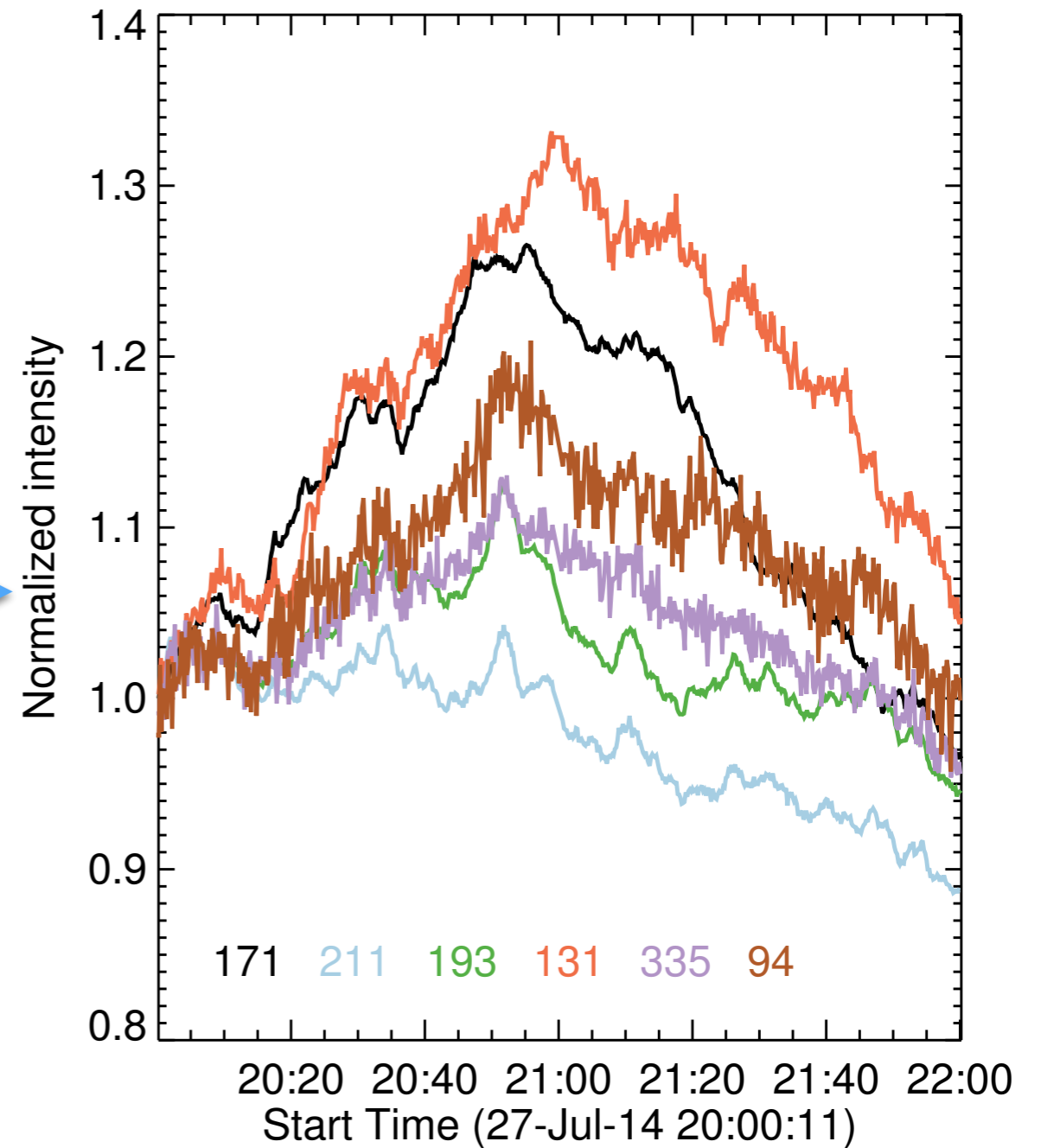
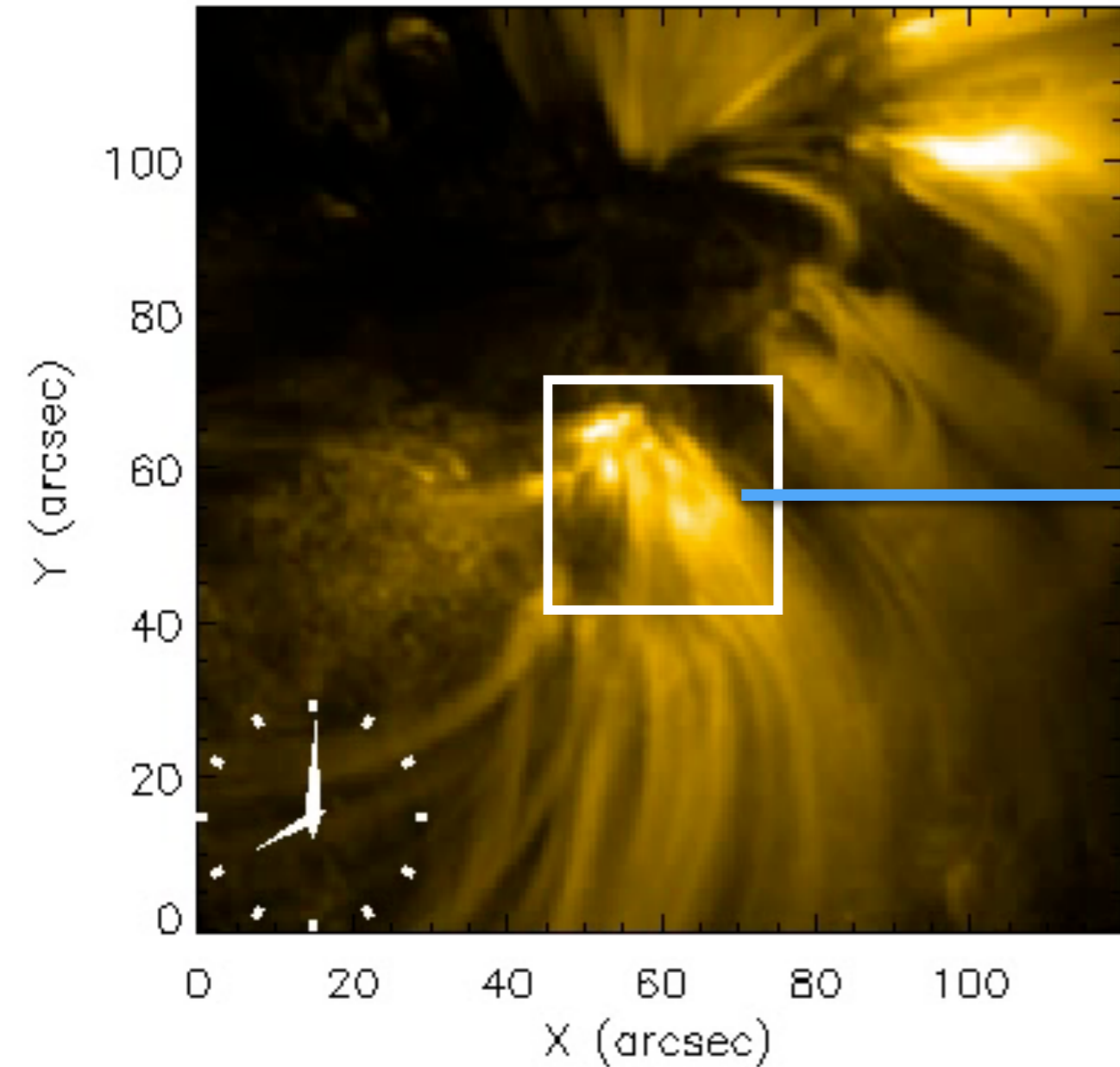


Potential reconnection site in the lower atmosphere

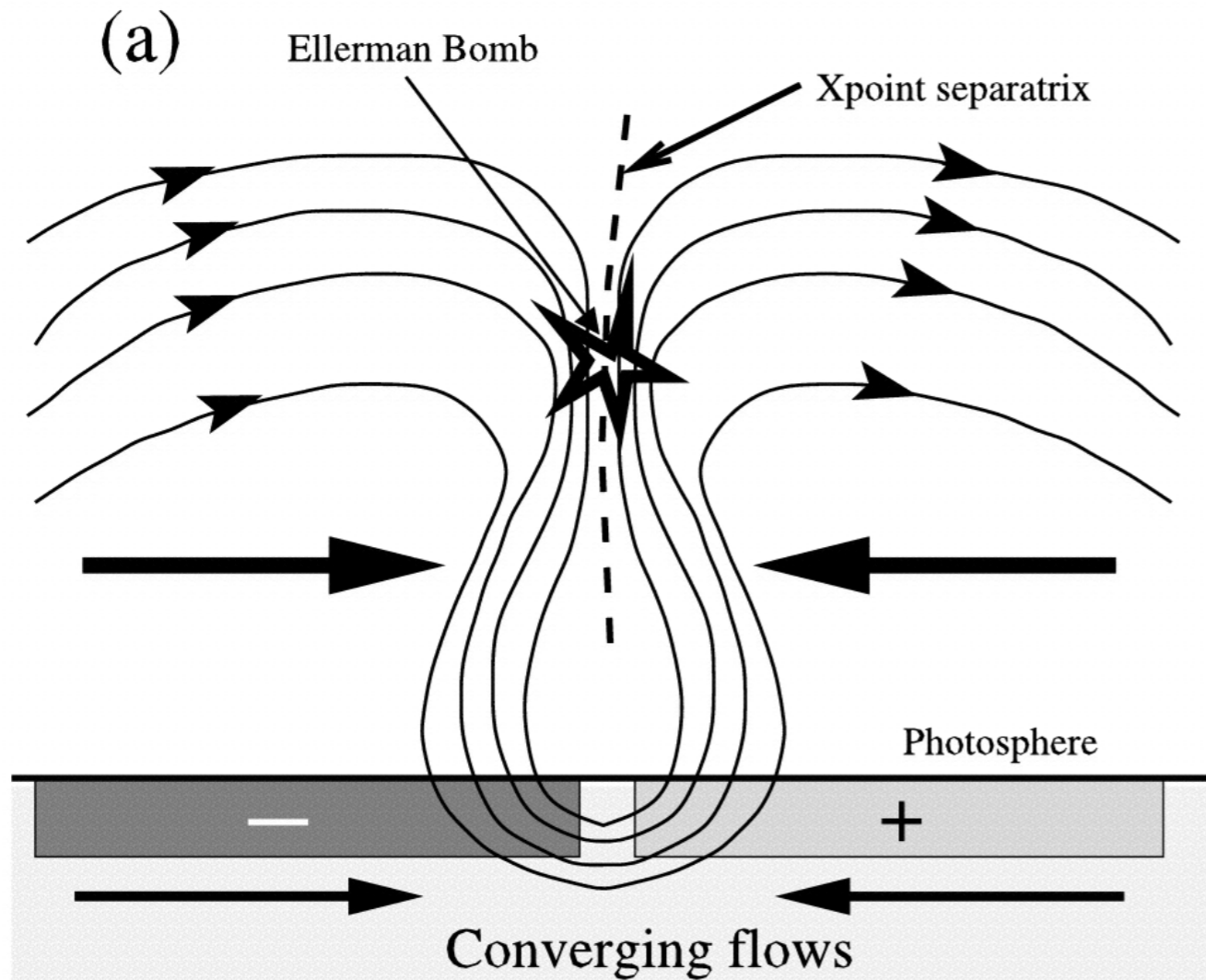


# Coronal signatures?

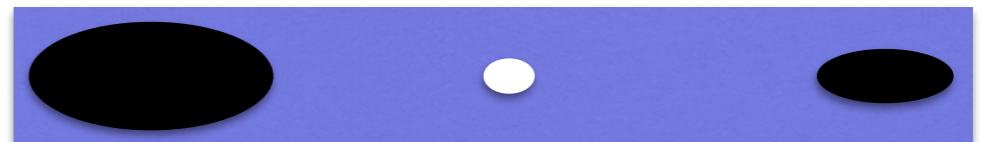
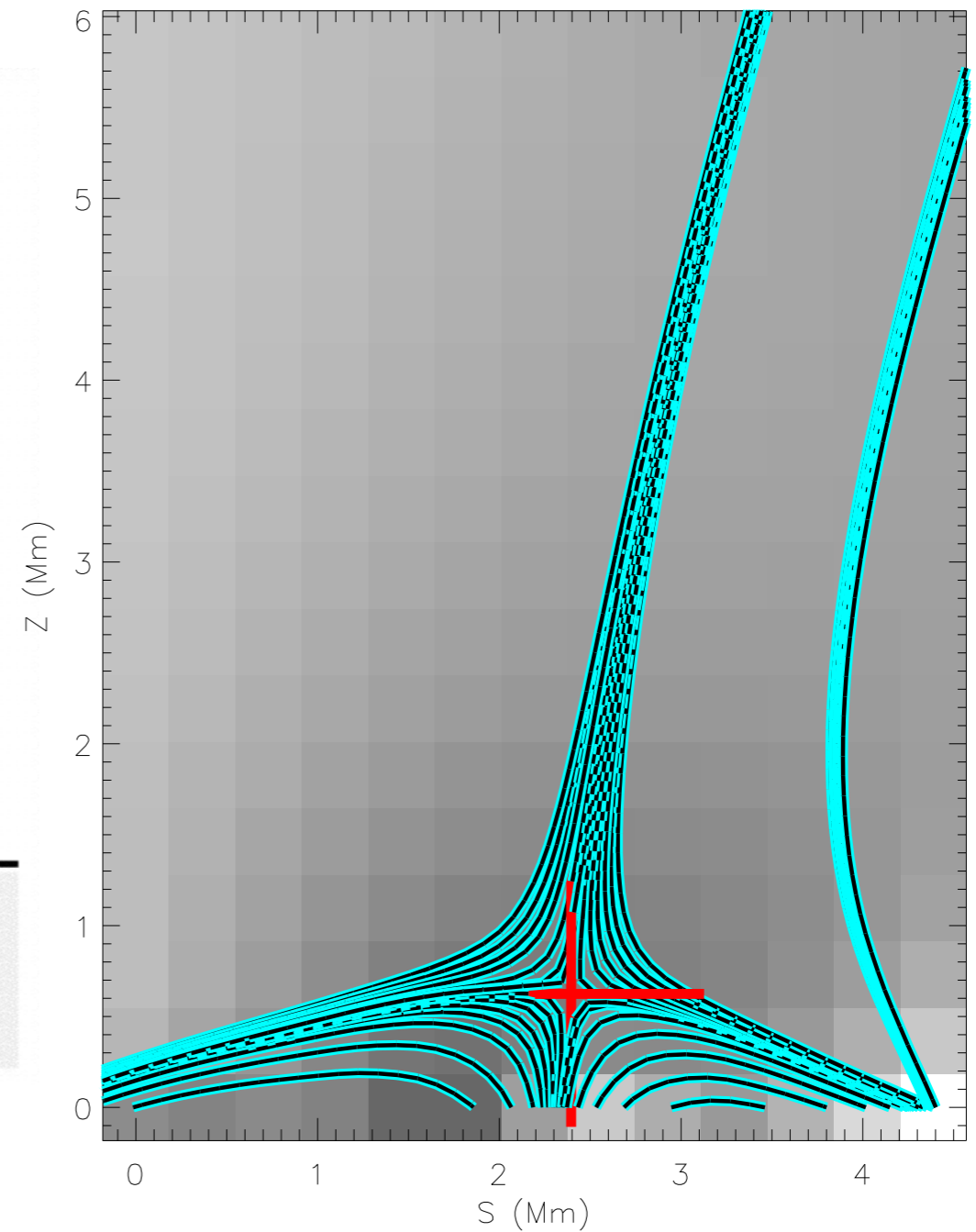
SDO AIA 171 Å



# Plasma response to magnetic geometry?



Georgoulis et al. (2002)



# Summary

- **Reconnection in the solar lower atmosphere with fan-spine geometry**
- **Coherent but spatially decoupled plasma up- and downflows**
- **Possible evidence for coronal response due to favourable magnetic topology**

# Questions

- **The onset of reconnection and the role of neutrals**
- **Plasma response to different magnetic geometries**
- **Bi-directional jets vs. other scenarios to explain the observed red and blueshifts**

**Thank you**