

A Solar Flare Observed by Fast Imaging Solar Spectrograph (FISS)

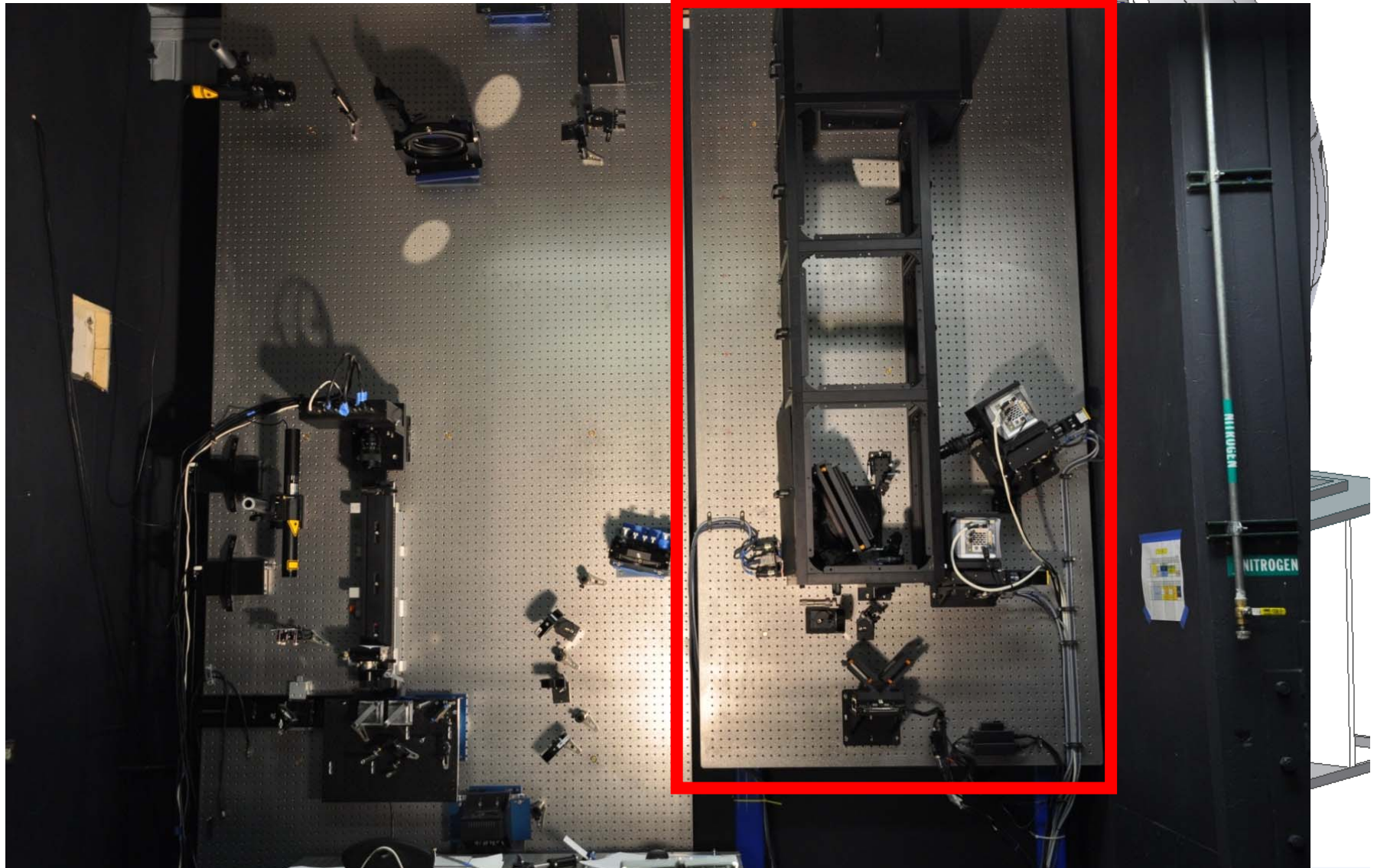
Hyungmin Park

Seoul National University, Korea

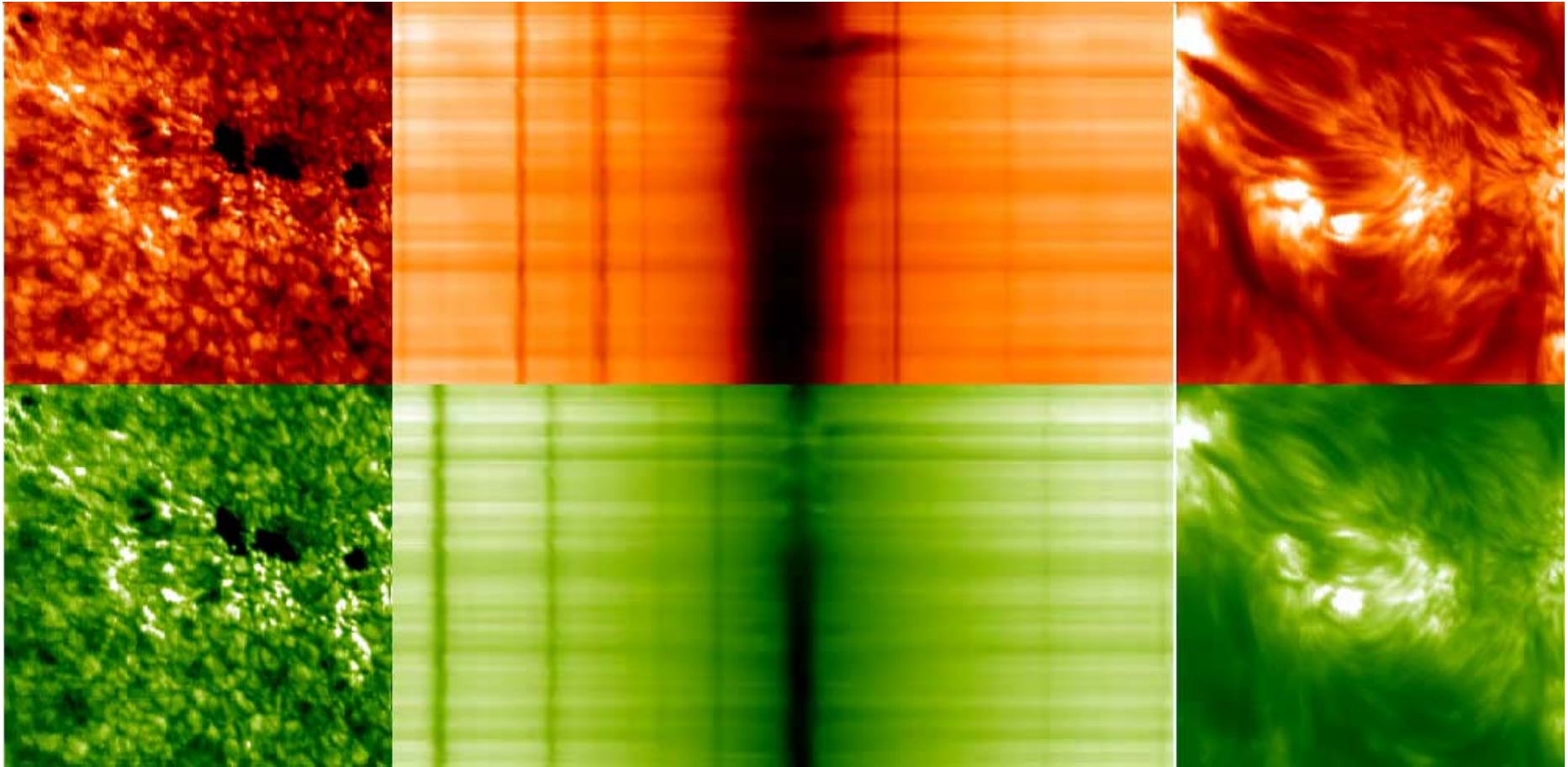
Contents

- Instruments
- Observation
- Data Analysis
- Conclusion

NST/FISS



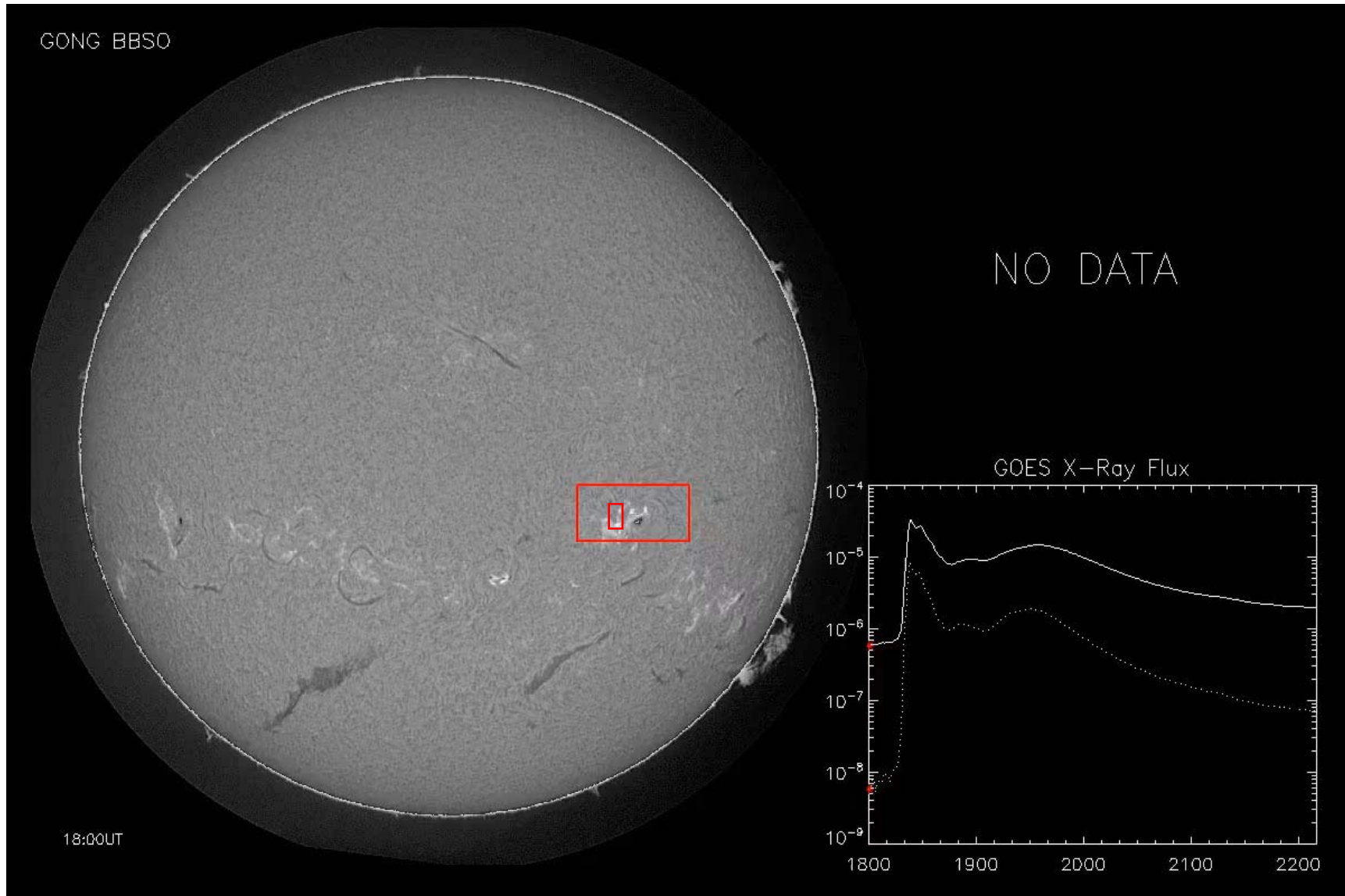
Imaging Spectroscopy using Slit-Scanning

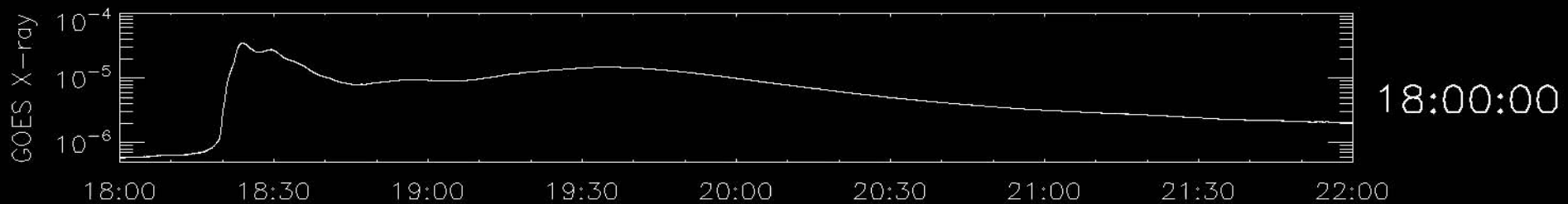
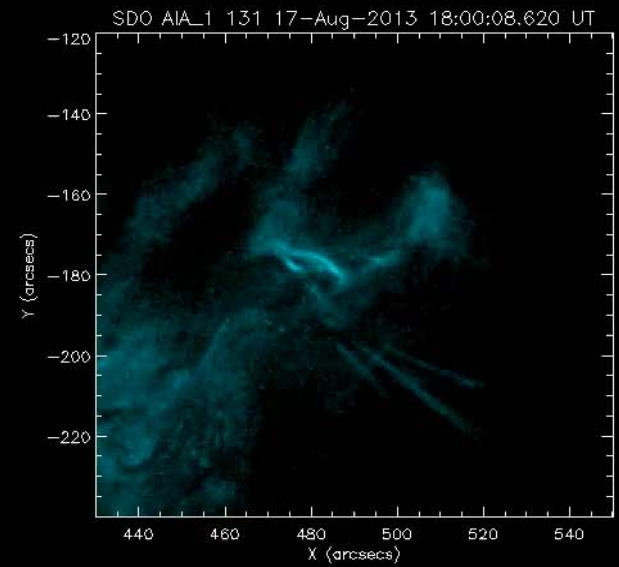
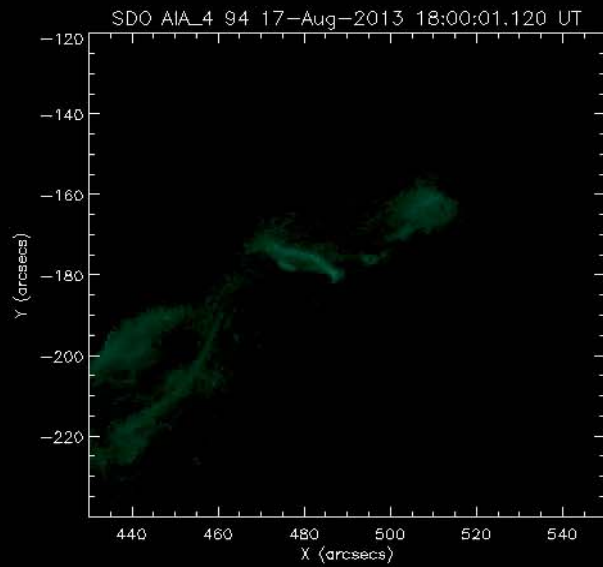
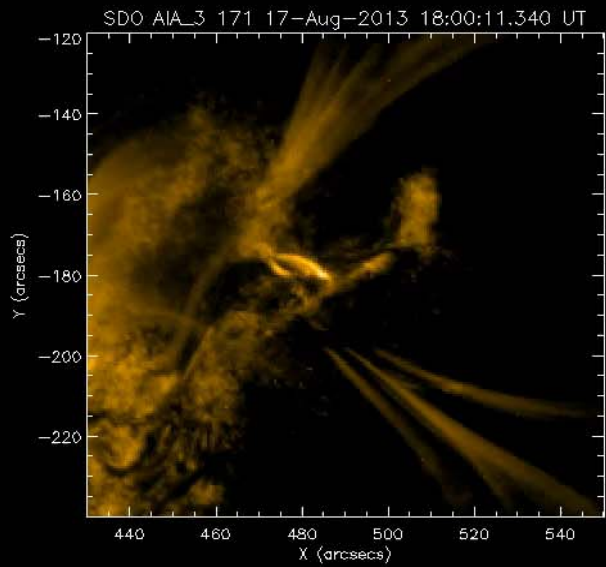
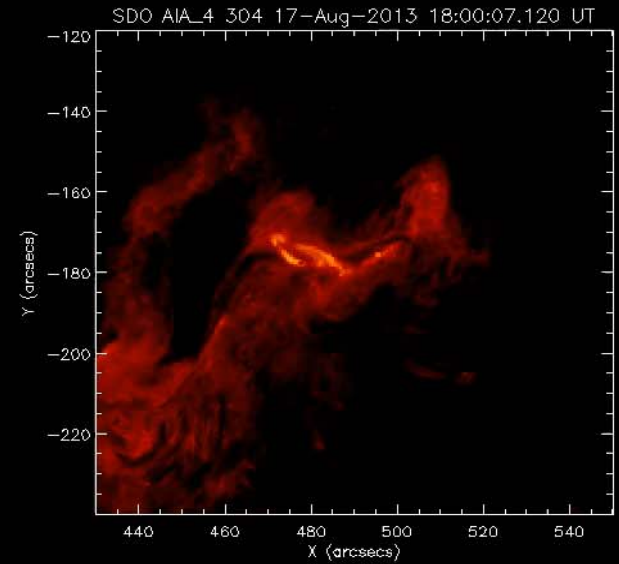
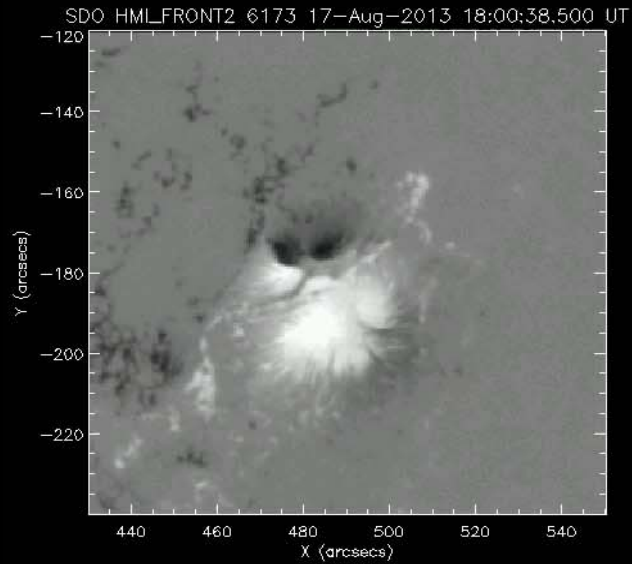


Observation

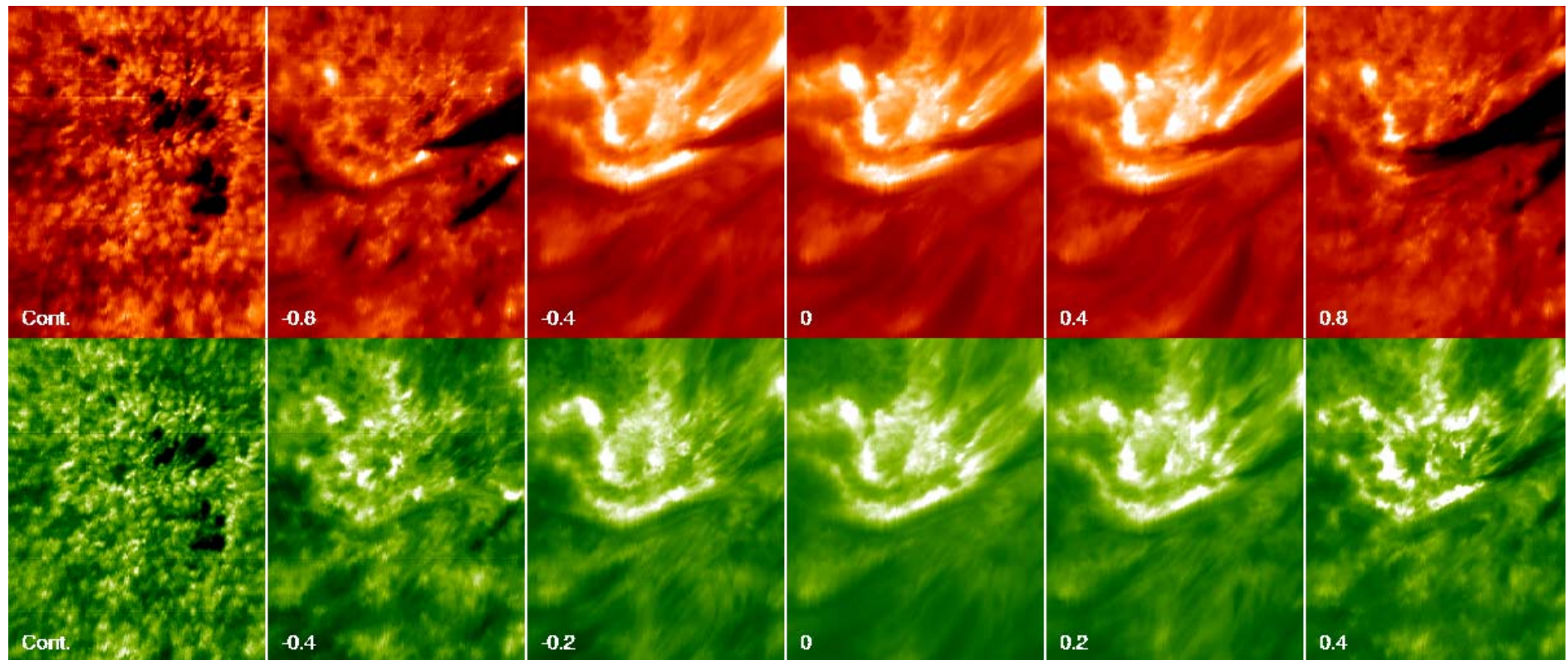
- Sep. 17, 2013
- AR11818 (678",-192")
- 18:00-22:00
- M3.3(18:16), M1.4(18:49)
- NST
 - Filtergram (TiO, He10830)
 - Speckle Reconstruction
- FISS
 - FOV: 20.8"x40"
 - Time Cadence: 18-19 Sec
- Coordinate Observation with Hinode

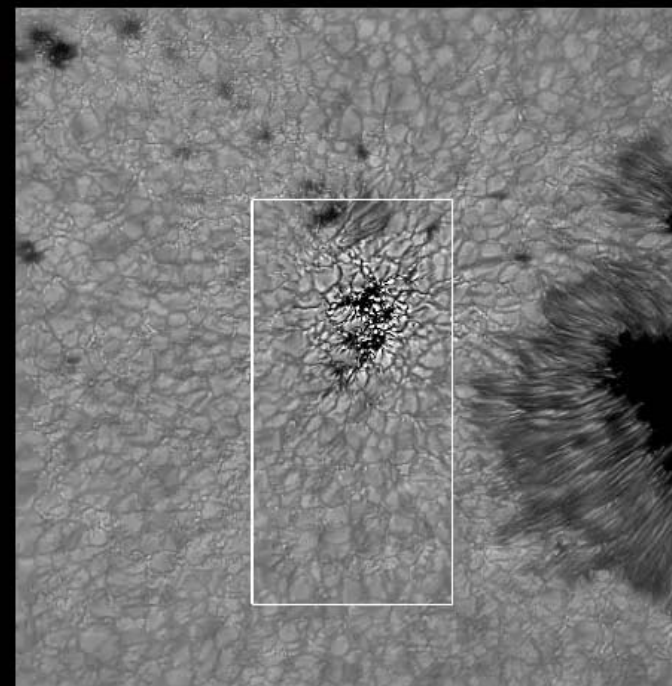
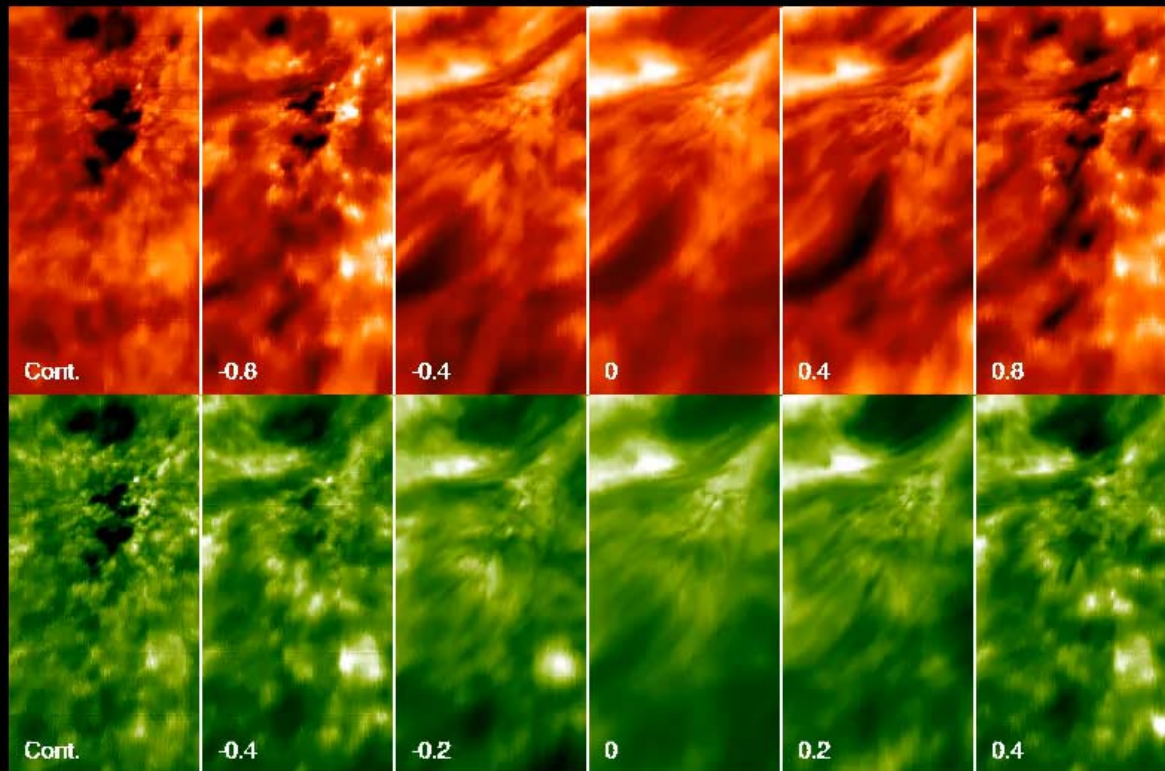
GONG, Hinode SOT and GOES



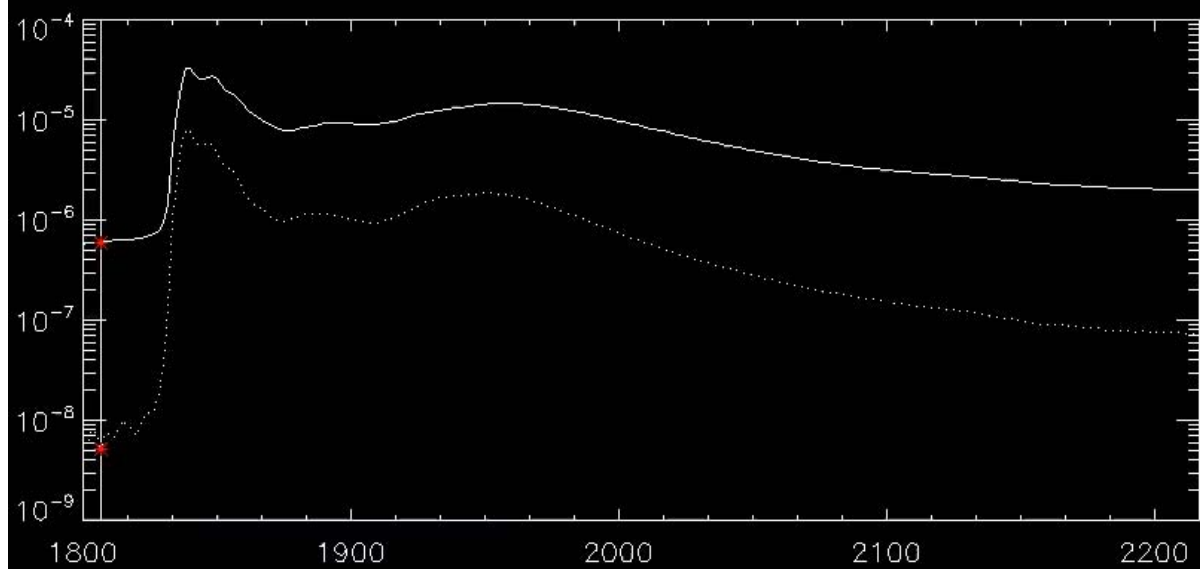


An example of FISS Data



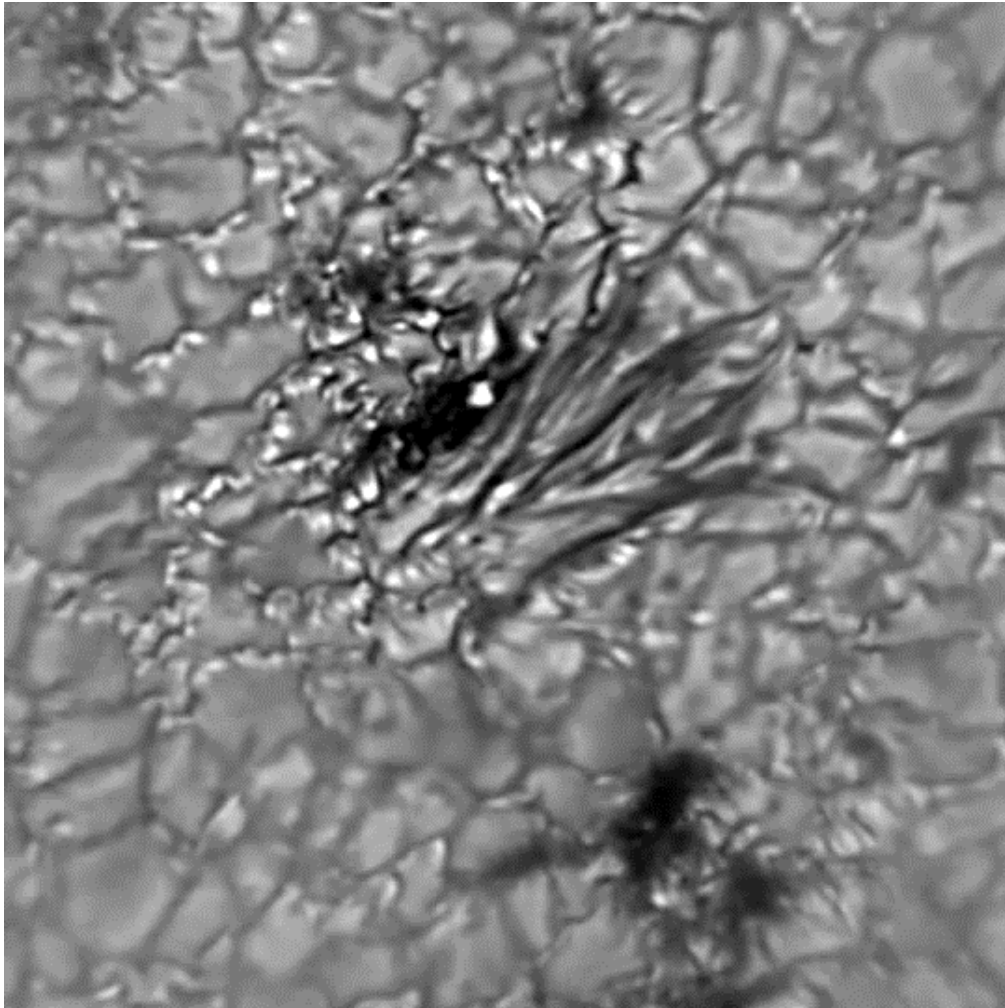


20130817_180444

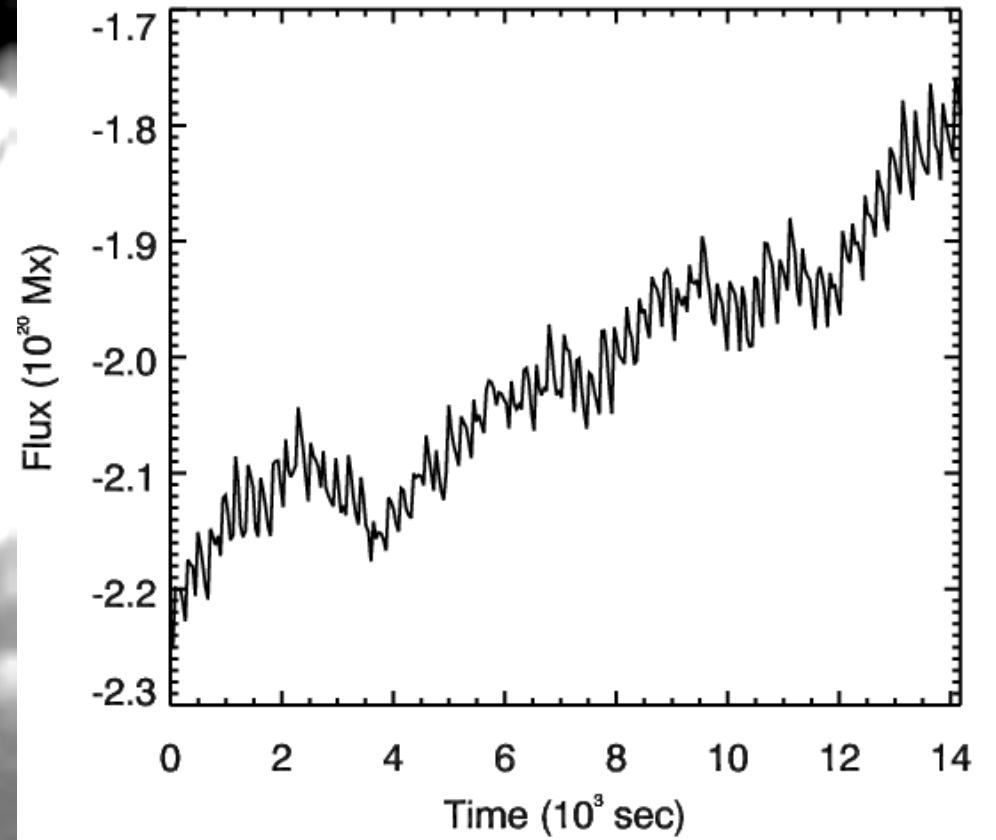
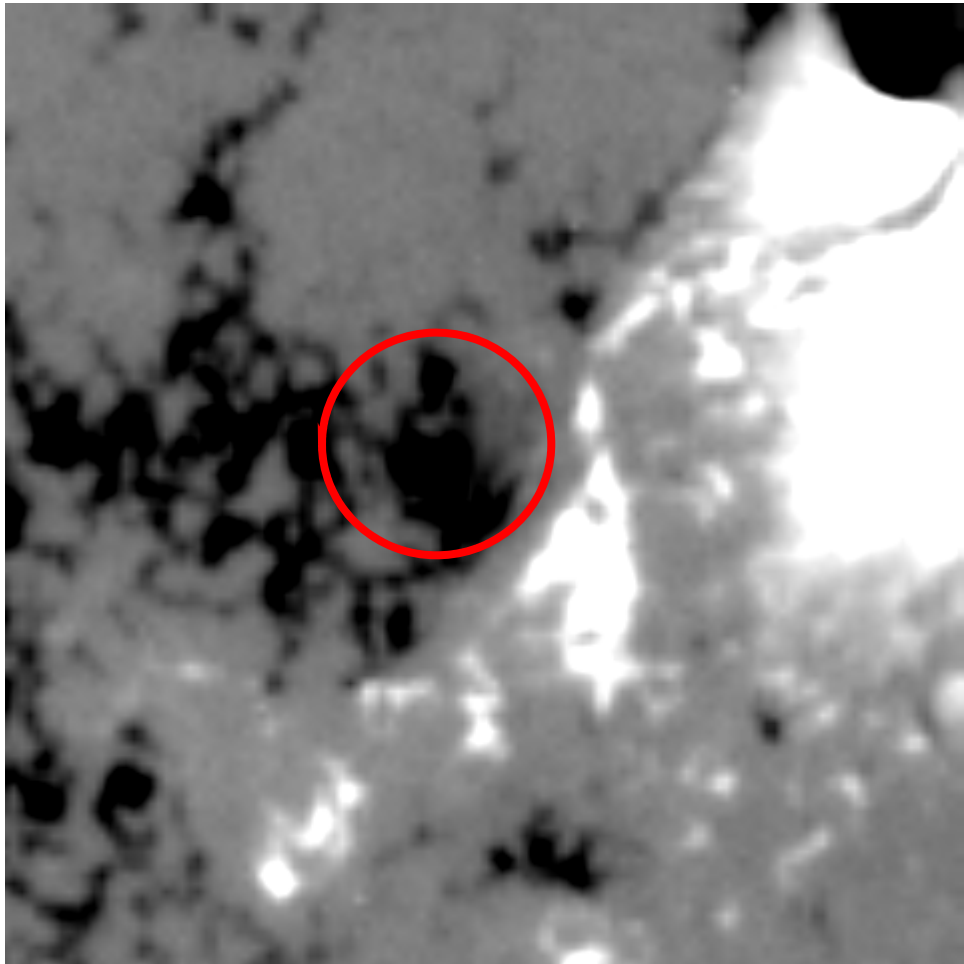


No Data

Photospheric Motion

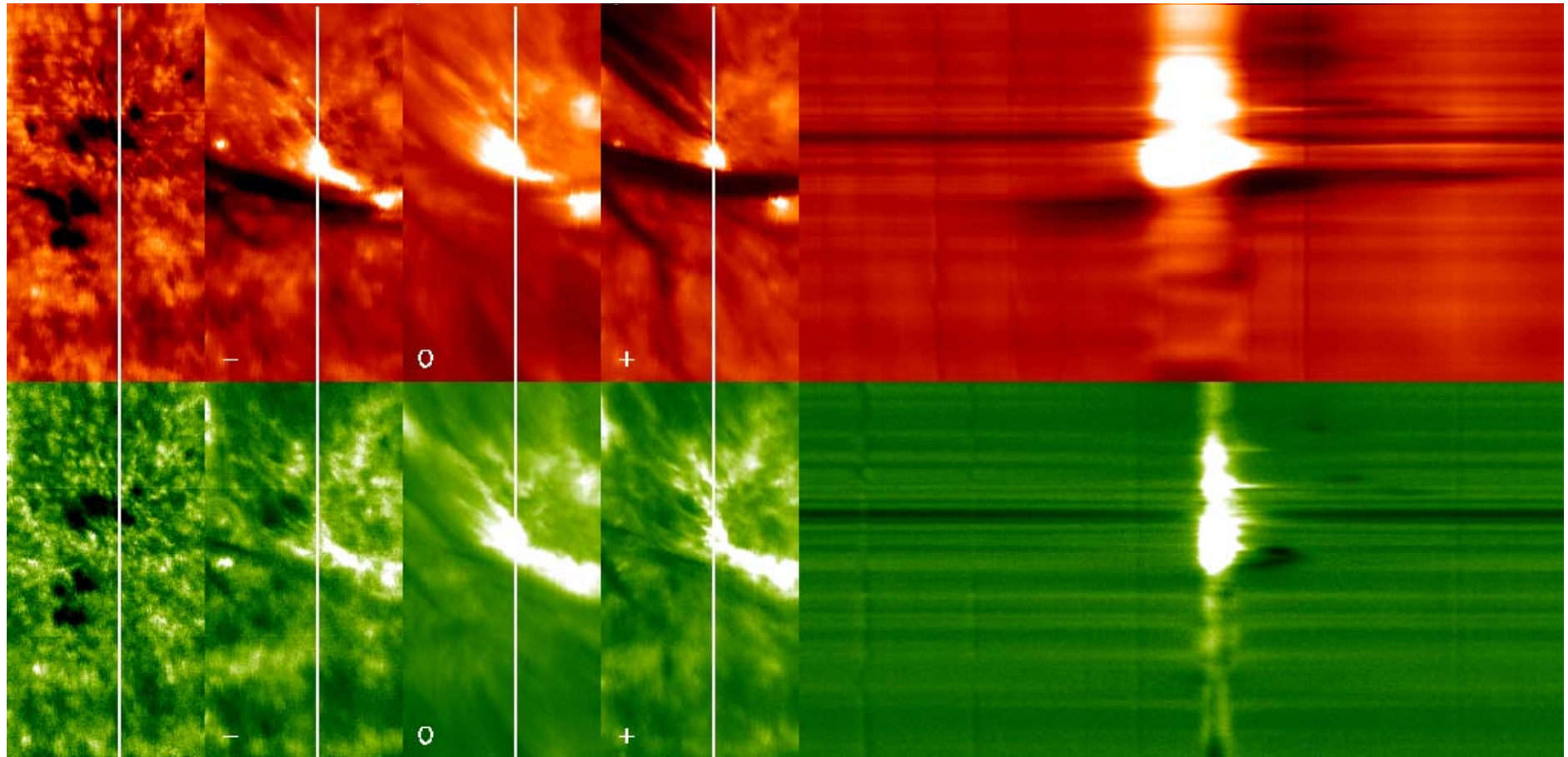


- Anomalous Motion :
Filament? Penumbra?
- Associate with Flux
Emergence?
 - Measure Magnetic
Flux

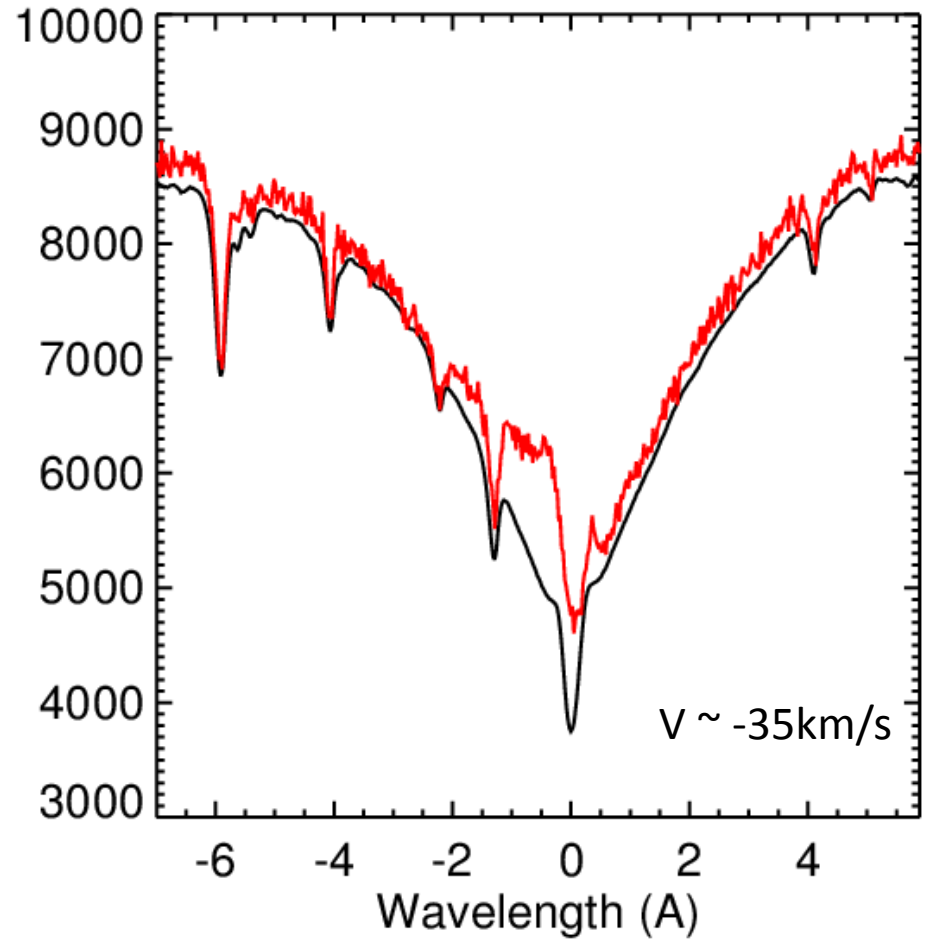
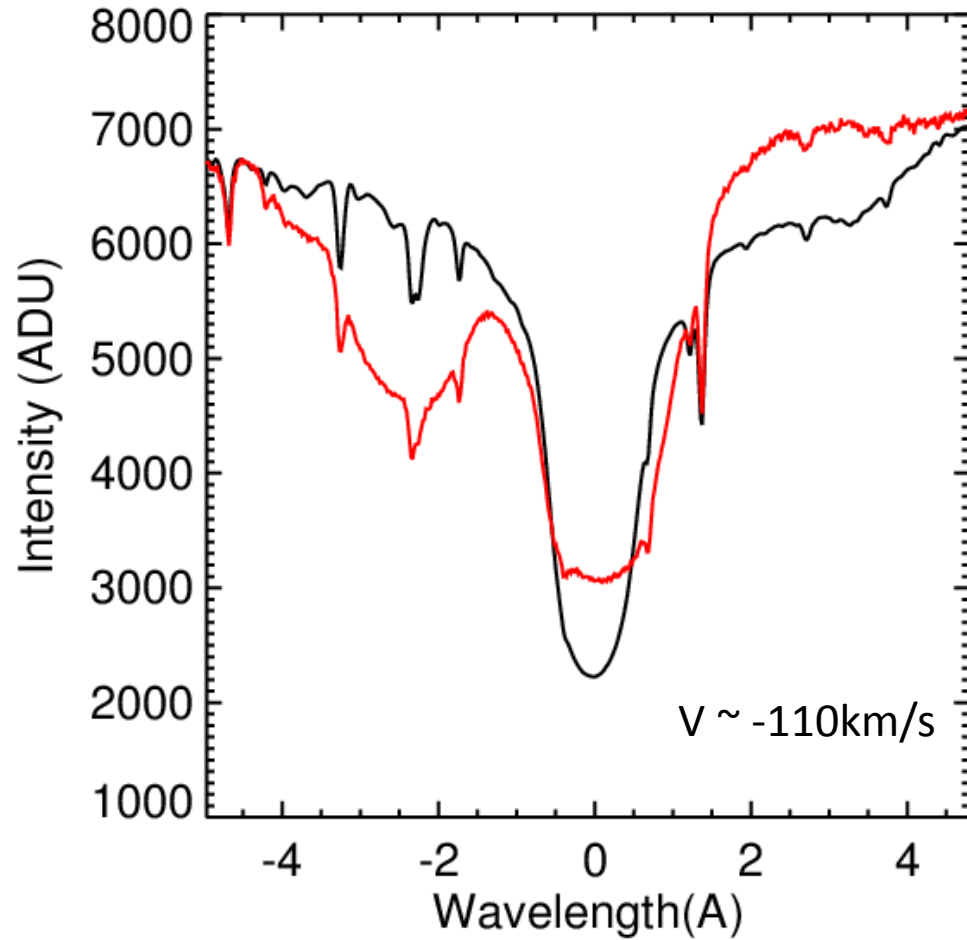


Negative Flux Decreases!

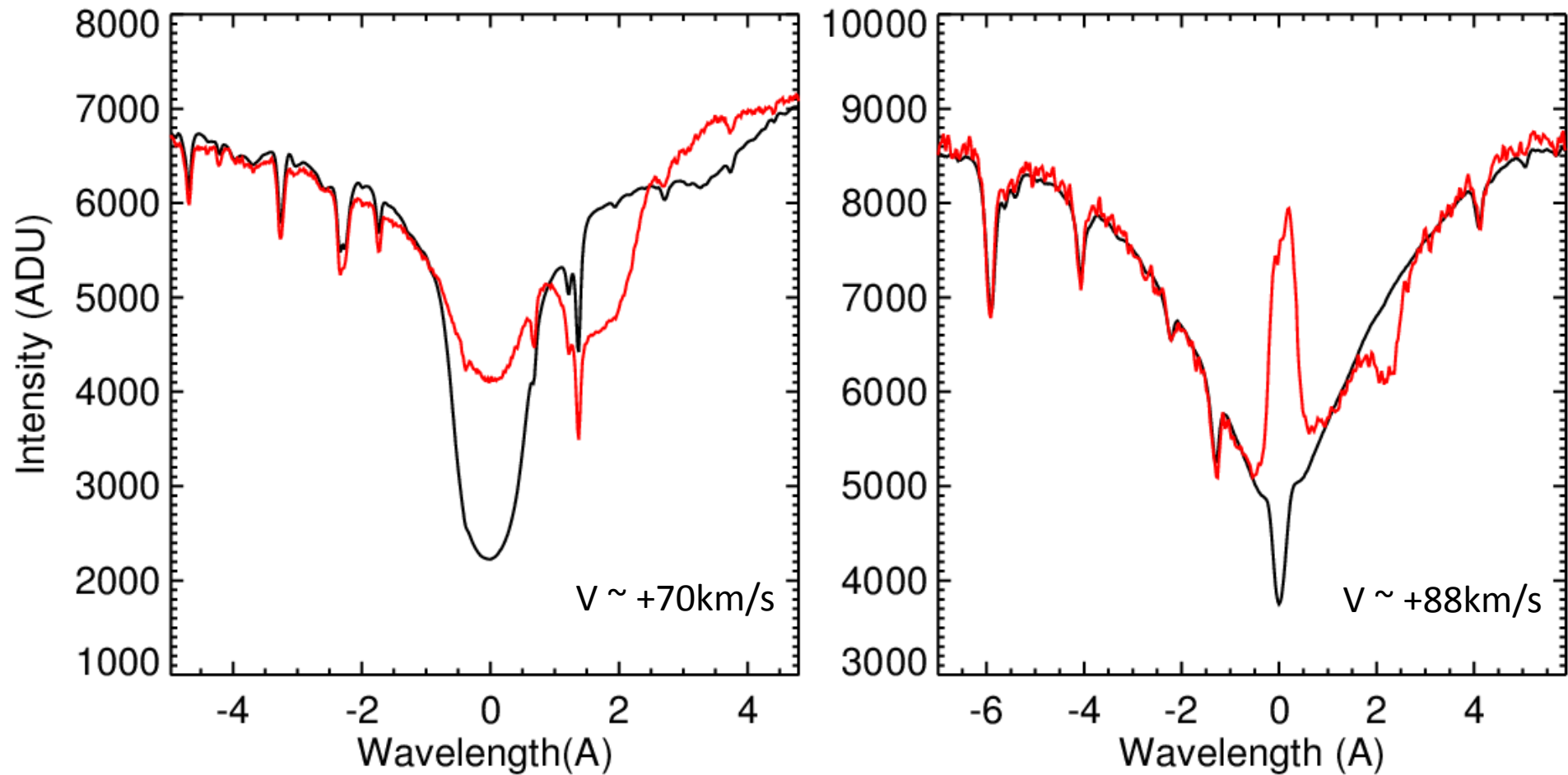
Asymmetry in Ha and CaII (1)



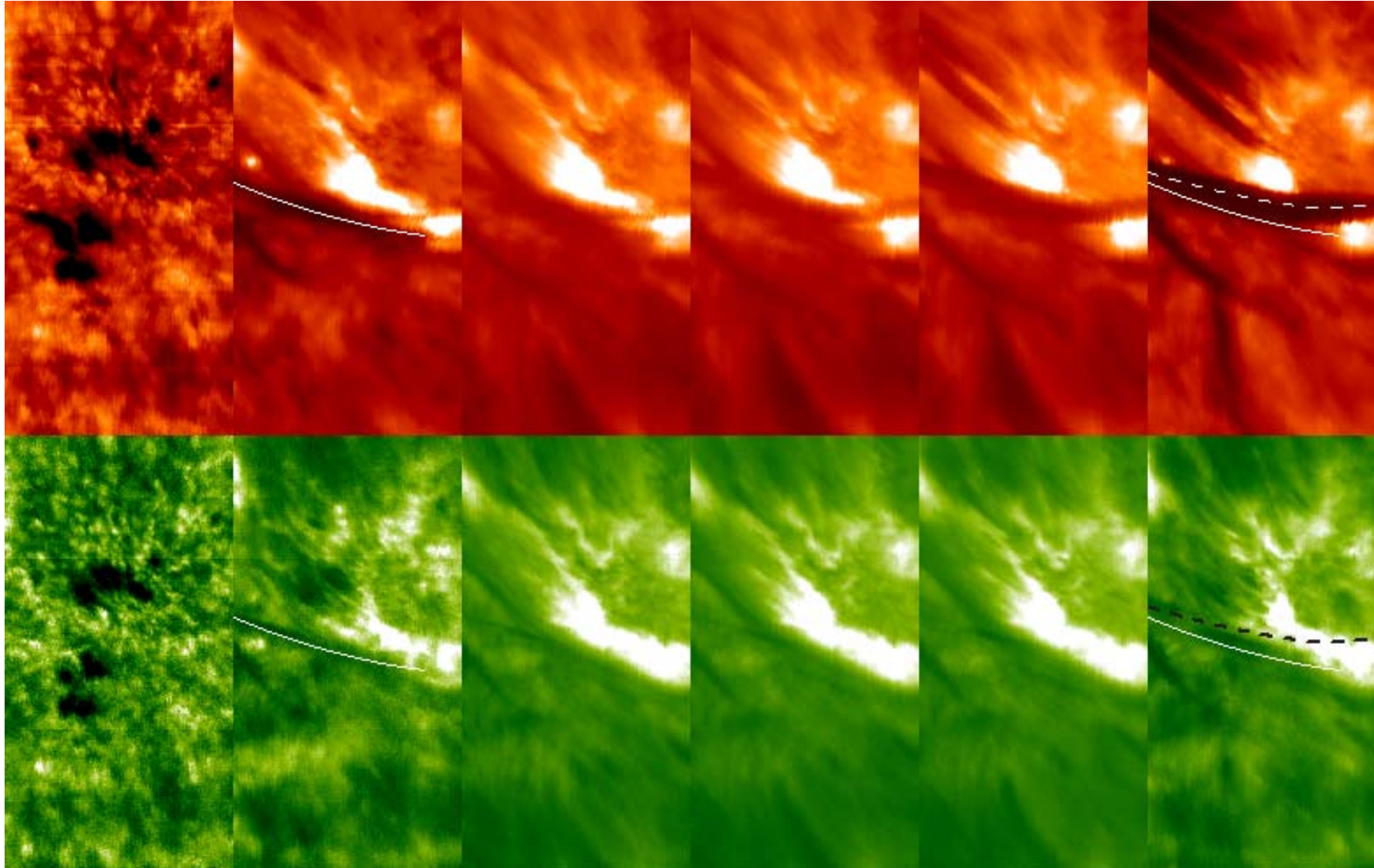
Asymmetry in H α and CaII (2)



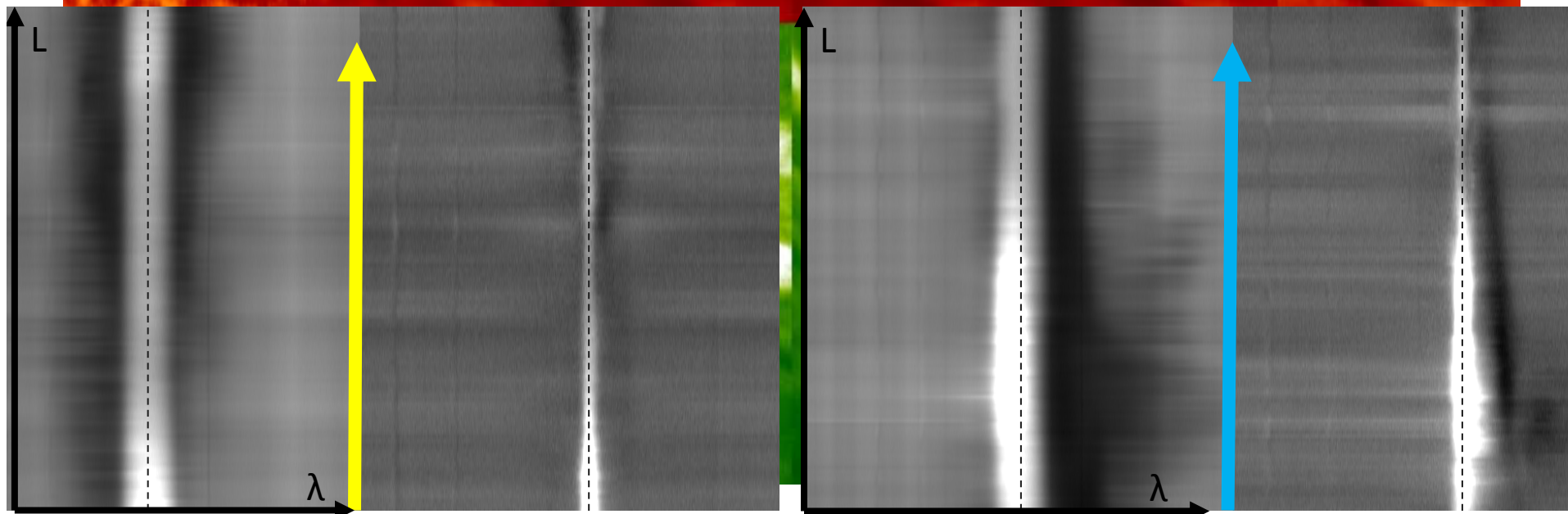
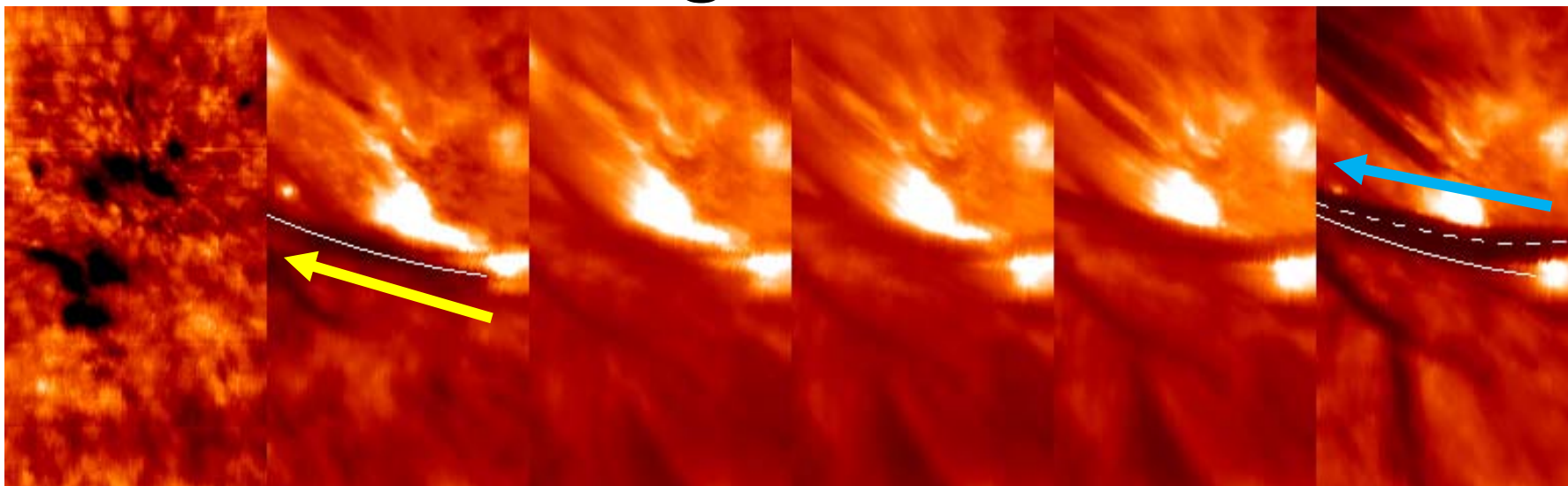
Asymmetry in H α and CaII (3)



Velocities along mass flow



Velocities along mass flow



Conclusion

- We observed the M-class flare on Aug. 17, 2013 with FISS(and other instruments)
- Horizontal and up/downward flow are seen
- Anomalous motion is seen in the photosphere and the flux decreases at the region
- We also find the asymmetry in both spectrum and the Doppler velocity is so fast
- Any comments and suggestions are welcome!