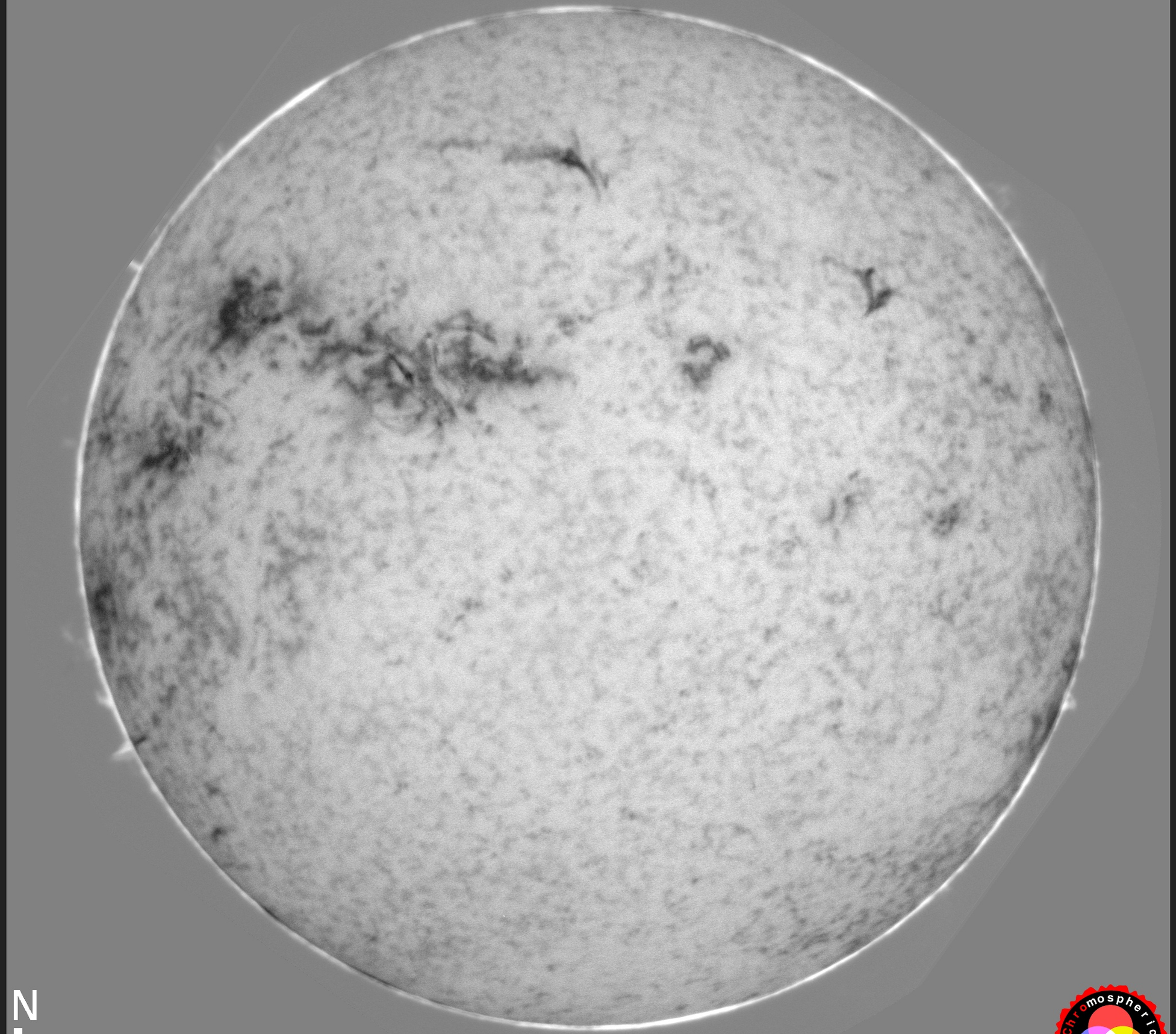
A. ASENSIO RAMOS

HE I MULTIPLETS: DIAGNOSTIC POTENTIAL

ChroTel Helium 1083 nm

16 Apr 2015 07:48:20 UTC



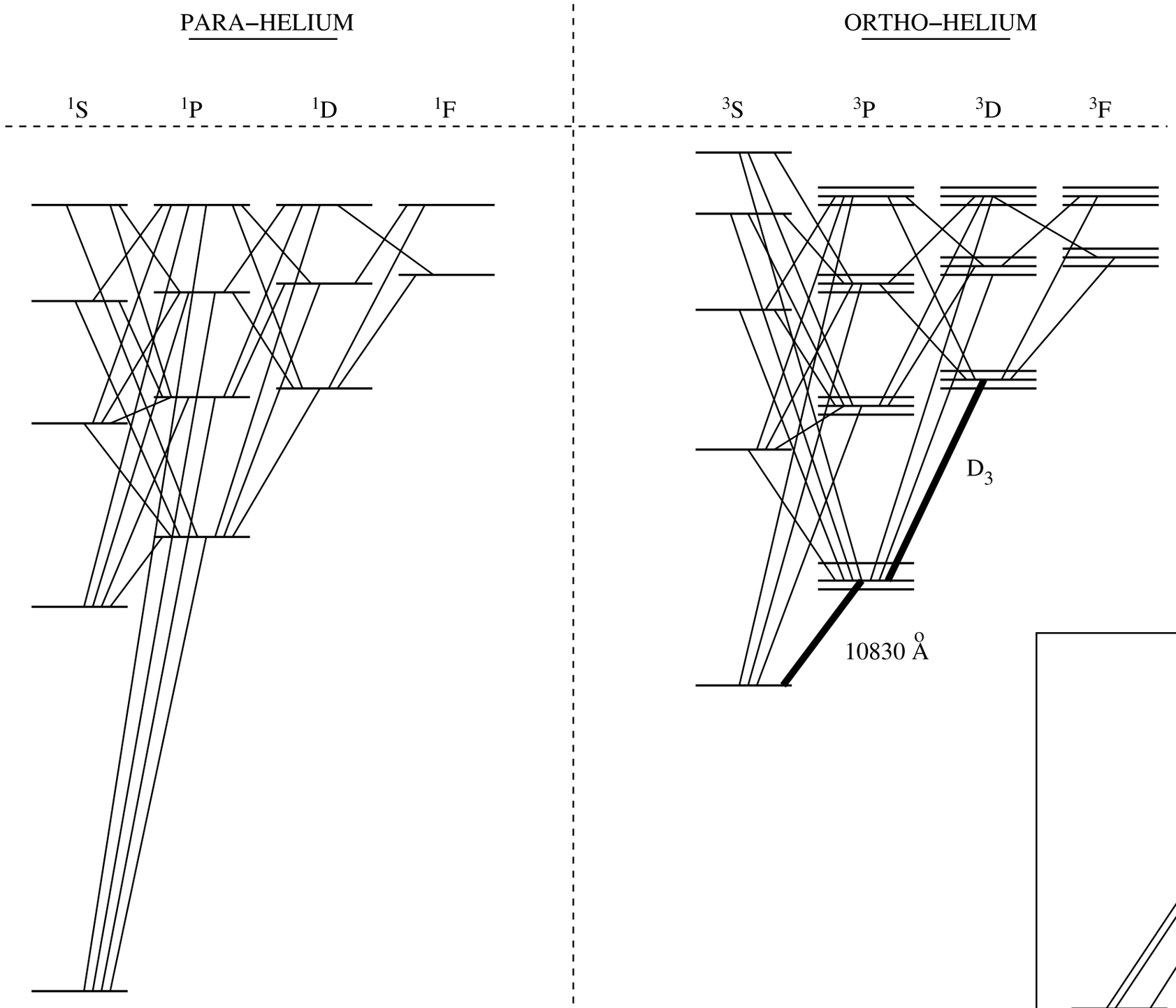
N

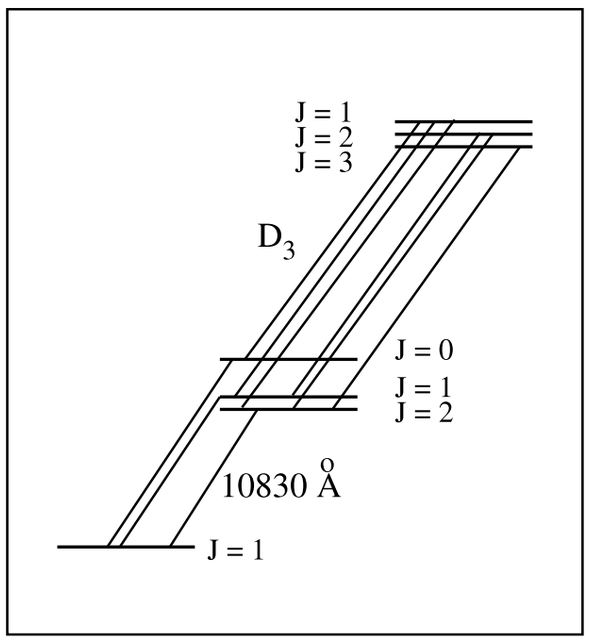
W

Chromospheric telescope

GENERALITIES

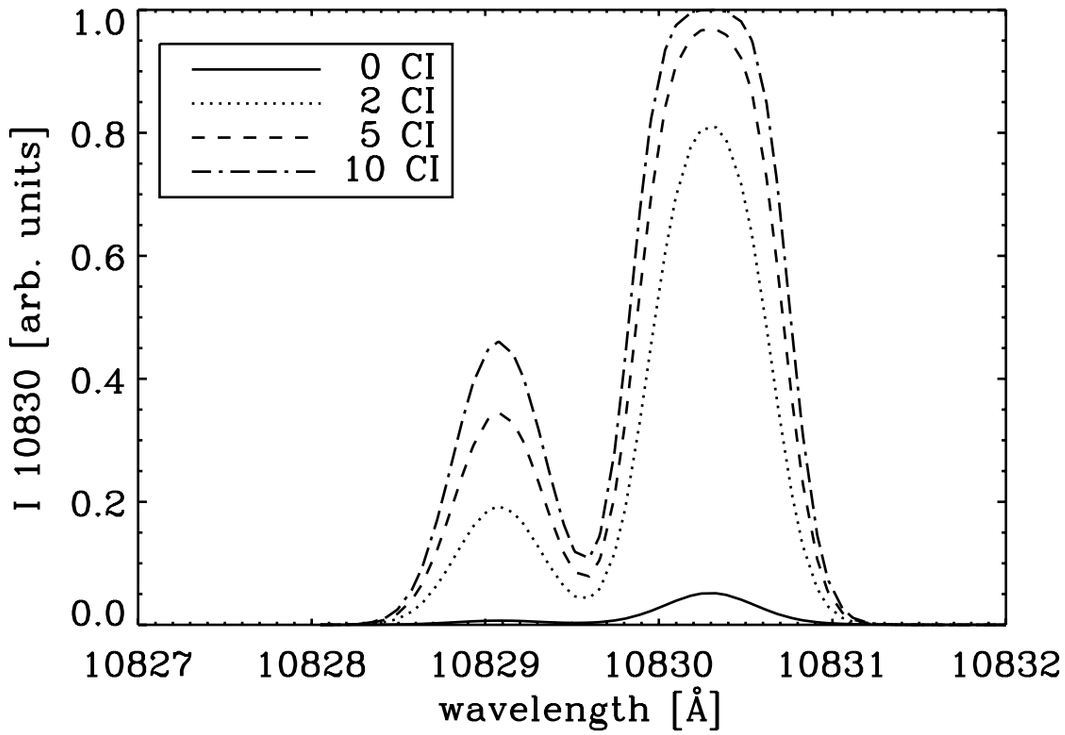
TRIPLET LINES: PHOTOIONIZATION+RECOMBINATION

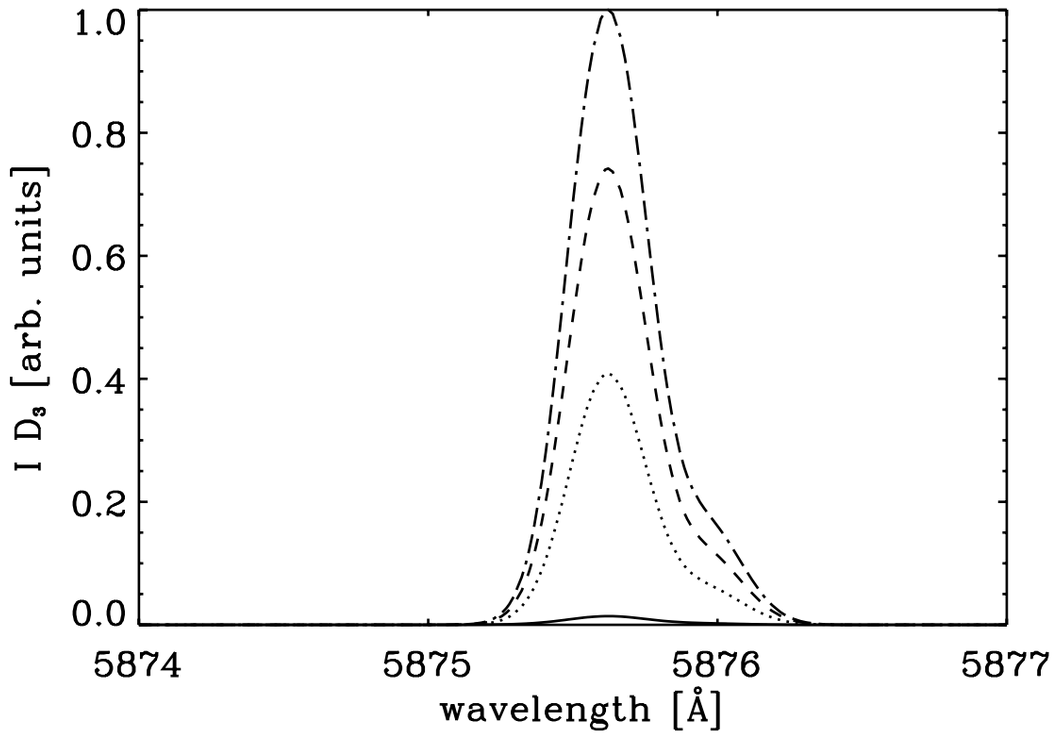


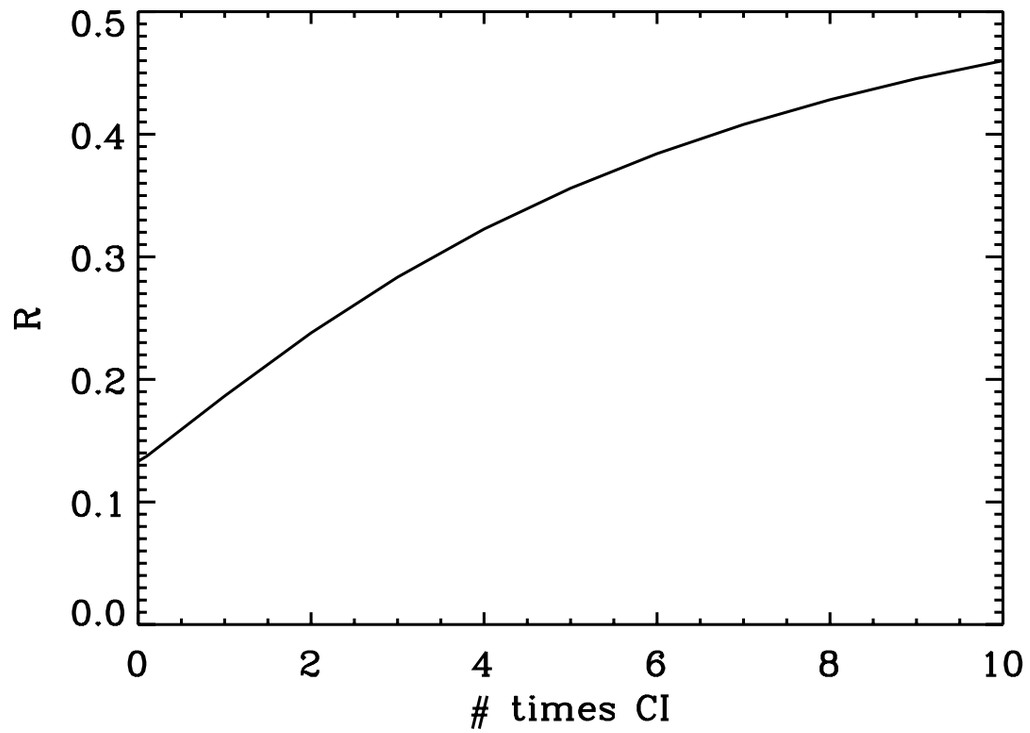


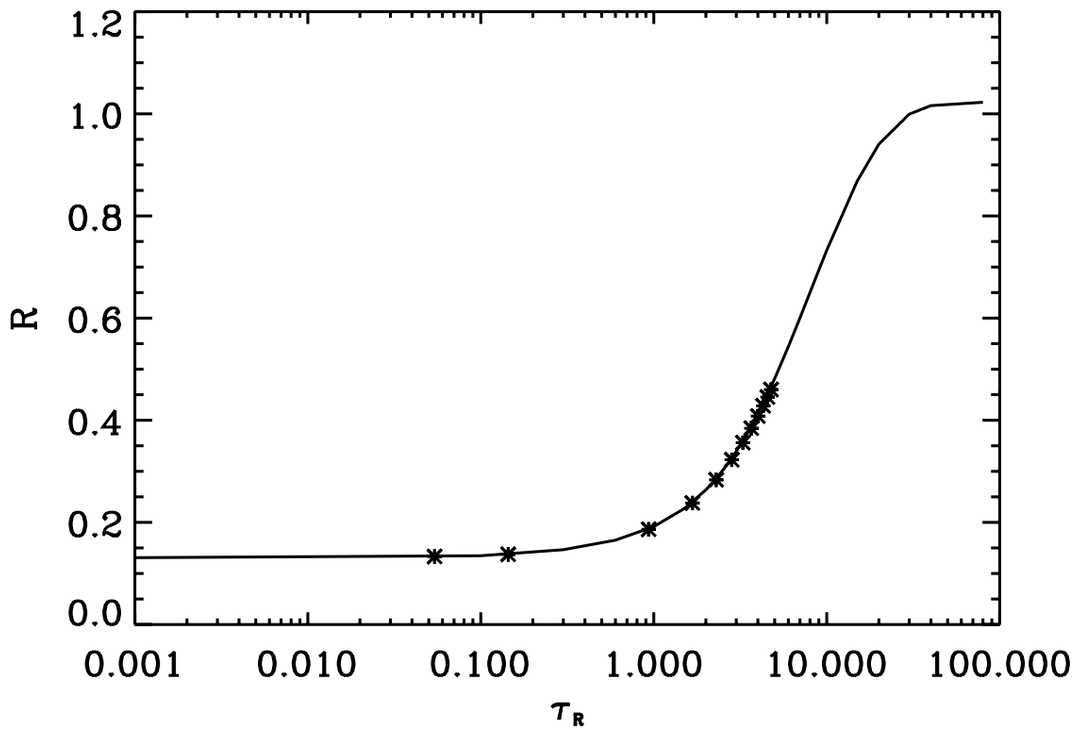
Centeno et al. (2008)

BLUE VS RED IS SENSITIVE TO OPTICAL DEPTH + CORONAL IRRADIATION



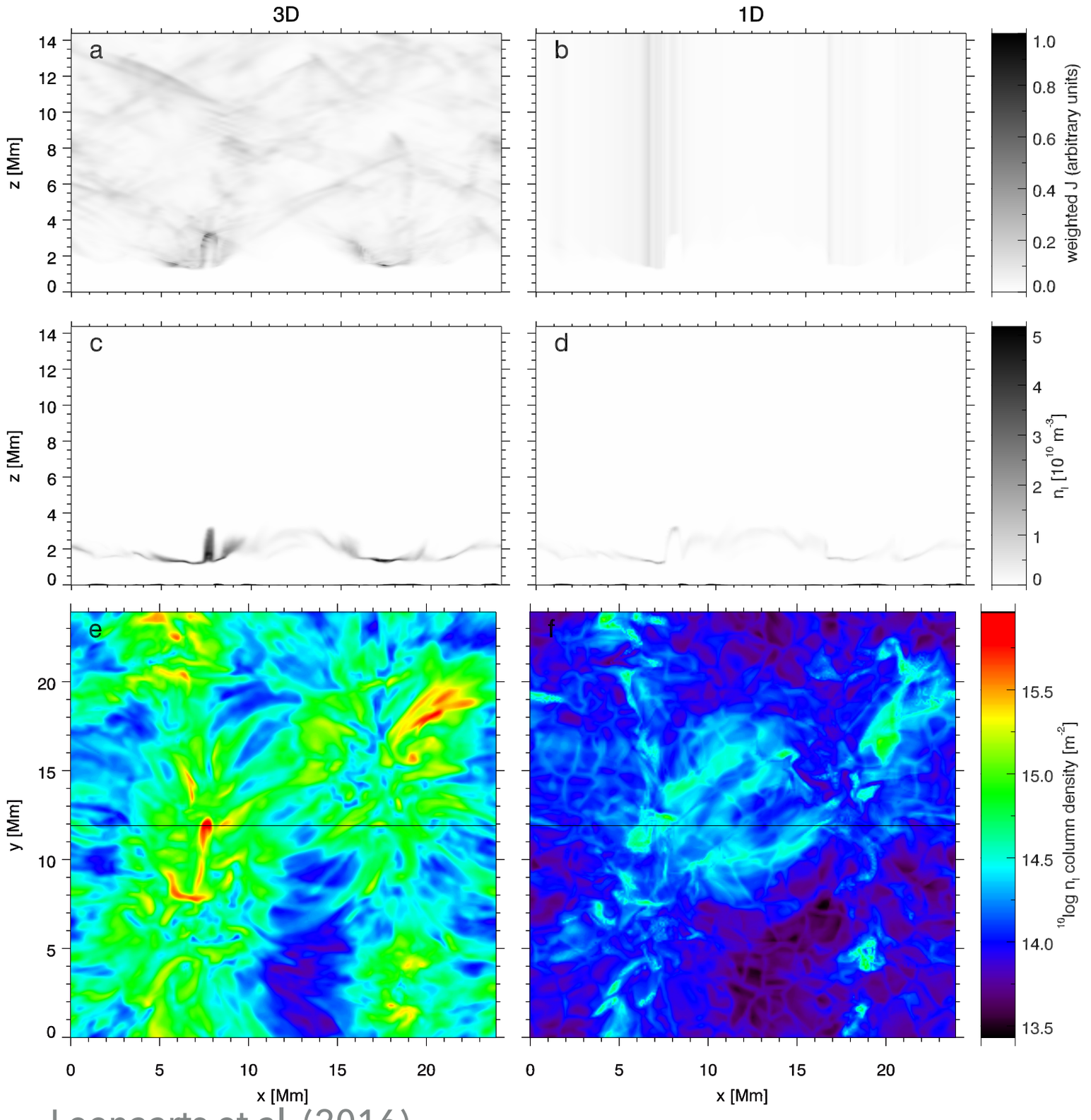


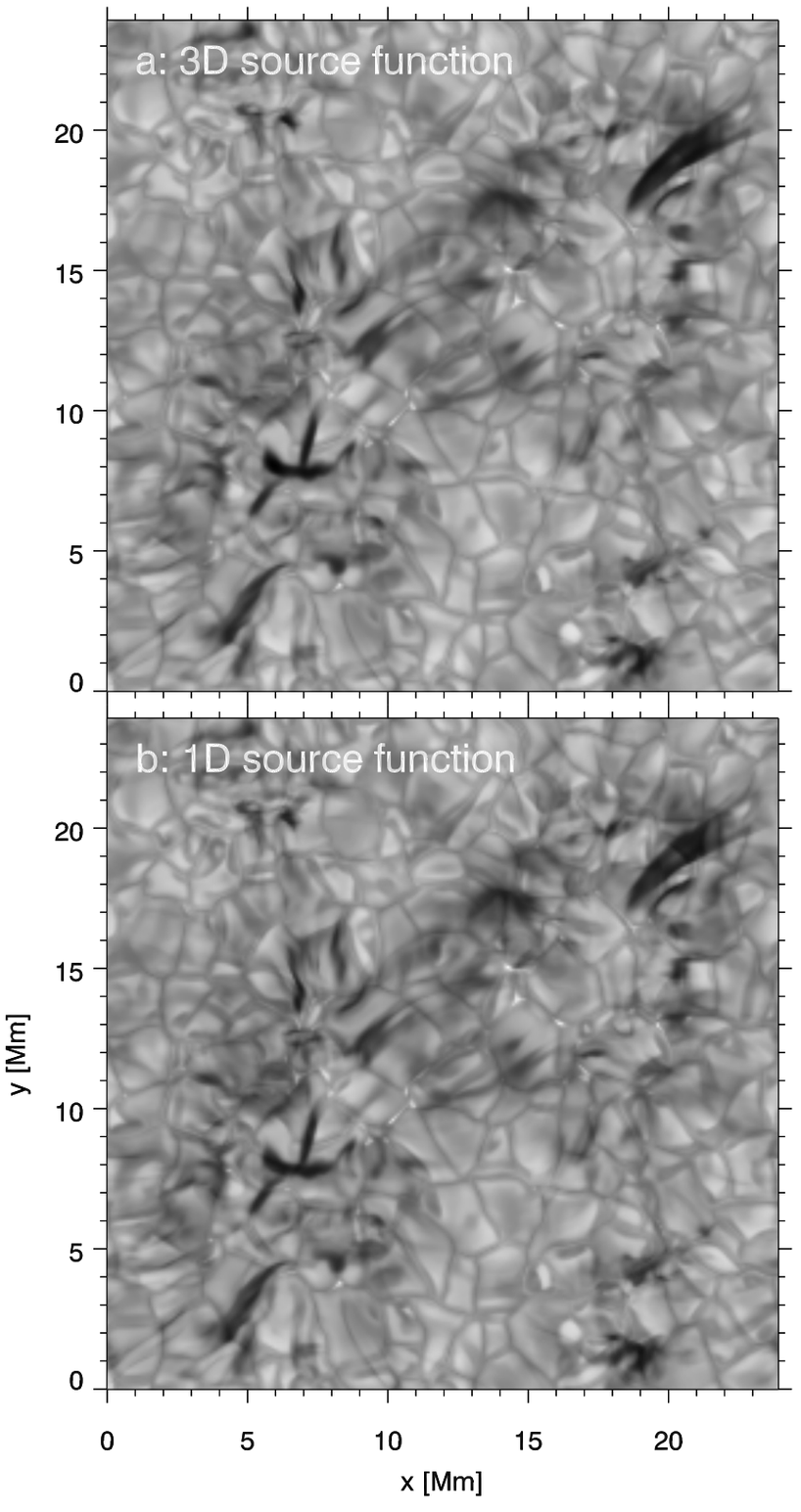




Centeno et al. (2008)

3D EFFECTS





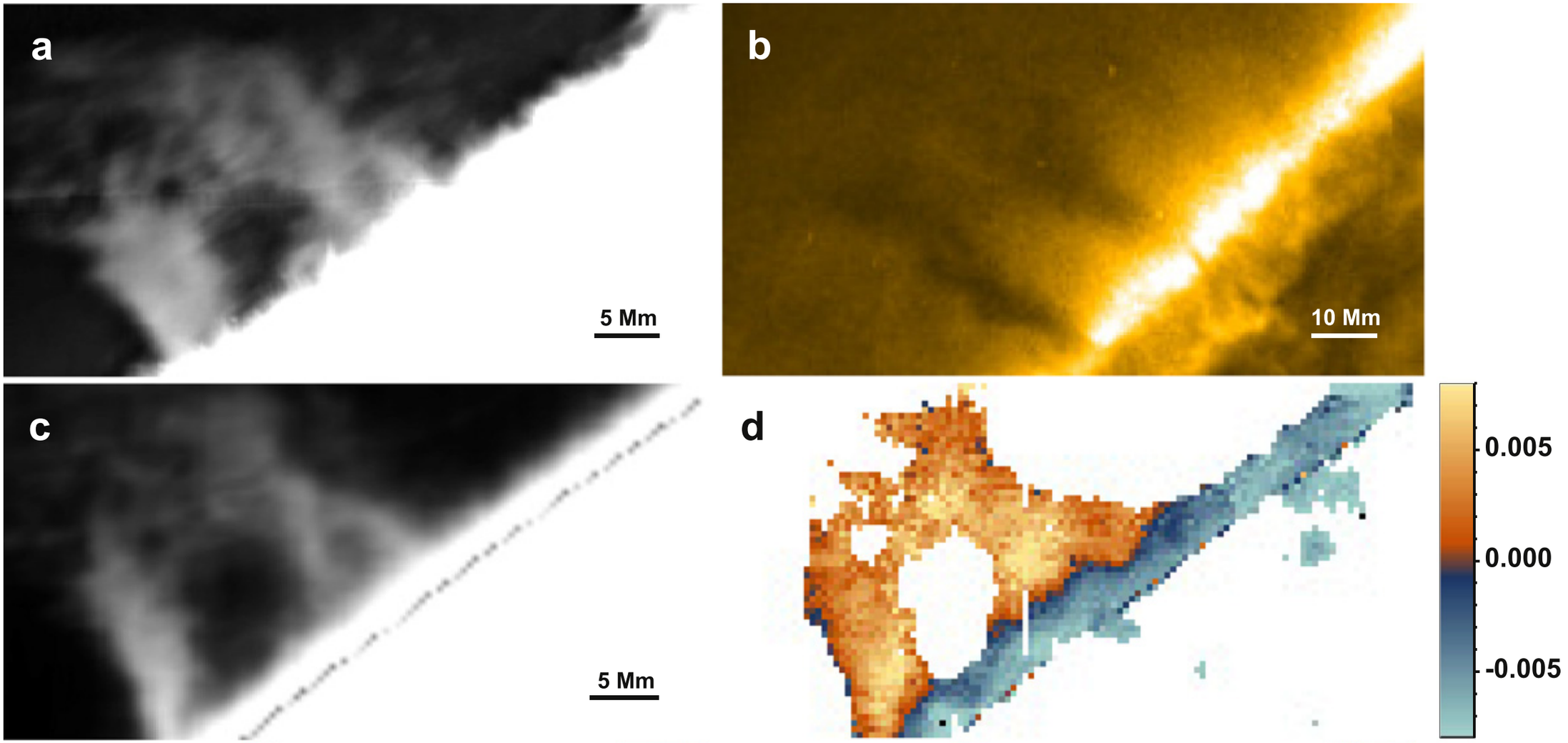
Leenaarts et al. (2016)

APPLICATIONS

- PROMINENCES + CORONAL RAIN
- FLARES
- SUNSPOTS
- SPICULES
- EMERGING FLUX REGIONS
- FILAMENTS

PROMINENCES

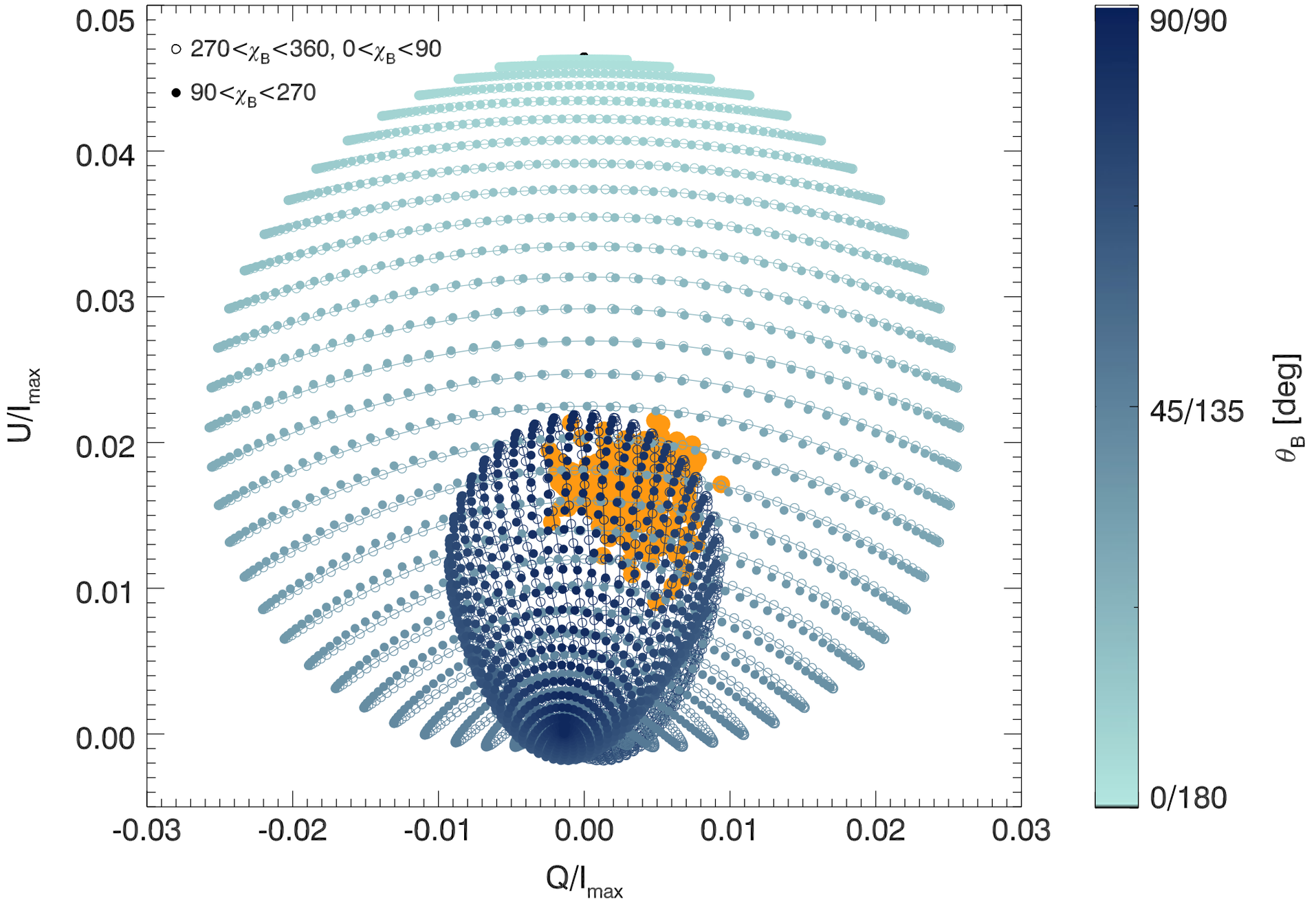
PROMINENCES: DOUBLE-HELIX IN PROMINENCE FEET



Martínez González et al. (2015)

DOUBLE-HELIX IN PROMINENCE FEET

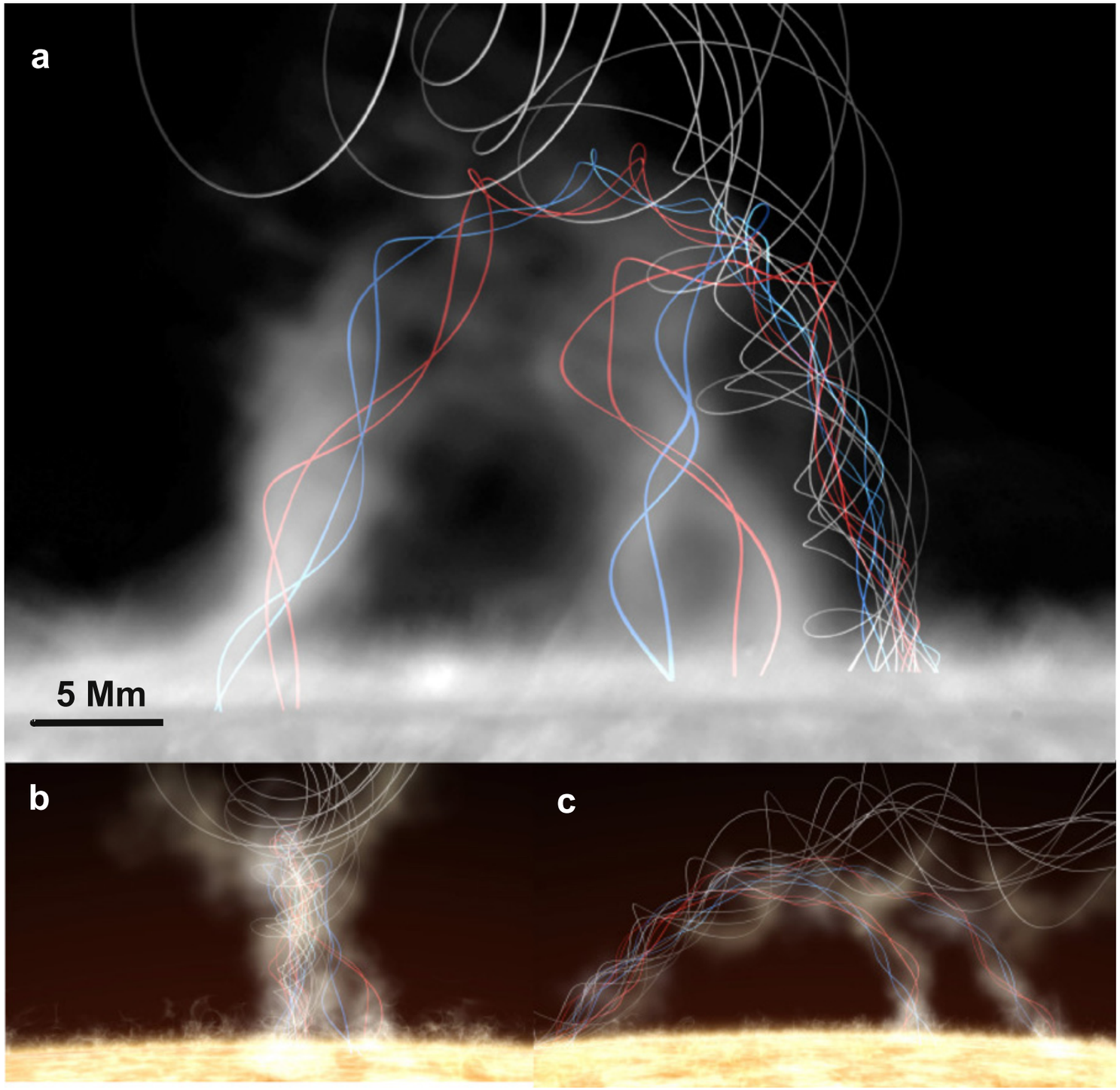
Martínez González et al. (2015)

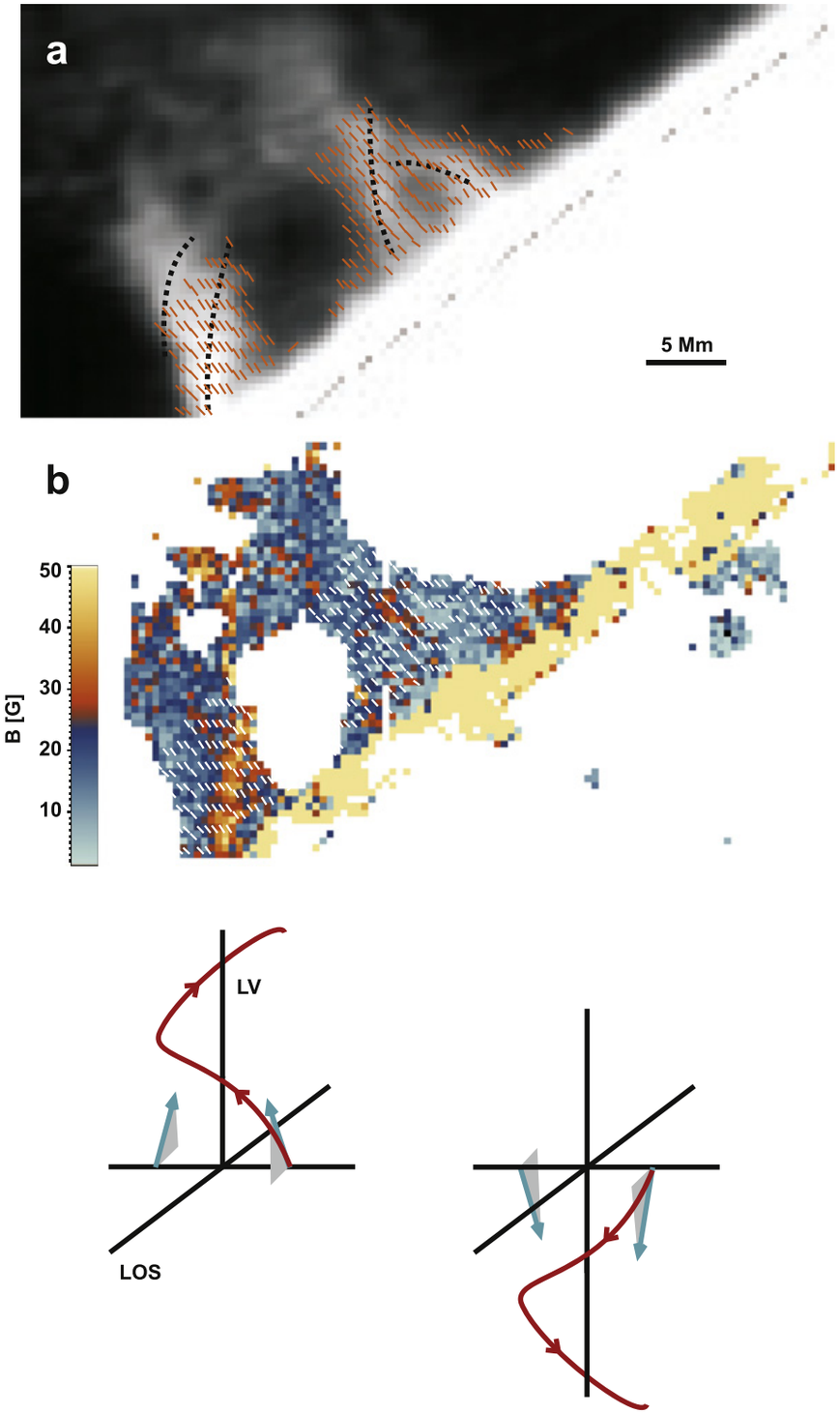


Additional criteria is required to choose between

vertical or horizontal

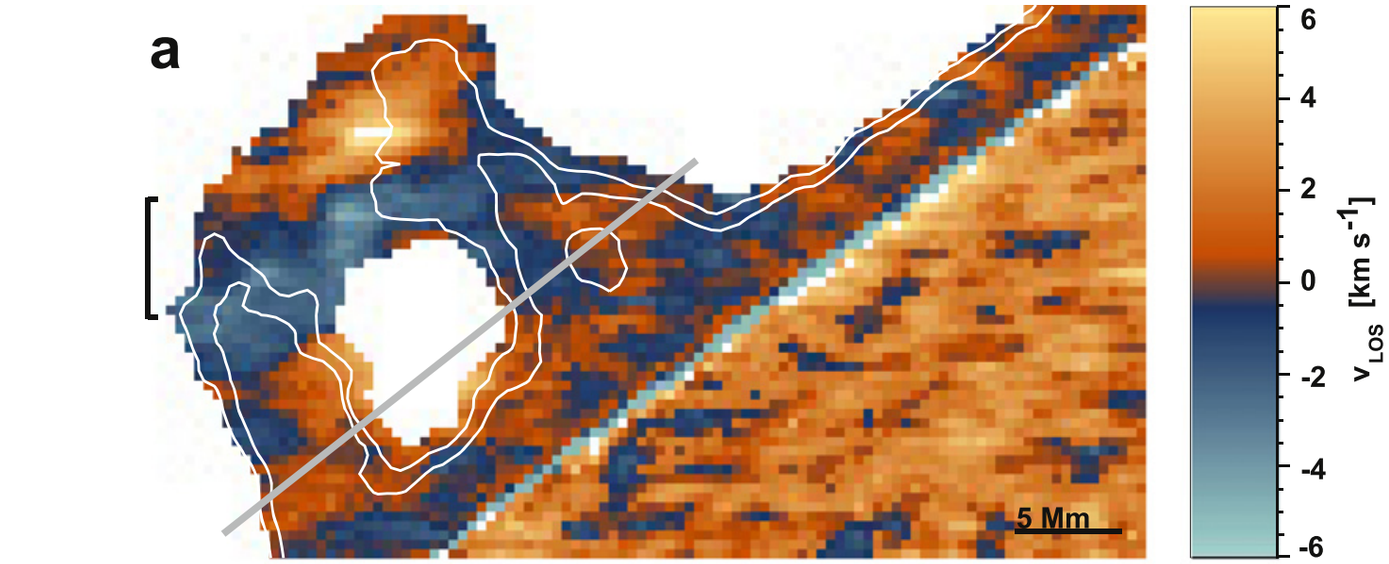
DOUBLE-HELIX IN PROMINENCE FEET

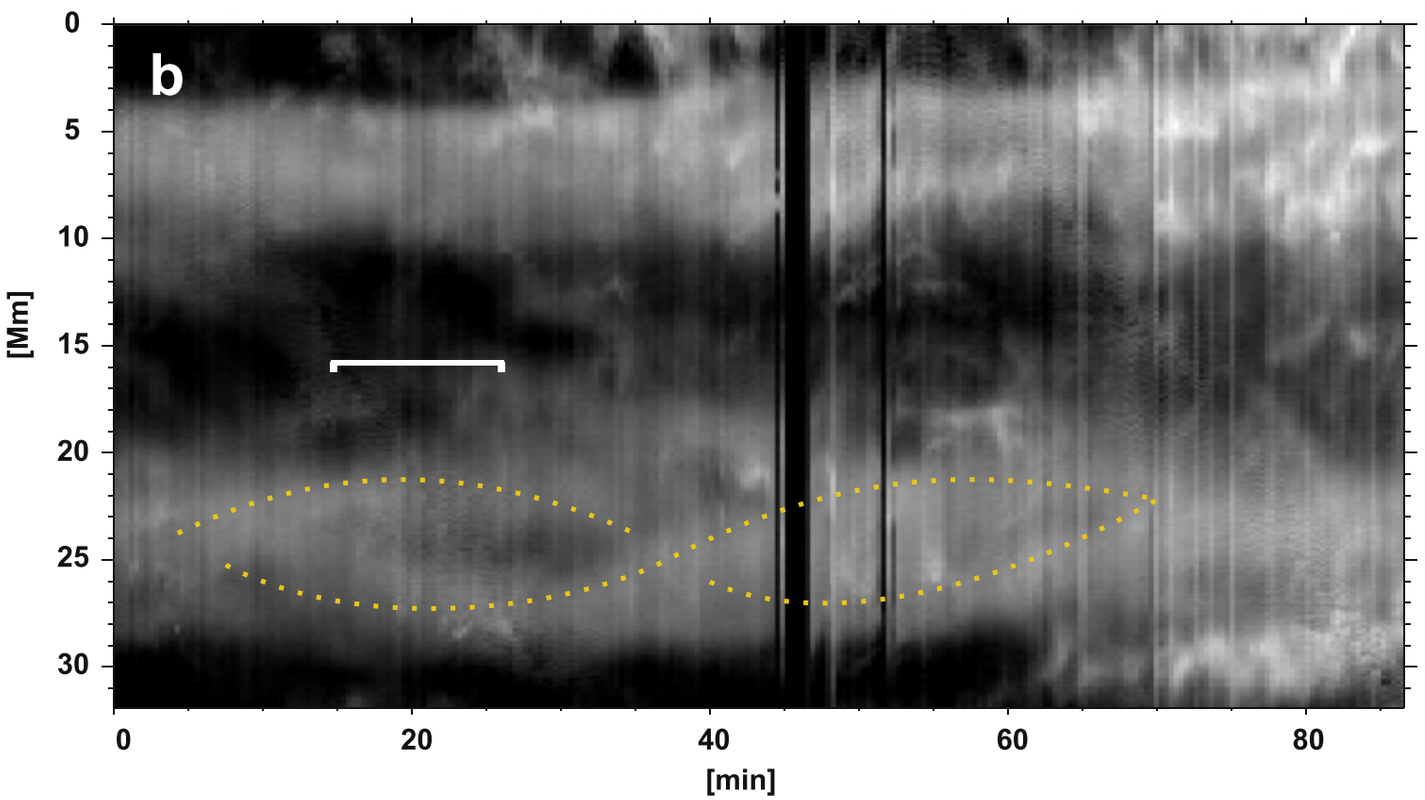




Martínez González et al. (2015)

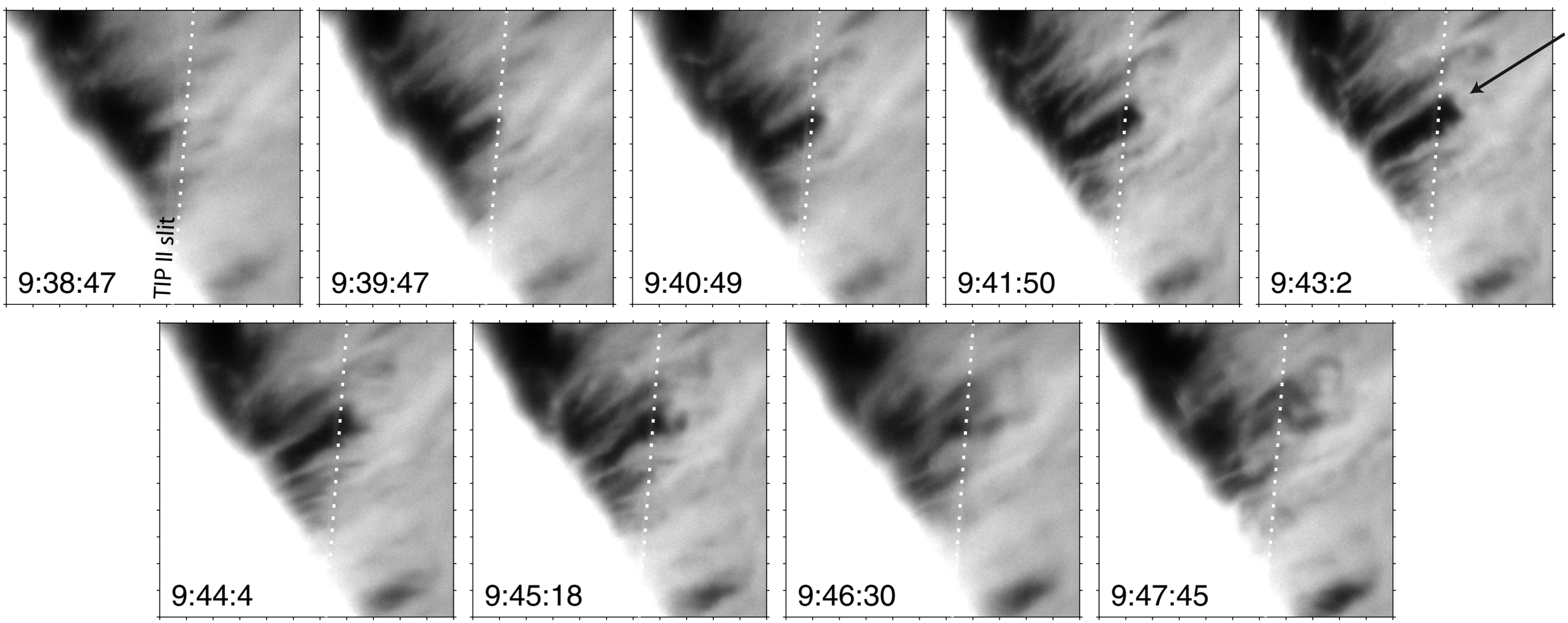
DOUBLE-HELIX IN PROMINENCE FEET





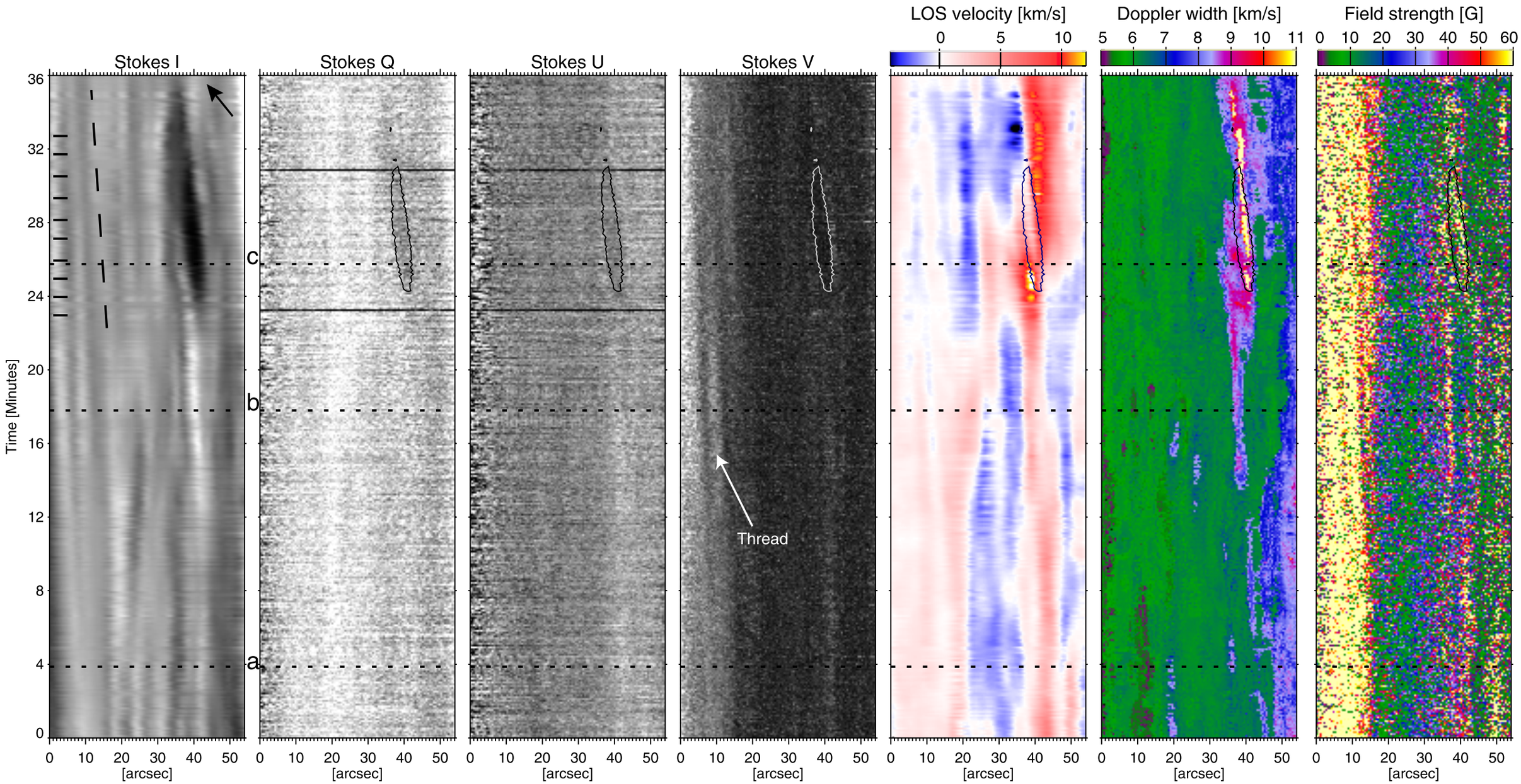
Martínez González et al. (2015)

RISING OF PLASMA INSTABILITIES



Orozco Suárez et al. (2014)

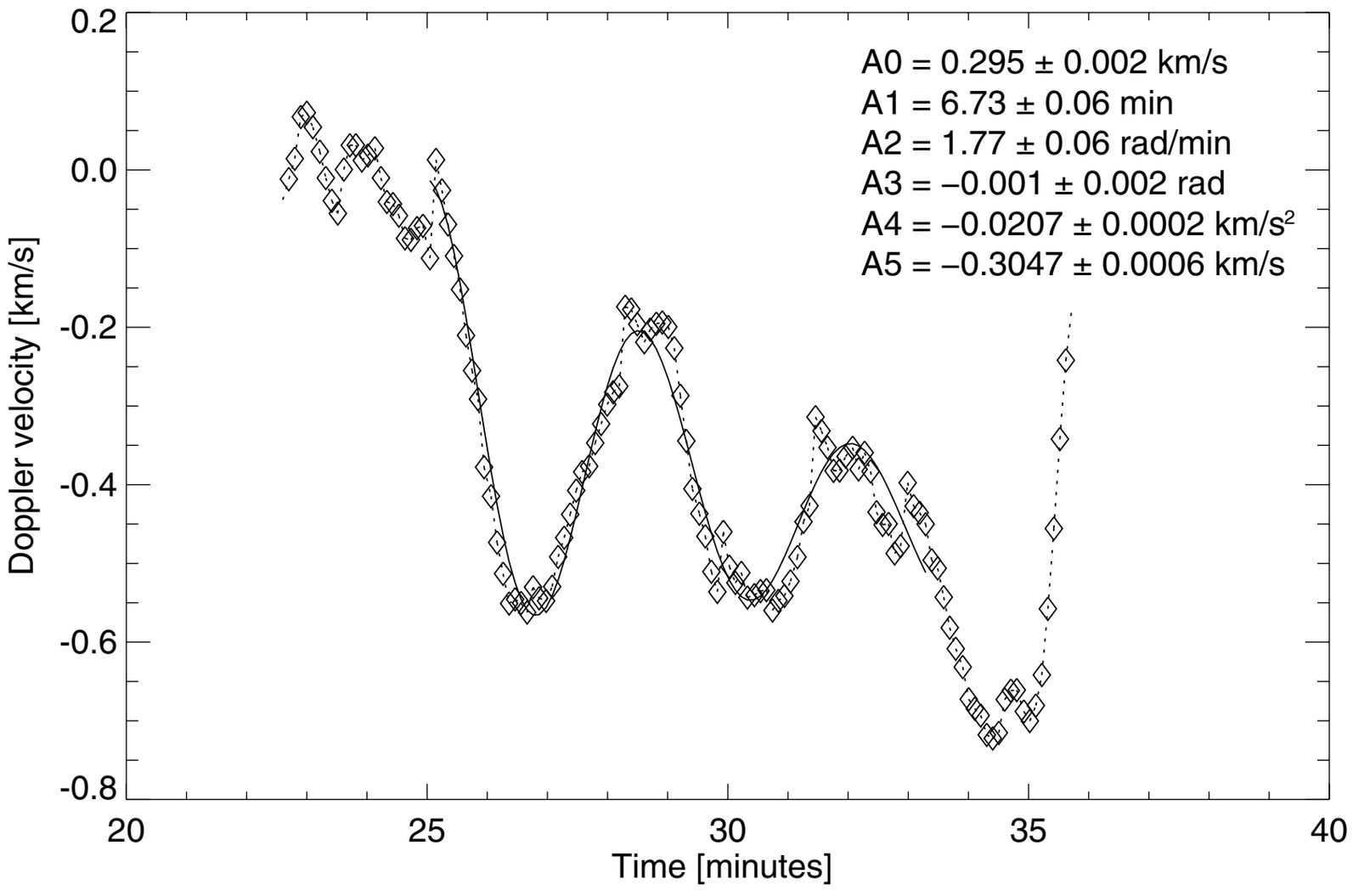
NO CLEAR CHANGE IN MAGNETIC FIELD



Orozco Suárez et al. (2014)

PROMINENCE SEISMOLOGY

Orozco Suárez et al. (2014)

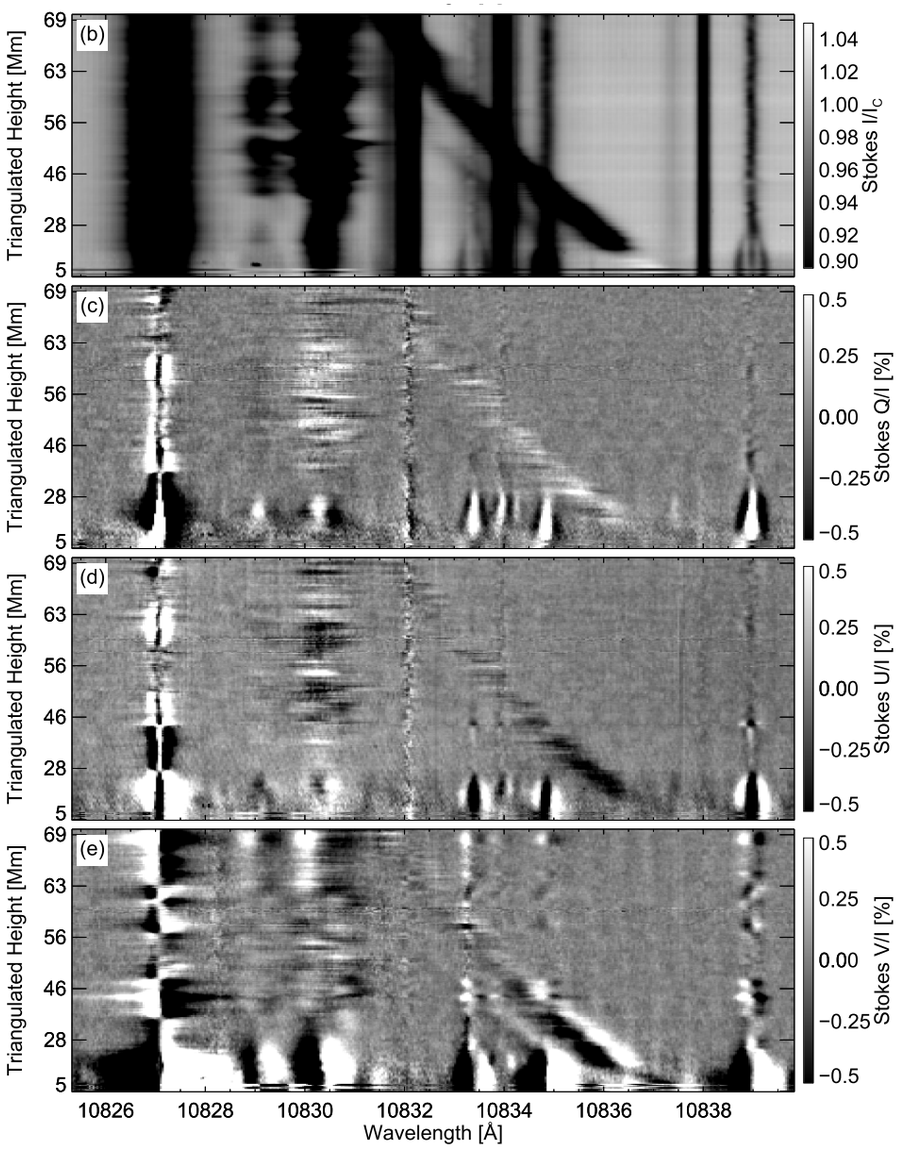


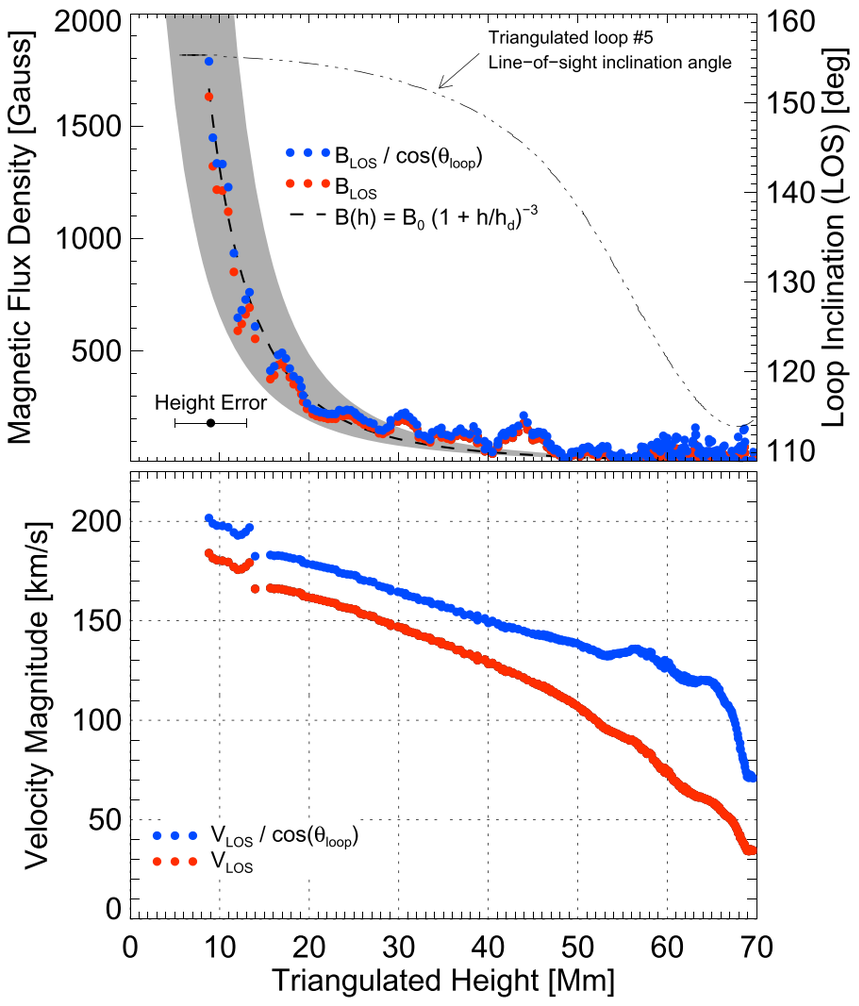
$$P = \frac{\pi}{c_{Ap}} \sqrt{\frac{wL}{2}}$$

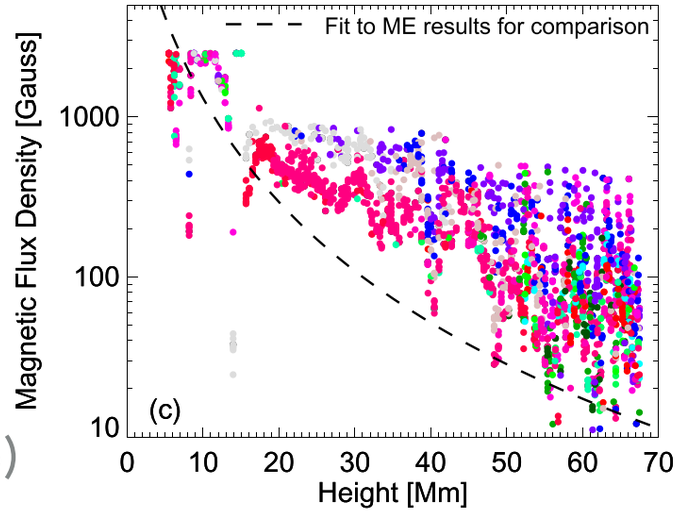
$$\frac{\tau}{P} = \frac{4R}{\pi^2 l}$$

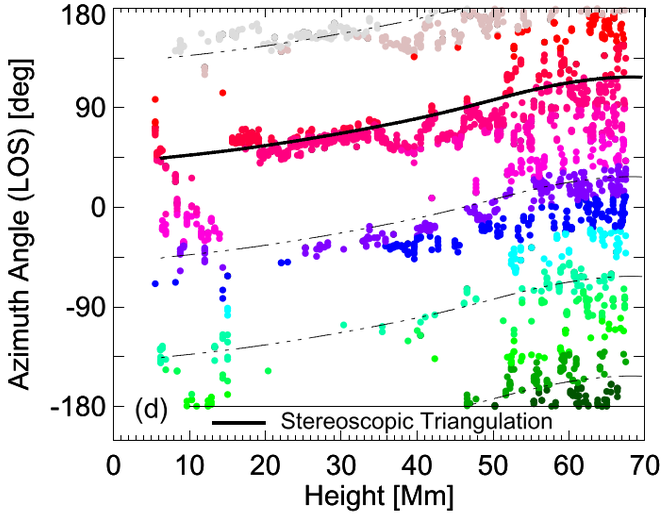
$$\rho_p L w = 1.8 \times 10^5 \pm 1.5 \times 10^5 \,\mathrm{kg\,m^{-1}}$$

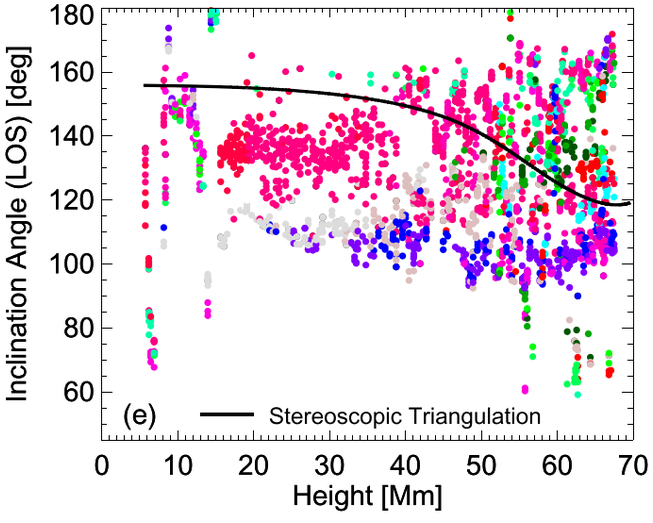
CORONAL RAIN







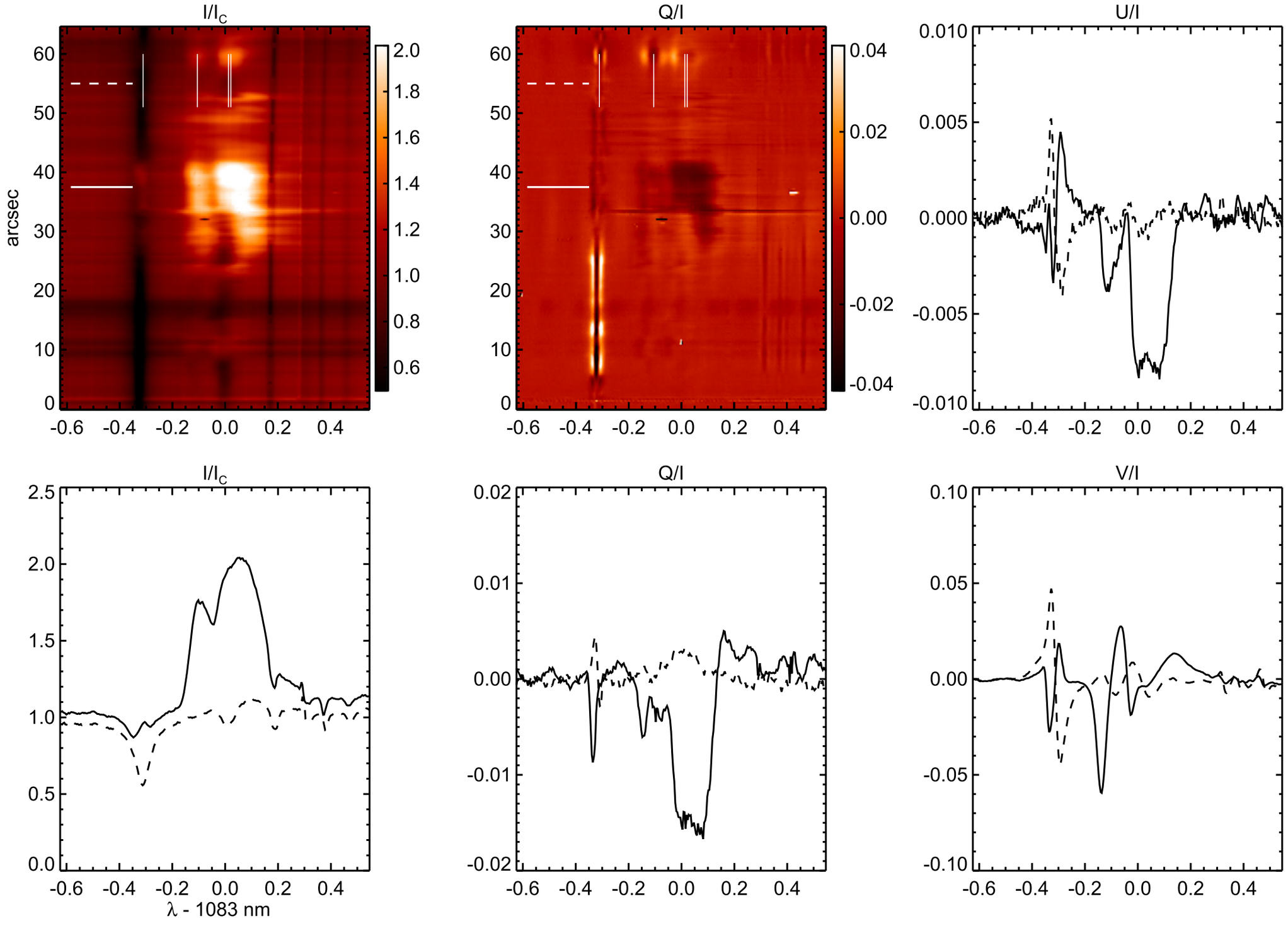




Schad et al. (2016)

FLARES

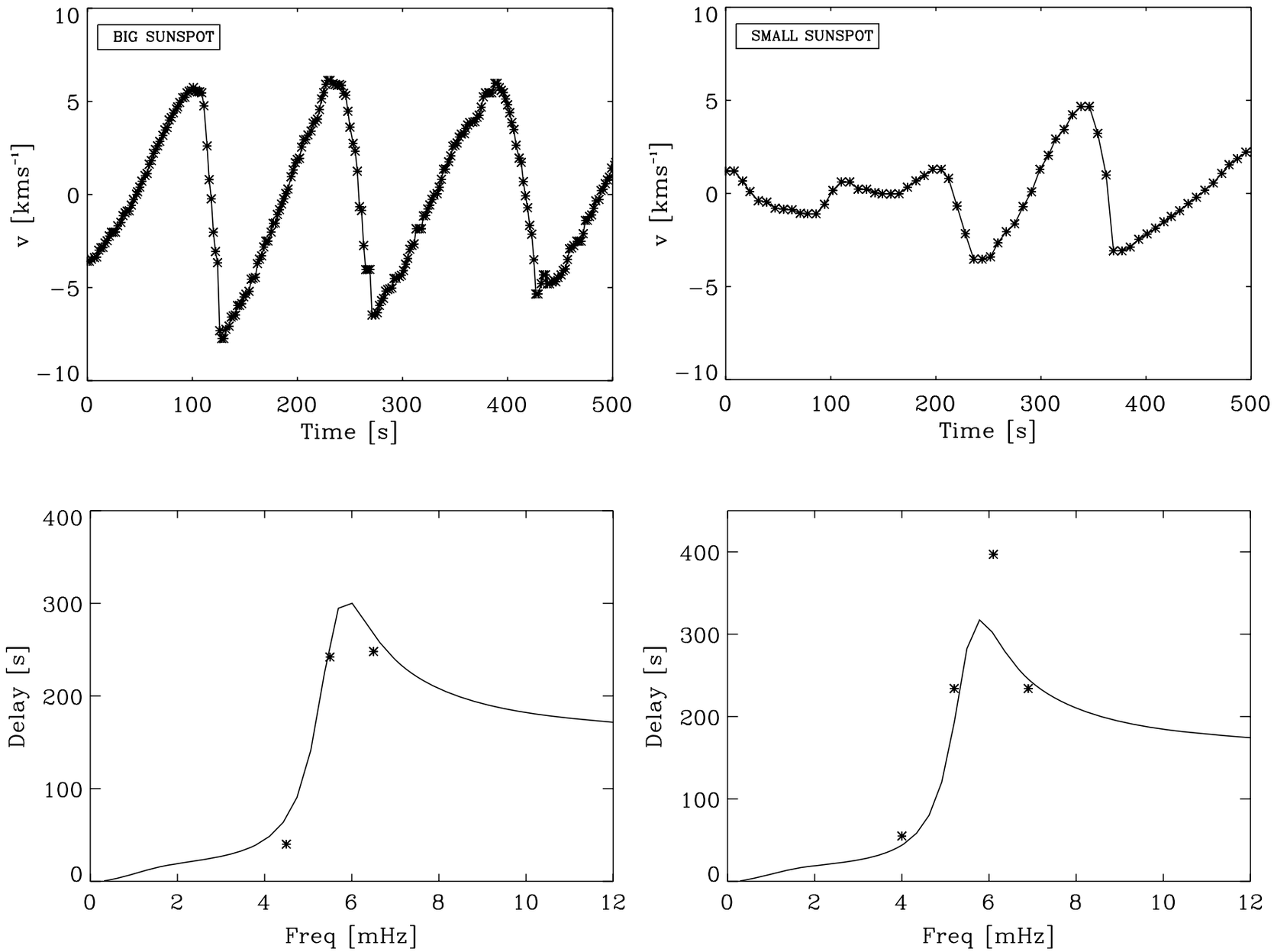
FLARES: RADIATIVE TRANSFER EFFECTS IN FLARES



Judge et al. (2015)

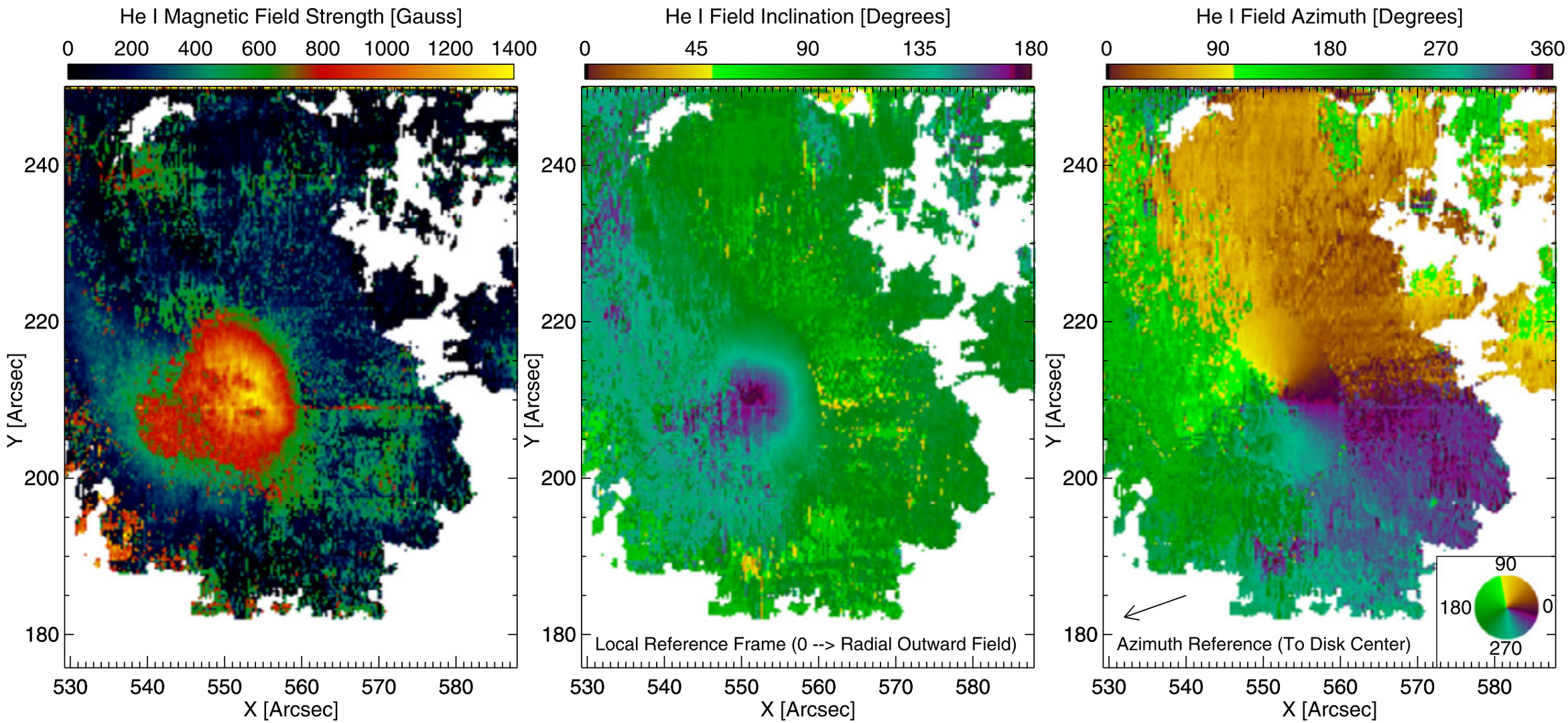
SUNSPOTS

SUNPOTS: WAVES BUT WHAT ABOUT MAGNETIC FIELD?



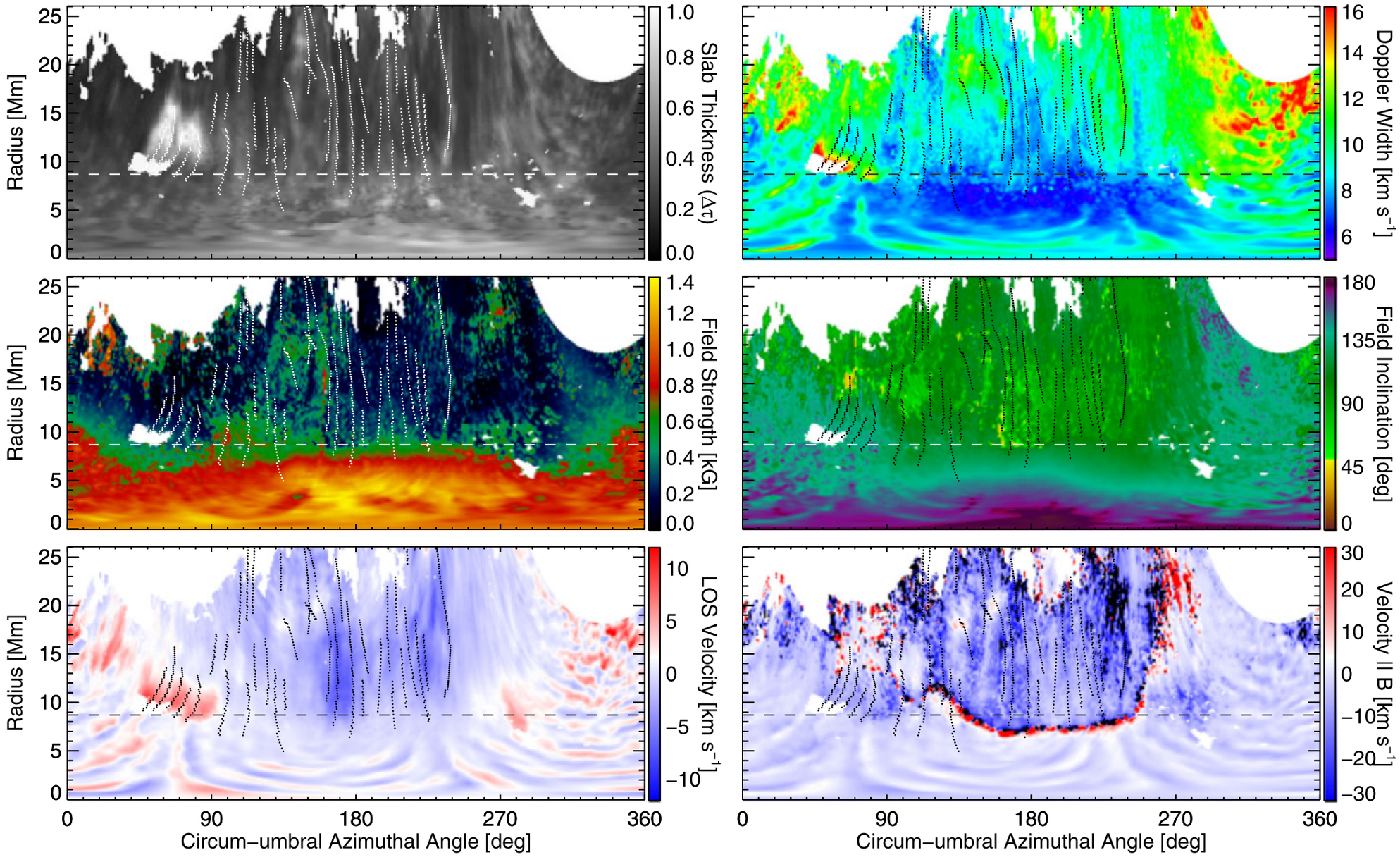
Centeno et al. (2009)

SUNSPOT CHROMOSPHERE



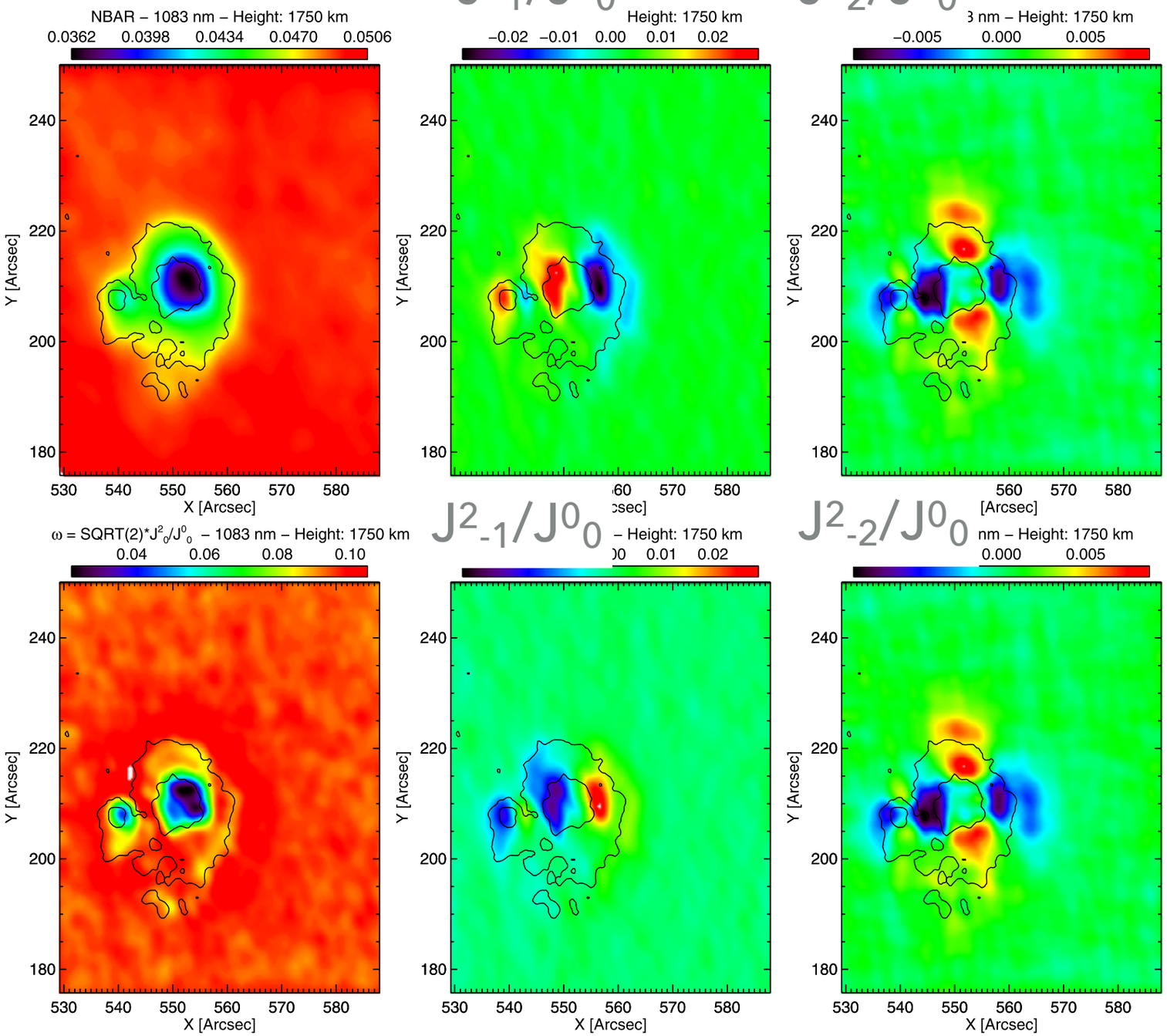
Schad (2015)

SUNSPOT CHROMOSPHERE: FIELD MORE UNIFORM THAN OTHER QUANTITIES



Schad (2015)

SYMMETRY BREAKING



Schad (2015)

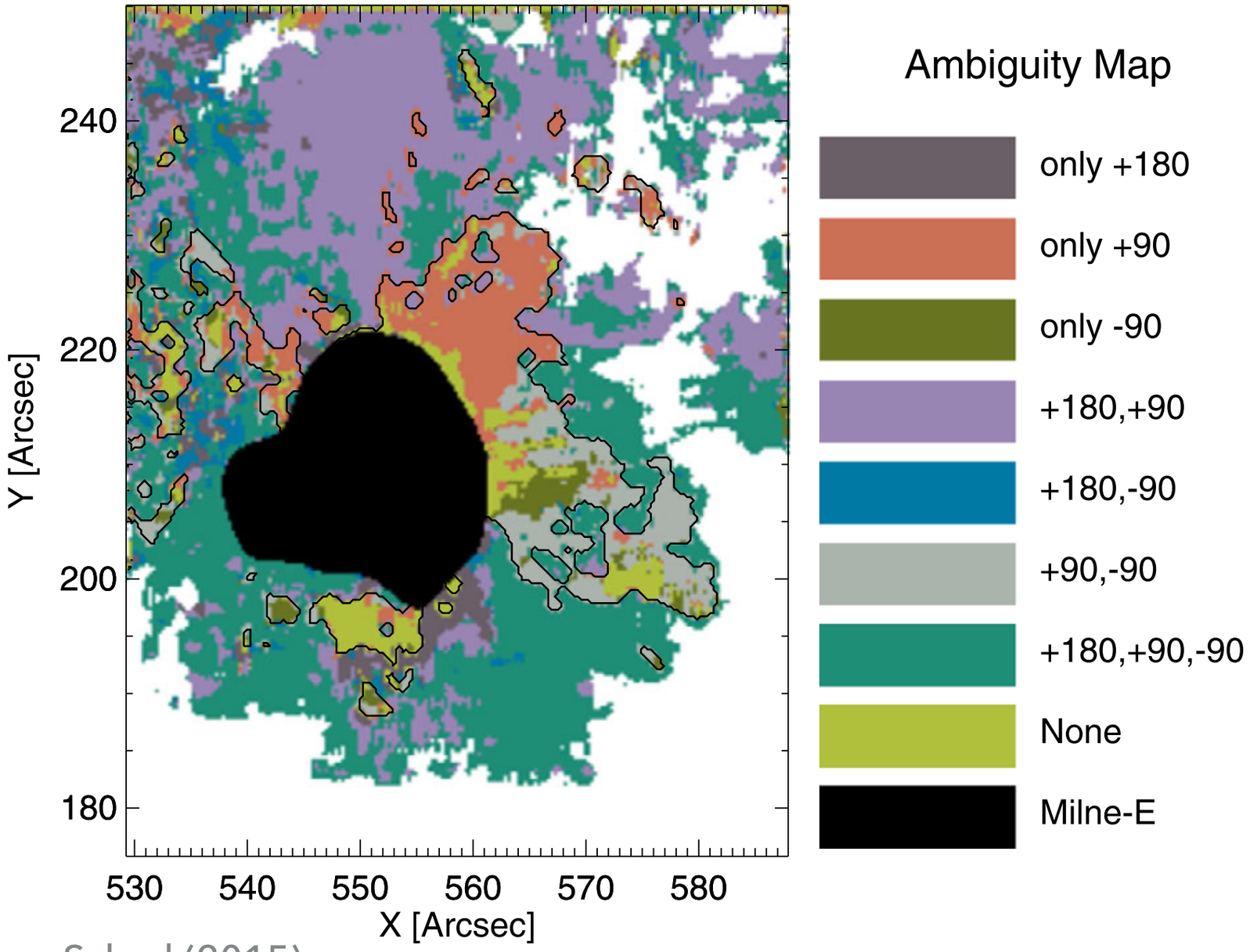
$$J^0_0(\nu) = \int \frac{d\Omega}{4\pi} I(\nu, \Omega)$$

$$J^2_0(\nu) = \frac{1}{2\sqrt{2}} \int \frac{d\Omega}{4\pi} (3\cos^2\theta - 1) I(\nu, \Omega)$$

$$J^2_{\pm 1}(\nu) = \mp \frac{\sqrt{3}}{2} \int \frac{d\Omega}{4\pi} \sin\theta \cos\theta e^{\pm i\phi} I(\nu, \Omega)$$

$$J^2_{\pm 2}(\nu) = \mp \frac{\sqrt{3}}{4} \int \frac{d\Omega}{4\pi} \sin^2\theta e^{\pm 2i\phi} I(\nu, \Omega)$$

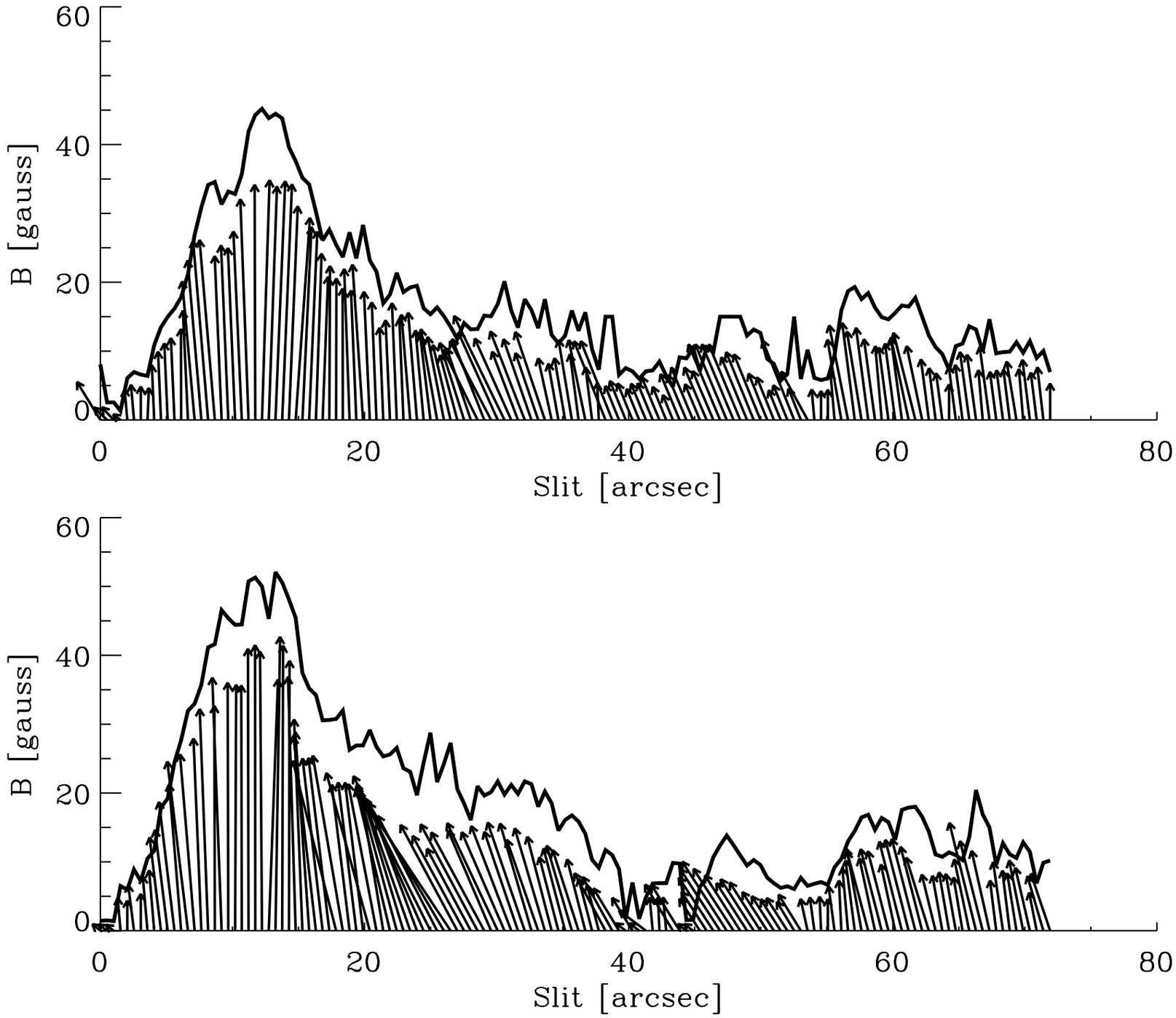
AMBIGUITIES



Schad (2015)

SPICULES

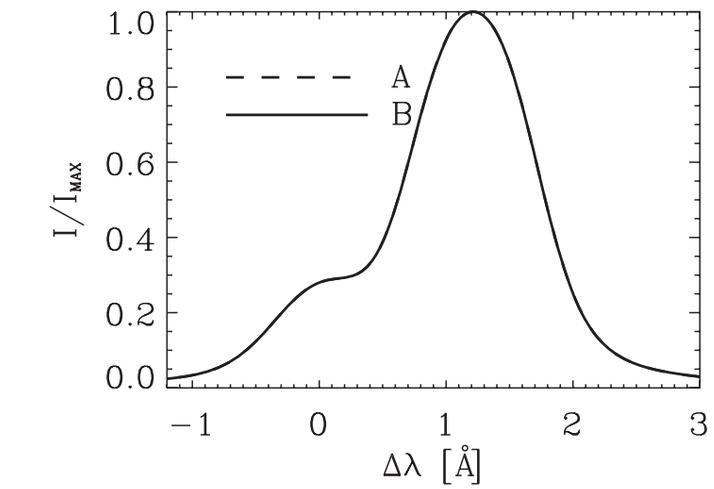
SPICULES: MEASURING MAGNETIC FIELDS

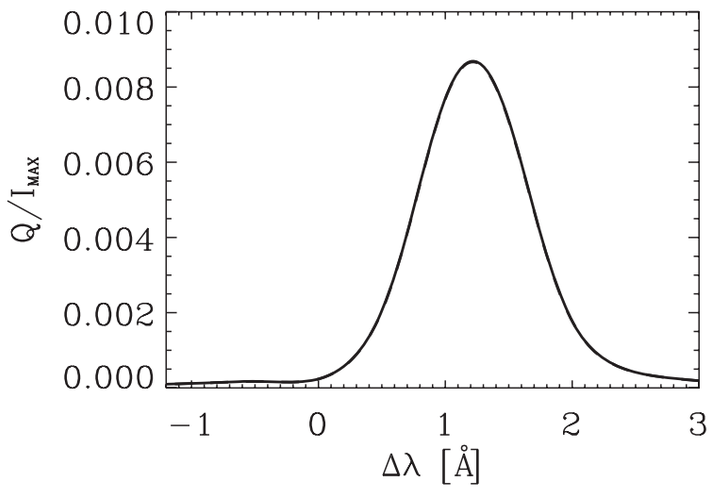


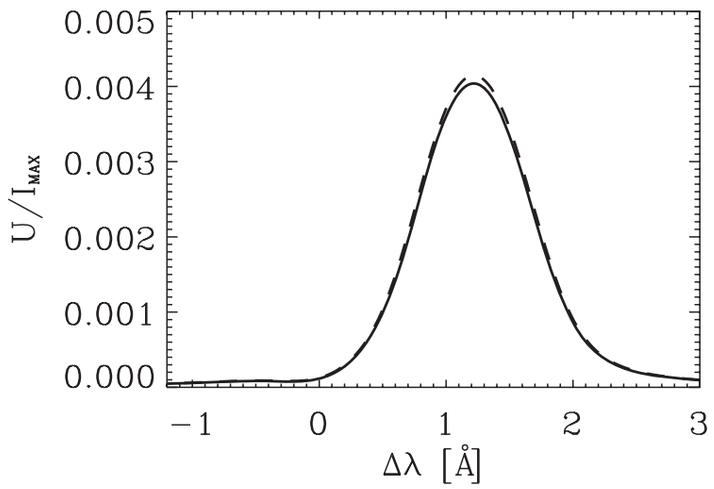
Centeno et al. (2010)

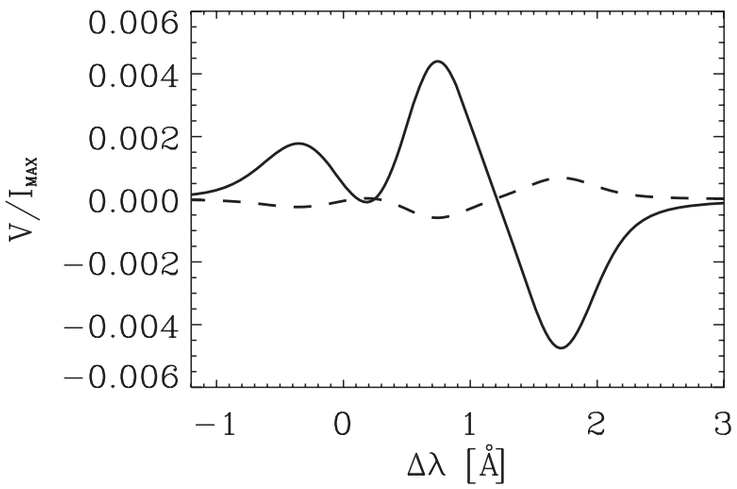
PUSH FOR OBSERVING STOKES V

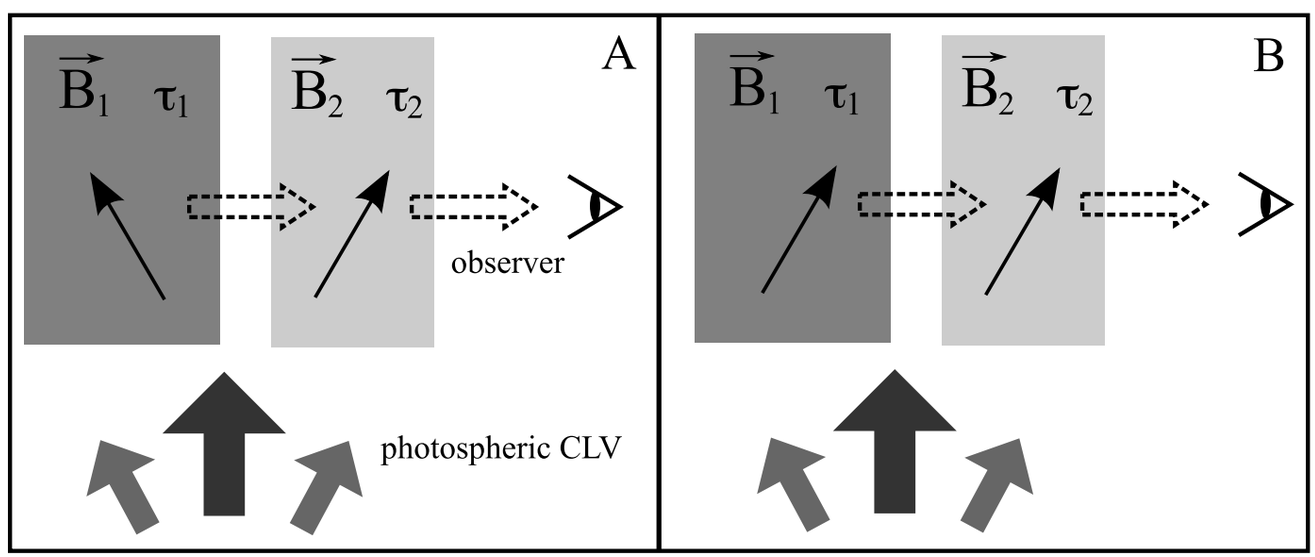
Centeno et al. (2009)



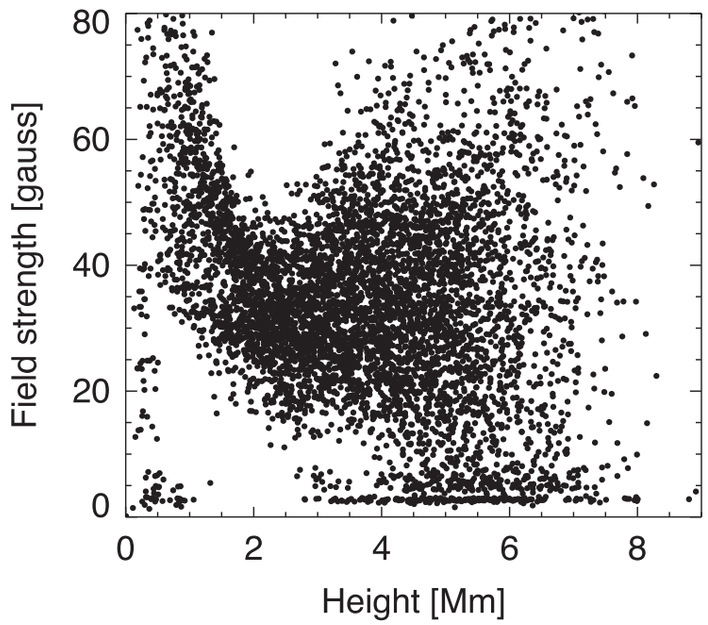


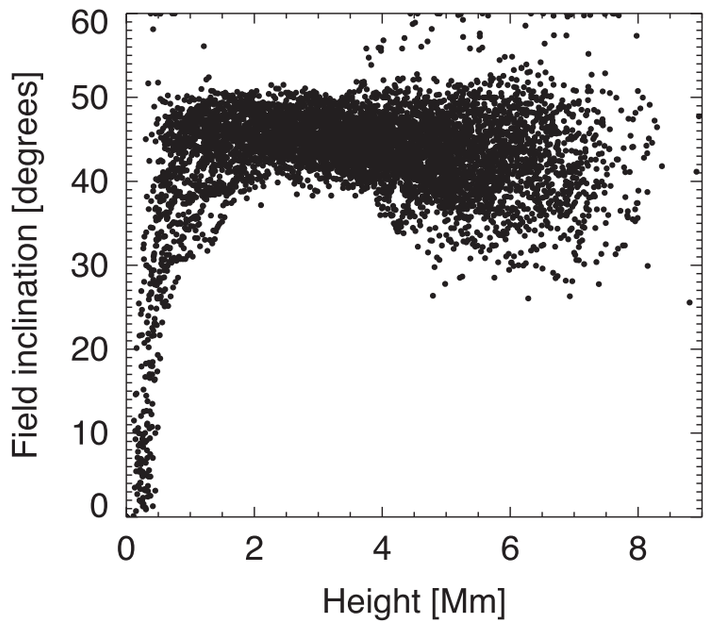


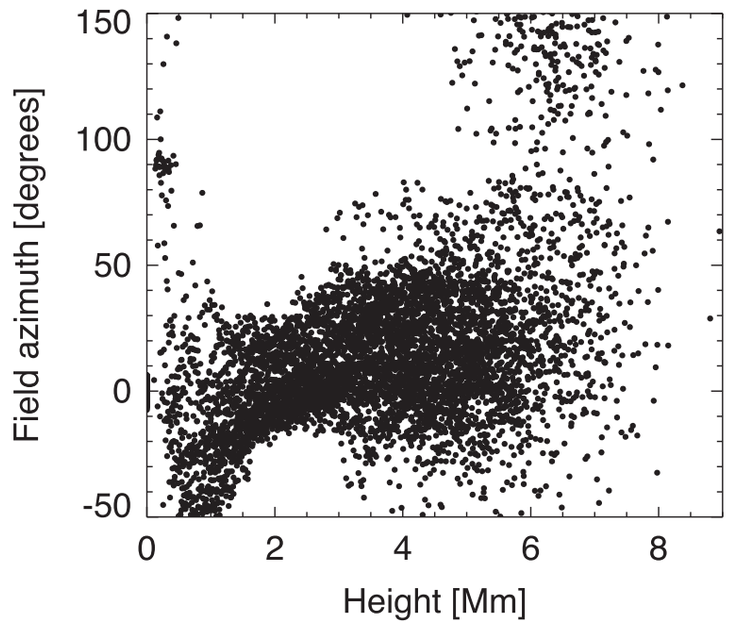


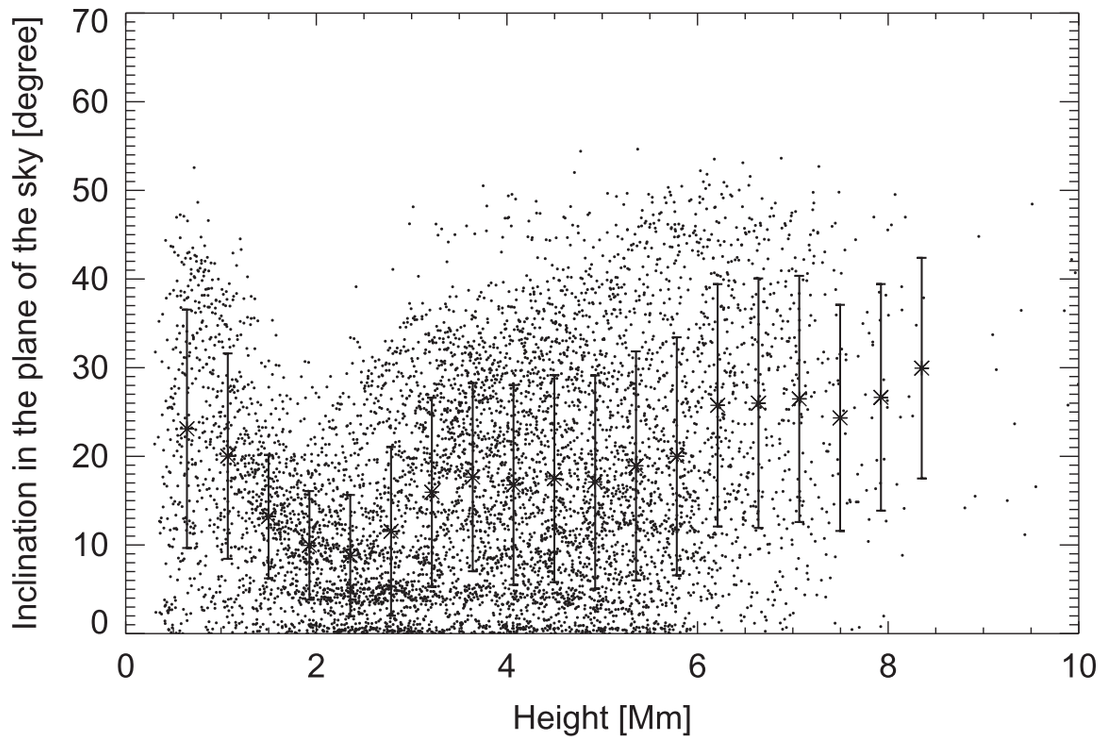


HEIGHT VARIATION OF MAGNETIC FIELD





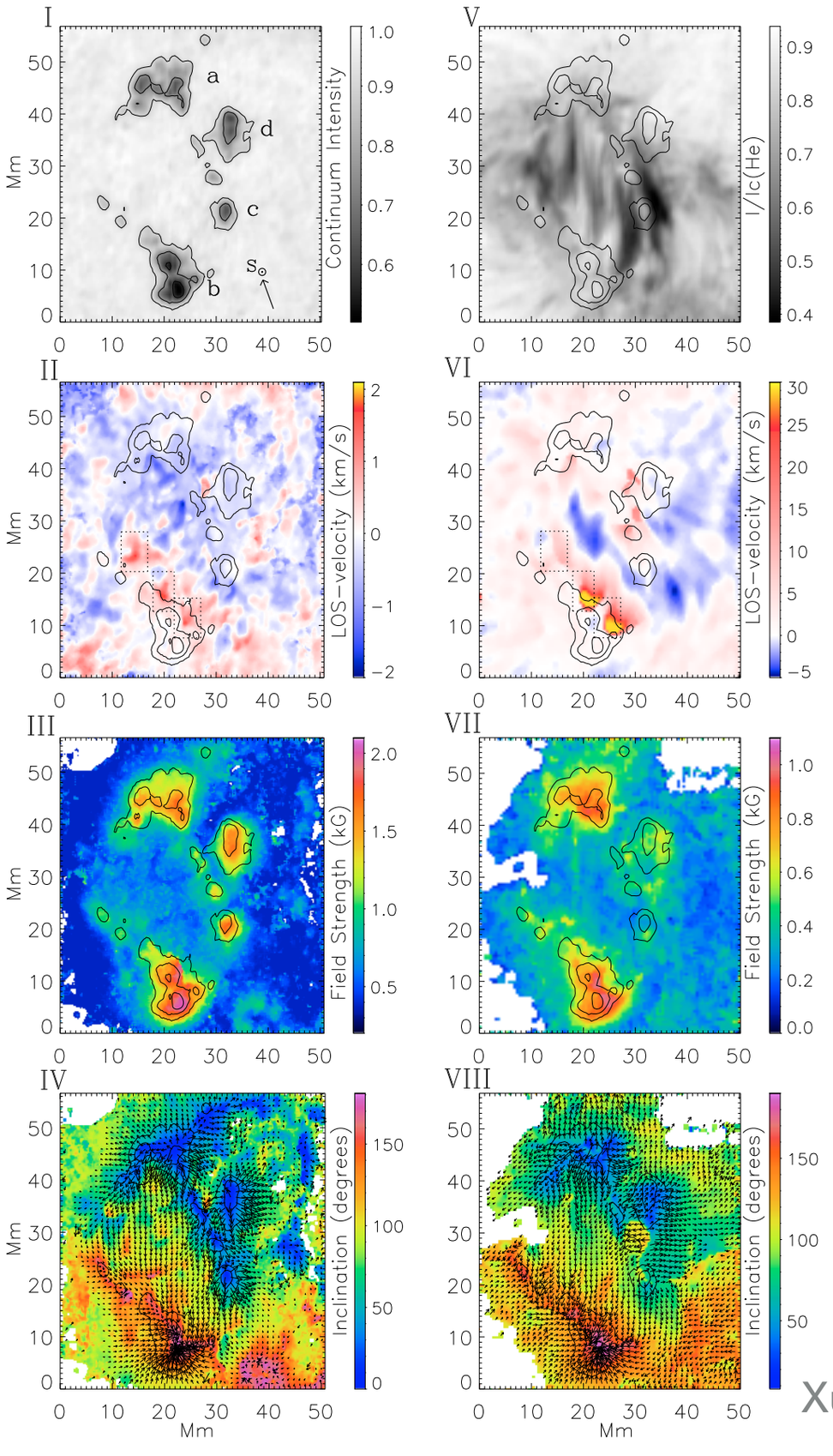




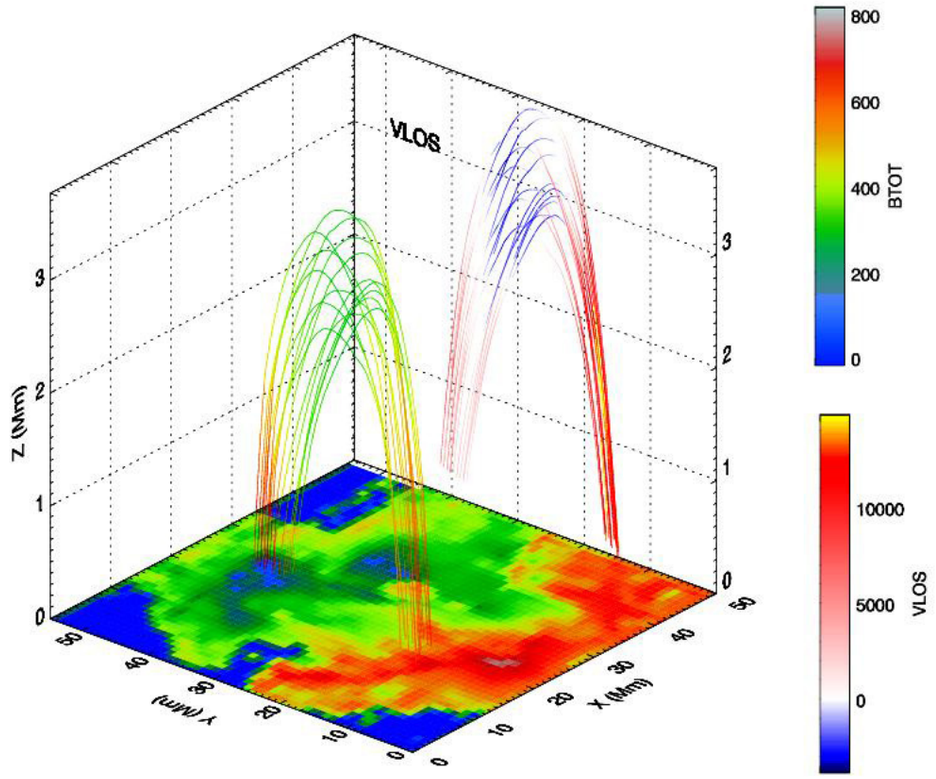
Orozco et al. (2015)

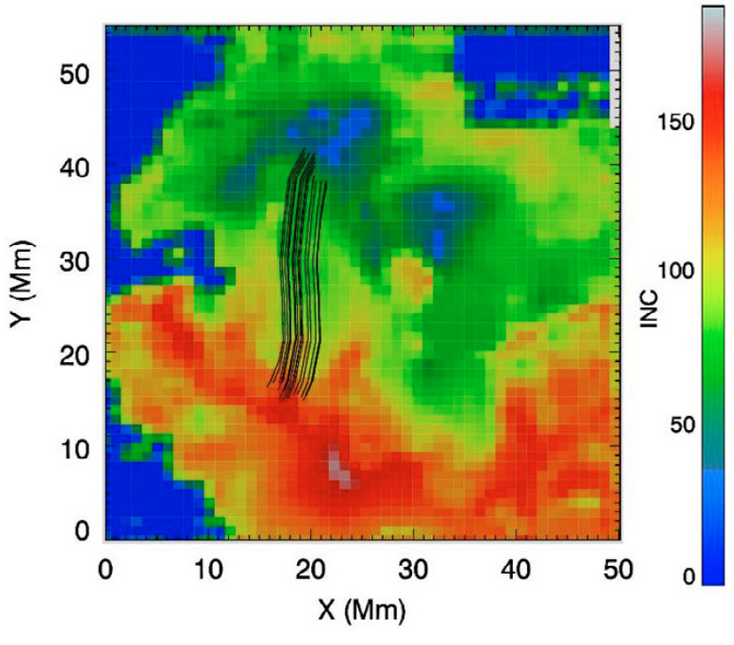
EMERGING FLUX REGIONS

EMERGING FLUX REGIONS: LOOPS REACHING CORONAL HEIGHTS

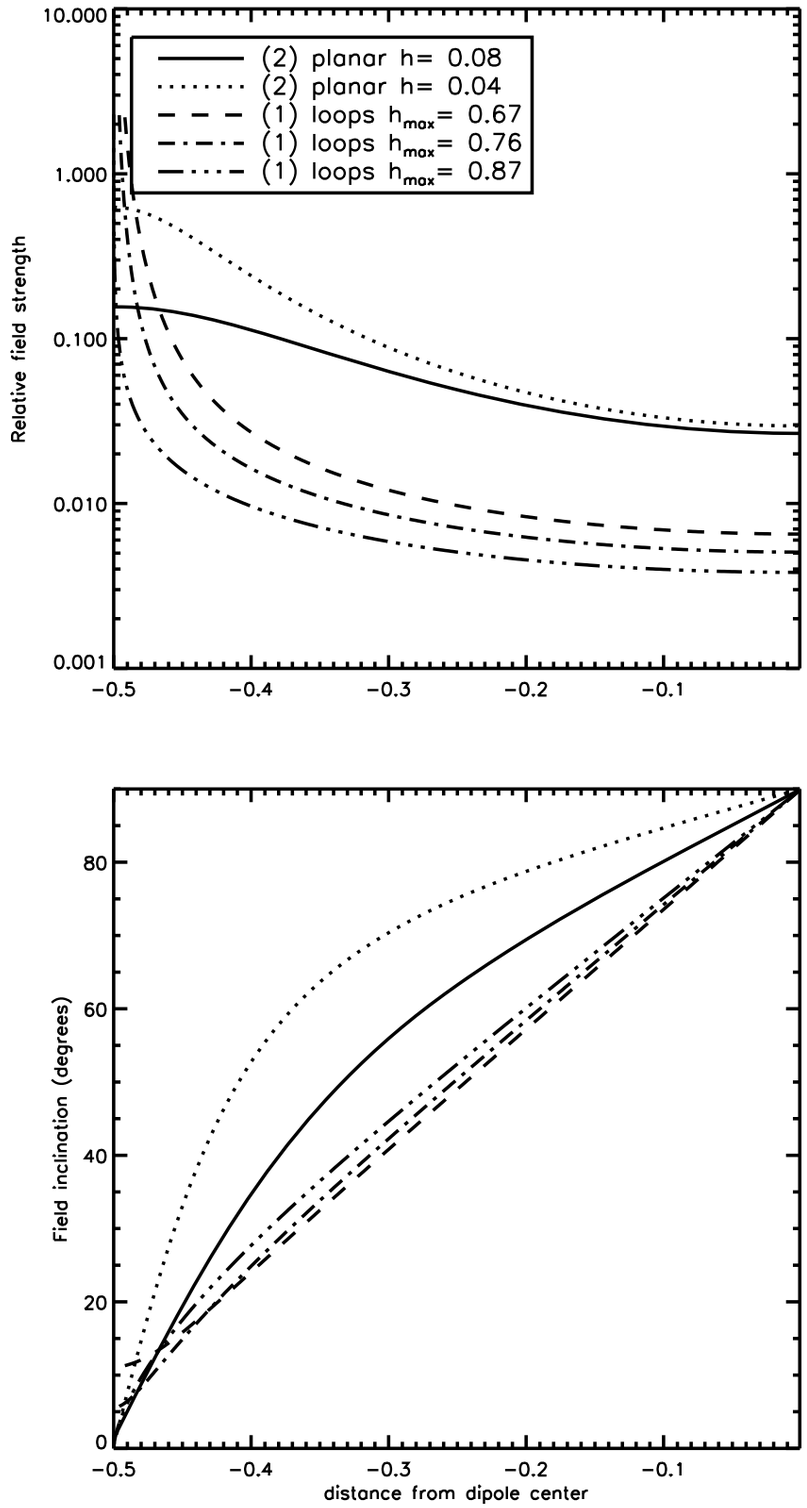


Xu et al. (2010)

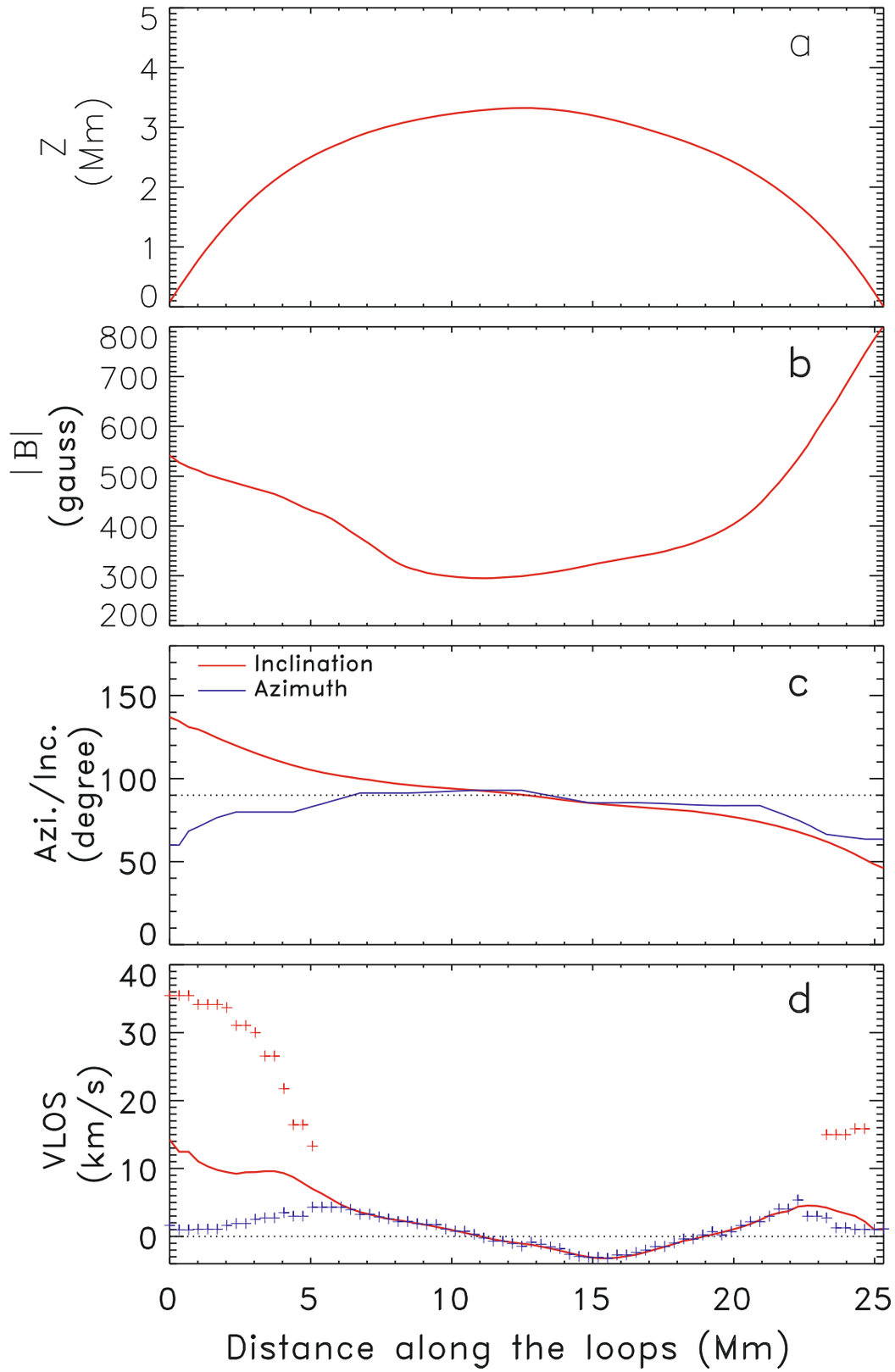




REALLY LOOPS REACHING CORONAL HEIGHTS?



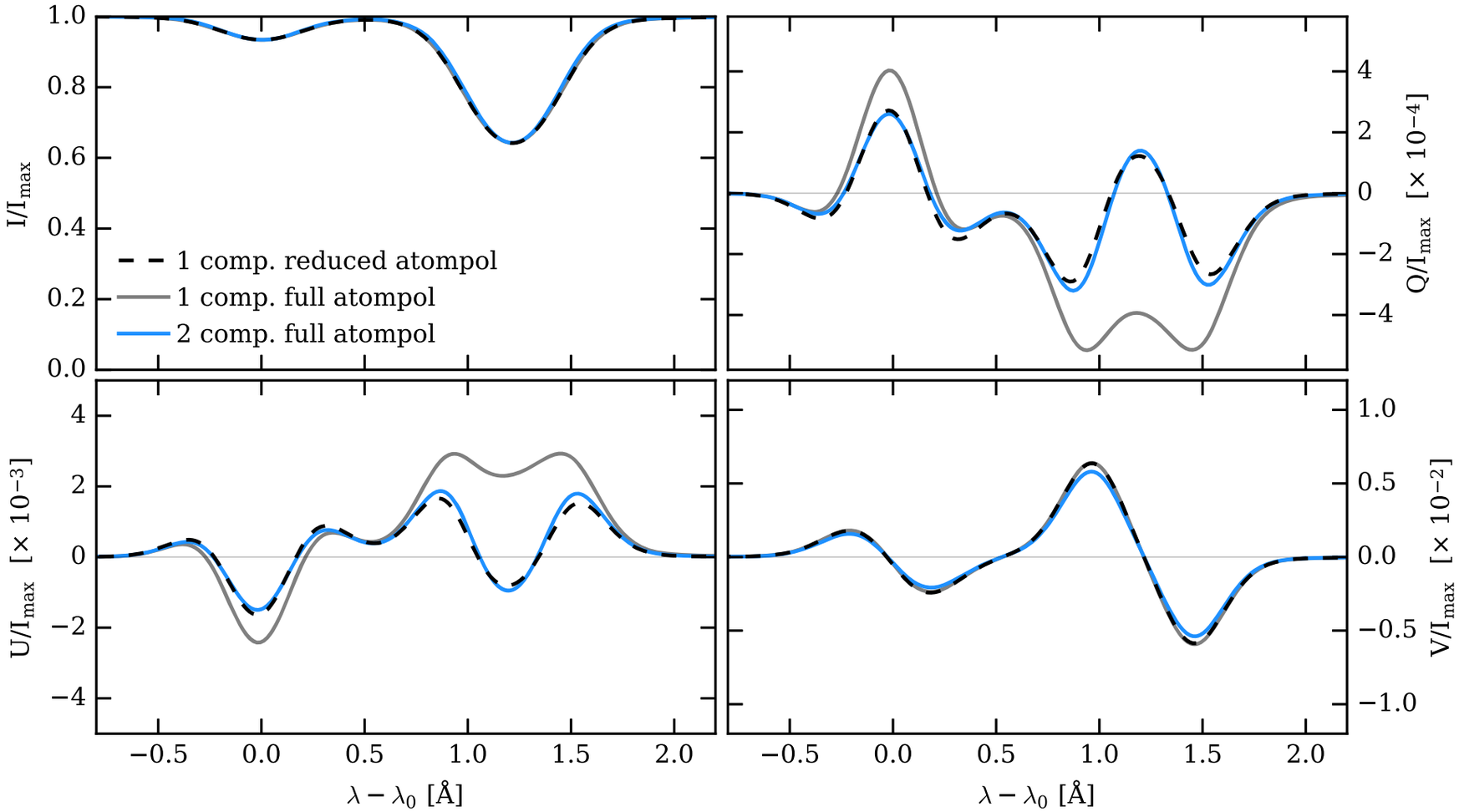
Judge (2009)



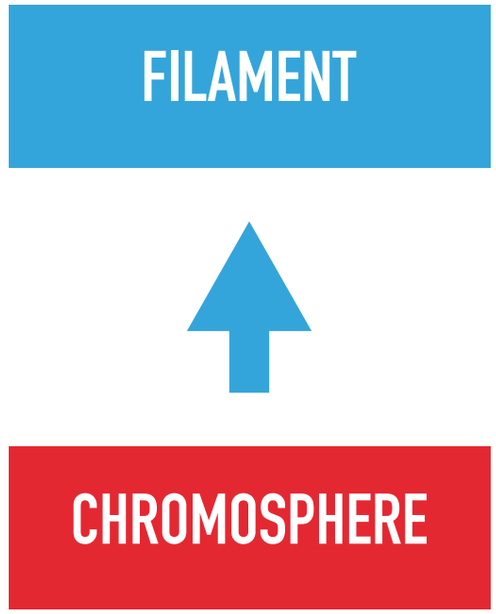
Xu et al. (2010)

FILAMENTS

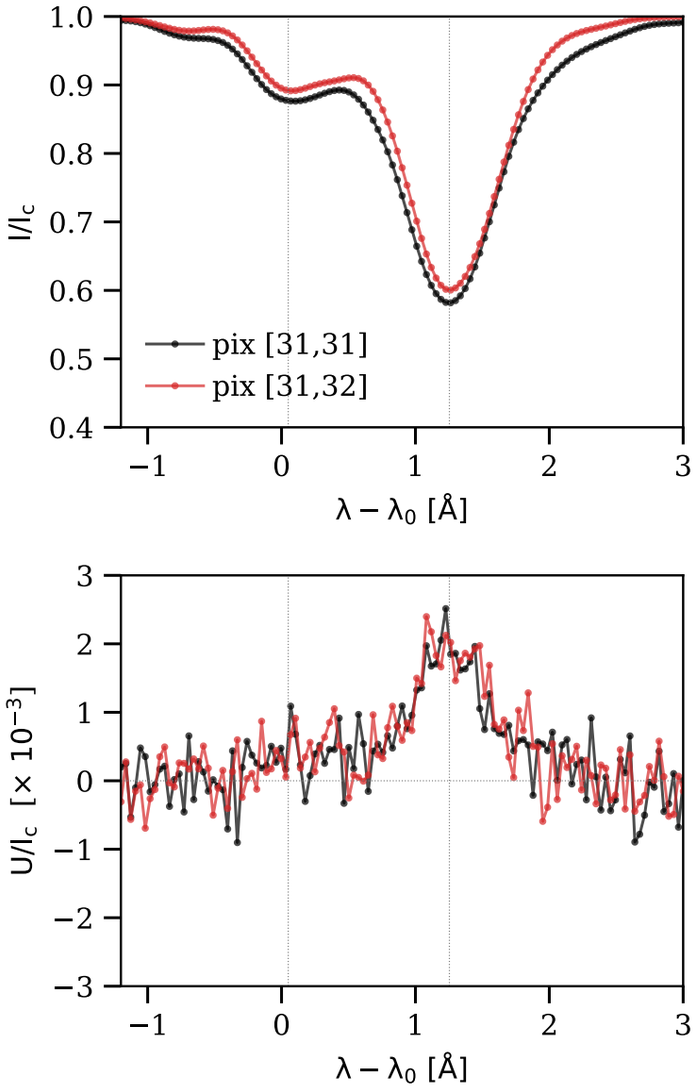
FILAMENTS: THEY ARE SEMI-TRANSPARENT

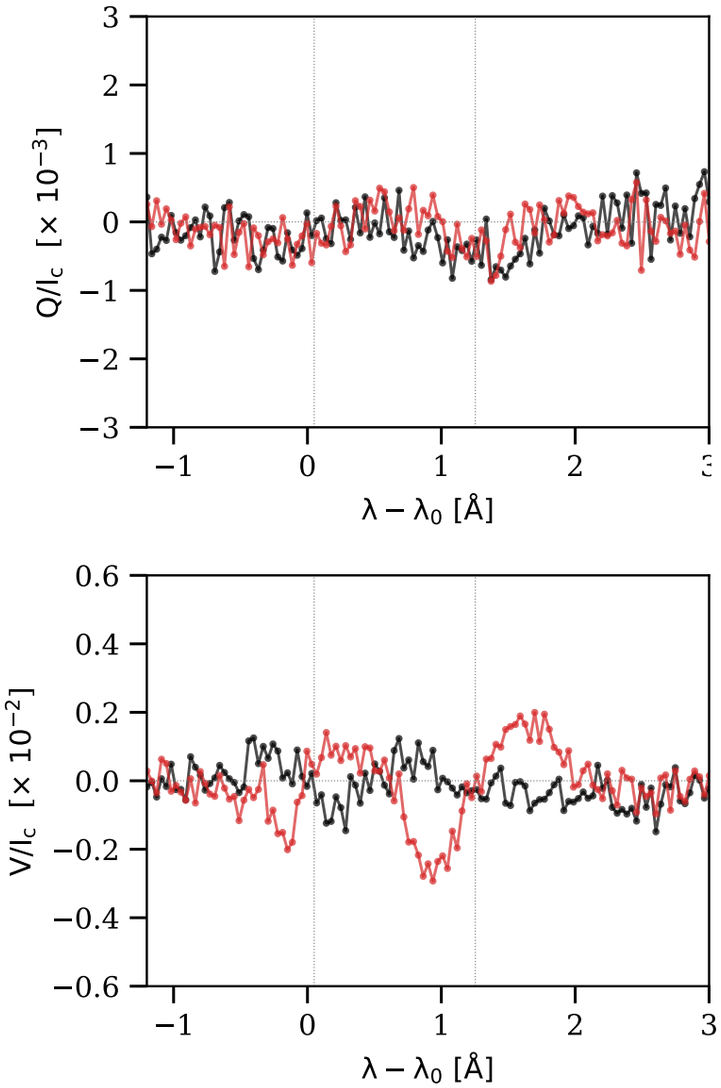


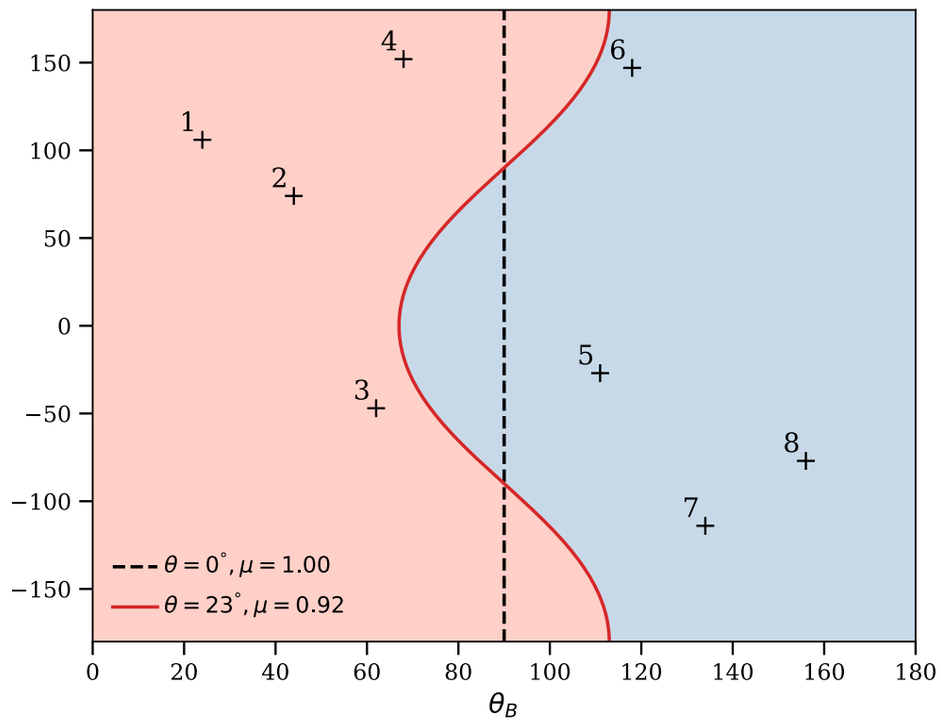
Díaz Baso et al. (2017)



FILAMENTS ARE SEMITRANSPARENT TO STOKES V

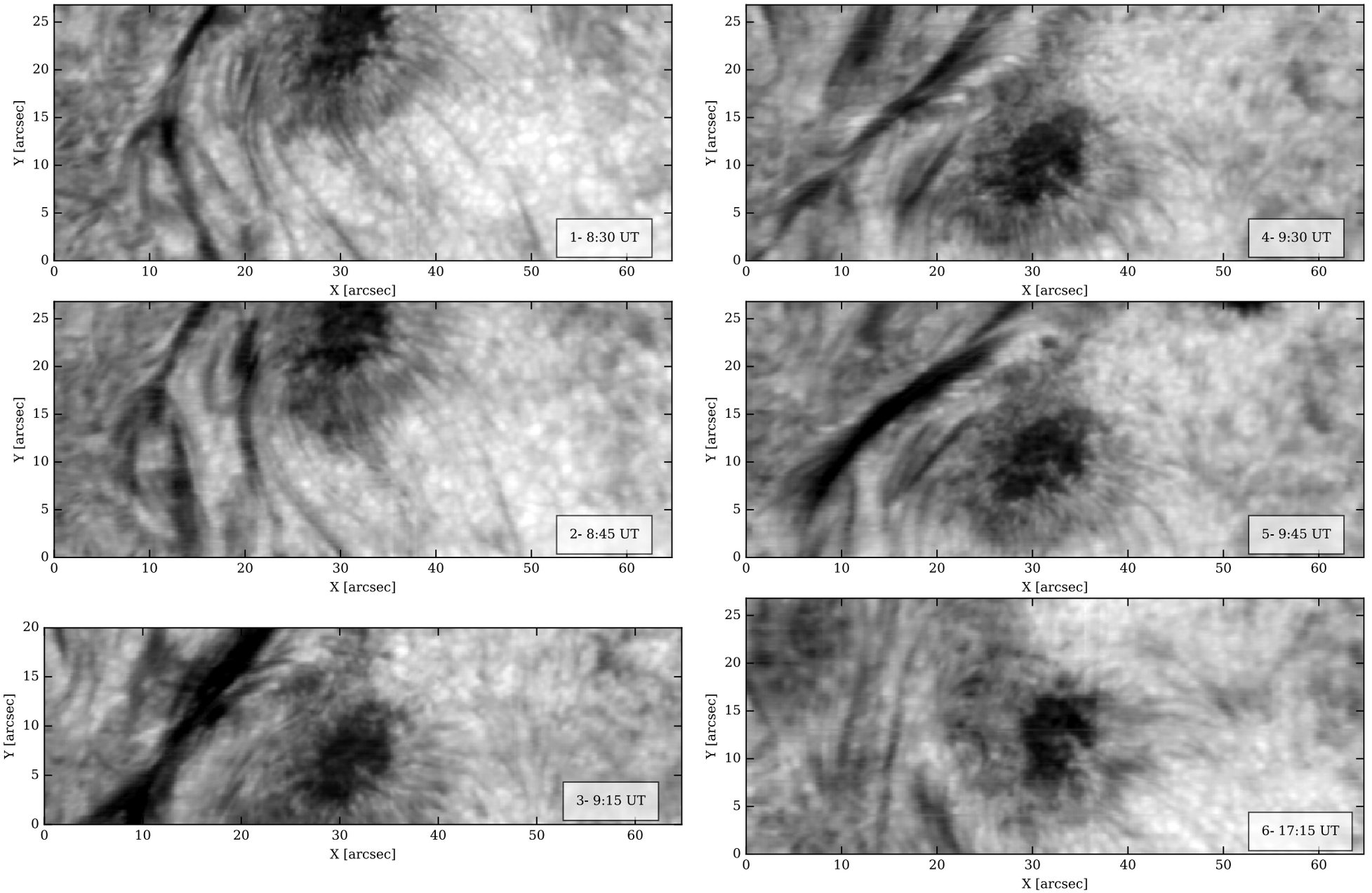






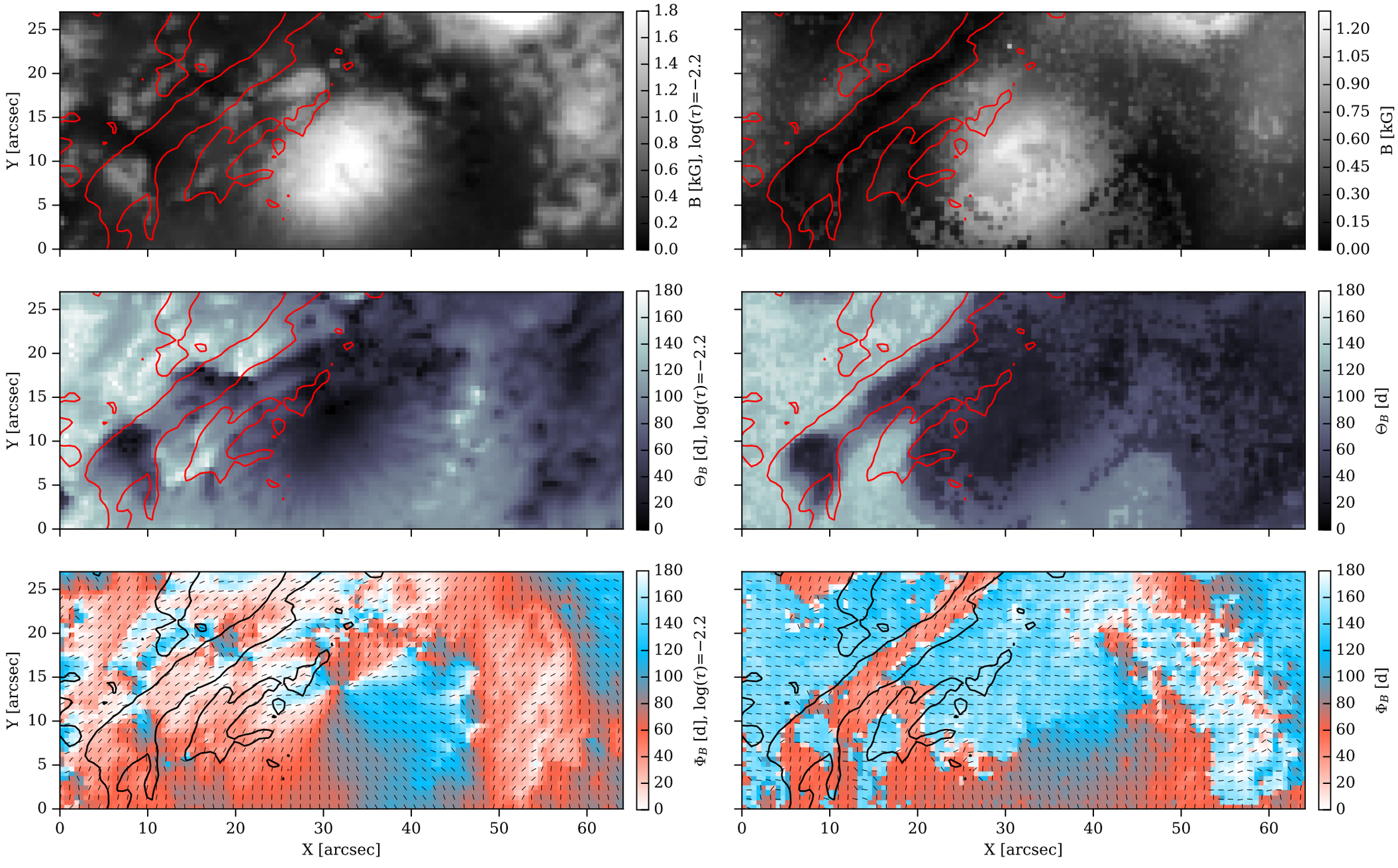
Díaz Baso et al. (in prep)

FILAMENTS



Díaz Baso et al. (in prep)

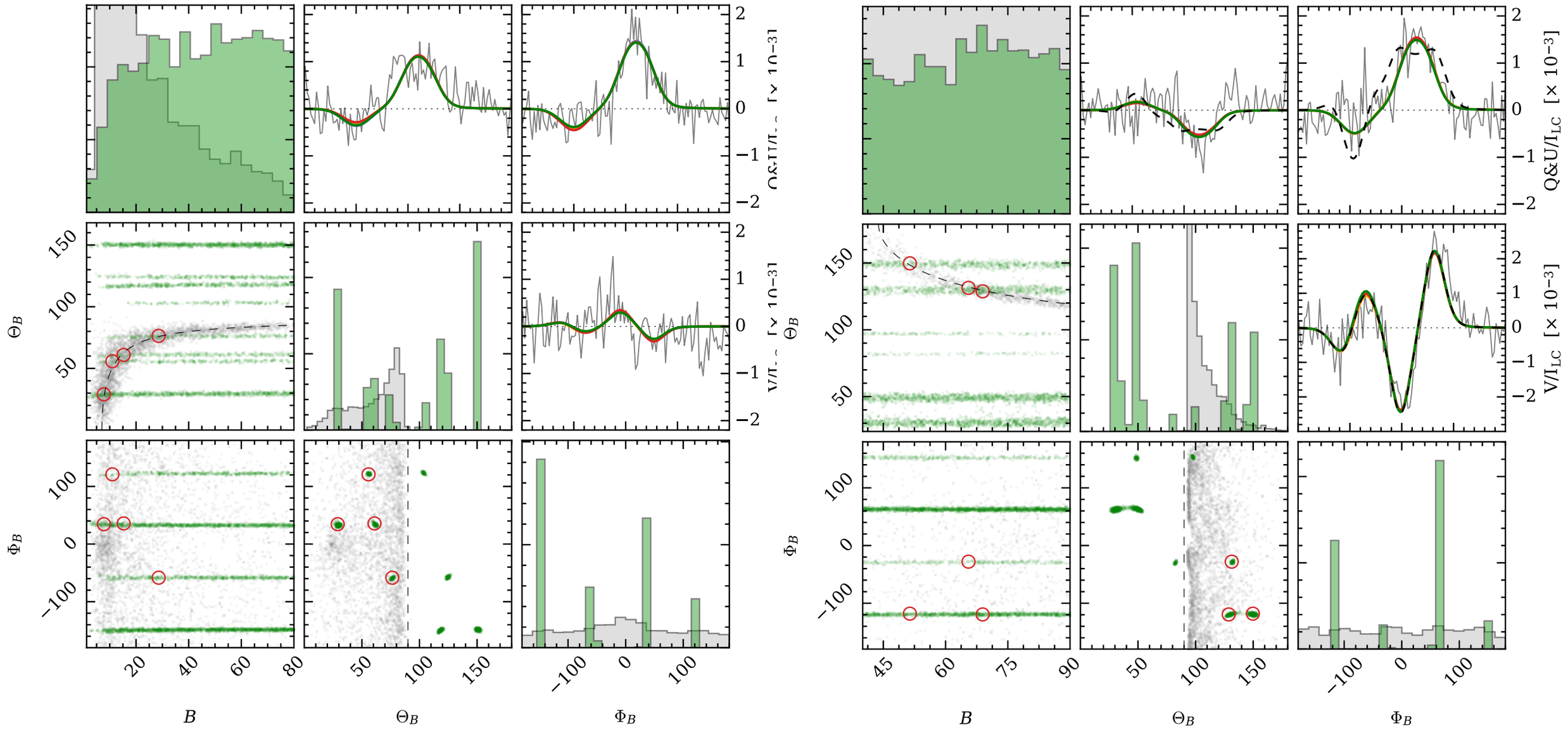
FILAMENTS: SINGLE COMPONENT INVERSION



Díaz Baso et al. (in prep)

SOME ISSUES

AMBIGUITIES: POSTERIOR SAMPLING



Díaz Baso et al. (in prep)

HEIGHT IS DEGENERATE WITH OTHER PARAMETERS

Field

Inclination

Azimuth

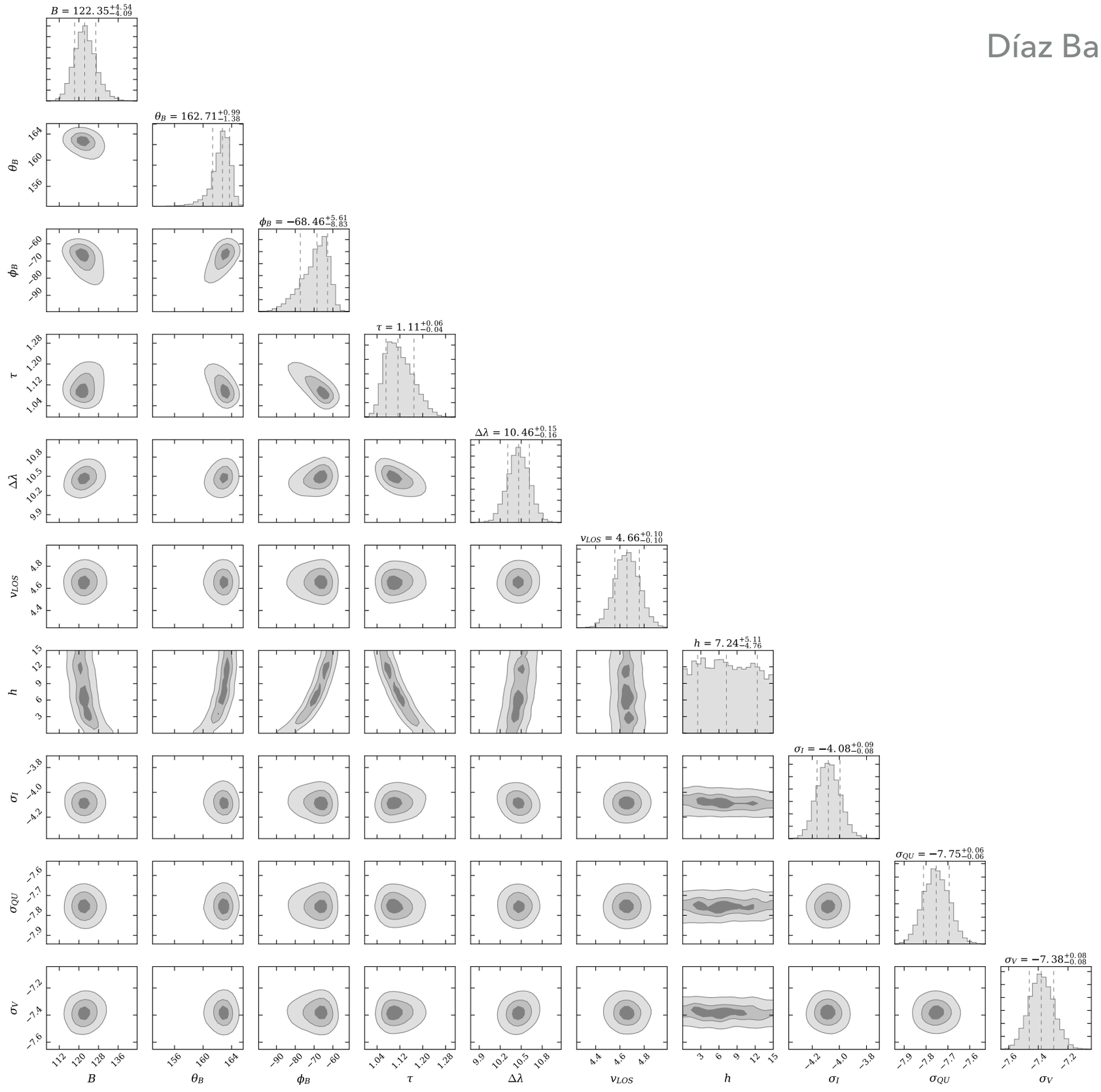
Optical depth

Width

Velocity

Height

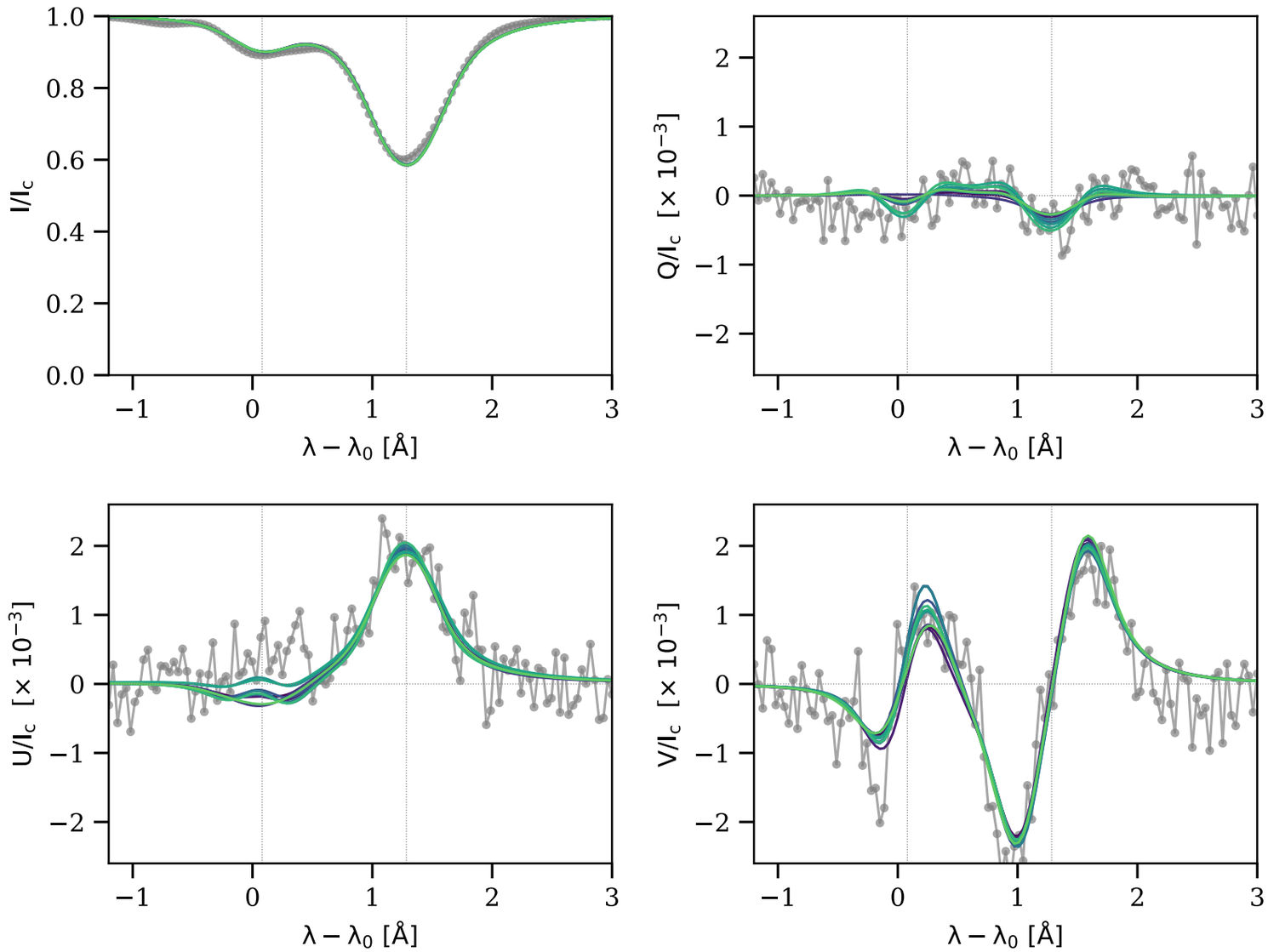
Noise



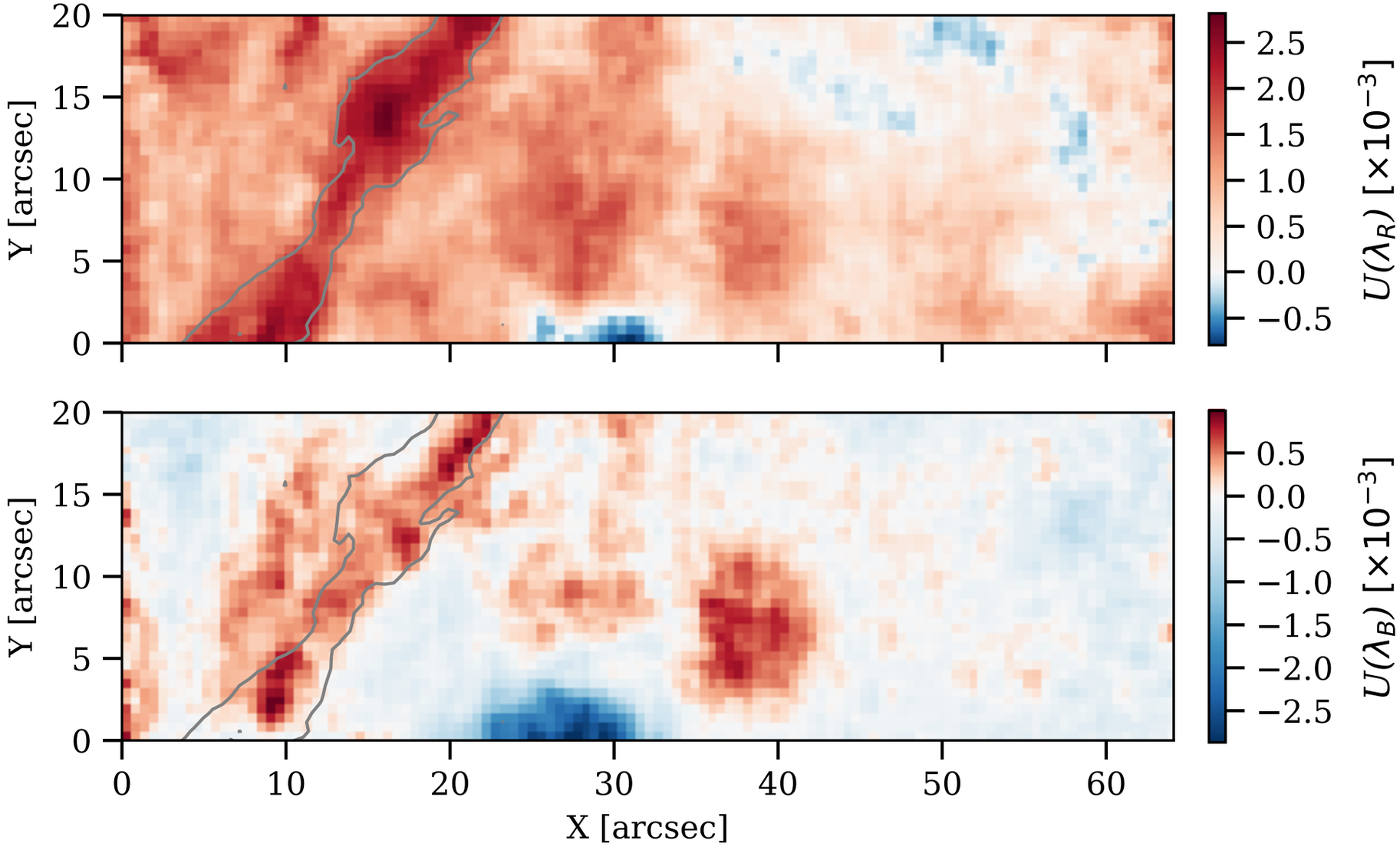
Díaz Baso et al. (in prep)

TWO COMPONENT INVERSION

Díaz Baso et al. (in prep)



CANNOT BE EXPLAINED WITH HAZEL IN NORMAL CONDITIONS



Díaz Baso et al. (in prep)