

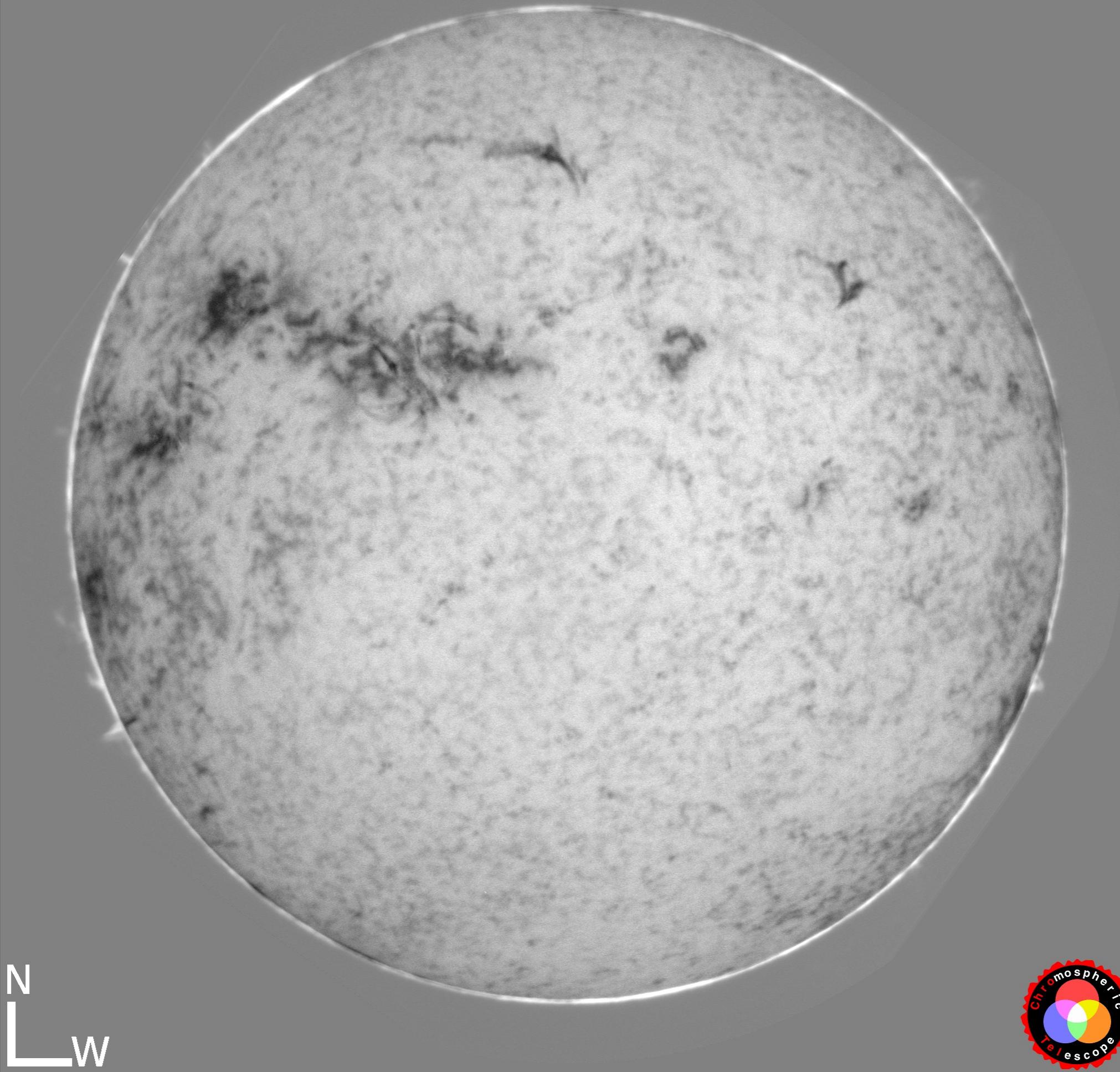


A. ASENSIO RAMOS

HE I MULTIPLETS: DIAGNOSTIC POTENTIAL

ChroTel Helium 1083 nm

16 Apr 2015 07:48:20 UTC

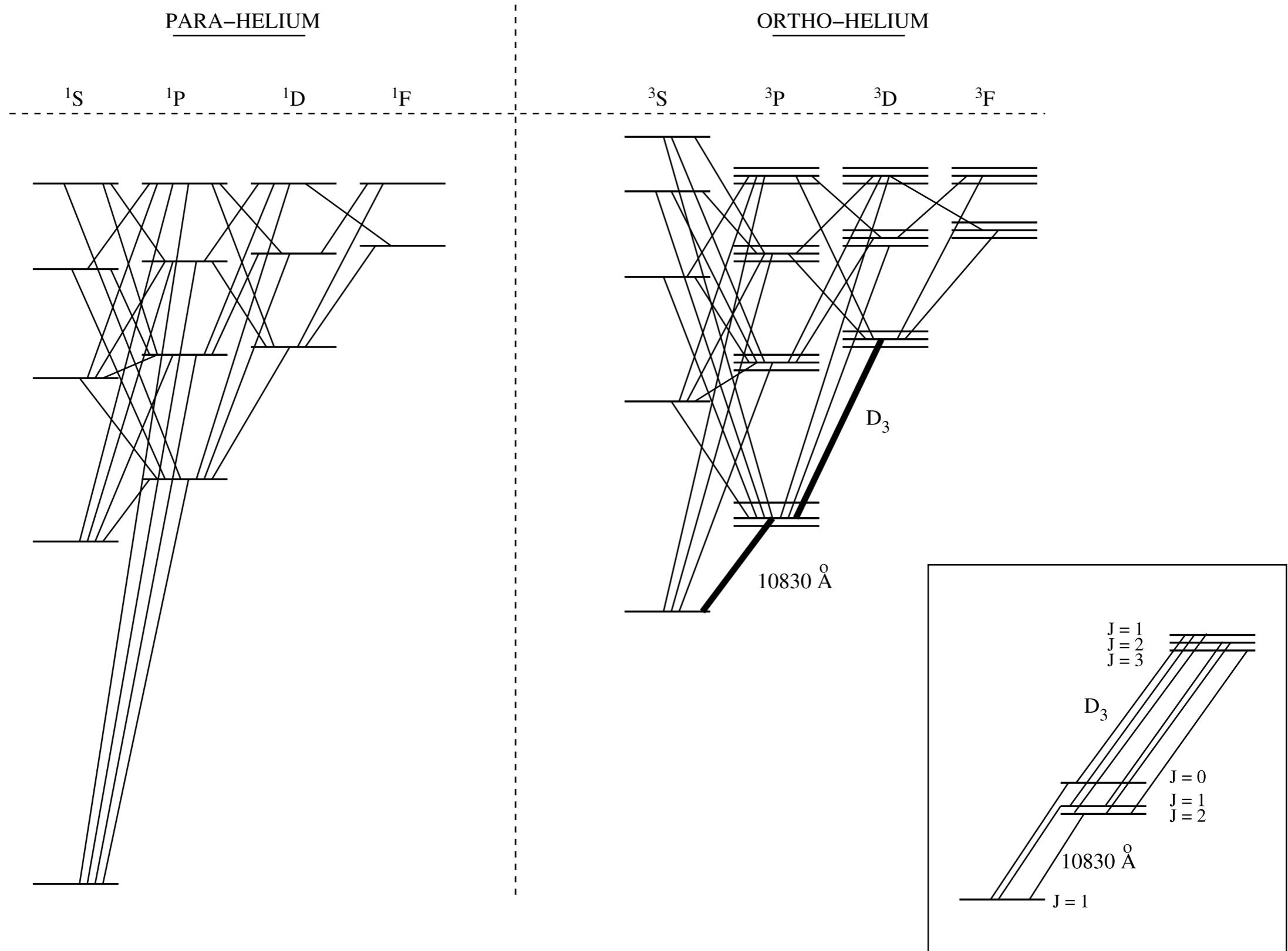


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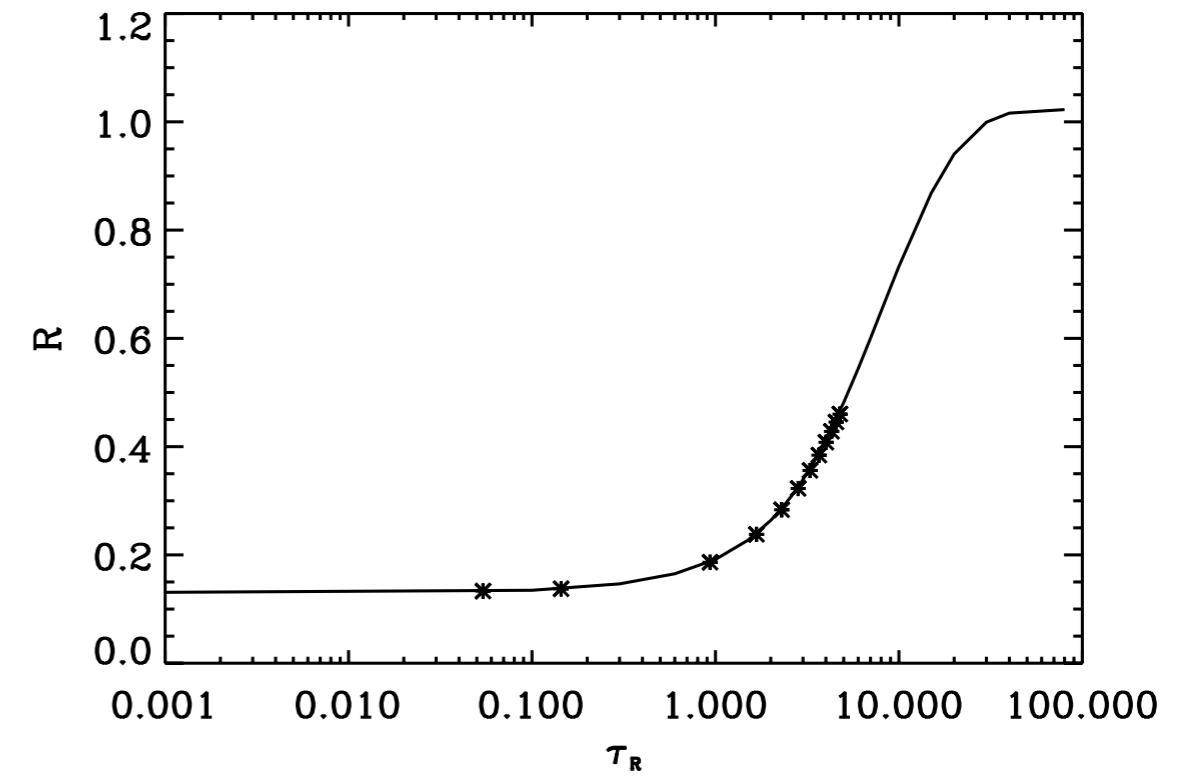
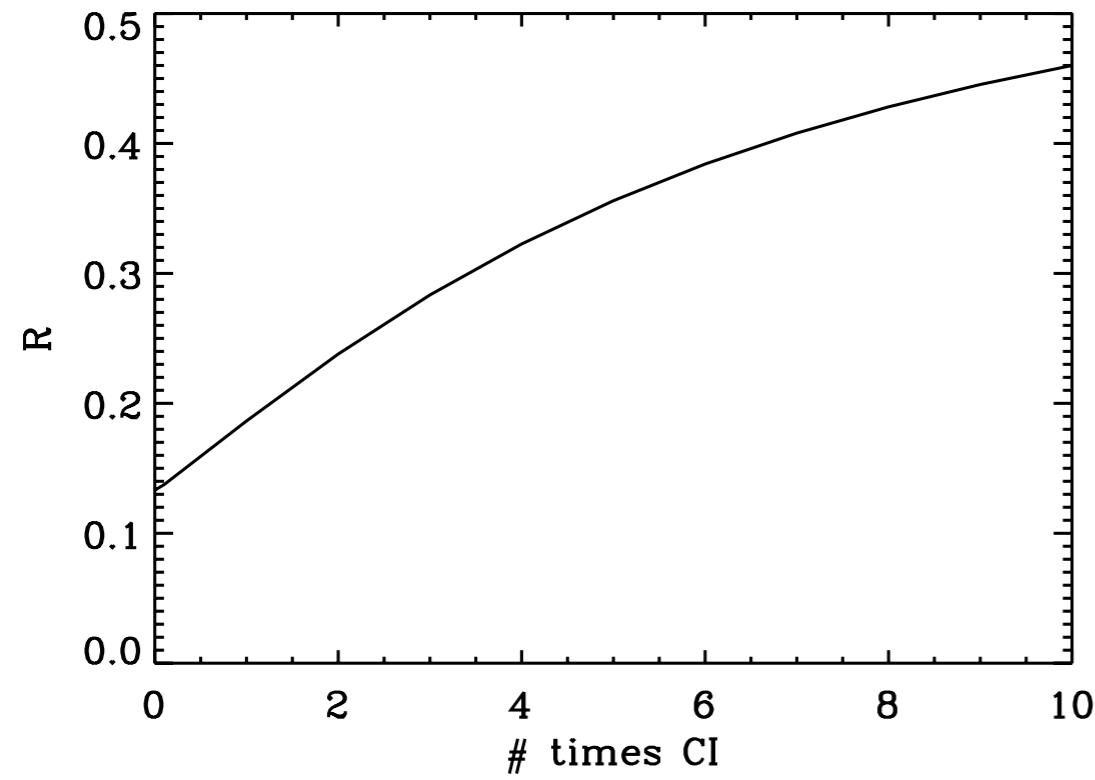
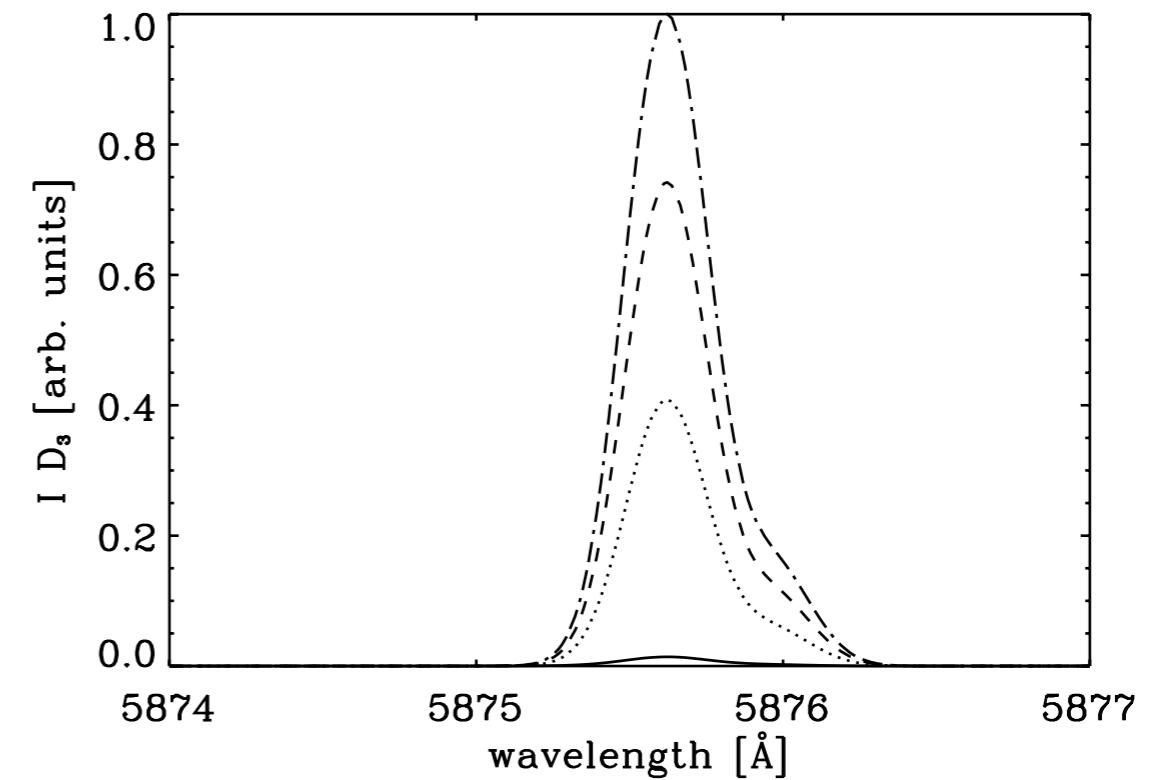
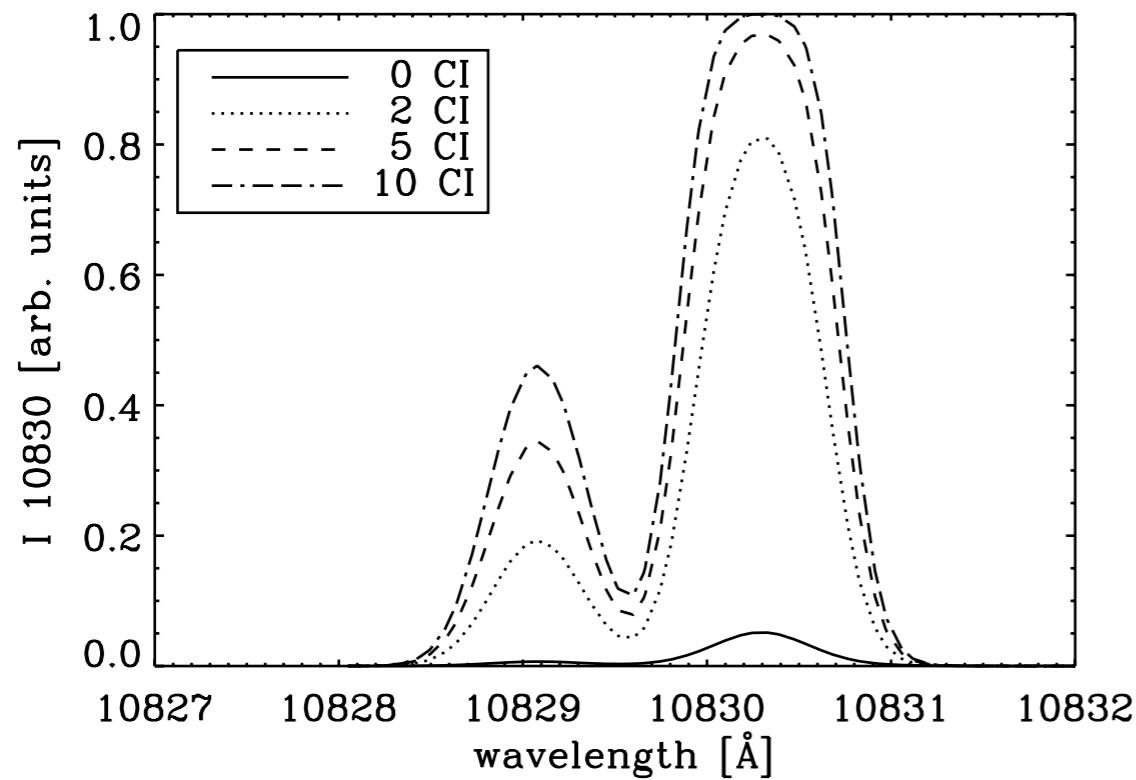


GENERALITIES

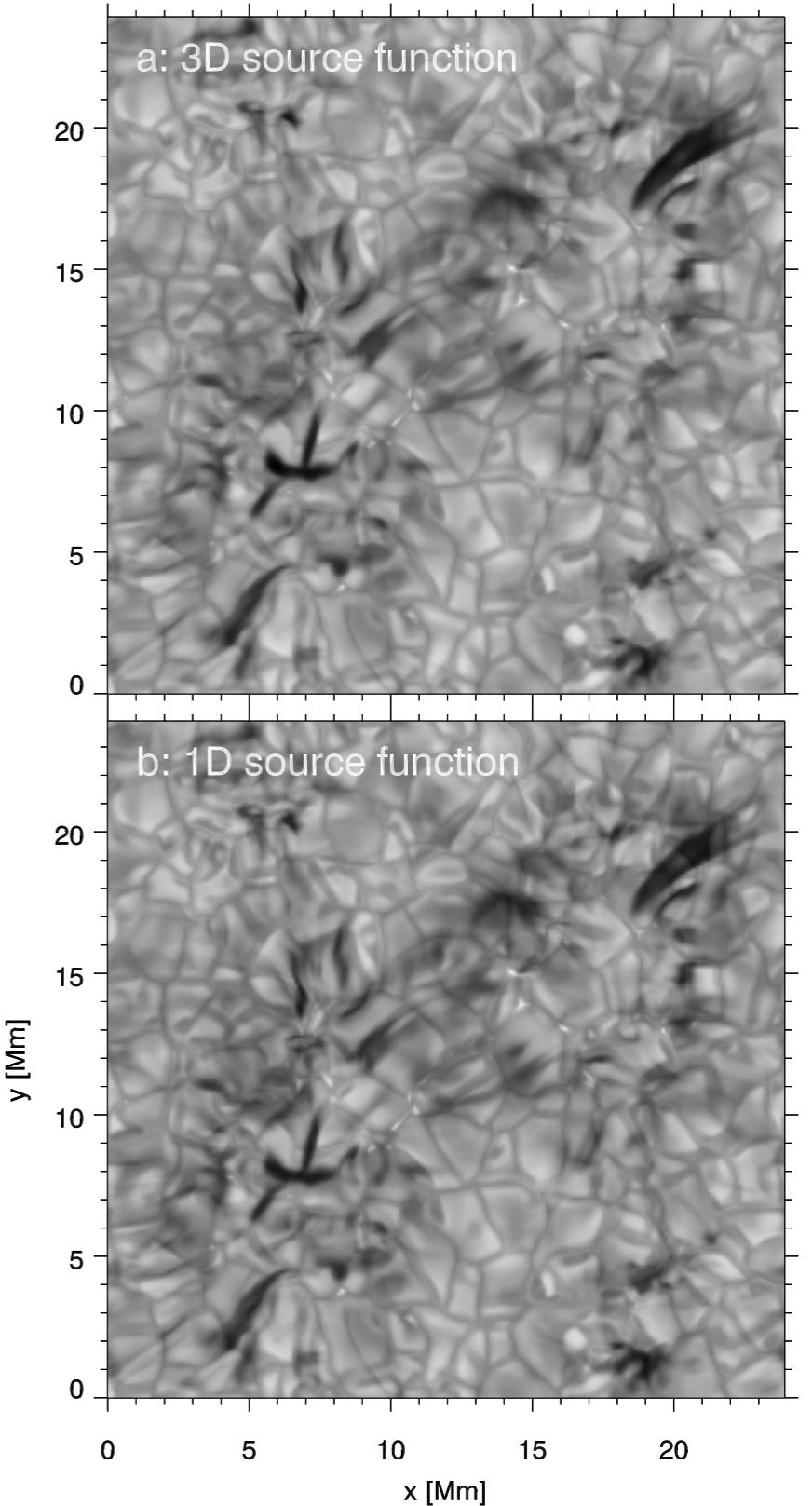
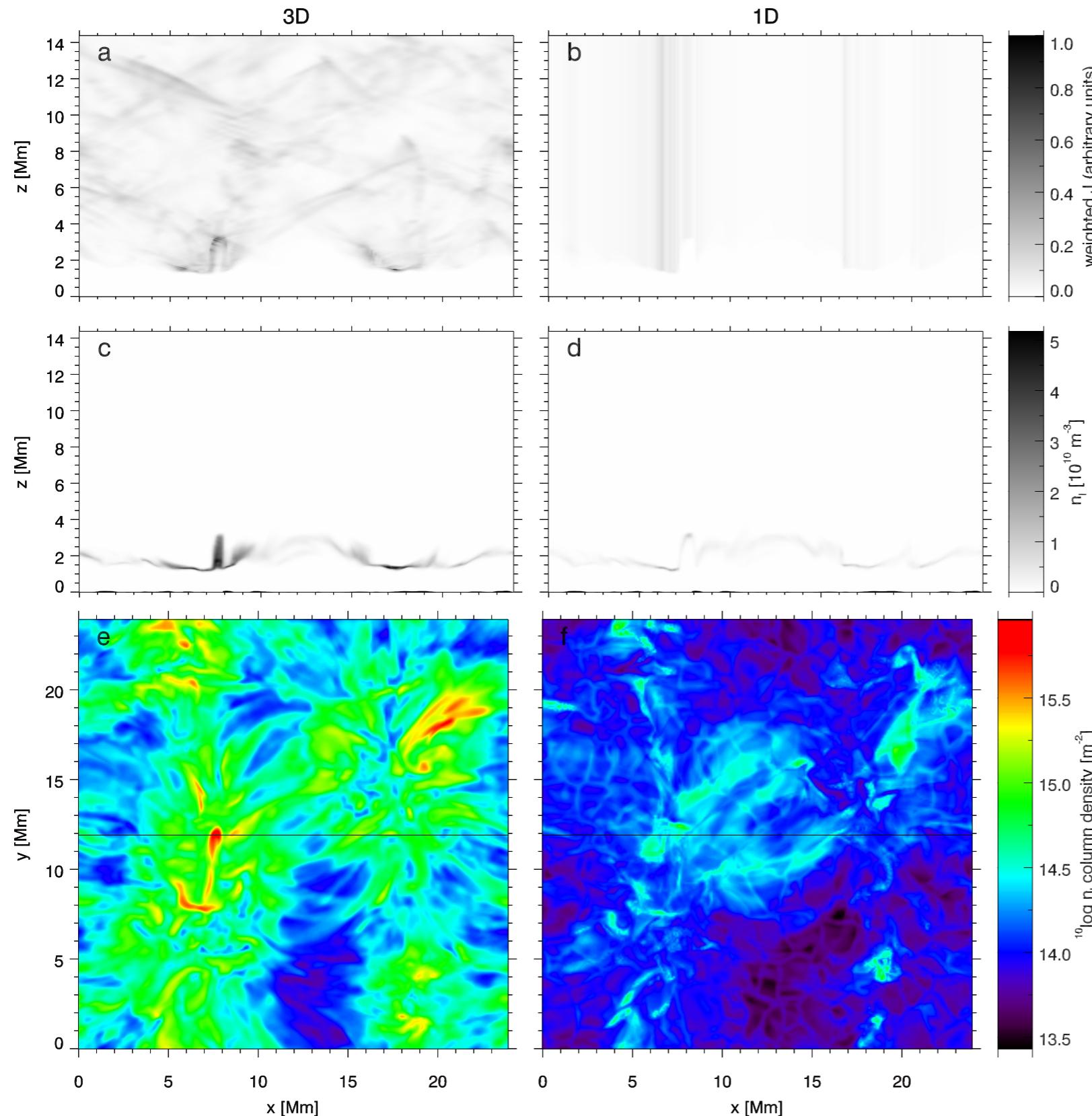
TRIPLET LINES: PHOTOIONIZATION+RECOMBINATION



BLUE VS RED IS SENSITIVE TO OPTICAL DEPTH + CORONAL IRRADIATION



3D EFFECTS

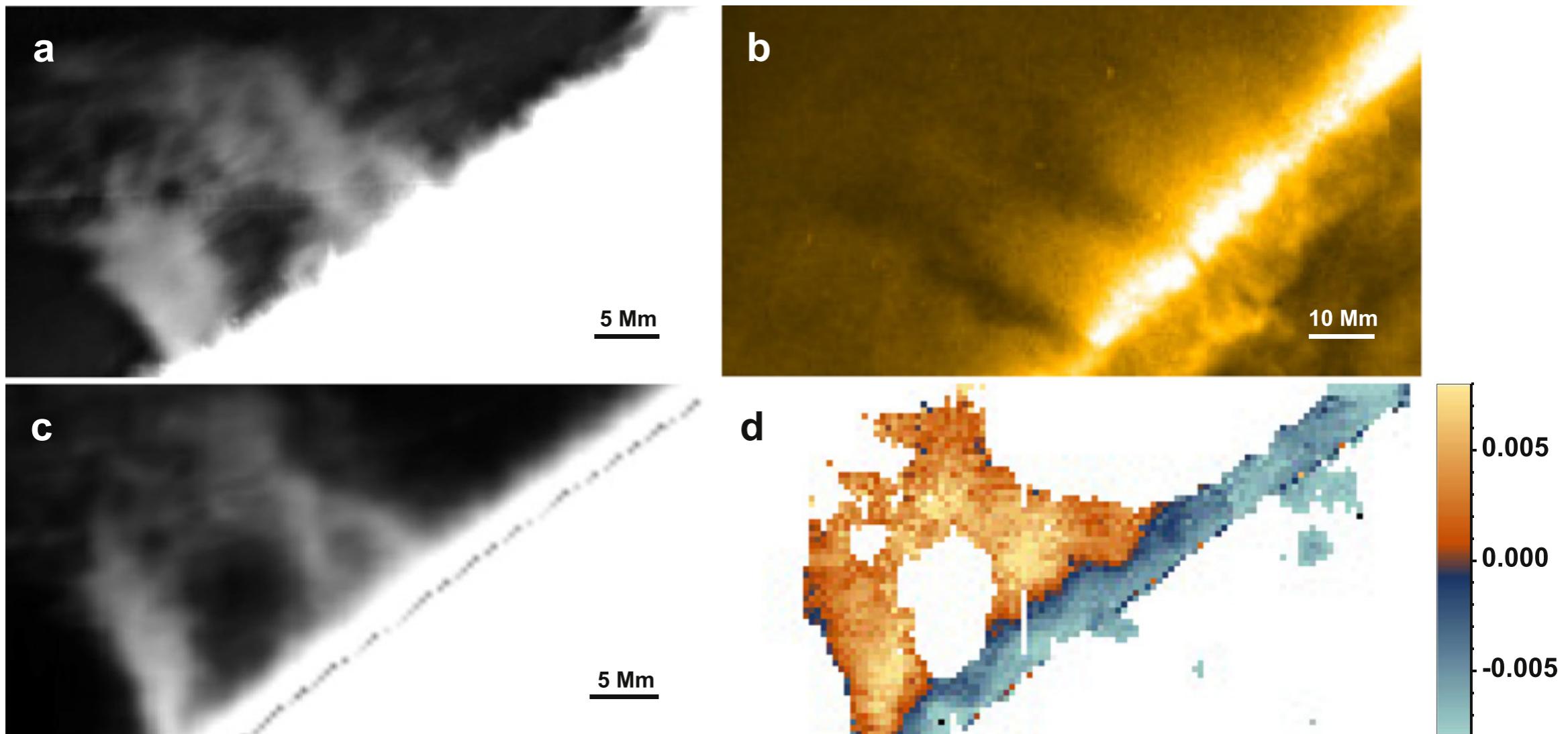


APPLICATIONS

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

PROMINENCES

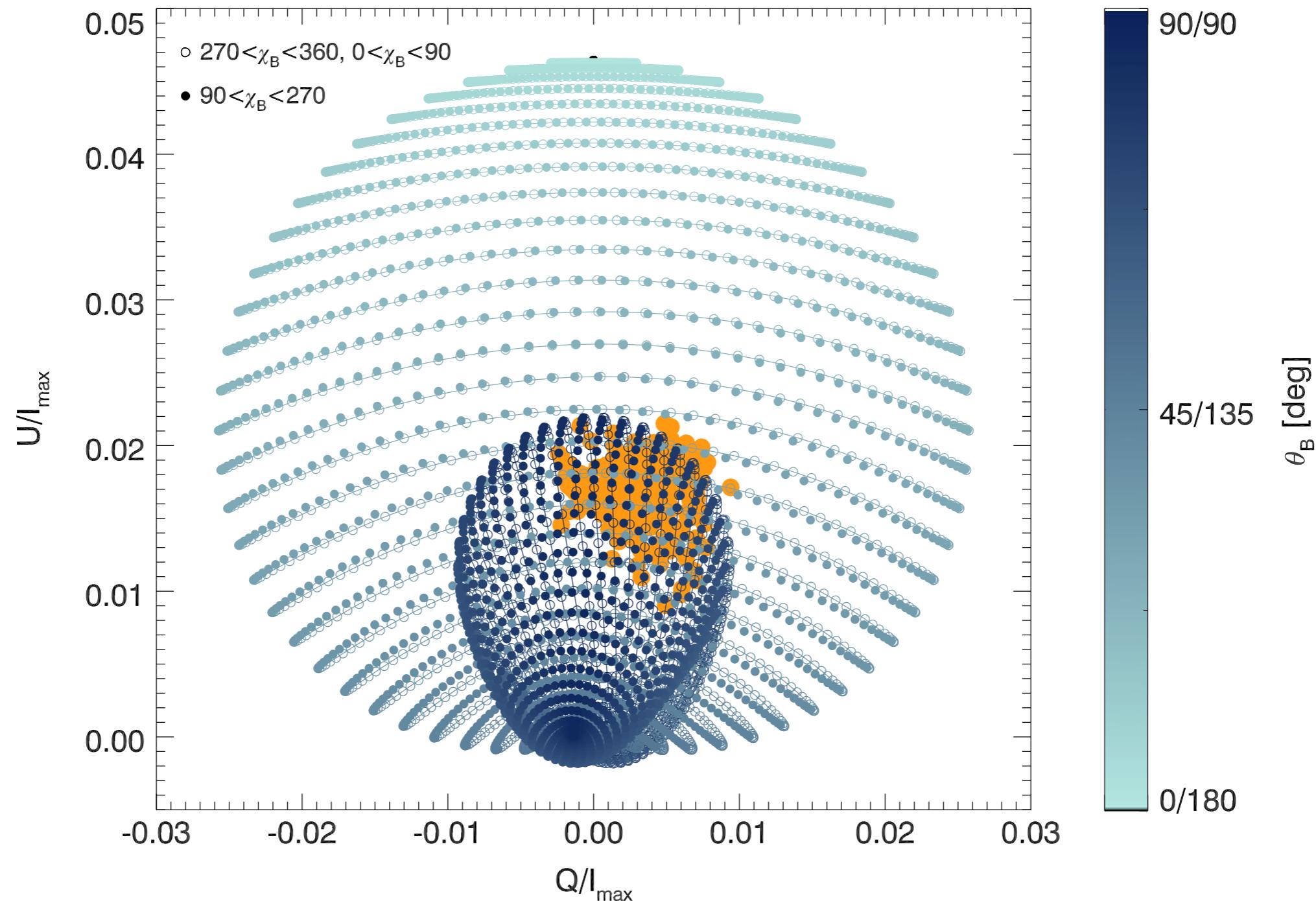
PROMINENCES: DOUBLE-HELIX IN PROMINENCE FEET



Martínez González et al. (2015)

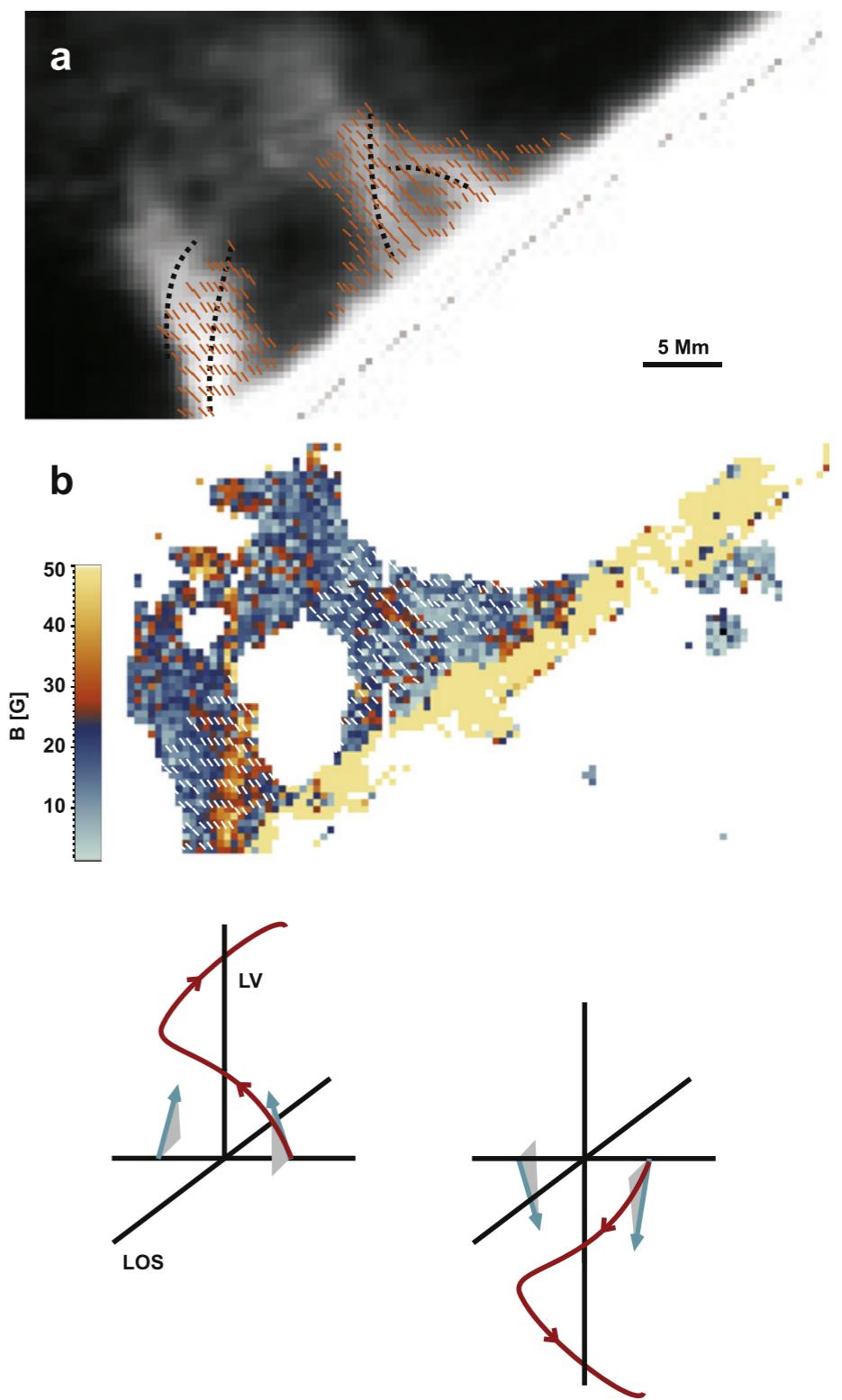
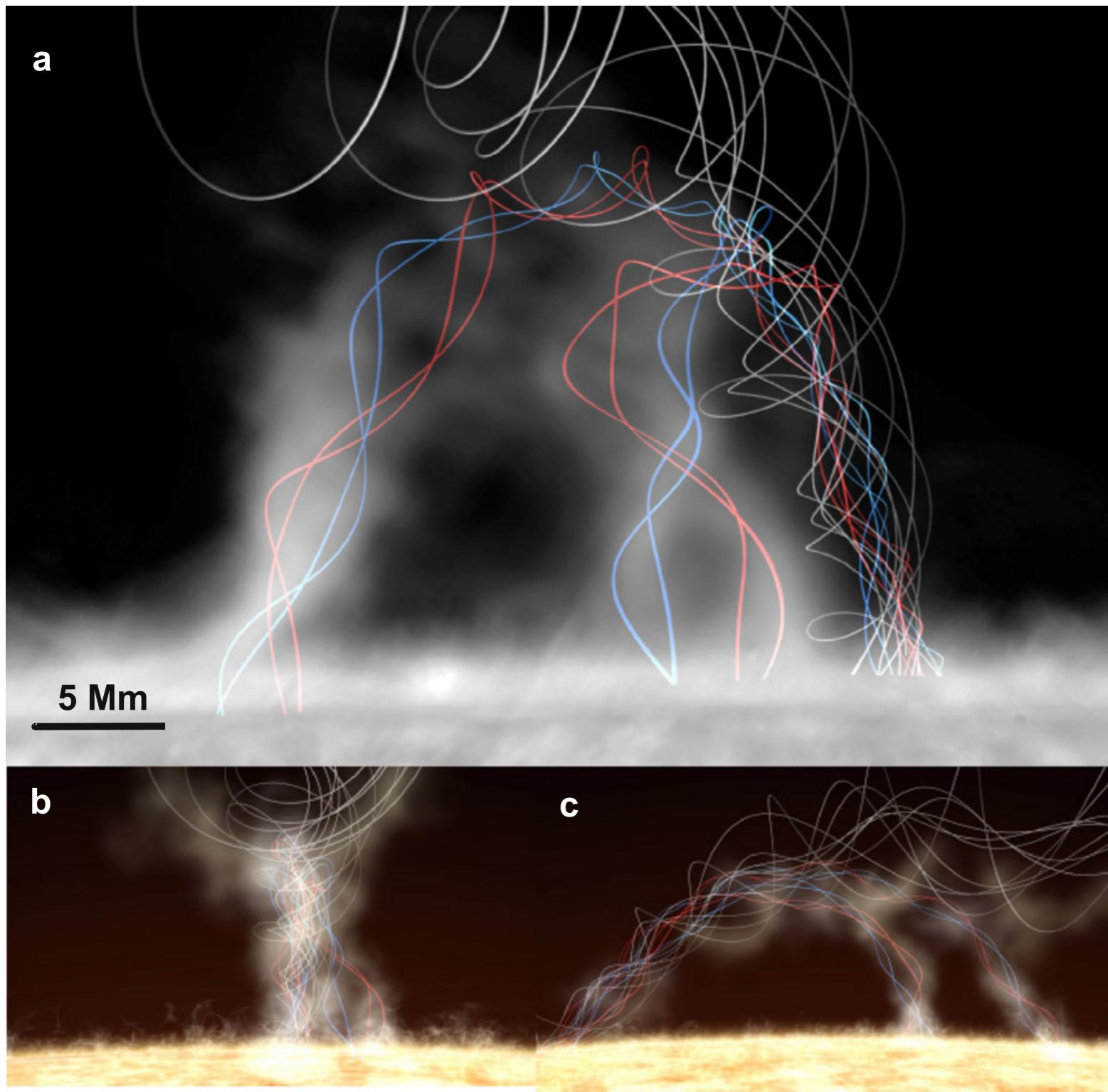
DOUBLE-HELIX IN PROMINENCE FEET

Martínez González et al. (2015)

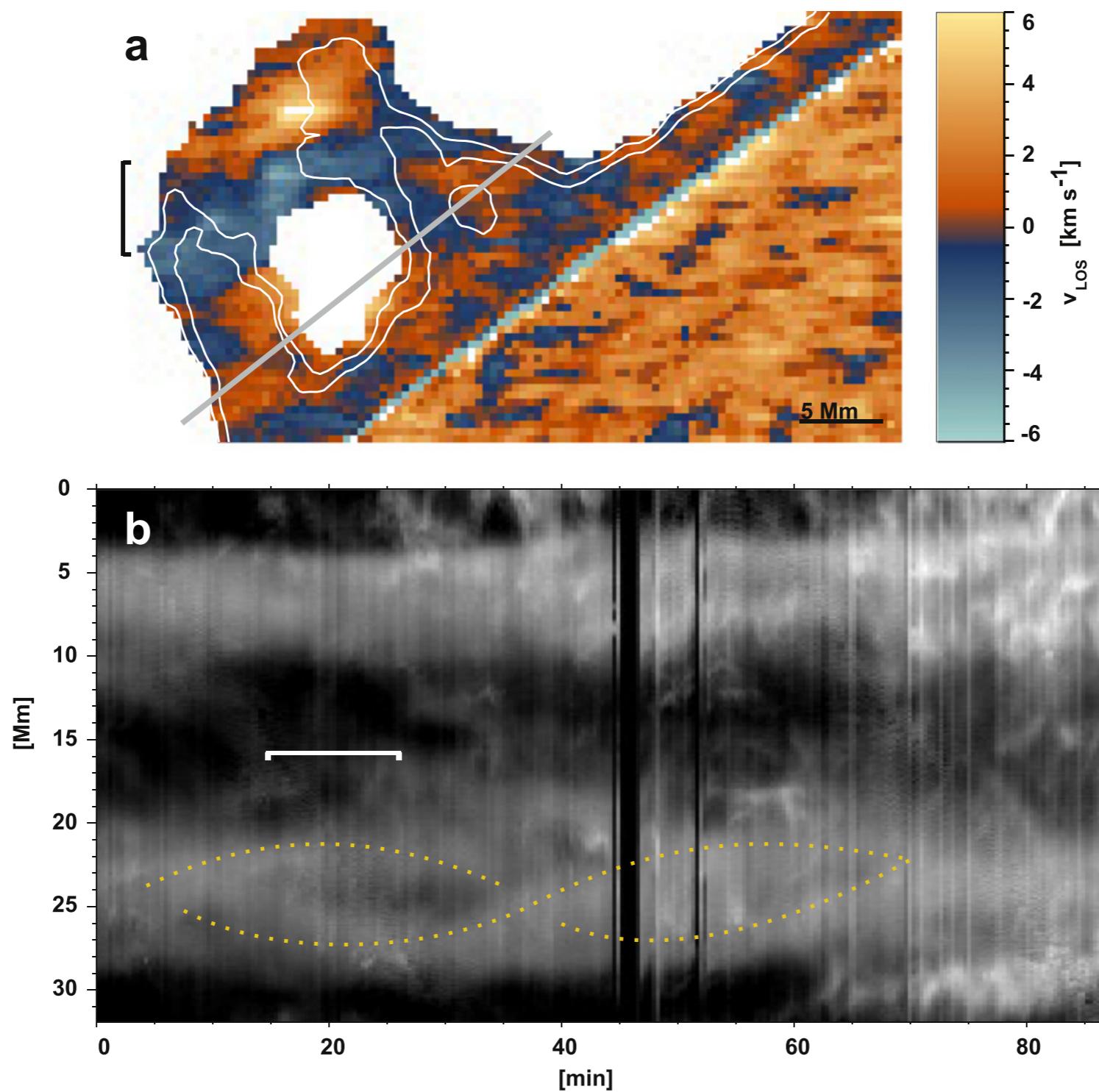


Additional criteria is required to choose between
vertical or horizontal

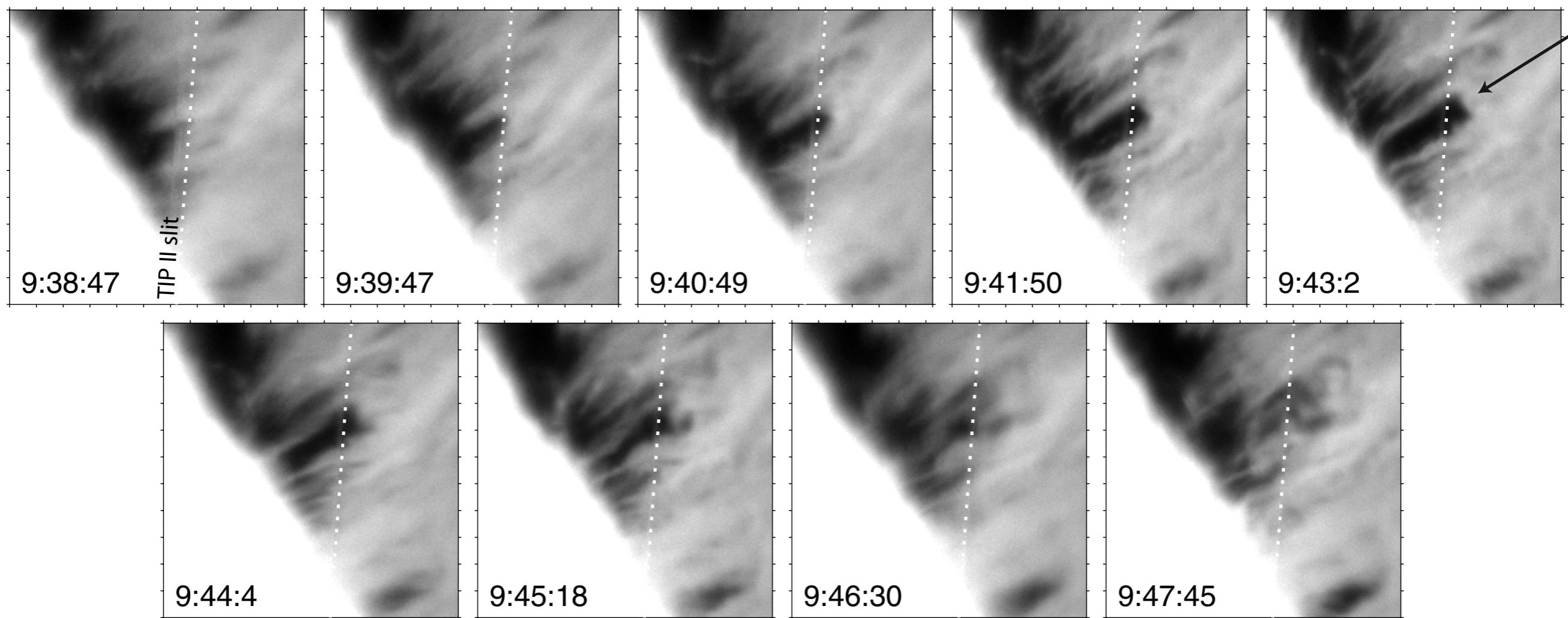
DOUBLE-HELIX IN PROMINENCE FEET



DOUBLE-HELIX IN PROMINENCE FEET

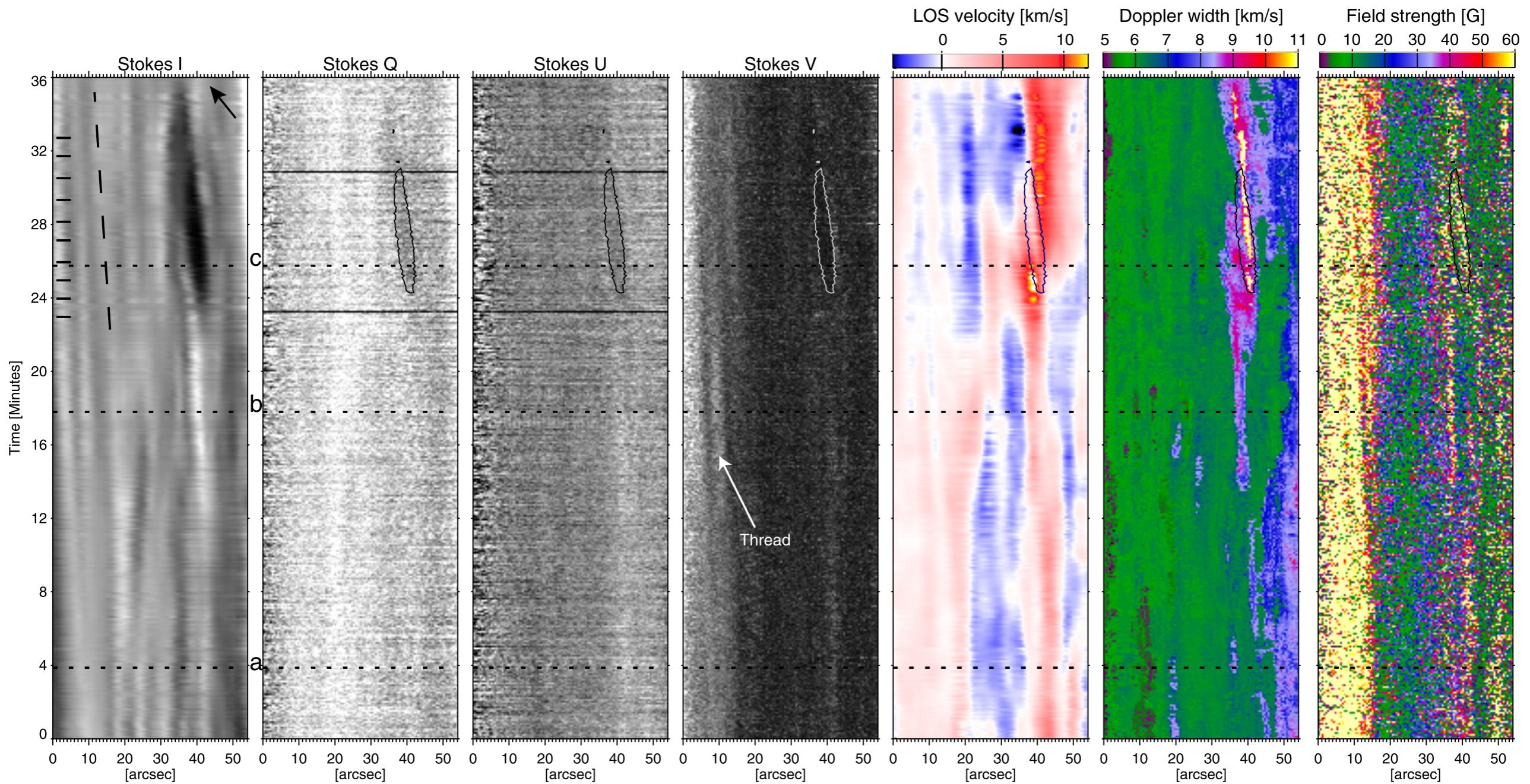


RISING OF PLASMA INSTABILITIES



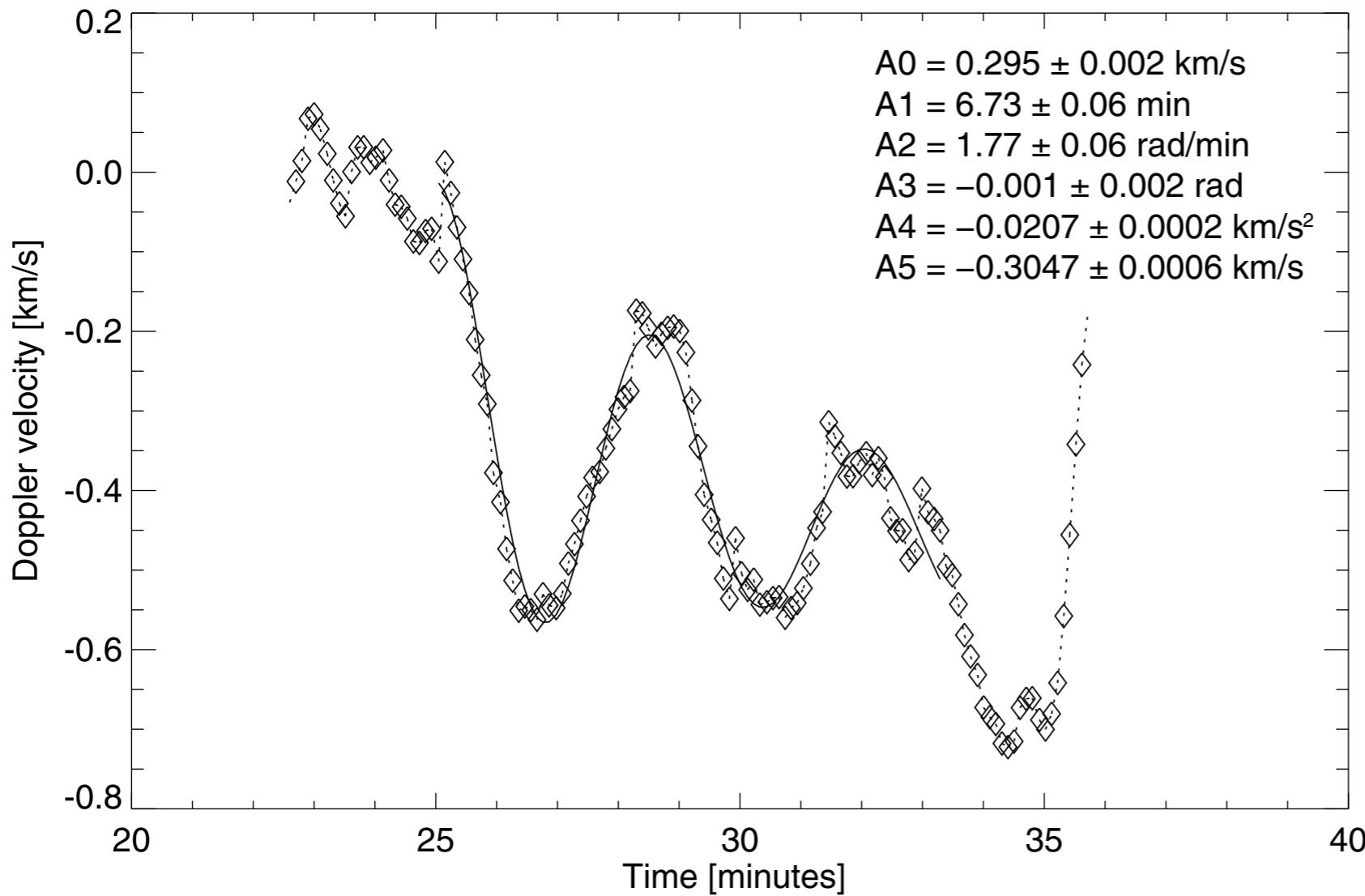
Orozco Suárez et al. (2014)

NO CLEAR CHANGE IN MAGNETIC FIELD



PROMINENCE SEISMOLOGY

Orozco Suárez et al. (2014)

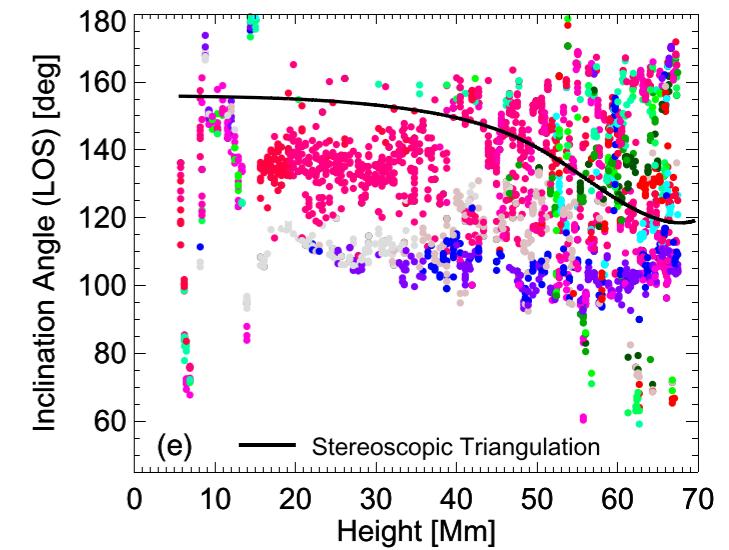
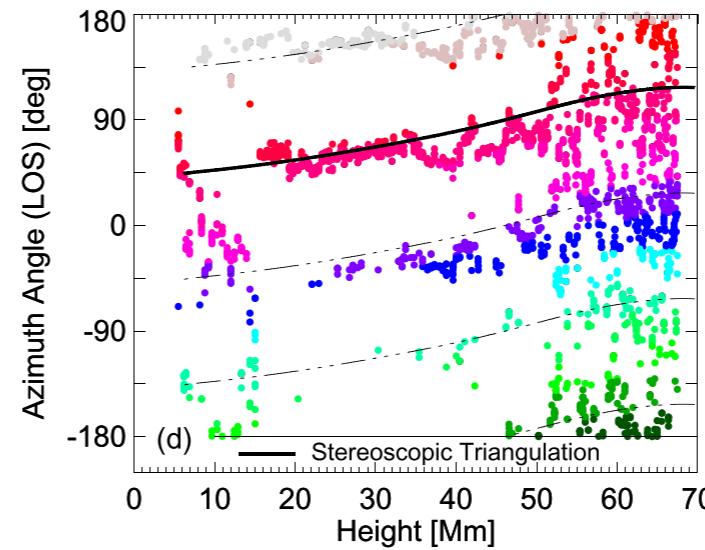
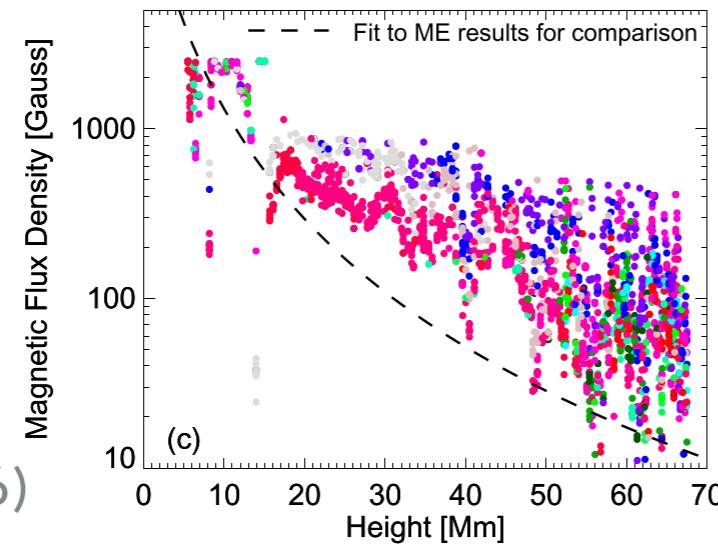
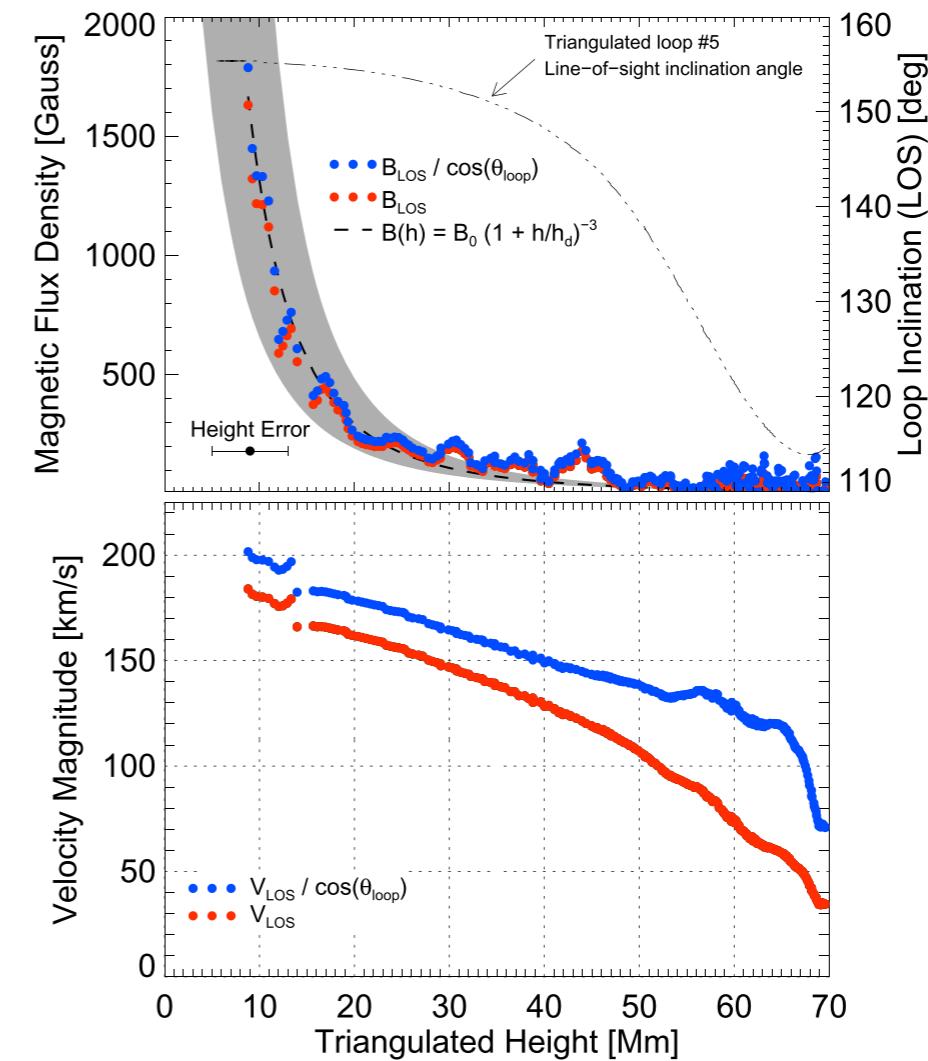
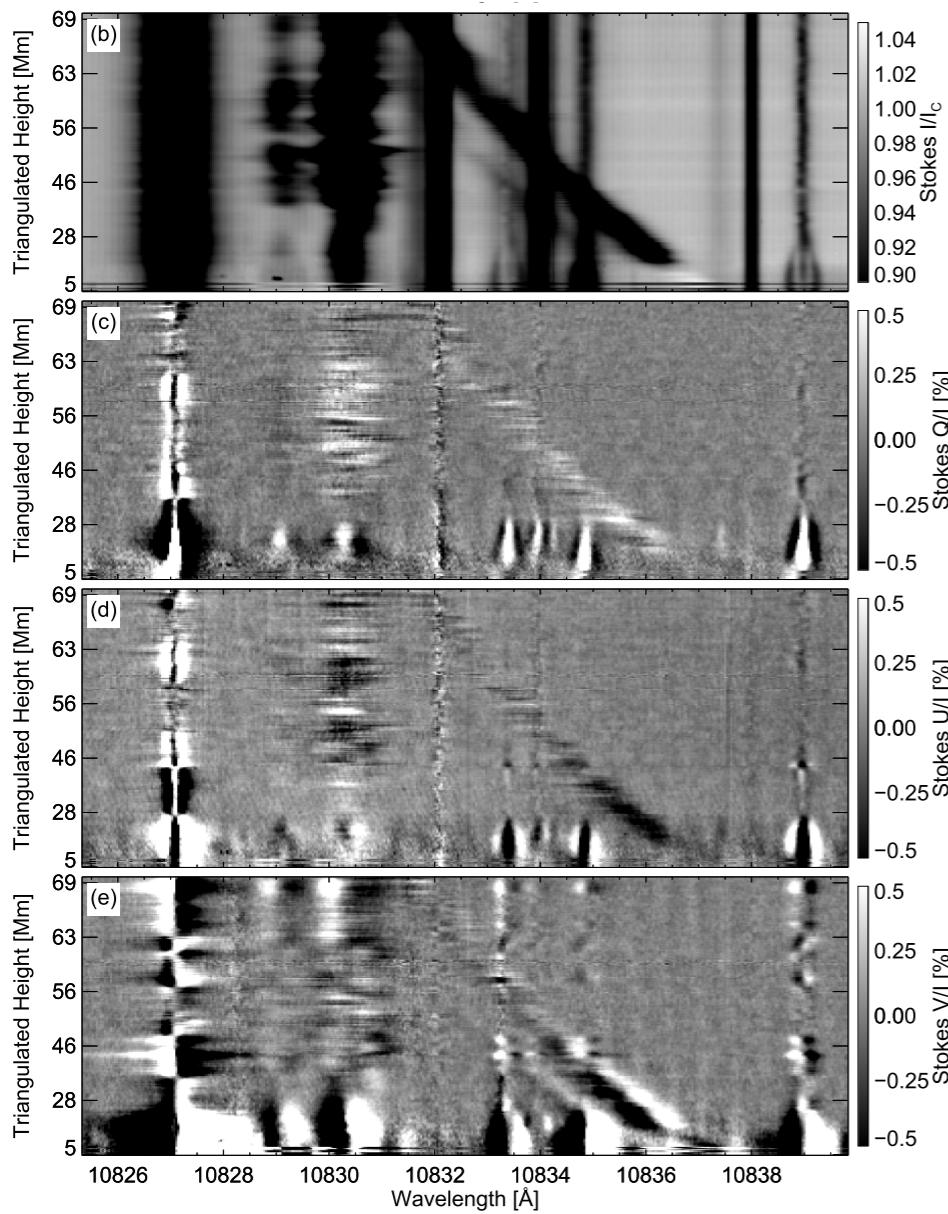


$$P = \frac{\pi}{c_{Ap}} \sqrt{\frac{wL}{2}}$$

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

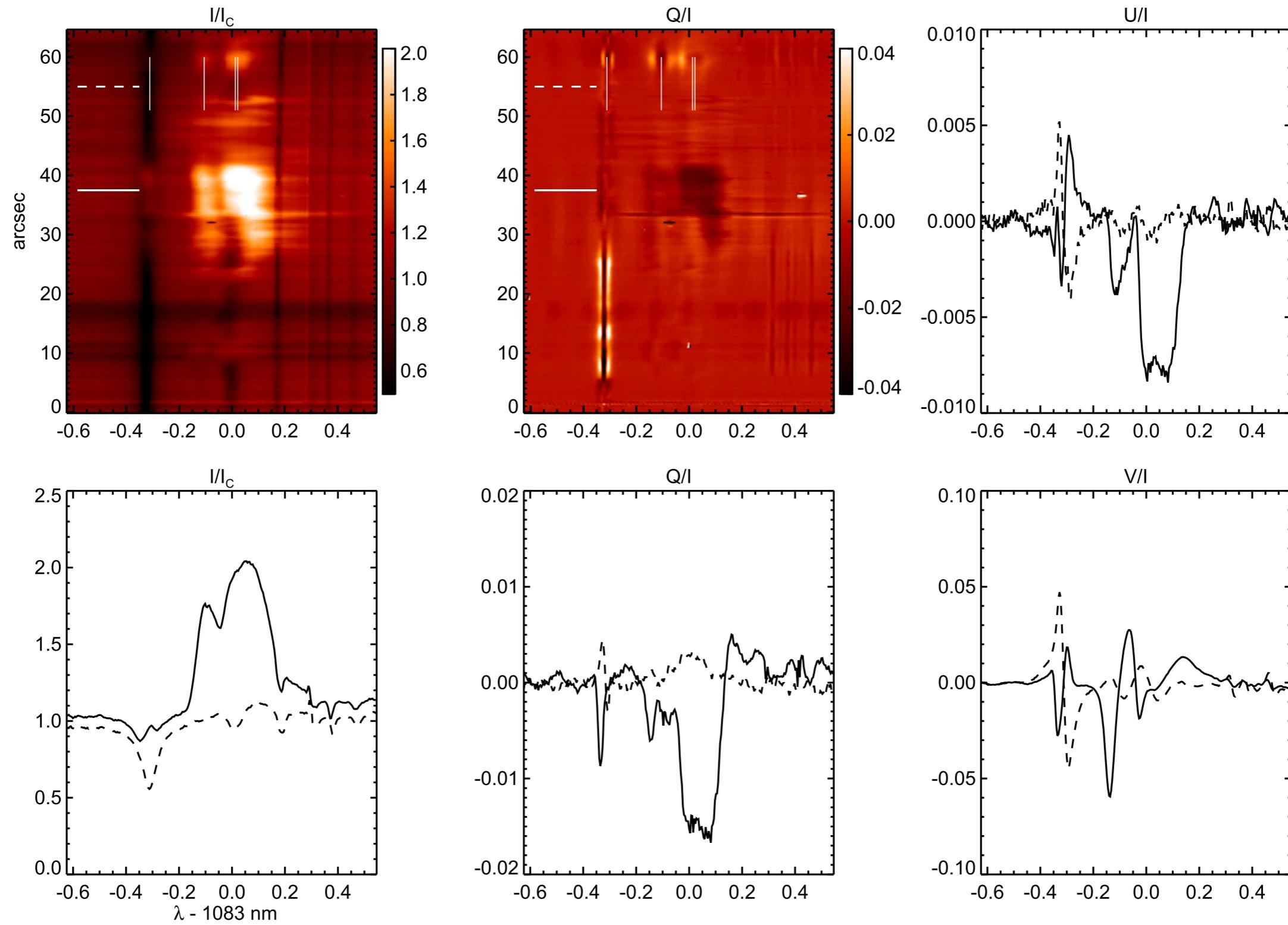
$$\rho_p L w = 1.8 \times 10^5 \pm 1.5 \times 10^5 \text{ kg m}^{-1}$$

CORONAL RAIN



FLARES

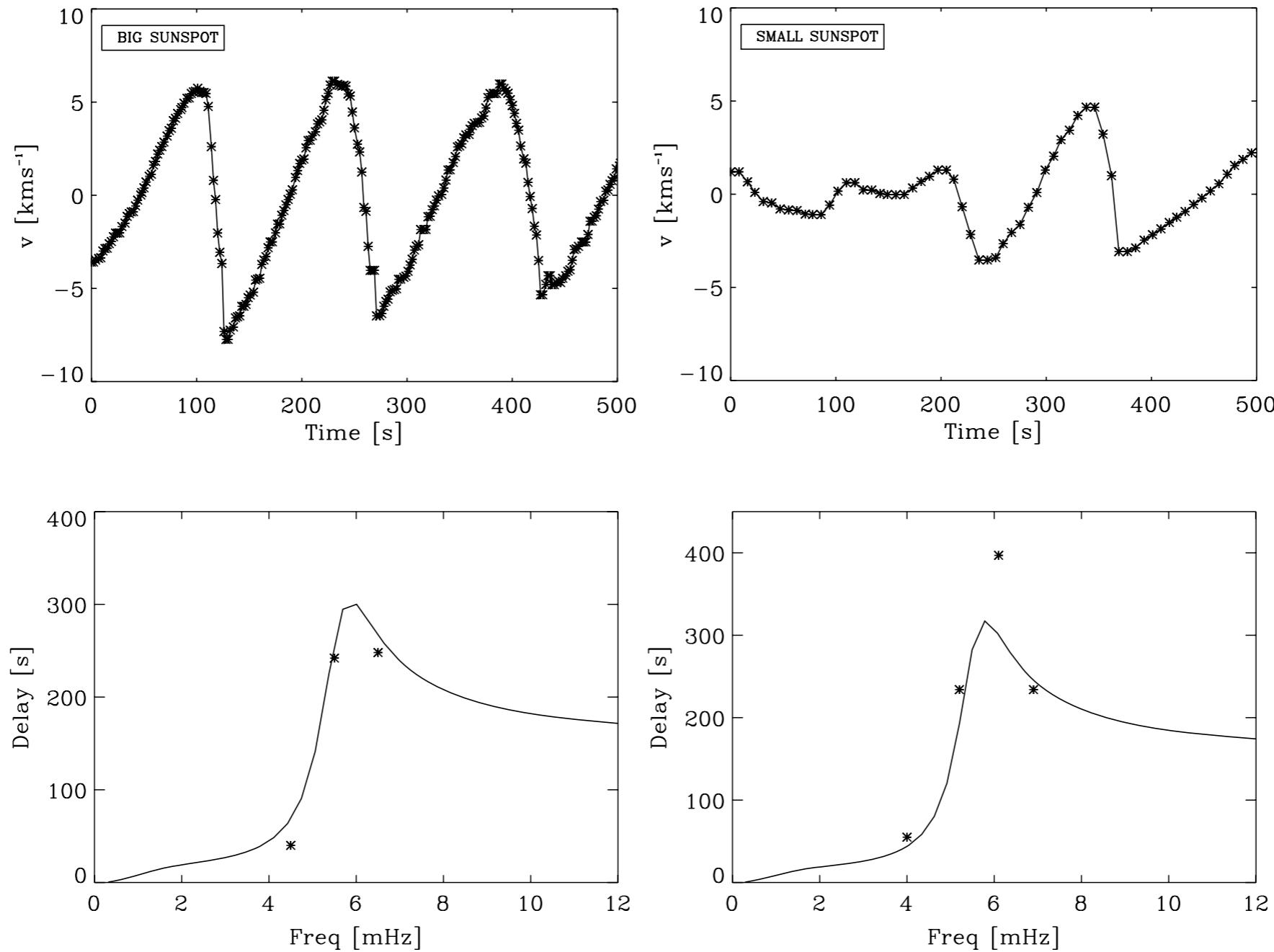
FLARES: RADIATIVE TRANSFER EFFECTS IN FLARES



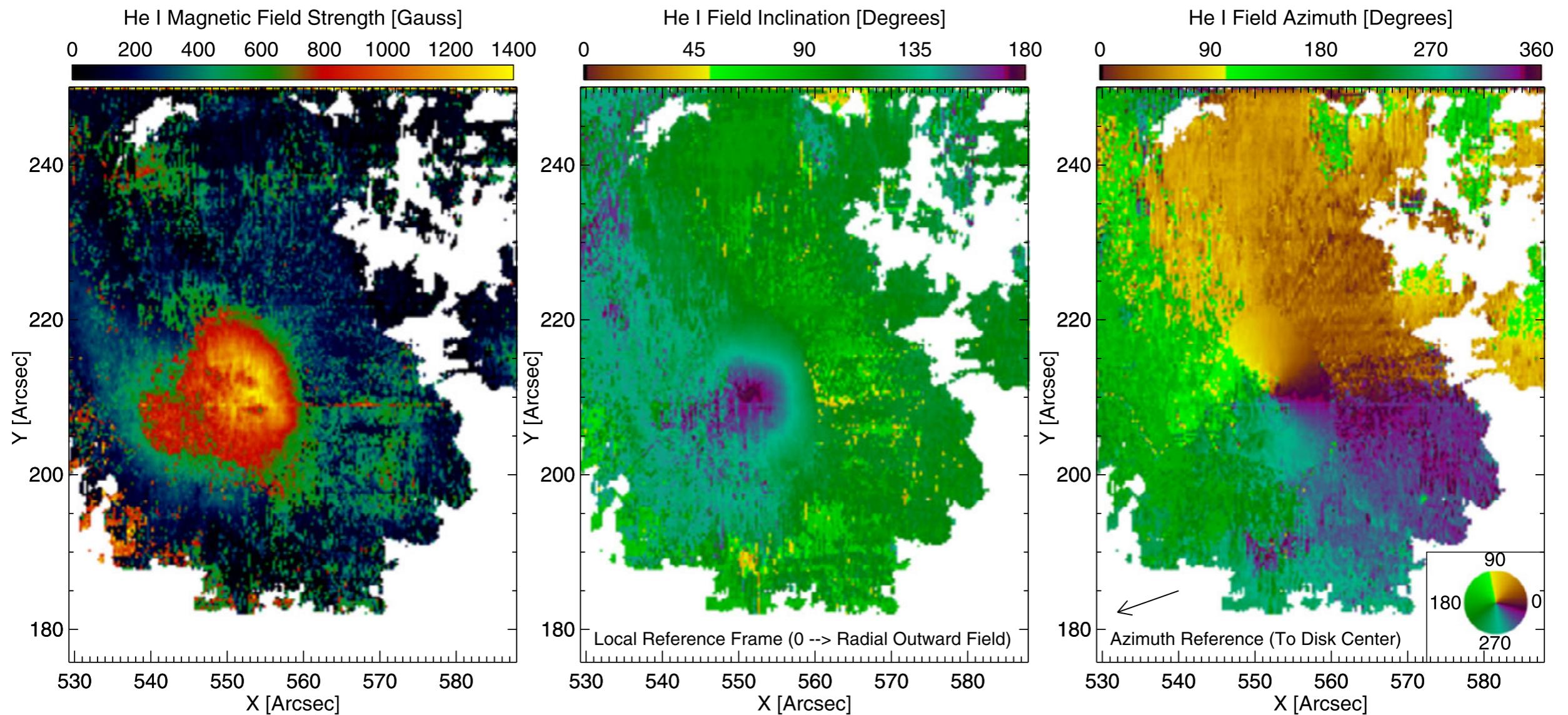
Judge et al. (2015)

SUNSPOTS

SUNPOTS: WAVES BUT WHAT ABOUT MAGNETIC FIELD?

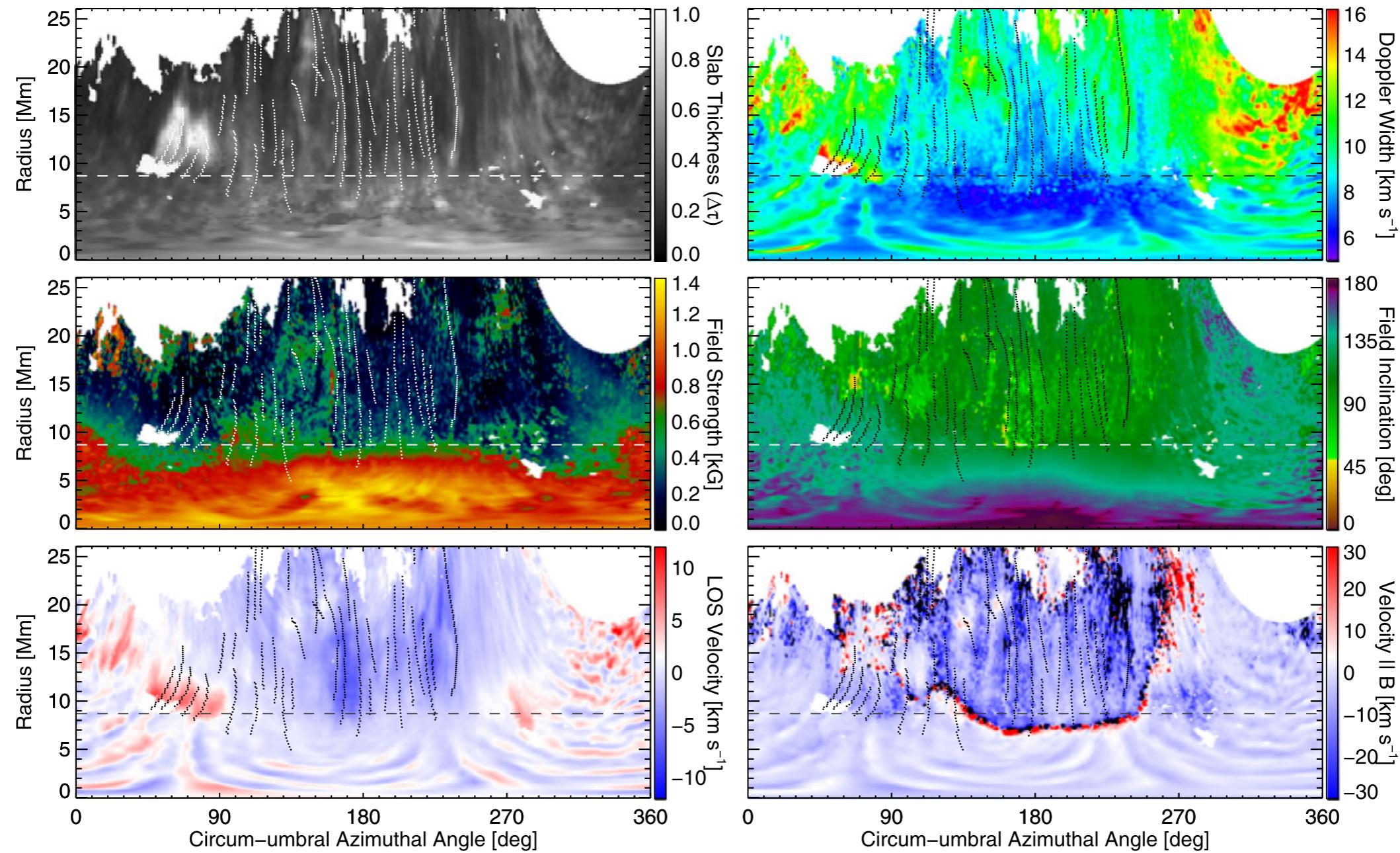


SUNSPOT CHROMOSPHERE



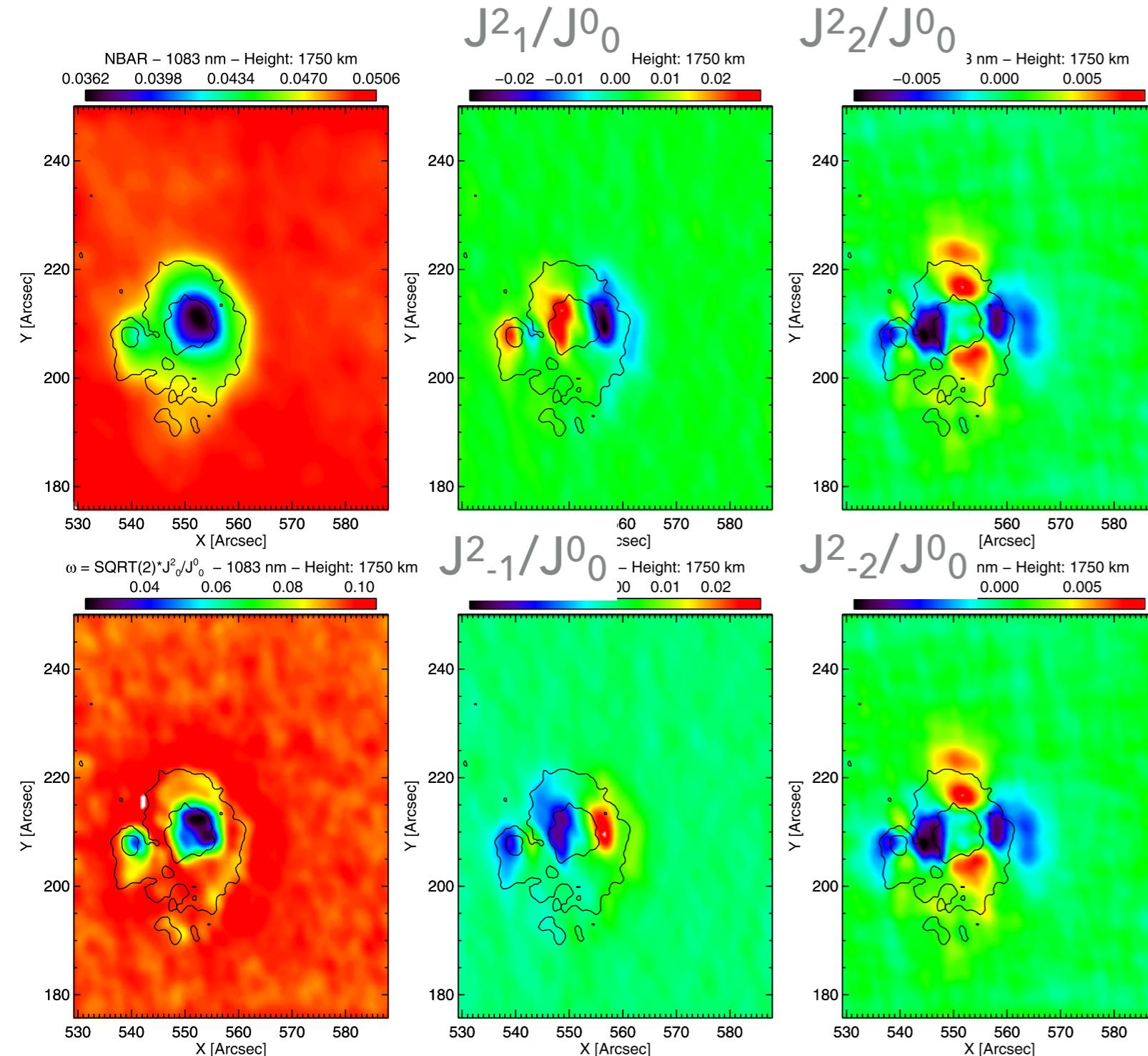
Schad (2015)

SUNSPOT CHROMOSPHERE: FIELD MORE UNIFORM THAN OTHER QUANTITIES



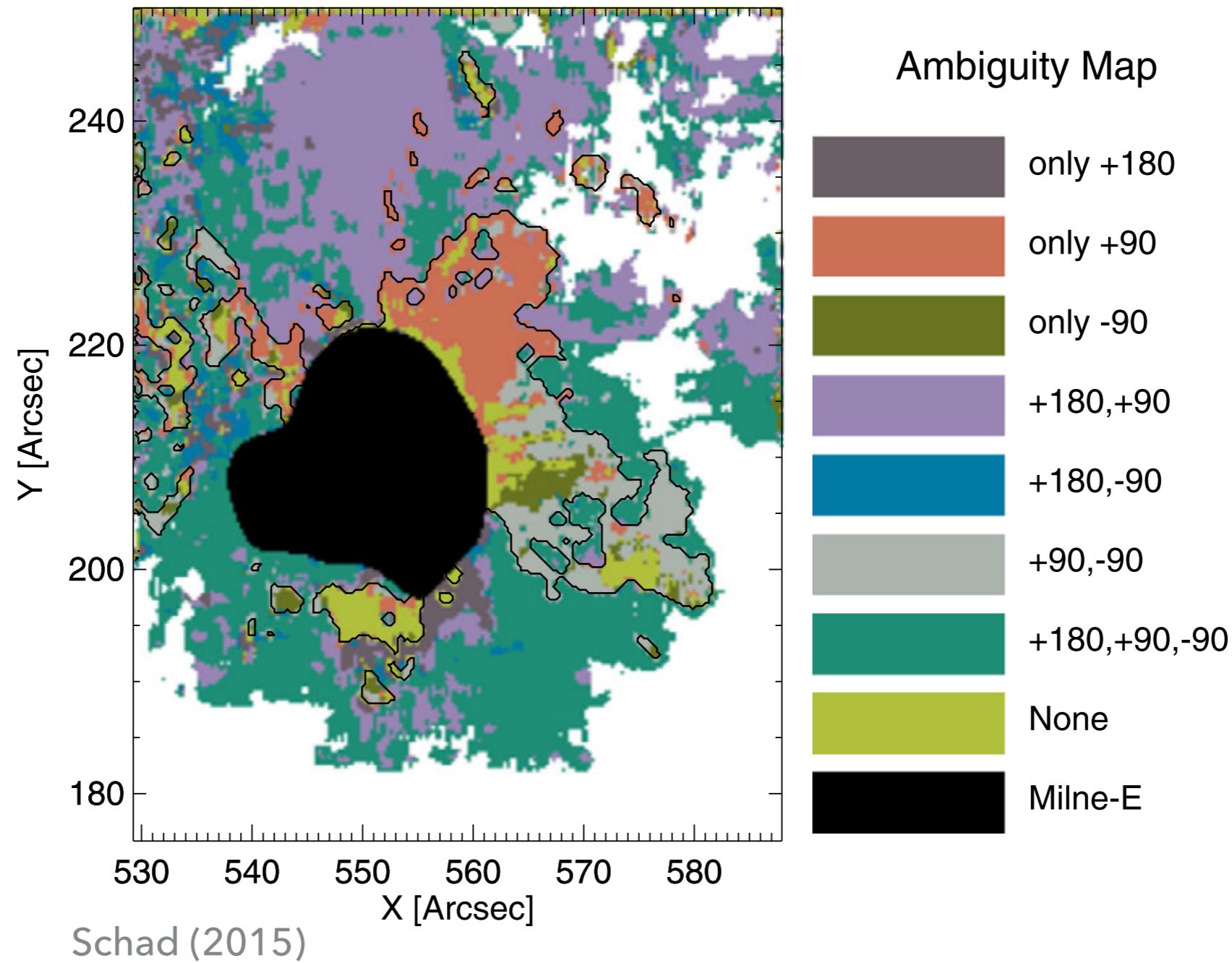
Schad (2015)

SYMMETRY BREAKING



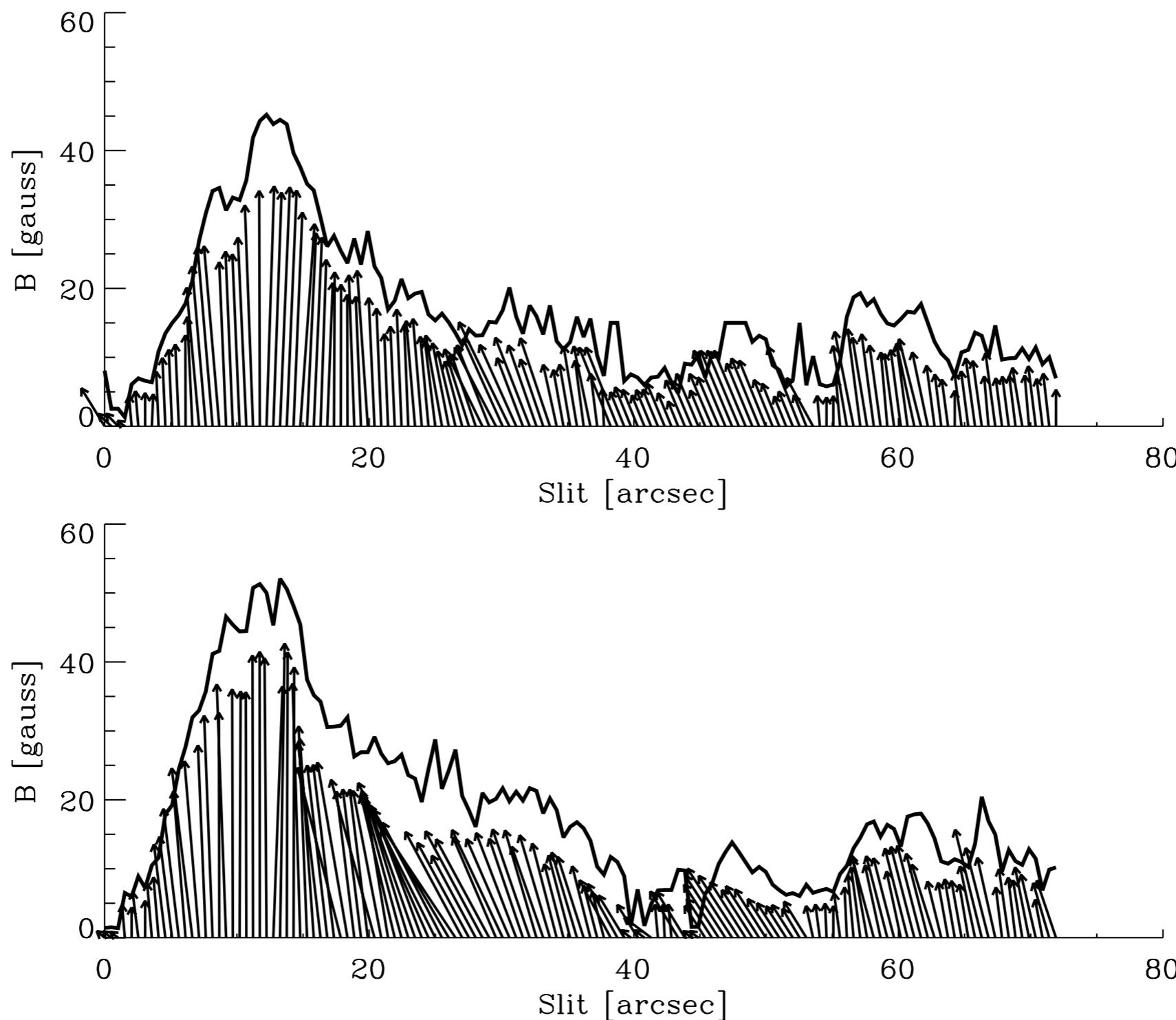
$$\begin{aligned}
 J_0^0(\nu) &= \int \frac{d\Omega}{4\pi} I(\nu, \Omega) \\
 J_0^2(\nu) &= \frac{1}{2\sqrt{2}} \int \frac{d\Omega}{4\pi} (3 \cos^2 \theta - 1) I(\nu, \Omega) \\
 J_{\pm 1}^2(\nu) &= \mp \frac{\sqrt{3}}{2} \int \frac{d\Omega}{4\pi} \sin \theta \cos \theta e^{\pm i\phi} I(\nu, \Omega) \\
 J_{\pm 2}^2(\nu) &= \mp \frac{\sqrt{3}}{4} \int \frac{d\Omega}{4\pi} \sin^2 \theta e^{\pm 2i\phi} I(\nu, \Omega)
 \end{aligned}$$

AMBIGUITIES

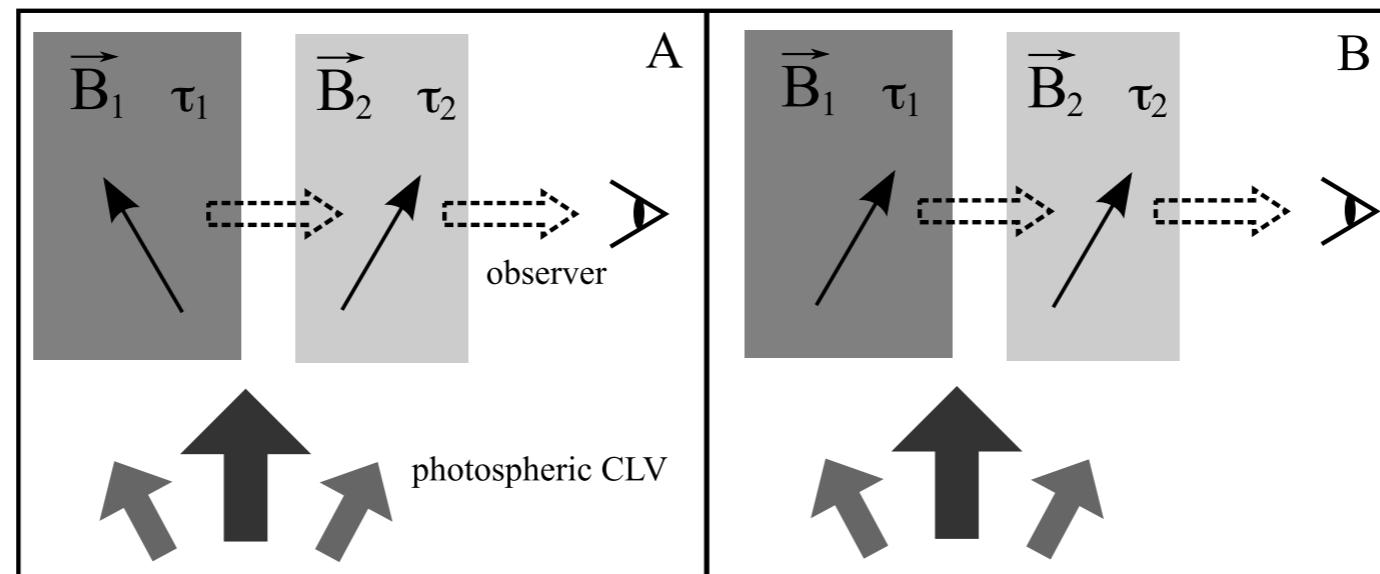
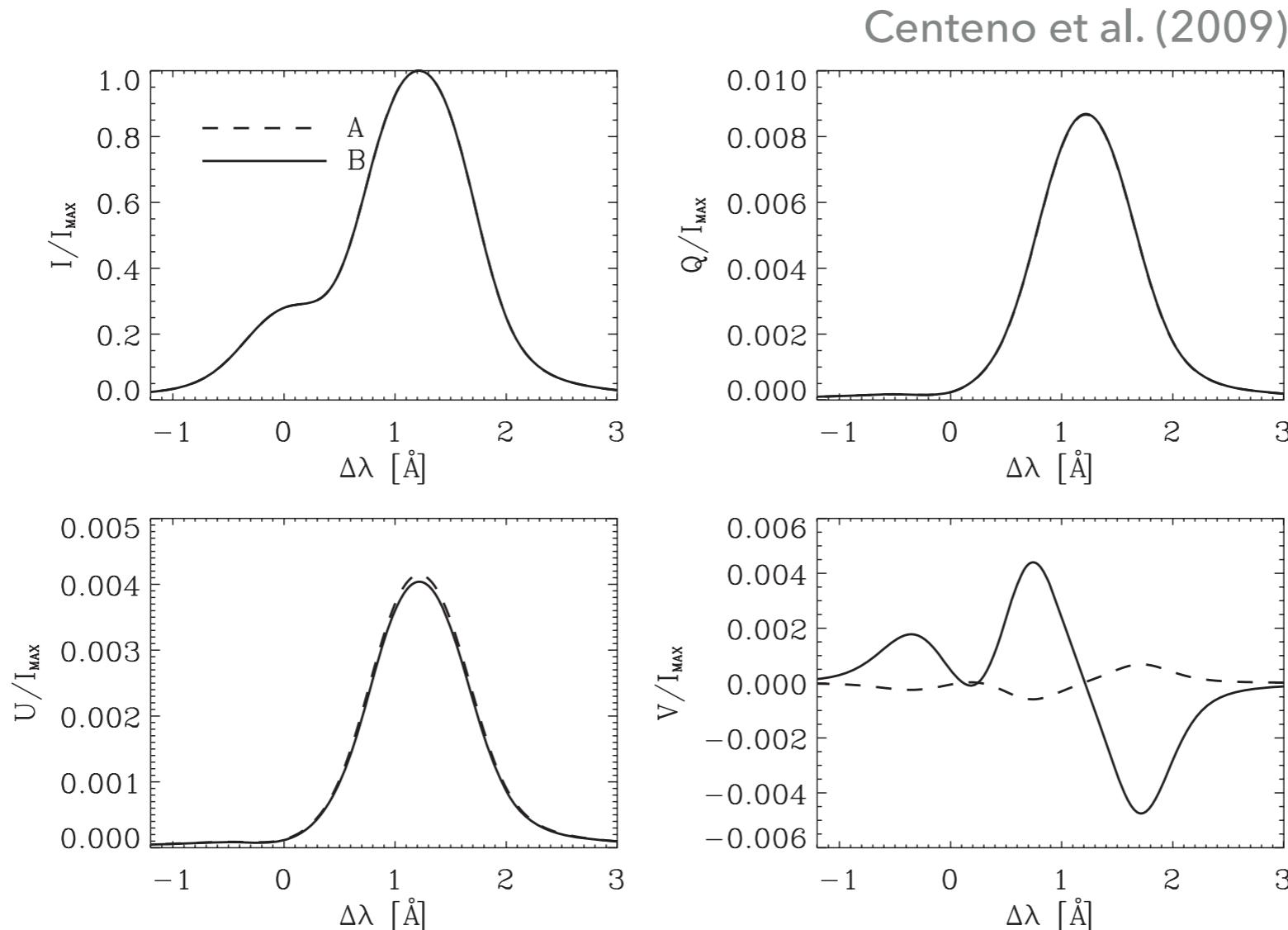


SPICULES

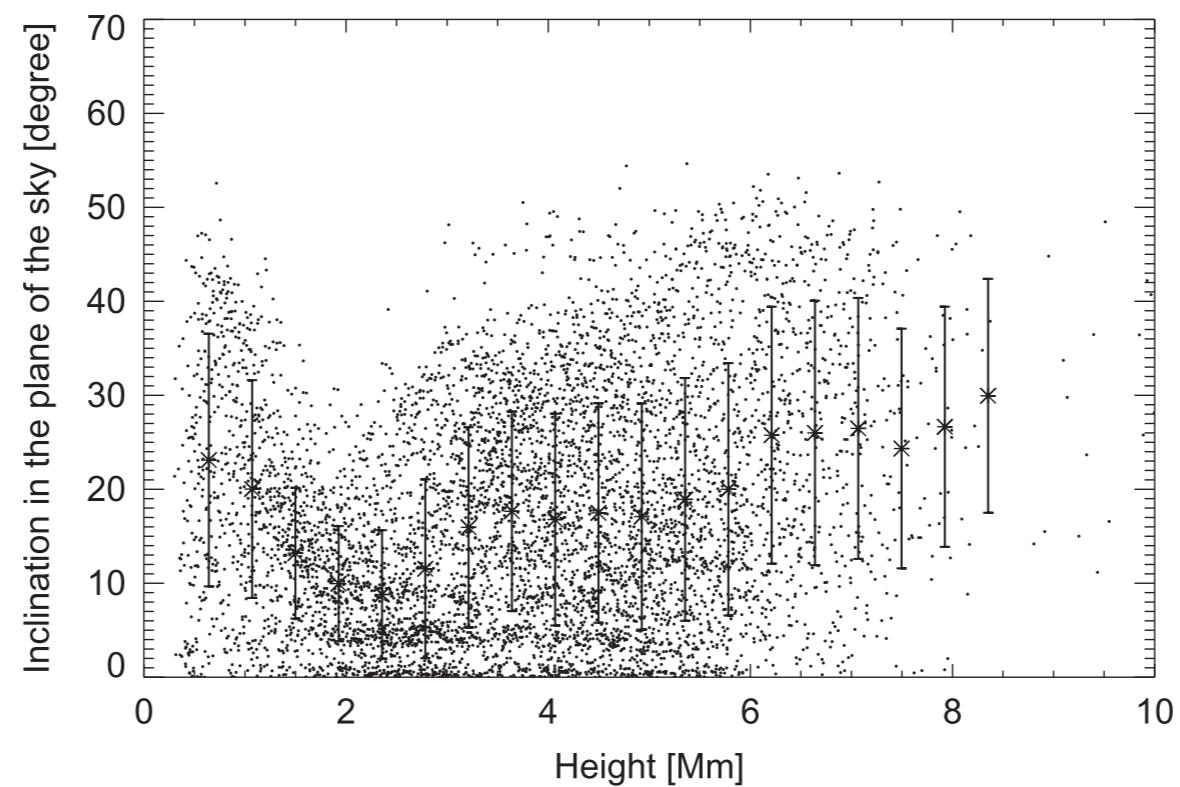
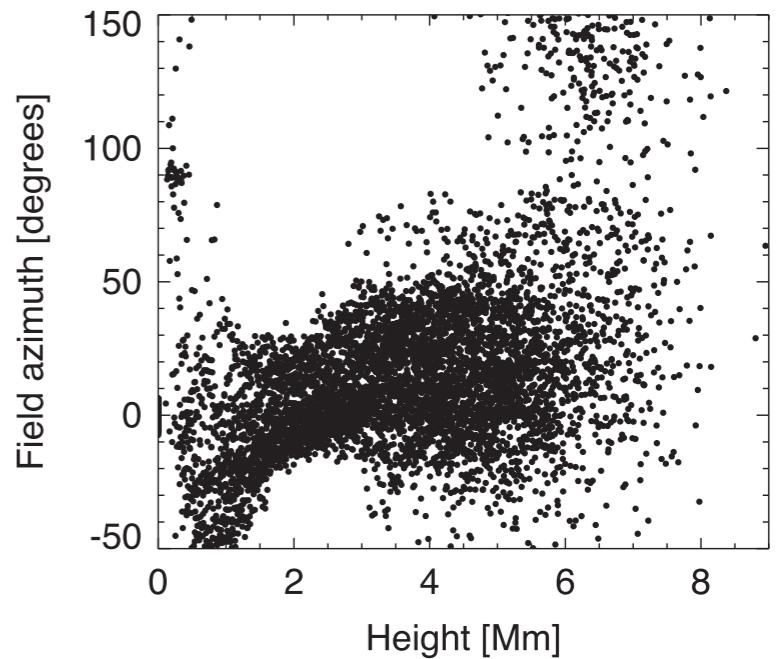
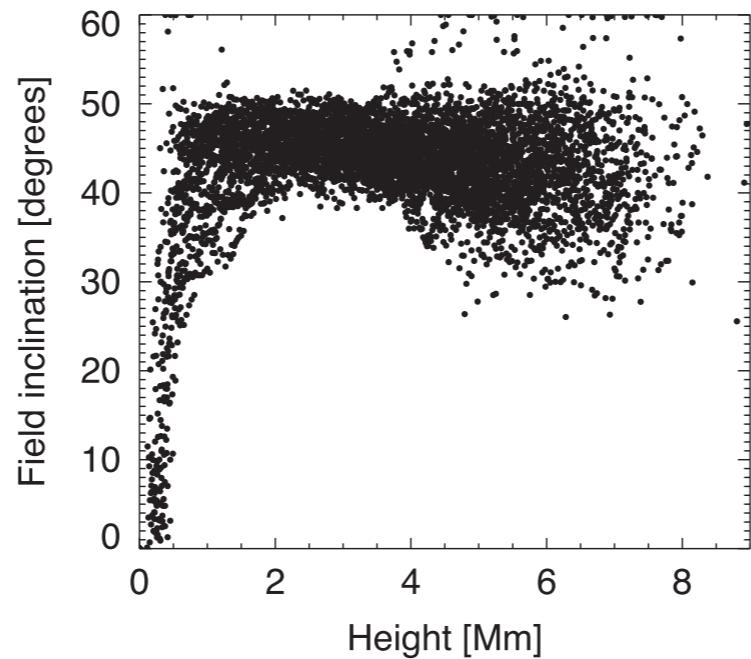
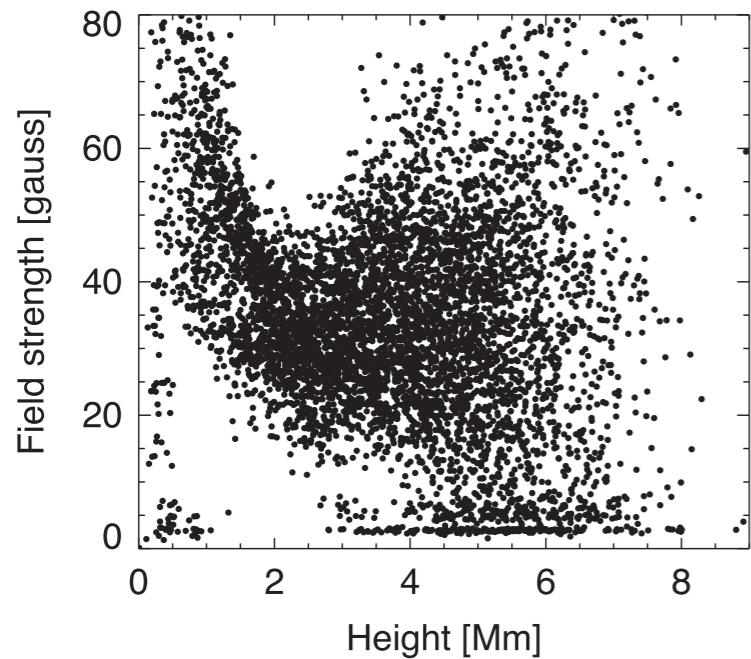
SPICULES: MEASURING MAGNETIC FIELDS



PUSH FOR OBSERVING STOKES V

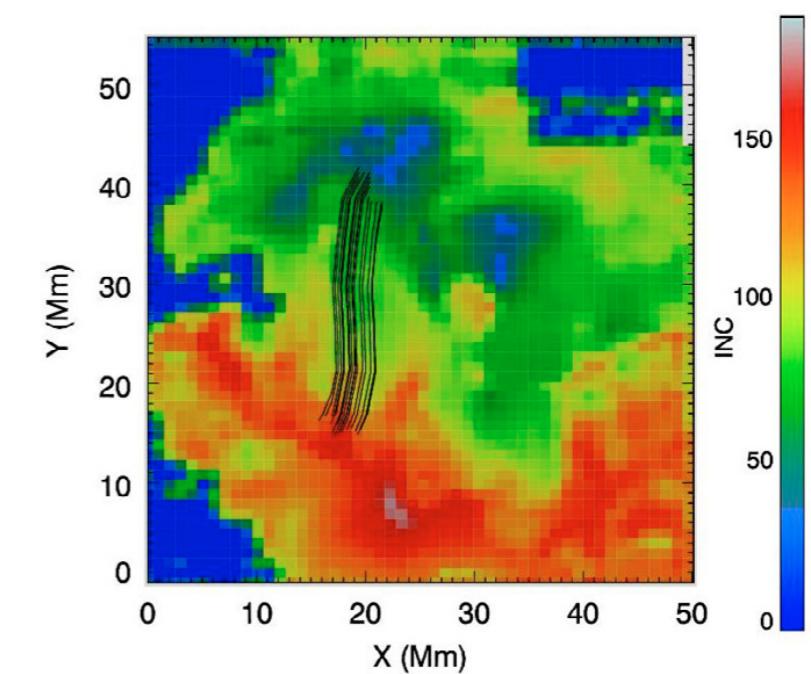
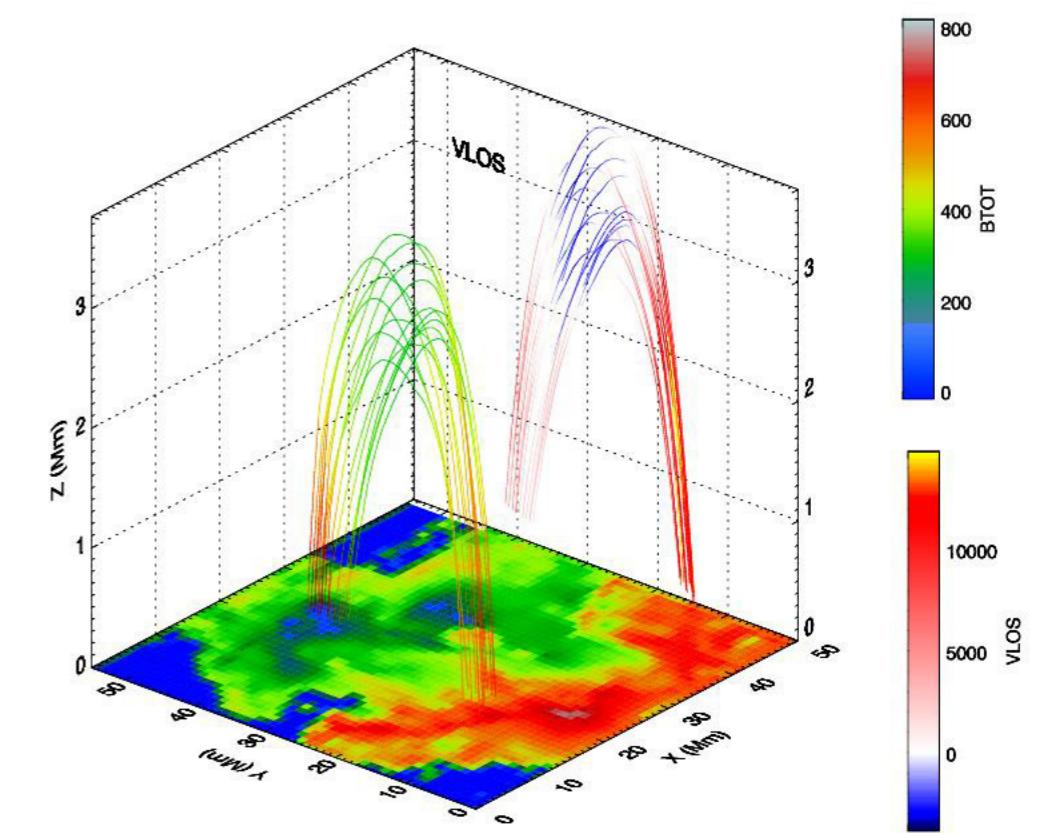
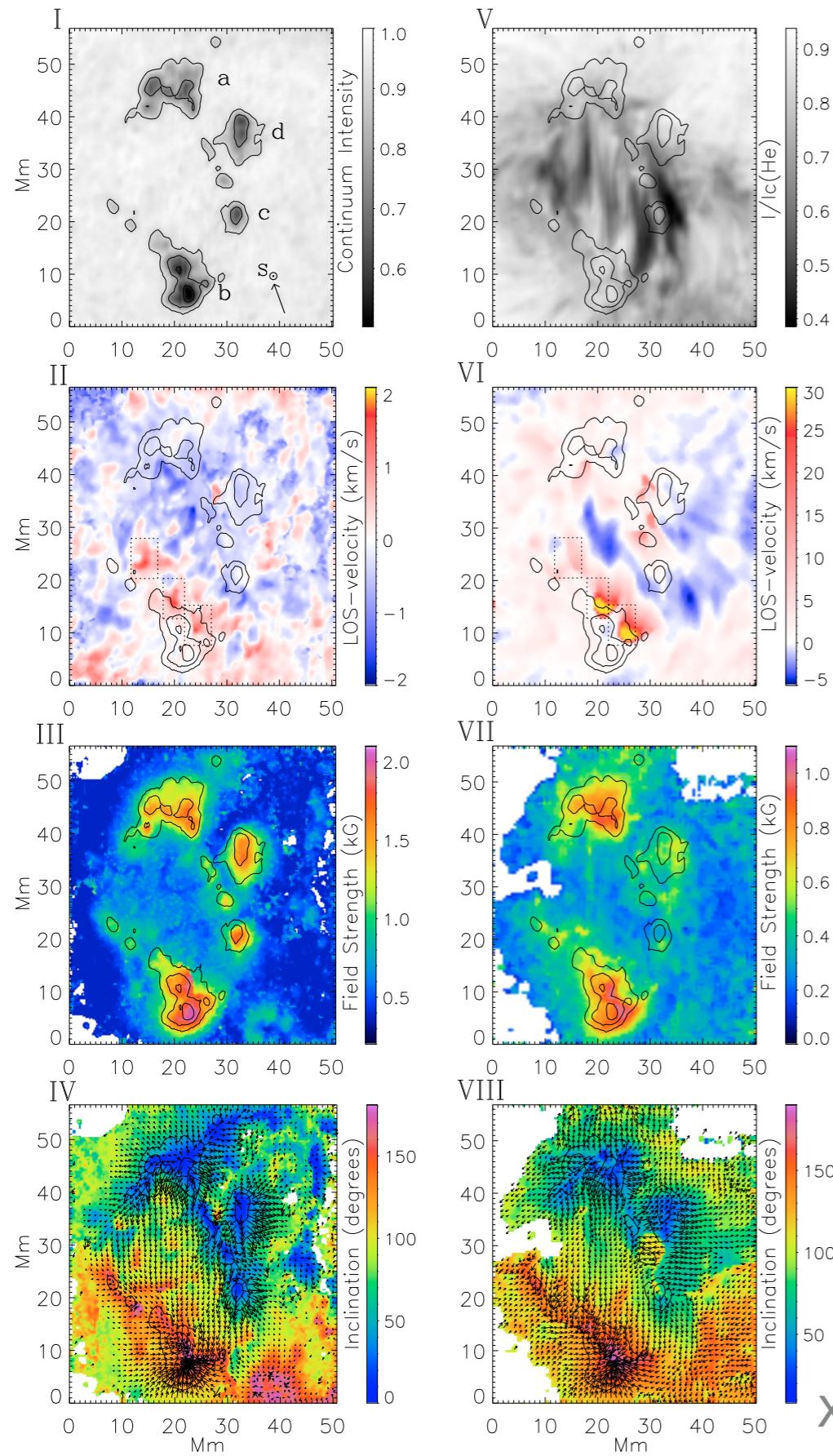


HEIGHT VARIATION OF MAGNETIC FIELD



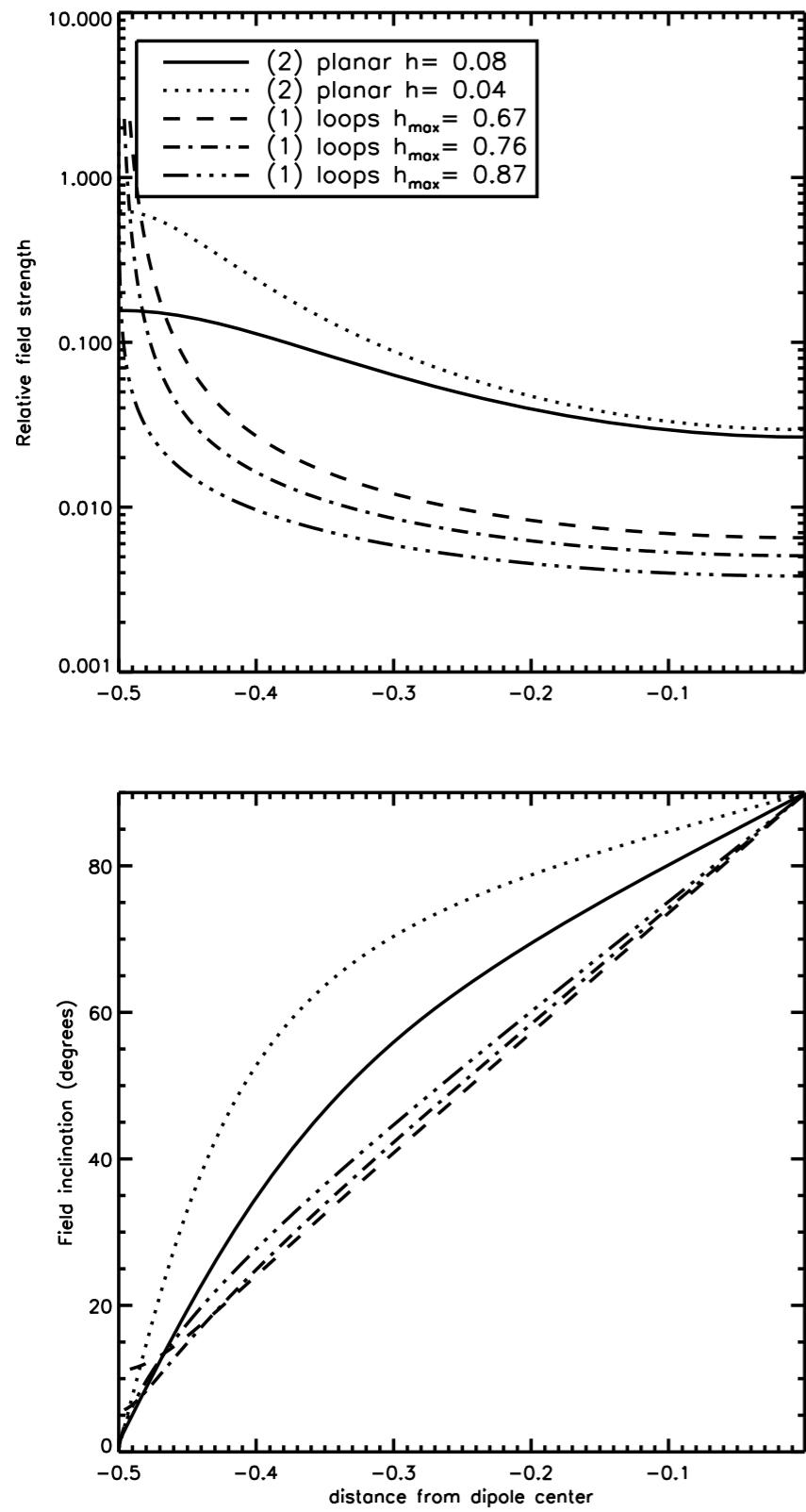
EMERGING FLUX REGIONS

EMERGING FLUX REGIONS: LOOPS REACHING CORONAL HEIGHTS

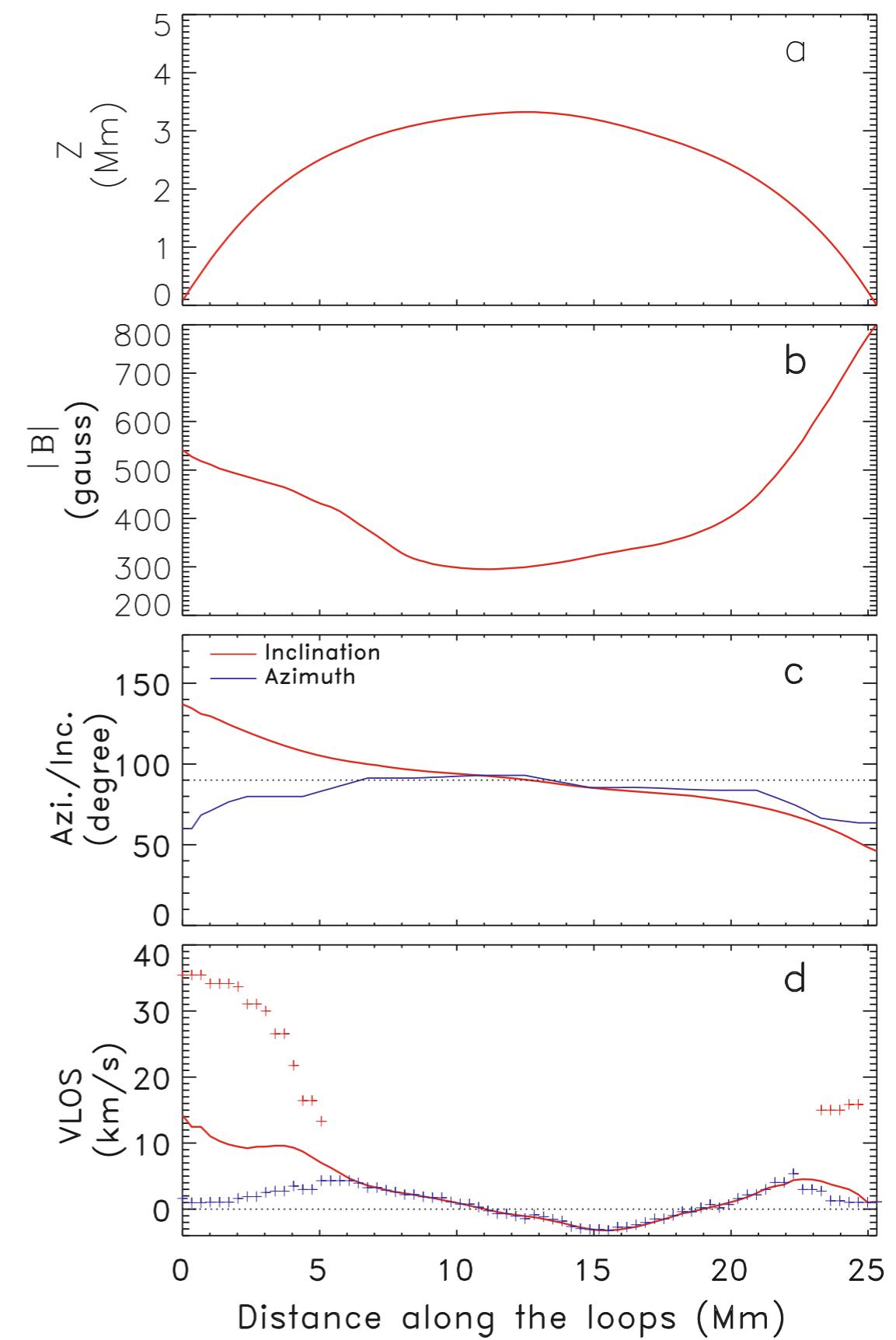


Xu et al. (2010)

REALLY LOOPS REACHING CORONAL HEIGHTS?



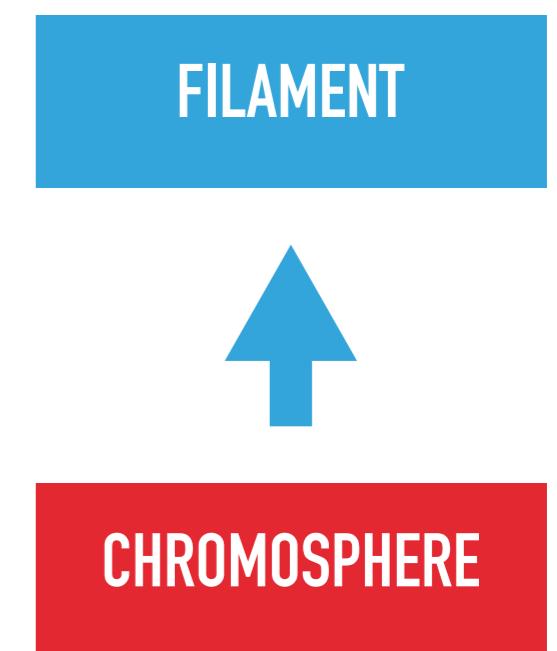
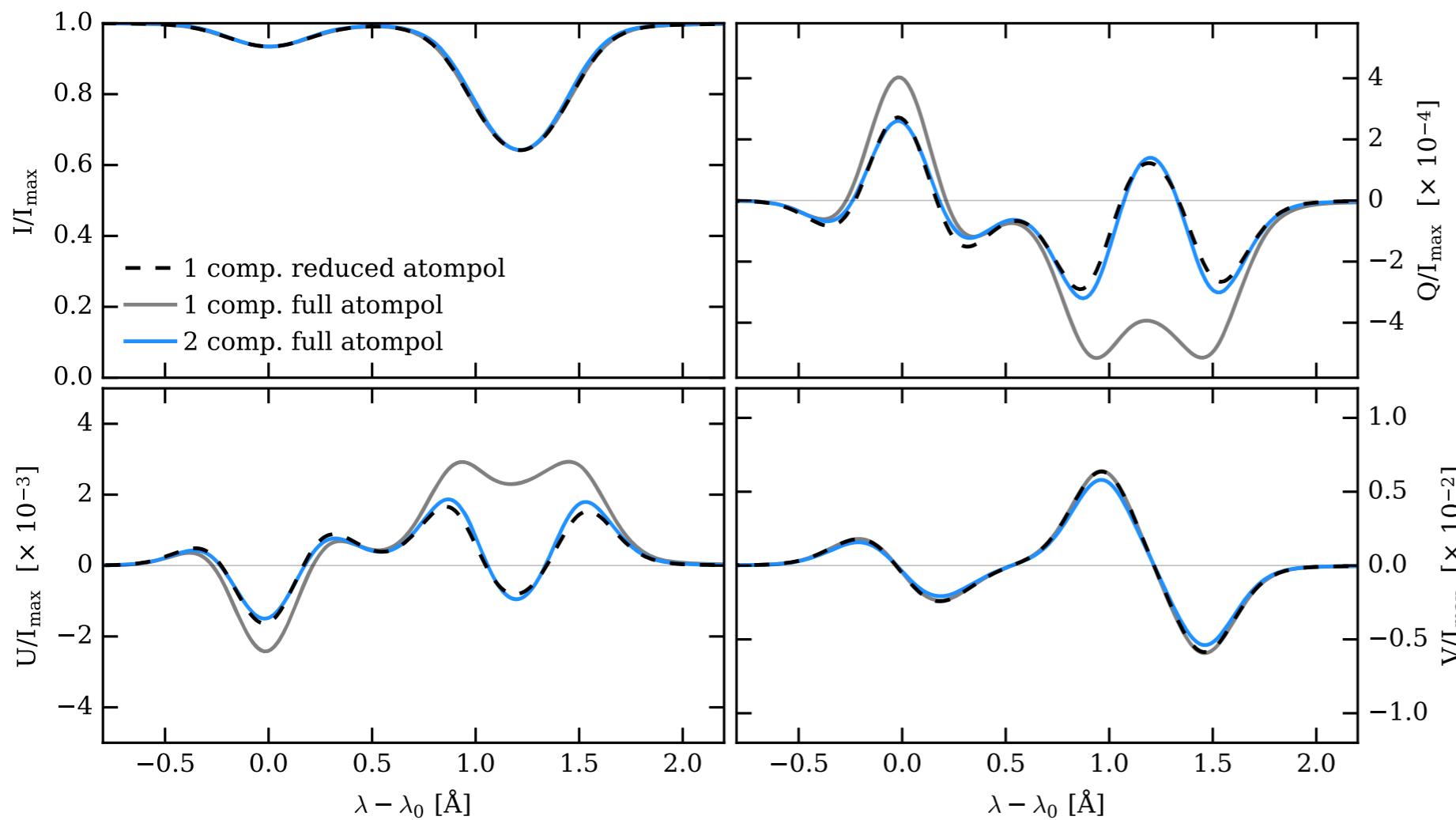
Judge (2009)



Xu et al. (2010)

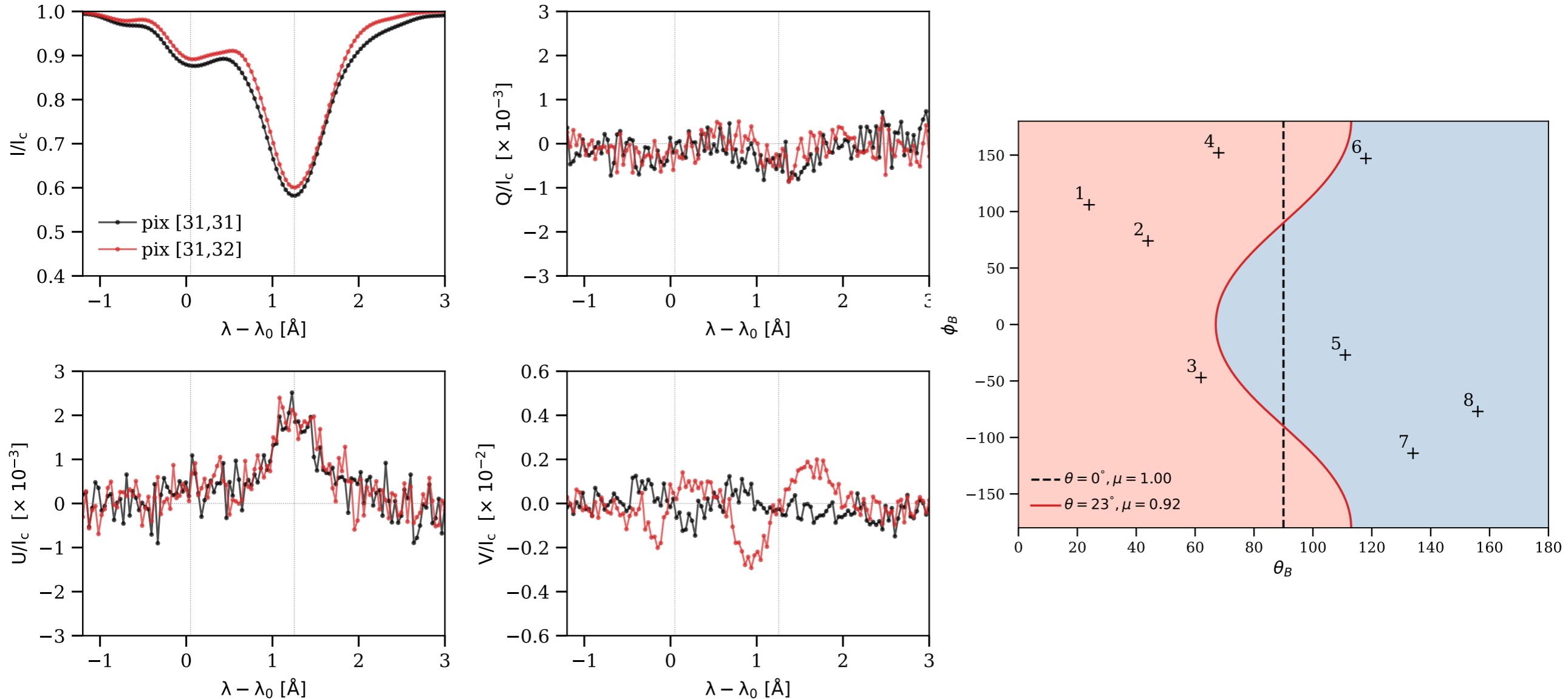
FILAMENTS

FILAMENTS: THEY ARE SEMI-TRANSPARENT



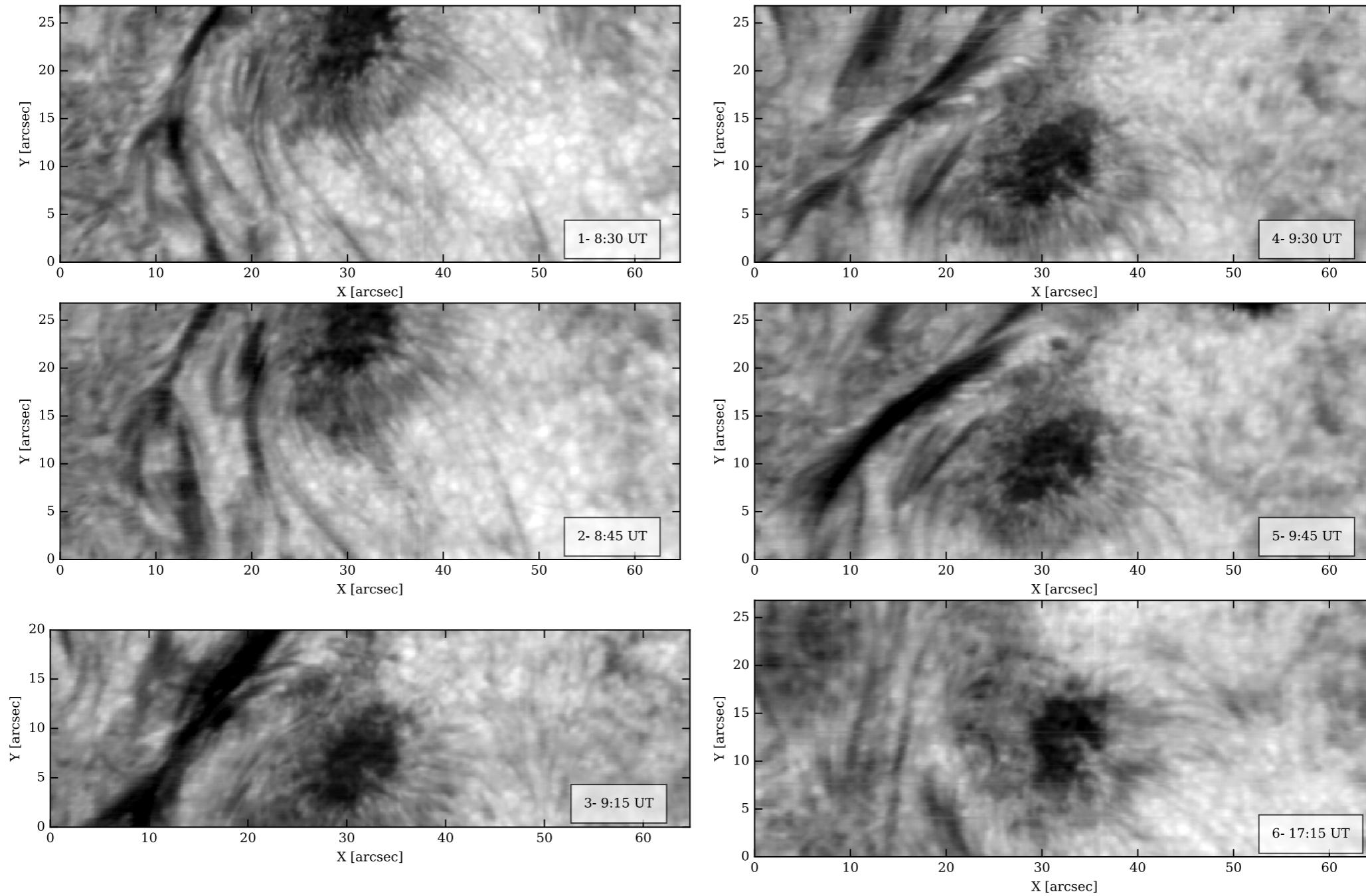
Díaz Baso et al. (2017)

FILAMENTS ARE SEMITRSPARENT TO STOKES V

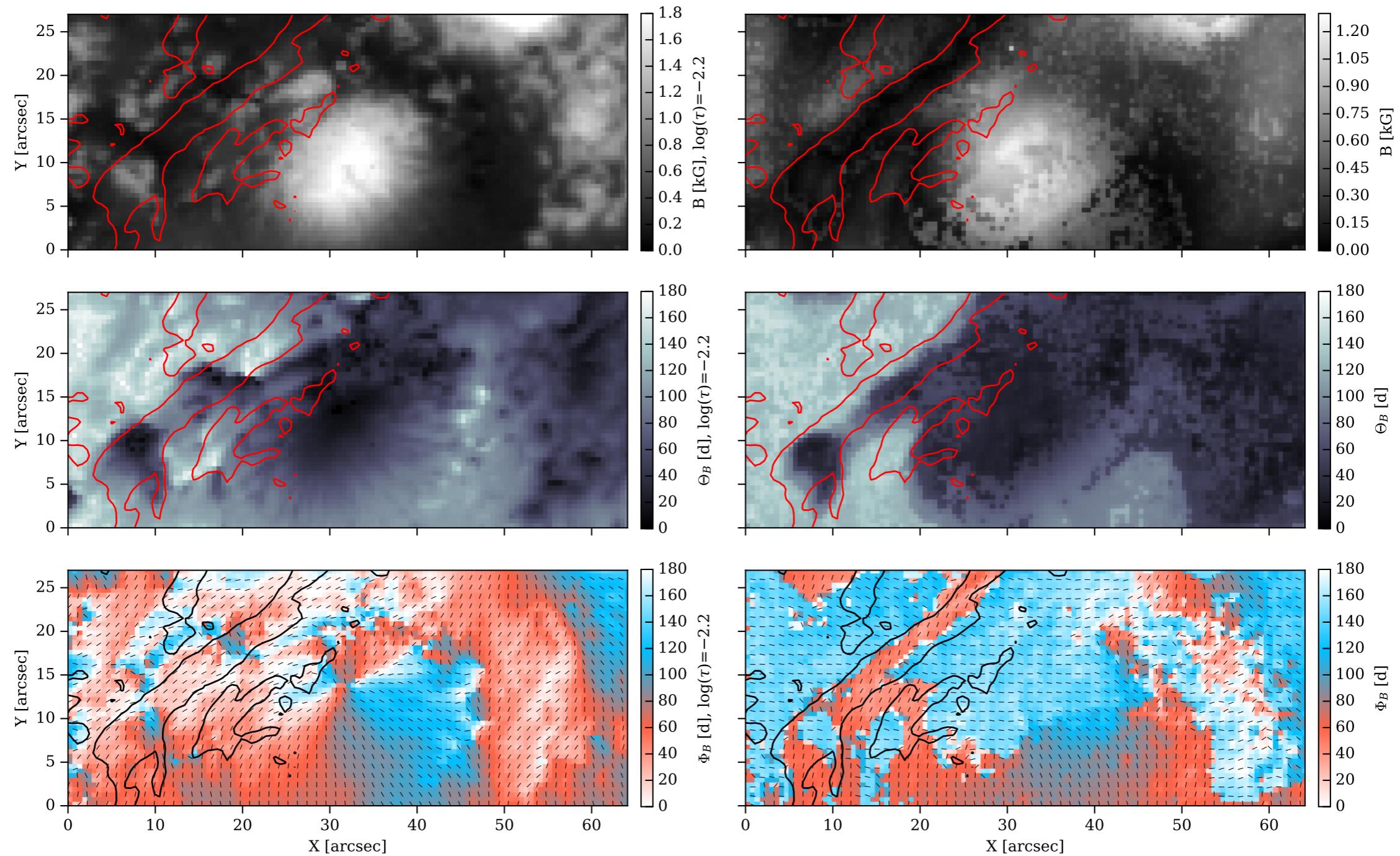


Díaz Baso et al. (in prep)

FILAMENTS

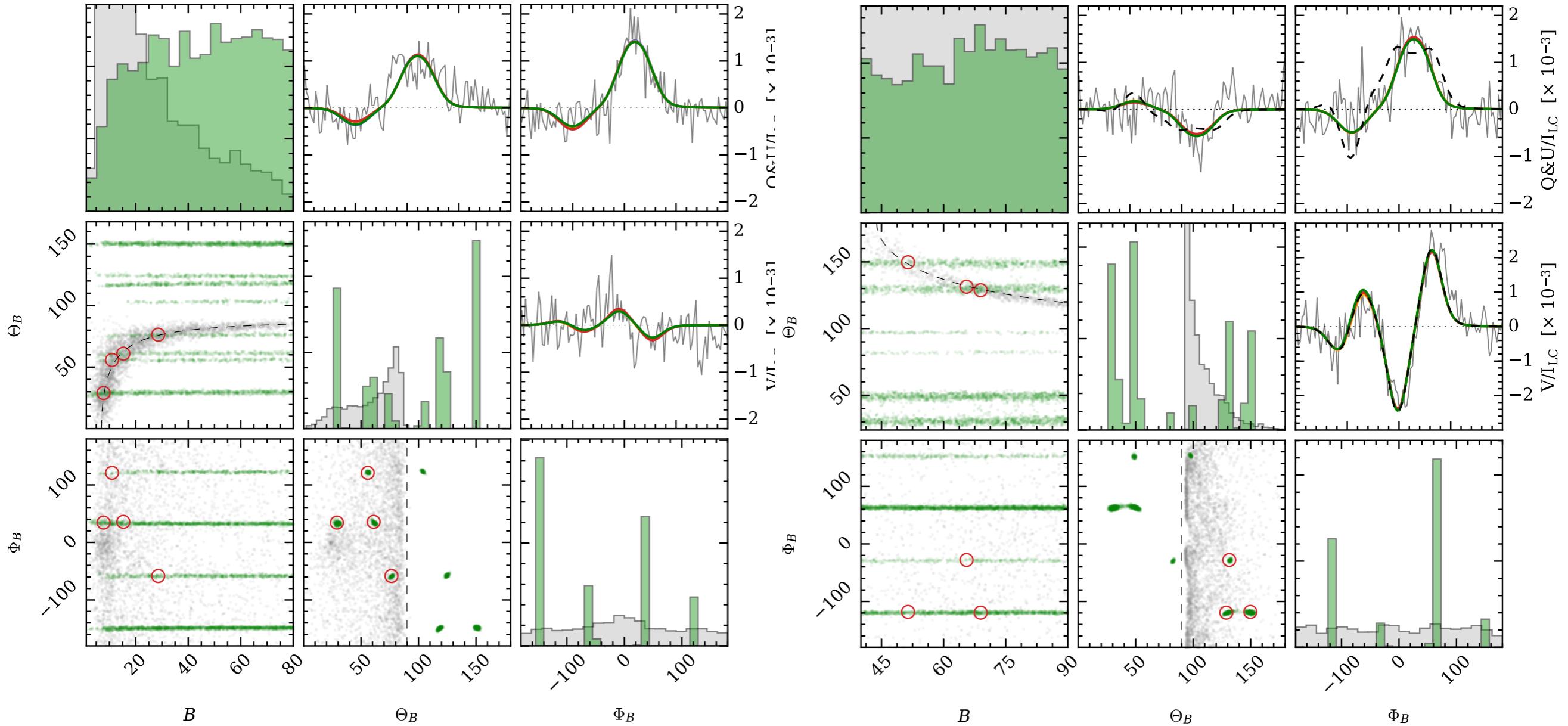


FILAMENTS: SINGLE COMPONENT INVERSION

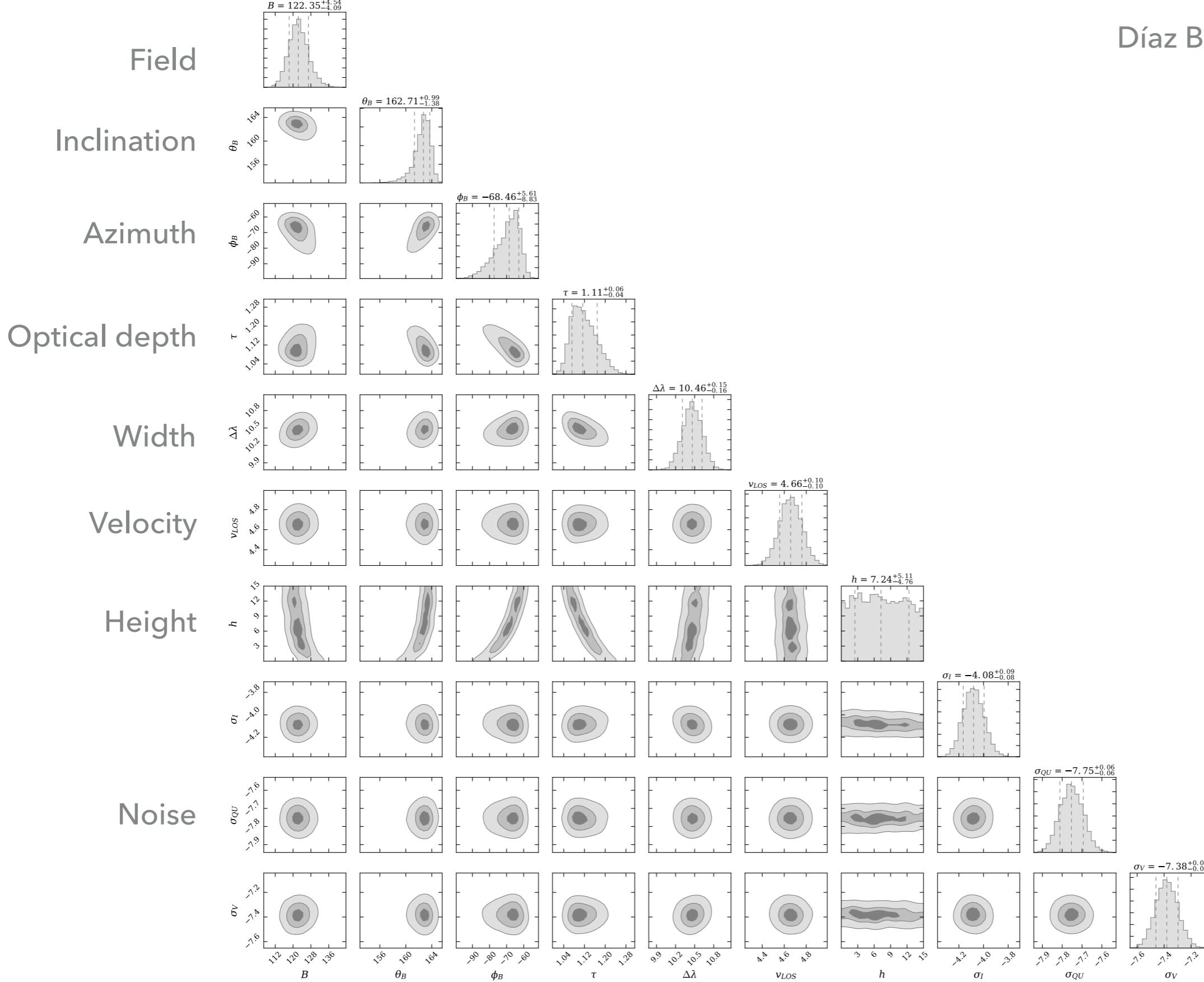


SOME ISSUES

AMBIGUITIES: POSTERIOR SAMPLING



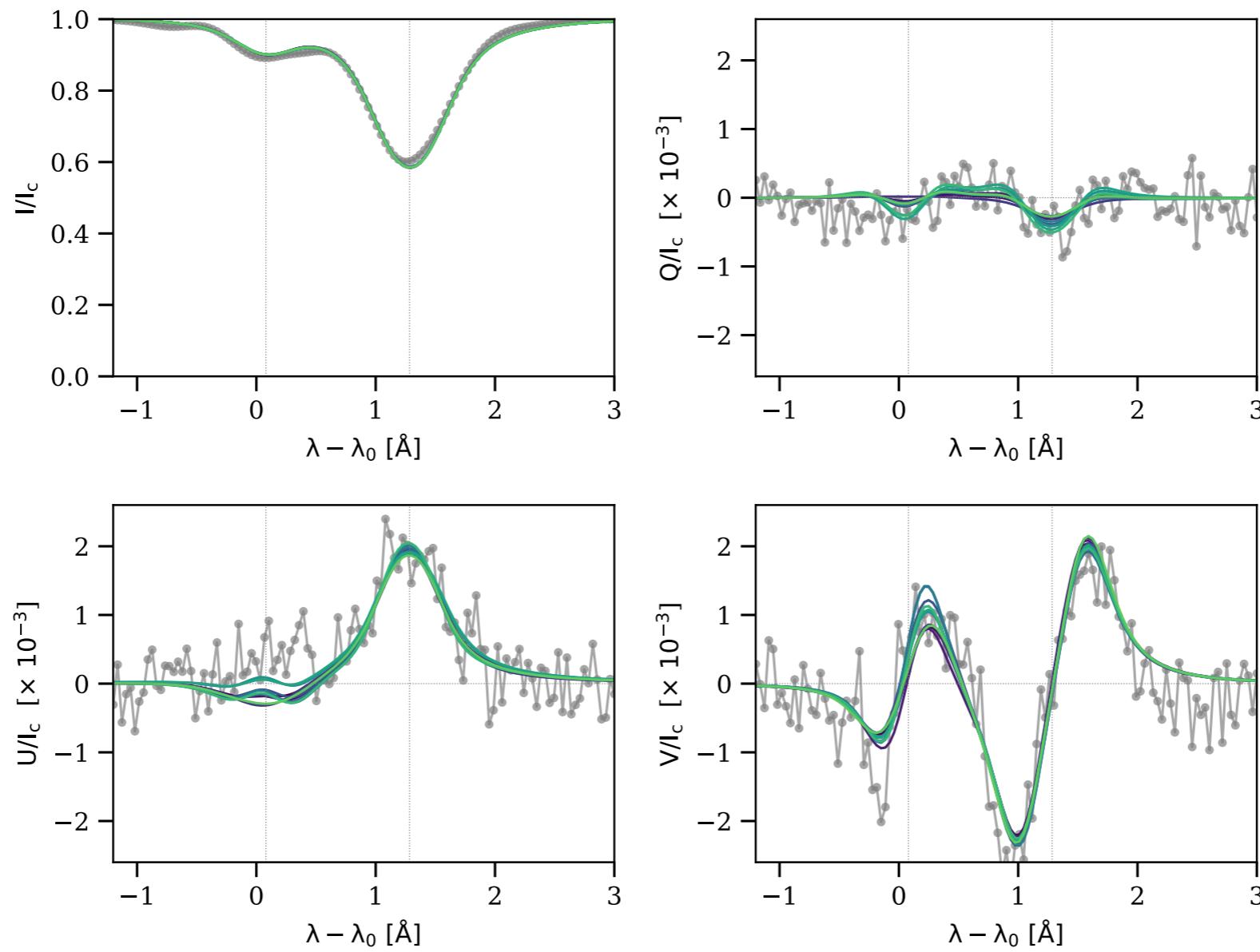
HEIGHT IS DEGENERATE WITH OTHER PARAMETERS



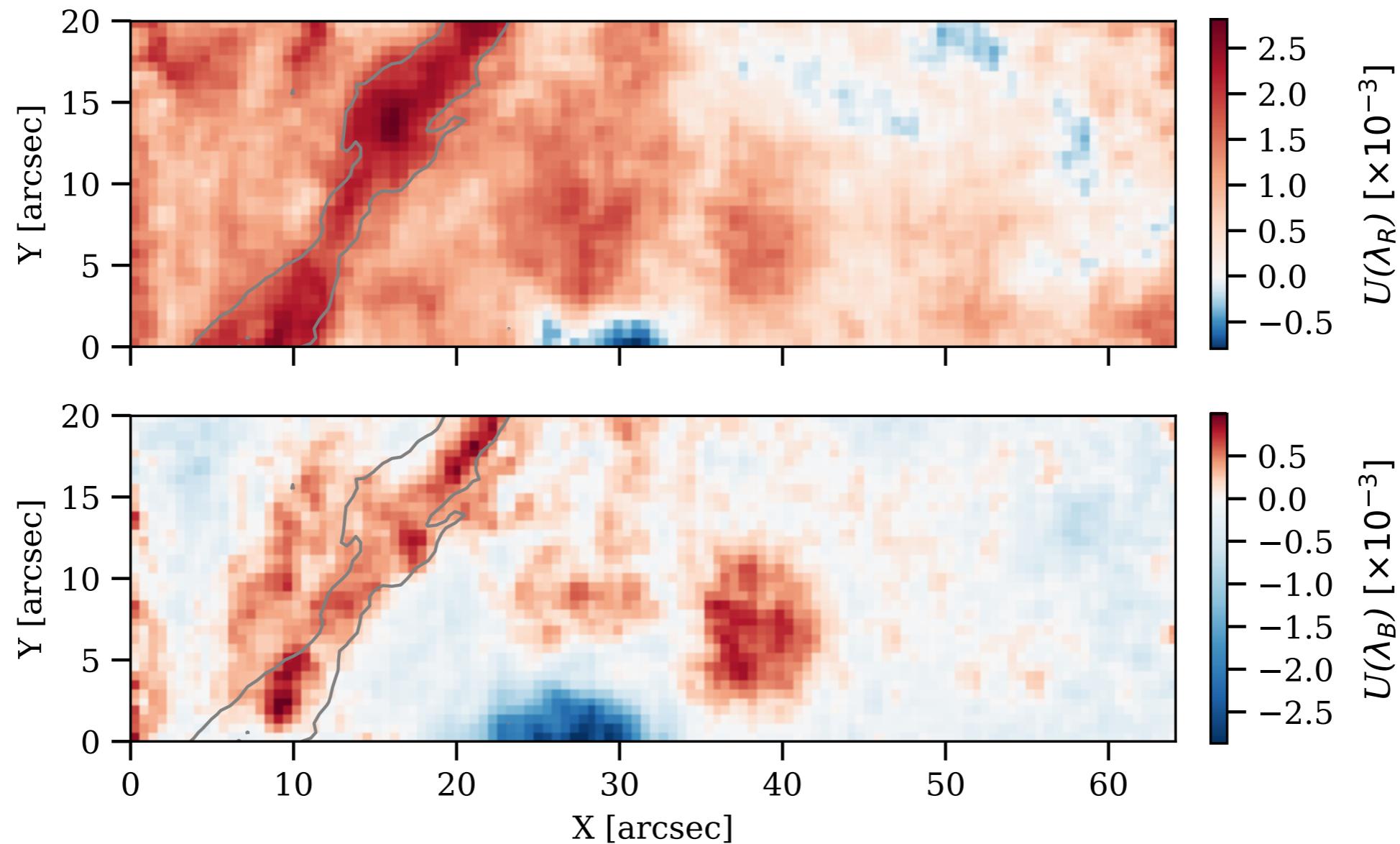
Díaz Baso et al. (in prep)

TWO COMPONENT INVERSION

Díaz Baso et al. (in prep)



CANNOT BE EXPLAINED WITH HAZEL IN NORMAL CONDITIONS



Díaz Baso et al. (in prep)