

Center-to-Limb Variation of the polarization of Mg II h & k lines as measured by CLASP2

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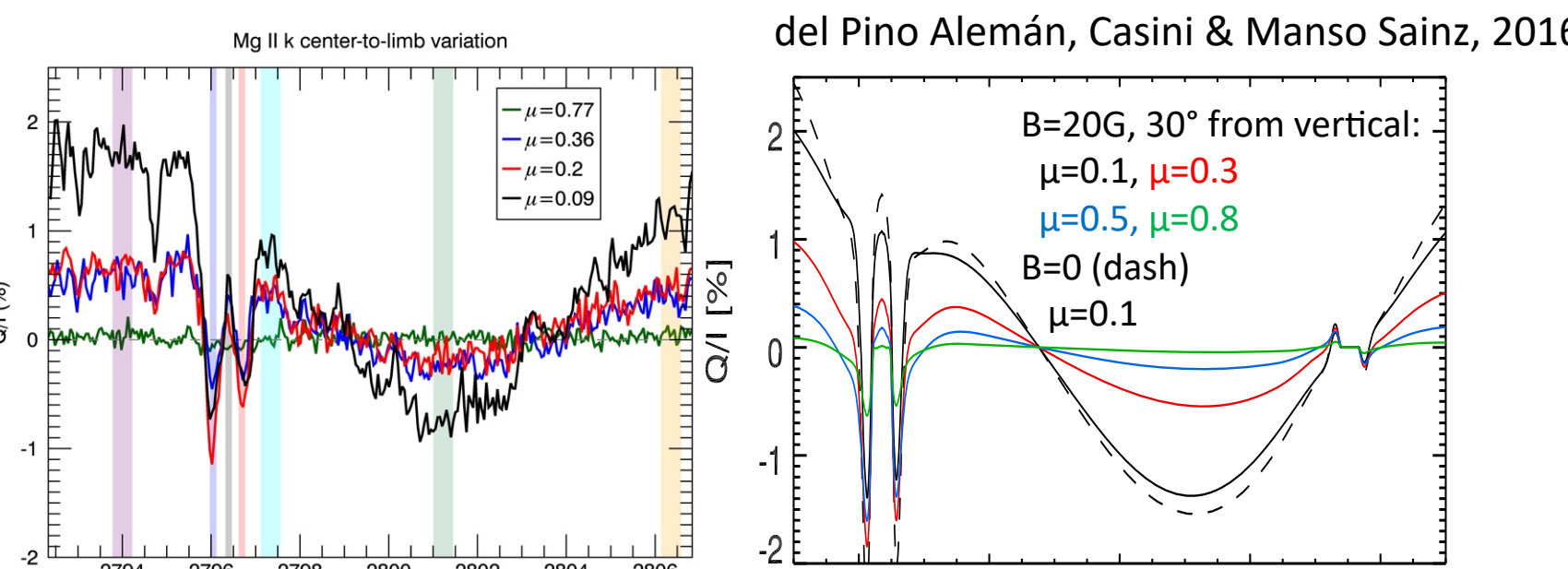
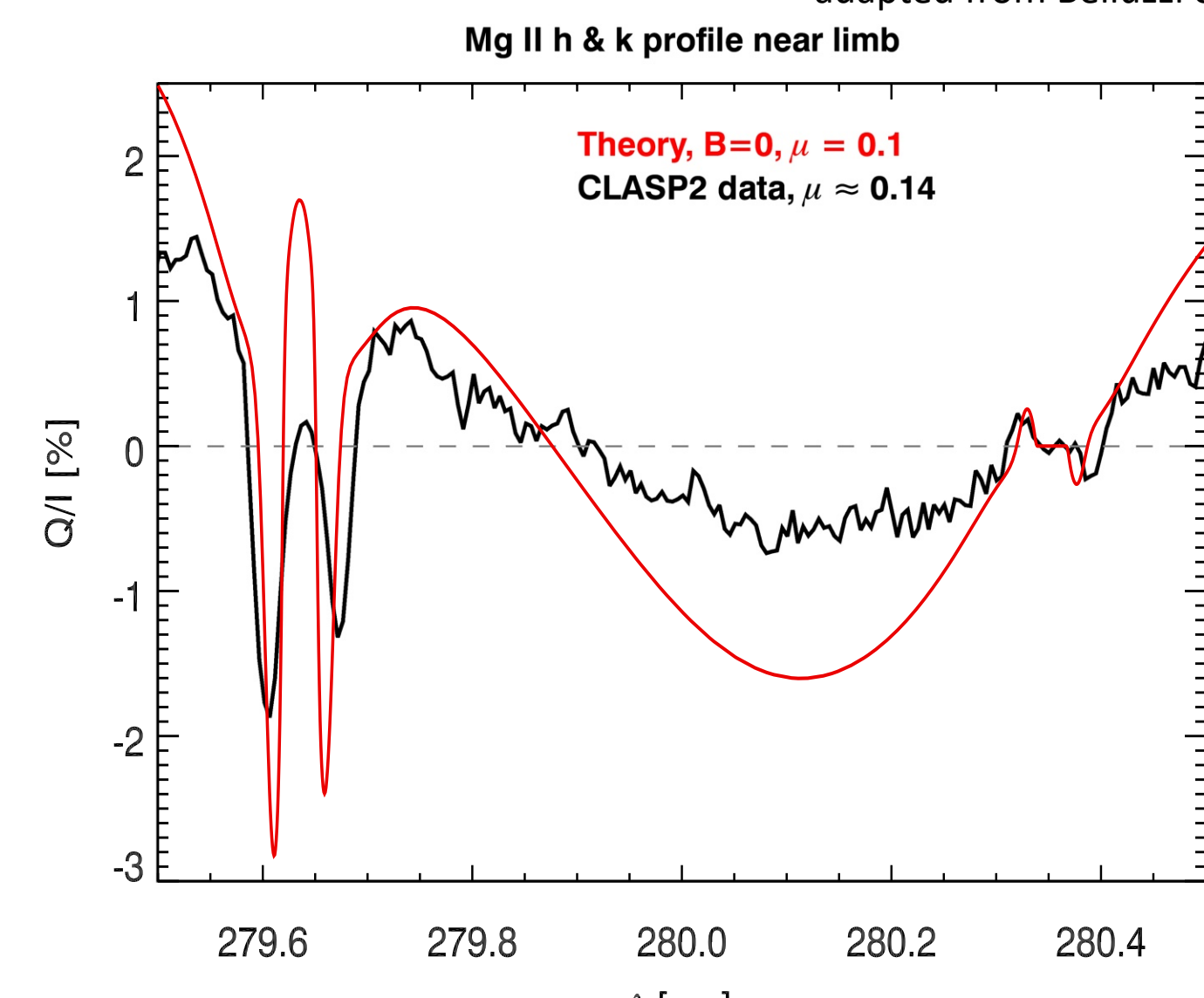
INTRO:

- Who cares? Magnetograms in the upper chromosphere are needed for accurate magnetic coronal extrapolations. The CLASP2 sounding rocket took spatially resolved spectropolarimetric data of Mg II h & k in the upper chromosphere, that can be used as a pathfinder to routine magnetograms.
- This work: Preliminary results of the center-to-limb variation (CLV) of the linear polarization in the quiet sun. We compare the signals to recent theoretical calculations of the expected polarization which include PRD, J-state interference, and magneto-optical effects.

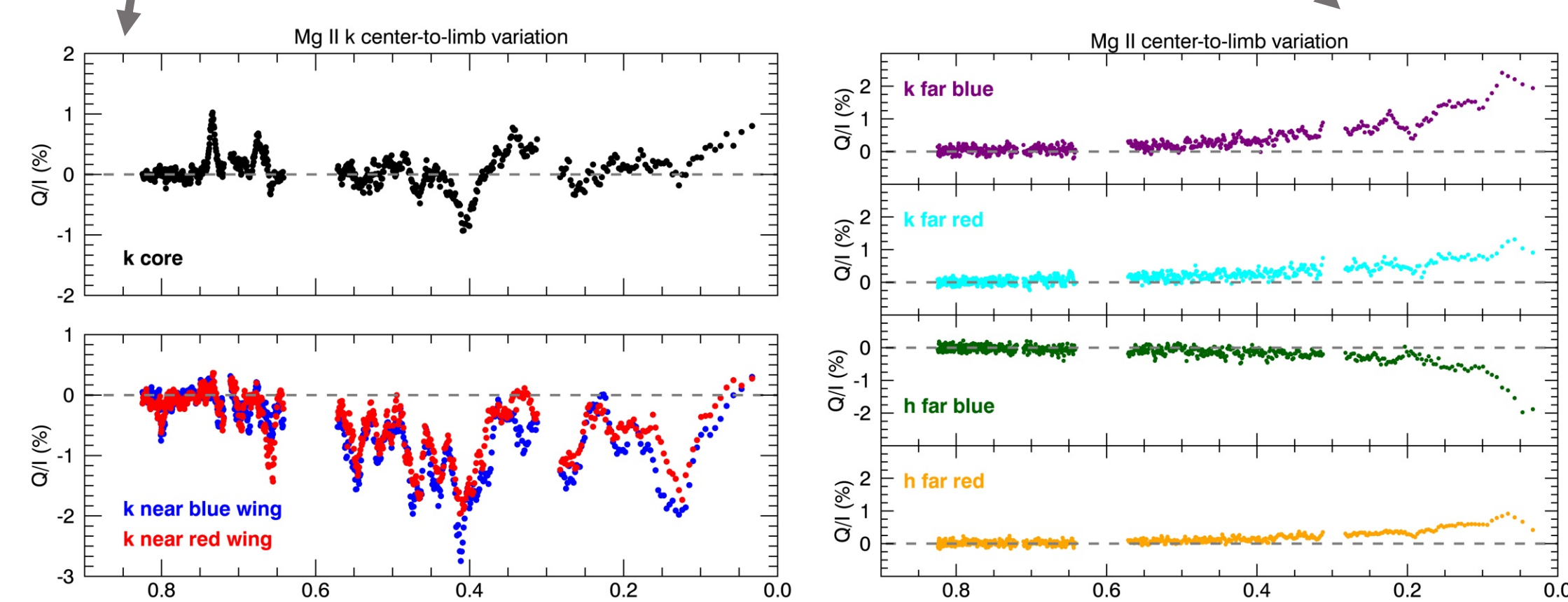
RESULTS

- Observed Q/I qualitatively matches theory

adapted from Belluzzi & Trujillo Bueno, 2012.



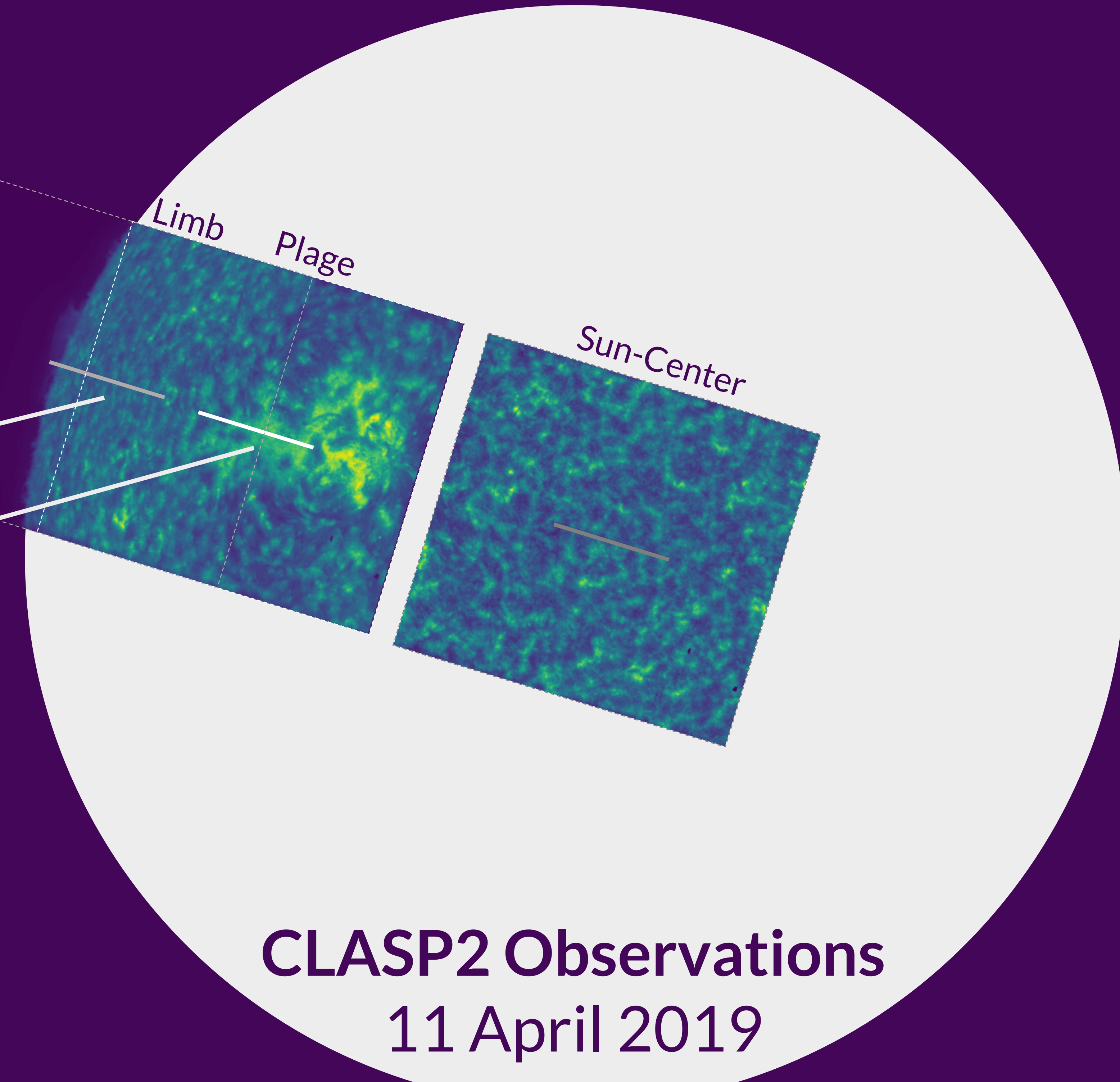
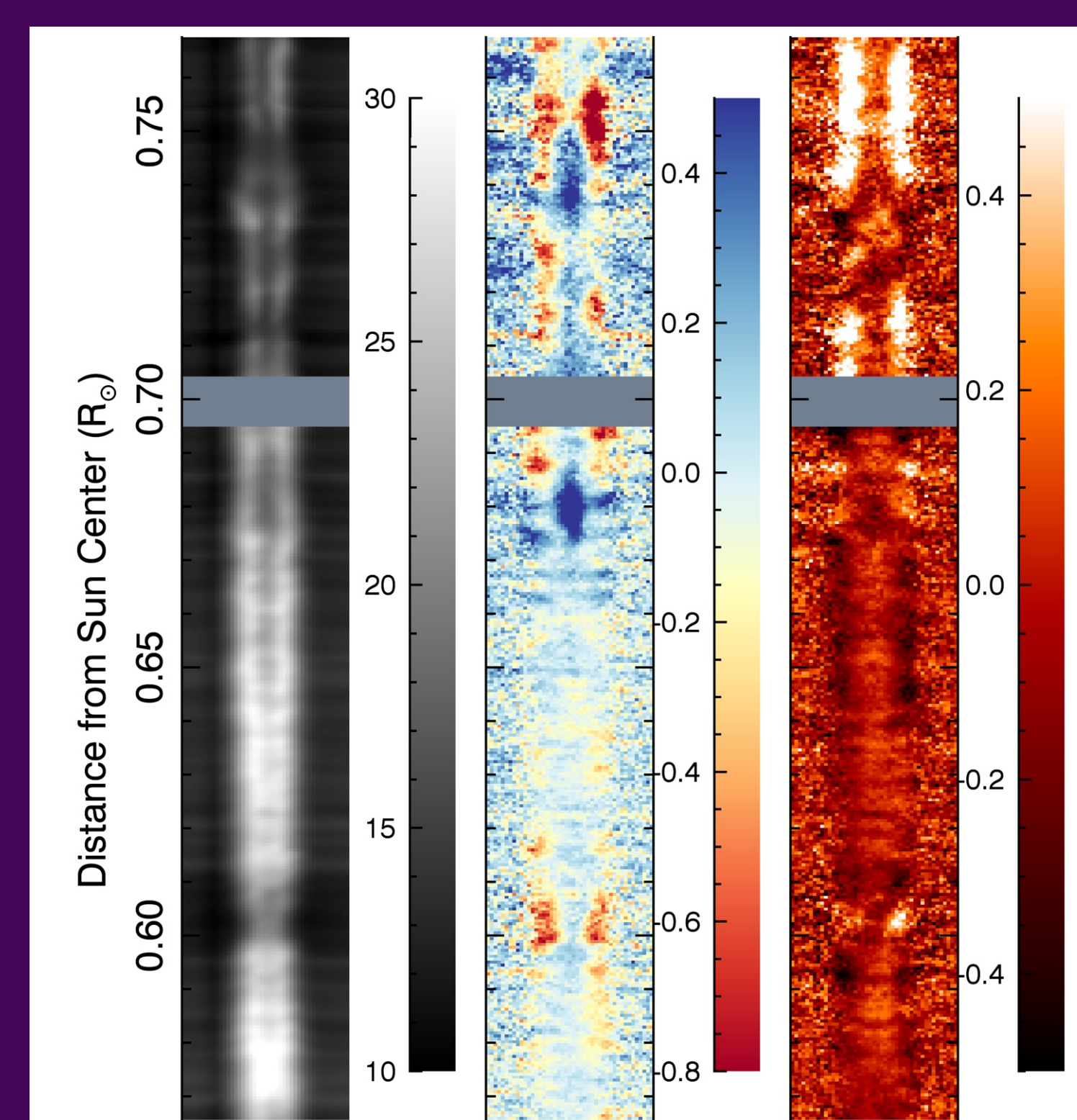
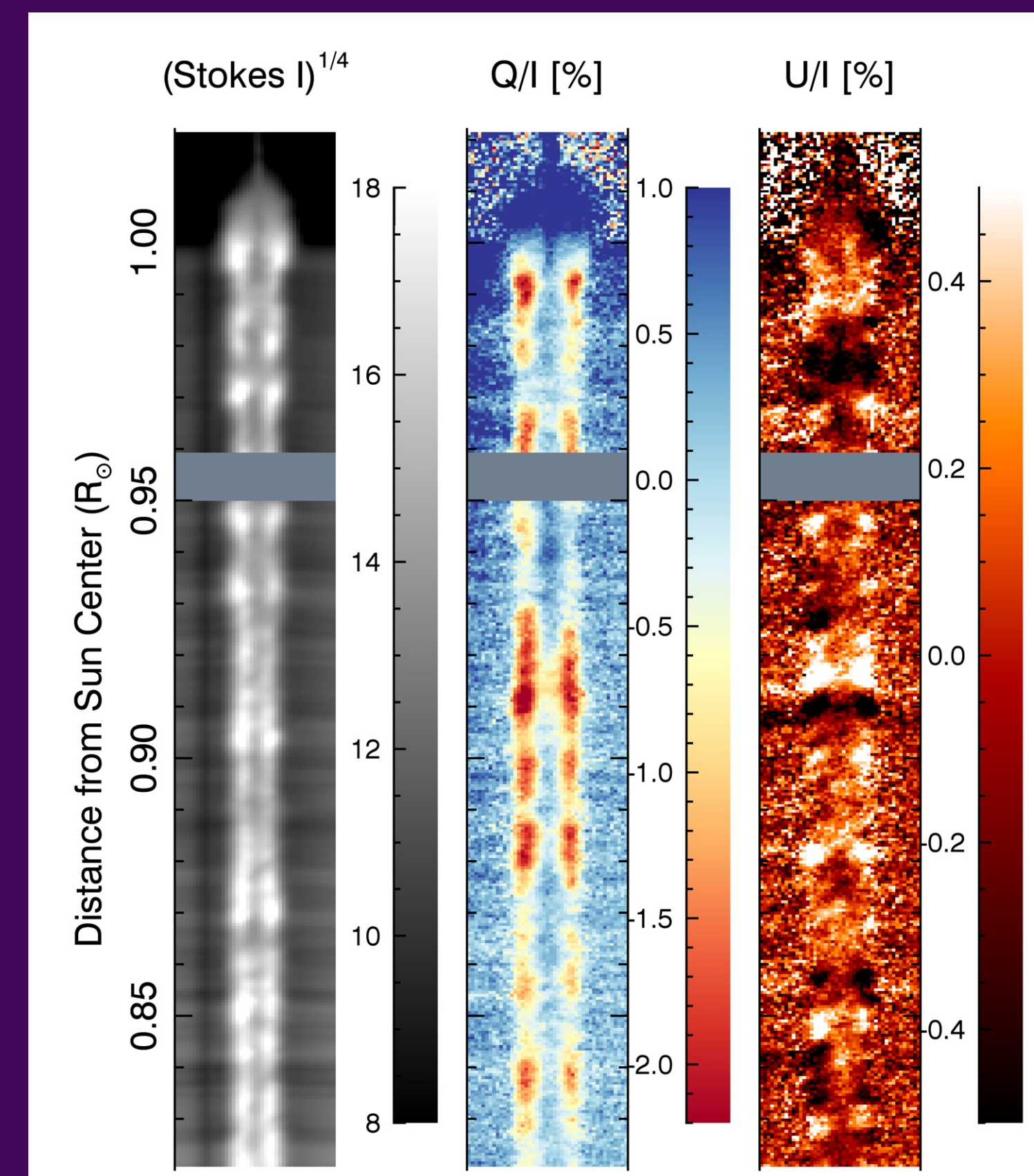
- Q/I CLV in Mg II k emission line is not clear
- Q/I CLV outside of emission lines (due to PRD & J-state interference) is clear.



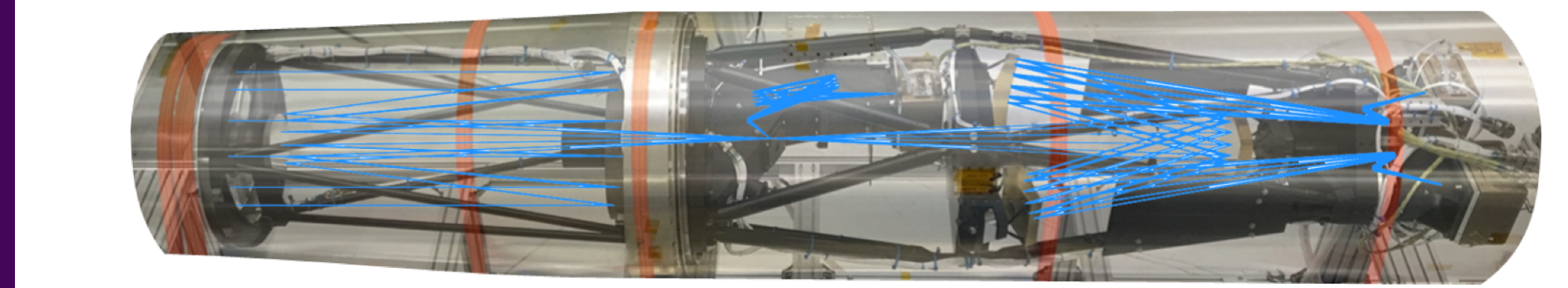
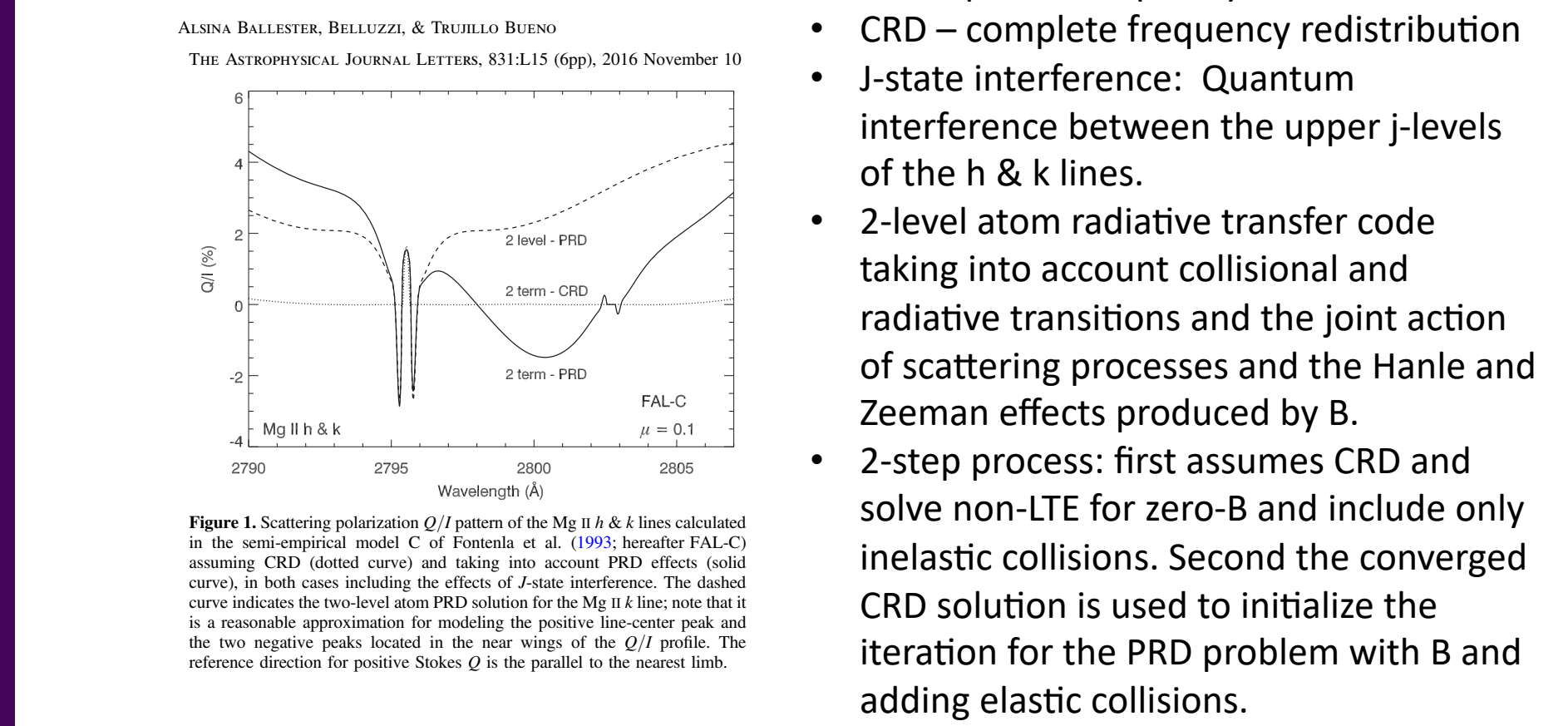
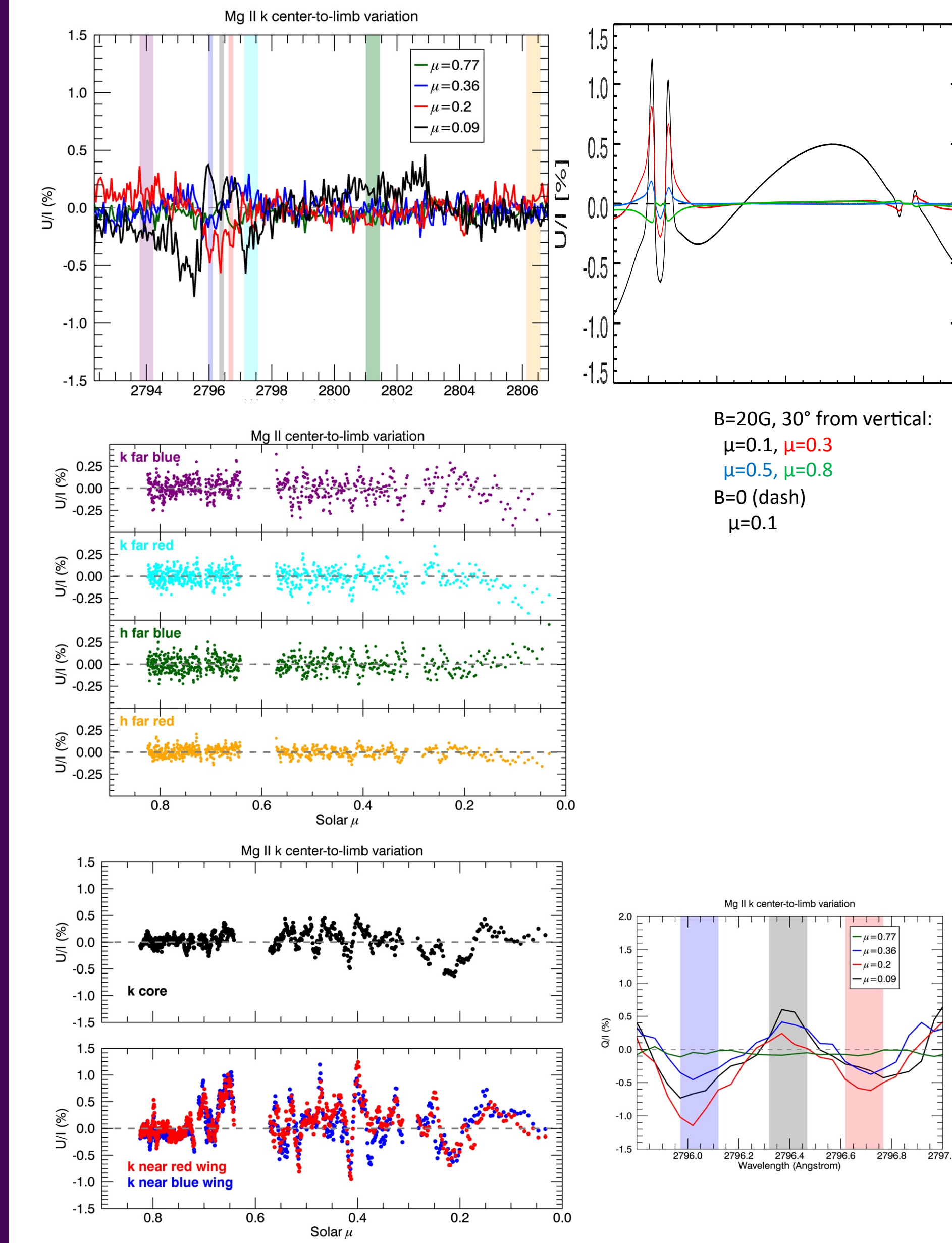
- U/I signal is dominated by spatial variations.
- Partial frequency redistribution, J-state interference, and the presence of a magnetic field, are needed in models to match observations.

Measurements confirm recent predictions of Mg II h & k polarization in the chromosphere.

CLASP2 Mg II k Polarization



CLASP2 Observations
11 April 2019



Related talk here at AGU
SH44A-06 The Chromospheric Layer Spectro-Polarimeter (CLASP2) Sounding Rocket Mission: First Results, David E. McKenzie et al.
Thursday 17:15 - 17:30 Moscone South - 208, L2

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