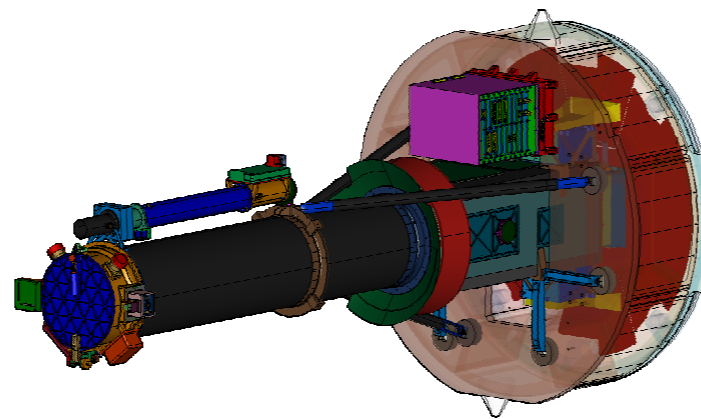
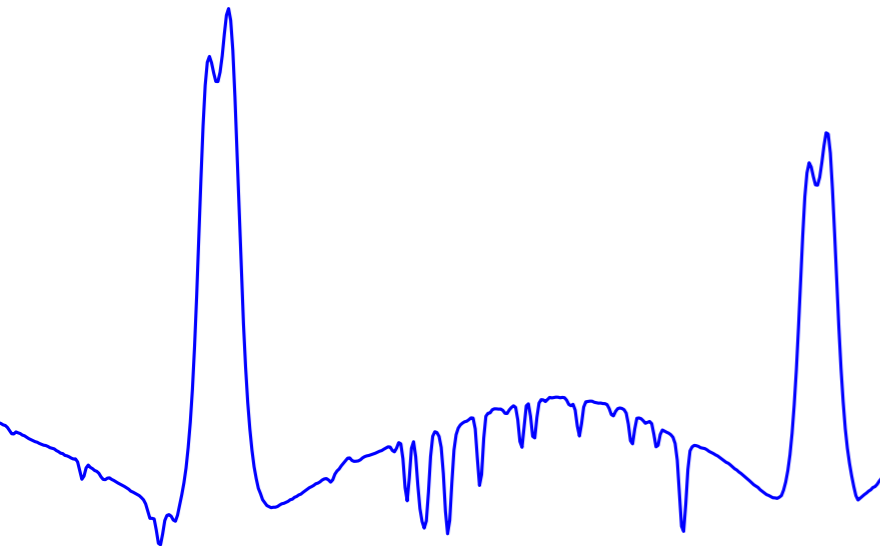


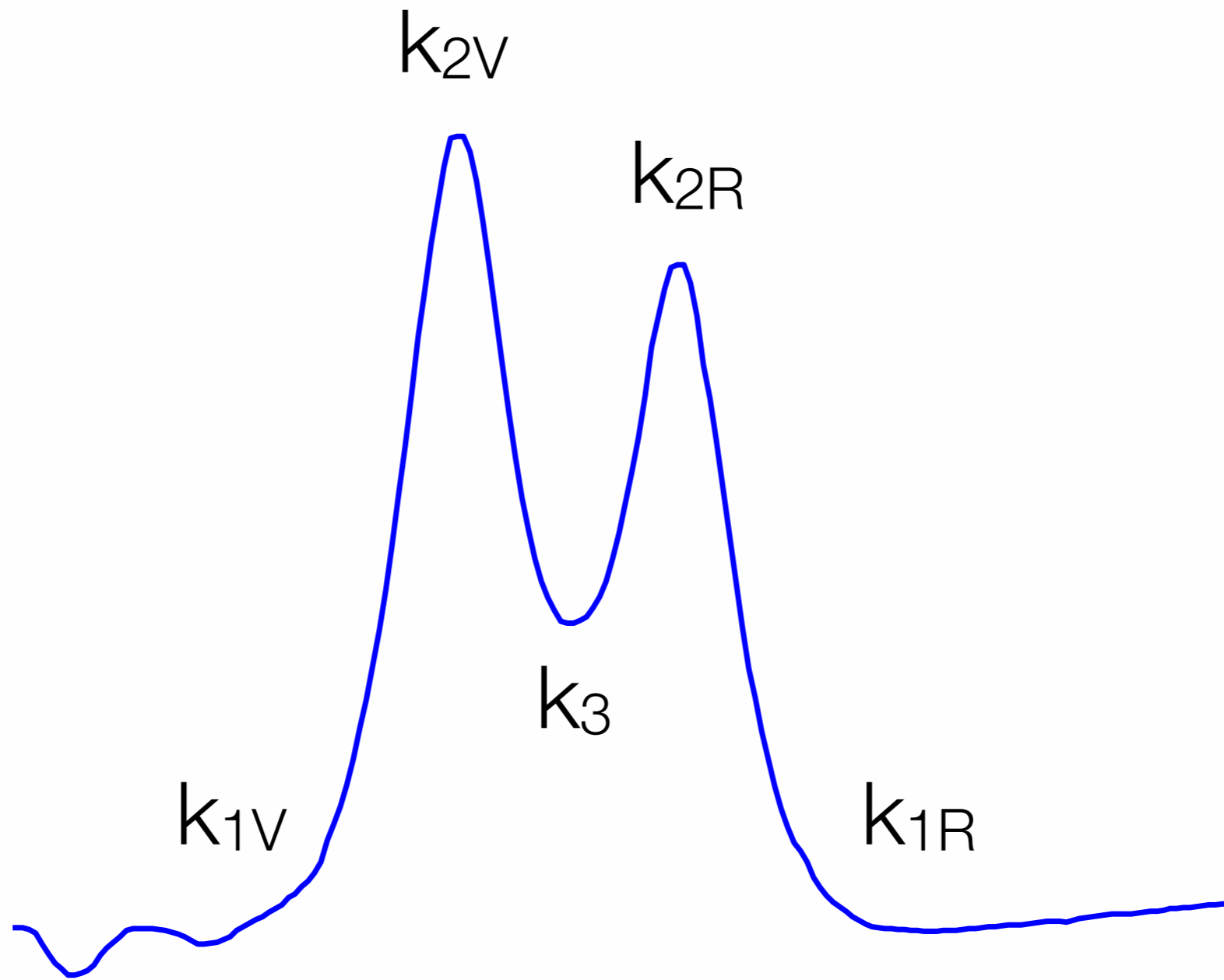
IRIS diagnostics for lower chromospheric heating

Tiago M. D. Pereira

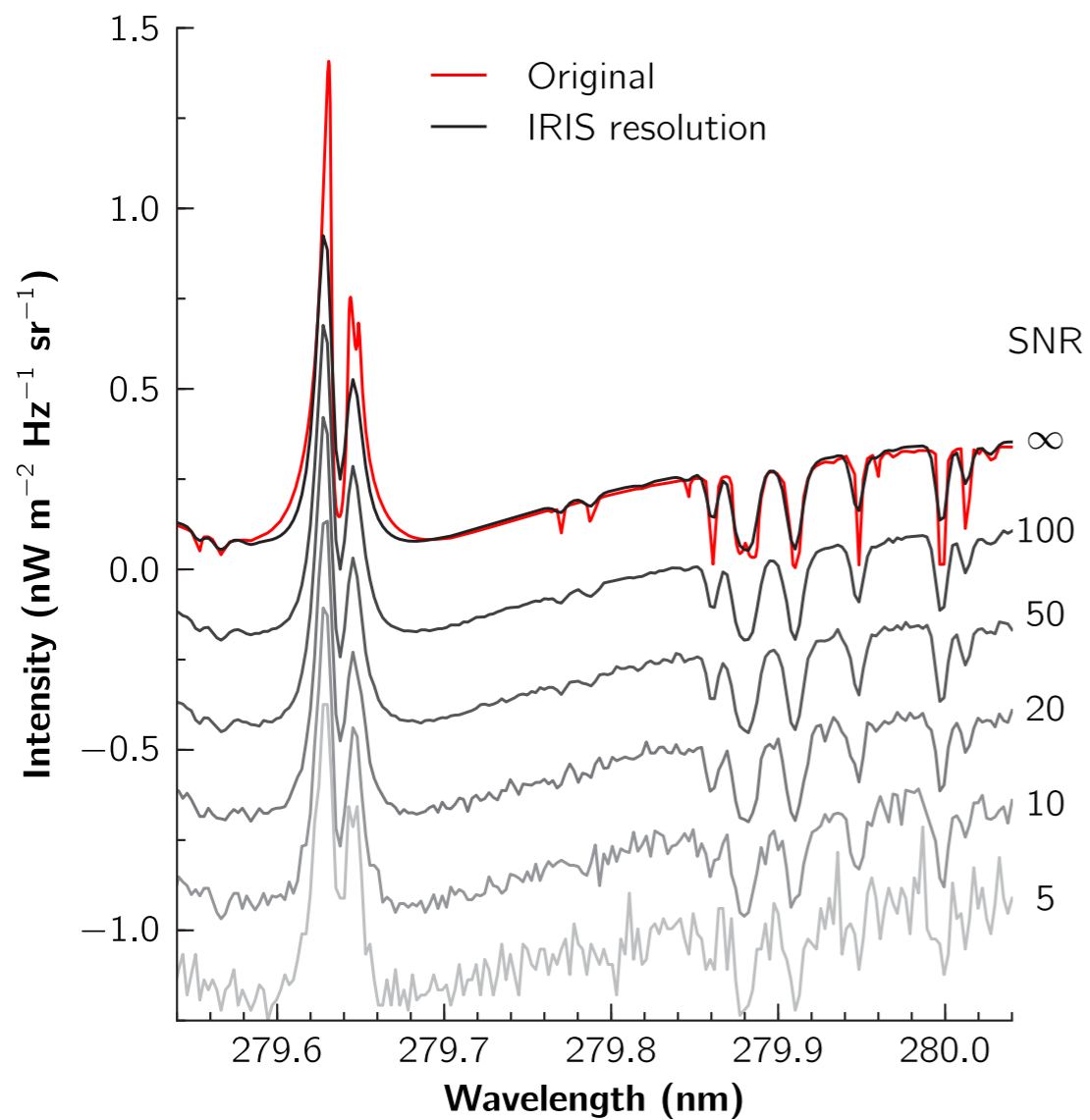
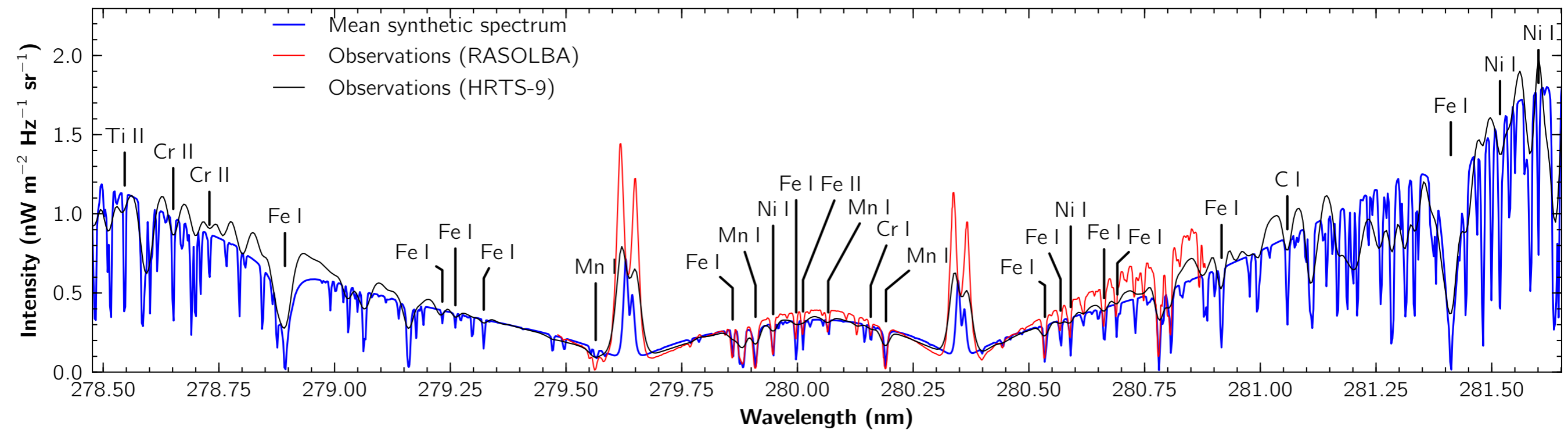


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Mg II k

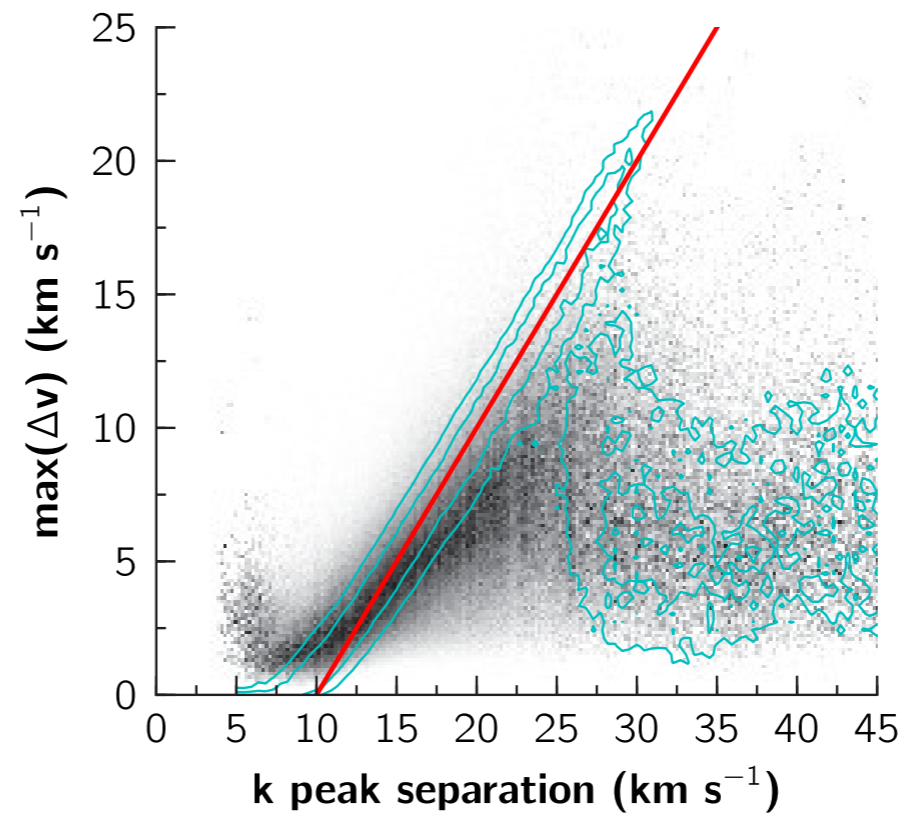
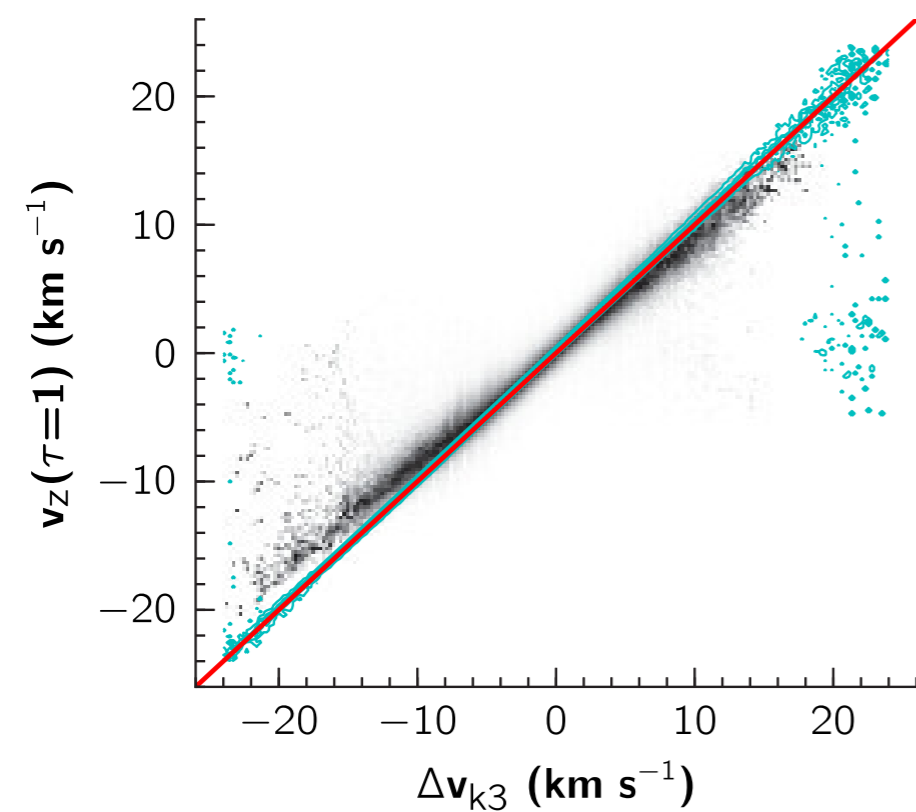


279.55 nm

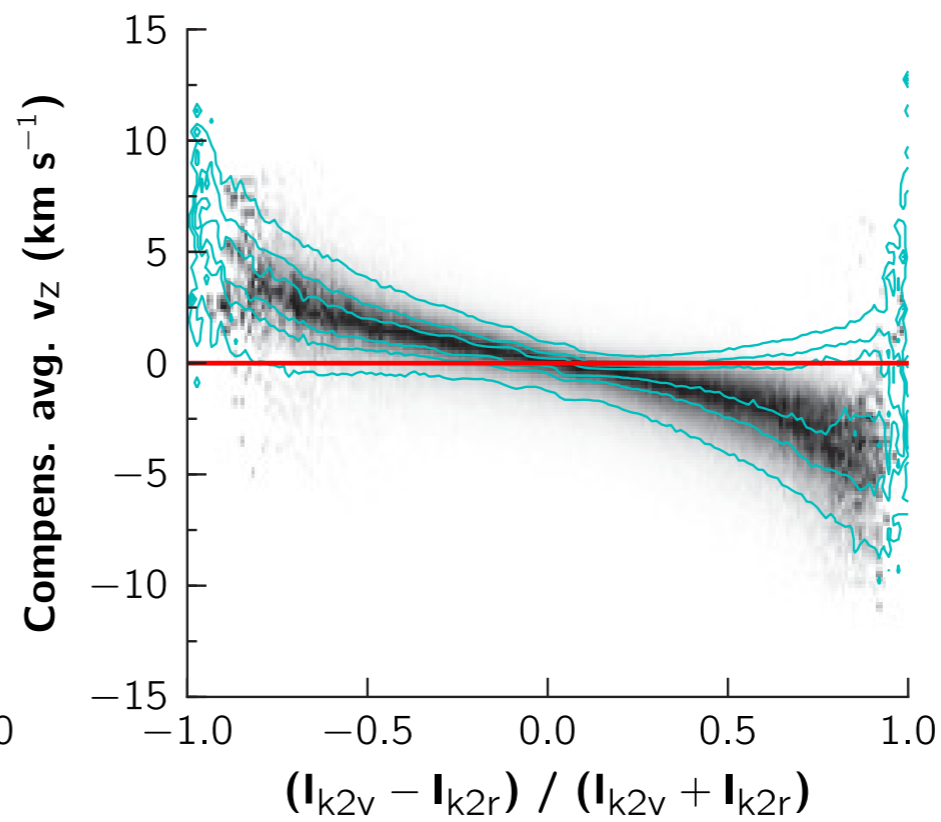
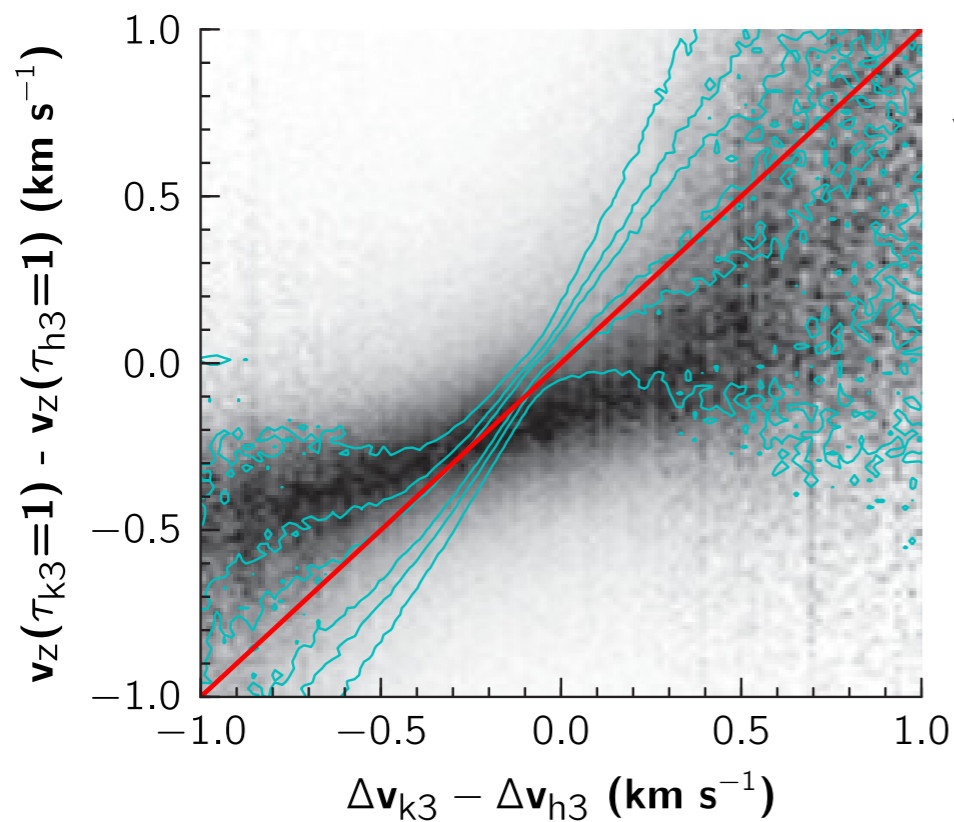


TMDP, J. Leenaarts, B. De Pontieu, et al. (2013)

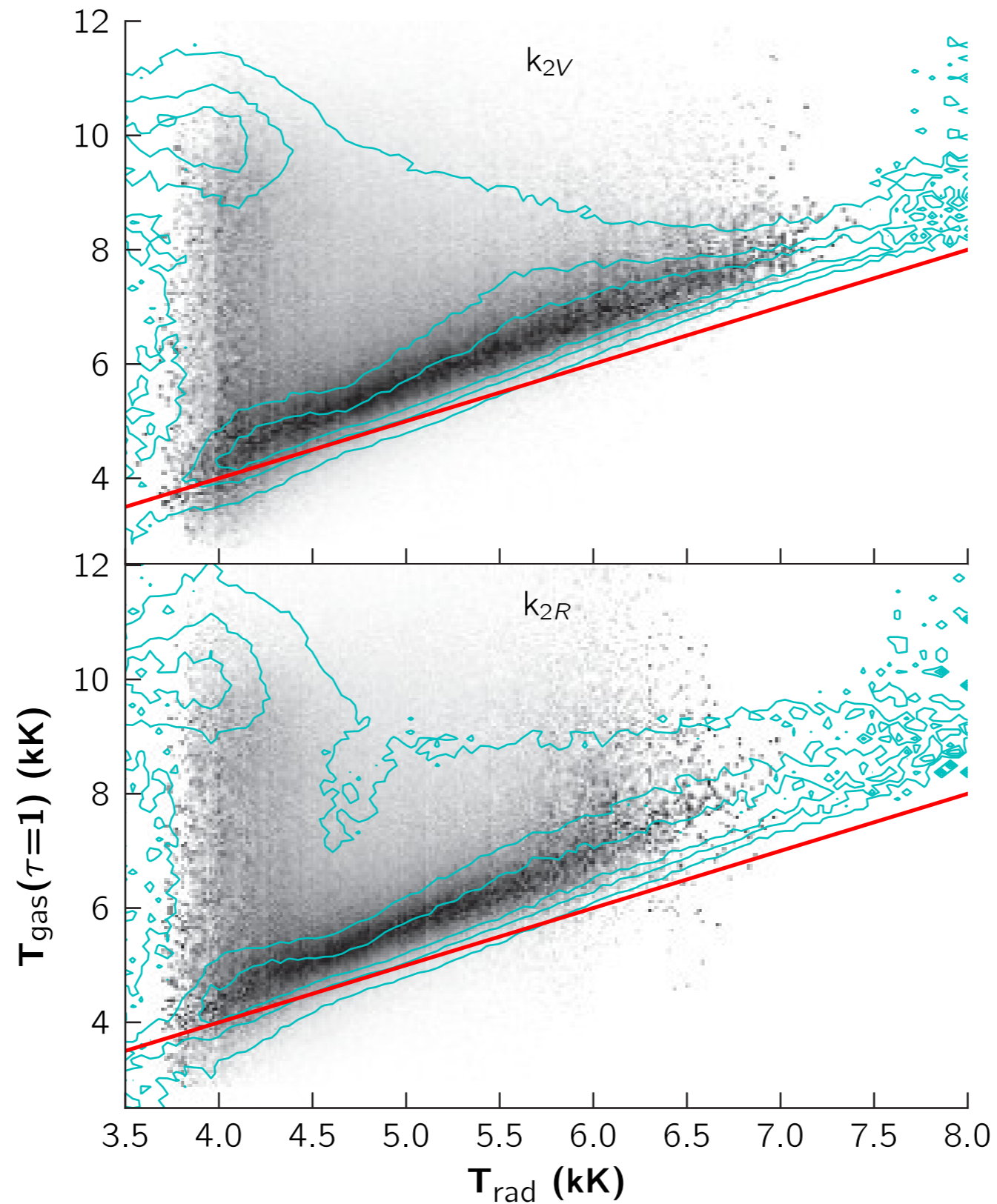
Mg II h & k: velocity diagnostics



at IRIS
resolution
simulation
original



Mg II h & k: temperature diagnostics

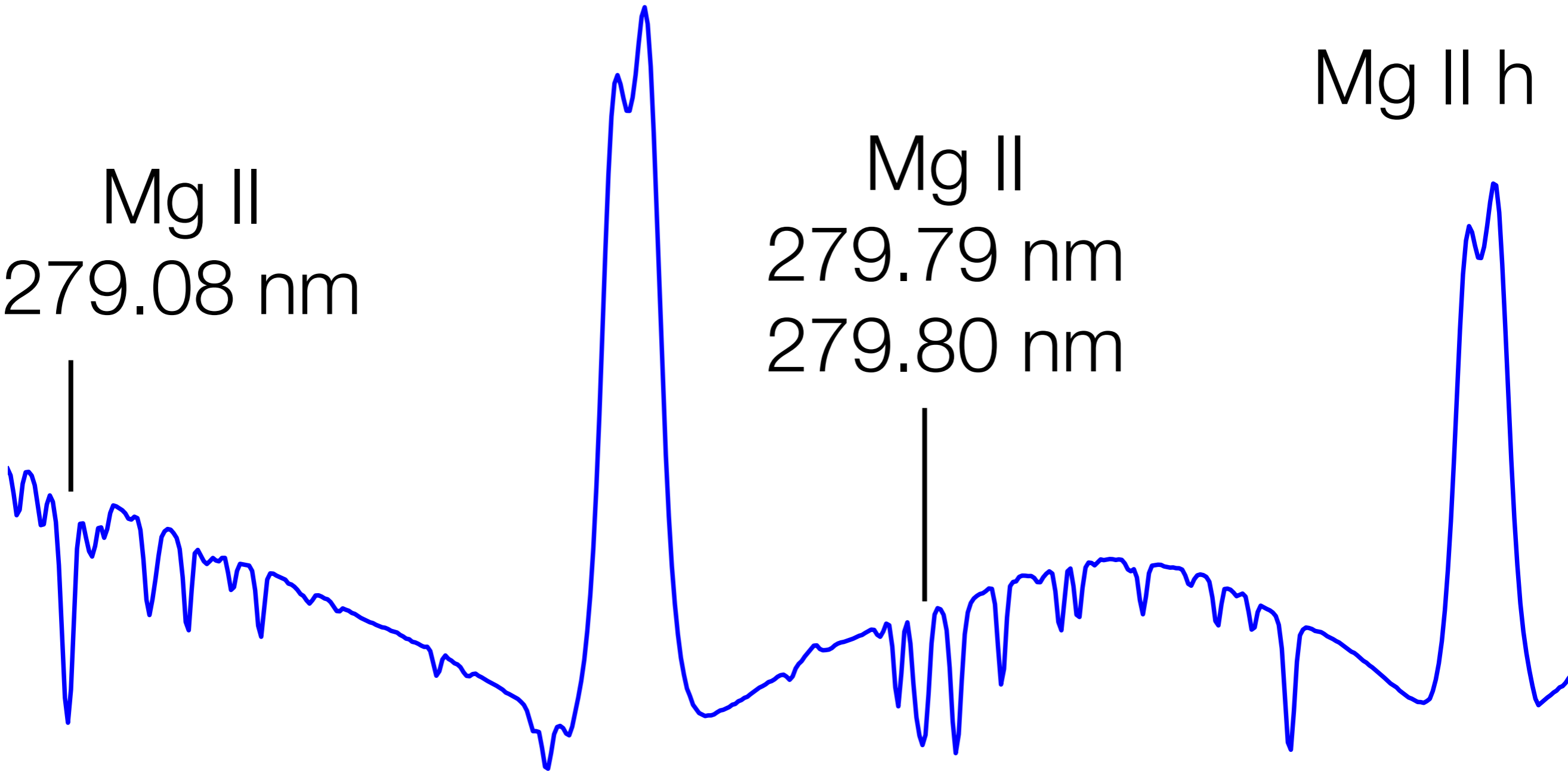


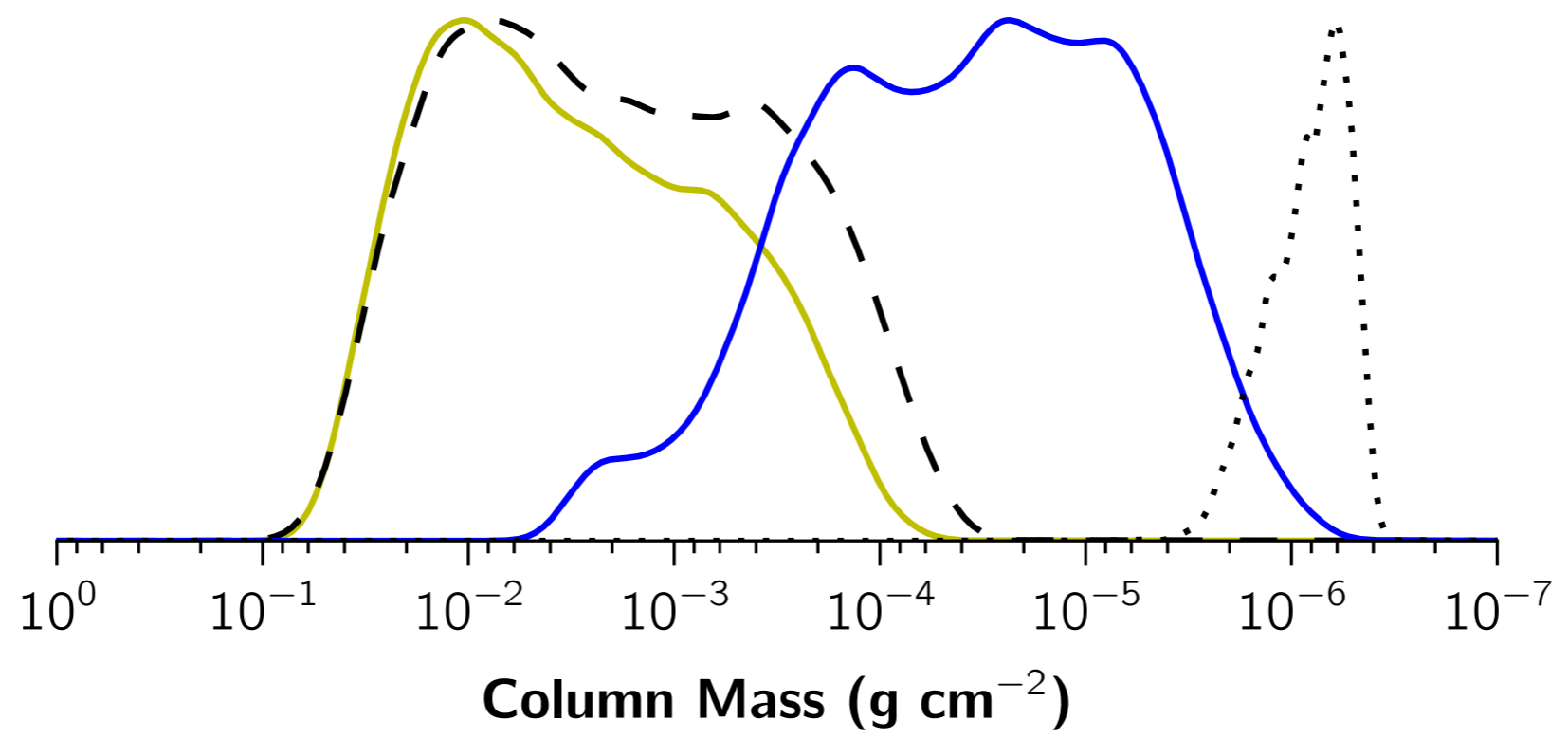
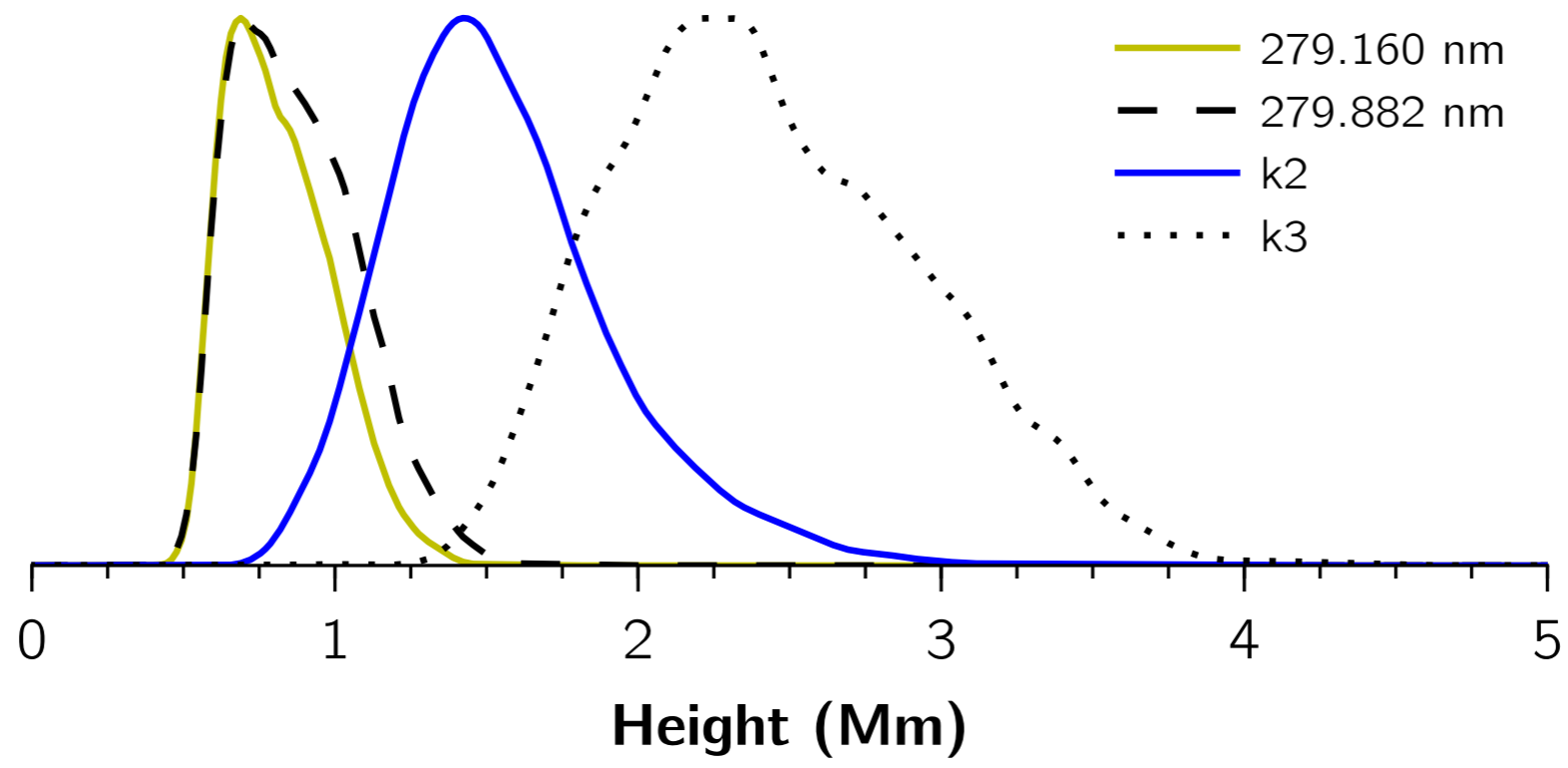
Mg II k

Mg II h

Mg II
279.08 nm

Mg II
279.79 nm
279.80 nm



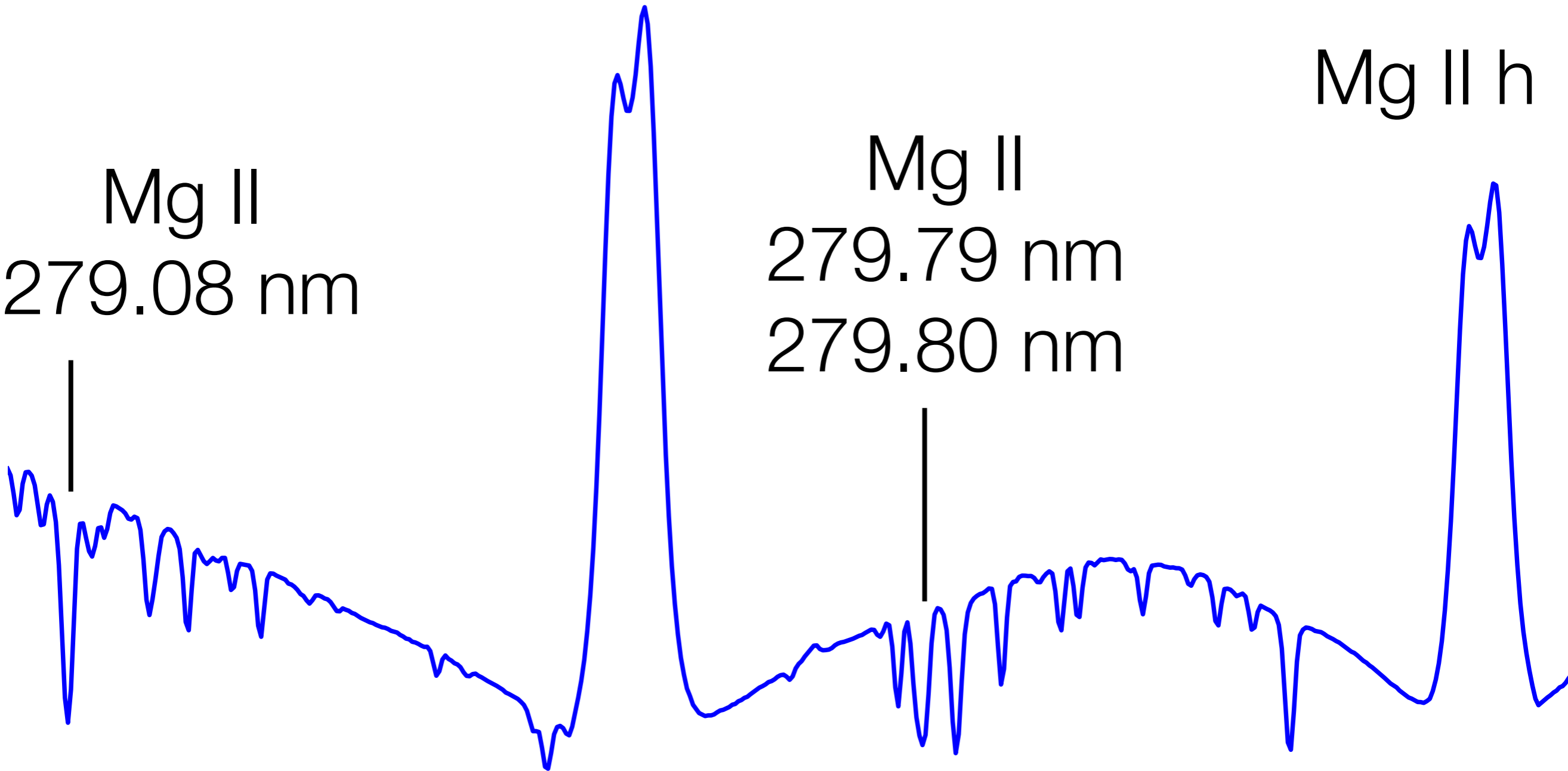


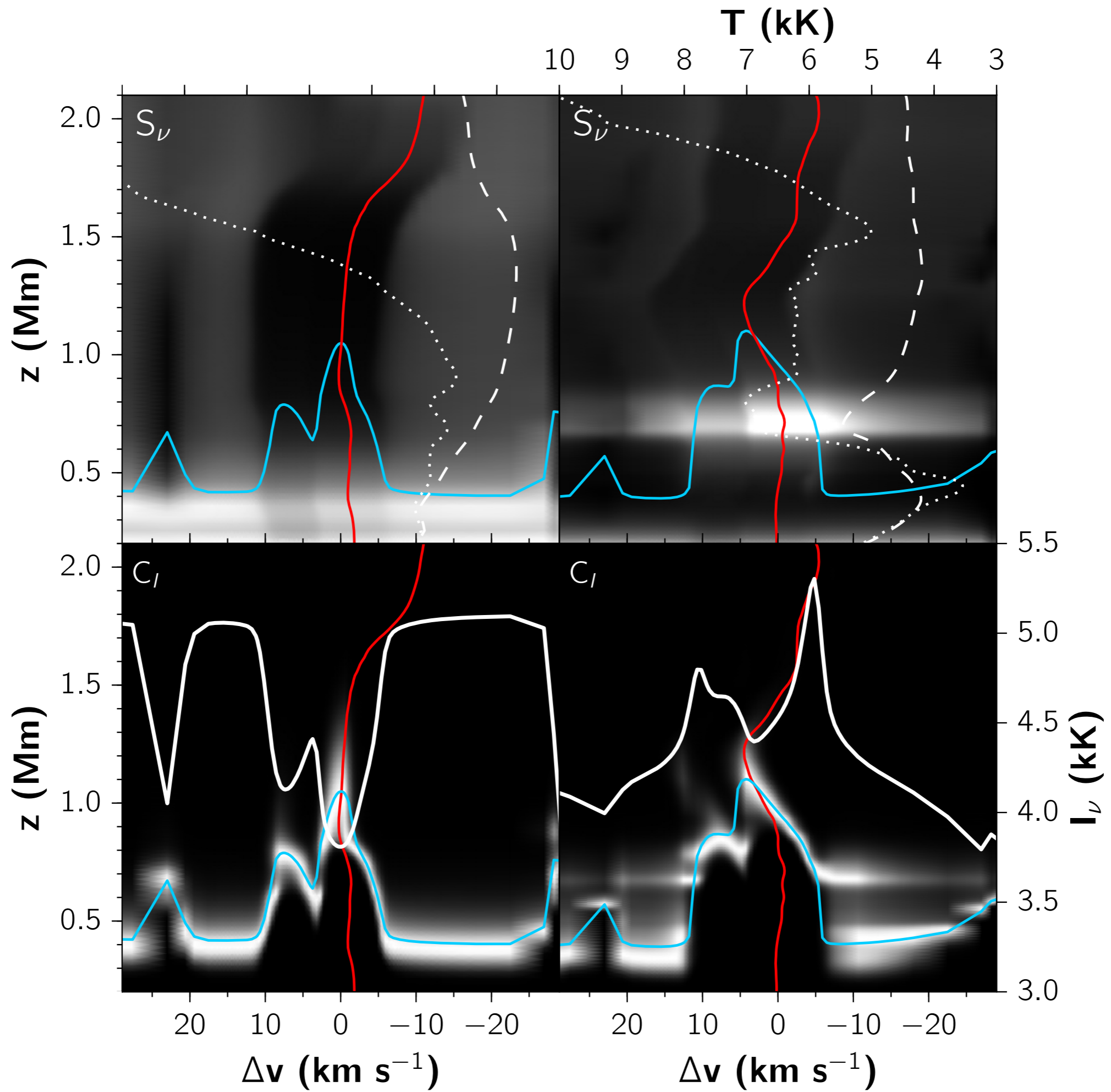
Mg II k

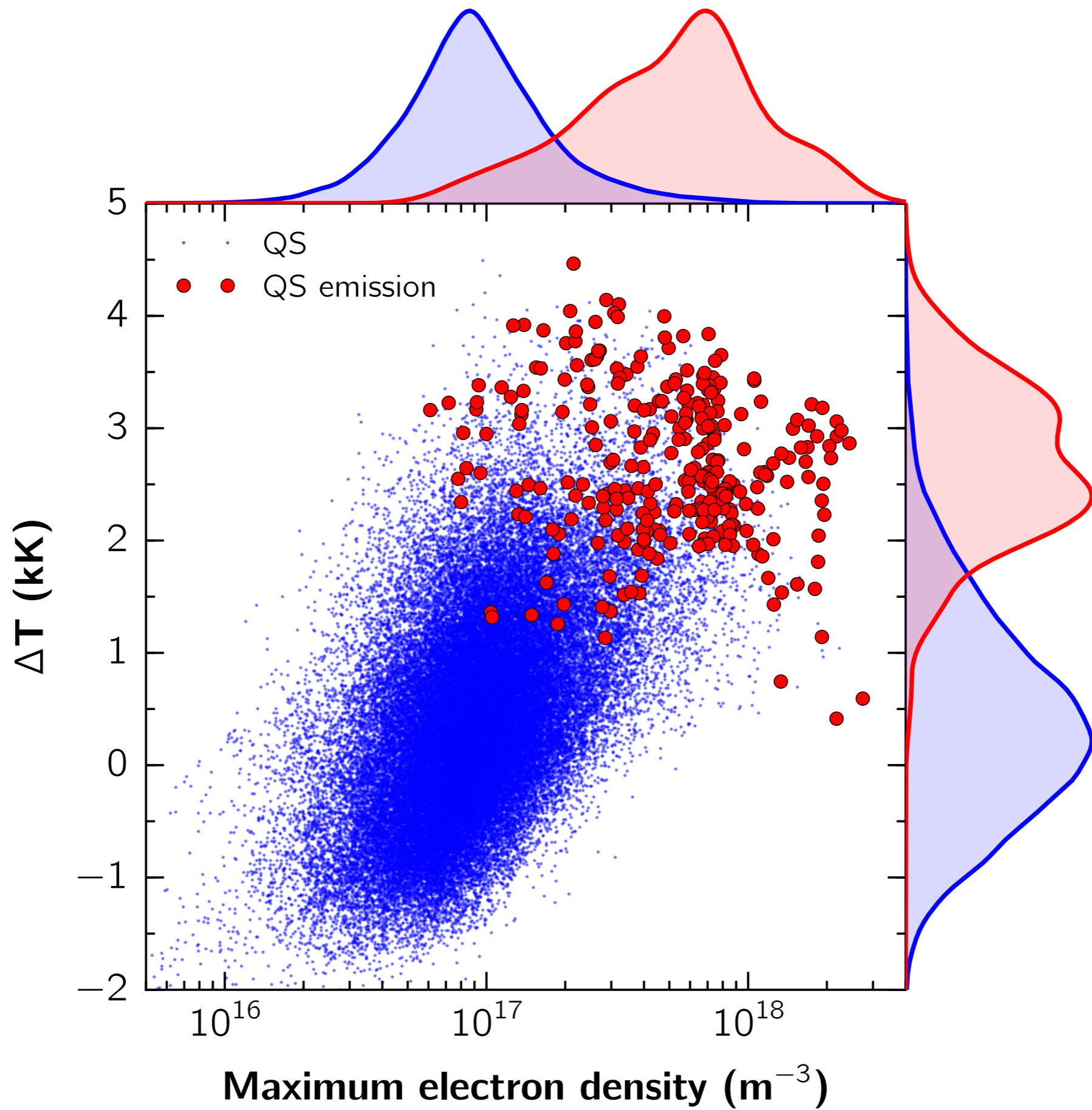
Mg II h

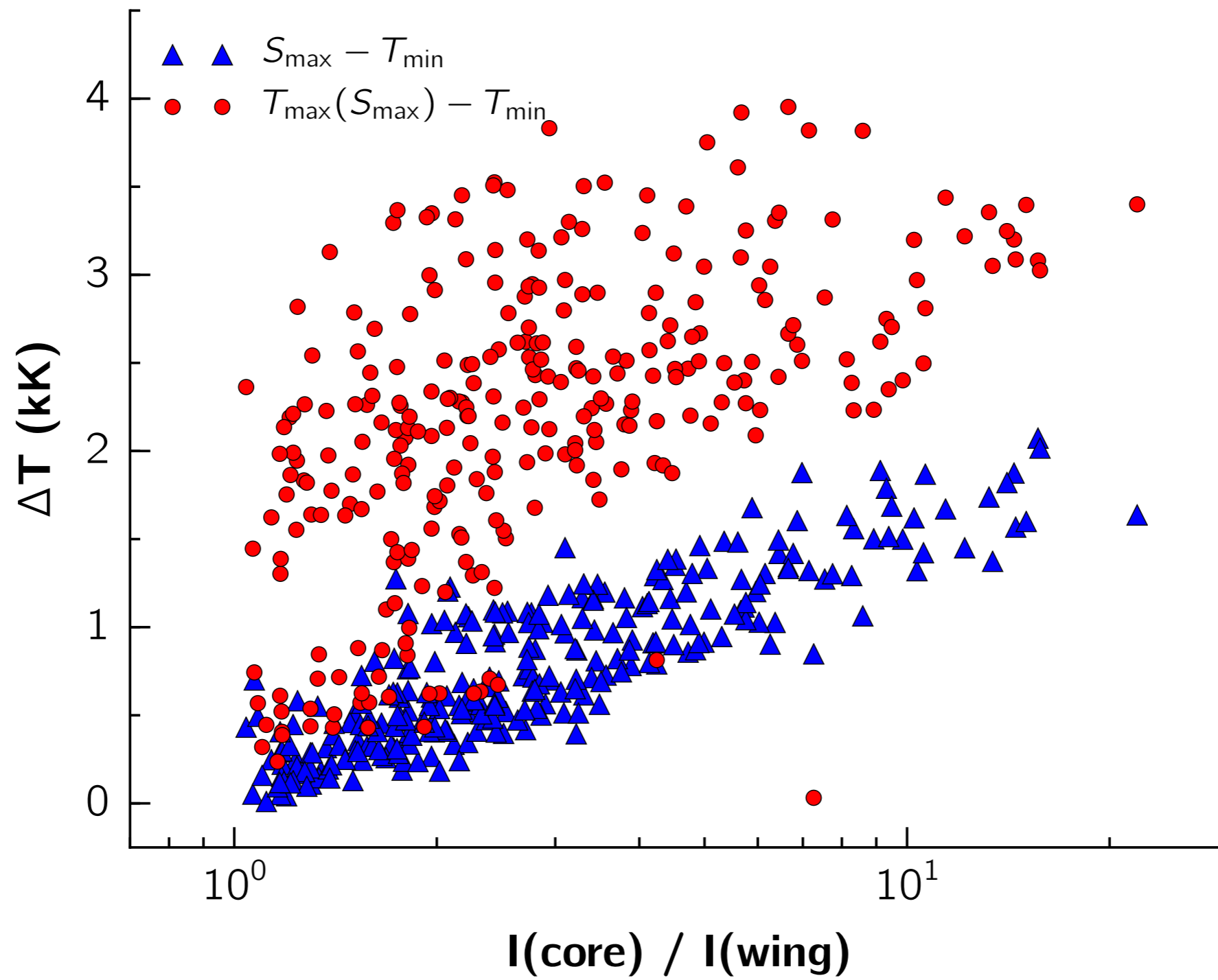
Mg II
279.08 nm

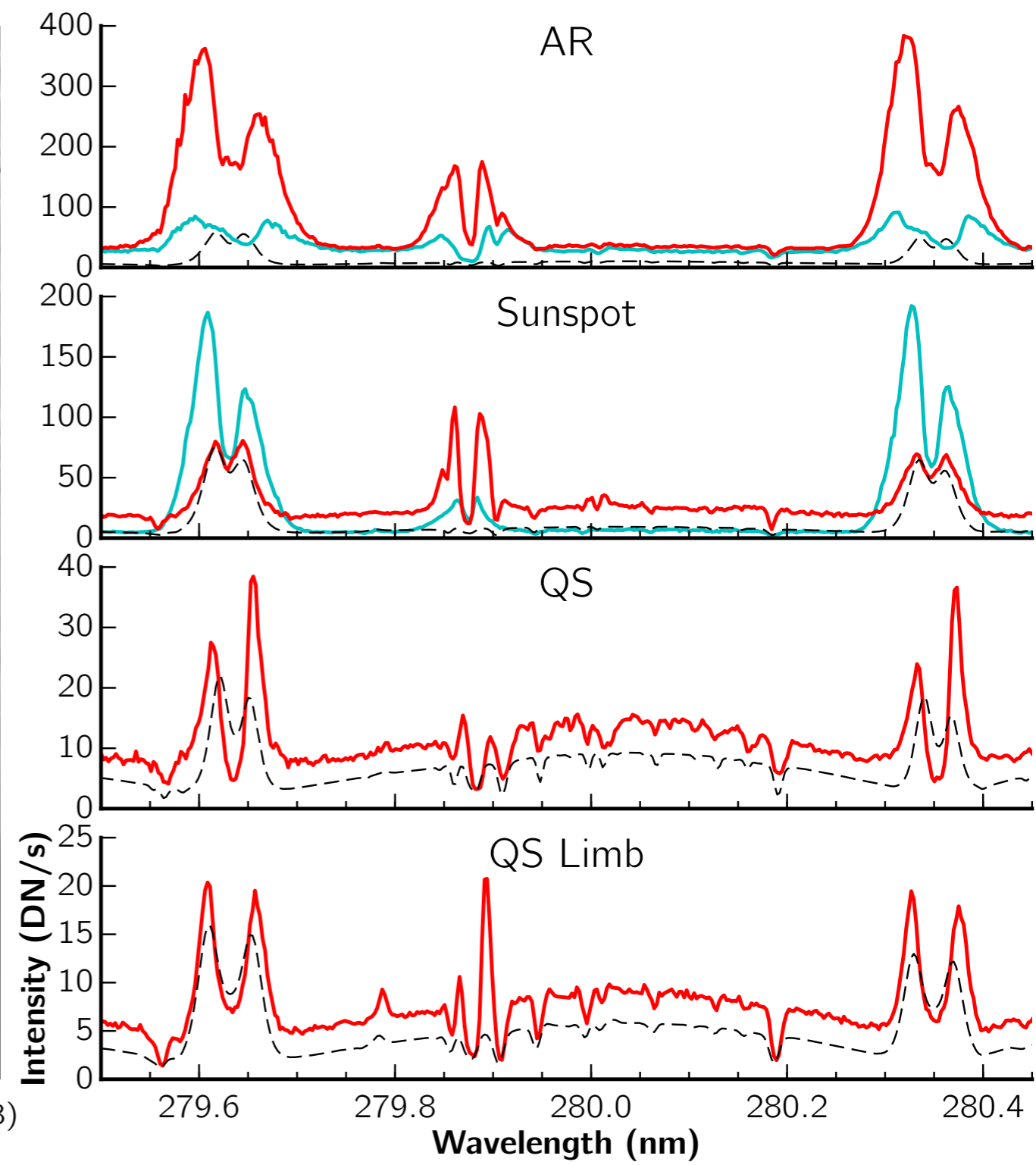
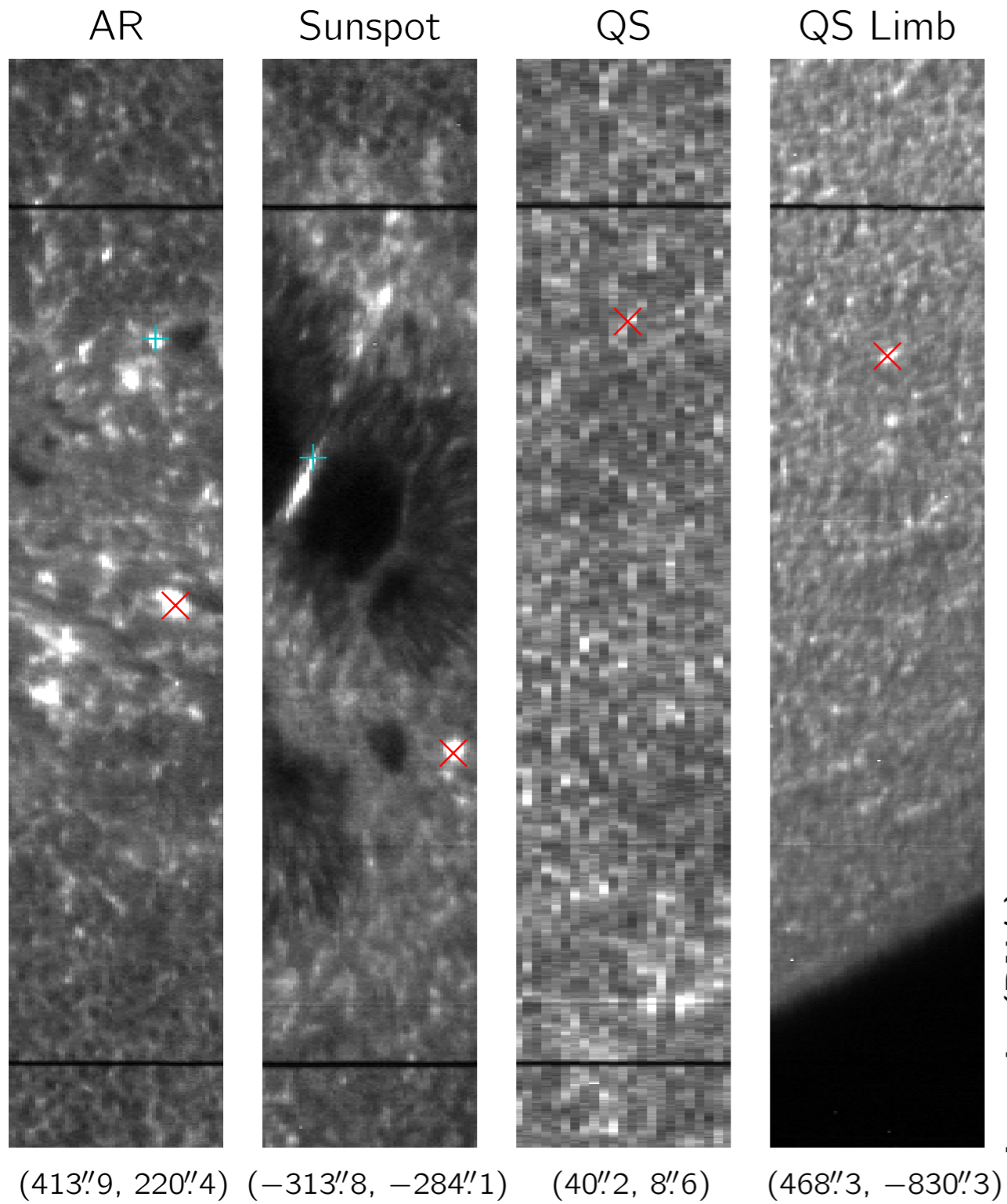
Mg II
279.79 nm
279.80 nm

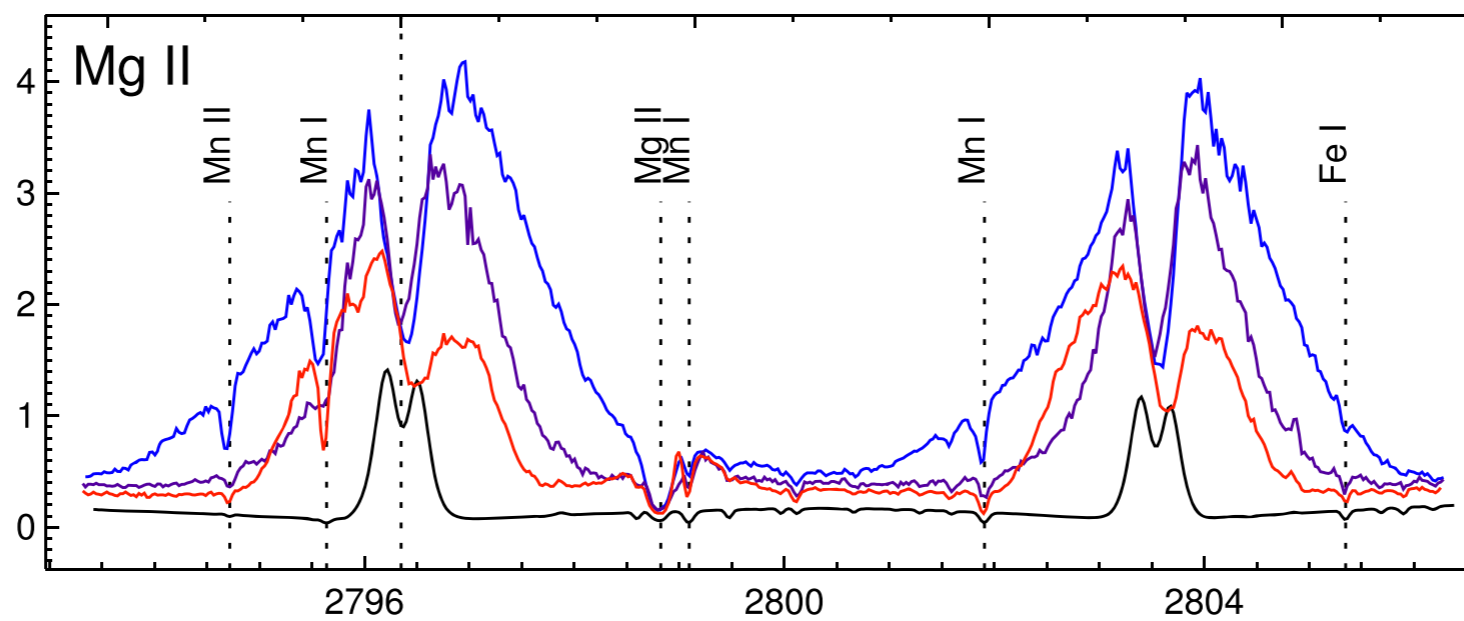
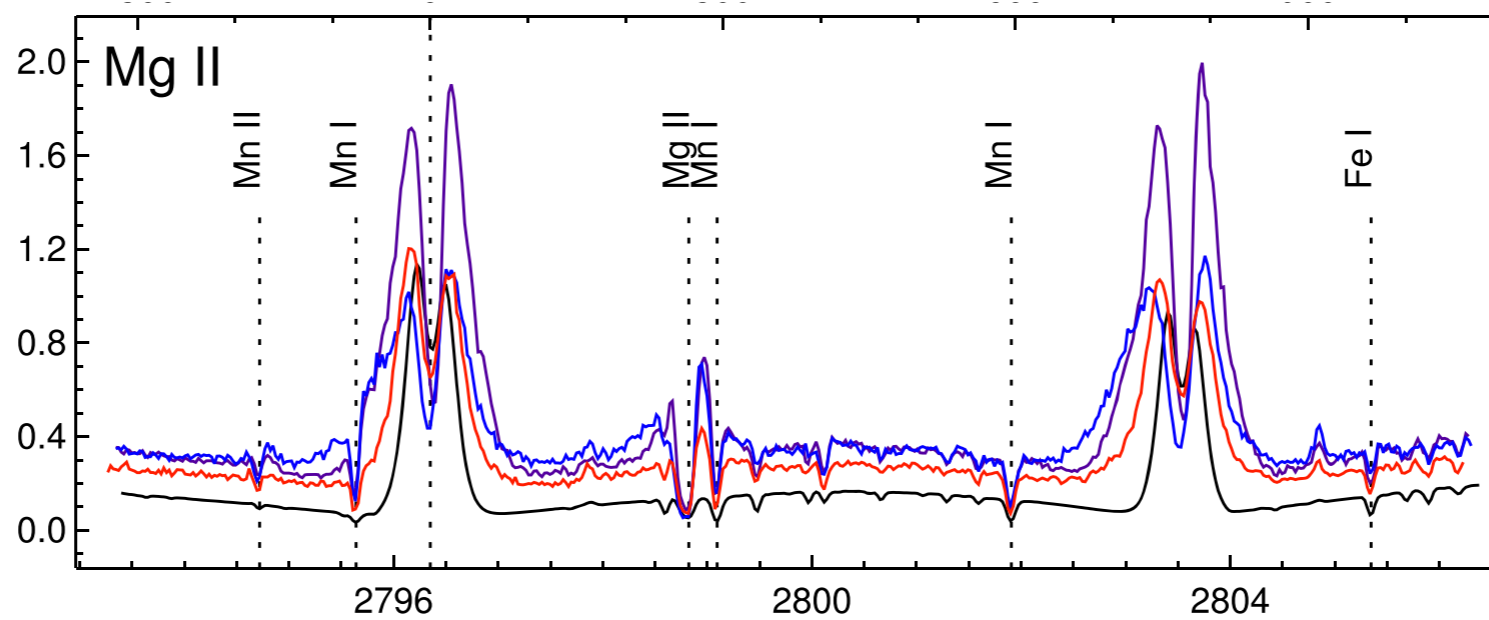
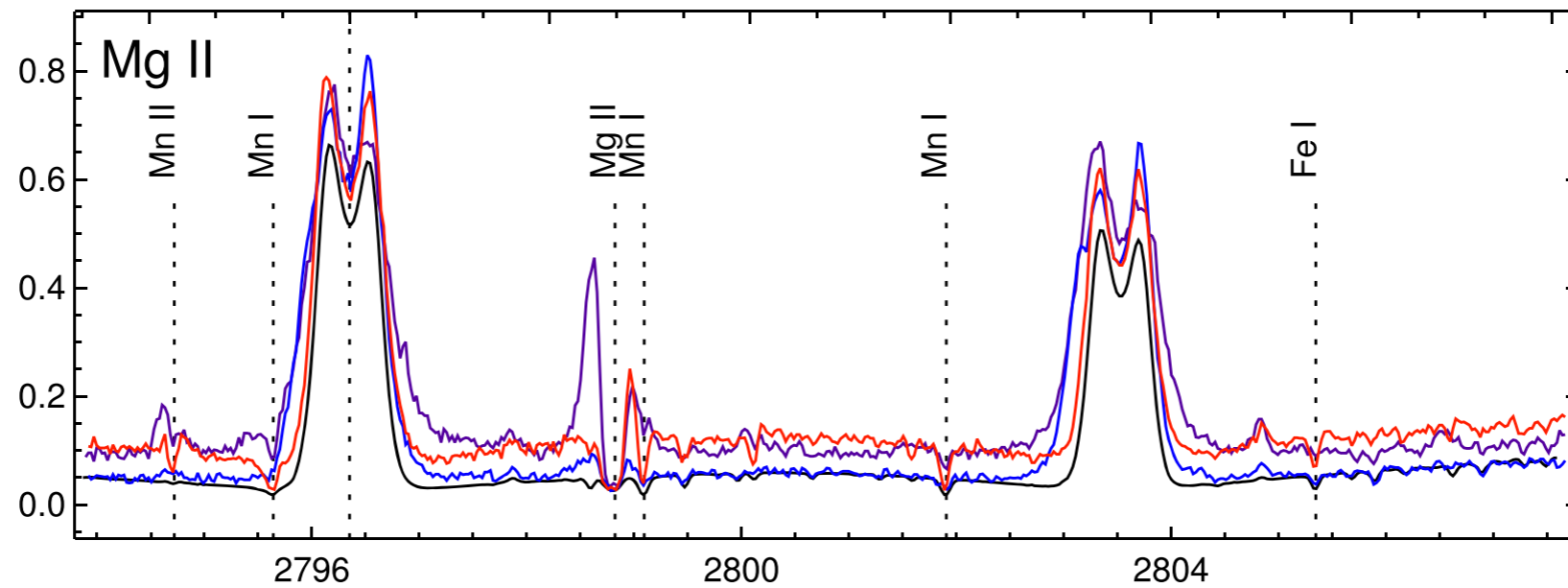






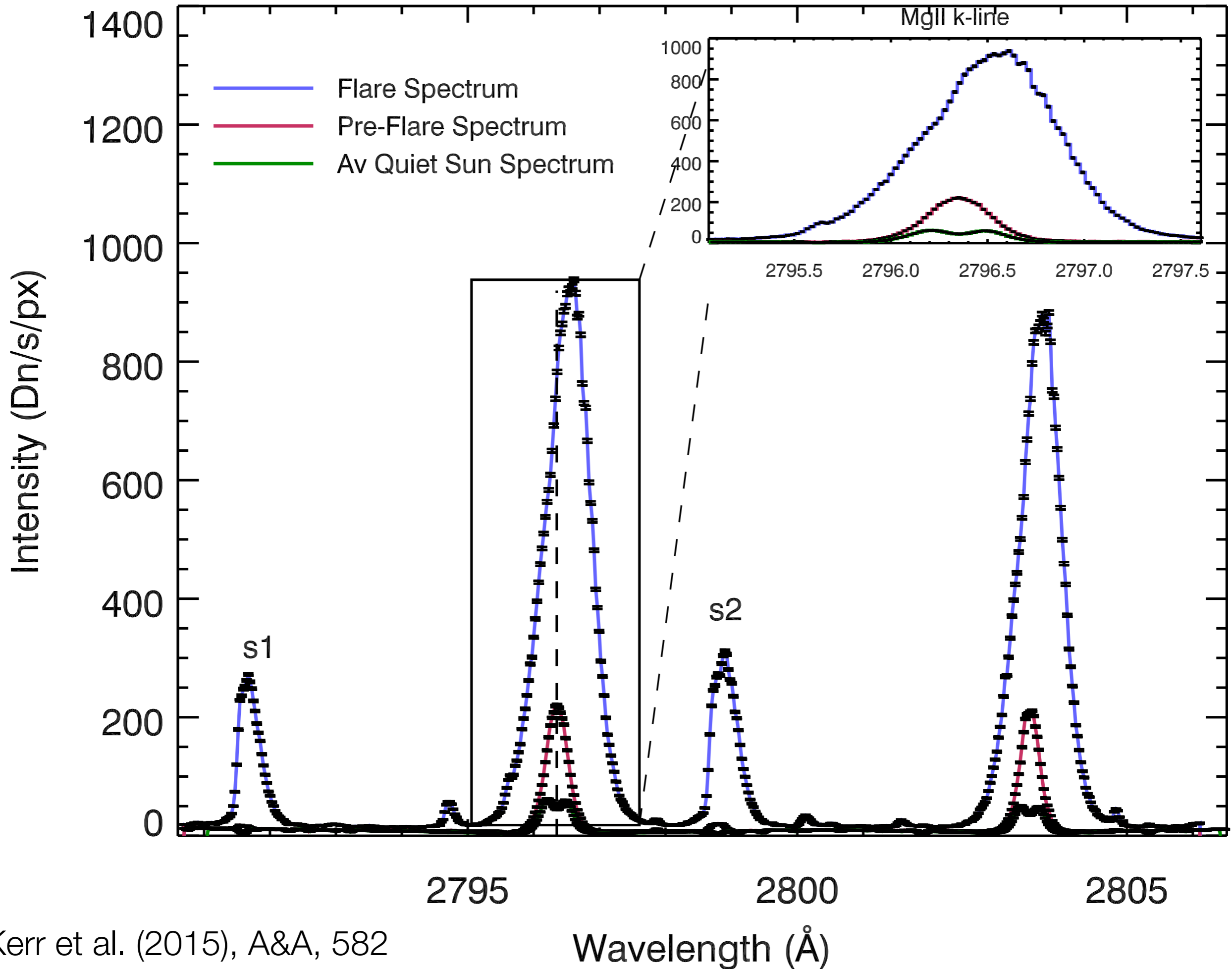


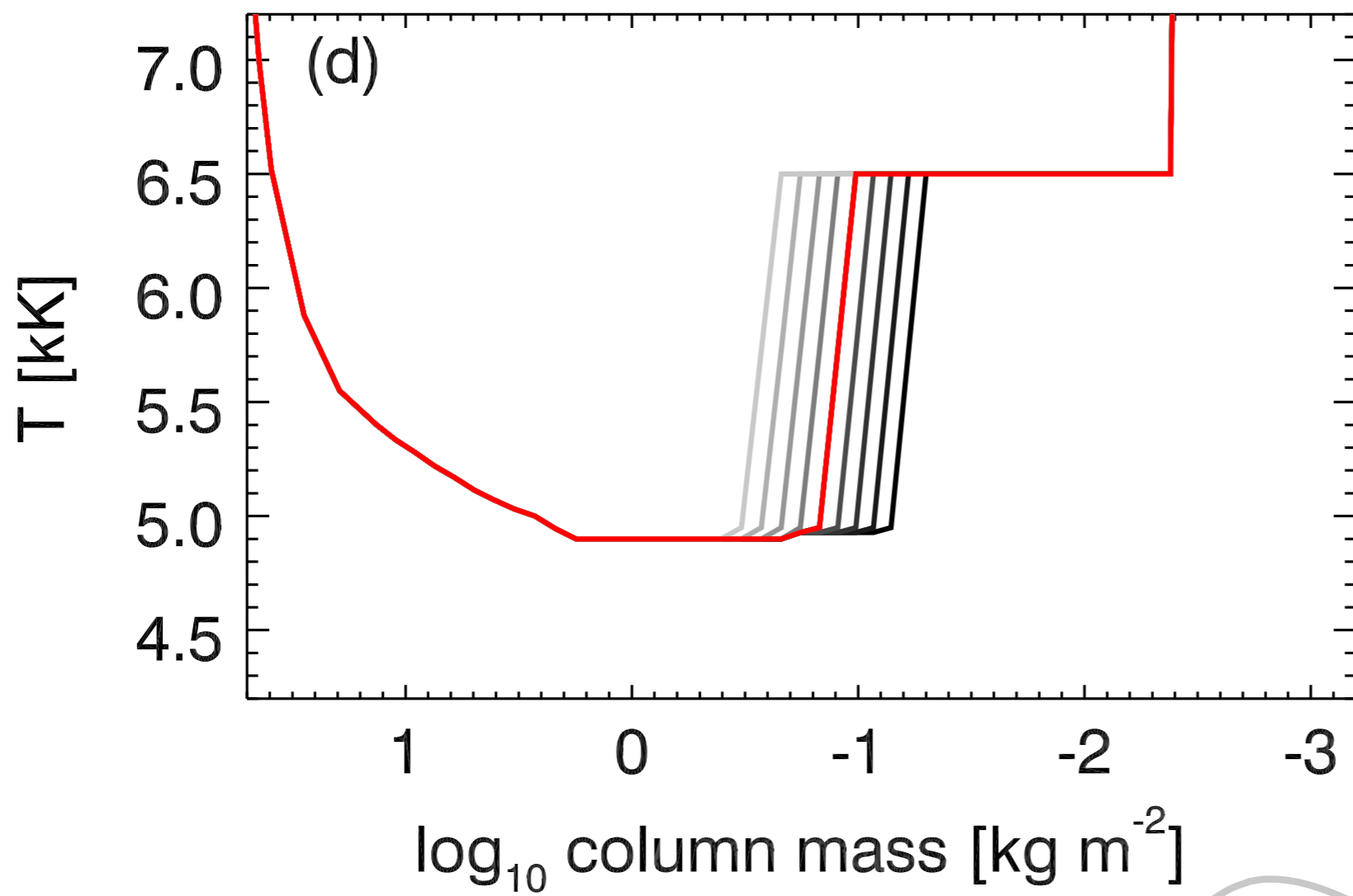




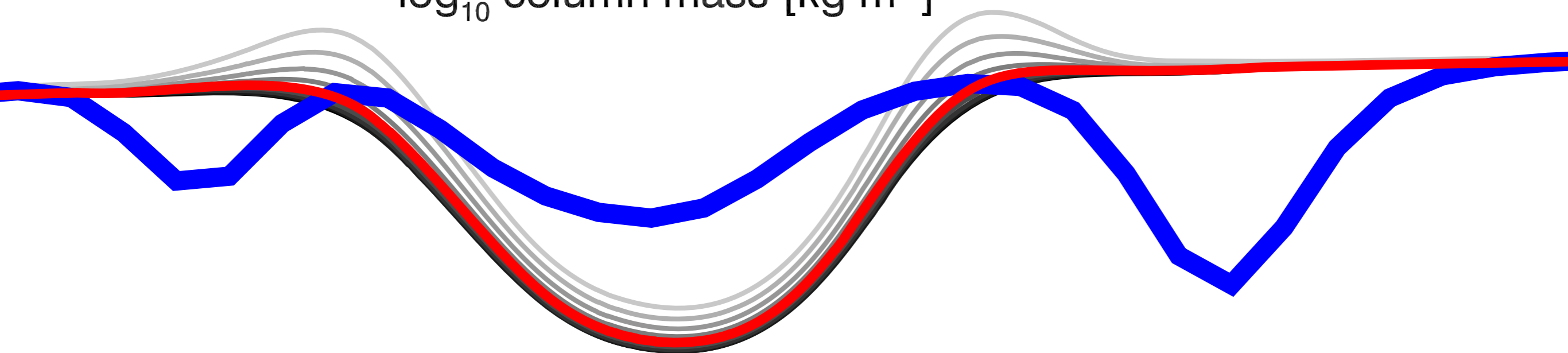
Wavelength (Å)

Vissers et al. (2015), ApJ, 812





Carlsson et al. (2015),
ApJL, 30



279.86 279.88 279.90 279.9

Conclusions

- Forward modelling a reliable method to diagnose complex spectra
- Mg II triplet lines unremarkable except when in emission
- Amount of emission + shape of emission give clues to underlying atmosphere ($\Delta T > 1500$ K, $N_e \approx 10^{18} \text{ m}^{-3}$)
- IRIS results illustrate key cases where Mg II triplet useful in constraining condition of lower chromosphere