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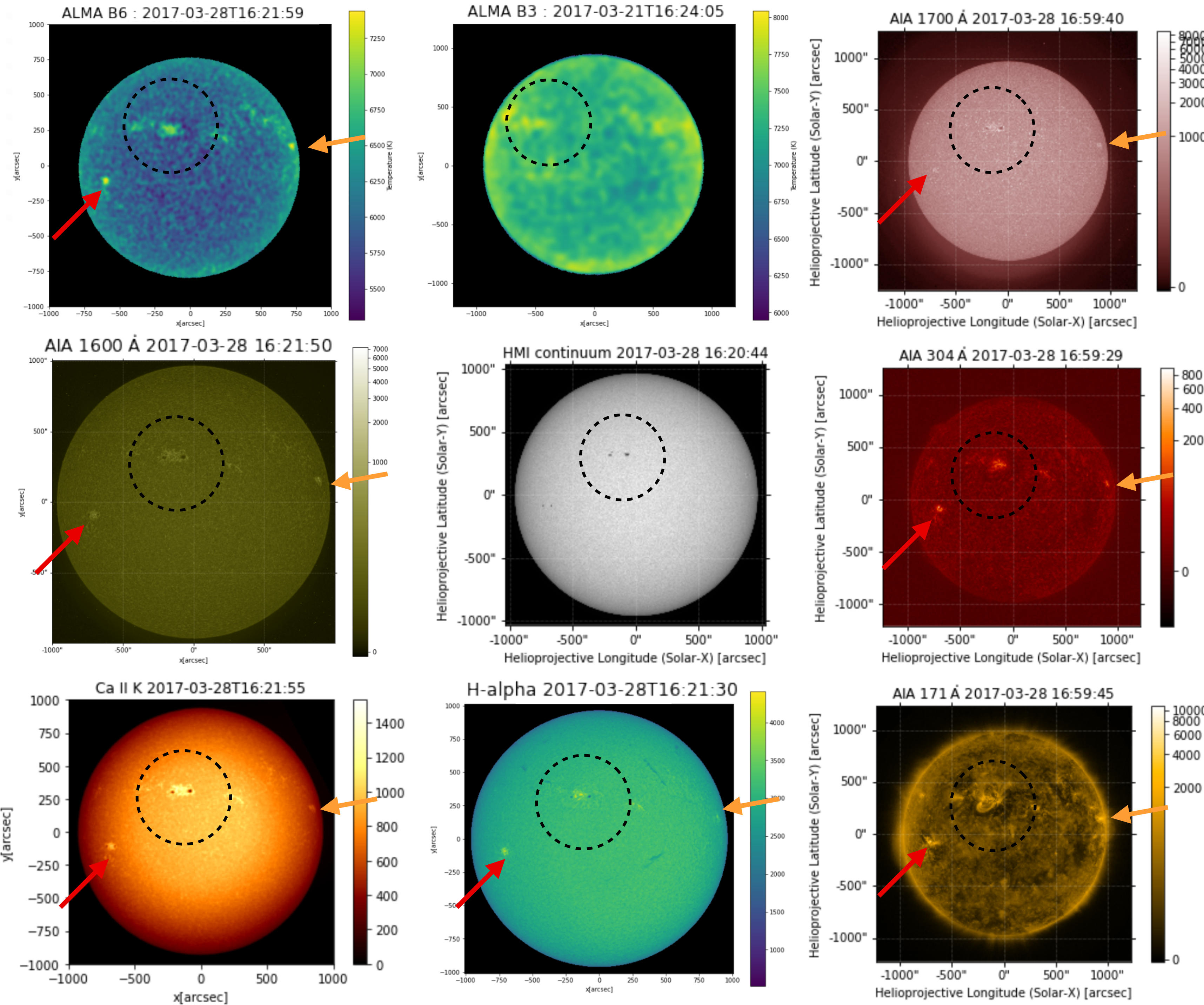
The Sun as a star: New insights from full-disk observations with ALMA

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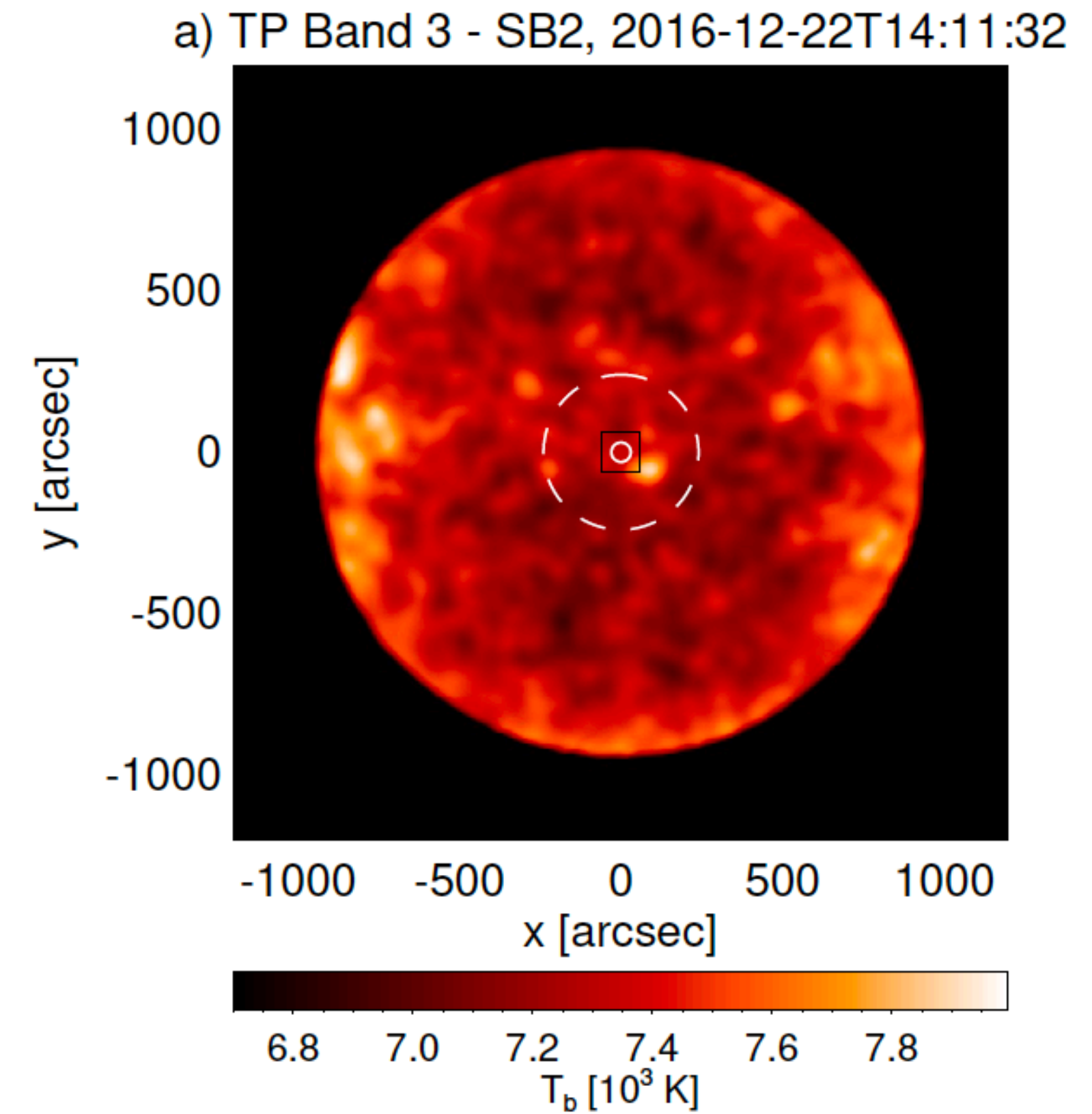
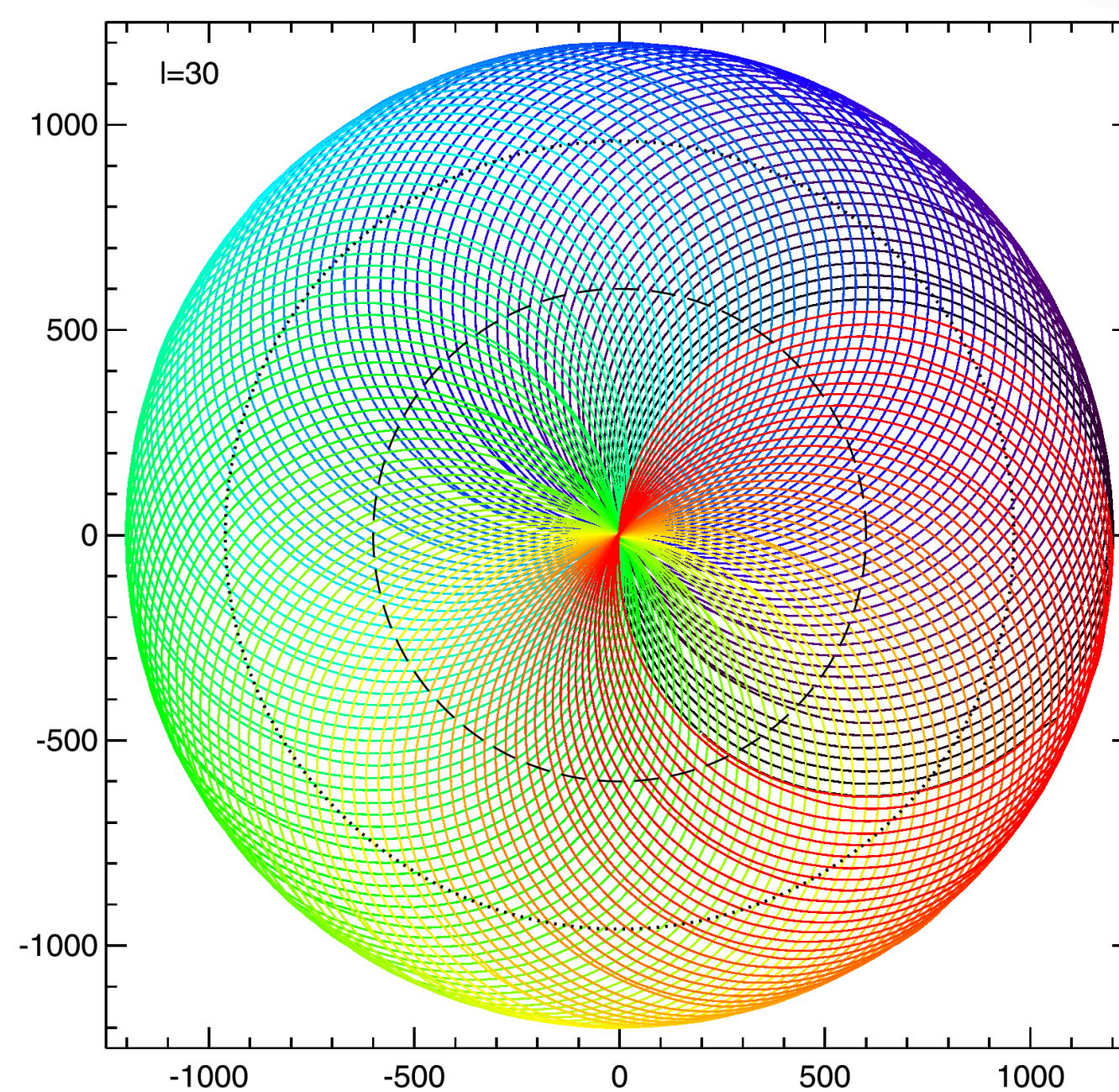
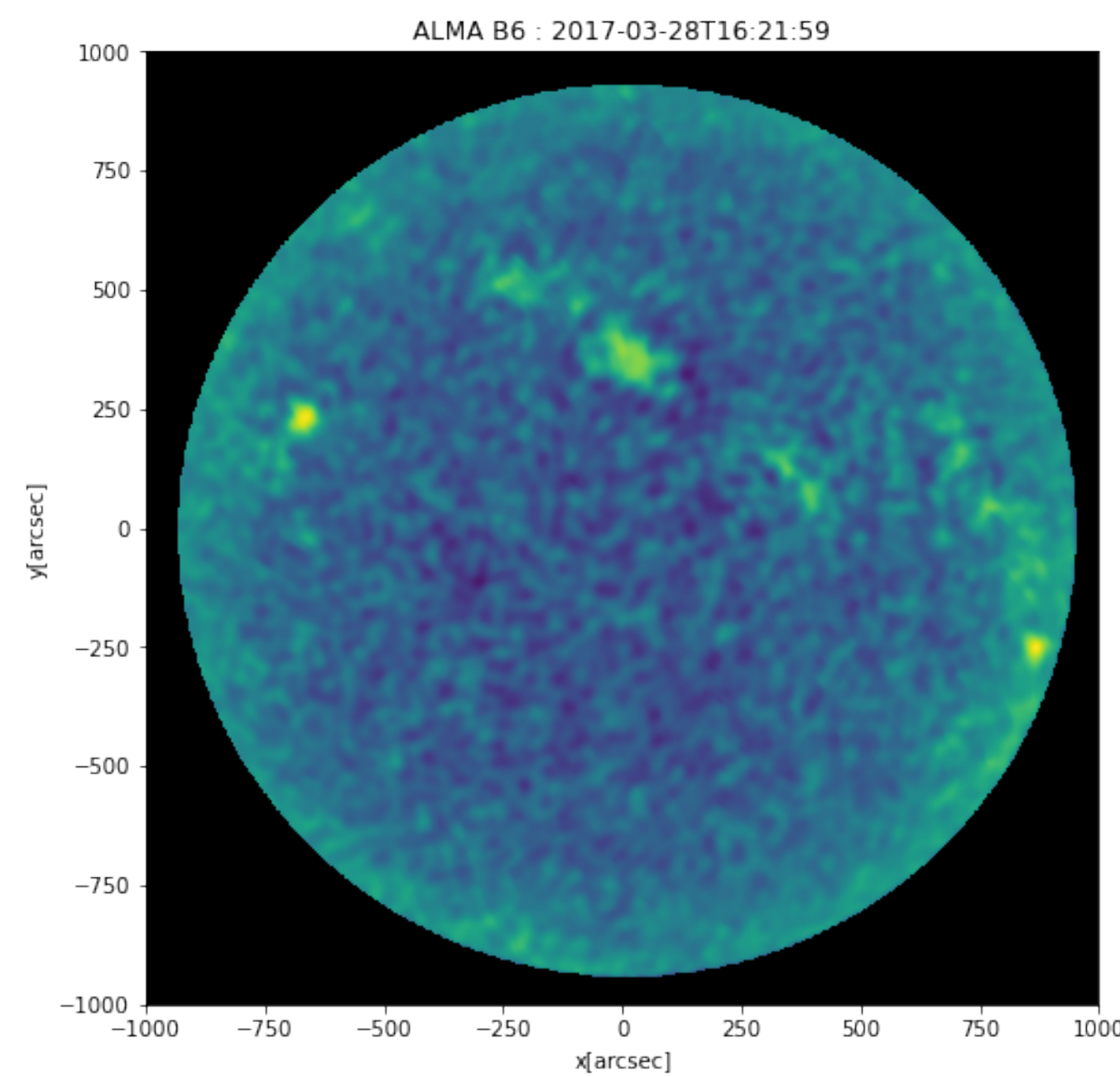
How do ALMA Full Disk observations correlate with other established chromospheric diagnostics?

Magnetic field strength
↕
brightness temperature

R ● C S



Calibration



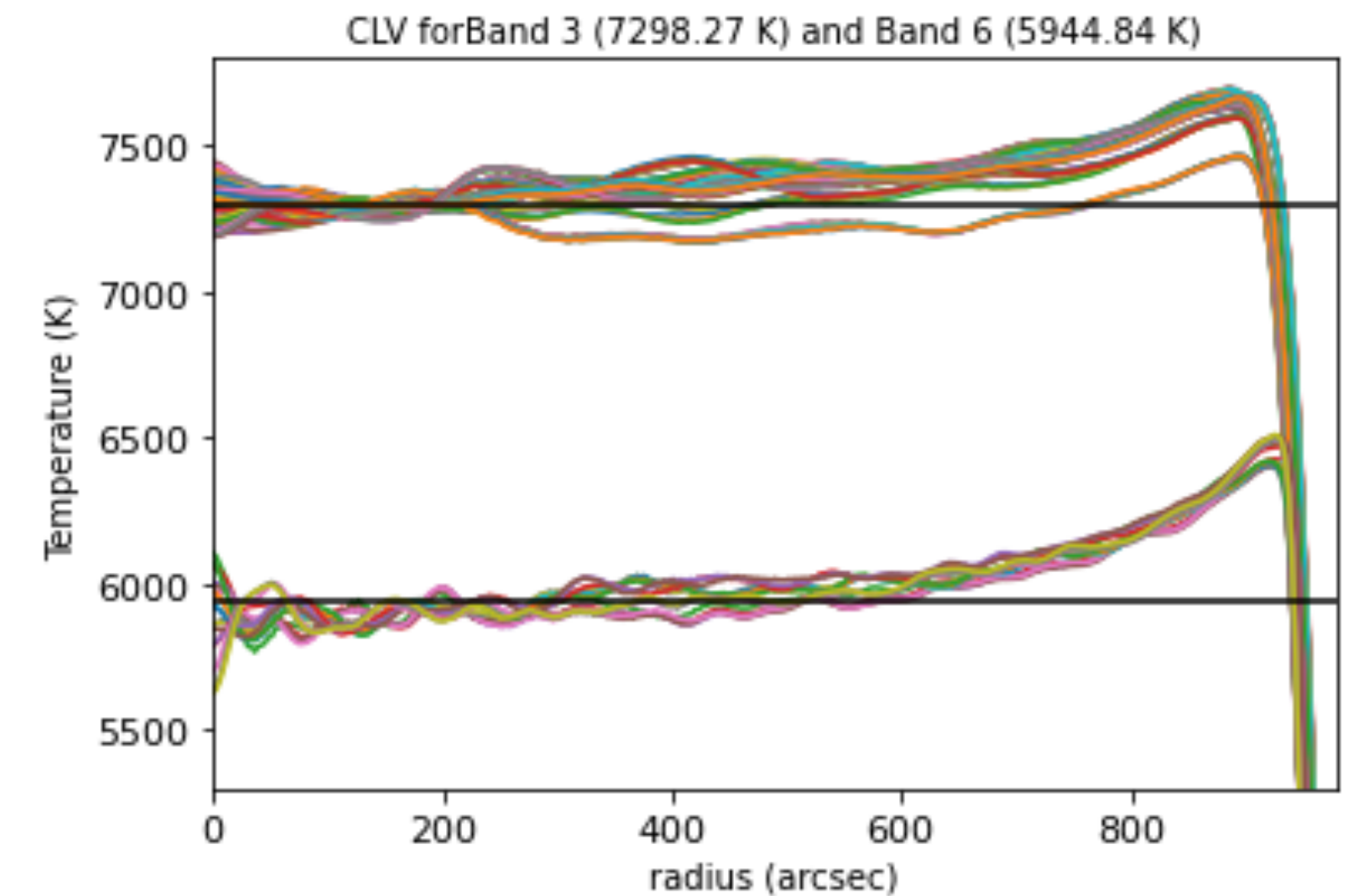
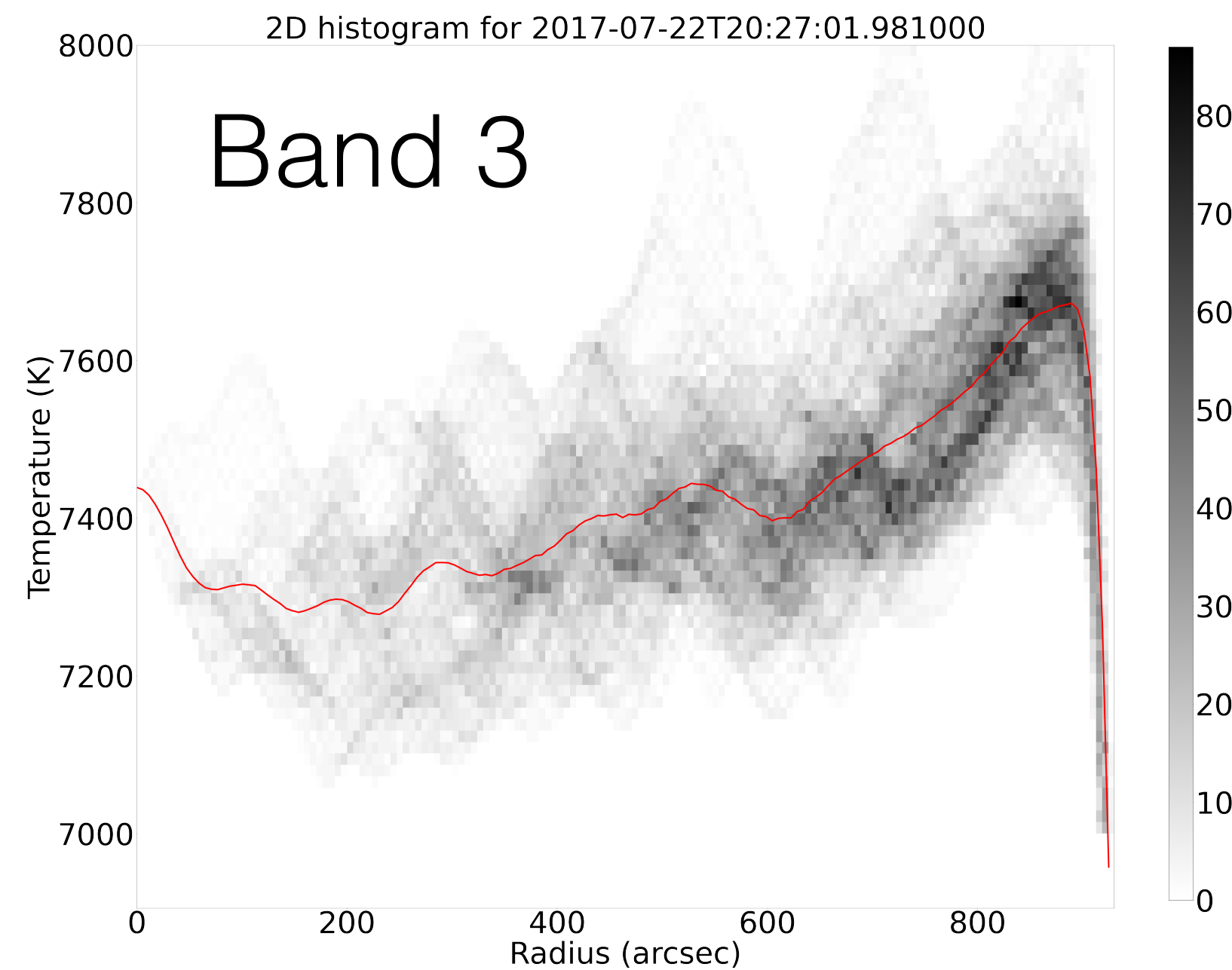
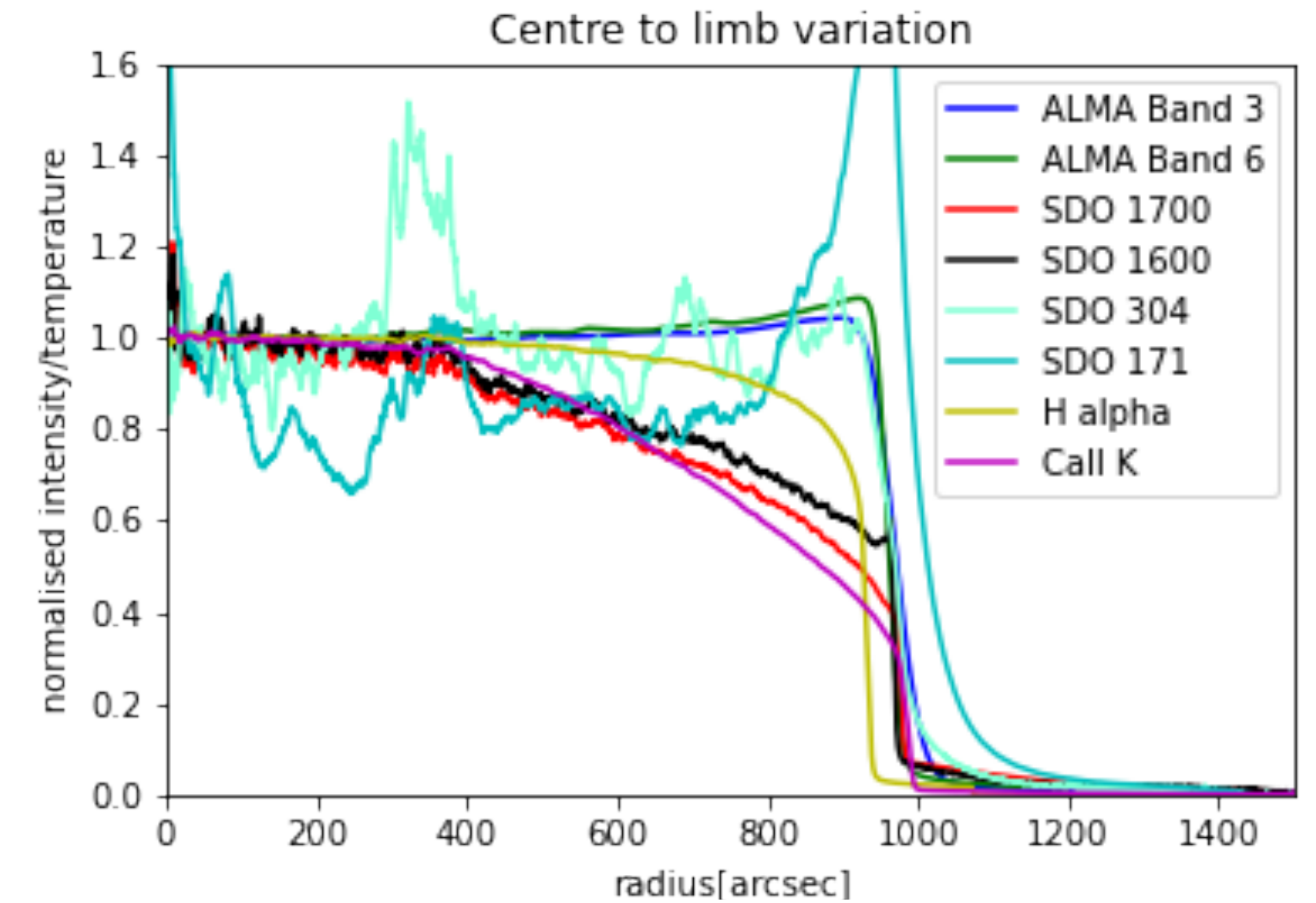
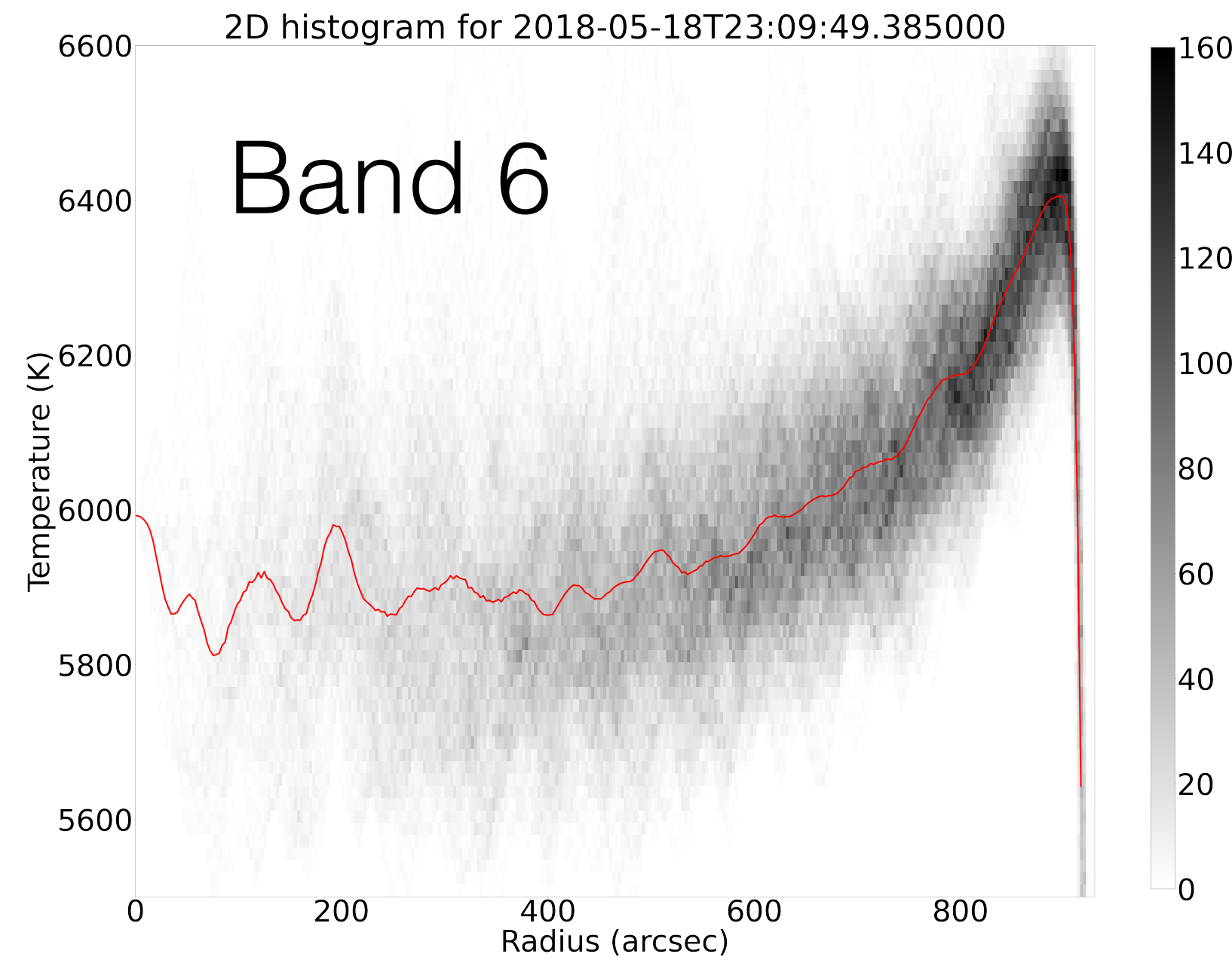
- ▶ TP map is Single Dish Observation
- ▶ White et al (2017) correction
- ▶ Mean temperature shifted to calibrated value

▶ Offset (?)

✓ Statistical analysis

What?

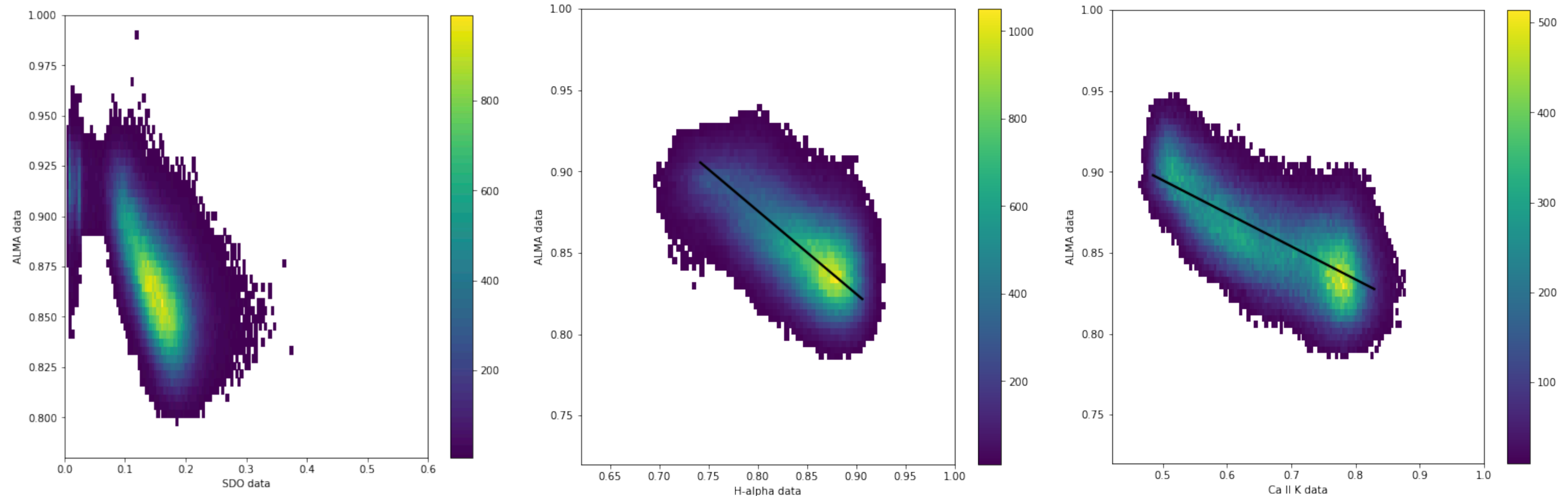
Primary Results: Centre-to-Limb-Variation



See also, Alissandrakis et al. (2017)

Comparison of ALMA data with other diagnostics

- ▶ To understand the **correlation** between the diagnostics
- ▶ To estimate **formation height** of the radiation in comparison
- ▶ To gain insights about the activity and **activity indicators**



Pixel to pixel correlation of ALMA with SDO 1700, H alpha and Ca II K.

Key takeaways:

- ▶ Magnetic field strength ↔ brightness temperature
- ▶ The layer observed by the band 3 lies significantly **above** the layer observed by band 6. (C. E. Alissandrakis)
- ▶ More statistics will reveal **better calibration methods** for full disk maps and in turn for interferometric data.



- Integrating the solar signal and getting estimates for **solar activity indicators**
- Comparative study of the solar and **stellar activities**
- Comparative study of various activity estimates and **physical properties** with reference to the sun



THANK YOU!



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