

Catching the wisps

Constraining mass-loss rates of cool stars at
low frequencies

Sanne Bloot

Radio Stars 2024

18-04-2024

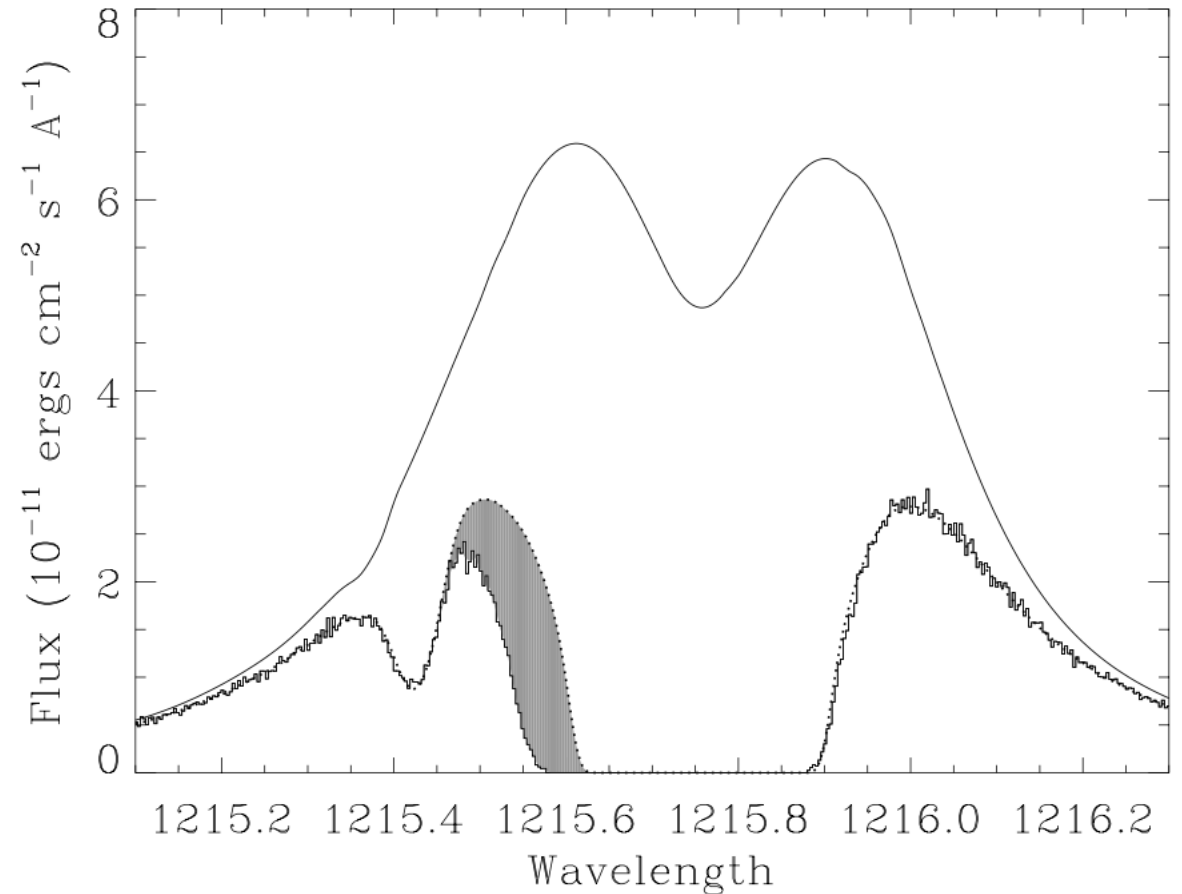


VIDI Grant
PI: Vedantham

Image credit: NASA/GSFC

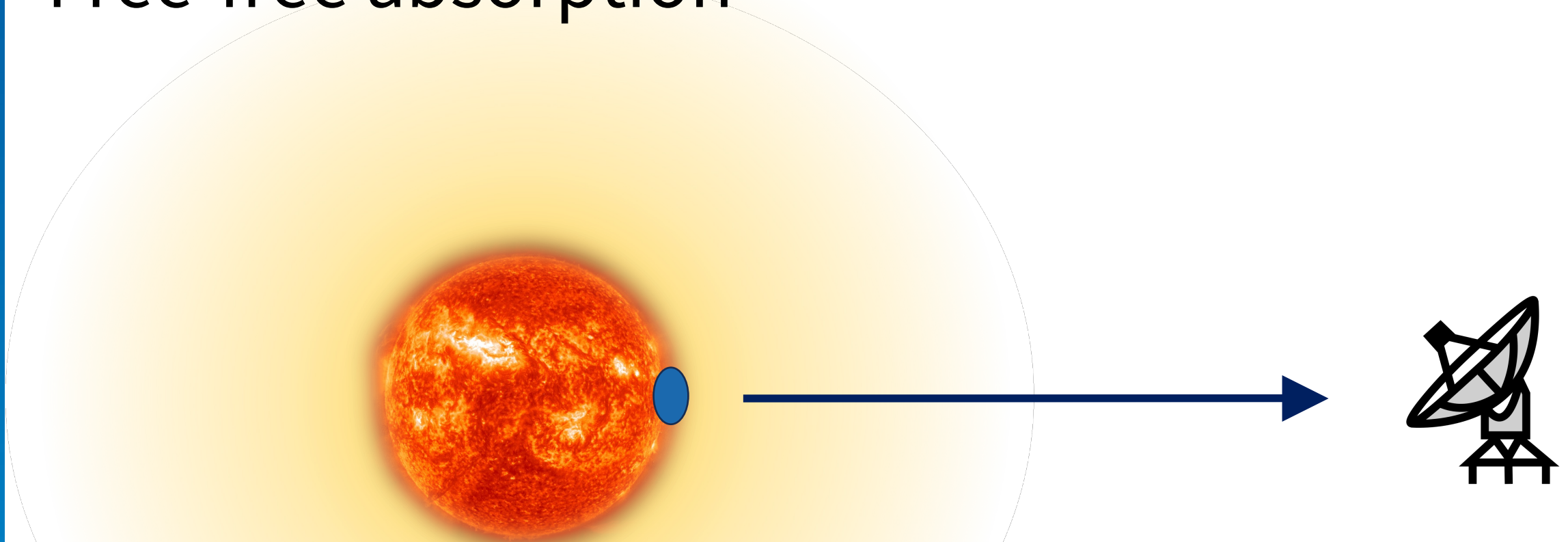
Stellar winds of low-mass stars

- Stellar evolution
- Star-planet interactions
- Extremely tenuous
- Astrospheric absorption
 - E.g. Wood et al. 2002, 2004, 2005, 2010, 2021
 - Limited to 7 pc



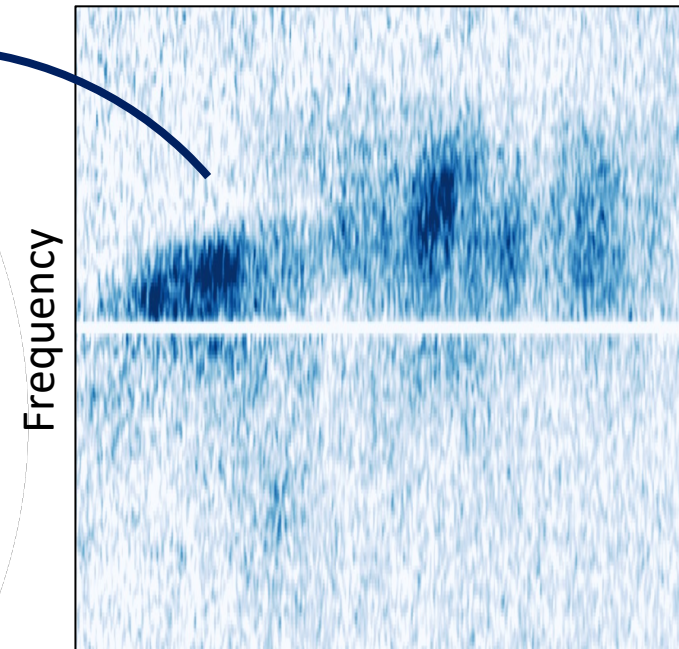
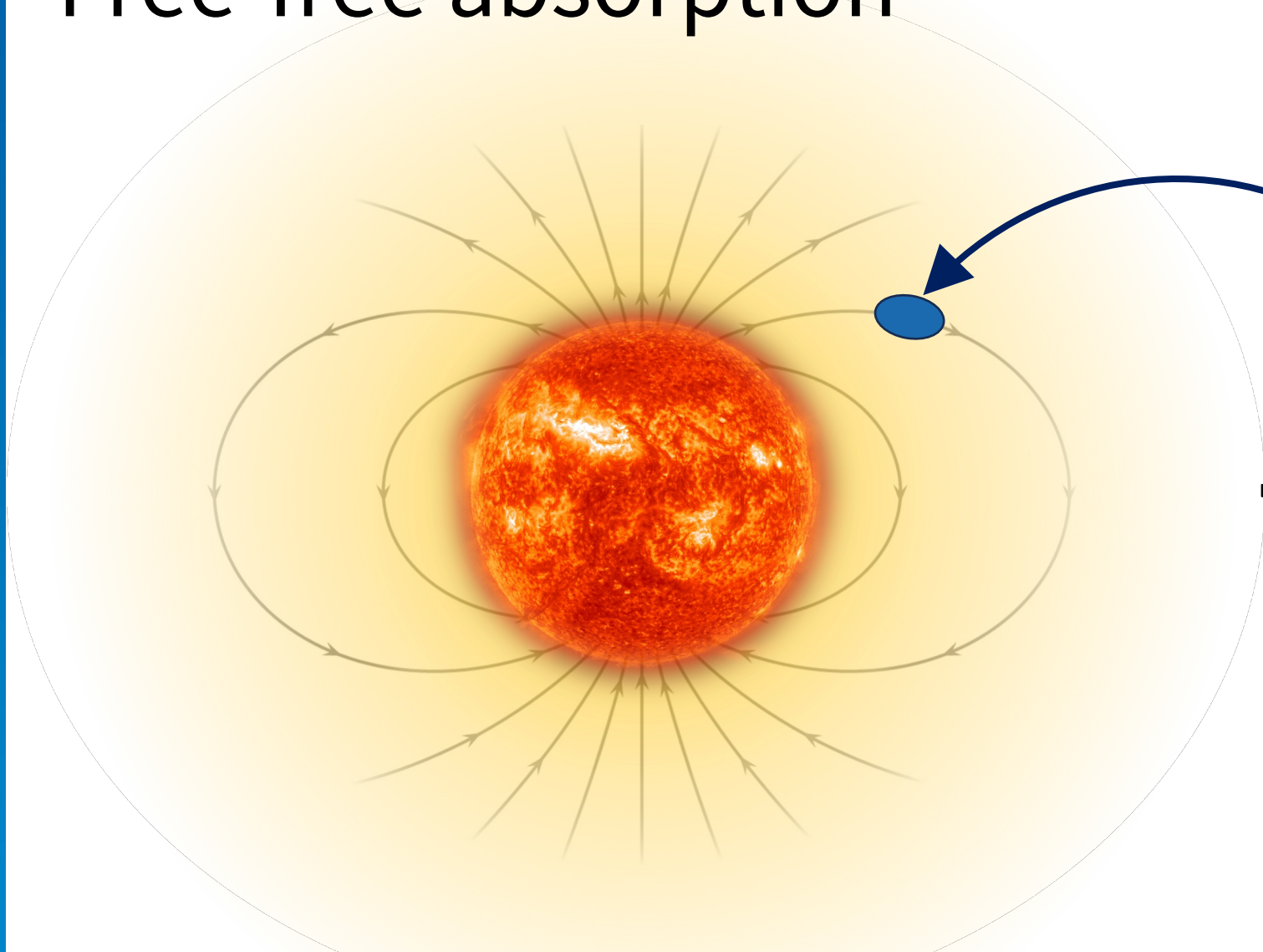
Wood et al. 2002

Free-free absorption



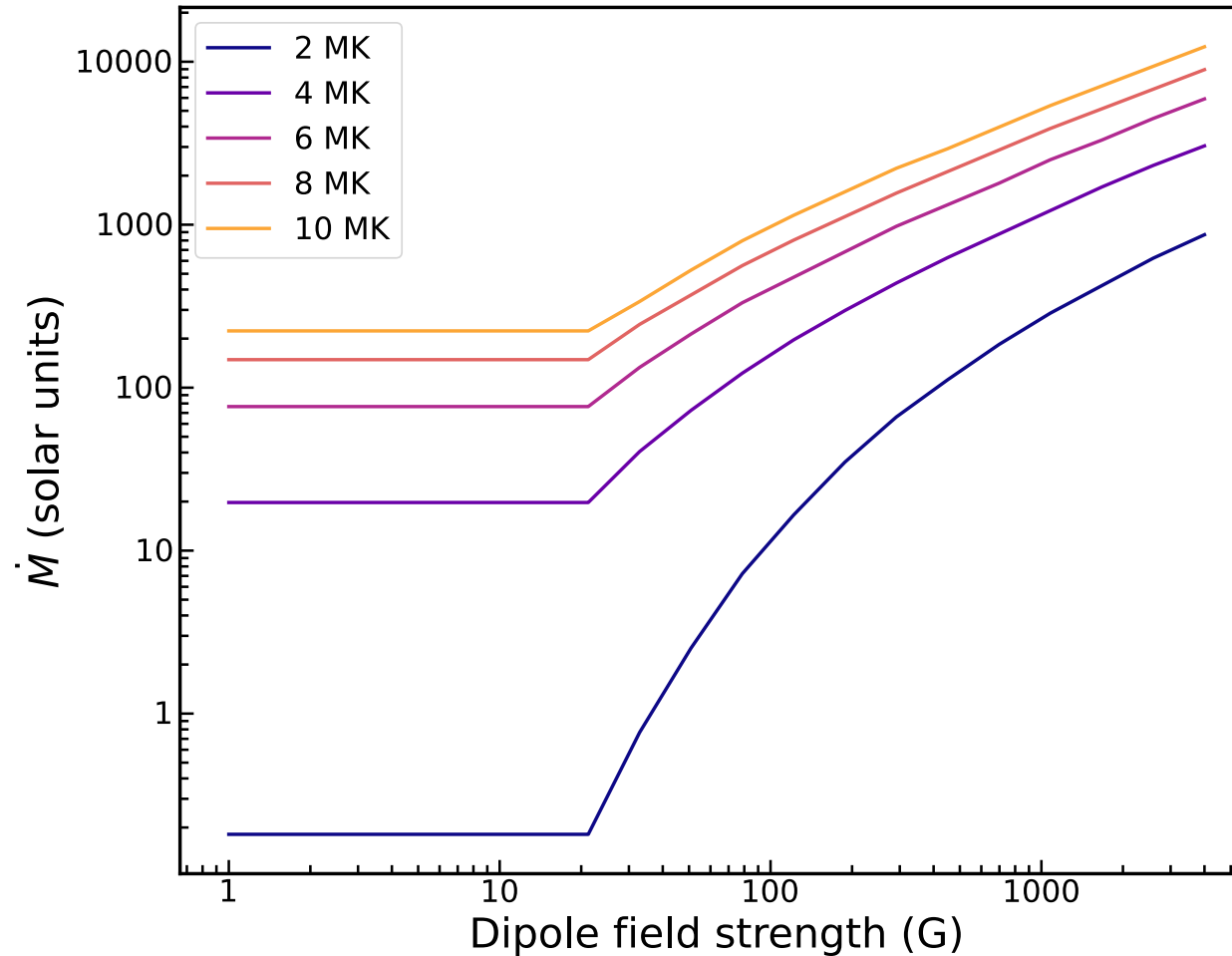
Lim & White 1996

Free-free absorption

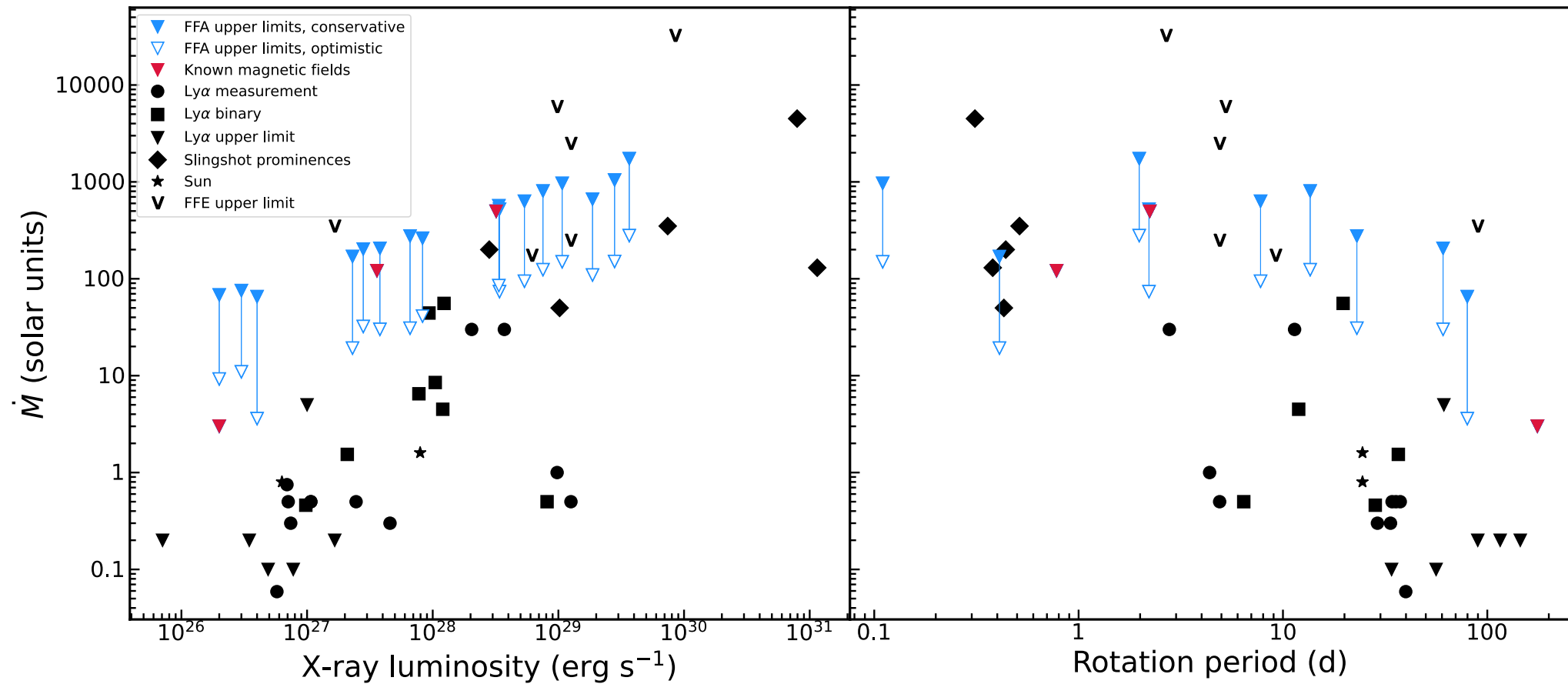


Time
Callingham et al. 2021

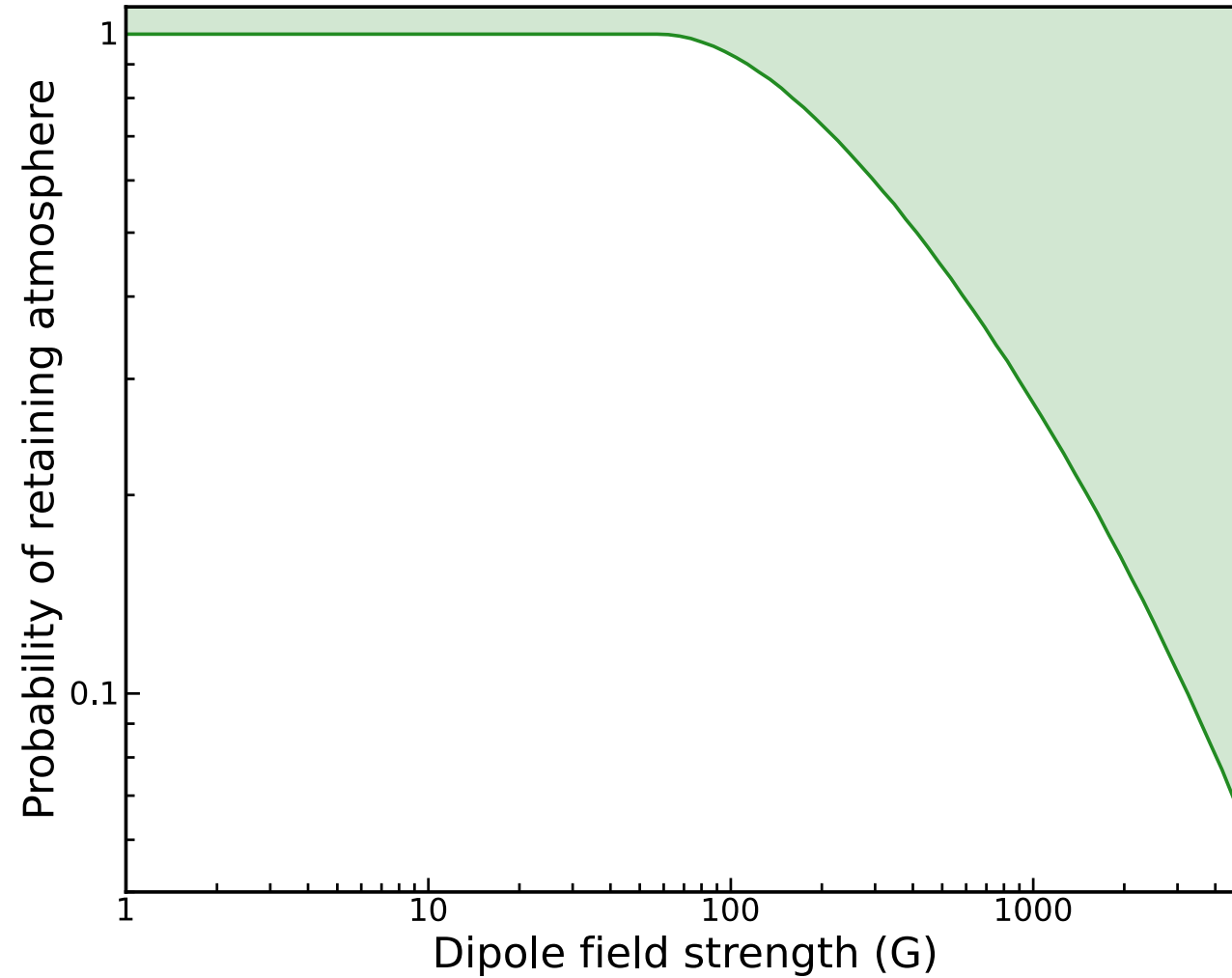
Free-free absorption



LOFAR-detected M dwarfs



GJ 625 b



Summary

- With a radio detection of a star, we can constrain its mass-loss rate
- GJ 625 b is probably not being stripped of its atmosphere by the stellar wind

