

# New Insights into Stellar Atmospheres at Millimeter, Sub-millimeter, and Infrared wavelengths

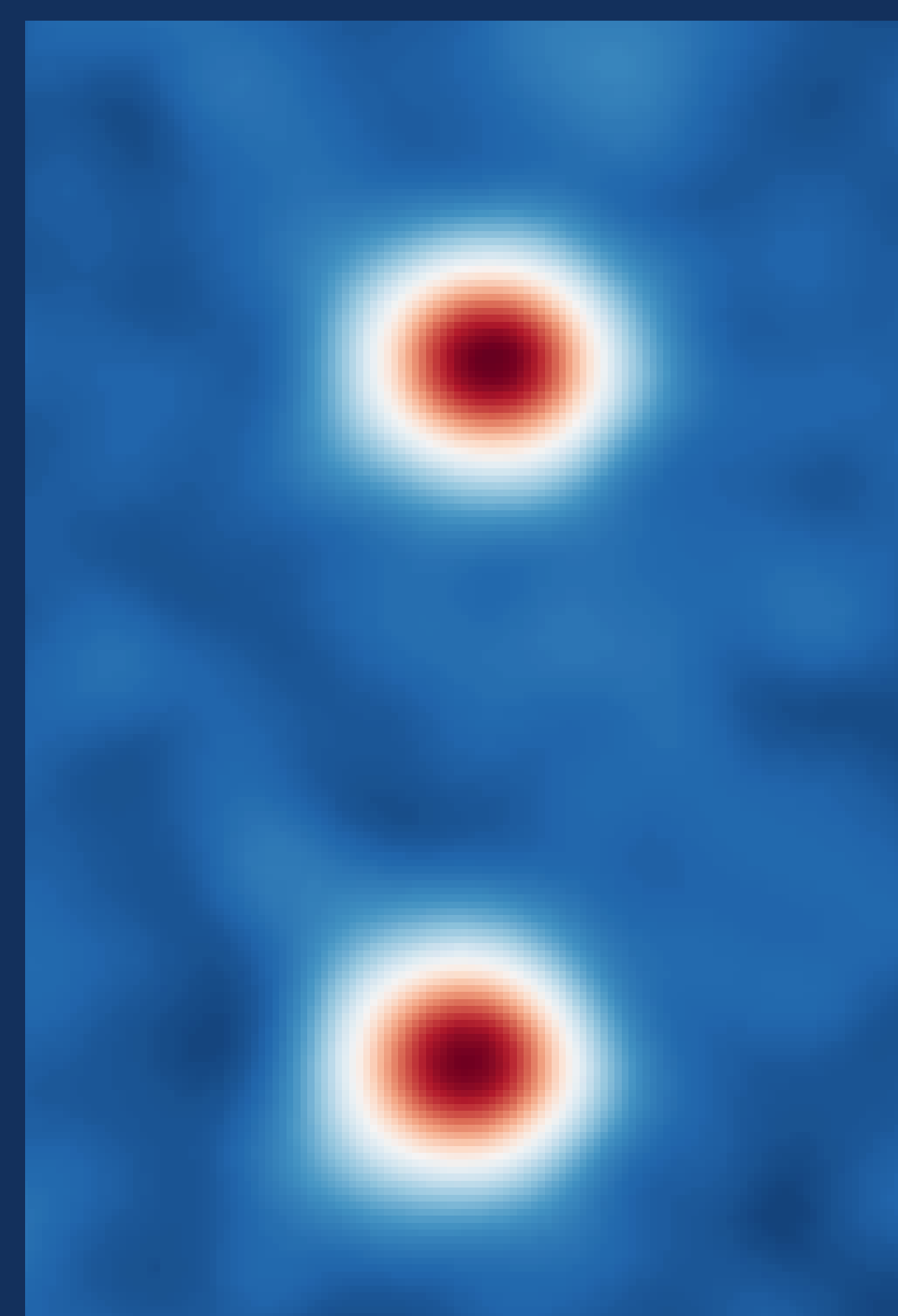
## Method

Observed flux of 7 main-sequence stars by ALMA, VLA, Herschel, and IRAM

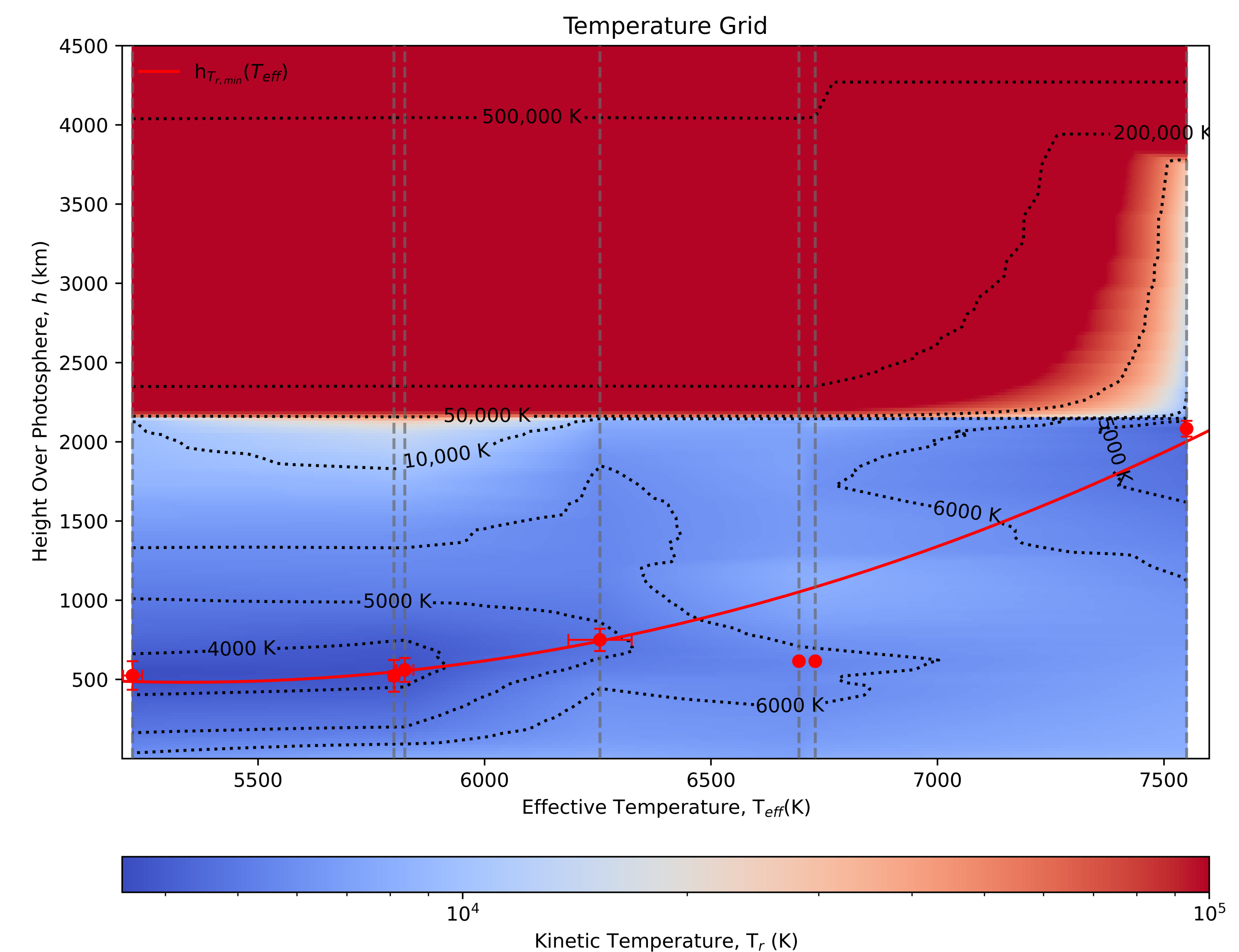
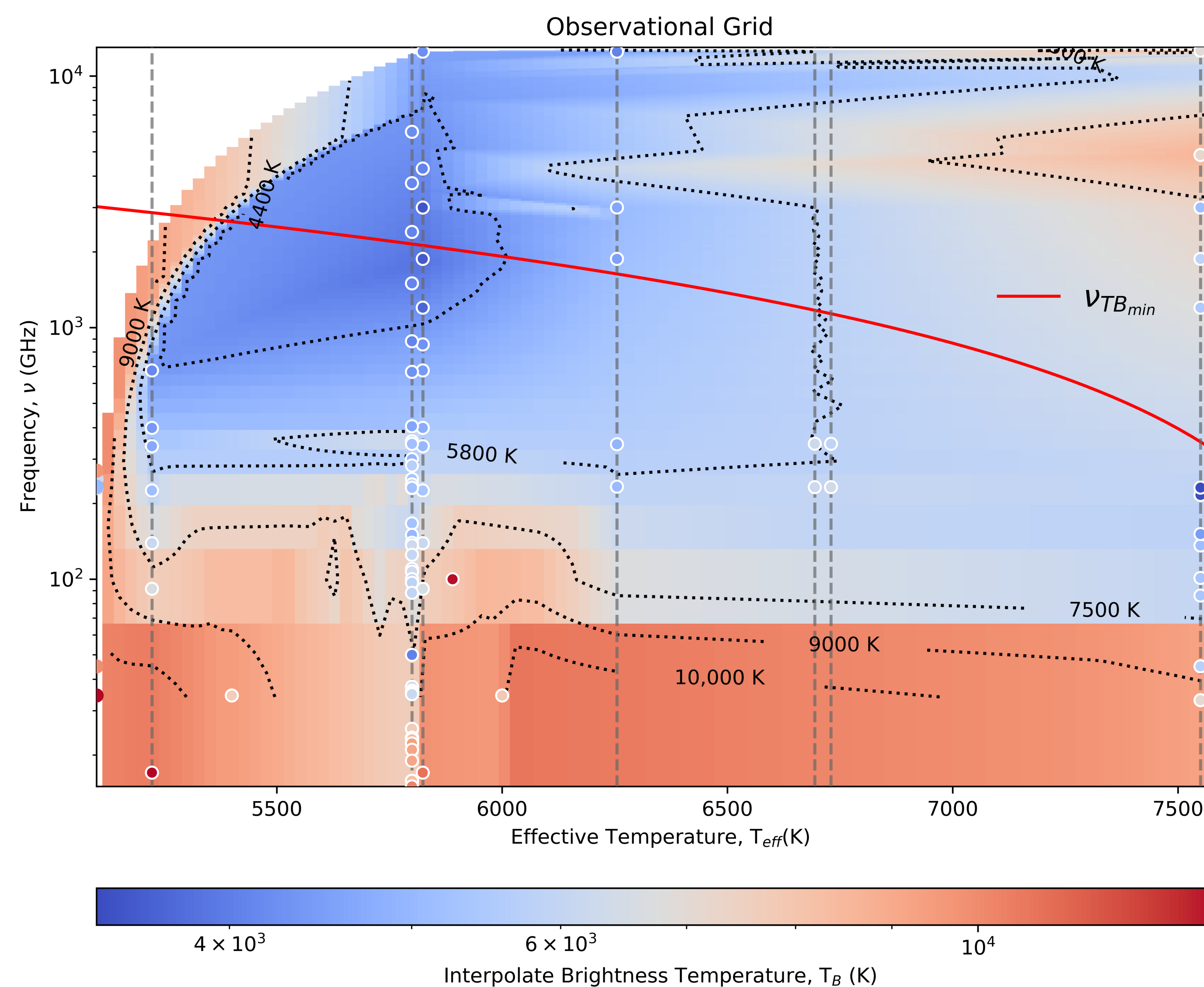
Atmospheric model of the stars (height vs  $T_b$ ,  $n_e$ ,  $P$ ,  $H$ ,  $He$ , + 21 atoms) are computed by KINICH-PAKAL (observed spectrum + synthetic model in NLTE approximation)

Left: relationship between frequency and effective temperature.

Right: correlation between position of temperature minimum and effective temperature



# Temperature minimum at the chromosphere is proportional to effective temperatures in main sequence stars



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