

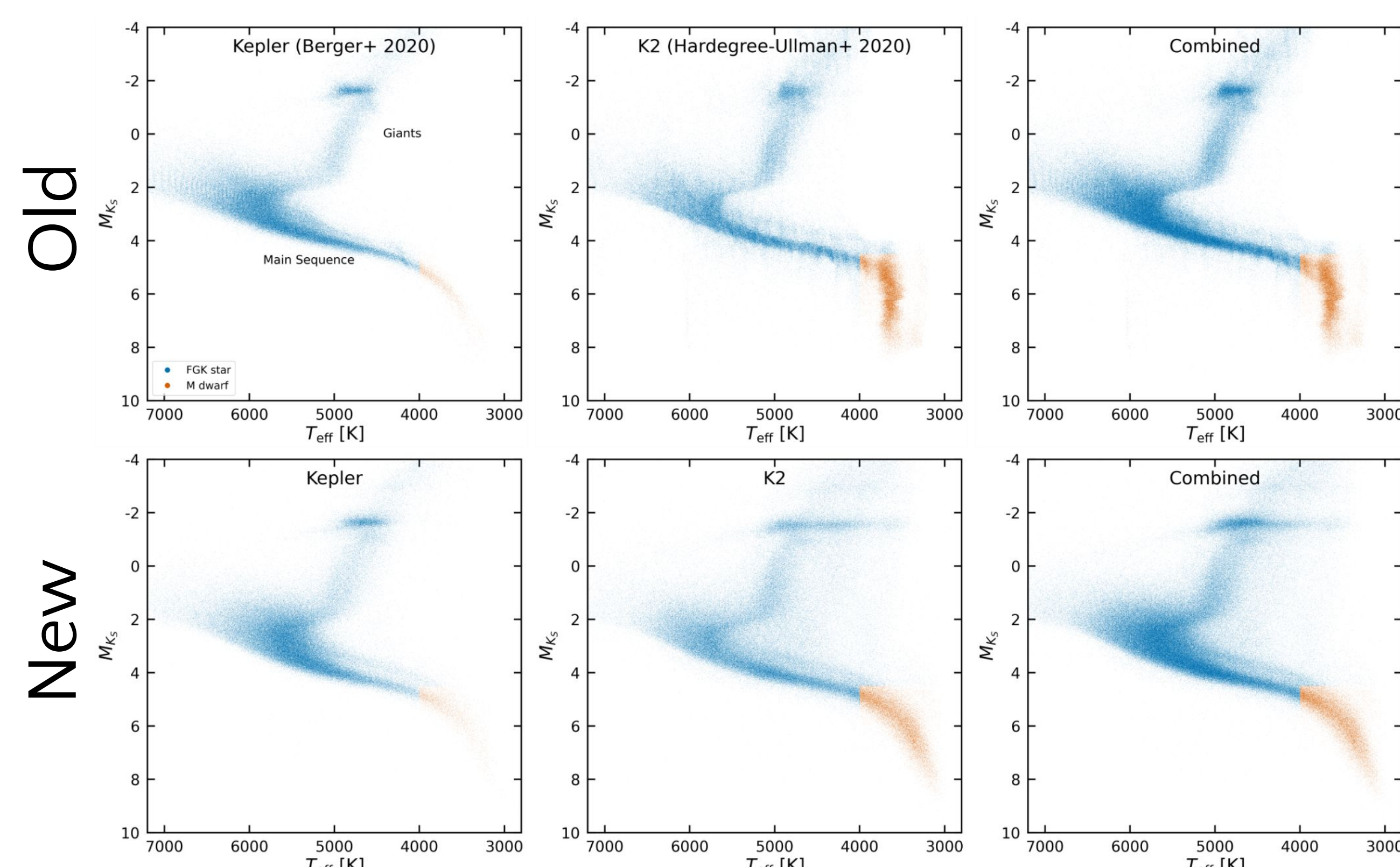
Scaling K2: Short-Period Sub-Neptune Occurrence Rates Peak Around Early-Type M Dwarfs

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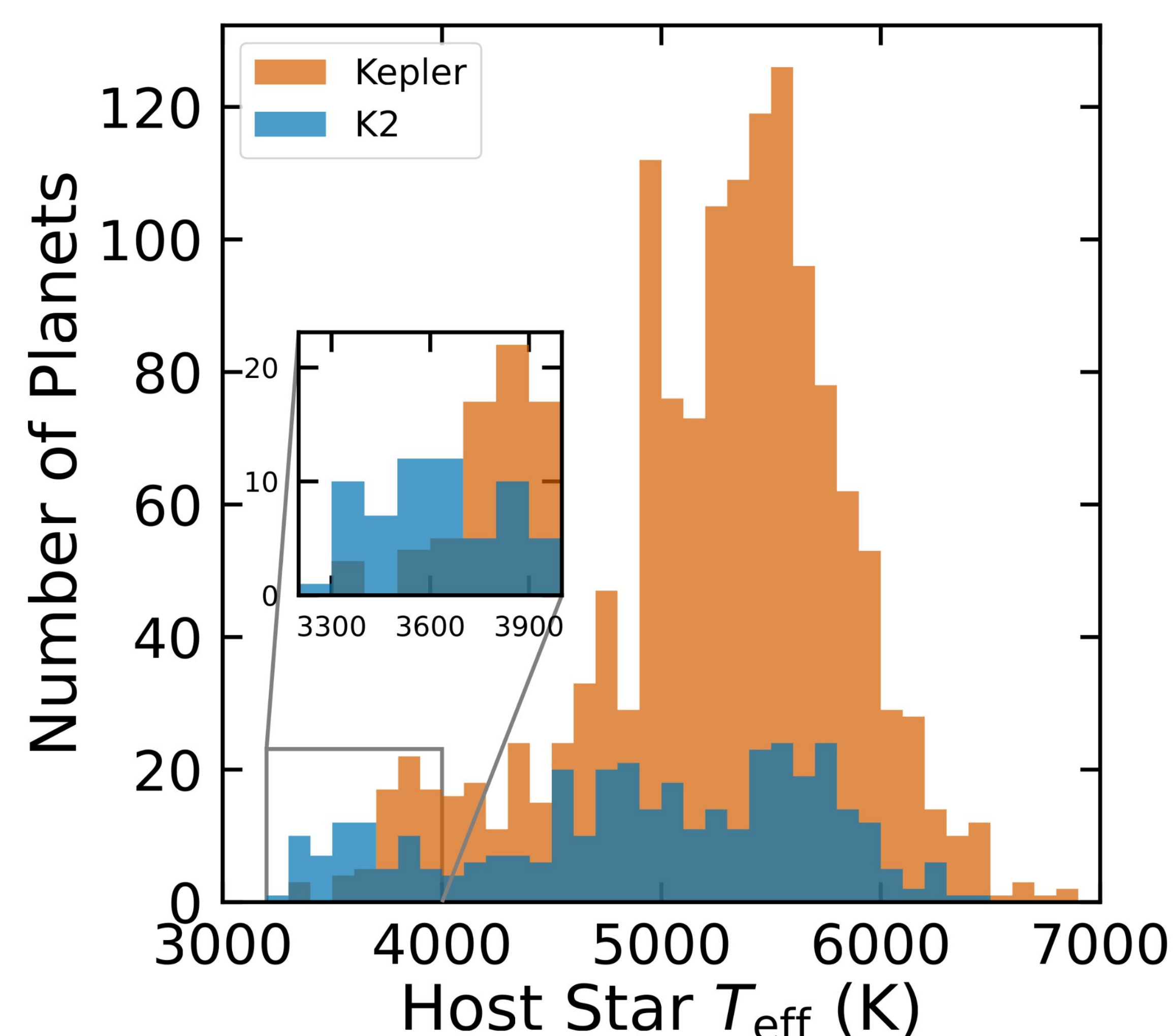
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Combining Kepler & K2 requires homogeneous stellar samples

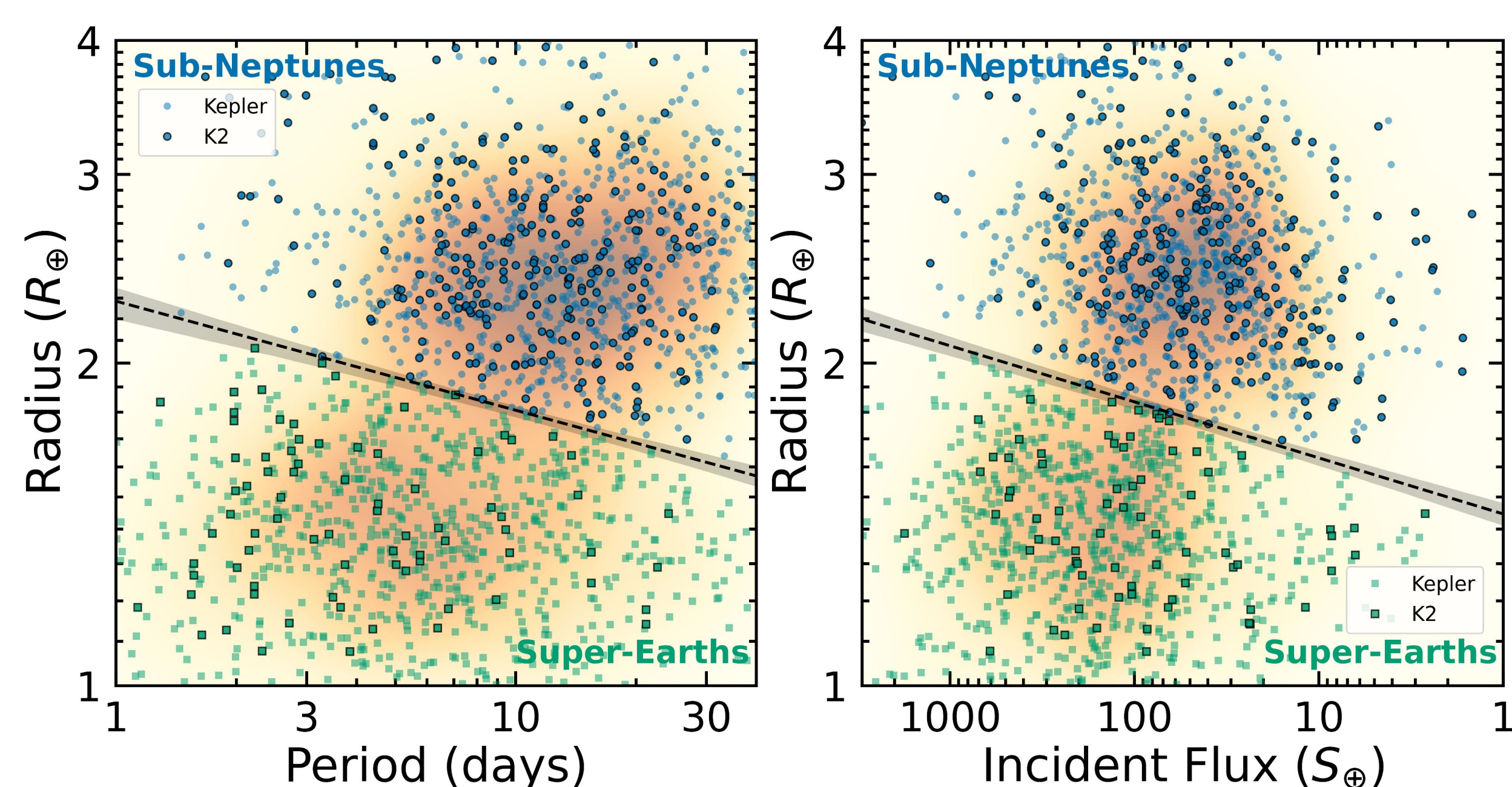


★ K2 observed >9x more M dwarfs than Kepler.

3.5x more Super-Earths & Sub-Neptunes for host stars below 3700 K in K2 than Kepler



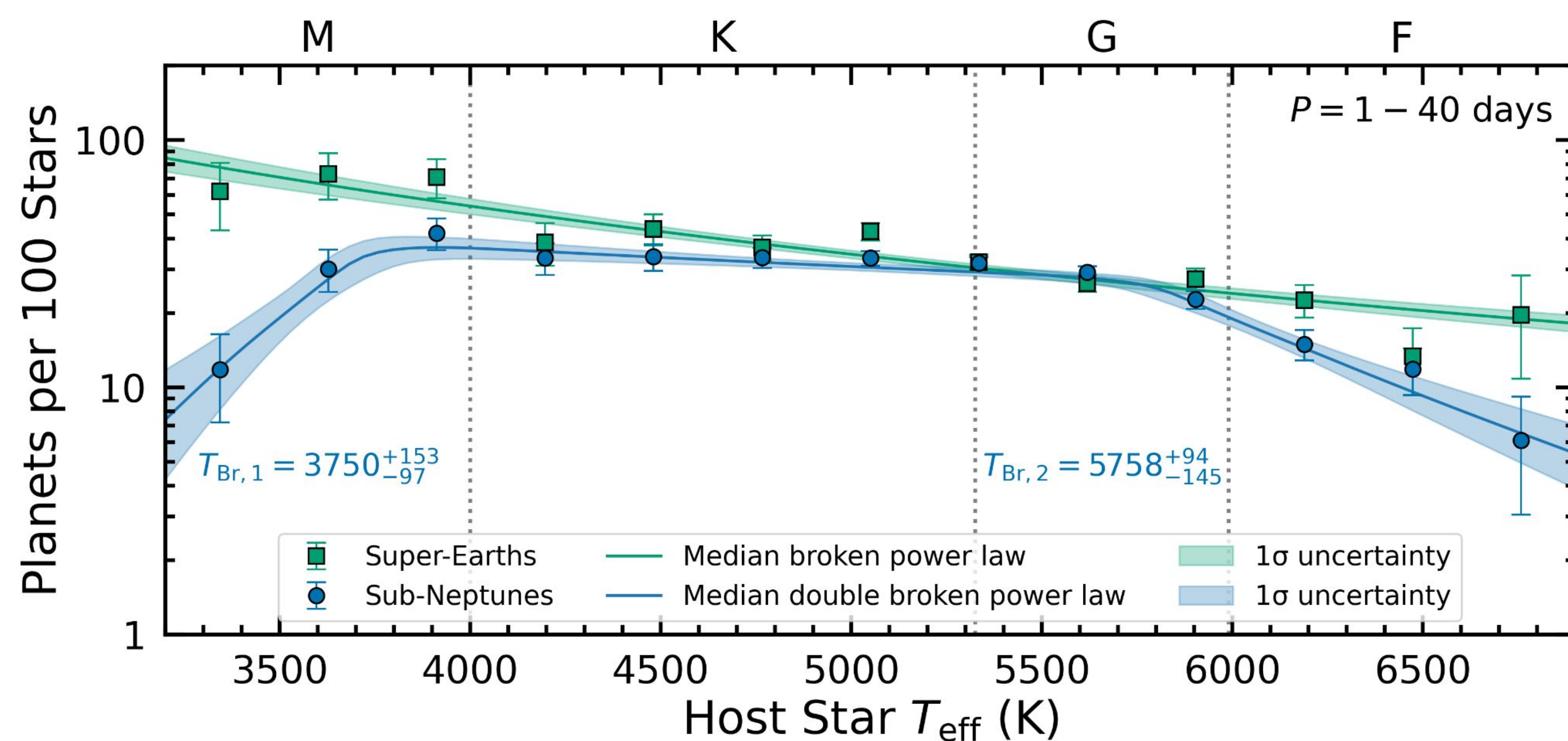
Kepler+K2 FGKM Radius Valley



$$\log_{10} \frac{R_p}{R_{\oplus}} = -0.102 \log_{10} \frac{P}{\text{days}} + 0.359$$

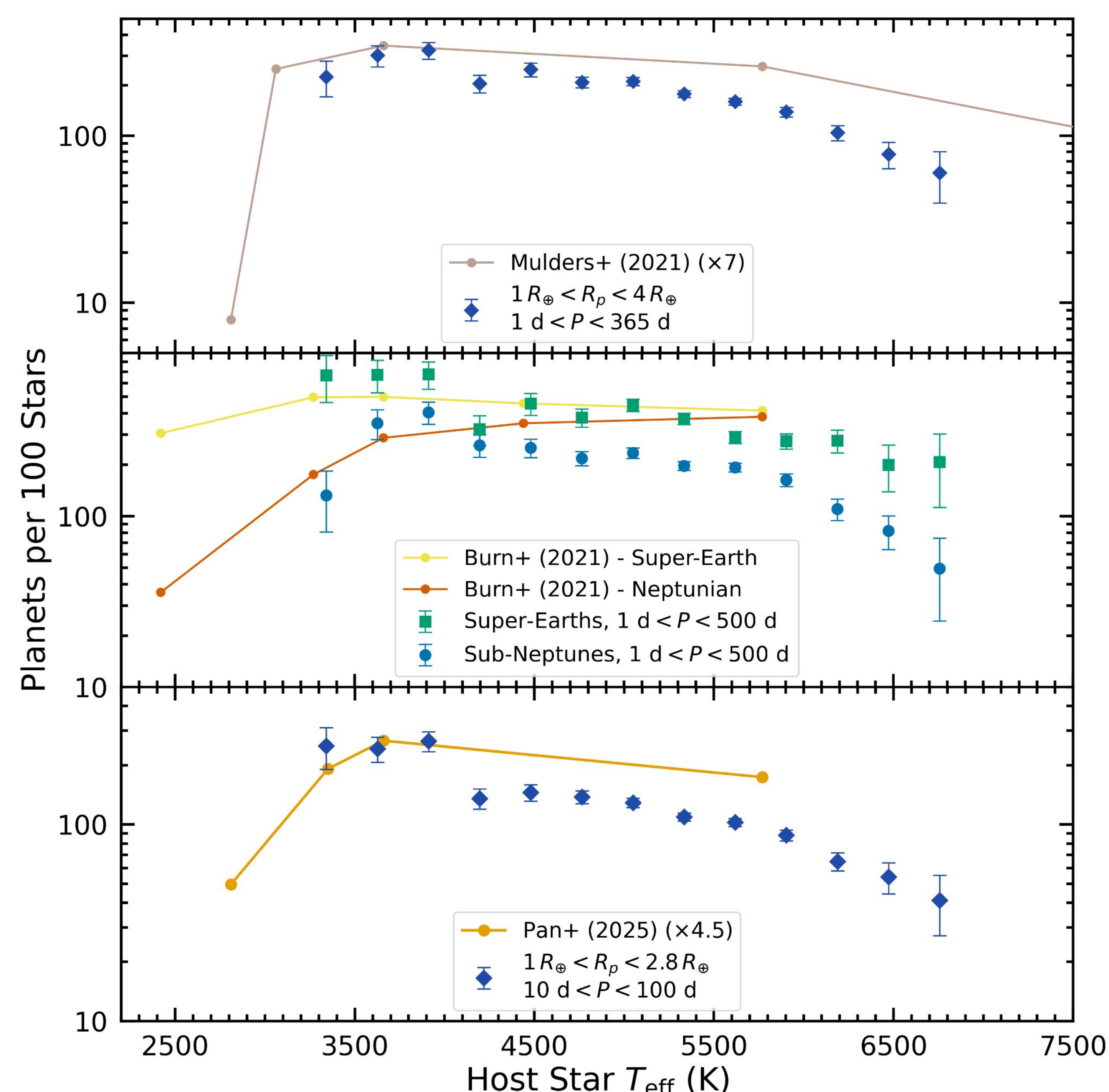
$$\log_{10} \frac{R_p}{R_{\oplus}} = 0.160 \log_{10} \frac{S}{\text{days}} + 0.052$$

Kepler+K2 FGKM Super-Earth & Sub-Neptune Occurrence Rates



- ★ Sub-Neptunes peak then drop in occurrence rates around 3750 K hosts.
- ★ Another more subtle sub-Neptune drop occurs around 5758 K hosts.
- ★ Super-Earths do not exhibit similar behavior.

Planet formation models need refinement



- ★ Formation models predict a drop in small planets toward cool stars.
- ★ Our observations can inform improved planet formation models.
- ★ Updated models should separate super-Earths and sub-Neptunes.

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