Transiting Planets from the Ground and Space

Zach Berta-Thompson
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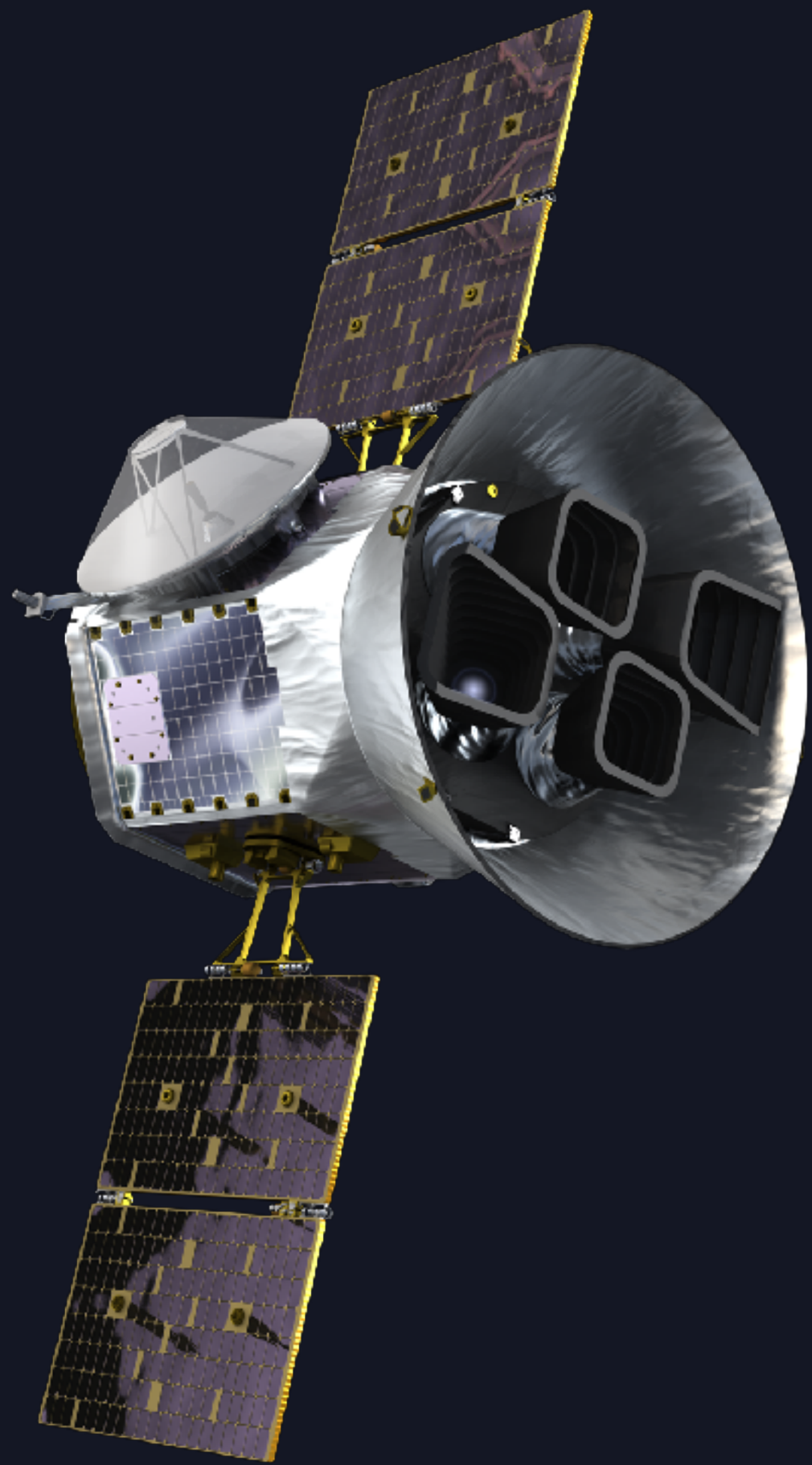
Duane D213 (with the yarn stars)


flux
time



TESS

Explorer Mission

launched at
6:51pm ET, April 16
to find hundreds of nearby small exoplanets amenable to detailed characterization

Ricker et al., *JATIS*, (2014)

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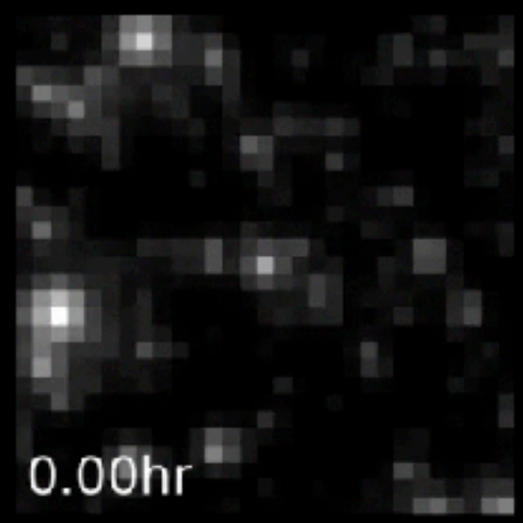
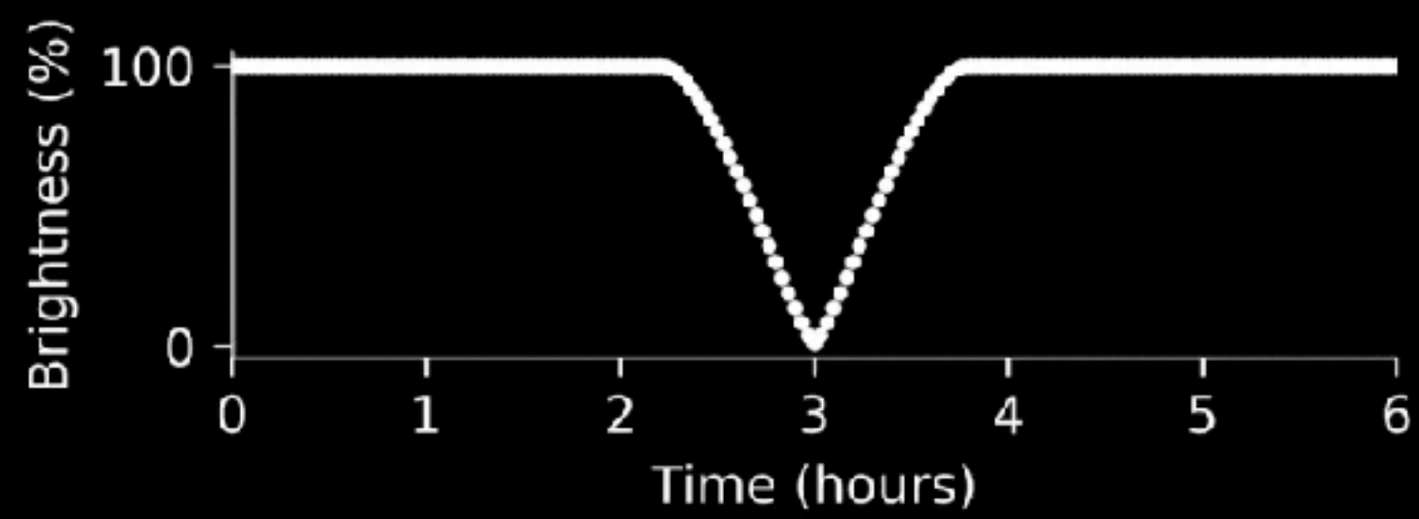
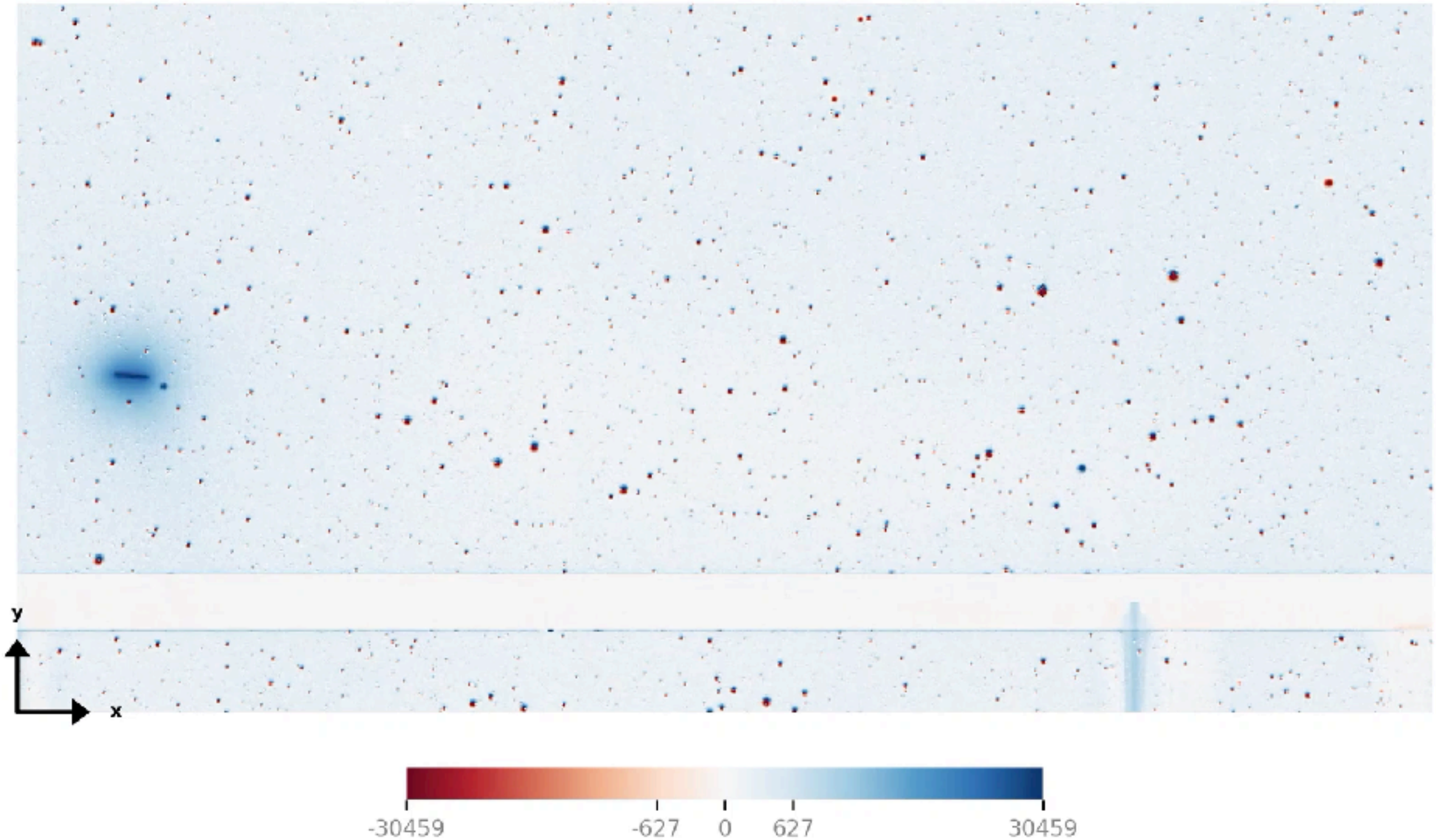
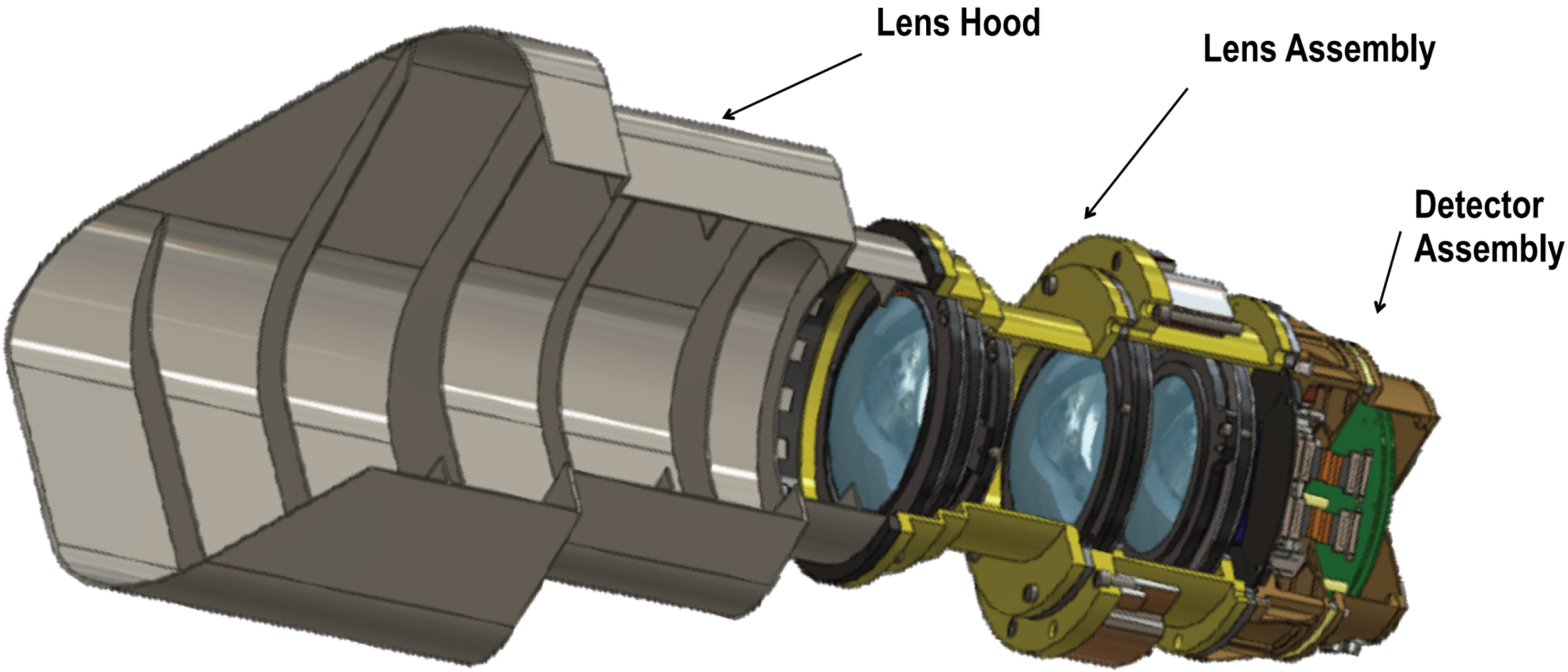
TESS measures the brightness of stars.





Early **TESS** data are beautiful!





With 10.5 cm diameter,
the **TESS** telescopes are tiny.

Ricker et al. (2014), Sullivan et al. (2015)

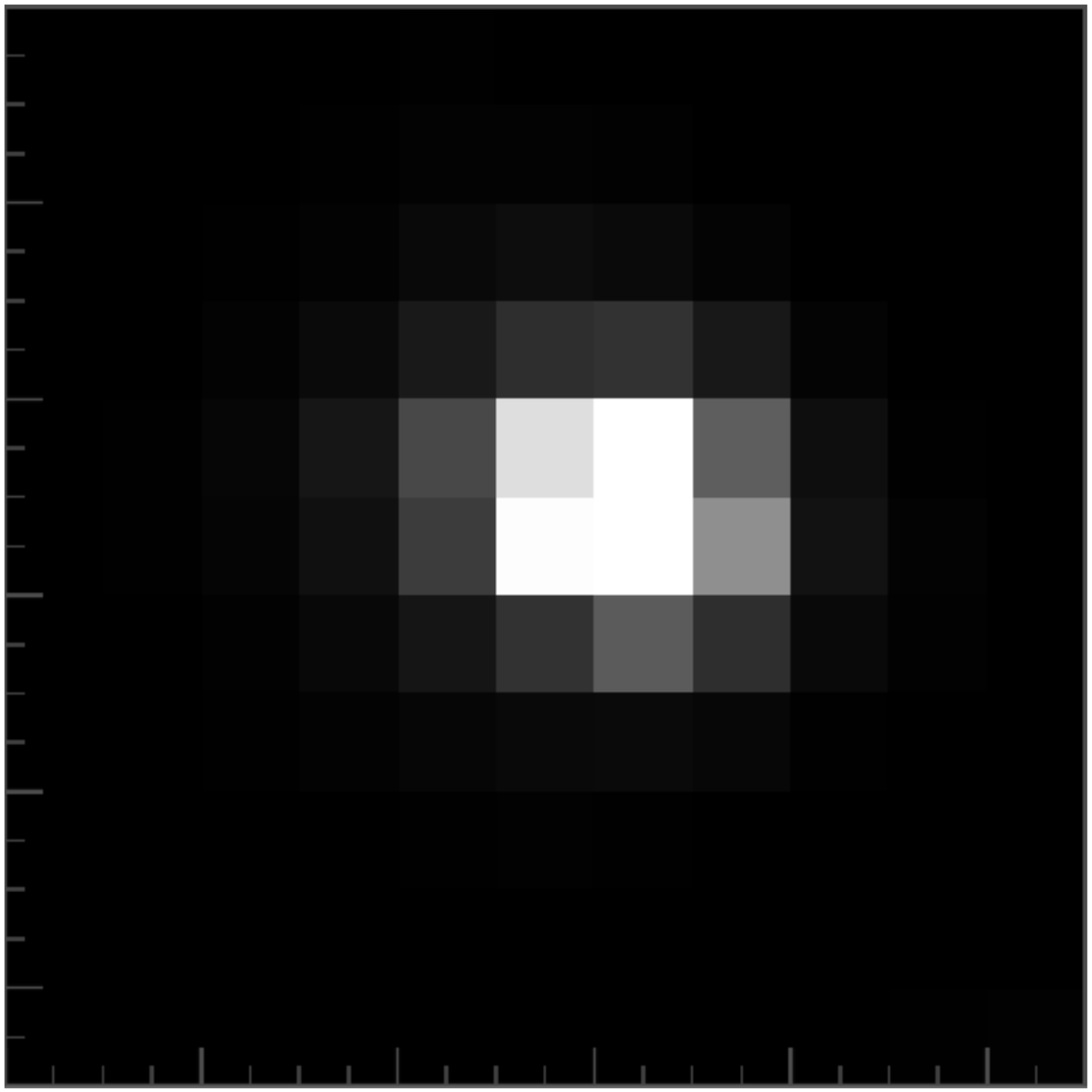
We have bigger telescopes on campus!

TESS
(10 cm)

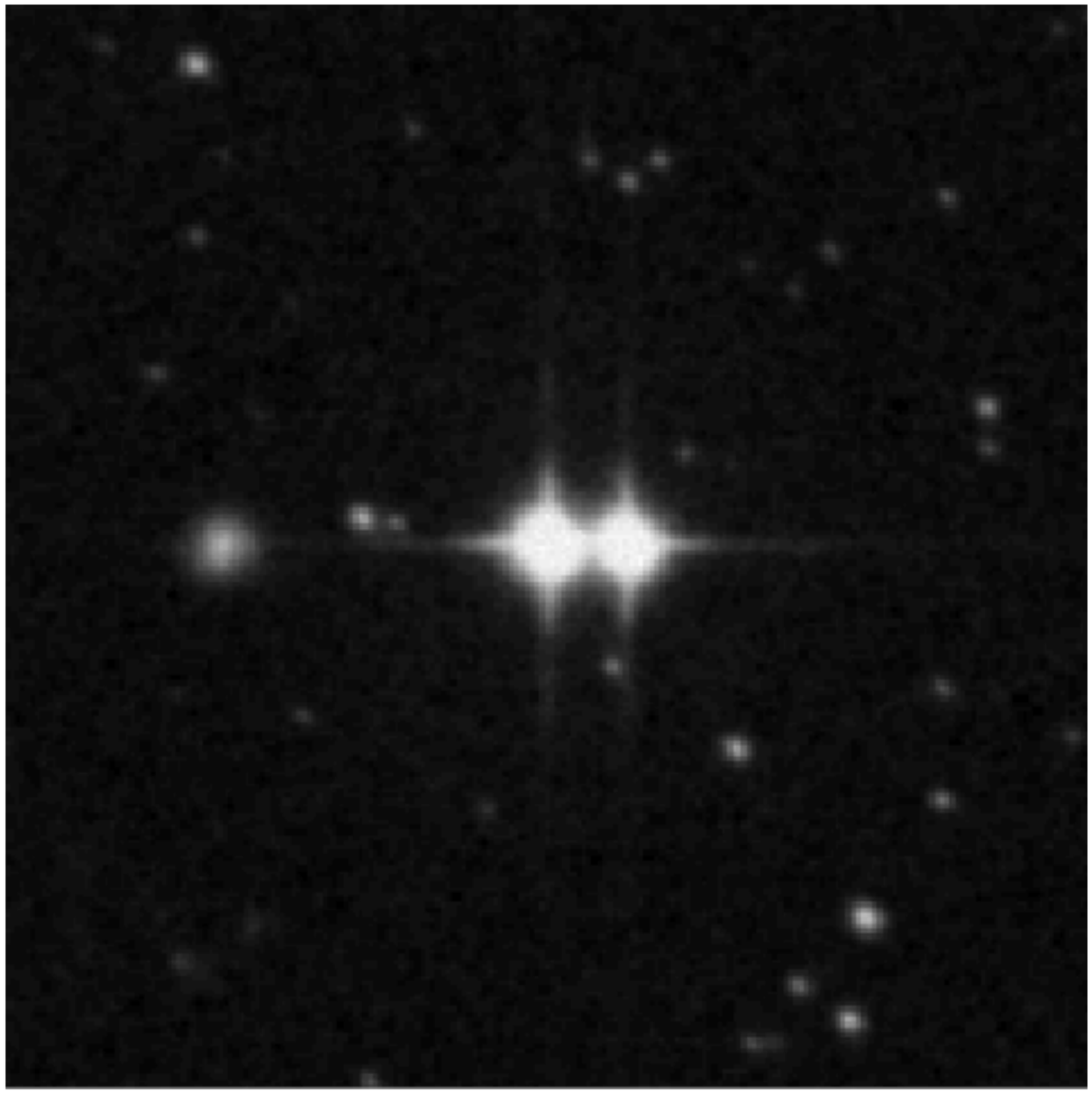
Sommers-Bausch Observatory
(Artemis + Apollo, 50 cm)

Which star causes the dip?

TESS (21” pixels)

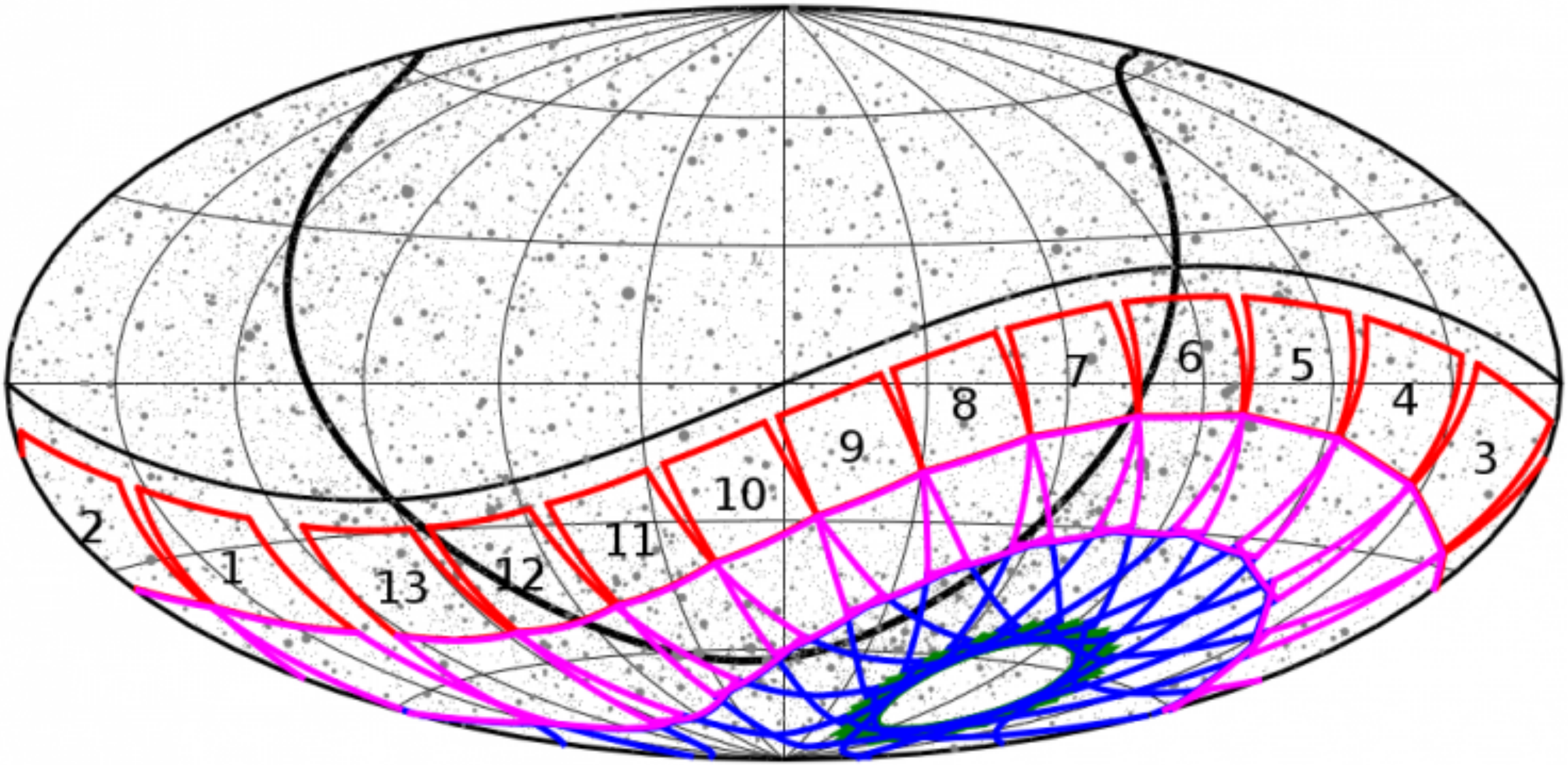


Ground-based Telescopes (~1” seeing)



TESS needs our help!

TESS is starting to find candidates in the northern hemisphere.
Let's observe them to confirm their planets!



Ricker et al. (2014), Sullivan et al. (2015)

Are you interested in…

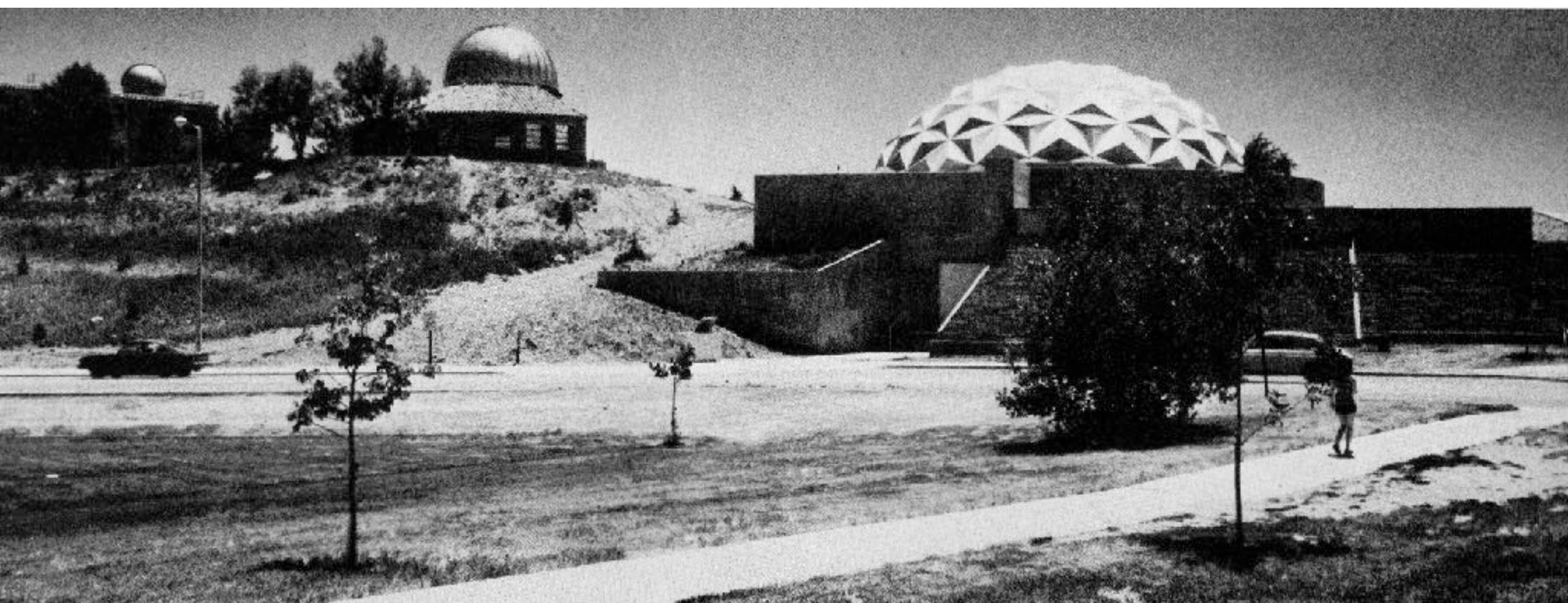
- analyzing light curve data from TESS to study exoplanets
- observing TESS candidate planets with ground-based telescopes
- working on this as paid research or independent study

…?

Are you willing to learn…

- how to use the "henrietta" tools we developed for ASTR3400
- how to observe transiting planets with the SBO telescopes
- how to work collaboratively in a world-wide community of exoplanet observers

…?

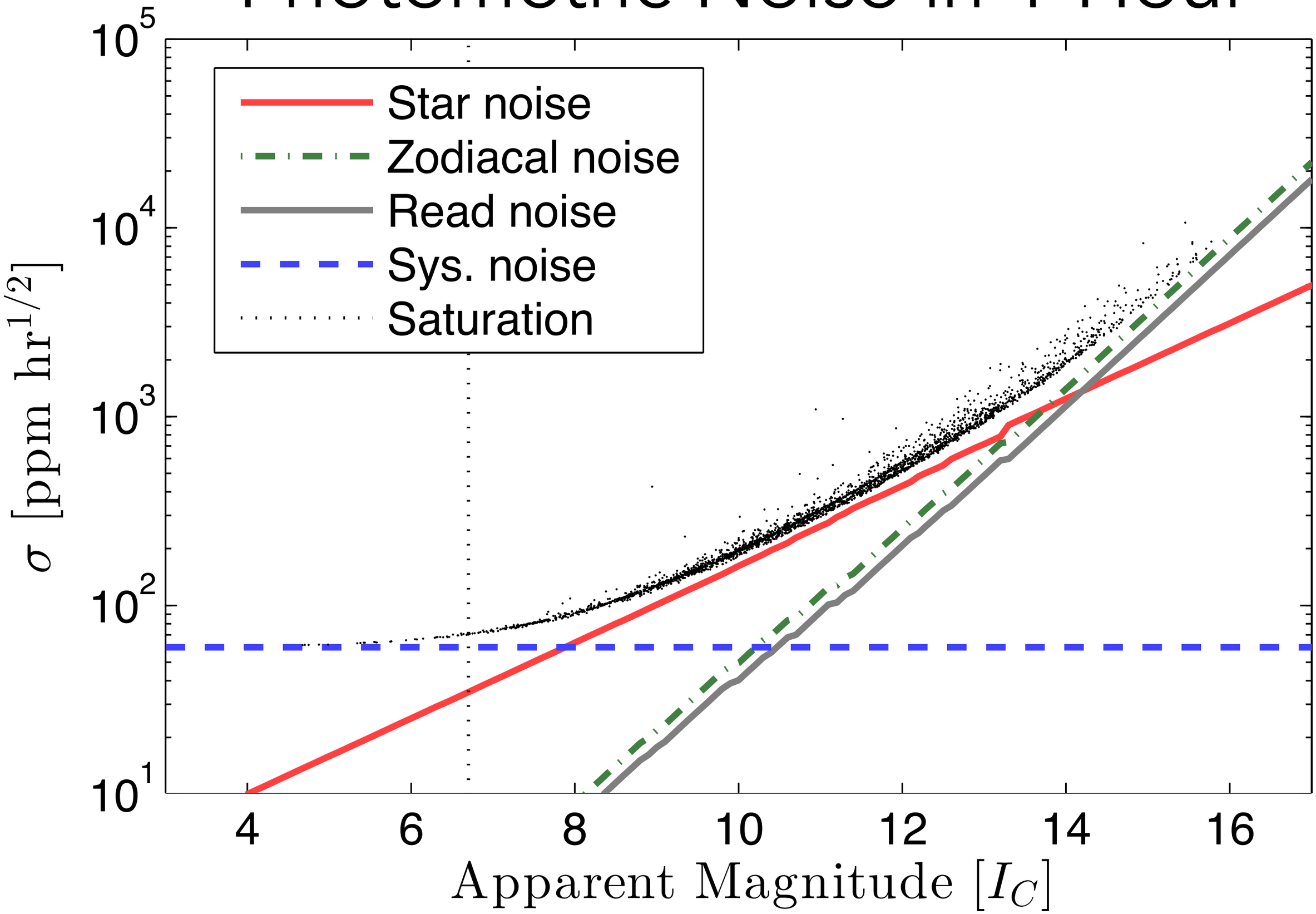


I am looking for students available during spring and/or summer 2019.

Please email me (zach.bertathompson):

- a brief resume/CV
- a plot you made with the `henrietta` toolkit and a brief description of something interesting you see in it
- your potential availability during spring + summer 2019

Photometric Noise in 1 Hour



Ricker et al. (2014); Sullivan et al. (2015)

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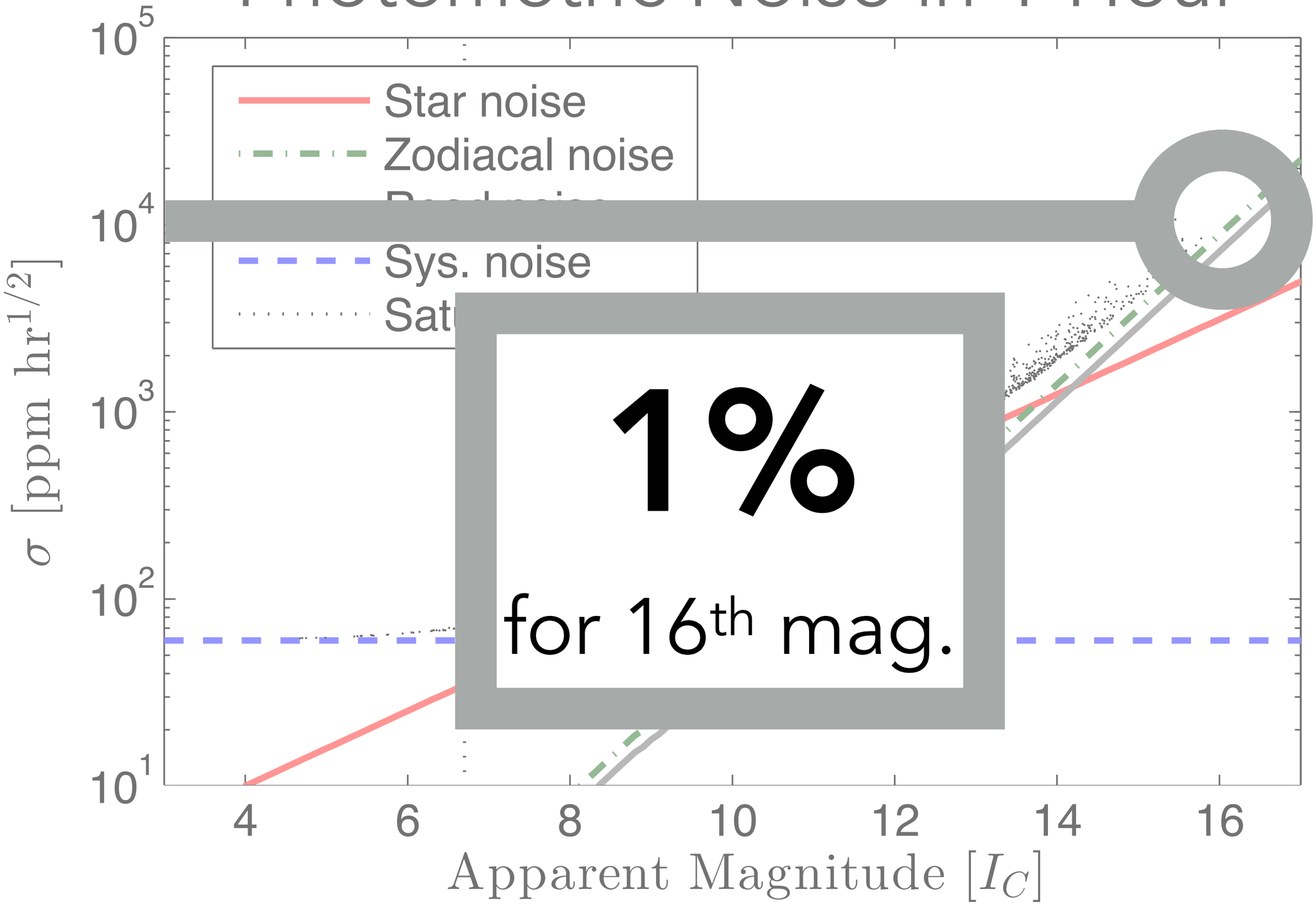

Ricker et al. (2014), Sullivan et al. (2015), both including Berta-Thompson