

A decorative graphic on the left side of the slide consists of two overlapping parallelograms. The front one is blue and the back one is a light green. They are positioned diagonally, with the blue one partially covering the green one.

Starspot modeling

with Dr. Wisniewski

Presentation by Simon Lowry



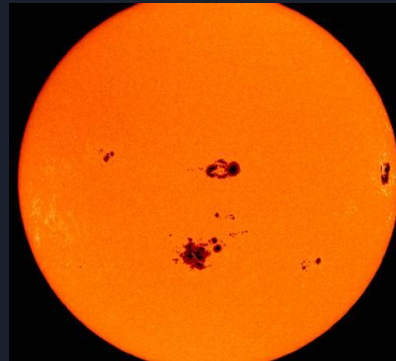
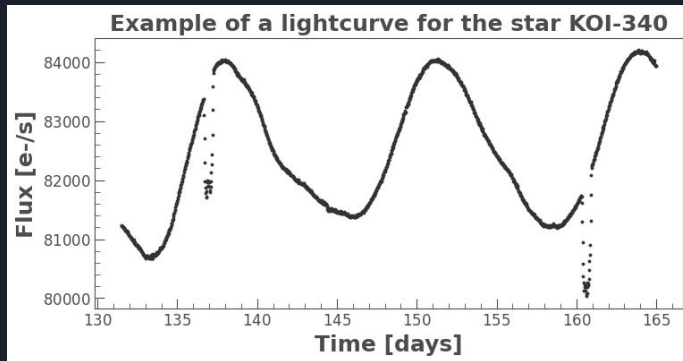
Who cares?

Why does it matter if we can model spots on other stars?

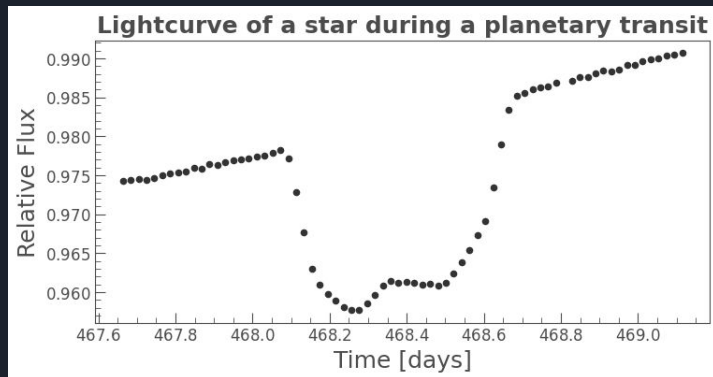
- Compare to Solar activity
- Stellar magnetic fields
- Exoplanet radii and atmosphere
 - Habitability

Can we look at a lightcurve of a star with a transiting planet to model the spots on the star's surface?

Key words: Lightcurve, Planetary Transit, Starspots



How do we detect starspots?

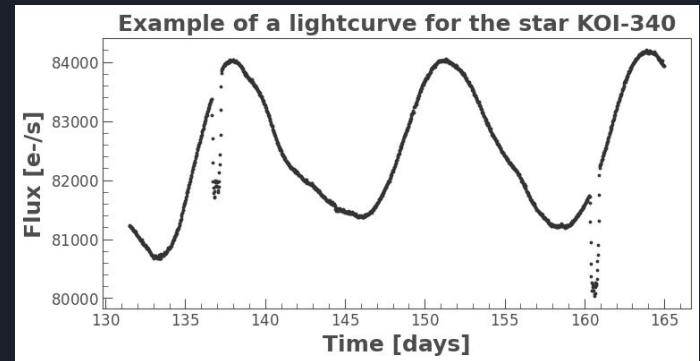
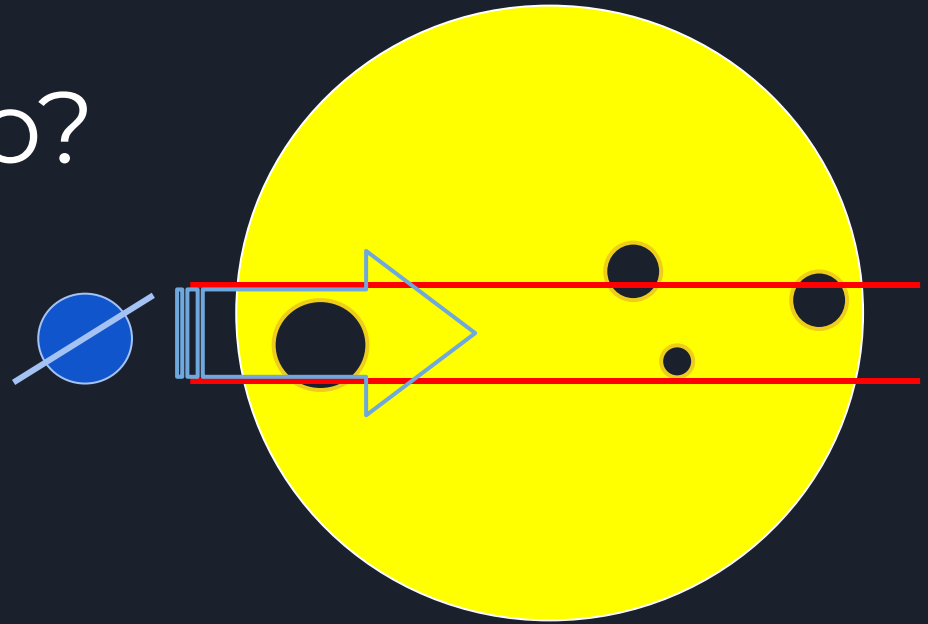


- Impossible to observe directly
- Several methods (spectroscopic)
- My research:
 - Analyse lightcurves
 - Something causes the in-transit 'bump'
 - Use software to model starspots
 - Create lightcurves from modeled stars
 - **Model = Actual** → **spot confirmed**

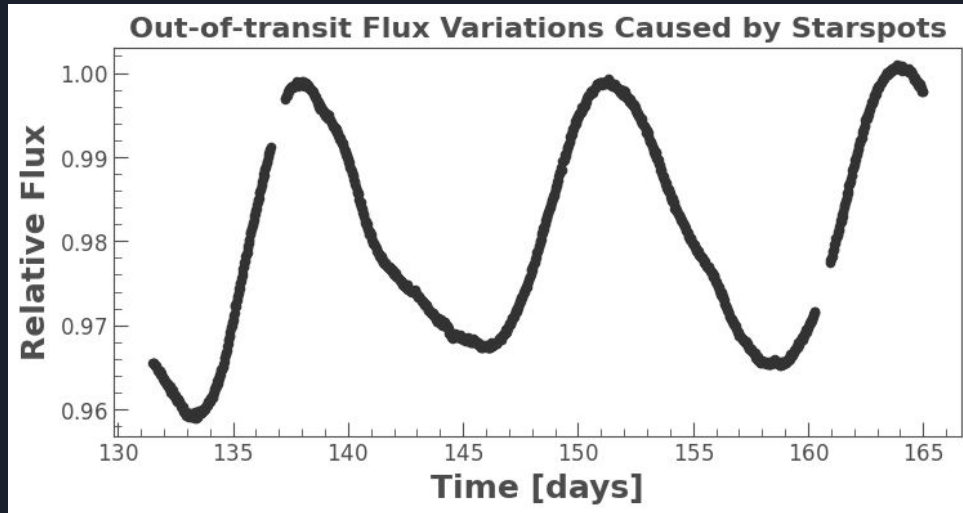
What will I do?

Use models of
in-transit spots...

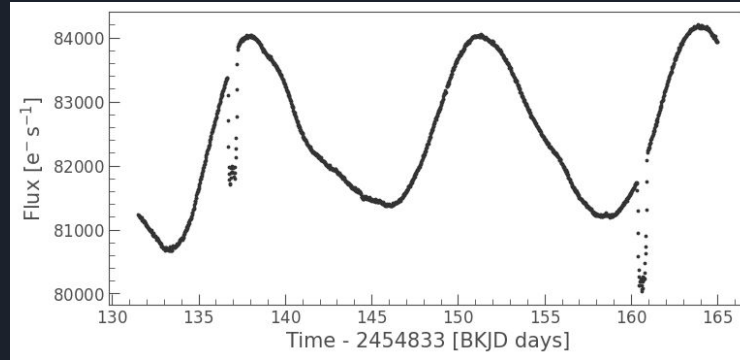
... to model
out-of-transit spots



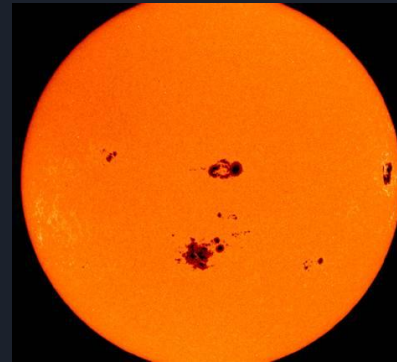
- Out-of-transit modulation caused by star's rotation
- Model the starspots to mimic the actual lightcurve



So basically, I want to turn this:



into this:



to help increase our understanding
of other stars and exoplanets