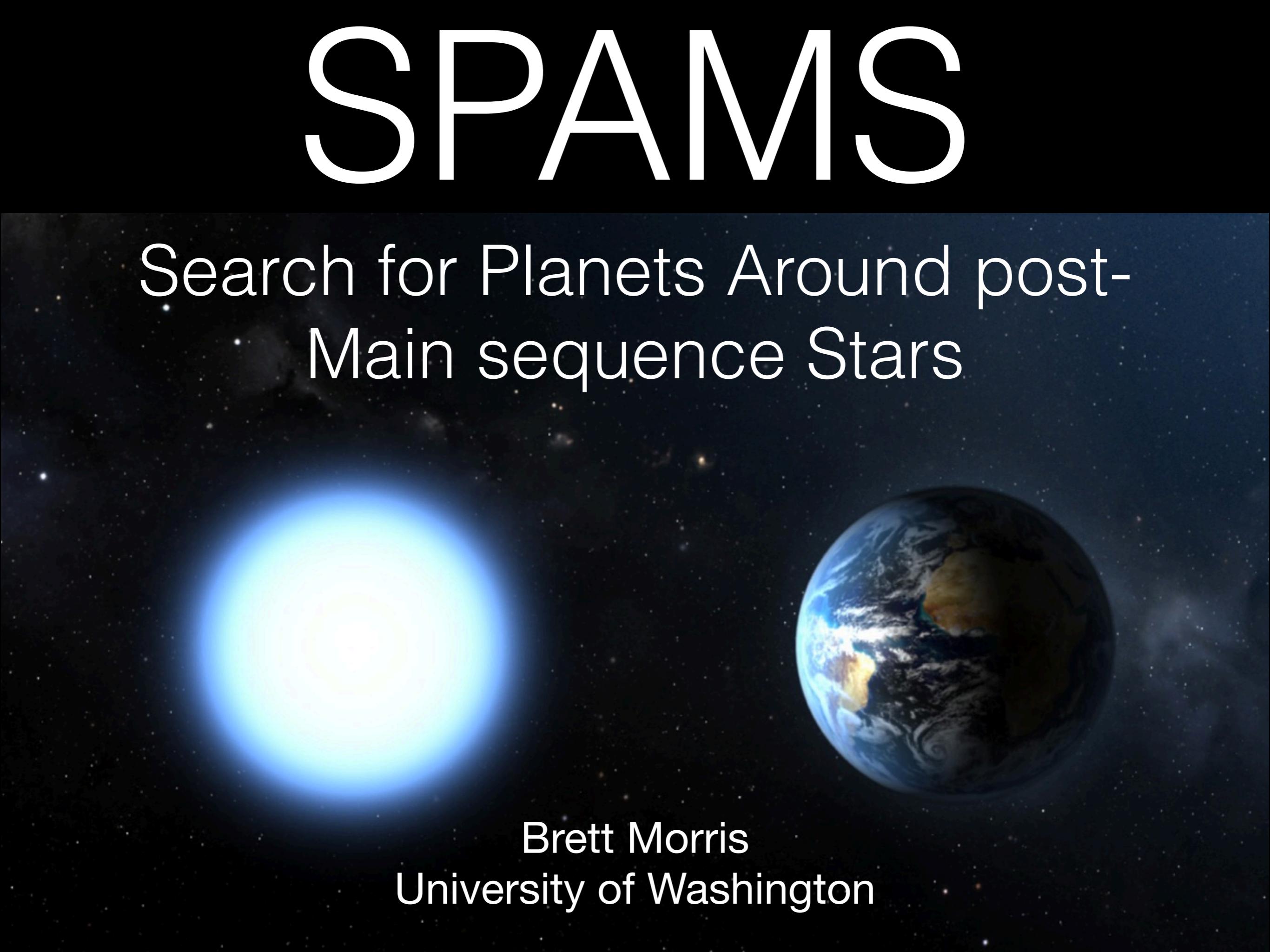
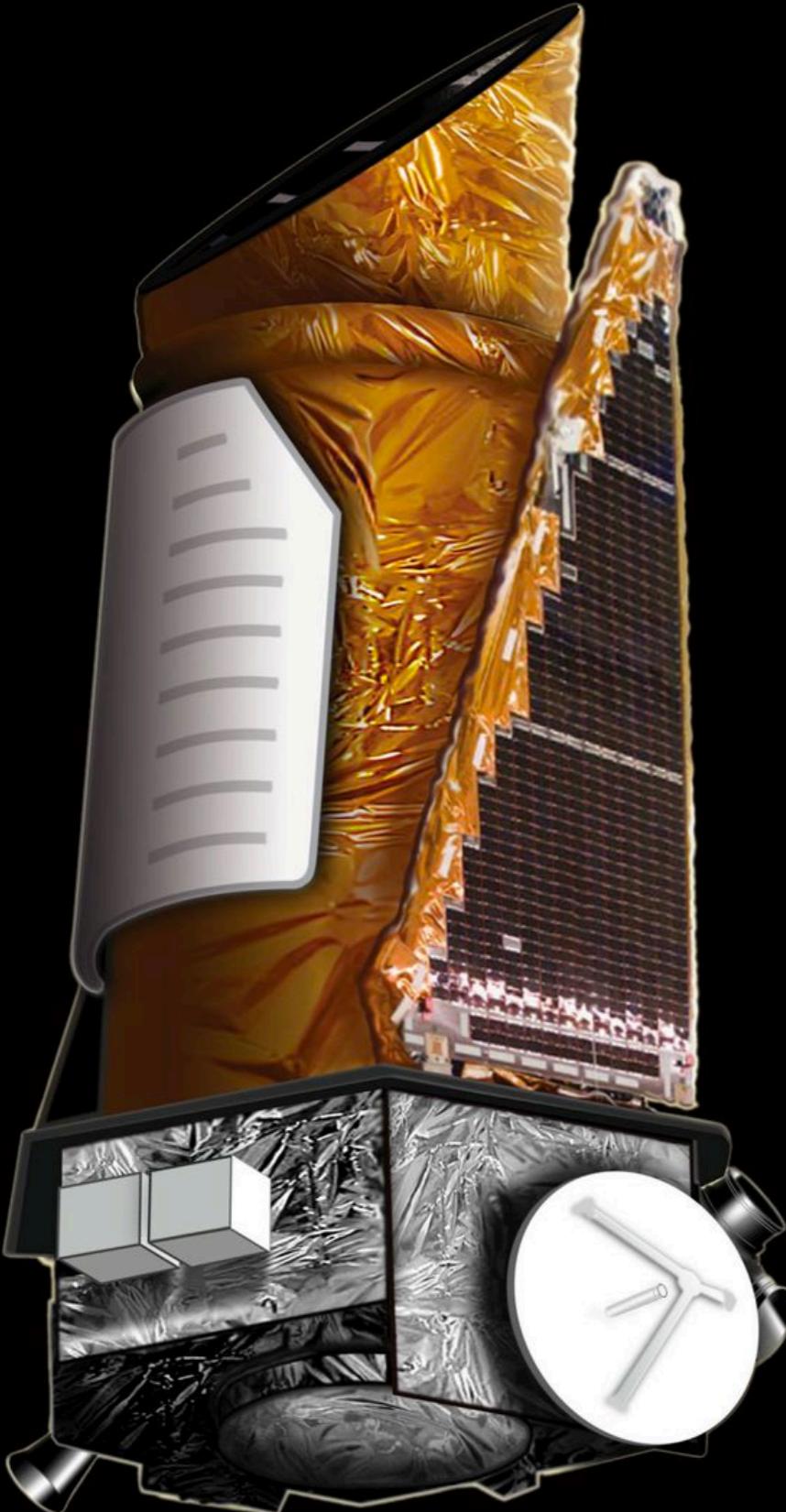


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Search for Planets Around post-
Main sequence Stars



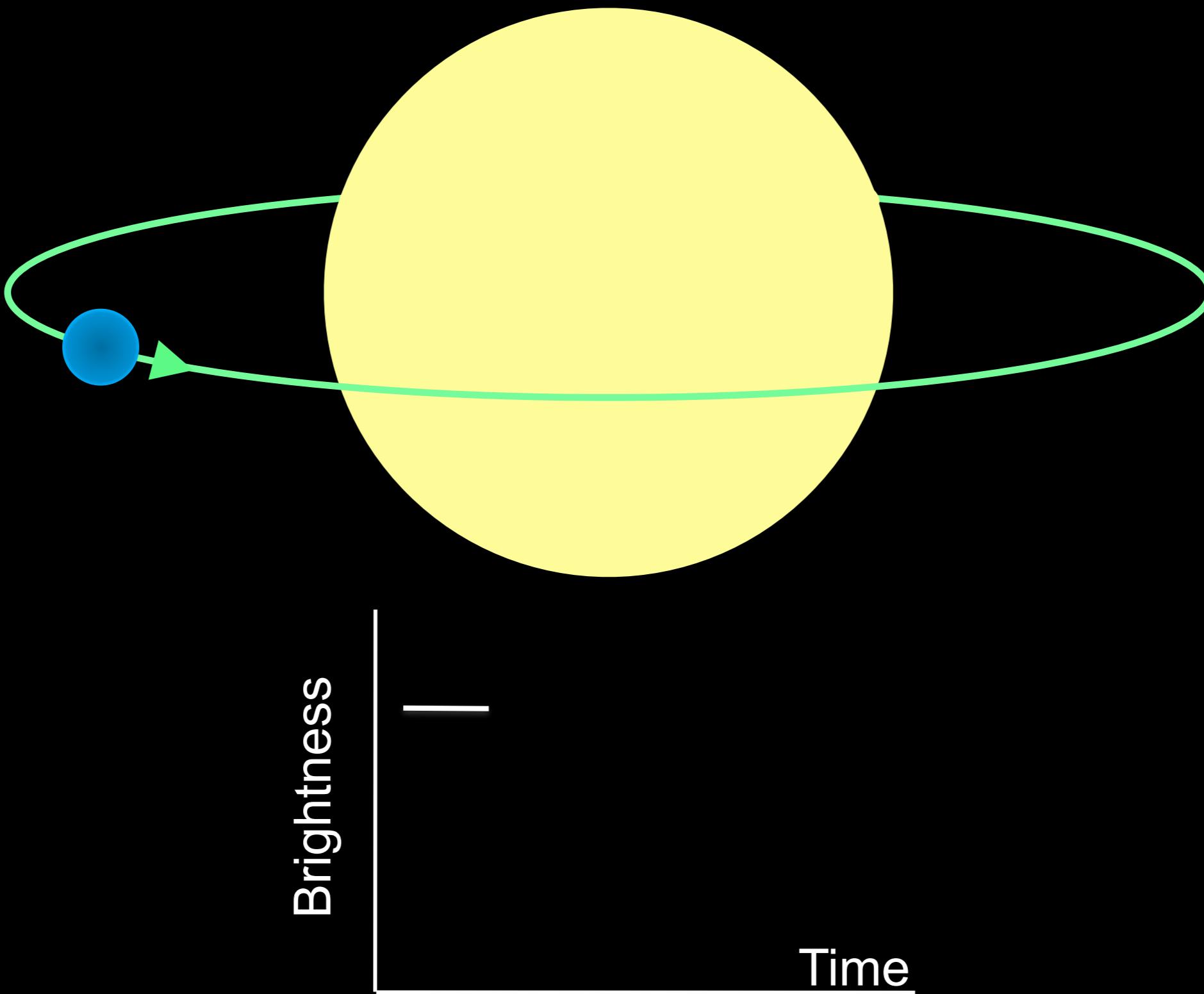
Brett Morris
University of Washington



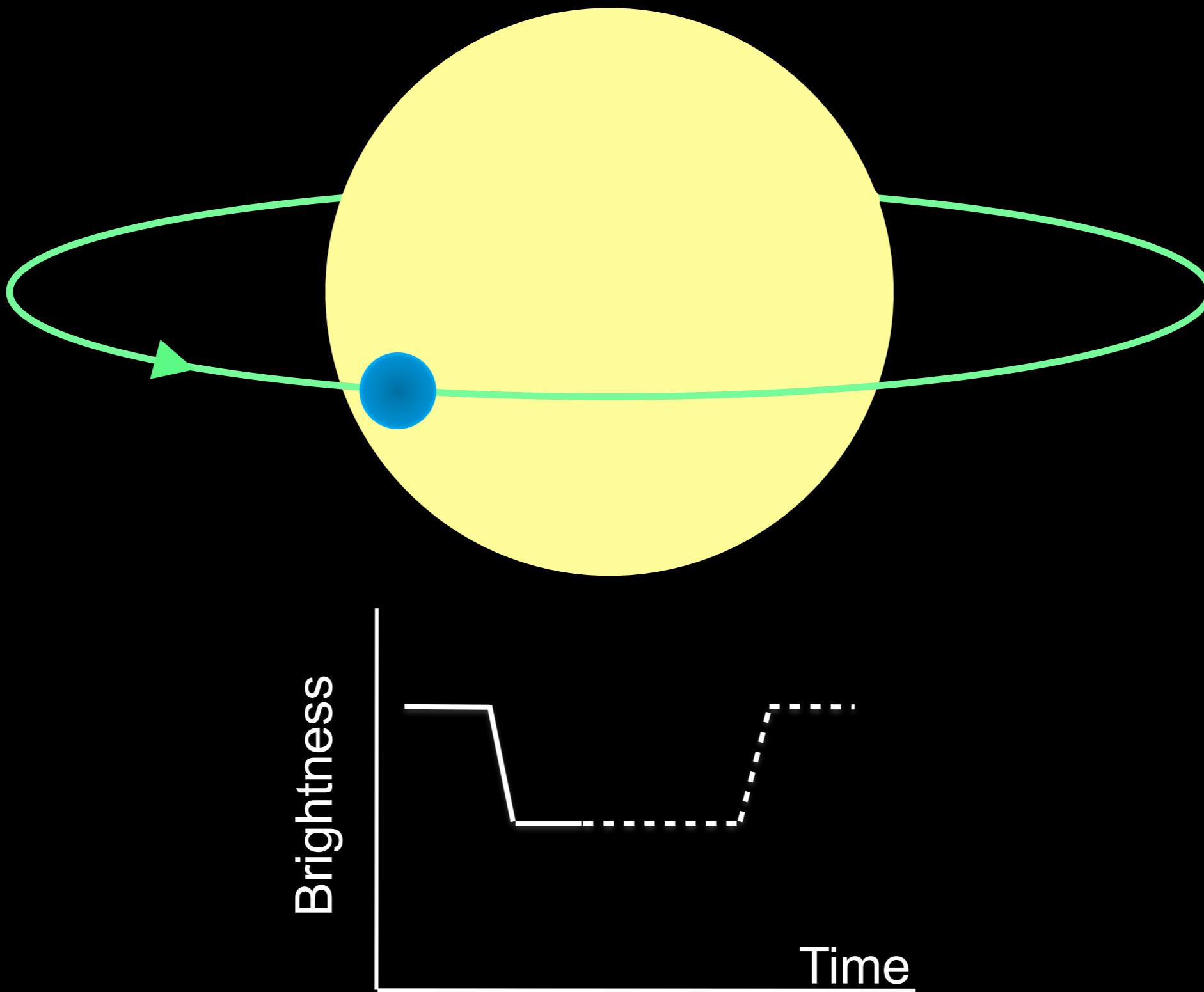
Kepler Mission:

Planet-finder extraordinaire

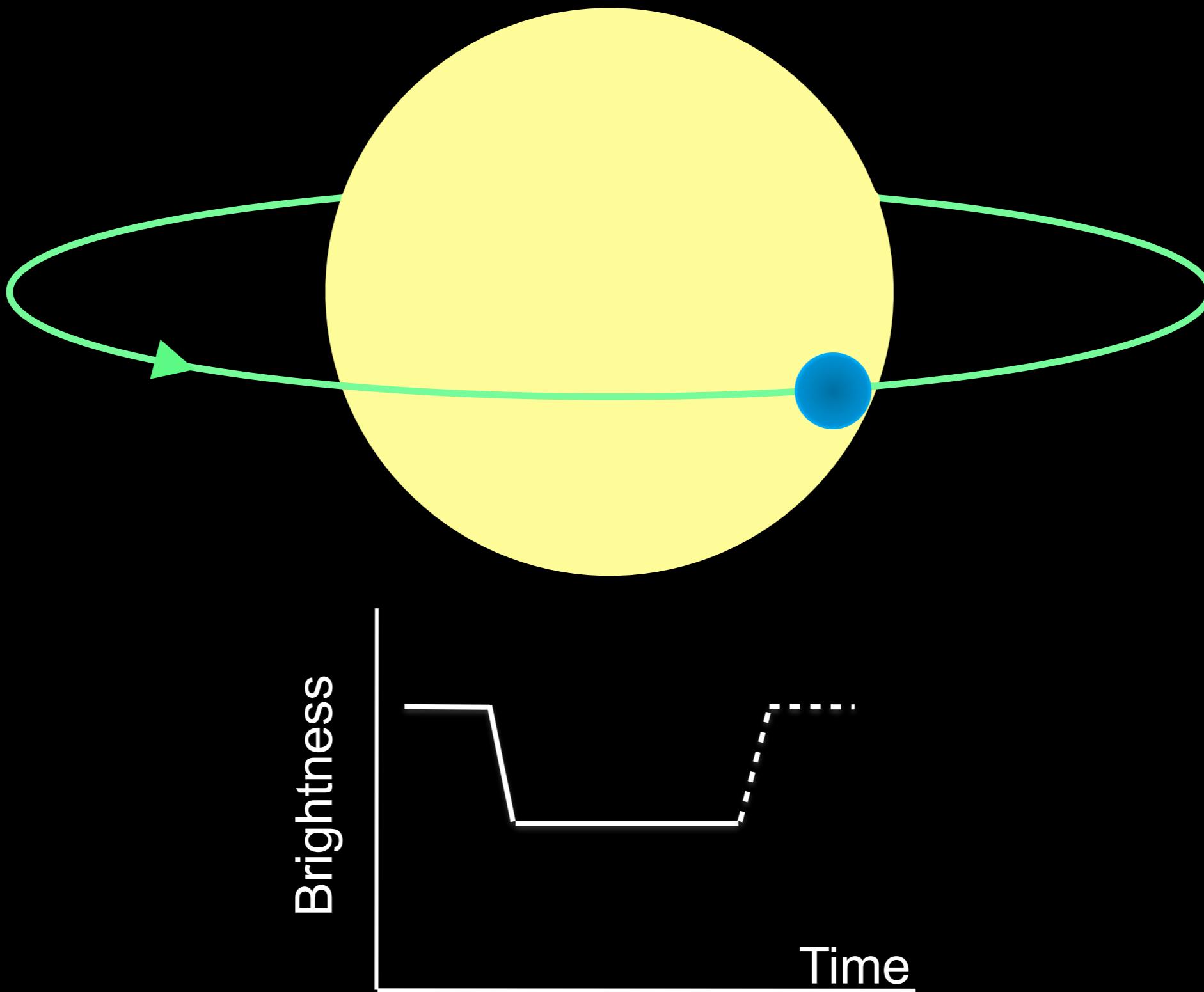
Finding Planets: Transit Method



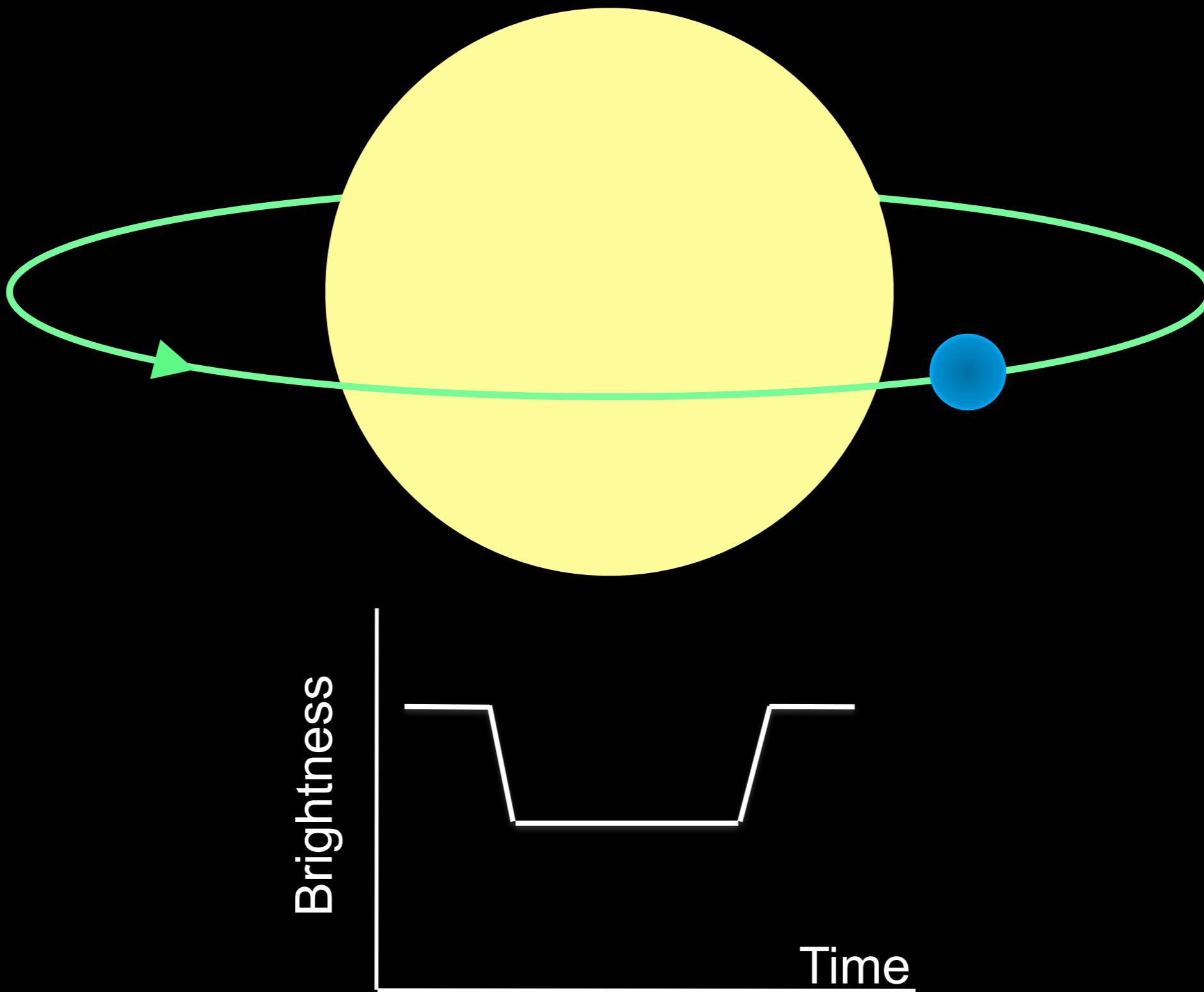
Finding Planets: Transit Method

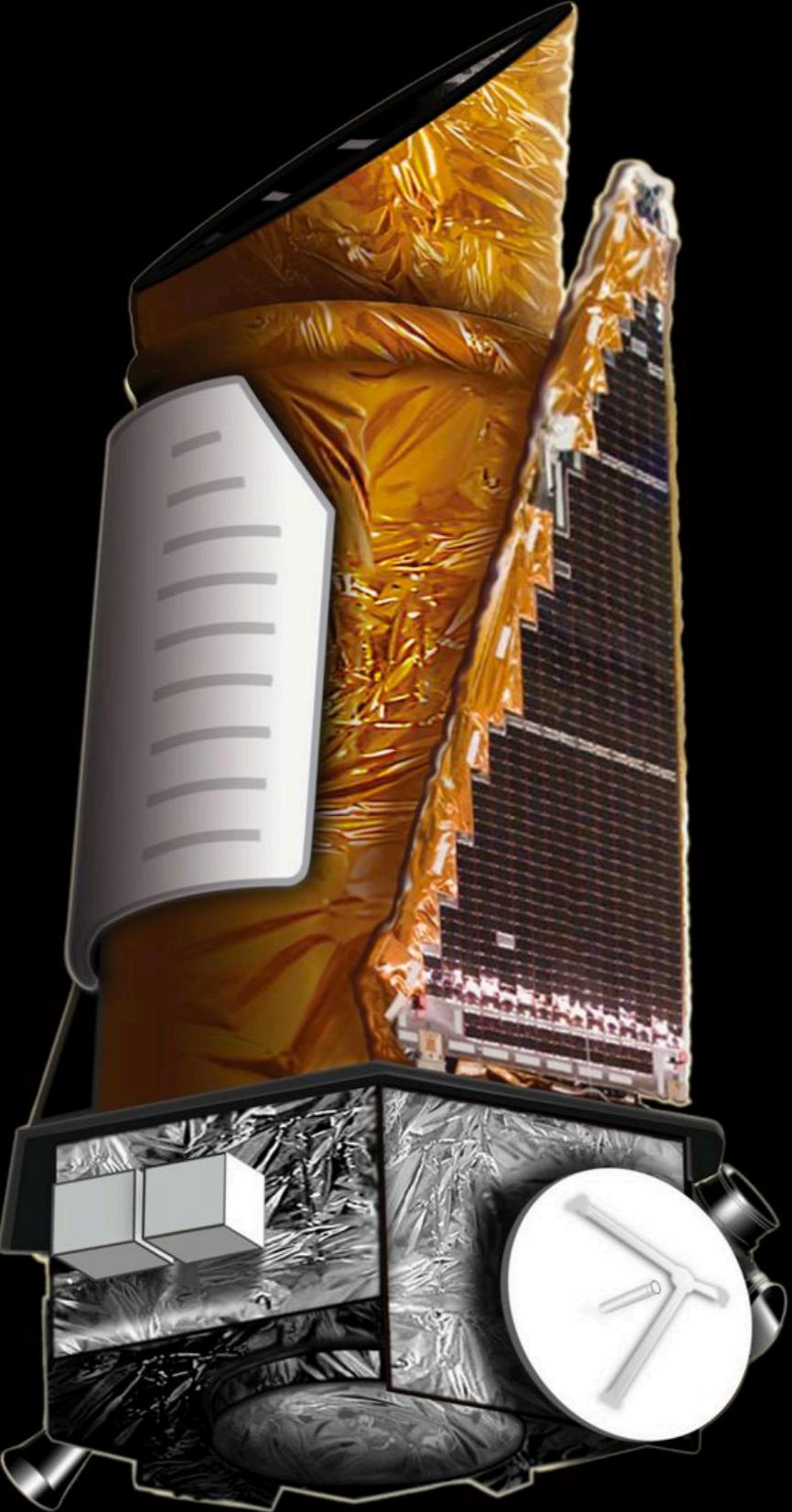


Finding Planets: Transit Method



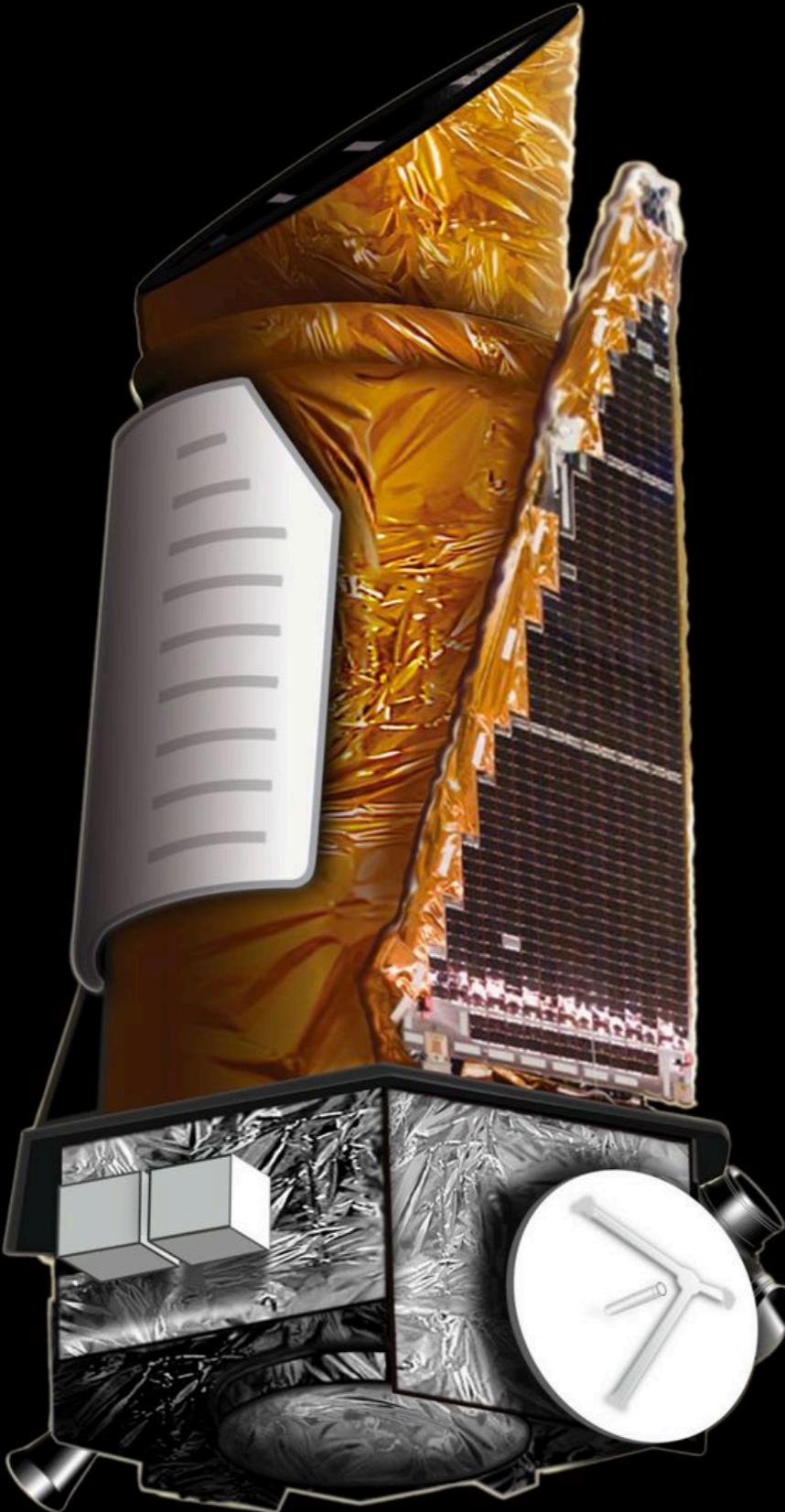
Finding Planets: Transit Method





Lessons from Kepler Mission:

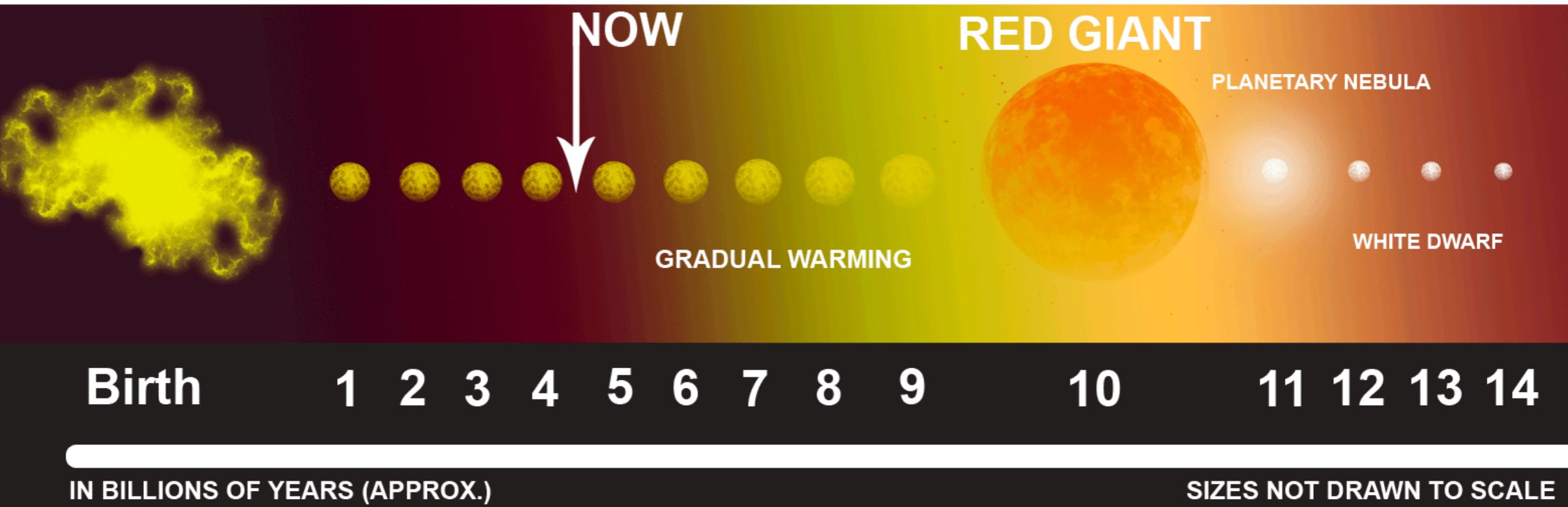
Sun-like stars host planets



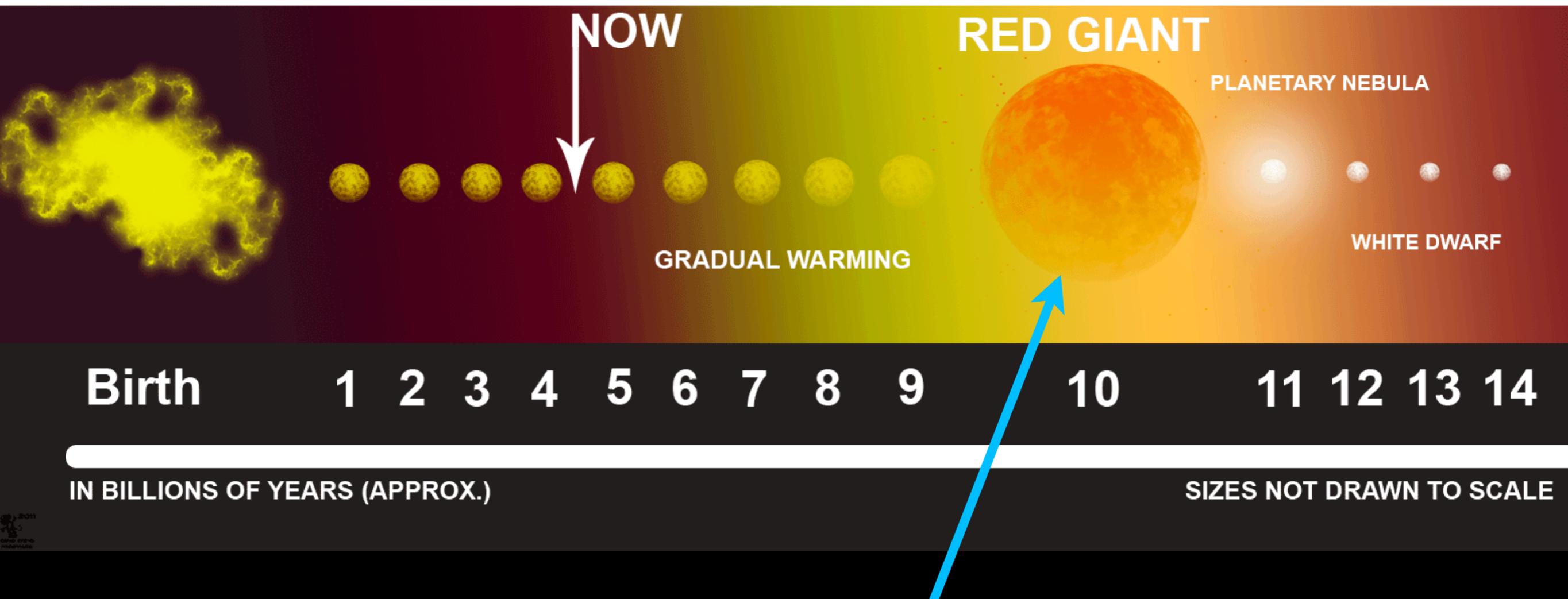
Morbid questions post-Kepler Mission:

What happens to all those planets when their stars die?

LIFE CYCLE OF THE SUN

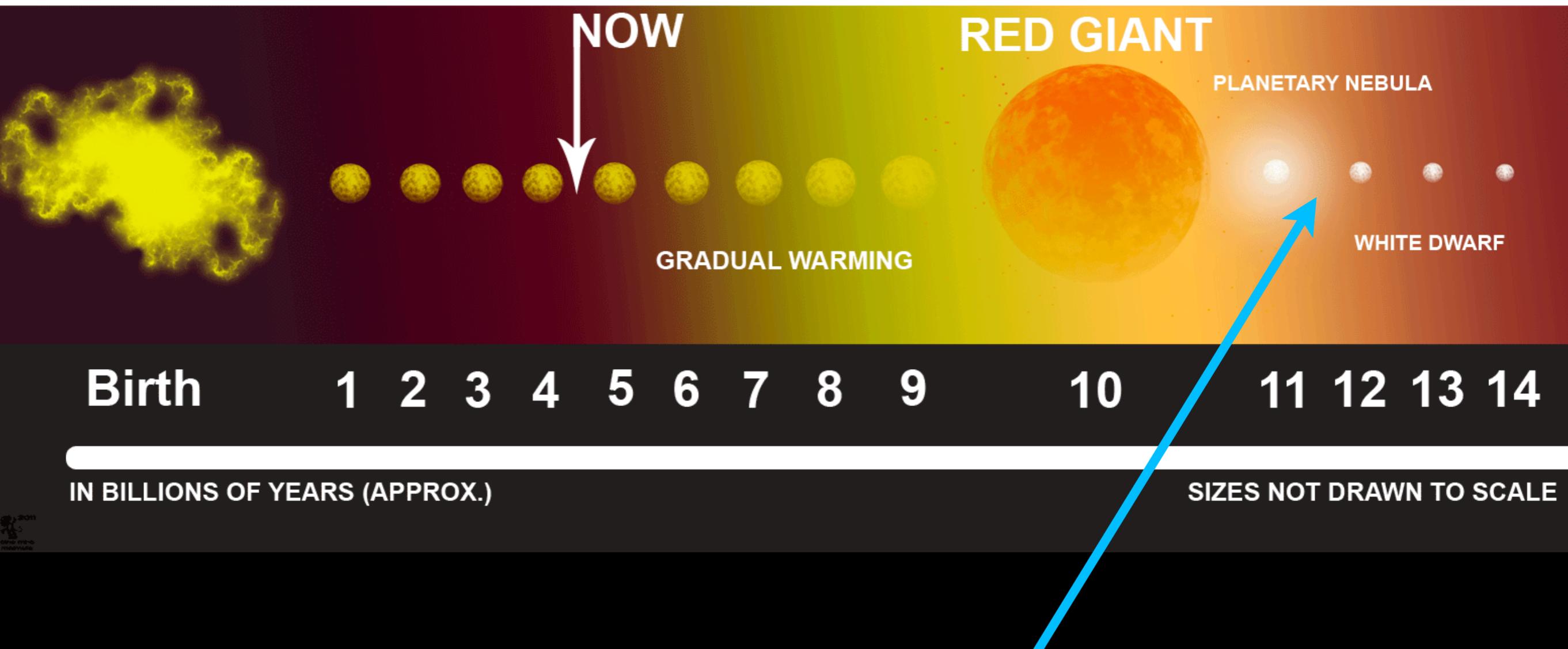


LIFE CYCLE OF THE SUN



Mercury, Venus (+ Earth?) destroyed

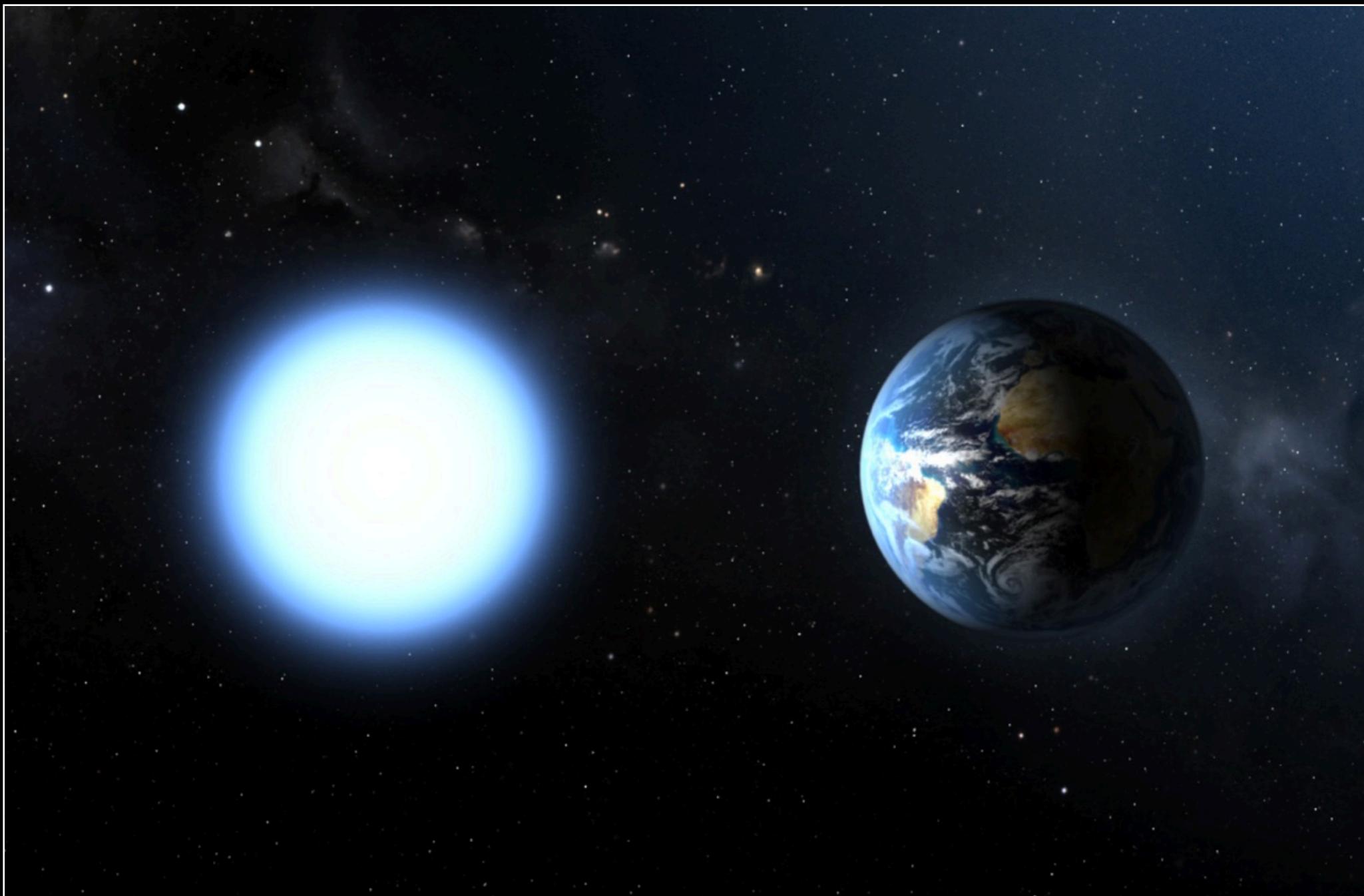
LIFE CYCLE OF THE SUN



Mars and outer planets survive?

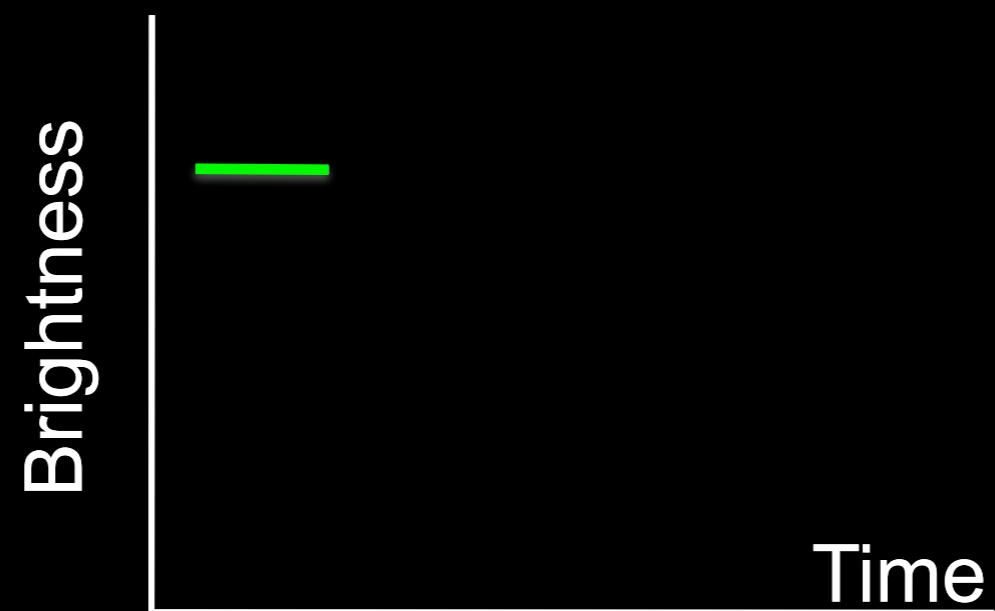
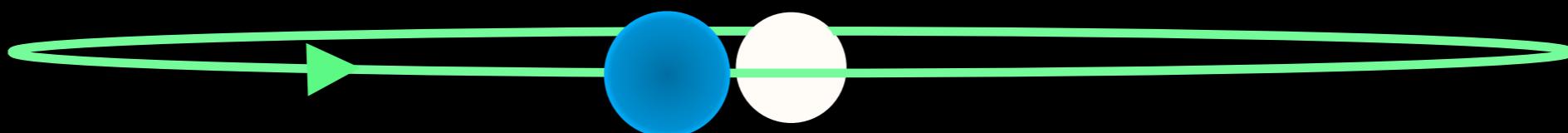
What if we looked at White Dwarfs?

Smaller Stars = Bigger Transit Signal



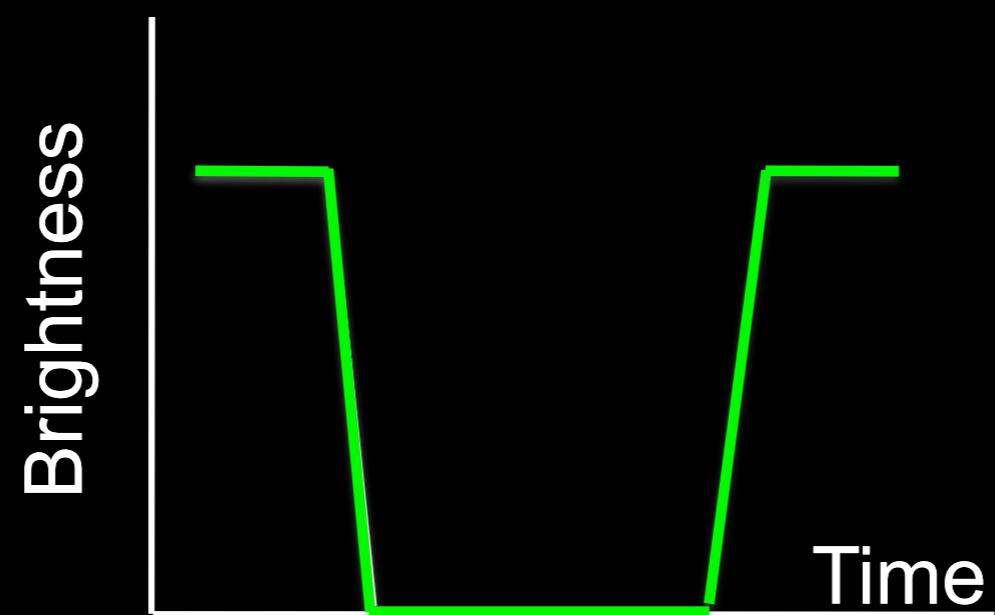
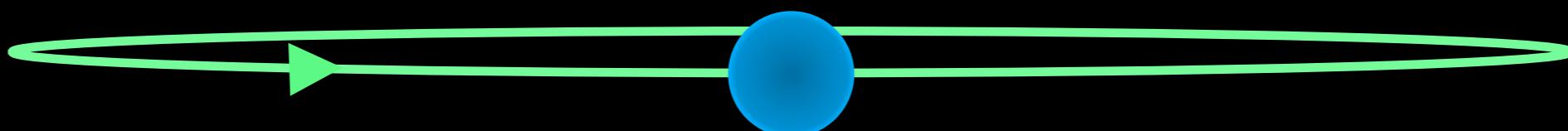
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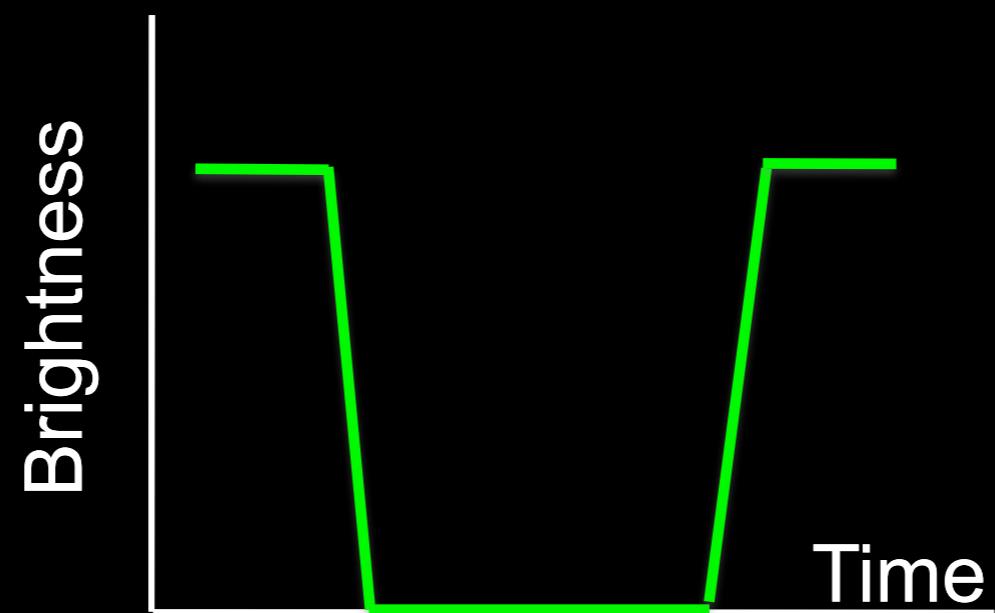
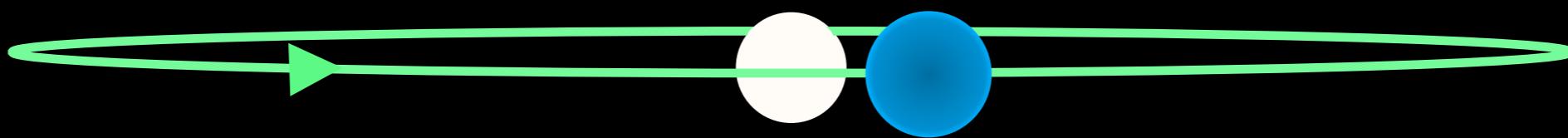
What if we looked at White Dwarfs?

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What if we looked at White Dwarfs?

Smaller Stars = Bigger Transit Signal



But do white dwarfs have planets?



- Spectroscopy says rock/metals fall on some WDs
- Is the rock/metal from rocky planetary debris?
- What's the debris source?

Recipe: How To Start The Hunt

(Observational Astronomy)

- Determine the best targets and observing strategy
- Write a proposal, convince a committee to let us use their telescope
- Use data from the telescope to search for planets
- Reevaluate and repeat

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post-Main sequence Stars



Apache Point Observatory ARC 3.5 m

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- We will work together in  python™ to:

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 - Narrow that list to determine which WDs are the easiest to work with

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Search for Planets Around
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 - Compile the list of polluted WDs available for study
 - Narrow that list to determine which WDs are the easiest to work with
 - Analyze archival WD data from APO
 - Visualize the feasibility of the project (plots plots plots!)

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- **Ultimate goals:**

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SPAMS

Search for Planets Around
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- **Ultimate goals:**
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 - Provided we get telescope time, we will reduce and analyze the data
 - Hunt for planets!

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- Questions?