

# Observational results of the three-year Distant Giants Survey

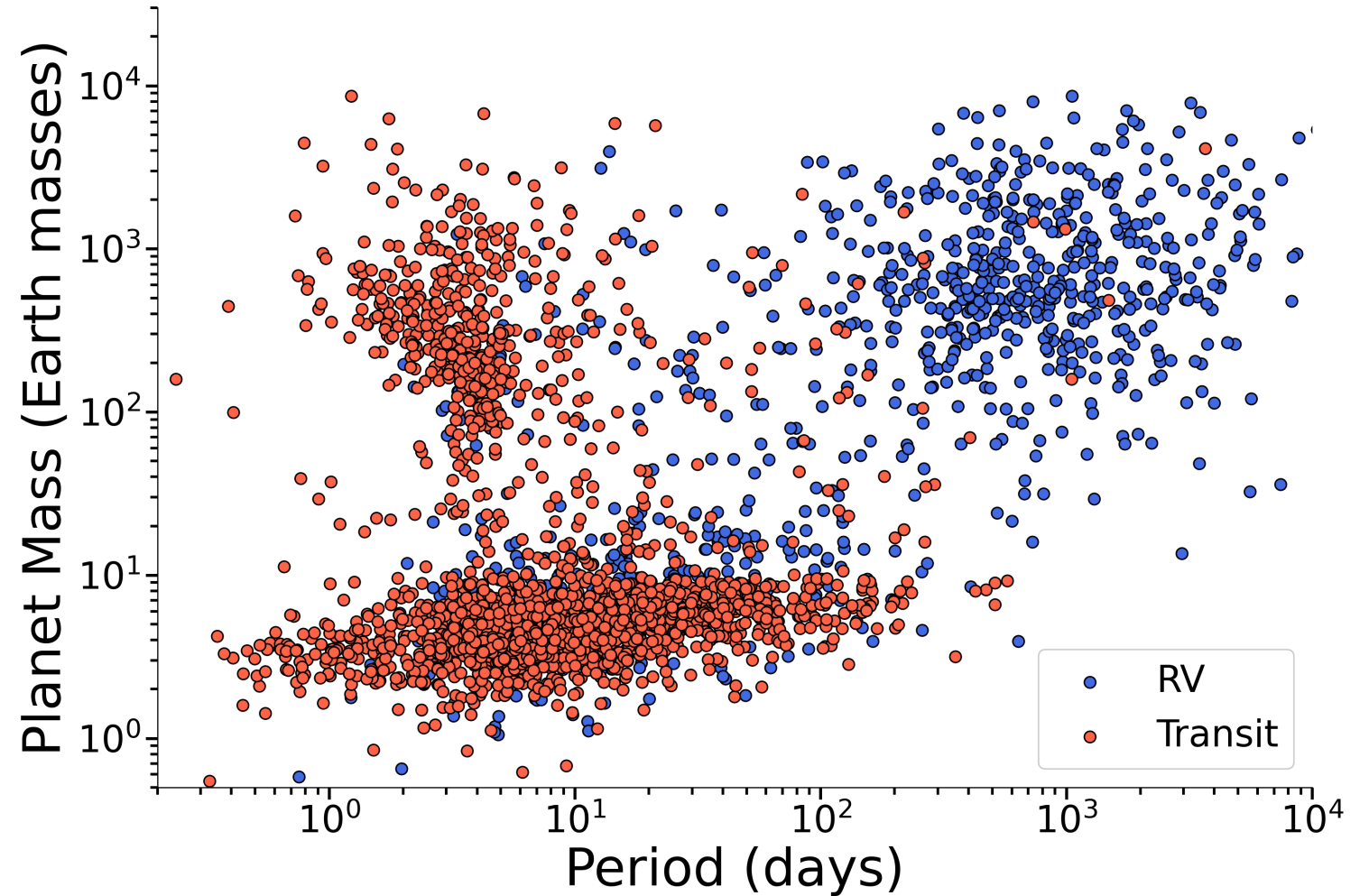
Judah Van Zandt

5<sup>th</sup> year graduate student

UCLA

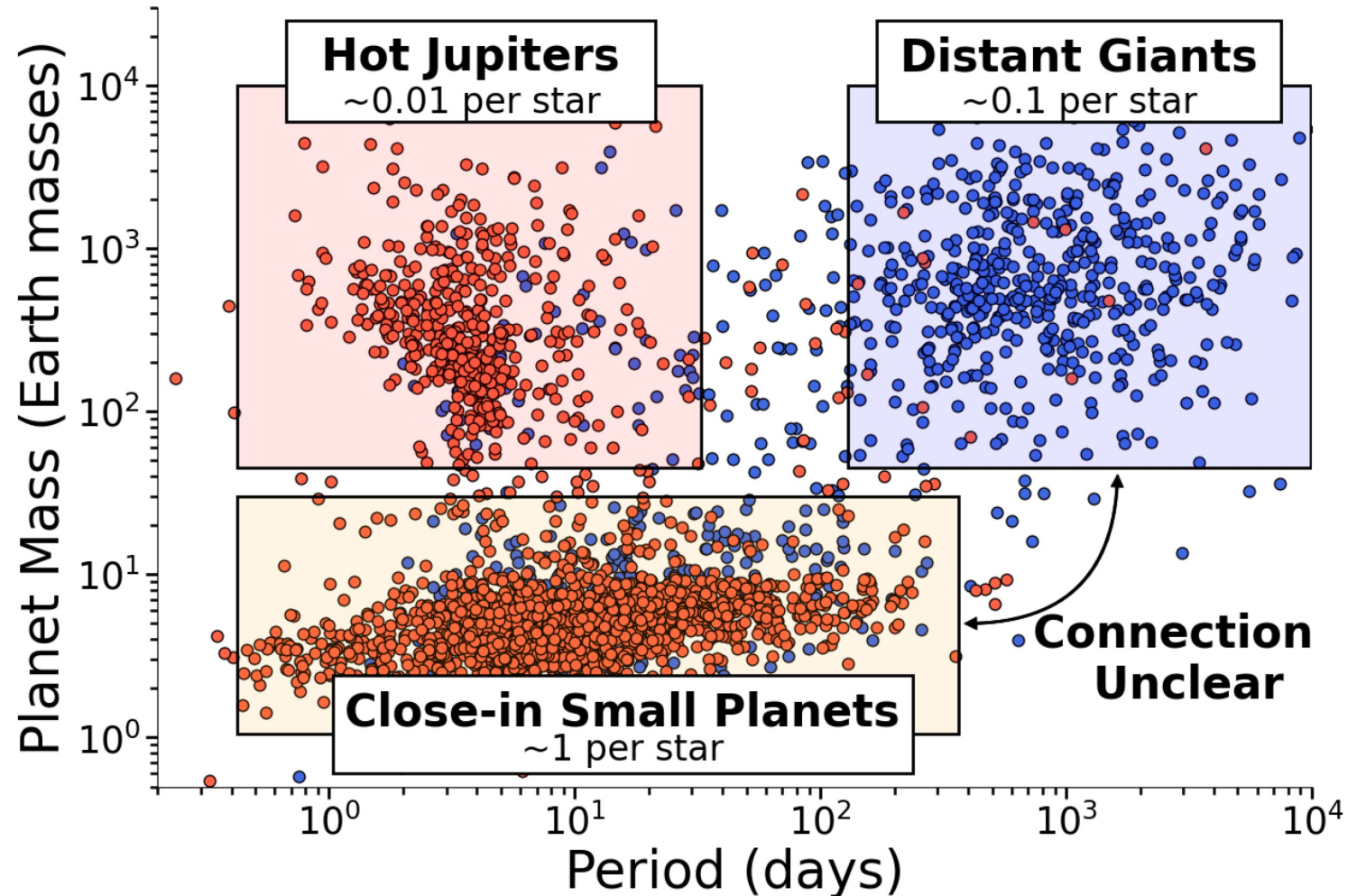
# Survey recap: science goal

- Uncover the connection between close-in small planets and outer giants



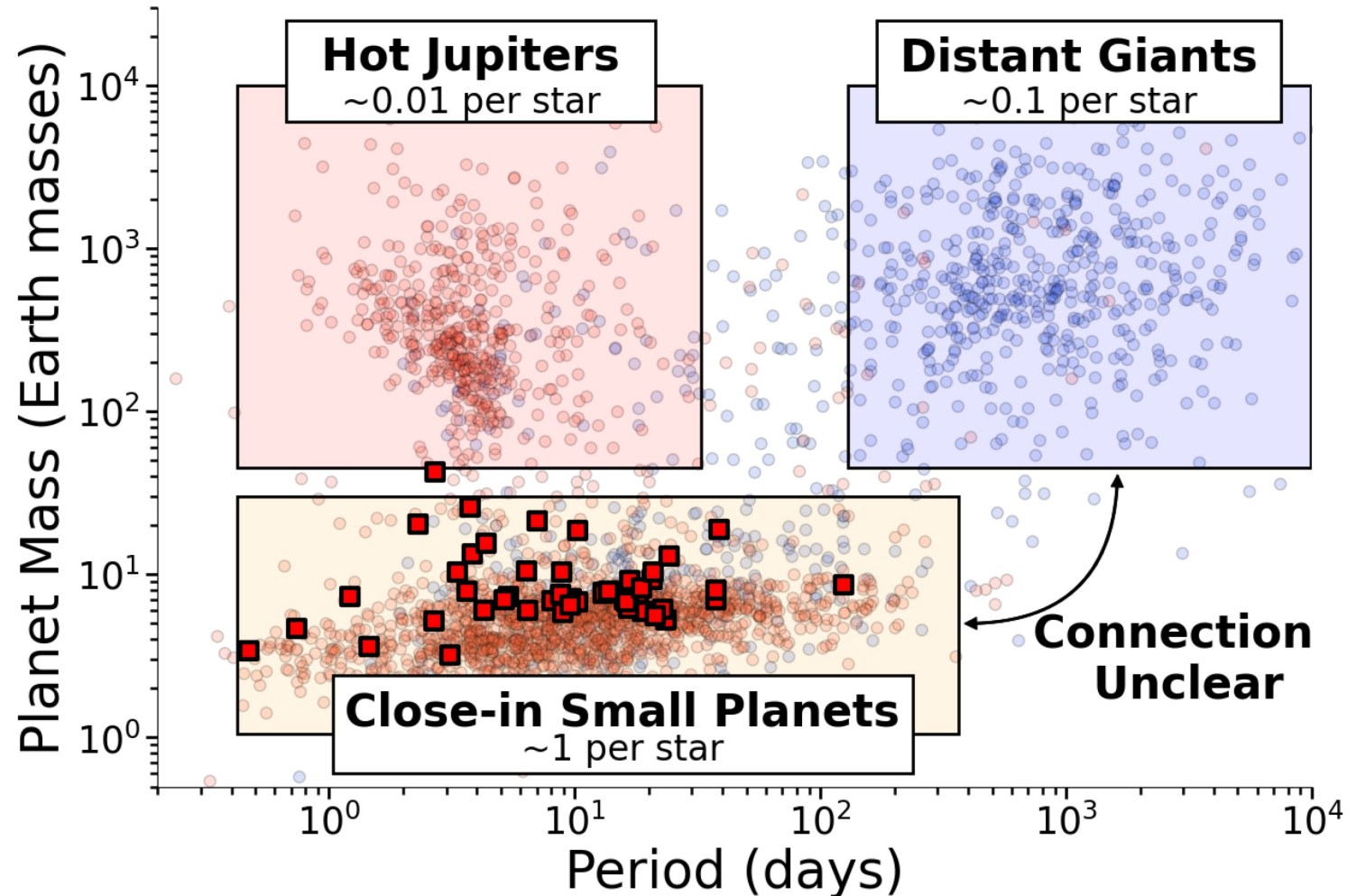
# Survey recap: science goal

- Uncover the connection between close-in small planets and outer giants:
  - “Conditional occurrence”  $P(\text{DG}|\text{CS})$



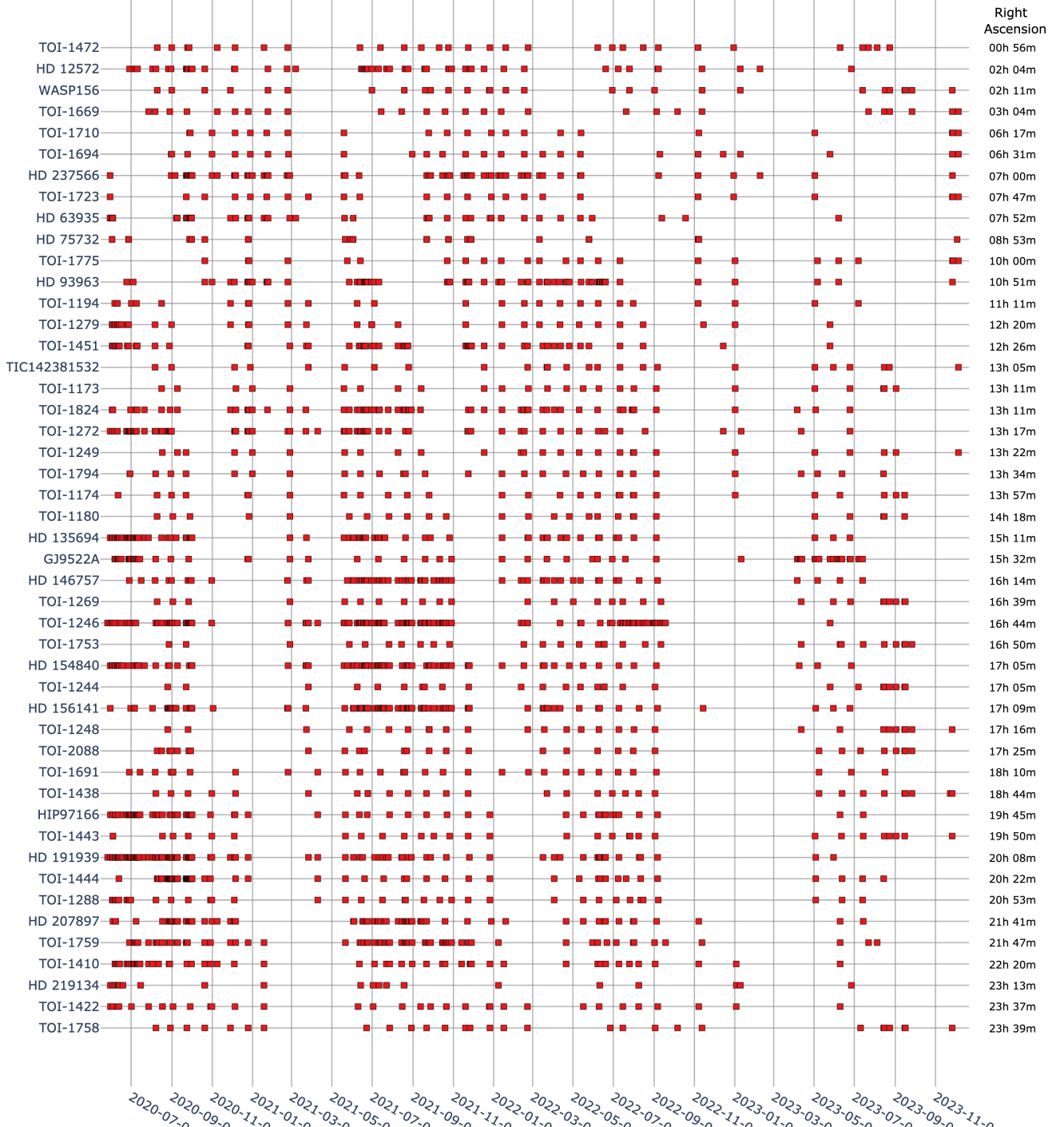
# Survey recap: design

- Select 47 bright stars with small transiting planets
- Get 1 RV/month of each system for 3 years
- Search for signals from distant giant planets



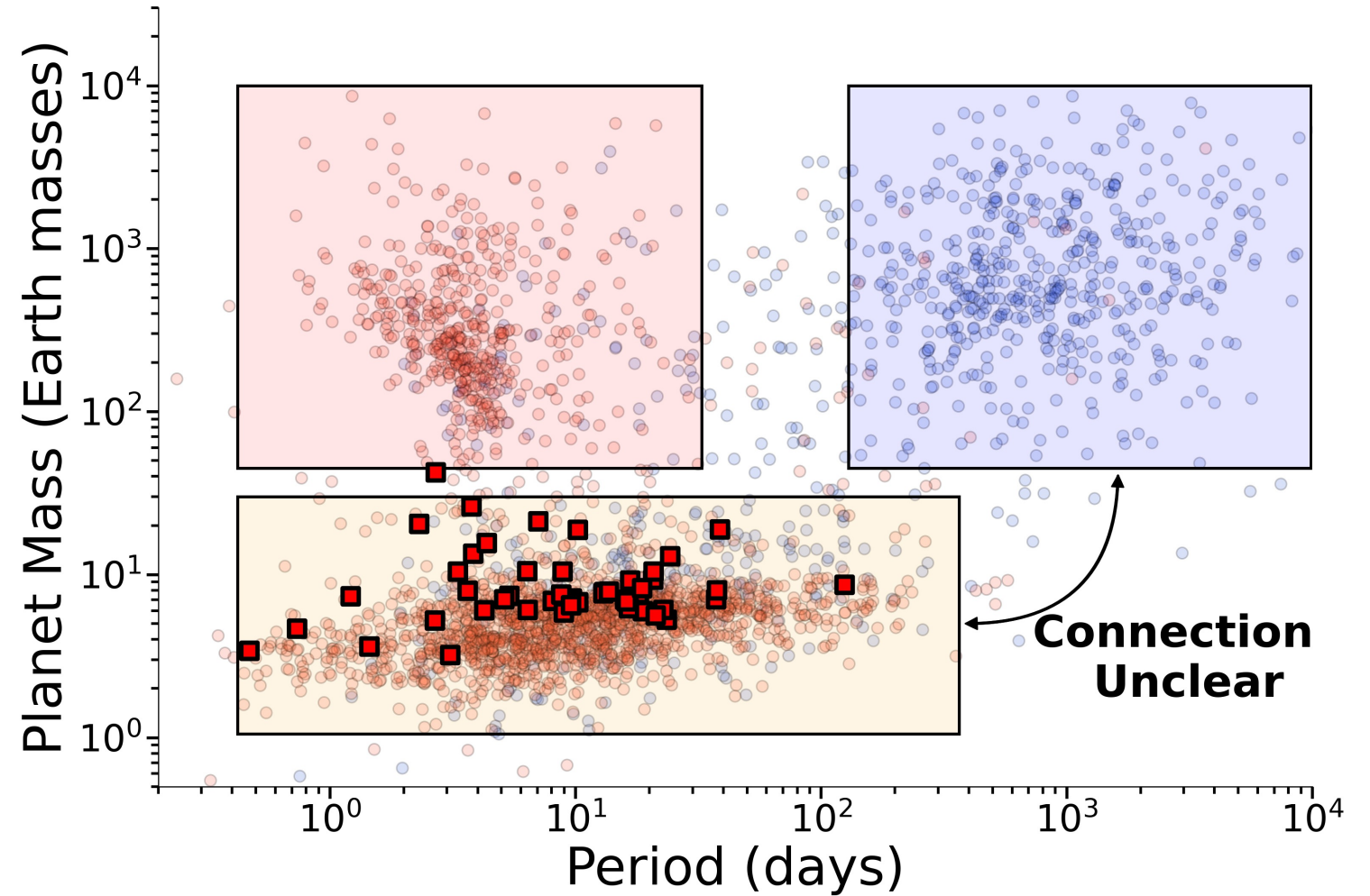
# Observational results

- Survey duration: 3.5 years
- RVs collected: 4000+
- Finished targets: 41/47
  - RVs: 61/24
  - Baseline: 3.3 yr/3.0 yr



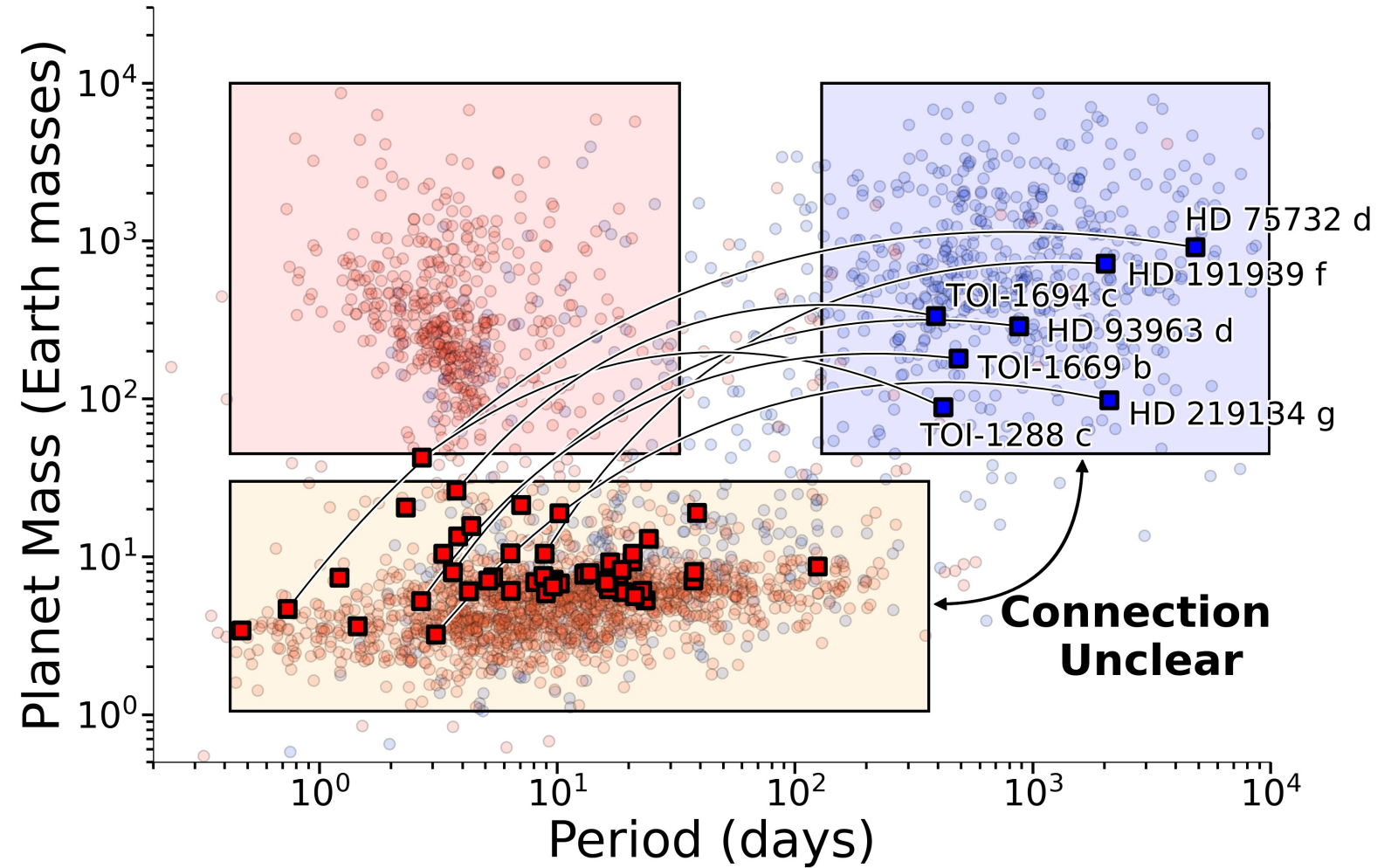


# Detections



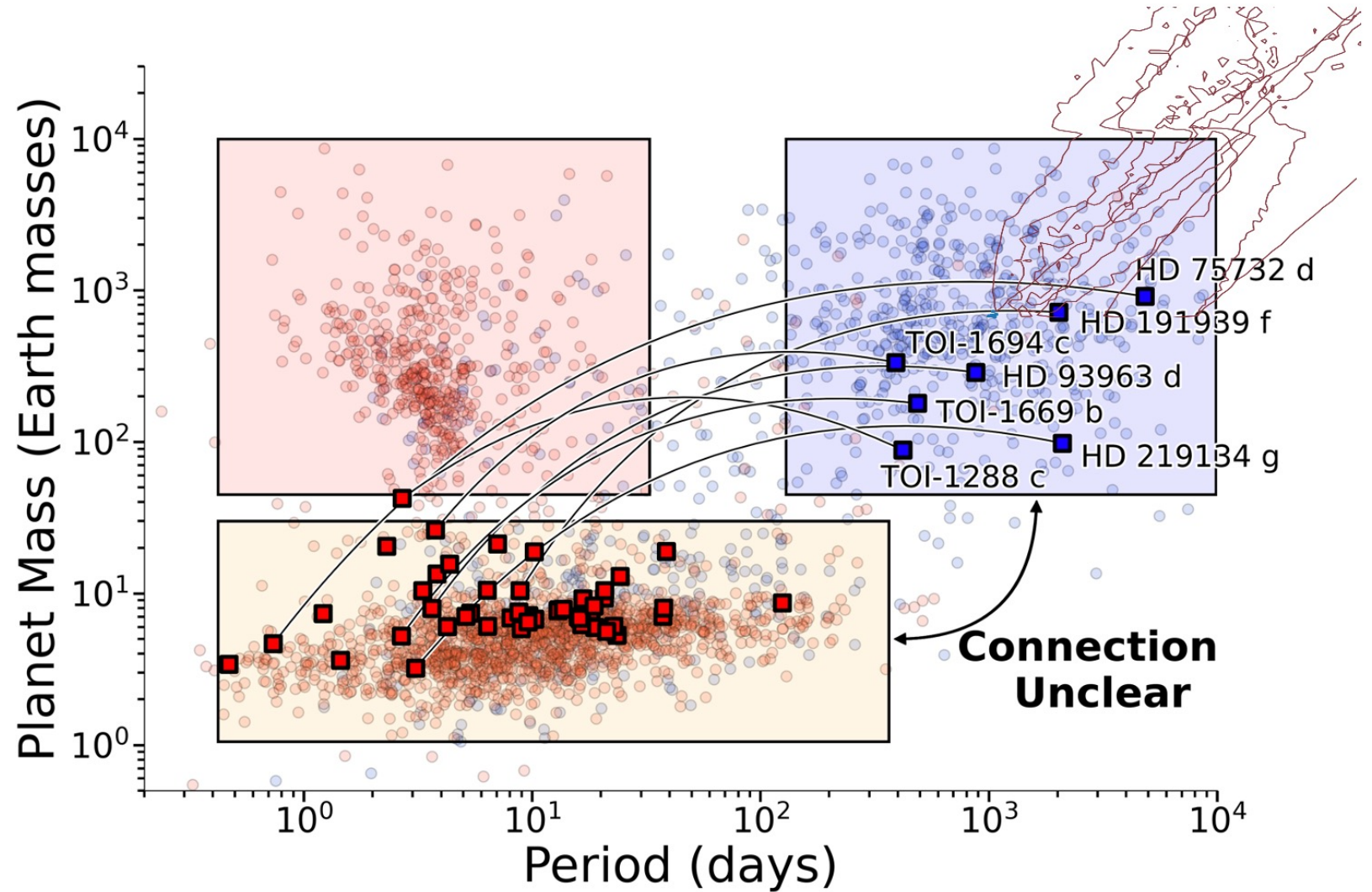
# Detections

- 7 giant planets



# Detections

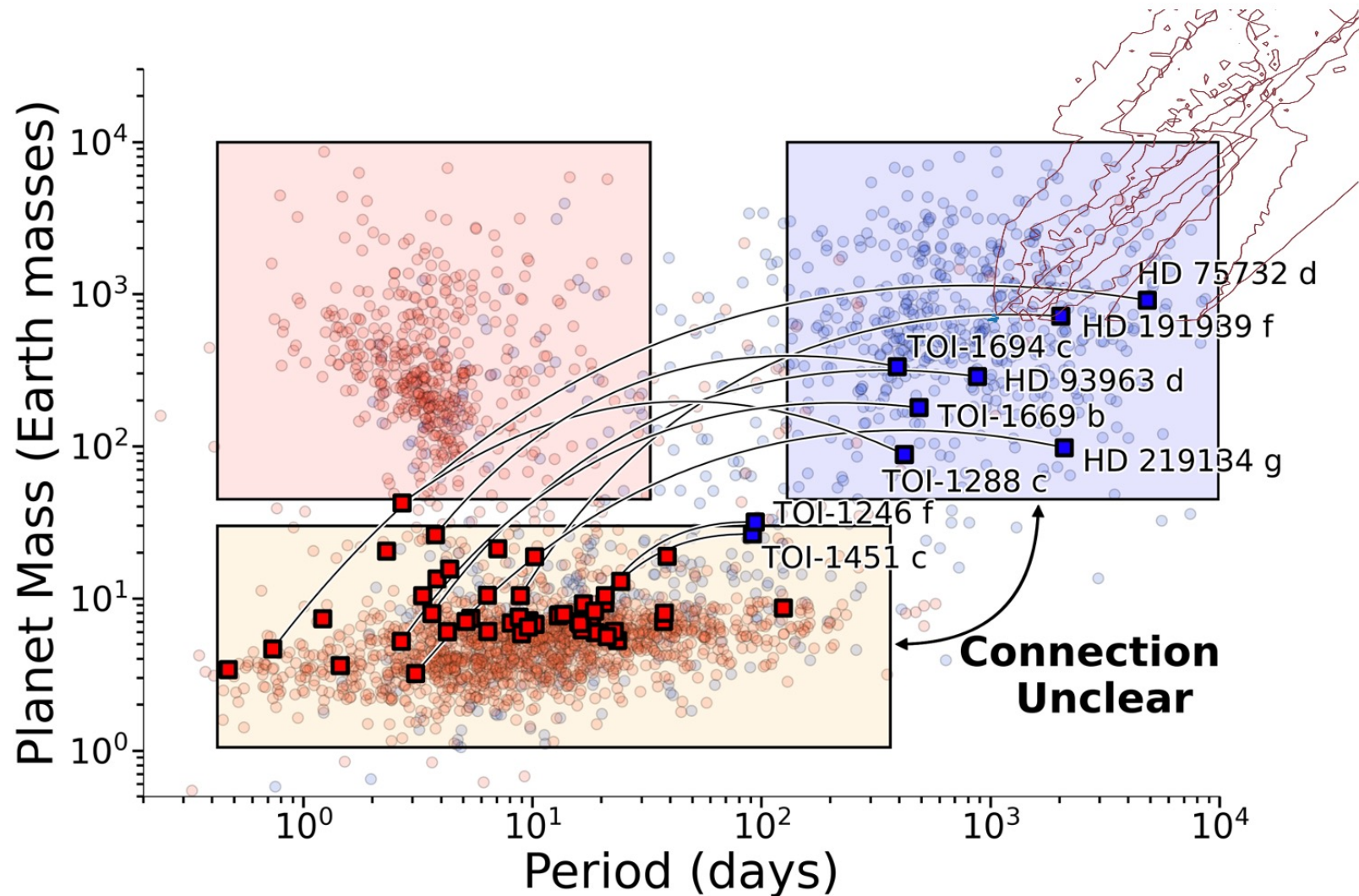
- 7 giant planets
- 6 long-term trends





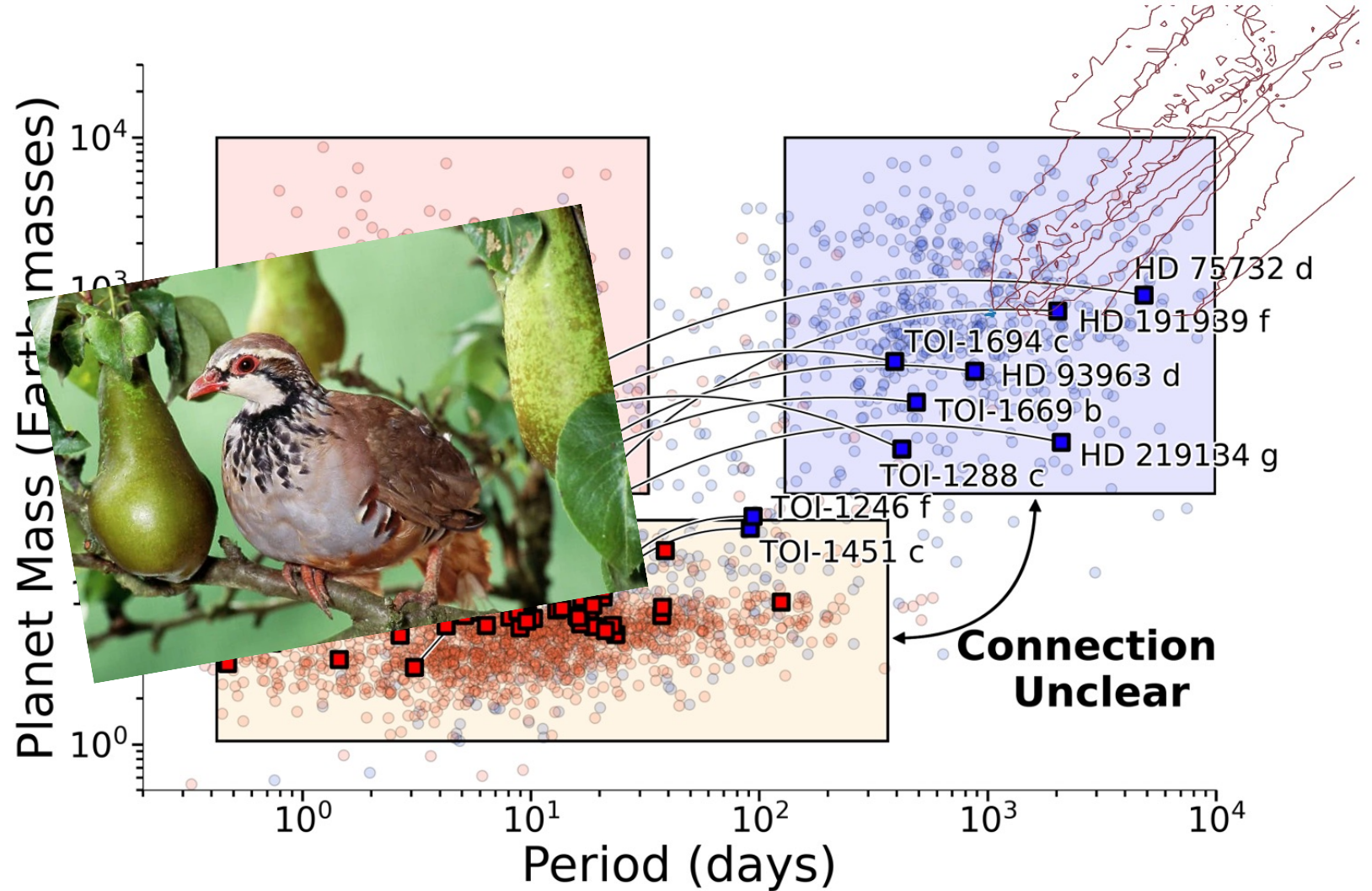
# Detections

- 7 giant planets
- 6 long-term trends
- 2 sub-Jovians



# Detections

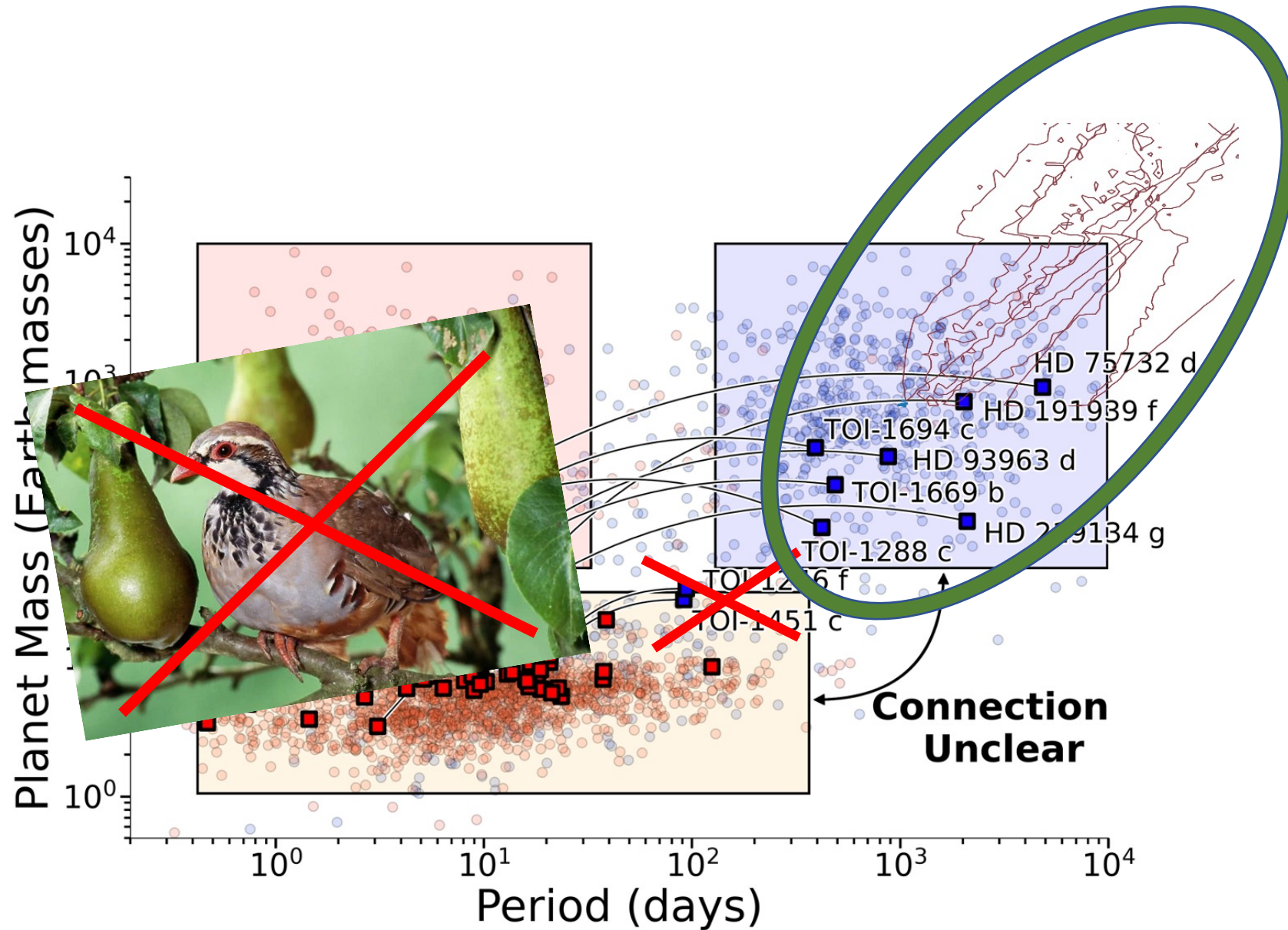
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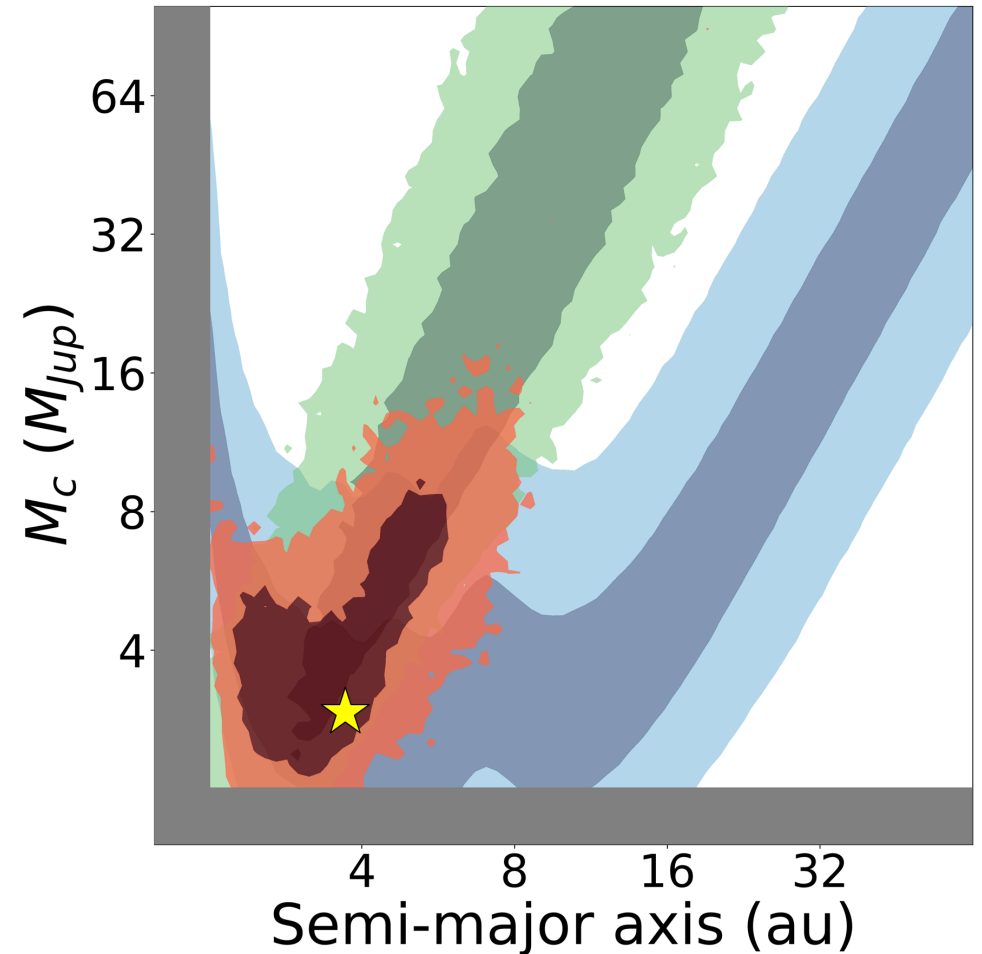
# Detections

- 7 giant planets
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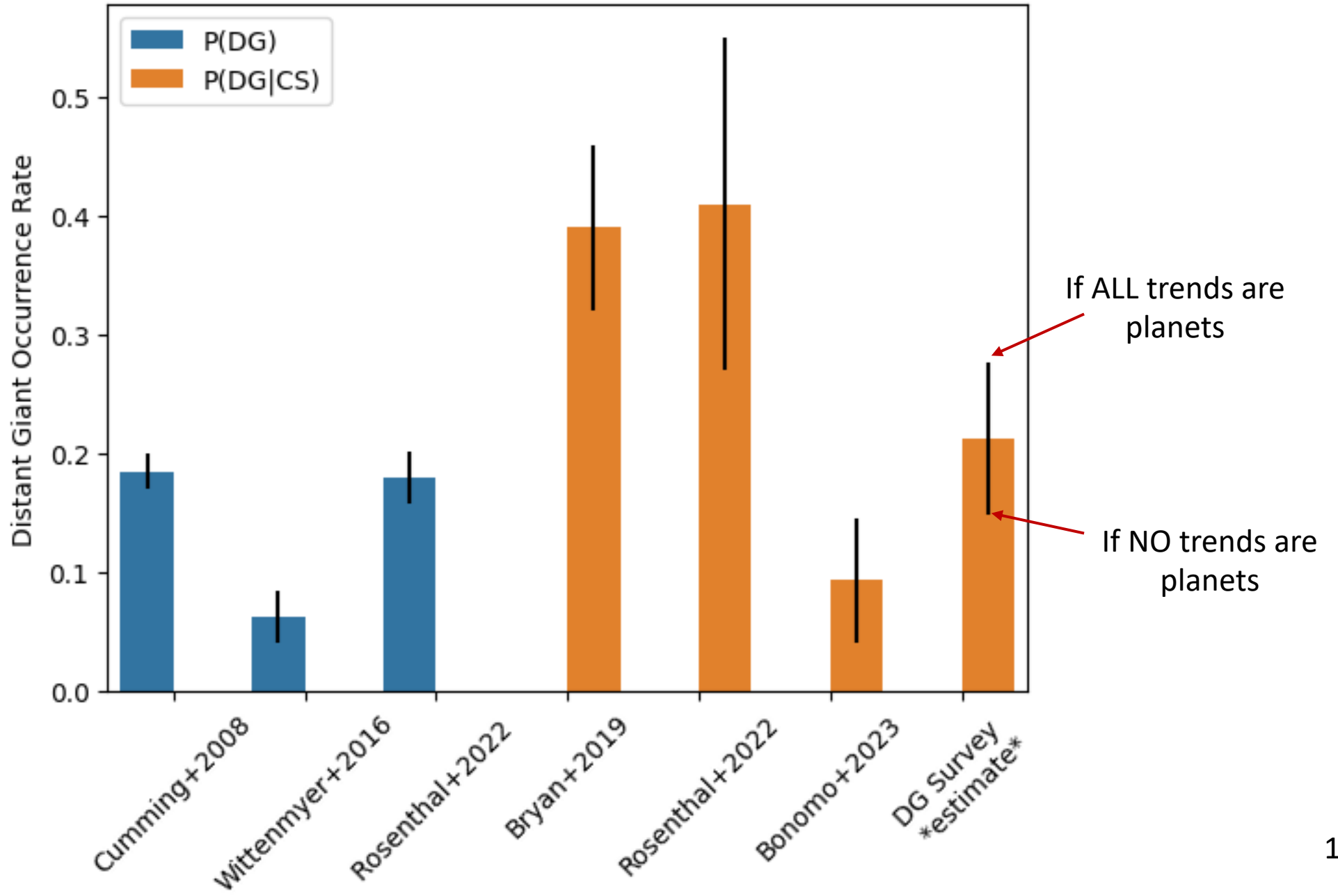


# Plug for `ethraid`

- Python package for analyzing systems with RV trends
- Shrink the uncertainty in companion mass and separation
- Simple to use!
- `pip install ethraid`
- <https://github.com/jvanzand/ethraid>

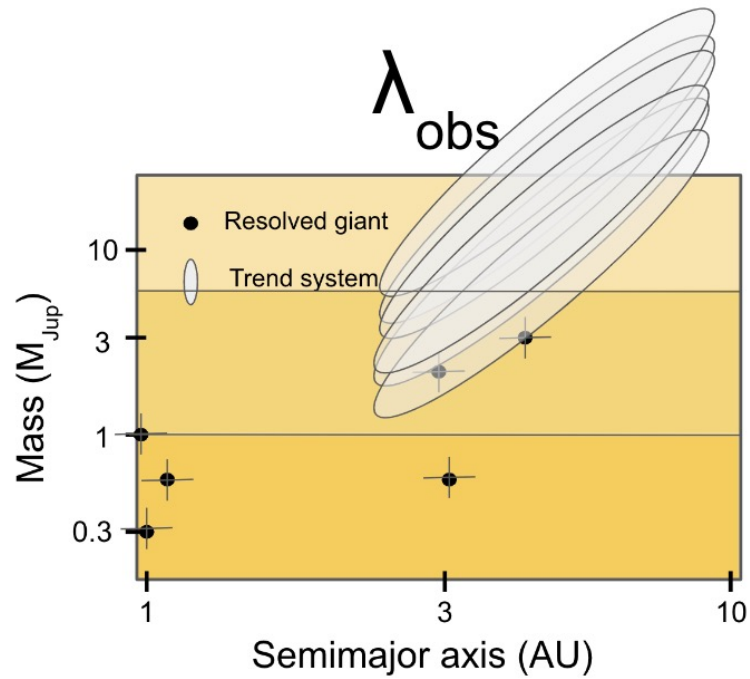


# First impressions: anti-correlation ruled out

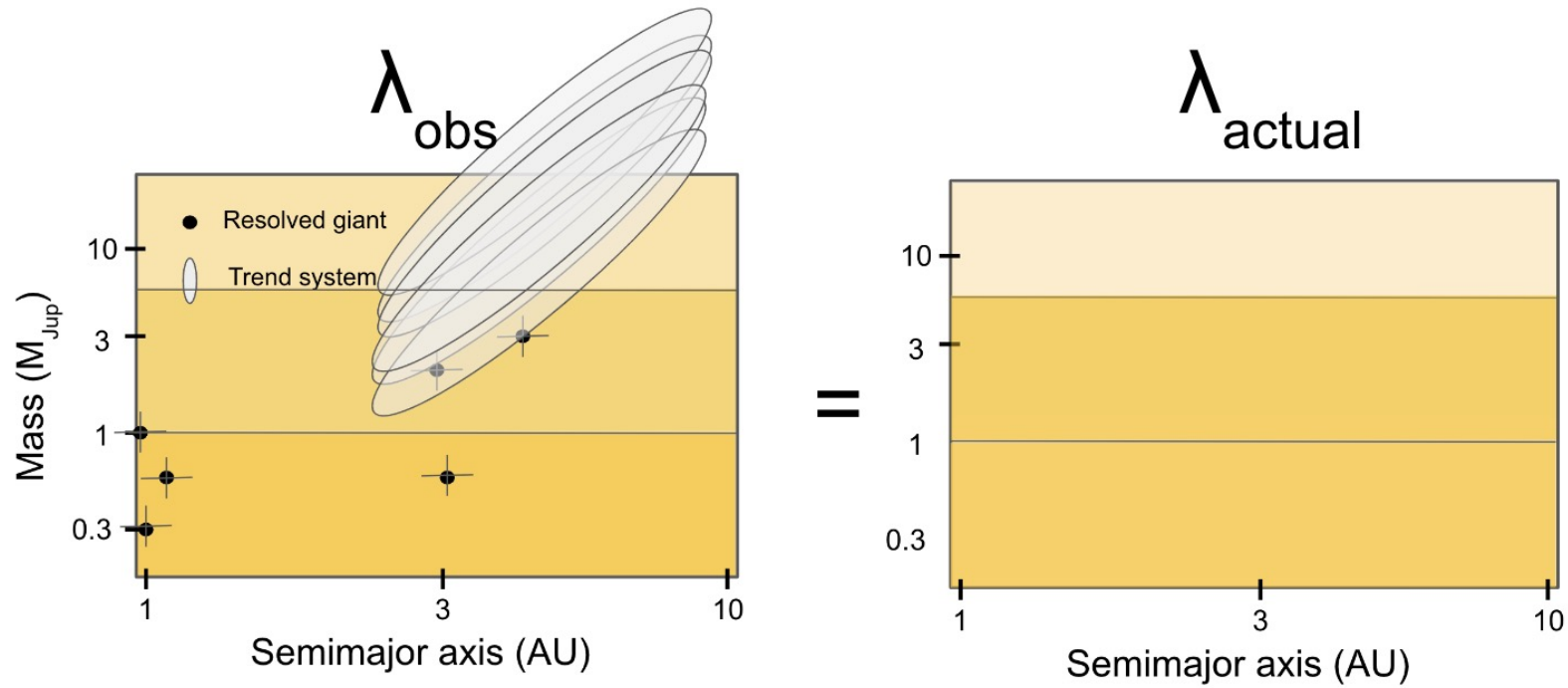




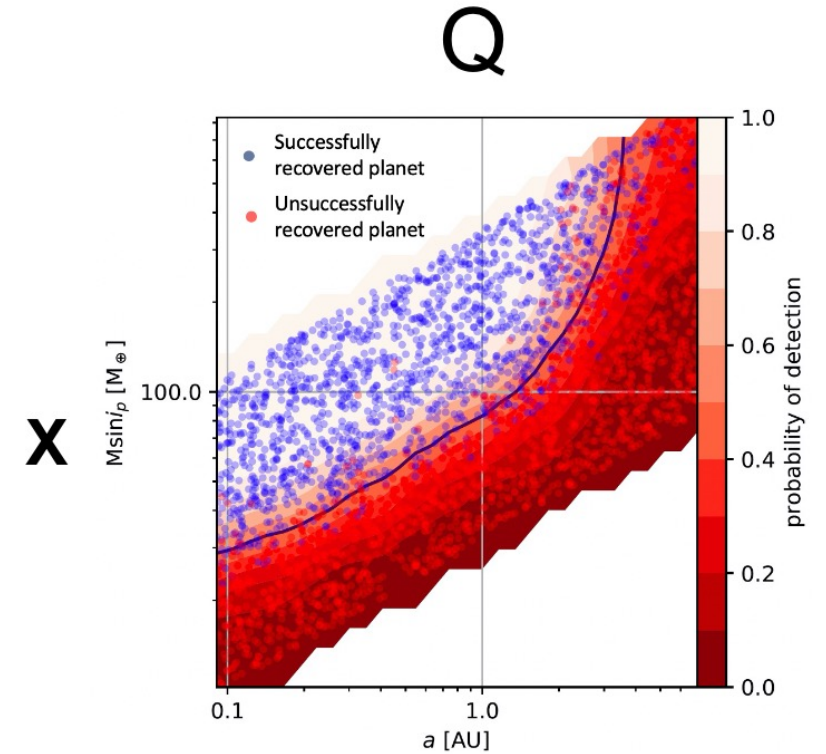
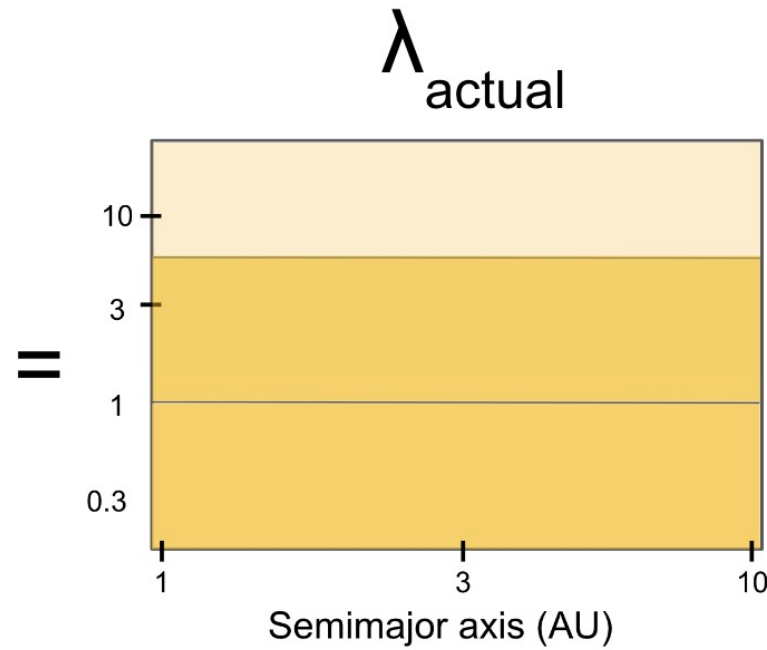
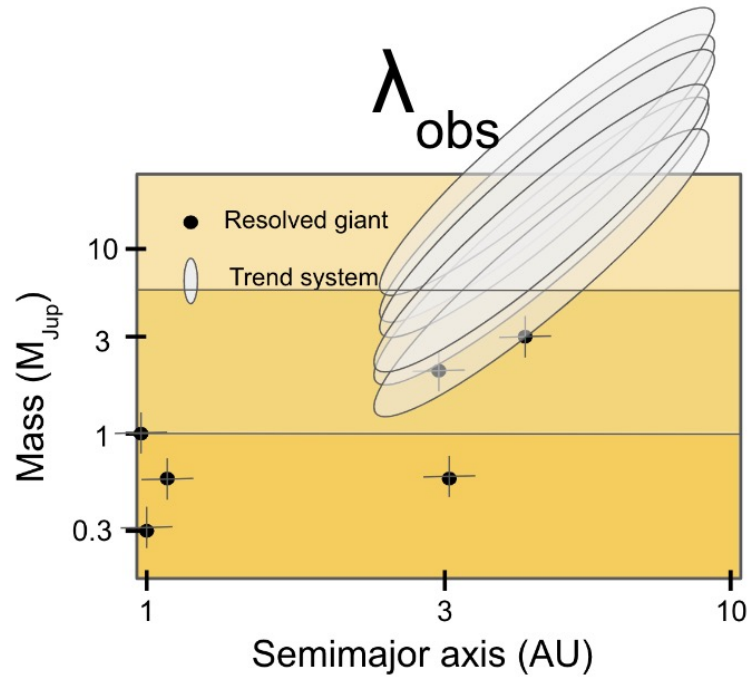
# Next step: comprehensive statistical treatment



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# Main takeaways

- The Distant Giants catalog includes 7 resolved outer giants and 6 additional trends
- The raw results are not conclusive, but disfavor an anti-correlation between distant giants and inner small planets
- We will arrive at the final result by accounting for our survey completeness