

Observational Constraints on Planets in the α Centauri Star System

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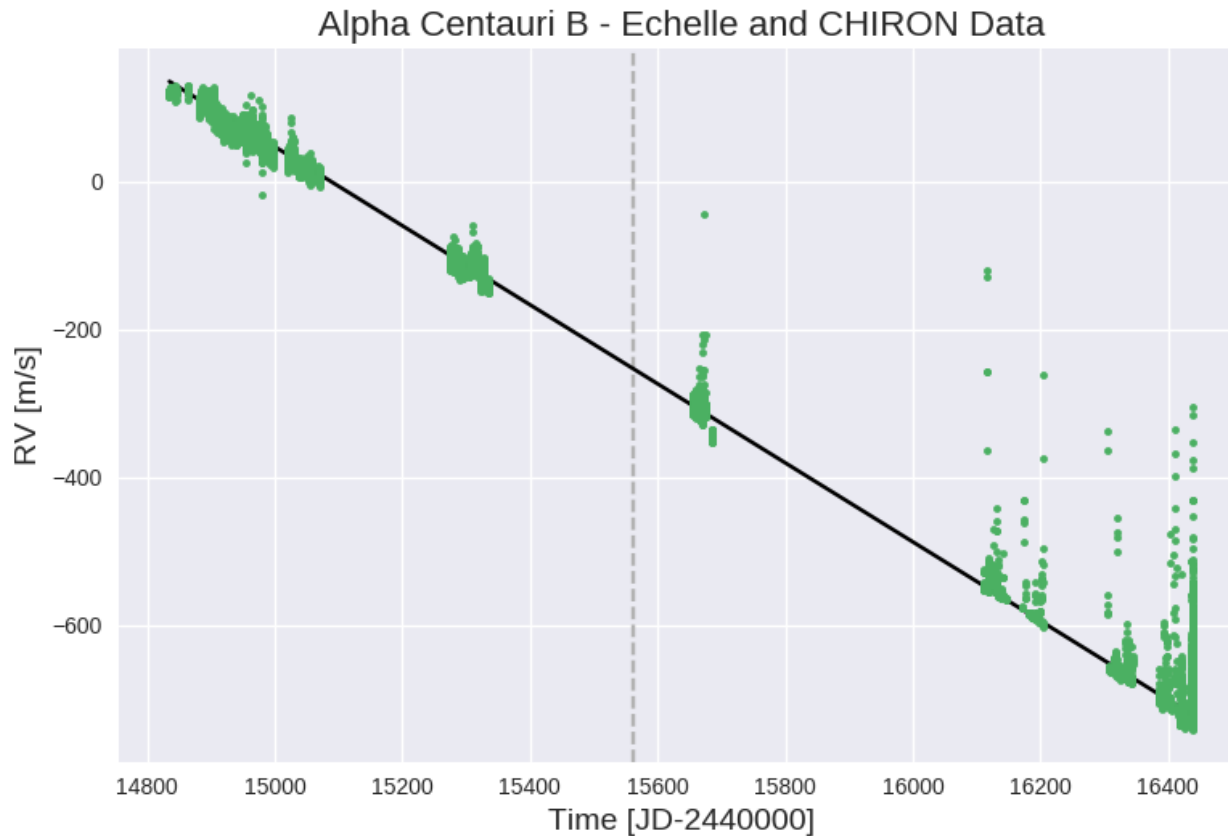
JUNE 13, 2017

α Centauri A and B

- Close, bright, and Sun-like
- Metallicity suggests rocky planets
- Favorable inclination

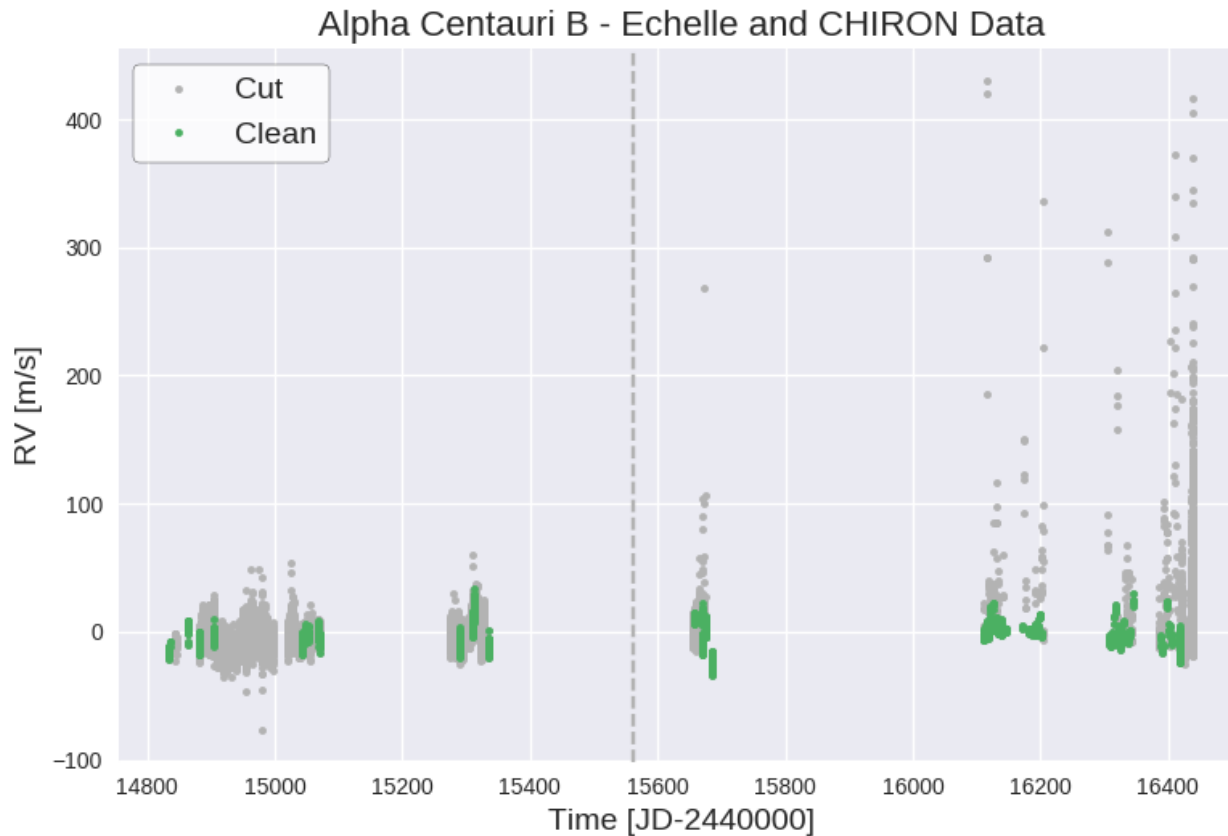
Data Cleaning:

Subtract out Binary Trend



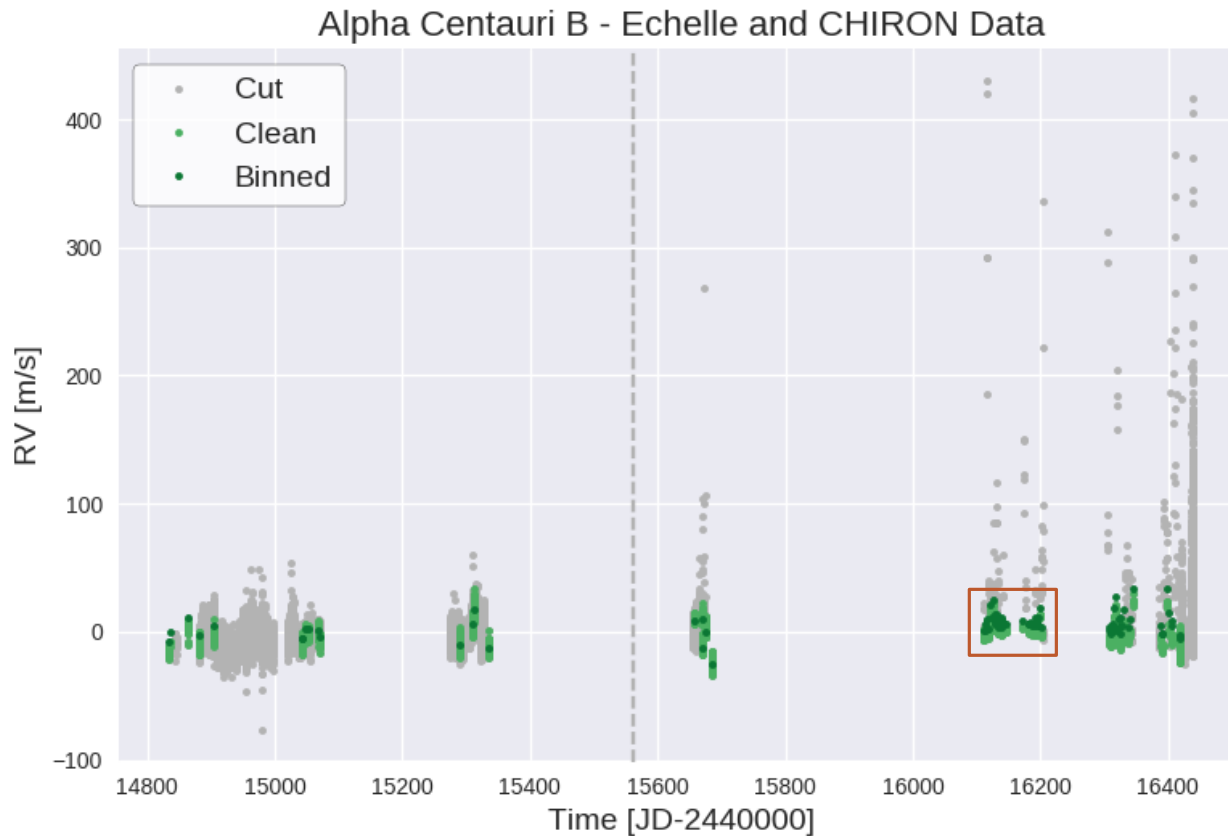
Data Cleaning:

Vet for Nights with High Noise



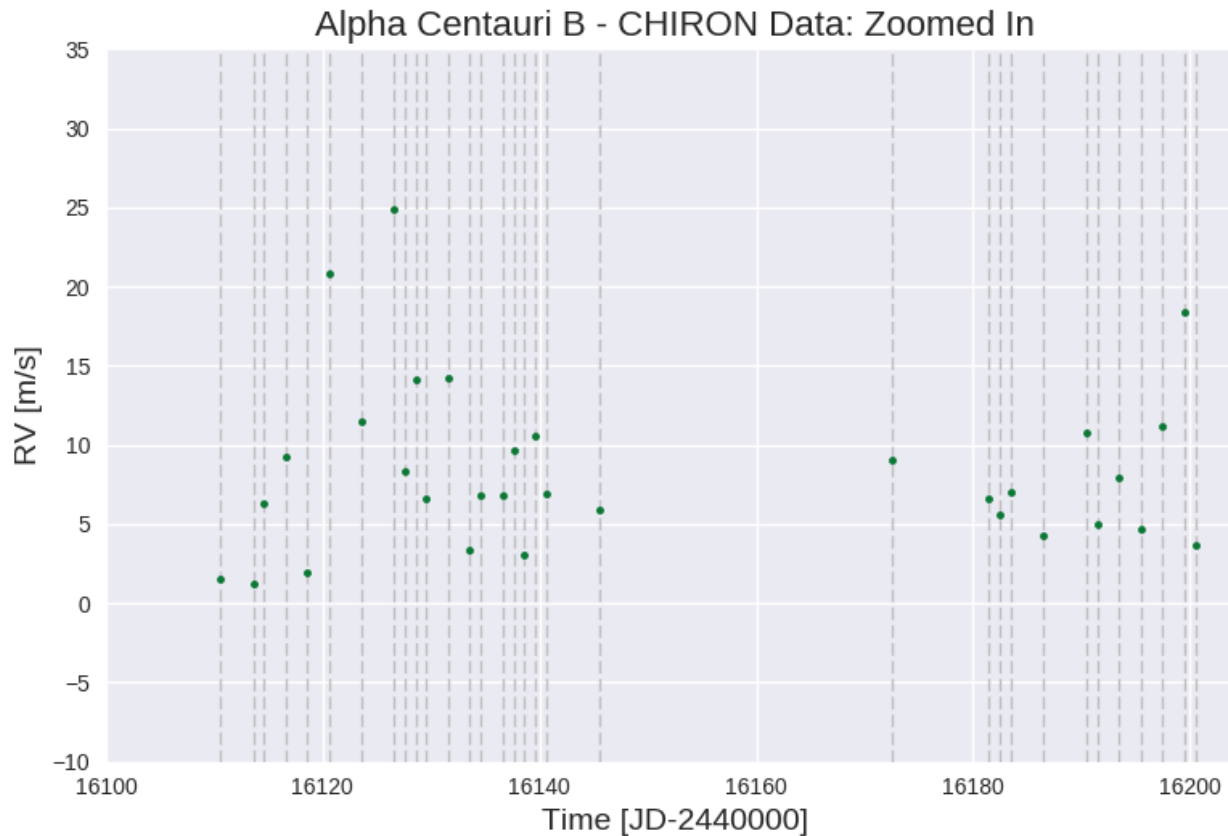
Data Cleaning:

Bin Observations by Night



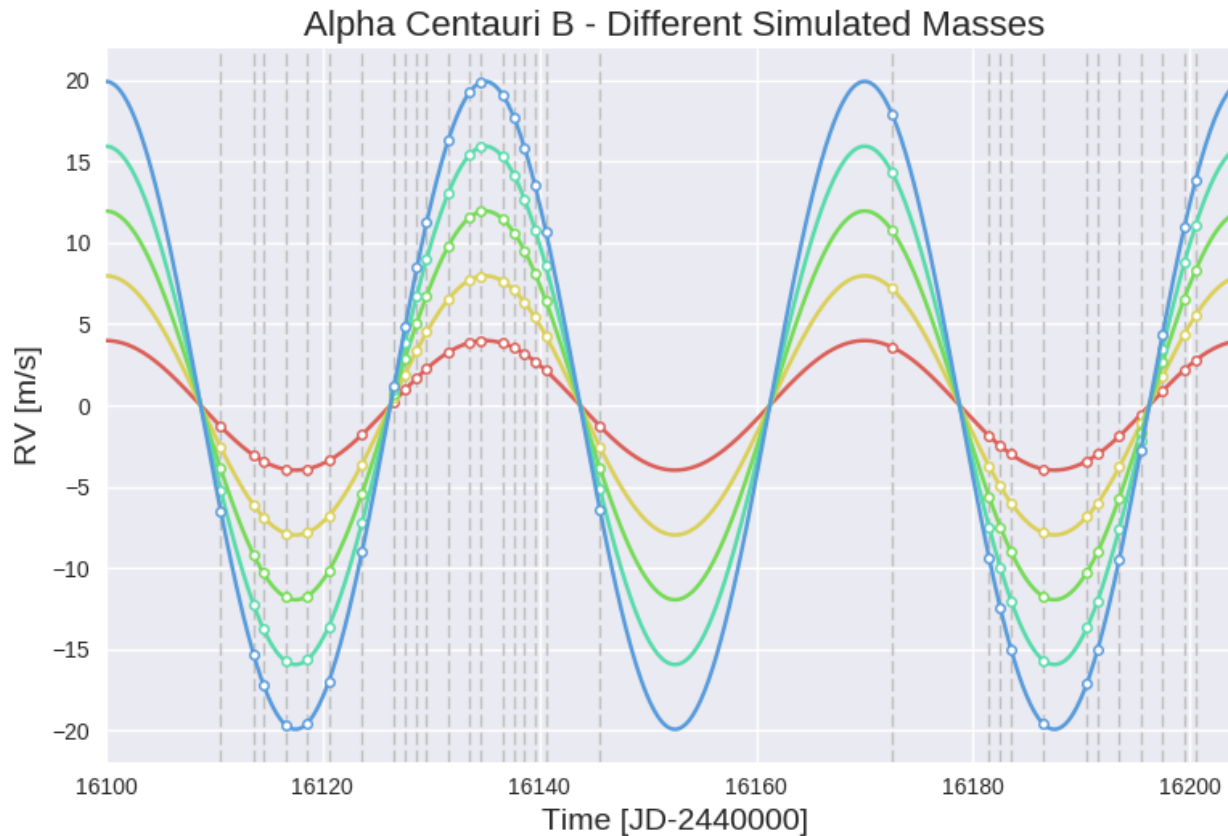
Simulations:

Maintained Time of Observations



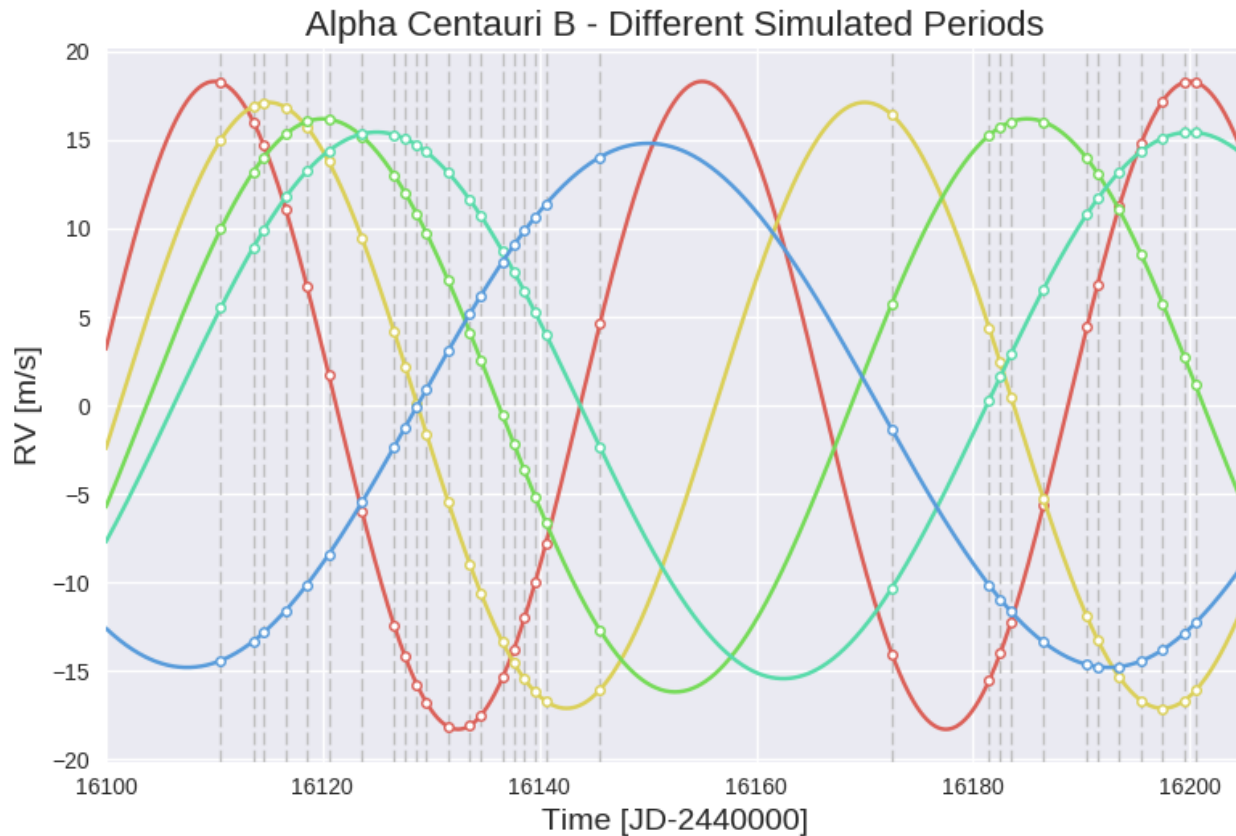
Simulations:

Simulated Radial Velocity Signals

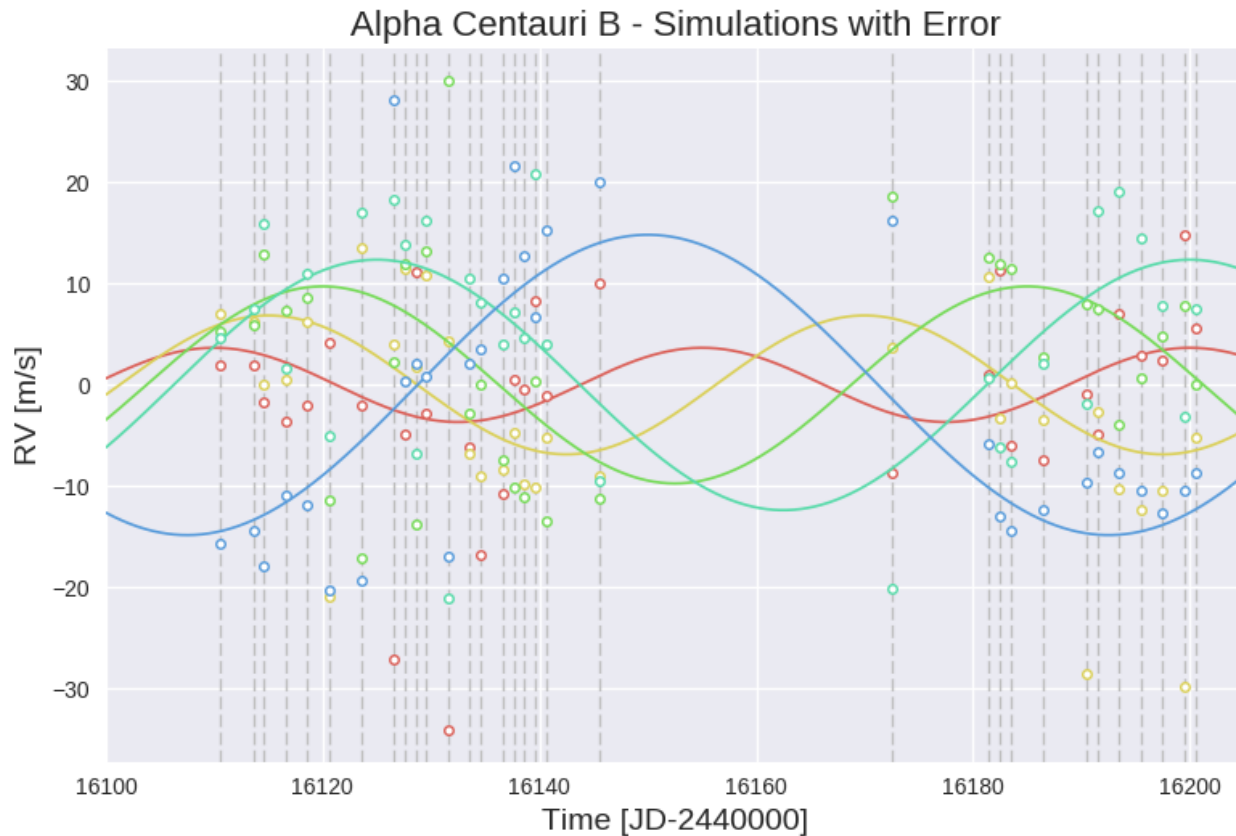


Simulations:

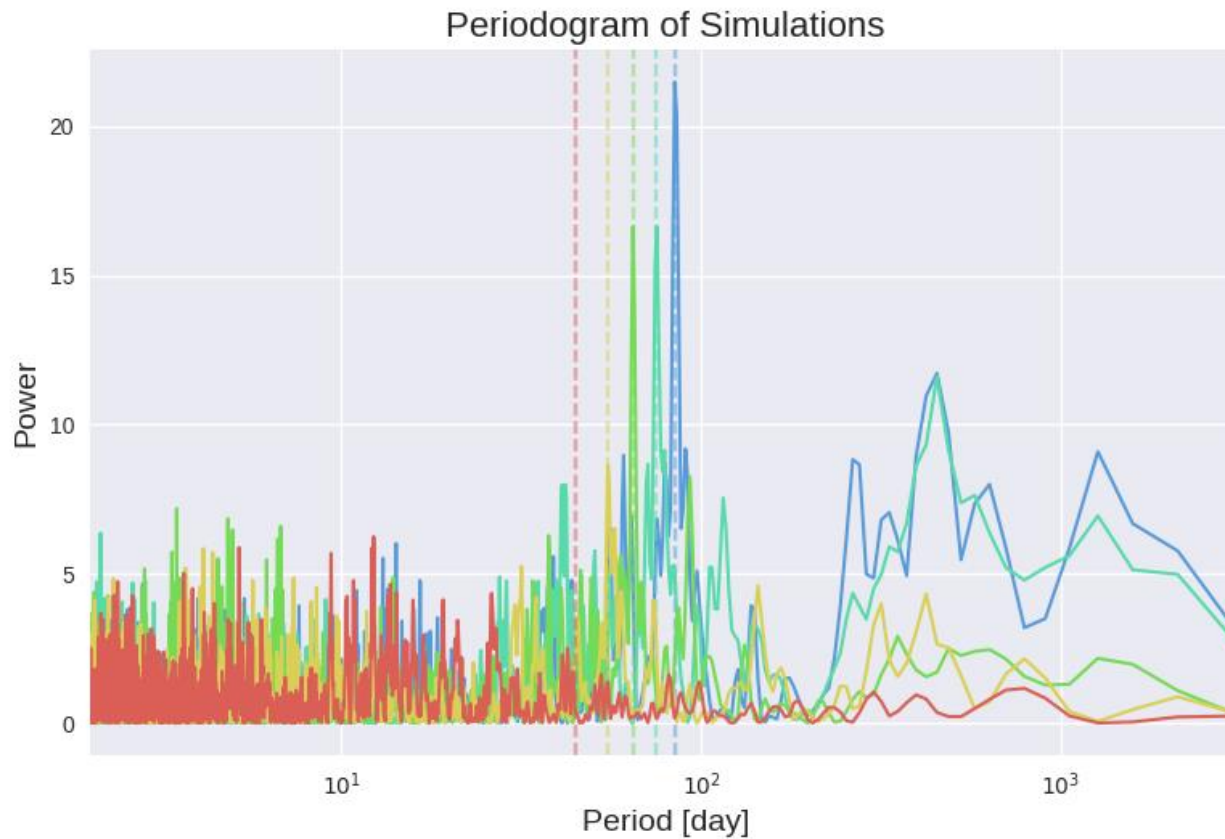
Simulated Radial Velocity Signals



Simulations: Introduced Errors

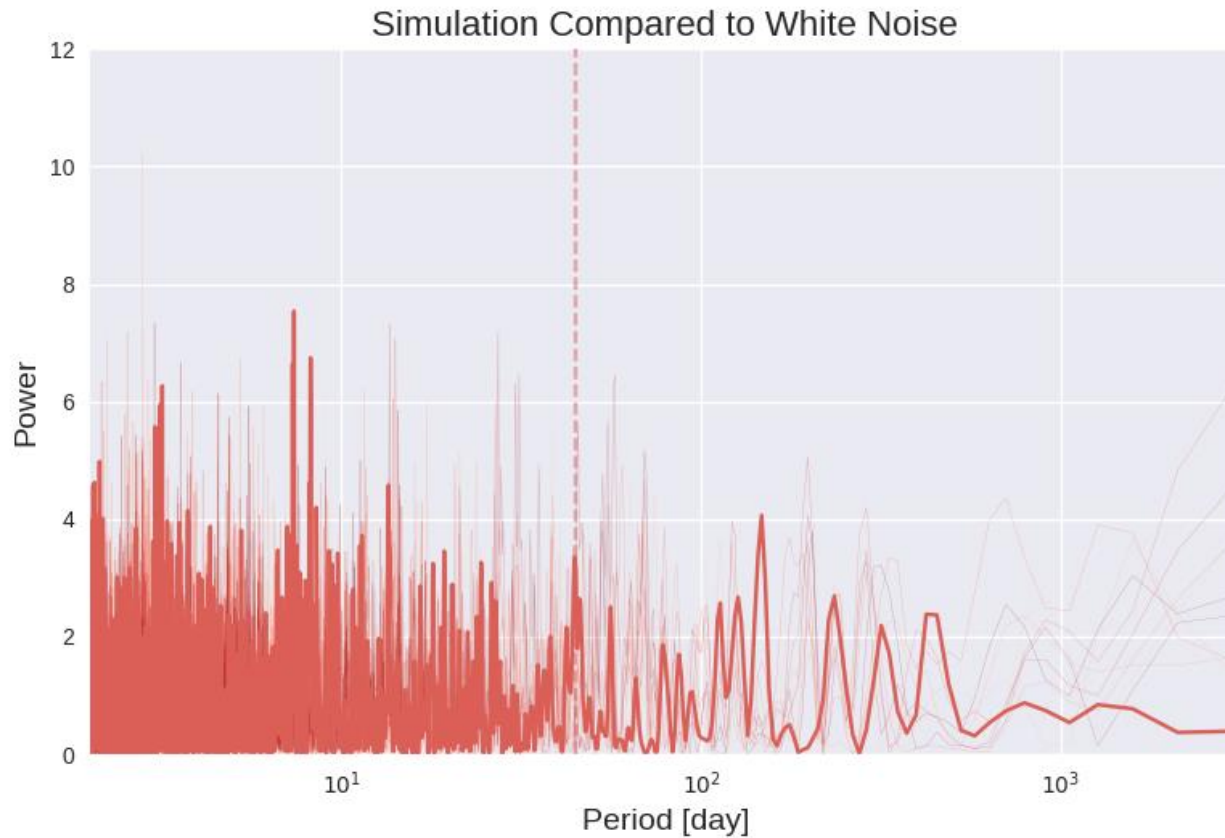


Simulations: Periodograms

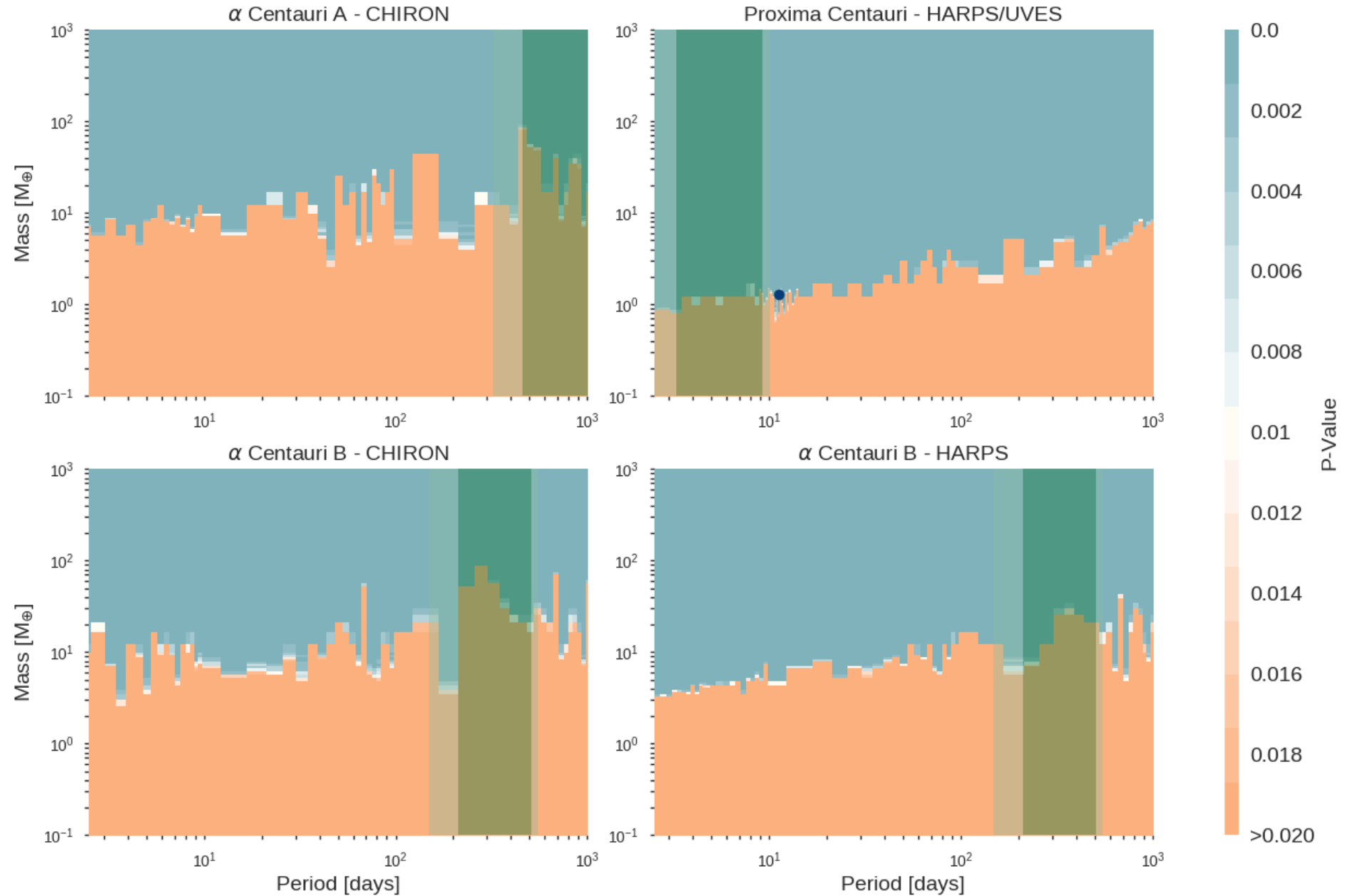


Simulations:

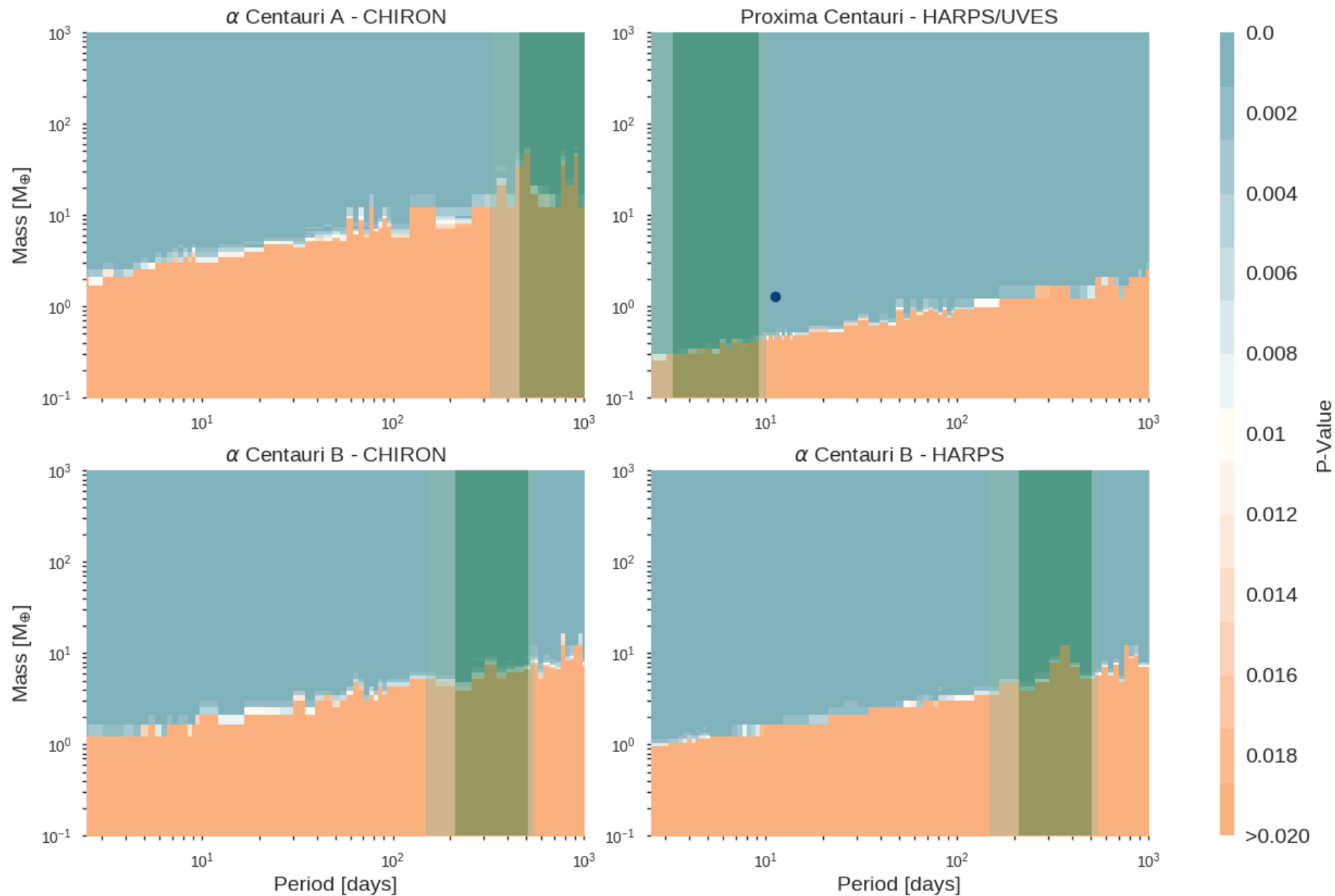
Comparison to White Noise



Simulations Using Residuals



Simulations Using Reported Errors



Residuals vs. Errors

