



Third body around the semi-detached binary system V527 Dra

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Intro and motivation

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Comprehensive analysis of the eclipsing binaries V527 Dra and V2846 Cyg

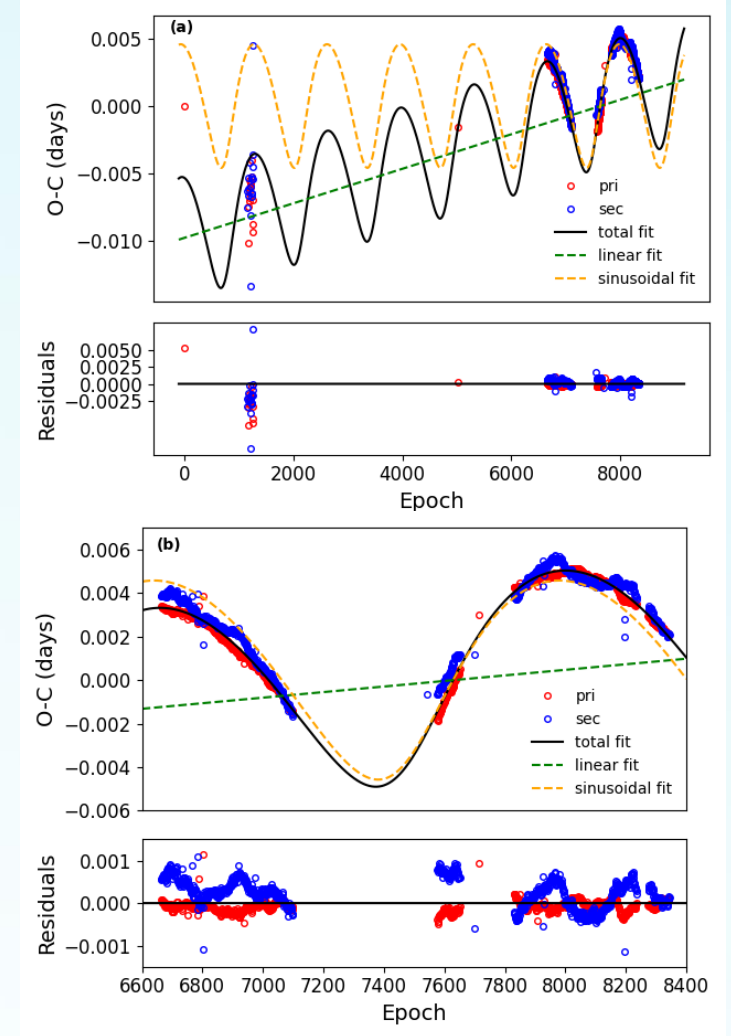
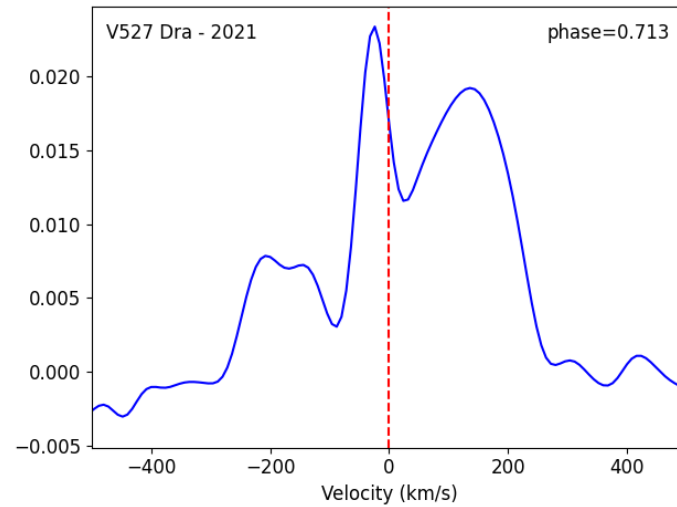
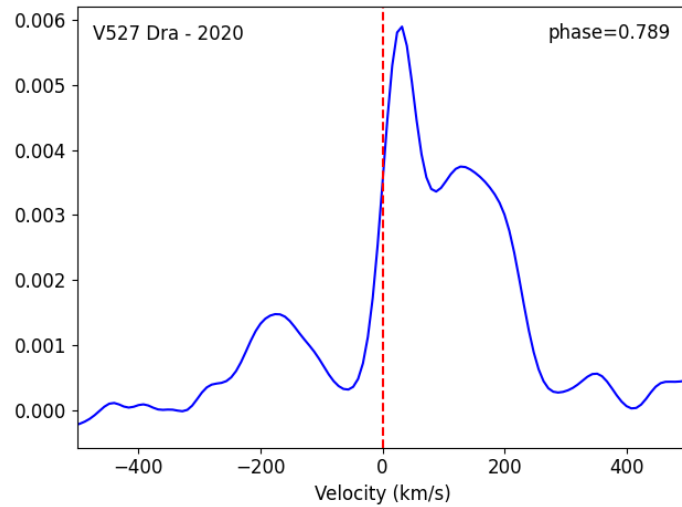
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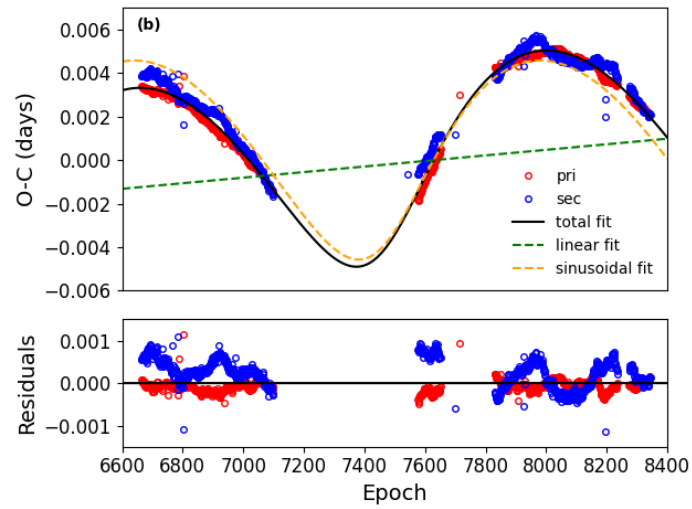
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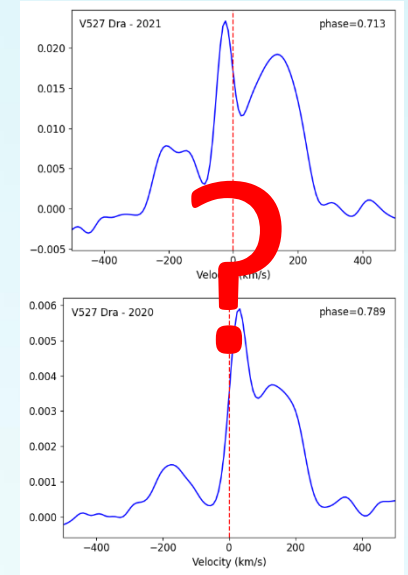
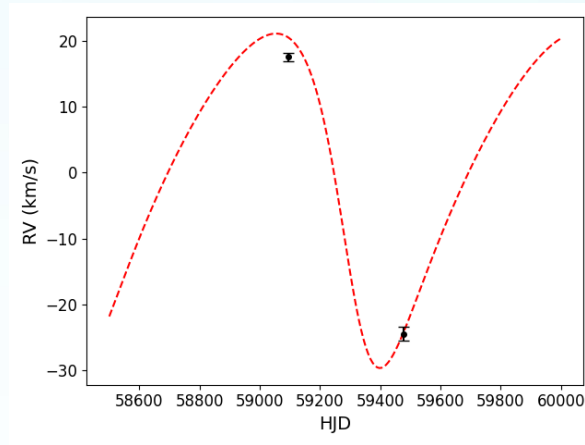
Intro and motivation



LiTE + co-planar orbit assumption

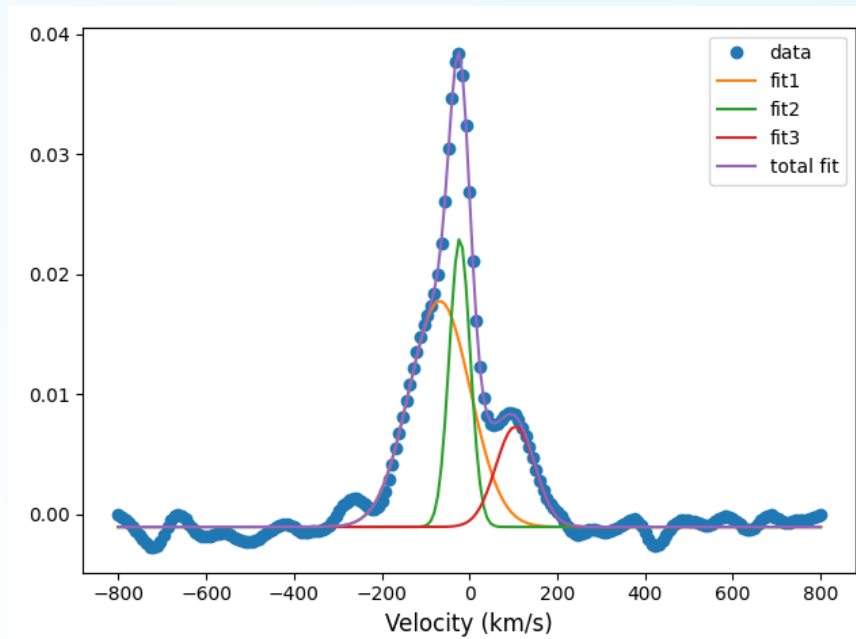
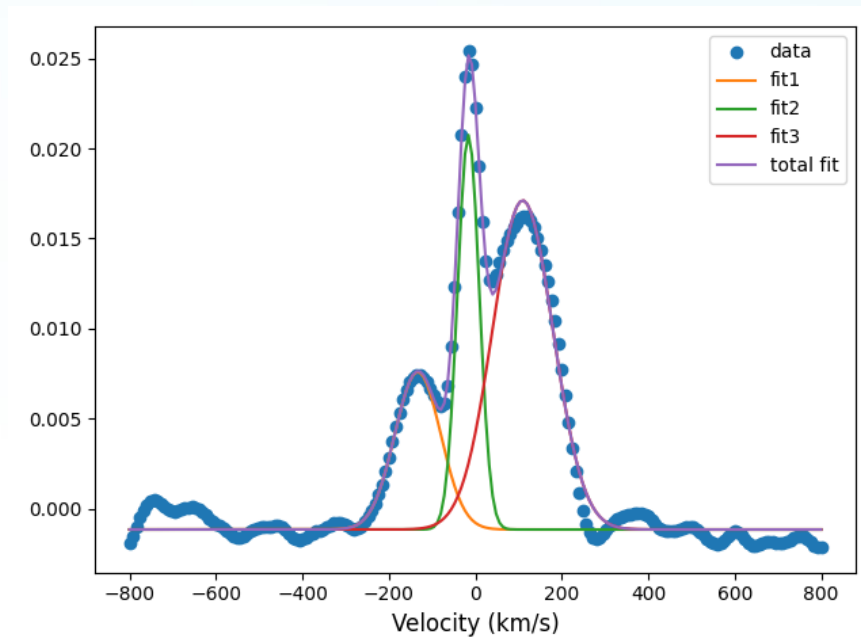
- $M_3 = 0.999 \pm 0.031 M_{\odot}$
- $P_3 = 2.733 \text{ y}$

$$V_{\text{rad}} = \frac{2\pi a_3 \sin i_3}{P(1-e^2)^{1/2}} [\cos(v + \omega_3) + e \cos \omega_3] + V_{\gamma 3}$$

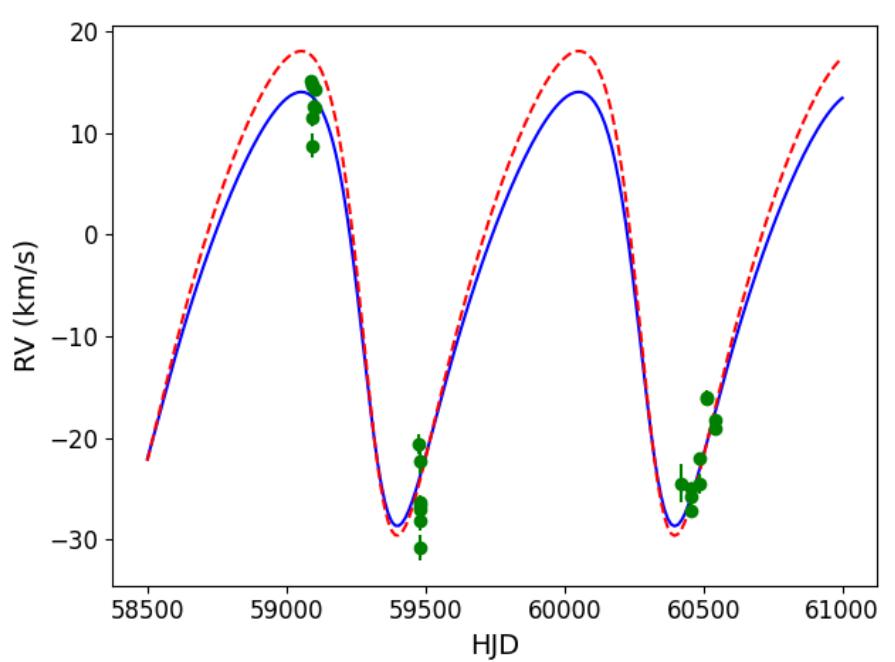


New spectroscopic observations and RV determination

- 2024 April → Lijiang Observatory
- 2024 May – August → DAO
- combination of three Gaussians



Results



$$V_{rad} = \frac{2\pi a_3 \sin i_3}{P(1 - e^2)^{1/2}} [\cos(v + \omega_3) + e \cos \omega_3] + V_{\gamma 3}$$

$$\frac{a_{12} \sin i_3}{a_3 \sin i_3} = \frac{M_3}{M_1 + M_2} \quad f(M_3) = \frac{(M_3 \sin i_3)^3}{(M_1 + M_2 + M_3)^2}$$

$M_3 = 1.19 \pm 0.11 M_{\odot}$, $i_3 = 60.0 \pm 2.0^\circ$ and $V_{\gamma 3} = -3.72 \pm 0.54 \text{ km/s}$.



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THANK YOU!