

Asteroseismology for the masses-pulsations in binary stars

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Introduction

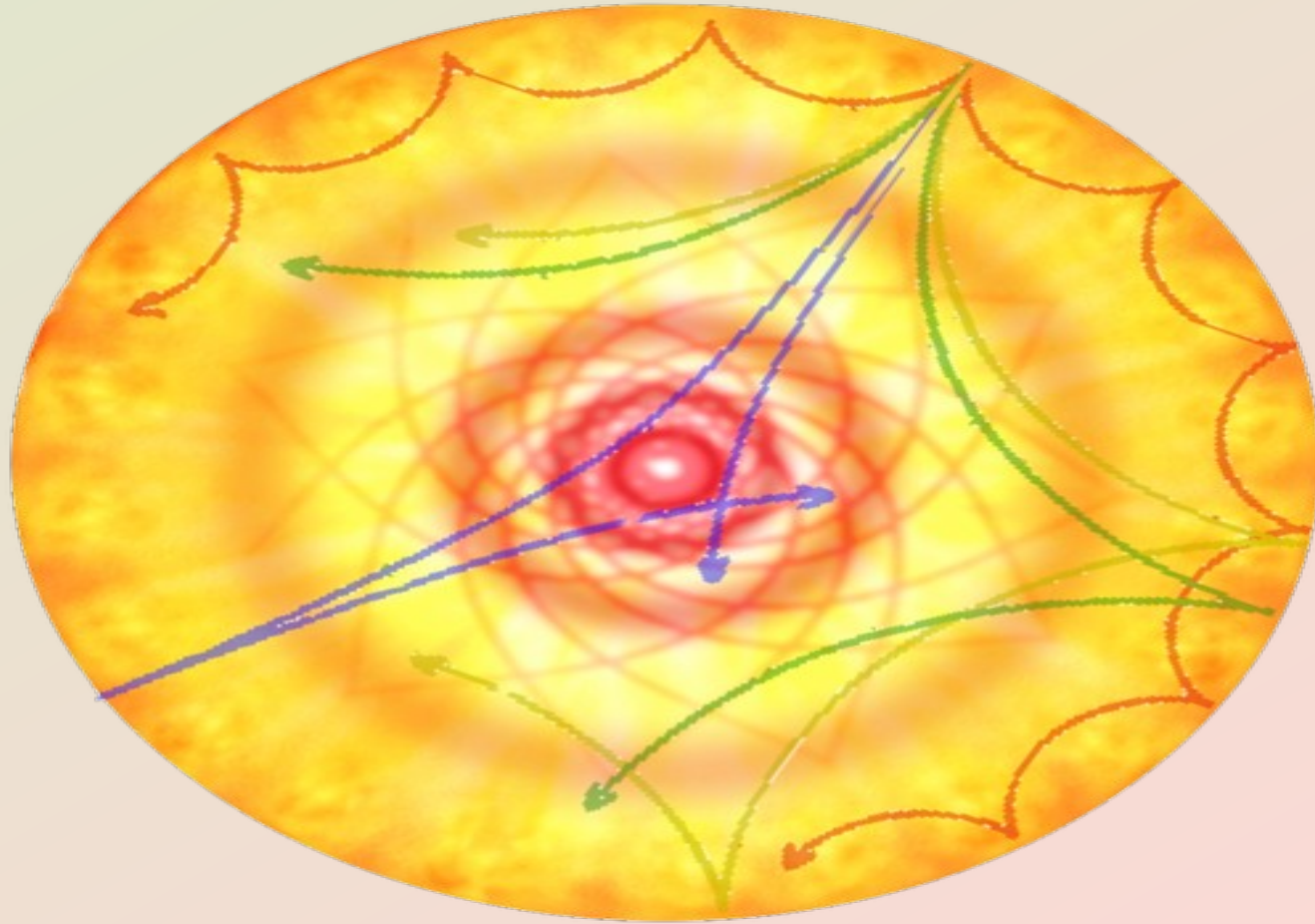


Image credit: IAC

Photometric and pulsation analysis

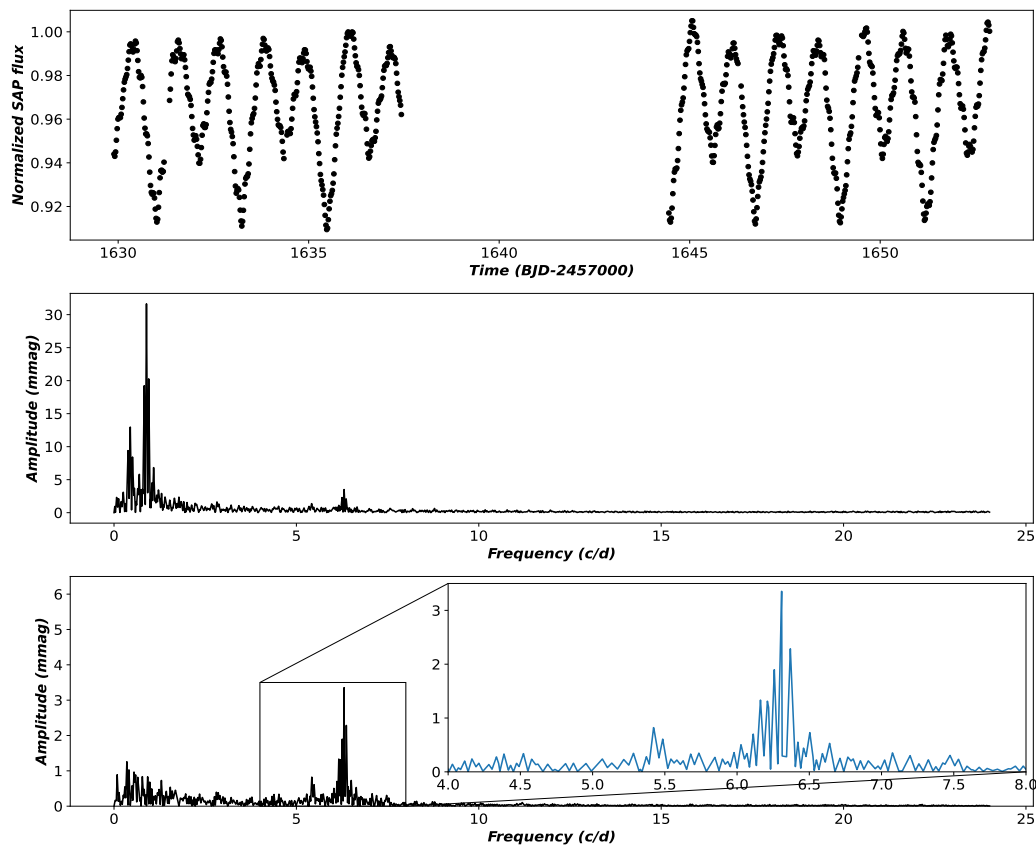


Fig. 1: A sample figure of the light curve and DFT of a beta Cep pulsator in EB

- Submitted First author manuscripts
- β Cephei pulsators in eclipsing binaries observed with TESS. **Manuscript submitted to ApJS**
- Photometric sample of beta Cep pulsators in eclipsing binaries observed with TESS. **Accepted for publication as a conference proceeding paper in 'Contributions of the Astronomical Observatory Skalnaté Pleso'.**

Table 1: An excerpt from the list of massive pulsators in eclipsing binaries in our sample

TIC ID	Class of Variability	P (d)	Puls.dom (c/d)	freq.	Pulsation amp. (mmag)	S/N
TIC 122314621	EB+bCep+SPB+ELL	2.2464(4)	6.3086		3.3545	53.3
TIC 144535458	EB+bCep?	4.1317(5)	5.0968		1.0016	9.8
TIC 220430912	EB+bCep/SPB	2.032671(3)	3.2028		1.2072	27.4
TIC 247315421	EB+bCep	3.9213(6)	5.5517		10.6175	38.2
TIC 25041731	EB+bCep?	20.6094(8)	13.9797		0.4237	30.2
TIC 30562668	EB+bCep	3.8522(2)	8.7329		2.8359	93.9
TIC 434893323	EB+bCep	2.72914(3)	5.3415		0.4052	13.2
TIC 465870314	ROT/ELL/EB+bCep	1.8837(6)	13.7095		0.3660	6.6
TIC 469247903	EB+bCep?	4.47800(2)	5.7216		0.1346	5.5
TIC 60433558	EB+bCep	10.798(1)	6.7726		7.6322	78.8

Spectroscopic follow-up

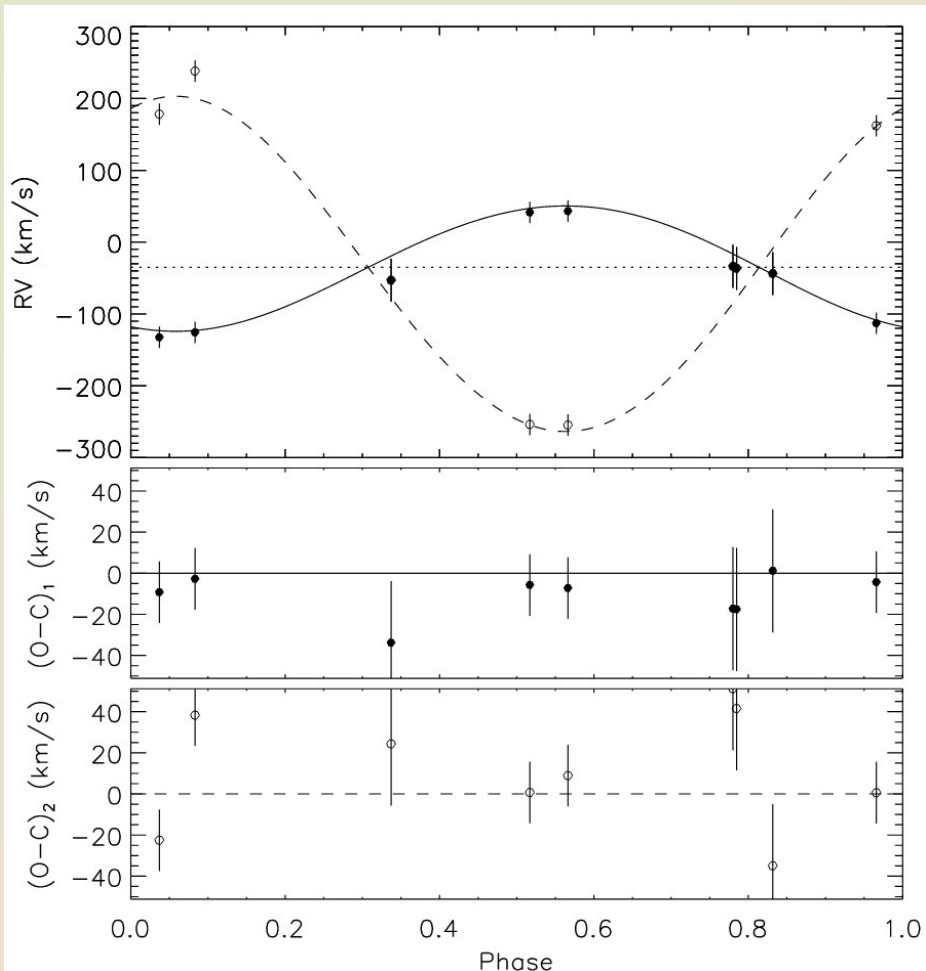


Figure 2: RV fit of V1216 Sco

Table 1: Fitted parameters of V1216 Sco

Parameter	Value
Adjusted Quantities	
P (d)	3.9369000 ± 0.0000000
T_p (HJD)	$2458601.45480 \pm 0.0000000$
e	$0.022095000 \pm 0.026987000$
ω (deg)	158.11843 ± 3.0519990
γ (km/s)	-35.088653 ± 4.5952910
K_1 (km/s)	87.220456 ± 7.0972170
K_2 (km/s)	233.25990 ± 7.2654010
Derived Quantities	
$M_1 \sin^3 i$ (M_\odot)	9.7651936 ± 0.86328453
$M_2 \sin^3 i$ (M_\odot)	3.6513976 ± 0.48784030
$q = M_2/M_1$	$0.37391963 \pm 0.032579093$
$a_1 \sin i$ (10^6 km)	4.7206411 ± 0.38413368
$a_2 \sin i$ (10^6 km)	12.624748 ± 0.39329811
$a \sin i$ (10^6 km)	17.345389 ± 0.54976549
Other Quantities	
χ^2	18.767804
N_{obs} (primary)	9
N_{obs} (secondary)	9
Time span (days)	85.751540
rms_1 (km/s)	14.727389
rms_2 (km/s)	30.204839

Conferences, workshops, summer school and observations

- International conferences: 4 talks and 1 poster (AFAS, SALT highlights, EAS, TASC/KASC, AISAS)
- national Conference: 1 talk (ASN)
- 1 summer school (MESA/GYRE)
- 2 SALT observation proposals as PI (~18 hr), 1 SALT and CHIRON-proposals as Col and 1 observation runs at Skalnaté Pleso Observatory.

Thank you