



PHOTOMETRIC AND SPECTROSCOPIC VARIABILITY OF THE Be STAR HD 171219

Eduardo Janot-Pacheco¹, L. Andrade¹, M. Emilio¹ and the
CoRoT Be Team

¹ University of Sao Paulo, Brazil

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HD 171219 $V = 7.6$

LRc06 July - September 2010 (77.6 days)

Classical Be star:

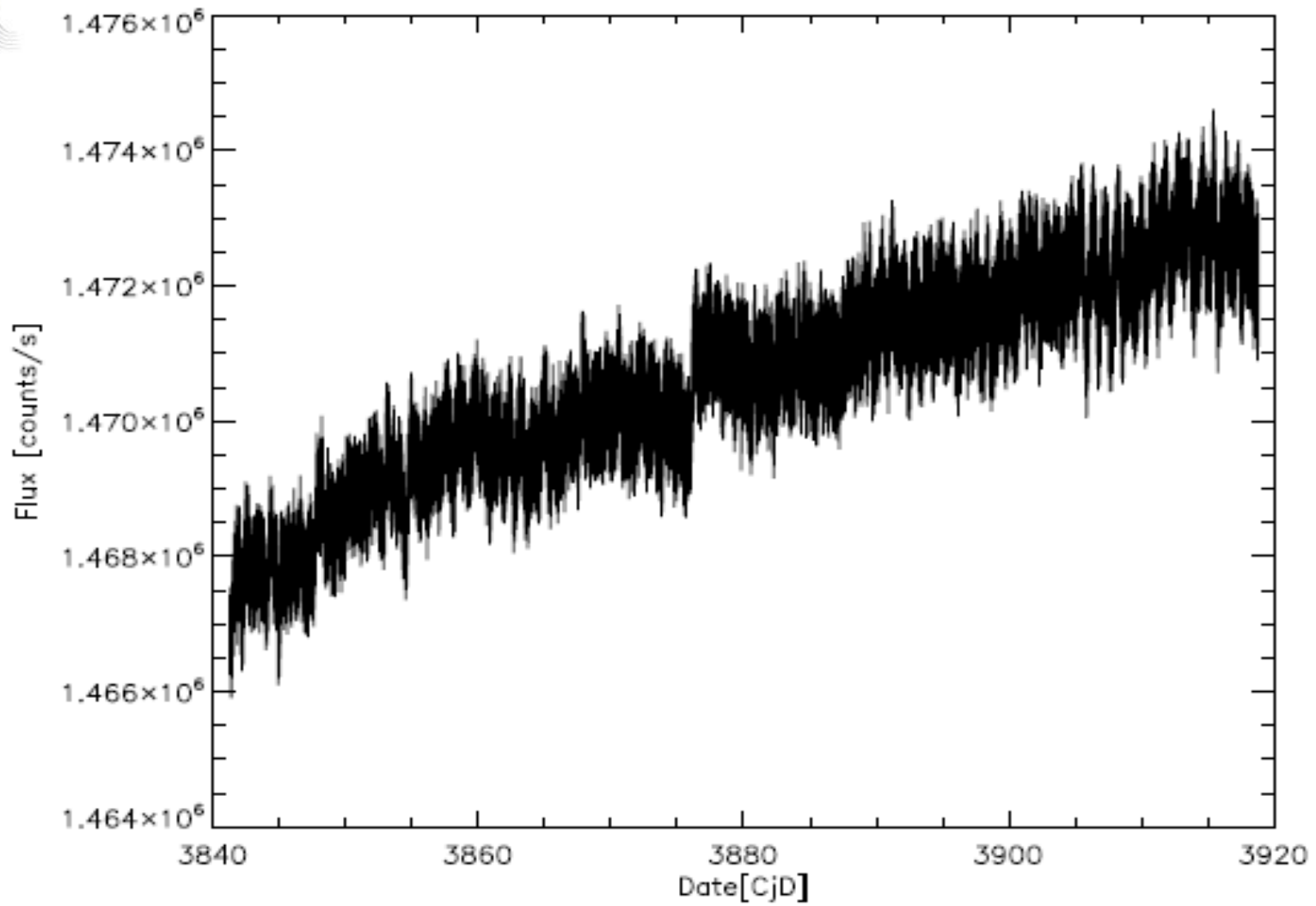
rapid rotators, Sp late O to early A V-III

Balmer emission +IR excess →

→ equatorially concentrated CS envelope,
feed by sporadic mass ejection episodes.

Frémat et al. (2006): fit of low-resolution spectral
lines → $T_{eff} = 16000 \pm 500$, $\log g = 3.6 \pm 0.01$

(B5 III), $V \sin i = 326 \pm 12$ km/s, $i = 81 \pm 4^\circ$

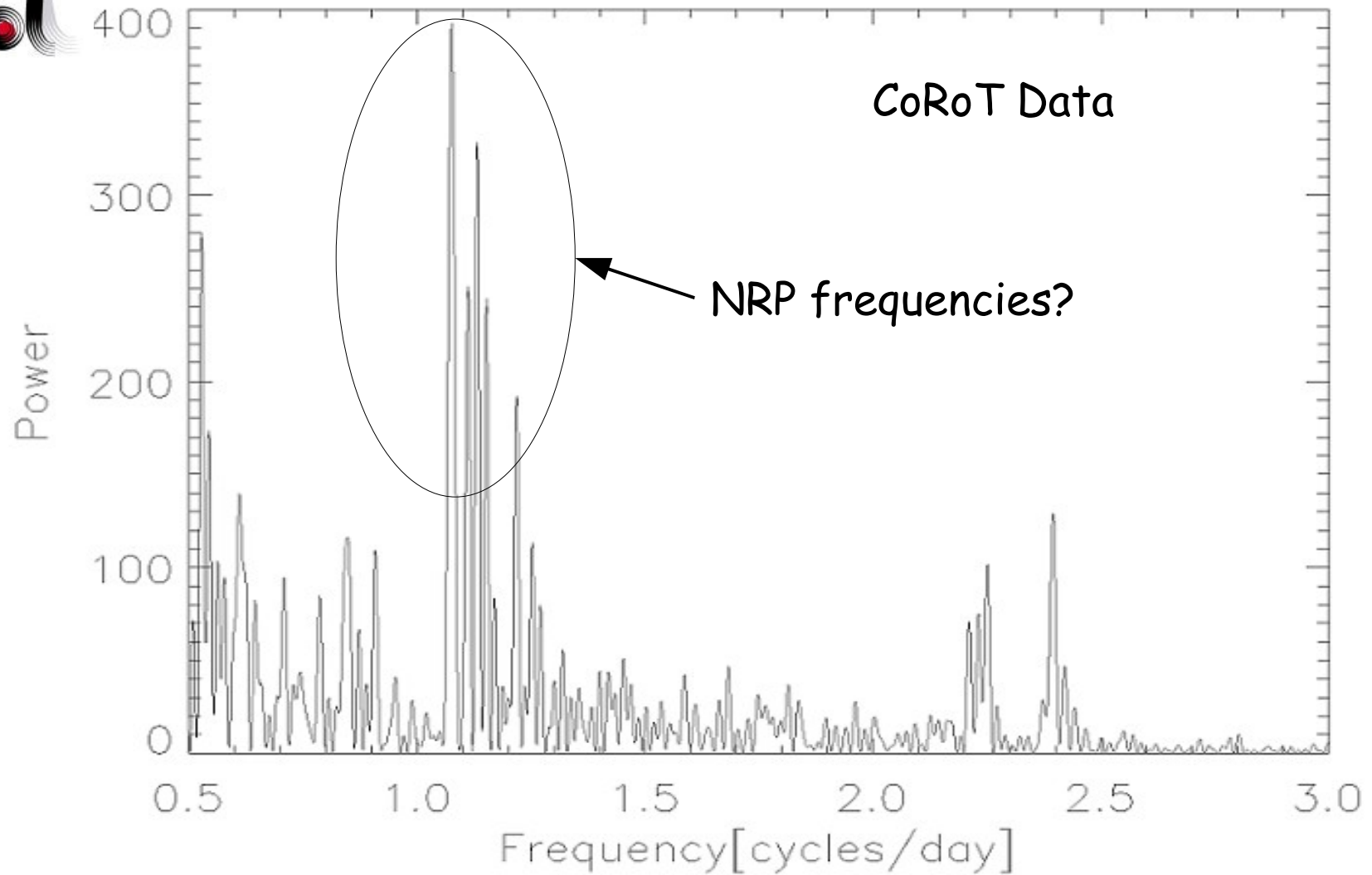


CoRoT light curve for HD 171219

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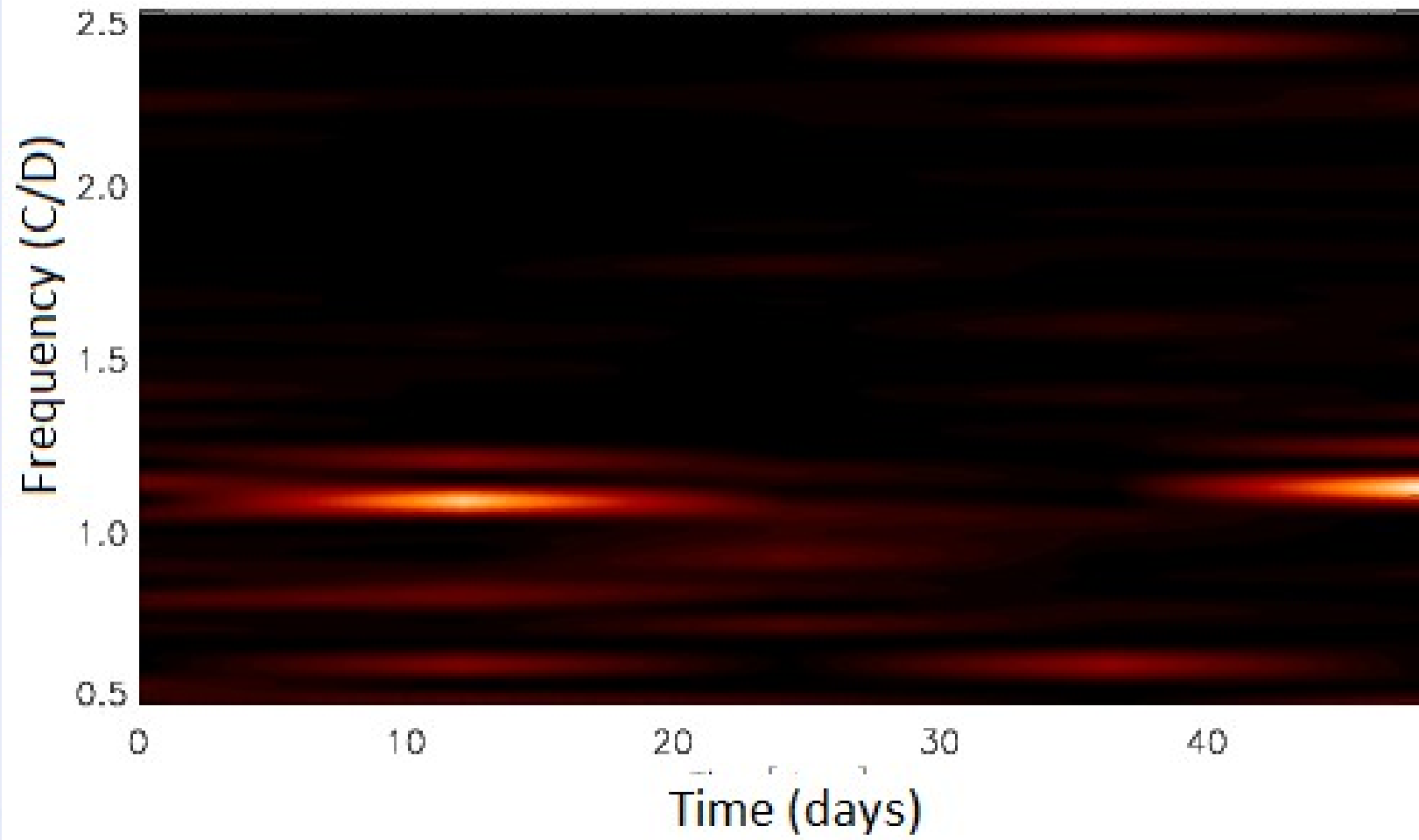
HD 171219 POWER SPECTRUM



Power spectrum using the CLEANEST algorithm (Foster

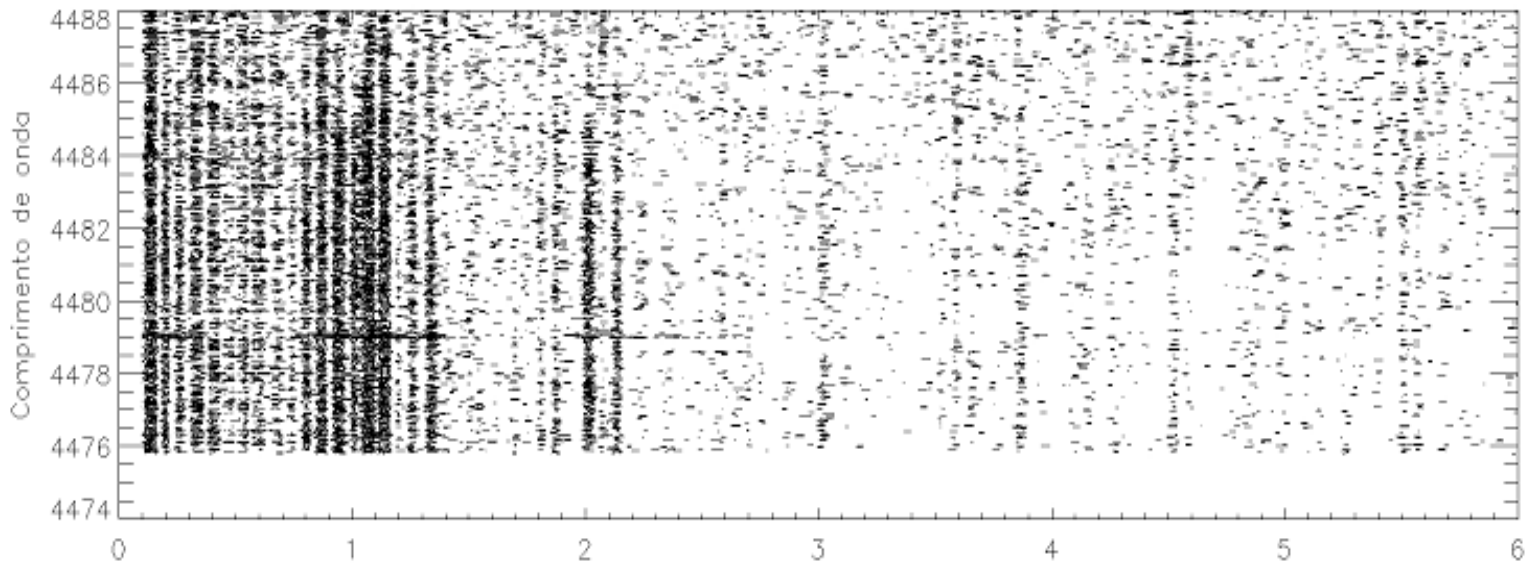
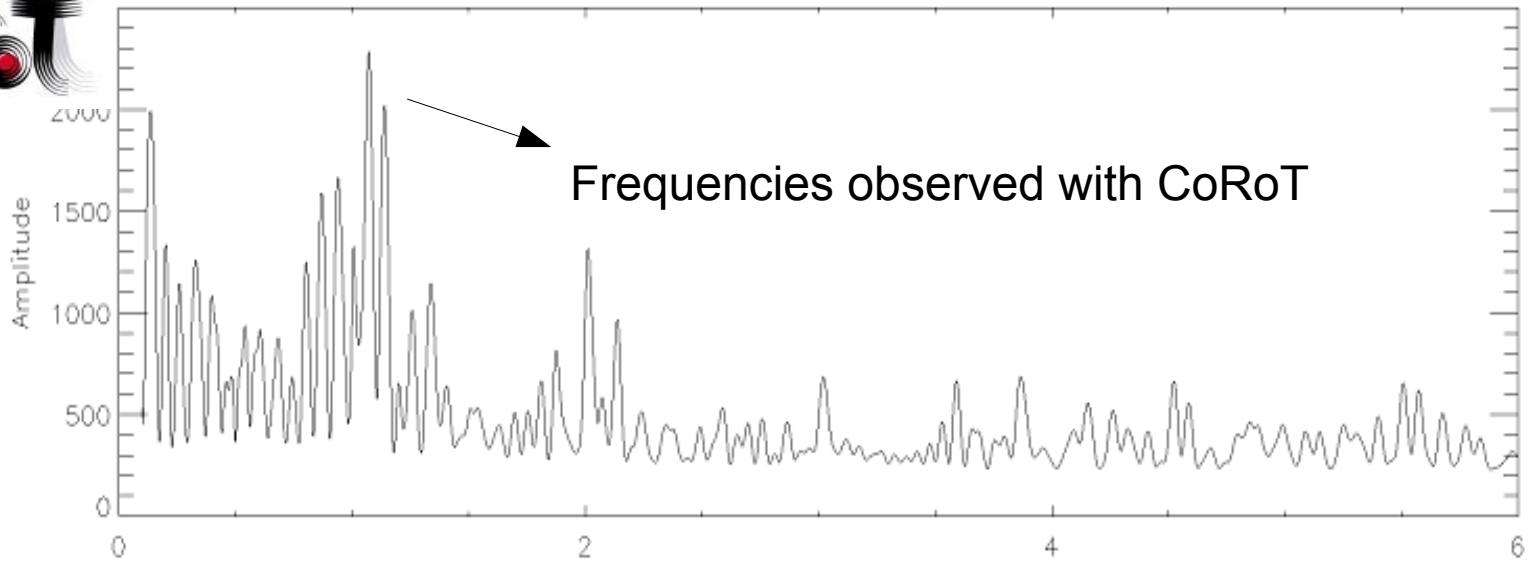
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1995)



NRP frequencies intensities variable in time

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Periodogram made with HARPS MGII 4481 line observations

HD 171219 rotation frequency from Fremat et

al. results: $\nu_{\text{rot}} = 1.02 \pm 0.04 \text{ c/d}$

We found a **triplet**: 1.113, 1.130 and 1.146 c/d

$(\delta \nu = 0.016 \text{ s}^{-1})$ + its

harmonics

+ other 12 frequencies above noise level

(to be followed).





→ Spectroscopic campaign at ESO + OHP
(just before CoRoT observations)

a) **HARPS**: at 3.6m La Silla

R = 80000 41 spectra (June-July 2010)

b) **SOPHIE**: at 1.93 m OHP

R = 40000 12 spectra (late June 2010)

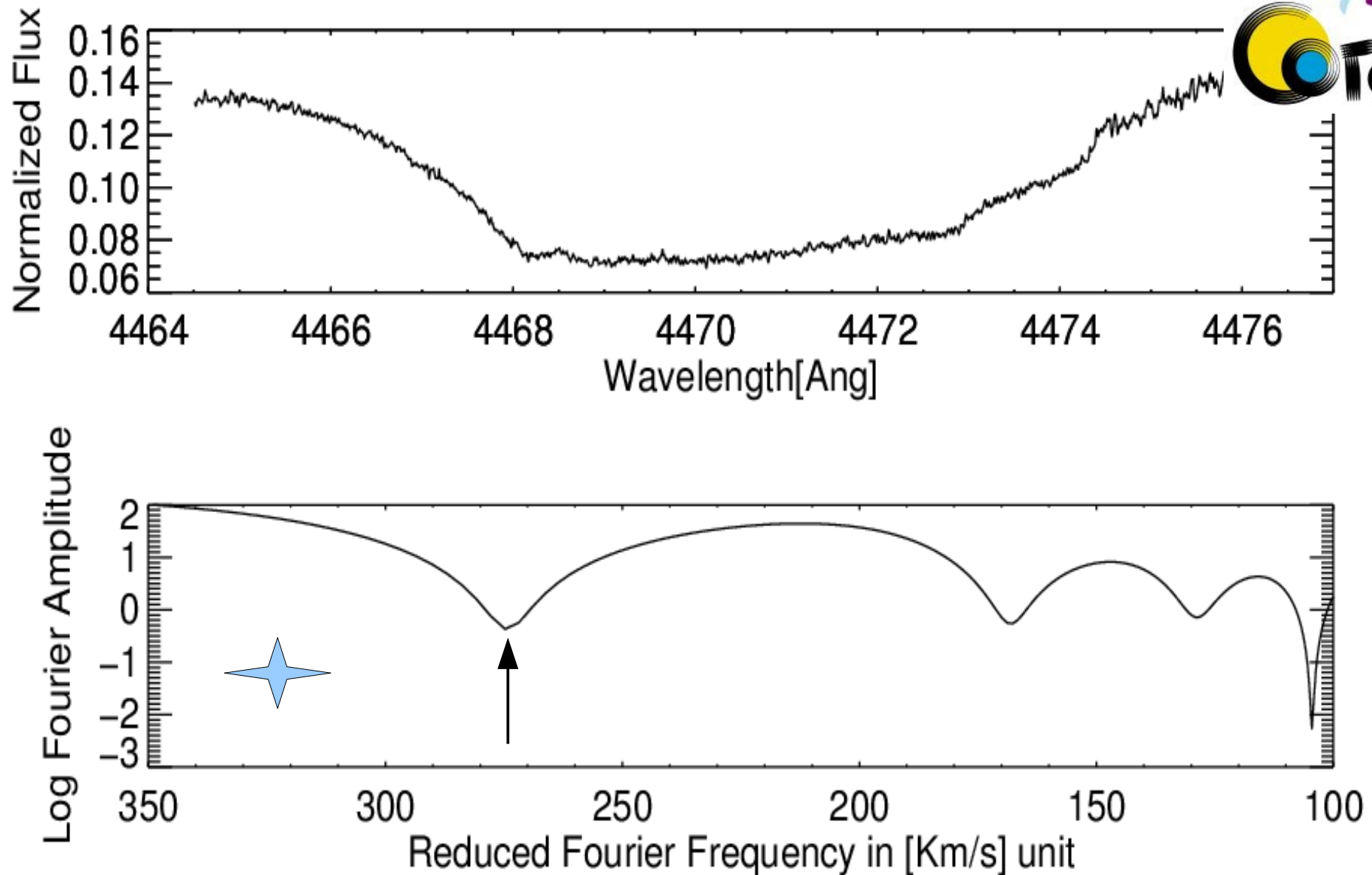
Balmer and HeI lines partially filled →

→ dense CS envelope at the epoch

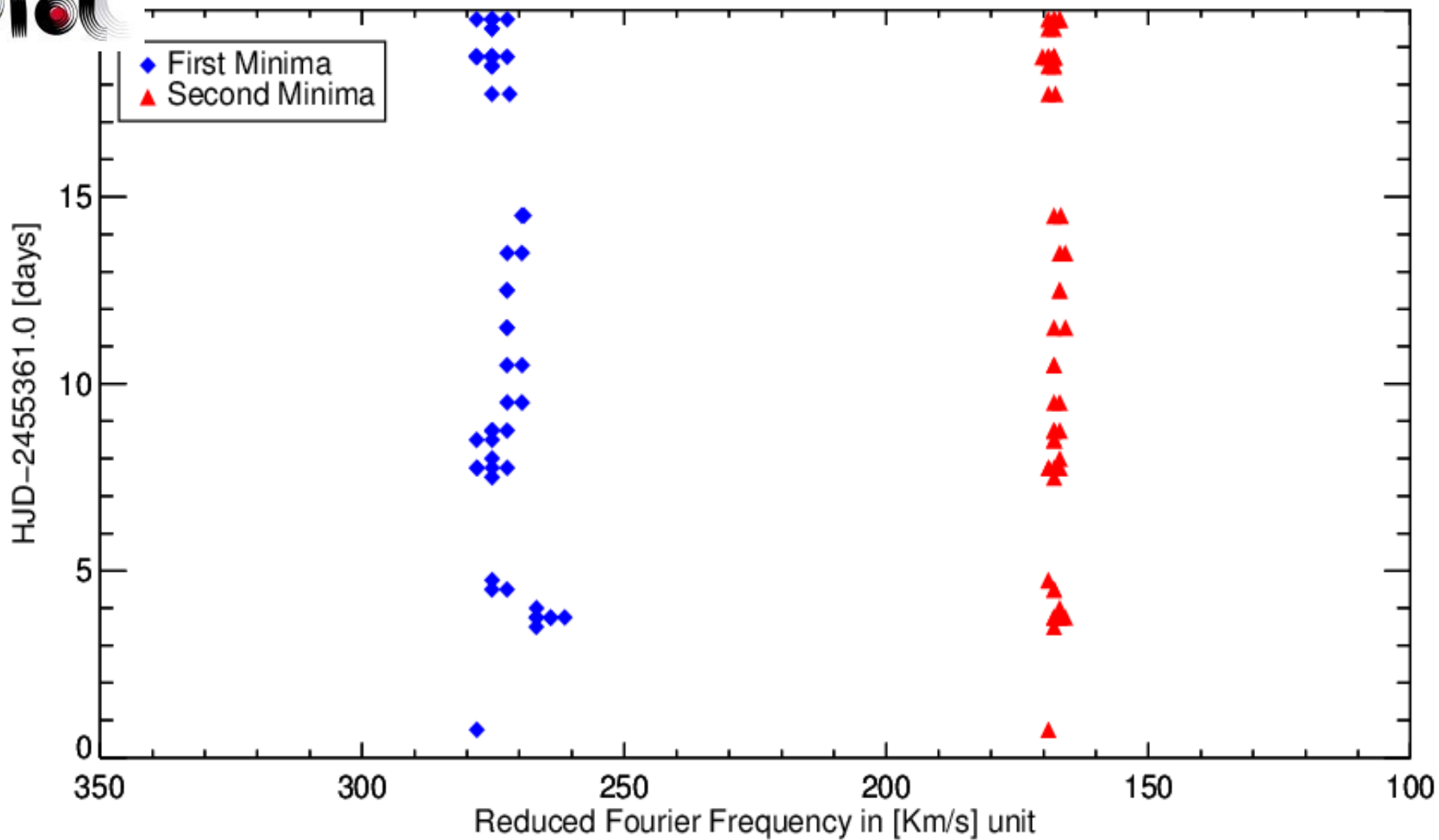
DATE	Instrument	# of Spectra	Covered Time[hours]
2010.06.14	HARPS	02	01
2010.06.16	HARPS	07	07
2010.06.18	HARPS	03	03
2010.06.21	HARPS	06	07
2010.06.22	HARPS	05	06
2010.06.22	SOPHIE	01	
2010.06.23	SOPHIE	02	01
2010.06.24	SOPHIE	02	01
2010.06.25	SOPHIE	02	01
2010.06.26	SOPHIE	02	01
2010.06.27	SOPHIE	02	01
2010.06.28	SOPHIE	01	
2010.07.01	HARPS	11	07
2010.07.02	HARPS	07	07



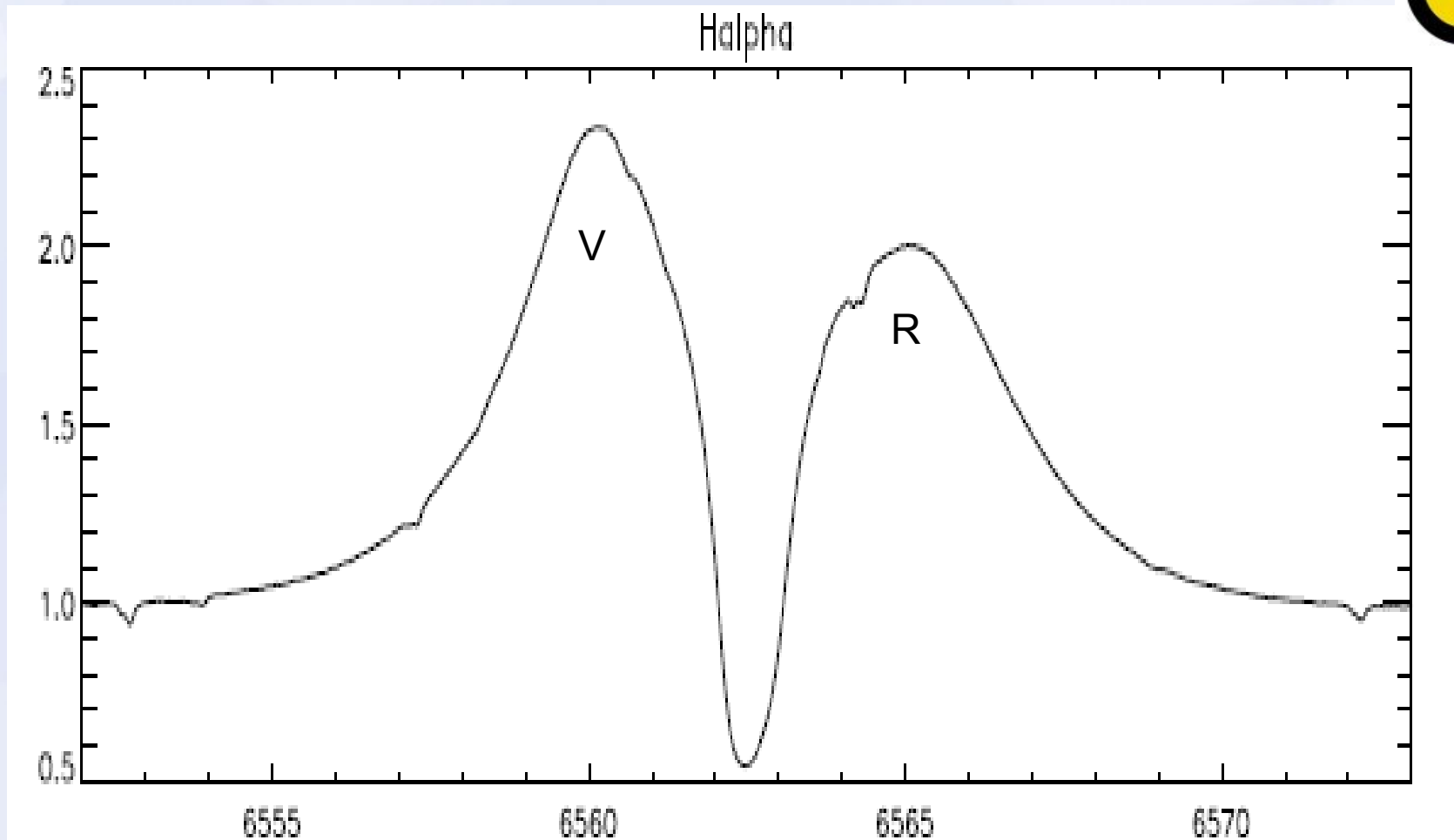
Ground-based spectroscopic observations of HD171219 9



Comparison of $Vsini$ estimates. The star is Fremat et al's result by fitting low-resolution spectral lines. The arrow indicates our result (first minimum of TF).



No variations in the minima of V_{sini} determined from TF of HeI spectral lines



Violet and Red peaks of H α

V/R variations are due to one-armed oscillations in the CS disk

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CONCLUSION:

It is worth making an intensive ground-based

spectroscopic campaign on HD 171219 → →

→ → powerfull frequency analysis → →

NRP azimuthal m and degree l , rotation period

GRACIAS!