

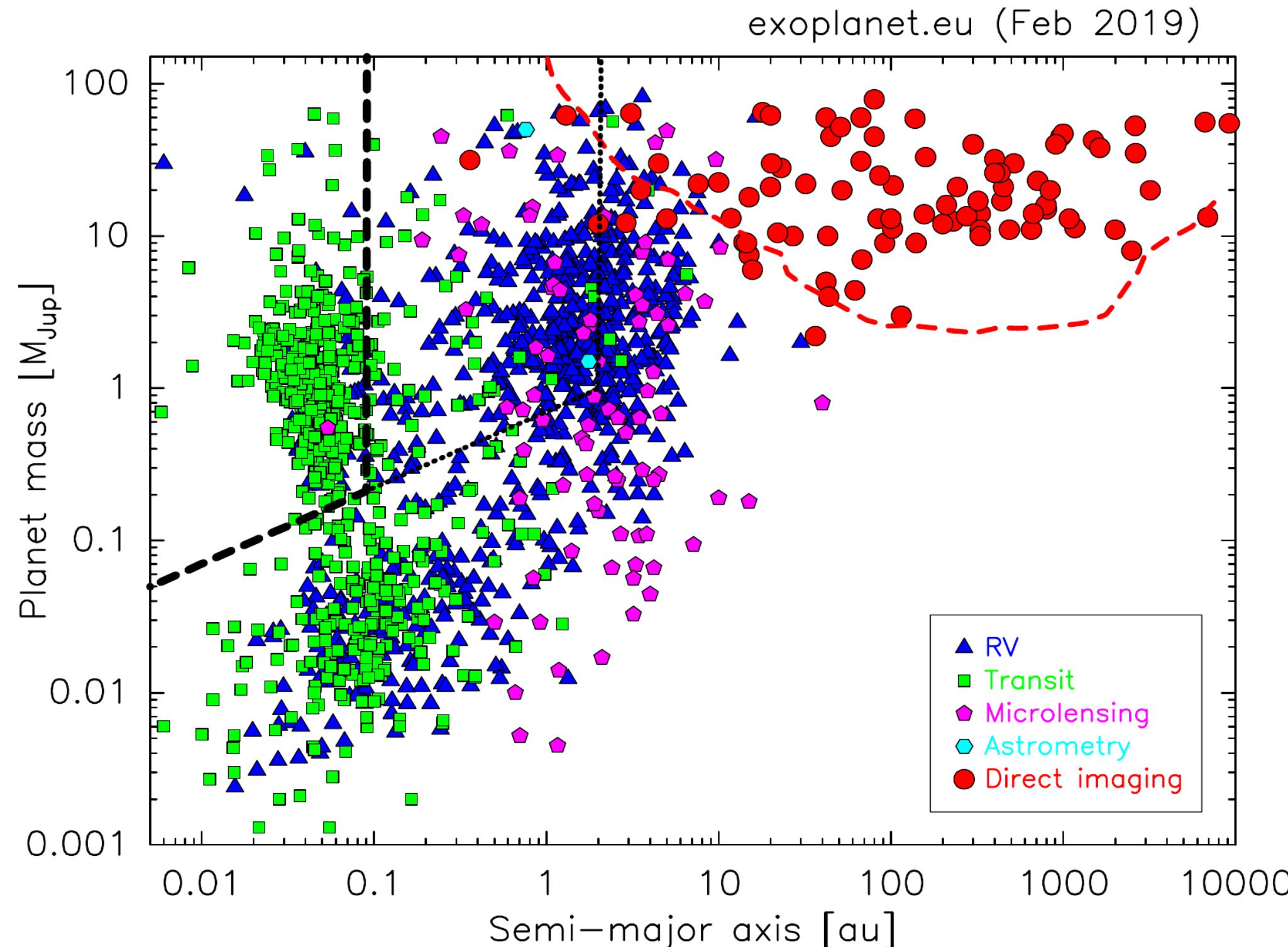
Radial Velocity Survey for Planets around Young stars RV-SPY

Olga Zakhozhay

R. Launhardt, S. Brems, Th. Henning, A. Müller, T. Trifonov, M. Kürster, S. Reffert, A. Pavlov, G. Kennedy, J. Patel

Great Barriers in Planet Formation, Palm Cove – 23.07.2019

Search for Planets around Young Stars with



Search for Planets around Young Stars with

**Radial Velocity
(RV-SPY)**

FEROS, 2.2m telescope (La Silla)

435h (p101-103, 2018-2019)

11 researchers from 3 institutes

111 stars

<5 au

debris disks

**Imaging
(ISPY)**

NaCo, UT1 (Paranal)

Instrument:

Observing time granted:

120n over 4.0yr (2015-2019)

Science team:

22 researchers from 6 institutes

Targets sample:

~230 stars

Science goal:

Characterizing the Giant Planets population at the separation of

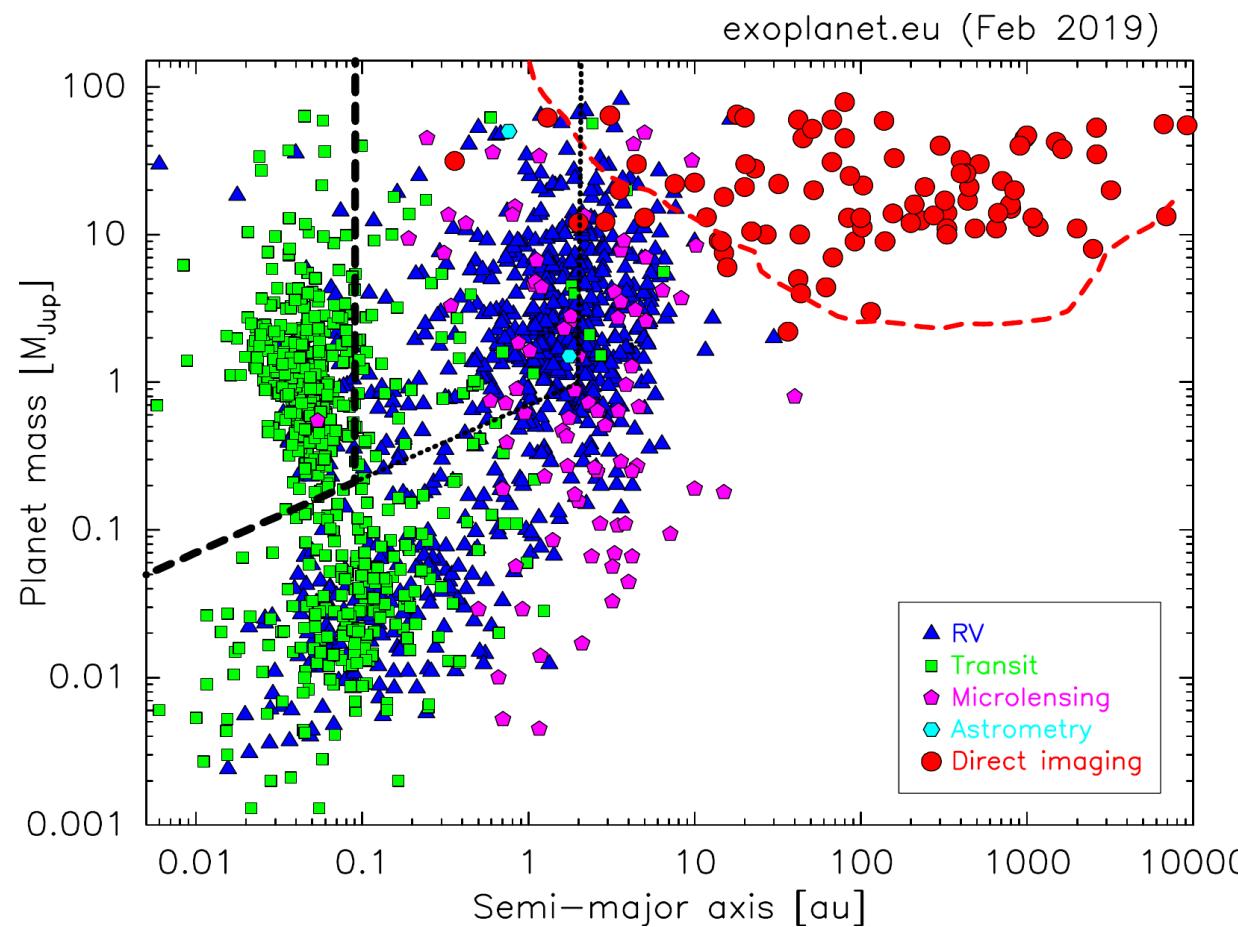
around the stars with

>5-10 au

protoplanetary and debris disks

Search for Planets around Young Stars with

RV-SPY vs I SPY



Observing strategy:

Initial survey:

- **first 2 years**

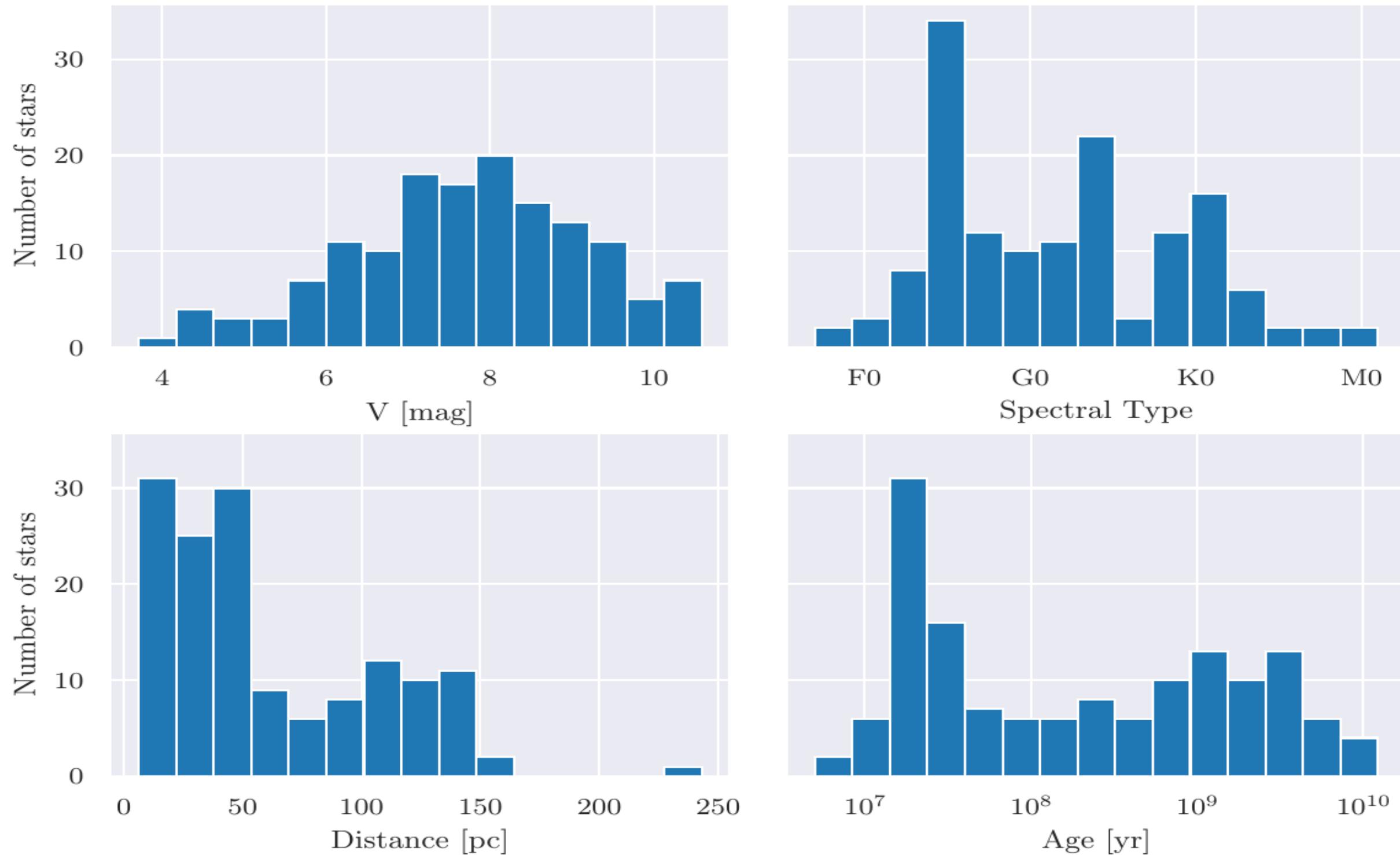
- observations of all targets in high-cadence
(aim: 14 consecutive nights, 1 spectra each night and 1 night 3 spectra per target);

Follow-up observations:

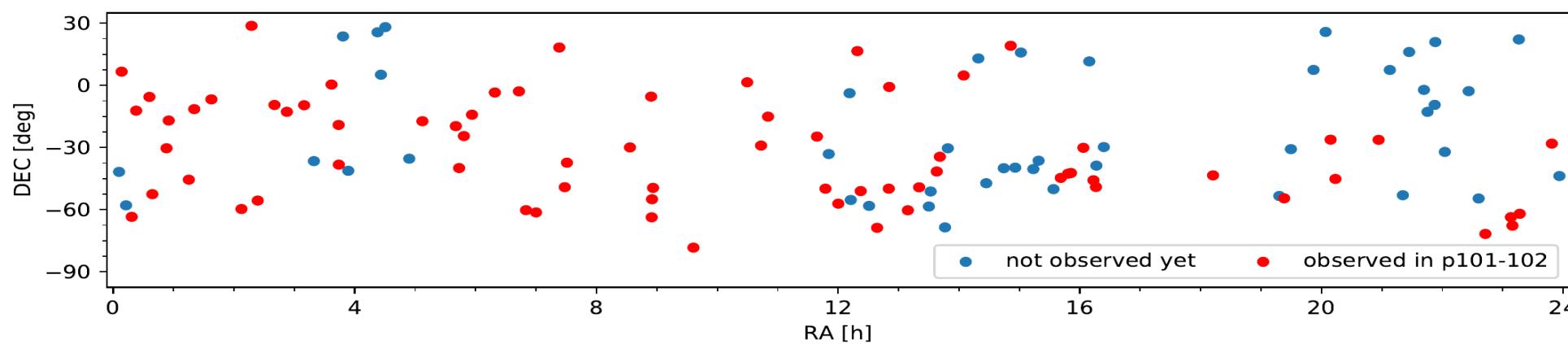
- **after 2nd observing semester**

- observations of the highest priority targets selected during initial survey results (cadence determined individually for each case).

RV-SPY targets parameters distribution



RV-SPY: results of 1.5 observing years



Observations: 370h, 1815 spectra.

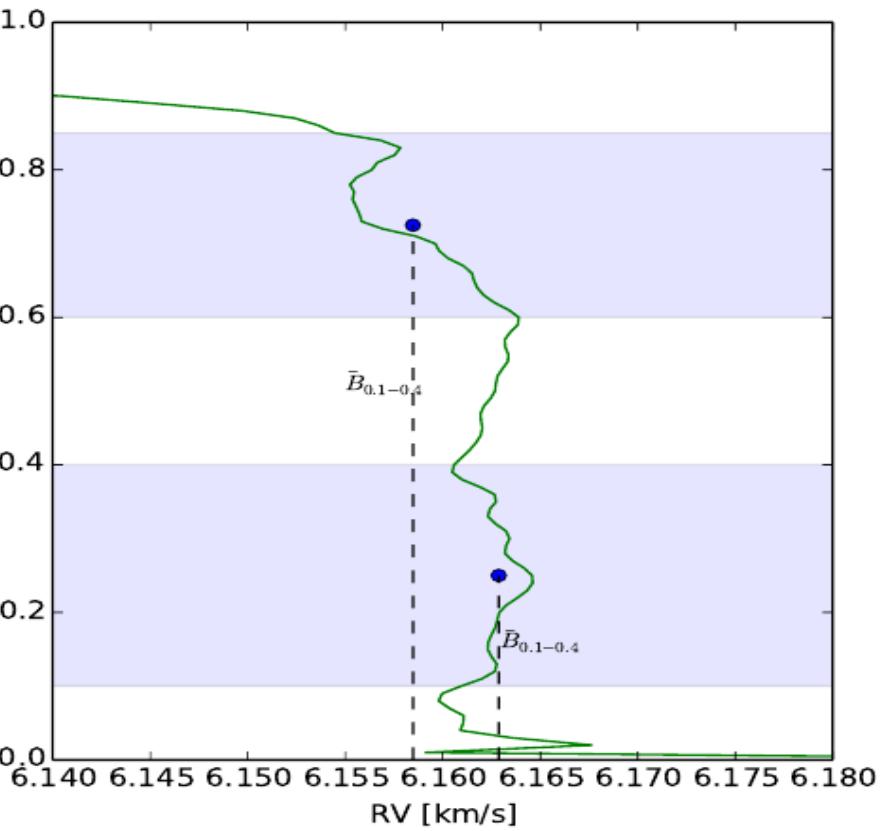
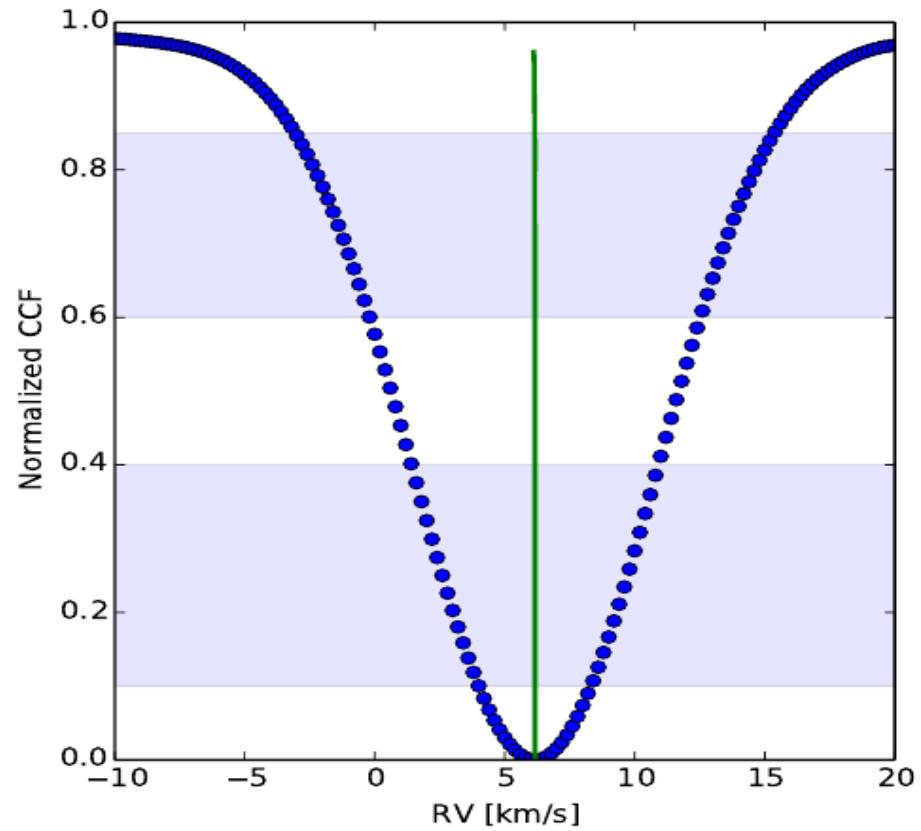
95 targets observed in high cadence:

25 have clear activity indication: BIS(RV) anti-correlation;

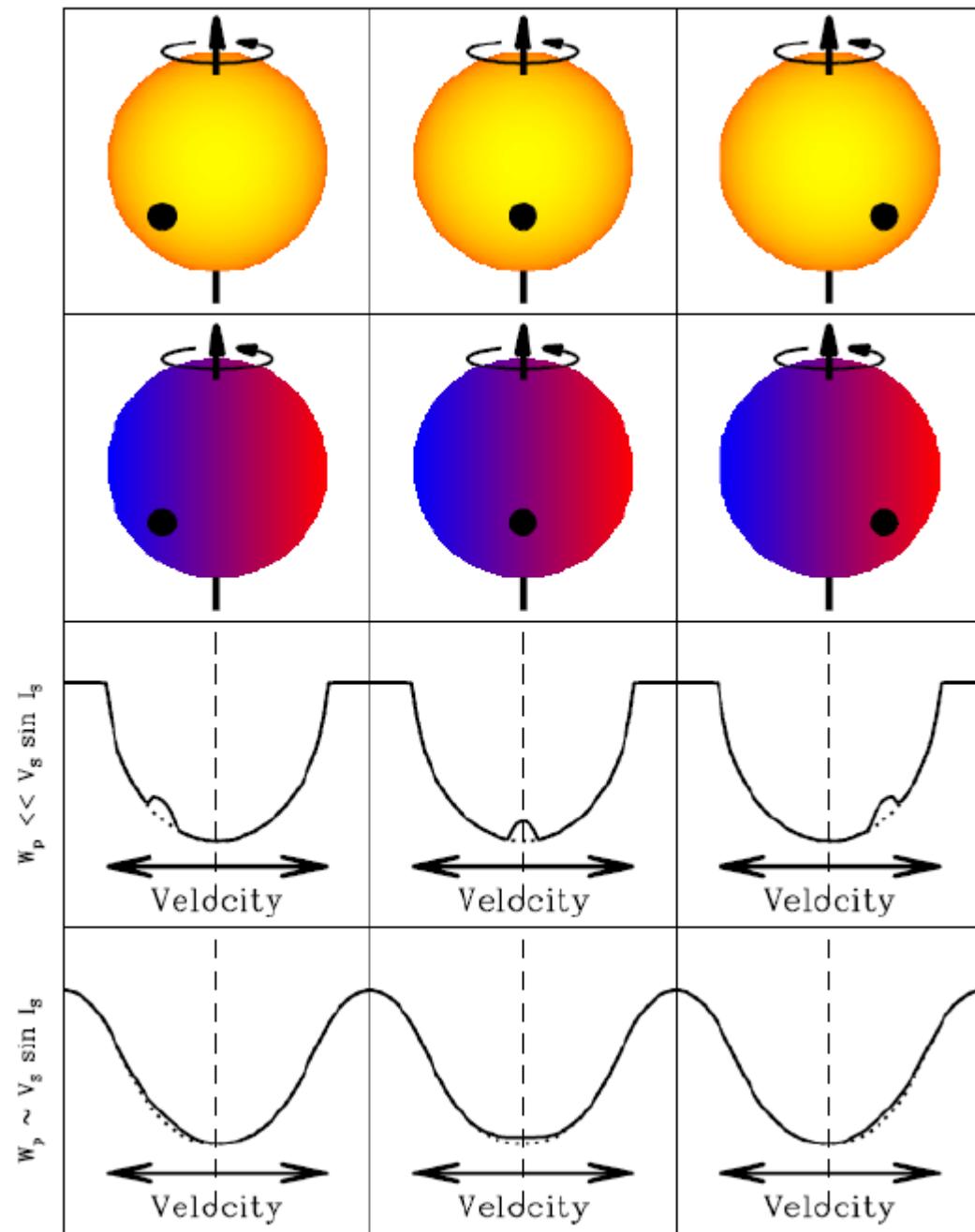
12 positive BIS(RV) correlation;

20 are followed-up already due to the strongest evidence for a significant signal (short or long period) not induced by the stellar activity.

Bisector span (BIS)



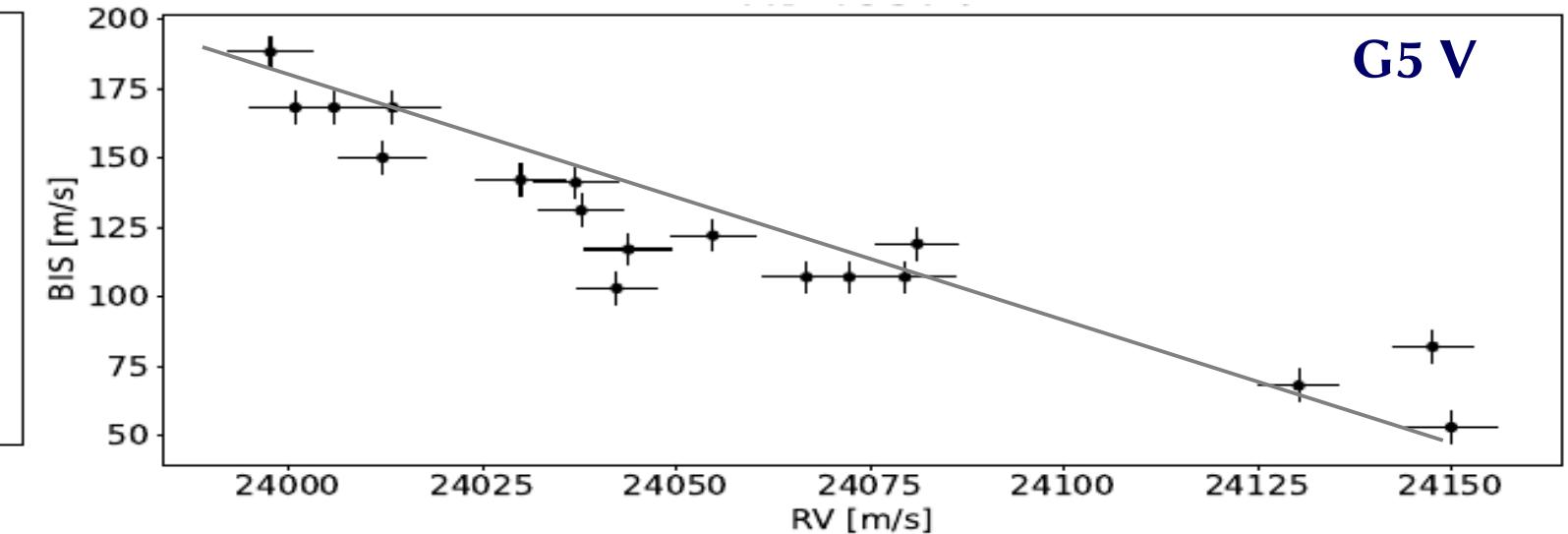
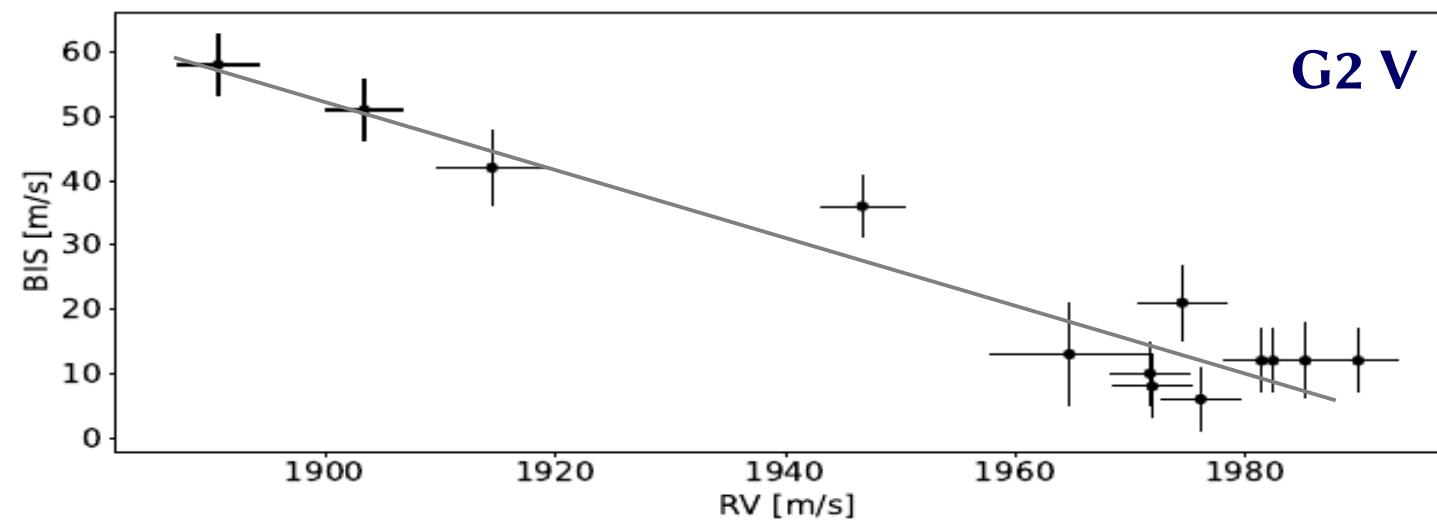
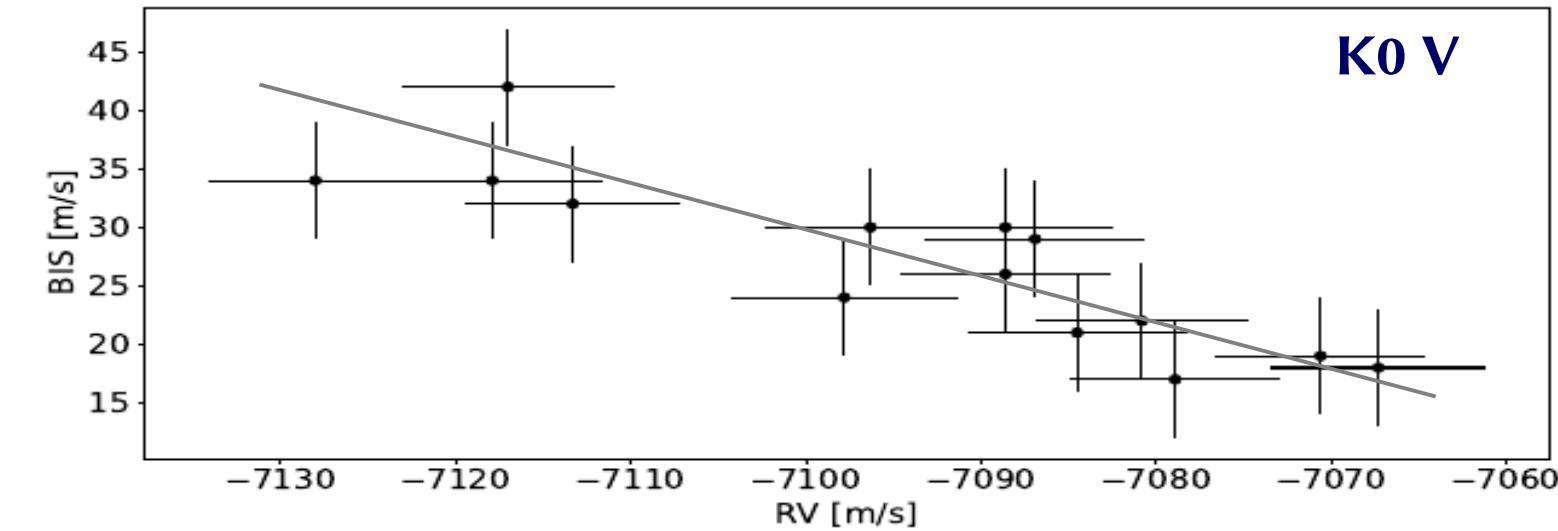
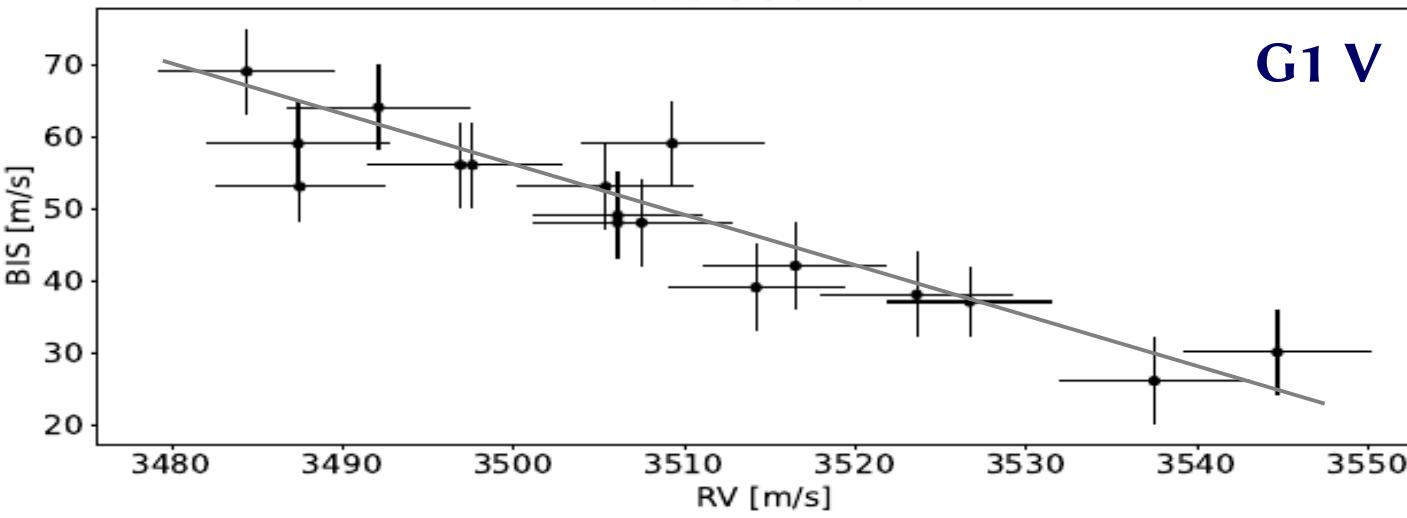
Brahm et al. 2017



W. Torres, YPSW, Nov.2010

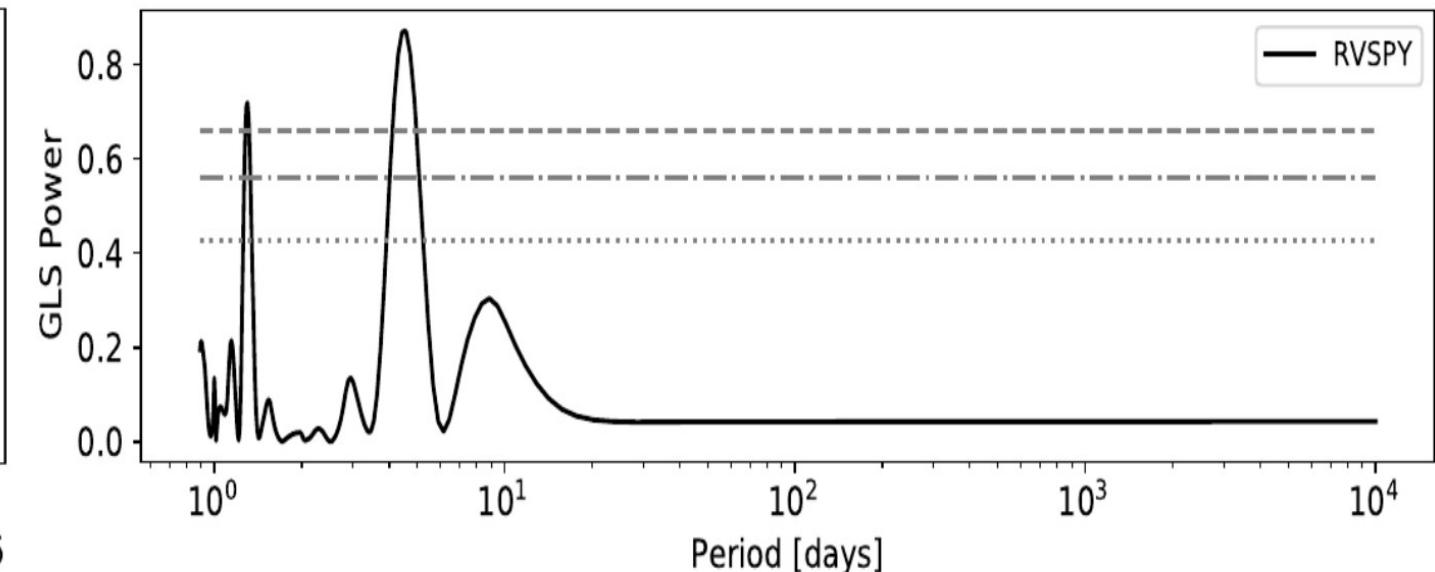
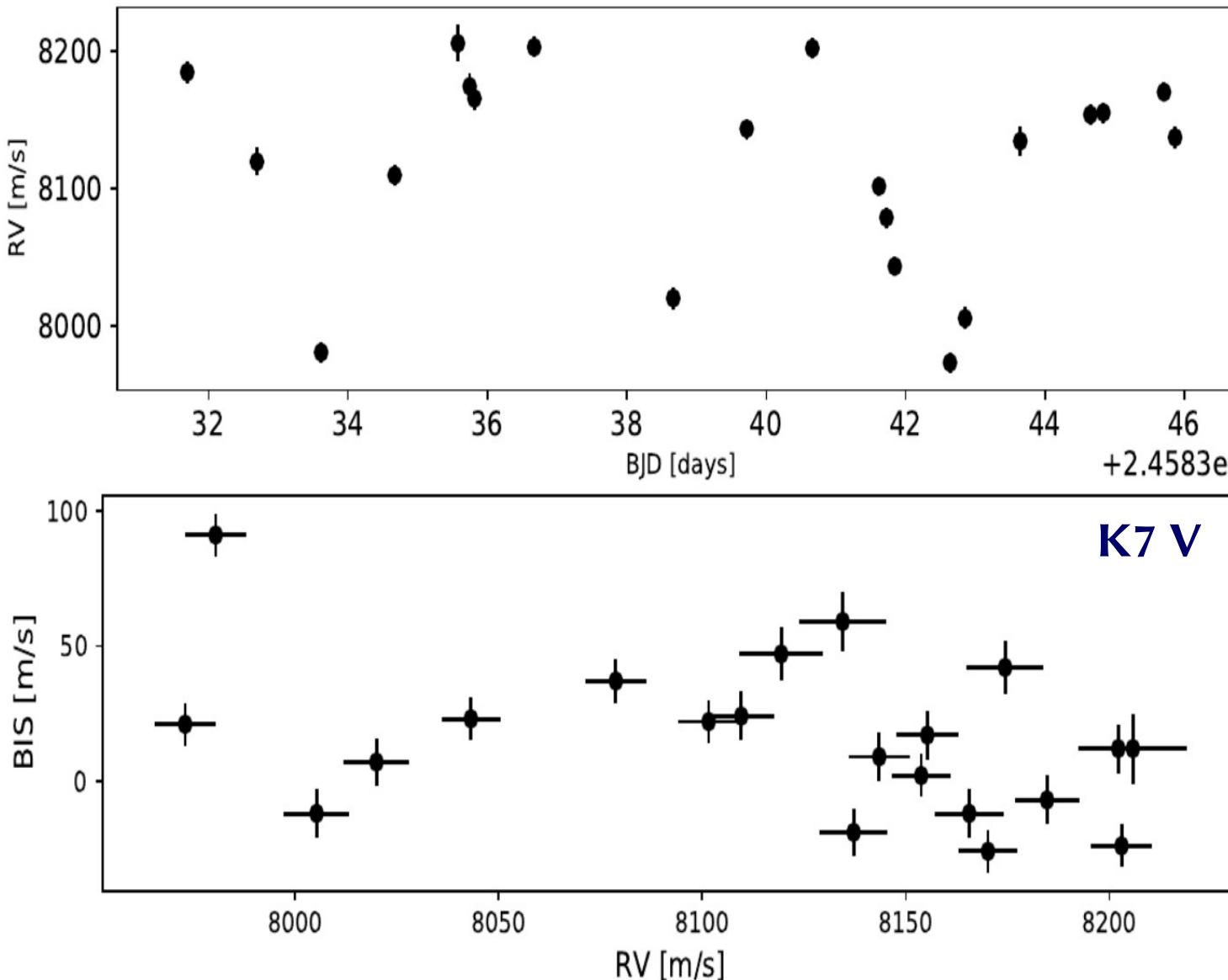
RV-SPY preliminary results

Clear activity cases (26% of the observed sample)



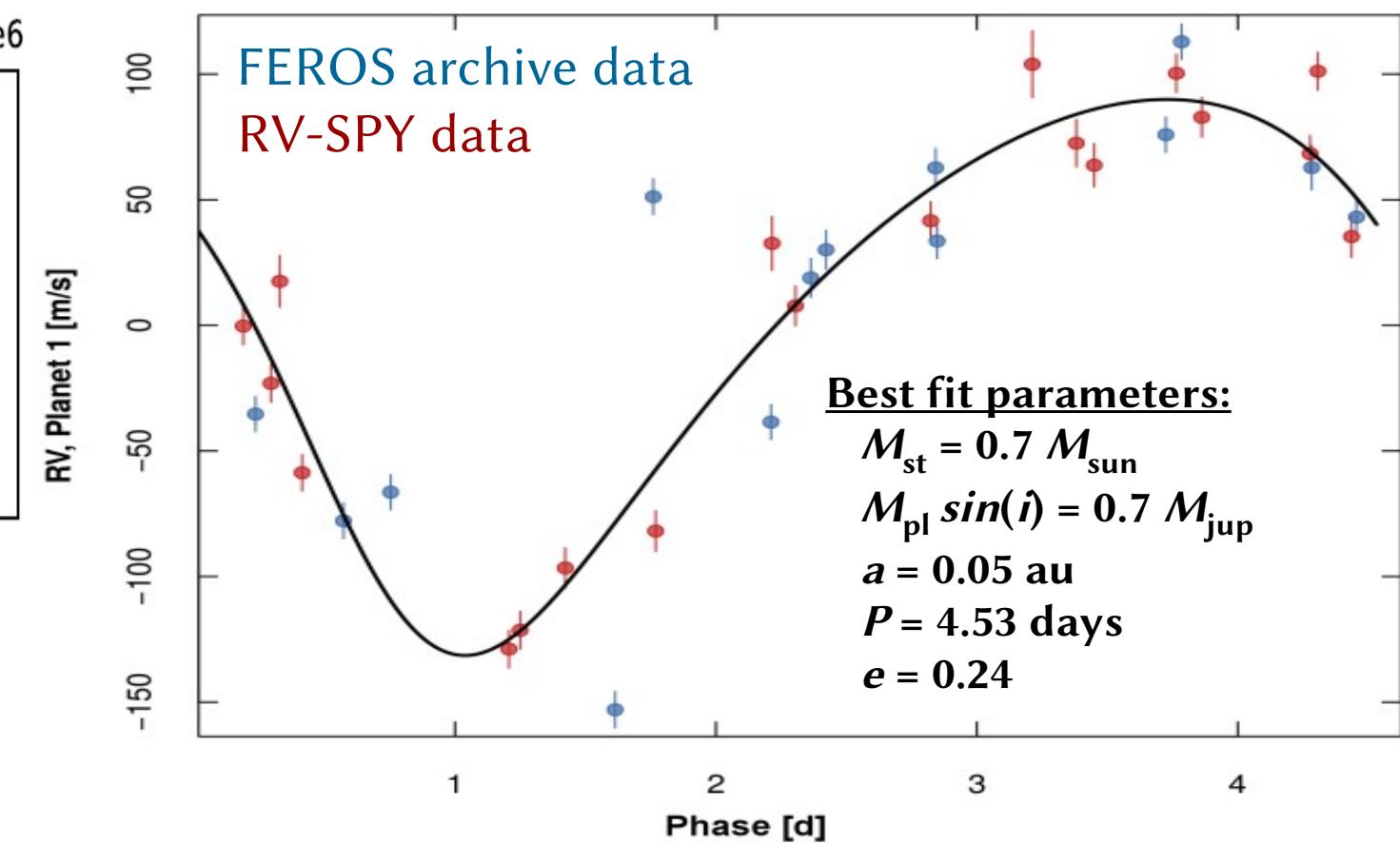
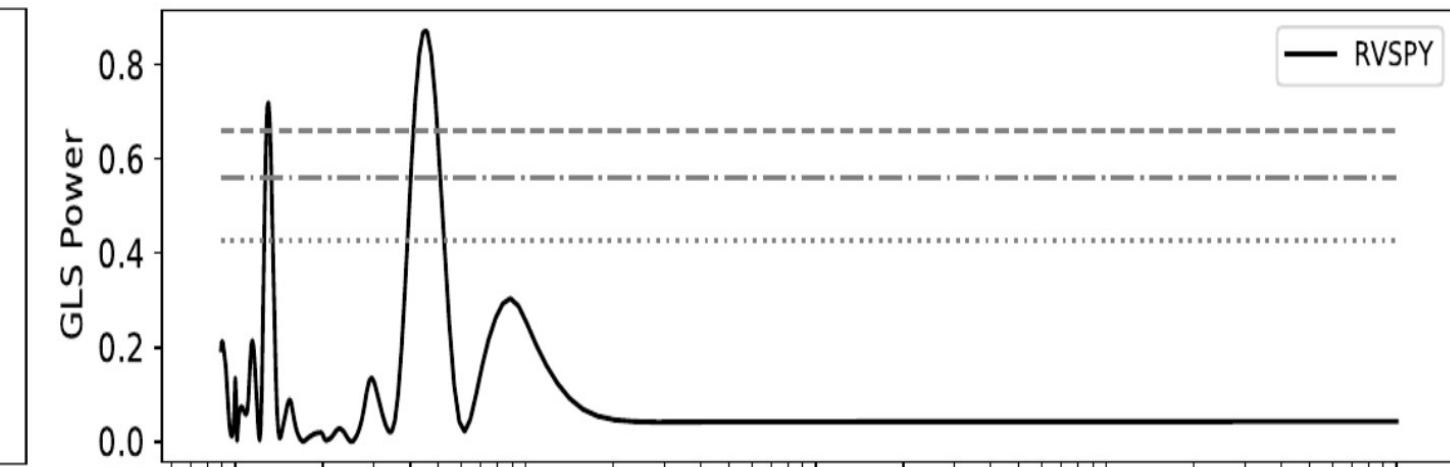
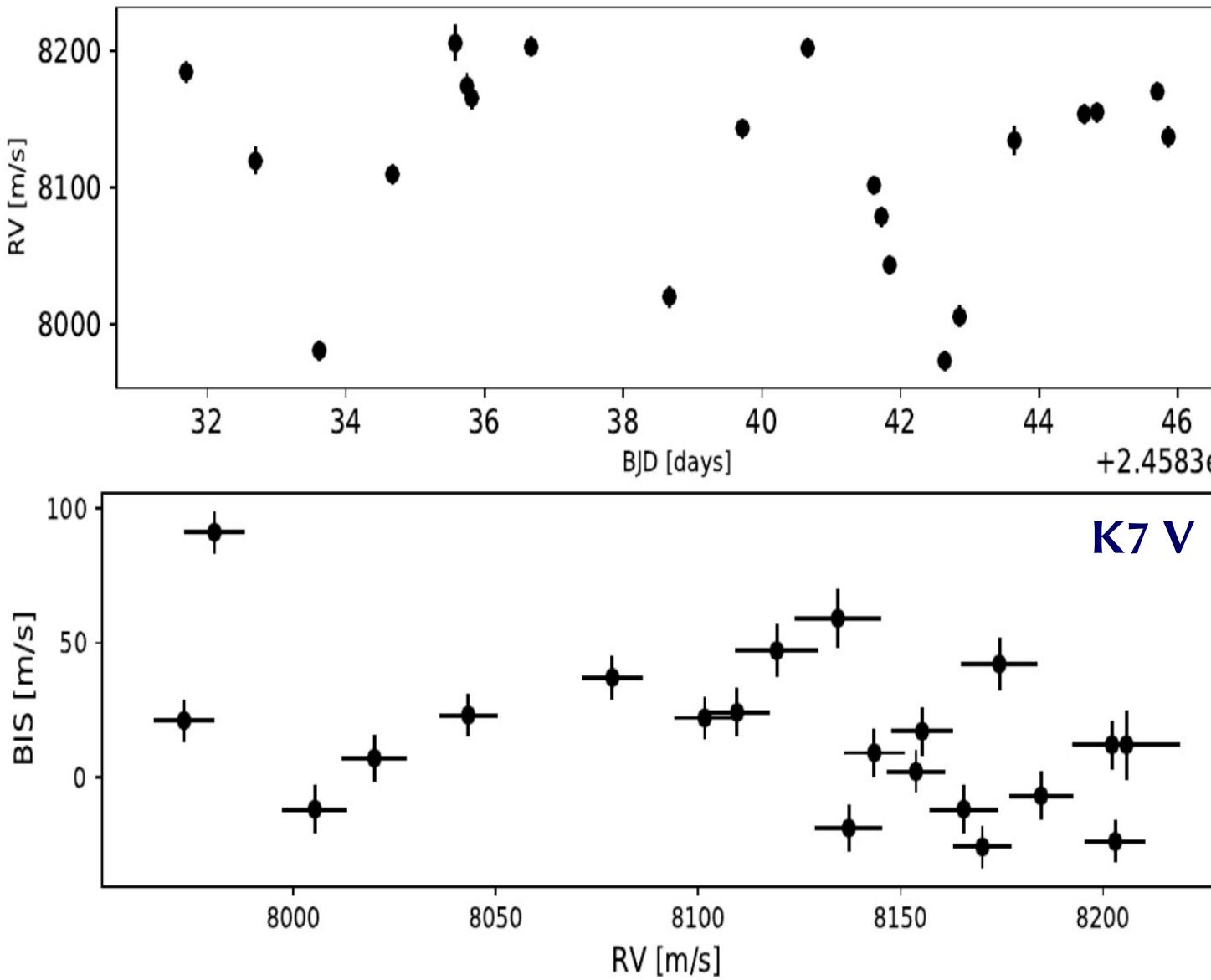
RV-SPY preliminary results

Interesting candidate



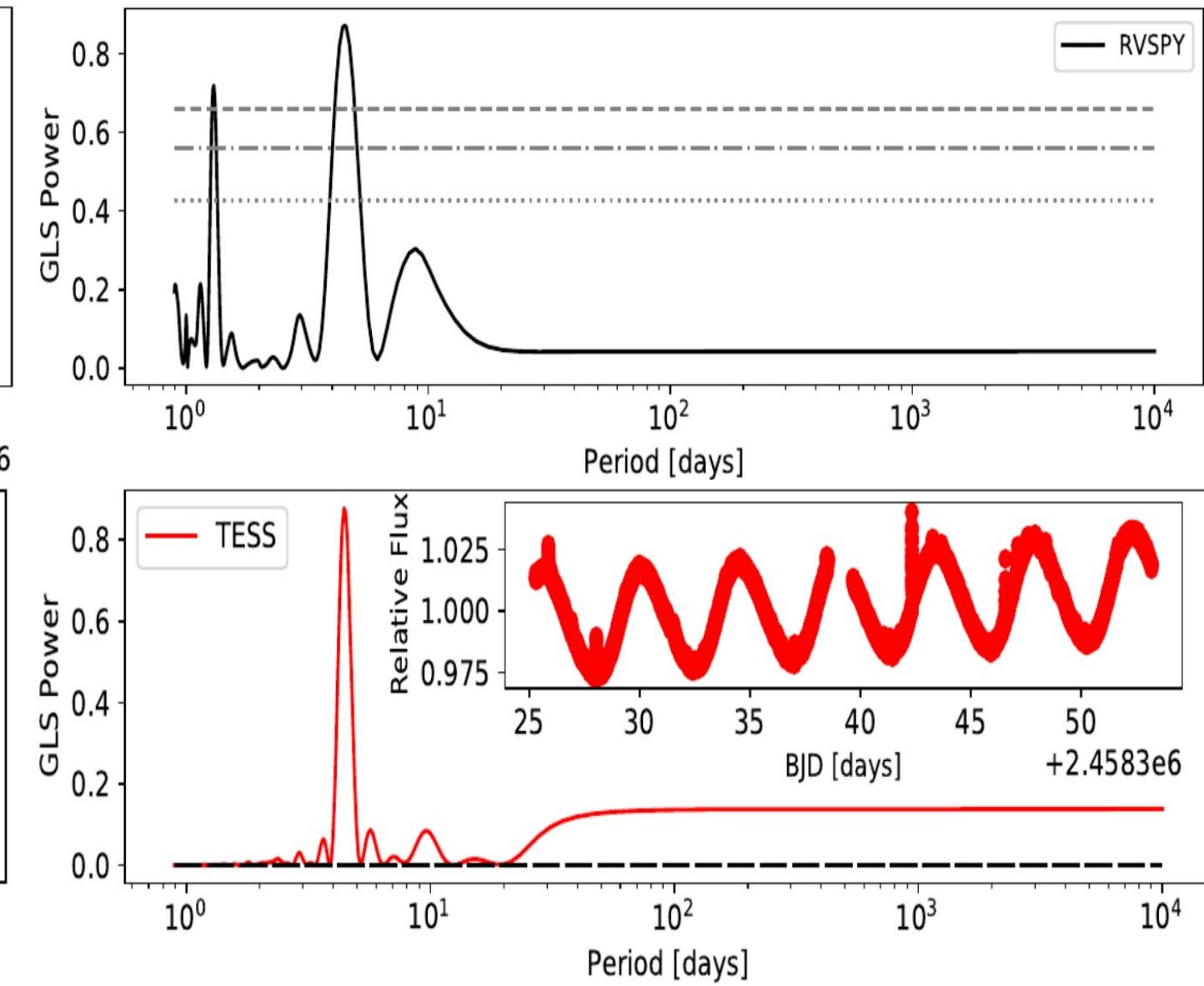
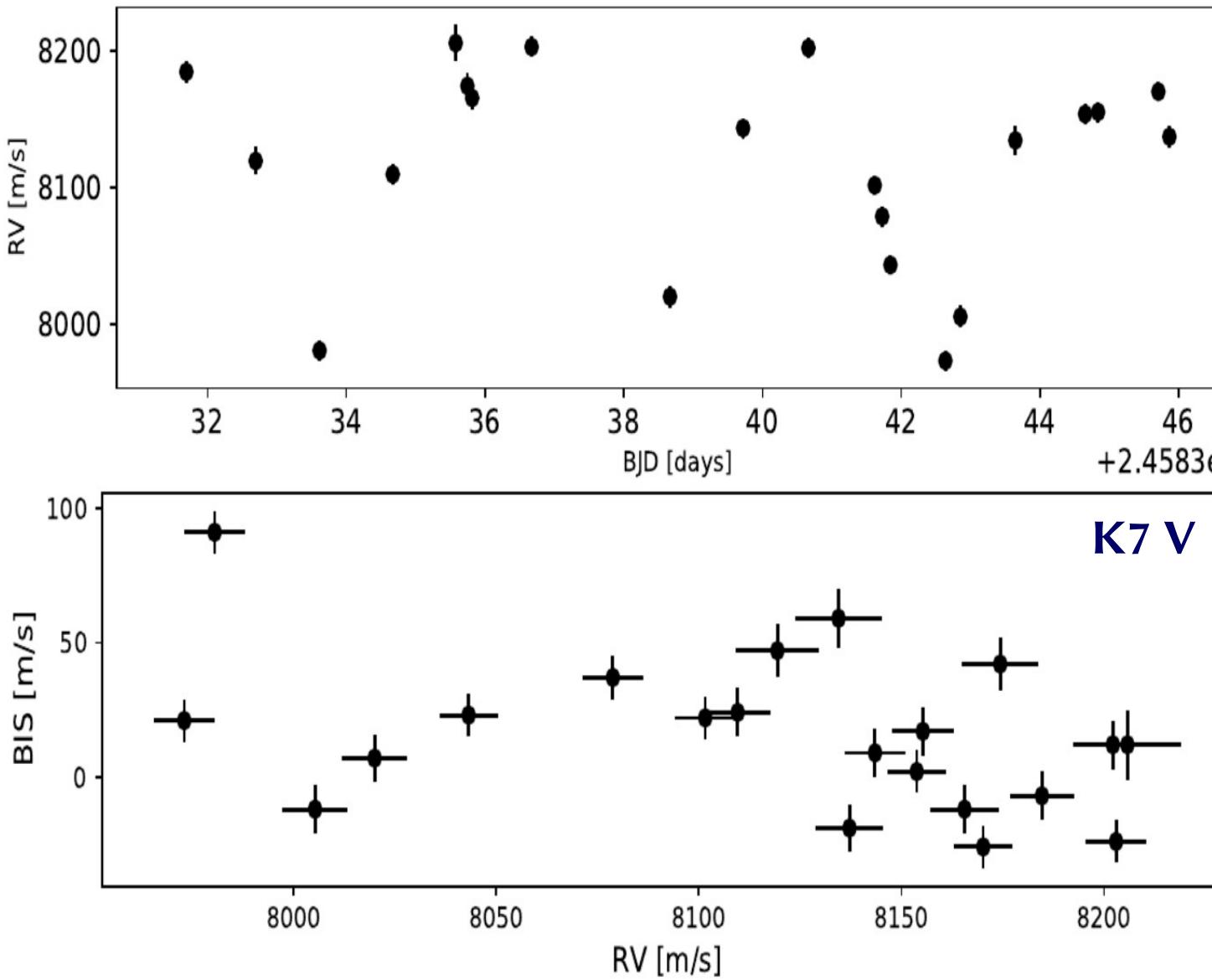
RV-SPY preliminary results

Interesting candidate



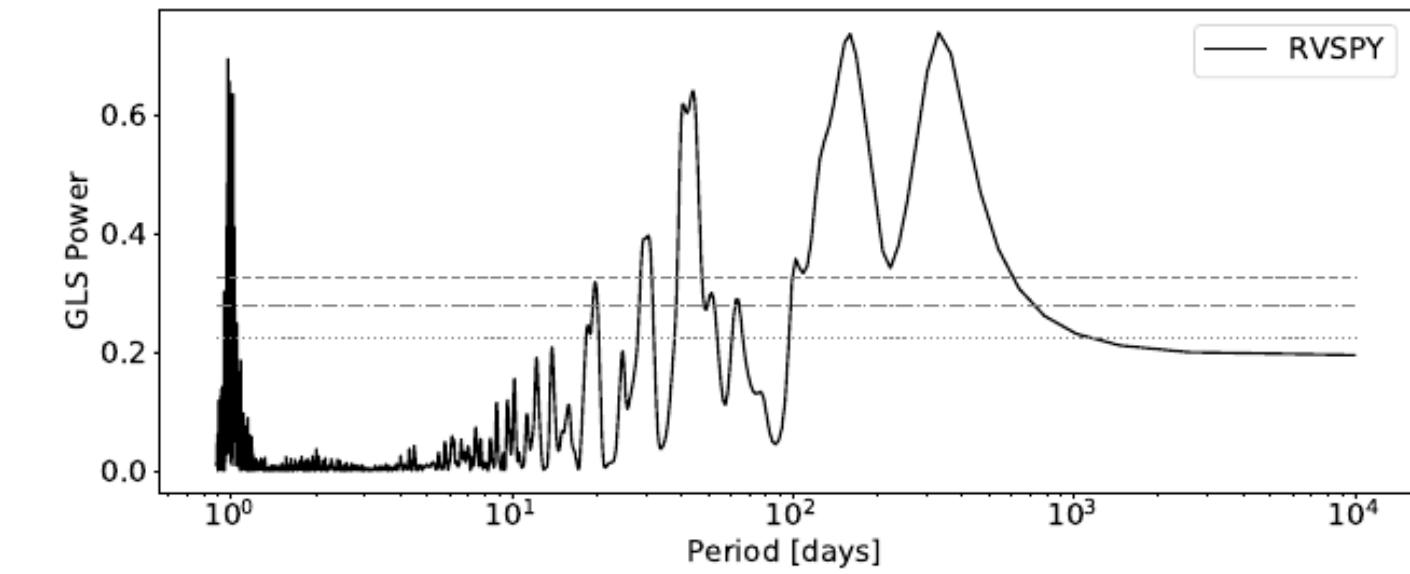
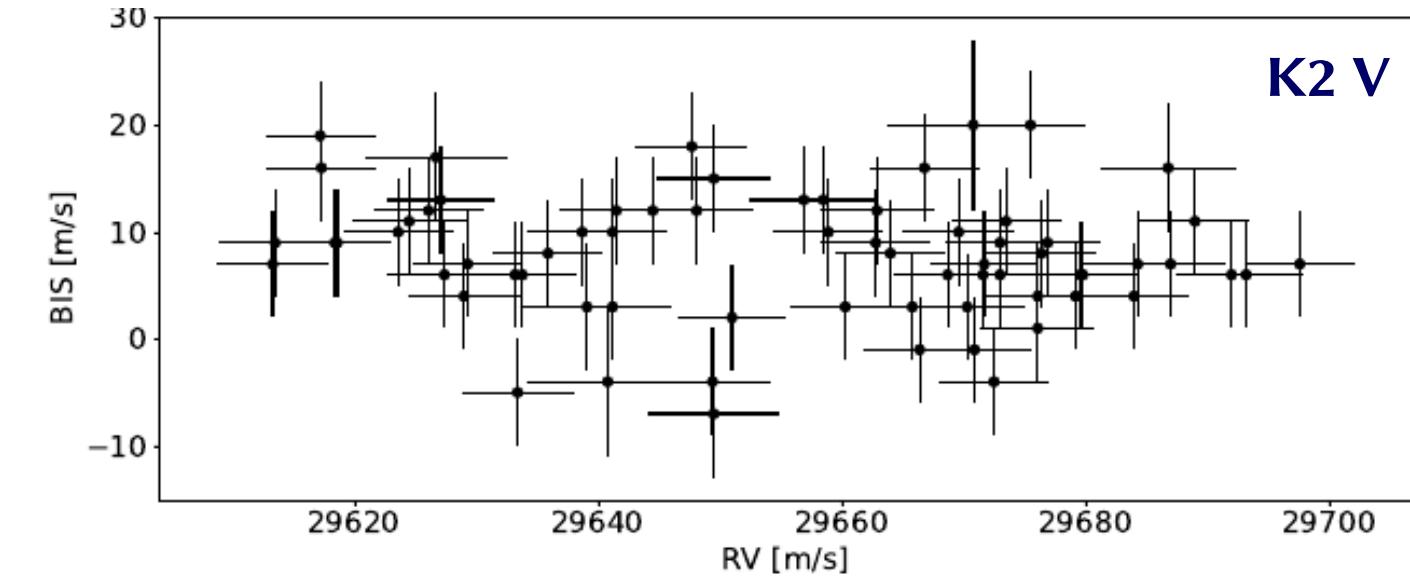
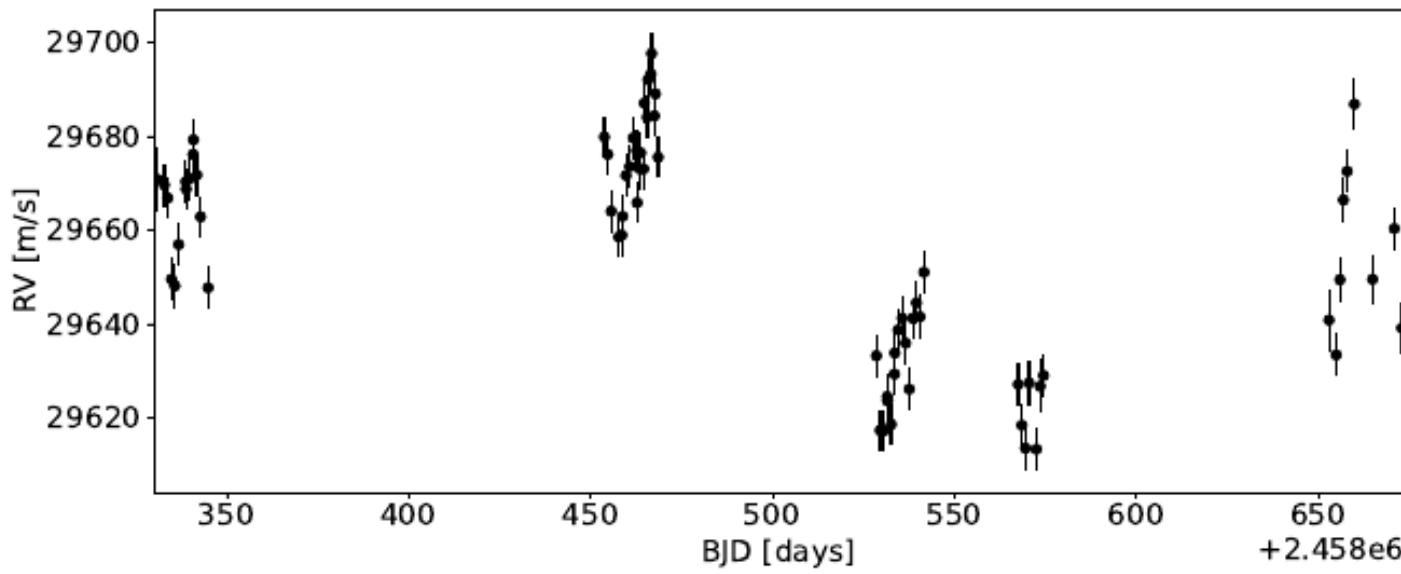
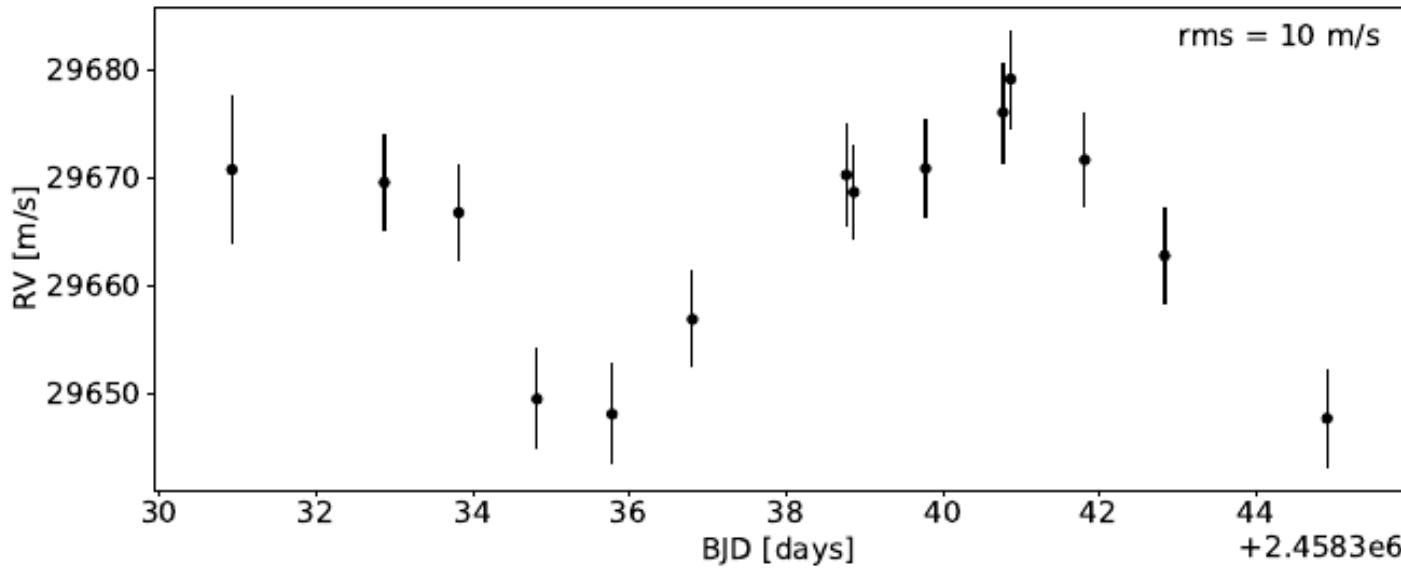
RV-SPY preliminary results

Interesting candidate → activity case



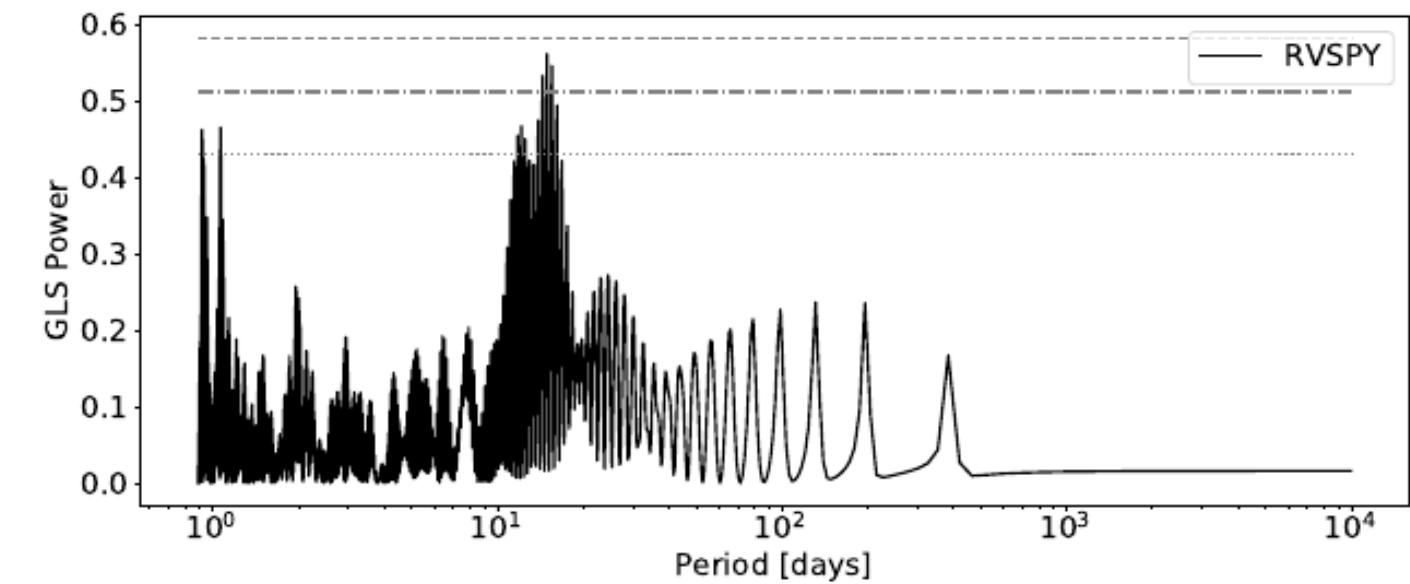
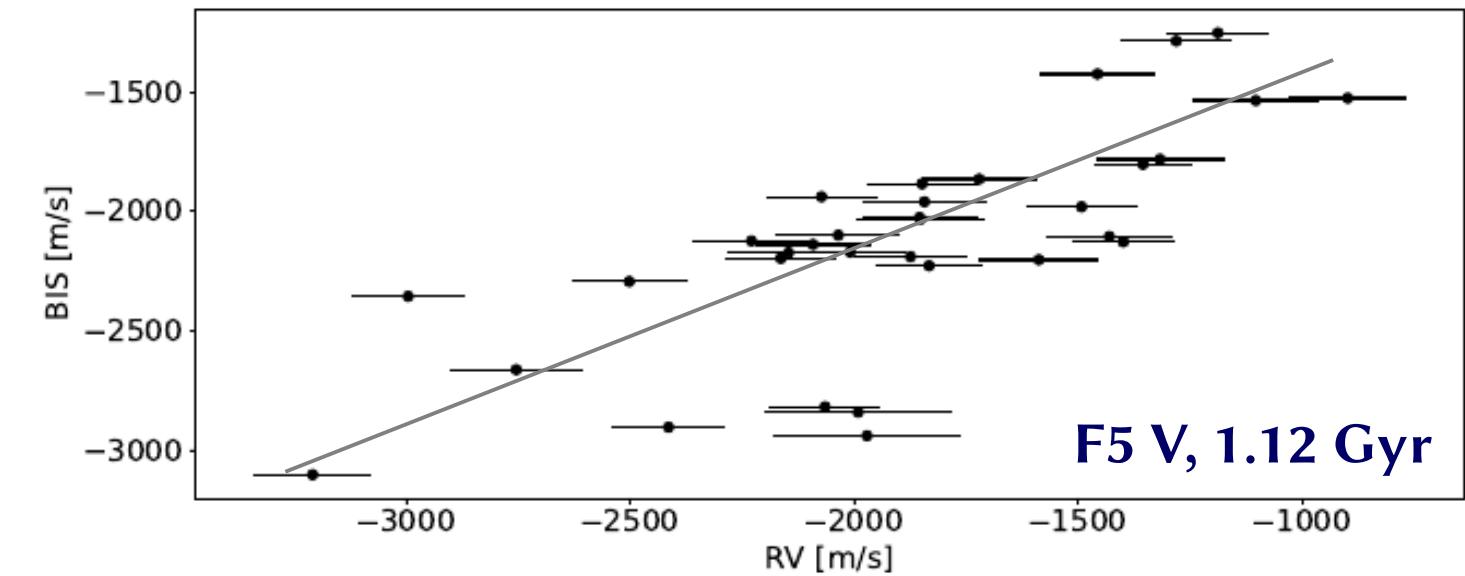
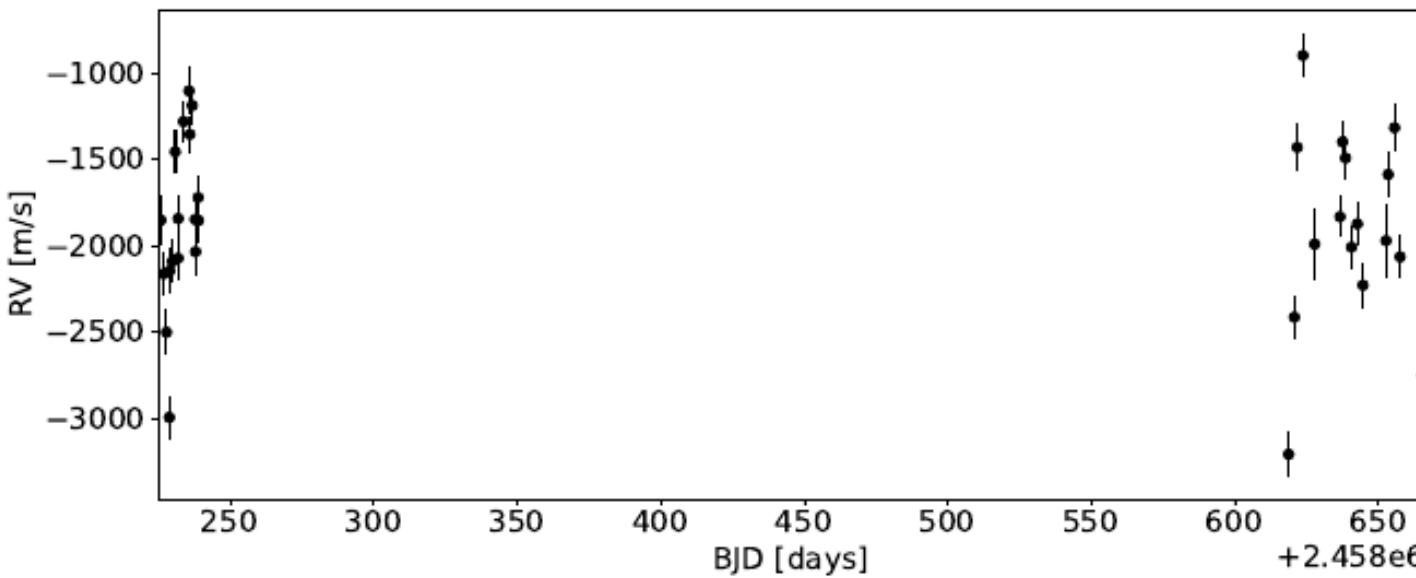
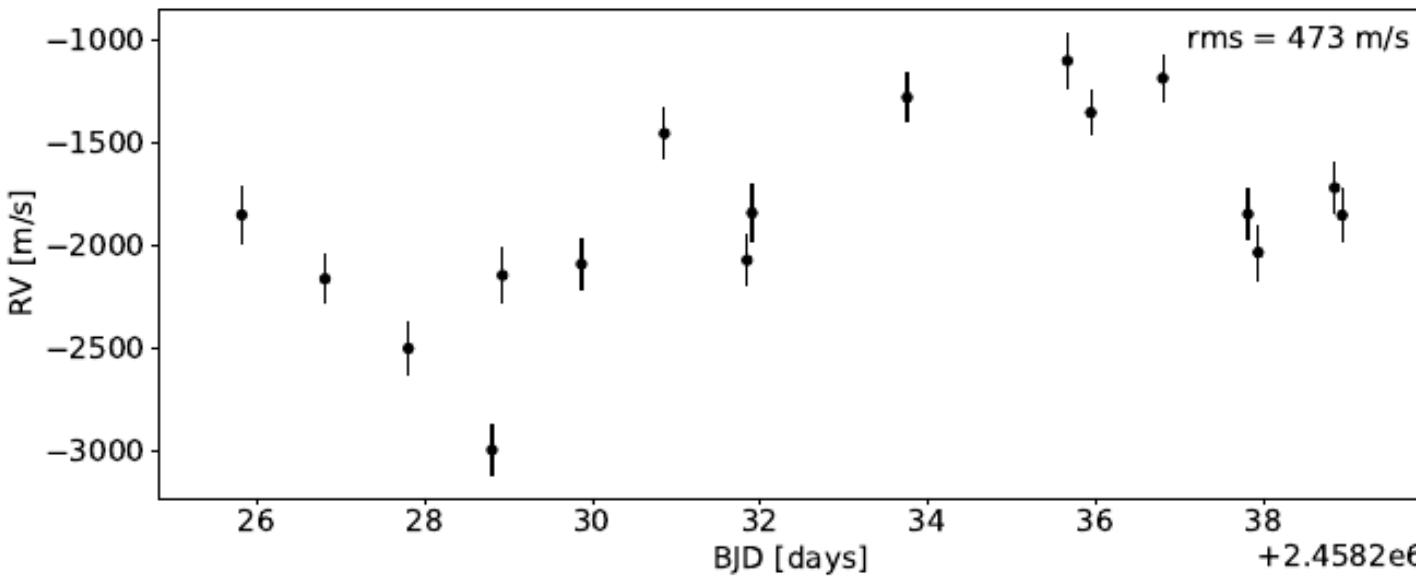
RV-SPY preliminary results

Interesting candidate



RV-SPY preliminary results

Positive BIS (RV)



Conclusion:

- More observations are needed.

