Hatfield 3rd December 2010

RoPACS
Mid-term review training day

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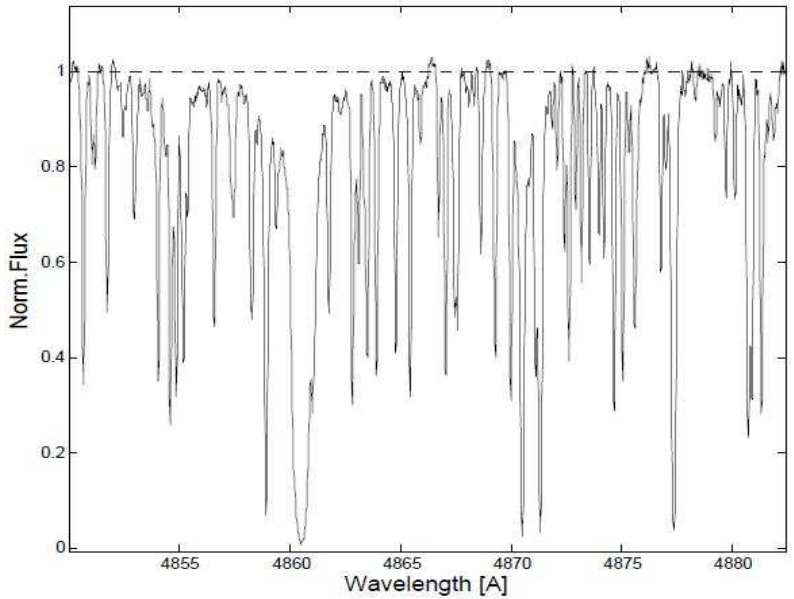
Outline

- The data
- Reduction/Analysis pipeline
- Results
  - Precision: HD195019 and GJ1214
  - HET candidate
  - RoPACS-09358
- Ongoing work



The data

	HD195019	GJ1214	RoPACS-09358	HD352939	HD353741
mV	6.9	14.7	16	9.3	9.6
Star type	G3	M4	Late F	G0	K0
λ max [Å]	5040	9050	4490	4910	5682
Texp [s]	200	2390	2x1320	1300	1300
SNR	70÷210	5÷30	4÷15	8÷35	8÷40
Orders	[22:24]+[2:40]	[22:24]+[2:30]	[22:24]+[3:20]	[22:24]+[2:38]	[22:24]+[2:38]
λ range [Å]	4250÷6050	4570÷6050	4950÷6050	4250÷6050	4250÷6050

Known companion
K ~ 266 m/s

Known companion
K ~ 12 m/s

!!!

Reduction/Analysis pipeline

Master flat and bias

Order definition

Calibration

Spectrum extraction

ThAr lines dispersion fit

Wavelength calibration

Normalization

Cosmic hits remotion

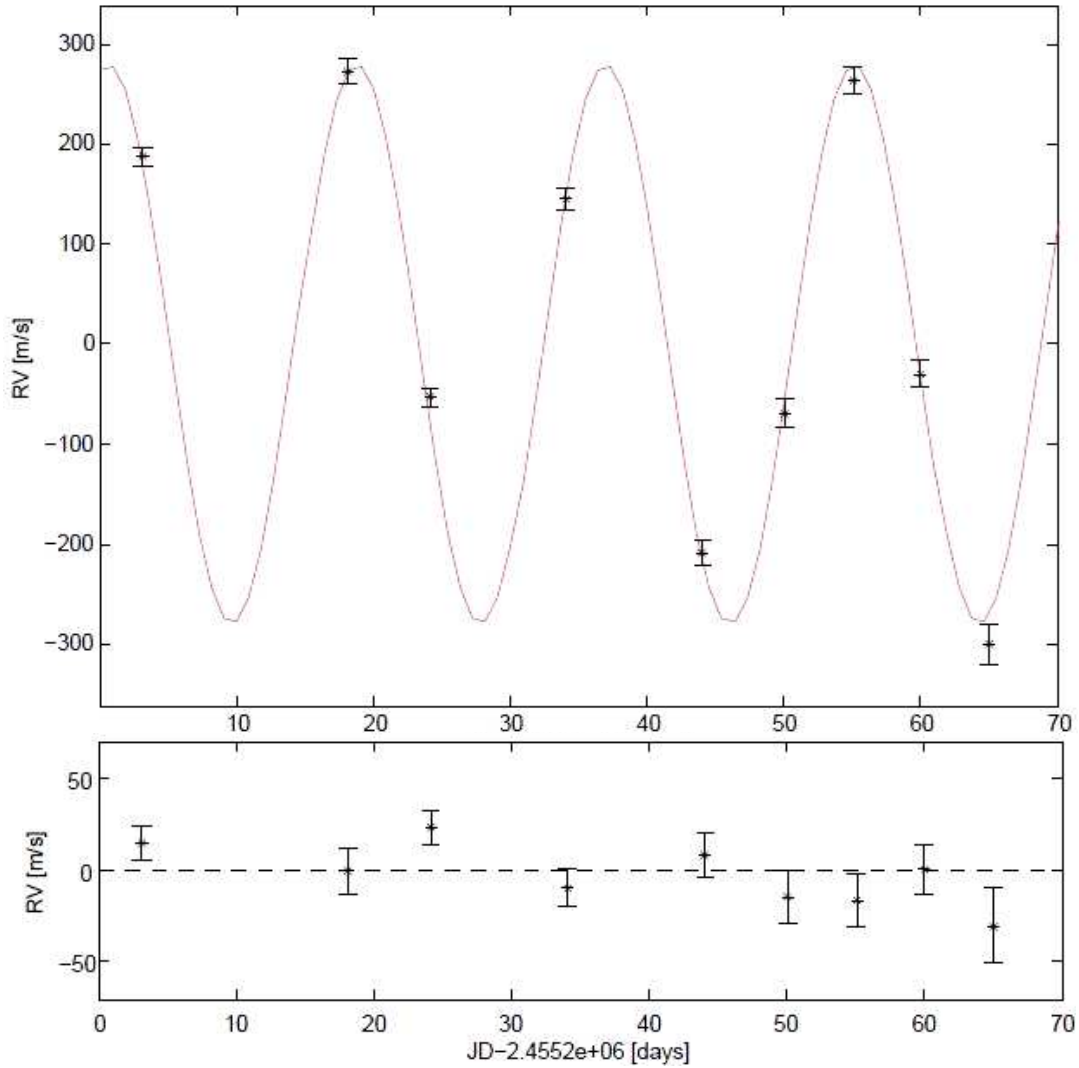
Telluric/sky lines remotion

Resampling

Cross-correlation

Plot and curve fit

HD195019



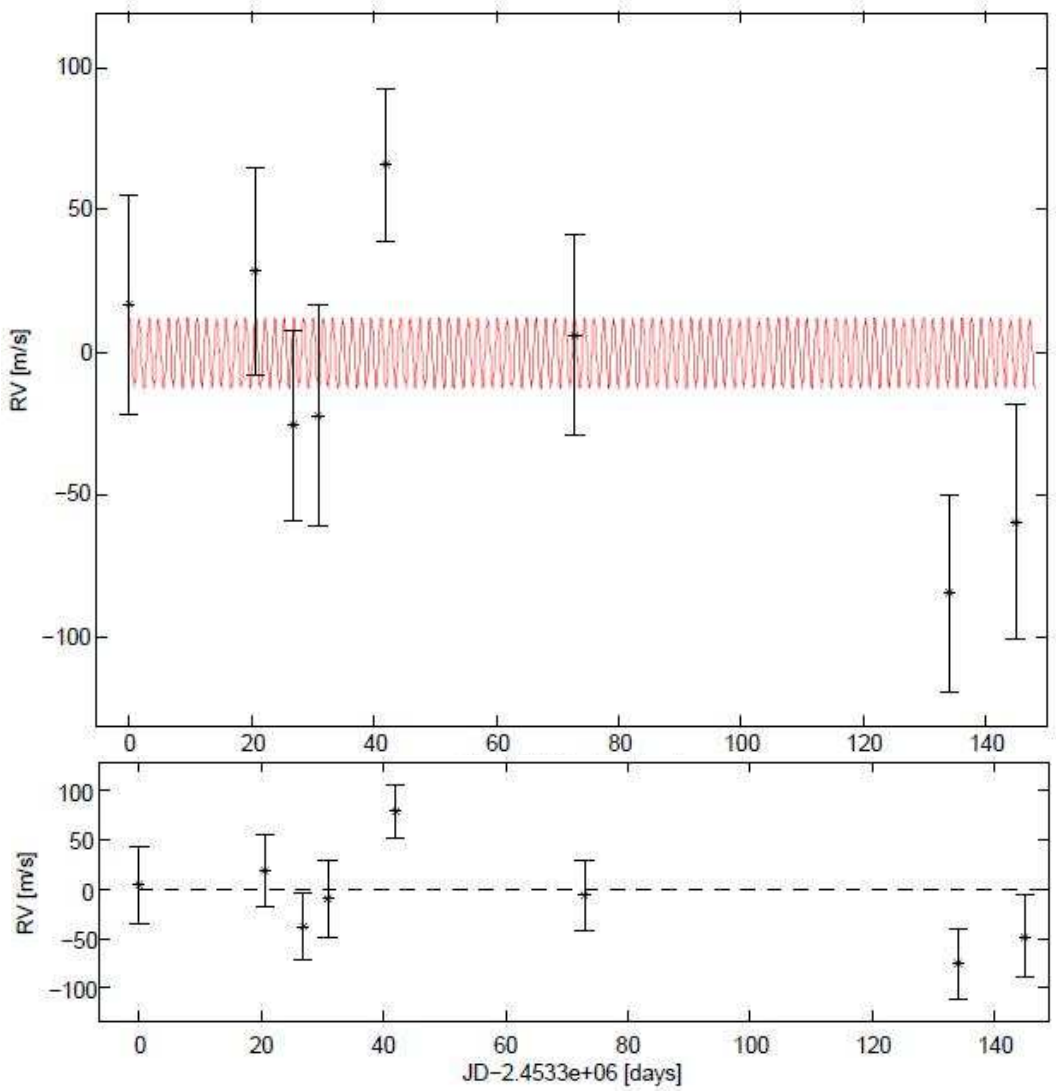
HD195019b

$M \cdot \sin(i) = 3.49\ M_{Jup}$
P = 18.20 days
a = 0.14 AU
e = 0.01

Fisher et al. (1999)

rms ~ 15m/s

GJ1214



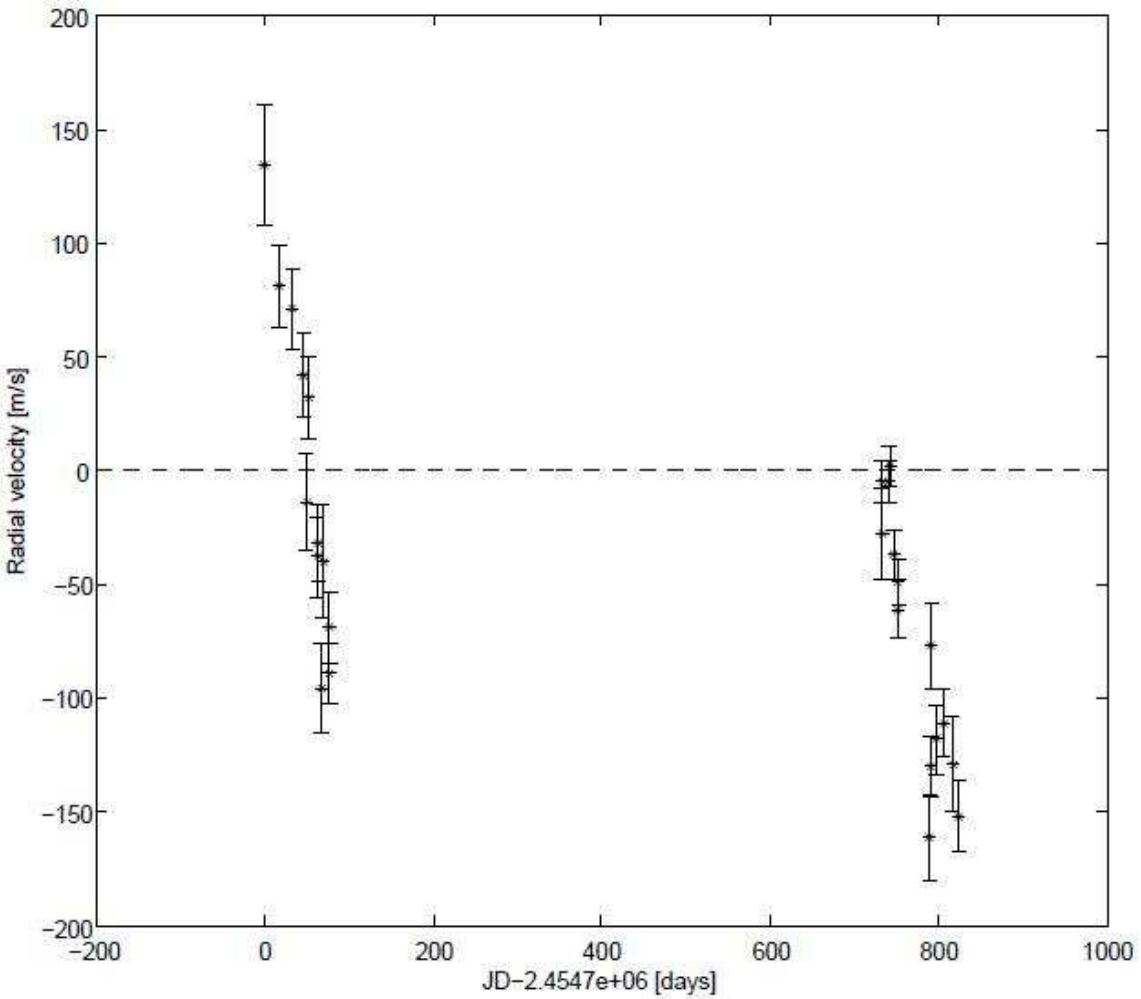
GJ1214b

$M \cdot \sin(i) = 6.5\ M_{Earth}$
$R = 2.7\ R_{Earth}$
P = 1.58 days
a = 0.026 AU
e < 0.2

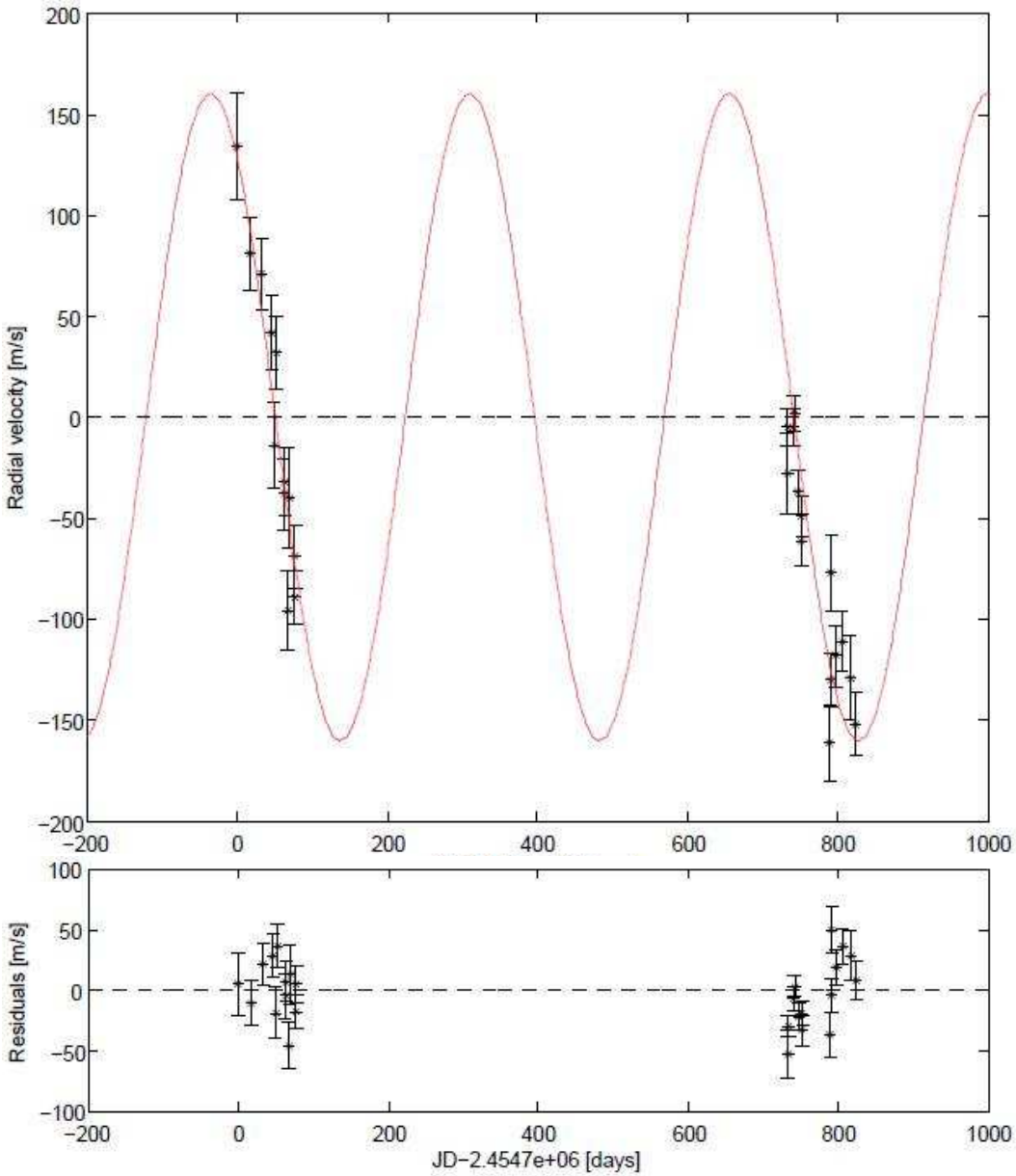
D.Charbonneau et al. (2009)

rms ~ 60m/s

Candidate: HD352939b



Candidate: HD352939b



HD352939b

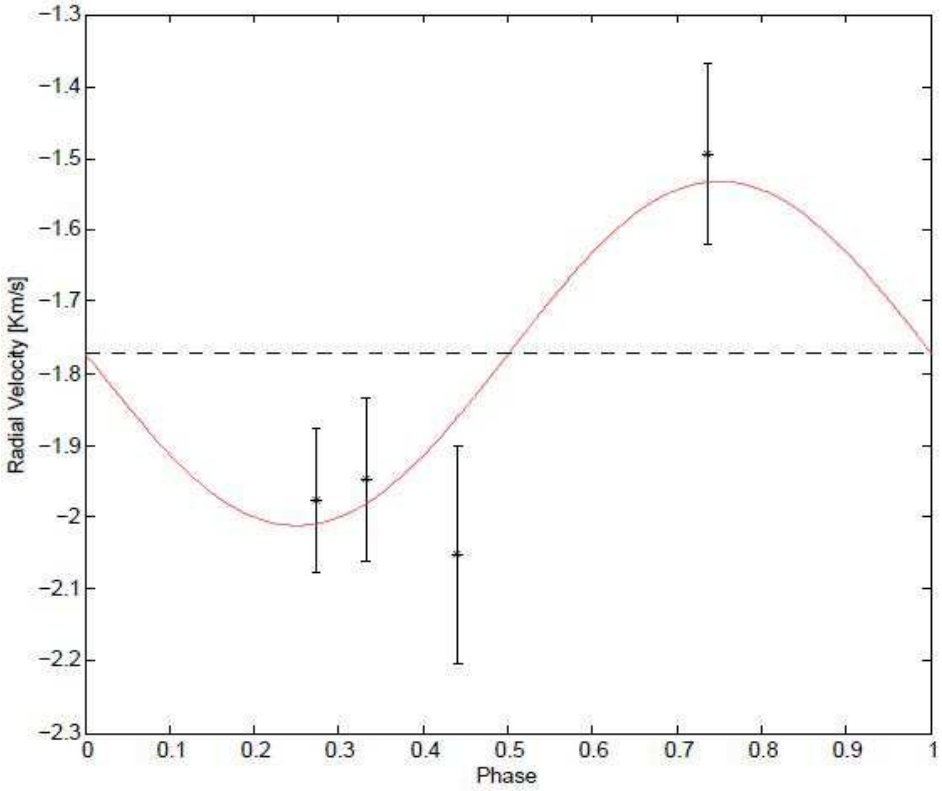
$M \cdot \sin(i) = 5.82\ M_{Jup}$
P = 345 days
a = 0.96 AU

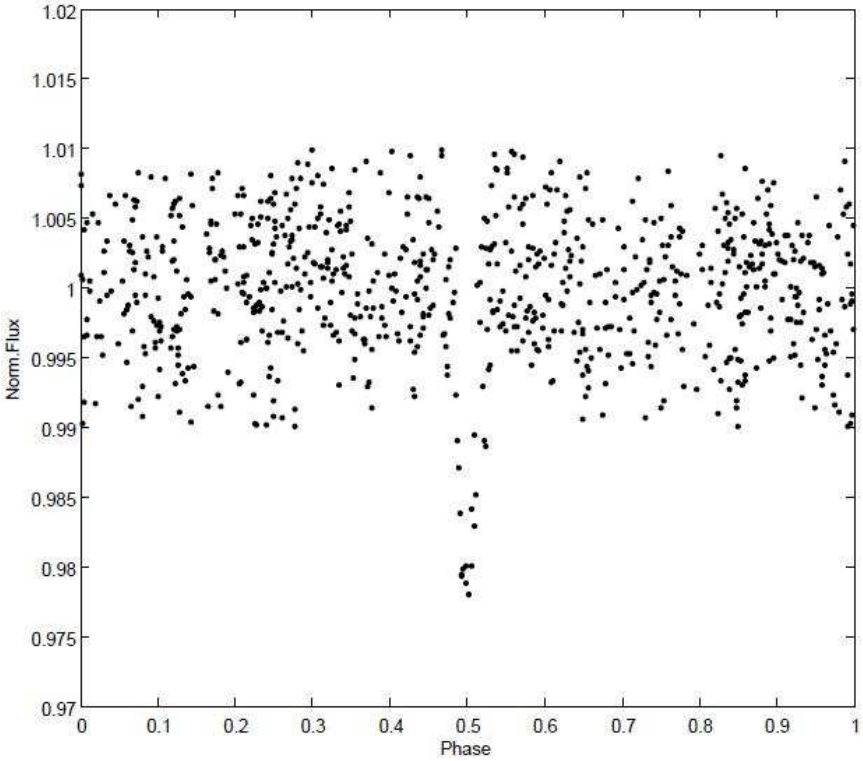
rms ~ 25m/s

RoPACS-19d-09358

EB09358b

$M = 2.16\ M_{Jup}$
$R = 1.84\ R_{Jup}$
$P = 3.35$ days
$a = 0.044$ AU





Ongoing work

- Reduction and analysis of
  - 2 visits for HD352939
  - 3 visits for RoPACS-09358
  - 9 visits for HD353741
- Improve the telluric mask precedure
- 2011: Further observations of HD352939 and RoPACS candidates

Thank you for your time