Planetary transit candidates in CoRoT-IRa01 field

S. Carpano, J. Cabrera, R. Alonso, P. Barge et al.

(2nd of February 2009)

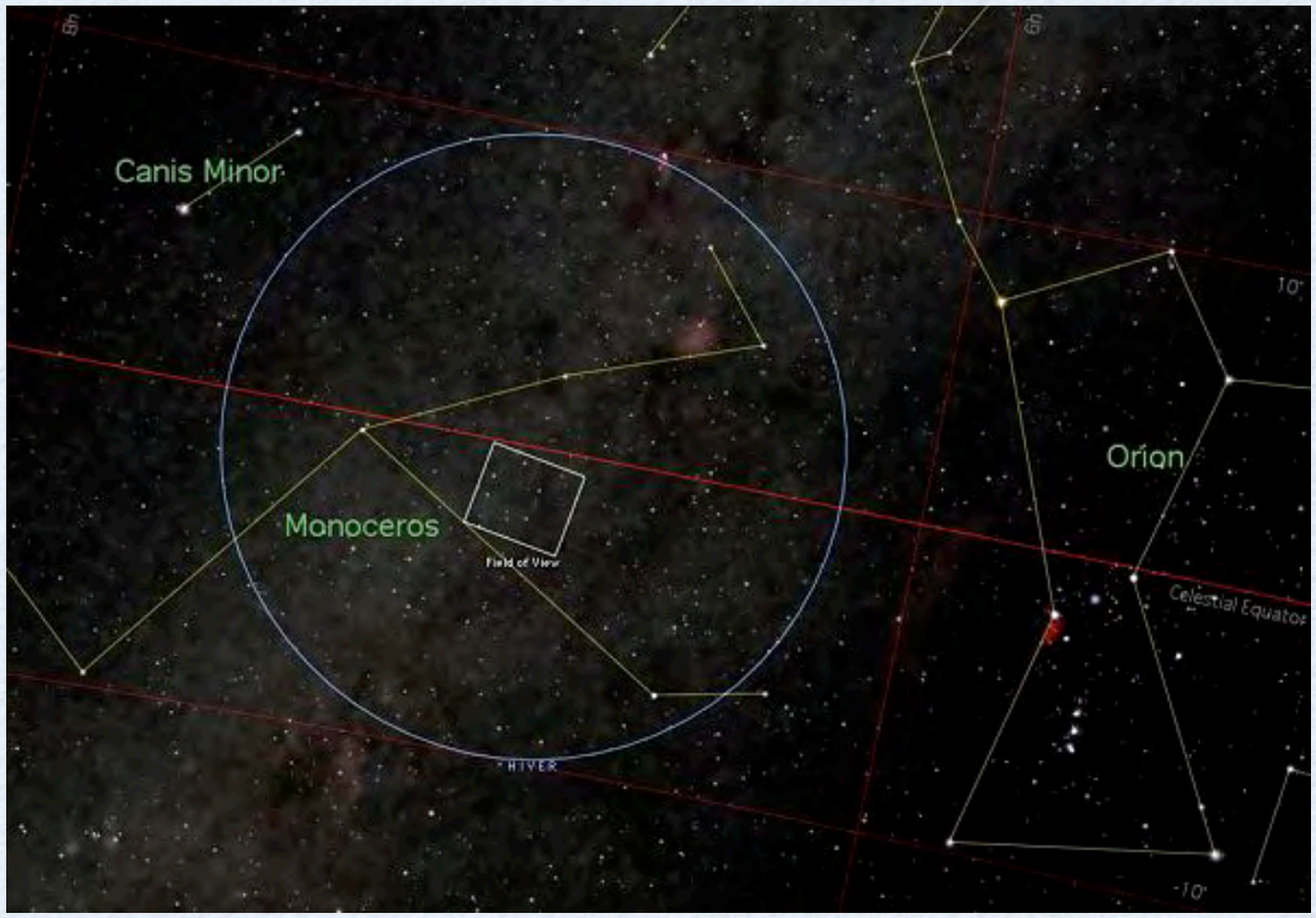
COROT FIELDS

- Year divided into two 6-months of observation towards galactic center and galactic anti-center
- Each of these 6 months is divided between a short run (20 days) and a long run (150 days)

	IRa01	LRc/a0X X=1,2,3..	SRc/a0X X=1,2,3...
run type	Initial run	Long run	Short run
direction	anti-center	c=center a=anti-center	c=center a=anti-center
length (days)	60	150	20

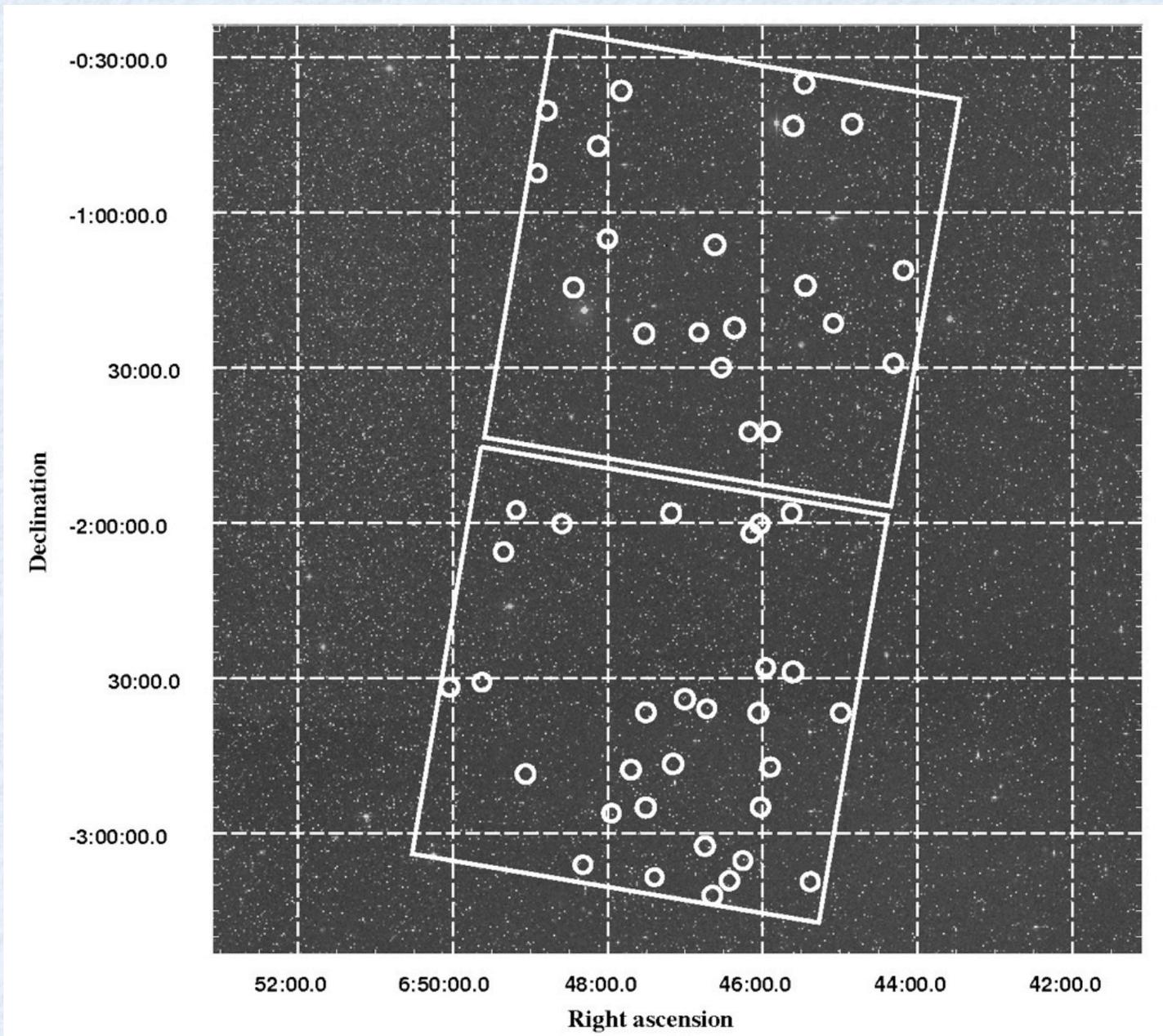
THE INITIAL RUN: IRA01

- 3898 sources in chromatic filters (B, V, R bands)
- 5974 sources in monochromatic band
- Merged list of 92 planetary transit candidates reported by the 8 detection teams
- After discussion, 50 sources kept as good candidates



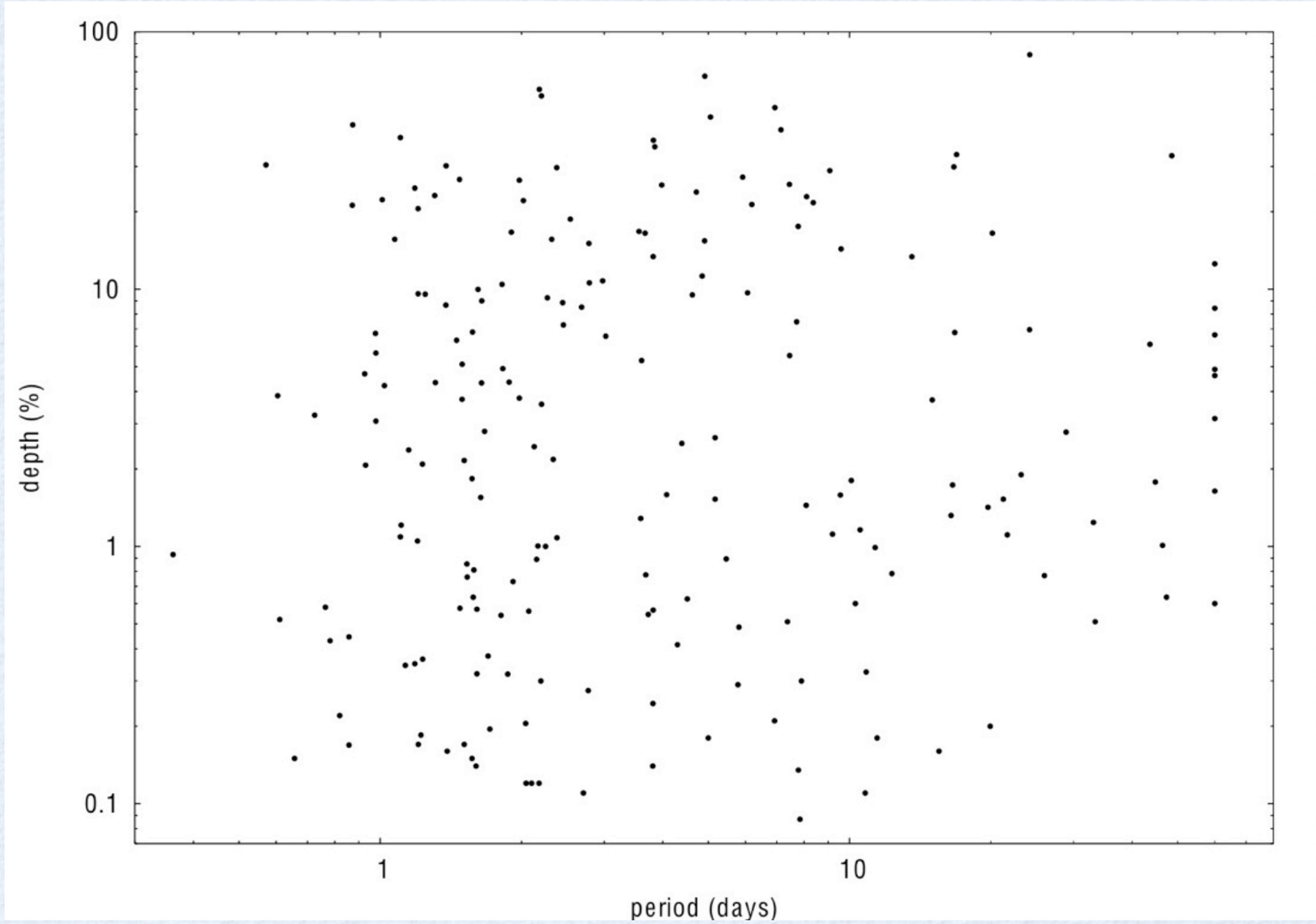
THE 50 PLANETARY CANDIDATES

- Transit parameters: Period, Epoch, Duration, Depth, Stellar density (Carpano et al. 2009)



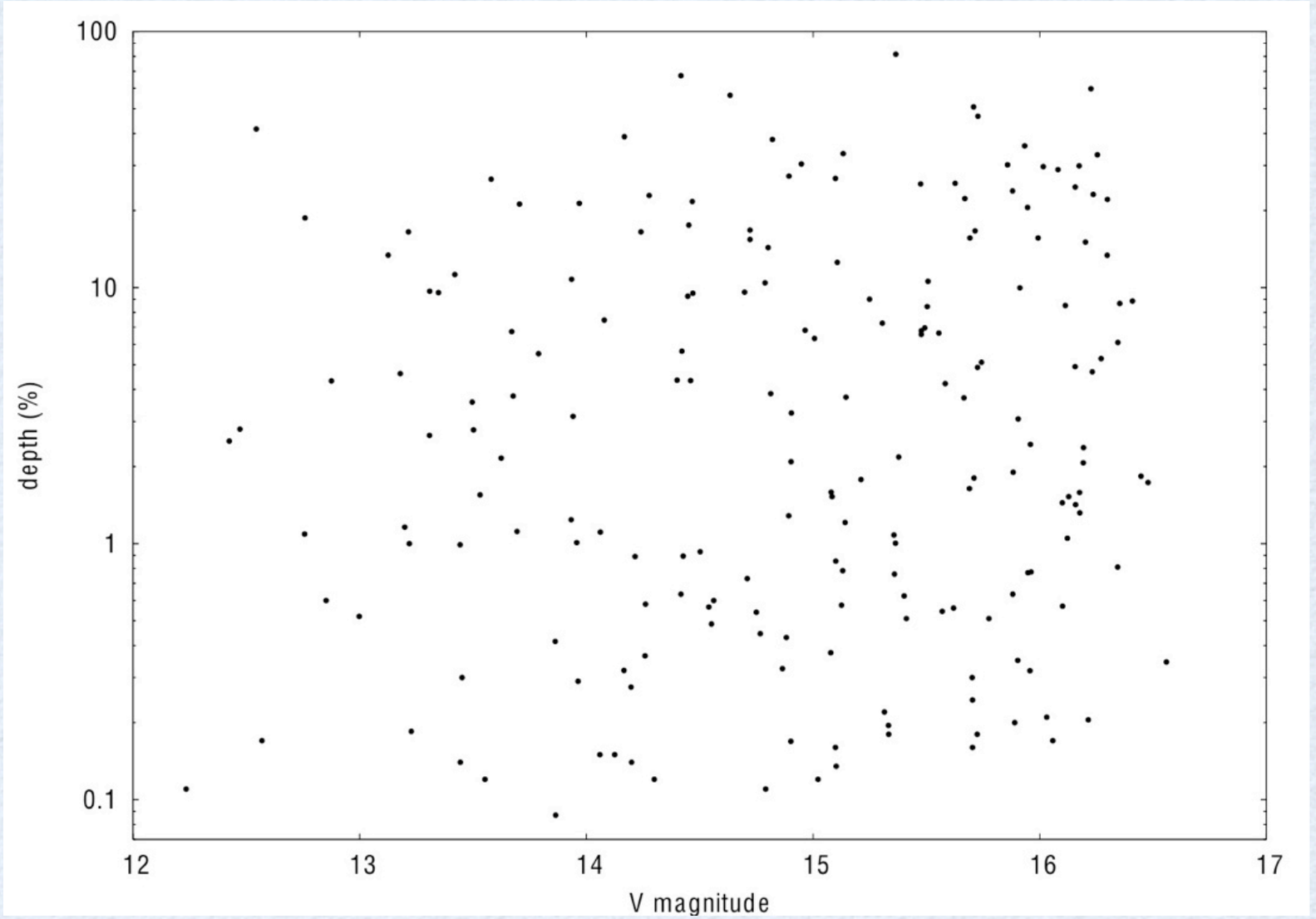
TRANSIT DEPTH VS PERIOD

- Depth vs period diagram for all periodic transit signals (planetary candidates+clear binaries)
- Dependence of depth with period only for large period (>10 days)

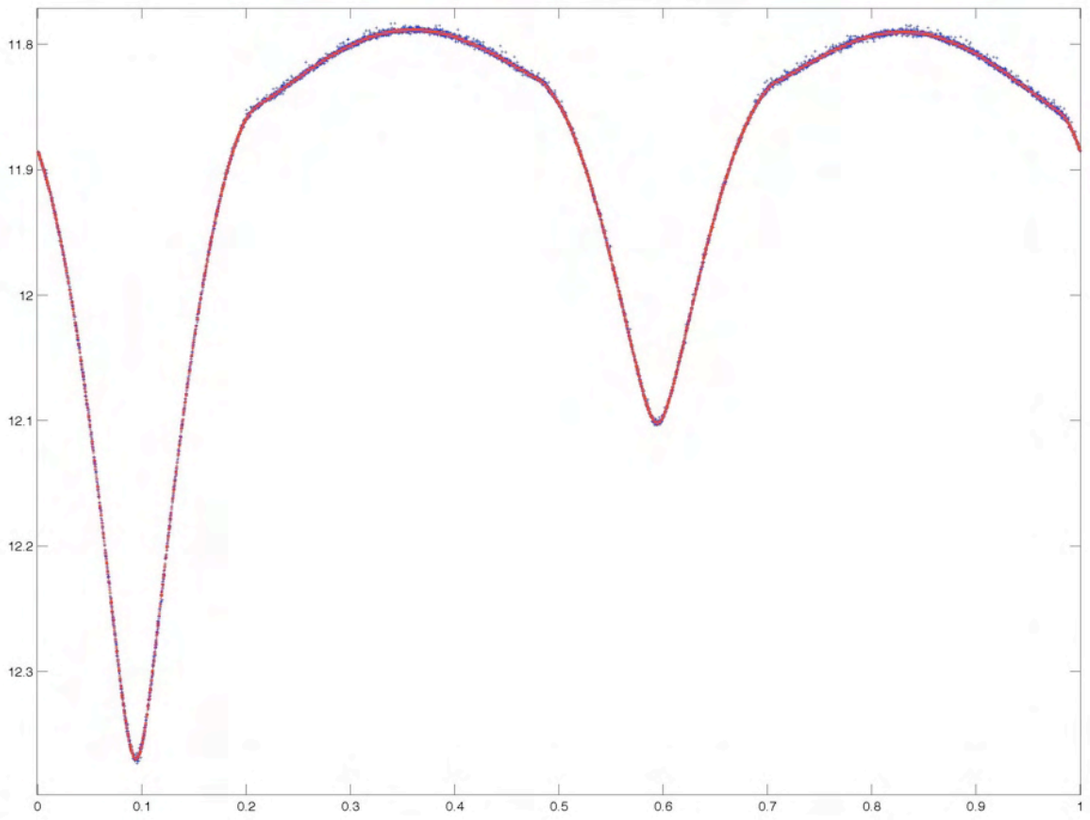


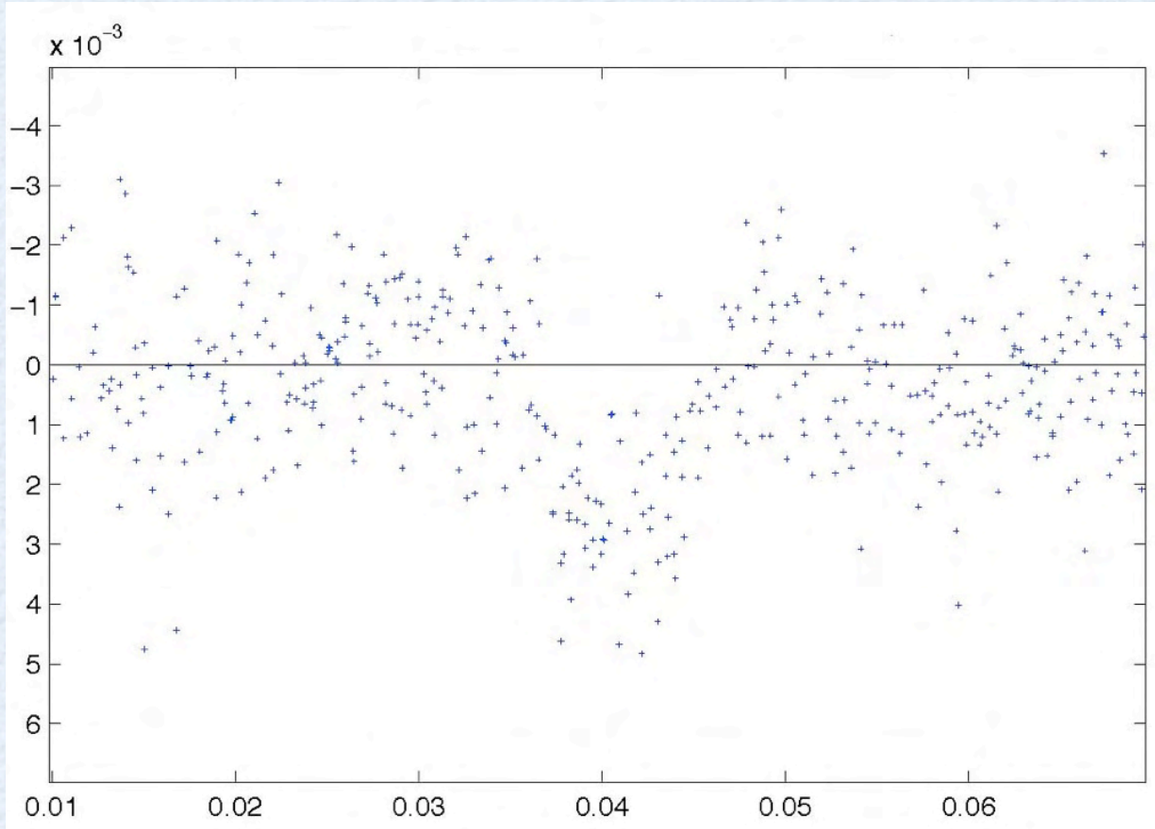
TRANSIT DEPTH VS MAG

- Depth vs mag diagram for all periodic transit signals (planetary candidates +clear binaries)
- Photon noise not dominant? (except for mag>16?)

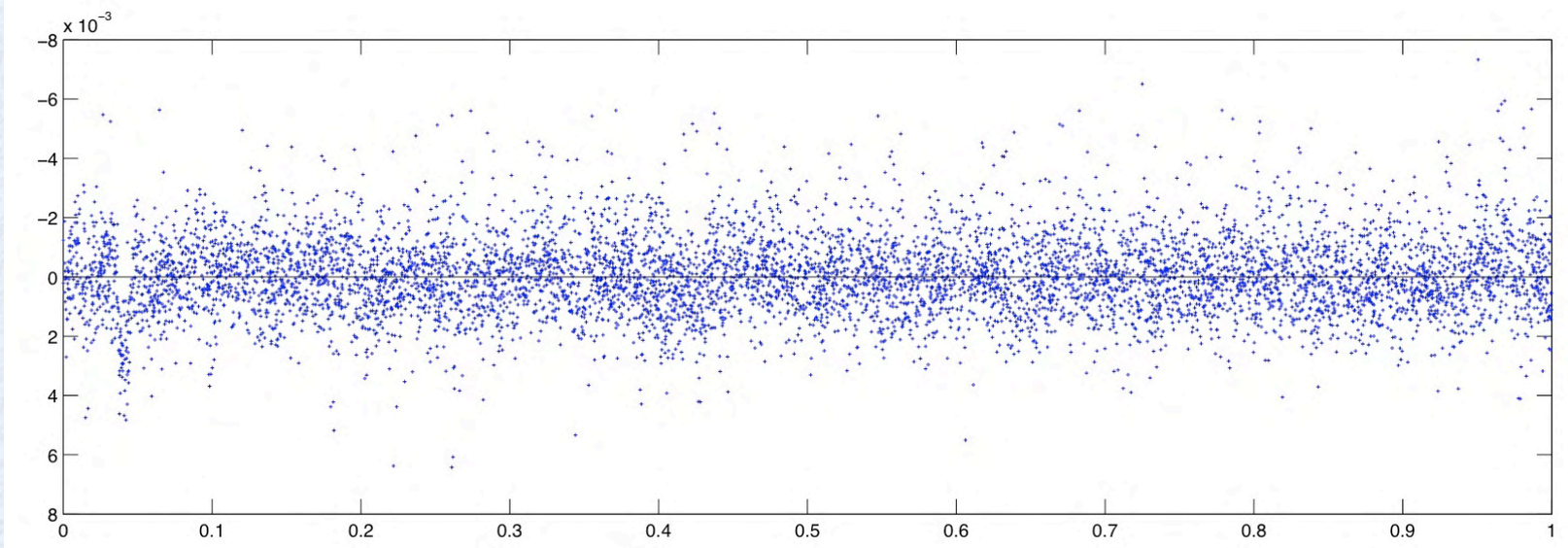


SOURCE CONFUSION: BINARY +PLANETARY CANDIDATE

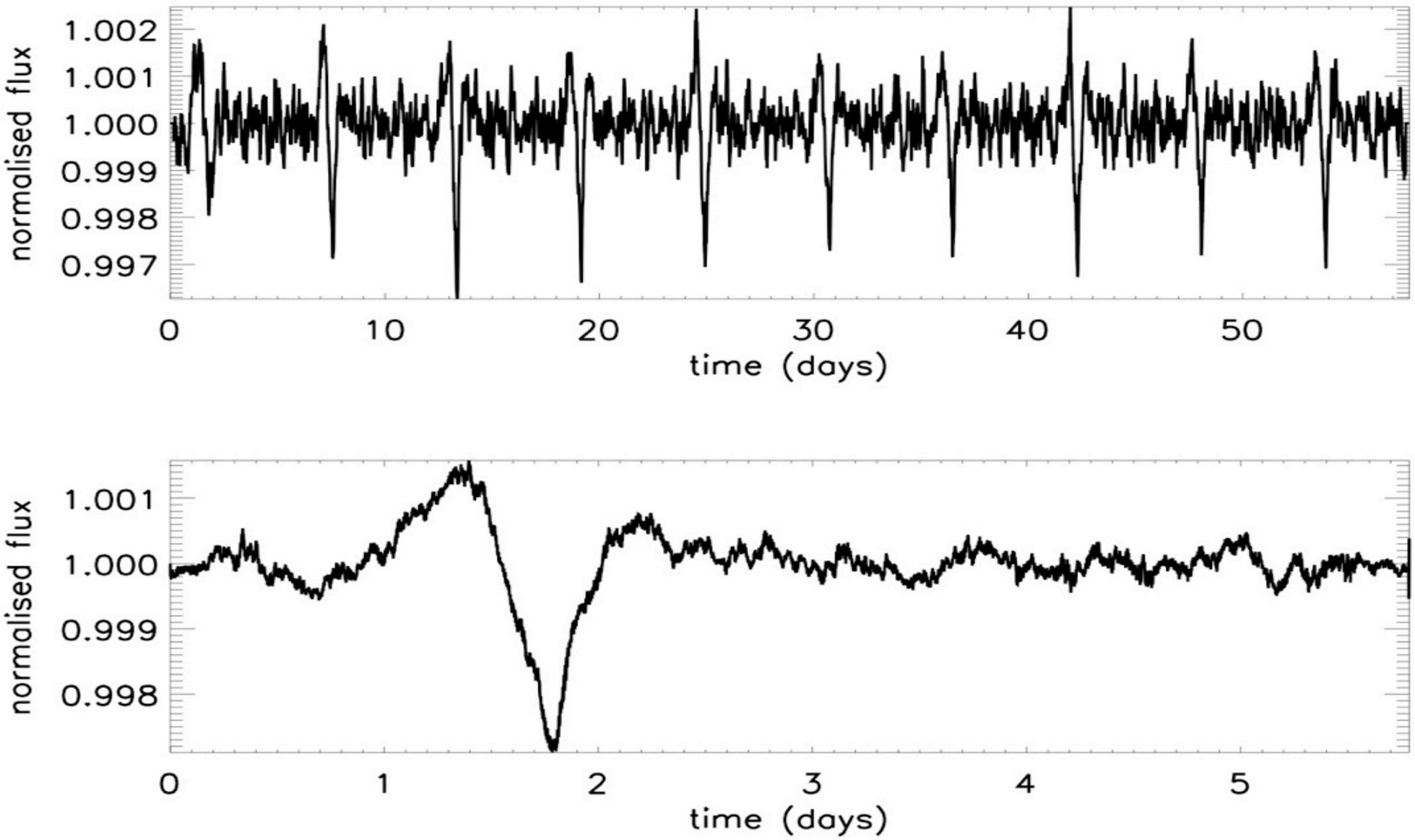




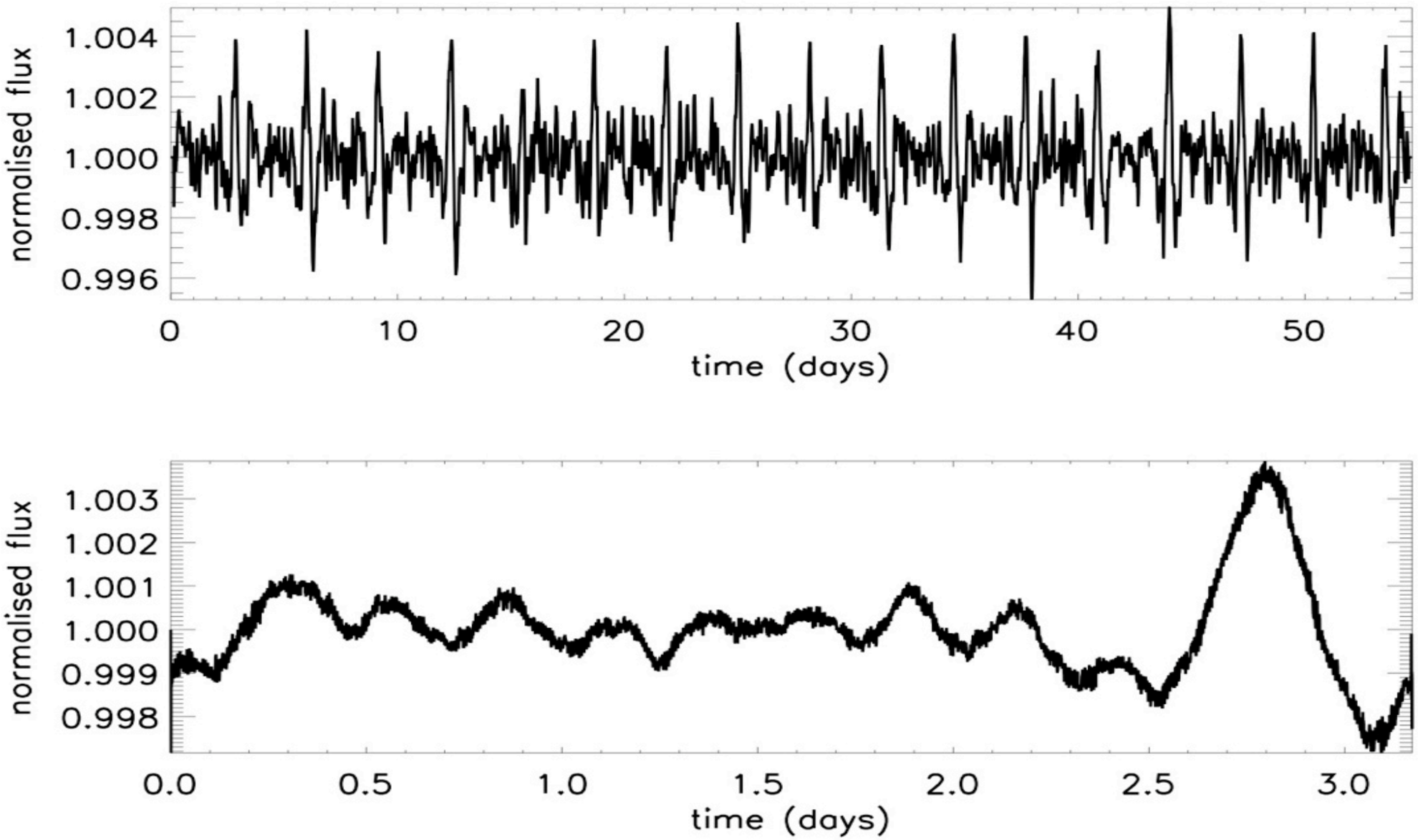
(Aviv Ofir)



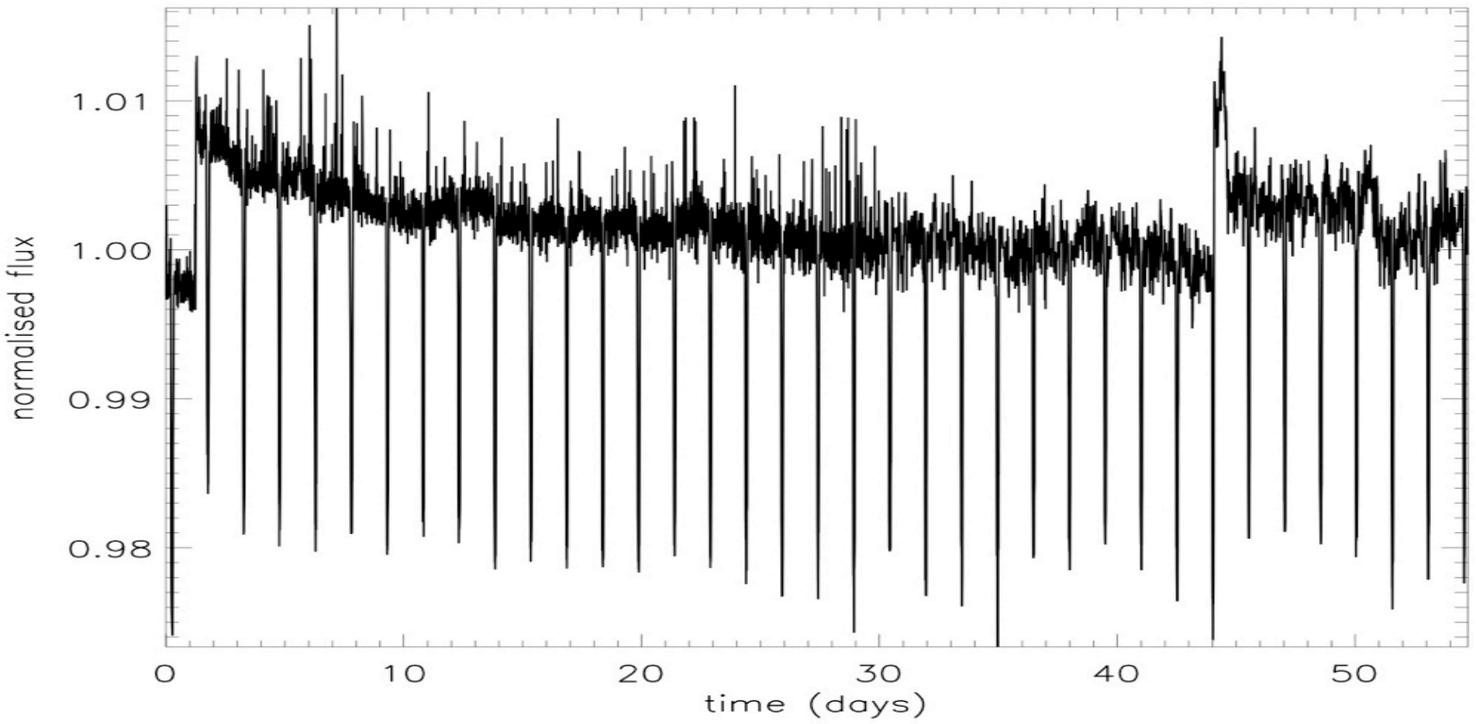
NOT A PLANET BUT STILL INTERESTING

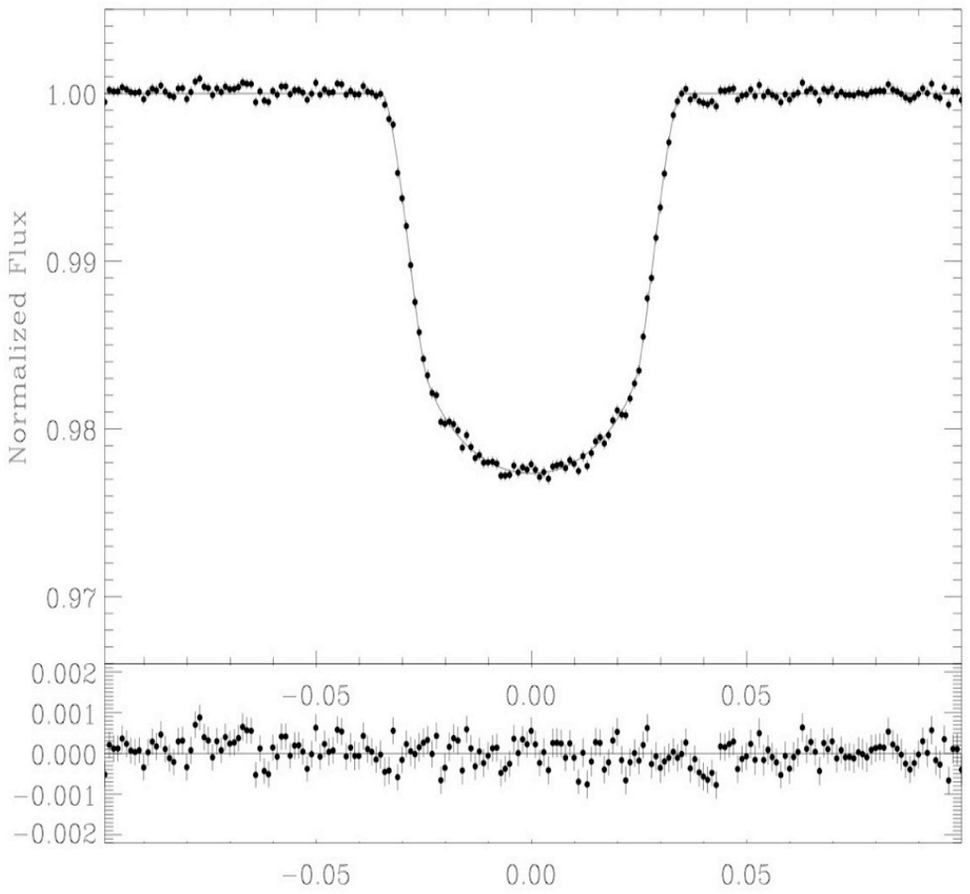


OSCILLATIONS?



COROT-EXO-1B





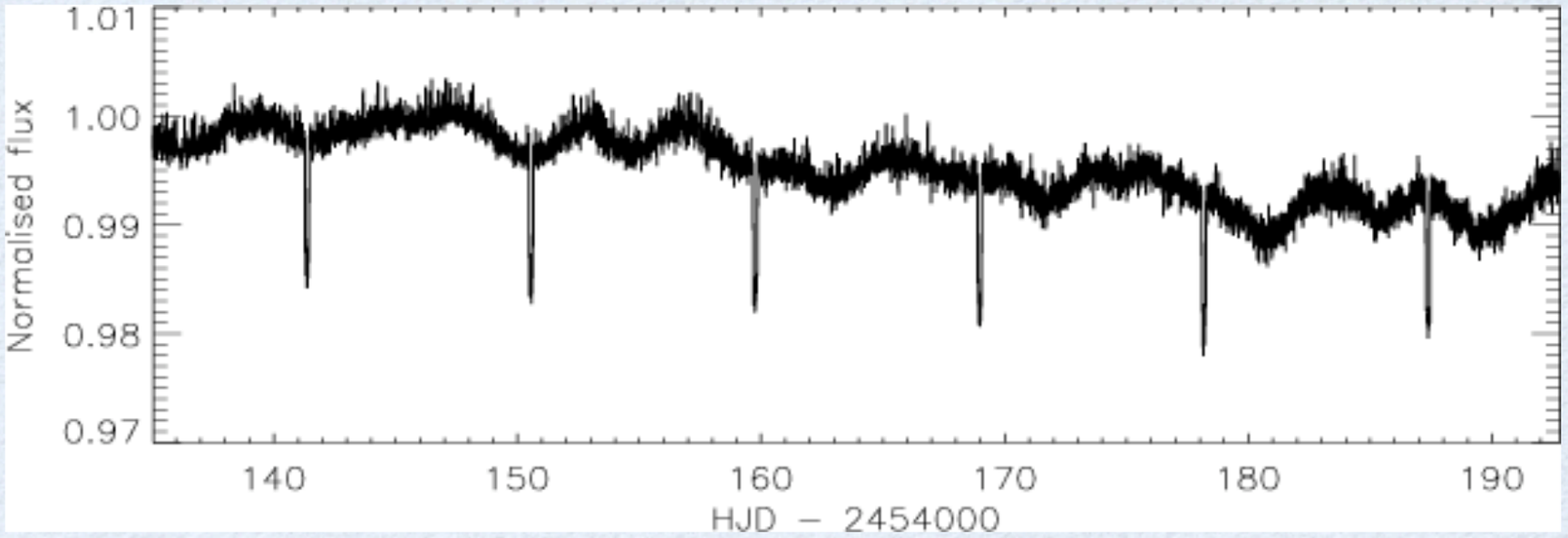
(Barge et al. 2008)

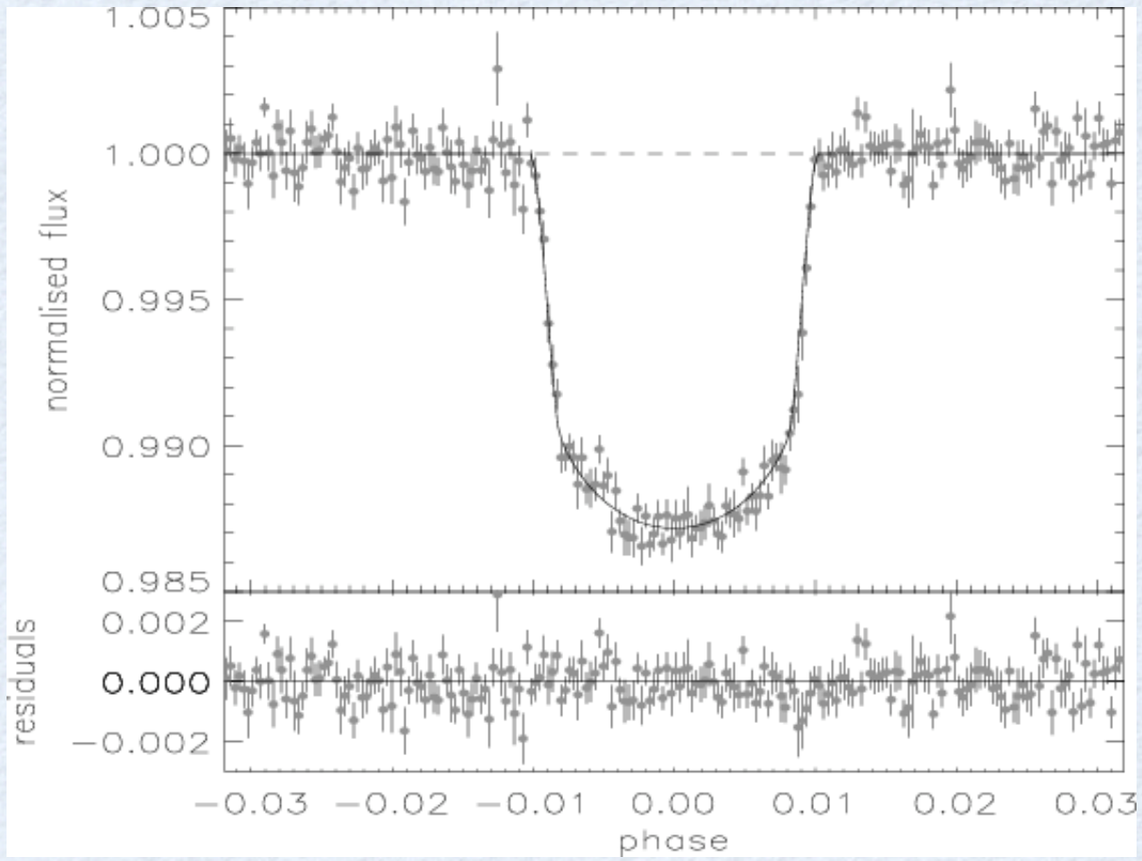
- P=1.51 days, Depth(%)=2.3, Dur(h)=2.4, R_{pl}=1.5 R_{jup}, M_{pl}=1.0 M_{jup}, R_*=1.1 R_{sun}

COROT-EXO-4B

- P=9.2 days, Depth(%)=1.3, Dur(h)=3.8, R_{pl}=1.2 R_{jup}, M_{pl}=0.75 M_{jup}, R_*=1.2 R_{sun}

(Aigrain et al. 2008)





STATUS OF FOLLOW-UPS

- Of the 50 candidates, 42 with high priorities have been sent for follow-up.
- ~ 31 have been or are being followed-up.
- So far only 2 confirmed planets (in IRa01): CoRoT-Exo-1b & CoRoT-Exo-4b.