

# KIC 007900114

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007900114-01	OBS	8148.01	303.955629	276.998094	478.9	14.590	9.8	8.4	0.89	5412	2.18	0.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007900114-01	OBS	FP	0.10	1	0	0	0	INCONSISTENT_TRANS—CENT_FEW_DIFFS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

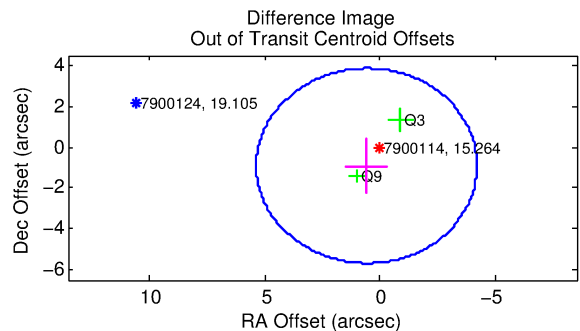
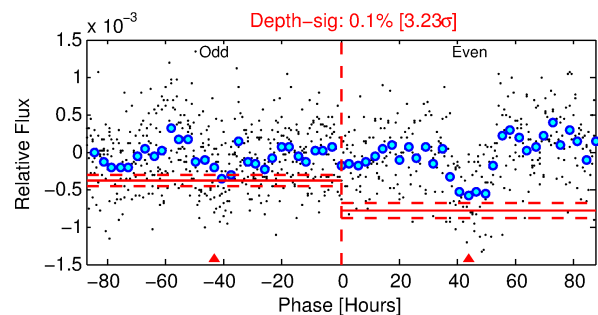
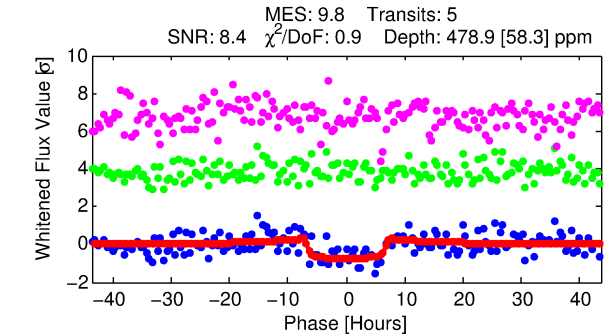
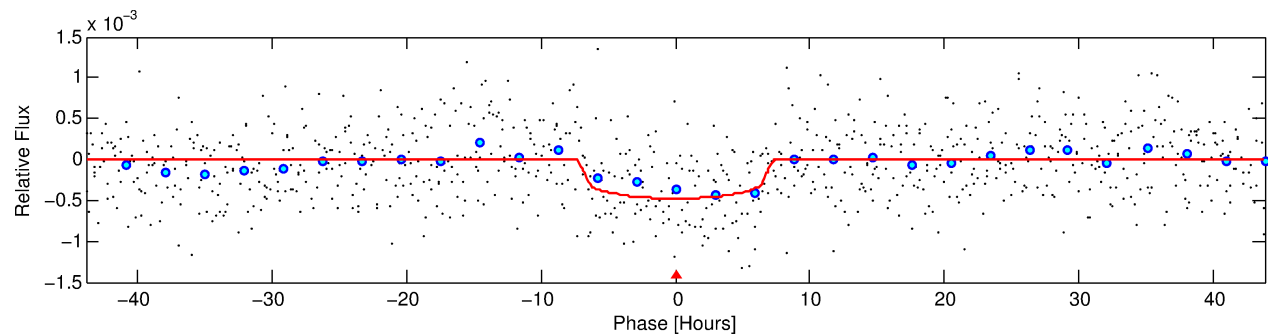
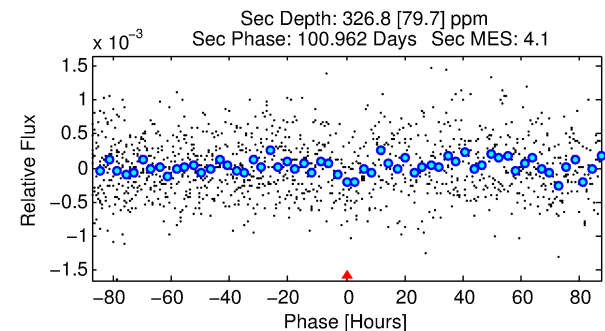
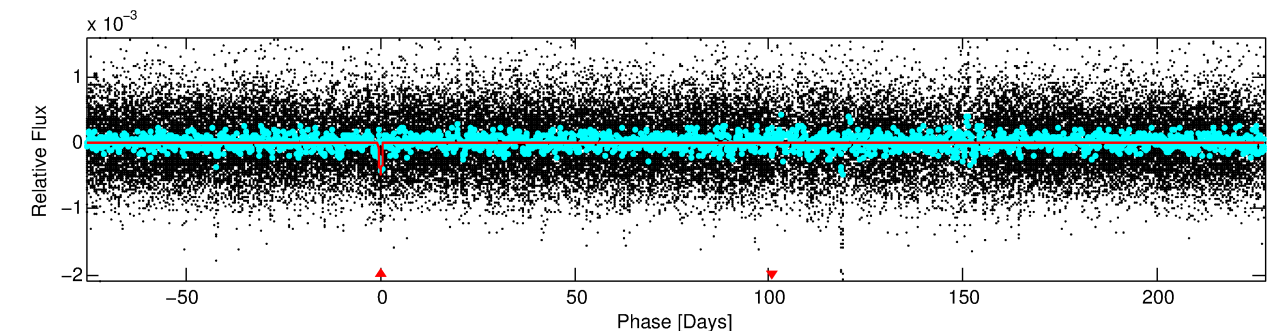
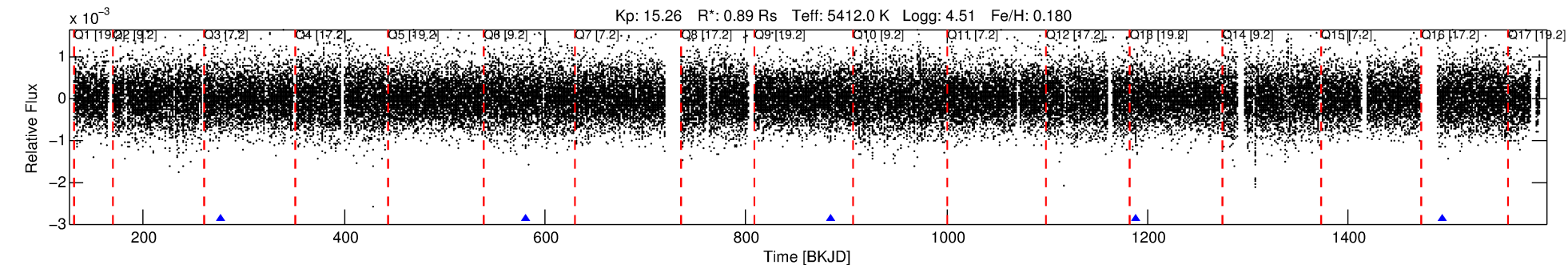
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007900114-01

No Significant Match Found

# DV One-Page Summary

KIC: 7900114 Candidate: 1 of 1 Period: 303.956 d



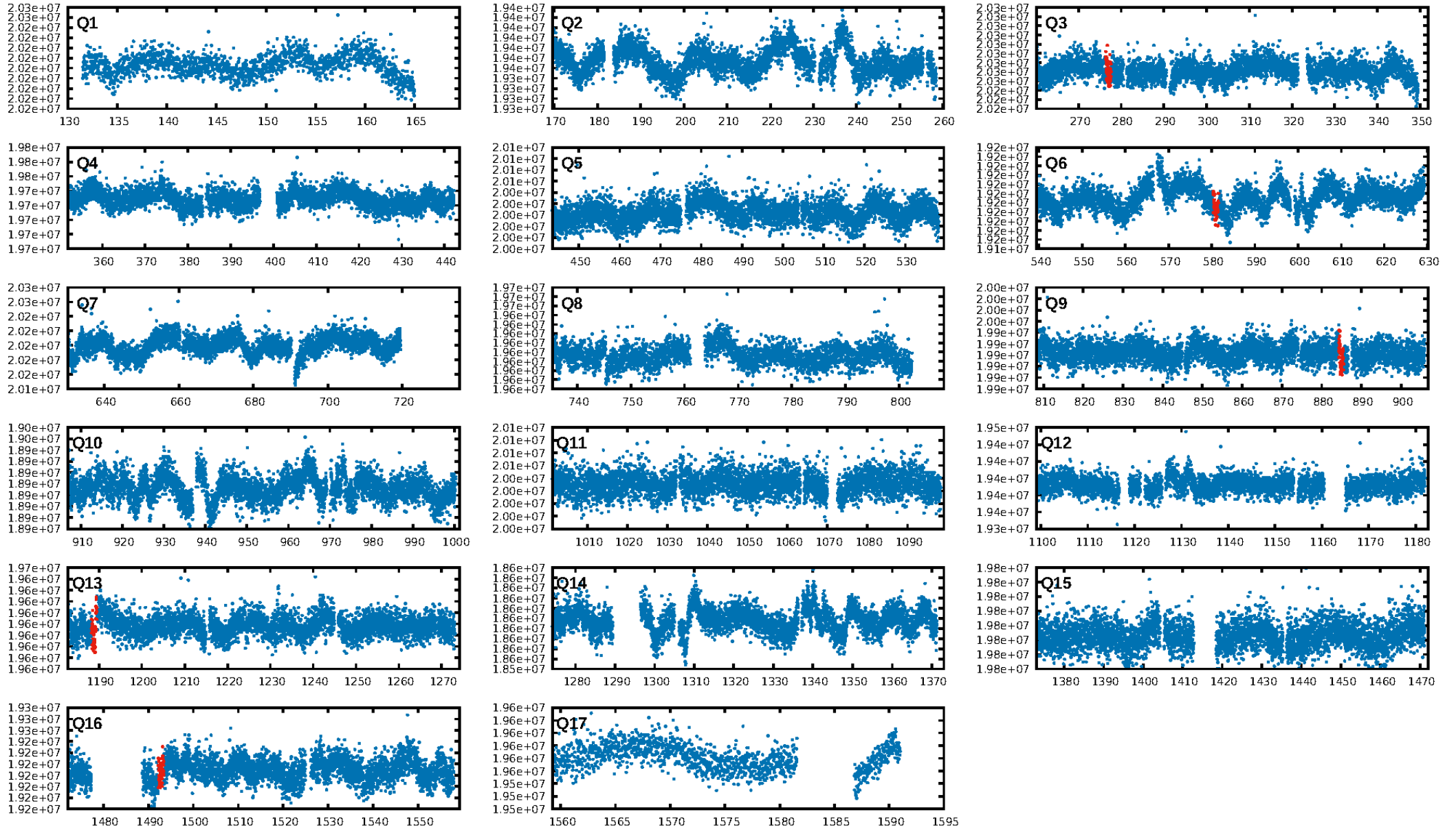
## DV Fit Results:

Period = 303.95563 [0.00863] d  
Epoch = 276.9981 [0.0211] BKJD  
Rp/R\* = 0.0225 [0.0057]  
a/R\* = 98.89 [95.18]  
b = 0.81 [0.41]  
Seff = 0.81 [0.24]  
Teff = 242 [18] K  
Rp = 2.18 [0.71] Re  
a = 0.8653 [0.1572] AU  
Ag = 28346.85 [17575.56] [1.61σ]  
Teffp = 4849 [693] K [6.65σ]

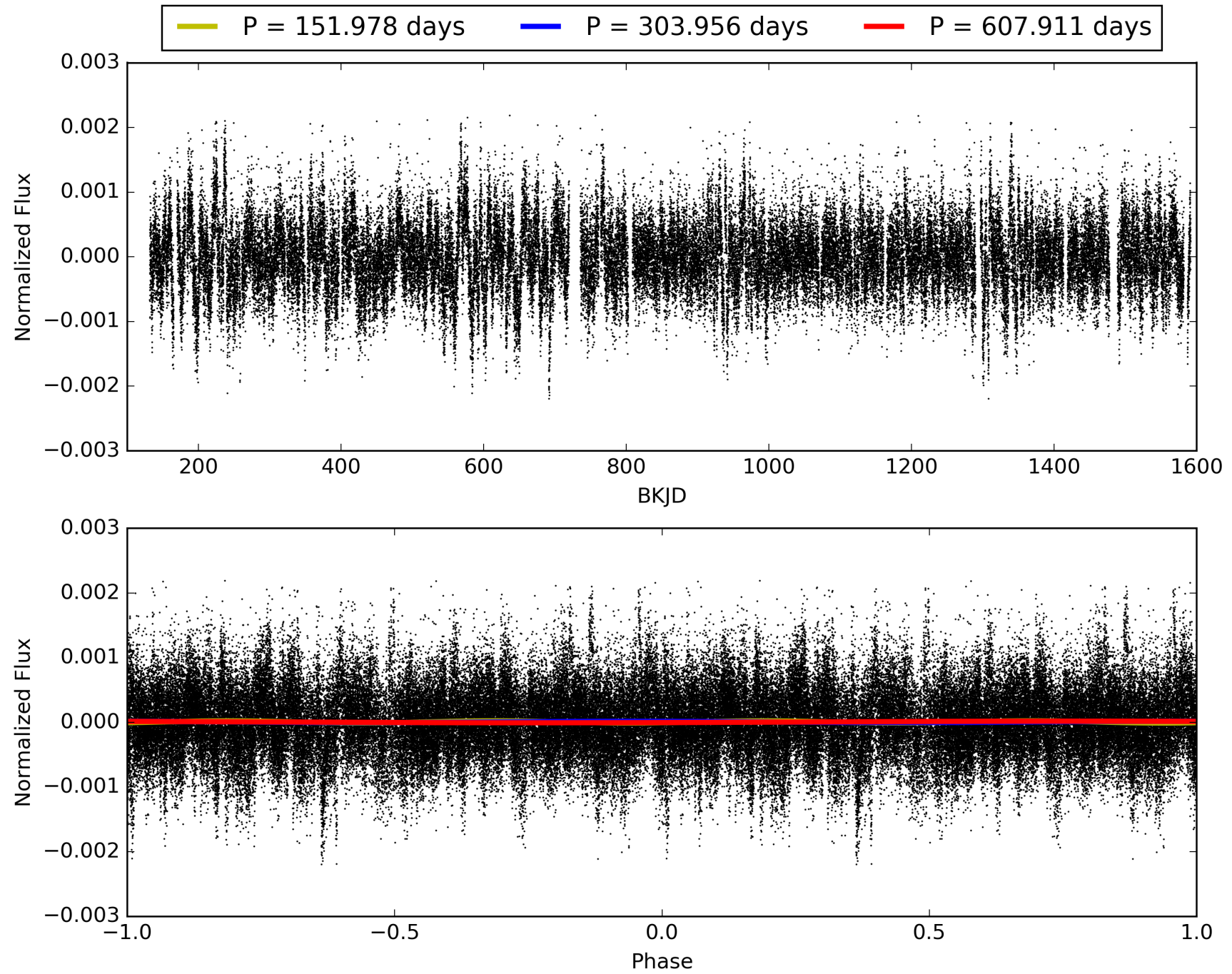
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.6%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.03e-11**  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 1.282  
Centroid-sig: 73.9%  
Centroid-so: 1.139 arcsec [0.73σ]  
OotOffset-rm: 1.084 arcsec [0.68σ]  
OotOffset-st: 0/1/0/1 [2]  
KicOffset-rm: 1.262 arcsec [0.83σ]  
KicOffset-st: 0/1/0/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [4/4]

# TCE 007900114-01, PDC Light Curves

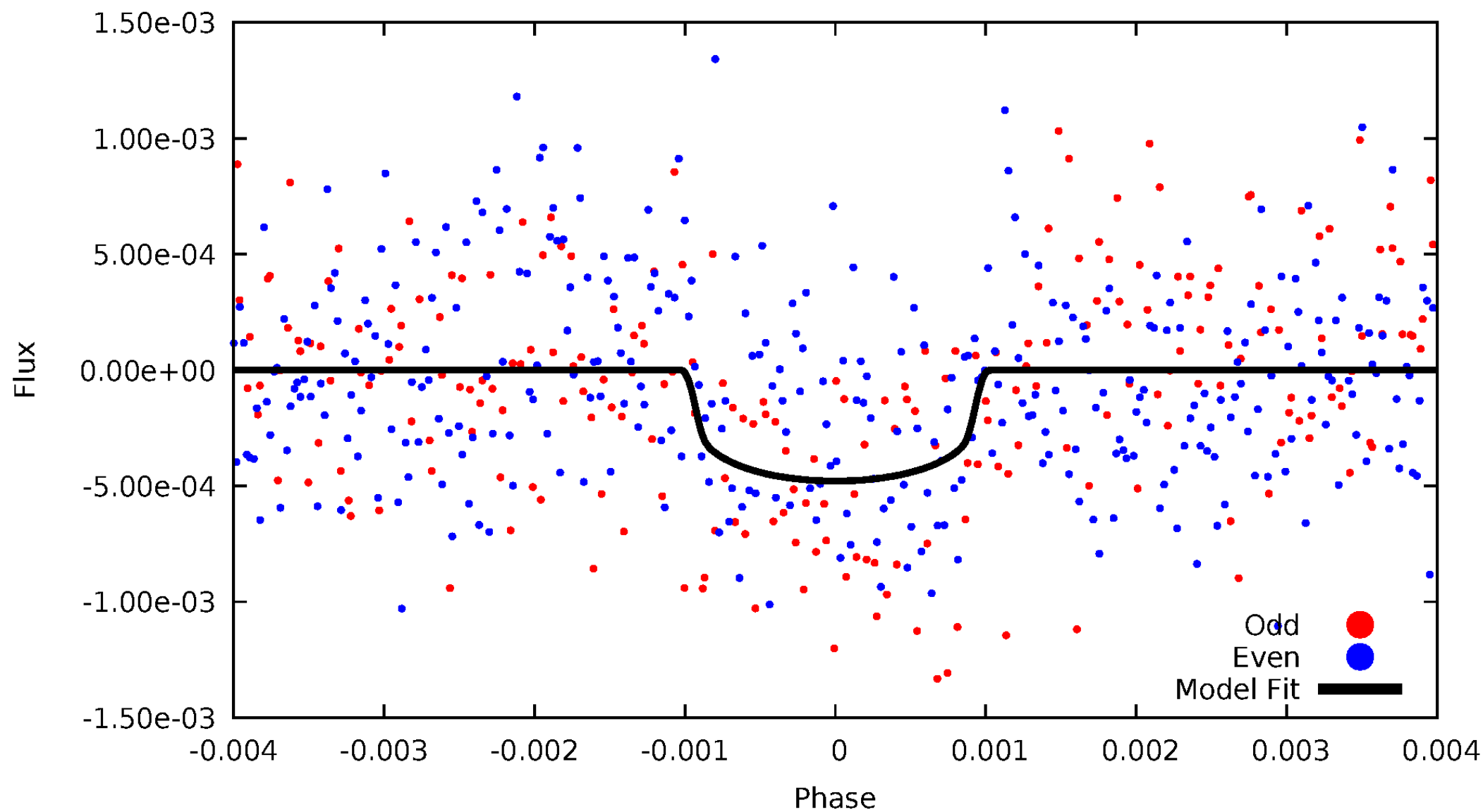


TCE 007900114-01



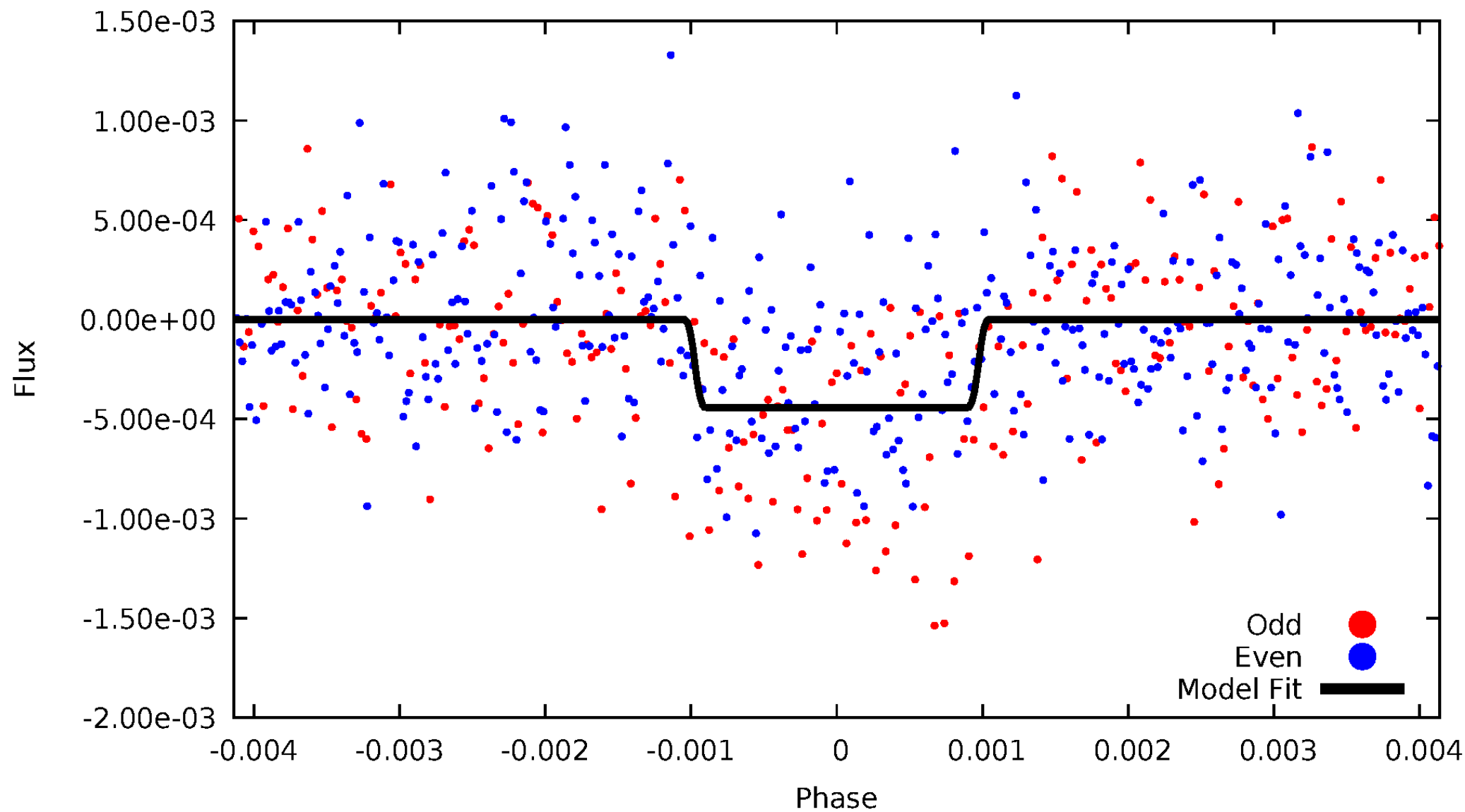
# DV Odd/Even

TCE 007900114-01



# ALT Odd/Even

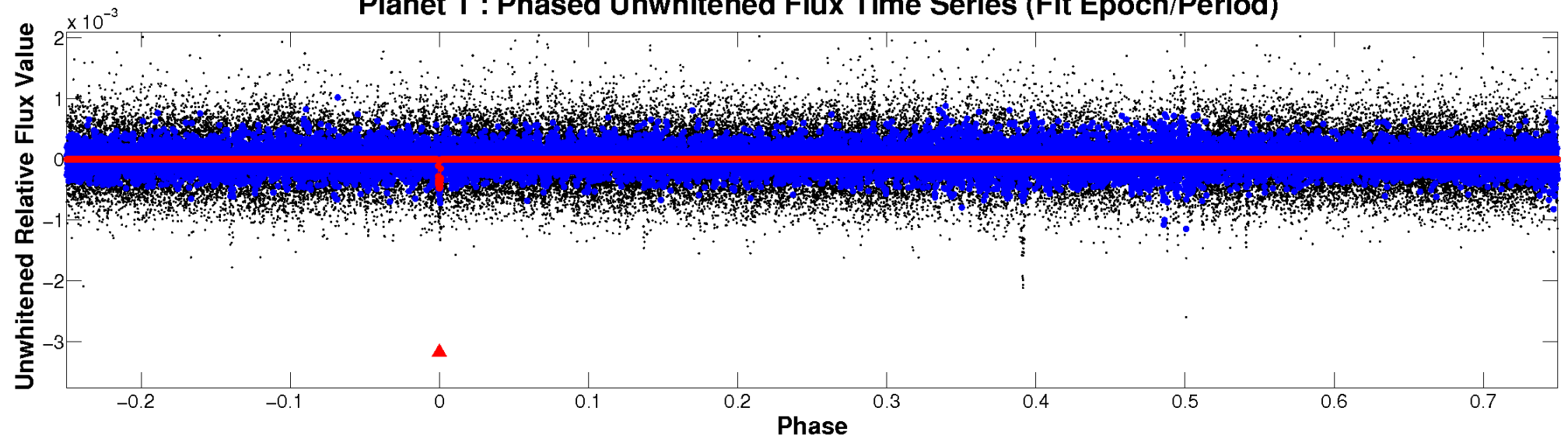
TCE 007900114-01



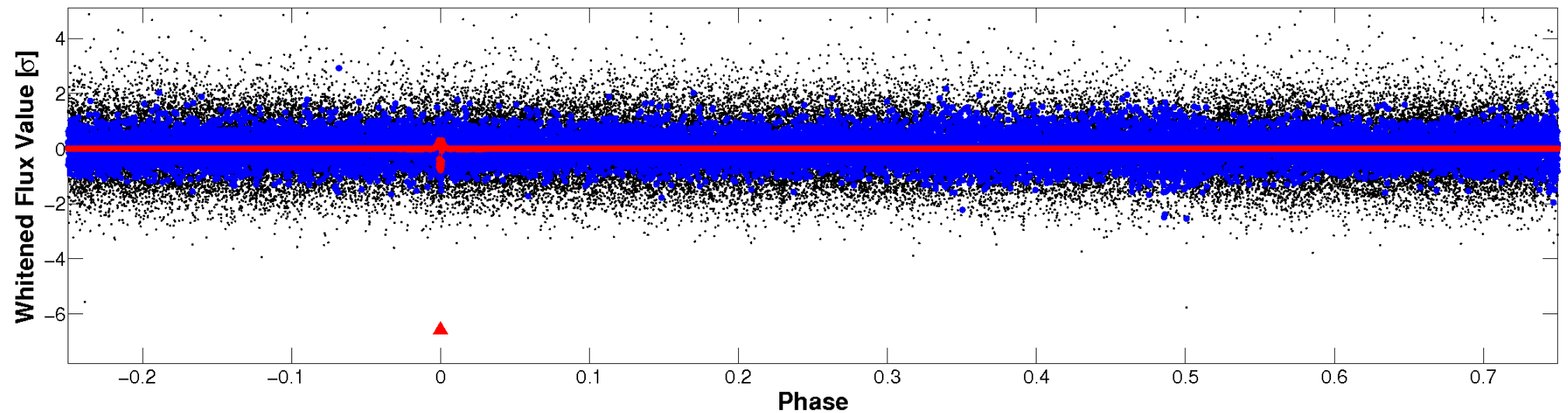


# Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

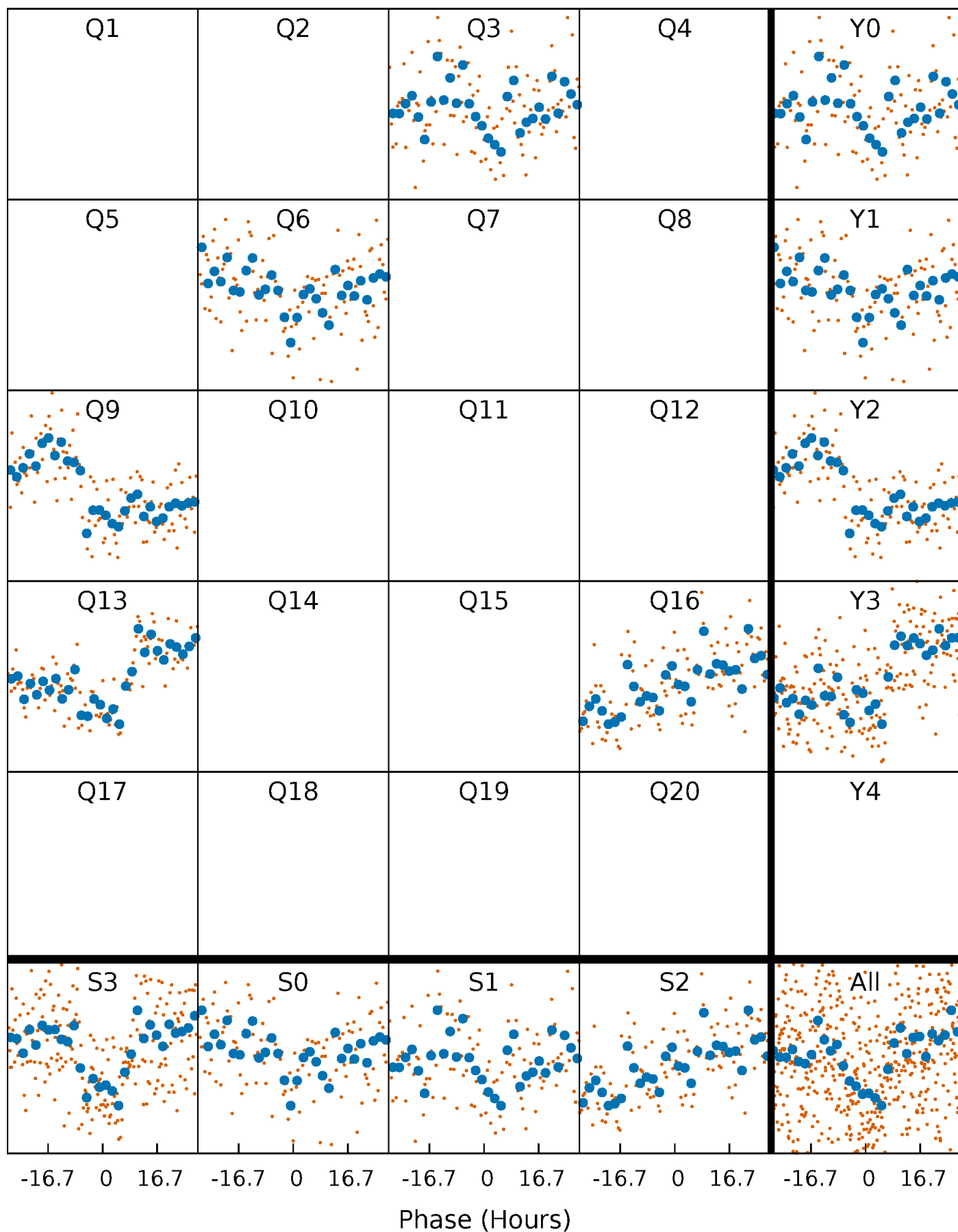


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

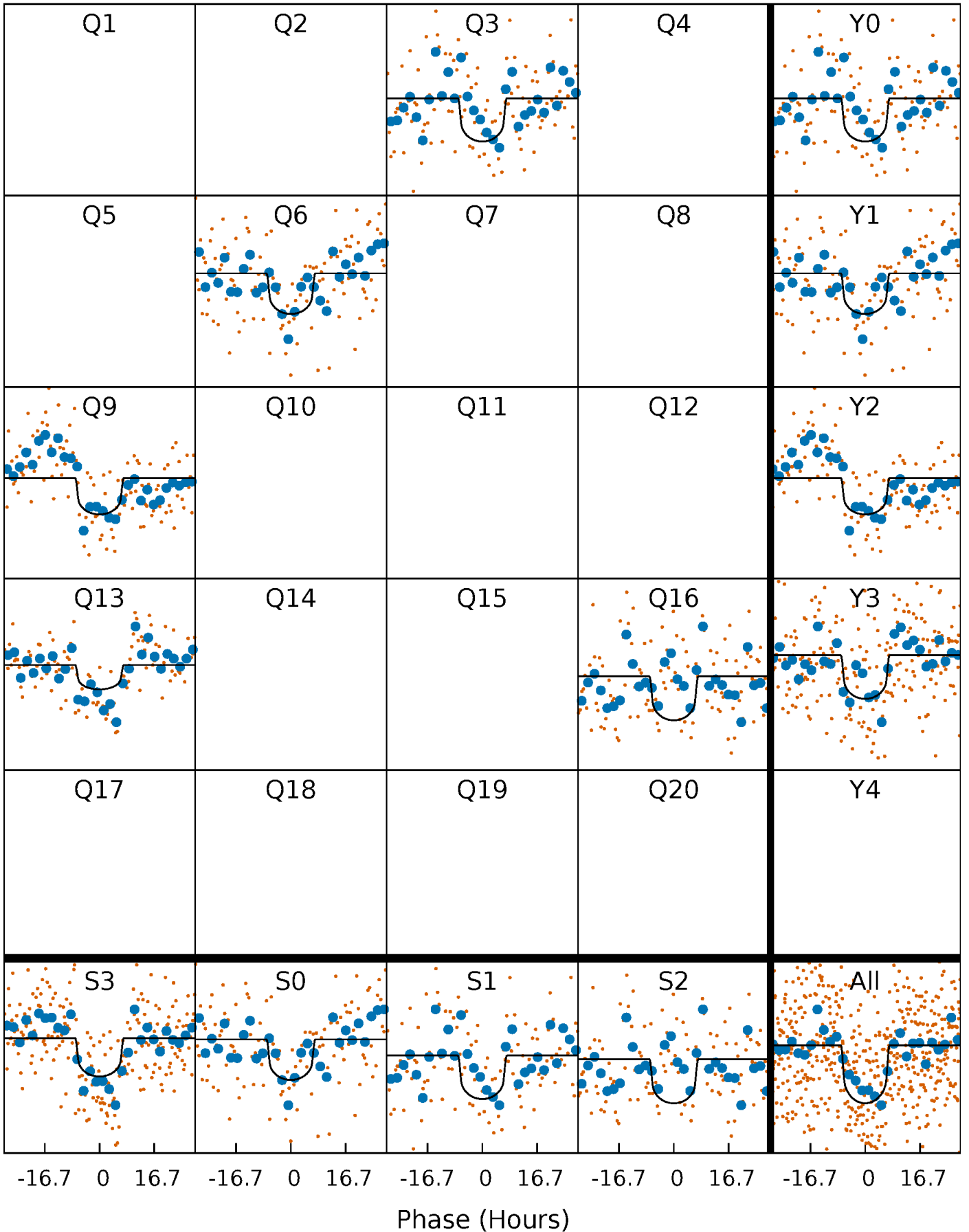
TCE 007900114-01 P=303.955629 Days  $T_0=276.998094$  (BKJD)





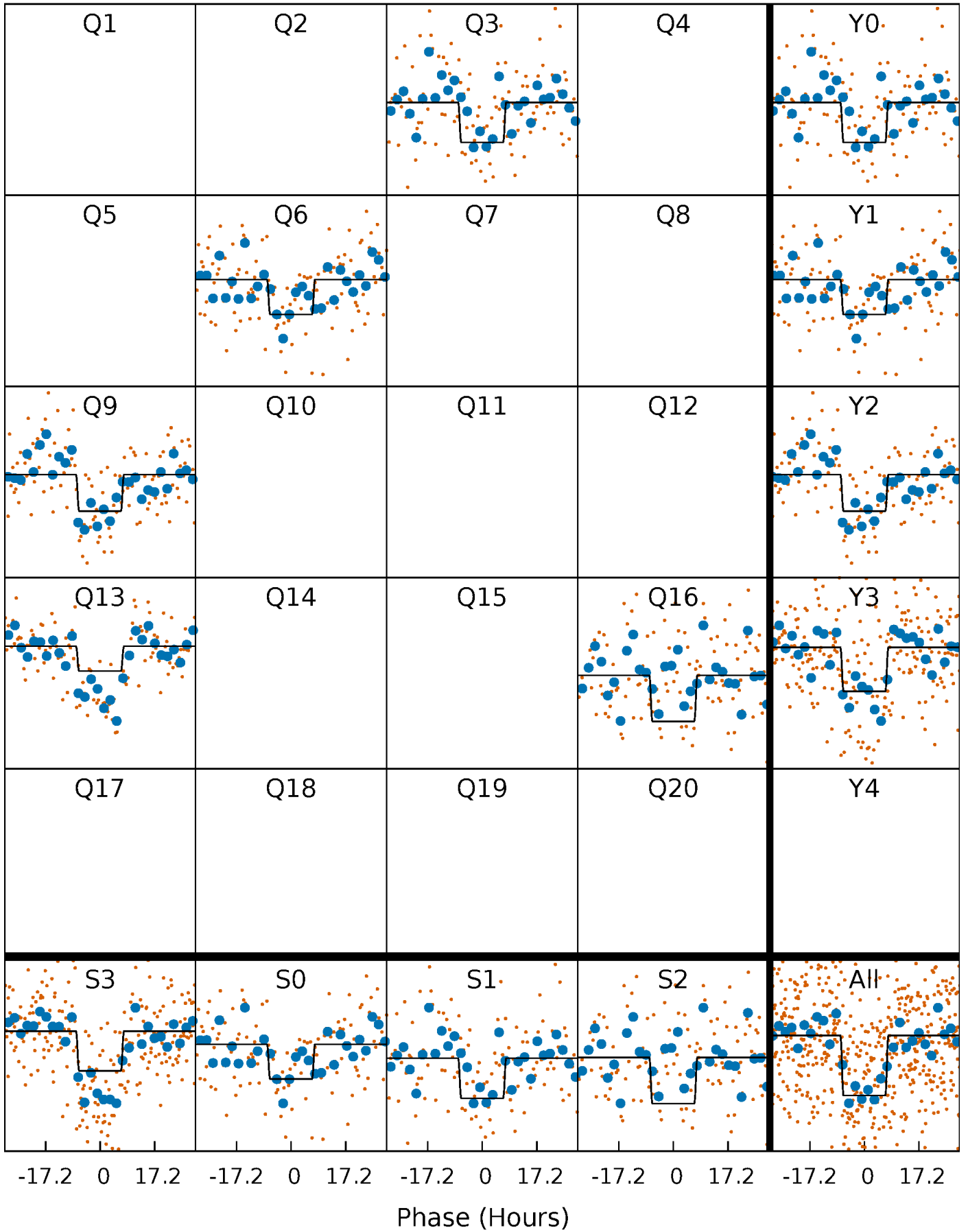
# DV Quarter-Phased Transit Curves

TCE 007900114-01 P=303.955629 Days  $T_0=276.998094$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

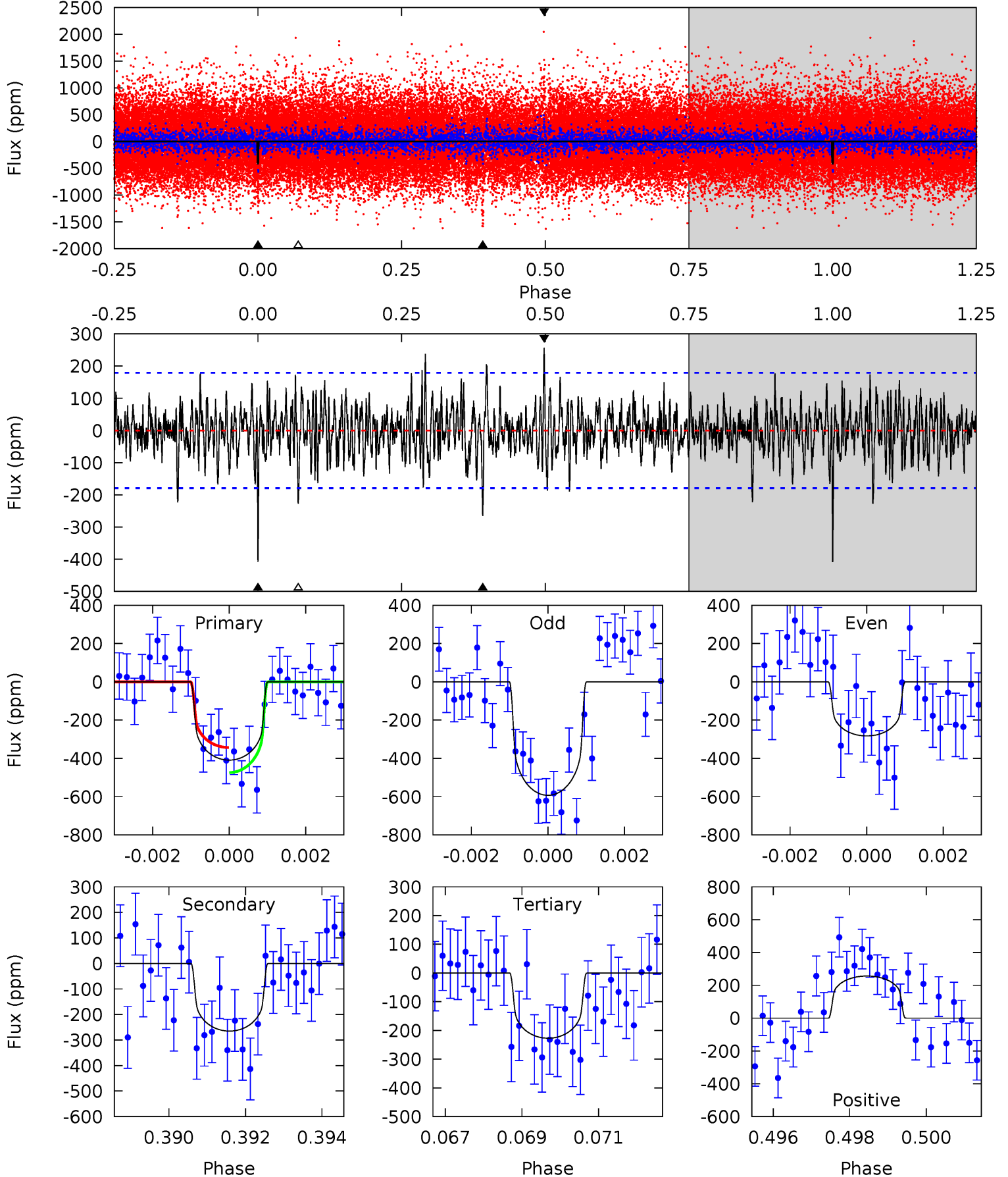
TCE 007900114-01 P=303.921960 Days  $T_0=277.101109$  (BKJD)



# DV Model-Shift Uniqueness Test

007900114-01, P = 303.955629 Days, E = 276.998094 Days

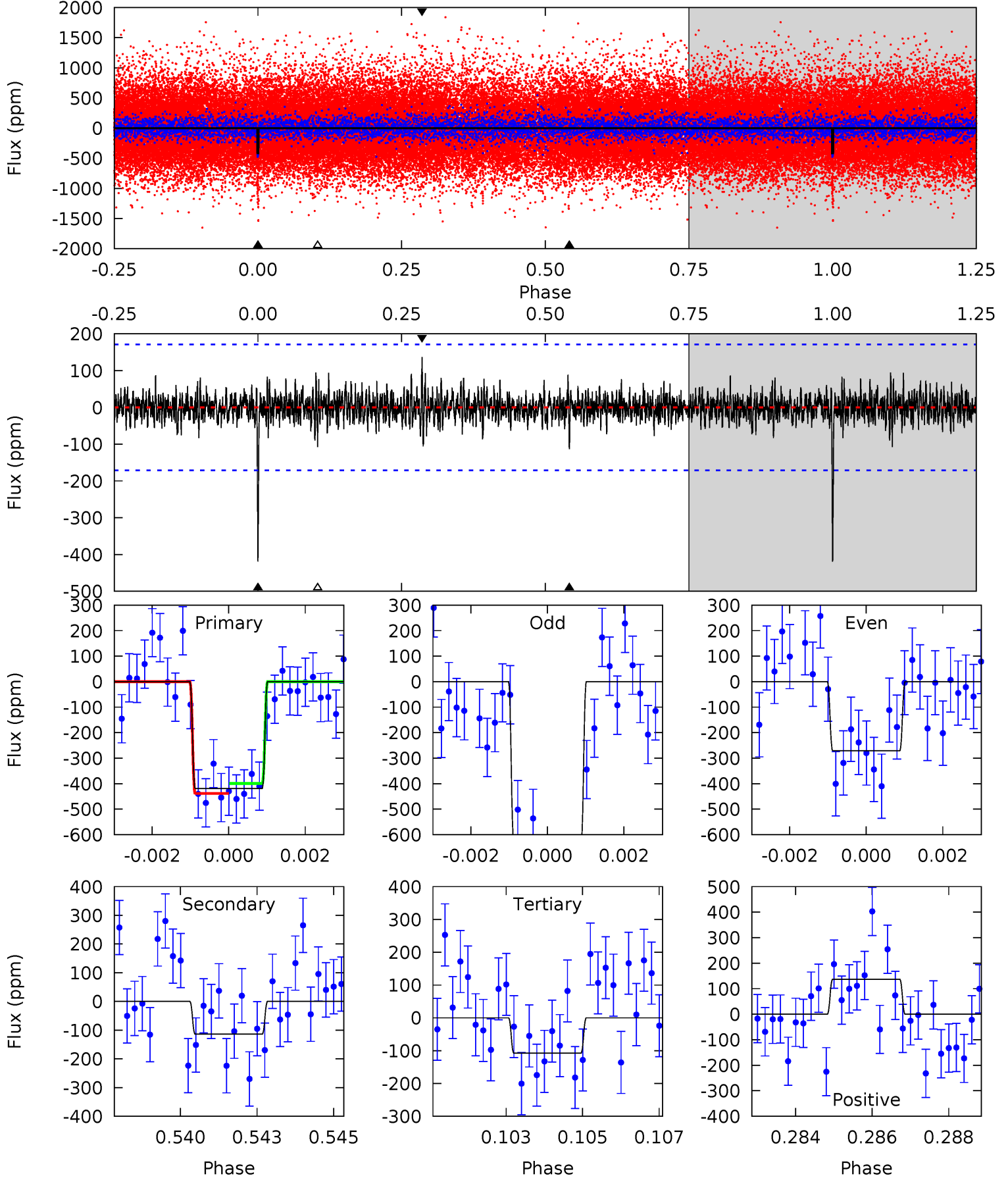
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.2	7.88	6.75	7.62	5.32	3.08	1.82	5.41	4.53	1.13	0.25	4.57	1.04	0.39	1.94



# Alt Model-Shift Uniqueness Test

007900114-01, P = 303.921960 Days, E = 277.101109 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.0	3.53	3.34	4.26	5.32	3.08	0.83	9.68	8.76	0.19	-0.72	5.61	1.17	0.25	0.60



### Stellar Parameters For KIC 007900114

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5412^{+164}_{-164}$	$4.513^{+0.050}_{-0.150}$	$0.180^{+0.200}_{-0.300}$	$0.887^{+0.187}_{-0.080}$	$0.936^{+0.074}_{-0.090}$	$1.886^{+0.396}_{-0.781}$
	+3%/-3%	+1%/-3%	+111%/-167%	+21%/-9%	+8%/-10%	+21%/-41%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 007900114-01 / KOI 8148.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-265 \pm 34$	$2.23^{+0.58}_{-0.53}$	$342^{+19}_{-14}$	$4702^{+592}_{-407}$	$21366^{+16106}_{-7993}$
Alt.	$-114 \pm 32$	$2.08^{+0.60}_{-0.54}$	$343^{+18}_{-16}$	$4115^{+551}_{-395}$	$10397^{+10145}_{-4331}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

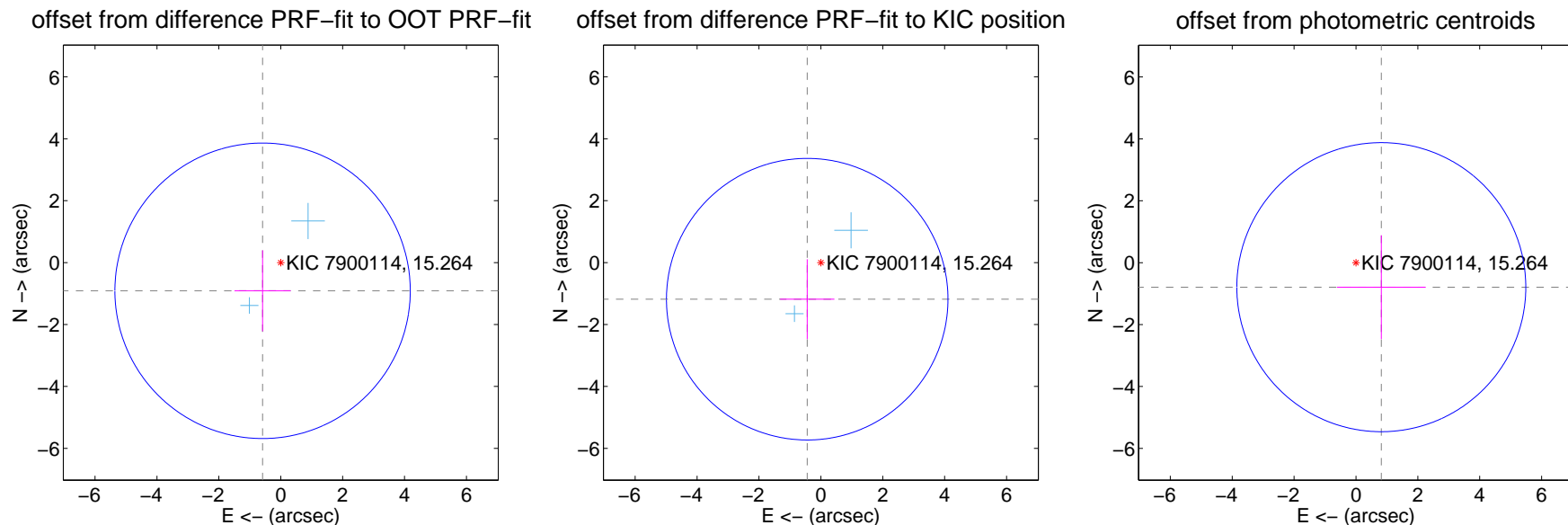
## DV Centroid Data

Supplemental centroid analysis for 007900114-01. Kepler magnitude: 15.26. Transit SNR 8.37

There are 2 quarters with good PRF difference image offsets

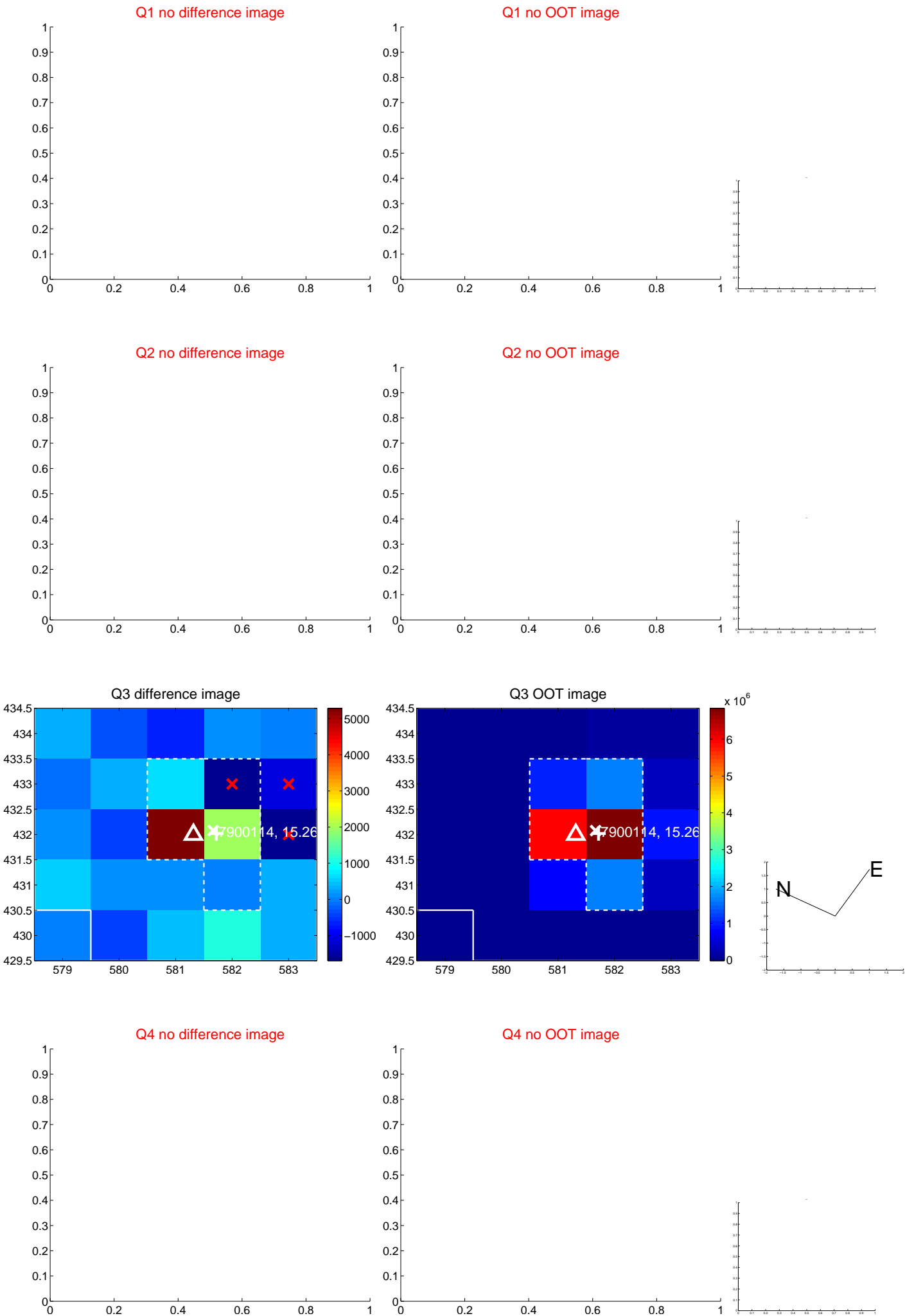
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.084 \pm 1.590$	0.68	$0.587 \pm 0.909$	$-0.911 \pm 1.308$
PRF-fit source offset from KIC position	$1.262 \pm 1.516$	0.83	$0.441 \pm 0.878$	$-1.182 \pm 1.291$
photometric centroid source offset	$1.14 \pm 1.56$	0.73	$-0.82 \pm 1.43$	$-0.79 \pm 1.68$



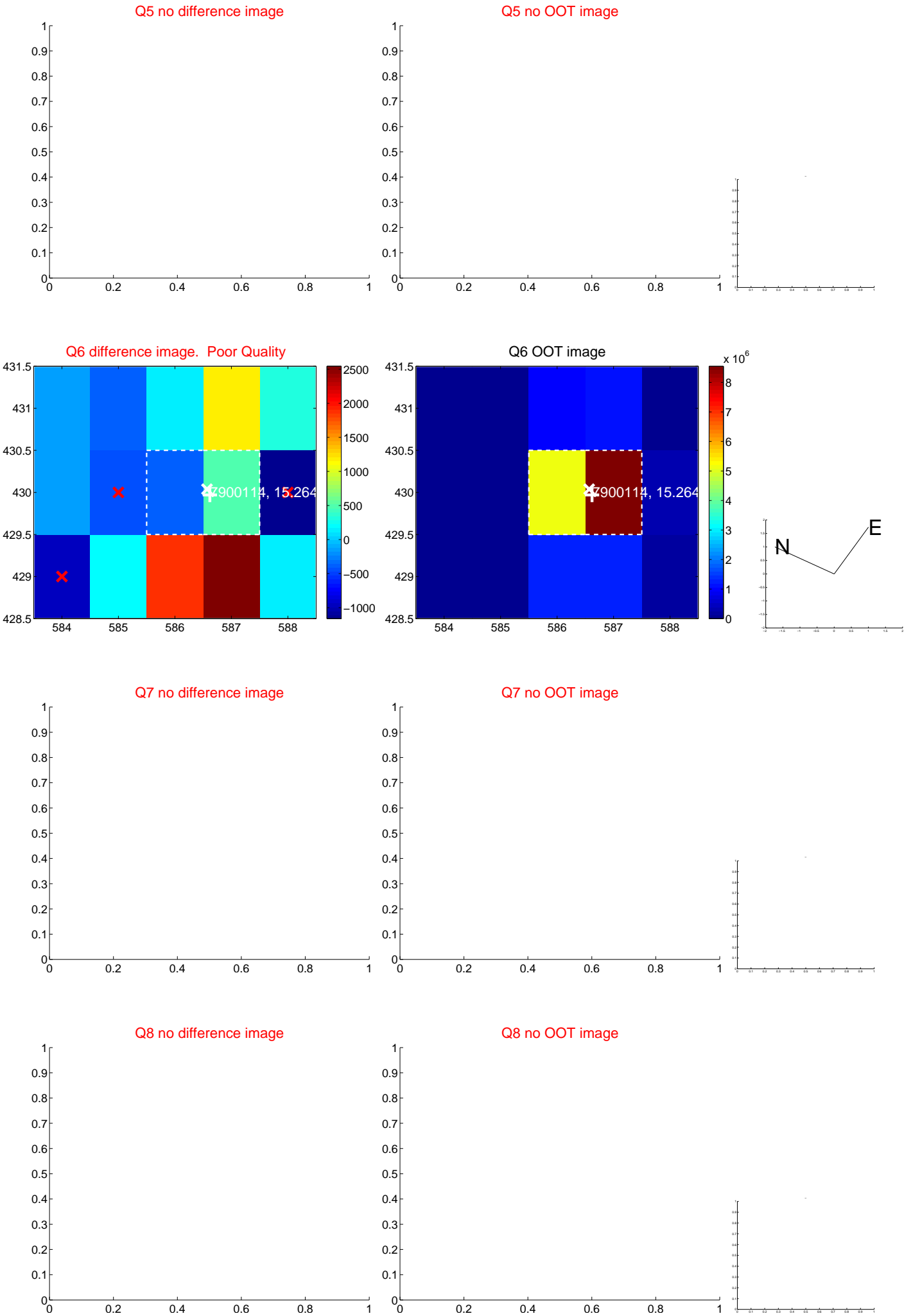
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

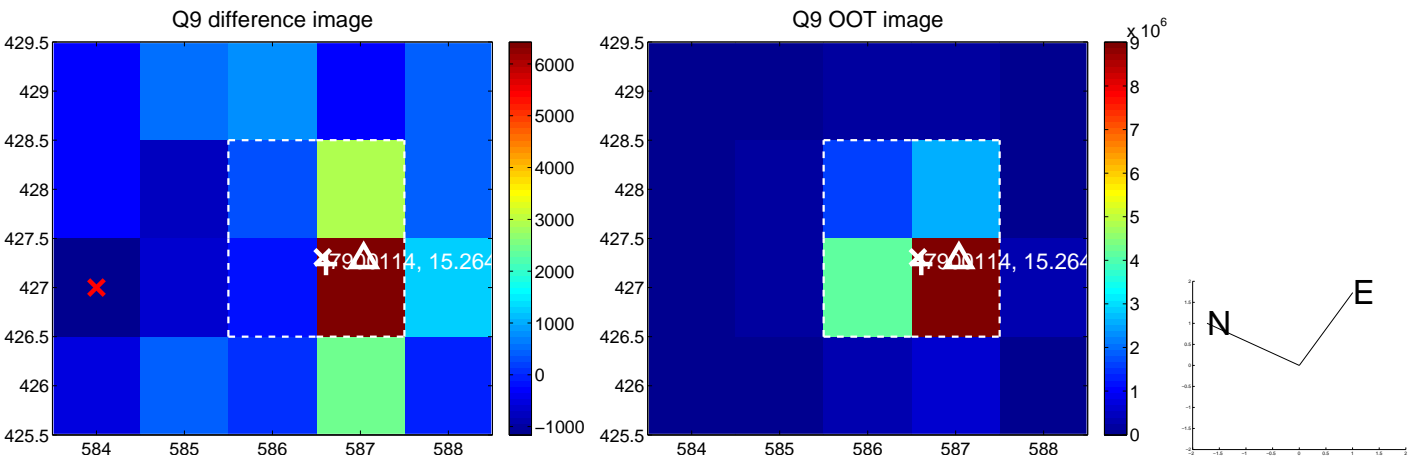




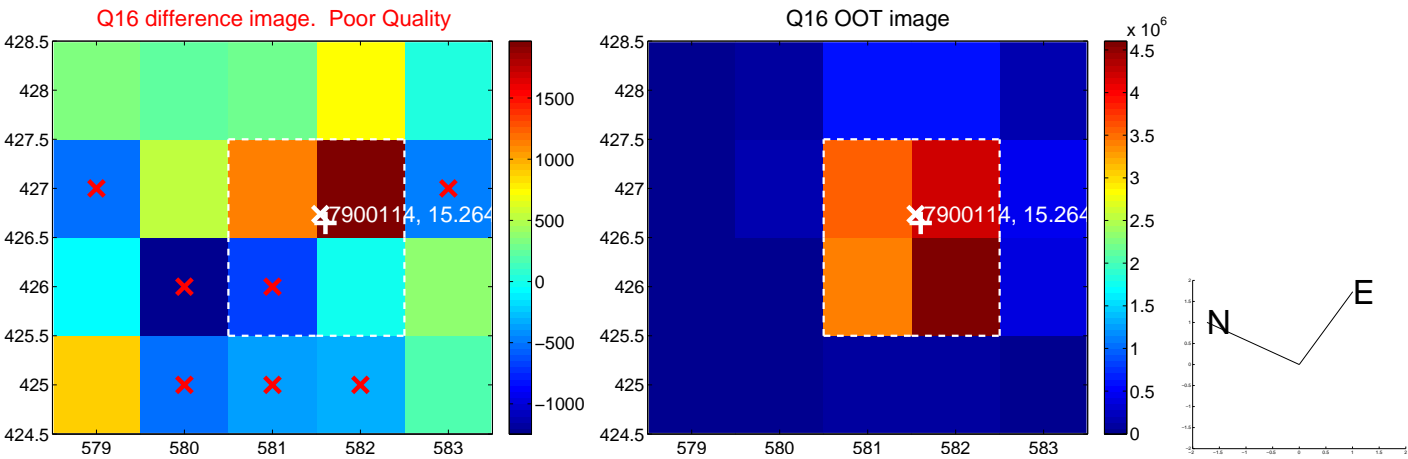
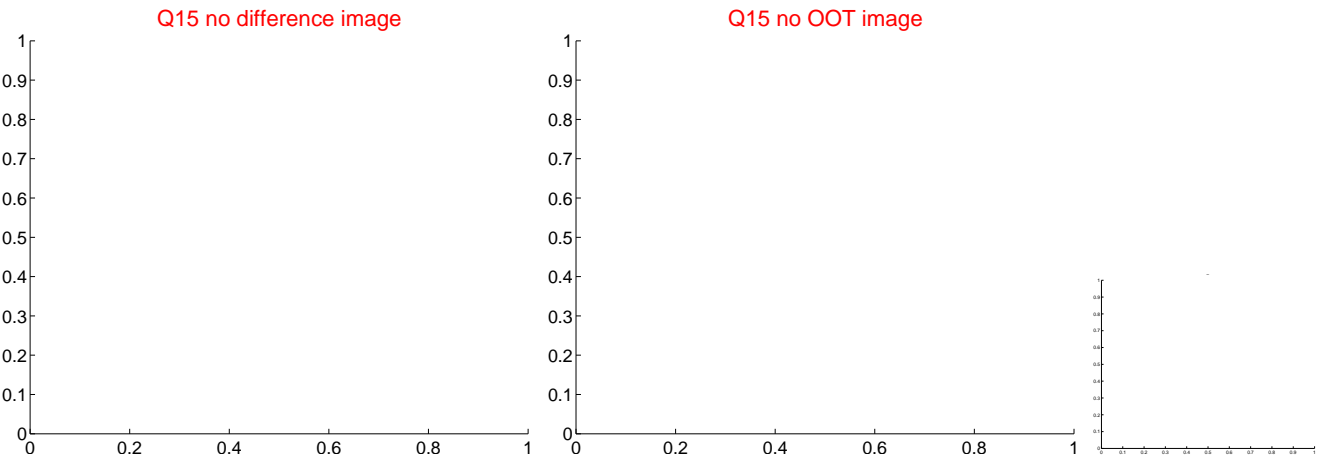
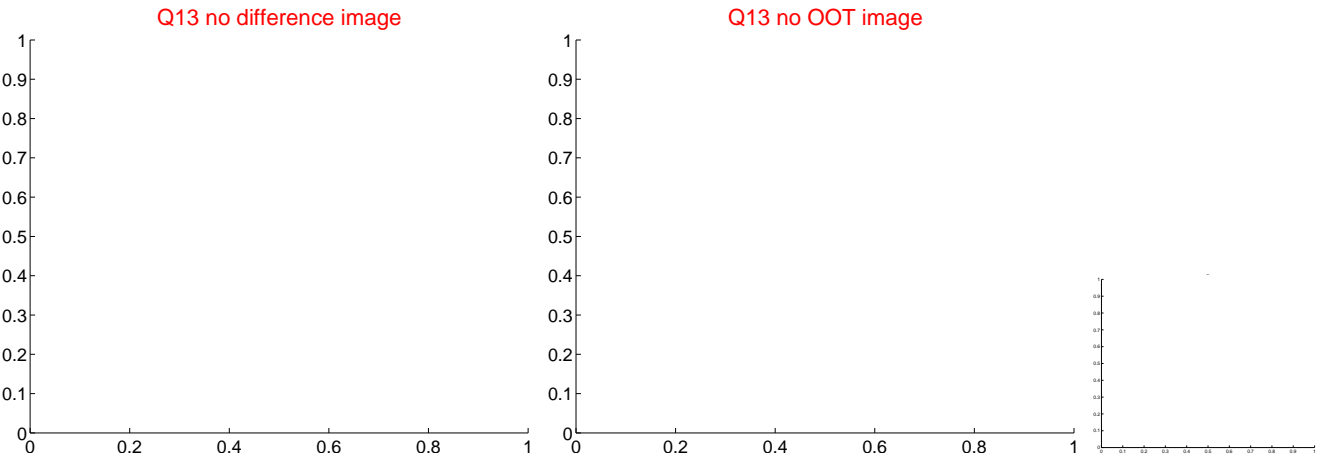
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



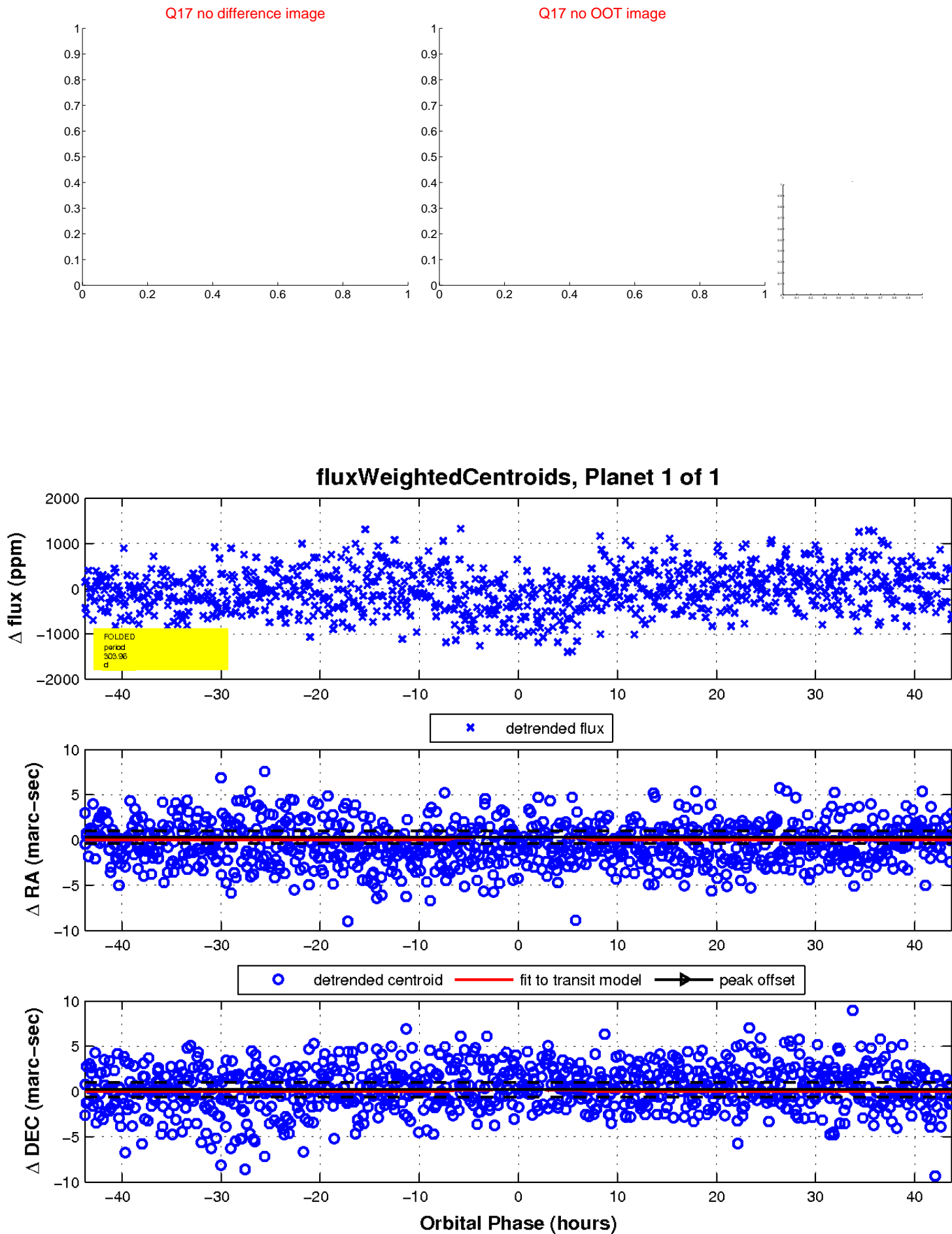
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



# UKIRT Image

Declination

