

# KIC 008891684

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008891684-01	OBS	5581.01	374.882196	491.058170	937.7	11.624	14.2	15.0	1.35	5636	5.04	1.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008891684-01	OBS	PC	0.97	0	0	0	0	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.

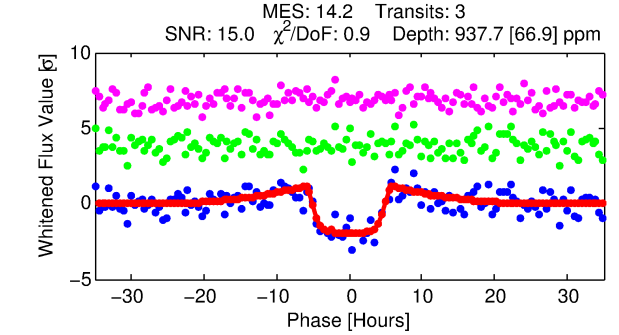
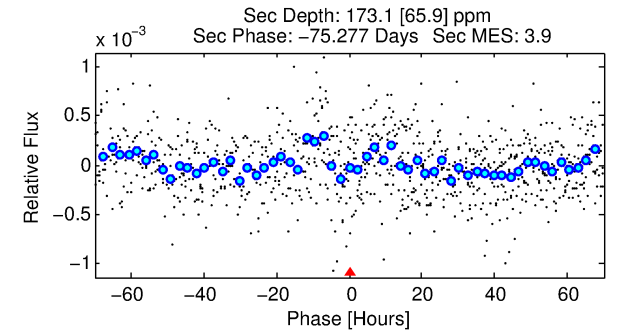
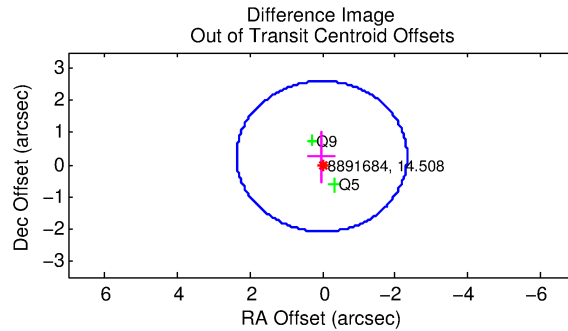
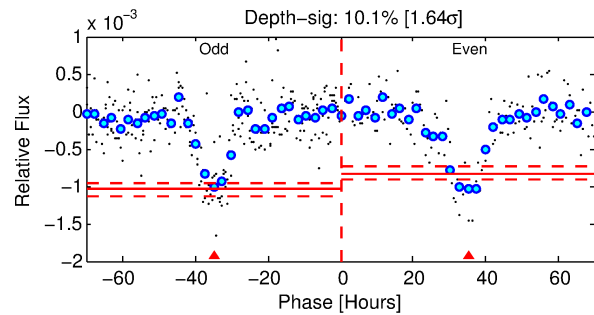
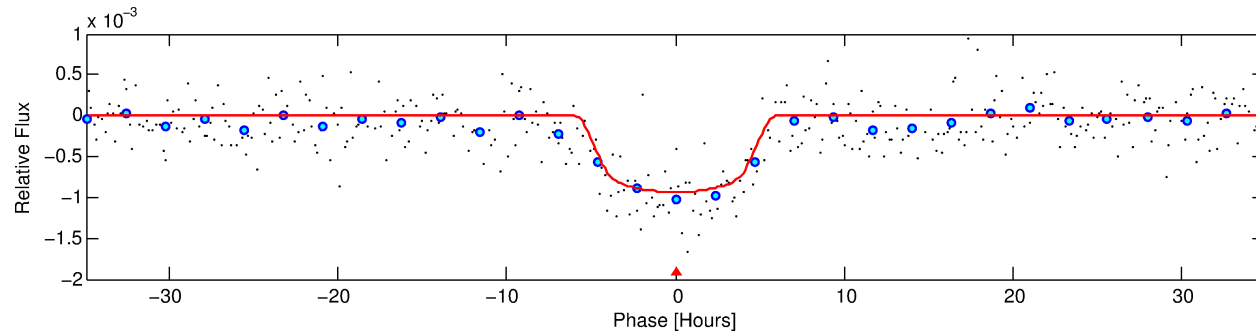
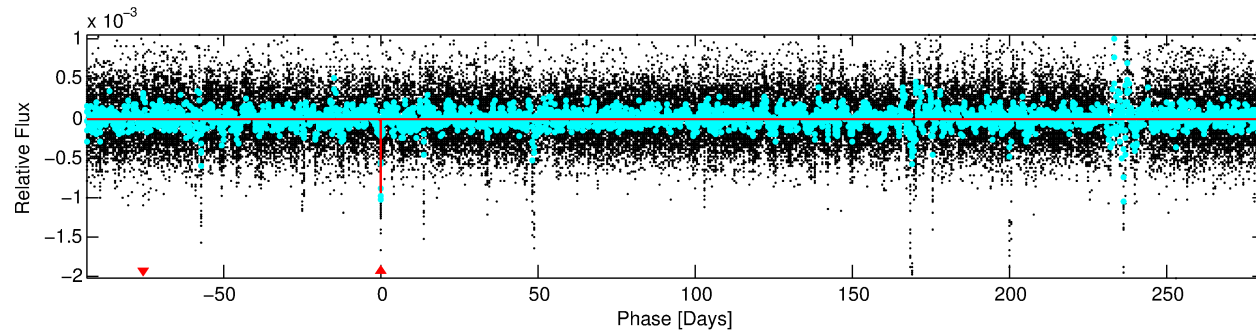
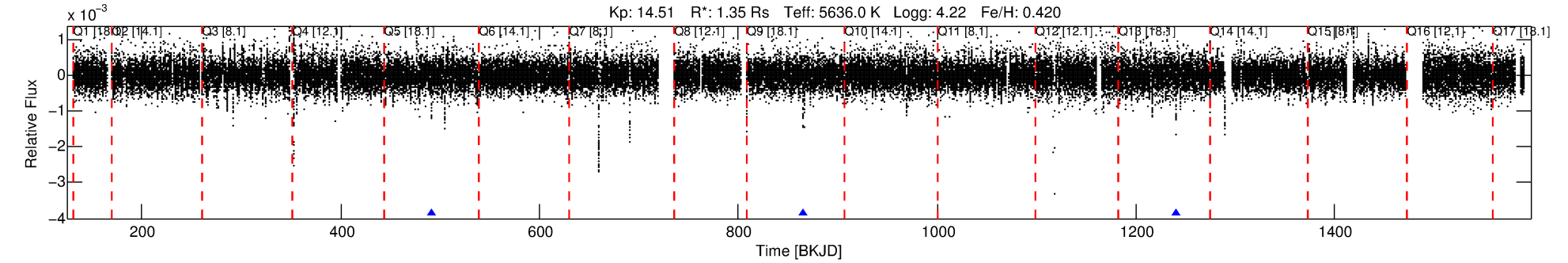
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008891684-01

No Significant Match Found

# DV One-Page Summary

KIC: 8891684 Candidate: 1 of 1 Period: 374.882 d  
KOI: K05581.01 Corr: 0.987



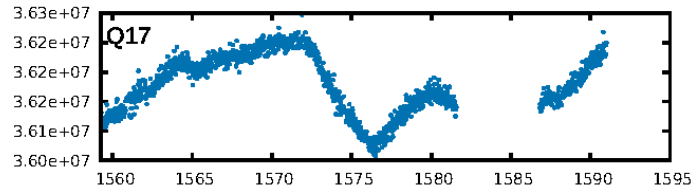
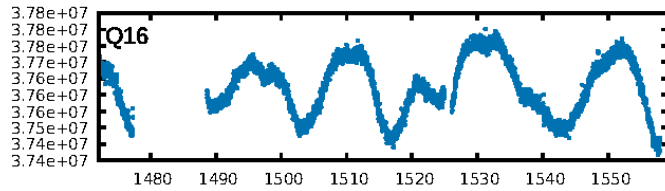
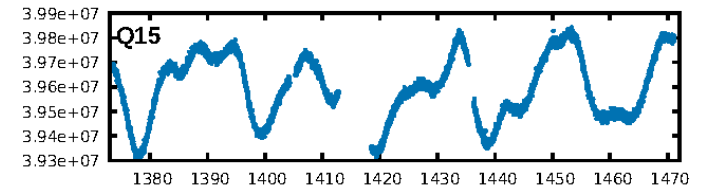
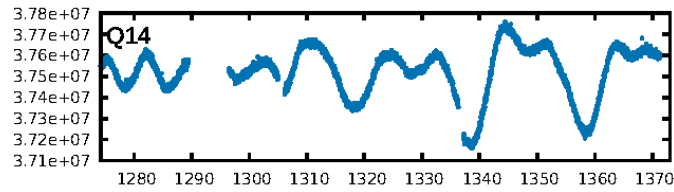
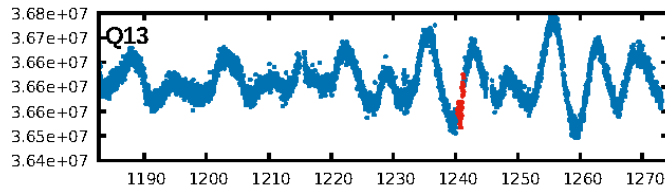
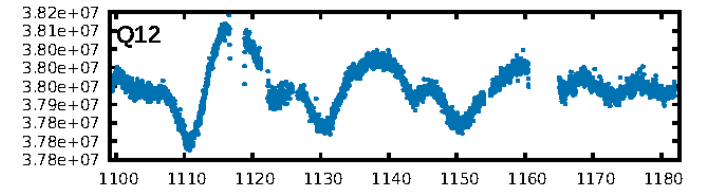
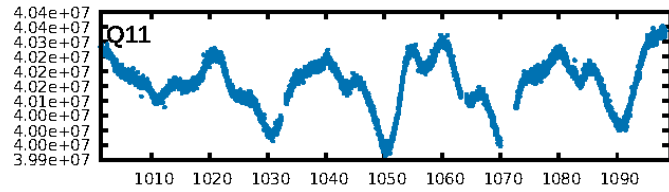
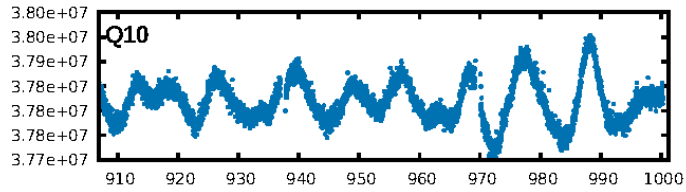
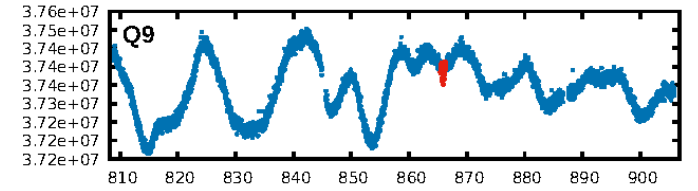
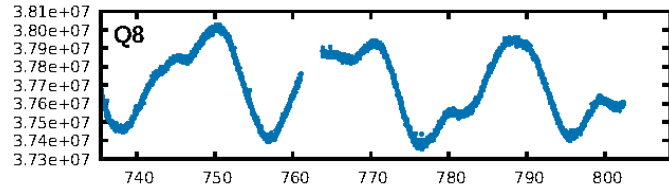
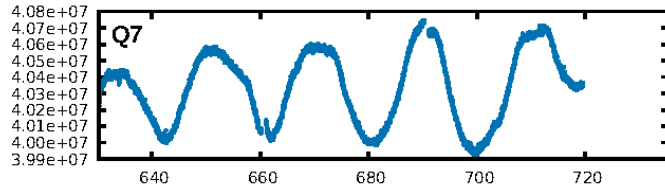
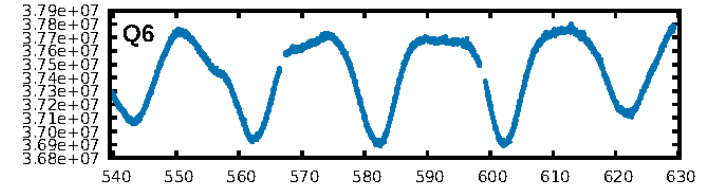
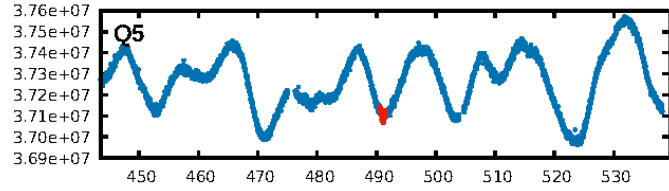
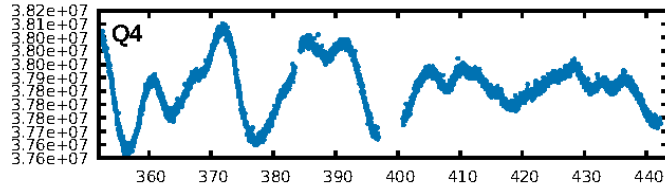
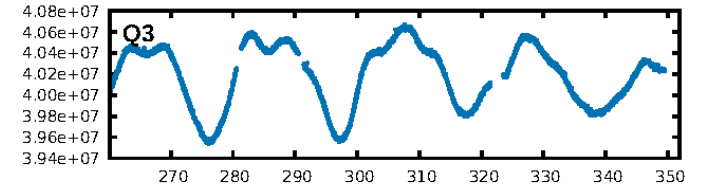
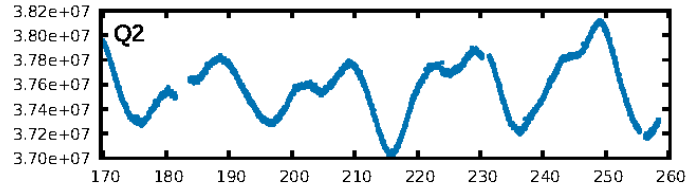
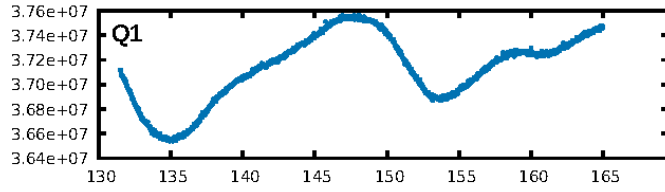
## DV Fit Results:

Period = 374.88220 [0.00790] d  
Epoch = 491.0582 [0.0095] BKJD  
Rp/R\* = 0.0341 [0.0021]  
a/R\* = 121.01 [22.92]  
b = 0.91 [0.04]  
Seff = 1.50 [0.59]  
Teff = 282 [28] K  
Rp = 5.03 [1.43] Re  
a = 1.0521 [0.2600] AU  
Ag = 4156.97 [2284.92] [1.82 $\sigma$ ]  
Teffp = 3502 [366] K [8.77 $\sigma$ ]

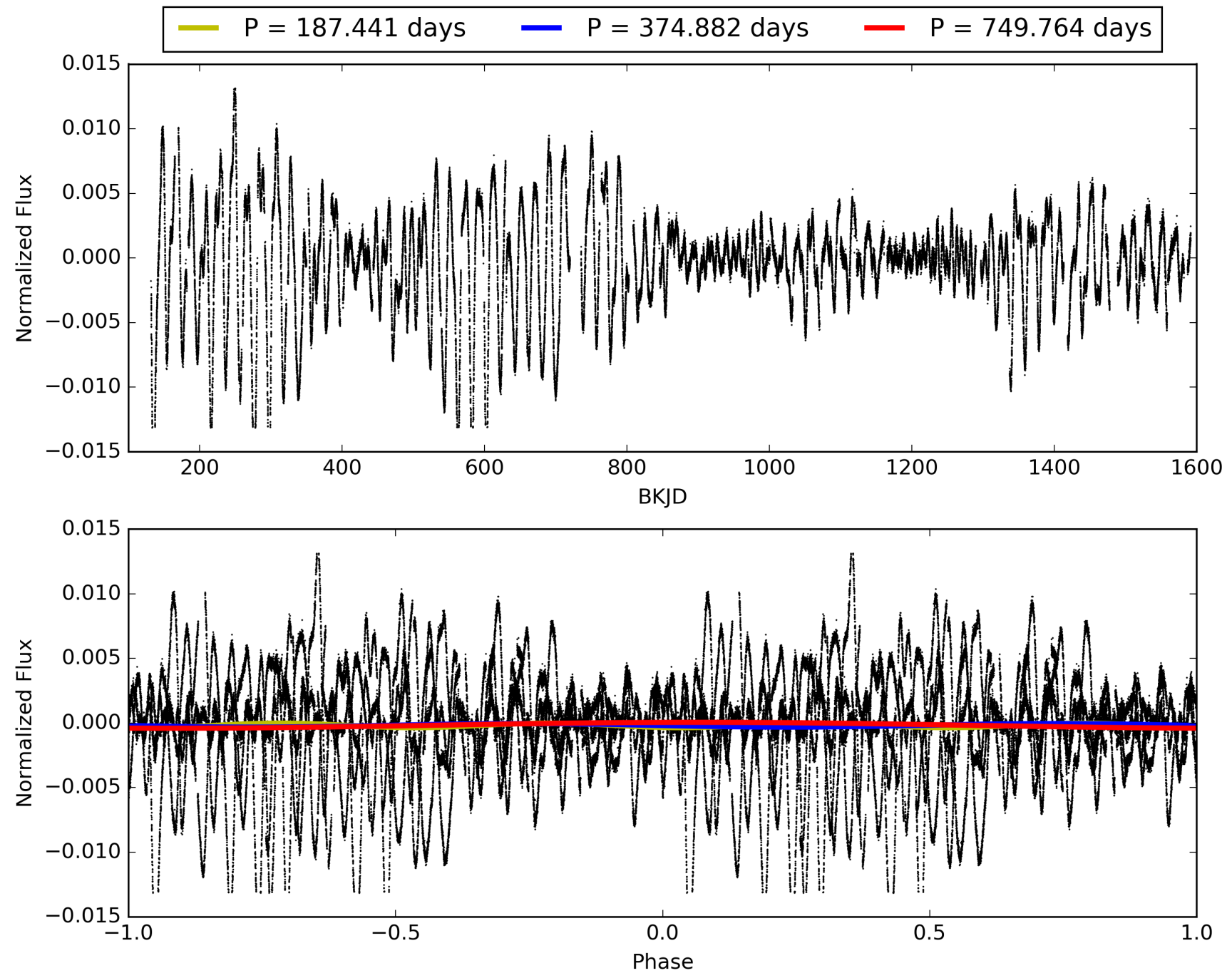
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 69.6%  
ModelChiSquareGof-sig: 99.7%  
Bootstrap-pfa: 2.38e-18  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.5959**  
Centroid-sig: 13.4%  
Centroid-so: 0.627 arcsec [1.05 $\sigma$ ]  
OotOffset-rm: 0.256 arcsec [0.33 $\sigma$ ]  
KicOffset-rm: 0.365 arcsec [0.47 $\sigma$ ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 008891684-01, PDC Light Curves

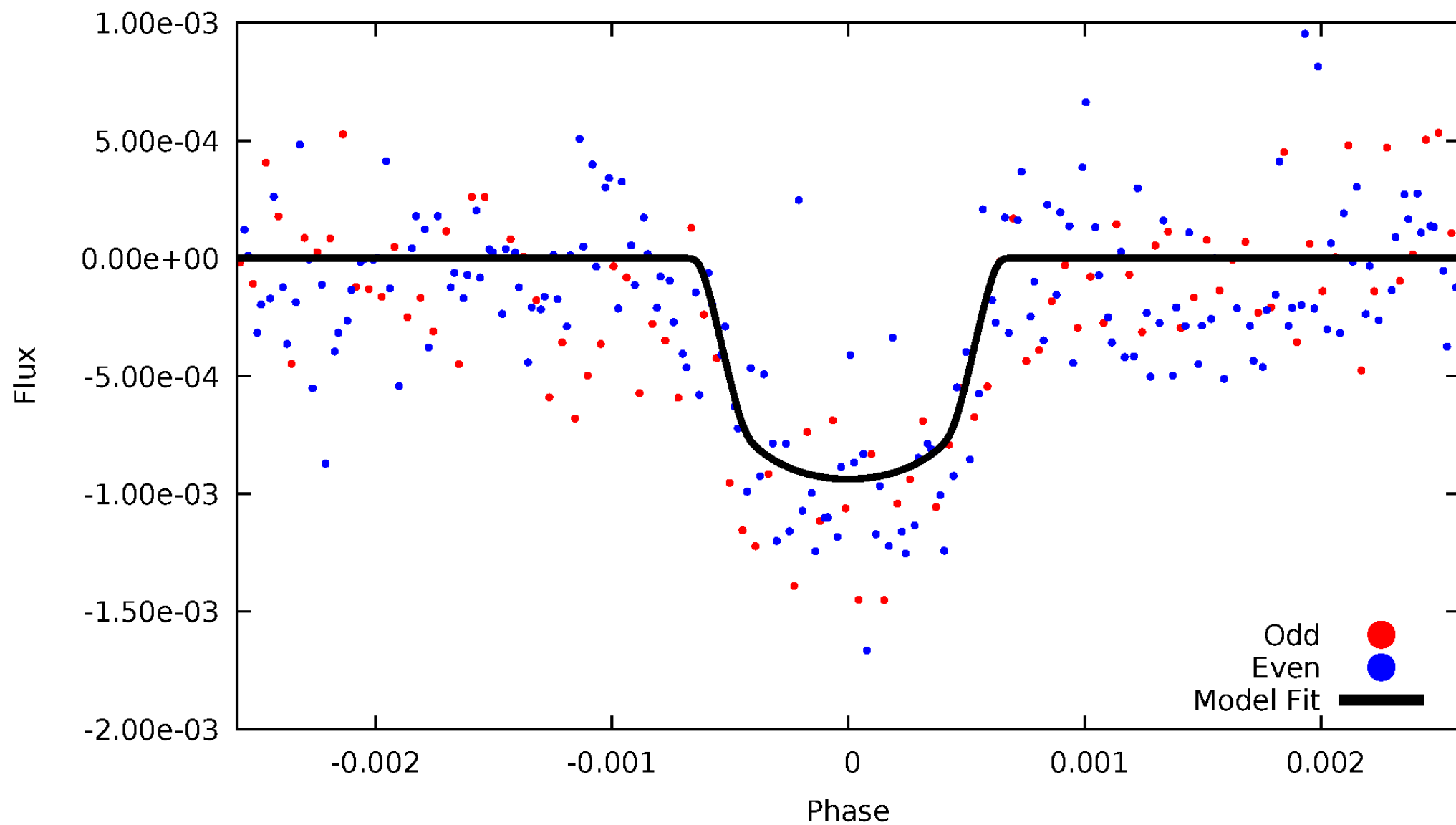


TCE 008891684-01



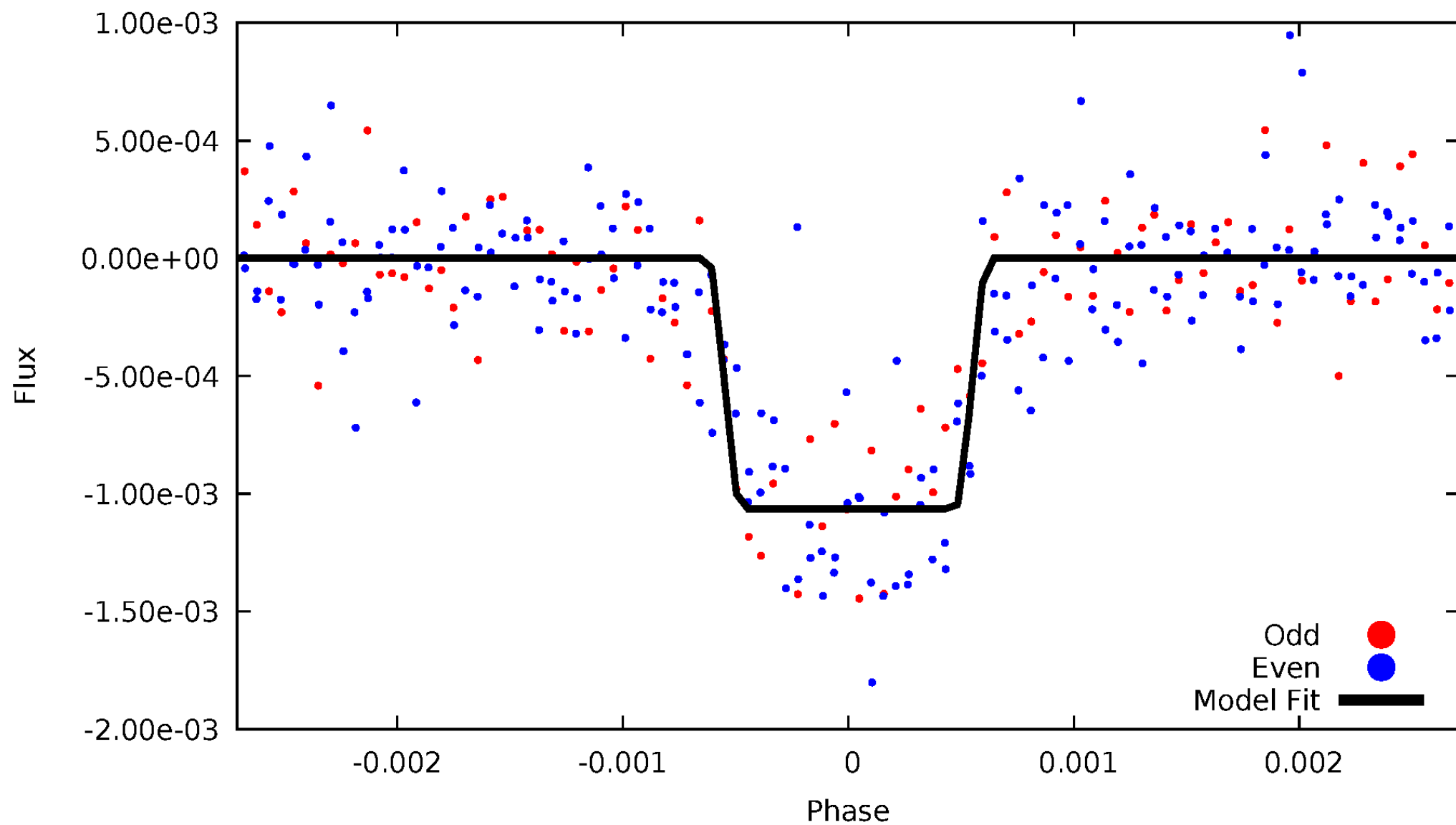
# DV Odd/Even

TCE 008891684-01



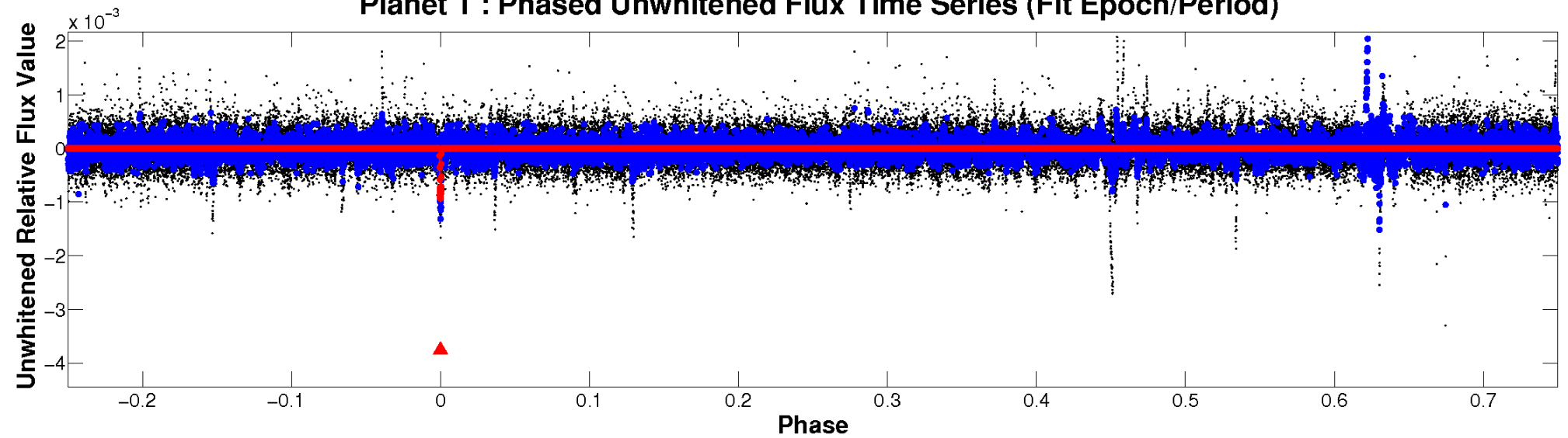
# ALT Odd/Even

TCE 008891684-01

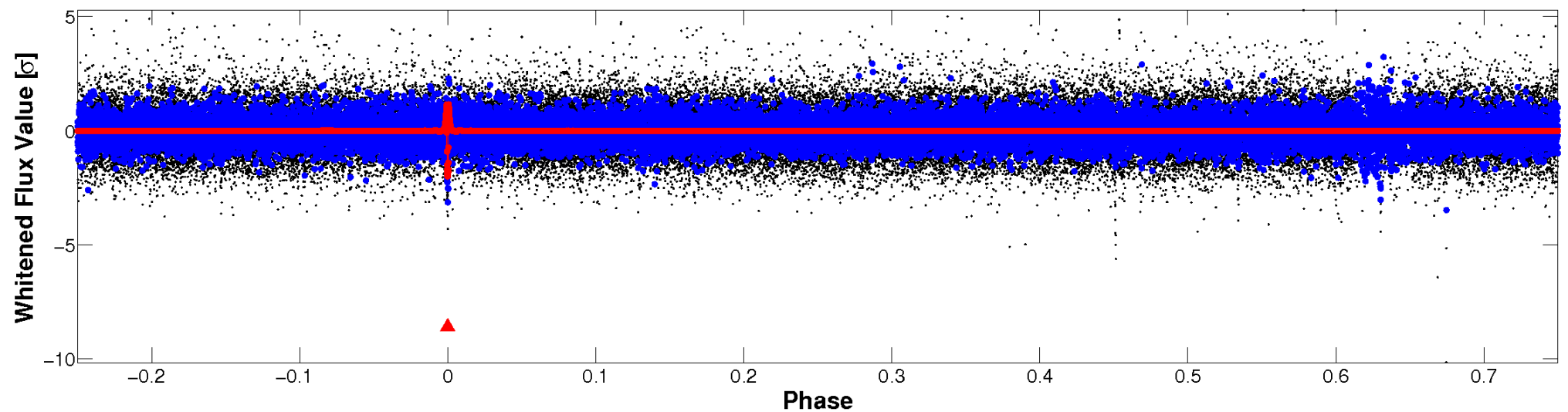


# Non-Whitened Vs. Whitened Light Curve

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

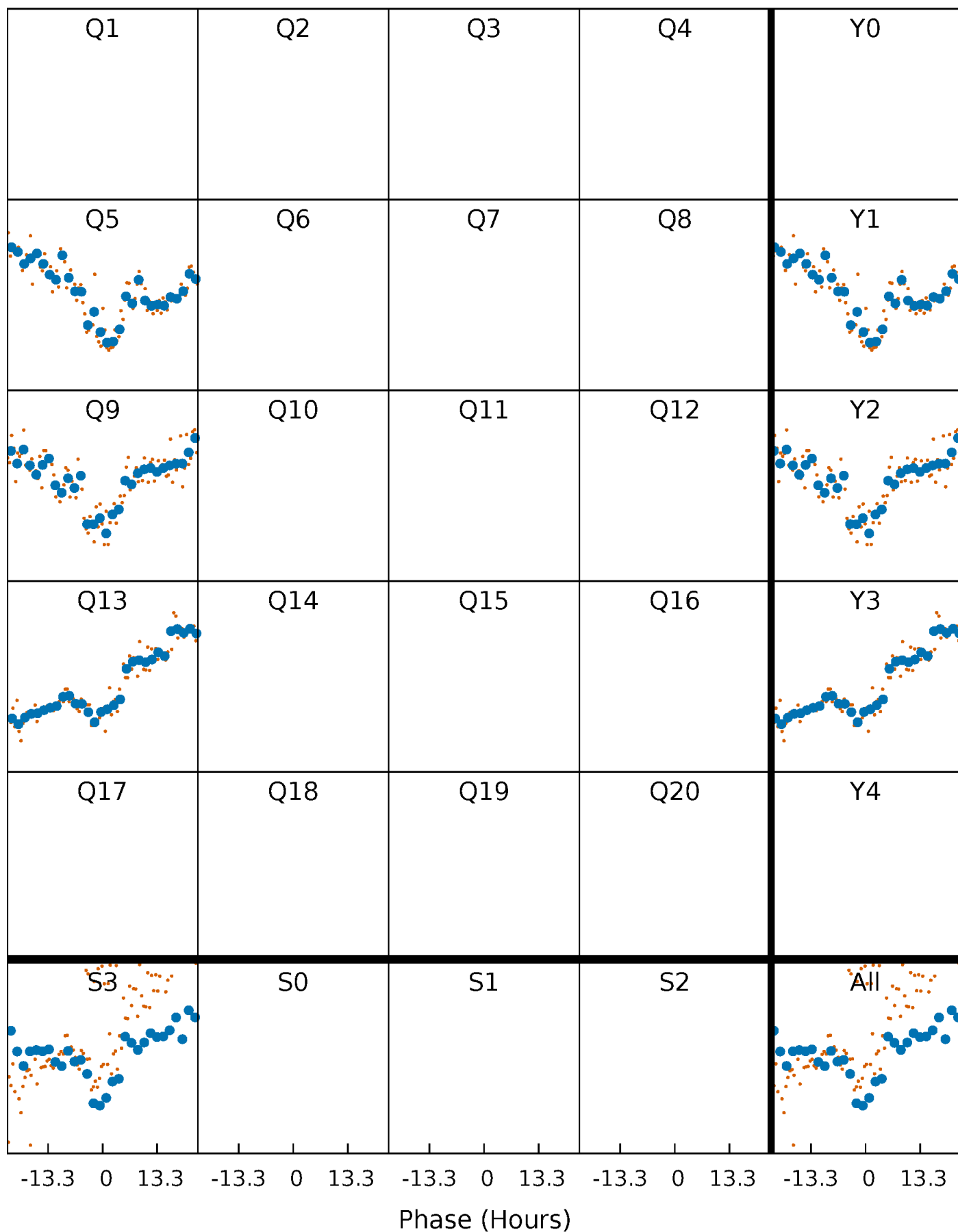


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

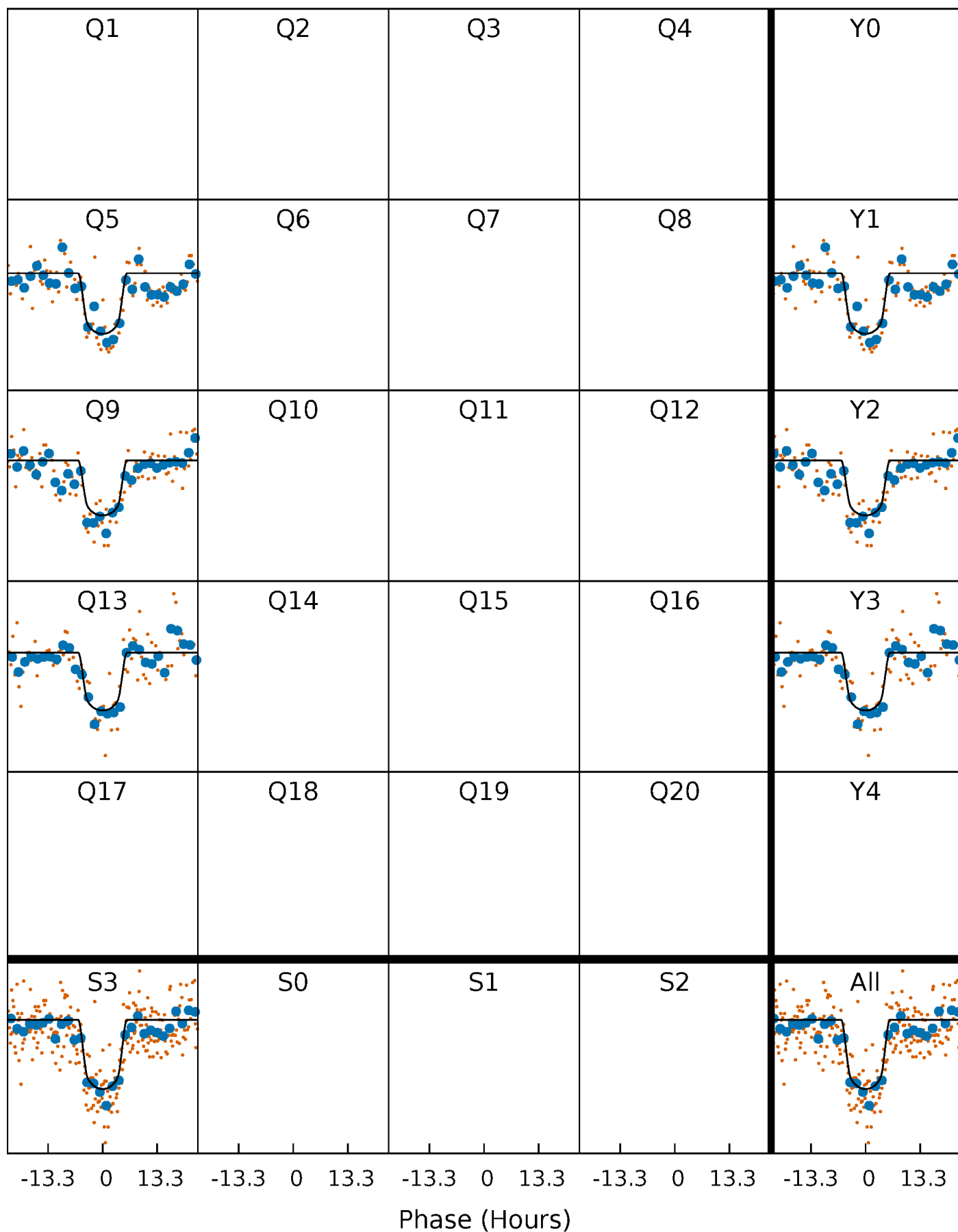
TCE 008891684-01   P=374.882196 Days    $T_0=491.058170$  (BKJD)





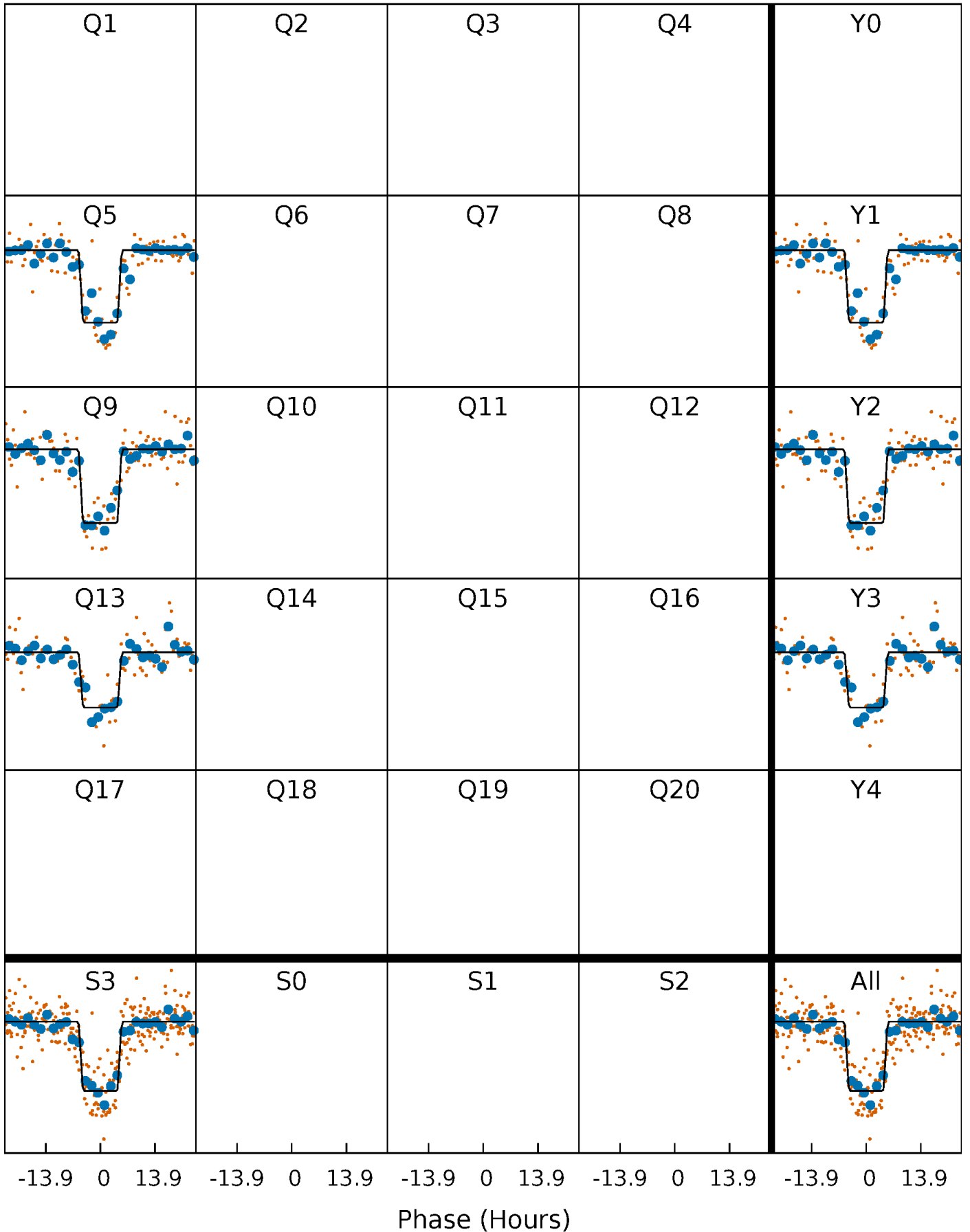
# DV Quarter-Phased Transit Curves

TCE 008891684-01 P=374.882196 Days  $T_0=491.058170$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

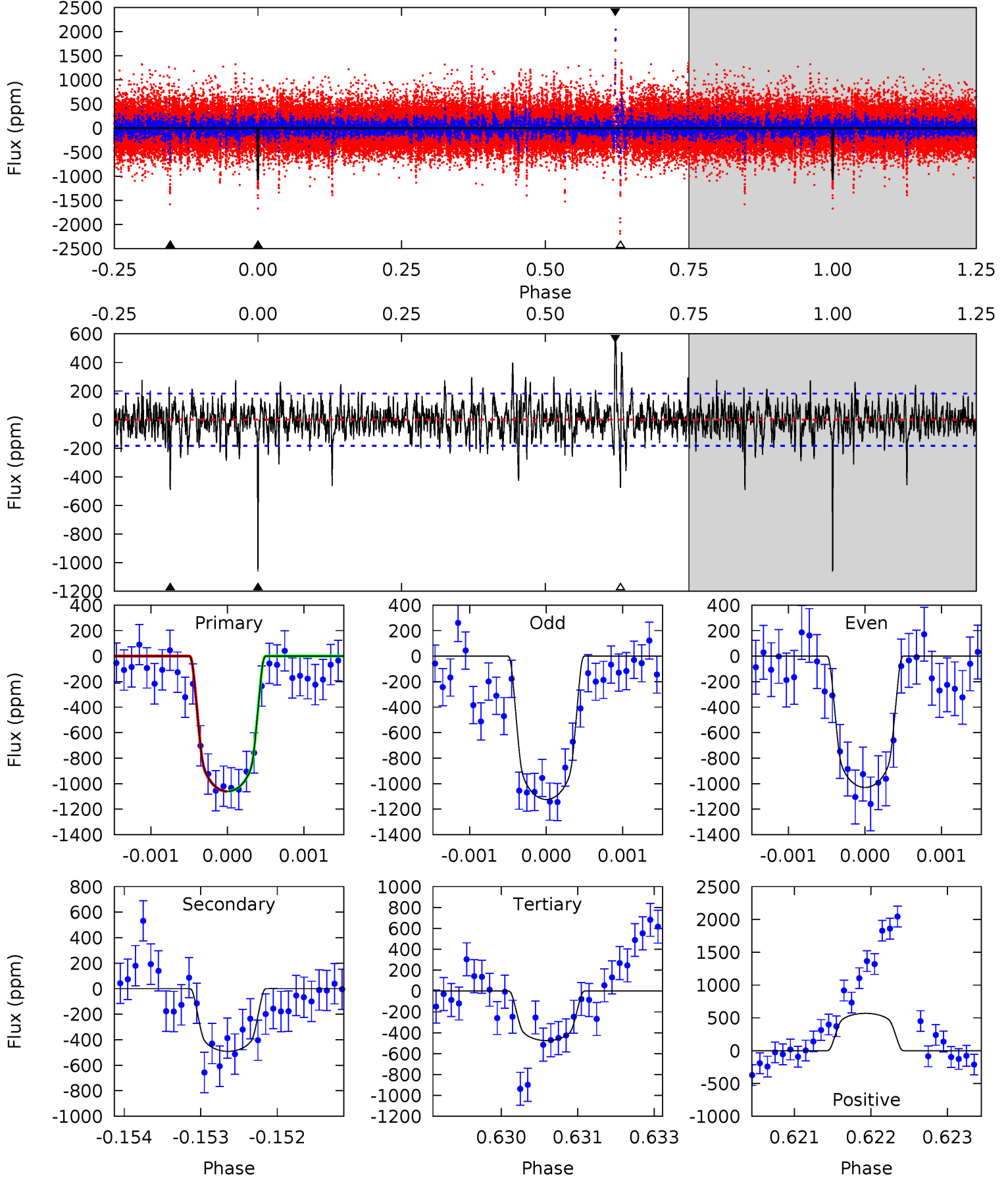
TCE 008891684-01     $P=374.874092$  Days     $T_0=491.064414$  (BKJD)



# DV Model-Shift Uniqueness Test

008891684-01, P = 374.882196 Days, E = 116.175974 Days

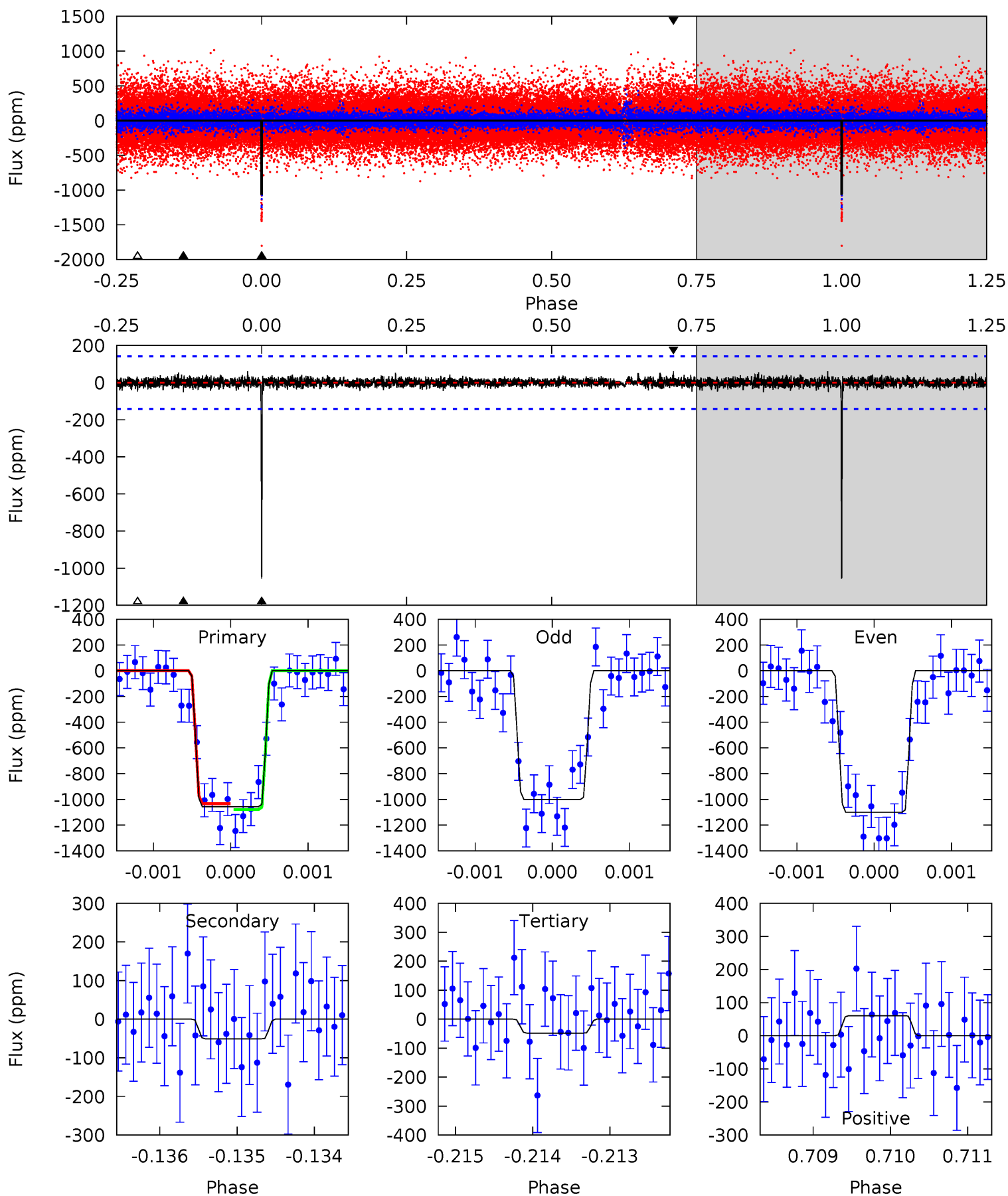
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
31.4	14.5	14.1	16.8	5.40	3.21	2.72	17.3	14.5	0.47	-2.29	1.29	1.01	0.35	0.02



# Alt Model-Shift Uniqueness Test

008891684-01, P = 374.874092 Days, E = 116.190322 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
40.4	1.94	1.84	2.32	5.42	3.24	0.47	38.5	38.1	0.10	-0.37	1.80	0.99	0.05	0.87



### Stellar Parameters For KIC 008891684

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5636^{+171}_{-171}$	$4.218^{+0.214}_{-0.156}$	$0.420^{+0.050}_{-0.300}$	$1.354^{+0.341}_{-0.375}$	$1.103^{+0.110}_{-0.146}$	$0.626^{+0.844}_{-0.271}$
	+3%/-3%	+5%/-4%	+12%/-71%	+25%/-28%	+10%/-13%	+135%/-43%
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 008891684-01 / KOI 5581.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-491 \pm 34$	$5.02^{+0.70}_{-0.74}$	$393^{+27}_{-28}$	$4675^{+187}_{-178}$	$11929^{+4260}_{-2768}$
Alt.	$-51 \pm 26$	$4.80^{+0.72}_{-0.75}$	$394^{+27}_{-30}$	$3207^{+229}_{-303}$	$1350^{+889}_{-702}$

$T_{\text{max}}$  = 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  $A_{\text{obs}} \gg 1.0$

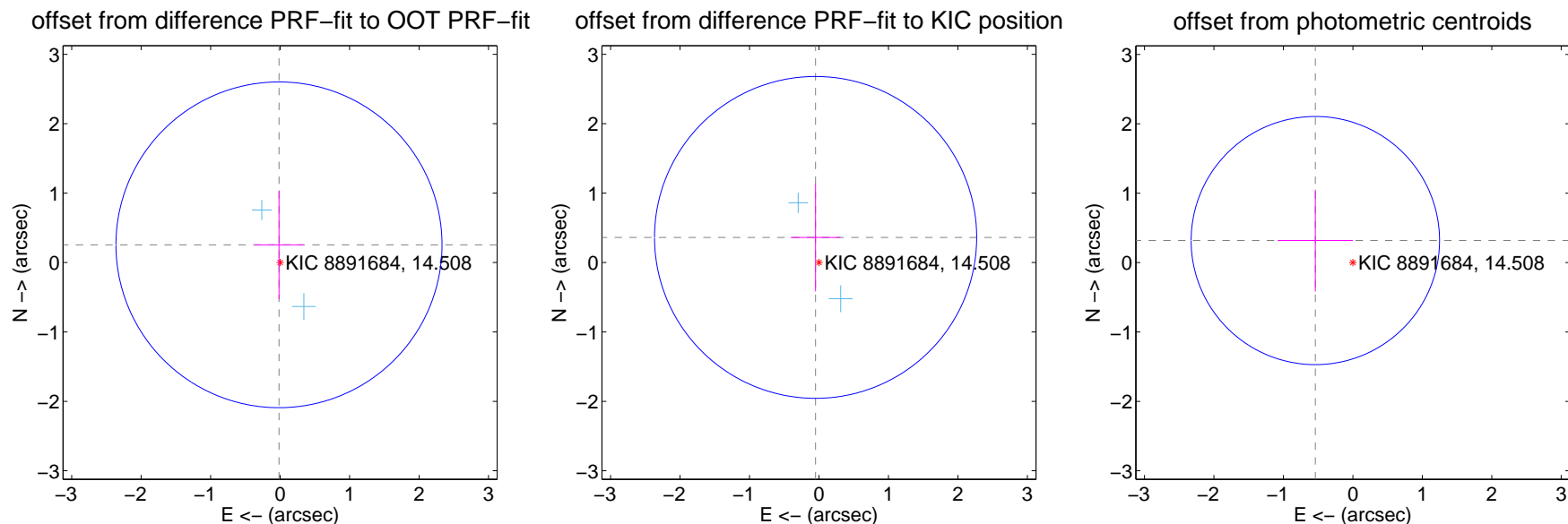
## DV Centroid Data

Supplemental centroid analysis for 008891684-01. Kepler magnitude: 14.51. Transit SNR 15.03

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.256 \pm 0.782$	0.33	$0.016 \pm 0.354$	$0.255 \pm 0.783$
PRF-fit source offset from KIC position	$0.365 \pm 0.773$	0.47	$0.049 \pm 0.357$	$0.362 \pm 0.778$
photometric centroid source offset	$0.63 \pm 0.60$	1.05	$0.54 \pm 0.54$	$0.32 \pm 0.73$

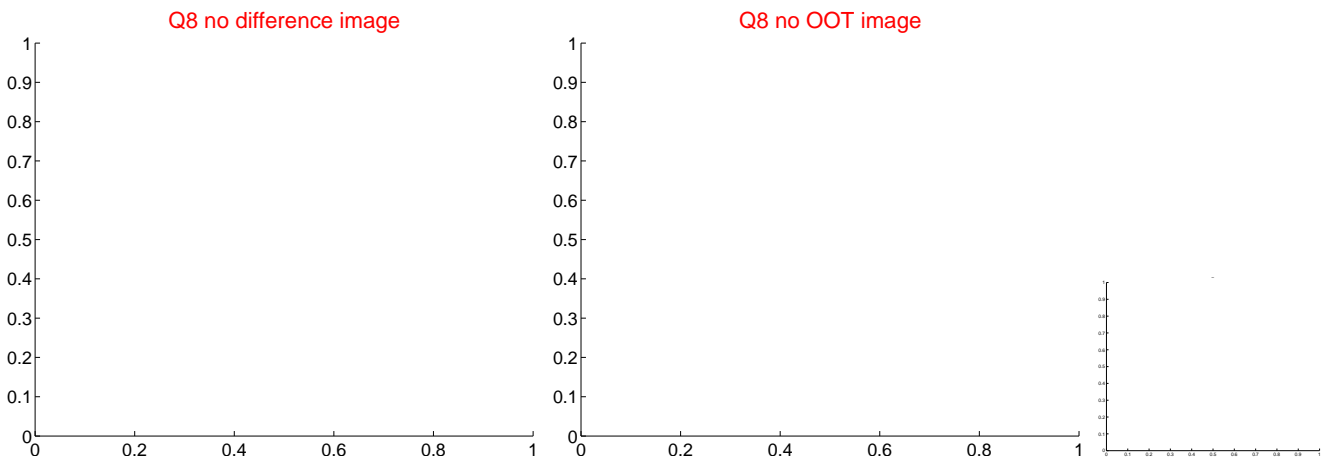
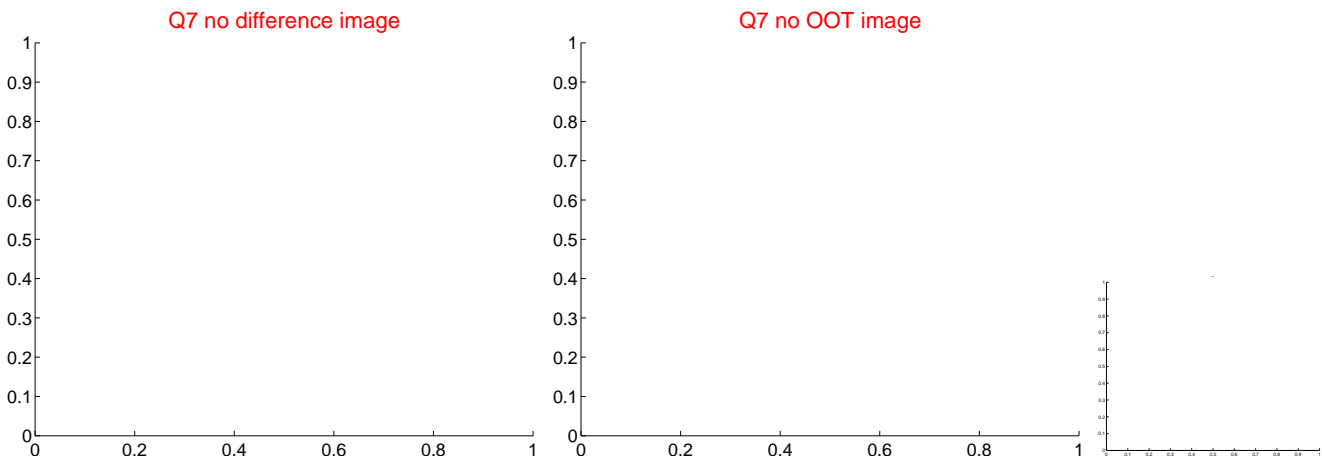
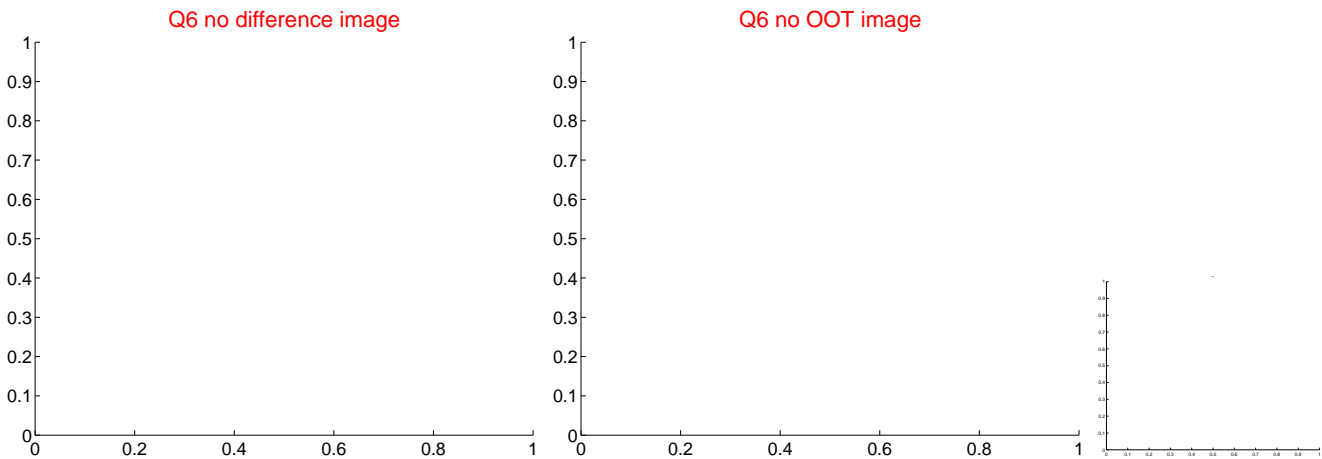
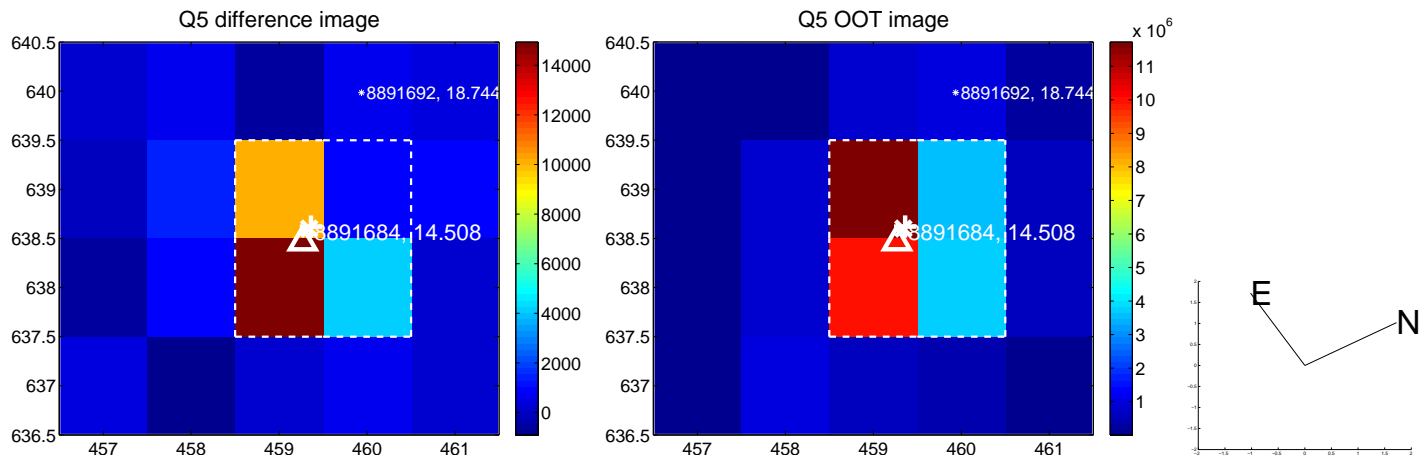


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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.

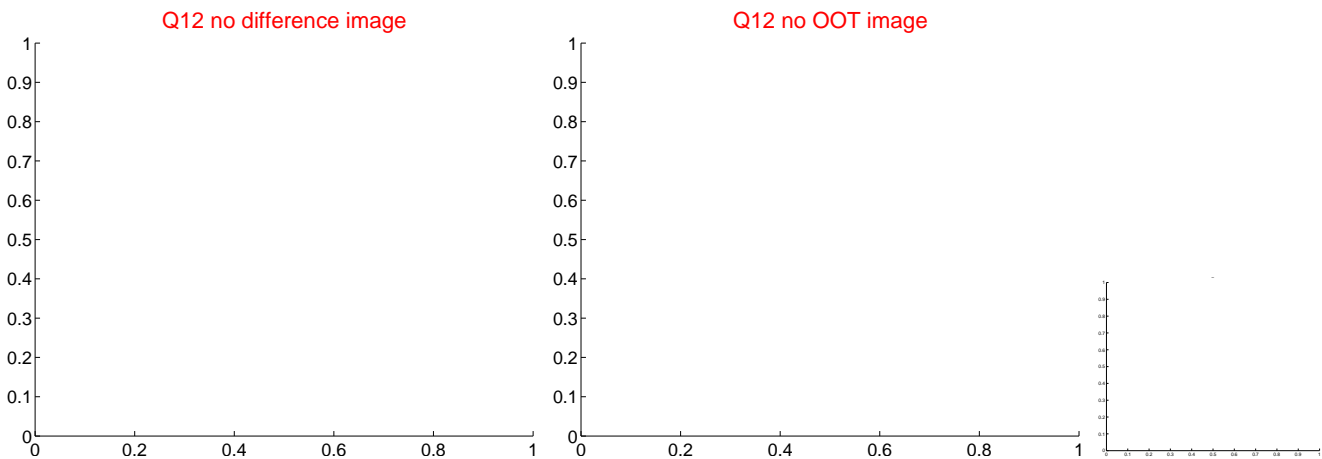
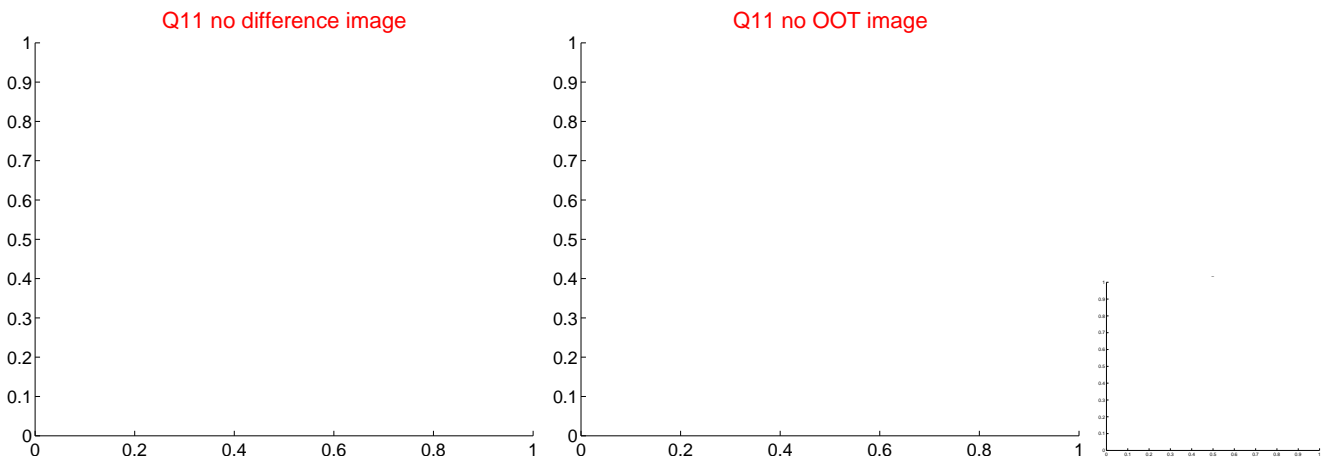
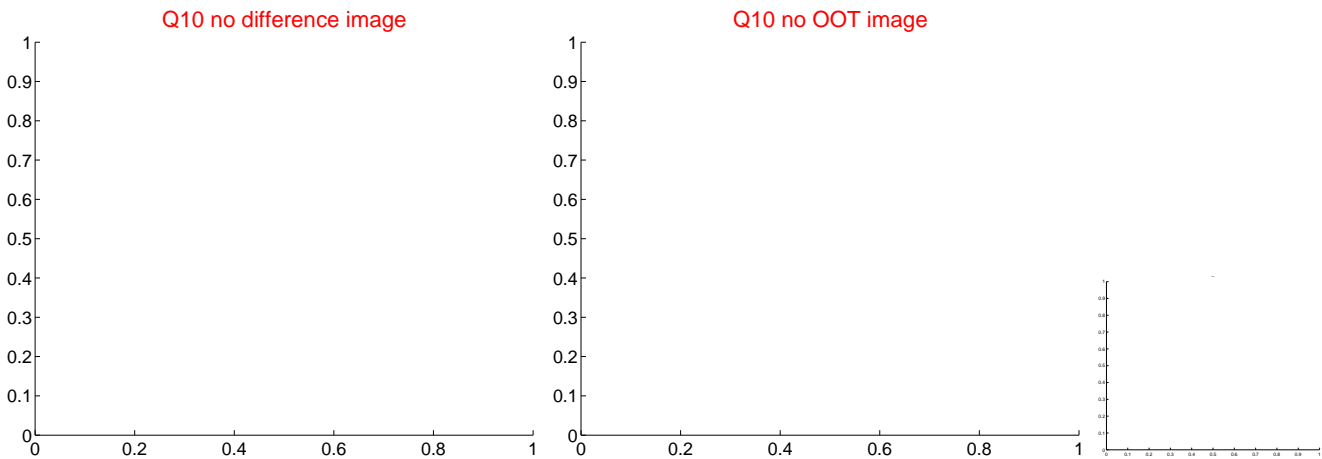
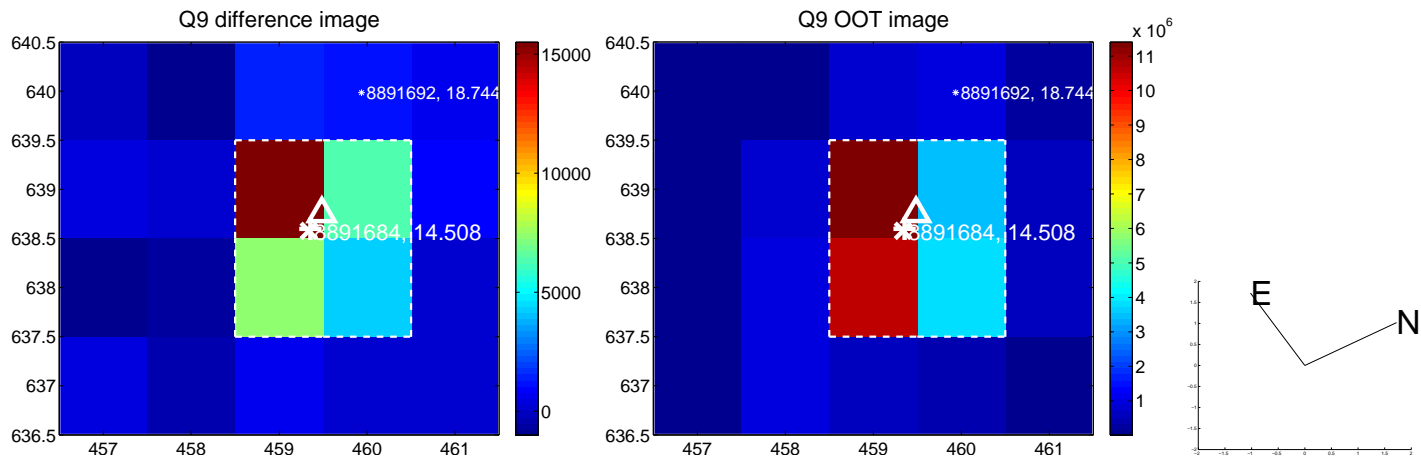


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





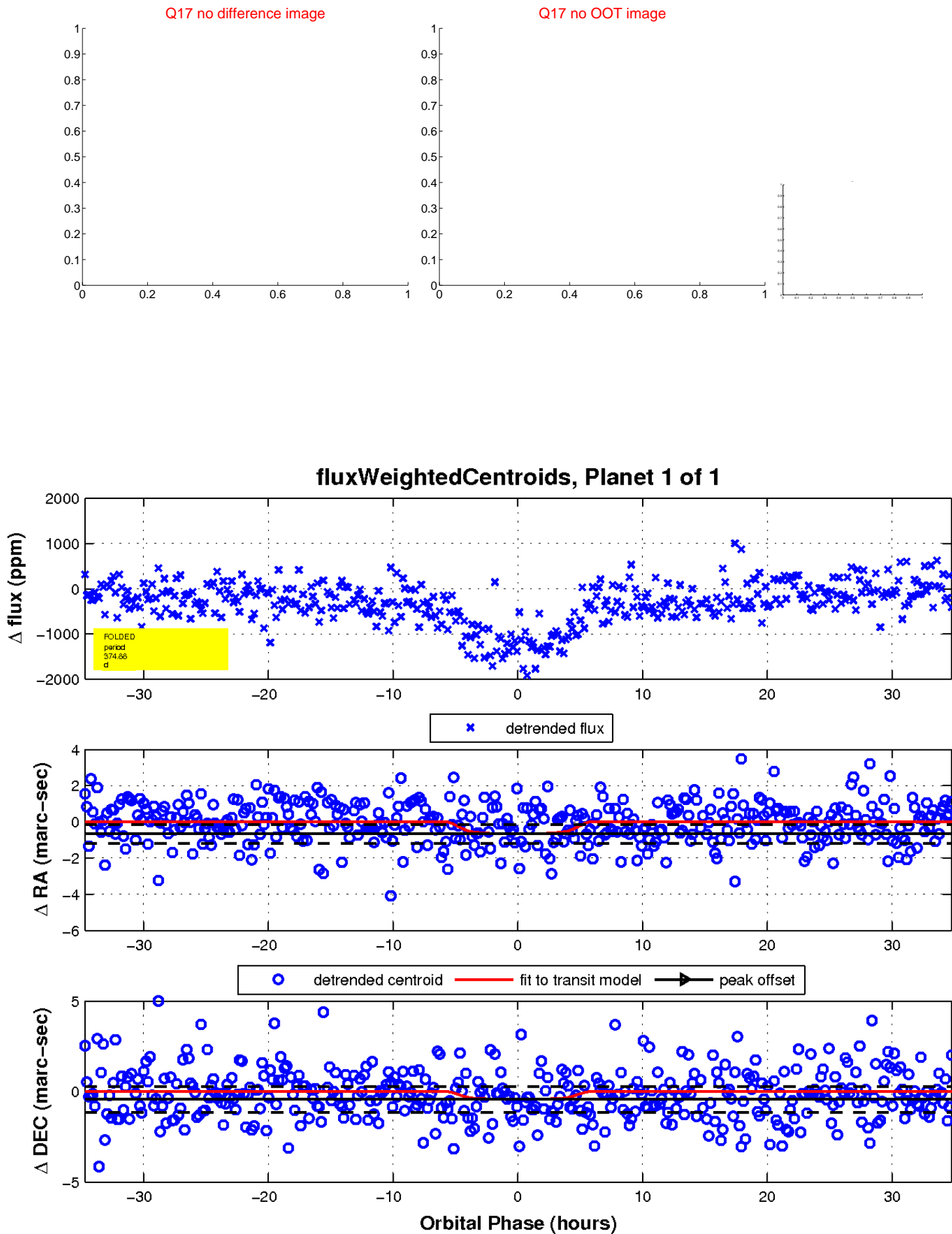
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : 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.



# UKIRT Image

Declination

