

# KIC 008308832

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008308832-01	OBS	No	369.886403	233.051730	1265.6	14.069	9.4	9.8	0.65	5087	2.32	0.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008308832-01	OBS	FP	0.00	1	0	0	1	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS—EPHEM_MATCH

**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.

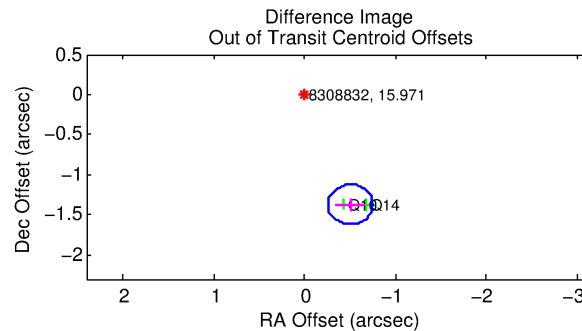
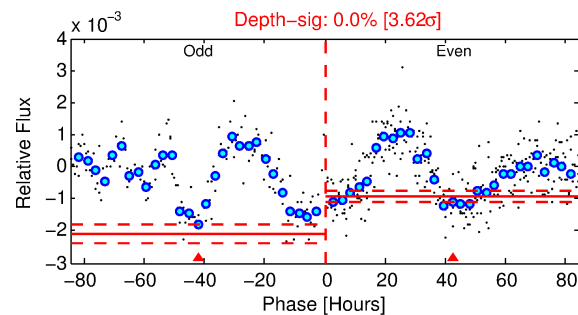
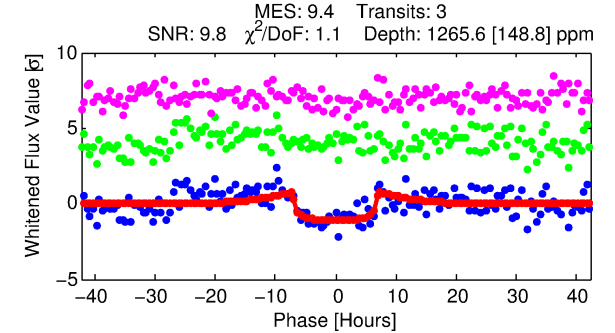
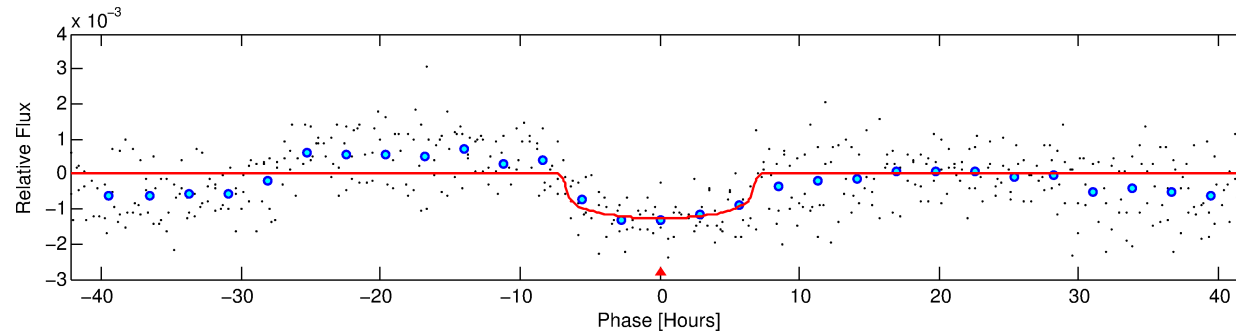
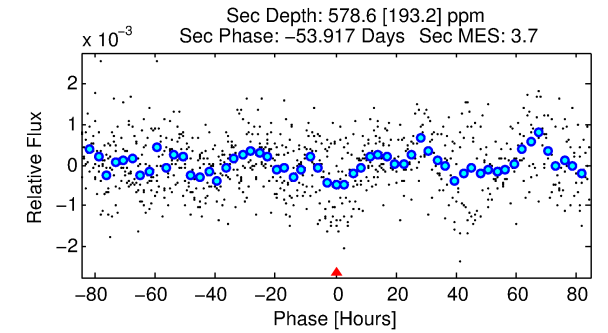
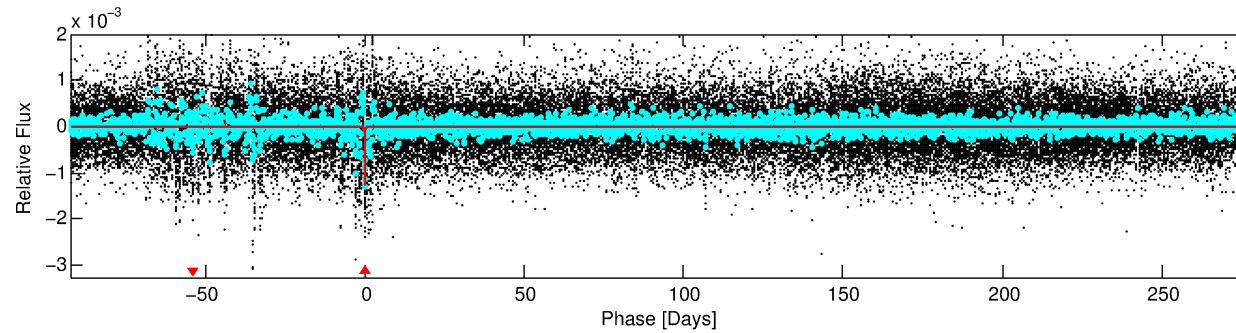
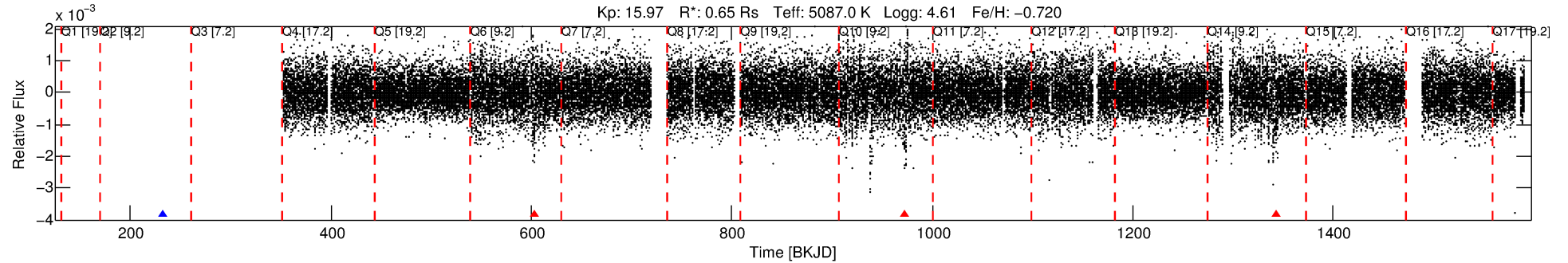
## Ephemeris Match Information For 008308832-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $\prime$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
008308832-01	8308832	008308199-01	8308199	1:1	594.7	150	0	14.89	15.97	0.66	Col-Anomaly	1	0.03	2.55

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8308832 Candidate: 1 of 1 Period: 369.886 d



## DV Fit Results:

Period = 369.88640 [0.01028] d  
Epoch = 233.0517 [0.0227] BKJD  
Rp/R\* = 0.0326 [0.0169]  
a/R\* = 192.03 [382.86]  
b = 0.39 [4.38]  
Seff = 0.34 [0.06]  
Teq = 195 [9] K  
Rp = 2.32 [1.22] Re  
a = 0.8677 [0.0710] AU  
Ag = 44411.69 [48569.02] [0.91σ]  
Teff = 4370 [1197] K [3.49σ]

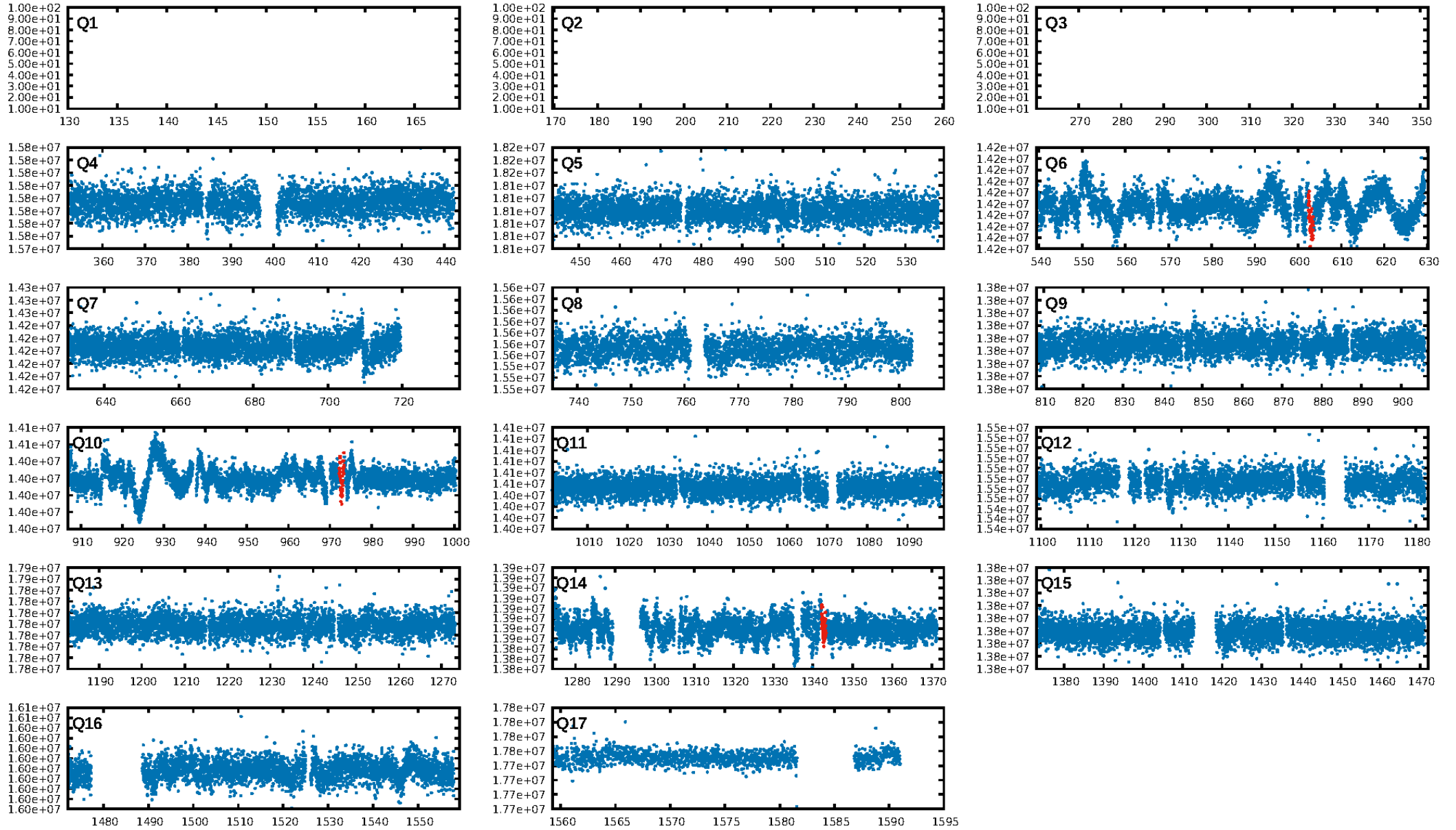
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 5.2%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 1.24e-12  
RollingBand-fgt: 0.00 [0/3]  
GhostDiagnostic-chr: 0.5606  
Centroid-sig: 0.3%  
Centroid-so: 3.654 arcsec [3.18σ]  
OotOffset-rm: 1.461 arcsec [17.79σ]  
KicOffset-rm: 3.409 arcsec [41.90σ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

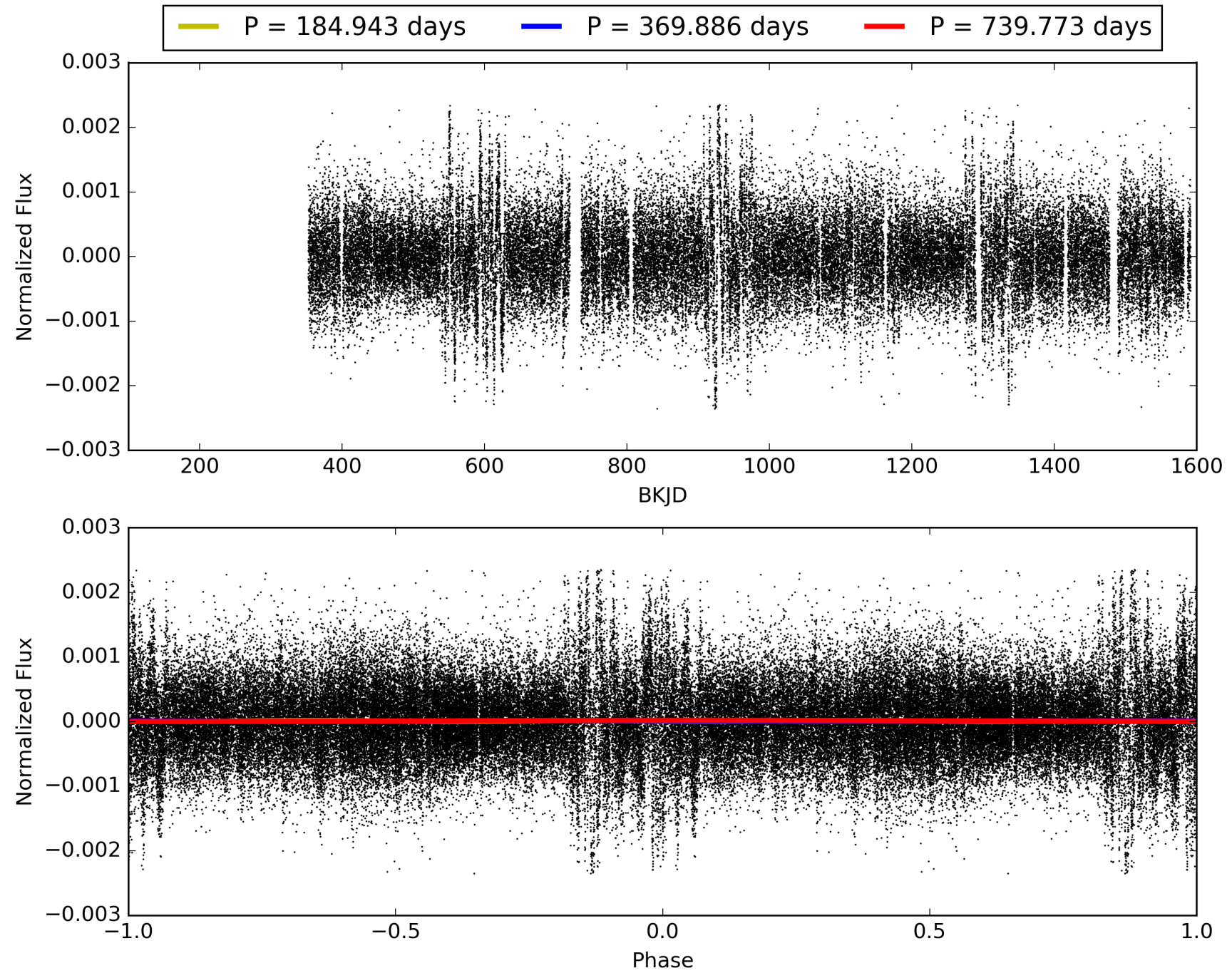
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:06:16 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 008308832-01, PDC Light Curves

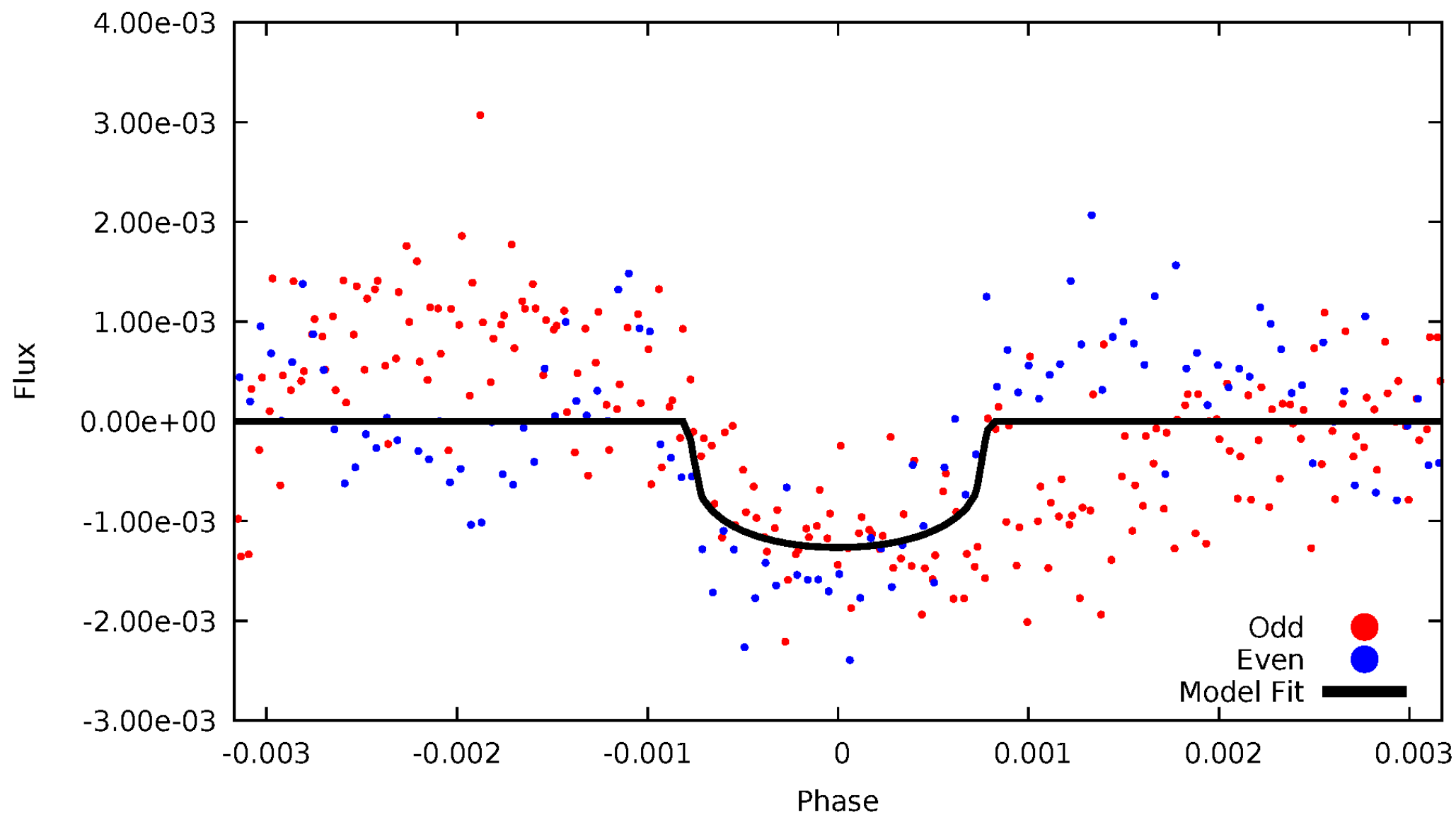


TCE 008308832-01



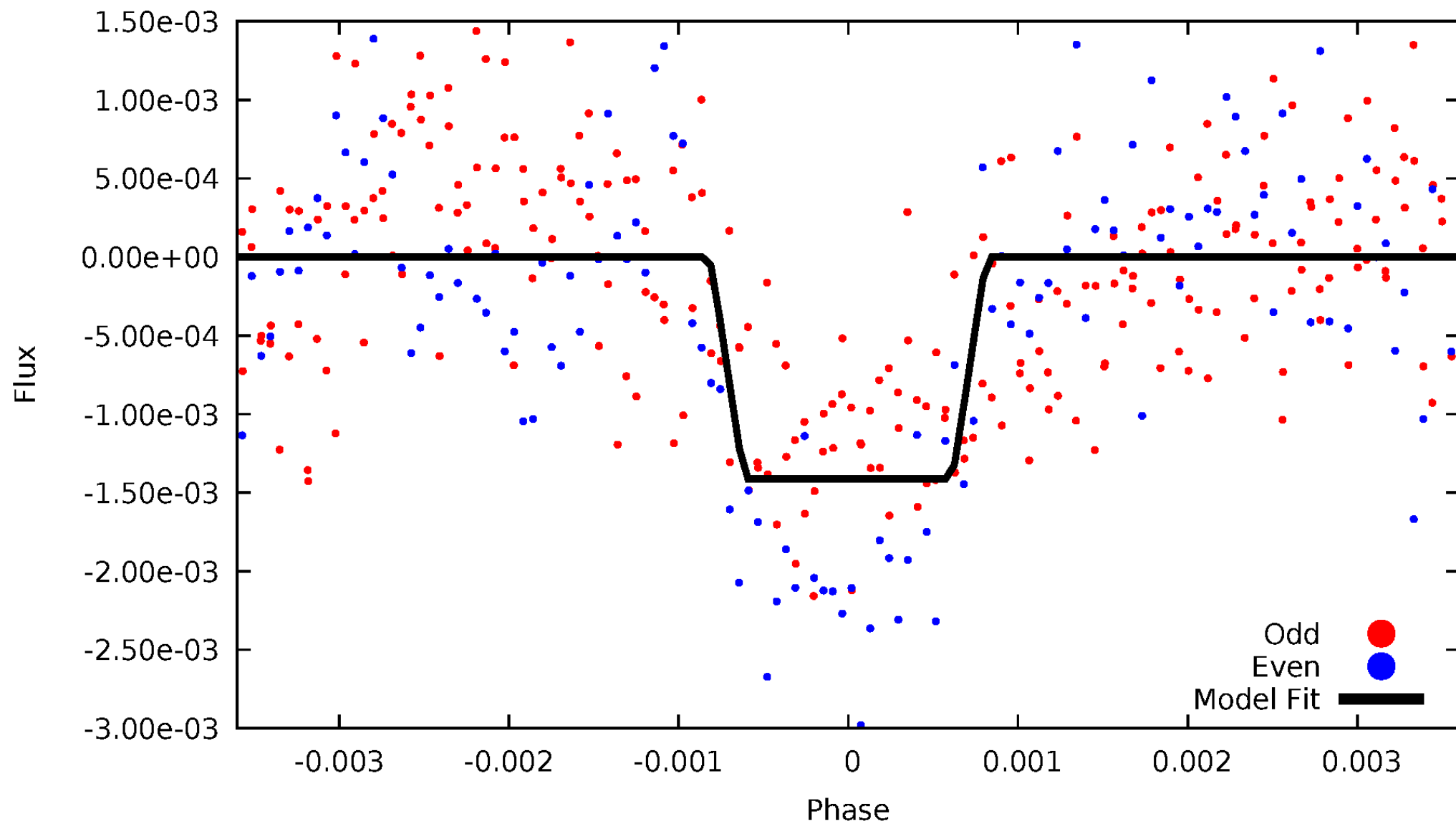
# DV Odd/Even

TCE 008308832-01



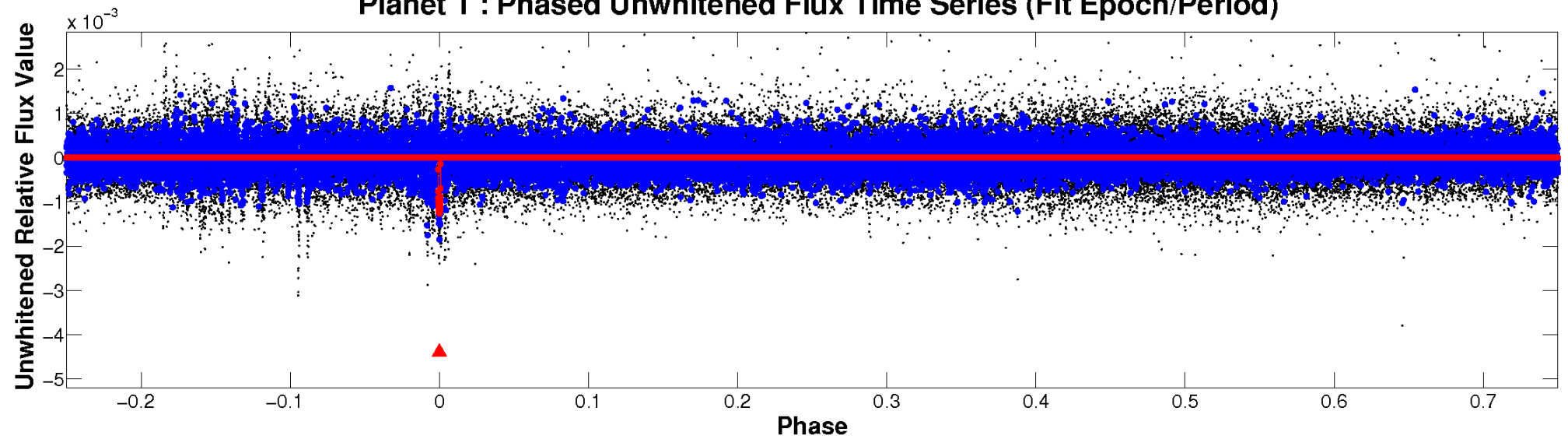
# ALT Odd/Even

TCE 008308832-01

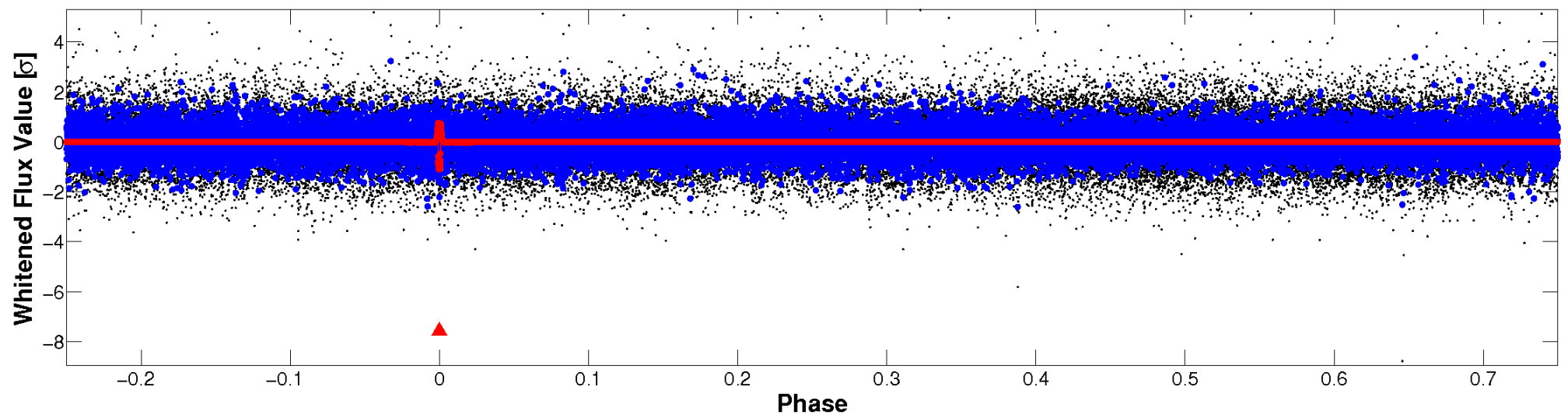


# Non-Whitened Vs. Whitened Light Curve

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

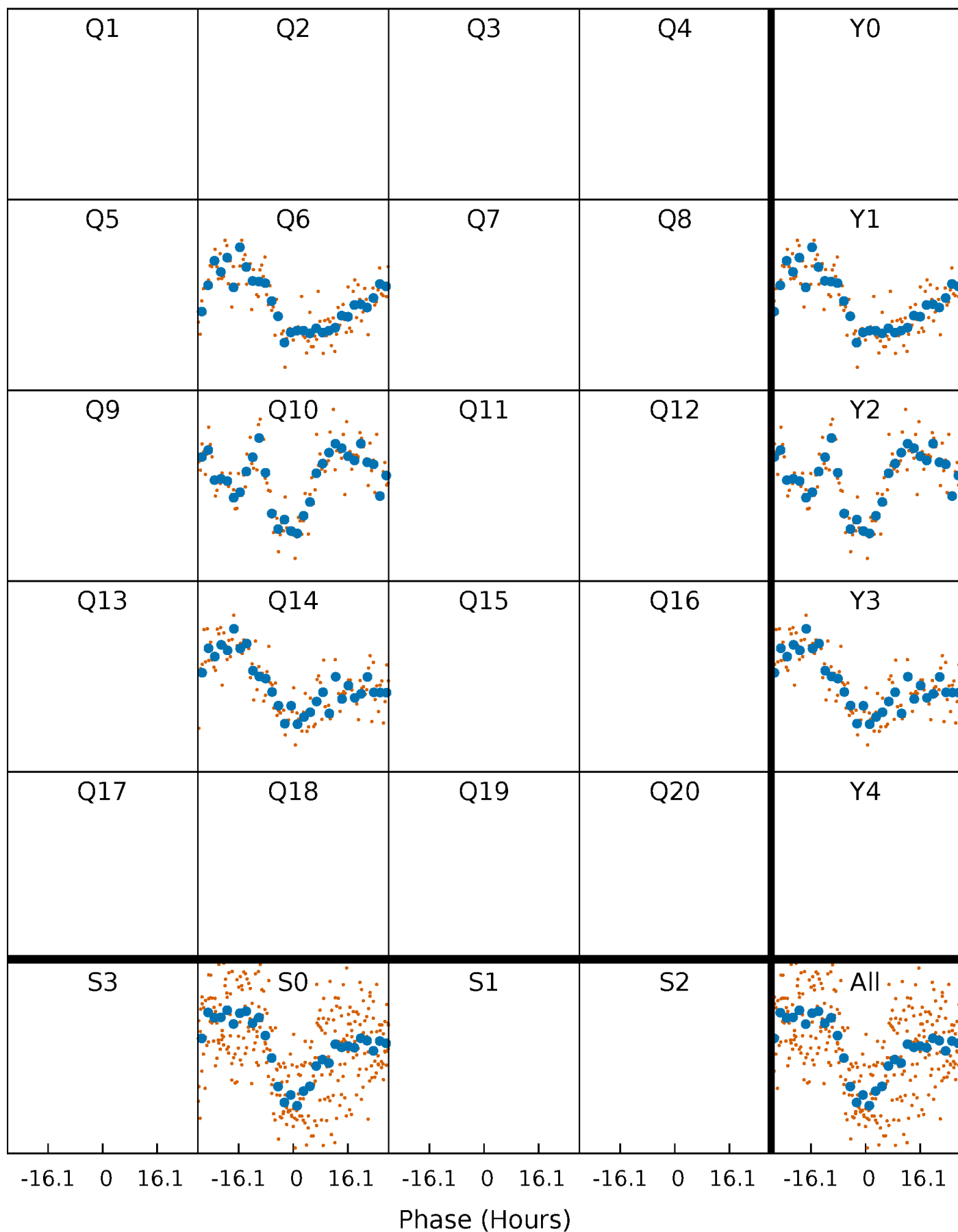


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



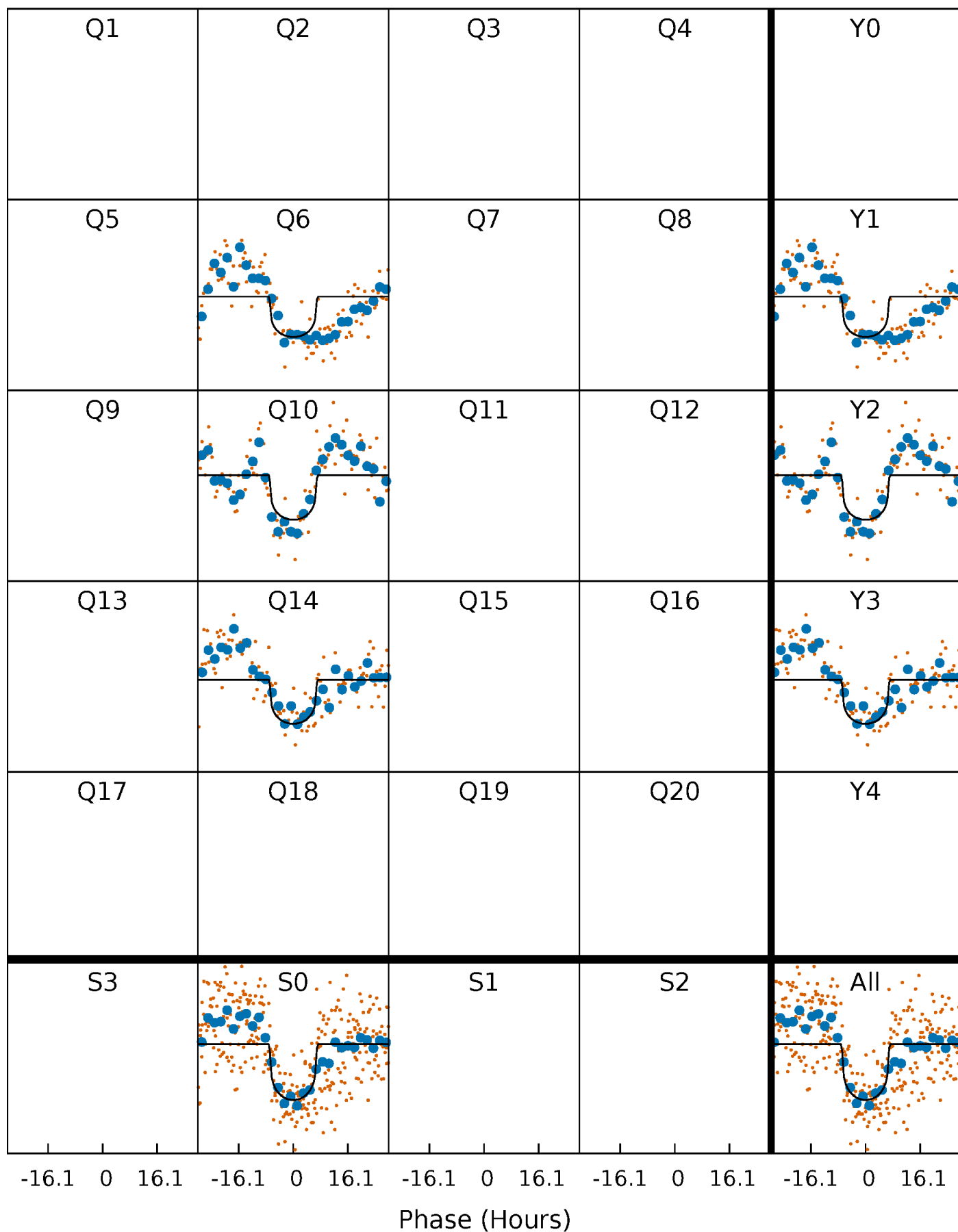
# PDC Quarter-Phased Transit Curves

TCE 008308832-01 P=369.886403 Days  $T_0=233.051730$  (BKJD)



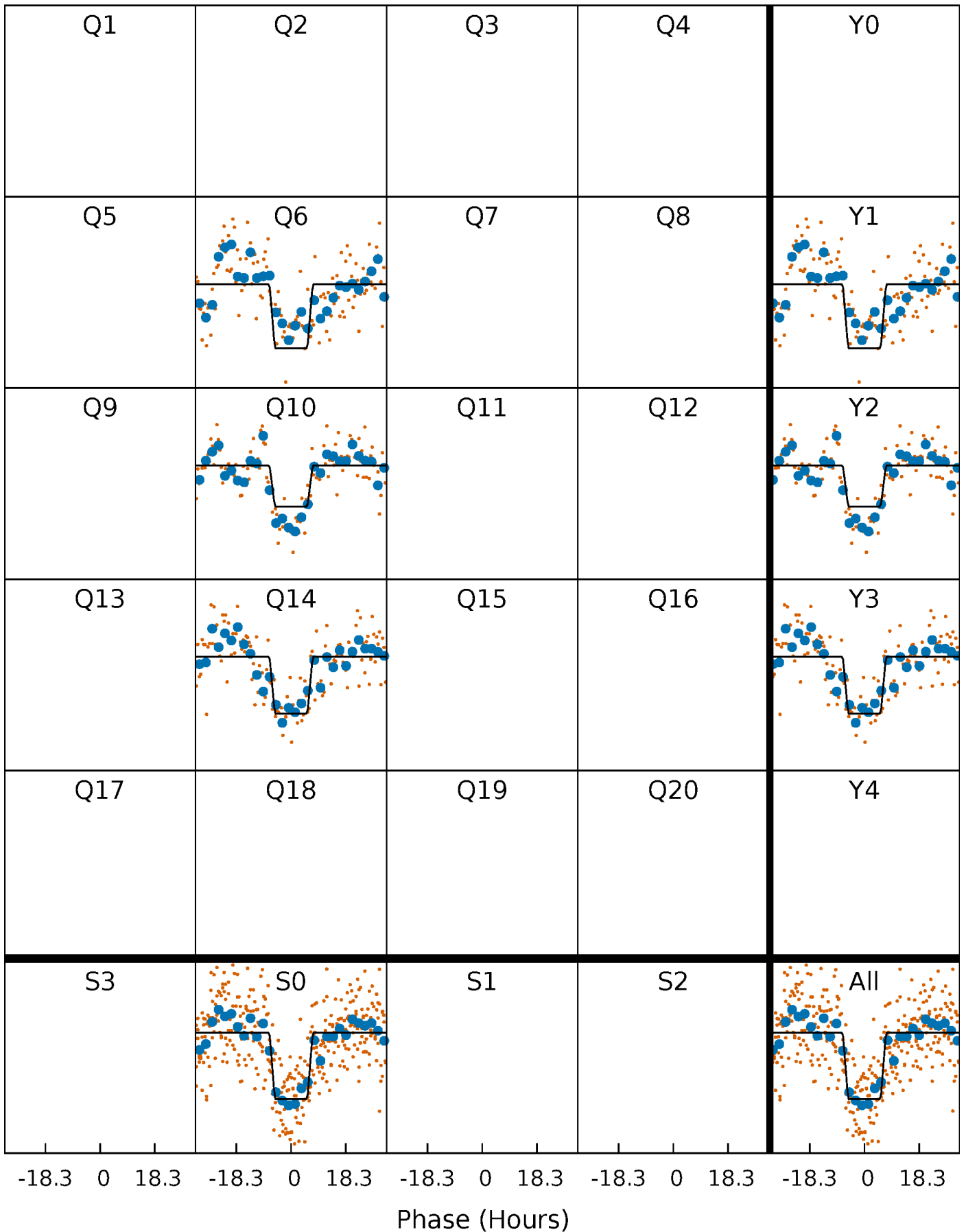
# DV Quarter-Phased Transit Curves

TCE 008308832-01 P=369.886403 Days  $T_0=233.051730$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

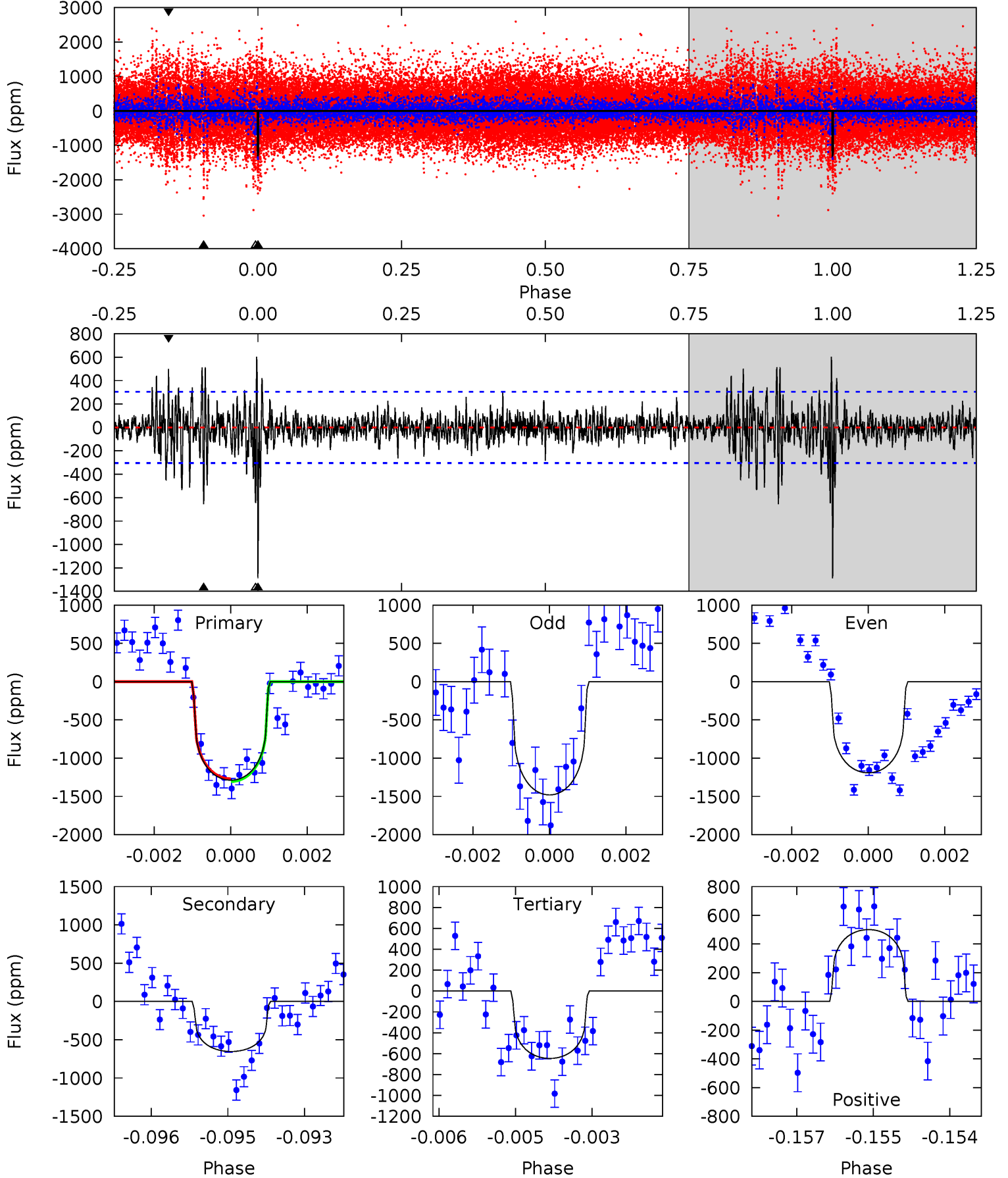
TCE 008308832-01 P=369.908737 Days  $T_0=233.002441$  (BKJD)



# DV Model-Shift Uniqueness Test

008308832-01, P = 369.886403 Days, E = 233.051730 Days

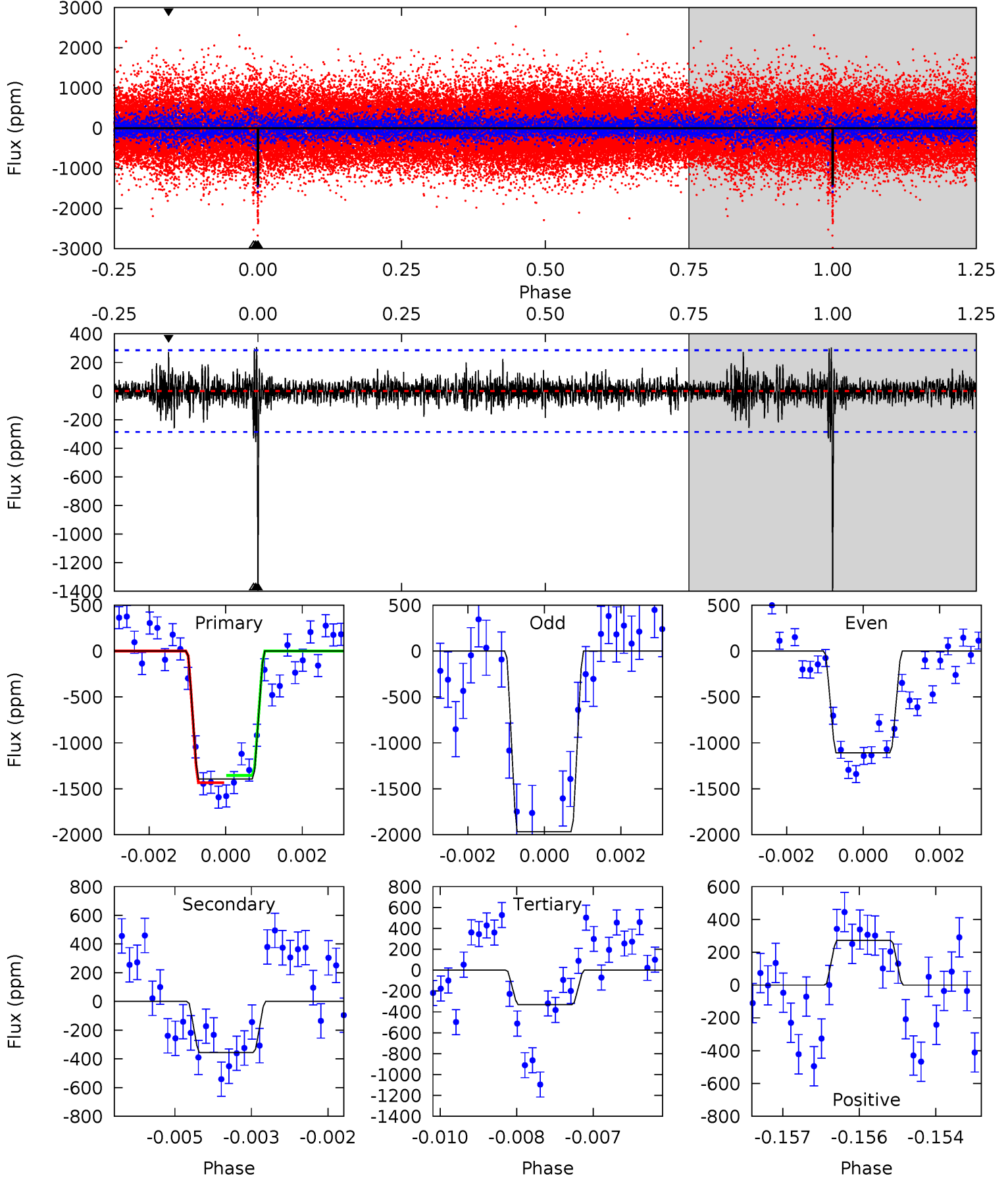
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.7	11.5	11.4	8.81	5.37	3.16	1.83	11.3	13.9	0.14	2.70	2.37	1.01	0.32	0.31



# Alt Model-Shift Uniqueness Test

008308832-01, P = 369.908737 Days, E = 233.002441 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
26.2	6.68	6.21	5.12	5.36	3.15	1.03	20.0	21.1	0.47	1.56	7.51	1.06	0.18	0.76



### Stellar Parameters For KIC 008308832

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5087^{+179}_{-179}$	$4.612^{+0.066}_{-0.044}$	$-0.720^{+0.300}_{-0.300}$	$0.653^{+0.063}_{-0.057}$	$0.637^{+0.073}_{-0.031}$	$3.217^{+0.883}_{-0.580}$
	+4%/-4%	+1%/-1%	+42%/-42%	+10%/-9%	+11%/-5%	+27%/-18%
Source	KIC0	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 008308832-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-654 \pm 57$	$2.35^{+1.19}_{-1.16}$	$272^{+11}_{-11}$	$4589^{+1492}_{-674}$	$49578^{+133267}_{-28159}$
Alt.	$-355 \pm 53$	$2.63^{+1.34}_{-1.11}$	$271^{+10}_{-11}$	$3912^{+913}_{-480}$	$21494^{+44040}_{-11875}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

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

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

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

## DV Centroid Data

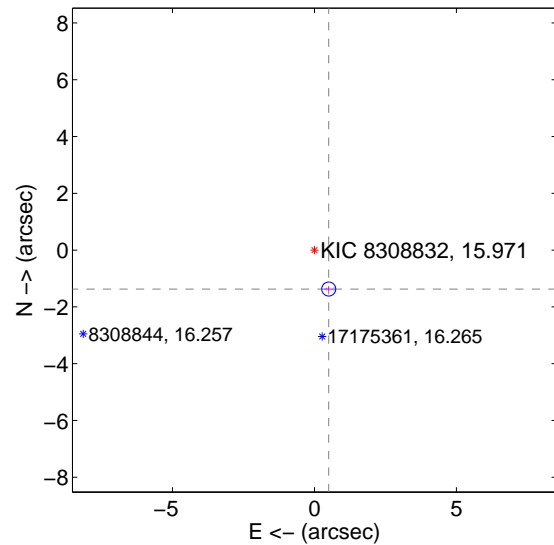
Supplemental centroid analysis for 008308832-01. Kepler magnitude: 15.97. Transit SNR 9.80

There are 2 quarters with good PRF difference image offsets

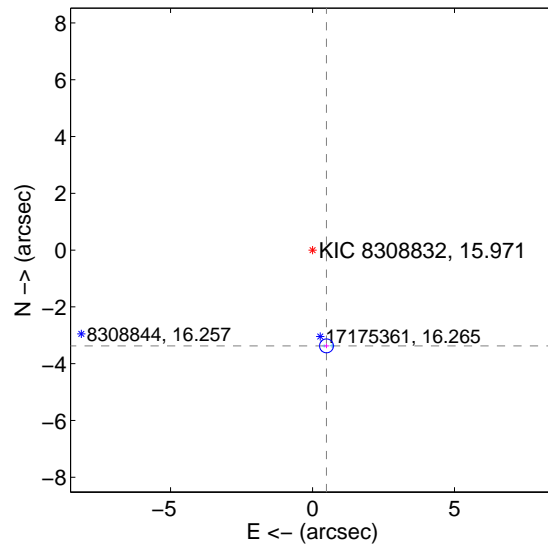
The direct PRF centroid is offset from the target star catalog position by about 1.99 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.461 \pm 0.082$	17.79	$-0.504 \pm 0.154$	$-1.372 \pm 0.067$
PRF-fit source offset from KIC position	$3.409 \pm 0.081$	41.90	$-0.492 \pm 0.086$	$-3.374 \pm 0.081$
photometric centroid source offset	$3.65 \pm 1.15$	3.18	$0.82 \pm 1.24$	$-3.56 \pm 1.14$

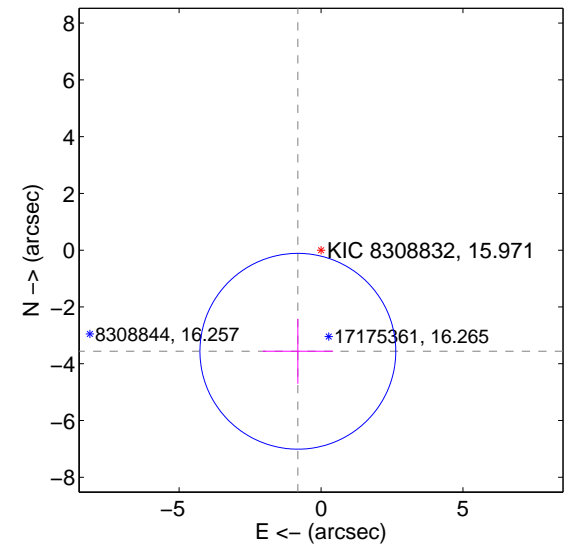
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

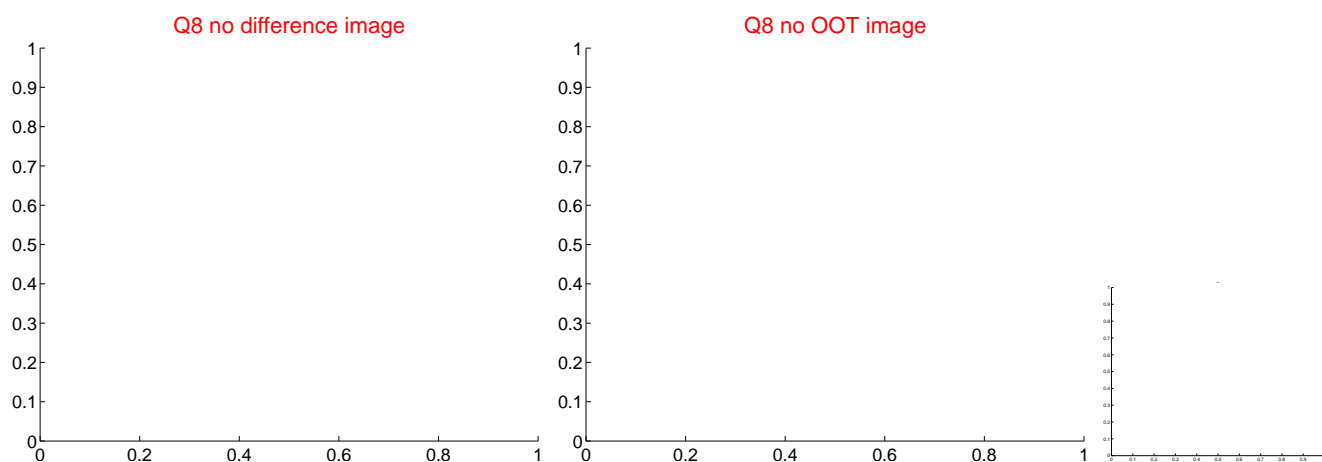
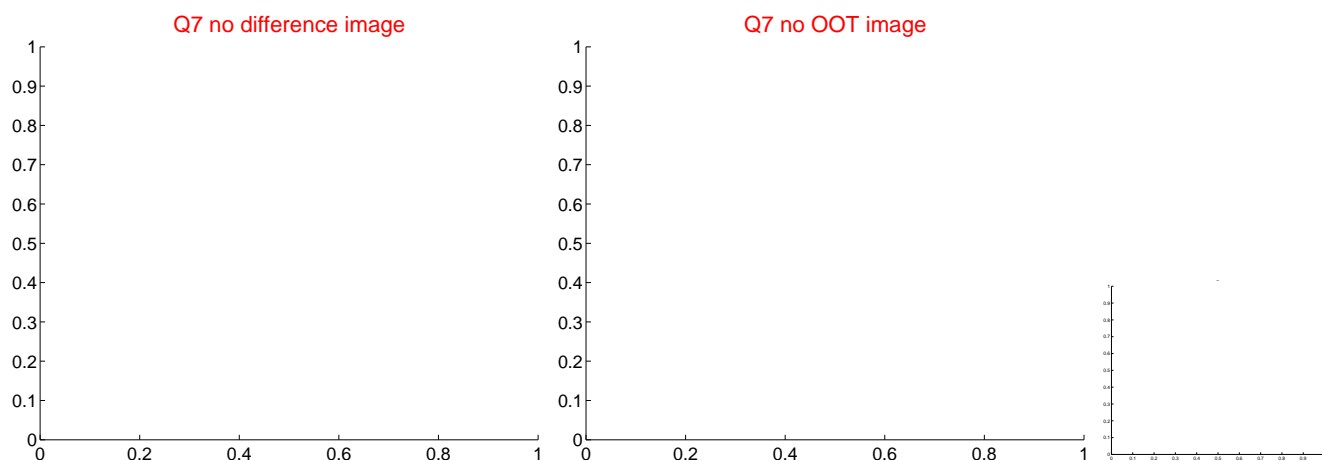
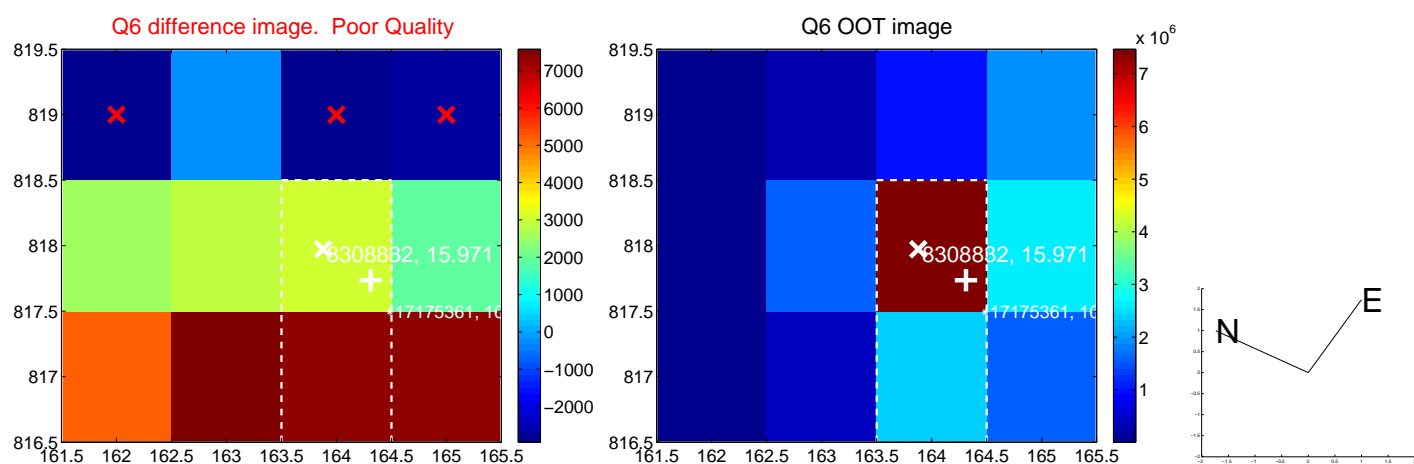
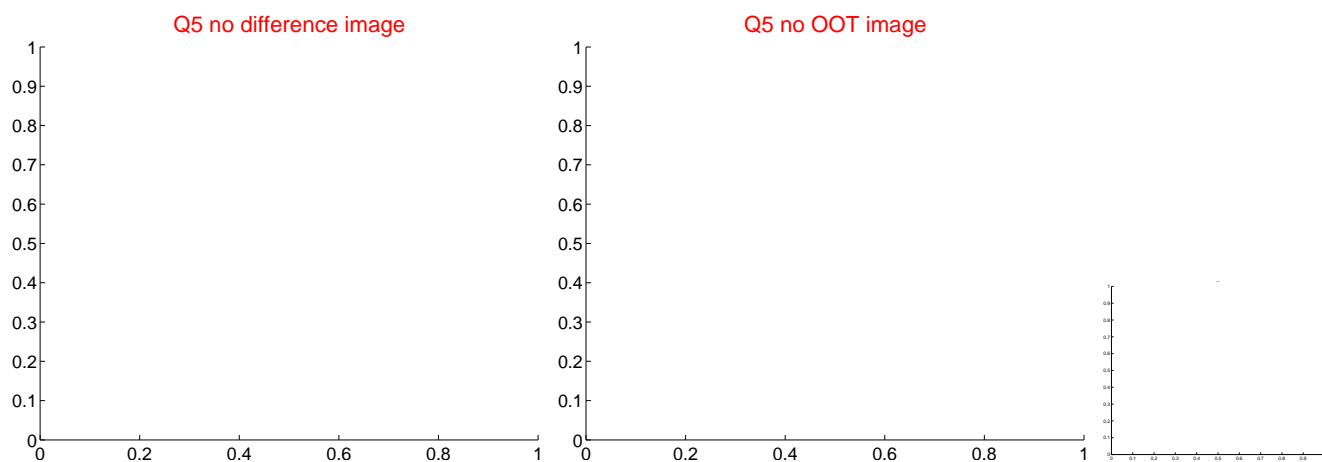


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

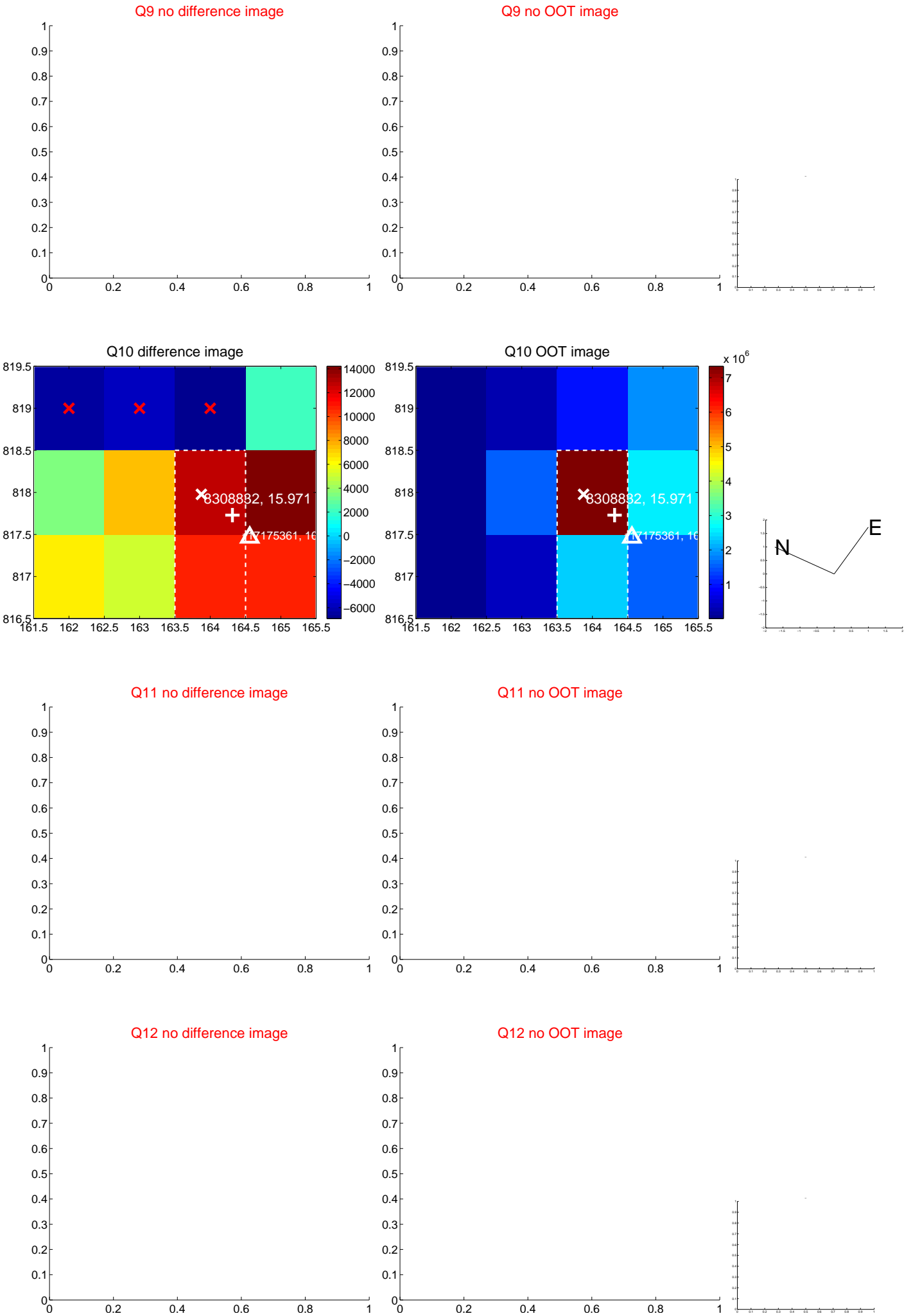
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



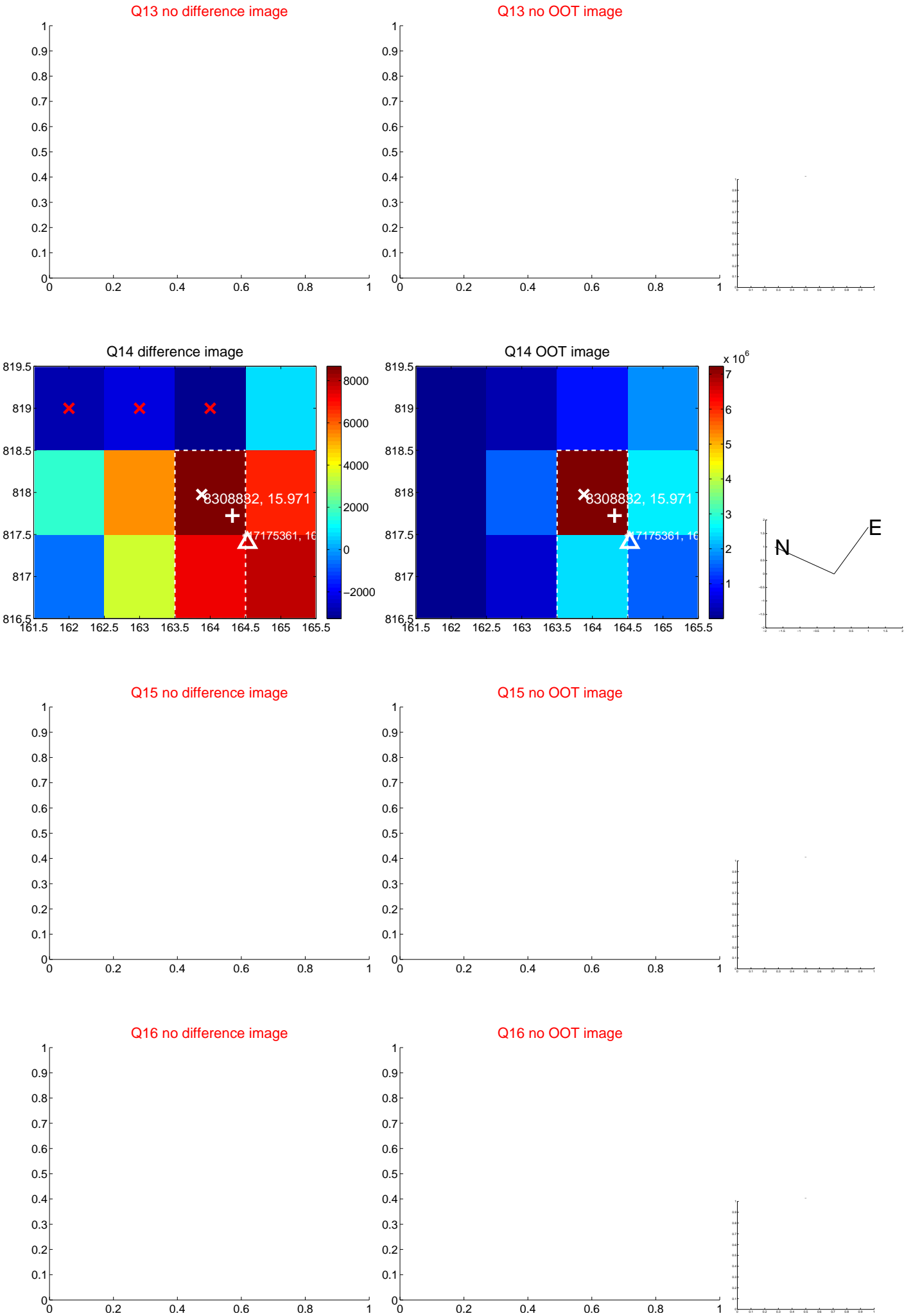
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



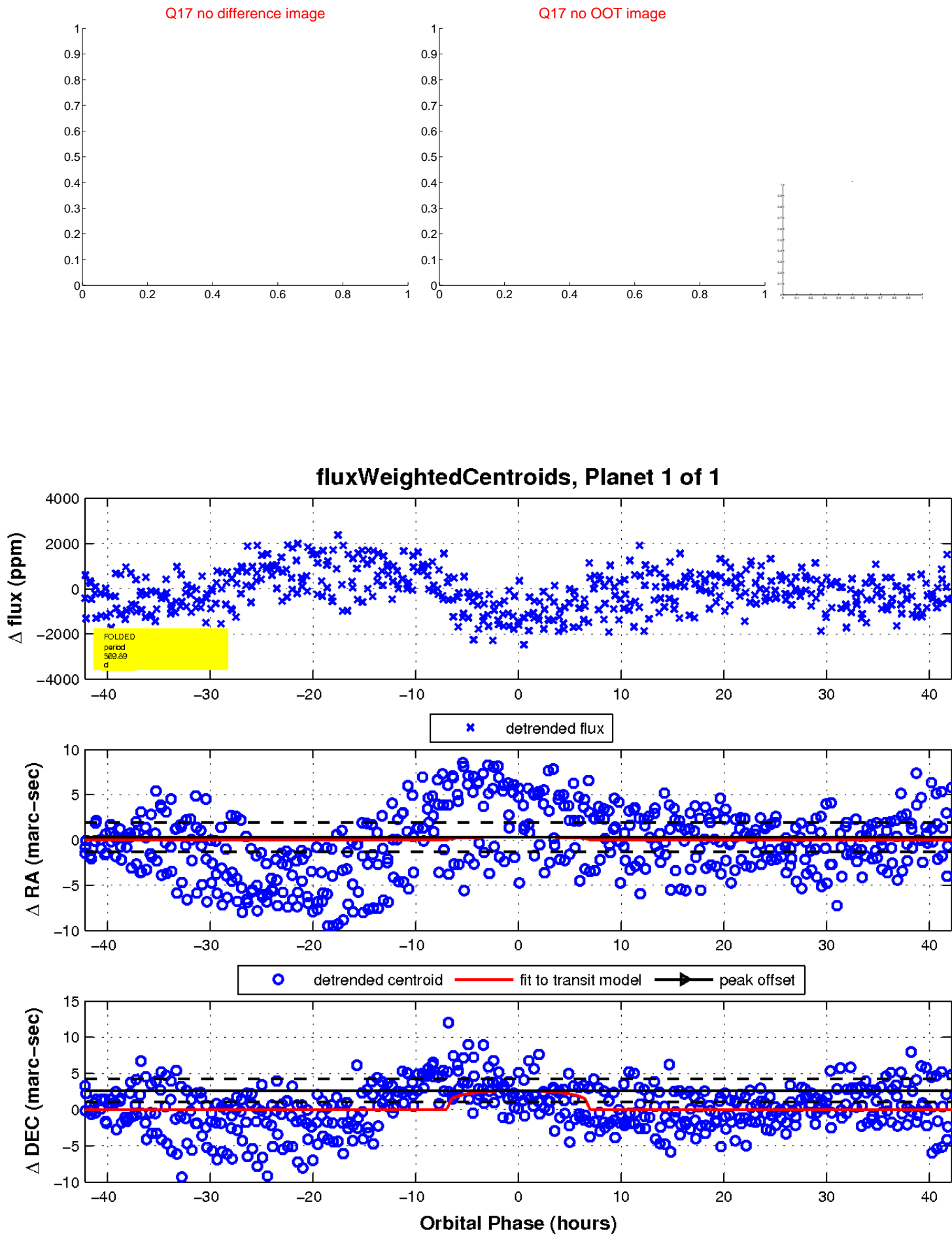
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

