

# KIC 008242460

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008242460-01	OBS	No	368.254081	234.622437	1179.8	19.415	8.7	9.4	0.83	5195	5.72	0.53

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008242460-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—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.

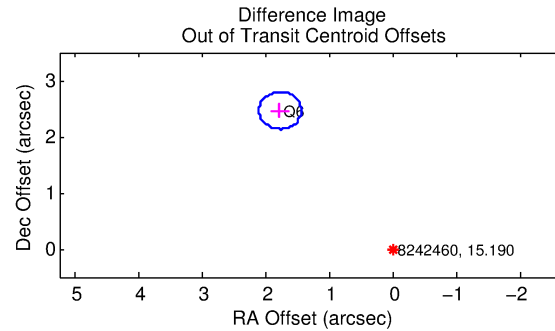
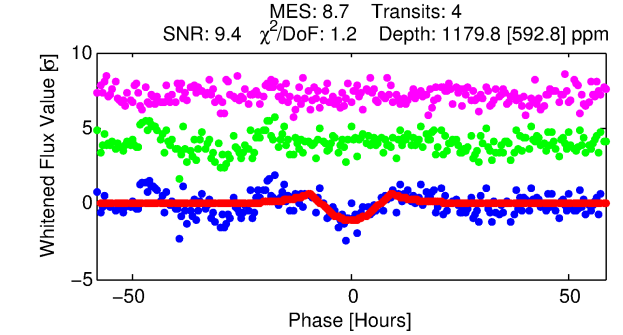
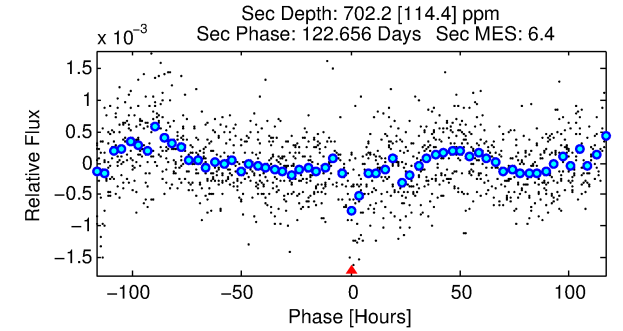
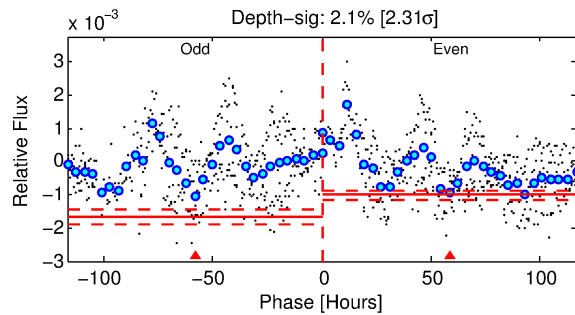
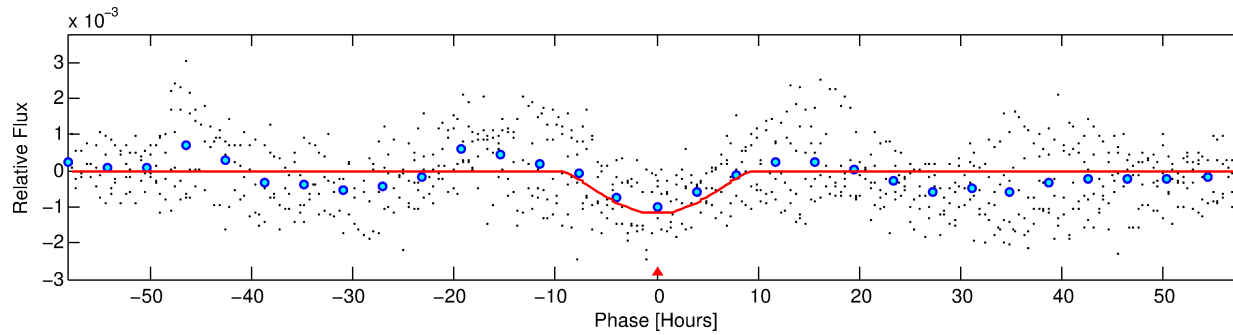
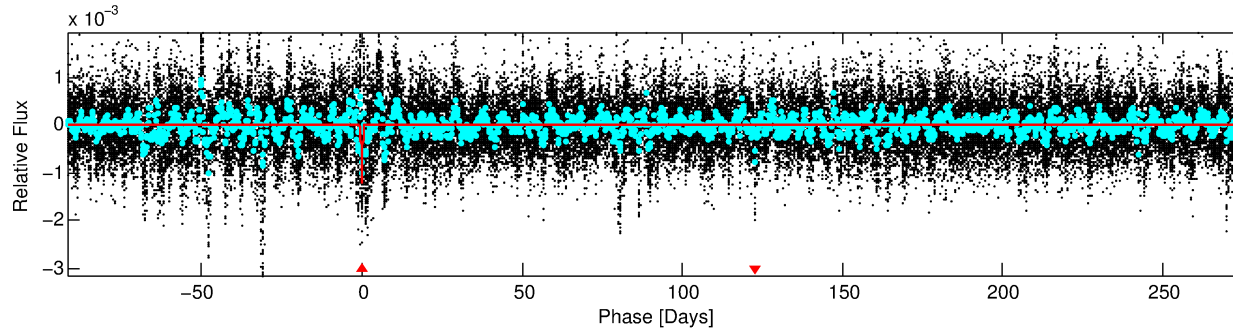
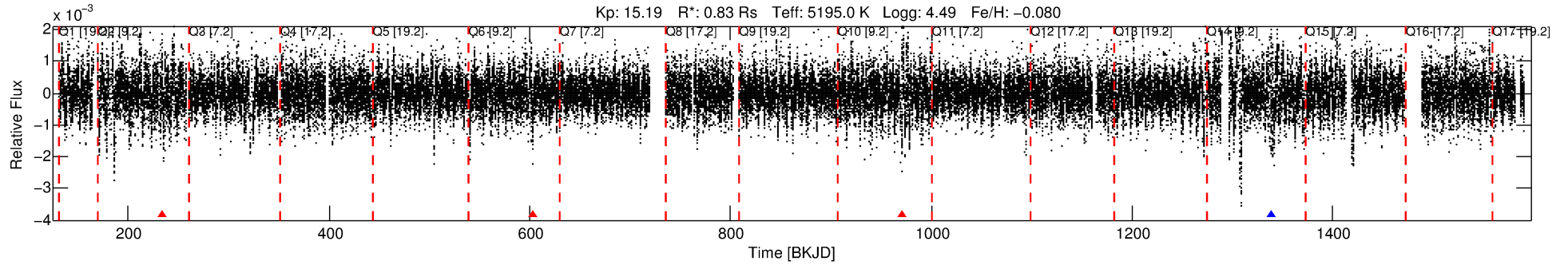
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008242460-01

No Significant Match Found

# DV One-Page Summary

KIC: 8242460 Candidate: 1 of 1 Period: 368.254 d



## DV Fit Results:

Period = 368.25408 [0.01861] d  
Epoch = 234.6224 [0.0368] BKJD  
Rp/R\* = 0.0628 [0.1633]  
a/R\* = 52.18 [30.68]  
b = 1.00 [0.21]  
Seff = 0.53 [0.11]  
Teq = 218 [12] K  
Rp = 5.72 [14.90] Re  
a = 0.9245 [0.1056] AU  
Ag = 10075.73 [52439.88] [0.19 $\sigma$ ]  
Teff = 3374 [4389] K [0.72 $\sigma$ ]

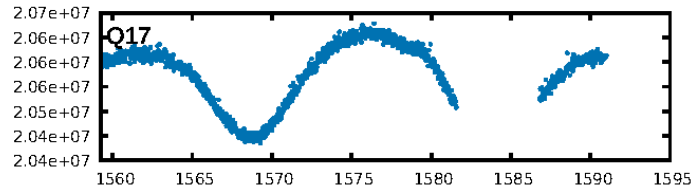
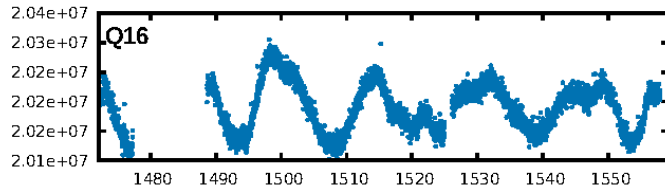
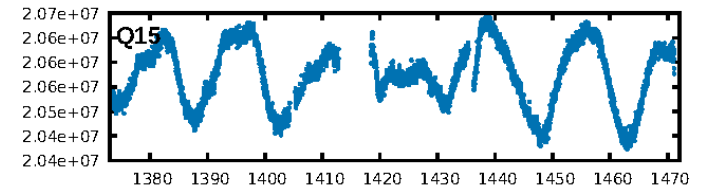
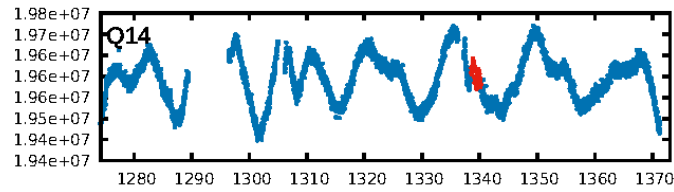
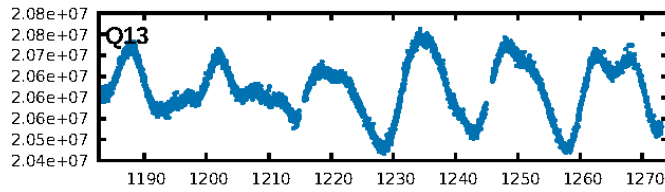
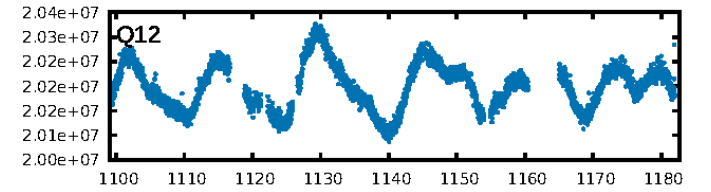
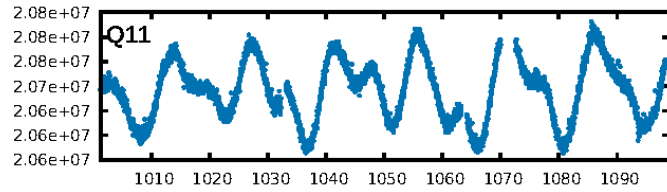
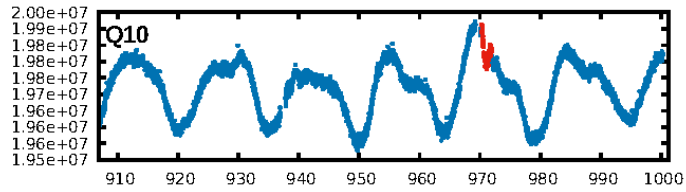
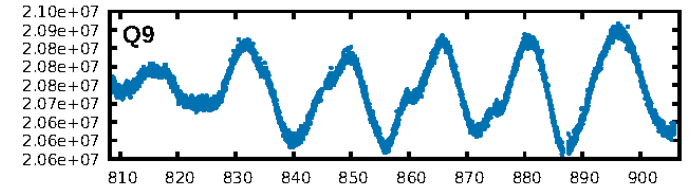
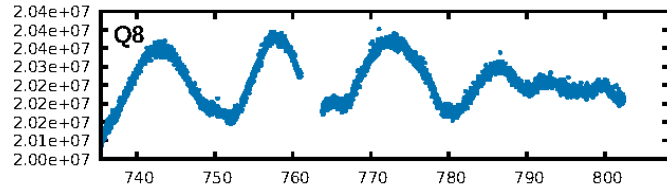
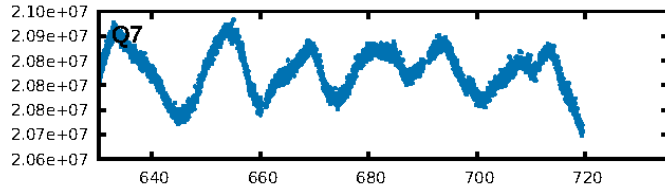
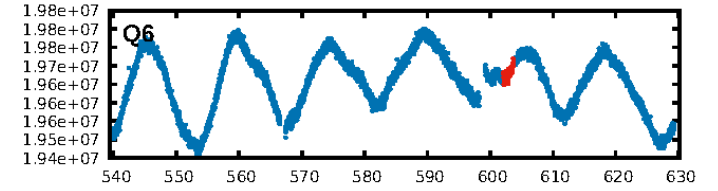
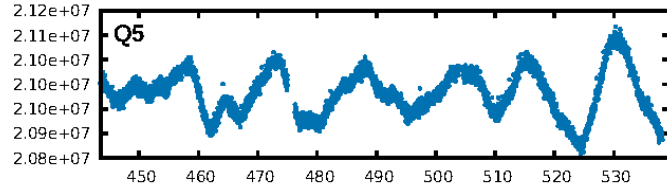
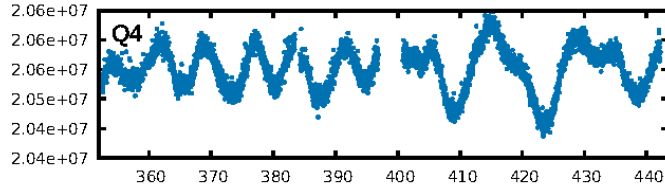
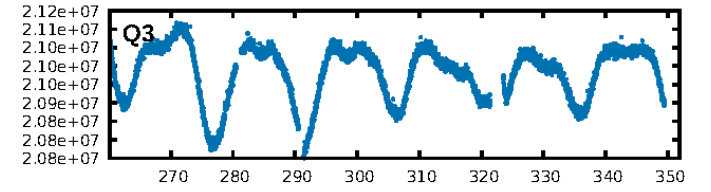
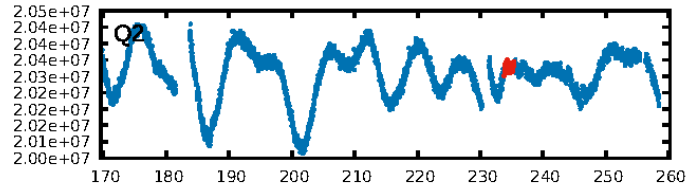
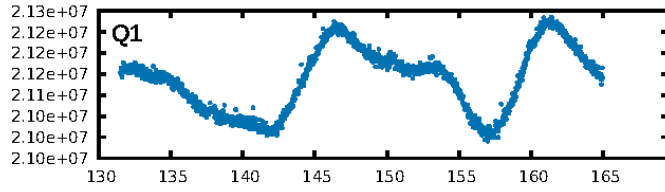
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.5%  
ModelChiSquareGoF-sig: 99.9%  
Bootstrap-pfa: 2.18e-13  
RollingBand-fgt: 0.25 [1/4]  
GhostDiagnostic-chr: 0.6126  
Centroid-sig: 0.0%  
Centroid-so: 7.159 arcsec [4.48 $\sigma$ ]  
OotOffset-rm: 3.041 arcsec [27.47 $\sigma$ ]  
KicOffset-rm: 2.938 arcsec [26.92 $\sigma$ ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

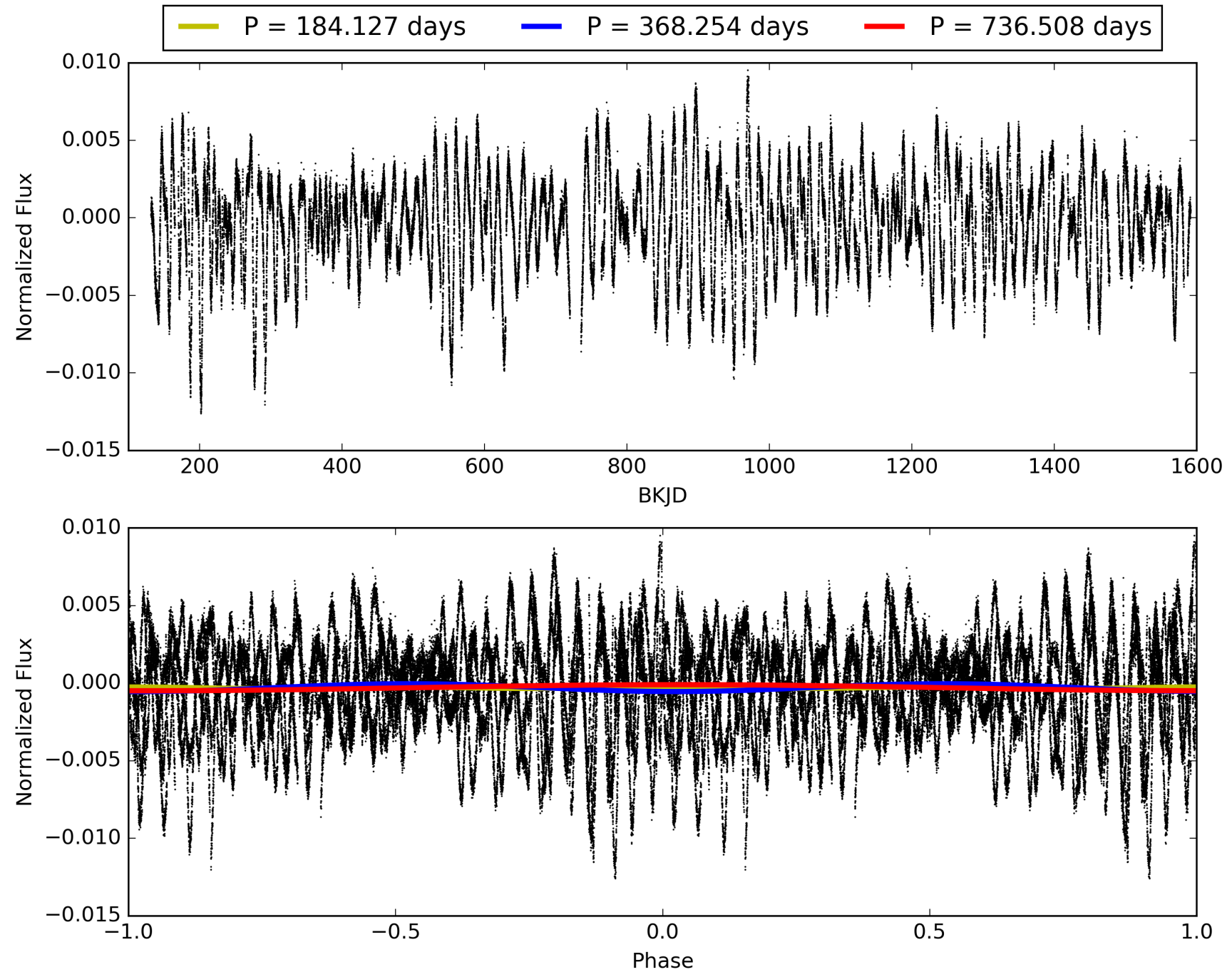
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 02:30:14 Z

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

# TCE 008242460-01, PDC Light Curves

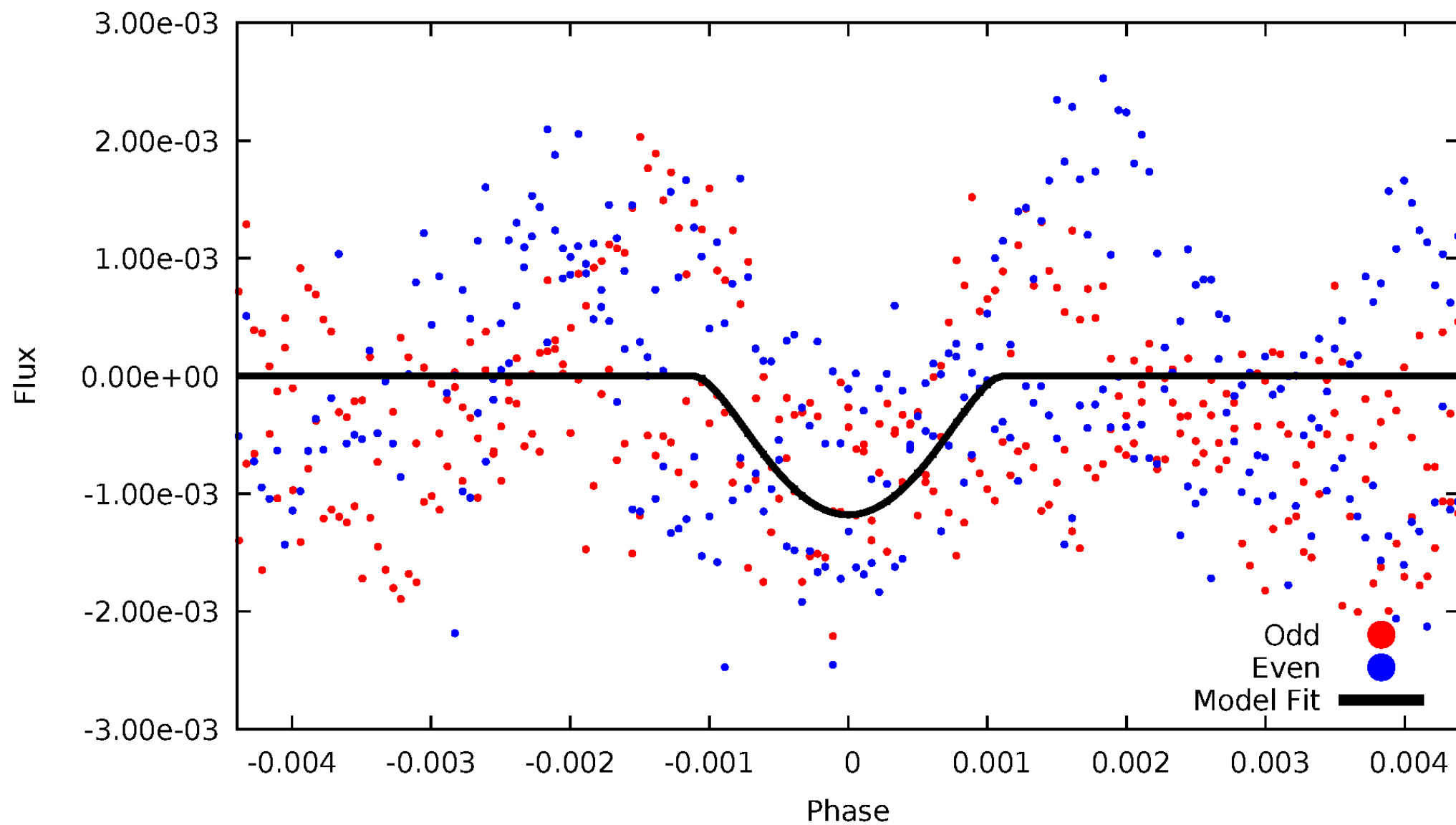


TCE 008242460-01



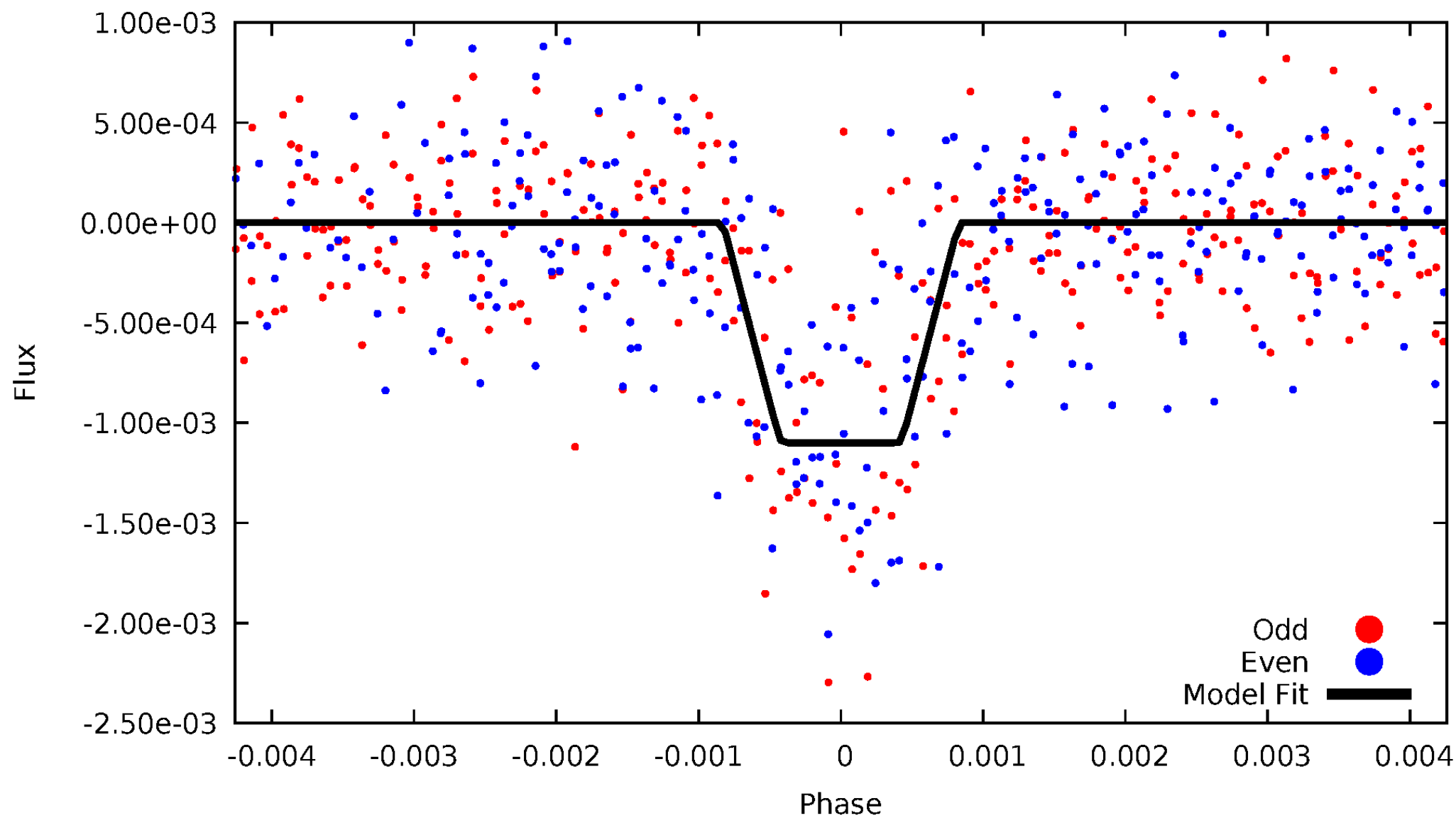
# DV Odd/Even

TCE 008242460-01



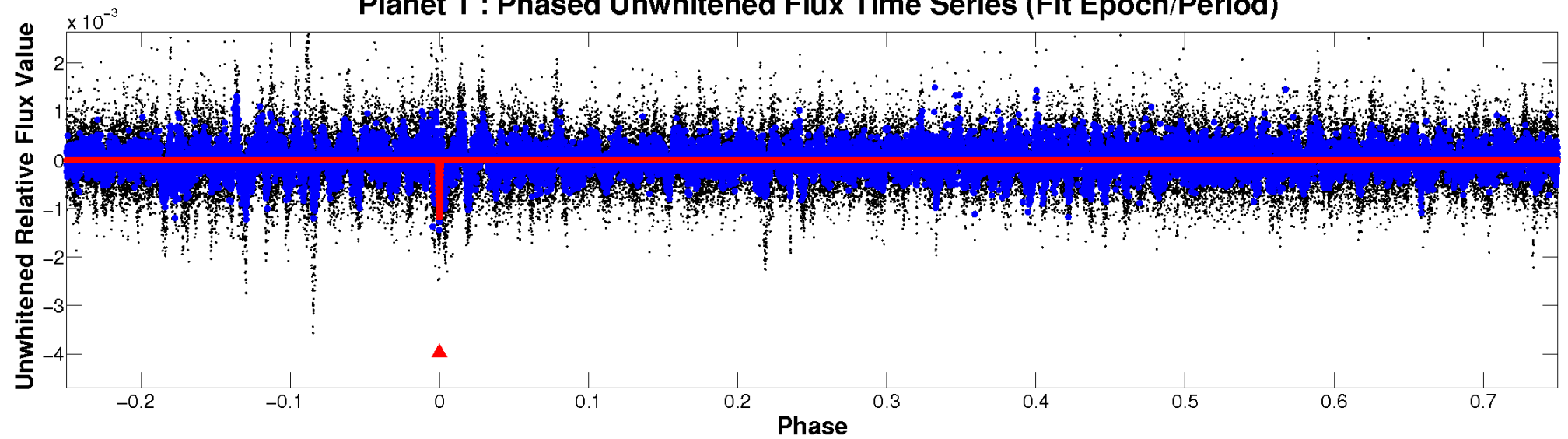
# ALT Odd/Even

TCE 008242460-01

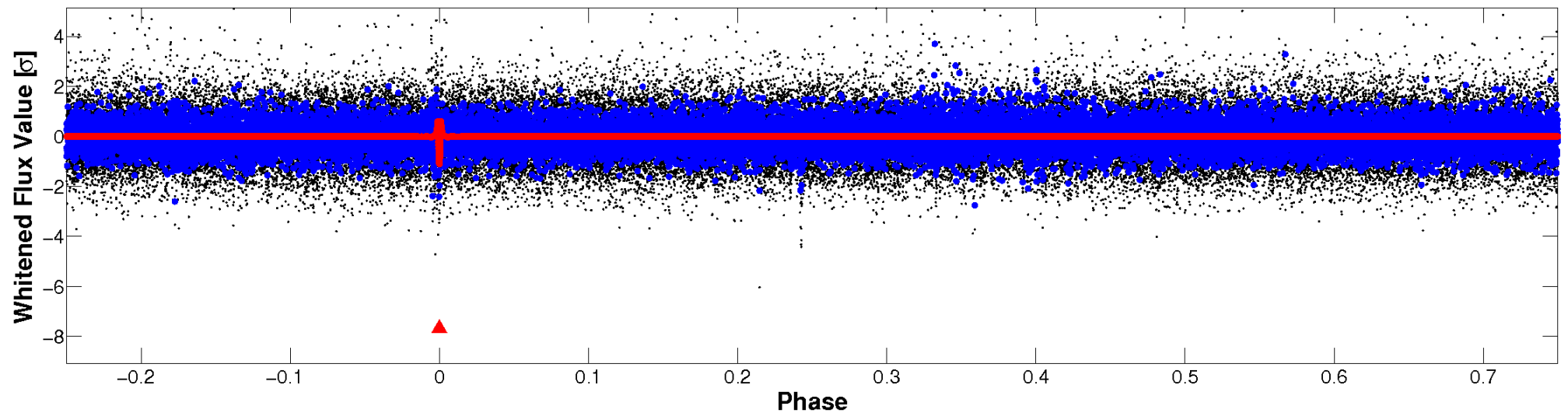


# Non-Whitened Vs. Whitened Light Curve

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

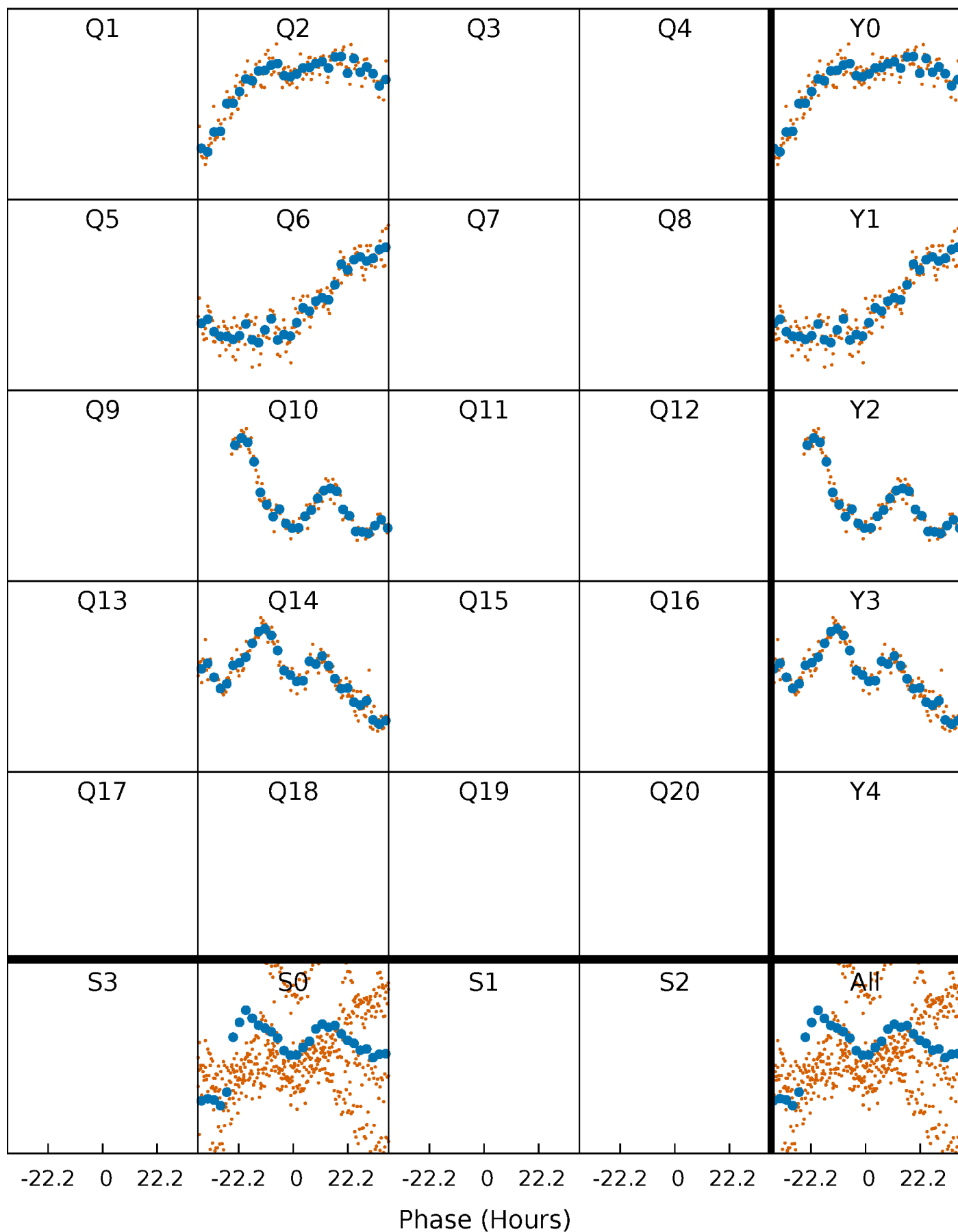


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

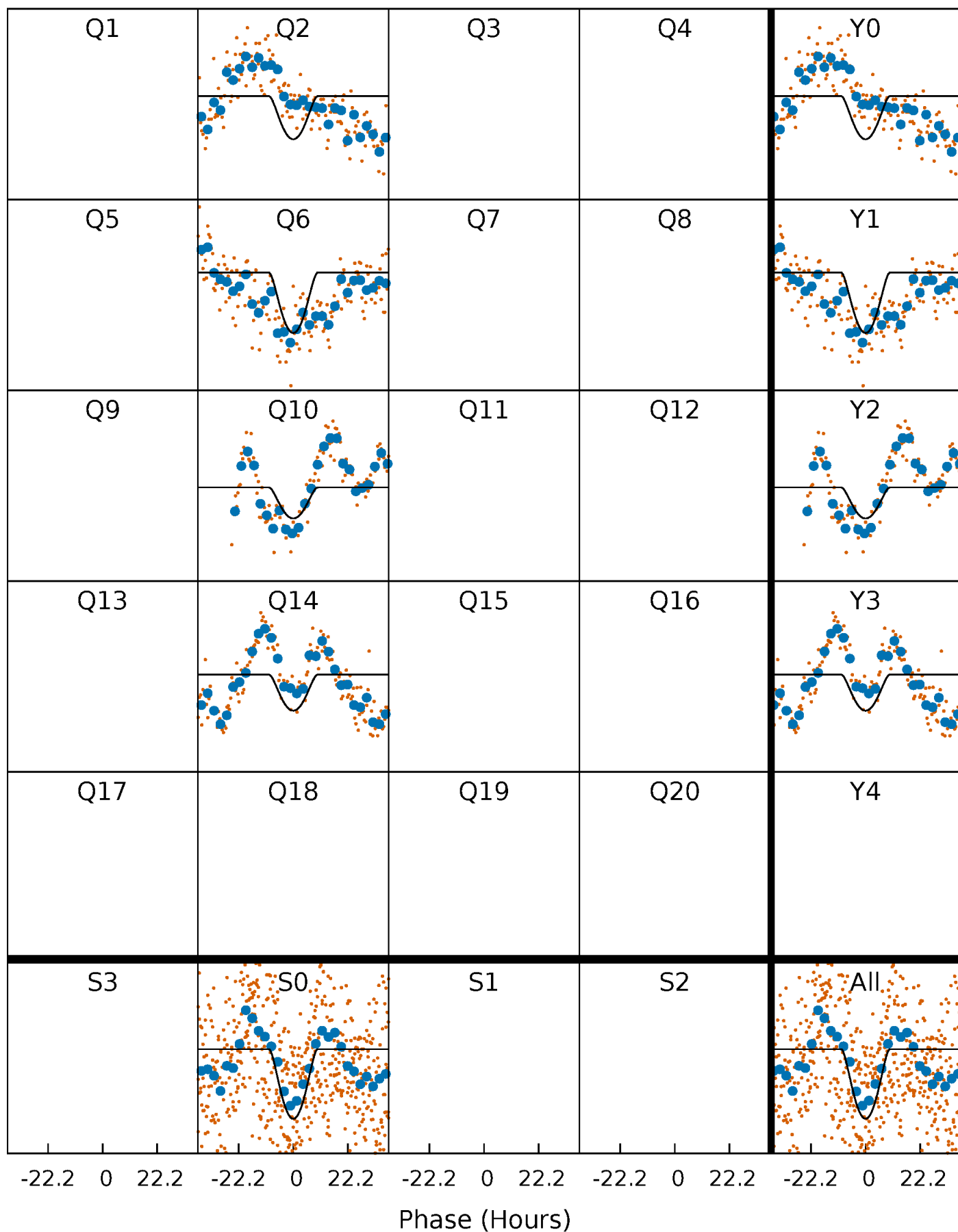
TCE 008242460-01 P=368.254081 Days  $T_0=234.622437$  (BKJD)





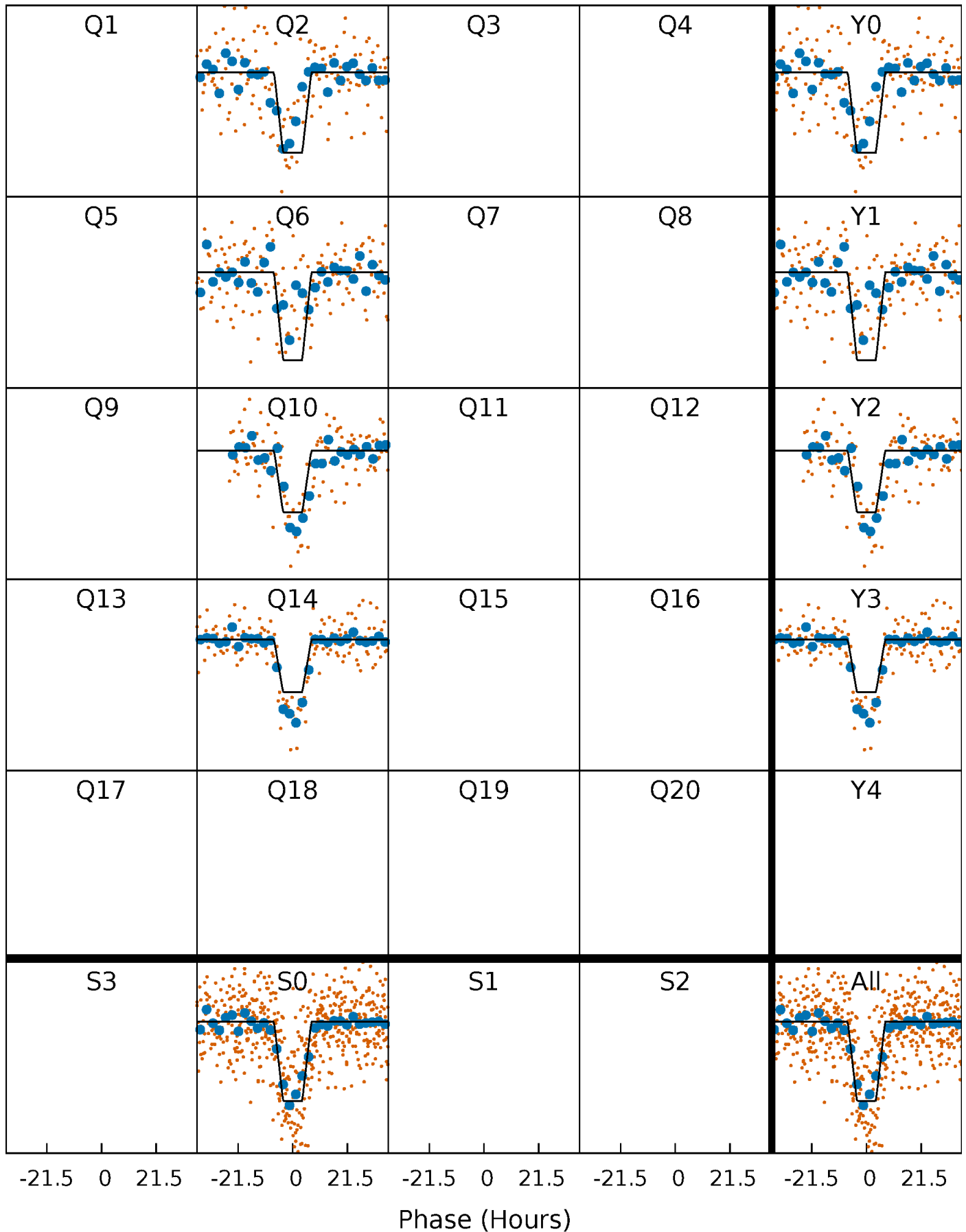
# DV Quarter-Phased Transit Curves

TCE 008242460-01 P=368.254081 Days  $T_0=234.622437$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

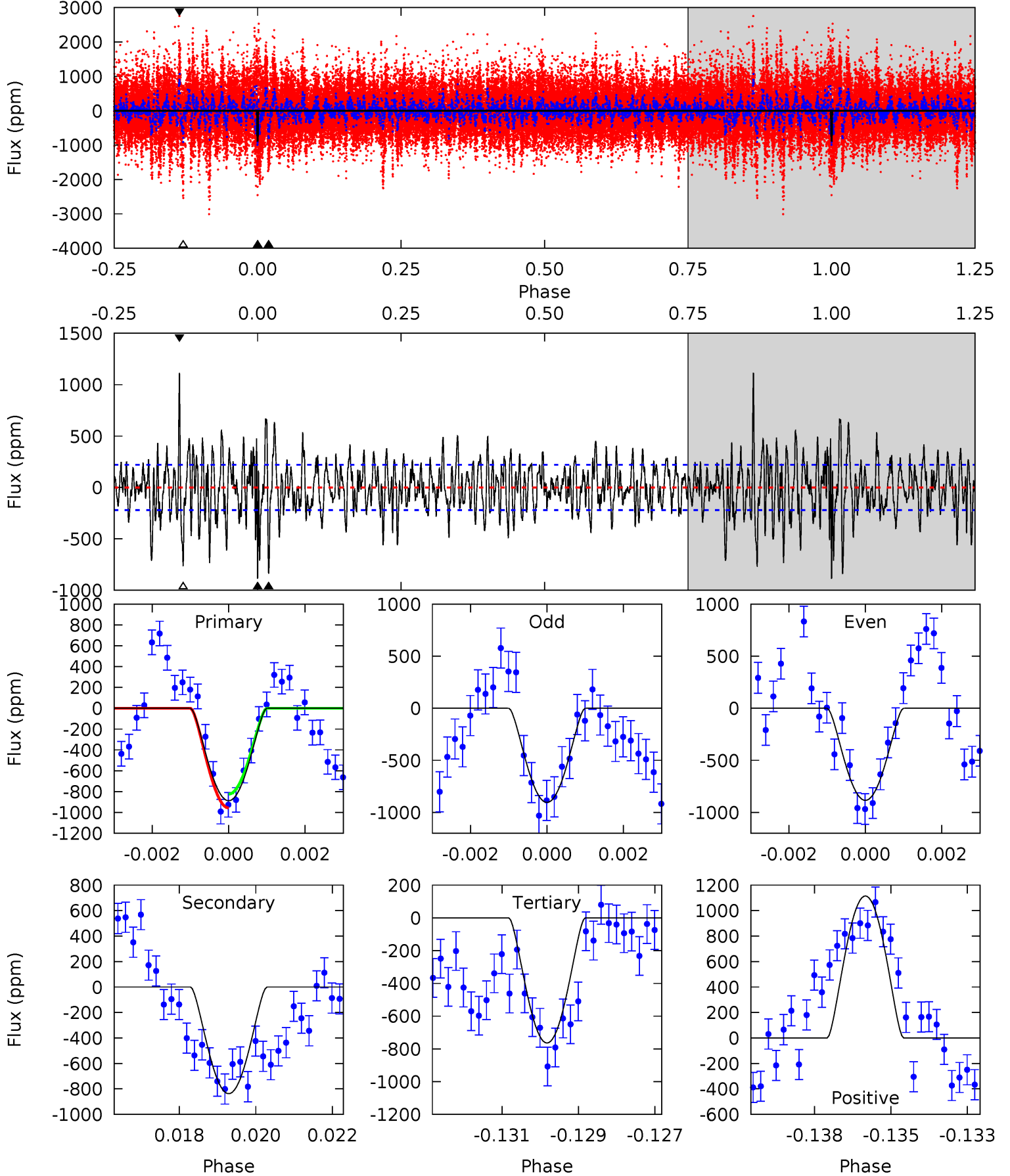
TCE 008242460-01 P=368.253618 Days  $T_0=234.615882$  (BKJD)



# DV Model-Shift Uniqueness Test

008242460-01, P = 368.254081 Days, E = 234.622437 Days

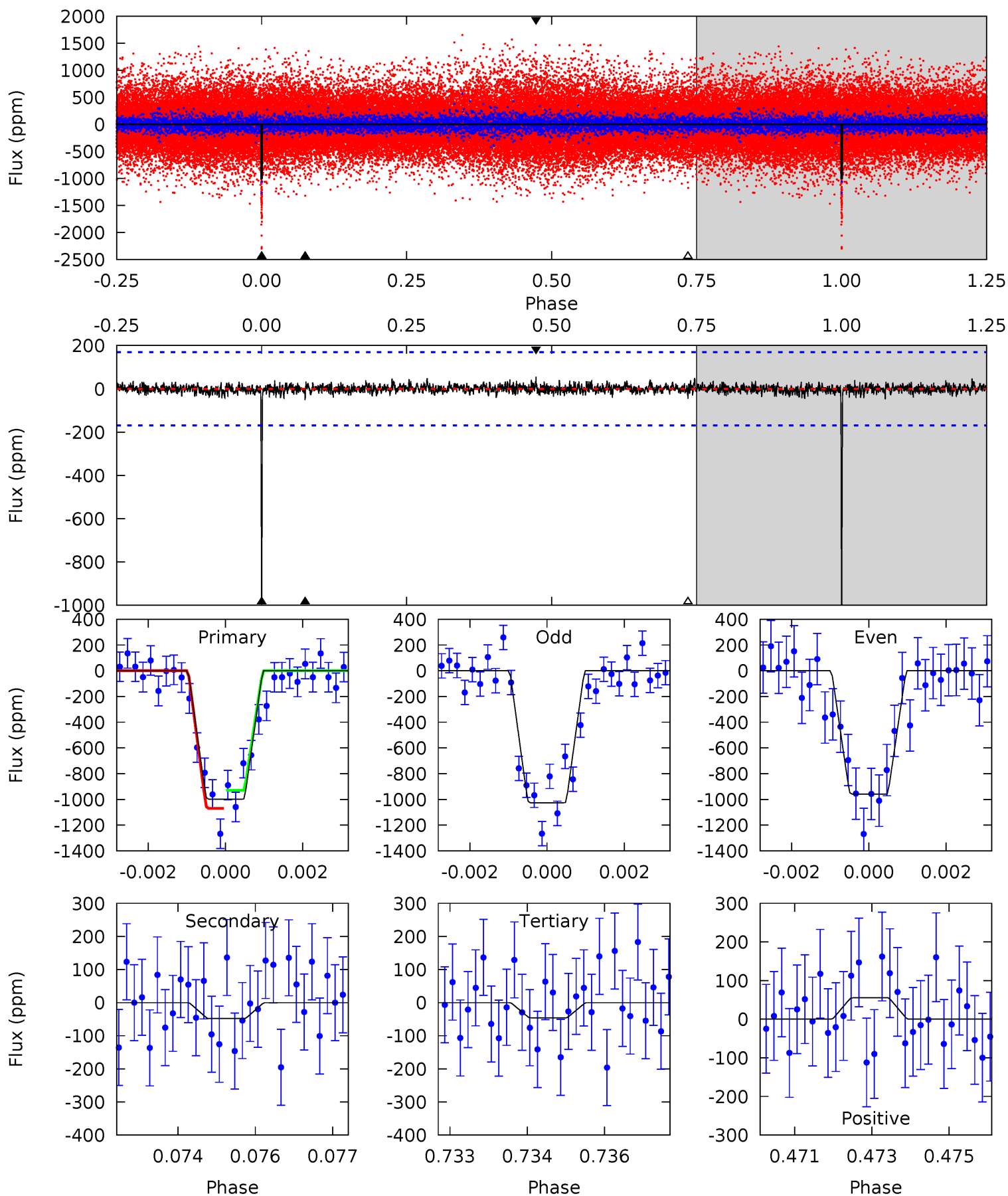
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	20.2	18.4	26.9	5.31	3.06	5.19	2.98	-5.48	1.77	-6.69	0.24	1.00	0.56	1.61



# Alt Model-Shift Uniqueness Test

008242460-01, P = 368.253618 Days, E = 234.615882 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
31.5	1.52	1.44	1.75	5.35	3.13	0.42	30.1	29.8	0.08	-0.23	1.07	1.04	0.05	2.21



### Stellar Parameters For KIC 008242460

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5195^{+155}_{-140}$	$4.485^{+0.100}_{-0.100}$	$-0.080^{+0.300}_{-0.300}$	$0.835^{+0.106}_{-0.096}$	$0.776^{+0.102}_{-0.059}$	$1.881^{+0.752}_{-0.538}$
	+3%/-3%	+2%/-2%	+375%/-375%	+13%/-11%	+13%/-8%	+40%/-29%
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 008242460-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-838 \pm 41$	$13.10^{+12.23}_{-8.61}$	$304^{+14}_{-14}$	$3004^{+1225}_{-483}$	$2347^{+17013}_{-1714}$
Alt.	$-48 \pm 32$	$11.20^{+11.84}_{-7.65}$	$304^{+15}_{-13}$	$2139^{+673}_{-367}$	$150^{+1385}_{-127}$

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

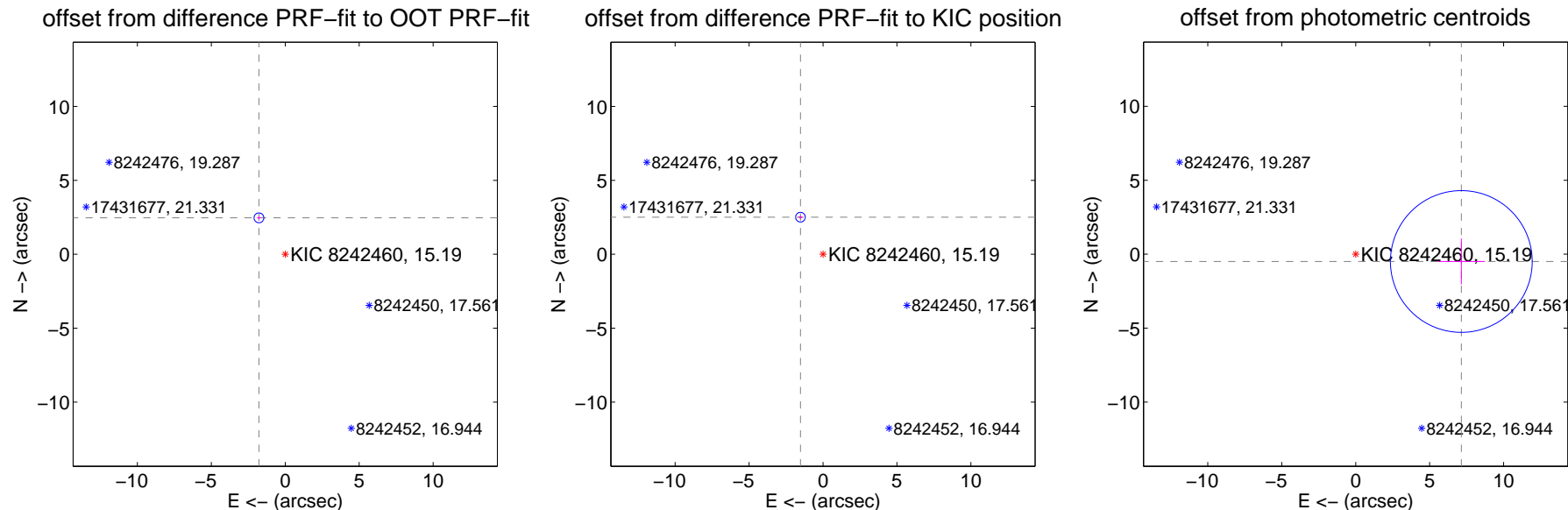
## DV Centroid Data

Supplemental centroid analysis for 008242460-01. Kepler magnitude: 15.19. Transit SNR 9.39

There are 0 quarters with good PRF difference image offsets

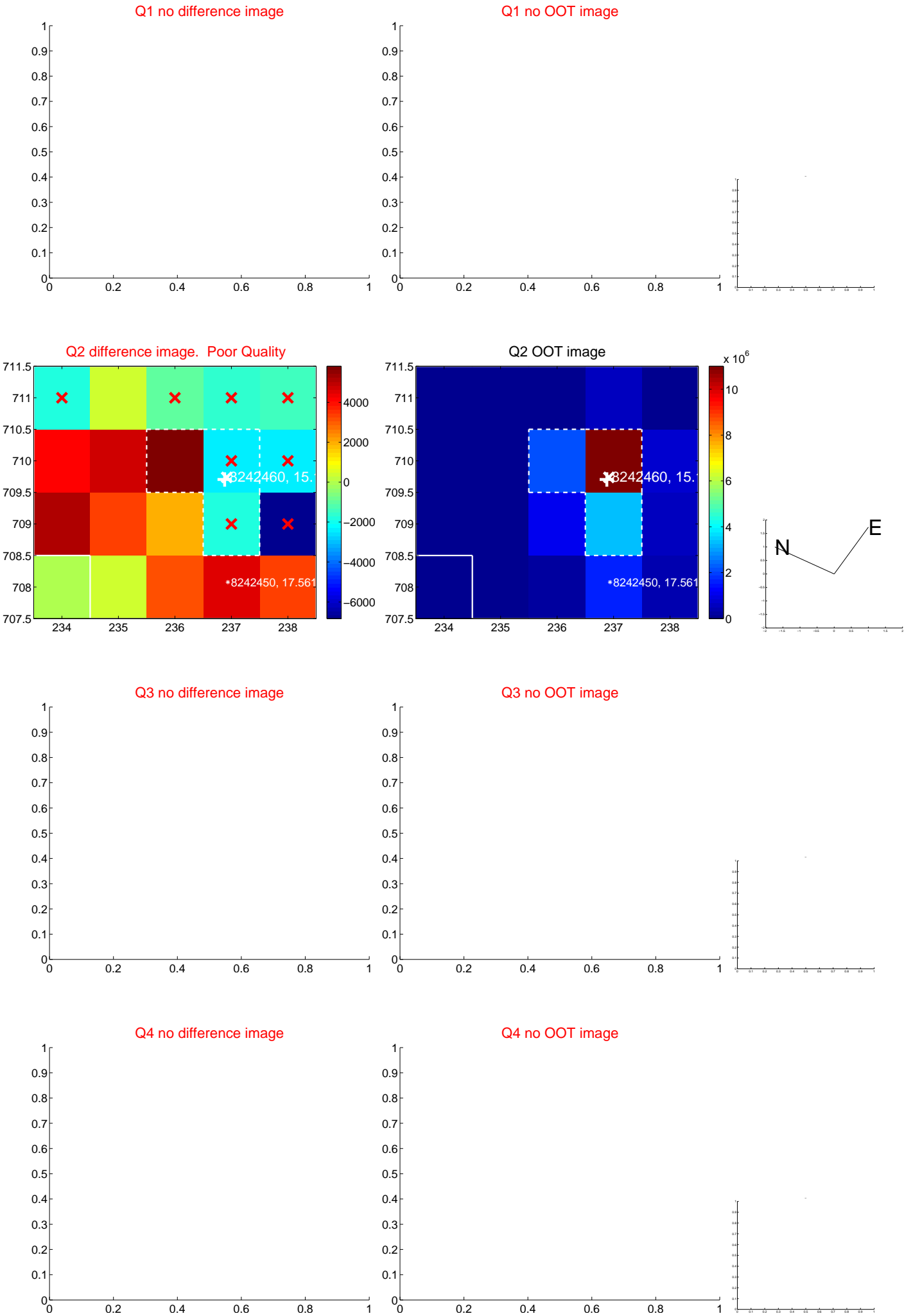
The direct PRF centroid is offset from the target star catalog position by about 0.26 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.041 \pm 0.111$	27.47	$1.781 \pm 0.124$	$2.465 \pm 0.103$
PRF-fit source offset from KIC position	$2.938 \pm 0.109$	26.92	$1.526 \pm 0.124$	$2.510 \pm 0.103$
photometric centroid source offset	$7.16 \pm 1.60$	4.48	$-7.14 \pm 1.60$	$-0.49 \pm 1.55$

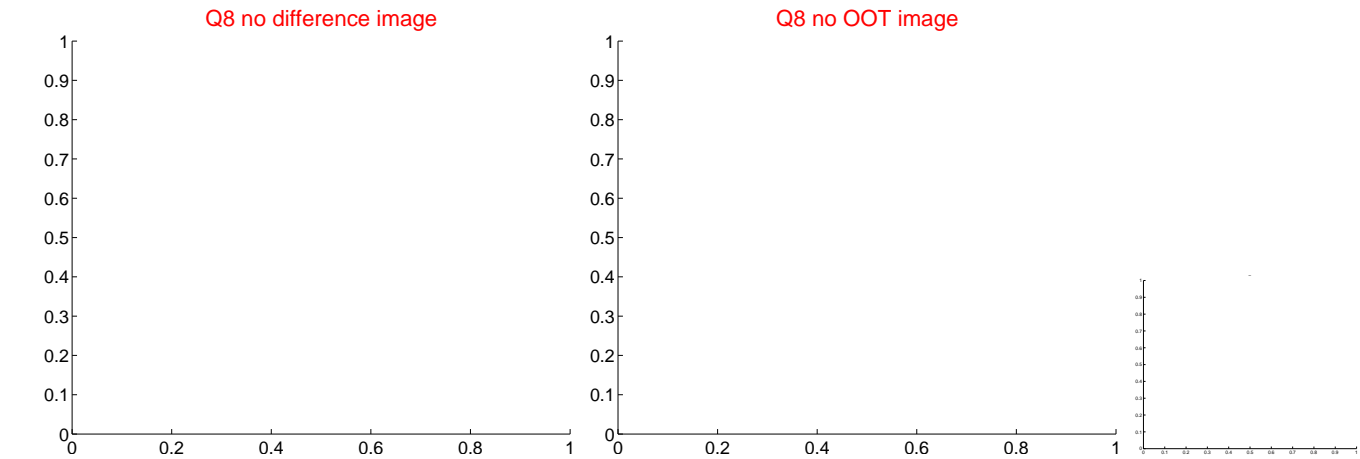
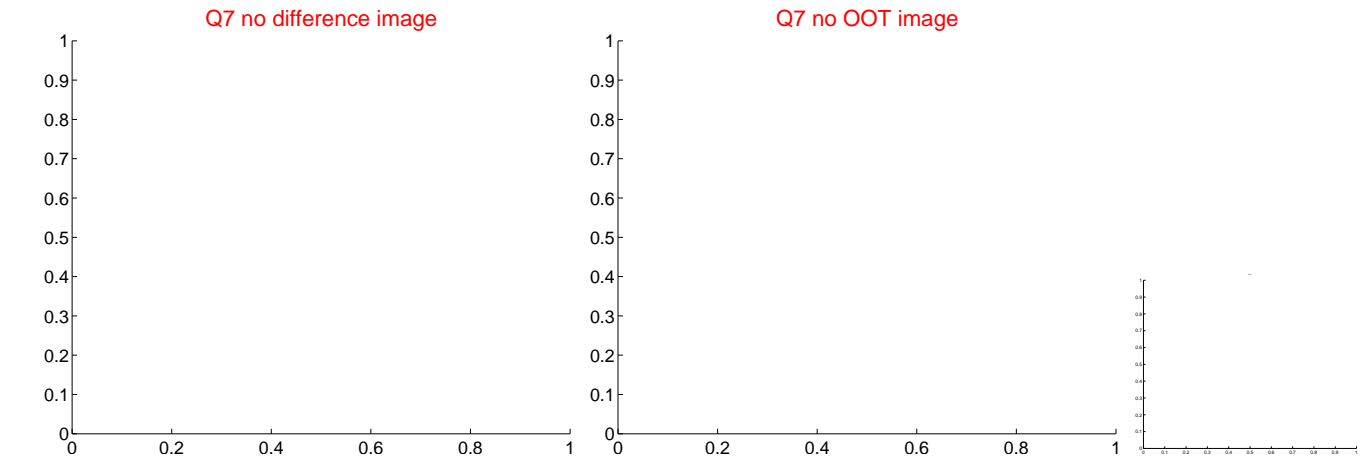
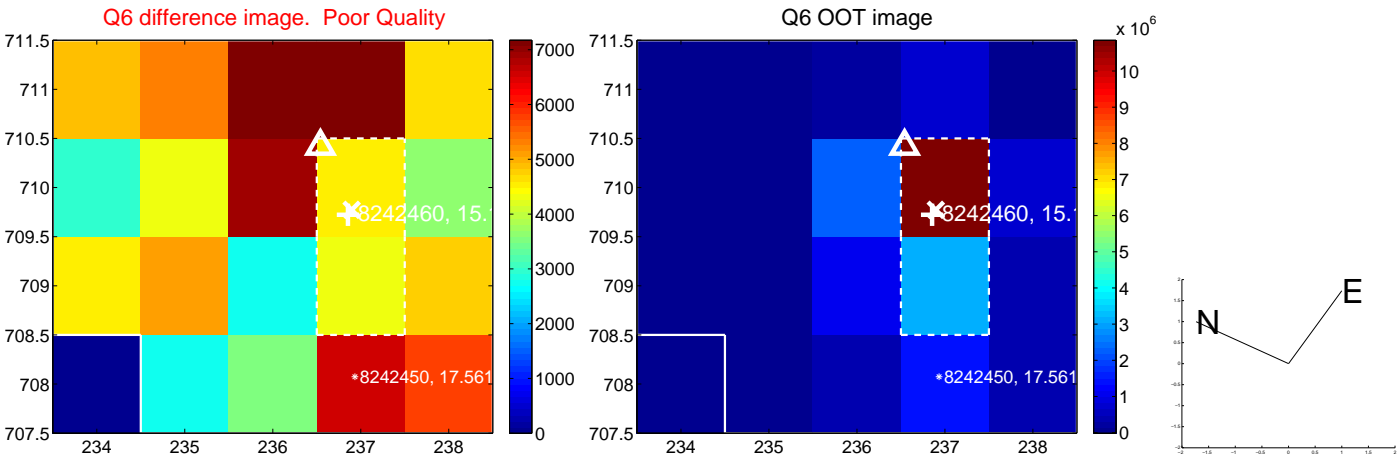
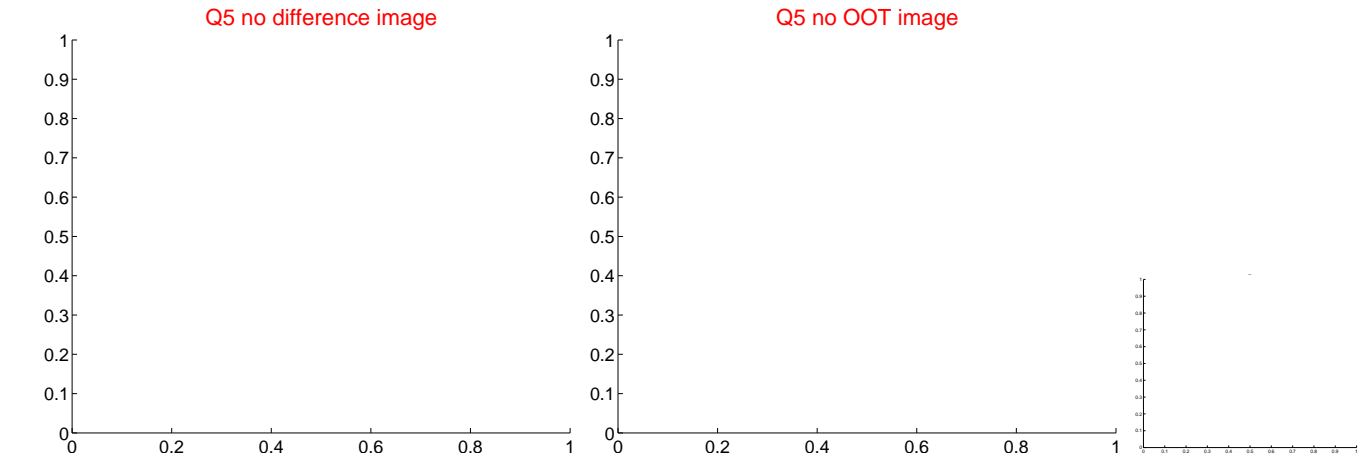


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





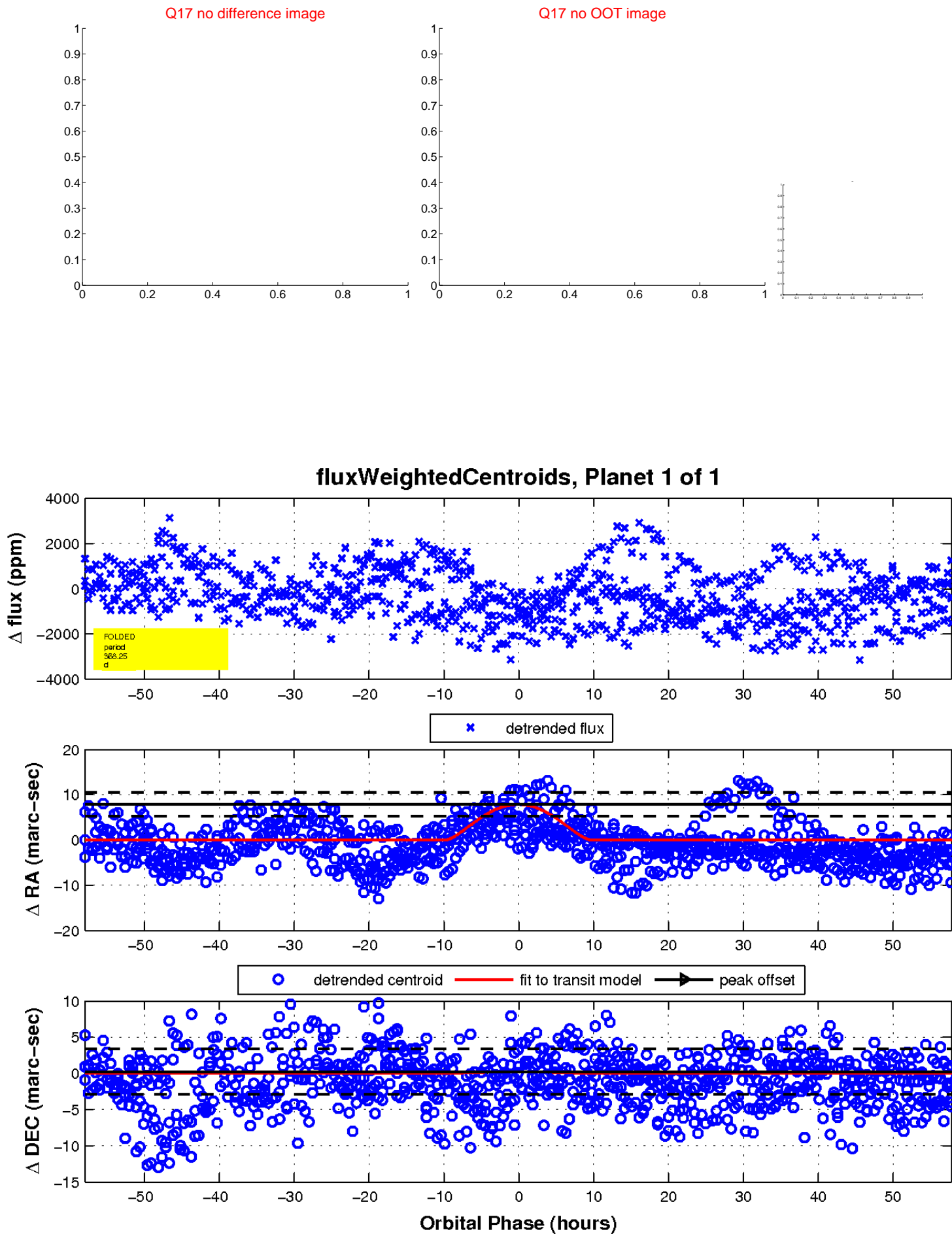
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

