

# KIC 006613747

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006613747-01	OBS	No	365.466072	295.473289	430.7	6.495	8.8	7.8	1.73	4827	4.01	1.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006613747-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—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.

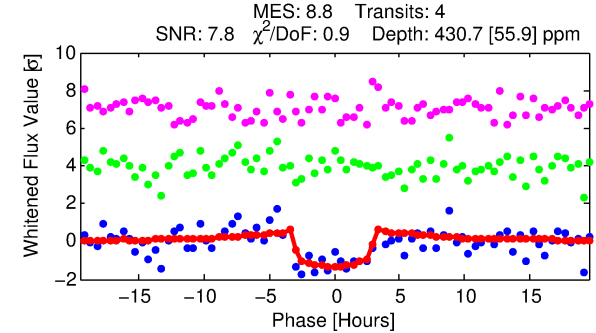
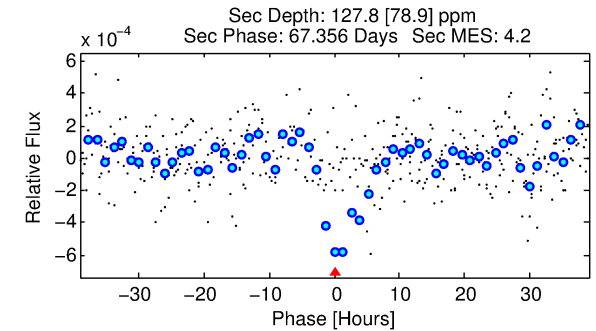
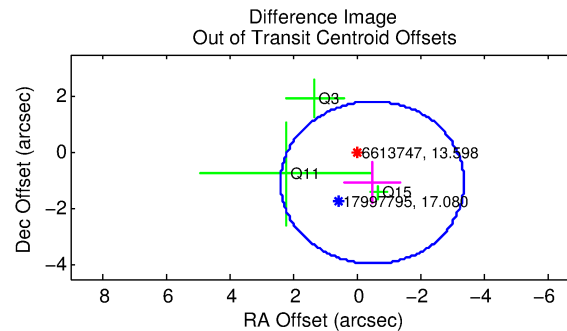
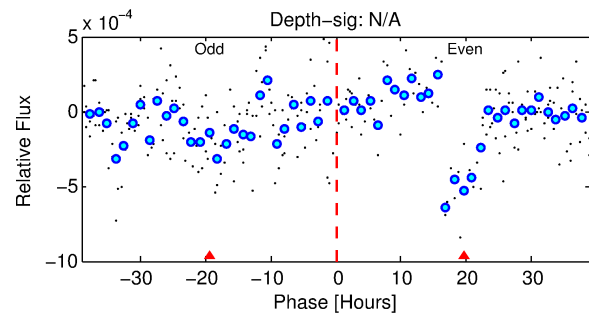
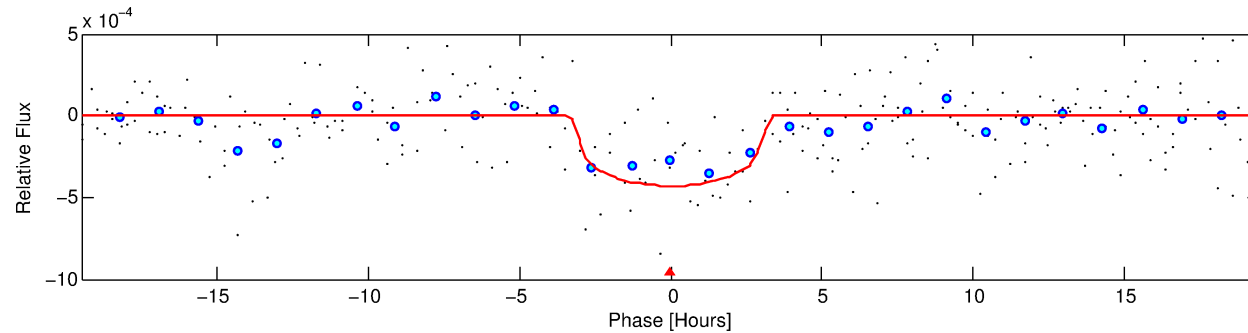
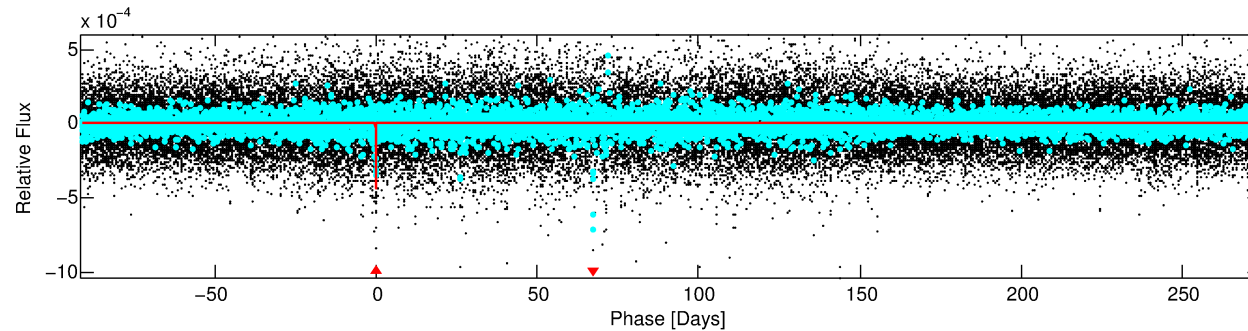
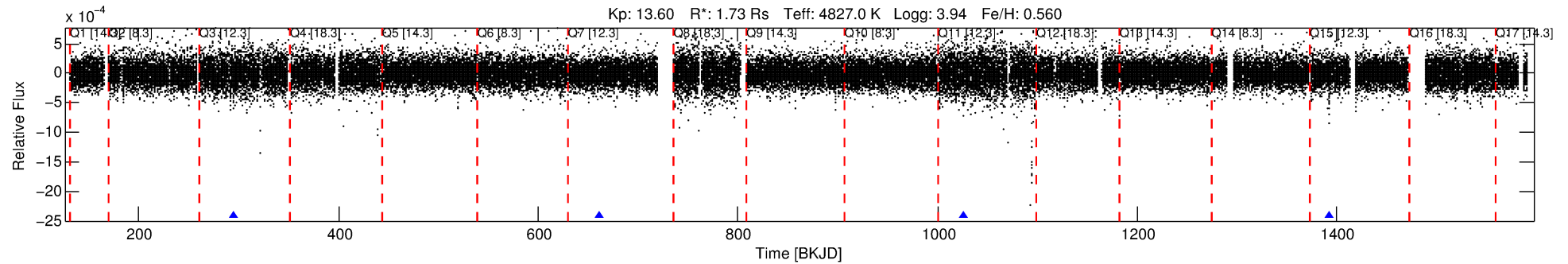
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006613747-01

No Significant Match Found

# DV One-Page Summary

KIC: 6613747 Candidate: 1 of 1 Period: 365.466 d



## DV Fit Results:

Period = 365.46607 [0.00464] d  
Epoch = 295.4733 [0.0095] BKJD  
Rp/R\* = 0.0213 [0.0118]  
a/R\* = 276.49 [511.33]  
b = 0.79 [0.88]  
Seff = 1.50 [1.59]  
Teq = 282 [75] K  
Rp = 4.01 [3.36] Re  
a = 0.9843 [0.6299] AU  
Ag = 4228.94 [6963.89] [0.61σ]  
Teffp = 3517 [1117] K [2.89σ]

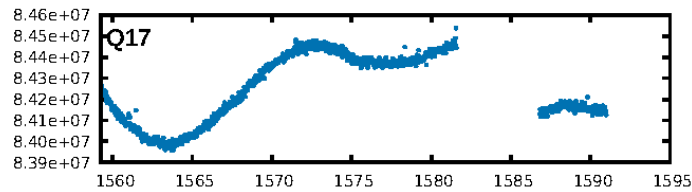
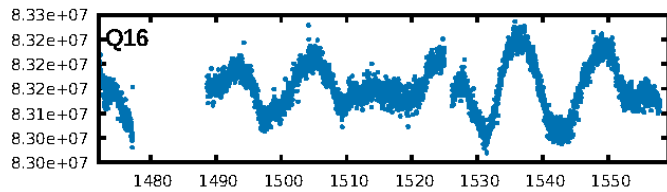
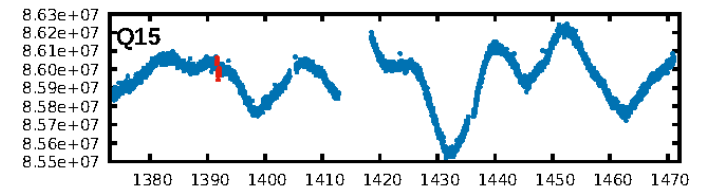
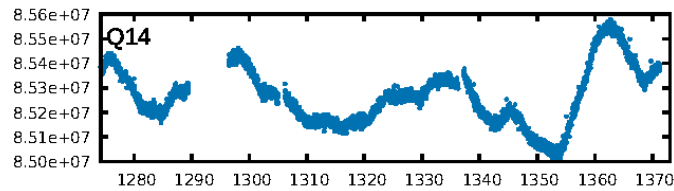
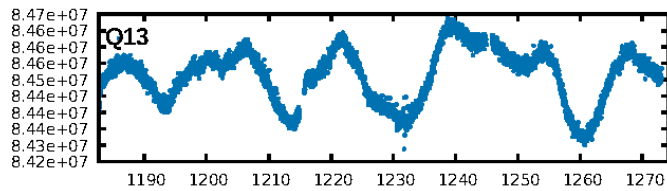
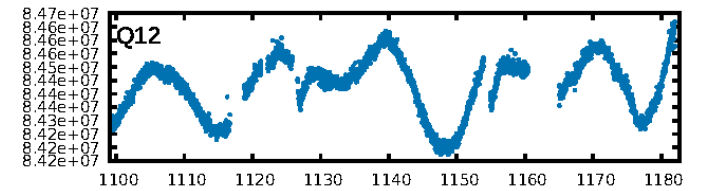
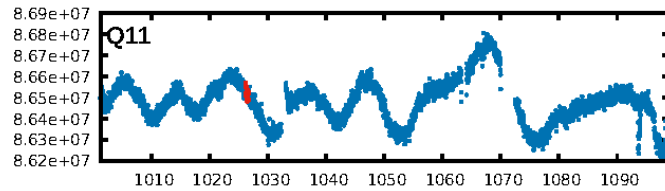
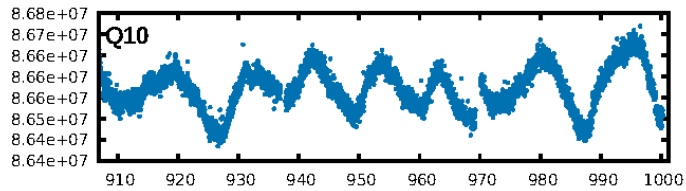
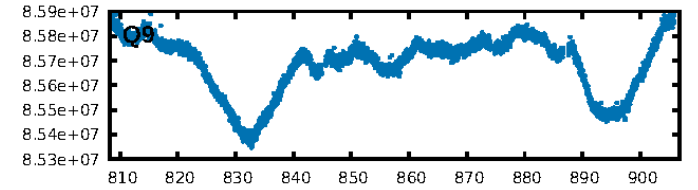
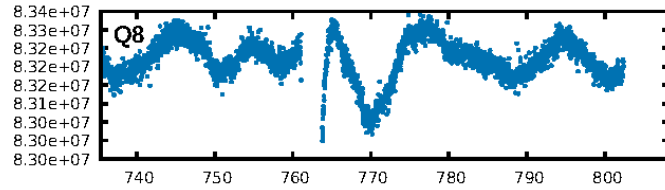
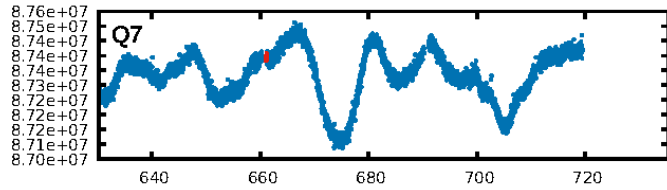
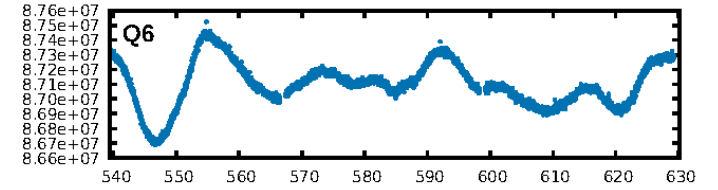
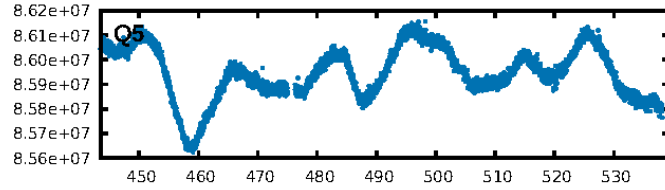
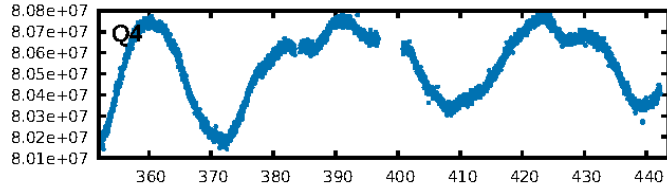
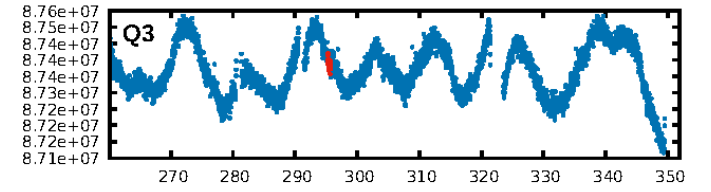
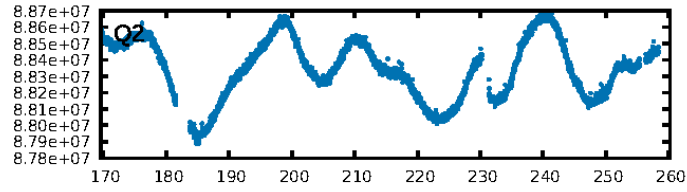
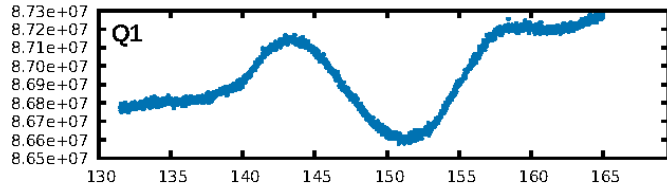
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 11.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.89e-14  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -1.223  
Centroid-sig: 9.0%  
Centroid-so: 0.818 arcsec [0.98σ]  
OotOffset-rm: 1.180 arcsec [1.23σ]  
OotOffset-st: 0/3/0/0 [3]  
KicOffset-rm: 0.786 arcsec [1.04σ]  
KicOffset-st: 0/3/0/0 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

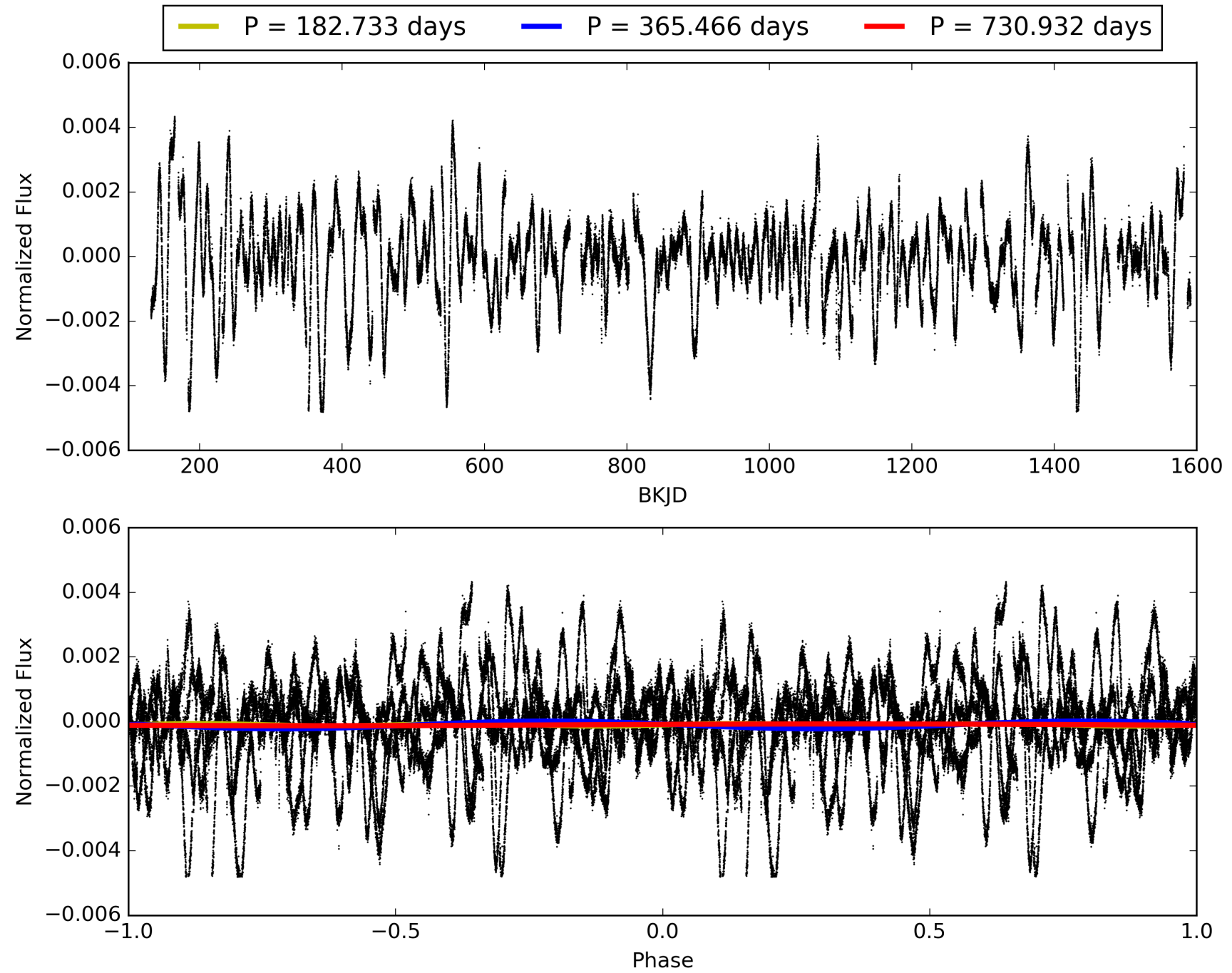
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:03:32 Z

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

# TCE 006613747-01, PDC Light Curves

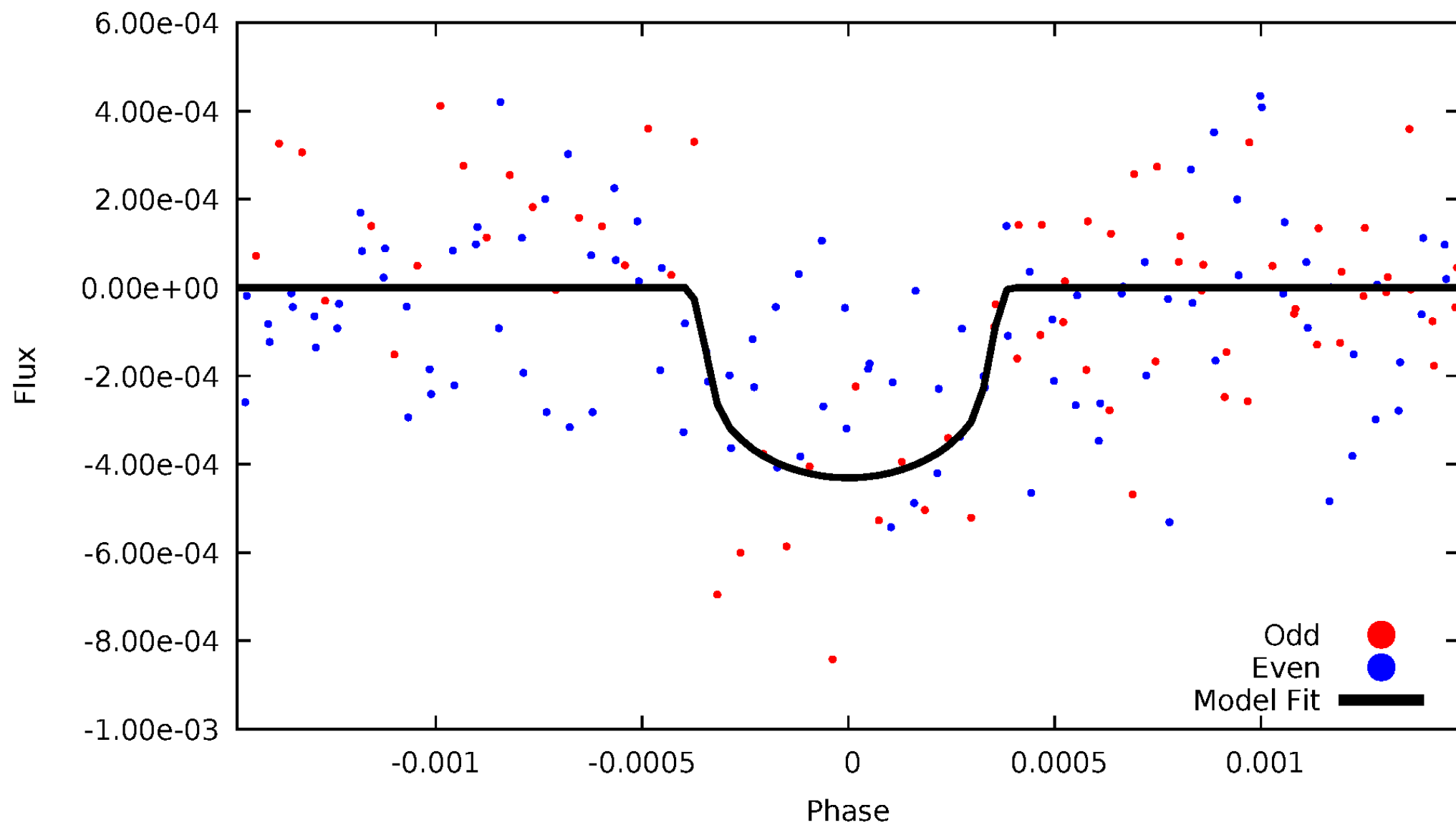


TCE 006613747-01



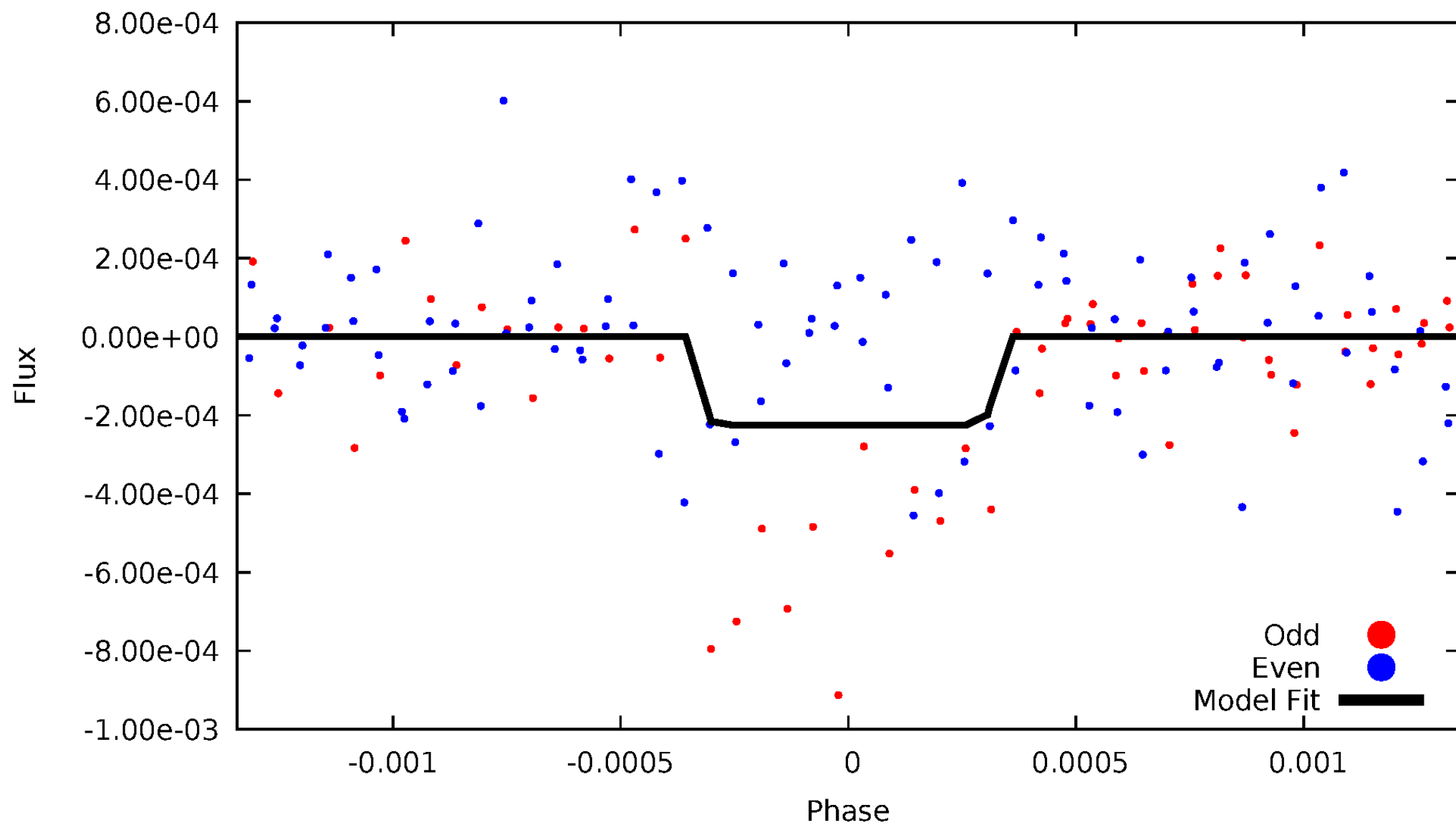
# DV Odd/Even

TCE 006613747-01



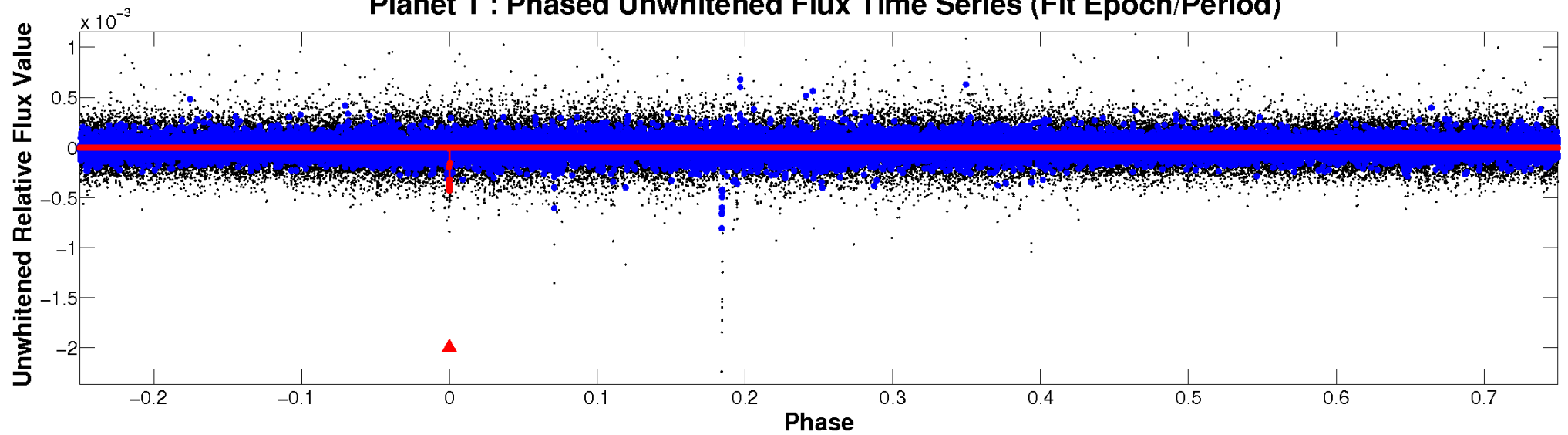
# ALT Odd/Even

TCE 006613747-01

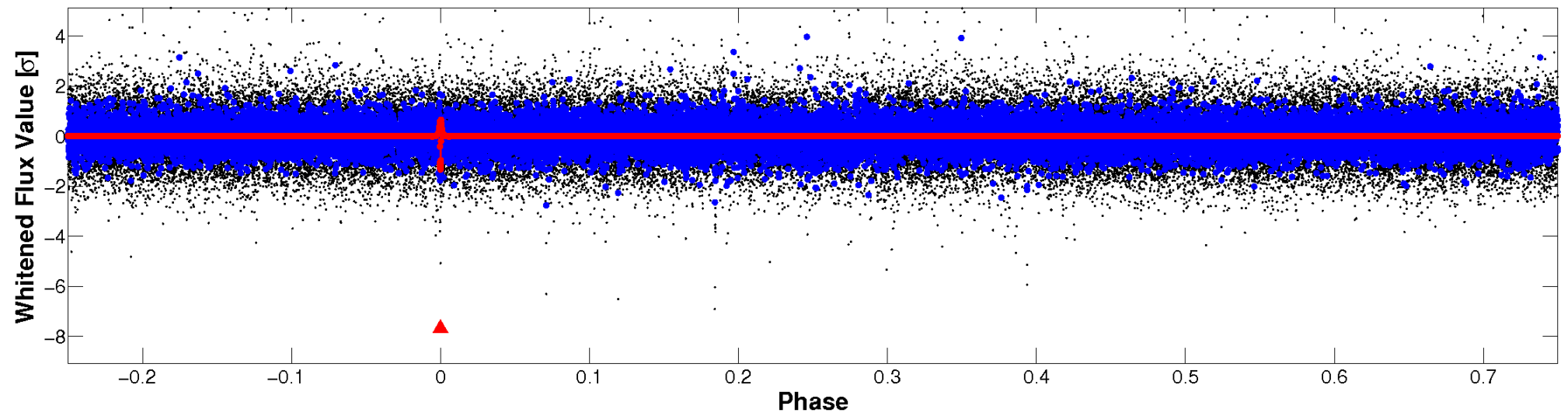


# Non-Whitened Vs. Whitened Light Curve

**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

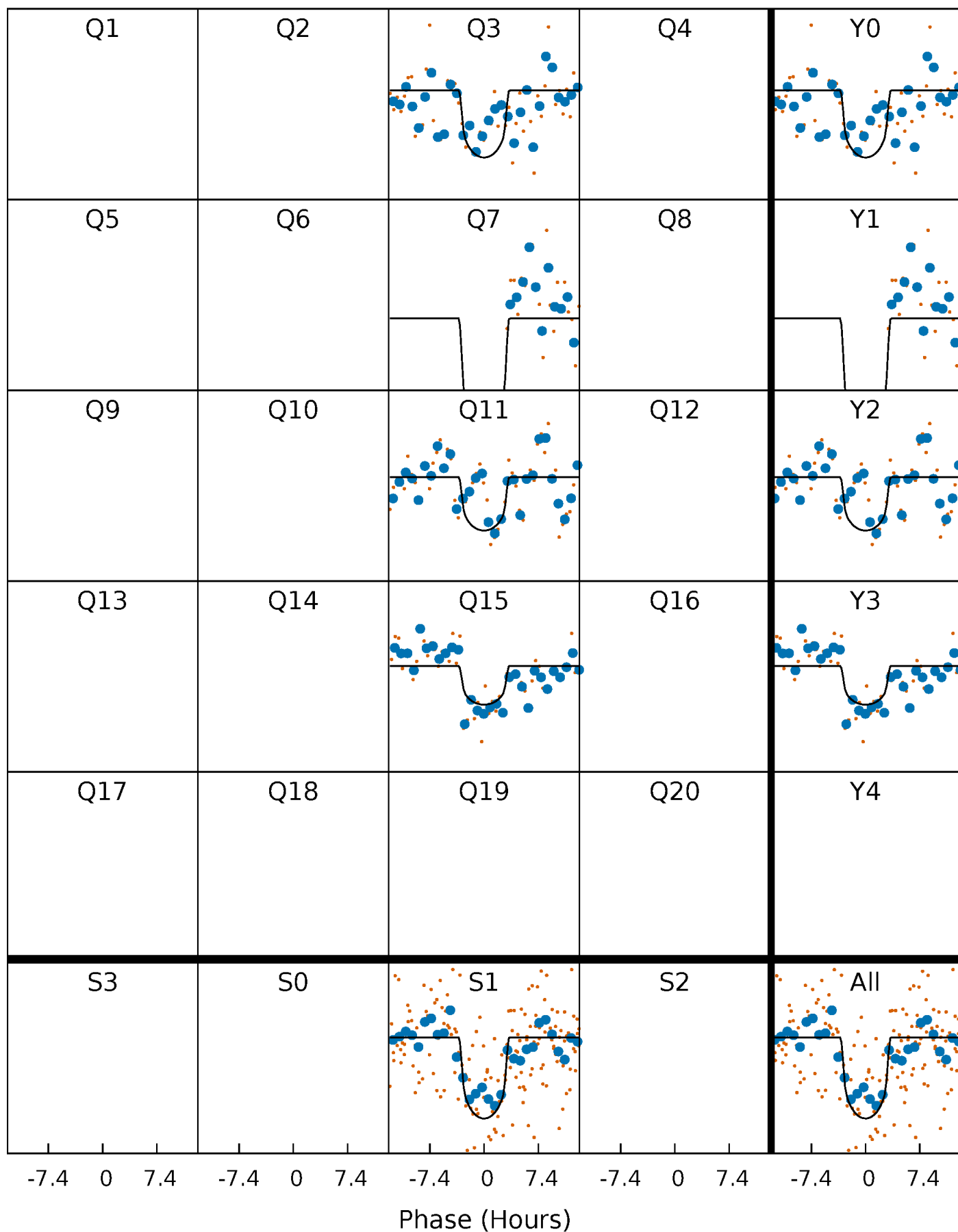
TCE 006613747-01 P=365.466072 Days  $T_0=295.473289$  (BKJD)





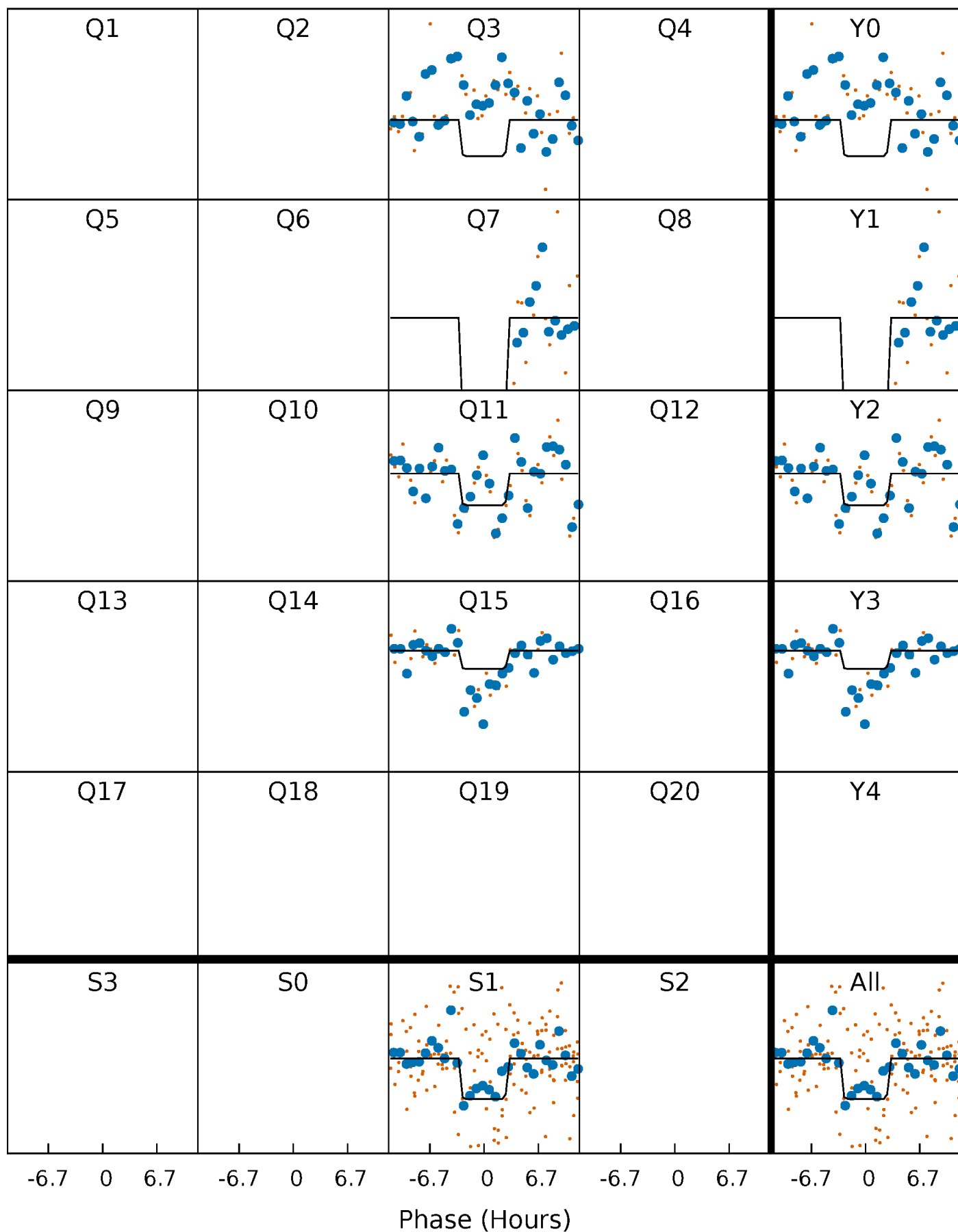
# DV Quarter-Phased Transit Curves

TCE 006613747-01 P=365.466072 Days  $T_0=295.473289$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

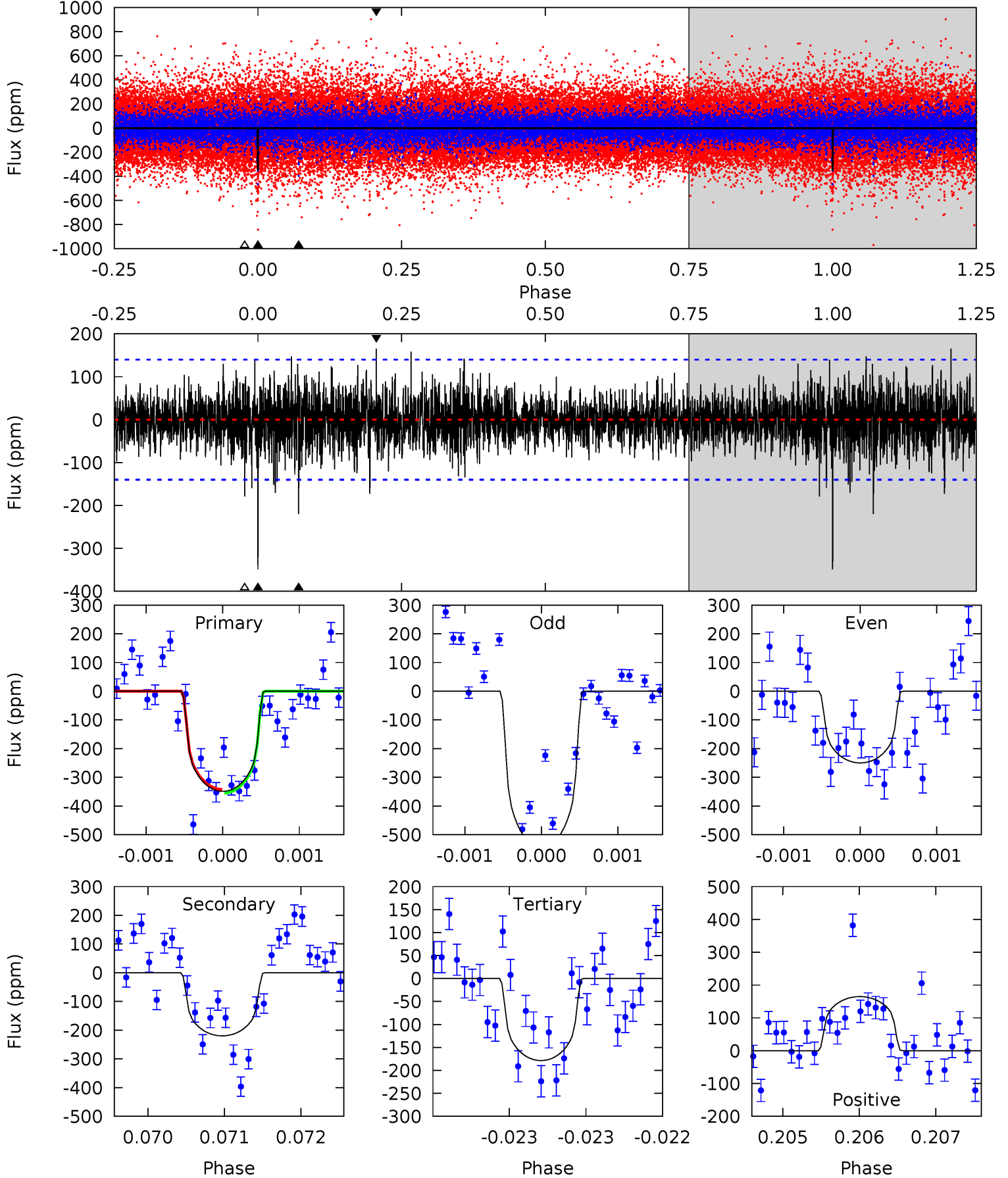
TCE 006613747-01 P=365.474654 Days  $T_0=295.441646$  (BKJD)



# DV Model-Shift Uniqueness Test

006613747-01, P = 365.466072 Days, E = 295.473289 Days

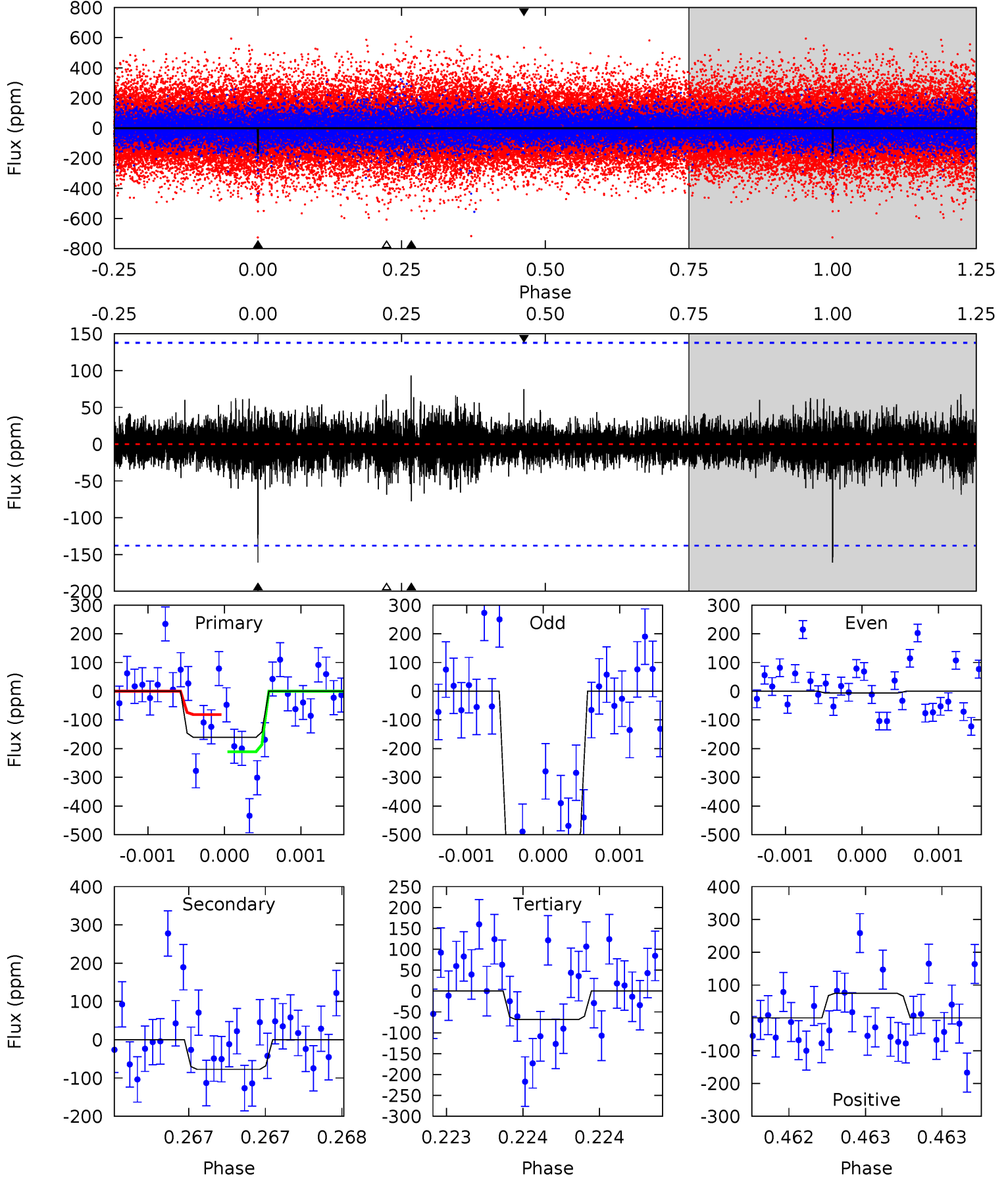
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.7	8.66	7.04	6.49	5.51	3.38	1.53	6.71	7.26	1.62	2.17	5.71	1.27	0.32	0.26



# Alt Model-Shift Uniqueness Test

006613747-01, P = 365.474654 Days, E = 295.441646 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
6.45	3.10	2.75	3.00	5.53	3.42	0.61	3.71	3.45	0.35	0.10	11.3	1.07	0.37	0



### Stellar Parameters For KIC 006613747

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4827^{+144}_{-129}$	$3.942^{+0.630}_{-0.339}$	$0.560^{+0.050}_{-0.300}$	$1.727^{+1.086}_{-0.987}$	$0.952^{+0.197}_{-0.144}$	$0.260^{+2.282}_{-0.185}$
	+3%/-3%	+16%/-9%	+9%/-54%	+63%/-57%	+21%/-15%	+876%/-71%
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 006613747-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-220 \pm 25$	$3.83^{+2.71}_{-1.99}$	$389^{+56}_{-59}$	$4124^{+1377}_{-541}$	$8044^{+25525}_{-5292}$
Alt.	$-77 \pm 25$	$2.87^{+2.45}_{-1.78}$	$390^{+57}_{-59}$	$3799^{+1488}_{-611}$	$4855^{+29408}_{-3538}$

$T_{max}$  = 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

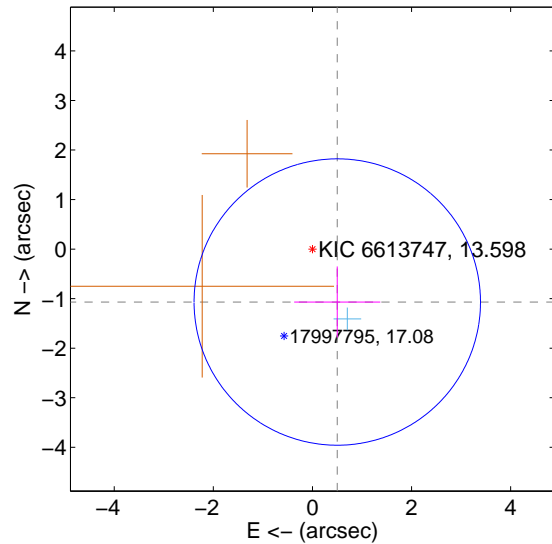
Supplemental centroid analysis for 006613747-01. Kepler magnitude: 13.60. Transit SNR 7.83

There are 1 quarters with good PRF difference image offsets

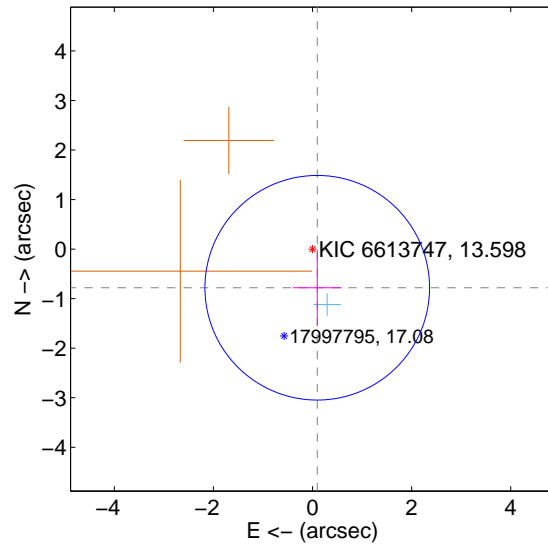
The direct PRF centroid is offset from the target star catalog position by about 0.50 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.180 \pm 0.963$	1.23	$-0.501 \pm 0.869$	$-1.068 \pm 0.718$
PRF-fit source offset from KIC position	$0.786 \pm 0.756$	1.04	$-0.095 \pm 0.493$	$-0.780 \pm 0.759$
photometric centroid source offset	$0.82 \pm 0.83$	0.98	$0.12 \pm 0.89$	$-0.81 \pm 0.83$

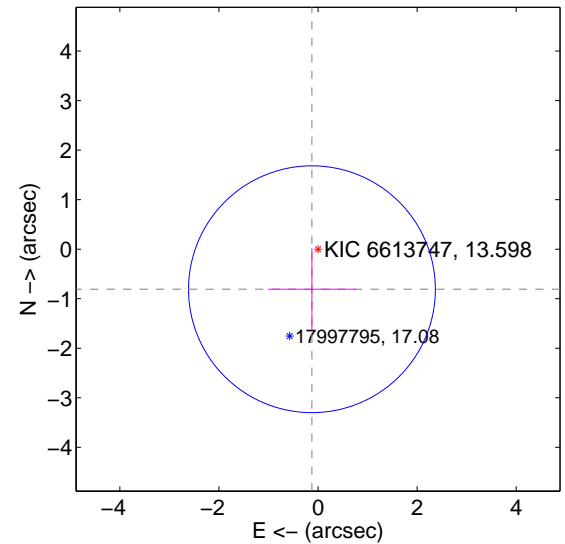
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



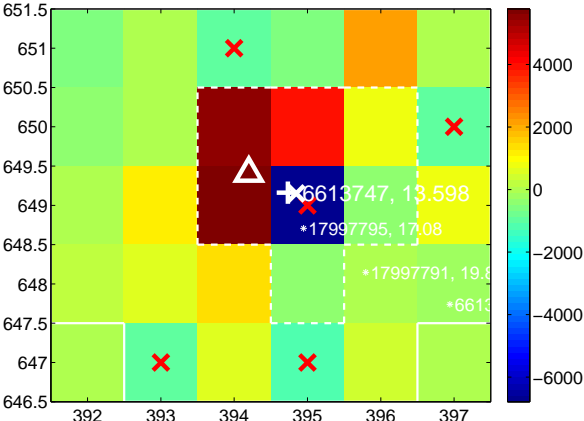
Q2 no difference image



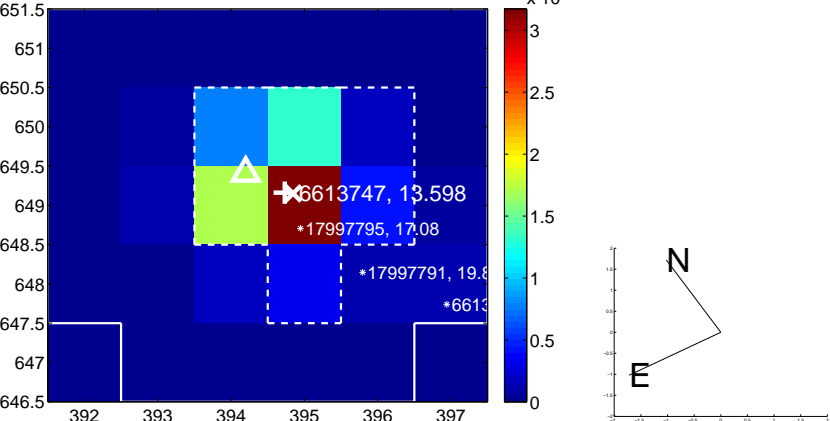
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



Q4 no OOT image



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.

Q9 no difference image



Q9 no OOT image



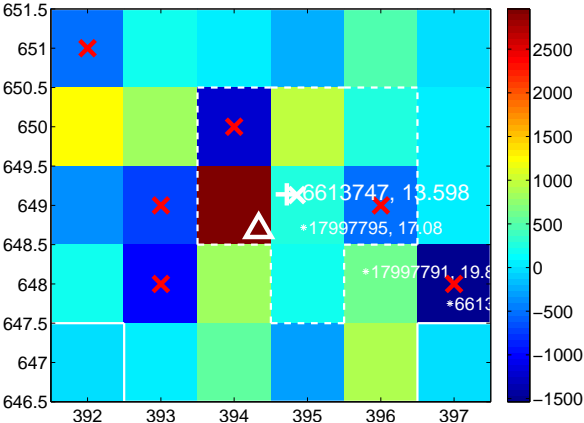
Q10 no difference image



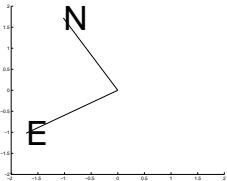
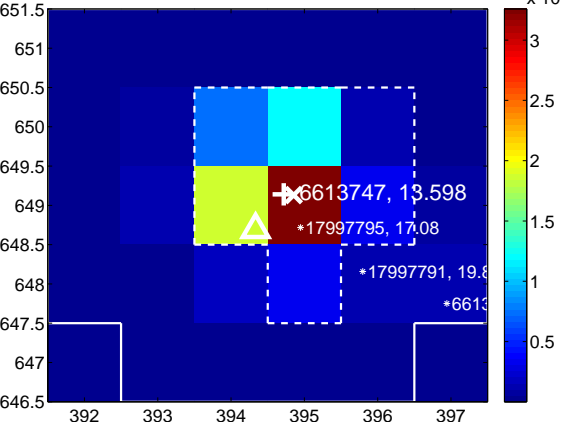
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



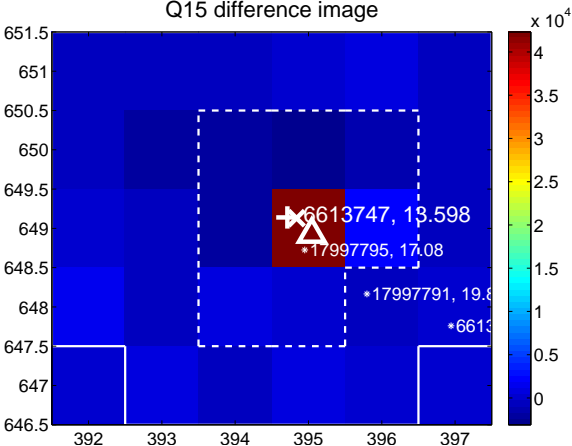
Q14 no difference image



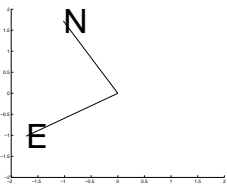
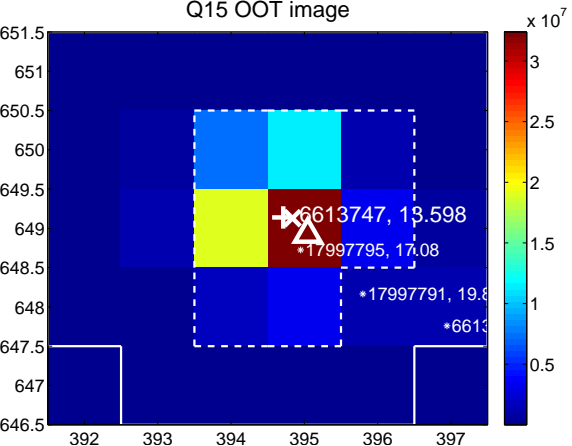
Q14 no OOT image



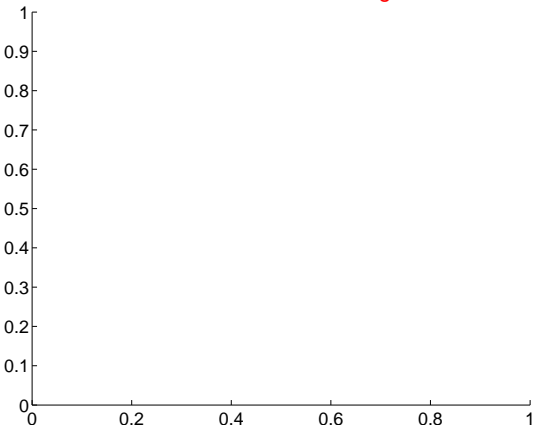
Q15 difference image



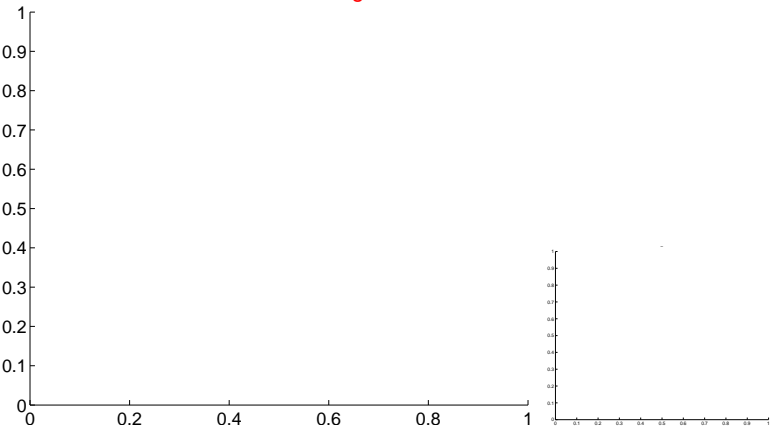
Q15 OOT image



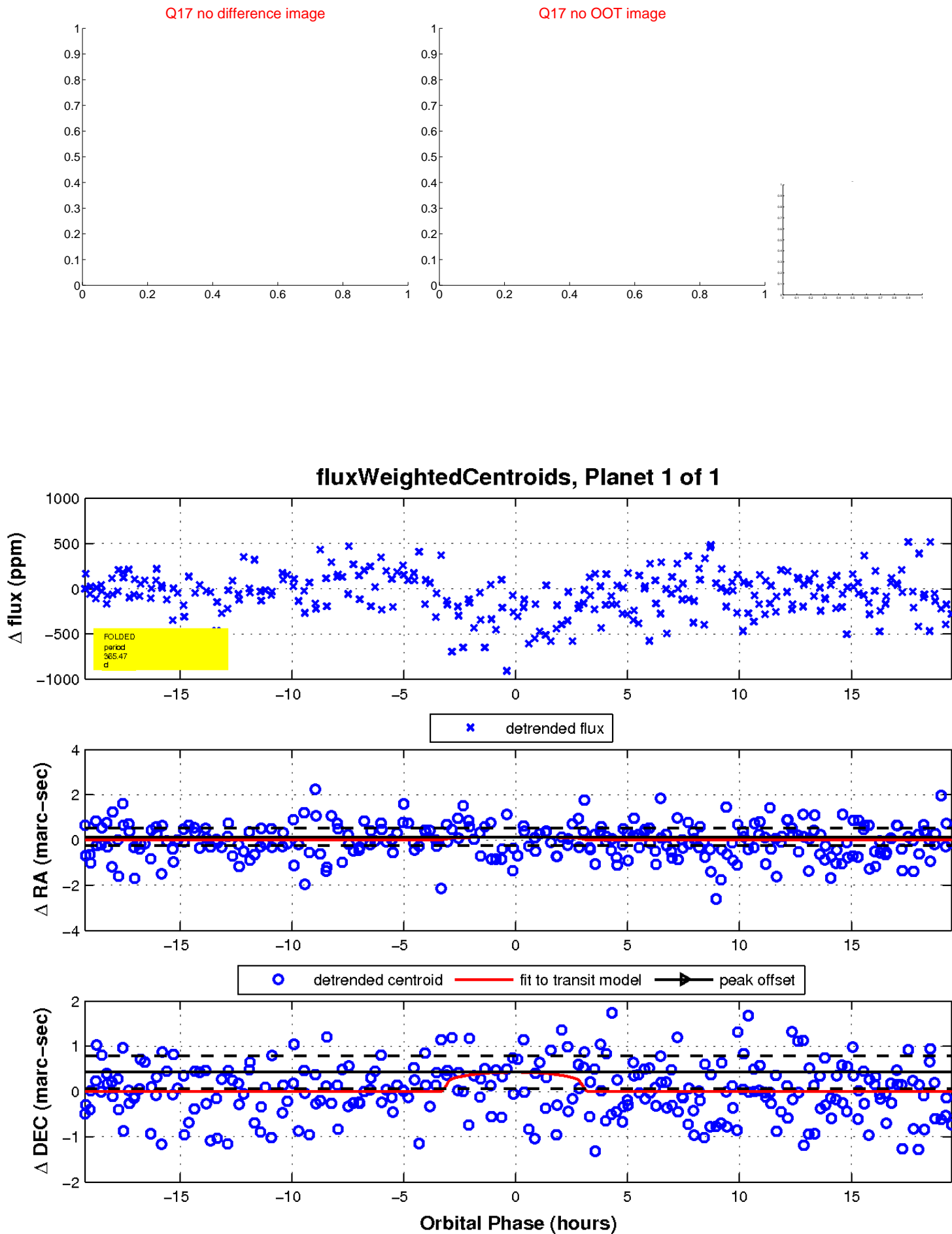
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

