

# KIC 008618147

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008618147-01	OBS	8160.01	345.121751	218.673618	343.5	16.227	8.0	7.1	1.08	6214	2.23	1.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008618147-01	OBS	FP	0.08	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.

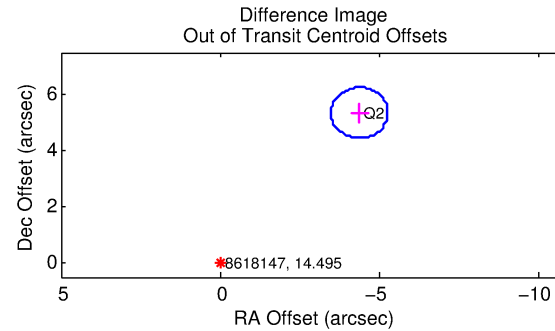
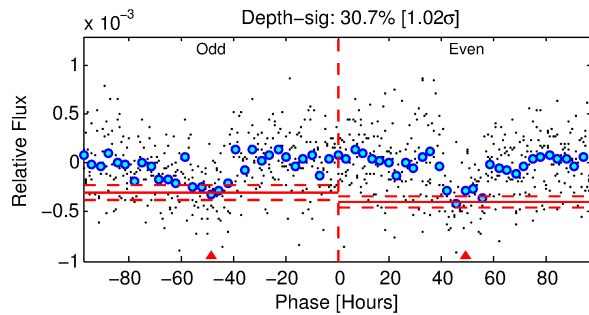
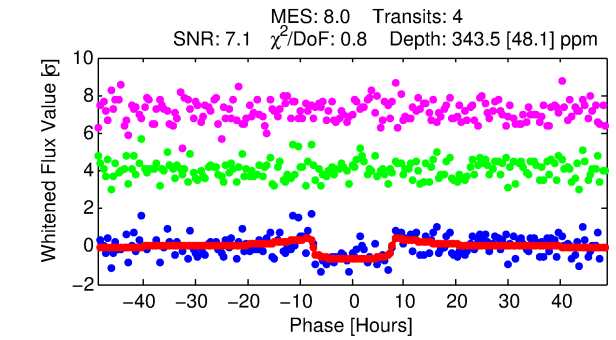
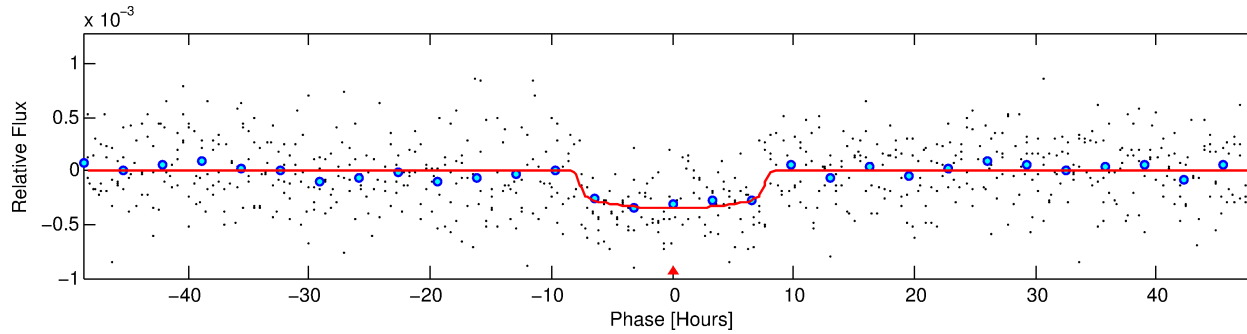
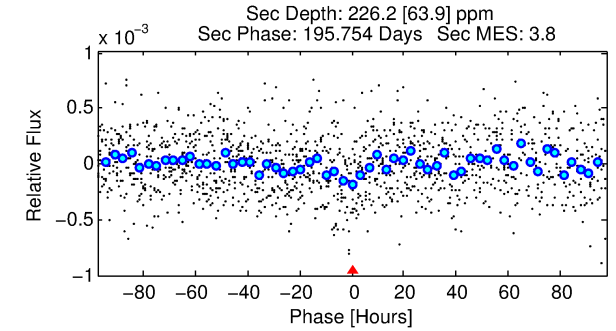
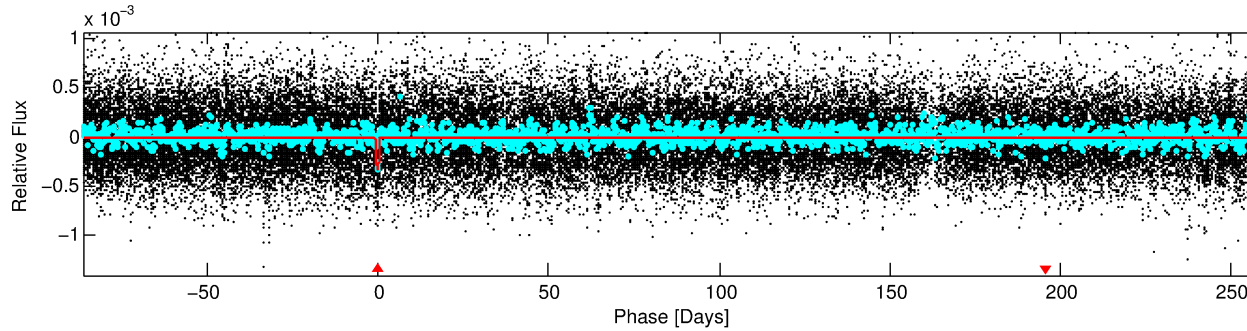
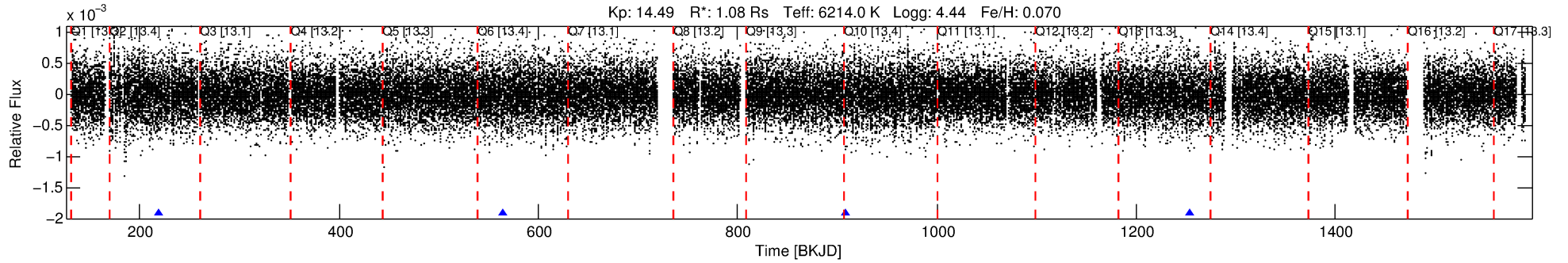
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008618147-01

No Significant Match Found

# DV One-Page Summary

KIC: 8618147 Candidate: 1 of 1 Period: 345.122 d



## DV Fit Results:

Period = 345.12175 [0.01101] d  
Epoch = 218.6736 [0.0214] BKJD  
Rp/R\* = 0.0190 [0.0041]  
a/R\* = 97.61 [96.45]  
b = 0.82 [0.39]  
Seff = 1.50 [0.61]  
Teq = 282 [29] K  
Rp = 2.23 [0.84] Re  
a = 1.0144 [0.2656] AU  
Ag = 25738.32 [16436.62] [1.57σ]  
Teffp = 5529 [734] K [7.14σ]

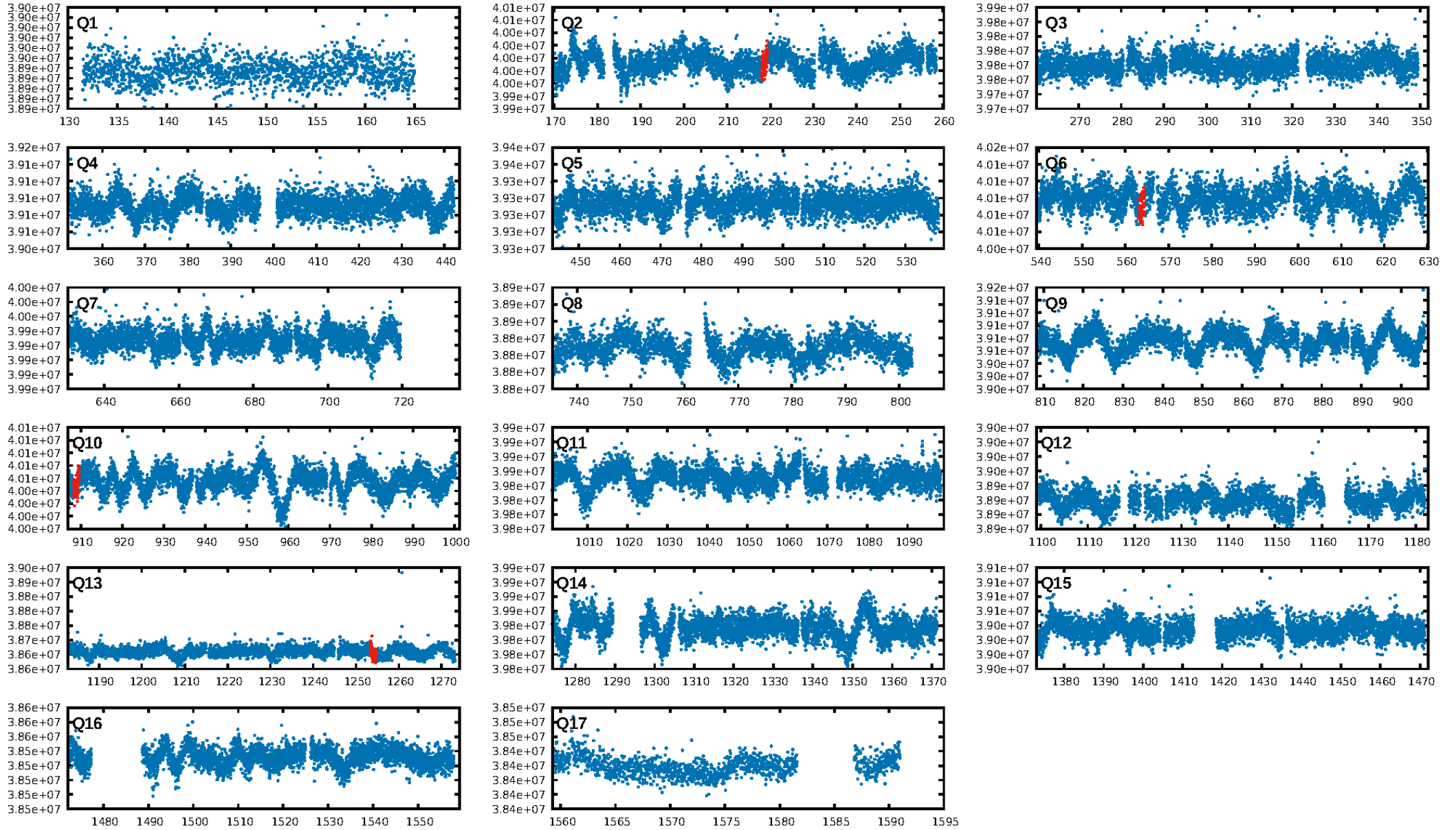
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 71.0%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 3.58e-12**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -21.2  
Centroid-sig: 15.4%  
Centroid-so: 1.056 arcsec [0.94σ]  
**OotOffset-rm: 6.915 arcsec [23.06σ]**  
**KicOffset-rm: 2.675 arcsec [8.55σ]**  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [4/4]

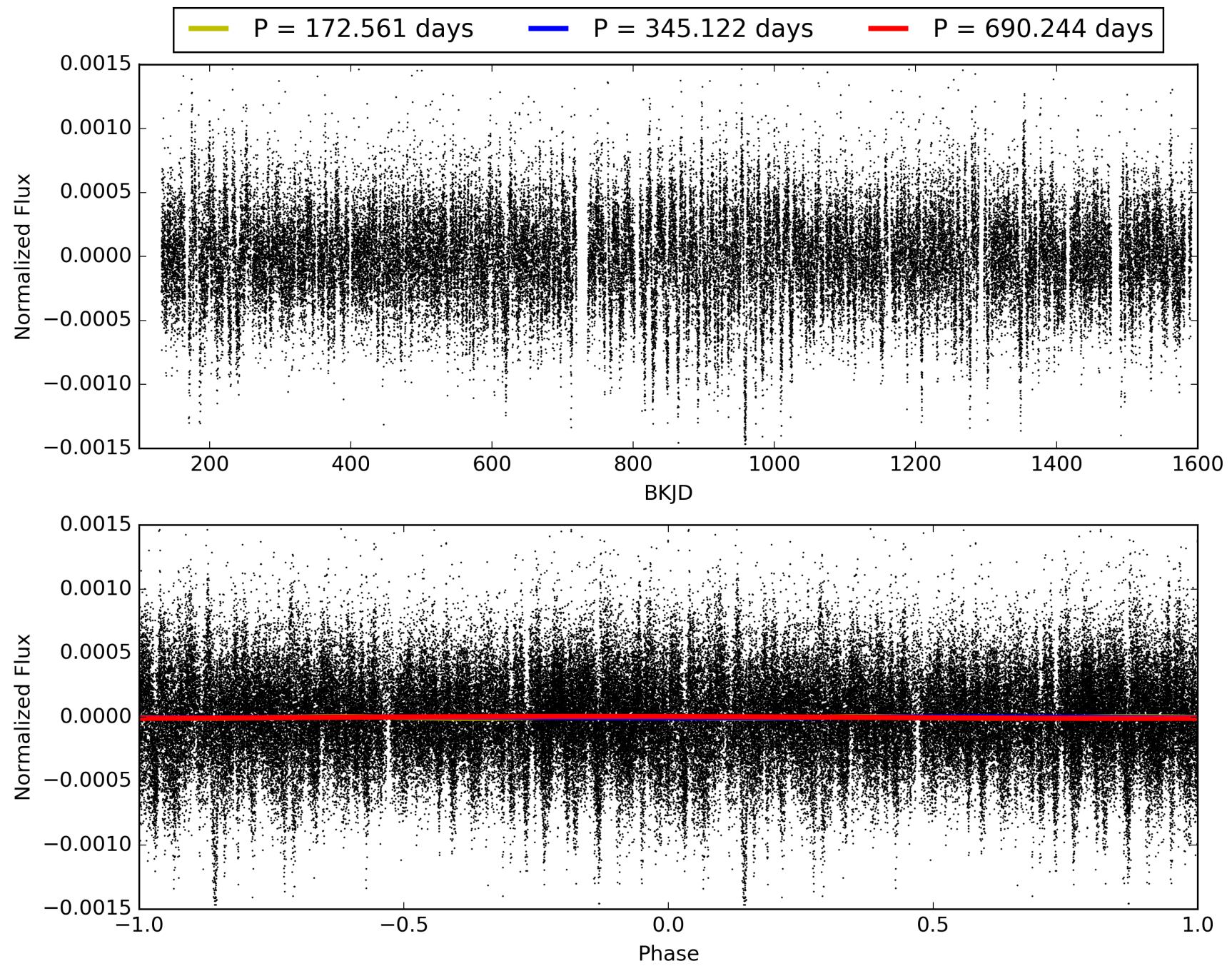
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 15:09:24 Z

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

# TCE 008618147-01, PDC Light Curves

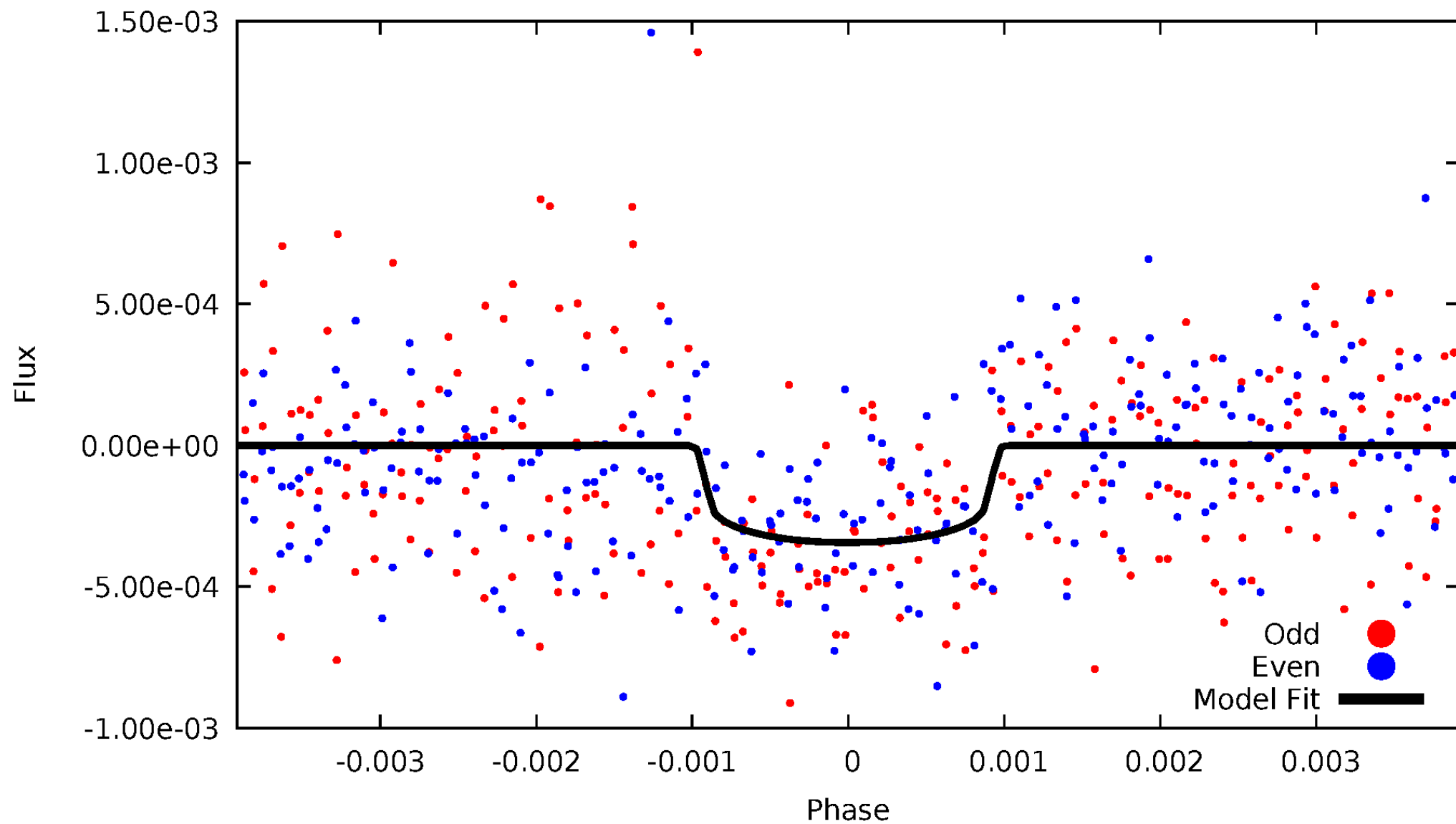


TCE 008618147-01



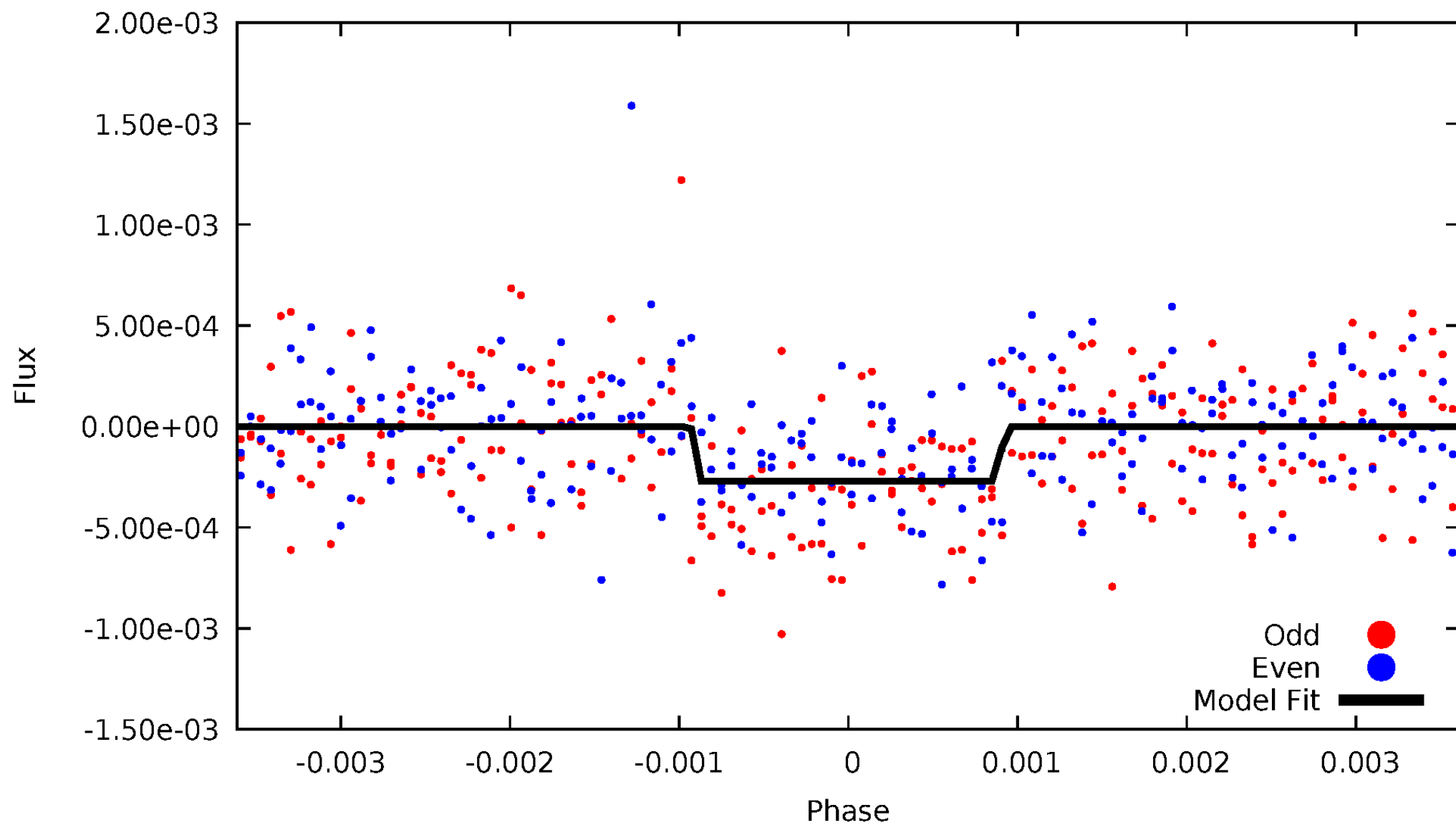
# DV Odd/Even

TCE 008618147-01



# ALT Odd/Even

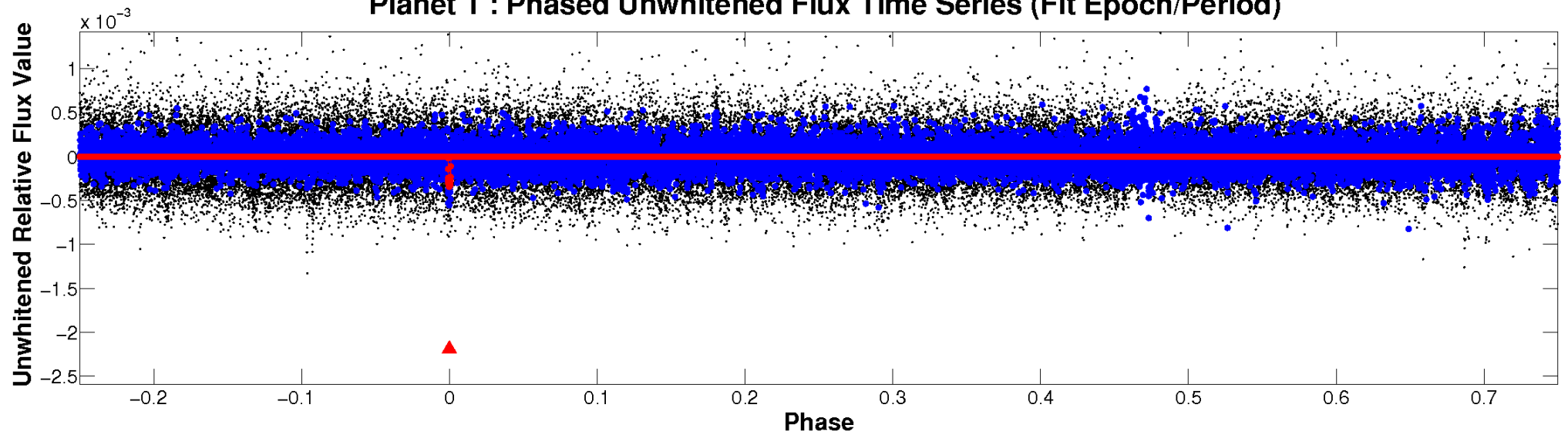
TCE 008618147-01



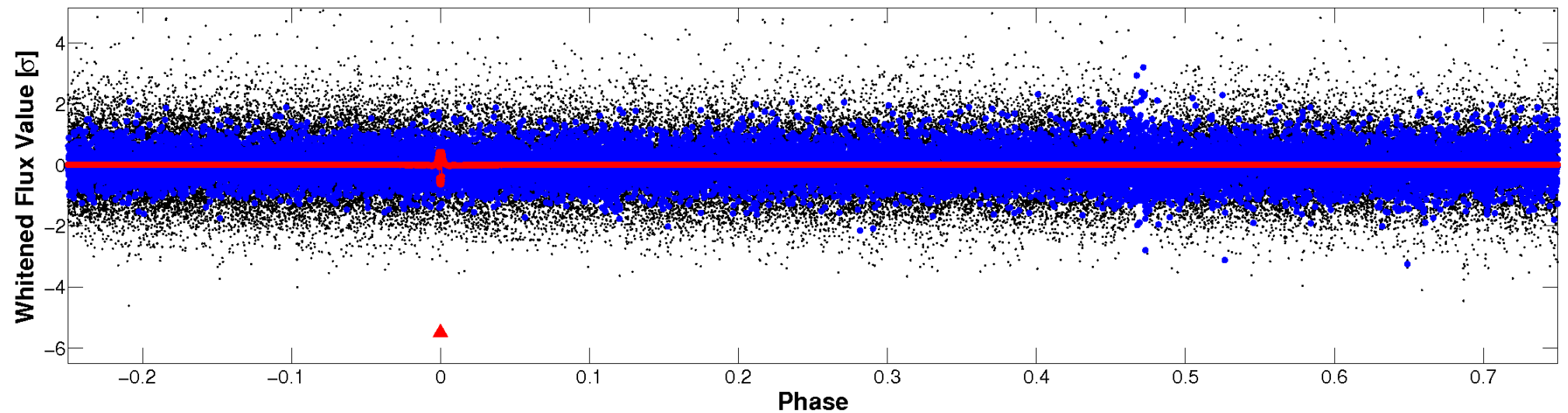


# Non-Whitened Vs. Whitened Light Curve

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

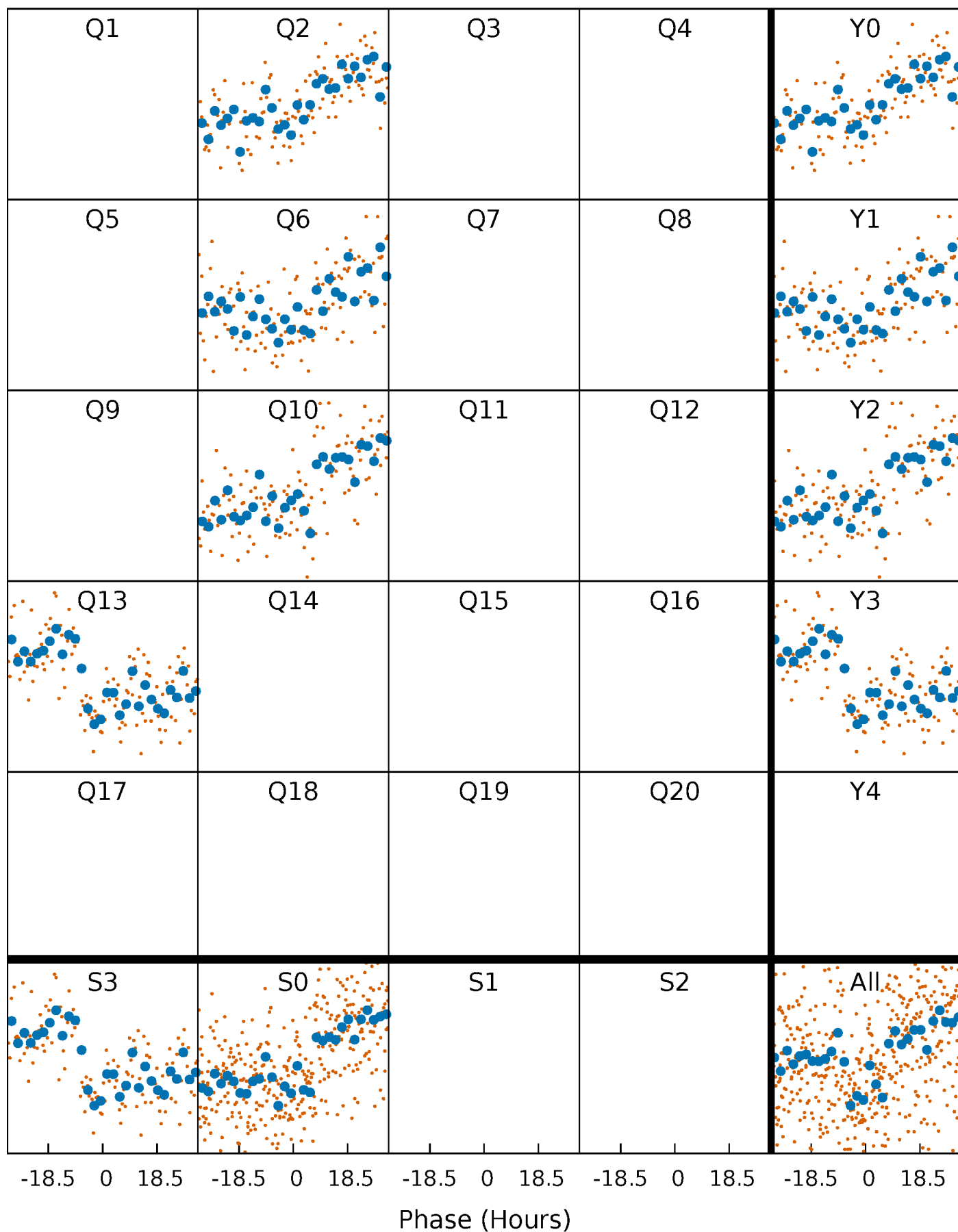


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

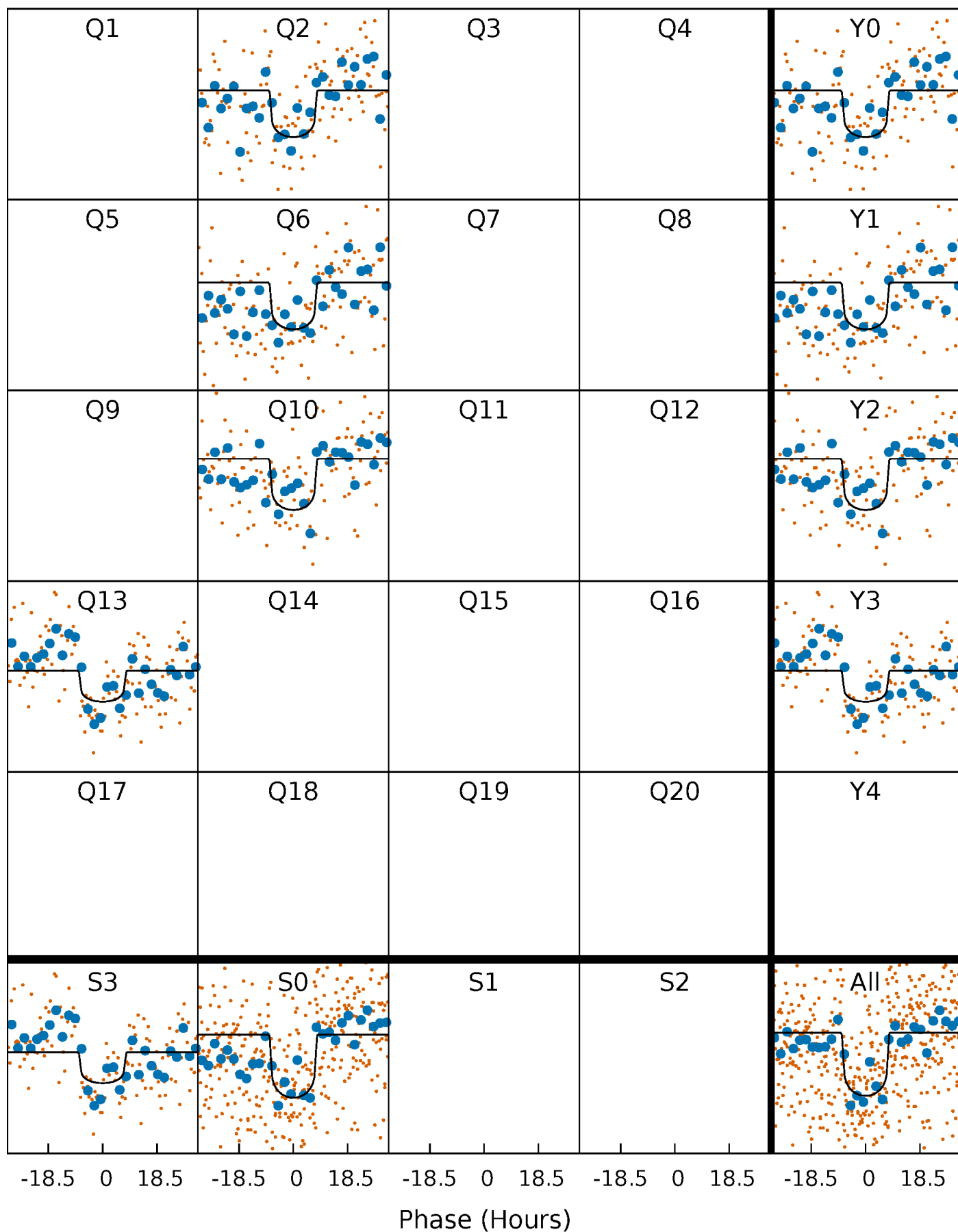
TCE 008618147-01   P=345.121751 Days    $T_0=218.673618$  (BKJD)





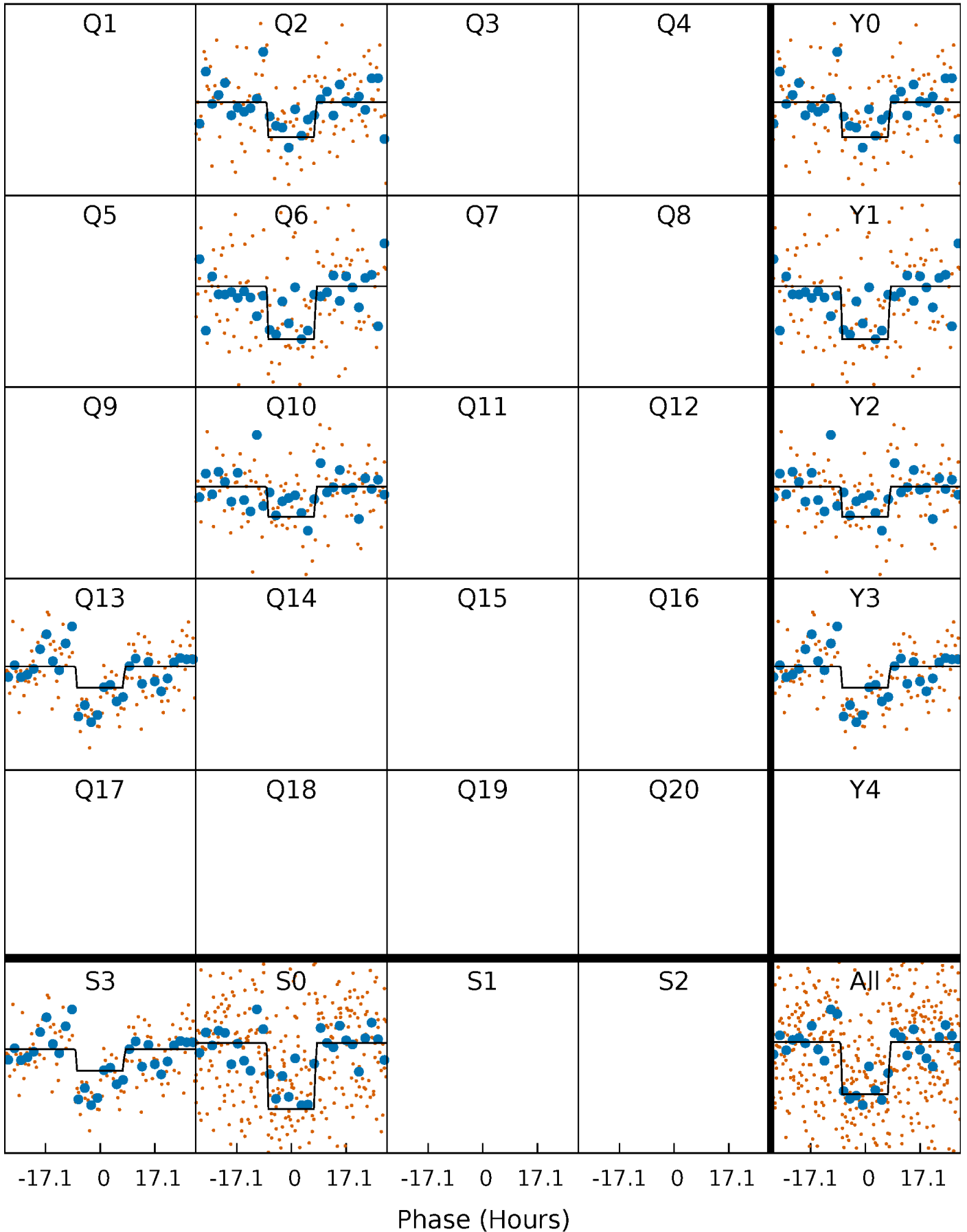
# DV Quarter-Phased Transit Curves

TCE 008618147-01 P=345.121751 Days  $T_0=218.673618$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

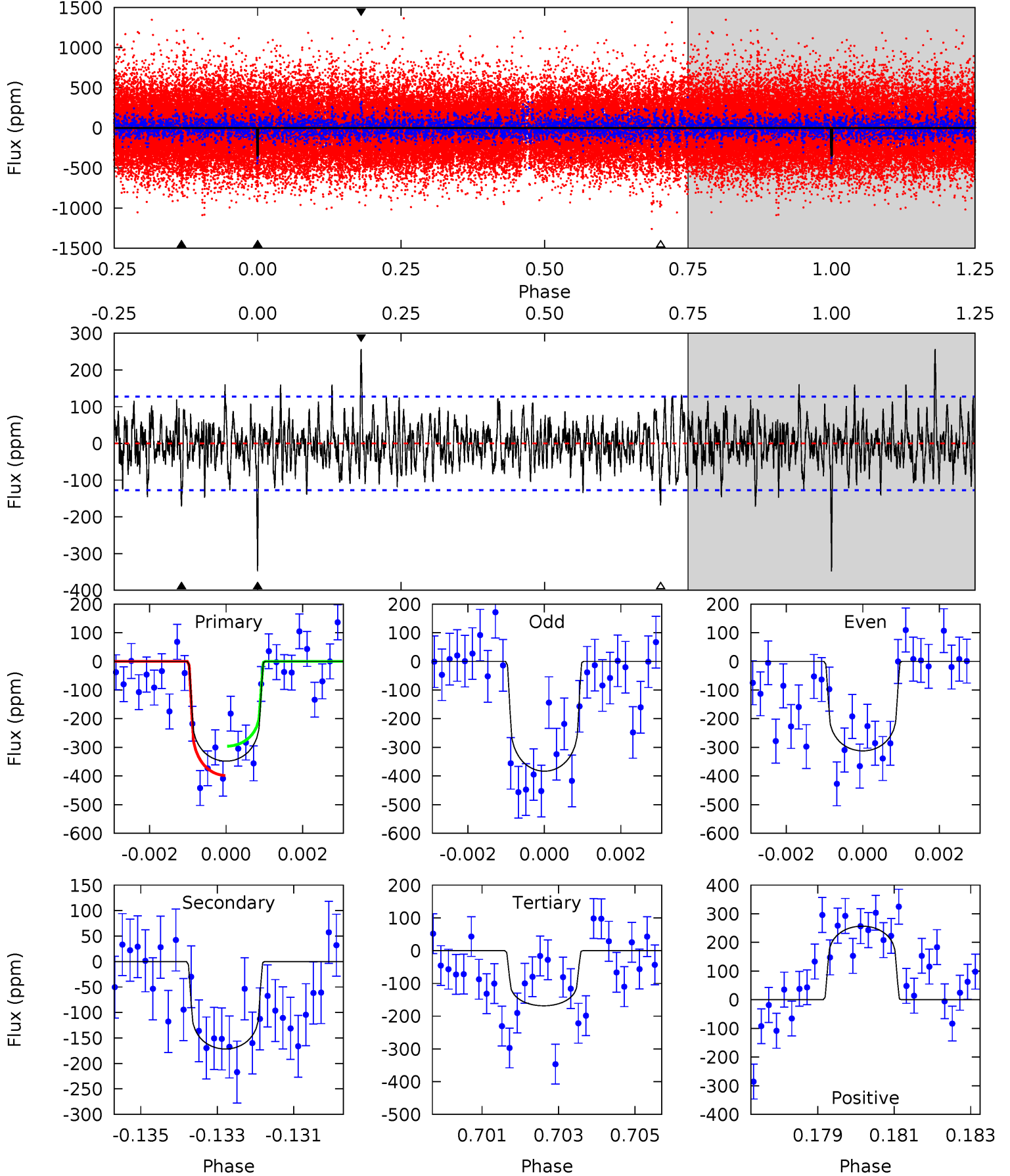
TCE 008618147-01 P=345.122828 Days  $T_0=218.677473$  (BKJD)



# DV Model-Shift Uniqueness Test

008618147-01, P = 345.121751 Days, E = 218.673618 Days

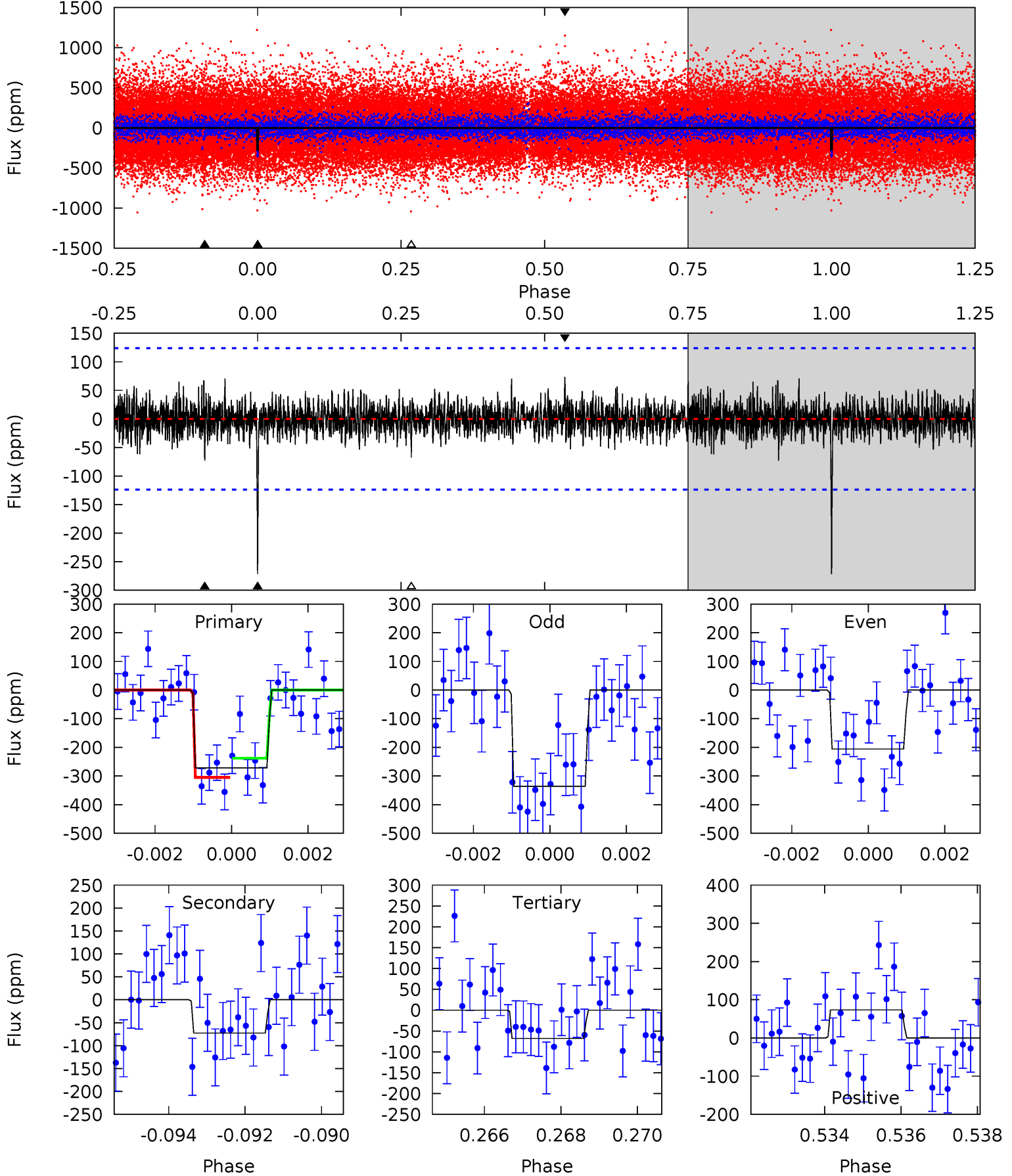
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	7.16	7.03	10.7	5.33	3.09	2.04	7.50	3.81	0.13	-3.56	1.48	1.04	0.42	2.13



# Alt Model-Shift Uniqueness Test

008618147-01, P = 345.122828 Days, E = 218.677473 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
11.7	3.13	2.92	3.17	5.34	3.12	0.78	8.80	8.55	0.21	-0.03	2.82	1.32	0.21	1.44



### Stellar Parameters For KIC 008618147

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6214^{+174}_{-217}$	$4.442^{+0.052}_{-0.208}$	$0.070^{+0.250}_{-0.300}$	$1.076^{+0.335}_{-0.112}$	$1.169^{+0.141}_{-0.173}$	$1.321^{+0.354}_{-0.667}$
	+3%/-3%	+1%/-5%	+357%/-429%	+31%/-10%	+12%/-15%	+27%/-51%
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 008618147-01 / KOI 8160.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-172 \pm 24$	$2.34^{+0.64}_{-0.53}$	$405^{+29}_{-22}$	$5166^{+689}_{-451}$	$16619^{+12405}_{-6218}$
Alt.	$-73 \pm 23$	$2.00^{+0.62}_{-0.50}$	$404^{+31}_{-21}$	$4644^{+657}_{-535}$	$9866^{+8854}_{-4633}$

$T_{\text{max}}$  = 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

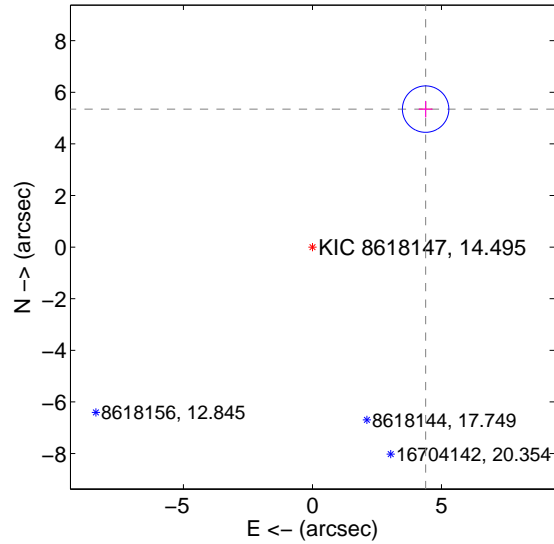
Supplemental centroid analysis for 008618147-01. Kepler magnitude: 14.49. Transit SNR 7.11

There are 0 quarters with good PRF difference image offsets

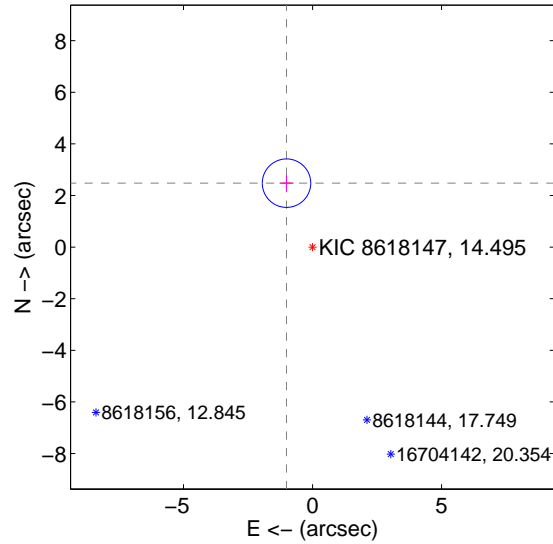
The OOT PRF centroid is offset from the target star catalog position by about 6.11 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.915 \pm 0.300$	23.06	$-4.385 \pm 0.267$	$5.347 \pm 0.320$
PRF-fit source offset from KIC position	$2.675 \pm 0.313$	8.55	$1.008 \pm 0.267$	$2.478 \pm 0.320$
photometric centroid source offset	$1.06 \pm 1.13$	0.94	$0.73 \pm 1.29$	$-0.77 \pm 0.96$

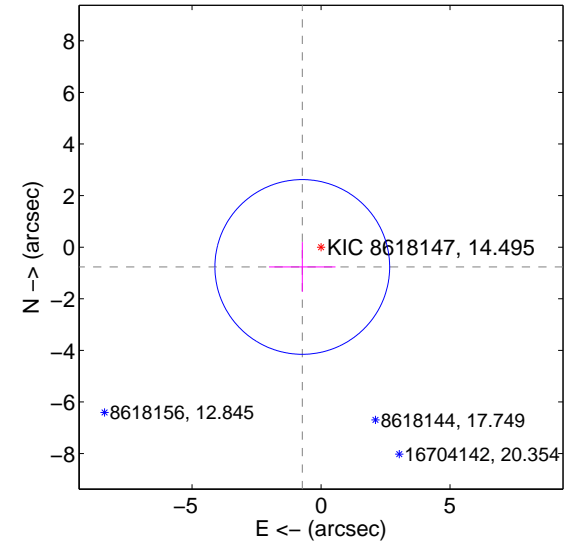
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



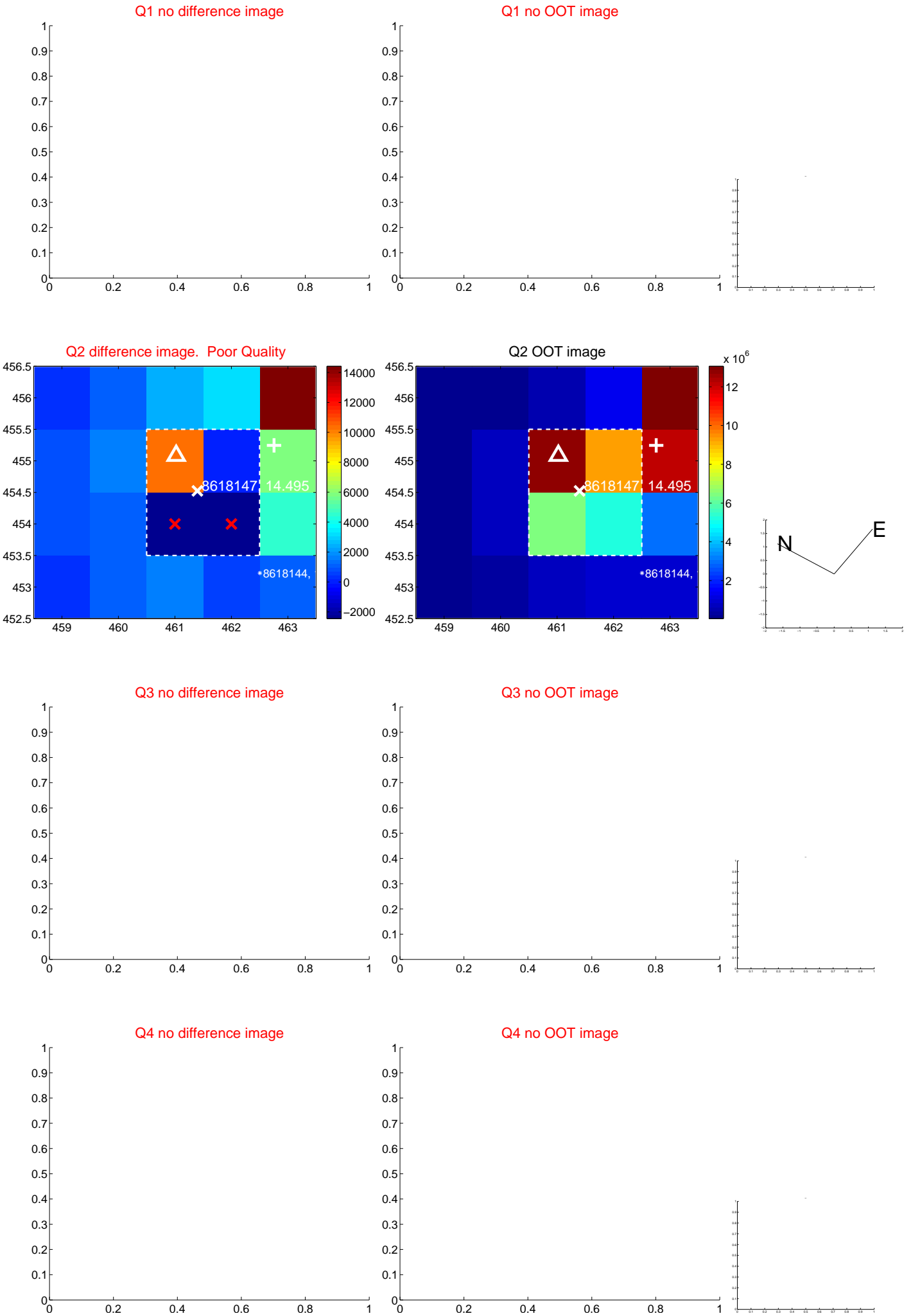
offset from photometric centroids



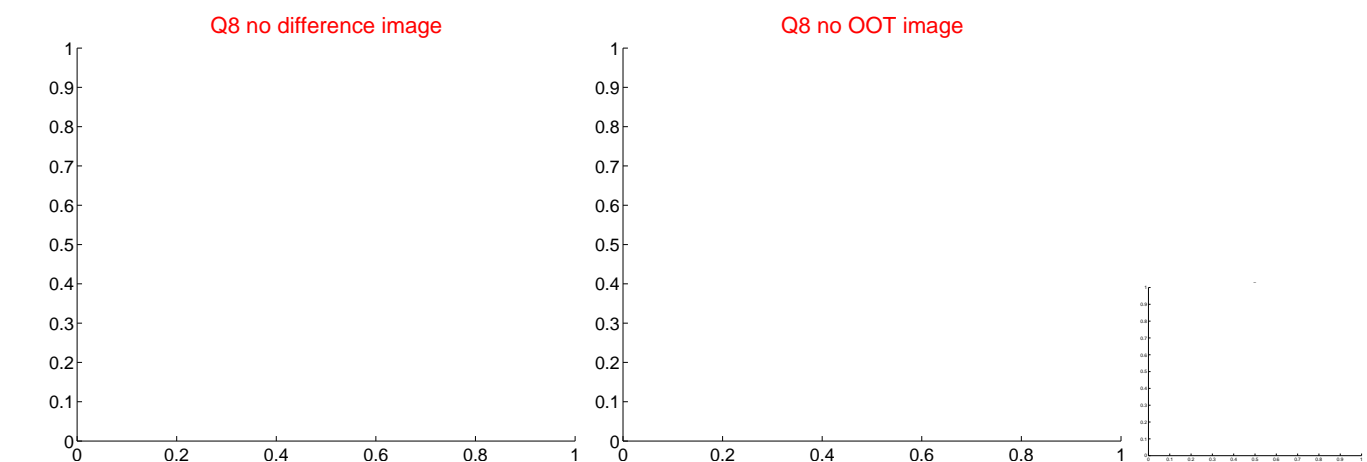
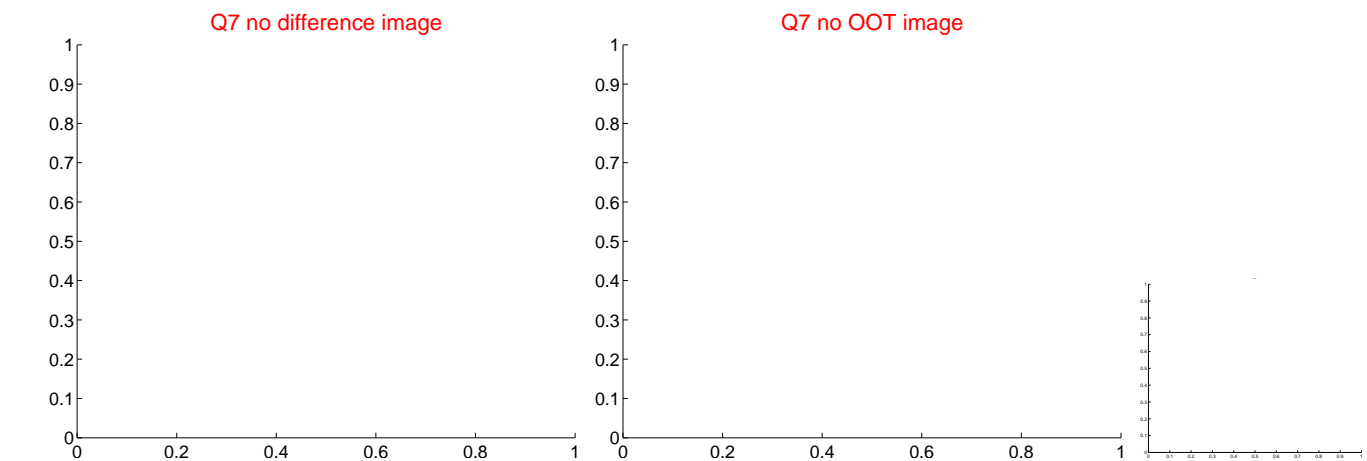
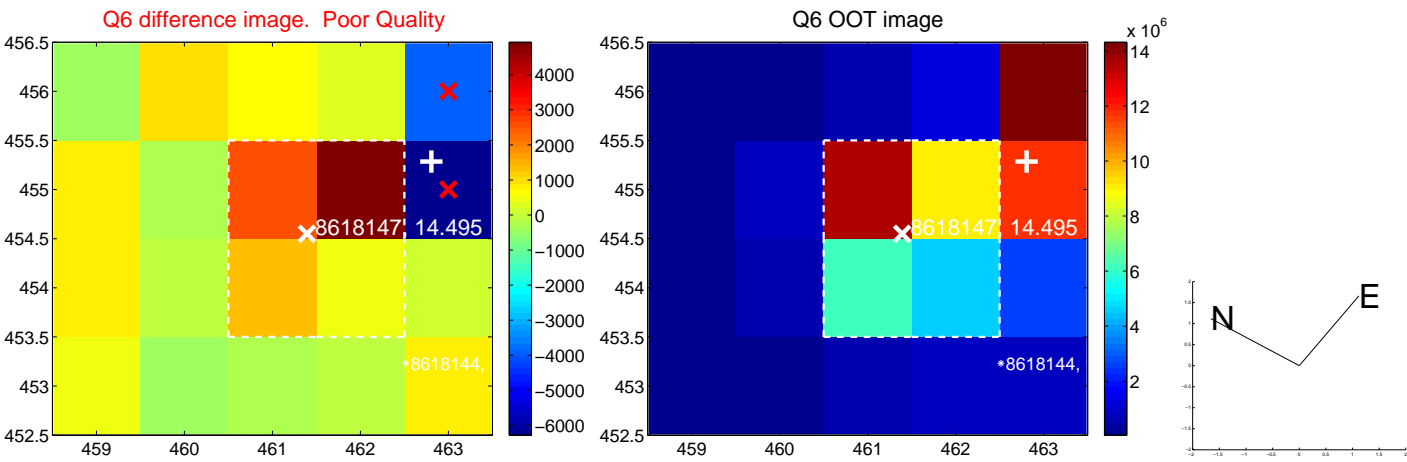
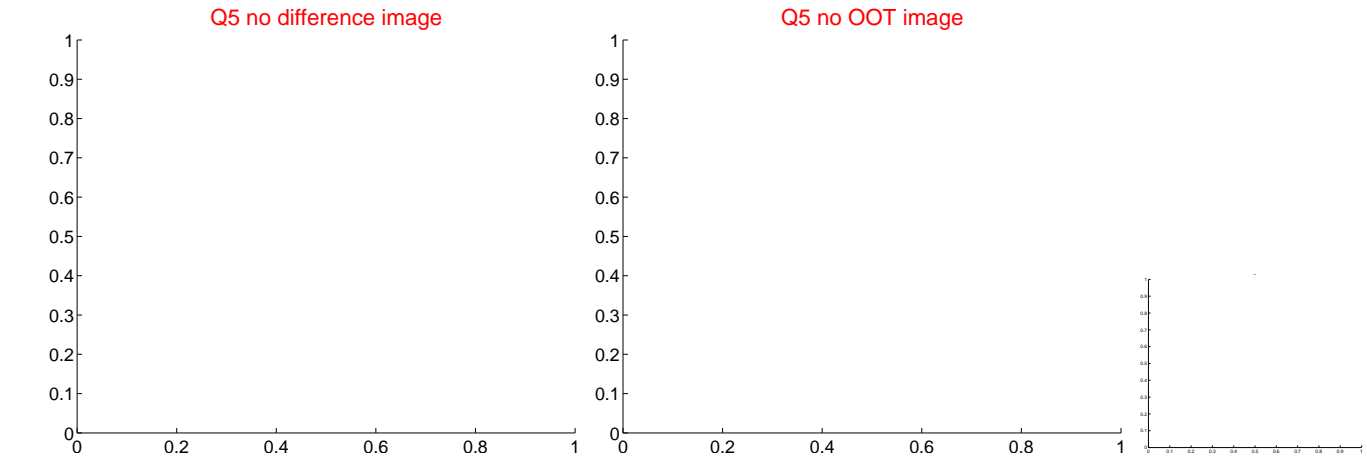
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

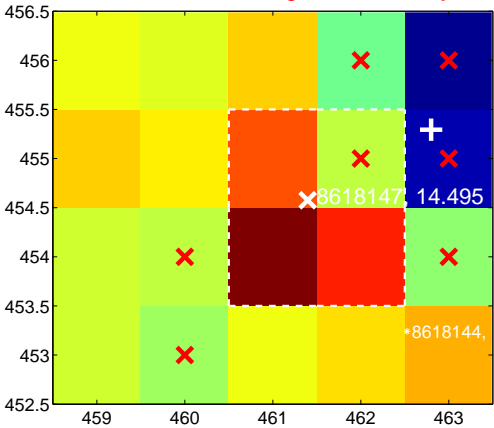
Q9 no difference image



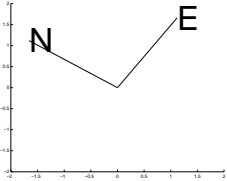
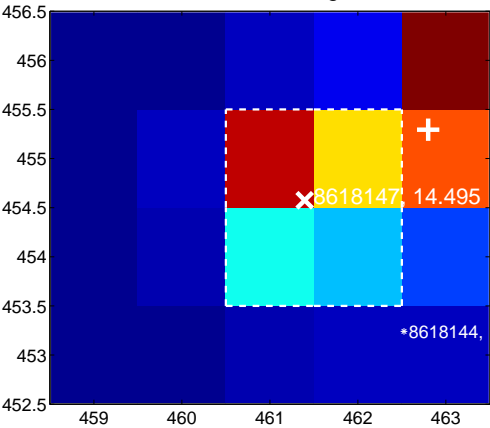
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



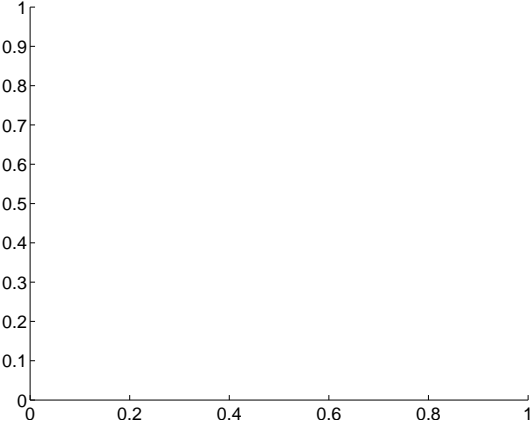
Q11 no difference image



Q11 no OOT image



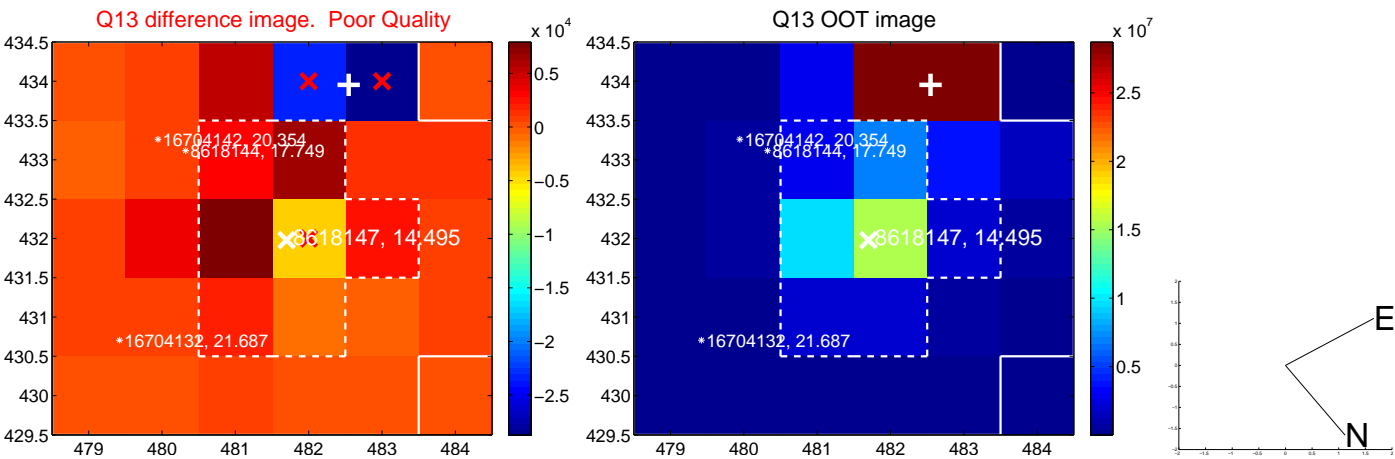
Q12 no difference image



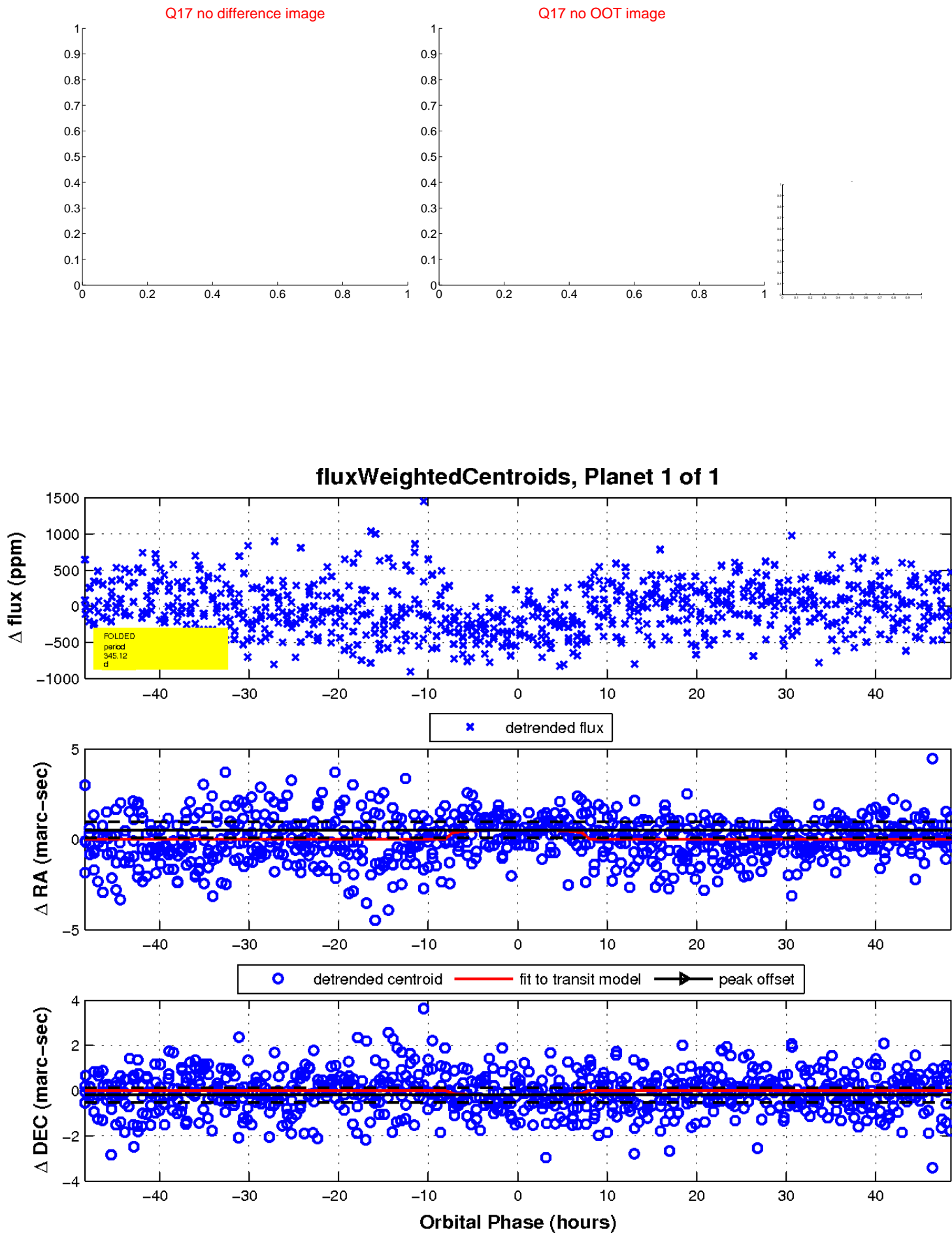
Q12 no OOT image



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.



UKIRT Image

Declination

