

# KIC 008624967

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008624967-01	OBS	No	462.784755	581.676041	144.7	10.448	7.4	7.2	1.35	6214	1.77	1.78

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008624967-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—INCONSISTENT_TRANS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

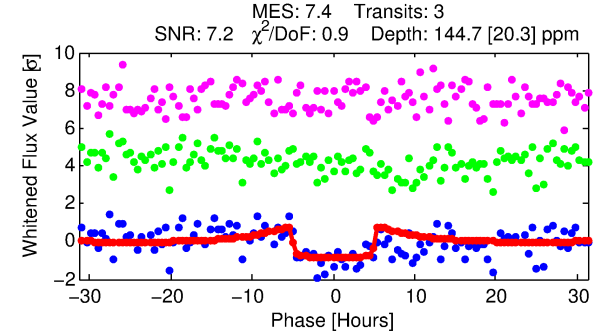
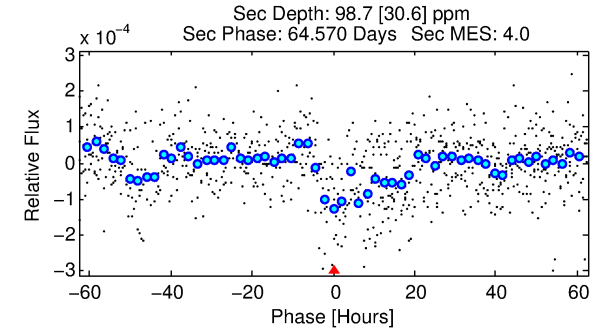
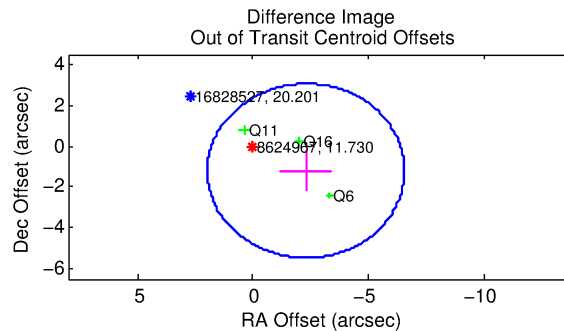
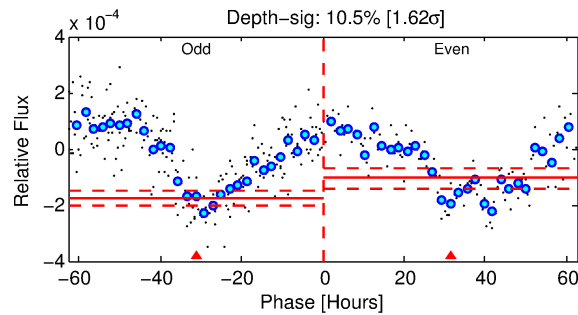
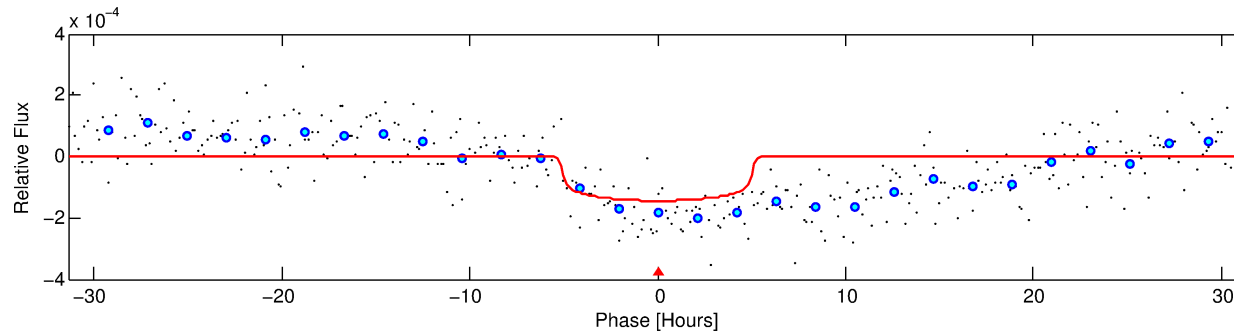
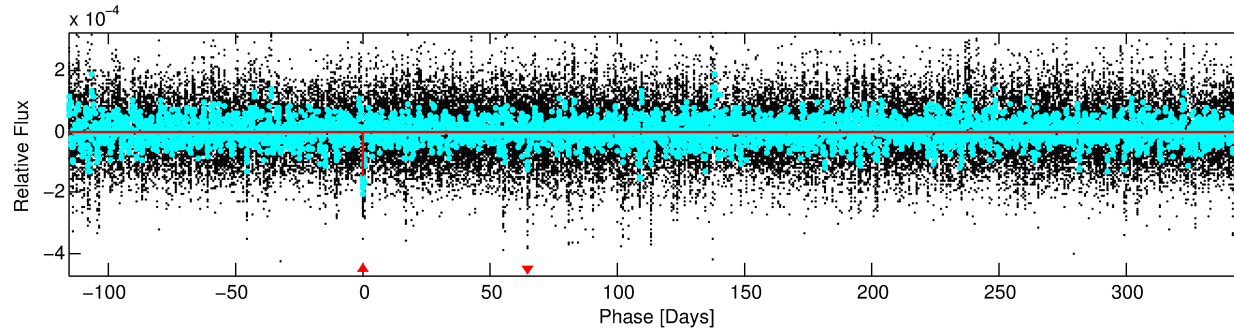
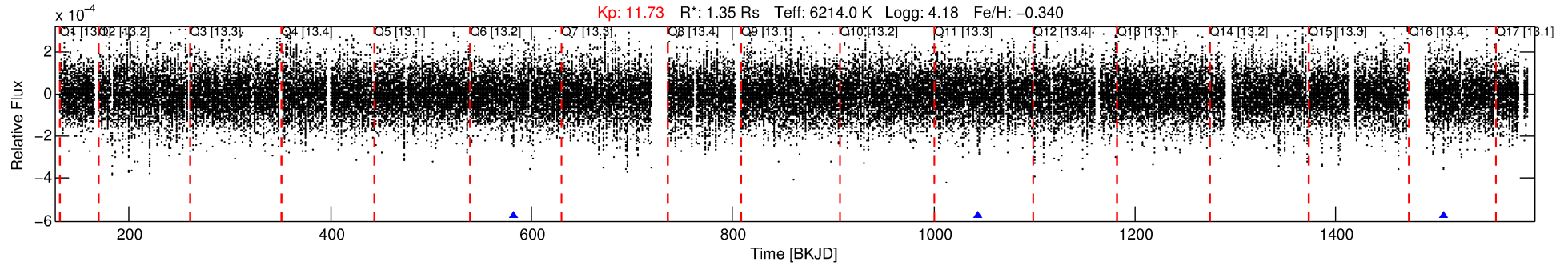
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008624967-01

No Significant Match Found

# DV One-Page Summary

KIC: 8624967 Candidate: 1 of 1 Period: 462.785 d



## DV Fit Results:

Period = 462.78476 [0.00867] d  
Epoch = 581.6760 [0.0105] BKJD  
Rp/R\* = 0.0120 [0.0060]  
a/R\* = 223.11 [592.37]  
b = 0.77 [1.42]  
Seff = 1.78 [0.65]  
Teq = 294 [27] K  
Rp = 1.77 [0.97] Re  
a = 1.1709 [0.2548] AU  
Ag = 23698.90 [26134.80] [0.91σ]  
Teffp = 5647 [1485] K [3.60σ]

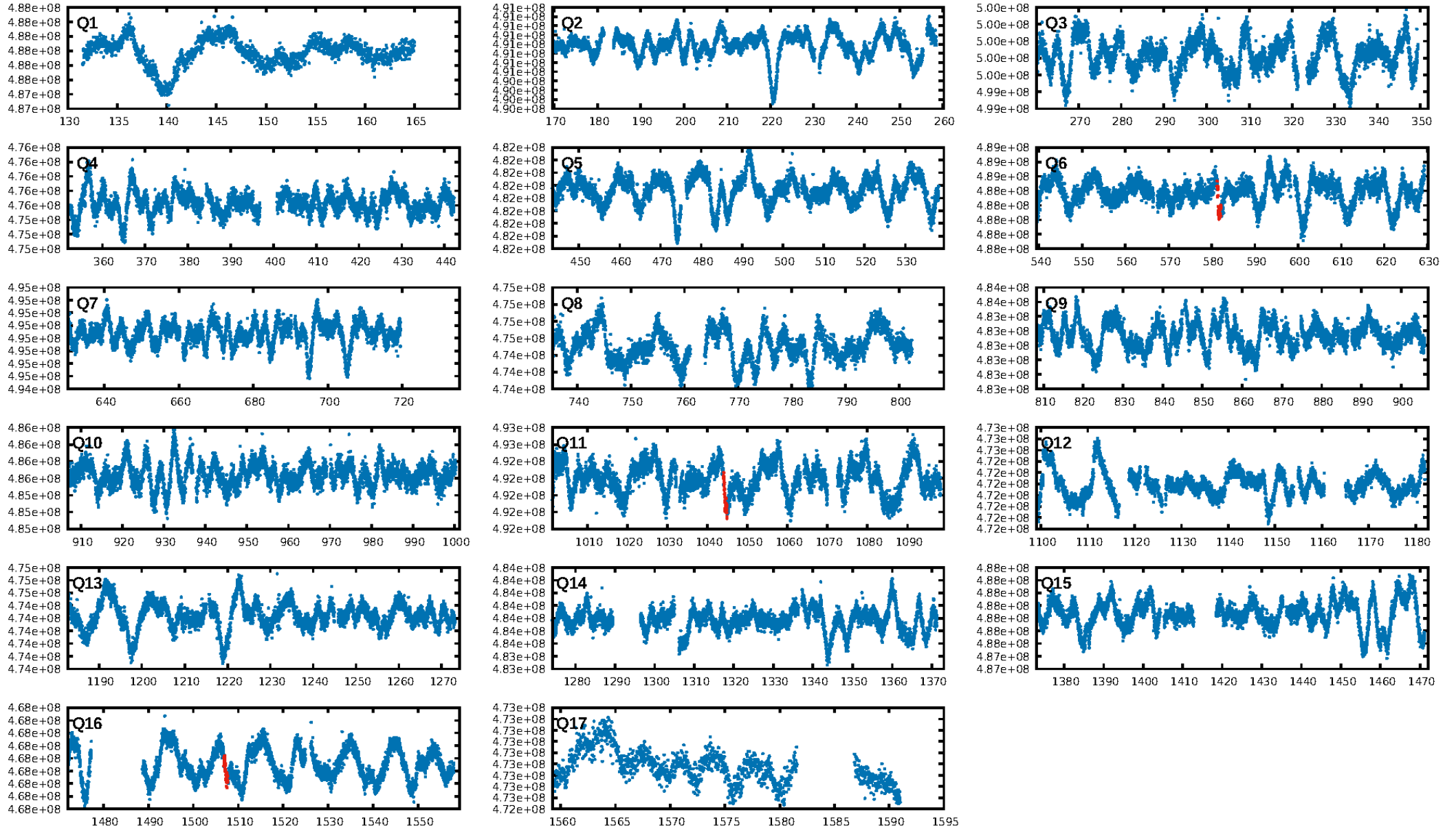
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 14.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 5.93e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 3.025  
Centroid-sig: 61.6%  
Centroid-so: 0.909 arcsec [0.97σ]  
OotOffset-rm: 2.582 arcsec [1.82σ]  
OotOffset-st: 1/1/1/0 [3]  
KicOffset-rm: 2.294 arcsec [2.12σ]  
KicOffset-st: 1/1/1/0 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

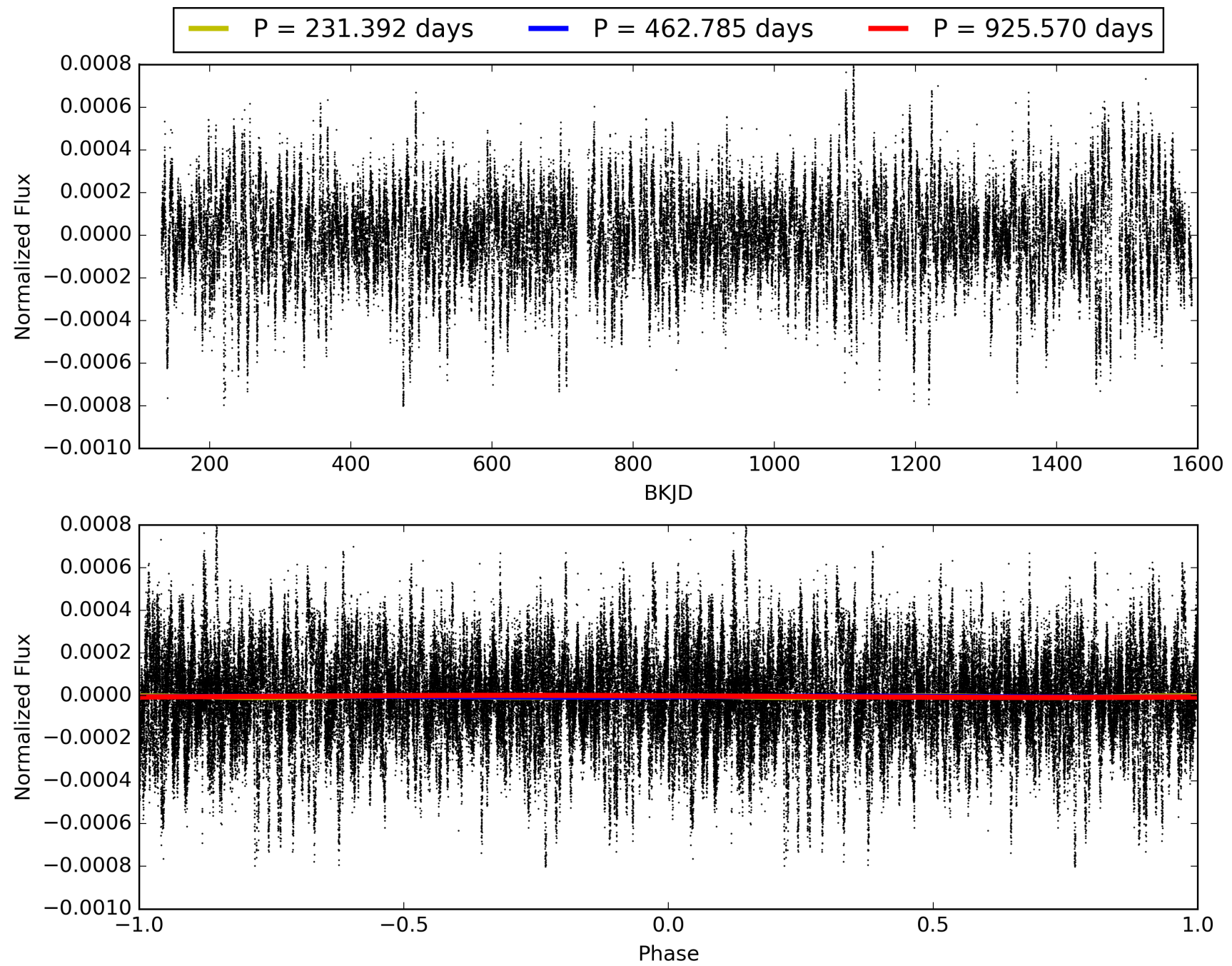
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 08:53:29 Z

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

# TCE 008624967-01, PDC Light Curves

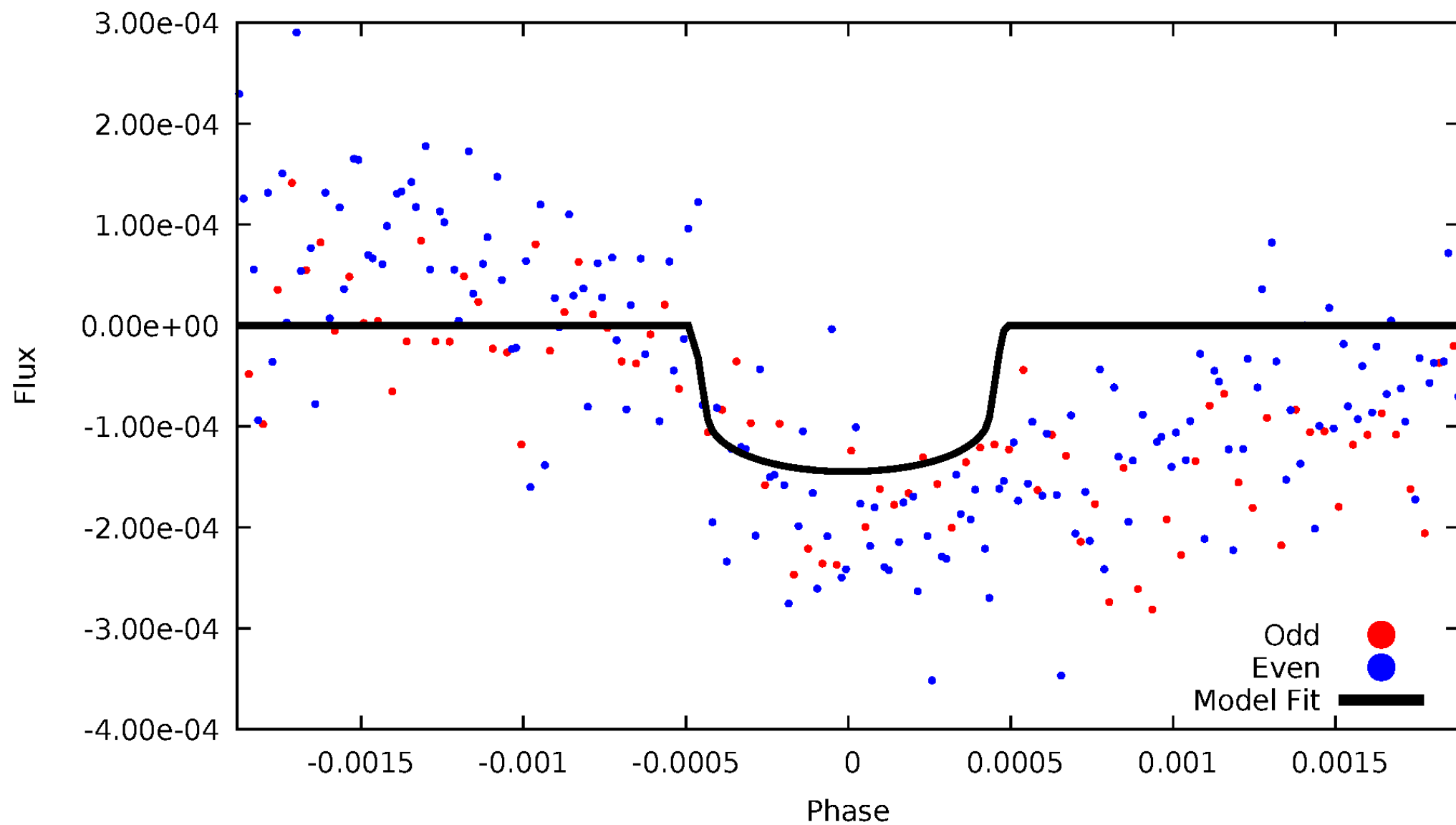


# TCE 008624967-01



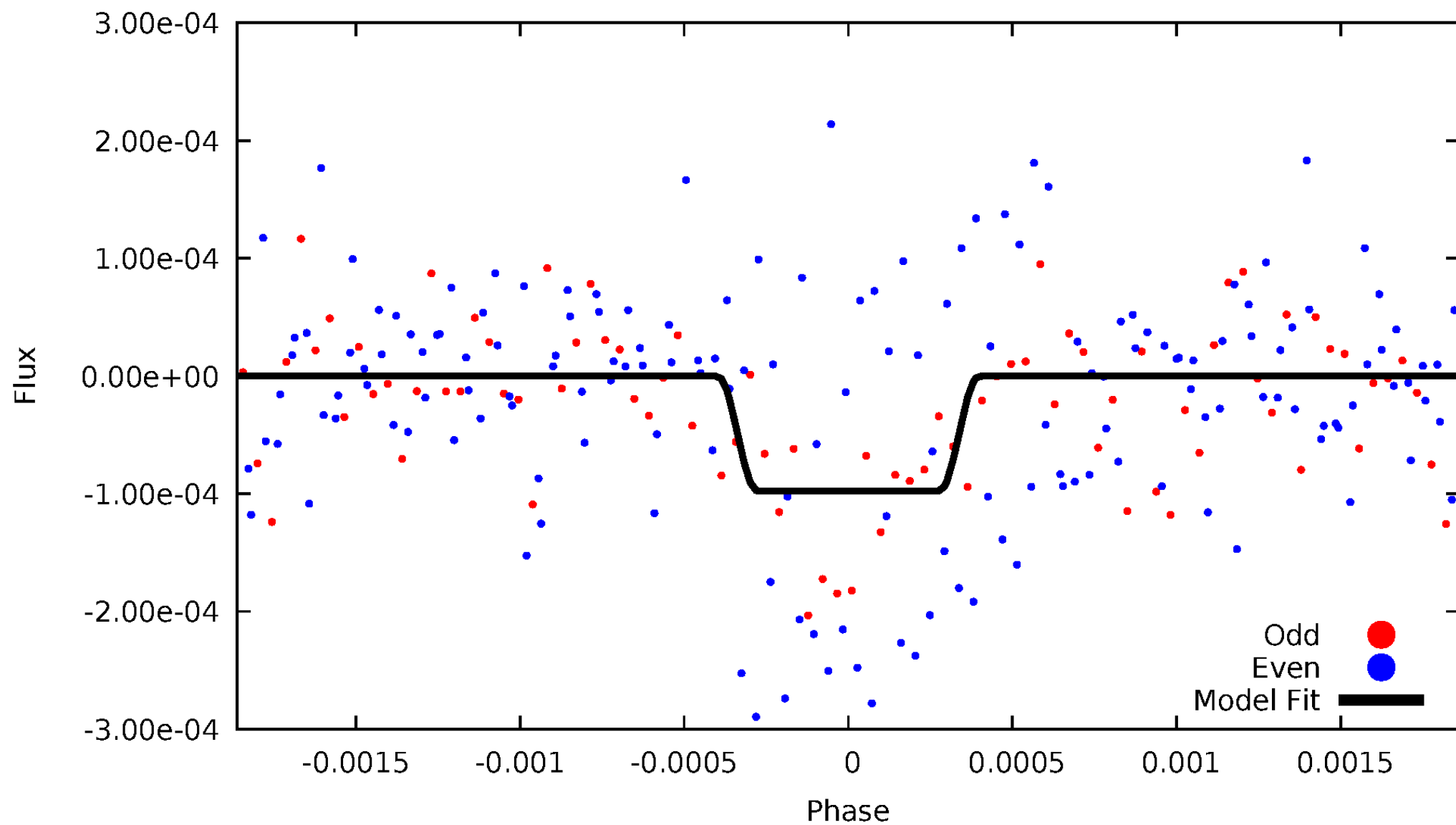
# DV Odd/Even

TCE 008624967-01



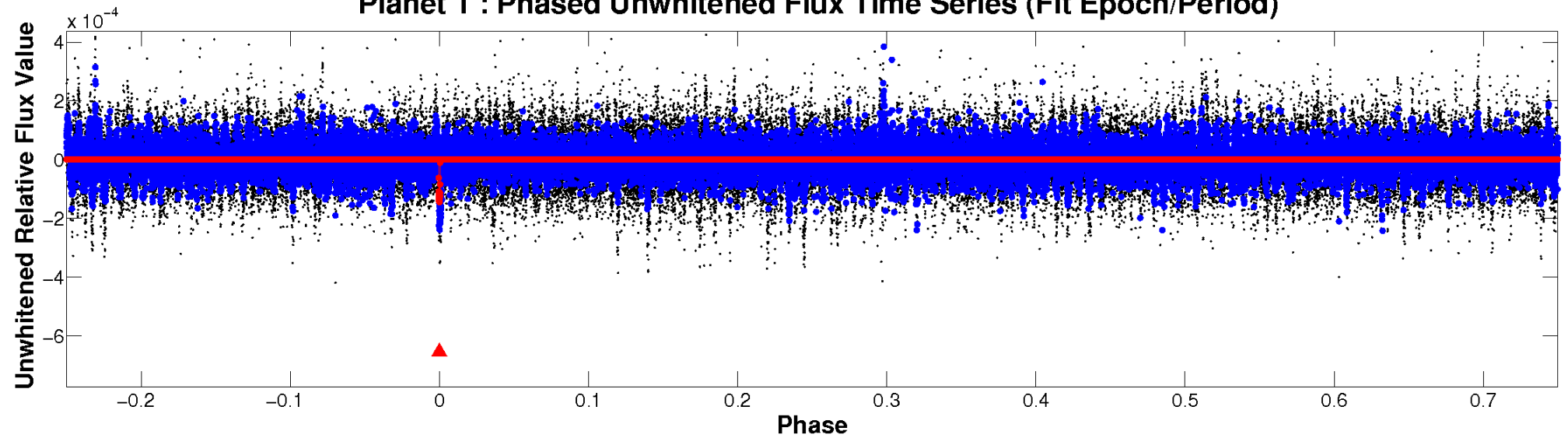
# ALT Odd/Even

TCE 008624967-01

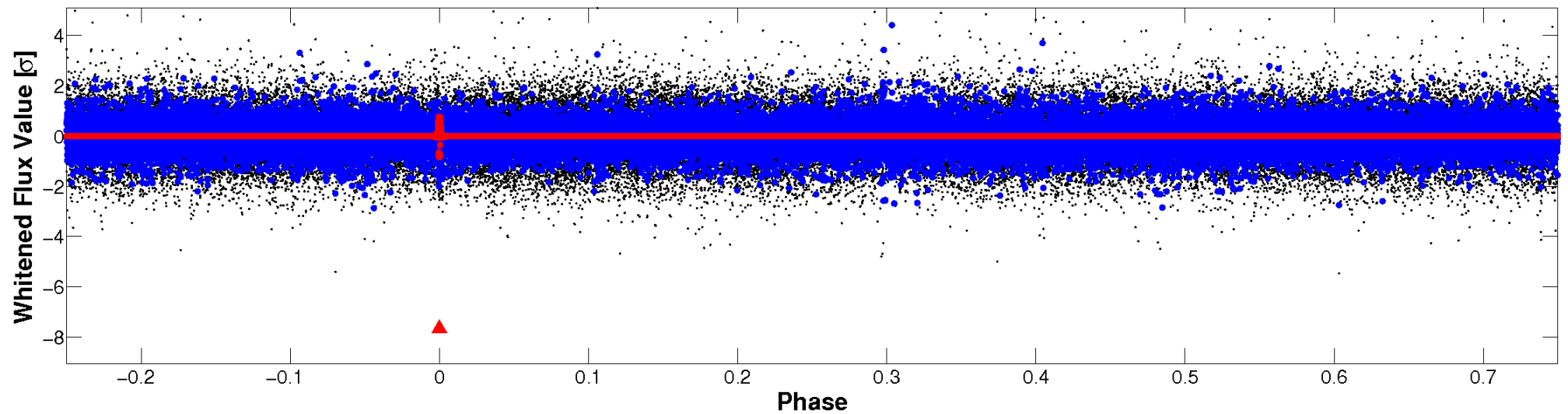


# Non-Whitened Vs. Whitened Light Curve

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



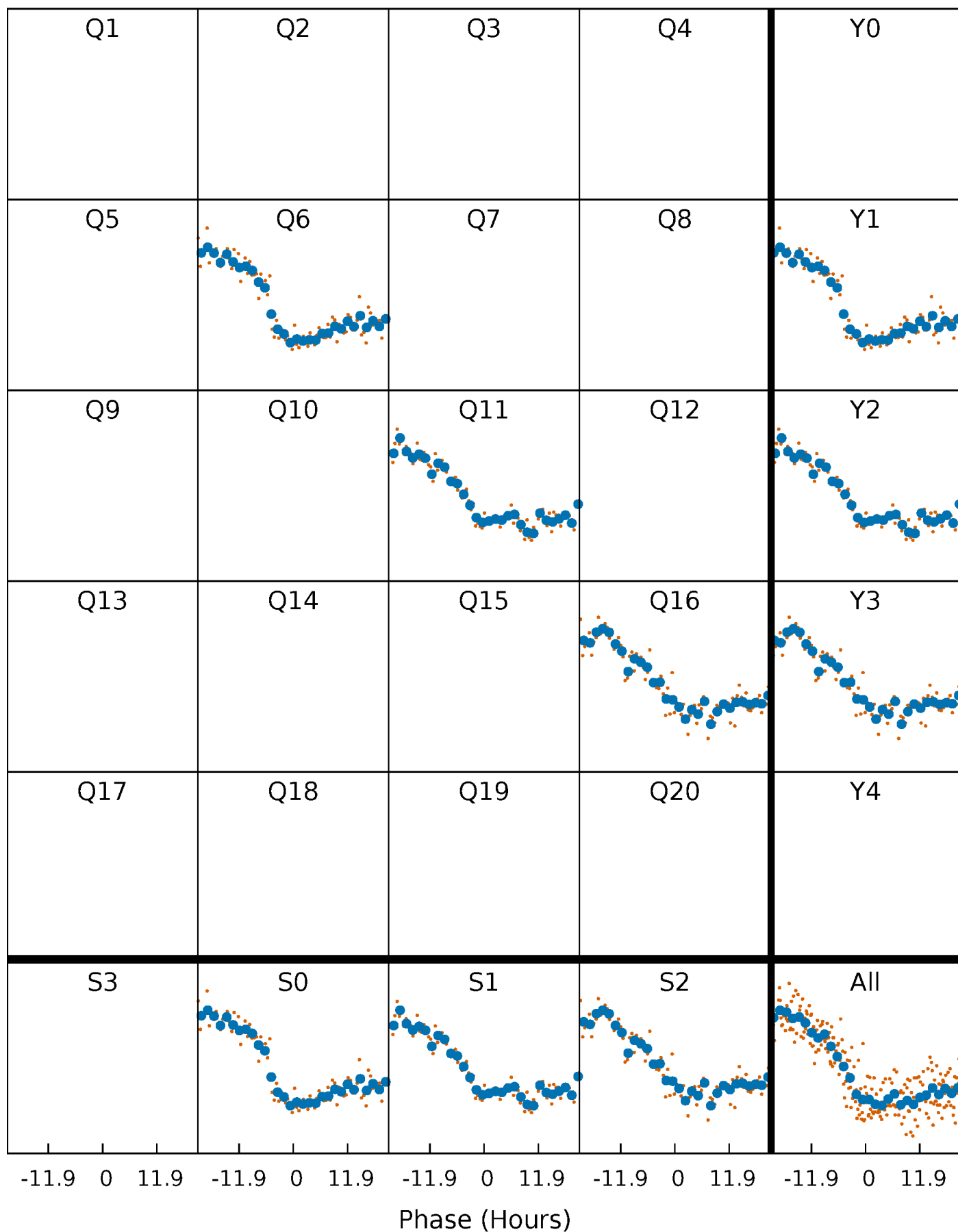
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

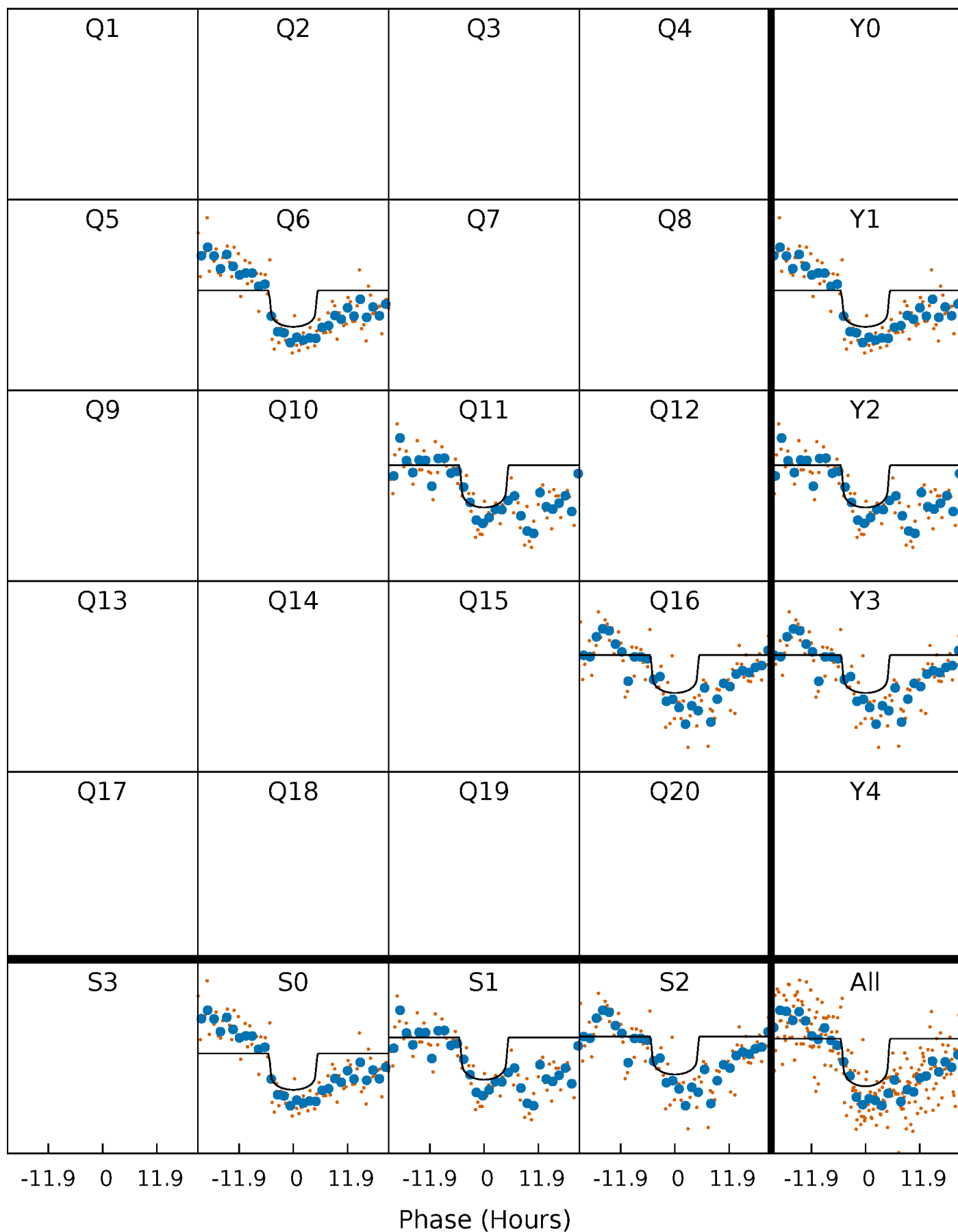
TCE 008624967-01 P=462.784755 Days  $T_0=581.676041$  (BKJD)





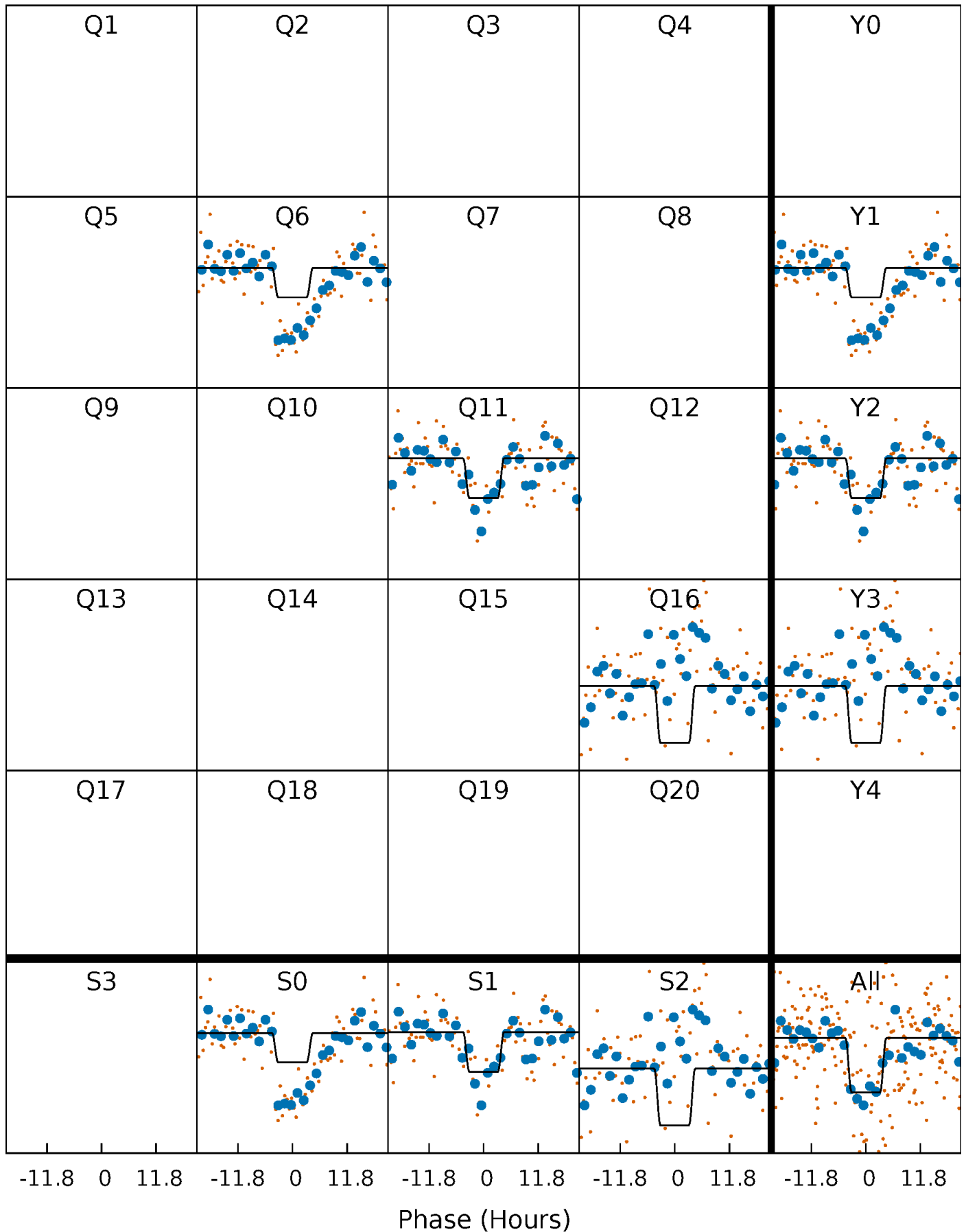
# DV Quarter-Phased Transit Curves

TCE 008624967-01   P=462.784755 Days    $T_0=581.676041$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

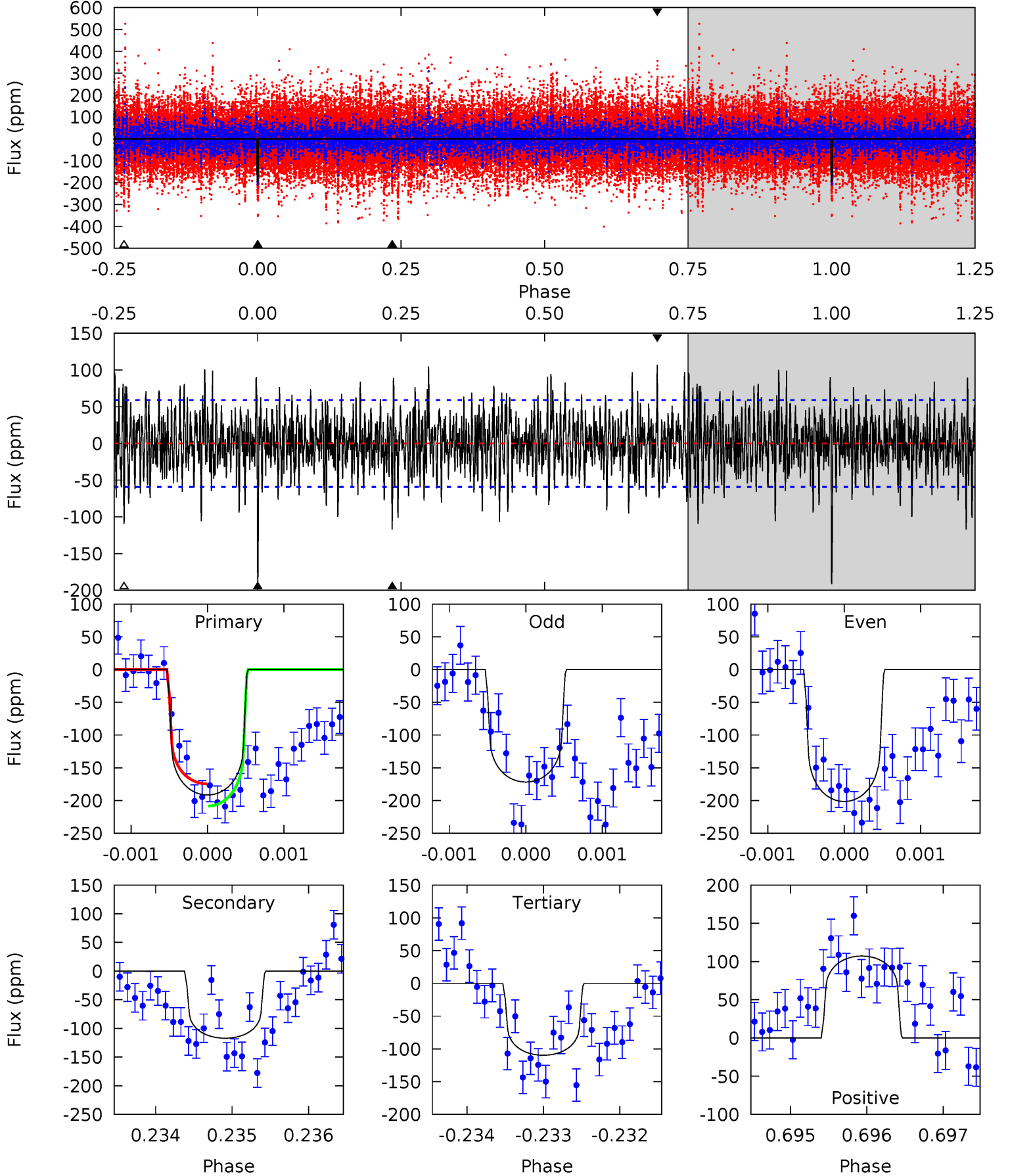
TCE 008624967-01     $P=462.806512$  Days     $T_0=581.633165$  (BKJD)



# DV Model-Shift Uniqueness Test

008624967-01, P = 462.784755 Days, E = 118.891286 Days

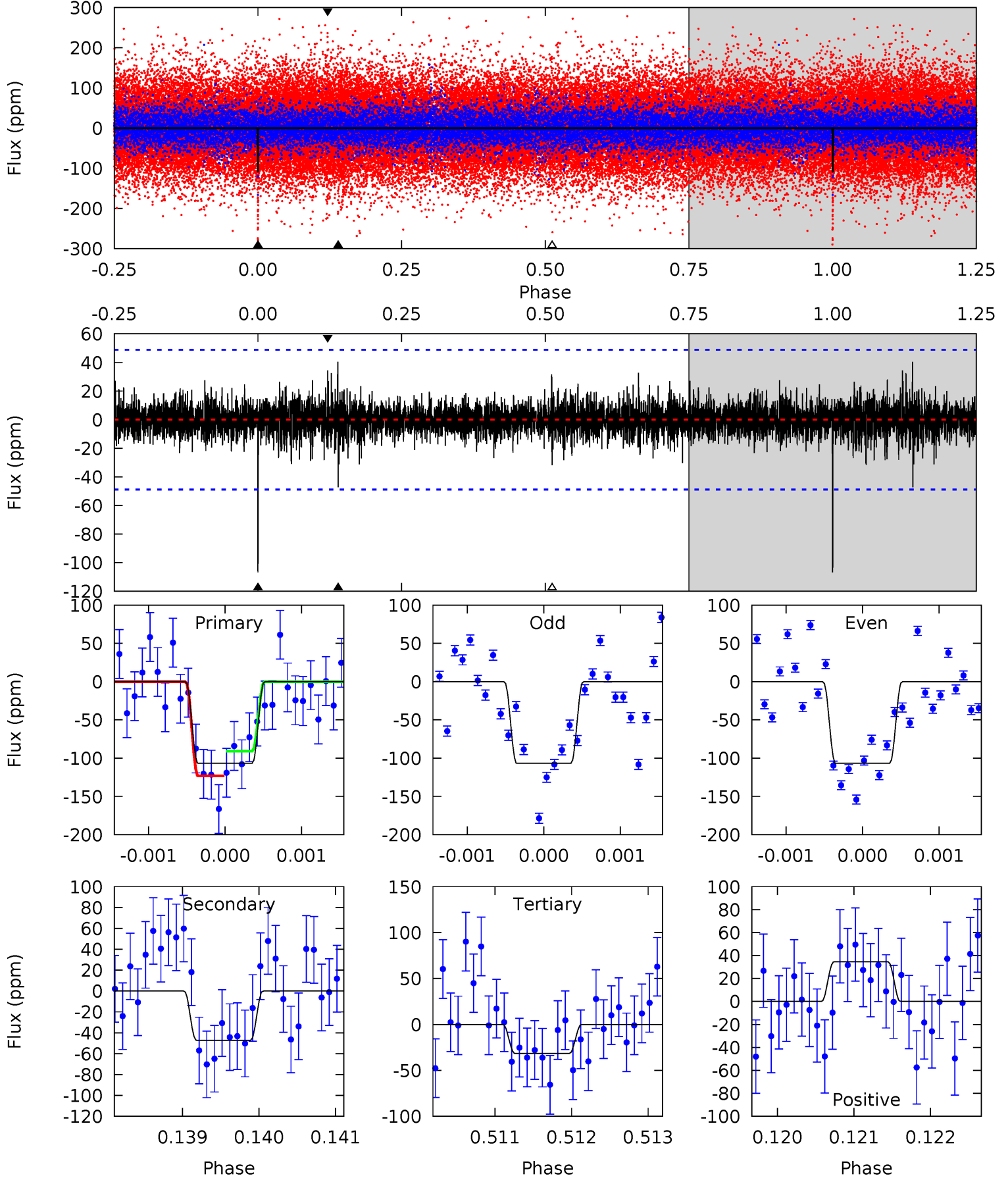
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	10.8	10.1	9.91	5.46	3.31	2.95	7.56	7.79	0.69	0.92	1.30	0.97	0.36	1.56



# Alt Model-Shift Uniqueness Test

008624967-01, P = 462.806512 Days, E = 118.826653 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
12.0	5.30	3.57	3.88	5.50	3.36	0.90	8.43	8.12	1.74	1.43	0.00	0.93	0.28	1.81



### Stellar Parameters For KIC 008624967

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6214^{+170}_{-170}$	$4.177^{+0.204}_{-0.136}$	$-0.340^{+0.300}_{-0.300}$	$1.350^{+0.306}_{-0.306}$	$1.001^{+0.165}_{-0.110}$	$0.572^{+0.633}_{-0.226}$
	+3%/-3%	+5%/-3%	+88%/-88%	+23%/-23%	+16%/-11%	+111%/-40%
Source	PHO1	FLK73	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 008624967-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-117 \pm 11$	$1.70^{+0.96}_{-0.78}$	$408^{+26}_{-26}$	$5918^{+2361}_{-1023}$	$30555^{+74295}_{-17985}$
Alt.	$-47 \pm 9$	$1.47^{+0.83}_{-0.84}$	$410^{+24}_{-29}$	$5186^{+2768}_{-894}$	$16762^{+71372}_{-10097}$

$T_{max}$  = 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

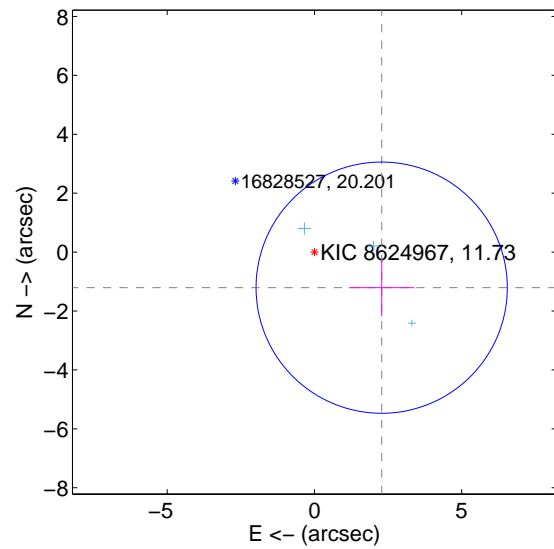
Supplemental centroid analysis for 008624967-01. **Kepler magnitude: 11.73.** Transit SNR 7.24

**There are 3 quarters with good PRF difference image offsets**

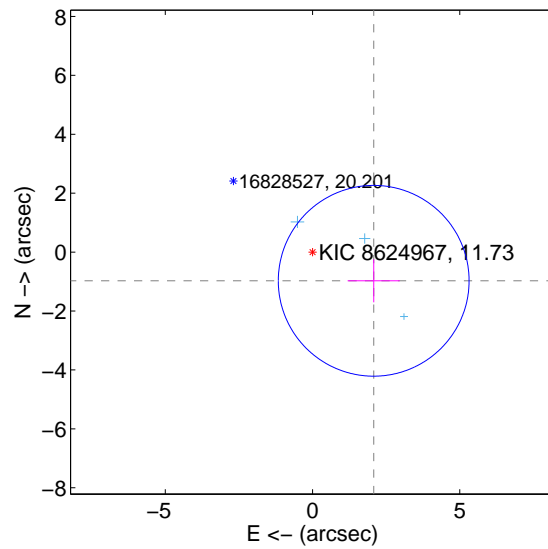
The direct PRF centroid is offset from the target star catalog position by about 0.35 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.582 \pm 1.421$	1.82	$-2.282 \pm 1.111$	$-1.207 \pm 0.973$
PRF-fit source offset from KIC position	$2.294 \pm 1.079$	2.12	$-2.076 \pm 0.883$	$-0.974 \pm 0.730$
photometric centroid source offset	$0.91 \pm 0.94$	0.97	$0.61 \pm 1.01$	$0.68 \pm 0.89$

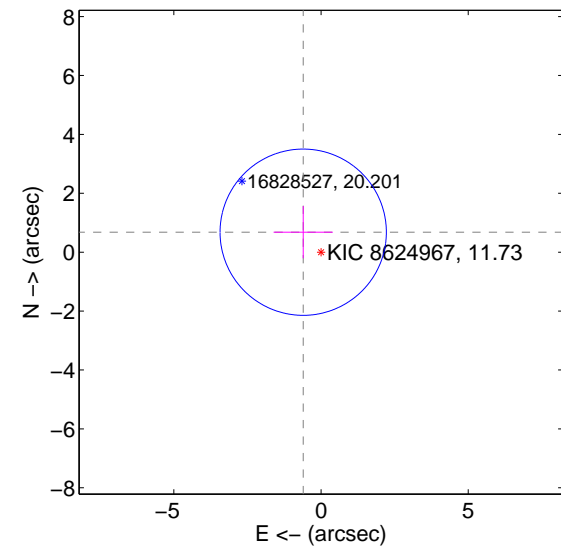
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



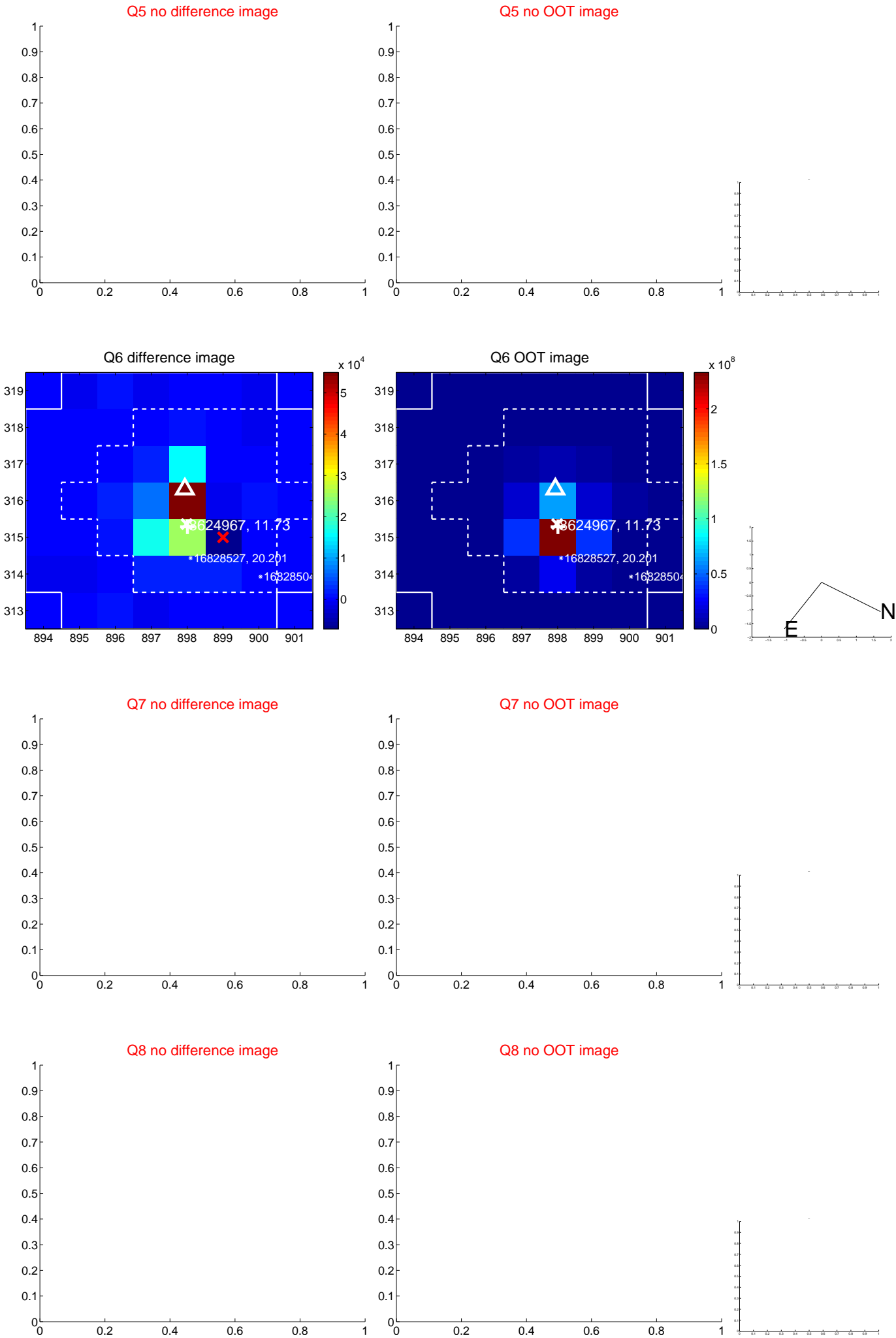
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

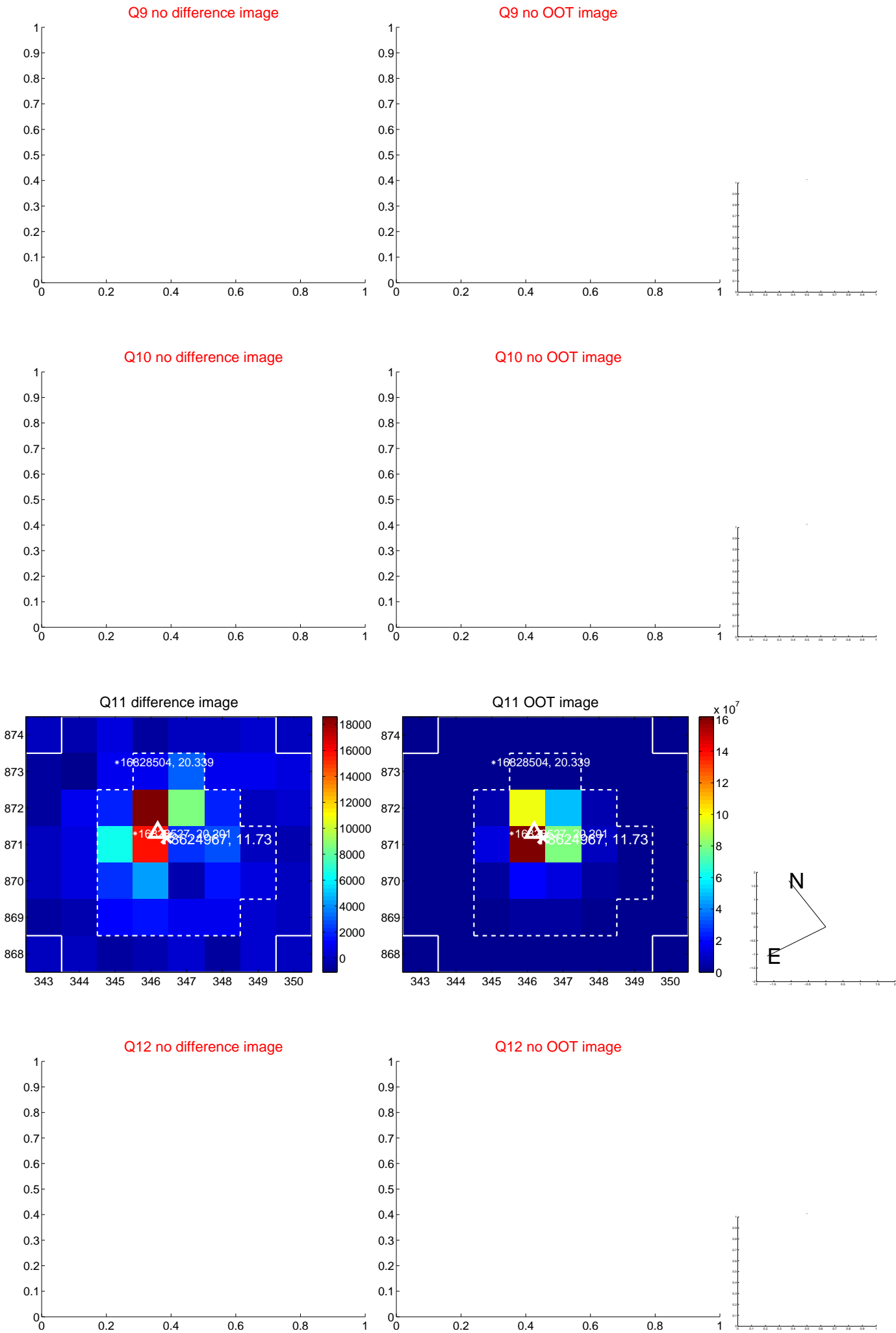




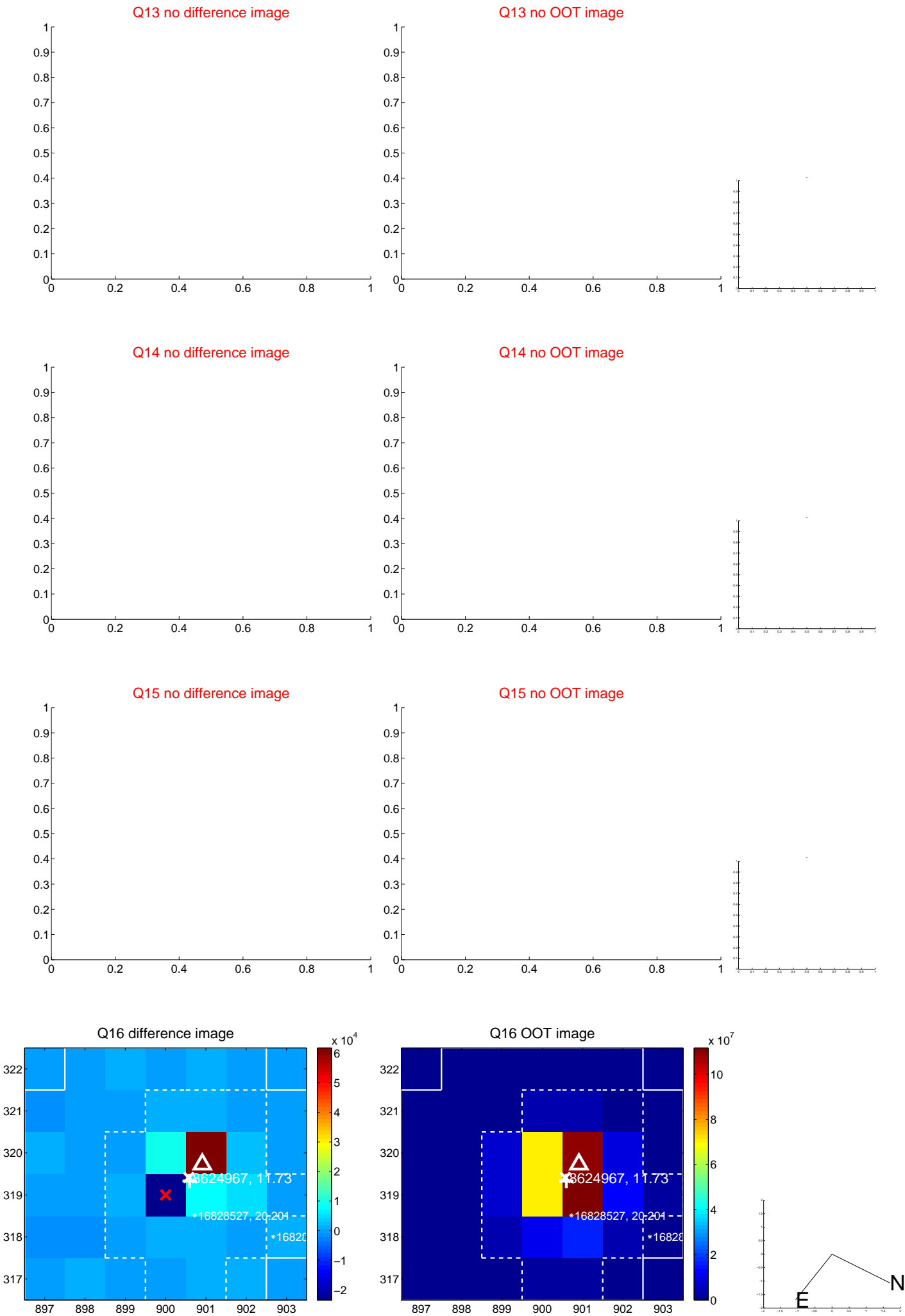
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



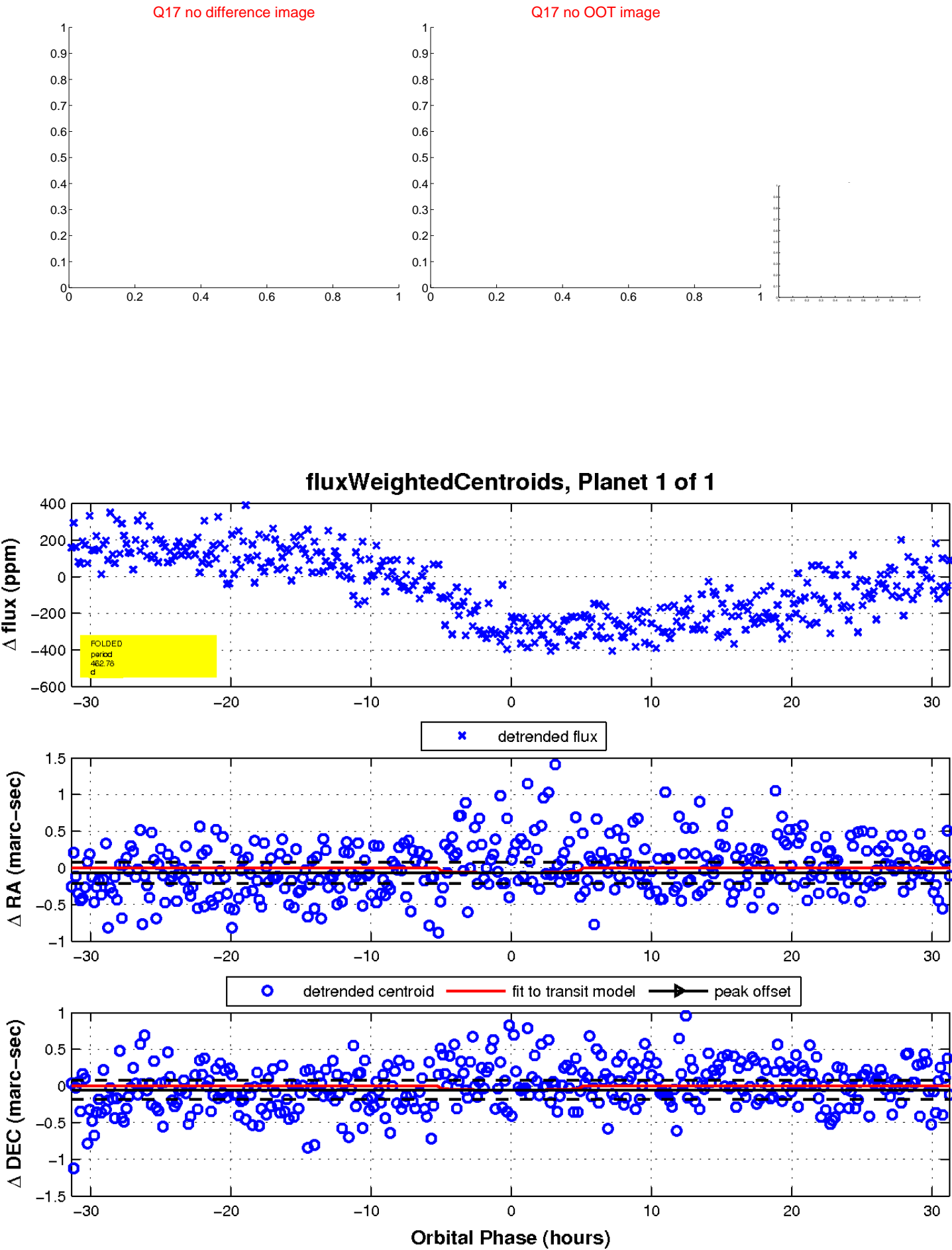
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

