

# KIC 007347246

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007347246-01	OBS	3014.01	86.116570	134.872497	897.5	6.079	16.4	16.8	1.05	6161	3.30	8.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007347246-01	OBS	PC	0.94	0	0	0	0	NO_COMMENT

**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 007347246-01

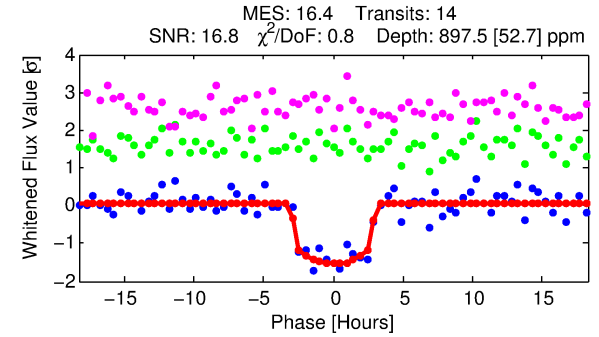
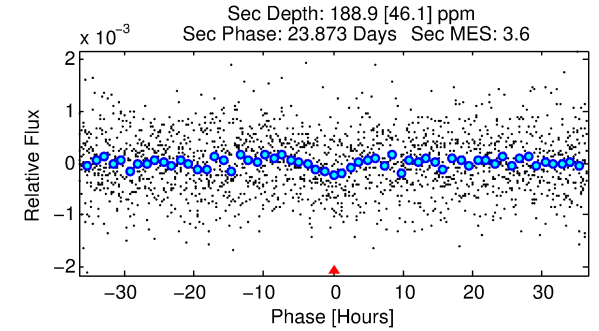
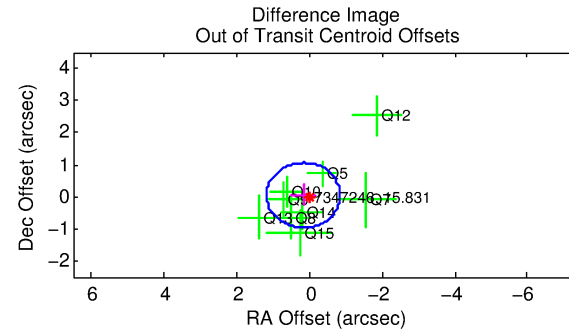
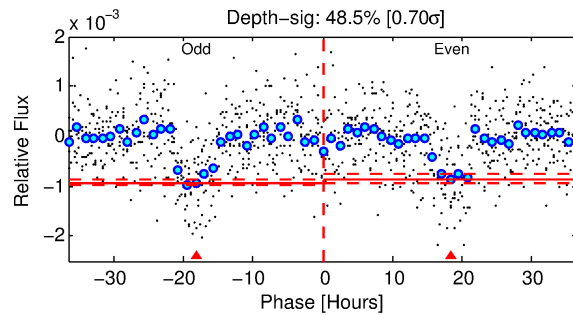
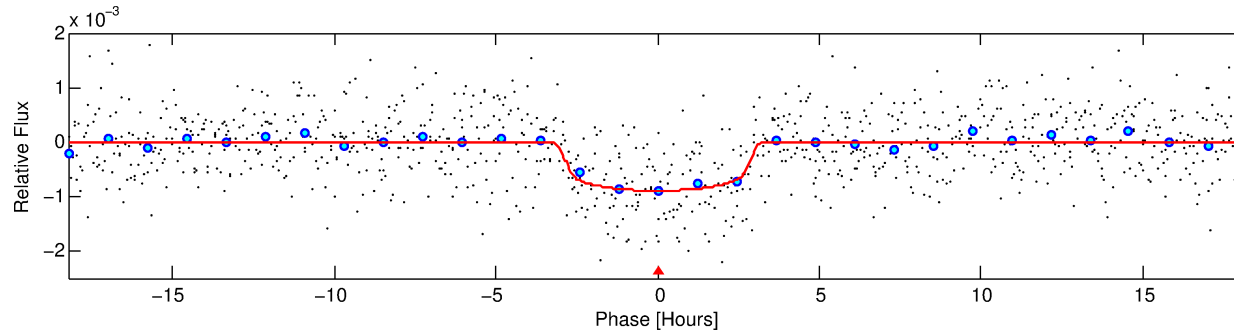
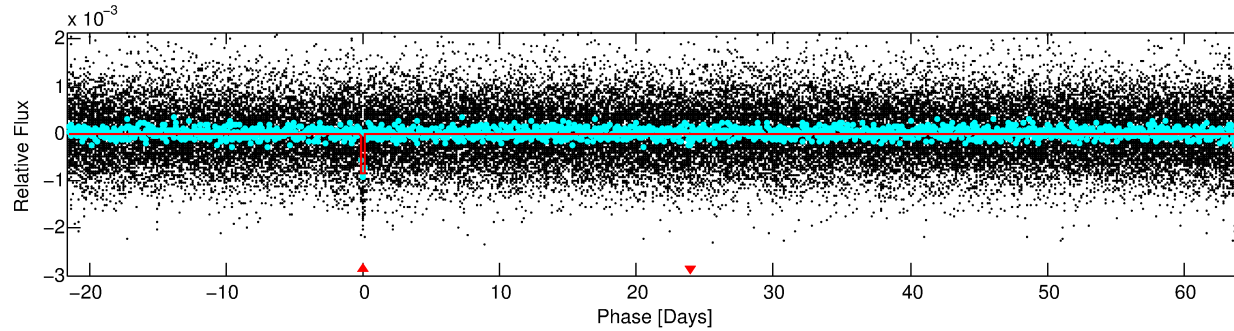
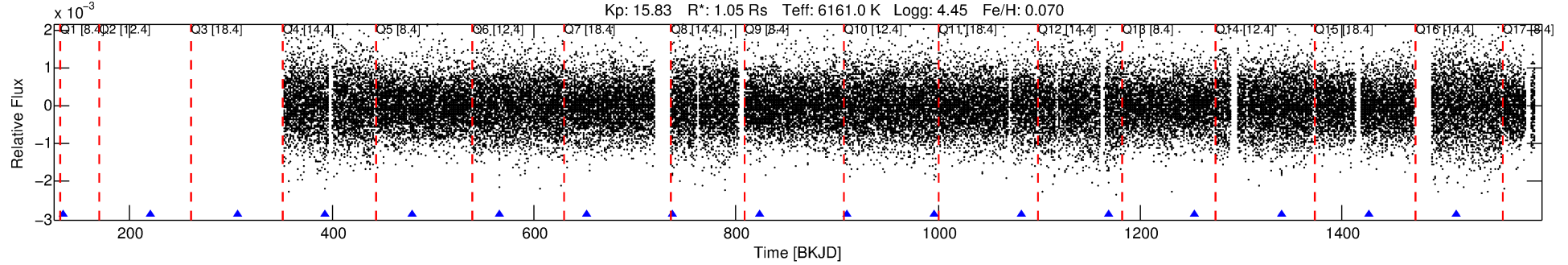
No Significant Match Found

# DV One-Page Summary

KIC: 7347246 Candidate: 1 of 1 Period: 86.117 d

KOI: K03014.01 Corr: 0.966

Kp: 15.83 R\*: 1.05 Rs Teff: 6161.0 K Logg: 4.45 Fe/H: 0.070



## DV Fit Results:

Period = 86.11657 [0.00085] d  
Epoch = 134.8725 [0.0088] BKJD  
Rp/R\* = 0.0287 [0.0135]  
a/R\* = 89.47 [201.66]  
b = 0.61 [2.32]  
Seff = 8.95 [3.84]  
Teq = 441 [47] K  
Rp = 3.30 [1.91] Re  
a = 0.4000 [0.1121] AU  
Ag = 1525.00 [1597.96] [0.95σ]  
Teffp = 4261 [1044] K [3.66σ]

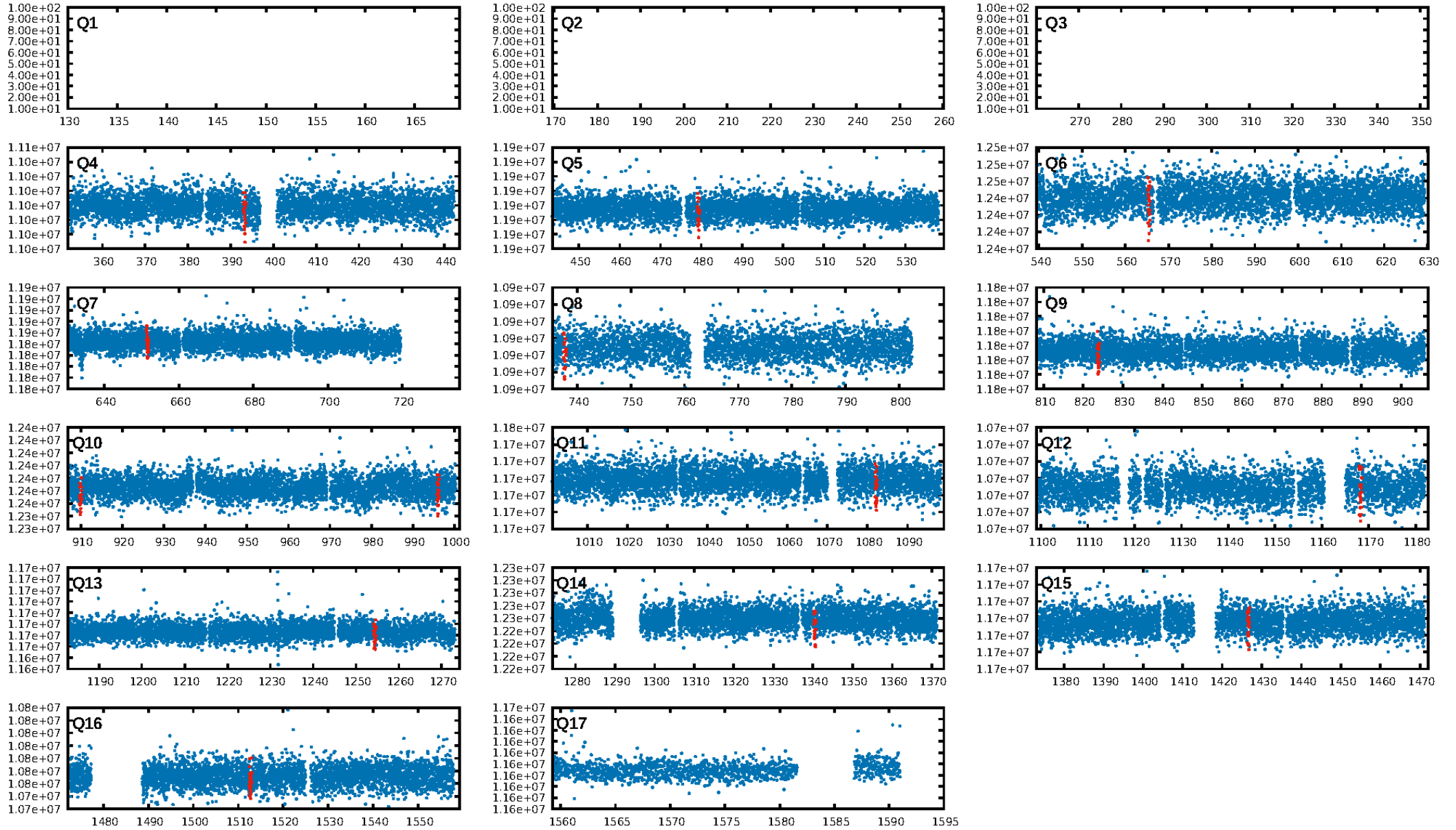
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 92.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.28e-62  
RollingBand-fgt: 1.00 [14/14]  
GhostDiagnostic-chr: 94.64  
Centroid-sig: 14.3%  
Centroid-so: 0.891 arcsec [1.04σ]  
OotOffset-rm: 0.173 arcsec [0.51σ]  
KicOffset-rm: 0.072 arcsec [0.21σ]  
OotOffset-st: 2/2/2/3 [9]  
KicOffset-st: 2/2/2/3 [9]  
DiffImageQuality-fgm: 1.00 [9/9]  
DiffImageOverlap-fno: 1.00 [13/13]

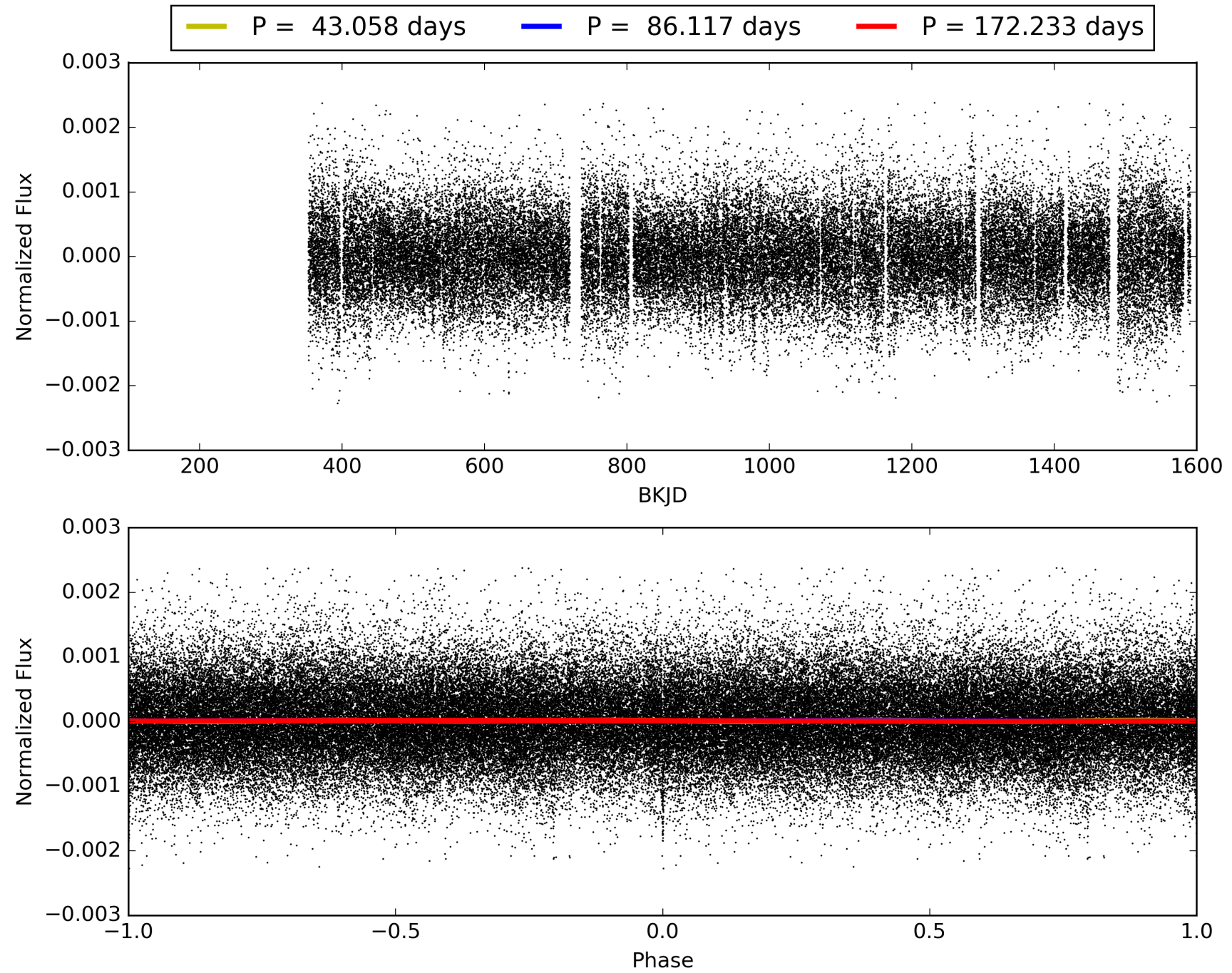
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:28:19 Z

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

# TCE 007347246-01, PDC Light Curves

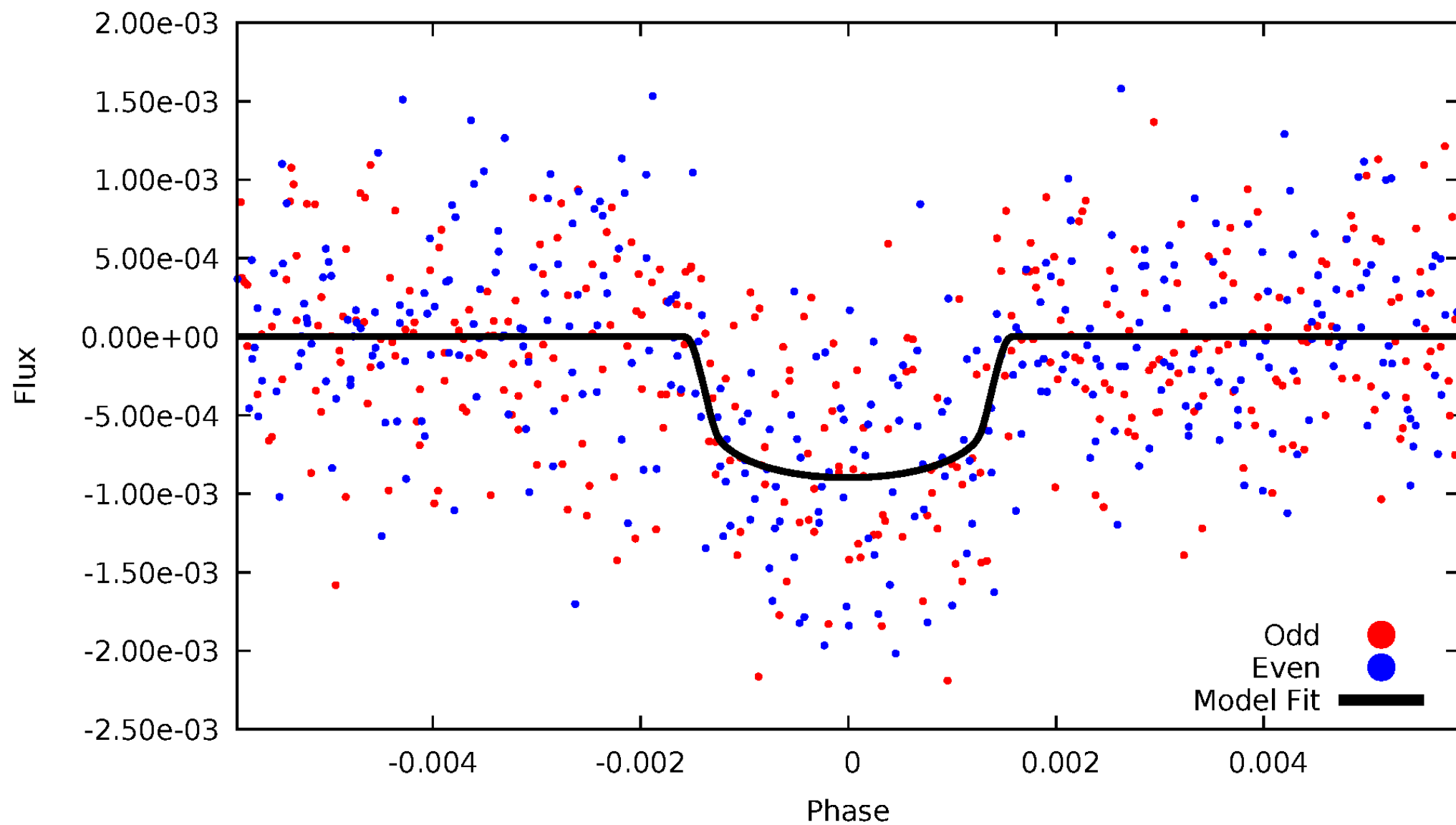


TCE 007347246-01



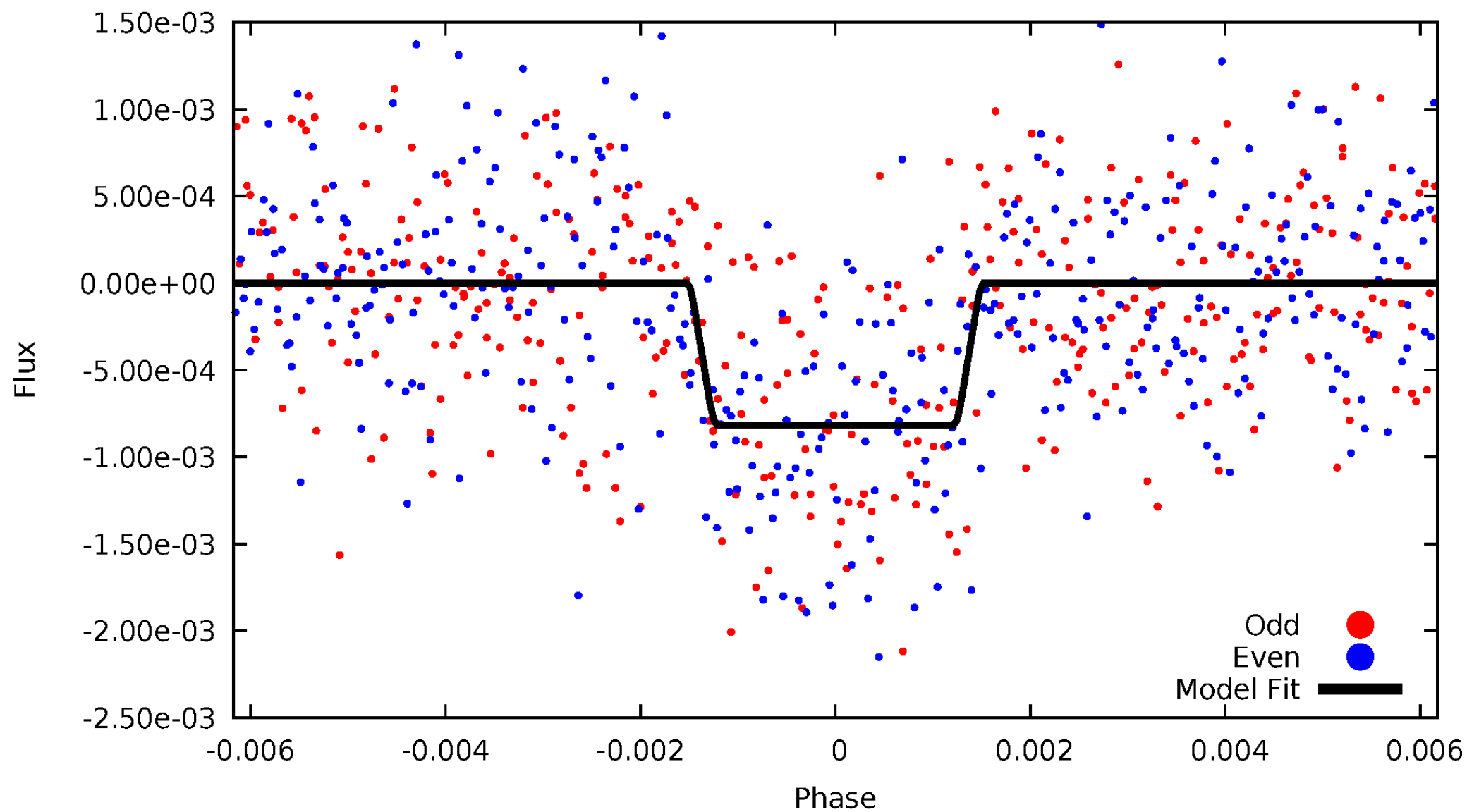
# DV Odd/Even

TCE 007347246-01



# ALT Odd/Even

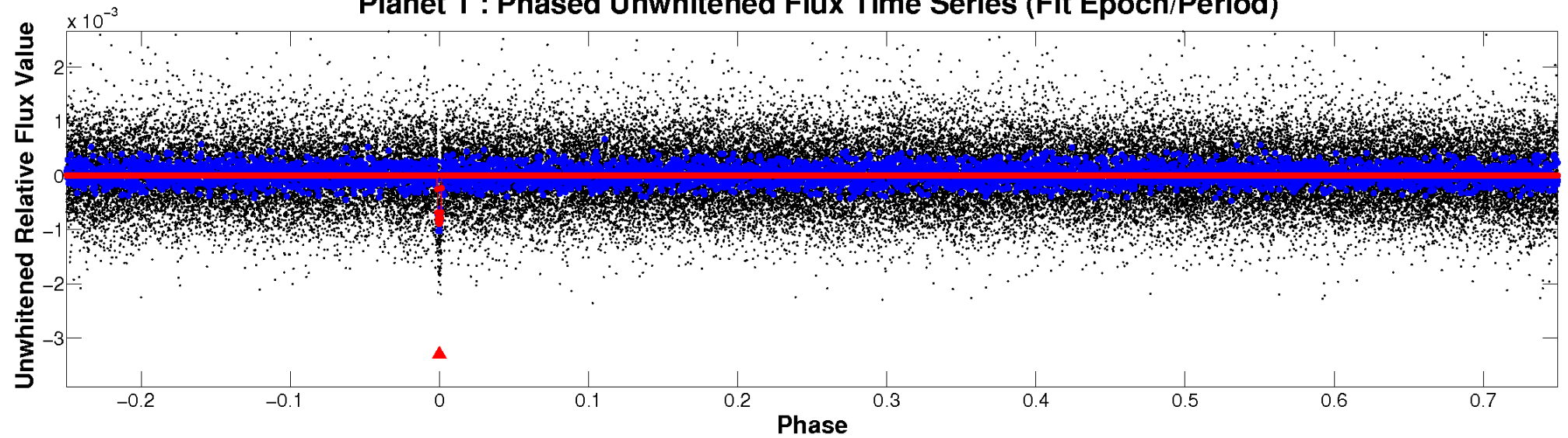
TCE 007347246-01



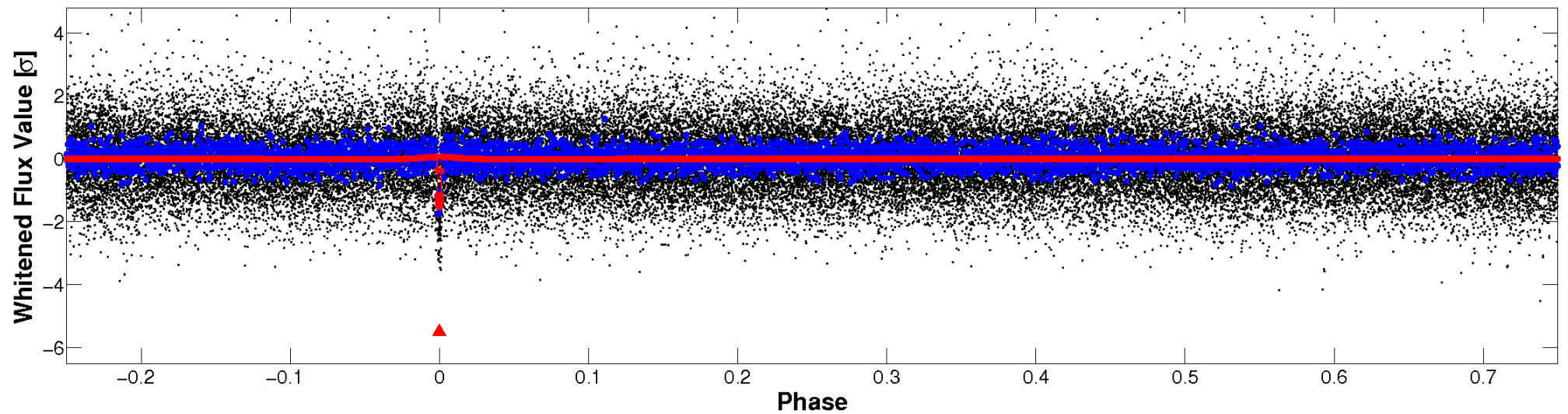


# Non-Whitened Vs. Whitened Light Curve

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

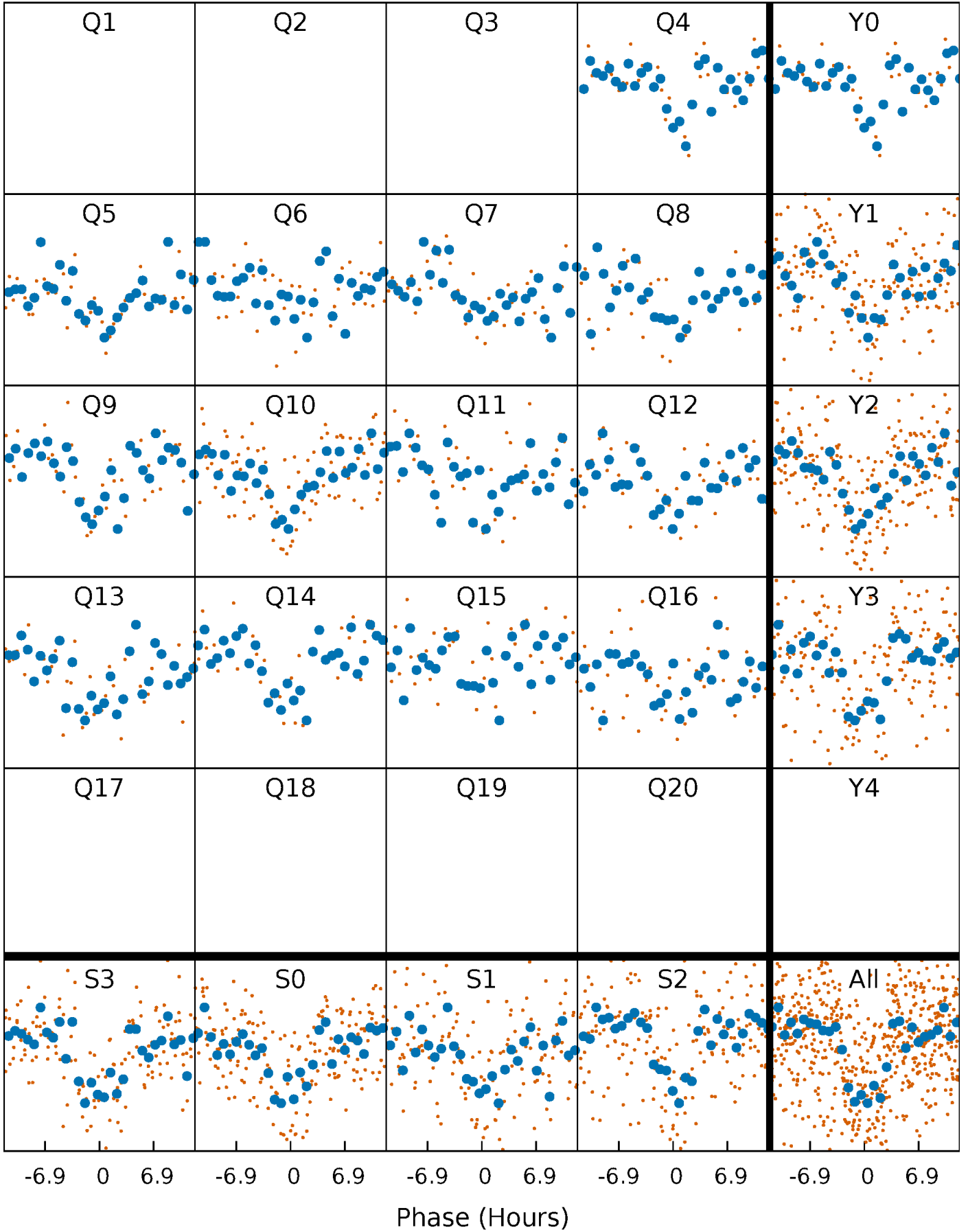


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

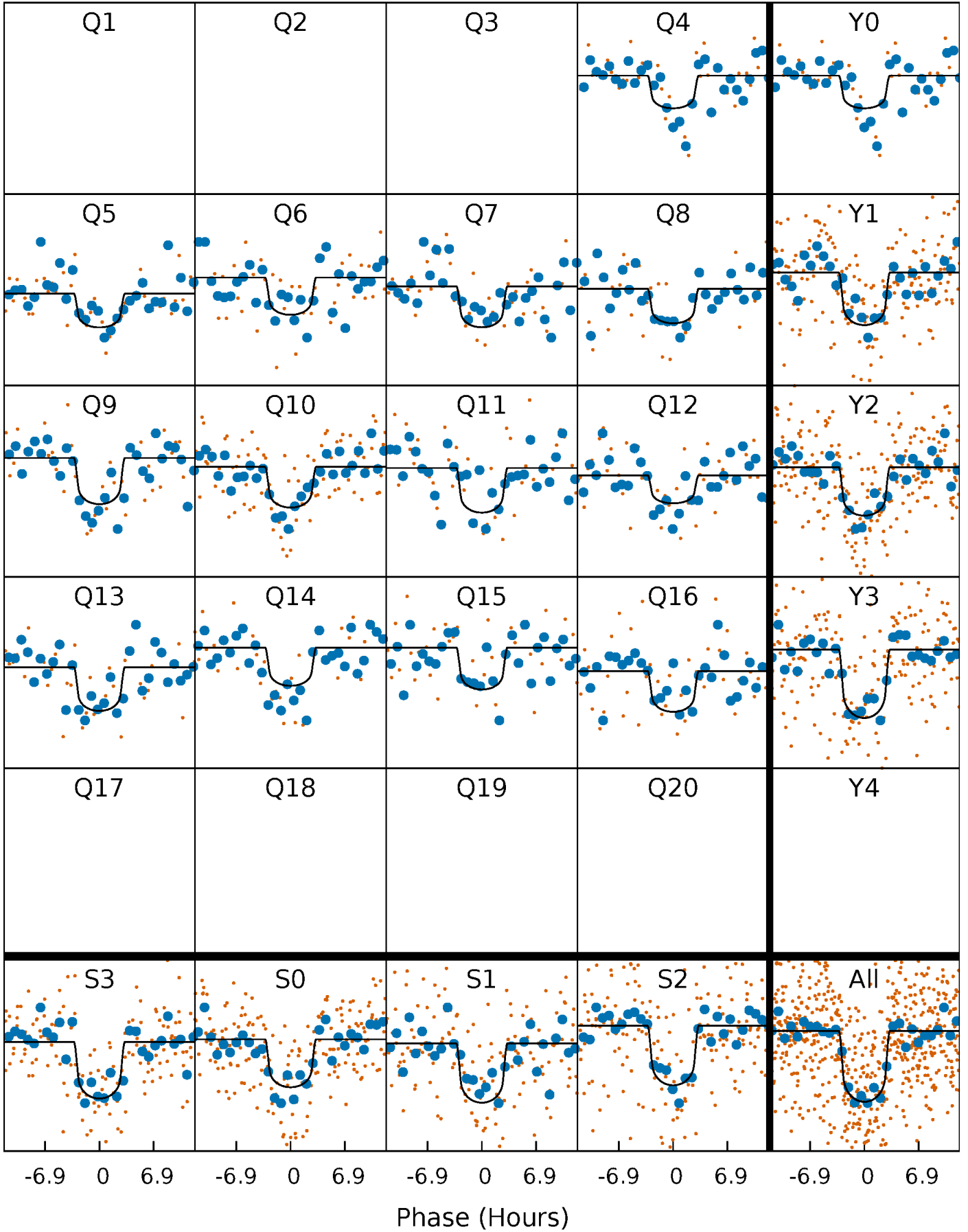
TCE 007347246-01 P= 86.116570 Days  $T_0=134.872497$  (BKJD)





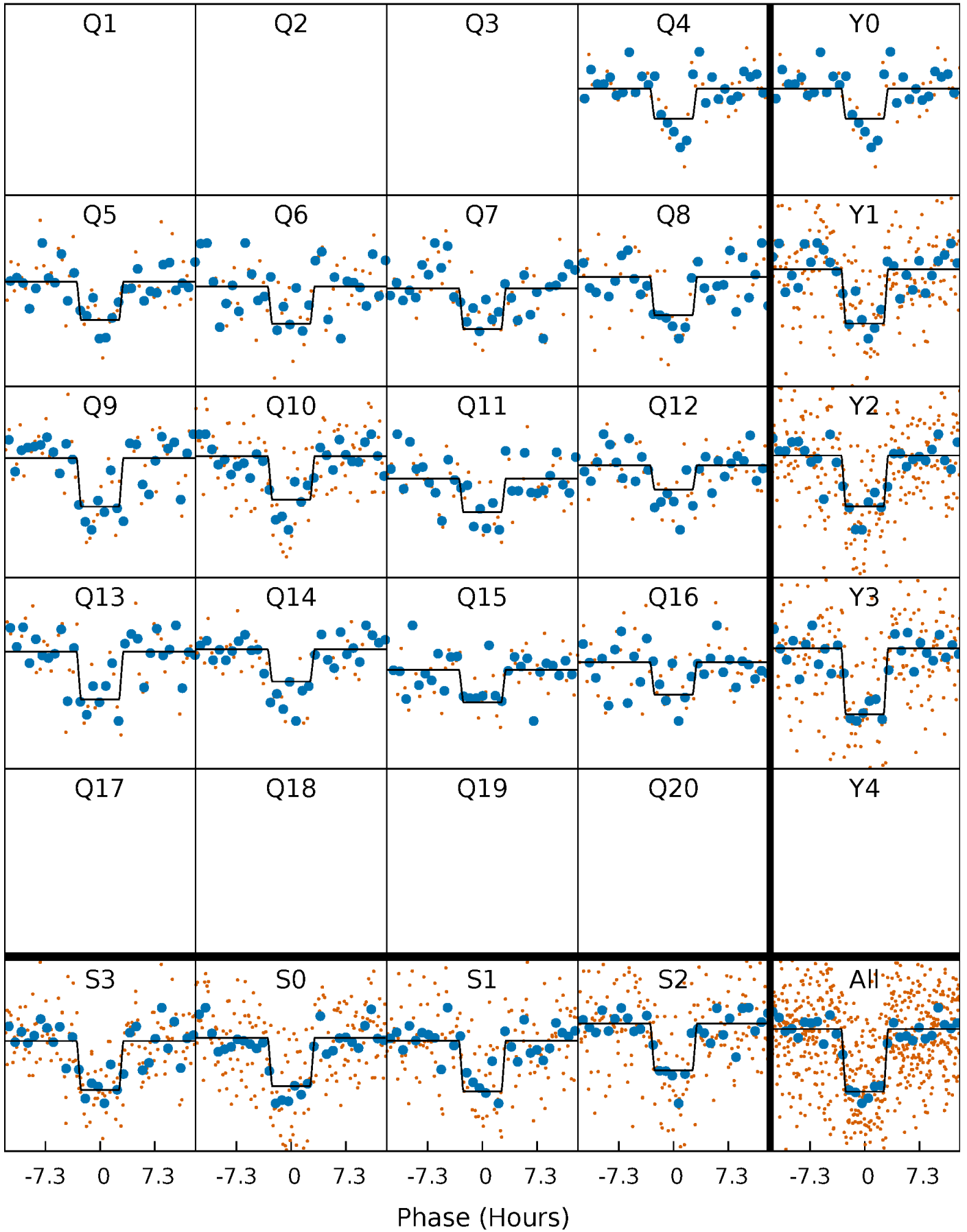
# DV Quarter-Phased Transit Curves

TCE 007347246-01   P= 86.116570 Days    $T_0=134.872497$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

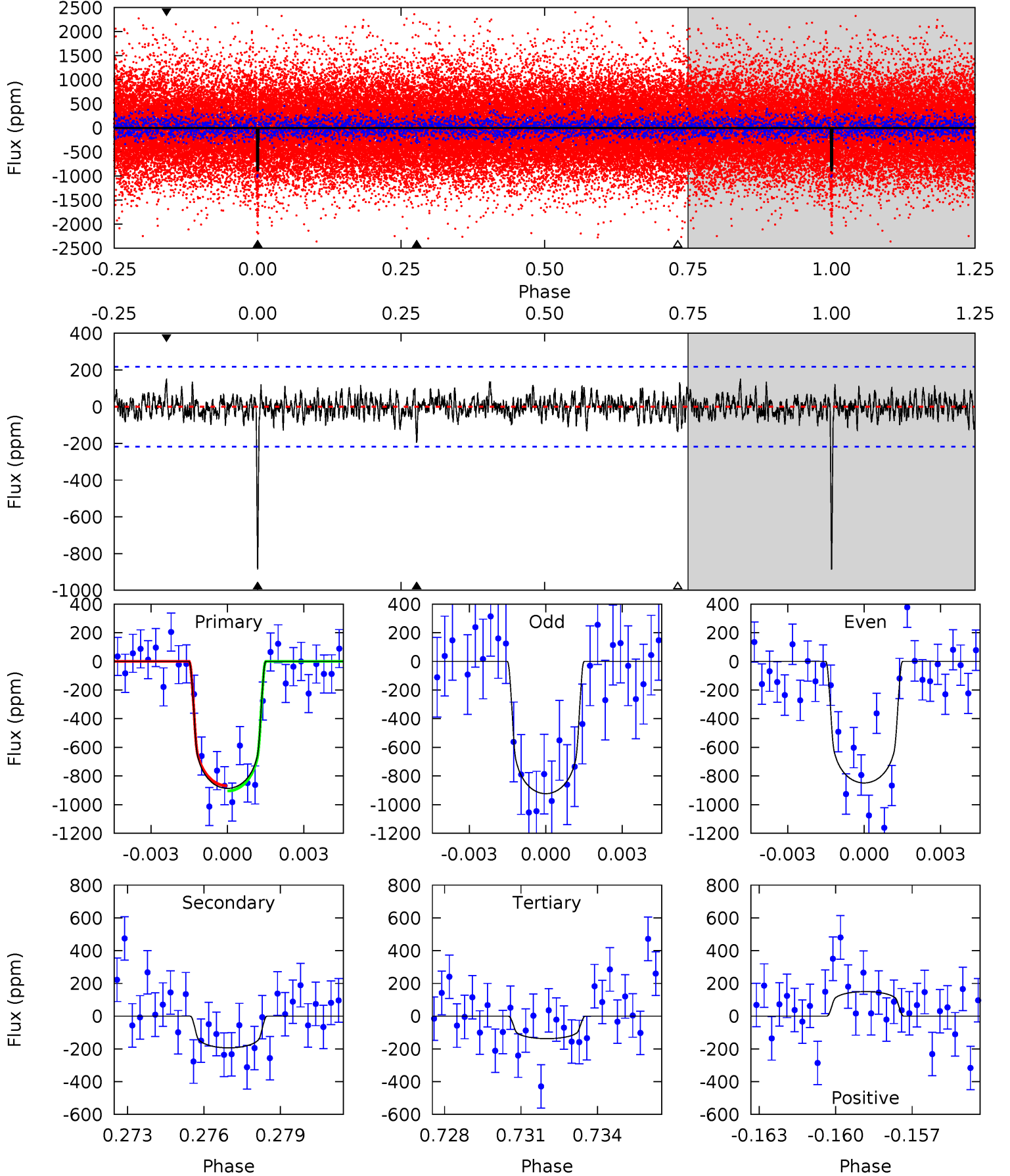
TCE 007347246-01 P= 86.114150 Days  $T_0=134.902396$  (BKJD)



# DV Model-Shift Uniqueness Test

007347246-01,  $P = 86.116570$  Days,  $E = 134.872497$  Days

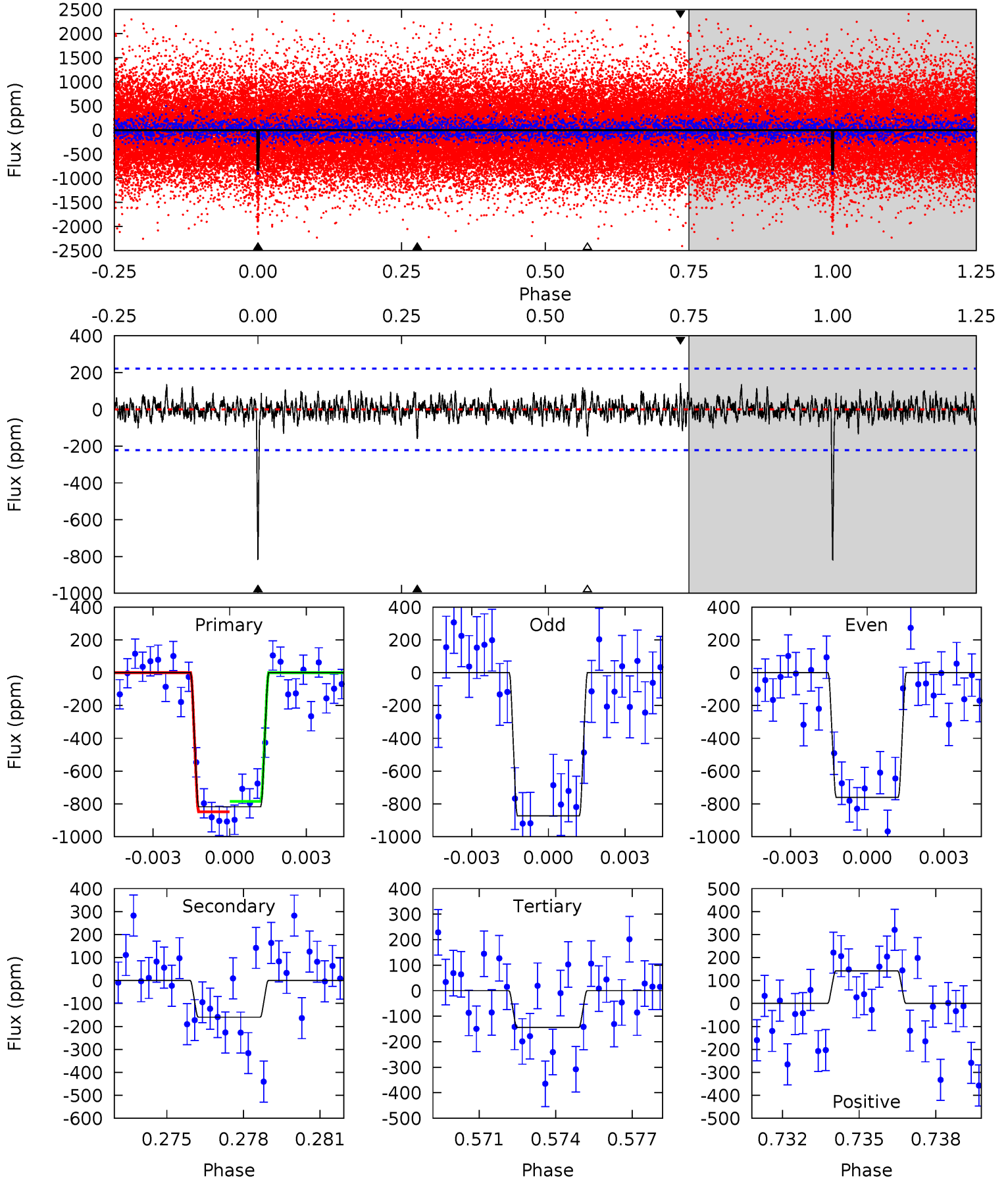
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	4.66	3.31	3.60	5.24	2.95	1.04	18.0	17.7	1.35	1.06	0.90	1.04	0.14	0.44



# Alt Model-Shift Uniqueness Test

007347246-01, P = 86.114150 Days, E = 134.902396 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
19.4	3.79	3.41	3.35	5.25	2.97	0.91	16.0	16.0	0.38	0.44	1.34	1.04	0.15	0.76



### Stellar Parameters For KIC 007347246

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6161^{+193}_{-236}$	$4.454^{+0.054}_{-0.216}$	$0.070^{+0.250}_{-0.300}$	$1.053^{+0.357}_{-0.119}$	$1.150^{+0.153}_{-0.153}$	$1.388^{+0.323}_{-0.757}$
	+3%/-4%	+1%/-5%	+357%/-429%	+34%/-11%	+13%/-13%	+23%/-55%
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 007347246-01 / KOI 3014.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-194 \pm 42$	$3.57^{+1.69}_{-1.68}$	$631^{+51}_{-35}$	$4414^{+1365}_{-588}$	$1273^{+3281}_{-688}$
Alt.	$-160 \pm 42$	$3.45^{+1.58}_{-1.58}$	$630^{+47}_{-35}$	$4302^{+1266}_{-578}$	$1093^{+2829}_{-585}$

$T_{\text{max}}$  = 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

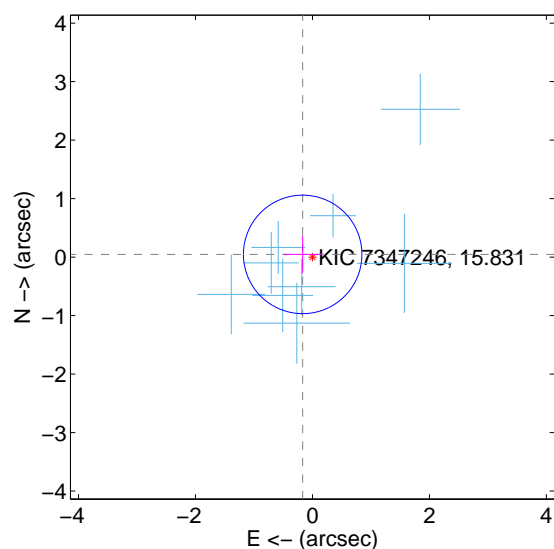
Supplemental centroid analysis for 007347246-01. Kepler magnitude: 15.83. Transit SNR 16.83

There are 9 quarters with good PRF difference image offsets

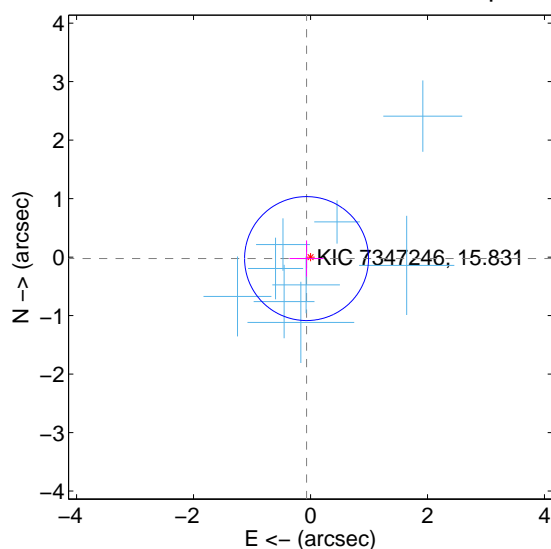
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.173 \pm 0.338$	0.51	$0.167 \pm 0.339$	$0.046 \pm 0.324$
PRF-fit source offset from KIC position	$0.072 \pm 0.353$	0.21	$0.068 \pm 0.291$	$-0.025 \pm 0.311$
photometric centroid source offset	$0.89 \pm 0.85$	1.04	$0.36 \pm 0.77$	$0.82 \pm 0.87$

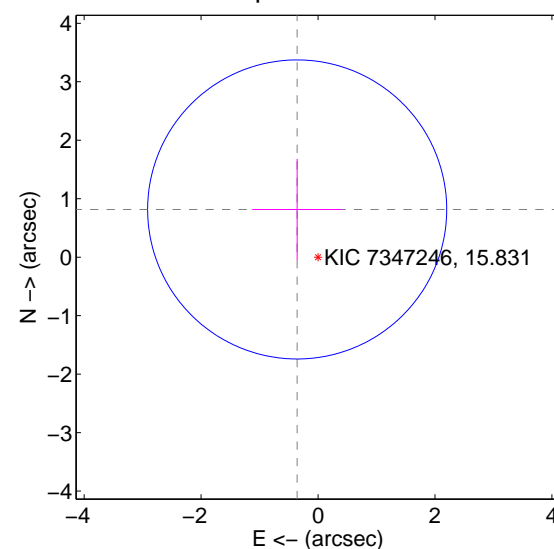
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



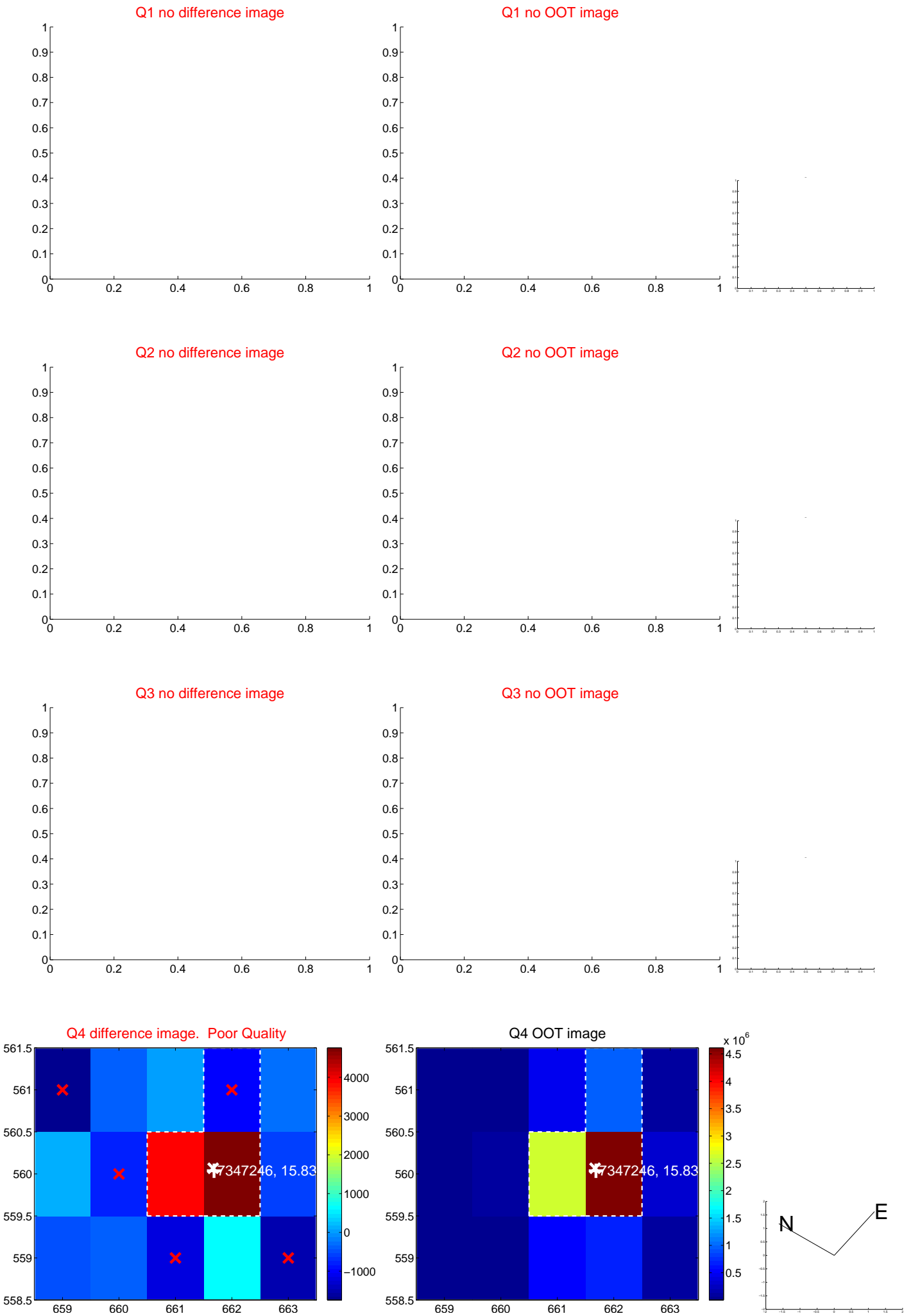
offset from photometric centroids



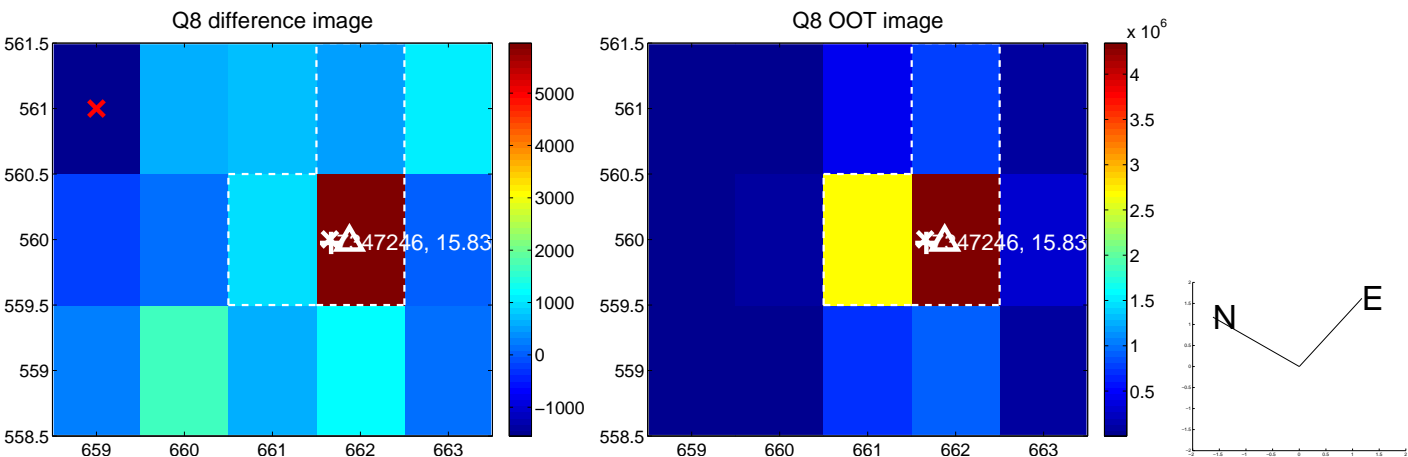
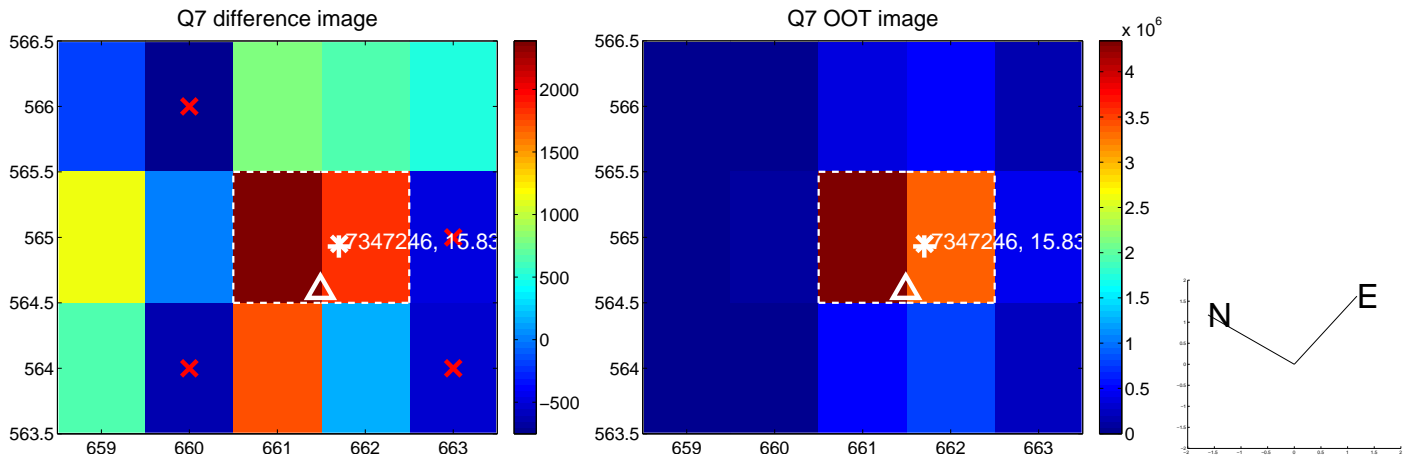
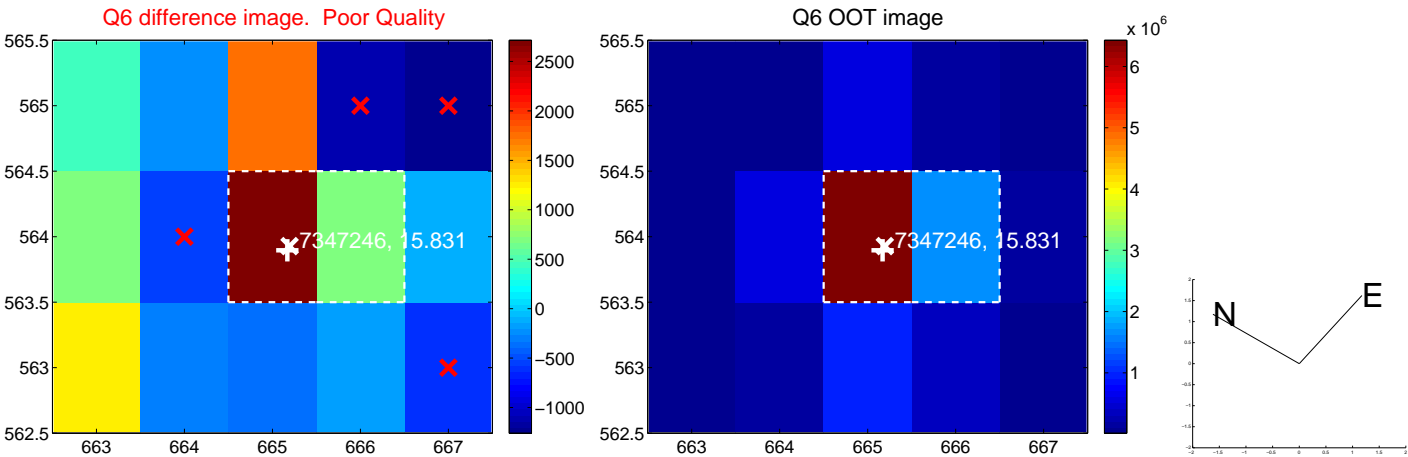
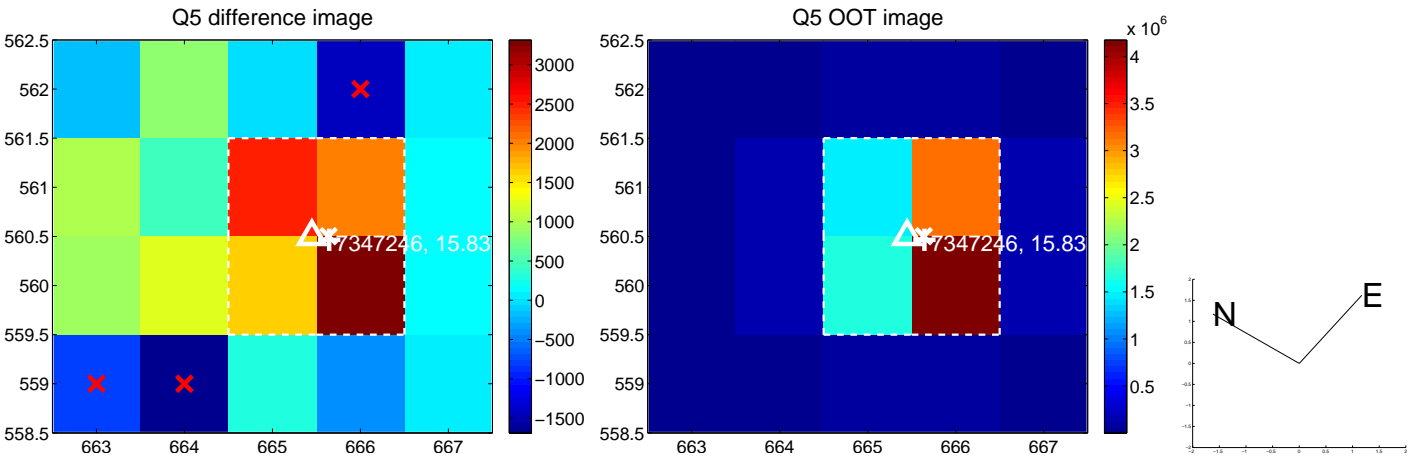
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



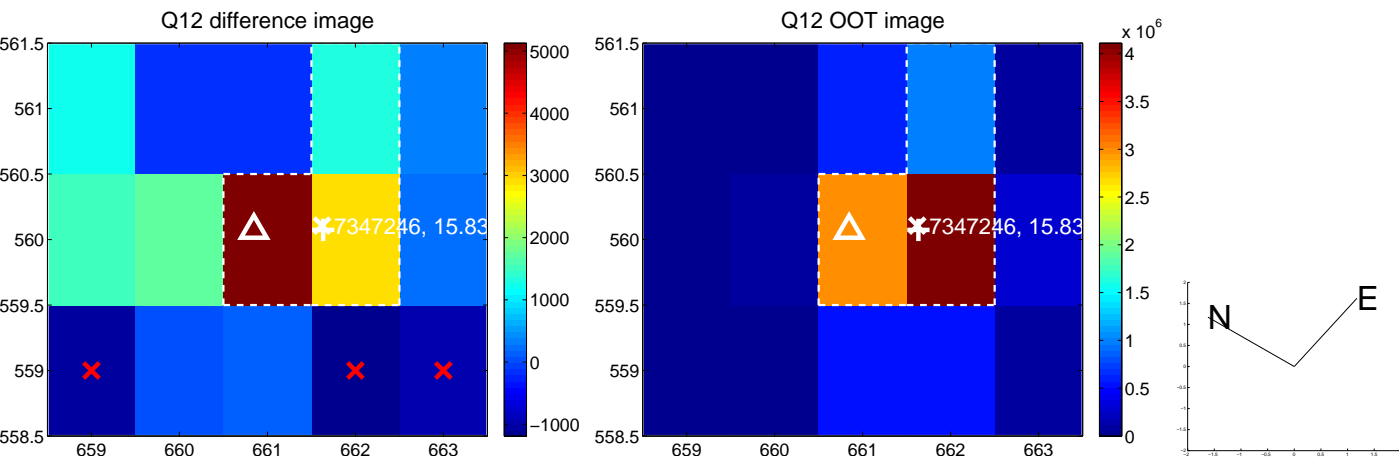
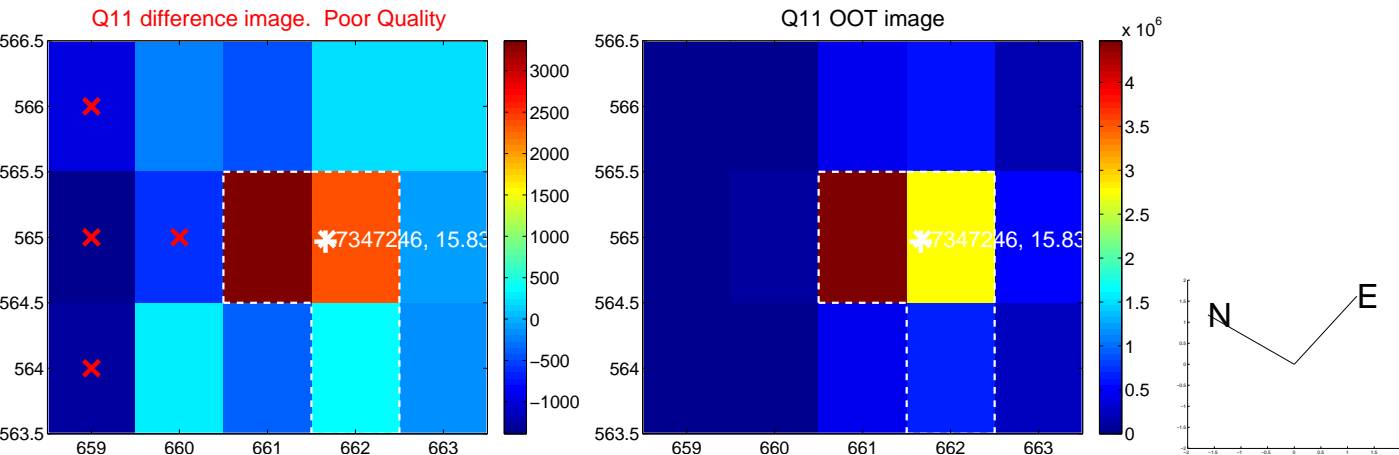
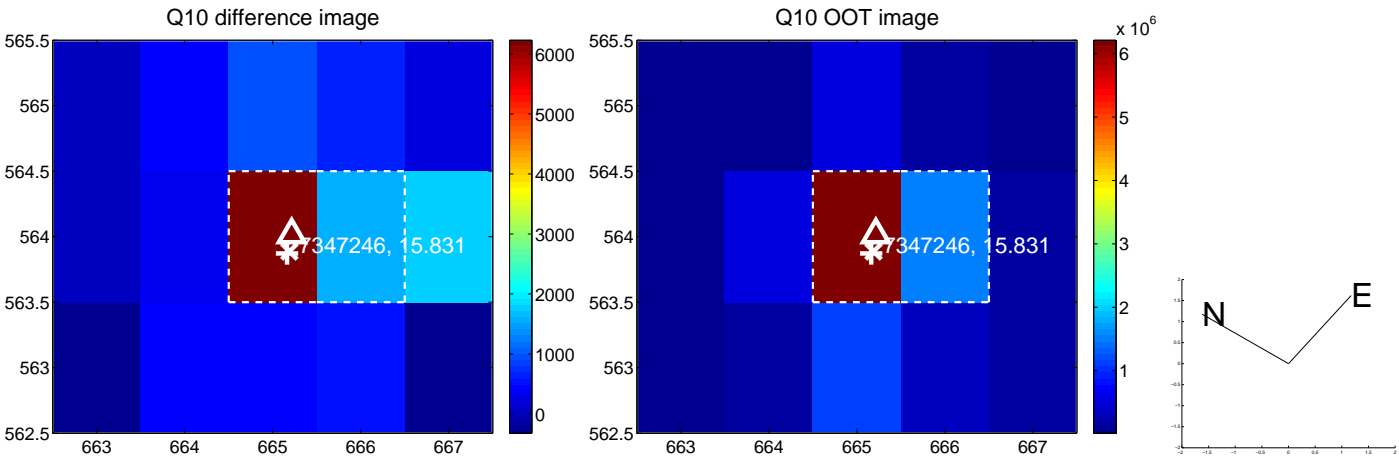
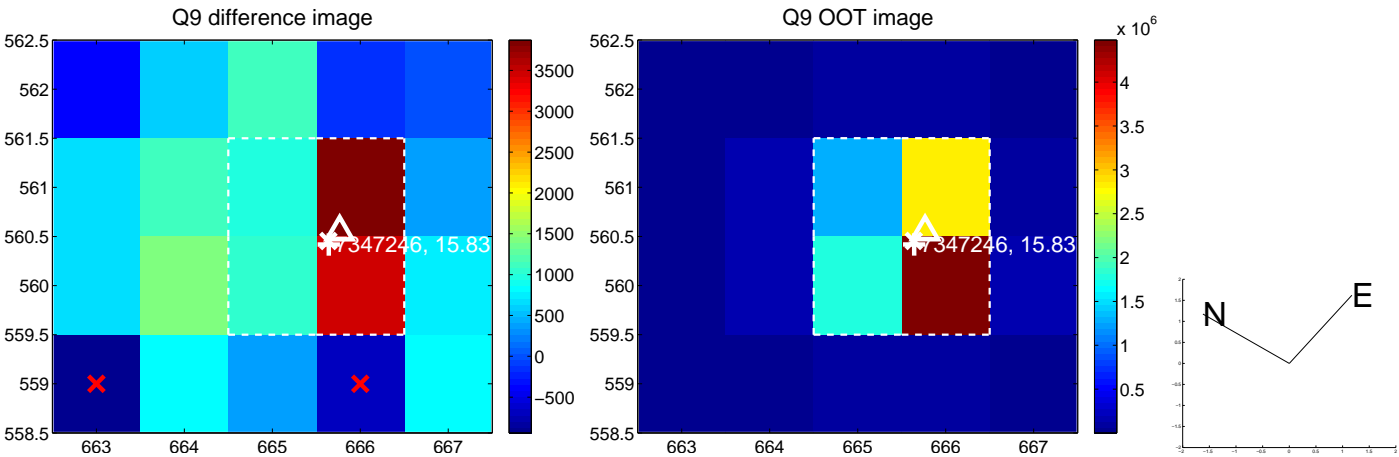
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



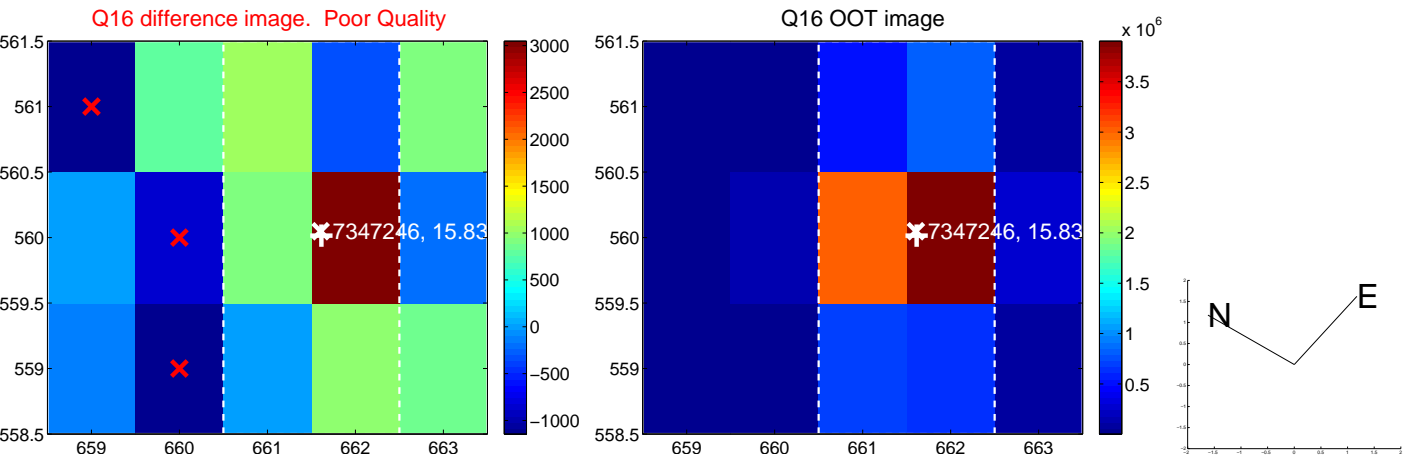
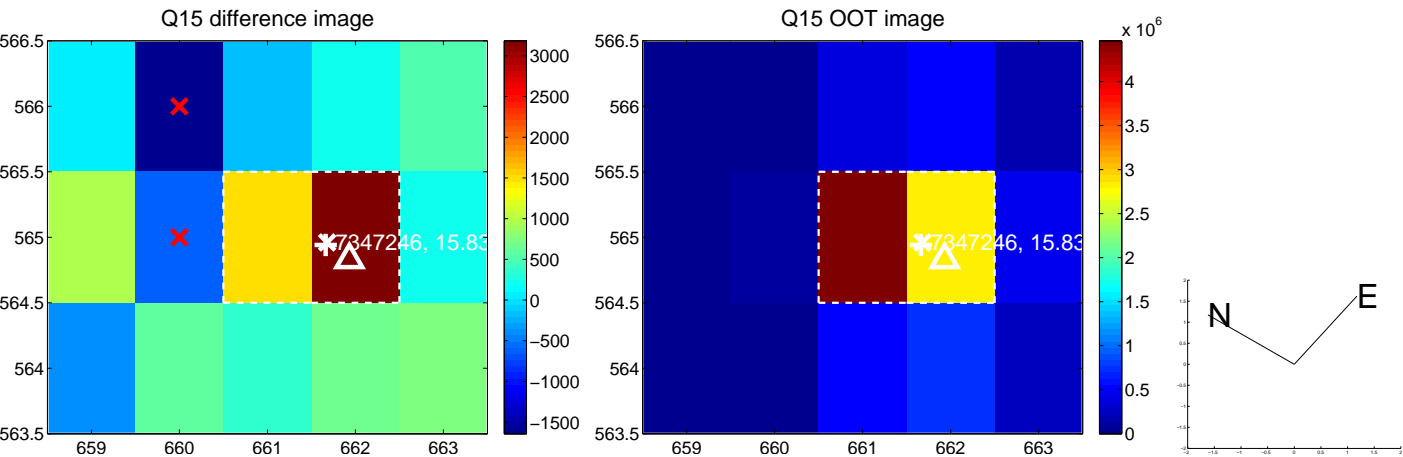
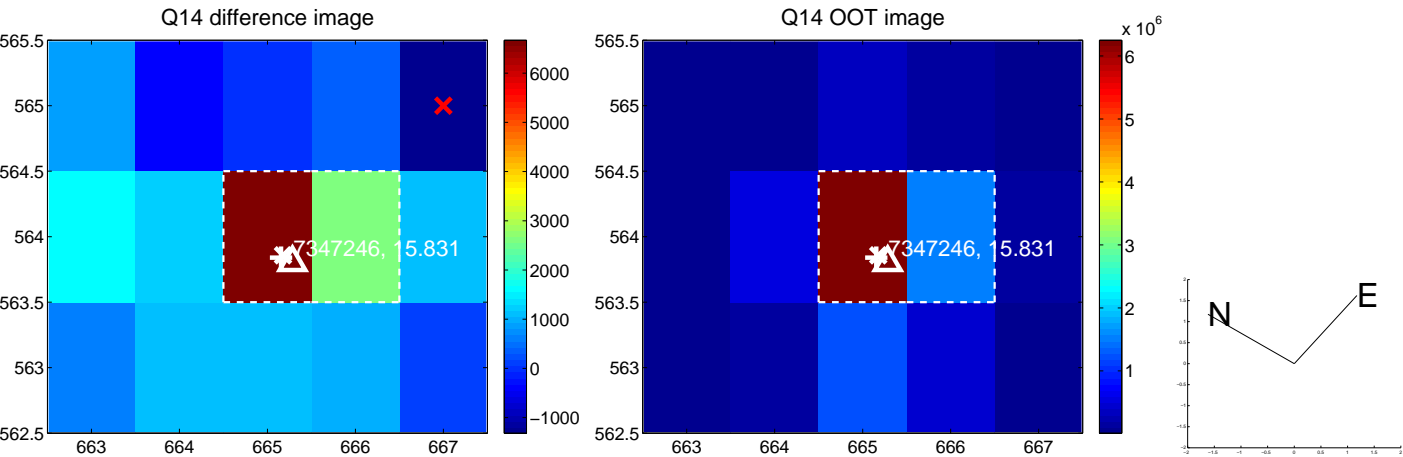
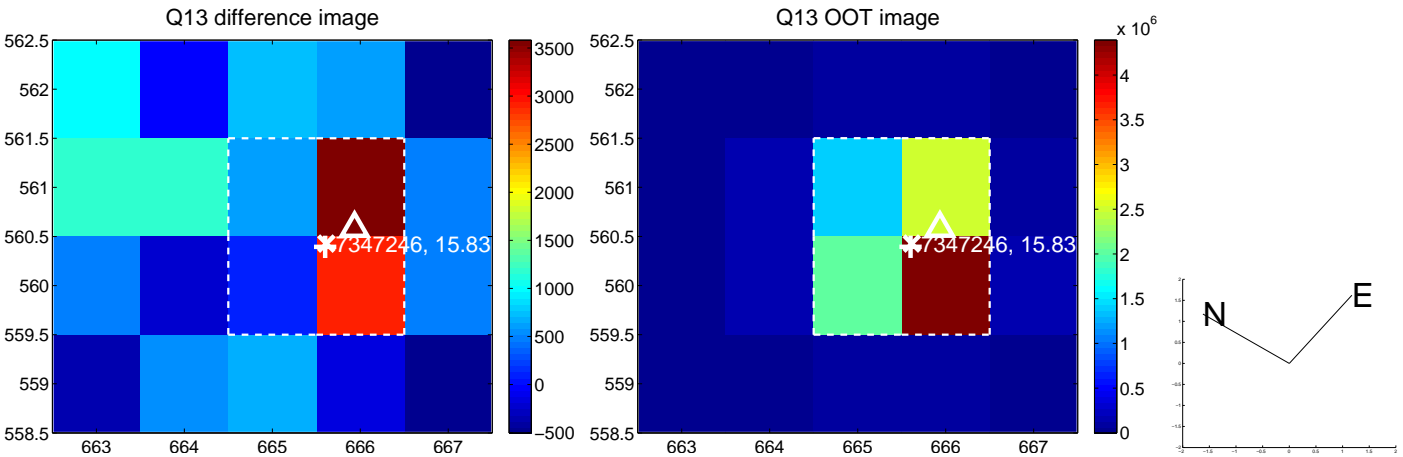
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



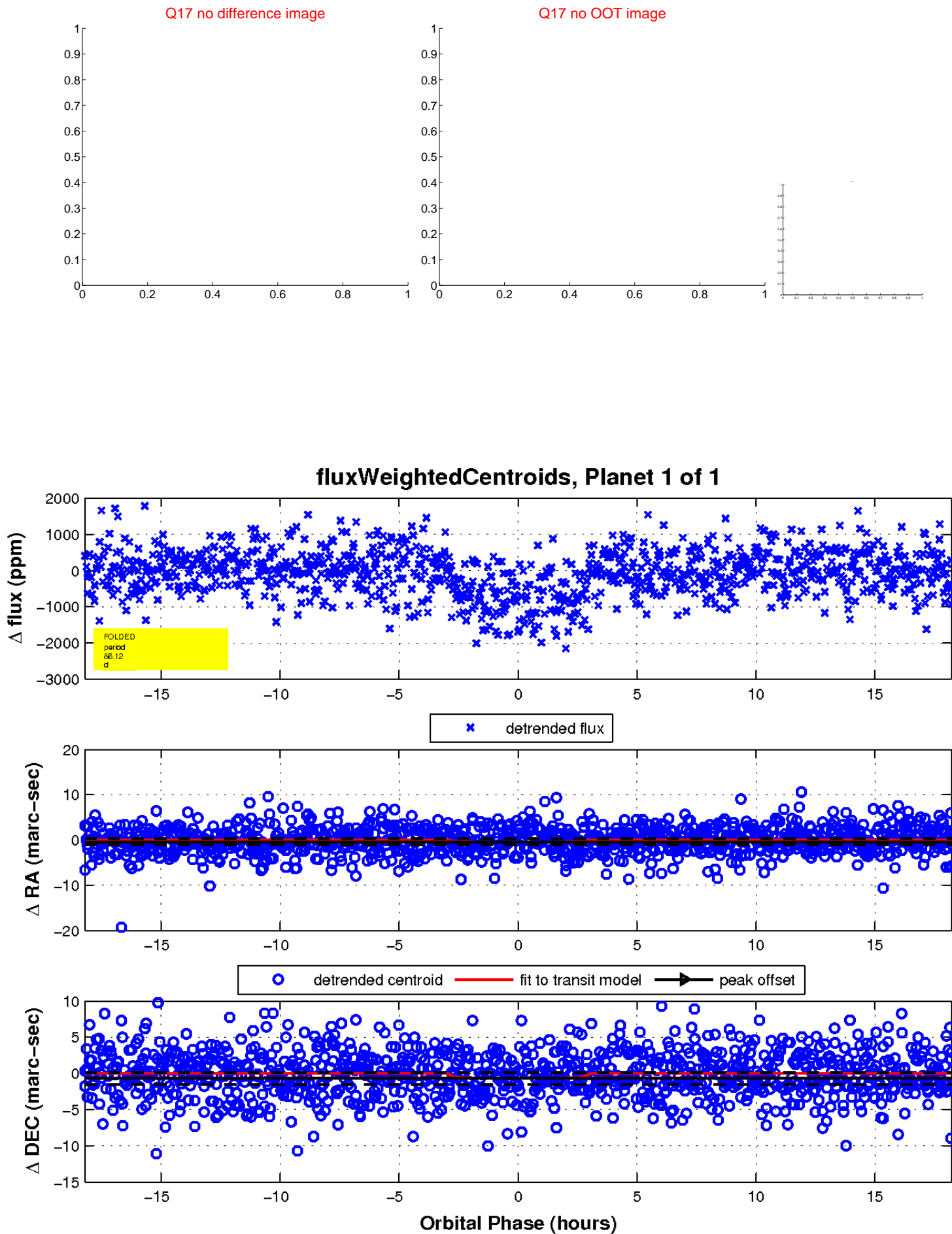
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

