

# KIC 006343170

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006343170-01	OBS	2419.01	9.956626	136.586707	590.8	3.135	14.0	15.9	1.11	6165	3.21	189.67

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006343170-01	OBS	PC	1.00	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 006343170-01

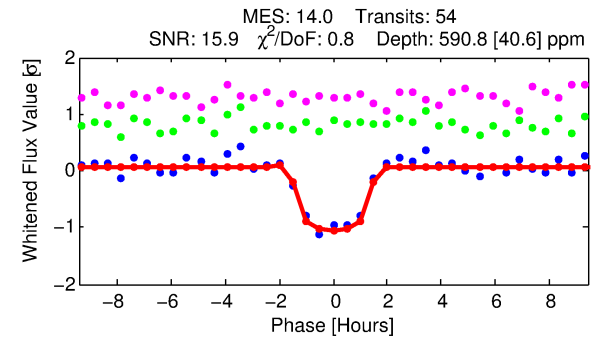
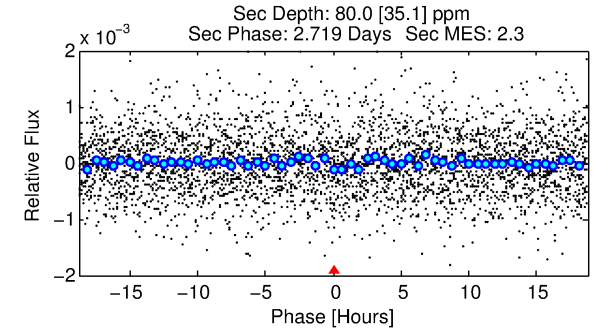
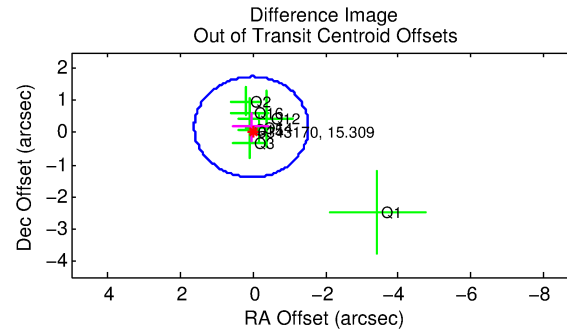
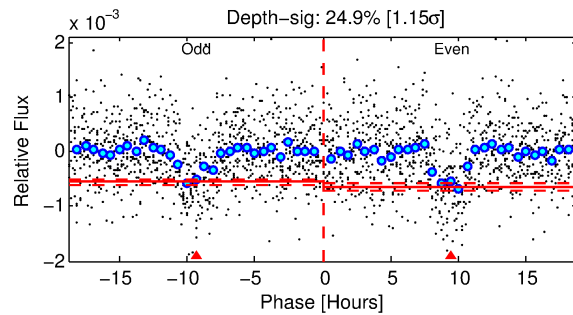
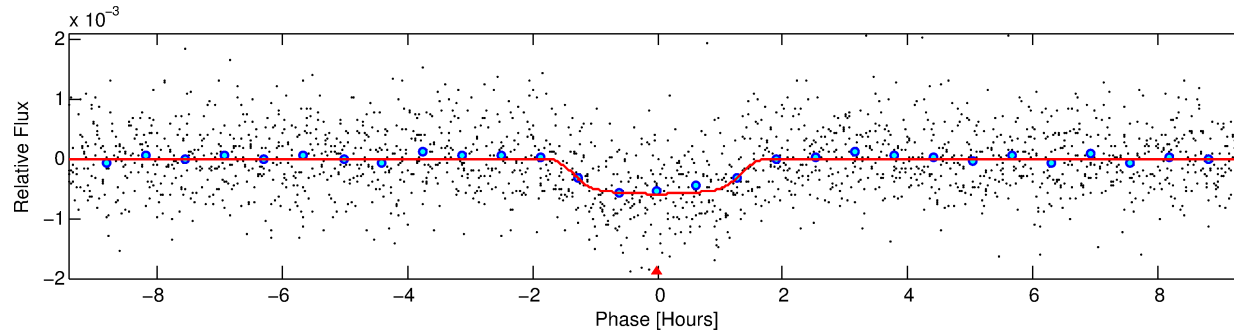
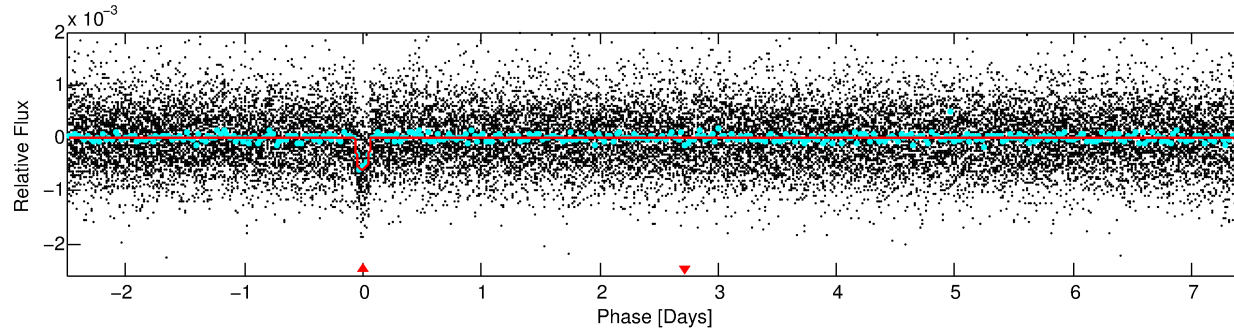
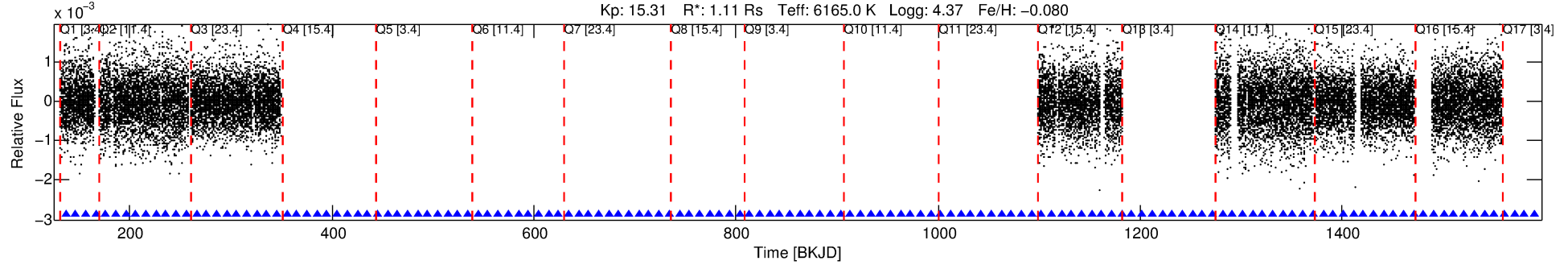
No Significant Match Found

# DV One-Page Summary

KIC: 6343170 Candidate: 1 of 1 Period: 9.957 d

KOI: K02419.01 Corr: 0.957

Kp: 15.31 R\*: 1.11 Rs Teff: 6165.0 K Logg: 4.37 Fe/H: -0.080



## DV Fit Results:

Period = 9.95663 [0.00004] d  
Epoch = 136.5867 [0.0037] BKJD  
Rp/R\* = 0.0263 [0.0039]  
a/R\* = 11.78 [8.57]  
b = 0.91 [0.15]  
Seff = 189.67 [77.97]  
Teq = 946 [97] K  
Rp = 3.21 [1.16] Re  
a = 0.0921 [0.0250] AU  
Ag = 36.37 [23.93] [1.48σ]  
Teffp = 3593 [491] K [5.29σ]

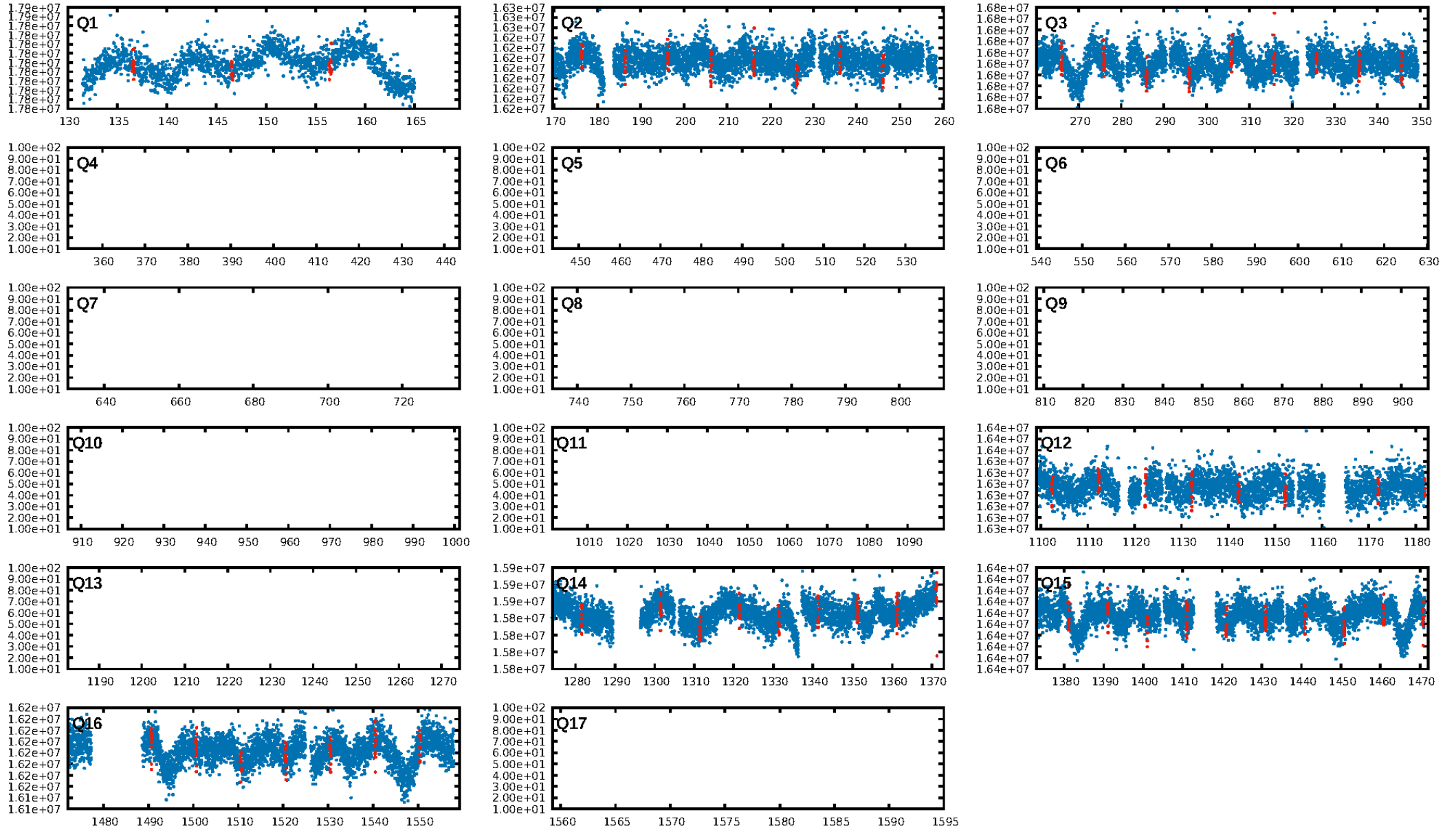
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 96.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.92e-43  
RollingBand-fgt: 1.00 [51/51]  
GhostDiagnostic-chr: -8.051  
Centroid-sig: 22.9%  
Centroid-so: 0.988 arcsec [1.14σ]  
OotOffset-rm: 0.178 arcsec [0.34σ]  
OotOffset-st: 2/2/2/1 [7]  
KicOffset-rm: 0.218 arcsec [0.44σ]  
KicOffset-st: 2/2/2/1 [7]  
DiffImageQuality-fgm: 0.86 [6/7]  
DiffImageOverlap-fno: 1.00 [7/7]

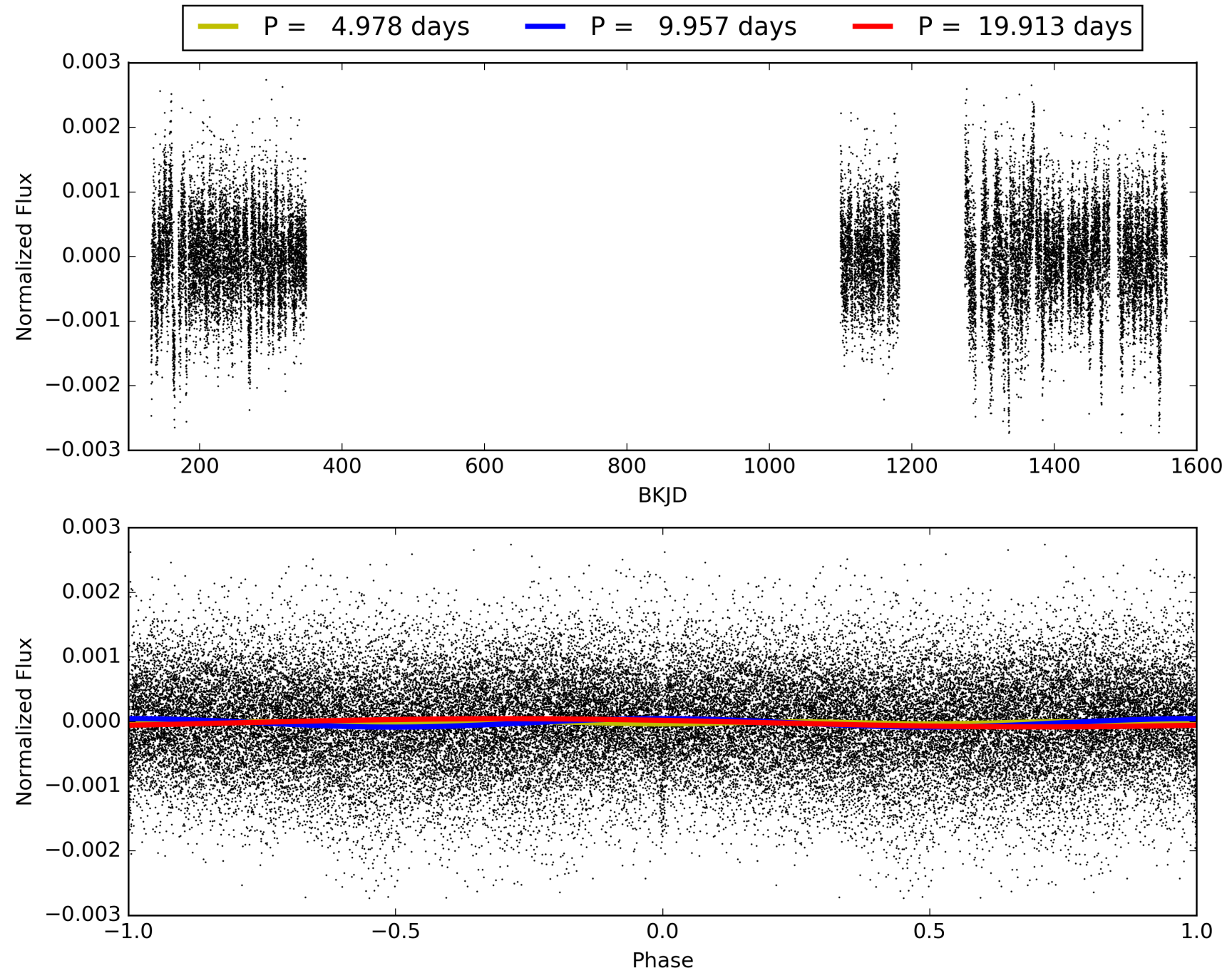
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:53:25 Z

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

# TCE 006343170-01, PDC Light Curves

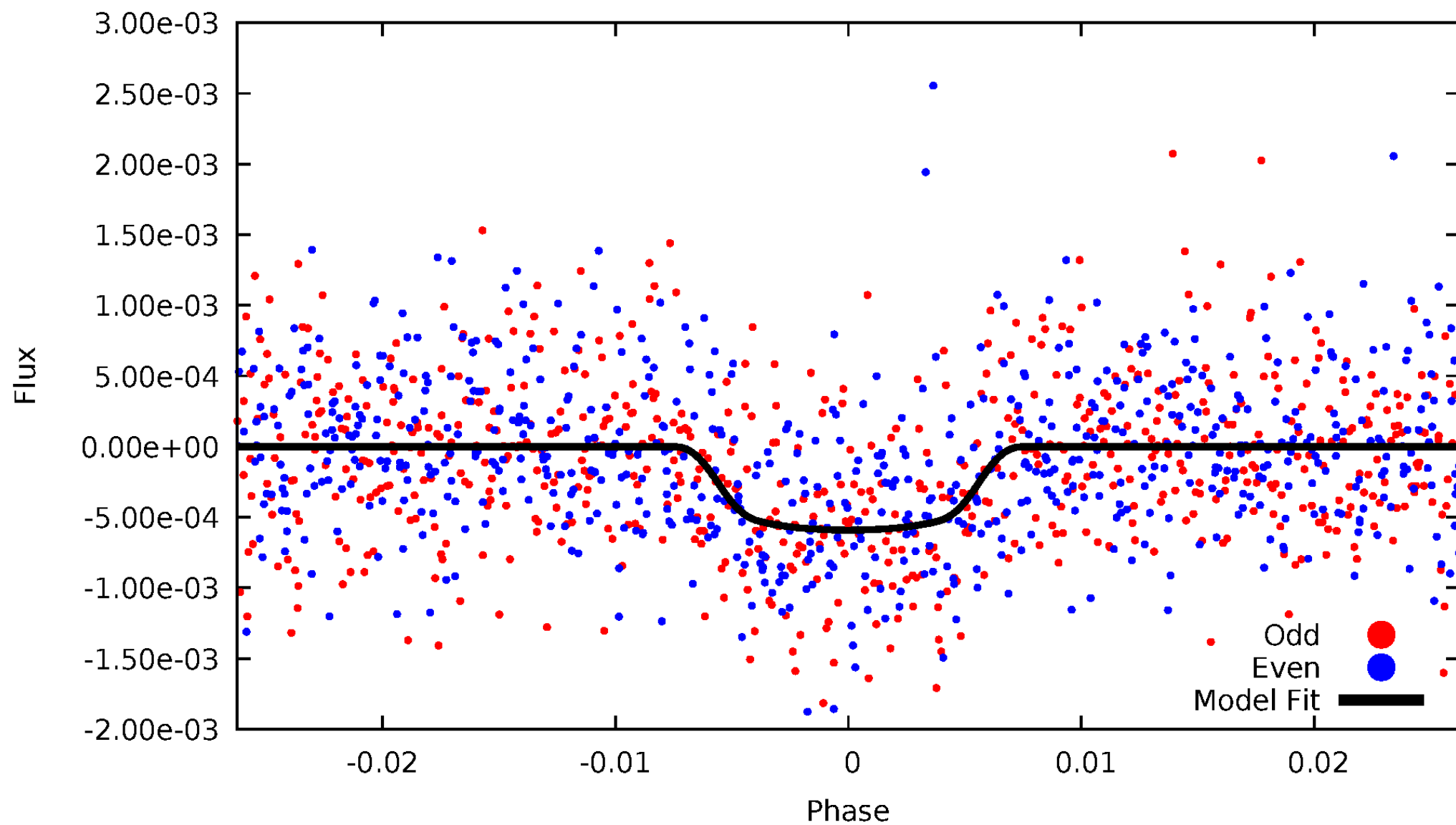


TCE 006343170-01



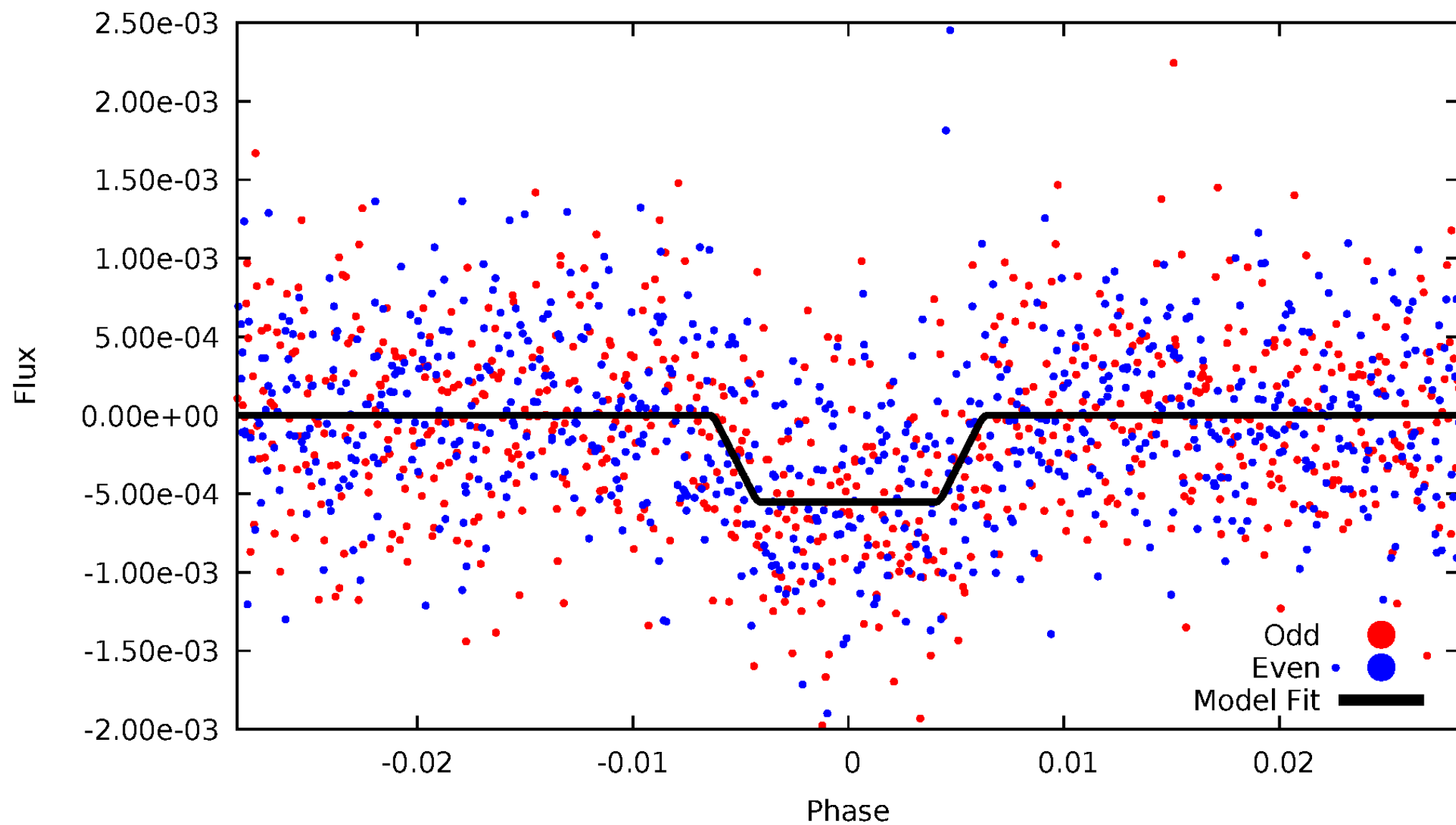
# DV Odd/Even

TCE 006343170-01



# ALT Odd/Even

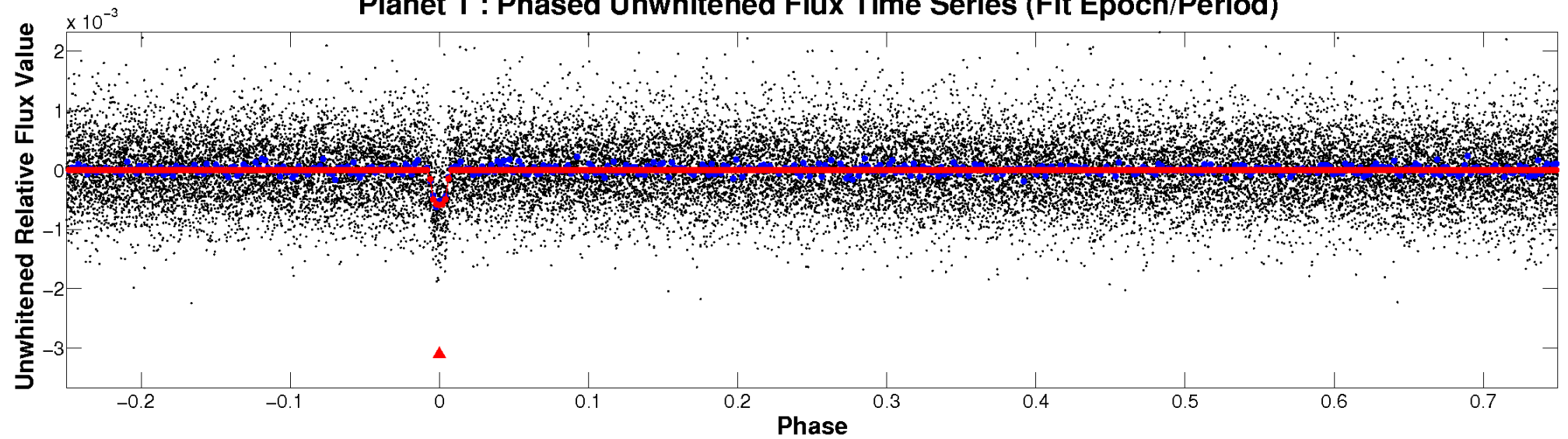
TCE 006343170-01



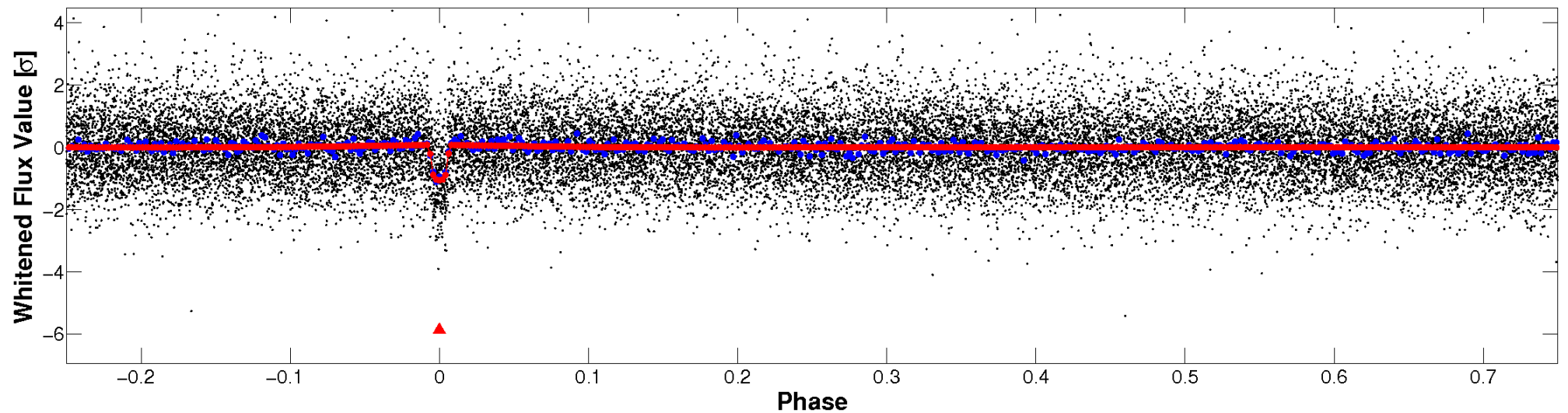


# Non-Whitened Vs. Whitened Light Curve

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

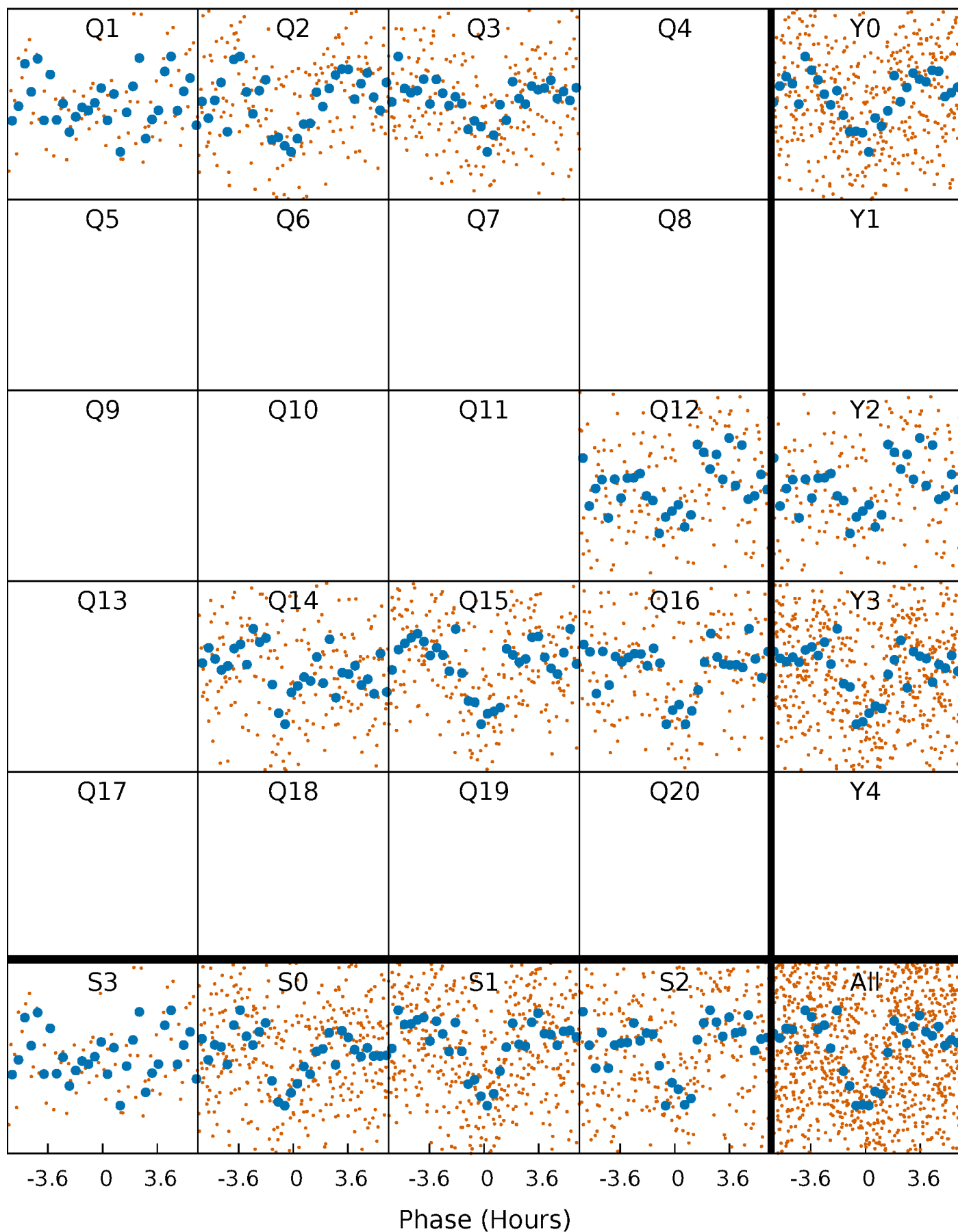


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

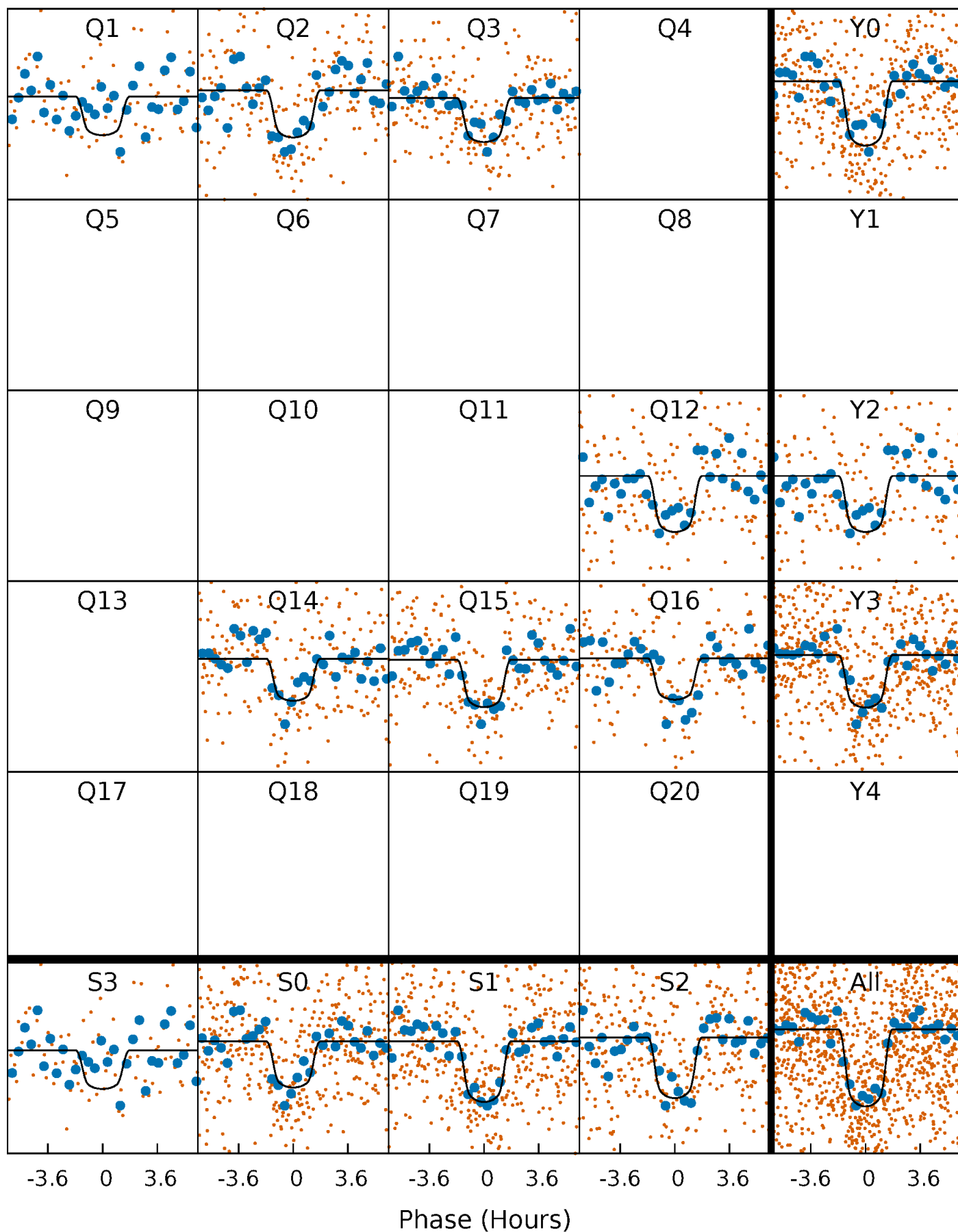
TCE 006343170-01 P= 9.956626 Days  $T_0=136.586707$  (BKJD)





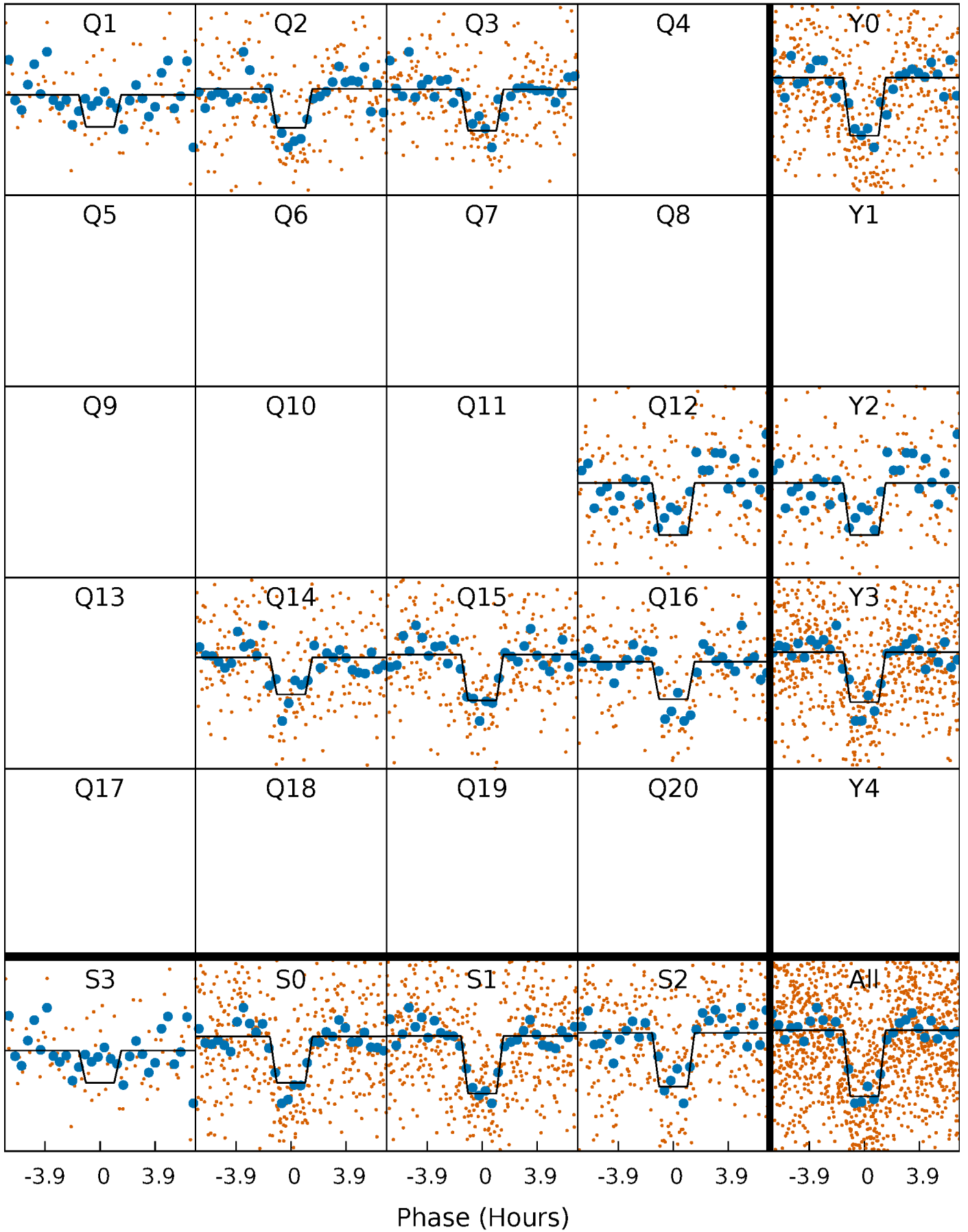
# DV Quarter-Phased Transit Curves

TCE 006343170-01 P= 9.956626 Days  $T_0=136.586707$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

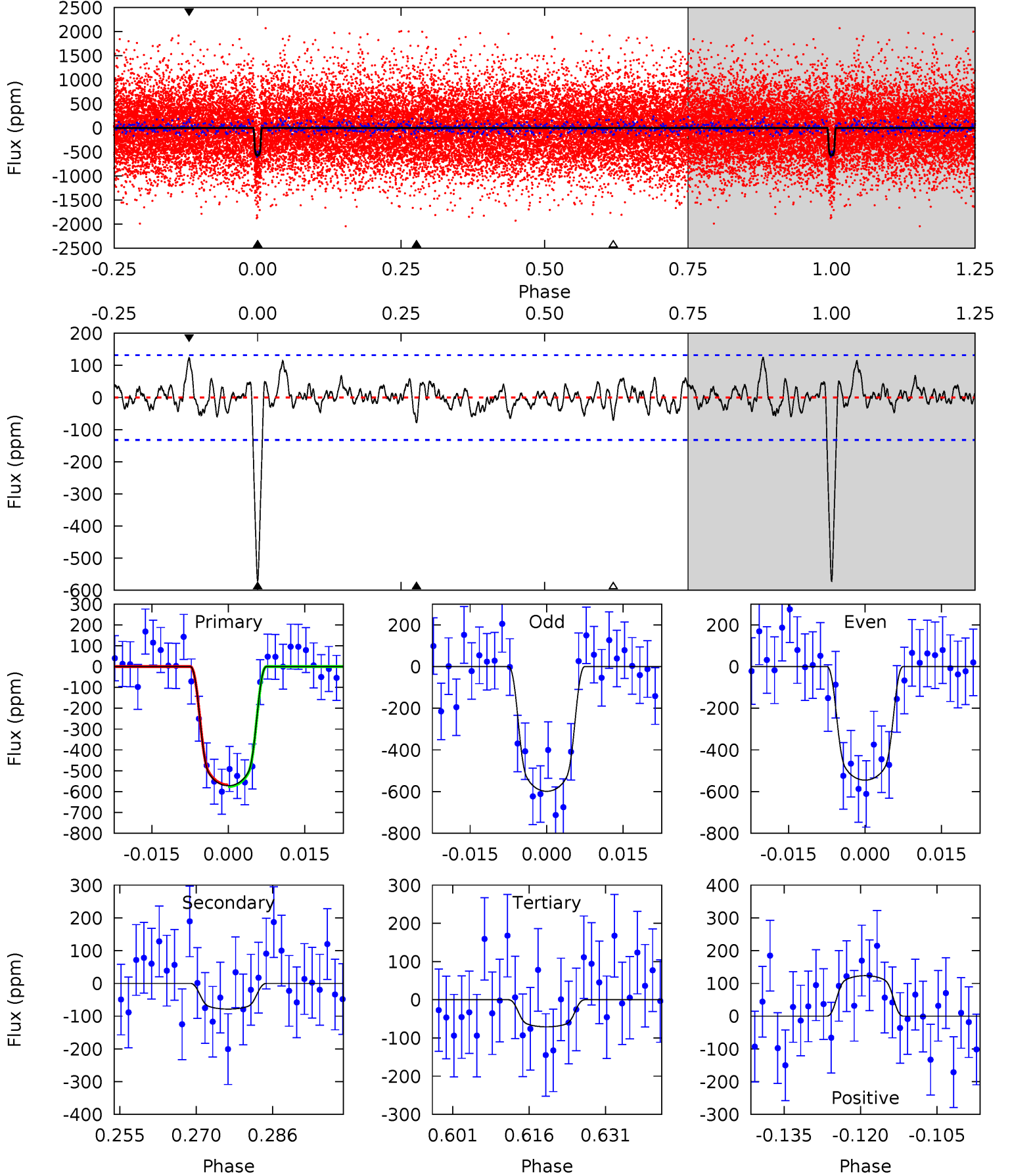
TCE 006343170-01 P= 9.956749 Days  $T_0=136.573738$  (BKJD)



# DV Model-Shift Uniqueness Test

006343170-01, P = 9.956626 Days, E = 126.630081 Days

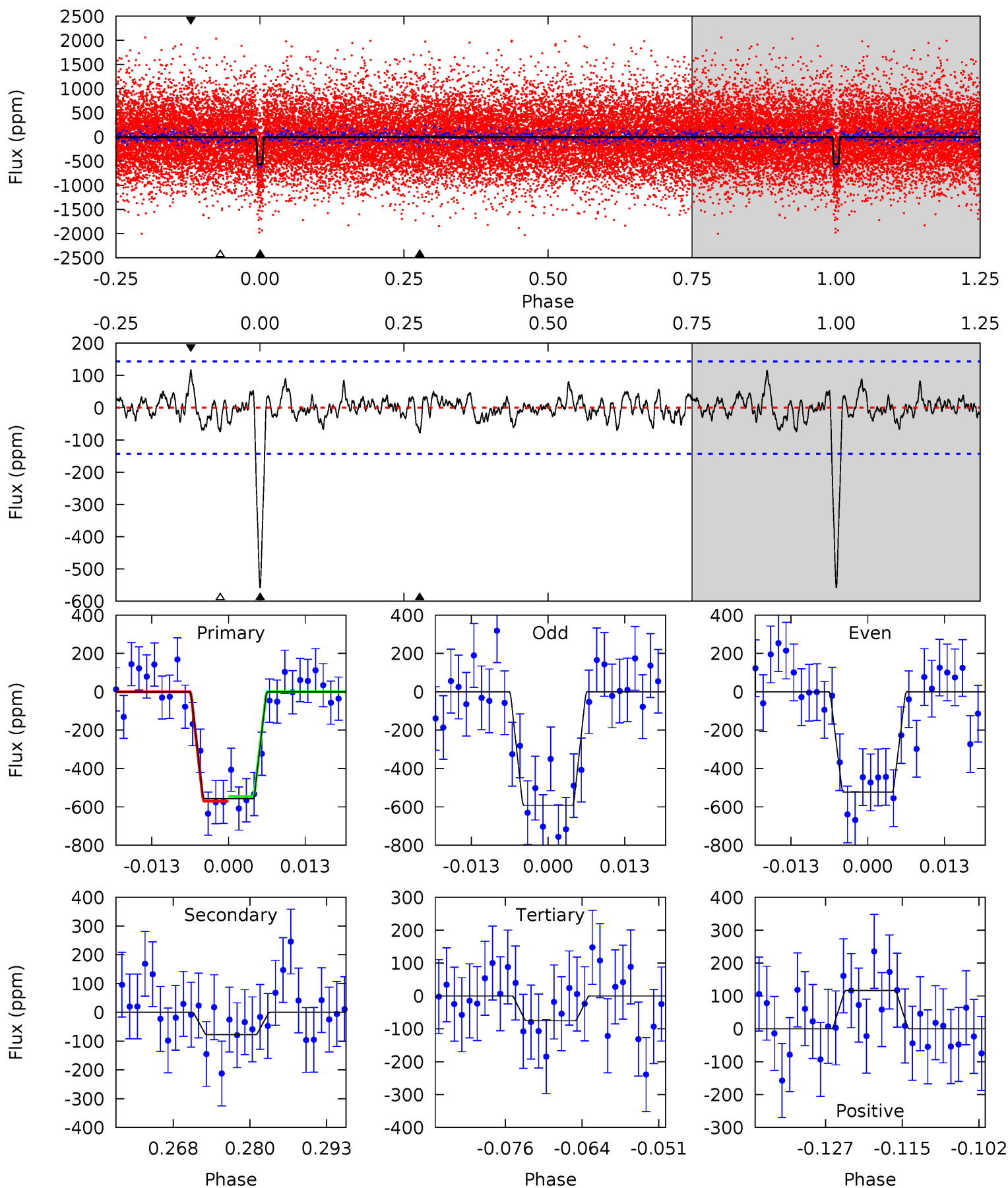
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.5	2.94	2.66	4.63	4.95	2.43	1.12	18.8	16.8	0.29	-1.69	1.01	0.90	0.18	0.15



# Alt Model-Shift Uniqueness Test

006343170-01, P = 9.956749 Days, E = 126.616989 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	2.70	2.62	4.04	4.98	2.49	1.00	16.8	15.3	0.09	-1.33	1.21	0.93	0.17	0.43



### Stellar Parameters For KIC 006343170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6165^{+184}_{-202}$	$4.365^{+0.105}_{-0.210}$	$-0.080^{+0.250}_{-0.300}$	$1.115^{+0.366}_{-0.157}$	$1.048^{+0.181}_{-0.120}$	$1.065^{+0.500}_{-0.542}$
	+3%/-3%	+2%/-5%	+312%/-375%	+33%/-14%	+17%/-11%	+47%/-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 006343170-01 / KOI 2419.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-79 \pm 27$	$3.24^{+0.75}_{-0.59}$	$1330^{+106}_{-74}$	$3898^{+369}_{-319}$	$33^{+23}_{-14}$
Alt.	$-78 \pm 29$	$2.91^{+0.67}_{-0.54}$	$1328^{+110}_{-68}$	$4048^{+408}_{-386}$	$41^{+30}_{-20}$

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

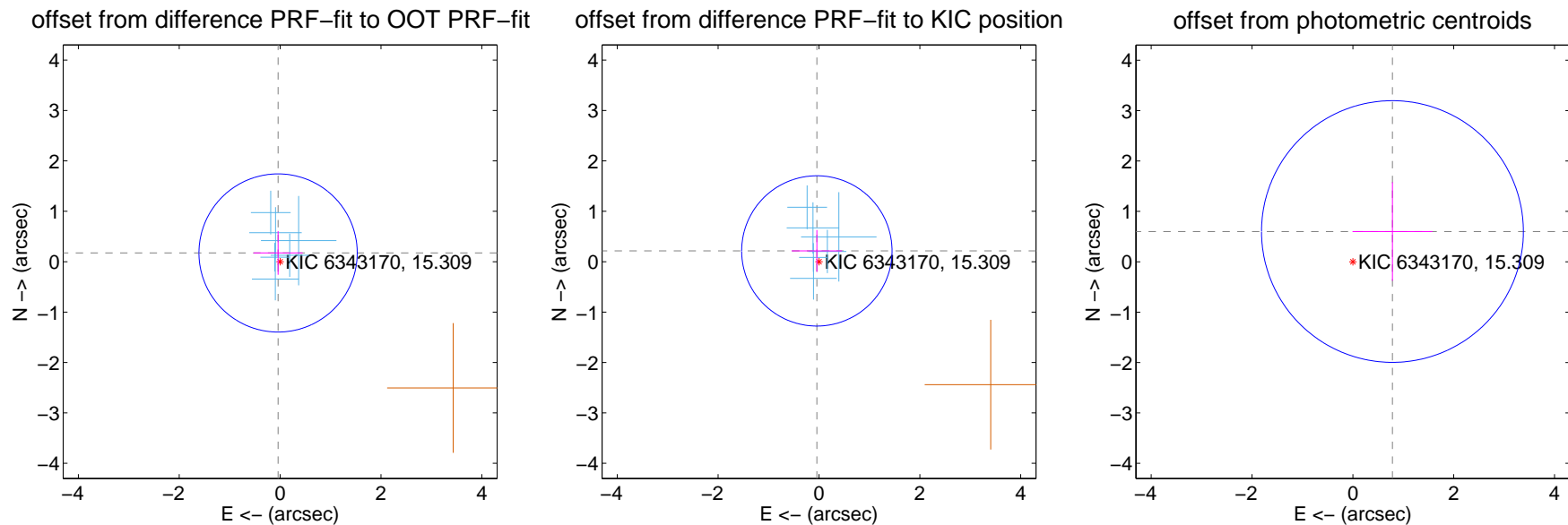
## DV Centroid Data

Supplemental centroid analysis for 006343170-01. Kepler magnitude: 15.31. Transit SNR 15.88

There are 6 quarters with good PRF difference image offsets

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

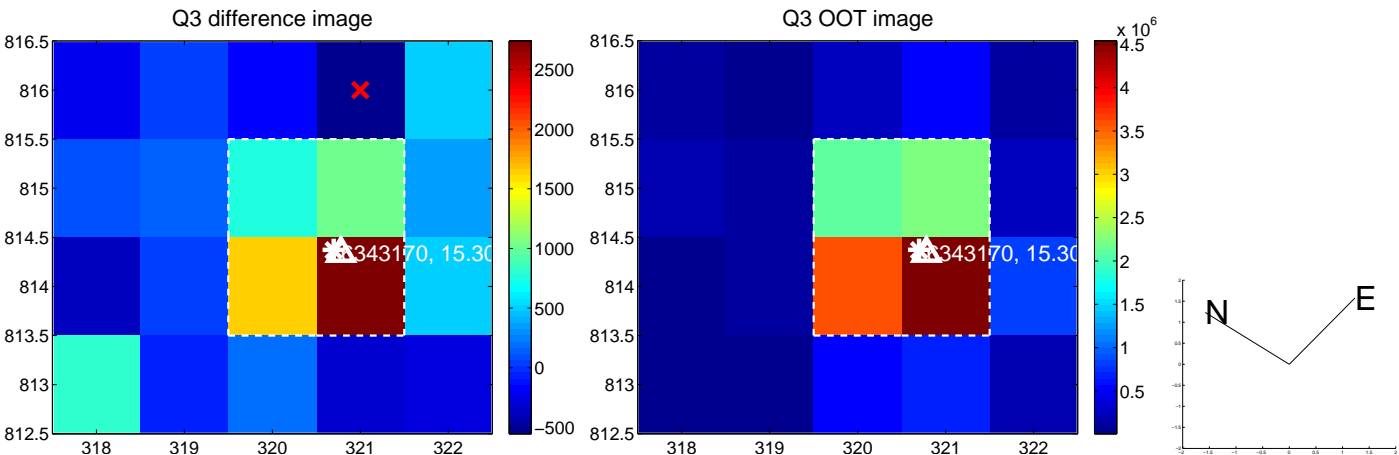
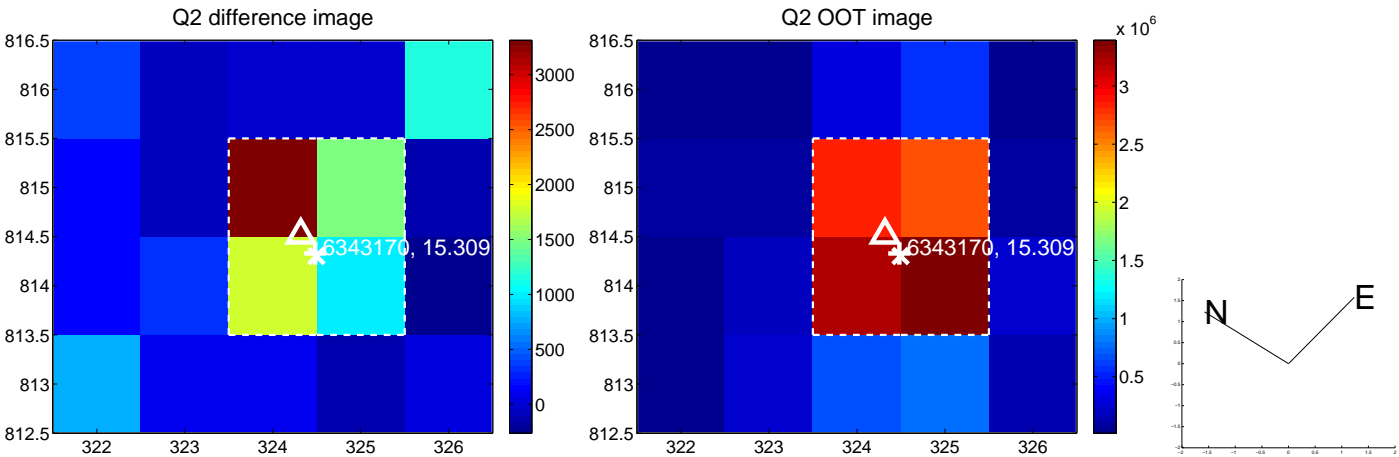
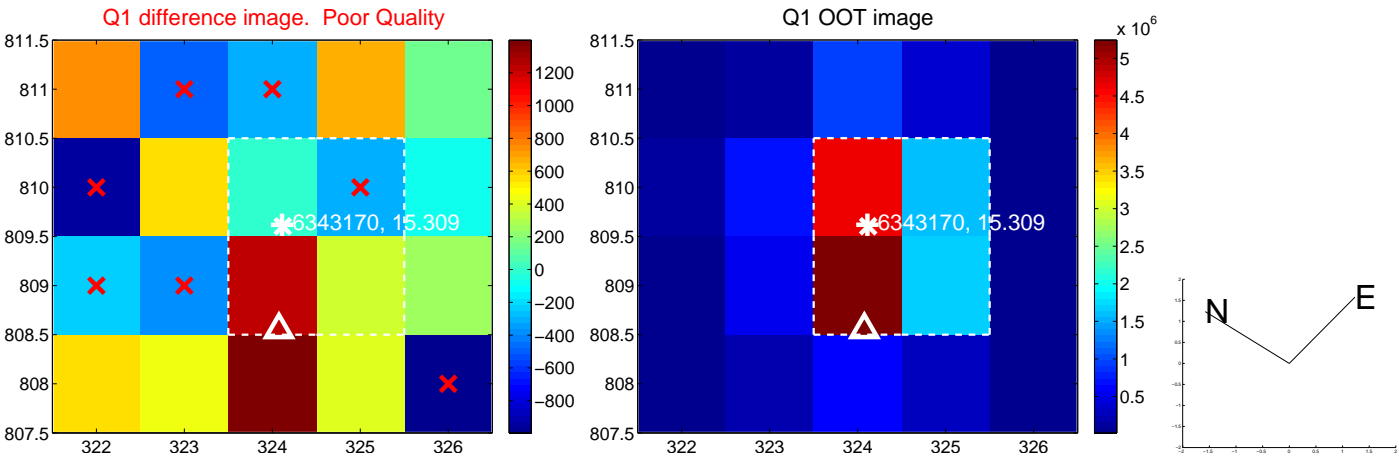
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.178 \pm 0.523$	0.34	$0.040 \pm 0.489$	$0.173 \pm 0.434$
PRF-fit source offset from KIC position	$0.218 \pm 0.497$	0.44	$0.042 \pm 0.500$	$0.214 \pm 0.414$
photometric centroid source offset	$0.99 \pm 0.87$	1.14	$-0.79 \pm 0.79$	$0.60 \pm 0.98$



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.



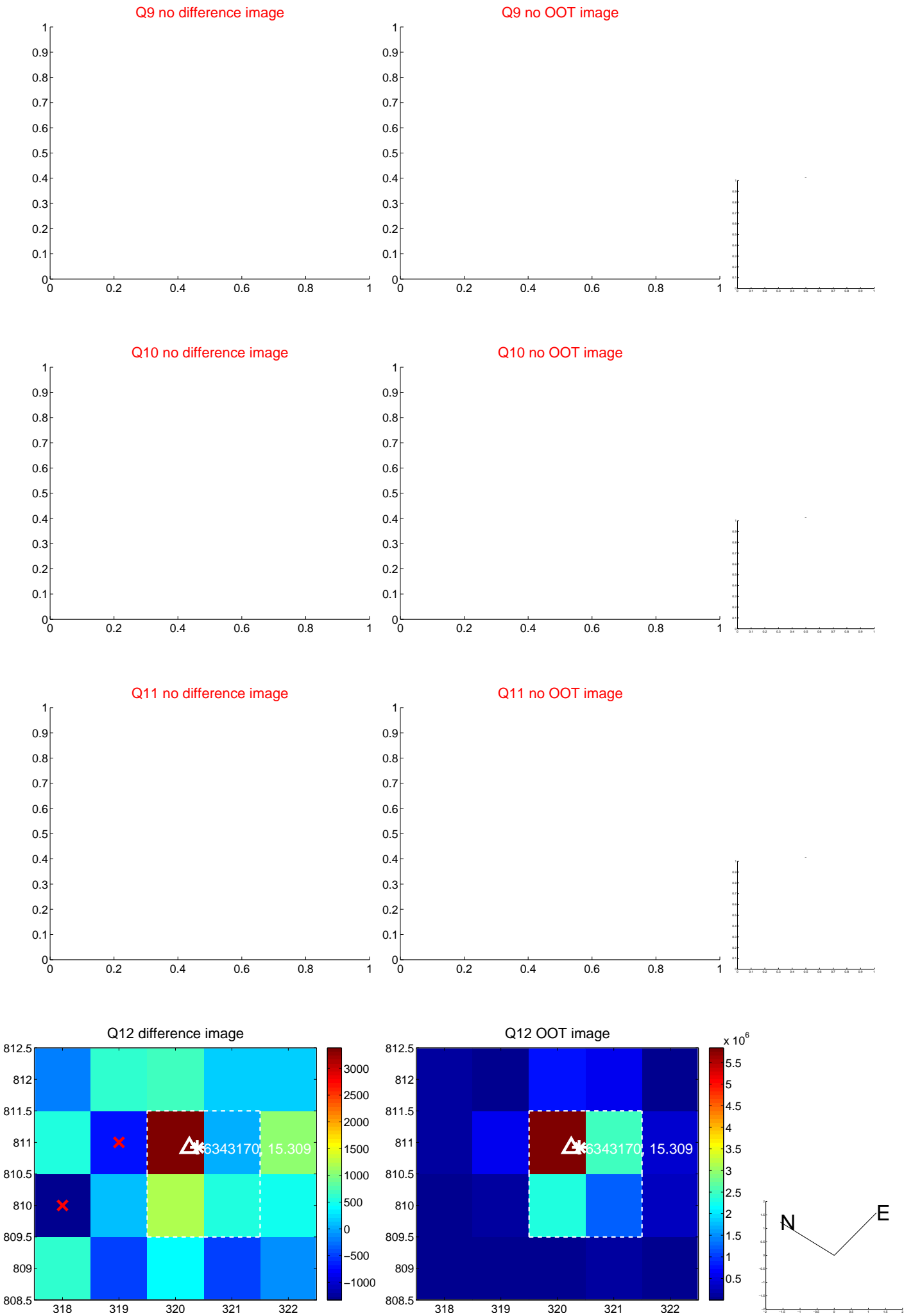
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



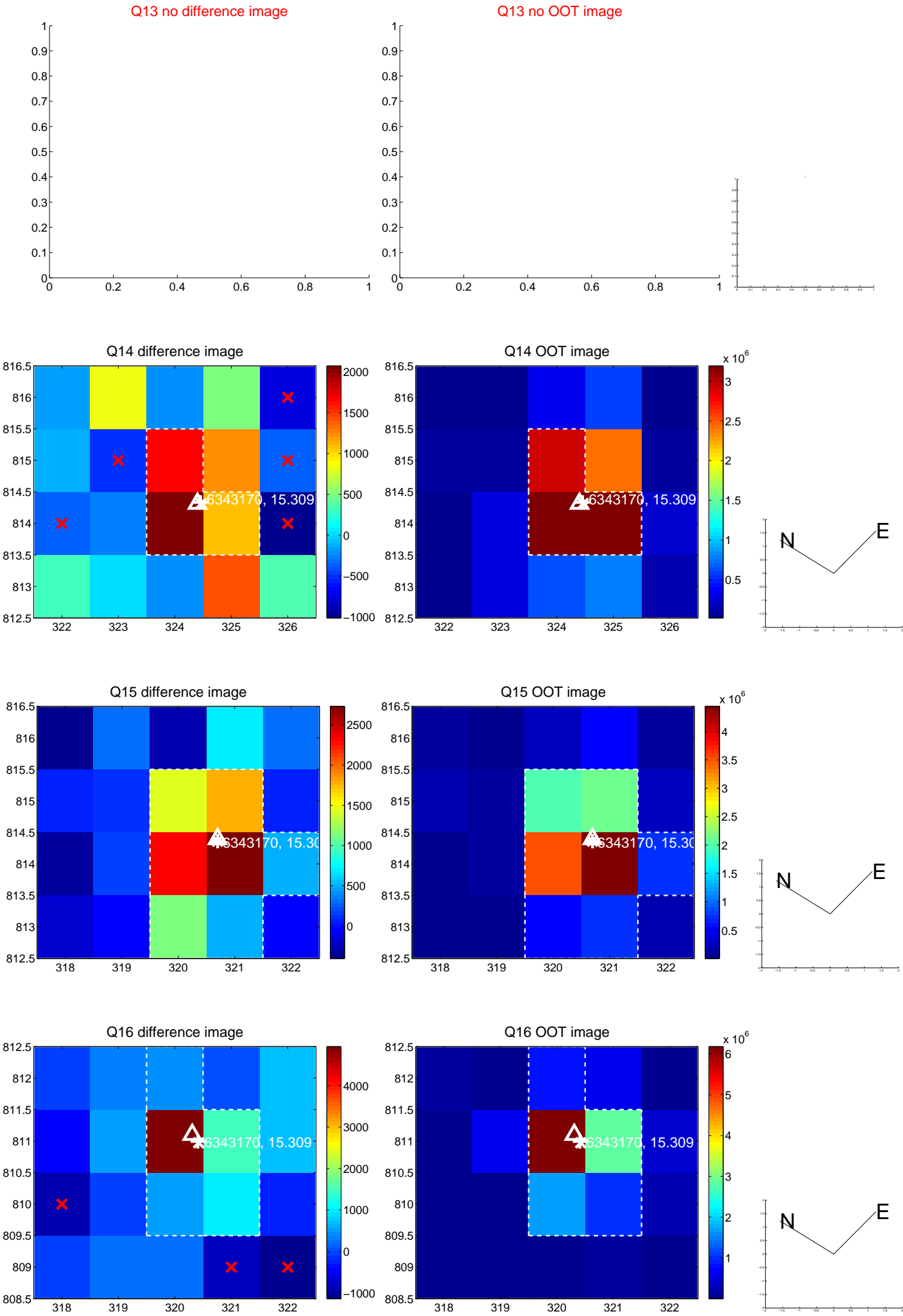
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



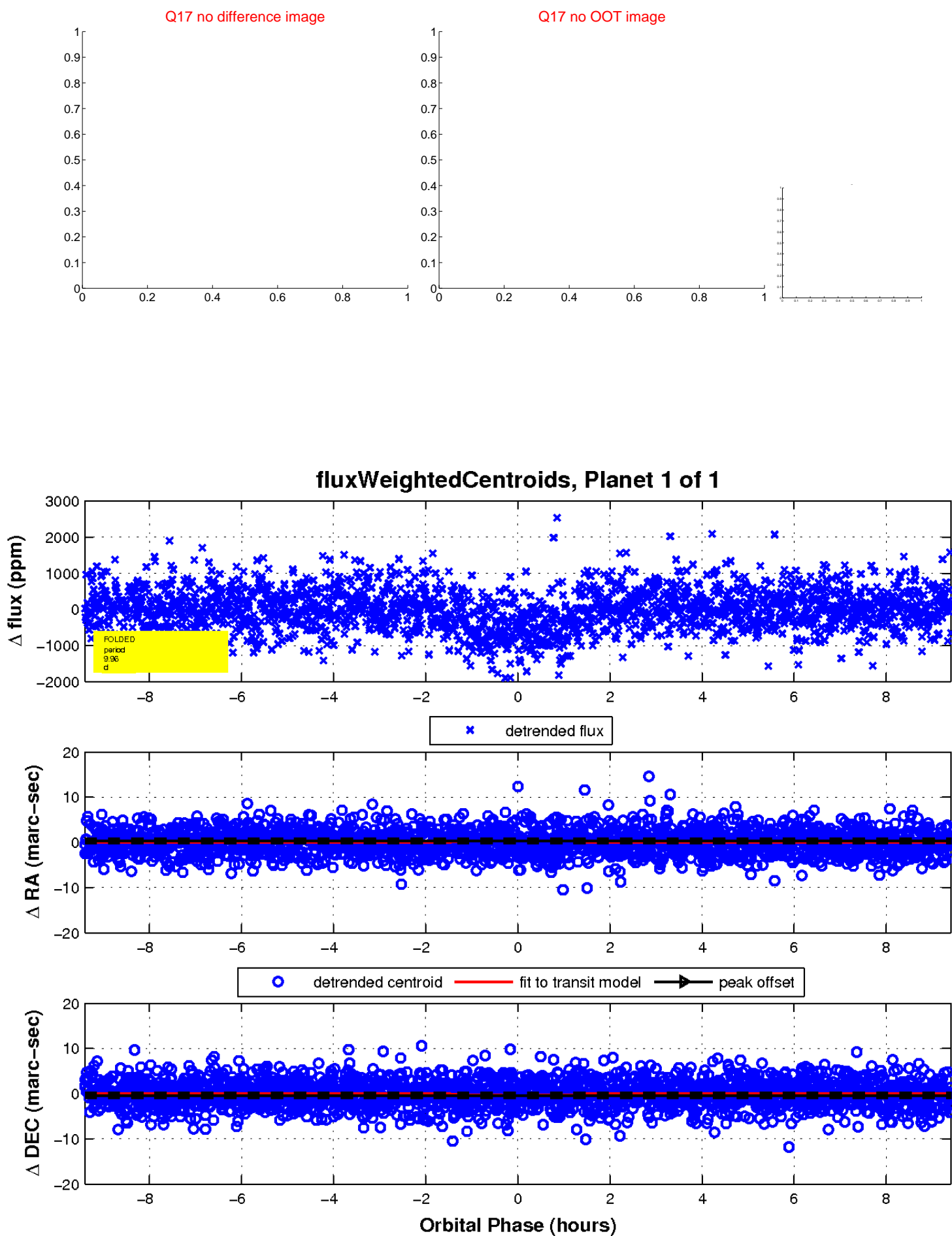
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



# UKIRT Image

Declination

