

# KIC 008345384

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008345384-01	OBS	4399.01	42.100327	143.028171	226.6	1.034	13.5	19.6	0.82	5595	1.33	11.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008345384-01	OBS	PC	0.96	0	0	0	0	CENT_KIC_POS

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

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

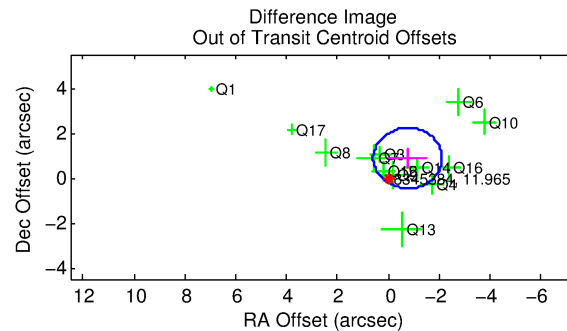
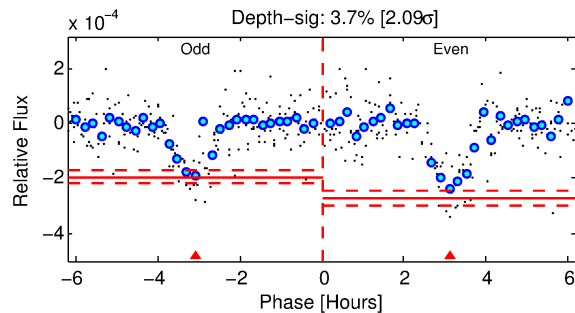
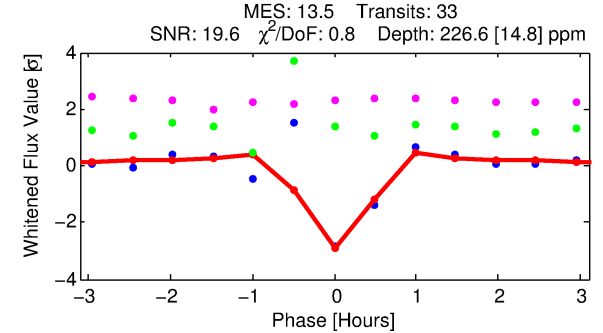
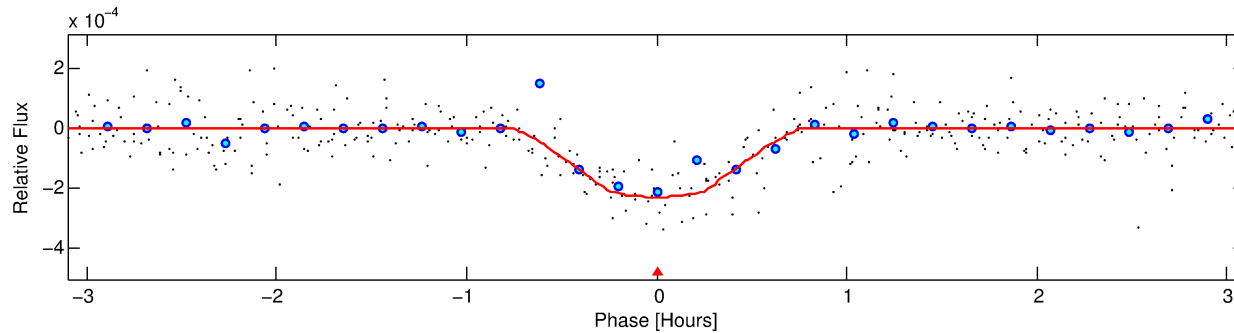
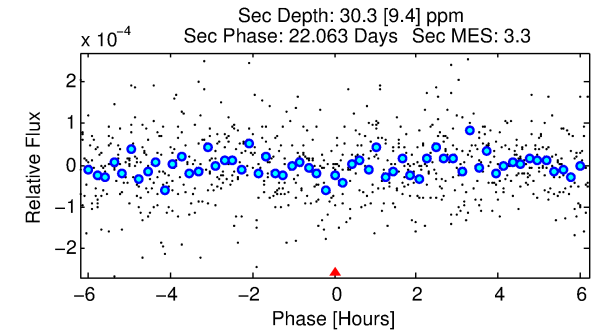
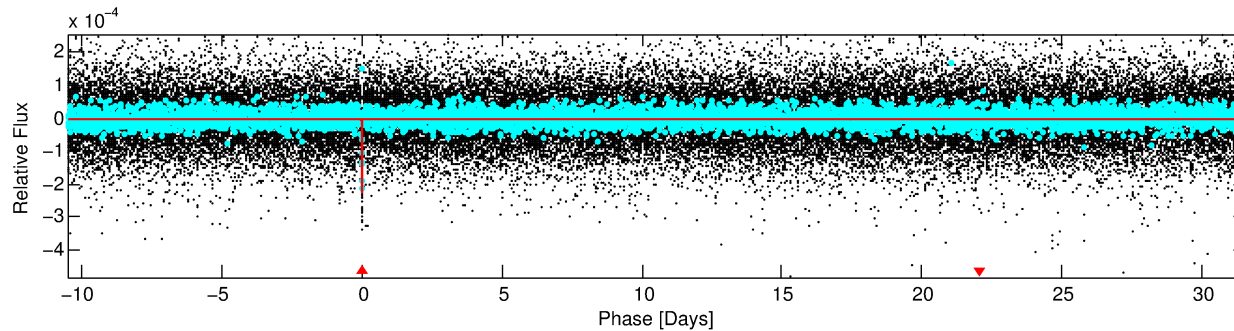
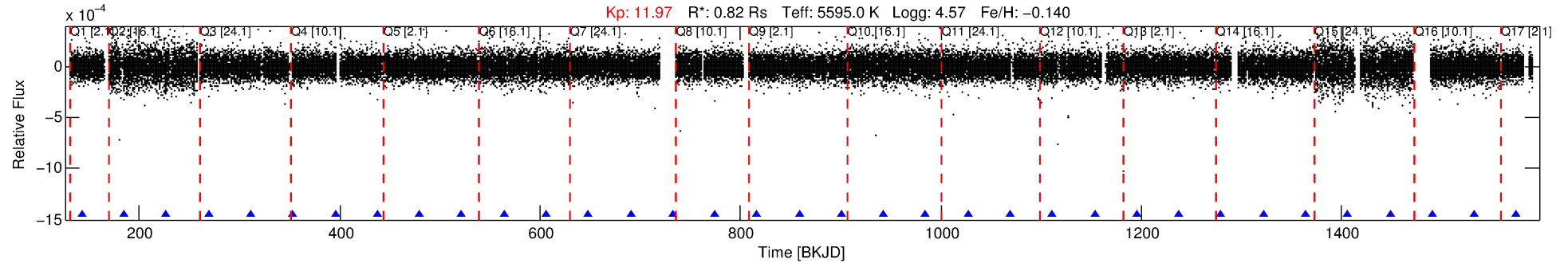
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008345384-01

No Significant Match Found

# DV One-Page Summary

KIC: 8345384 Candidate: 1 of 1 Period: 42.100 d  
KOI: K04399.01 Corr: 0.938



## DV Fit Results:

Period = 42.10033 [0.00009] d  
Epoch = 143.0282 [0.0018] BKJD  
Rp/R\* = 0.0149 [0.0064]  
a/R\* = 228.08 [419.57]  
b = 0.70 [1.34]  
Seff = 11.19 [2.05]  
Teq = 466 [21] K  
Rp = 1.33 [0.59] Re  
a = 0.2297 [0.0237] AU  
Ag = 496.41 [458.25] [1.08σ]  
Teffp = 3404 [777] K [3.78σ]

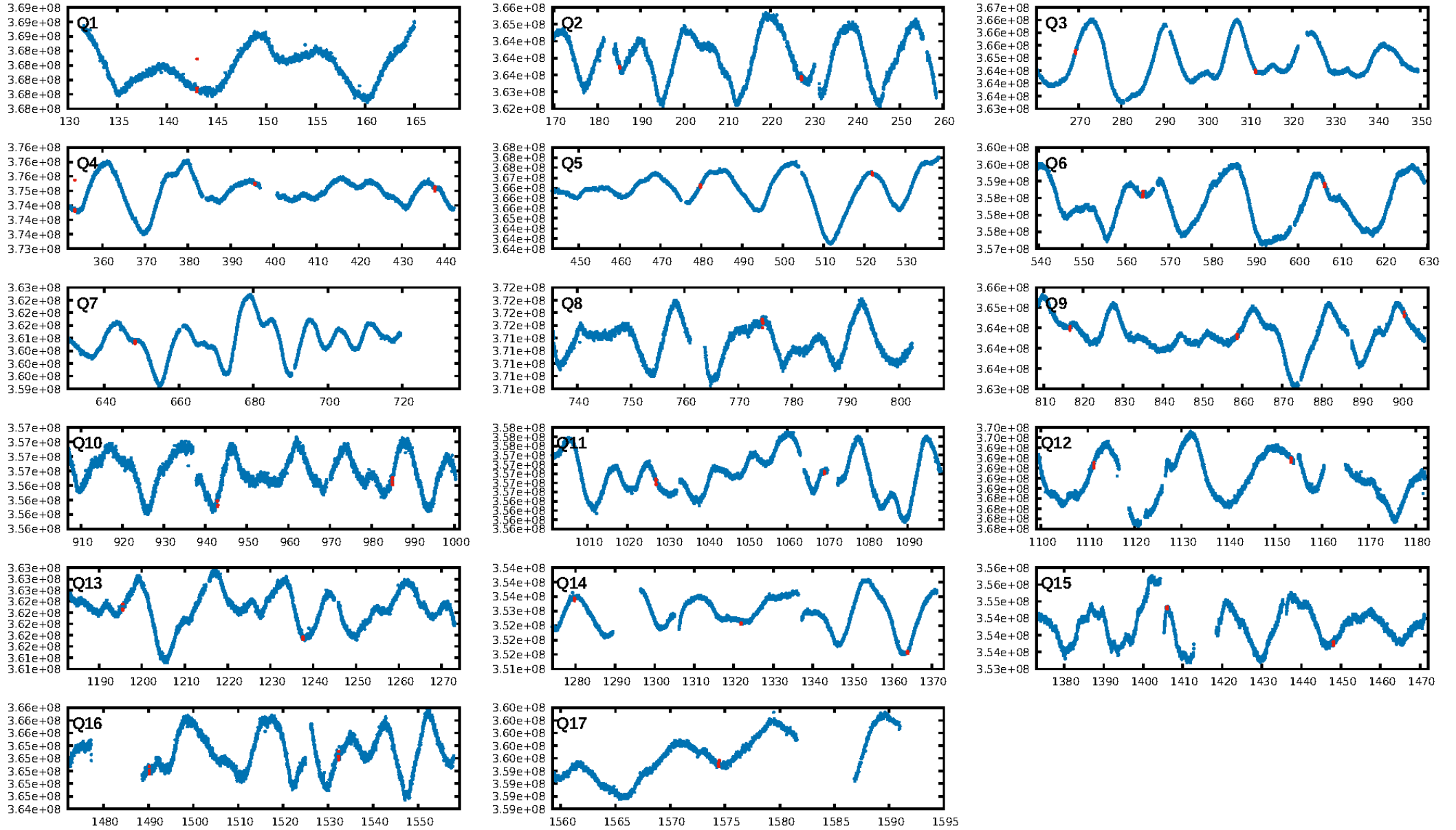
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 94.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.42e-36  
RollingBand-fgt: 1.00 [31/31]  
GhostDiagnostic-chr: 4.269  
Centroid-sig: 0.1%  
Centroid-so: 1.883 arcsec [3.05σ]  
OotOffset-rm: 1.158 arcsec [2.58σ]  
KicOffset-rm: 0.903 arcsec [1.36σ]  
OotOffset-st: 3/3/4/4 [14]  
KicOffset-st: 3/3/4/4 [14]  
DiffImageQuality-fgm: 0.71 [10/14]  
DiffImageOverlap-fno: 1.00 [16/16]

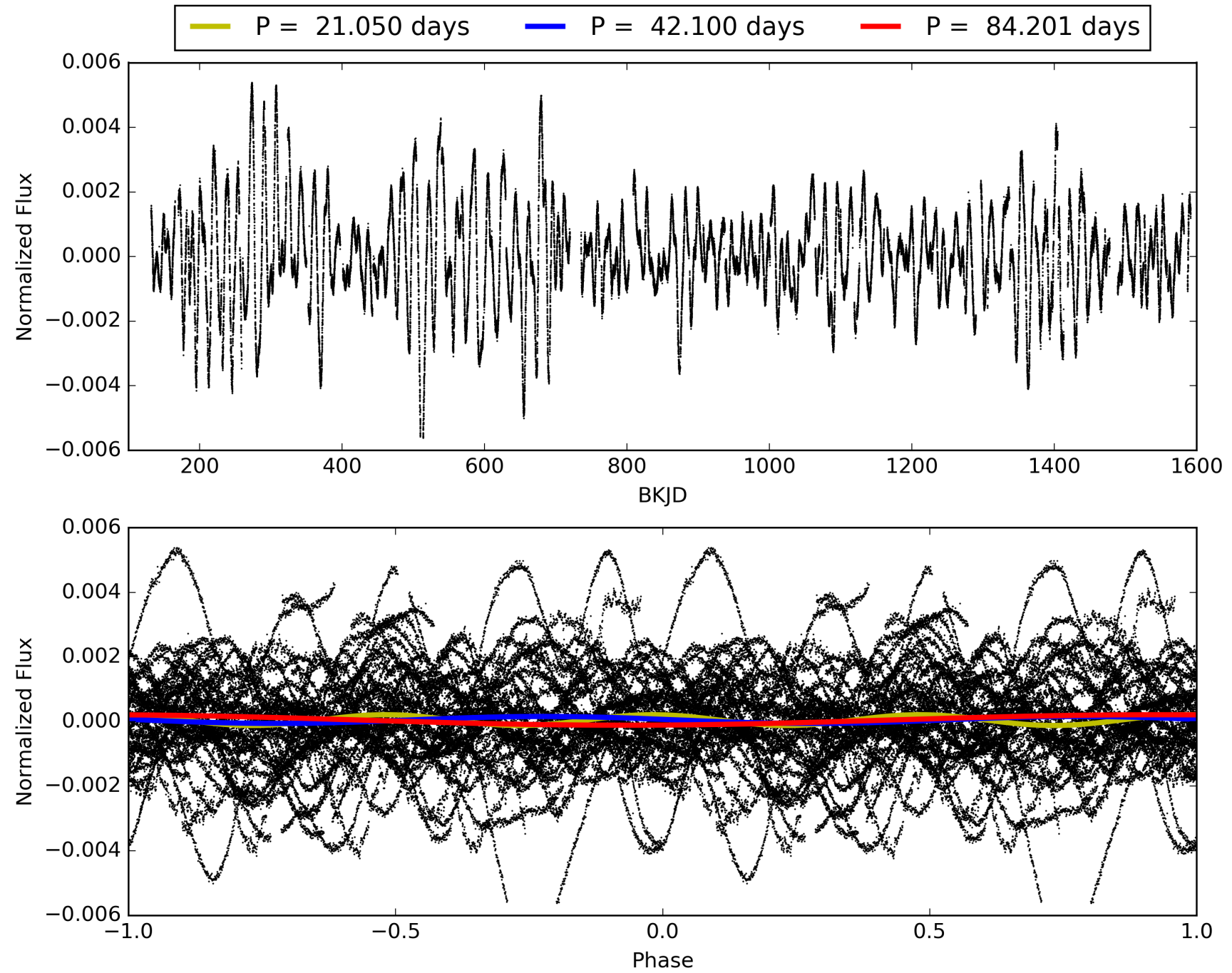
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 02:38:49 Z

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

# TCE 008345384-01, PDC Light Curves

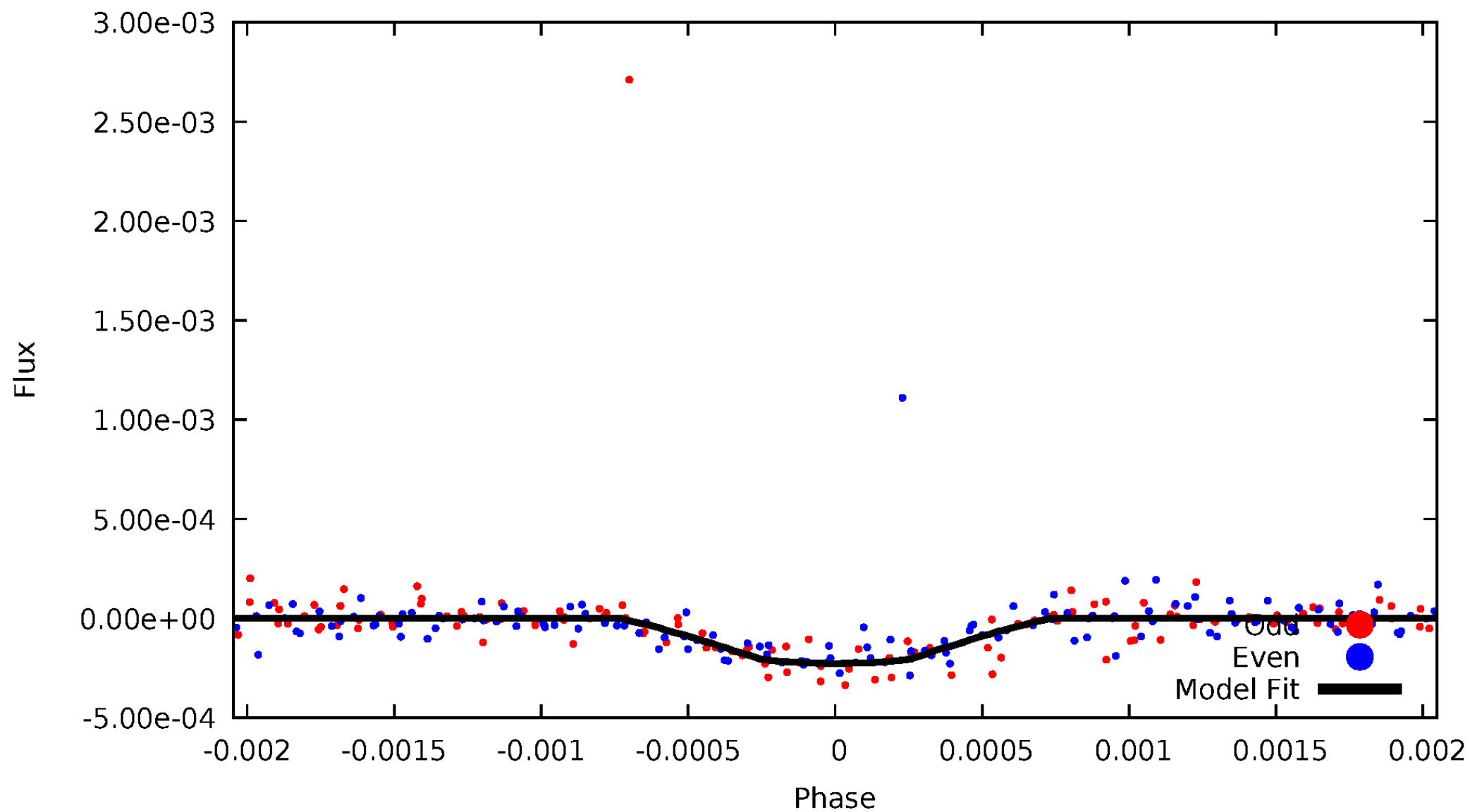


TCE 008345384-01



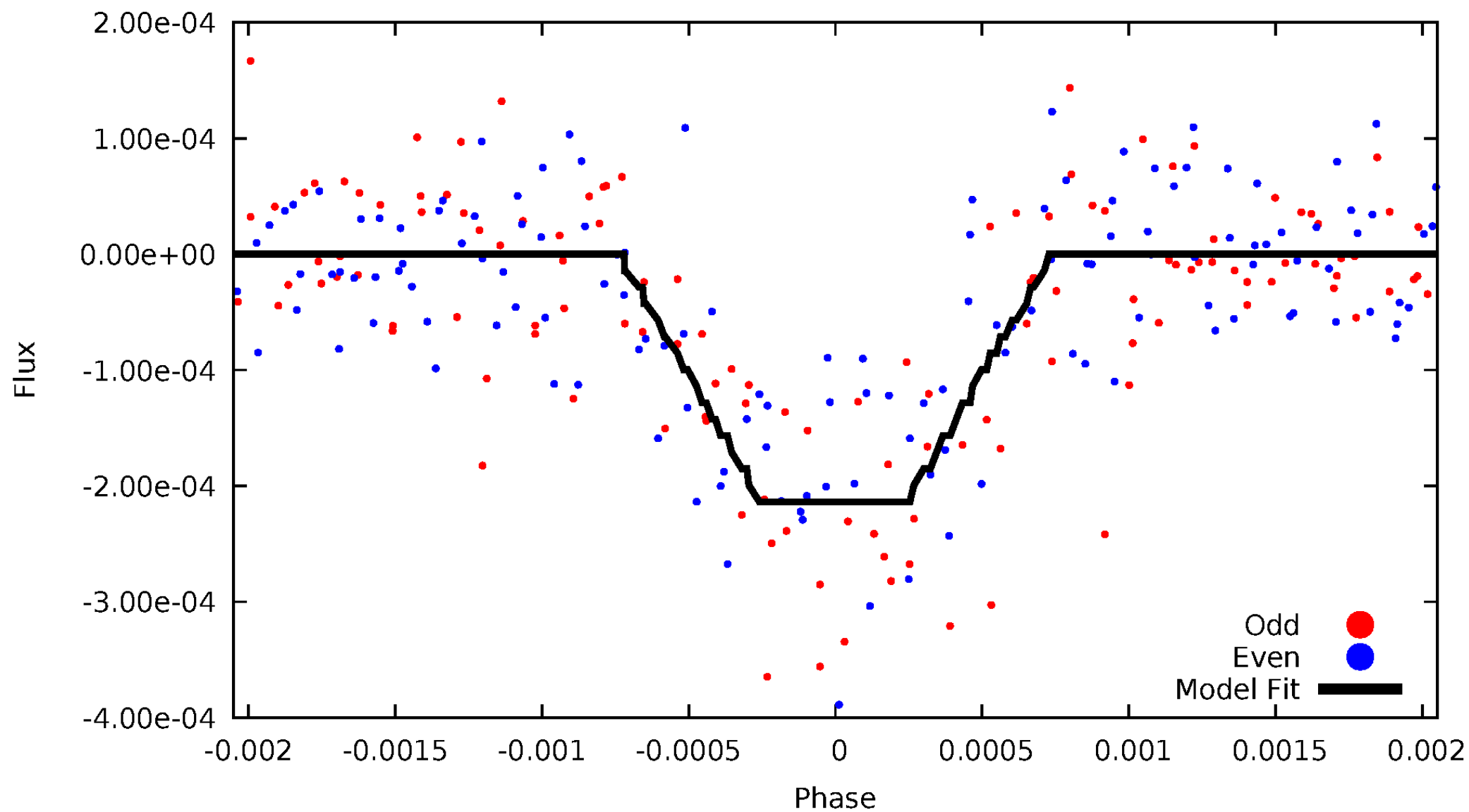
# DV Odd/Even

TCE 008345384-01

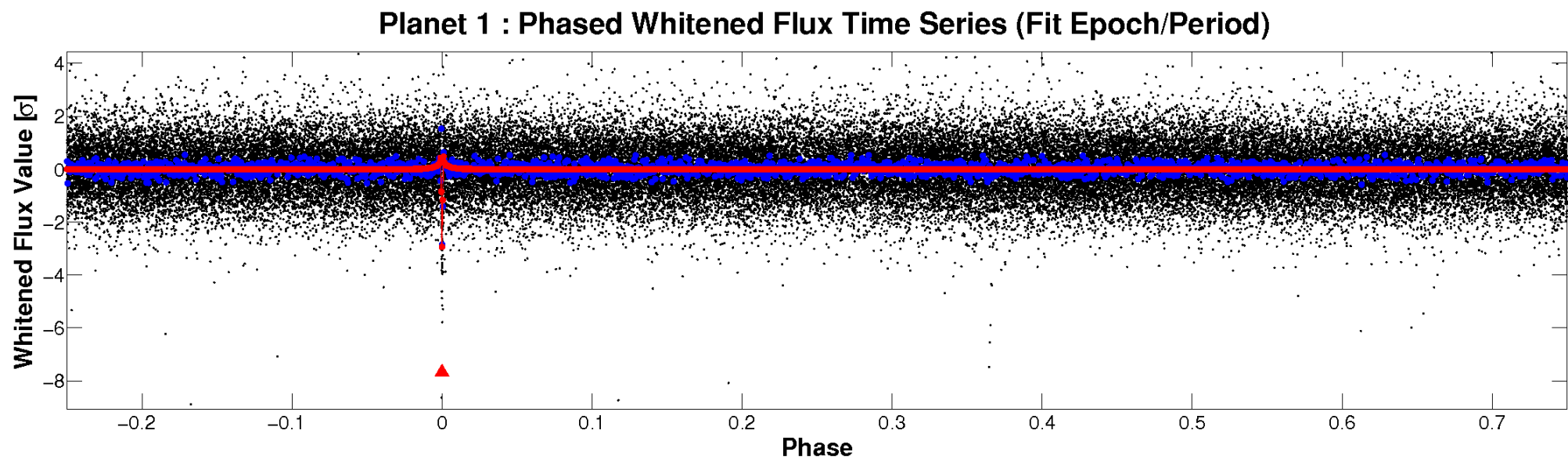
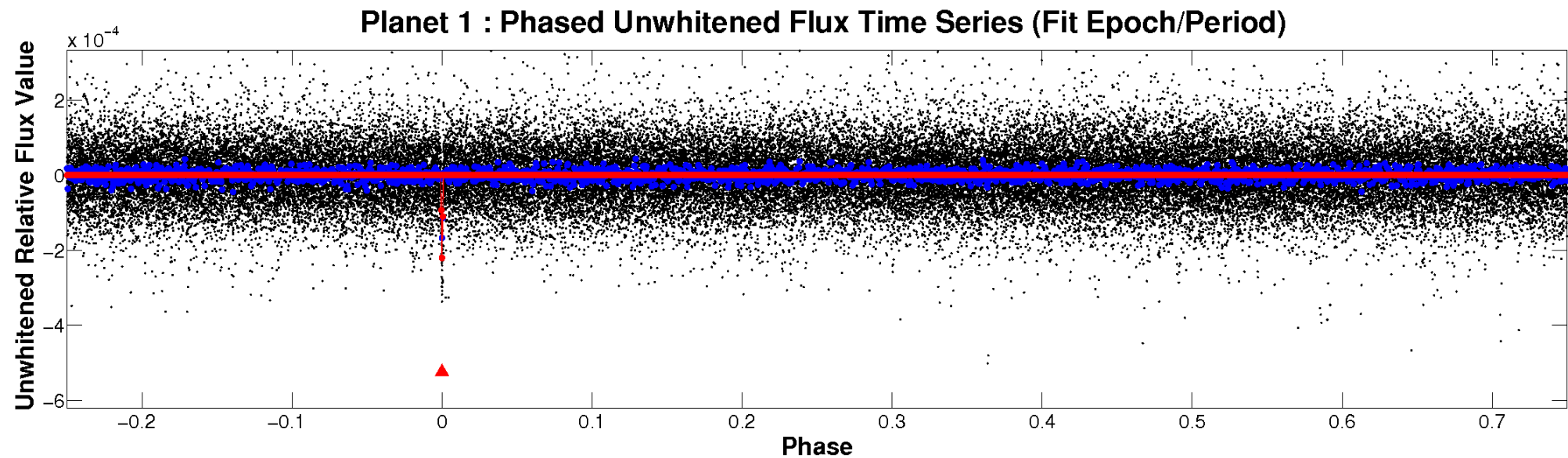


# ALT Odd/Even

TCE 008345384-01

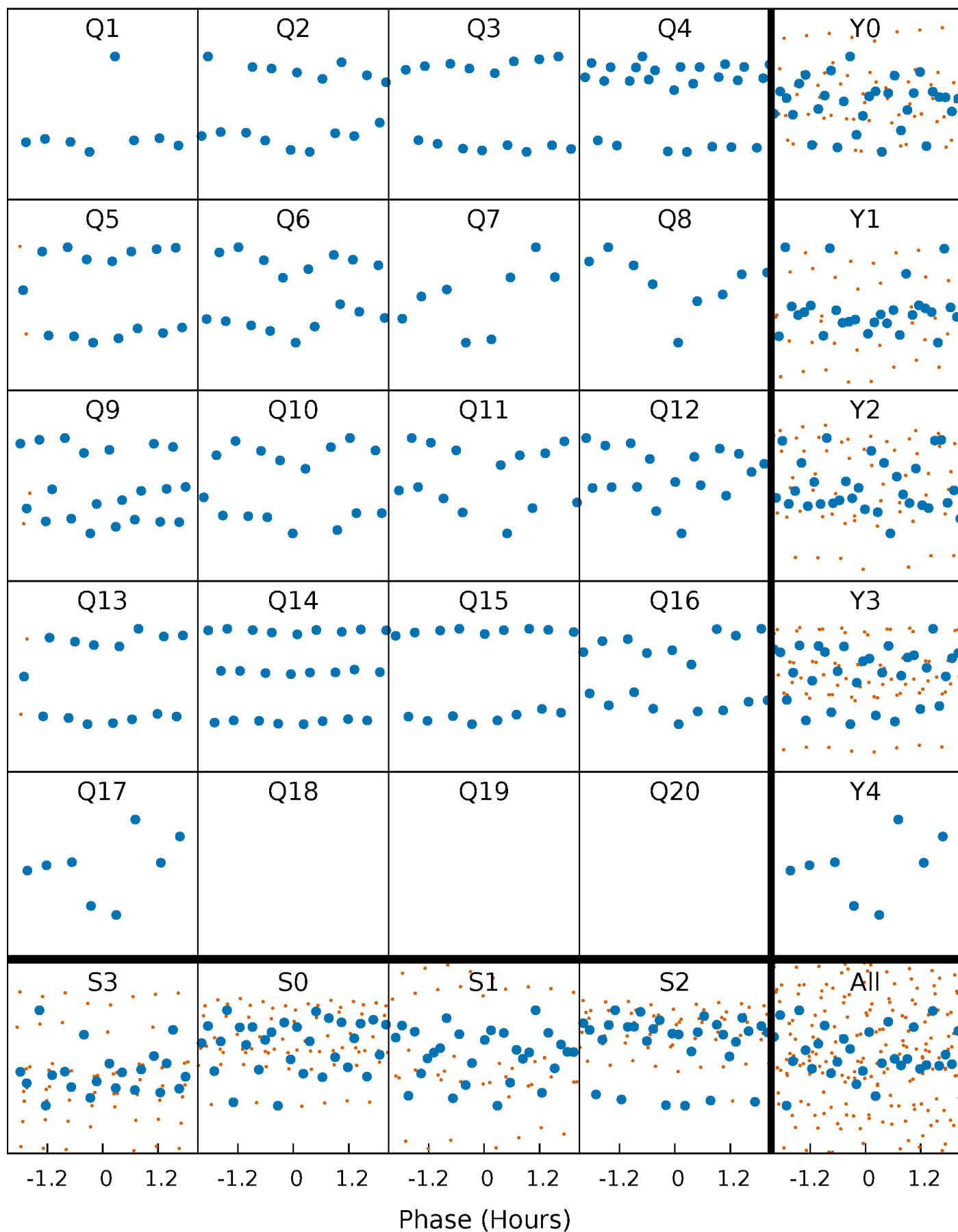


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

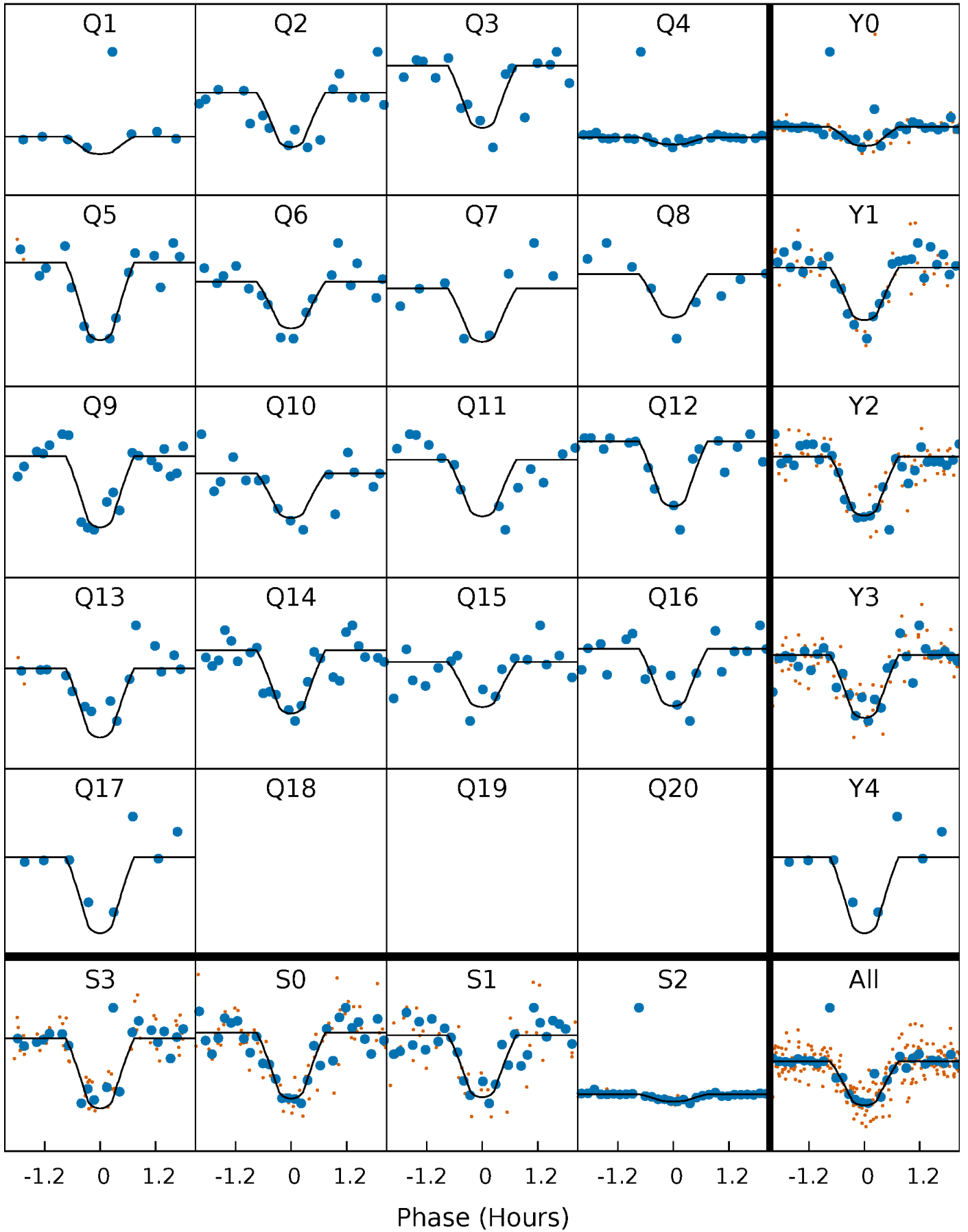
TCE 008345384-01   P= 42.100327 Days    $T_0=143.028170$  (BKJD)





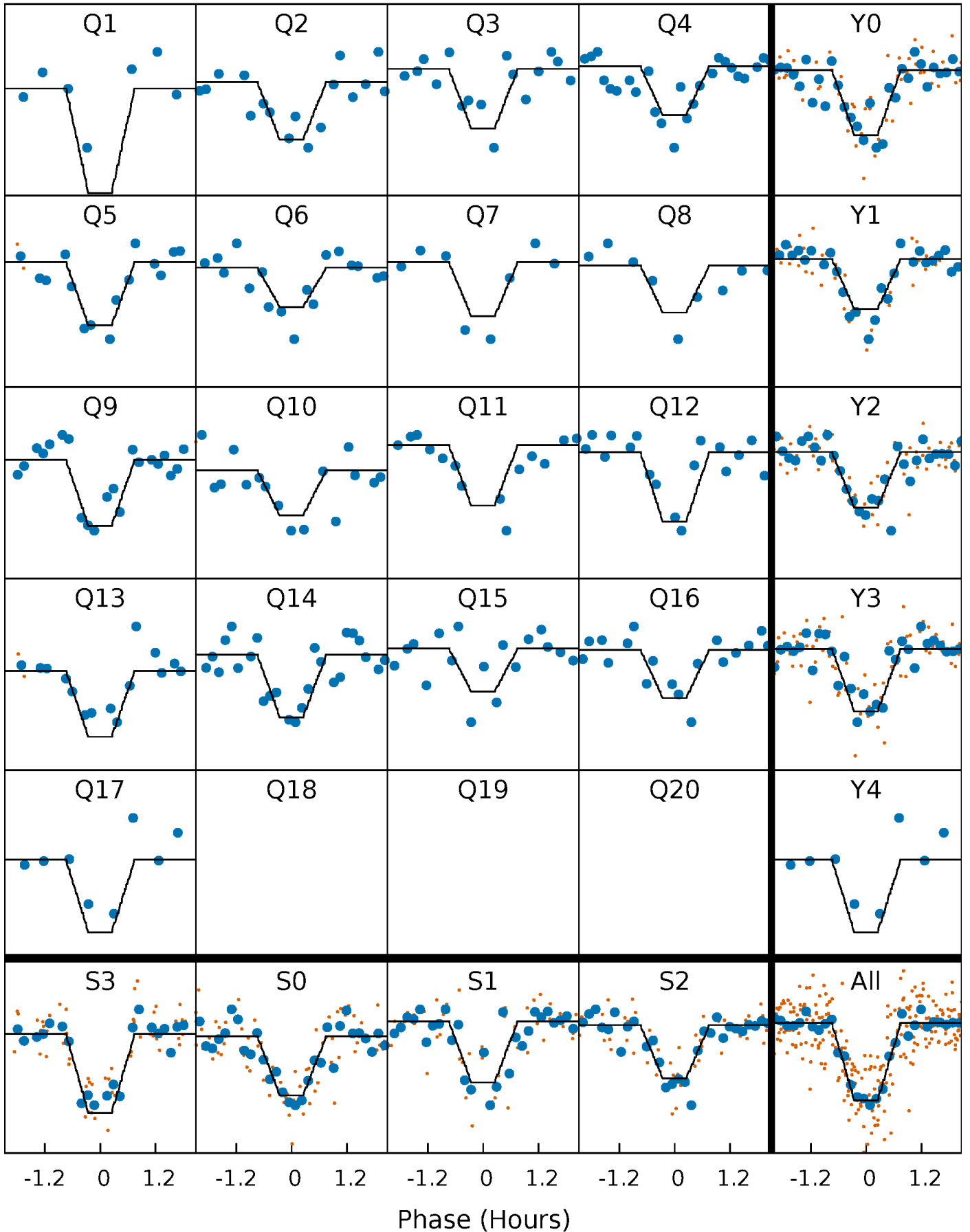
# DV Quarter-Phased Transit Curves

TCE 008345384-01 P= 42.100327 Days  $T_0=143.028170$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

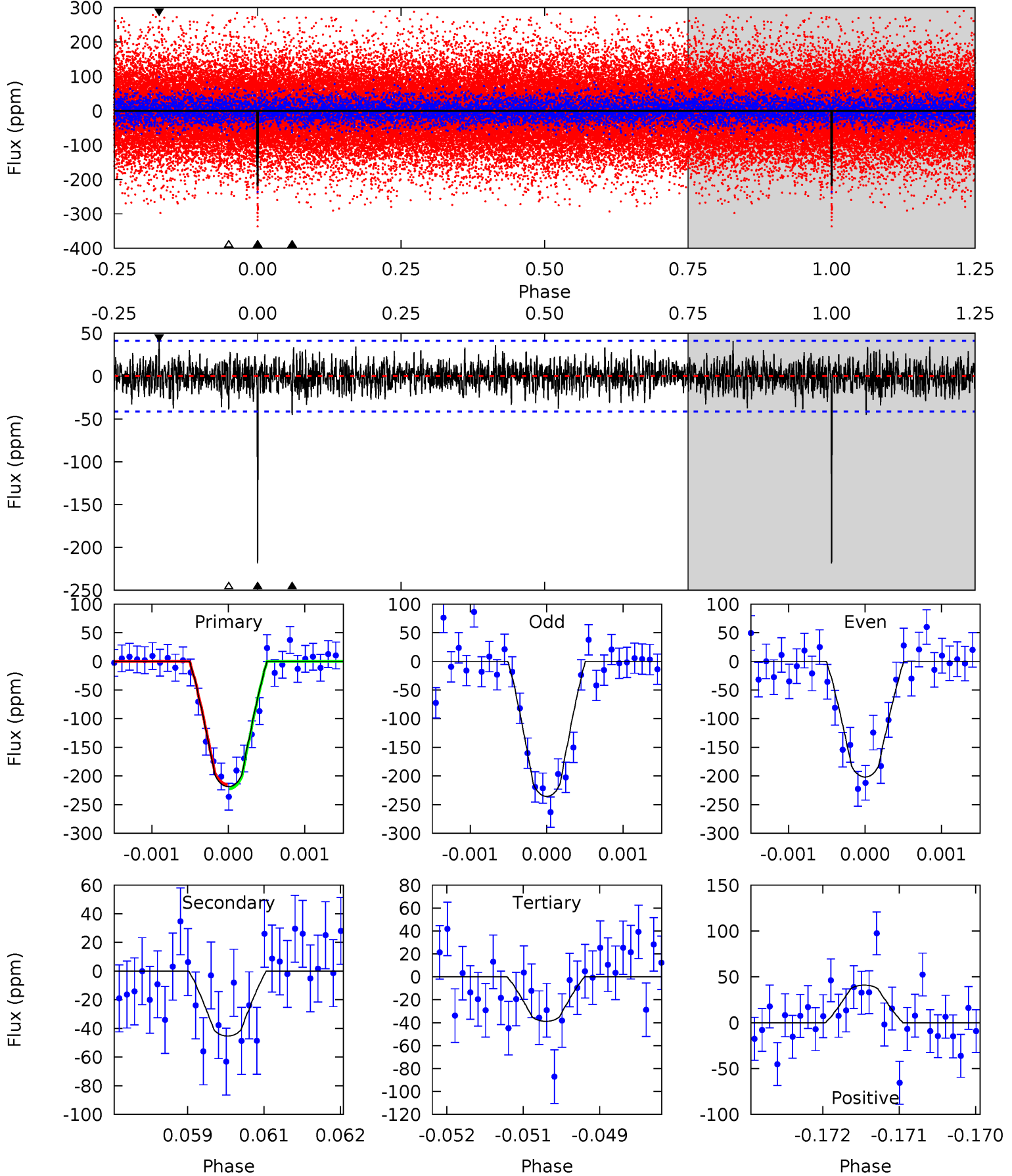
TCE 008345384-01 P= 42.100331 Days  $T_0=143.028266$  (BKJD)



# DV Model-Shift Uniqueness Test

008345384-01,  $P = 42.100327$  Days,  $E = 100.927843$  Days

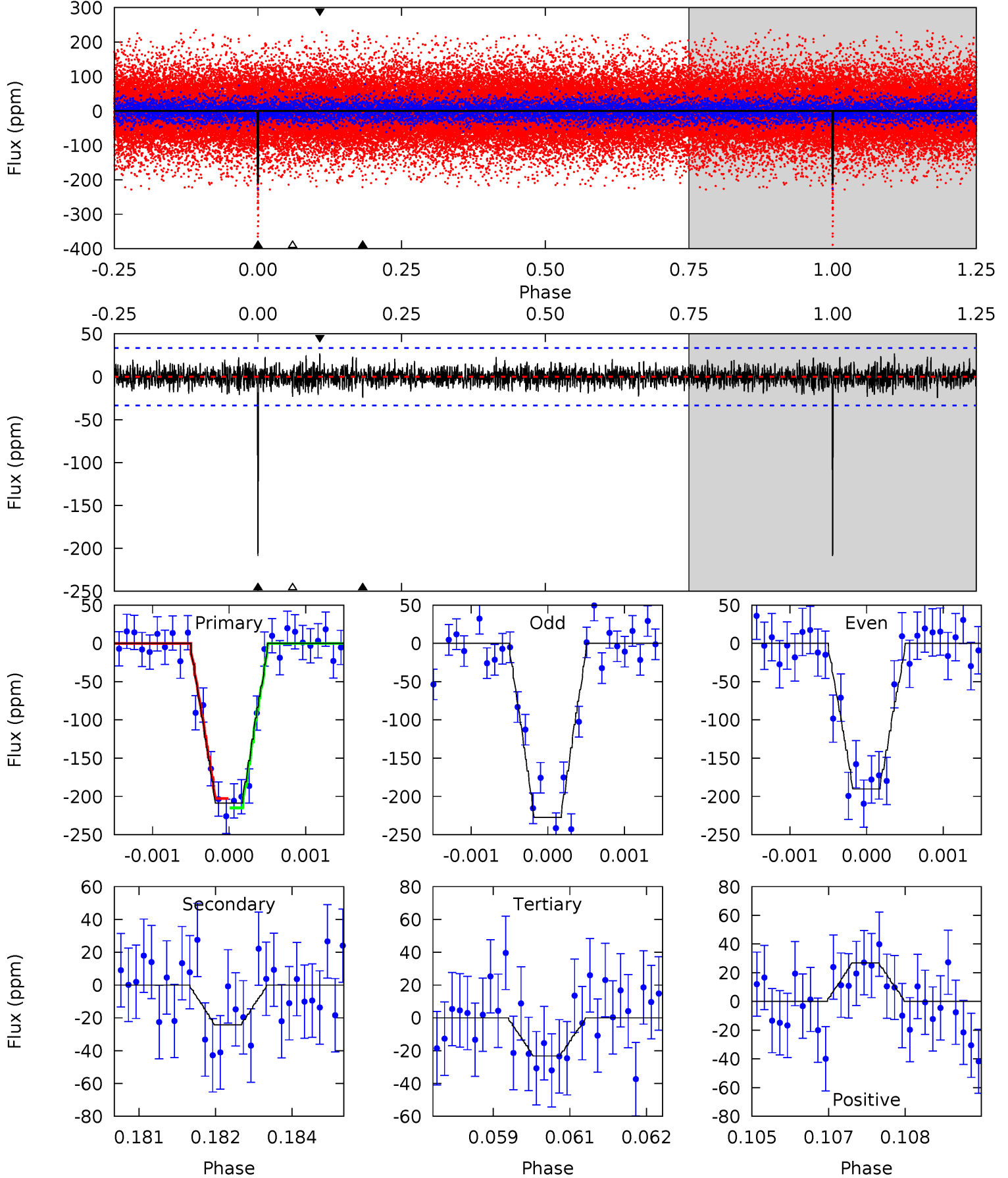
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.5	5.91	5.06	5.34	5.39	3.18	1.49	23.4	23.2	0.85	0.57	2.22	0.89	0.16	0.48



# Alt Model-Shift Uniqueness Test

008345384-01, P = 42.100331 Days, E = 100.927935 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
33.7	3.90	3.75	4.34	5.39	3.19	1.13	29.9	29.3	0.16	-0.44	3.01	1.06	0.11	0.99



### Stellar Parameters For KIC 008345384

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5595^{+100}_{-122}$	$4.570^{+0.016}_{-0.093}$	$-0.140^{+0.150}_{-0.150}$	$0.820^{+0.092}_{-0.040}$	$0.917^{+0.043}_{-0.076}$	$2.341^{+0.204}_{-0.667}$
	+2%/-2%	+0%/-2%	+107%/-107%	+11%/-5%	+5%/-8%	+9%/-28%
Source	SPE59	SPE59	SPE59	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008345384-01 / KOI 4399.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-45 \pm 8$	$1.36^{+0.56}_{-0.56}$	$660^{+21}_{-17}$	$4055^{+939}_{-486}$	$706^{+1286}_{-367}$
Alt.	$-24 \pm 6$	$1.36^{+0.56}_{-0.59}$	$660^{+21}_{-17}$	$3650^{+754}_{-426}$	$385^{+714}_{-217}$

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

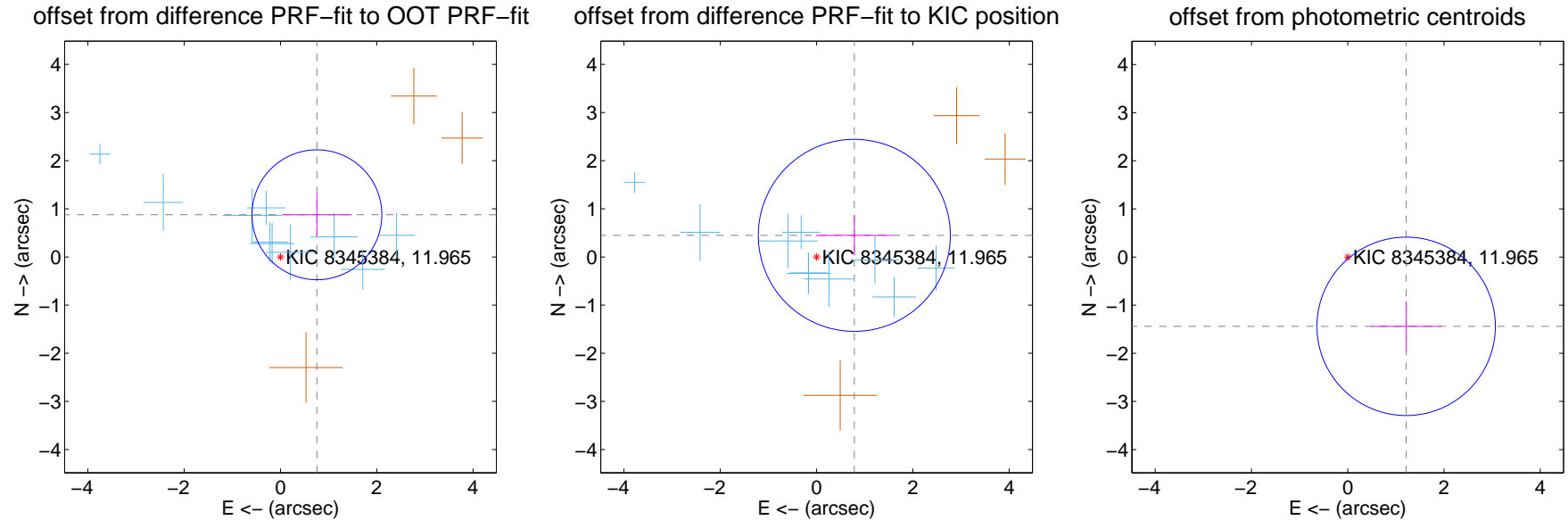
## DV Centroid Data

Supplemental centroid analysis for 008345384-01. **Kepler magnitude: 11.96.** Transit SNR 19.55

There are 10 quarters with good PRF difference image offsets

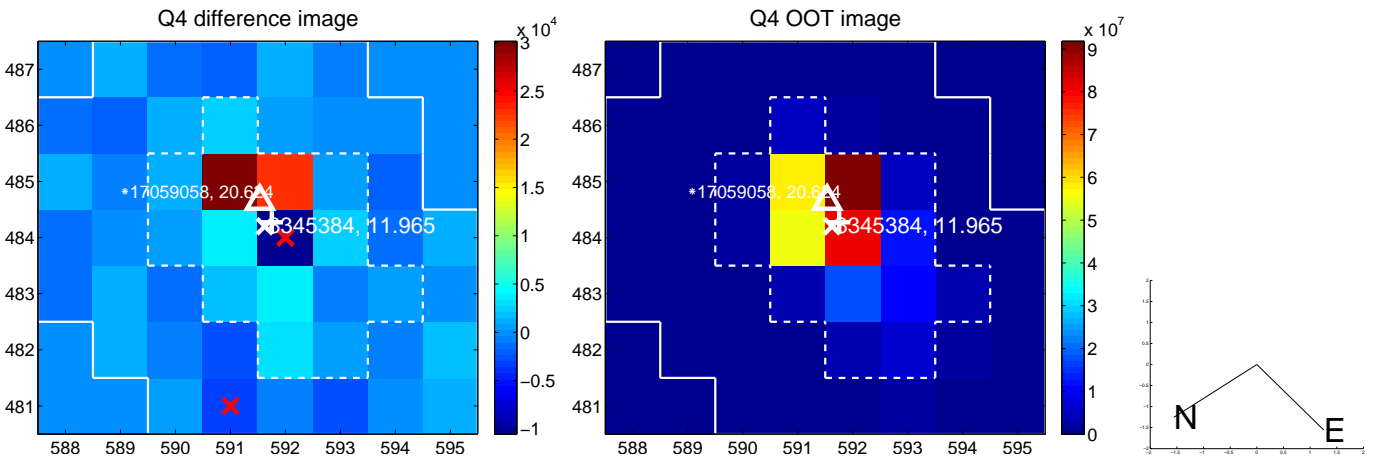
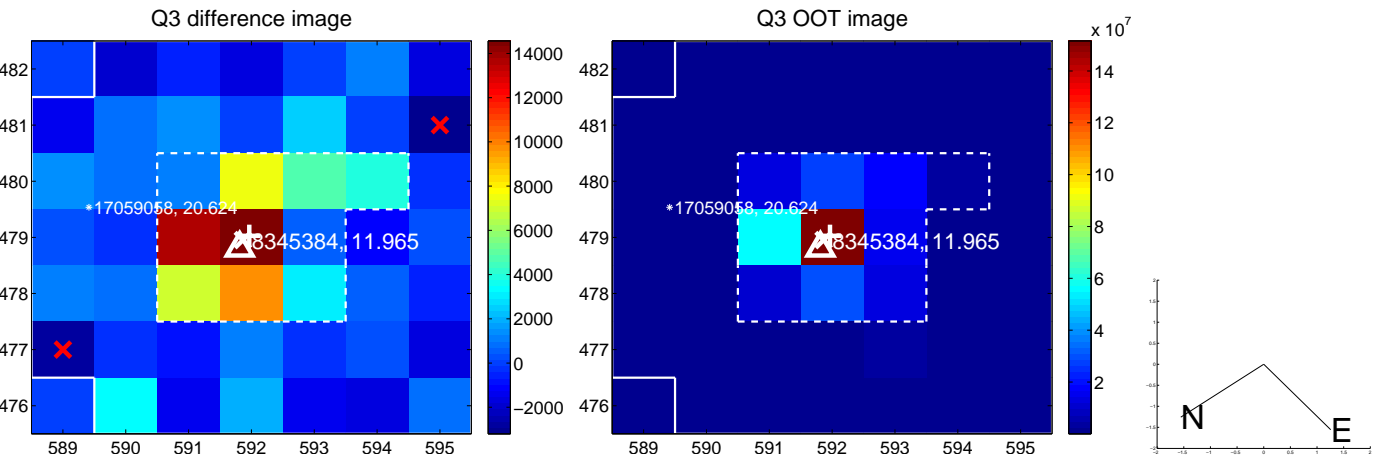
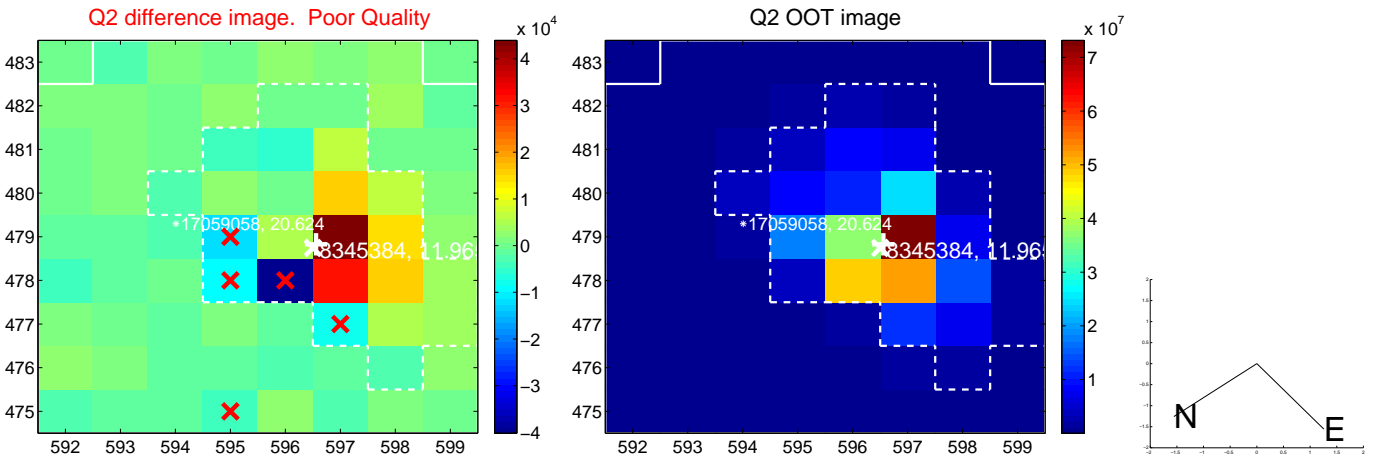
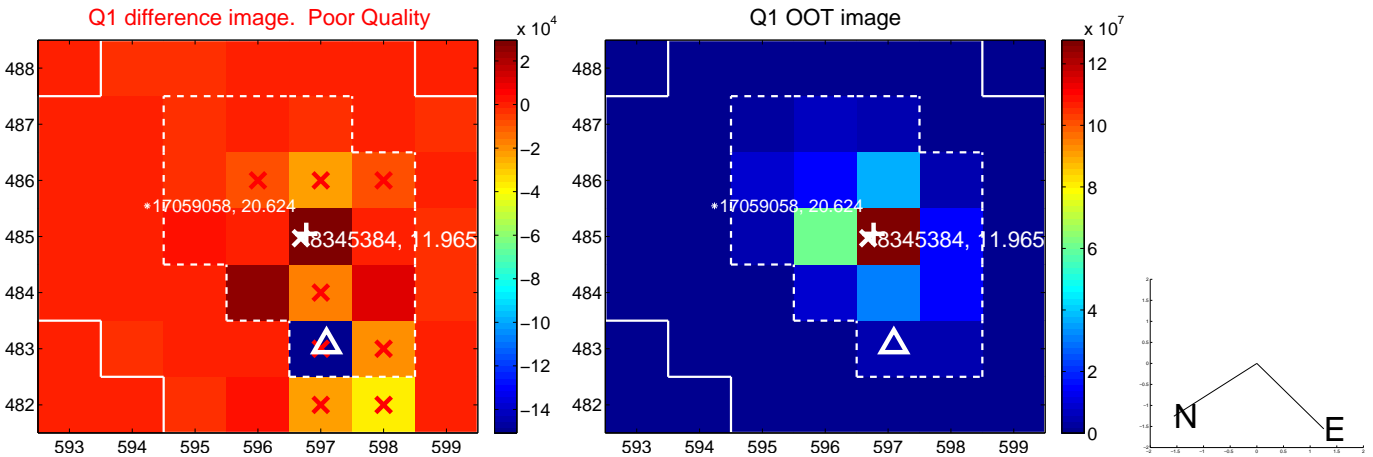
The direct PRF centroid is offset from the target star catalog position by about 0.59 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.158 \pm 0.450$	2.58	$-0.757 \pm 0.721$	$0.876 \pm 0.446$
PRF-fit source offset from KIC position	$0.903 \pm 0.665$	1.36	$-0.784 \pm 0.802$	$0.449 \pm 0.421$
photometric centroid source offset	<b><math>1.88 \pm 0.62</math></b>	<b>3.05</b>	$-1.21 \pm 0.73$	$-1.44 \pm 0.52$

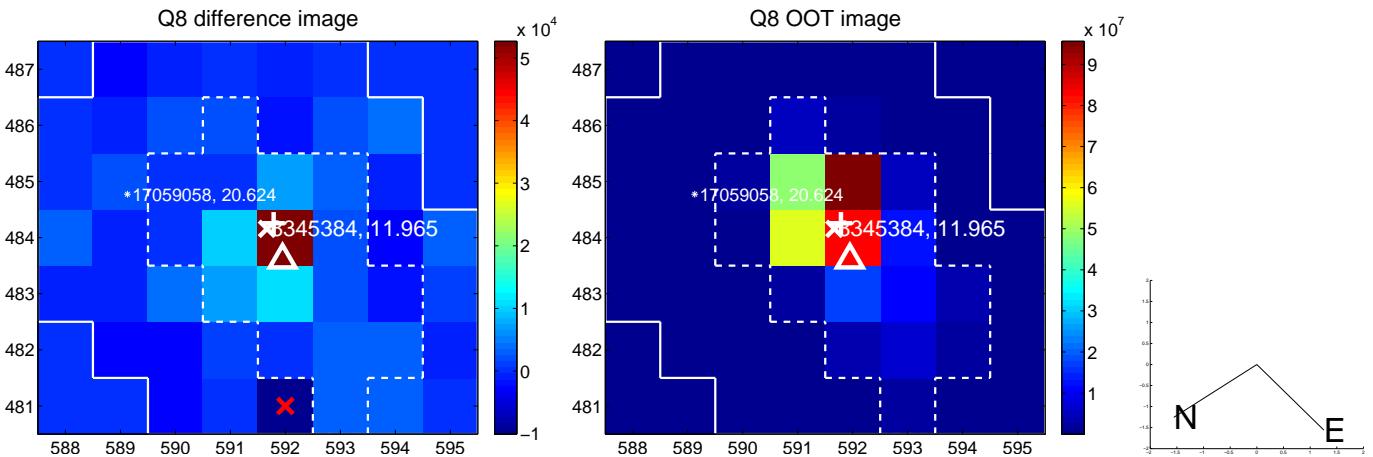
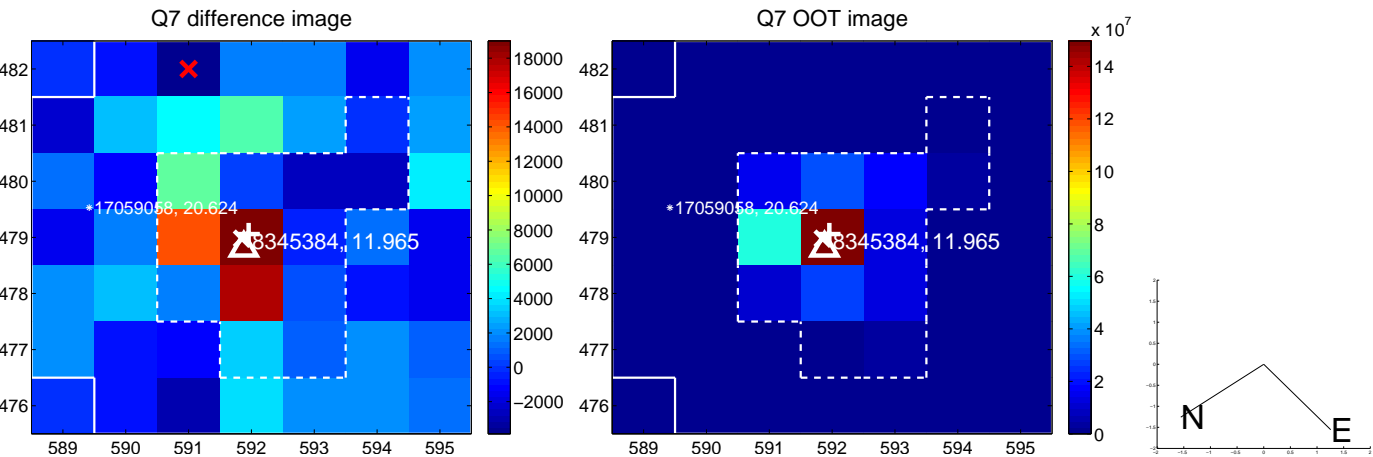
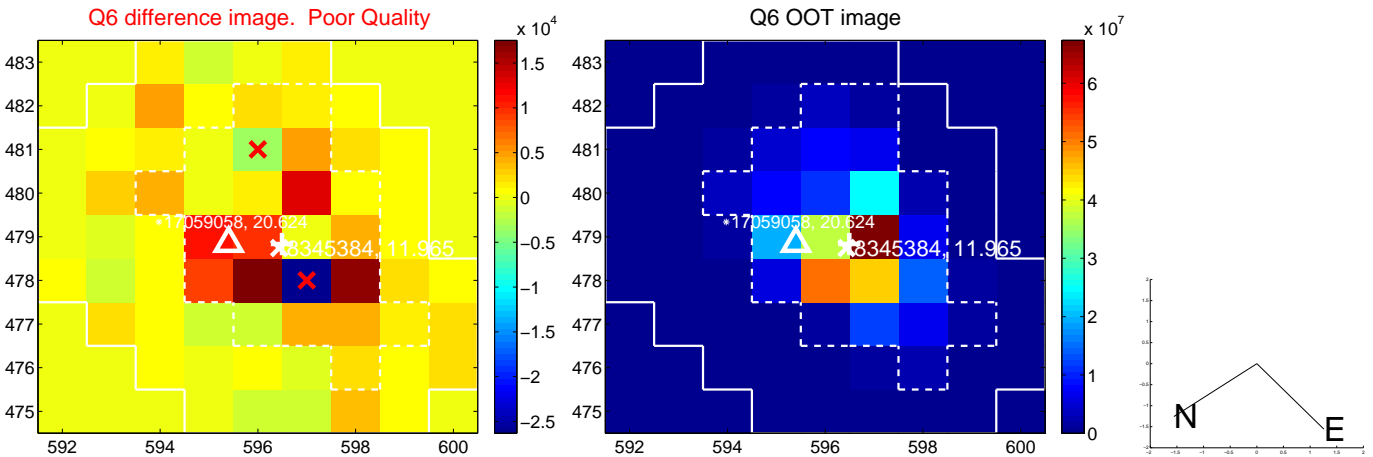
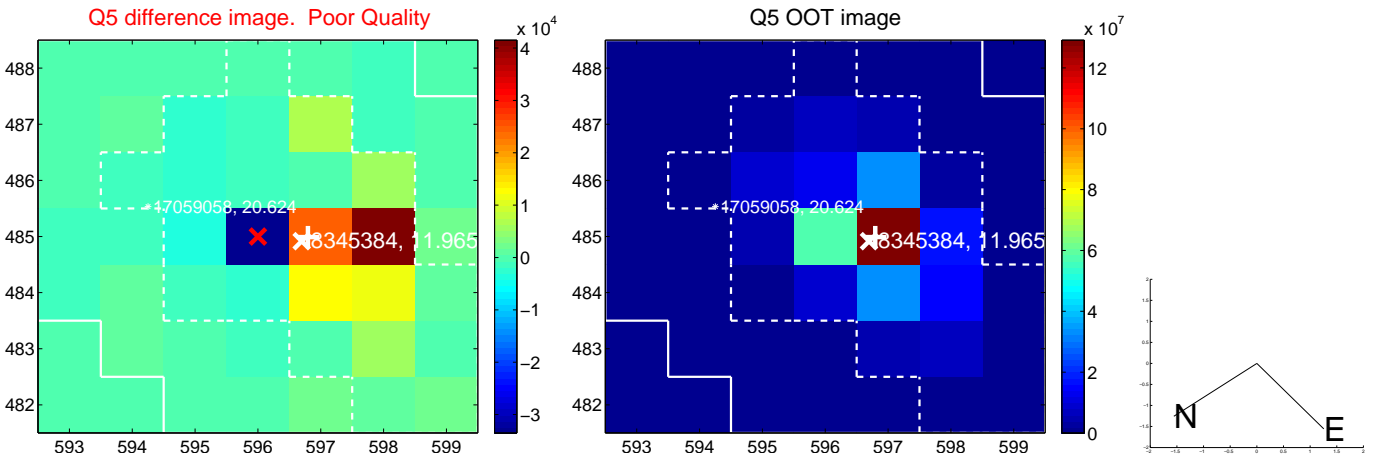


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

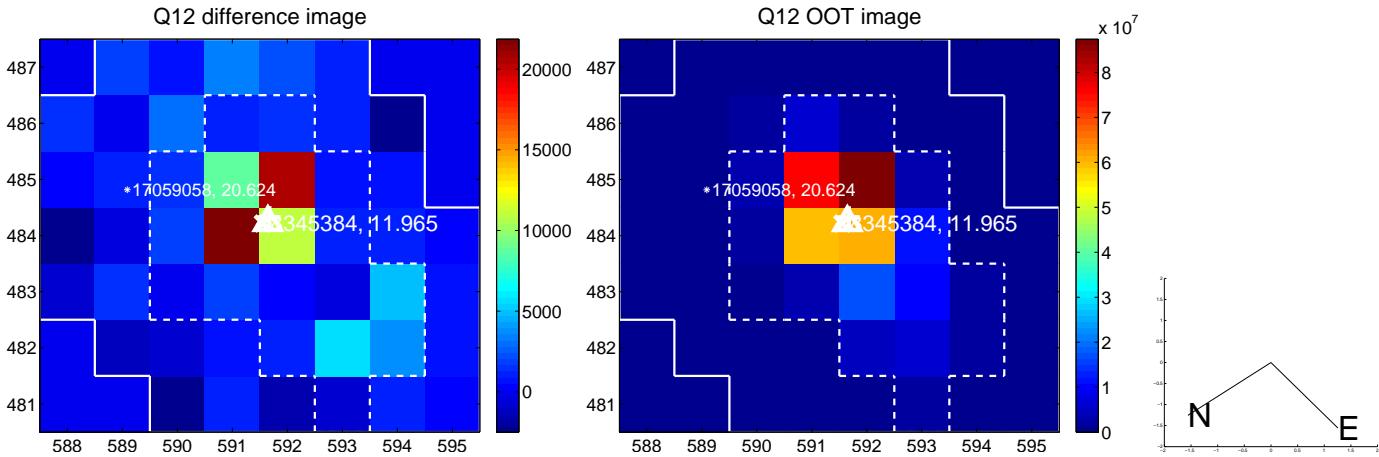
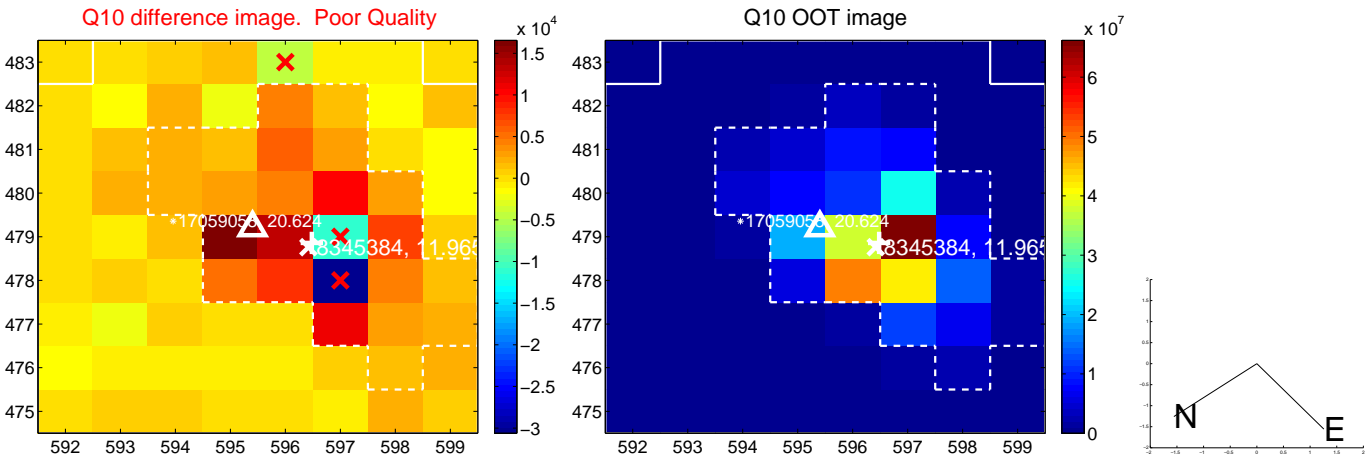
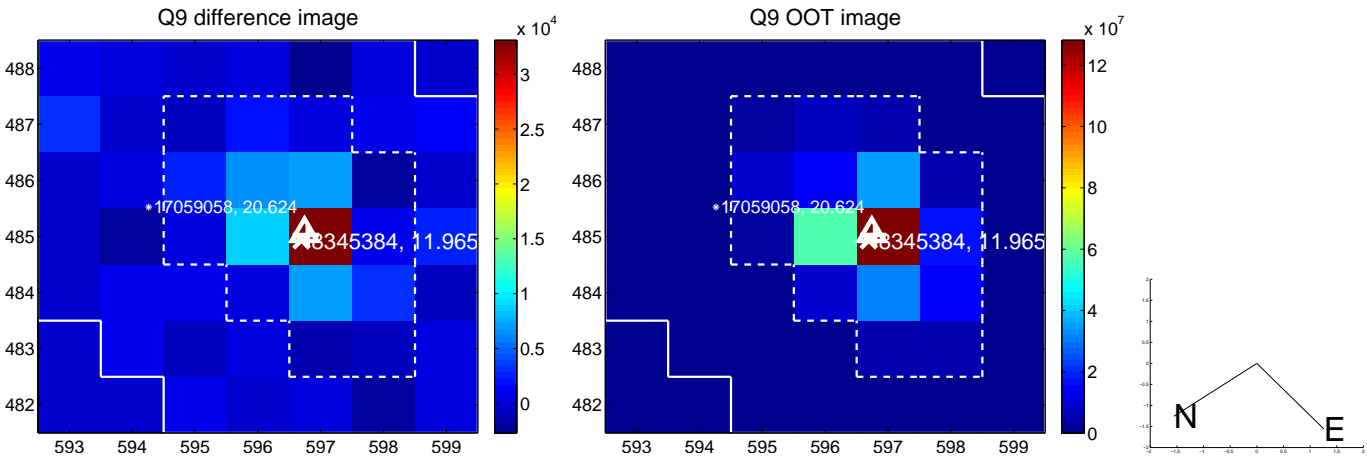


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

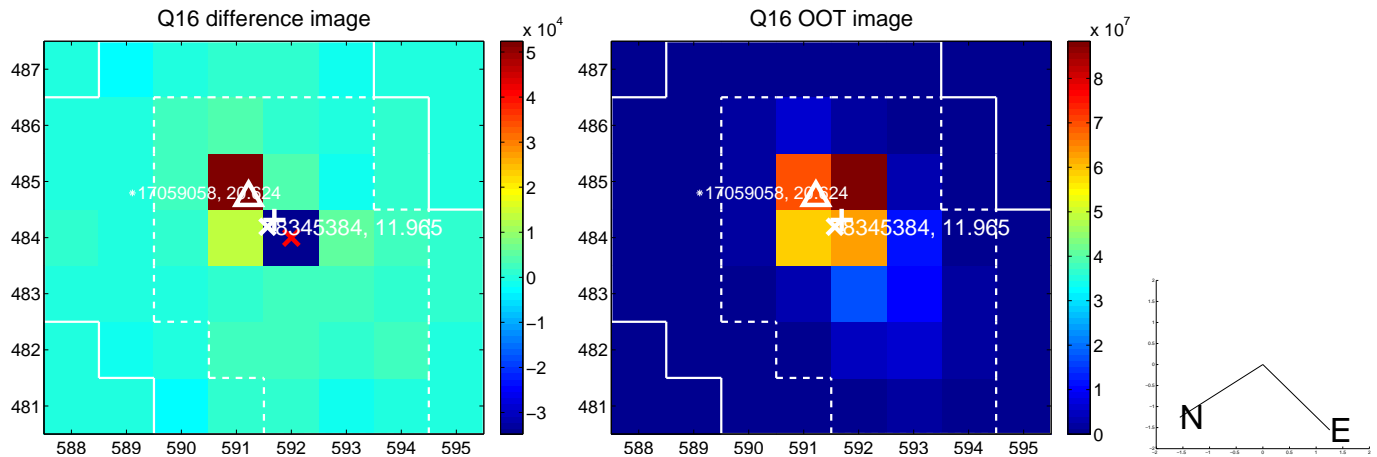
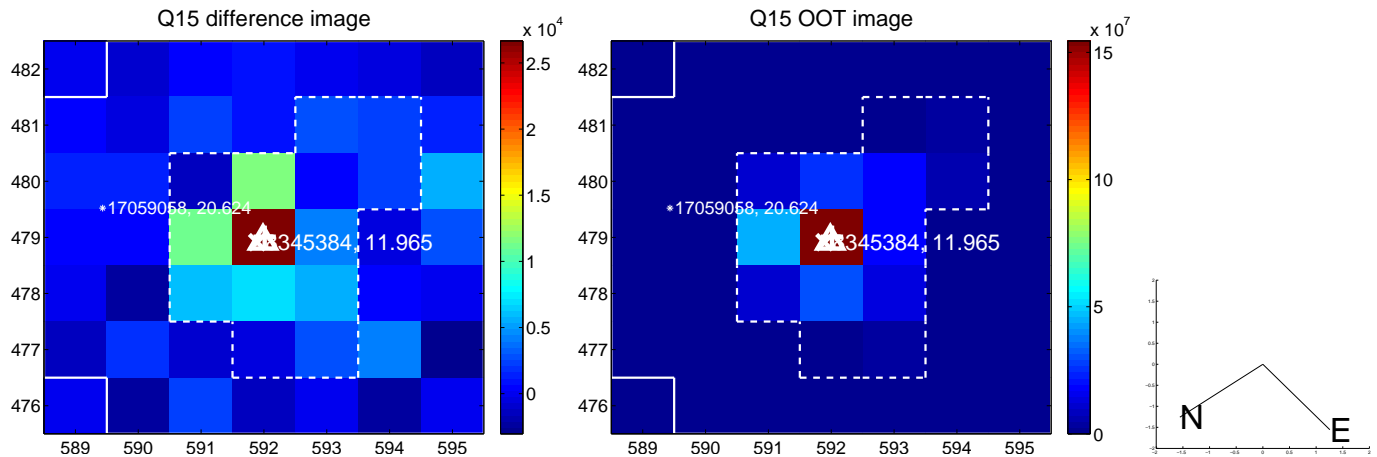
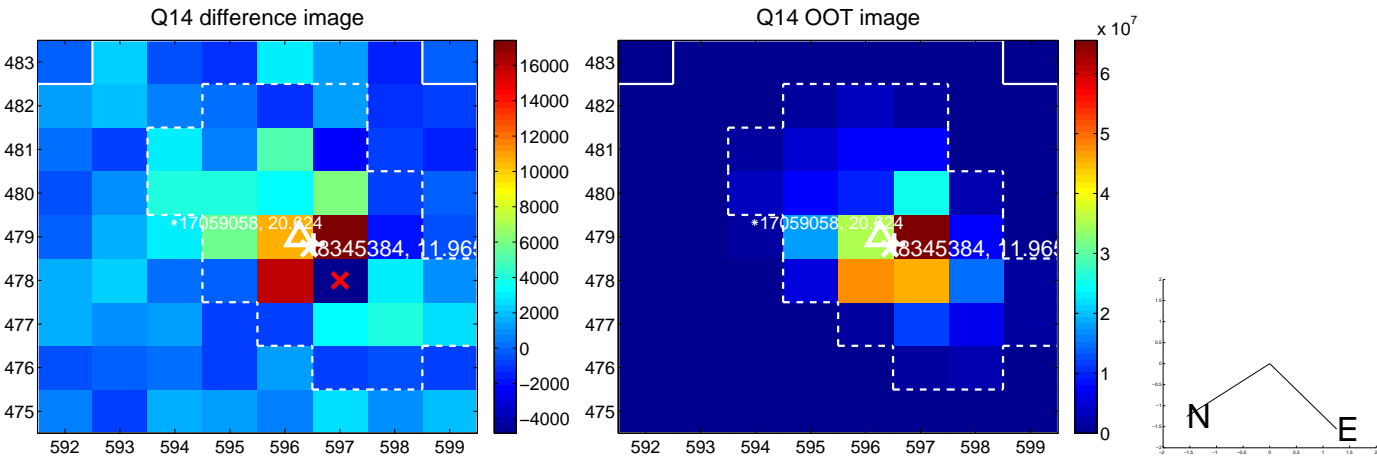
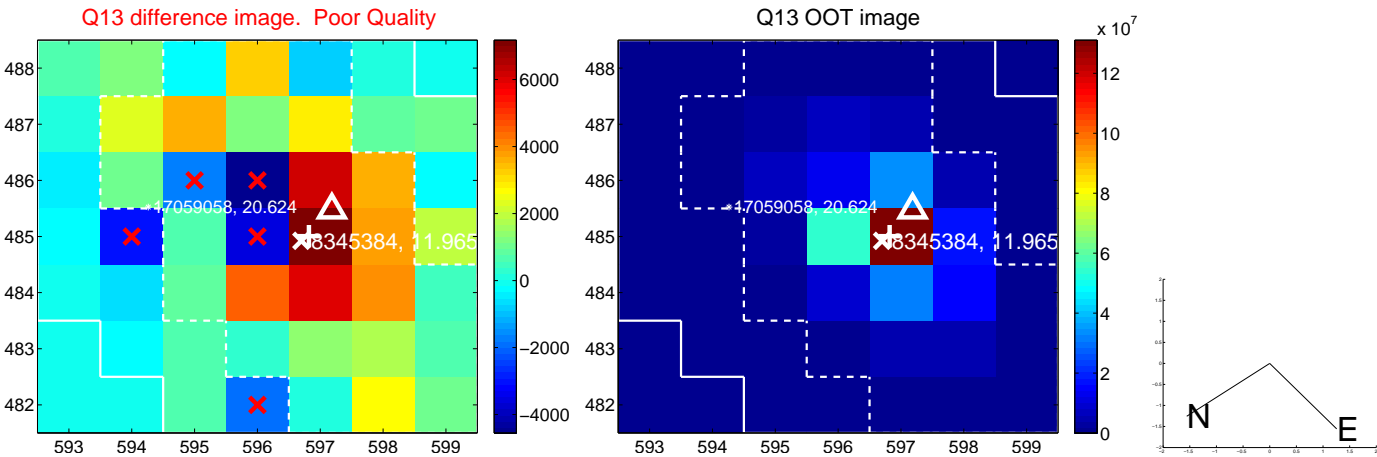




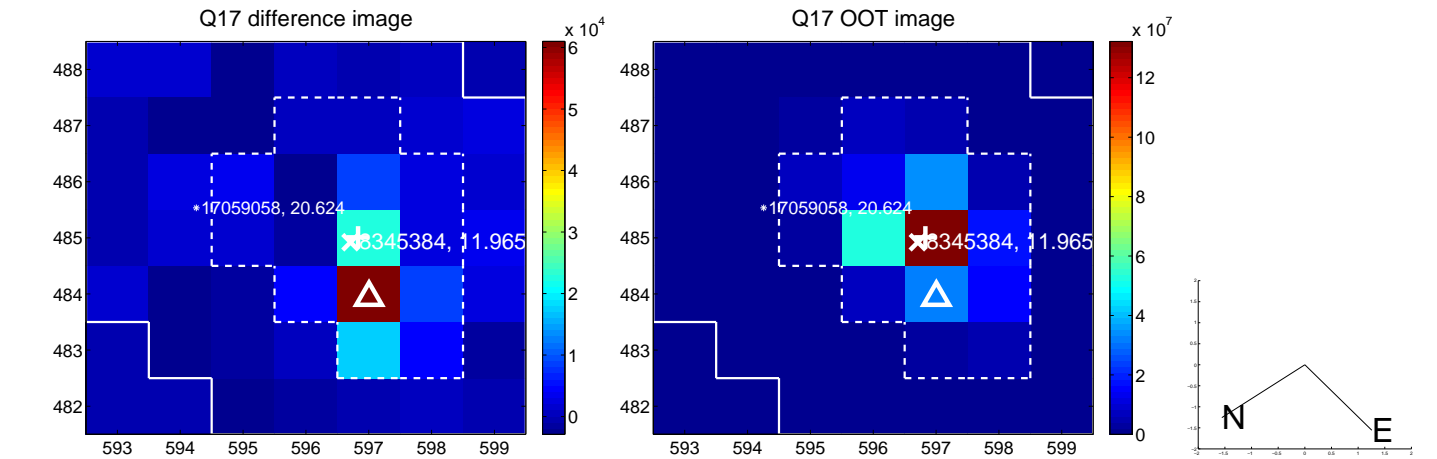
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



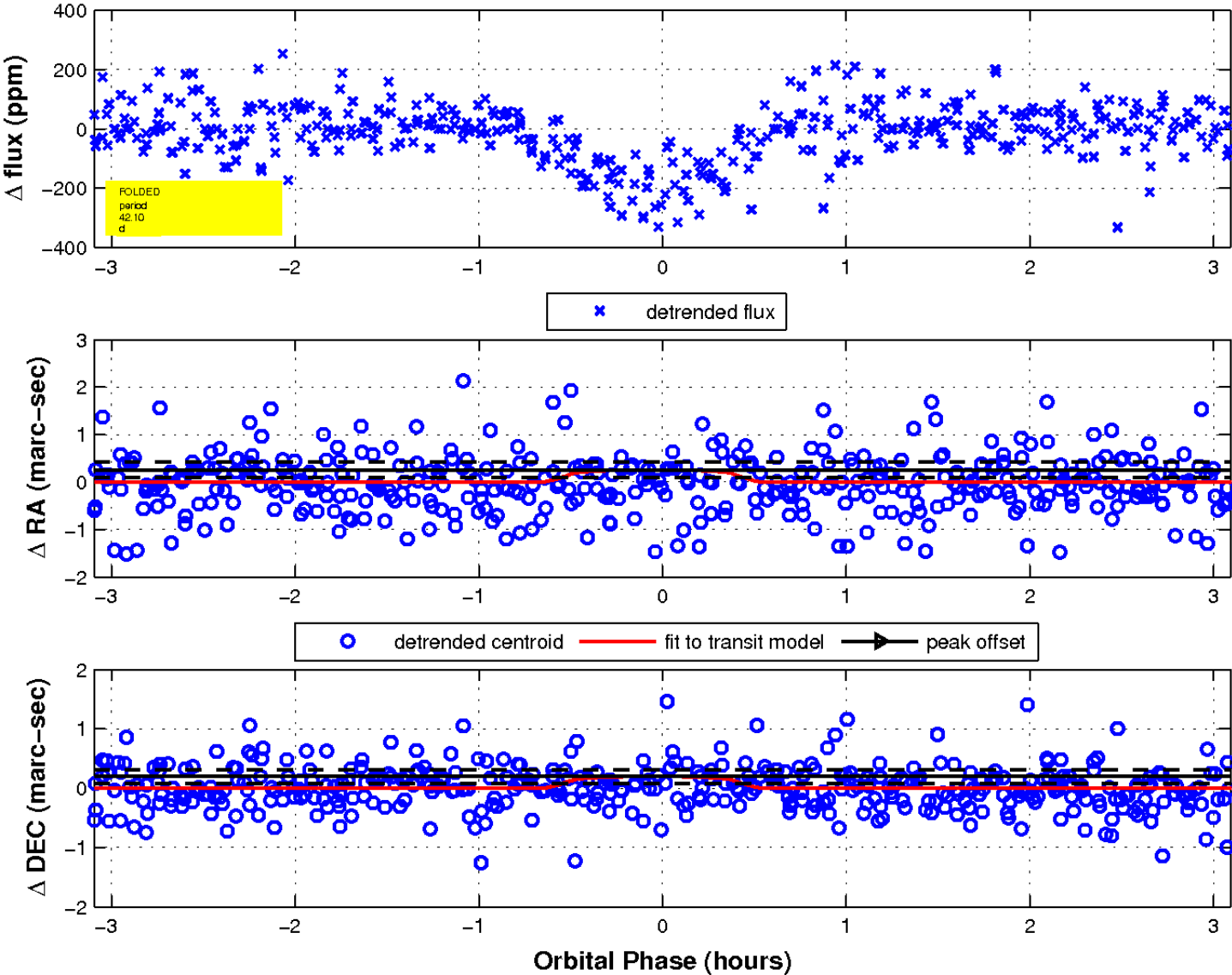
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

