

# KIC 008684240

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008684240-01	OBS	No	375.236518	175.174751	2443.4	48.451	13.6	20.2	1.09	6246	6.90	1.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008684240-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

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

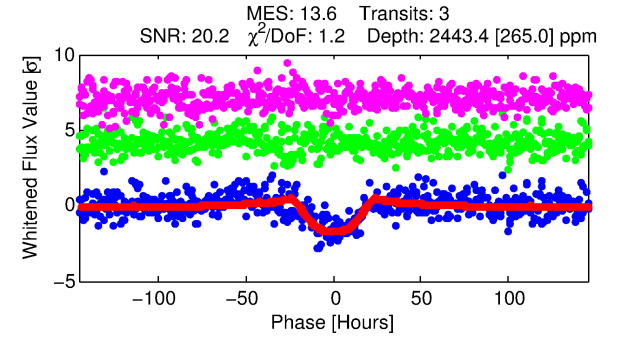
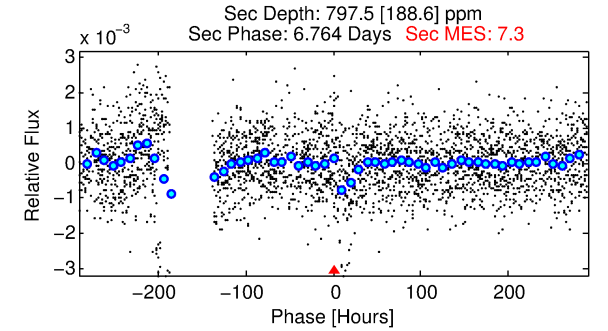
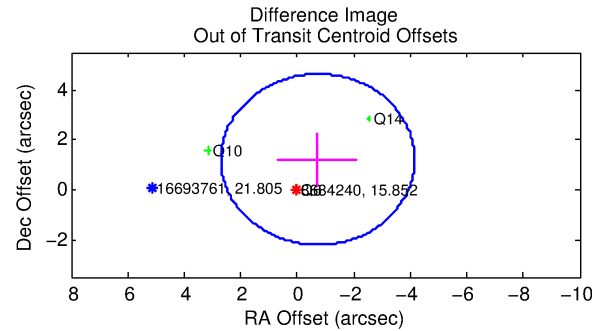
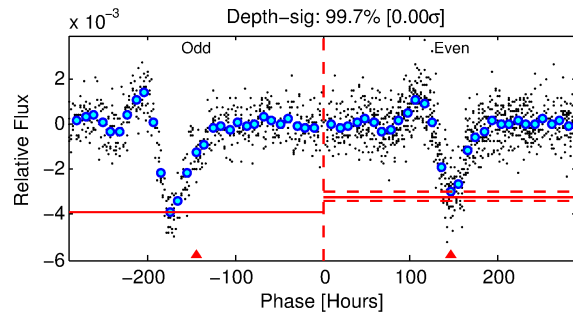
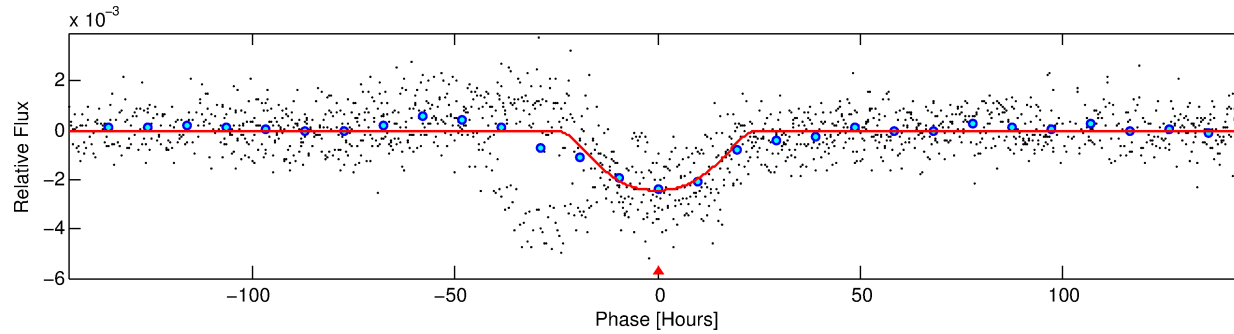
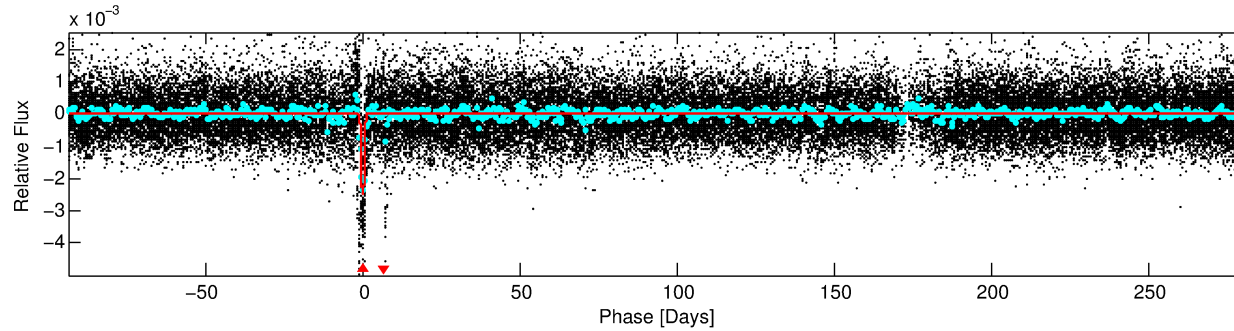
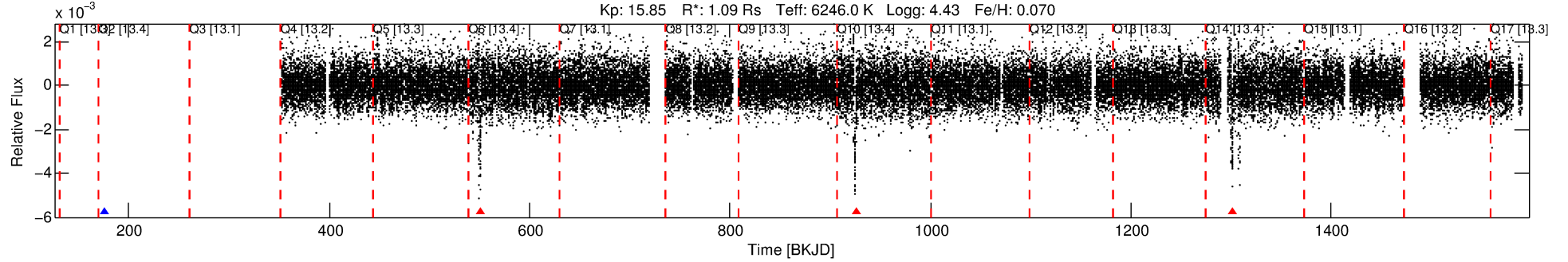
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008684240-01

No Significant Match Found

# DV One-Page Summary

KIC: 8684240 Candidate: 1 of 1 Period: 375.237 d



## DV Fit Results:

Period = 375.23652 [0.03224] d  
Epoch = 175.1748 [0.0665] BKJD  
Rp/R\* = 0.0579 [0.0088]  
a/R\* = 27.59 [3.15]  
b = 0.95 [0.03]  
Seff = 1.41 [0.57]  
Teq = 278 [28] K  
Rp = 6.90 [2.33] Re  
a = 1.0758 [0.2730] AU  
Ag = 10652.94 [5677.28] [1.88σ]  
Teff = 4361 [457] K [8.92σ]

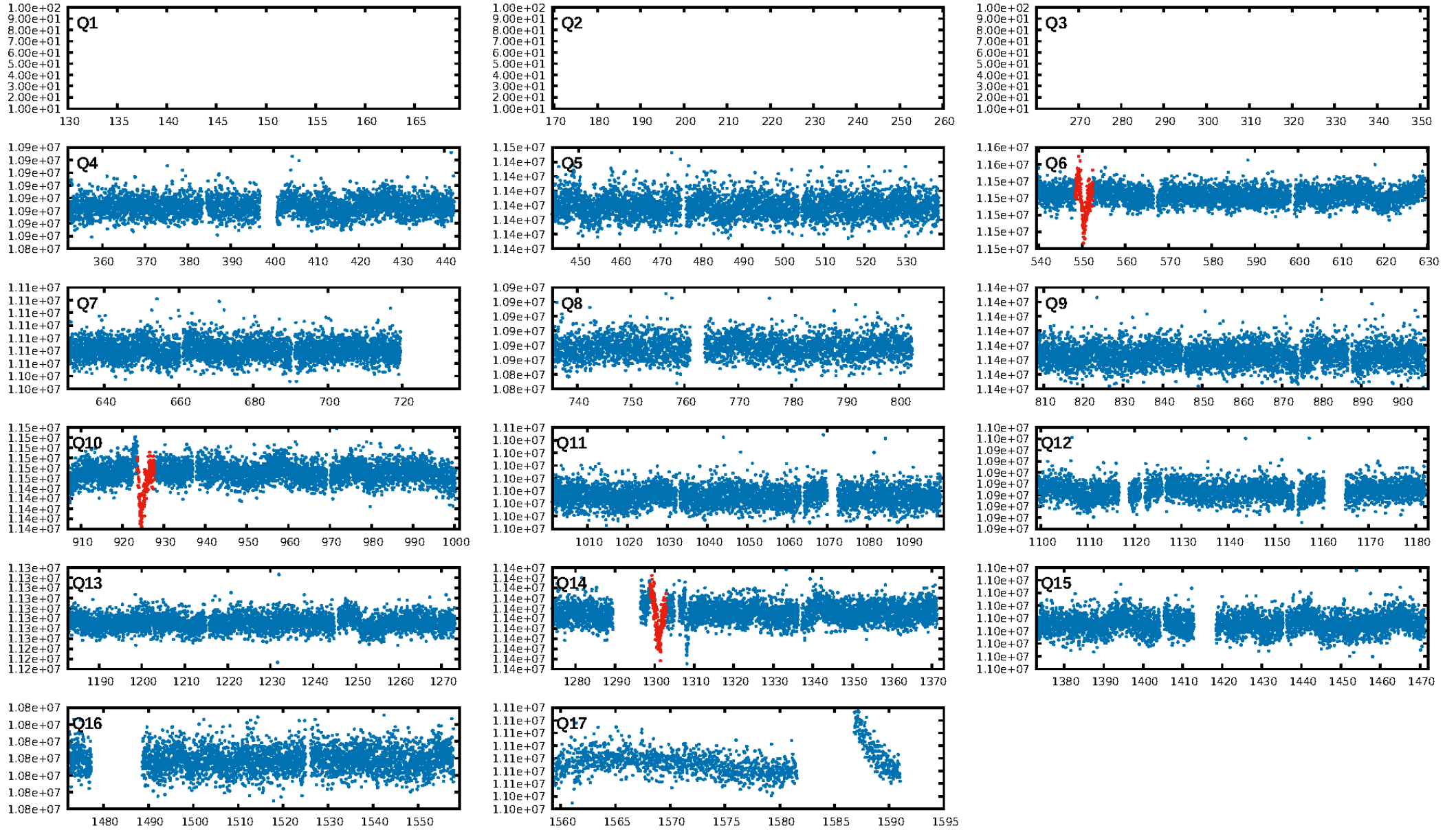
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 95.7%  
Bootstrap-pfa: 4.92e-34  
RollingBand-fgt: 0.00 [0/3]  
GhostDiagnostic-chr: 0.1861  
Centroid-sig: 72.2%  
Centroid-so: 0.469 arcsec [0.66σ]  
OotOffset-rm: 1.409 arcsec [1.23σ]  
OotOffset-st: 3/0/0/0 [3]  
KicOffset-rm: 1.441 arcsec [1.29σ]  
KicOffset-st: 3/0/0/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [3/3]

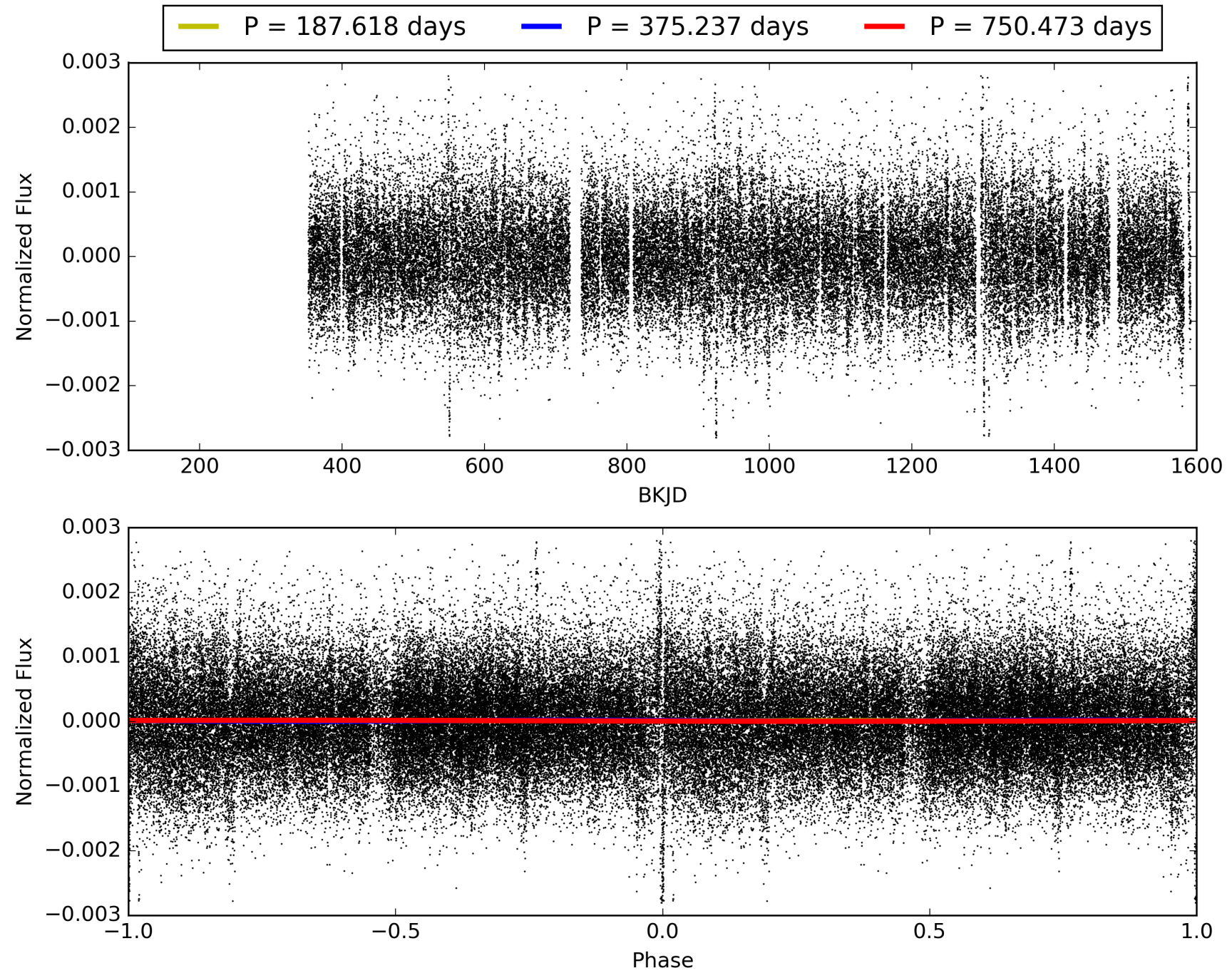
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 17:07:41 Z

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

# TCE 008684240-01, PDC Light Curves

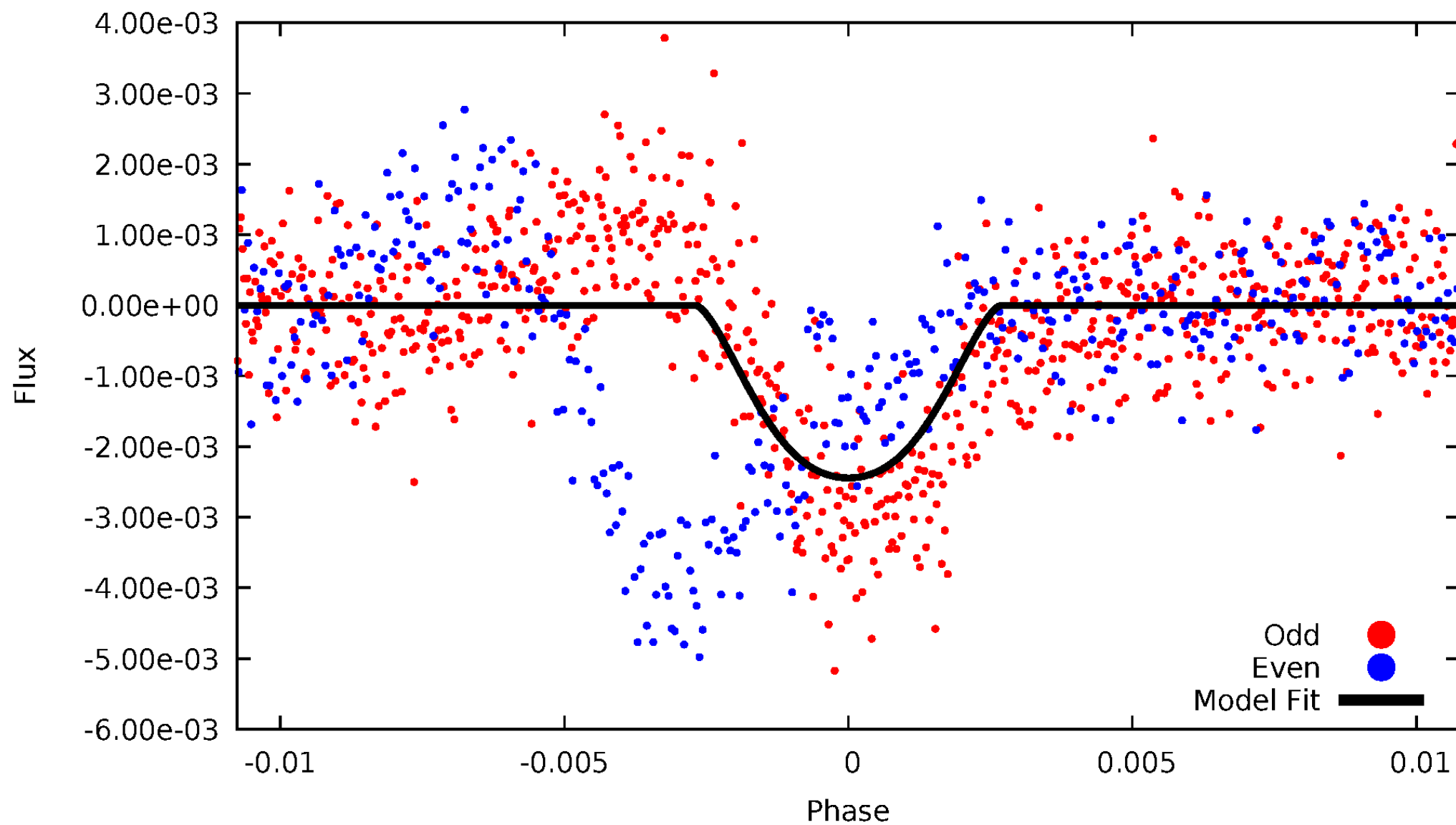


TCE 008684240-01



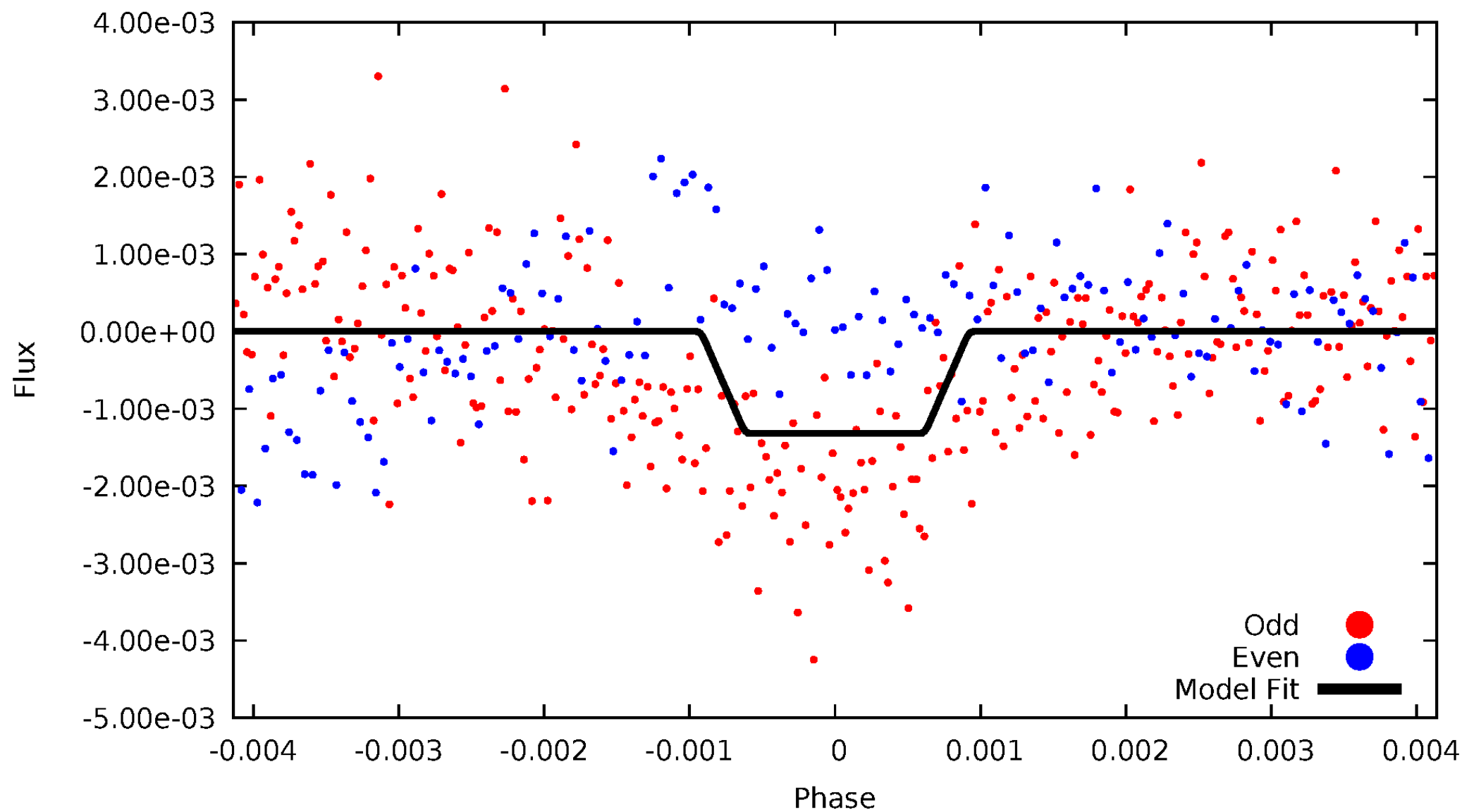
# DV Odd/Even

TCE 008684240-01



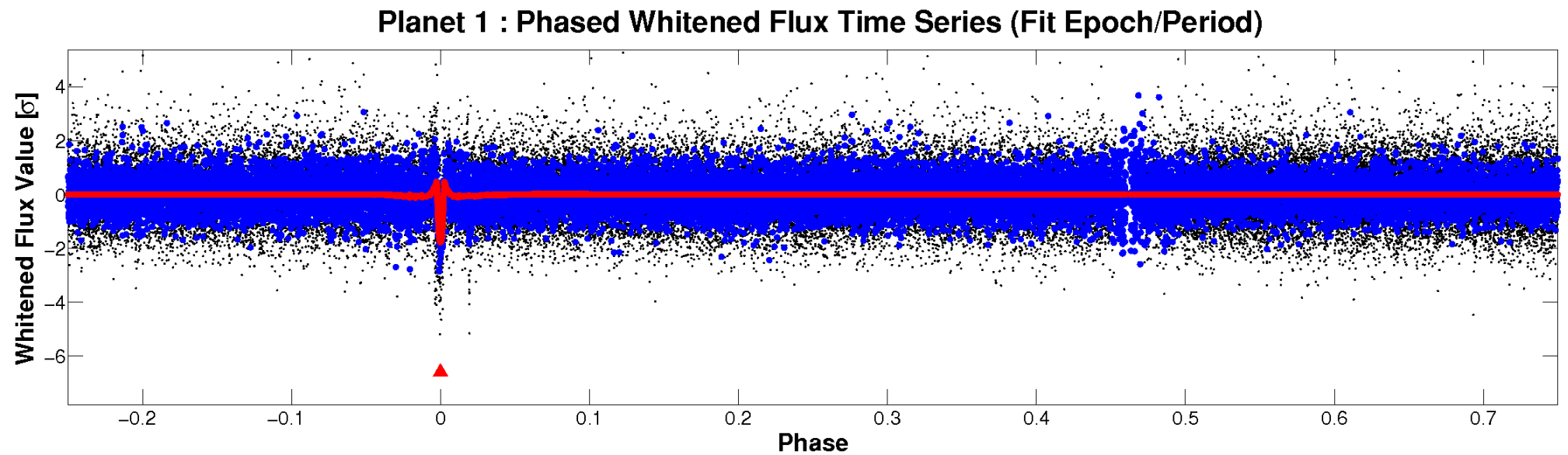
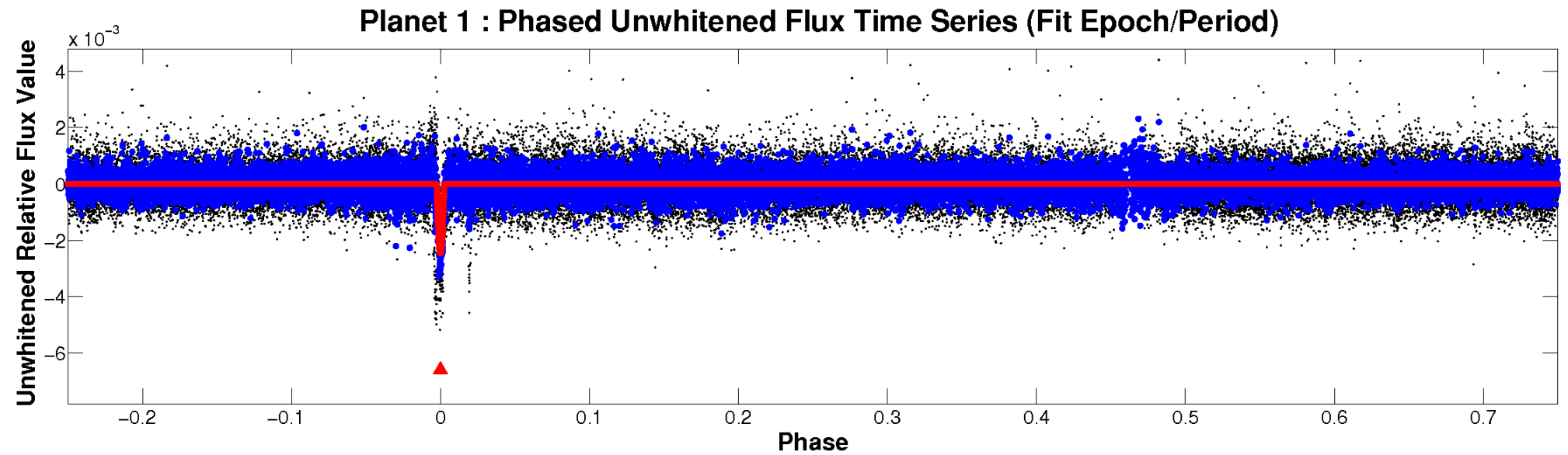
# ALT Odd/Even

TCE 008684240-01



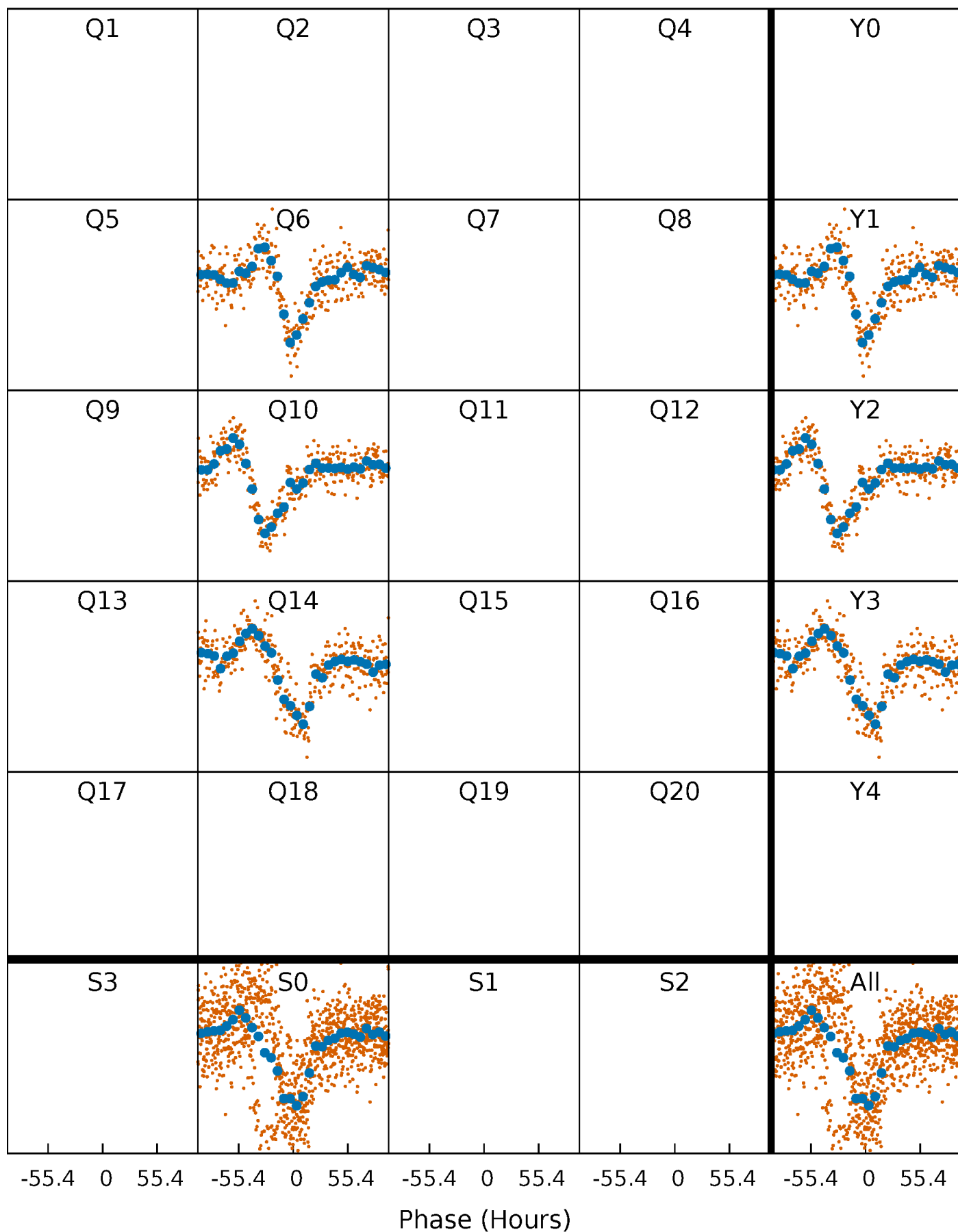


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

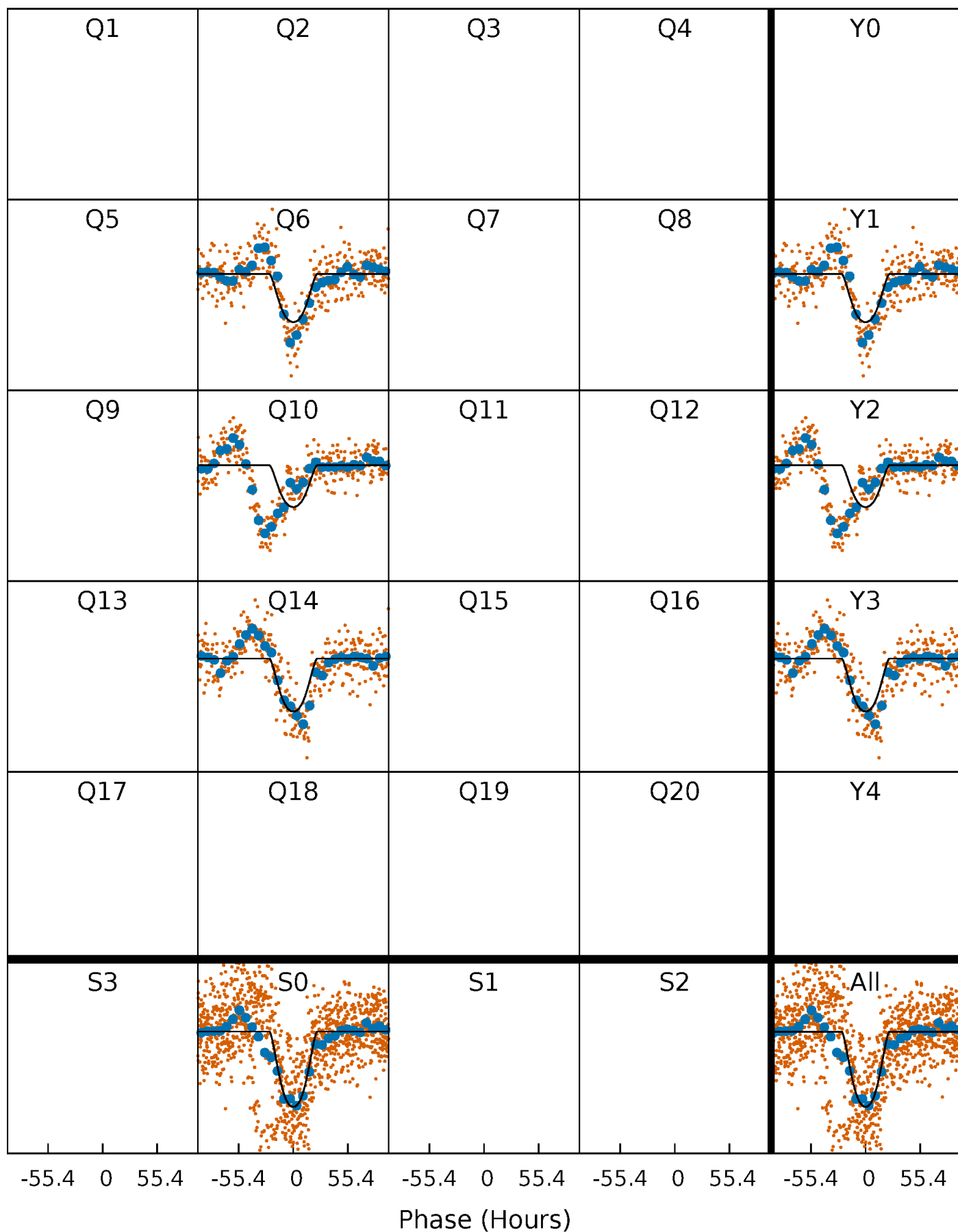
TCE 008684240-01 P=375.236518 Days  $T_0=175.174751$  (BKJD)





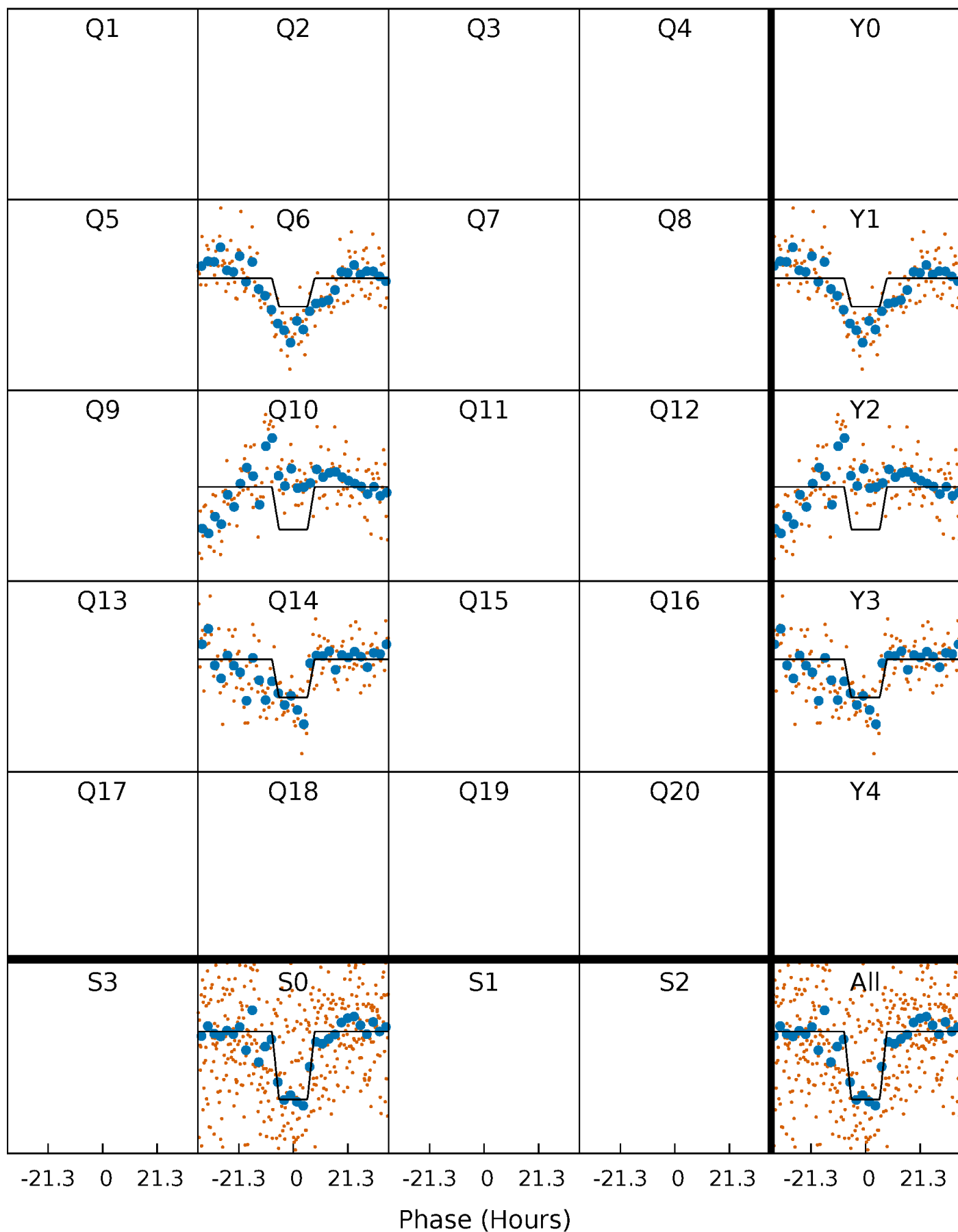
# DV Quarter-Phased Transit Curves

TCE 008684240-01 P=375.236518 Days  $T_0=175.174751$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

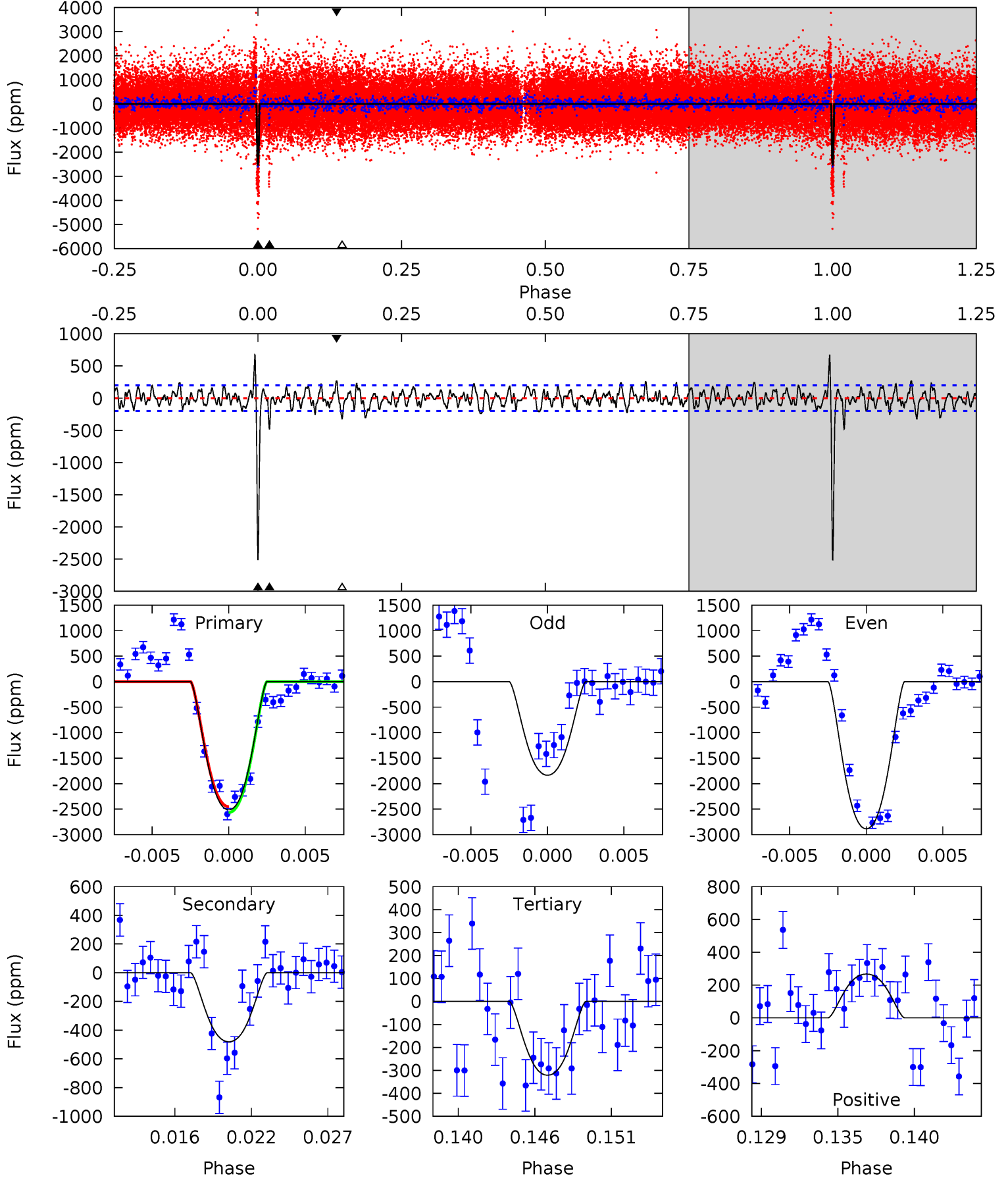
TCE 008684240-01 P=375.473476 Days  $T_0=174.902666$  (BKJD)



# DV Model-Shift Uniqueness Test

008684240-01, P = 375.236518 Days, E = 175.174751 Days

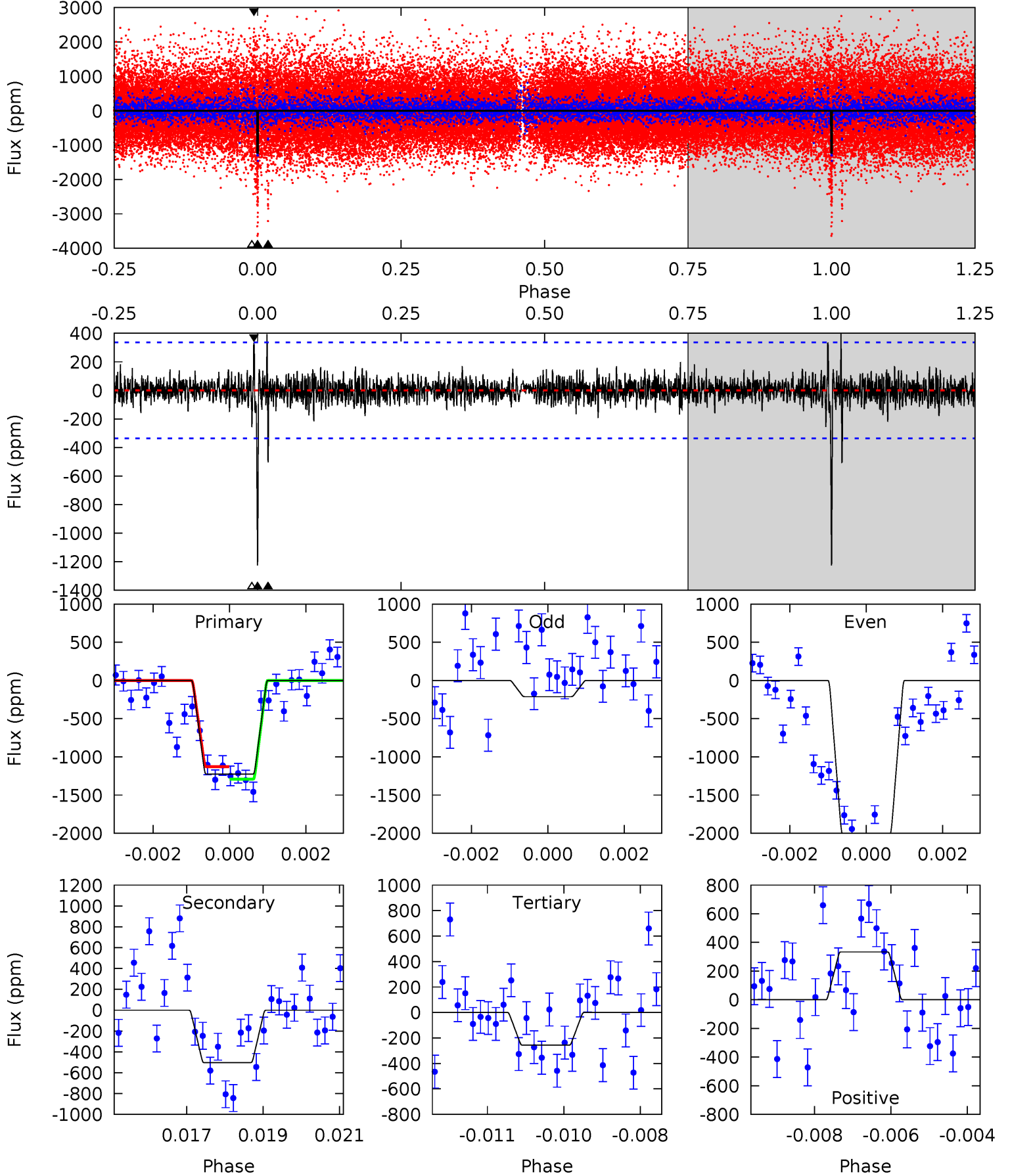
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
65.0	12.4	8.31	6.91	5.14	2.78	2.55	56.7	58.1	4.13	5.53	13.1	0.90	0.21	1.48



# Alt Model-Shift Uniqueness Test

008684240-01,  $P = 375.473476$  Days,  $E = 174.902666$  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	7.98	4.07	5.29	5.34	3.10	0.91	15.4	14.1	3.91	2.69	13.7	0.81	0.24	1.28



### Stellar Parameters For KIC 008684240

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6246^{+174}_{-261}$	$4.433^{+0.067}_{-0.202}$	$0.070^{+0.200}_{-0.350}$	$1.092^{+0.329}_{-0.141}$	$1.180^{+0.135}_{-0.186}$	$1.276^{+0.361}_{-0.674}$
	+3%/-4%	+2%/-5%	+286%/-500%	+30%/-13%	+11%/-16%	+28%/-53%
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 008684240-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-481 \pm 39$	$7.15^{+1.51}_{-1.27}$	$394^{+30}_{-23}$	$4109^{+278}_{-240}$	$5741^{+2961}_{-1750}$
Alt.	$-503 \pm 63$	$4.37^{+1.26}_{-1.08}$	$393^{+28}_{-22}$	$4987^{+697}_{-421}$	$16146^{+13029}_{-6454}$

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

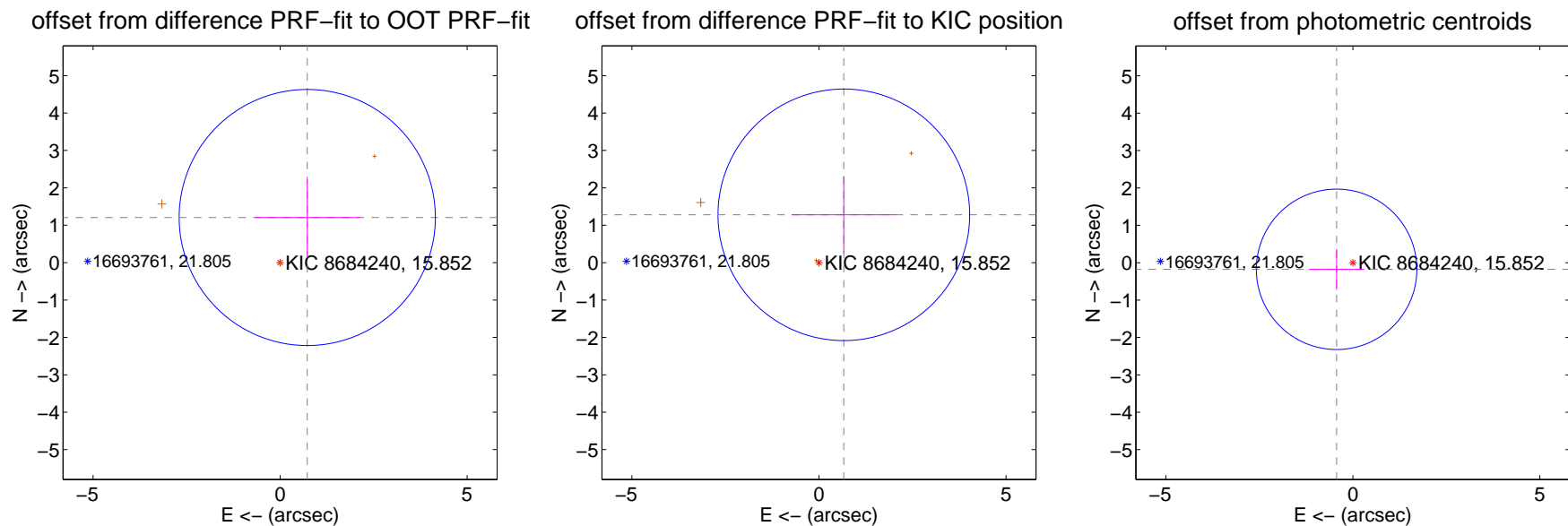
## DV Centroid Data

Supplemental centroid analysis for 008684240-01. Kepler magnitude: 15.85. Transit SNR 20.17

There are 0 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	$1.409 \pm 1.141$	1.23	$-0.726 \pm 1.399$	$1.207 \pm 1.033$
PRF-fit source offset from KIC position	$1.441 \pm 1.121$	1.29	$-0.664 \pm 1.396$	$1.279 \pm 1.035$
photometric centroid source offset	$0.47 \pm 0.72$	0.66	$0.43 \pm 0.74$	$-0.18 \pm 0.55$



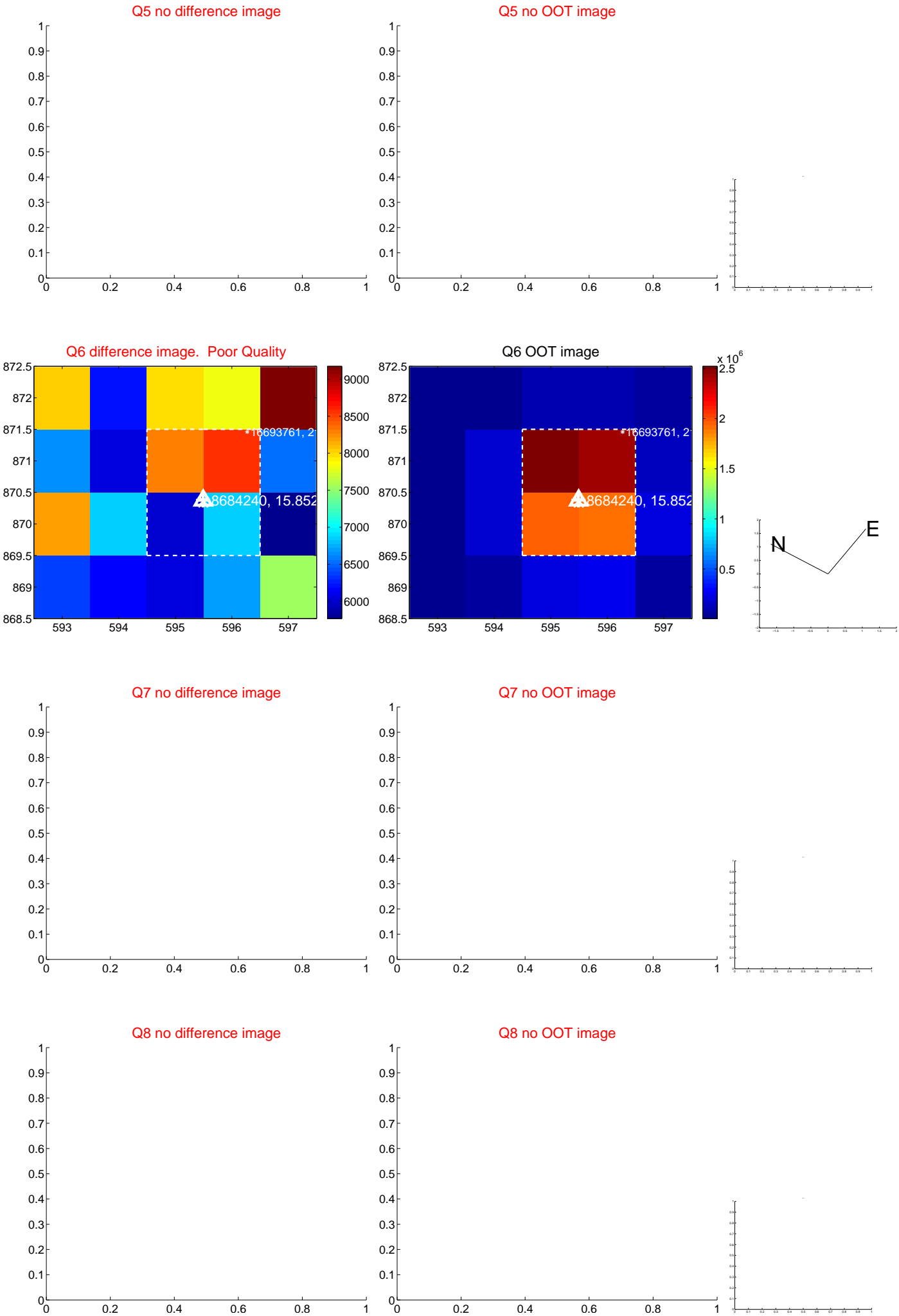
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



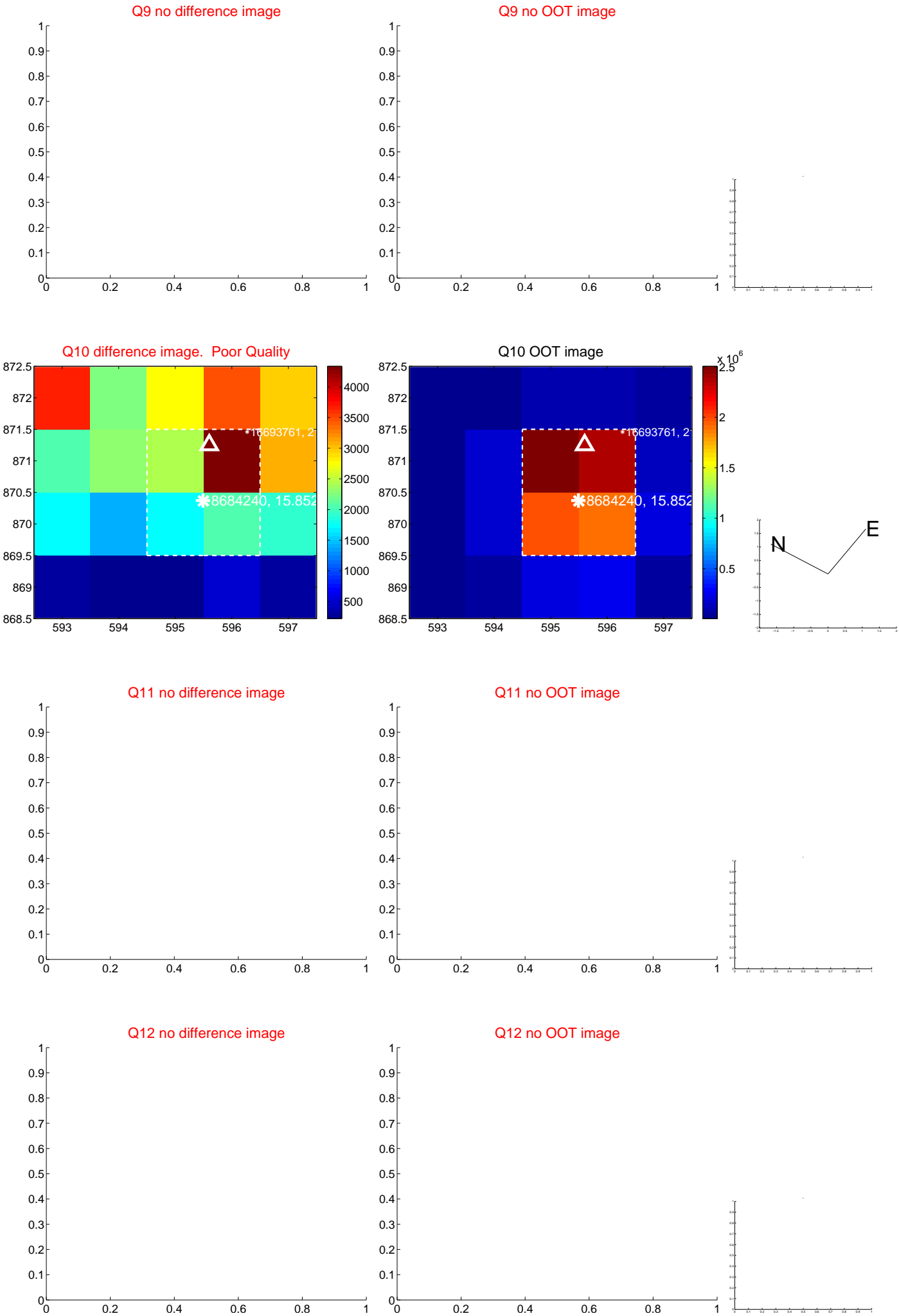
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



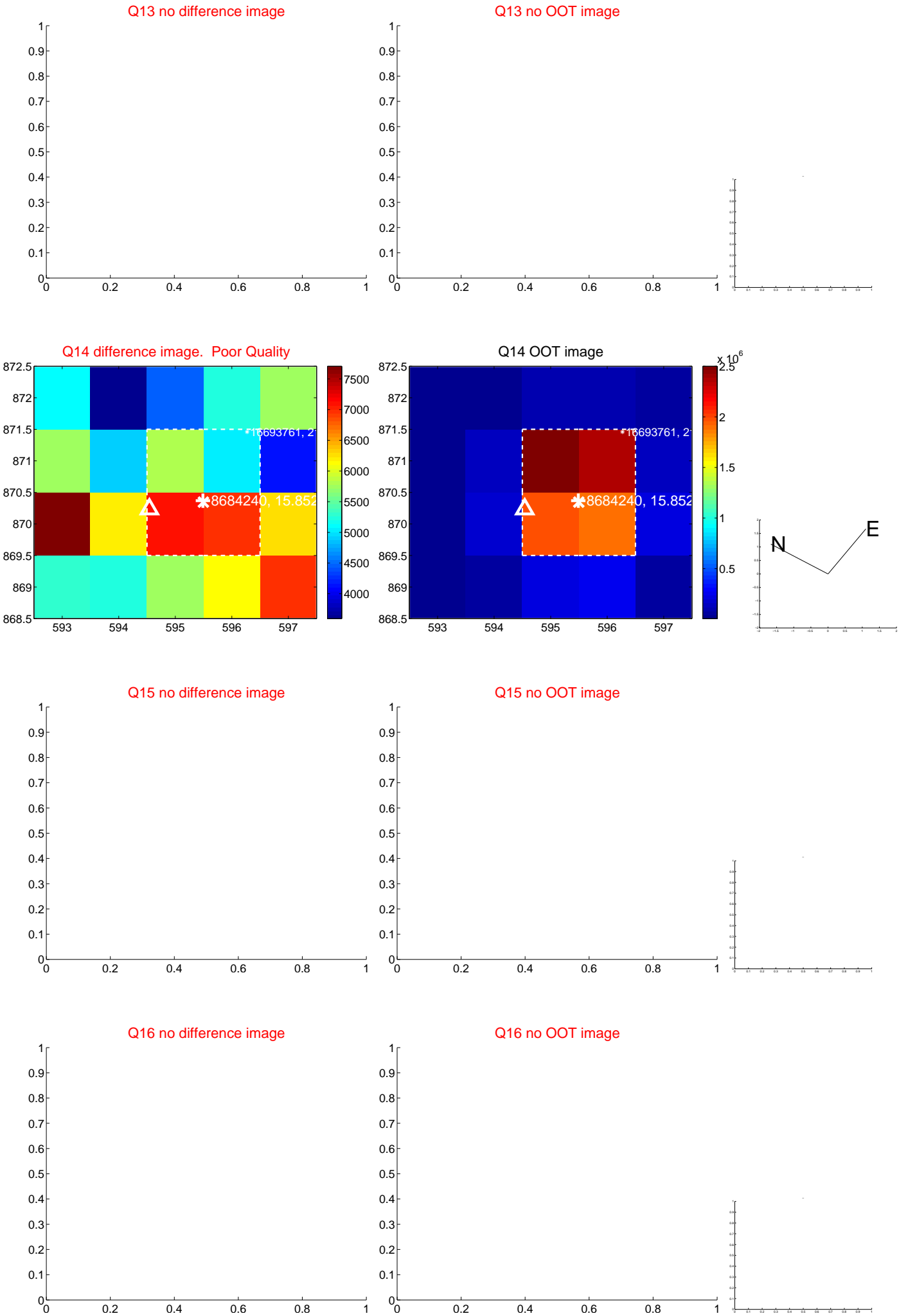
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



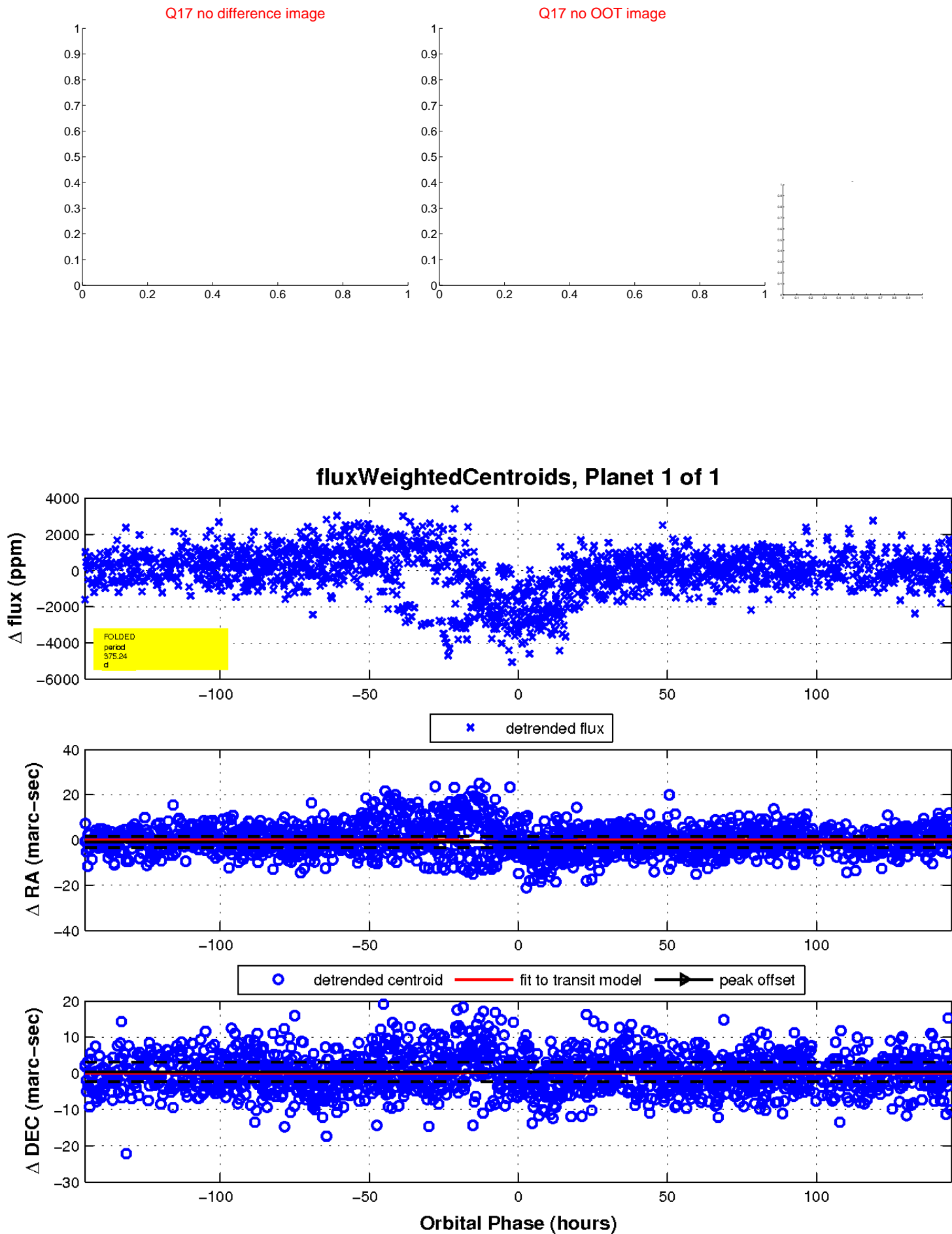
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

