

# KIC 006773862

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006773862-01	OBS	1868.01	17.760775	137.506680	1306.8	1.745	36.4	43.1	0.52	3826	2.12	4.35

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006773862-01	OBS	PC	1.00	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 006773862-01

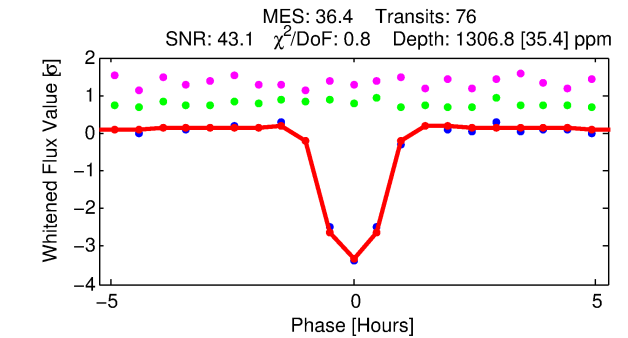
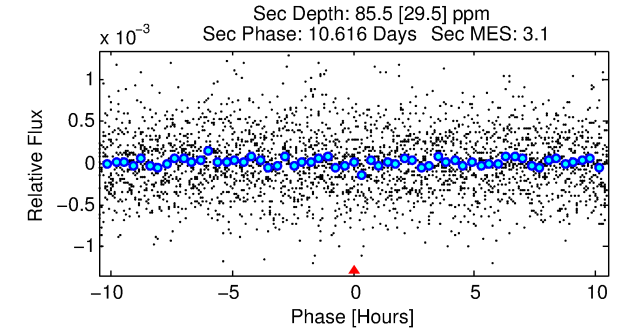
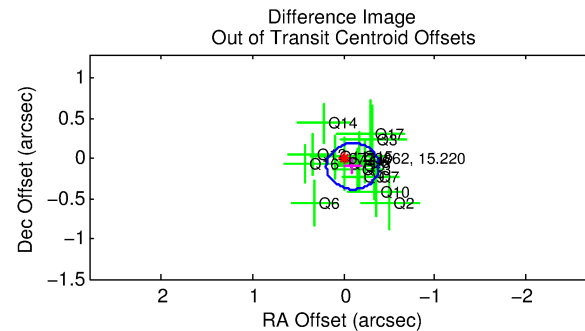
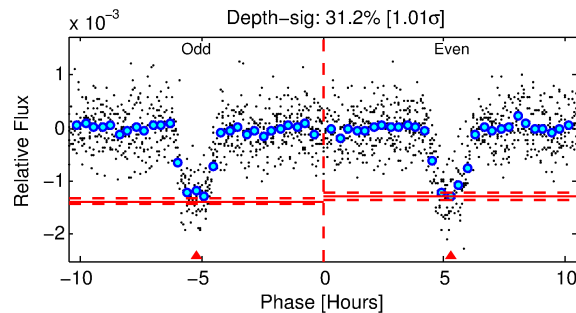
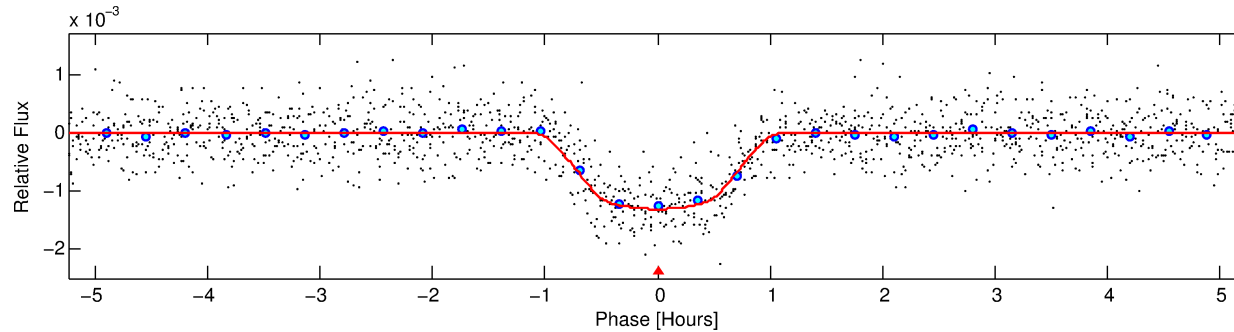
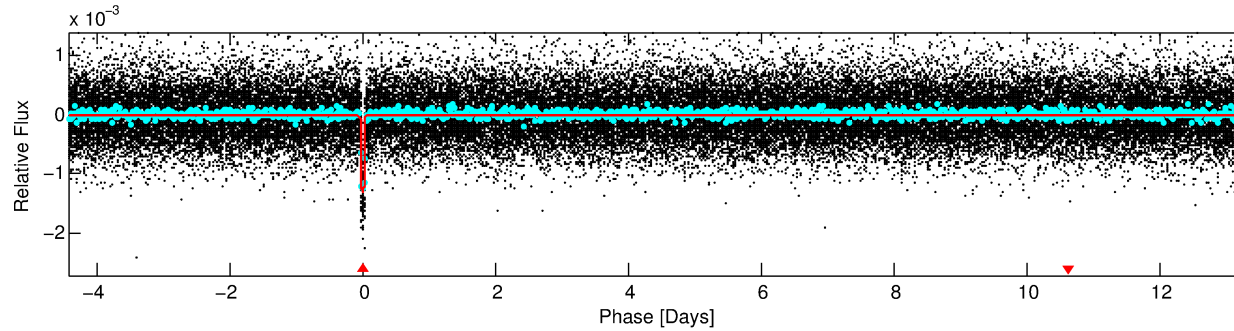
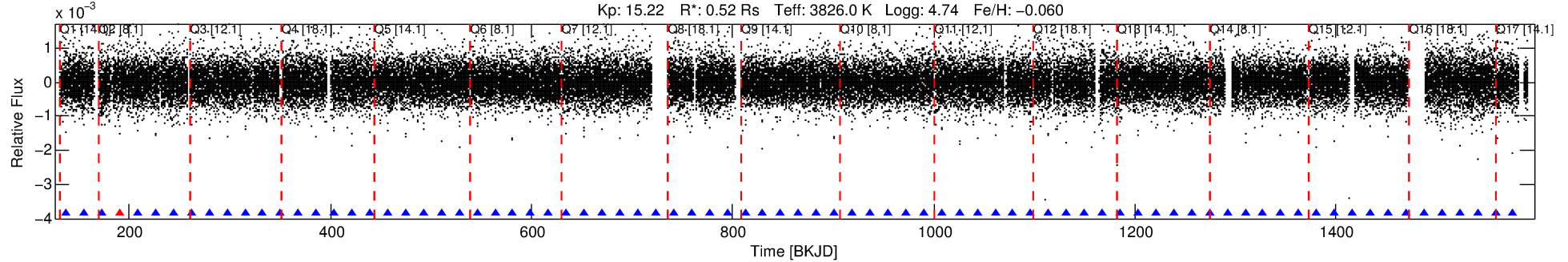
No Significant Match Found

# DV One-Page Summary

KIC: 6773862 Candidate: 1 of 1 Period: 17.761 d

KOI: K01868.01 Corr: 0.982

Kp: 15.22 R\*: 0.52 Rs Teff: 3826.0 K Logg: 4.74 Fe/H: -0.060



## DV Fit Results:

Period = 17.76078 [0.00002] d  
Epoch = 137.5067 [0.0011] BKJD  
Rp/R\* = 0.0376 [0.0060]  
a/R\* = 48.07 [32.05]  
b = 0.83 [0.25]  
Seff = 4.35 [0.50]  
Teq = 368 [11] K  
Rp = 2.12 [0.37] Re  
a = 0.1084 [0.0063] AU  
Ag = 123.18 [58.49] [2.09σ]  
Teffp = 1897 [226] K [6.75σ]

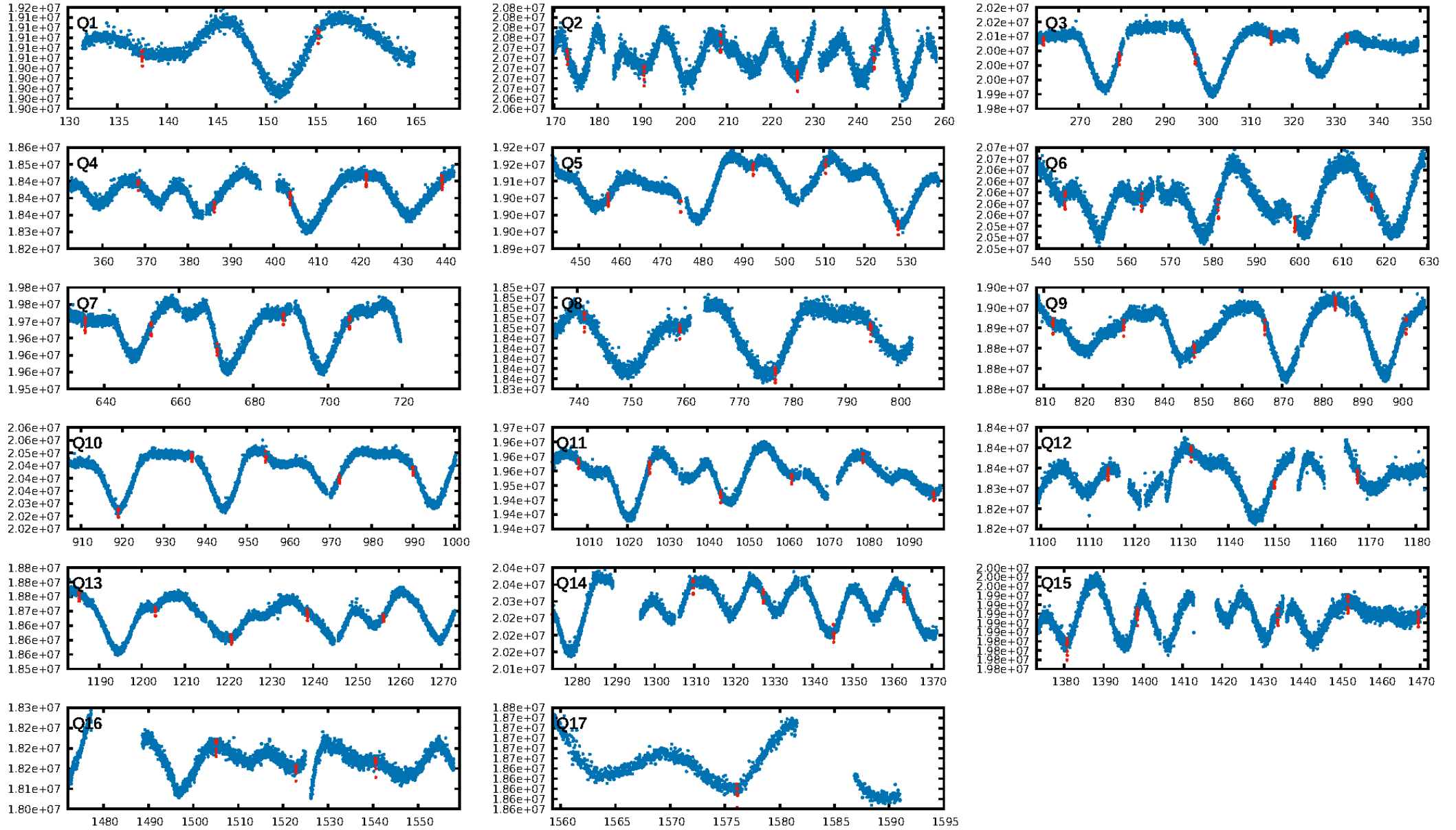
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.82e-269  
RollingBand-fgt: 0.99 [72/73]  
GhostDiagnostic-chr: 5.084  
Centroid-sig: 34.7%  
Centroid-so: 0.815 arcsec [2.55σ]  
OotOffset-rm: 0.139 arcsec [1.45σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.598 arcsec [6.26σ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

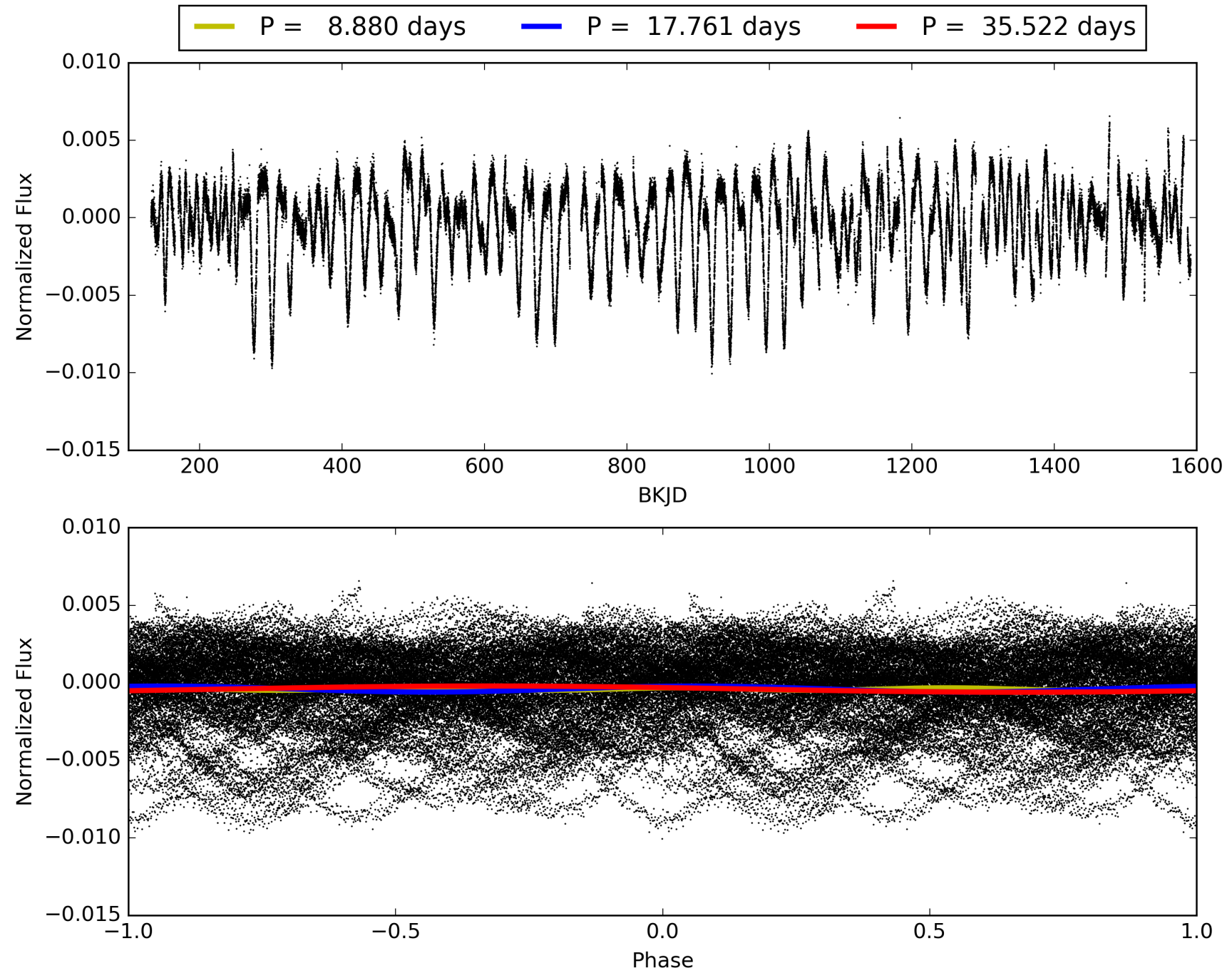
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 05:22:33 Z

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

# TCE 006773862-01, PDC Light Curves

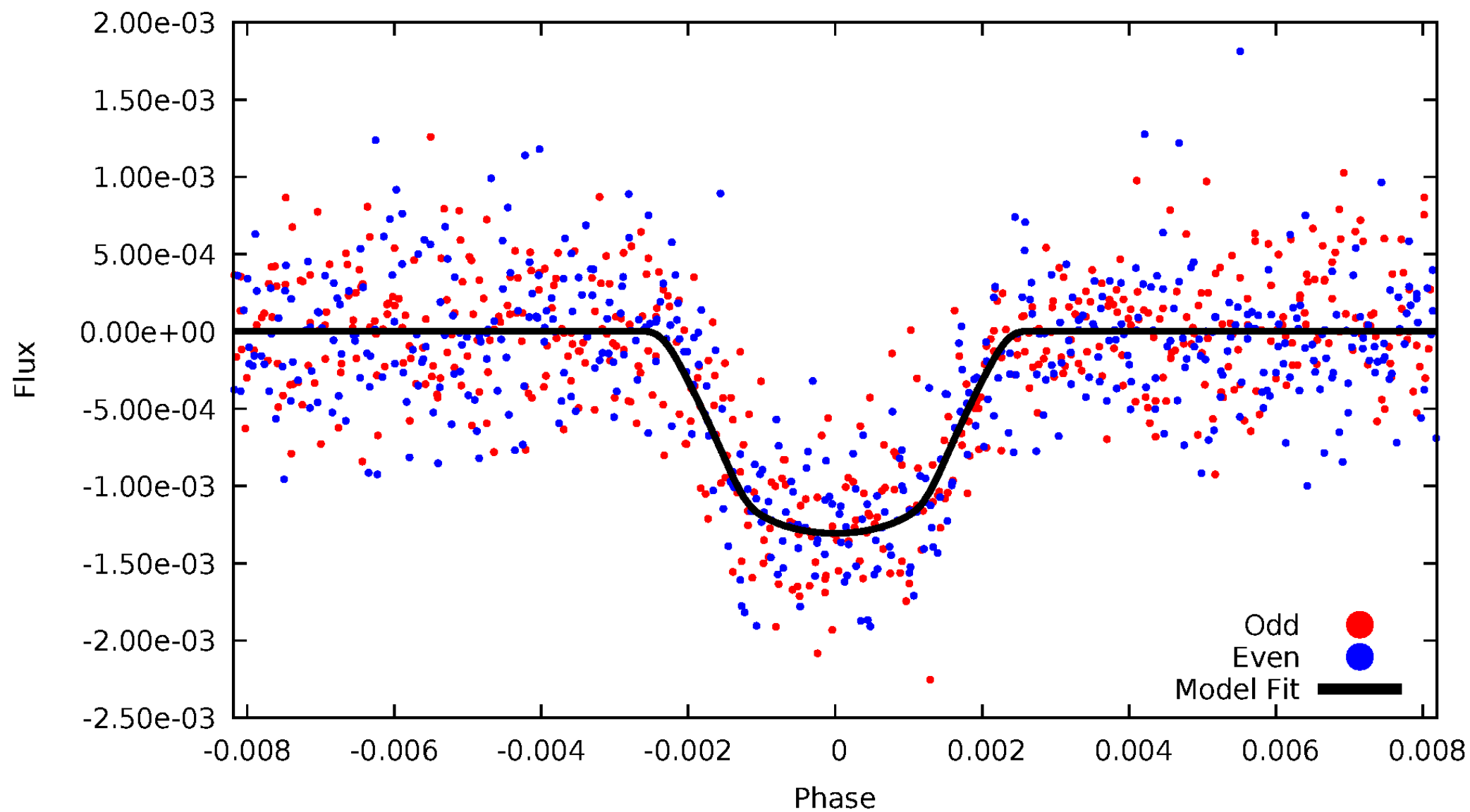


TCE 006773862-01



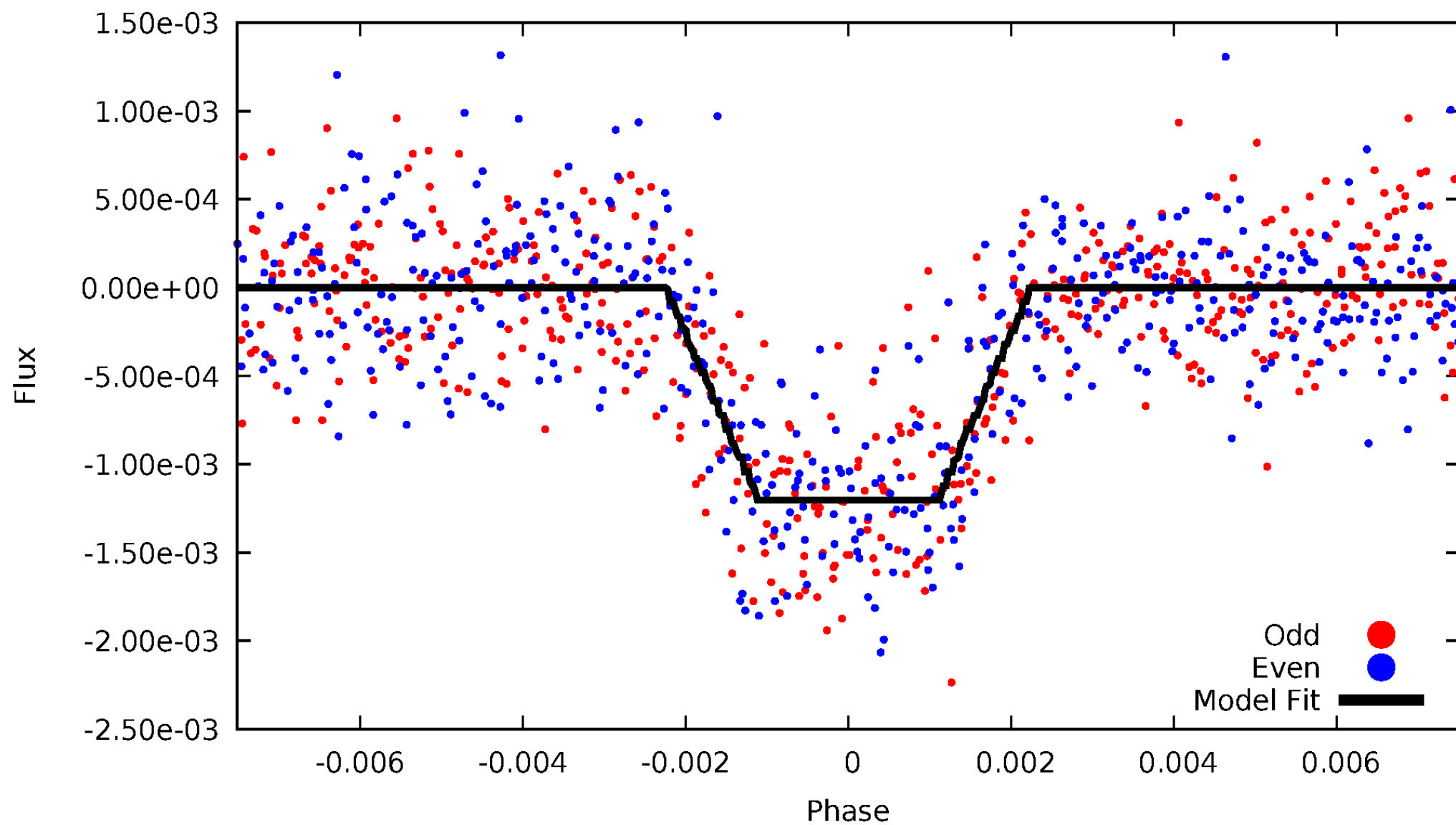
# DV Odd/Even

TCE 006773862-01



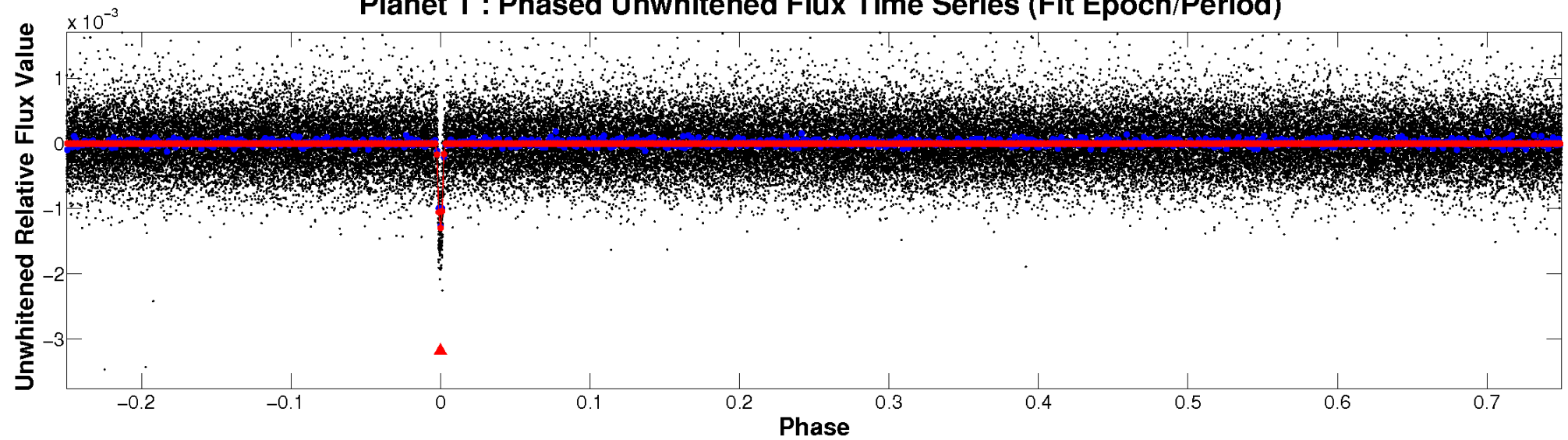
# ALT Odd/Even

TCE 006773862-01

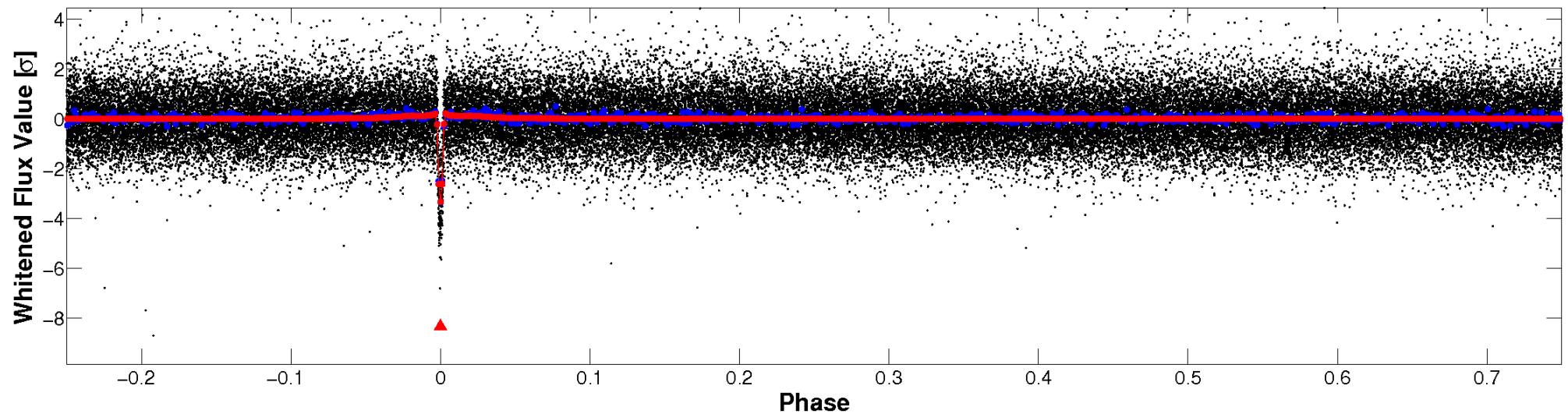


# Non-Whitened Vs. Whitened Light Curve

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



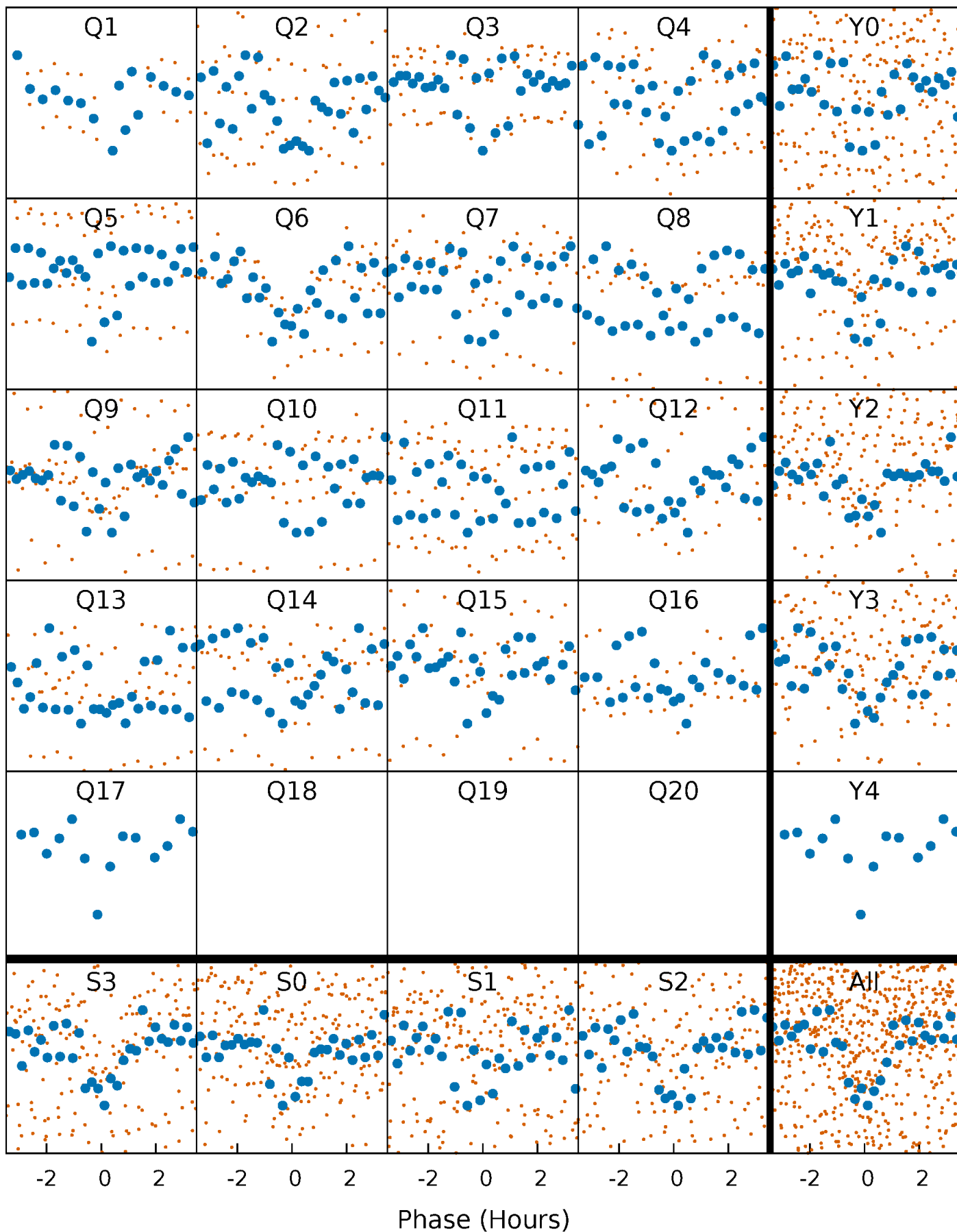
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

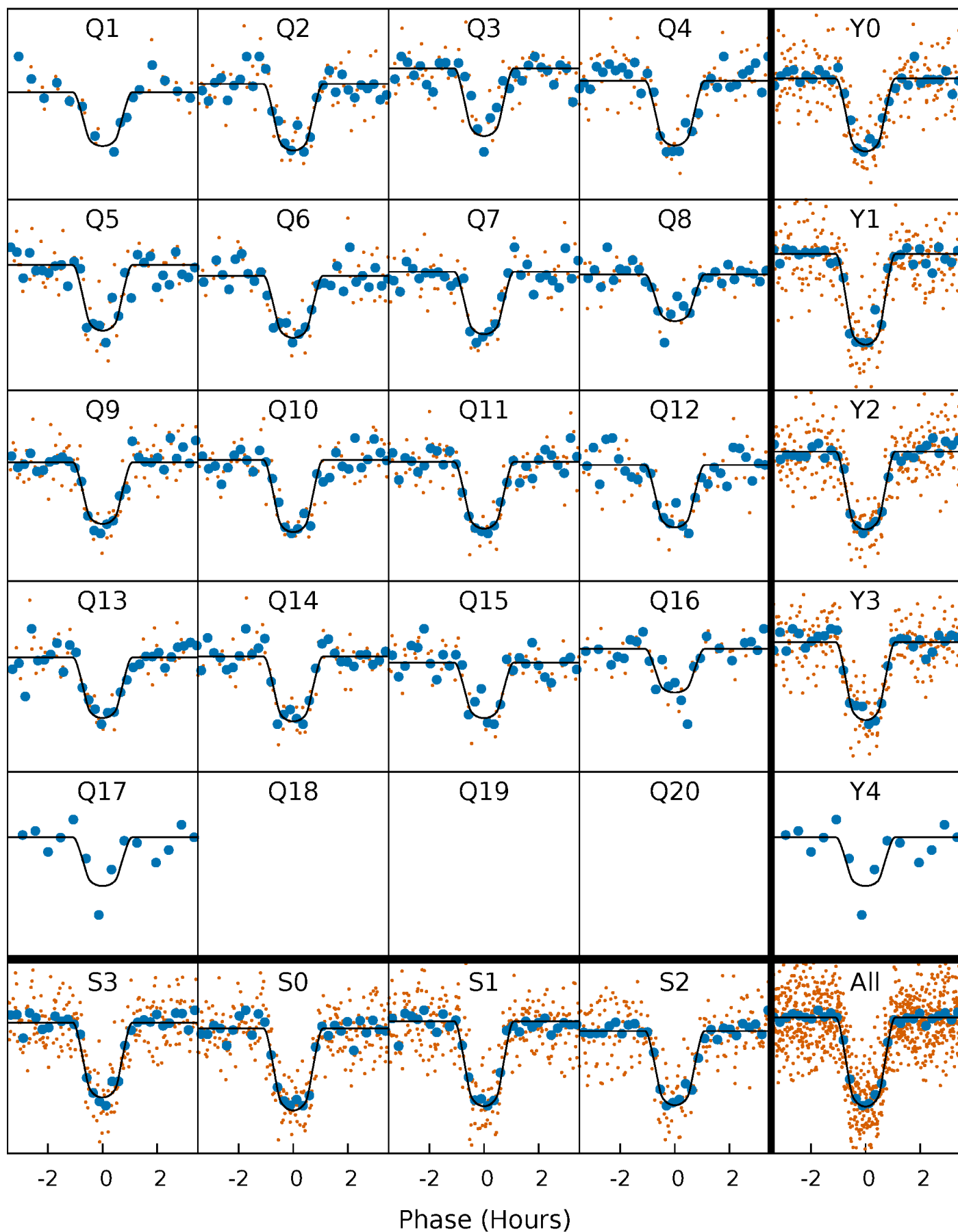
TCE 006773862-01 P= 17.760775 Days  $T_0=137.506680$  (BKJD)





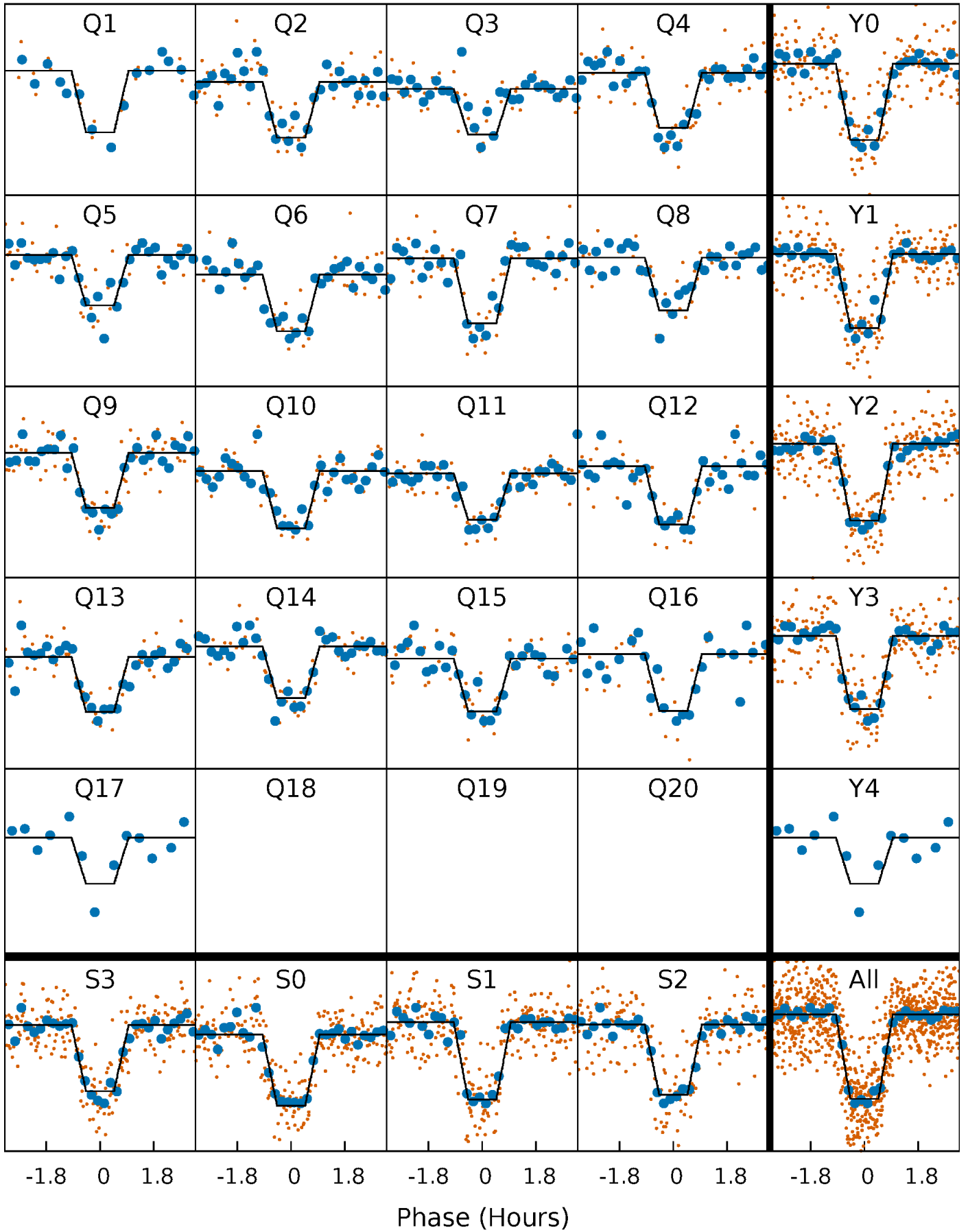
# DV Quarter-Phased Transit Curves

TCE 006773862-01 P= 17.760775 Days  $T_0=137.506680$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

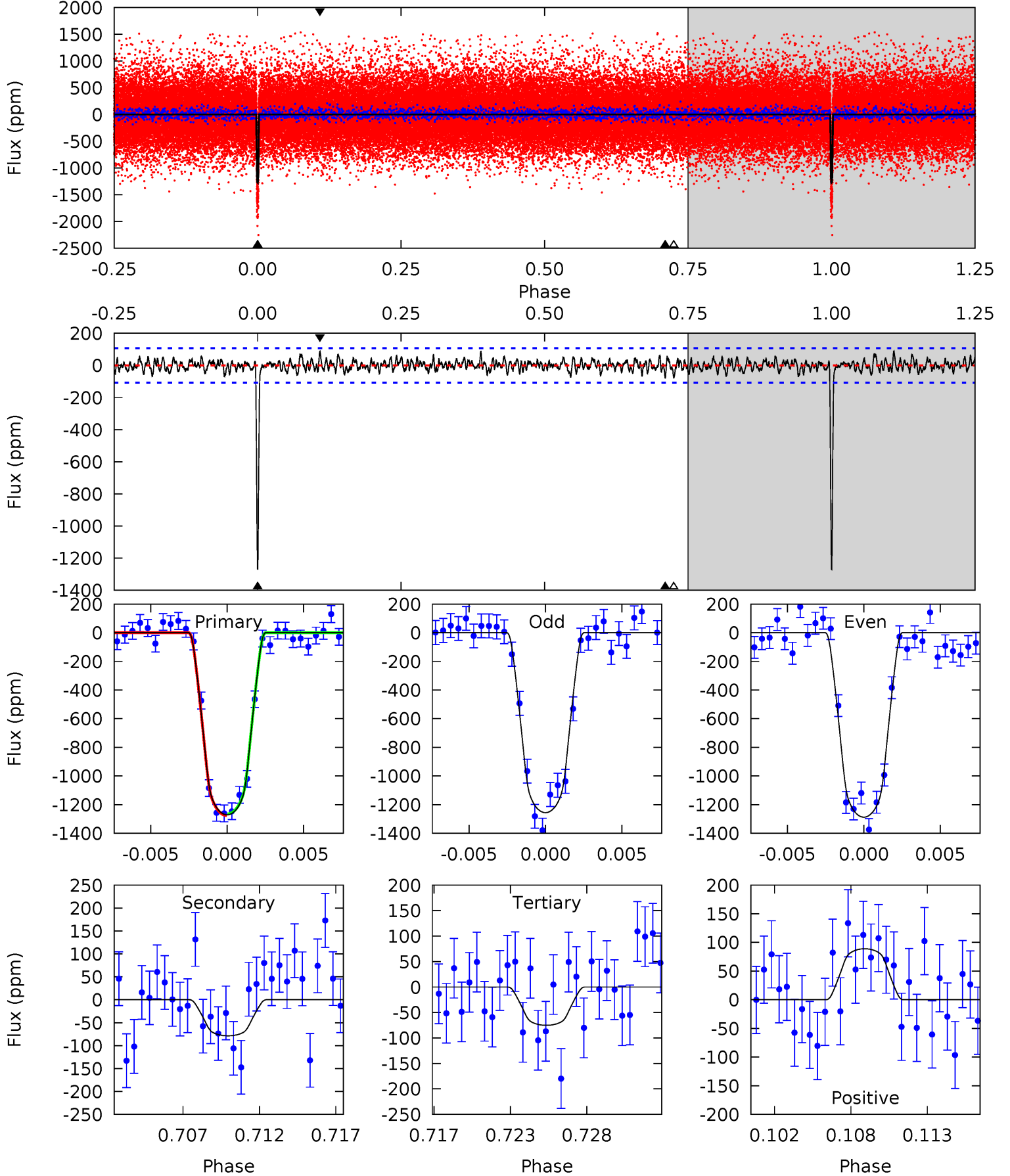
TCE 006773862-01 P= 17.760769 Days  $T_0=137.507583$  (BKJD)



# DV Model-Shift Uniqueness Test

006773862-01,  $P = 17.760775$  Days,  $E = 119.745905$  Days

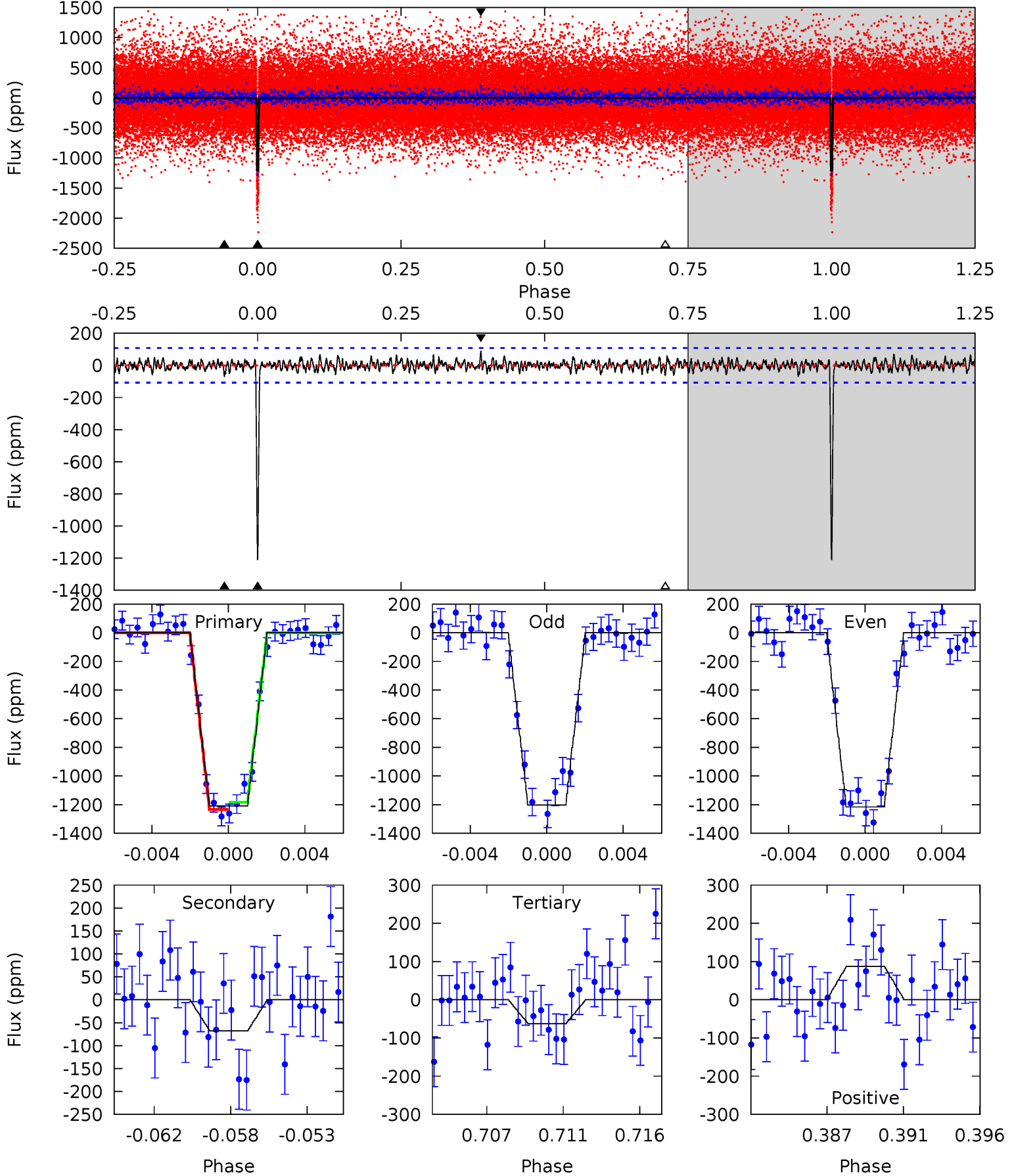
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
61.2	3.79	3.62	4.29	5.15	2.80	1.23	57.6	56.9	0.17	-0.50	0.76	1.00	0.07	0.27



# Alt Model-Shift Uniqueness Test

006773862-01,  $P = 17.760769$  Days,  $E = 119.746814$  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
58.0	3.26	2.99	4.20	5.18	2.84	1.04	55.0	53.8	0.27	-0.94	0.33	0.98	0.07	1.22



### Stellar Parameters For KIC 006773862

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3826^{+76}_{-84}$	$4.744^{+0.035}_{-0.035}$	$-0.060^{+0.150}_{-0.150}$	$0.516^{+0.037}_{-0.040}$	$0.540^{+0.031}_{-0.043}$	$5.522^{+0.983}_{-0.763}$
	+2%/-2%	+1%/-1%	+250%/-250%	+7%/-8%	+6%/-8%	+18%/-14%
Source	SPE70	SPE60	SPE70	DSEP		

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

### Secondary Eclipse Parameters for KIC 006773862-01 / KOI 1868.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-79 \pm 21$	$2.12^{+0.36}_{-0.36}$	$514^{+13}_{-13}$	$2518^{+142}_{-127}$	$111^{+61}_{-37}$
Alt.	$-68 \pm 21$	$1.95^{+0.35}_{-0.37}$	$514^{+13}_{-13}$	$2522^{+170}_{-150}$	$113^{+73}_{-44}$

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

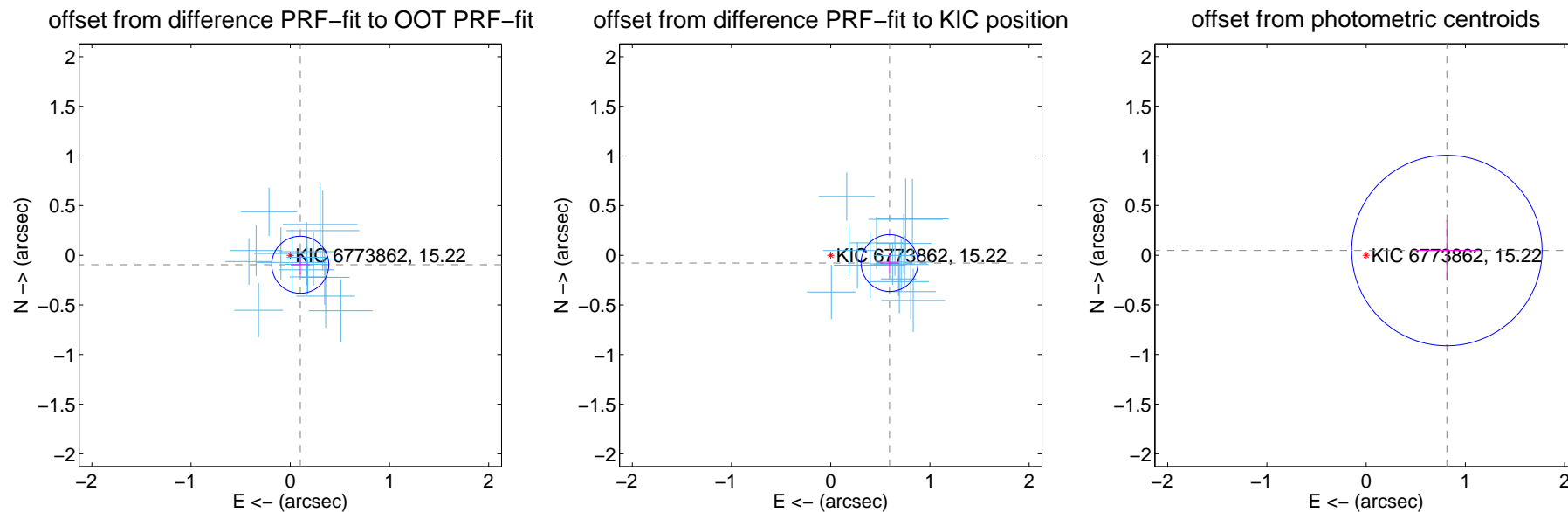
## DV Centroid Data

Supplemental centroid analysis for 006773862-01. Kepler magnitude: 15.22. Transit SNR 43.06

There are 17 quarters with good PRF difference image offsets

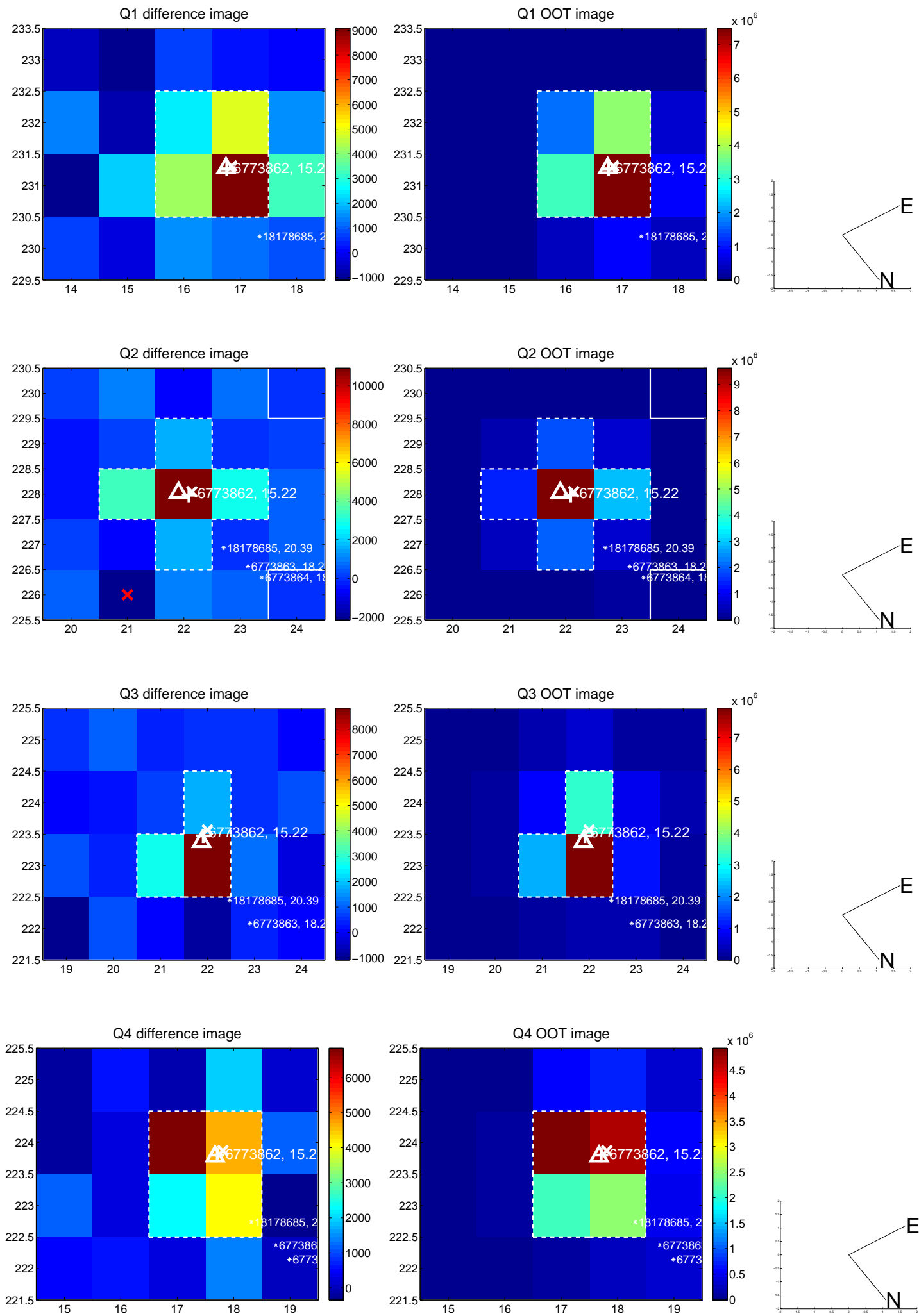
The direct PRF centroid is offset from the target star catalog position by about 0.46 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.139 \pm 0.096$	1.45	$-0.101 \pm 0.096$	$-0.095 \pm 0.096$
PRF-fit source offset from KIC position	<b><math>0.598 \pm 0.096</math></b>	<b>6.26</b>	$-0.593 \pm 0.096$	$-0.078 \pm 0.096$
photometric centroid source offset	$0.82 \pm 0.32$	2.55	$-0.81 \pm 0.32$	$0.05 \pm 0.30$



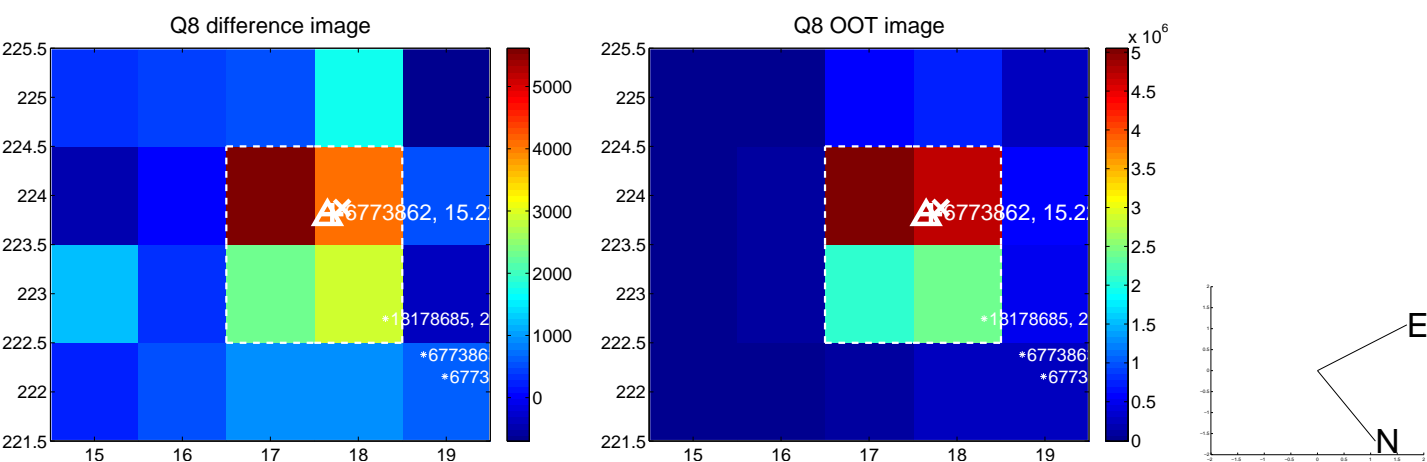
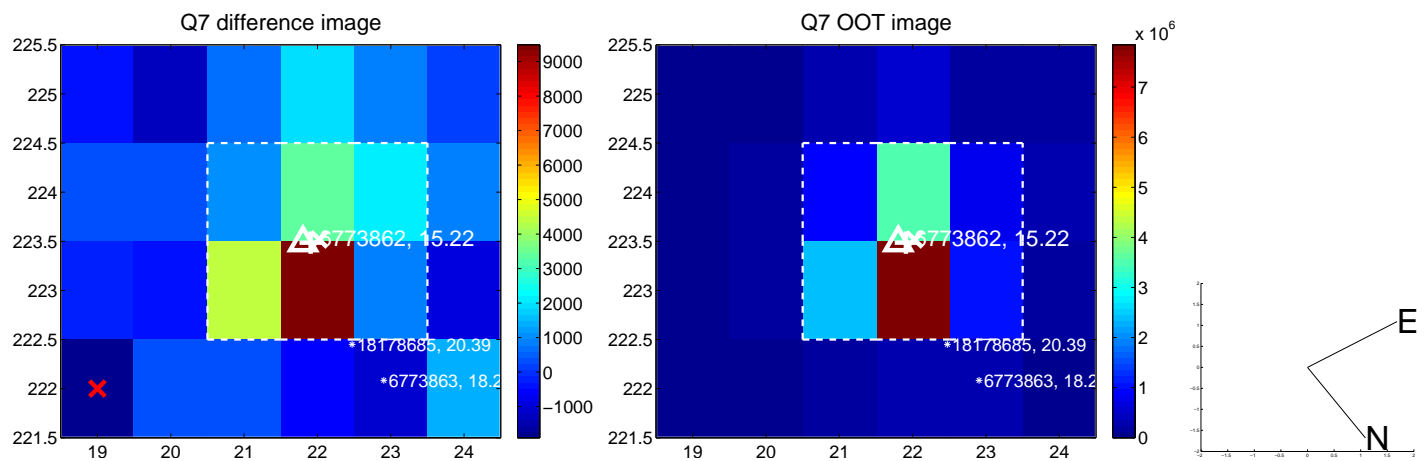
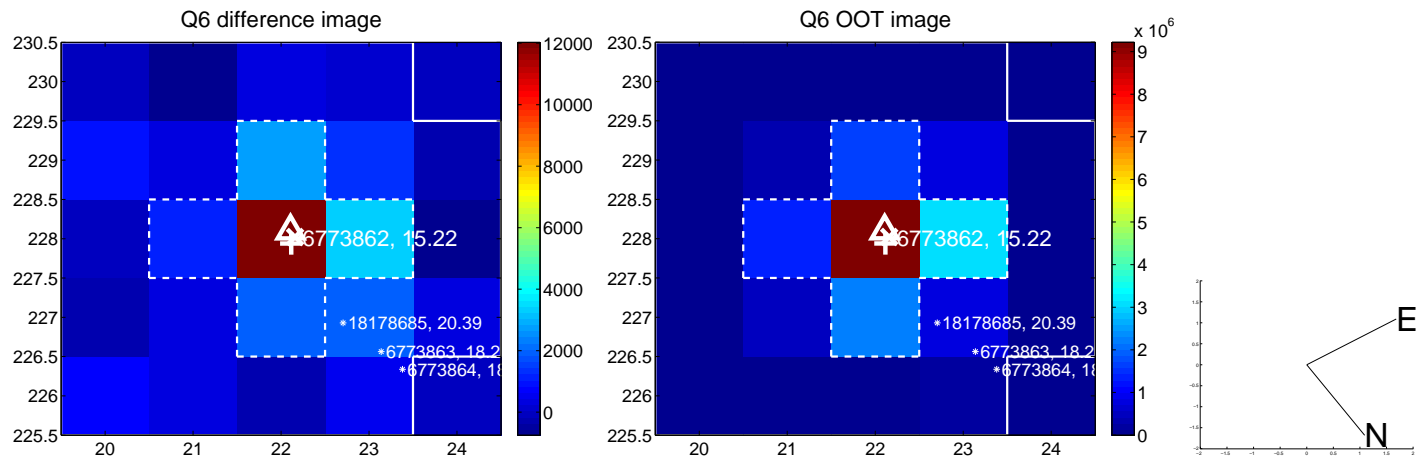
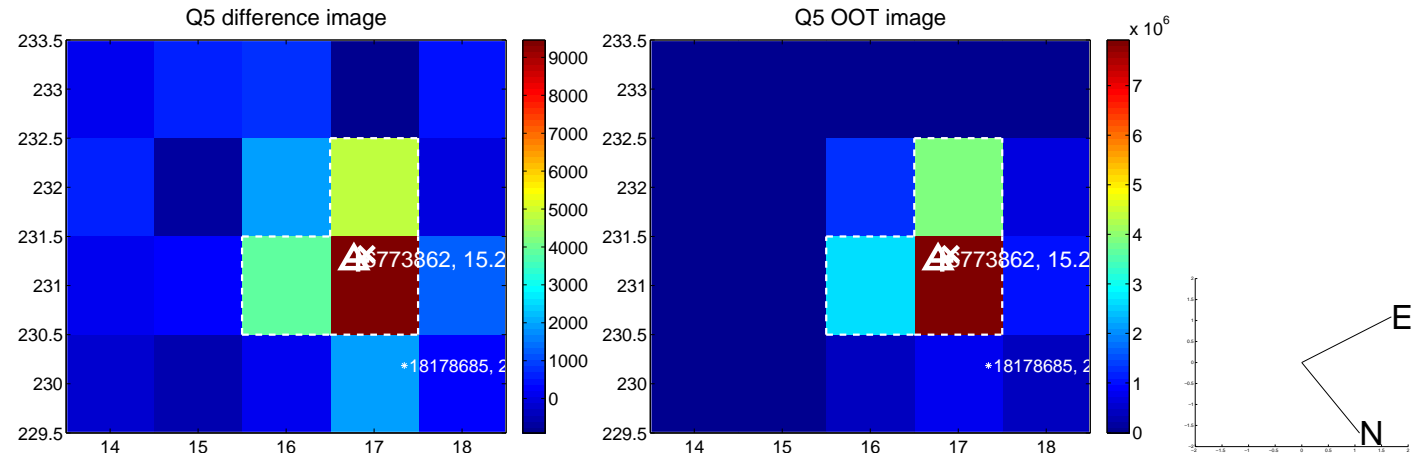
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

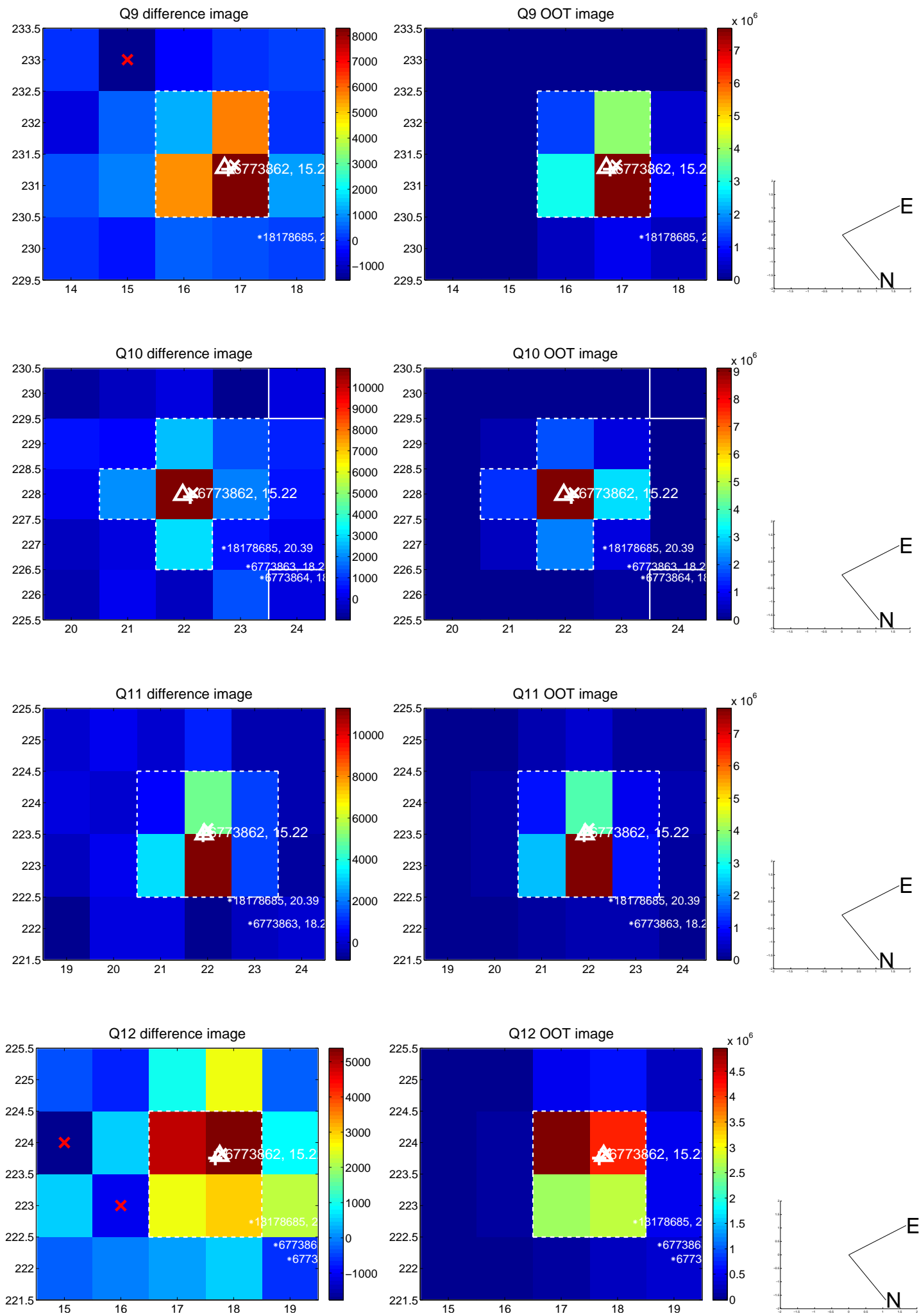




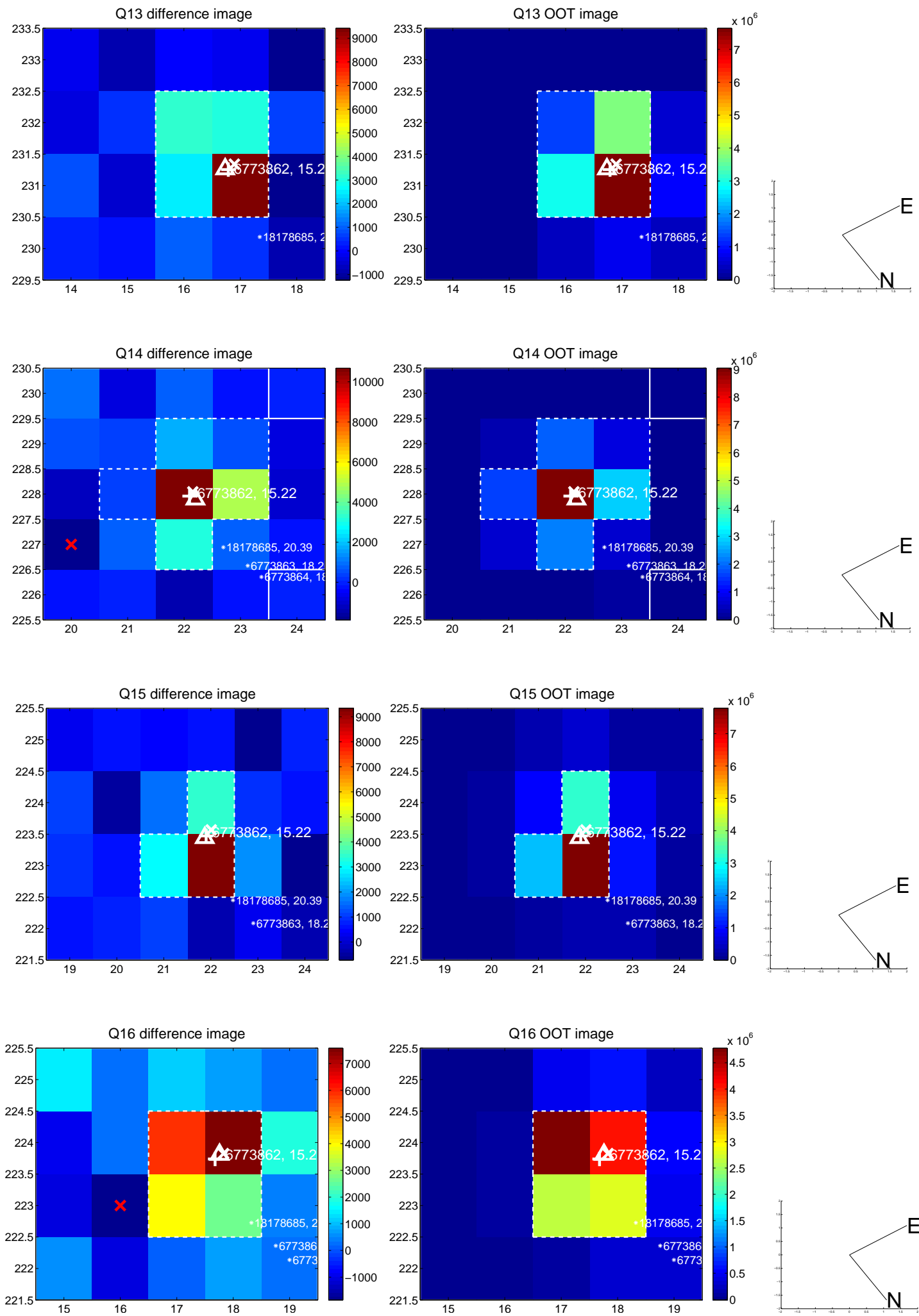
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



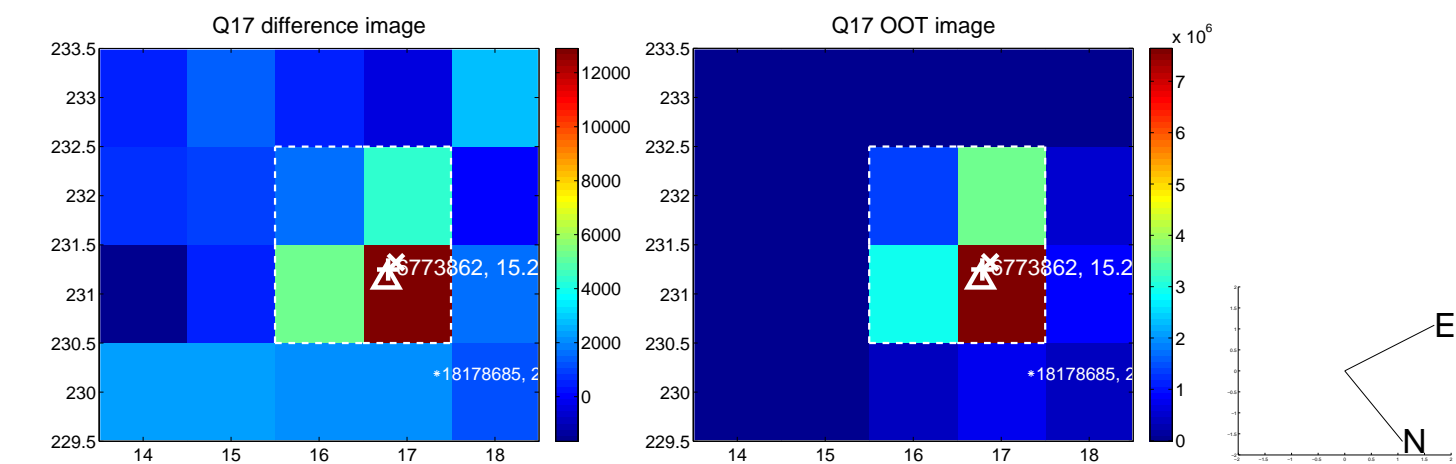
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



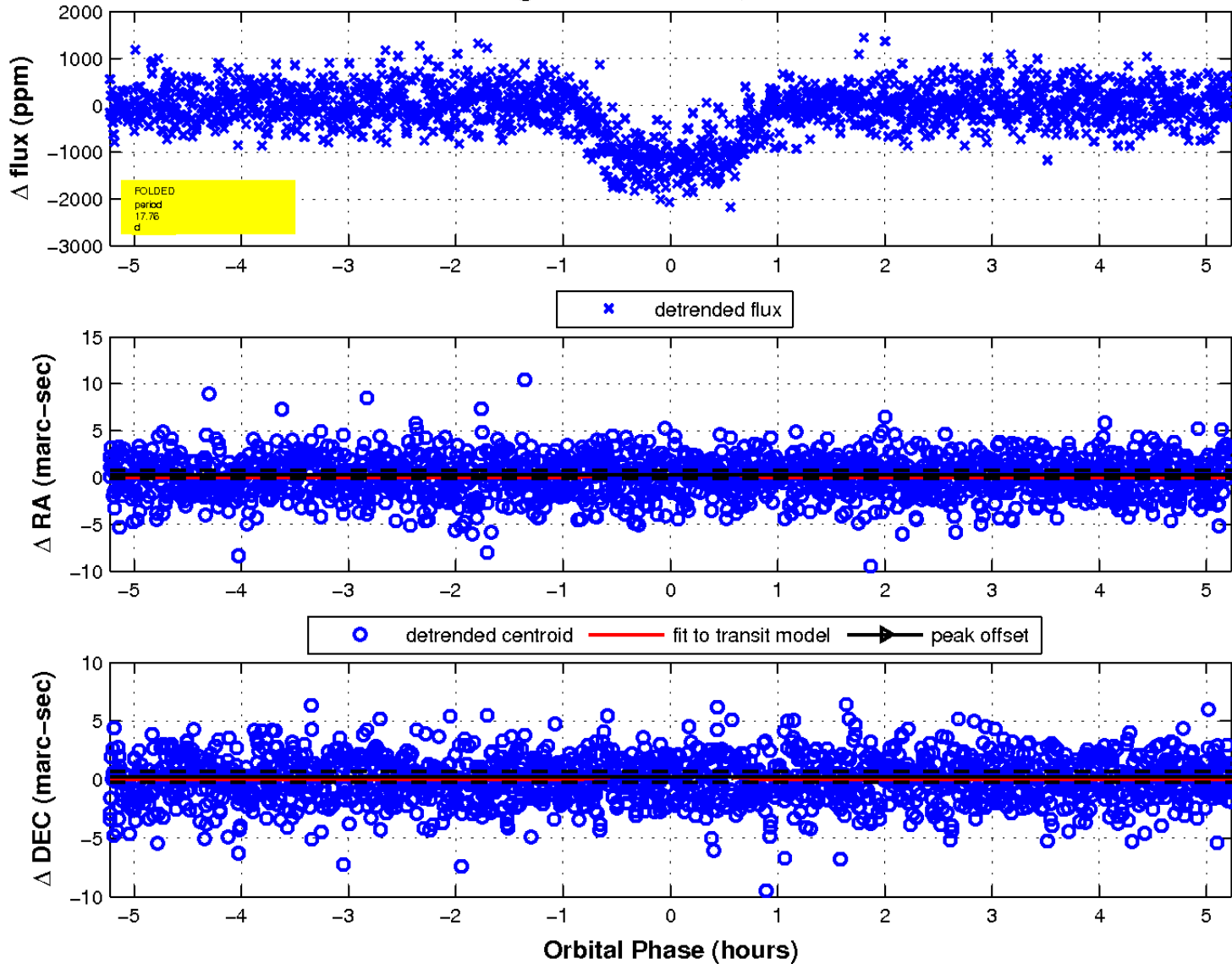
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

