

# KIC 007778664

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007778664-01	OBS	7849.01	5.026326	135.565314	77.5	4.457	7.5	8.1	0.96	5783	1.04	305.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007778664-01	OBS	PC	0.92	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.

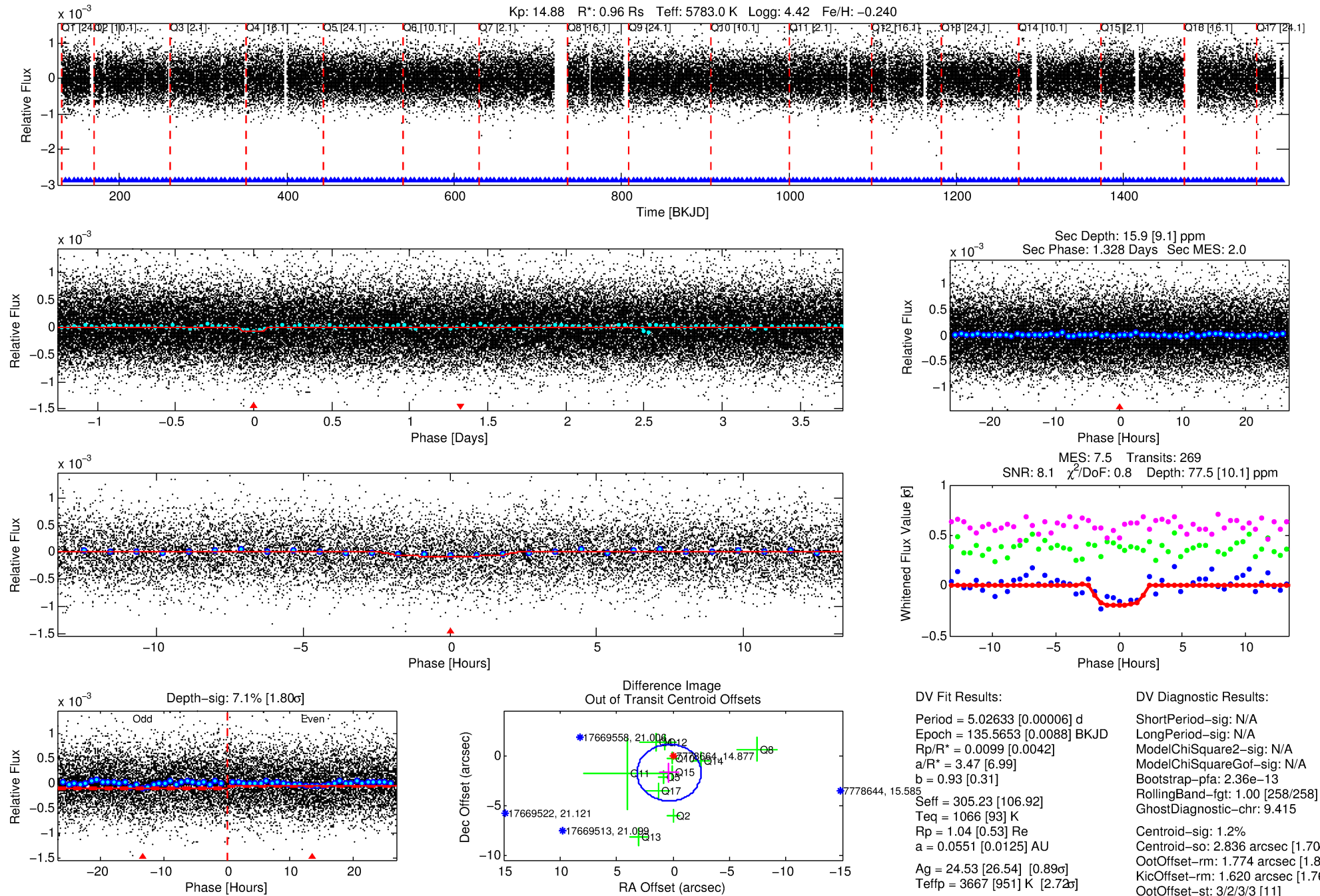
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007778664-01

No Significant Match Found

# DV One-Page Summary

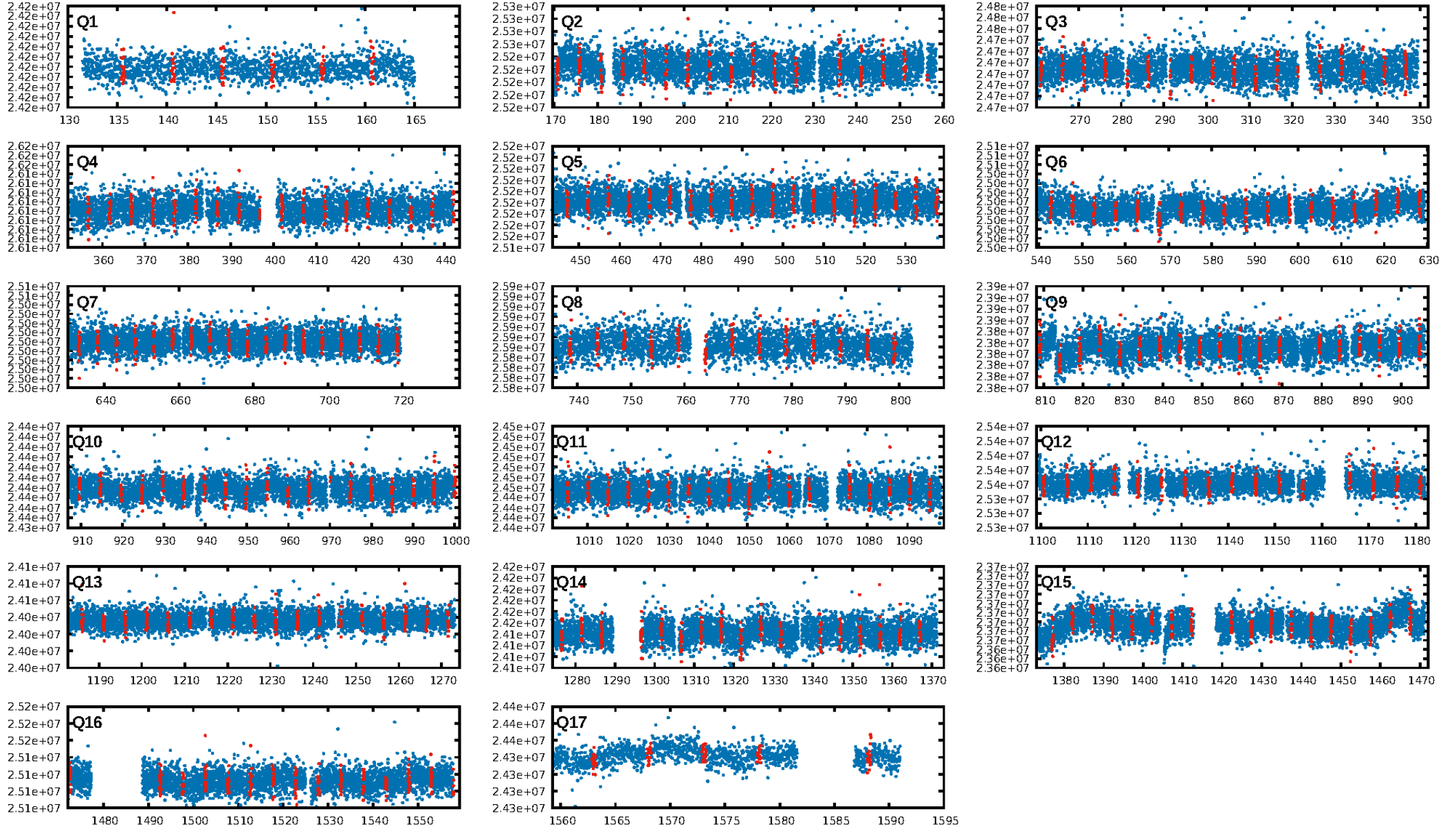
KIC: 7778664 Candidate: 1 of 1 Period: 5.026 d



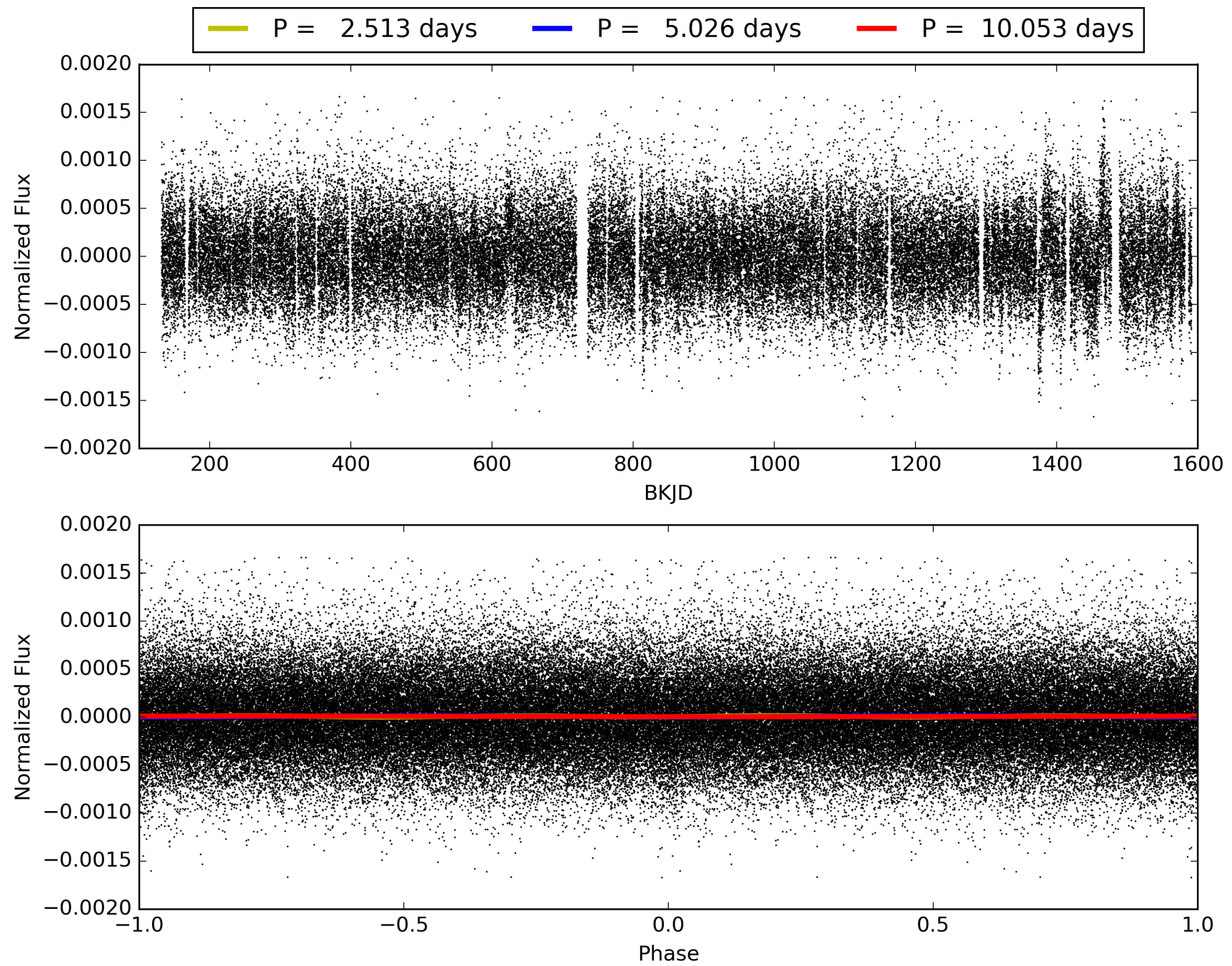
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:56:47 Z

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

# TCE 007778664-01, PDC Light Curves



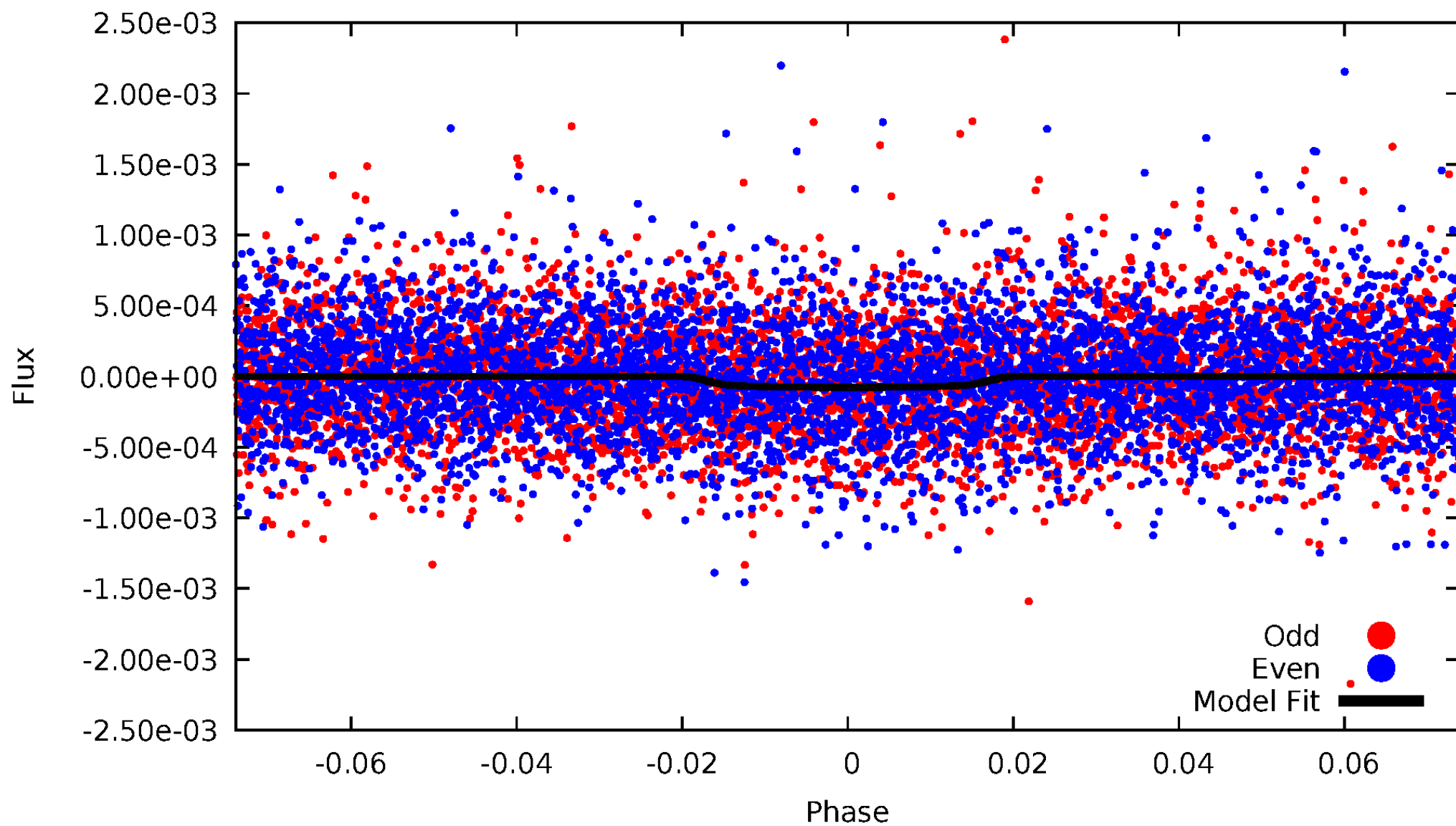
TCE 007778664-01





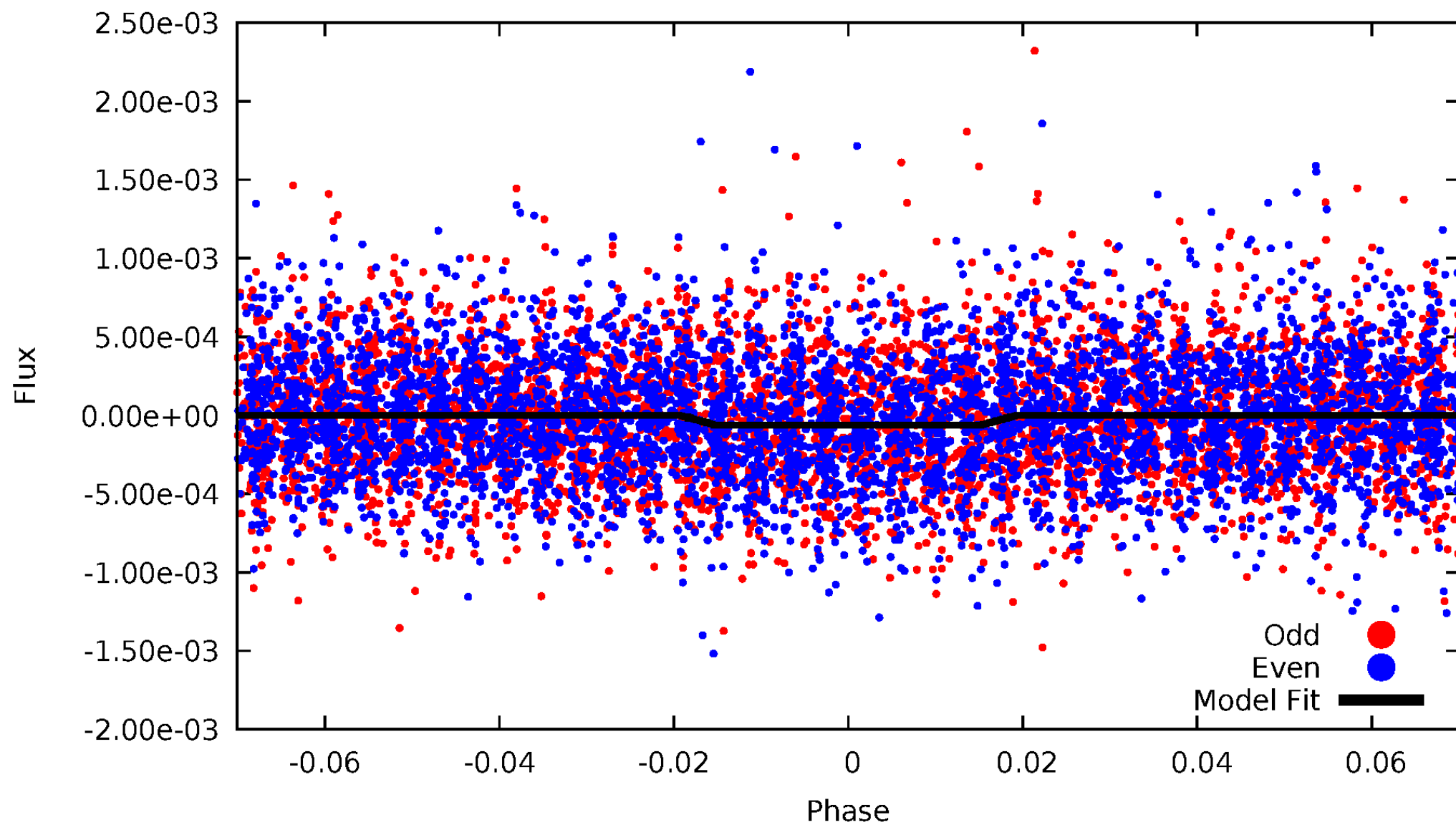
# DV Odd/Even

TCE 007778664-01



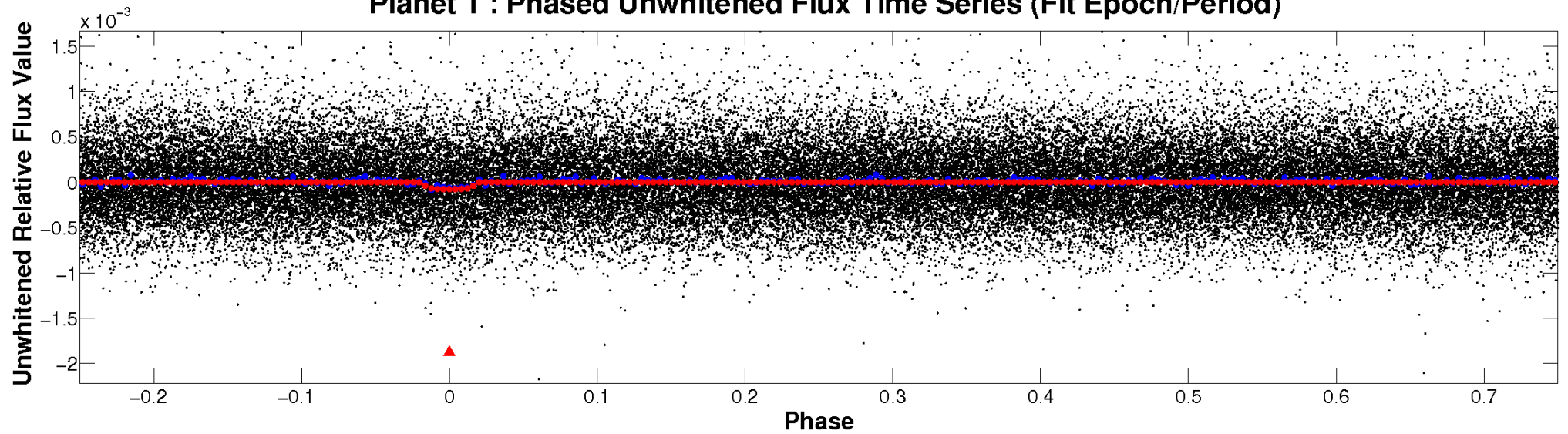
# ALT Odd/Even

TCE 007778664-01

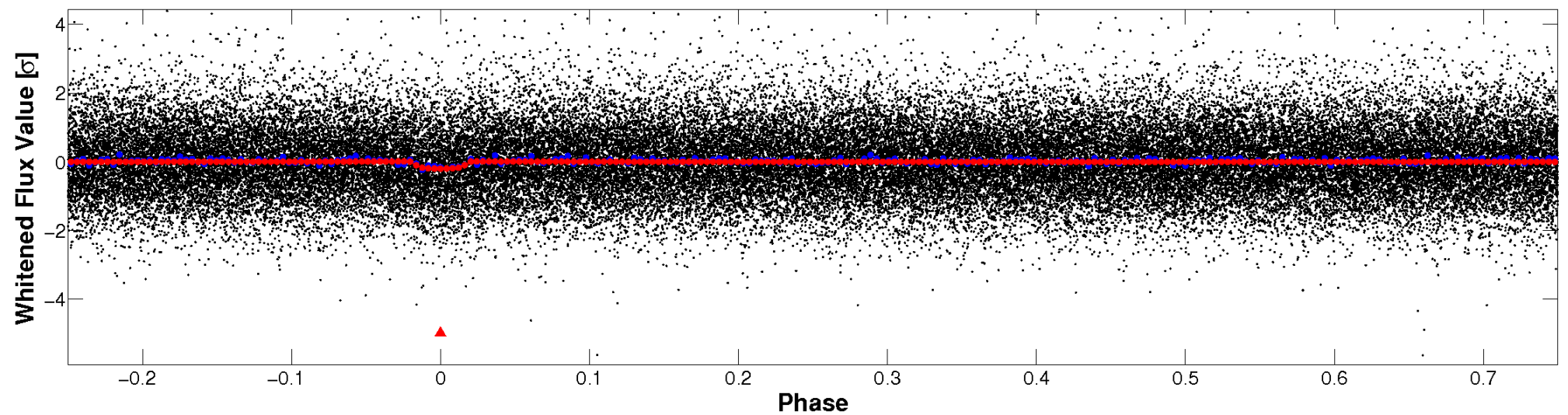


# Non-Whitened Vs. Whitened Light Curve

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

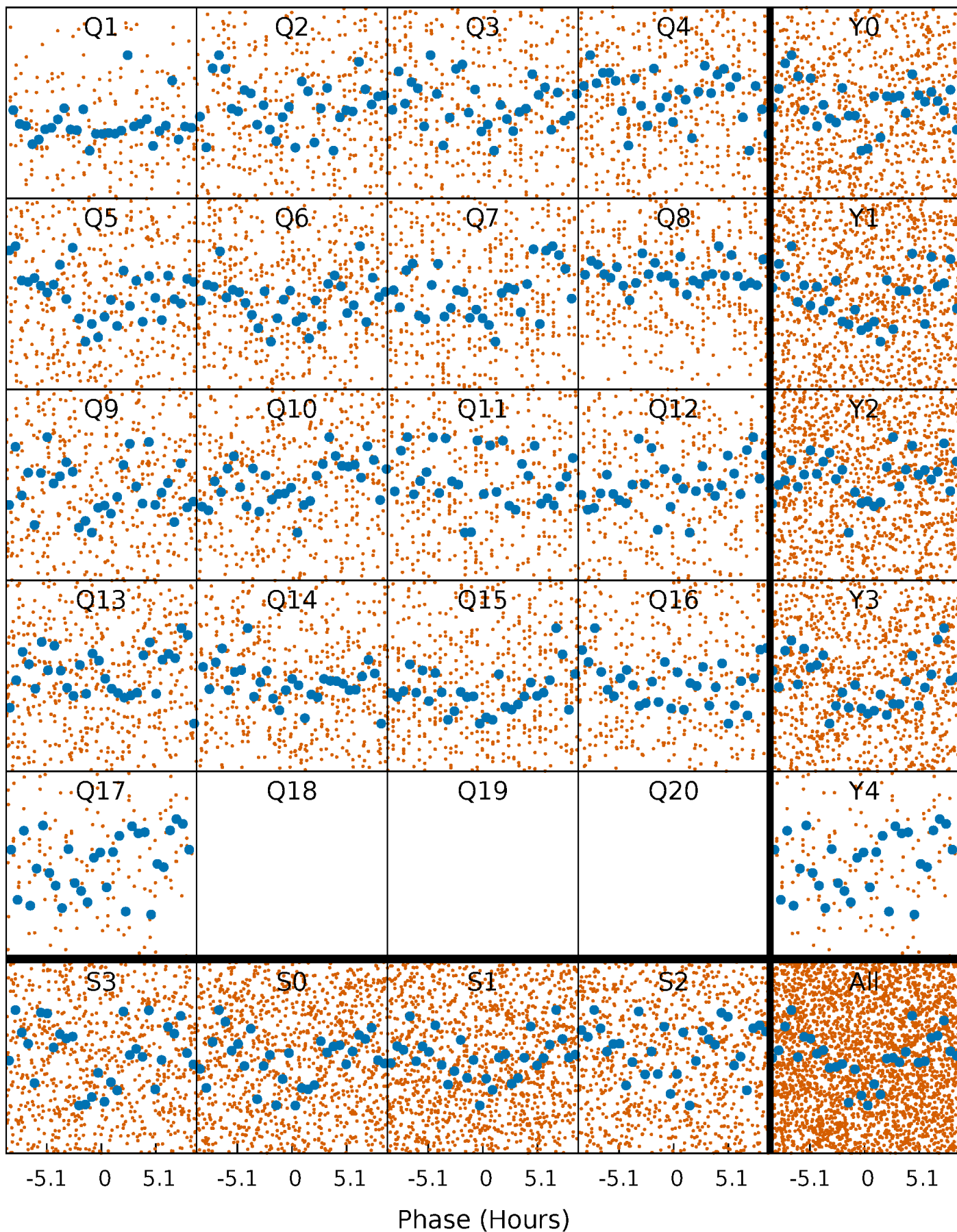


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

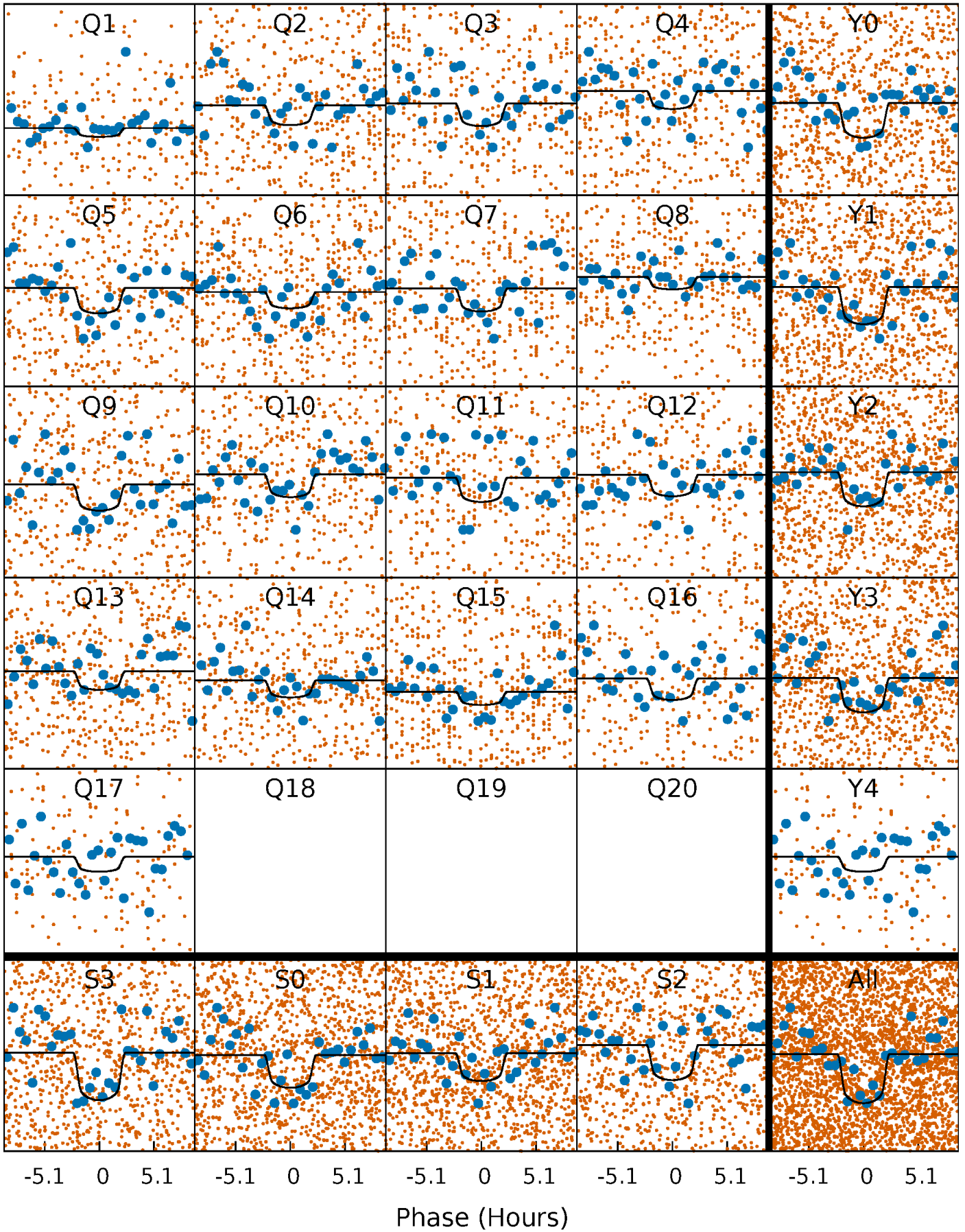
TCE 007778664-01 P= 5.026326 Days  $T_0=135.565314$  (BKJD)





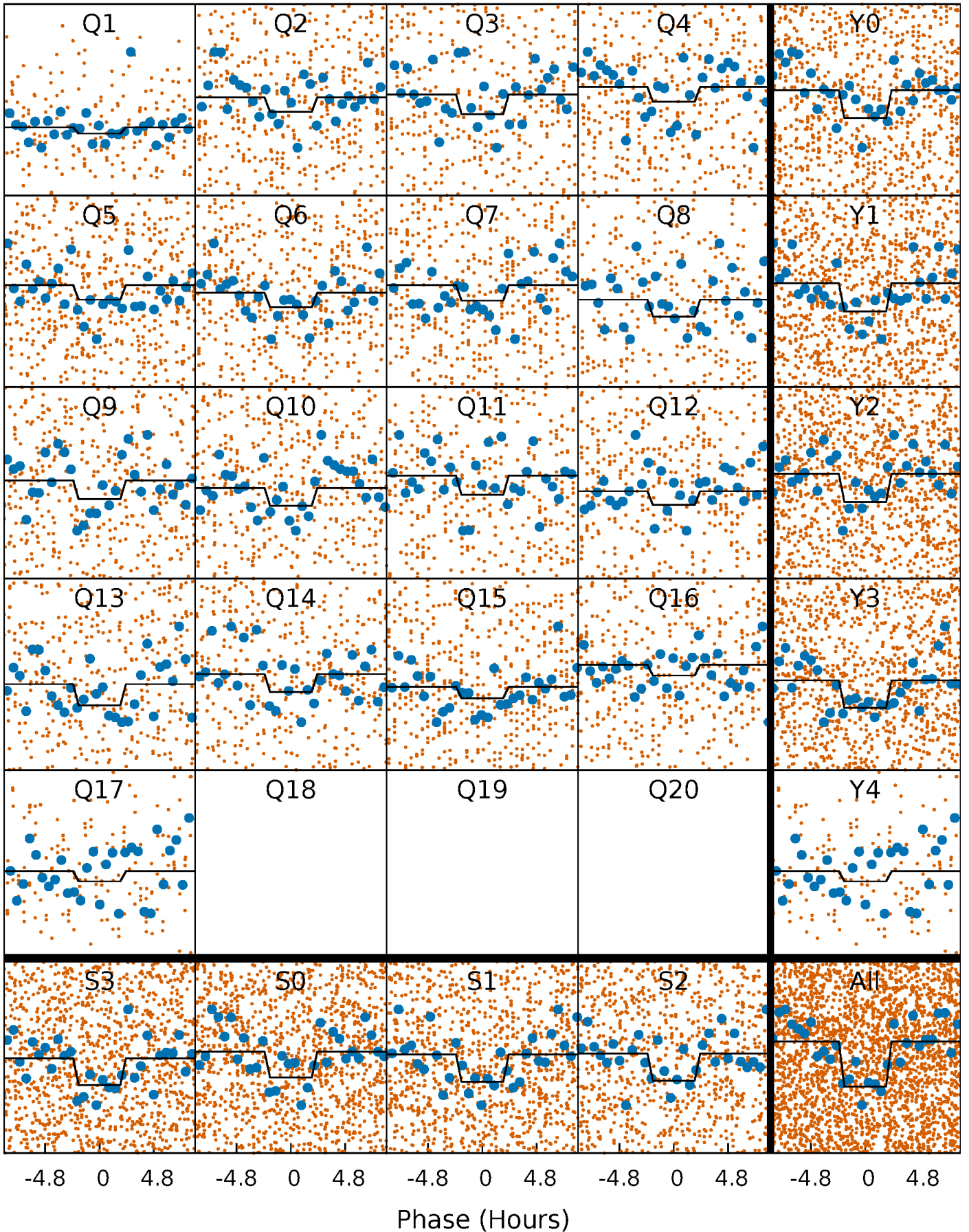
# DV Quarter-Phased Transit Curves

TCE 007778664-01 P= 5.026326 Days  $T_0=135.565314$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

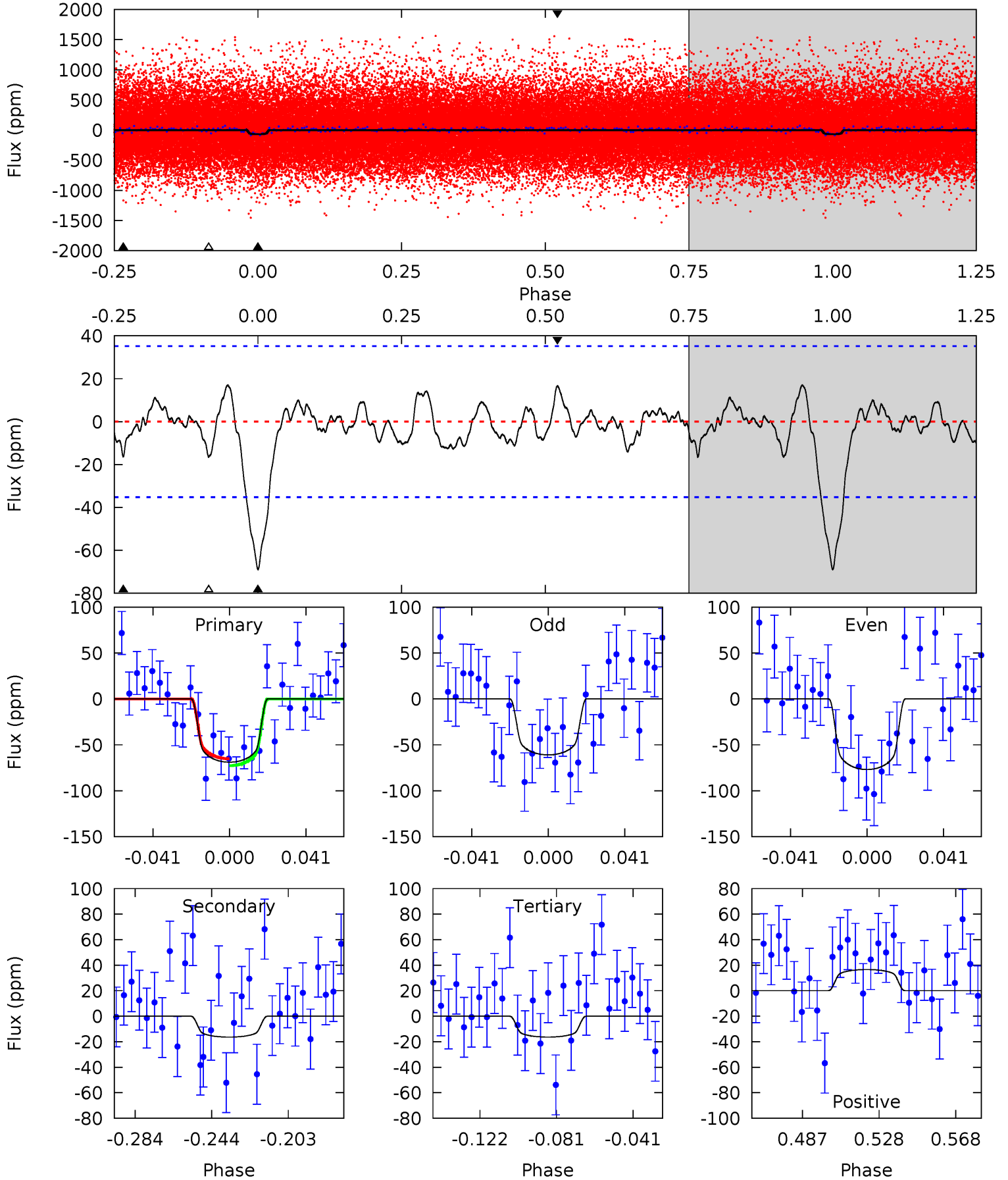
TCE 007778664-01 P= 5.026430 Days  $T_0=135.553084$  (BKJD)



# DV Model-Shift Uniqueness Test

007778664-01, P = 5.026326 Days, E = 130.538988 Days

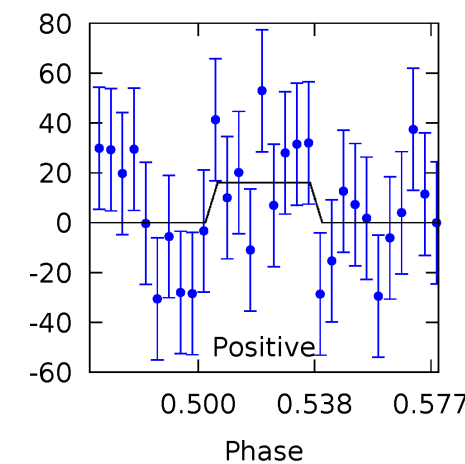
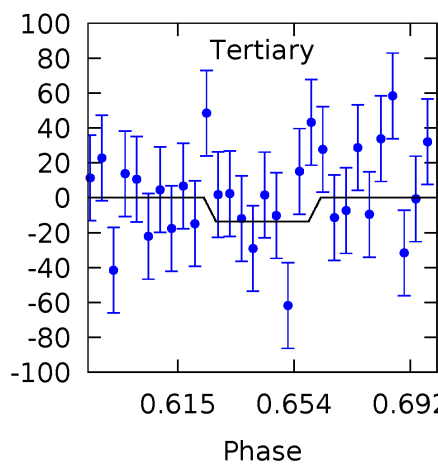
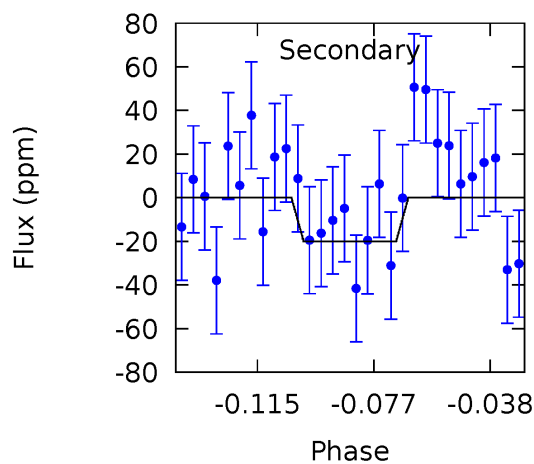
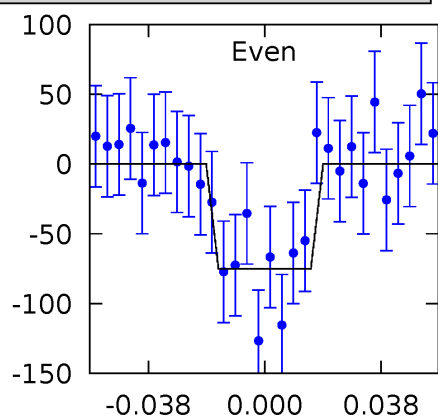
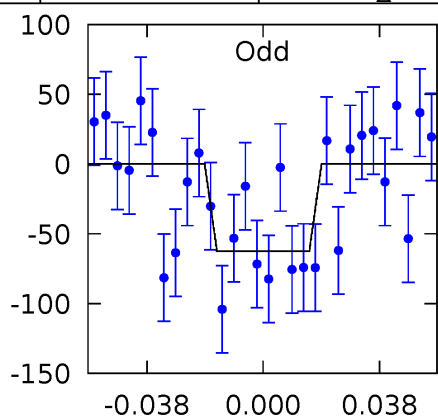
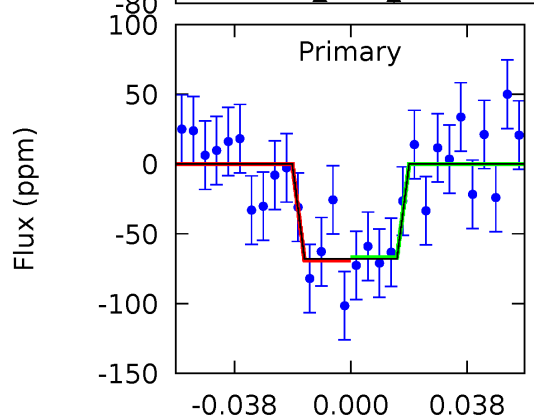
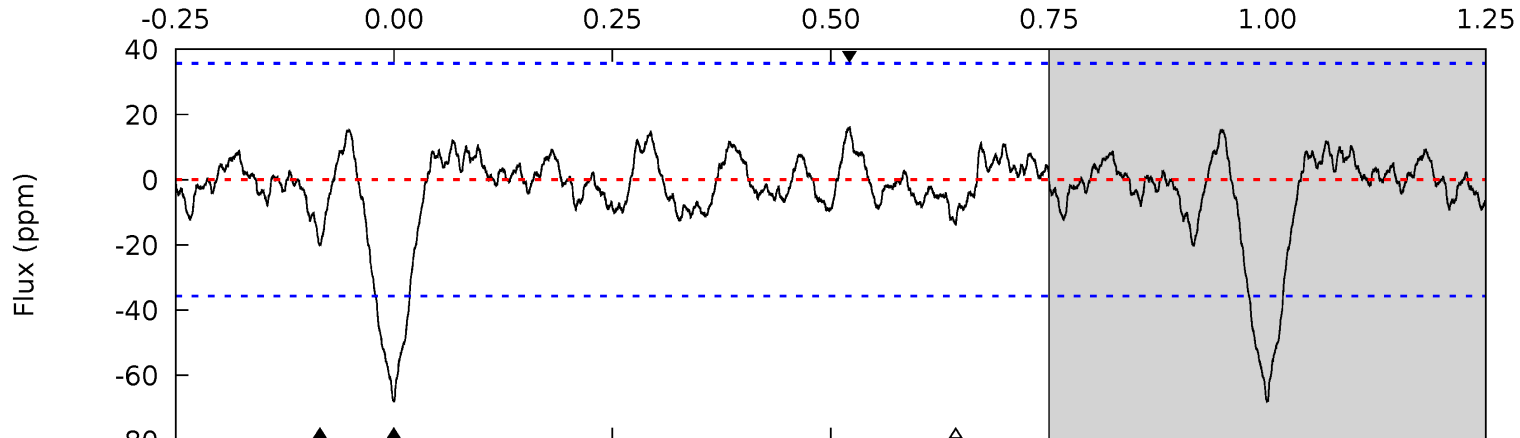
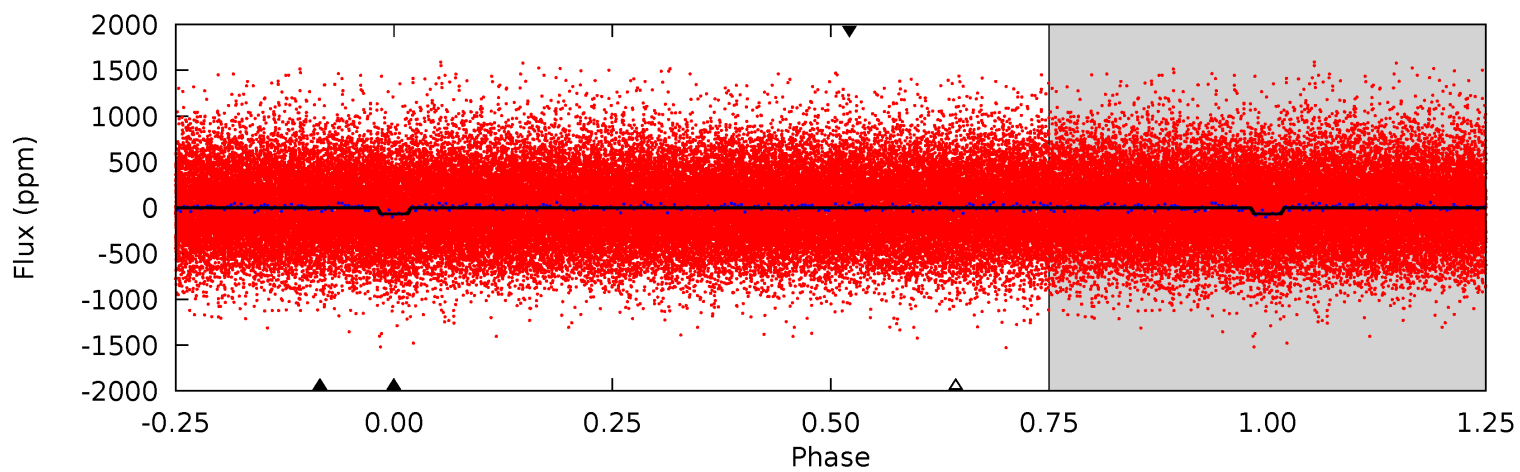
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.30	2.21	2.21	2.24	4.75	2.05	0.93	7.09	7.07	0.00	-0.02	1.08	1.09	0.20	0.51



# Alt Model-Shift Uniqueness Test

007778664-01, P = 5.026430 Days, E = 130.526654 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
9.07	2.68	1.83	2.14	4.76	2.07	0.83	7.25	6.93	0.85	0.54	0.83	0.98	0.19	0.13





### Stellar Parameters For KIC 007778664

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5783^{+155}_{-172}$	$4.418^{+0.120}_{-0.180}$	$-0.240^{+0.300}_{-0.300}$	$0.962^{+0.259}_{-0.139}$	$0.885^{+0.120}_{-0.076}$	$1.399^{+0.776}_{-0.684}$
	+3%/-3%	+3%/-4%	+125%/-125%	+27%/-14%	+14%/-9%	+55%/-49%
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 007778664-01 / KOI 7849.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-16 \pm 7$	$1.11^{+0.47}_{-0.47}$	$1495^{+108}_{-81}$	$3963^{+921}_{-568}$	$23^{+45}_{-14}$
Alt.	$-20 \pm 7$	$0.86^{+0.51}_{-0.44}$	$1494^{+103}_{-75}$	$4513^{+1649}_{-790}$	$46^{+150}_{-29}$

$T_{\text{max}}$  = 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

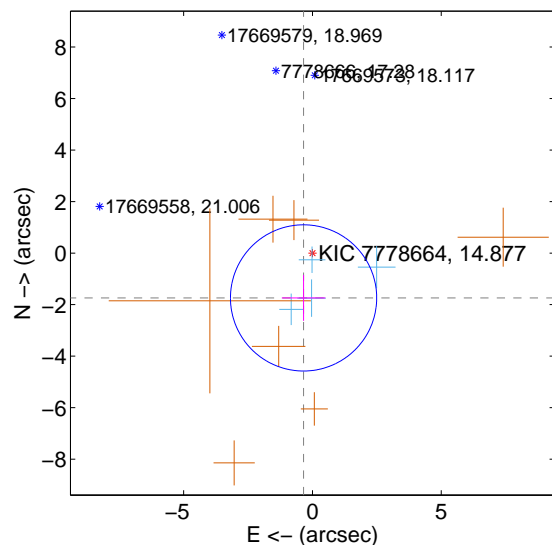
Supplemental centroid analysis for 007778664-01. Kepler magnitude: 14.88. Transit SNR 8.13

There are 4 quarters with good PRF difference image offsets

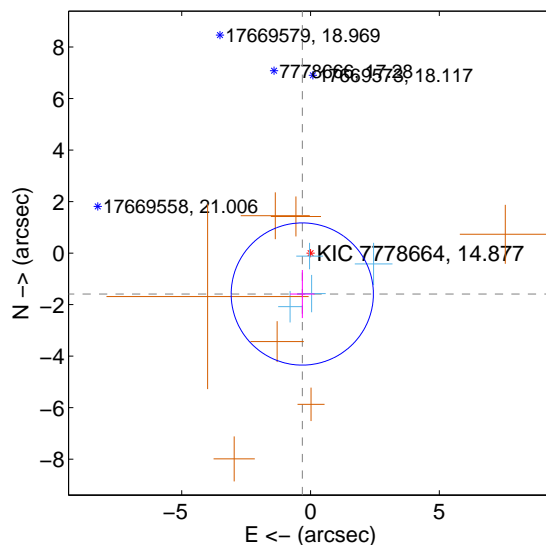
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.774 \pm 0.946$	1.87	$0.344 \pm 0.845$	$-1.740 \pm 0.892$
PRF-fit source offset from KIC position	$1.620 \pm 0.920$	1.76	$0.320 \pm 0.474$	$-1.588 \pm 0.934$
photometric centroid source offset	$2.84 \pm 1.66$	1.70	$-1.89 \pm 1.60$	$-2.12 \pm 1.71$

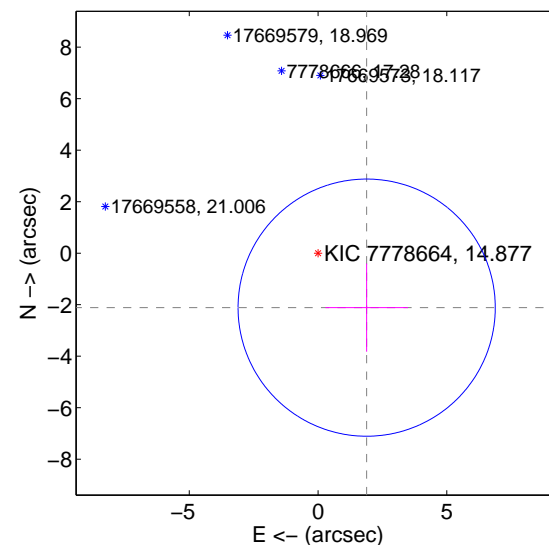
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

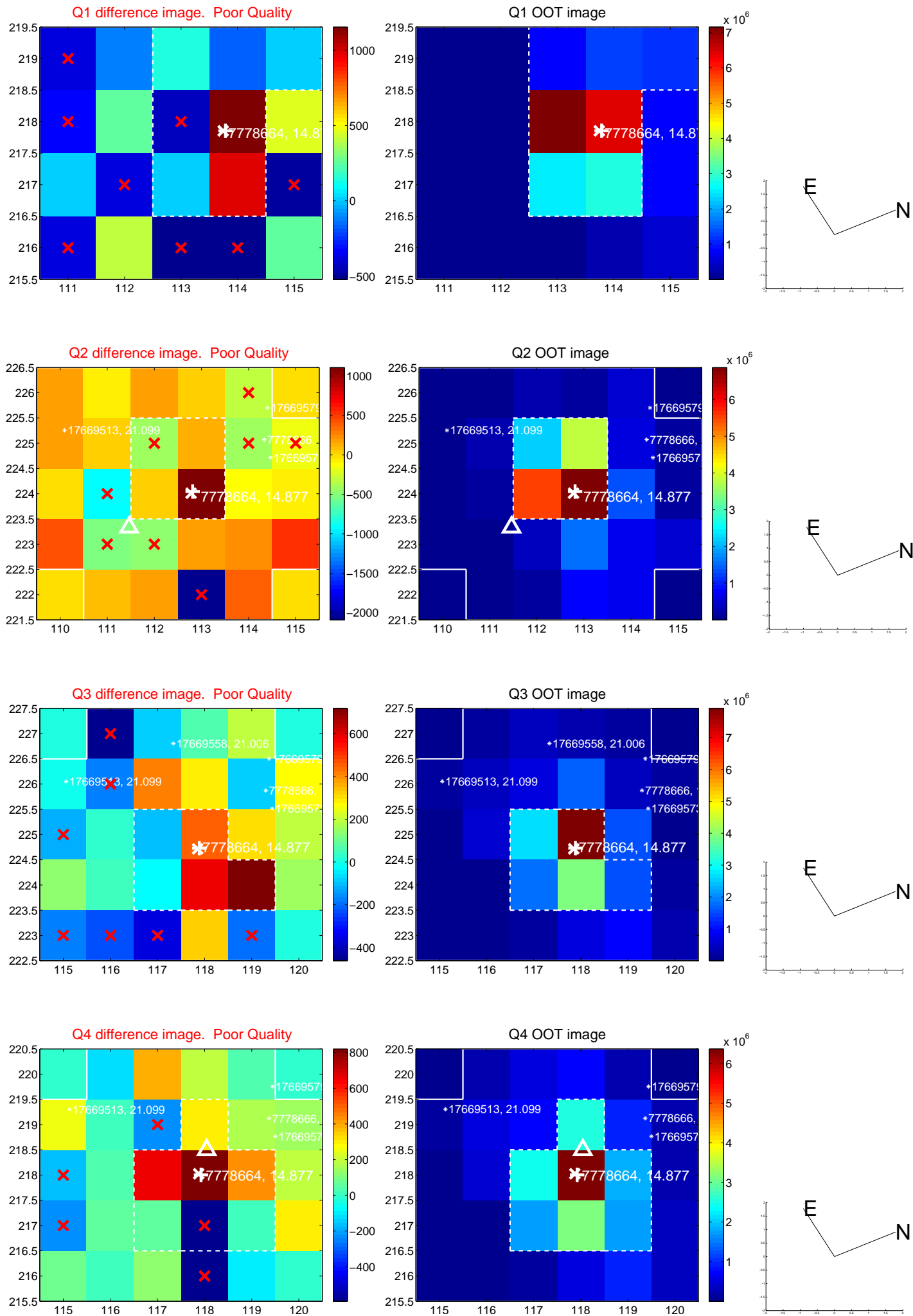


offset from photometric centroids

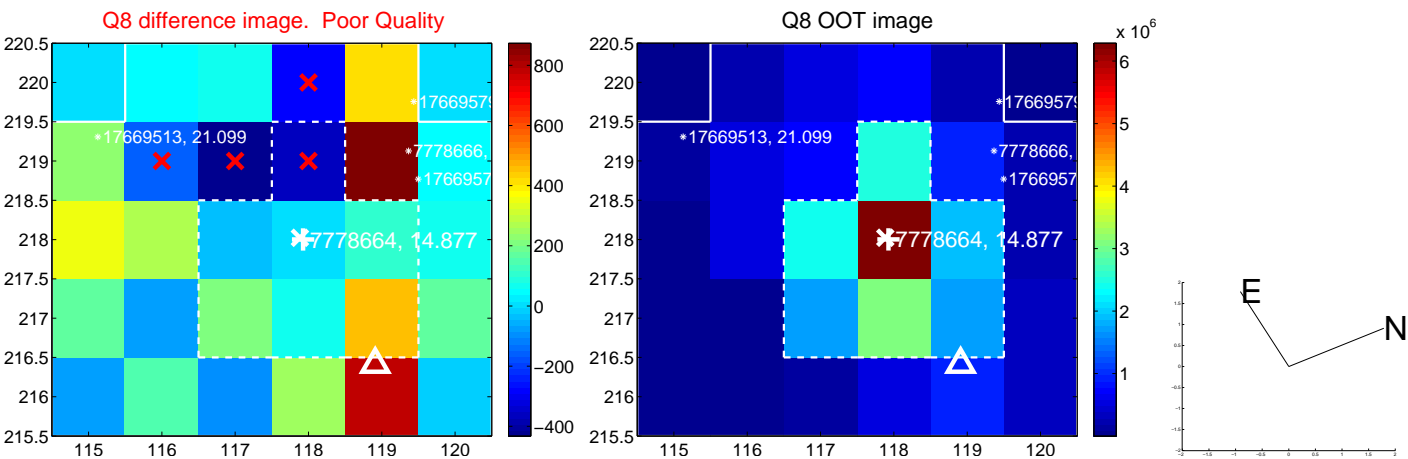
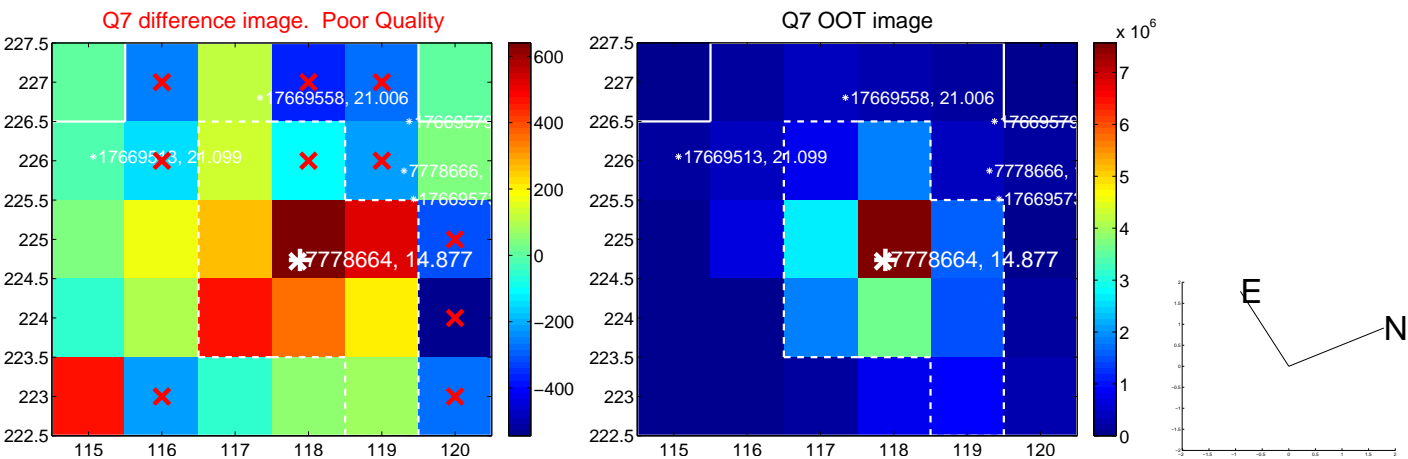
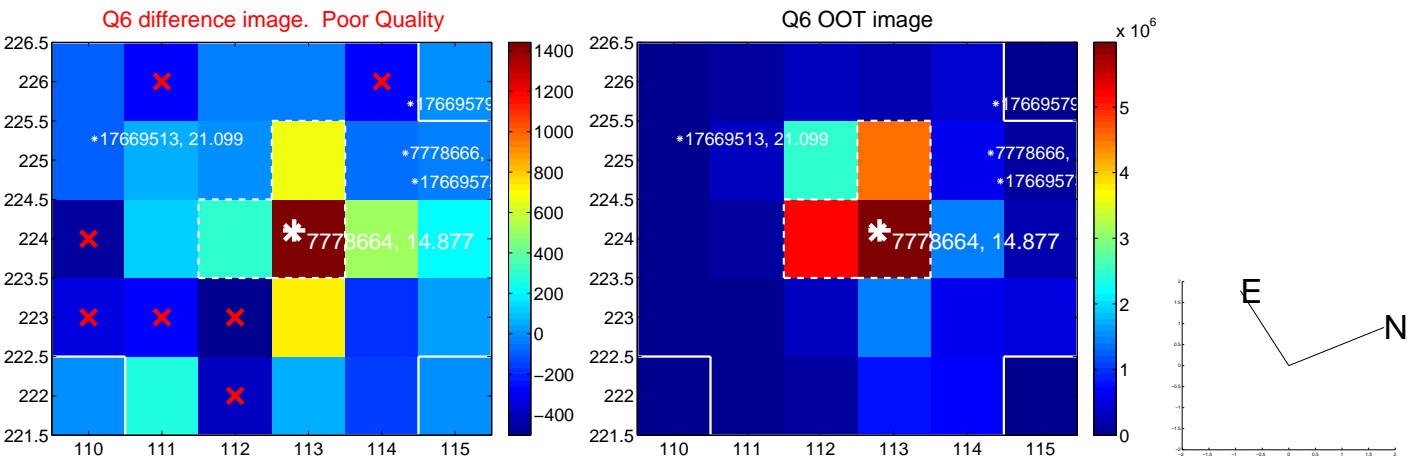
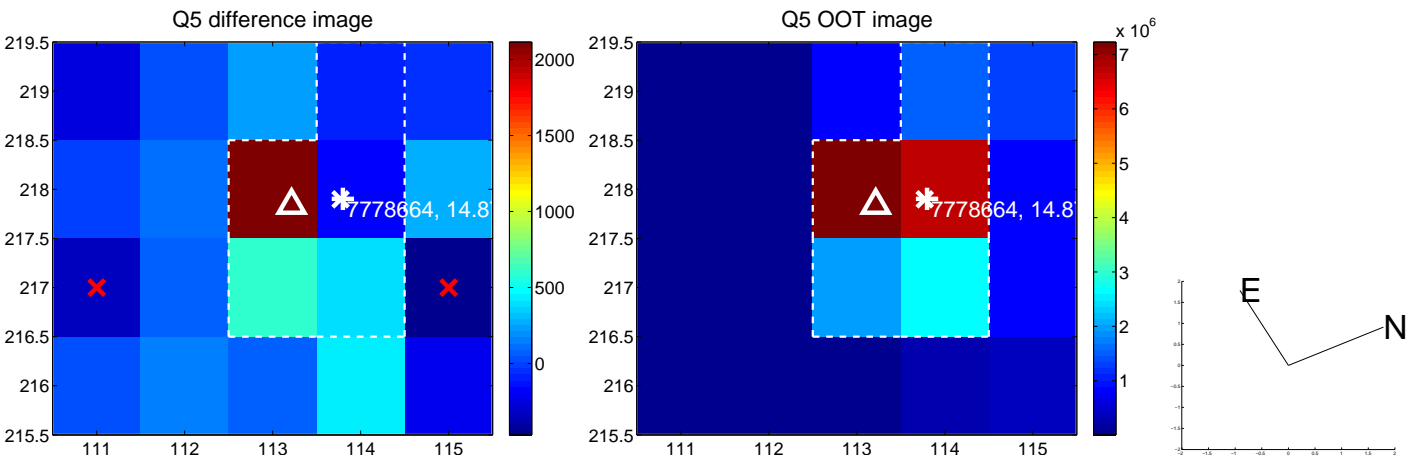


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

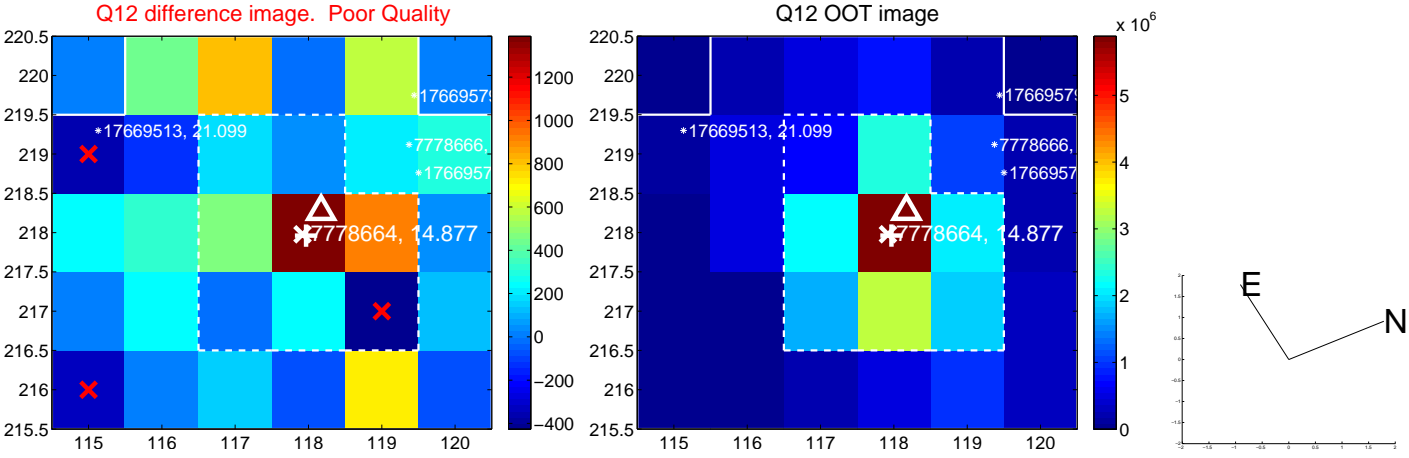
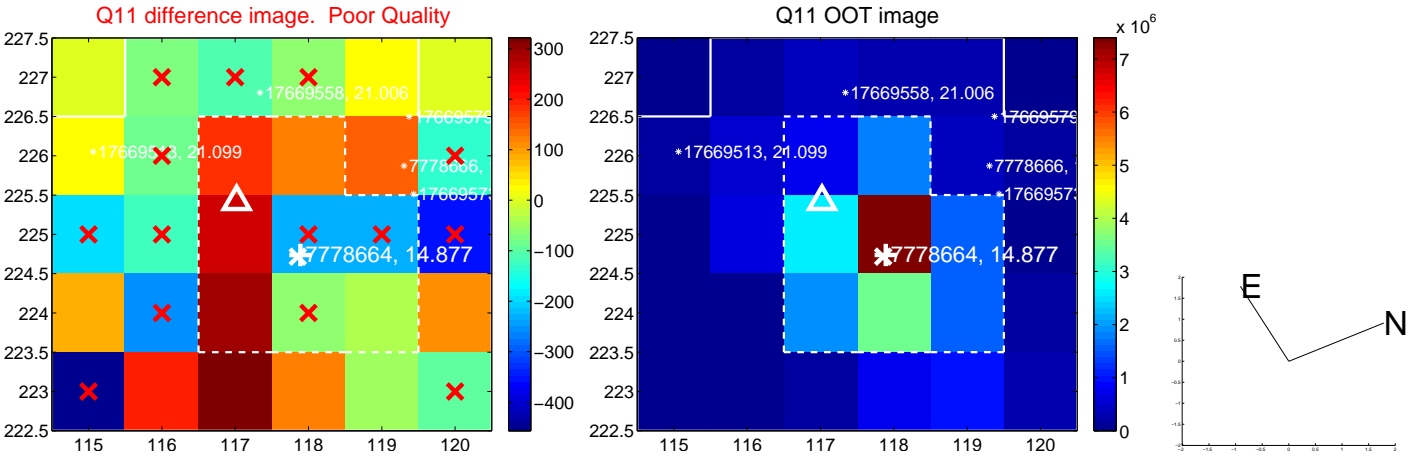
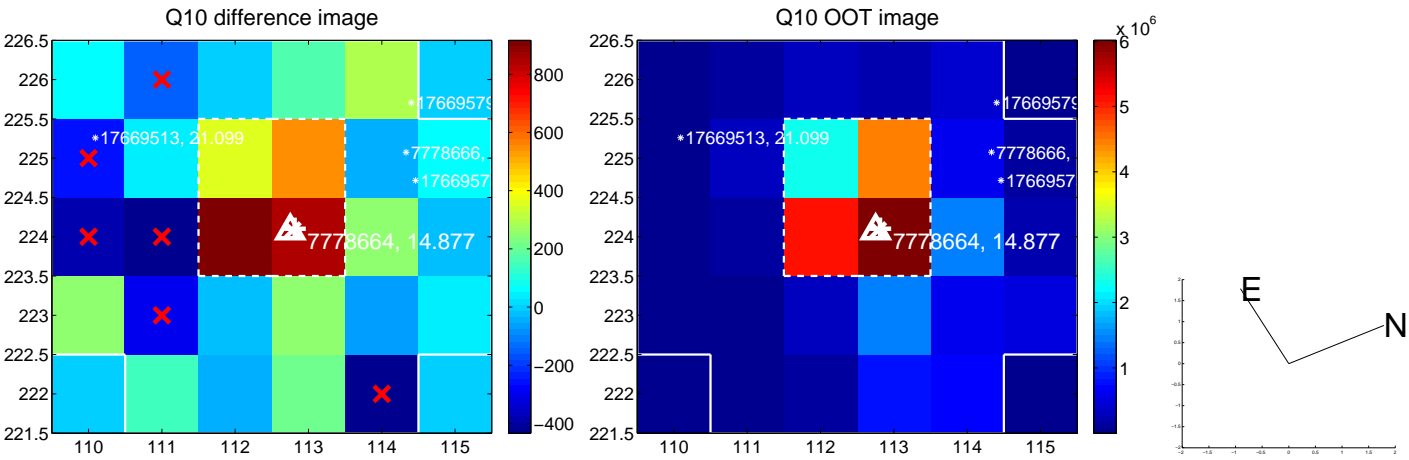
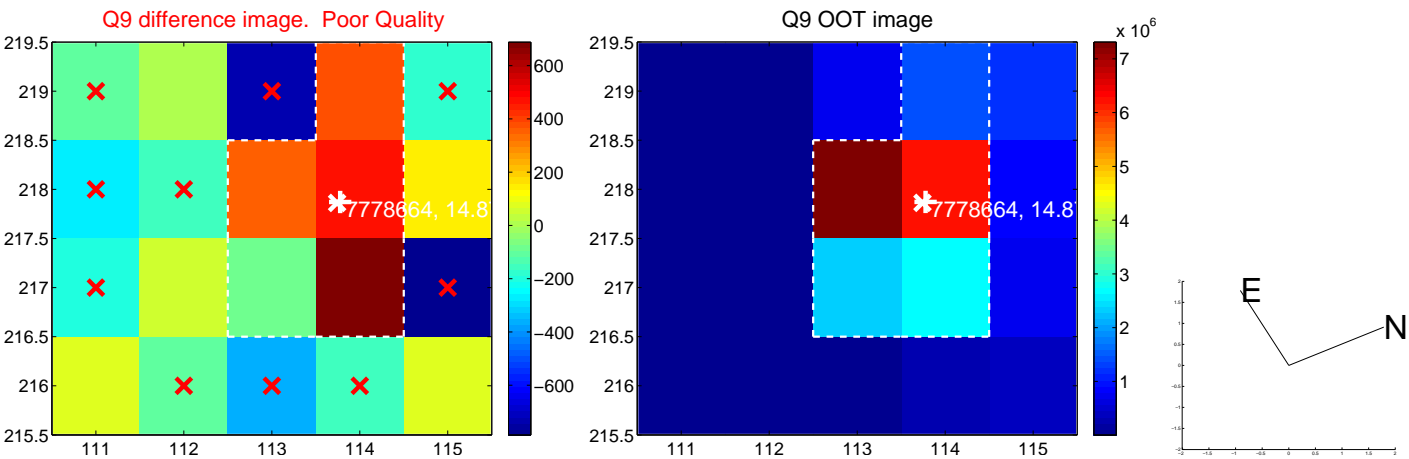


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

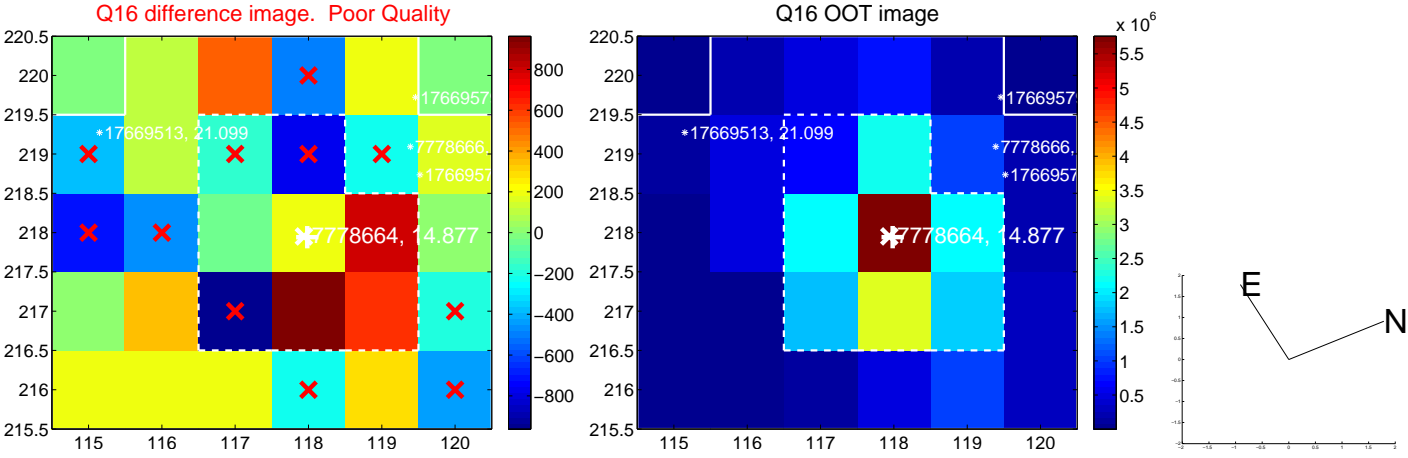
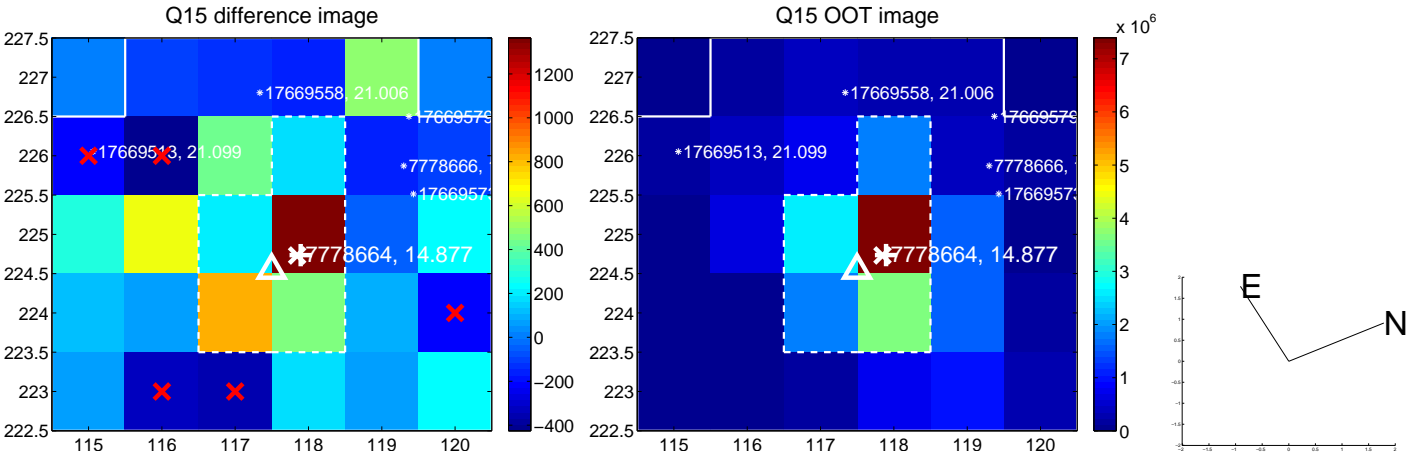
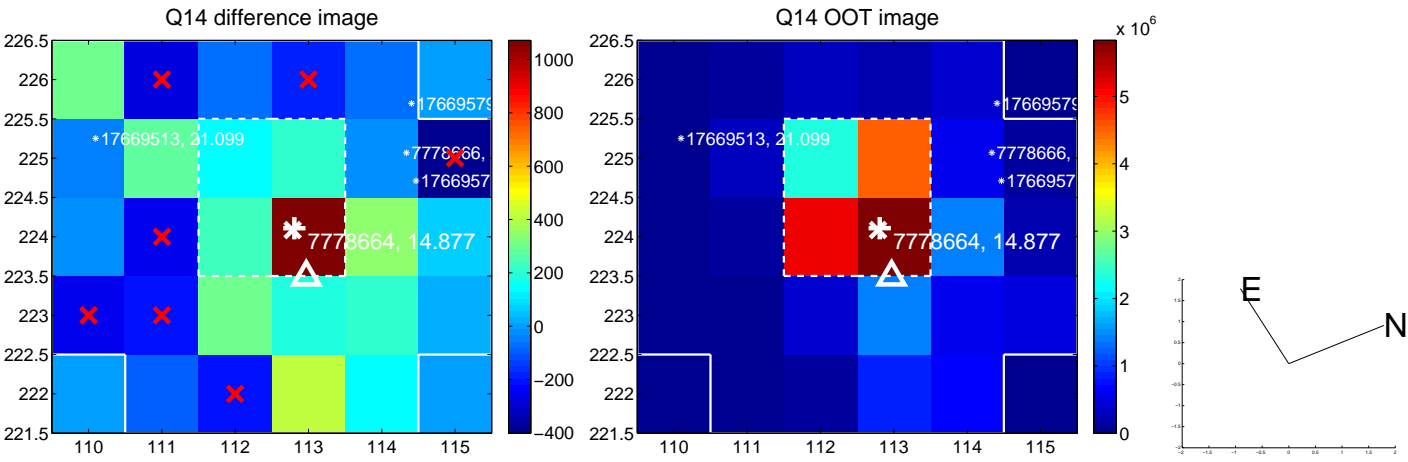
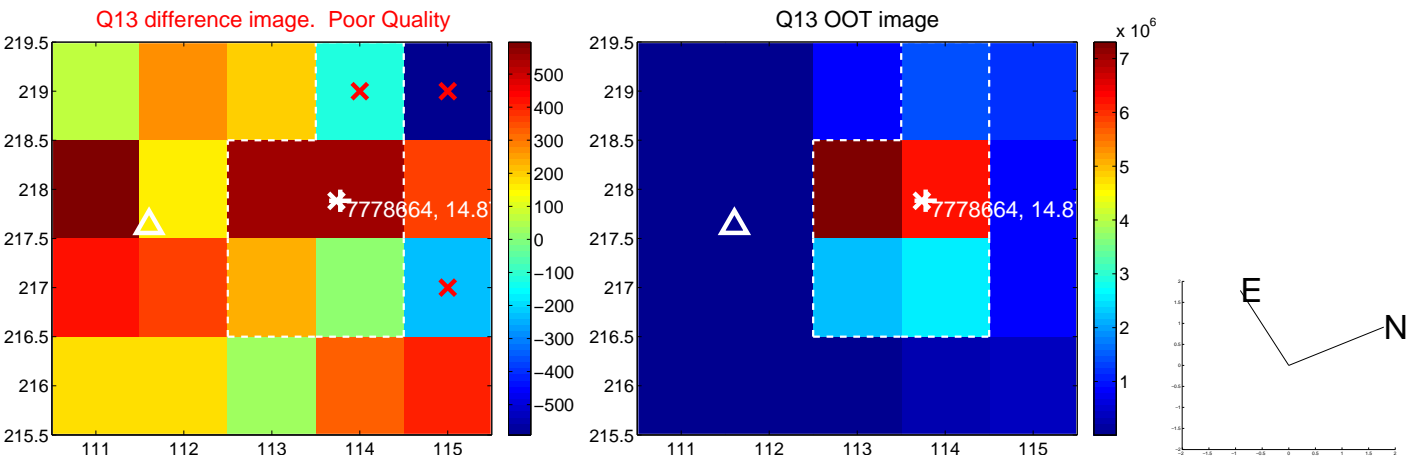




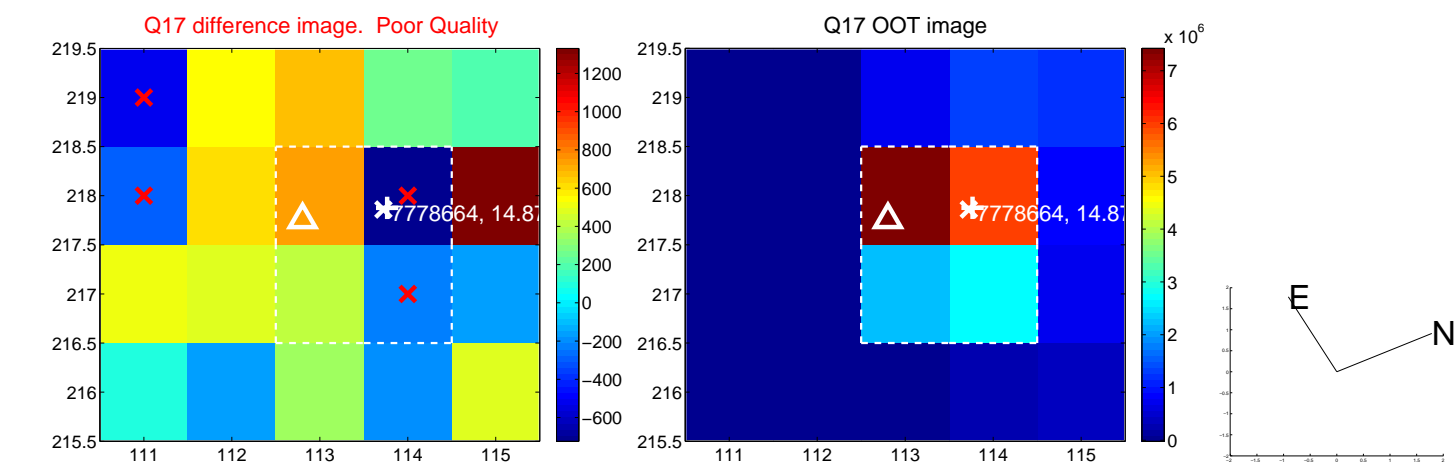
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



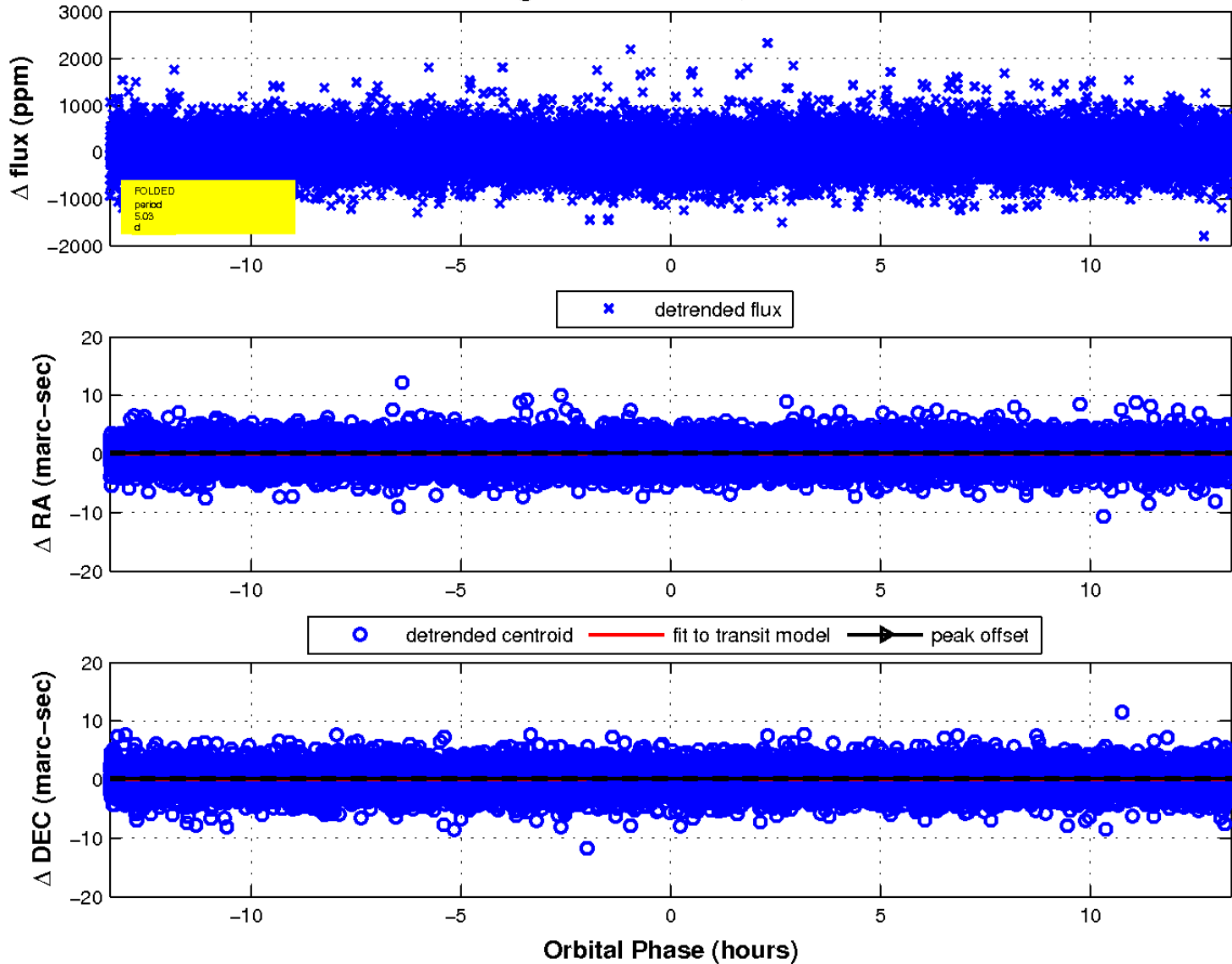
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

