

# KIC 003545240

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003545240-01	OBS	No	479.732210	586.581810	635.3	18.398	8.1	8.0	0.90	5390	2.40	0.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003545240-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_FEW_DIFFS—HALO_GHOST

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

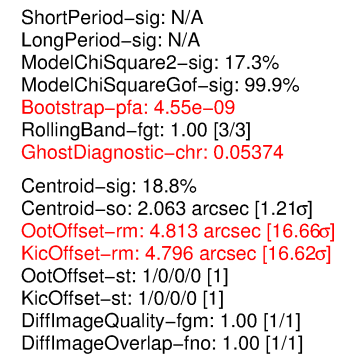
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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 003545240-01

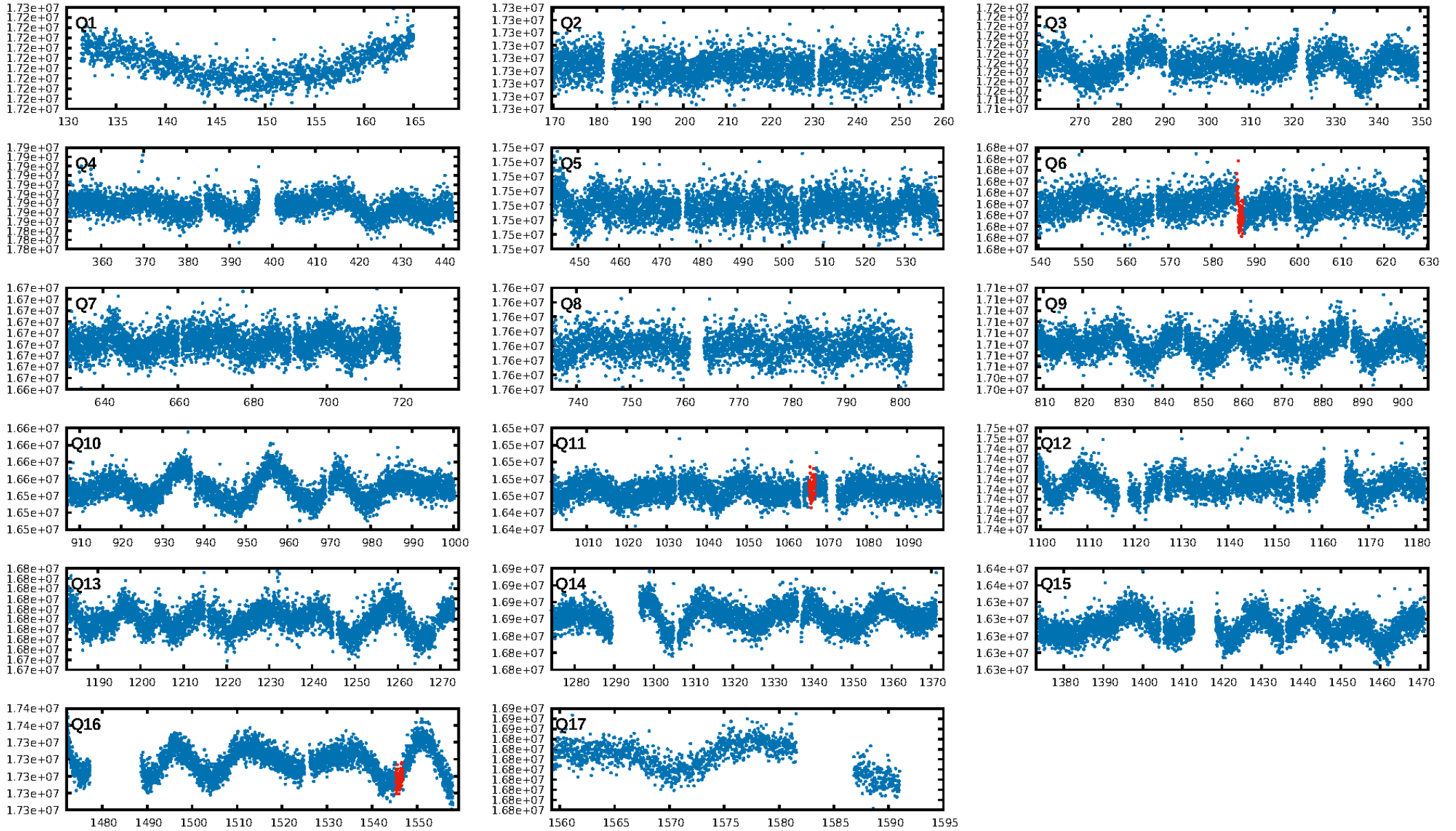
No Significant Match Found

**KIC: 3545240    Candidate: 1 of 1    Period: 479.732 d**

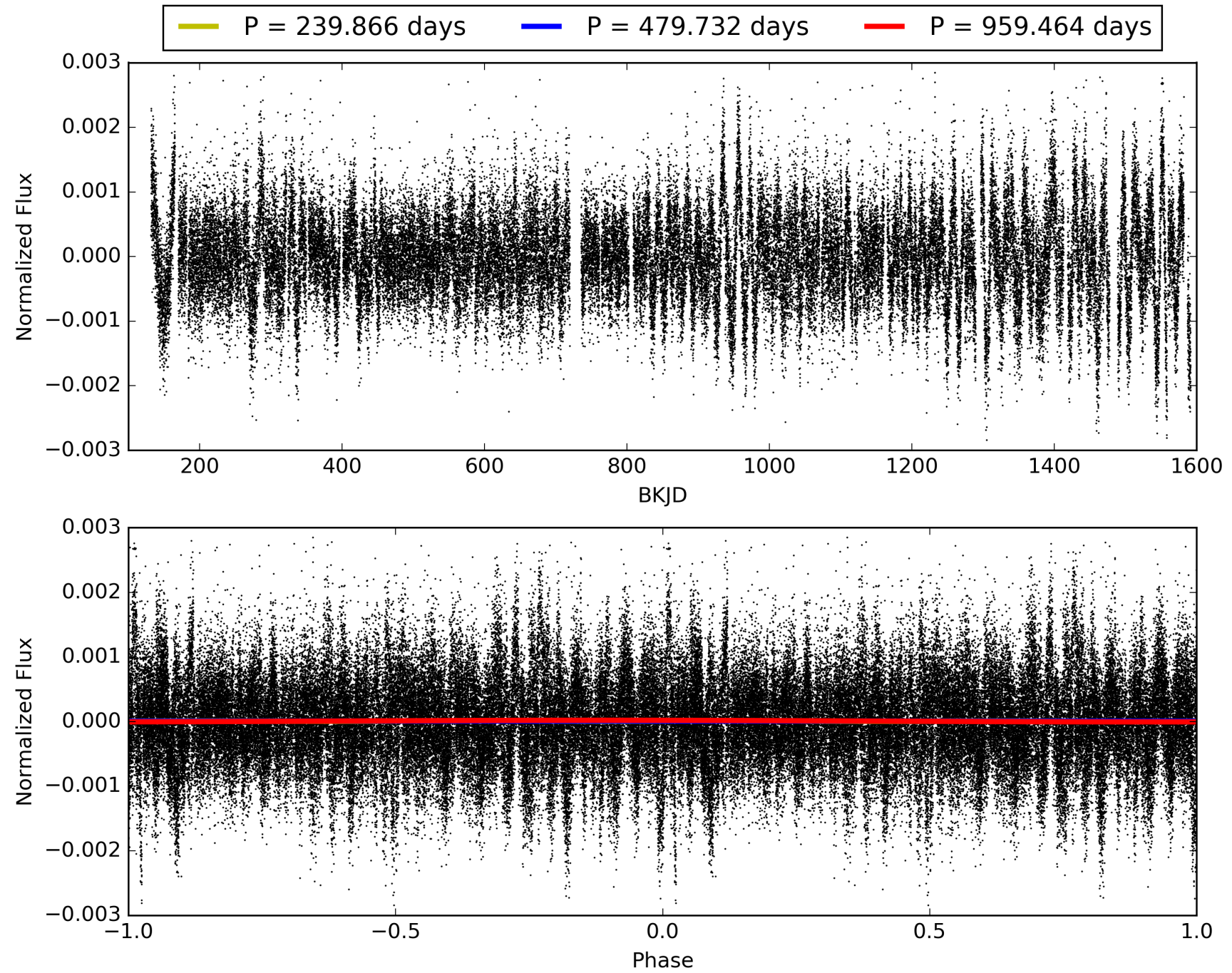


**This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center**

# TCE 003545240-01, PDC Light Curves

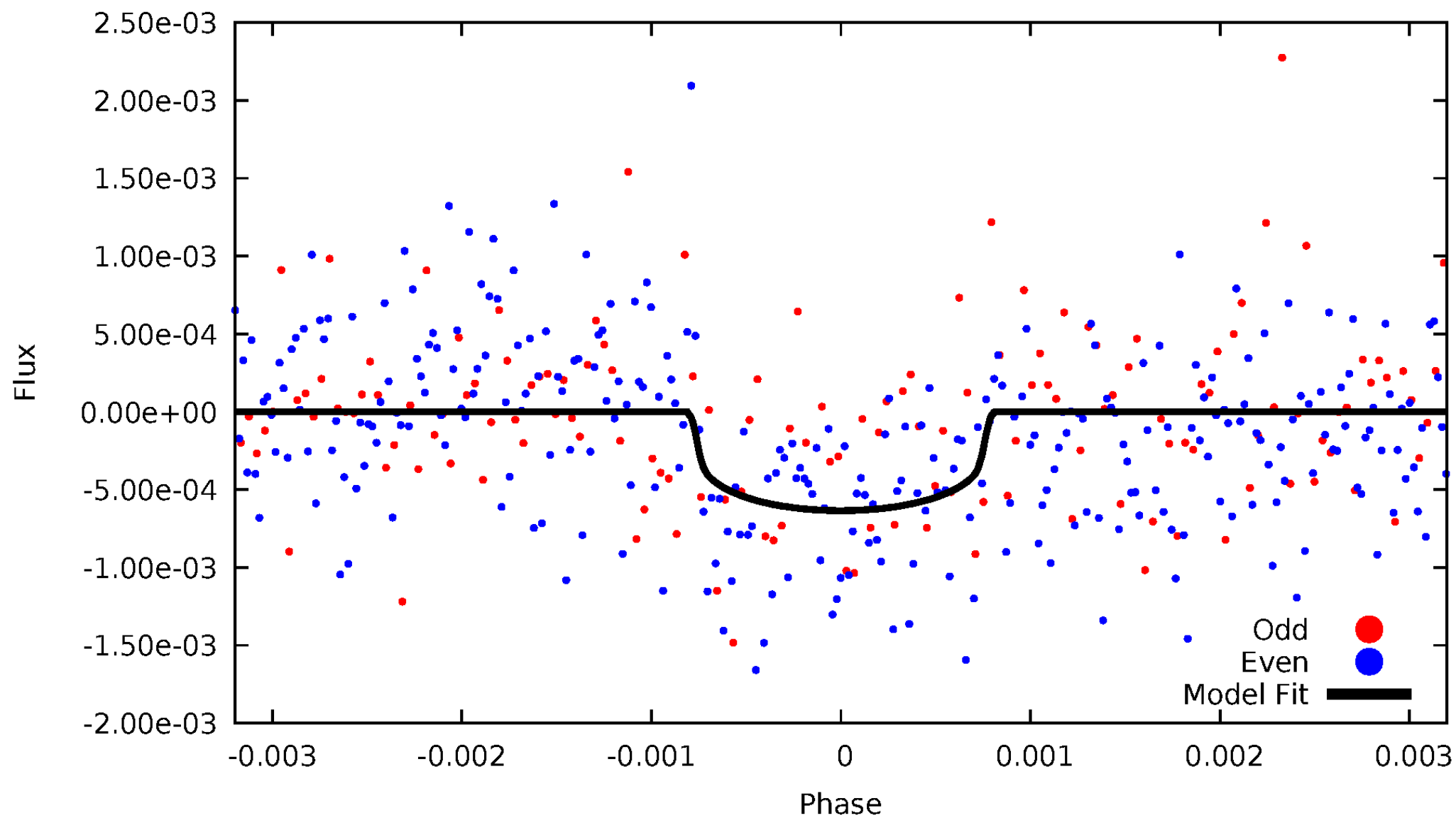


TCE 003545240-01



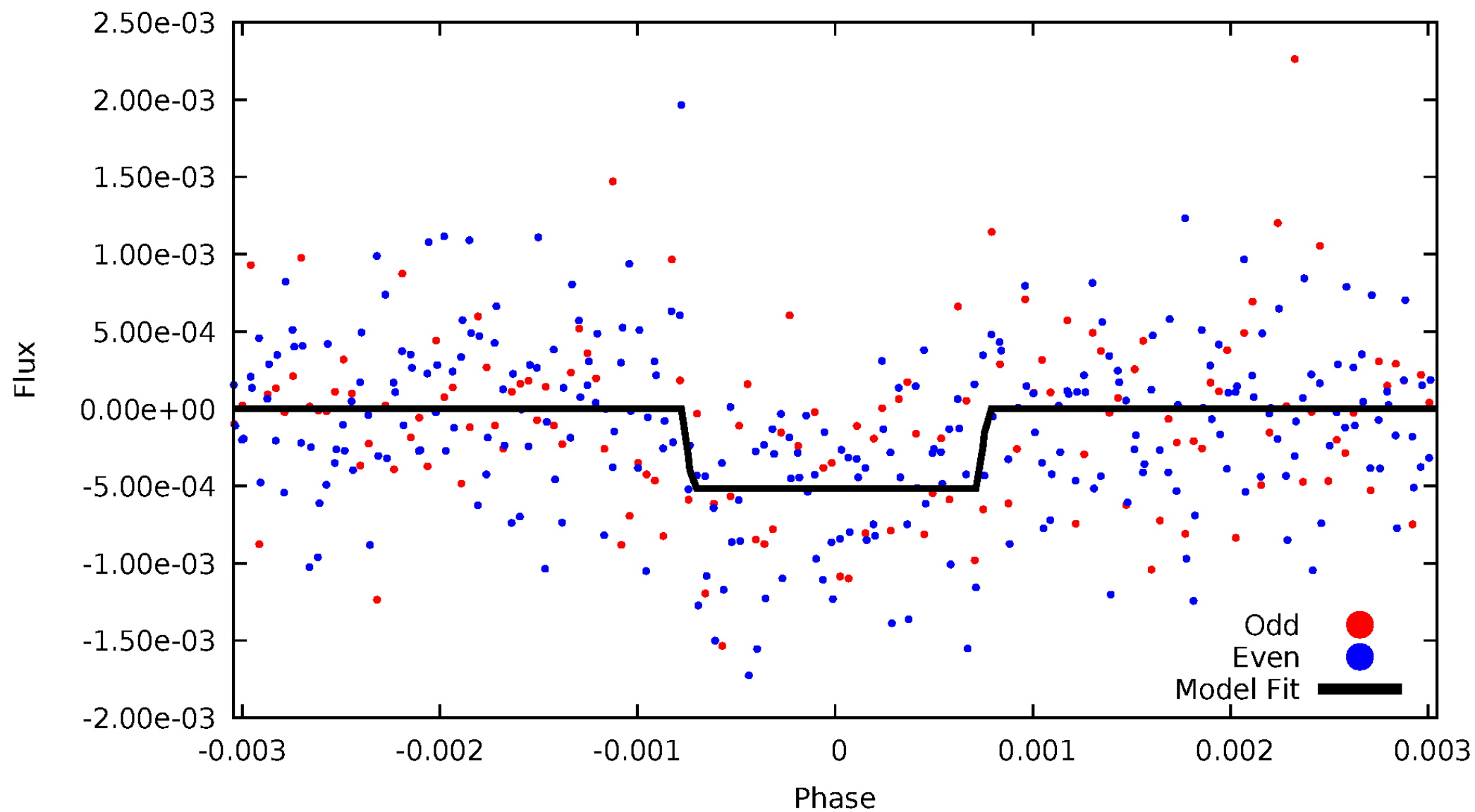
# DV Odd/Even

TCE 003545240-01



# ALT Odd/Even

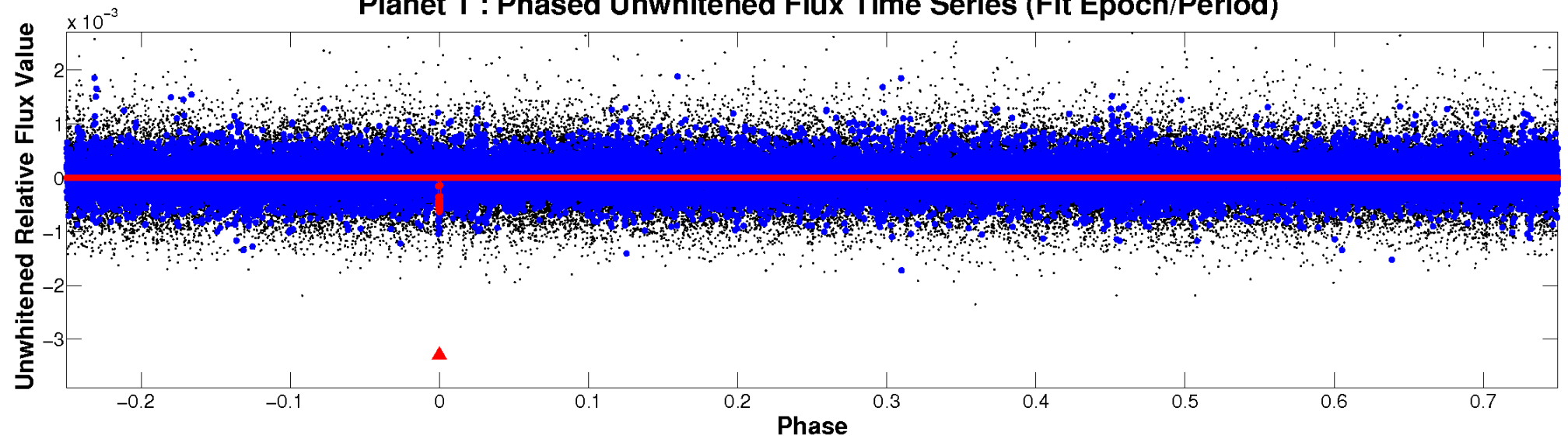
TCE 003545240-01



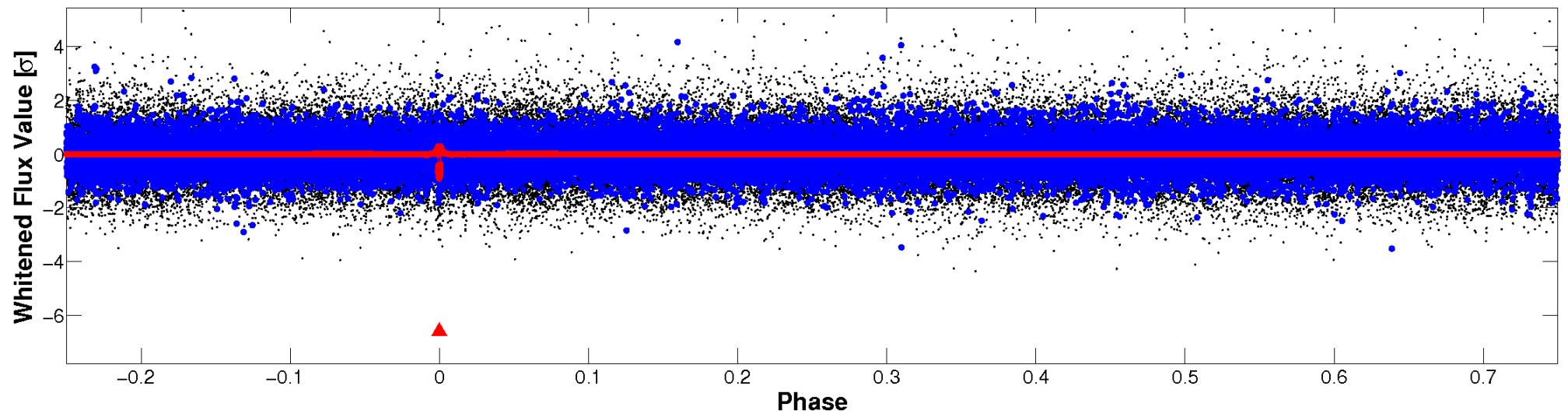


# Non-Whitened Vs. Whitened Light Curve

**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 003545240-01 P=479.732211 Days  $T_0=586.581810$  (BKJD)





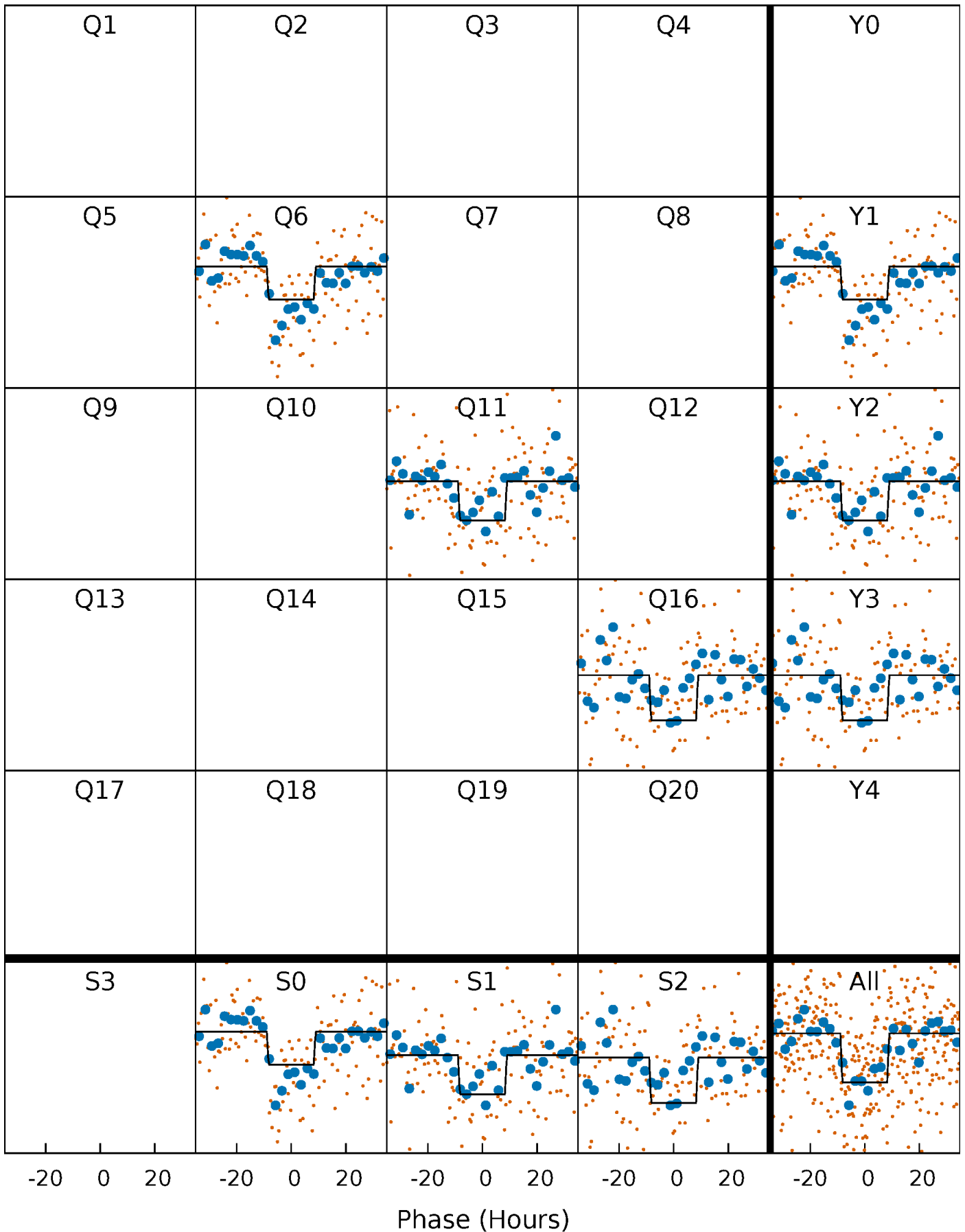
# DV Quarter-Phased Transit Curves

TCE 003545240-01 P=479.732211 Days  $T_0=586.581810$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

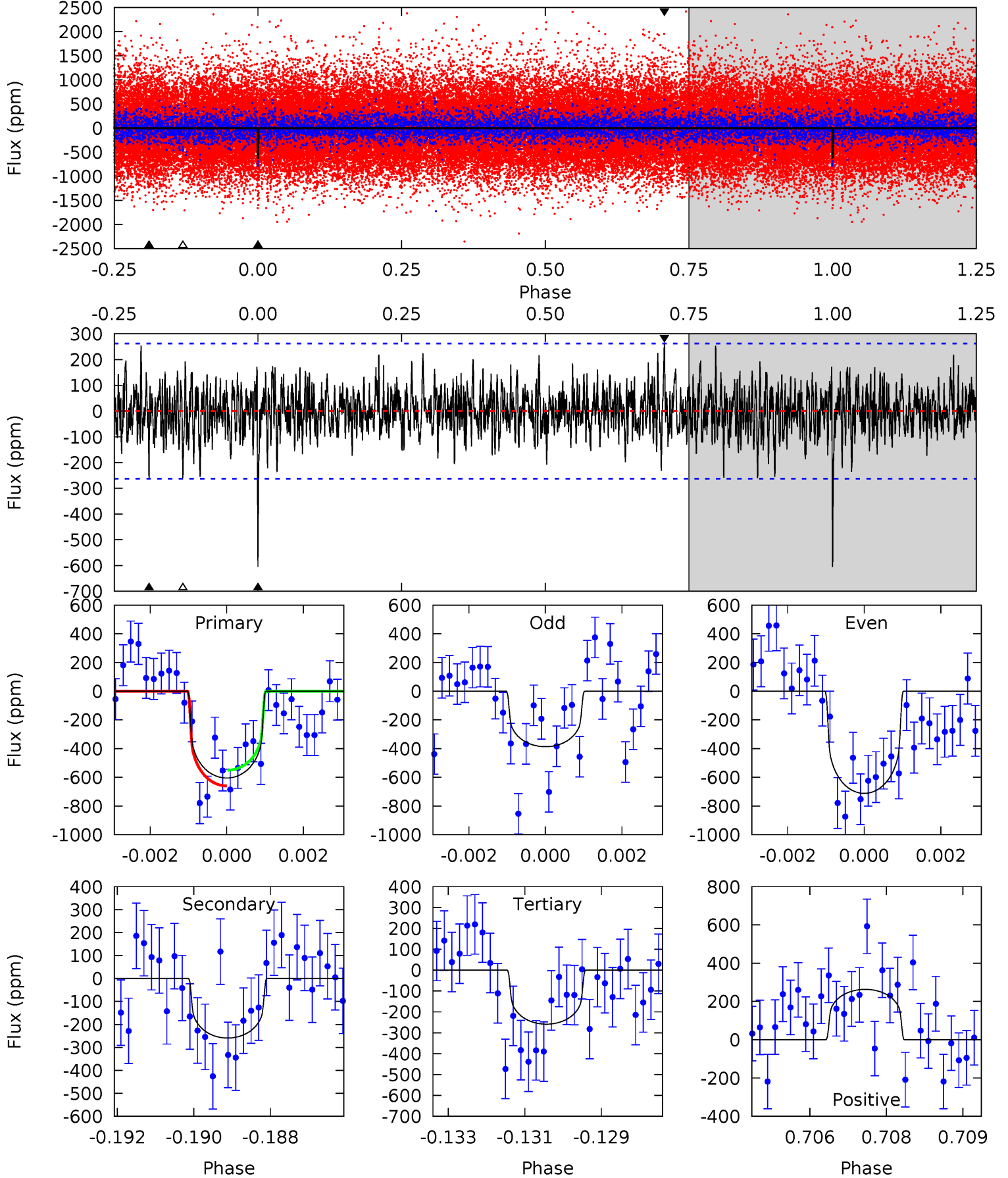
TCE 003545240-01 P=479.739122 Days  $T_0=586.576450$  (BKJD)



# DV Model-Shift Uniqueness Test

003545240-01,  $P = 479.732211$  Days,  $E = 106.849599$  Days

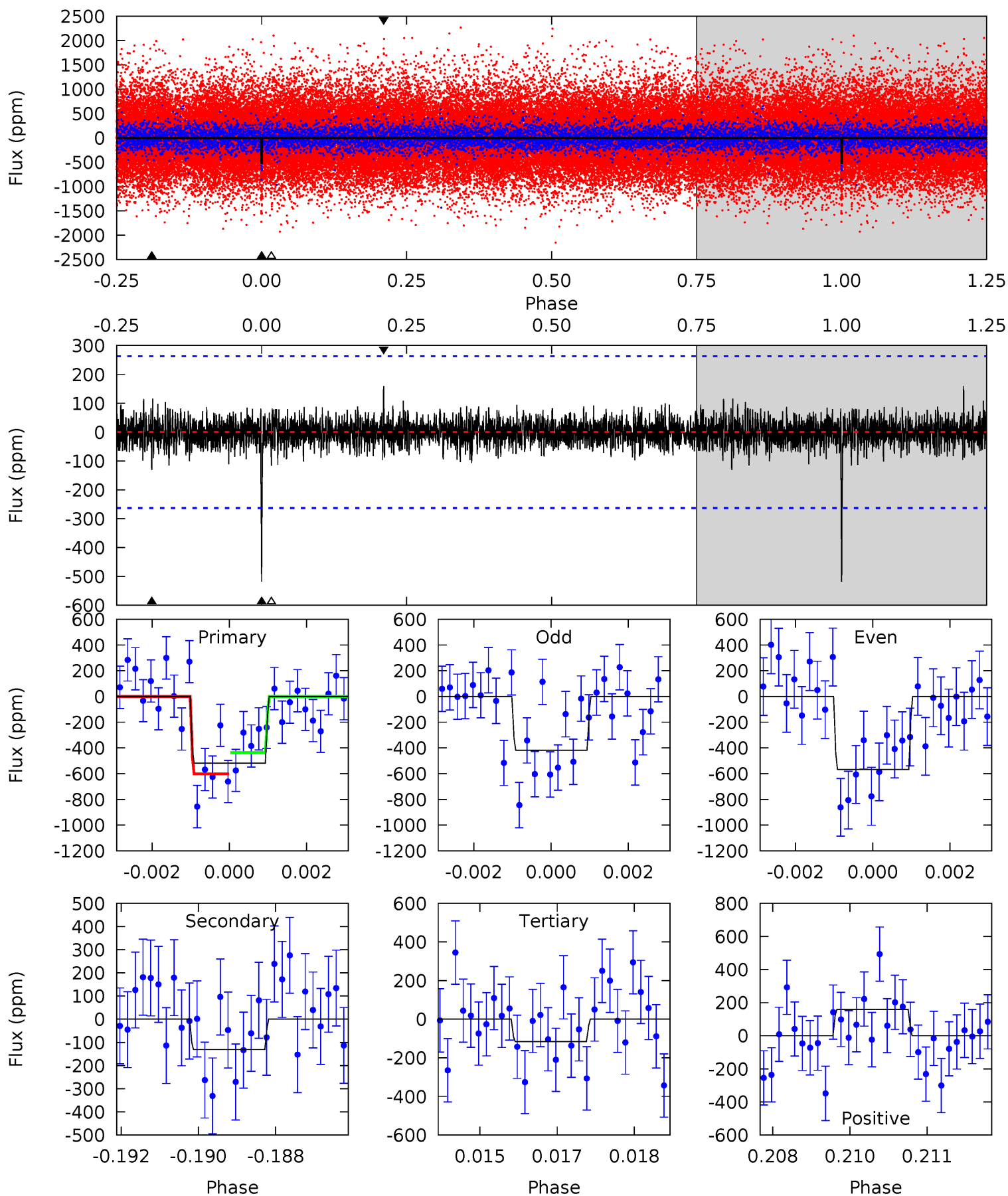
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	5.30	5.29	5.38	5.37	3.16	1.48	7.08	6.99	0.01	-0.08	3.13	1.11	0.30	1.12



# Alt Model-Shift Uniqueness Test

003545240-01, P = 479.739122 Days, E = 106.837328 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
10.6	2.68	2.37	3.25	5.37	3.17	0.66	8.22	7.34	0.31	-0.58	1.43	1.23	0.24	1.69



### Stellar Parameters For KIC 003545240

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5390^{+164}_{-164}$	$4.502^{+0.050}_{-0.150}$	$0.210^{+0.200}_{-0.300}$	$0.896^{+0.187}_{-0.080}$	$0.930^{+0.072}_{-0.086}$	$1.821^{+0.467}_{-0.753}$
	+3%/-3%	+1%/-3%	+95%/-143%	+21%/-9%	+8%/-9%	+26%/-41%
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 003545240-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-259 \pm 49$	$2.47^{+0.90}_{-0.82}$	$295^{+17}_{-14}$	$4538^{+836}_{-560}$	$32068^{+37560}_{-16000}$
Alt.	$-131 \pm 49$	$2.24^{+0.86}_{-0.79}$	$294^{+18}_{-12}$	$4107^{+788}_{-530}$	$18563^{+29984}_{-10070}$

$T_{max}$  = 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

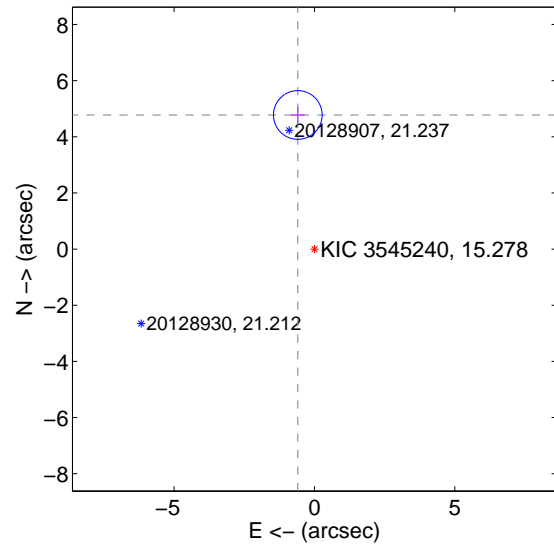
Supplemental centroid analysis for 003545240-01. Kepler magnitude: 15.28. Transit SNR 8.01

There are 1 quarters with good PRF difference image offsets

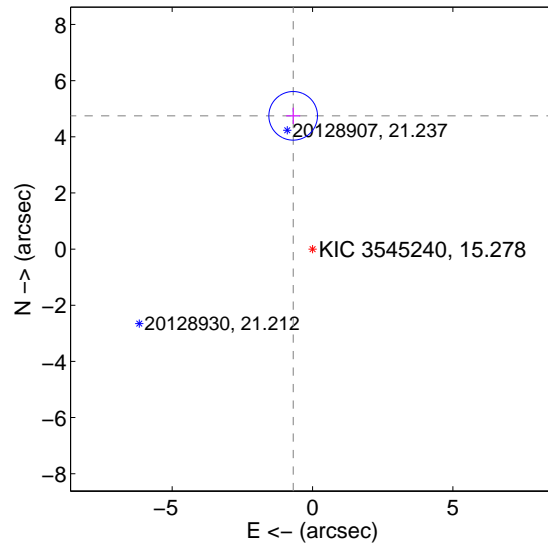
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.813 \pm 0.289$	16.66	$0.593 \pm 0.249$	$4.776 \pm 0.289$
PRF-fit source offset from KIC position	$4.796 \pm 0.289$	16.62	$0.689 \pm 0.249$	$4.747 \pm 0.289$
photometric centroid source offset	$2.06 \pm 1.71$	1.21	$1.45 \pm 1.64$	$1.47 \pm 1.77$

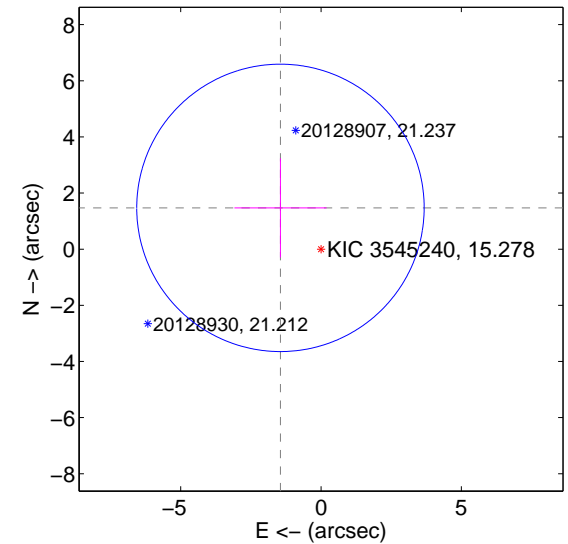
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



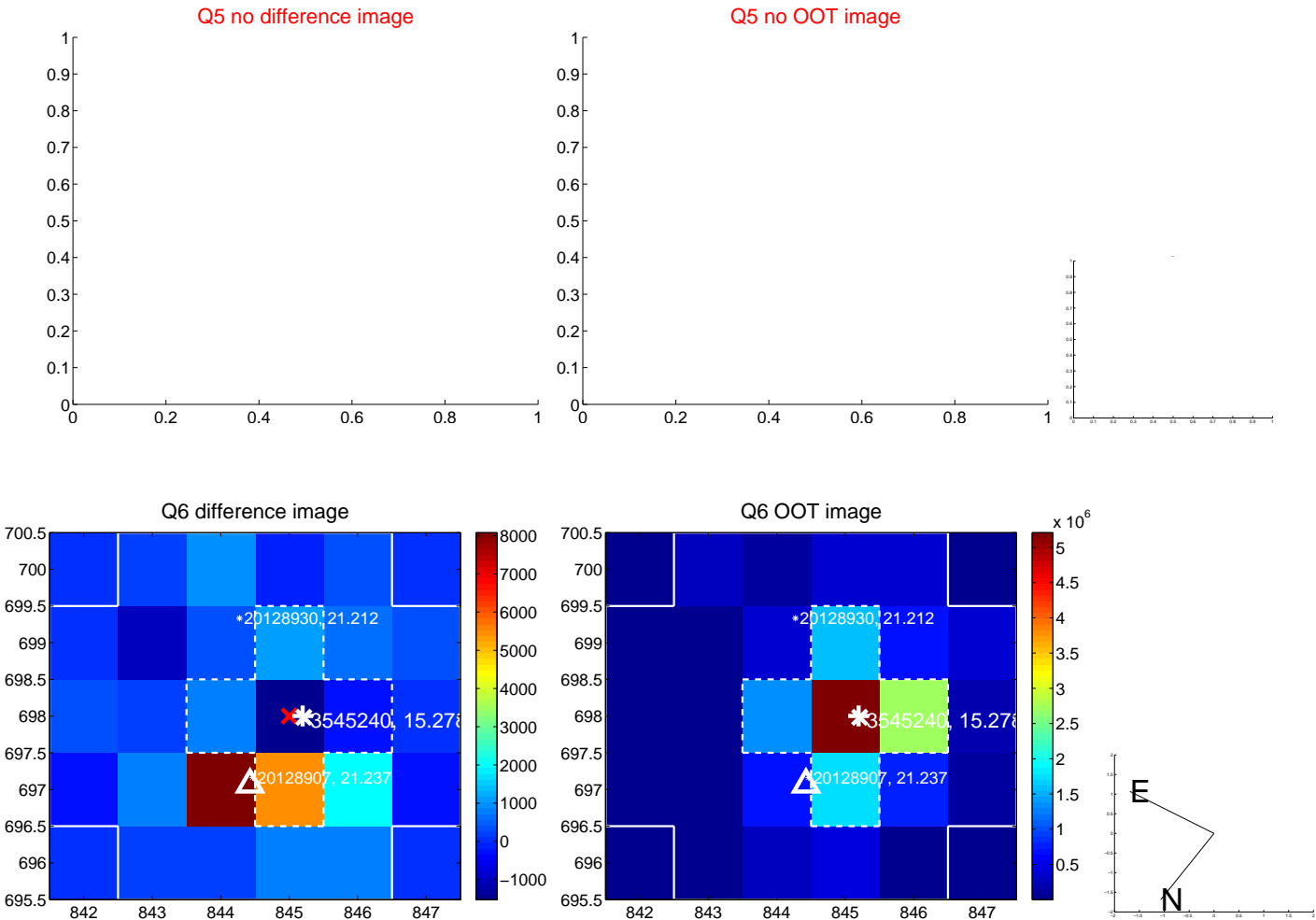
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



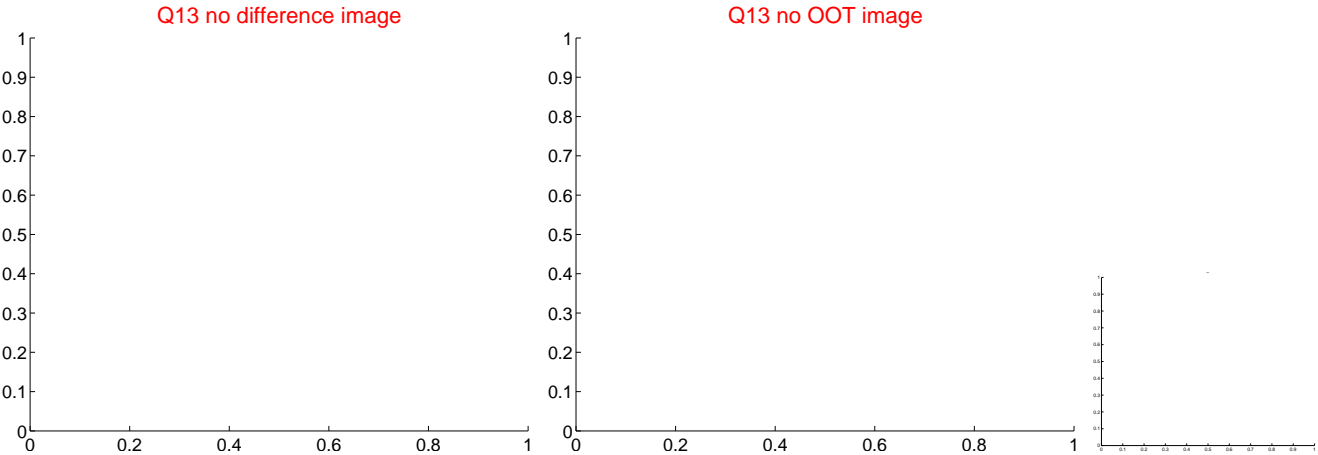
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



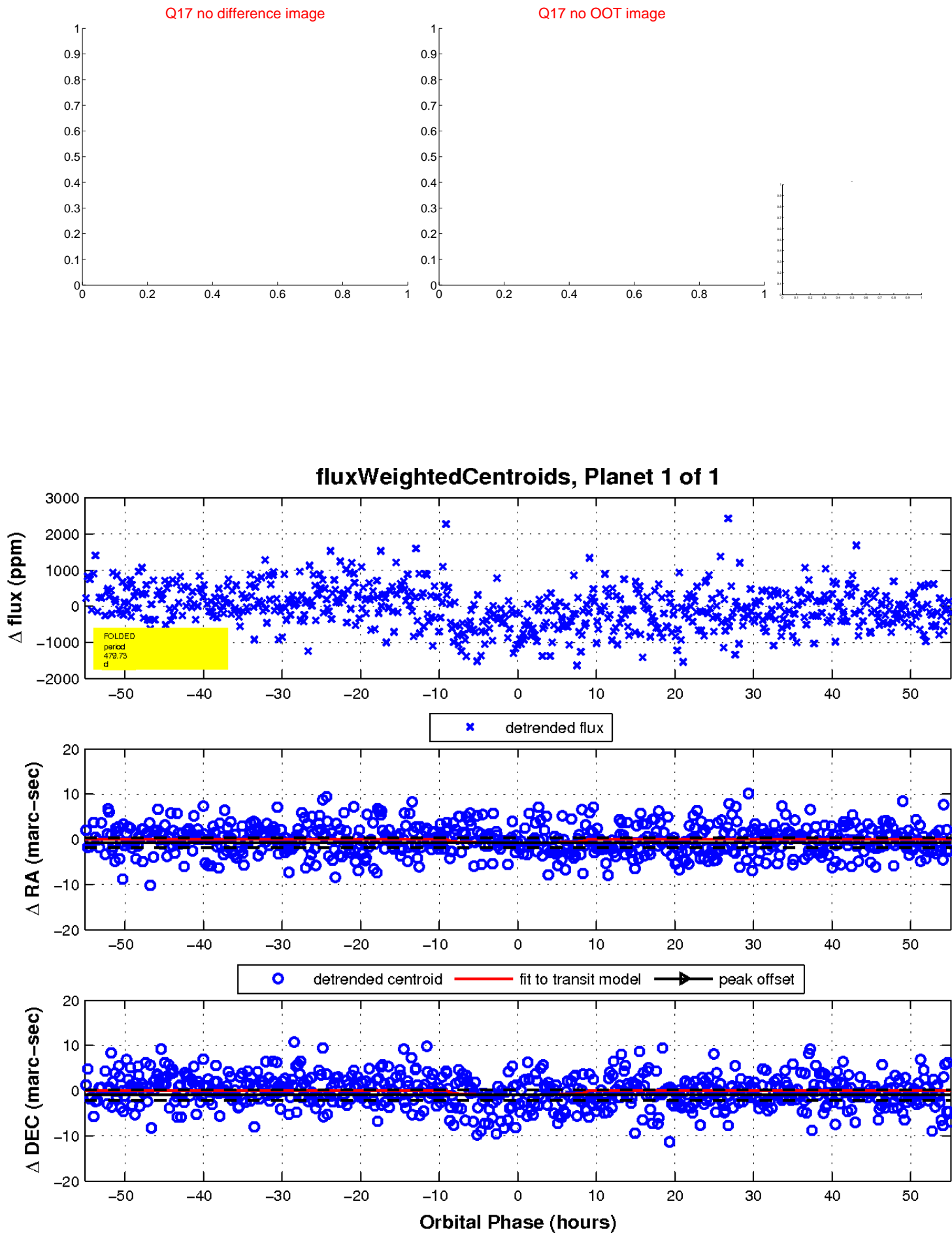
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

