

# KIC 005032833

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005032833-01	OBS	No	479.210453	309.007202	471.1	13.374	7.4	7.5	0.89	5798	2.04	0.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005032833-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_ALT—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

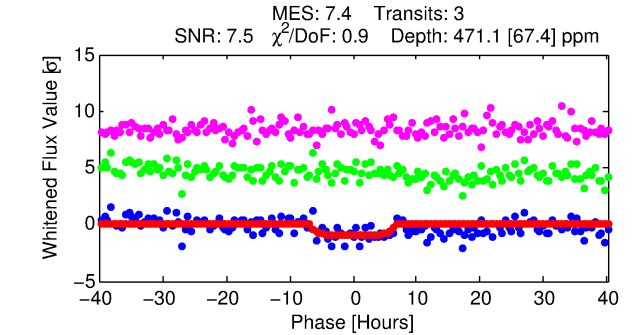
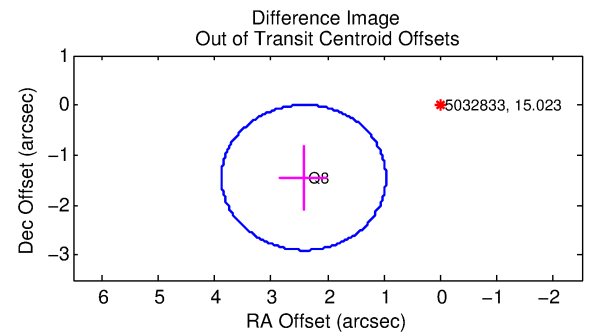
N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

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 005032833-01

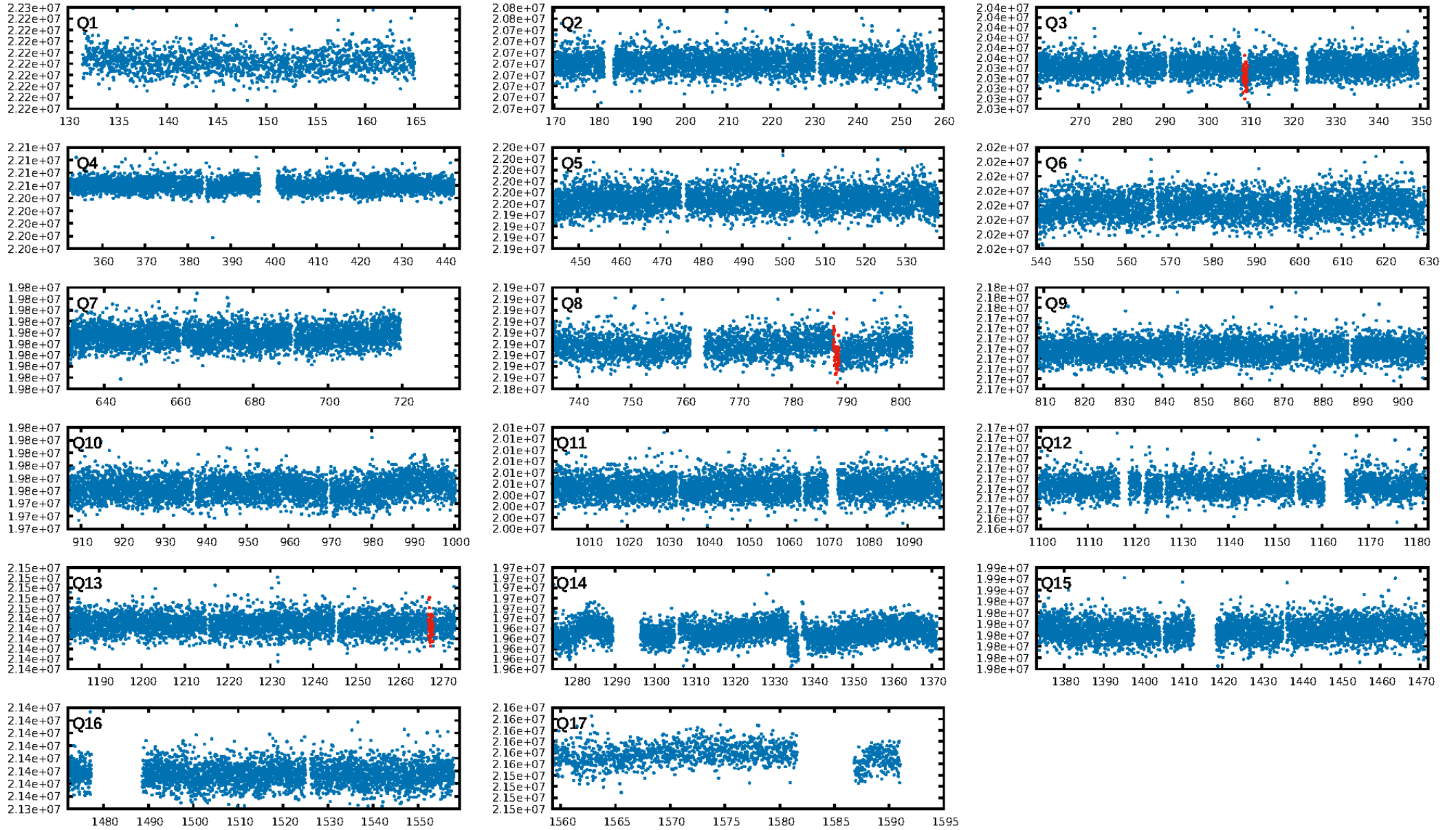
No Significant Match Found

KIC: 5032833    Candidate: 1 of 1    Period: 479.210 d

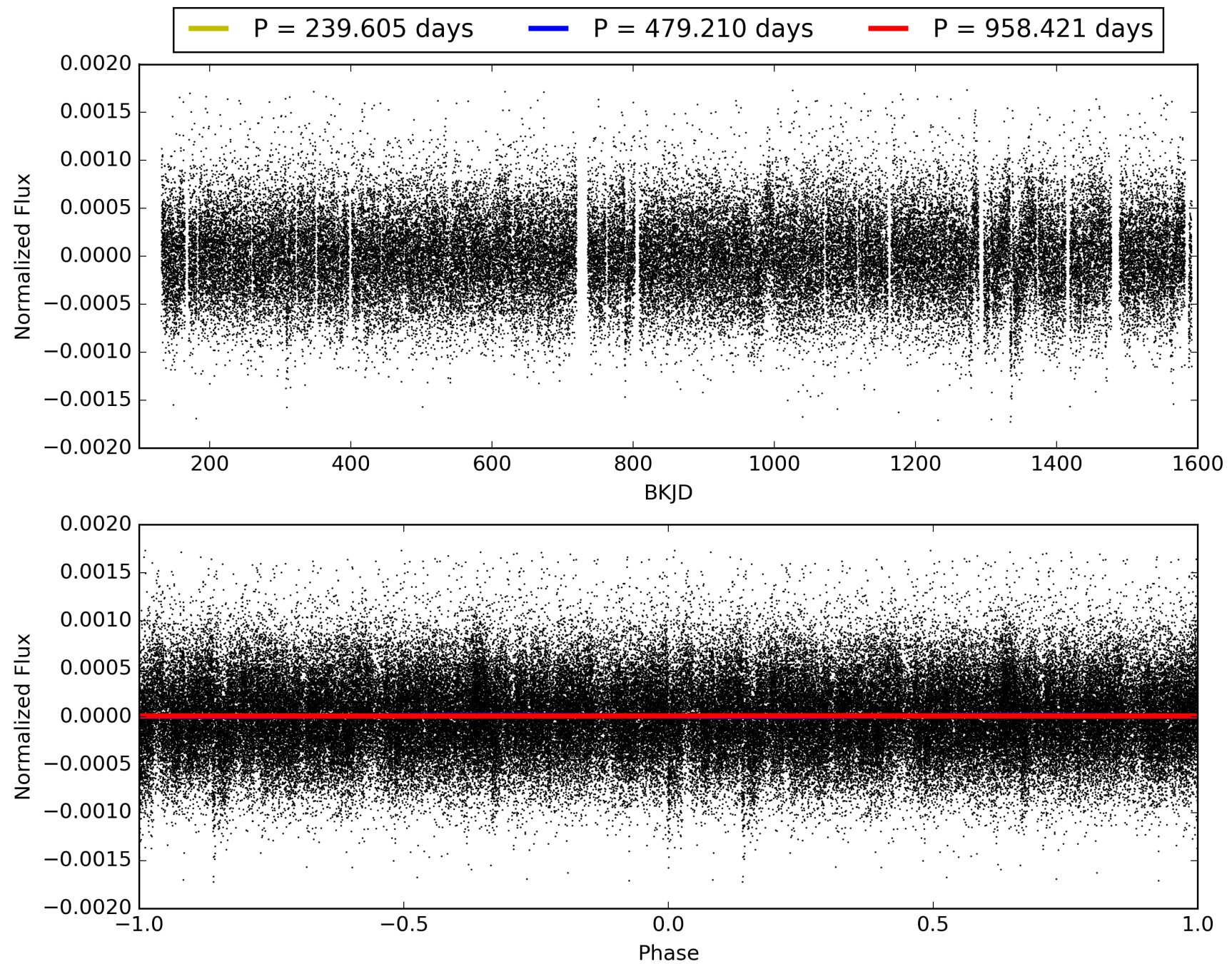


ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 13.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.25e-13  
RollingBand-fgt: 1.00 [3/3]  
GstDiagnostic-chr: 0.4047  
  
Centroid-sig: 5.7%  
Centroid-so: 2.697 arcsec [1.48σ]  
OotOffset-rm: 2.819 arcsec [5.81σ]  
KicOffset-rm: 2.817 arcsec [5.71σ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 005032833-01, PDC Light Curves

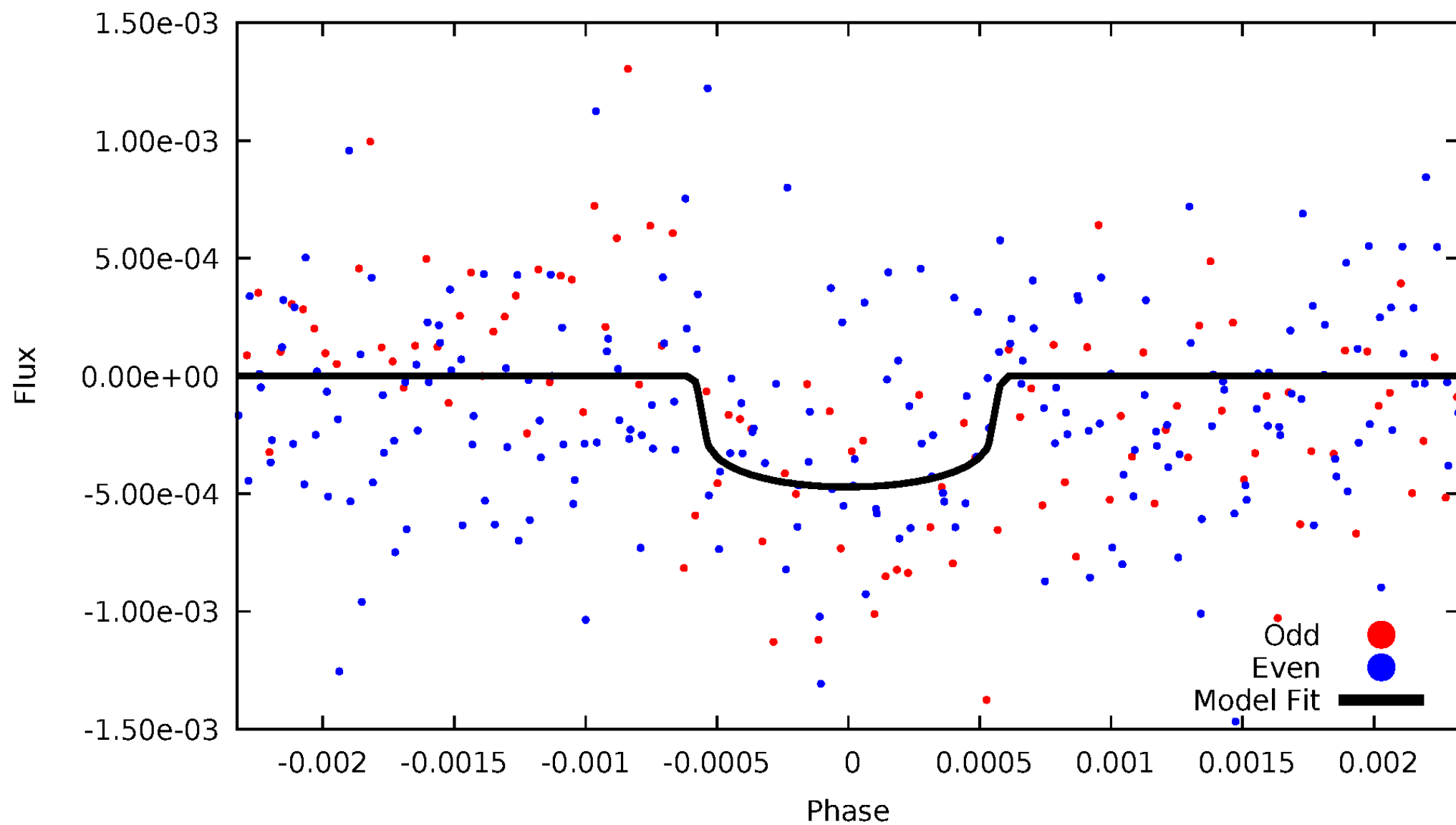


TCE 005032833-01



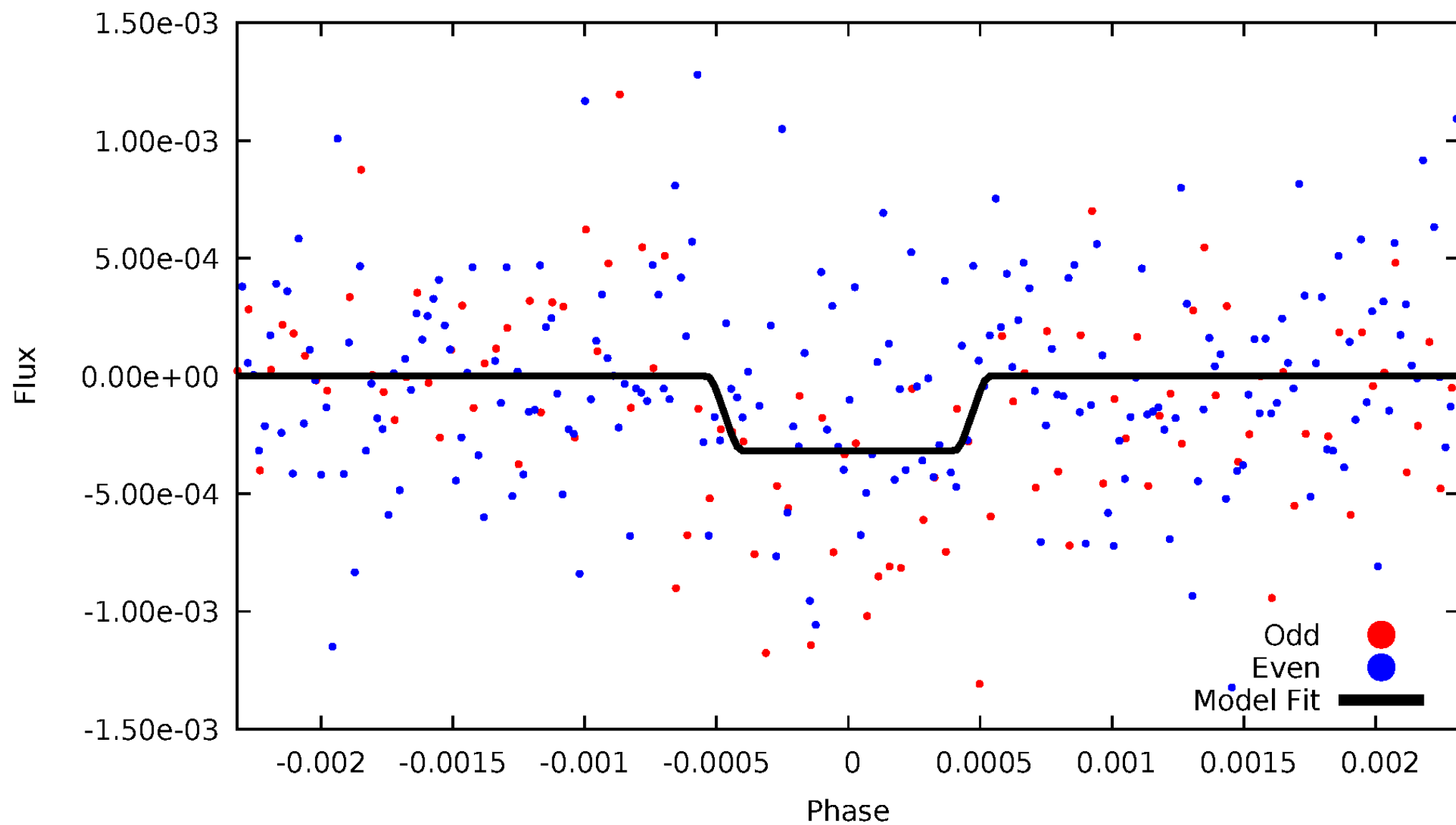
# DV Odd/Even

TCE 005032833-01



# ALT Odd/Even

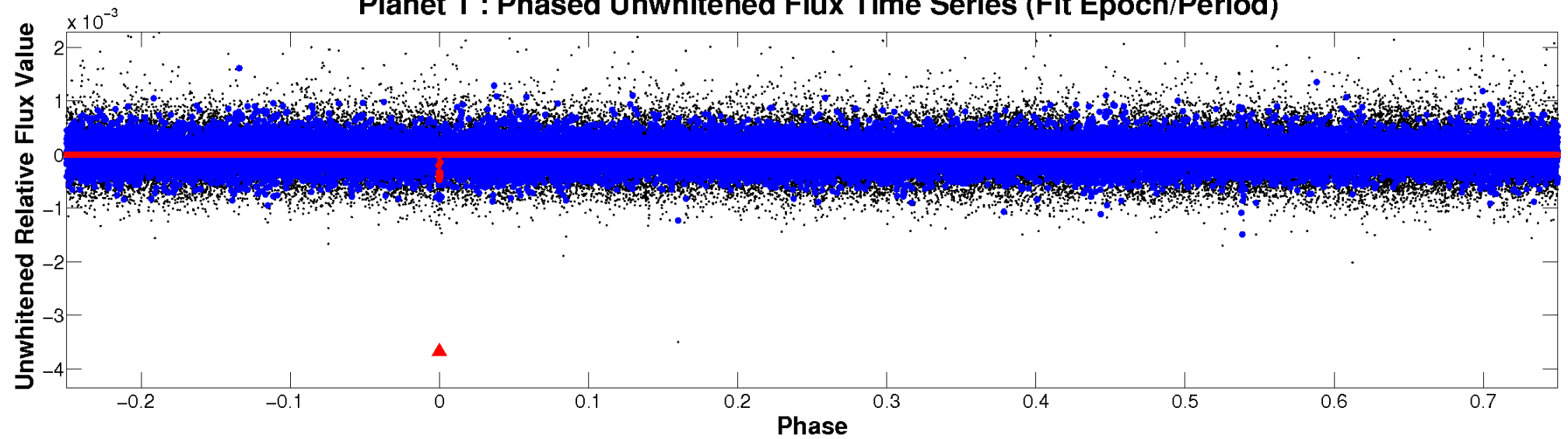
TCE 005032833-01



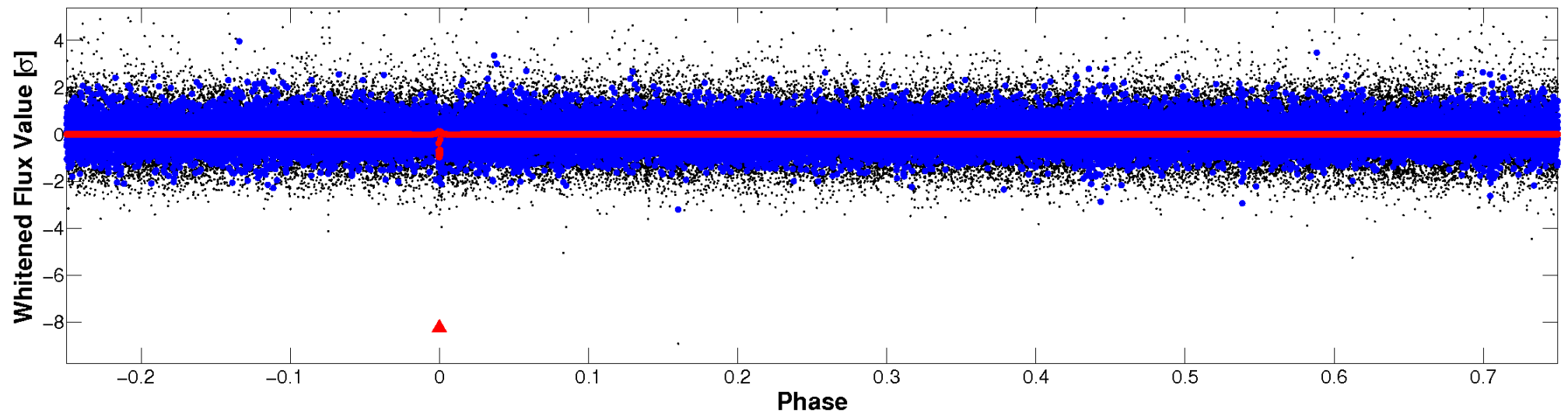


# Non-Whitened Vs. Whitened Light Curve

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

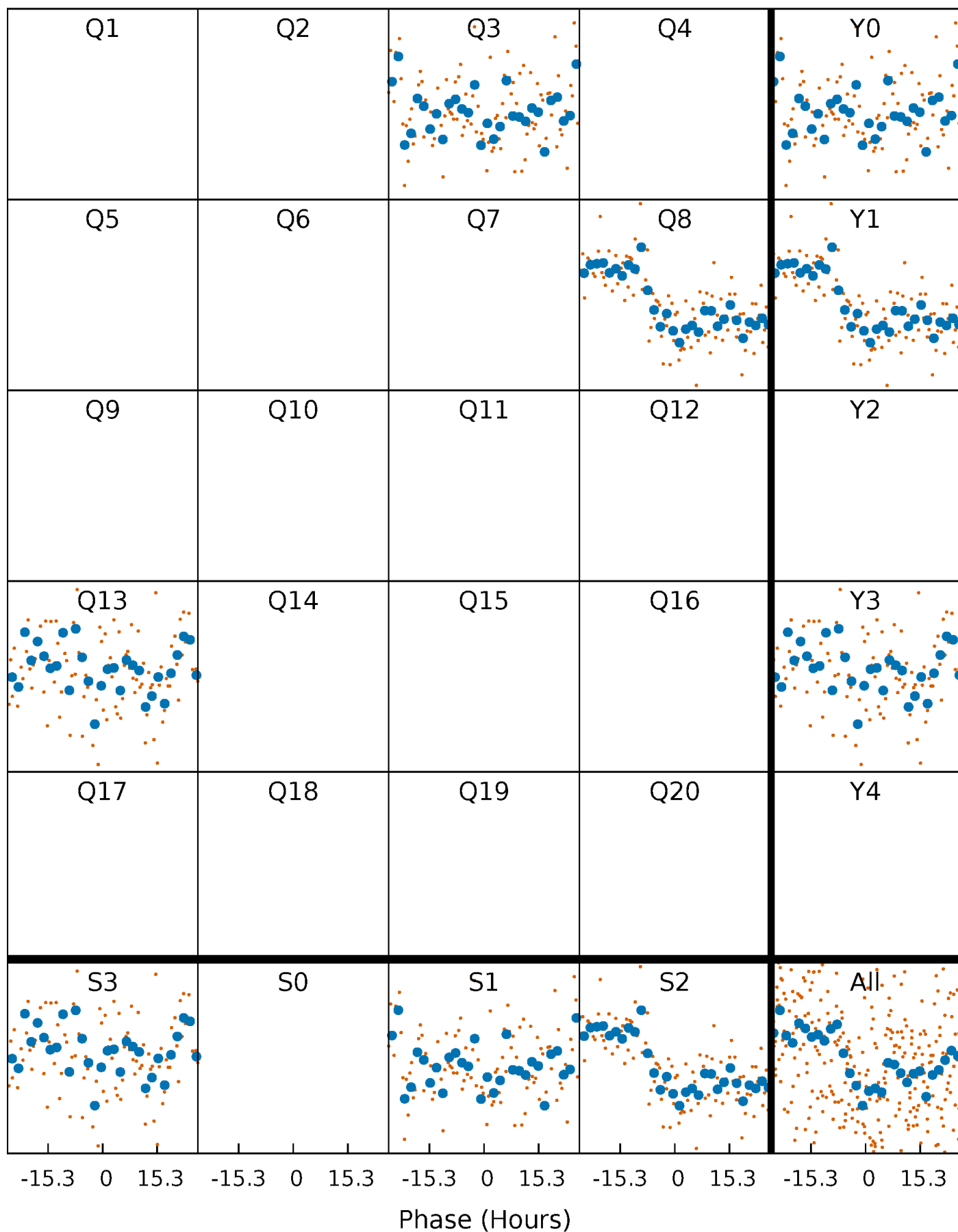


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

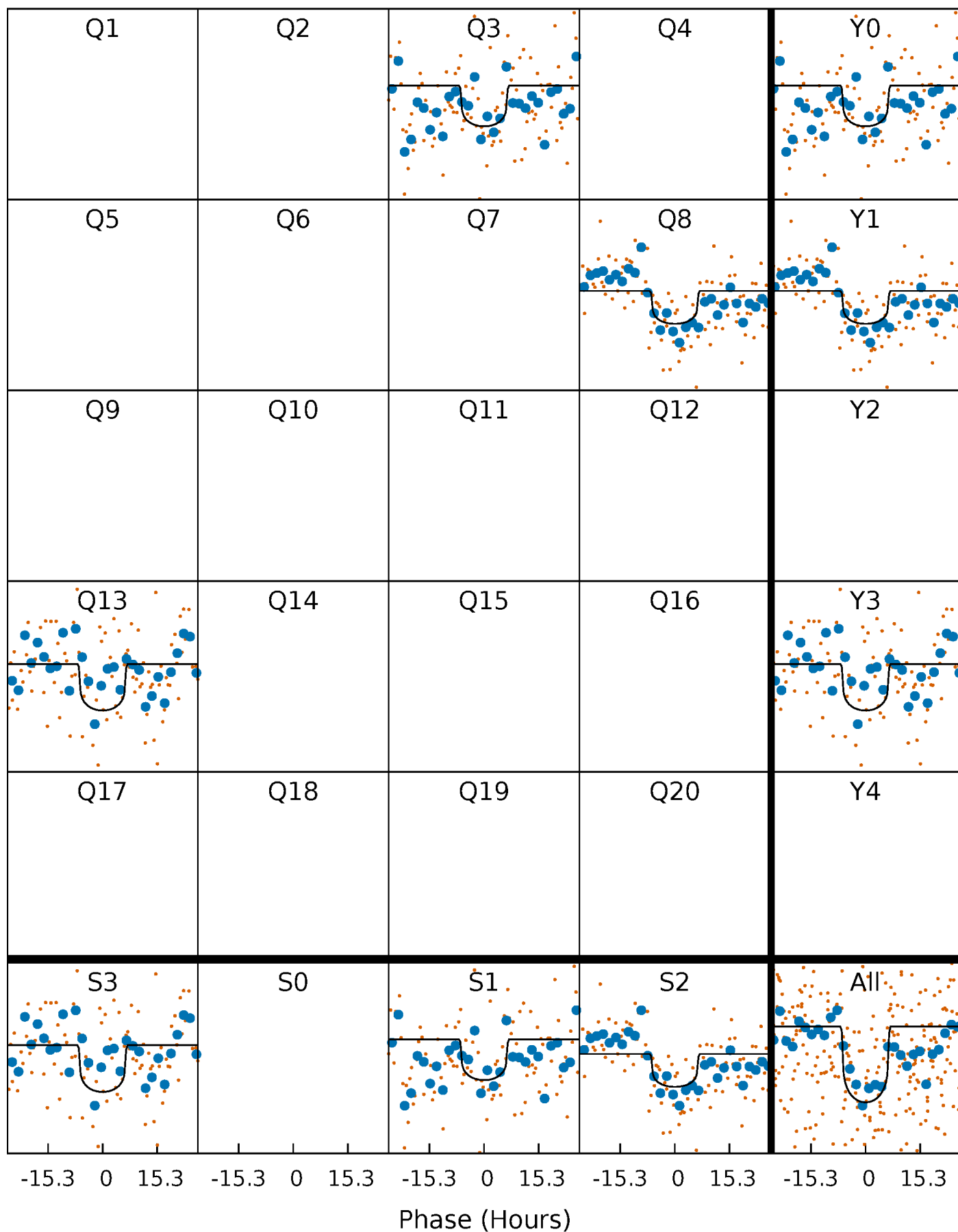
TCE 005032833-01 P=479.210453 Days  $T_0=309.007203$  (BKJD)





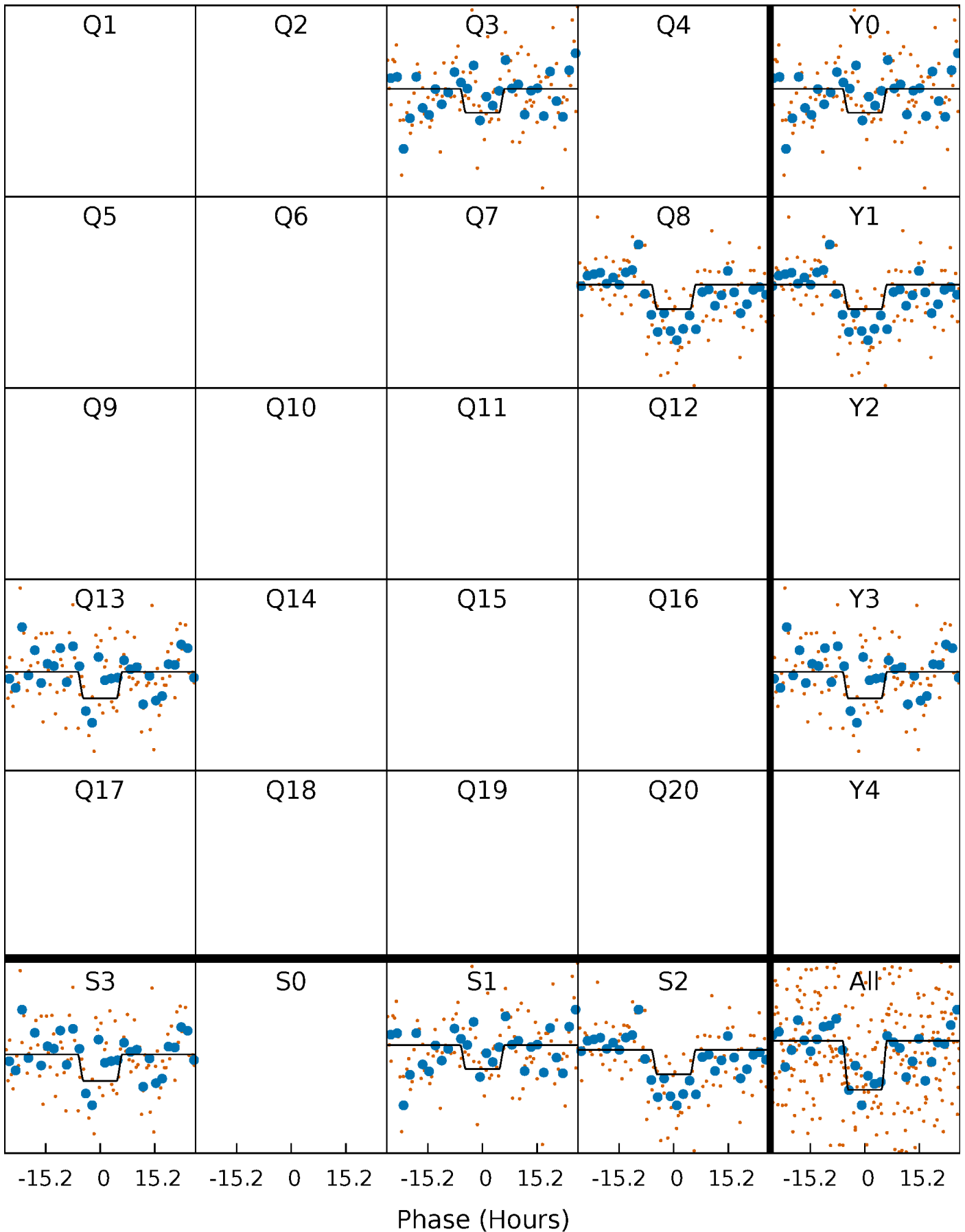
# DV Quarter-Phased Transit Curves

TCE 005032833-01 P=479.210453 Days  $T_0=309.007203$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

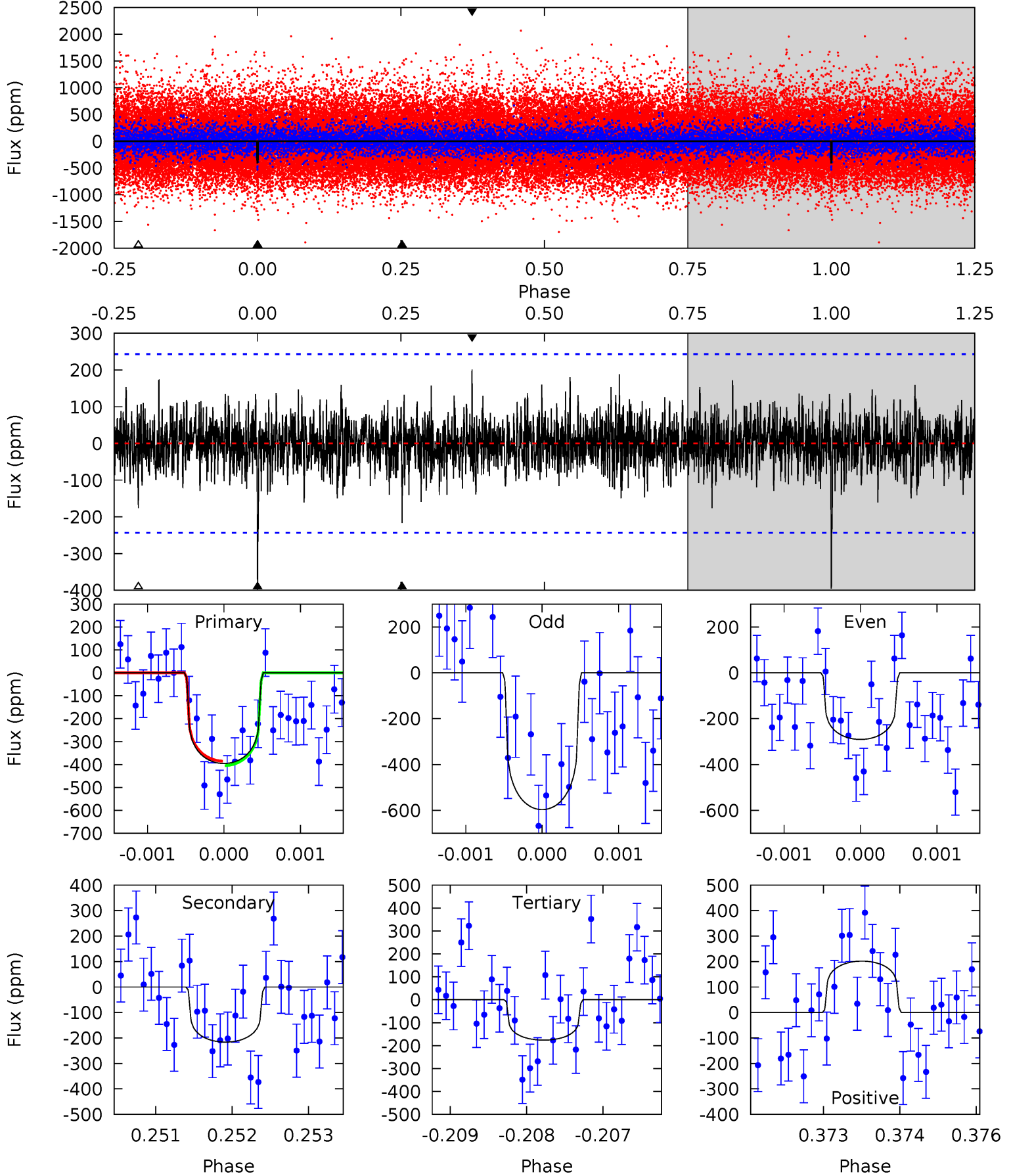
TCE 005032833-01 P=479.214660 Days  $T_0=309.016461$  (BKJD)



# DV Model-Shift Uniqueness Test

005032833-01, P = 479.210453 Days, E = 309.007203 Days

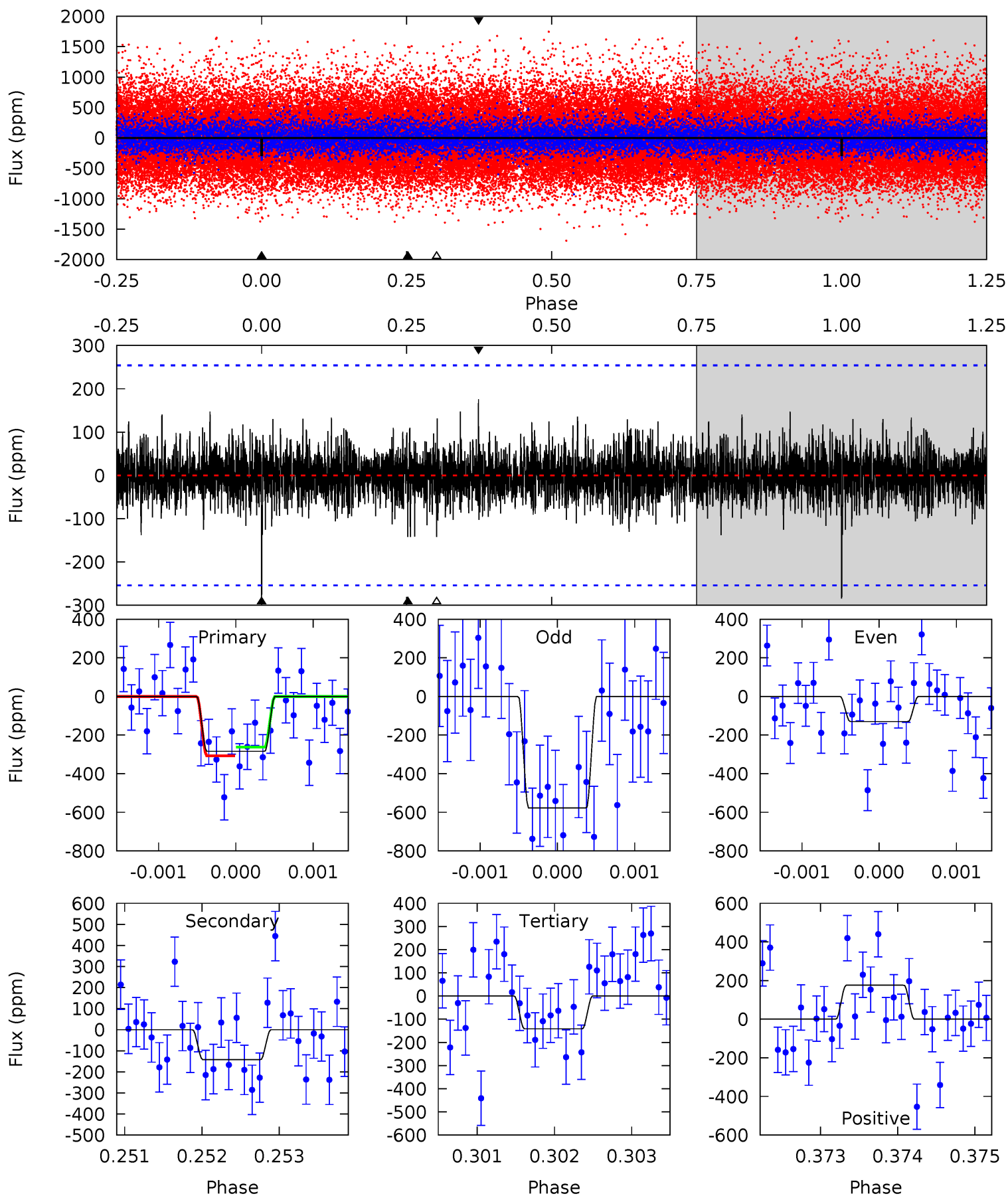
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.81	4.81	3.92	4.49	5.42	3.24	1.10	4.89	4.32	0.89	0.32	3.25	1.07	0.34	0.22



# Alt Model-Shift Uniqueness Test

005032833-01, P = 479.214660 Days, E = 309.016461 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
6.08	3.04	3.04	3.76	5.44	3.27	0.86	3.05	2.32	0.00	-0.72	4.59	1.76	0.38	0.48



### Stellar Parameters For KIC 005032833

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5798^{+174}_{-174}$	$4.434^{+0.124}_{-0.171}$	$-0.560^{+0.300}_{-0.300}$	$0.892^{+0.225}_{-0.139}$	$0.786^{+0.108}_{-0.054}$	$1.562^{+1.002}_{-0.716}$
	+3%/-3%	+3%/-4%	+54%/-54%	+25%/-16%	+14%/-7%	+64%/-46%
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 005032833-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-216 \pm 45$	$2.09^{+1.13}_{-1.09}$	$322^{+21}_{-18}$	$4946^{+2023}_{-804}$	$34347^{+111447}_{-20835}$
Alt.	$-142 \pm 47$	$1.84^{+1.10}_{-0.97}$	$322^{+22}_{-18}$	$4744^{+1866}_{-792}$	$29298^{+96926}_{-19306}$

$T_{max}$  = 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

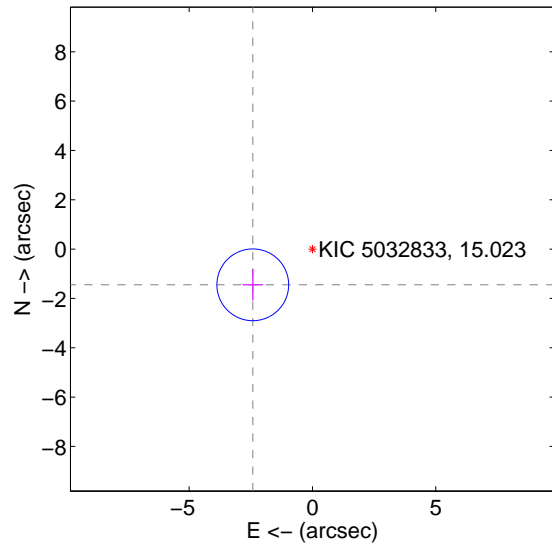
Supplemental centroid analysis for 005032833-01. Kepler magnitude: 15.02. Transit SNR 7.50

There are 1 quarters with good PRF difference image offsets

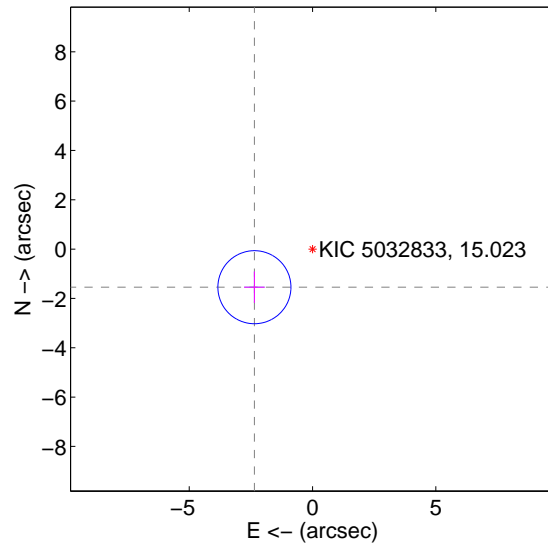
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	2.819 $\pm$ 0.485	5.81	2.419 $\pm$ 0.418	-1.448 $\pm$ 0.636
PRF-fit source offset from KIC position	2.817 $\pm$ 0.494	5.71	2.356 $\pm$ 0.418	-1.545 $\pm$ 0.636
photometric centroid source offset	2.70 $\pm$ 1.83	1.48	1.43 $\pm$ 1.76	-2.28 $\pm$ 1.85

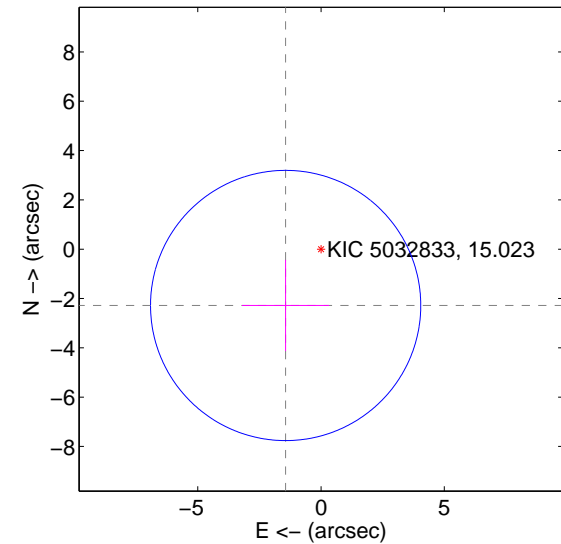
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



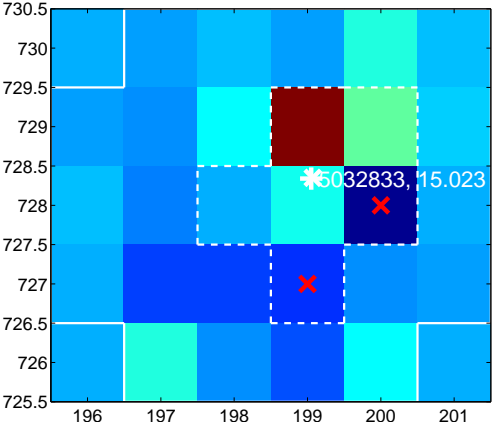
Q2 no difference image



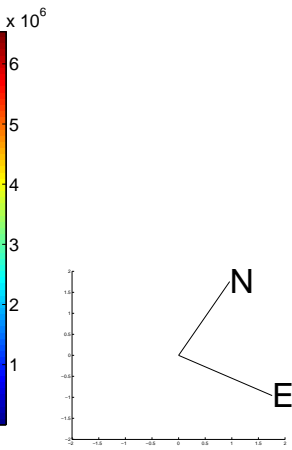
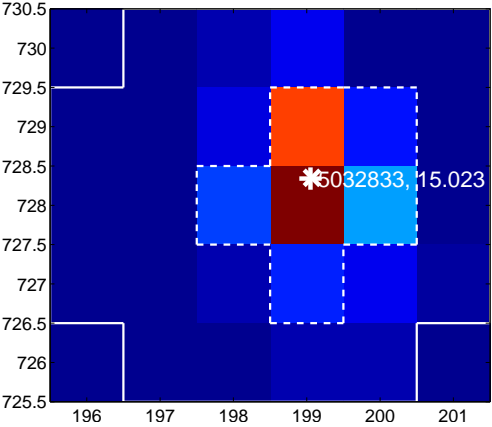
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image

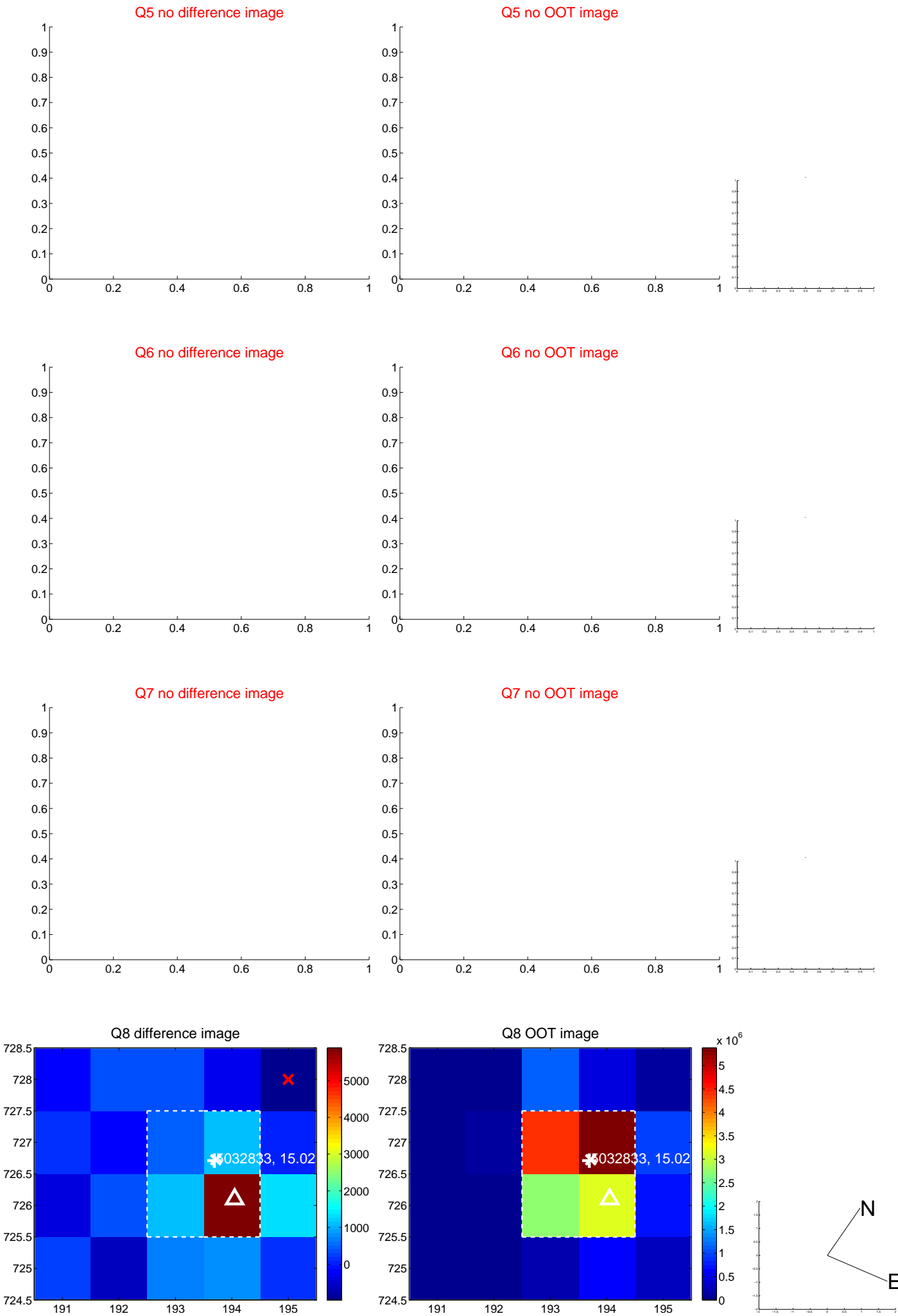


Q4 no OOT image





white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



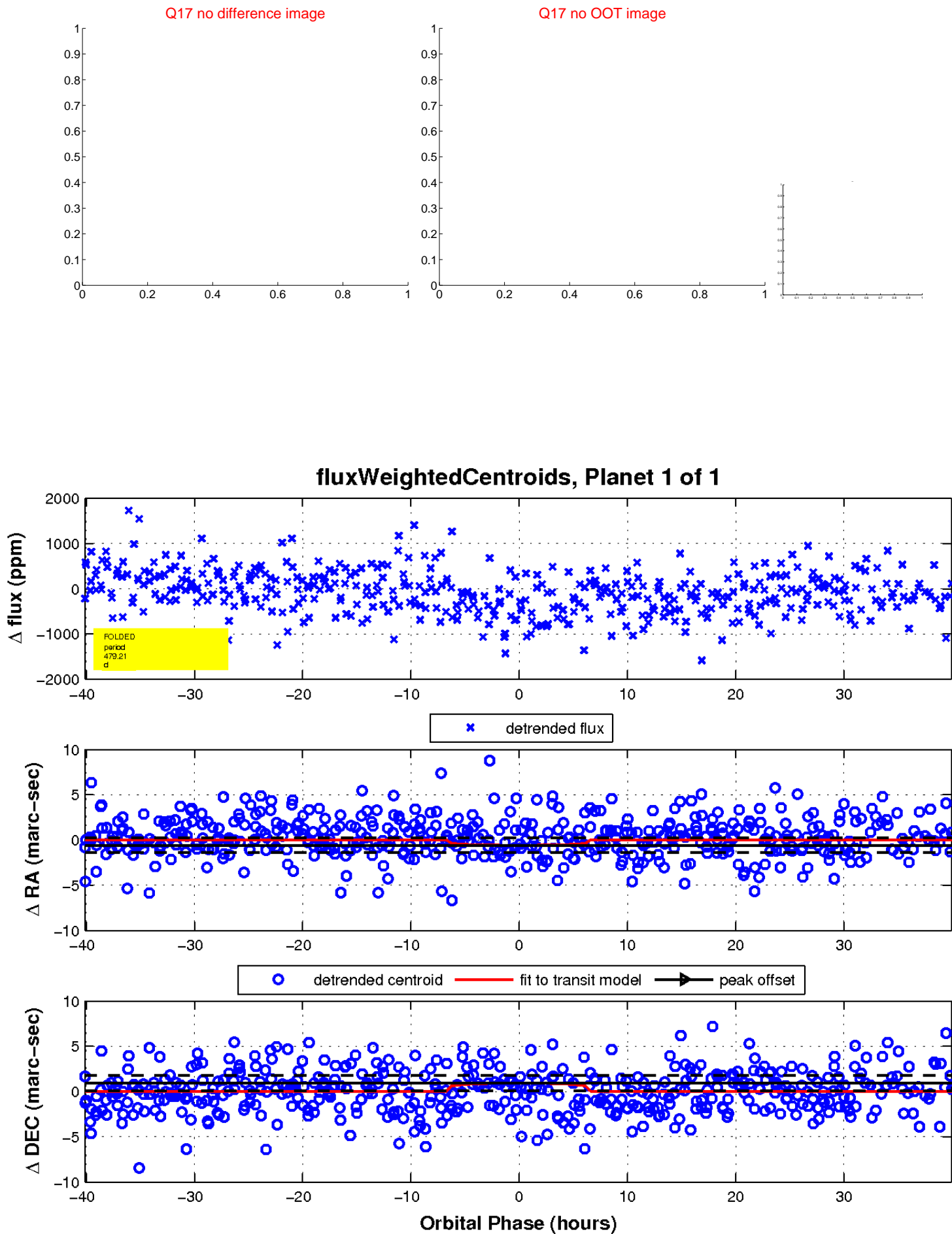
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

