

# KIC 012303344

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
012303344-01	OBS	No	380.328102	150.761155	393.1	6.561	8.8	6.2	1.03	6102	2.16	1.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012303344-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_CHASES_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.

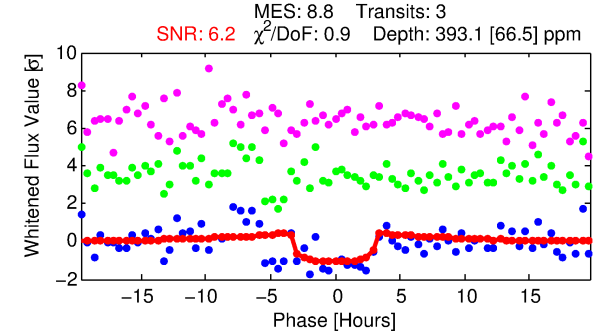
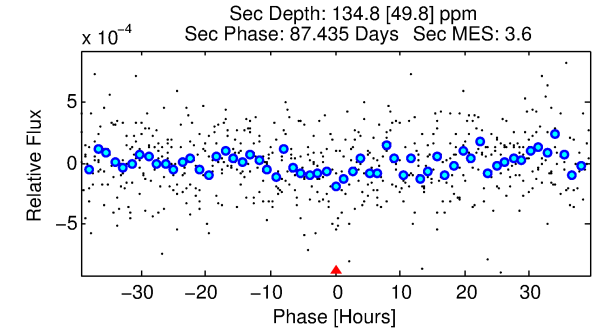
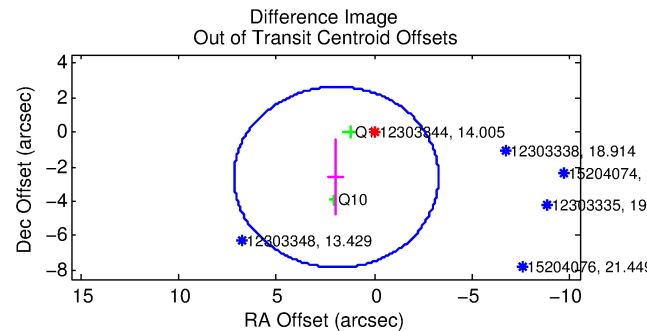
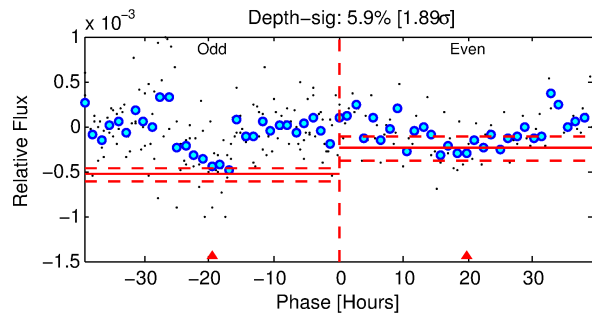
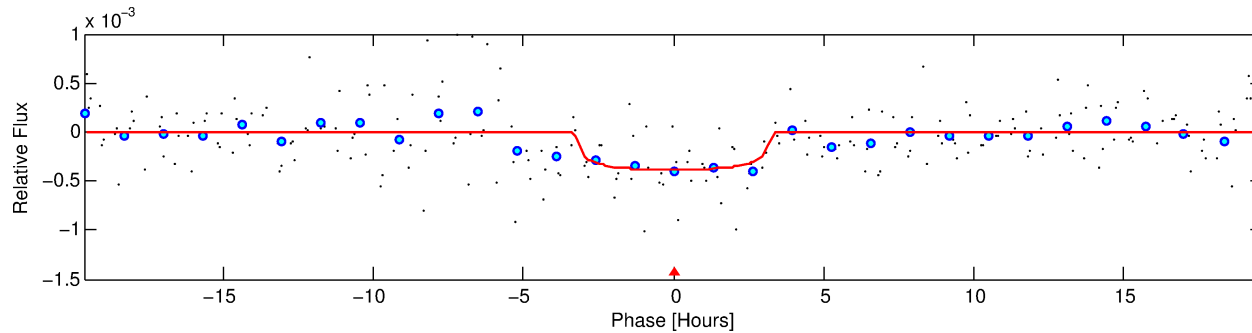
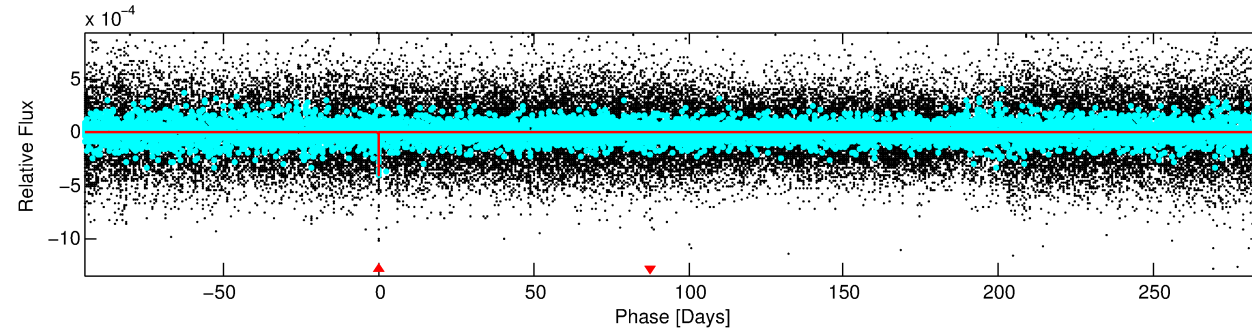
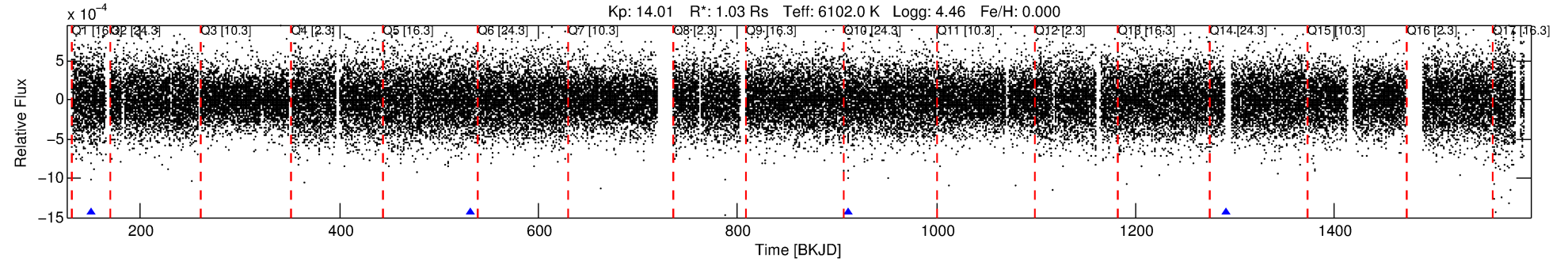
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 012303344-01

No Significant Match Found

# DV One-Page Summary

KIC: 12303344 Candidate: 1 of 1 Period: 380.328 d



## DV Fit Results:

Period = 380.32810 [0.01081] d  
Epoch = 150.7612 [0.0153] BKJD  
Rp/R\* = 0.0193 [0.0161]  
a/R\* = 336.76 [1343.72]  
b = 0.68 [3.20]  
Seff = 1.16 [0.45]  
Teq = 265 [26] K  
Rp = 2.16 [1.92] Re  
a = 1.0606 [0.2697] AU  
Ag = 17859.63 [31229.15] [0.57 $\sigma$ ]  
Teff = 4732 [2028] K [2.20 $\sigma$ ]

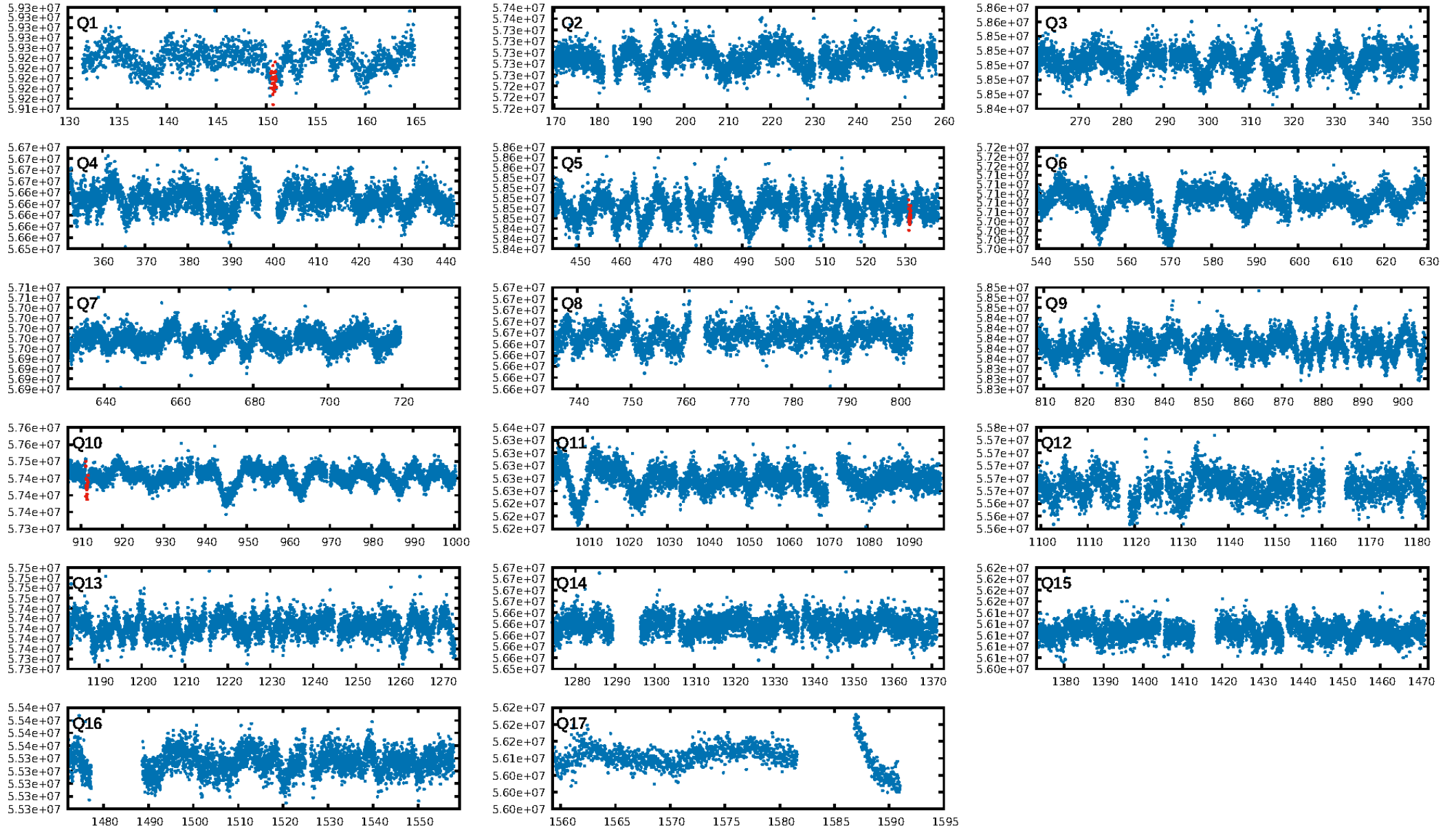
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 9.1%  
ModelChiSquareGof-sig: 99.4%  
Bootstrap-pfa: 1.68e-16  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: -0.2208  
Centroid-sig: 17.3%  
Centroid-so: 3.403 arcsec [2.48 $\sigma$ ]  
OotOffset-rm: 3.256 arcsec [1.87 $\sigma$ ]  
OotOffset-st: 1/0/0/1 [2]  
KicOffset-rm: 6.032 arcsec [3.19 $\sigma$ ]  
KicOffset-st: 1/0/0/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

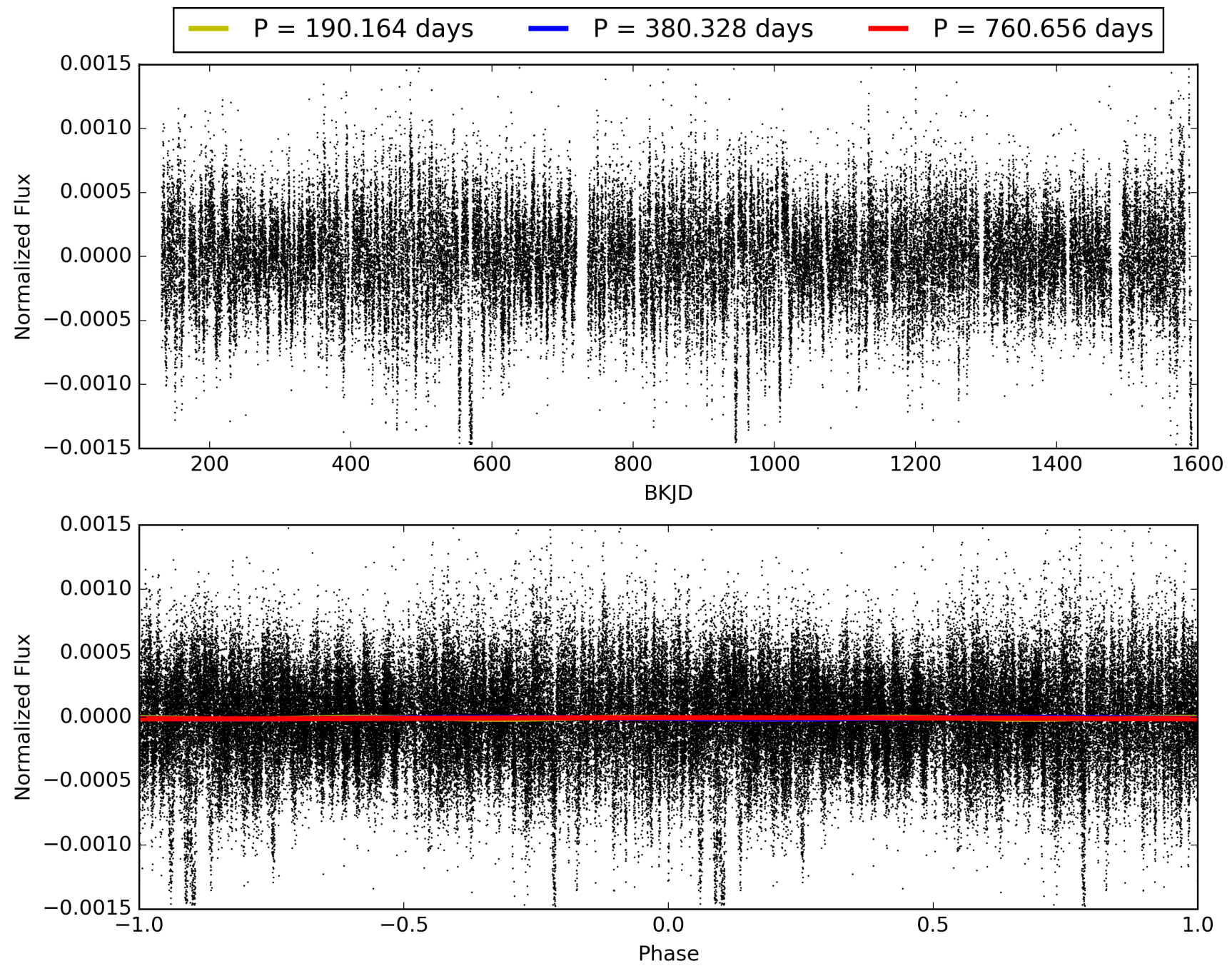
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:47:37 Z

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

# TCE 012303344-01, PDC Light Curves

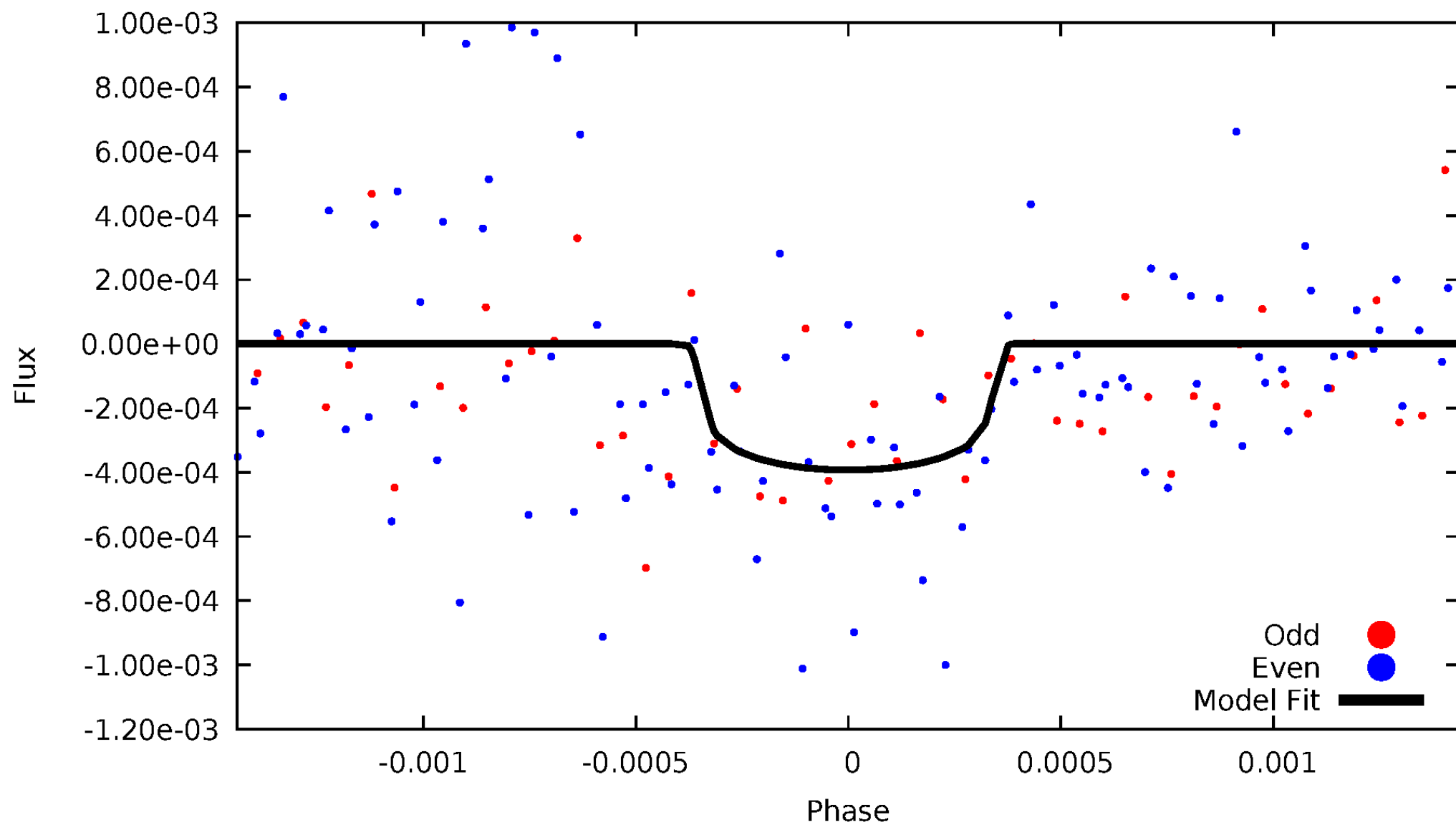


TCE 012303344-01



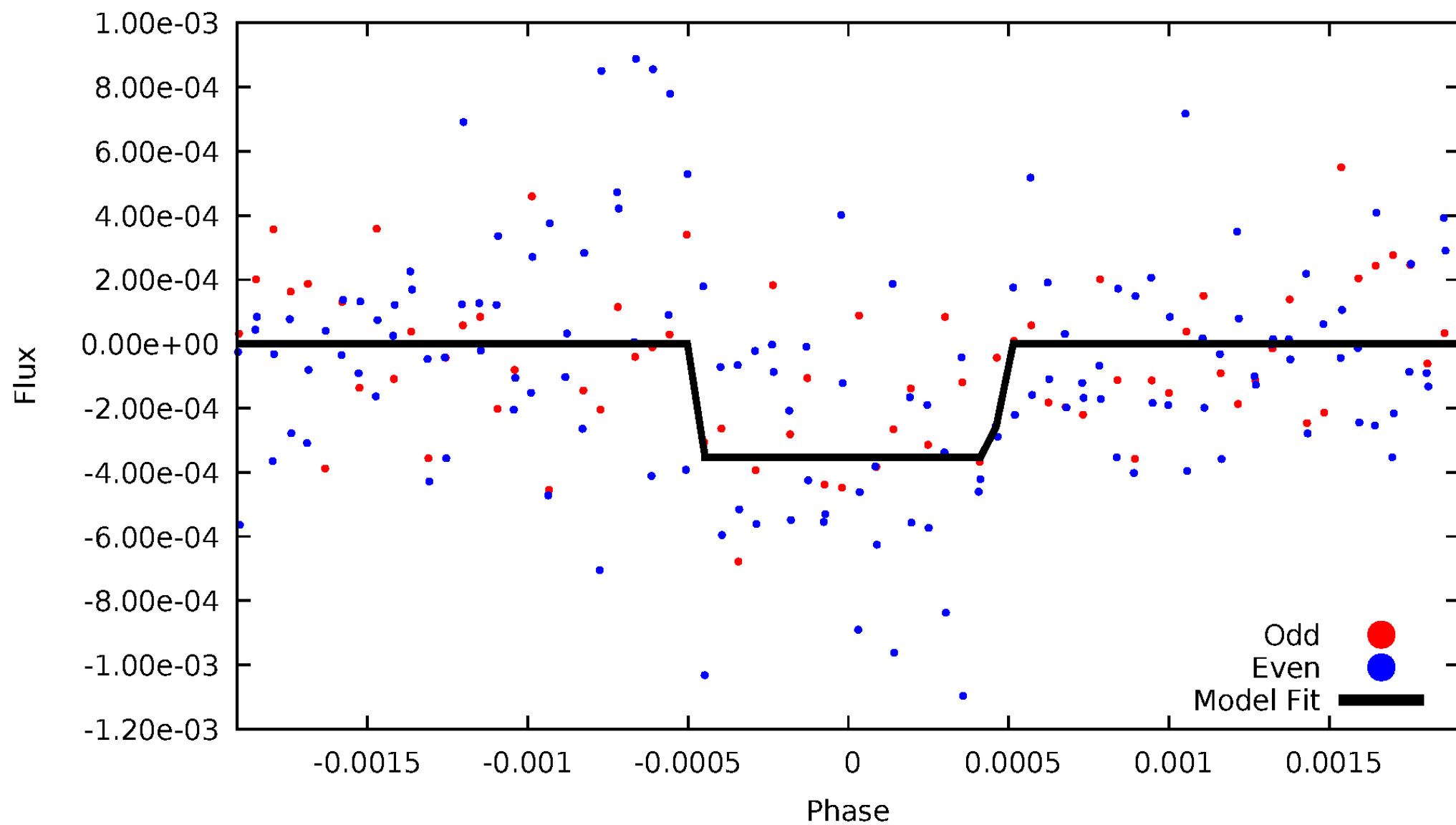
# DV Odd/Even

TCE 012303344-01



# ALT Odd/Even

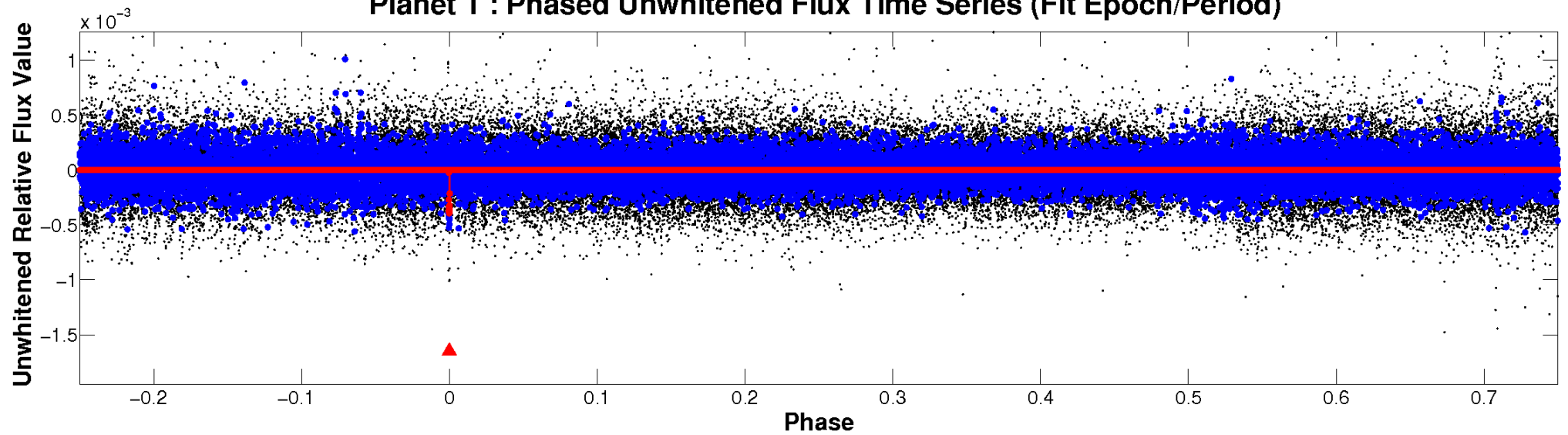
TCE 012303344-01



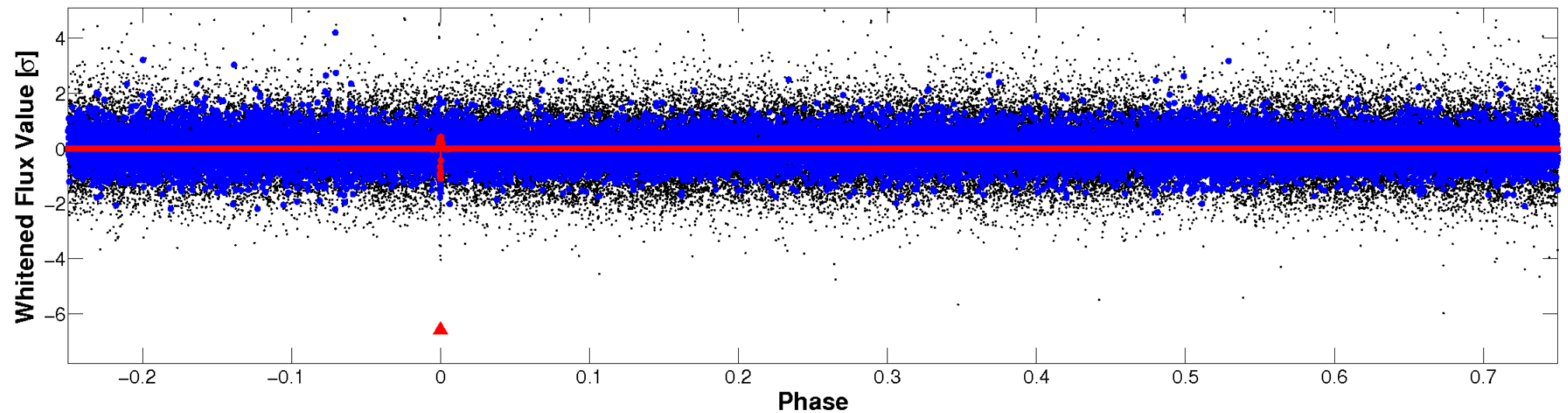


# Non-Whitened Vs. Whitened Light Curve

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

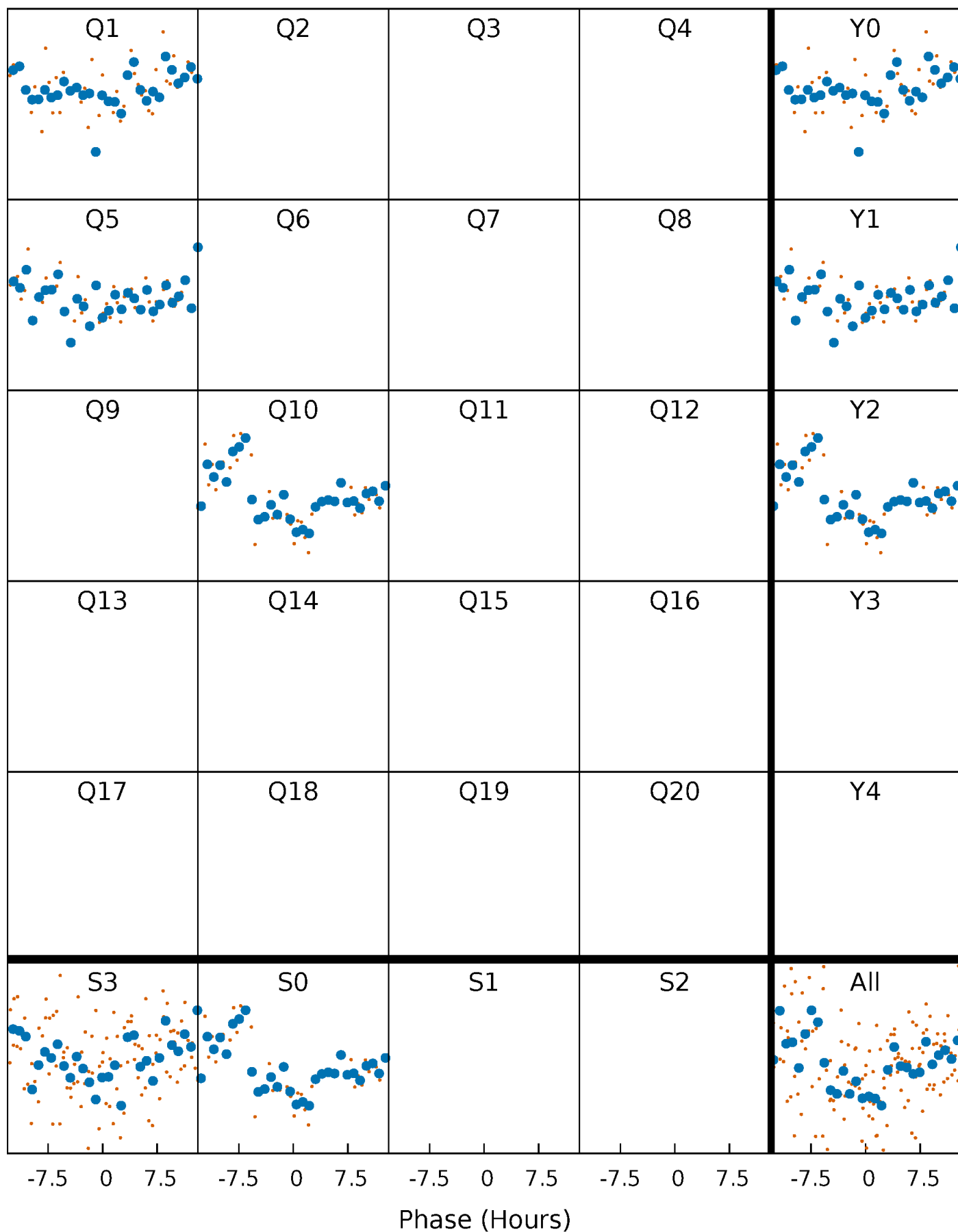


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 012303344-01 P=380.328102 Days  $T_0=150.761155$  (BKJD)





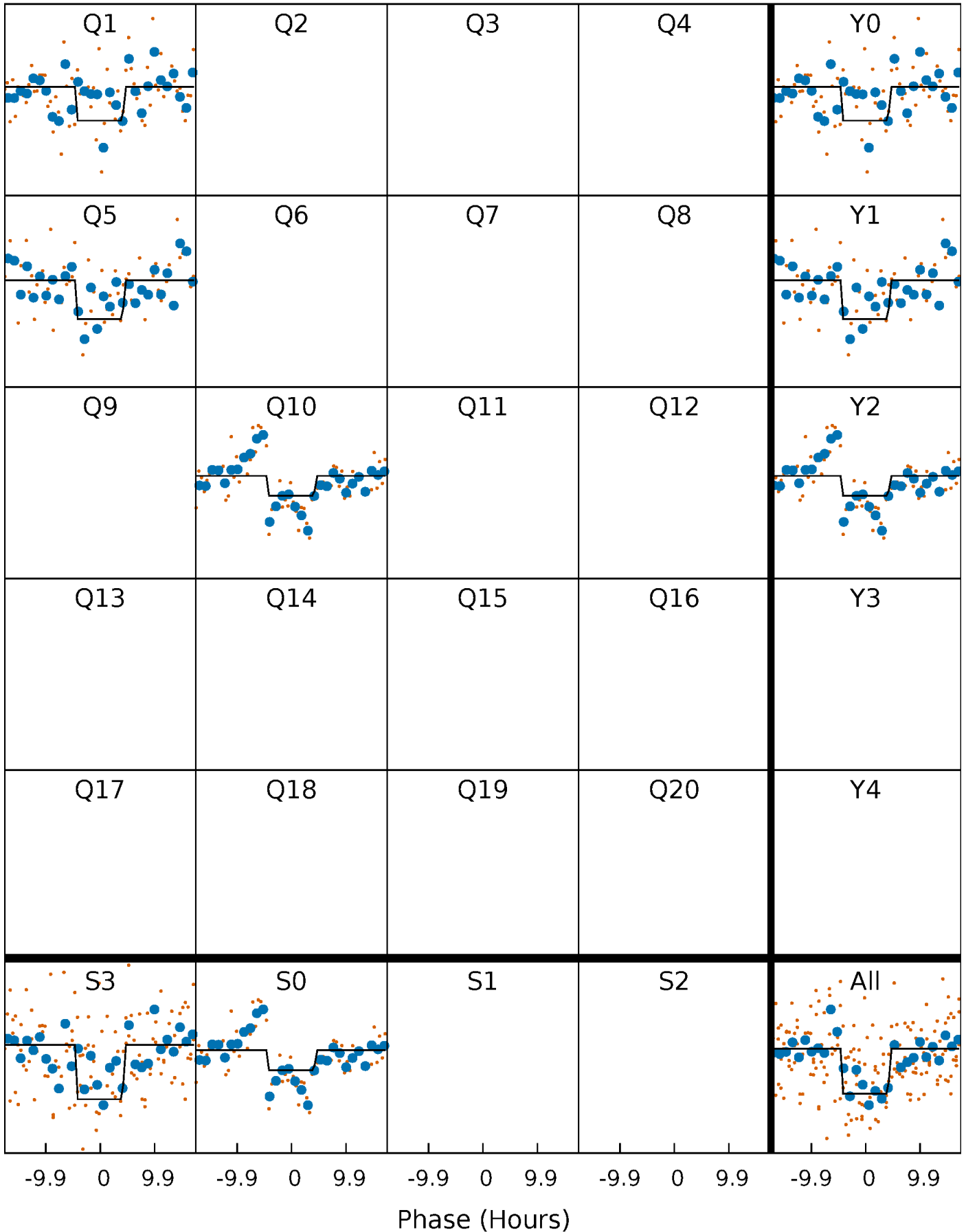
# DV Quarter-Phased Transit Curves

TCE 012303344-01 P=380.328102 Days  $T_0=150.761155$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

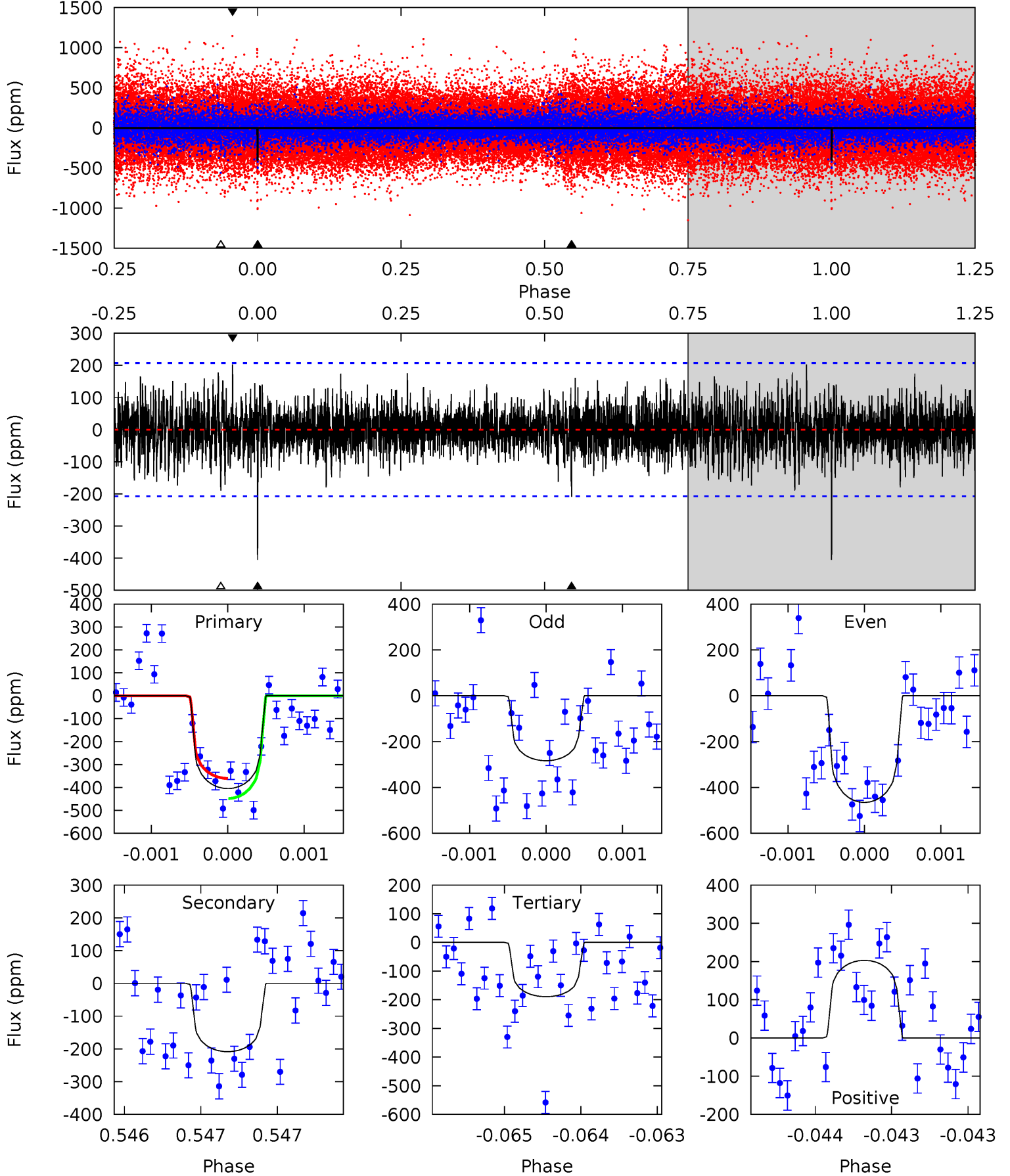
TCE 012303344-01     $P=380.329852$  Days     $T_0=150.708496$  (BKJD)



# DV Model-Shift Uniqueness Test

012303344-01, P = 380.328102 Days, E = 150.761155 Days

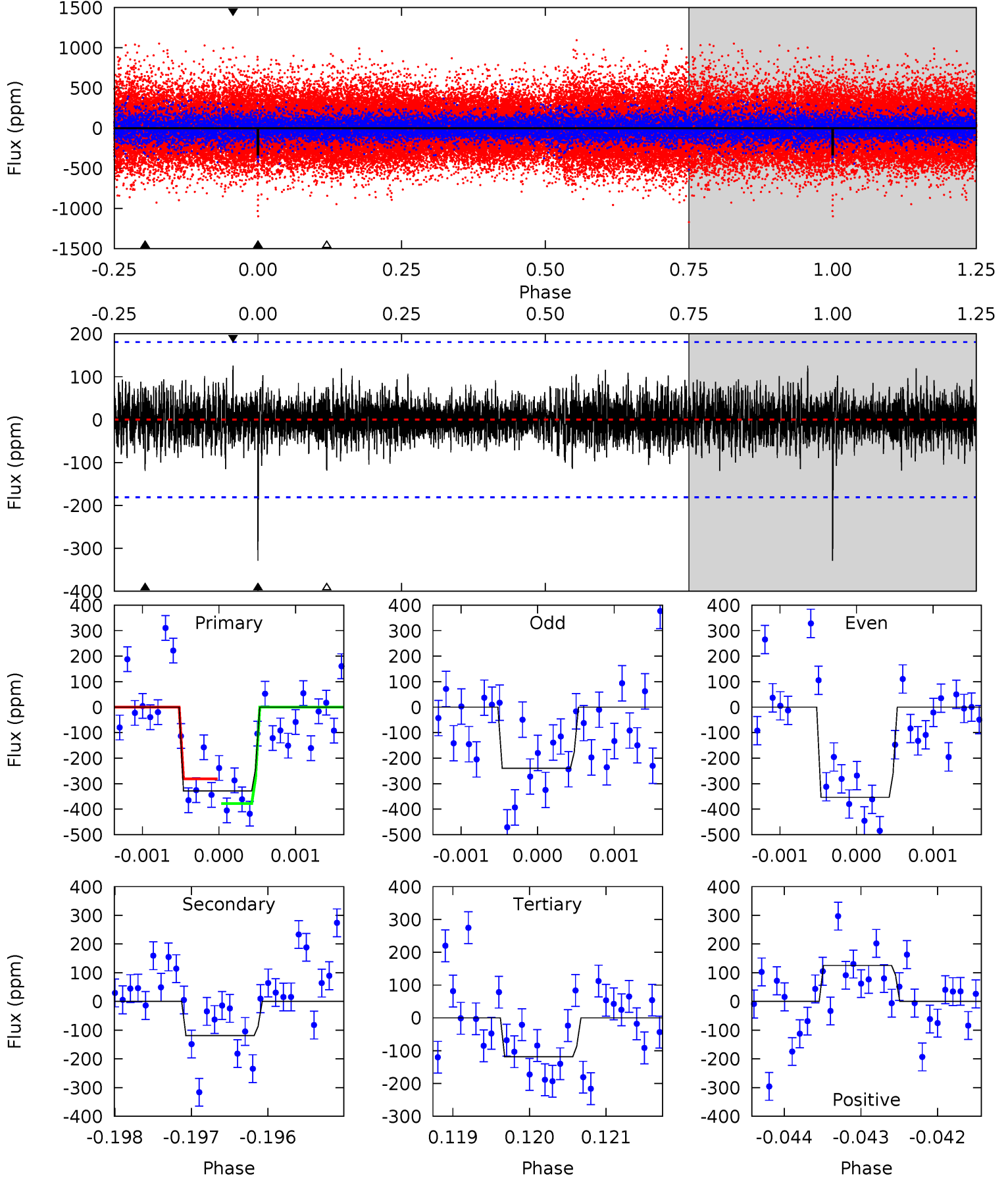
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	5.53	5.02	5.39	5.50	3.37	1.31	5.72	5.35	0.51	0.14	2.27	1.06	0.33	1.16



# Alt Model-Shift Uniqueness Test

012303344-01, P = 380.329852 Days, E = 150.708496 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
9.91	3.59	3.57	3.78	5.46	3.30	0.95	6.34	6.13	0.03	-0.19	1.61	1.37	0.28	1.46



### Stellar Parameters For KIC 012303344

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6102^{+165}_{-201}$	$4.457^{+0.050}_{-0.200}$	$0.000^{+0.250}_{-0.350}$	$1.026^{+0.312}_{-0.125}$	$1.099^{+0.133}_{-0.148}$	$1.433^{+0.399}_{-0.753}$
	+3%/-3%	+1%/-4%	+inf%/-inf%	+30%/-12%	+12%/-13%	+28%/-53%
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 012303344-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-208 \pm 38$	$2.71^{+1.79}_{-1.63}$	$377^{+25}_{-16}$	$4925^{+2812}_{-894}$	$16531^{+90956}_{-10545}$
Alt.	$-119 \pm 33$	$2.59^{+1.71}_{-1.45}$	$378^{+27}_{-18}$	$4474^{+1976}_{-811}$	$10702^{+46680}_{-7163}$

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

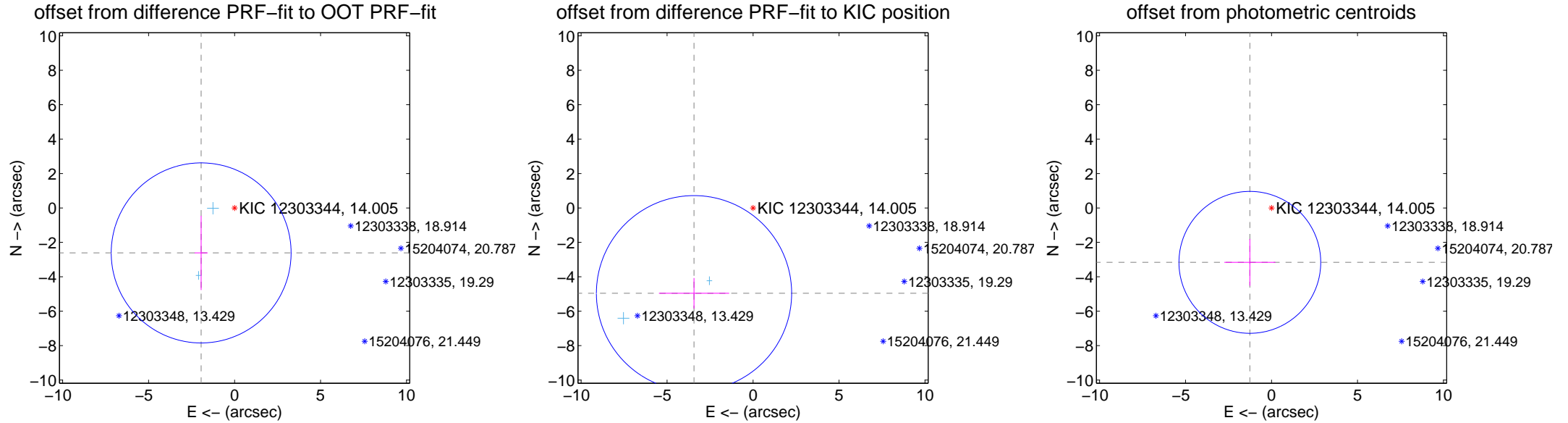
## DV Centroid Data

Supplemental centroid analysis for 012303344-01. Kepler magnitude: 14.01. Transit SNR 6.17

There are 2 quarters with good PRF difference image offsets

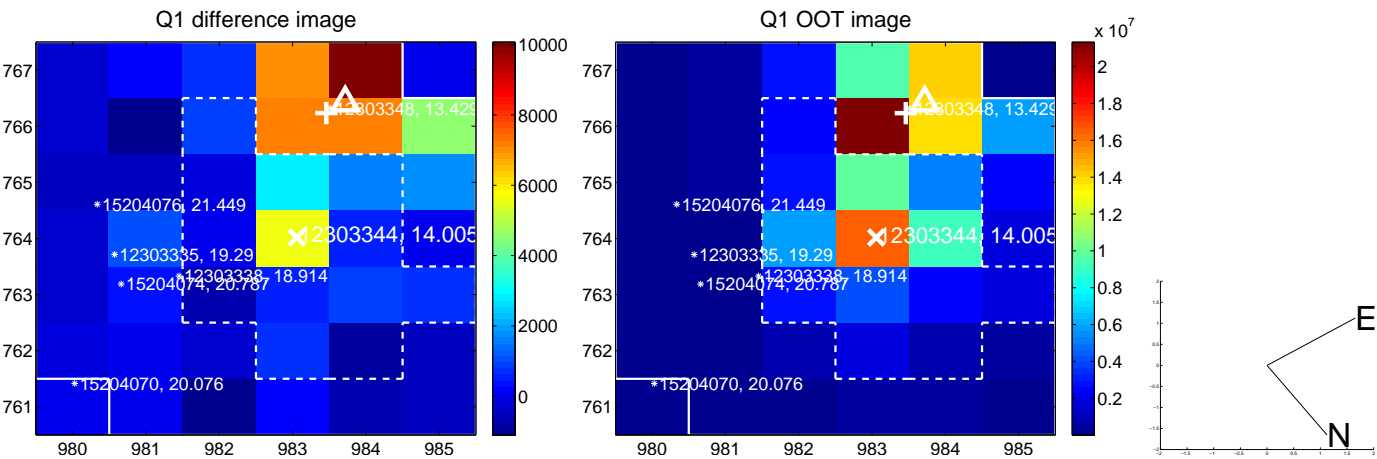
The direct PRF centroid is offset from the target star catalog position by about 0.54 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.256 \pm 1.744$	1.87	$1.944 \pm 0.381$	$-2.612 \pm 2.155$
PRF-fit source offset from KIC position	$6.032 \pm 1.892$	3.19	$3.433 \pm 2.041$	$-4.959 \pm 0.891$
photometric centroid source offset	$3.40 \pm 1.37$	2.48	$1.26 \pm 1.48$	$-3.16 \pm 1.36$



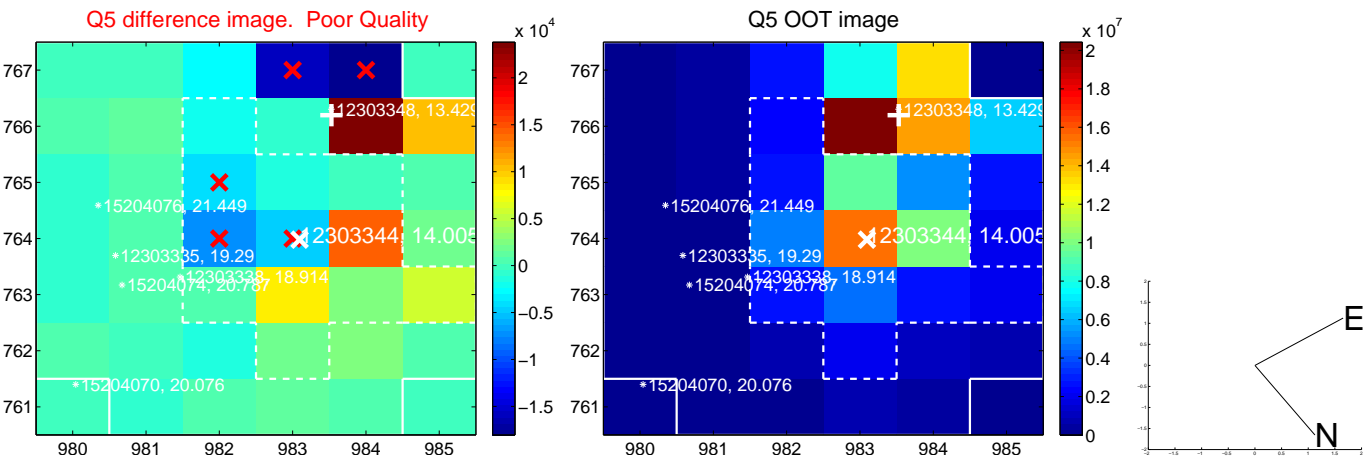
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.

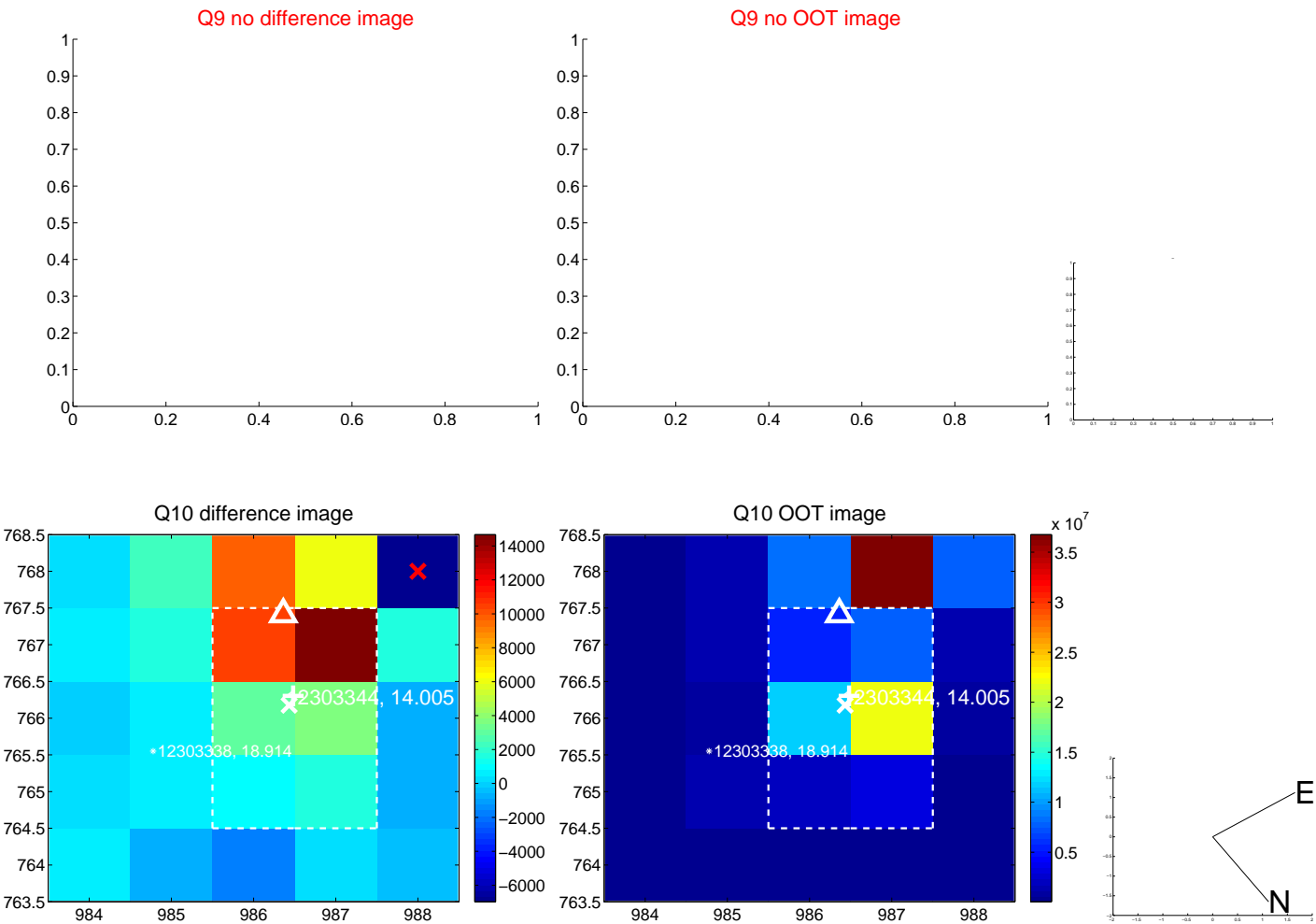




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



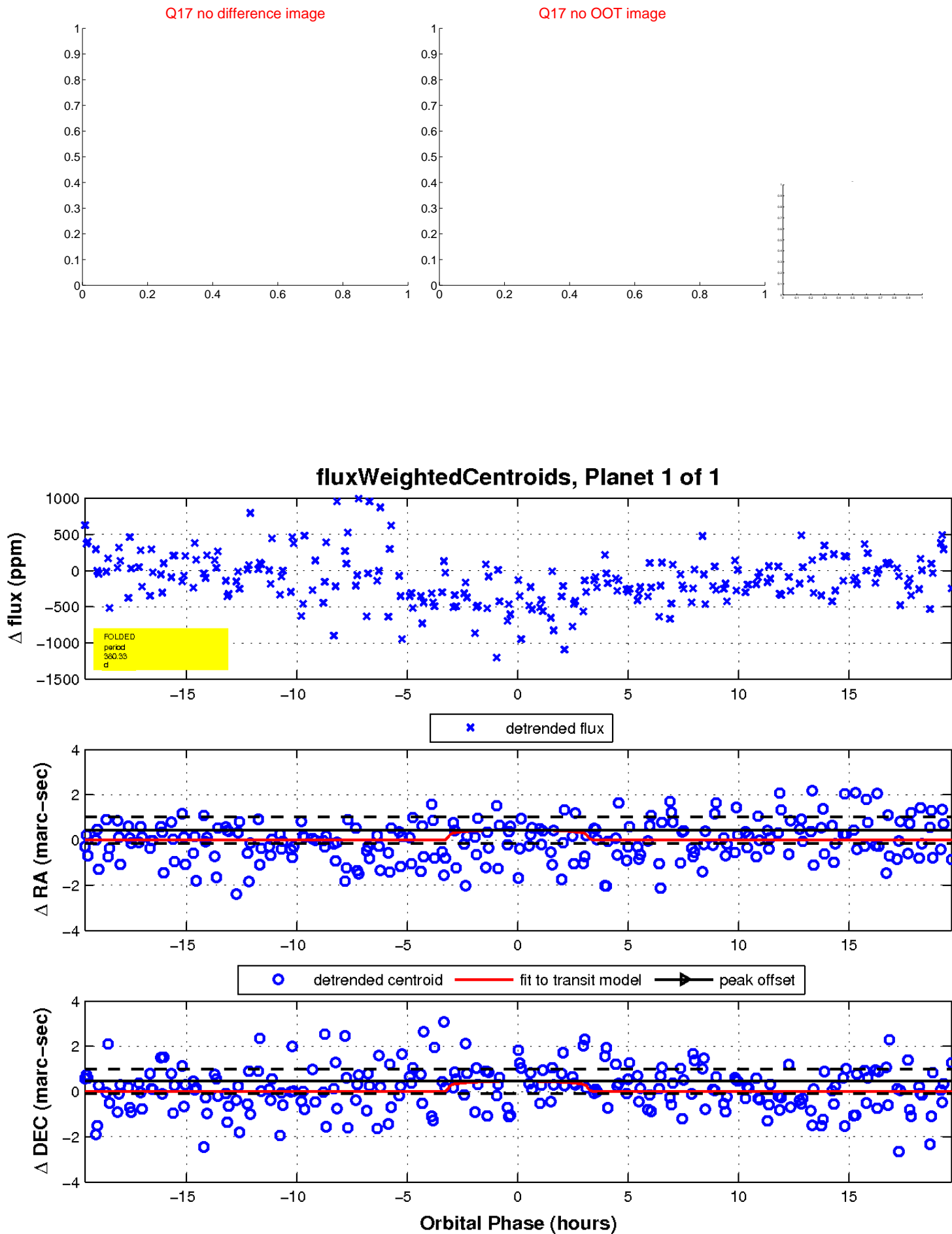
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

