

# KIC 010965665

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010965665-01	OBS	No	384.752713	465.989782	218.5	17.784	7.1	7.0	0.94	5688	1.48	0.82

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010965665-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_ALT—ALL_TRANS_CHASES—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.

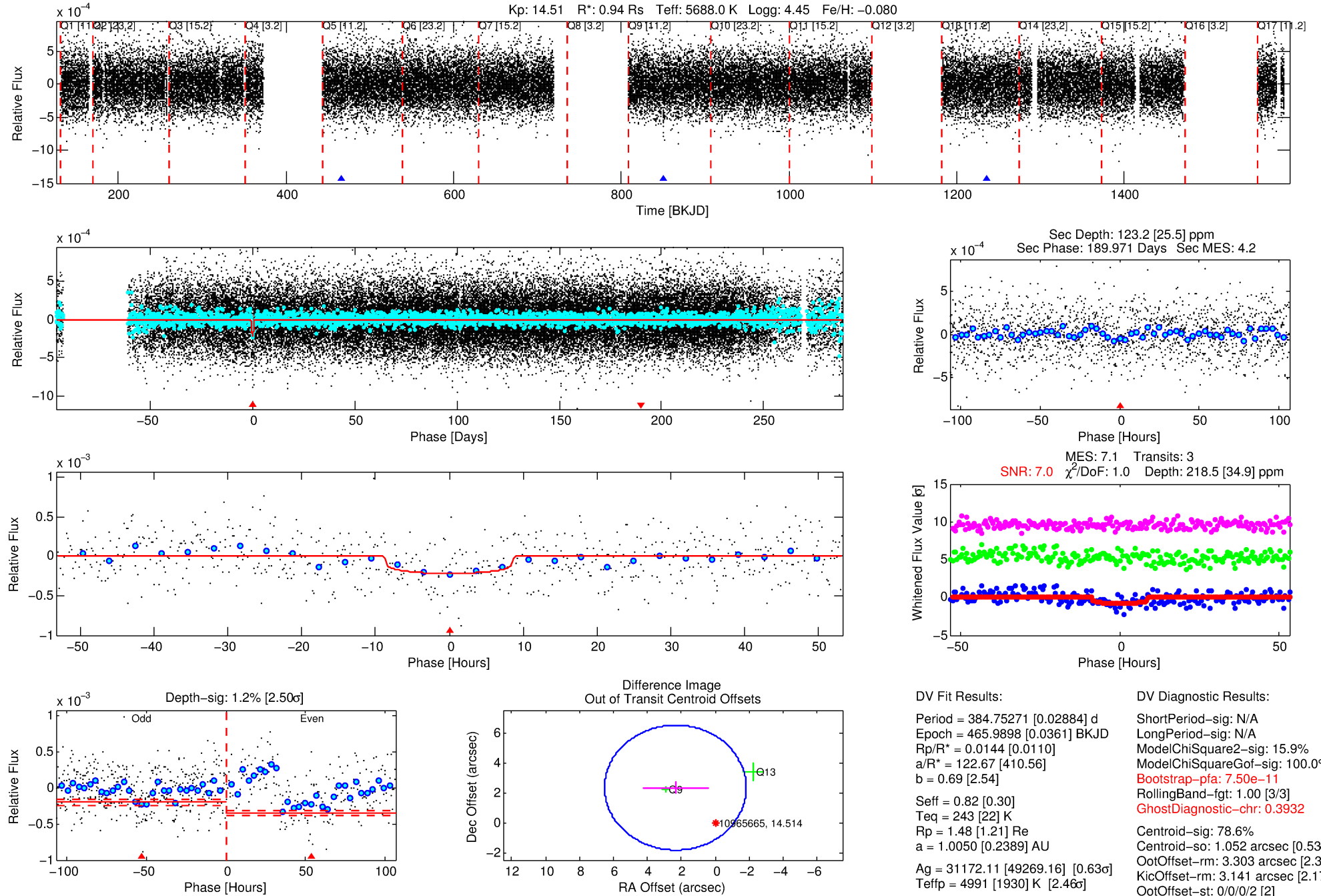
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010965665-01

No Significant Match Found

# DV One-Page Summary

KIC: 10965665 Candidate: 1 of 1 Period: 384.753 d



## DV Fit Results:

Period = 384.75271 [0.02884] d  
Epoch = 465.9898 [0.0361] BKJD  
Rp/R\* = 0.0144 [0.0110]  
a/R\* = 122.67 [410.56]  
b = 0.69 [2.54]  
Seff = 0.82 [0.30]  
Teq = 243 [22] K  
Rp = 1.48 [1.21] Re  
a = 1.0050 [0.2389] AU  
Ag = 31172.11 [49269.16] [0.63 $\sigma$ ]  
Teffp = 4991 [1930] K [2.46 $\sigma$ ]

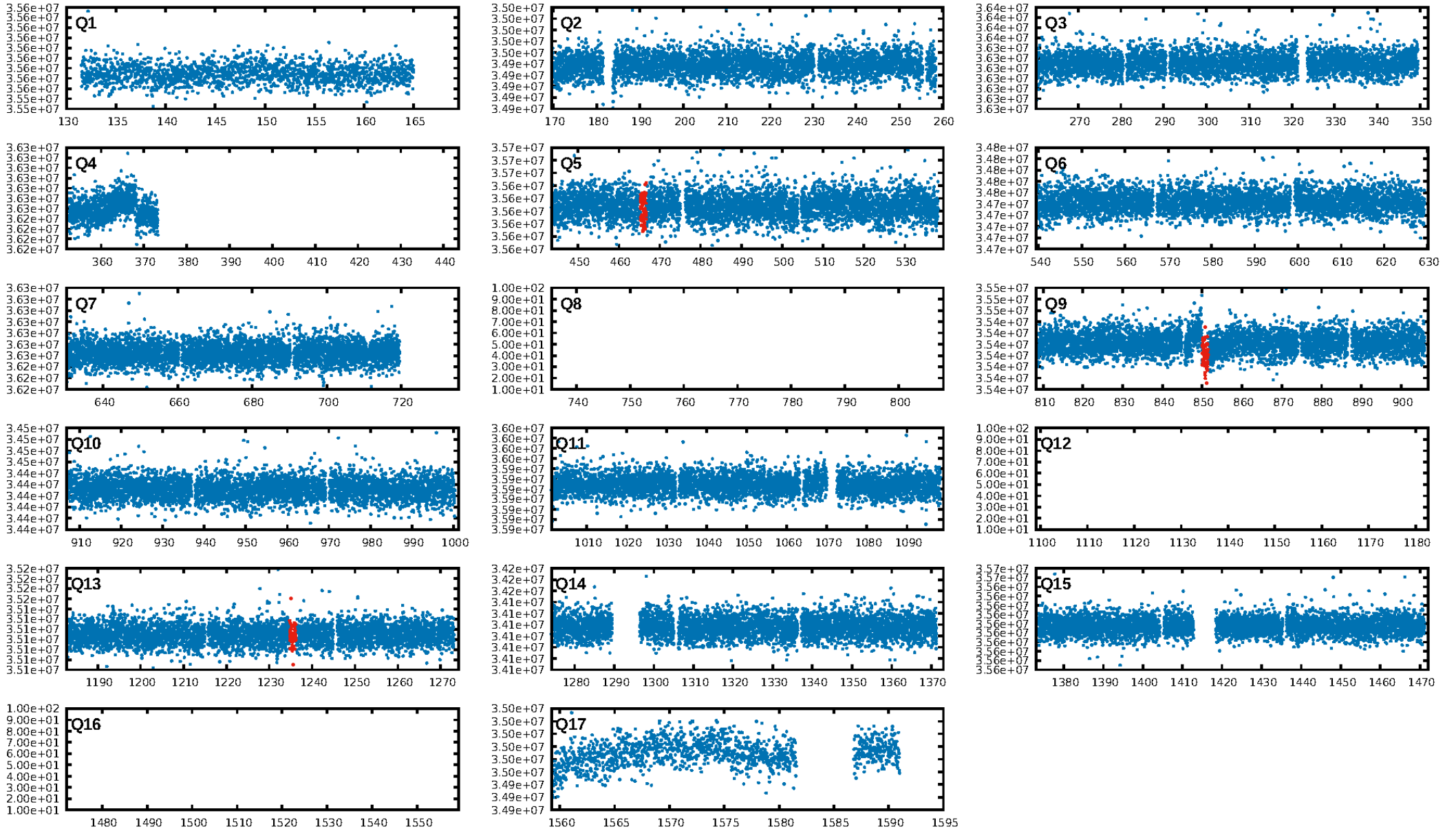
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 15.9%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 7.50e-11**  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.3932**  
Centroid-sig: 78.6%  
Centroid-so: 1.052 arcsec [0.53 $\sigma$ ]  
OotOffset-rm: 3.303 arcsec [2.38 $\sigma$ ]  
KicOffset-rm: 3.141 arcsec [2.17 $\sigma$ ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

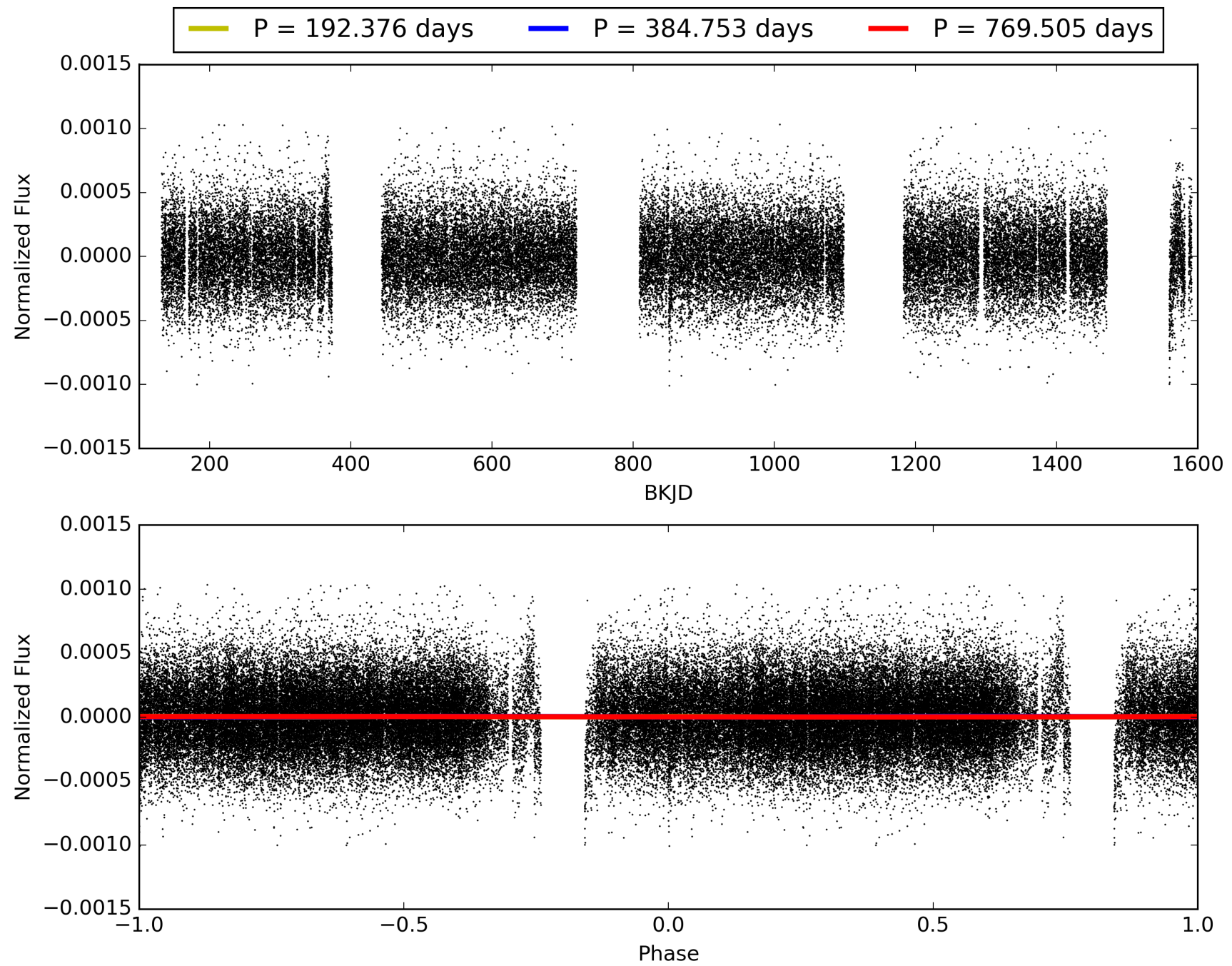
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:10:50 Z

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

# TCE 010965665-01, PDC Light Curves

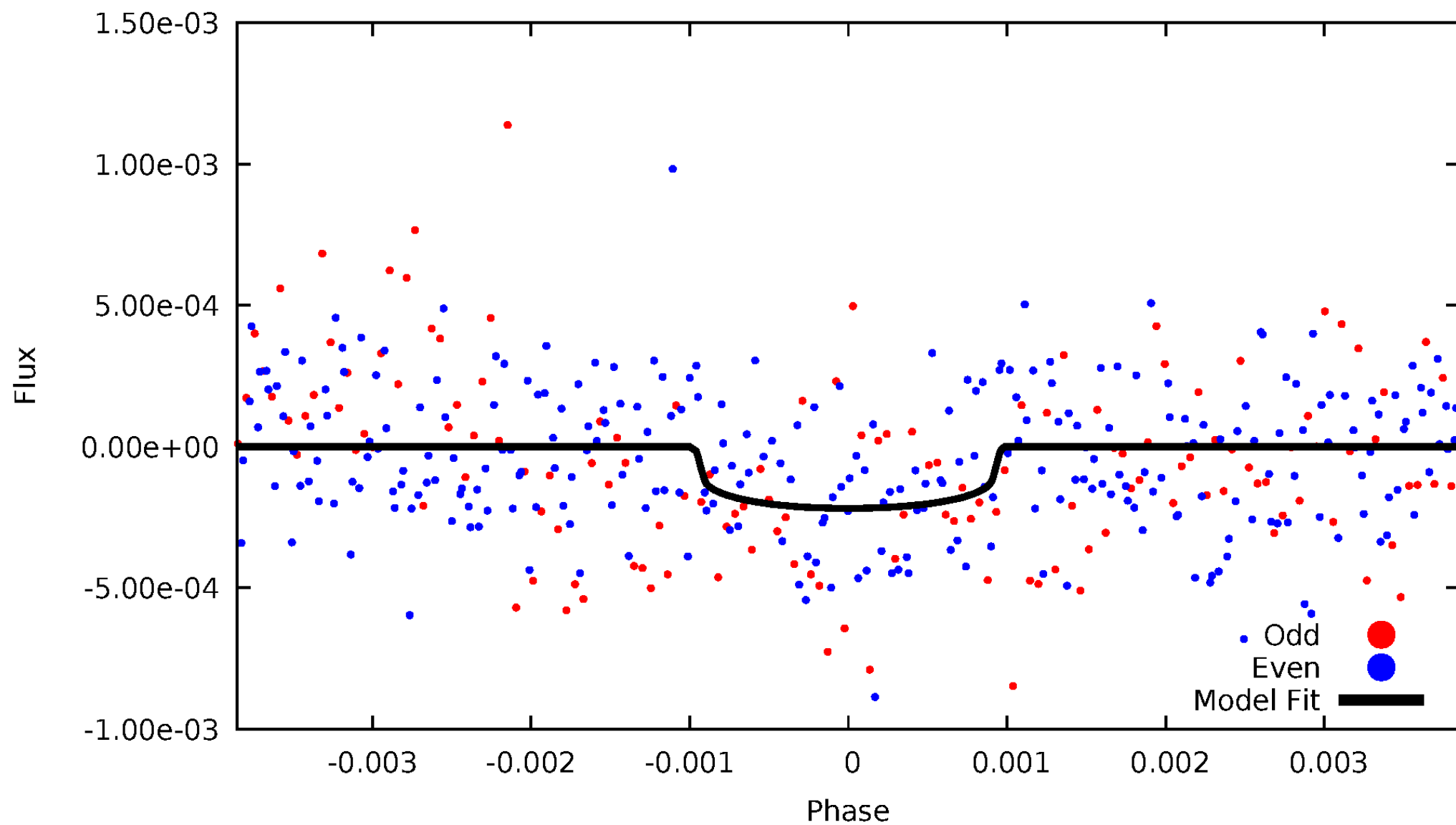


TCE 010965665-01



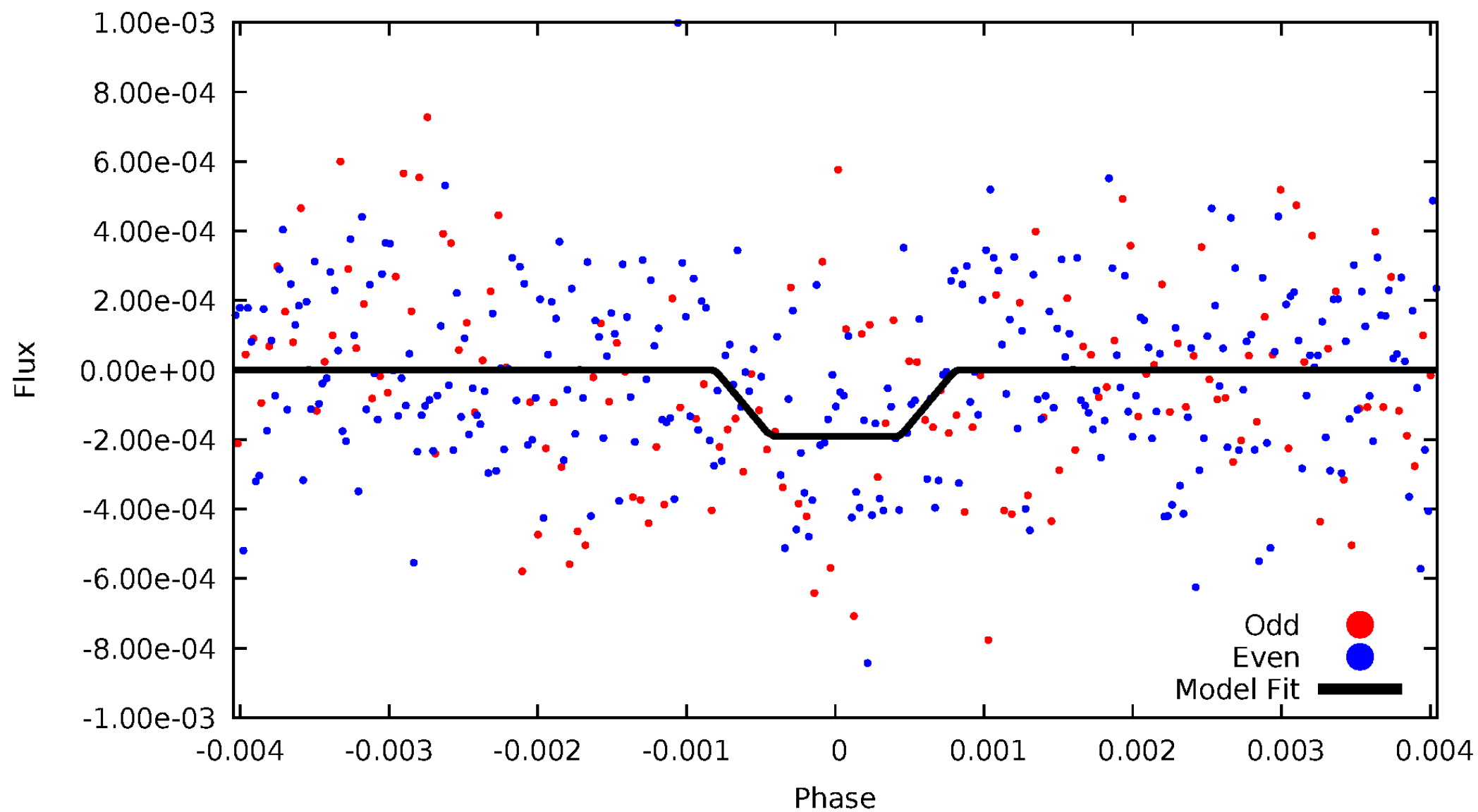
# DV Odd/Even

TCE 010965665-01



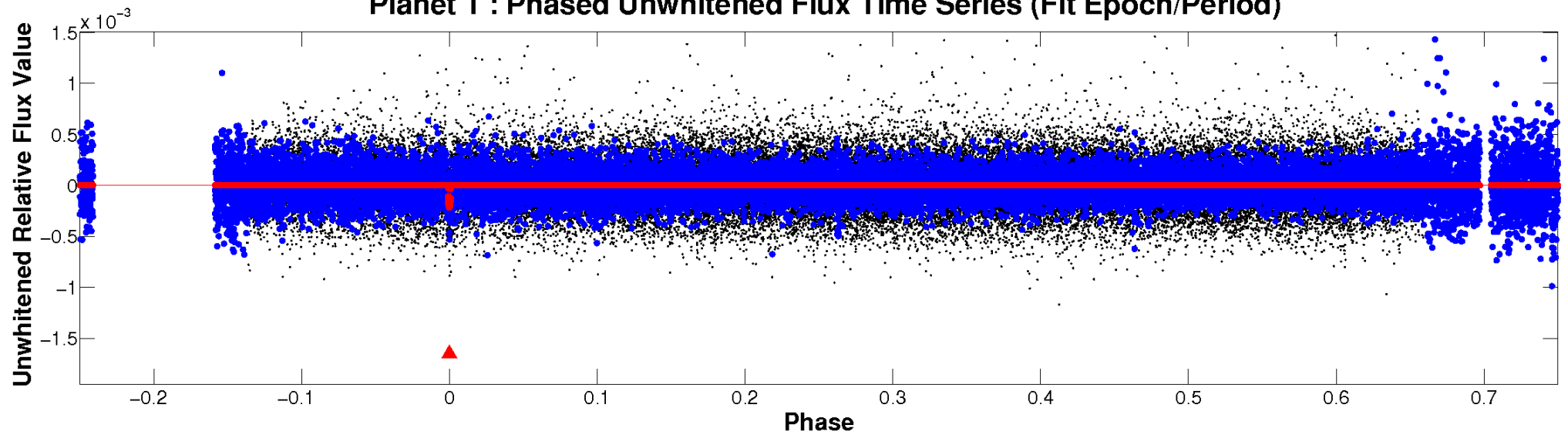
# ALT Odd/Even

TCE 010965665-01

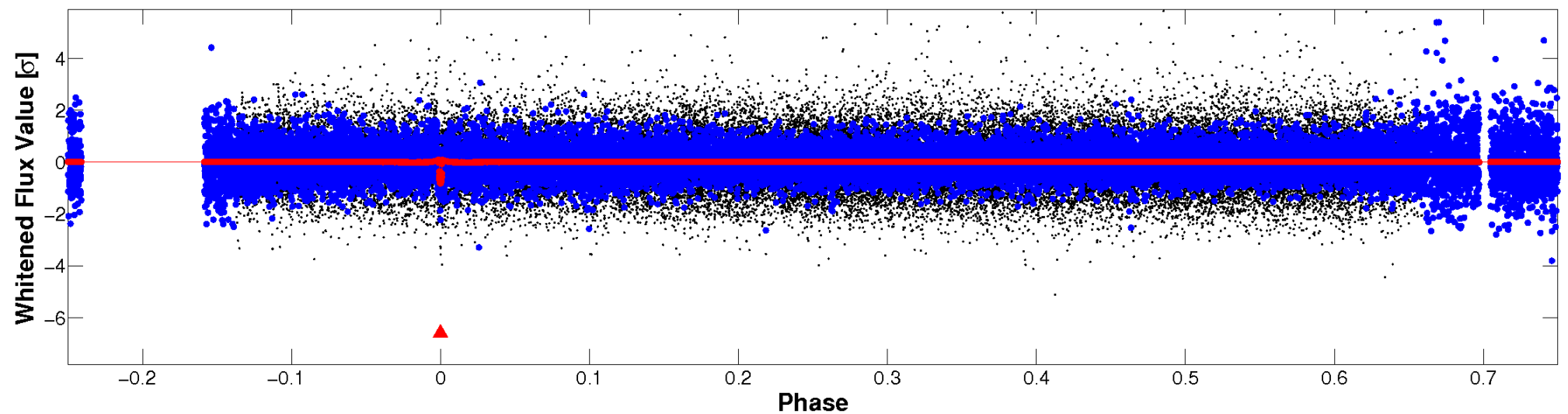


# Non-Whitened Vs. Whitened Light Curve

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



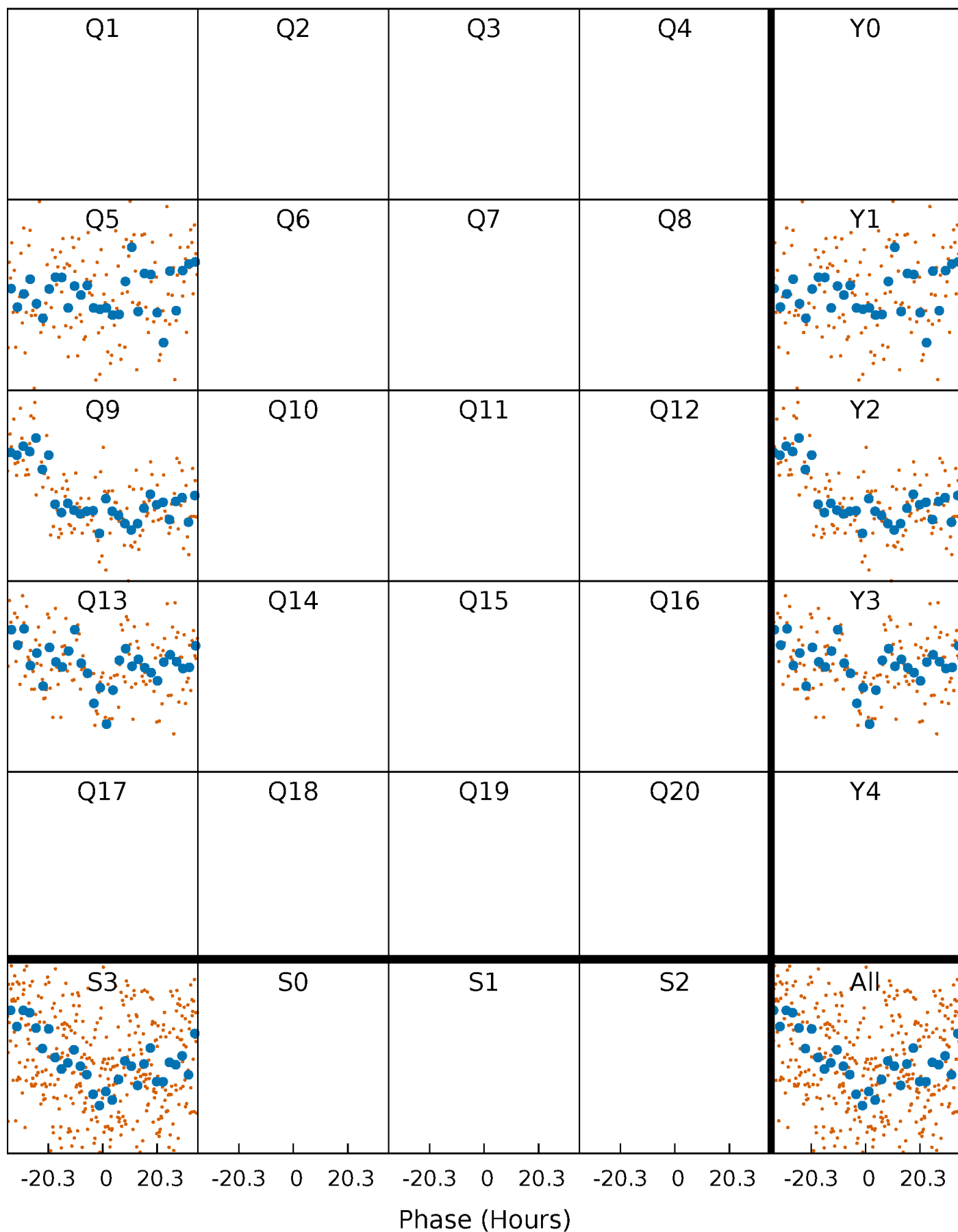
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

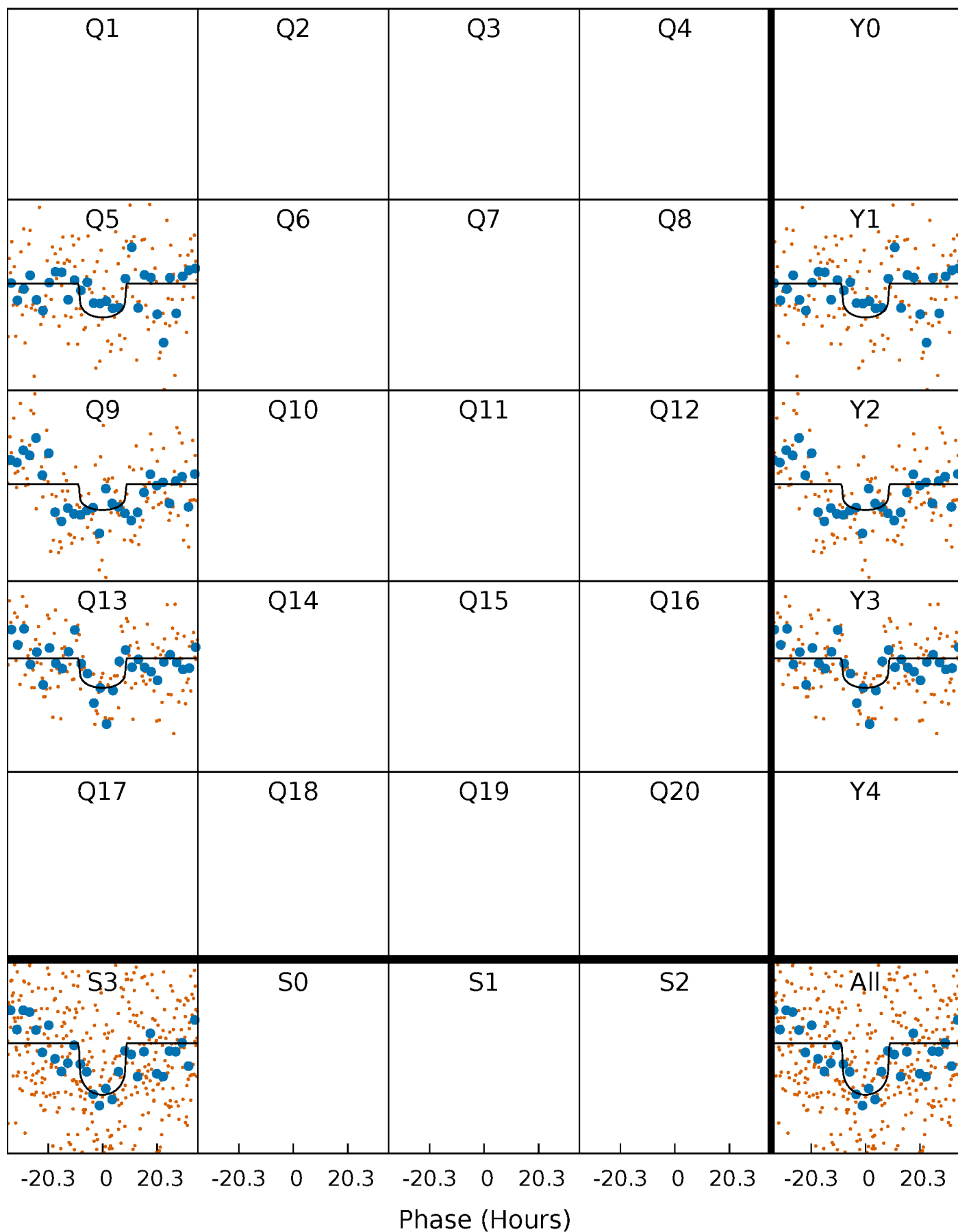
TCE 010965665-01 P=384.752713 Days  $T_0=465.989782$  (BKJD)





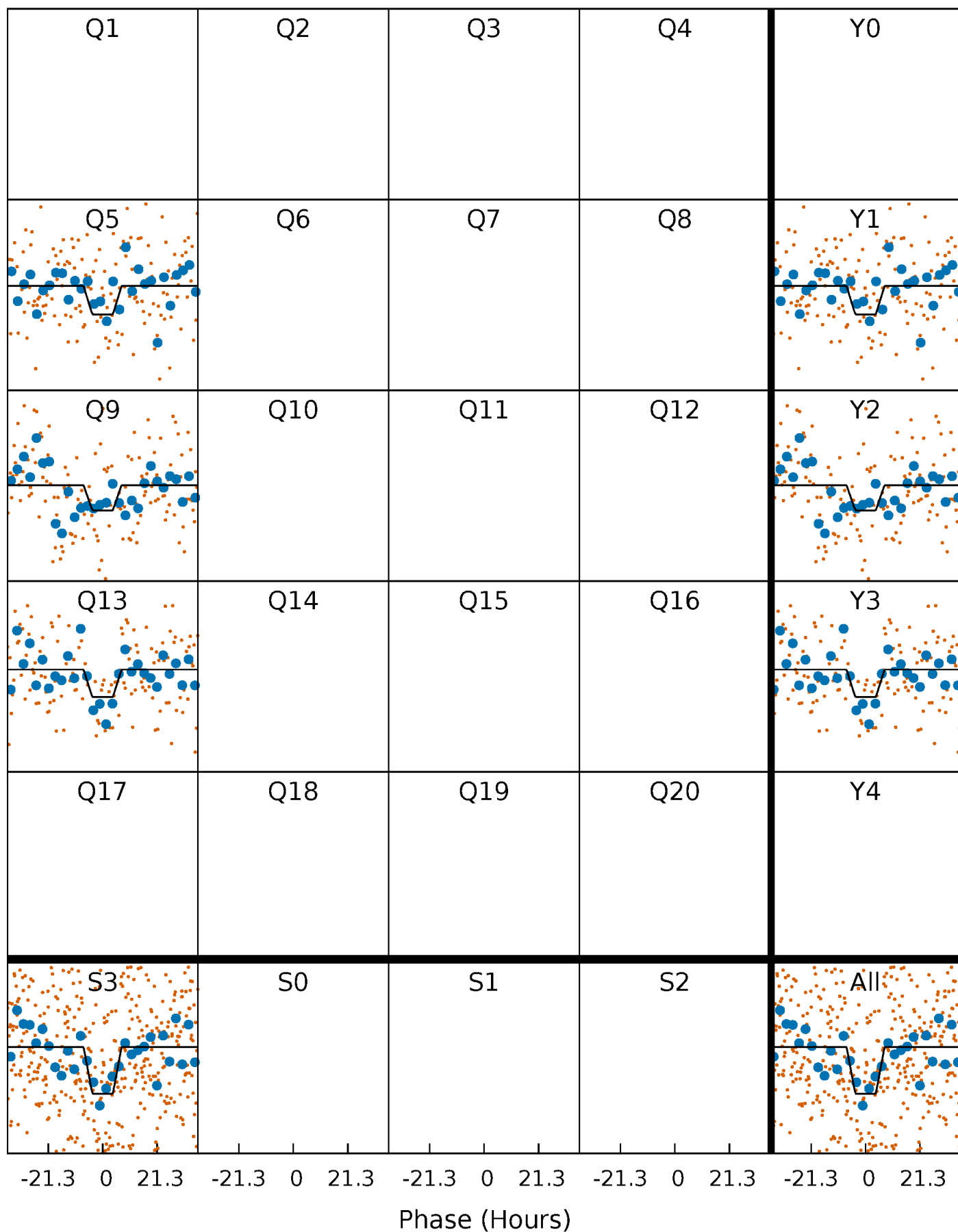
# DV Quarter-Phased Transit Curves

TCE 010965665-01 P=384.752713 Days  $T_0=465.989782$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

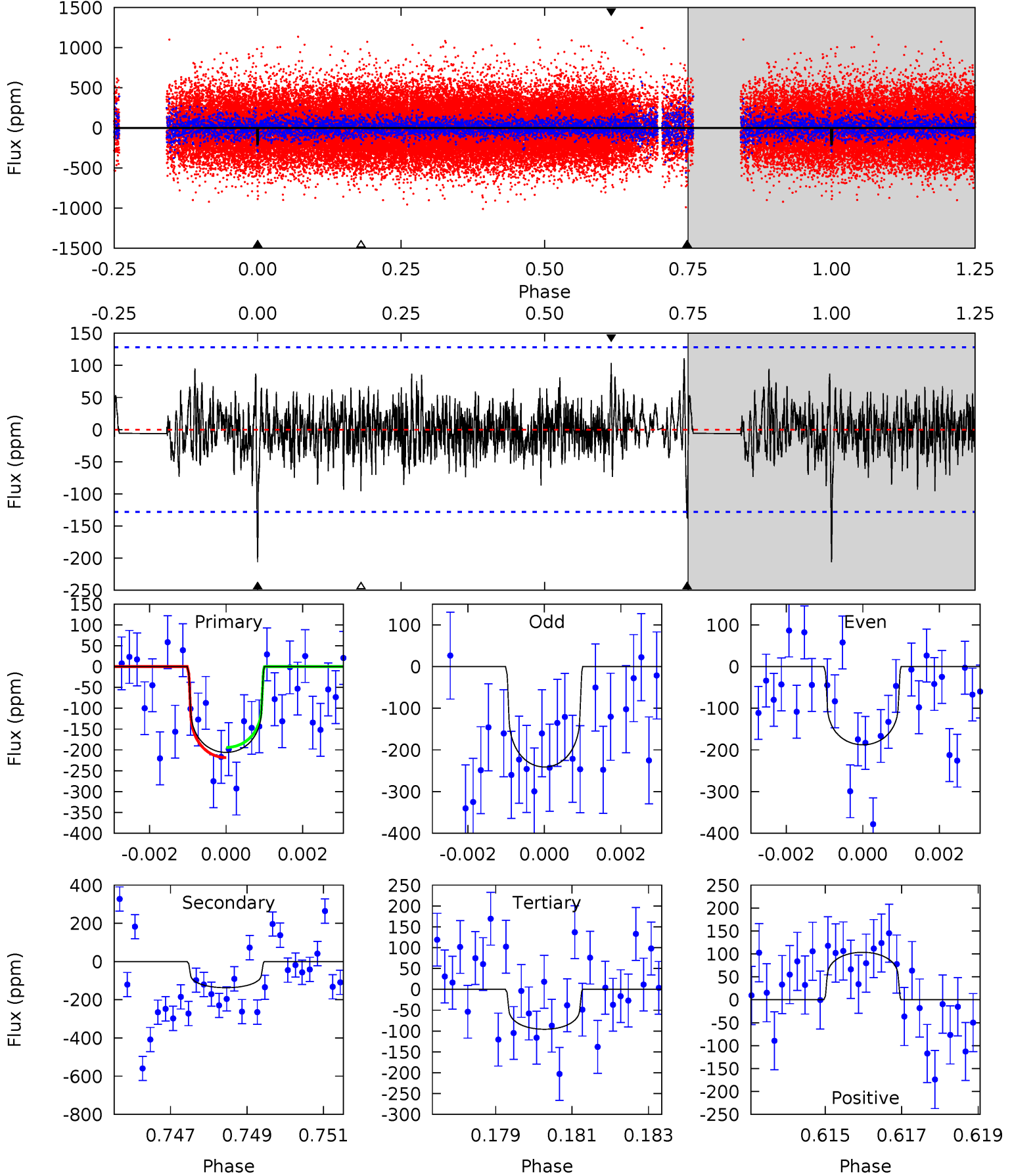
TCE 010965665-01 P=384.729879 Days  $T_0=466.016569$  (BKJD)



# DV Model-Shift Uniqueness Test

010965665-01, P = 384.752713 Days, E = 81.237069 Days

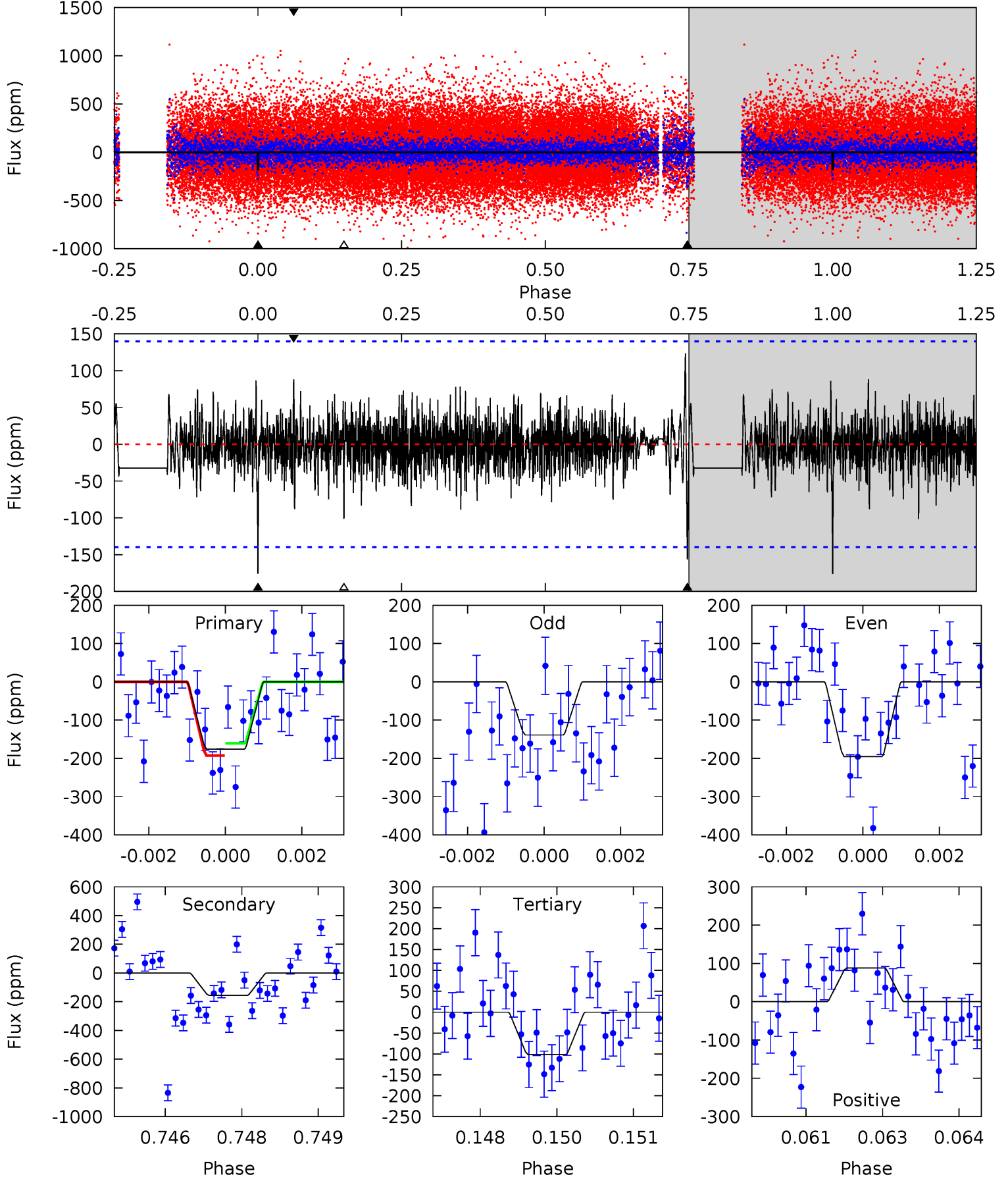
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.57	5.70	3.99	4.31	5.33	3.10	1.15	4.58	4.26	1.71	1.39	1.07	0.86	0.35	0.51



# Alt Model-Shift Uniqueness Test

010965665-01,  $P = 384.729879$  Days,  $E = 81.286690$  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
6.75	6.00	3.89	3.38	5.36	3.15	0.99	2.86	3.37	2.11	2.61	1.04	1.29	0.41	0.62



### Stellar Parameters For KIC 010965665

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5688^{+152}_{-169}$	$4.451^{+0.094}_{-0.189}$	$-0.080^{+0.300}_{-0.300}$	$0.942^{+0.266}_{-0.114}$	$0.916^{+0.115}_{-0.083}$	$1.542^{+0.646}_{-0.741}$
	+3%/-3%	+2%/-4%	+375%/-375%	+28%/-12%	+13%/-9%	+42%/-48%
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 010965665-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-137 \pm 24$	$1.58^{+1.19}_{-0.95}$	$342^{+22}_{-18}$	$5018^{+2961}_{-949}$	$29843^{+156420}_{-20052}$
Alt.	$-156 \pm 26$	$1.65^{+1.10}_{-0.91}$	$342^{+23}_{-17}$	$5094^{+2580}_{-913}$	$30956^{+132585}_{-19546}$

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

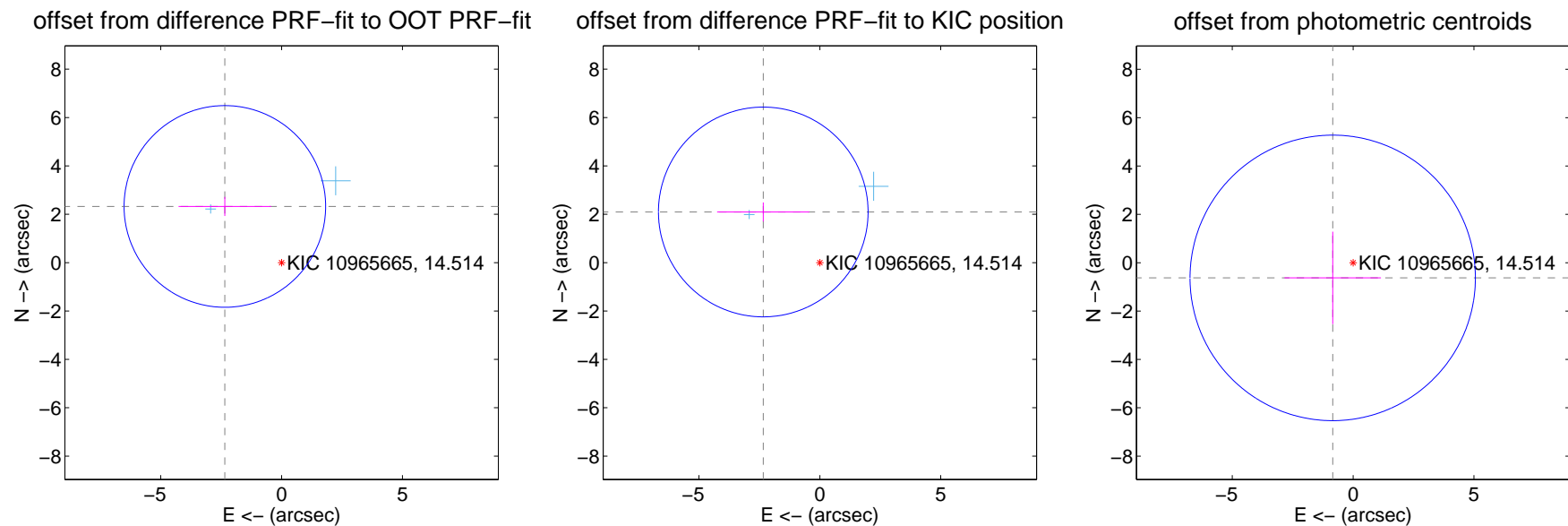
## DV Centroid Data

Supplemental centroid analysis for 010965665-01. Kepler magnitude: 14.51. Transit SNR 7.01

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.303 \pm 1.390$	2.38	$2.347 \pm 1.916$	$2.324 \pm 0.395$
PRF-fit source offset from KIC position	$3.141 \pm 1.446$	2.17	$2.341 \pm 1.907$	$2.095 \pm 0.396$
photometric centroid source offset	$1.05 \pm 1.97$	0.53	$0.84 \pm 2.00$	$-0.63 \pm 1.91$



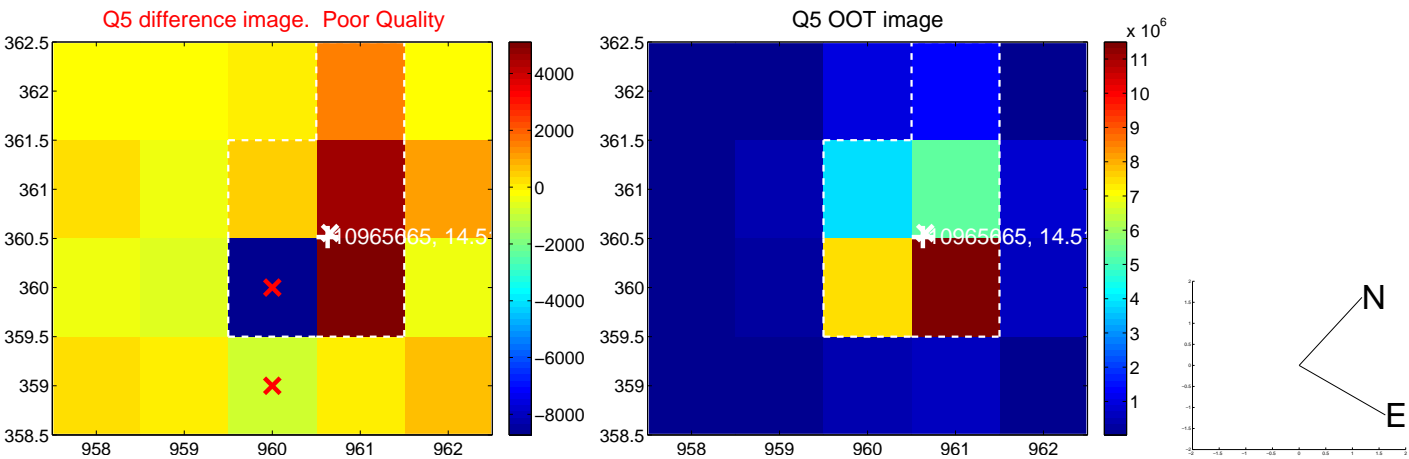
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

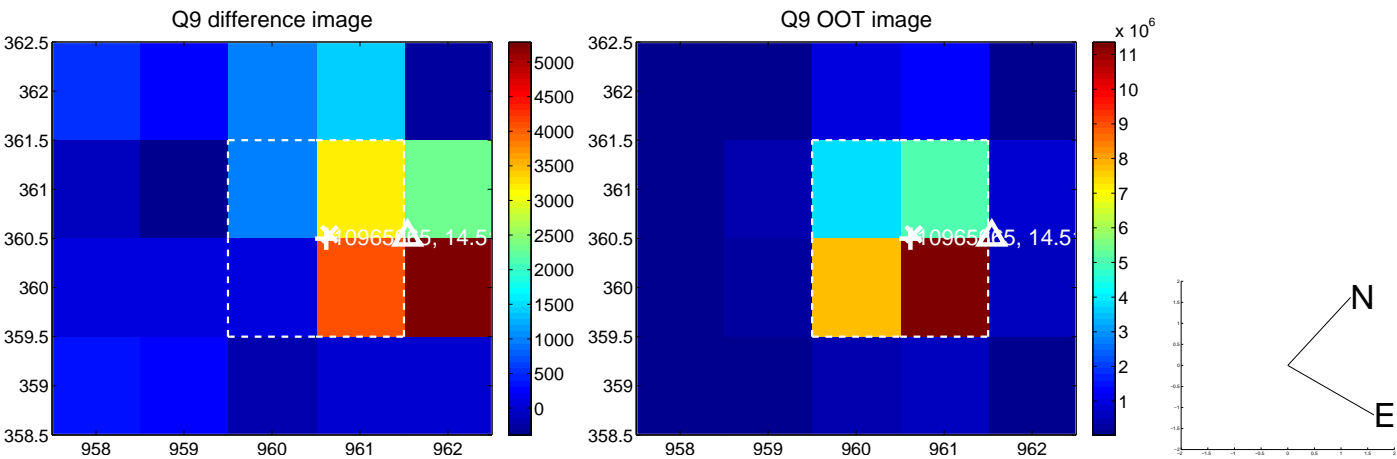




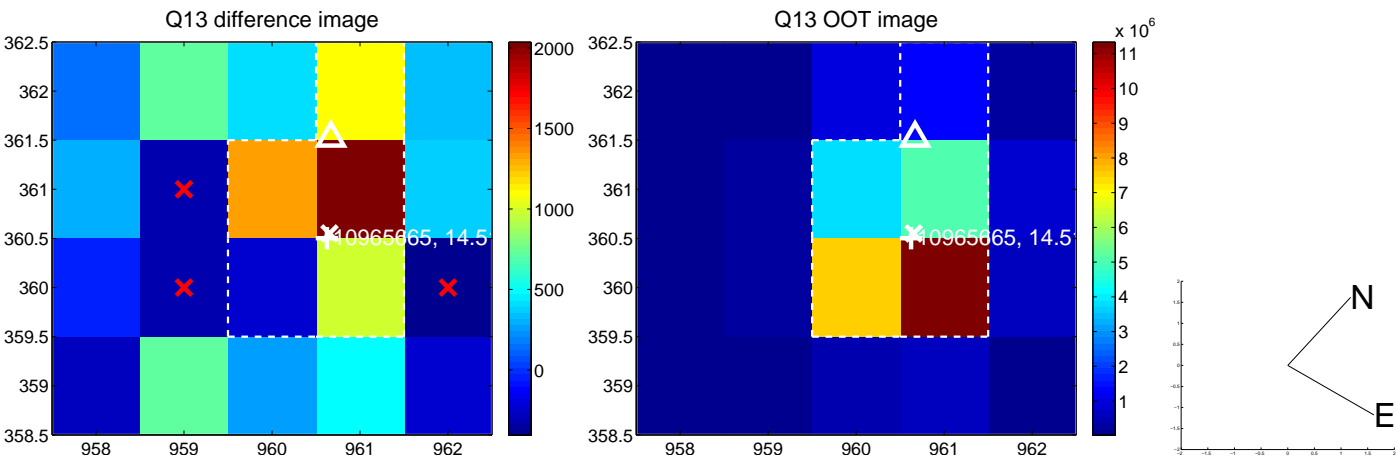
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



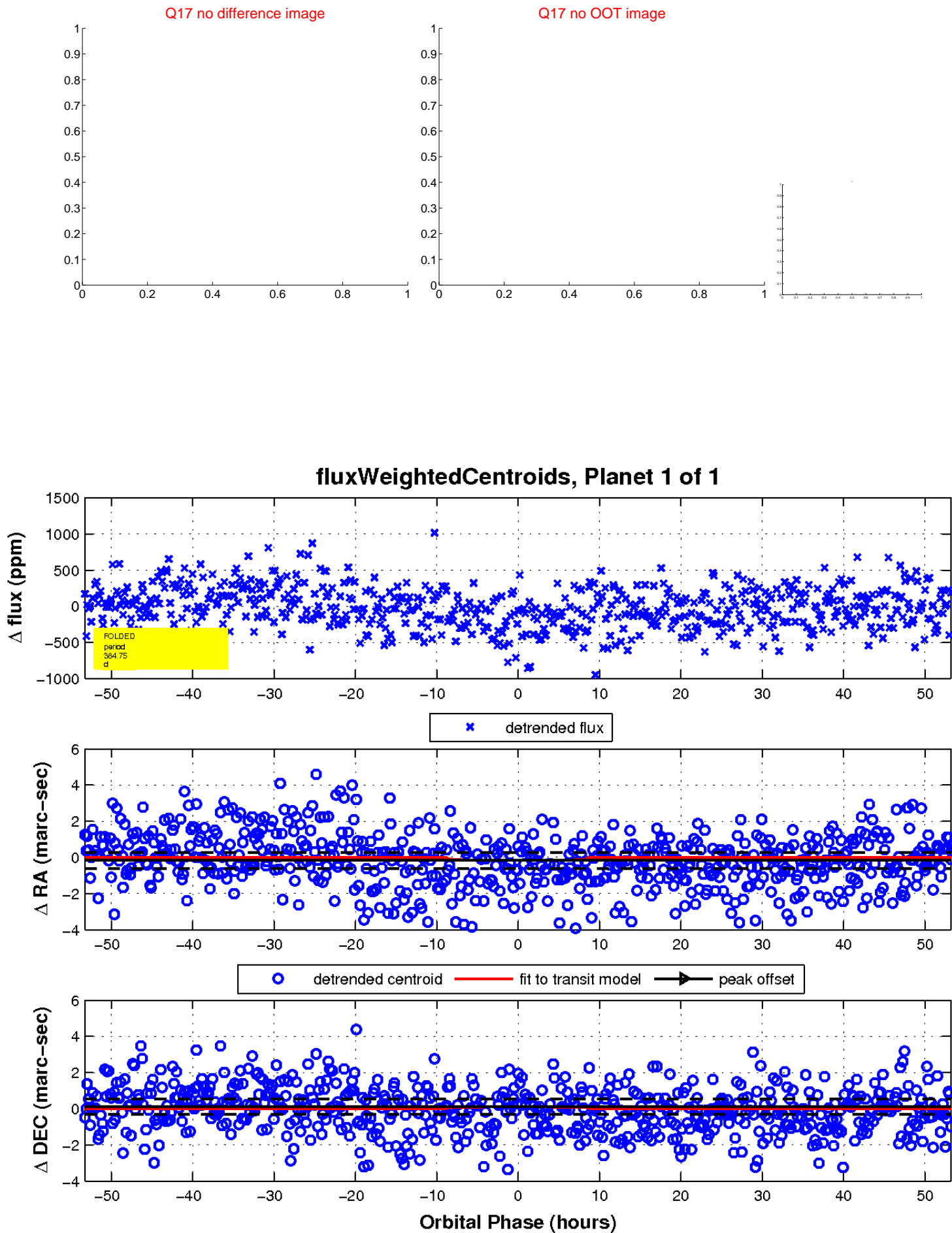
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

