

# KIC 010597084

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010597084-01	OBS	No	376.189325	137.432718	1667.3	21.091	9.1	8.9	0.57	4800	2.97	0.22

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010597084-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

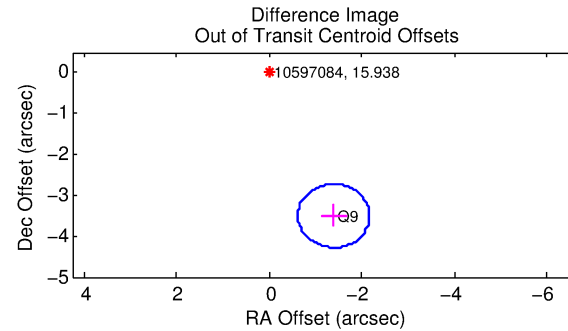
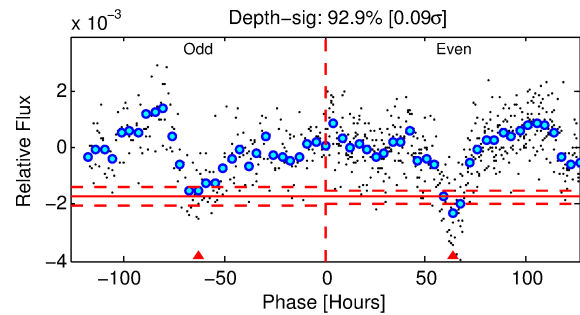
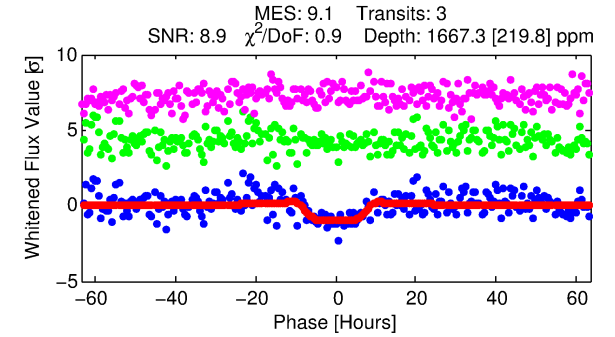
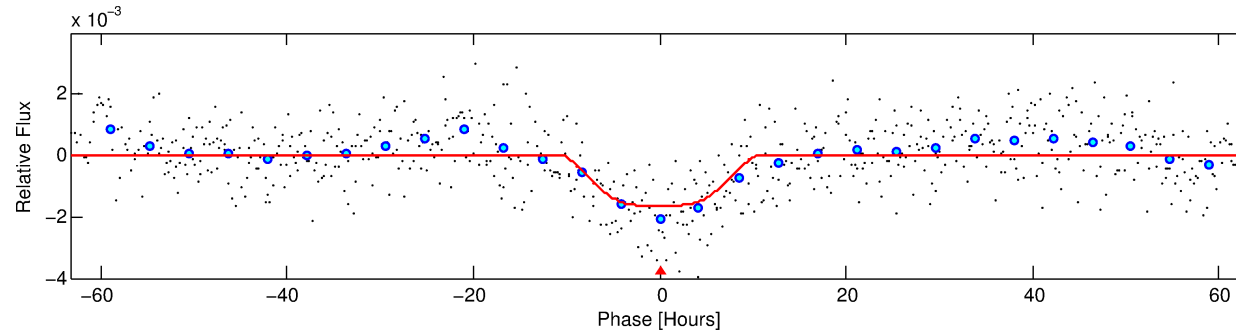
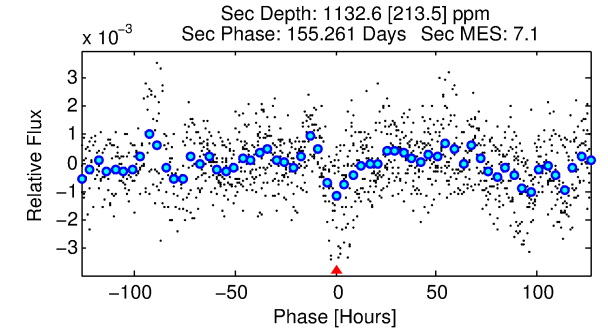
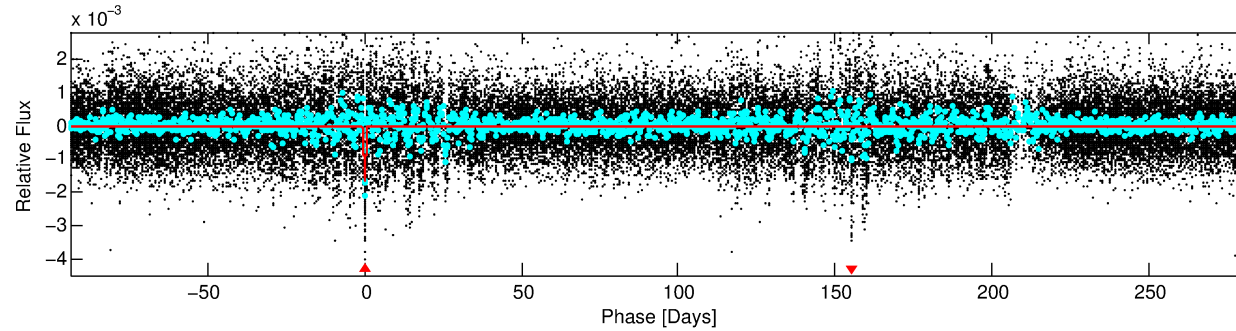
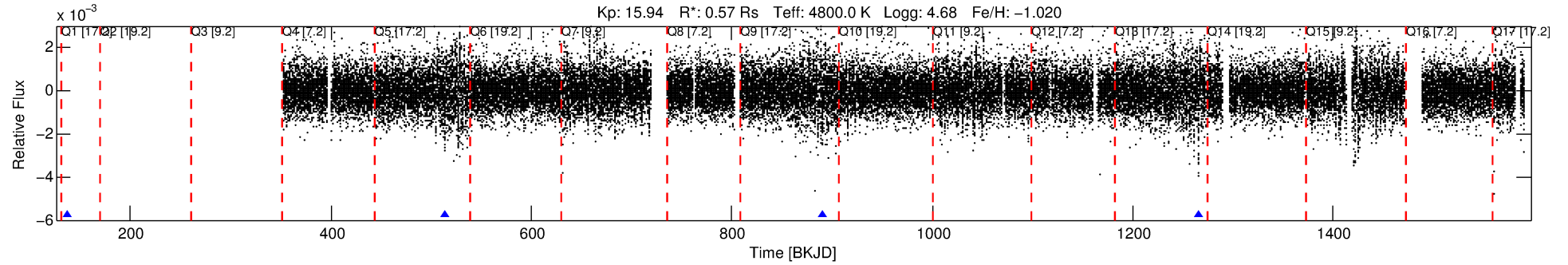
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010597084-01

No Significant Match Found

# DV One-Page Summary

KIC: 10597084 Candidate: 1 of 1 Period: 376.189 d



## DV Fit Results:

Period = 376.18932 [0.02849] d  
Epoch = 137.4327 [0.0582] BKJD  
Rp/R\* = 0.0478 [0.0044]  
a/R\* = 64.00 [10.74]  
b = 0.94 [0.03]  
Seff = 0.22 [0.04]  
Teq = 174 [8] K  
Rp = 2.97 [0.36] Re  
a = 0.8457 [0.0543] AU  
Ag = 50471.75 [14180.36] [3.56σ]  
Teff = 4029 [306] K [12.59σ]

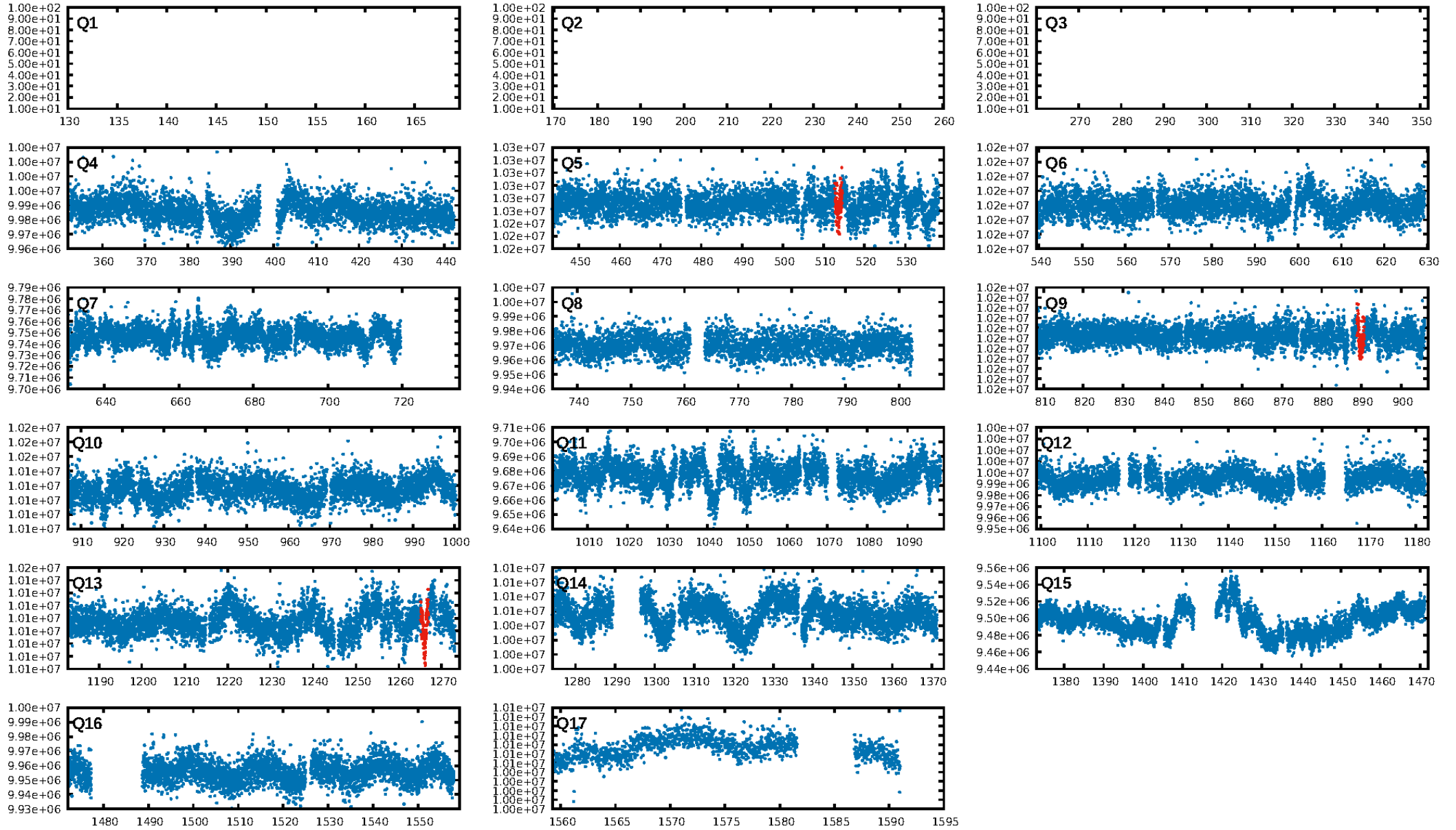
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 12.0%  
ModelChiSquareGoF-sig: 100.0%  
**Bootstrap-pfa: 3.72e-12**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -6.311  
**Centroid-sig: 0.3%**  
Centroid-so: 5.679 arcsec [2.63σ]  
**OotOffset-rm: 3.772 arcsec [14.59σ]**  
**KicOffset-rm: 3.576 arcsec [13.82σ]**  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

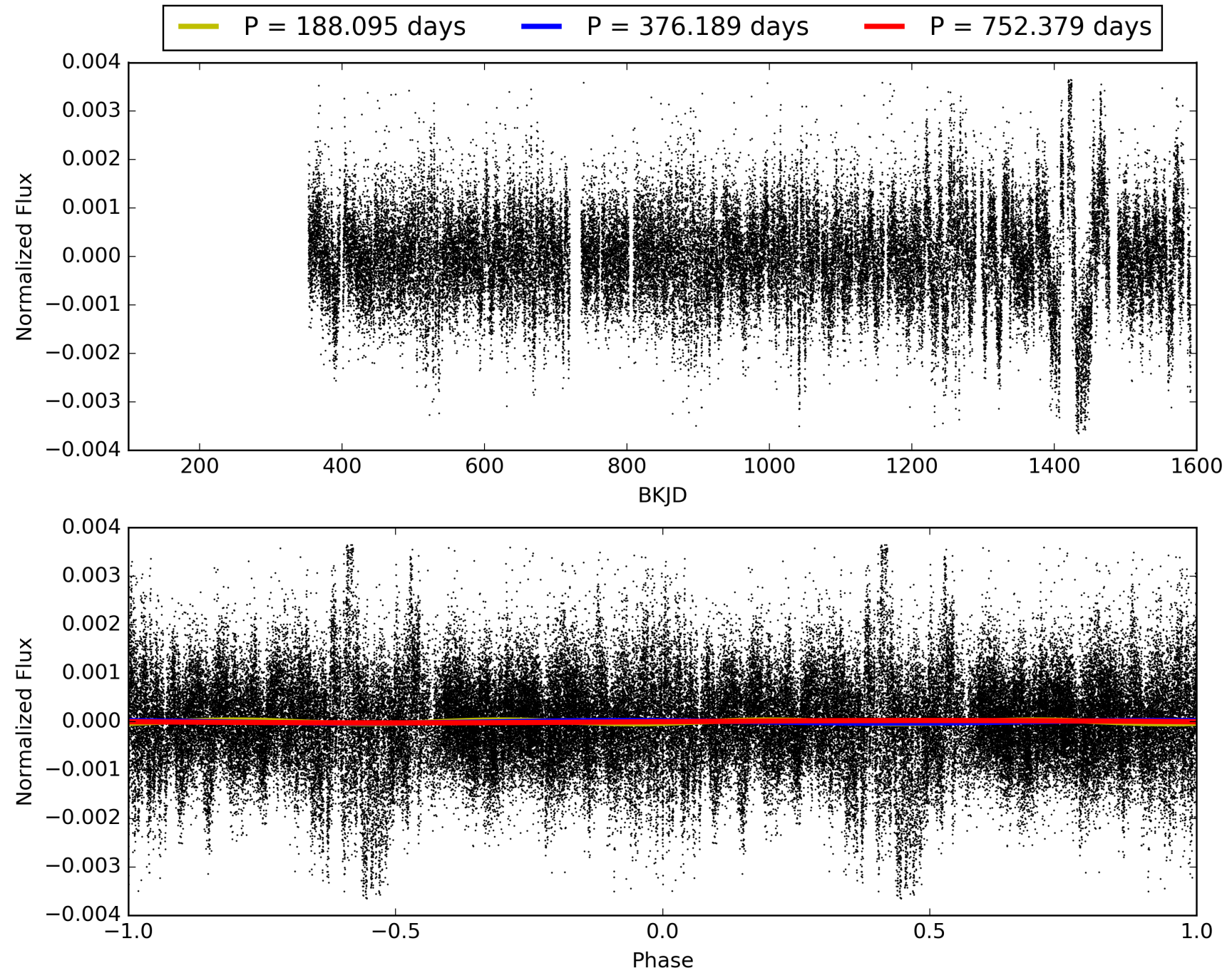
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:17:30 Z

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

# TCE 010597084-01, PDC Light Curves

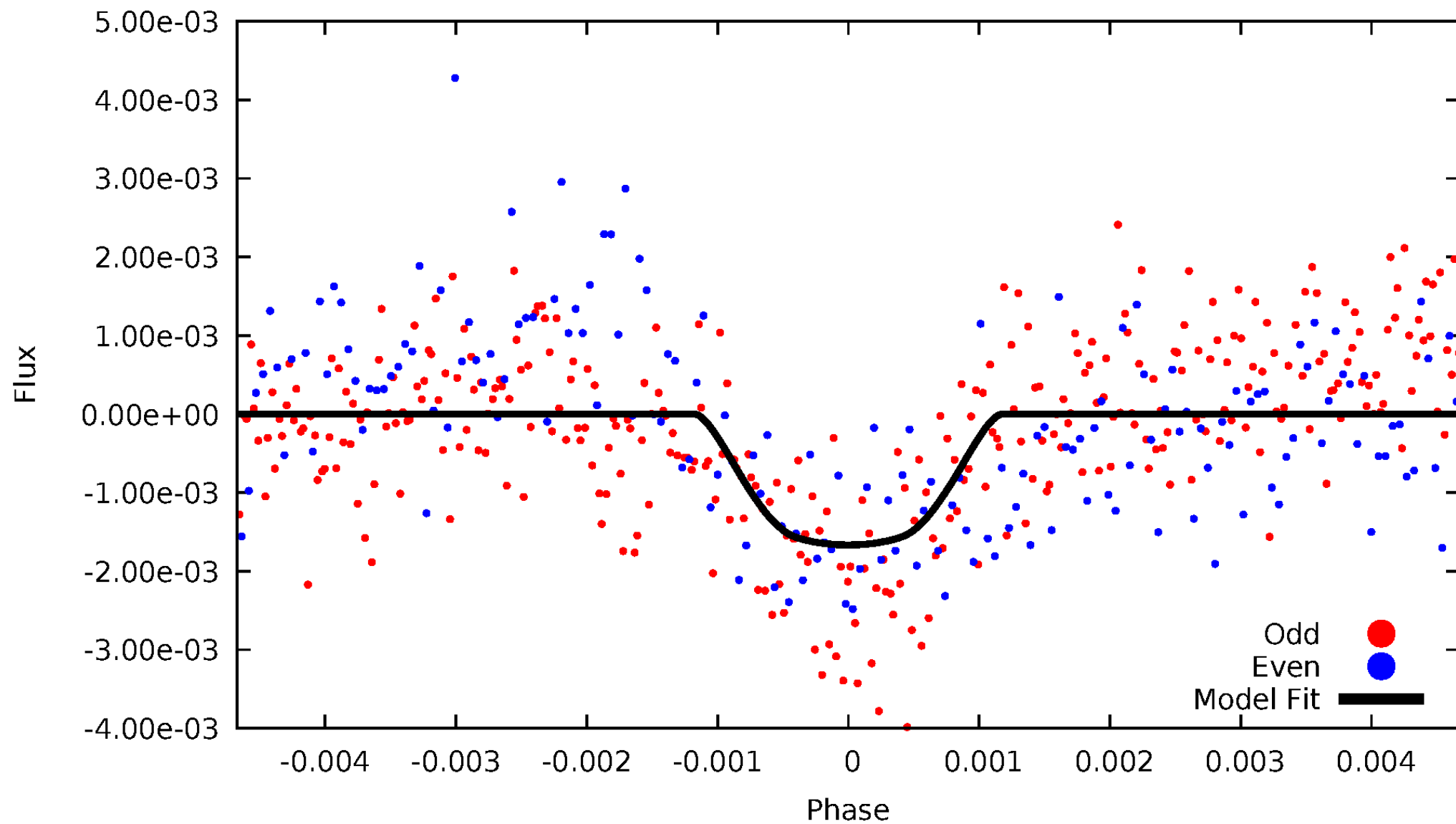


TCE 010597084-01



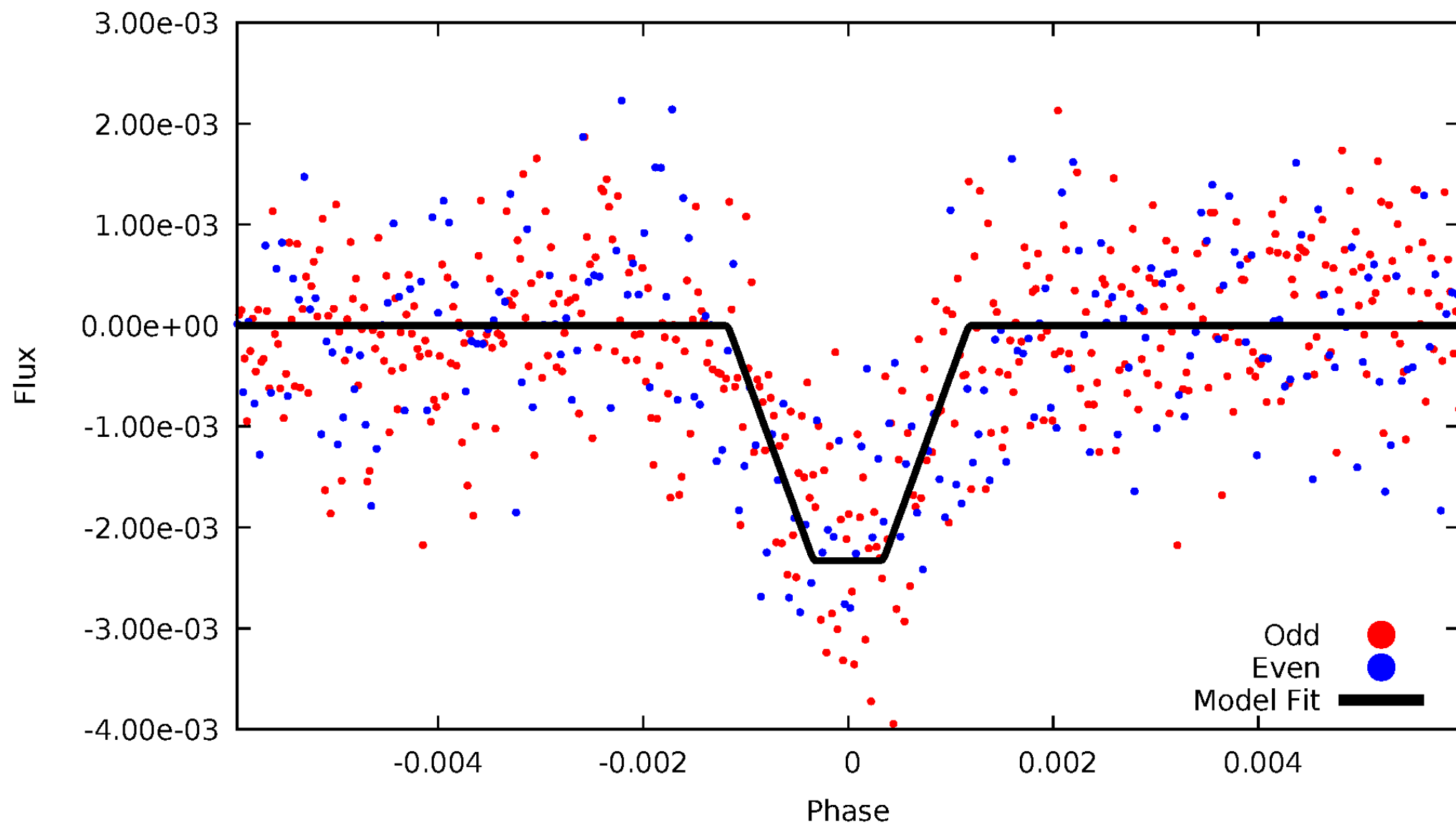
# DV Odd/Even

TCE 010597084-01



# ALT Odd/Even

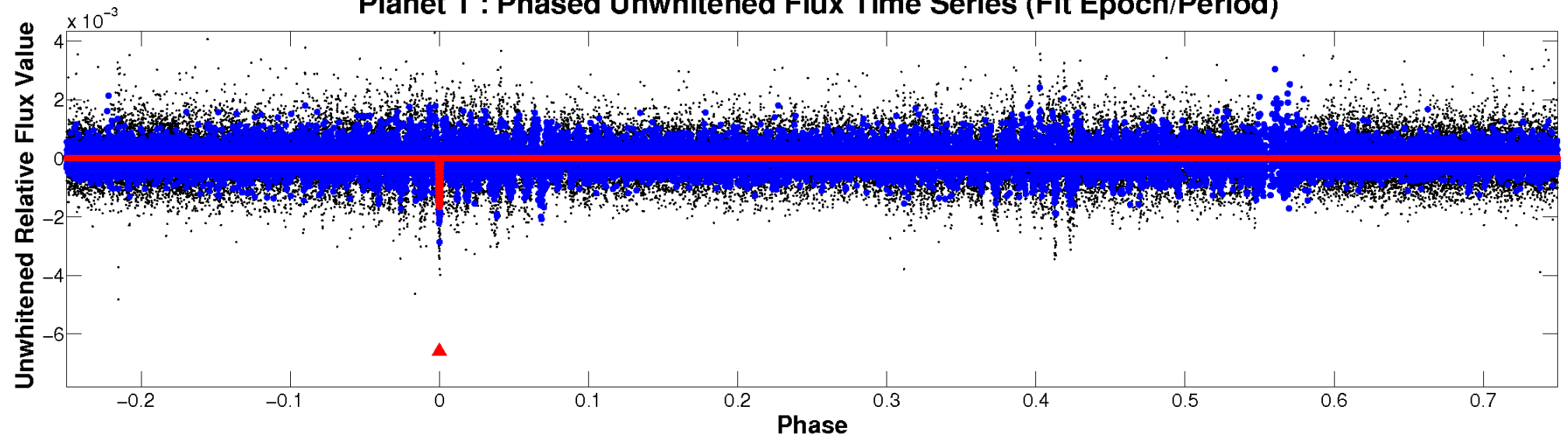
TCE 010597084-01



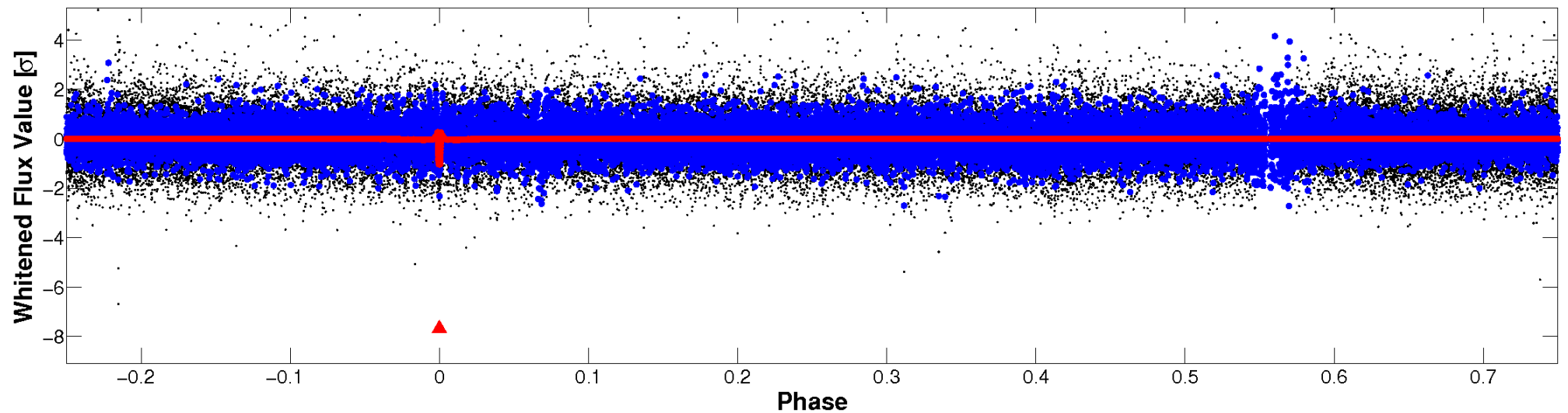


# Non-Whitened Vs. Whitened Light Curve

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

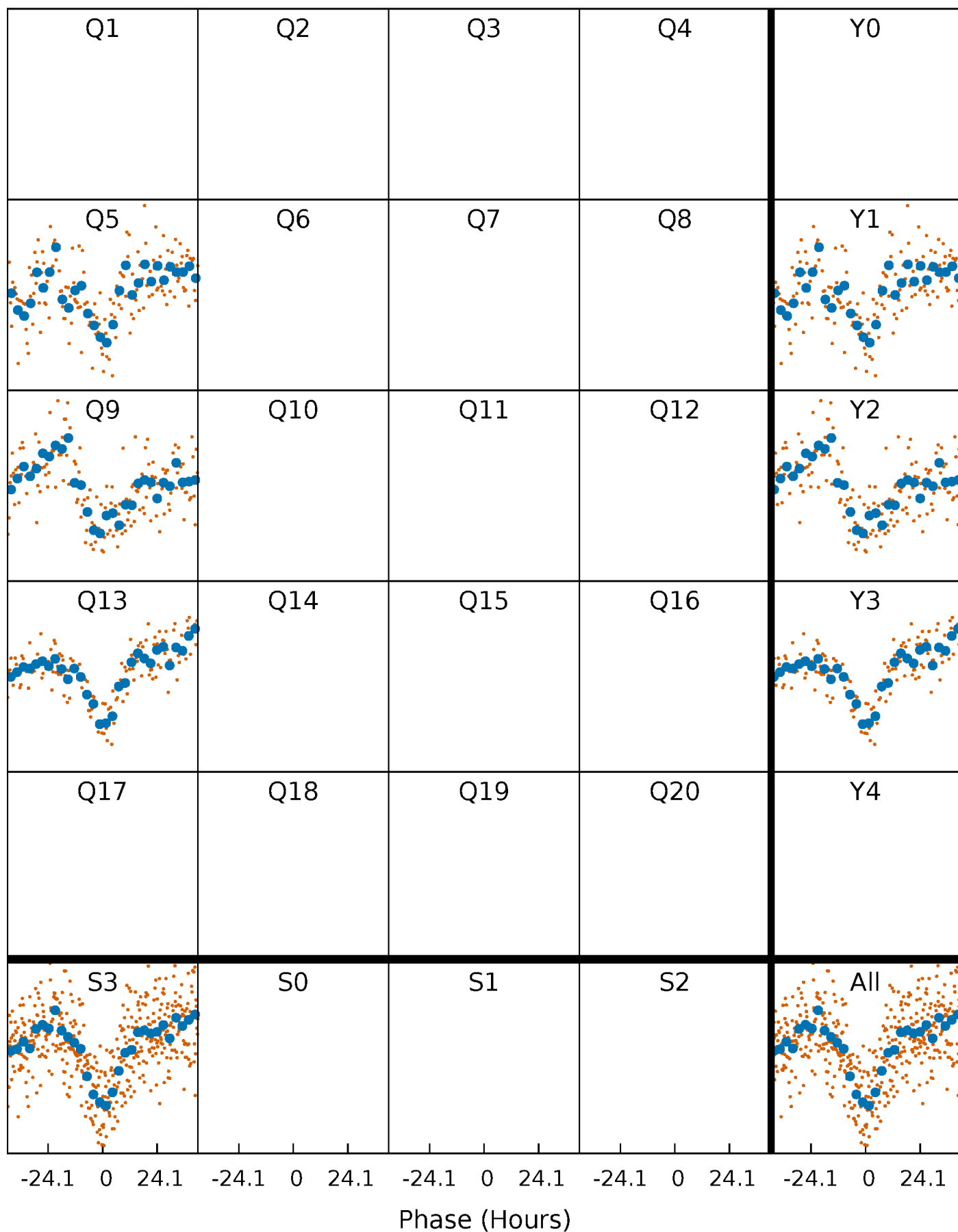


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

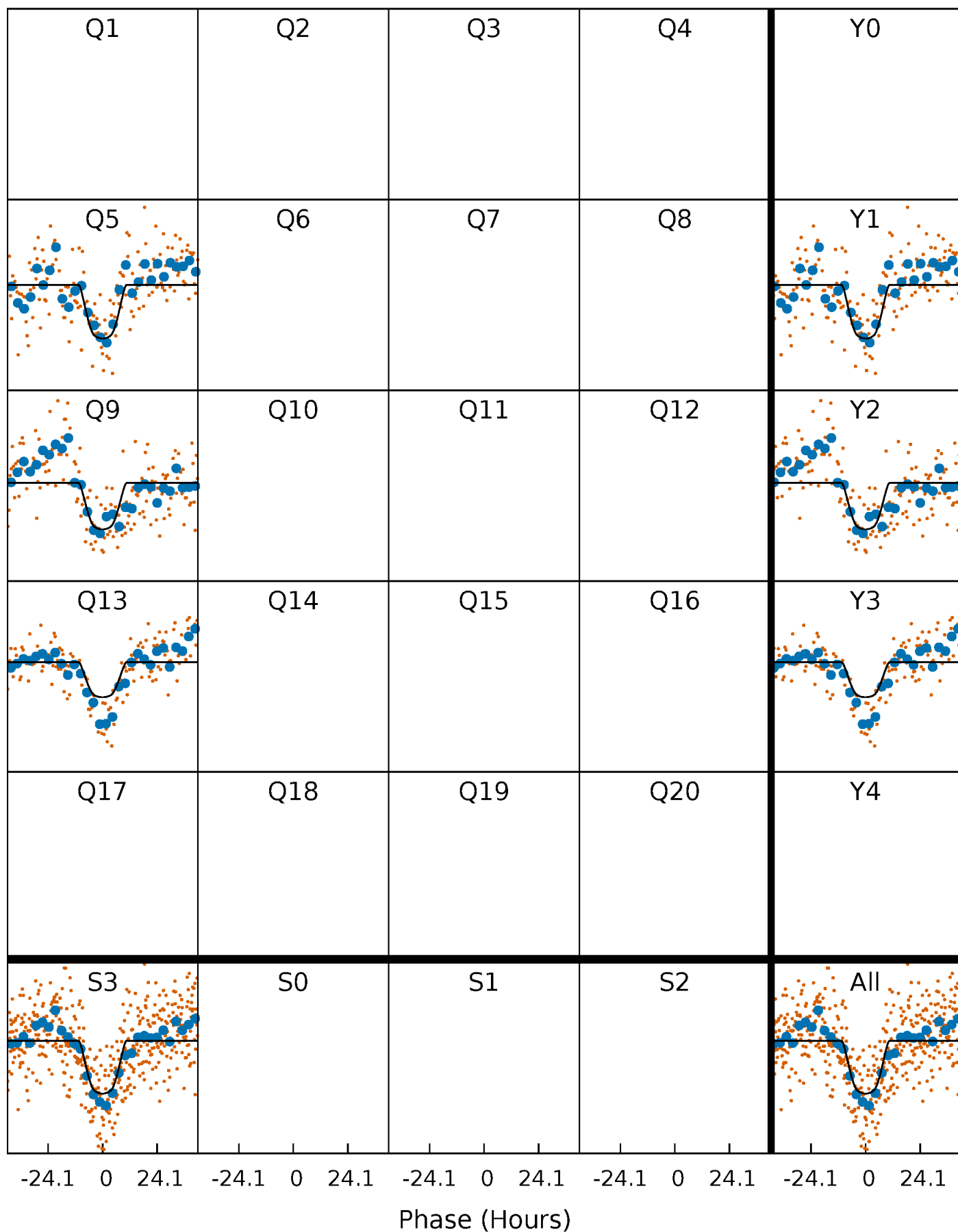
TCE 010597084-01 P=376.189325 Days  $T_0=137.432718$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 010597084-01 P=376.189325 Days  $T_0=137.432718$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

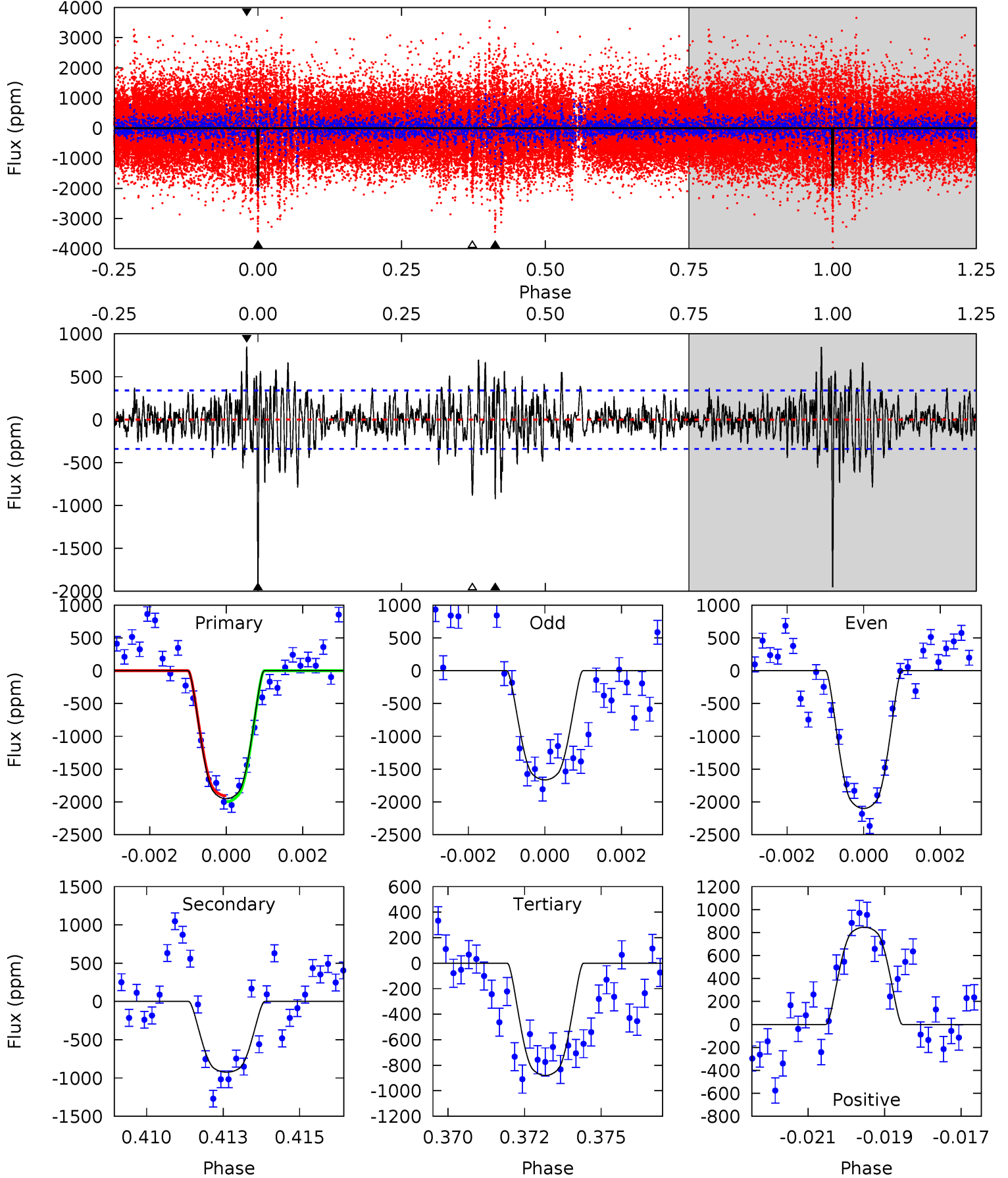
TCE 010597084-01 P=376.188651 Days  $T_0=137.439457$  (BKJD)



# DV Model-Shift Uniqueness Test

010597084-01, P = 376.189325 Days, E = 137.432718 Days

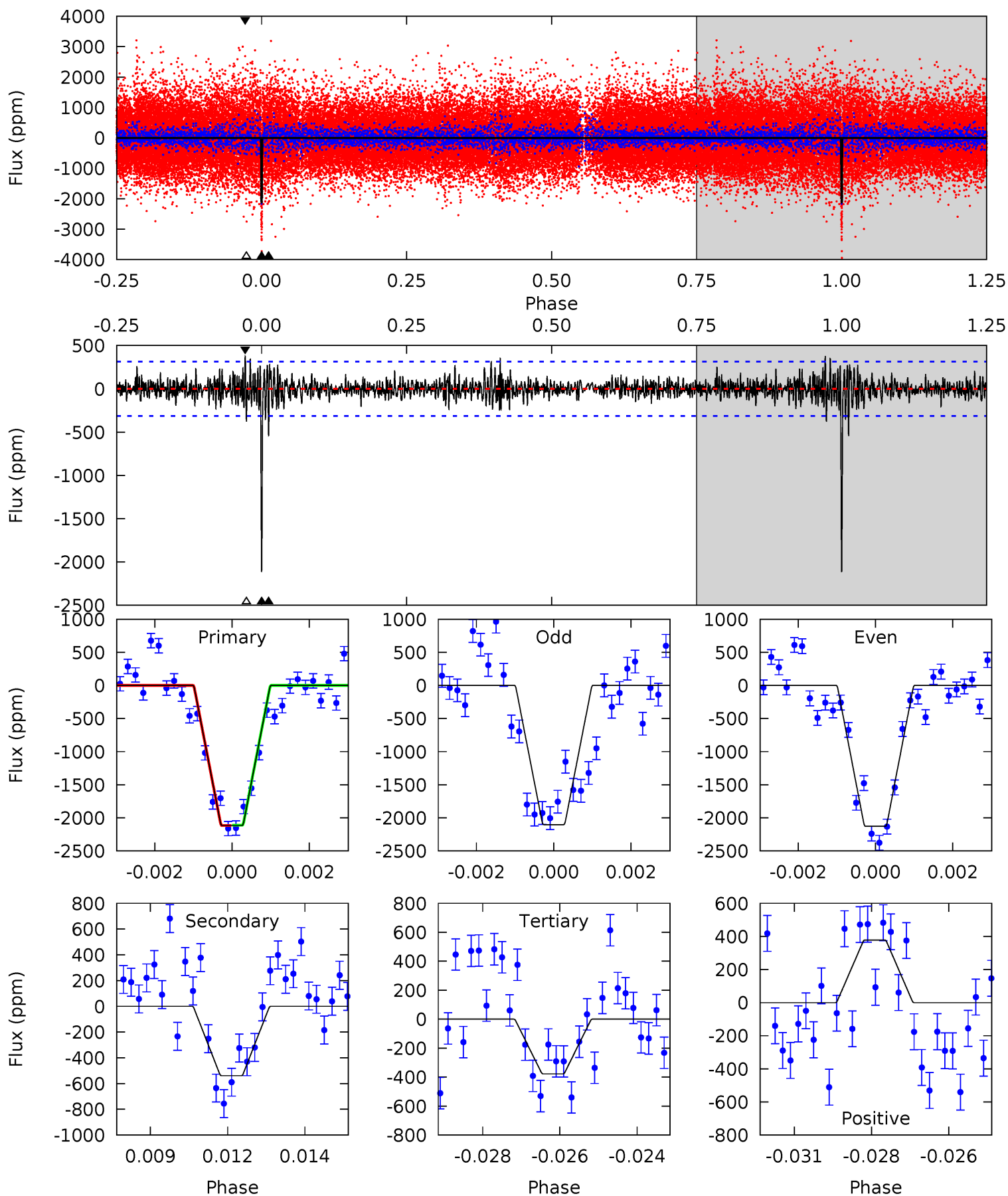
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.3	14.3	13.6	13.1	5.30	3.04	2.94	16.6	17.1	0.68	1.20	3.19	1.18	0.30	0.69



# Alt Model-Shift Uniqueness Test

010597084-01,  $P = 376.188651$  Days,  $E = 137.439457$  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
35.7	9.08	6.37	6.37	5.30	3.04	1.33	29.3	29.3	2.72	2.71	0.20	1.01	0.15	0.03



### Stellar Parameters For KIC 010597084

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4800^{+163}_{-179}$	$4.682^{+0.052}_{-0.032}$	$-1.020^{+0.300}_{-0.300}$	$0.570^{+0.038}_{-0.043}$	$0.569^{+0.047}_{-0.027}$	$4.328^{+1.003}_{-0.521}$
	+3%/-4%	+1%/-1%	+29%/-29%	+7%/-8%	+8%/-5%	+23%/-12%
Source	KIC0	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 010597084-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-924 \pm 64$	$2.98^{+0.29}_{-0.28}$	$242^{+9}_{-9}$	$4020^{+209}_{-169}$	$41363^{+9313}_{-7837}$
Alt.	$-539 \pm 59$	$3.01^{+0.29}_{-0.30}$	$243^{+9}_{-11}$	$3669^{+175}_{-175}$	$23545^{+6215}_{-4585}$

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

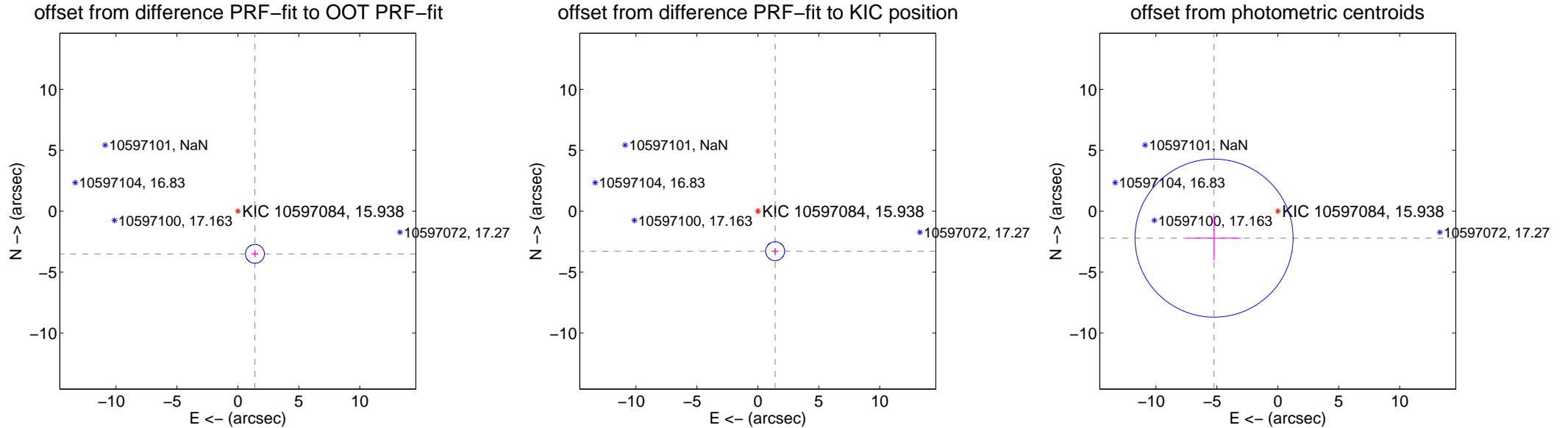
## DV Centroid Data

Supplemental centroid analysis for 010597084-01. Kepler magnitude: 15.94. Transit SNR 8.85

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.772 \pm 0.259$	14.59	$-1.401 \pm 0.272$	$-3.503 \pm 0.256$
PRF-fit source offset from KIC position	$3.576 \pm 0.259$	13.82	$-1.420 \pm 0.272$	$-3.282 \pm 0.256$
photometric centroid source offset	$5.68 \pm 2.16$	2.63	$5.23 \pm 2.22$	$-2.21 \pm 1.81$



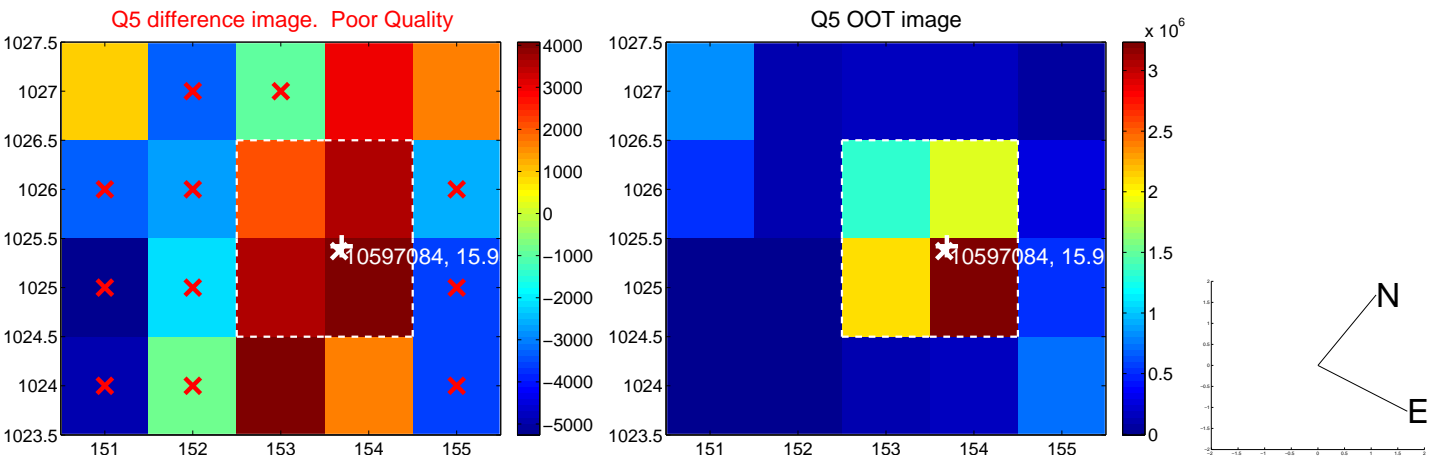
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

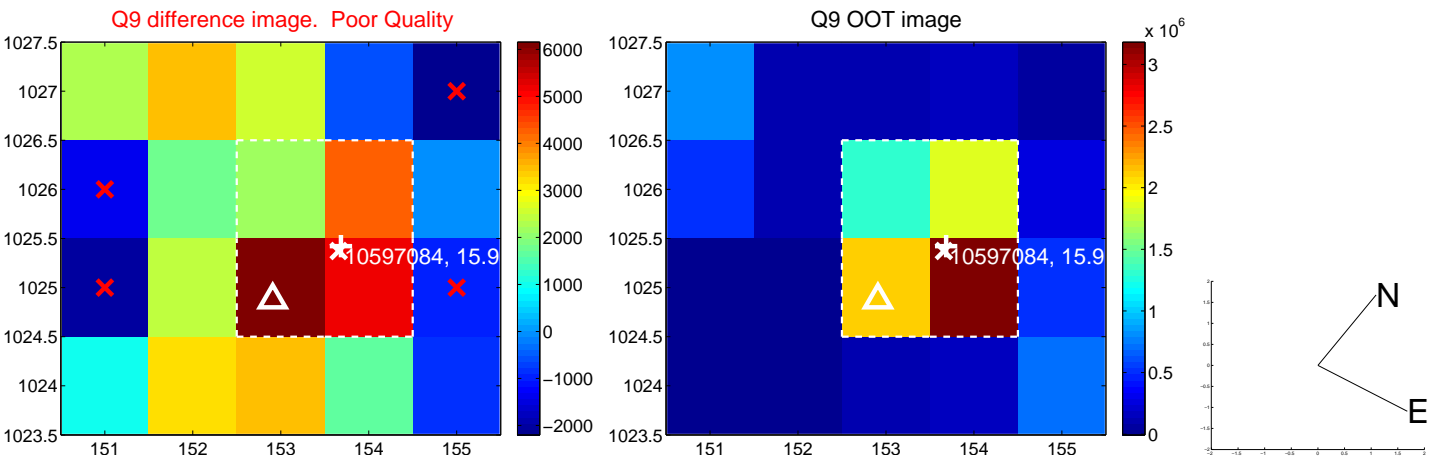




white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



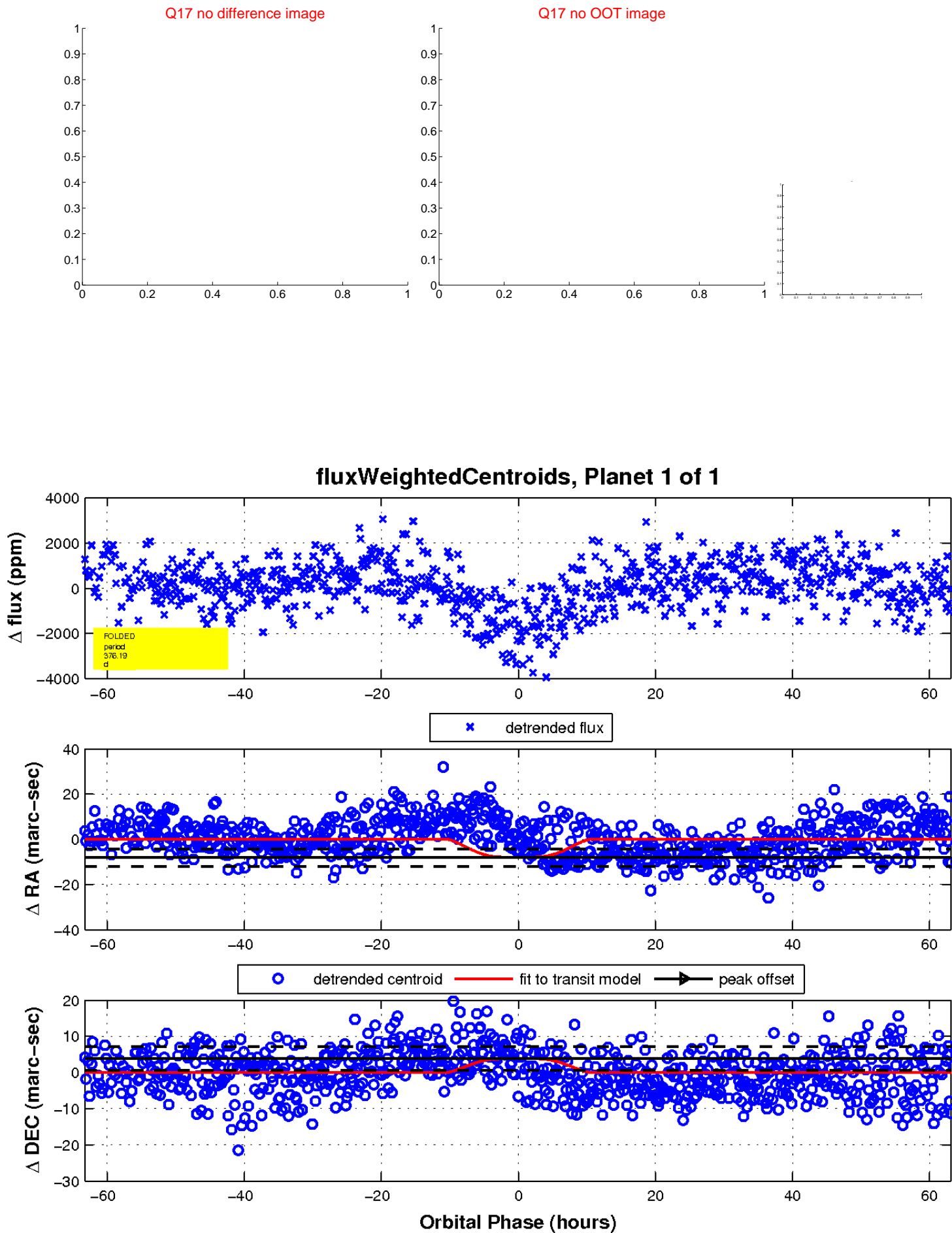
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

