

# KIC 008758590

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008758590-01	OBS	No	0.949019	132.459943	182.2	6.809	7.9	5.0	1.08	6372	1.49	4489.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008758590-01	OBS	FP	0.00	1	0	0	0	LPP_DV—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.

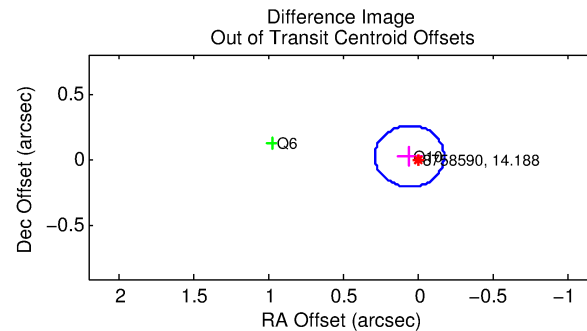
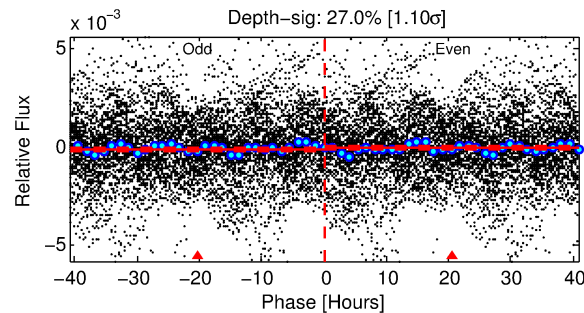
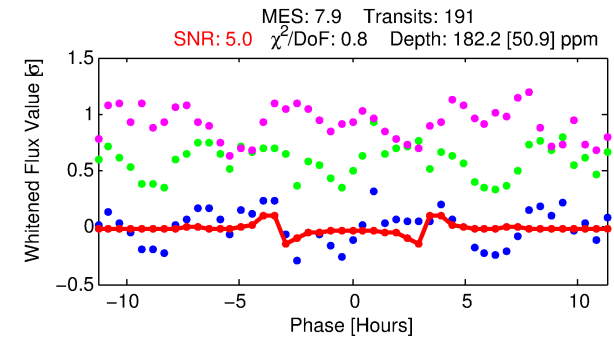
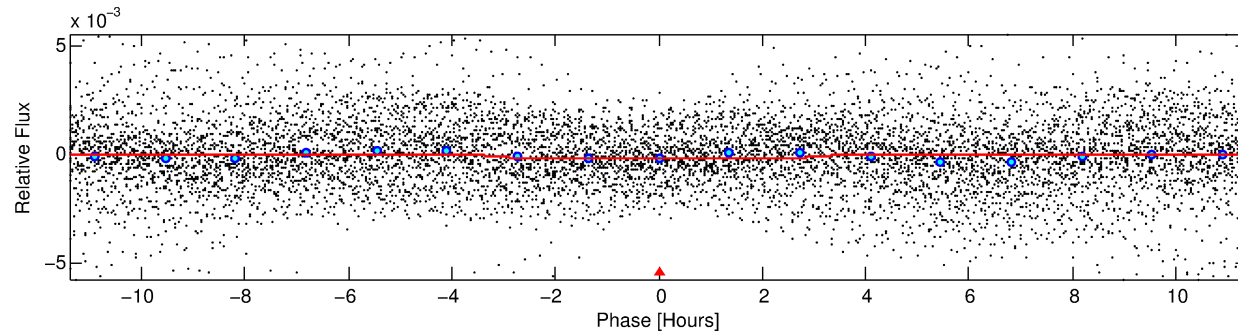
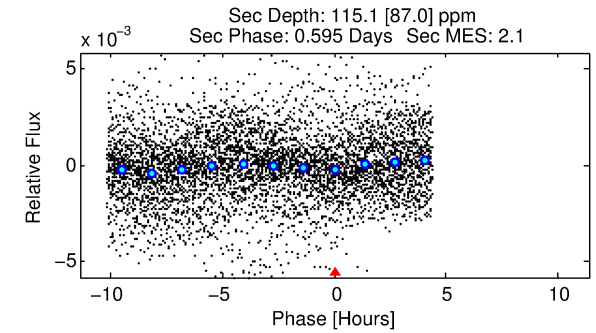
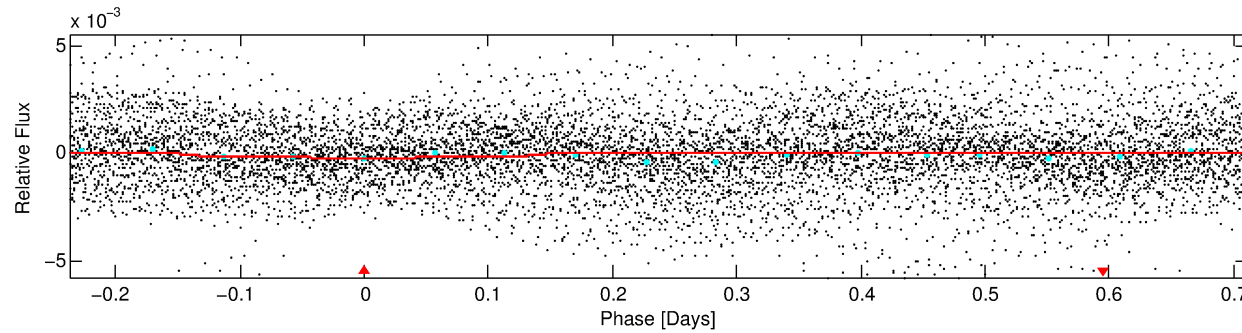
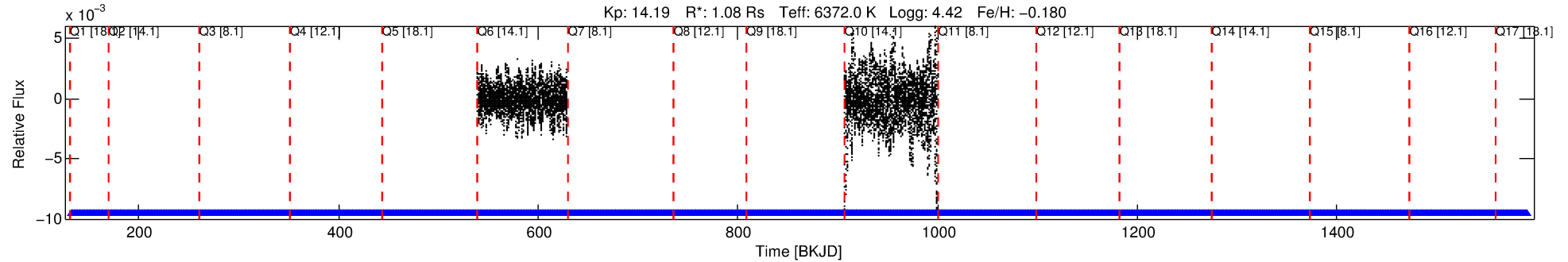
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008758590-01

No Significant Match Found

# DV One-Page Summary

KIC: 8758590 Candidate: 1 of 1 Period: 0.949 d



## DV Fit Results:

Period = 0.94902 [0.00002] d  
Epoch = 132.4599 [0.0025] BKJD  
Rp/R\* = 0.0126 [0.0075]  
a/R\* = 1.22 [1.24]  
b = 0.40 [6.56]  
Seff = 4489.33 [1948.50]  
Teq = 2087 [226] K  
Rp = 1.49 [1.03] Re  
a = 0.0196 [0.0056] AU  
Ag = 10.99 [16.11] [0.62σ]  
Teffp = 5876 [2080] K [1.81σ]

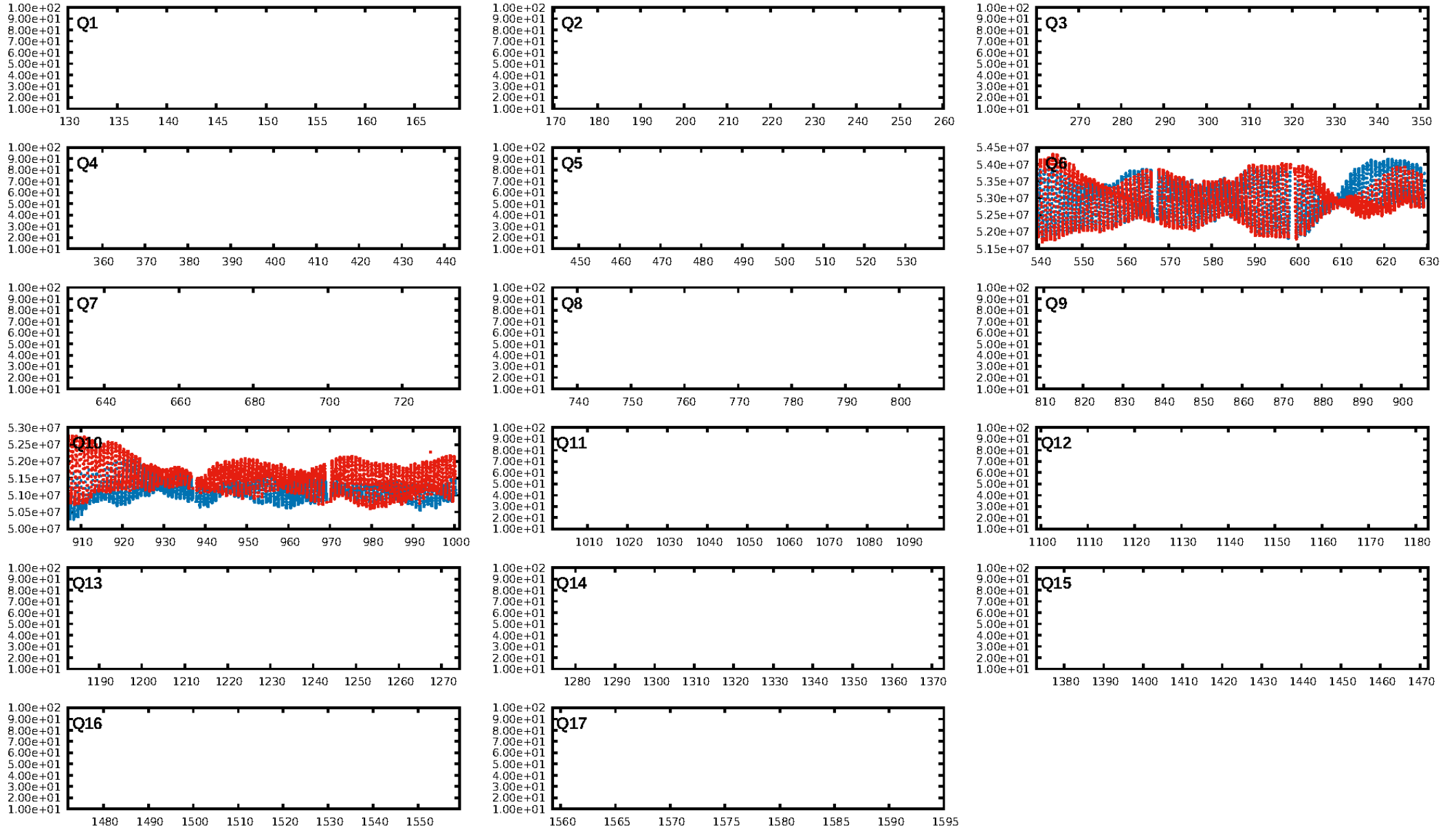
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.70e-04  
RollingBand-fgt: 1.00 [191/191]  
GhostDiagnostic-chr: -4.765  
Centroid-sig: 0.0%  
Centroid-so: 1.112 arcsec [3.45σ]  
OotOffset-rm: 0.061 arcsec [0.79σ]  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-rm: 0.056 arcsec [0.15σ]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

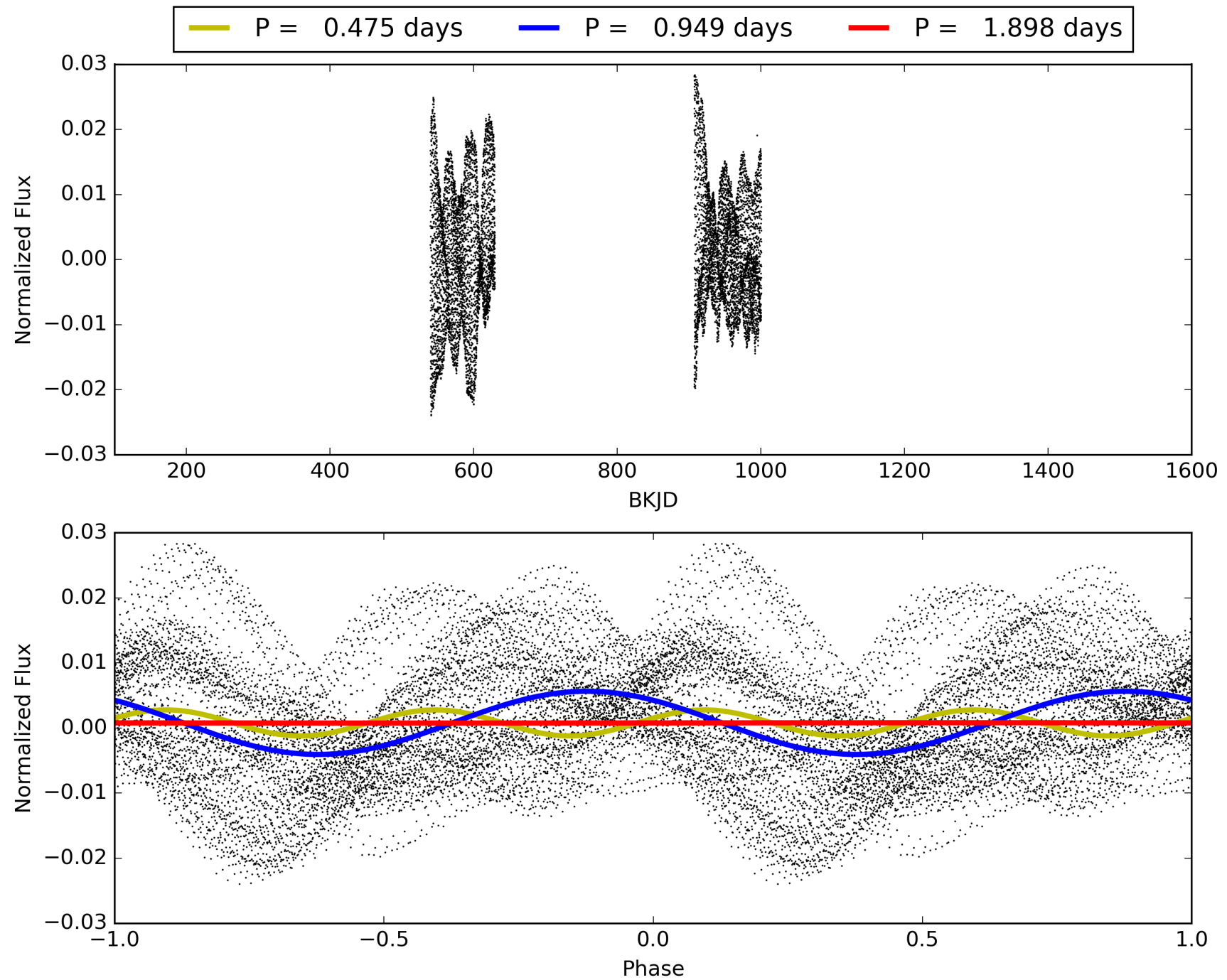
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 03:57:52 Z

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

# TCE 008758590-01, PDC Light Curves

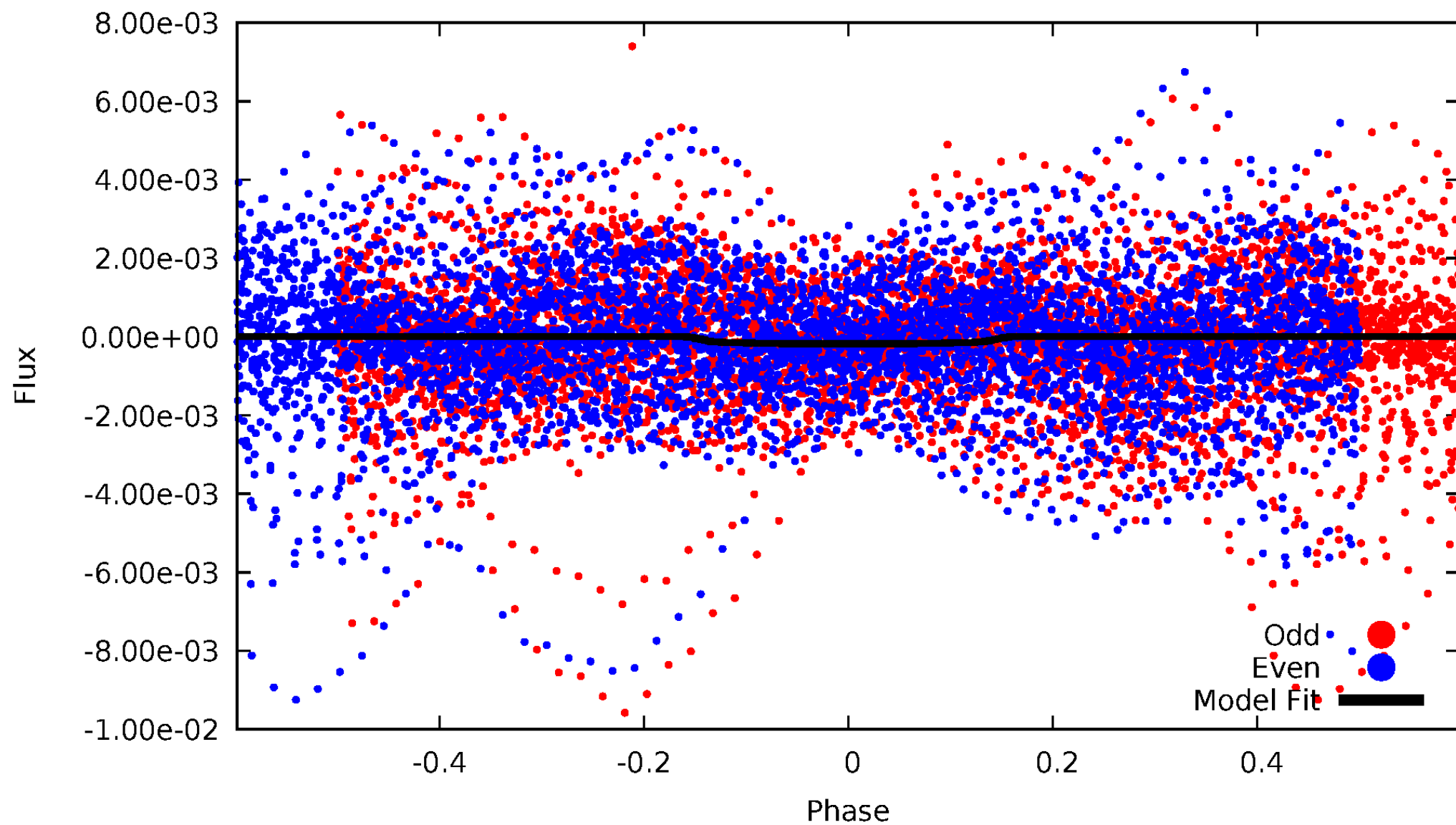


TCE 008758590-01



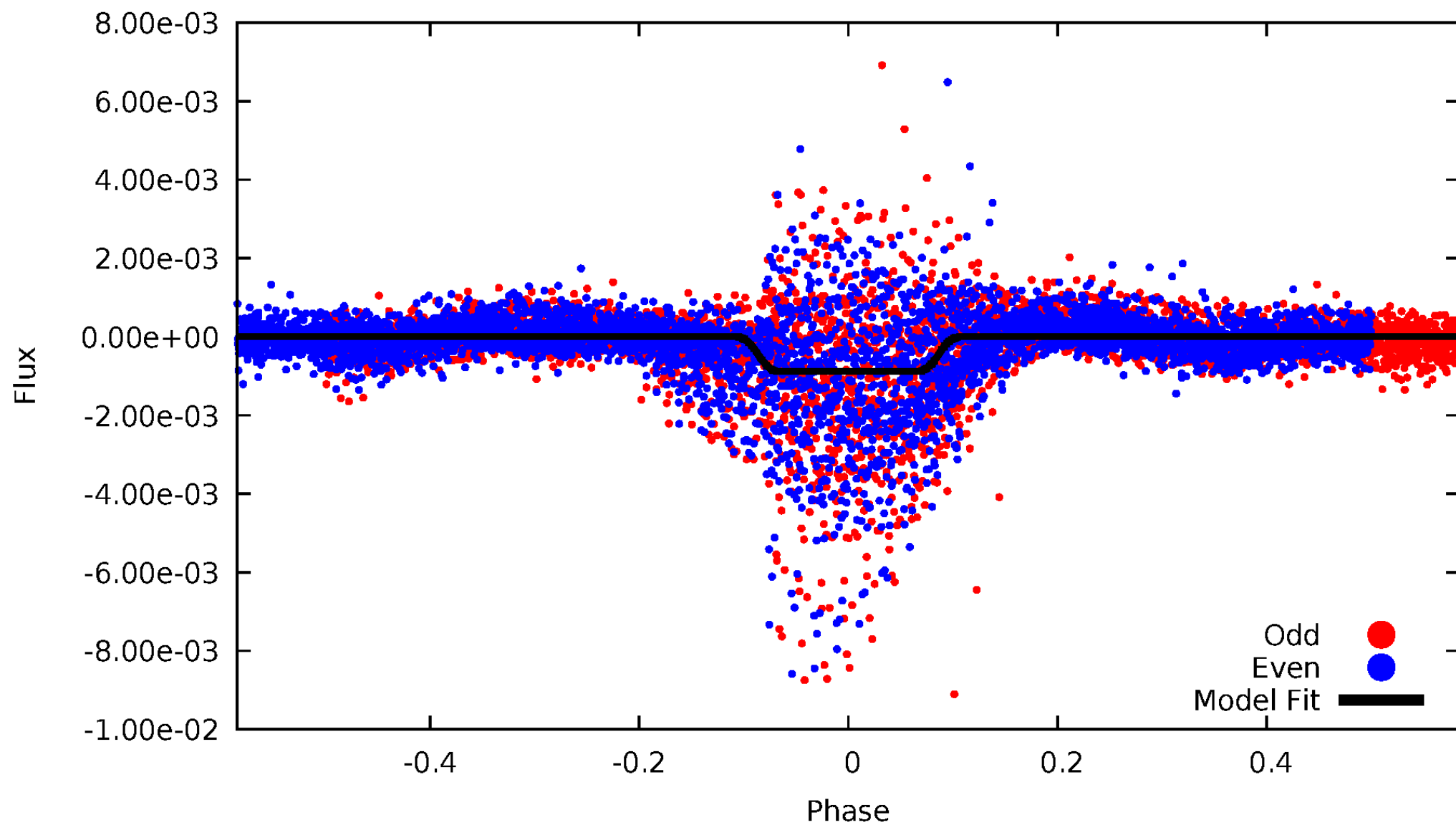
DV Odd/Even

TCE 008758590-01



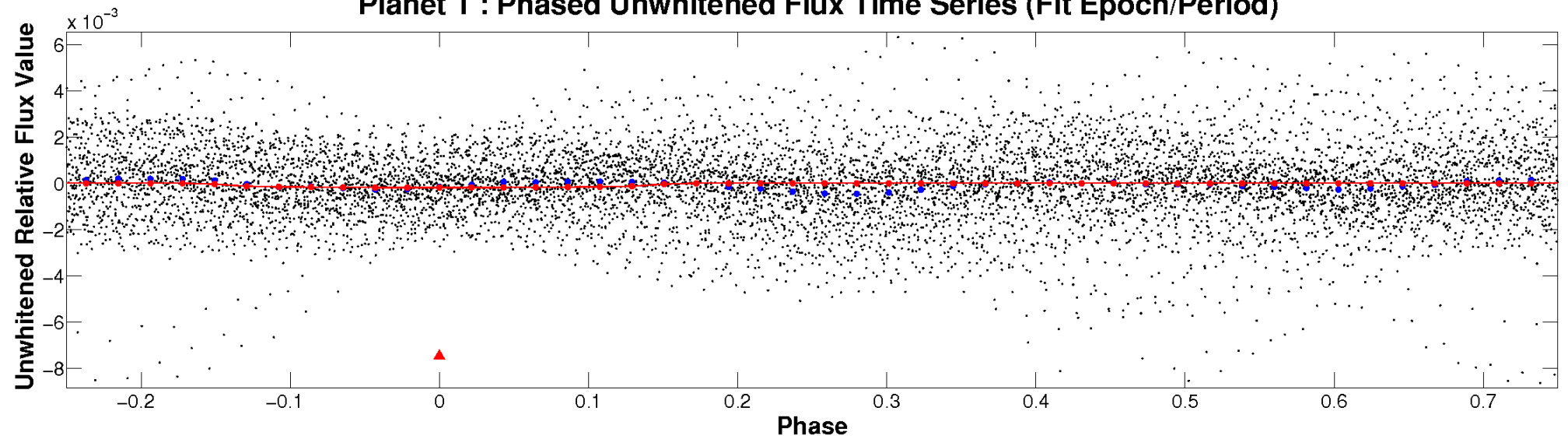
# ALT Odd/Even

TCE 008758590-01

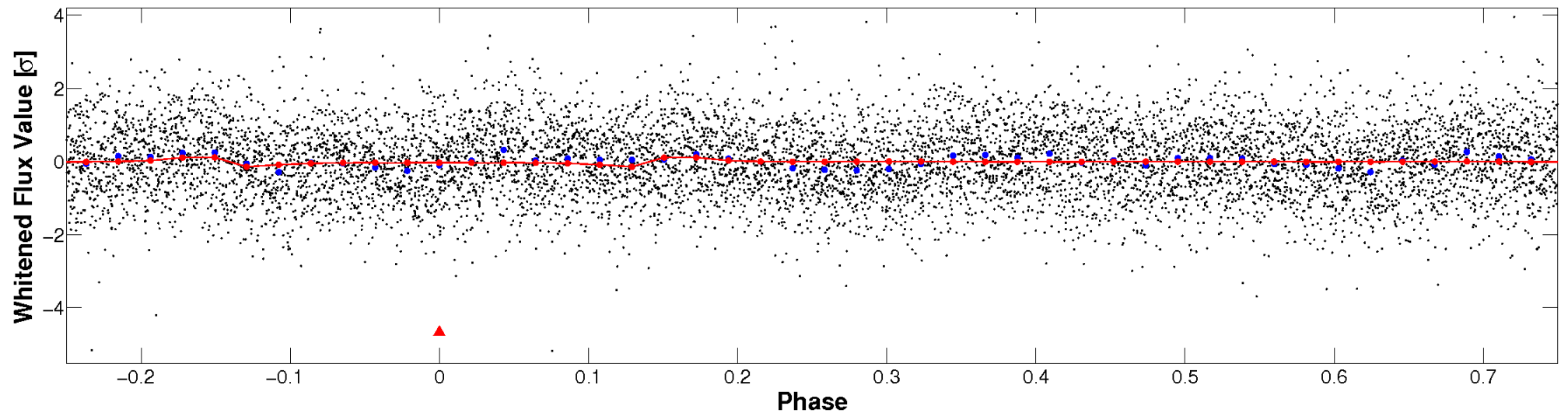


# Non-Whitened Vs. Whitened Light Curve

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



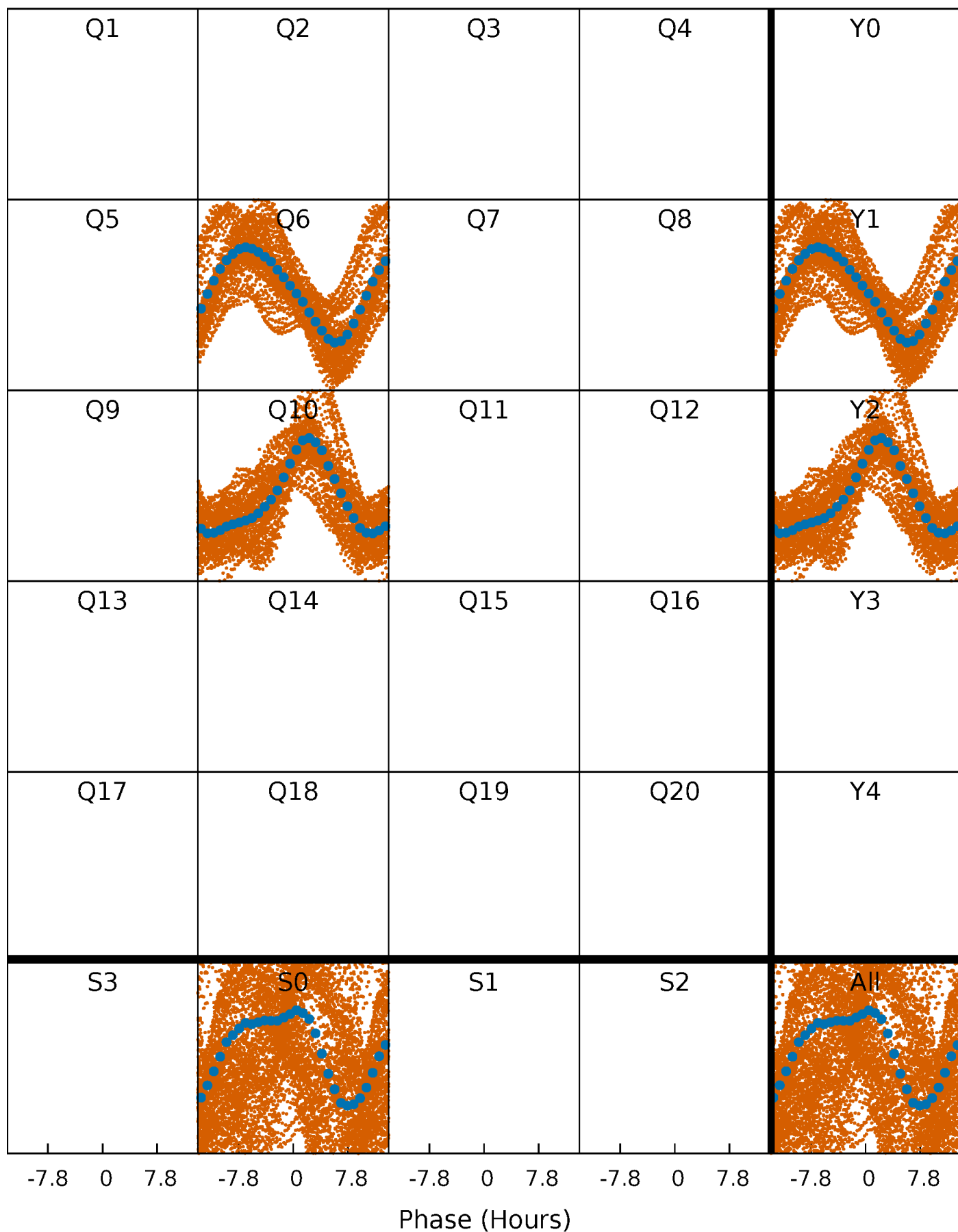
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

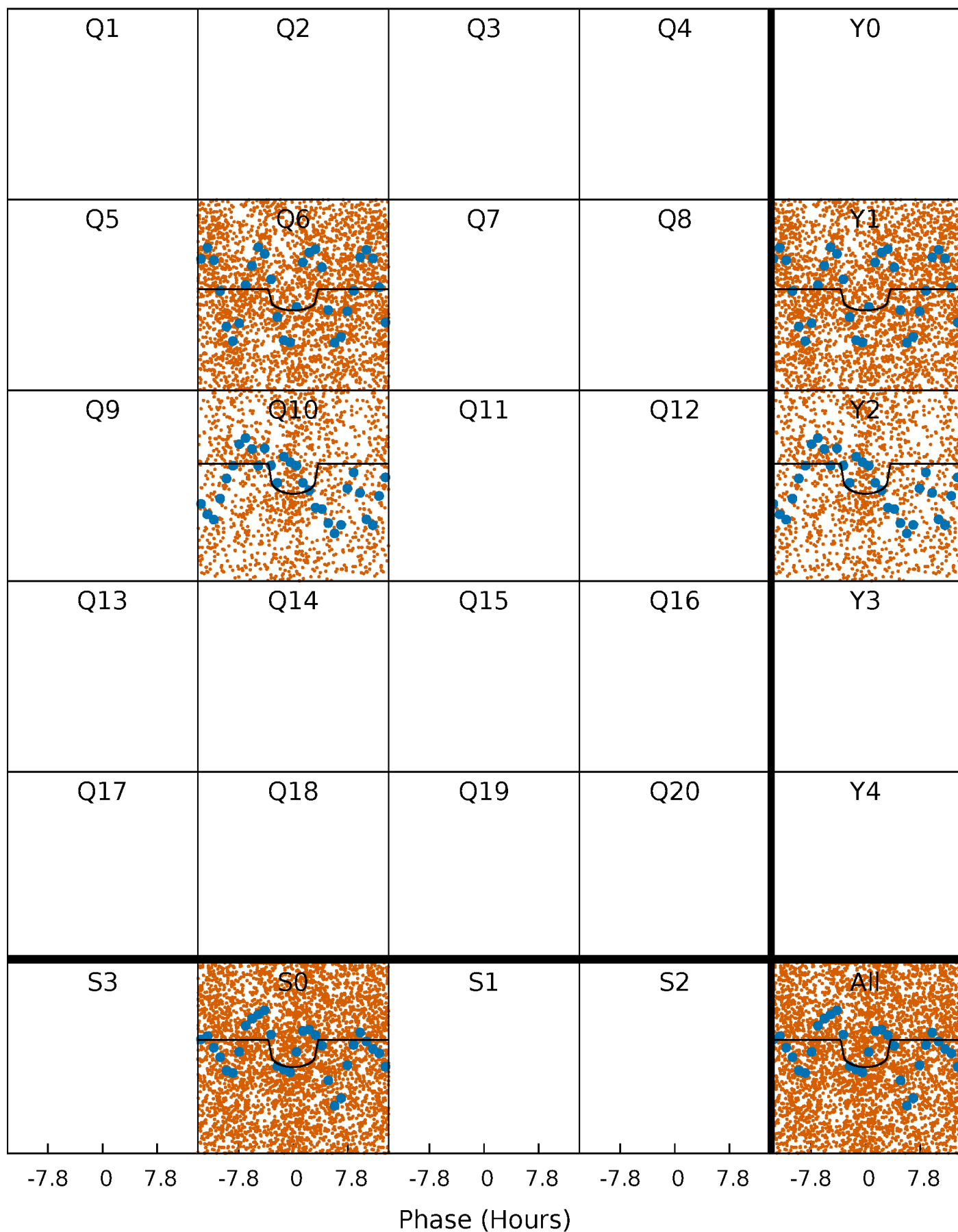
TCE 008758590-01   P= 0.949019 Days    $T_0=132.459943$  (BKJD)





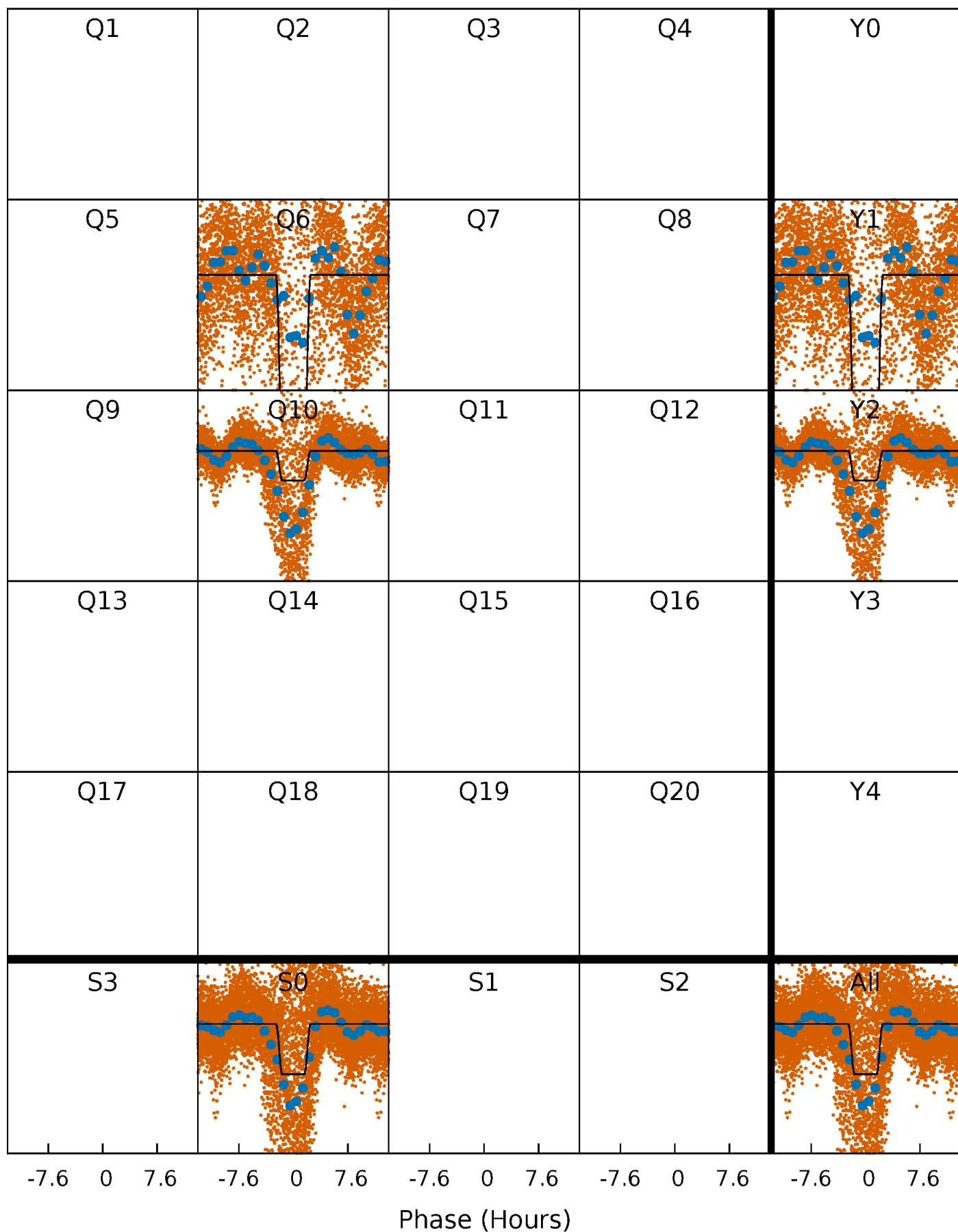
# DV Quarter-Phased Transit Curves

TCE 008758590-01 P= 0.949019 Days  $T_0=132.459943$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

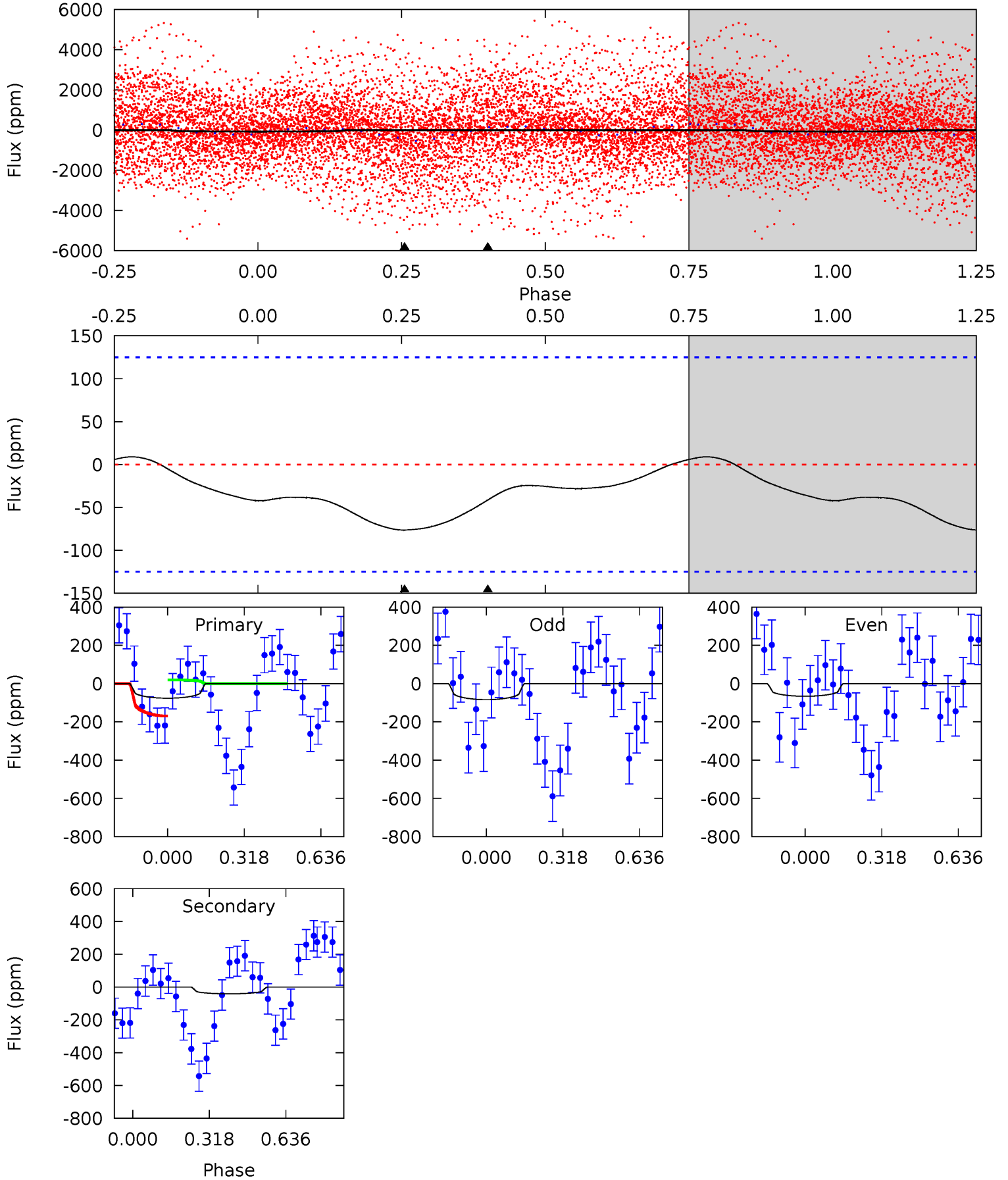
TCE 008758590-01 P= 0.949011 Days  $T_0=132.377308$  (BKJD)



# DV Model-Shift Uniqueness Test

008758590-01,  $P = 0.949019$  Days,  $E = 132.459943$  Days

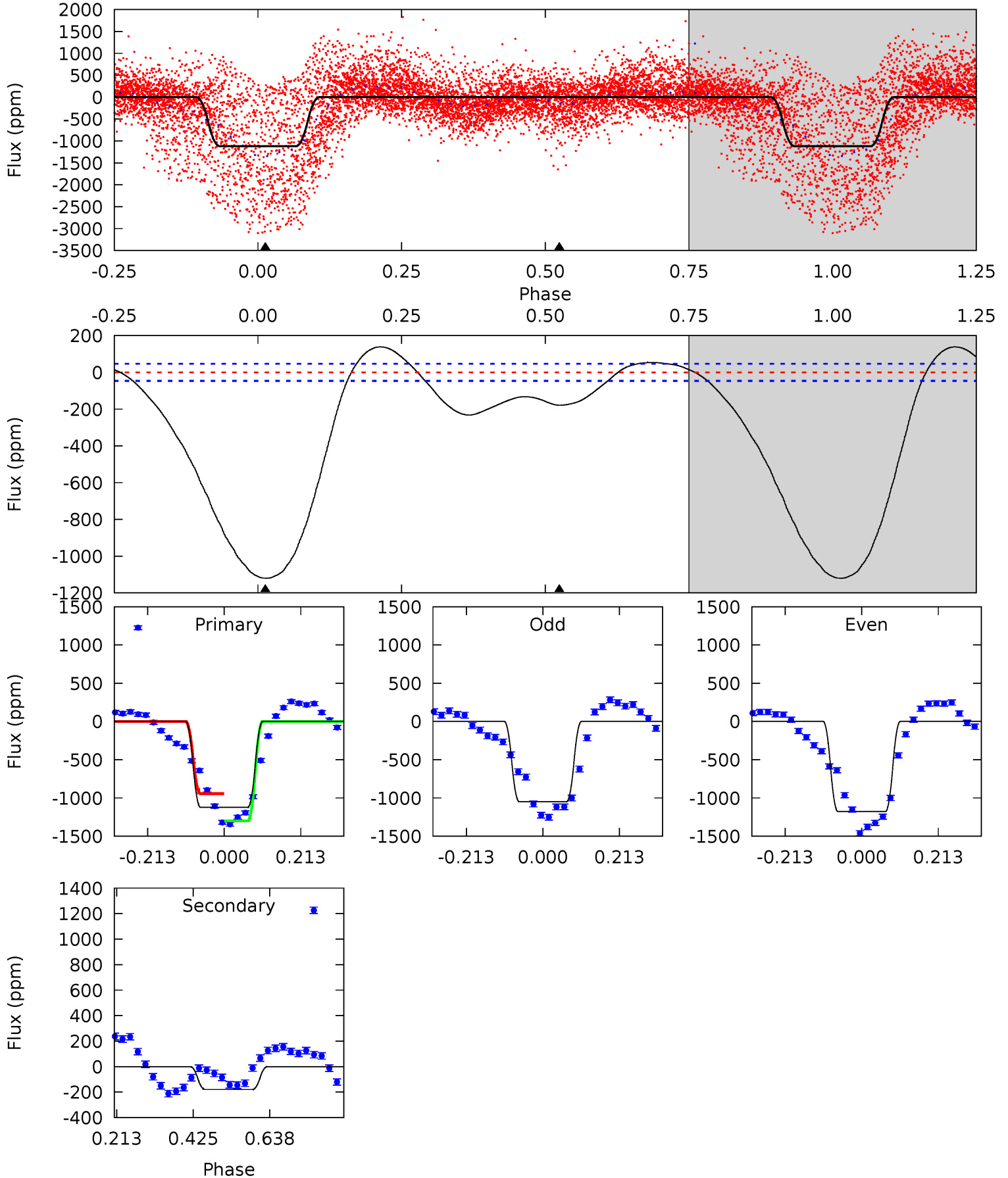
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.64	1.43	0	0	4.32	1.00	0.48	2.64	2.64	1.43	1.43	0.31	1.08	0.11	3.16



# Alt Model-Shift Uniqueness Test

008758590-01, P = 0.949011 Days, E = 132.377308 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
105.9	16.9	0	0	4.40	1.25	6.28	105.9	105.9	16.9	16.9	6.26	0.99	0.11	0



### Stellar Parameters For KIC 008758590

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6372^{+176}_{-242}$	$4.418^{+0.072}_{-0.217}$	$-0.180^{+0.250}_{-0.300}$	$1.081^{+0.378}_{-0.126}$	$1.114^{+0.164}_{-0.164}$	$1.243^{+0.384}_{-0.694}$
	+3%/-4%	+2%/-5%	+139%/-167%	+35%/-12%	+15%/-15%	+31%/-56%
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 008758590-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-41 \pm 29$	$1.55^{+1.00}_{-0.81}$	$2953^{+215}_{-160}$	$4428^{+1910}_{-1488}$	$3.137^{+11.359}_{-2.632}$
Alt.	$-179 \pm 11$	$3.56^{+1.08}_{-0.93}$	$2963^{+227}_{-149}$	$4381^{+635}_{-384}$	$2.921^{+2.543}_{-1.189}$

$T_{\text{max}}$  = 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

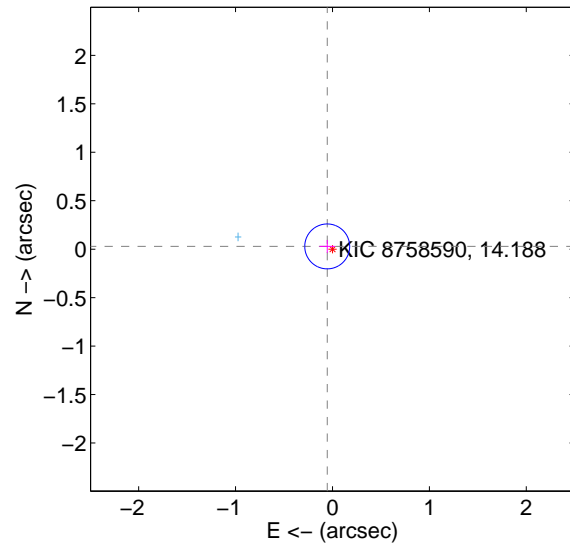
Supplemental centroid analysis for 008758590-01. Kepler magnitude: 14.19. Transit SNR 5.04

There are 1 quarters with good PRF difference image offsets

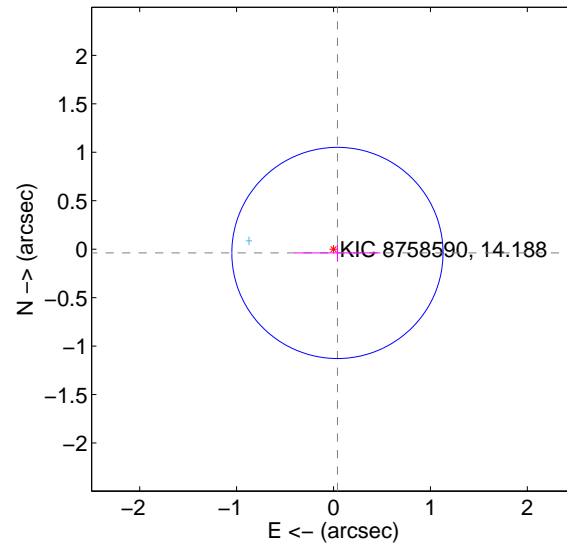
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.061 \pm 0.077$	0.79	$0.054 \pm 0.080$	$0.028 \pm 0.067$
PRF-fit source offset from KIC position	$0.056 \pm 0.363$	0.15	$-0.040 \pm 0.443$	$-0.039 \pm 0.089$
photometric centroid source offset	$1.11 \pm 0.32$	3.45	$-0.07 \pm 0.49$	$-1.11 \pm 0.32$

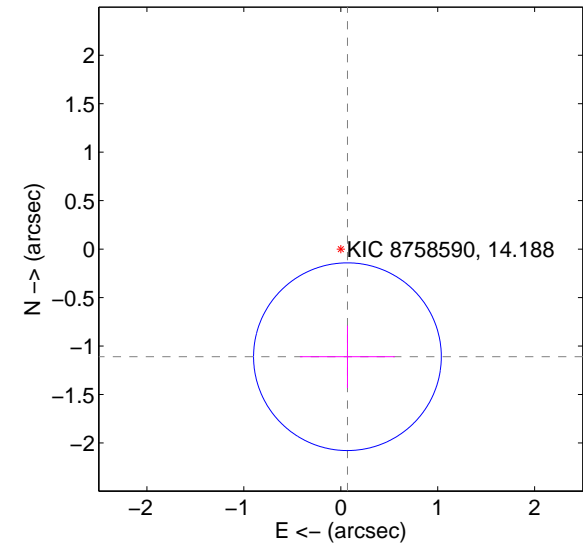
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



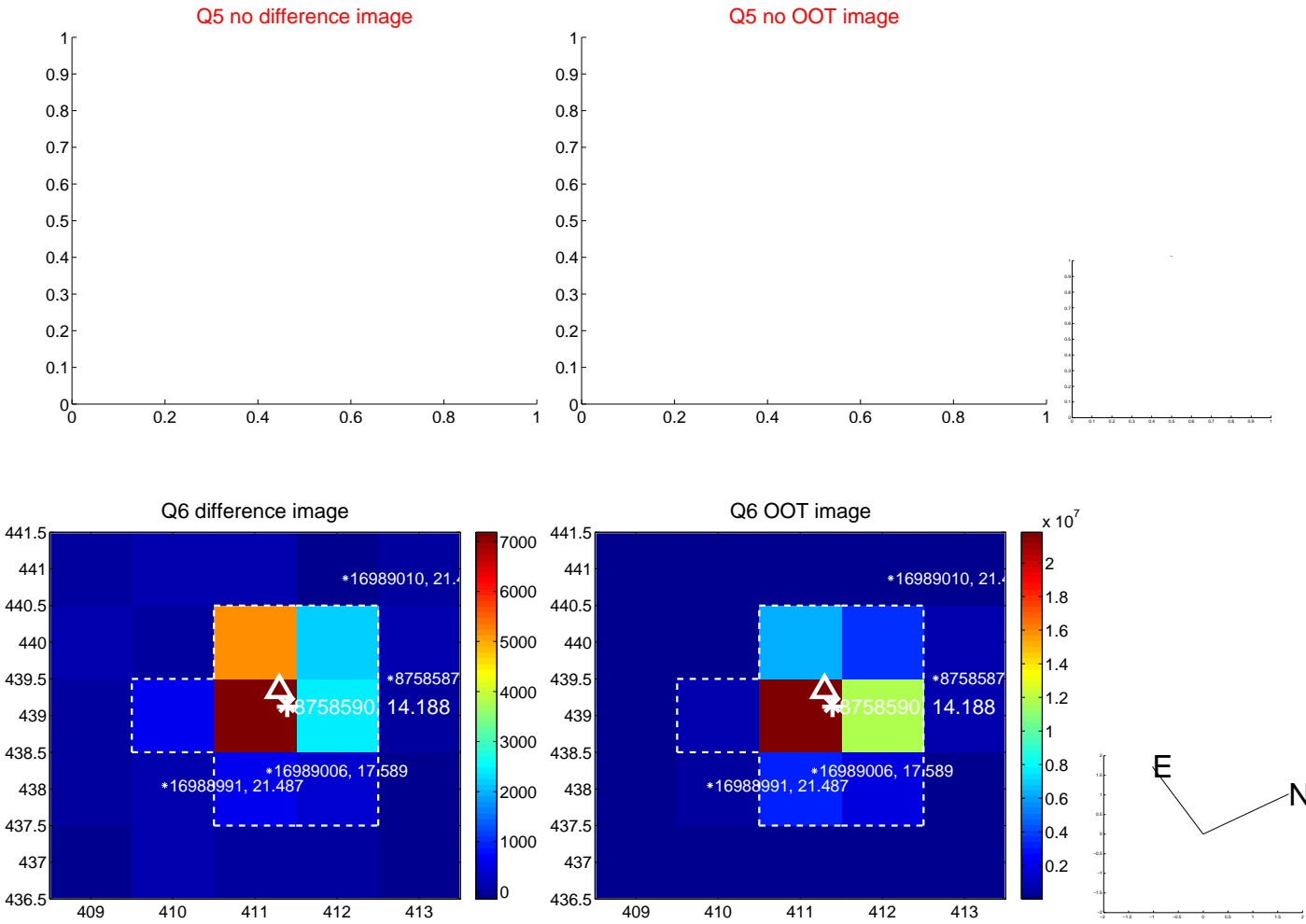
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

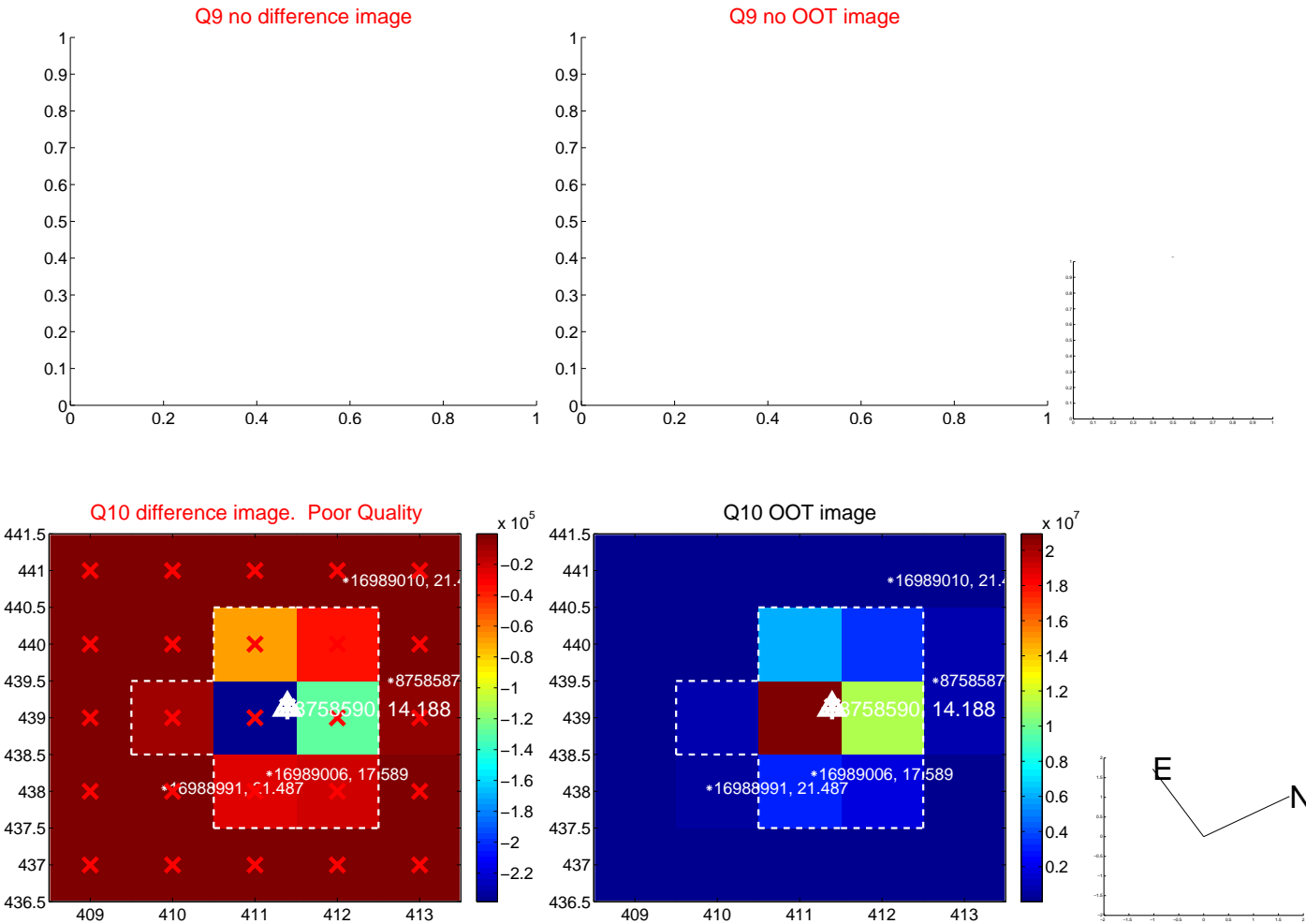




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



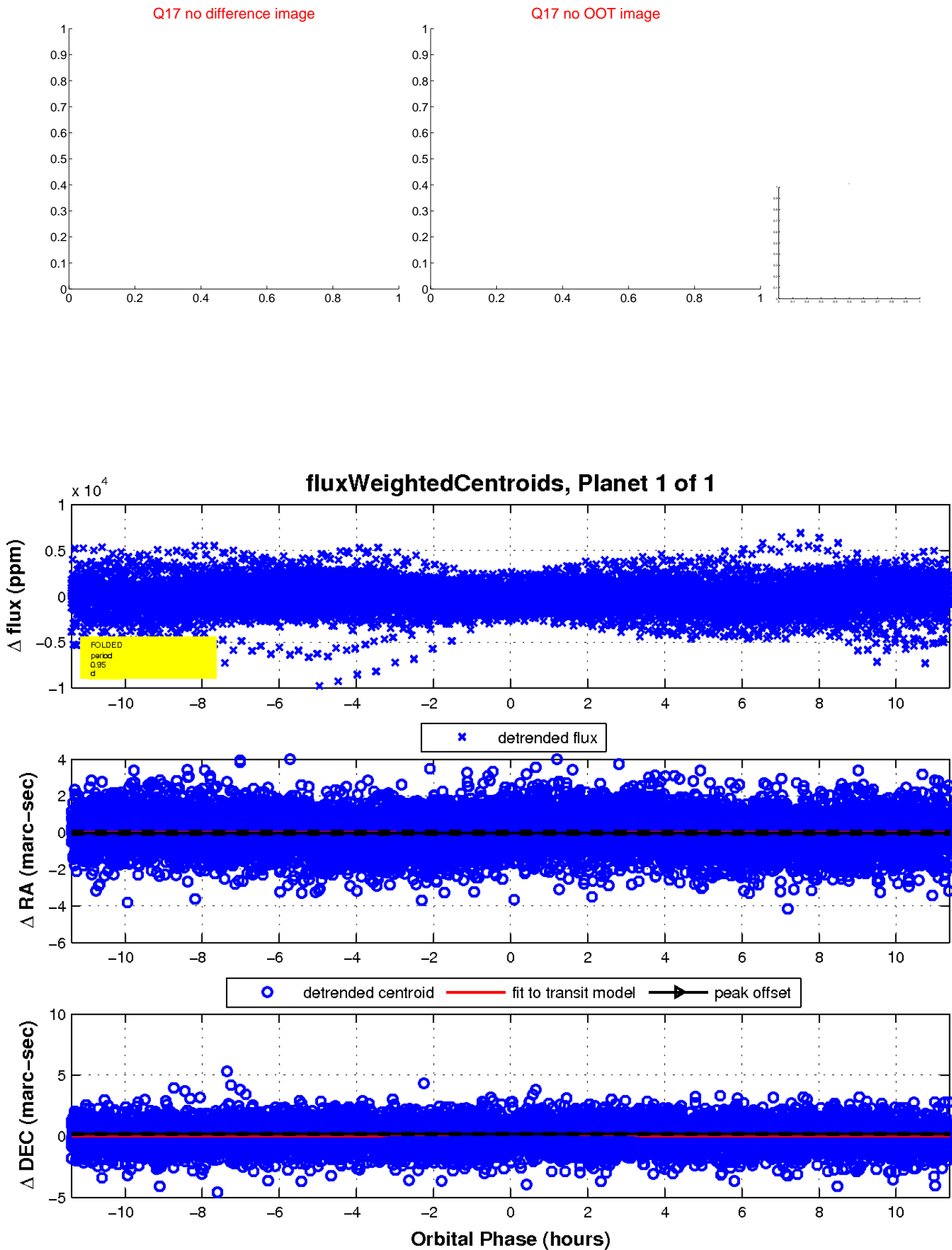
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

