

# KIC 008817865

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008817865-01	OBS	No	373.120715	140.271723	449.9	21.878	10.0	7.8	0.88	5841	1.91	0.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008817865-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

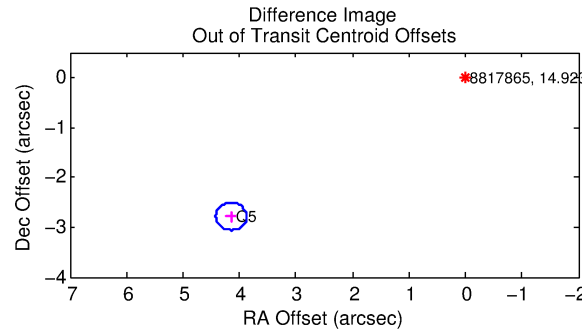
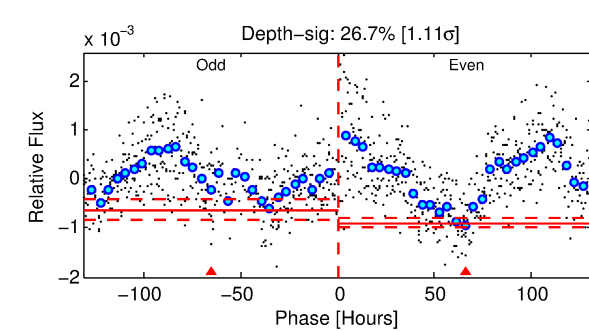
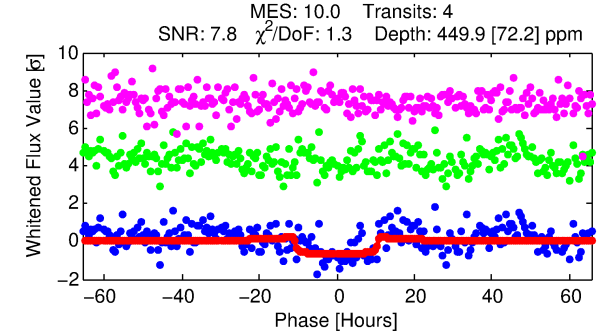
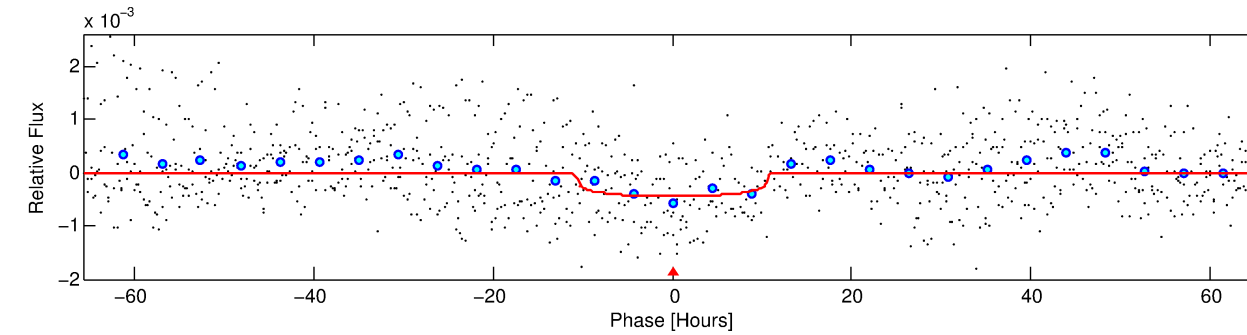
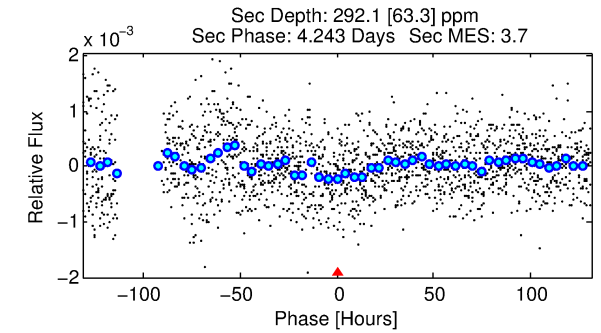
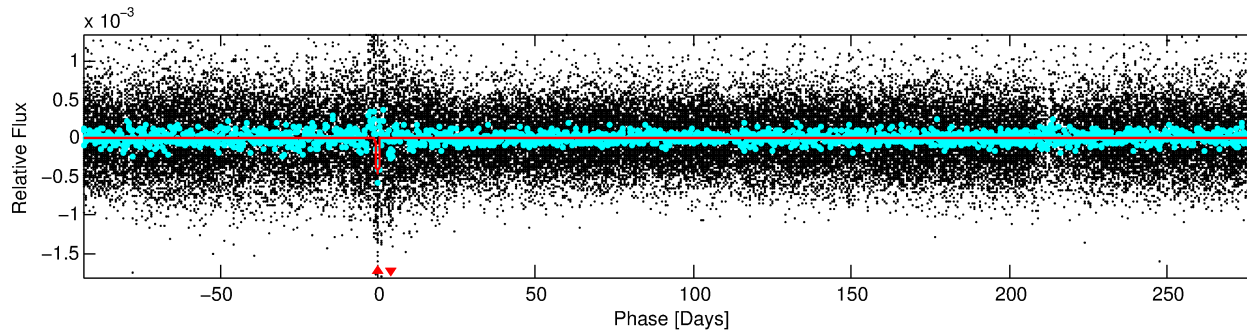
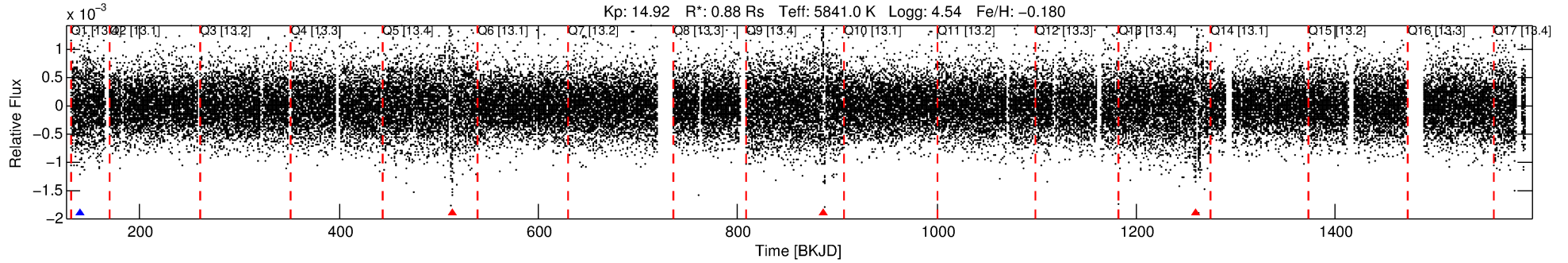
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008817865-01

No Significant Match Found

# DV One-Page Summary

KIC: 8817865 Candidate: 1 of 1 Period: 373.121 d



## DV Fit Results:

Period = 373.12072 [0.01725] d  
Epoch = 140.2717 [0.0325] BKJD  
Rp/R\* = 0.0200 [0.0110]  
a/R\* = 112.73 [279.94]  
b = 0.54 [3.28]  
Seff = 0.80 [0.31]  
Teq = 241 [23] K  
Rp = 1.91 [1.19] Re  
a = 1.0006 [0.2479] AU  
Ag = 43998.87 [52048.89] [0.85σ]  
Teffp = 5396 [1525] K [3.38σ]

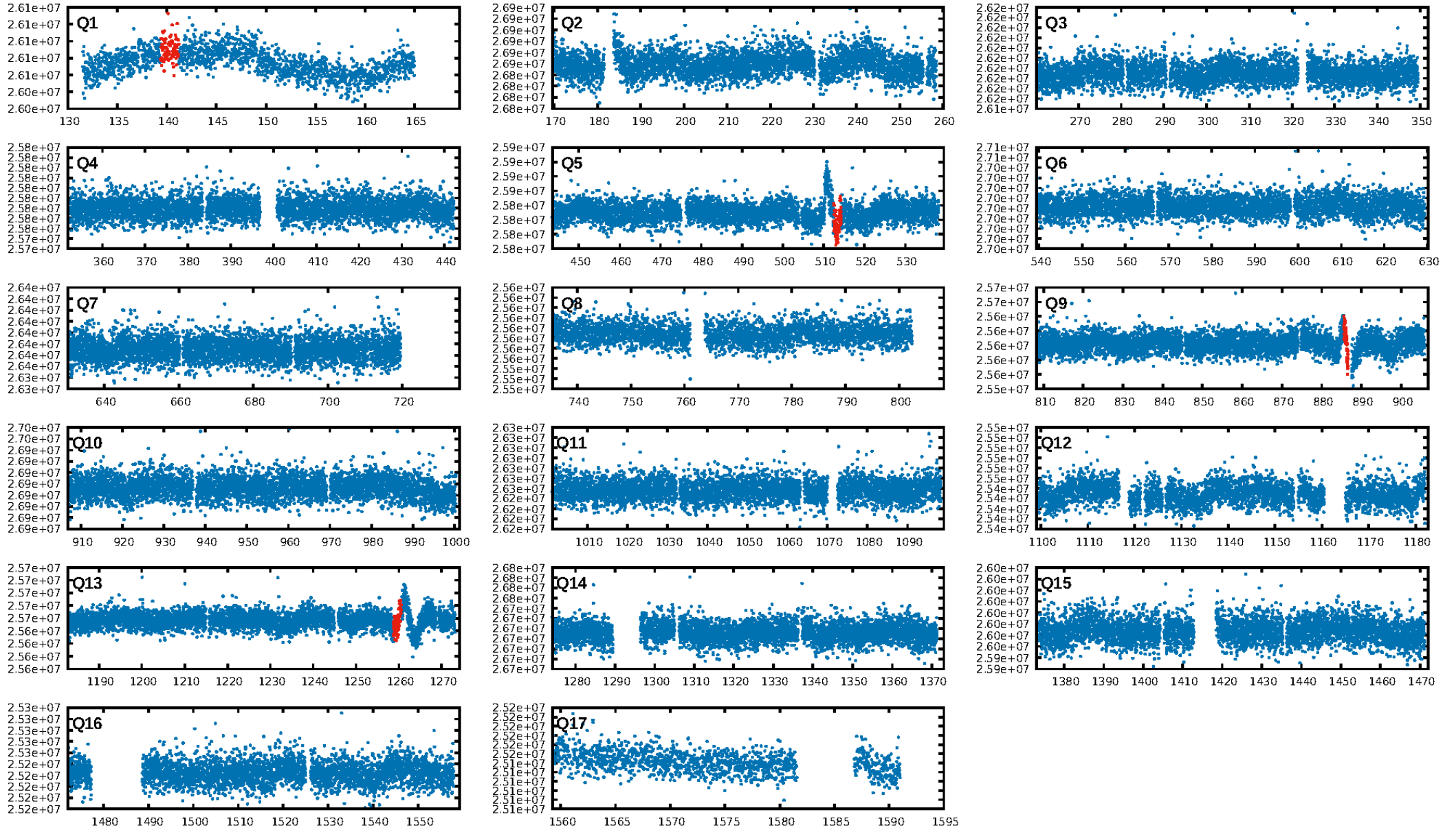
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.8%  
Bootstrap-pfa: 7.68e-12  
RollingBand-fgt: 0.00 [0/3]  
GhostDiagnostic-chr: 3.937  
Centroid-sig: 74.3%  
Centroid-so: 0.956 arcsec [0.53σ]  
OotOffset-rm: 4.997 arcsec [54.54σ]  
KicOffset-rm: 4.945 arcsec [53.92σ]  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [3/3]

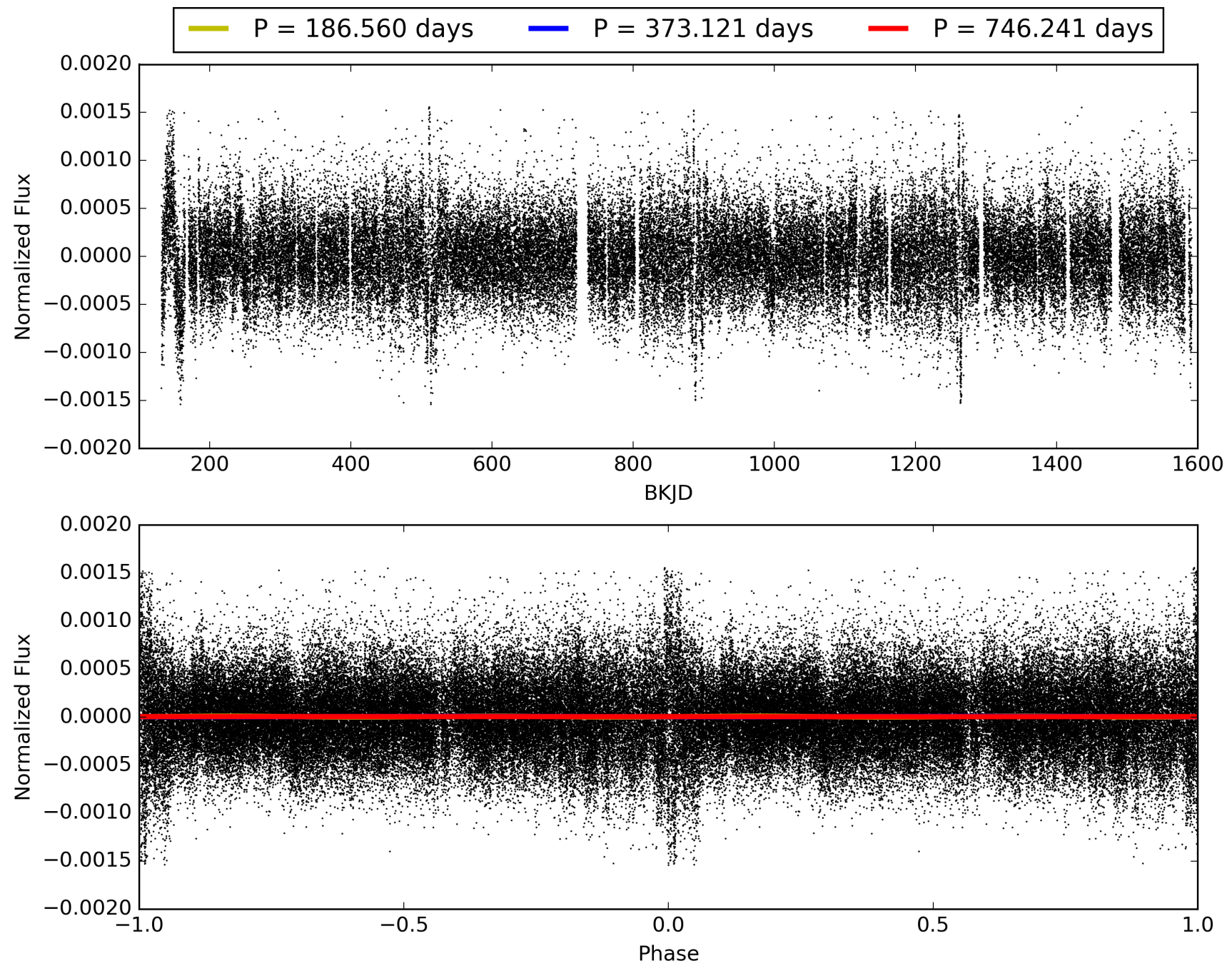
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:02:04 Z

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

# TCE 008817865-01, PDC Light Curves

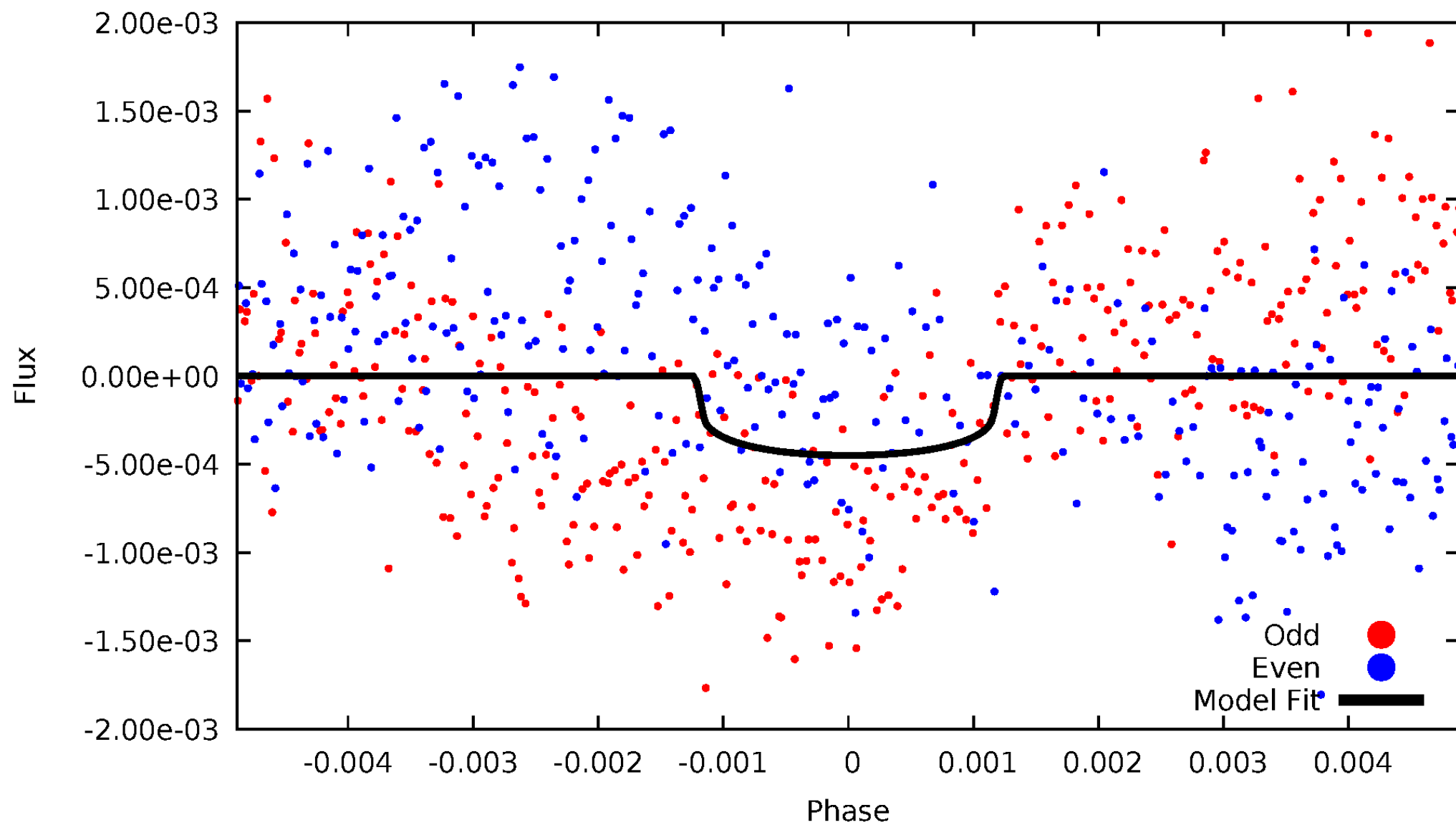


TCE 008817865-01



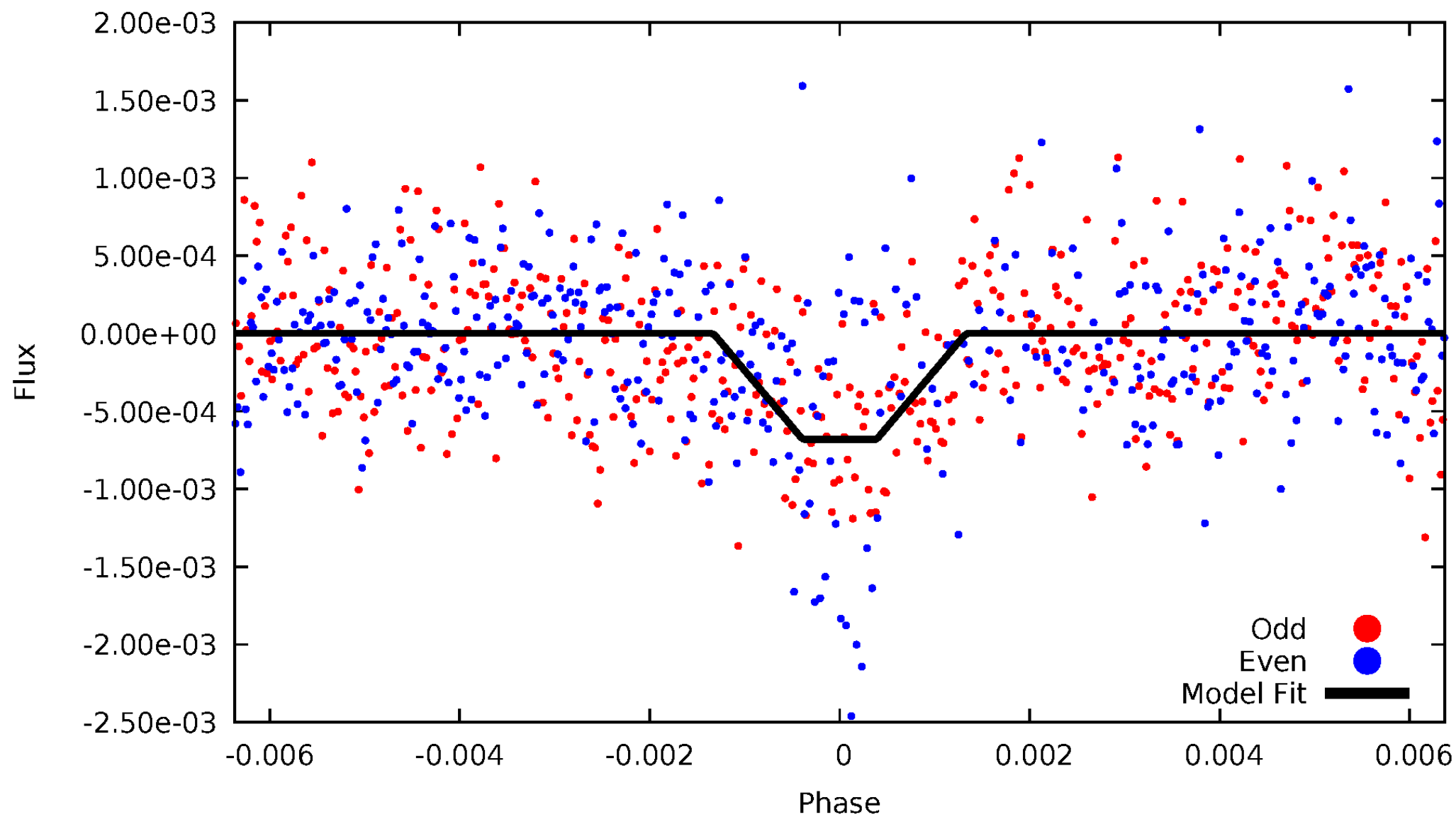
# DV Odd/Even

TCE 008817865-01



# ALT Odd/Even

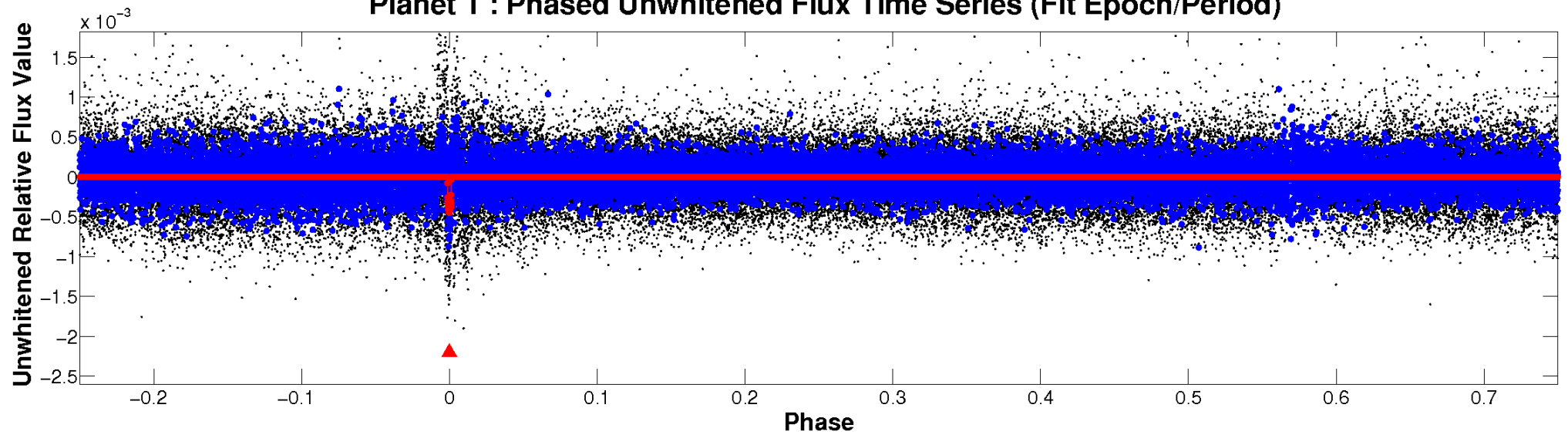
TCE 008817865-01



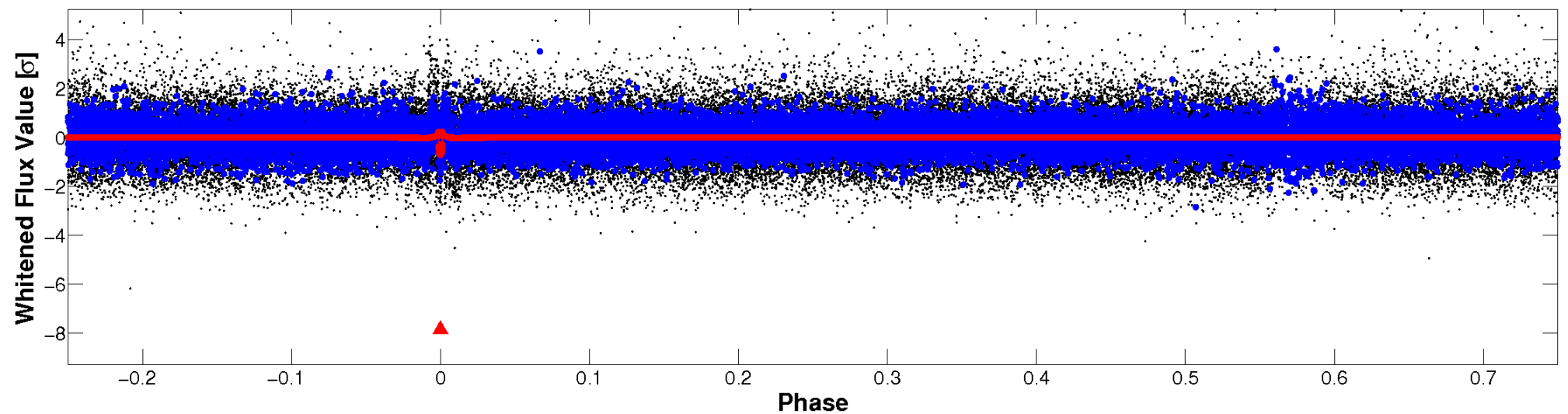


# Non-Whitened Vs. Whitened Light Curve

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

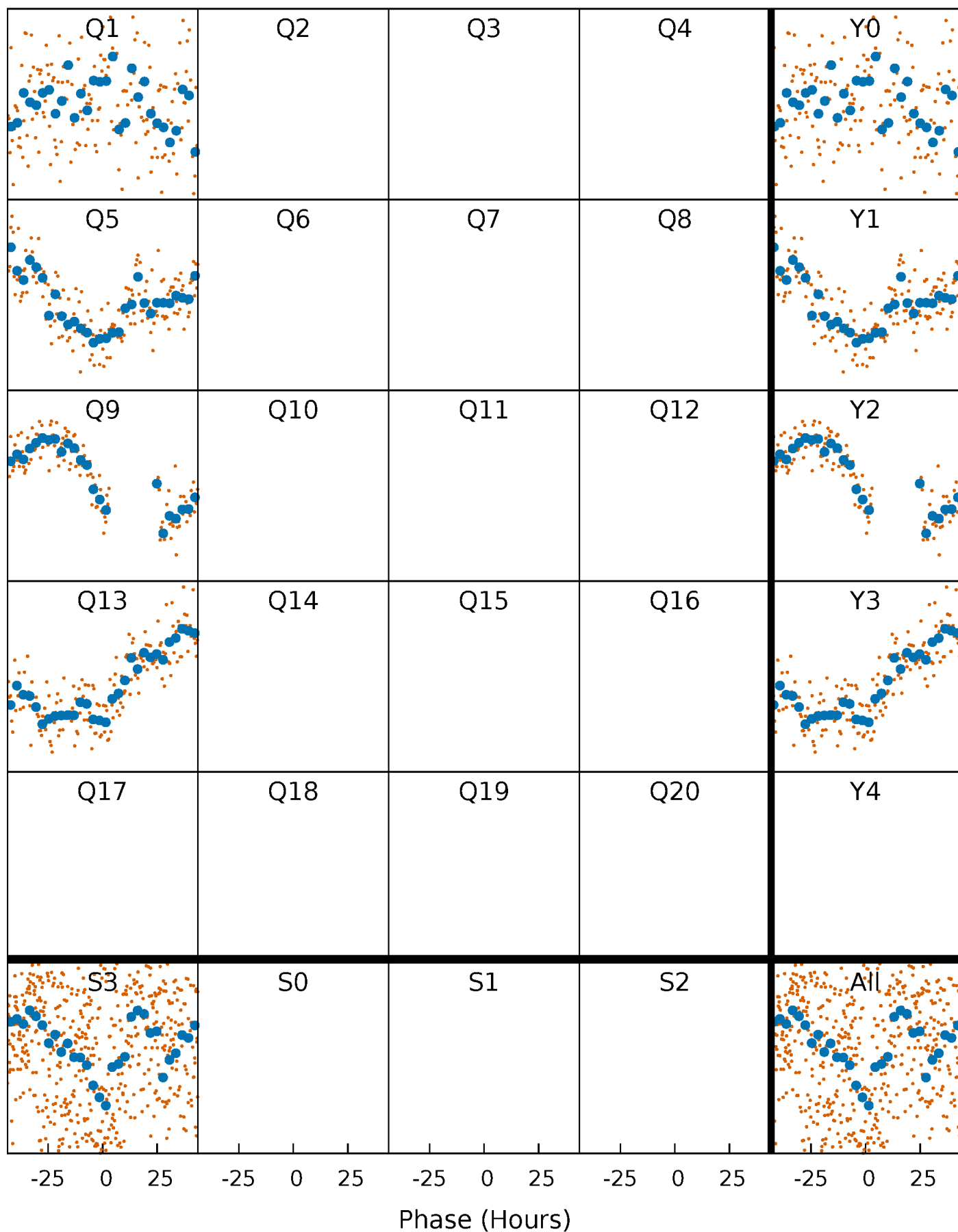


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

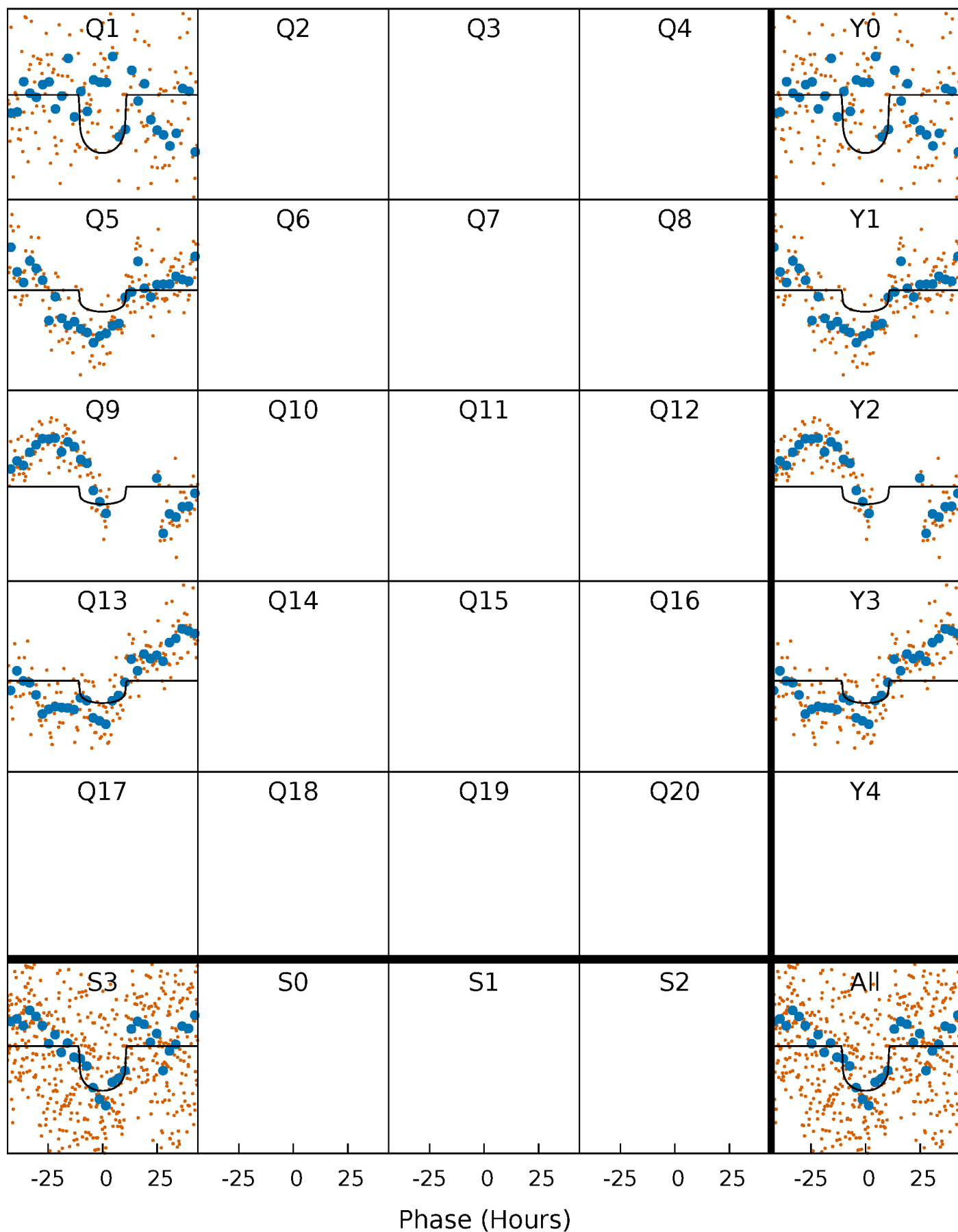
TCE 008817865-01   P=373.120716 Days    $T_0=140.271723$  (BKJD)





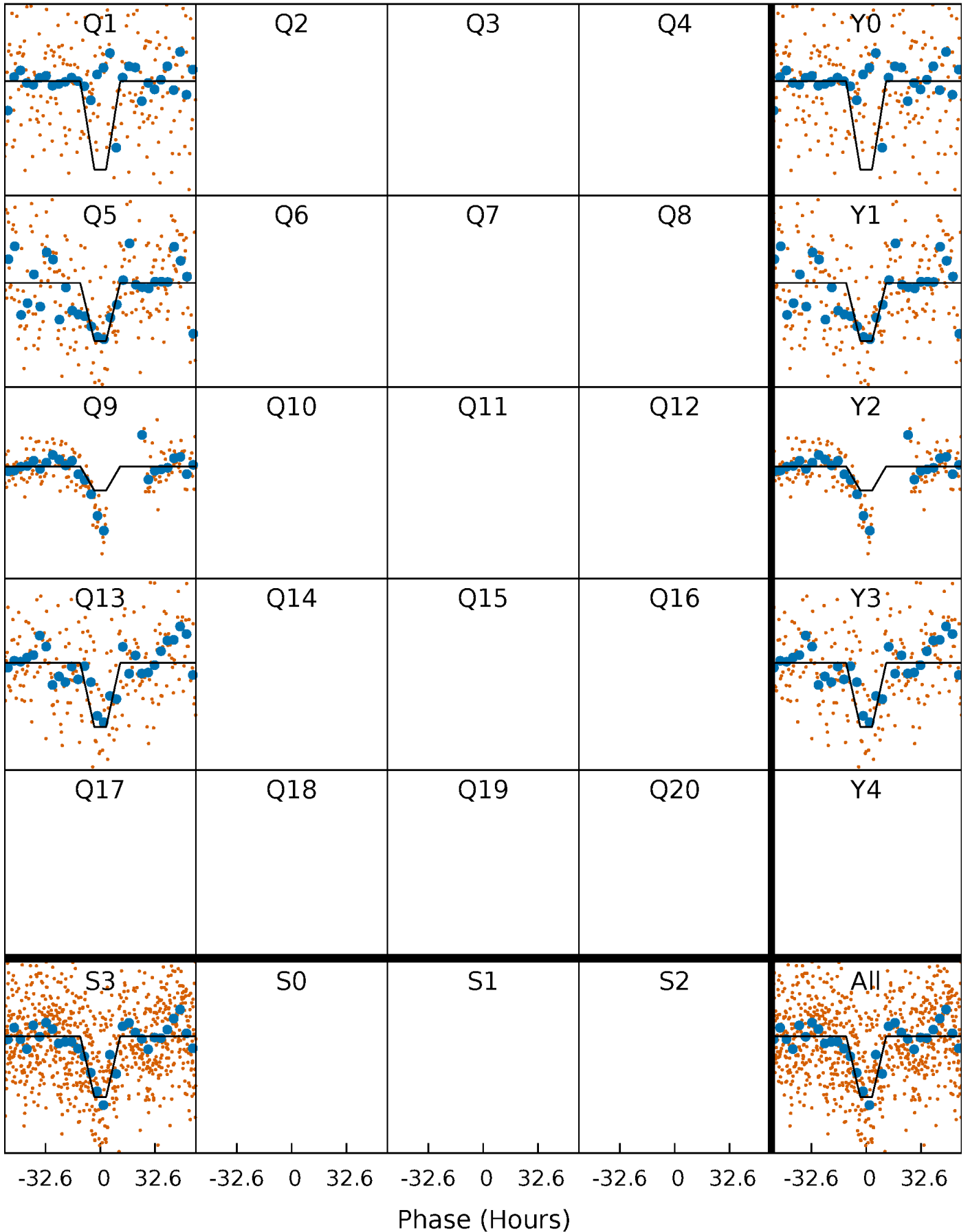
# DV Quarter-Phased Transit Curves

TCE 008817865-01     $P=373.120716$  Days     $T_0=140.271723$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

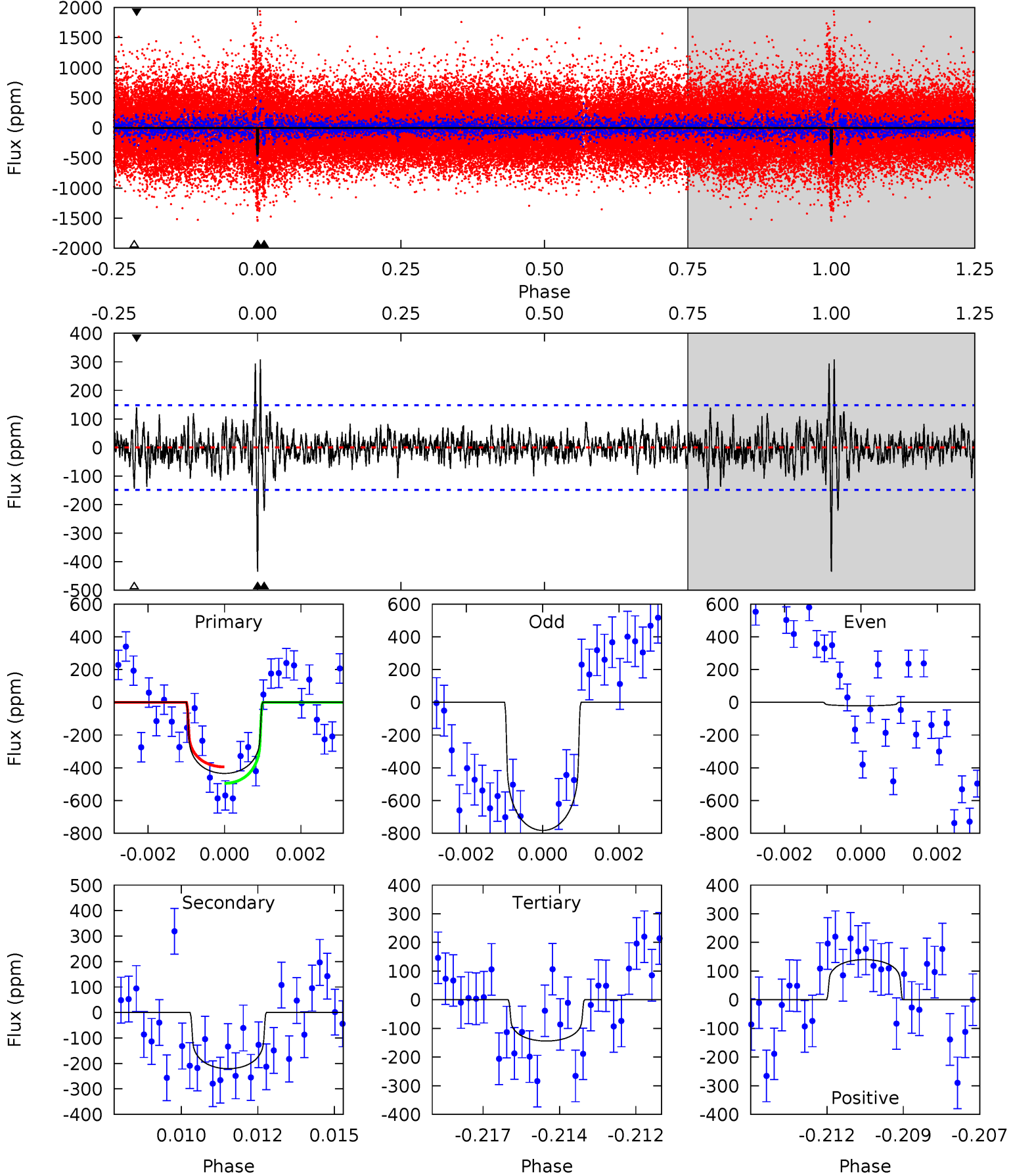
TCE 008817865-01 P=373.123617 Days  $T_0=140.241441$  (BKJD)



# DV Model-Shift Uniqueness Test

008817865-01, P = 373.120716 Days, E = 140.271723 Days

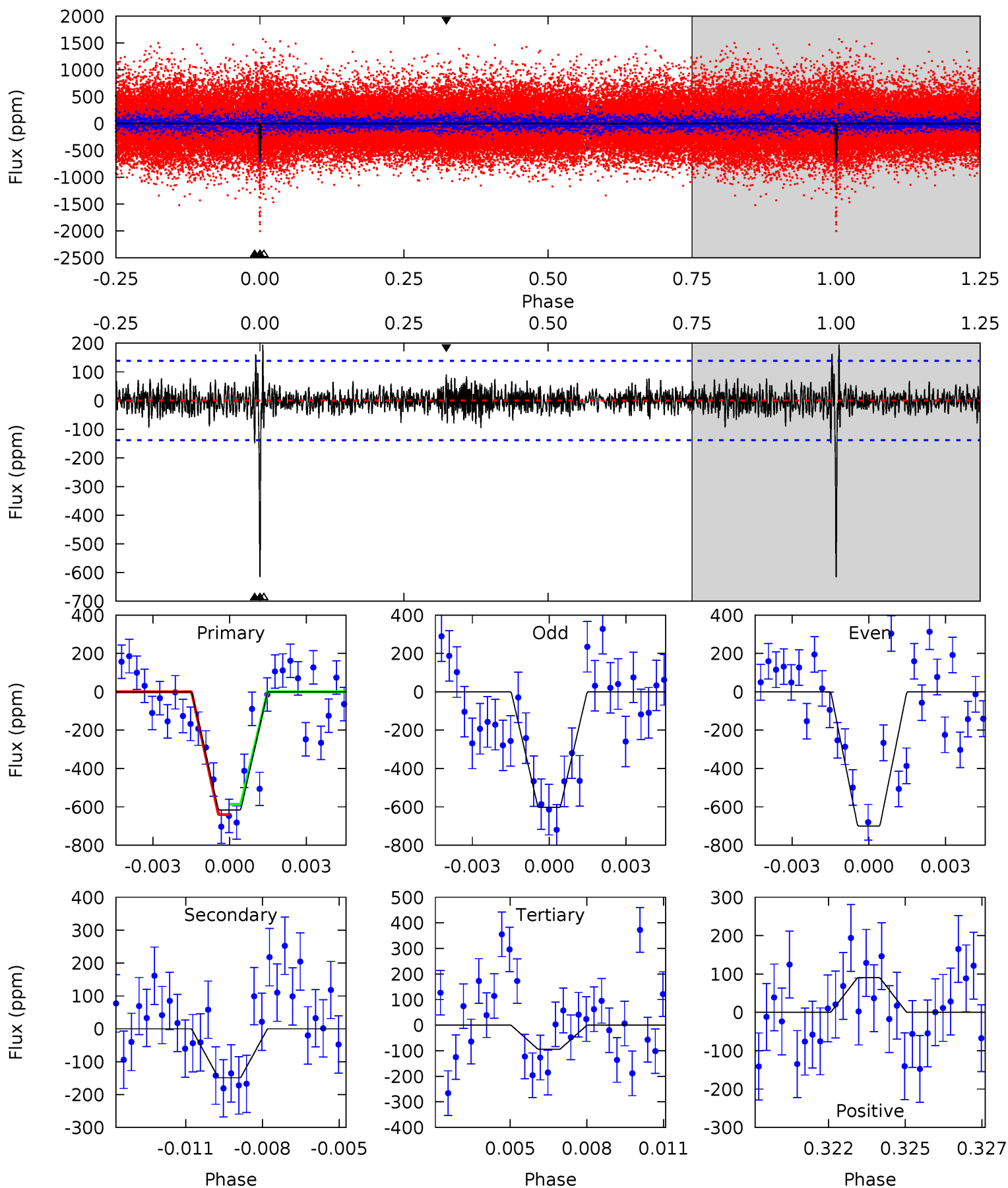
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	7.86	5.13	4.99	5.29	3.02	1.42	10.4	10.5	2.73	2.87	13.6	1.17	0.42	1.79



# Alt Model-Shift Uniqueness Test

008817865-01, P = 373.123617 Days, E = 140.241441 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
23.4	5.67	3.58	3.44	5.27	3.00	1.07	19.9	20.0	2.09	2.23	1.85	1.09	0.24	1.03



### Stellar Parameters For KIC 008817865

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5841^{+156}_{-174}$	$4.536^{+0.048}_{-0.204}$	$-0.180^{+0.300}_{-0.300}$	$0.875^{+0.252}_{-0.084}$	$0.958^{+0.110}_{-0.121}$	$2.015^{+0.510}_{-0.983}$
	+3%/-3%	+1%/-4%	+167%/-167%	+29%/-10%	+11%/-13%	+25%/-49%
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 008817865-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-221 \pm 28$	$2.04^{+1.12}_{-1.08}$	$345^{+23}_{-17}$	$5066^{+2379}_{-844}$	$29210^{+100225}_{-17416}$
Alt.	$-149 \pm 26$	$2.48^{+1.32}_{-0.95}$	$343^{+24}_{-15}$	$4276^{+990}_{-572}$	$12566^{+22189}_{-6995}$

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

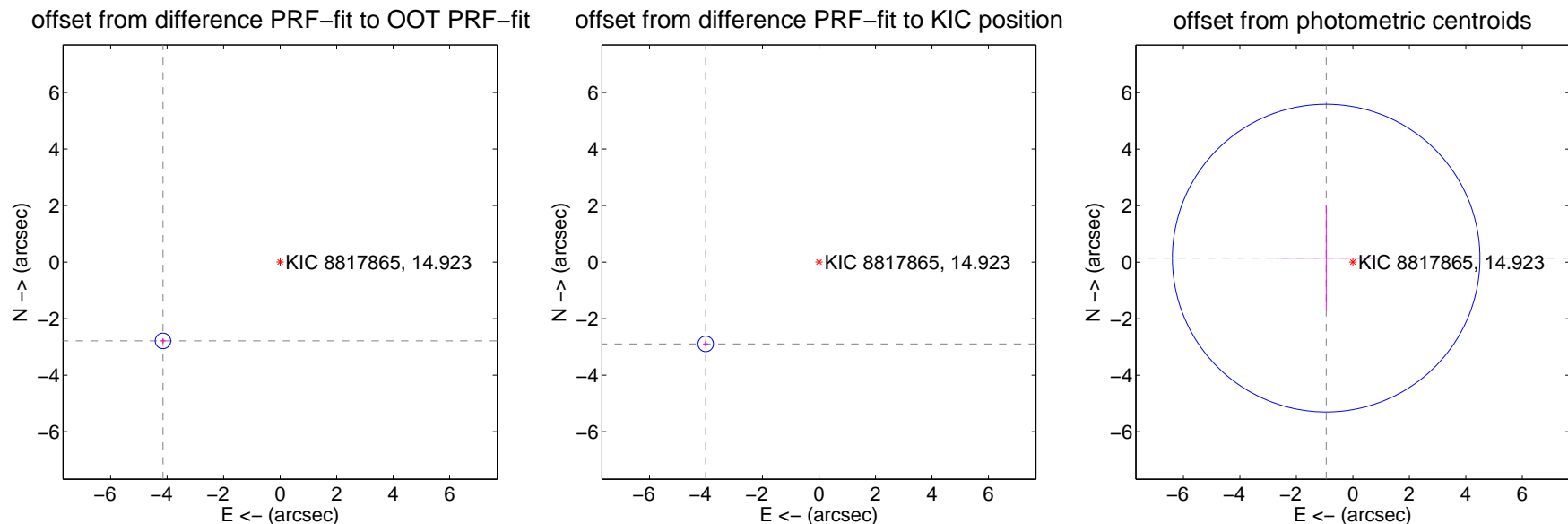
## DV Centroid Data

Supplemental centroid analysis for 008817865-01. Kepler magnitude: 14.92. Transit SNR 7.83

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

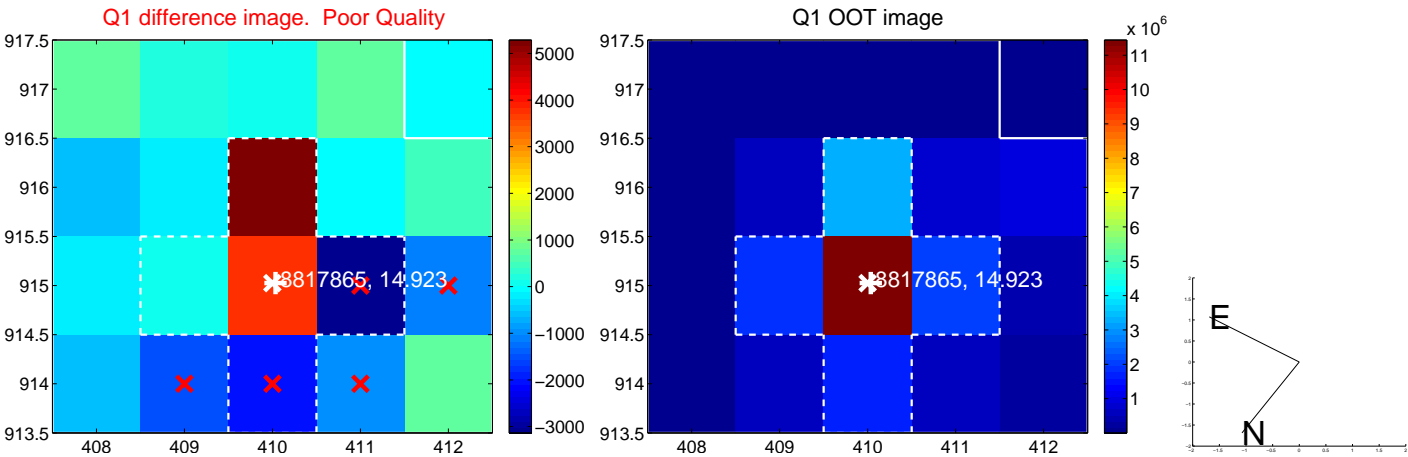
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.997 \pm 0.092$	54.54	$4.147 \pm 0.091$	$-2.788 \pm 0.094$
PRF-fit source offset from KIC position	$4.945 \pm 0.092$	53.92	$4.010 \pm 0.091$	$-2.894 \pm 0.094$
photometric centroid source offset	$0.96 \pm 1.82$	0.53	$0.95 \pm 1.81$	$0.14 \pm 1.86$



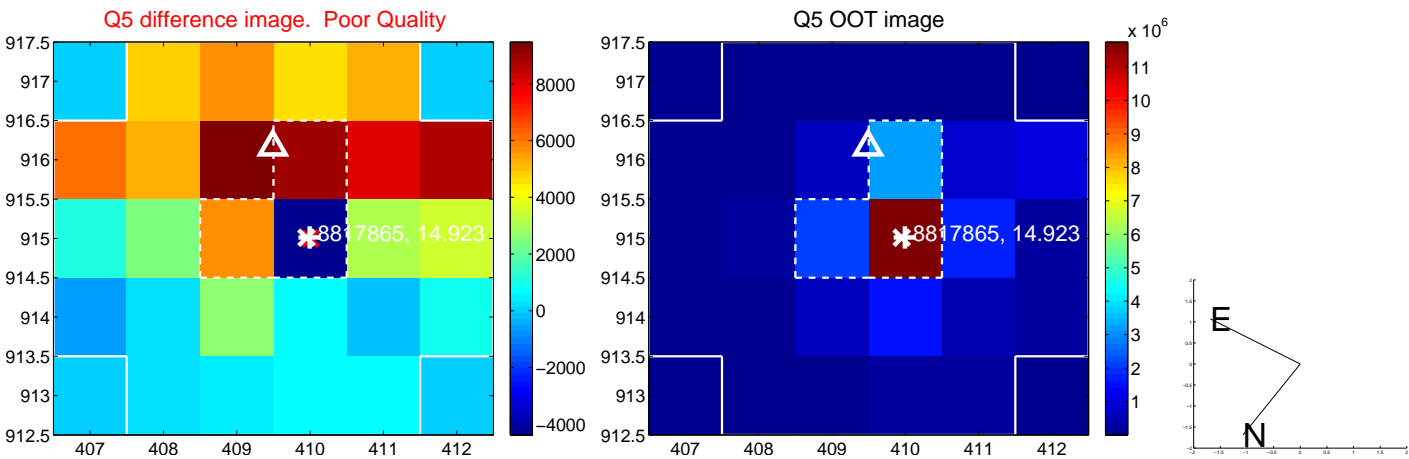
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



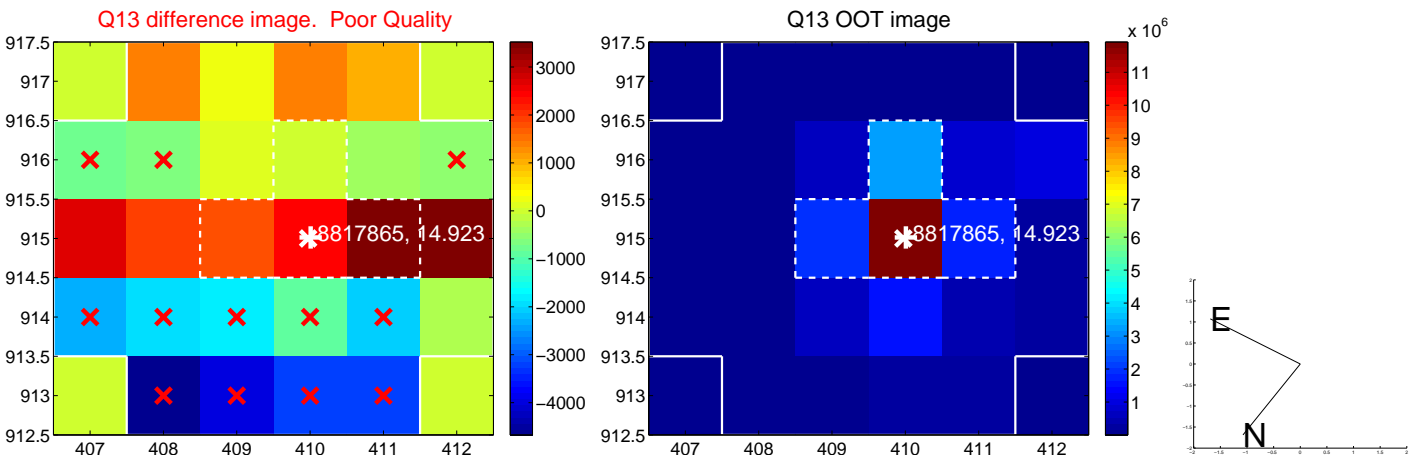
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



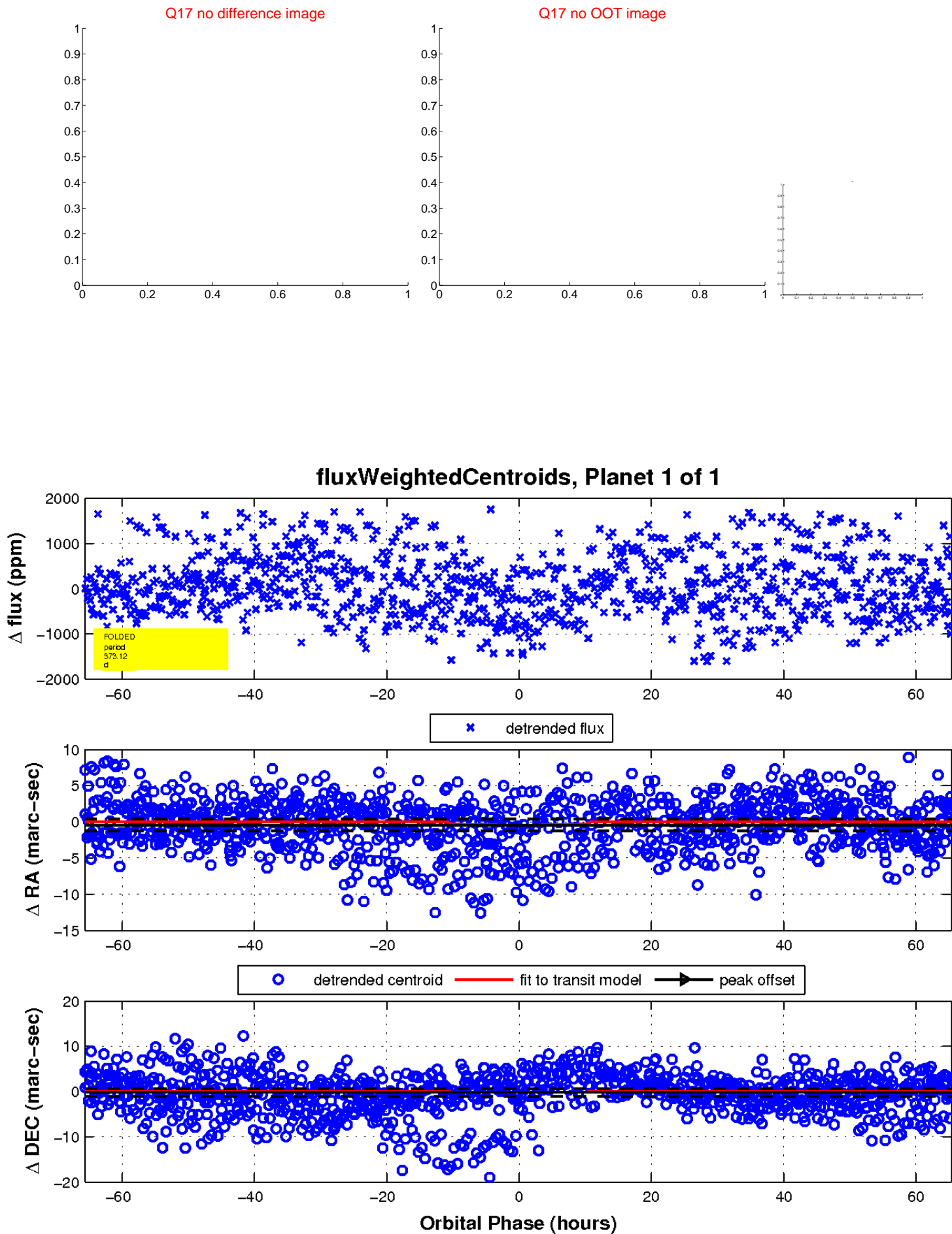
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



# UKIRT Image

Declination

