

# KIC 007903771

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007903771-01	OBS	No	367.736465	235.401574	863.3	31.910	8.1	10.6	0.87	5853	4.87	0.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007903771-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE--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.

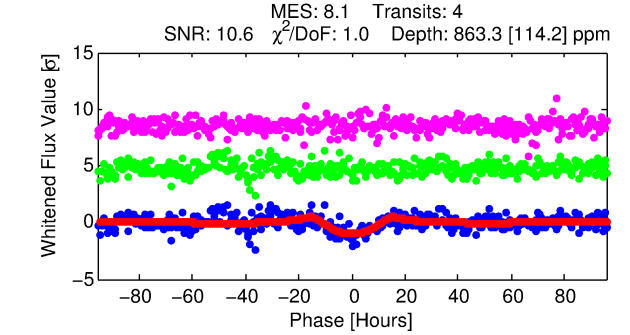
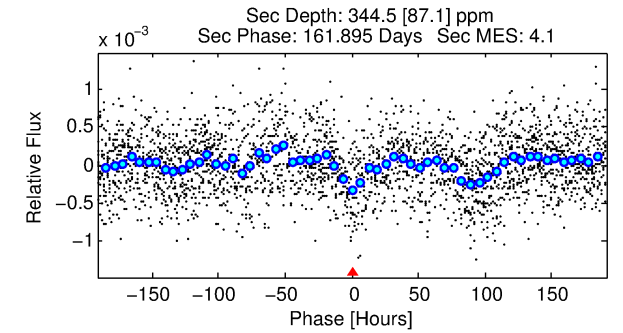
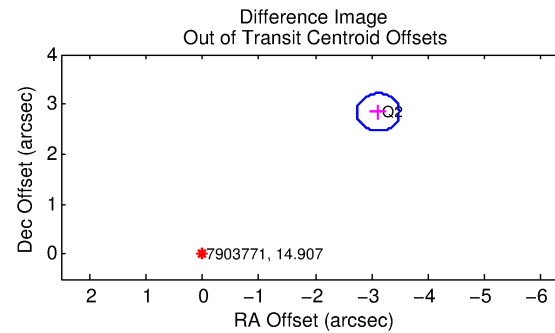
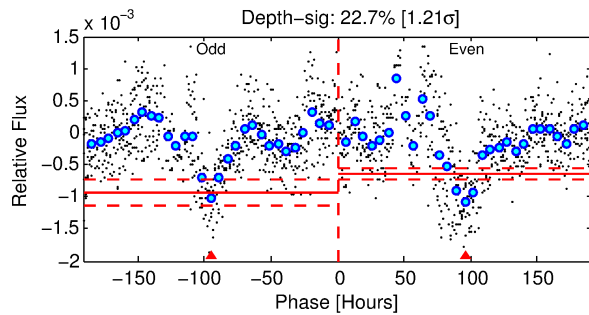
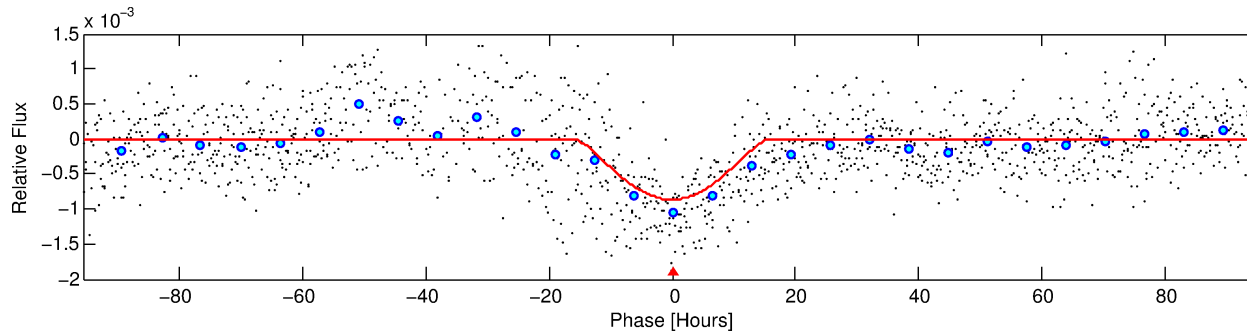
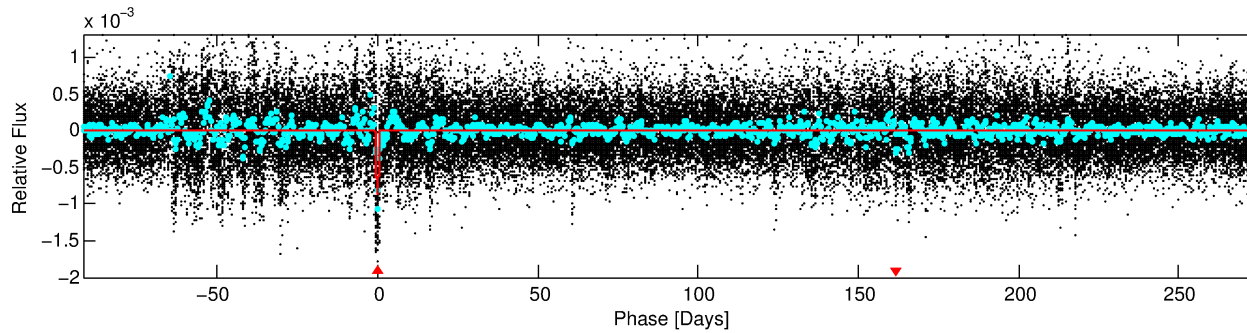
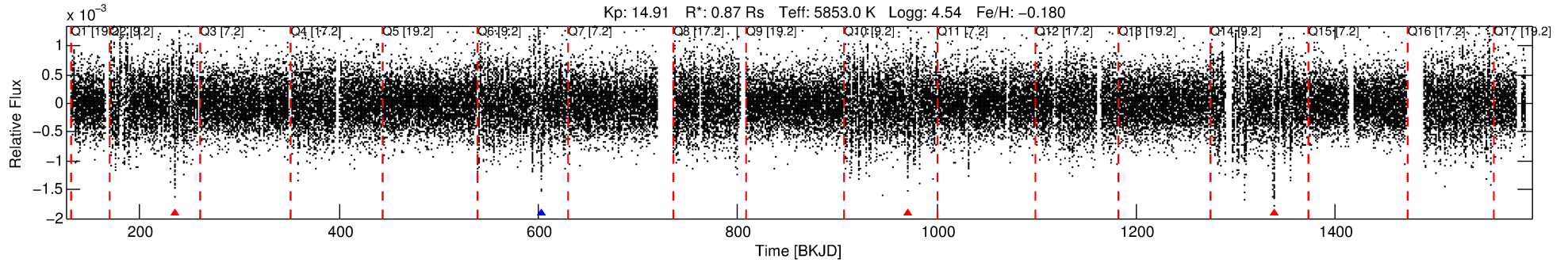
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007903771-01

No Significant Match Found

# DV One-Page Summary

KIC: 7903771 Candidate: 1 of 1 Period: 367.736 d



## DV Fit Results:

Period = 367.73647 [0.02413] d  
Epoch = 235.4016 [0.0452] BKJD  
Rp/R\* = 0.0514 [0.0877]  
a/R\* = 28.99 [12.09]  
b = 1.00 [0.13]  
Seff = 0.81 [0.30]  
Teq = 242 [22] K  
Rp = 4.87 [8.41] Re  
a = 0.9917 [0.2319] AU  
Ag = 7851.54 [26987.35] [0.29σ]  
Teffp = 3516 [3007] K [1.09σ]

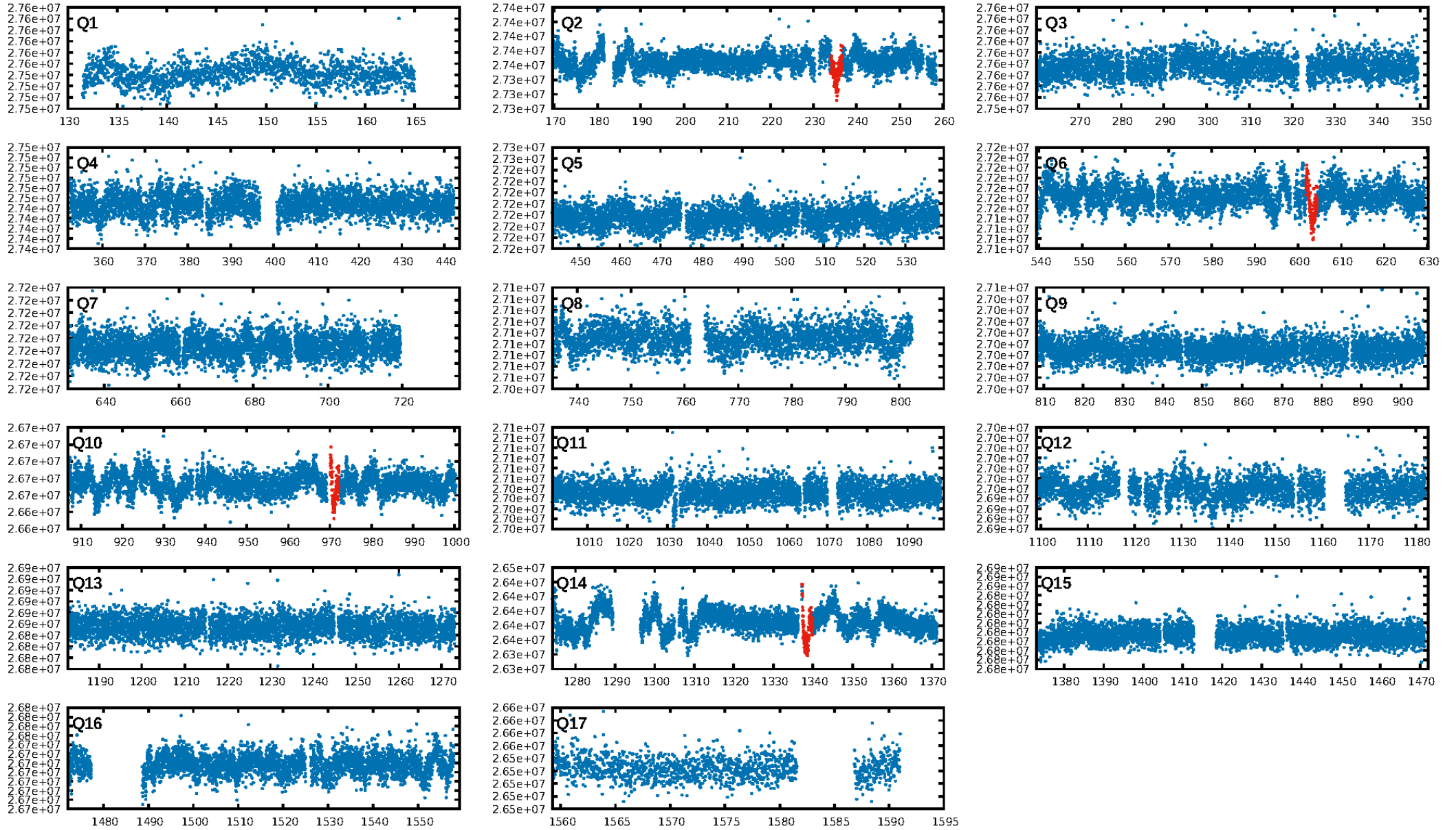
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 13.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.28e-09  
RollingBand-fgt: 0.25 [1/4]  
GhostDiagnostic-chr: 2.486  
Centroid-sig: 0.0%  
Centroid-so: 6.470 arcsec [3.21σ]  
OotOffset-rm: 4.214 arcsec [33.40σ]  
KicOffset-rm: 4.165 arcsec [33.04σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

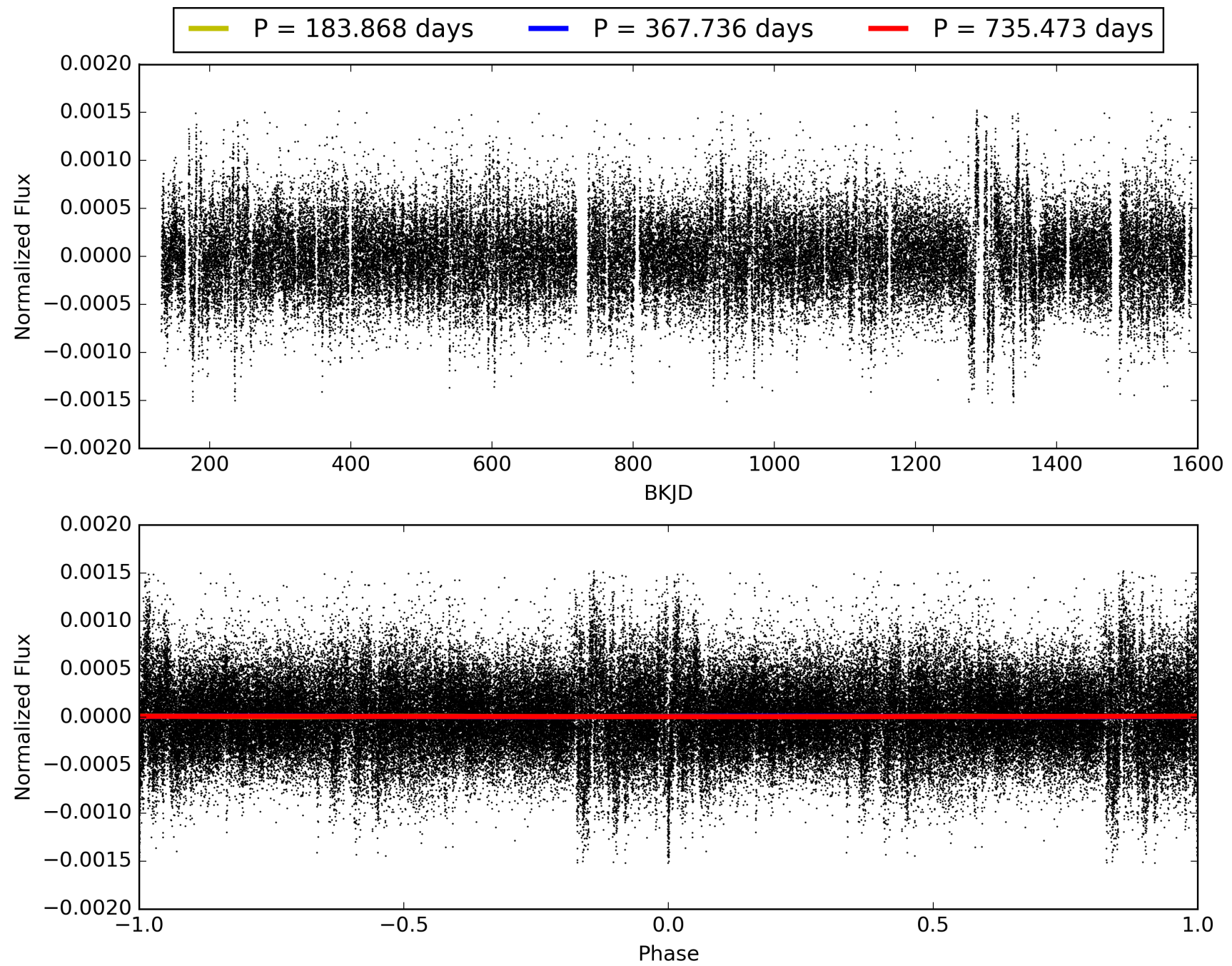
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:59:50 Z

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

# TCE 007903771-01, PDC Light Curves

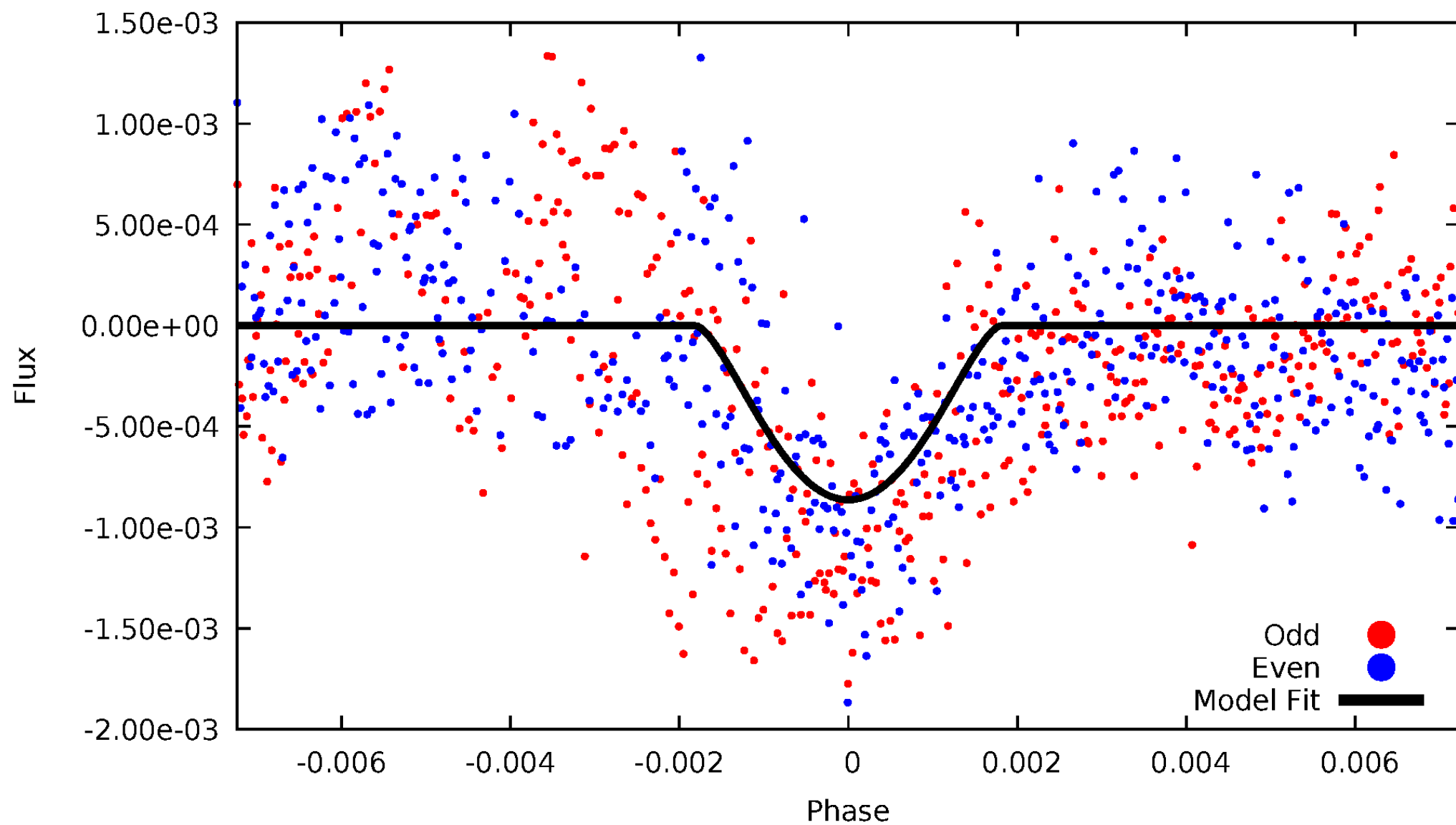


TCE 007903771-01



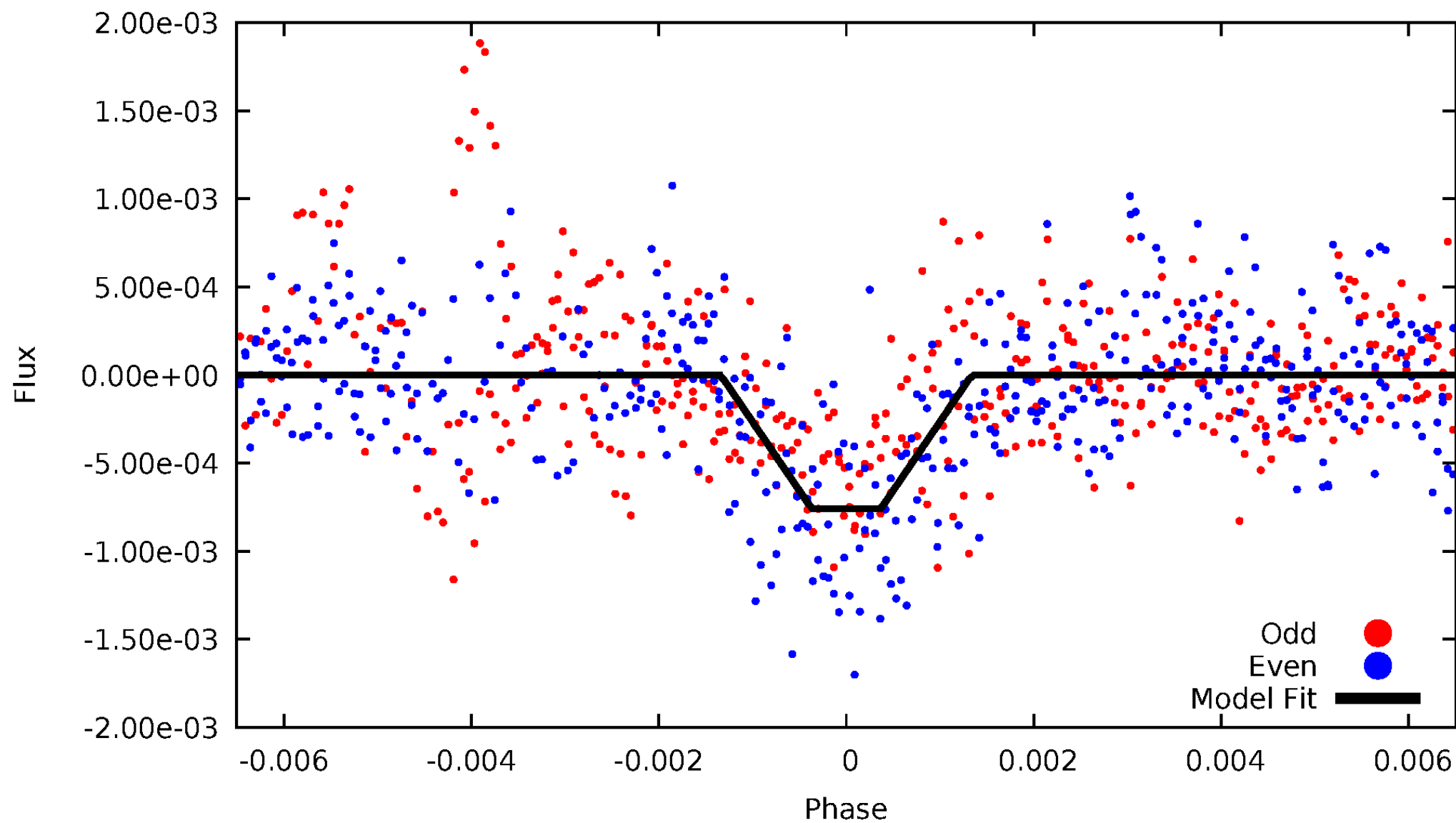
# DV Odd/Even

TCE 007903771-01



# ALT Odd/Even

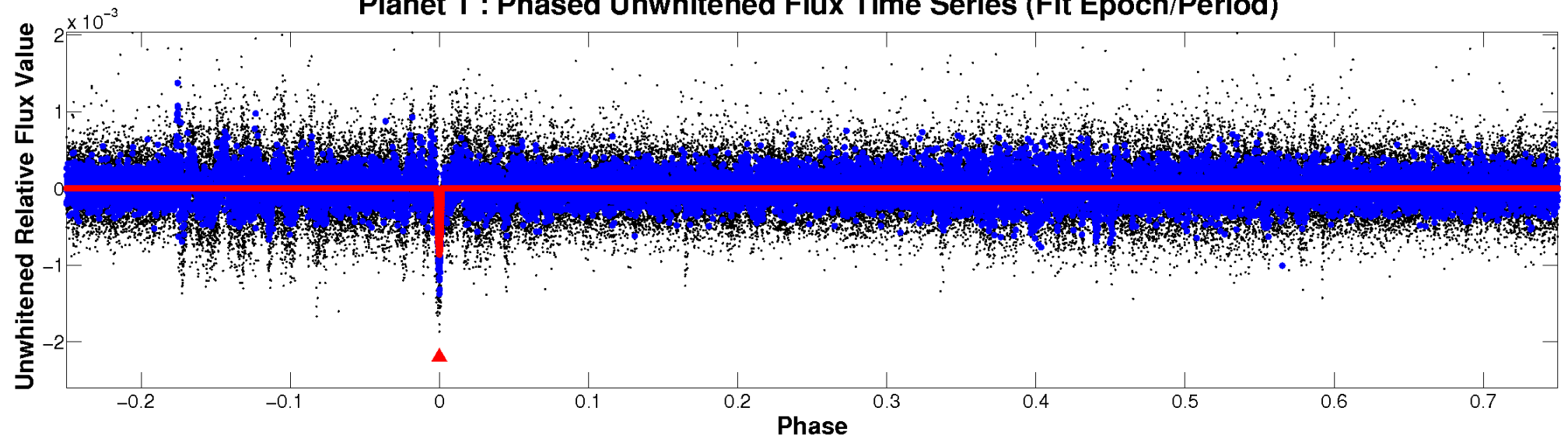
TCE 007903771-01



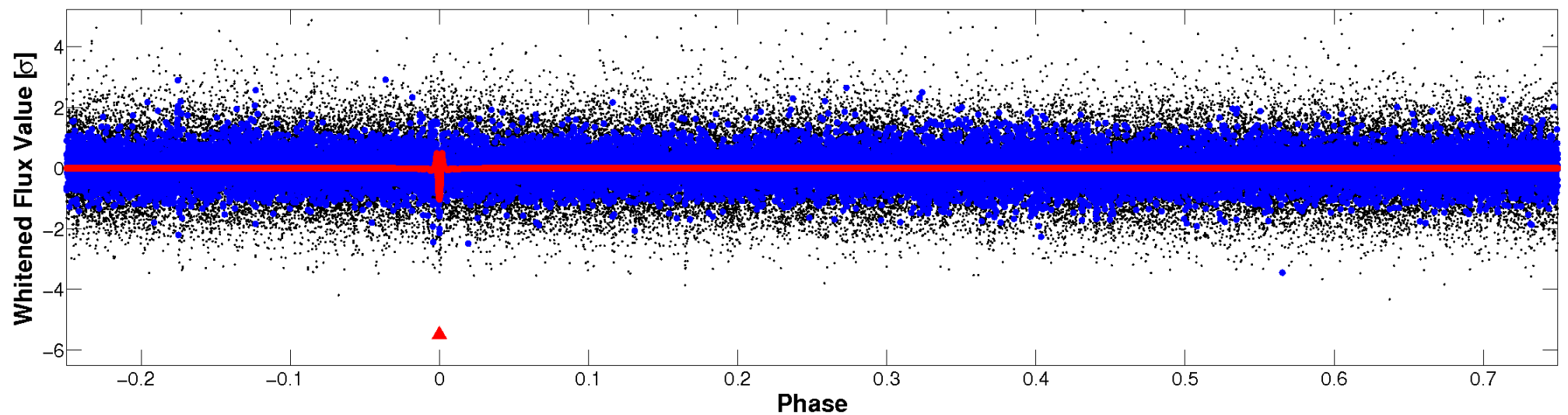


# Non-Whitened Vs. Whitened Light Curve

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

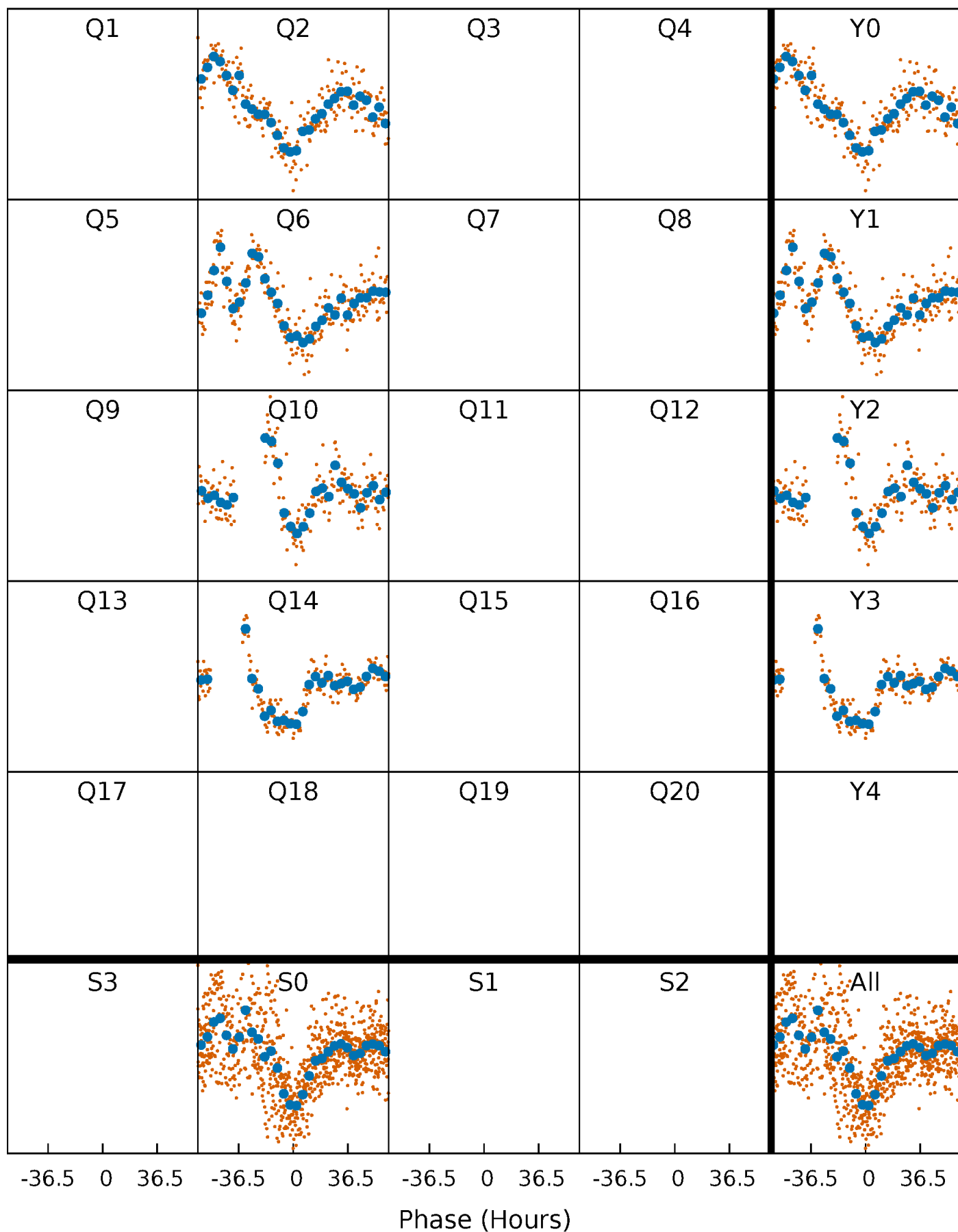


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

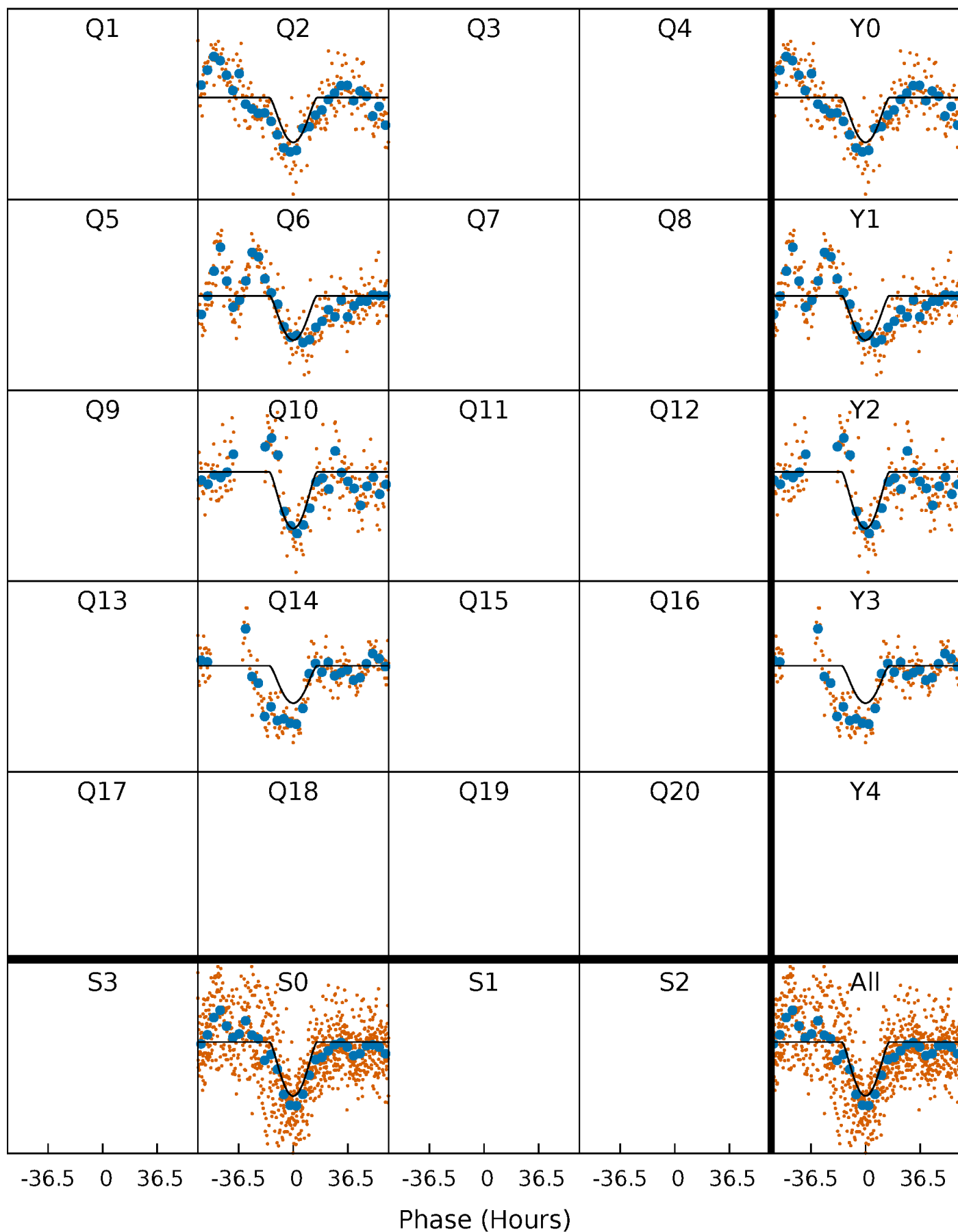
TCE 007903771-01 P=367.736465 Days  $T_0=235.401574$  (BKJD)





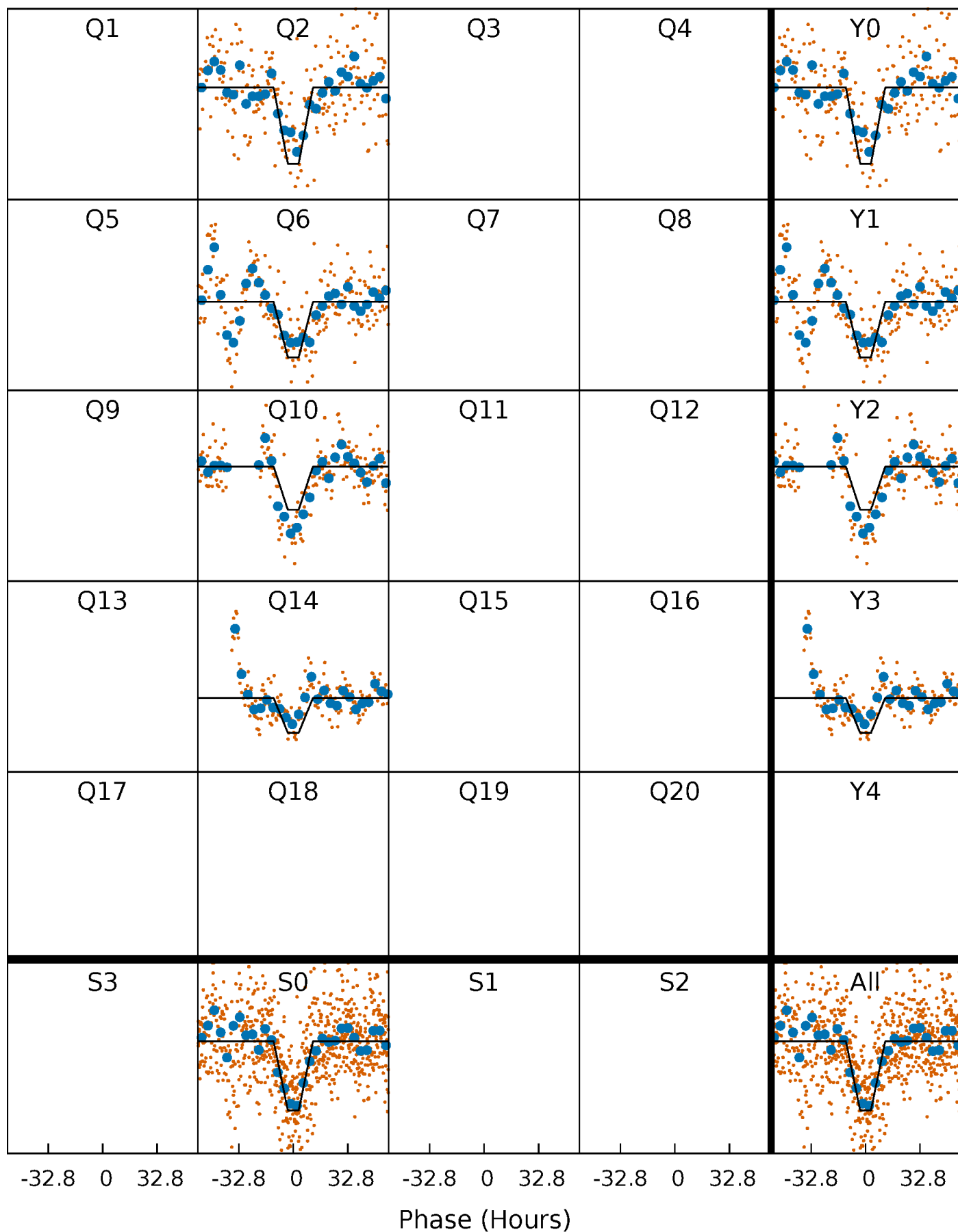
# DV Quarter-Phased Transit Curves

TCE 007903771-01 P=367.736465 Days  $T_0=235.401574$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

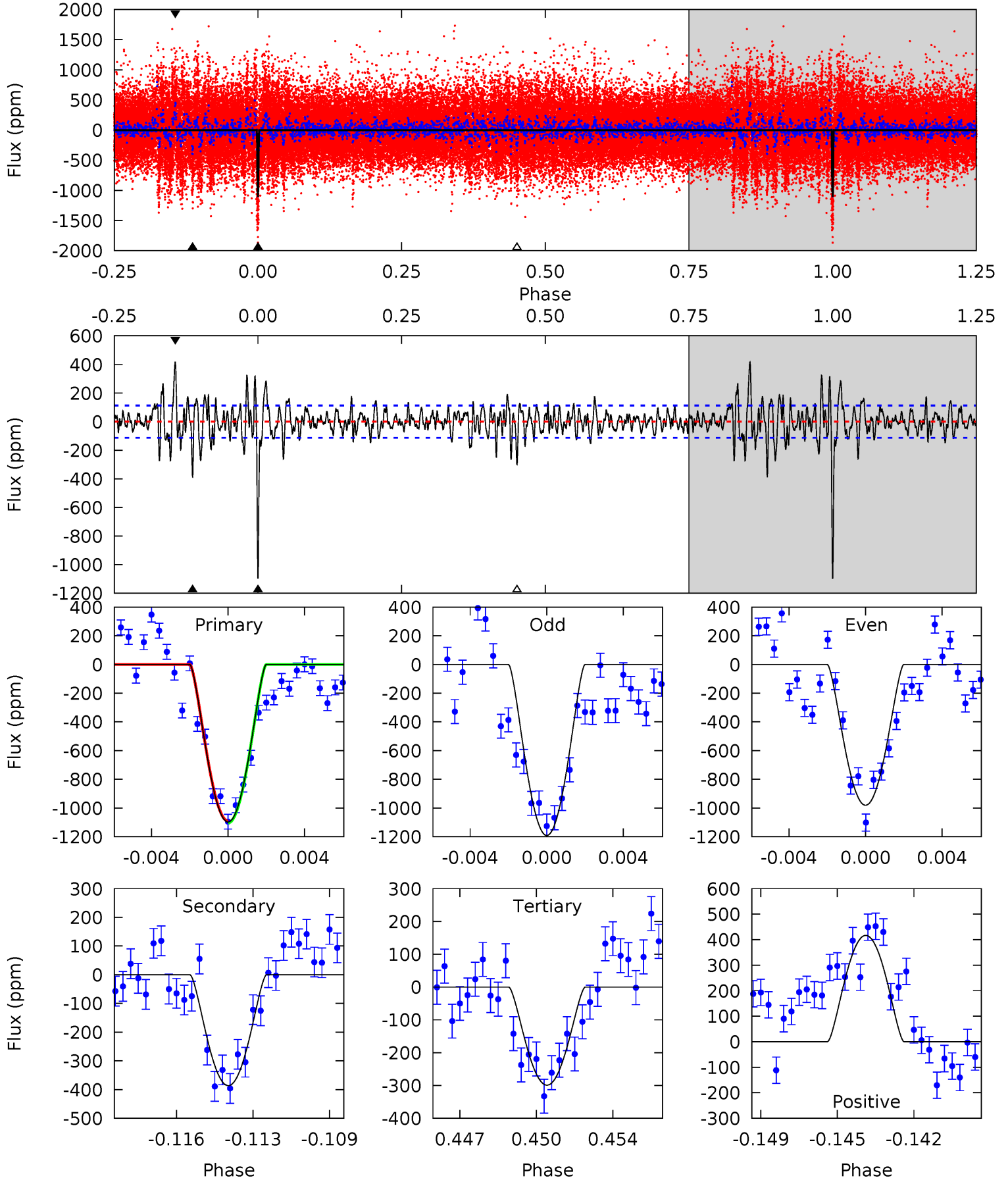
TCE 007903771-01 P=367.824514 Days  $T_0=235.265387$  (BKJD)



# DV Model-Shift Uniqueness Test

007903771-01, P = 367.736465 Days, E = 235.401574 Days

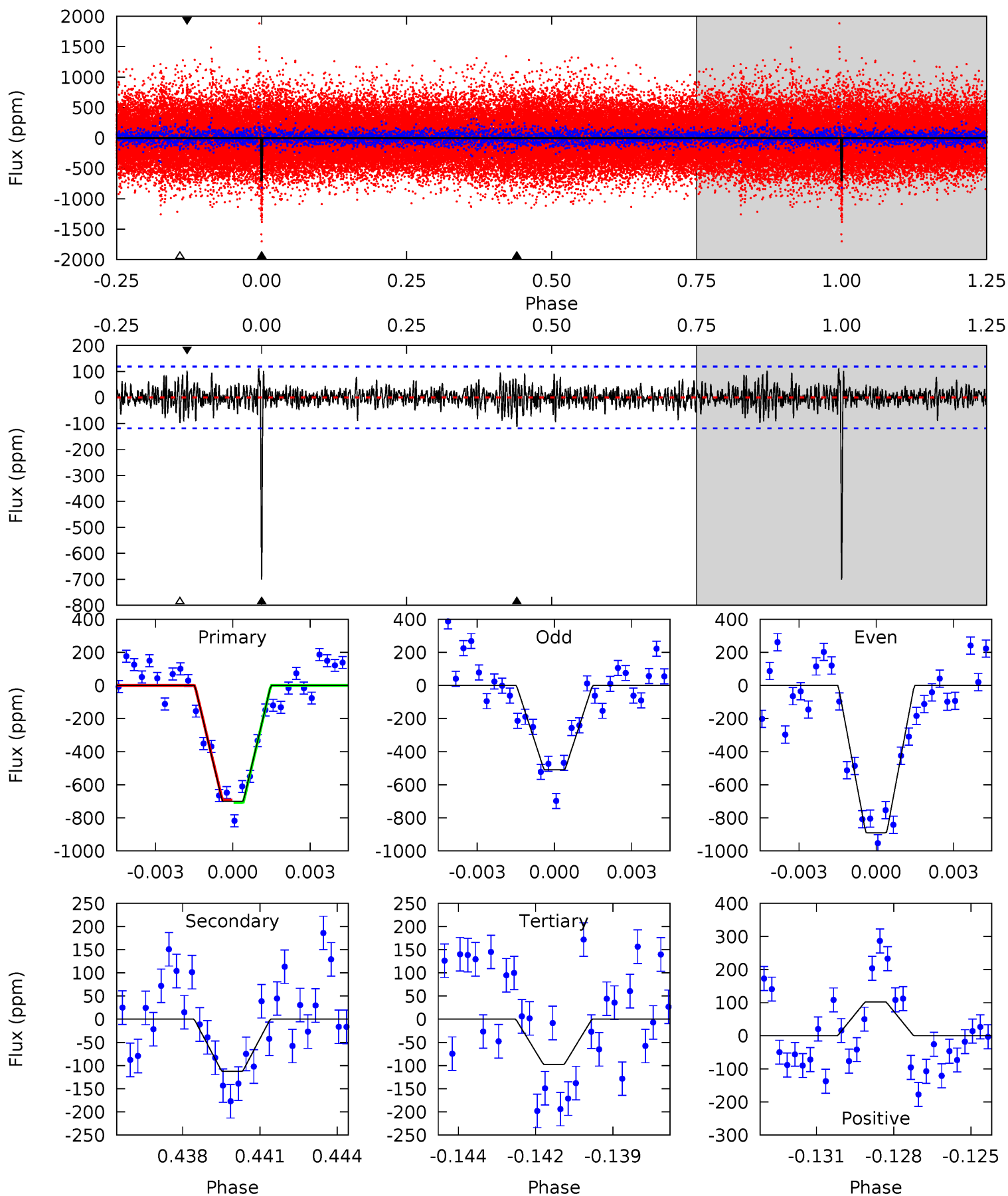
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.8	17.9	13.8	19.3	5.22	2.91	3.87	37.0	31.5	4.04	-1.41	4.90	1.07	0.28	0.30



# Alt Model-Shift Uniqueness Test

007903771-01, P = 367.824514 Days, E = 235.265387 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
31.0	4.99	4.32	4.54	5.27	3.00	1.23	26.7	26.5	0.67	0.45	8.43	1.18	0.14	0.36



### Stellar Parameters For KIC 007903771

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5853^{+147}_{-176}$	$4.544^{+0.035}_{-0.196}$	$-0.180^{+0.300}_{-0.300}$	$0.868^{+0.233}_{-0.078}$	$0.961^{+0.110}_{-0.110}$	$2.069^{+0.379}_{-1.007}$
	+3%/-3%	+1%/-4%	+167%/-167%	+27%/-9%	+11%/-11%	+18%/-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 007903771-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-386 \pm 22$	$8.51^{+7.49}_{-5.54}$	$347^{+21}_{-15}$	$3388^{+1414}_{-591}$	$2941^{+20162}_{-2150}$
Alt.	$-113 \pm 23$	$7.06^{+7.15}_{-4.97}$	$345^{+22}_{-15}$	$2956^{+1378}_{-512}$	$1193^{+11800}_{-916}$

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

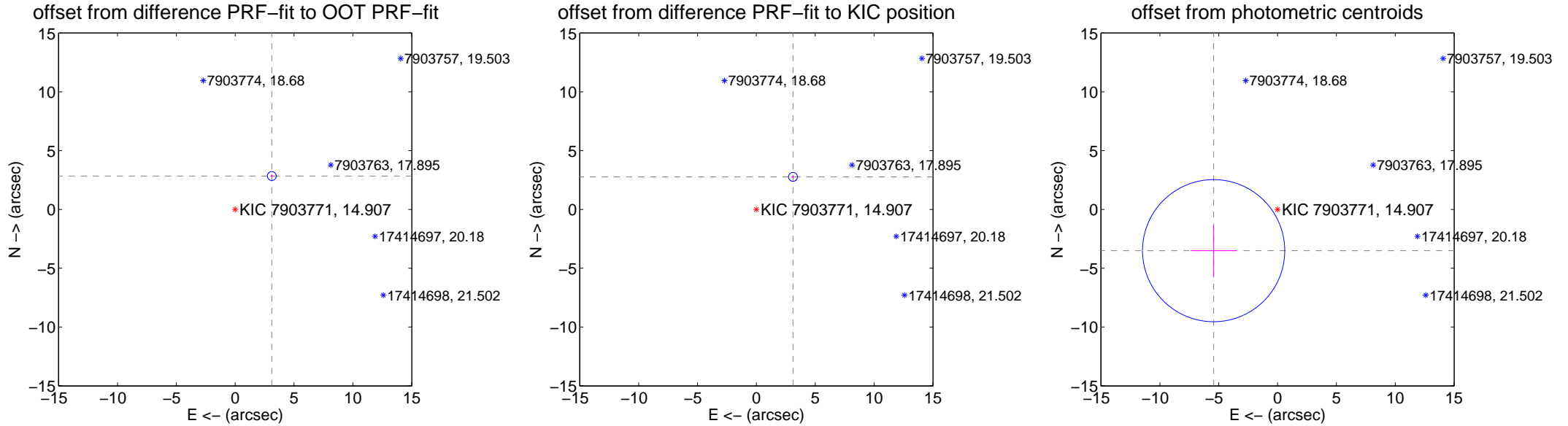
## DV Centroid Data

Supplemental centroid analysis for 007903771-01. Kepler magnitude: 14.91. Transit SNR 10.65

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	4.214 $\pm$ 0.126	33.40	-3.112 $\pm$ 0.122	2.841 $\pm$ 0.131
PRF-fit source offset from KIC position	4.165 $\pm$ 0.126	33.04	-3.110 $\pm$ 0.122	2.770 $\pm$ 0.131
photometric centroid source offset	6.47 $\pm$ 2.01	3.21	5.44 $\pm$ 1.95	-3.51 $\pm$ 2.16



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.

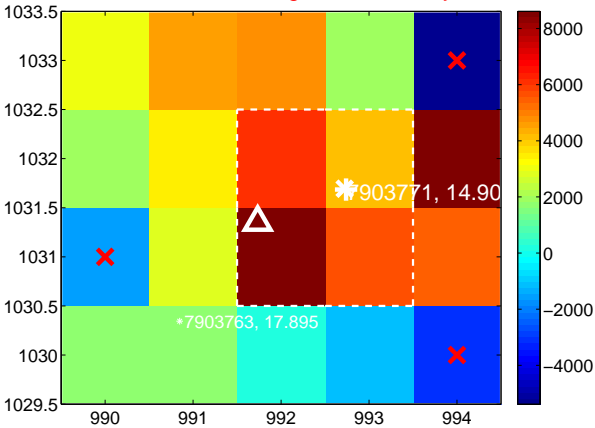
Q1 no difference image



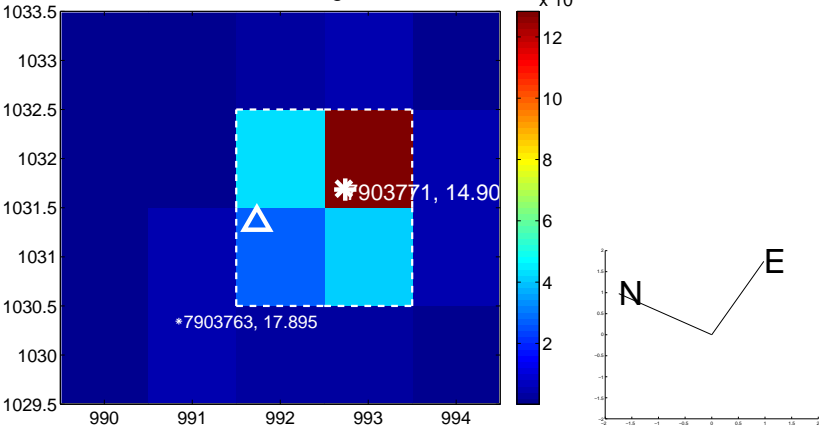
Q1 no OOT image



Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

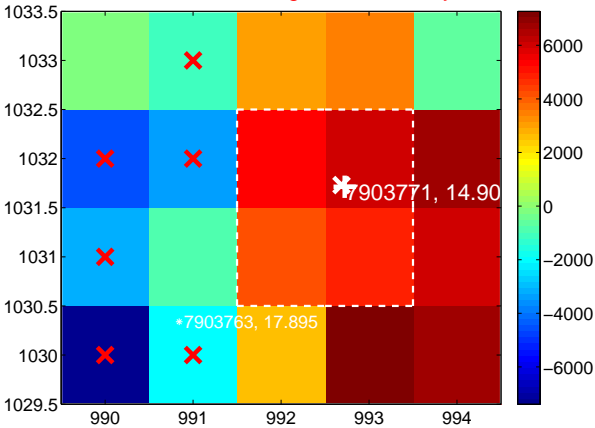
Q5 no difference image



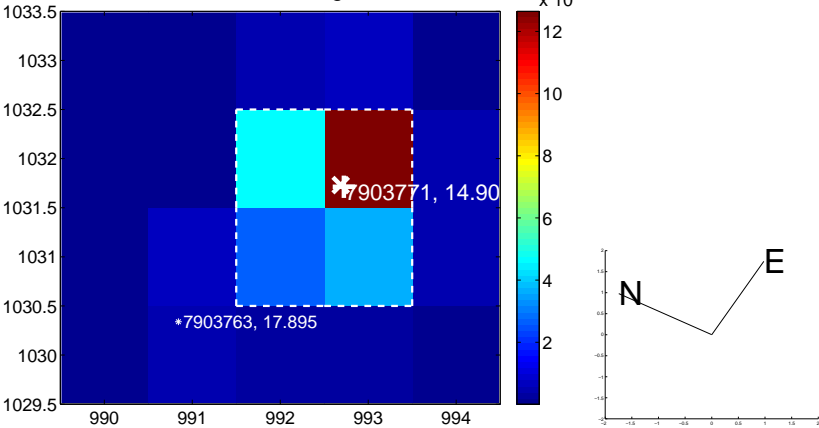
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no OOT image



Q8 no difference image



Q8 no OOT image



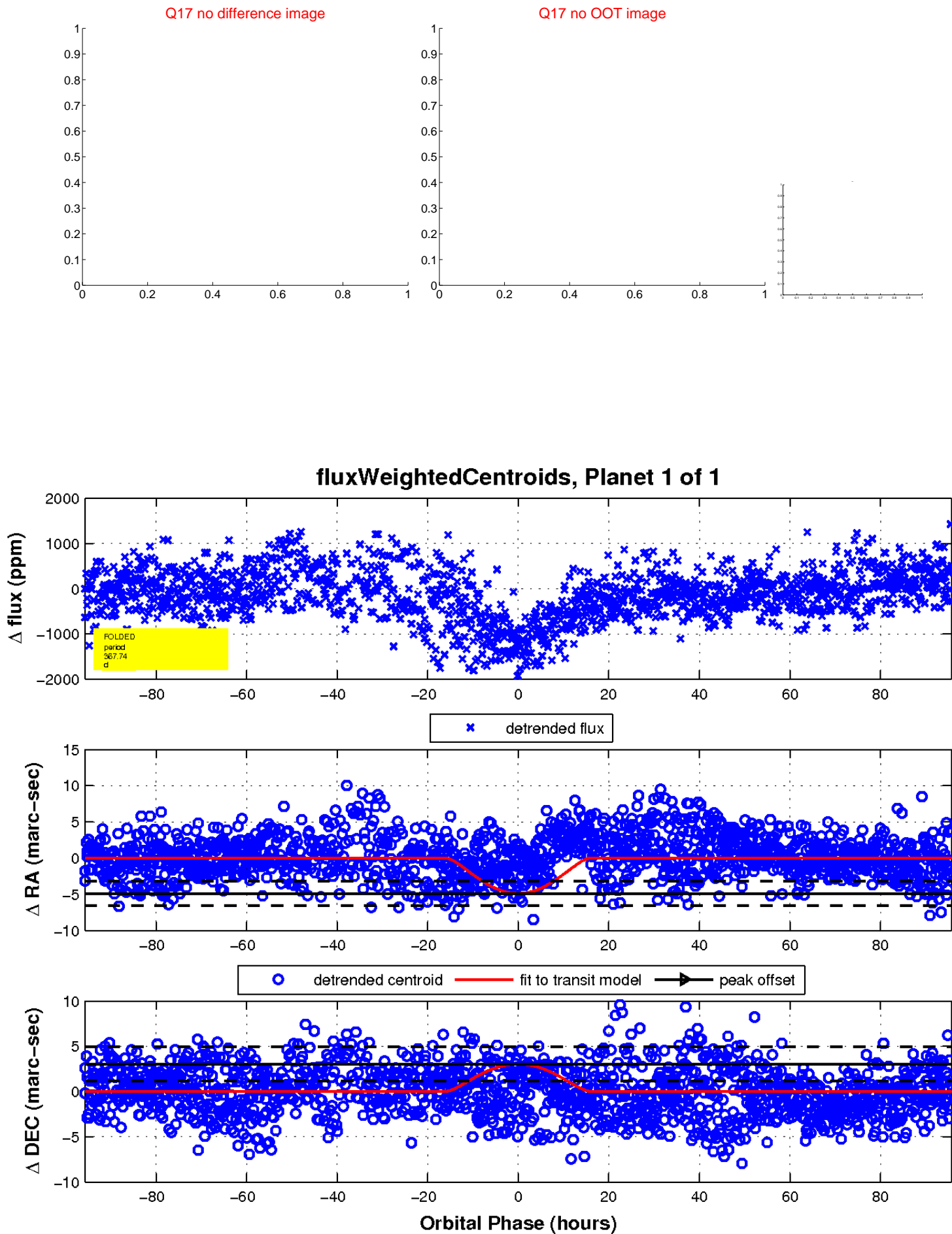
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

