

# KIC 008332986

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008332986-01	OBS	1137.01	302.388537	309.186845	41136.9	3.129	420.7	390.4	0.86	5328	26.82	0.76

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008332986-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED—CENT_KIC_POS

**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 008332986-01

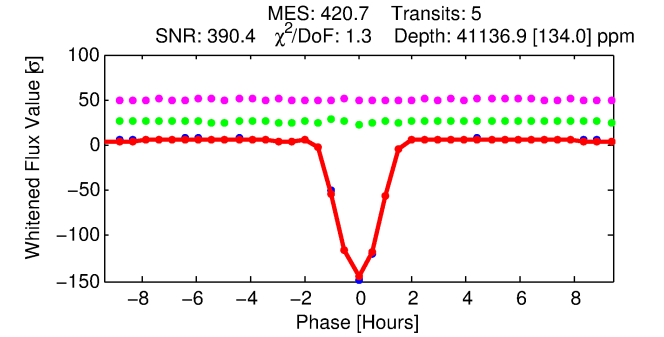
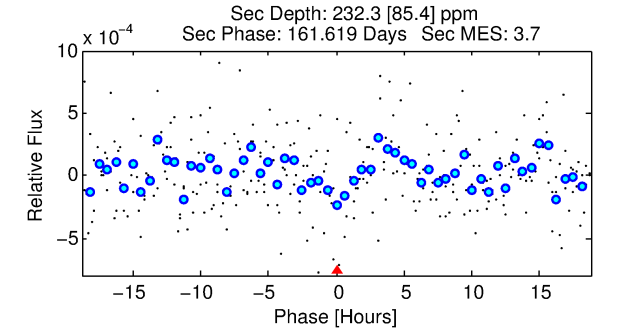
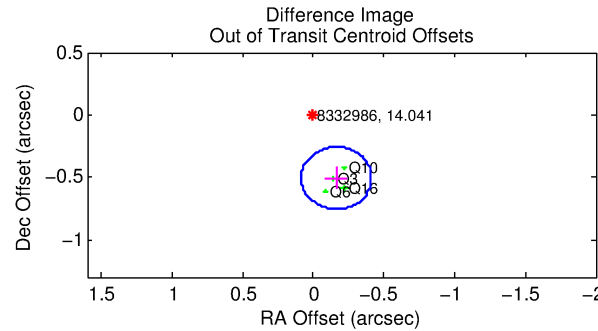
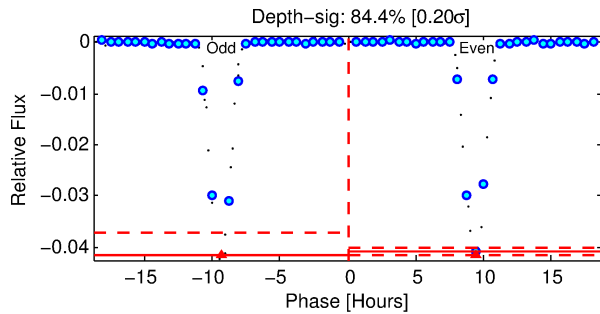
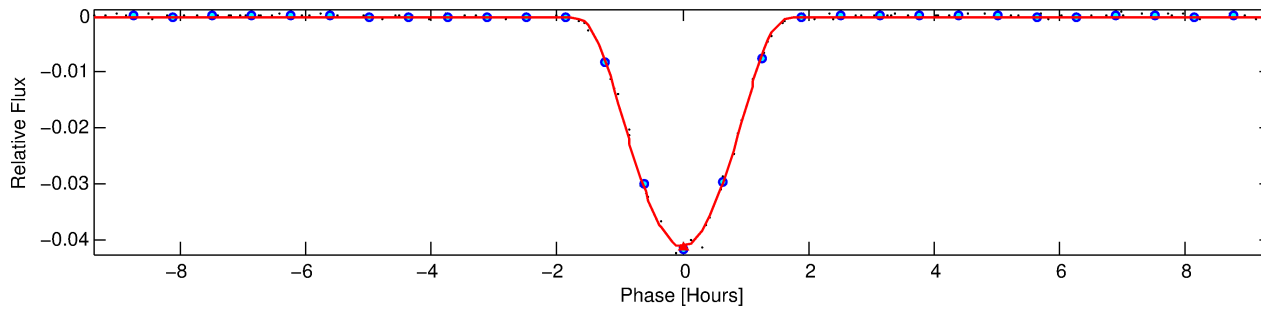
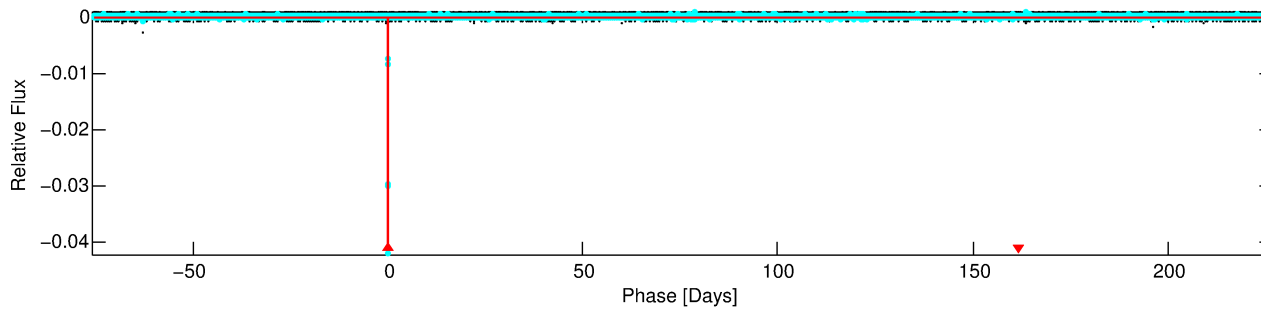
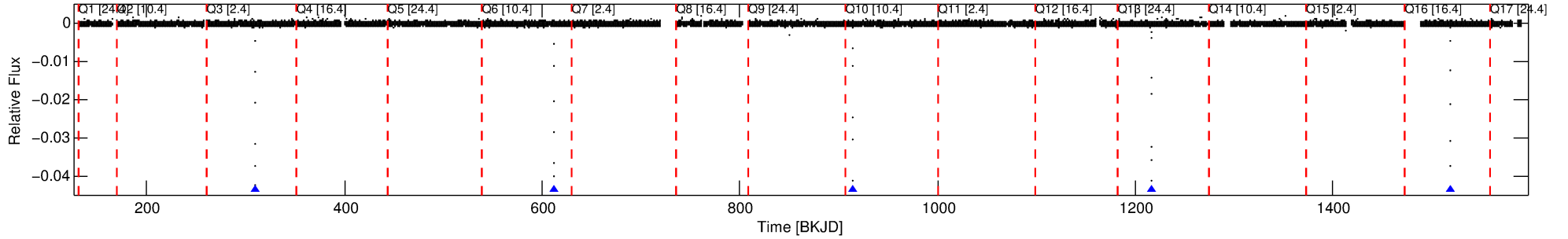
No Significant Match Found

# DV One-Page Summary

KIC: 8332986 Candidate: 1 of 1 Period: 302.389 d

KOI: K01137.01 Corr: 0.995

Kp: 14.04 R\*: 0.86 Rs Teff: 5328.0 K Logg: 4.50 Fe/H: 0.000



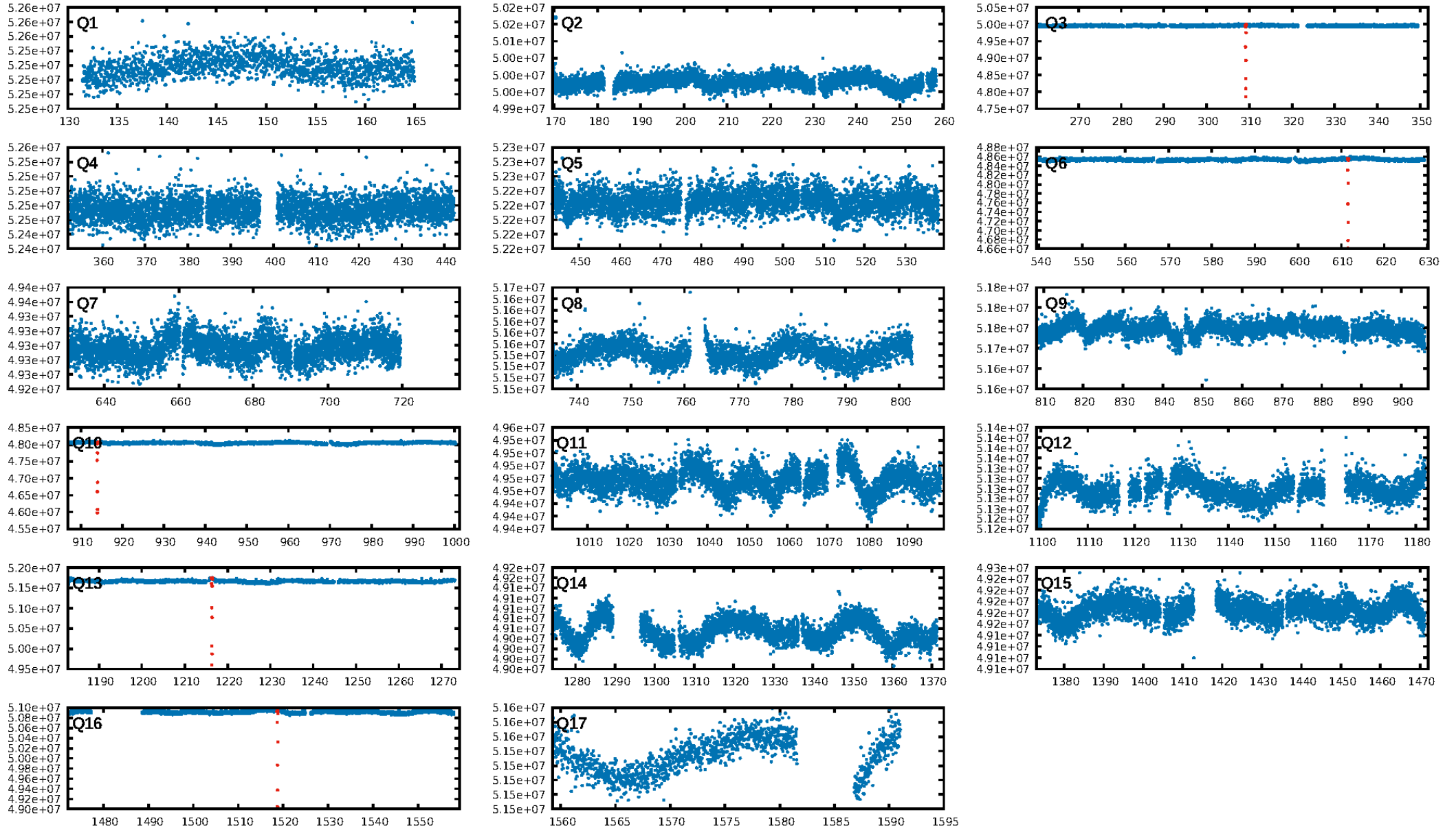
## DV Fit Results:

Period = 302.38854 [0.00008] d  
Epoch = 309.1868 [0.0002] BKJD  
Rp/R\* = 0.2868 [0.0438]  
a/R\* = 646.82 [7.55]  
b = 0.94 [0.07]  
Seff = 0.76 [0.11]  
Teq = 238 [8] K  
Rp = 26.82 [4.68] Re  
a = 0.8338 [0.0630] AU  
Ag = 123.53 [60.74] [2.02σ]  
Teffp = 1228 [149] K [6.64σ]

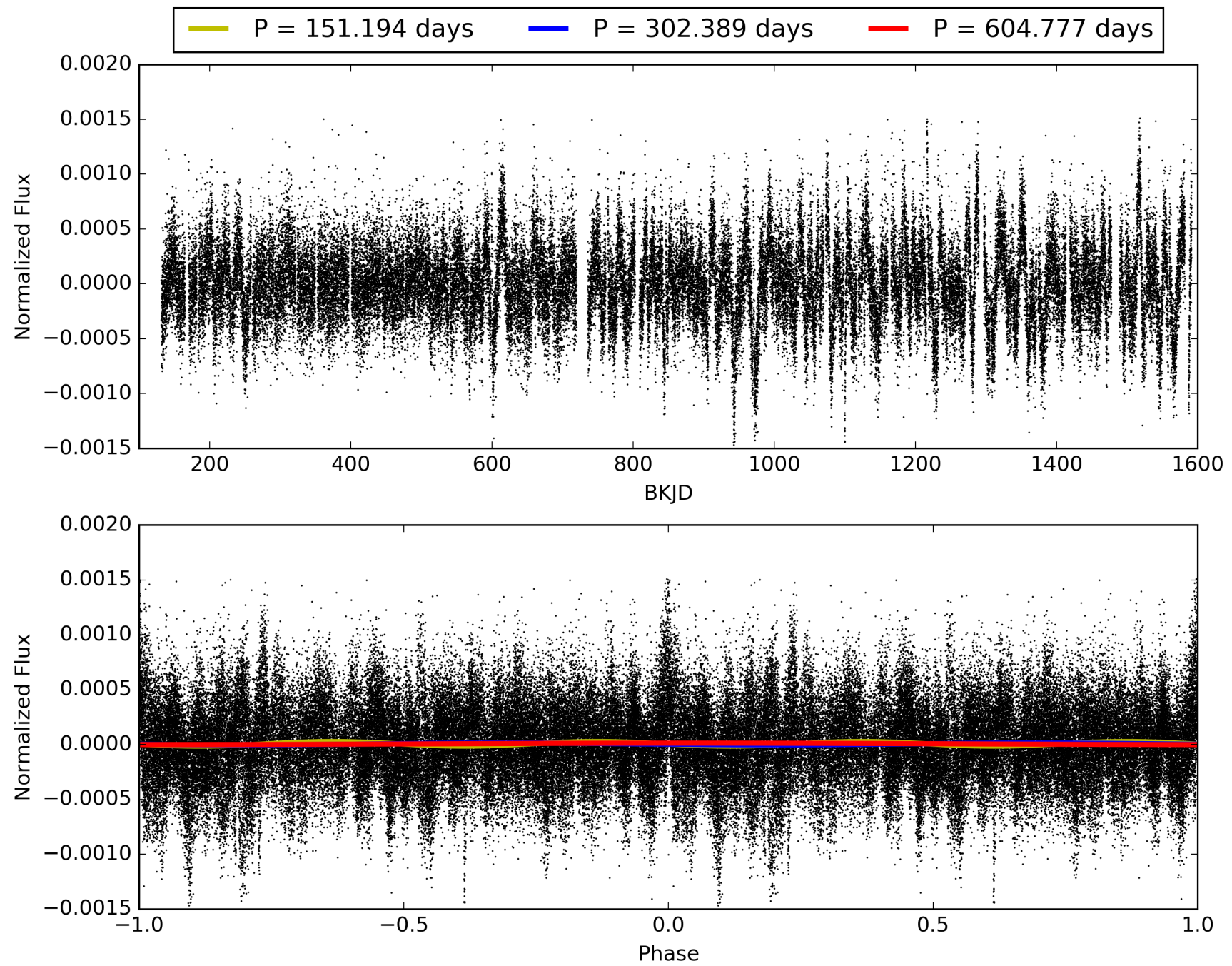
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 13.7%  
ModelChiSquareGof-sig: 48.8%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 2.337  
Centroid-sig: 0.0%  
Centroid-so: 1.509 arcsec [71.28σ]  
OotOffset-rm: 0.533 arcsec [6.42σ]  
KicOffset-rm: 0.251 arcsec [2.46σ]  
OotOffset-st: 2/1/1/0 [4]  
KicOffset-st: 2/1/1/0 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [4/4]

# TCE 008332986-01, PDC Light Curves

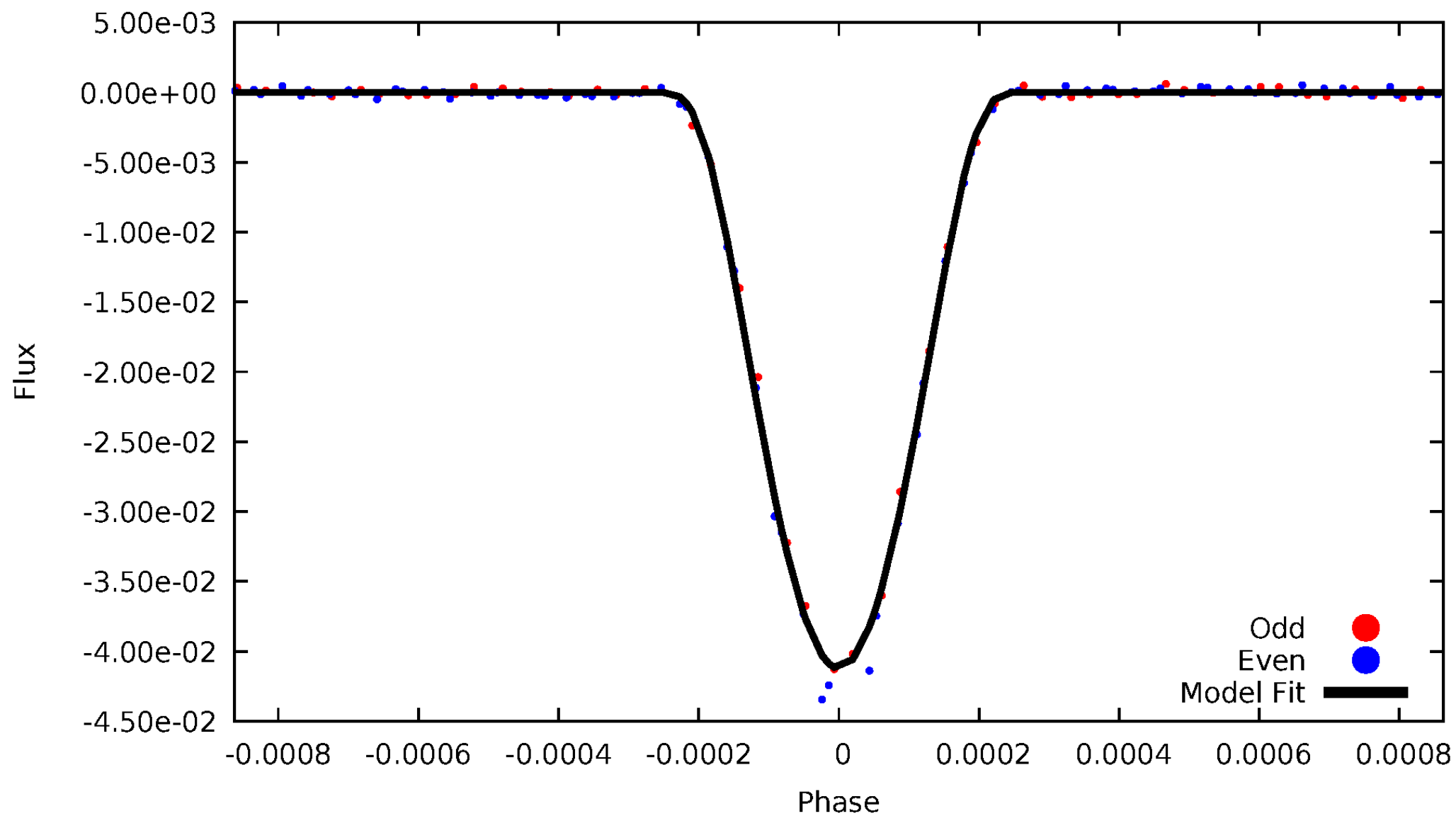


# TCE 008332986-01



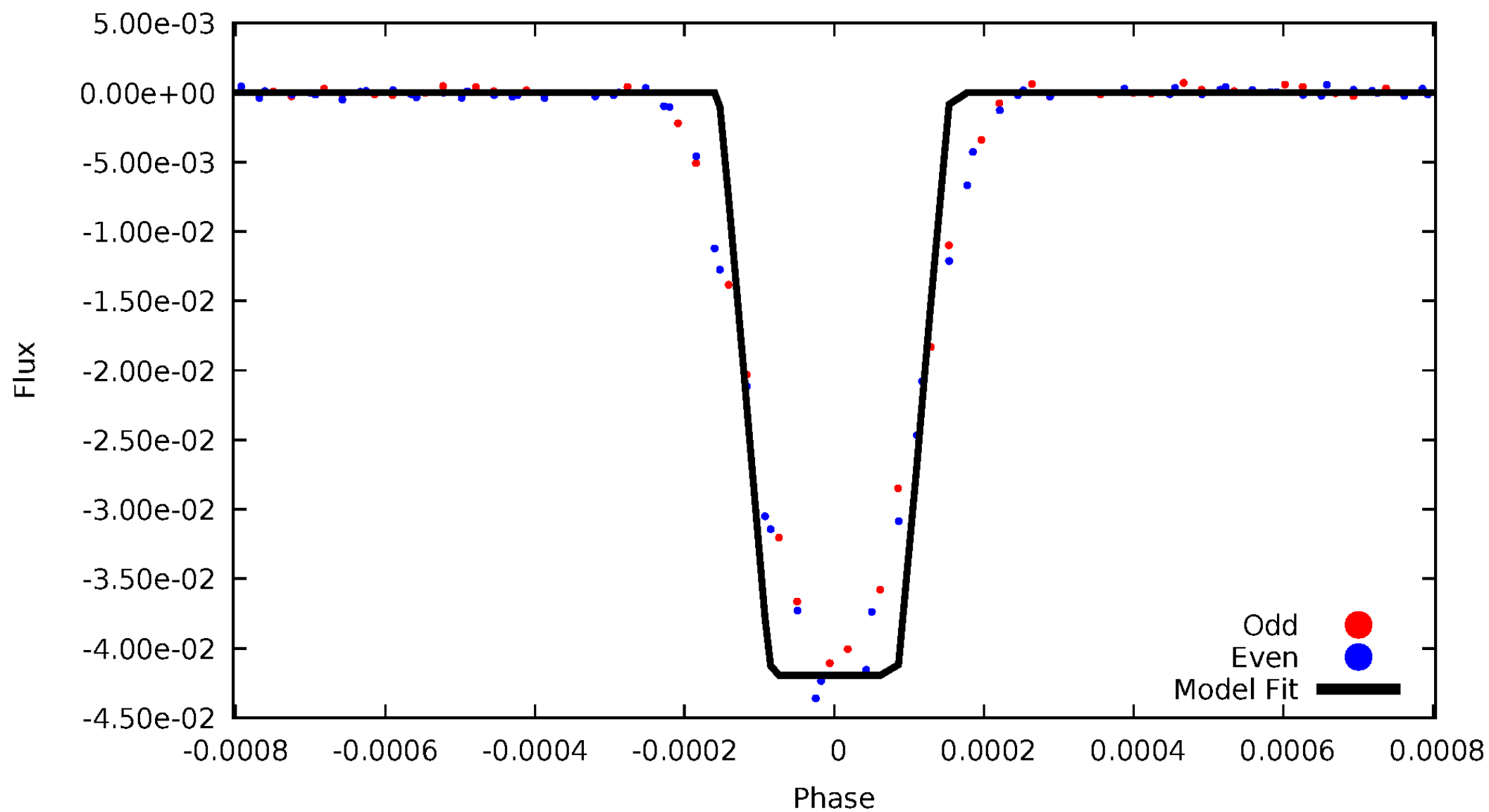
# DV Odd/Even

TCE 008332986-01



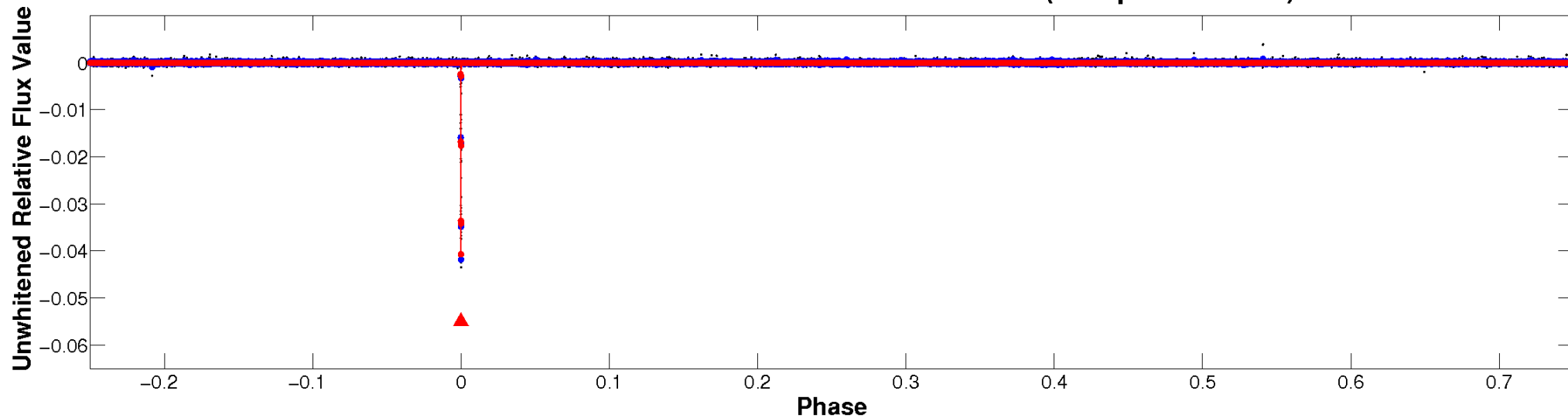
# ALT Odd/Even

TCE 008332986-01

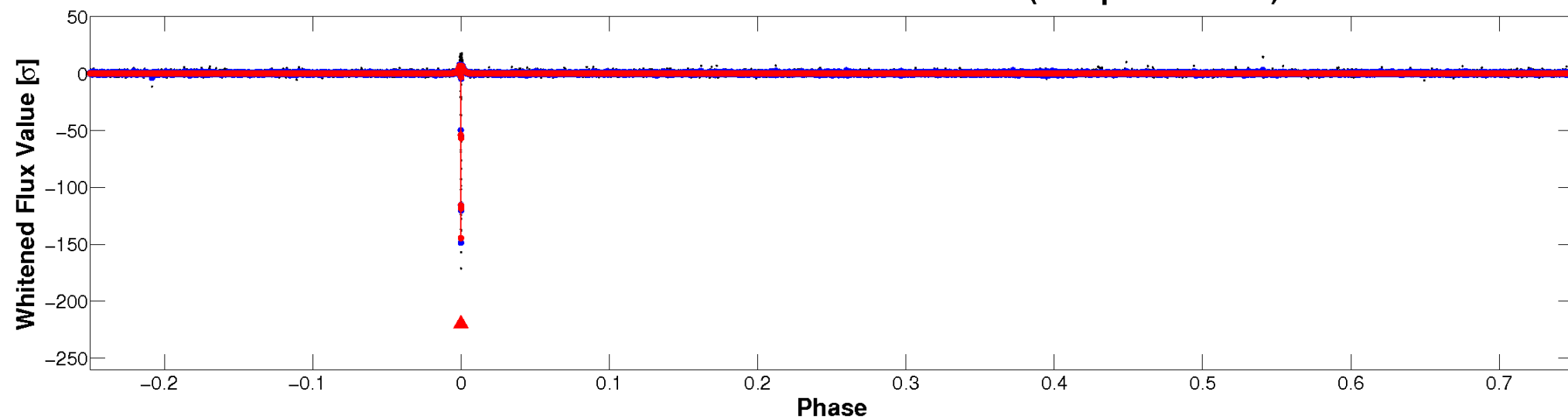


# Non-Whitened Vs. Whitened Light Curve

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

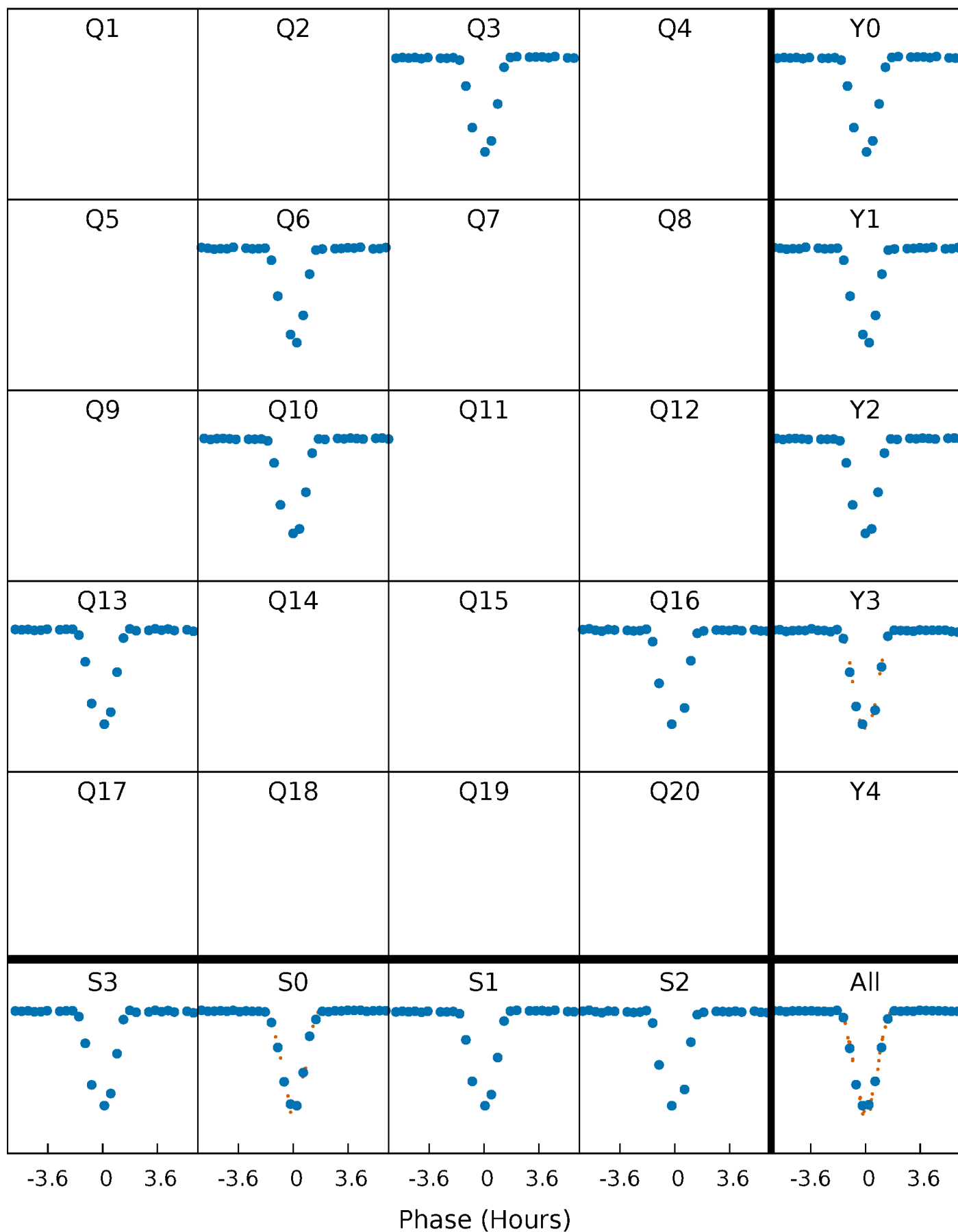


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

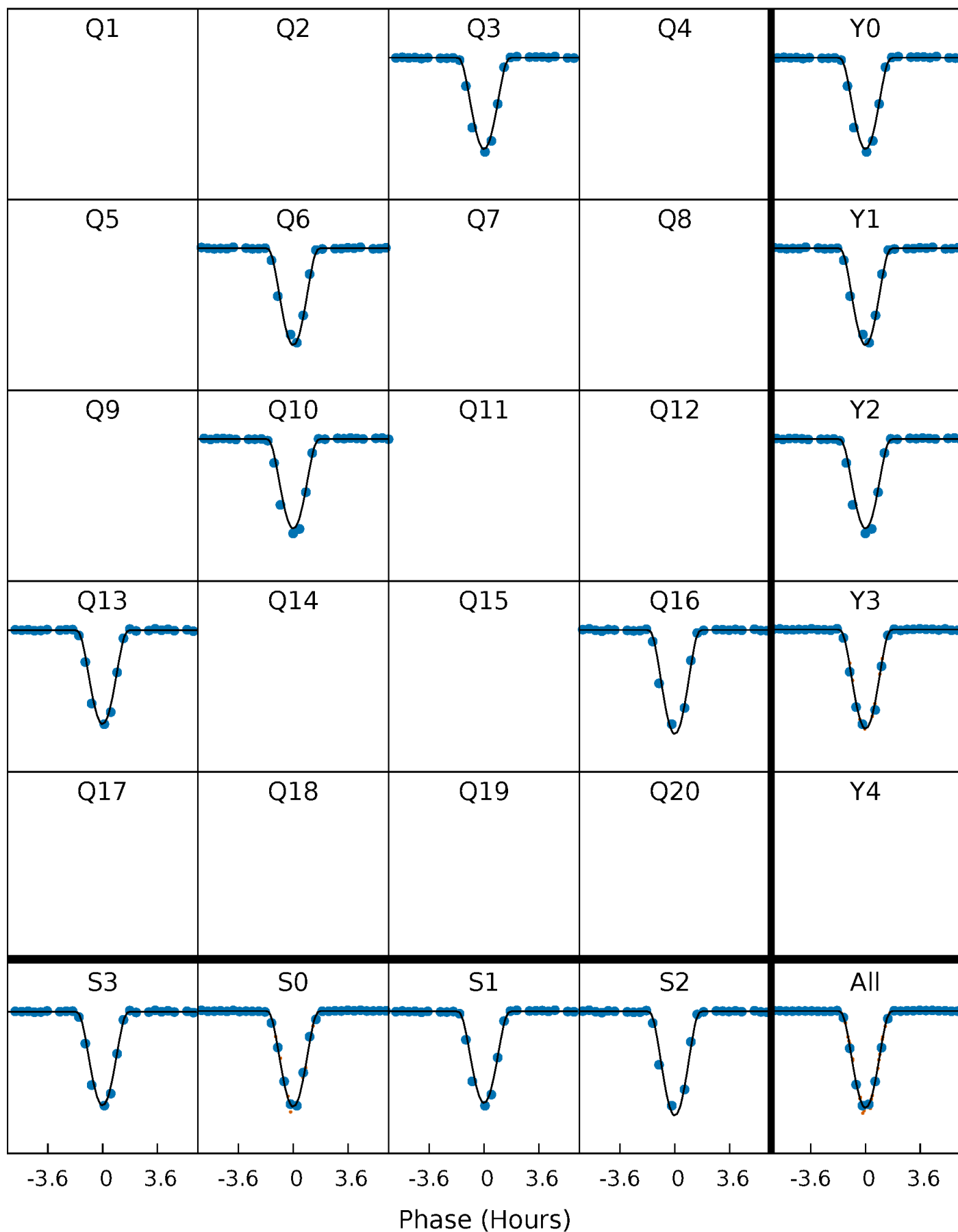
TCE 008332986-01 P=302.388537 Days  $T_0=309.186845$  (BKJD)





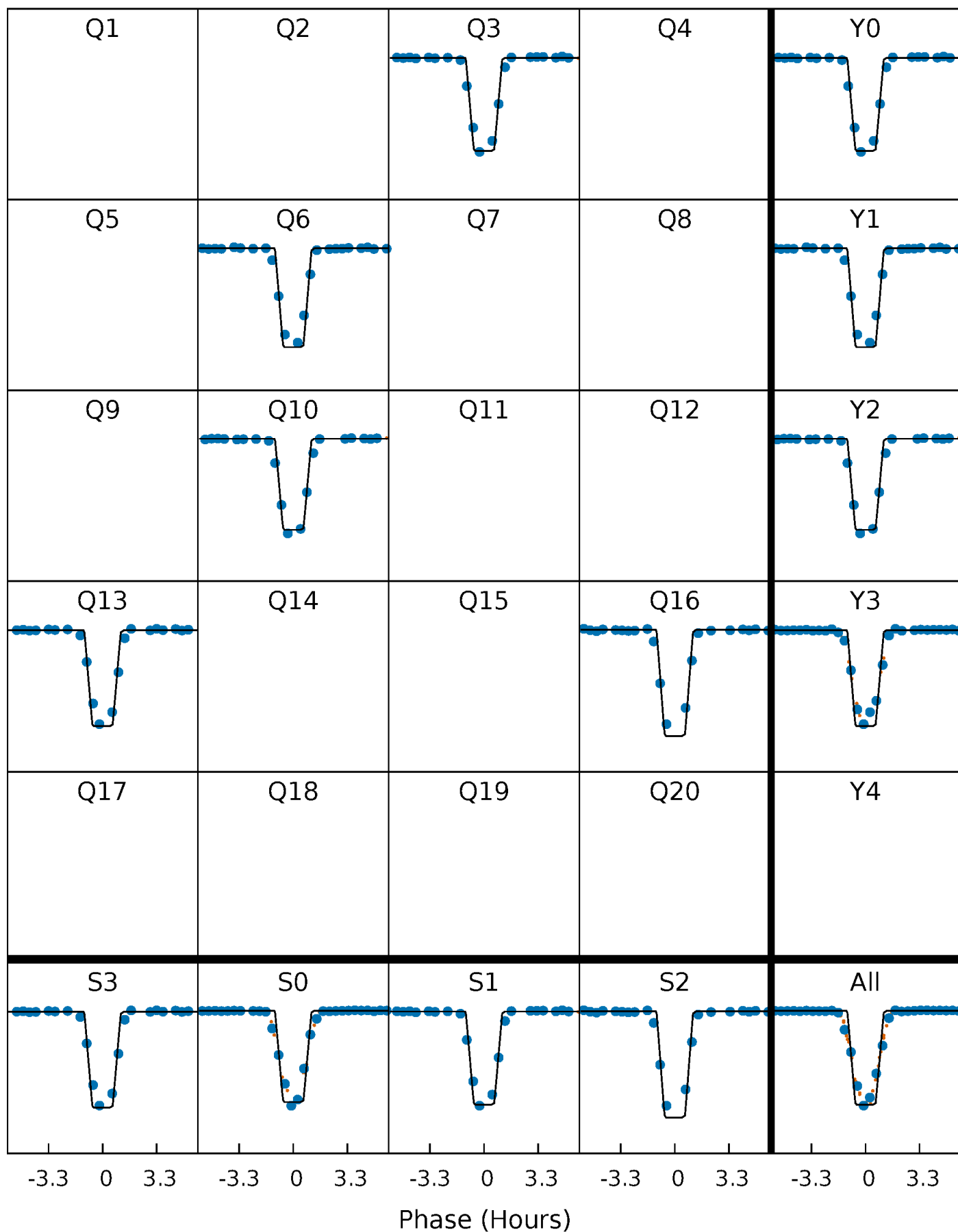
# DV Quarter-Phased Transit Curves

TCE 008332986-01 P=302.388537 Days  $T_0=309.186845$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

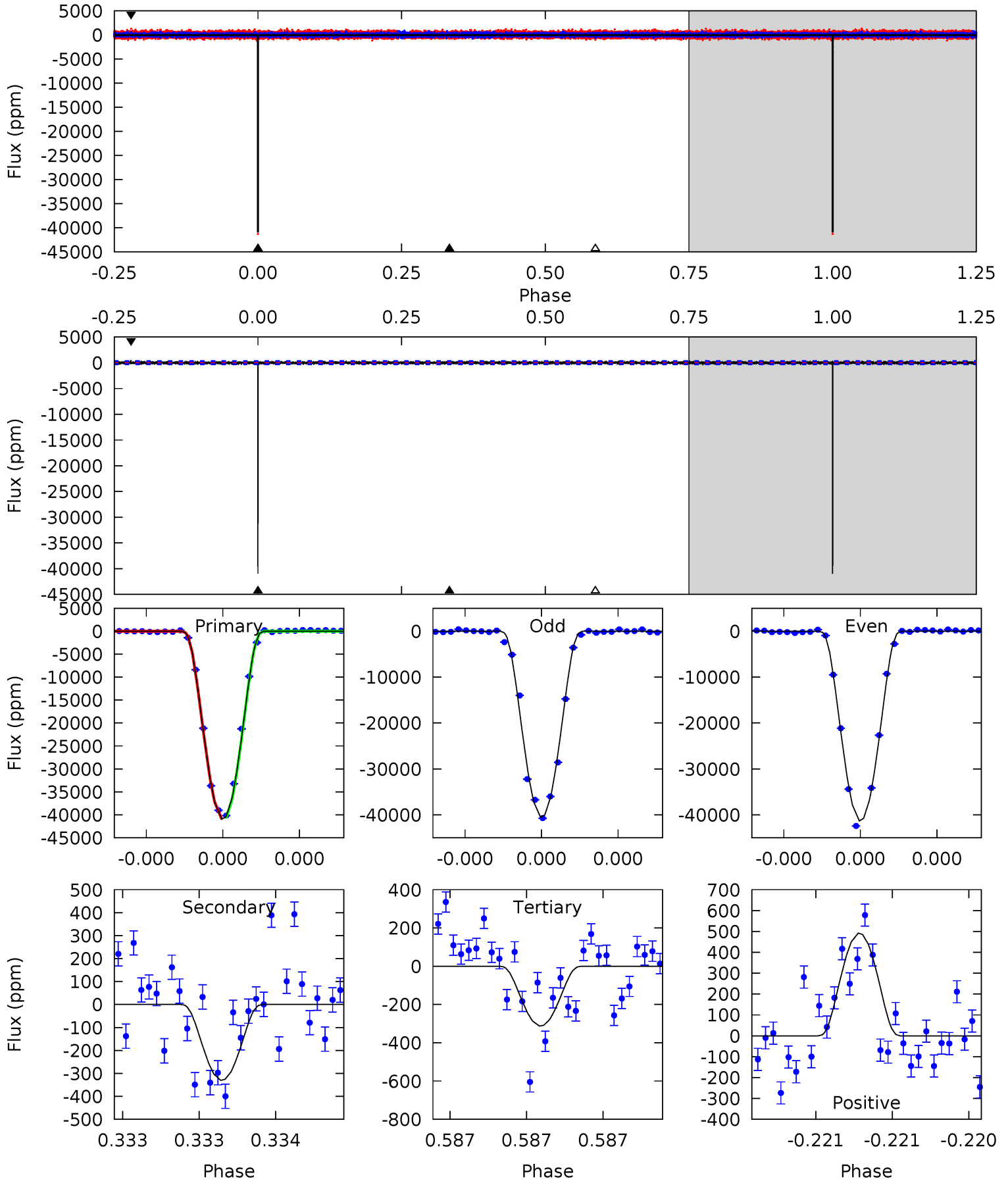
TCE 008332986-01 P=302.388172 Days  $T_0=309.187853$  (BKJD)



# DV Model-Shift Uniqueness Test

008332986-01, P = 302.388537 Days, E = 6.798308 Days

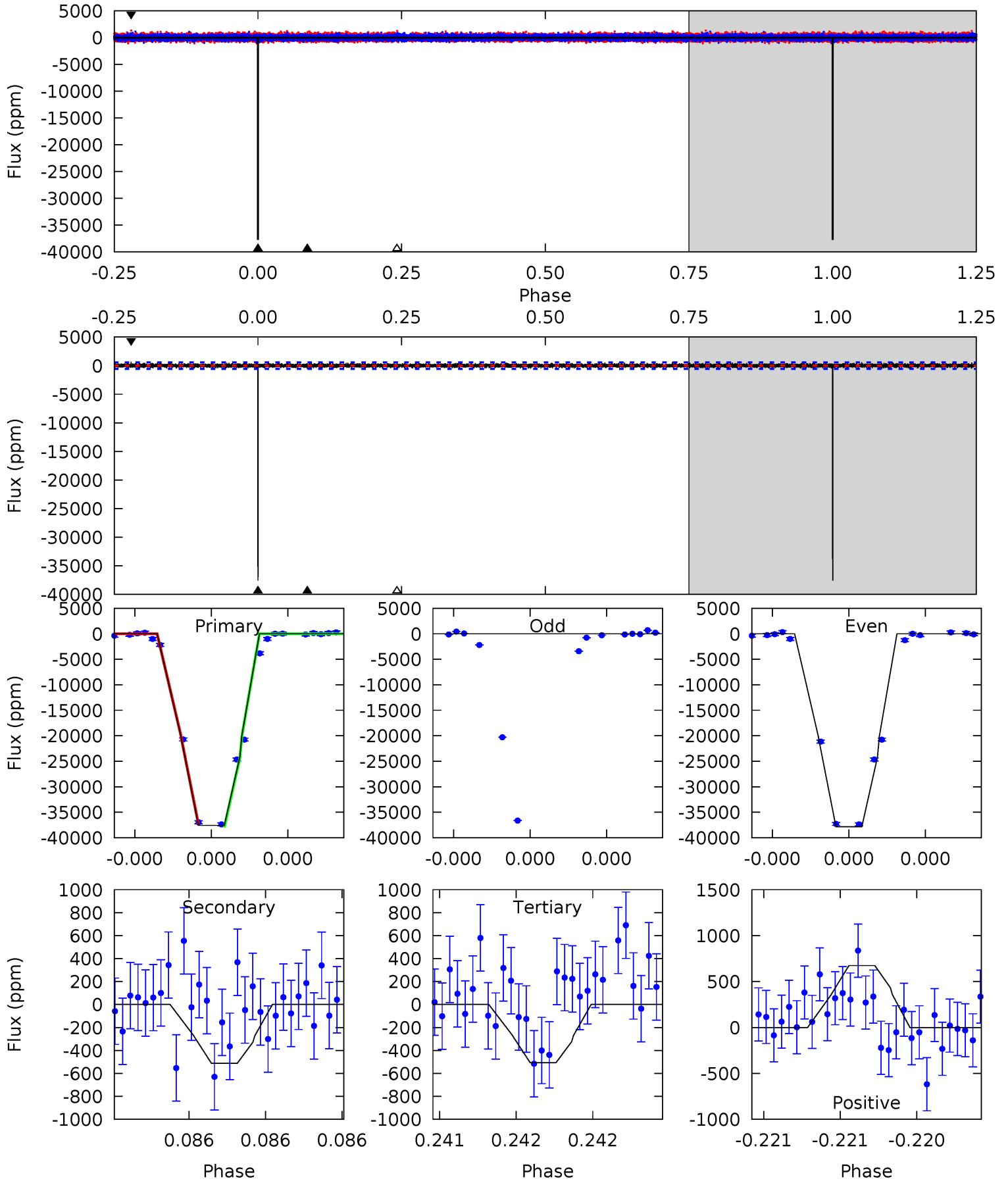
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
788.9	6.37	6.03	9.49	5.59	3.50	1.73	782.8	779.4	0.34	-3.12	7.93	1.01	0.01	2.48



# Alt Model-Shift Uniqueness Test

008332986-01, P = 302.388172 Days, E = 6.799681 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
375.9	5.12	5.07	6.75	5.66	3.62	1.30	370.8	369.1	0.05	-1.62	0	0.99	0.02	0



### Stellar Parameters For KIC 008332986

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5328^{+106}_{-106}$	$4.499^{+0.066}_{-0.060}$	$0.000^{+0.150}_{-0.150}$	$0.857^{+0.072}_{-0.058}$	$0.845^{+0.058}_{-0.044}$	$1.891^{+0.464}_{-0.373}$
	+2%/-2%	+1%/-1%	+inf%/-inf%	+8%/-7%	+7%/-5%	+25%/-20%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008332986-01 / KOI 1137.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-330 \pm 52$	$26.95^{+4.19}_{-4.29}$	$333^{+10}_{-9}$	$2265^{+97}_{-84}$	$175^{+80}_{-50}$
Alt.	$-512 \pm 100$	$19.35^{+4.40}_{-4.34}$	$333^{+10}_{-10}$	$2577^{+178}_{-146}$	$525^{+379}_{-199}$

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

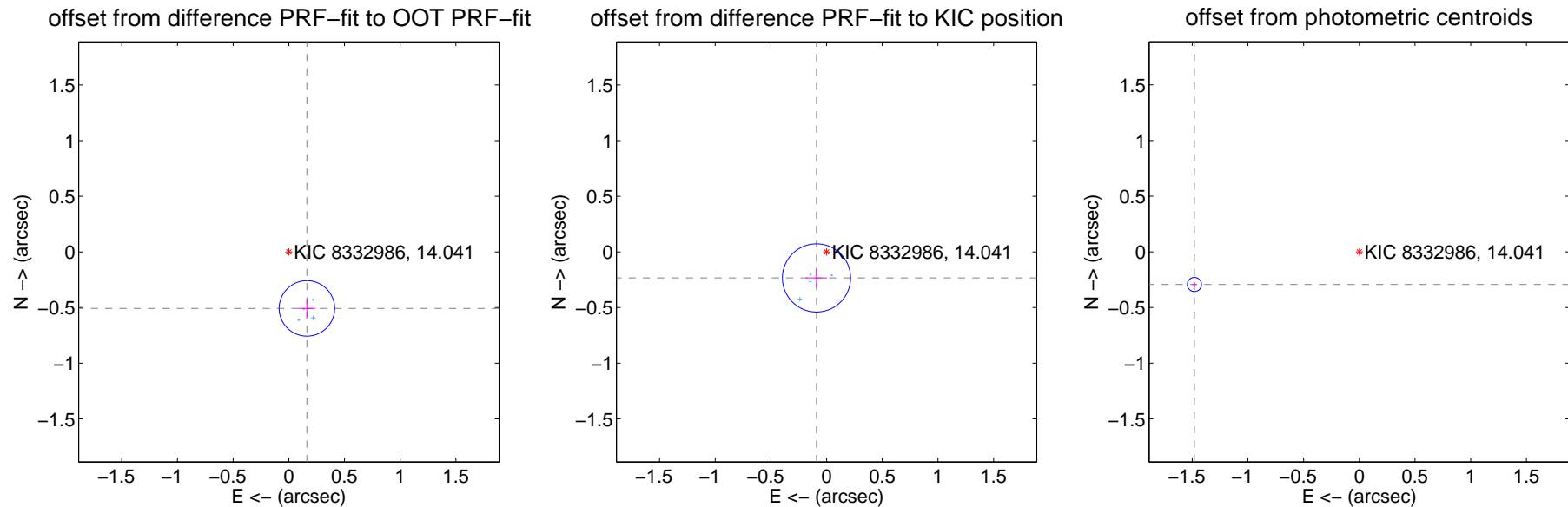
## DV Centroid Data

Supplemental centroid analysis for 008332986-01. Kepler magnitude: 14.04. Transit SNR 390.44

There are 4 quarters with good PRF difference image offsets

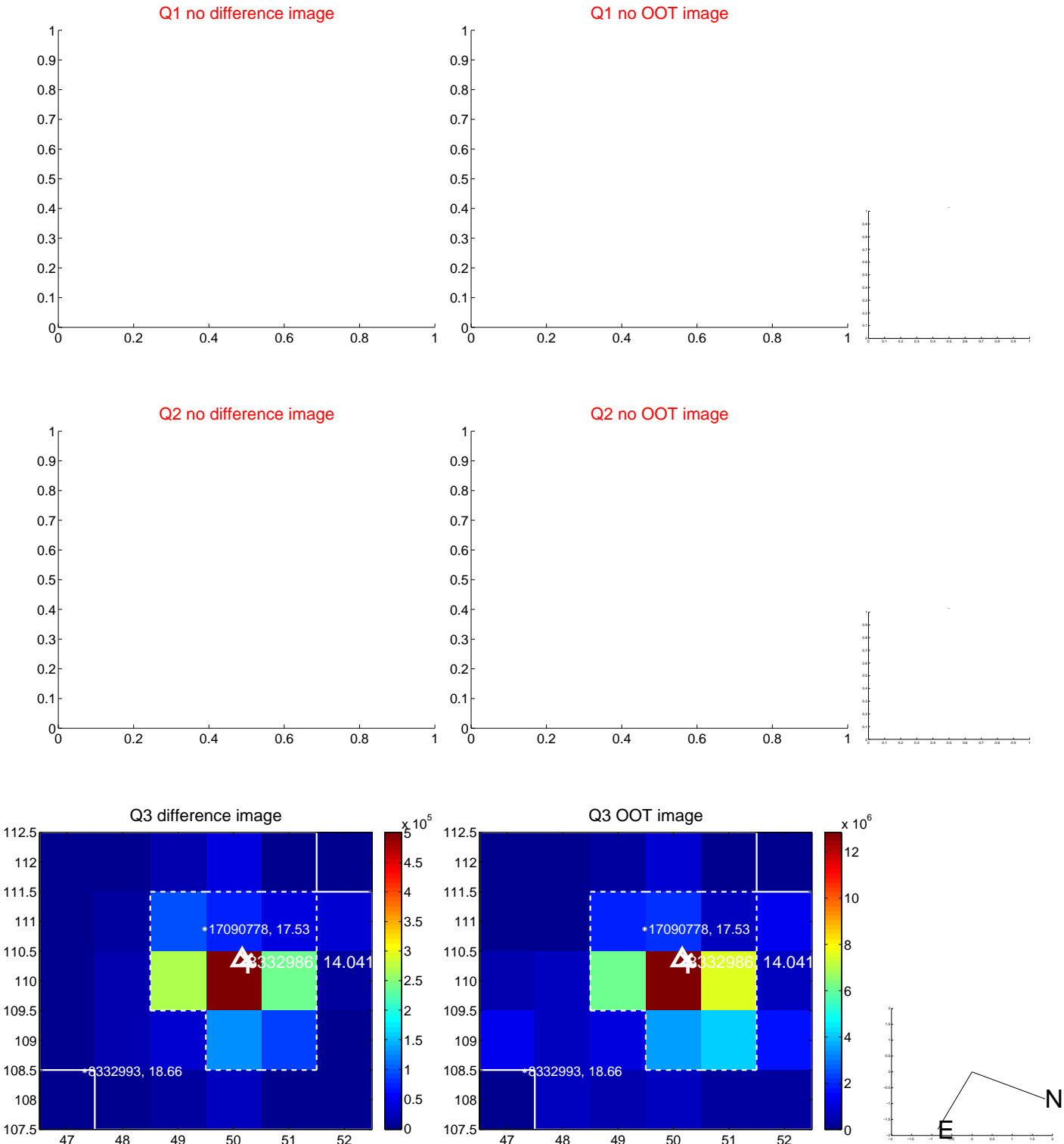
The direct PRF centroid is offset from the target star catalog position by about 0.49 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.533 \pm 0.083$	6.42	$-0.162 \pm 0.076$	$-0.508 \pm 0.084$
PRF-fit source offset from KIC position	$0.251 \pm 0.102$	2.46	$0.091 \pm 0.094$	$-0.234 \pm 0.090$
photometric centroid source offset	$1.51 \pm 0.02$	71.28	$1.48 \pm 0.02$	$-0.29 \pm 0.02$

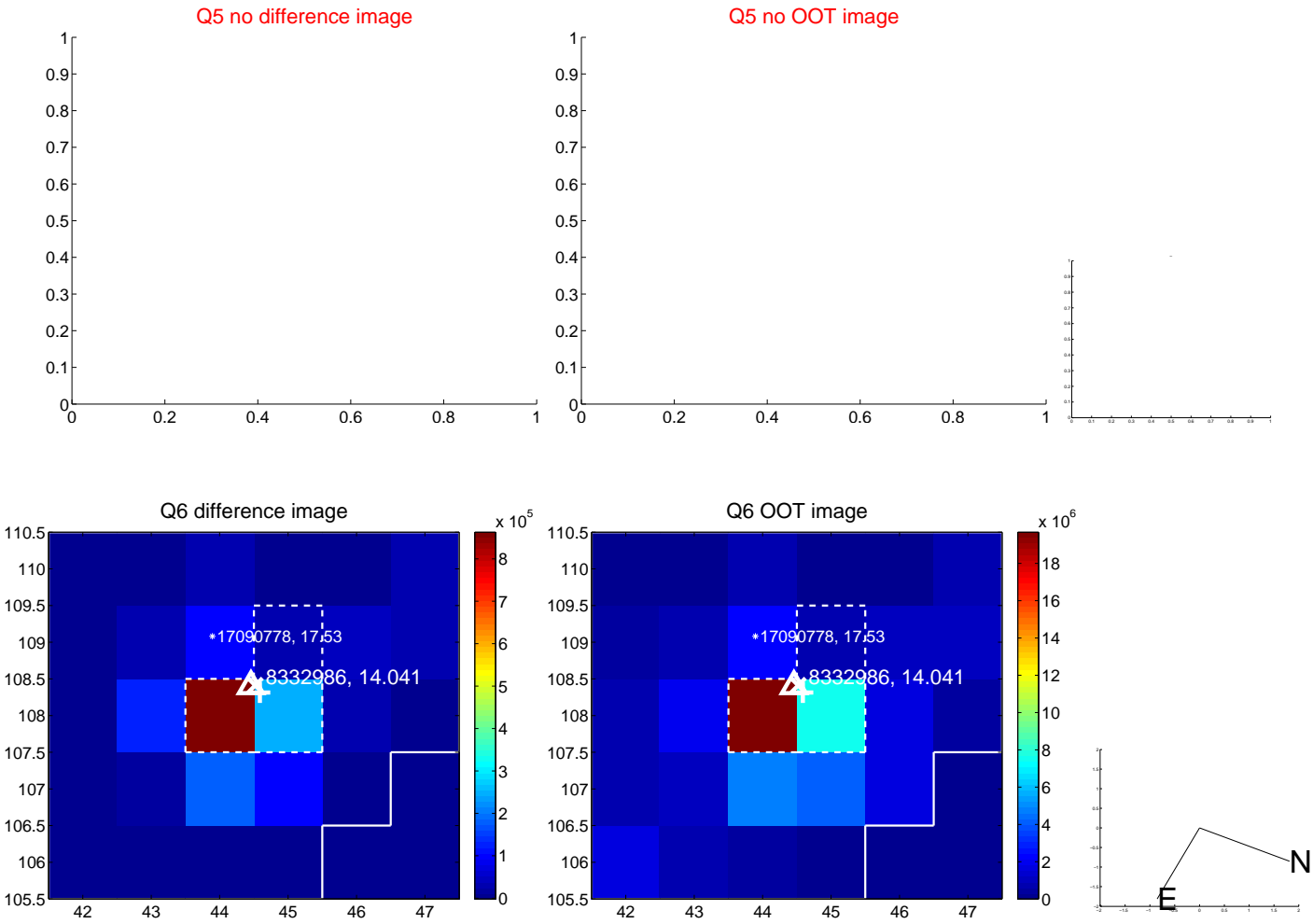


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

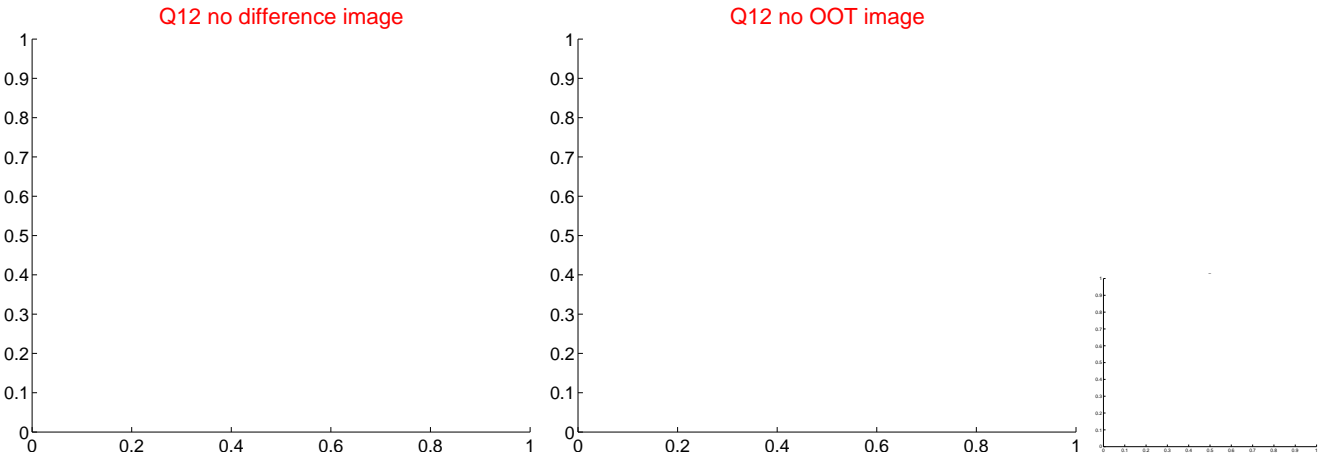
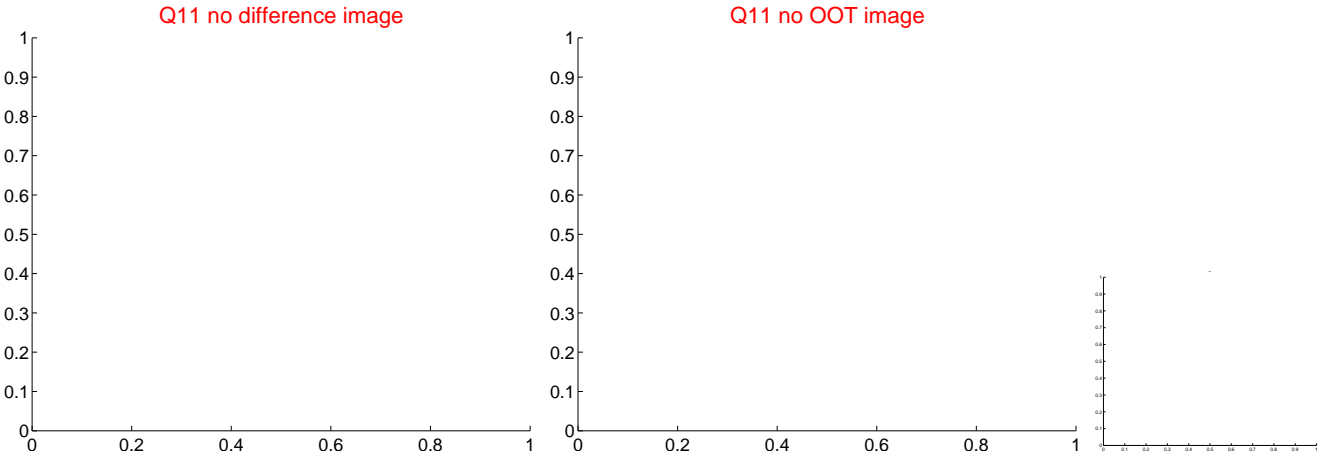
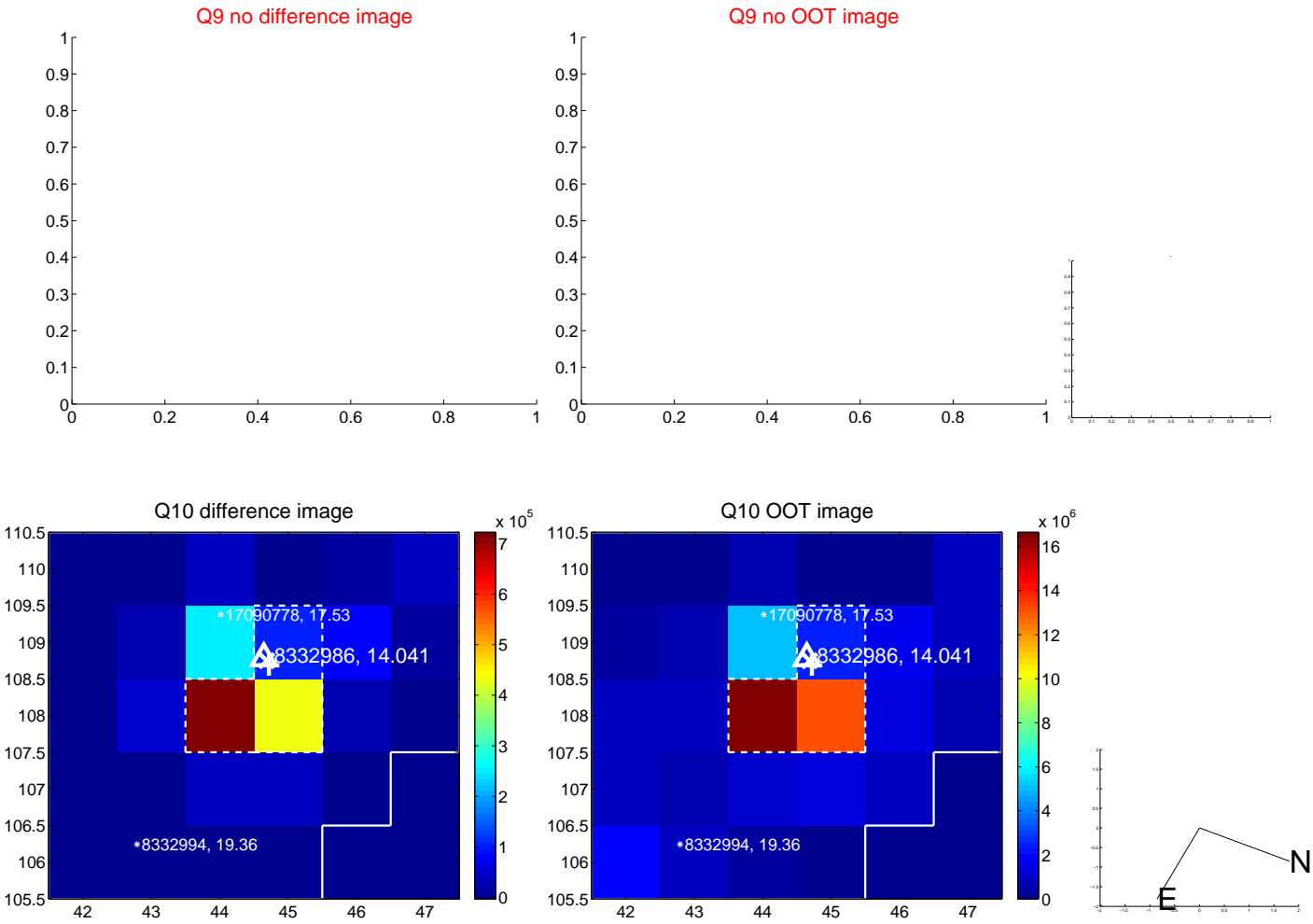


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



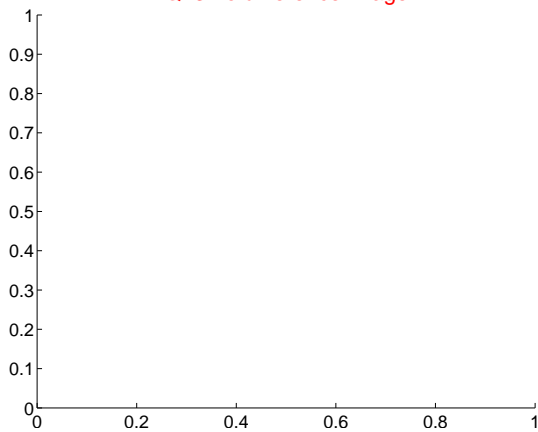


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

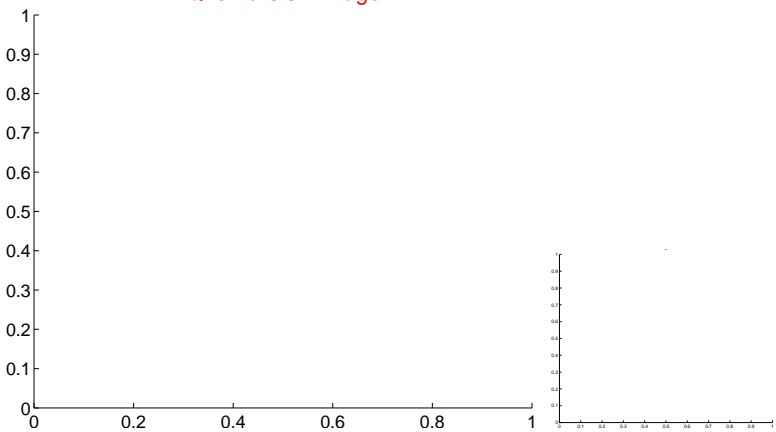


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

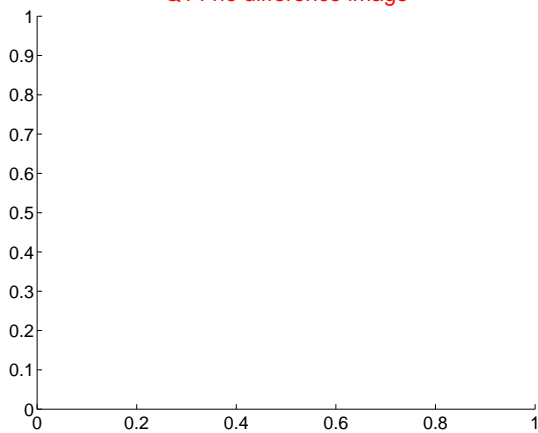
Q13 no difference image



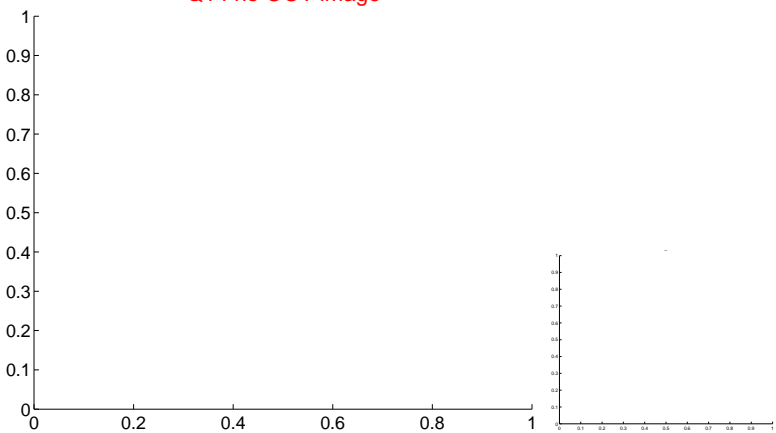
Q13 no OOT image



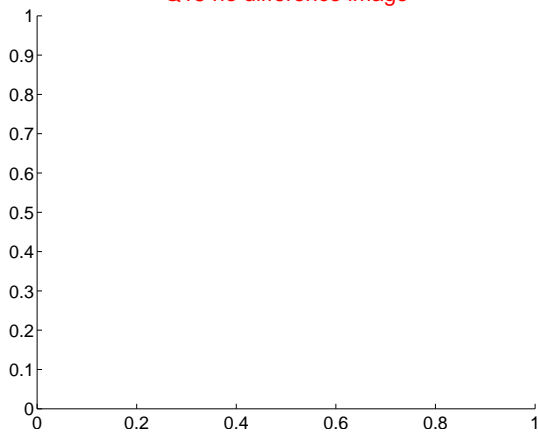
Q14 no difference image



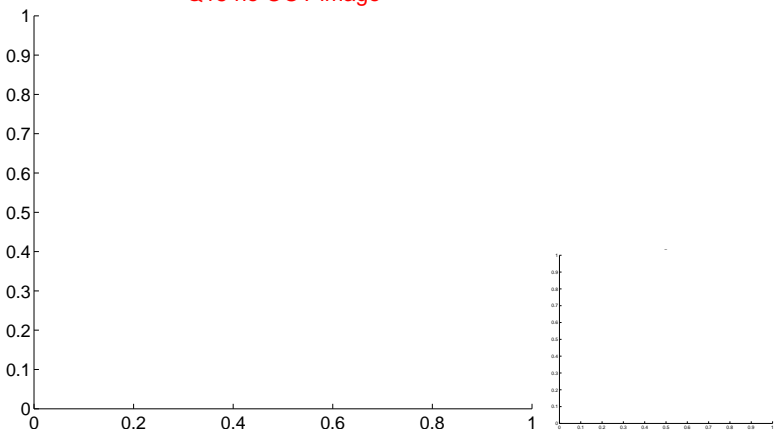
Q14 no OOT image



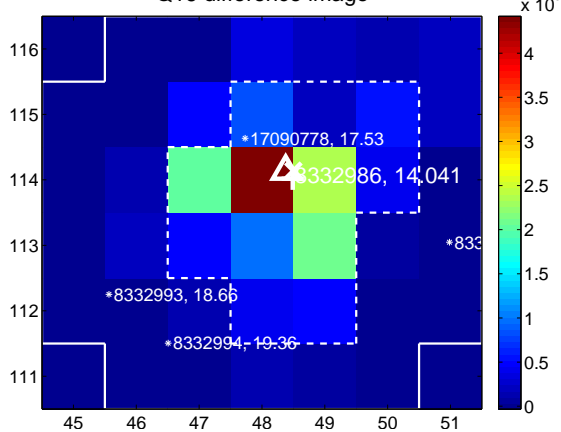
Q15 no difference image



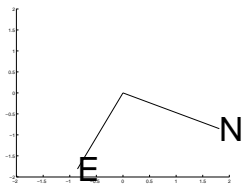
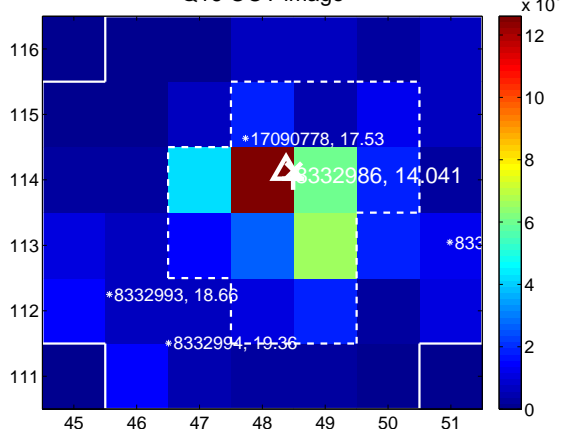
Q15 no OOT image



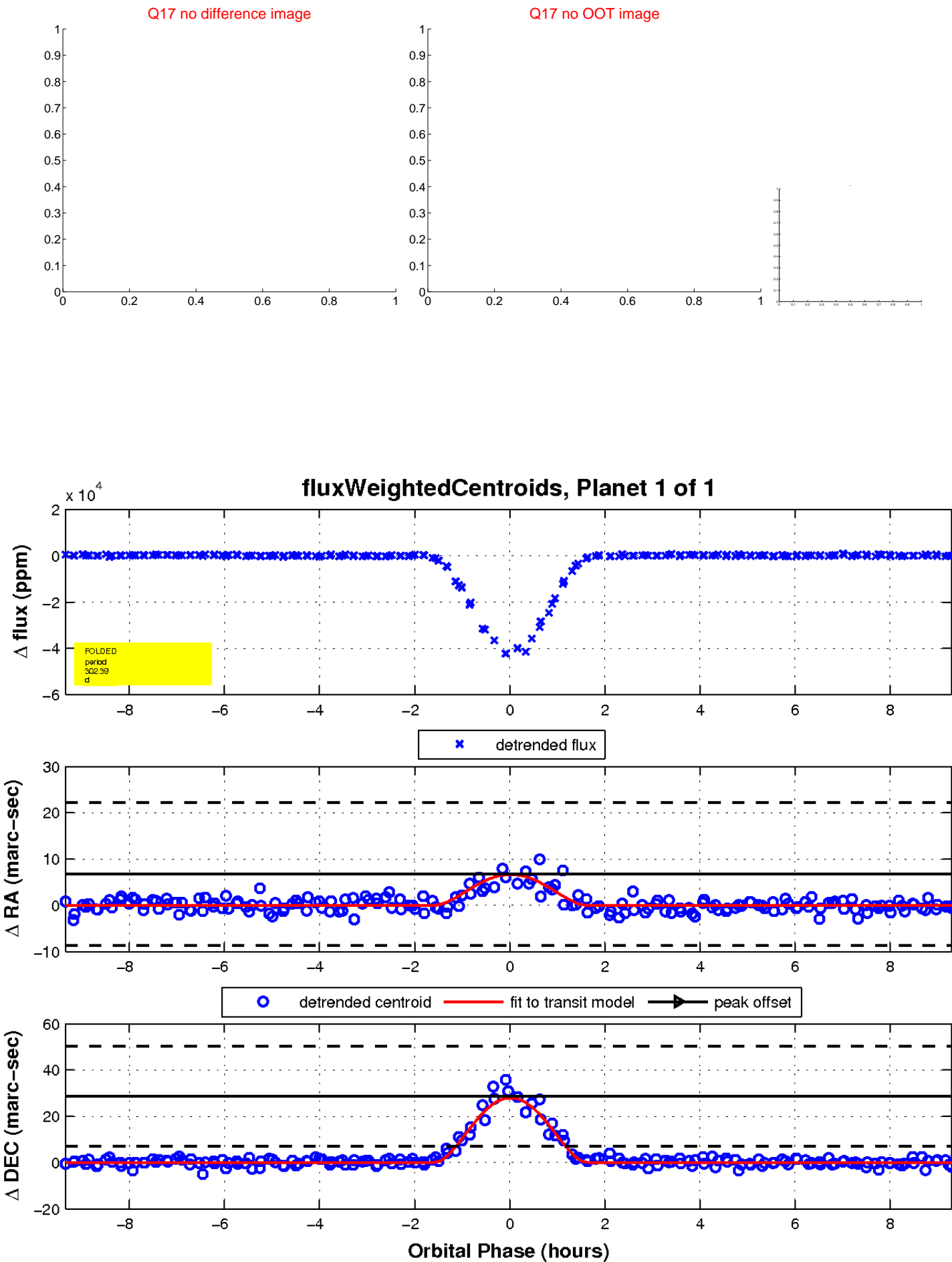
Q16 difference image



Q16 OOT image



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



UKIRT Image

Declination

