

# KIC 003548622

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003548622-01	OBS	6343.01	569.421821	143.495187	375.4	14.914	8.3	8.4	0.95	6117	1.94	0.61

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003548622-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

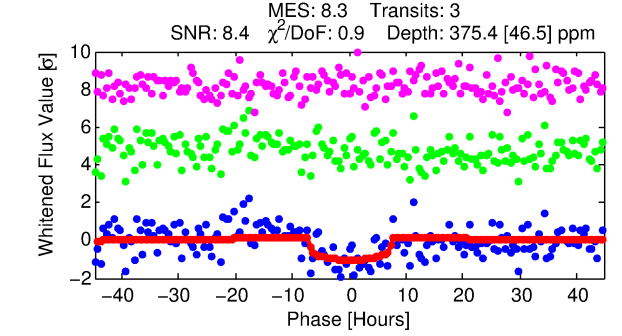
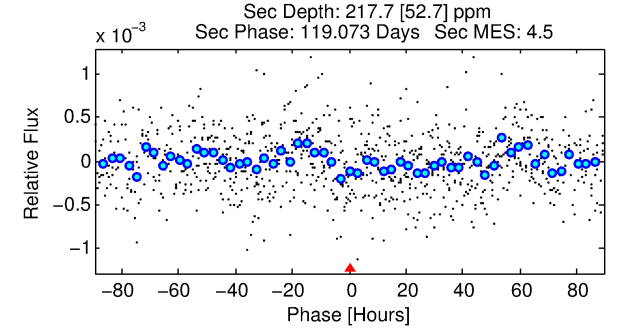
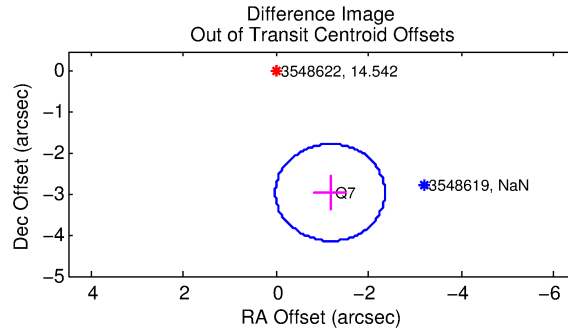
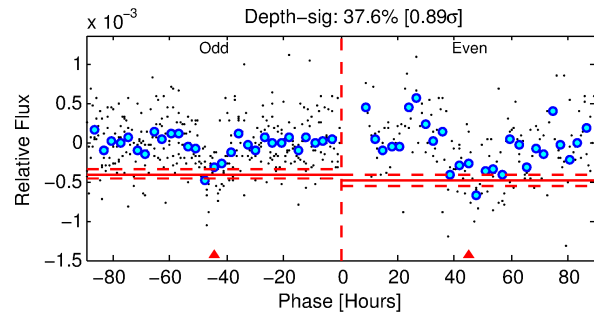
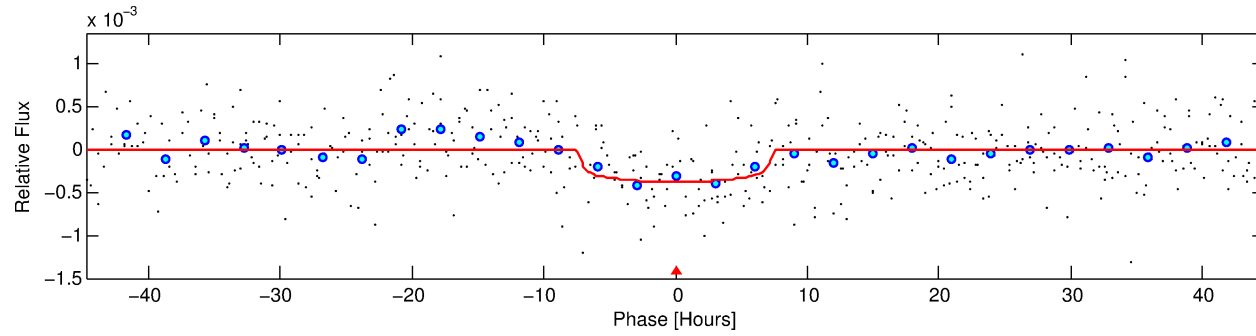
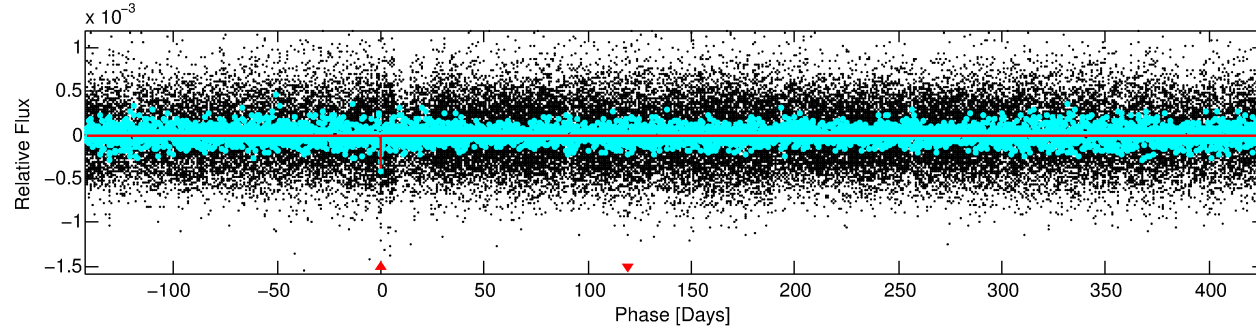
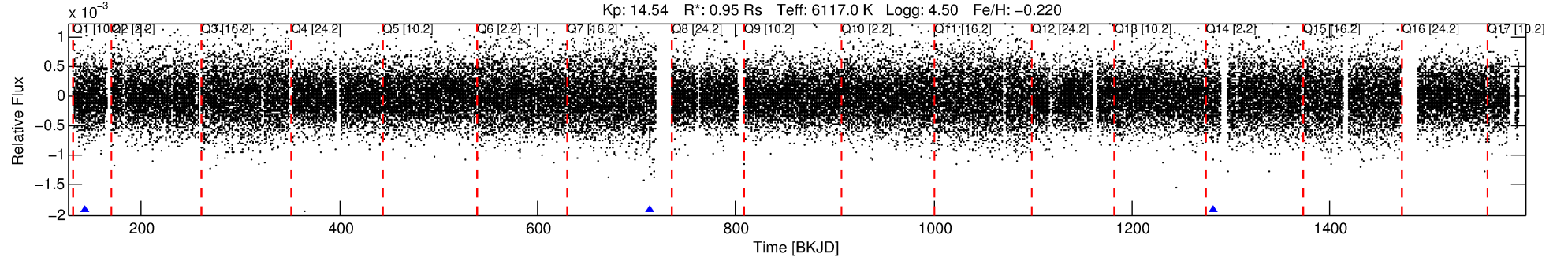
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003548622-01

No Significant Match Found

# DV One-Page Summary

KIC: 3548622 Candidate: 1 of 1 Period: 569.422 d  
KOI: K06343.01 Corr: 0.938



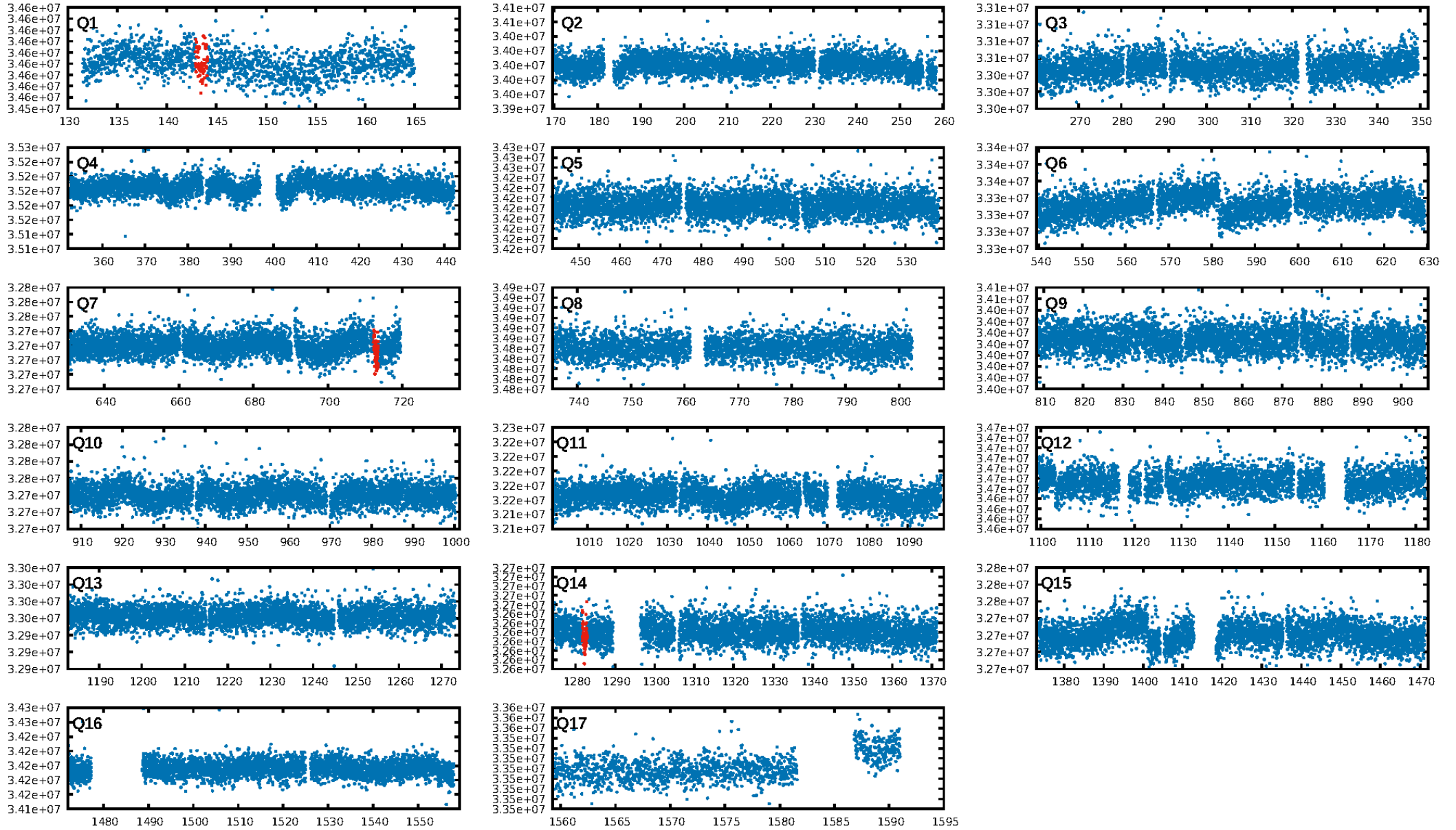
## DV Fit Results:

Period = 569.42182 [0.01769] d  
Epoch = 143.4952 [0.0197] BKJD  
Rp/R\* = 0.0188 [0.0126]  
a/R\* = 226.19 [758.10]  
b = 0.66 [2.87]  
Seff = 0.61 [0.25]  
Teff = 226 [23] K  
Rp = 1.94 [1.43] Re  
a = 1.3559 [0.3531] AU  
Ag = 58394.28 [82433.44] [0.71 $\sigma$ ]  
Teffp = 5420 [1849] K [2.81 $\sigma$ ]

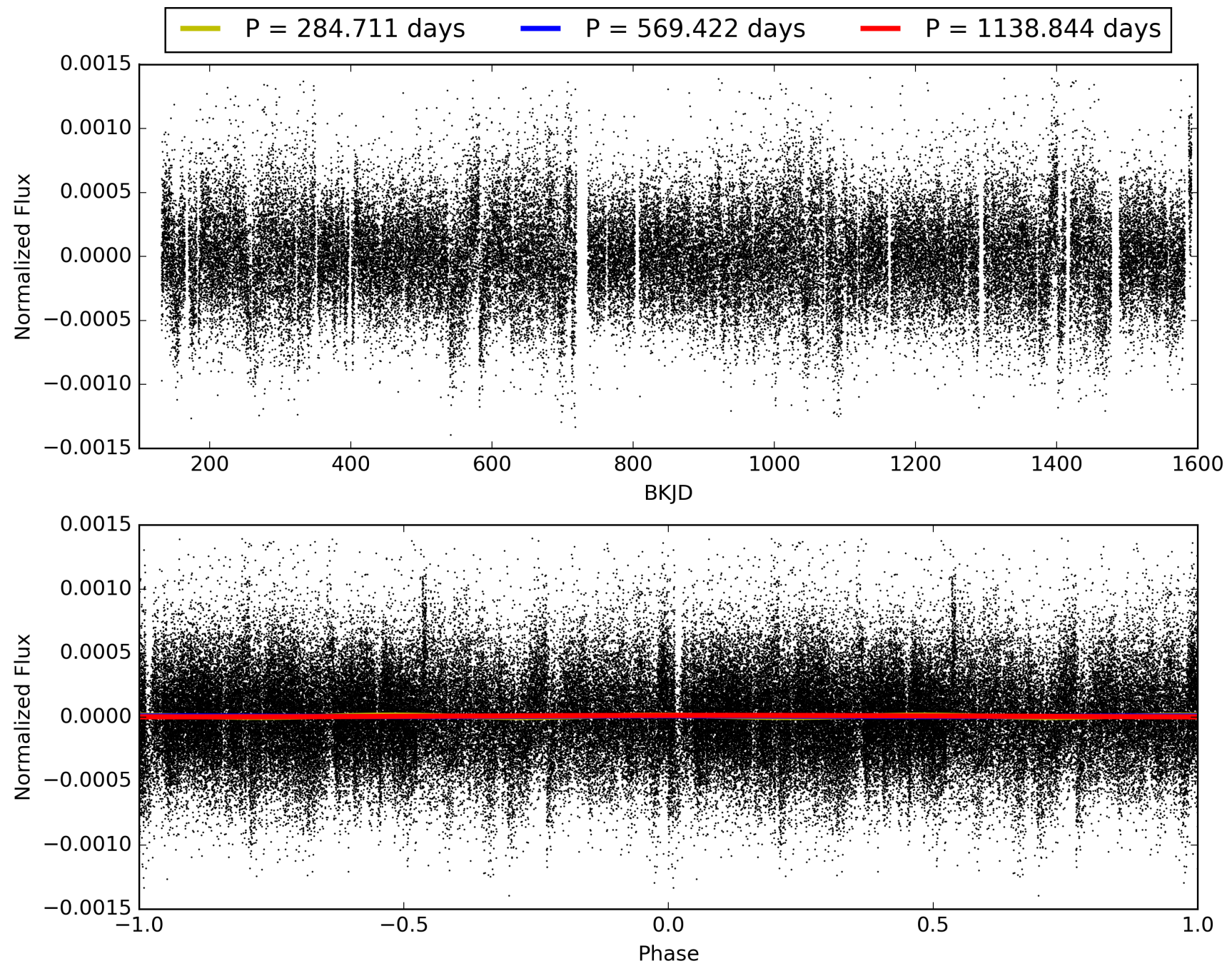
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 44.7%  
ModelChiSquareGoF-sig: 100.0%  
**Bootstrap-pfa: 1.73e-09**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: -1.78  
Centroid-sig: 8.1%  
Centroid-so: 2.479 arcsec [1.64 $\sigma$ ]  
**OotOffset-rm: 3.179 arcsec [8.05 $\sigma$ ]**  
**KicOffset-rm: 3.548 arcsec [8.99 $\sigma$ ]**  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

# TCE 003548622-01, PDC Light Curves

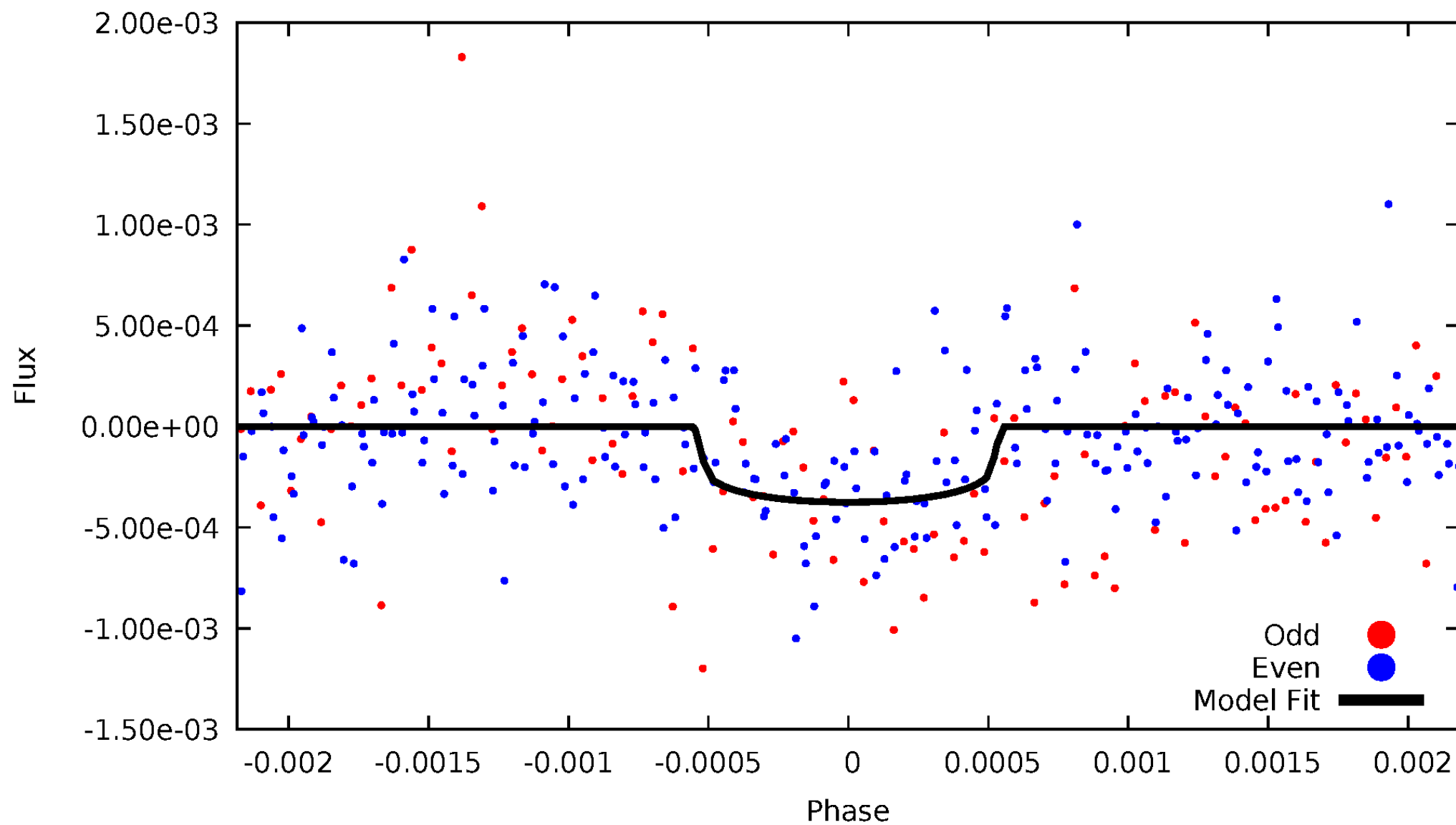


TCE 003548622-01



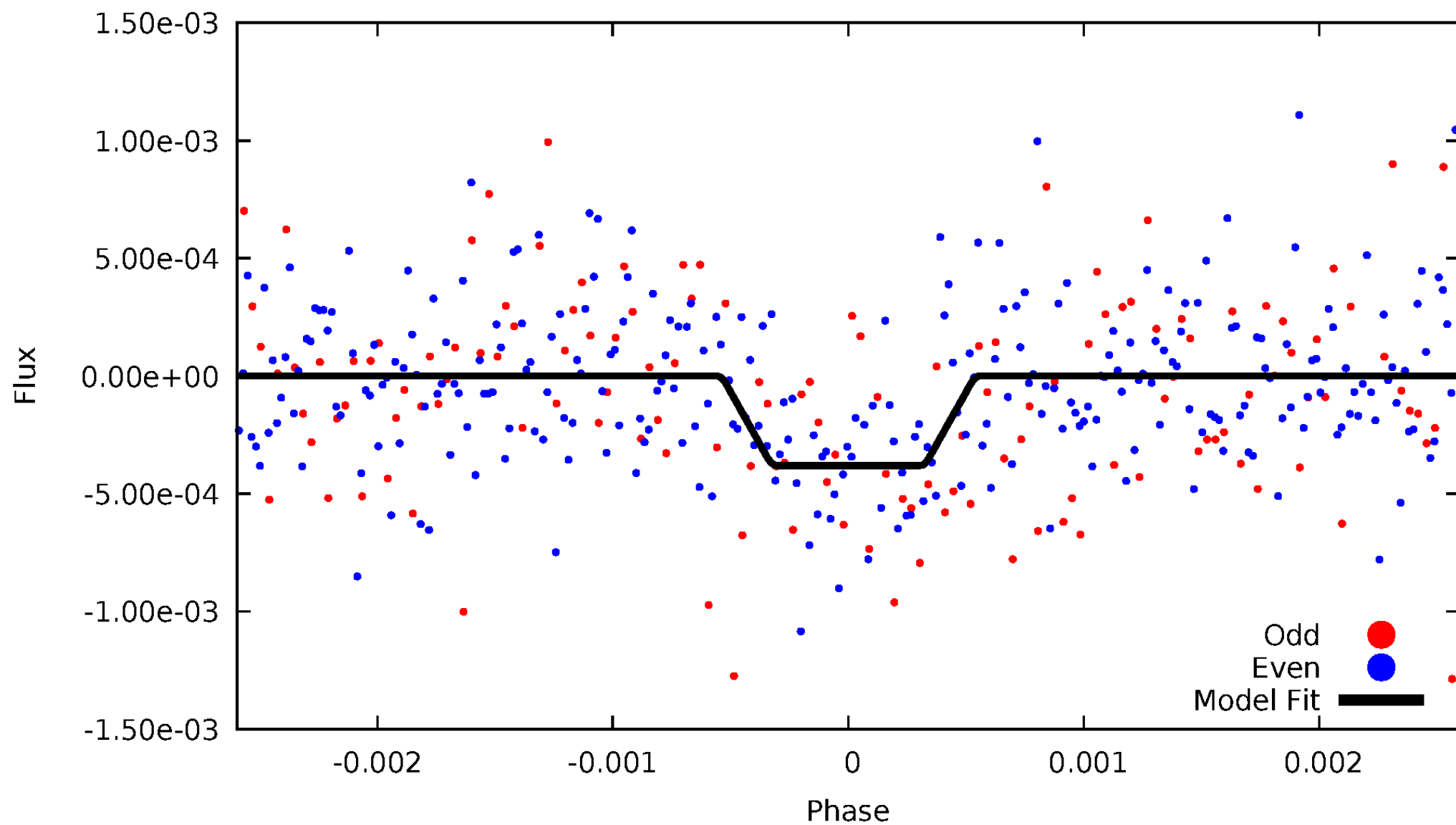
# DV Odd/Even

TCE 003548622-01



# ALT Odd/Even

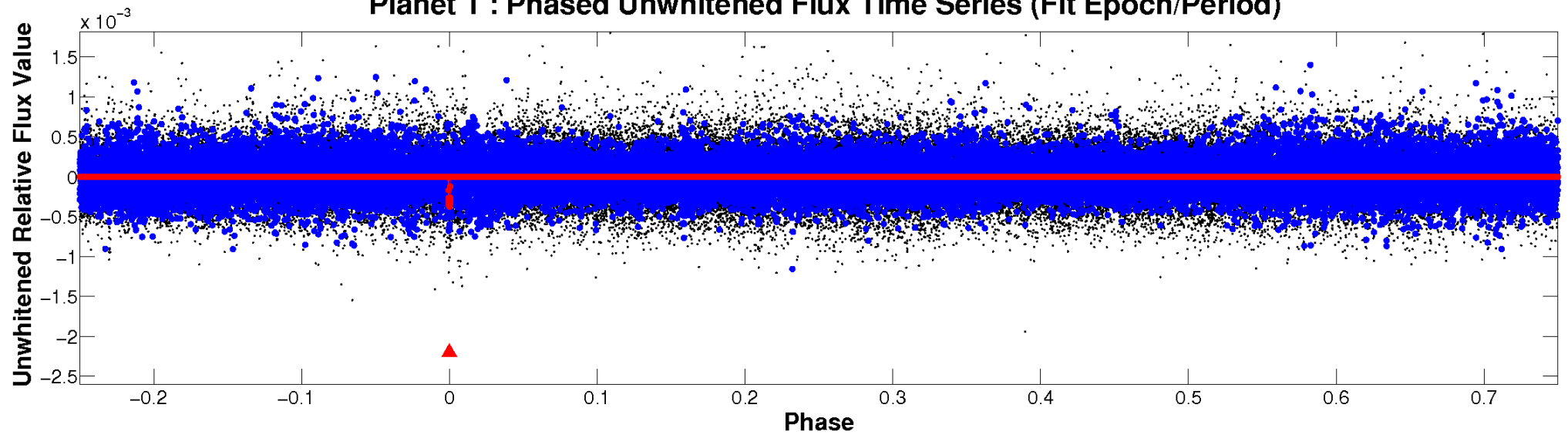
TCE 003548622-01



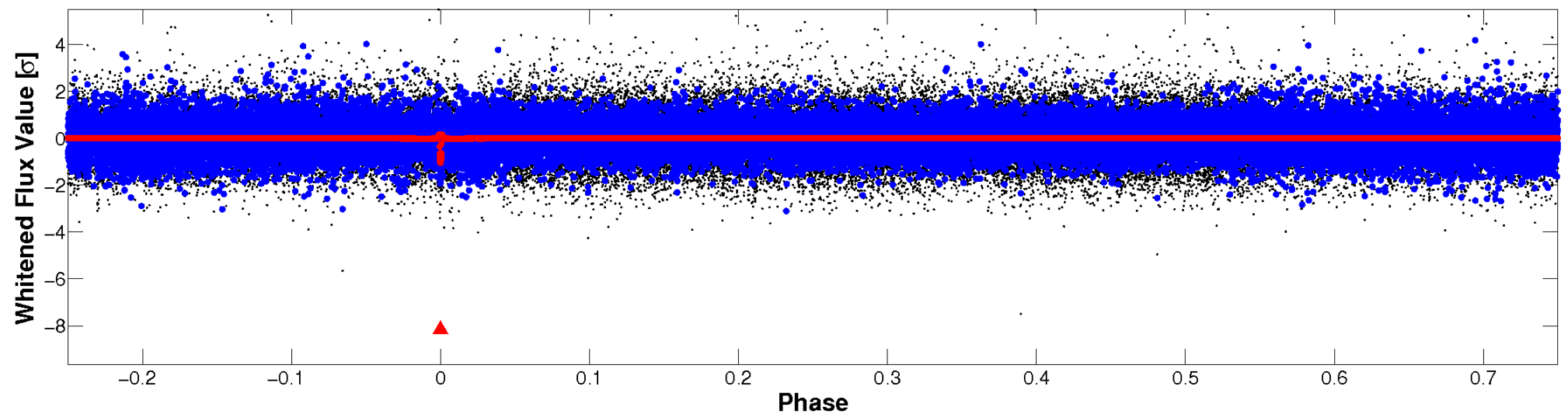


# Non-Whitened Vs. Whitened Light Curve

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

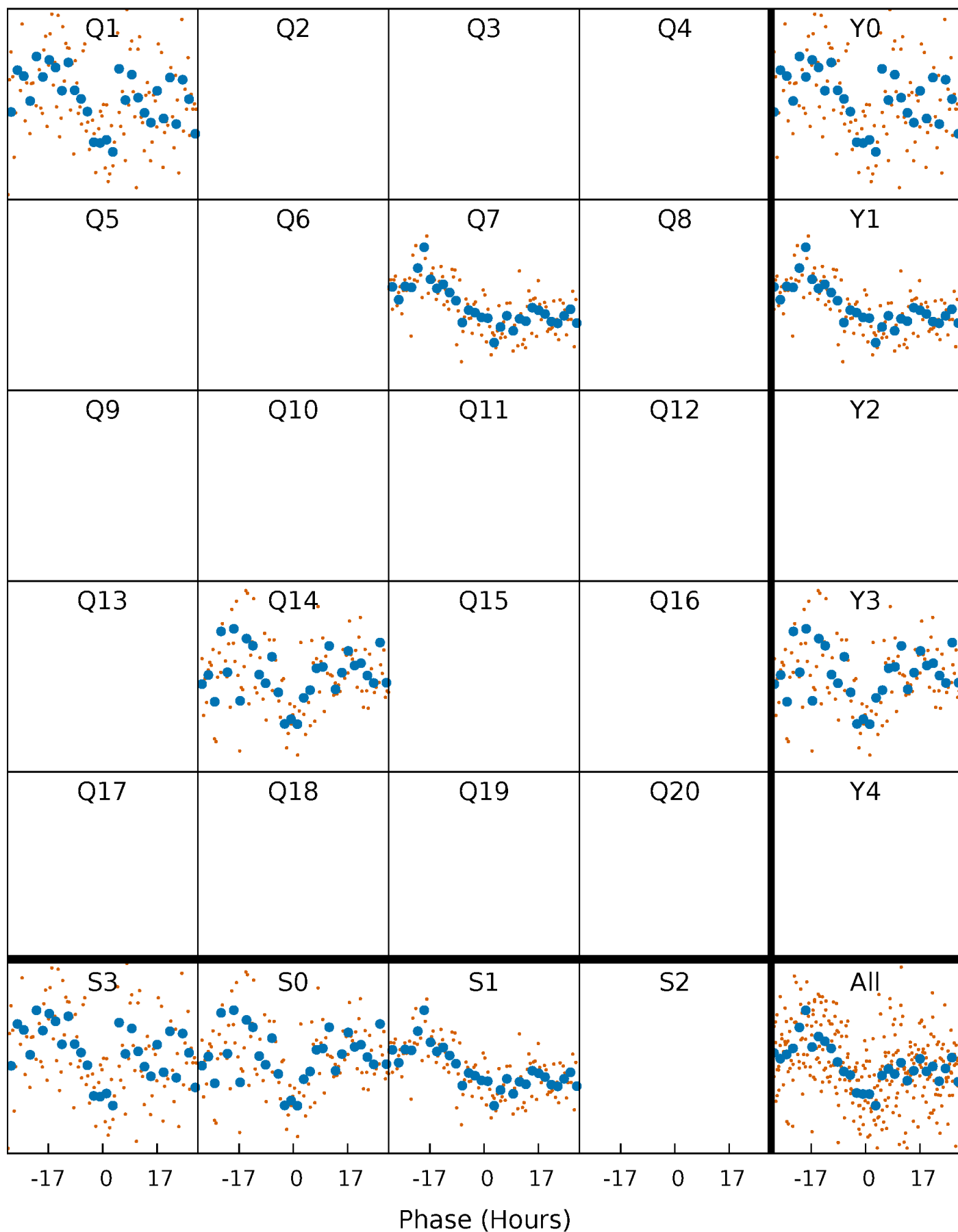


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

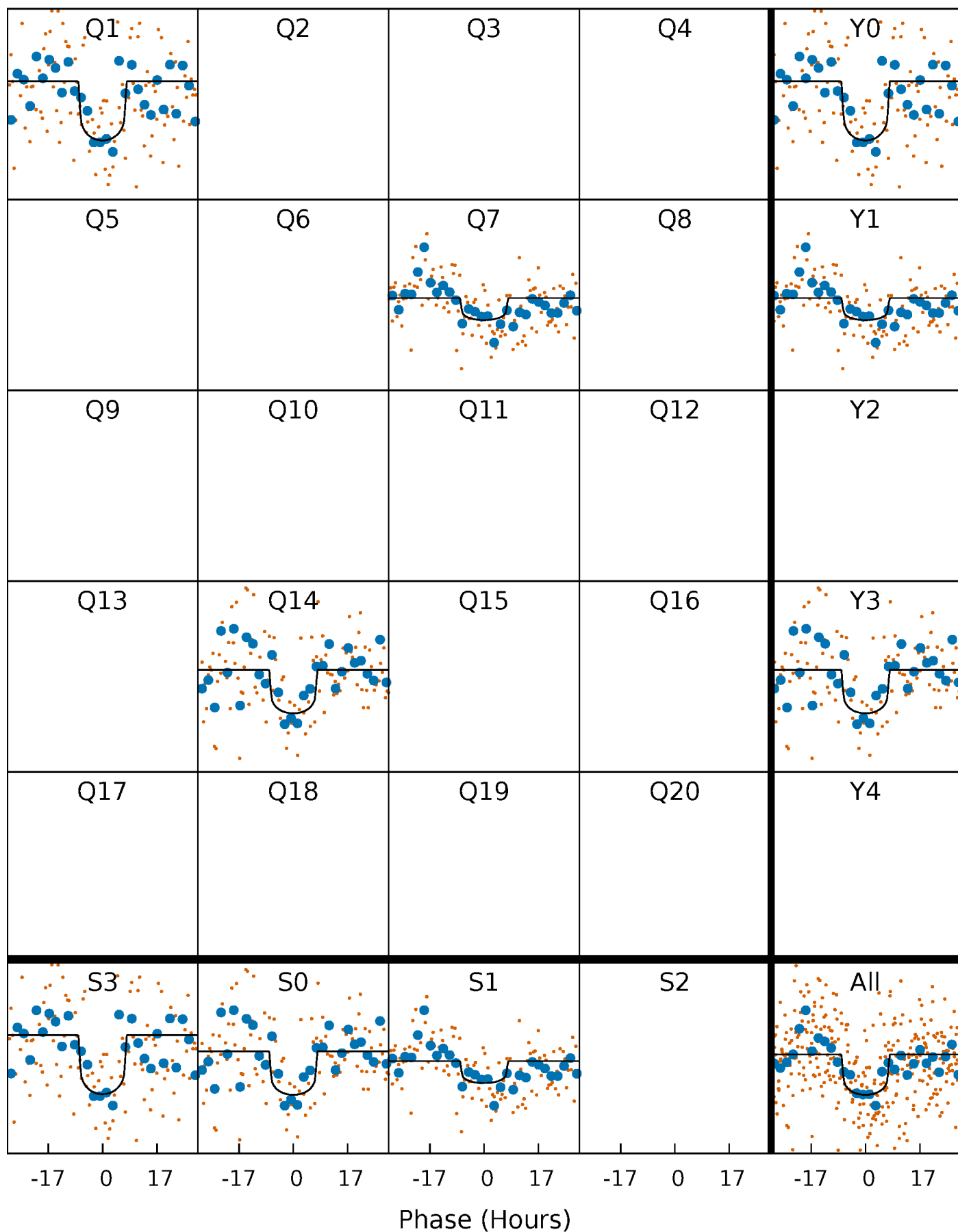
TCE 003548622-01 P=569.421821 Days  $T_0=143.495187$  (BKJD)





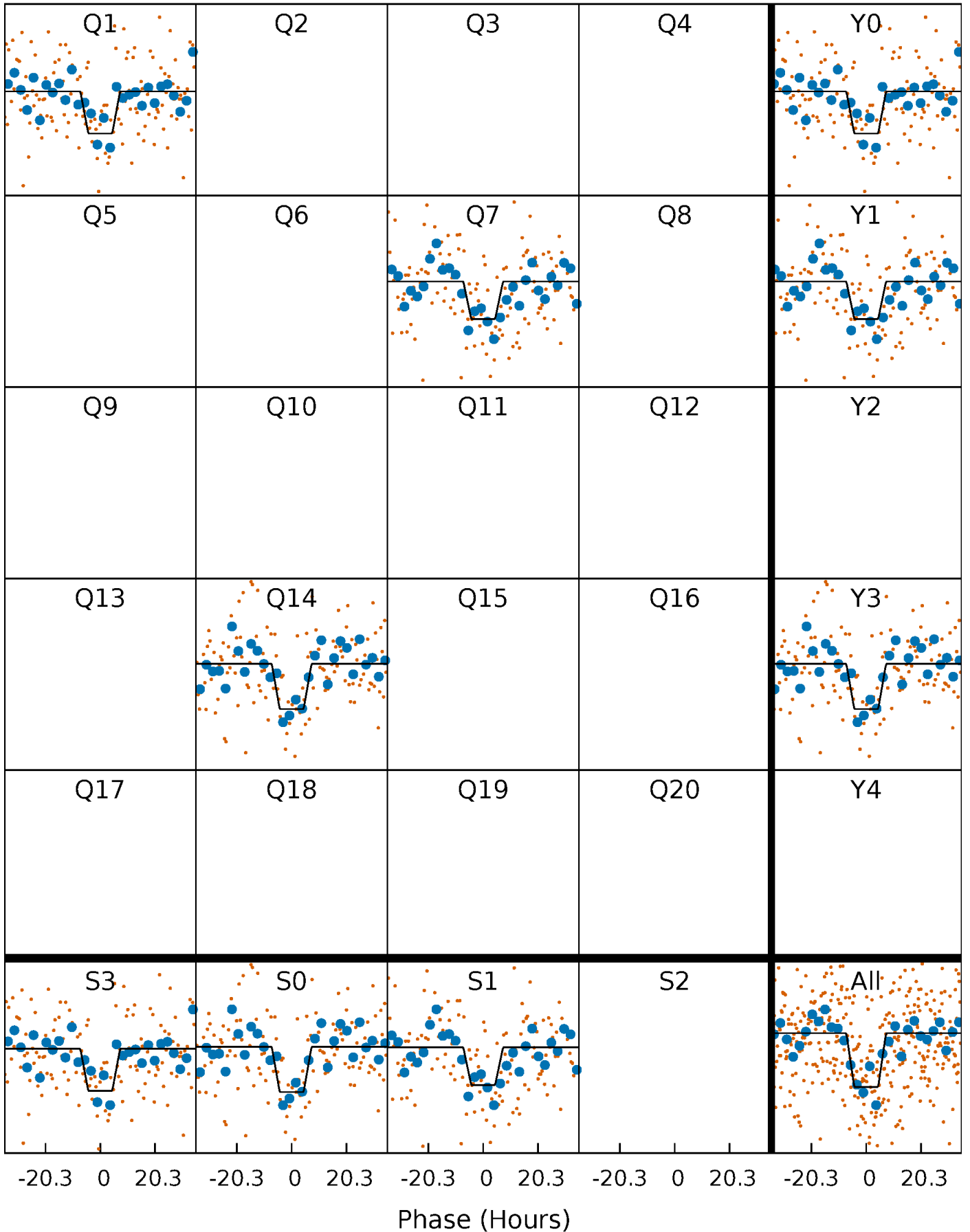
# DV Quarter-Phased Transit Curves

TCE 003548622-01 P=569.421821 Days  $T_0=143.495187$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

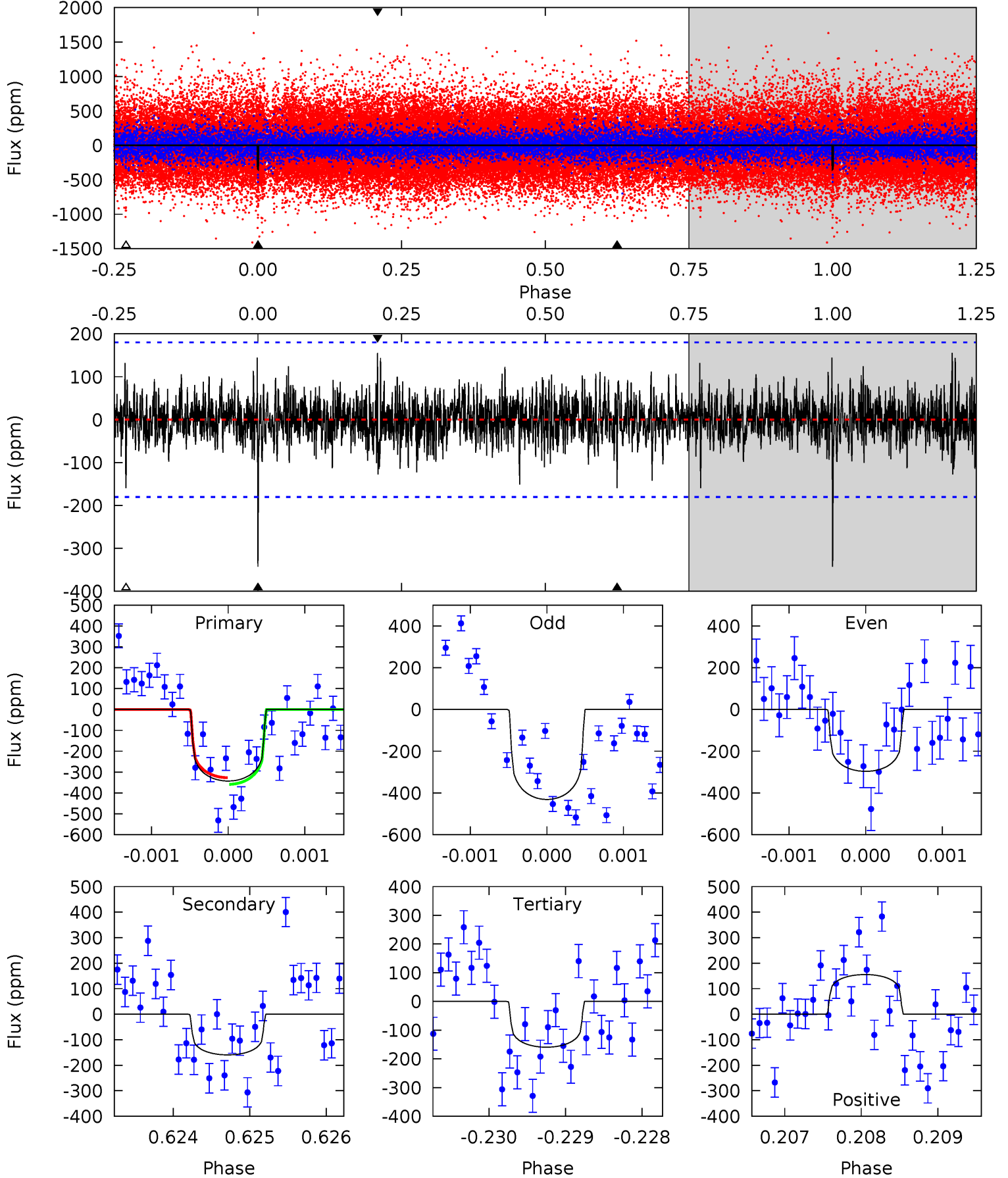
TCE 003548622-01 P=569.449261 Days  $T_0=143.448695$  (BKJD)



# DV Model-Shift Uniqueness Test

003548622-01, P = 569.421821 Days, E = 143.495187 Days

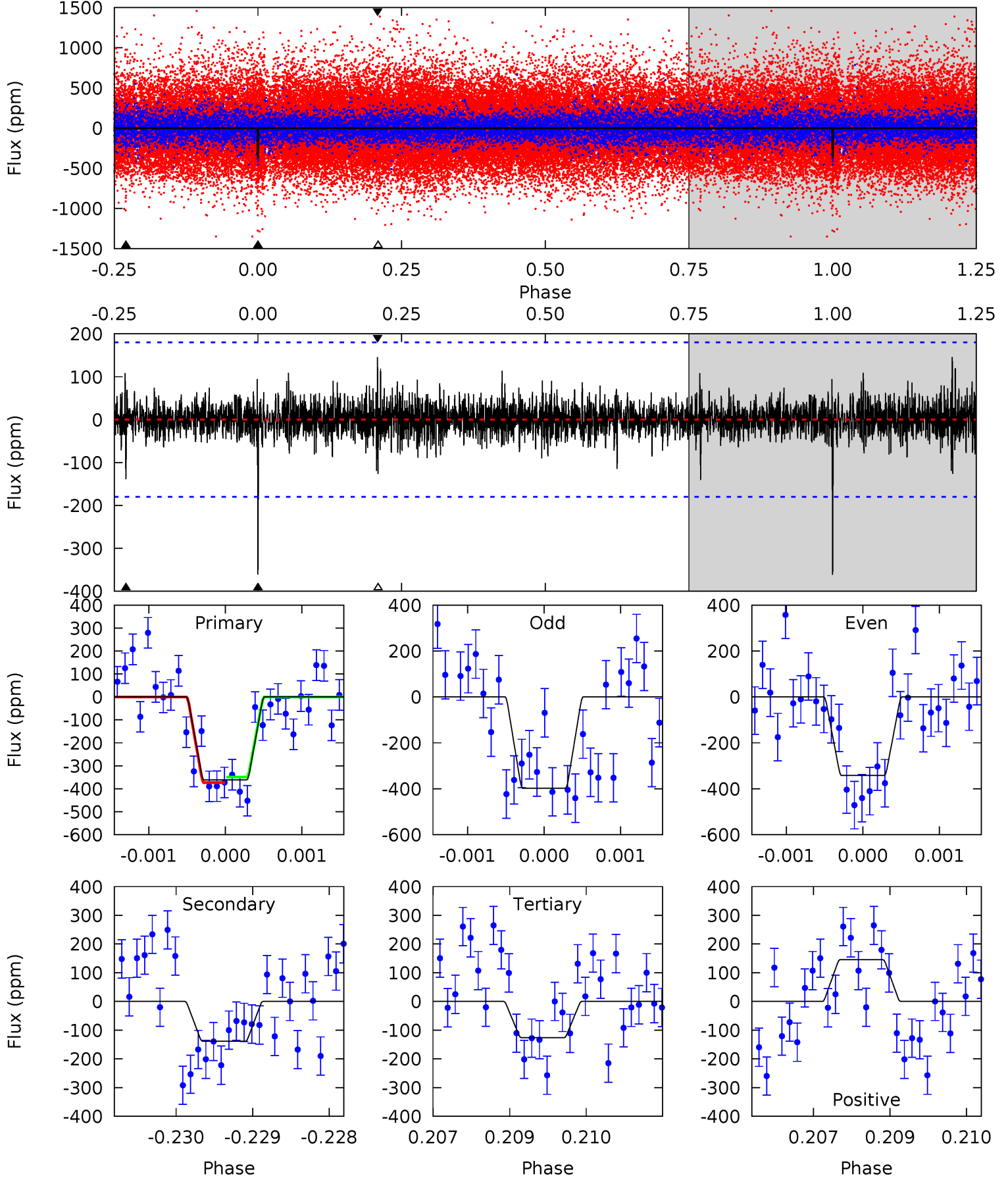
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.3	4.80	4.80	4.69	5.43	3.26	1.16	5.53	5.65	0.00	0.12	1.95	1.10	0.31	0.48



# Alt Model-Shift Uniqueness Test

003548622-01, P = 569.449261 Days, E = 143.448695 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
10.9	4.19	3.81	4.40	5.44	3.27	0.87	7.10	6.52	0.38	-0.21	0.80	0.95	0.29	0.36



### Stellar Parameters For KIC 003548622

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6117^{+182}_{-200}$	$4.496^{+0.050}_{-0.213}$	$-0.220^{+0.250}_{-0.350}$	$0.947^{+0.288}_{-0.096}$	$1.025^{+0.139}_{-0.139}$	$1.702^{+0.456}_{-0.907}$
	+3%/-3%	+1%/-5%	+114%/-159%	+30%/-10%	+14%/-14%	+27%/-53%
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 003548622-01 / KOI 6343.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-159 \pm 33$	$2.12^{+1.33}_{-1.21}$	$322^{+21}_{-17}$	$4948^{+2523}_{-826}$	$33304^{+154386}_{-20411}$
Alt.	$-139 \pm 33$	$2.18^{+1.30}_{-1.20}$	$321^{+23}_{-15}$	$4781^{+2254}_{-806}$	$28788^{+110106}_{-18371}$

$T_{\text{max}}$  = 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

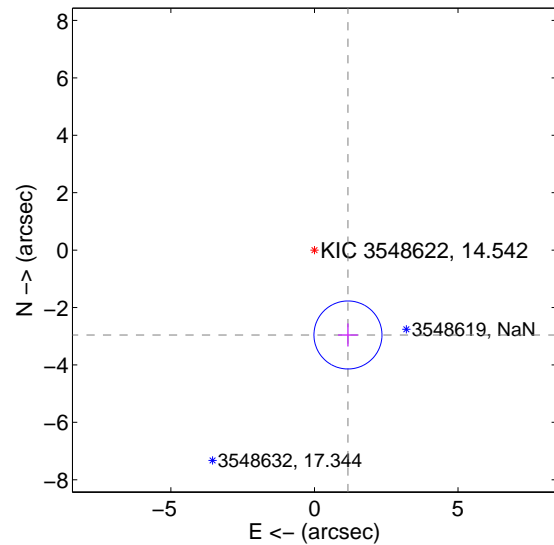
Supplemental centroid analysis for 003548622-01. Kepler magnitude: 14.54. Transit SNR 8.38

There are 1 quarters with good PRF difference image offsets

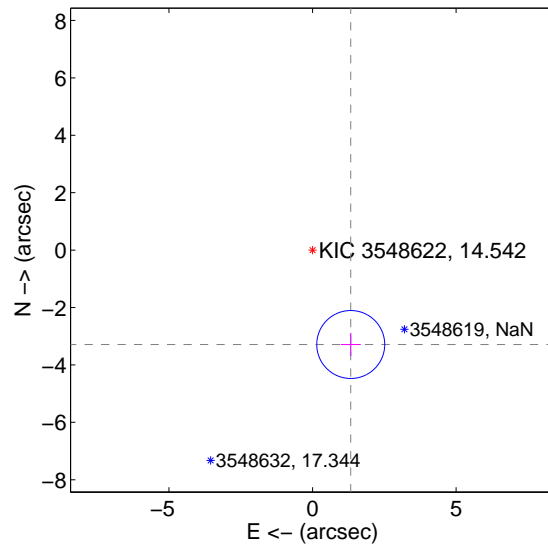
The direct PRF centroid is offset from the target star catalog position by about 0.37 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.179 \pm 0.395$	8.05	$-1.168 \pm 0.348$	$-2.957 \pm 0.402$
PRF-fit source offset from KIC position	$3.548 \pm 0.395$	8.99	$-1.331 \pm 0.348$	$-3.289 \pm 0.402$
photometric centroid source offset	$2.48 \pm 1.52$	1.64	$0.76 \pm 1.64$	$-2.36 \pm 1.50$

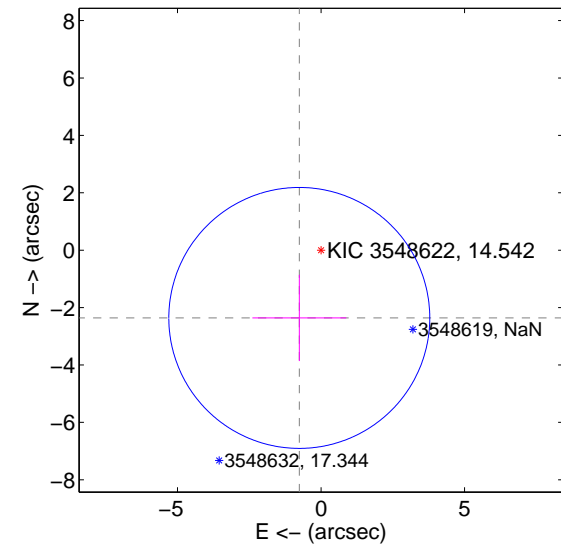
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



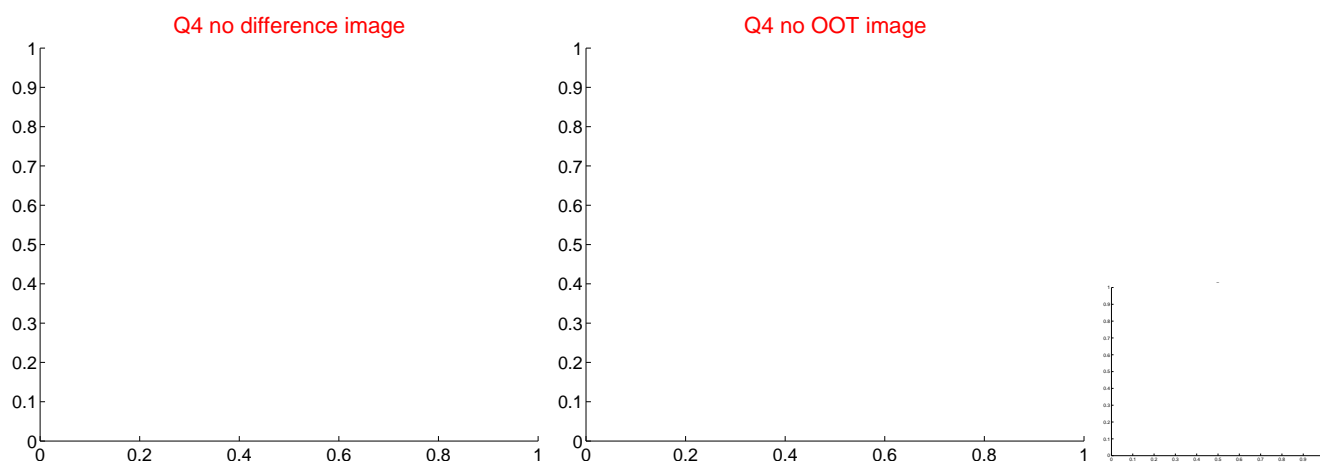
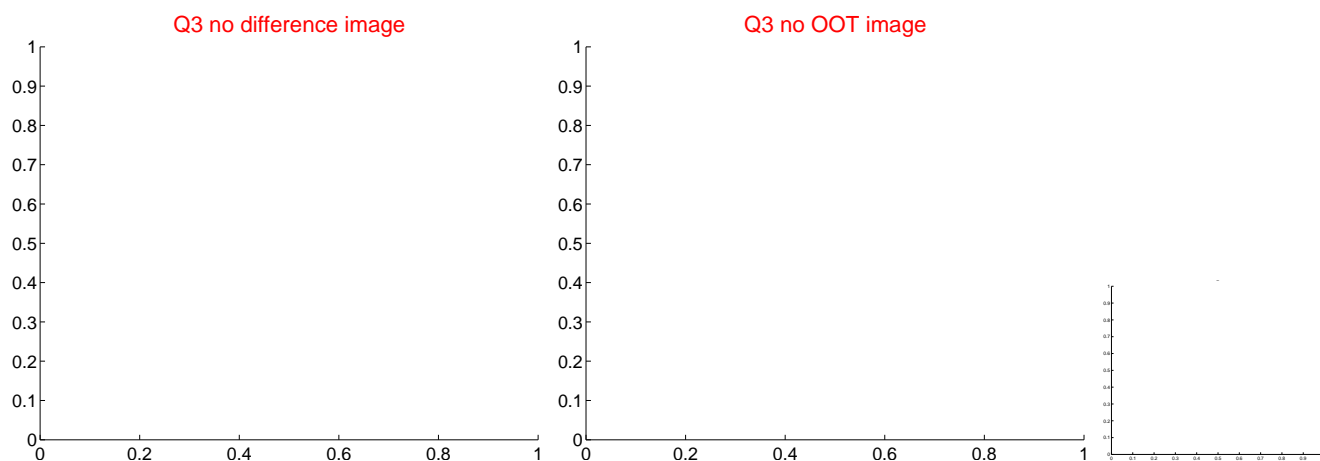
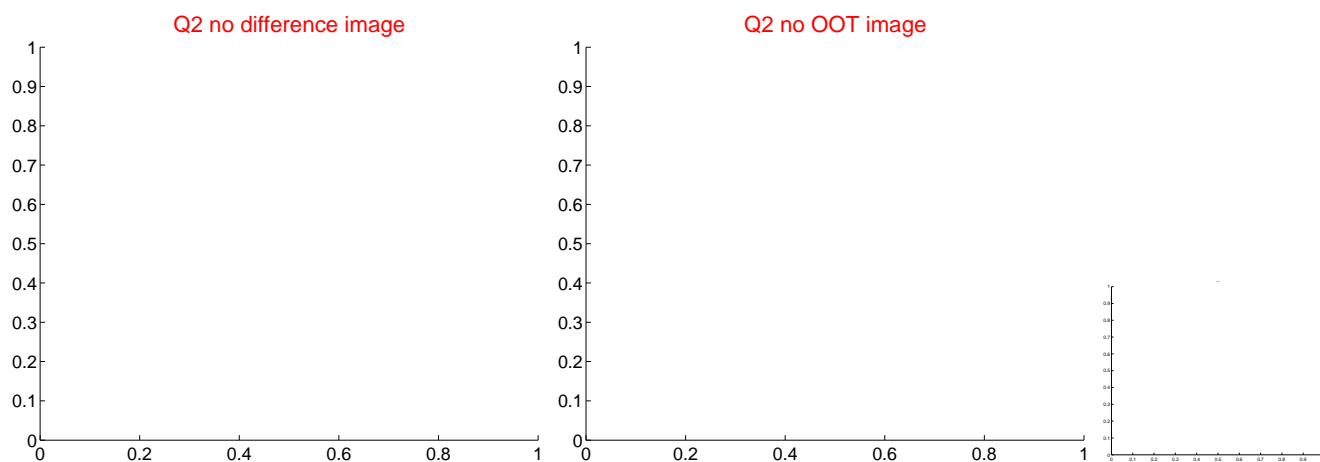
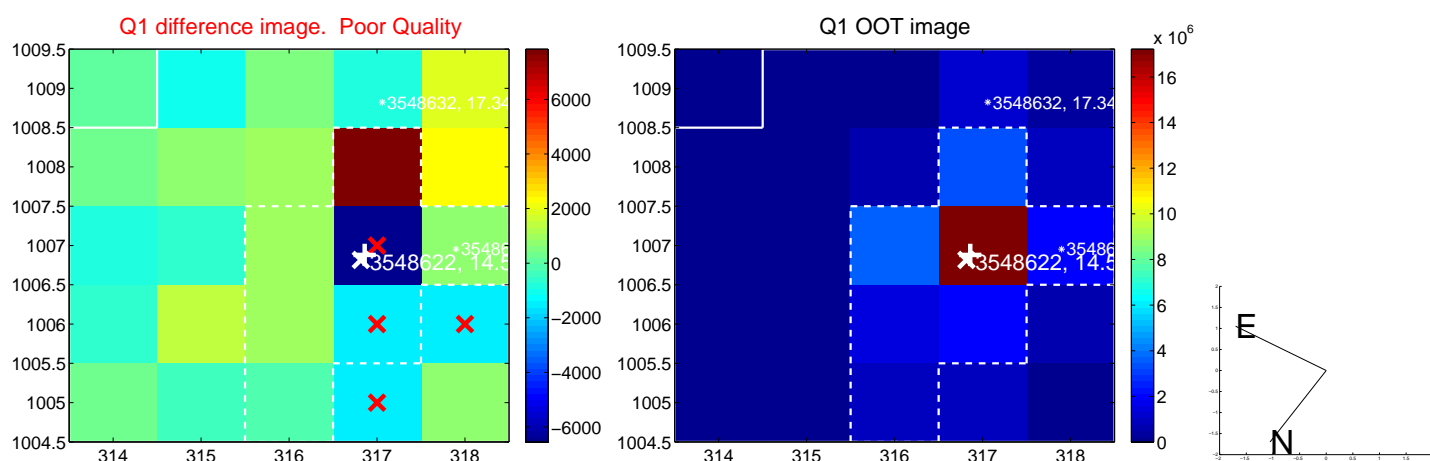
offset from photometric centroids



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

Q5 no difference image



Q5 no OOT image



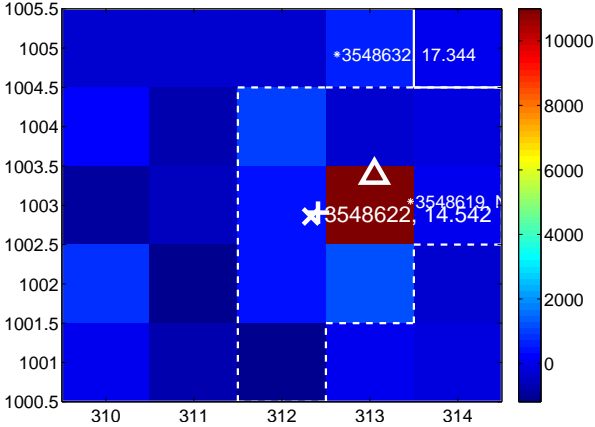
Q6 no difference image



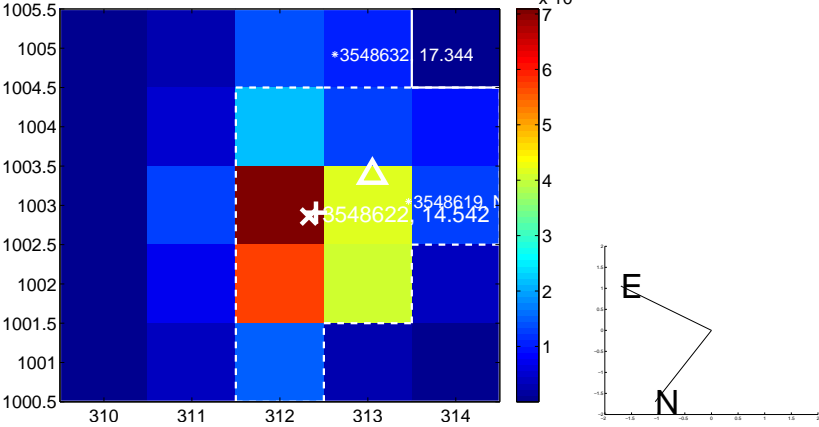
Q6 no OOT image



Q7 difference image



Q7 OOT image



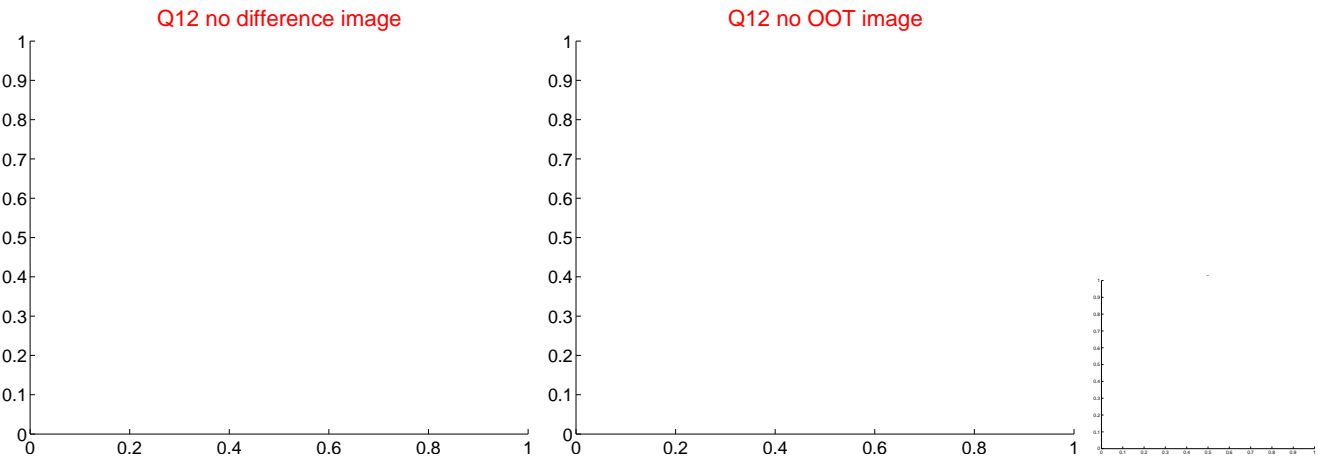
Q8 no difference image



Q8 no OOT image



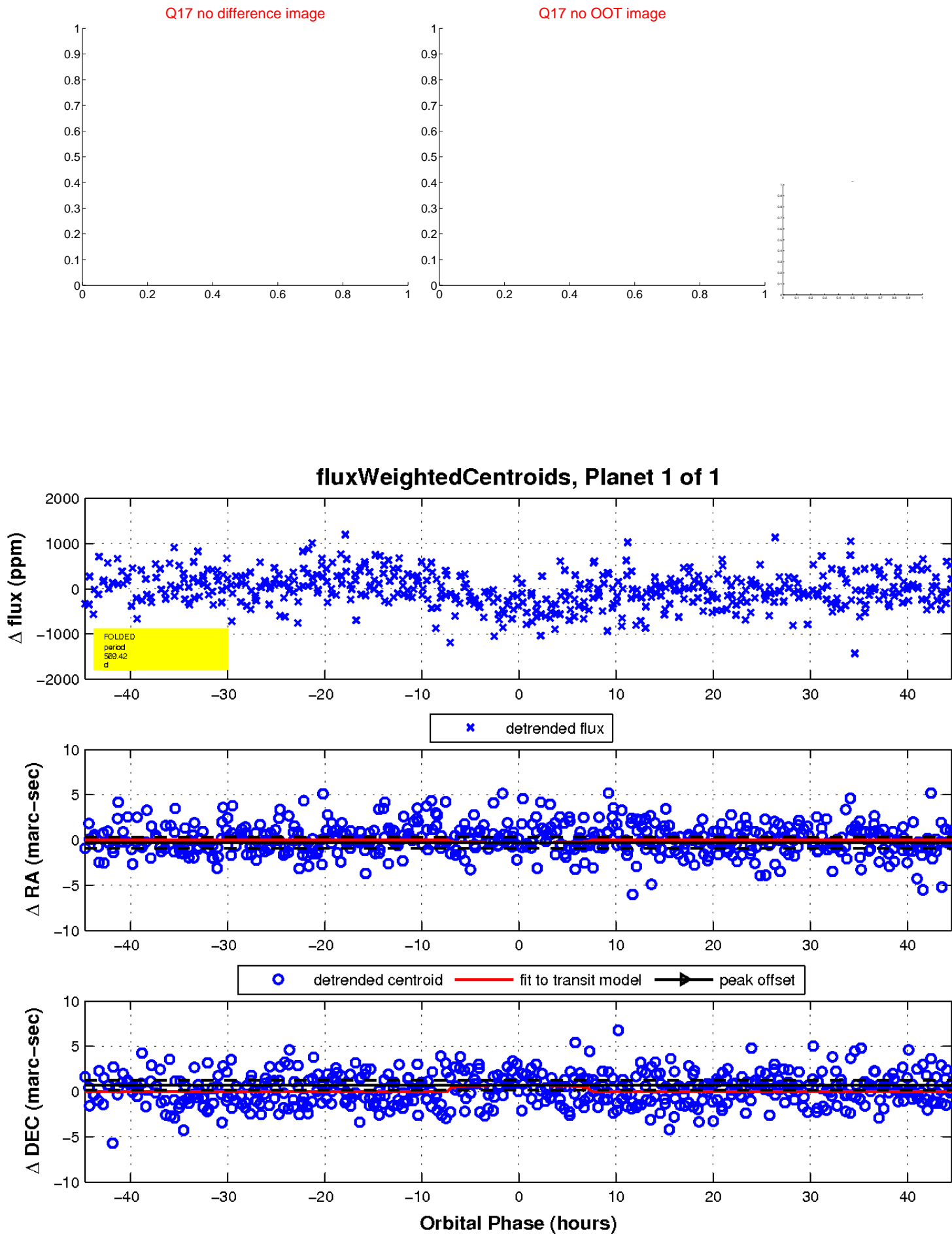
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

