

# KIC 005858919

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005858919-01	OBS	8109.01	218.770560	250.924865	149.2	3.207	7.6	7.7	151.18	3297	248.58	3764.63

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005858919-01	OBS	PC	0.22	0	0	0	0	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.

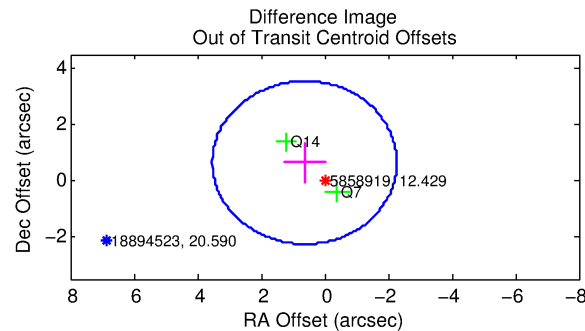
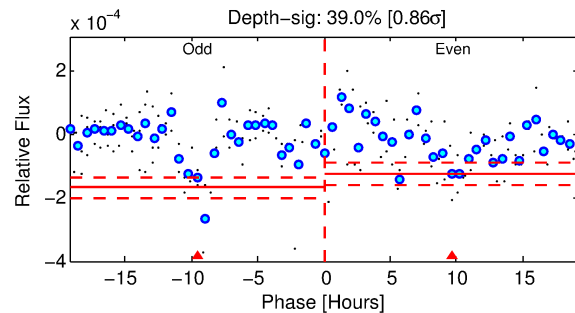
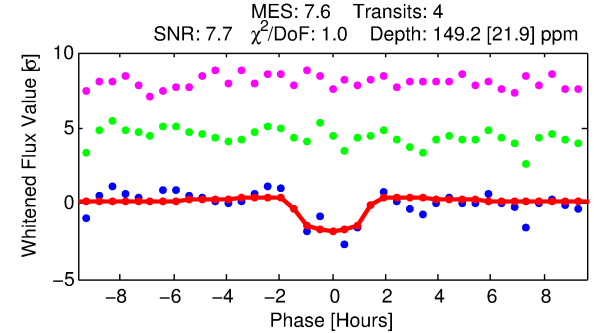
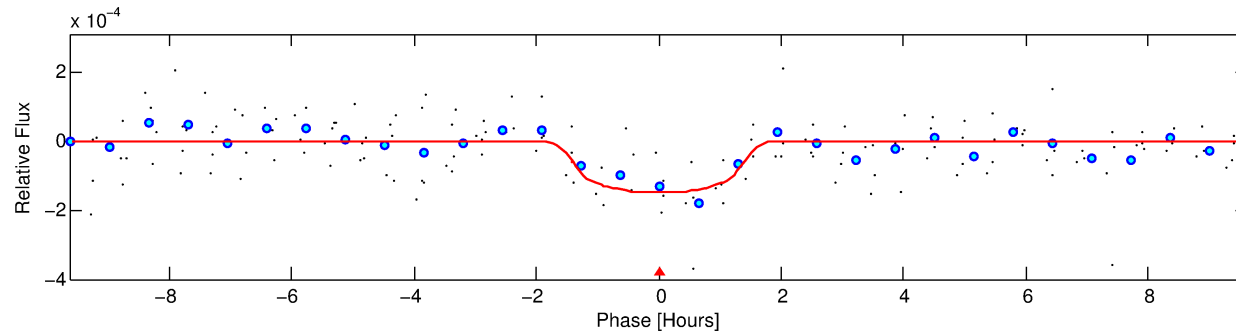
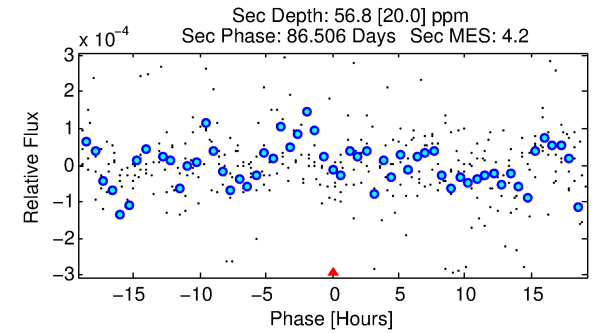
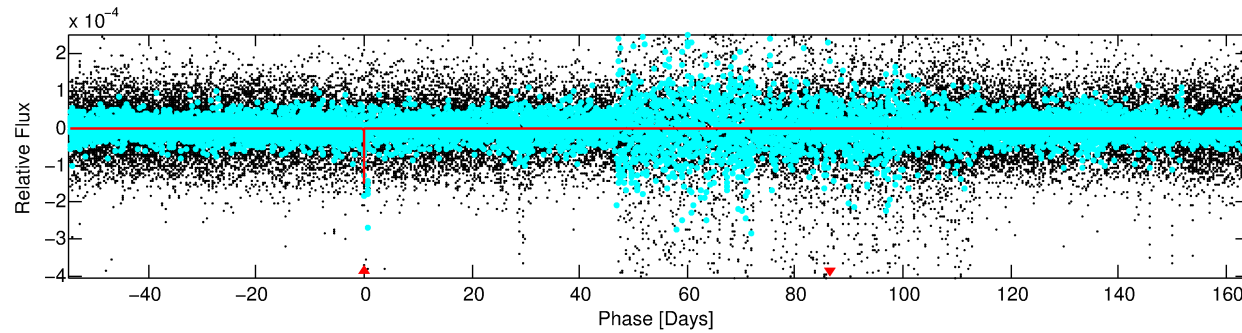
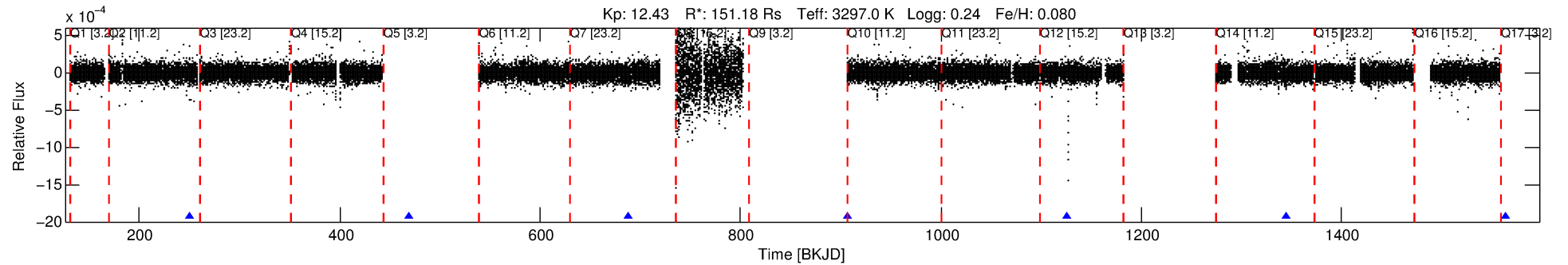
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005858919-01

No Significant Match Found

# DV One-Page Summary

KIC: 5858919 Candidate: 1 of 1 Period: 218.771 d



## DV Fit Results:

Period = 218.77056 [0.00272] d  
Epoch = 250.9249 [0.0080] BKJD  
Rp/R\* = 0.0151 [0.0247]  
a/R\* = 215.78 [1204.20]  
b = 0.93 [0.88]  
Seff = 3764.63 [527.66]  
Teff = 1997 [70] K  
Rp = 248.58 [408.27] Re  
a = 0.8017 [0.0596] AU  
Ag = 0.33 [1.07] [-0.63σ]  
Teffp = 2332 [1923] K [0.17σ]

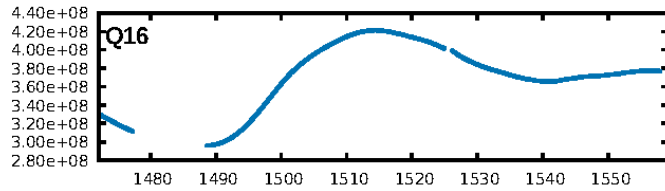
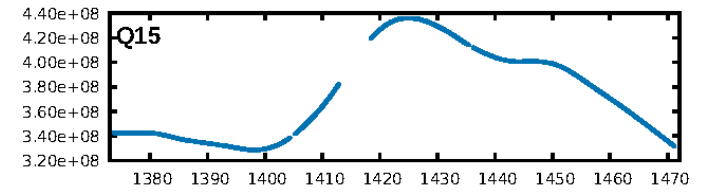
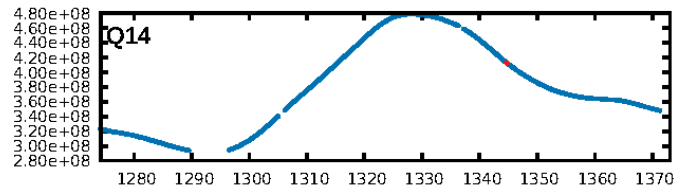
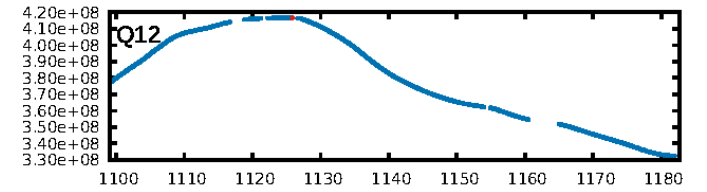
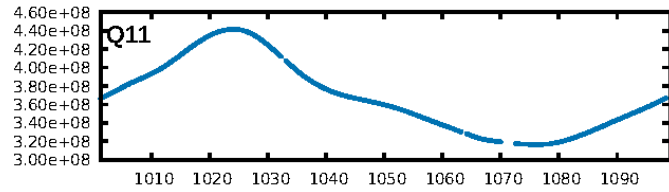
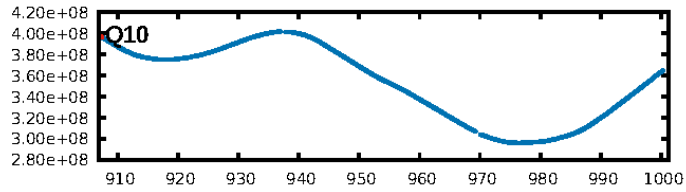
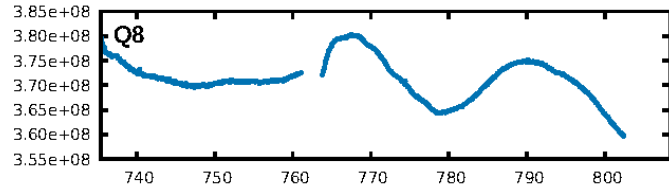
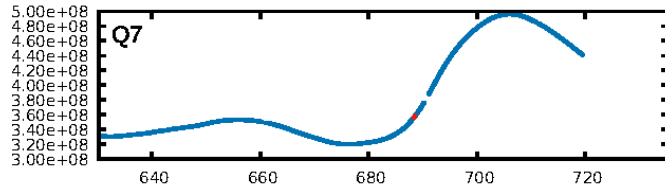
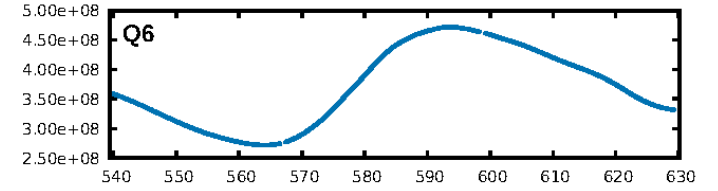
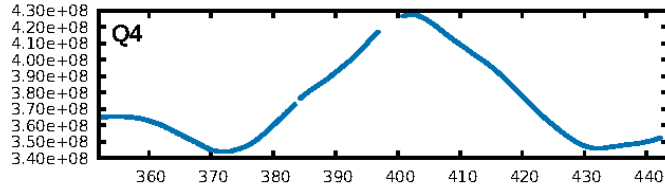
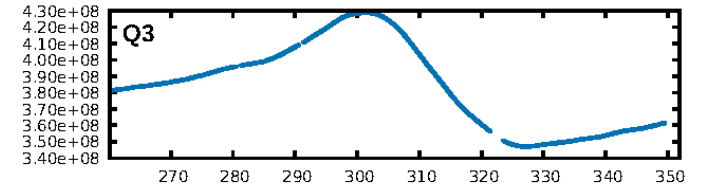
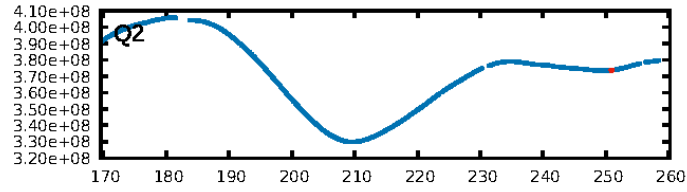
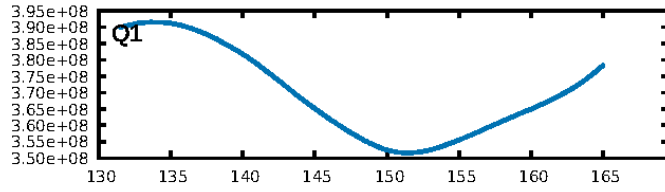
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 71.1%  
ModelChiSquareGof-sig: 84.6%  
Bootstrap-pfa: 1.25e-07  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.5553  
Centroid-sig: 0.2%  
Centroid-so: 3.410 arcsec [1.98σ]  
OotOffset-rm: 0.900 arcsec [0.93σ]  
KicOffset-rm: 0.822 arcsec [0.92σ]  
OotOffset-st: 1/1/0/0 [2]  
KicOffset-st: 1/1/0/0 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [3/3]

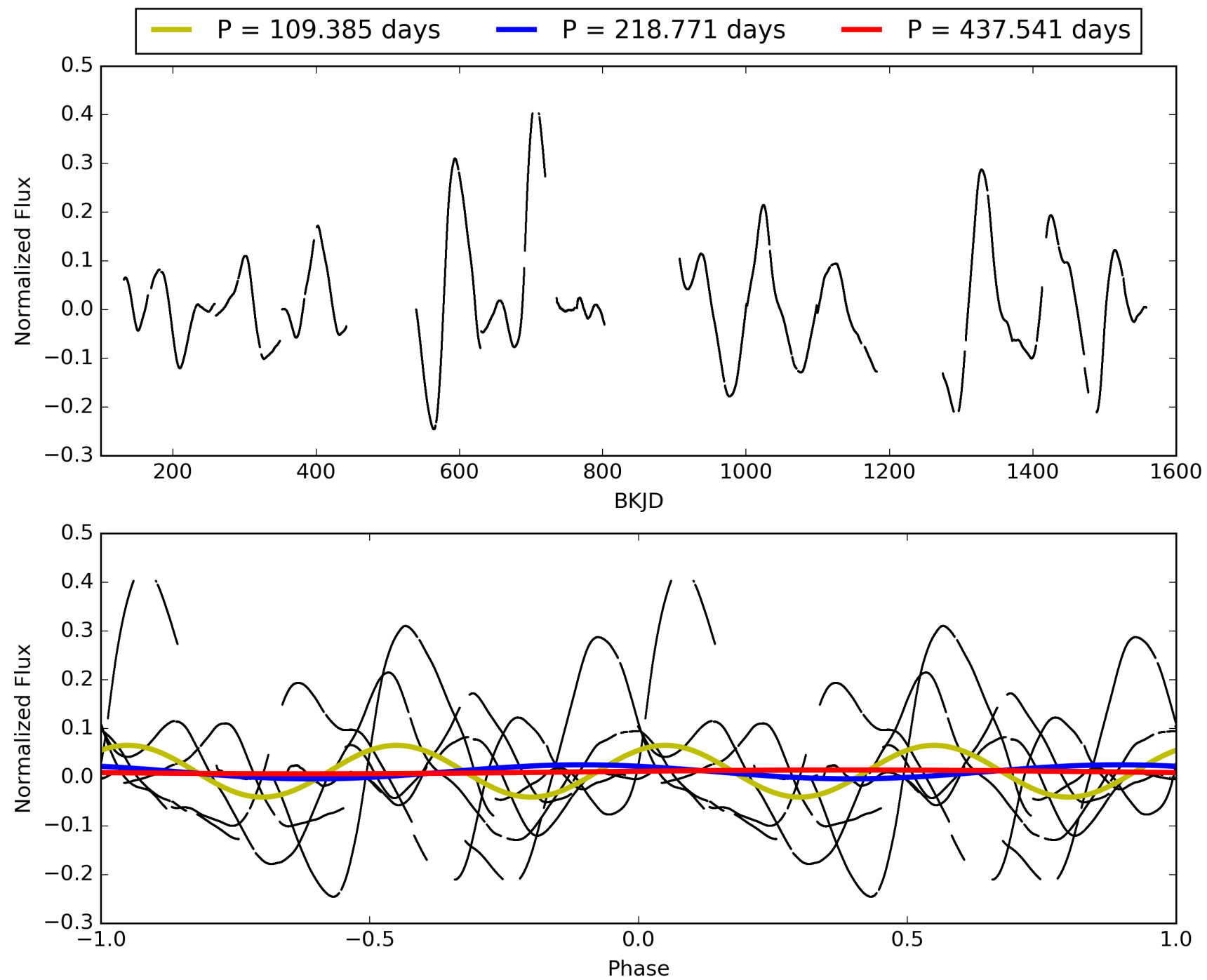
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:40:18 Z

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

# TCE 005858919-01, PDC Light Curves

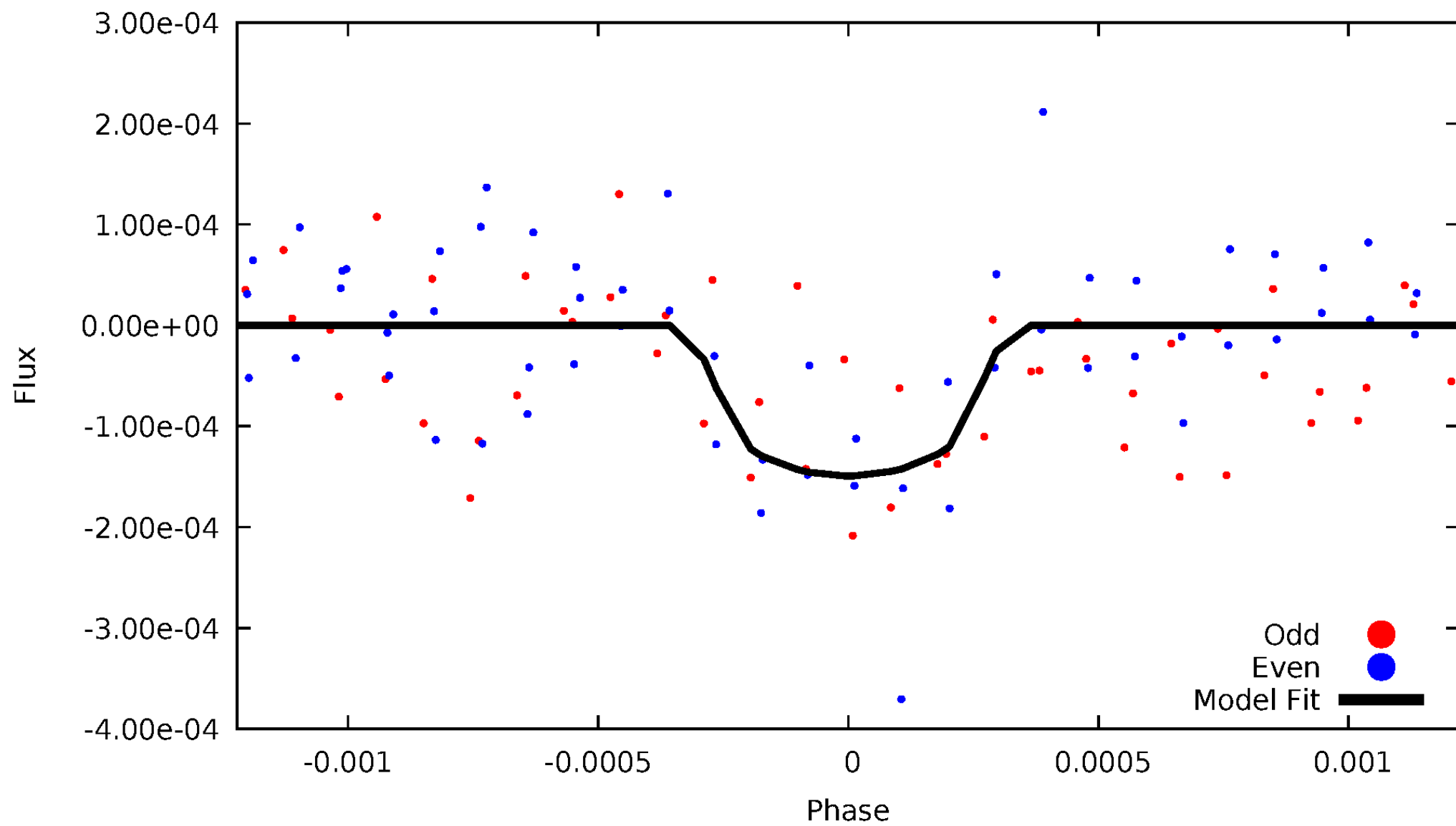


TCE 005858919-01



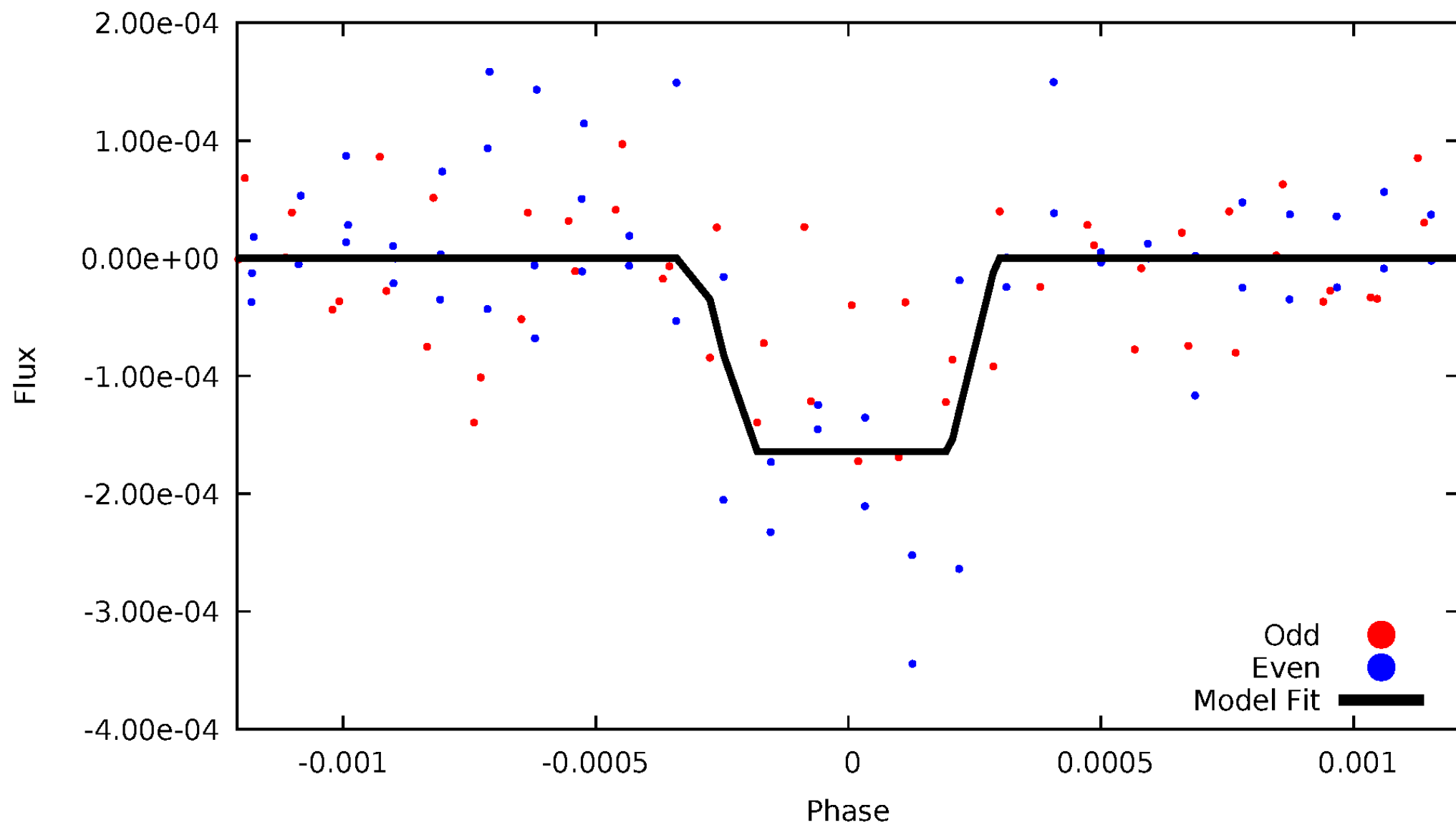
# DV Odd/Even

TCE 005858919-01

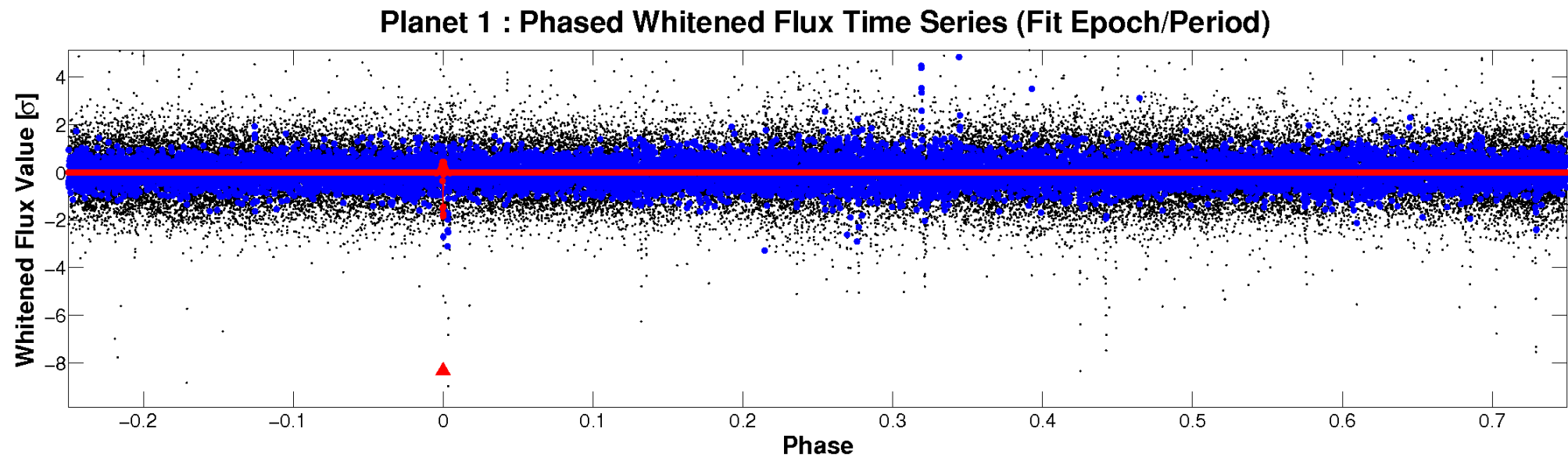
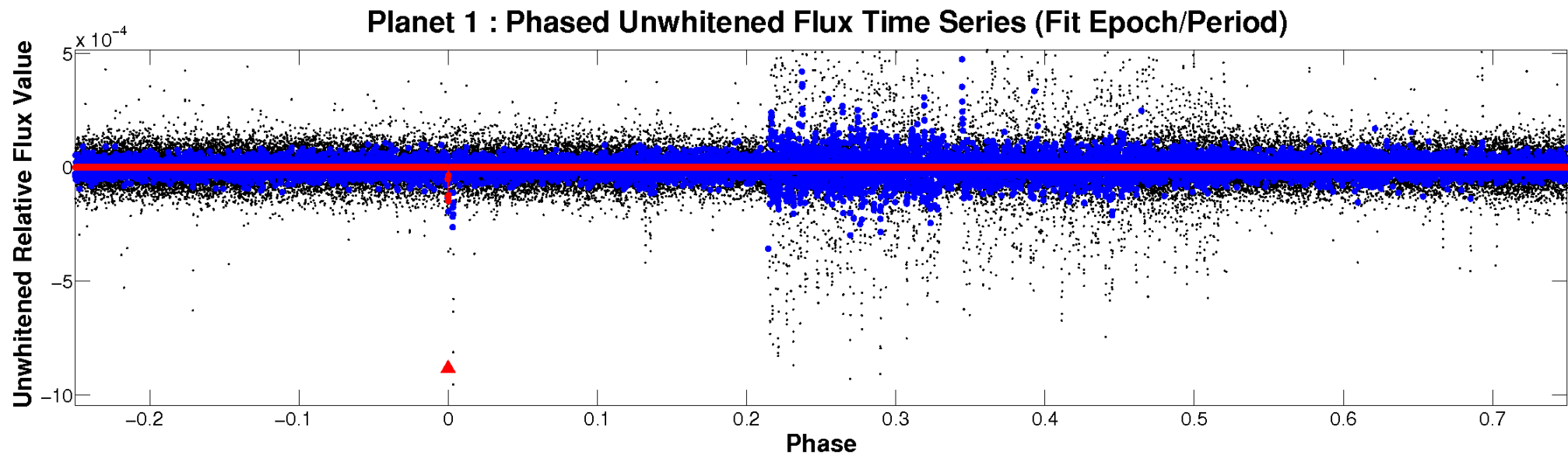


# ALT Odd/Even

TCE 005858919-01

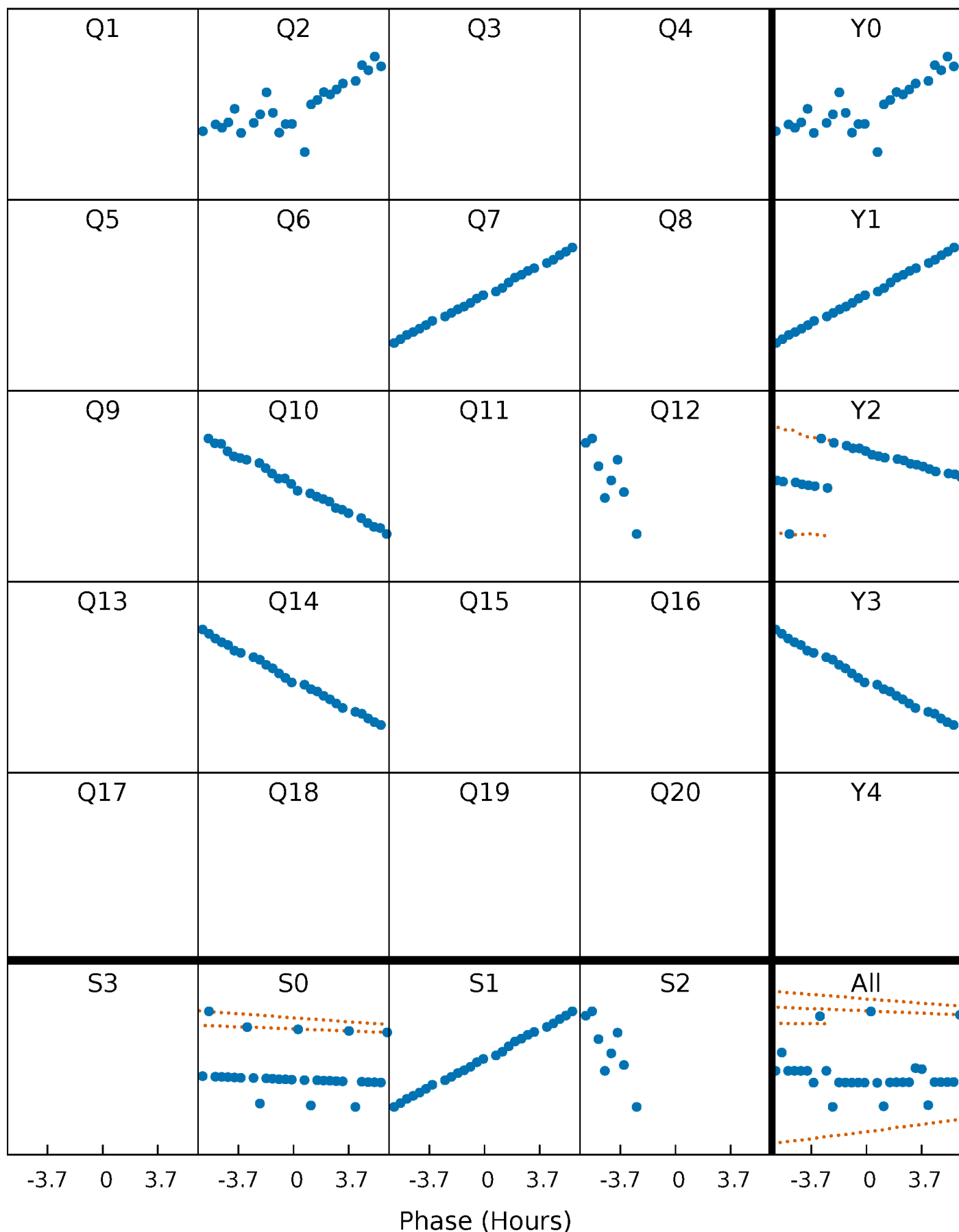


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

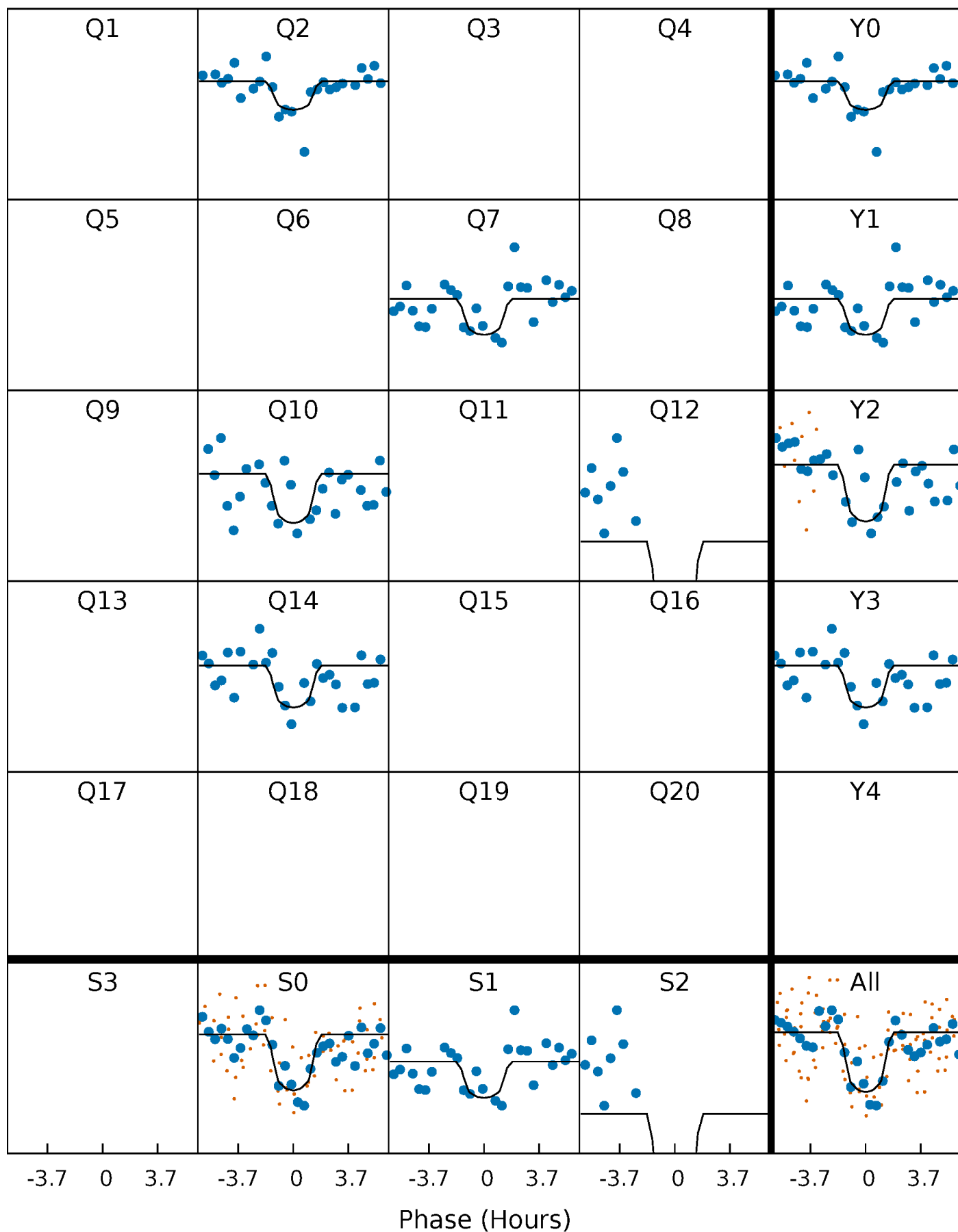
TCE 005858919-01 P=218.770560 Days  $T_0=250.924865$  (BKJD)





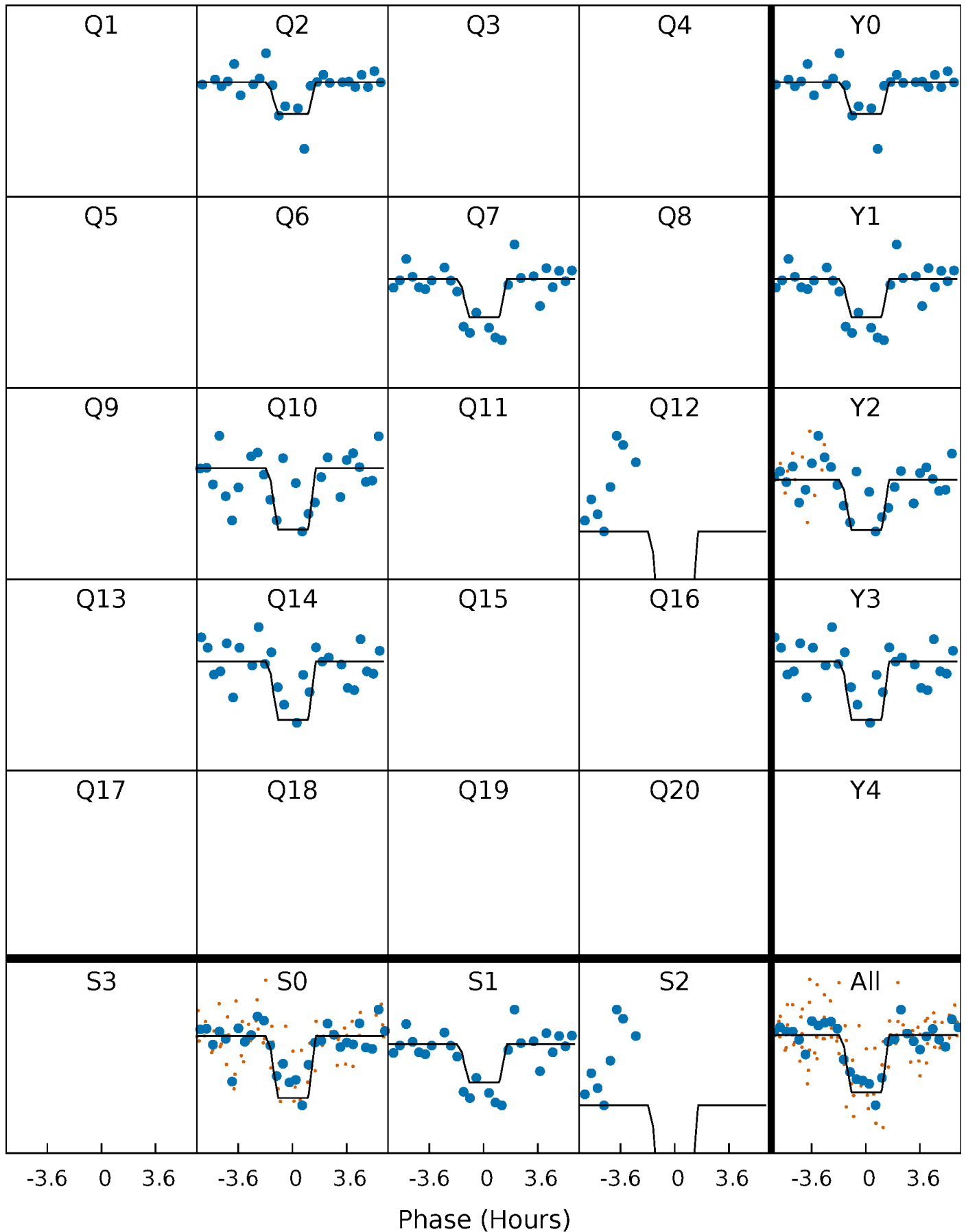
# DV Quarter-Phased Transit Curves

TCE 005858919-01 P=218.770560 Days  $T_0=250.924865$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

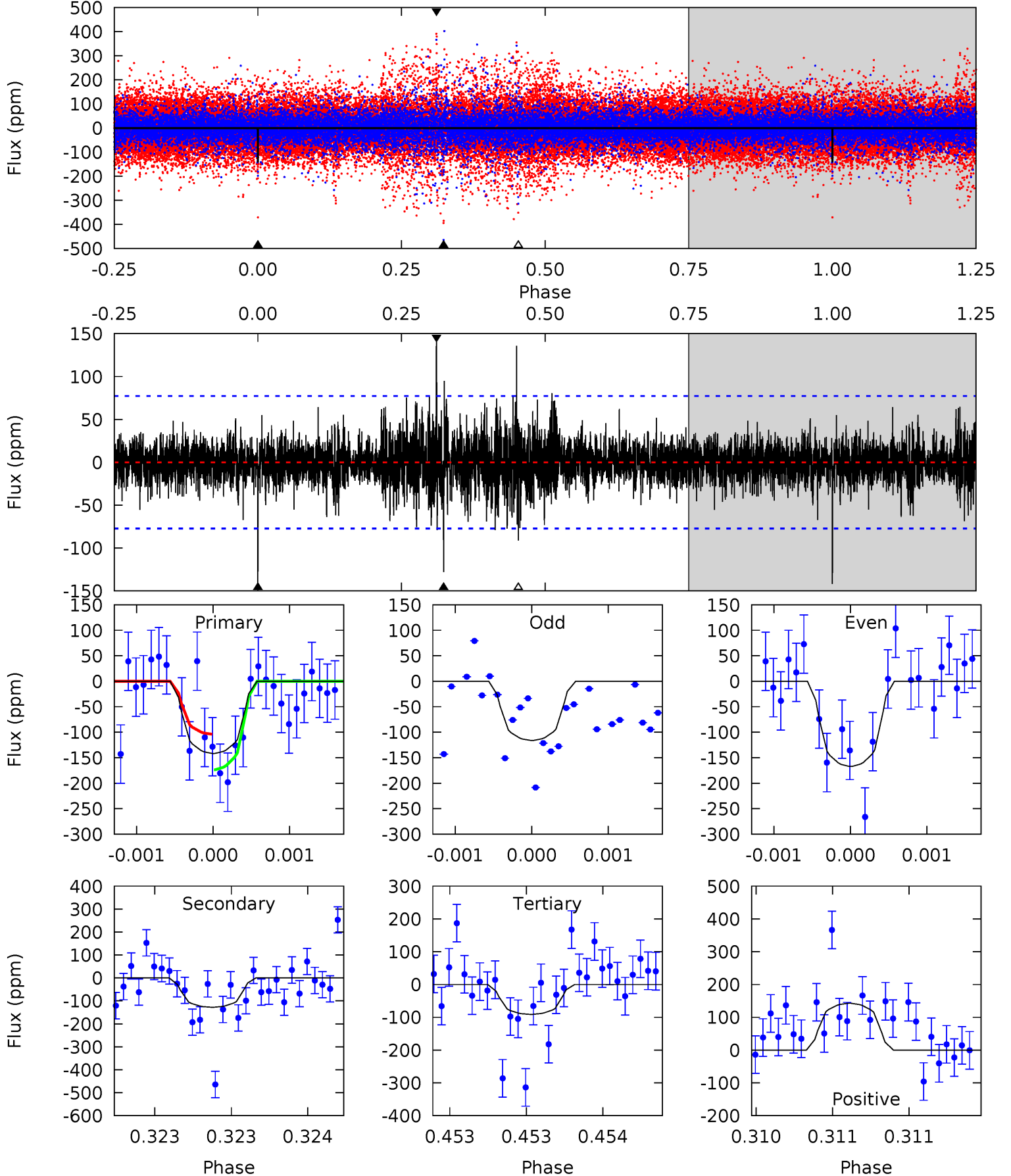
TCE 005858919-01 P=218.771009 Days  $T_0=250.920252$  (BKJD)



# DV Model-Shift Uniqueness Test

005858919-01, P = 218.770560 Days, E = 32.154305 Days

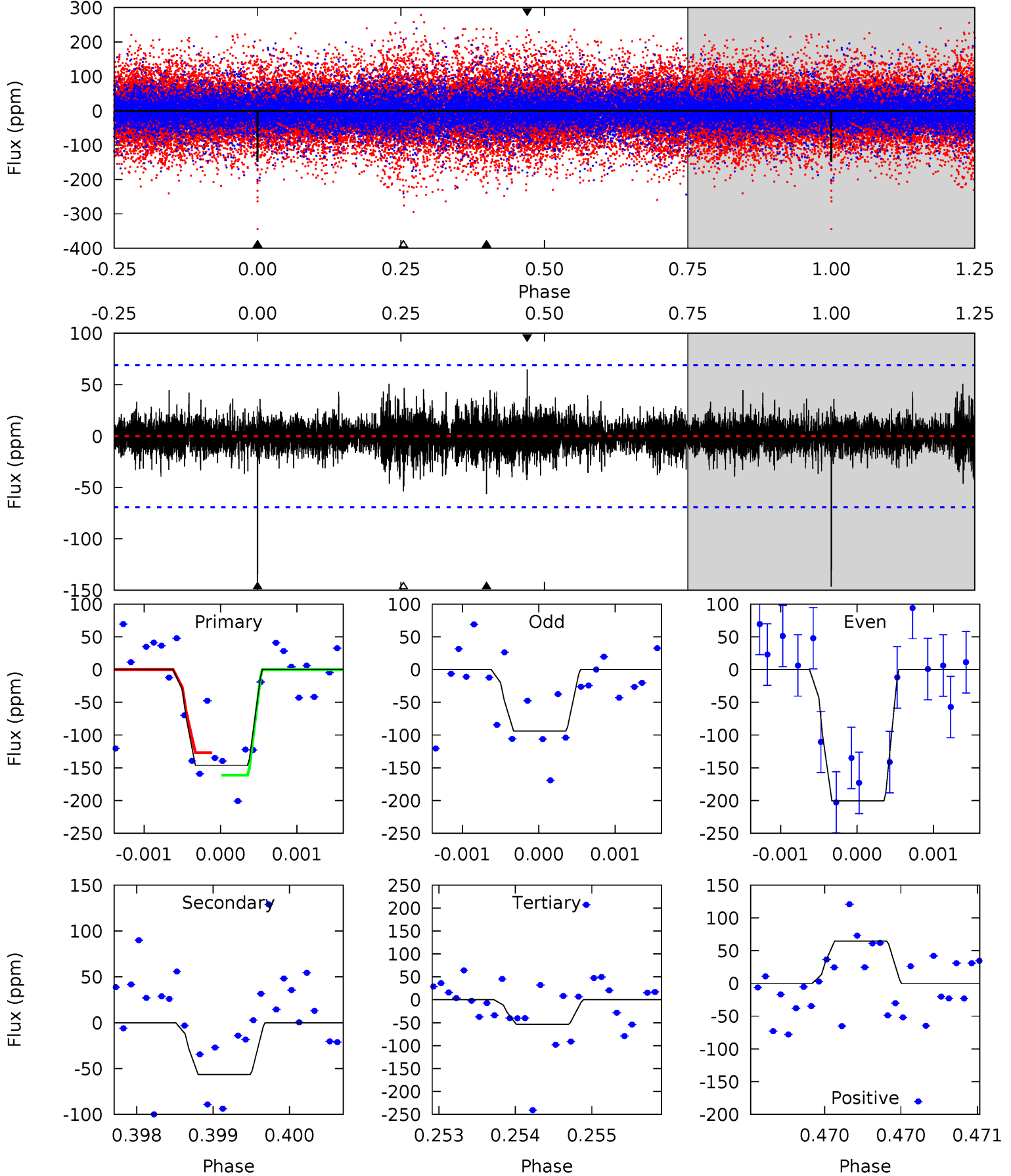
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.1	9.15	6.52	10.2	5.53	3.42	1.41	3.61	-0.07	2.62	-1.06	1.63	1.08	0.50	2.49



# Alt Model-Shift Uniqueness Test

005858919-01,  $P = 218.771009$  Days,  $E = 32.149243$  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
11.8	4.54	4.32	5.20	5.56	3.46	0.88	7.45	6.57	0.22	-0.66	4.22	1.13	0.31	1.38



### Stellar Parameters For KIC 005858919

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3297^{+91}_{-91}$	$0.236^{+0.027}_{-0.033}$	$0.080^{+0.200}_{-0.250}$	$151.184^{+4.956}_{-15.859}$	$1.436^{+0.050}_{-0.267}$	$0.000^{+0.000}_{-0.000}$
	+3%/-3%	+11%/-14%	+250%/-312%	+3%/-10%	+3%/-19%	+16%/-8%
Source	PHO54	AST54	PHO54	DSEP		

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

### Secondary Eclipse Parameters for KIC 005858919-01 / KOI 8109.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-128 \pm 14$	$366.43^{+352.75}_{-232.22}$	$2801^{+78}_{-88}$	$2037^{+1572}_{-4621}$	$0.329^{+2.271}_{-0.243}$
Alt.	$-56 \pm 12$	$378.13^{+364.80}_{-260.06}$	$2794^{+85}_{-91}$	$-2467^{+5705}_{-187}$	$0.133^{+1.224}_{-0.097}$

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

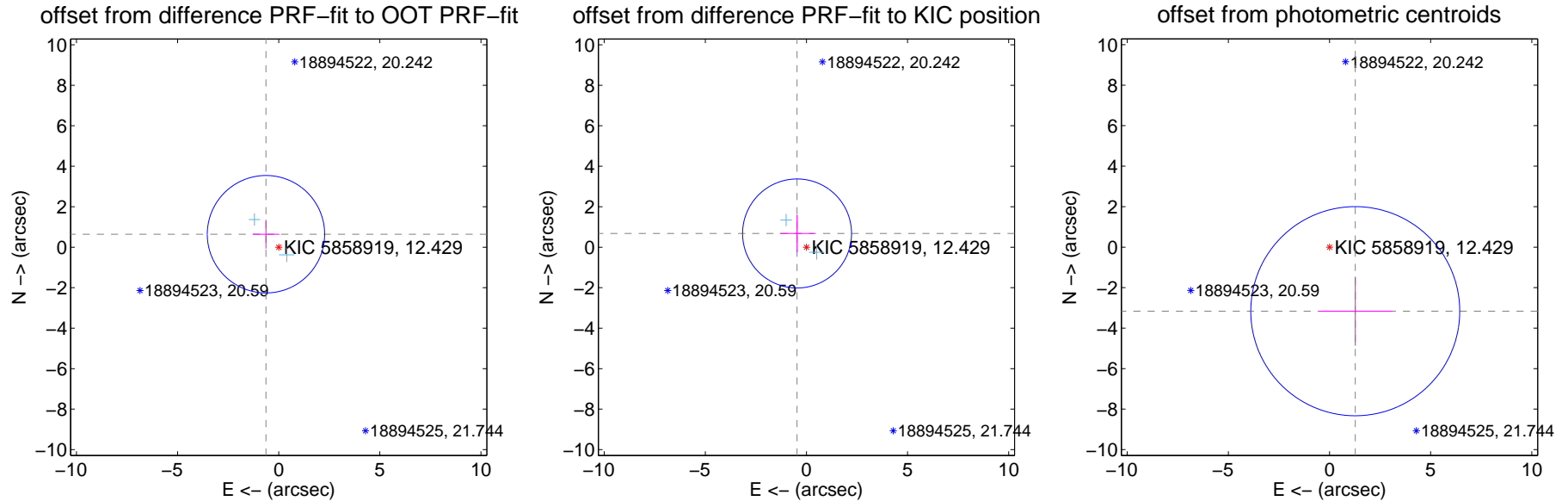
## DV Centroid Data

Supplemental centroid analysis for 005858919-01. Kepler magnitude: 12.43. Transit SNR 7.66

There are 2 quarters with good PRF difference image offsets

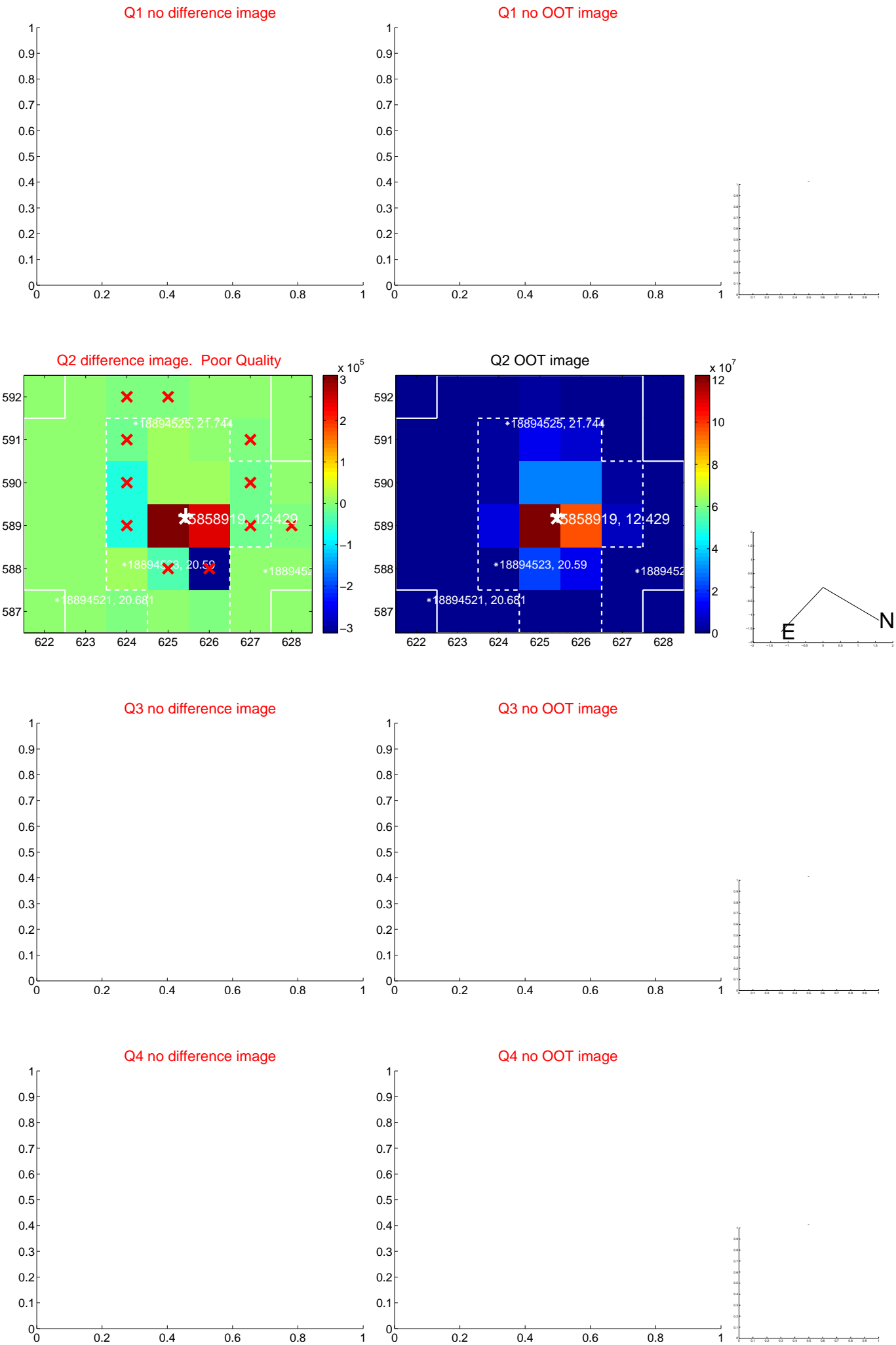
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.900 \pm 0.967$	0.93	$0.631 \pm 0.656$	$0.642 \pm 0.715$
PRF-fit source offset from KIC position	$0.822 \pm 0.898$	0.92	$0.464 \pm 0.848$	$0.679 \pm 0.920$
photometric centroid source offset	$3.41 \pm 1.72$	1.98	$-1.27 \pm 1.83$	$-3.16 \pm 1.70$



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.

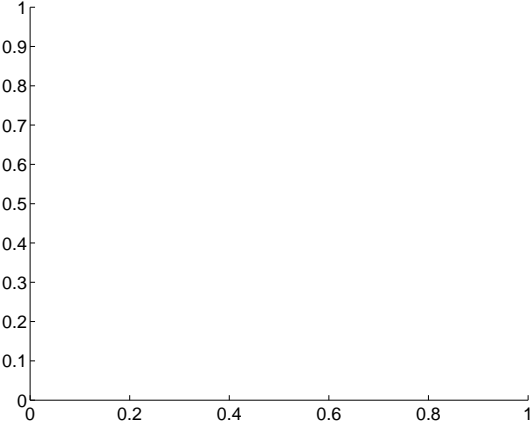
Q5 no difference image



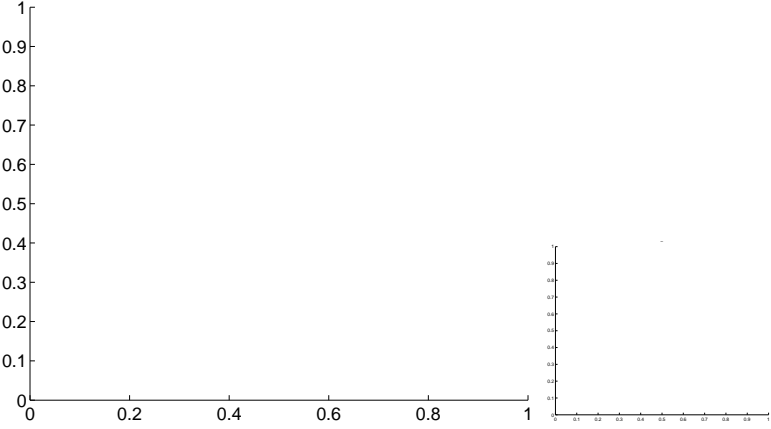
Q5 no OOT image



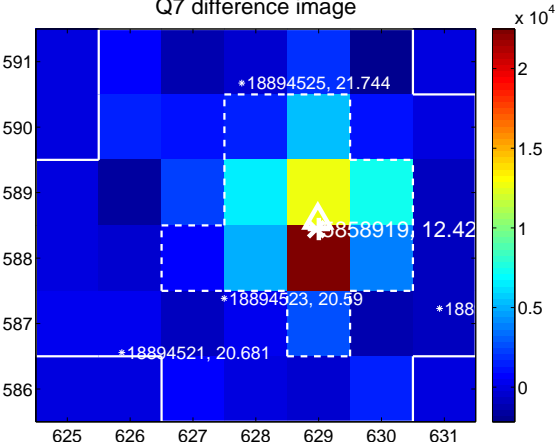
Q6 no difference image



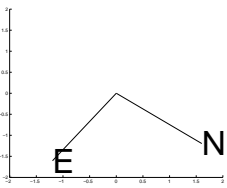
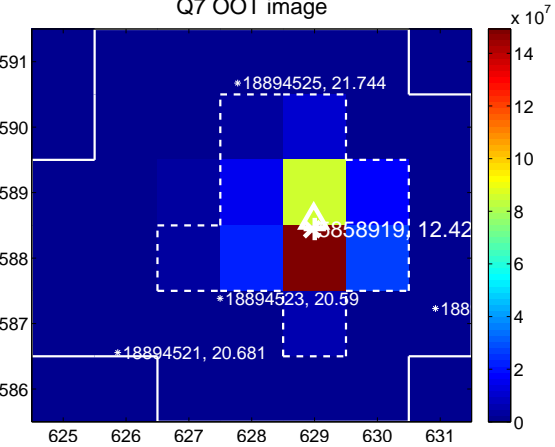
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image

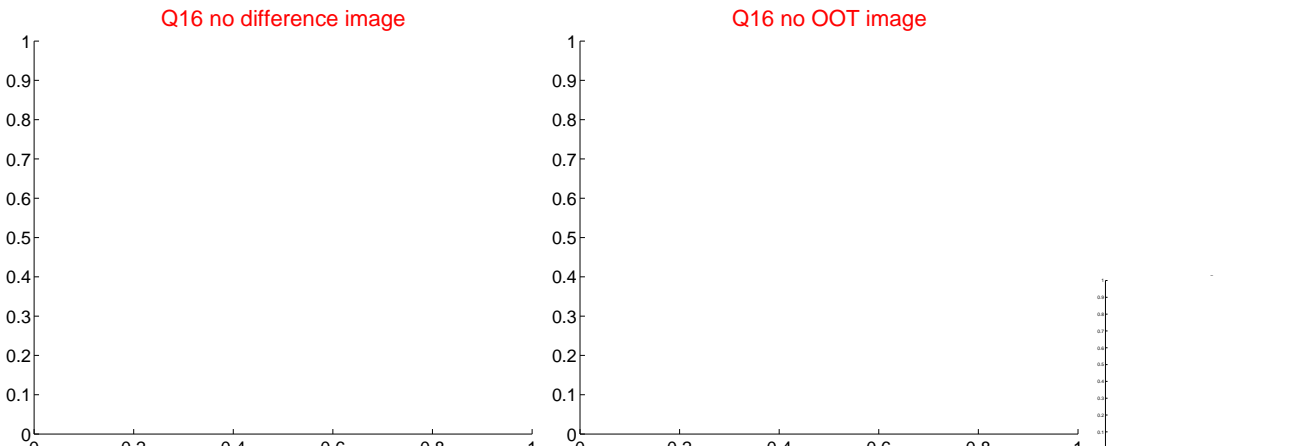
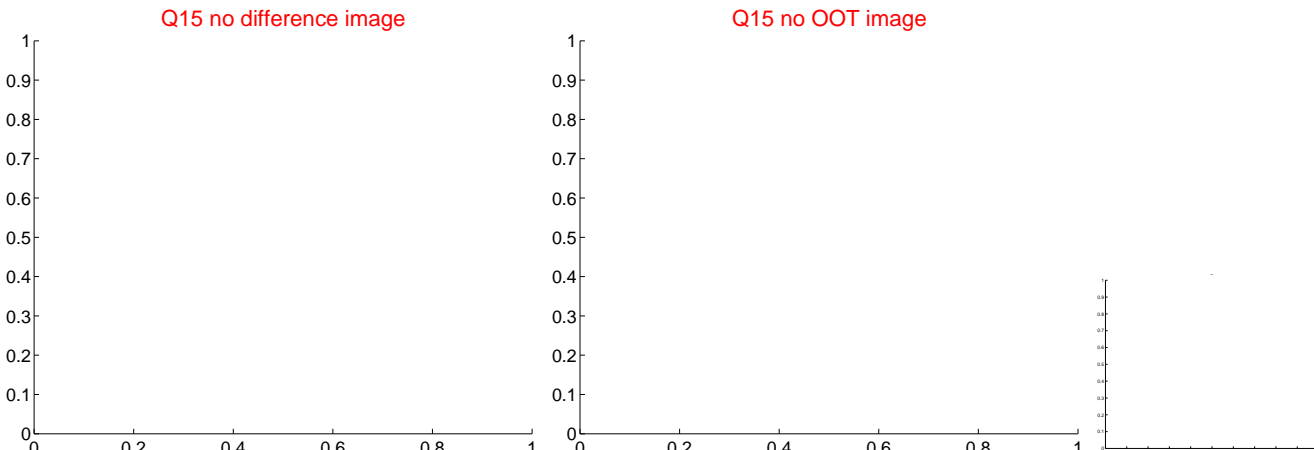
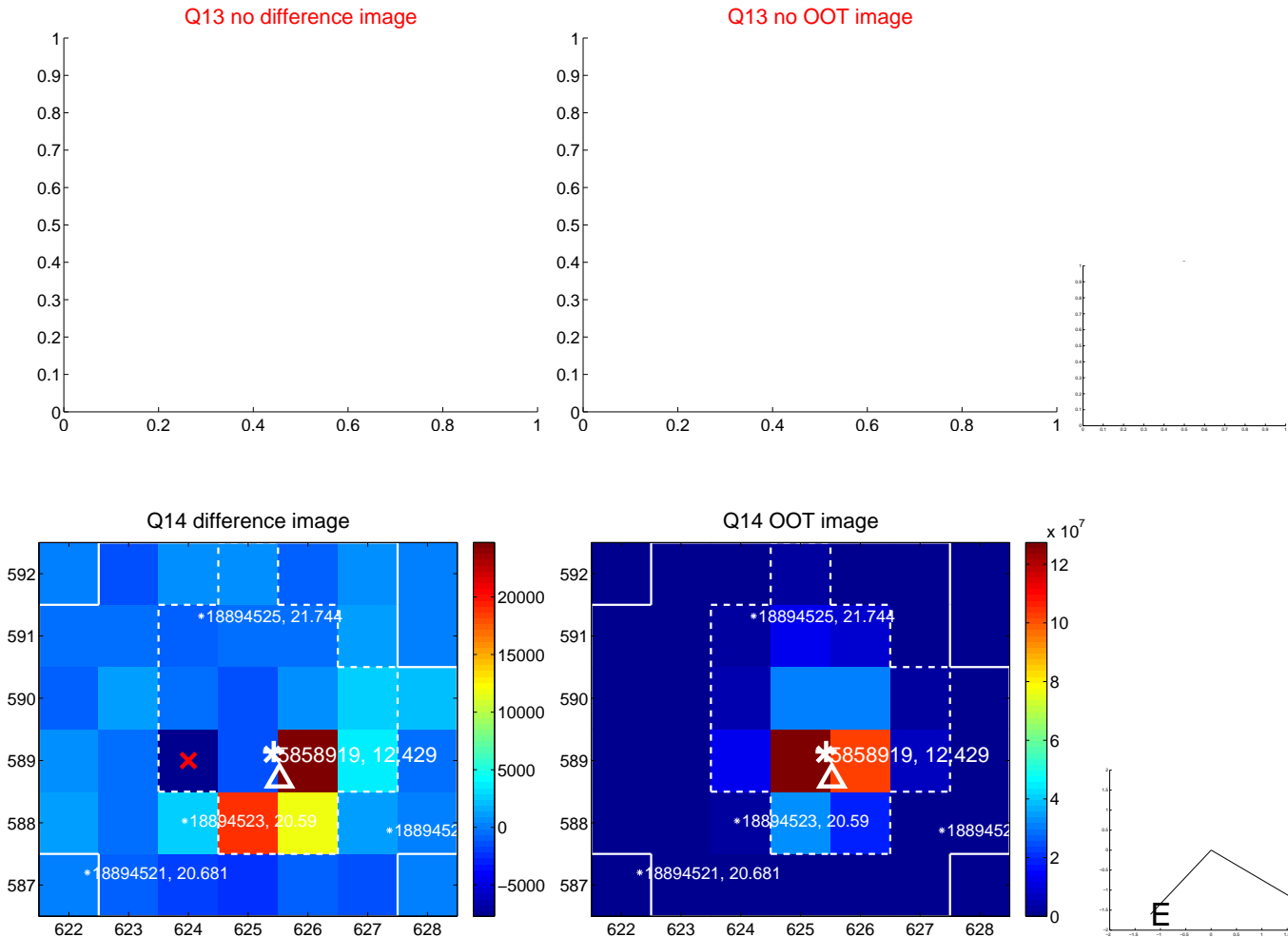




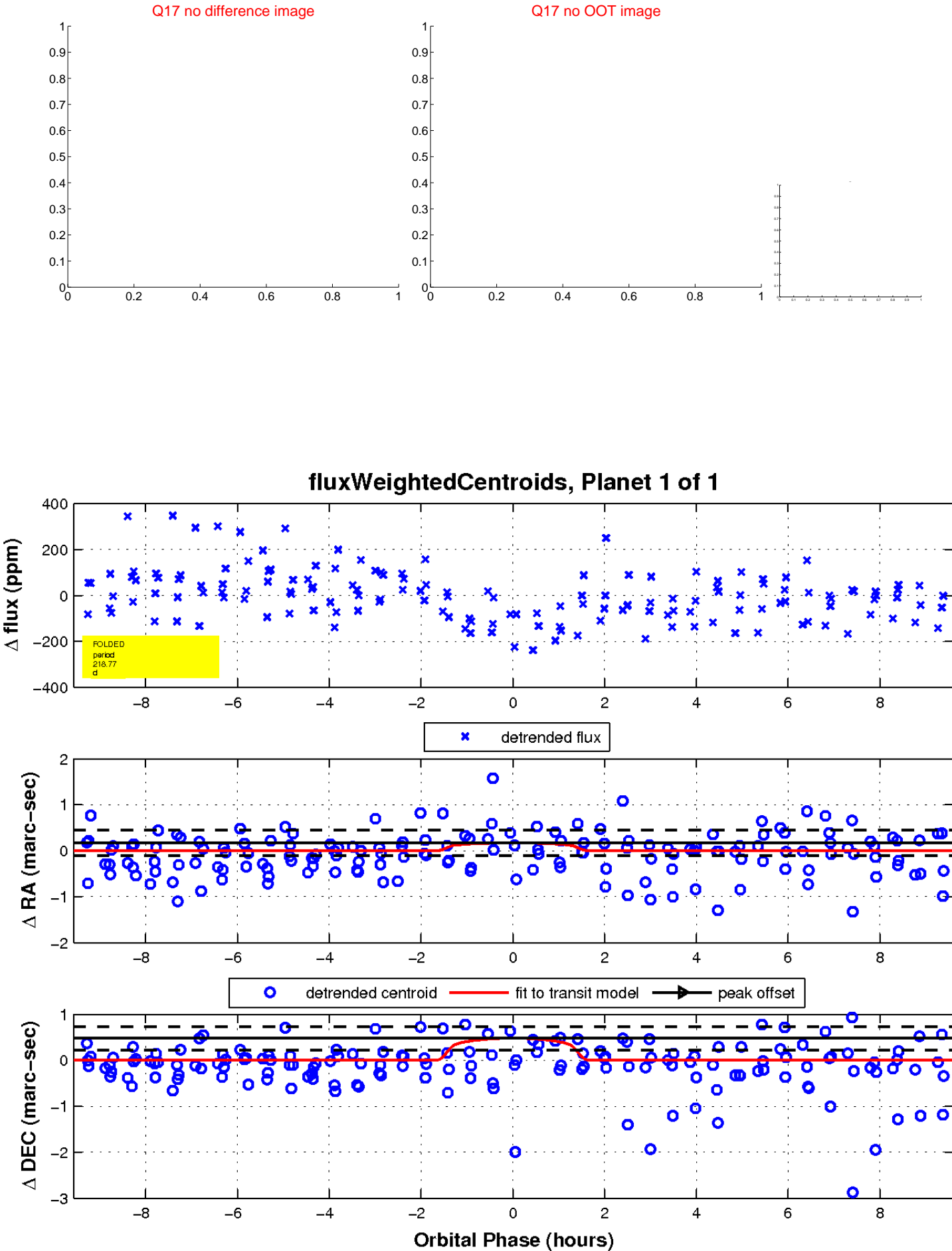
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

