

# KIC 010208894

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010208894-01	OBS	8199.01	183.826208	149.407650	1206.5	11.435	7.6	7.3	11.96	4959	47.24	124.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010208894-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—INCONSISTENT_TRANS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

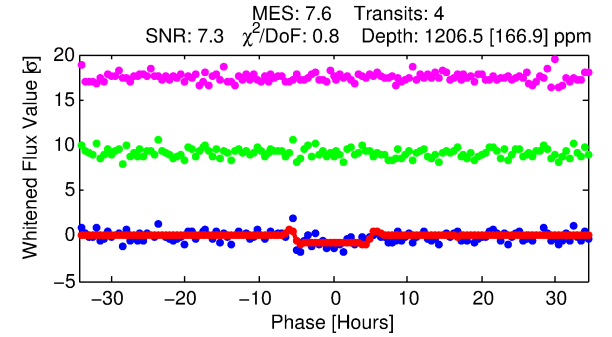
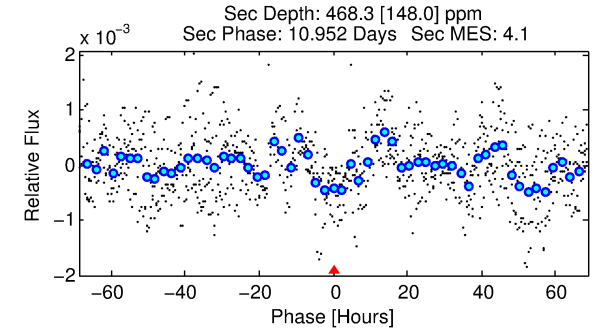
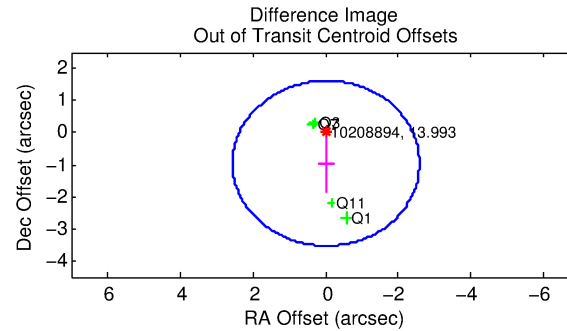
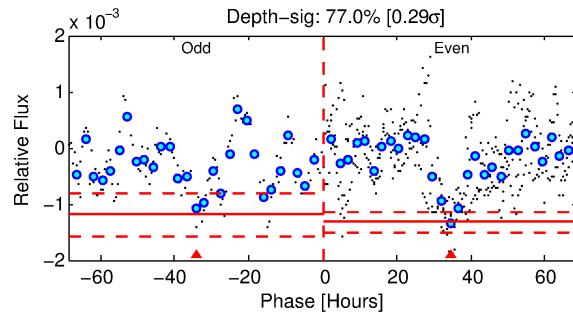
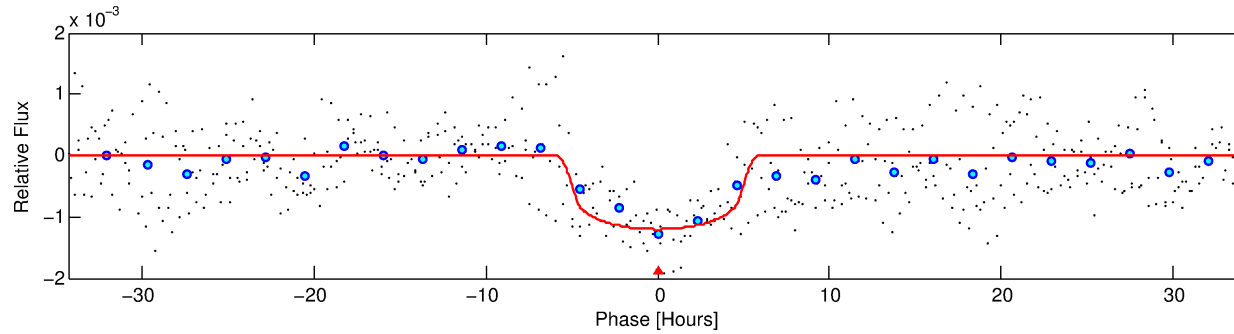
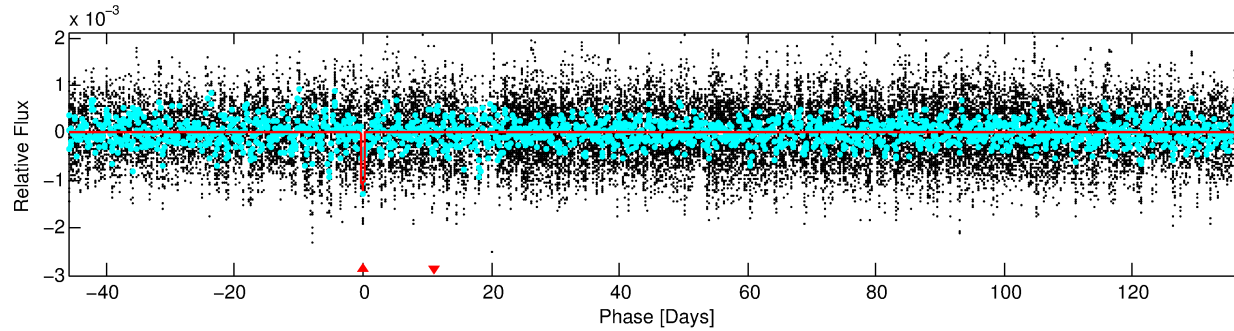
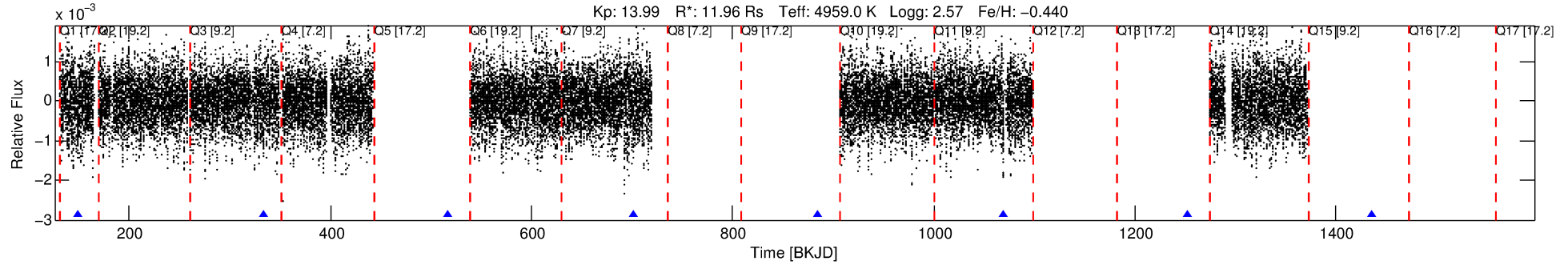
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010208894-01

No Significant Match Found

# DV One-Page Summary

KIC: 10208894 Candidate: 1 of 1 Period: 183.826 d



## DV Fit Results:

Period = 183.82621 [0.00278] d  
Epoch = 149.4077 [0.0085] BKJD  
Rp/R\* = 0.0362 [0.0031]  
a/R\* = 76.38 [13.16]  
b = 0.83 [0.07]  
Seff = 124.69 [26.87]  
Teq = 852 [46] K  
Rp = 47.24 [12.91] Re  
a = 0.7886 [0.1375] AU  
Ag = 71.79 [28.88] [2.45 $\sigma$ ]  
Teffp = 3835 [364] K [8.13 $\sigma$ ]

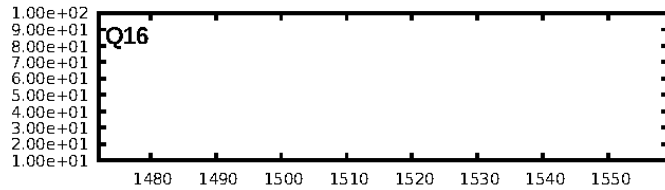
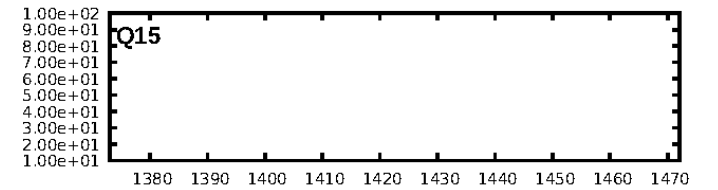
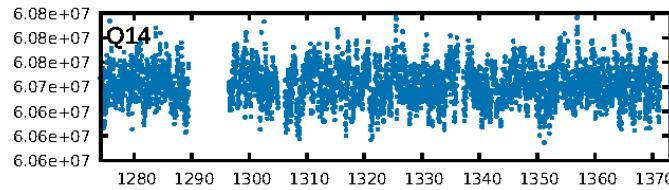
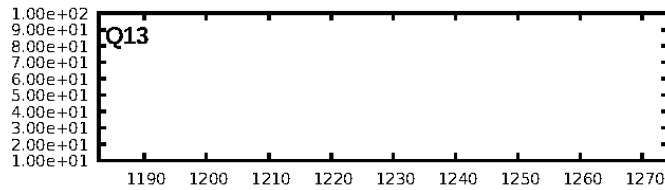
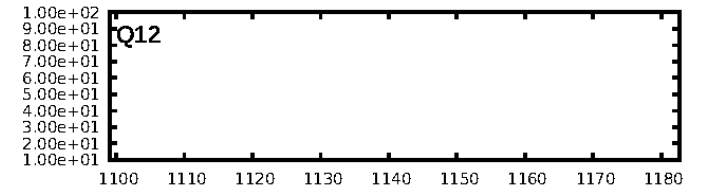
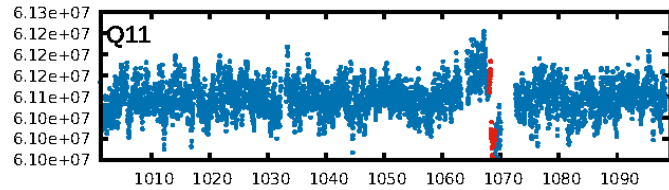
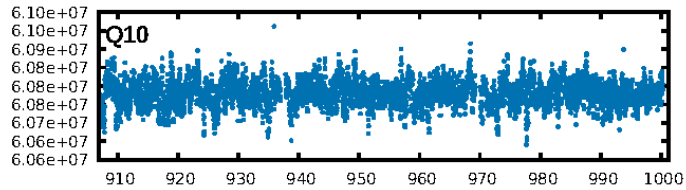
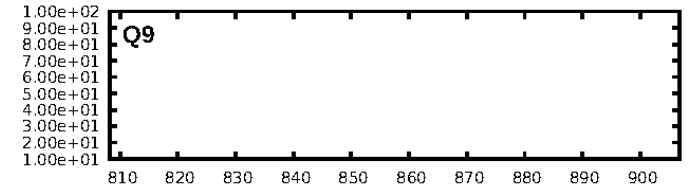
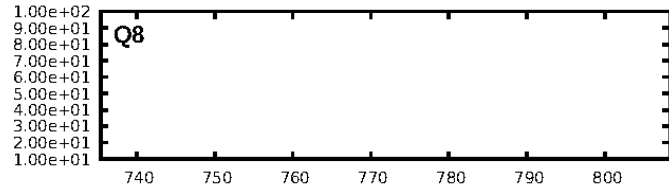
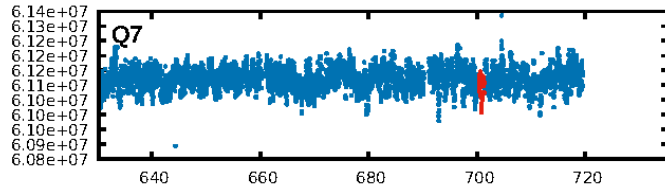
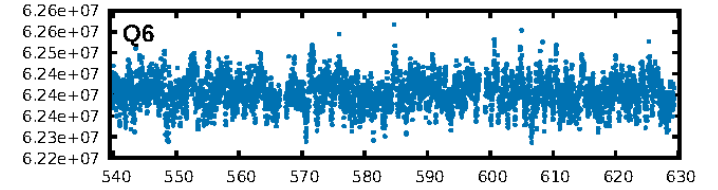
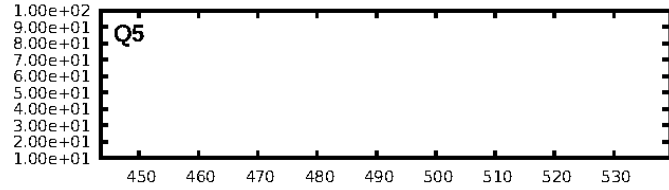
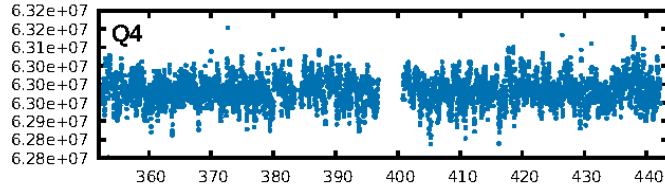
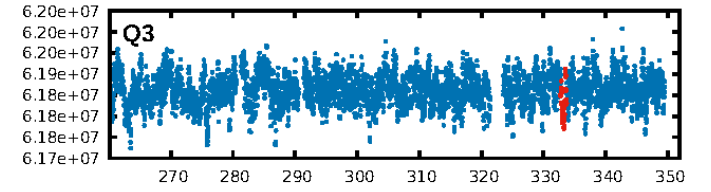
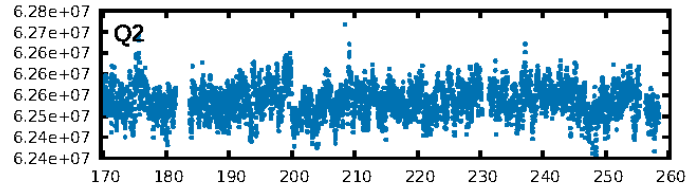
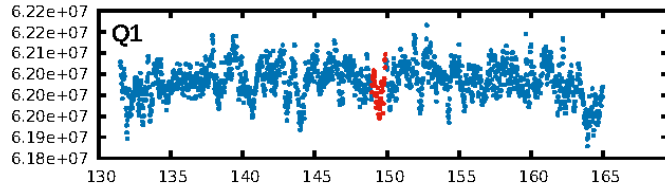
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 61.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 9.91e-11  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.029  
Centroid-sig: 86.2%  
Centroid-so: 0.270 arcsec [0.79 $\sigma$ ]  
OotOffset-rm: 0.959 arcsec [1.12 $\sigma$ ]  
OotOffset-st: 0/3/0/1 [4]  
KicOffset-rm: 1.043 arcsec [1.23 $\sigma$ ]  
KicOffset-st: 0/3/0/1 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [4/4]

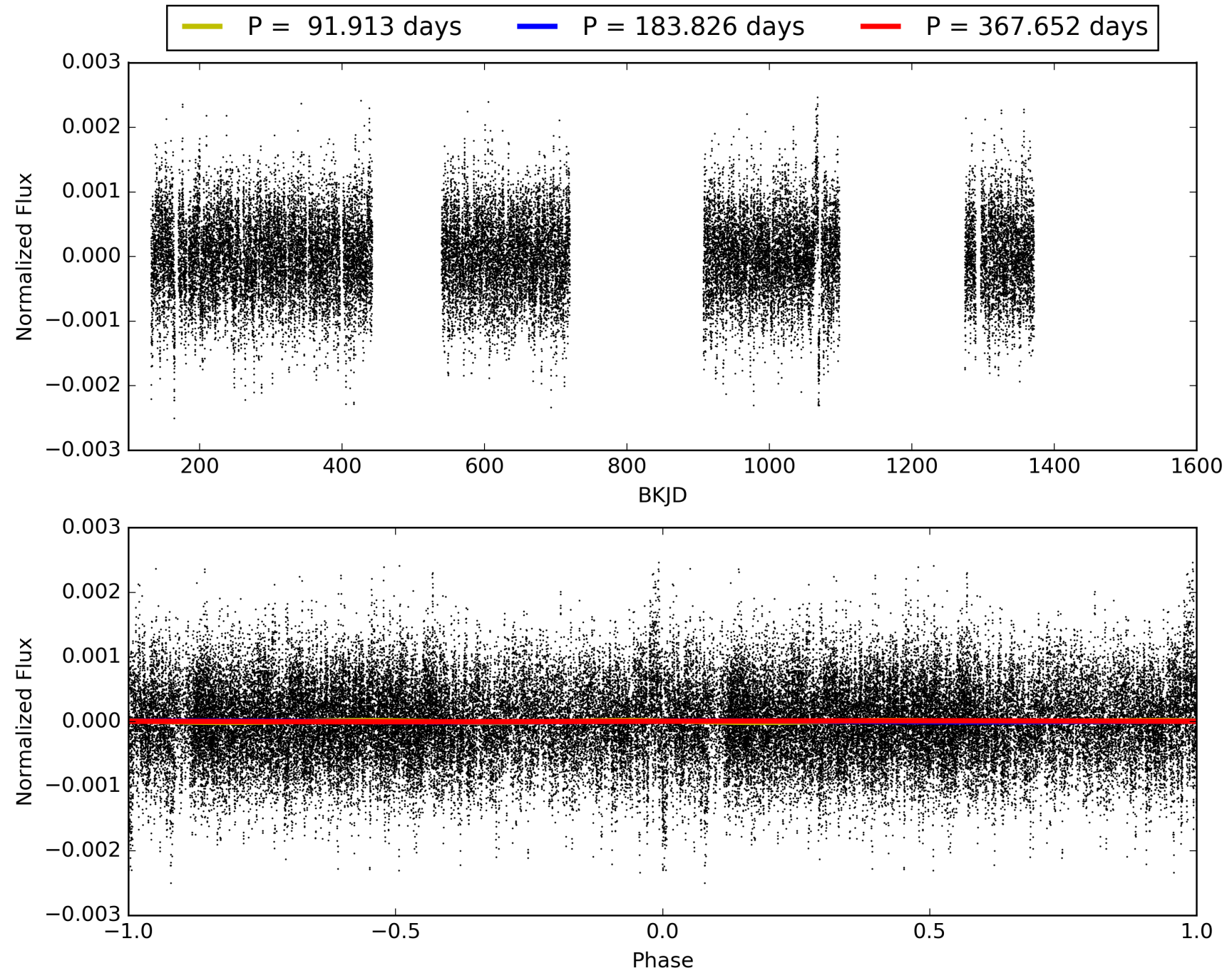
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 22:21:50 Z

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

# TCE 010208894-01, PDC Light Curves

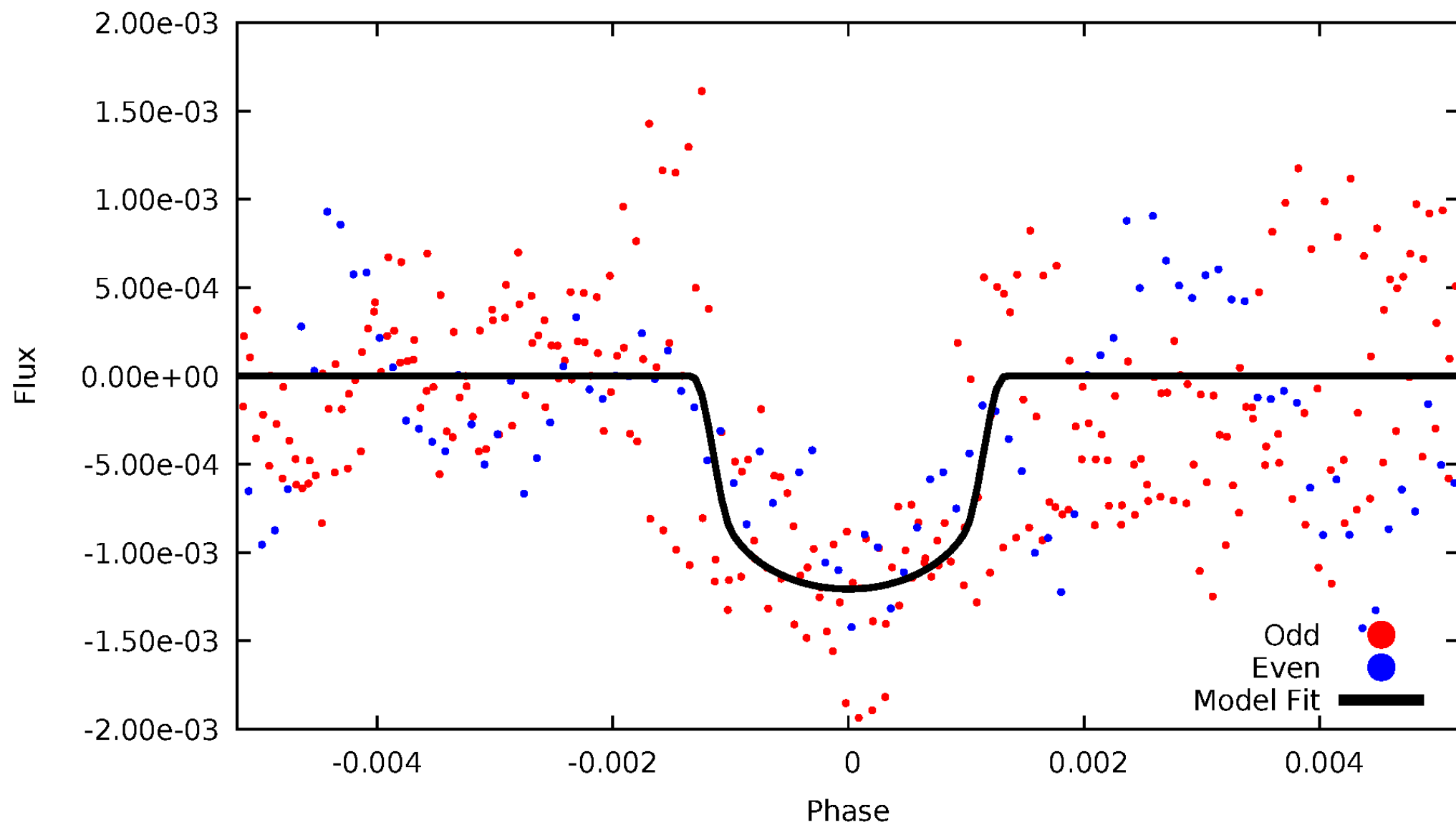


TCE 010208894-01



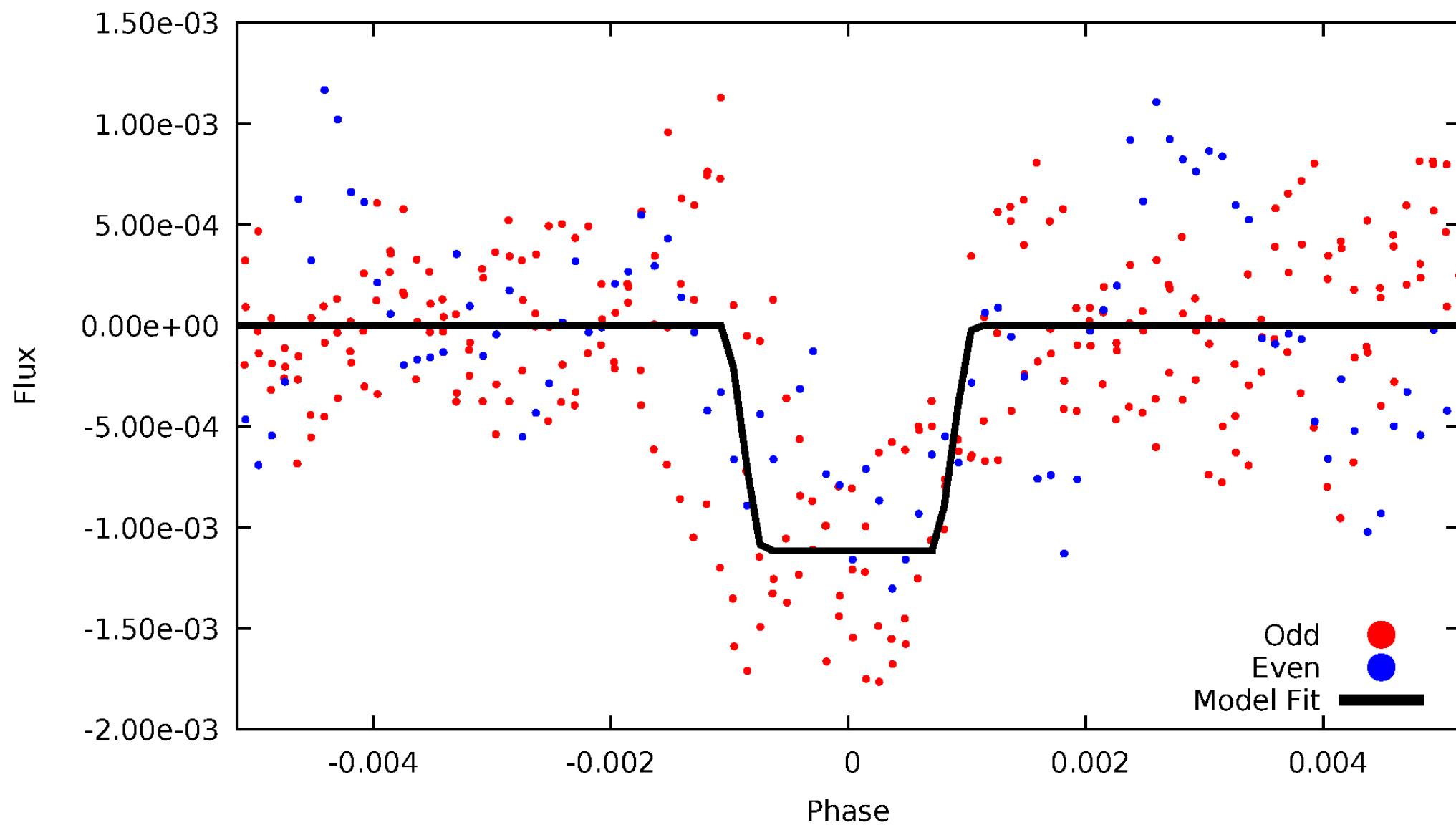
# DV Odd/Even

TCE 010208894-01



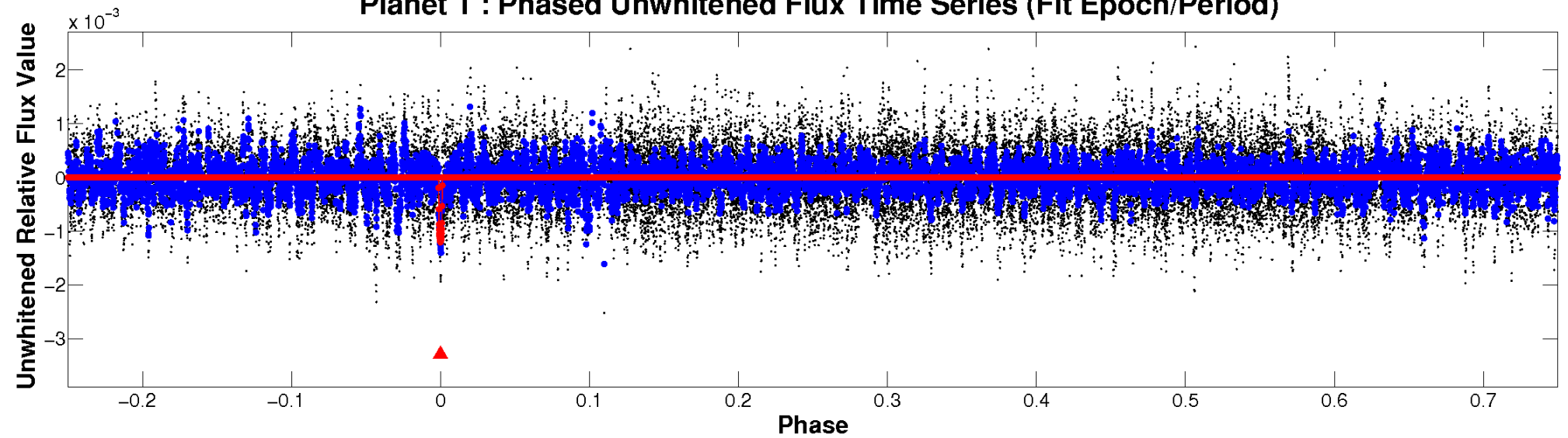
# ALT Odd/Even

TCE 010208894-01

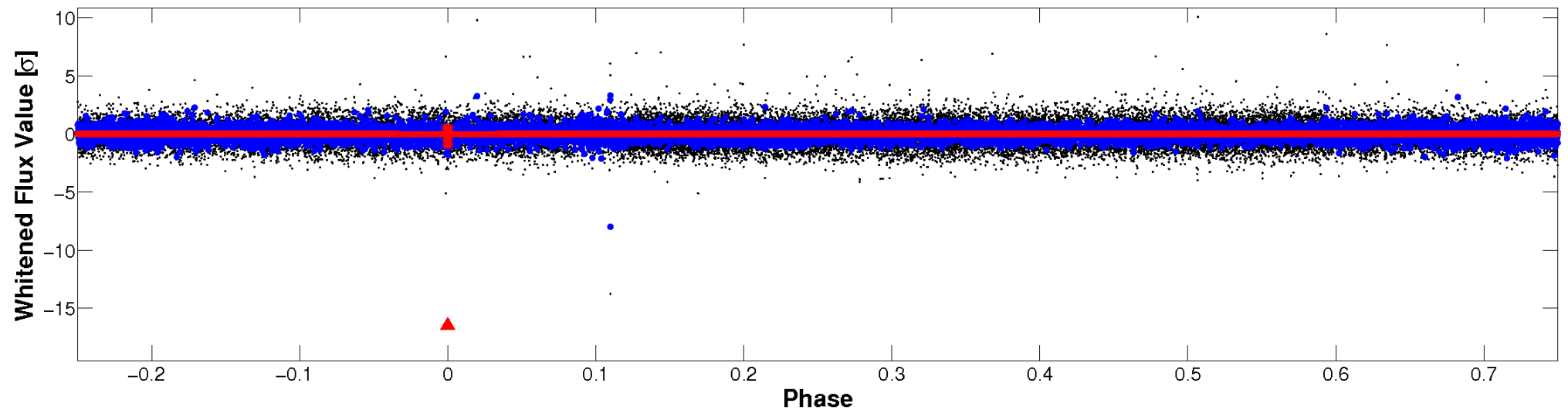


# Non-Whitened Vs. Whitened Light Curve

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

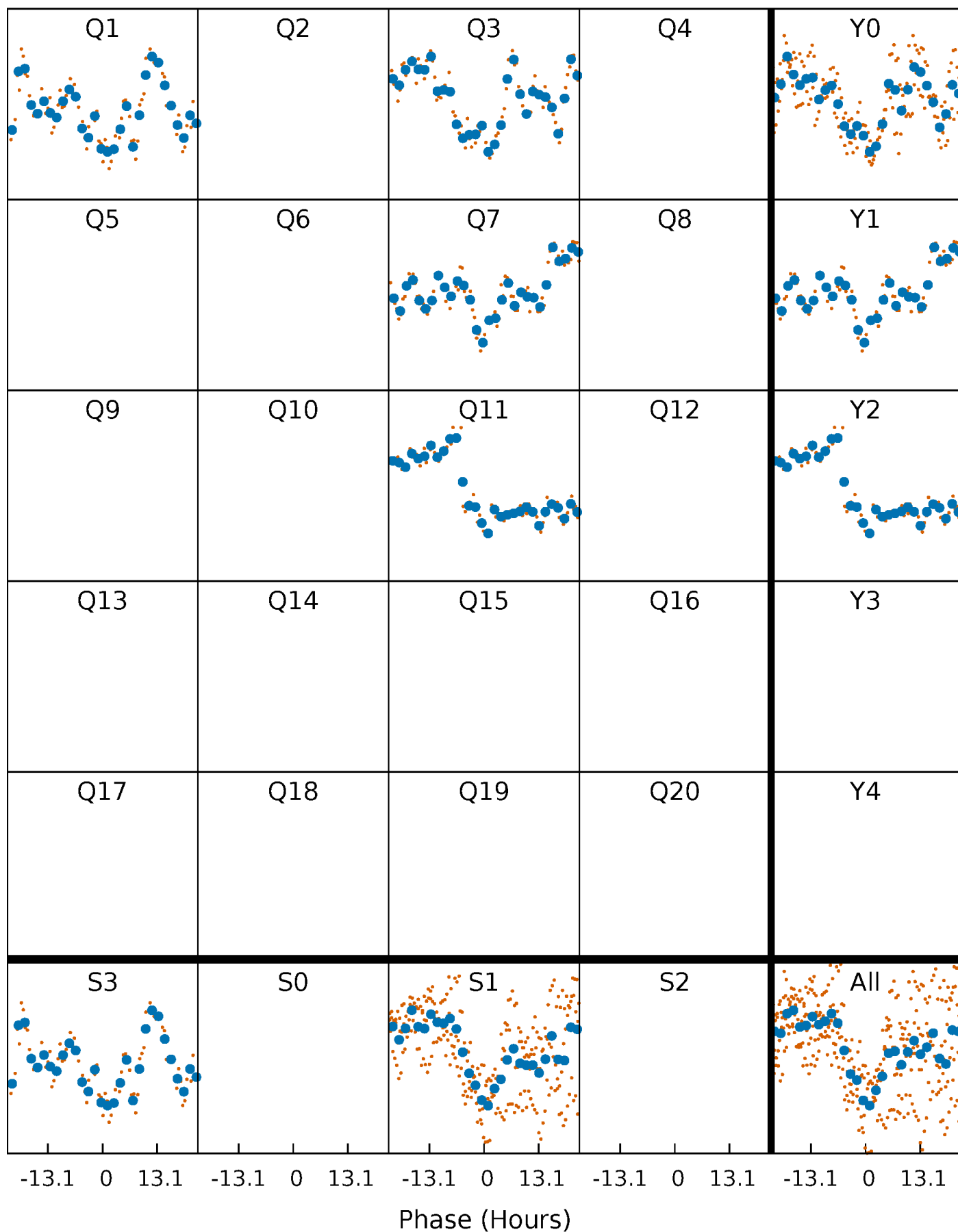


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

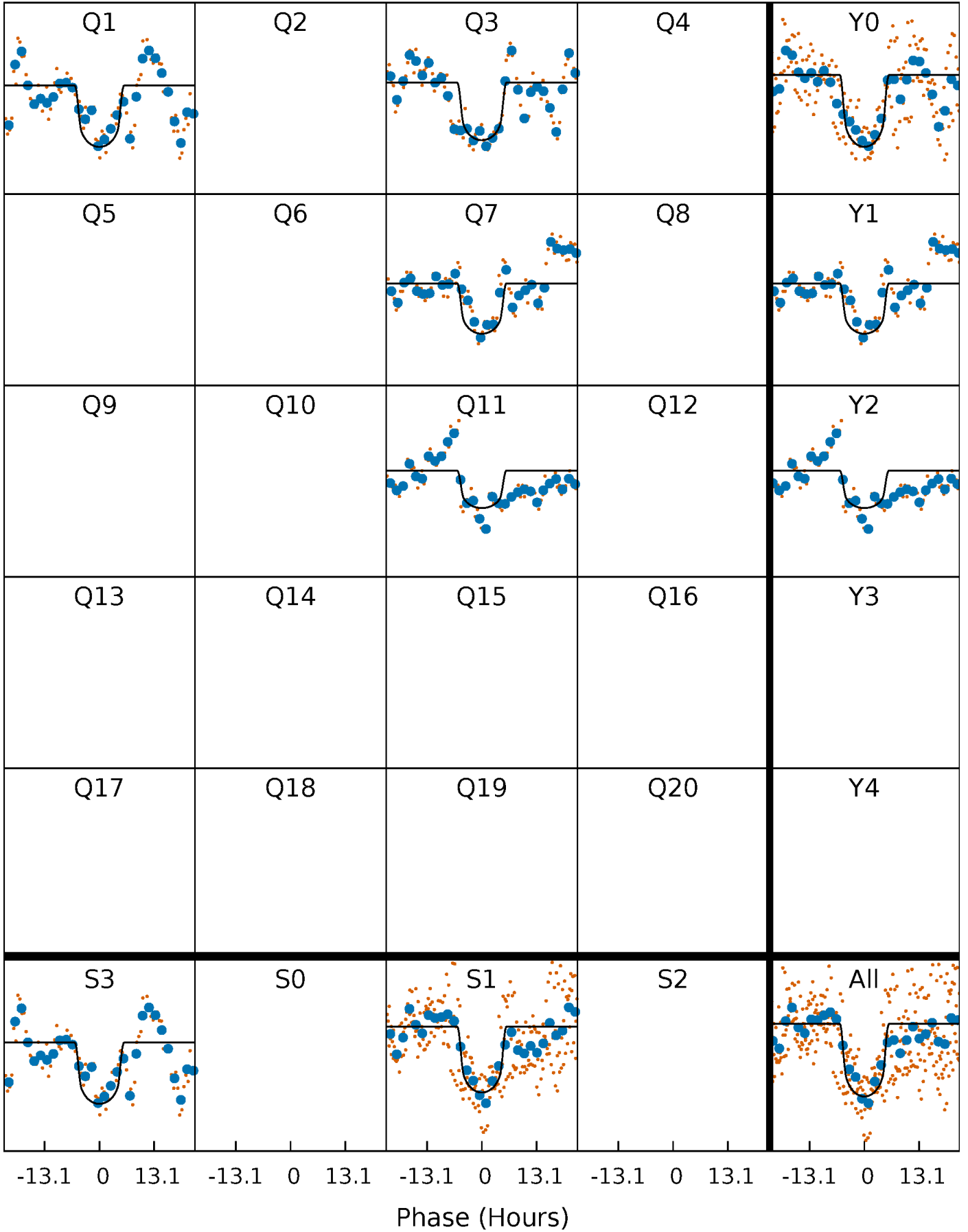
TCE 010208894-01 P=183.826208 Days  $T_0=149.407650$  (BKJD)





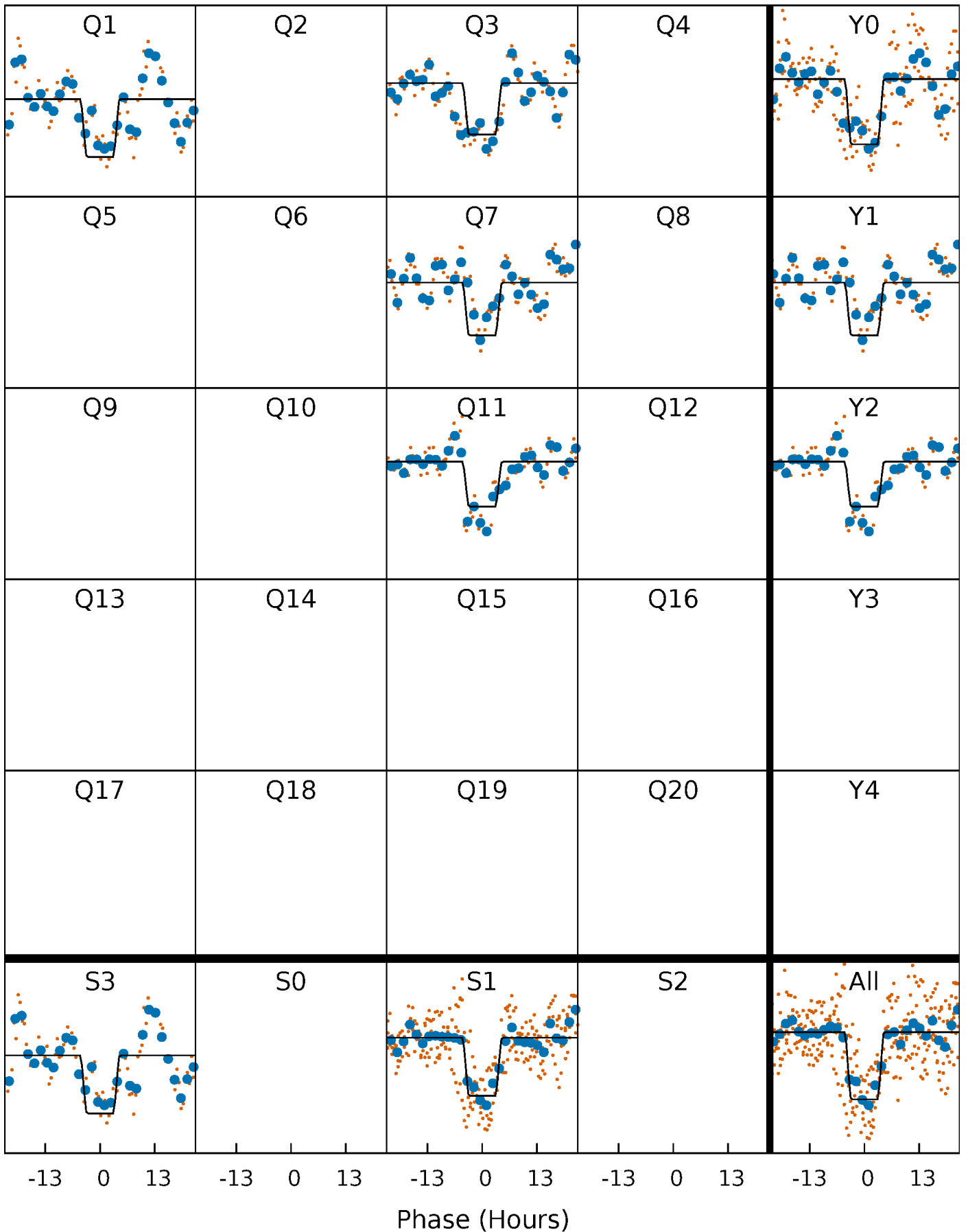
# DV Quarter-Phased Transit Curves

TCE 010208894-01     $P=183.826208$  Days     $T_0=149.407650$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

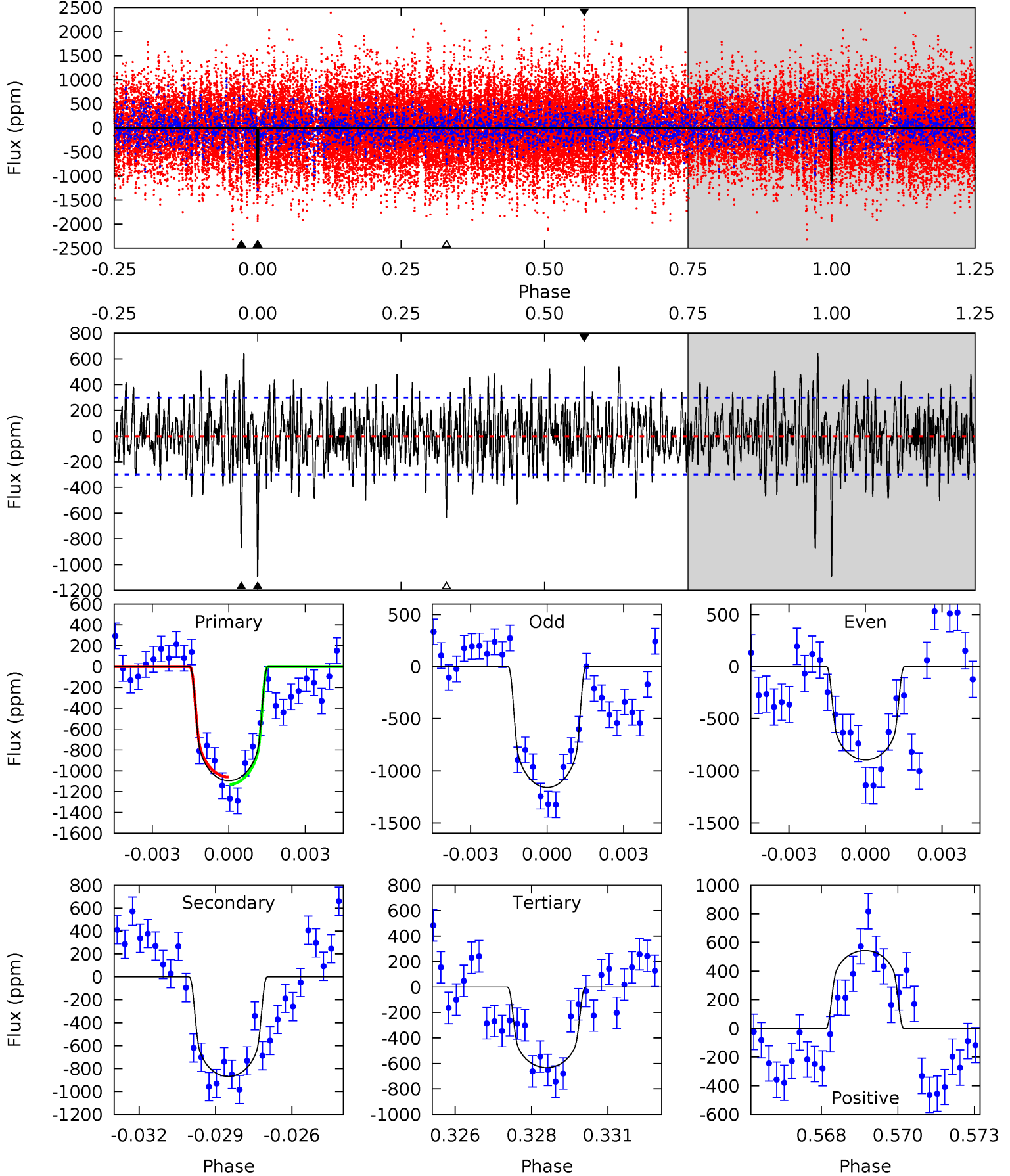
TCE 010208894-01 P=183.820306 Days  $T_0=149.405745$  (BKJD)



# DV Model-Shift Uniqueness Test

010208894-01, P = 183.826208 Days, E = 149.407650 Days

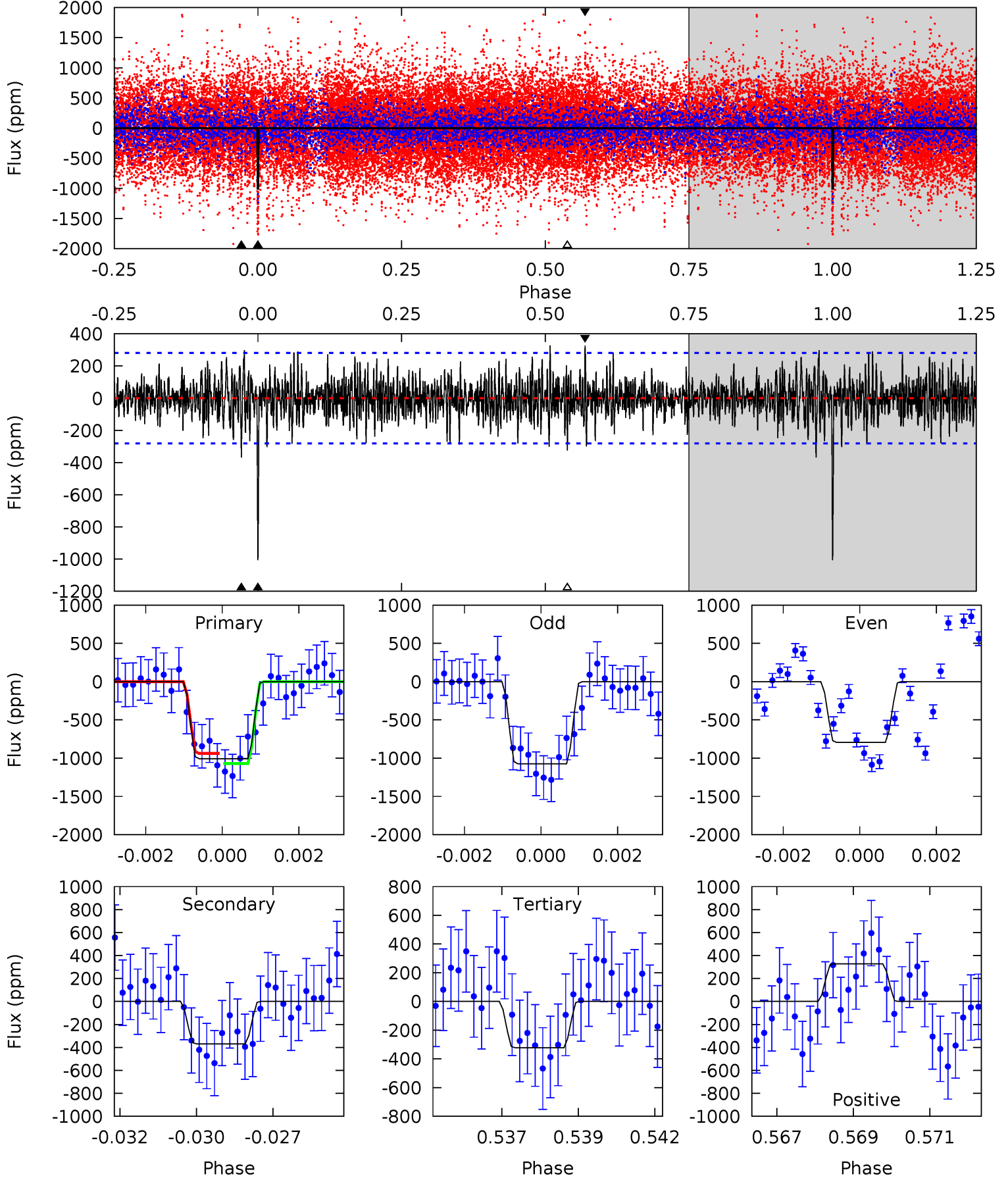
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
19.3	15.3	11.2	9.59	5.28	3.01	3.23	8.17	9.75	4.17	5.74	1.97	1.03	0.37	0.64



# Alt Model-Shift Uniqueness Test

010208894-01, P = 183.820306 Days, E = 149.405745 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
19.0	6.97	6.10	6.21	5.32	3.07	1.75	12.9	12.8	0.86	0.76	2.26	1.01	0.25	1.24



### Stellar Parameters For KIC 010208894

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4959^{+86}_{-149}$	$2.569^{+0.030}_{-0.030}$	$-0.440^{+0.200}_{-0.300}$	$11.963^{+2.068}_{-3.102}$	$1.934^{+0.840}_{-0.840}$	$0.002^{+0.001}_{-0.000}$
	+2%/-3%	+1%/-1%	+45%/-68%	+17%/-26%	+43%/-43%	+36%/-10%
Source	PHO1	AST9	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 010208894-01 / KOI 8199.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-869 \pm 57$	$49.04^{+7.90}_{-8.44}$	$1190^{+40}_{-43}$	$4547^{+208}_{-199}$	$132^{+35}_{-26}$
Alt.	$-368 \pm 53$	$44.79^{+7.76}_{-7.39}$	$1194^{+40}_{-46}$	$4002^{+180}_{-190}$	$66^{+19}_{-15}$

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

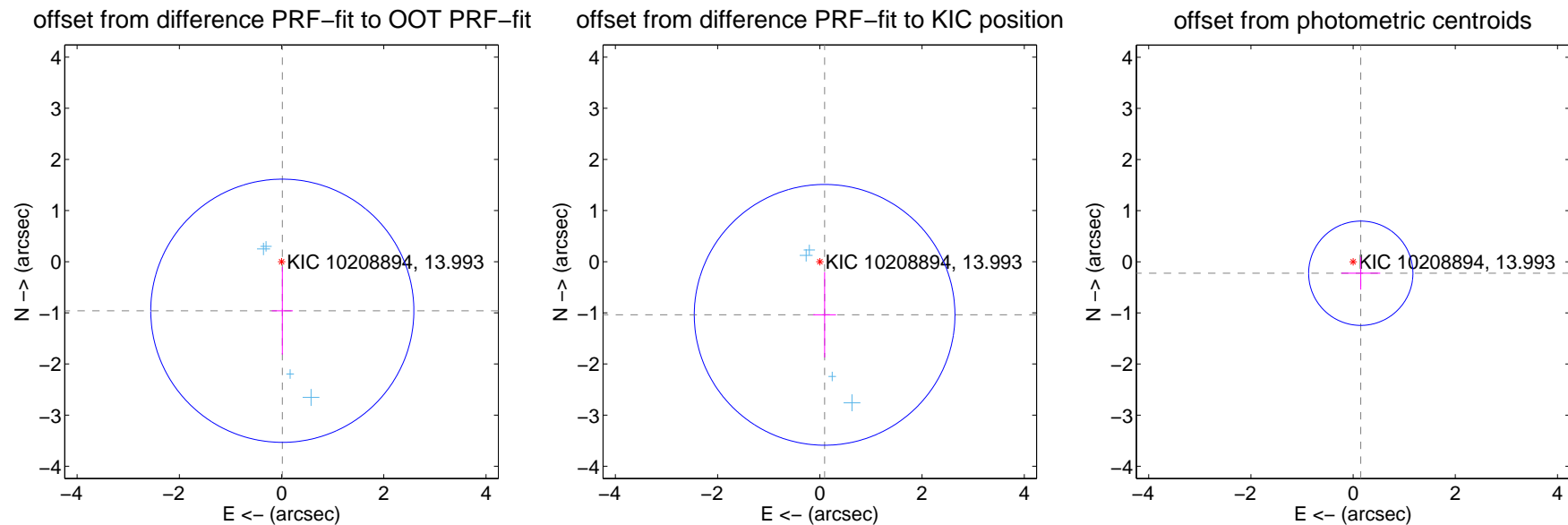
## DV Centroid Data

Supplemental centroid analysis for 010208894-01. Kepler magnitude: 13.99. Transit SNR 7.30

There are 4 quarters with good PRF difference image offsets

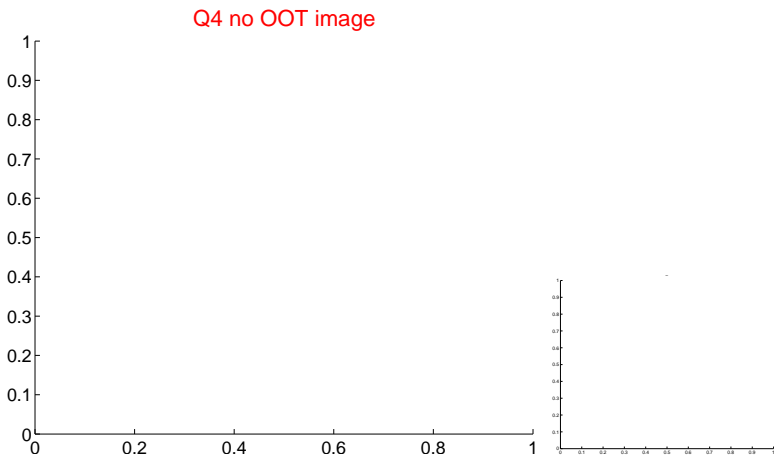
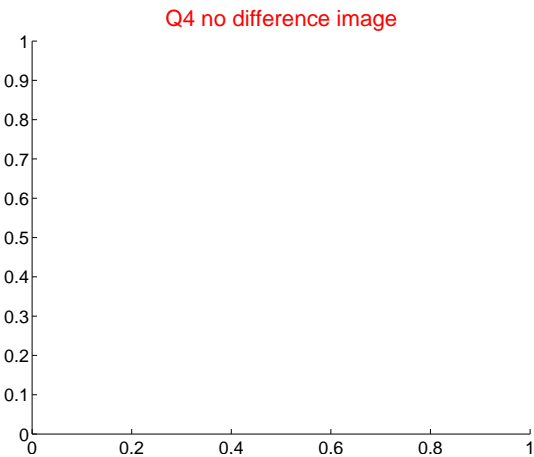
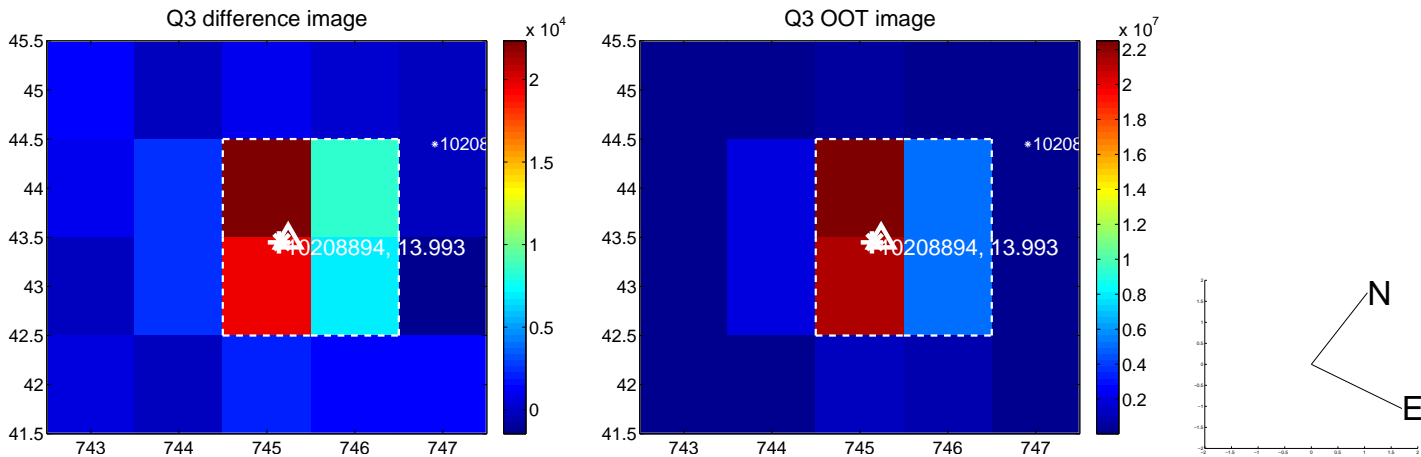
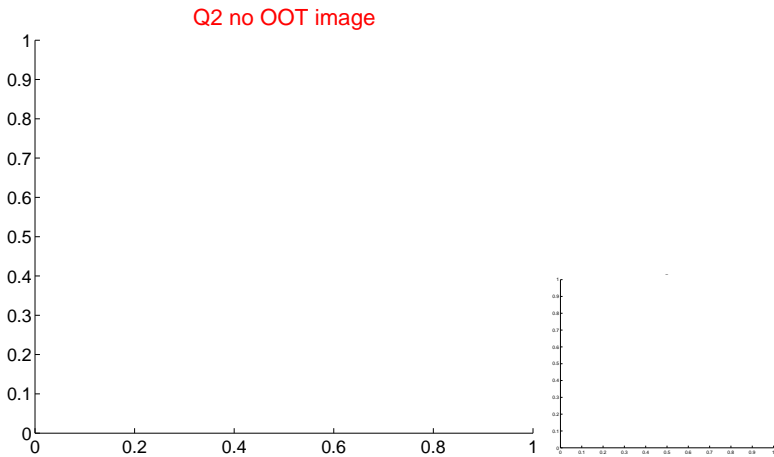
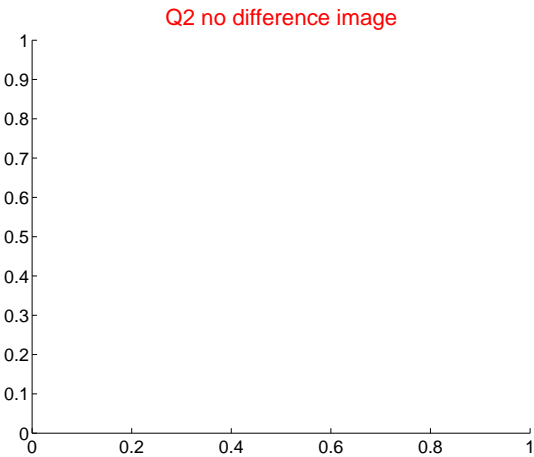
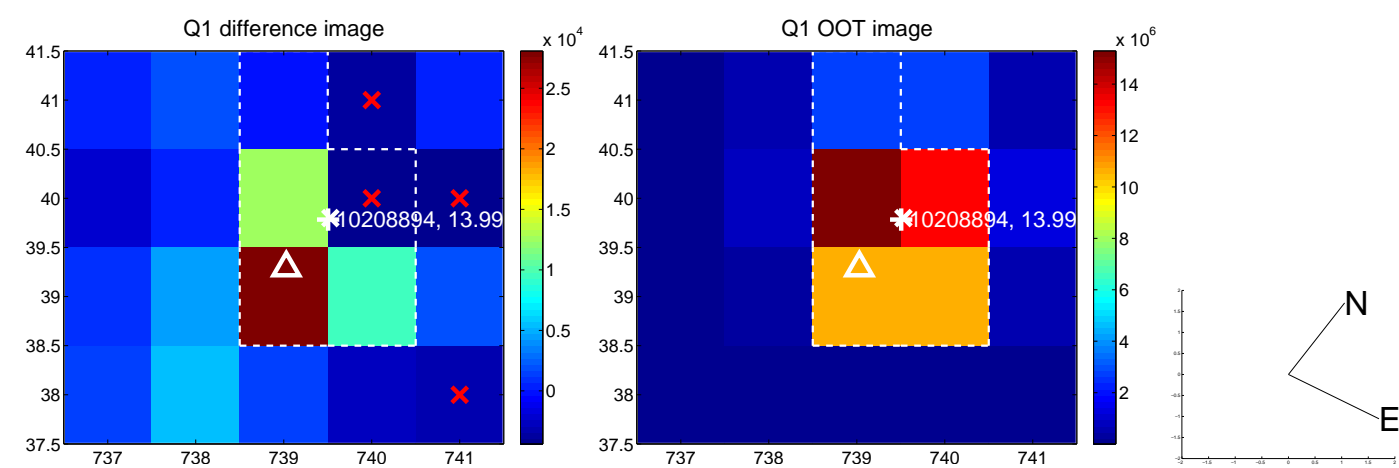
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.959 \pm 0.858$	1.12	$-0.014 \pm 0.207$	$-0.959 \pm 0.858$
PRF-fit source offset from KIC position	$1.043 \pm 0.850$	1.23	$-0.093 \pm 0.222$	$-1.039 \pm 0.834$
photometric centroid source offset	$0.27 \pm 0.34$	0.79	$-0.15 \pm 0.38$	$-0.22 \pm 0.32$



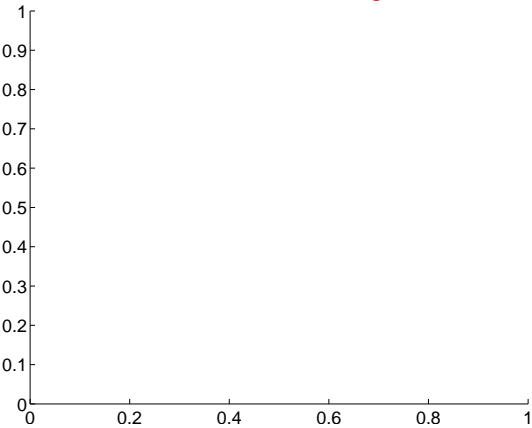
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

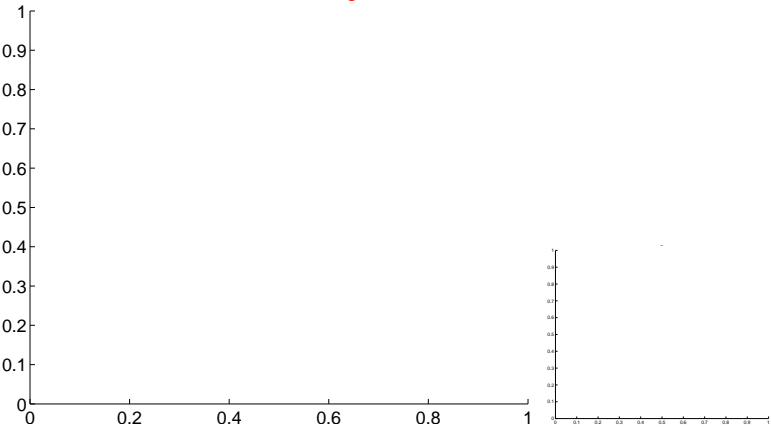


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

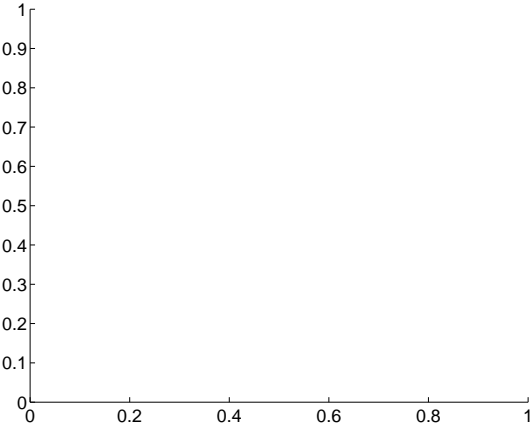
Q5 no difference image



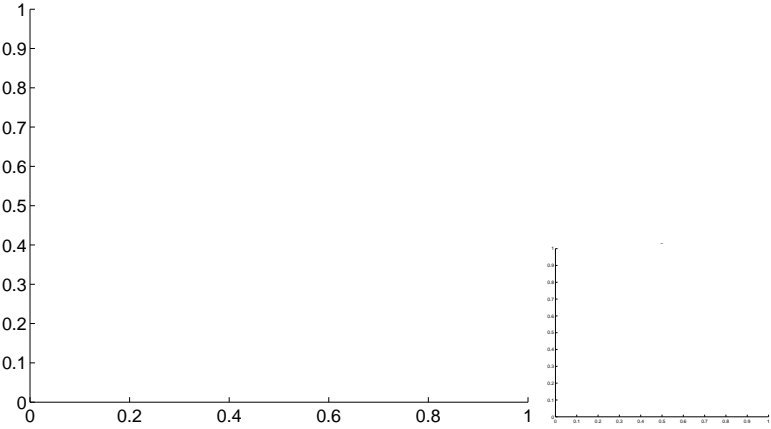
Q5 no OOT image



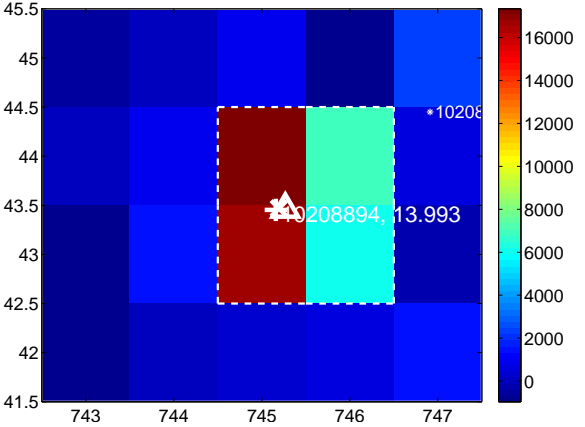
Q6 no difference image



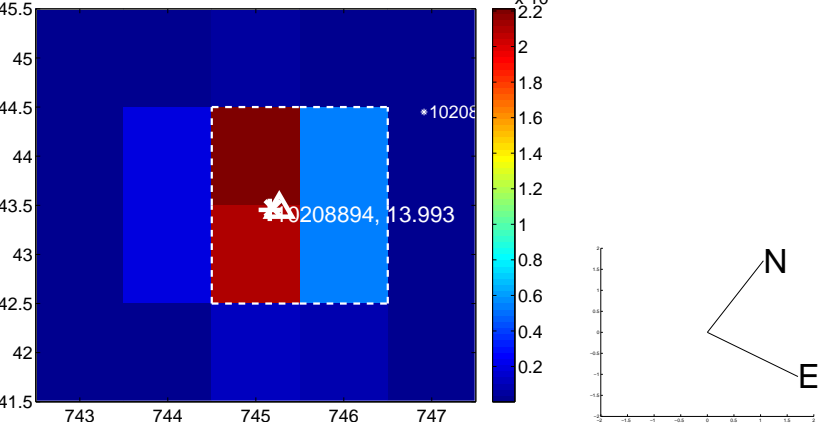
Q6 no OOT image



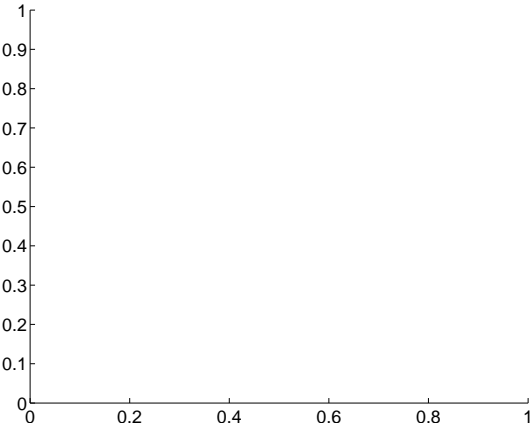
Q7 difference image



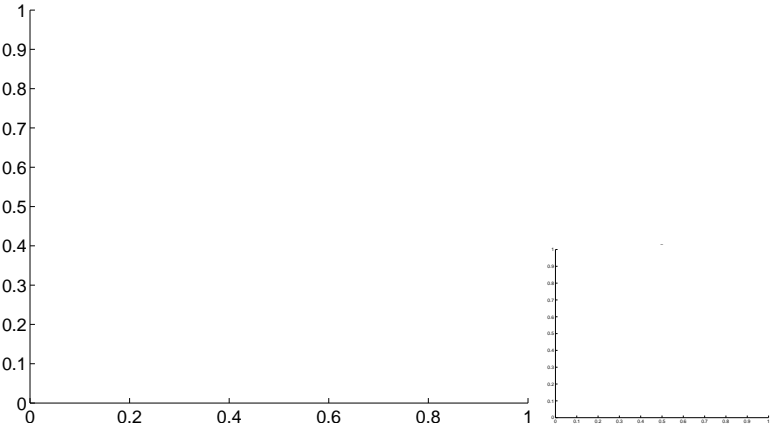
Q7 OOT image



Q8 no difference image



Q8 no OOT image



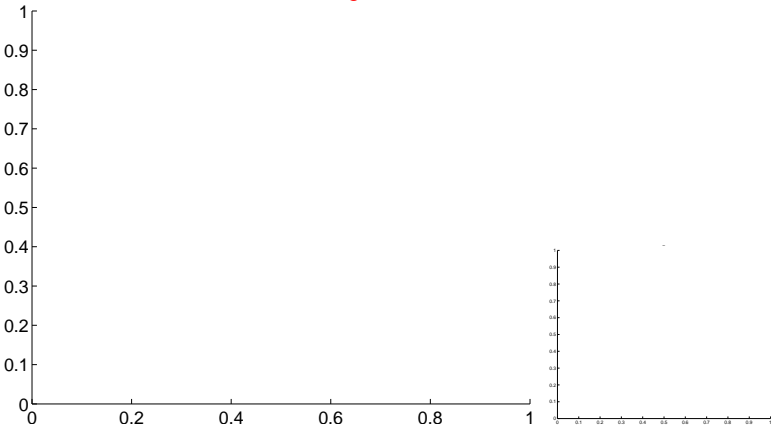


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

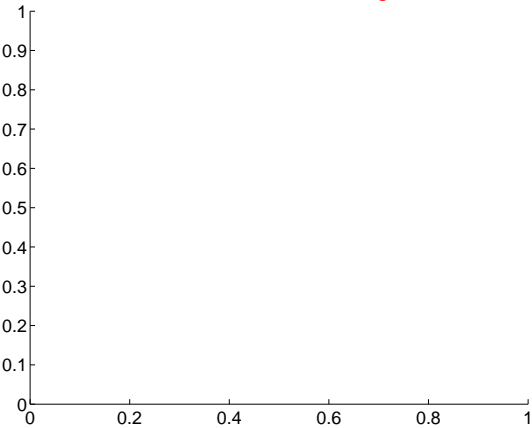
Q9 no difference image



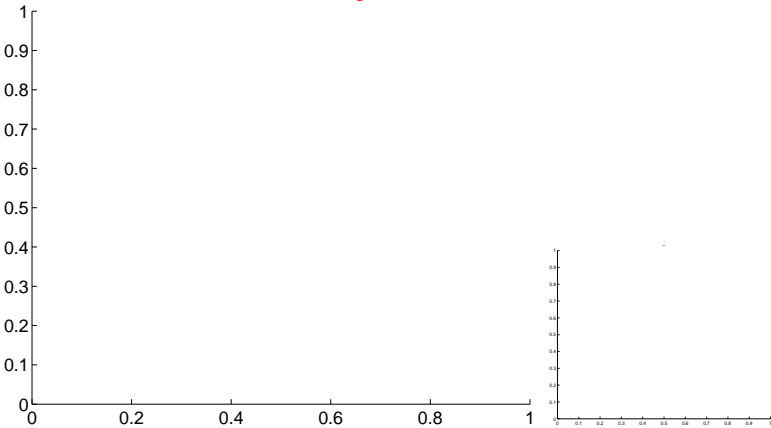
Q9 no OOT image



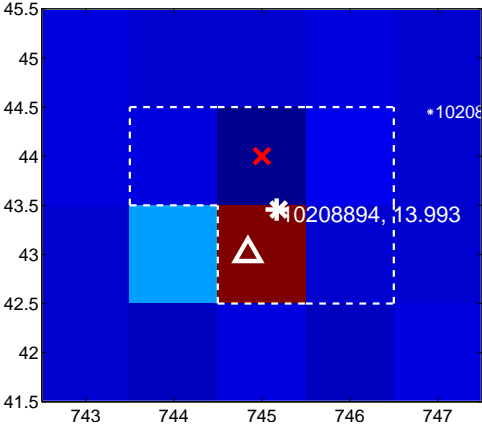
Q10 no difference image



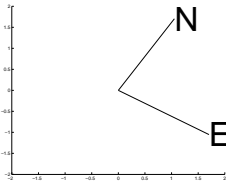
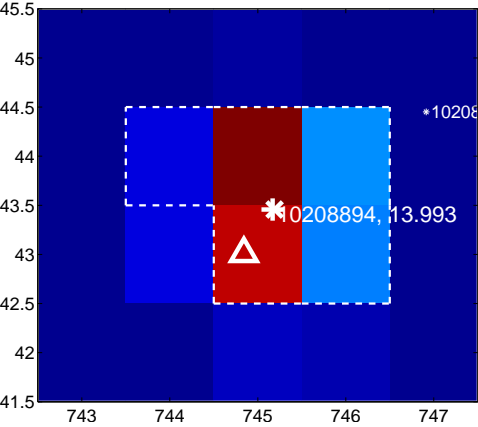
Q10 no OOT image



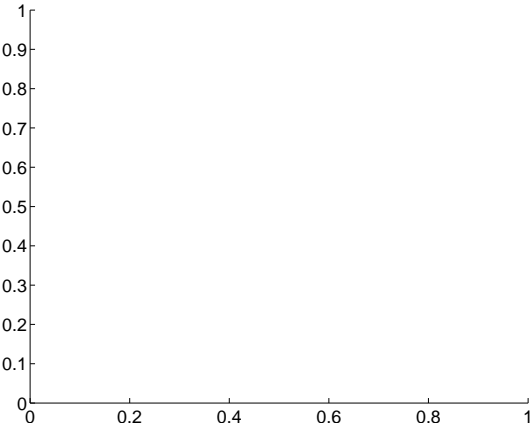
Q11 difference image



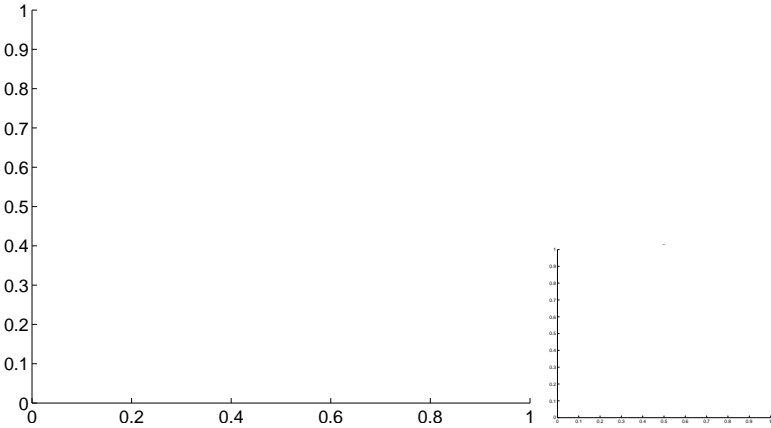
Q11 OOT image



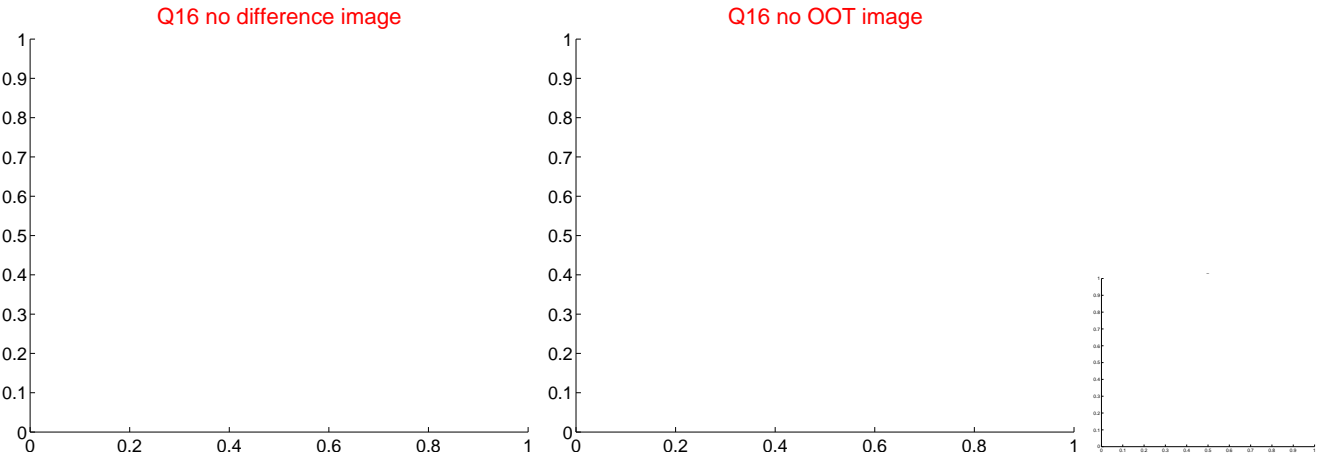
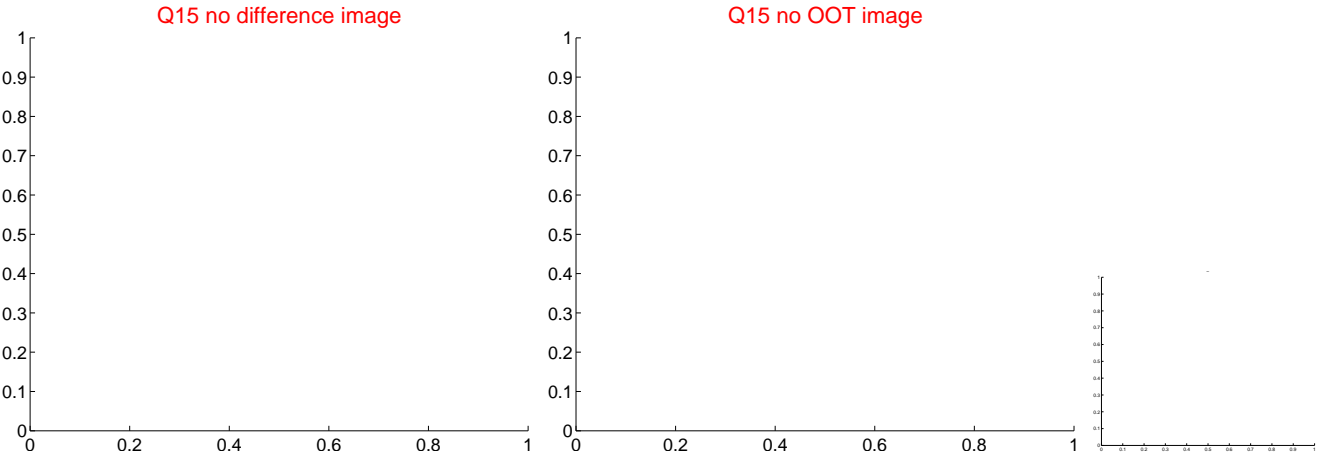
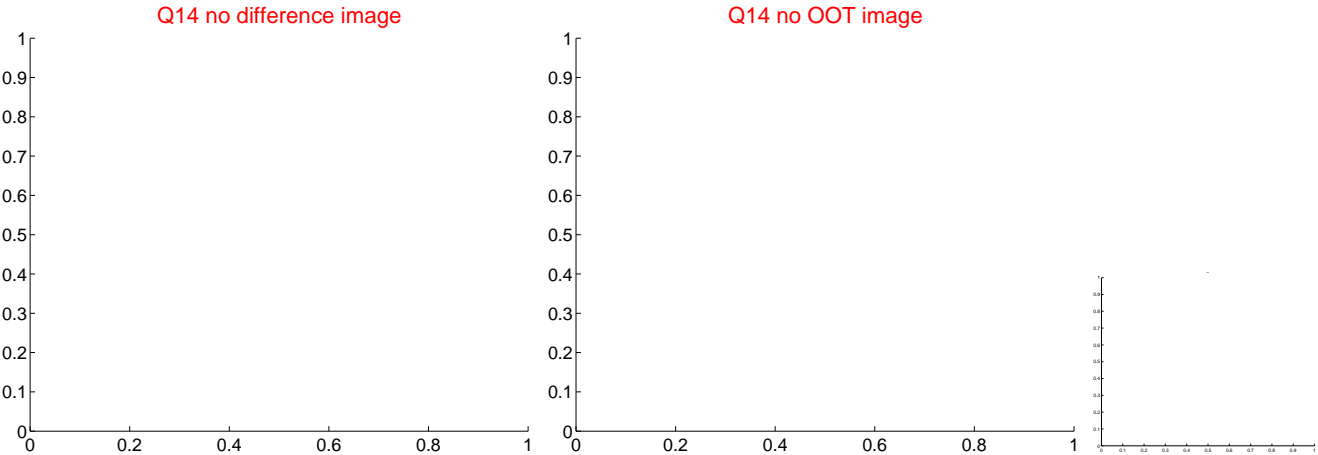
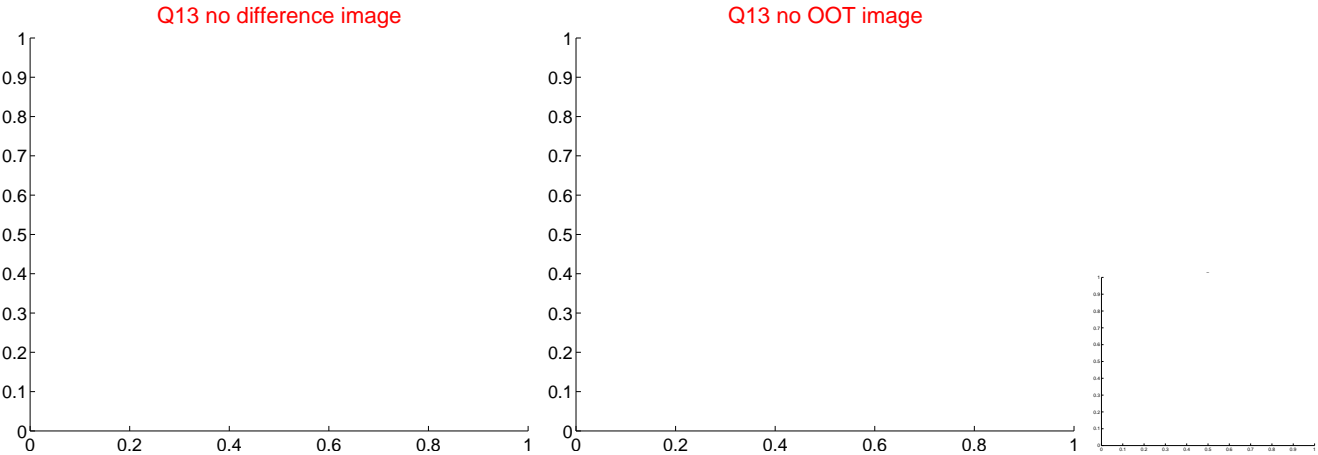
Q12 no difference image



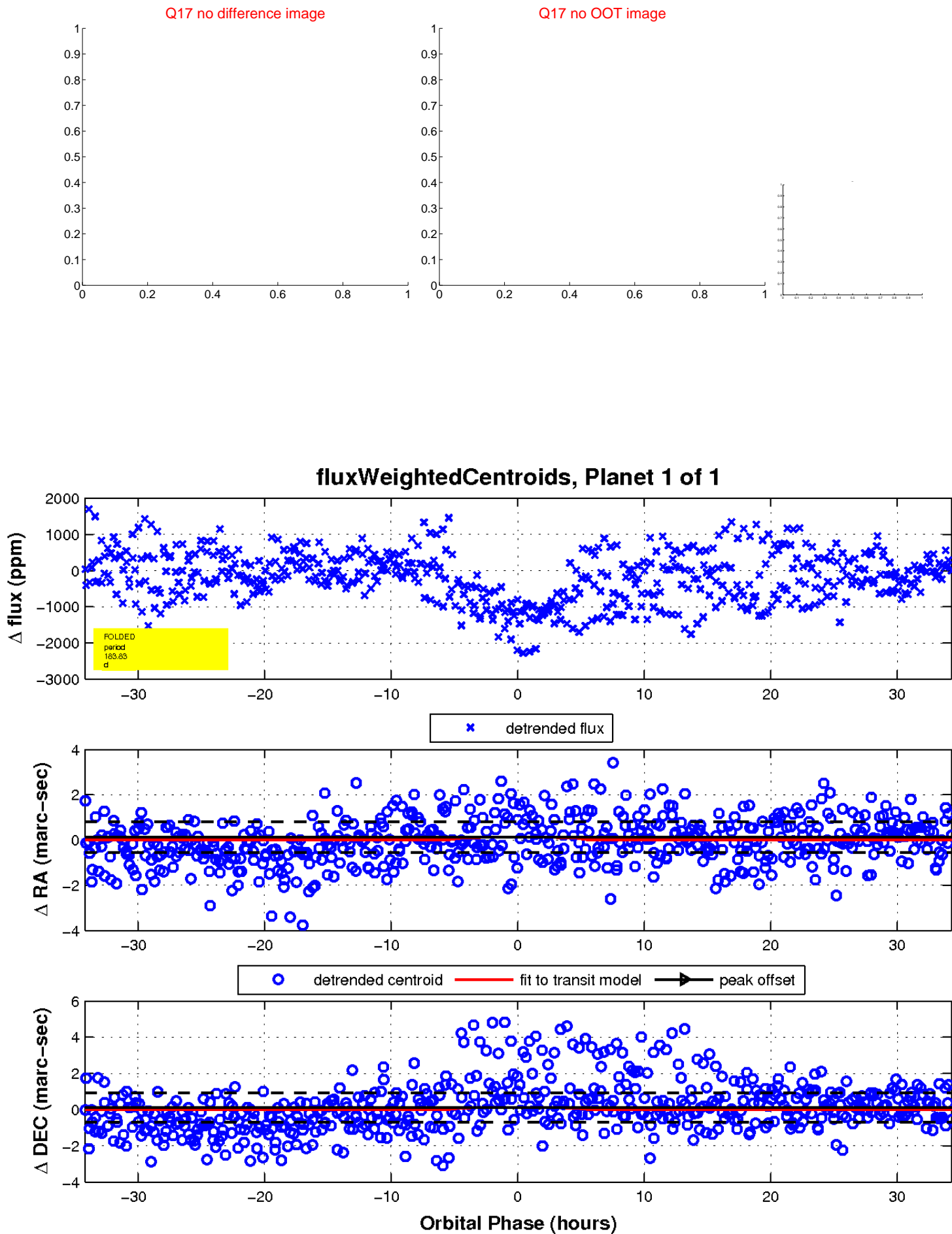
Q12 no OOT image



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.



UKIRT Image

Declination

