

# KIC 005645694

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005645694-01	OBS	No	3.852441	133.812566	231.3	21.186	8.2	10.3	2.02	6474	5.92	2183.36

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005645694-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

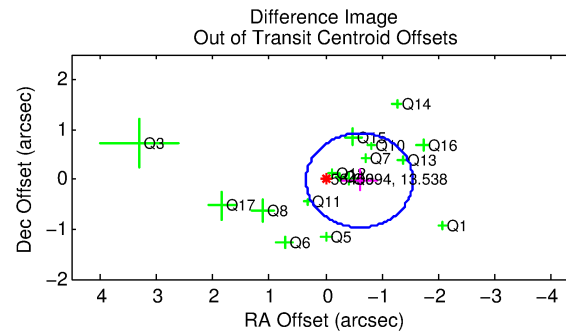
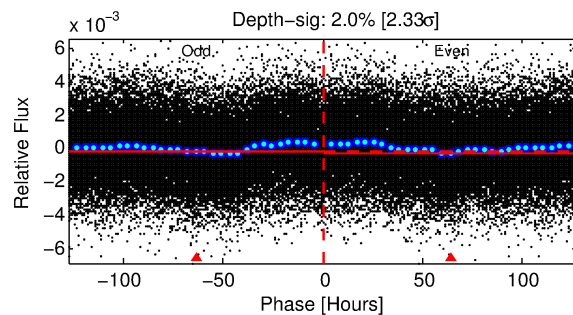
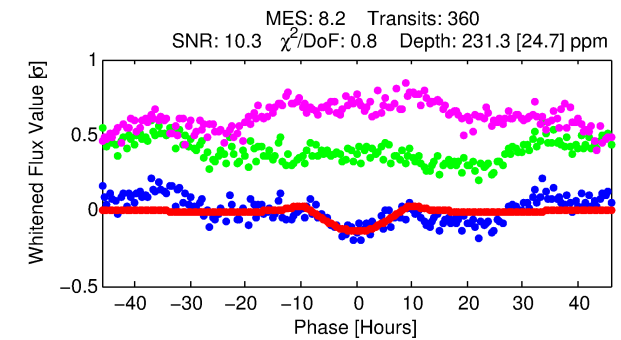
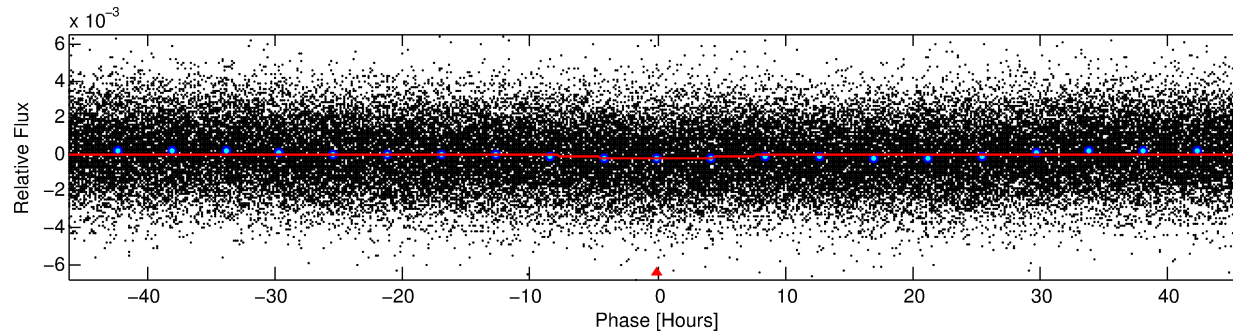
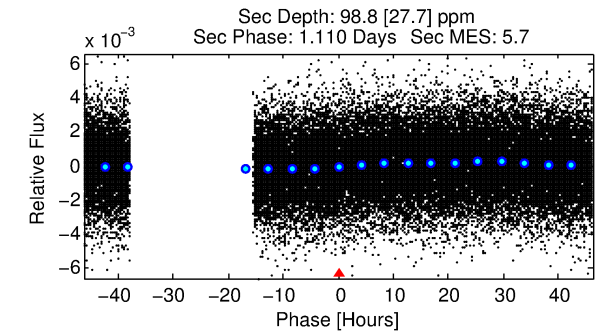
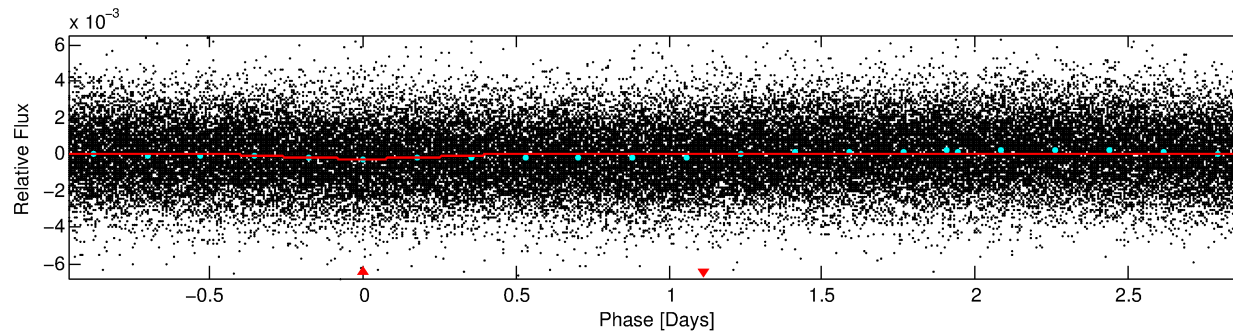
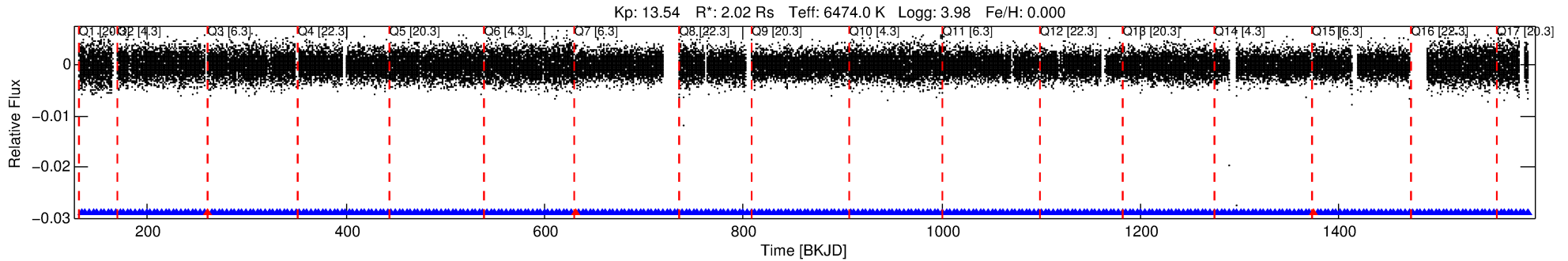
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005645694-01

No Significant Match Found

# DV One-Page Summary

KIC: 5645694 Candidate: 1 of 1 Period: 3.852 d



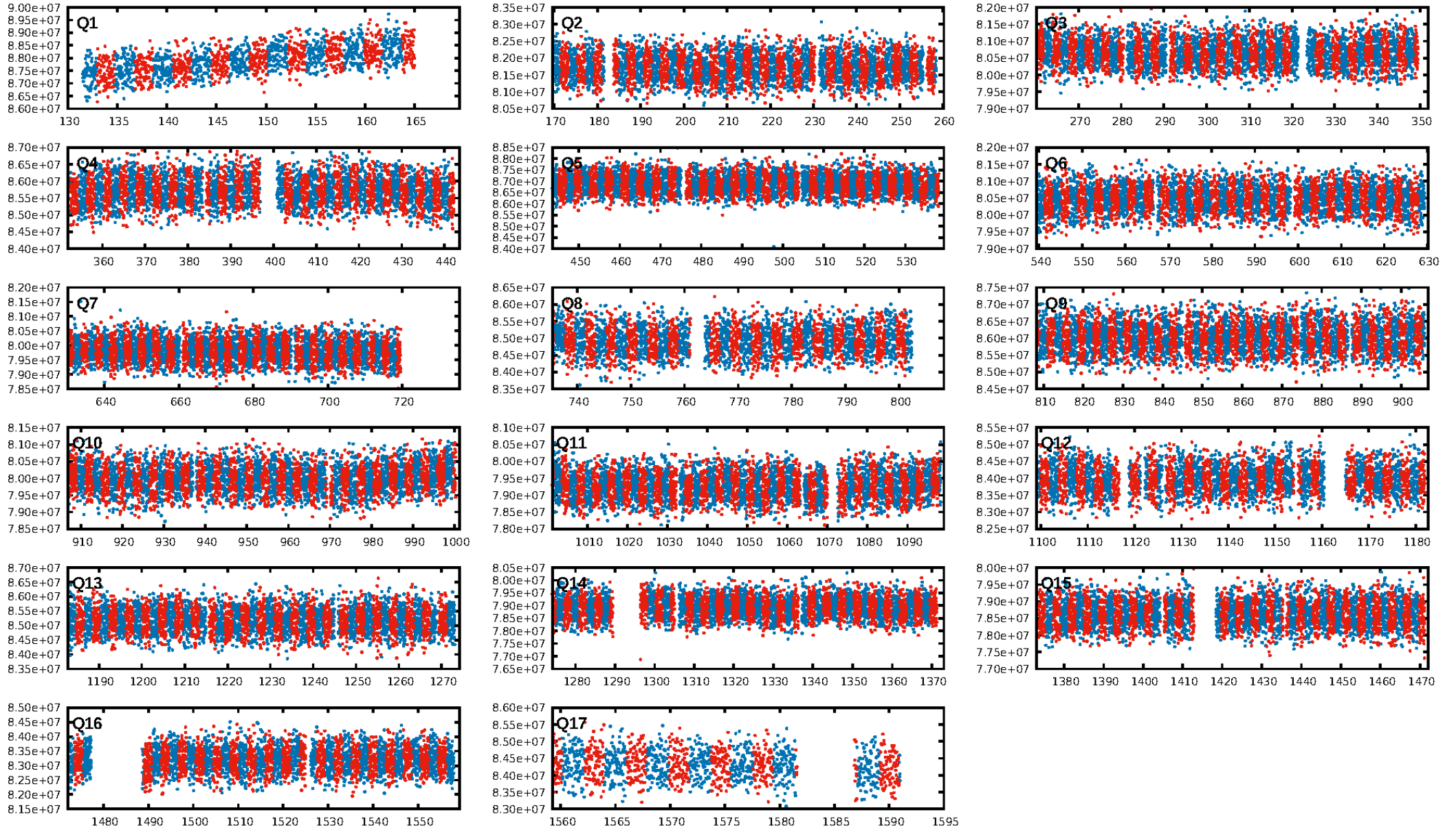
## DV Fit Results:

Period = 3.85244 [0.00017] d  
Epoch = 133.8126 [0.0365] BKJD  
Rp/R\* = 0.0268 [0.0378]  
a/R\* = 1.06 [0.01]  
b = 1.00 [0.06]  
Seff = 2183.36 [1259.21]  
Teq = 1743 [251] K  
Rp = 5.92 [8.61] Re  
a = 0.0543 [0.0190] AU  
Ag = 4.57 [13.20] [0.27σ]  
Teffp = 3941 [2792] K [0.78σ]

## DV Diagnostic Results:

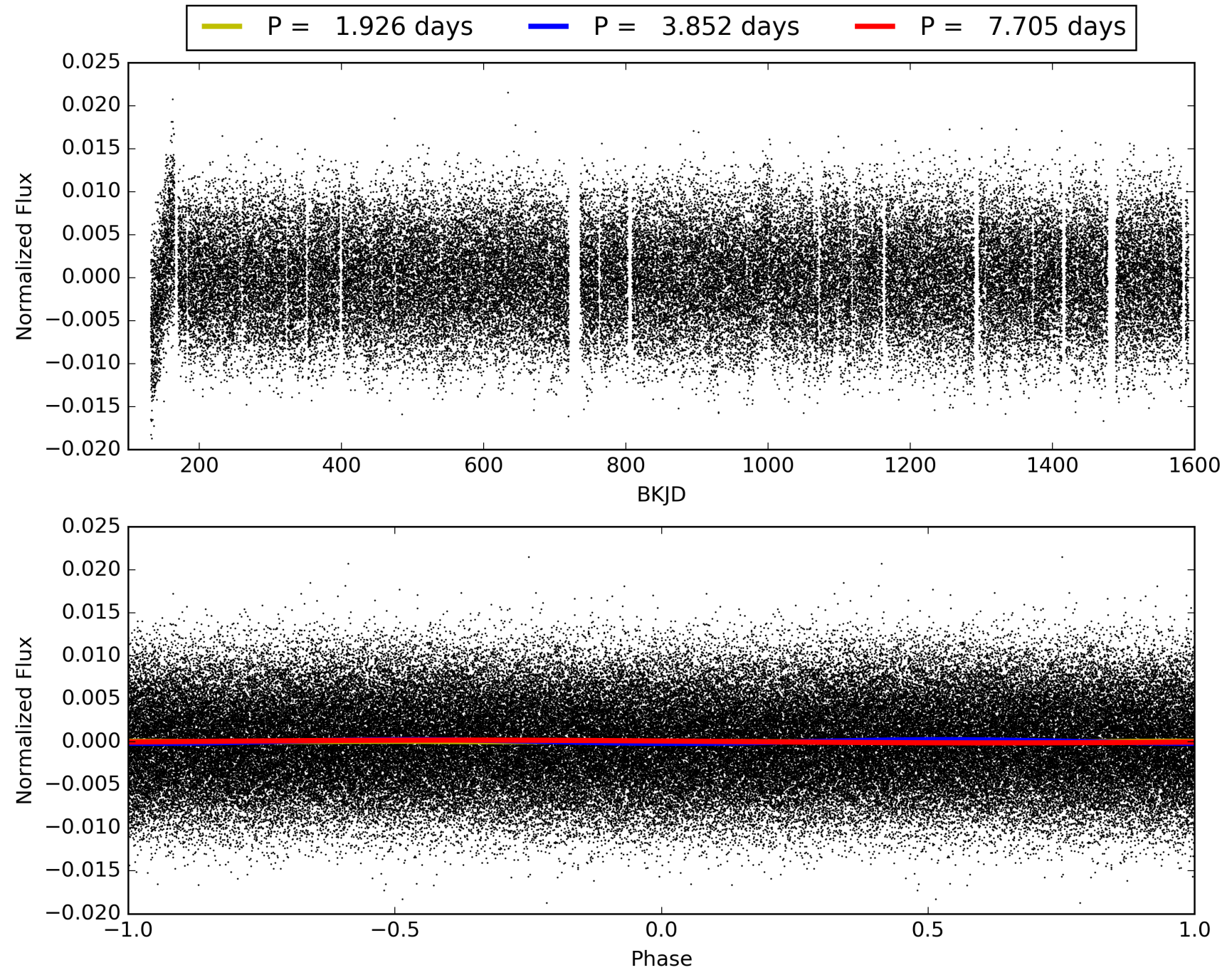
ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.49e-15  
RollingBand-fgt: 0.99 [341/344]  
**GhostDiagnostic-chr: 0.7836**  
Centroid-sig: 0.0%  
Centroid-so: 0.290 arcsec [1.24σ]  
OotOffset-rm: 0.600 arcsec [1.91σ]  
KicOffset-rm: 0.615 arcsec [1.84σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.88 [14/16]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 005645694-01, PDC Light Curves



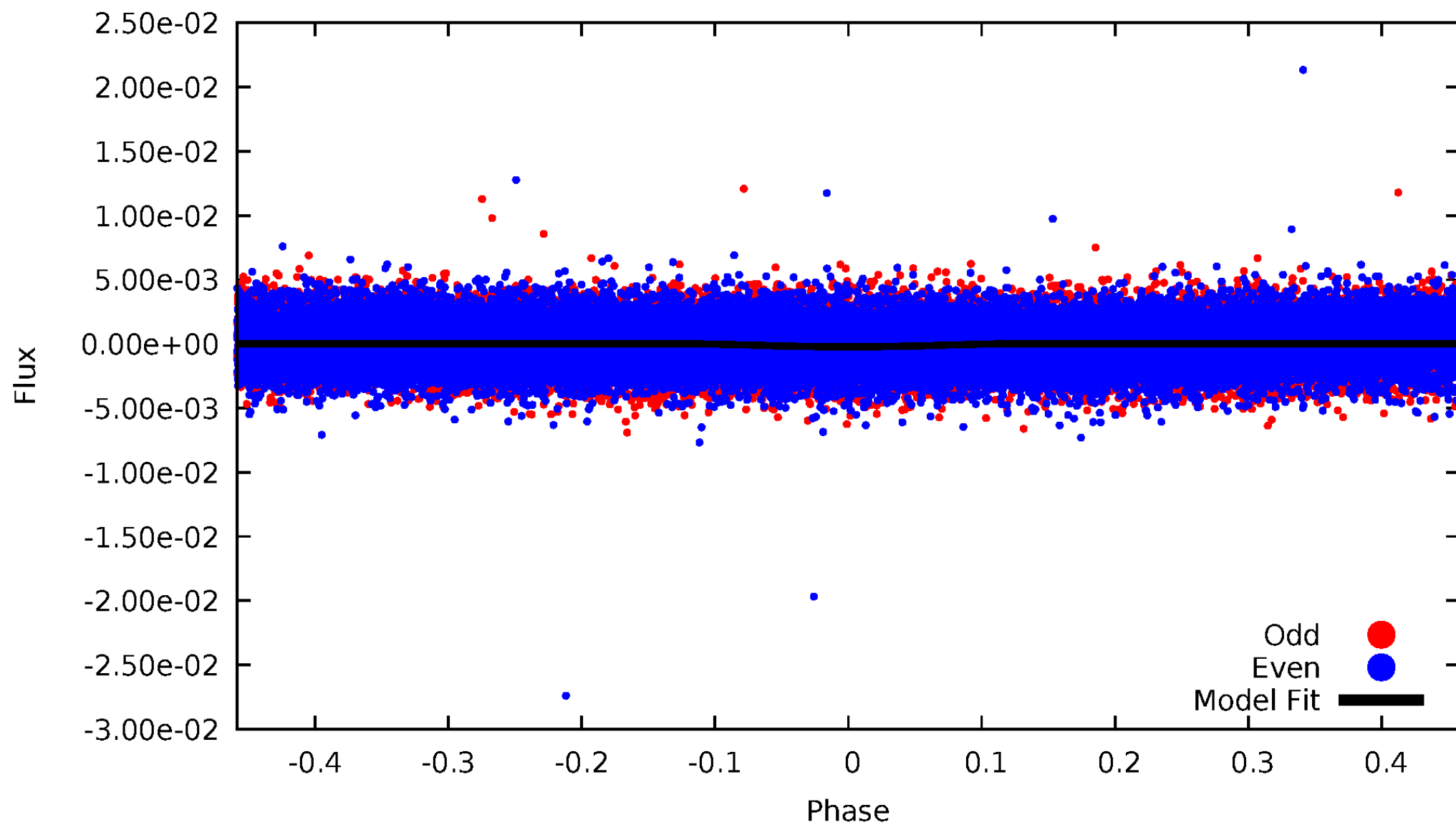


# TCE 005645694-01



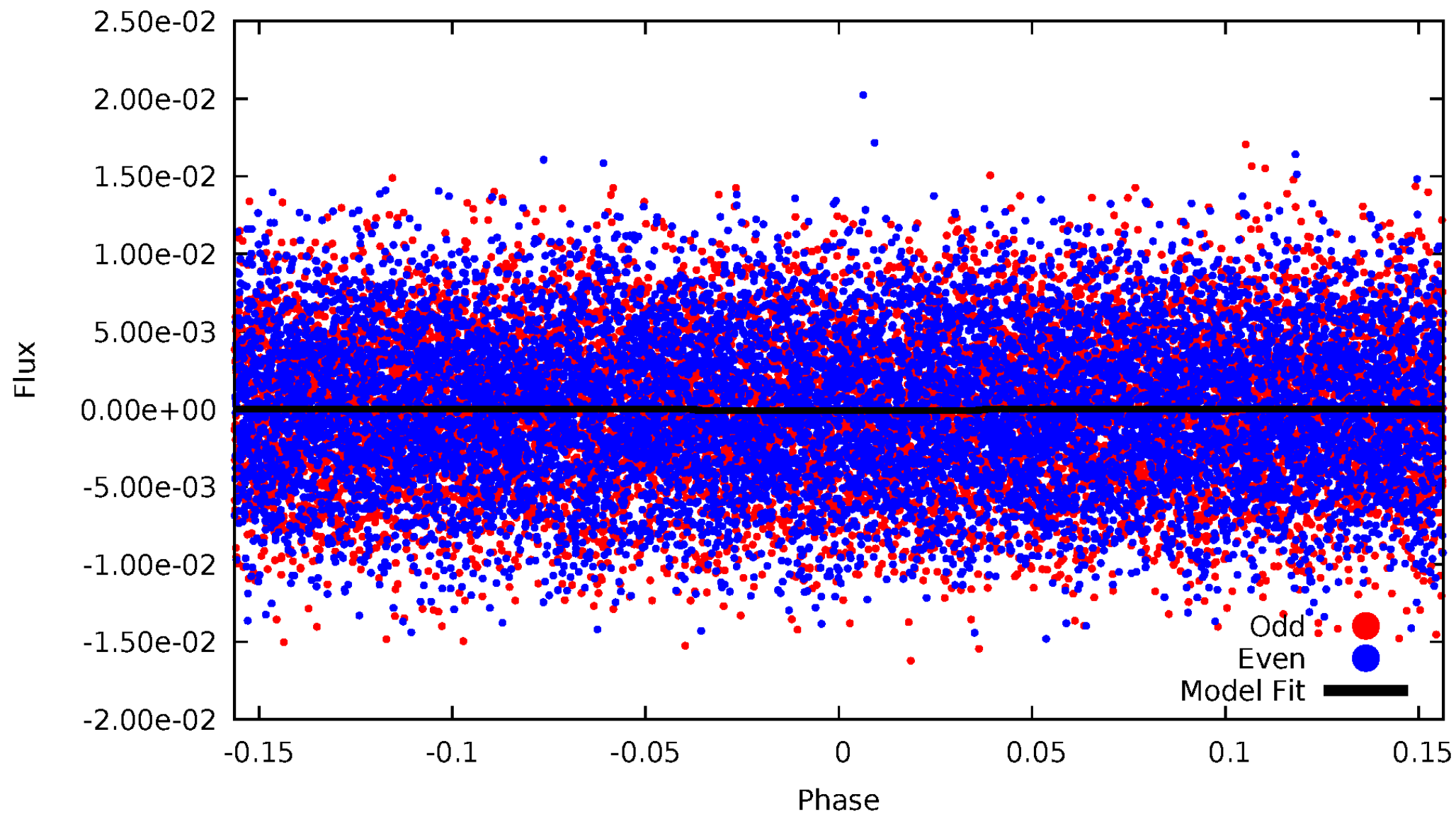
# DV Odd/Even

TCE 005645694-01



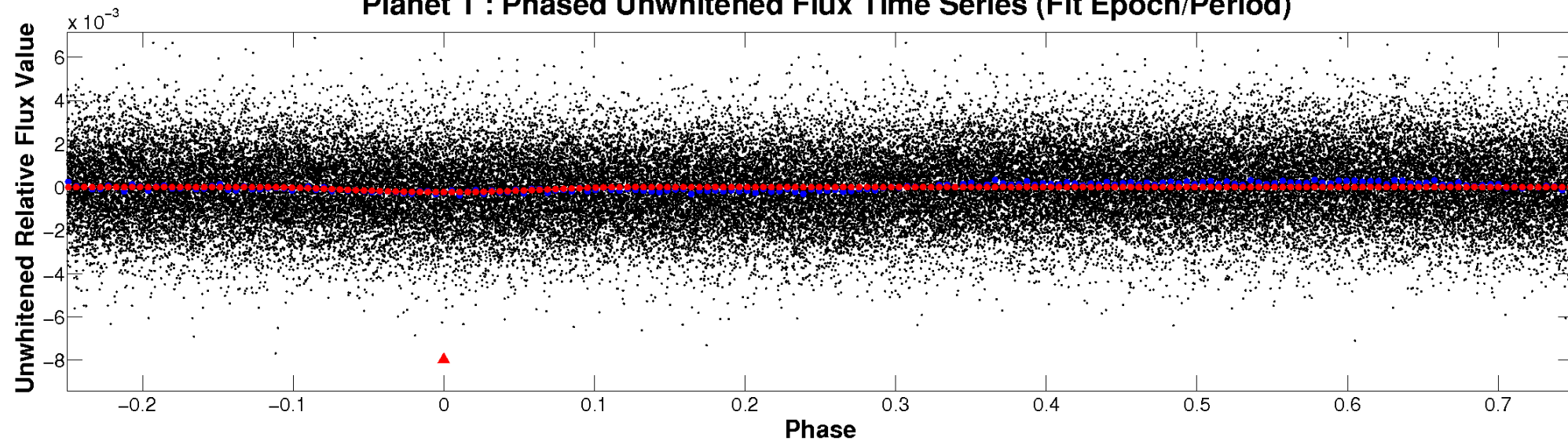
# ALT Odd/Even

TCE 005645694-01

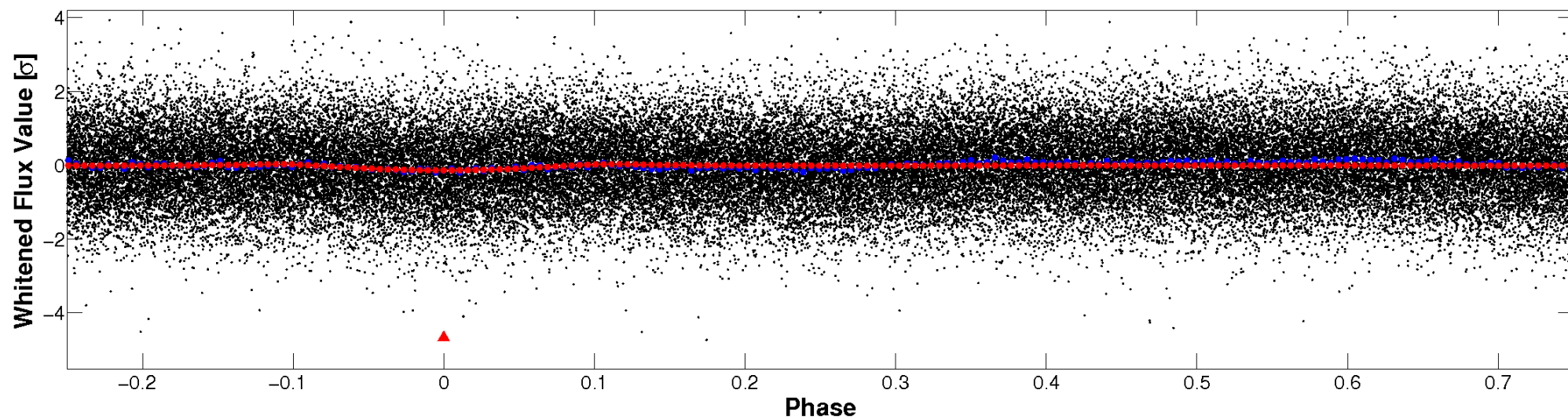


# Non-Whitened Vs. Whitened Light Curve

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



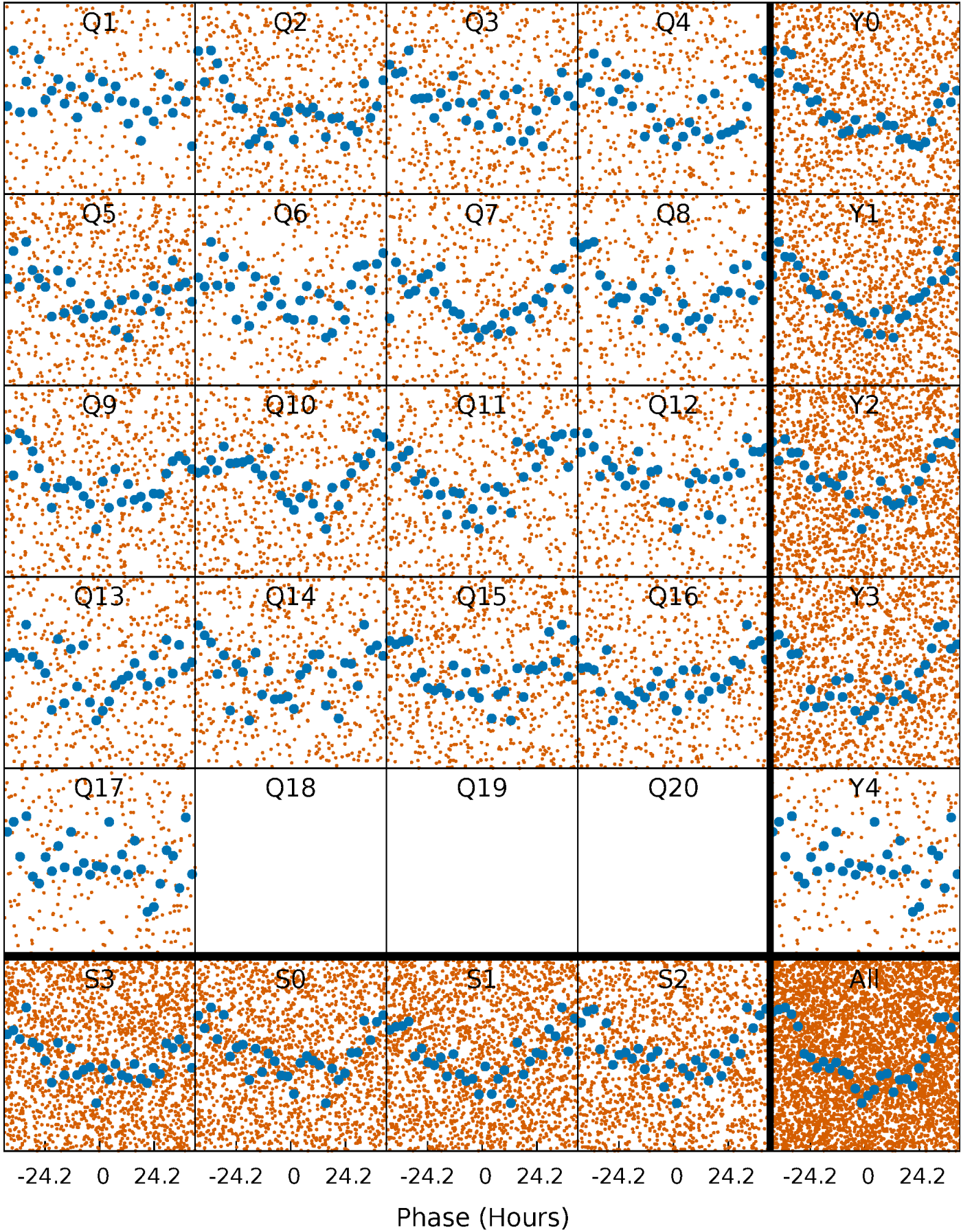
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

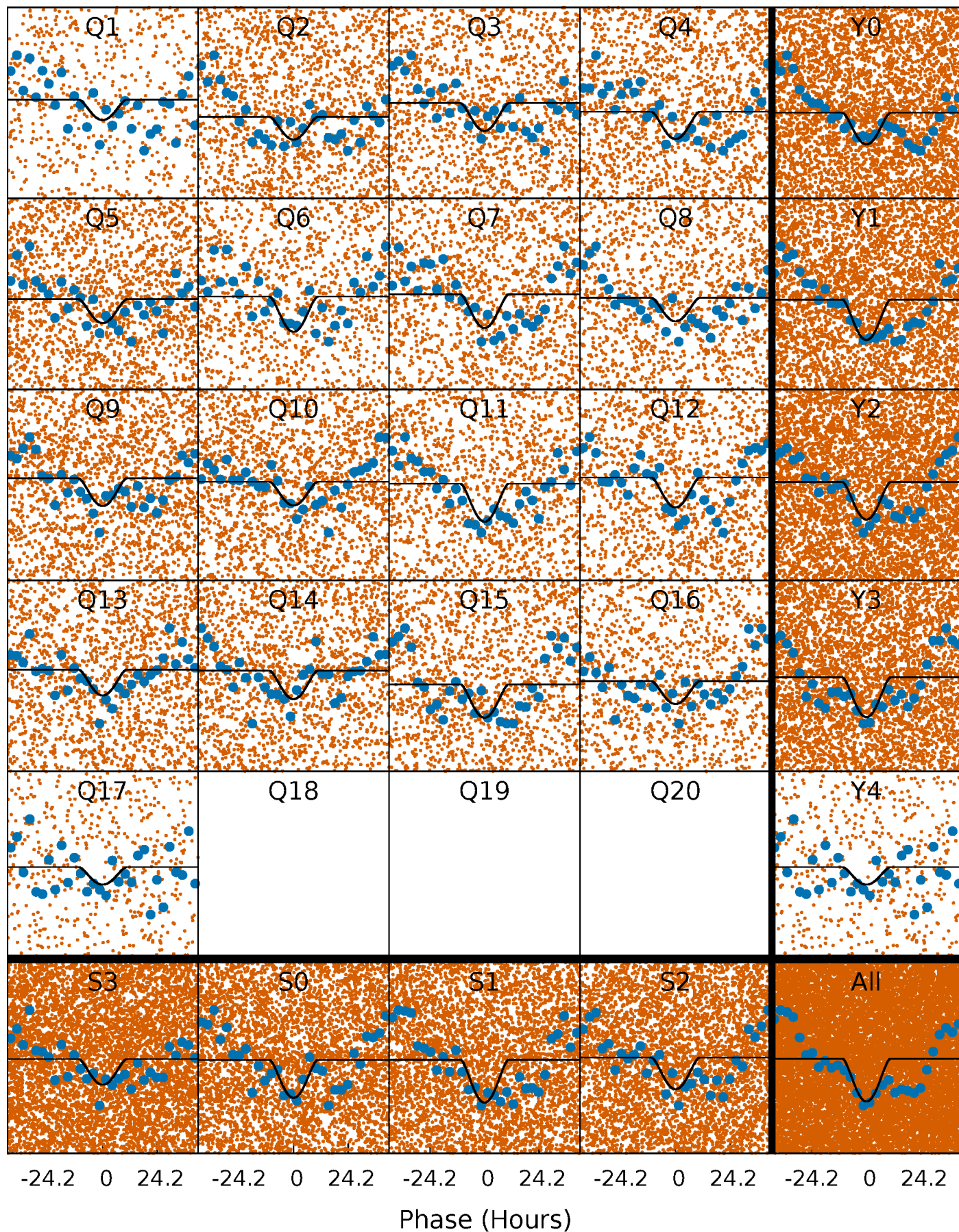
TCE 005645694-01     $P = 3.852441$  Days     $T_0 = 133.812566$  (BKJD)





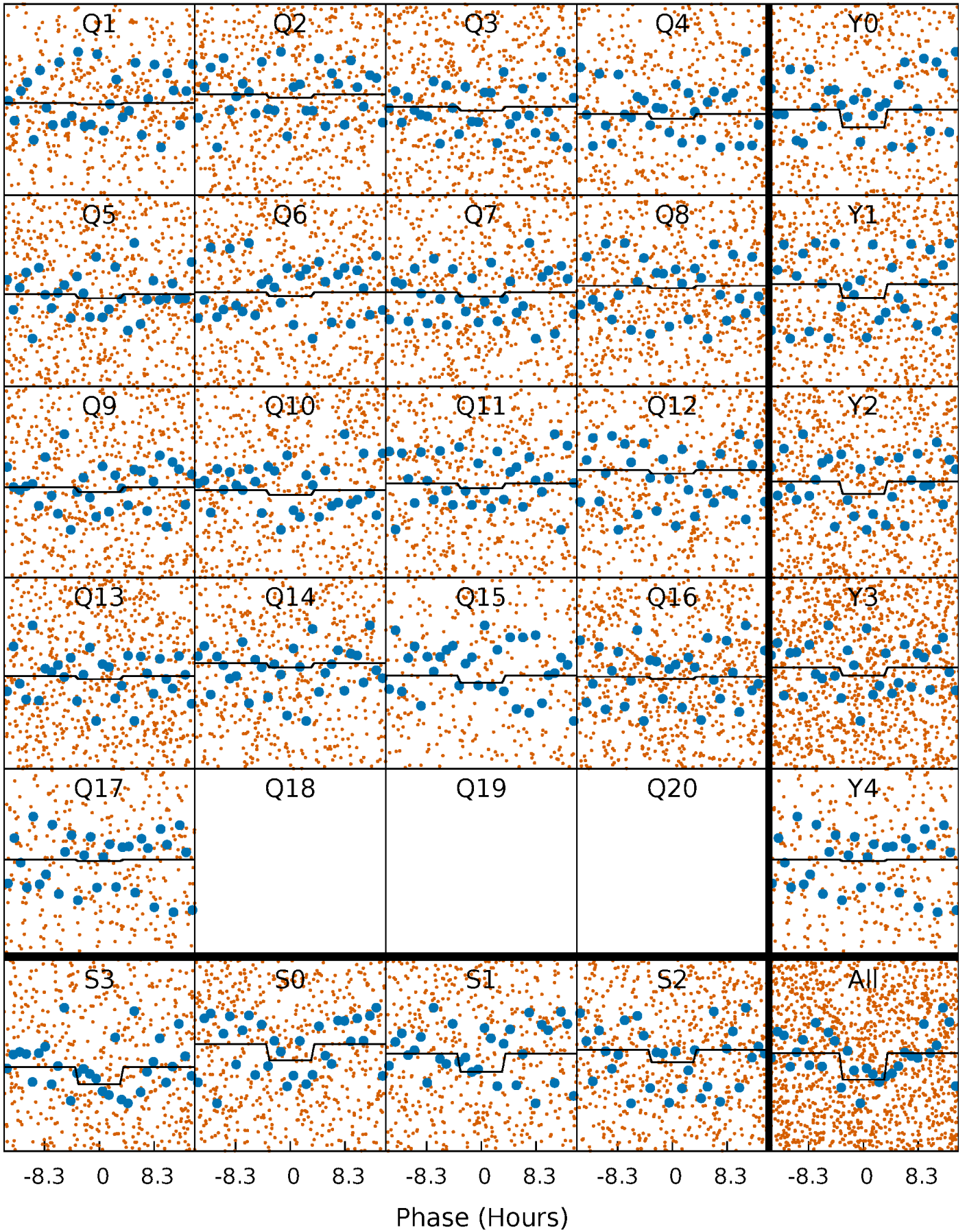
# DV Quarter-Phased Transit Curves

TCE 005645694-01 P= 3.852441 Days  $T_0=133.812566$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

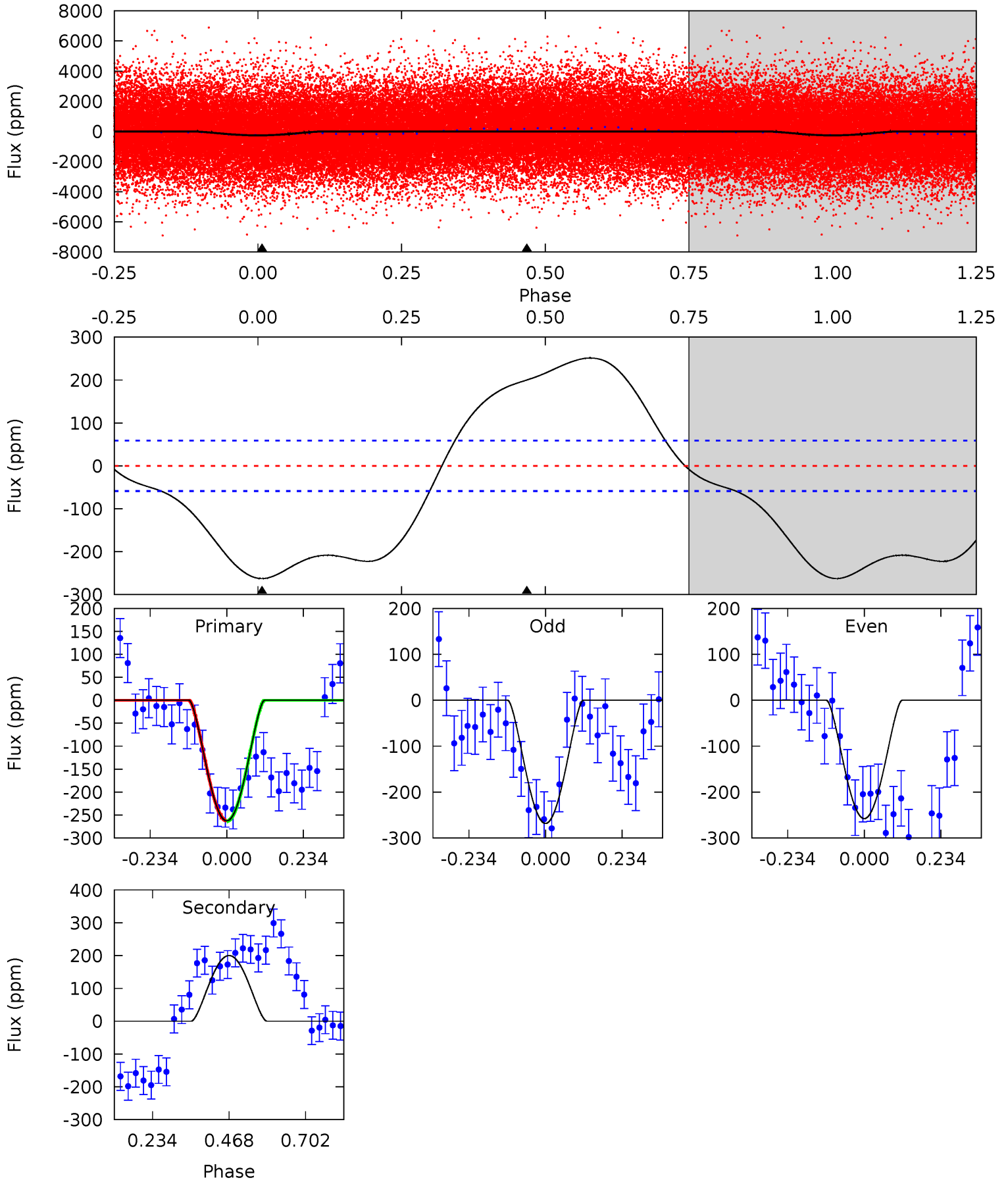
TCE 005645694-01 P= 3.852309 Days  $T_0=133.769493$  (BKJD)



# DV Model-Shift Uniqueness Test

005645694-01, P = 3.852441 Days, E = 129.960125 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
19.6	-14.9	0	0	4.38	1.19	5.60	19.6	19.6	-14.9	-14.9	0.39	1.15	0.49	0.03

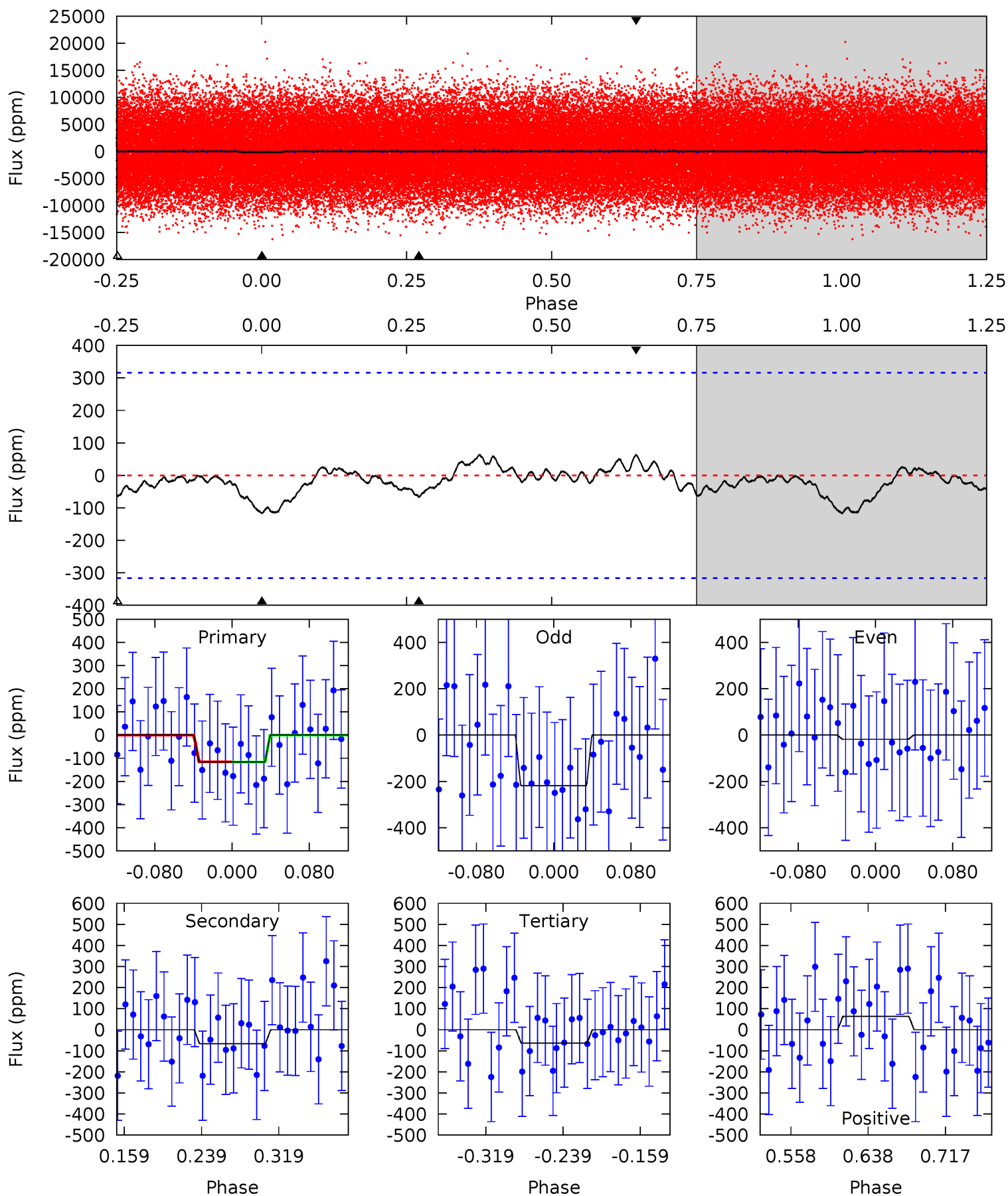




# Alt Model-Shift Uniqueness Test

005645694-01, P = 3.852309 Days, E = 129.917184 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
1.69	0.97	0.93	0.92	4.61	1.75	0.39	0.77	0.77	0.04	0.04	1.46	1.15	0.35	0.01





### Stellar Parameters For KIC 005645694

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6474^{+179}_{-224}$	$3.984^{+0.329}_{-0.165}$	$0.000^{+0.250}_{-0.300}$	$2.022^{+0.533}_{-0.733}$	$1.439^{+0.182}_{-0.313}$	$0.245^{+0.554}_{-0.115}$
	+3%/-3%	+8%/-4%	+inf%/-inf%	+26%/-36%	+13%/-22%	+226%/-47%
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 005645694-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$200 \pm 13$	$8.10^{+7.42}_{-5.14}$	$2409^{+189}_{-242}$	$-4195^{+704}_{-2328}$	$-4.923^{+3.554}_{-31.665}$
Alt.	$-66 \pm 69$	$6.23^{+6.44}_{-4.40}$	$2398^{+207}_{-225}$	$3485^{+2445}_{-6257}$	$2.106^{+22.735}_{-2.157}$

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

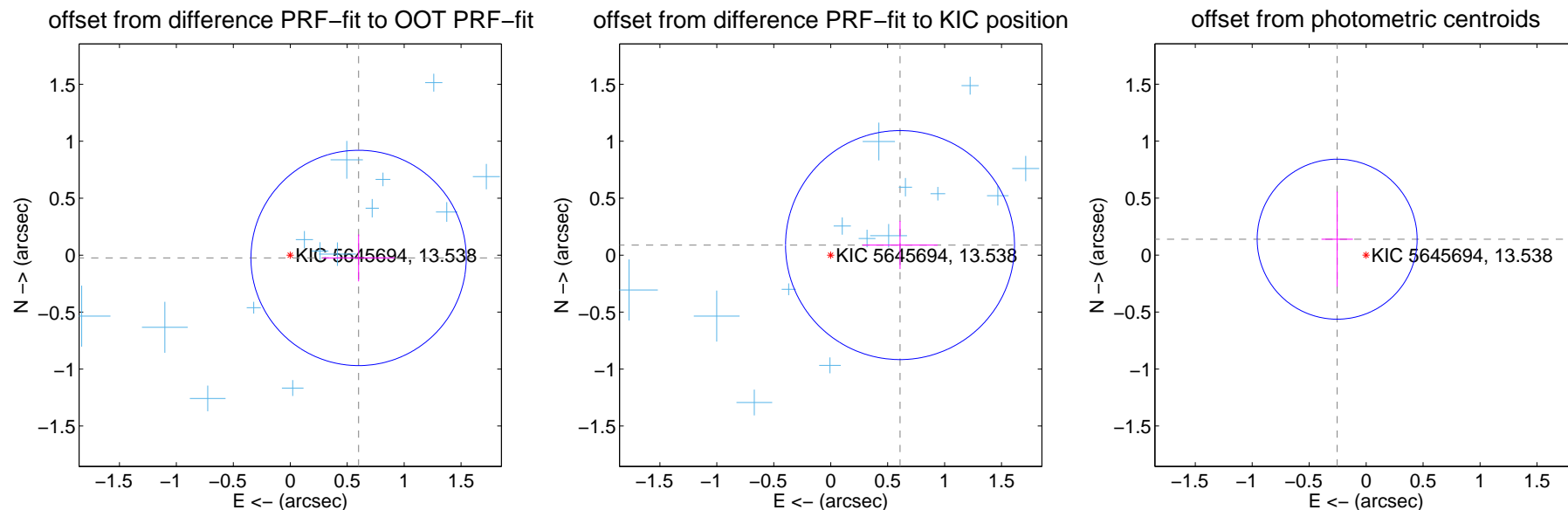
## DV Centroid Data

Supplemental centroid analysis for 005645694-01. Kepler magnitude: 13.54. Transit SNR 10.31

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.24 arcsec

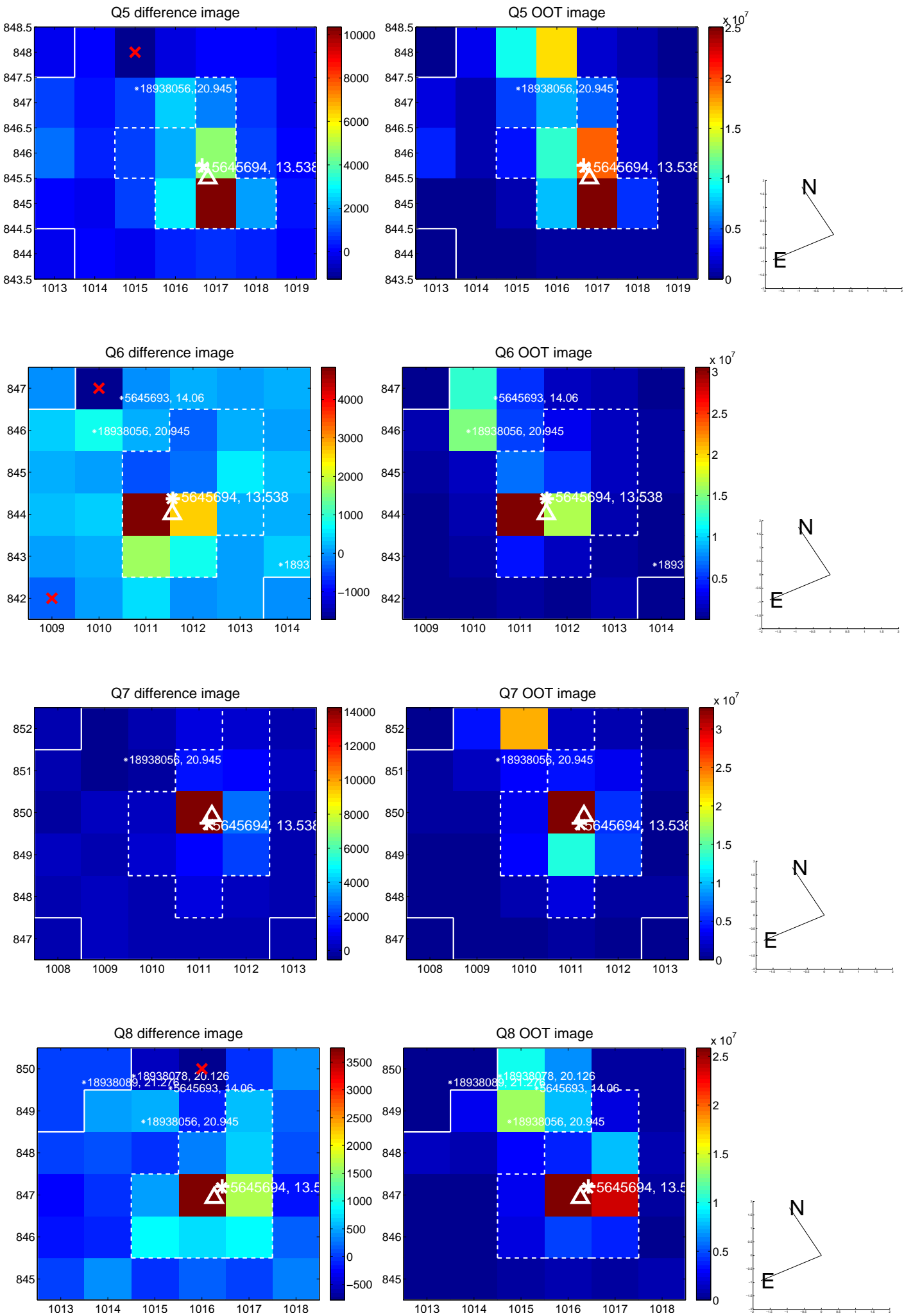
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.600 \pm 0.315$	1.91	$-0.600 \pm 0.317$	$-0.024 \pm 0.206$
PRF-fit source offset from KIC position	$0.615 \pm 0.335$	1.84	$-0.609 \pm 0.330$	$0.088 \pm 0.211$
photometric centroid source offset	$0.29 \pm 0.23$	1.24	$0.25 \pm 0.14$	$0.14 \pm 0.42$



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.

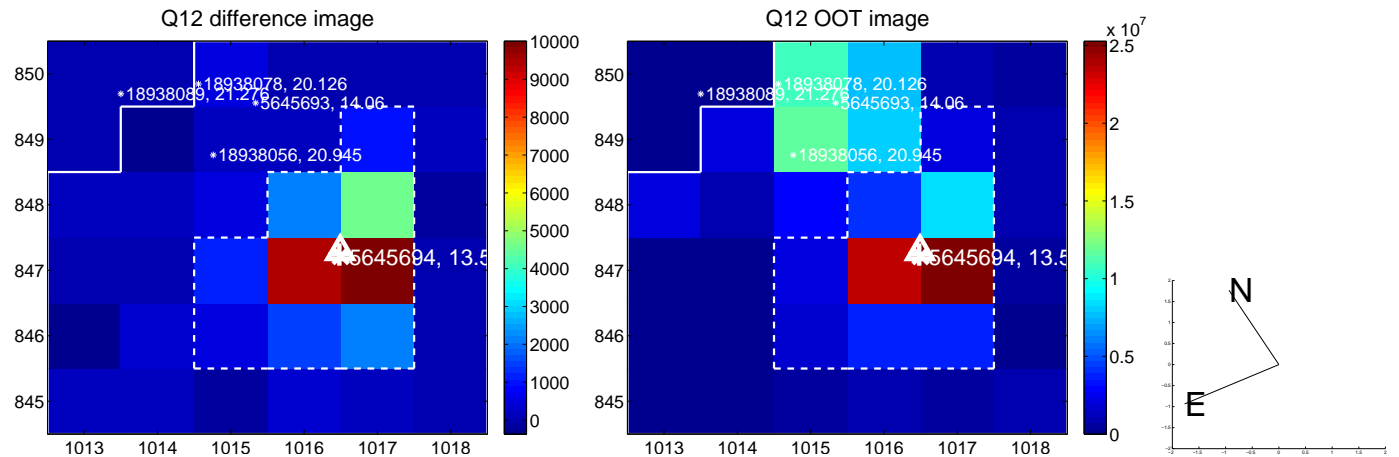
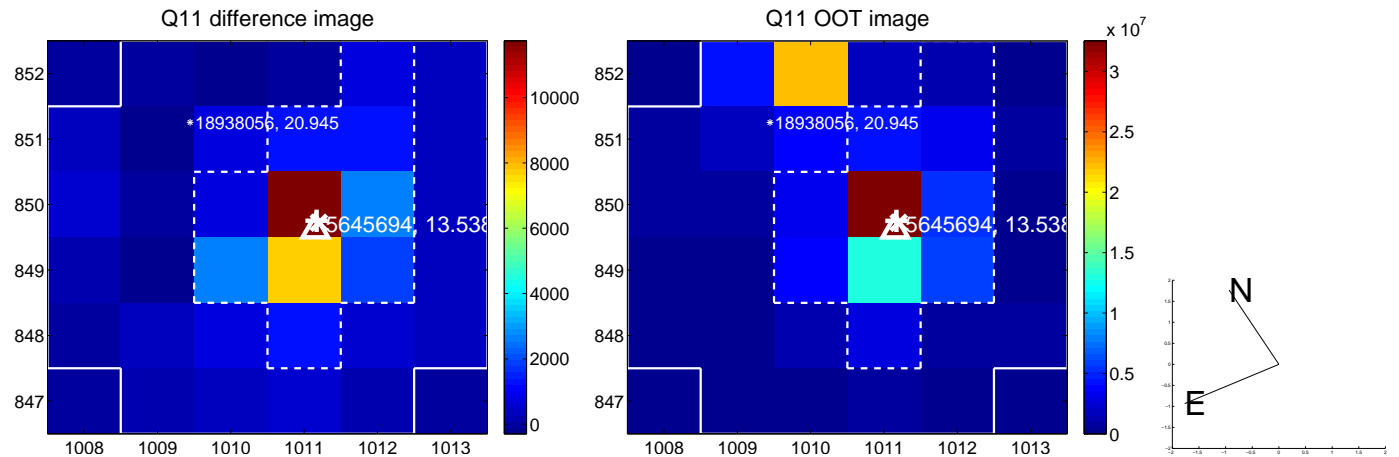
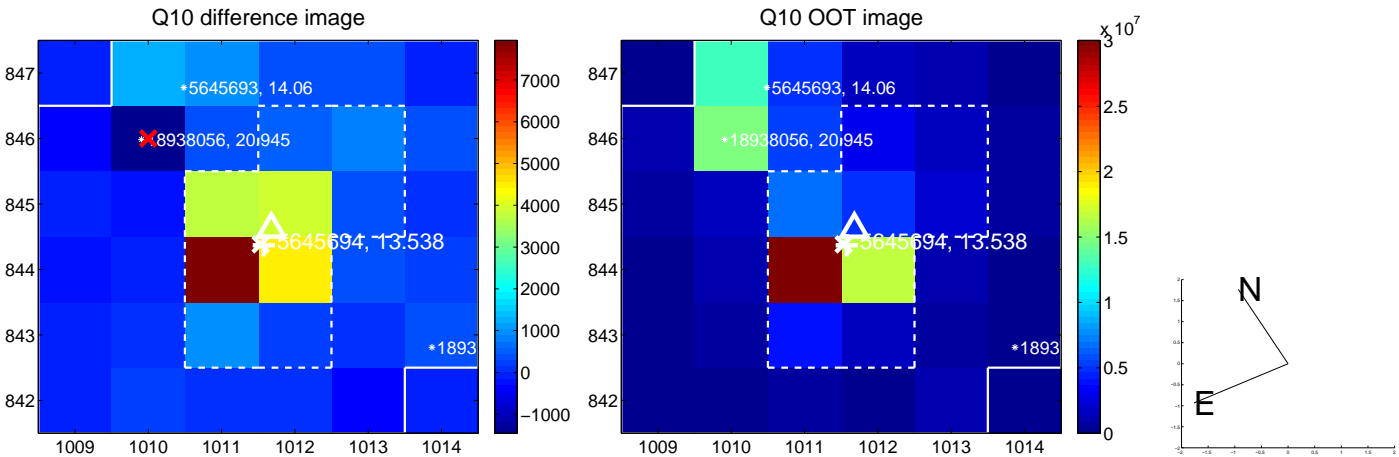
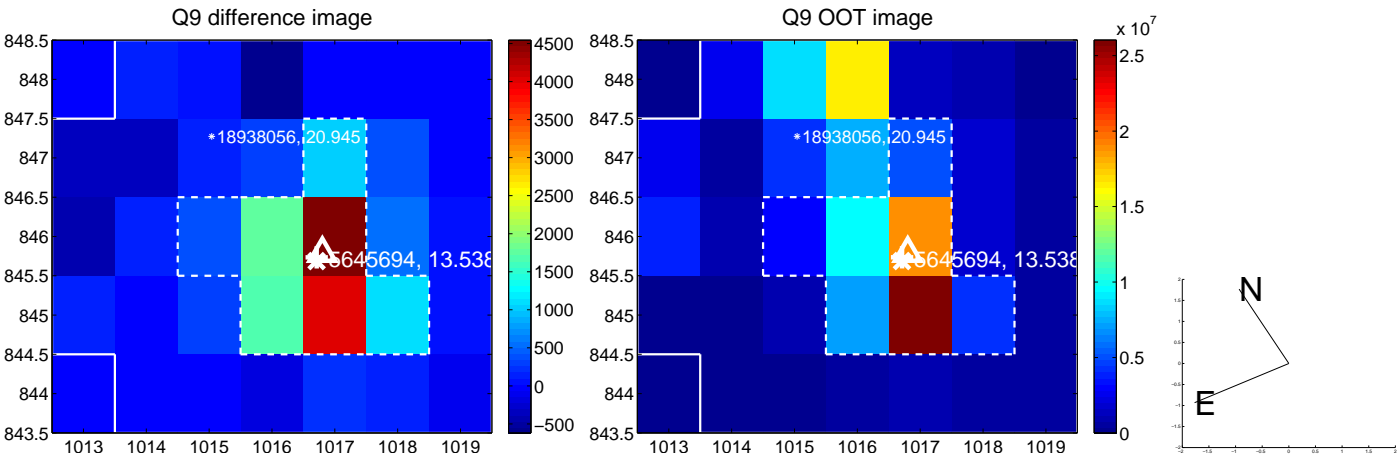


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

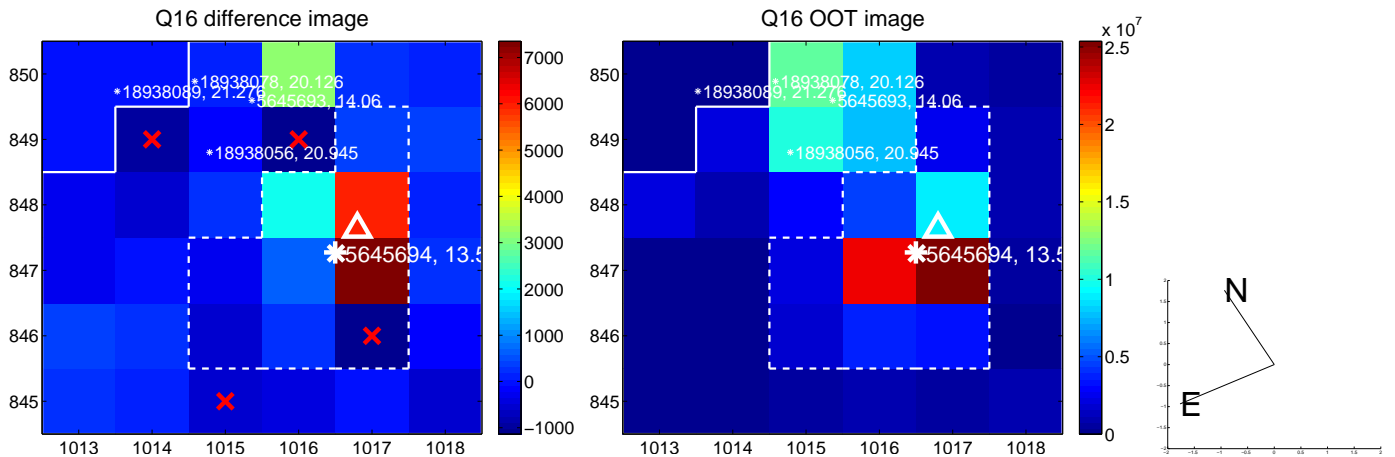
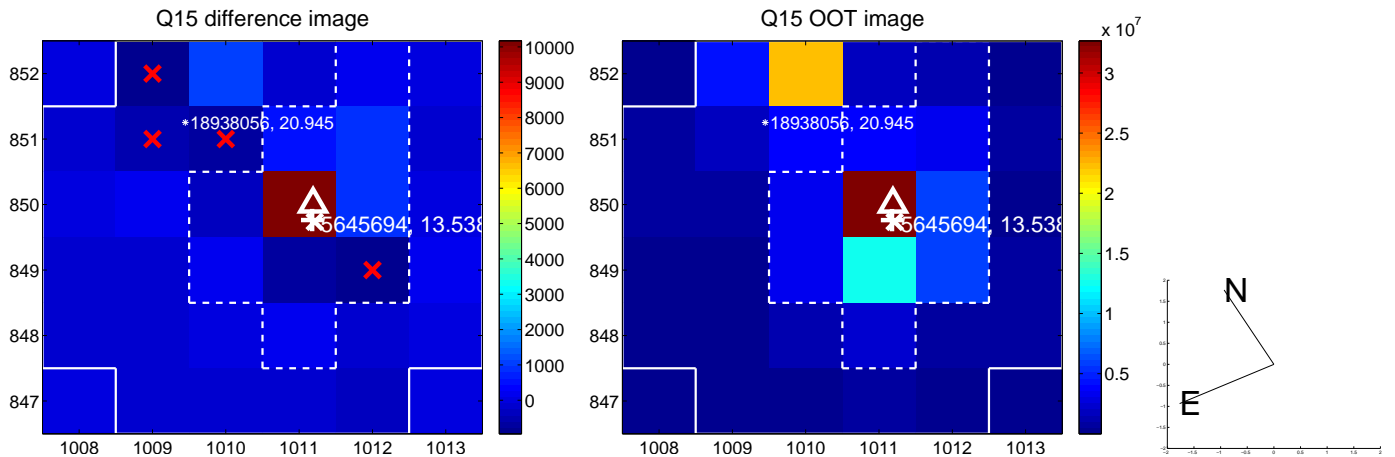
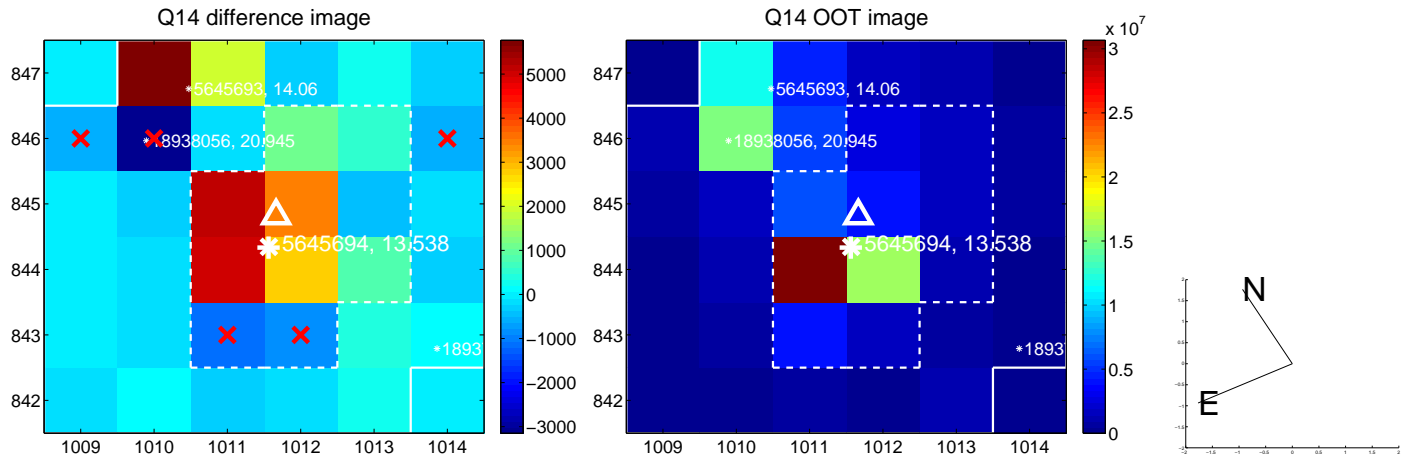
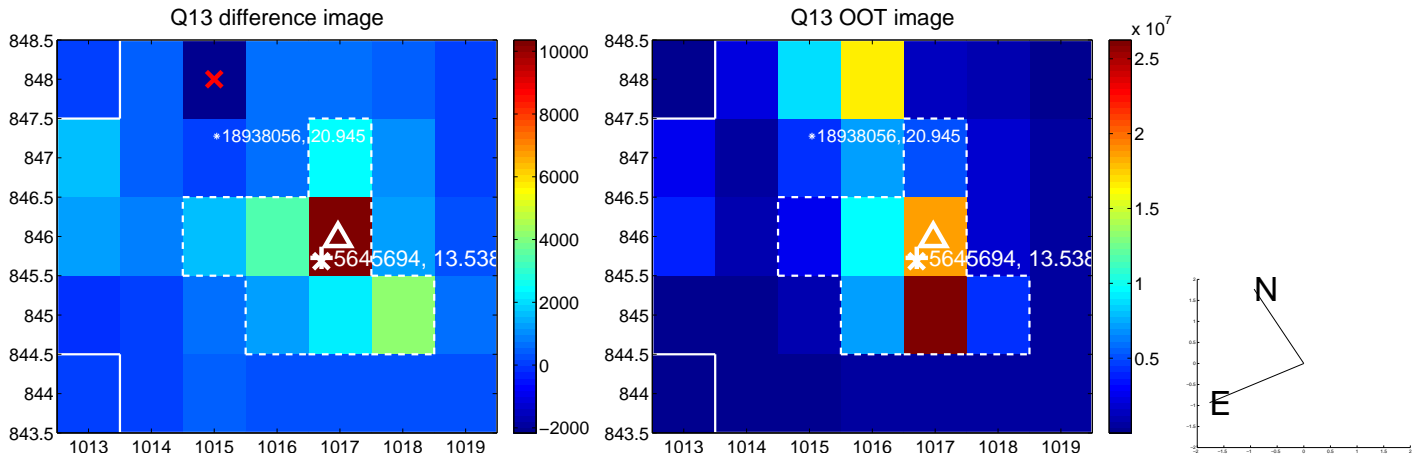




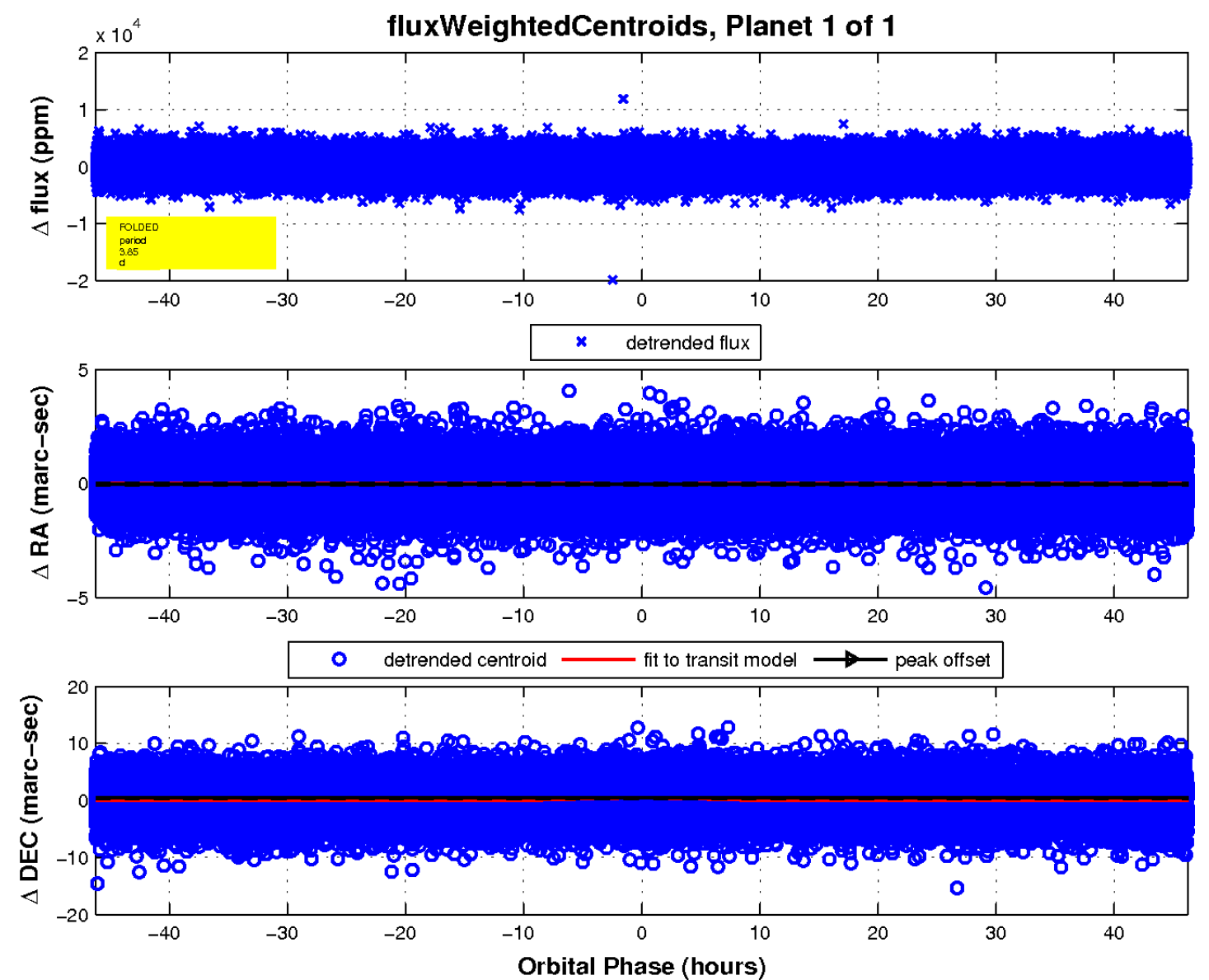
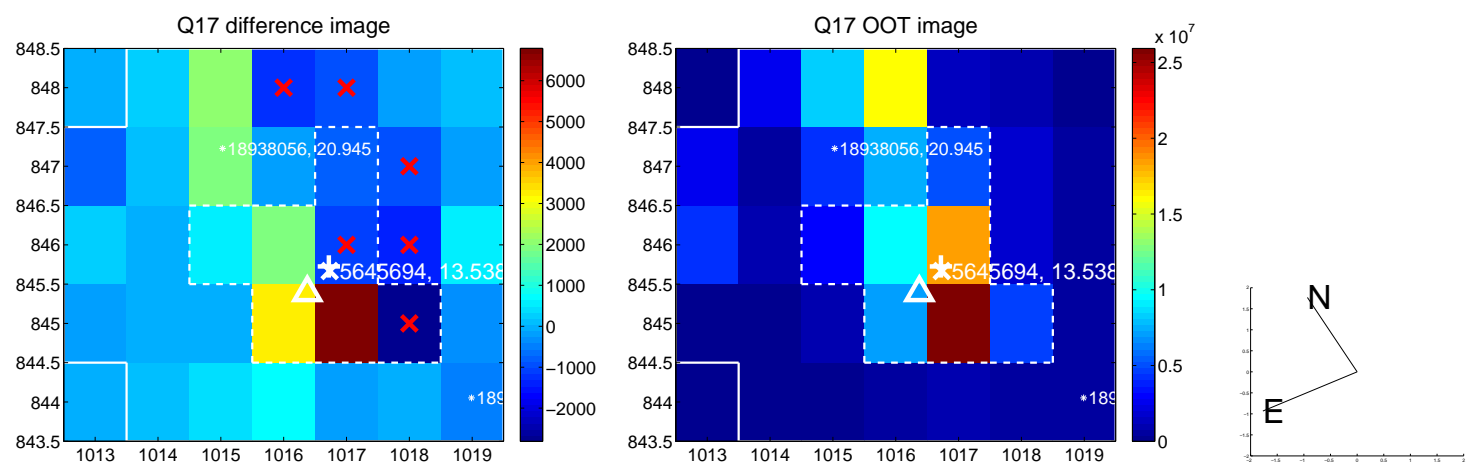
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

