

# KIC 009097892

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009097892-01	OBS	3809.01	1.674658	132.182778	236.2	1.396	34.7	56.9	1.16	6397	2.12	2557.33

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009097892-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

**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.

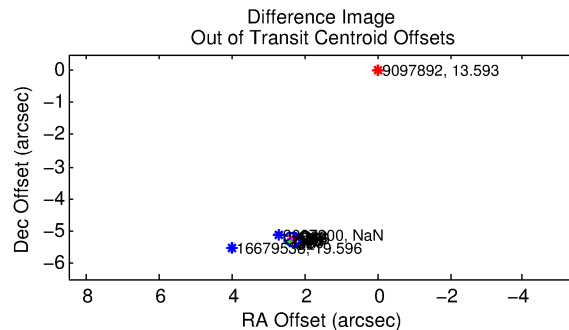
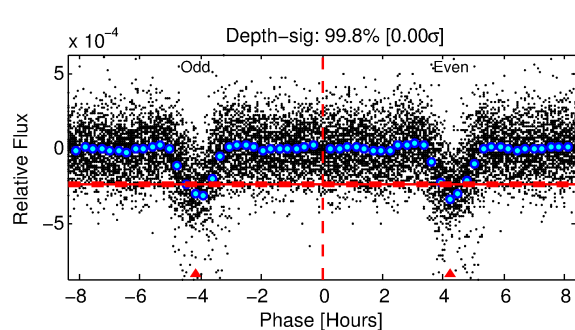
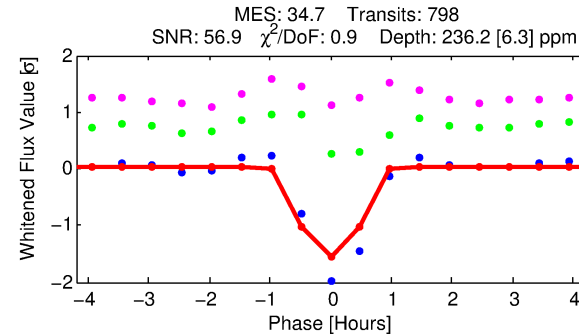
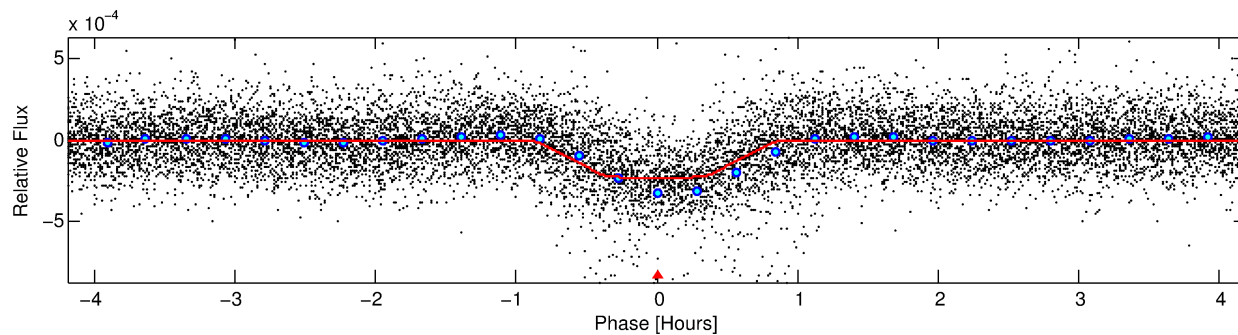
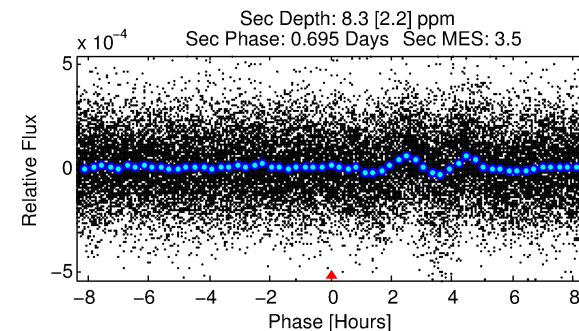
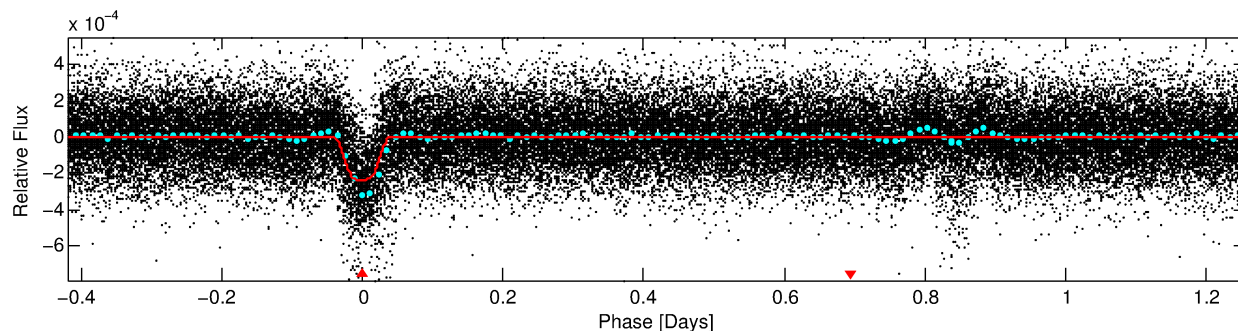
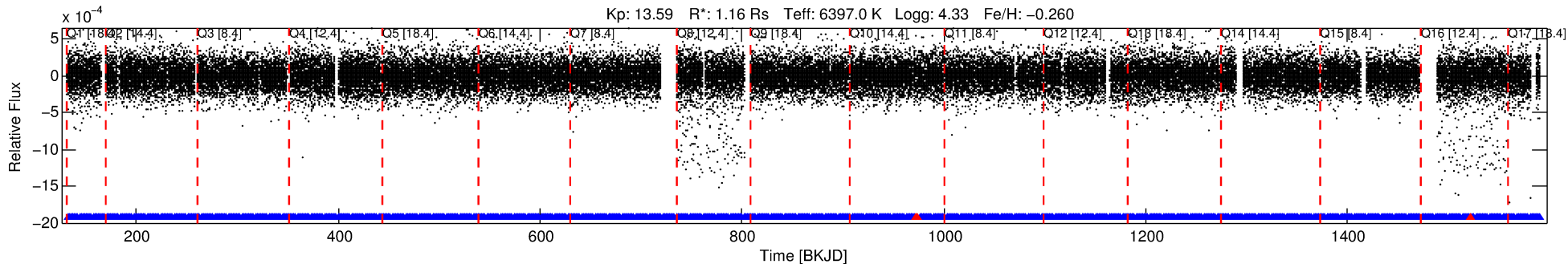
## Ephemeris Match Information For 009097892-01

No Significant Match Found

# DV One-Page Summary

KIC: 9097892 Candidate: 1 of 1 Period: 1.675 d  
KOI: K03809.01 Corr: 0.833

Kp: 13.59 R\*: 1.16 Rs Teff: 6397.0 K Logg: 4.33 Fe/H: -0.260



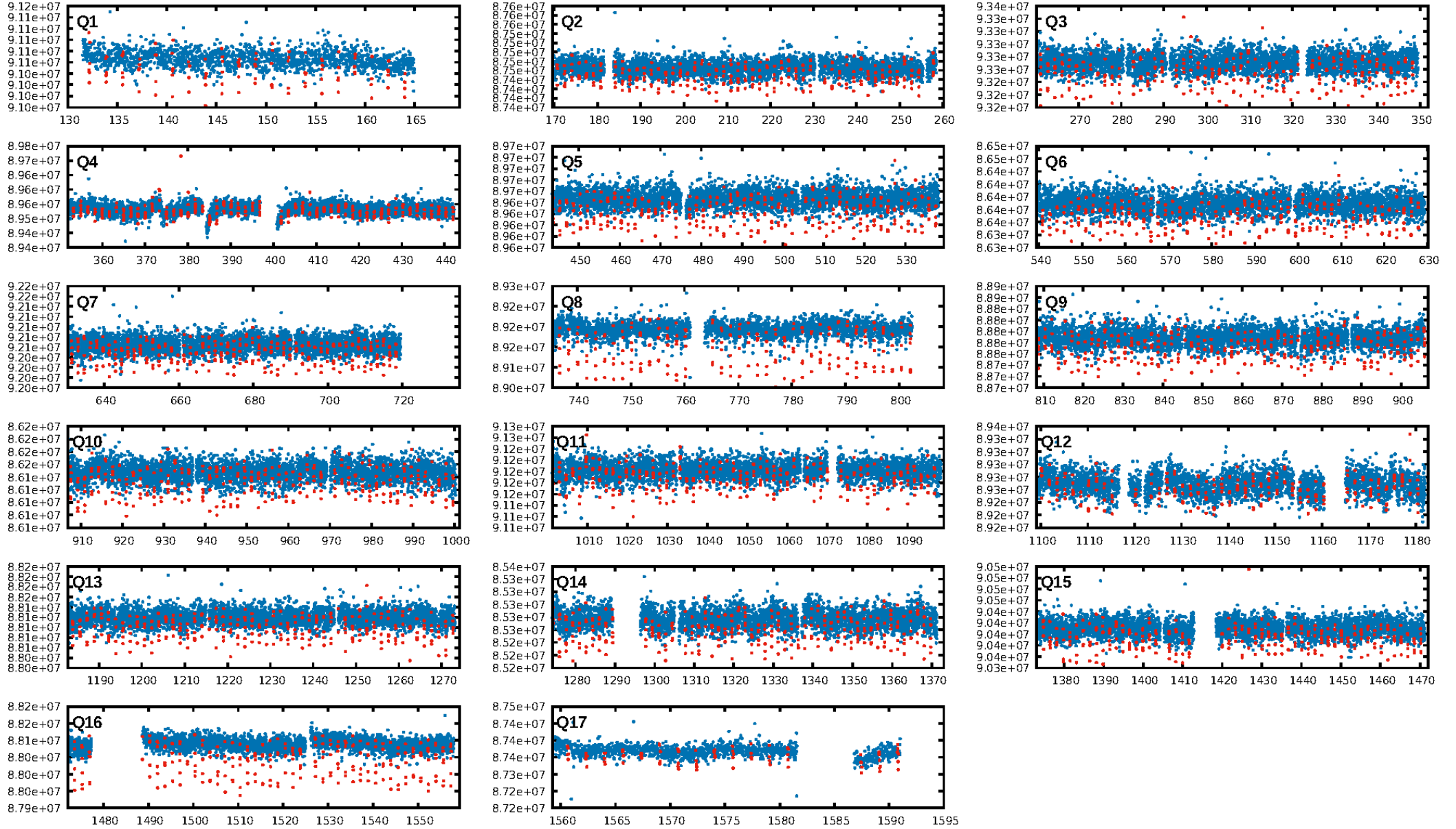
## DV Fit Results:

Period = 1.67466 [0.00000] d  
Epoch = 132.1828 [0.0004] BKJD  
Rp/R\* = 0.0168 [0.0017]  
a/R\* = 4.18 [2.23]  
b = 0.91 [0.10]  
Seff = 2557.33 [982.14]  
Teq = 1813 [174] K  
Rp = 2.12 [0.68] Re  
a = 0.0280 [0.0071] AU  
Ag = 0.80 [0.39] [-0.50σ]  
Teffp = 2654 [236] K [2.87σ]

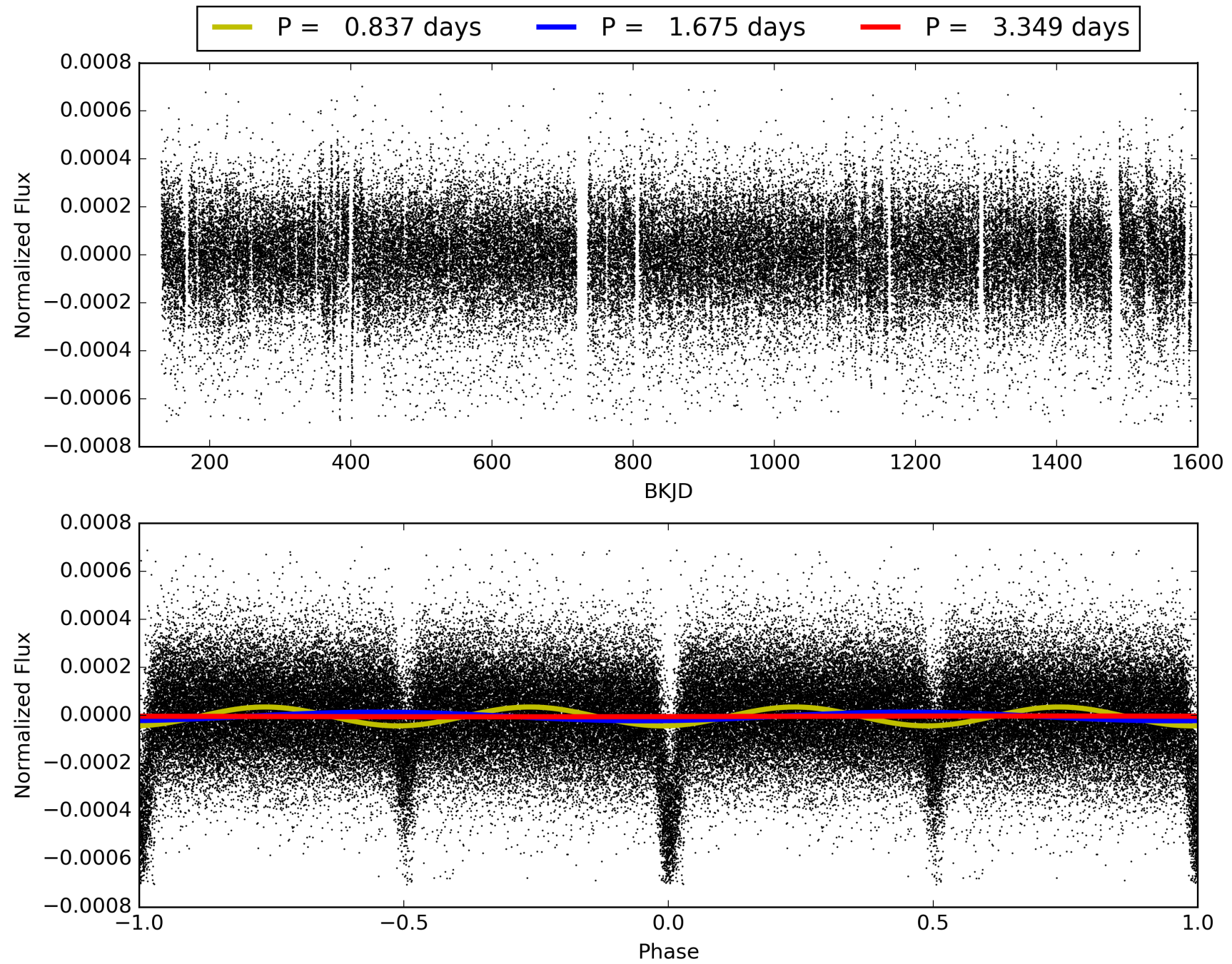
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.85e-252  
RollingBand-fgt: 1.00 [759/762]  
GhostDiagnostic-chr: -0.2422  
Centroid-sig: 0.0%  
Centroid-so: 36.352 arcsec [177.85σ]  
OotOffset-rm: 5.763 arcsec [82.45σ]  
KicOffset-rm: 5.773 arcsec [81.12σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 009097892-01, PDC Light Curves



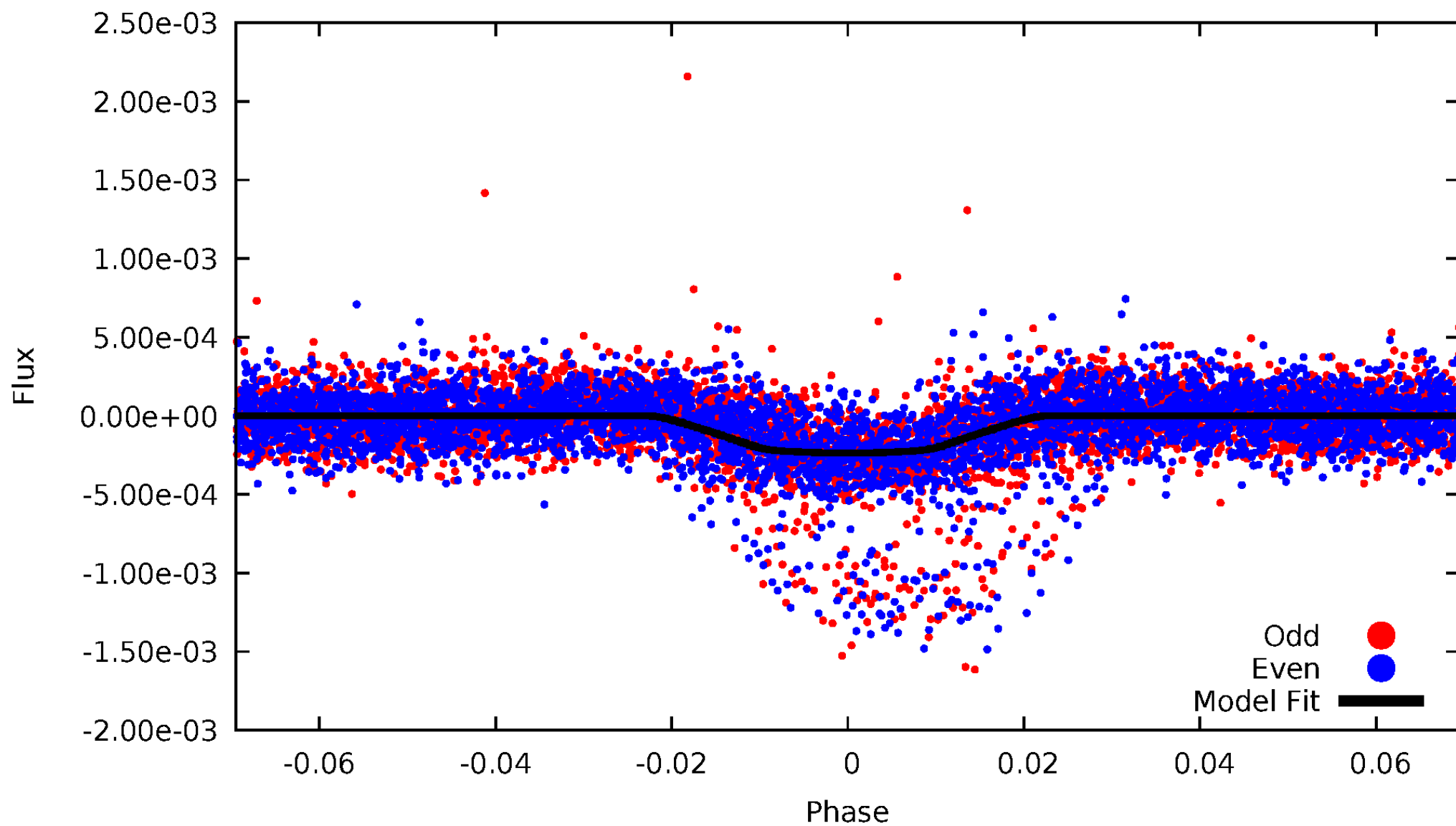
TCE 009097892-01





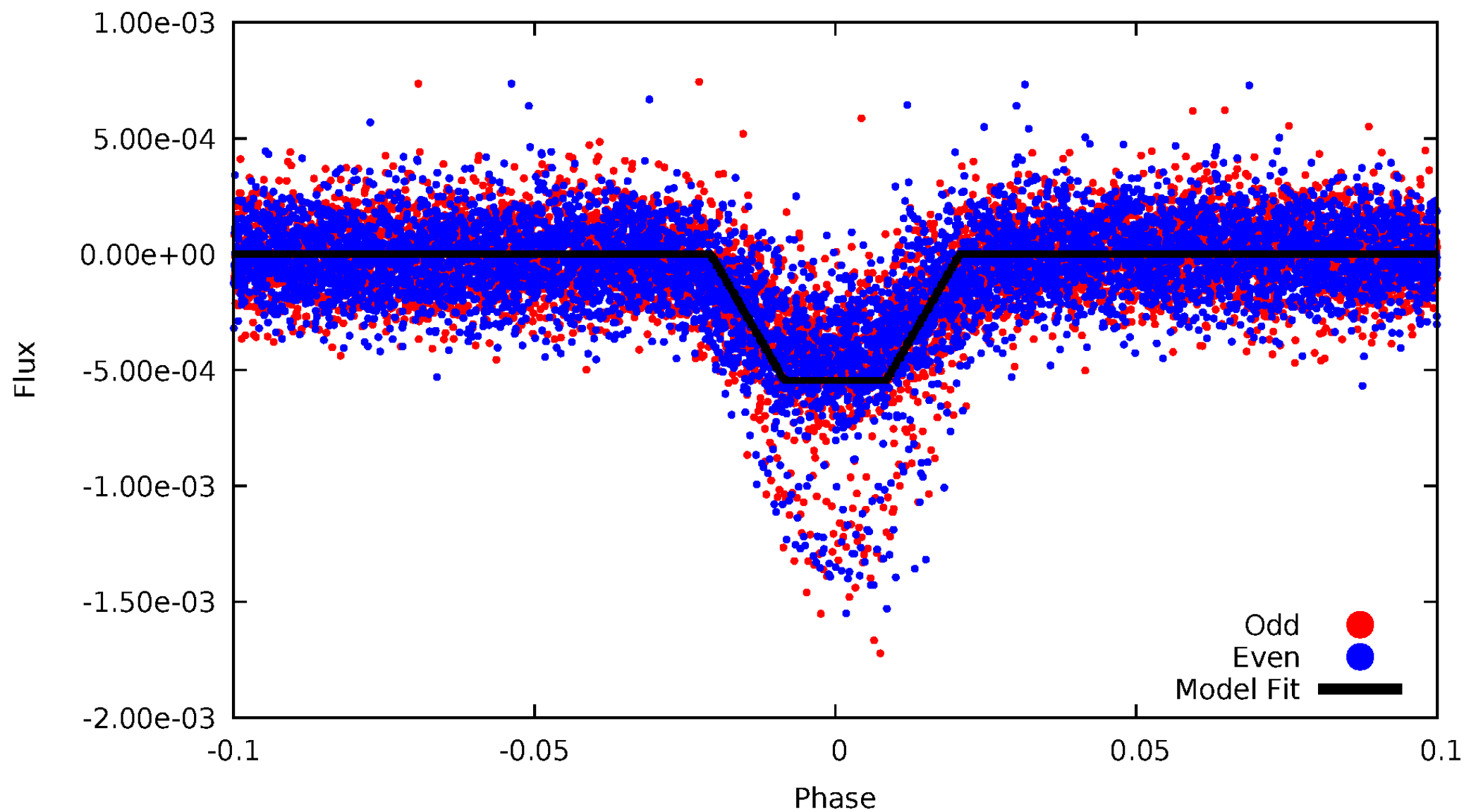
# DV Odd/Even

TCE 009097892-01



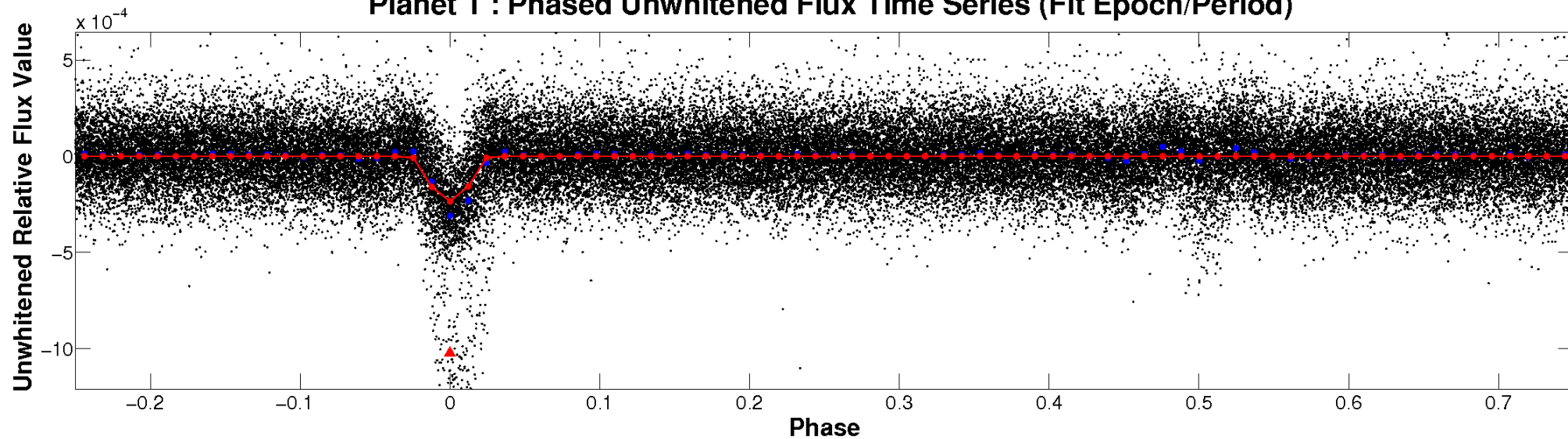
# ALT Odd/Even

TCE 009097892-01

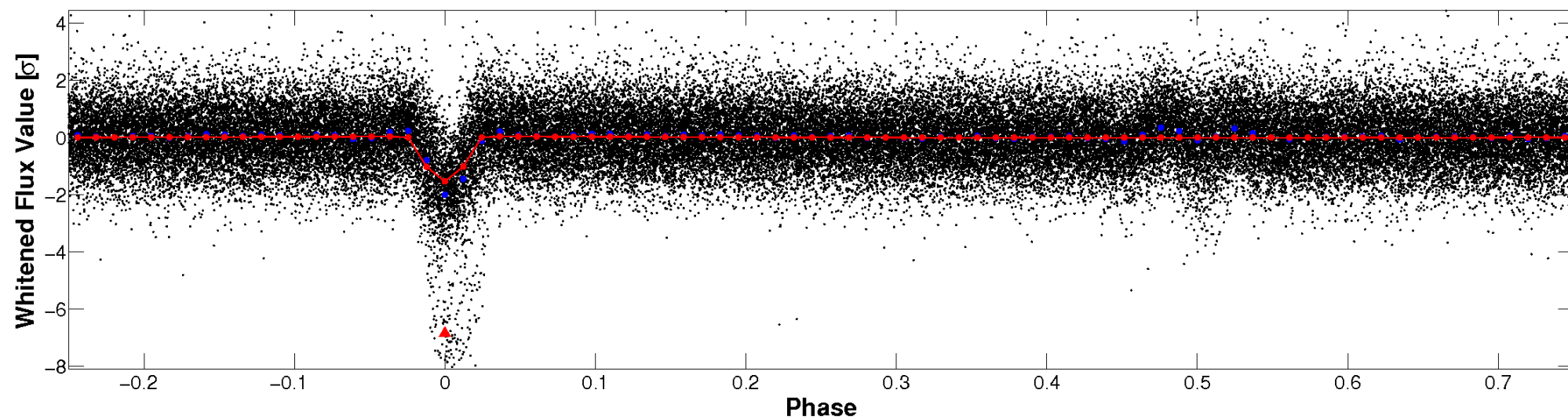


# Non-Whitened Vs. Whitened Light Curve

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

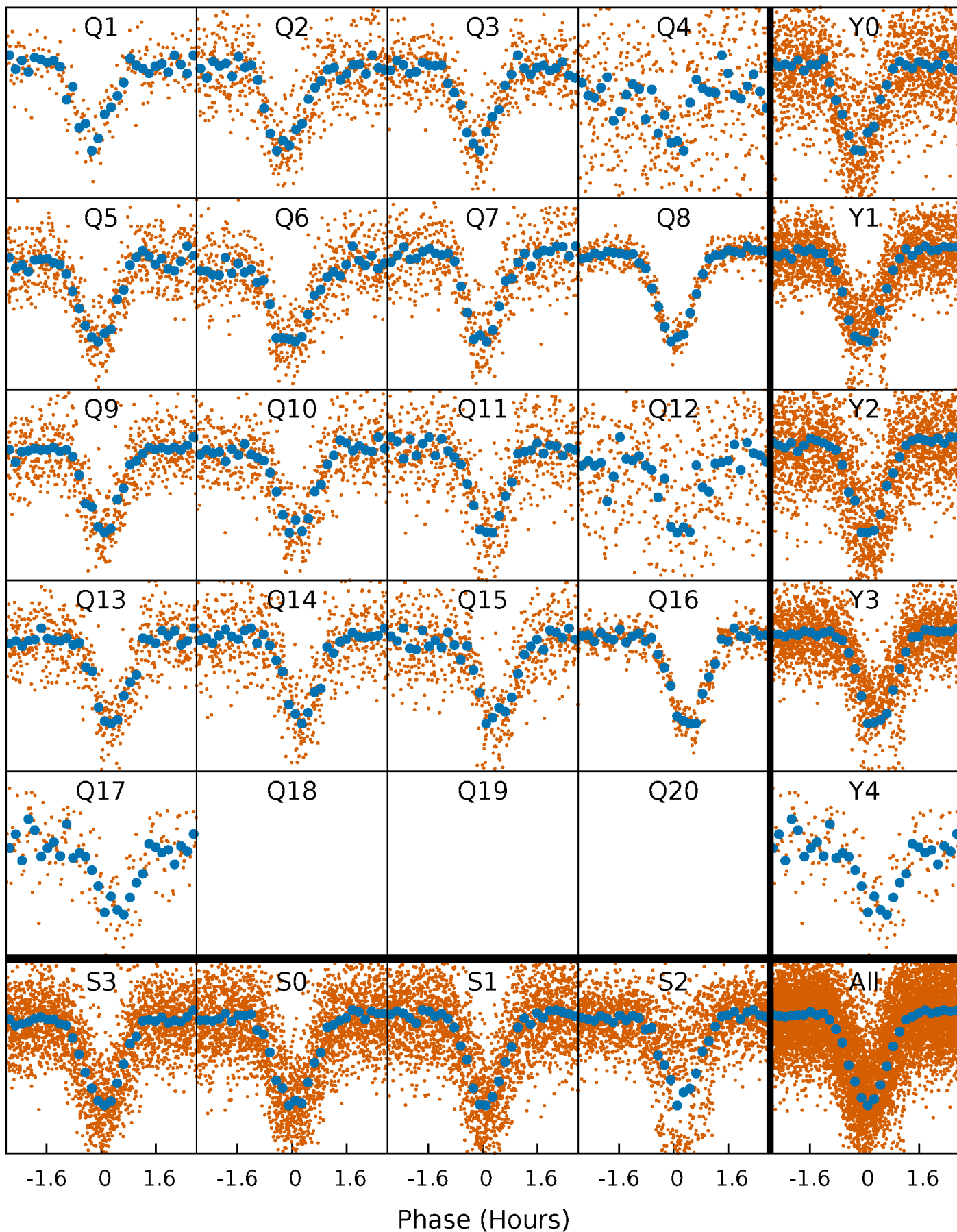


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

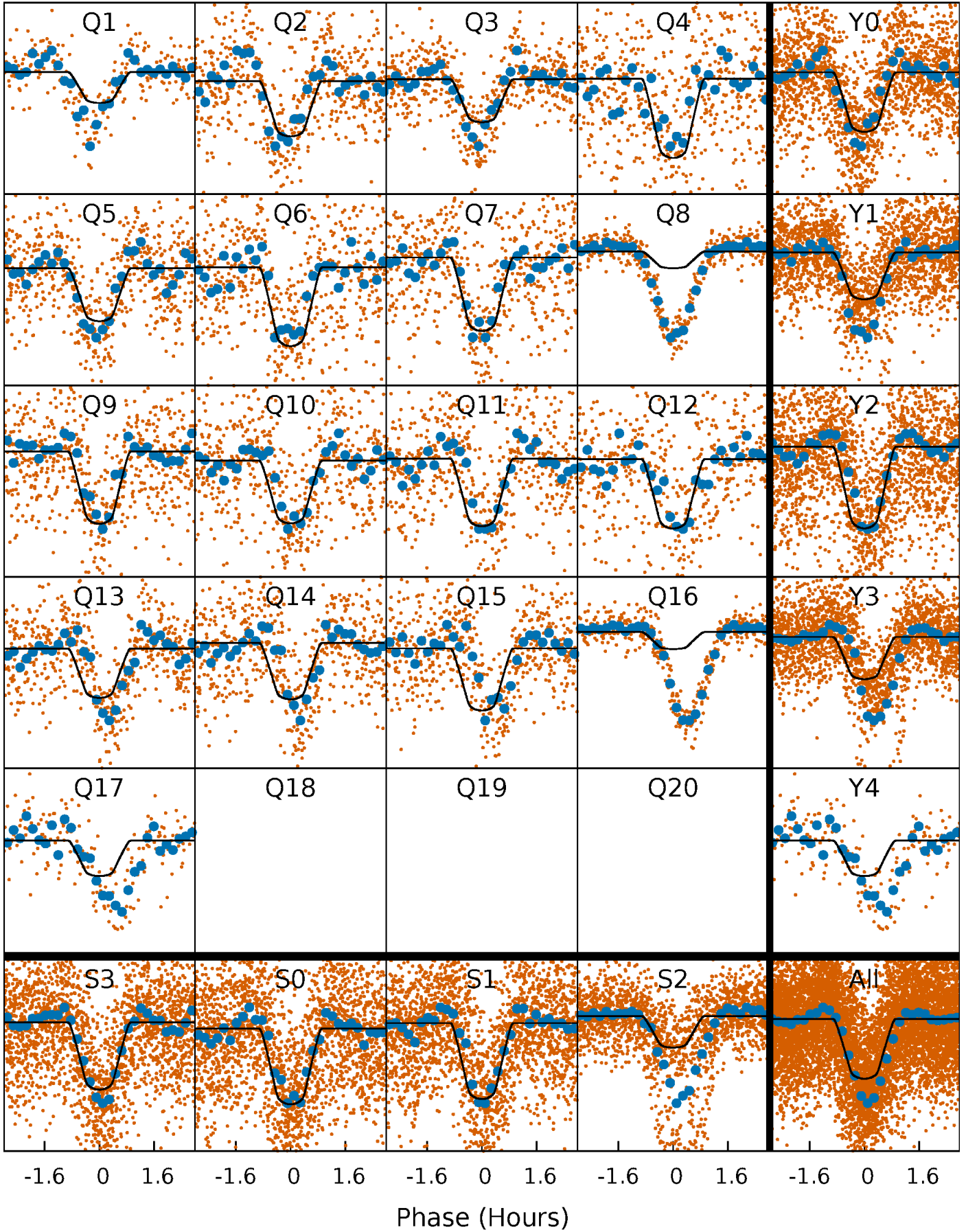
TCE 009097892-01 P= 1.674658 Days  $T_0=132.182778$  (BKJD)





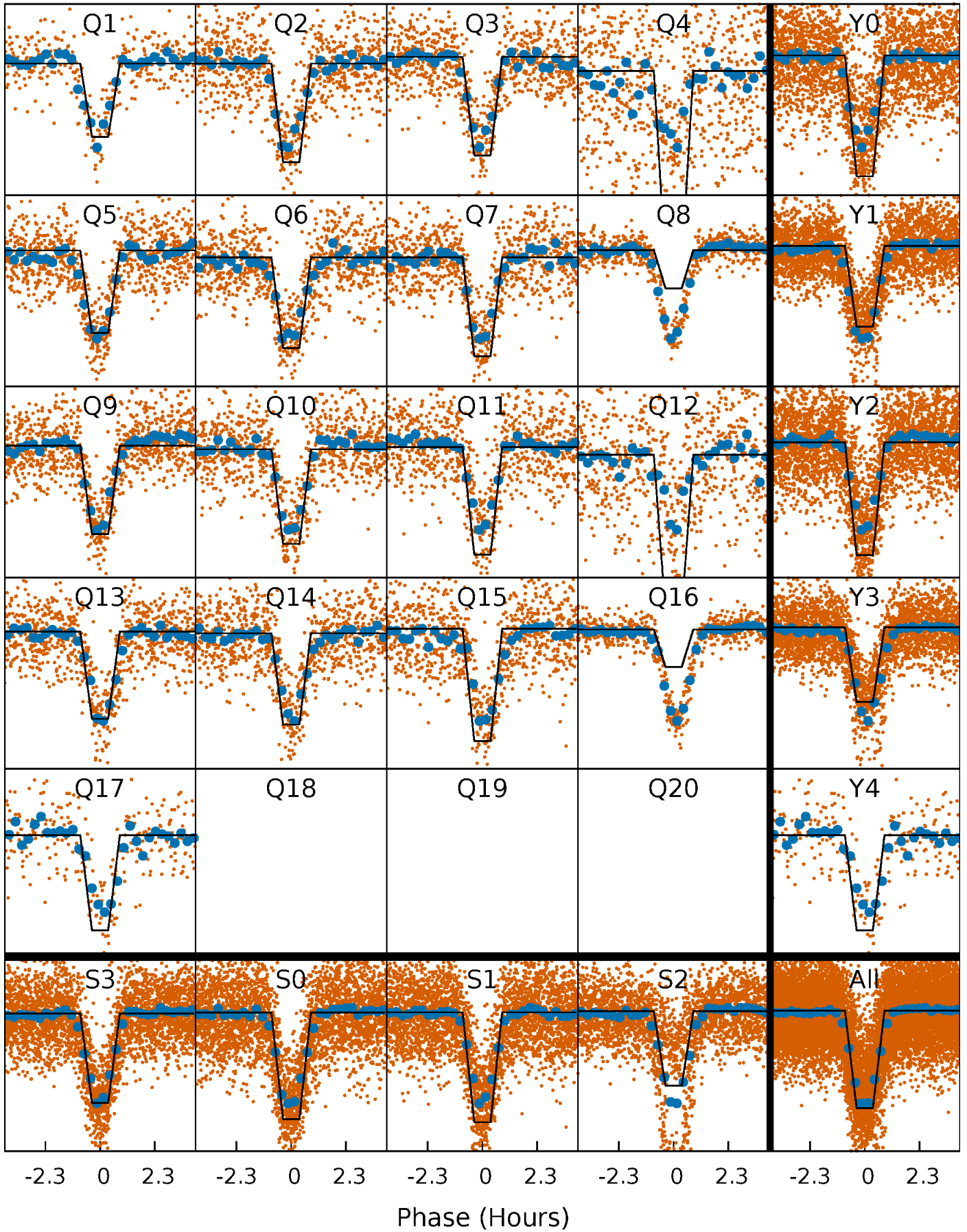
# DV Quarter-Phased Transit Curves

TCE 009097892-01 P= 1.674658 Days  $T_0=132.182778$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

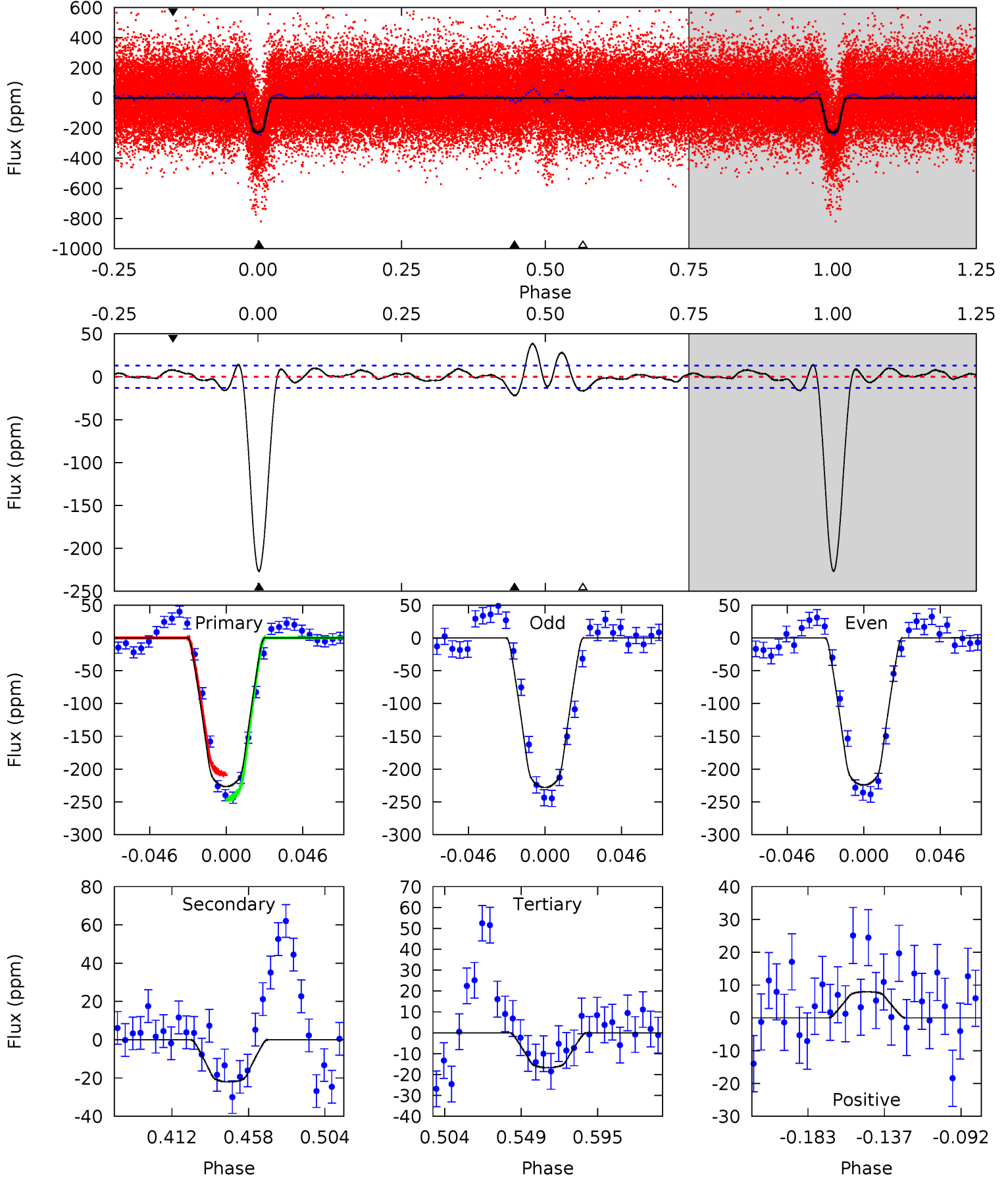
TCE 009097892-01 P= 1.674678 Days  $T_0=132.178106$  (BKJD)



# DV Model-Shift Uniqueness Test

009097892-01, P = 1.674658 Days, E = 130.508120 Days

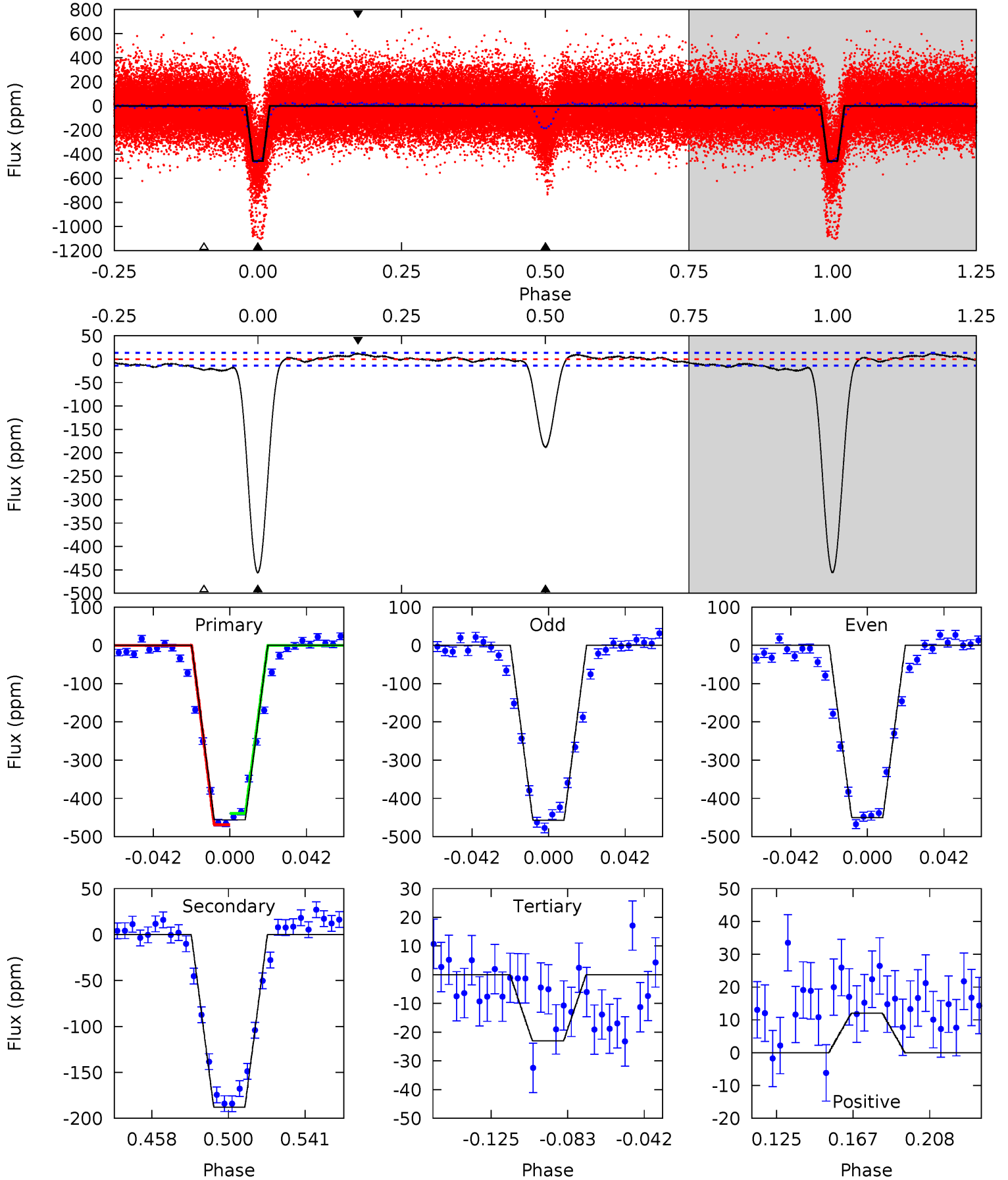
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
82.5	8.02	6.08	2.90	4.73	2.00	2.41	76.4	79.6	1.94	5.11	0.67	1.28	0.15	0



# Alt Model-Shift Uniqueness Test

009097892-01, P = 1.674678 Days, E = 130.503428 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
157.9	65.1	7.99	4.16	4.75	2.04	2.98	149.9	153.8	57.1	60.9	1.20	1.07	0.03	5.07



### Stellar Parameters For KIC 009097892

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6397^{+151}_{-207}$	$4.331^{+0.105}_{-0.195}$	$-0.260^{+0.250}_{-0.300}$	$1.157^{+0.352}_{-0.162}$	$1.042^{+0.172}_{-0.114}$	$0.947^{+0.447}_{-0.485}$
	+2%/-3%	+2%/-5%	+96%/-115%	+30%/-14%	+17%/-11%	+47%/-51%
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 009097892-01 / KOI 3809.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-22 \pm 3$	$2.15^{+0.42}_{-0.31}$	$2550^{+188}_{-147}$	$3659^{+192}_{-171}$	$2.035^{+0.739}_{-0.628}$
Alt.	$-188 \pm 3$	$3.00^{+0.54}_{-0.35}$	$2552^{+214}_{-143}$	$4948^{+192}_{-188}$	$8.955^{+2.453}_{-2.281}$

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



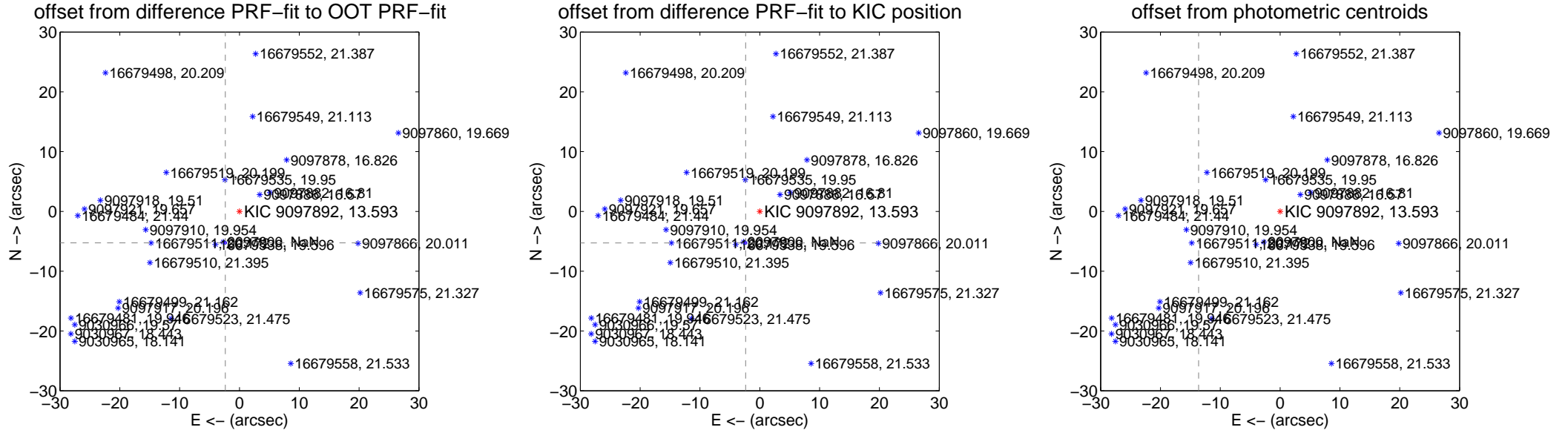
## DV Centroid Data

Supplemental centroid analysis for 009097892-01. Kepler magnitude: 13.59. Transit SNR 56.91

There are 17 quarters with good PRF difference image offsets

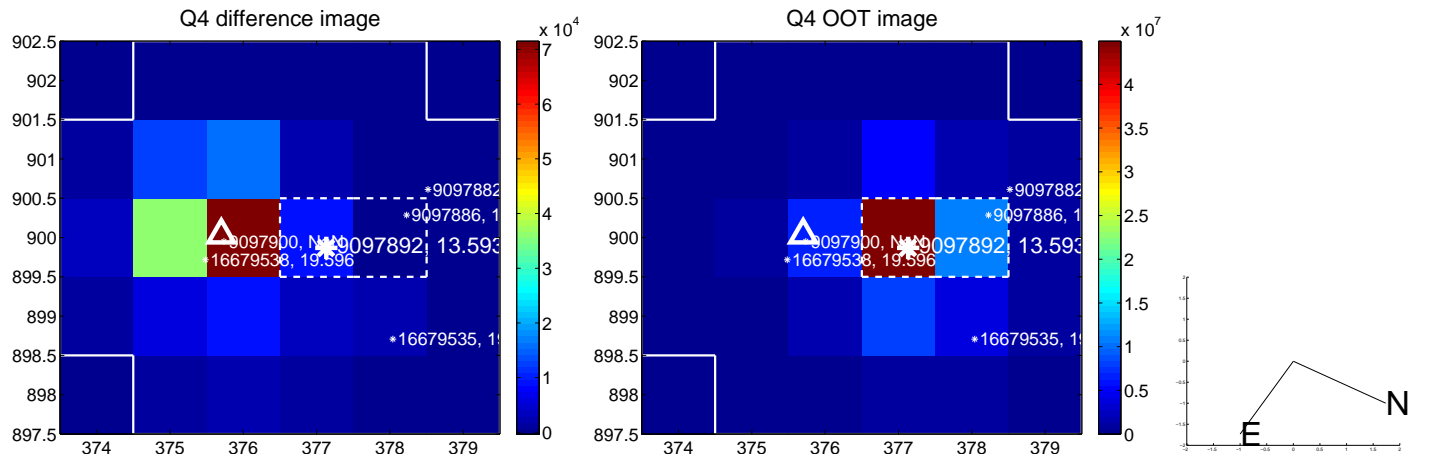
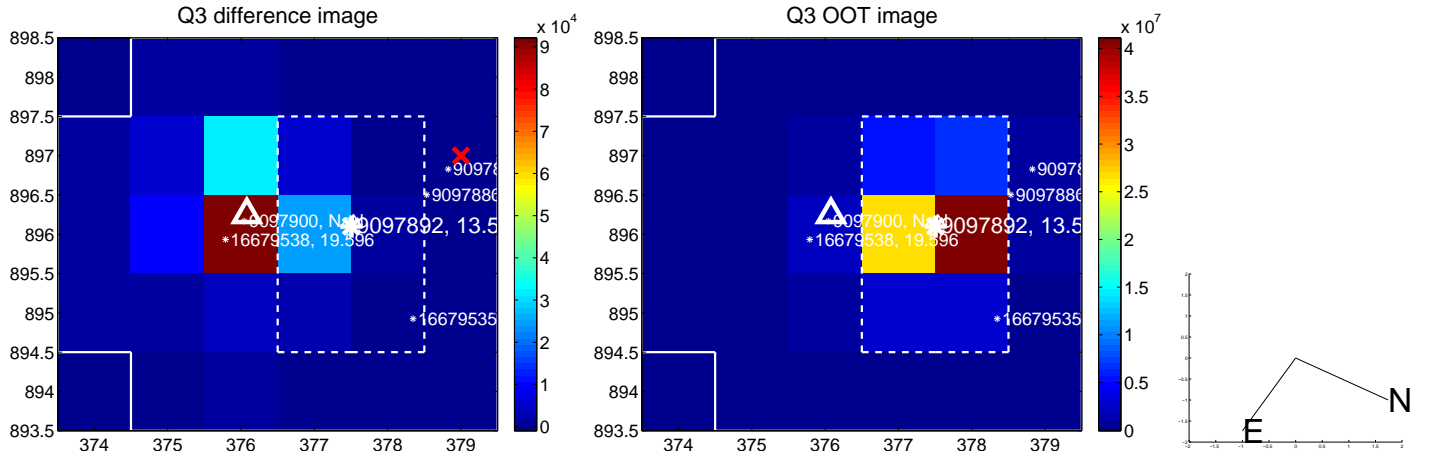
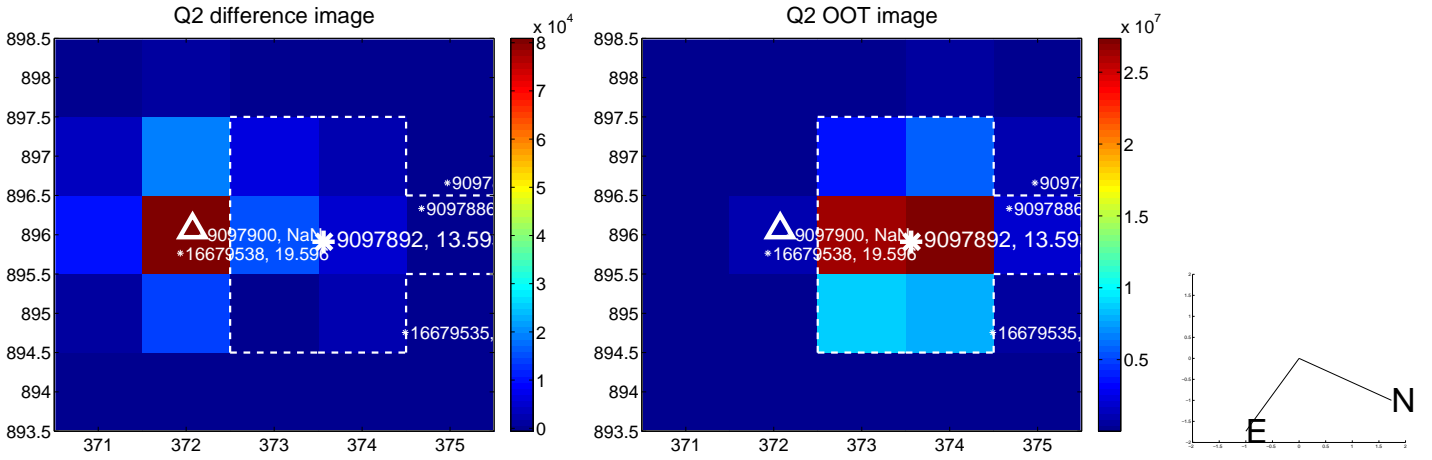
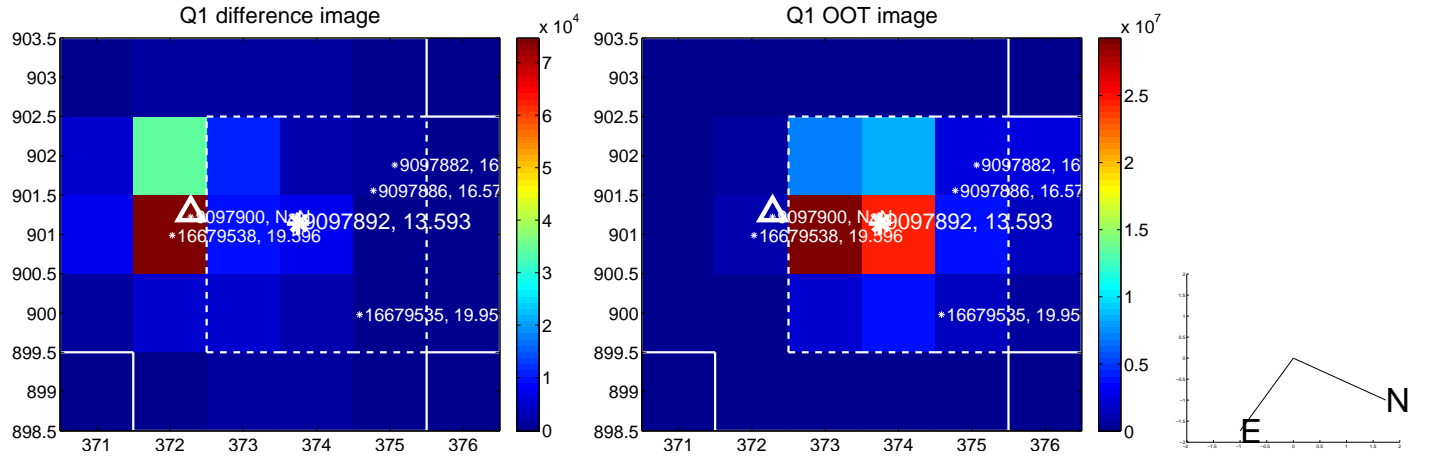
The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	5.763 $\pm$ 0.070	82.45	2.357 $\pm$ 0.070	-5.259 $\pm$ 0.068
PRF-fit source offset from KIC position	5.773 $\pm$ 0.071	81.12	2.357 $\pm$ 0.071	-5.270 $\pm$ 0.069
photometric centroid source offset	36.35 $\pm$ 0.20	177.85	13.63 $\pm$ 0.20	-33.70 $\pm$ 0.21

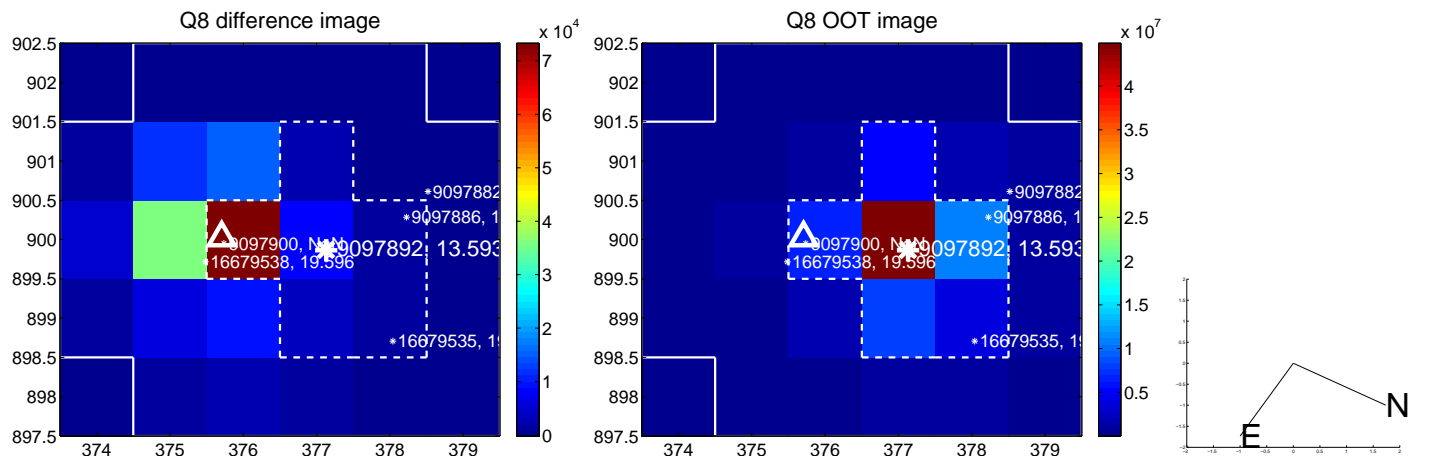
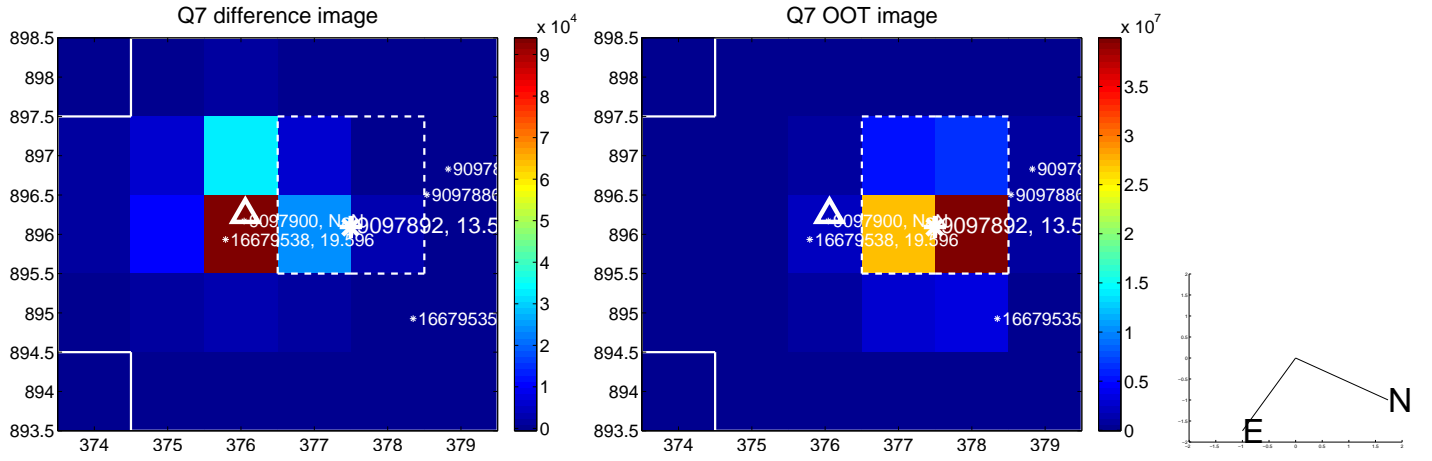
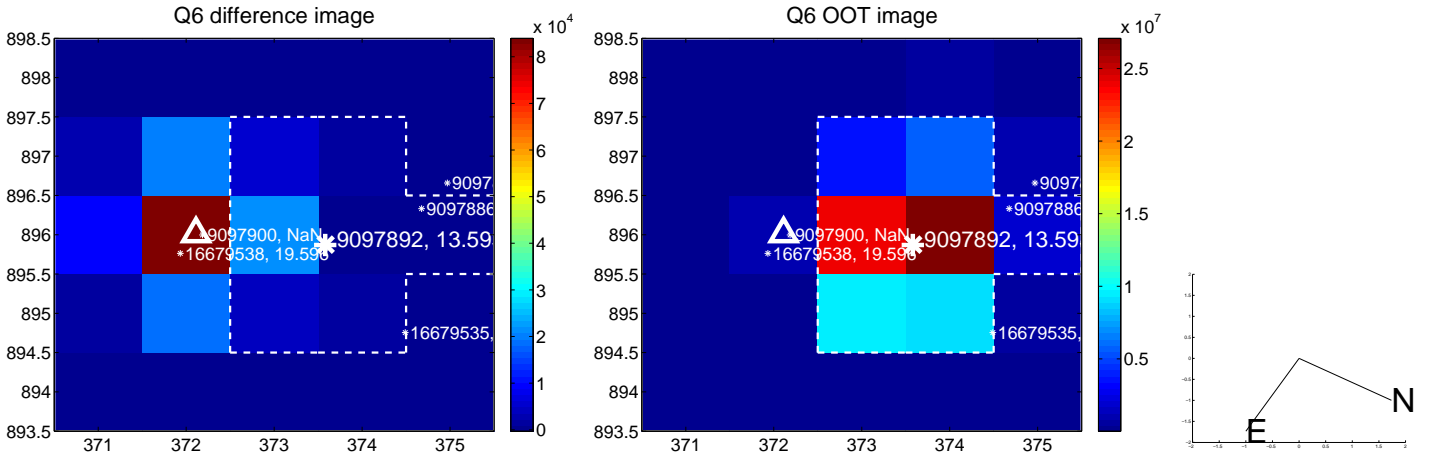
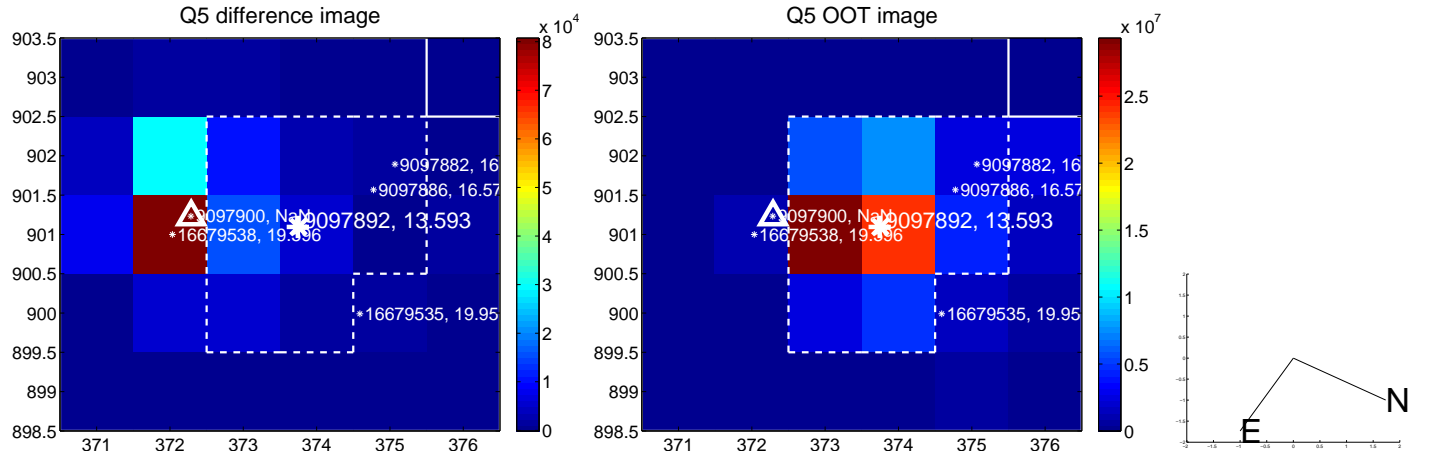


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000 are from the UKIRT catalog.

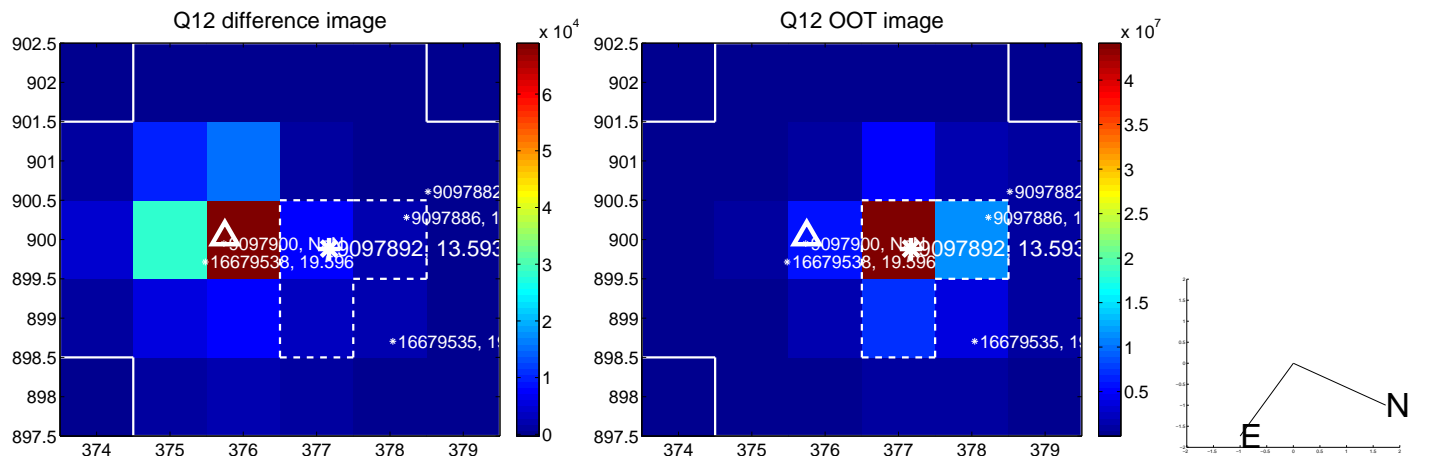
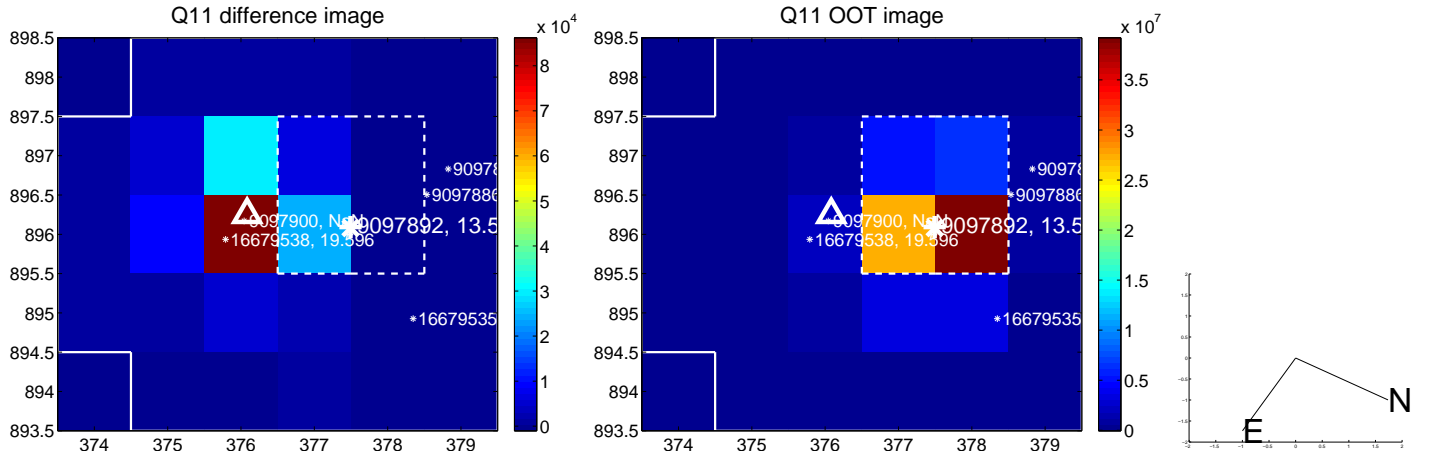
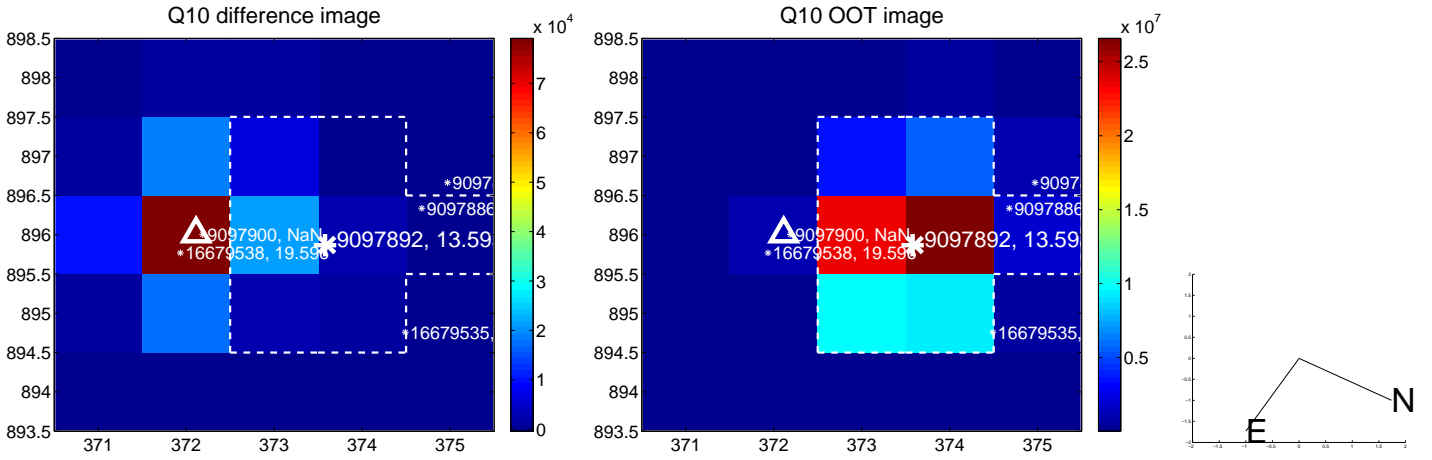
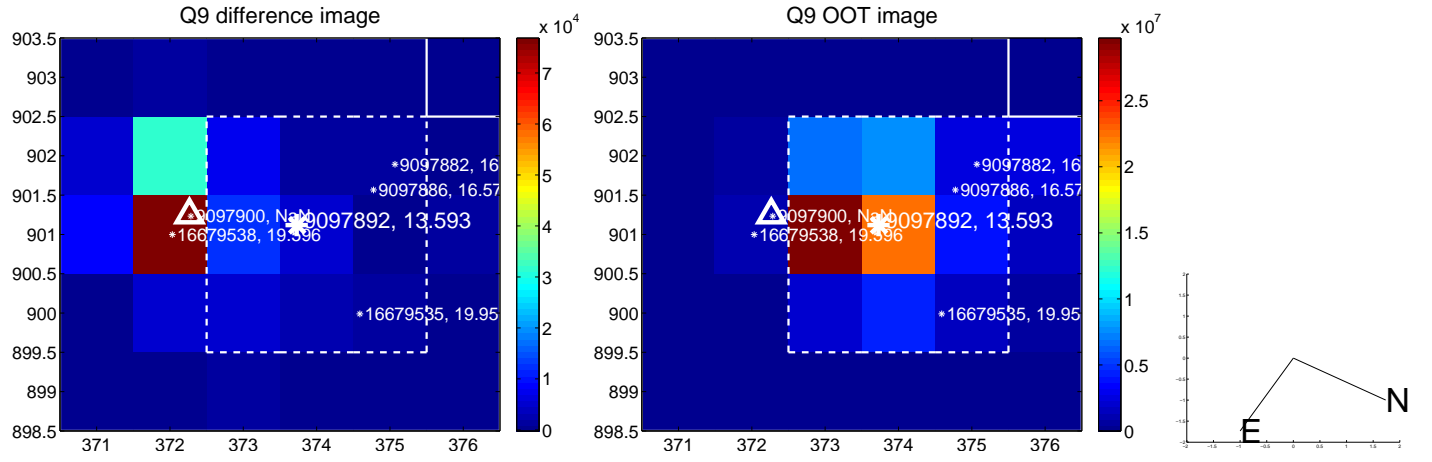
white  $\times$ : KIC target position; +: OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



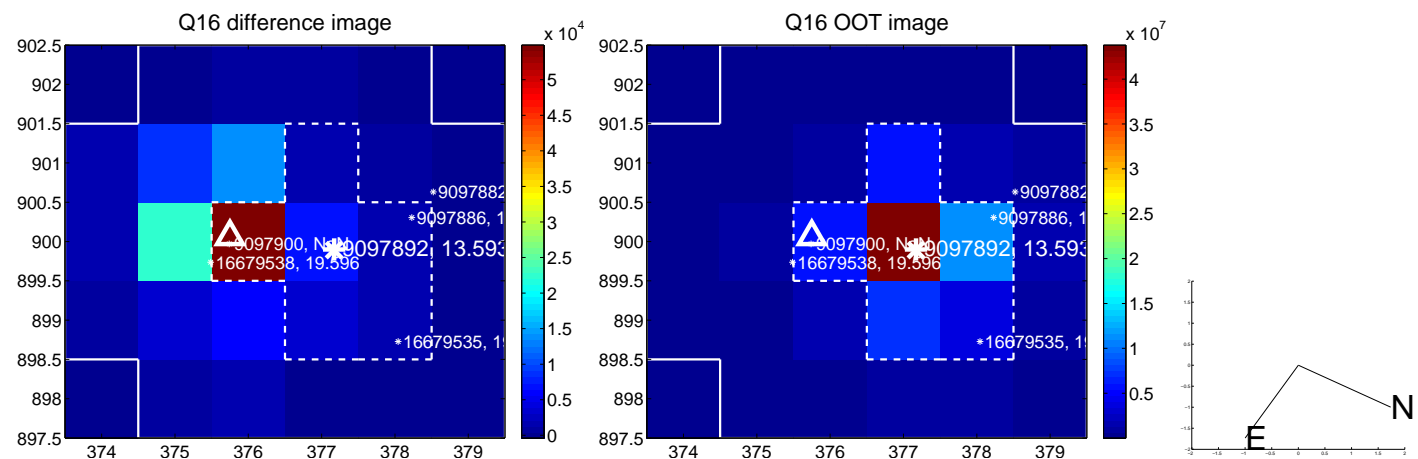
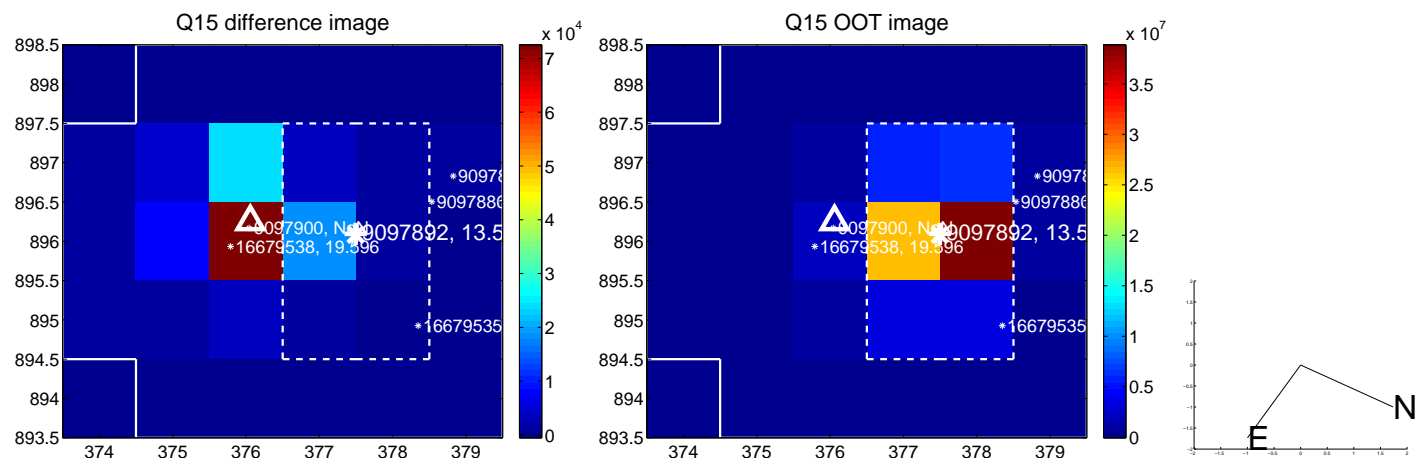
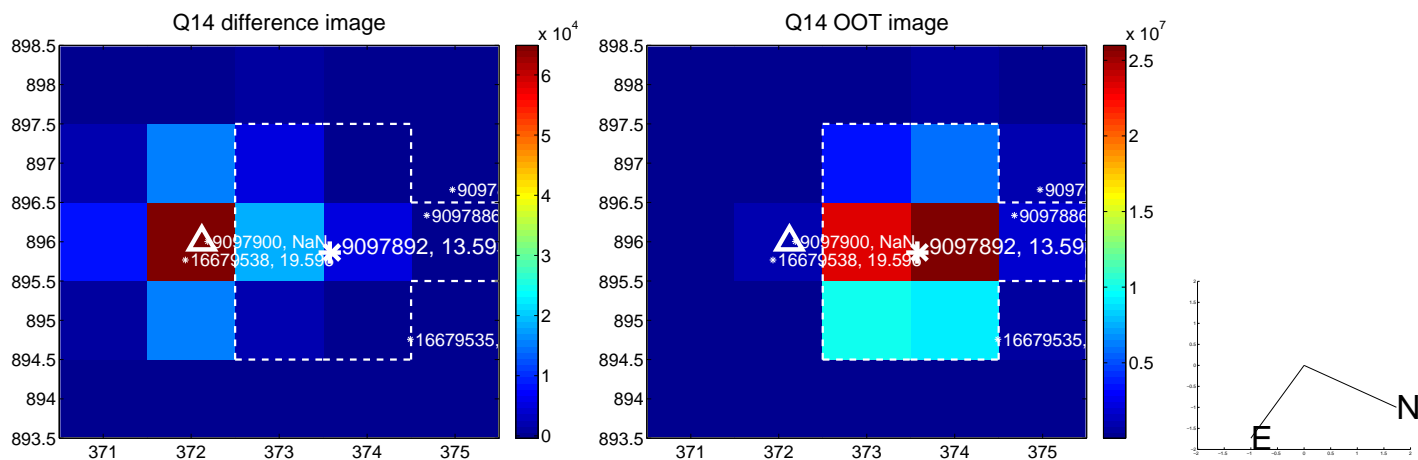
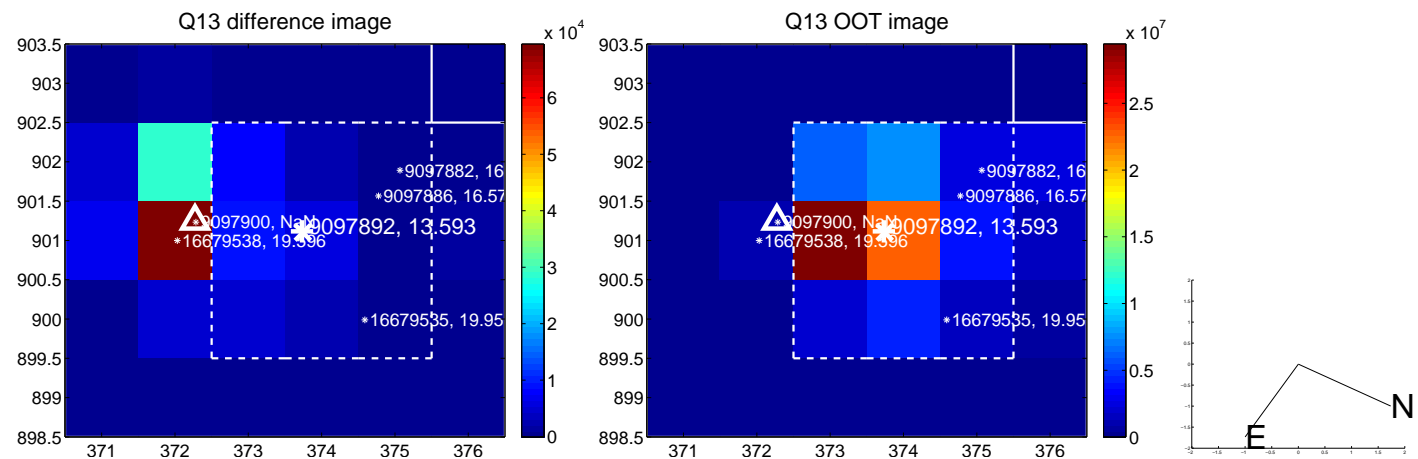
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

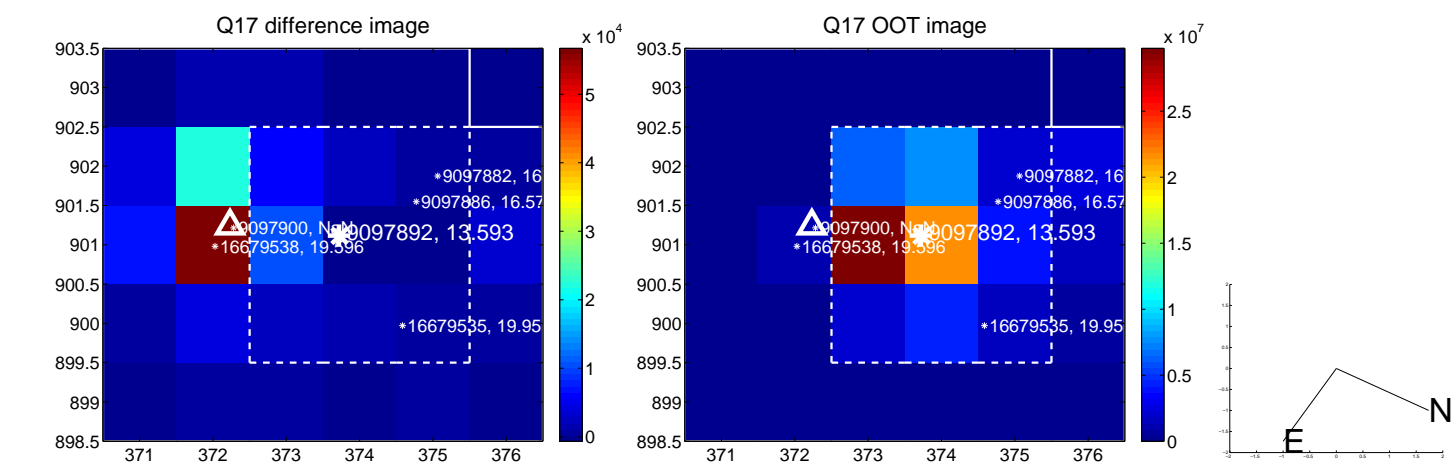


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

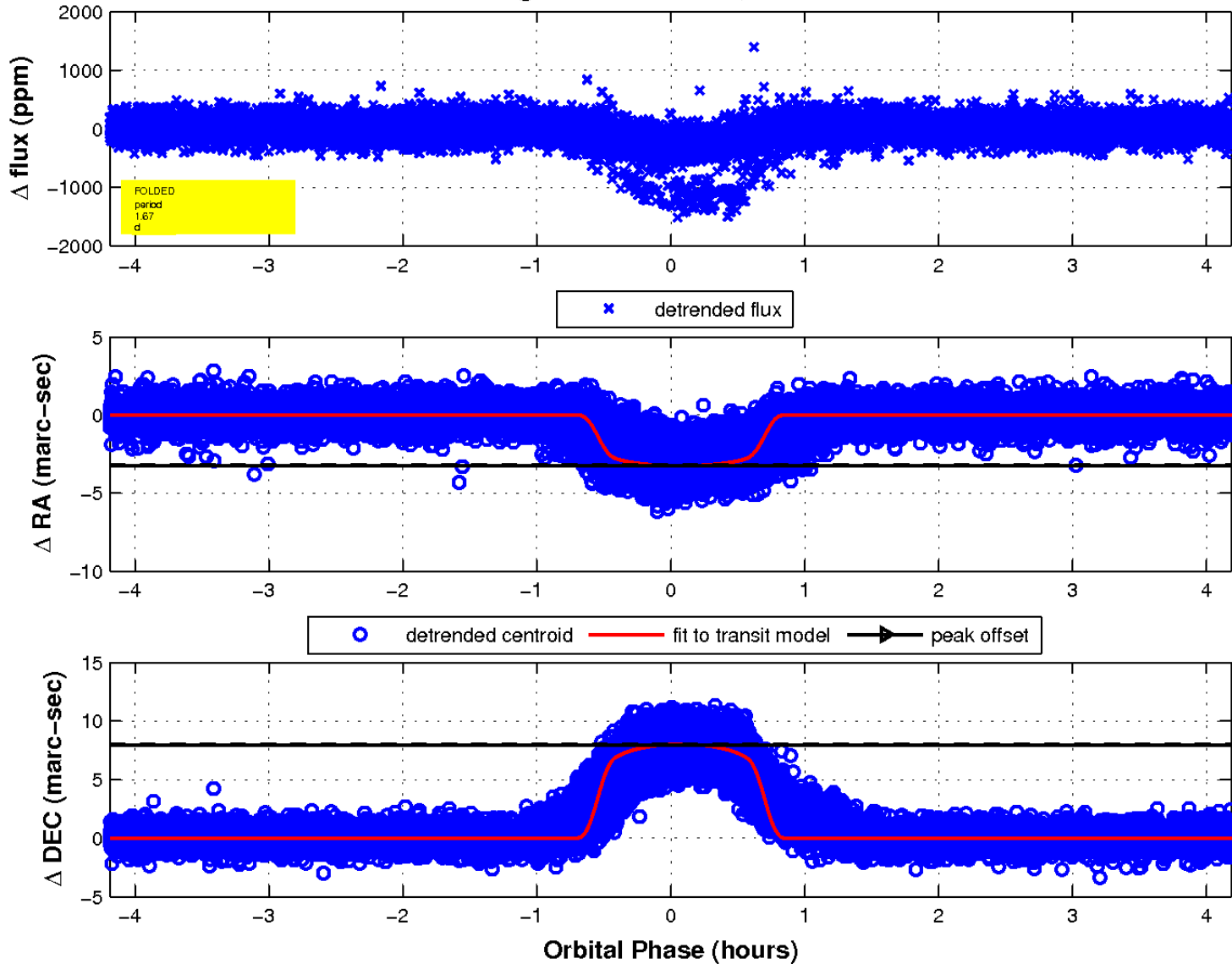




white  $\times$ : KIC target position; +: OOT centroid;  $\Delta$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

