

# KIC 008016692

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008016692-01	OBS	6954.01	6.613592	136.503102	28.5	4.114	7.7	8.0	1.60	6056	1.00	608.03

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008016692-01	OBS	PC	0.72	0	0	0	0	NO_COMMENT

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

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

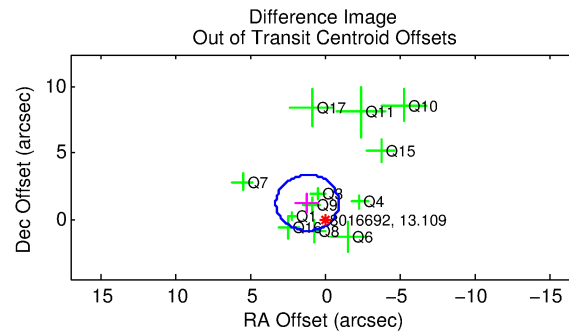
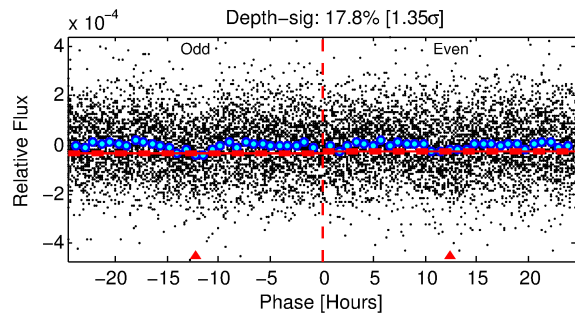
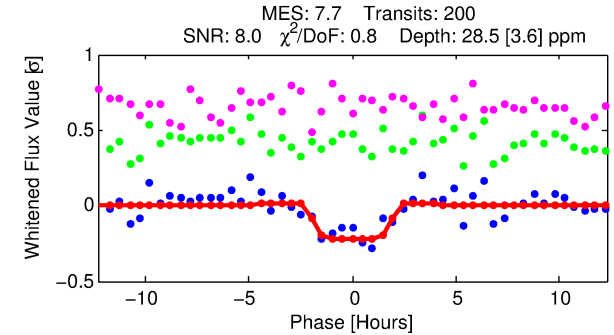
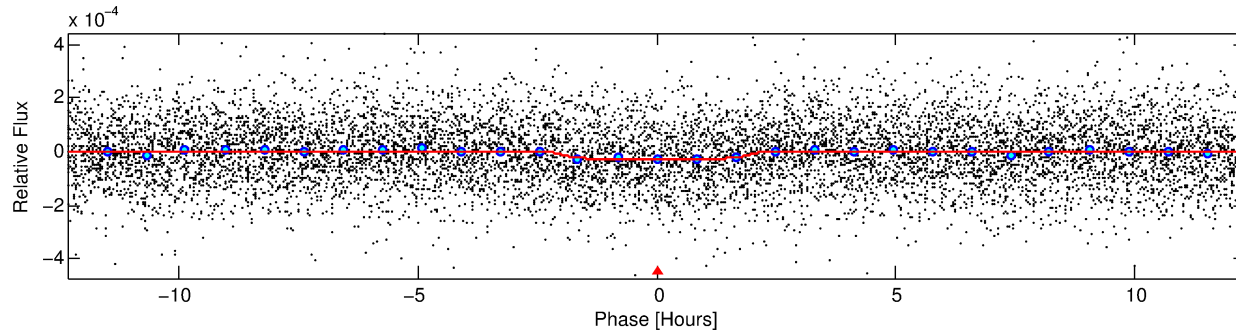
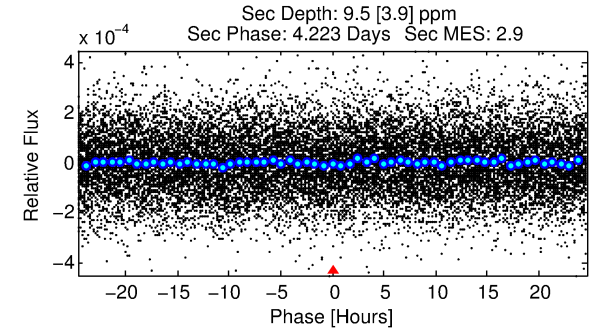
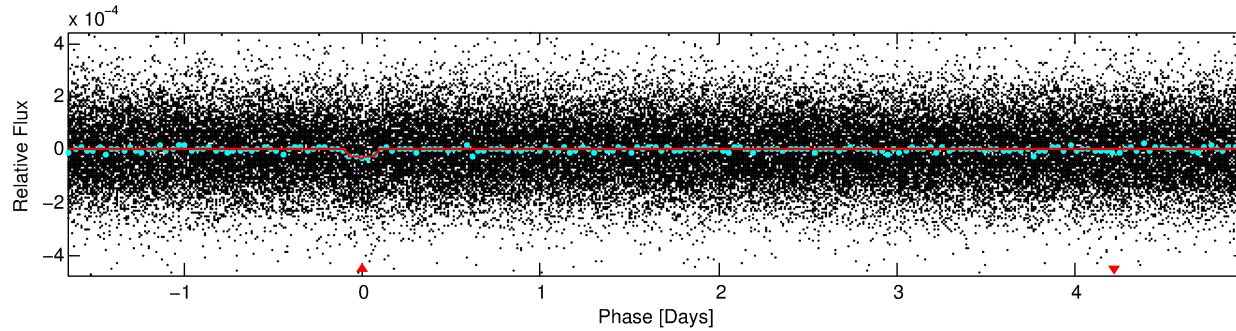
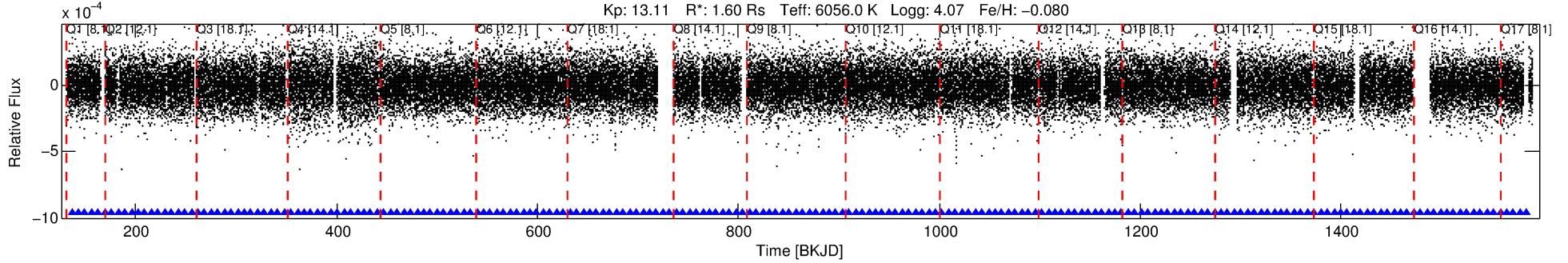
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008016692-01

No Significant Match Found

# DV One-Page Summary

KIC: 8016692 Candidate: 1 of 1 Period: 6.614 d  
KOI: K06954.01 Corr: 0.899



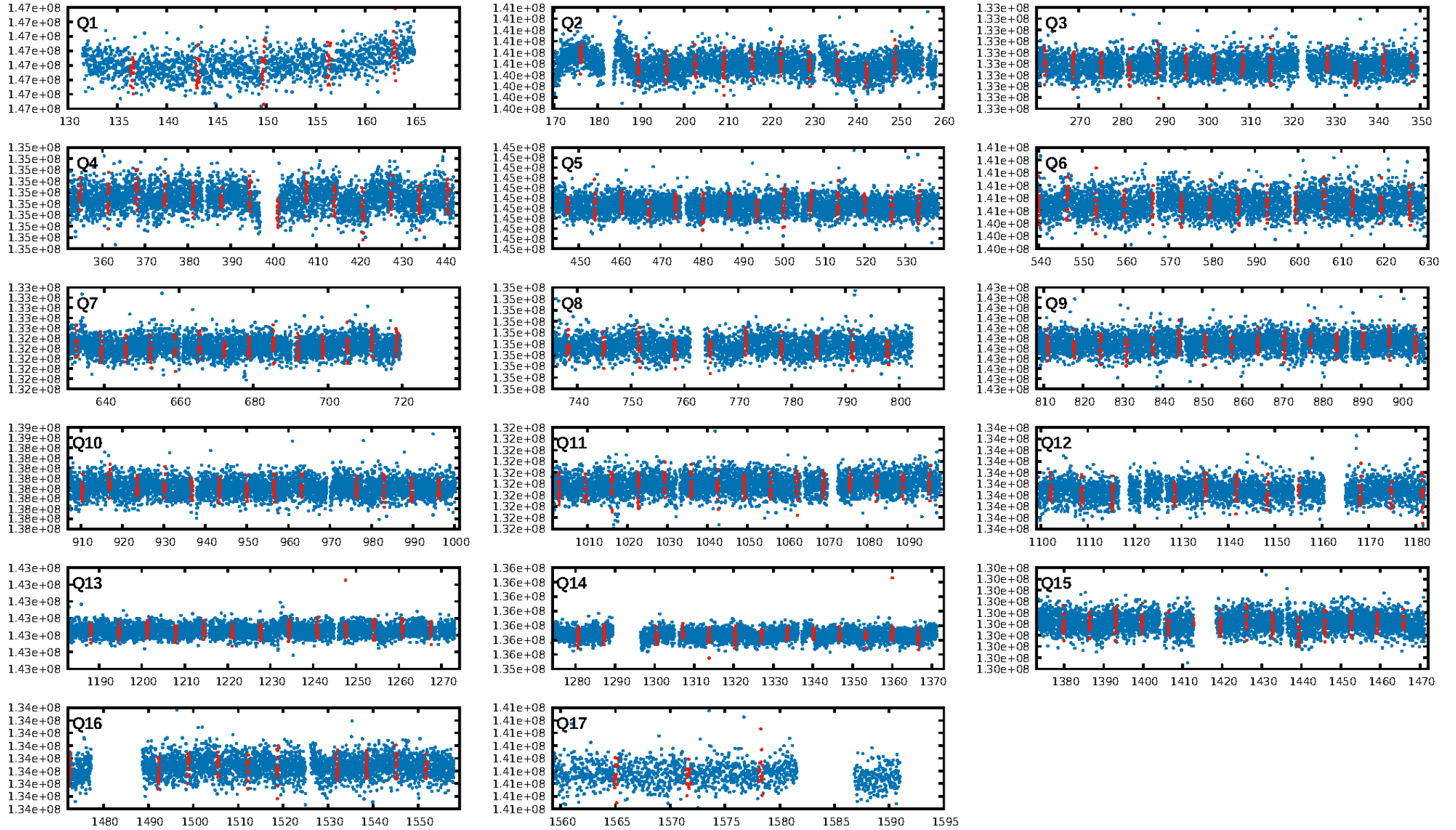
## DV Fit Results:

Period = 6.61359 [0.00008] d  
Epoch = 136.5031 [0.0089] BKJD  
Rp/R\* = 0.0058 [0.0028]  
a/R\* = 5.65 [14.17]  
b = 0.90 [0.57]  
Seff = 608.03 [254.44]  
Teq = 1266 [132] K  
Rp = 1.00 [0.56] Re  
a = 0.0711 [0.0179] AU  
Ag = 26.42 [29.90] [0.85σ]  
Teffp = 4439 [1182] K [2.67σ]

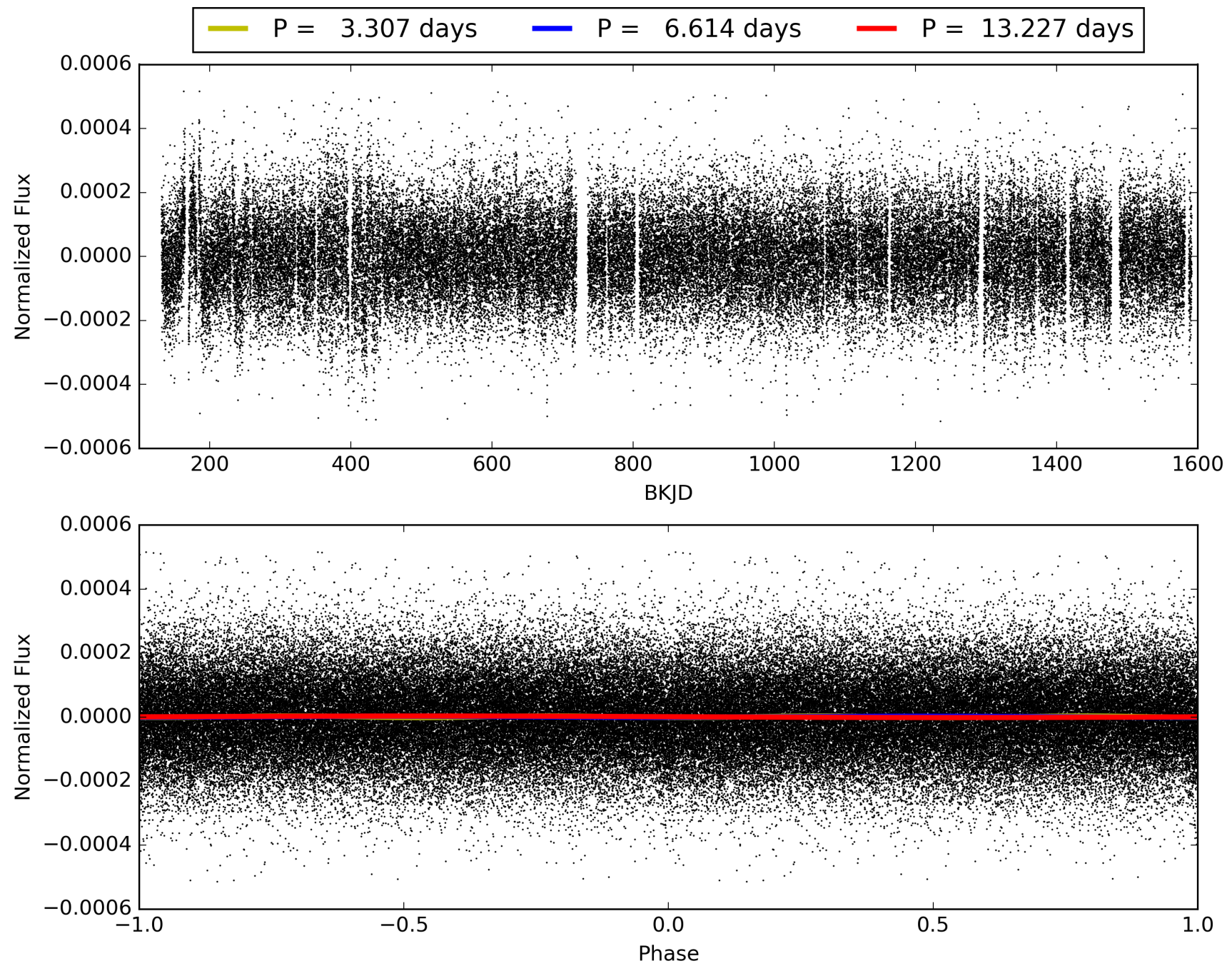
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.12e-14  
RollingBand-fgt: 1.00 [192/192]  
**GhostDiagnostic-chr: 0.6612**  
Centroid-sig: 0.3%  
Centroid-so: 2.564 arcsec [1.91σ]  
OotOffset-rm: 1.712 arcsec [2.44σ]  
KicOffset-rm: 1.800 arcsec [2.23σ]  
OotOffset-st: 2/4/3/3 [12]  
KicOffset-st: 2/4/3/3 [12]  
DiffImageQuality-fgm: 0.58 [7/12]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008016692-01, PDC Light Curves



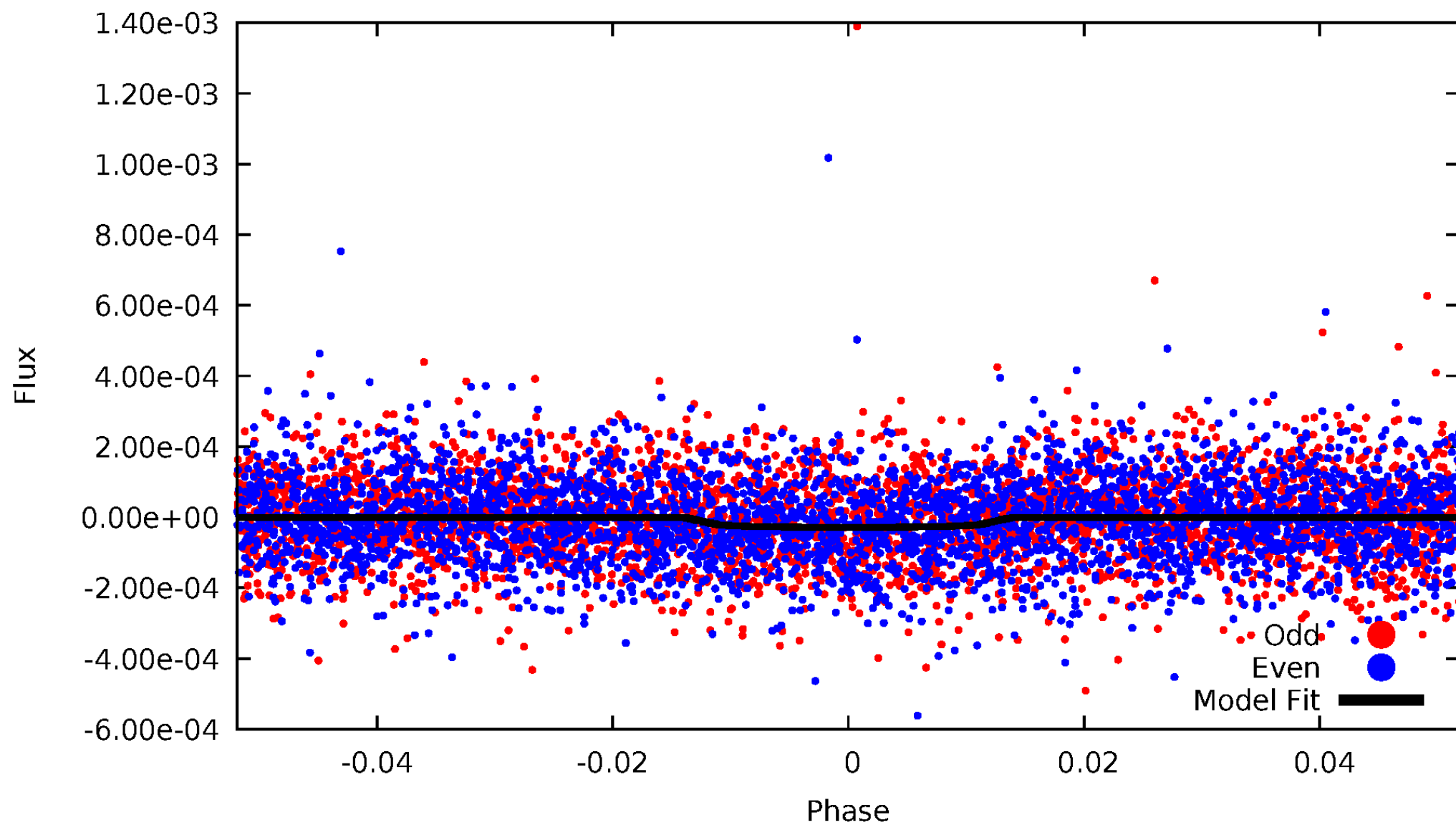
TCE 008016692-01





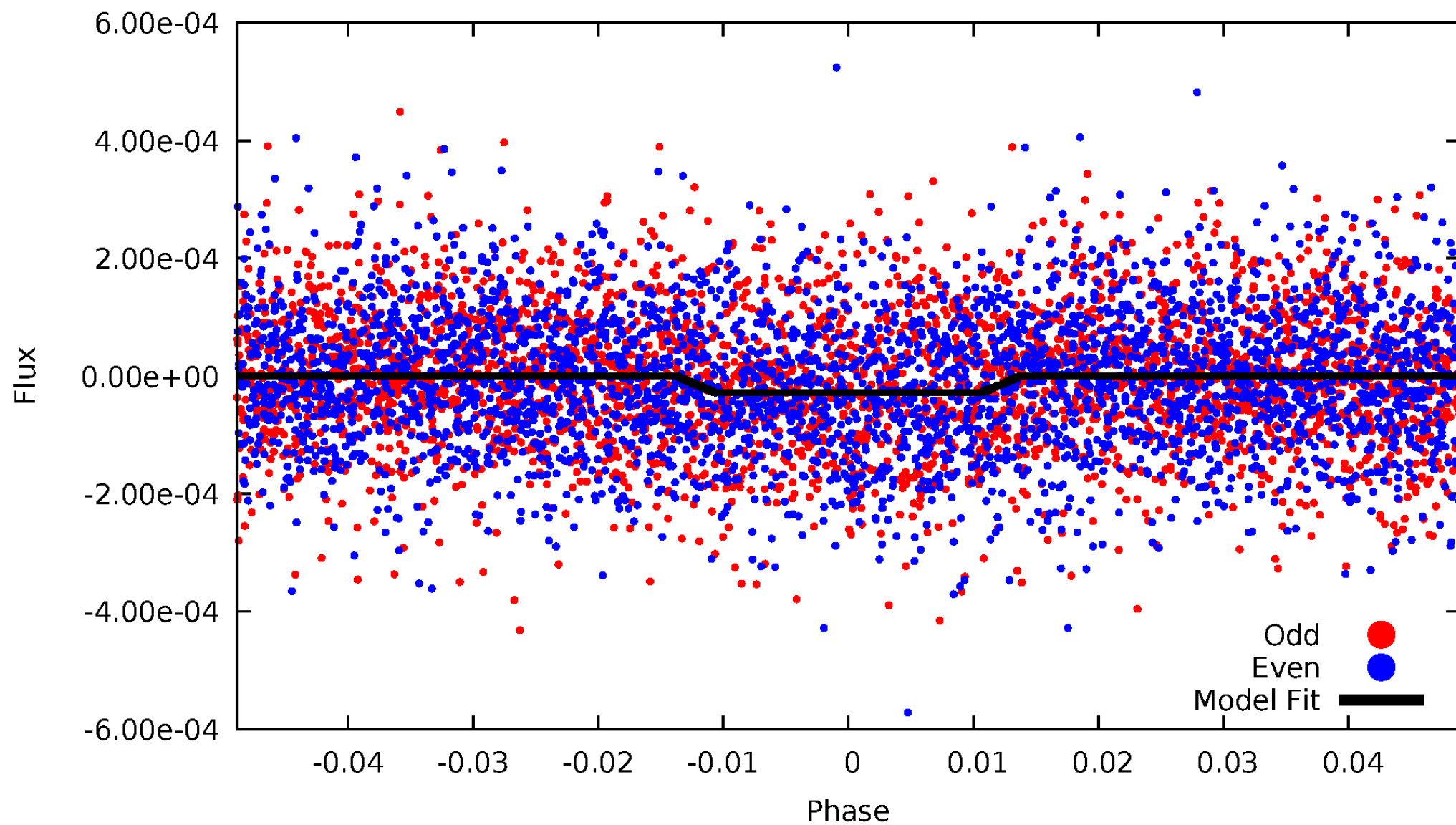
# DV Odd/Even

TCE 008016692-01



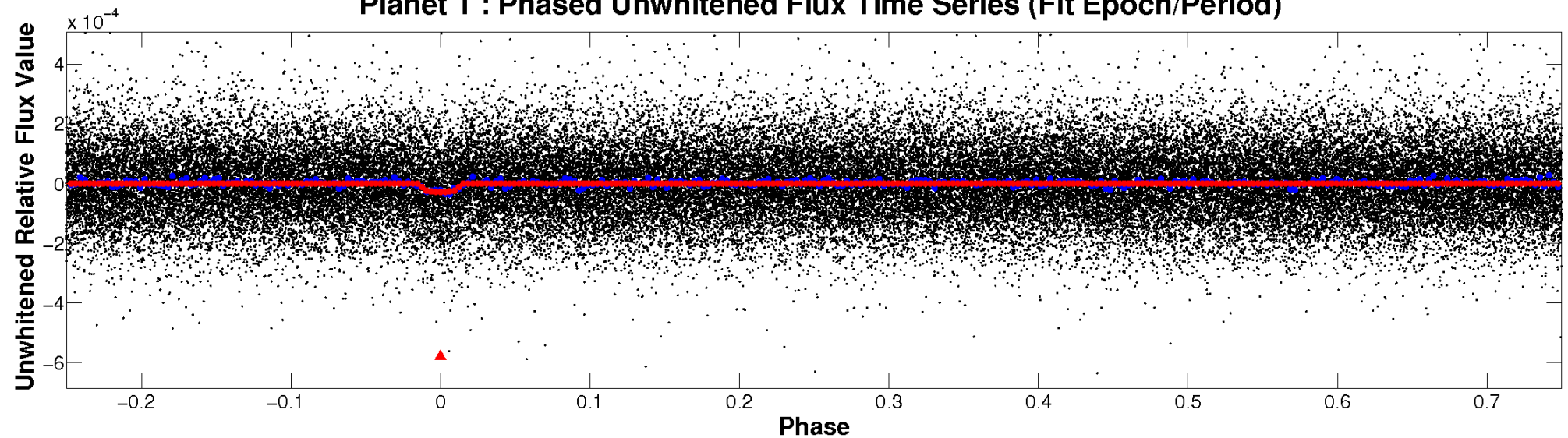
# ALT Odd/Even

TCE 008016692-01

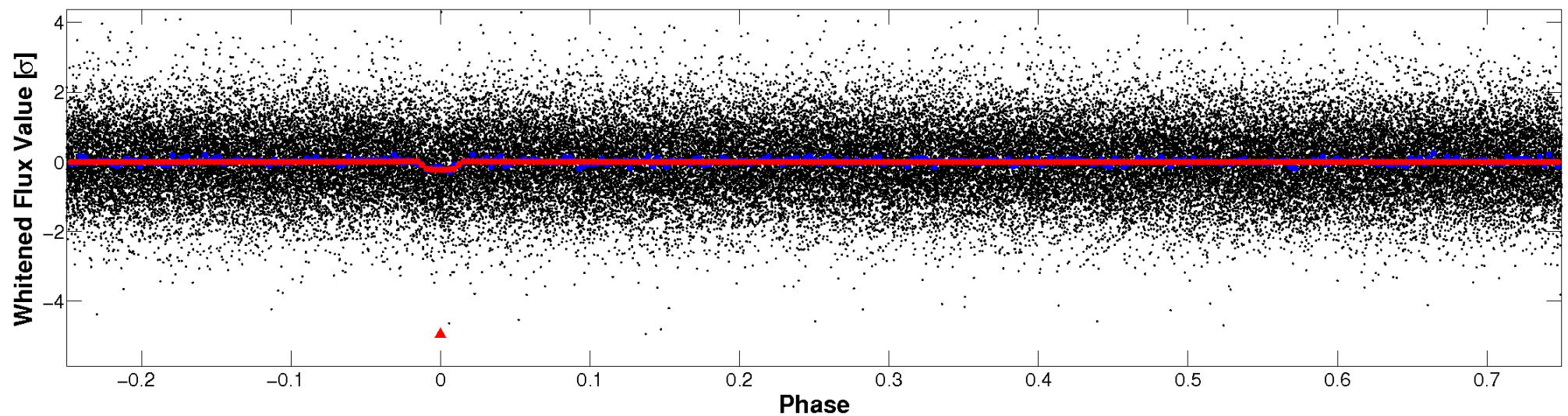


# Non-Whitened Vs. Whitened Light Curve

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

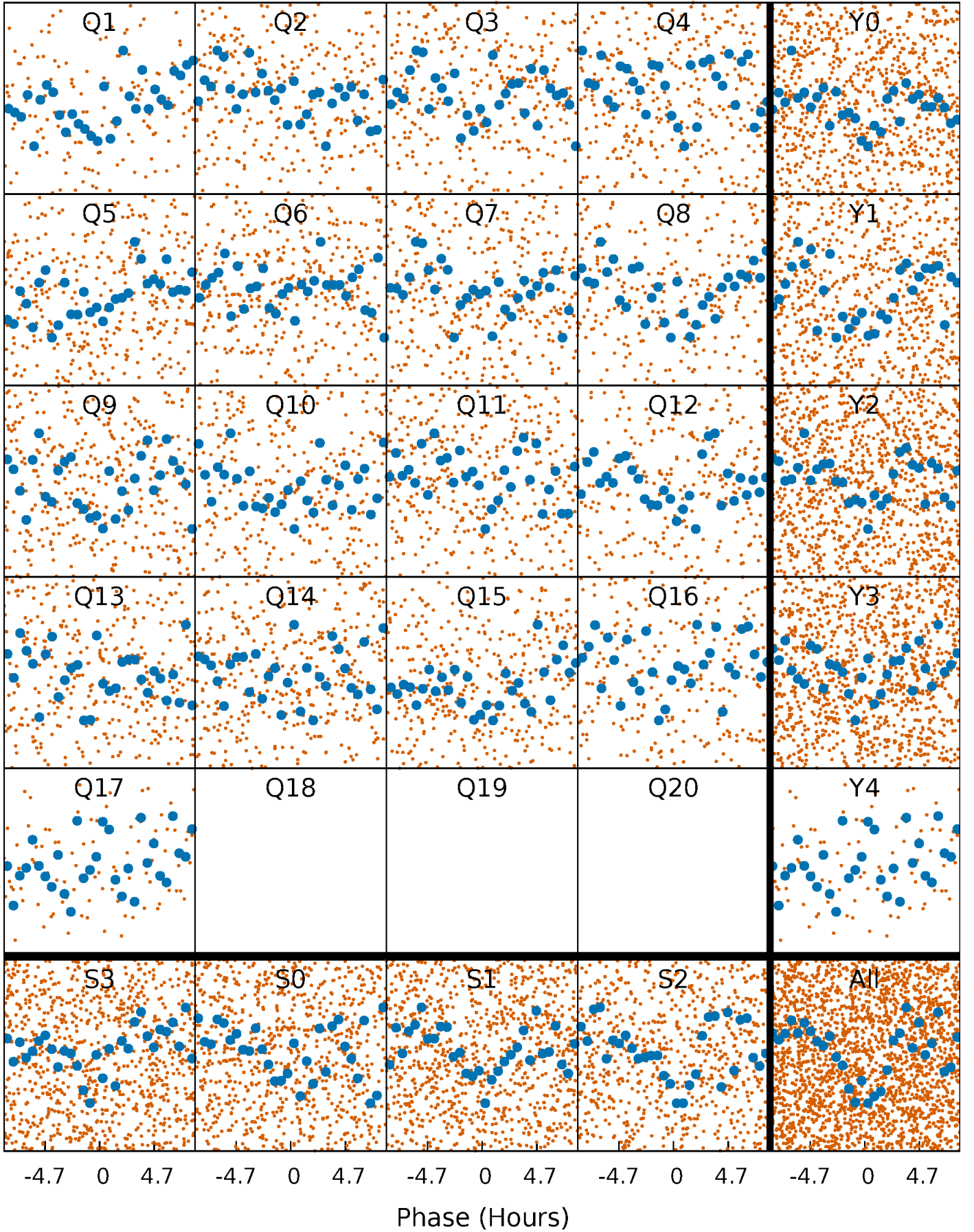


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

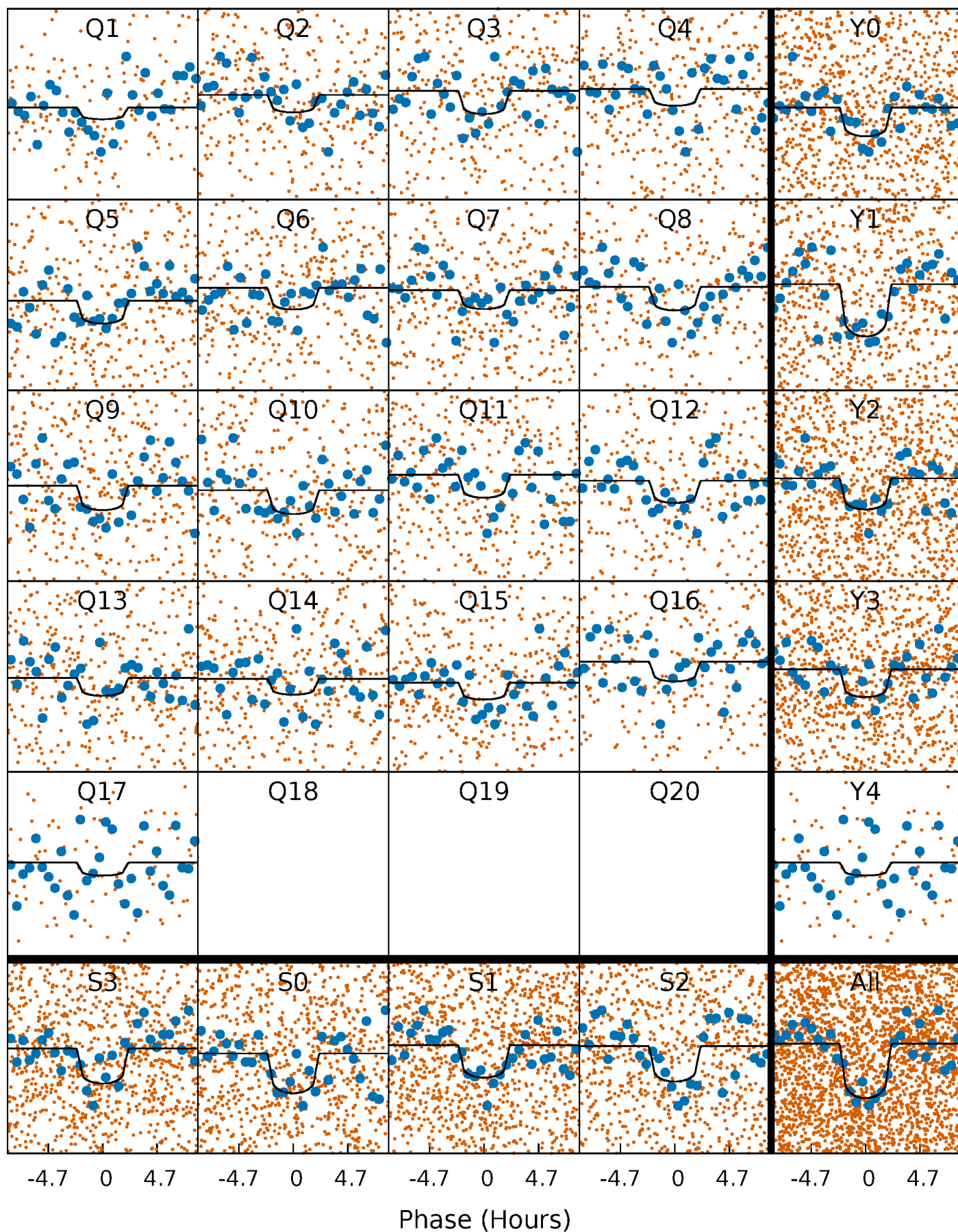
TCE 008016692-01   P= 6.613592 Days    $T_0=136.503102$  (BKJD)





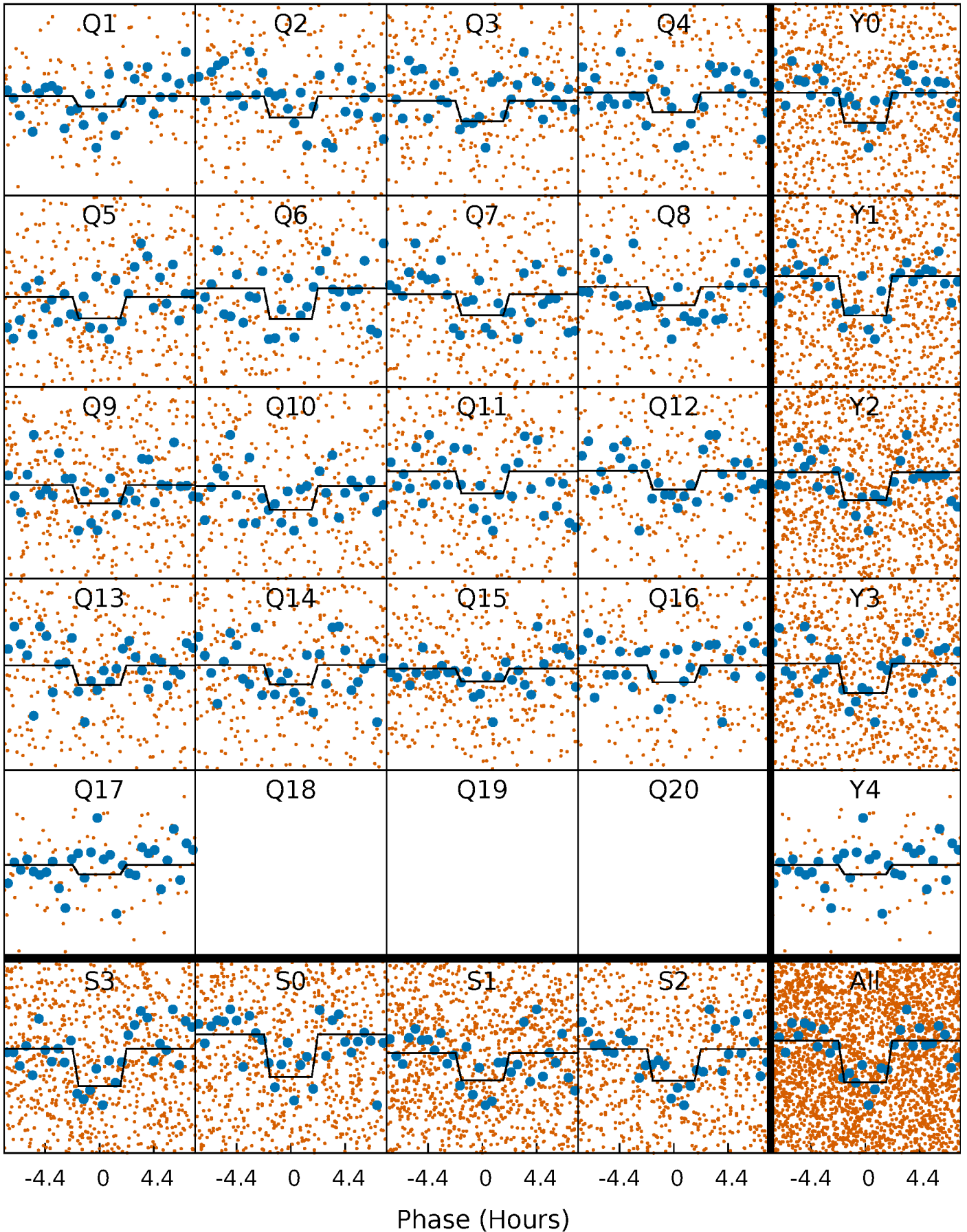
# DV Quarter-Phased Transit Curves

TCE 008016692-01 P= 6.613592 Days  $T_0=136.503102$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

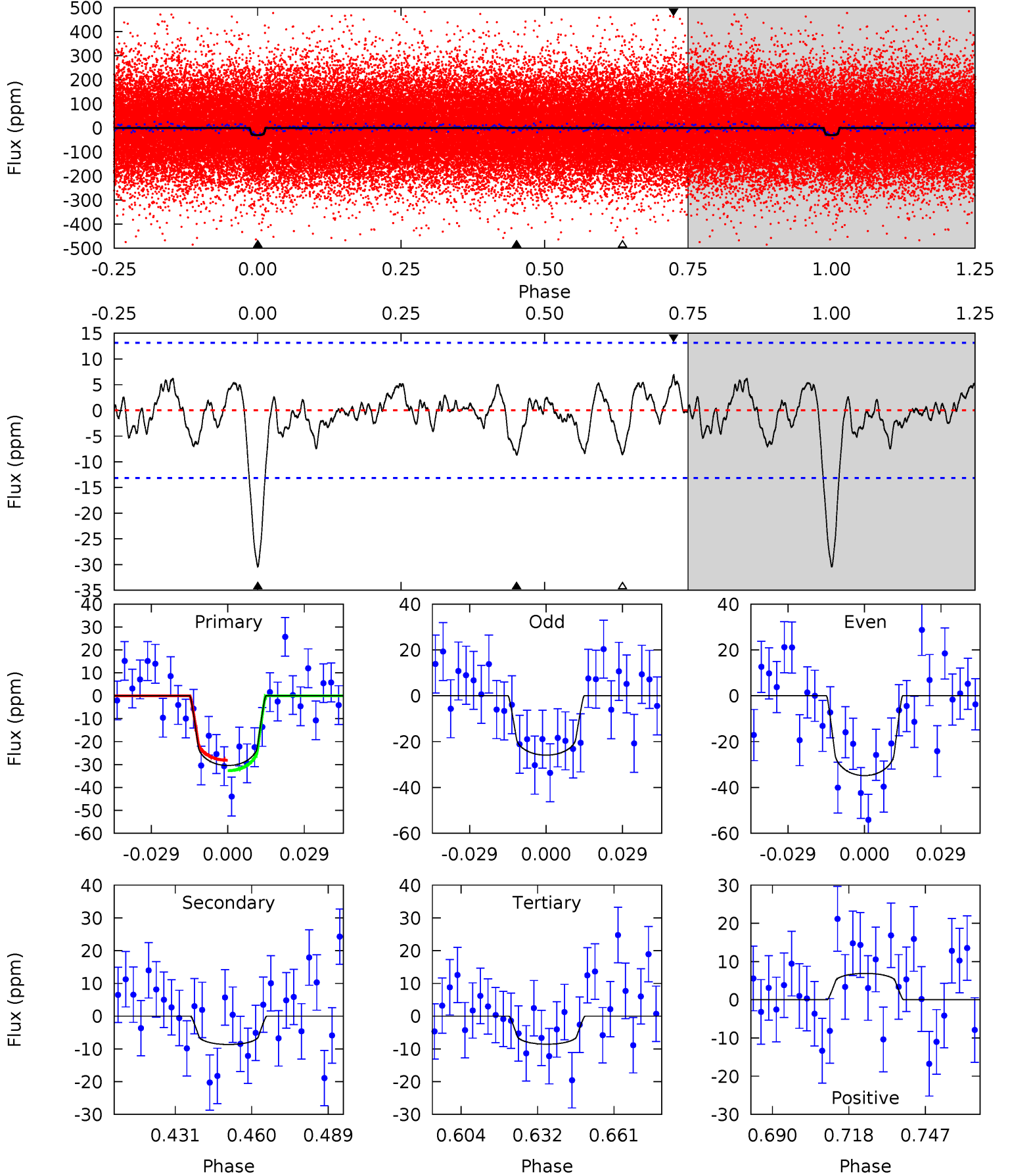
TCE 008016692-01 P= 6.613683 Days  $T_0=136.494419$  (BKJD)



# DV Model-Shift Uniqueness Test

008016692-01, P = 6.613592 Days, E = 129.889510 Days

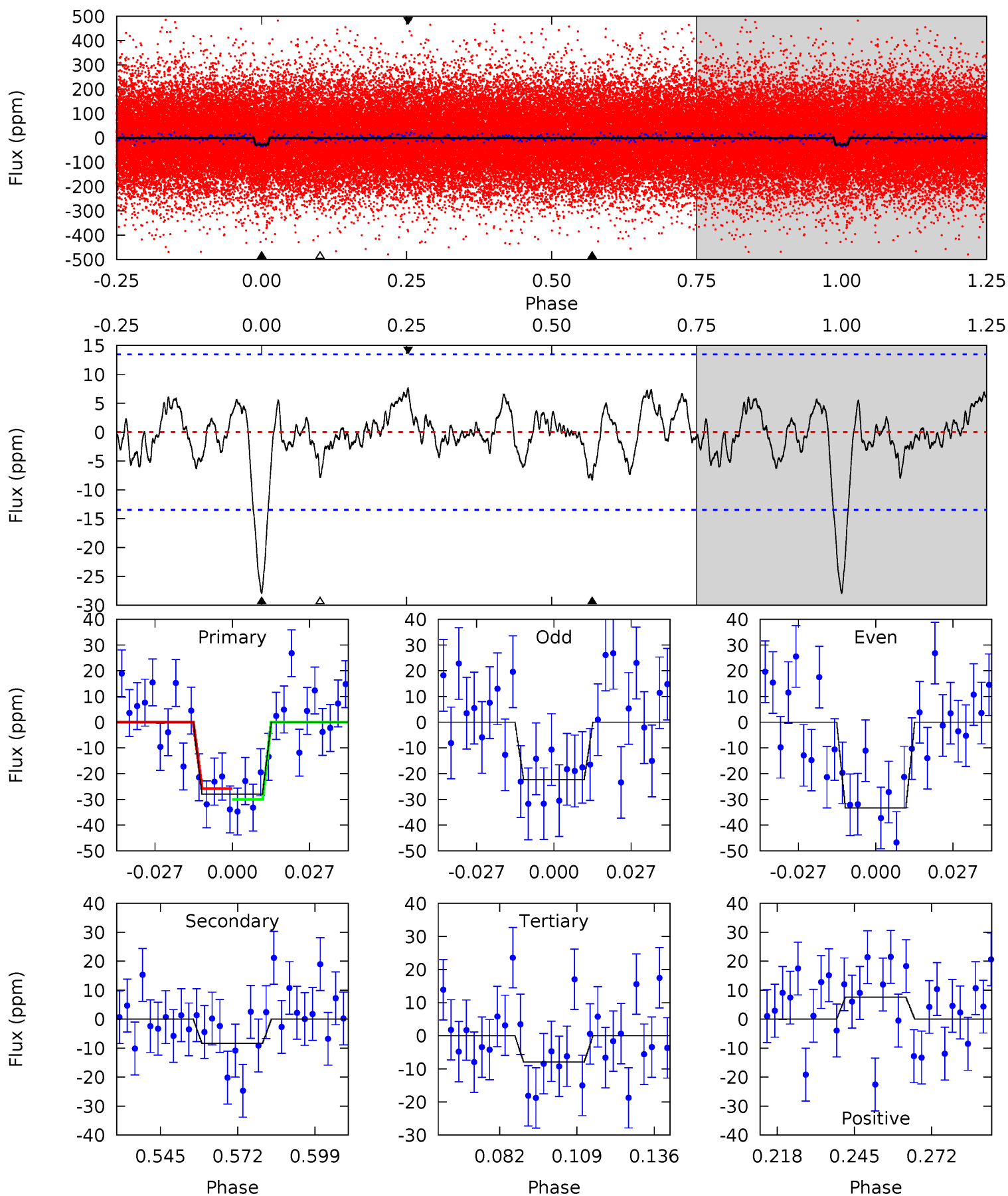
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	3.18	3.14	2.53	4.82	2.19	1.14	8.01	8.63	0.03	0.65	1.64	1.07	0.18	0.83



# Alt Model-Shift Uniqueness Test

008016692-01, P = 6.613683 Days, E = 129.880736 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
10.0	3.00	2.85	2.73	4.83	2.21	1.13	7.16	7.28	0.15	0.27	1.97	0.99	0.21	0.75





### Stellar Parameters For KIC 008016692

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6056^{+183}_{-164}$	$4.071^{+0.234}_{-0.126}$	$-0.080^{+0.300}_{-0.300}$	$1.597^{+0.348}_{-0.425}$	$1.094^{+0.189}_{-0.137}$	$0.378^{+0.539}_{-0.144}$
	+3%/-3%	+6%/-3%	+375%/-375%	+22%/-27%	+17%/-13%	+142%/-38%
Source	PHO1	FLK73	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 008016692-01 / KOI 6954.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-9 \pm 3$	$0.95^{+0.48}_{-0.41}$	$1756^{+115}_{-137}$	$4528^{+1315}_{-691}$	$26^{+62}_{-16}$
Alt.	$-8 \pm 3$	$0.90^{+0.52}_{-0.47}$	$1748^{+111}_{-128}$	$4566^{+1888}_{-730}$	$28^{+97}_{-17}$

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

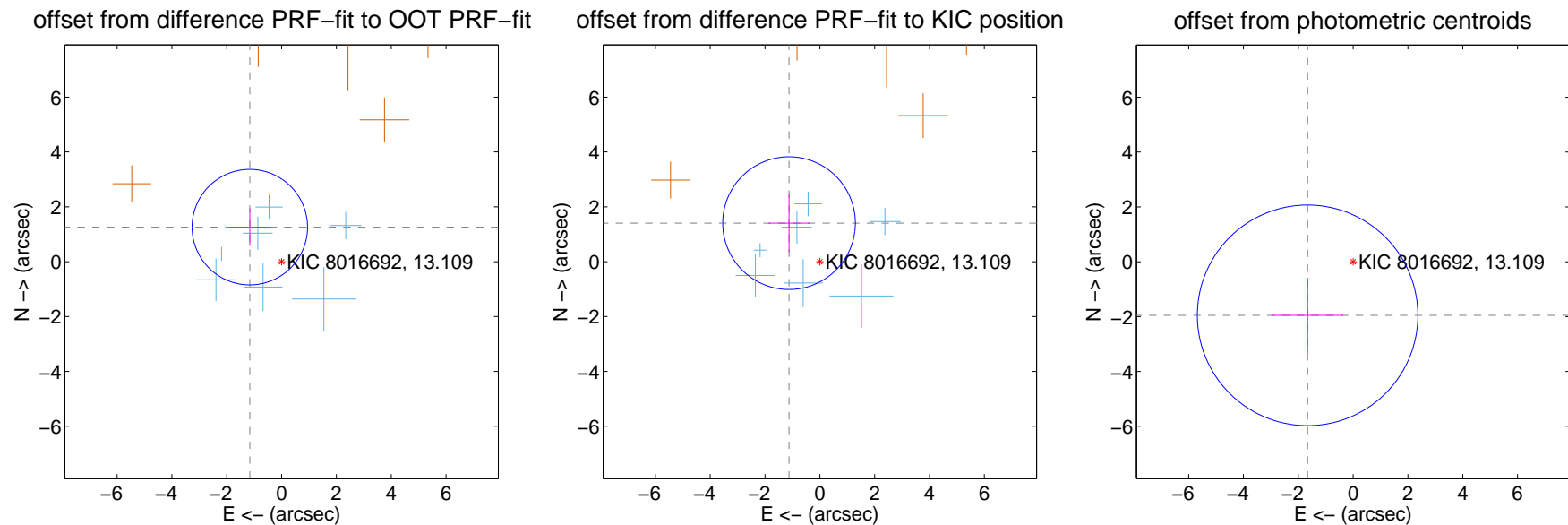
## DV Centroid Data

Supplemental centroid analysis for 008016692-01. Kepler magnitude: 13.11. Transit SNR 7.98

There are 7 quarters with good PRF difference image offsets

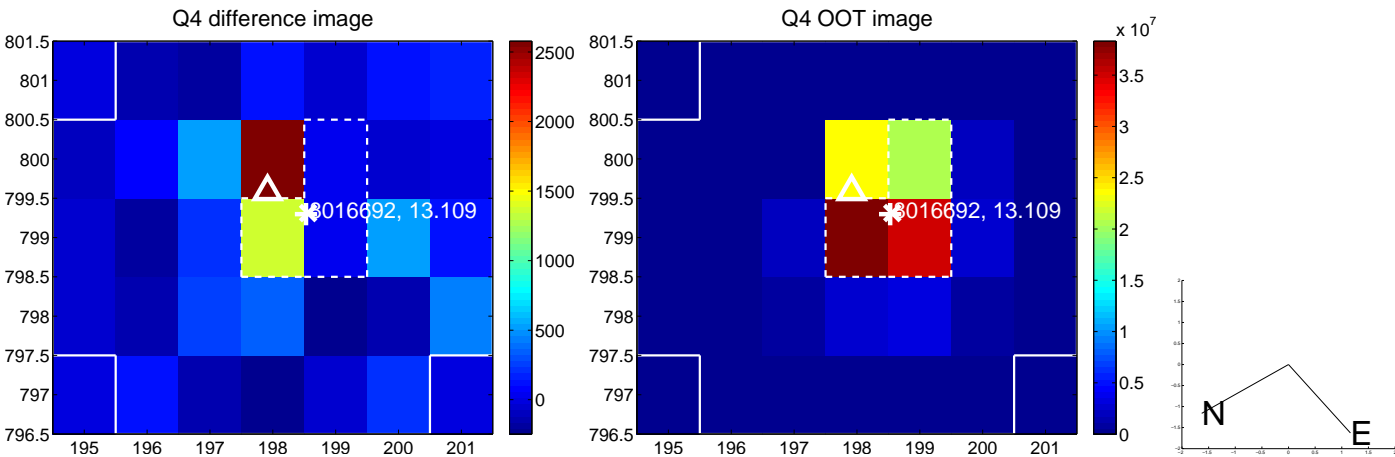
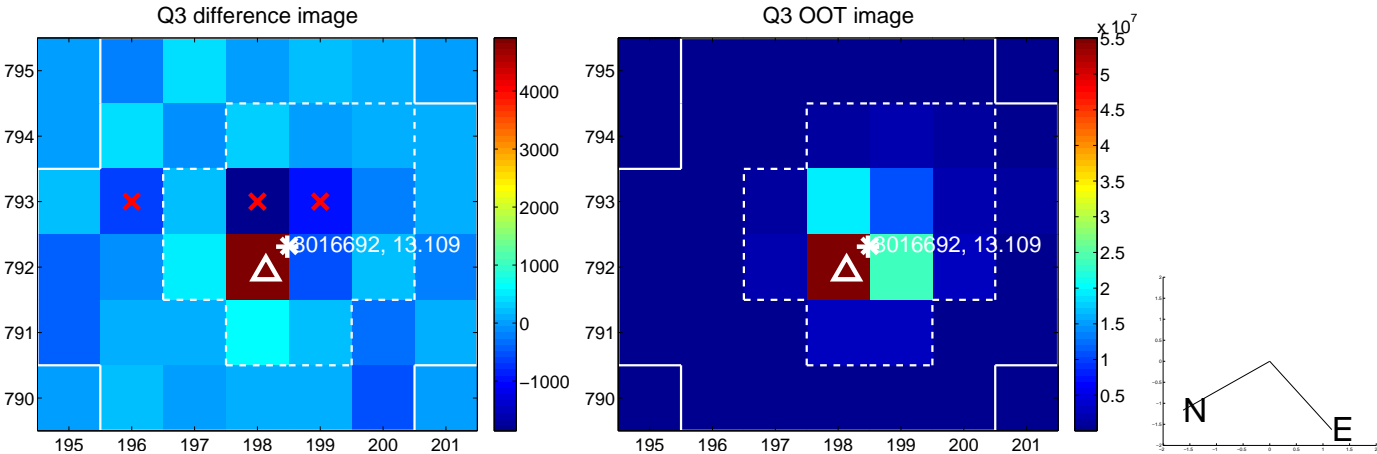
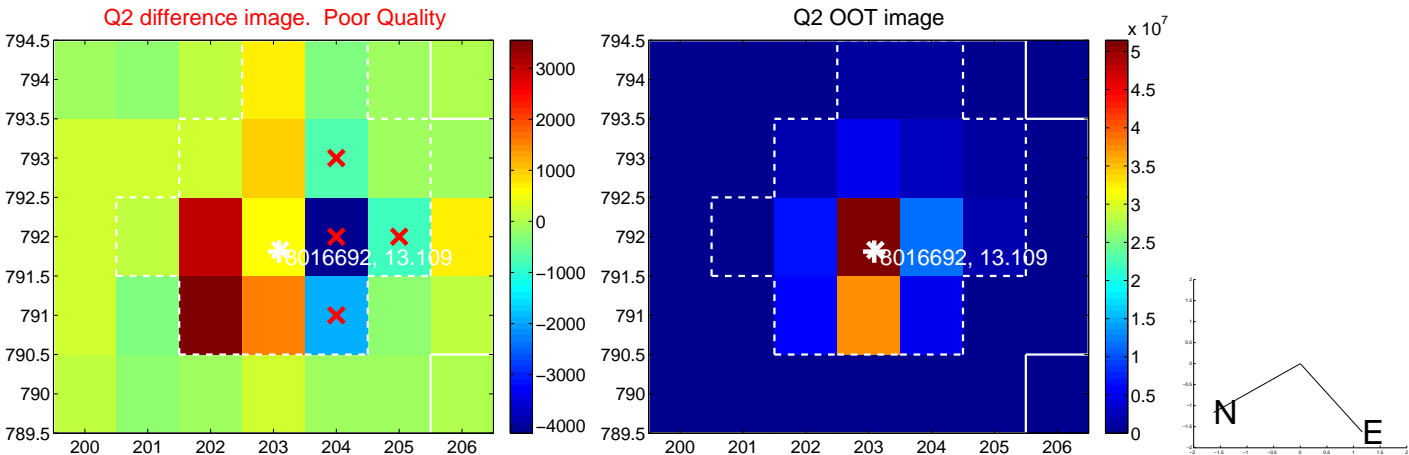
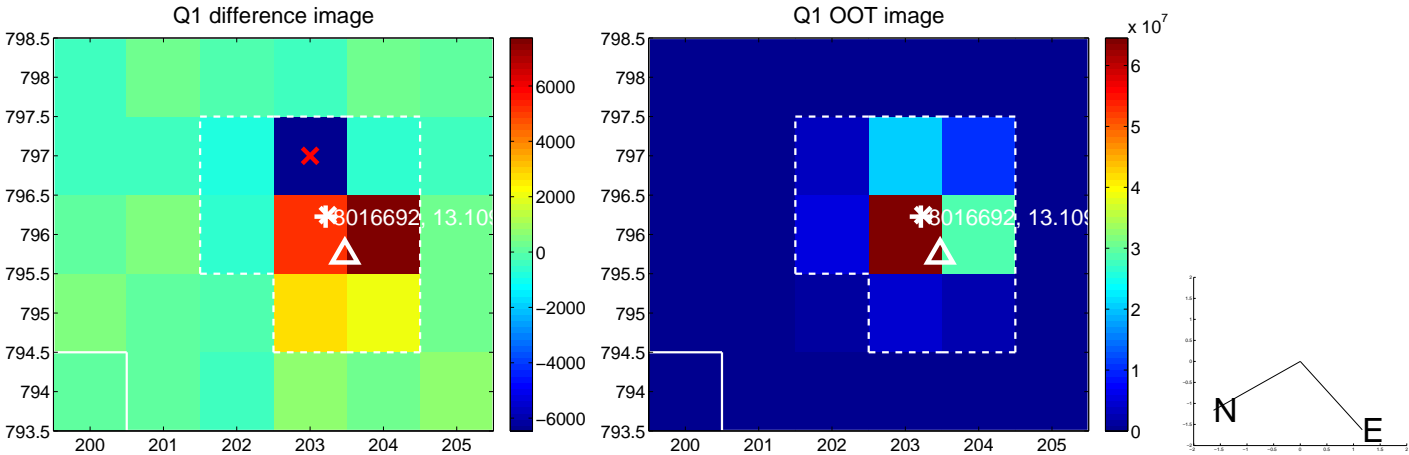
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.712 \pm 0.702$	2.44	$1.159 \pm 0.723$	$1.259 \pm 0.683$
PRF-fit source offset from KIC position	$1.800 \pm 0.806$	2.23	$1.124 \pm 0.748$	$1.406 \pm 1.059$
photometric centroid source offset	$2.56 \pm 1.34$	1.91	$1.66 \pm 1.30$	$-1.95 \pm 1.37$

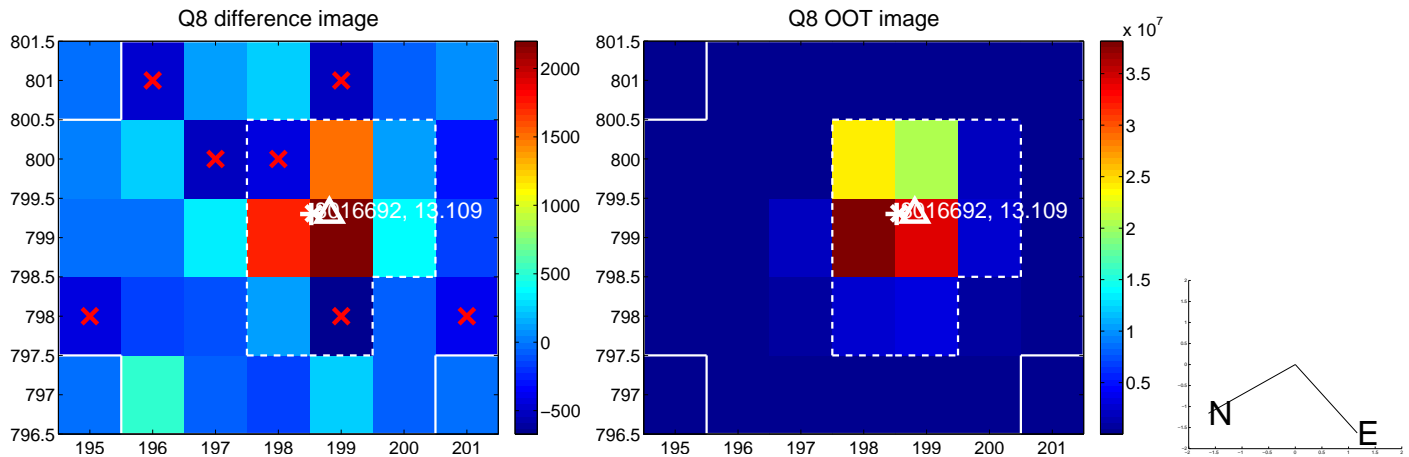
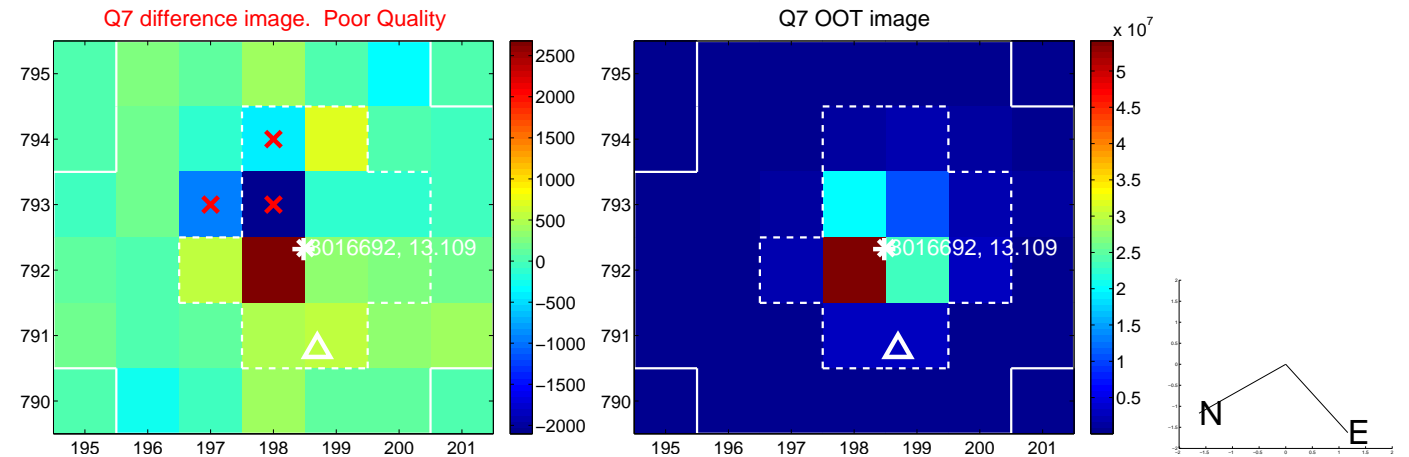
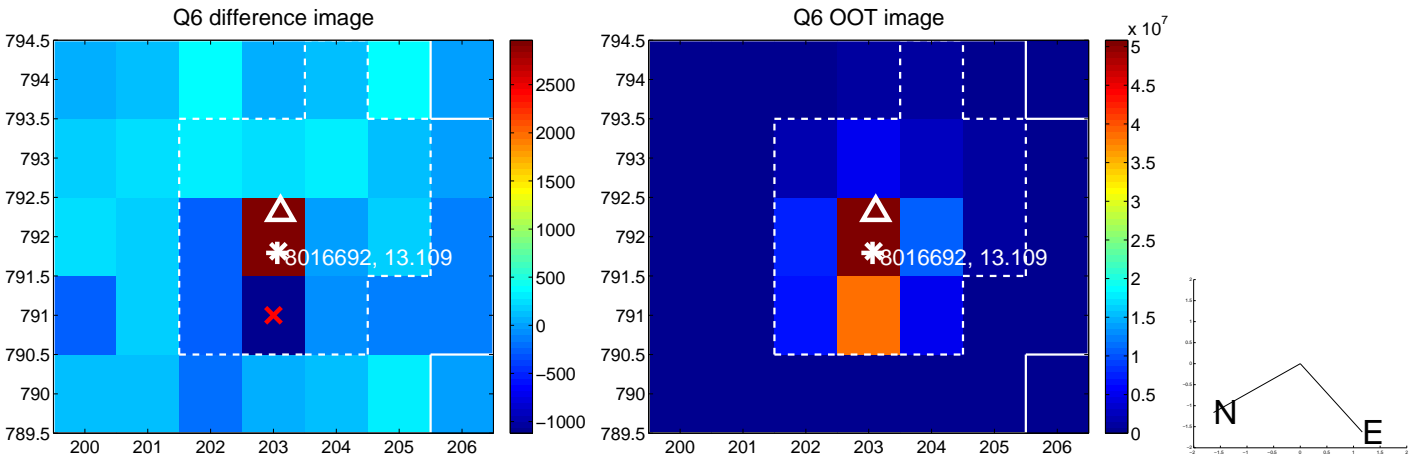
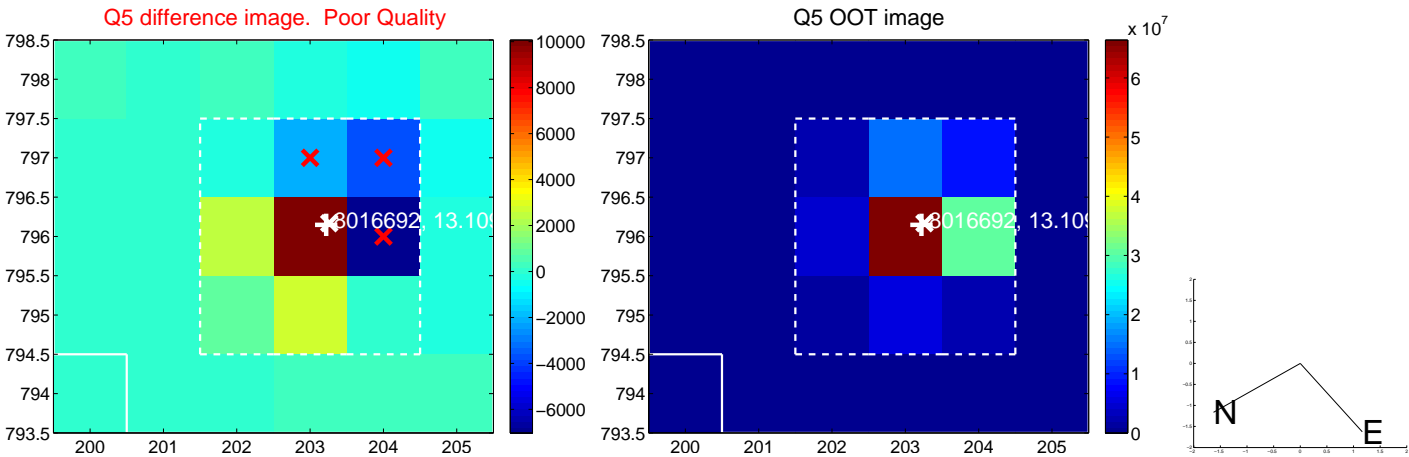


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

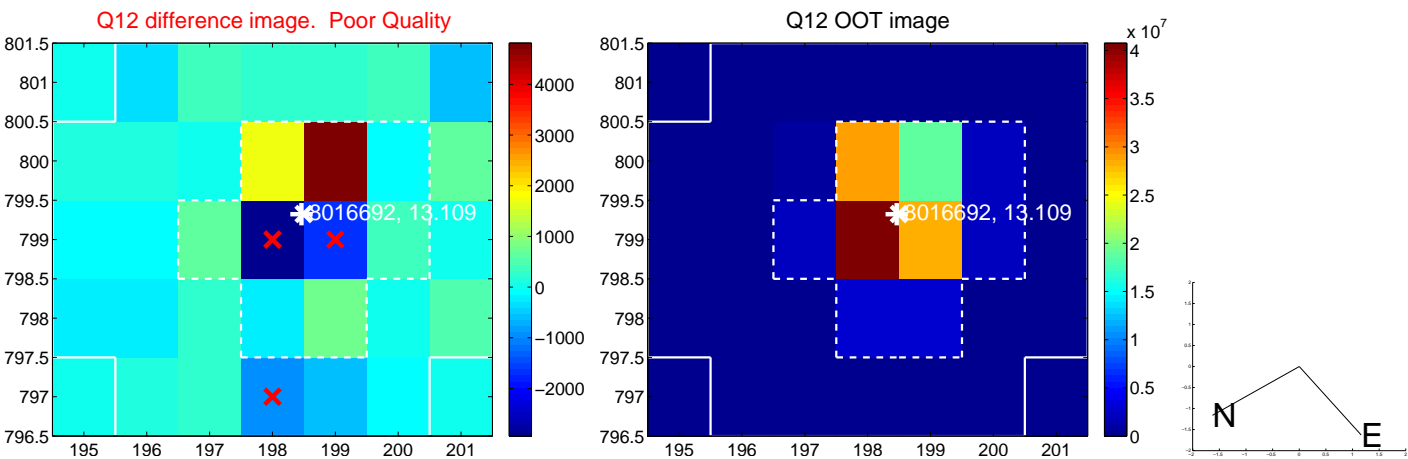
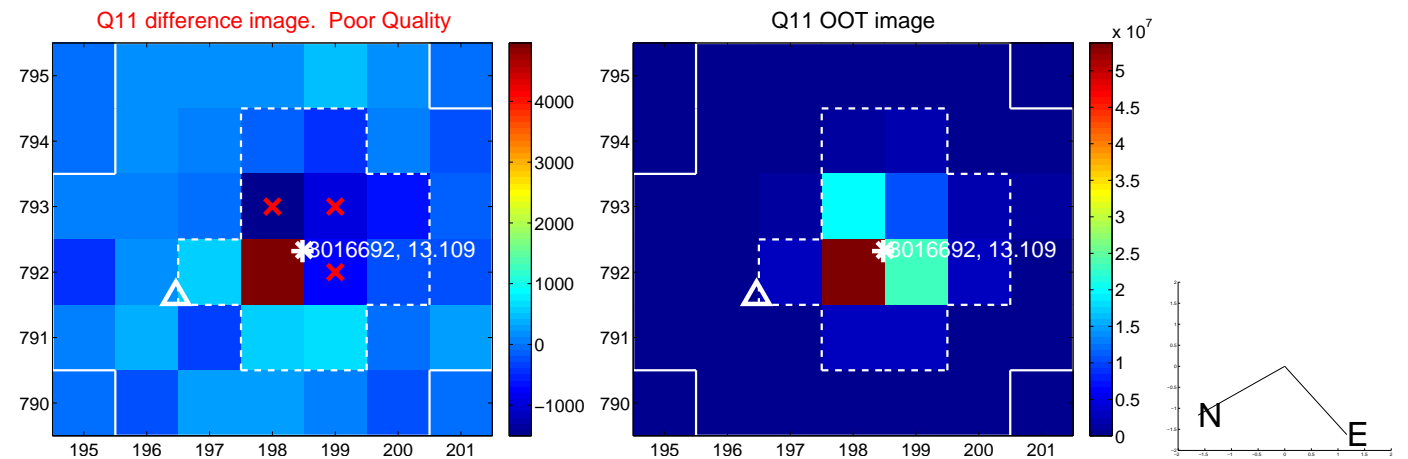
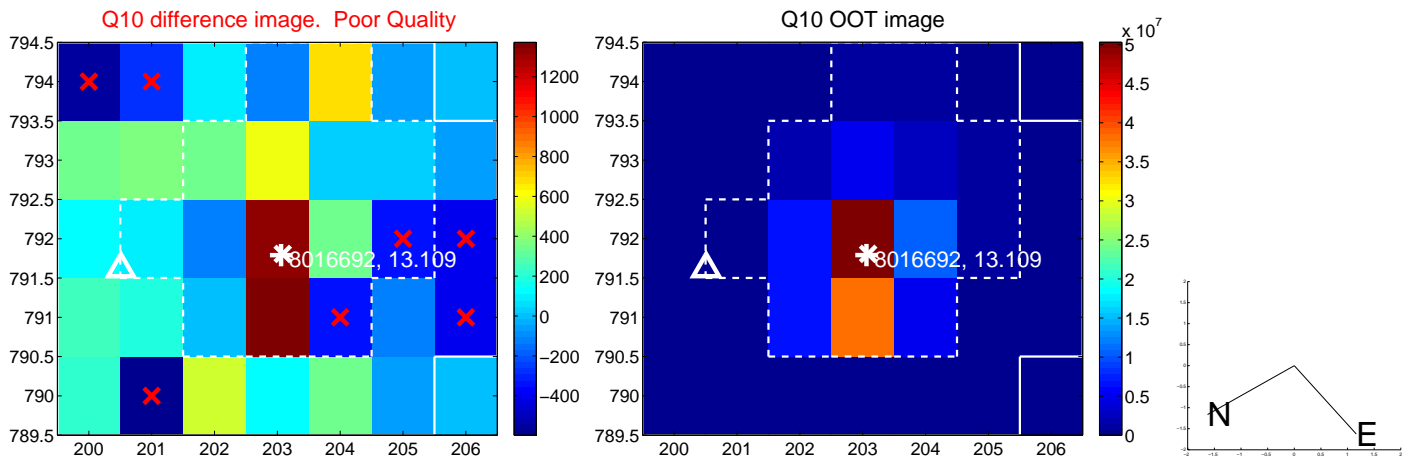
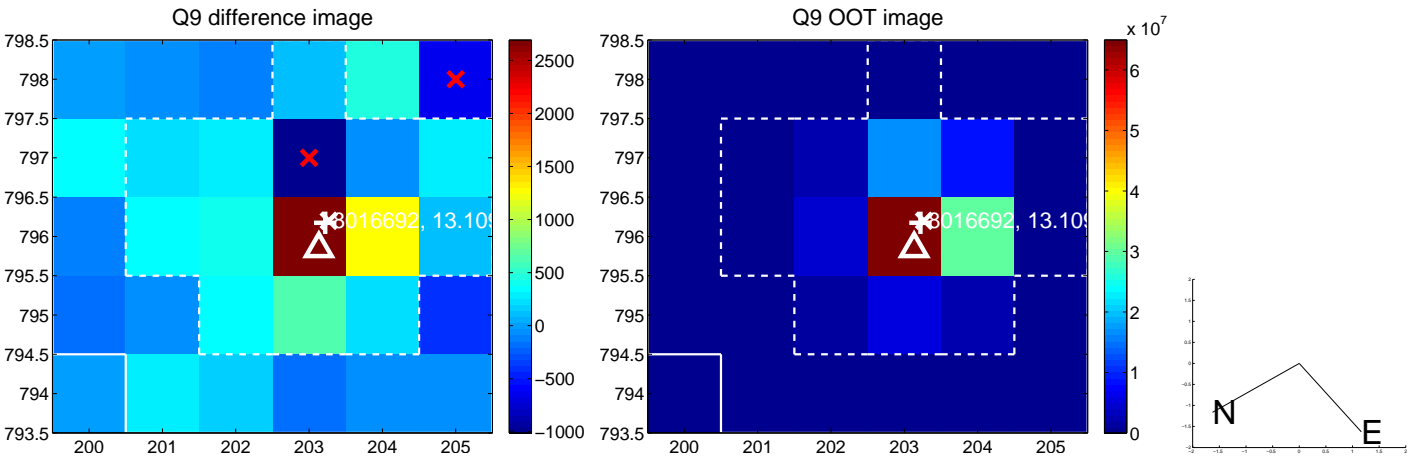


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



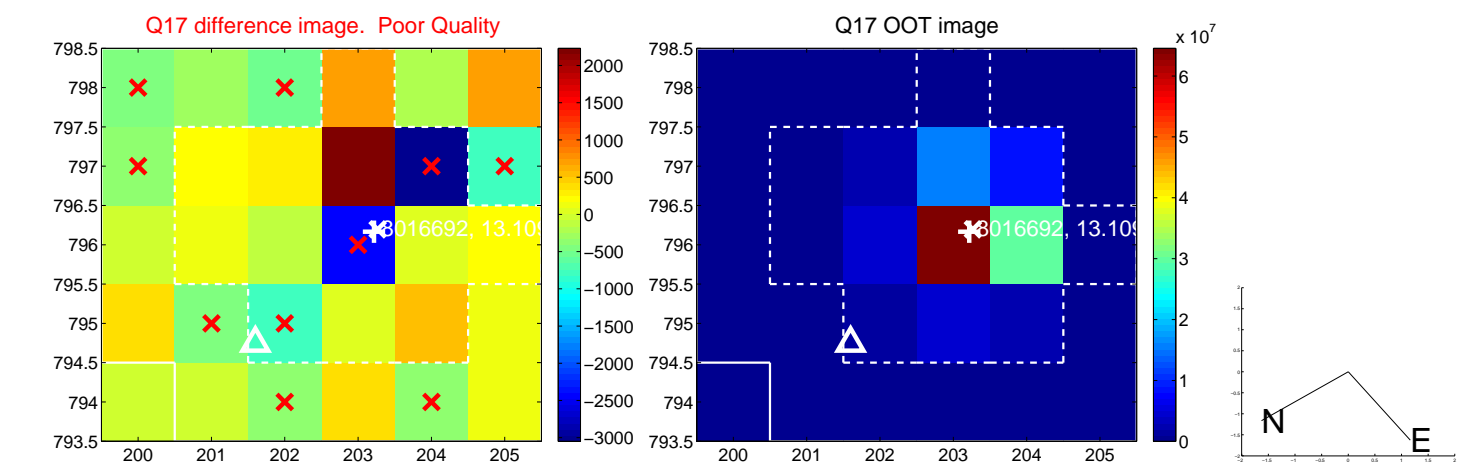


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

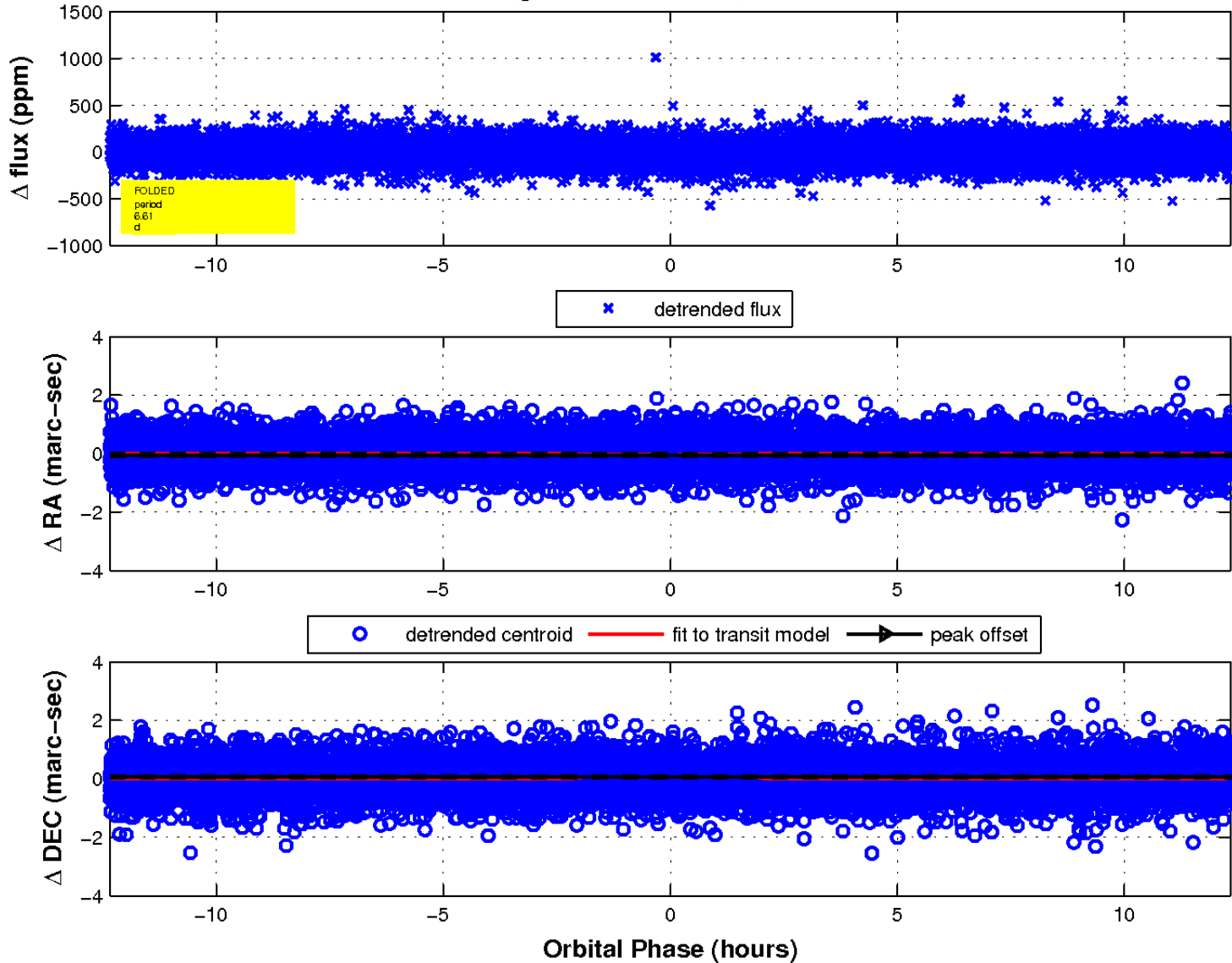




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

