

# KIC 010467714

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010467714-01	OBS	4480.01	58.748699	172.652863	535.7	3.756	11.6	12.7	0.81	5574	2.32	7.72

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010467714-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

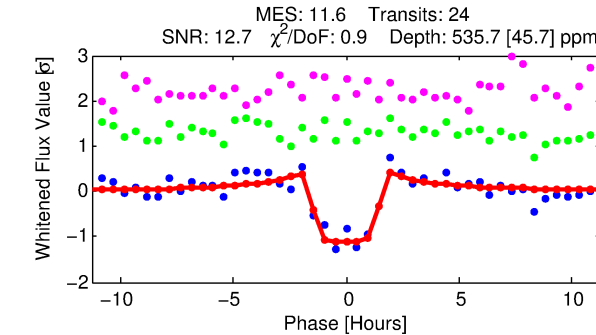
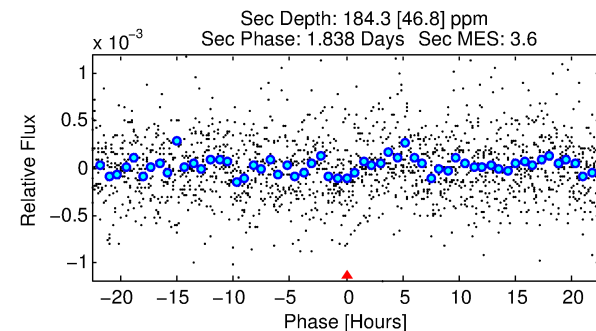
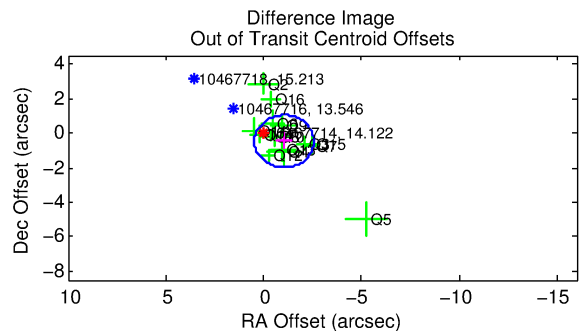
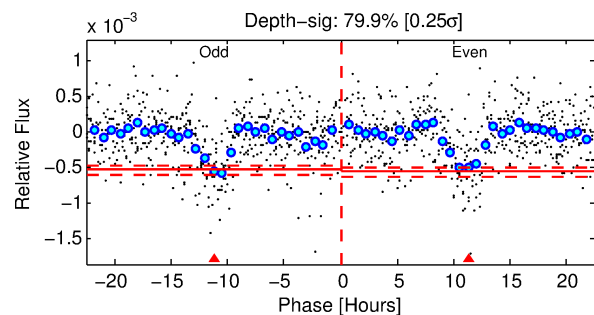
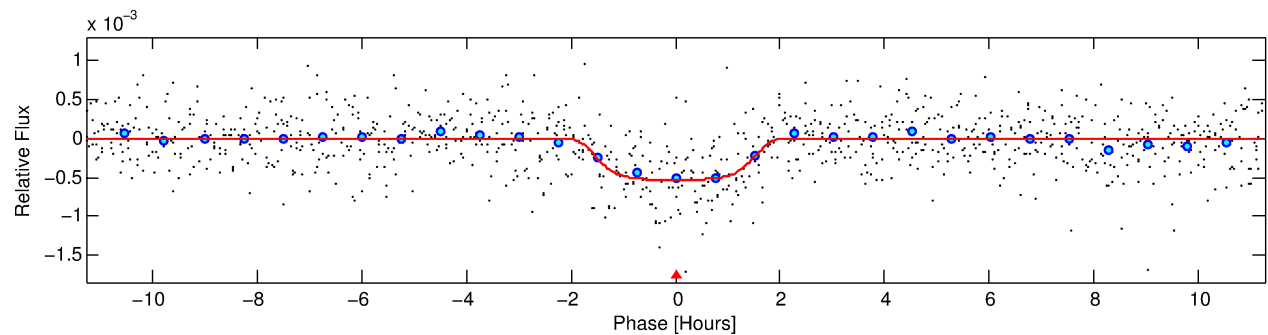
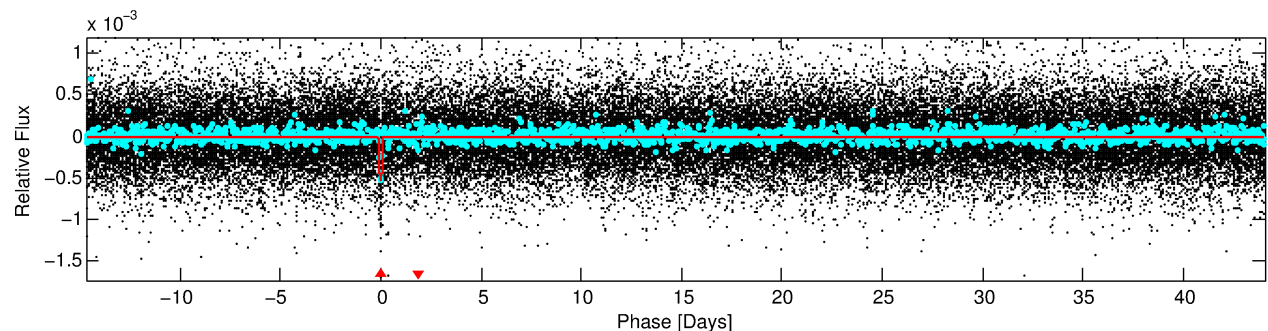
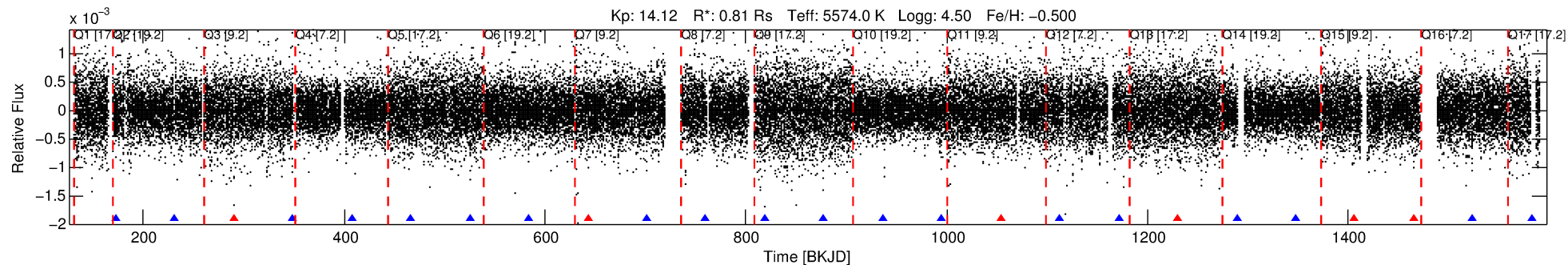
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010467714-01

No Significant Match Found

# DV One-Page Summary

KIC: 10467714 Candidate: 1 of 1 Period: 58.749 d  
KOI: K04480.01 Corr: 0.948



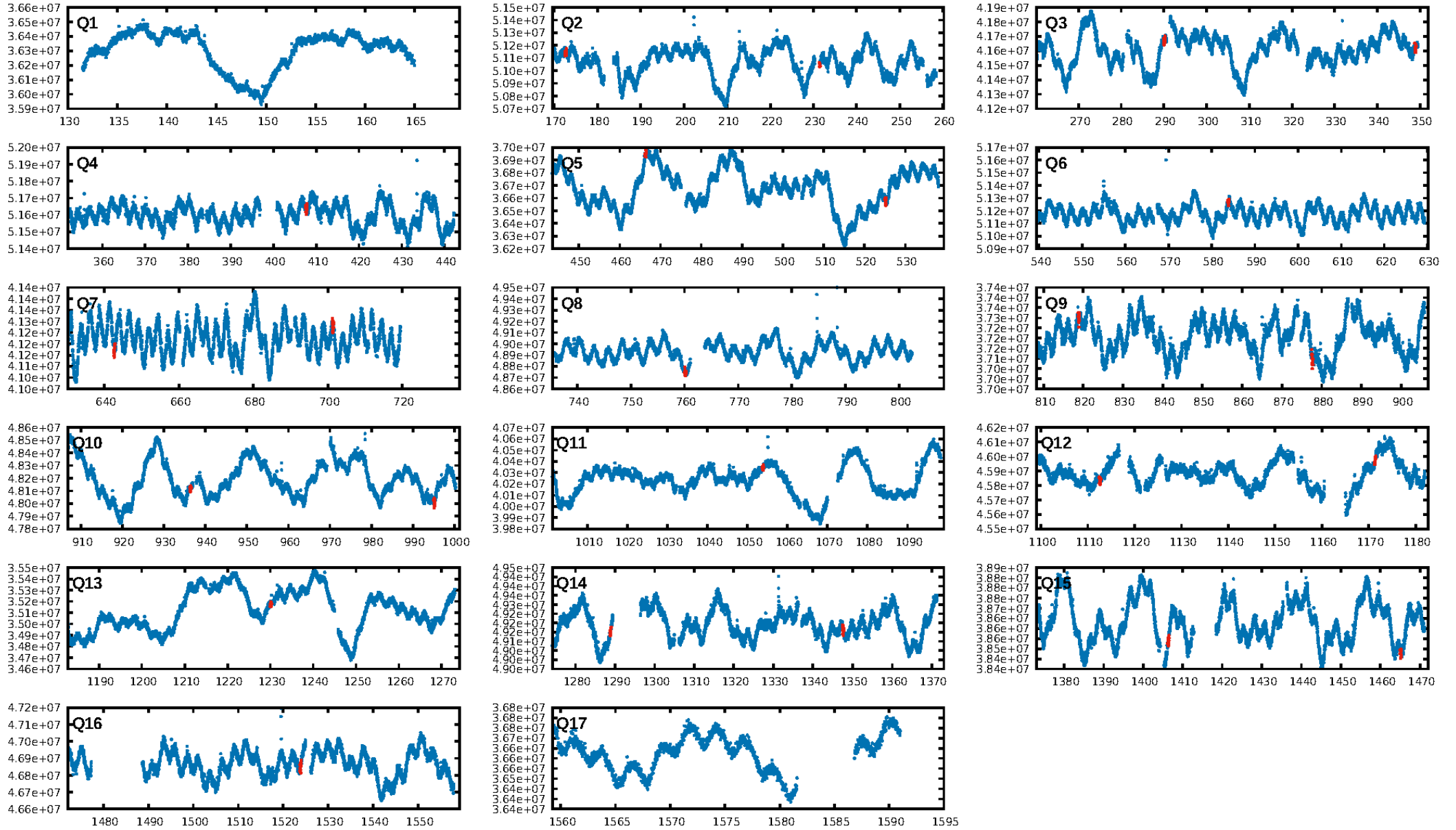
## DV Fit Results:

Period = 58.74870 [0.00040] d  
Epoch = 172.6529 [0.0054] BKJD  
Rp/R\* = 0.0264 [0.0021]  
a/R\* = 49.54 [13.45]  
b = 0.94 [0.03]  
Seff = 7.72 [2.02]  
Teq = 425 [28] K  
Rp = 2.32 [0.48] Re  
a = 0.2695 [0.0431] AU  
Ag = 1367.26 [516.65] [2.64 $\sigma$ ]  
Teffp = 3996 [320] K [11.10 $\sigma$ ]

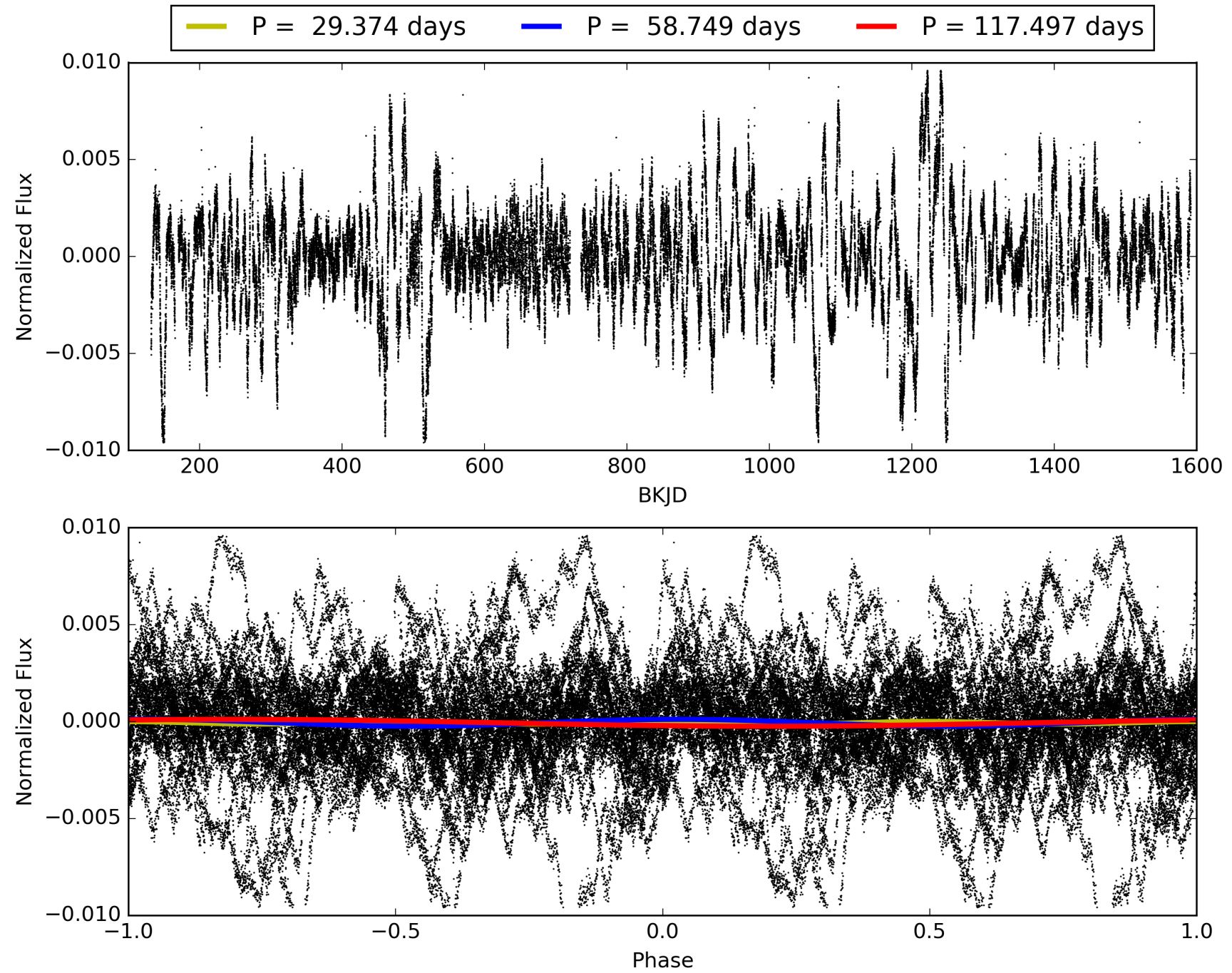
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 77.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.70e-25  
RollingBand-fgt: 0.75 [18/24]  
GhostDiagnostic-chr: 5.286  
Centroid-sig: 10.8%  
Centroid-so: 0.672 arcsec [1.13 $\sigma$ ]  
OotOffset-rm: 1.130 arcsec [2.23 $\sigma$ ]  
KicOffset-rm: 0.575 arcsec [1.29 $\sigma$ ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 0.93 [14/15]  
DiffImageOverlap-fno: 1.00 [15/15]

# TCE 010467714-01, PDC Light Curves

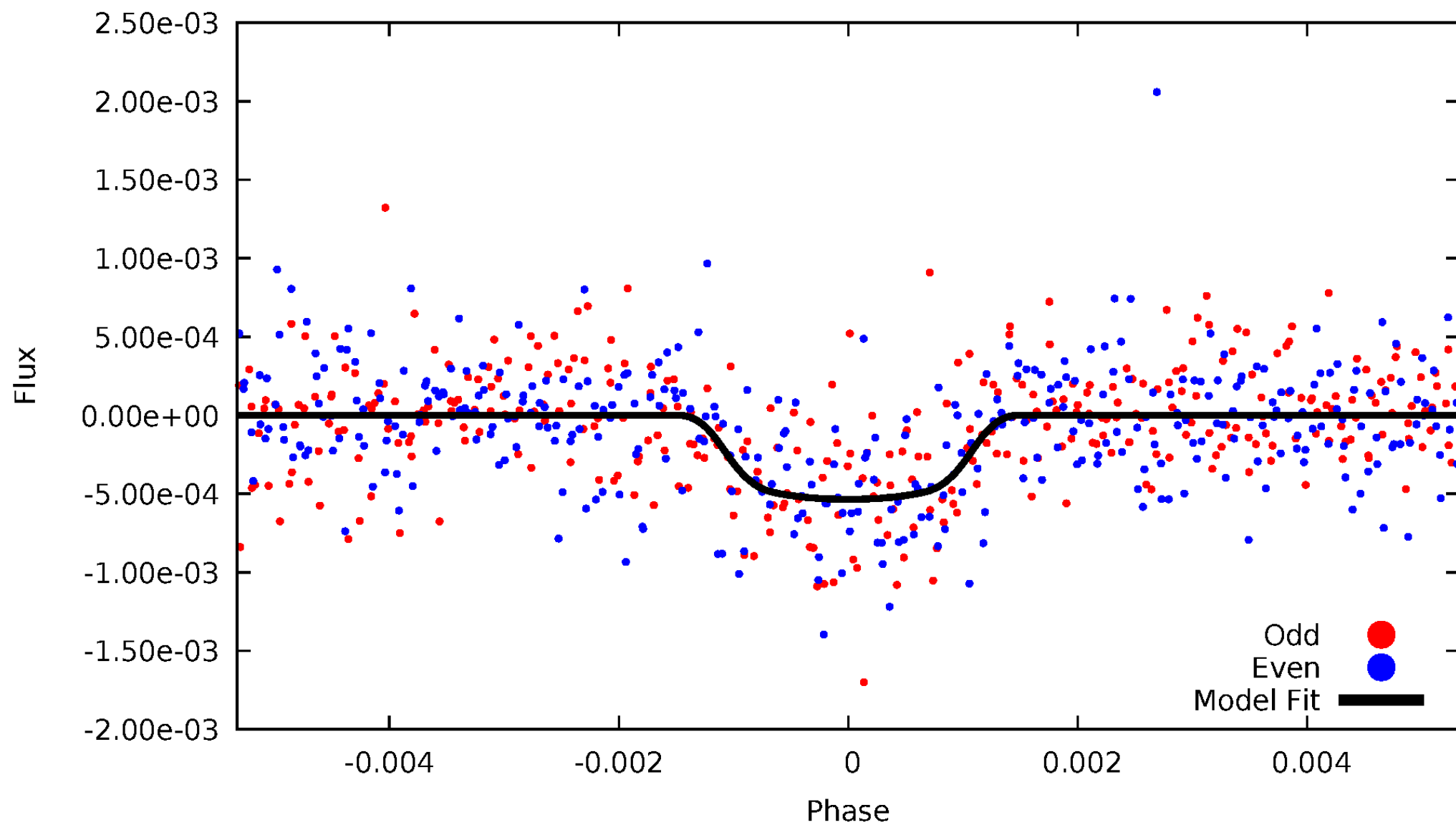


TCE 010467714-01



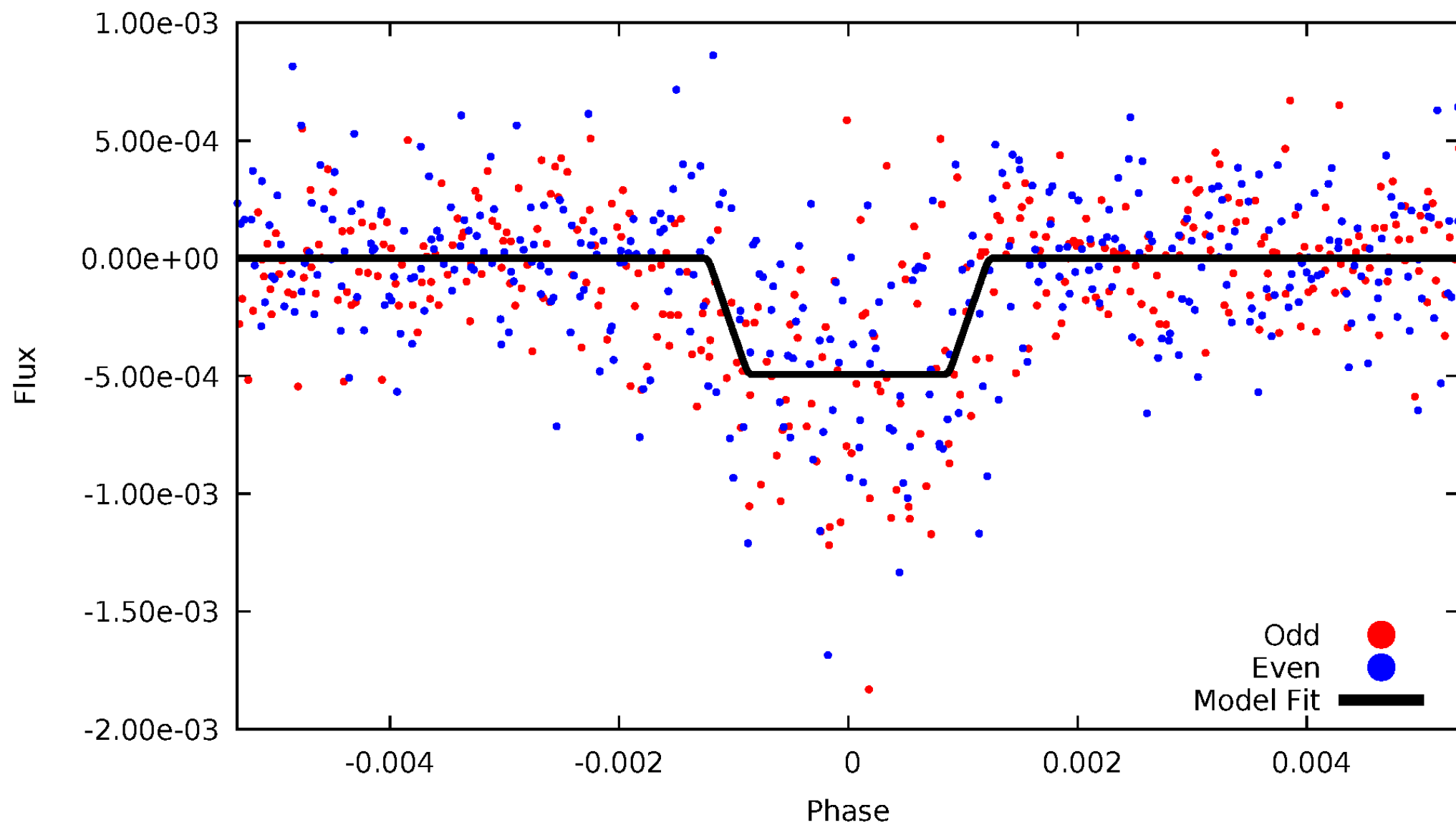
# DV Odd/Even

TCE 010467714-01



# ALT Odd/Even

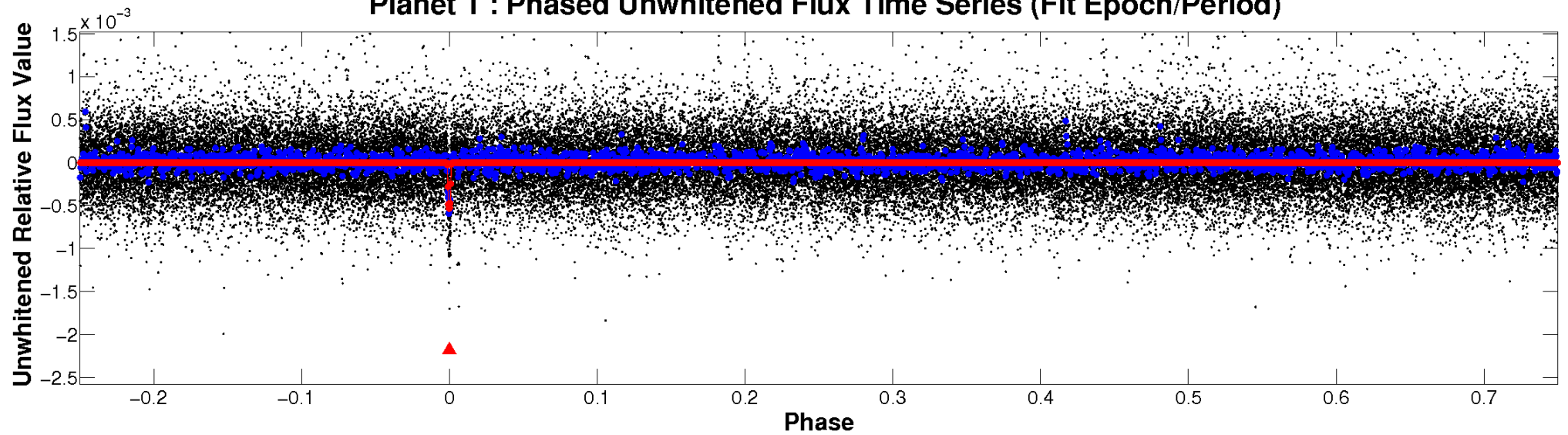
TCE 010467714-01



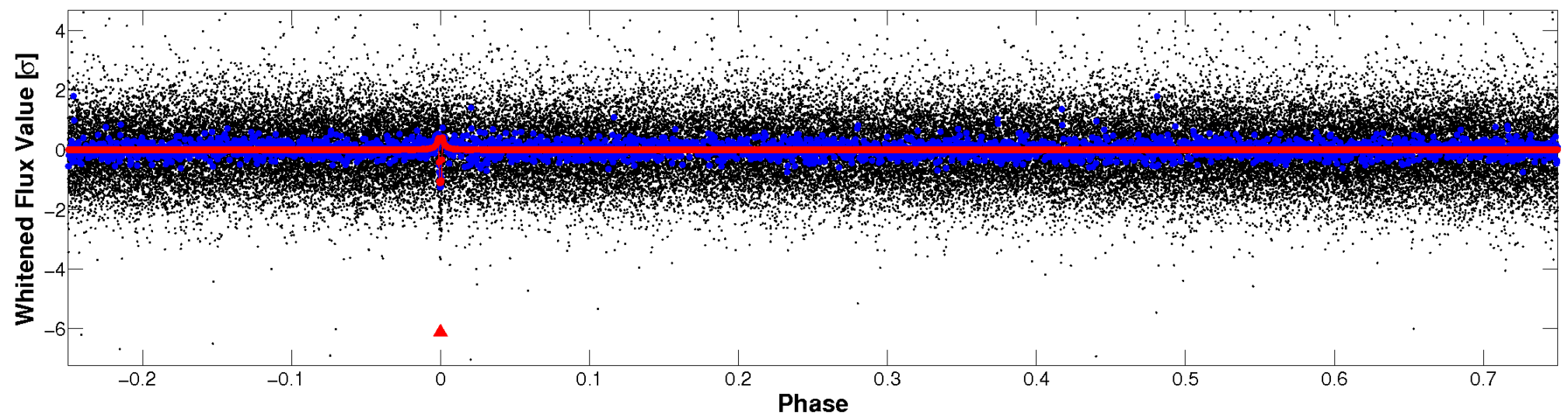


# Non-Whitened Vs. Whitened Light Curve

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

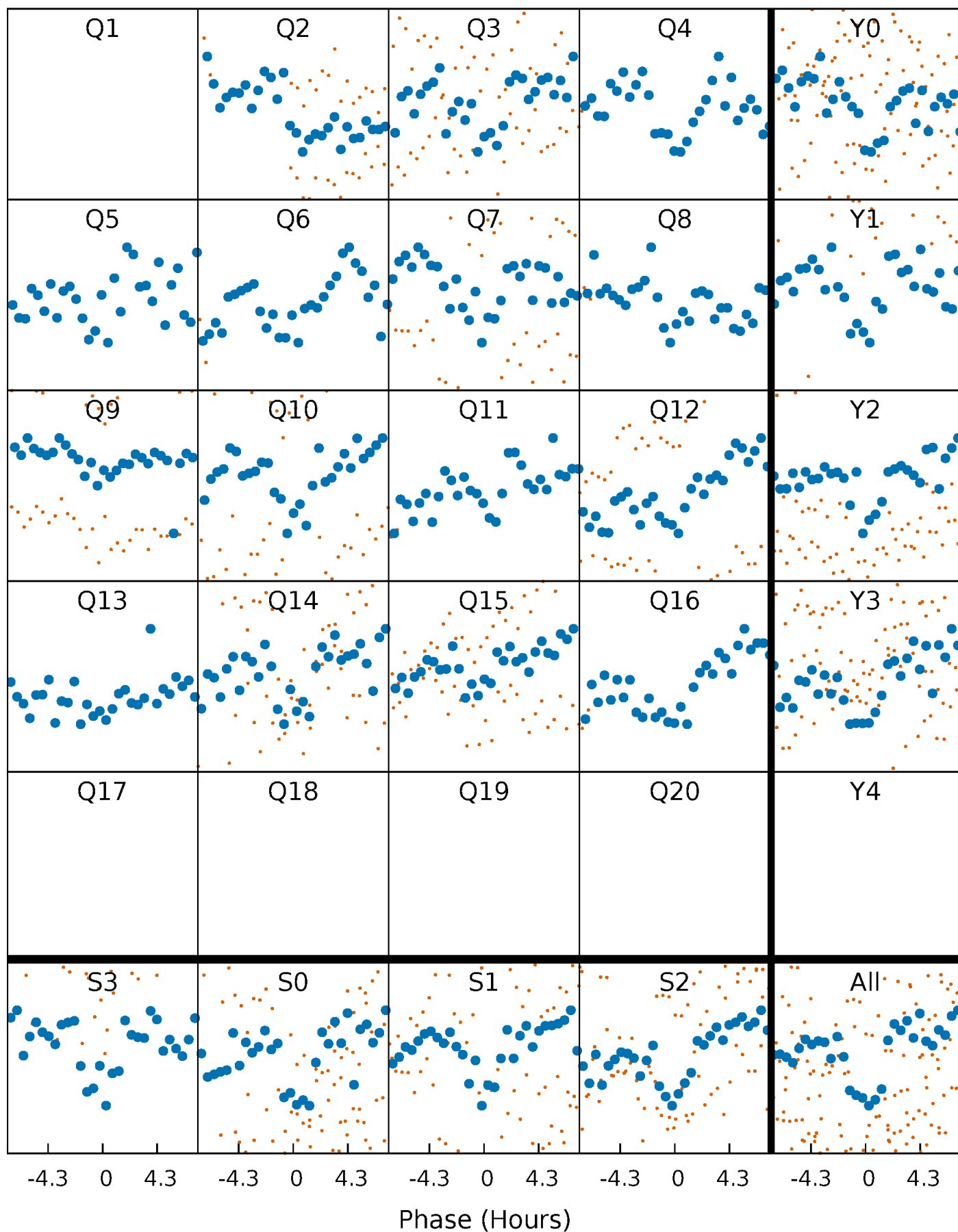


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

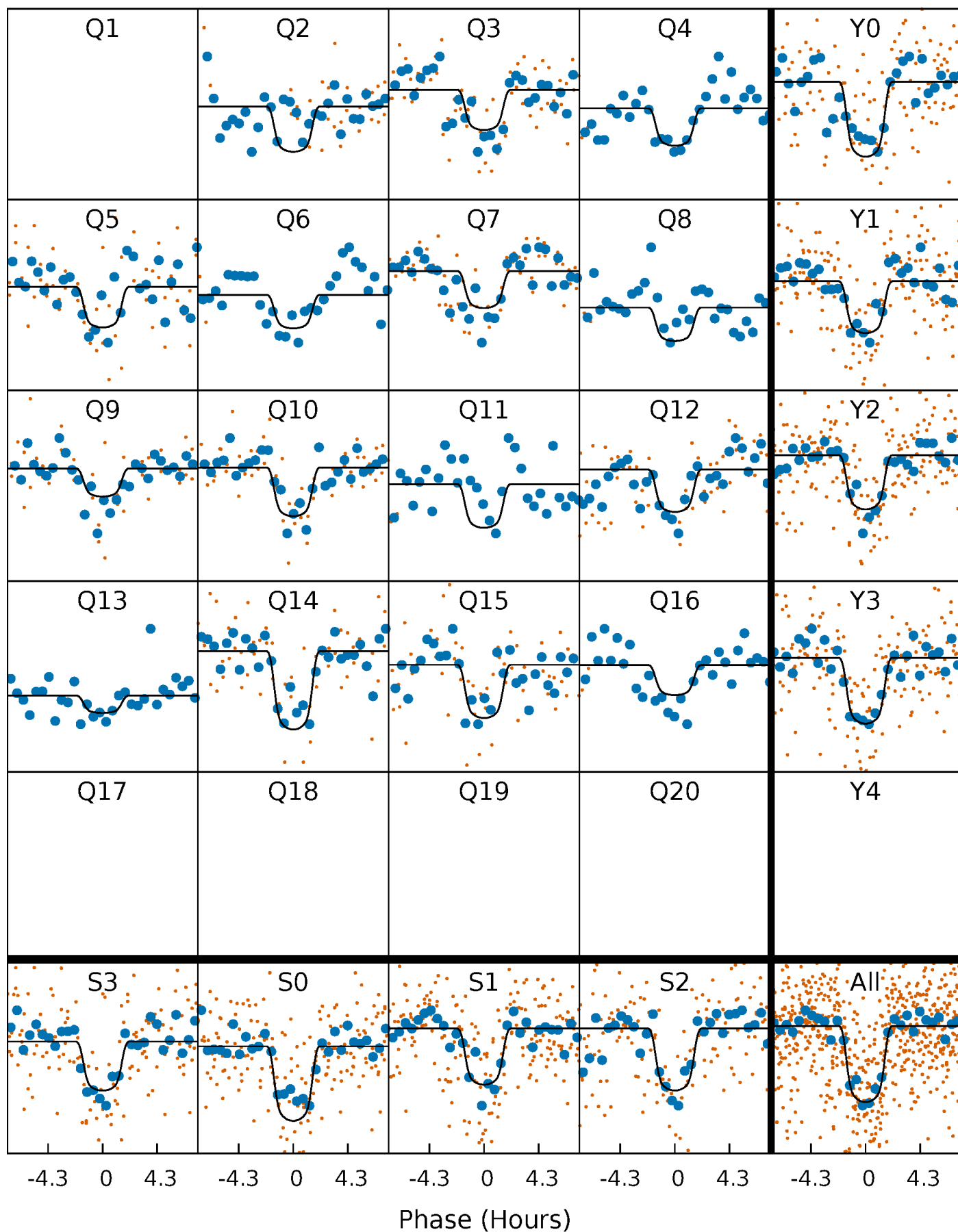
TCE 010467714-01 P= 58.748699 Days  $T_0=172.652863$  (BKJD)





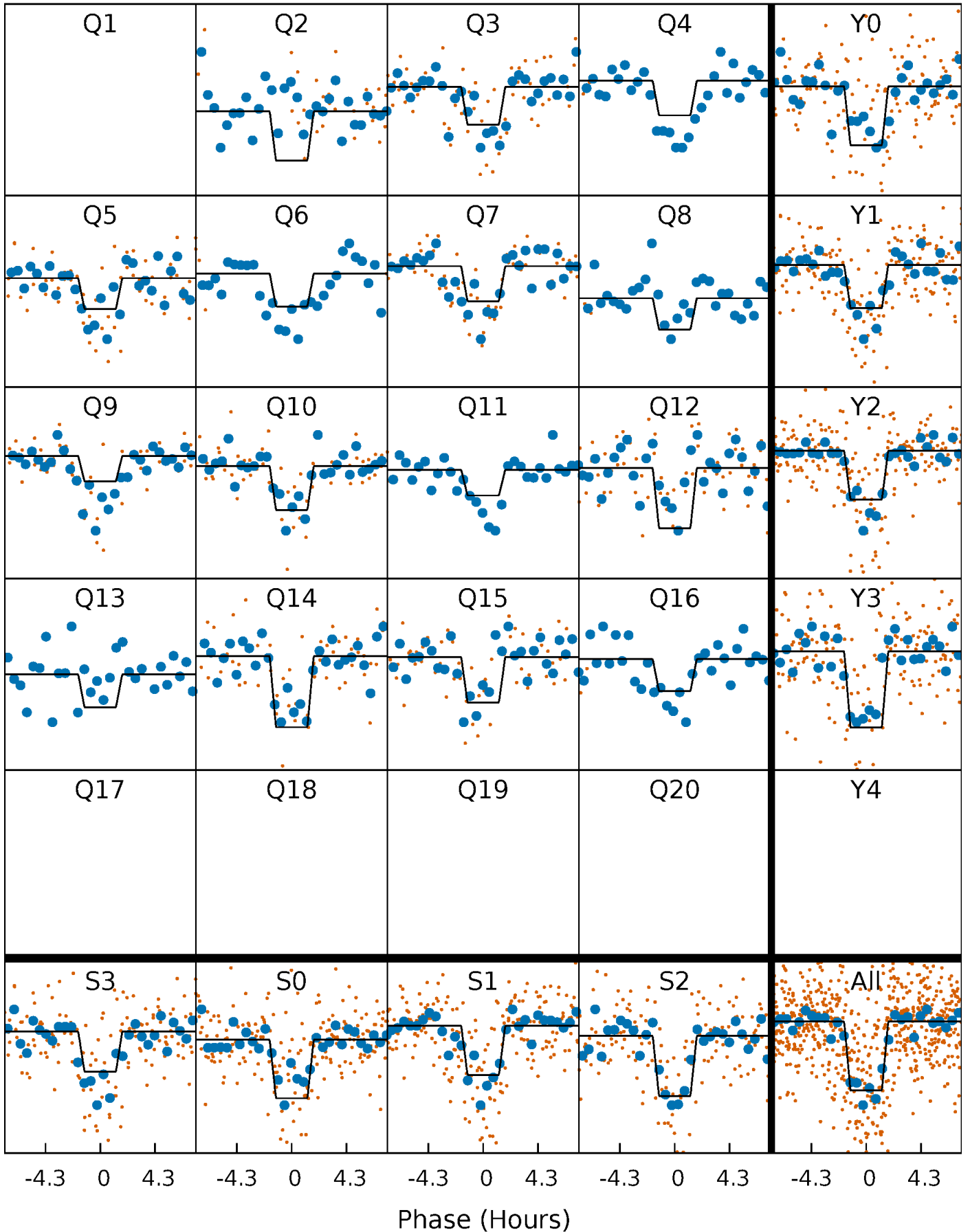
# DV Quarter-Phased Transit Curves

TCE 010467714-01 P= 58.748699 Days  $T_0=172.652863$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

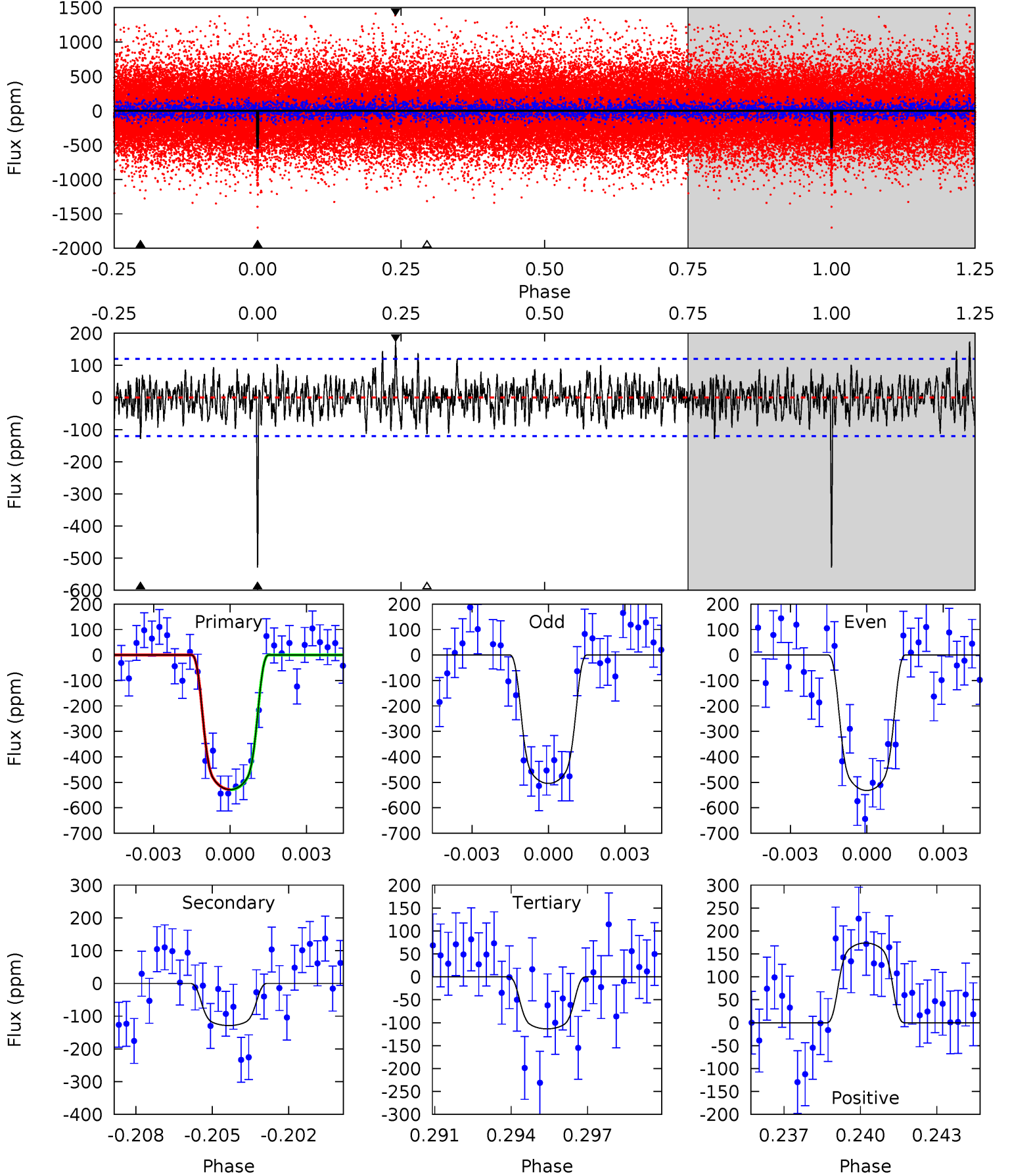
TCE 010467714-01 P= 58.749198 Days  $T_0=172.644844$  (BKJD)



# DV Model-Shift Uniqueness Test

010467714-01,  $P = 58.748699$  Days,  $E = 113.904164$  Days

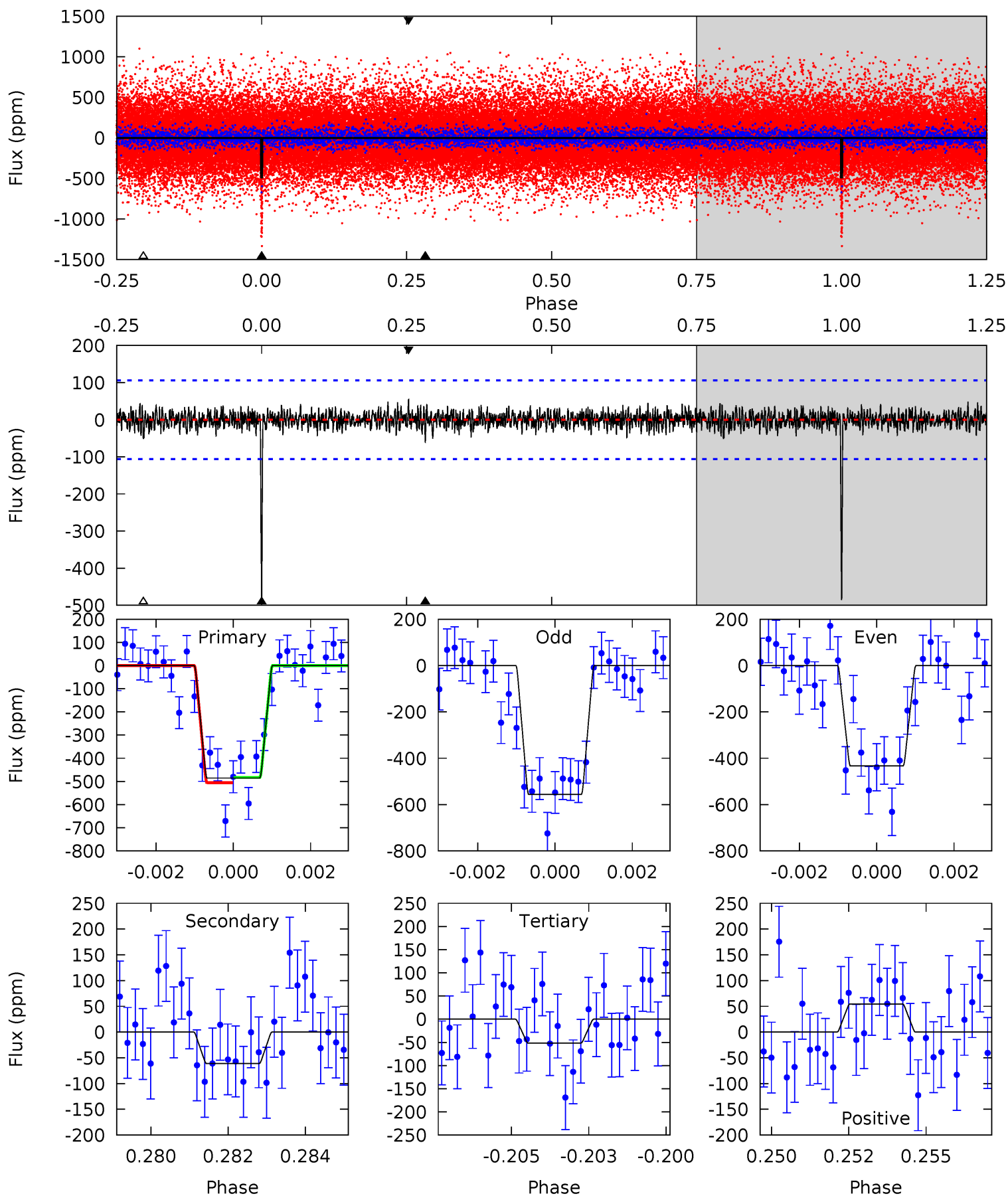
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.1	5.62	4.95	7.59	5.25	2.97	1.75	18.1	15.5	0.66	-1.97	0.61	0.92	0.25	0.03



# Alt Model-Shift Uniqueness Test

010467714-01, P = 58.749198 Days, E = 113.895646 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
24.2	3.05	2.57	2.72	5.29	3.03	0.79	21.7	21.5	0.48	0.33	3.07	0.96	0.10	0



### Stellar Parameters For KIC 010467714

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5574^{+166}_{-150}$	$4.505^{+0.104}_{-0.127}$	$-0.500^{+0.300}_{-0.300}$	$0.805^{+0.153}_{-0.102}$	$0.756^{+0.109}_{-0.047}$	$2.040^{+0.915}_{-0.741}$
	+3%/-3%	+2%/-3%	+60%/-60%	+19%/-13%	+14%/-6%	+45%/-36%
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 010467714-01 / KOI 4480.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-129 \pm 23$	$2.36^{+0.29}_{-0.26}$	$598^{+33}_{-30}$	$3975^{+192}_{-186}$	$930^{+313}_{-257}$
Alt.	$-61 \pm 20$	$1.96^{+0.29}_{-0.23}$	$596^{+33}_{-29}$	$3694^{+253}_{-258}$	$625^{+297}_{-245}$

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

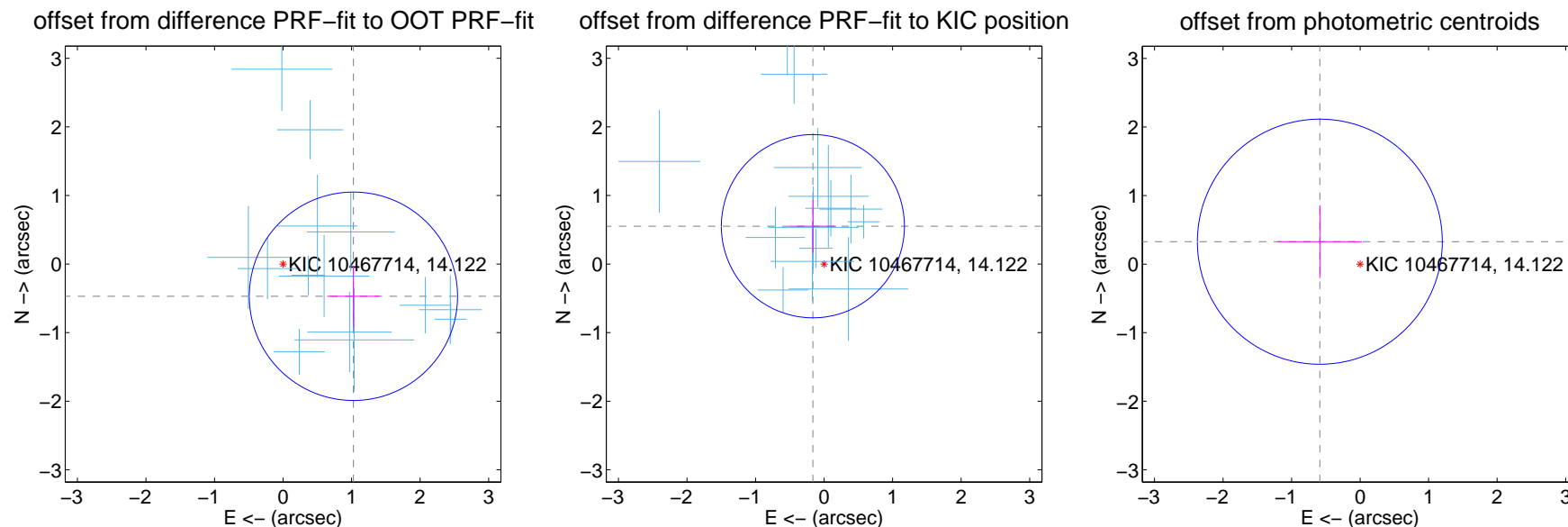
## DV Centroid Data

Supplemental centroid analysis for 010467714-01. Kepler magnitude: 14.12. Transit SNR 12.70

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 1.16 arcsec

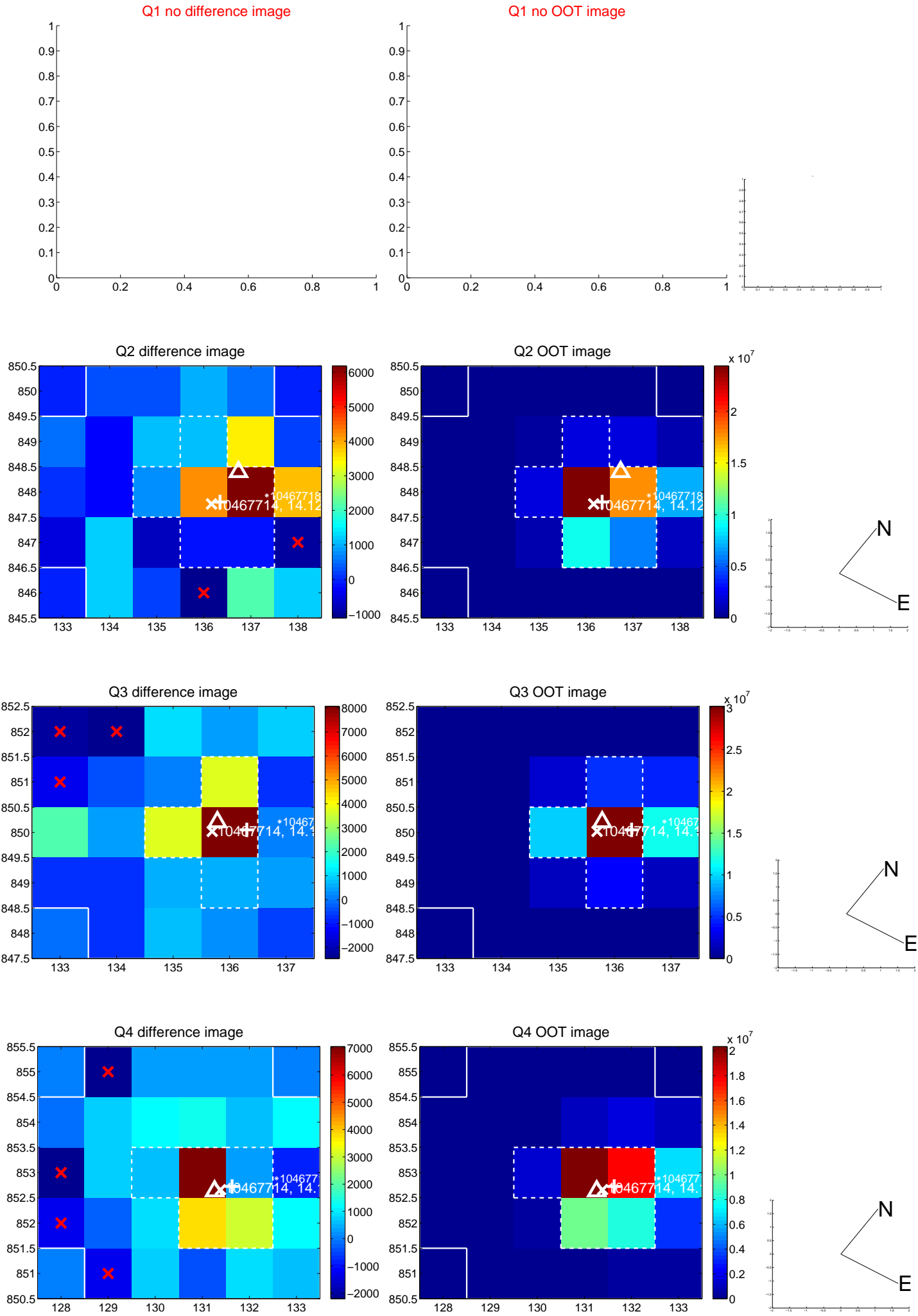
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.130 \pm 0.506$	2.23	$-1.027 \pm 0.382$	$-0.470 \pm 0.446$
PRF-fit source offset from KIC position	$0.575 \pm 0.445$	1.29	$0.163 \pm 0.341$	$0.552 \pm 0.386$
photometric centroid source offset	$0.67 \pm 0.60$	1.13	$0.59 \pm 0.61$	$0.33 \pm 0.53$



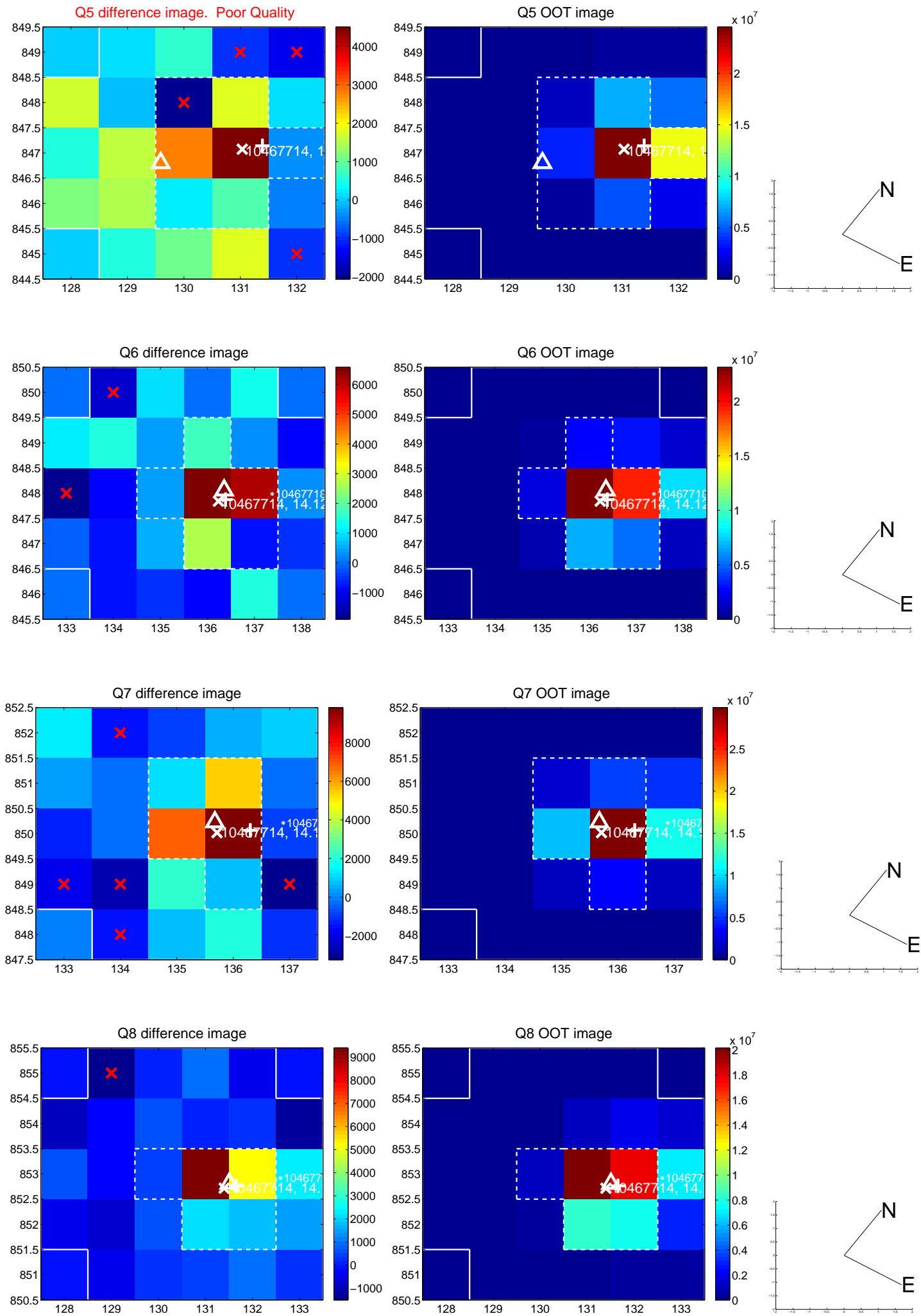
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



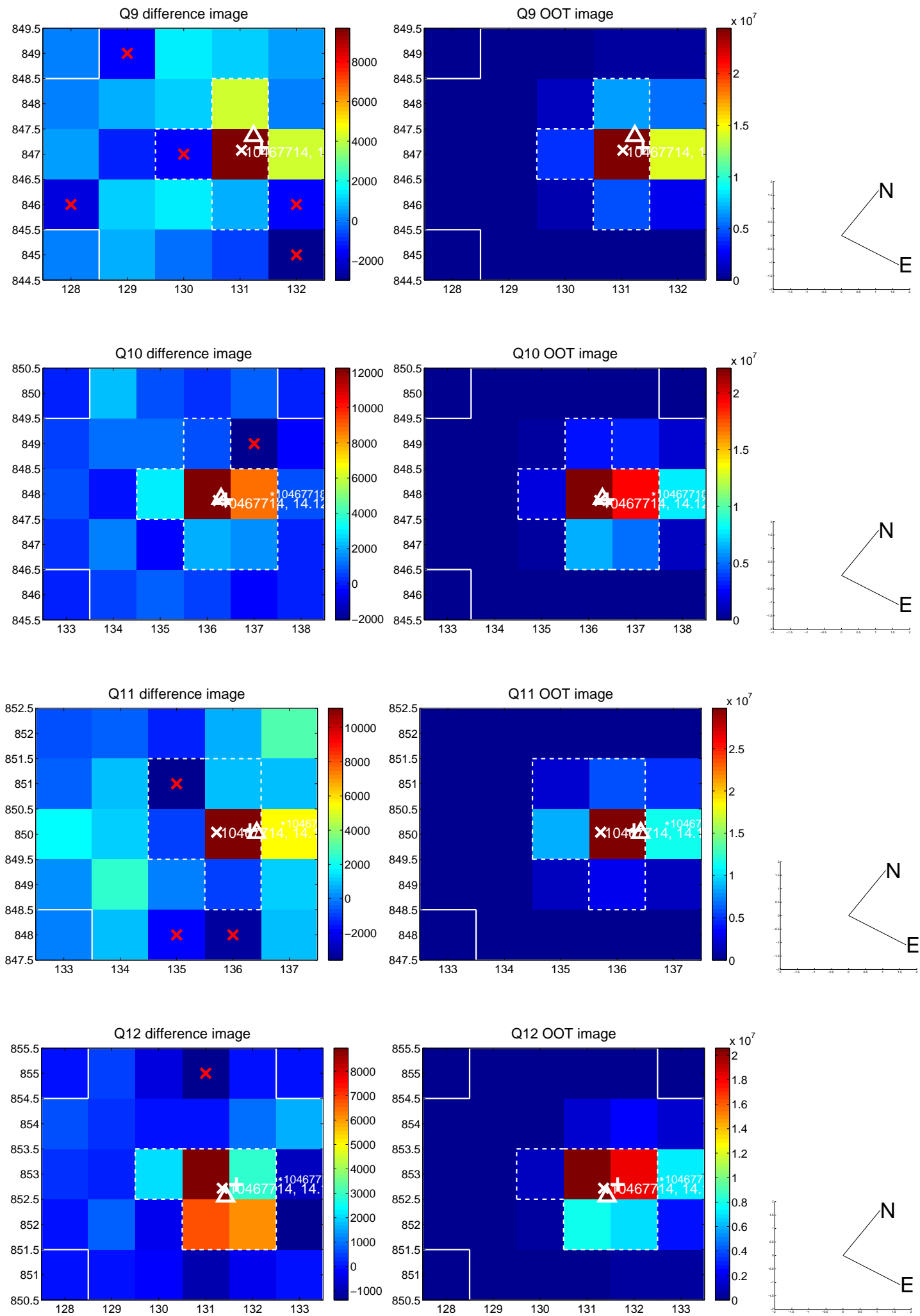
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



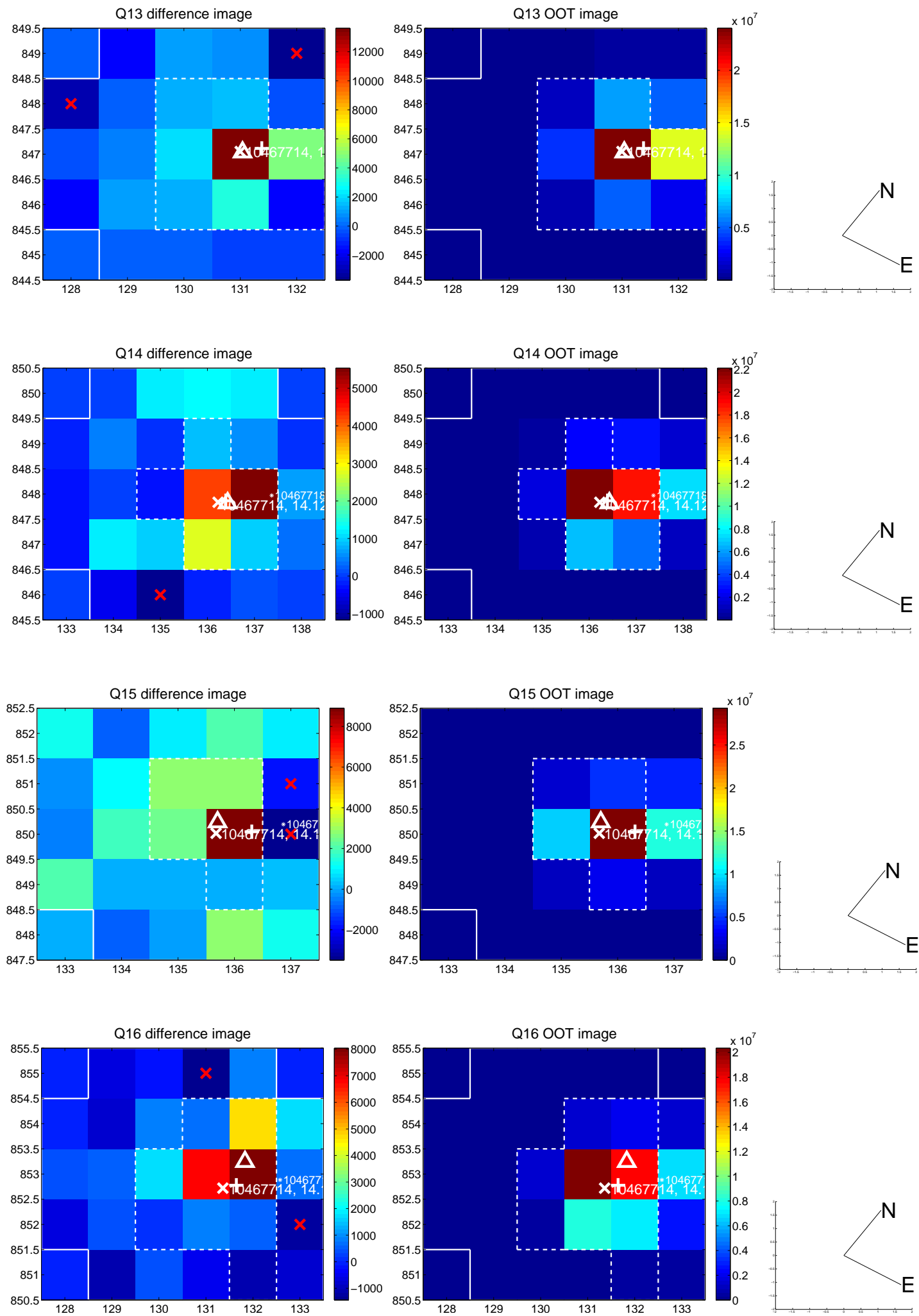
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



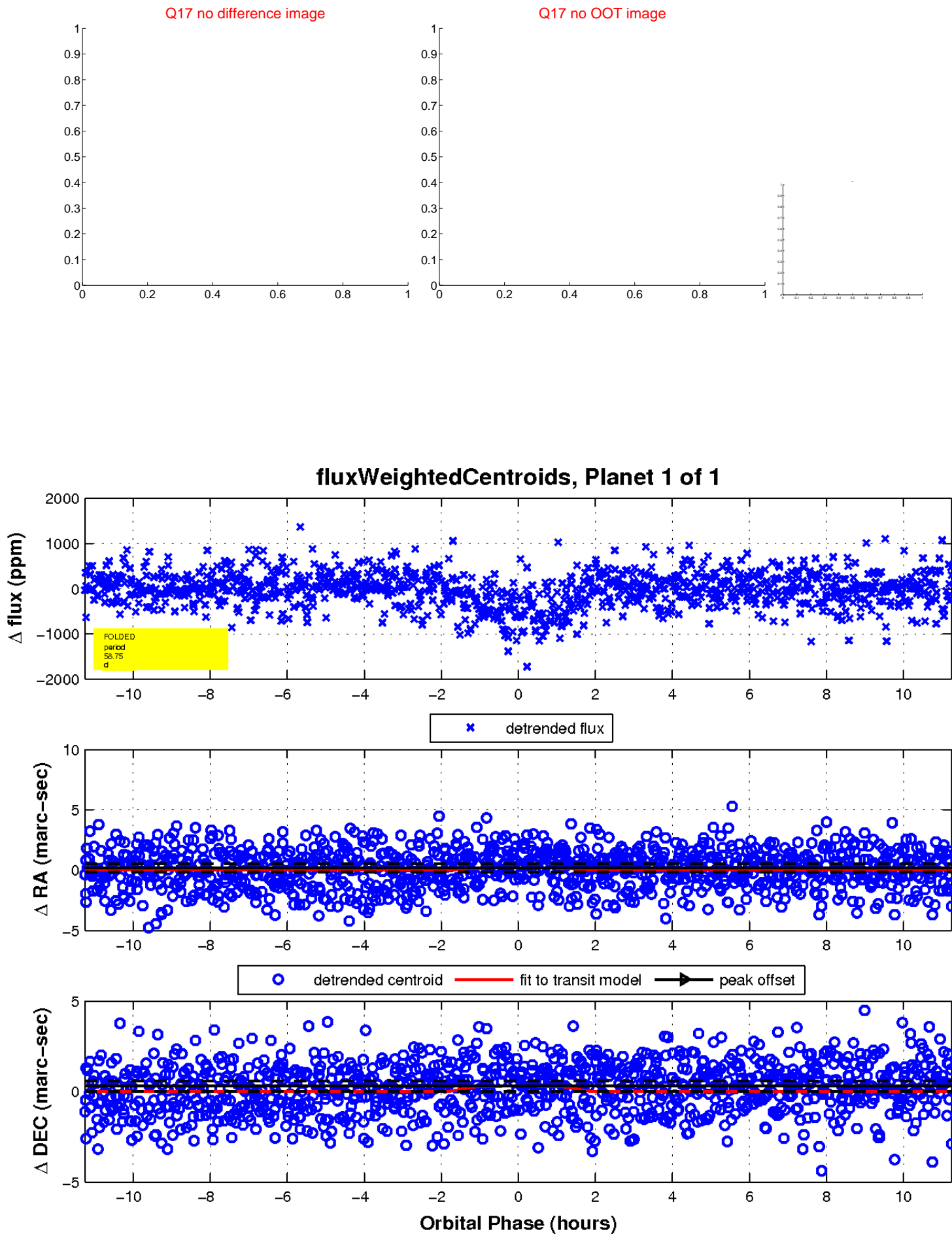
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

