

# KIC 008811490

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008811490-01	OBS	4811.01	21.743579	148.933424	146.3	7.771	8.9	9.7	1.50	5767	2.03	96.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008811490-01	OBS	PC	1.00	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.

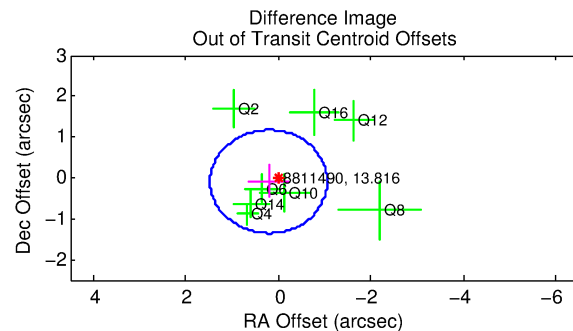
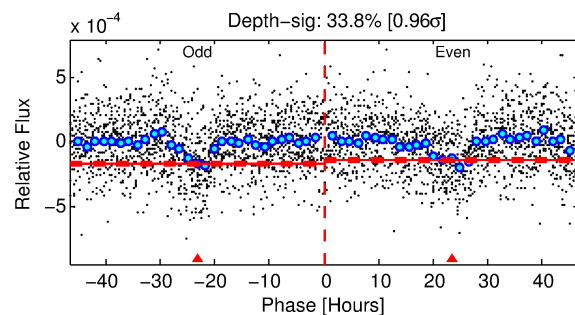
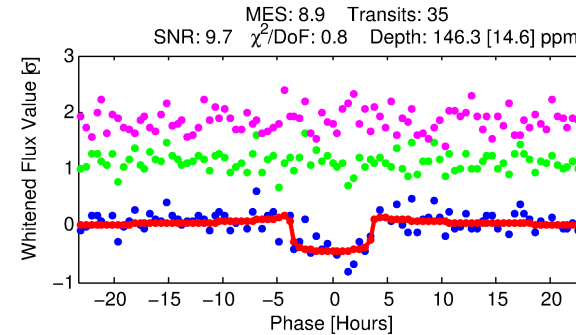
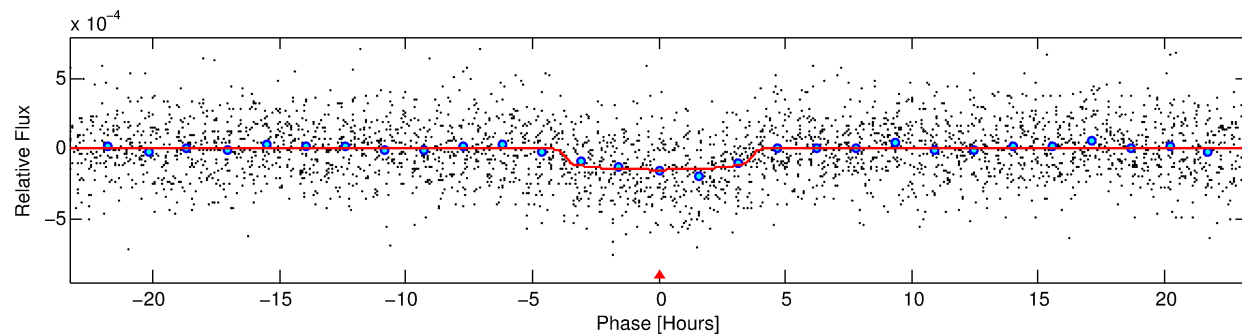
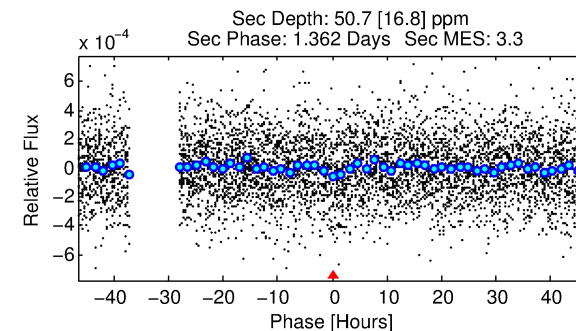
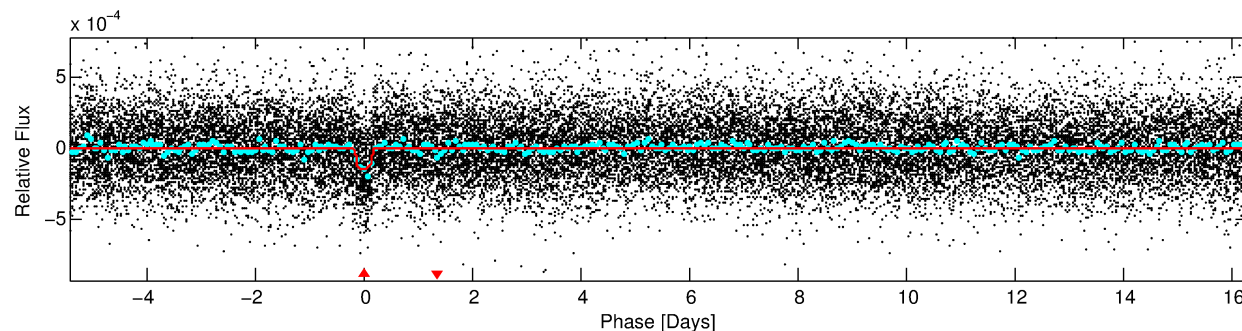
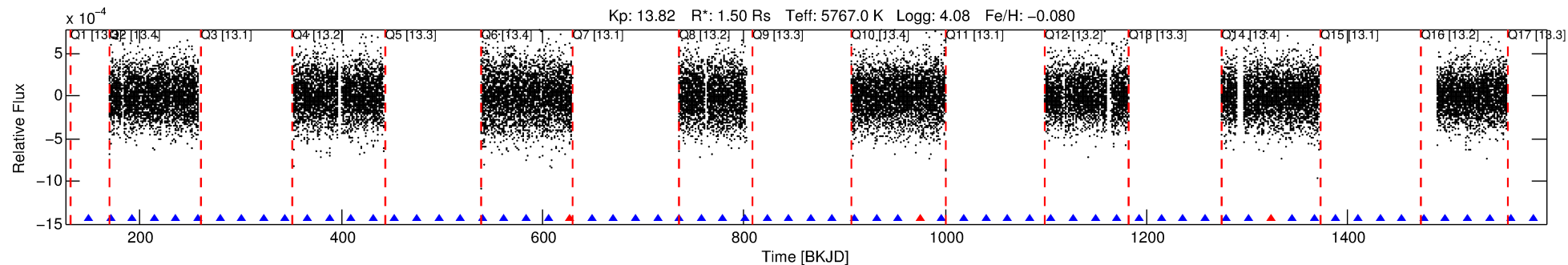
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008811490-01

No Significant Match Found

# DV One-Page Summary

KIC: 8811490 Candidate: 1 of 1 Period: 21.744 d  
KOI: K04811.01 Corr: 0.985



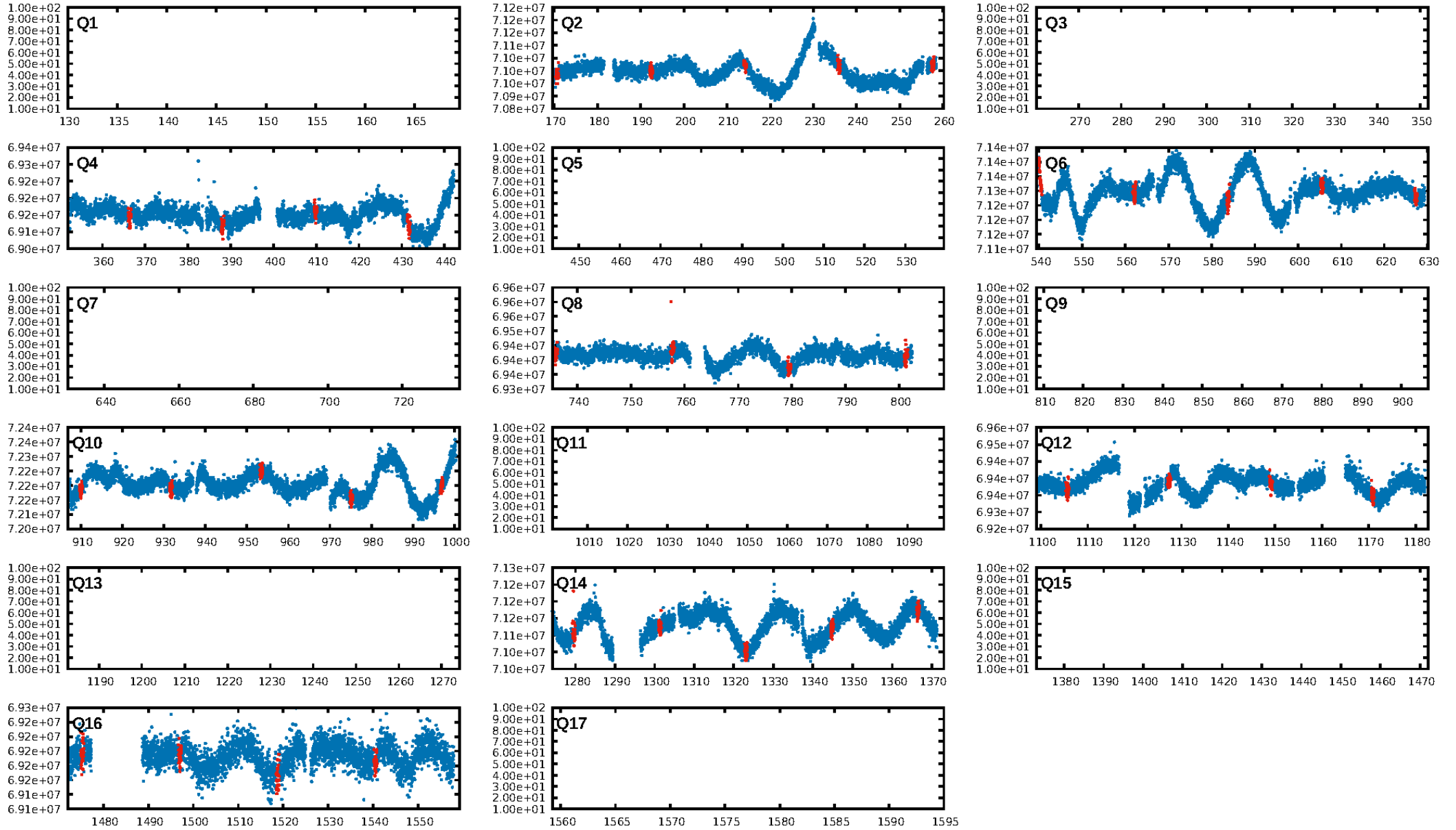
## DV Fit Results:

Period = 21.74358 [0.00028] d  
Epoch = 148.9334 [0.0108] BKJD  
Rp/R\* = 0.0124 [0.0047]  
a/R\* = 12.70 [22.25]  
b = 0.82 [0.71]  
Seff = 96.32 [59.21]  
Teq = 799 [123] K  
Rp = 2.03 [1.07] Re  
a = 0.1518 [0.0559] AU  
Ag = 156.07 [159.96] [0.97σ]  
Teffp = 4365 [918] K [3.85σ]

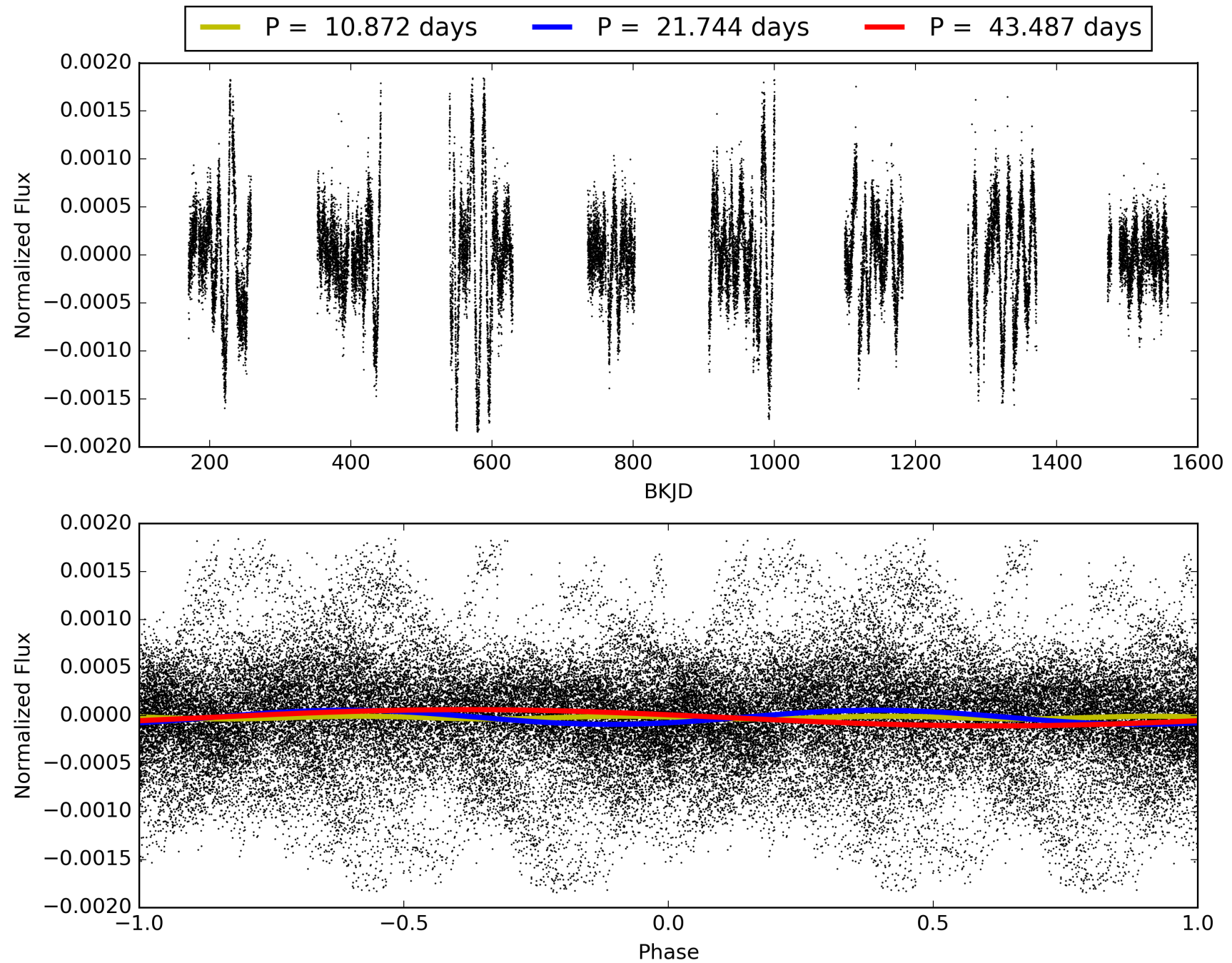
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 78.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.26e-18  
RollingBand-fgt: 0.91 [32/35]  
GhostDiagnostic-chr: 1.734  
Centroid-sig: 0.4%  
Centroid-so: 1.898 arcsec [2.08σ]  
OotOffset-rm: 0.230 arcsec [0.55σ]  
OotOffset-st: 4/0/4/0 [8]  
KicOffset-rm: 0.337 arcsec [0.87σ]  
KicOffset-st: 4/0/4/0 [8]  
DiffImageQuality-fgm: 0.88 [7/8]  
DiffImageOverlap-fno: 1.00 [8/8]

# TCE 008811490-01, PDC Light Curves

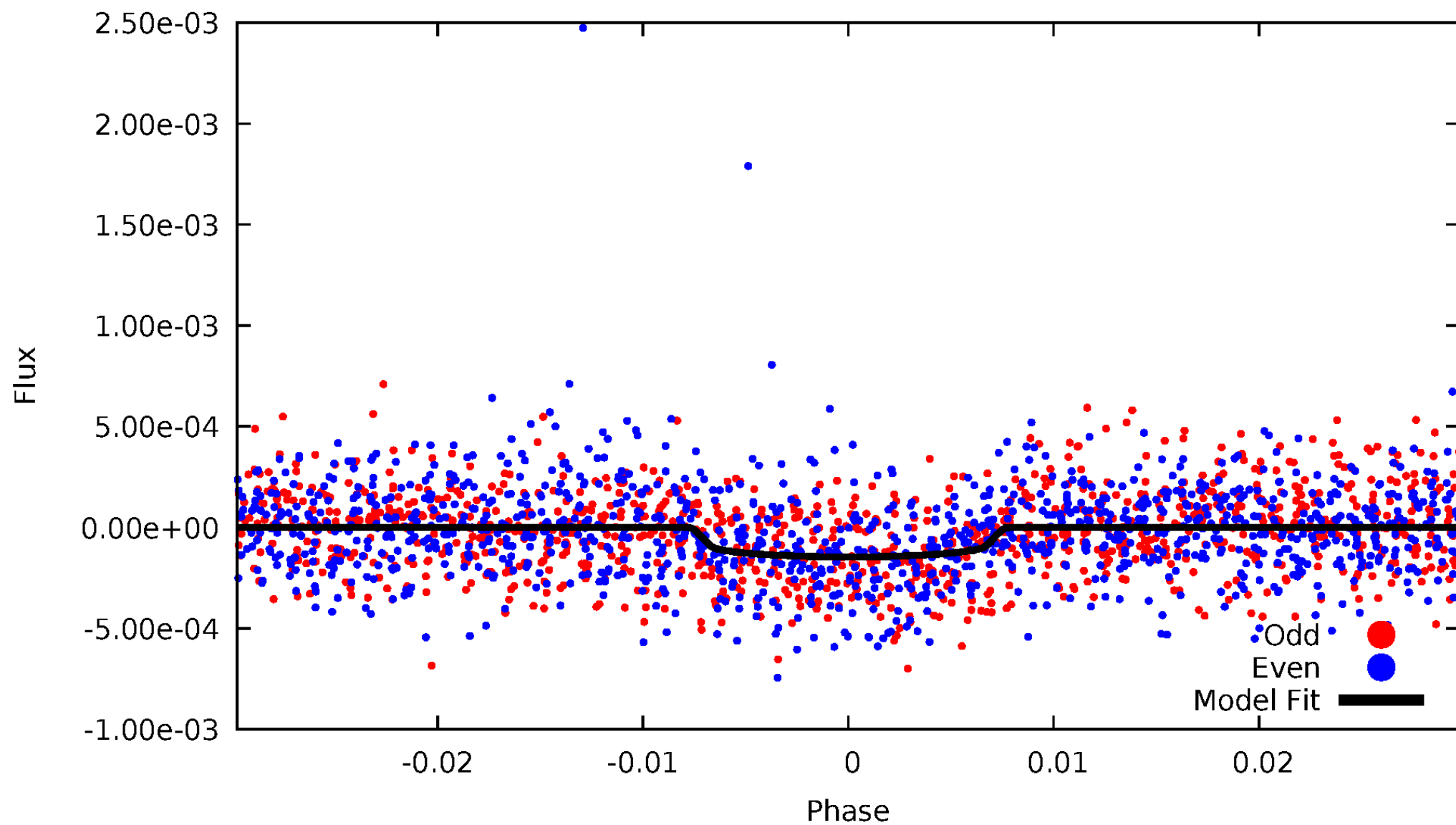


TCE 008811490-01



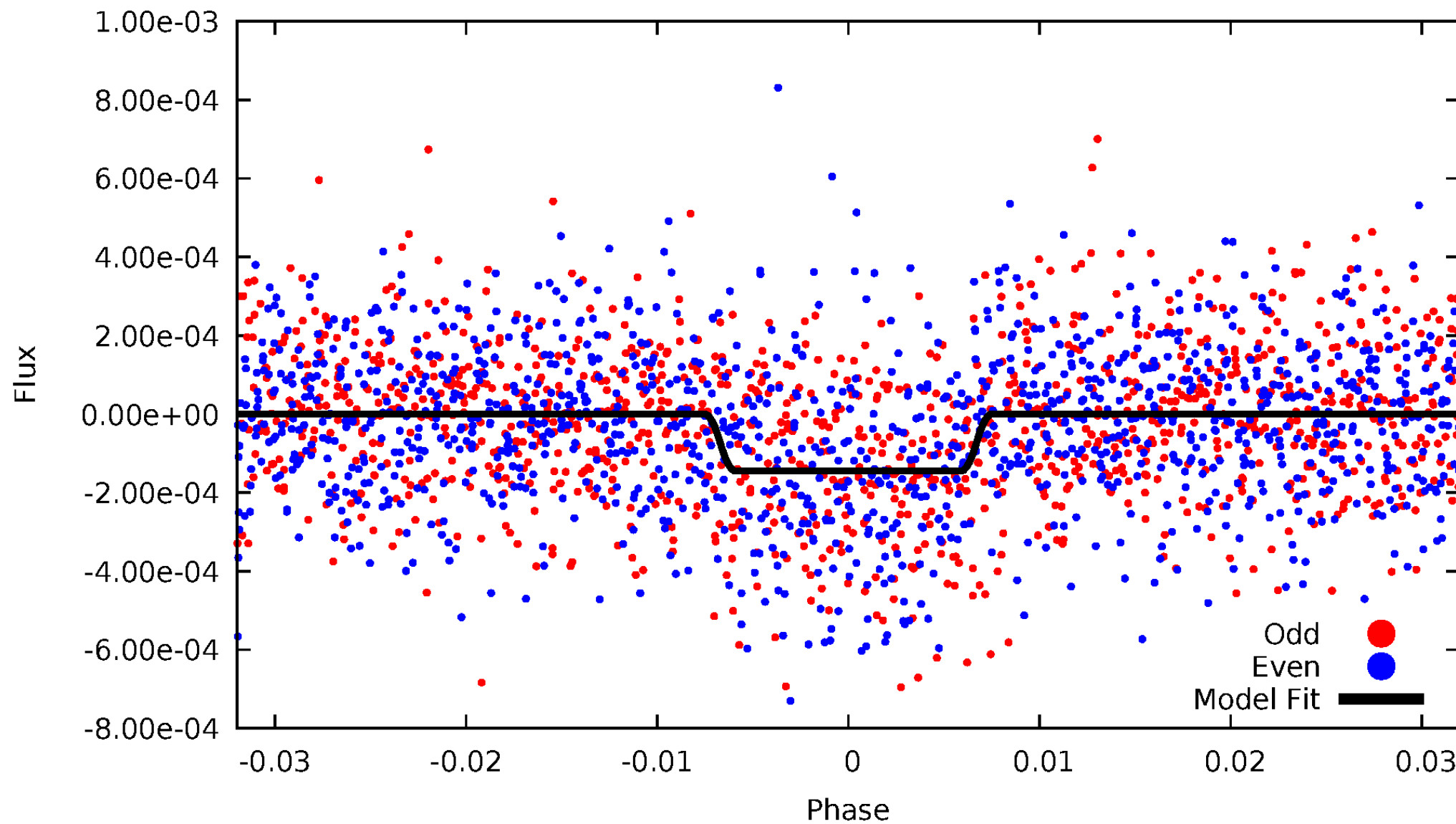
# DV Odd/Even

TCE 008811490-01



# ALT Odd/Even

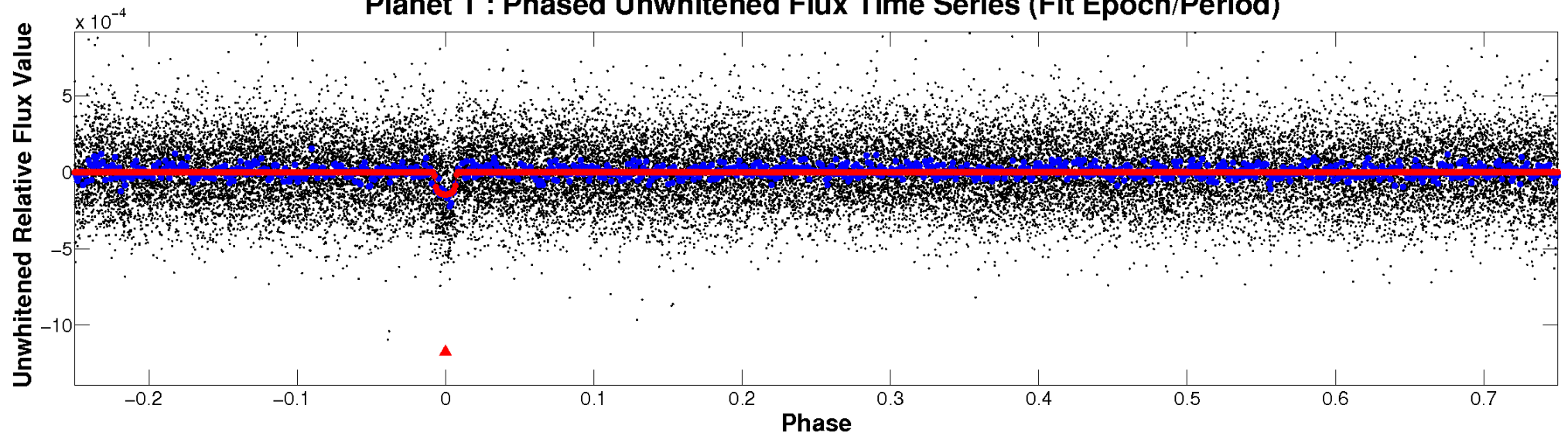
TCE 008811490-01



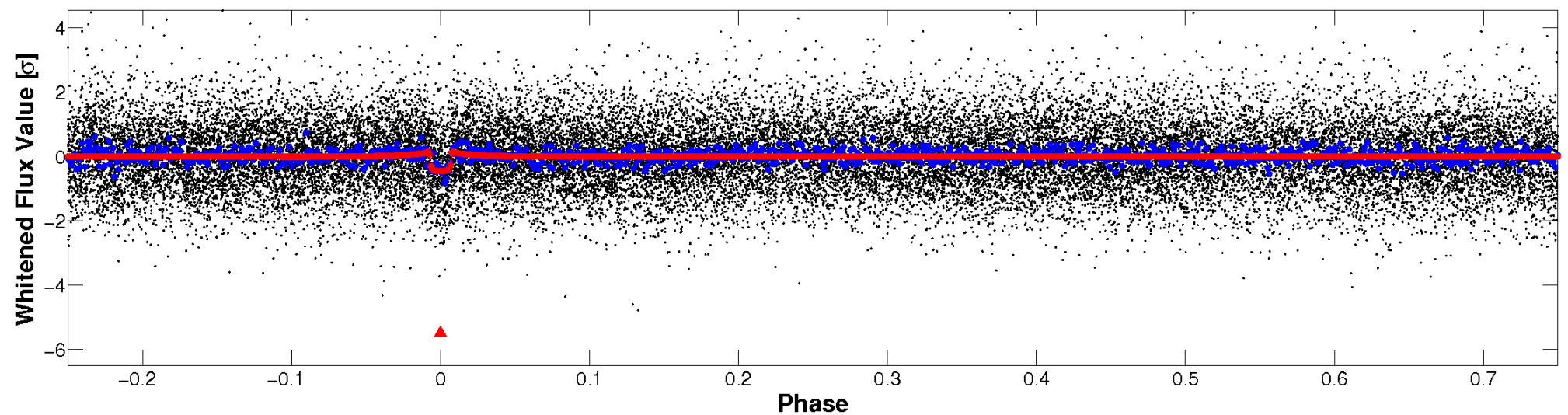


# Non-Whitened Vs. Whitened Light Curve

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

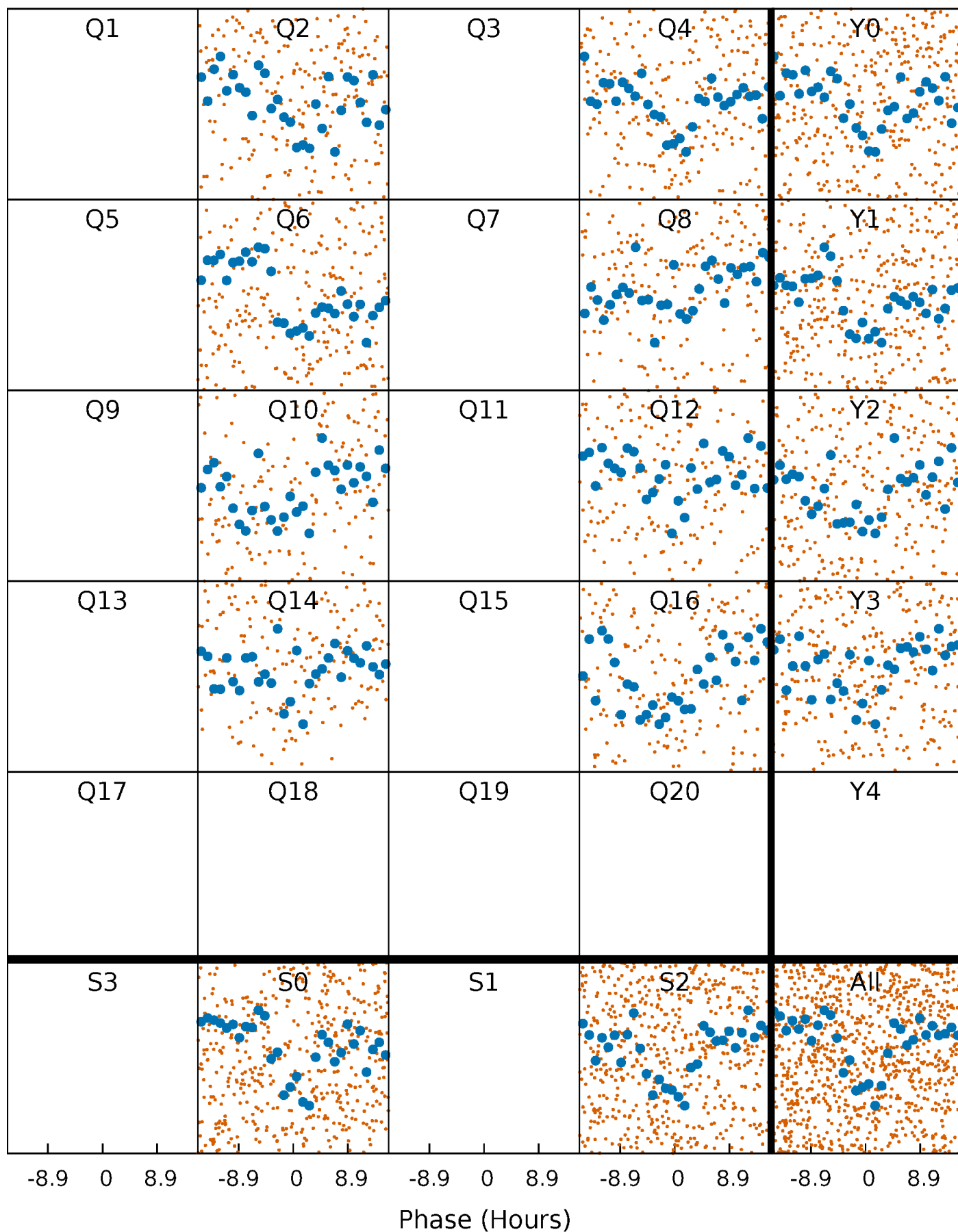


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

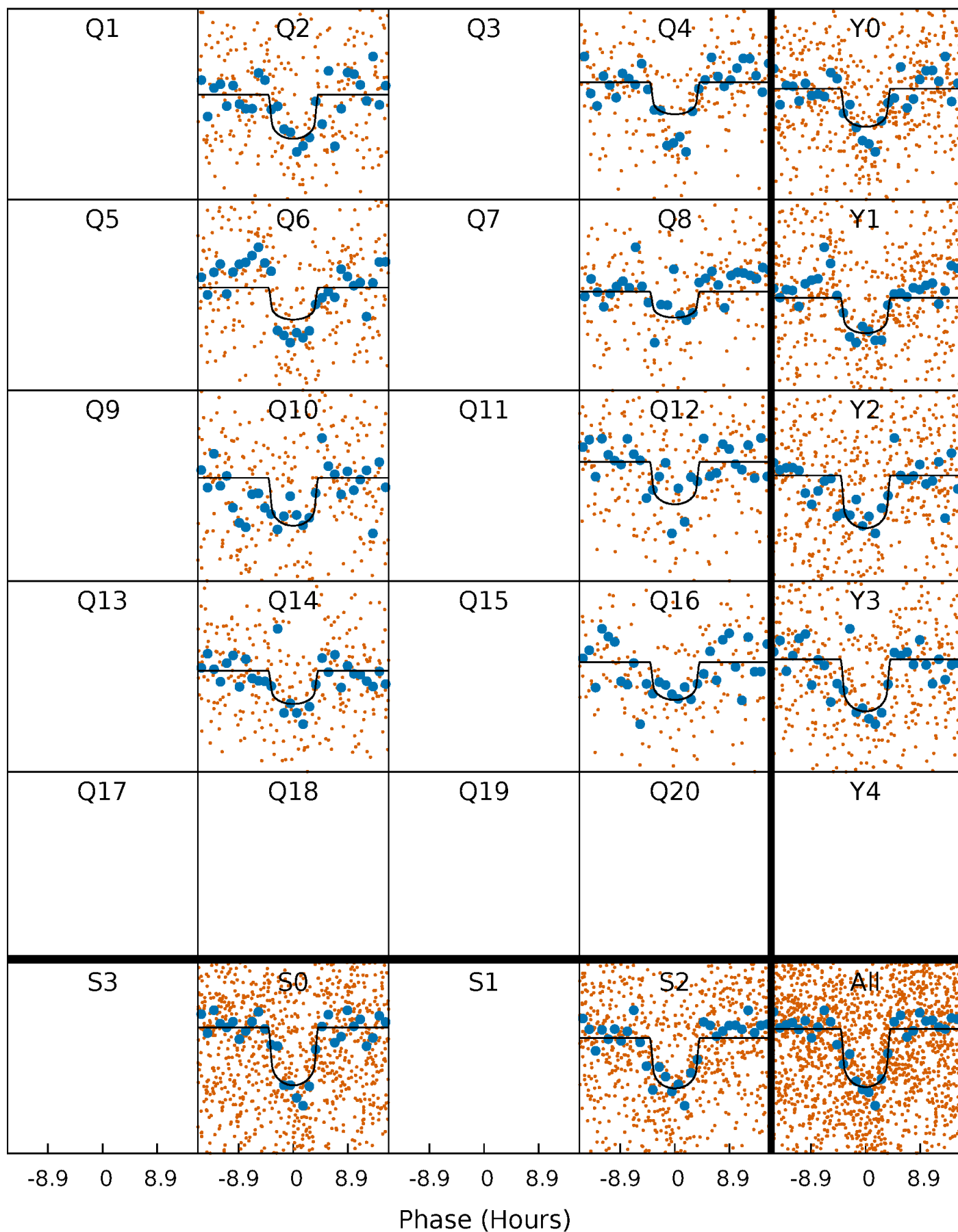
TCE 008811490-01 P= 21.743579 Days  $T_0=148.933424$  (BKJD)





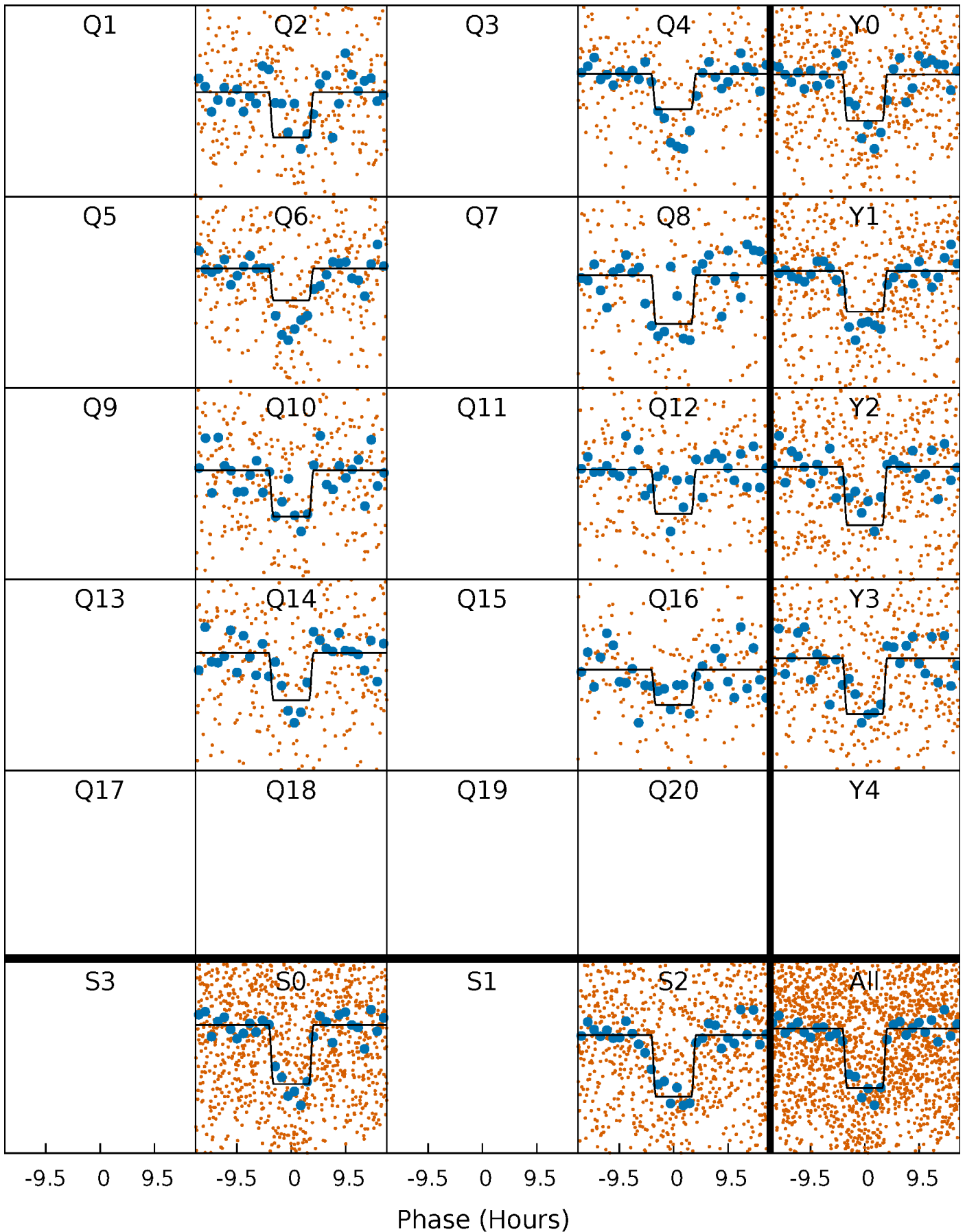
# DV Quarter-Phased Transit Curves

TCE 008811490-01 P= 21.743579 Days  $T_0=148.933424$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

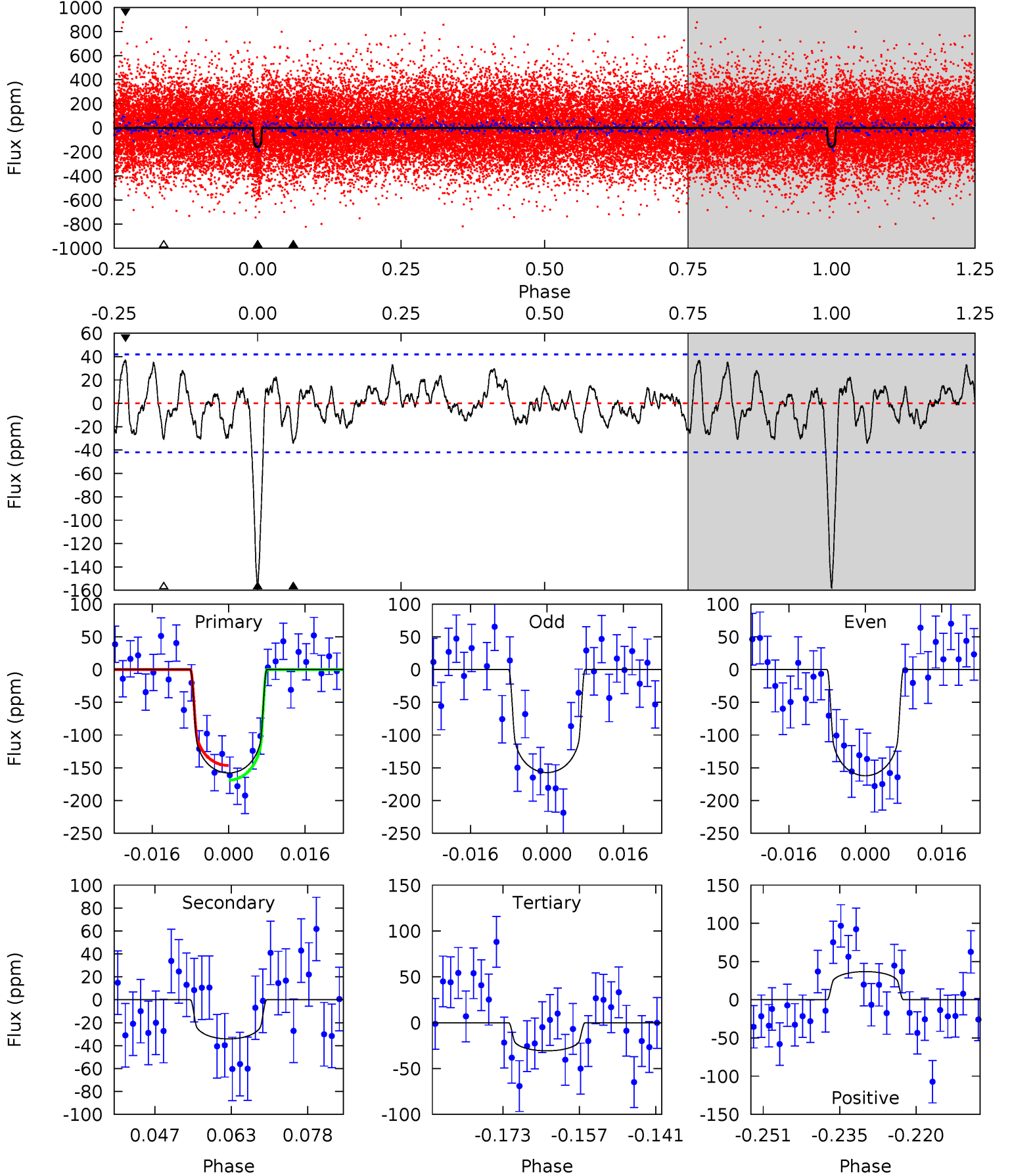
TCE 008811490-01 P= 21.744386 Days  $T_0=148.908108$  (BKJD)



# DV Model-Shift Uniqueness Test

008811490-01, P = 21.743579 Days, E = 148.933424 Days

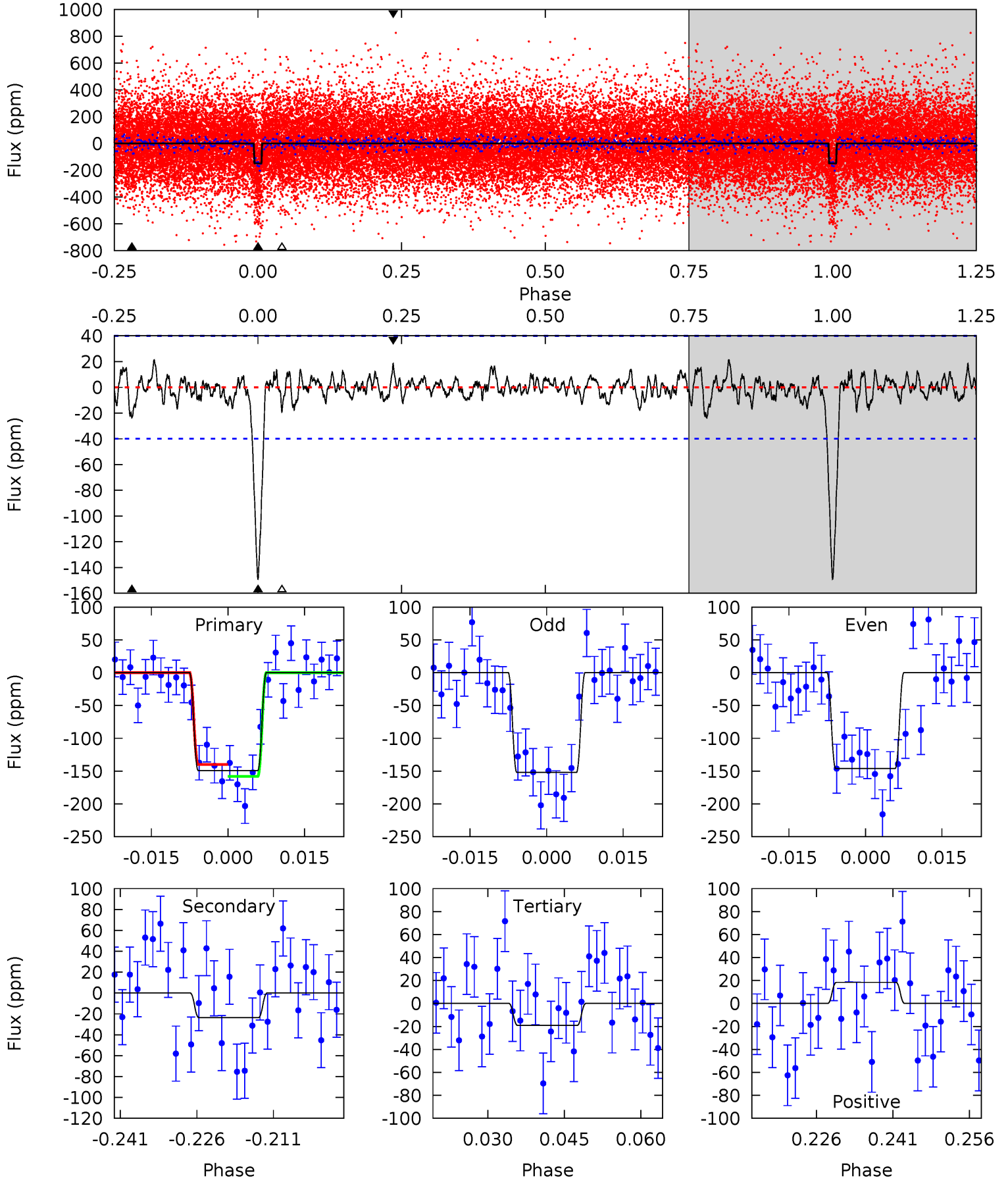
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.6	4.03	3.62	4.35	4.94	2.42	1.55	15.0	14.3	0.41	-0.32	0.29	0.96	0.19	1.32



# Alt Model-Shift Uniqueness Test

008811490-01,  $P = 21.744386$  Days,  $E = 148.908108$  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
18.5	2.92	2.37	2.27	4.95	2.43	0.80	16.1	16.2	0.55	0.65	0.38	1.10	0.13	1.13



### Stellar Parameters For KIC 008811490

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5767^{+190}_{-173}$	$4.082^{+0.357}_{-0.153}$	$-0.080^{+0.300}_{-0.250}$	$1.497^{+0.367}_{-0.551}$	$0.987^{+0.134}_{-0.121}$	$0.414^{+1.093}_{-0.174}$
	+3%/-3%	+9%/-4%	+375%/-312%	+25%/-37%	+14%/-12%	+264%/-42%
Source	KIC0	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 008811490-01 / KOI 4811.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-34 \pm 8$	$1.92^{+0.88}_{-0.82}$	$1104^{+88}_{-116}$	$4212^{+941}_{-475}$	$118^{+234}_{-63}$
Alt.	$-24 \pm 8$	$1.89^{+0.84}_{-0.78}$	$1104^{+83}_{-107}$	$3959^{+922}_{-501}$	$82^{+180}_{-48}$

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

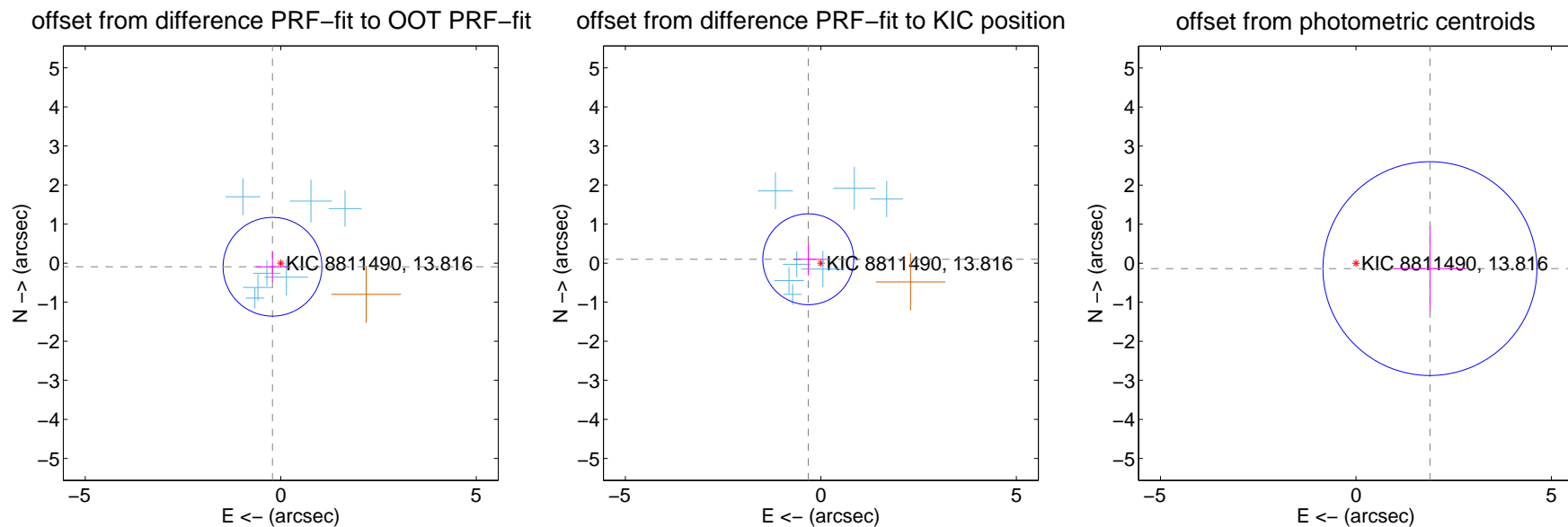
## DV Centroid Data

Supplemental centroid analysis for 008811490-01. Kepler magnitude: 13.82. Transit SNR 9.74

There are 7 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.34 arcsec

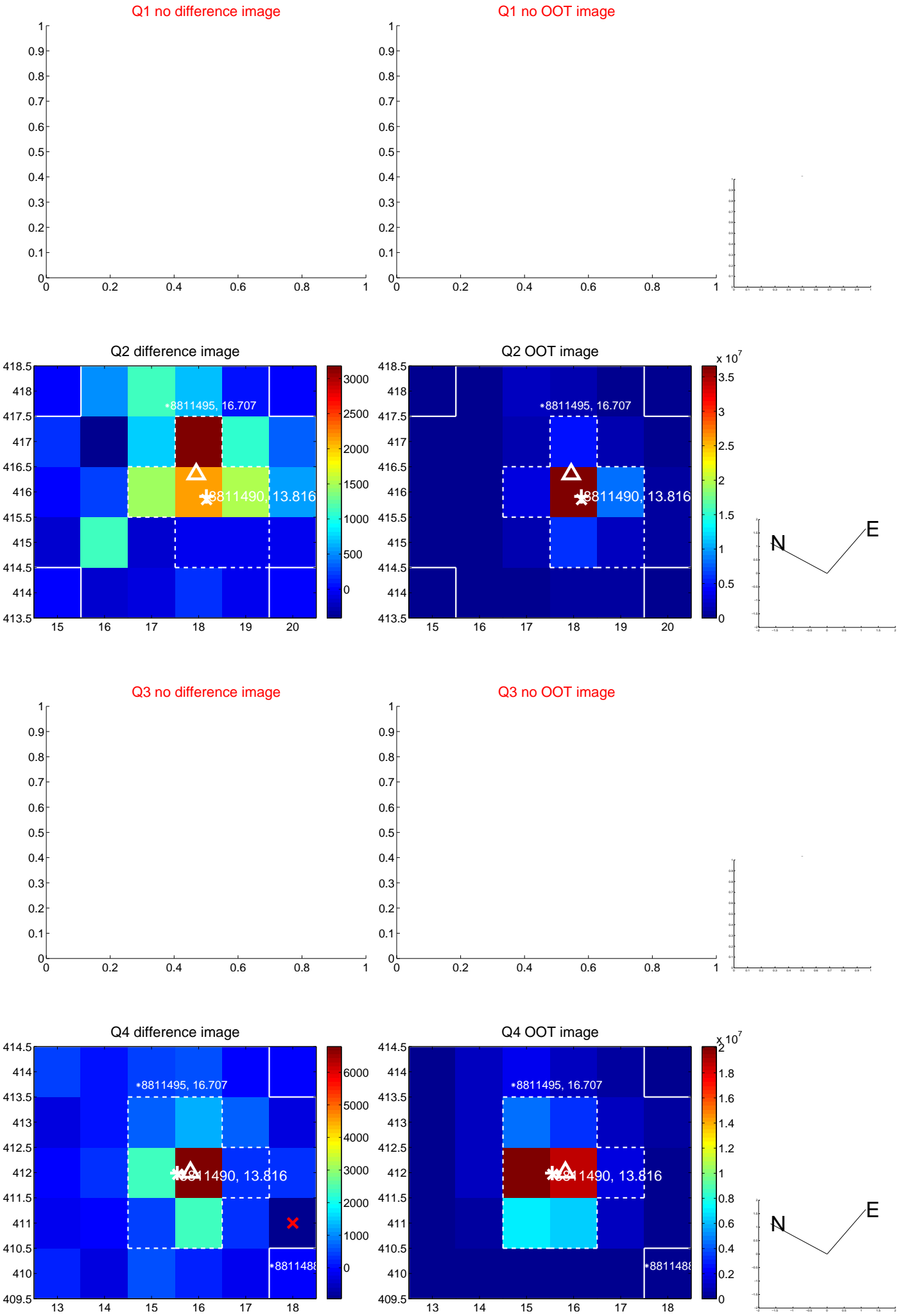
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.230 \pm 0.421$	0.55	$0.211 \pm 0.421$	$-0.092 \pm 0.388$
PRF-fit source offset from KIC position	$0.337 \pm 0.388$	0.87	$0.322 \pm 0.385$	$0.099 \pm 0.415$
photometric centroid source offset	$1.90 \pm 0.91$	2.08	$-1.89 \pm 0.91$	$-0.14 \pm 1.09$



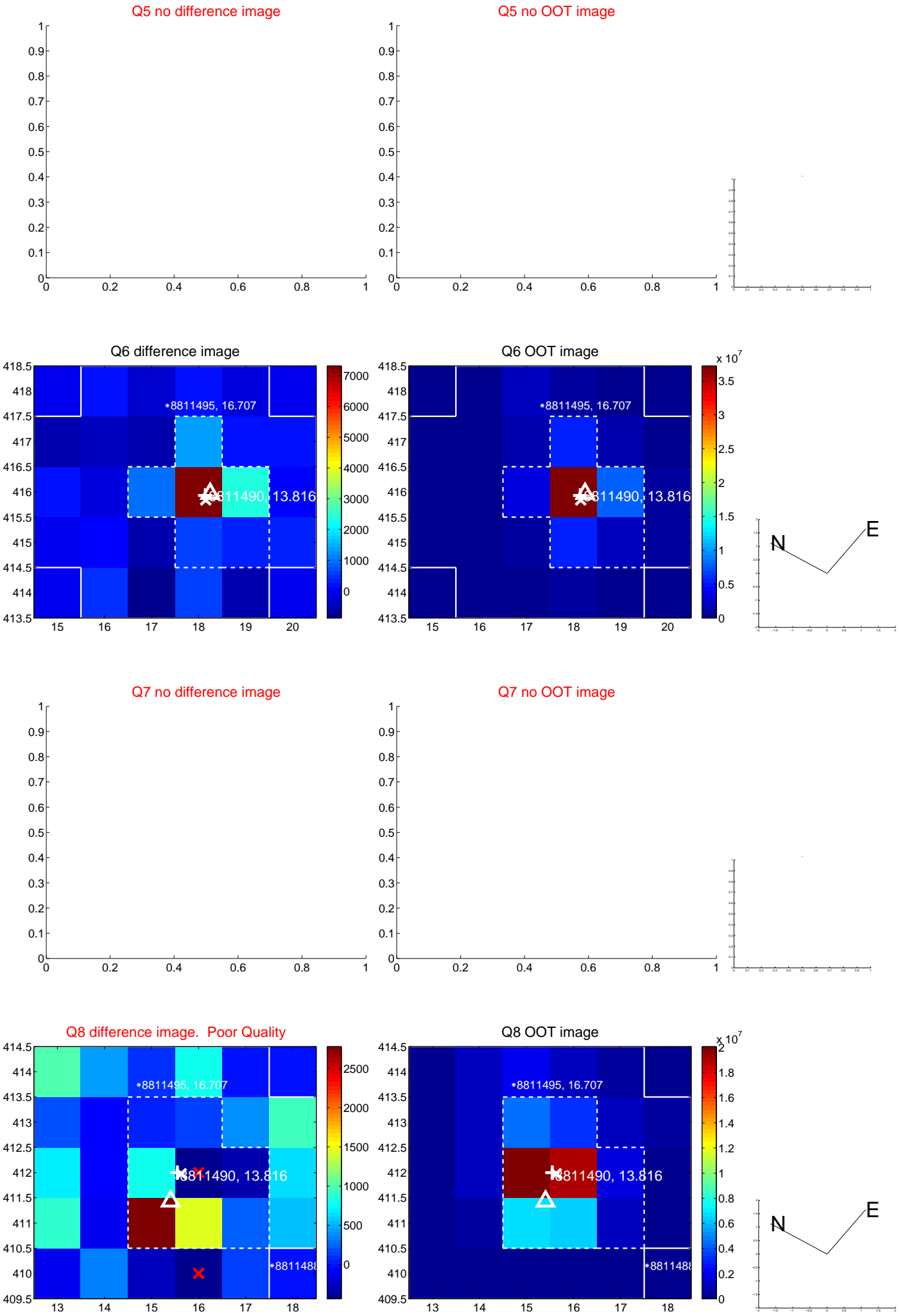
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



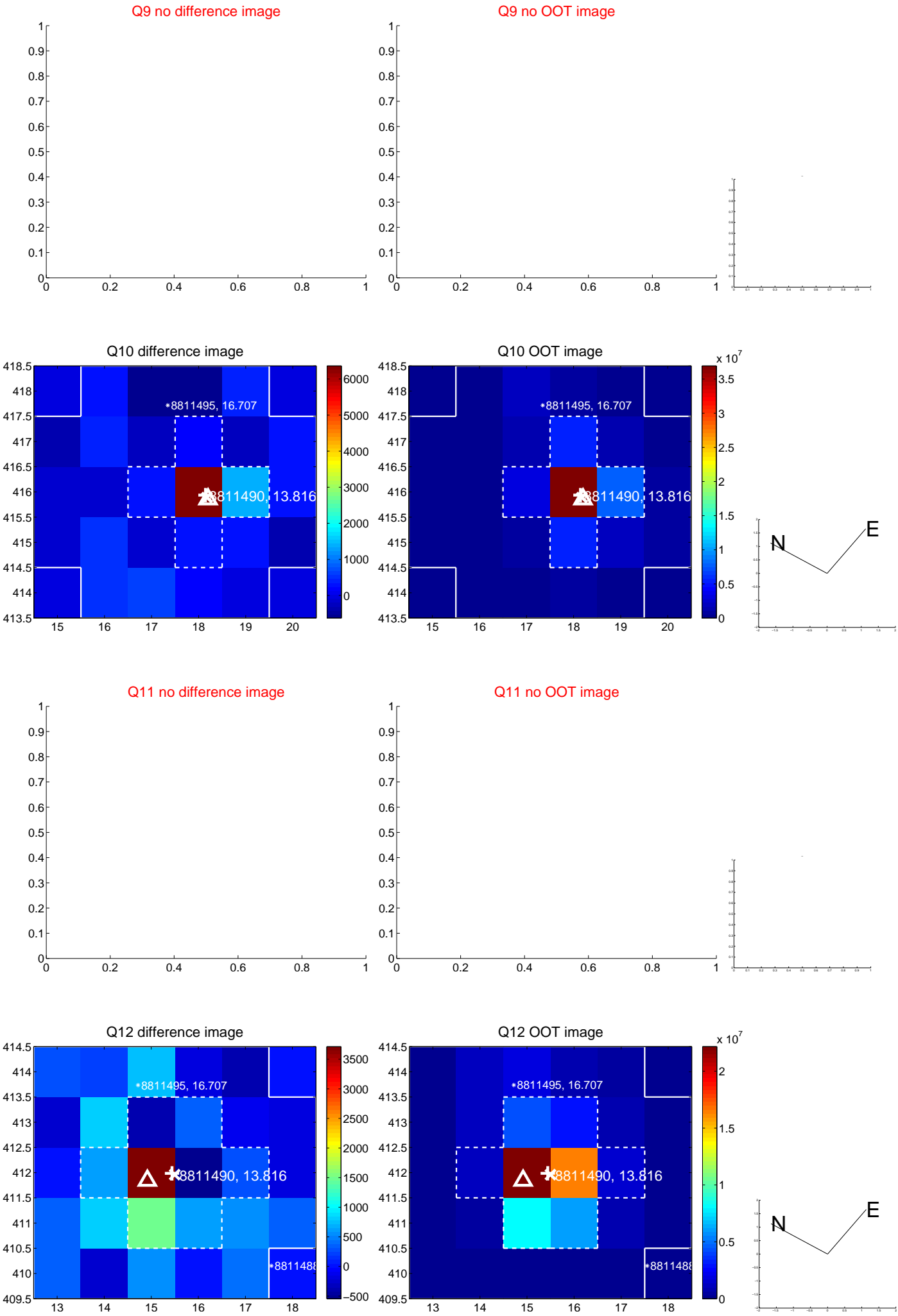
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



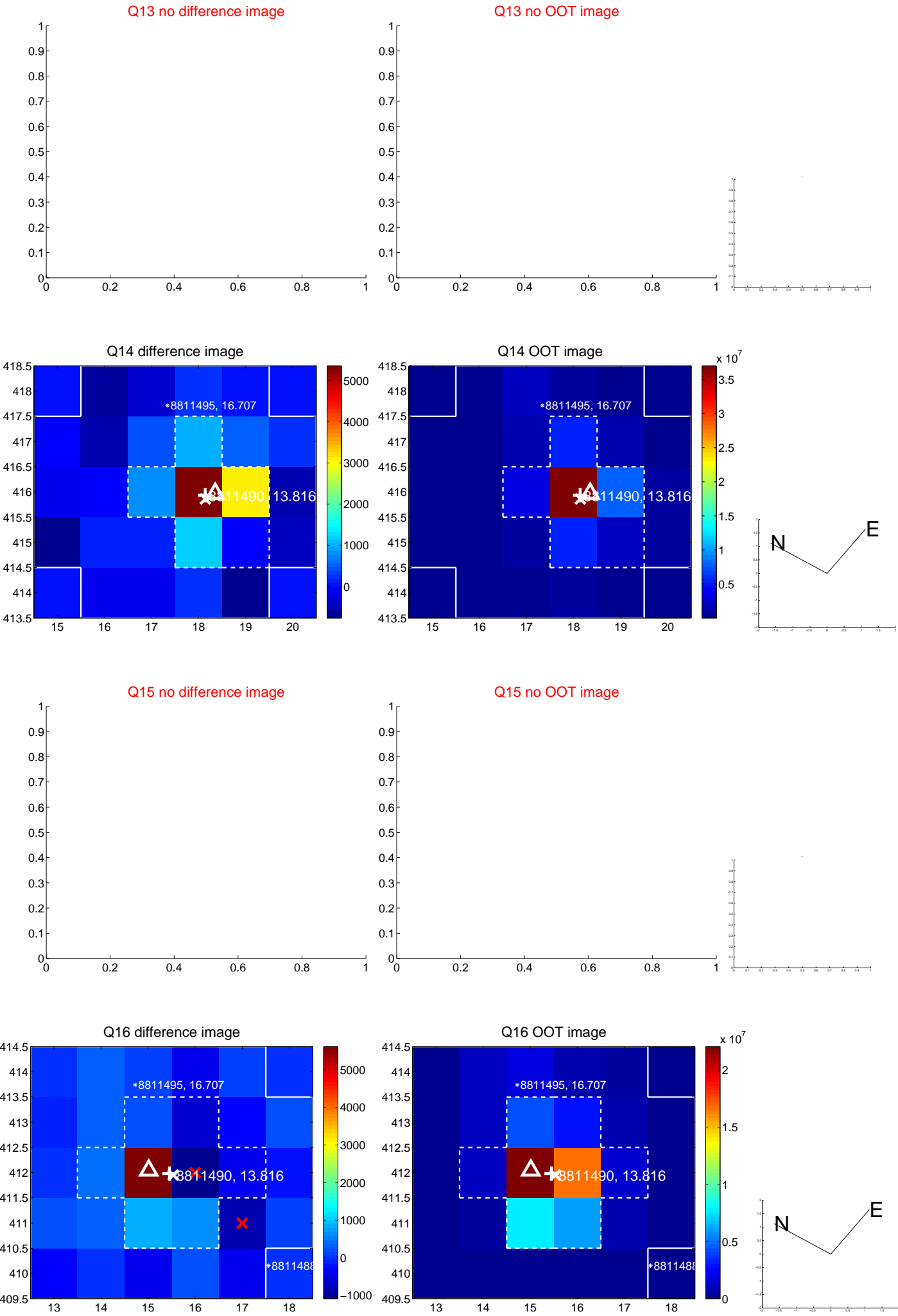
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



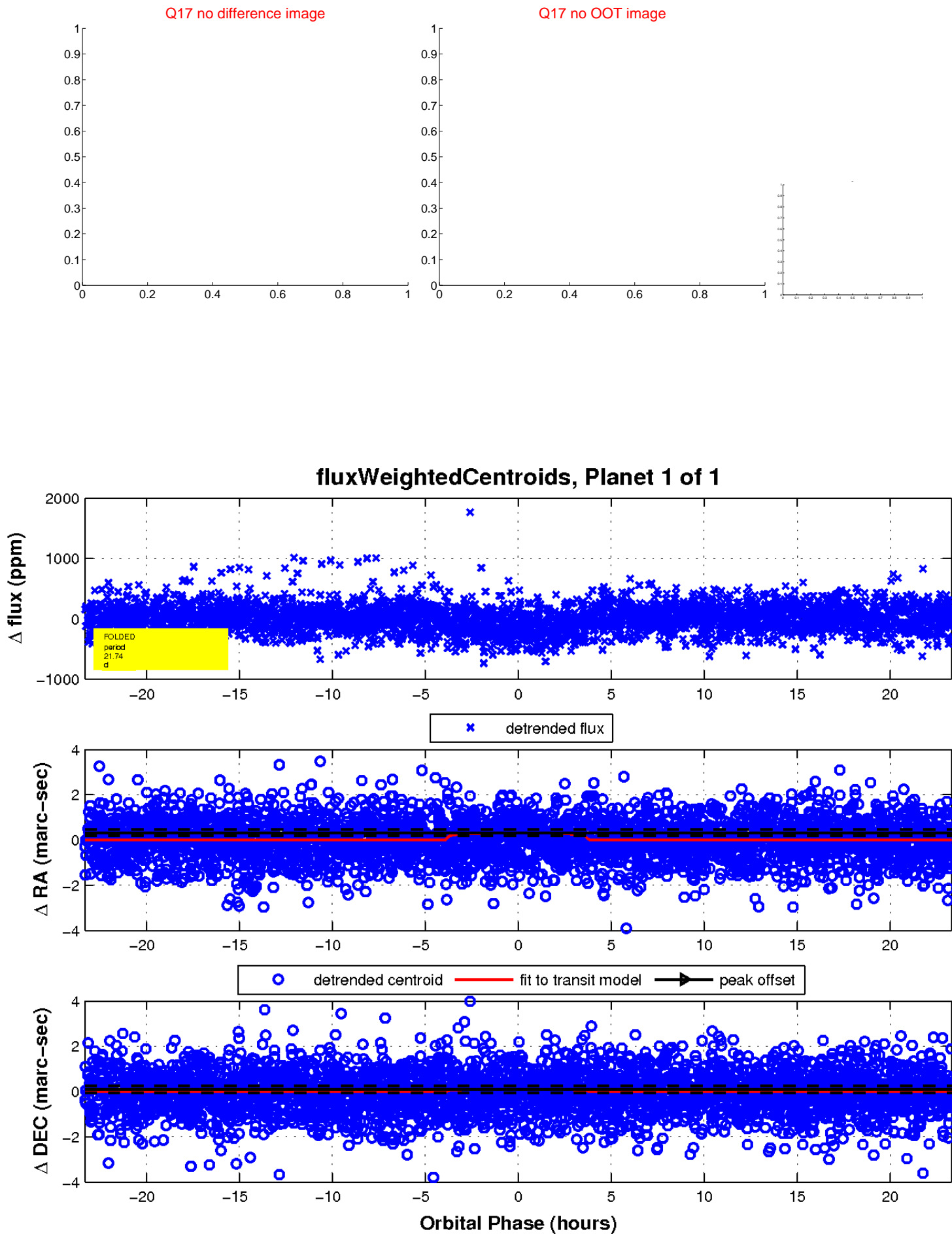
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

