

# KIC 011015108

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011015108-01	OBS	0344.01	39.309423	132.025485	1139.8	5.960	95.3	94.0	0.86	5607	3.15	13.48

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011015108-01	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.

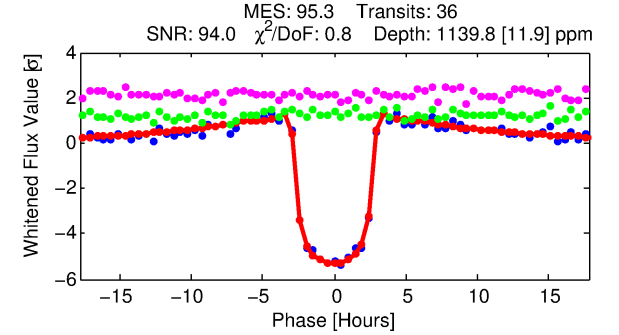
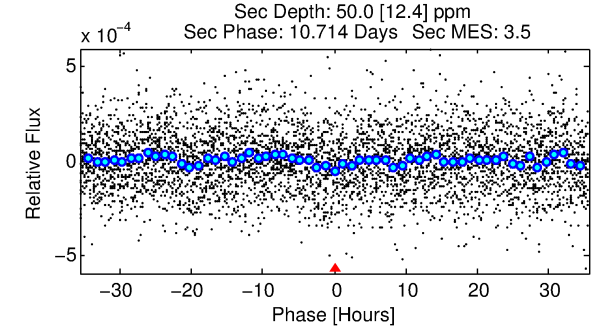
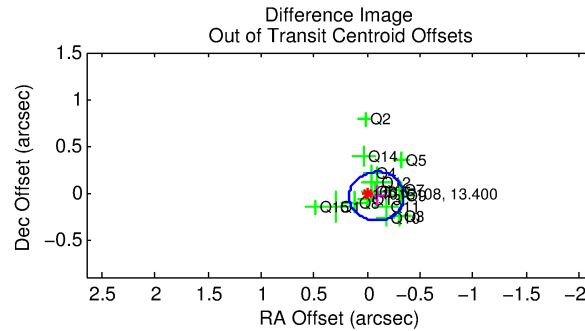
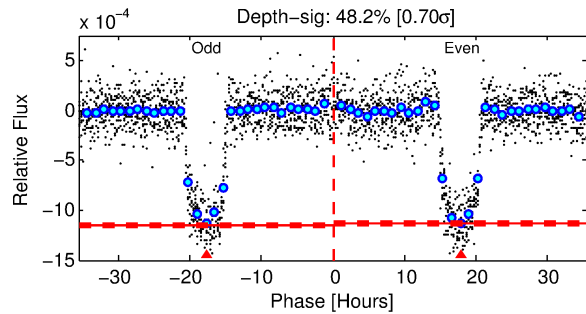
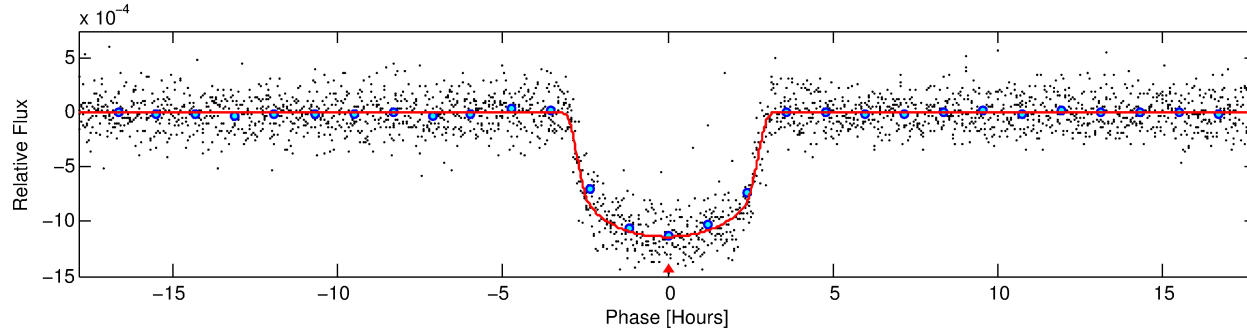
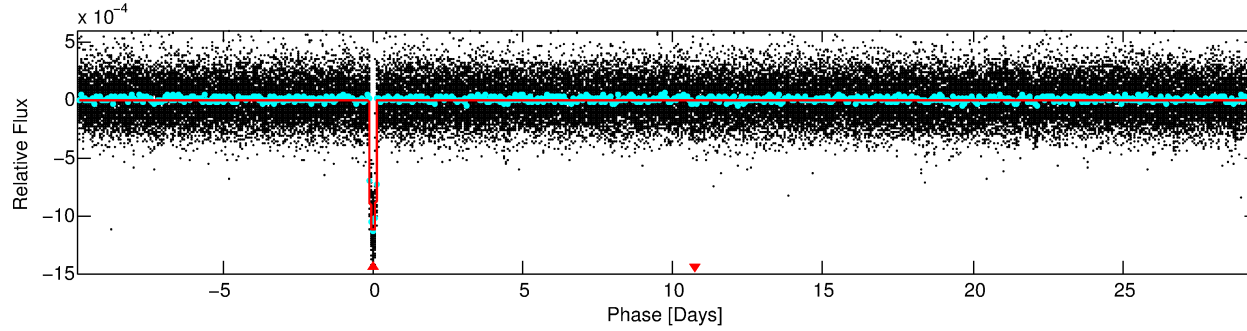
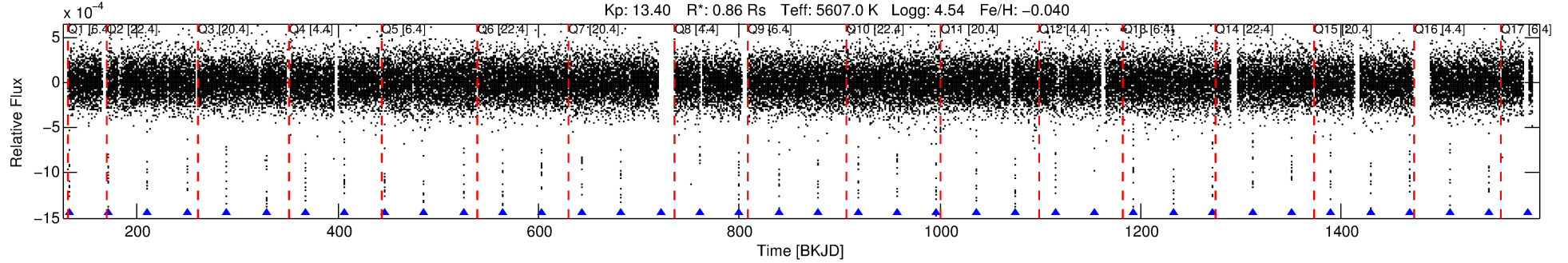
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011015108-01

No Significant Match Found

# DV One-Page Summary

KIC: 11015108 Candidate: 1 of 1 Period: 39.309 d  
KOI: K00344.01 Corr: 0.985



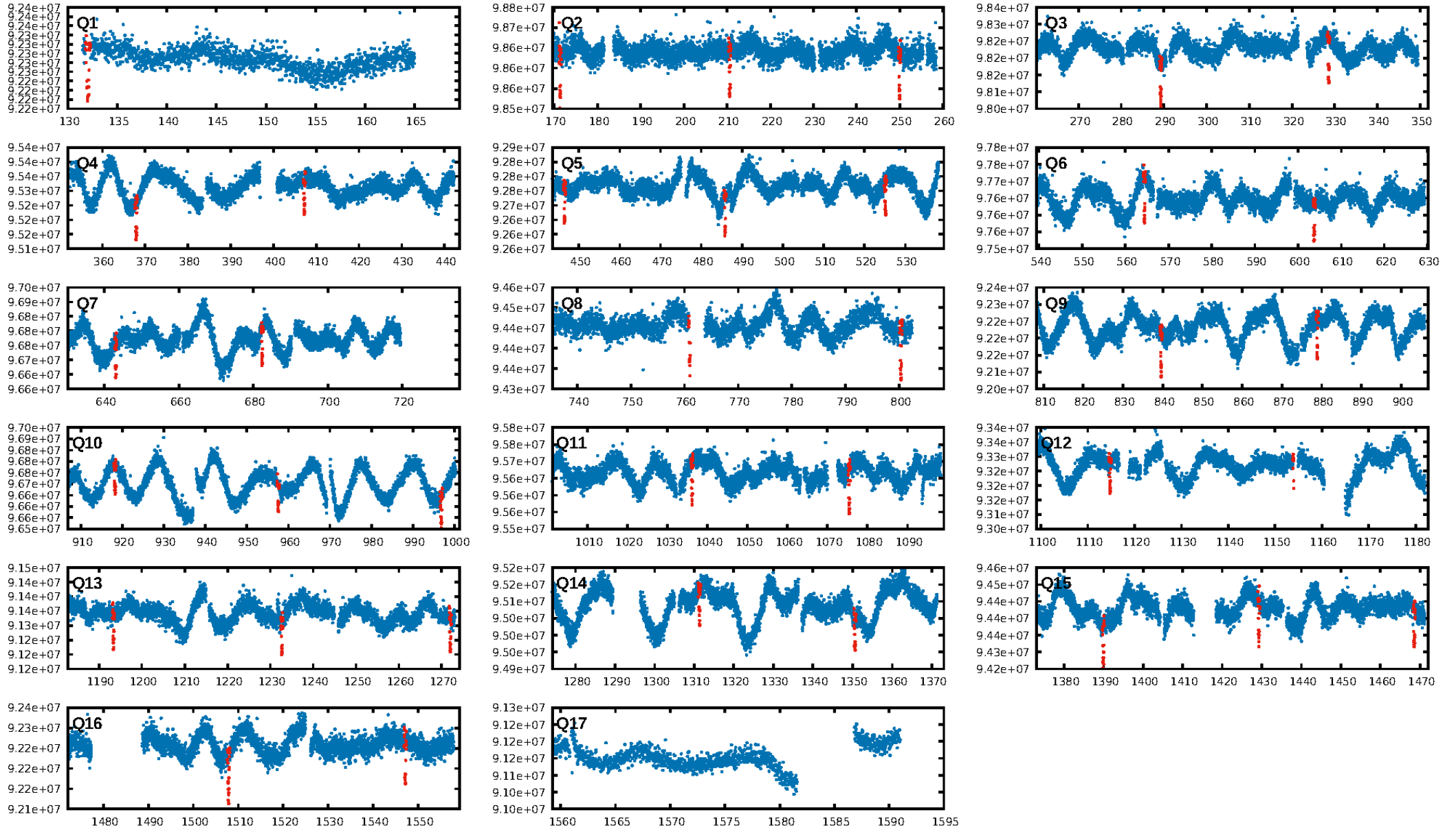
## DV Fit Results:

Period = 39.30942 [0.00005] d  
Epoch = 132.0255 [0.0010] BKJD  
Rp/R\* = 0.0334 [0.0013]  
a/R\* = 36.56 [5.95]  
b = 0.74 [0.10]  
Seff = 13.48 [2.81]  
Teq = 489 [25] K  
Rp = 3.15 [0.43] Re  
a = 0.2212 [0.0270] AU  
Ag = 135.54 [43.98] [3.06 $\sigma$ ]  
Teffp = 2578 [176] K [11.74 $\sigma$ ]

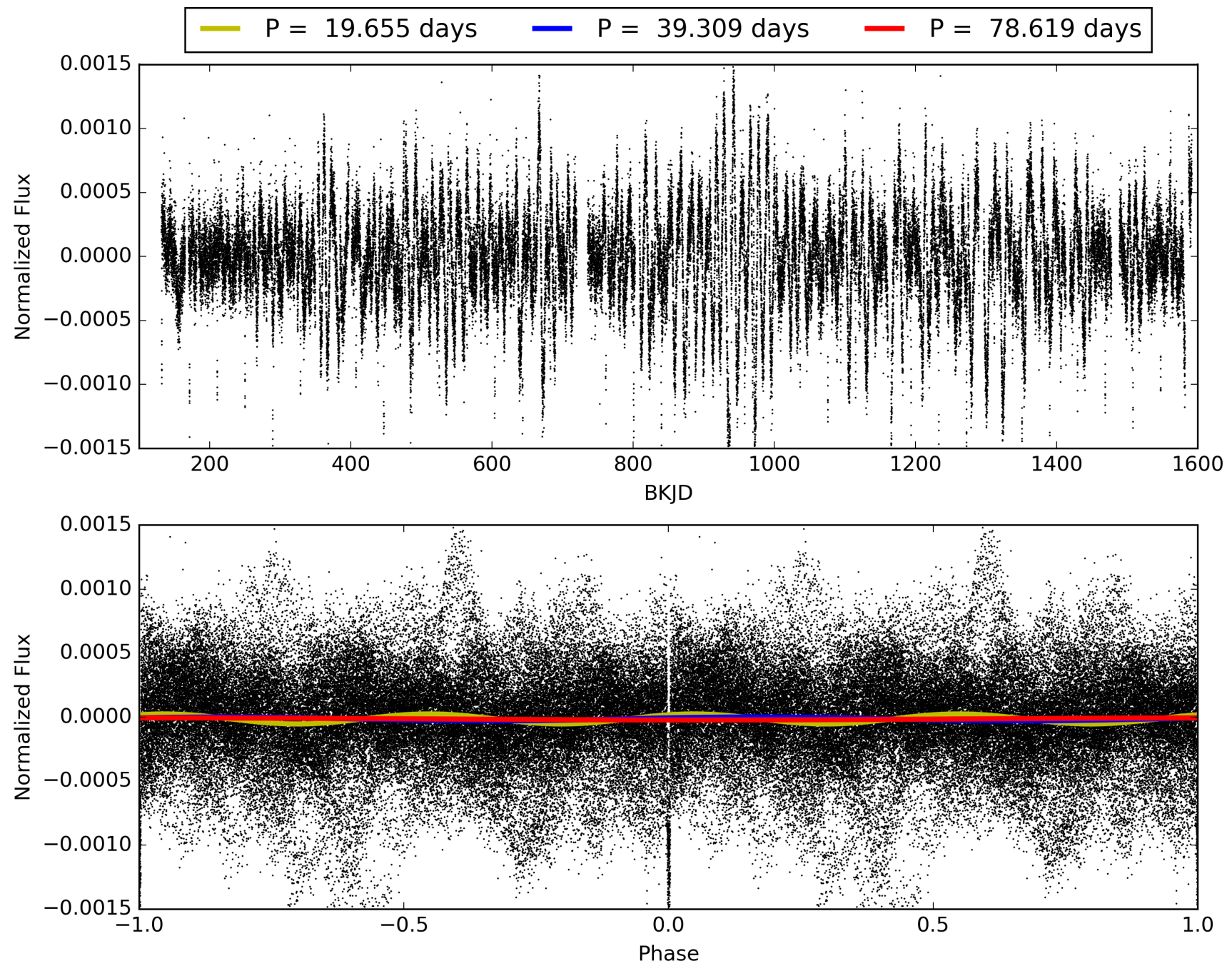
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 52.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [35/35]  
GhostDiagnostic-chr: 5.351  
Centroid-sig: 1.4%  
Centroid-so: 0.467 arcsec [3.56 $\sigma$ ]  
OotOffset-rm: 0.096 arcsec [1.11 $\sigma$ ]  
KicOffset-rm: 0.128 arcsec [1.31 $\sigma$ ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [16/16]

# TCE 011015108-01, PDC Light Curves

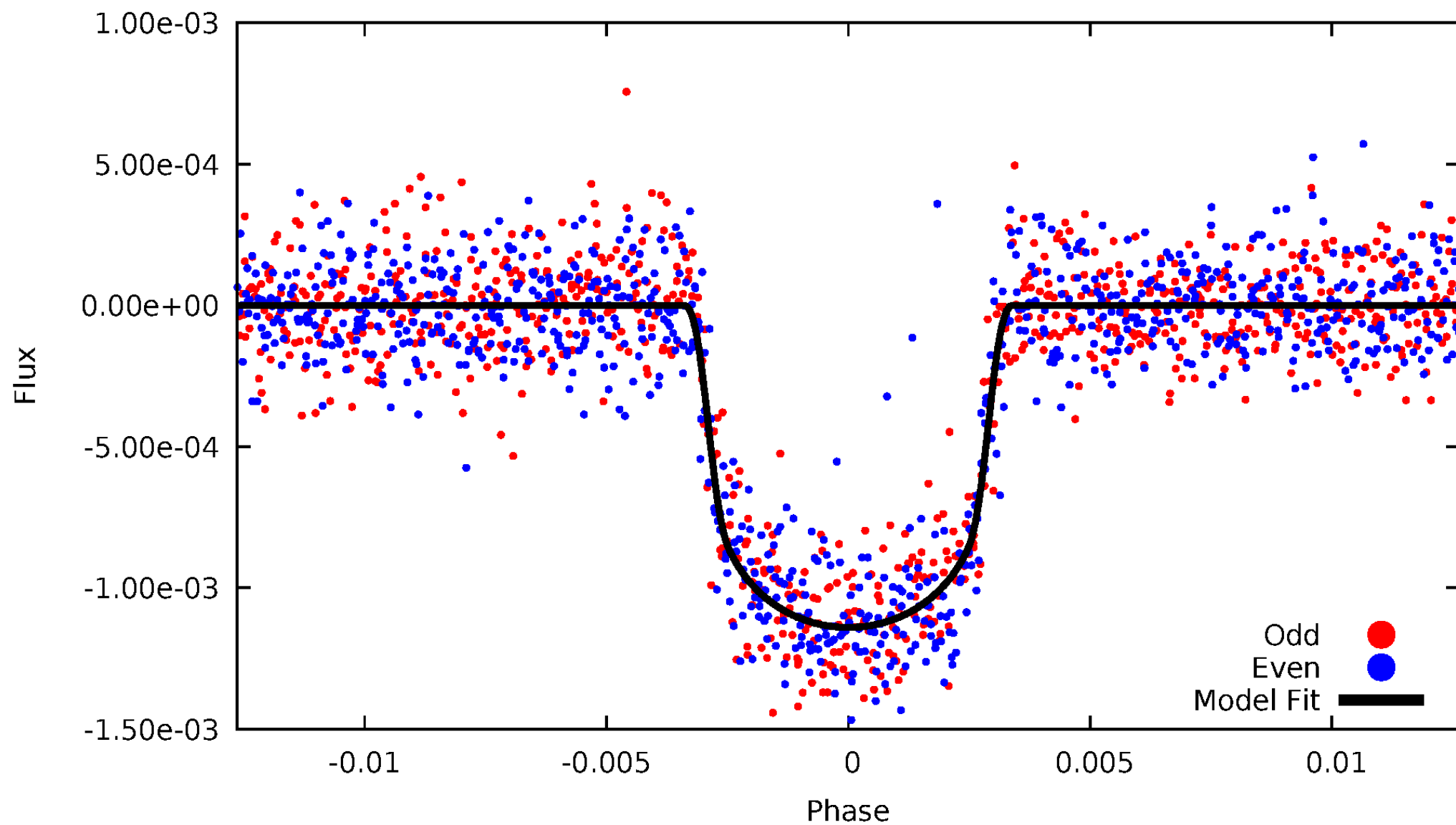


# TCE 011015108-01



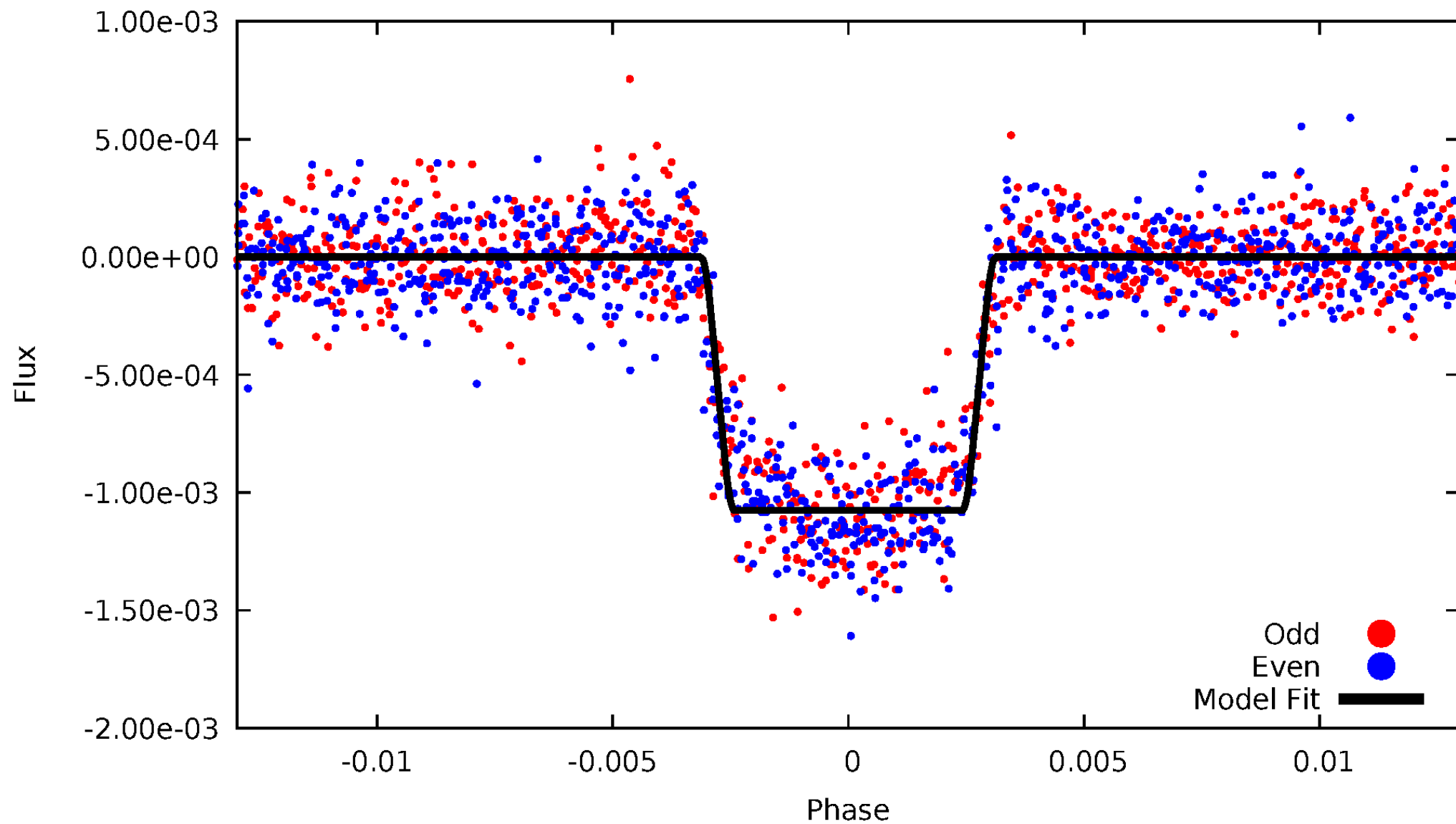
# DV Odd/Even

TCE 011015108-01



# ALT Odd/Even

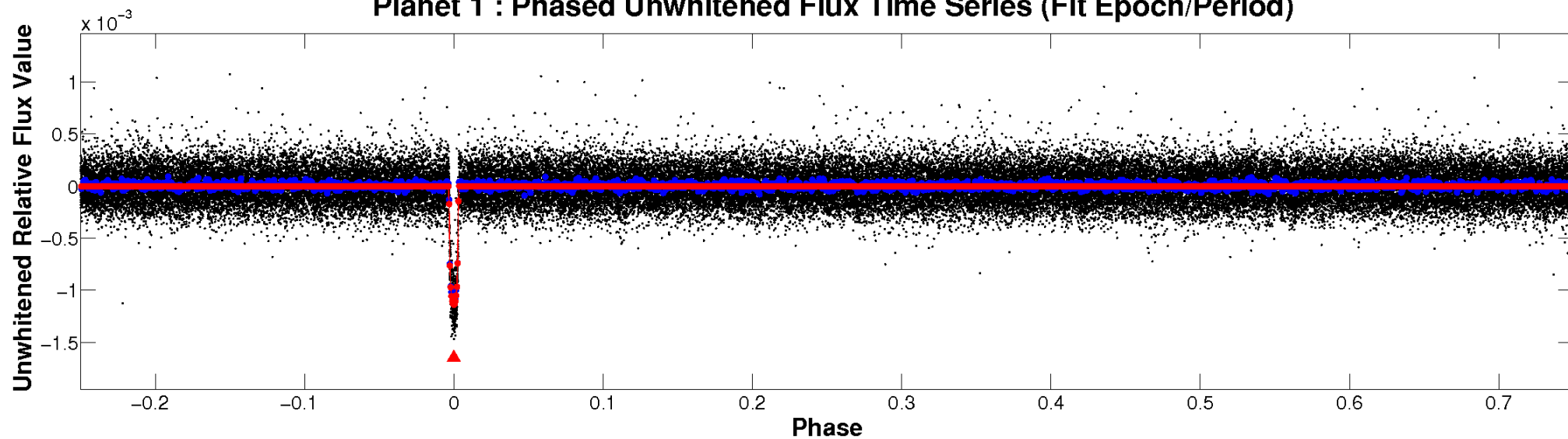
TCE 011015108-01



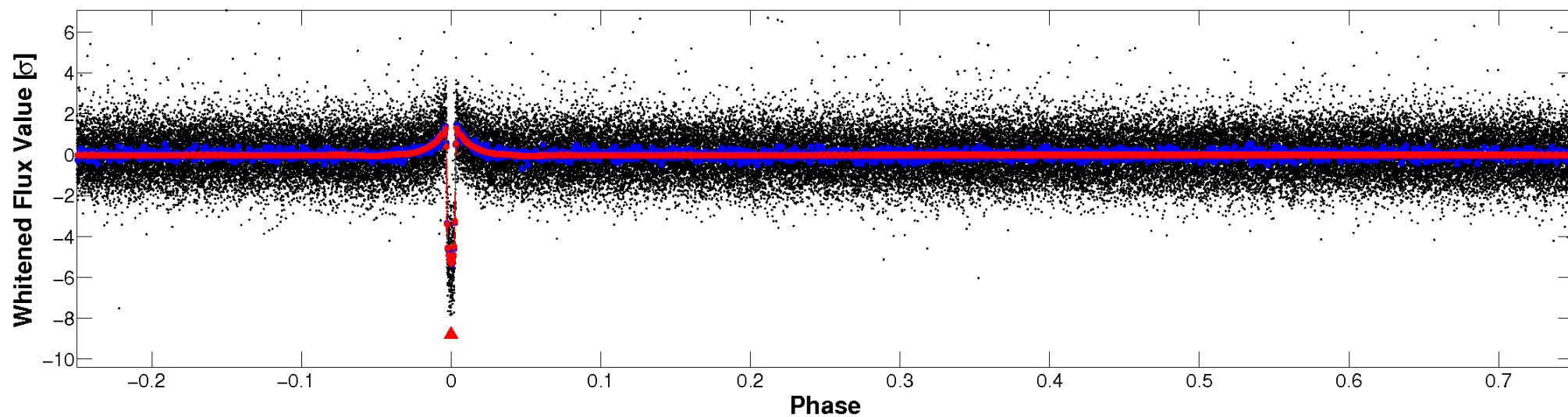


# Non-Whitened Vs. Whitened Light Curve

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

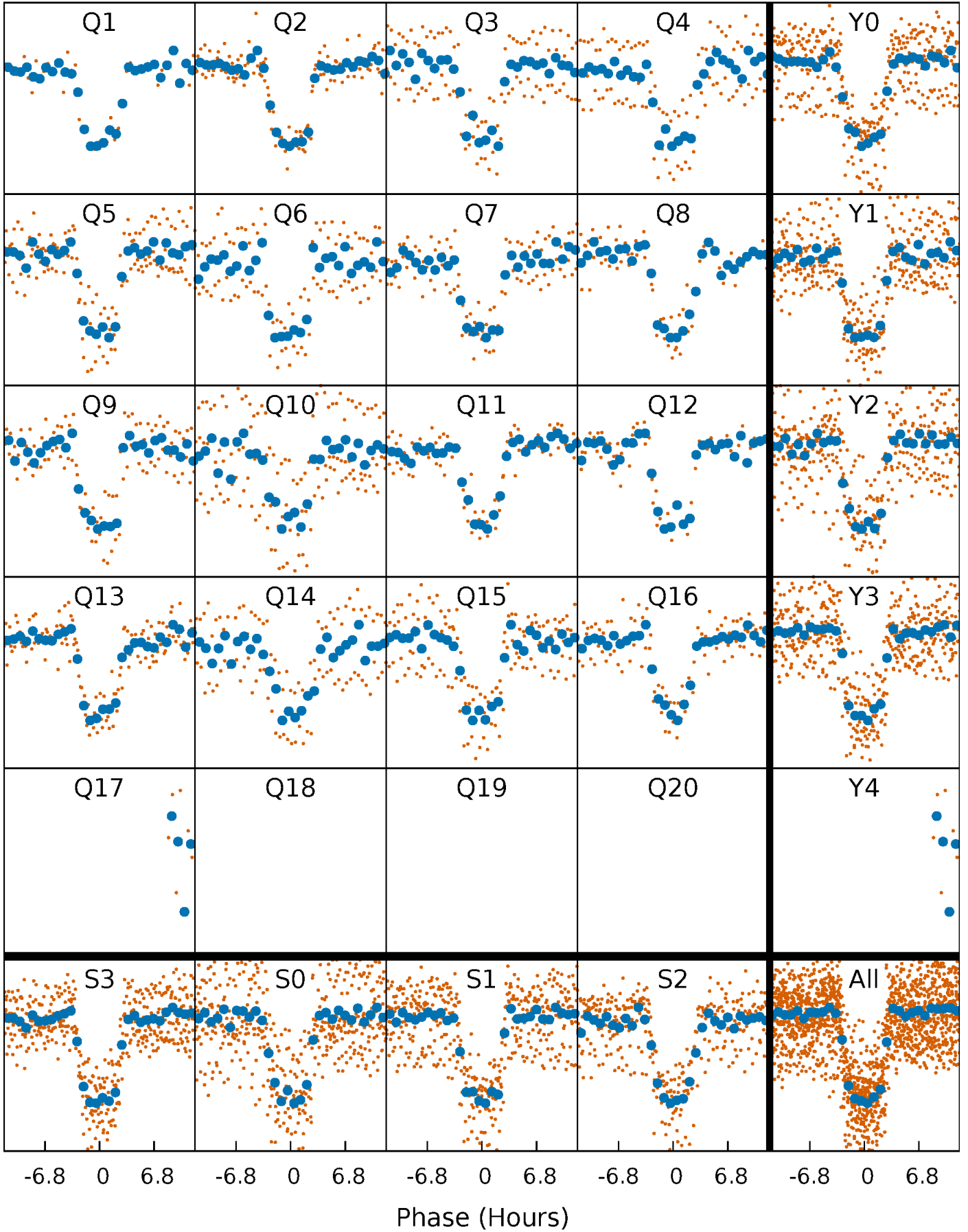


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

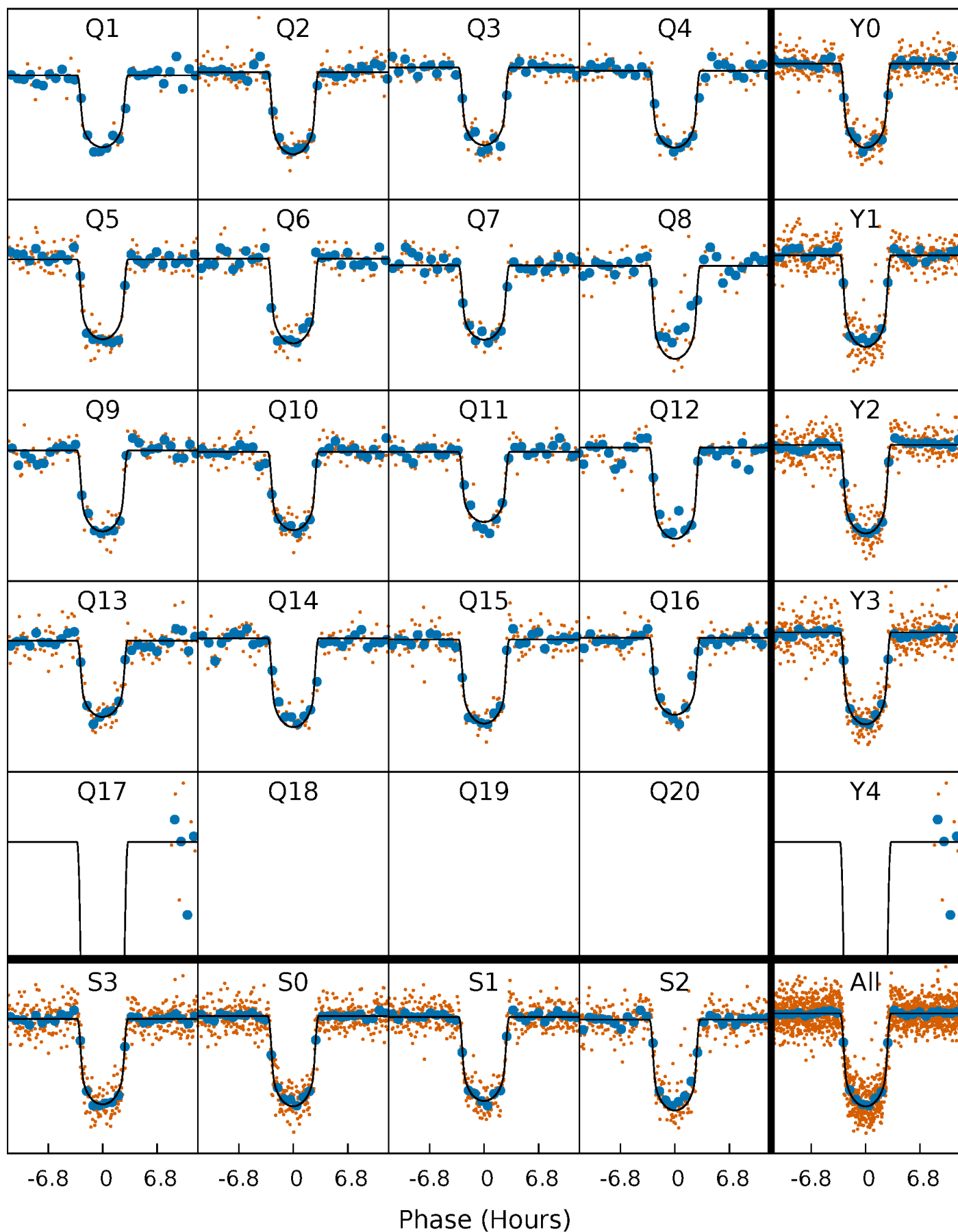
TCE 011015108-01 P= 39.309423 Days  $T_0=132.025485$  (BKJD)





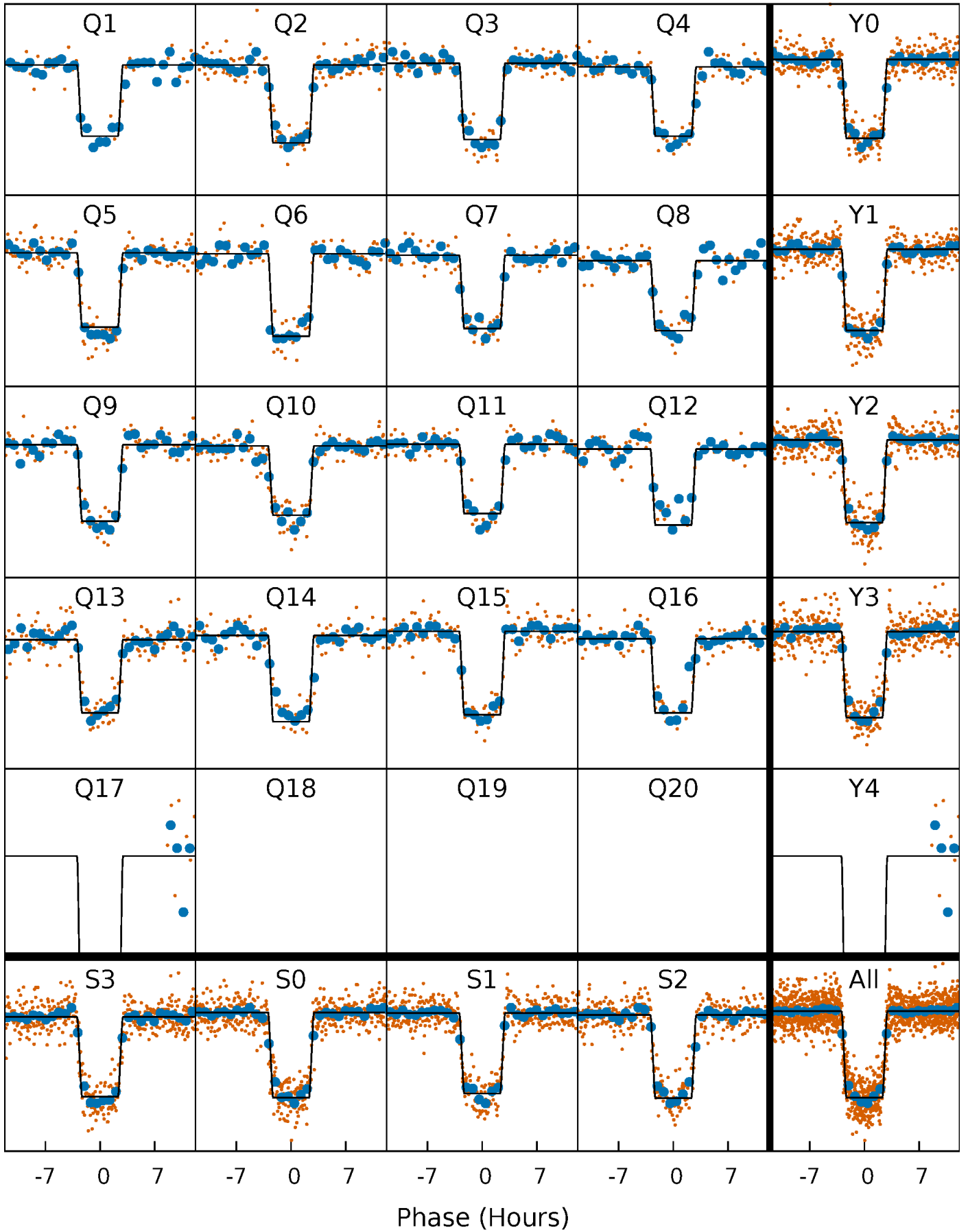
# DV Quarter-Phased Transit Curves

TCE 011015108-01 P= 39.309423 Days  $T_0=132.025485$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

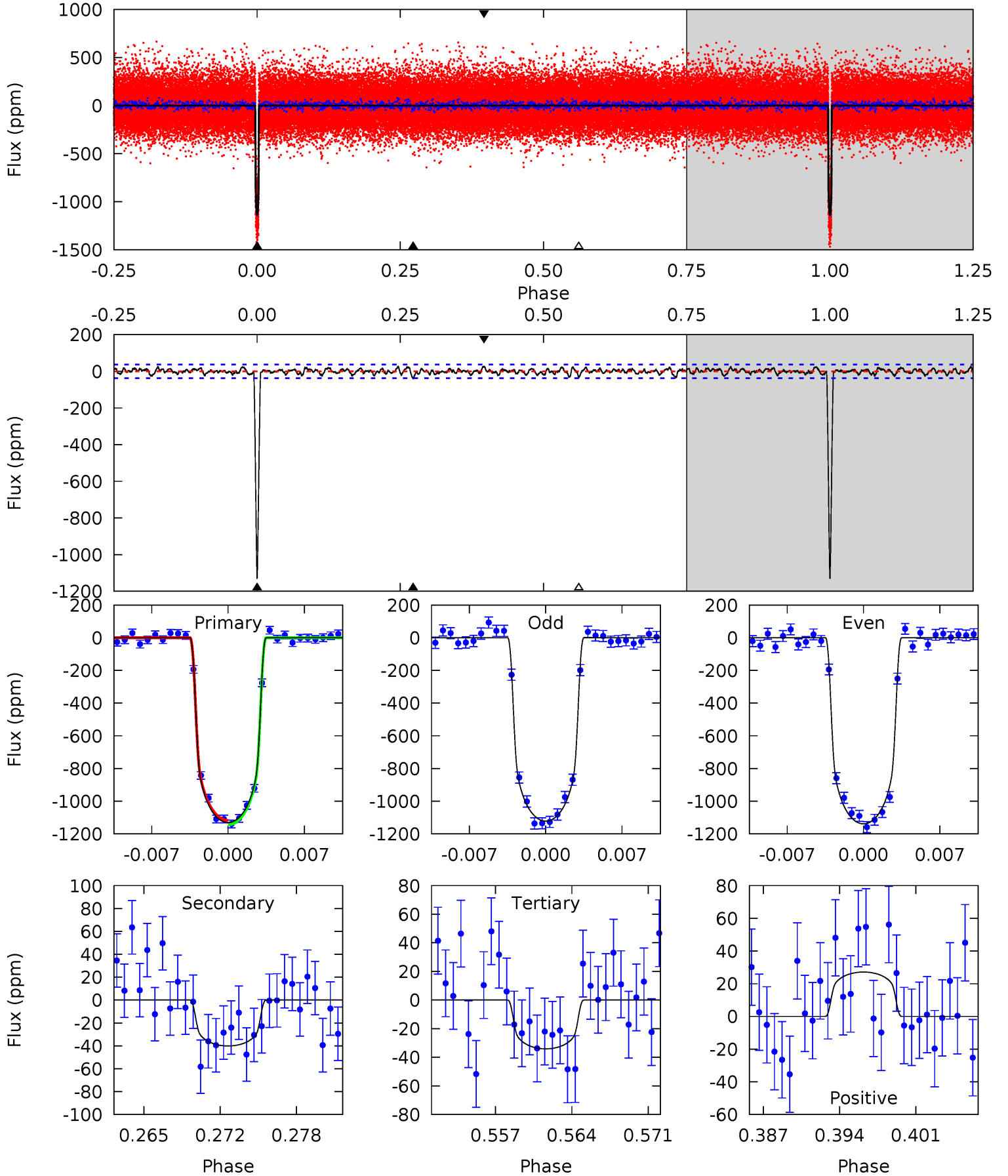
TCE 011015108-01 P= 39.309345 Days  $T_0=132.027500$  (BKJD)



# DV Model-Shift Uniqueness Test

011015108-01, P = 39.309423 Days, E = 92.716062 Days

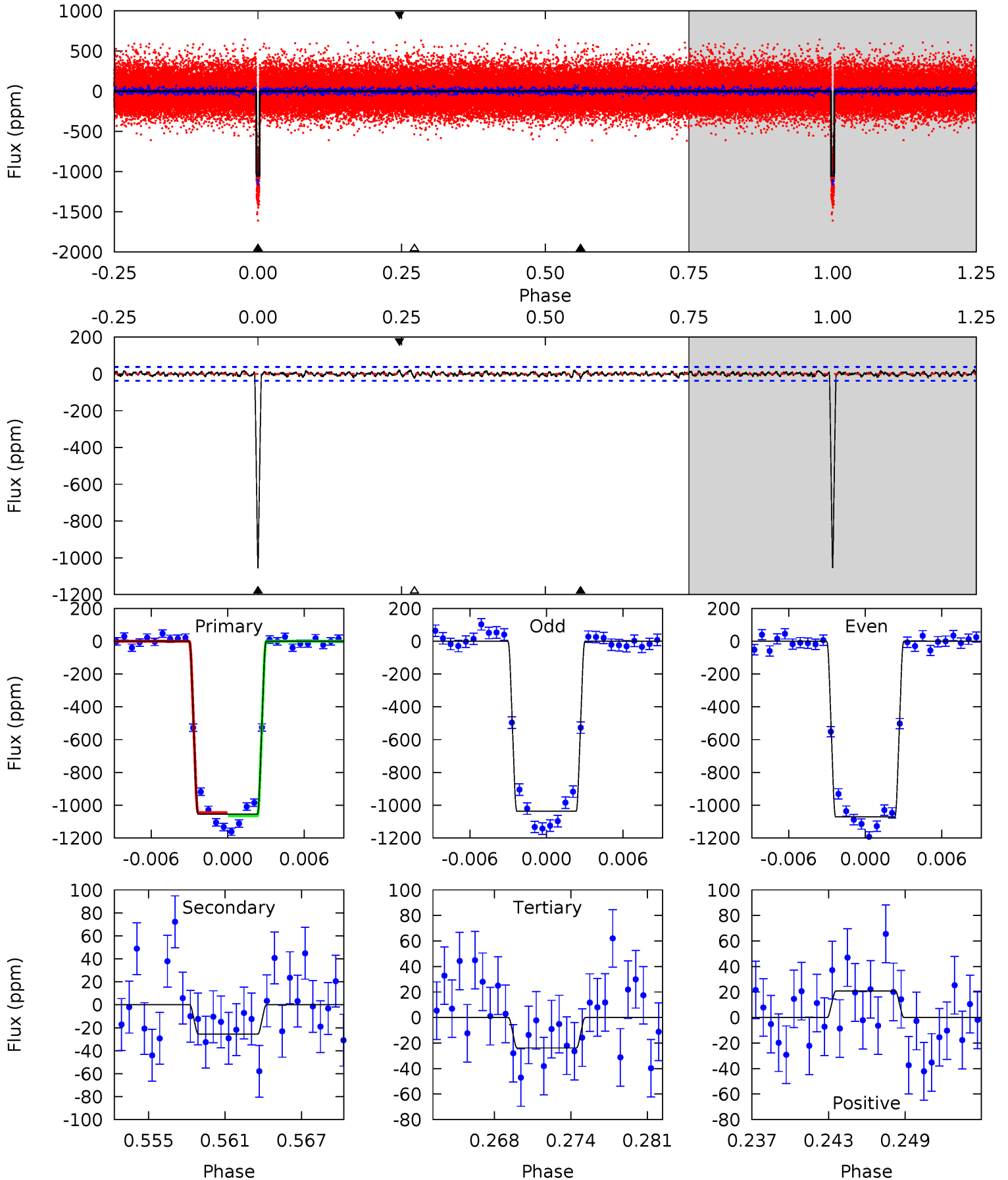
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
154.2	5.47	4.65	3.70	5.10	2.71	1.44	149.5	150.5	0.82	1.77	1.13	1.00	0.02	1.84



# Alt Model-Shift Uniqueness Test

011015108-01, P = 39.309345 Days, E = 92.718155 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
143.8	3.49	3.25	2.84	5.12	2.74	0.95	140.6	141.0	0.24	0.66	2.33	1.00	0.02	1.30



### Stellar Parameters For KIC 011015108

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5607^{+101}_{-112}$	$4.536^{+0.028}_{-0.112}$	$-0.040^{+0.150}_{-0.150}$	$0.863^{+0.112}_{-0.043}$	$0.932^{+0.046}_{-0.073}$	$2.045^{+0.262}_{-0.620}$
	+2%/-2%	+1%/-2%	+375%/-375%	+13%/-5%	+5%/-8%	+13%/-30%
Source	SPE59	SPE59	SPE59	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 011015108-01 / KOI 0344.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-40 \pm 7$	$3.19^{+0.26}_{-0.19}$	$688^{+27}_{-17}$	$3074^{+98}_{-101}$	$103^{+24}_{-22}$
Alt.	$-26 \pm 7$	$3.15^{+0.25}_{-0.20}$	$691^{+24}_{-20}$	$2895^{+123}_{-134}$	$68^{+22}_{-21}$

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

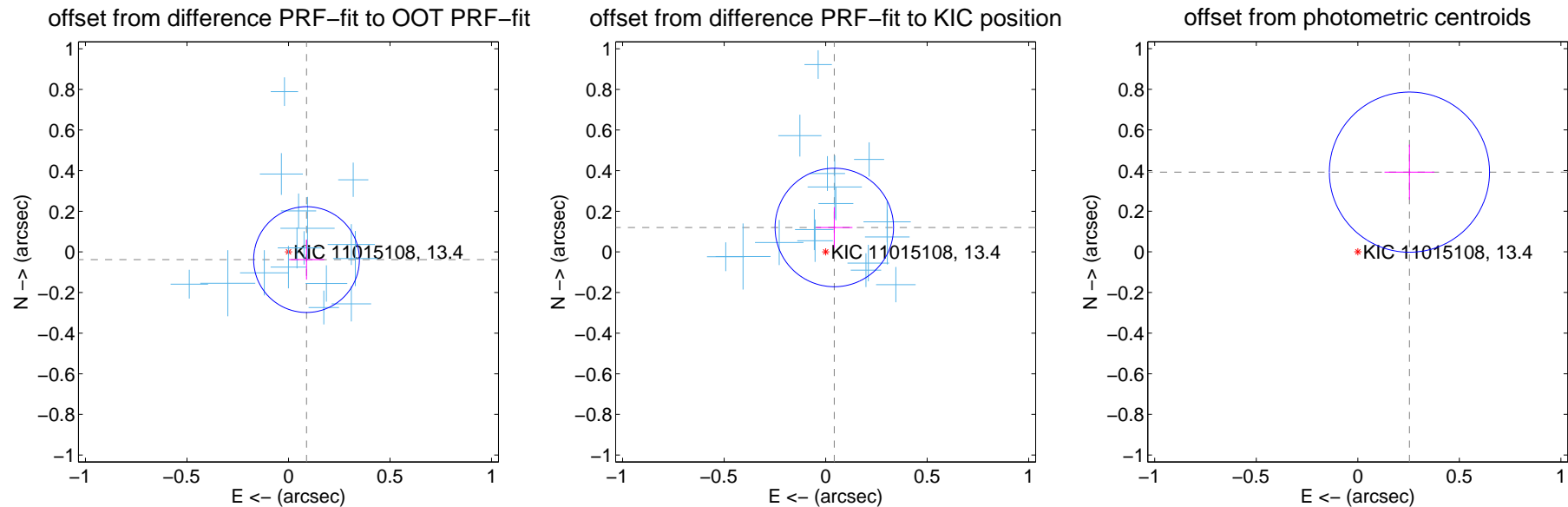
## DV Centroid Data

Supplemental centroid analysis for 011015108-01. Kepler magnitude: 13.40. Transit SNR 94.05

There are 16 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

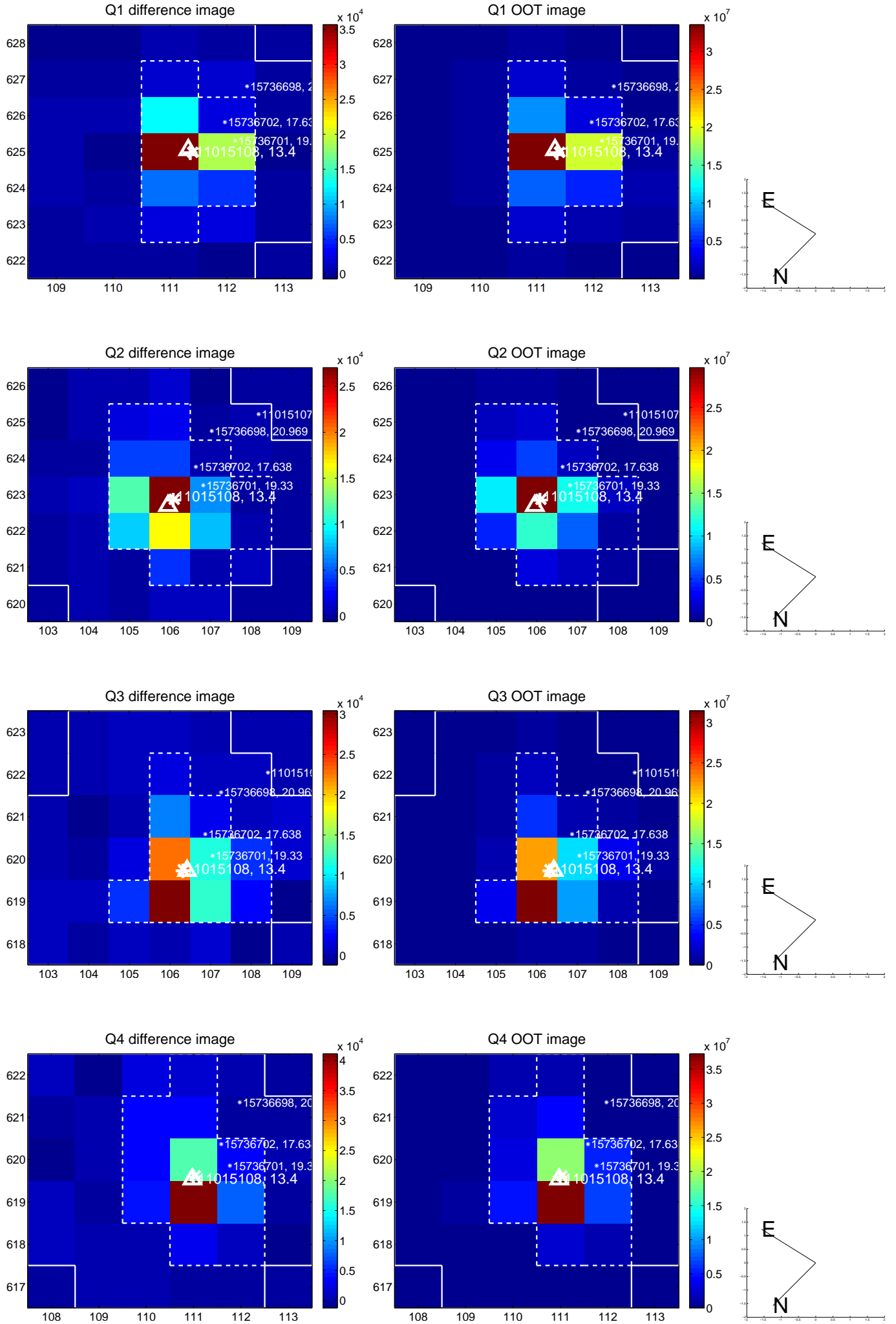
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.096 \pm 0.087$	1.11	$-0.089 \pm 0.087$	$-0.038 \pm 0.098$
PRF-fit source offset from KIC position	$0.128 \pm 0.097$	1.31	$-0.043 \pm 0.090$	$0.120 \pm 0.100$
photometric centroid source offset	$0.47 \pm 0.13$	3.56	$-0.25 \pm 0.12$	$0.39 \pm 0.13$



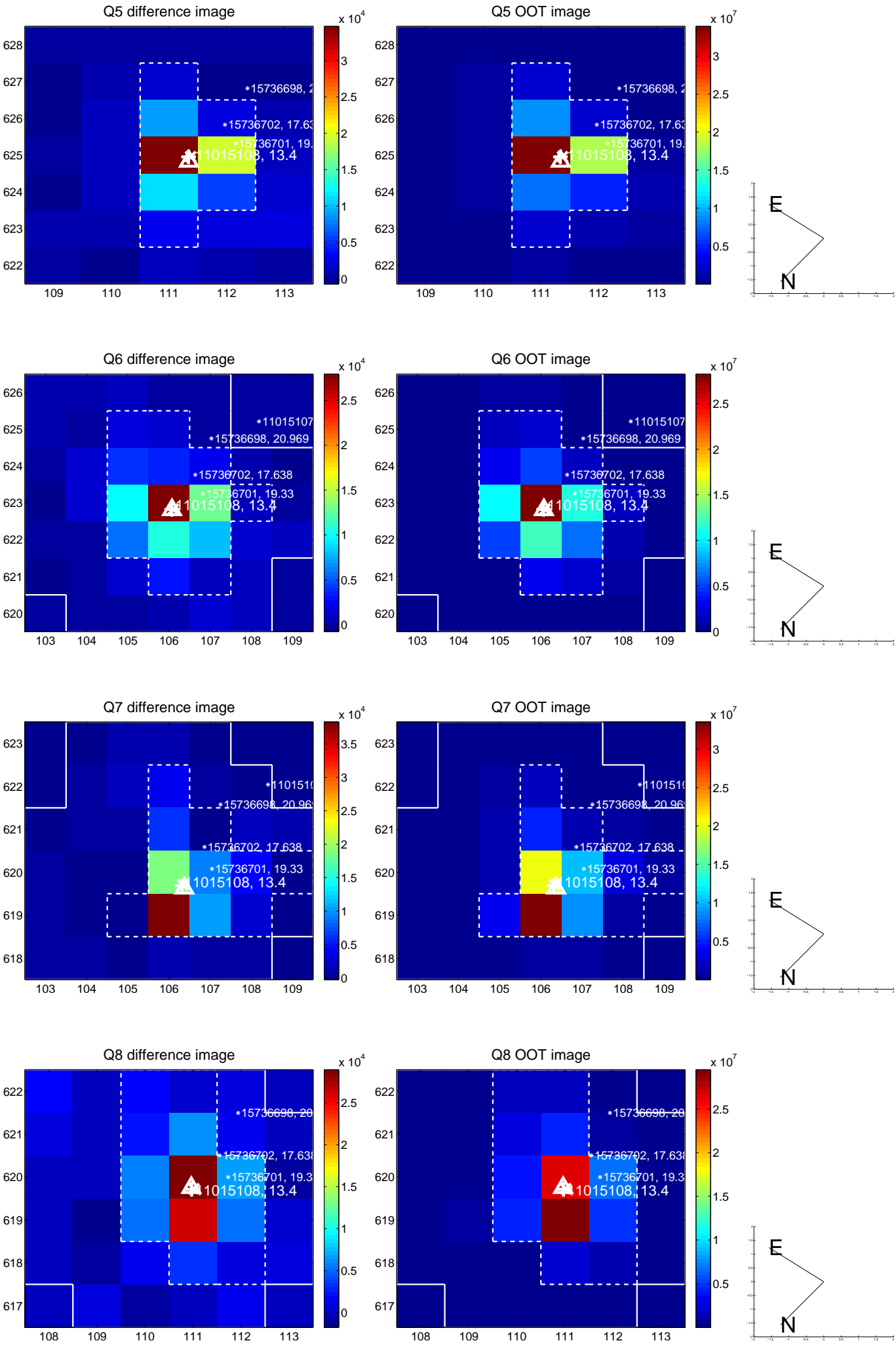
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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



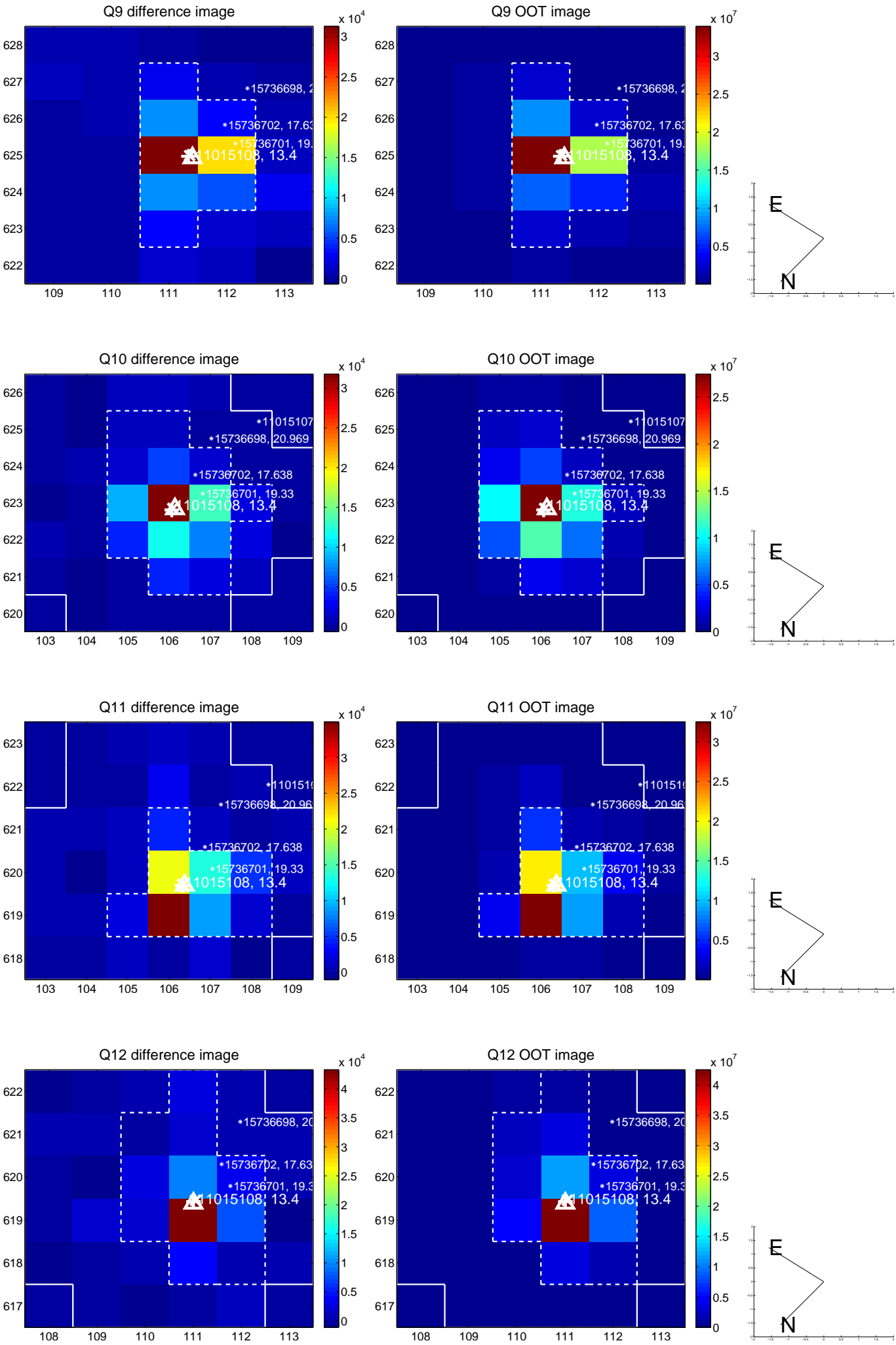
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



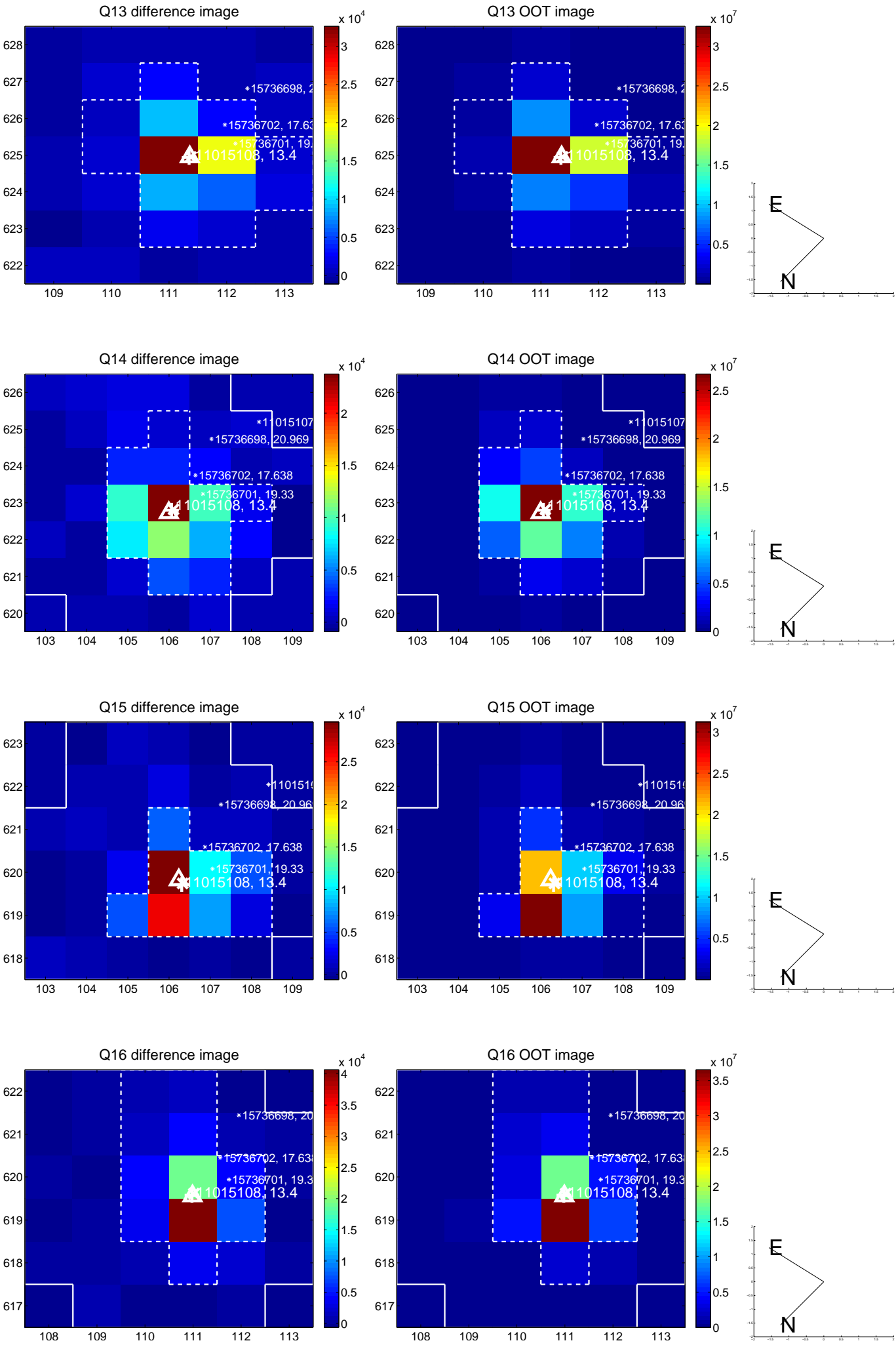
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



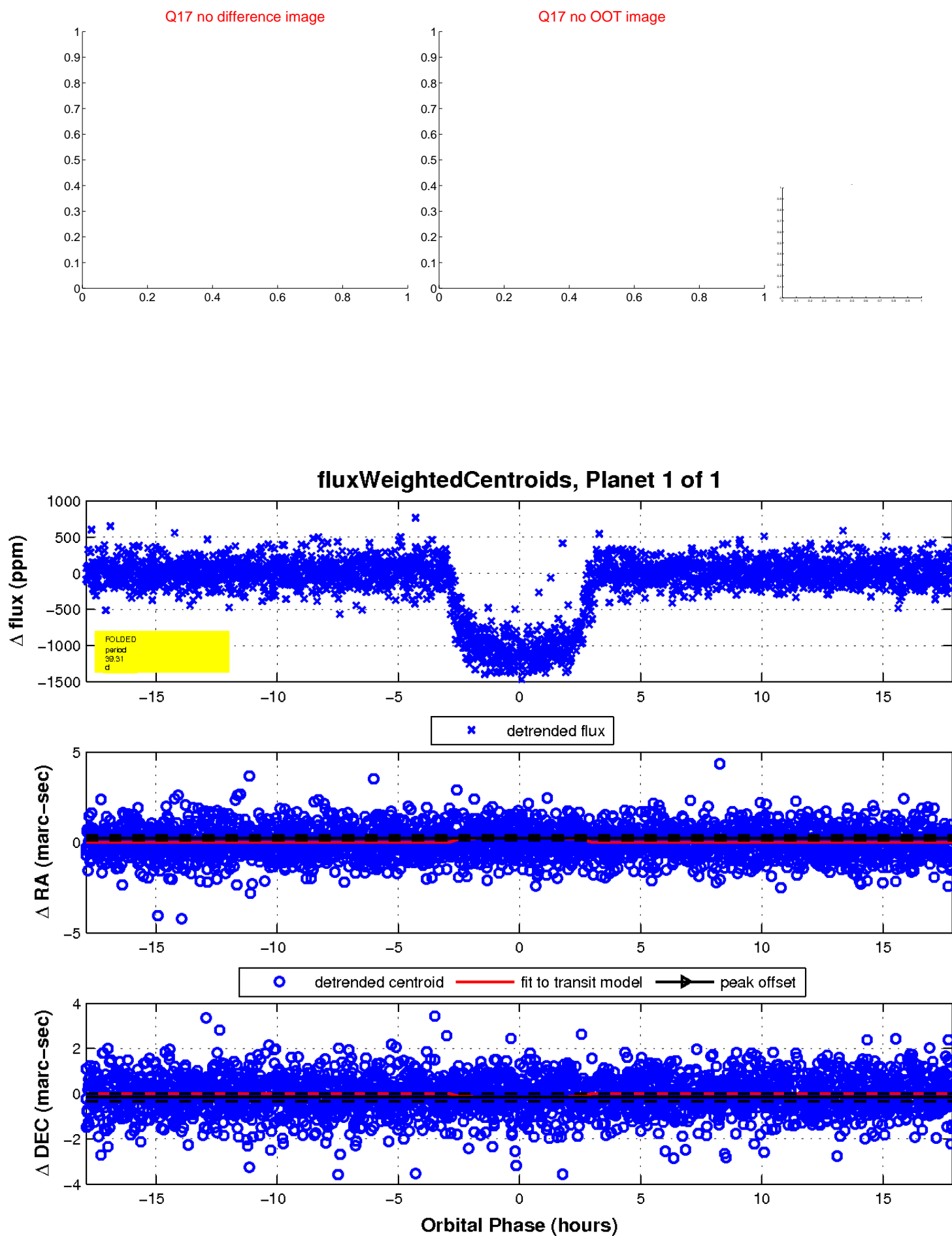
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

