

# KIC 009962595

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009962595-01	OBS	5745.01	11.374443	142.455860	27670.2	2.314	1210.0	1168.0	0.81	5297	20.89	52.89

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009962595-01	OBS	FP	0.00	0	1	0	0	DEEP_V_SHAPED

**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.

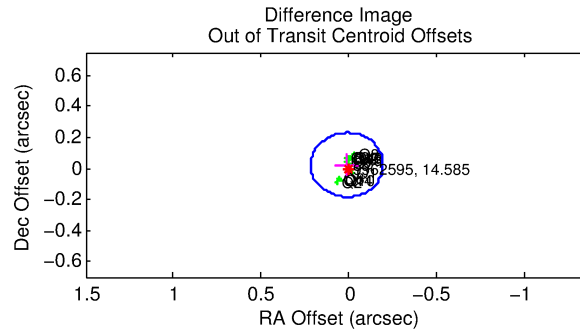
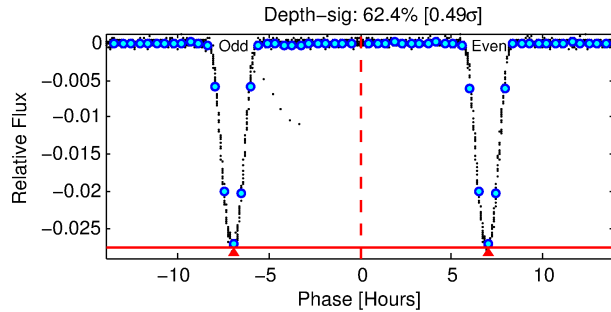
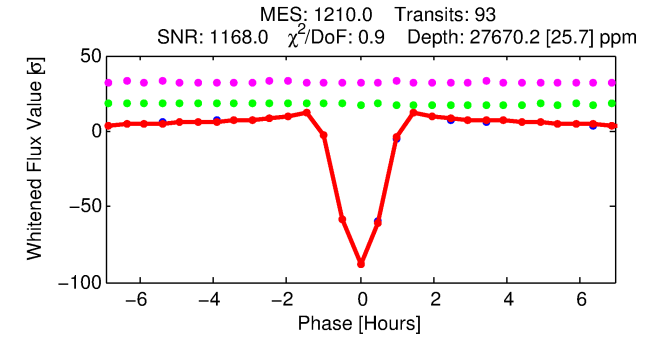
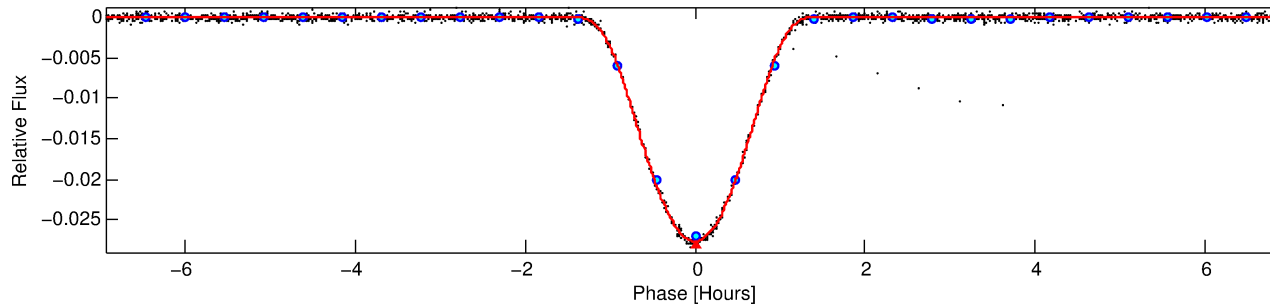
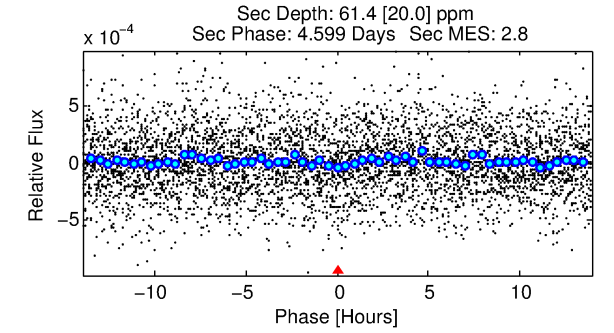
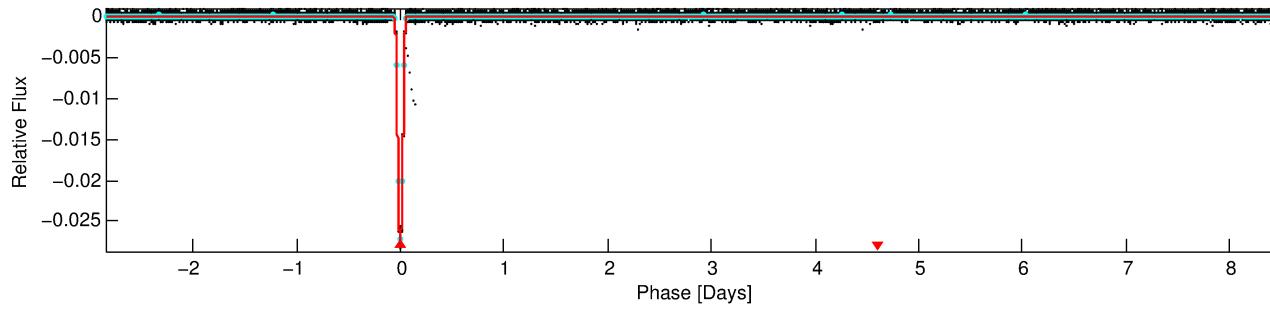
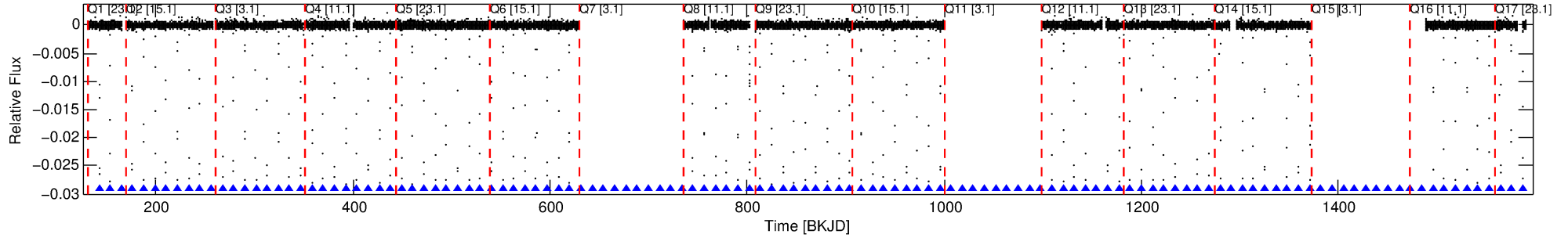
## Ephemeris Match Information For 009962595-01

No Significant Match Found

# DV One-Page Summary

KIC: 9962595 Candidate: 1 of 1 Period: 11.374 d  
KOI: K05745.01 Corr: 0.998

Kp: 14.59 R\*: 0.81 Rs Teff: 5297.0 K Logg: 4.55 Fe/H: -0.060



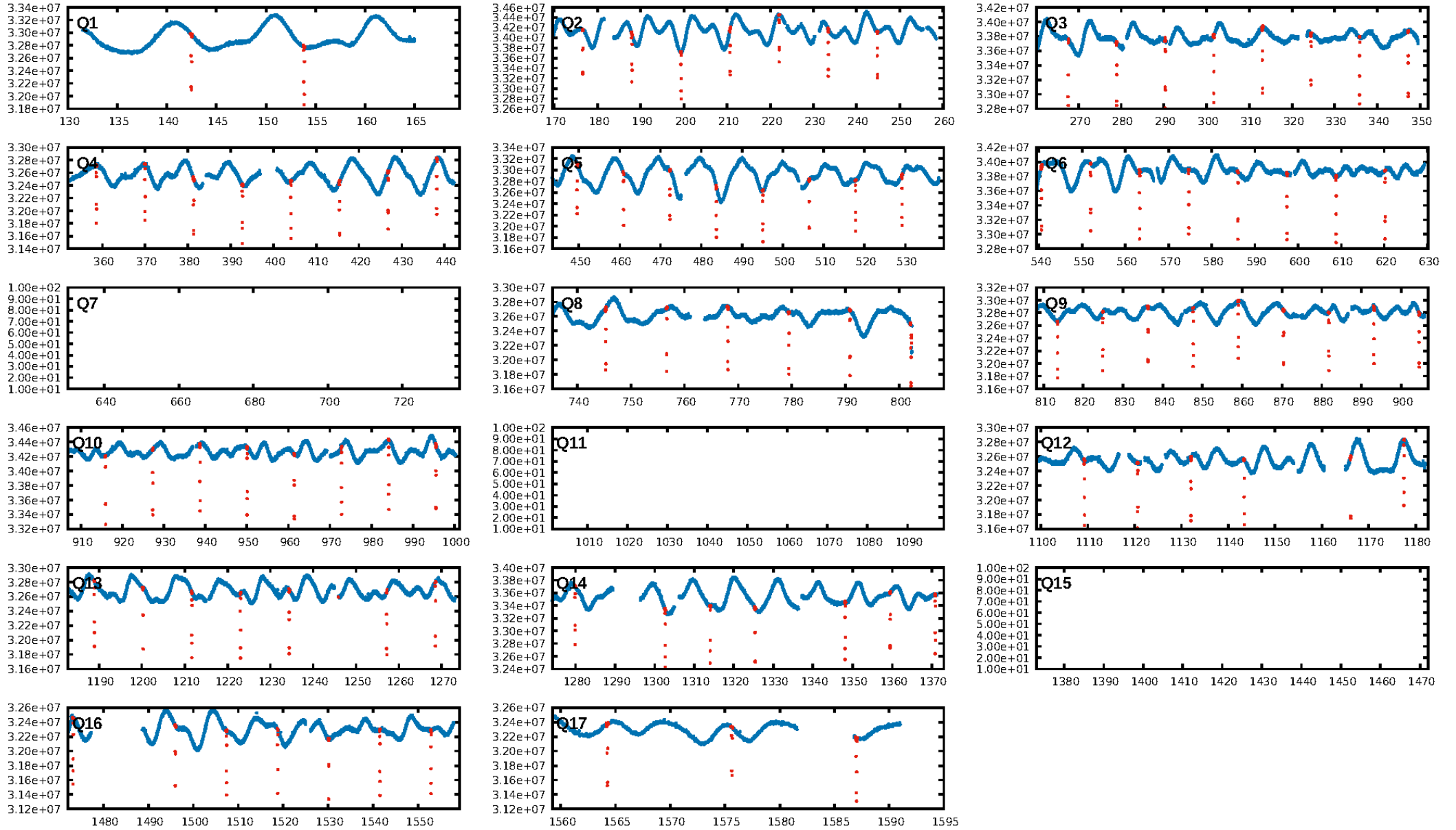
## DV Fit Results:

Period = 11.37444 [0.00000] d  
Epoch = 142.4559 [0.0000] BKJD  
Rp/R\* = 0.2370 [0.0101]  
a/R\* = 29.86 [0.15]  
b = 0.95 [0.02]  
Seff = 52.89 [11.43]  
Teq = 688 [37] K  
Rp = 20.89 [3.28] Re  
a = 0.0933 [0.0117] AU  
Ag = 0.67 [0.26] [-1.27 $\sigma$ ]  
Teff = 963 [86] K [2.93 $\sigma$ ]

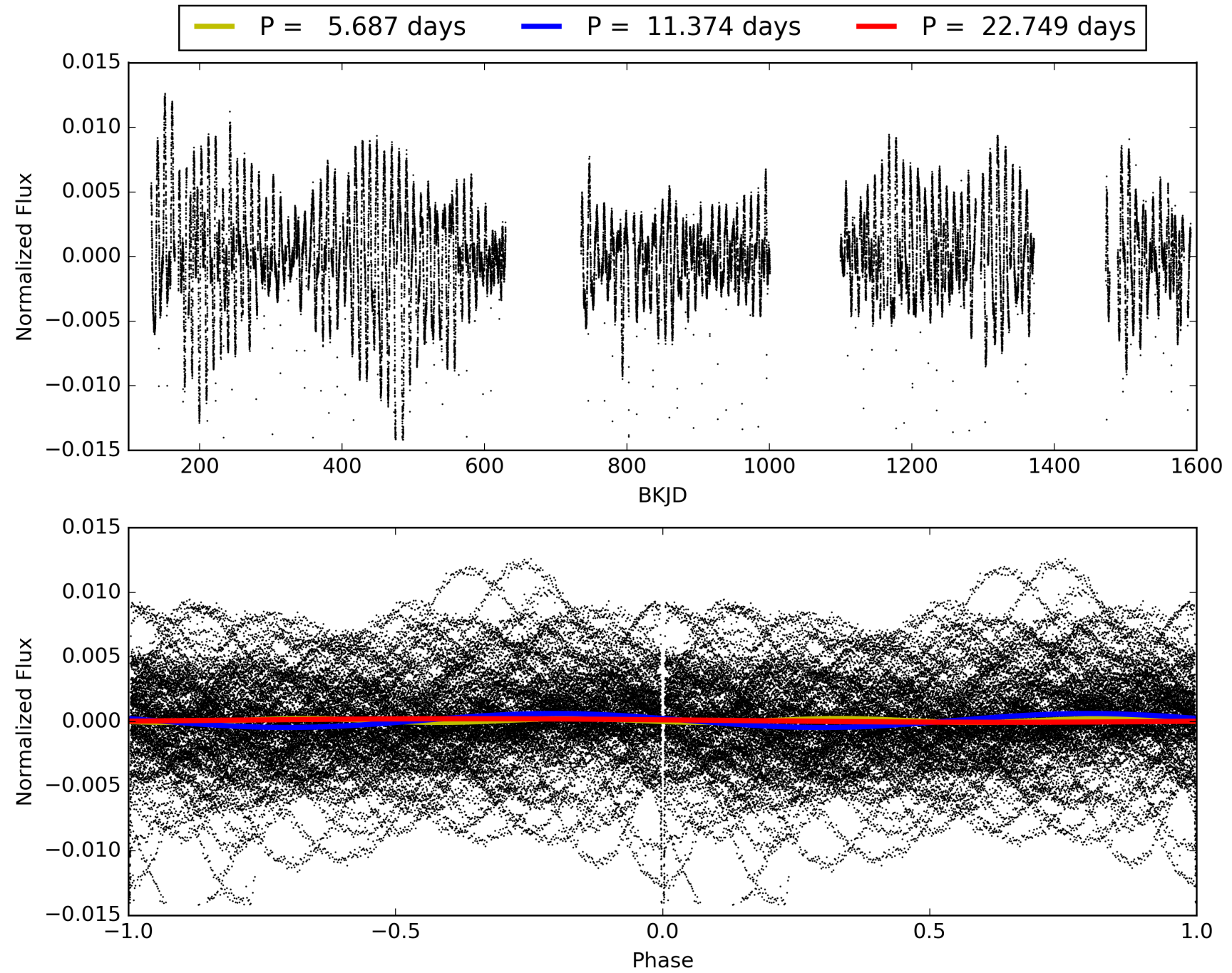
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 5.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [88/88]  
GhostDiagnostic-chr: 5.921  
Centroid-sig: 0.0%  
Centroid-so: 0.175 arcsec [17.34 $\sigma$ ]  
OotOffset-rm: 0.027 arcsec [0.39 $\sigma$ ]  
KicOffset-rm: 0.255 arcsec [3.47 $\sigma$ ]  
OotOffset-st: 4/1/4/5 [14]  
KicOffset-st: 4/1/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 009962595-01, PDC Light Curves

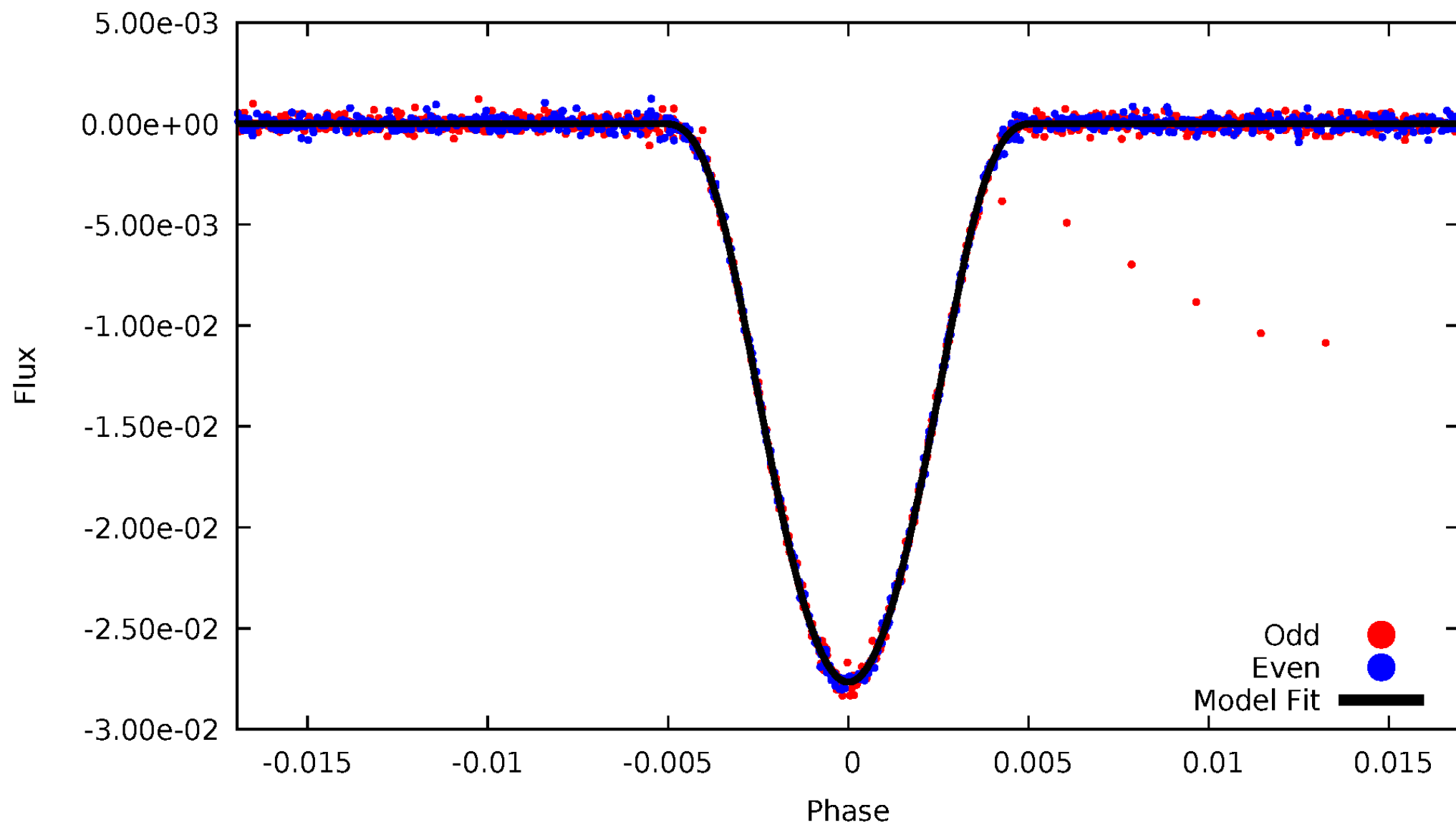


TCE 009962595-01



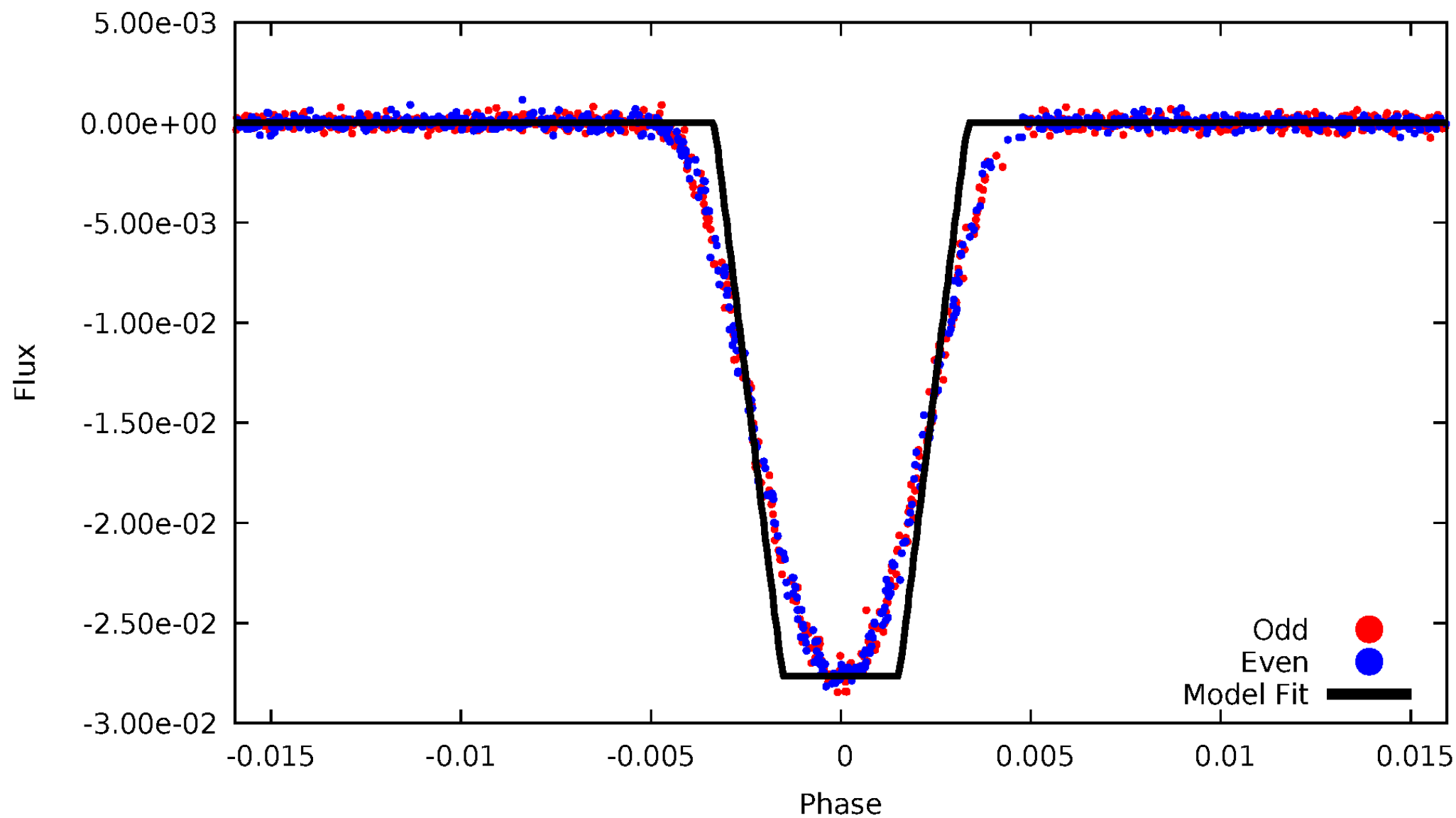
# DV Odd/Even

TCE 009962595-01



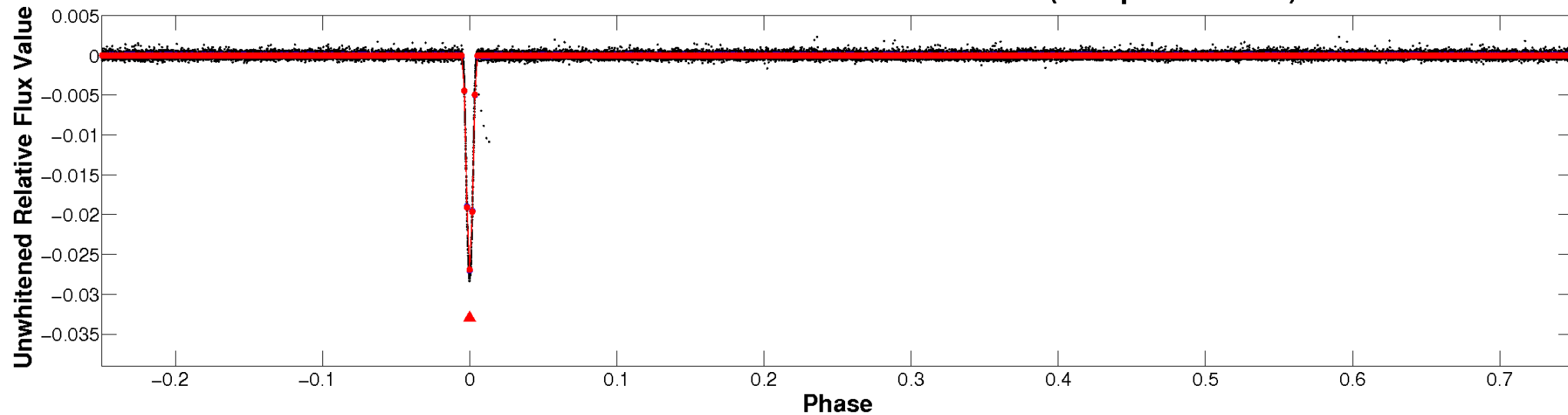
# ALT Odd/Even

TCE 009962595-01

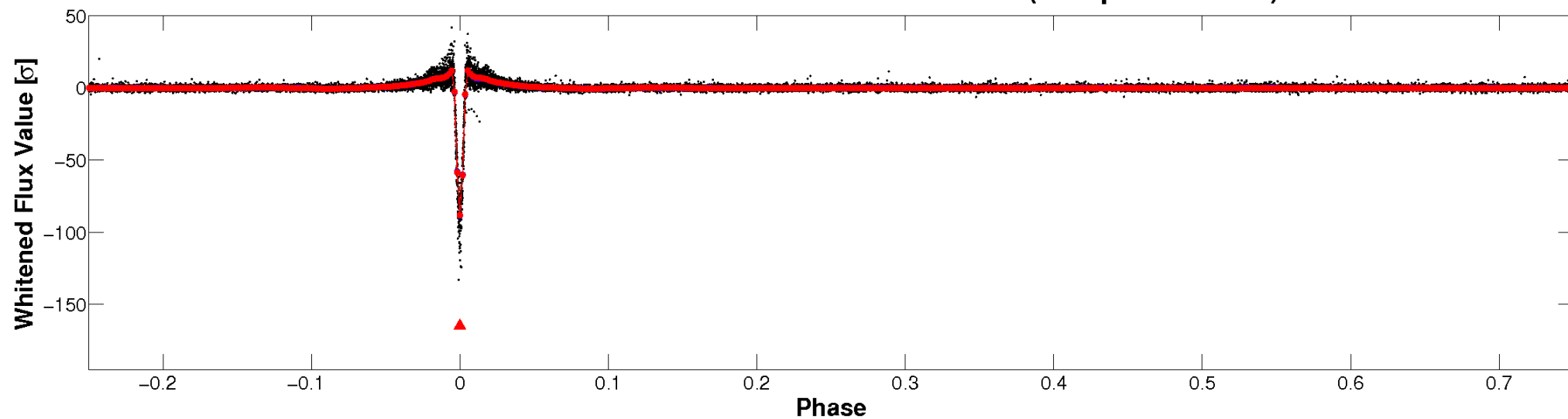


# Non-Whitened Vs. Whitened Light Curve

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

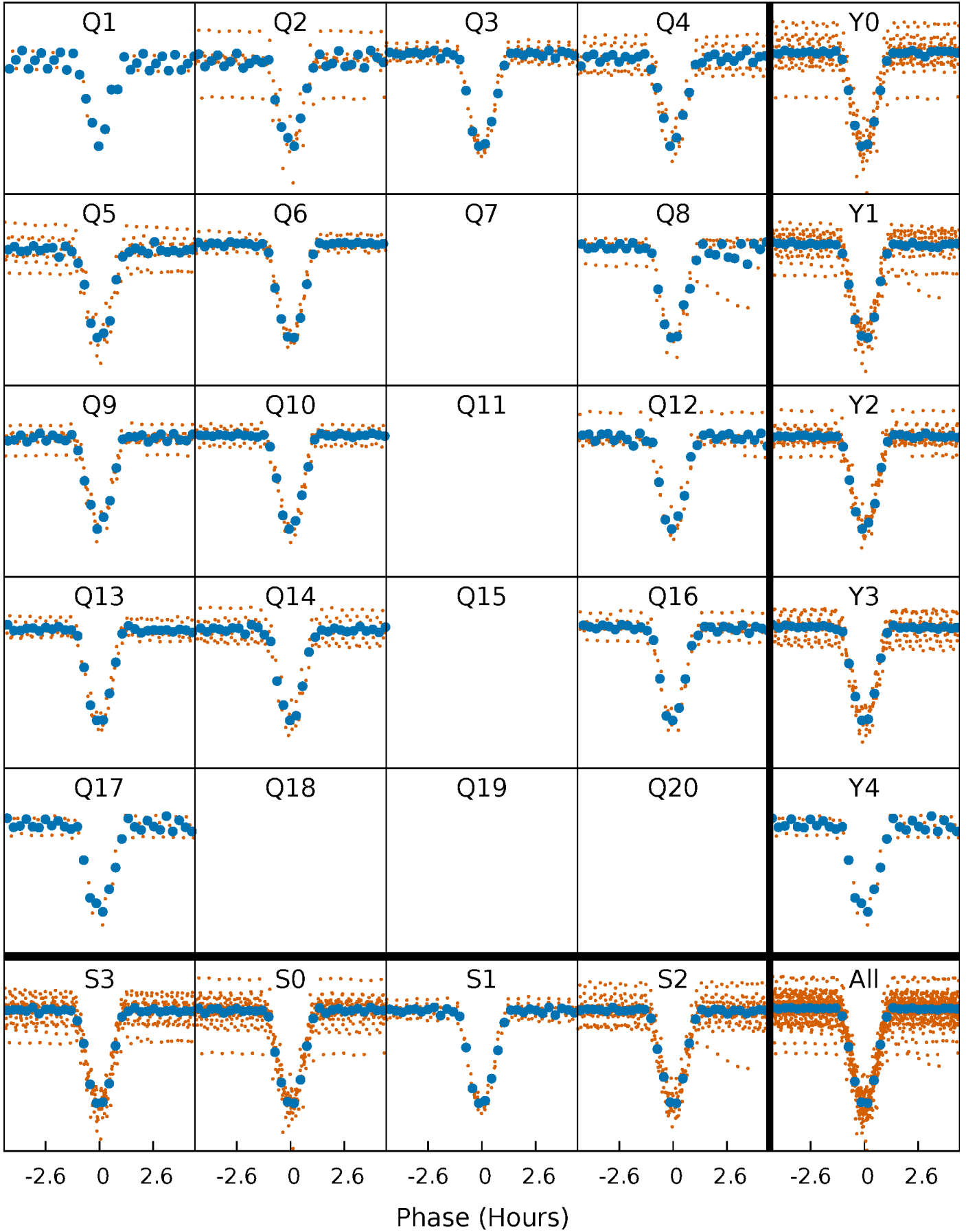


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

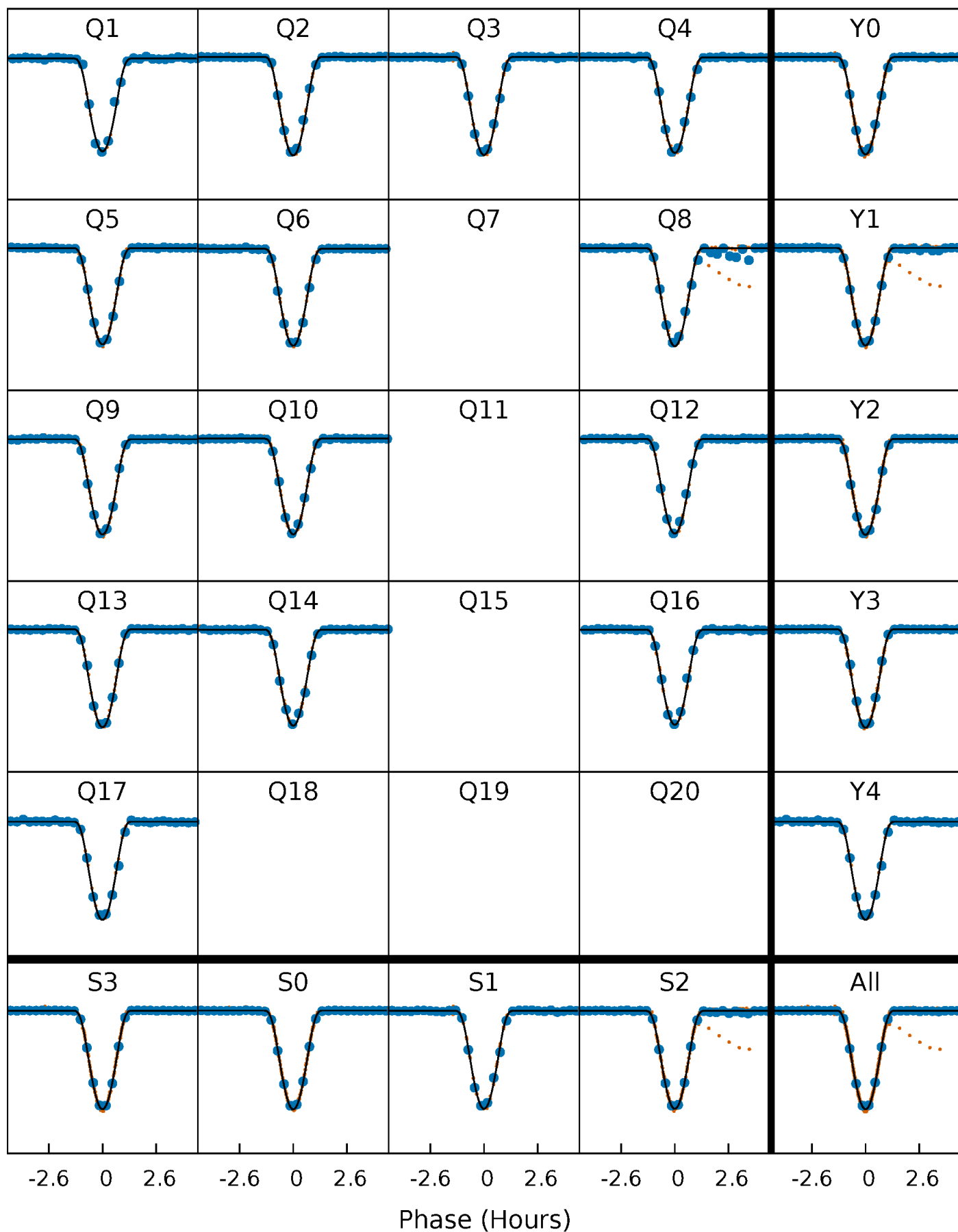
TCE 009962595-01 P= 11.374443 Days  $T_0=142.455860$  (BKJD)





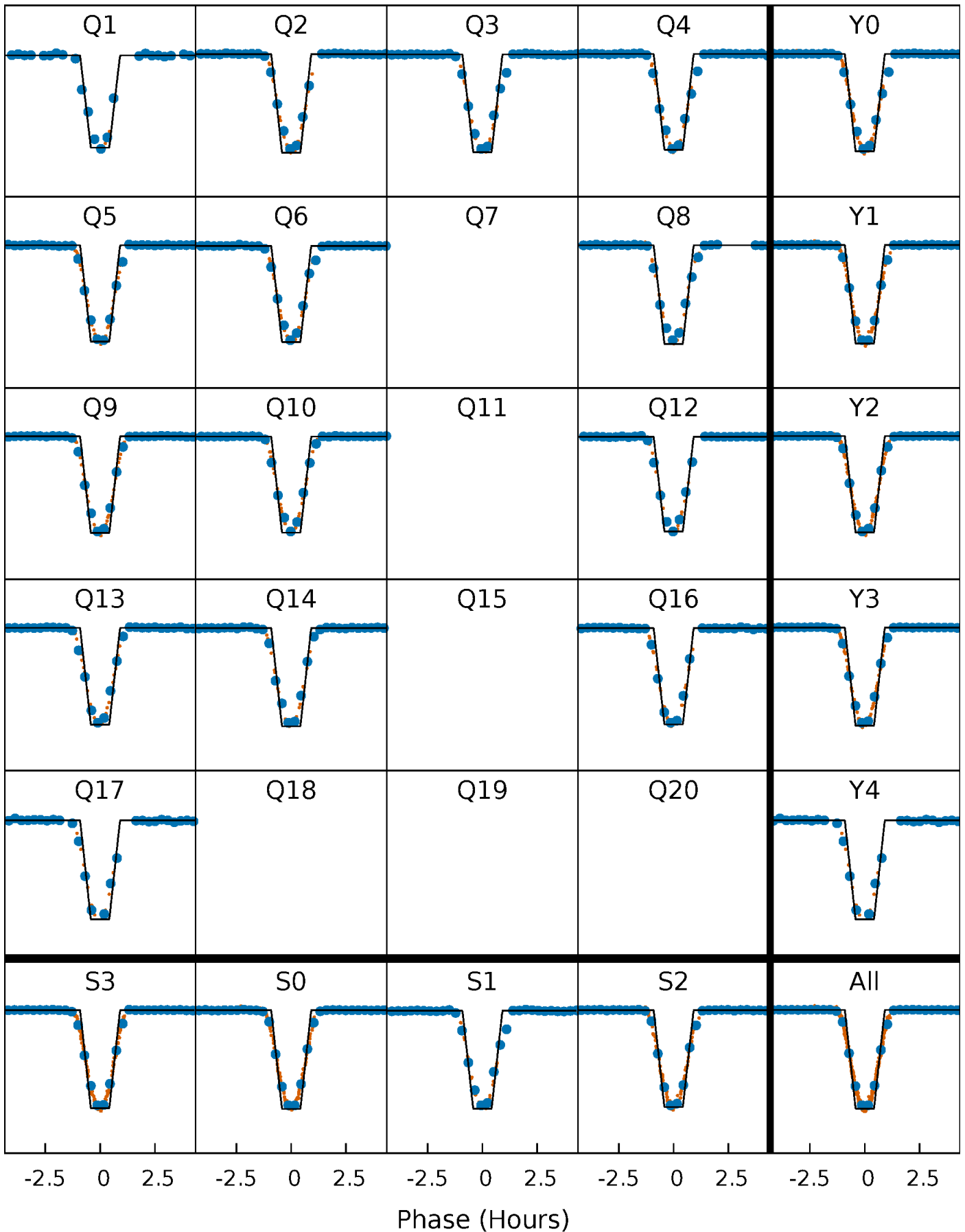
# DV Quarter-Phased Transit Curves

TCE 009962595-01 P= 11.374443 Days  $T_0=142.455860$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

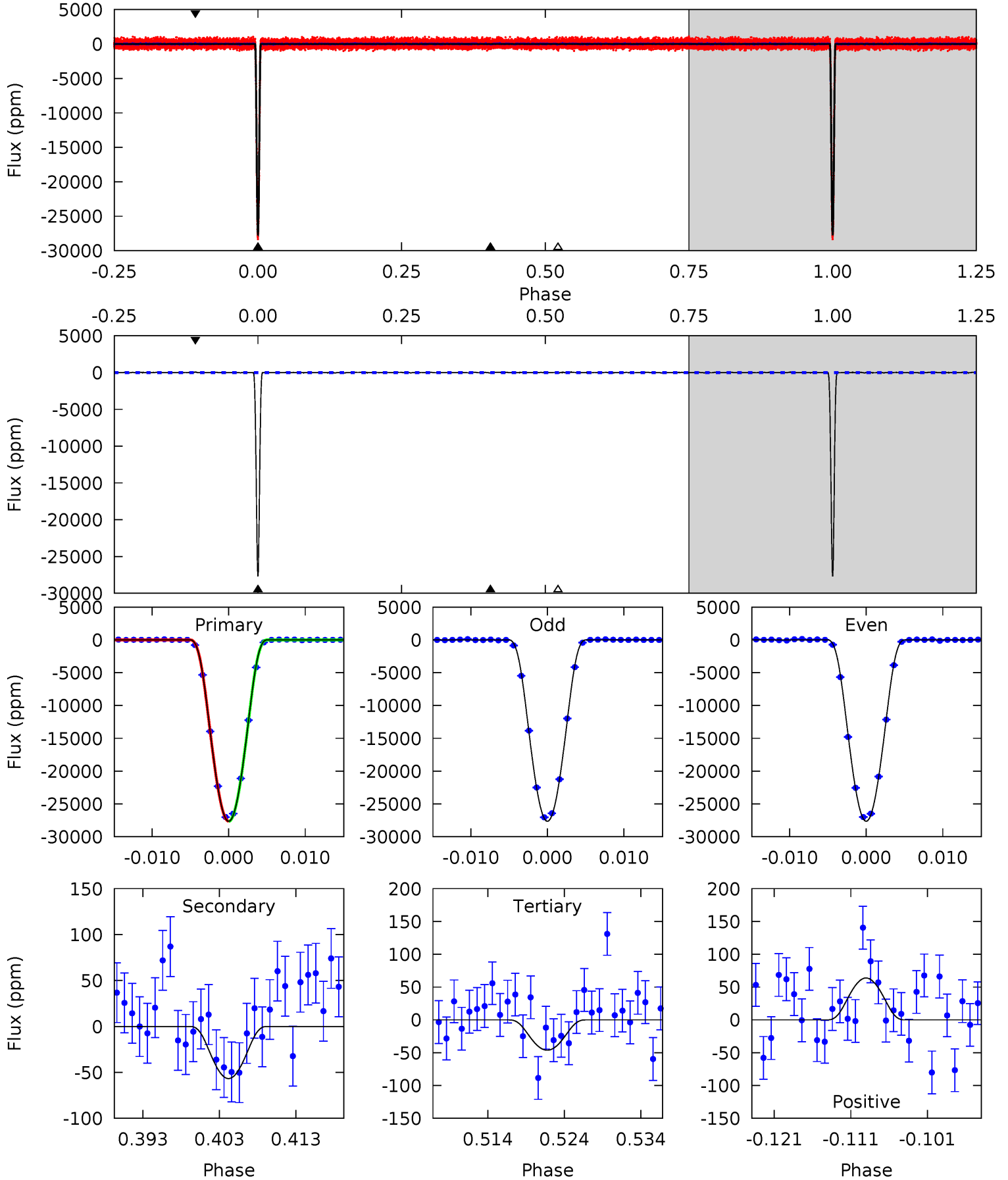
TCE 009962595-01 P= 11.374468 Days  $T_0=142.454436$  (BKJD)



# DV Model-Shift Uniqueness Test

009962595-01, P = 11.374443 Days, E = 131.081417 Days

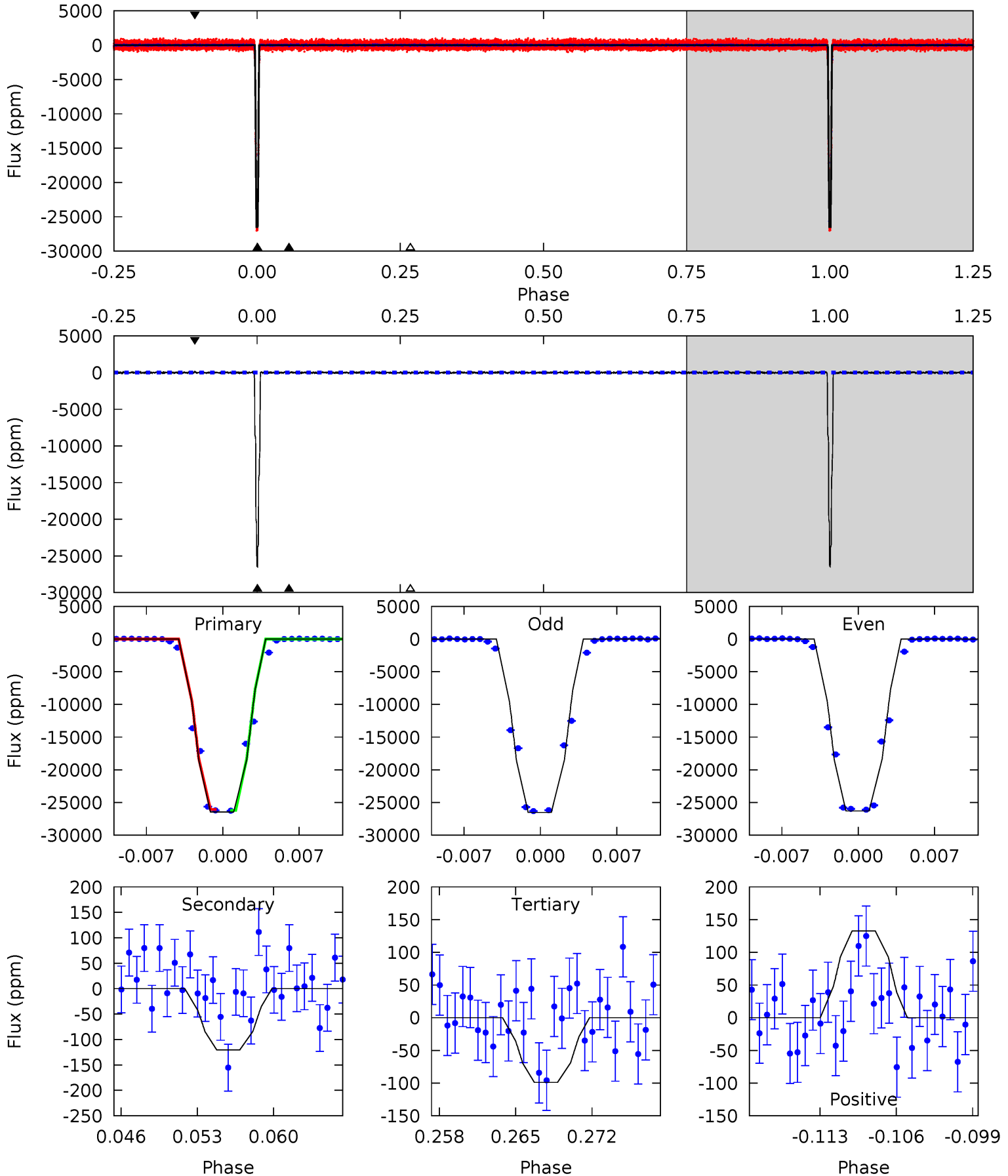
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2376	4.88	3.98	5.48	5.02	2.57	1.53	2372	2371	0.90	-0.60	0.33	1.00	0.00	0.88



# Alt Model-Shift Uniqueness Test

009962595-01, P = 11.374468 Days, E = 131.079968 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
1049	4.77	3.92	5.26	5.10	2.72	1.25	1045	1043	0.85	-0.49	4.35	1.00	0.00	0



### Stellar Parameters For KIC 009962595

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5297^{+159}_{-143}$	$4.546^{+0.052}_{-0.097}$	$-0.060^{+0.300}_{-0.300}$	$0.808^{+0.122}_{-0.071}$	$0.838^{+0.086}_{-0.078}$	$2.239^{+0.495}_{-0.692}$
	+3%/-3%	+1%/-2%	+500%/-500%	+15%/-9%	+10%/-9%	+22%/-31%
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 009962595-01 / KOI 5745.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-57 \pm 12$	$21.25^{+1.98}_{-1.61}$	$969^{+50}_{-36}$	$1818^{+75}_{-96}$	$0.590^{+0.161}_{-0.136}$
Alt.	$-120 \pm 25$	$14.90^{+1.41}_{-1.24}$	$969^{+40}_{-38}$	$2248^{+72}_{-85}$	$2.587^{+0.665}_{-0.676}$

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

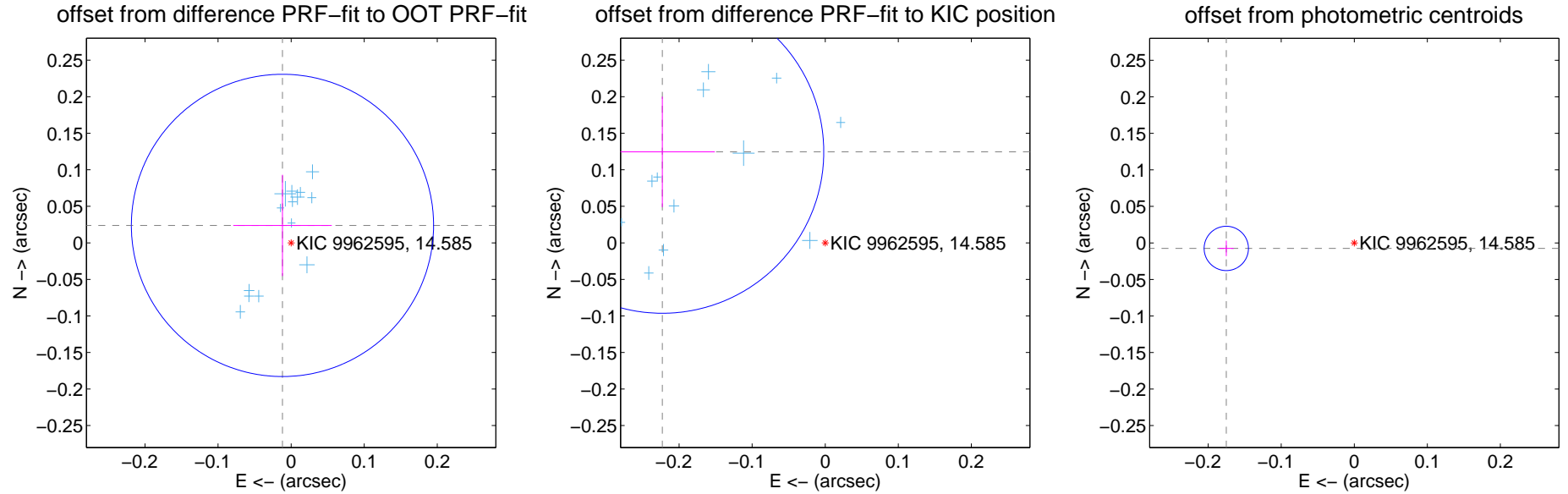
## DV Centroid Data

Supplemental centroid analysis for 009962595-01. Kepler magnitude: 14.59. Transit SNR 1168.01

There are 14 quarters with good PRF difference image offsets

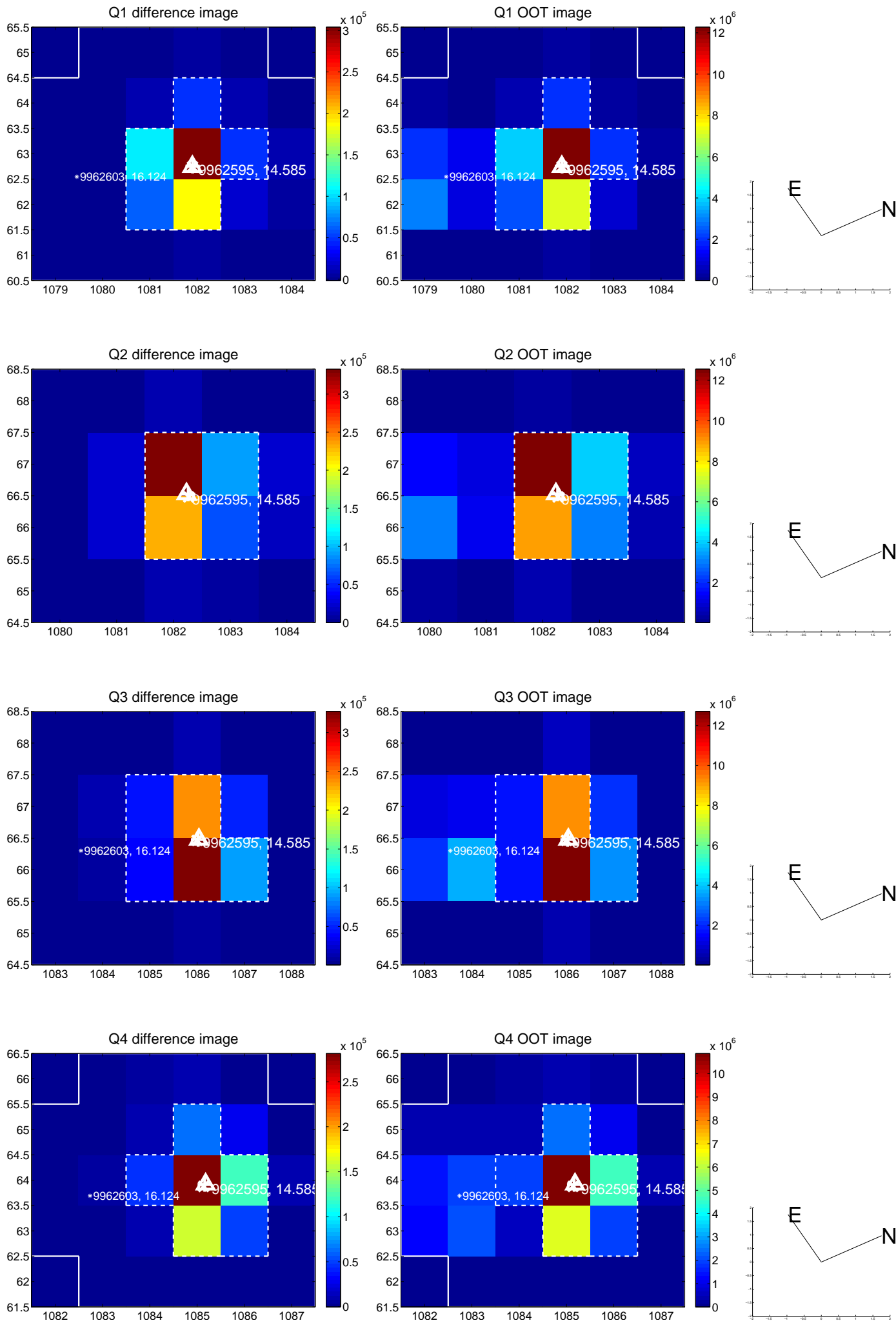
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.027 \pm 0.069$	0.39	$0.012 \pm 0.067$	$0.024 \pm 0.069$
PRF-fit source offset from KIC position	$0.255 \pm 0.074$	3.47	$0.223 \pm 0.072$	$0.125 \pm 0.076$
photometric centroid source offset	$0.18 \pm 0.01$	17.34	$0.18 \pm 0.01$	$-0.01 \pm 0.01$

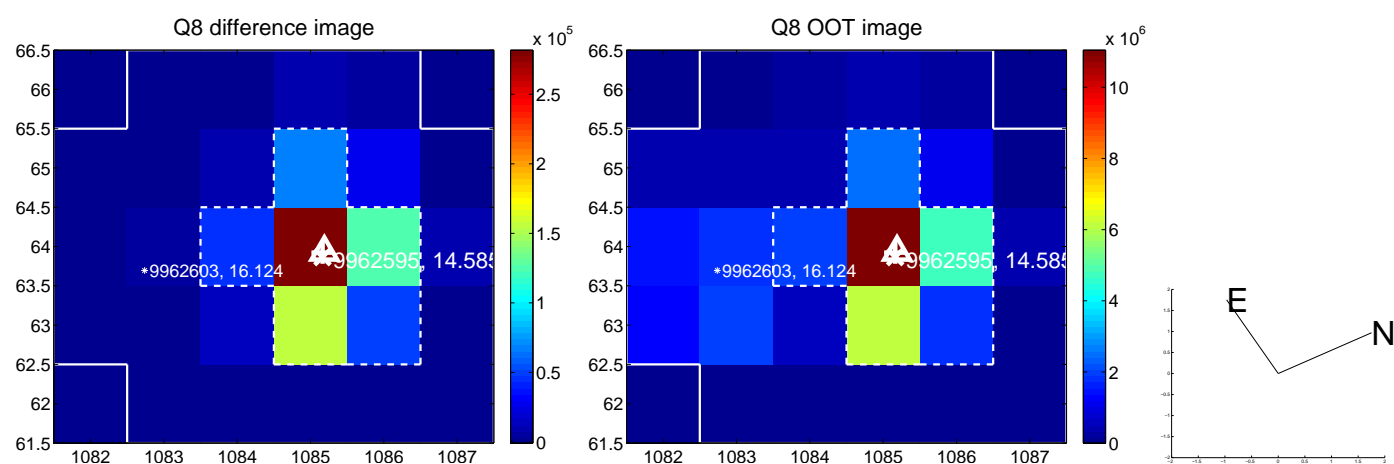
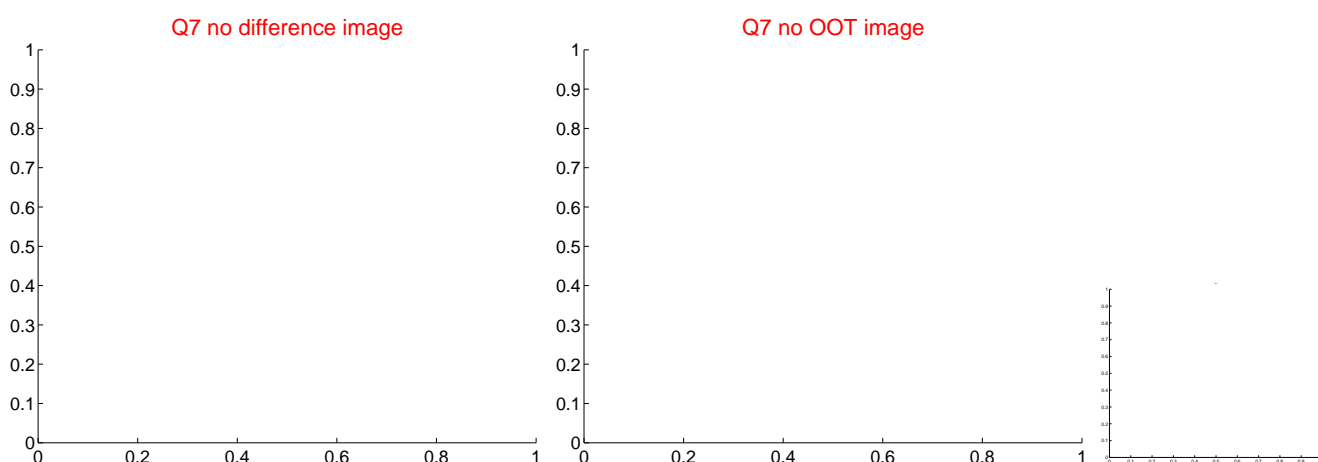
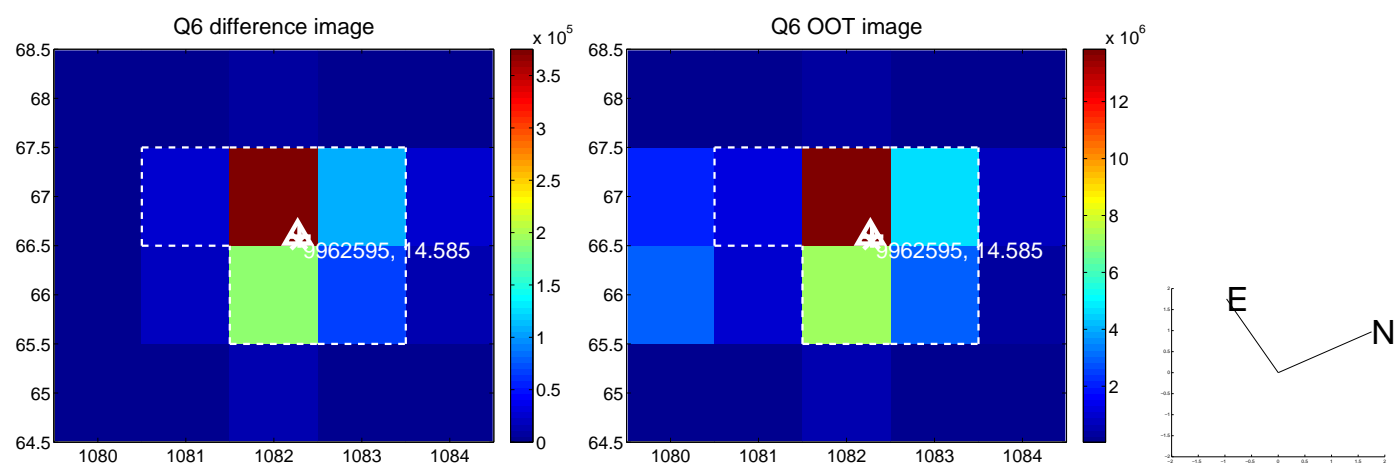
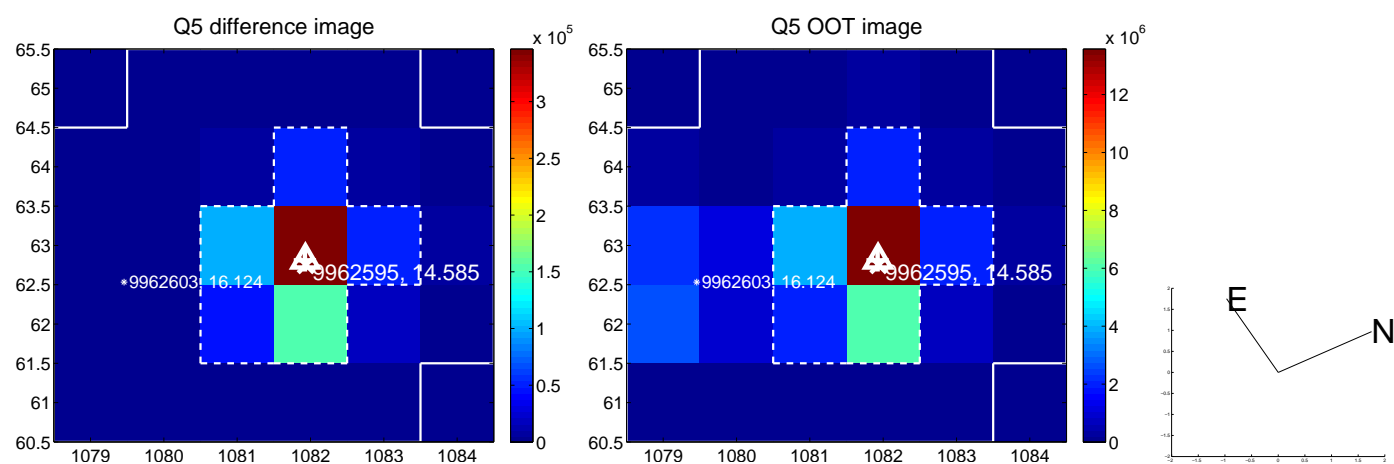


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

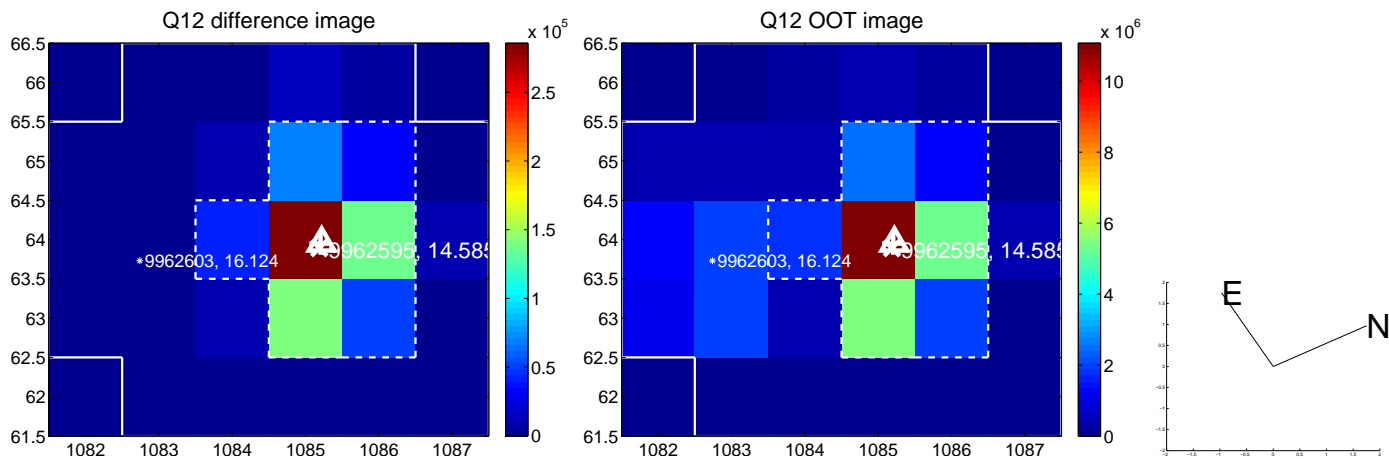
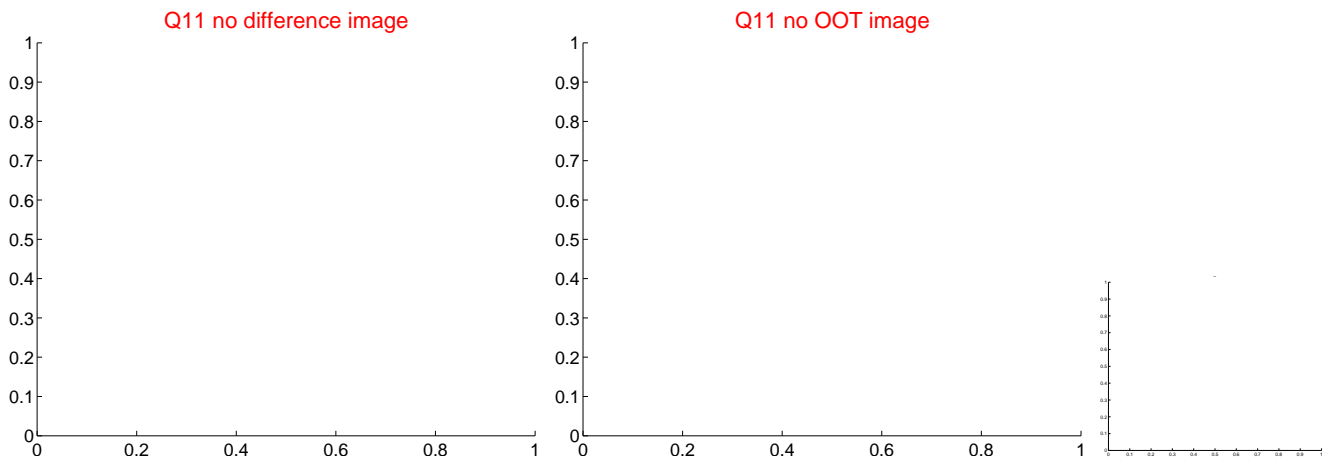
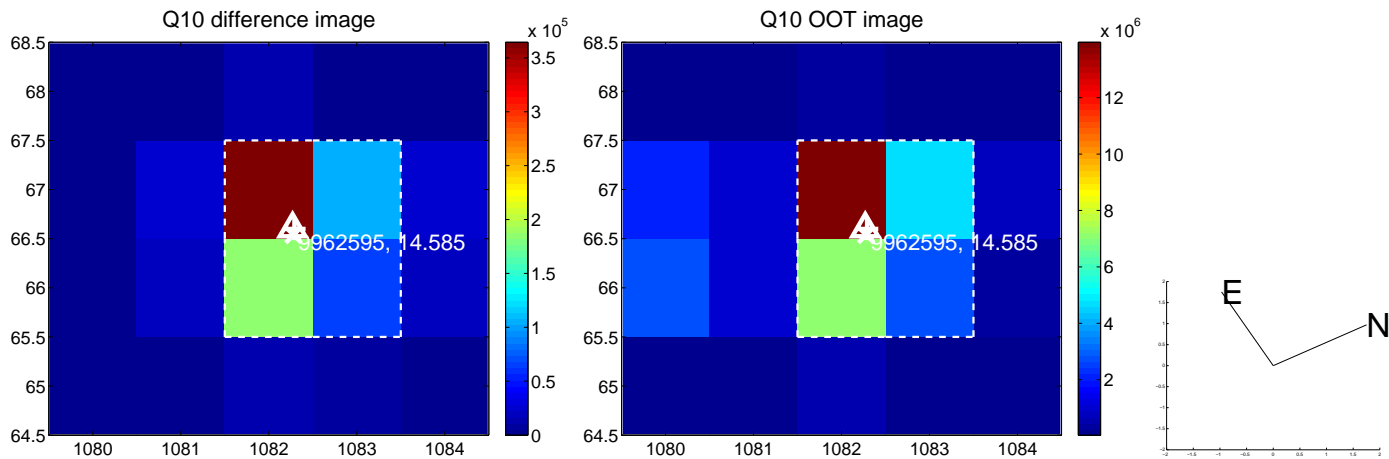
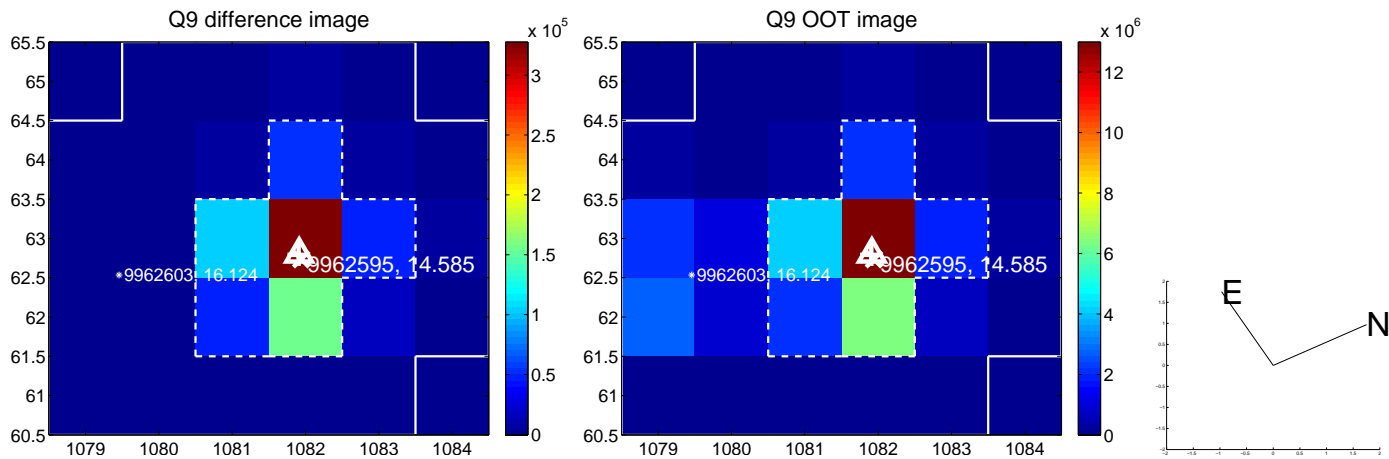


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

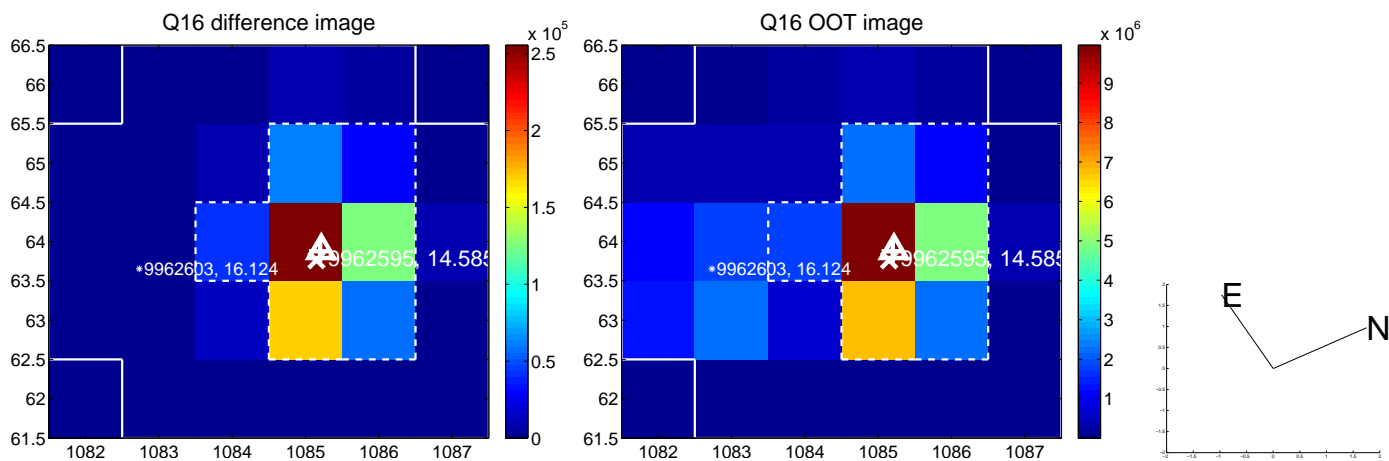
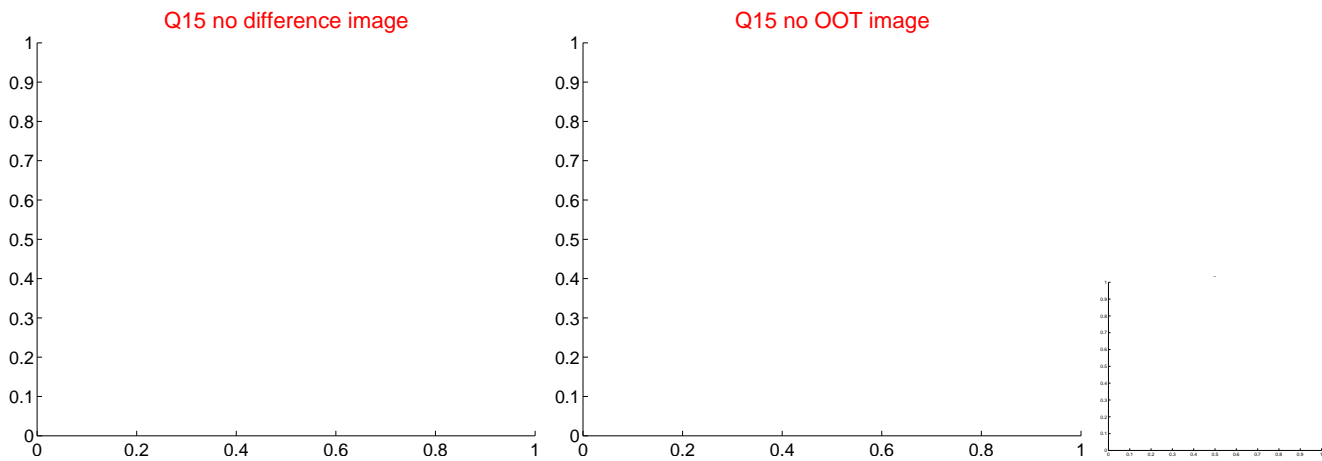
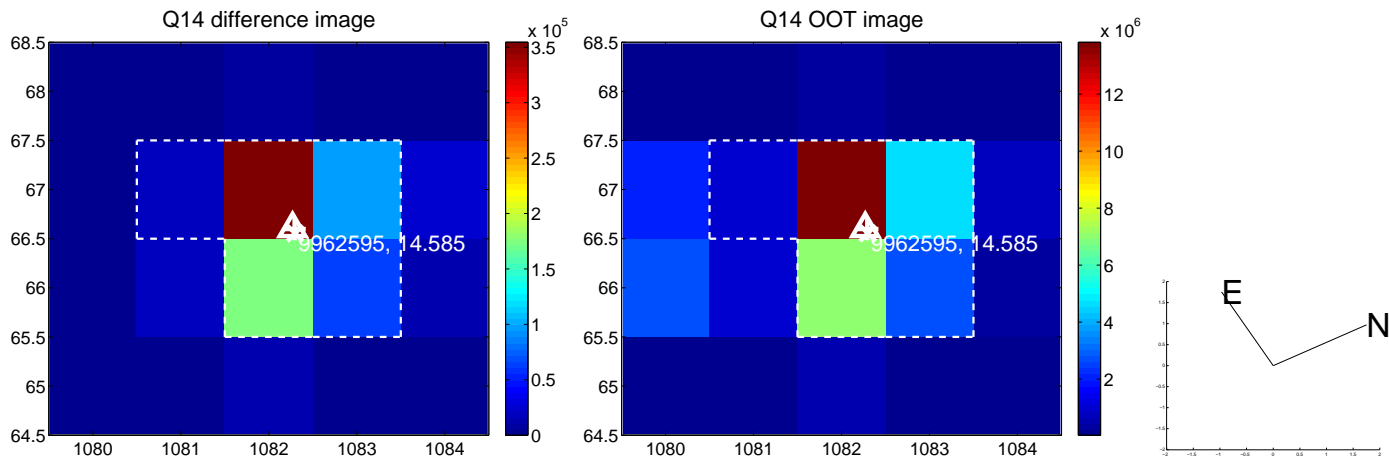
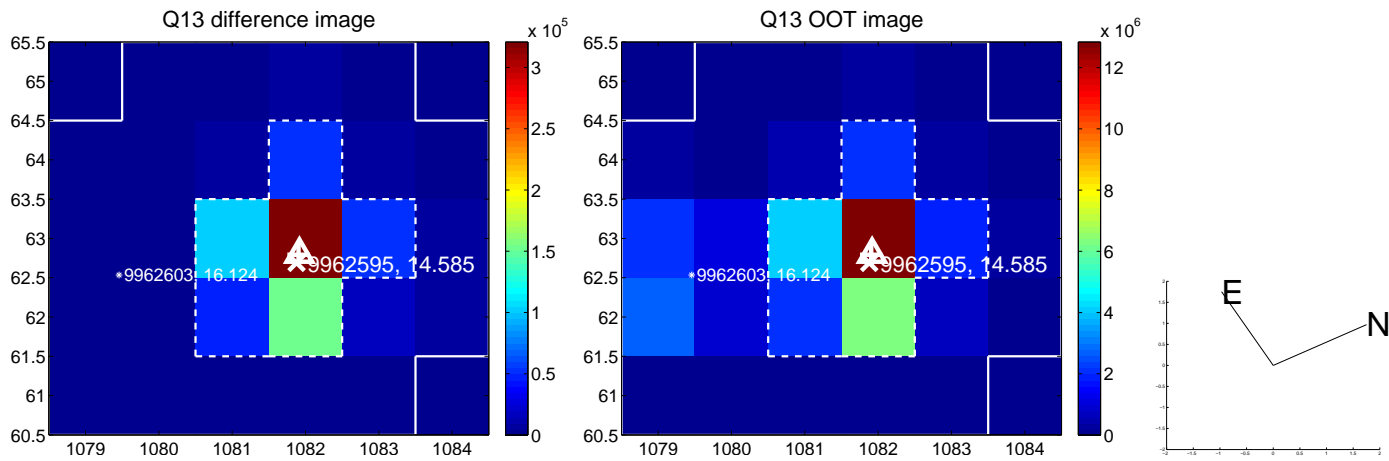




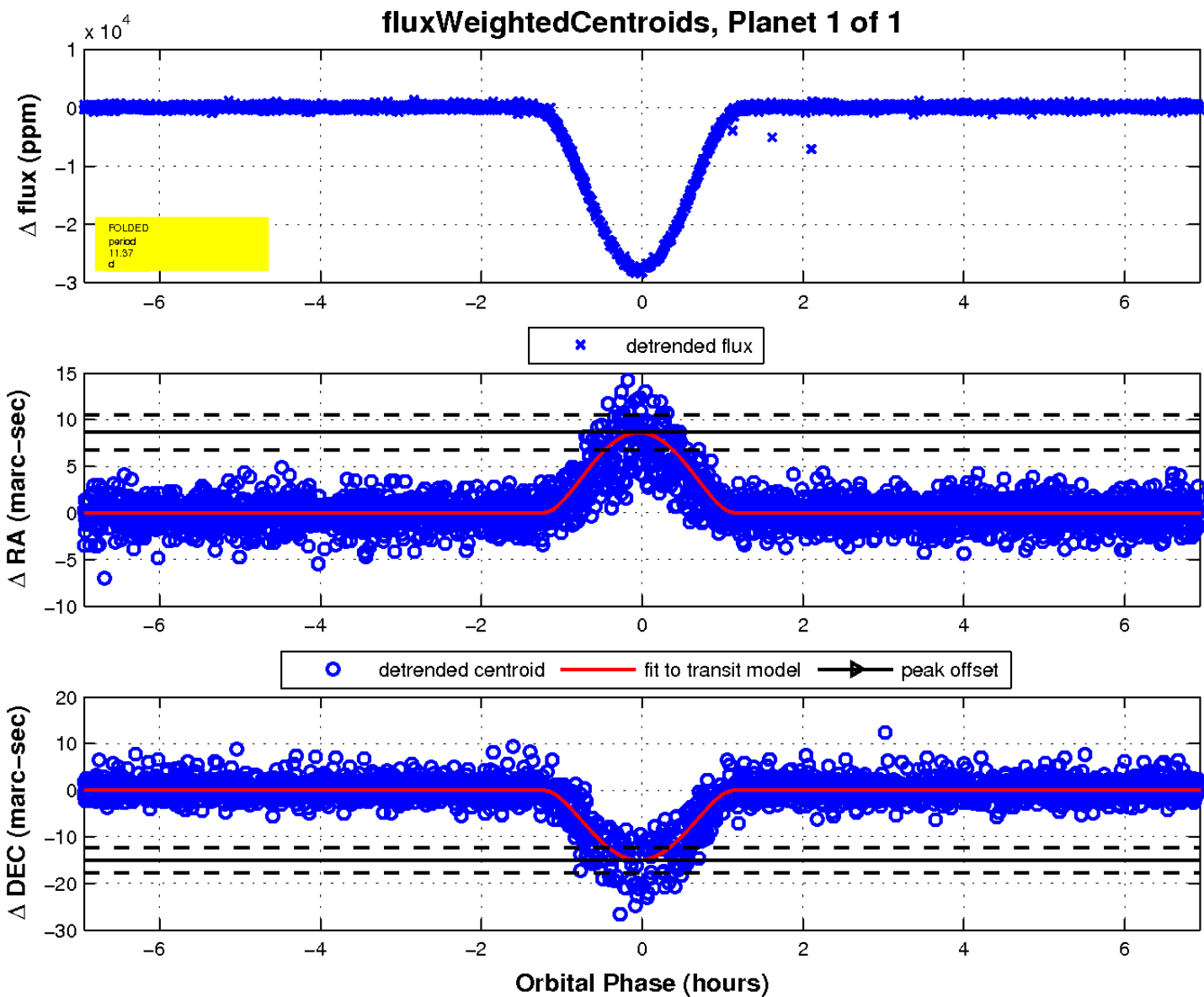
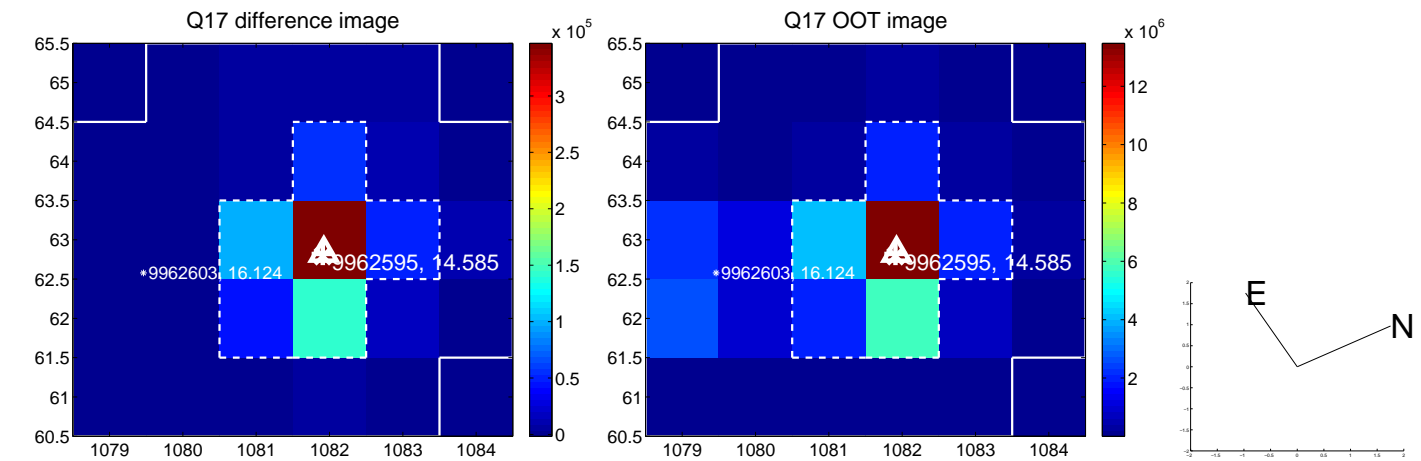
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

