

# KIC 008826168

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008826168-01	OBS	1850.01	11.551027	134.908659	410.1	3.978	40.4	44.8	1.06	5907	2.73	120.93

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008826168-01	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.

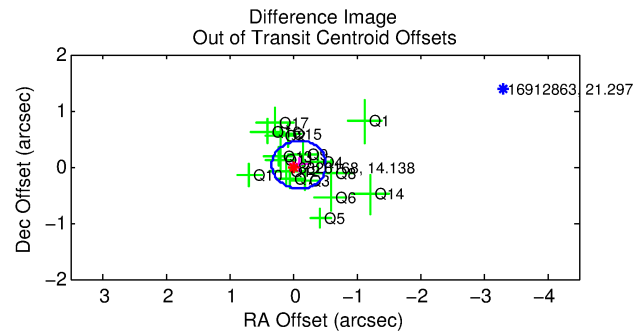
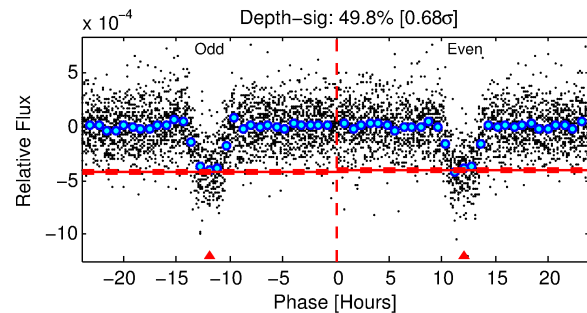
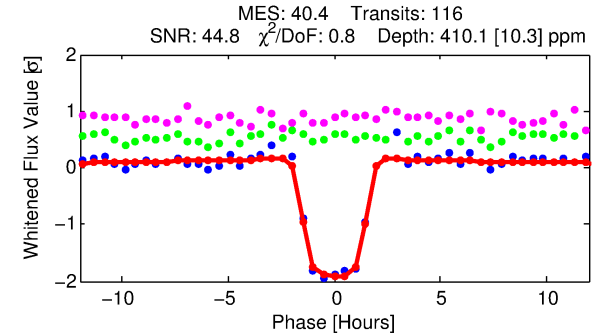
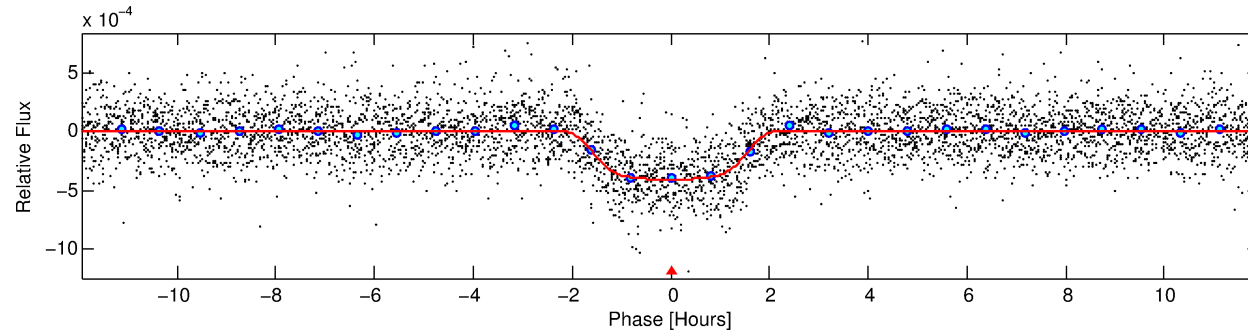
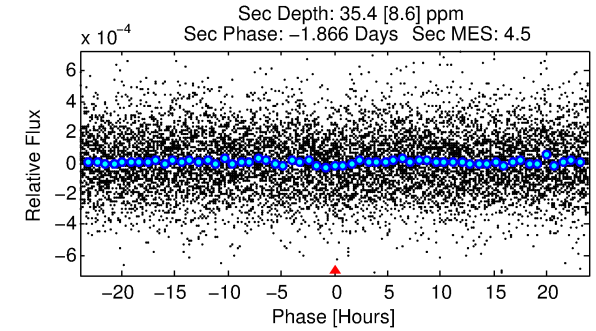
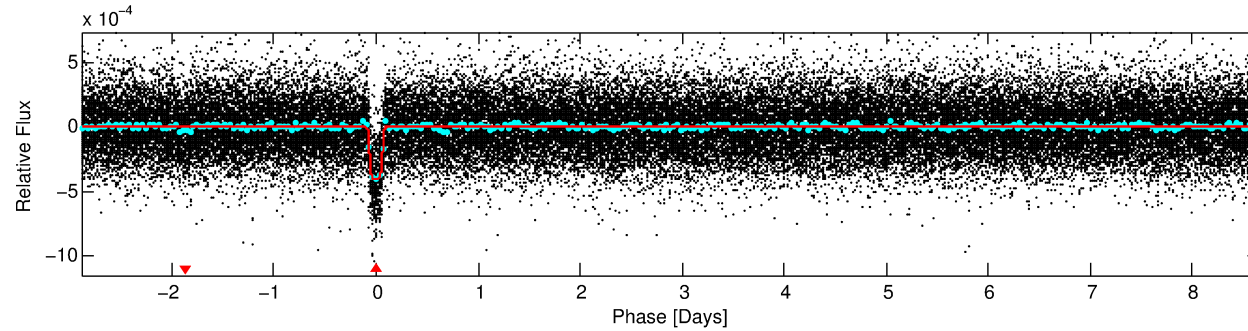
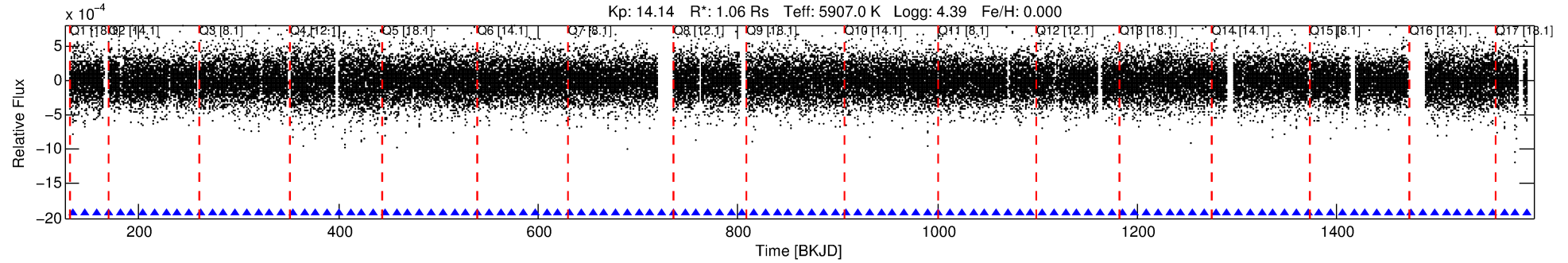
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008826168-01

No Significant Match Found

# DV One-Page Summary

KIC: 8826168 Candidate: 1 of 1 Period: 11.551 d  
KOI: K01850.01 Corr: 0.966



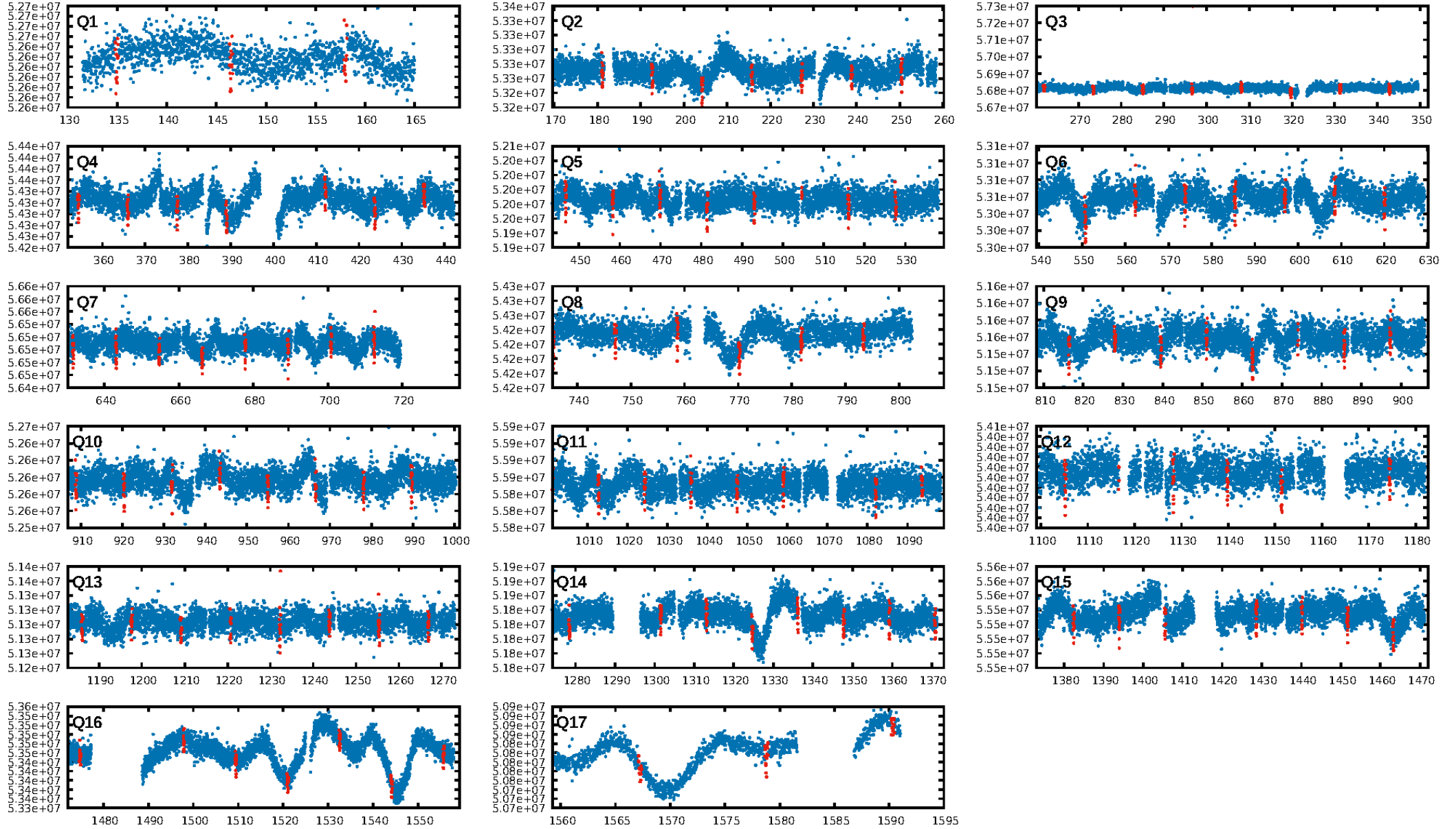
## DV Fit Results:

Period = 11.55103 [0.00003] d  
Epoch = 134.9087 [0.0019] BKJD  
Rp/R\* = 0.0236 [0.0006]  
a/R\* = 8.33 [0.73]  
b = 0.95 [0.01]  
Seff = 120.93 [27.35]  
Teff = 846 [48] K  
Rp = 2.73 [0.43] Re  
a = 0.1005 [0.0140] AU  
Ag = 26.47 [8.64] [2.95σ]  
Teffp = 2965 [193] K [10.65σ]

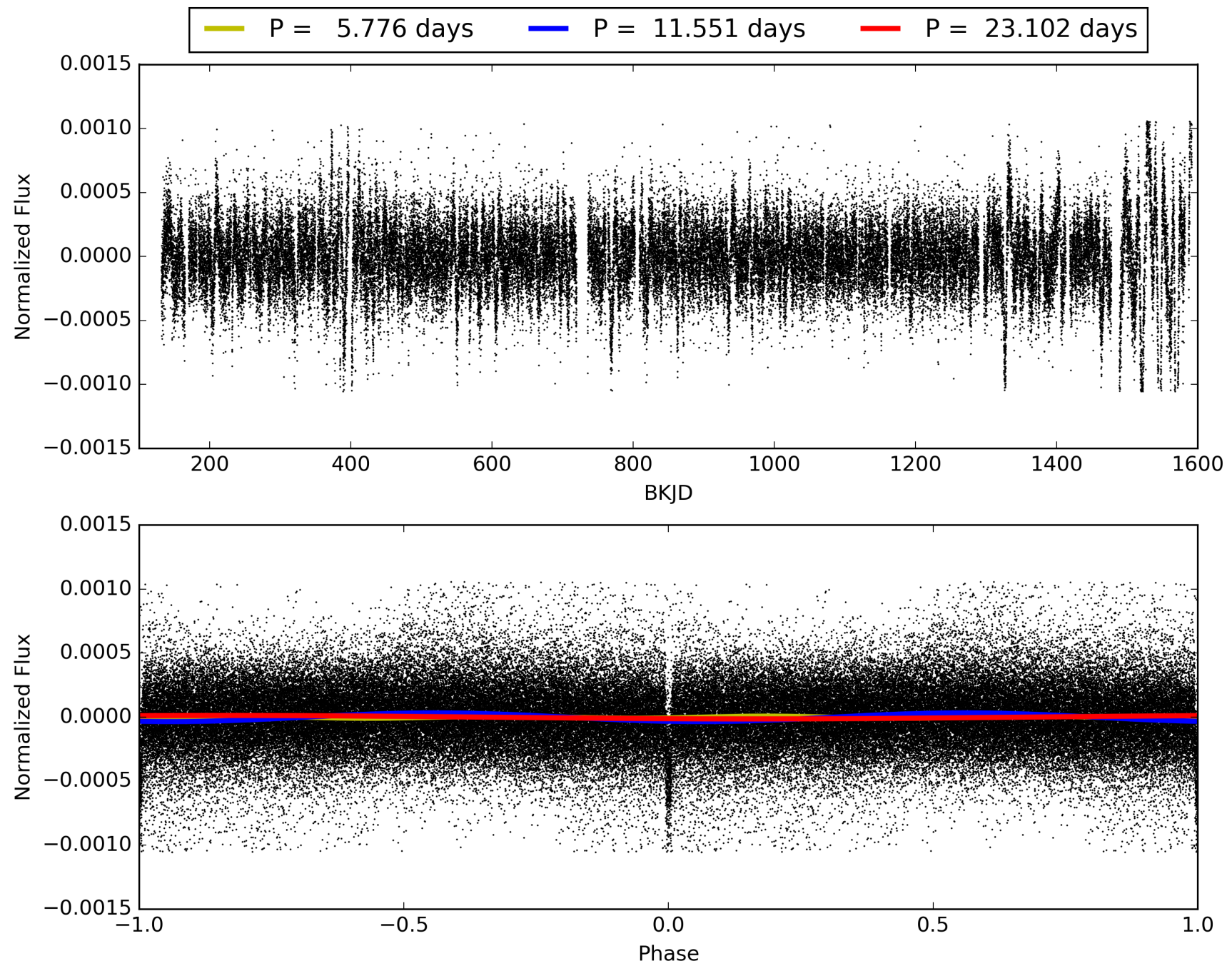
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [110/110]  
GhostDiagnostic-chr: 4.097  
Centroid-sig: 0.3%  
Centroid-so: 0.460 arcsec [1.51σ]  
OotOffset-rm: 0.101 arcsec [0.71σ]  
KicOffset-rm: 0.144 arcsec [1.04σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008826168-01, PDC Light Curves

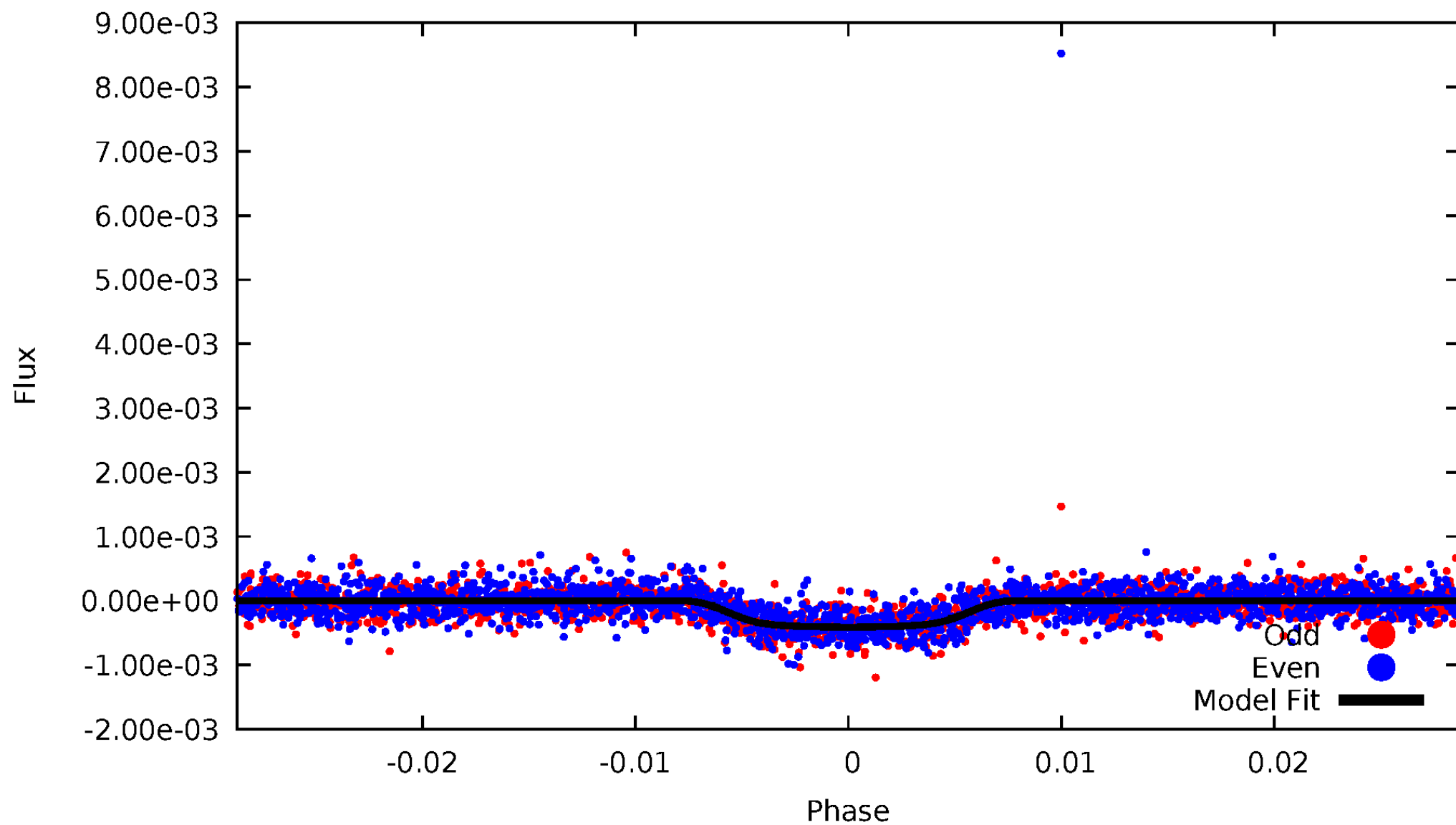


# TCE 008826168-01



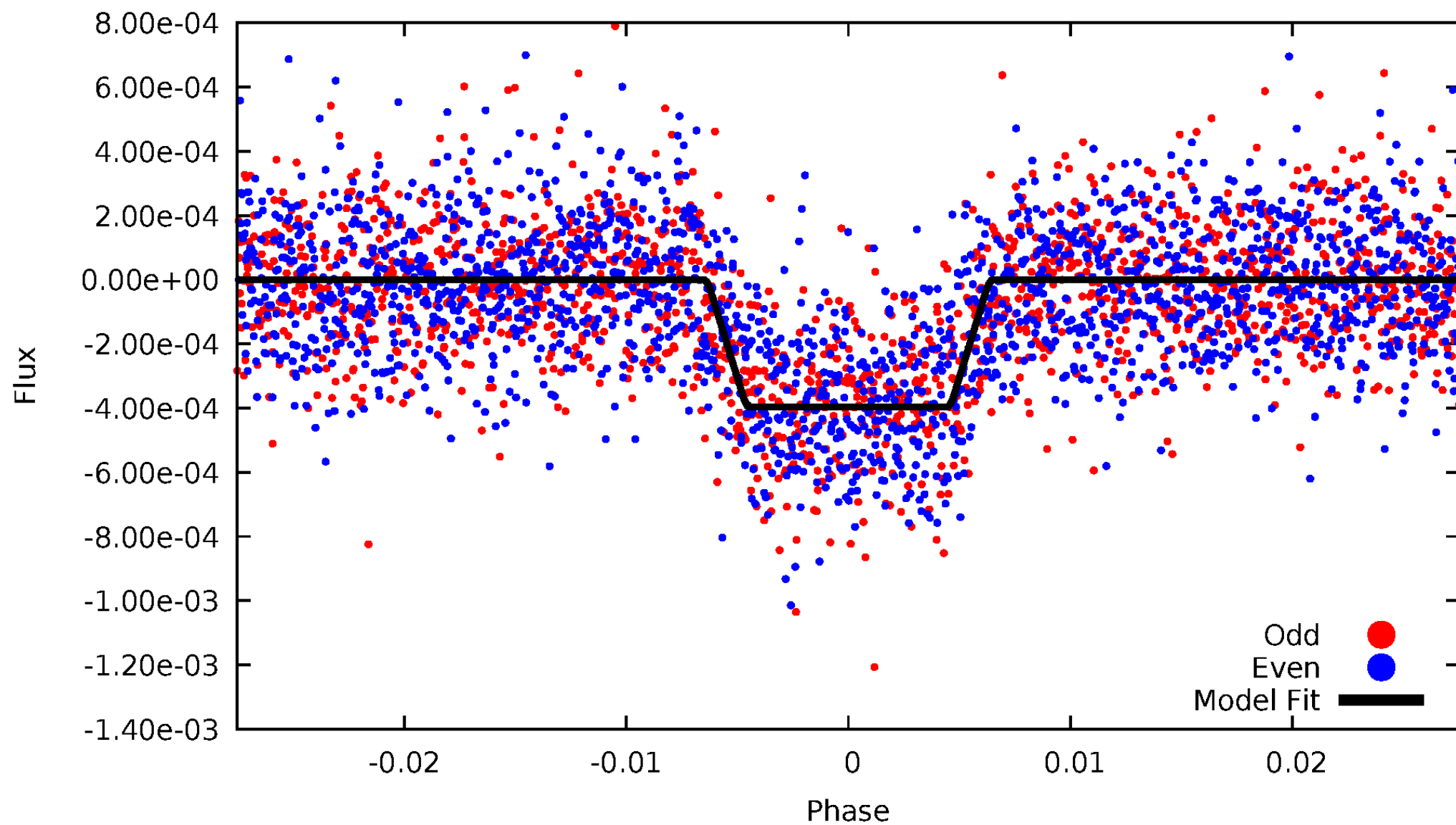
# DV Odd/Even

TCE 008826168-01



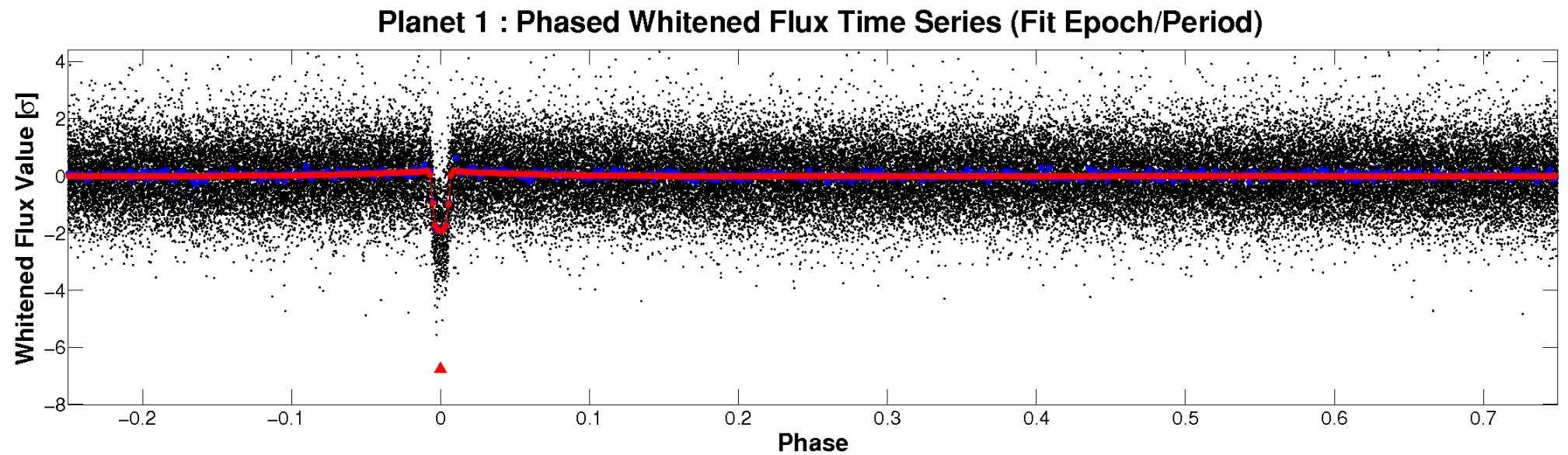
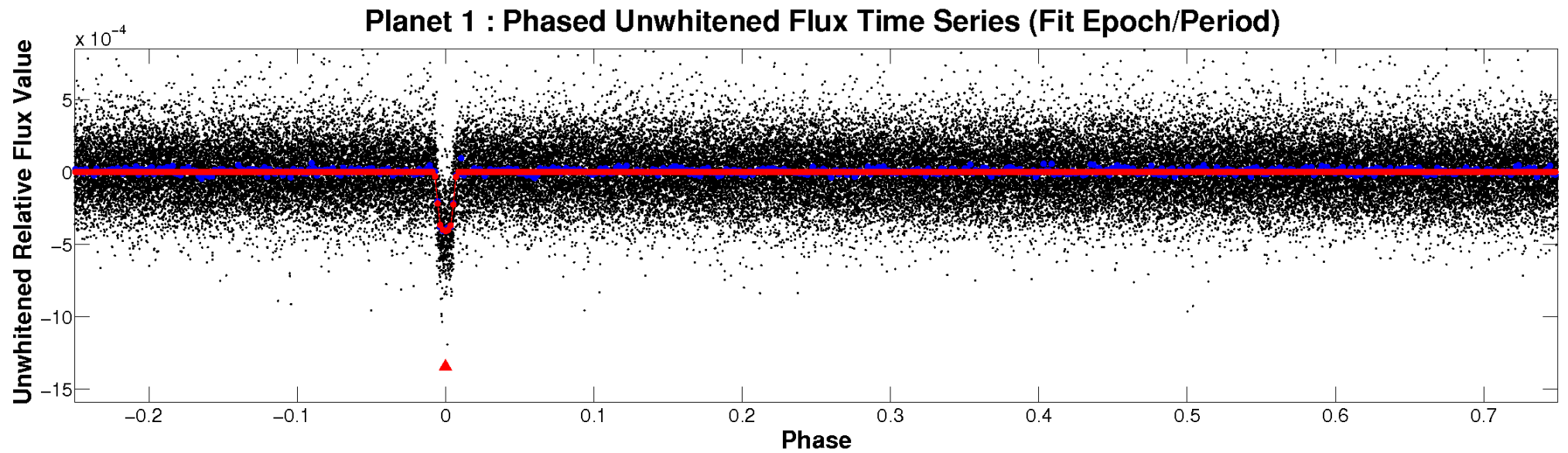
# ALT Odd/Even

TCE 008826168-01



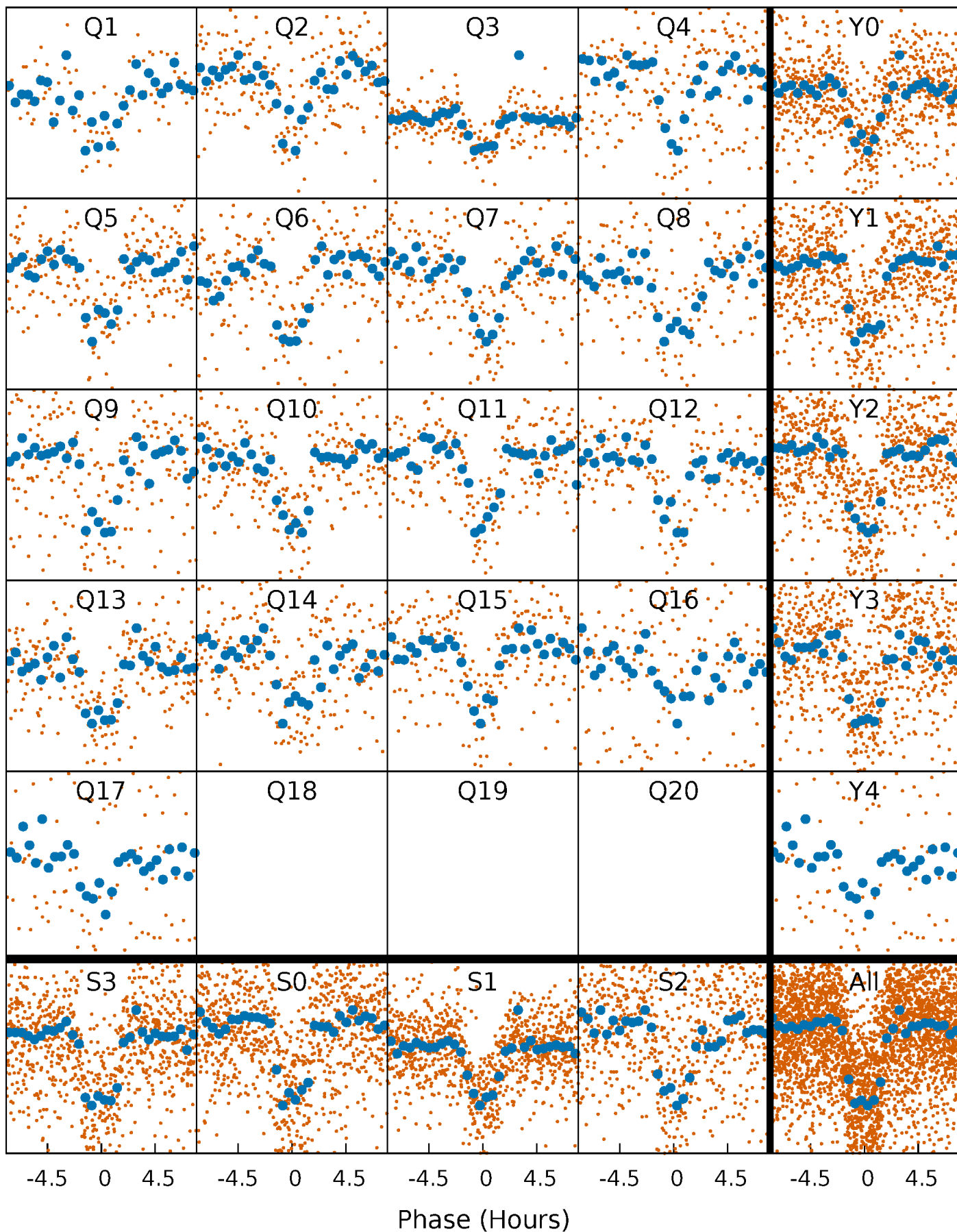


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

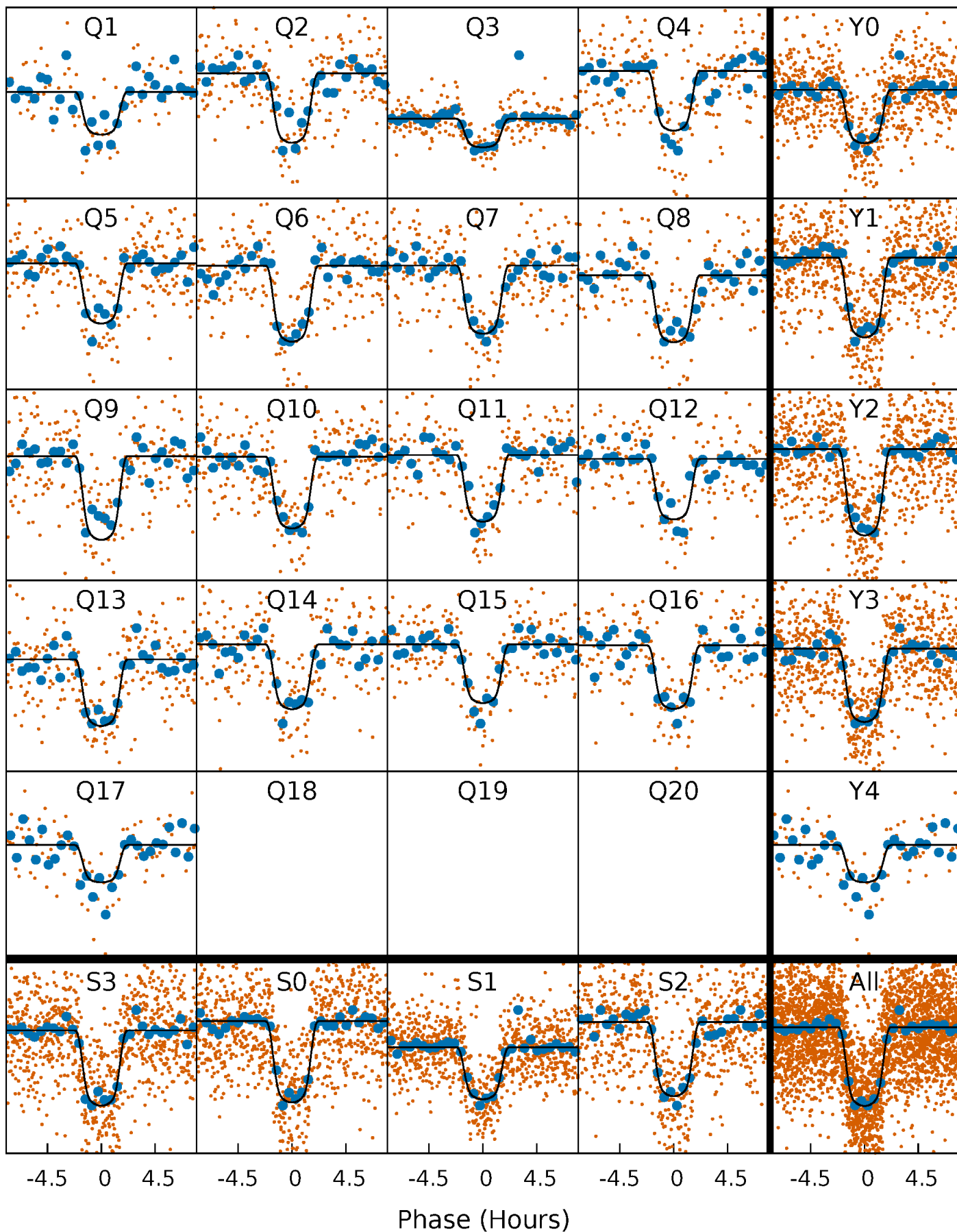
TCE 008826168-01 P= 11.551027 Days  $T_0=134.908659$  (BKJD)





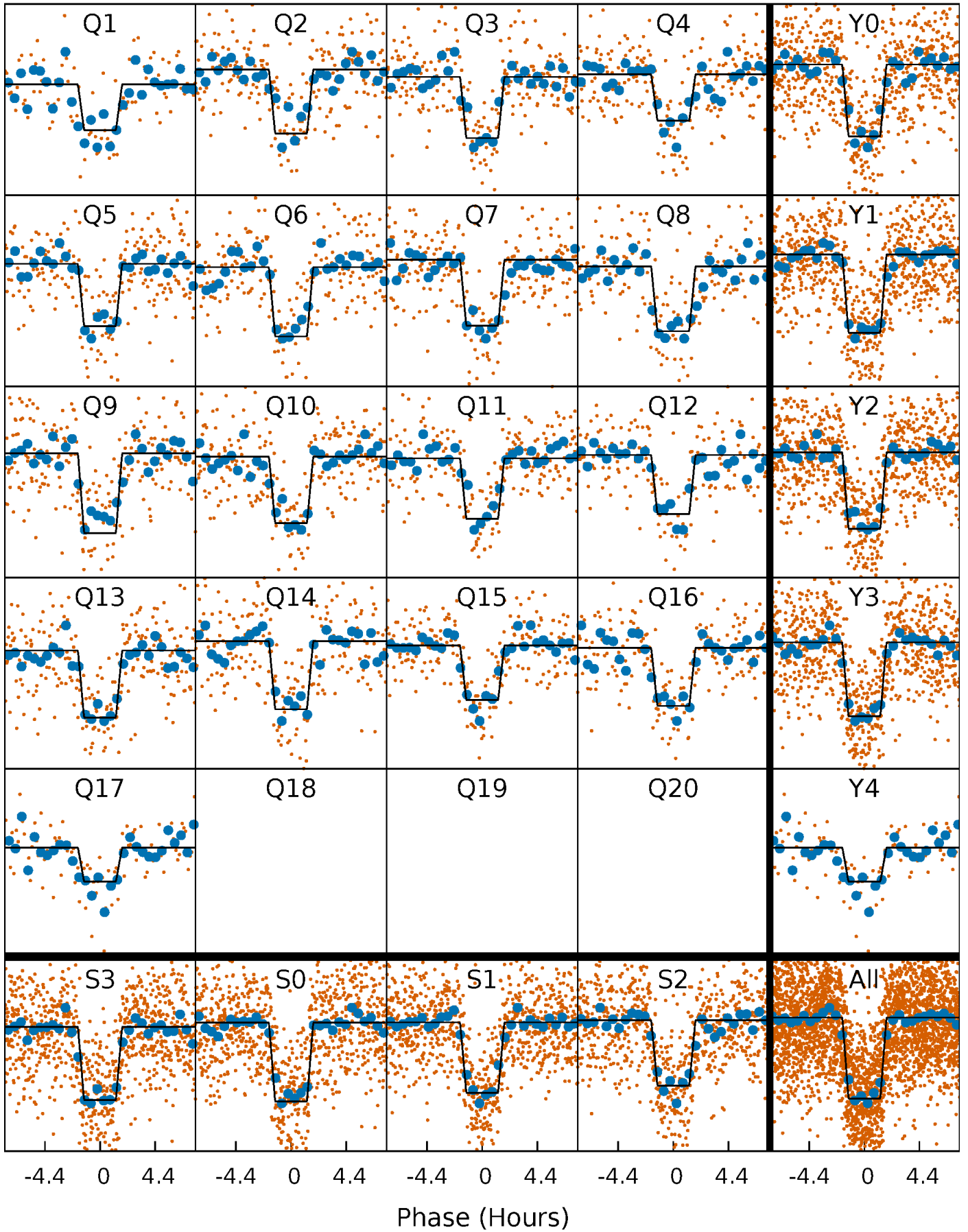
# DV Quarter-Phased Transit Curves

TCE 008826168-01 P= 11.551027 Days  $T_0=134.908659$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

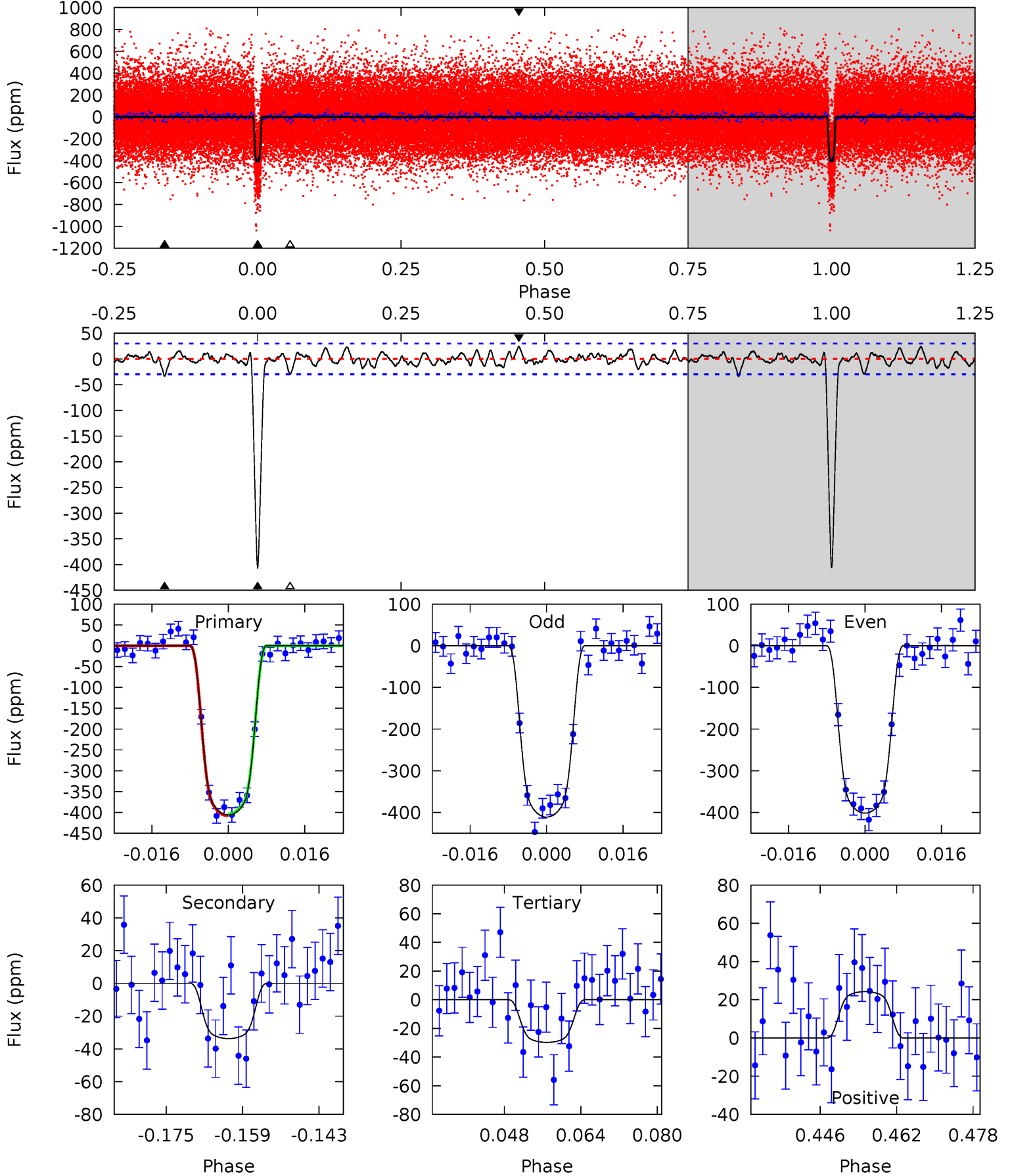
TCE 008826168-01 P= 11.551039 Days  $T_0=134.908370$  (BKJD)



# DV Model-Shift Uniqueness Test

008826168-01, P = 11.551027 Days, E = 123.357632 Days

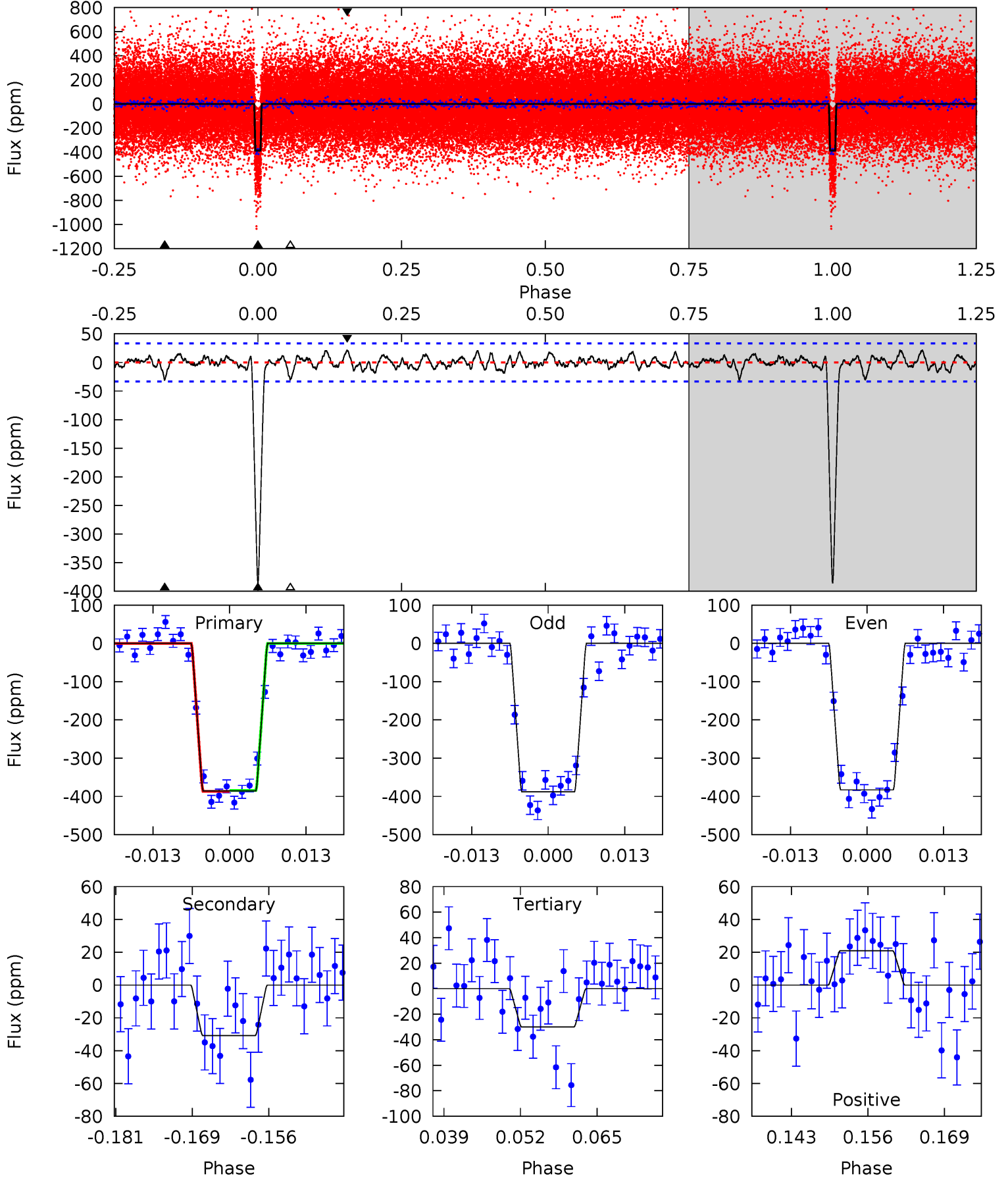
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
66.8	5.55	4.89	3.99	4.94	2.41	1.44	61.9	62.8	0.65	1.55	0.76	0.98	0.06	0.32



# Alt Model-Shift Uniqueness Test

008826168-01,  $P = 11.551039$  Days,  $E = 123.357331$  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
57.7	4.61	4.47	3.13	4.98	2.48	1.20	53.2	54.6	0.13	1.48	0.39	0.99	0.05	0.18



### Stellar Parameters For KIC 008826168

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5907^{+105}_{-117}$	$4.395^{+0.080}_{-0.120}$	$0.000^{+0.150}_{-0.150}$	$1.058^{+0.166}_{-0.097}$	$1.014^{+0.074}_{-0.067}$	$1.207^{+0.390}_{-0.415}$
	+2%/-2%	+2%/-3%	+inf%/-inf%	+16%/-9%	+7%/-7%	+32%/-34%
Source	SPE57	SPE57	SPE57	DSEP		

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

### Secondary Eclipse Parameters for KIC 008826168-01 / KOI 1850.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-34 \pm 6$	$2.74^{+0.24}_{-0.18}$	$1186^{+49}_{-46}$	$3431^{+97}_{-121}$	$24^{+6}_{-6}$
Alt.	$-31 \pm 7$	$2.31^{+0.21}_{-0.17}$	$1184^{+50}_{-45}$	$3562^{+132}_{-143}$	$31^{+9}_{-8}$

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



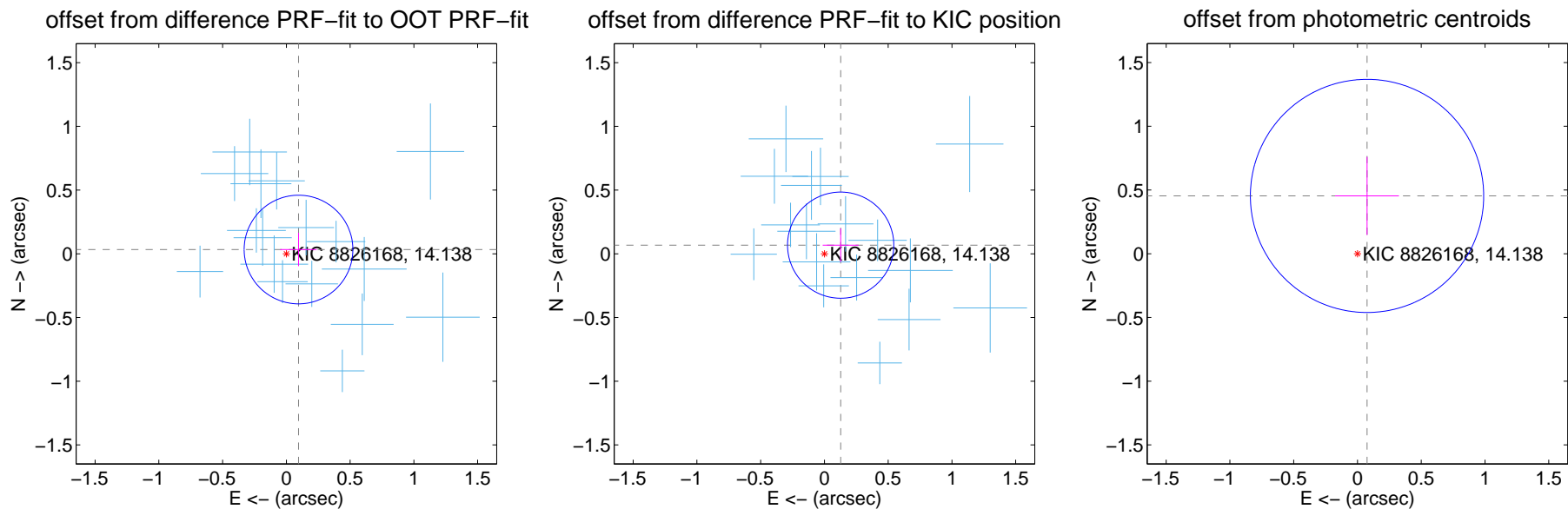
## DV Centroid Data

Supplemental centroid analysis for 008826168-01. Kepler magnitude: 14.14. Transit SNR 44.85

There are 17 quarters with good PRF difference image offsets

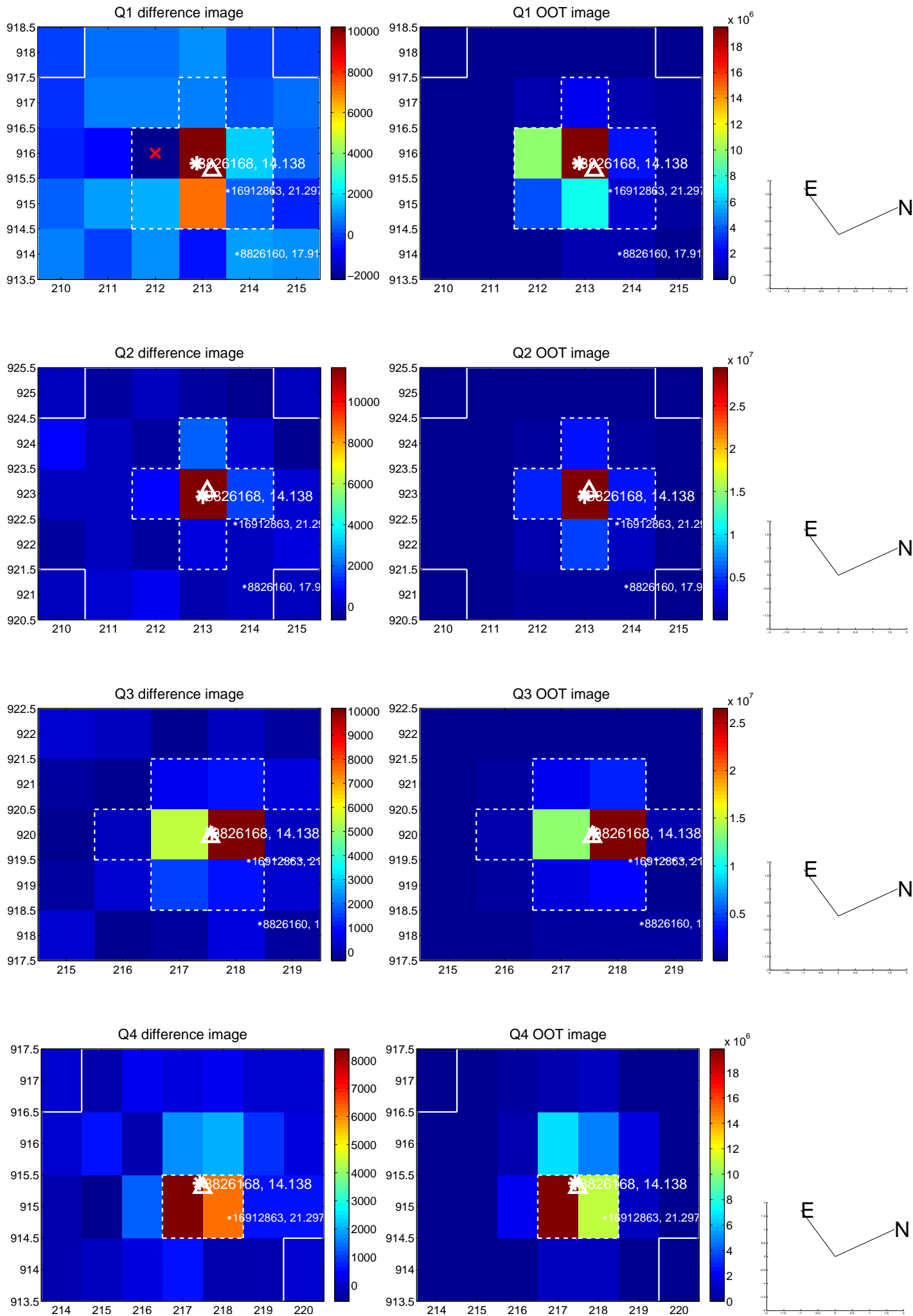
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.101 \pm 0.142$	0.71	$-0.095 \pm 0.143$	$0.033 \pm 0.131$
PRF-fit source offset from KIC position	$0.144 \pm 0.139$	1.04	$-0.127 \pm 0.141$	$0.068 \pm 0.131$
photometric centroid source offset	$0.46 \pm 0.30$	1.51	$-0.08 \pm 0.25$	$0.45 \pm 0.31$

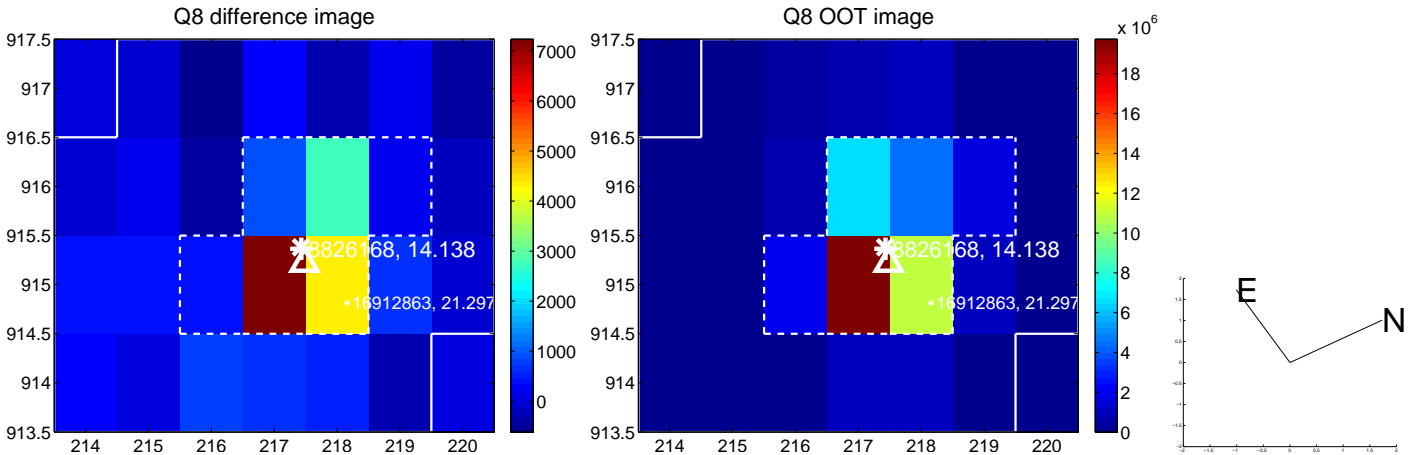
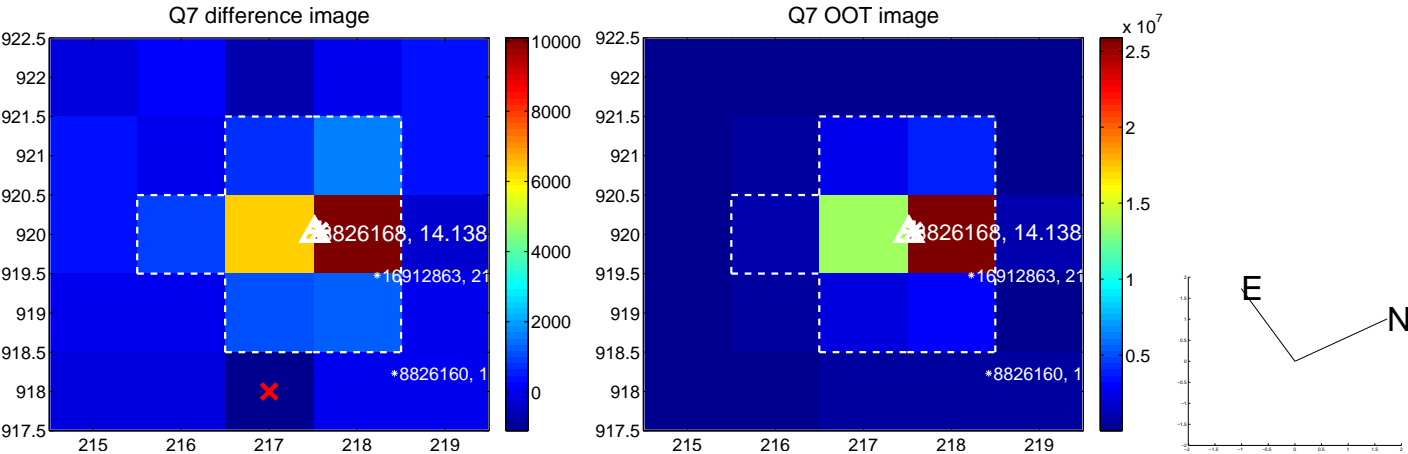
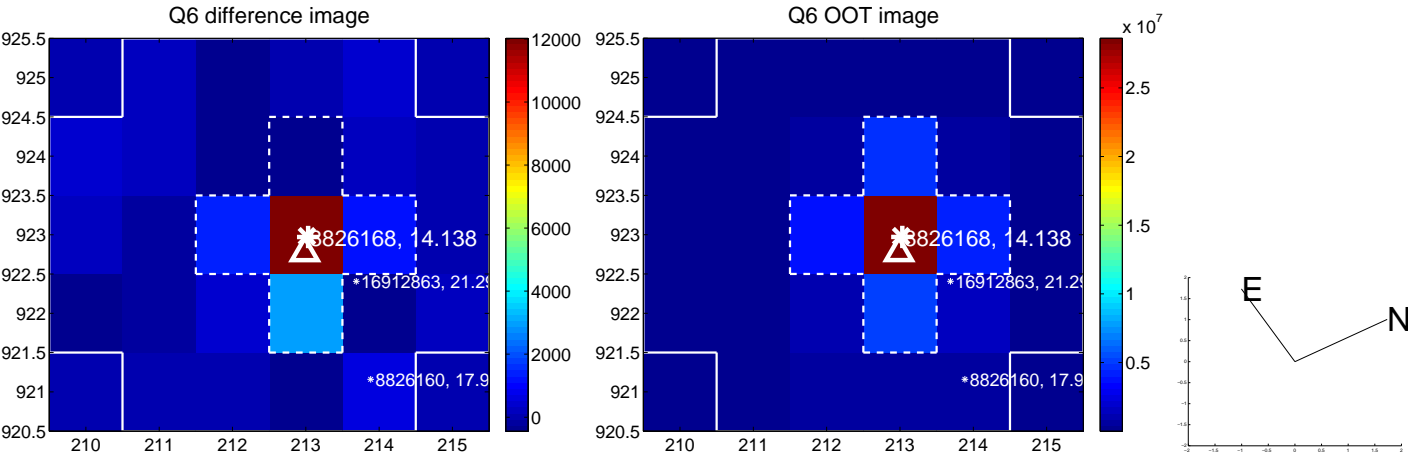
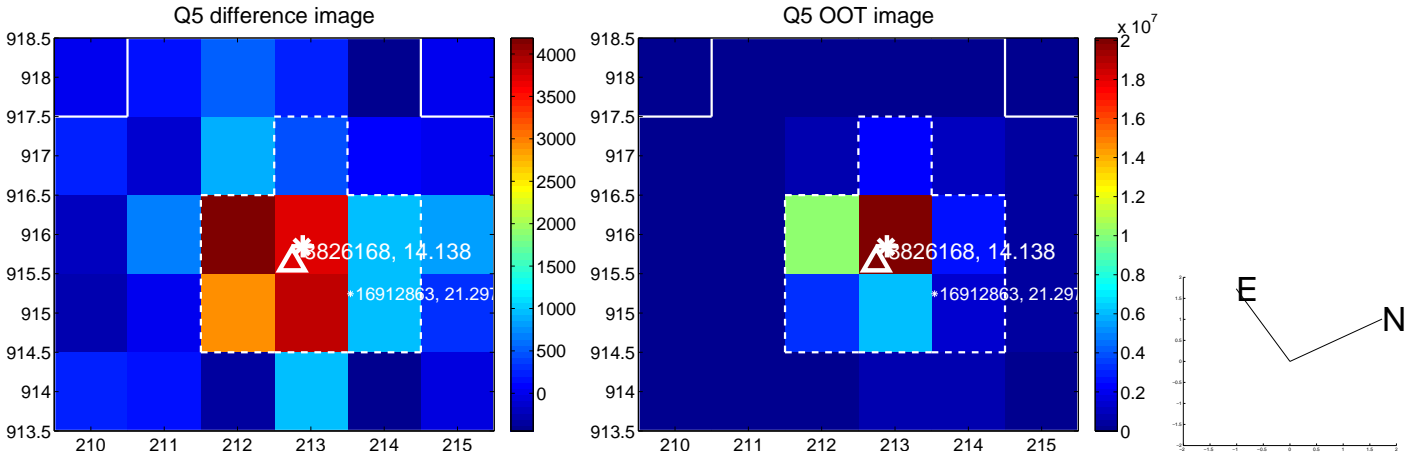


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

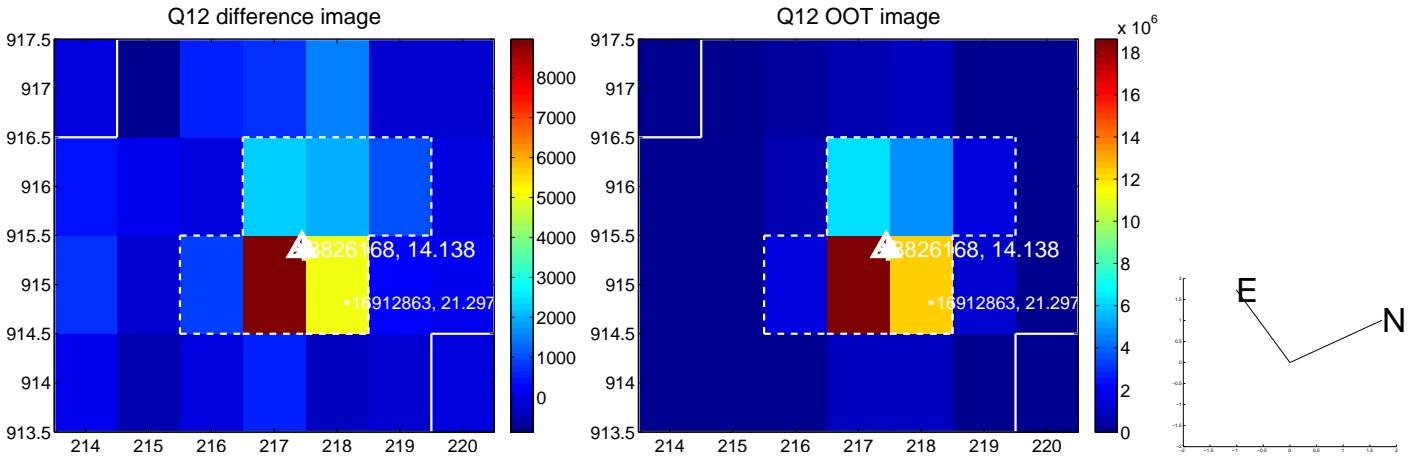
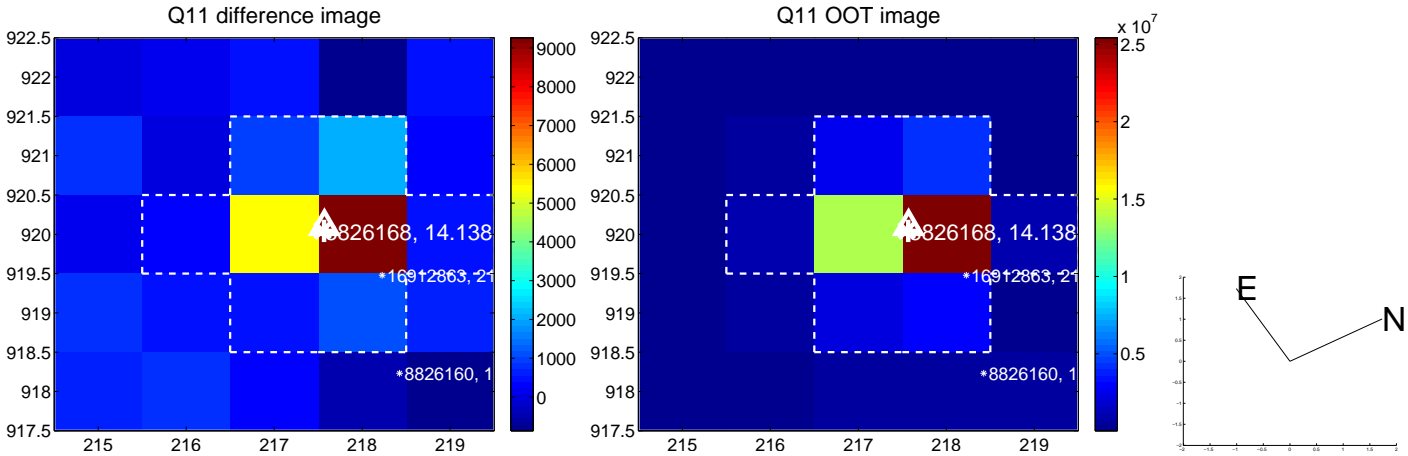
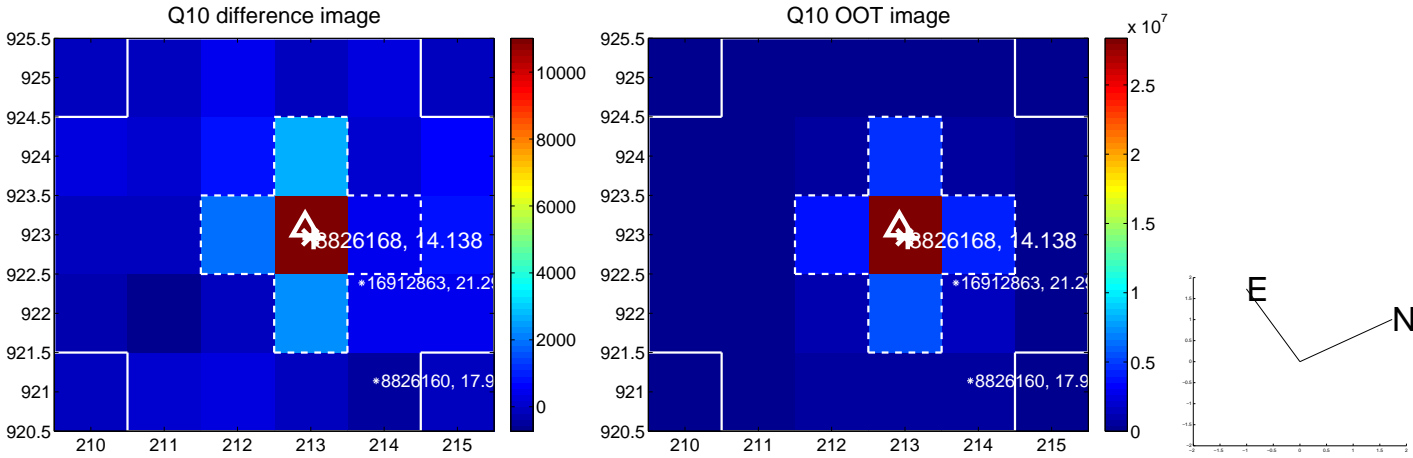
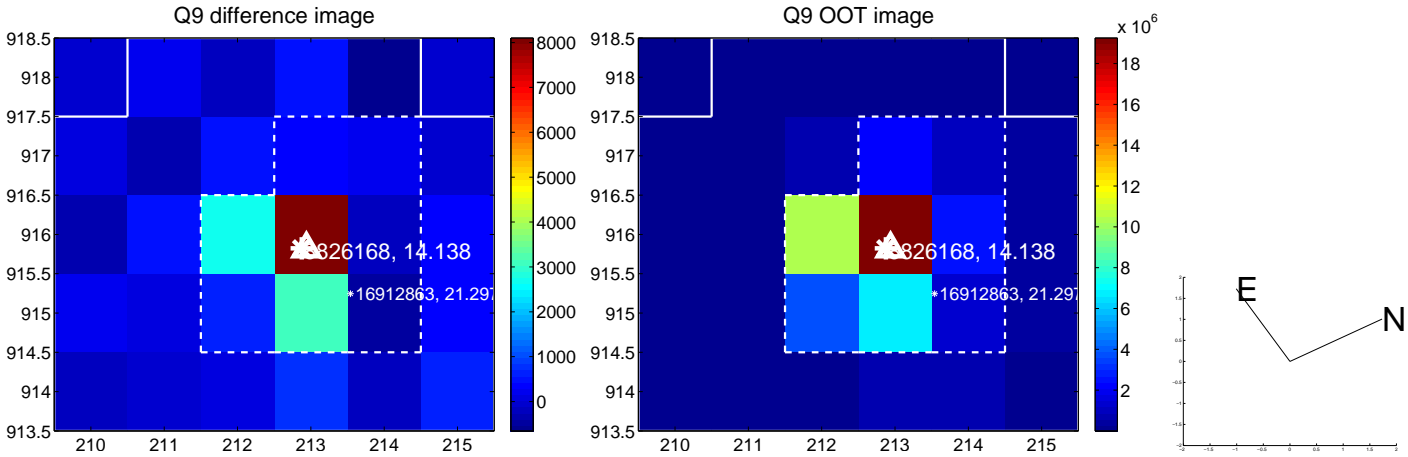
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



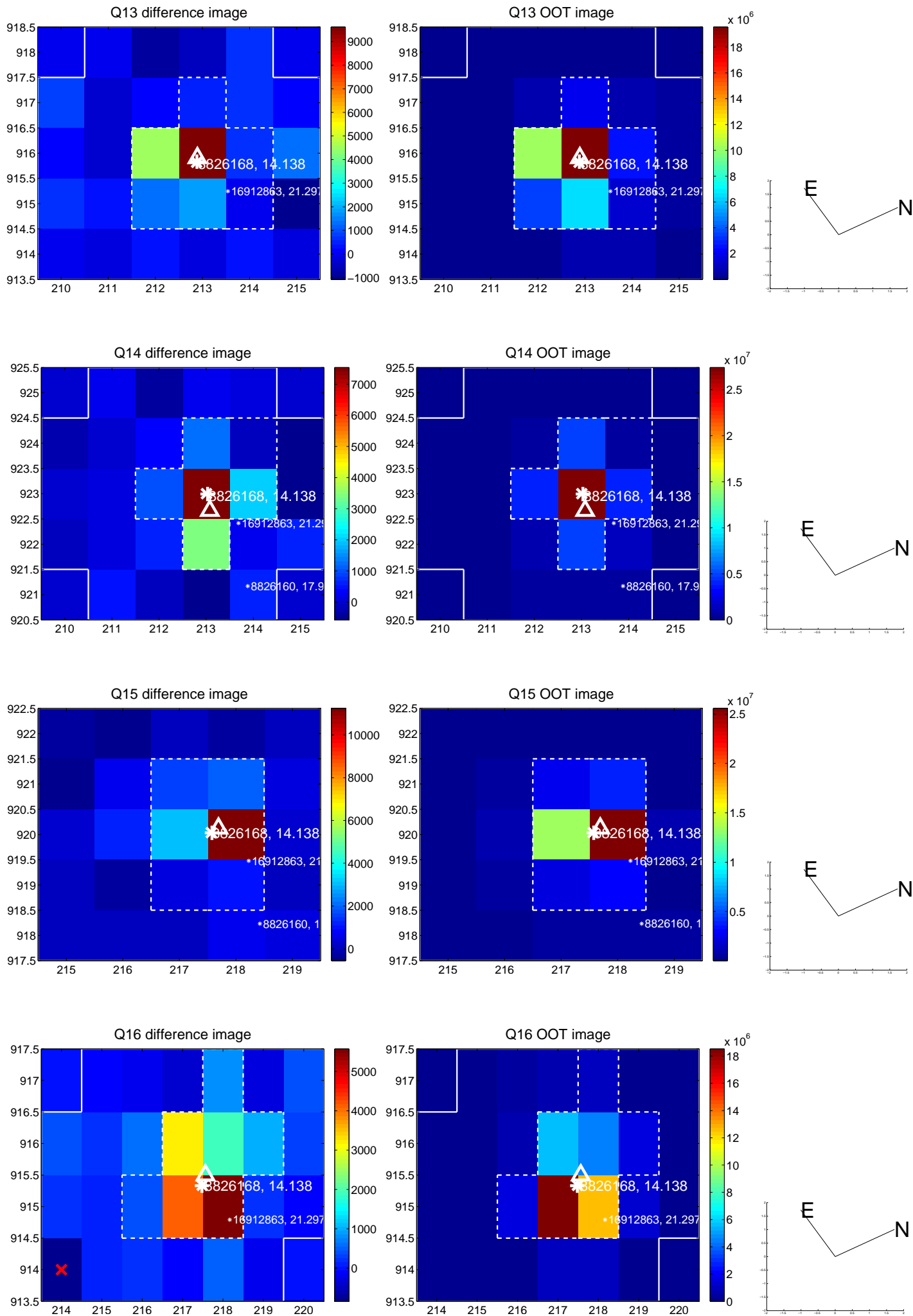
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

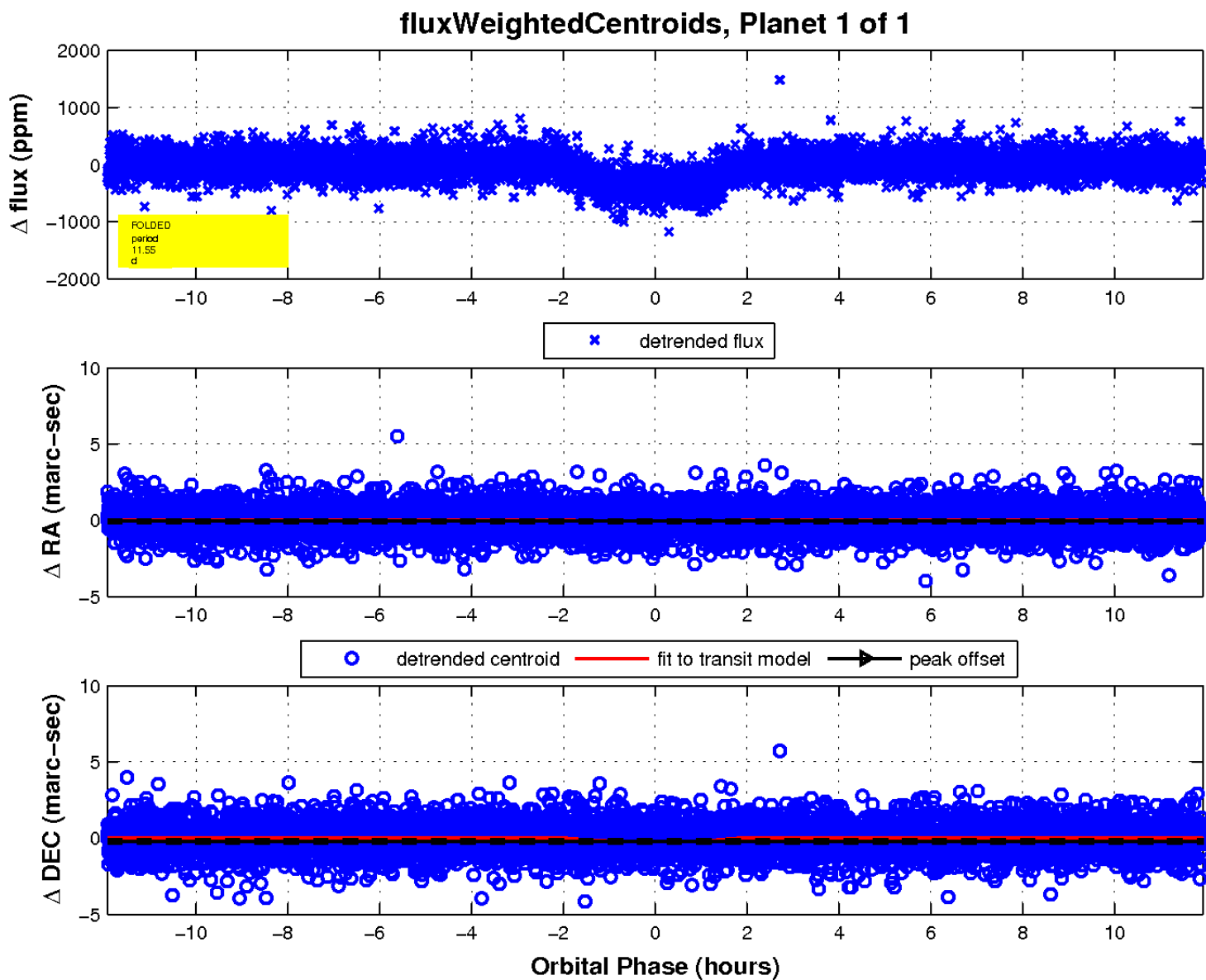
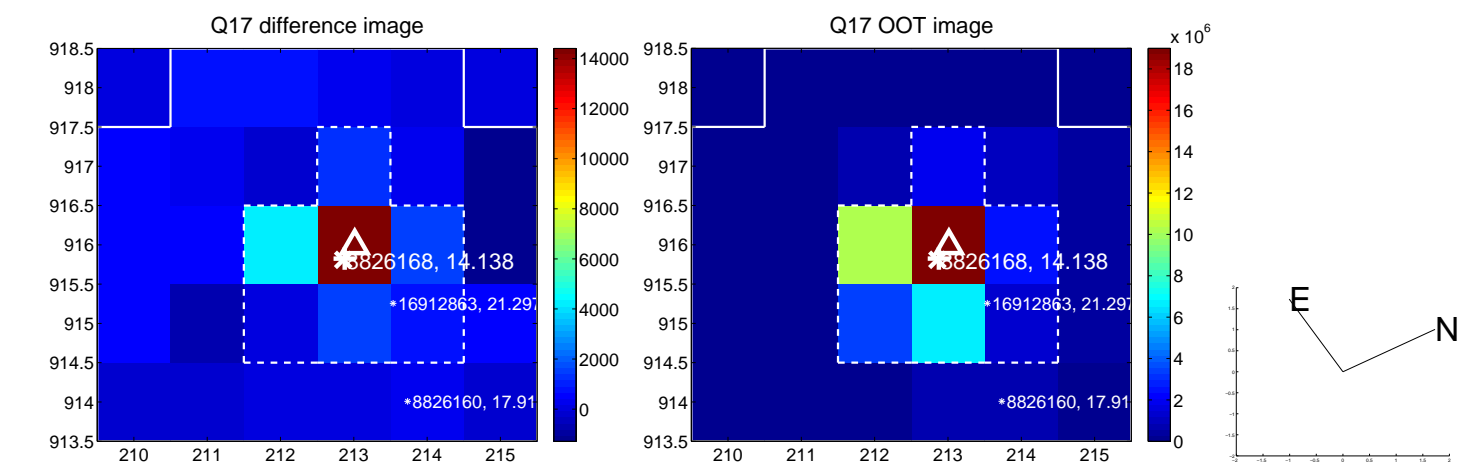


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



# UKIRT Image

Declination

