

# KIC 006862328

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006862328-01	OBS	0865.01	119.020675	222.236664	7444.6	8.208	166.0	166.3	1.06	5453	9.10	4.26

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006862328-01	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.

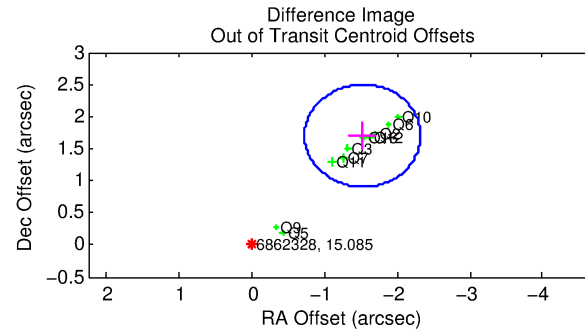
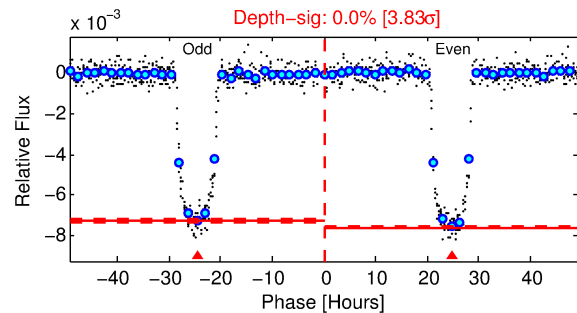
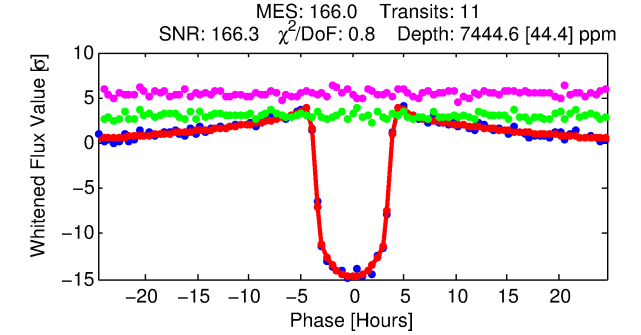
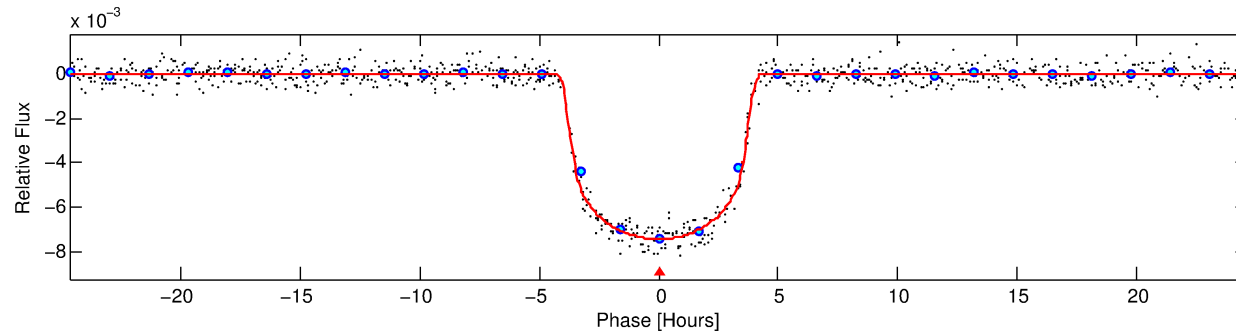
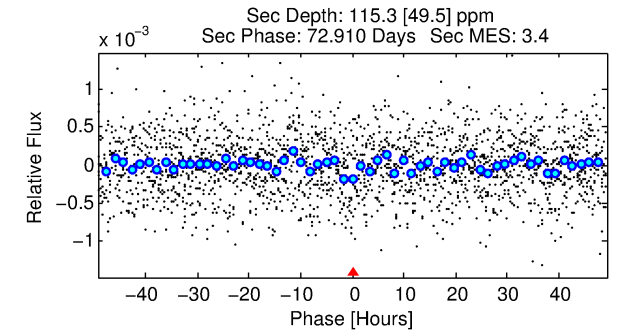
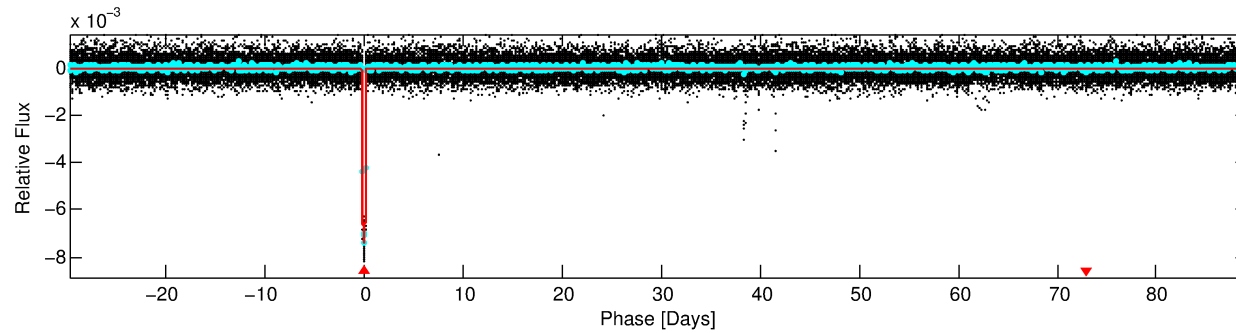
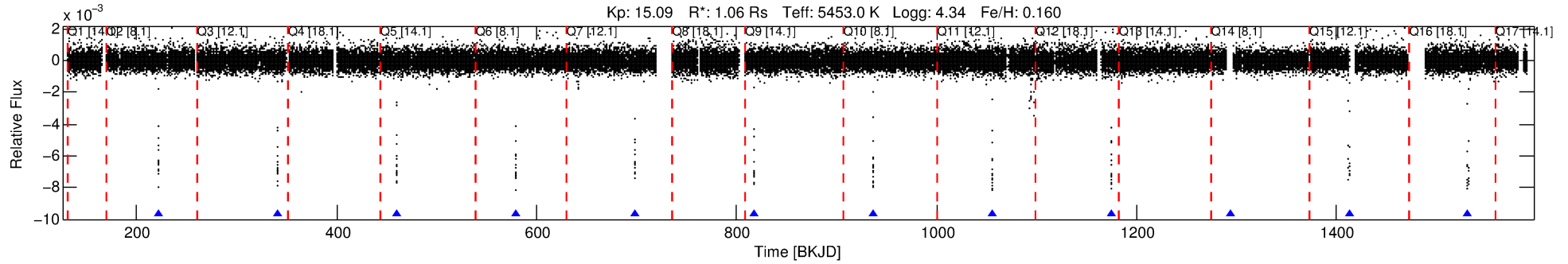
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006862328-01

No Significant Match Found

# DV One-Page Summary

KIC: 6862328 Candidate: 1 of 1 Period: 119.021 d  
KOI: K00865.01 Corr: 0.995



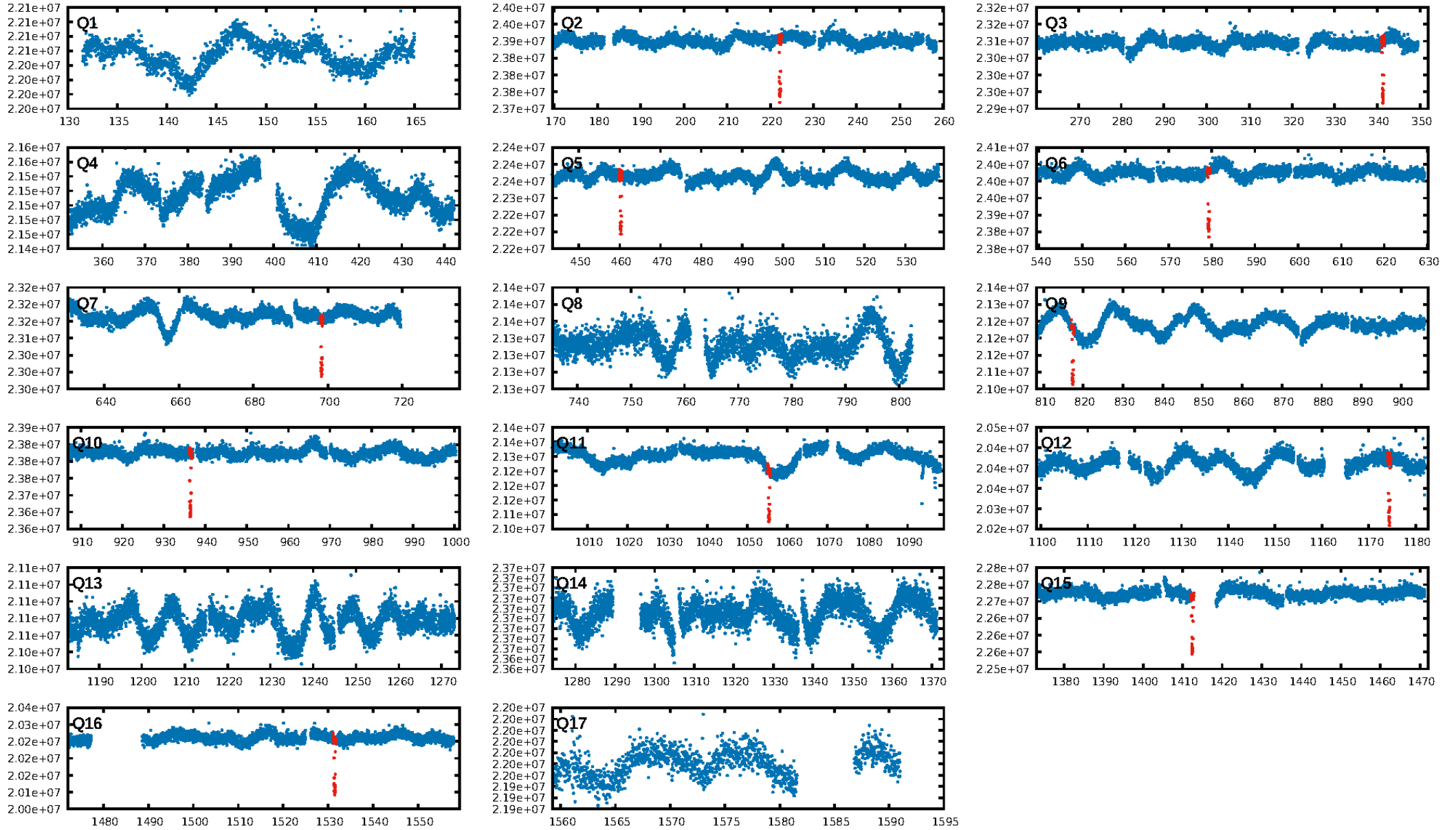
## DV Fit Results:

Period = 119.02067 [0.00012] d  
Epoch = 222.2367 [0.0007] BKJD  
Rp/R\* = 0.0785 [0.0013]  
a/R\* = 113.88 [6.73]  
b = 0.33 [0.16]  
Seff = 4.26 [1.06]  
Teq = 366 [23] K  
Rp = 9.10 [1.38] Re  
a = 0.4580 [0.0684] AU  
Ag = 160.77 [79.47] [2.01 $\sigma$ ]  
Teffp = 2017 [219] K [7.49 $\sigma$ ]

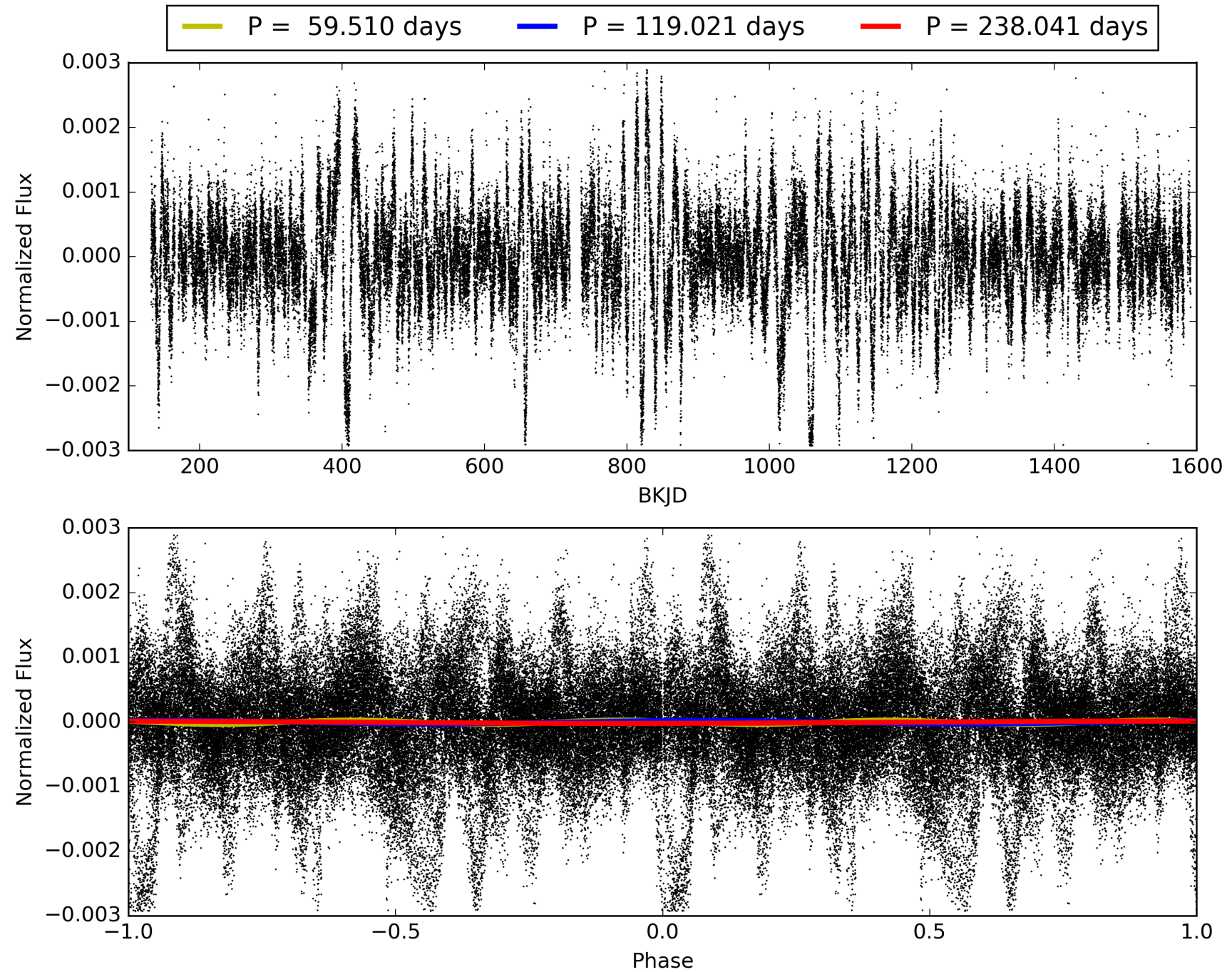
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [11/11]  
GhostDiagnostic-chr: 4.128  
Centroid-sig: 0.0%  
Centroid-so: 0.537 arcsec [9.66 $\sigma$ ]  
OotOffset-rm: 2.283 arcsec [8.60 $\sigma$ ]  
KicOffset-rm: 0.078 arcsec [1.12 $\sigma$ ]  
OotOffset-st: 3/3/2/2 [10]  
KicOffset-st: 3/3/2/2 [10]  
DiffImageQuality-fgm: 1.00 [10/10]  
DiffImageOverlap-fno: 1.00 [10/10]

# TCE 006862328-01, PDC Light Curves

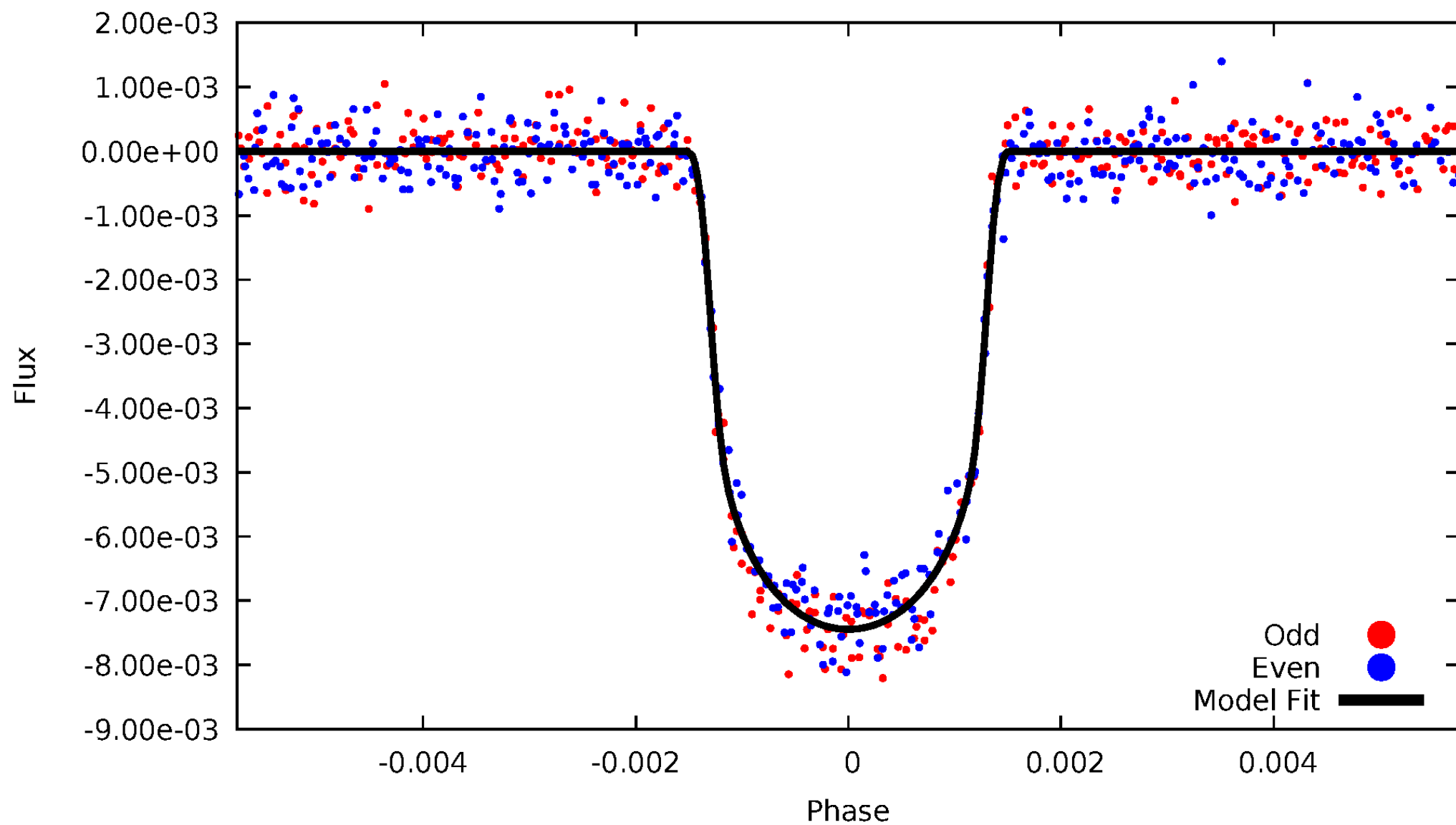


TCE 006862328-01



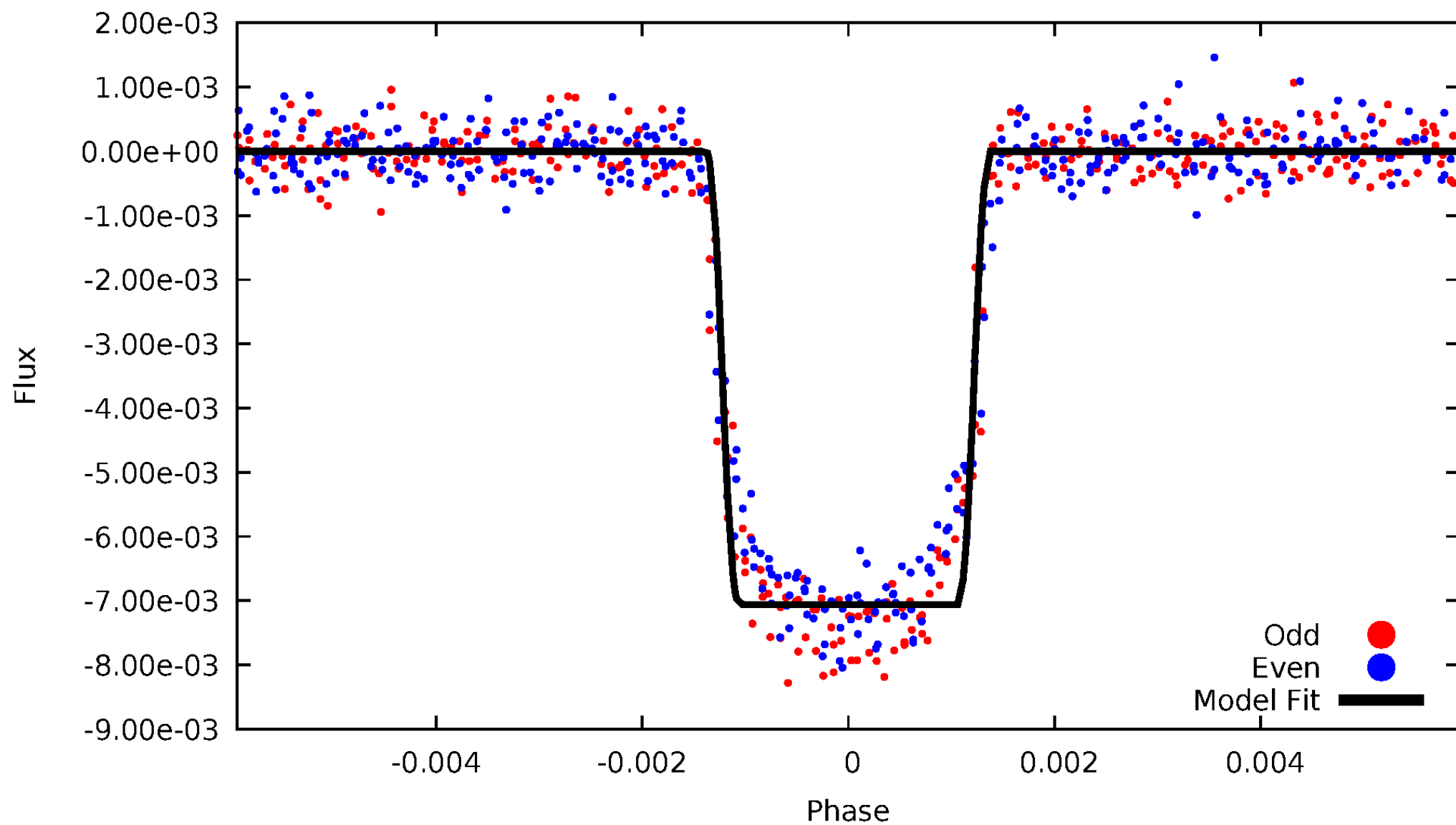
# DV Odd/Even

TCE 006862328-01



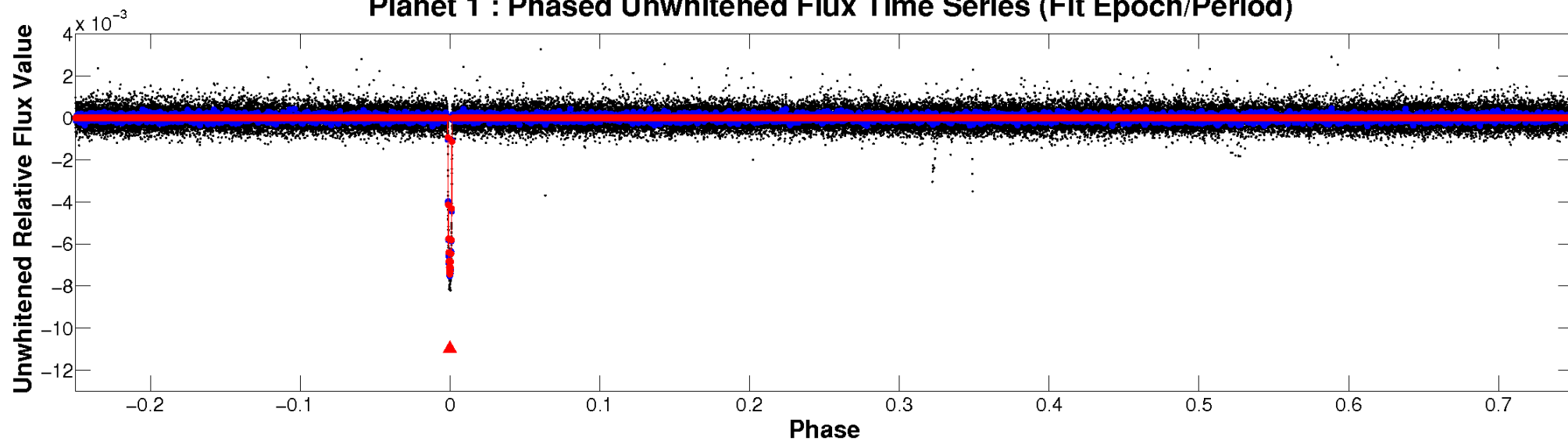
# ALT Odd/Even

TCE 006862328-01

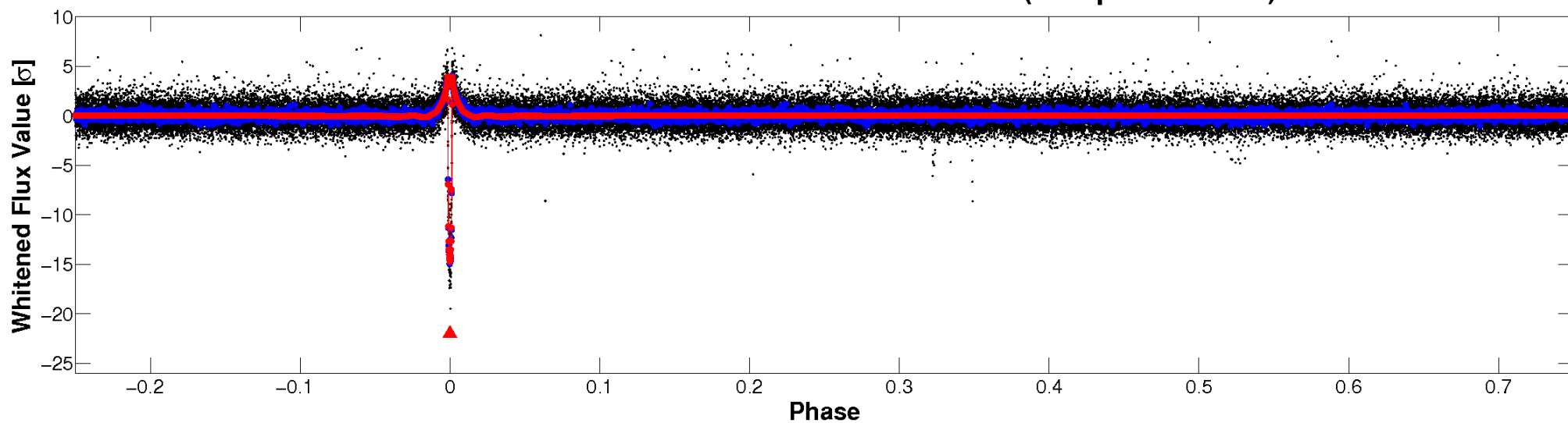


# Non-Whitened Vs. Whitened Light Curve

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

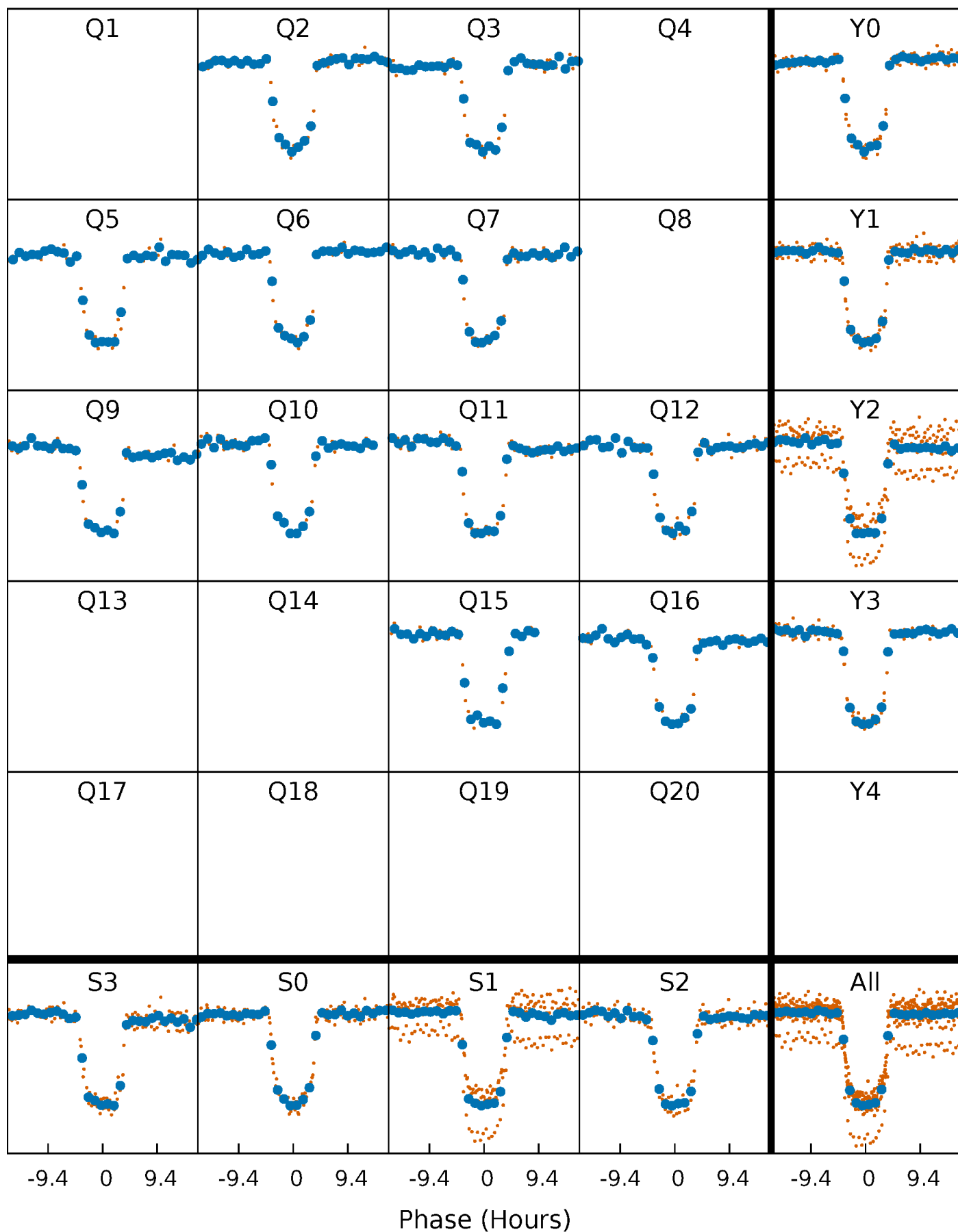


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

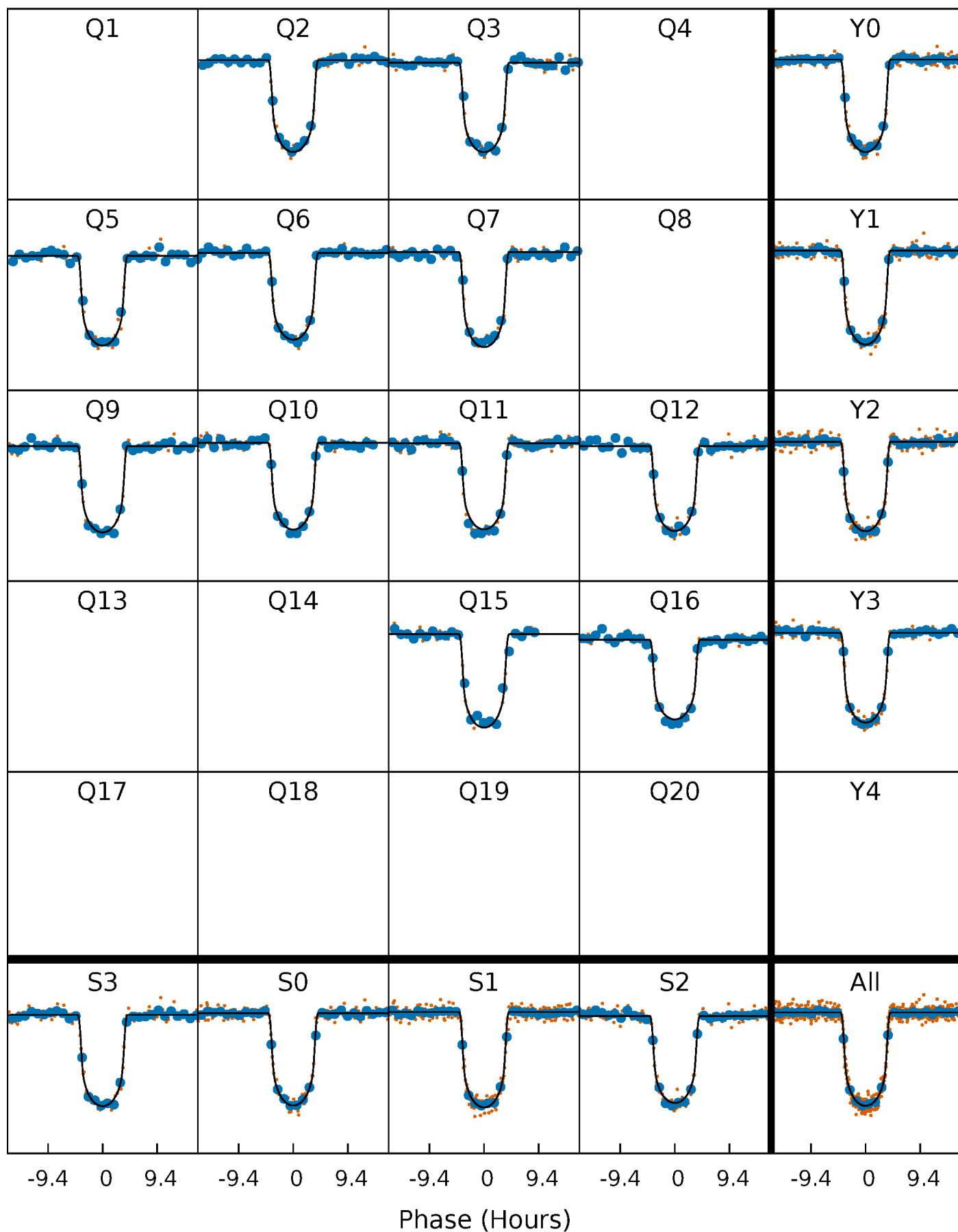
TCE 006862328-01 P=119.020675 Days  $T_0=222.236664$  (BKJD)





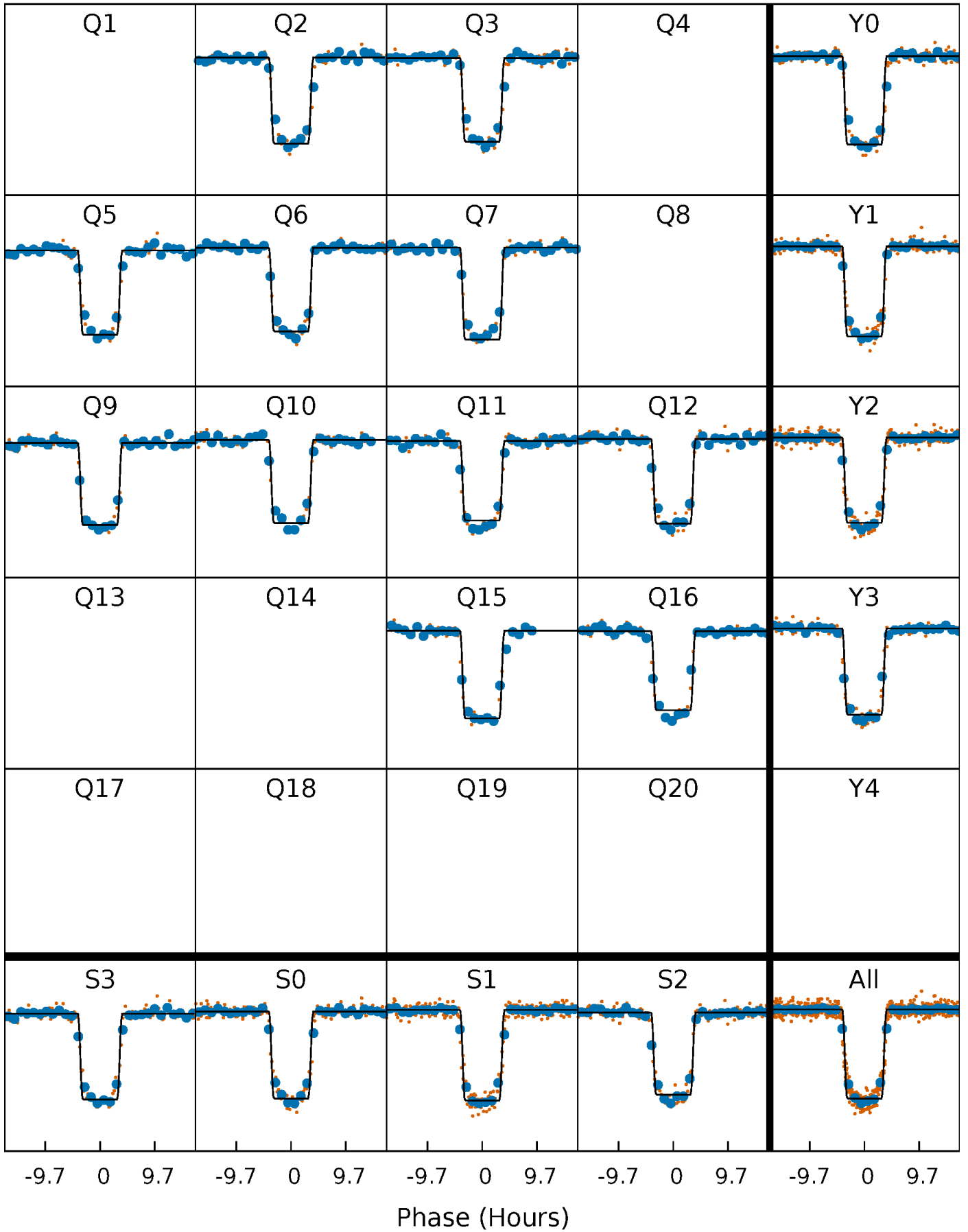
# DV Quarter-Phased Transit Curves

TCE 006862328-01 P=119.020675 Days  $T_0=222.236664$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

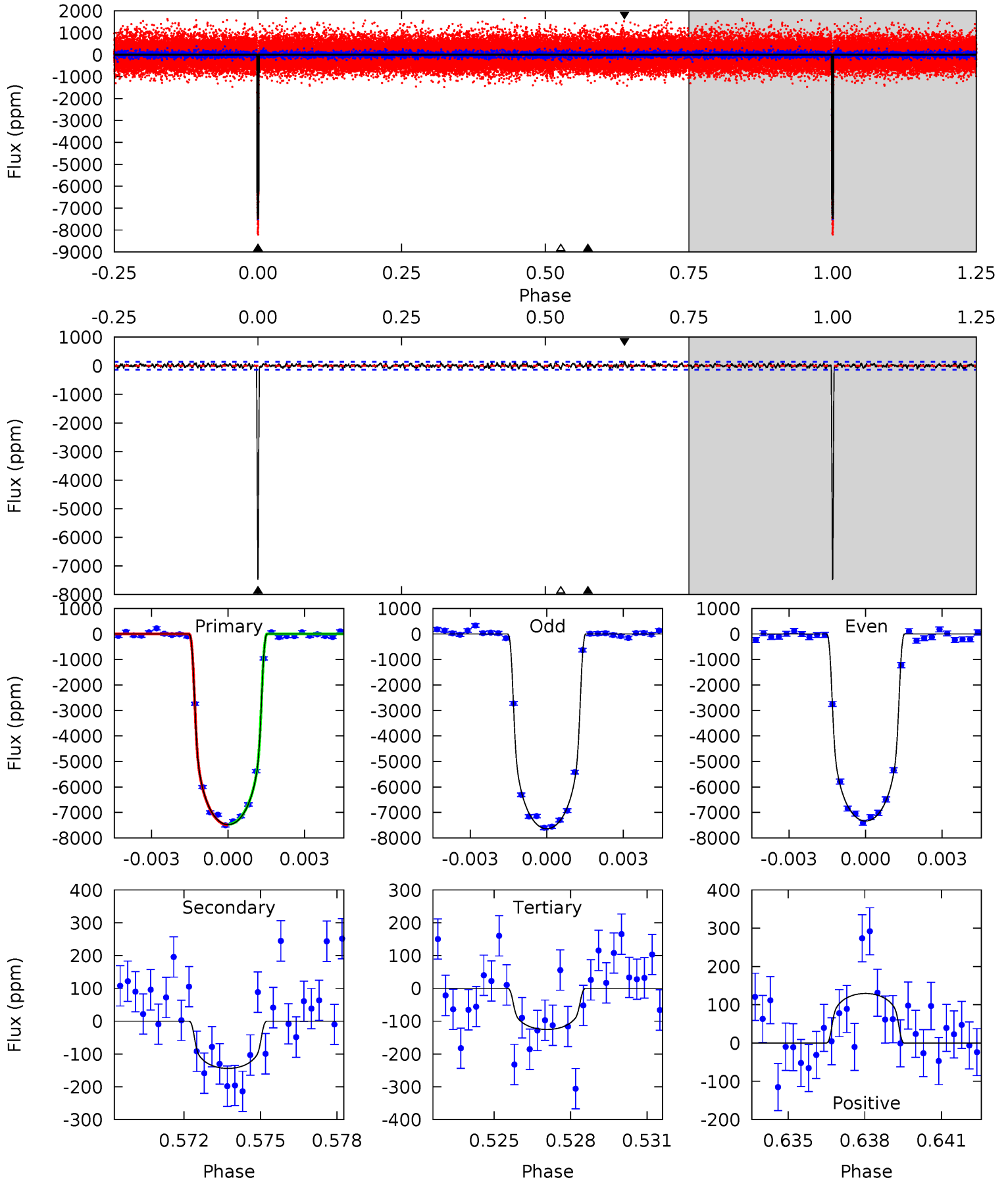
TCE 006862328-01 P=119.022166 Days  $T_0=222.229083$  (BKJD)



# DV Model-Shift Uniqueness Test

006862328-01, P = 119.020675 Days, E = 103.215989 Days

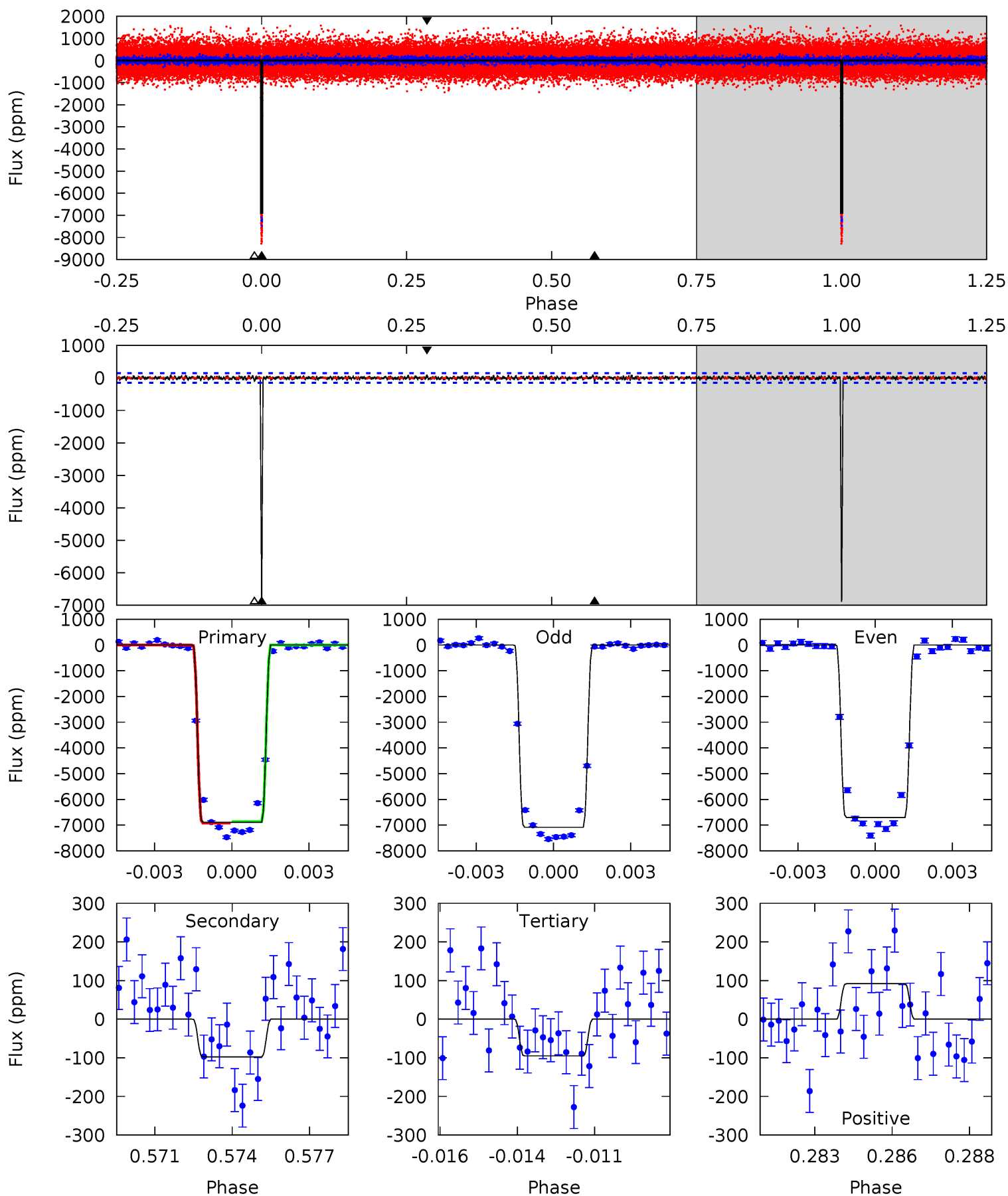
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
276.7	5.33	4.64	4.79	5.25	2.97	1.44	272.1	271.9	0.69	0.54	5.59	1.00	0.02	0.49



# Alt Model-Shift Uniqueness Test

006862328-01, P = 119.022166 Days, E = 103.206917 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
245.0	3.46	3.38	3.26	5.27	2.99	0.88	241.6	241.7	0.08	0.20	6.77	1.00	0.01	1.02



### Stellar Parameters For KIC 006862328

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5453^{+81}_{-73}$	$4.342^{+0.144}_{-0.108}$	$0.160^{+0.150}_{-0.150}$	$1.062^{+0.146}_{-0.160}$	$0.904^{+0.062}_{-0.039}$	$1.063^{+0.647}_{-0.345}$
	+1%/-1%	+3%/-2%	+94%/-94%	+14%/-15%	+7%/-4%	+61%/-32%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 006862328-01 / KOI 0865.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-144 \pm 27$	$9.11^{+0.72}_{-0.77}$	$512^{+19}_{-24}$	$2847^{+73}_{-84}$	$200^{+54}_{-45}$
Alt.	$-97 \pm 28$	$9.74^{+0.87}_{-0.94}$	$512^{+22}_{-25}$	$2655^{+91}_{-116}$	$119^{+45}_{-39}$

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

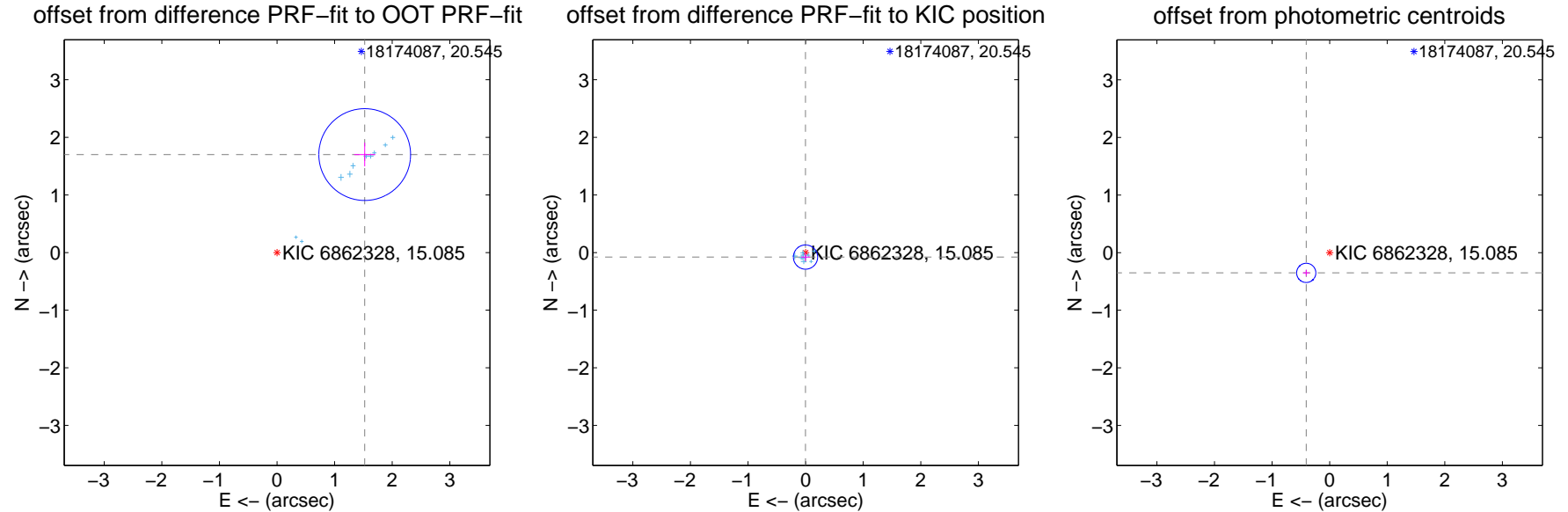
## DV Centroid Data

Supplemental centroid analysis for 006862328-01. Kepler magnitude: 15.09. Transit SNR 166.35

There are 10 quarters with good PRF difference image offsets

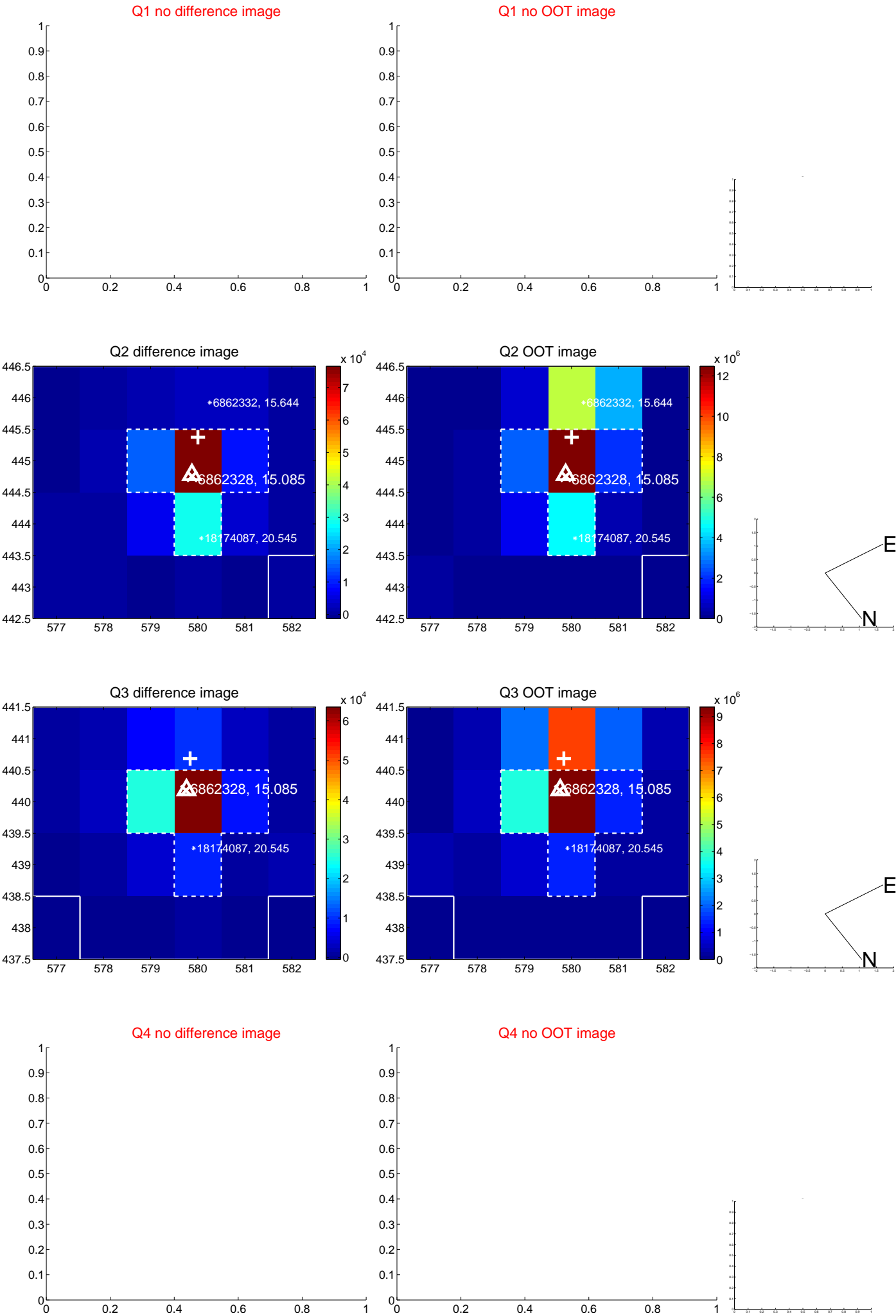
The OOT PRF centroid is offset from the target star catalog position by about 2.40 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.283 \pm 0.266$	8.60	$-1.523 \pm 0.183$	$1.701 \pm 0.205$
PRF-fit source offset from KIC position	$0.078 \pm 0.070$	1.12	$0.002 \pm 0.074$	$-0.078 \pm 0.070$
photometric centroid source offset	$0.54 \pm 0.06$	9.66	$0.41 \pm 0.06$	$-0.35 \pm 0.05$

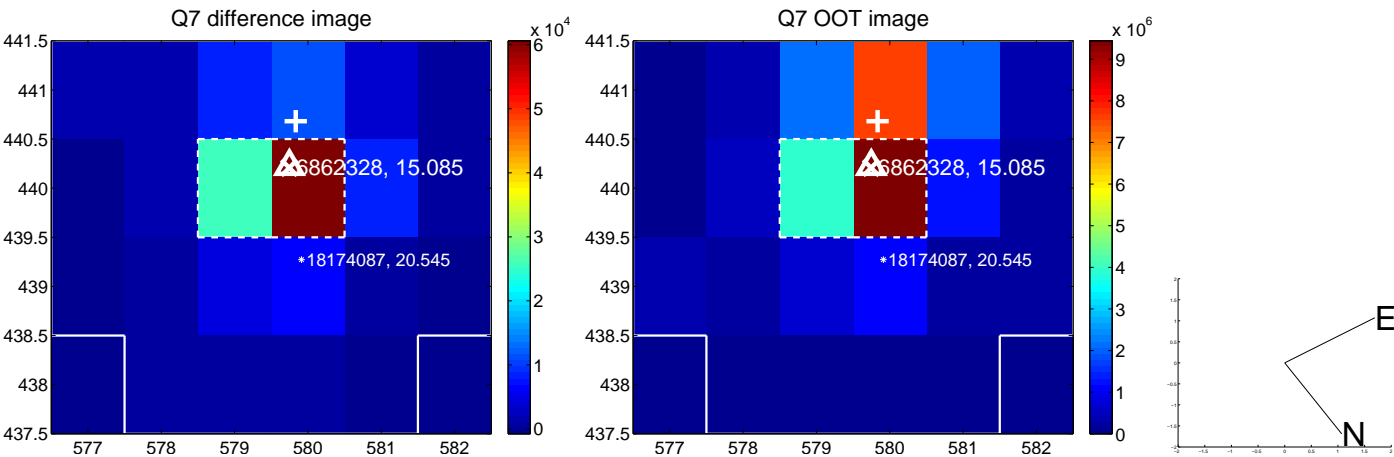
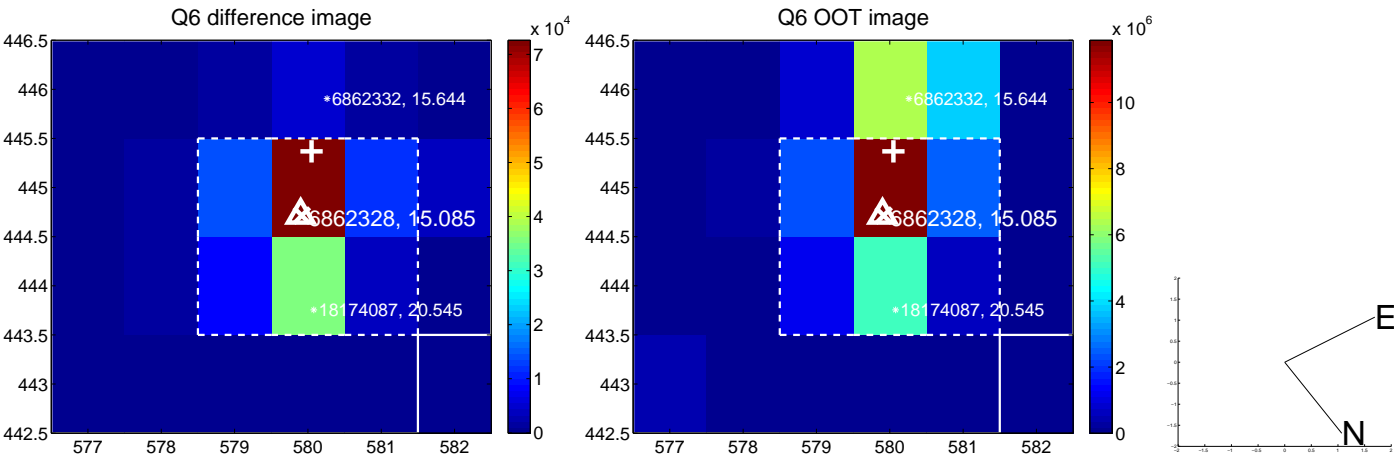
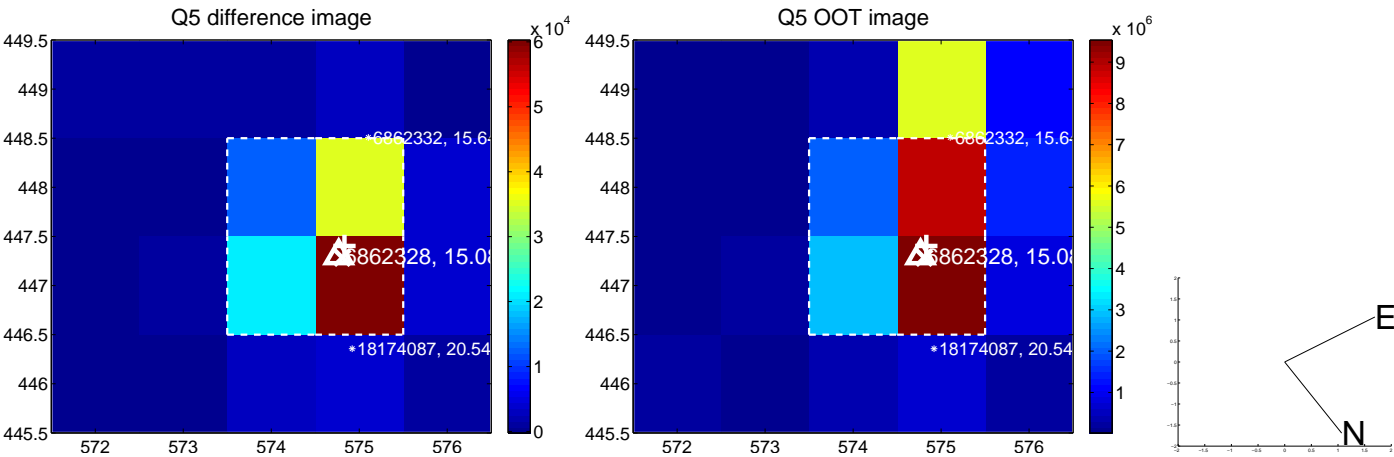


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

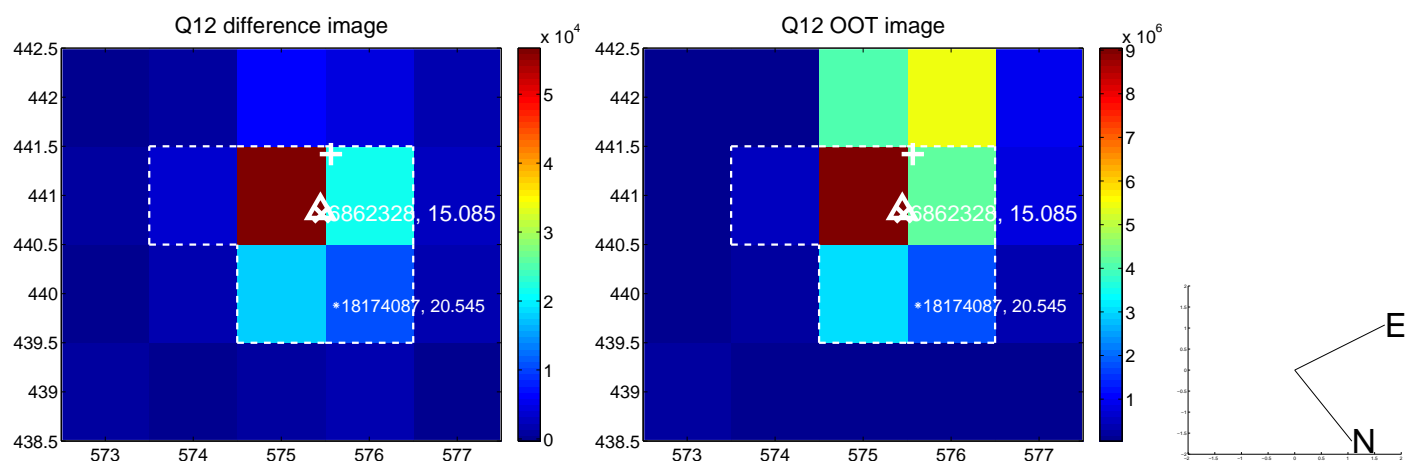
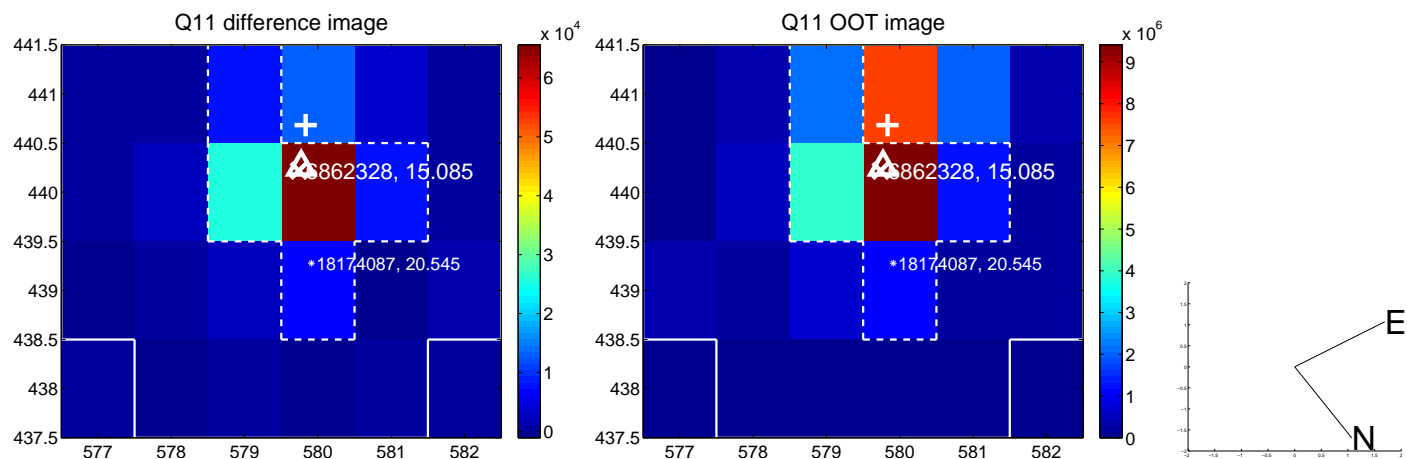
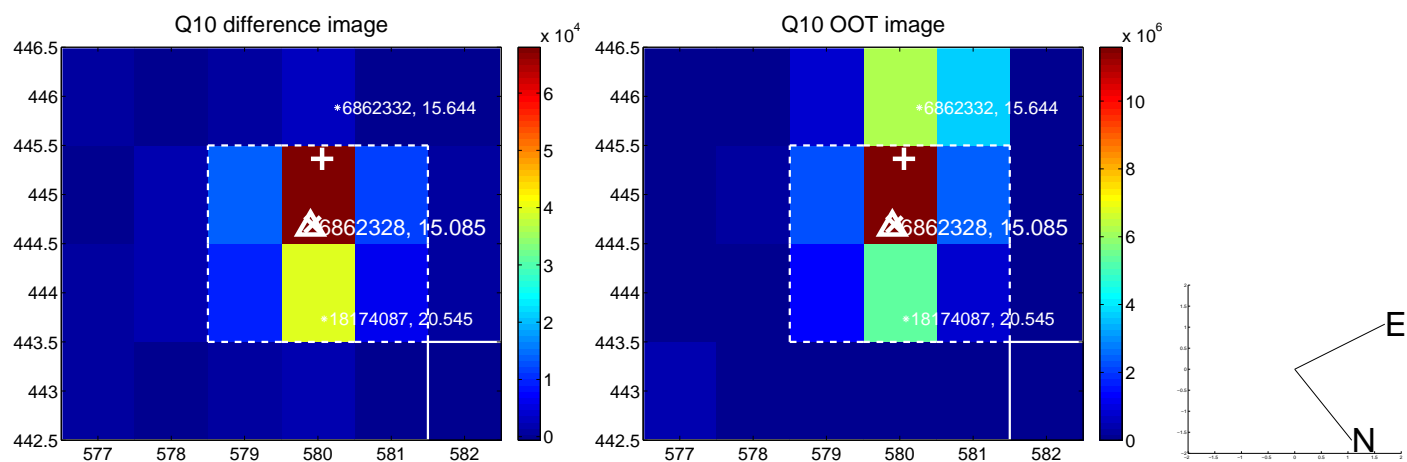
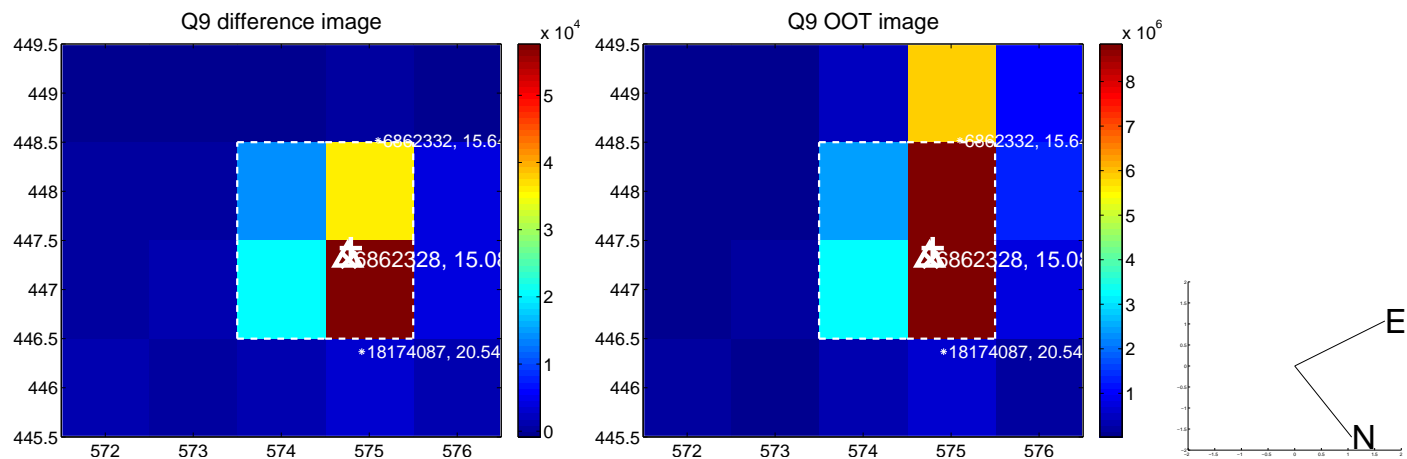


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

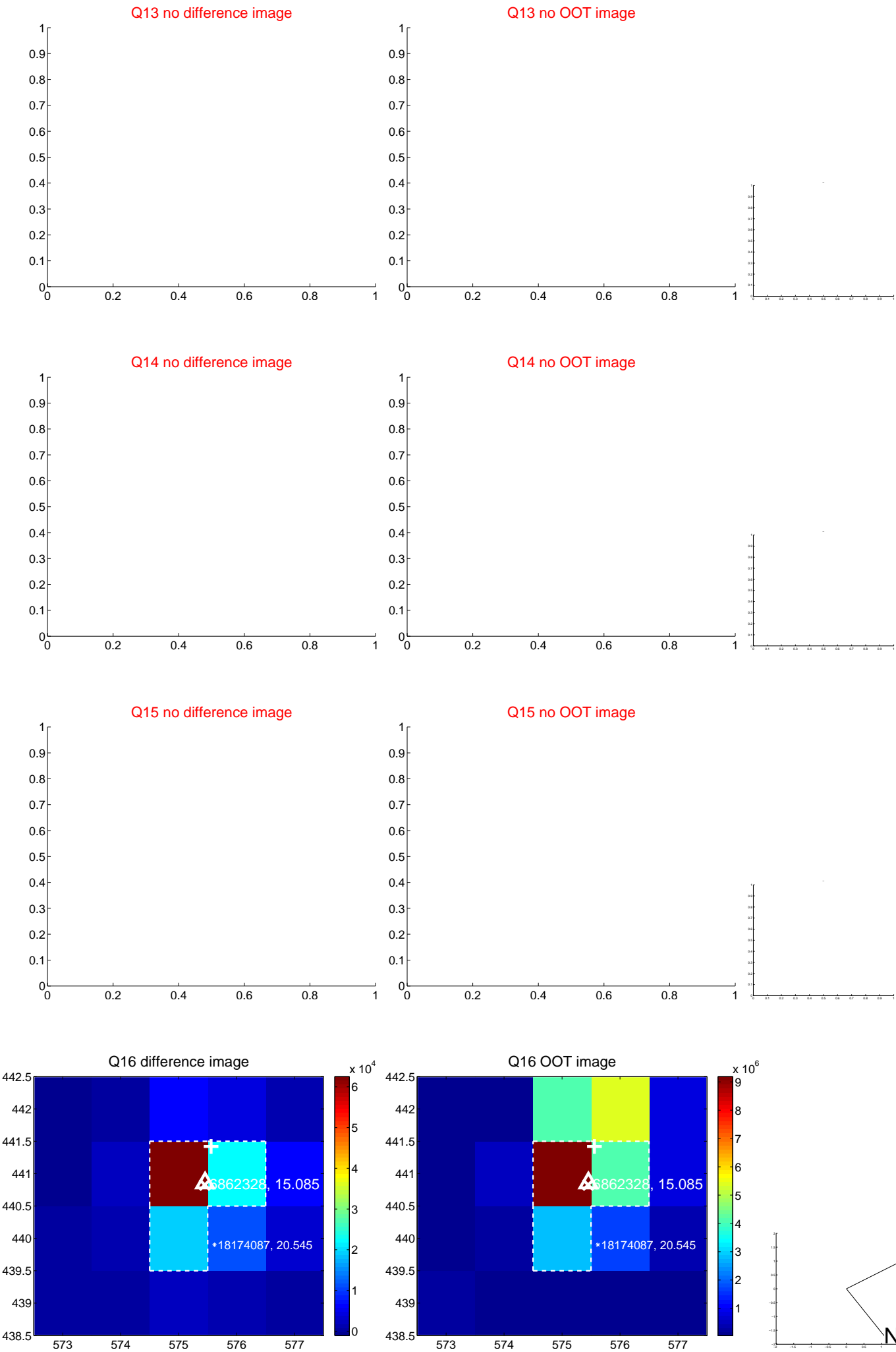




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

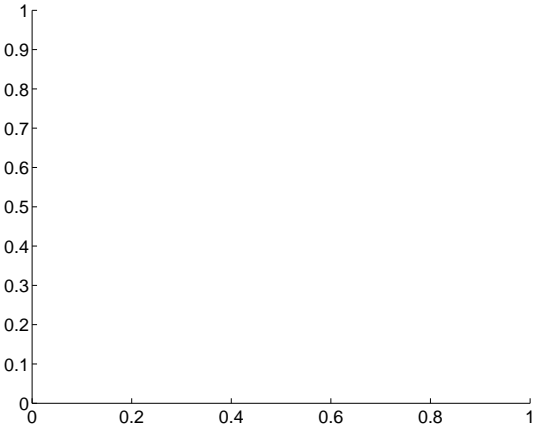


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

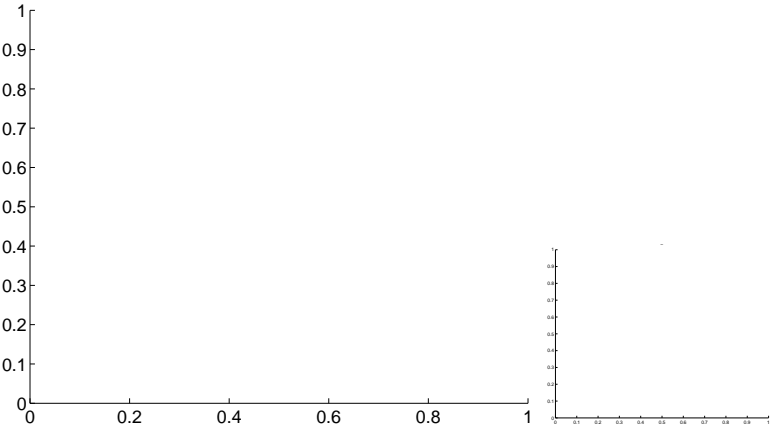


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

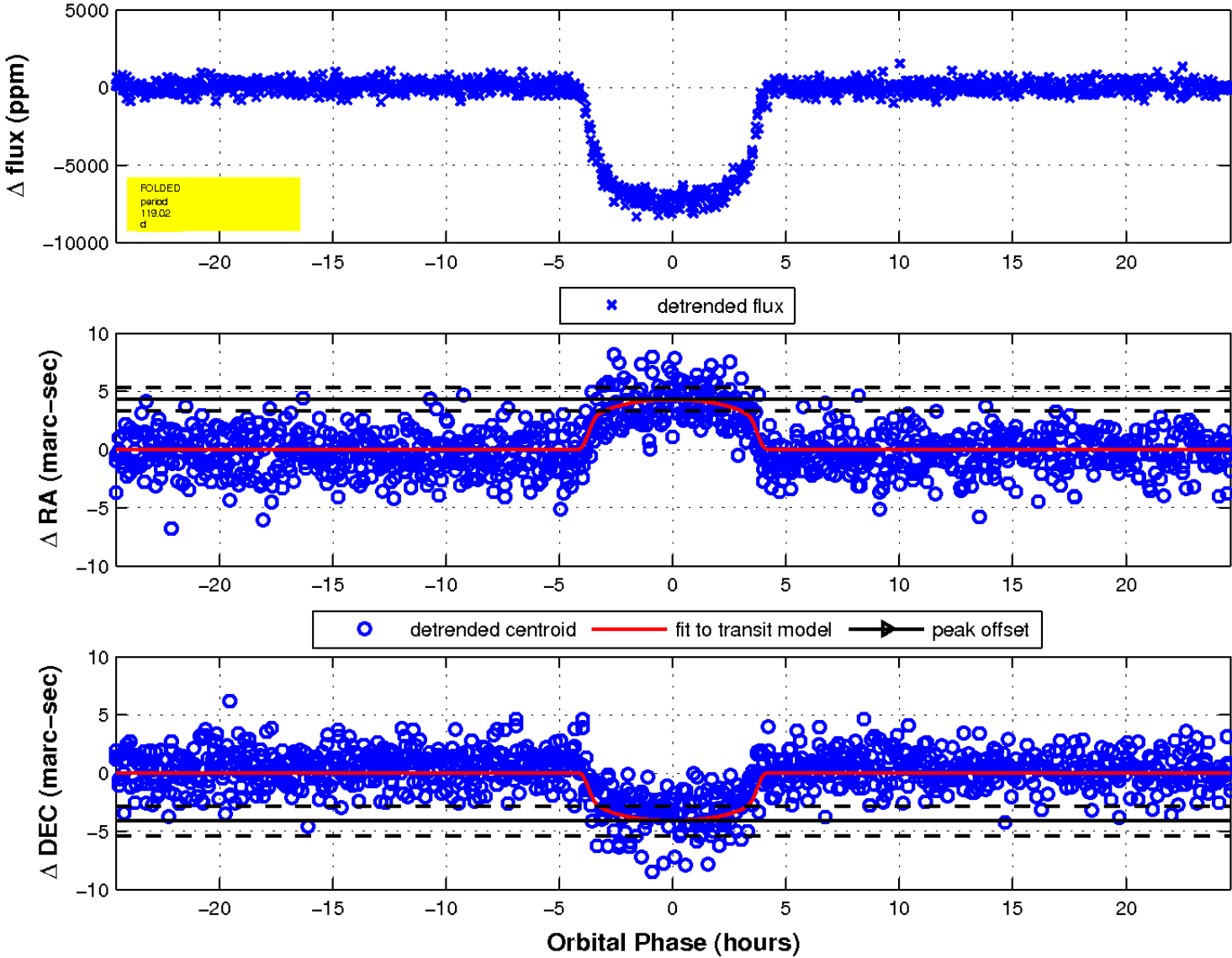
Q17 no difference image



Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

