

# KIC 006837283

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006837283-01	OBS	2914.01	21.118149	133.591258	120.5	9.815	12.5	15.4	2.57	6461	3.09	359.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006837283-01	OBS	PC	0.99	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.

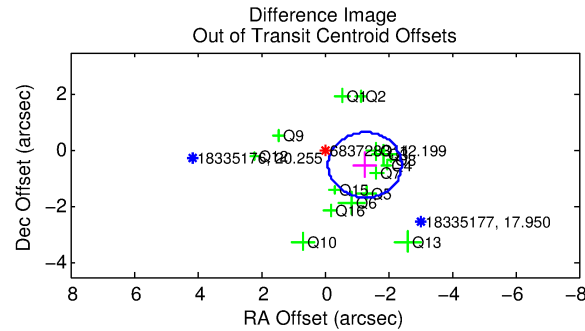
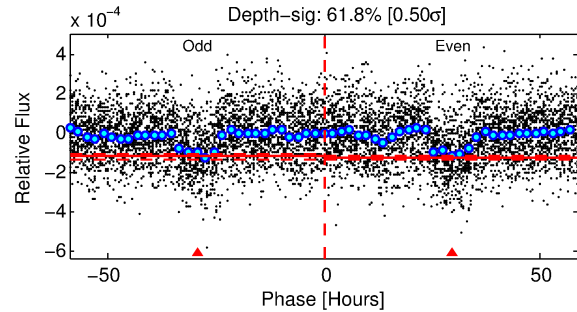
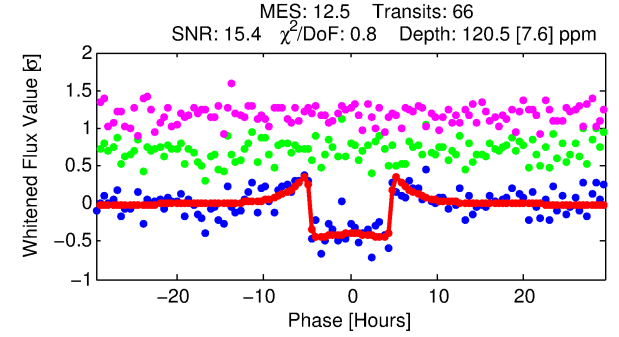
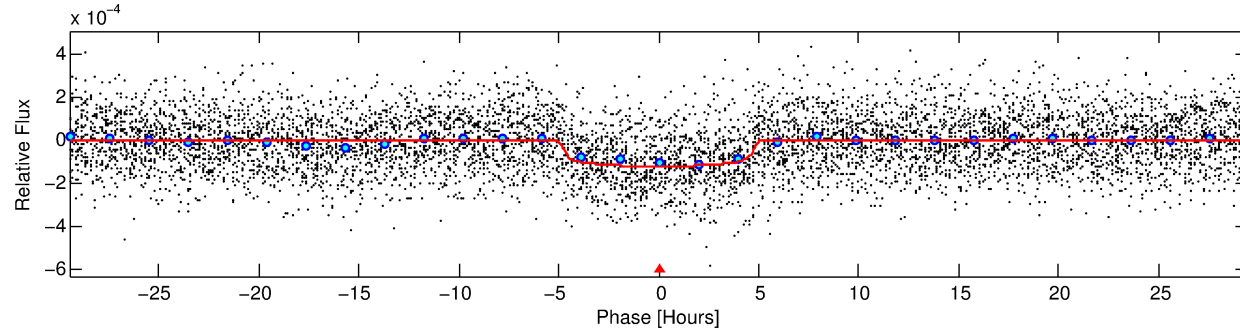
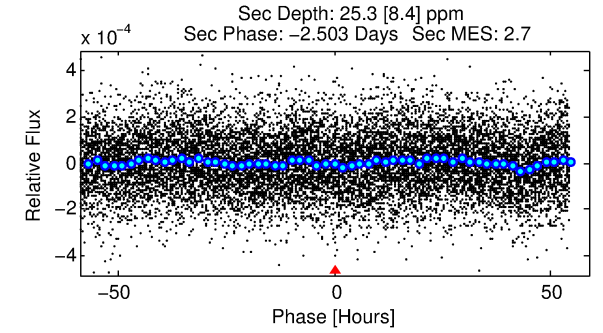
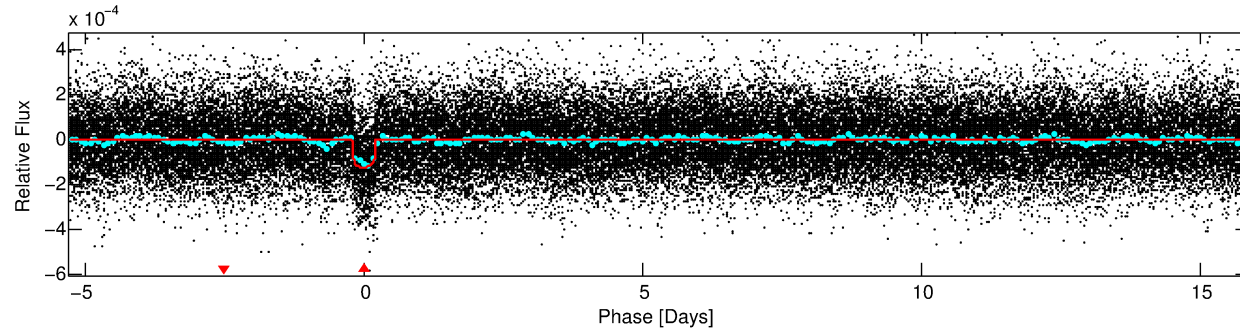
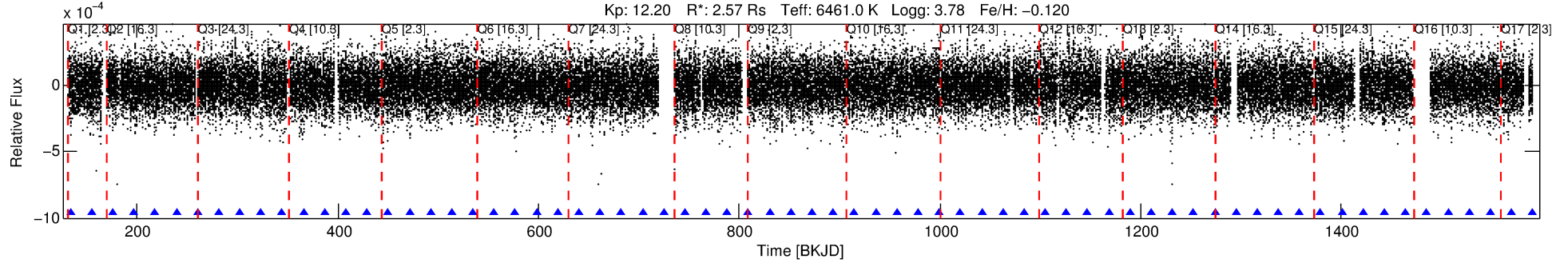
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006837283-01

No Significant Match Found

# DV One-Page Summary

KIC: 6837283 Candidate: 1 of 1 Period: 21.118 d  
KOI: K02914.01 Corr: 0.986



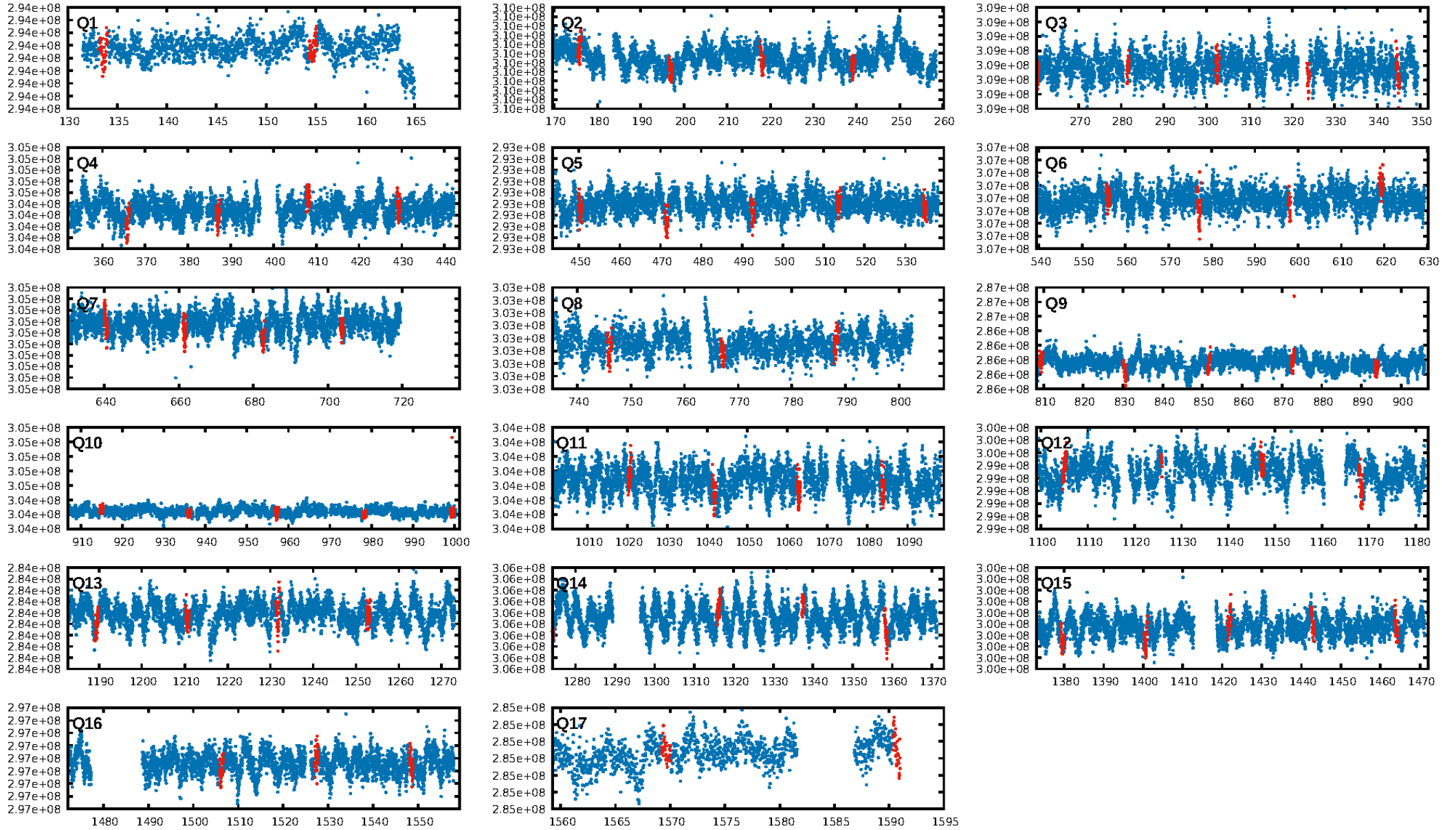
## DV Fit Results:

Period = 21.11815 [0.00012] d  
Epoch = 133.5913 [0.0049] BKJD  
Rp/R\* = 0.0110 [0.0013]  
a/R\* = 10.55 [6.56]  
b = 0.78 [0.31]  
Seff = 359.80 [186.55]  
Teq = 1111 [144] K  
Rp = 3.09 [1.15] Re  
a = 0.1690 [0.0549] AU  
Ag = 41.66 [27.14] [1.50σ]  
Teffp = 4362 [461] K [6.73σ]

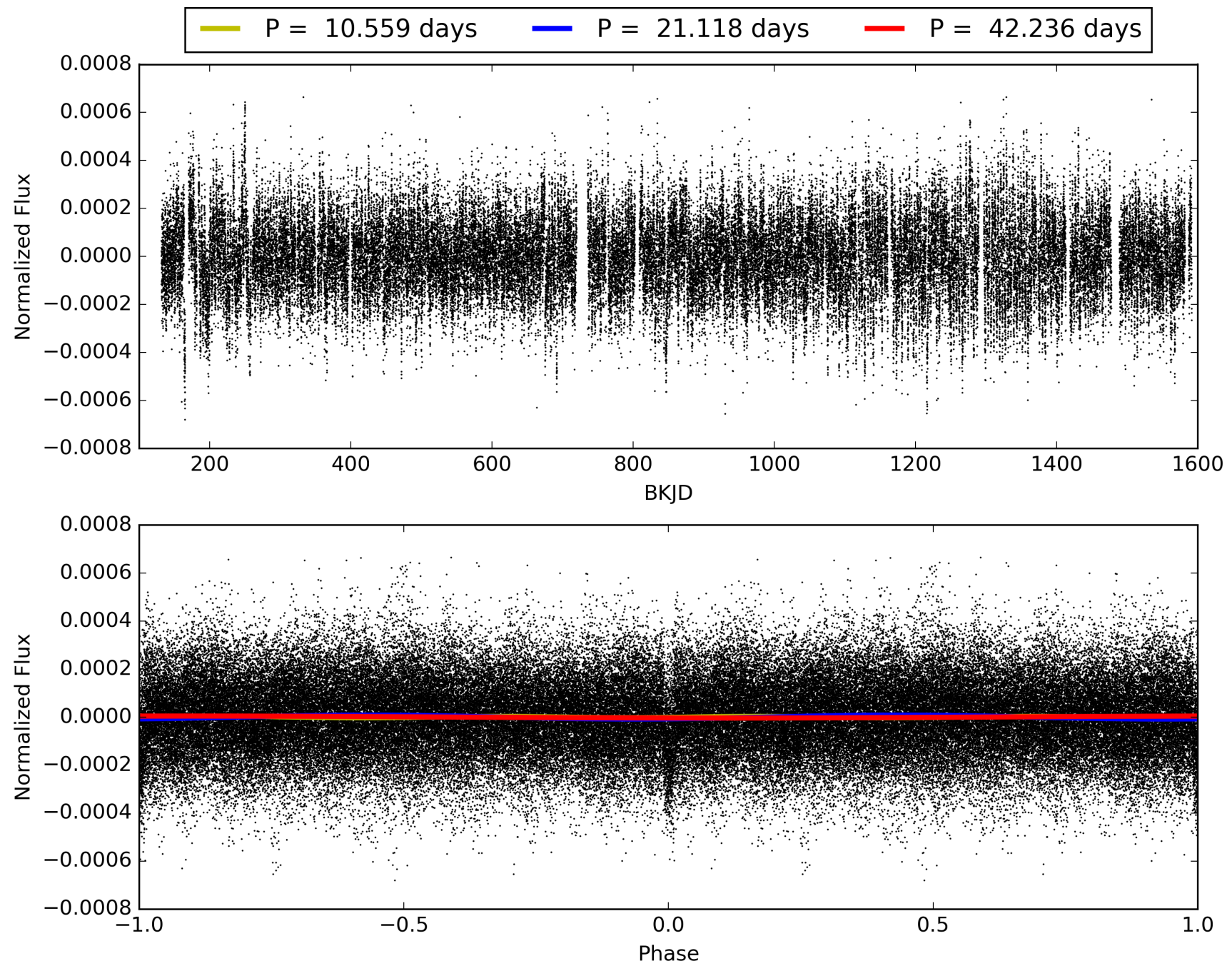
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 45.3%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.09e-31  
RollingBand-fgt: 1.00 [62/62]  
GhostDiagnostic-chr: 1.385  
Centroid-sig: 0.0%  
Centroid-so: 0.947 arcsec [2.33σ]  
OotOffset-rm: 1.363 arcsec [3.54σ]  
KicOffset-rm: 1.404 arcsec [3.89σ]  
OotOffset-st: 3/4/4/4 [15]  
KicOffset-st: 3/4/4/4 [15]  
DiffImageQuality-fgm: 0.73 [11/15]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 006837283-01, PDC Light Curves

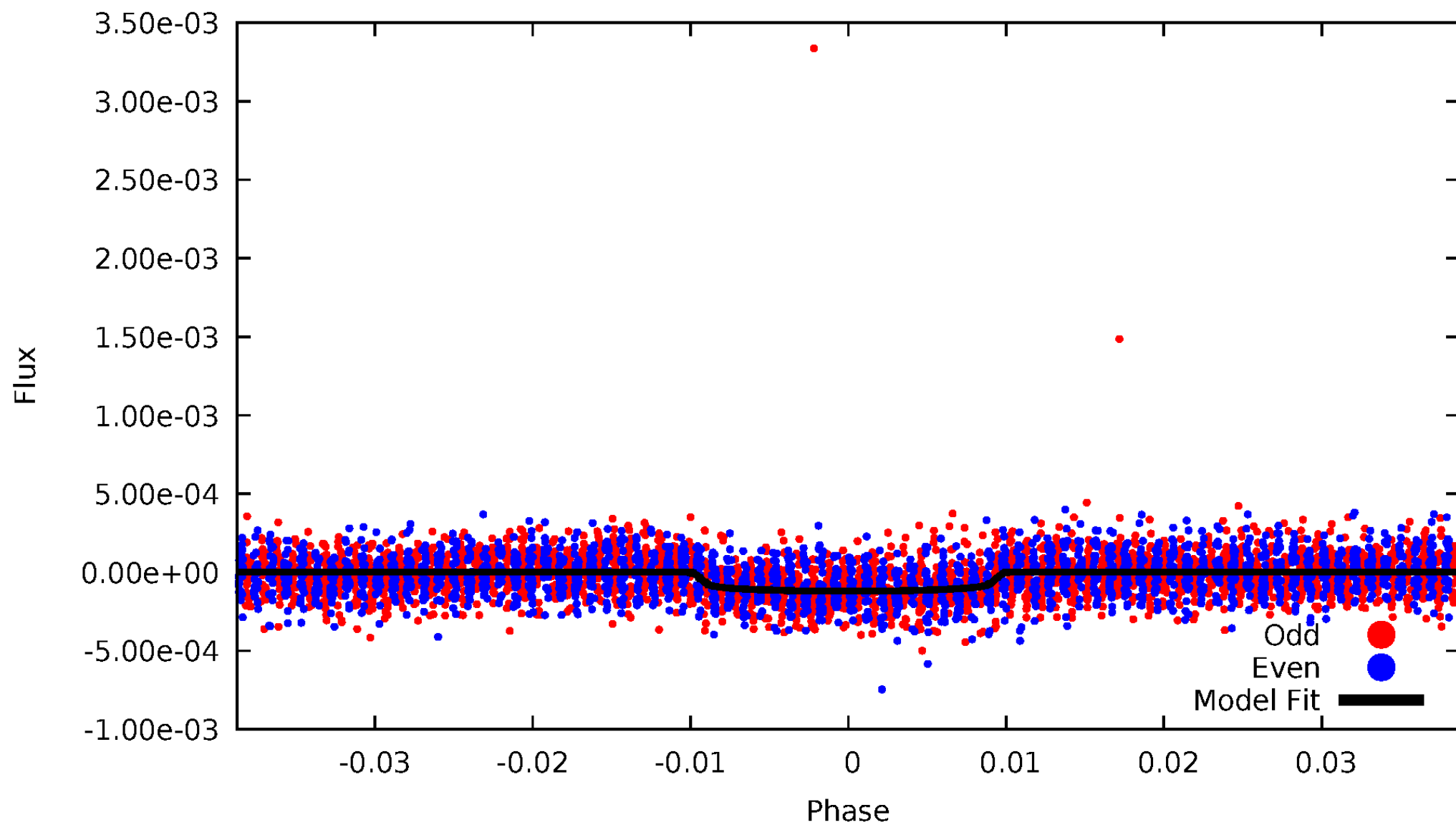


TCE 006837283-01



# DV Odd/Even

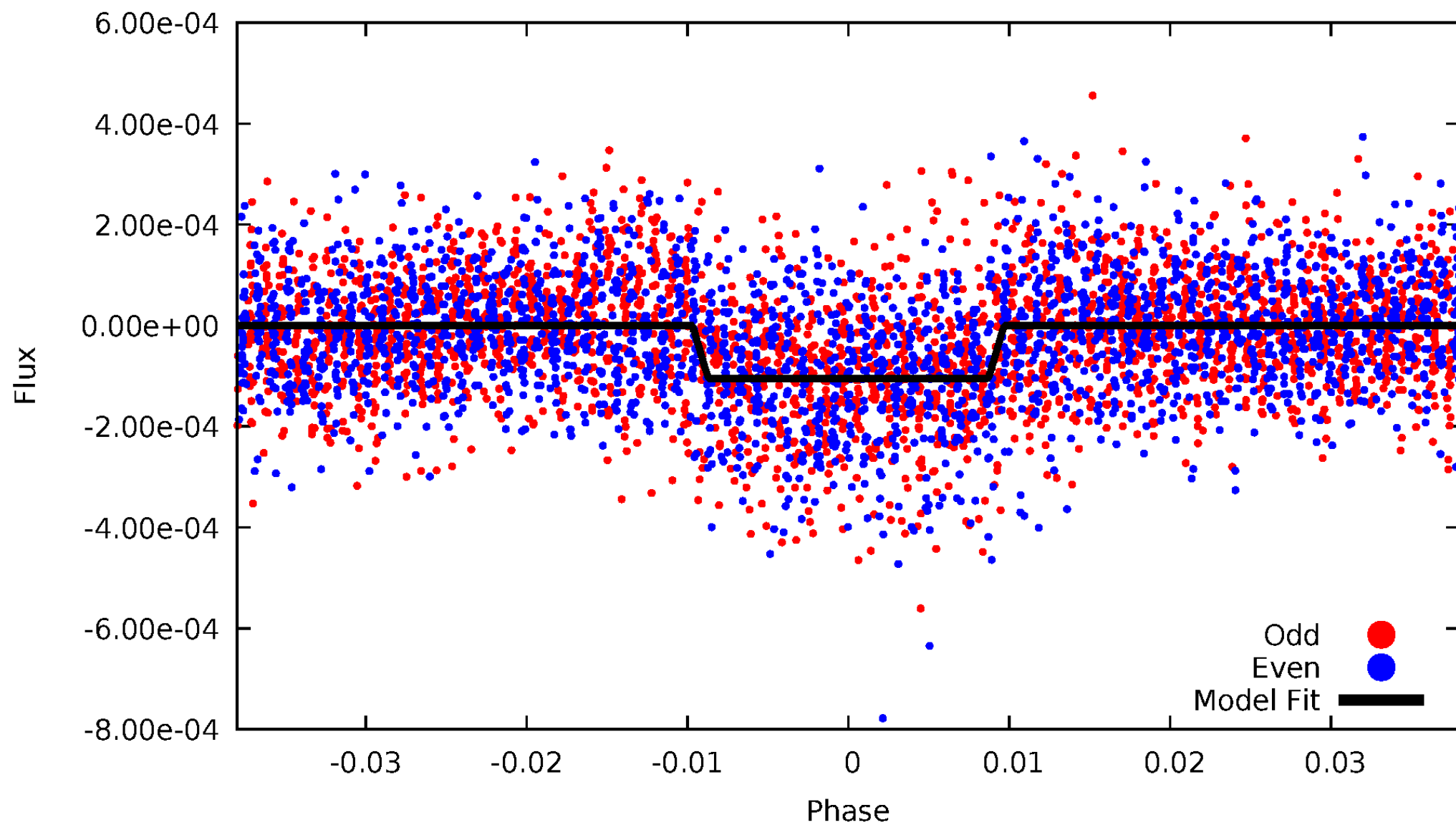
TCE 006837283-01



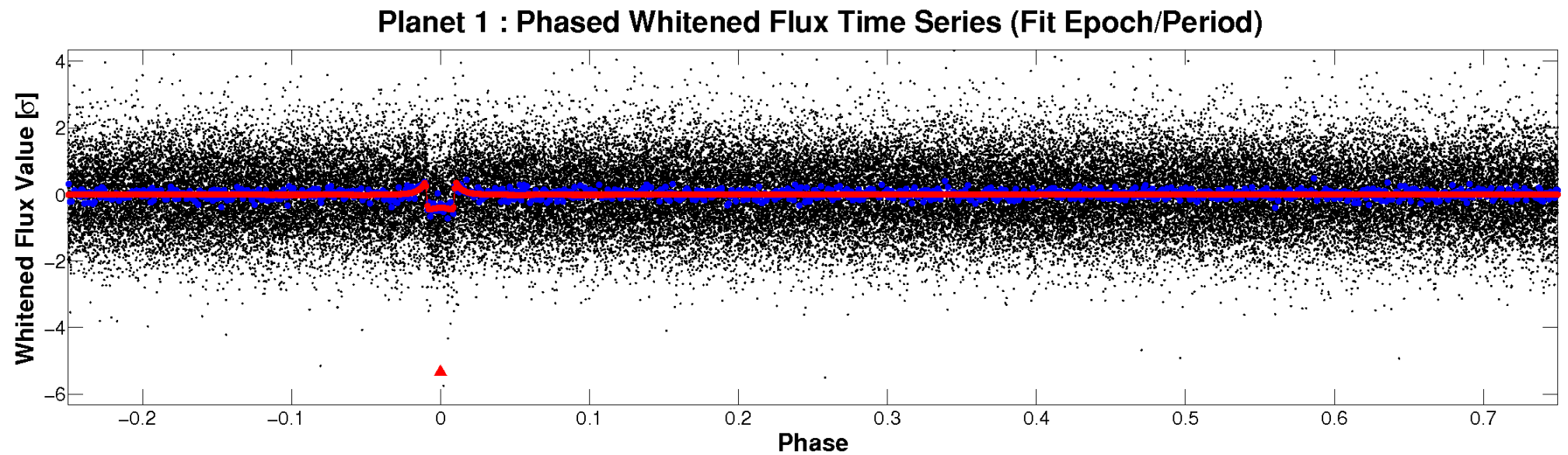
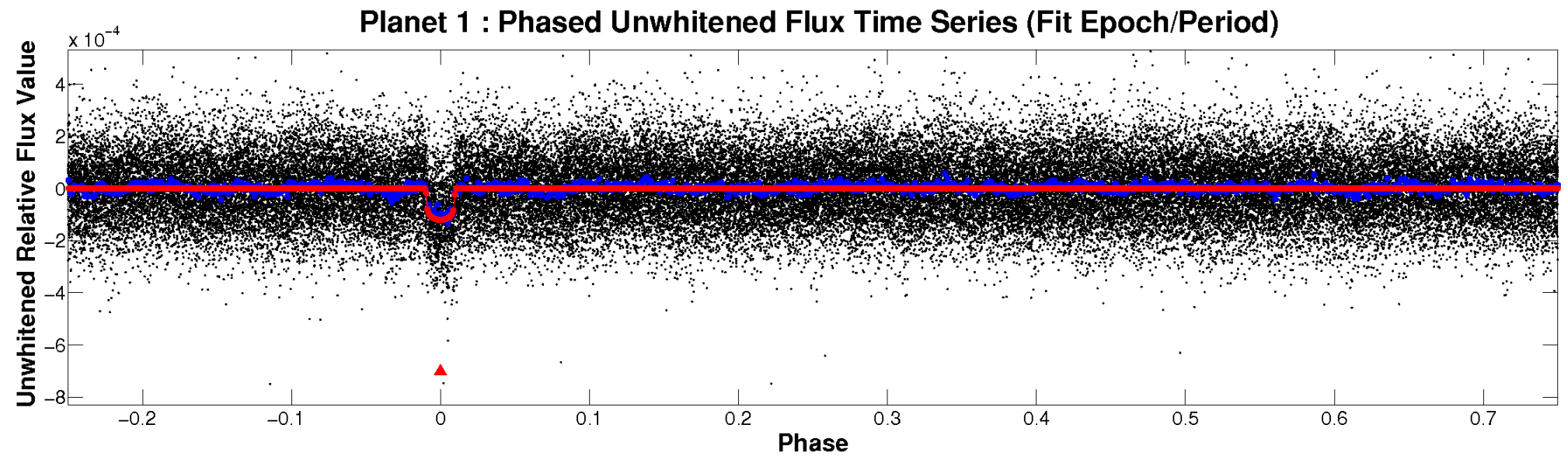


# ALT Odd/Even

TCE 006837283-01

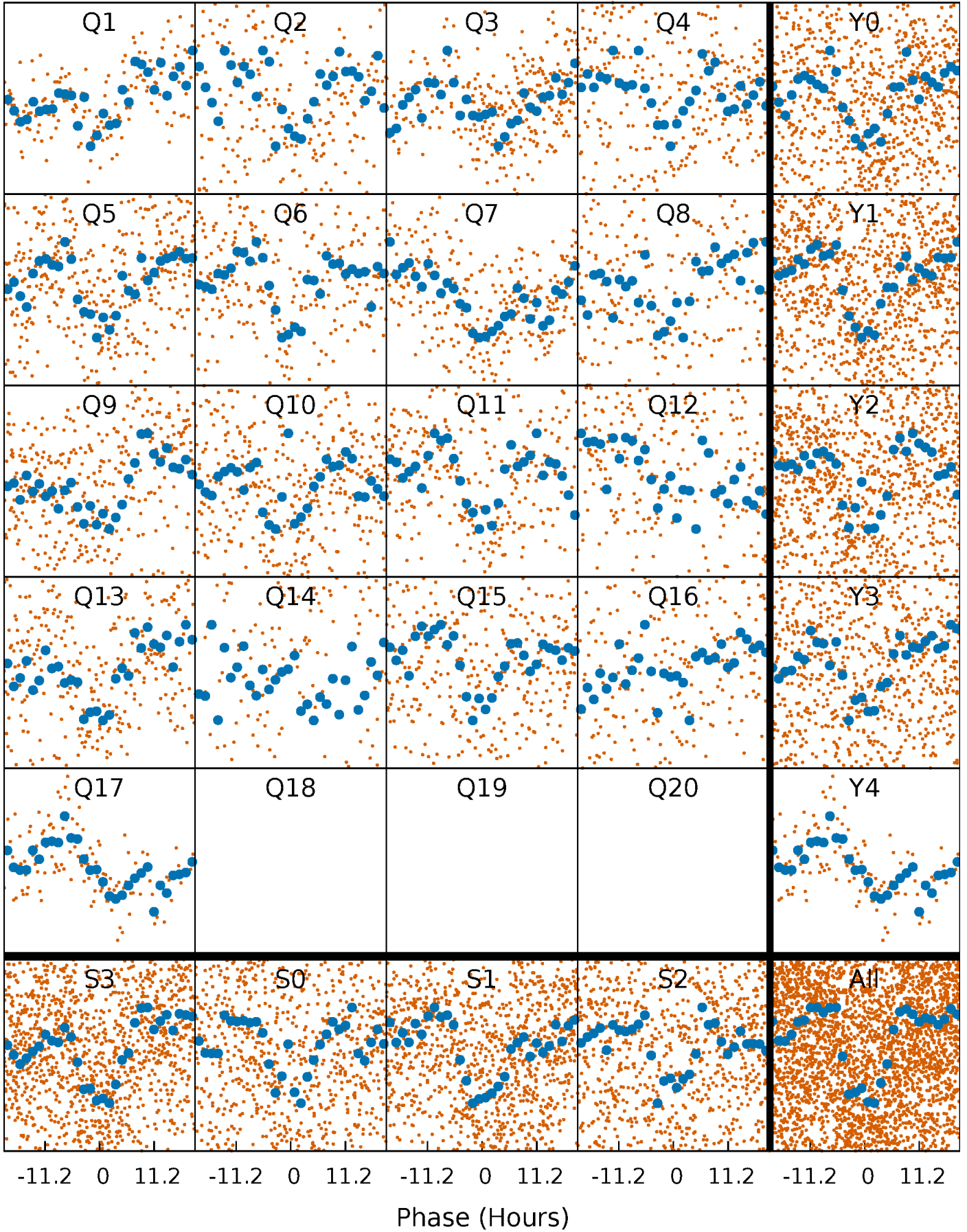


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

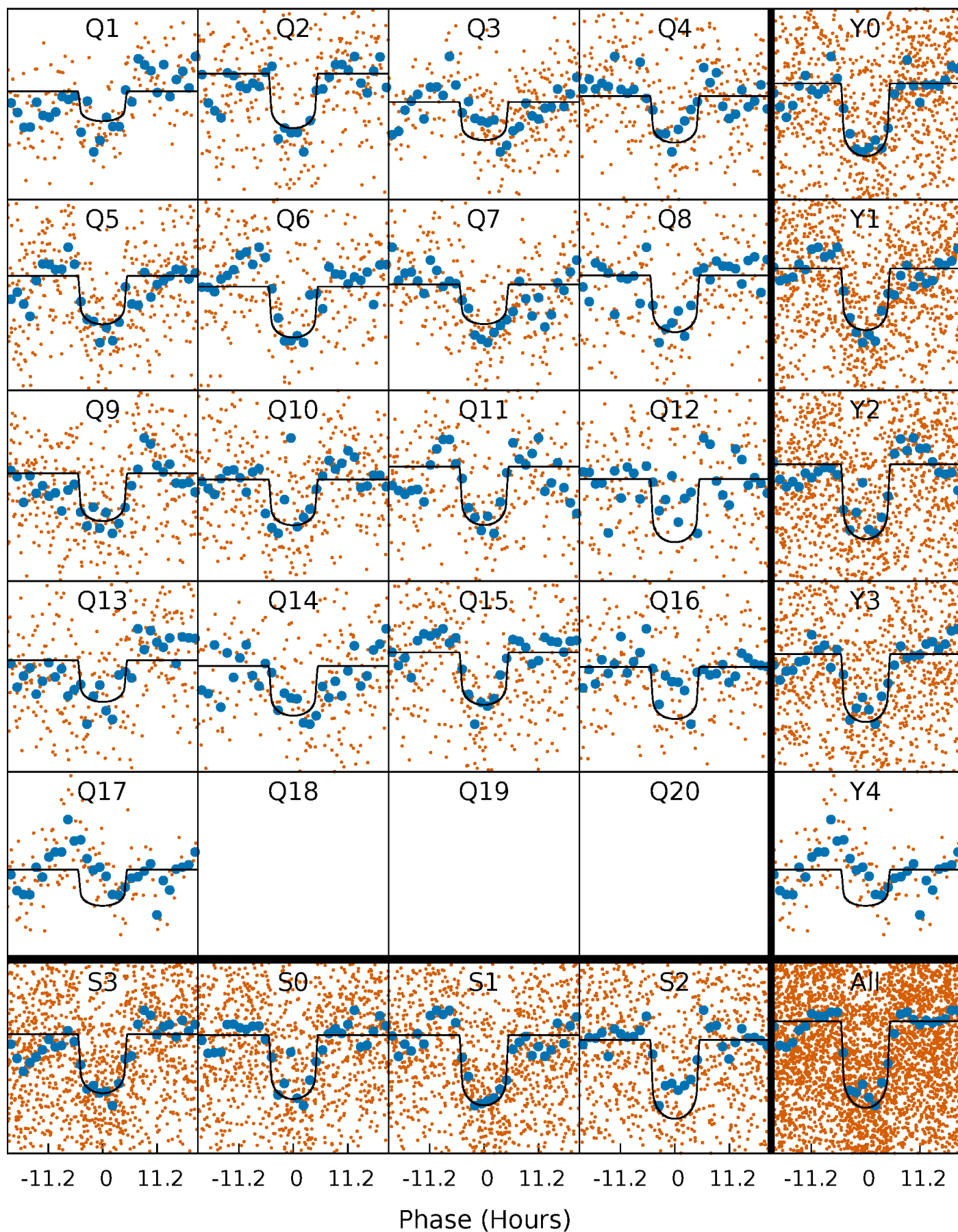
TCE 006837283-01 P= 21.118149 Days  $T_0=133.591258$  (BKJD)





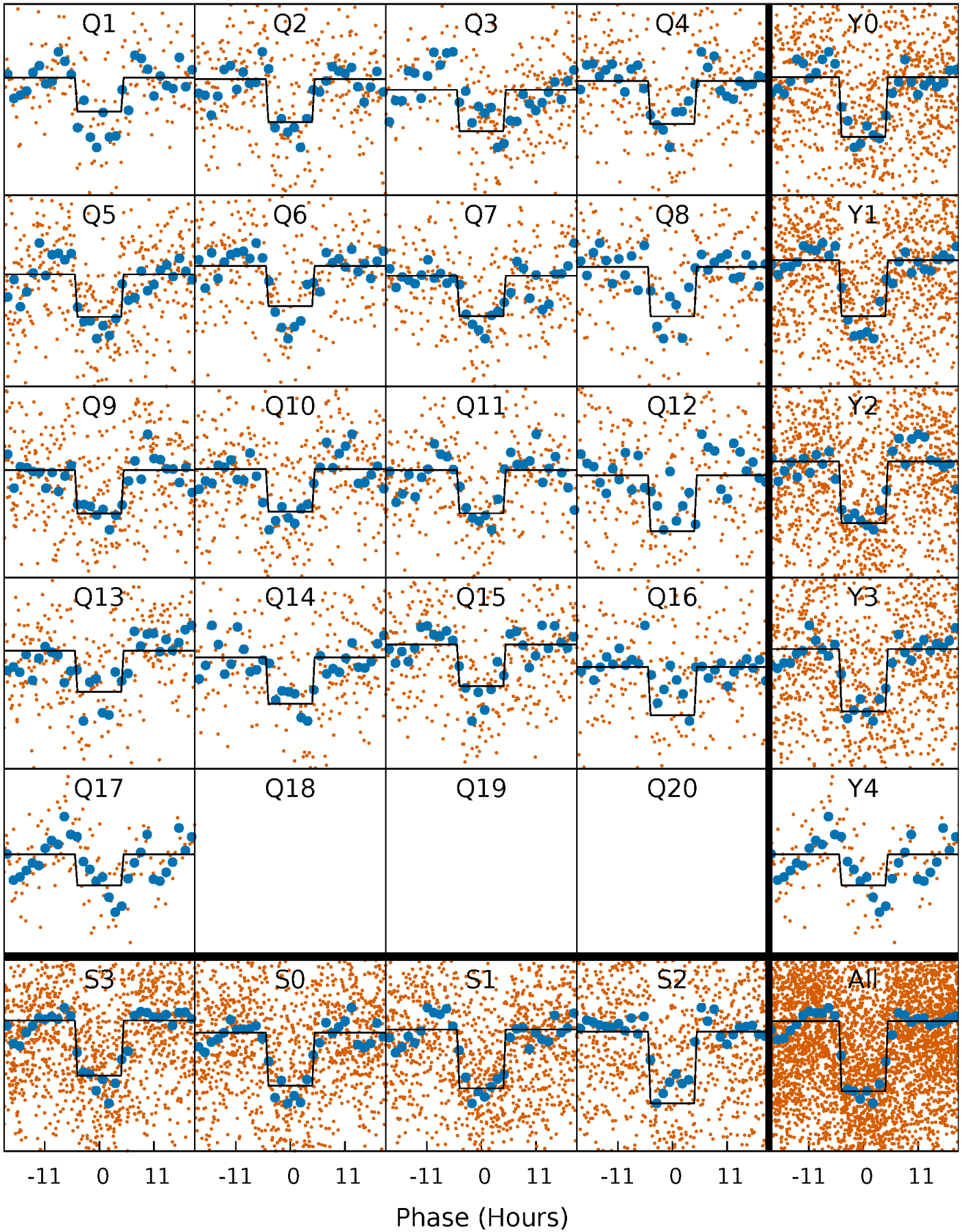
# DV Quarter-Phased Transit Curves

TCE 006837283-01 P= 21.118149 Days  $T_0=133.591258$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

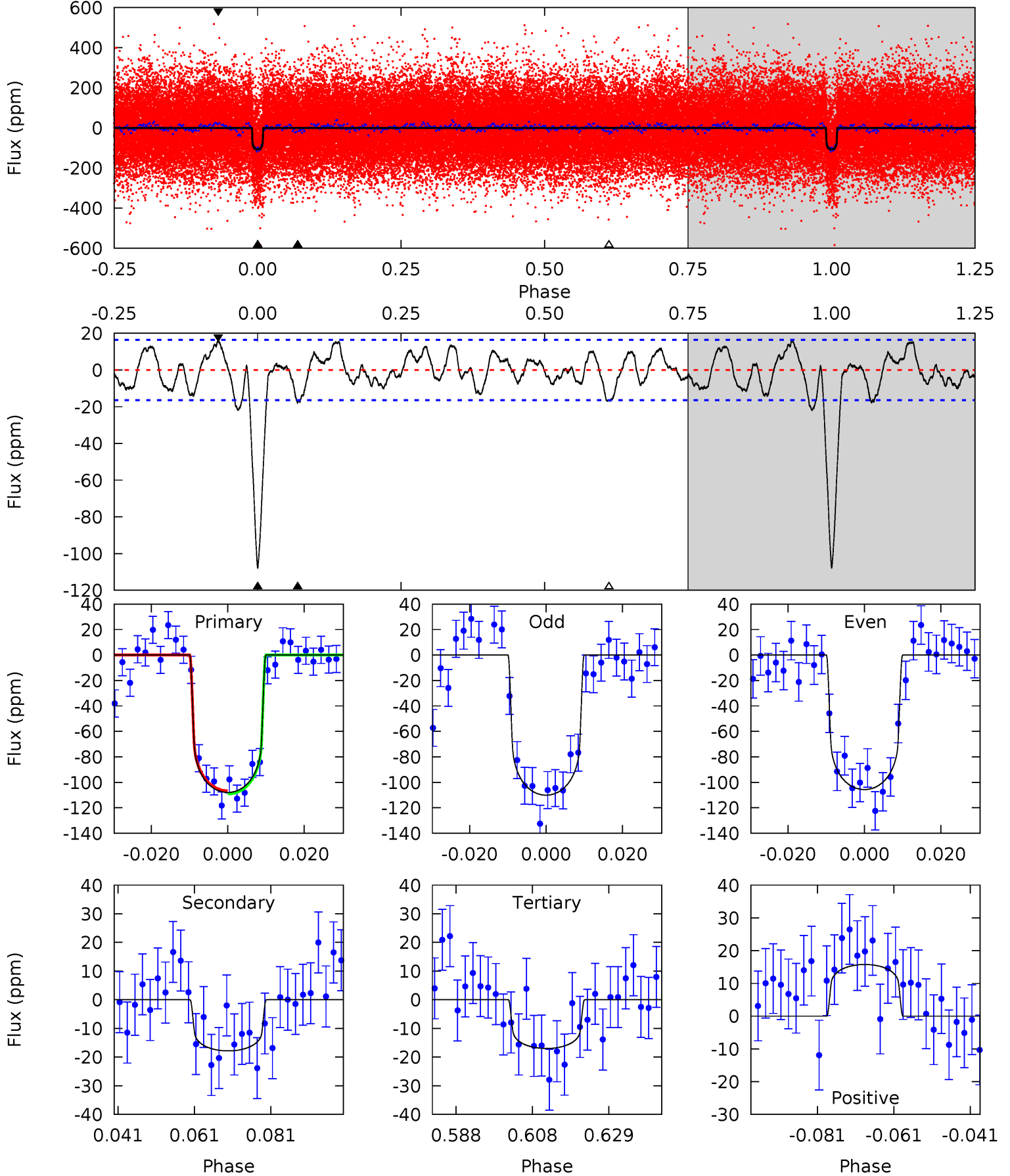
TCE 006837283-01 P= 21.118018 Days  $T_0=133.597779$  (BKJD)



# DV Model-Shift Uniqueness Test

006837283-01, P = 21.118149 Days, E = 112.473109 Days

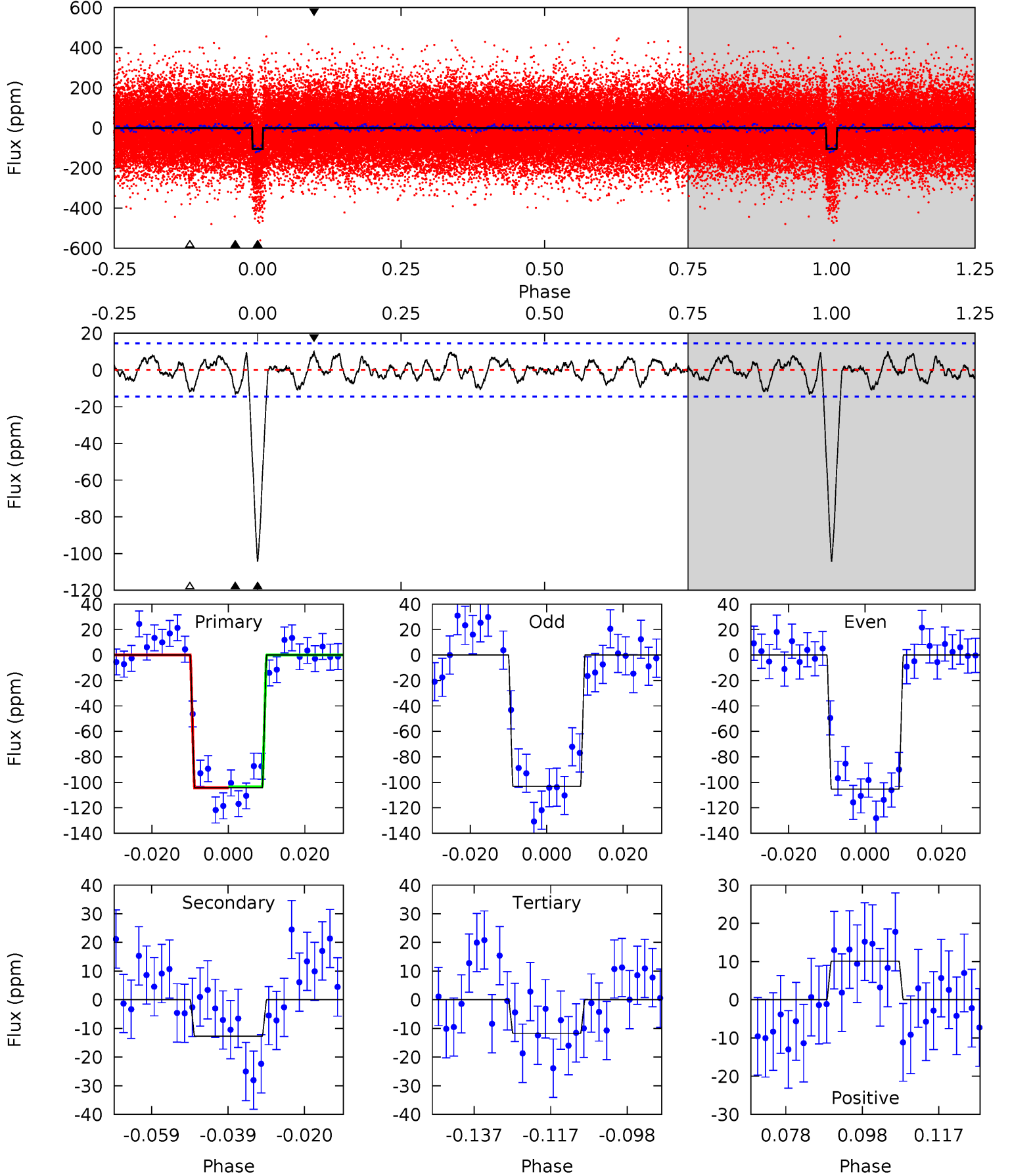
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.1	5.31	5.06	4.69	4.89	2.32	2.27	27.1	27.4	0.25	0.62	0.66	0.94	0.13	0.36



# Alt Model-Shift Uniqueness Test

006837283-01, P = 21.118018 Days, E = 112.479761 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
35.1	4.28	3.95	3.40	4.90	2.34	1.46	31.2	31.7	0.33	0.88	0.38	1.10	0.09	0.16



### Stellar Parameters For KIC 006837283

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6461^{+175}_{-175}$	$3.779^{+0.293}_{-0.098}$	$-0.120^{+0.300}_{-0.250}$	$2.566^{+0.485}_{-0.901}$	$1.443^{+0.224}_{-0.274}$	$0.120^{+0.263}_{-0.036}$
	+3%/-3%	+8%/-3%	+250%/-208%	+19%/-35%	+16%/-19%	+218%/-30%
Source	PHO1	FLK73	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 006837283-01 / KOI 2914.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-18 \pm 3$	$2.94^{+0.57}_{-0.58}$	$1520^{+102}_{-131}$	$4233^{+284}_{-226}$	$32^{+19}_{-10}$
Alt.	$-13 \pm 3$	$2.72^{+0.54}_{-0.57}$	$1530^{+89}_{-146}$	$4096^{+310}_{-260}$	$27^{+17}_{-9}$

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



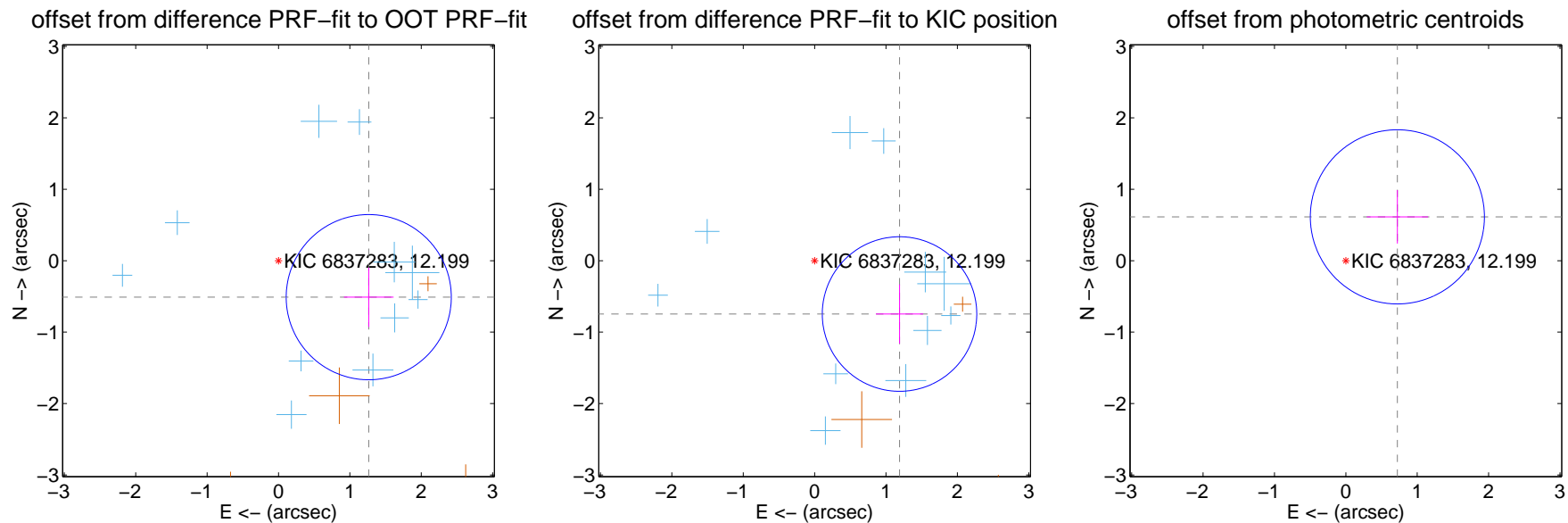
## DV Centroid Data

Supplemental centroid analysis for 006837283-01. Kepler magnitude: 12.20. Transit SNR 15.44

There are 11 quarters with good PRF difference image offsets

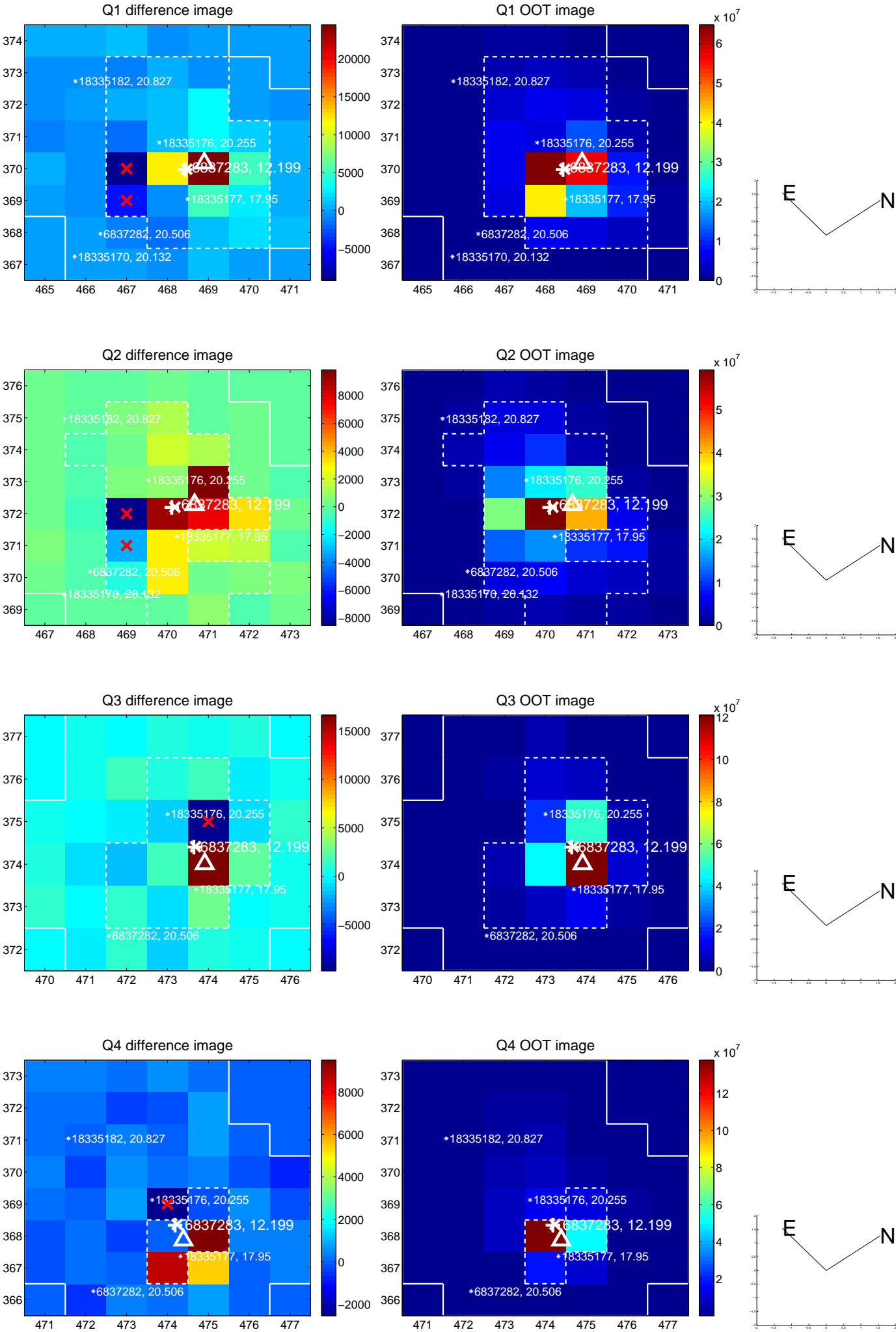
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.363 \pm 0.385$	$3.54$	$-1.264 \pm 0.348$	$-0.510 \pm 0.416$
PRF-fit source offset from KIC position	$1.404 \pm 0.361$	$3.89$	$-1.189 \pm 0.332$	$-0.746 \pm 0.414$
photometric centroid source offset	$0.95 \pm 0.41$	$2.33$	$-0.72 \pm 0.43$	$0.61 \pm 0.37$

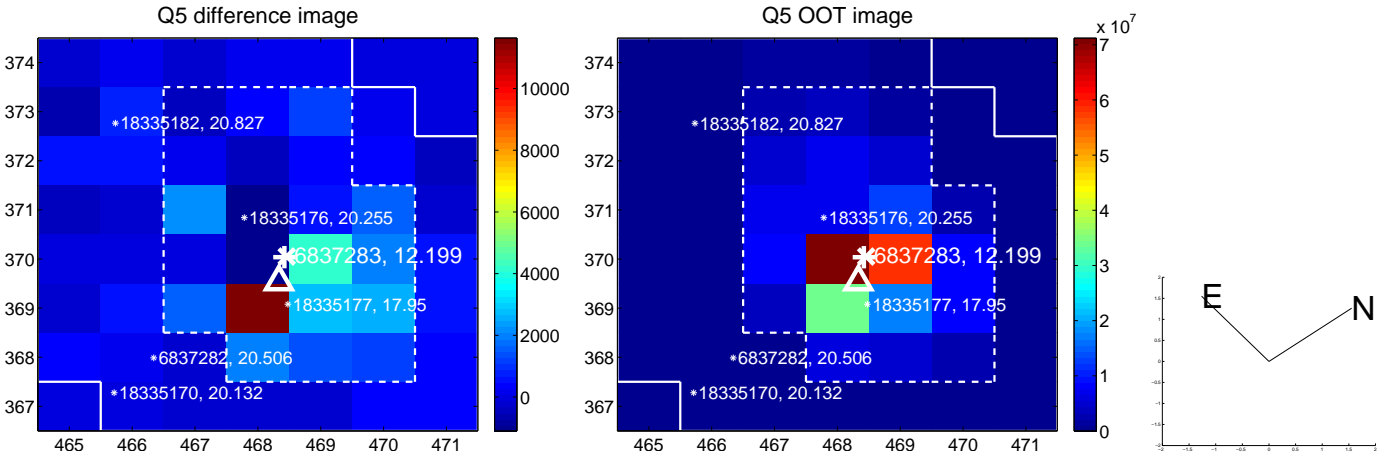


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

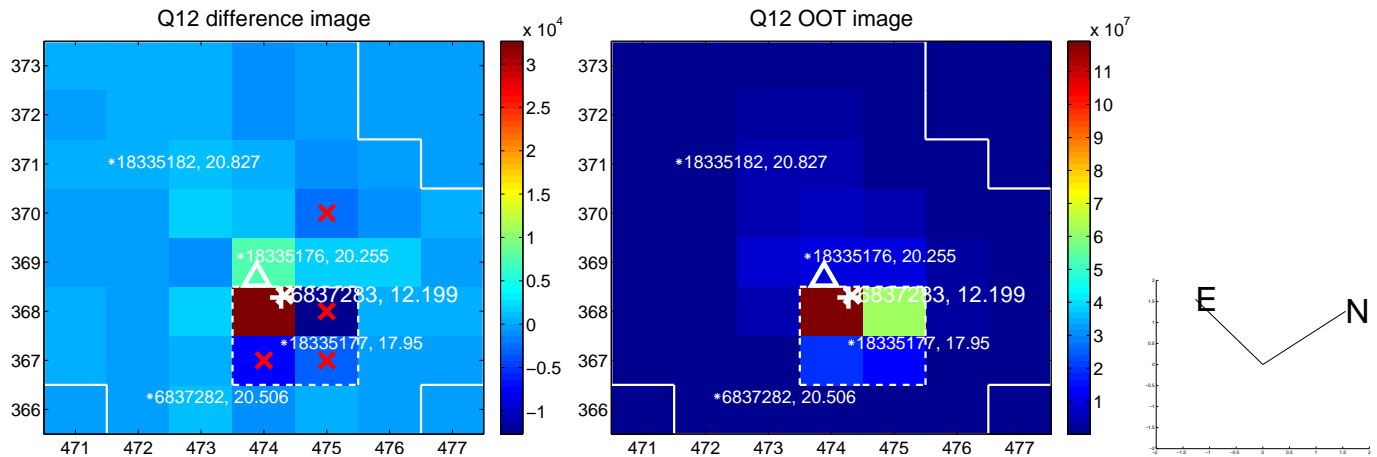
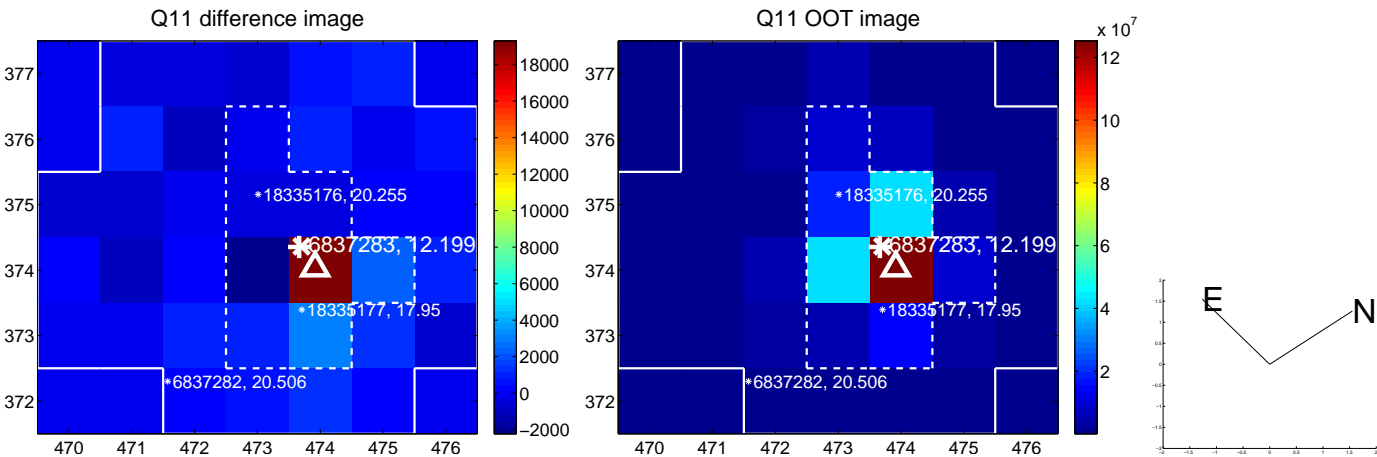
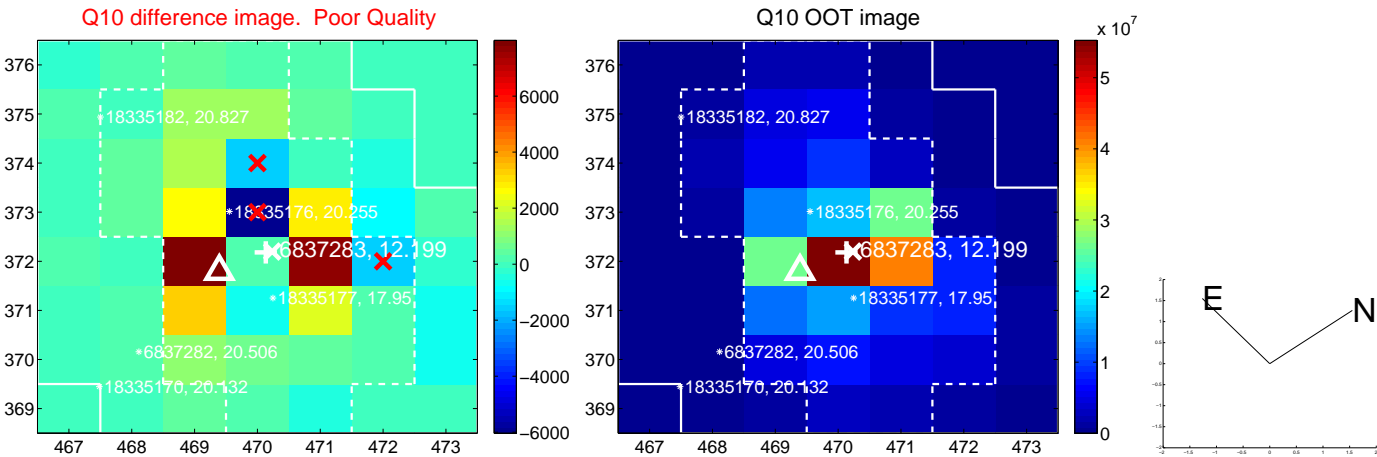
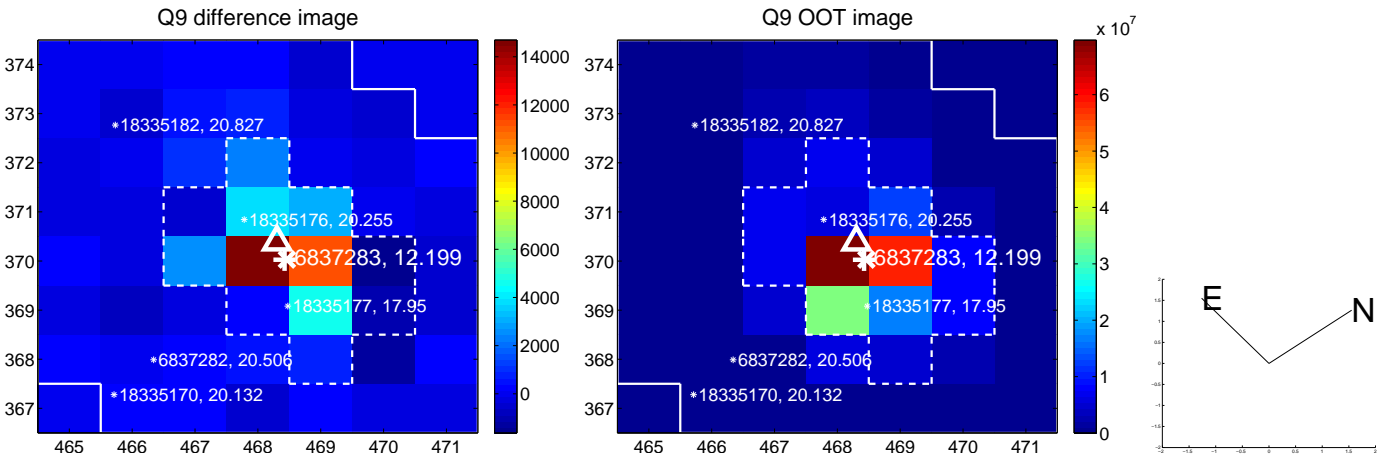
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



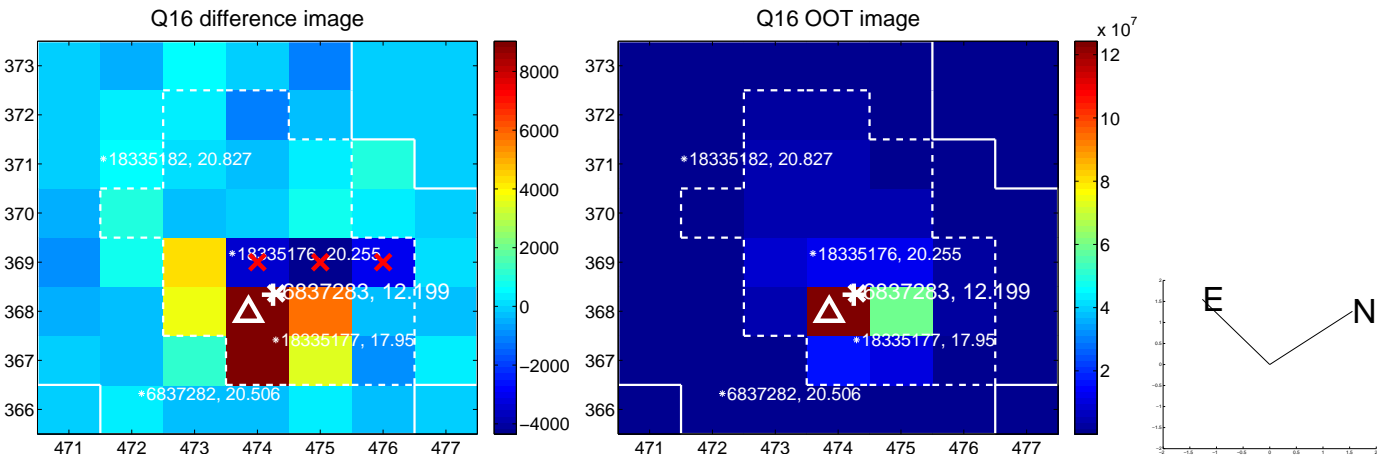
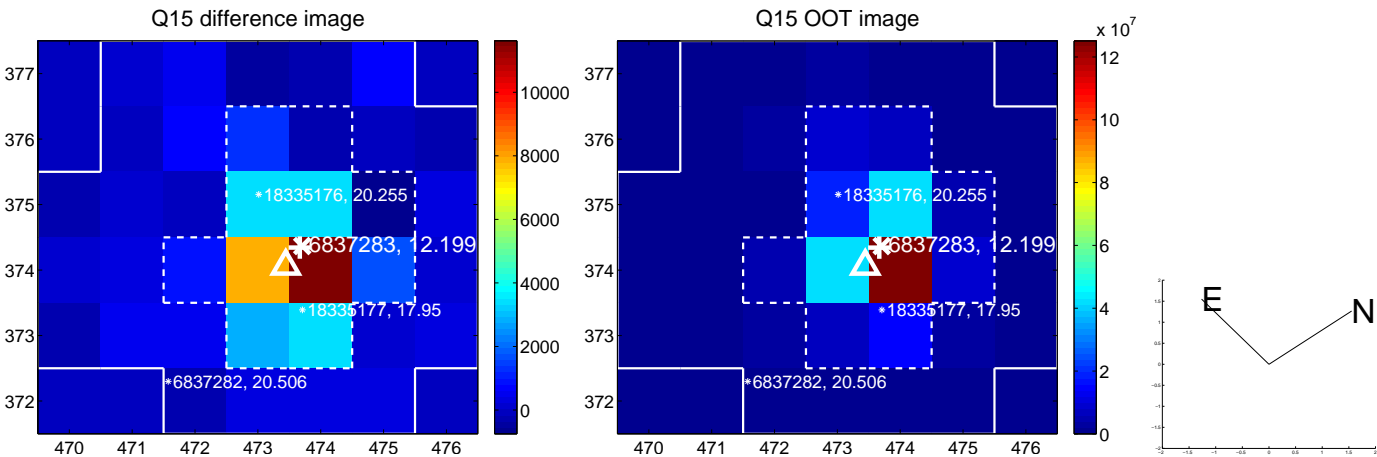
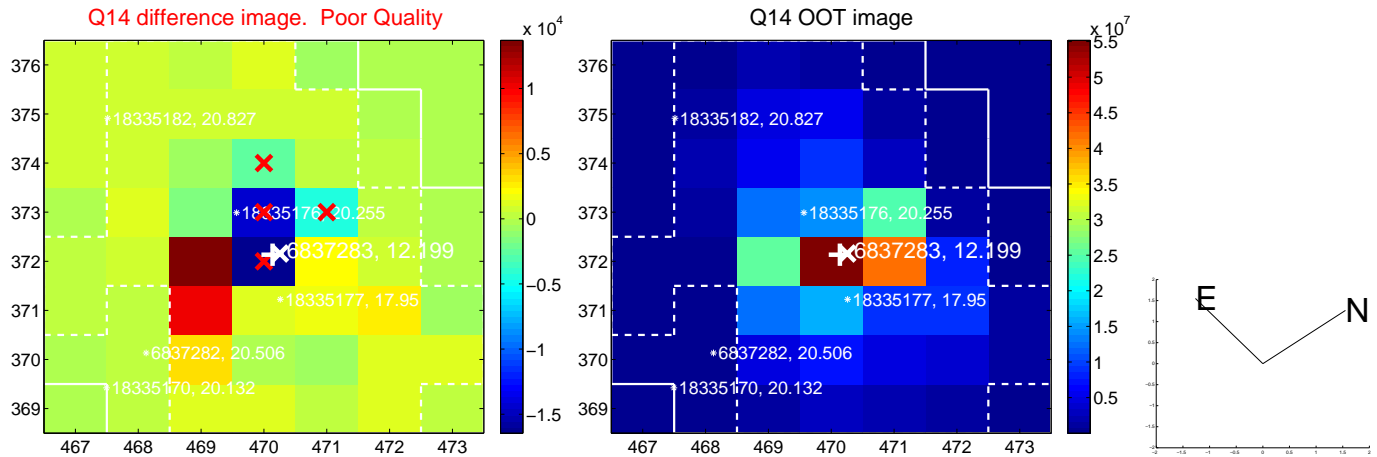
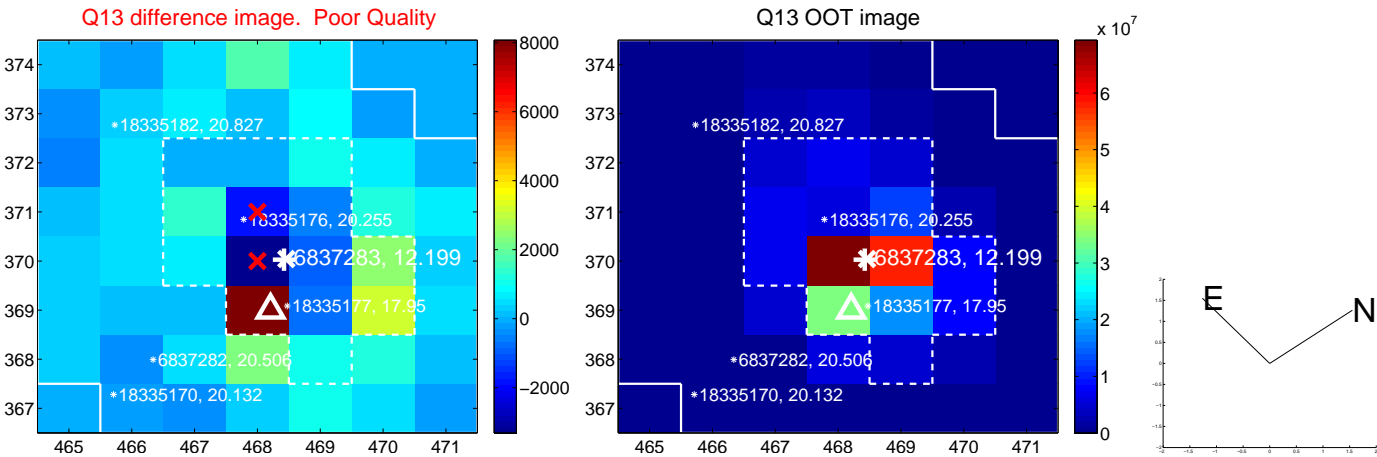
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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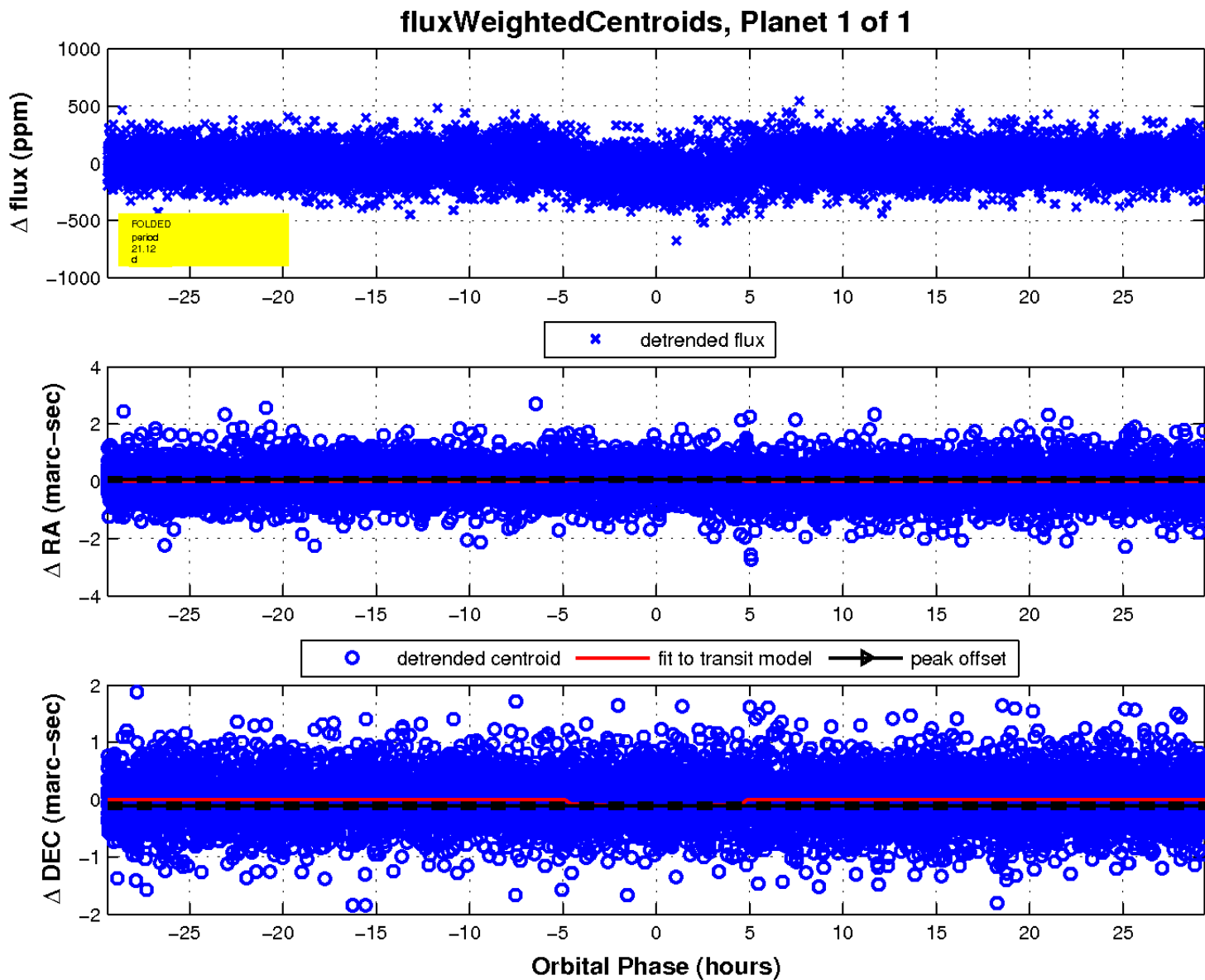
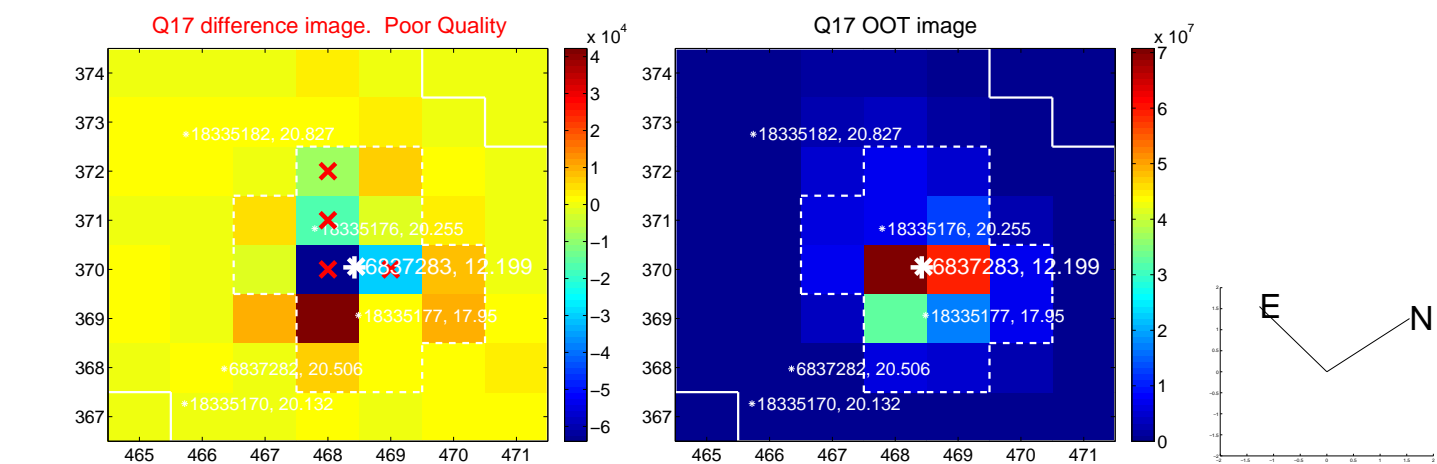


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

