

# KIC 008681833

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008681833-01	OBS	2865.01	1.311560	131.533569	145.6	2.039	15.2	17.2	0.96	5926	1.37	1778.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008681833-01	OBS	PC	0.98	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.

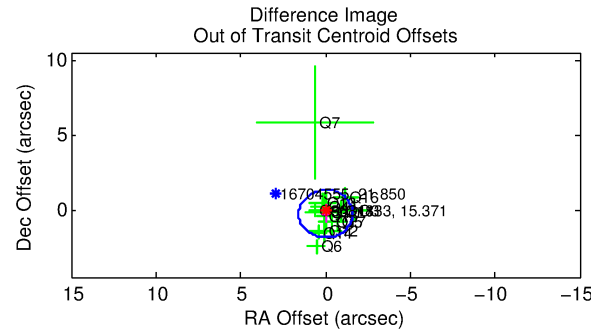
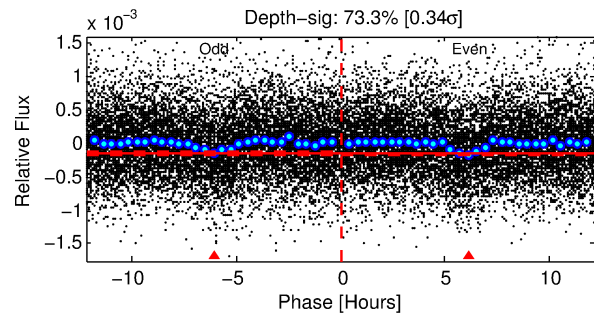
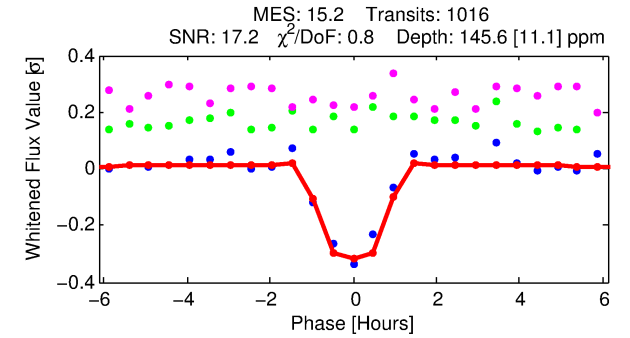
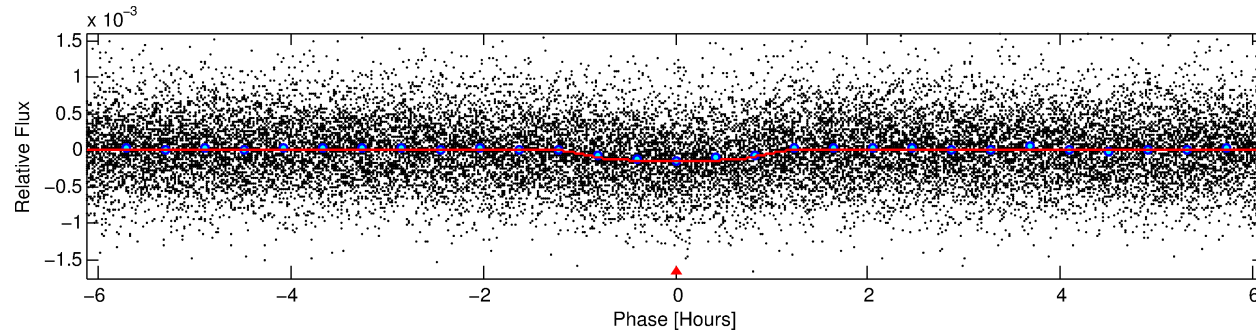
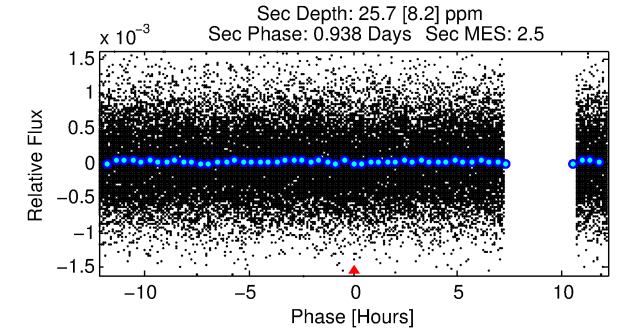
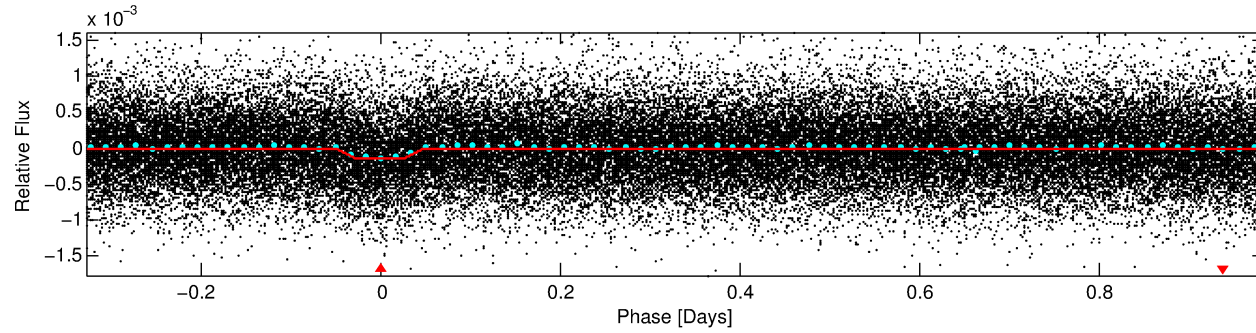
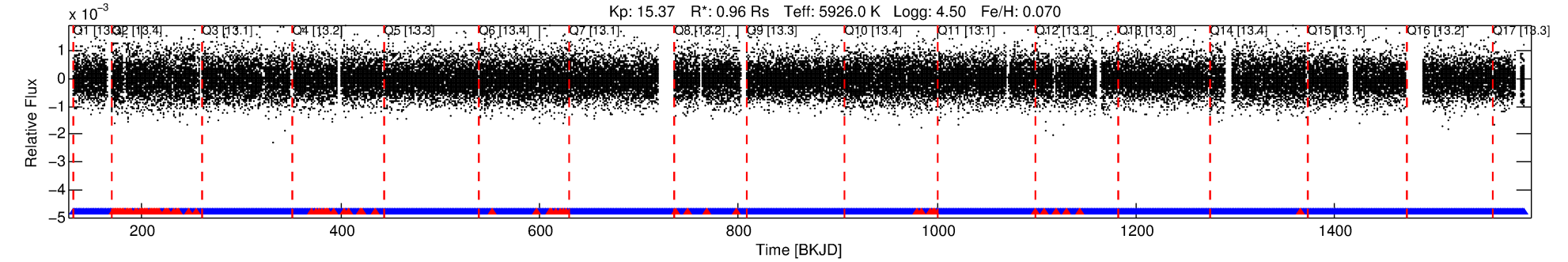
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008681833-01

No Significant Match Found

# DV One-Page Summary

KIC: 8681833 Candidate: 1 of 1 Period: 1.312 d  
KOI: K02865.01 Corr: 0.982



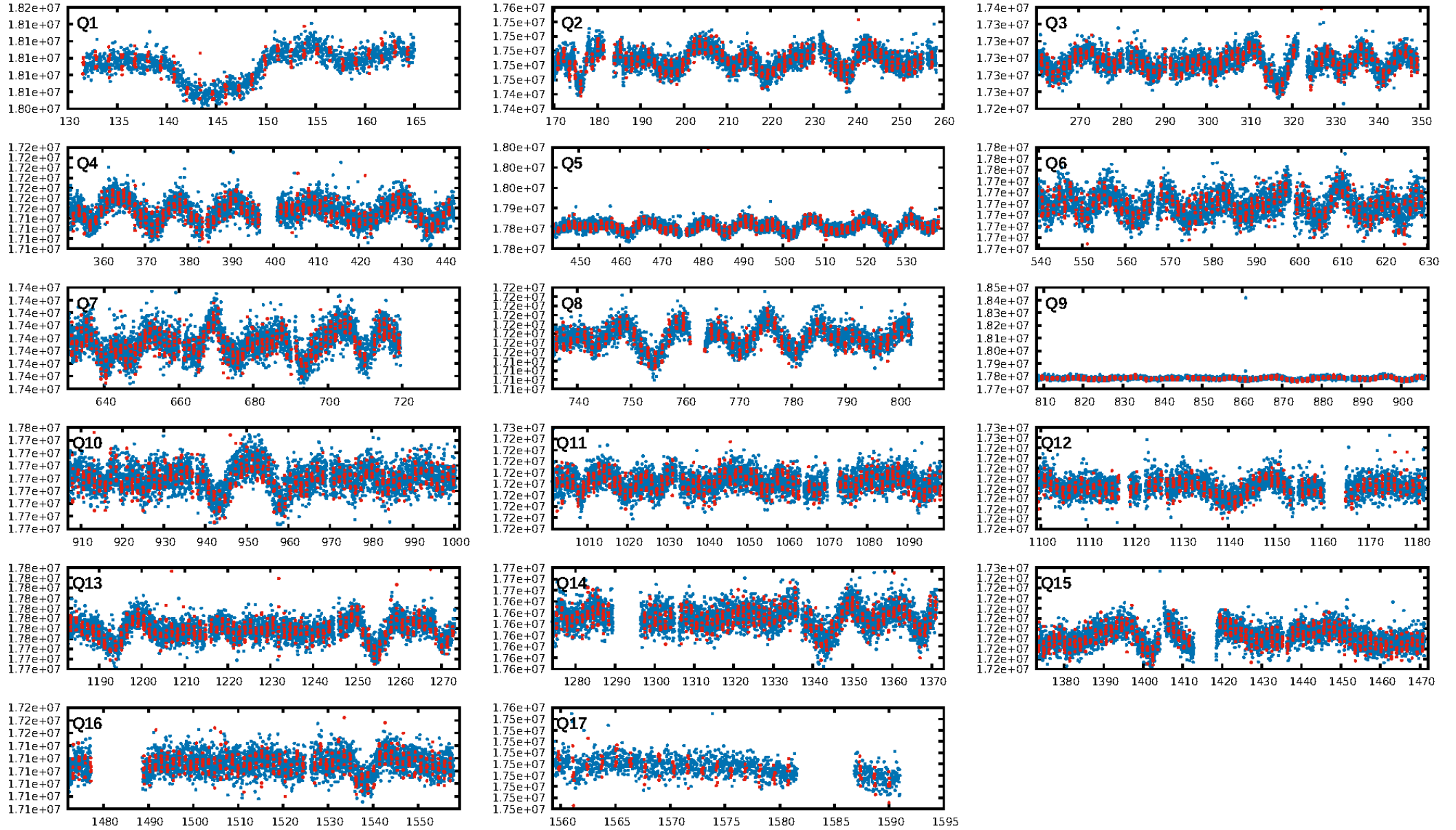
## DV Fit Results:

Period = 1.31156 [0.00001] d  
Epoch = 131.5336 [0.0017] BKJD  
Rp/R\* = 0.0130 [0.0059]  
a/R\* = 2.54 [4.74]  
b = 0.89 [0.52]  
Seff = 1778.17 [747.07]  
Teq = 1656 [174] K  
Rp = 1.37 [0.75] Re  
a = 0.0240 [0.0064] AU  
Ag = 4.35 [4.51] [0.74σ]  
Teffp = 3697 [894] K [2.24σ]

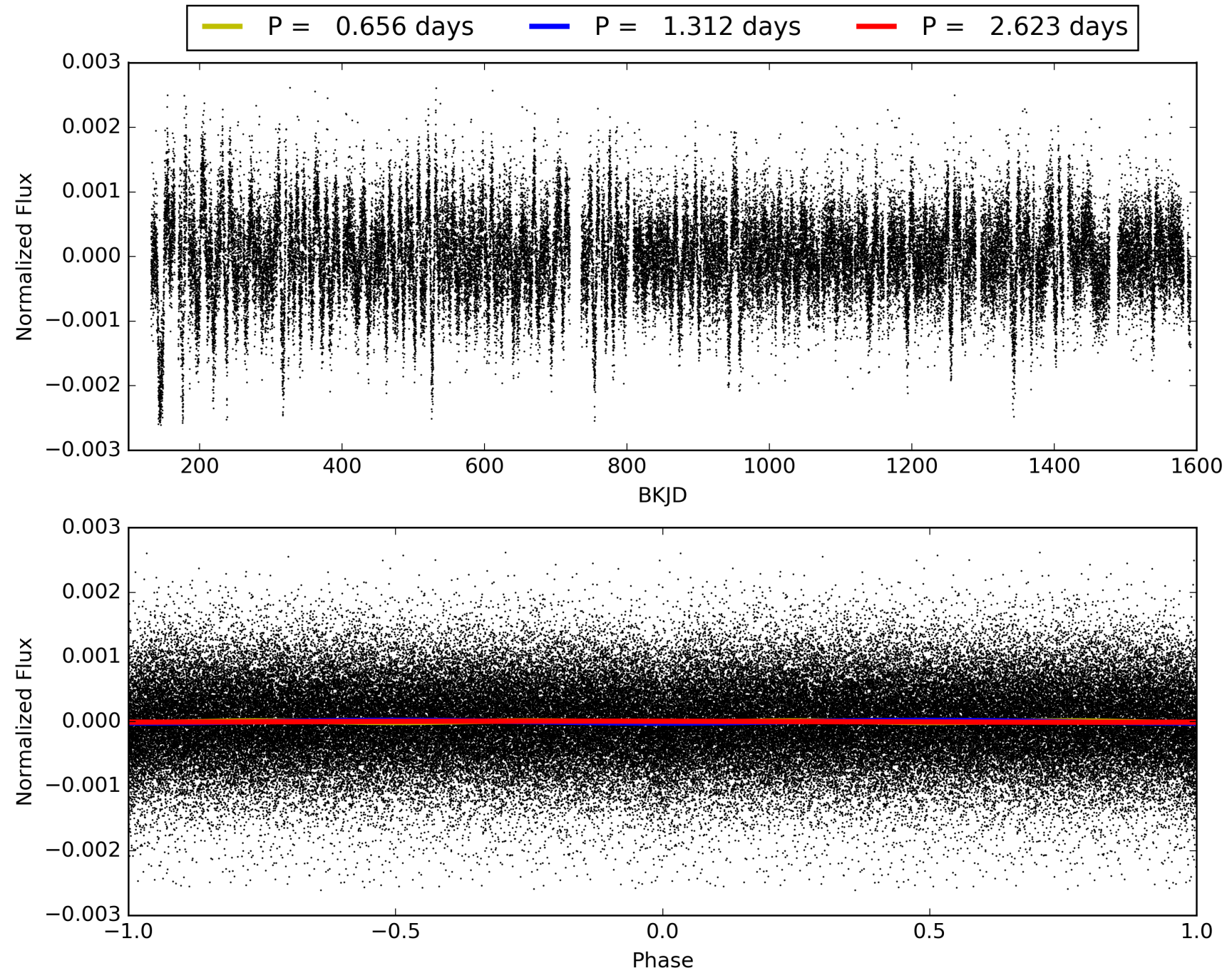
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.95e-51  
RollingBand-fgt: 0.92 [895/970]  
GhostDiagnostic-chr: -42.44  
Centroid-sig: 54.1%  
Centroid-so: 0.252 arcsec [0.33σ]  
OotOffset-rm: 0.282 arcsec [0.53σ]  
KicOffset-rm: 0.587 arcsec [1.16σ]  
OotOffset-st: 3/4/3/4 [14]  
KicOffset-st: 3/4/3/4 [14]  
DiffImageQuality-fgm: 0.71 [10/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008681833-01, PDC Light Curves

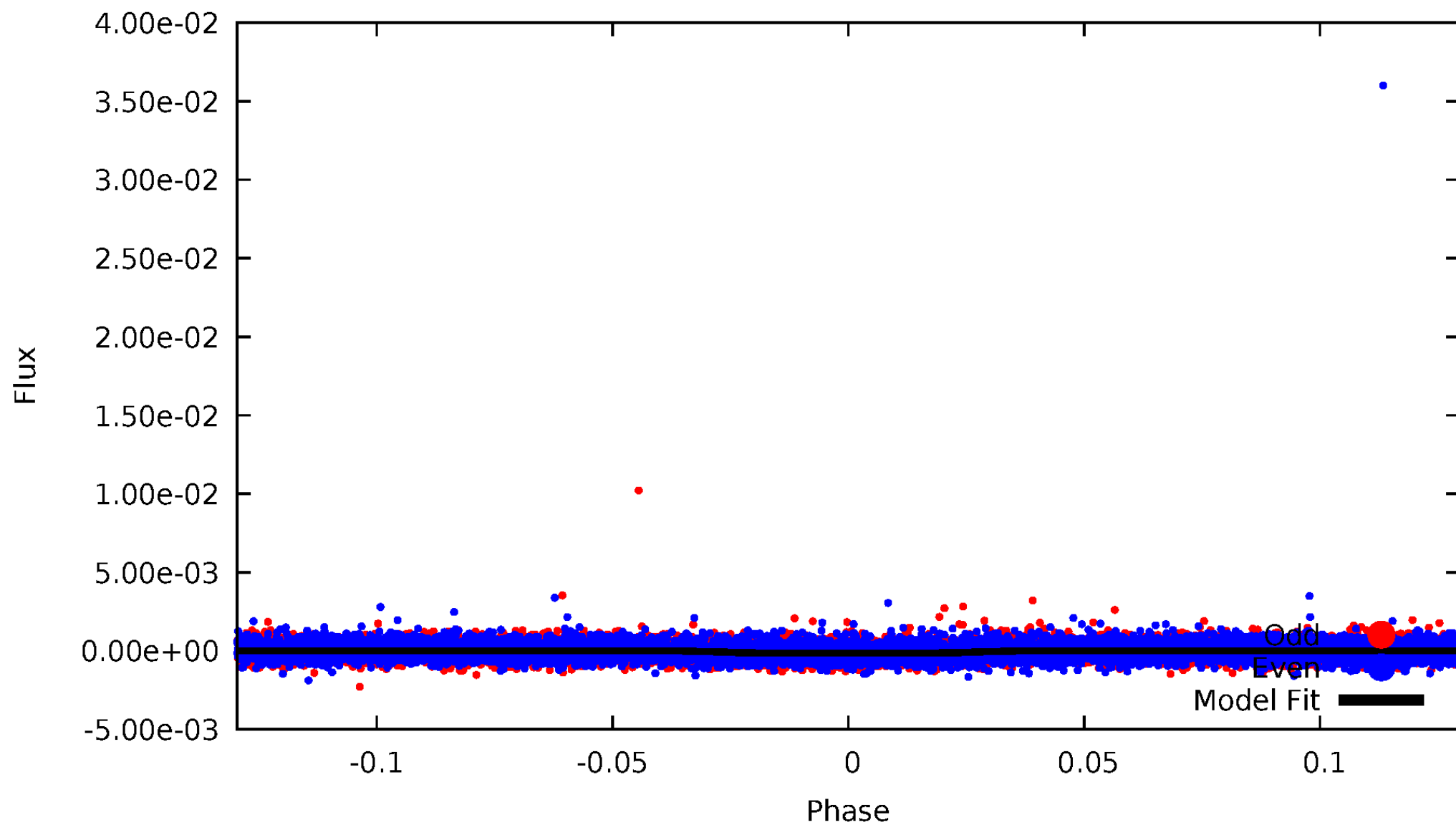


TCE 008681833-01



# DV Odd/Even

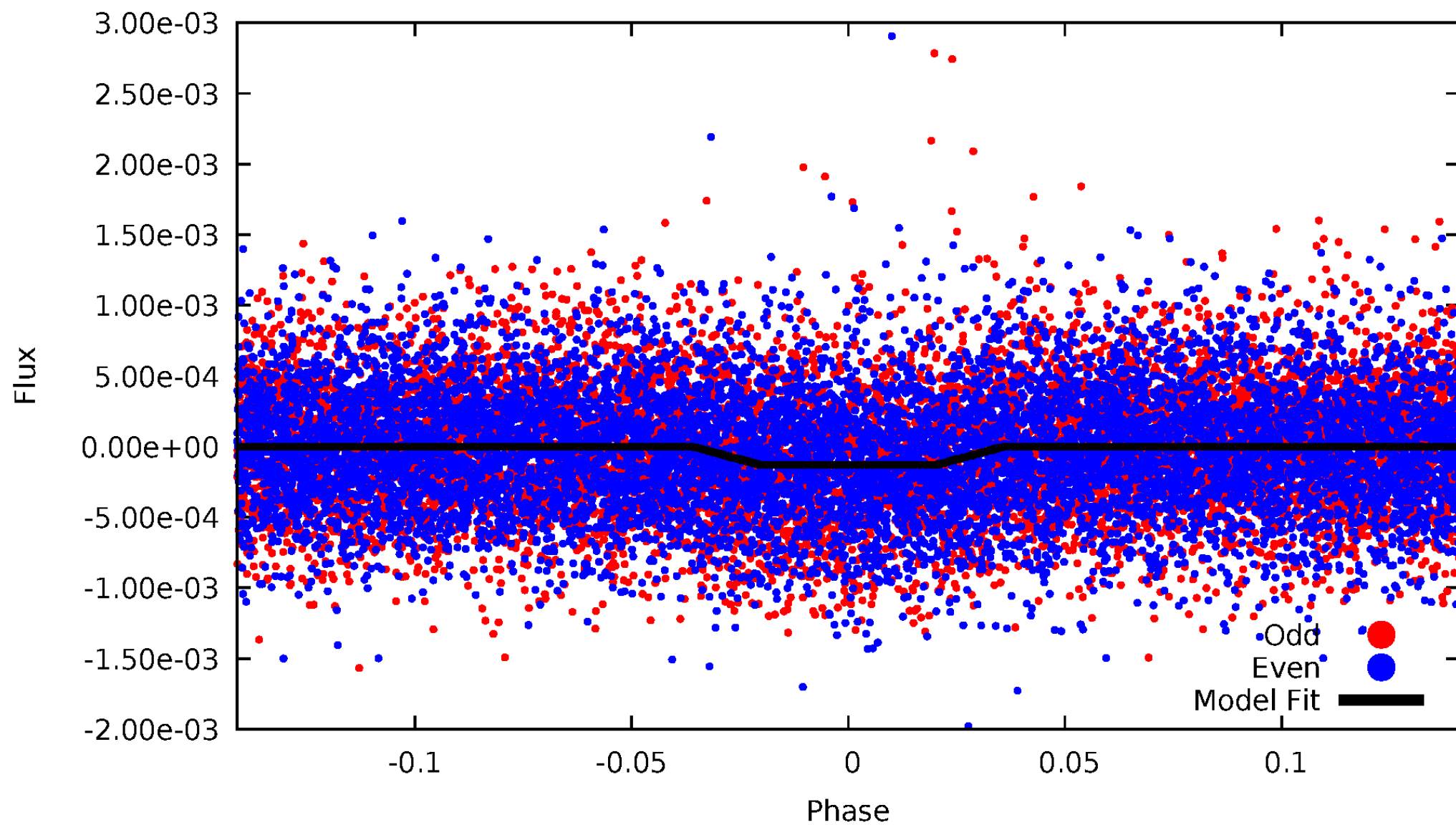
TCE 008681833-01





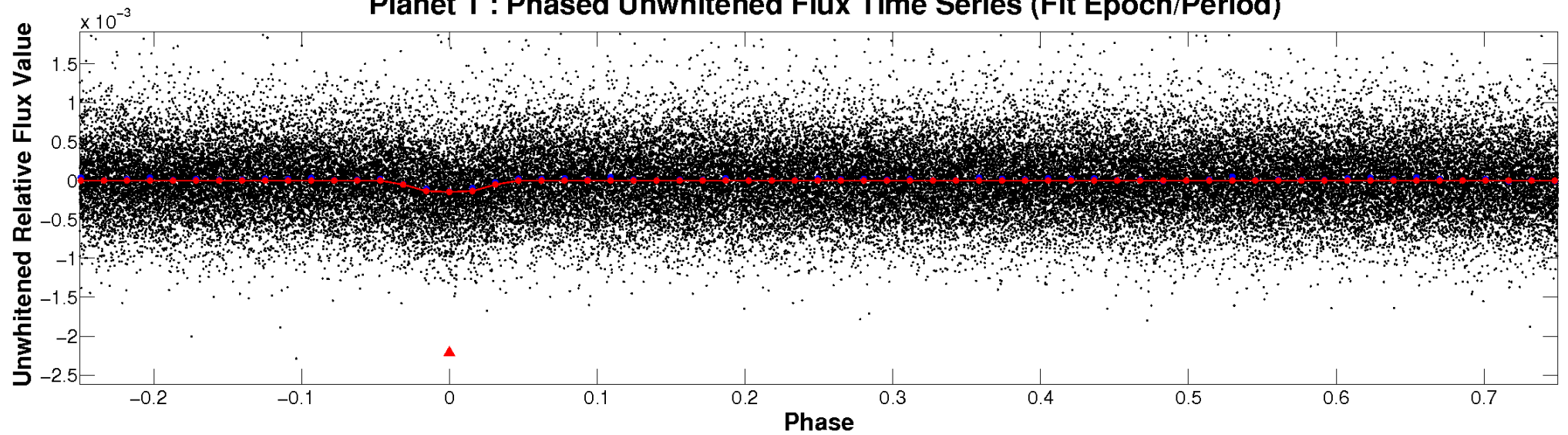
# ALT Odd/Even

TCE 008681833-01

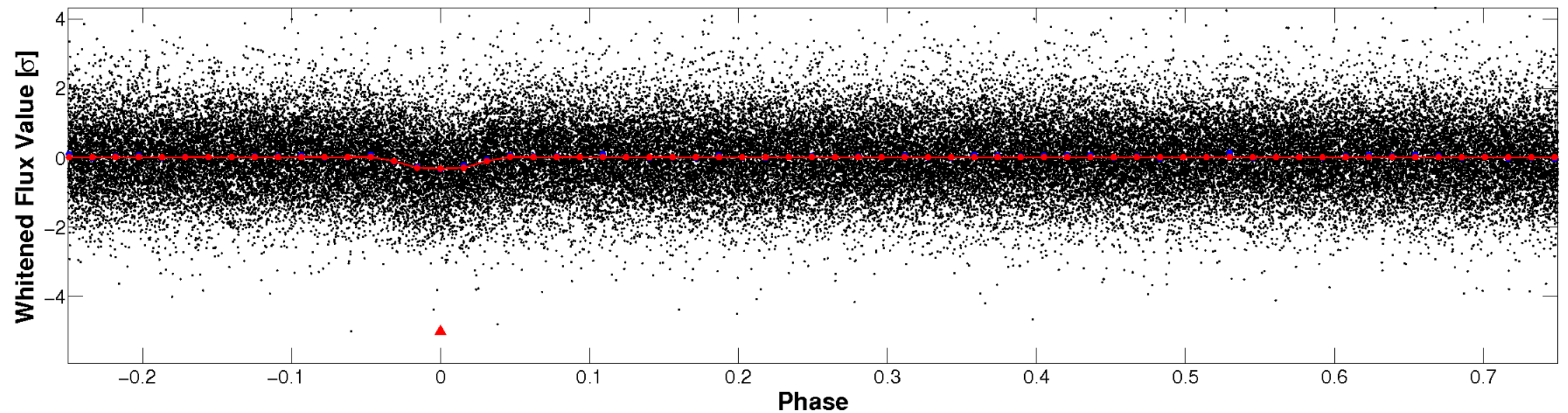


# Non-Whitened Vs. Whitened Light Curve

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

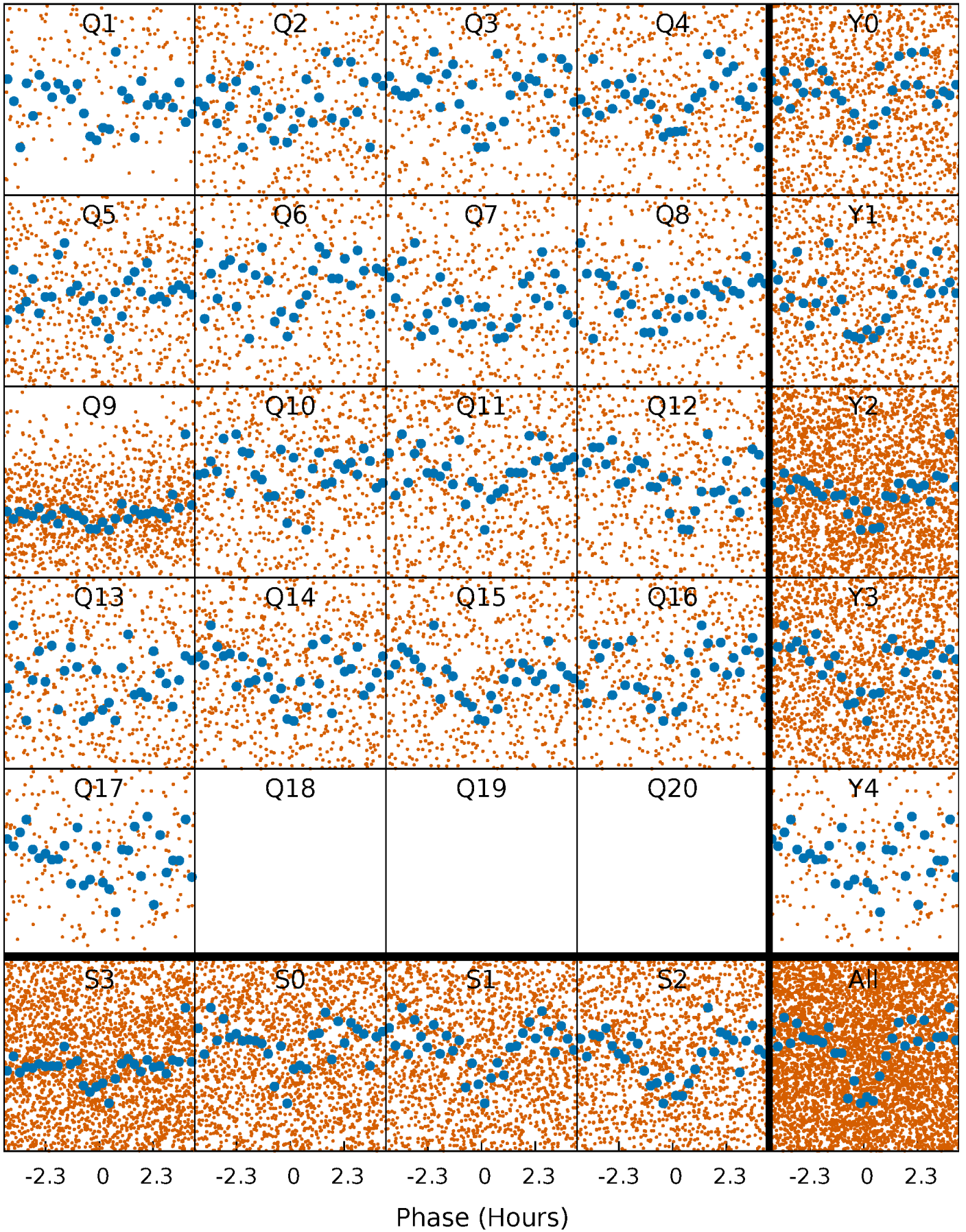


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

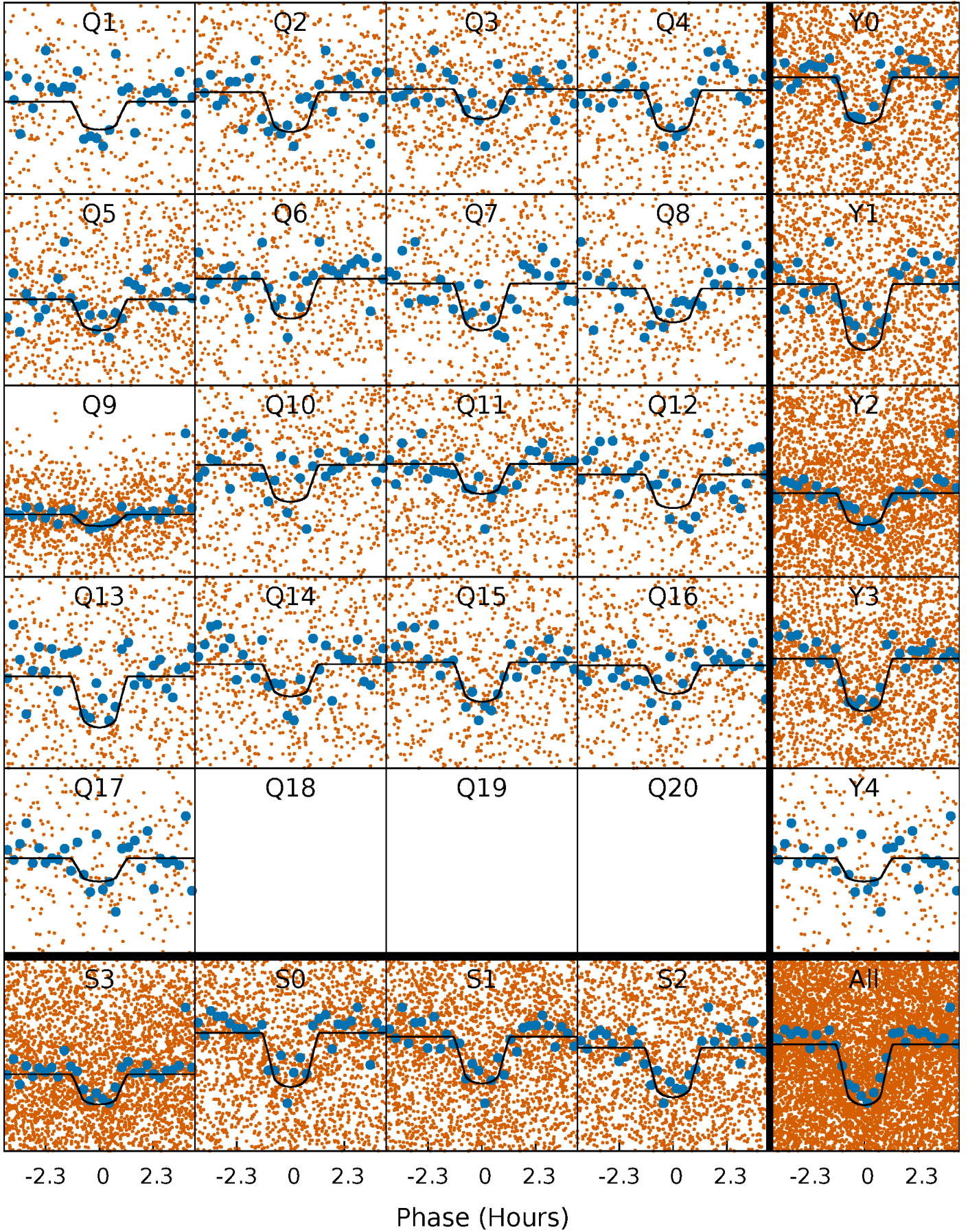
TCE 008681833-01   P= 1.311560 Days    $T_0=131.533569$  (BKJD)





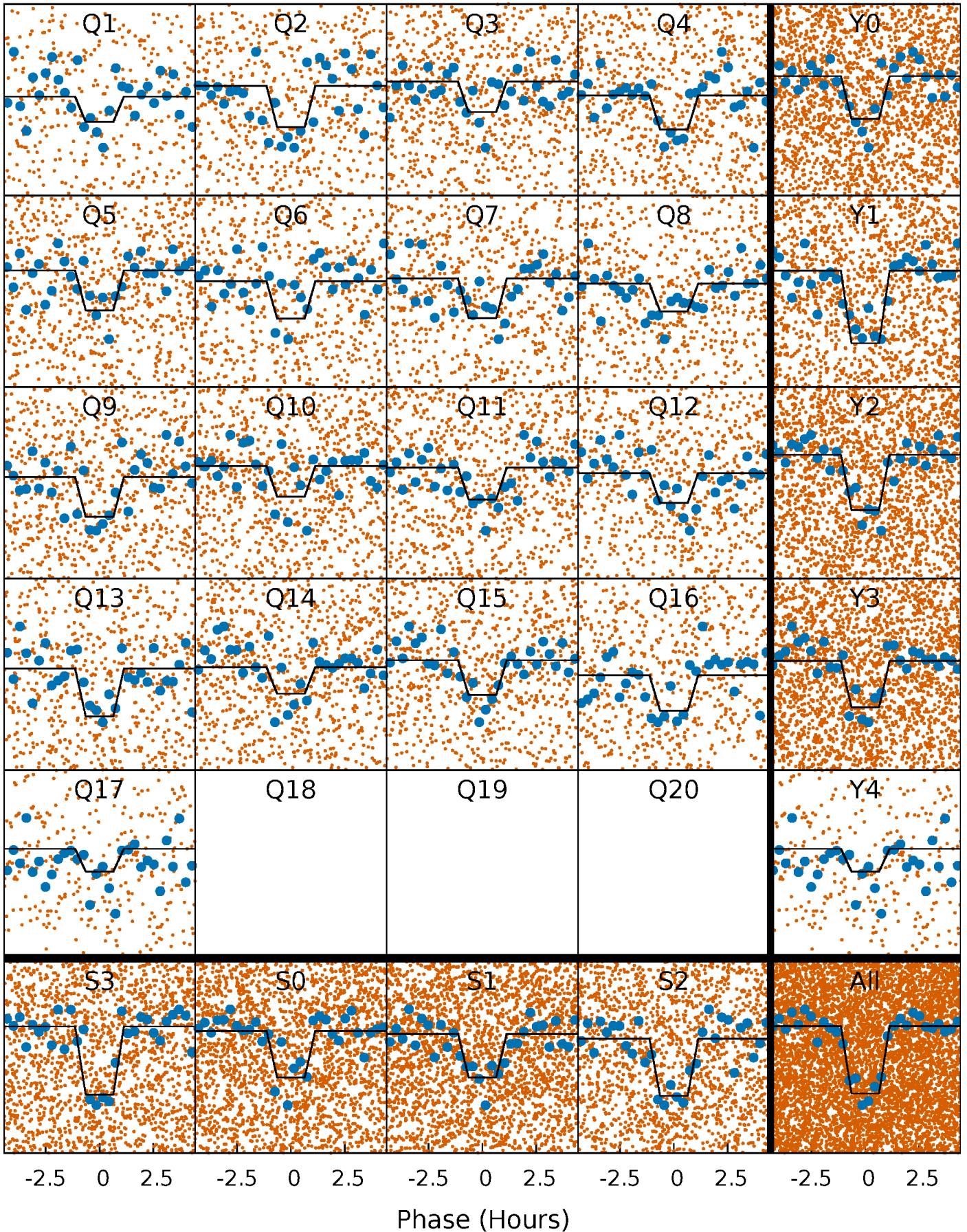
# DV Quarter-Phased Transit Curves

TCE 008681833-01 P= 1.311560 Days  $T_0=131.533569$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

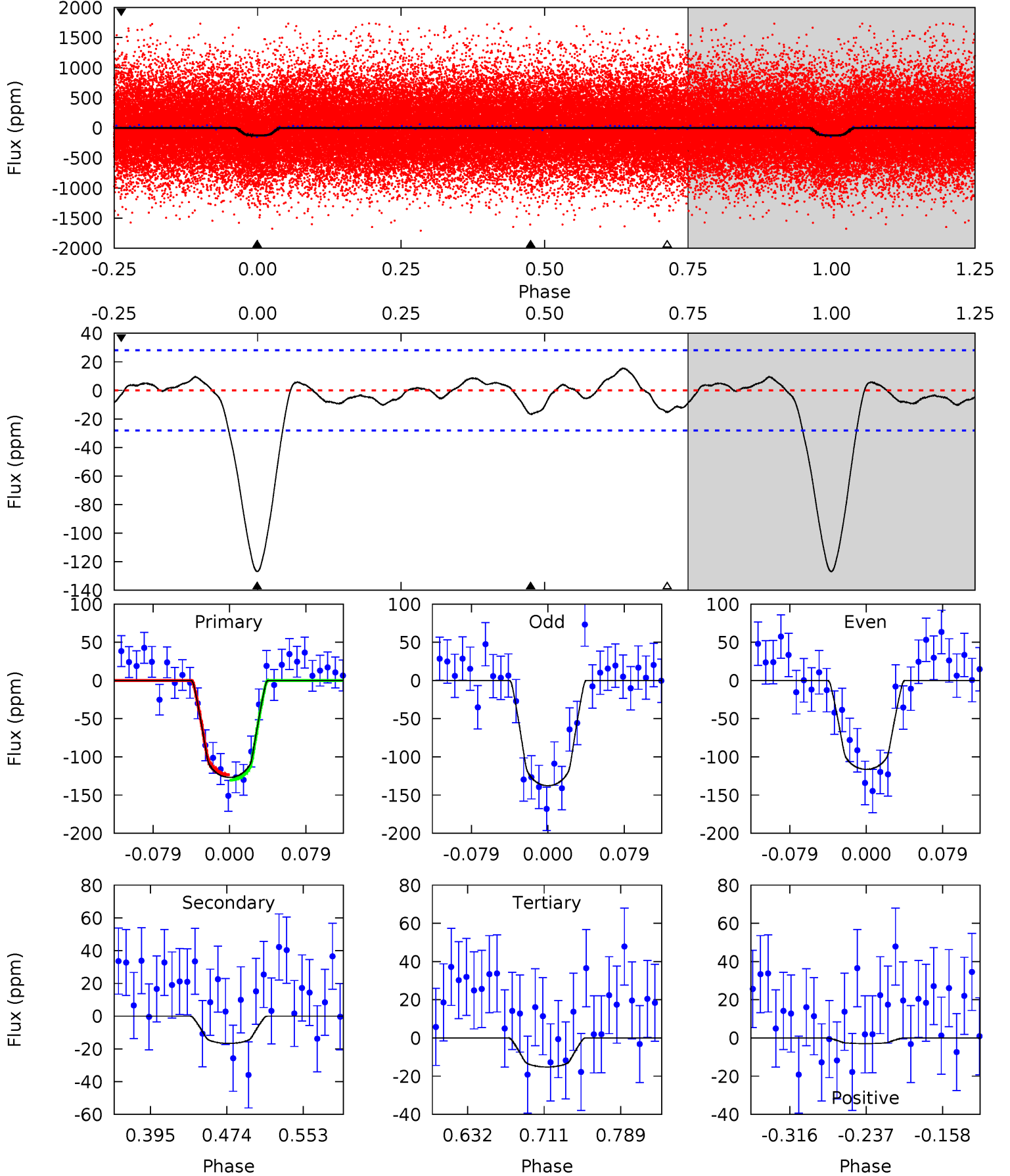
TCE 008681833-01 P= 1.311557 Days  $T_0=131.534291$  (BKJD)



# DV Model-Shift Uniqueness Test

008681833-01, P = 1.311560 Days, E = 130.222009 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
20.8	2.74	2.50	-0.48	4.61	1.76	1.11	18.3	21.3	0.24	3.22	1.76	0.94	0.11	0.57

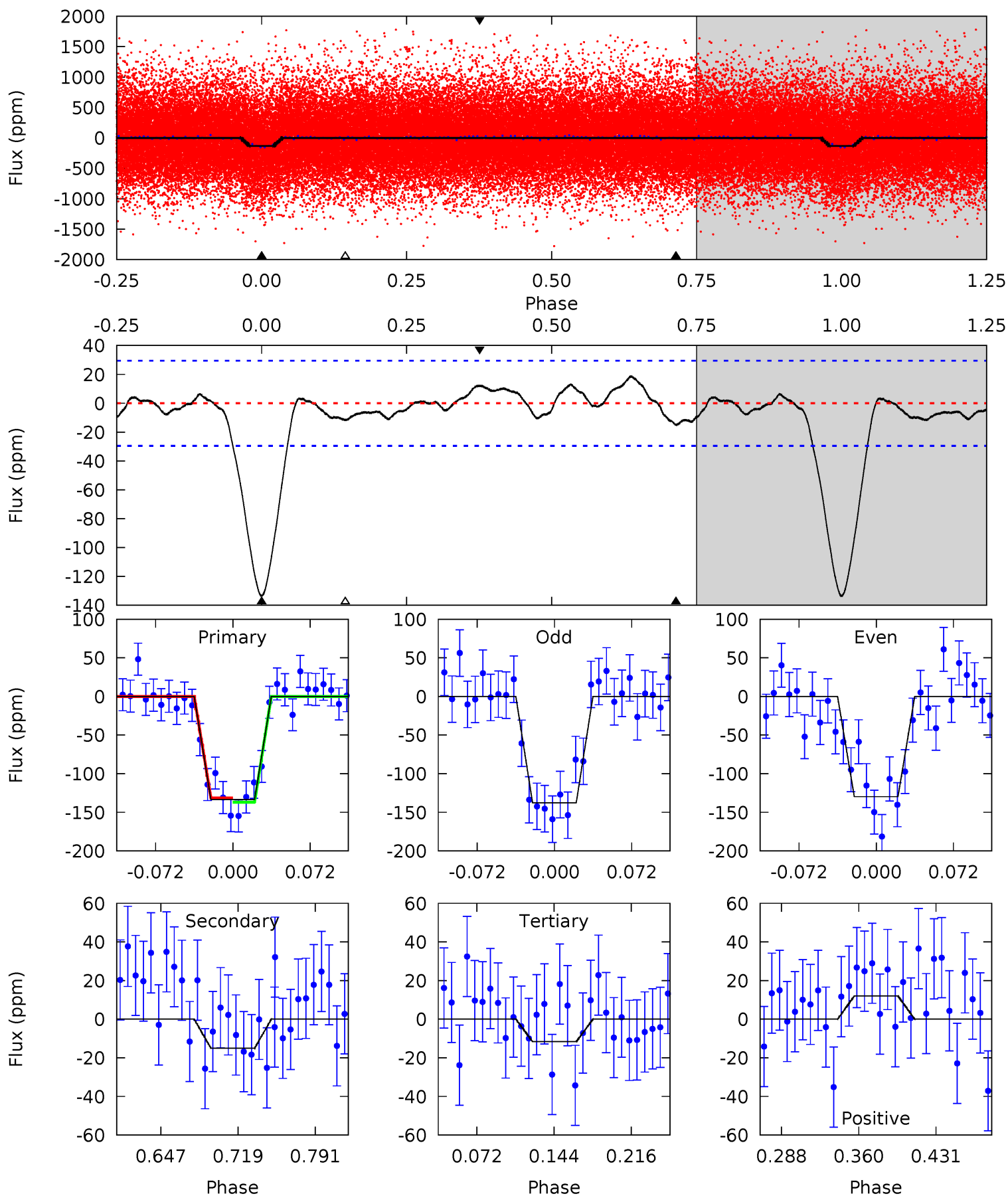




# Alt Model-Shift Uniqueness Test

008681833-01, P = 1.311557 Days, E = 130.222734 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
21.0	2.37	1.83	1.89	4.63	1.80	1.11	19.2	19.1	0.53	0.48	0.62	0.98	0.12	0.44





### Stellar Parameters For KIC 008681833

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5926^{+164}_{-205}$	$4.501^{+0.039}_{-0.221}$	$0.070^{+0.250}_{-0.350}$	$0.963^{+0.297}_{-0.099}$	$1.072^{+0.110}_{-0.152}$	$1.691^{+0.363}_{-0.916}$
	+3%/-3%	+1%/-5%	+357%/-500%	+31%/-10%	+10%/-14%	+21%/-54%
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 008681833-01 / KOI 2865.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-17 \pm 6$	$1.47^{+0.71}_{-0.63}$	$2372^{+175}_{-116}$	$3600^{+899}_{-584}$	$2.325^{+4.984}_{-1.395}$
Alt.	$-15 \pm 6$	$1.28^{+0.69}_{-0.60}$	$2374^{+161}_{-117}$	$3674^{+1052}_{-615}$	$2.548^{+7.018}_{-1.570}$

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

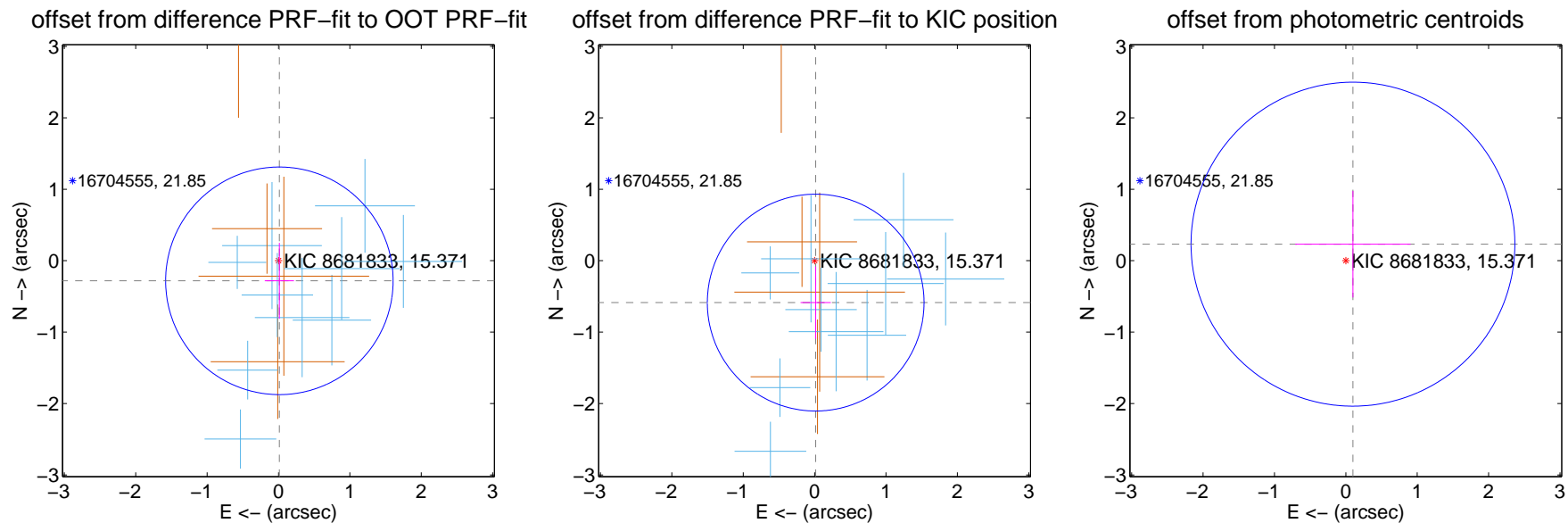
## DV Centroid Data

Supplemental centroid analysis for 008681833-01. Kepler magnitude: 15.37. Transit SNR 17.22

There are 10 quarters with good PRF difference image offsets

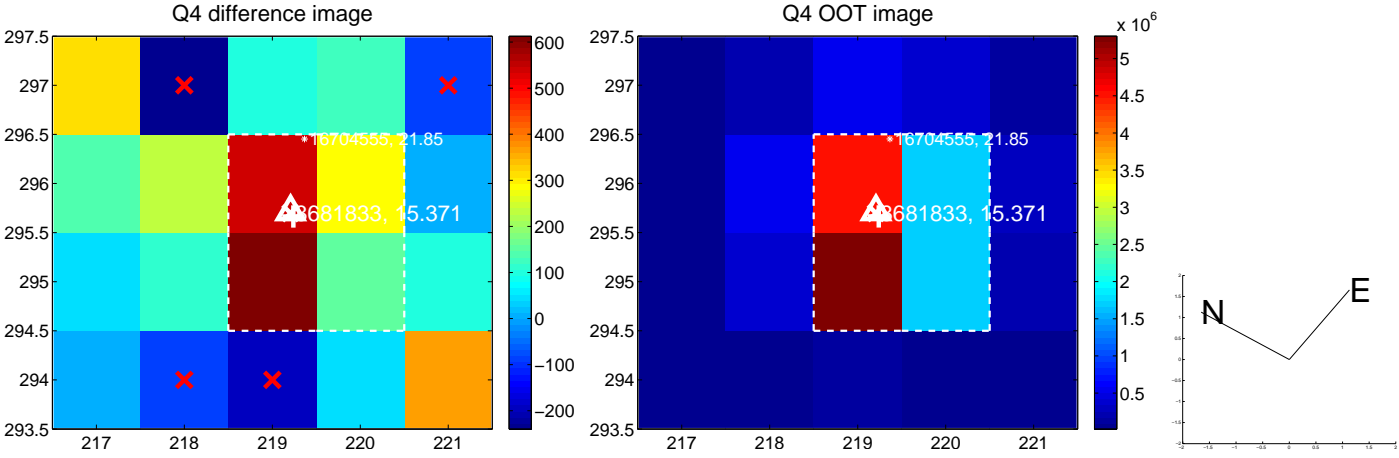
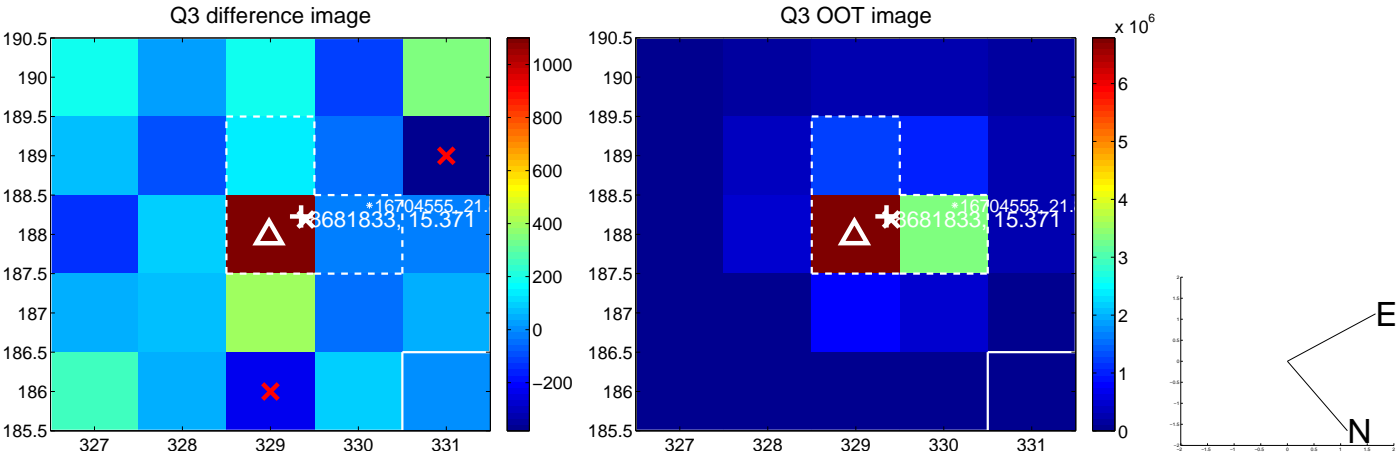
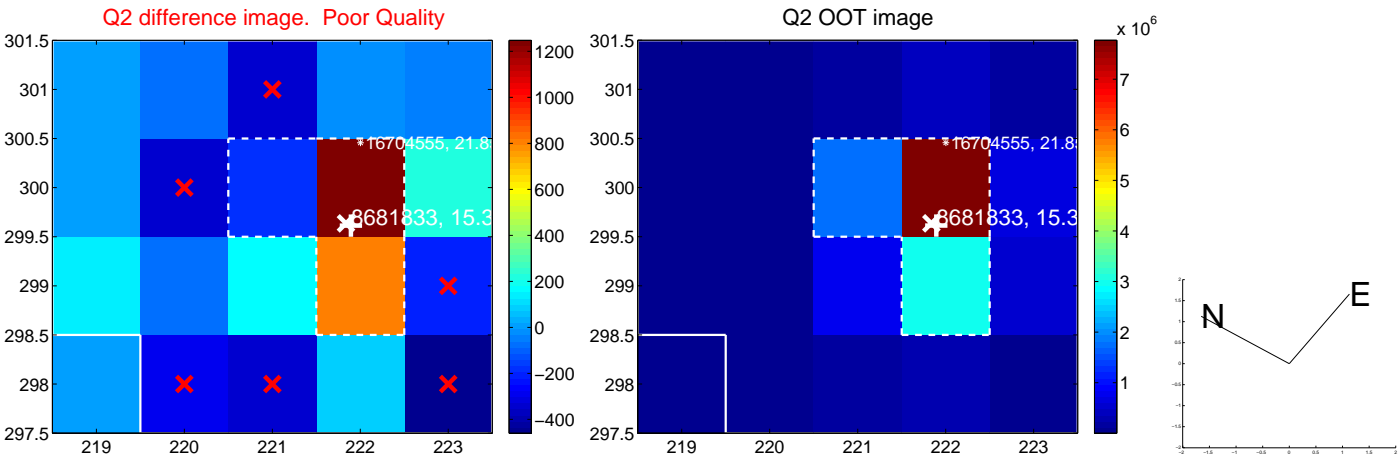
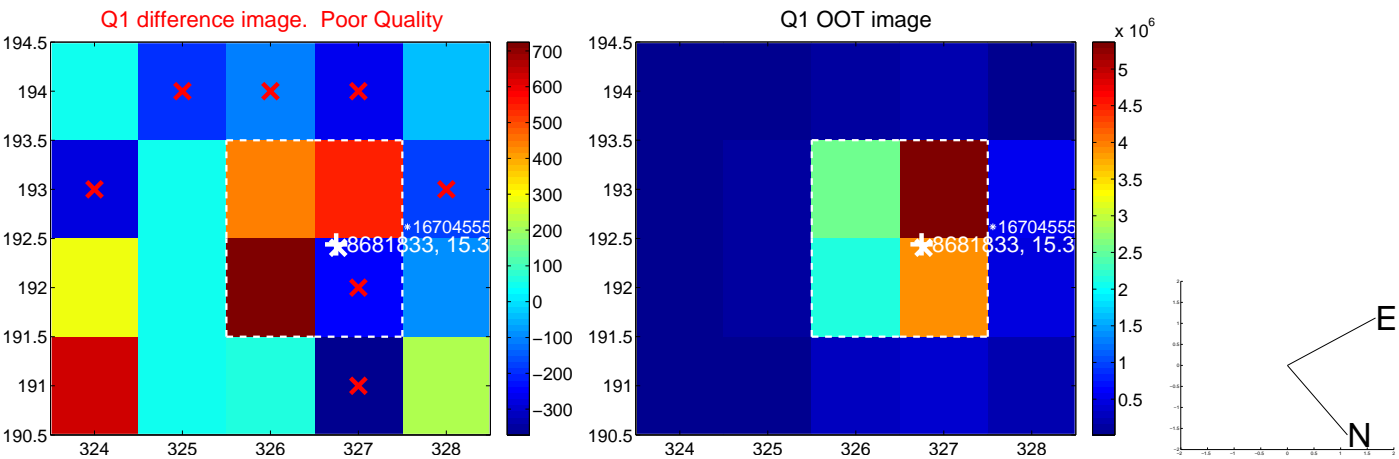
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.282 \pm 0.531$	0.53	$-0.012 \pm 0.205$	$-0.282 \pm 0.532$
PRF-fit source offset from KIC position	$0.587 \pm 0.506$	1.16	$-0.015 \pm 0.212$	$-0.587 \pm 0.506$
photometric centroid source offset	$0.25 \pm 0.76$	0.33	$-0.10 \pm 0.81$	$0.23 \pm 0.75$

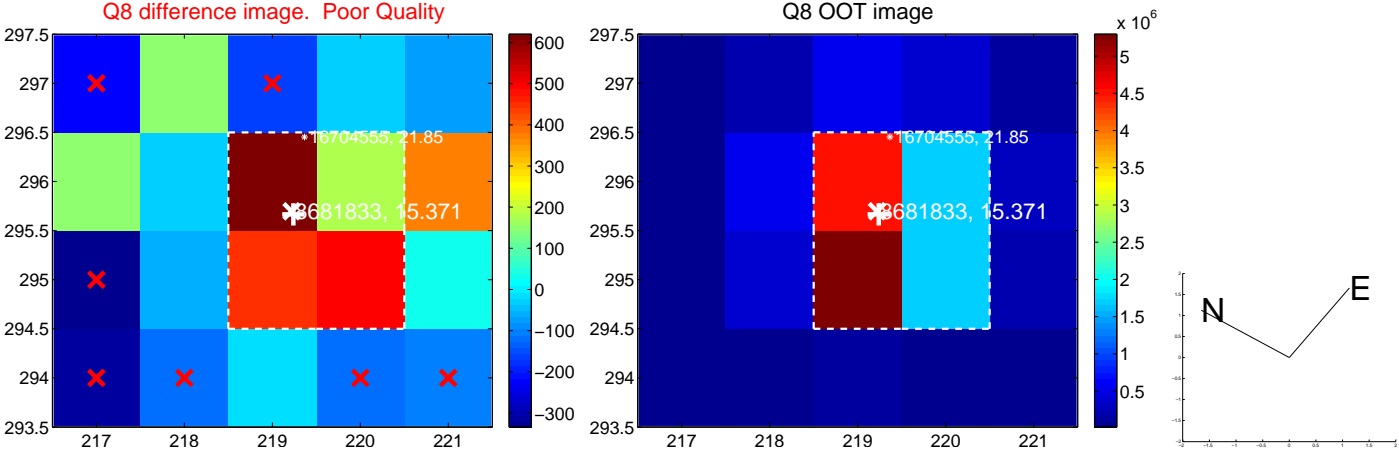
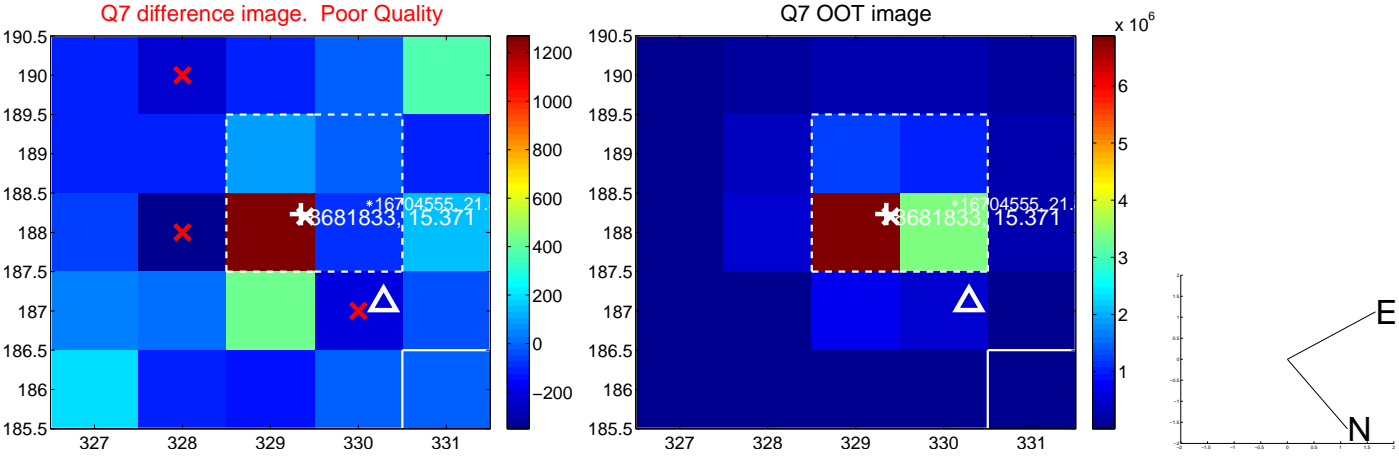
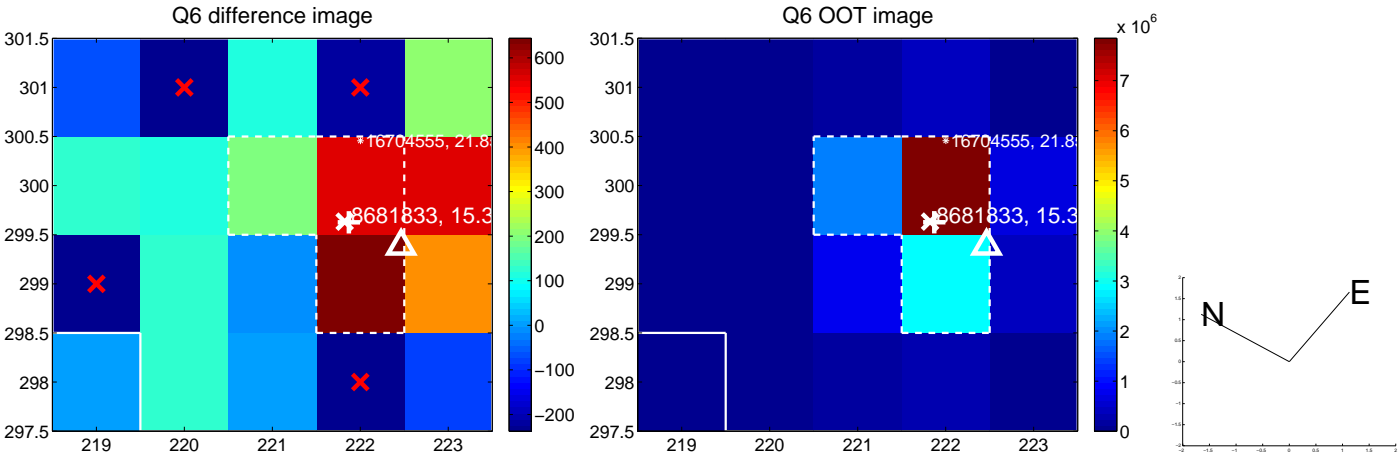
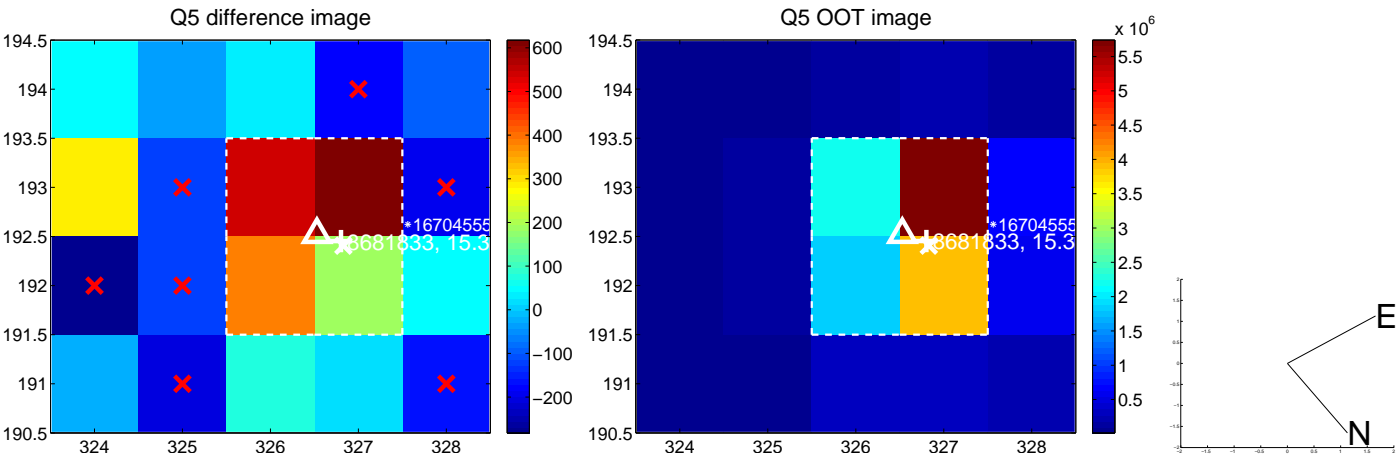


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

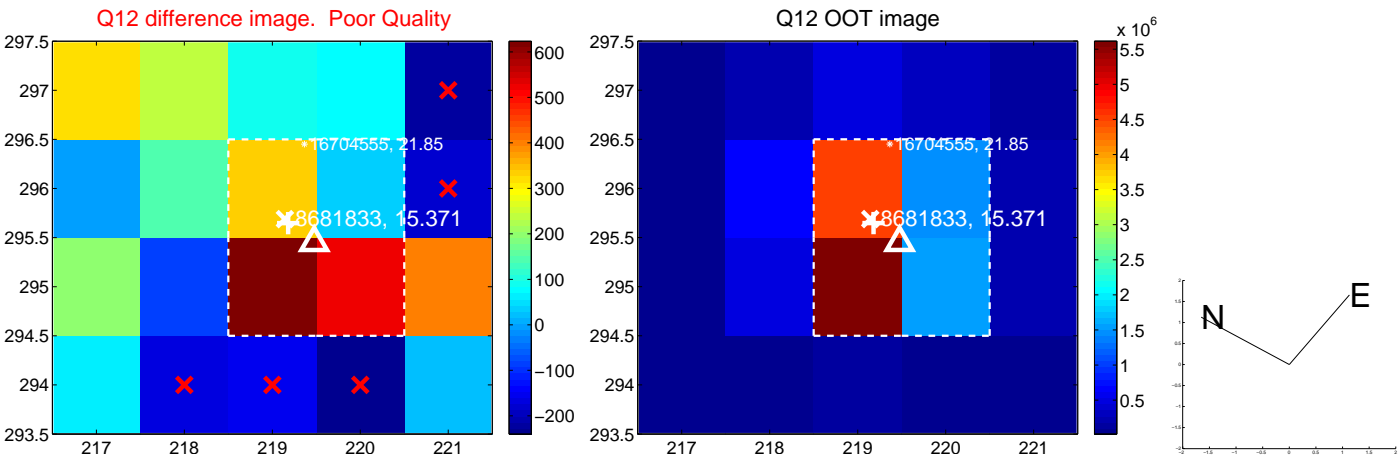
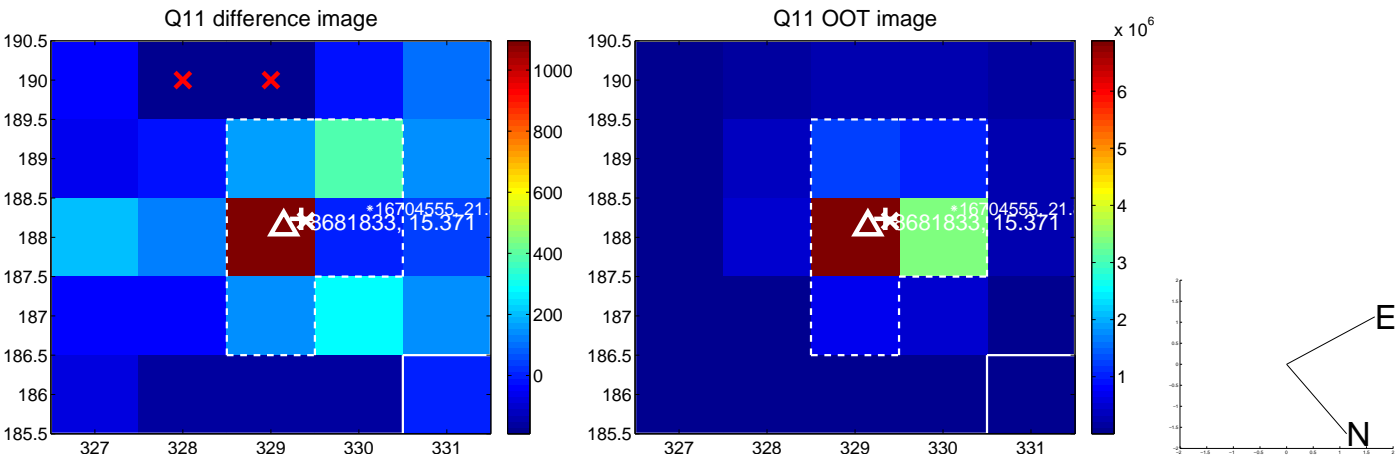
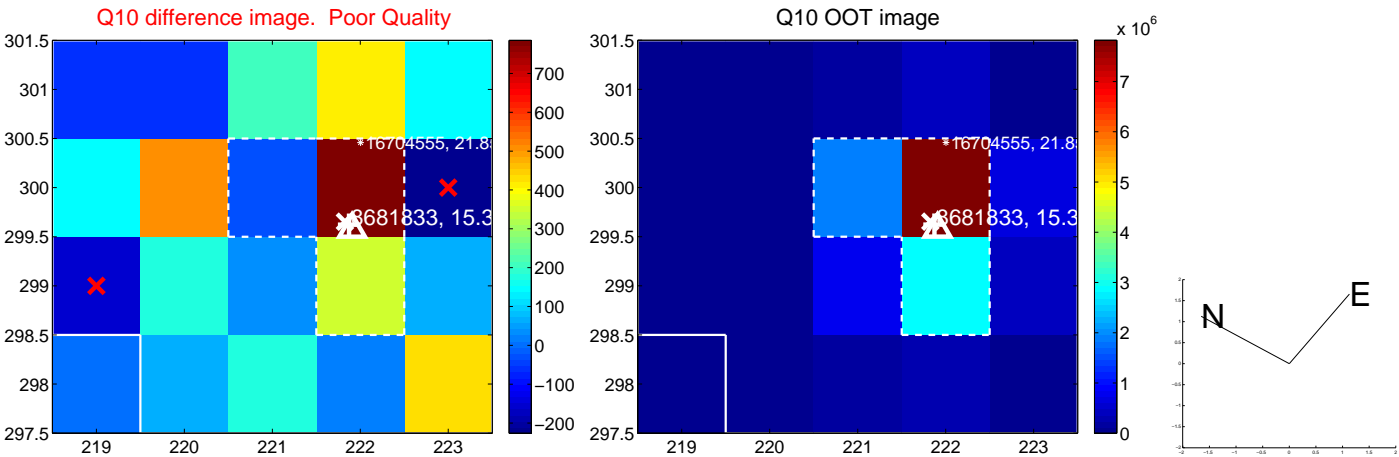
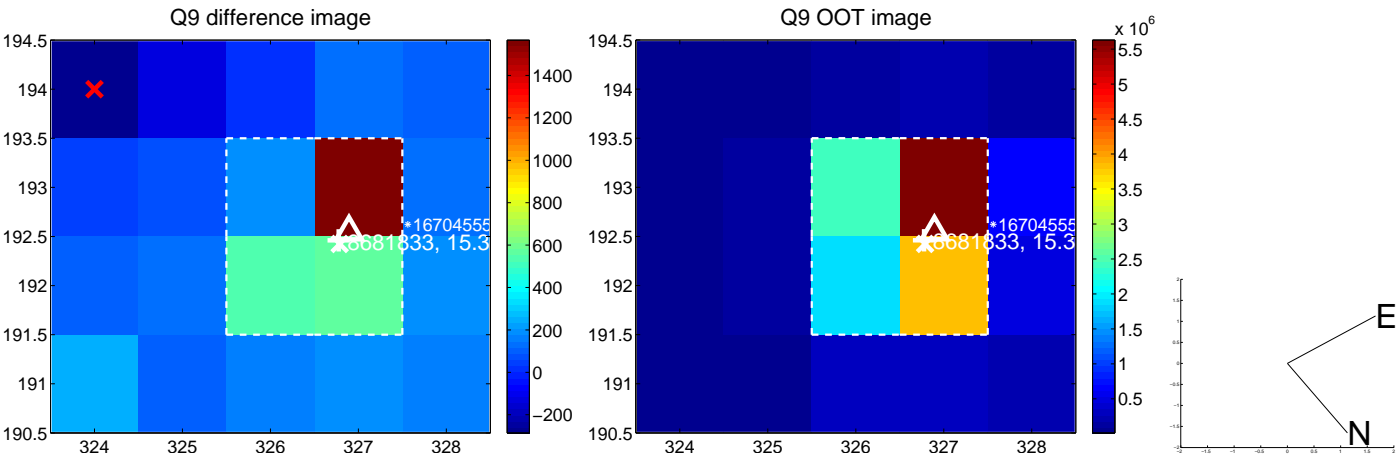


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

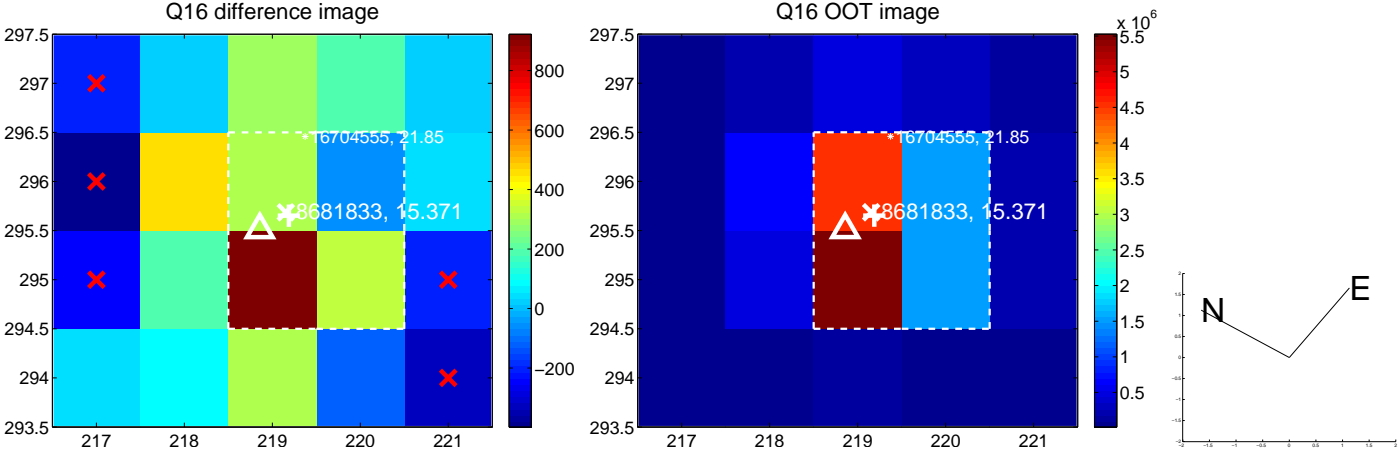
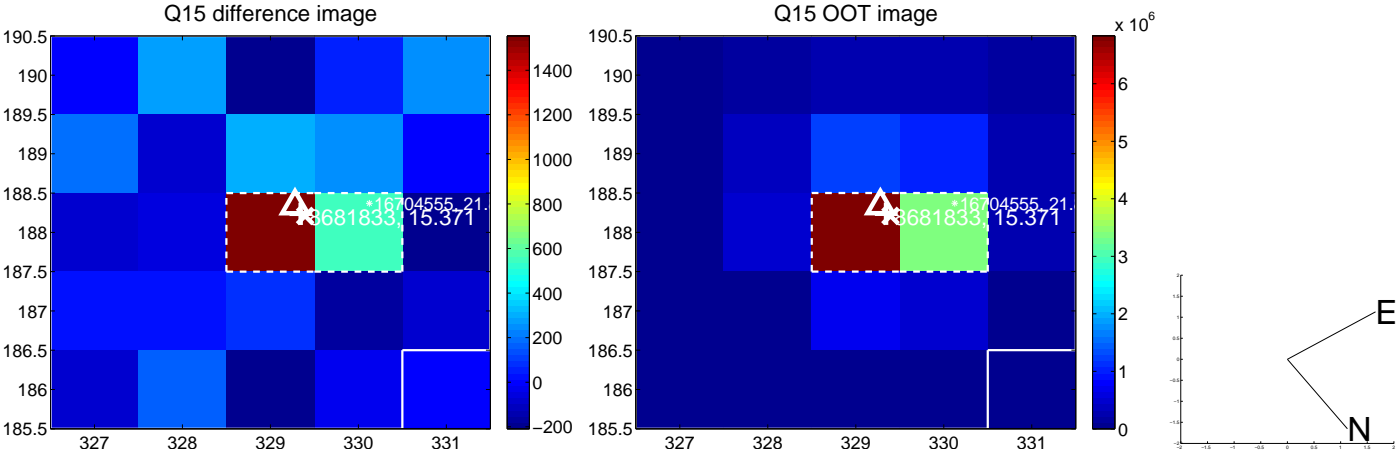
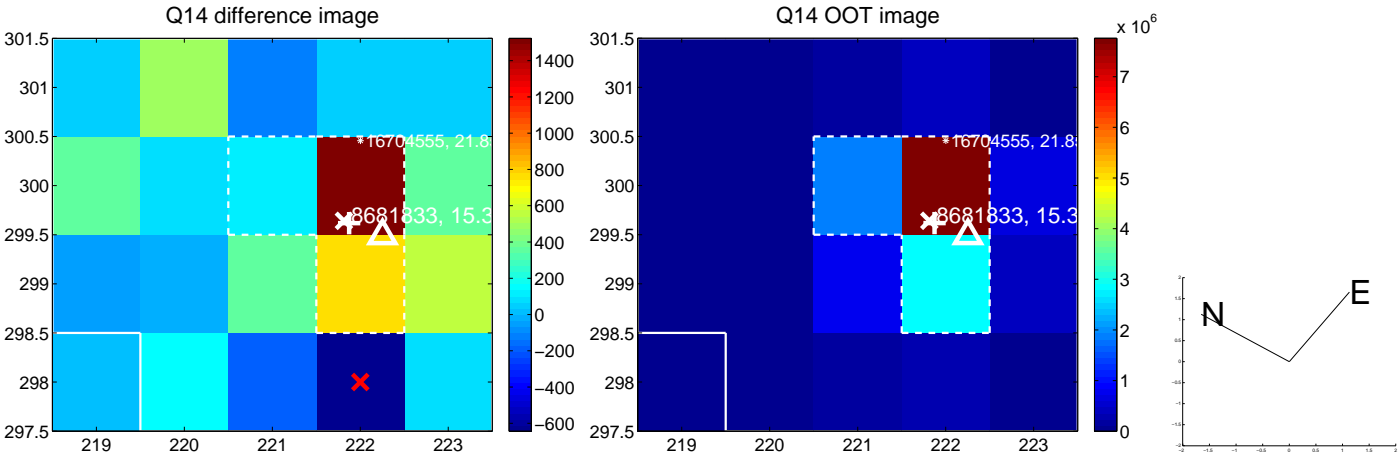
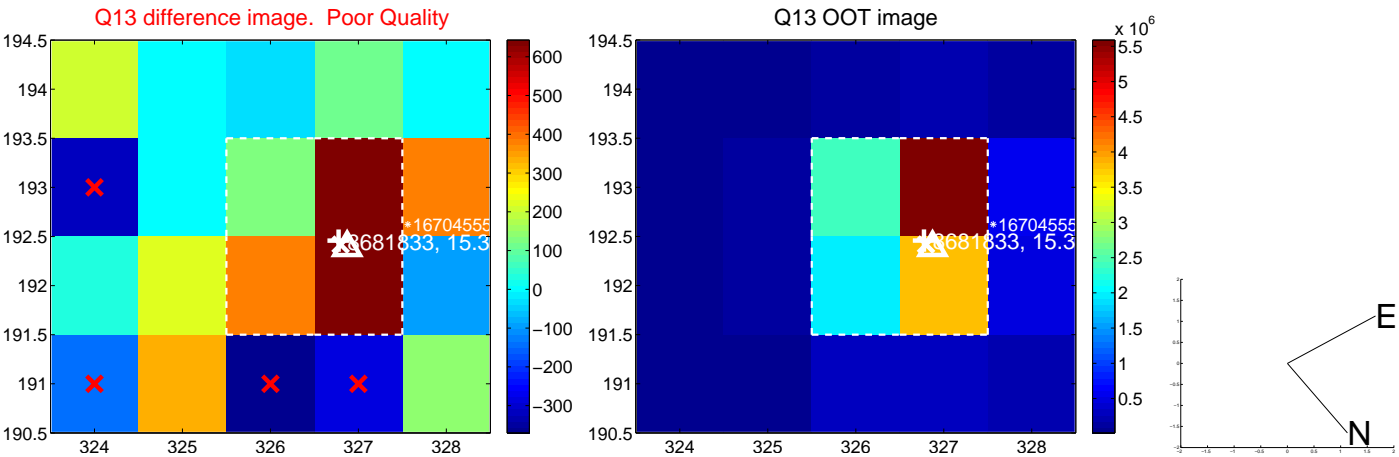




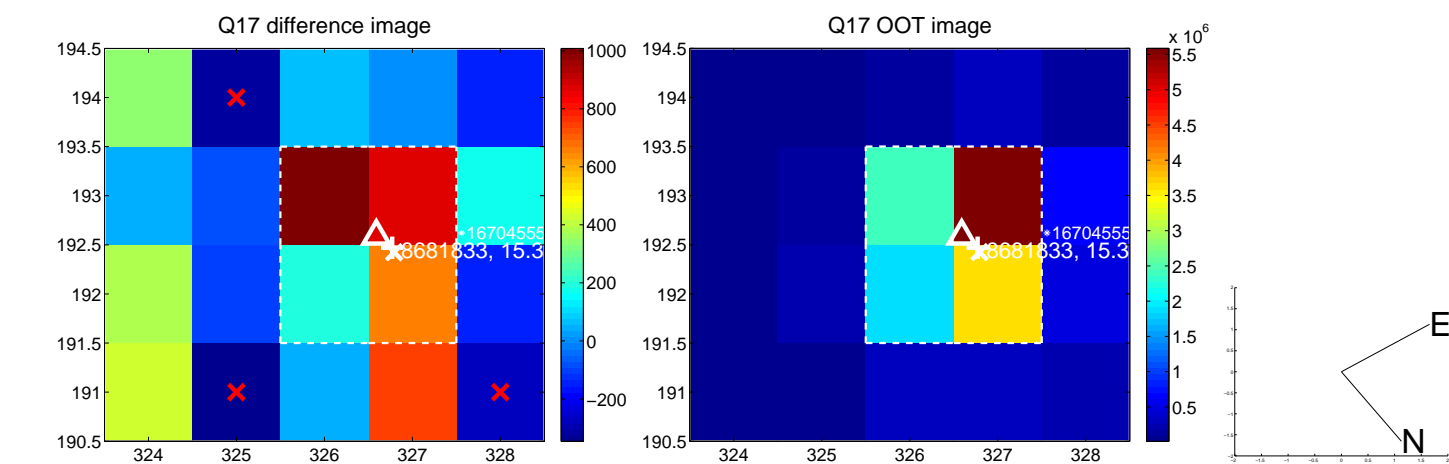
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



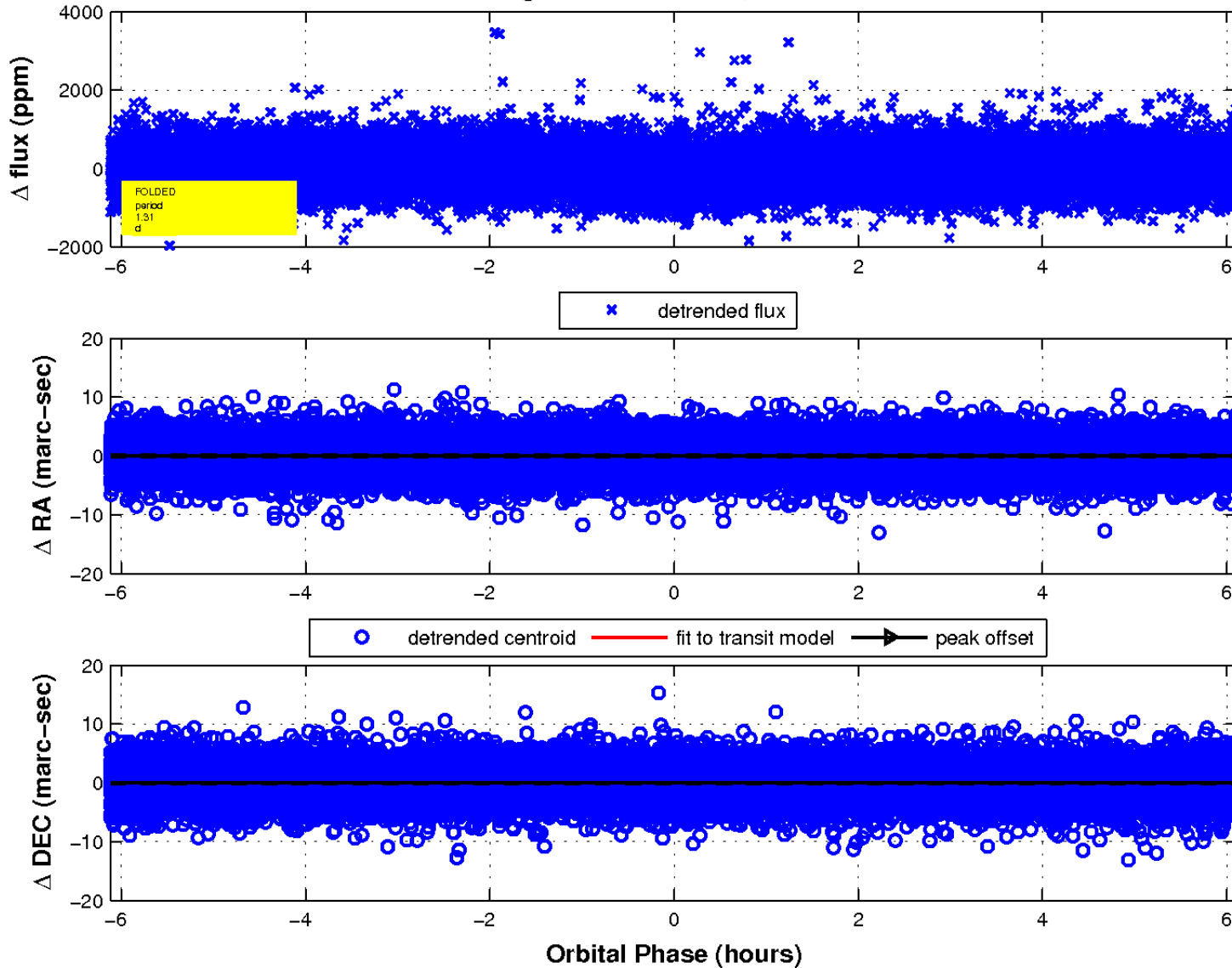
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

