

# KIC 003748855

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003748855-01	OBS	6355.01	4.371954	131.916932	100.0	2.195	8.7	9.4	0.92	5823	1.08	328.69

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003748855-01	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.

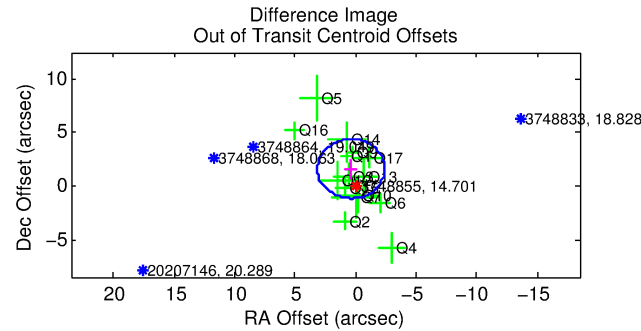
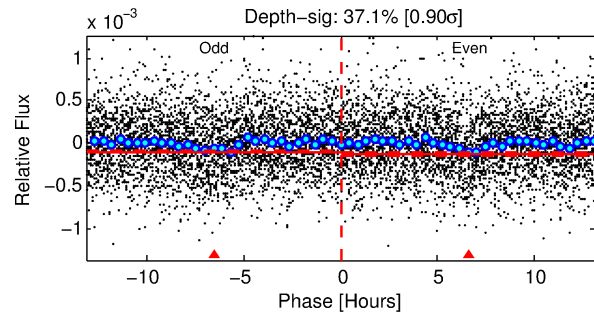
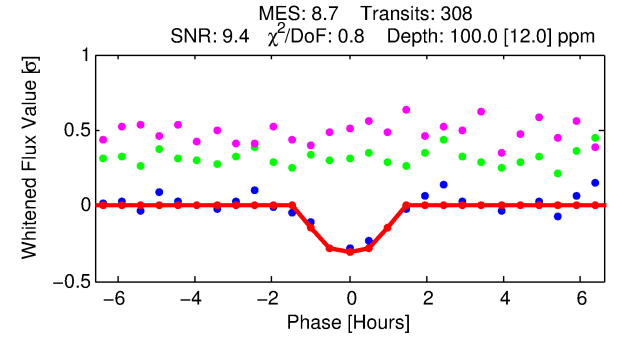
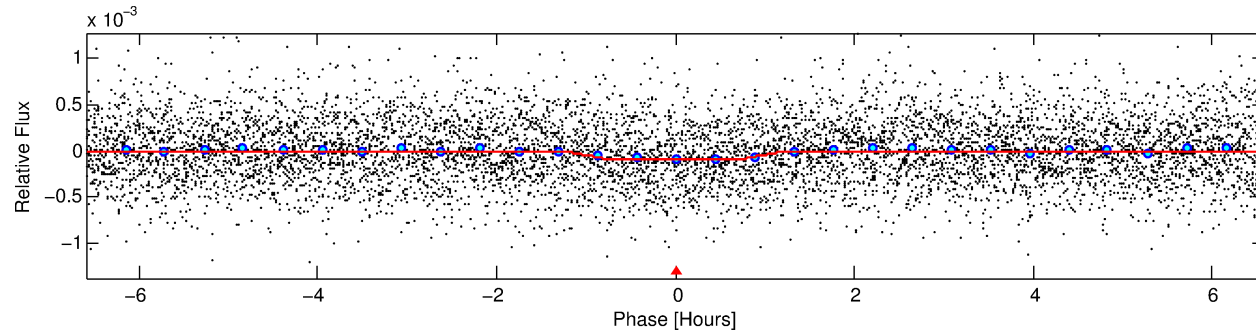
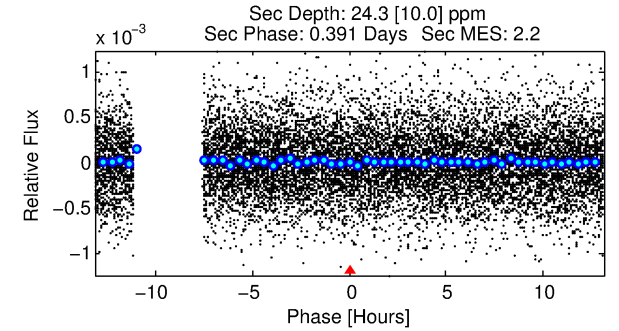
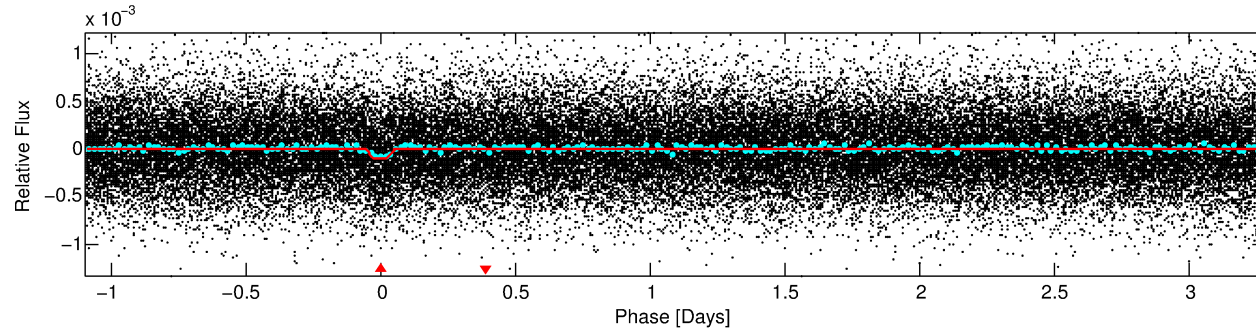
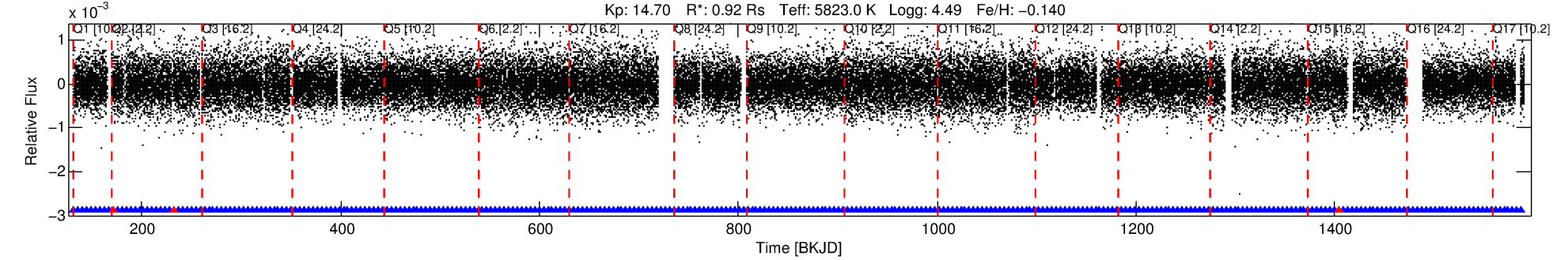
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003748855-01

No Significant Match Found

# DV One-Page Summary

KIC: 3748855 Candidate: 1 of 1 Period: 4.372 d  
KOI: K06355.01 Corr: 0.970



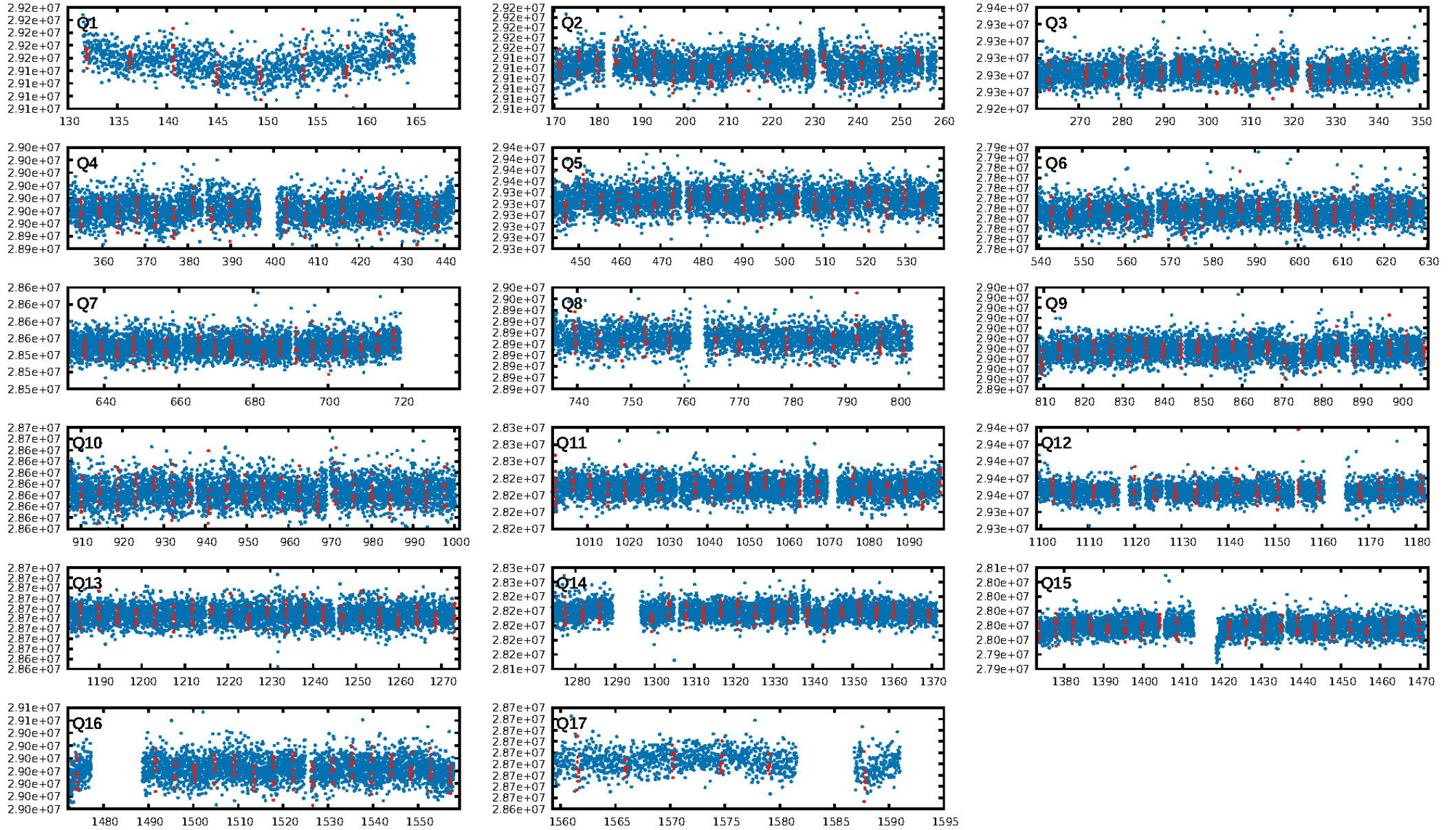
## DV Fit Results:

Period = 4.37195 [0.00003] d  
Epoch = 131.9169 [0.0045] BKJD  
Rp/R\* = 0.0108 [0.0095]  
a/R\* = 7.30 [30.87]  
b = 0.89 [1.01]  
Seff = 328.69 [119.64]  
Teq = 1086 [99] K  
Rp = 1.08 [1.00] Re  
a = 0.0514 [0.0121] AU  
Ag = 30.15 [55.25] [0.53σ]  
Teffp = 3933 [1774] K [1.60σ]

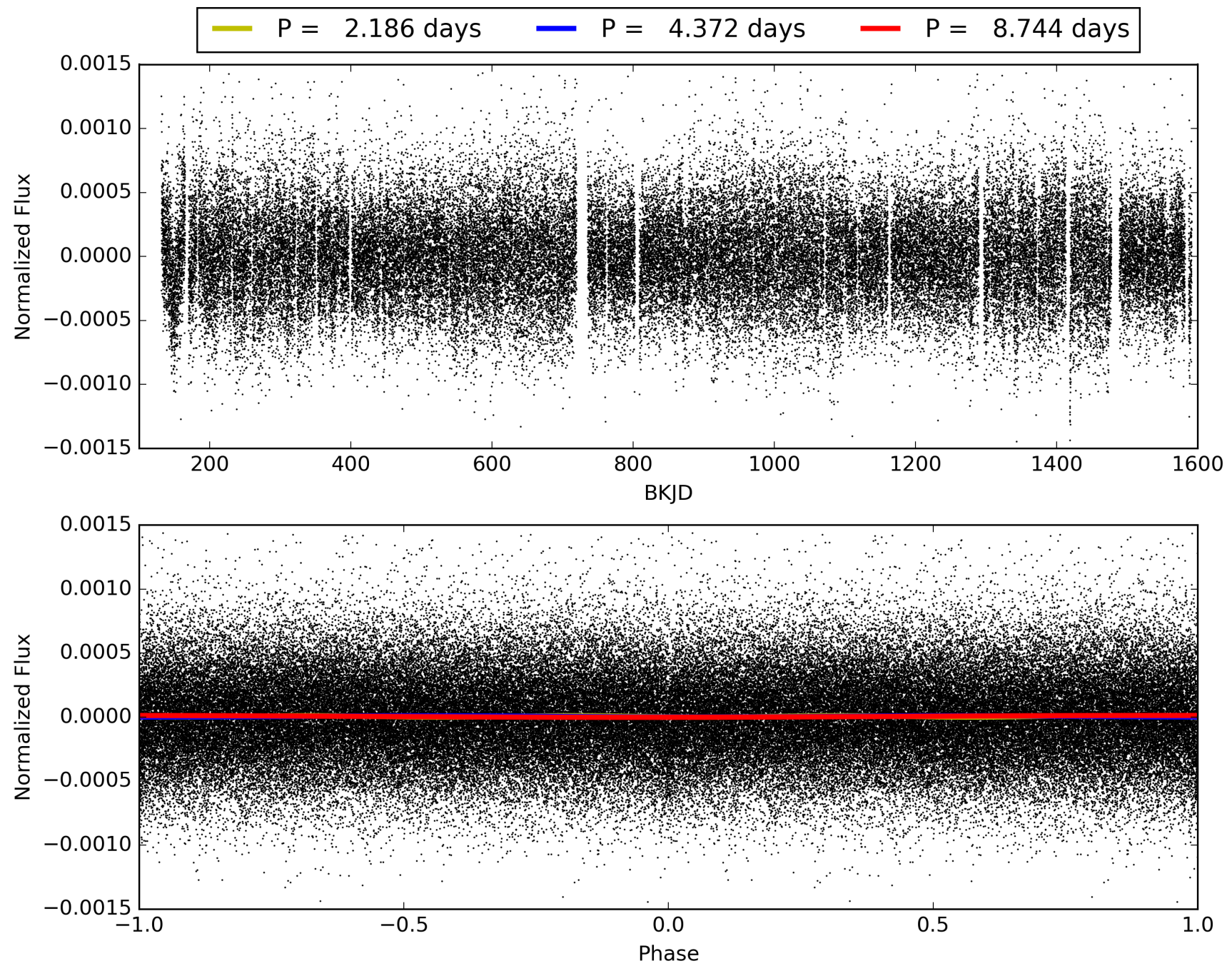
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.07e-18  
RollingBand-fgt: 0.99 [291/294]  
GhostDiagnostic-chr: 1.441  
Centroid-sig: 34.0%  
Centroid-so: 1.649 arcsec [0.97σ]  
OotOffset-rm: 1.659 arcsec [1.80σ]  
KicOffset-rm: 1.913 arcsec [2.17σ]  
OotOffset-st: 4/3/3/5 [15]  
KicOffset-st: 4/3/3/5 [15]  
DiffImageQuality-fgm: 0.40 [6/15]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 003748855-01, PDC Light Curves



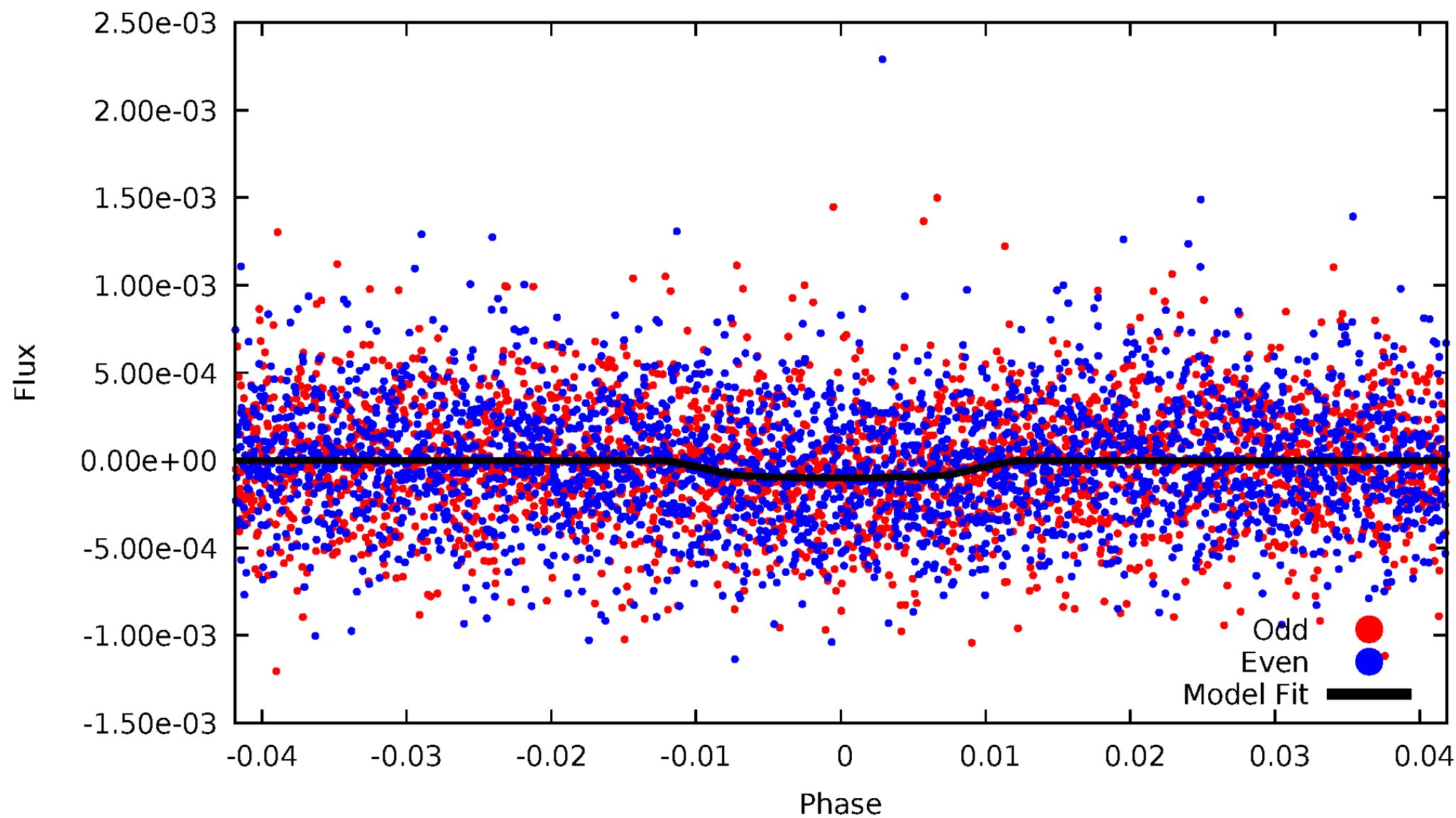
TCE 003748855-01





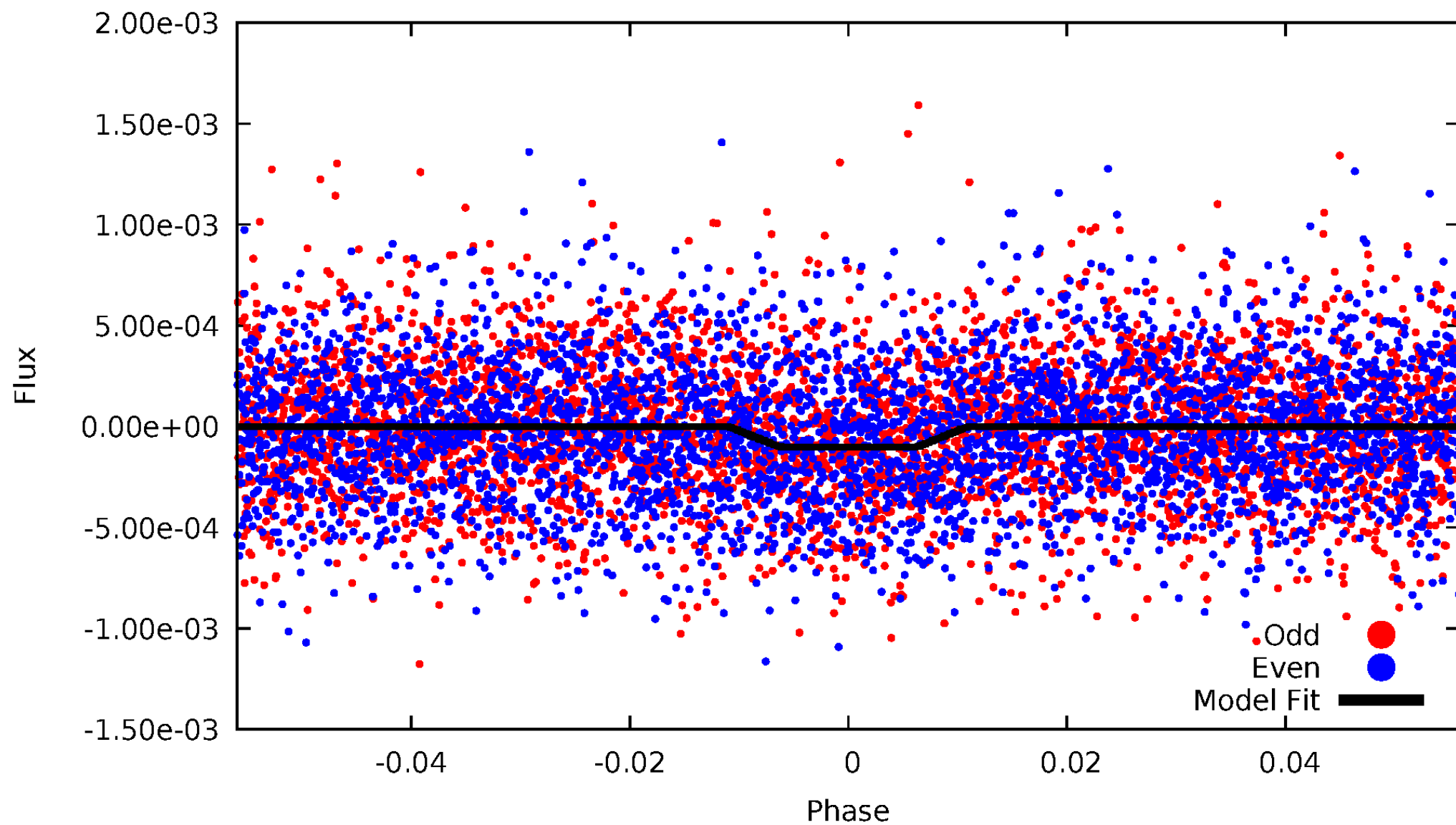
# DV Odd/Even

TCE 003748855-01

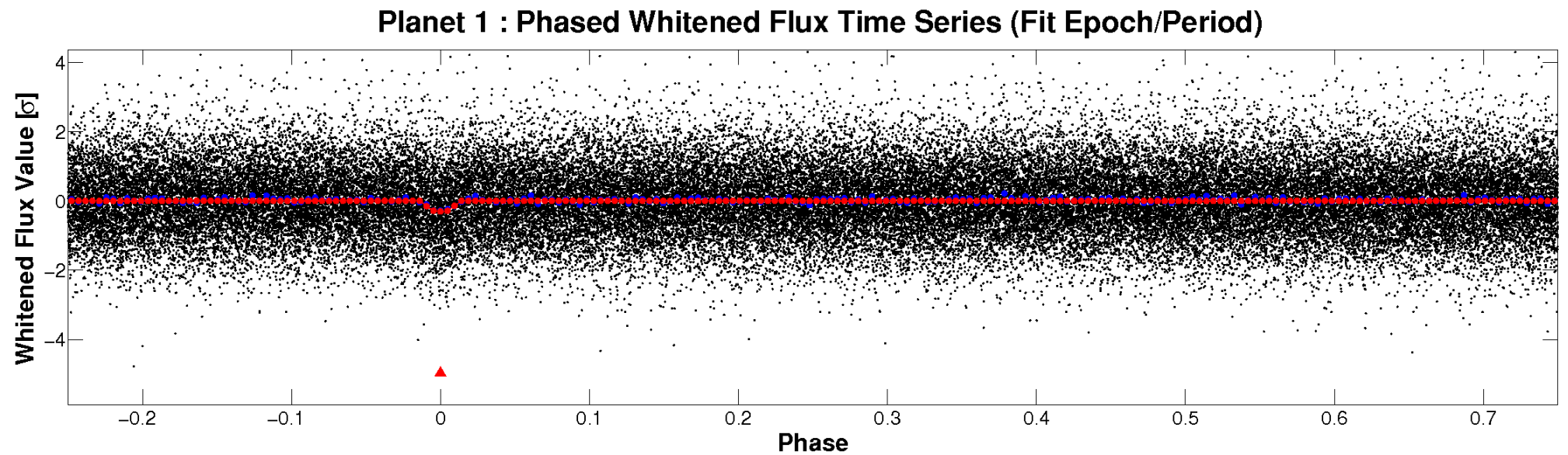
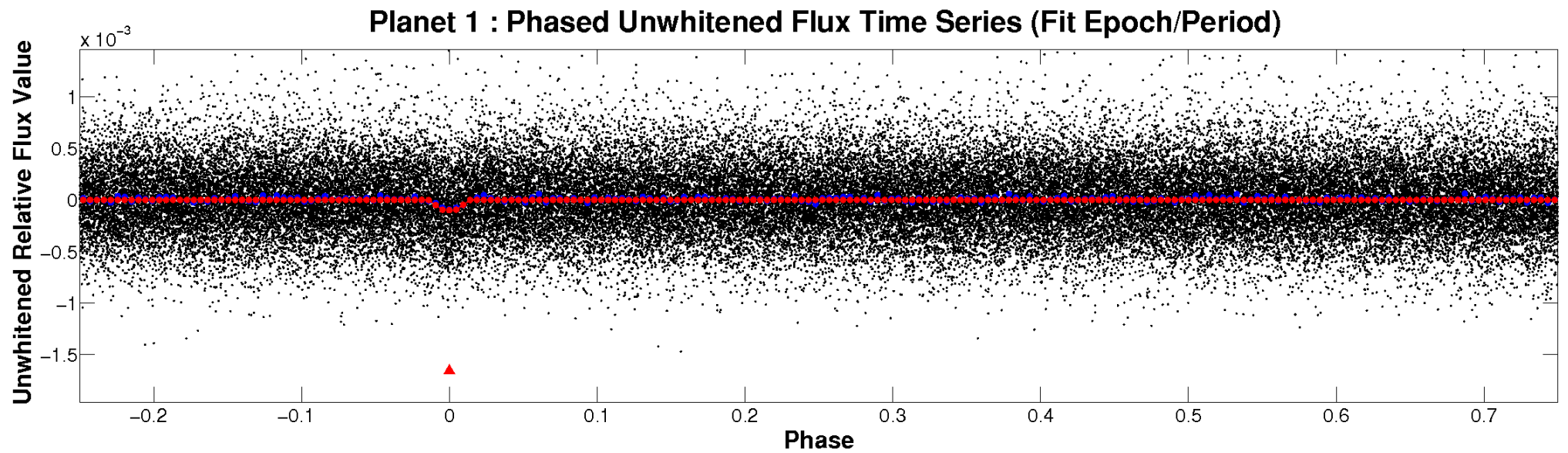


# ALT Odd/Even

TCE 003748855-01

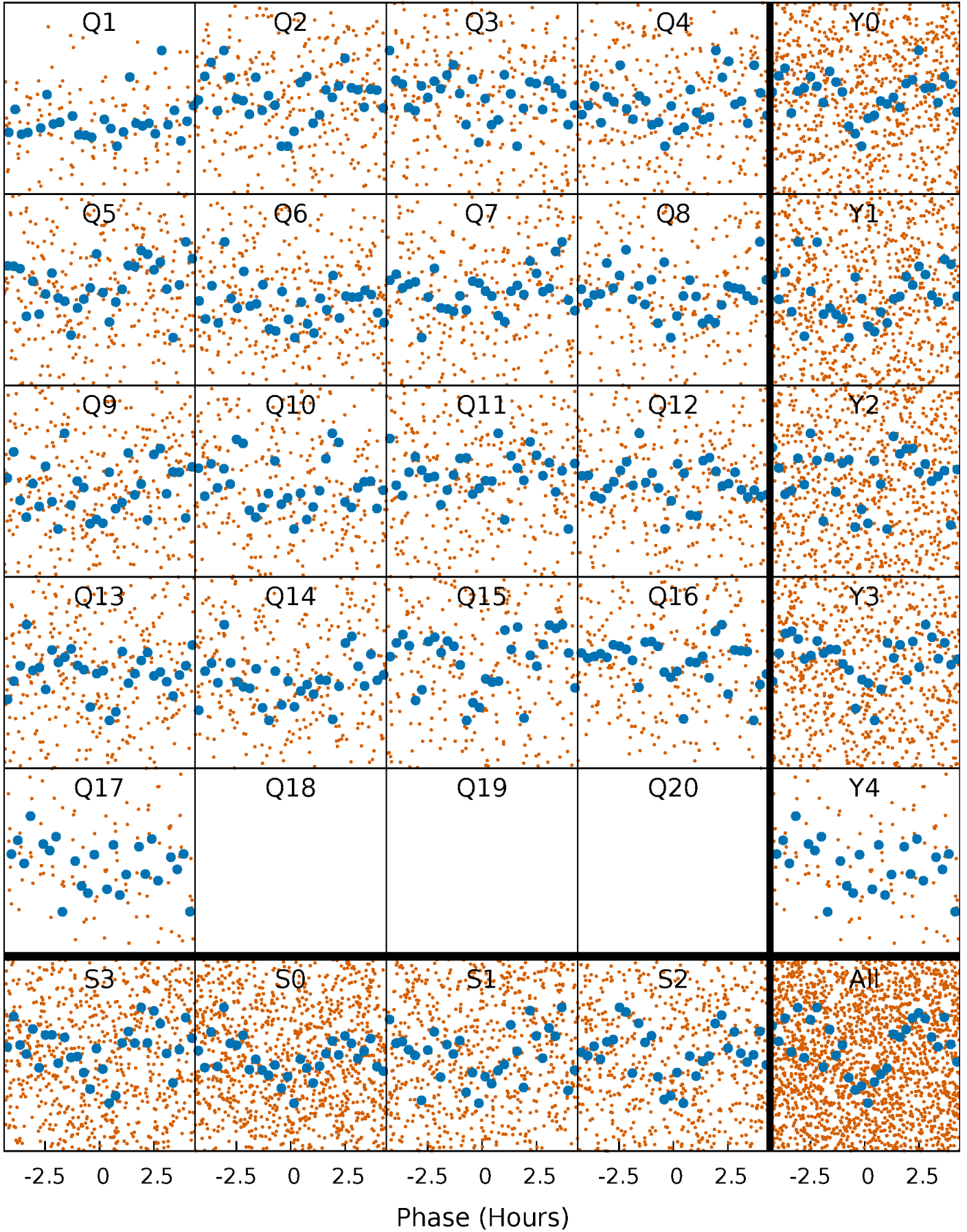


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

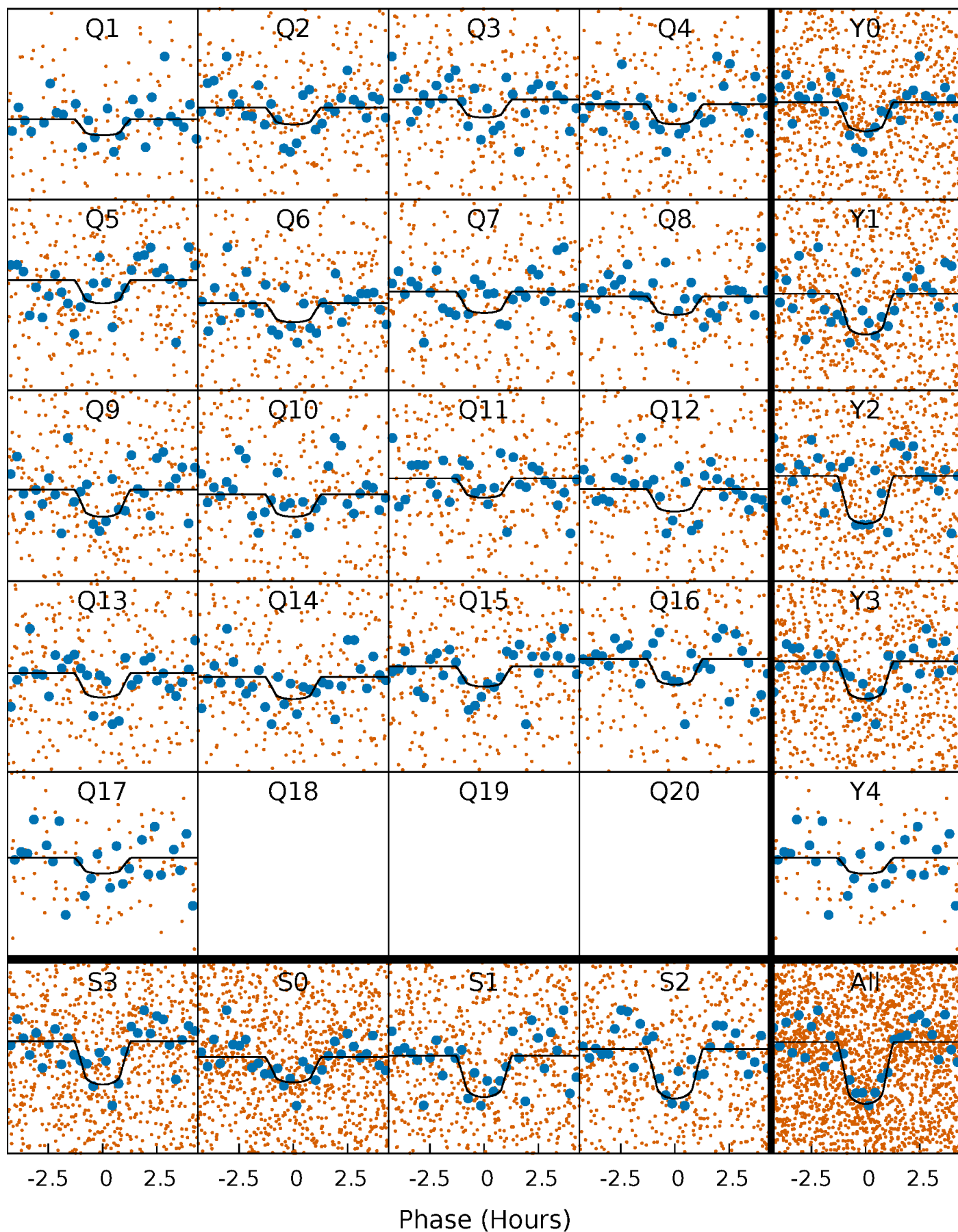
TCE 003748855-01 P= 4.371954 Days  $T_0=131.916932$  (BKJD)





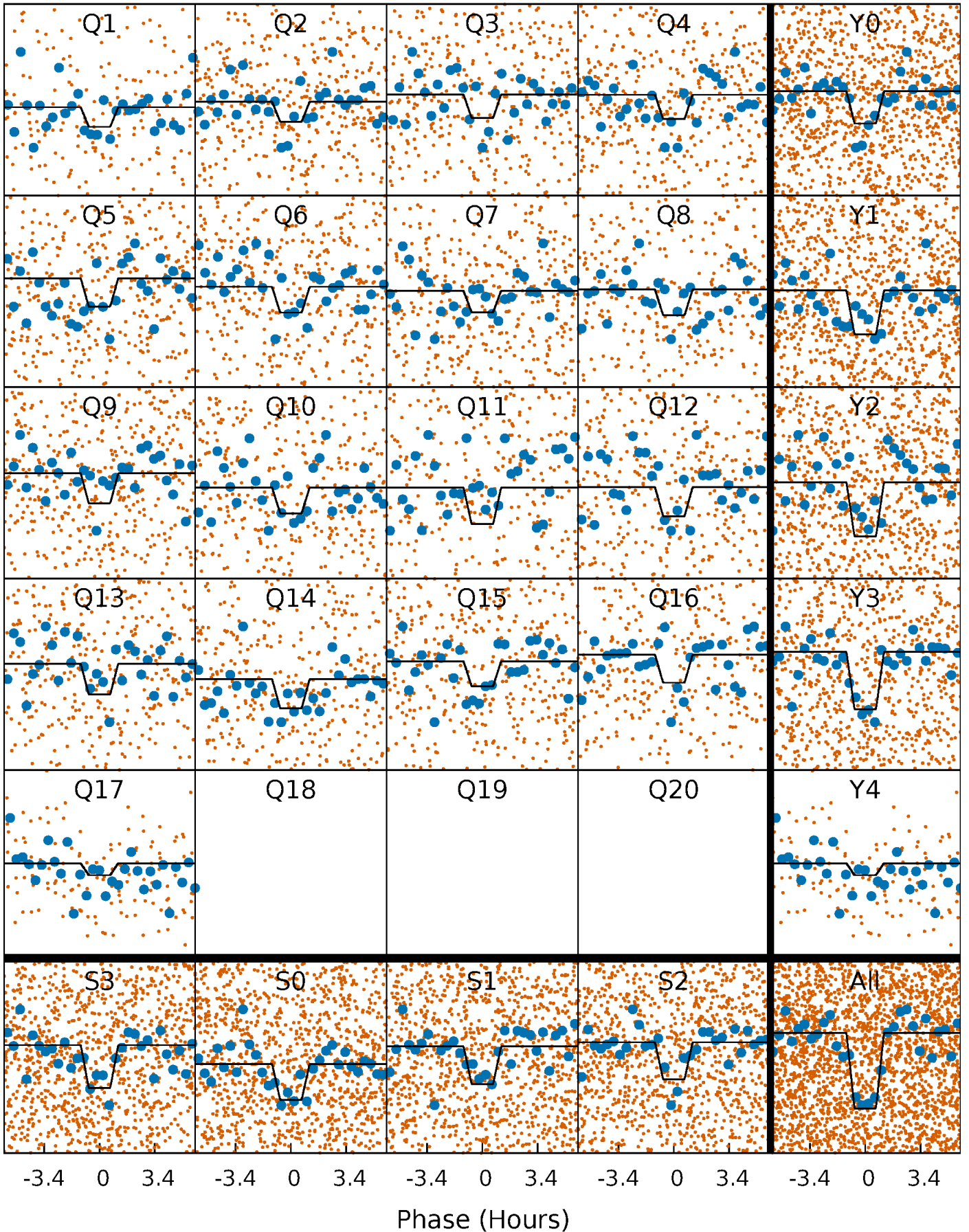
# DV Quarter-Phased Transit Curves

TCE 003748855-01 P= 4.371954 Days  $T_0=131.916932$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

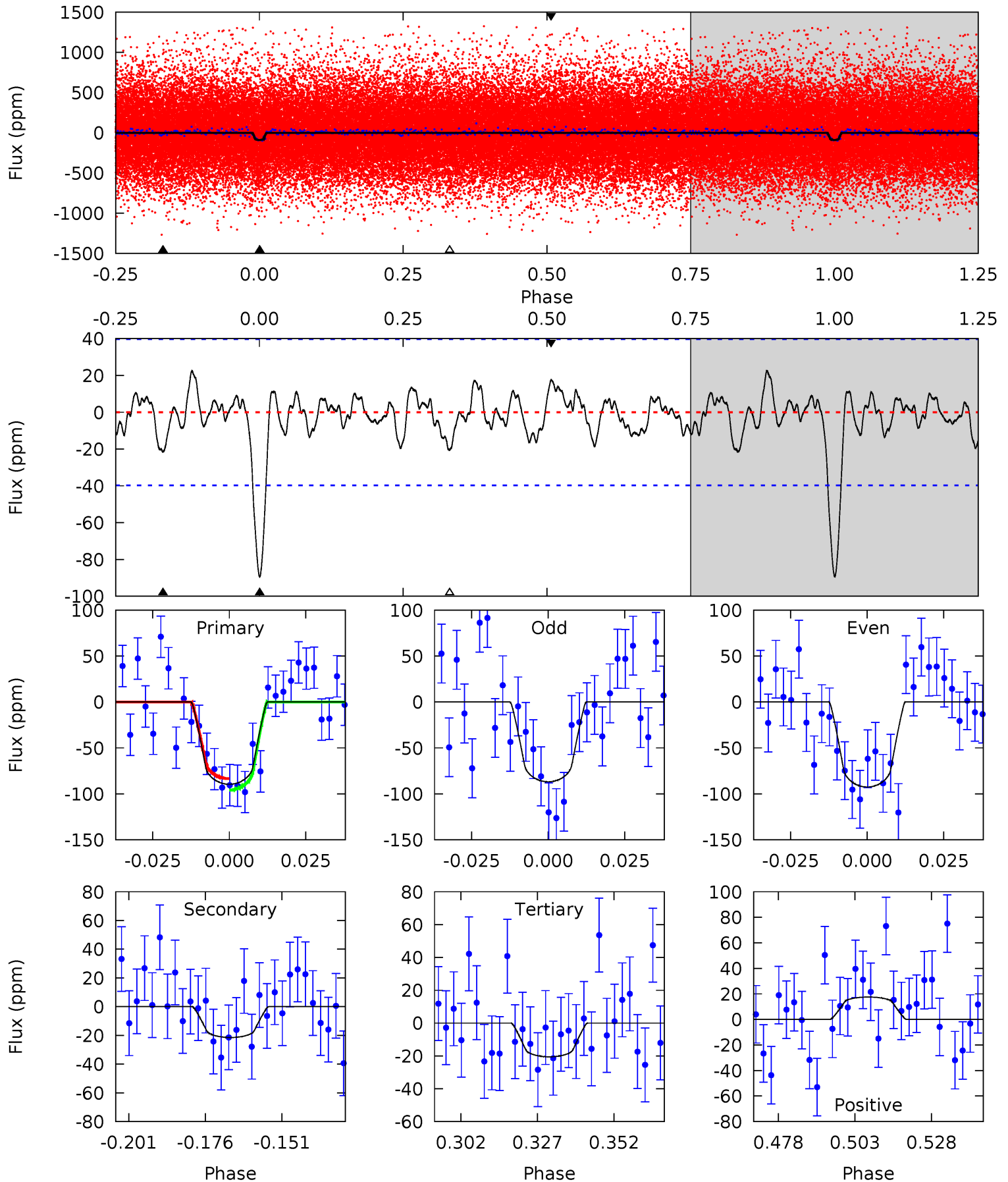
TCE 003748855-01 P= 4.371954 Days  $T_0=131.918009$  (BKJD)



## DV Model-Shift Uniqueness Test

003748855-01, P = 4.371954 Days, E = 127.544978 Days

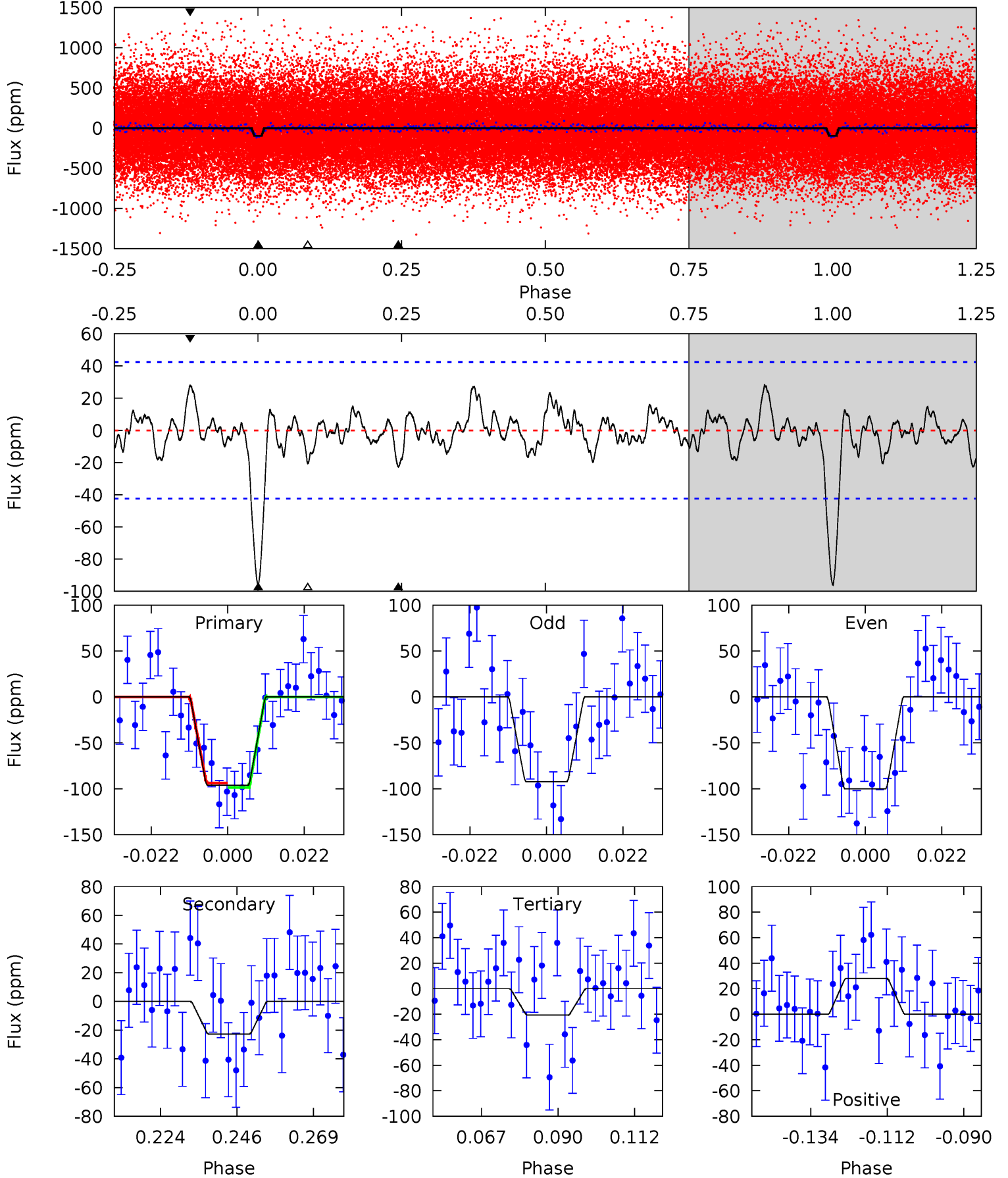
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	2.62	2.51	2.14	4.85	2.24	1.02	8.42	8.79	0.11	0.48	0.35	0.83	0.20	0.76



# Alt Model-Shift Uniqueness Test

003748855-01, P = 4.371954 Days, E = 127.546055 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
11.0	2.61	2.37	3.22	4.87	2.28	1.03	8.66	7.81	0.24	-0.62	0.45	0.94	0.23	0.29





### Stellar Parameters For KIC 003748855

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5823^{+158}_{-175}$	$4.489^{+0.062}_{-0.188}$	$-0.140^{+0.300}_{-0.300}$	$0.919^{+0.257}_{-0.110}$	$0.951^{+0.111}_{-0.111}$	$1.724^{+0.464}_{-0.884}$
	+3%/-3%	+1%/-4%	+214%/-214%	+28%/-12%	+12%/-12%	+27%/-51%
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 003748855-01 / KOI 6355.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-21 \pm 8$	$1.28^{+0.86}_{-0.79}$	$1539^{+113}_{-68}$	$3868^{+1688}_{-627}$	$18^{+98}_{-12}$
Alt.	$-23 \pm 9$	$1.26^{+0.92}_{-0.74}$	$1551^{+104}_{-77}$	$3925^{+1944}_{-704}$	$20^{+101}_{-14}$

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

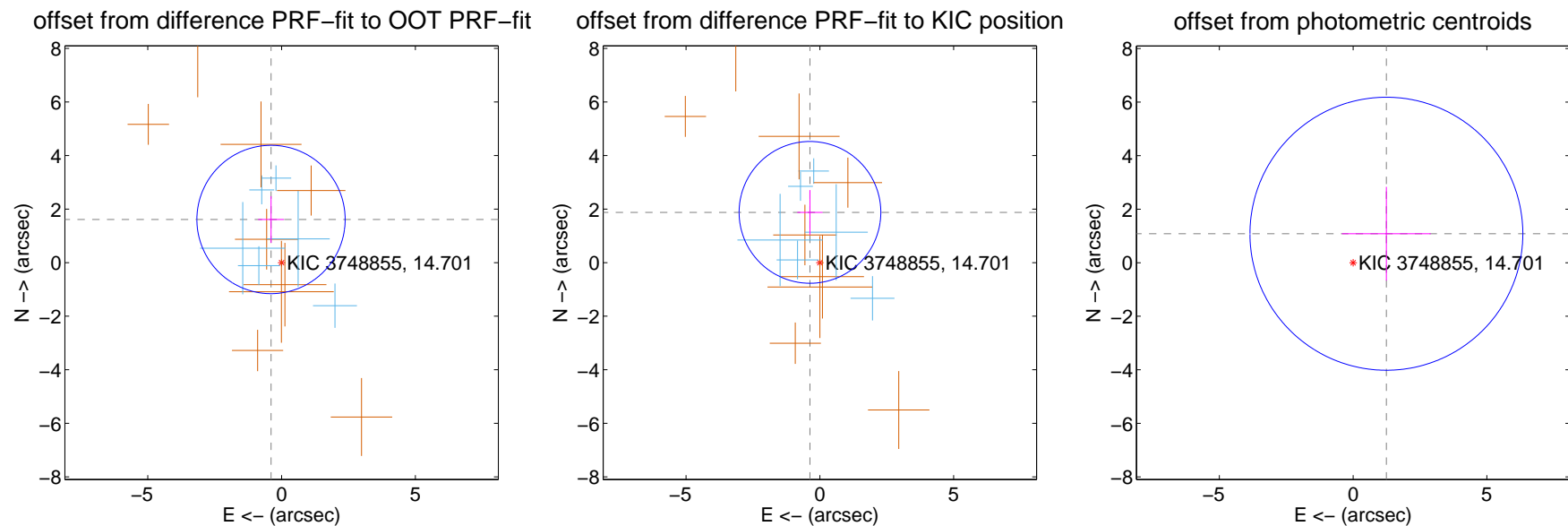
## DV Centroid Data

Supplemental centroid analysis for 003748855-01. Kepler magnitude: 14.70. Transit SNR 9.37

There are 6 quarters with good PRF difference image offsets

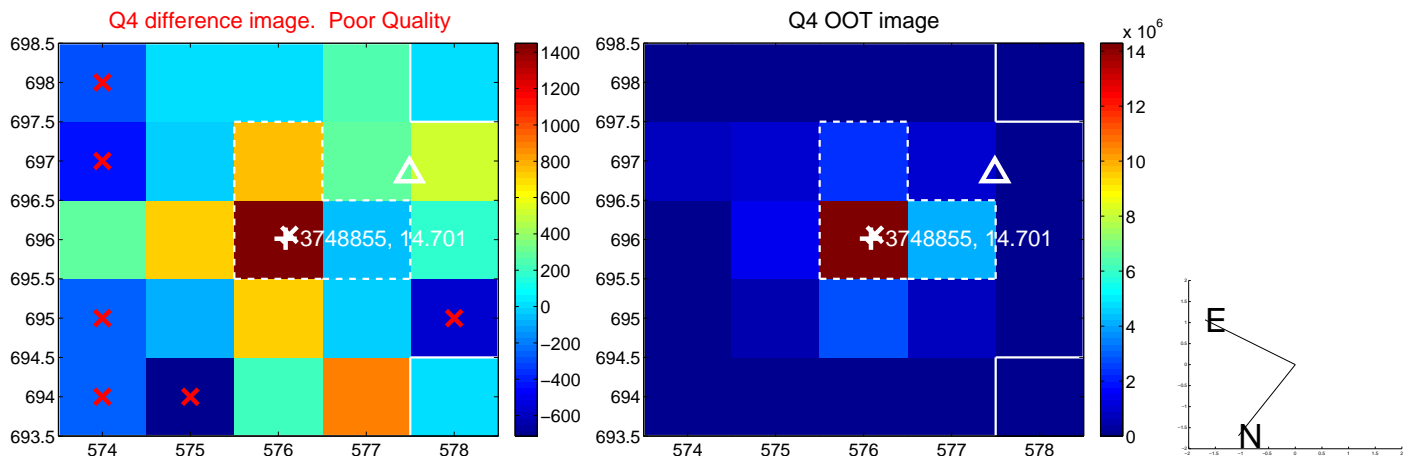
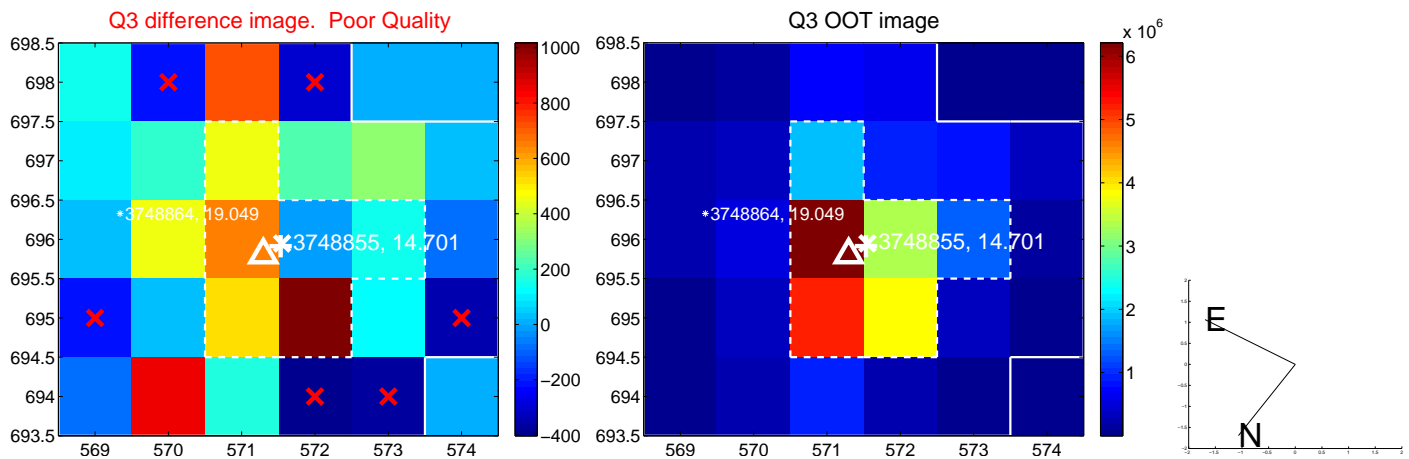
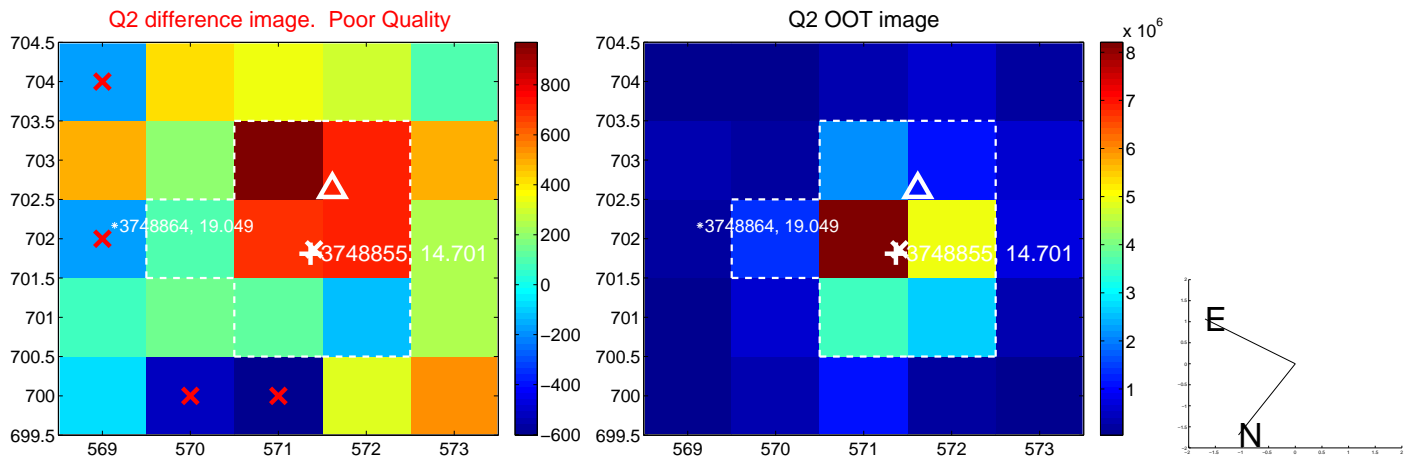
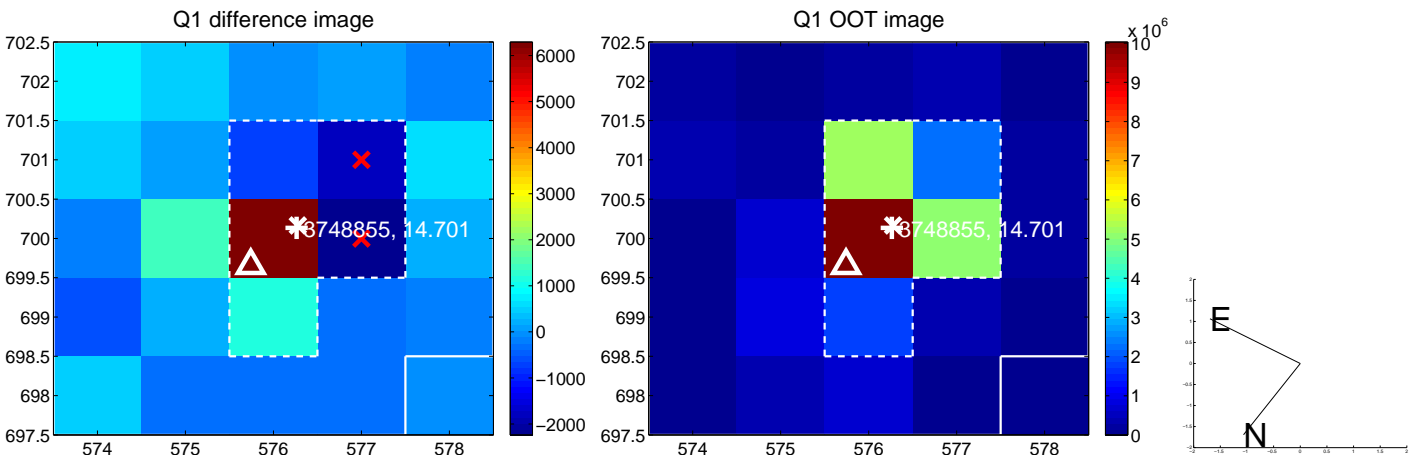
The direct PRF centroid is offset from the target star catalog position by about 0.30 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.659 \pm 0.923$	1.80	$0.394 \pm 0.481$	$1.612 \pm 0.870$
PRF-fit source offset from KIC position	$1.913 \pm 0.882$	2.17	$0.369 \pm 0.471$	$1.877 \pm 0.836$
photometric centroid source offset	$1.65 \pm 1.70$	0.97	$-1.24 \pm 1.66$	$1.08 \pm 1.75$

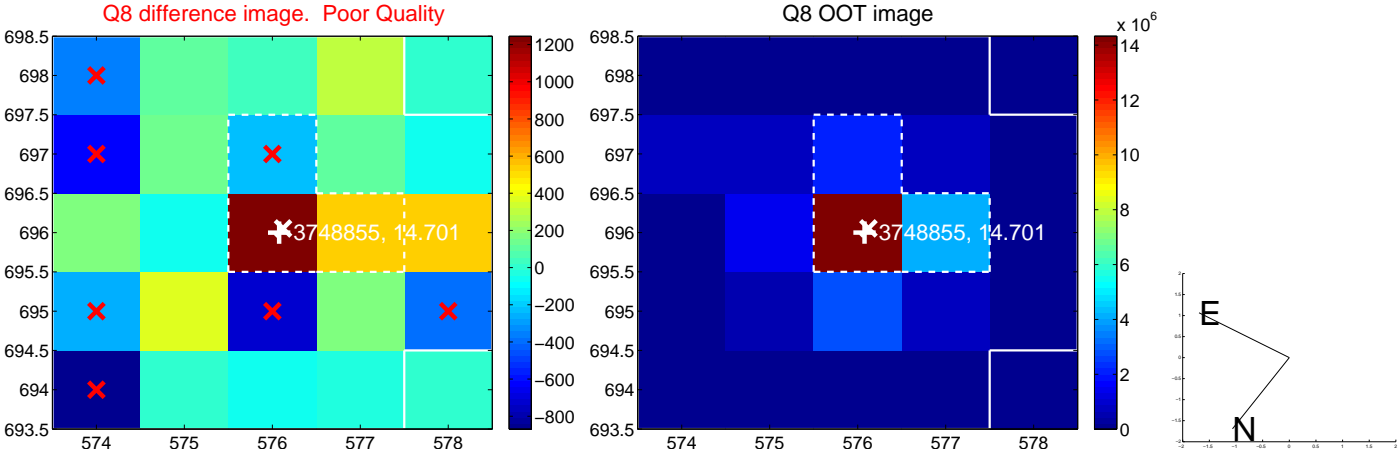
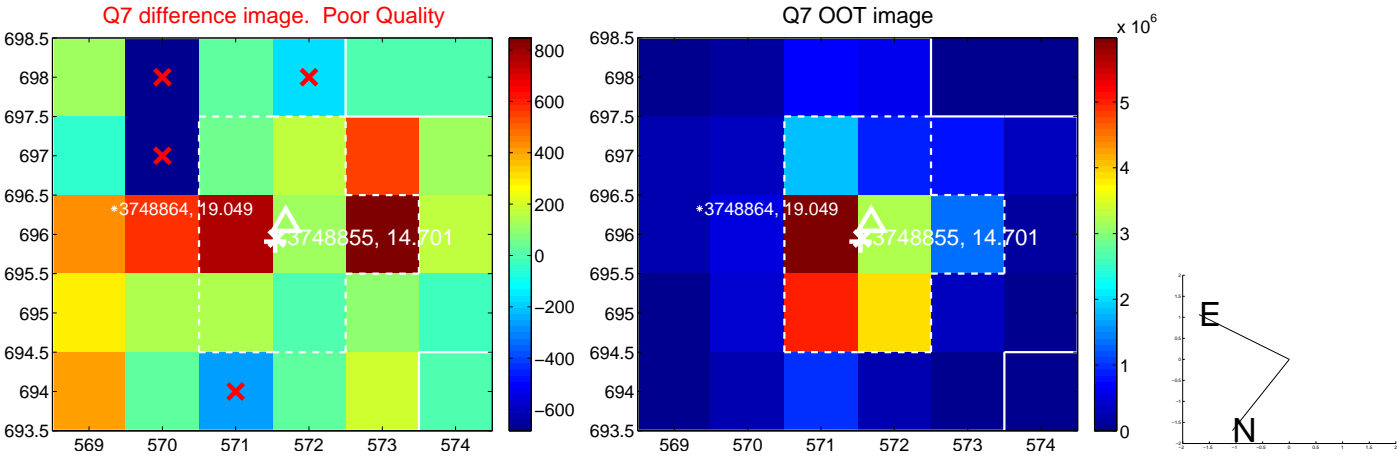
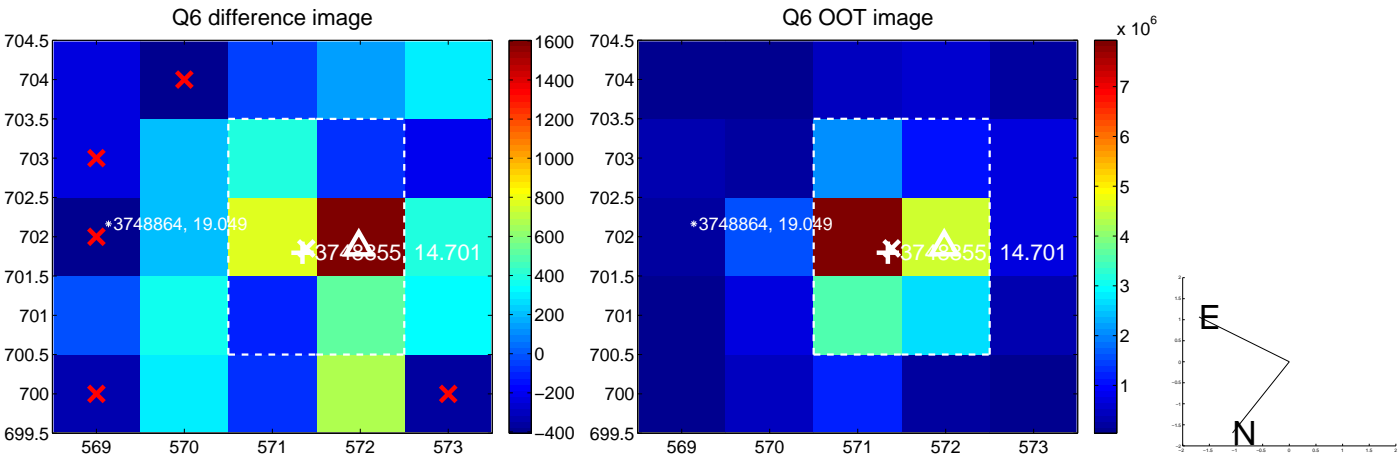
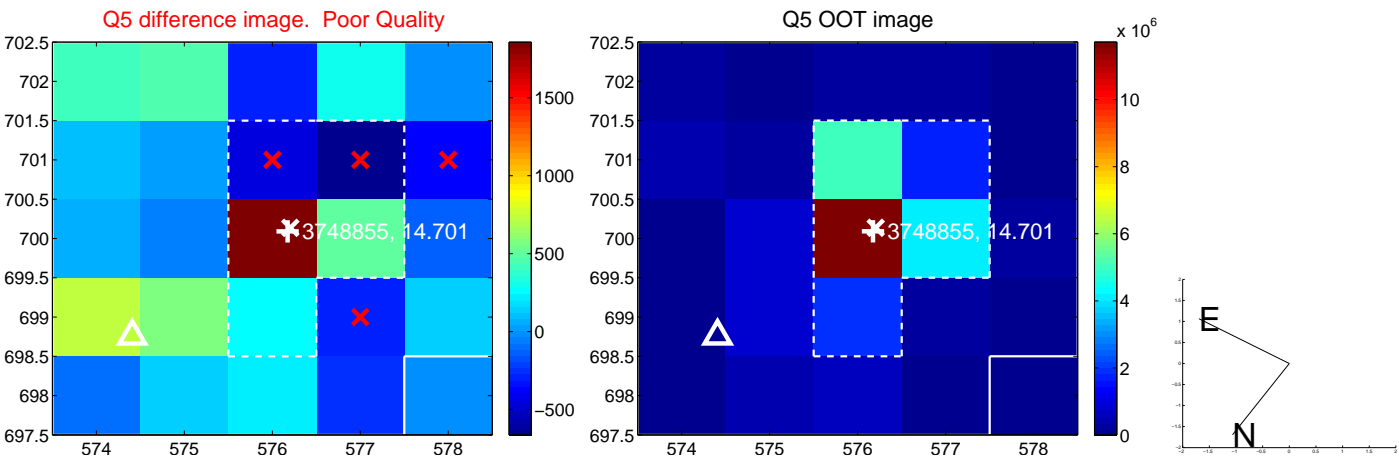


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

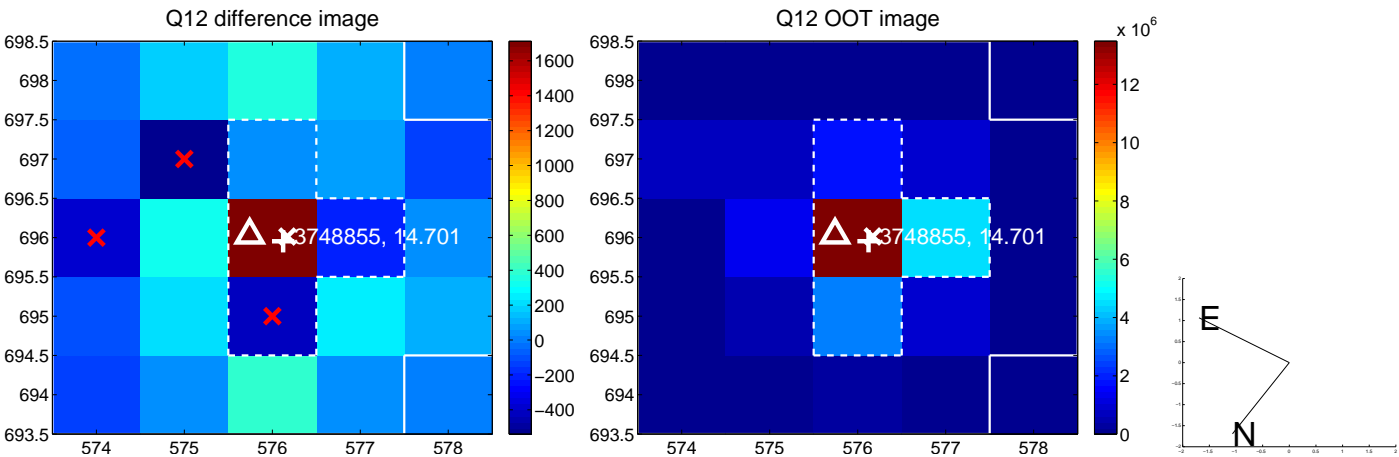
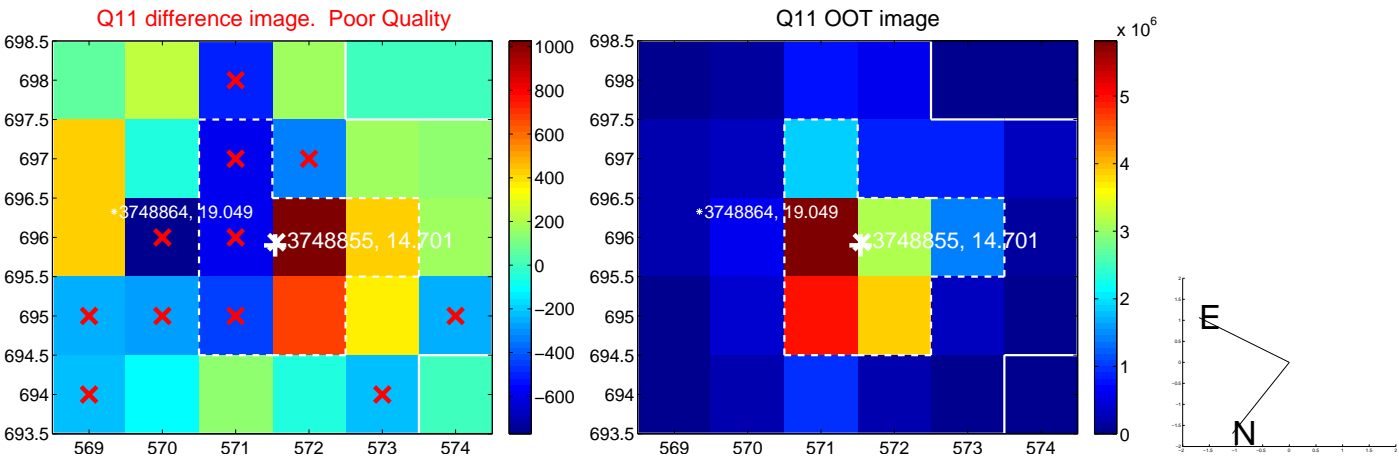
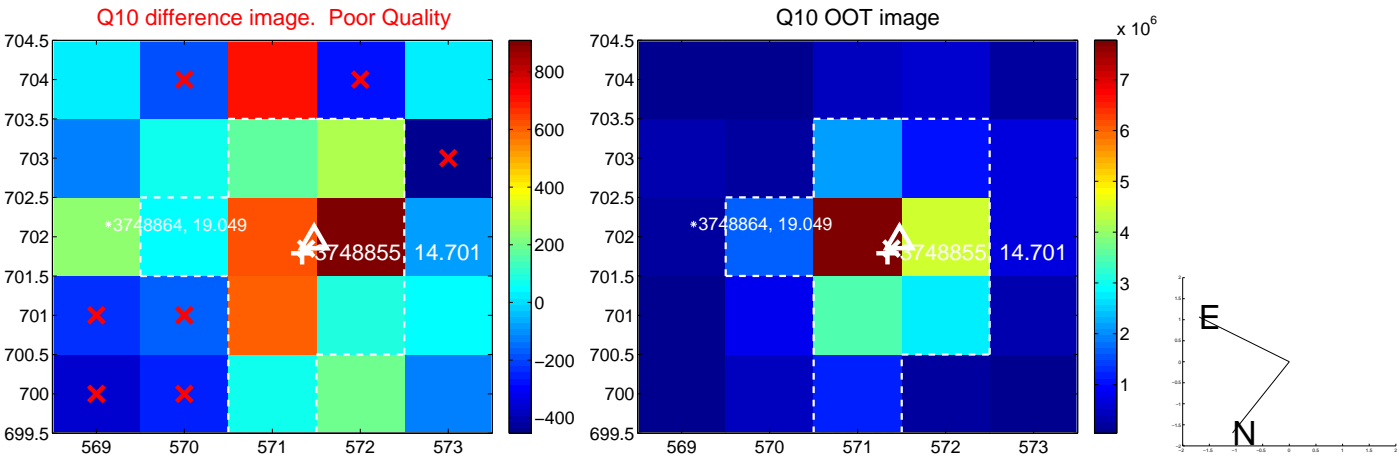
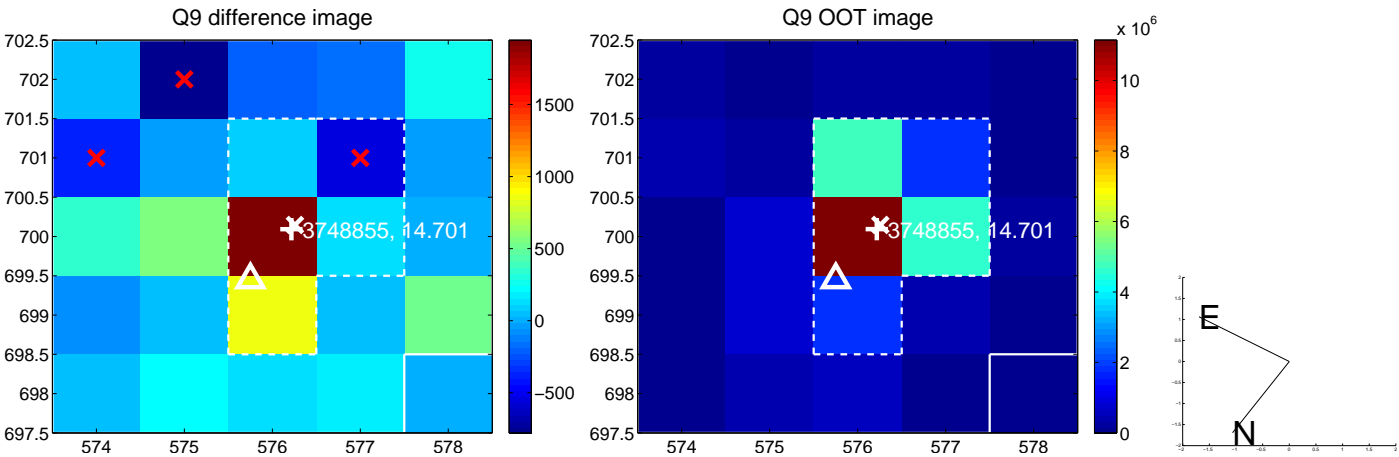


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

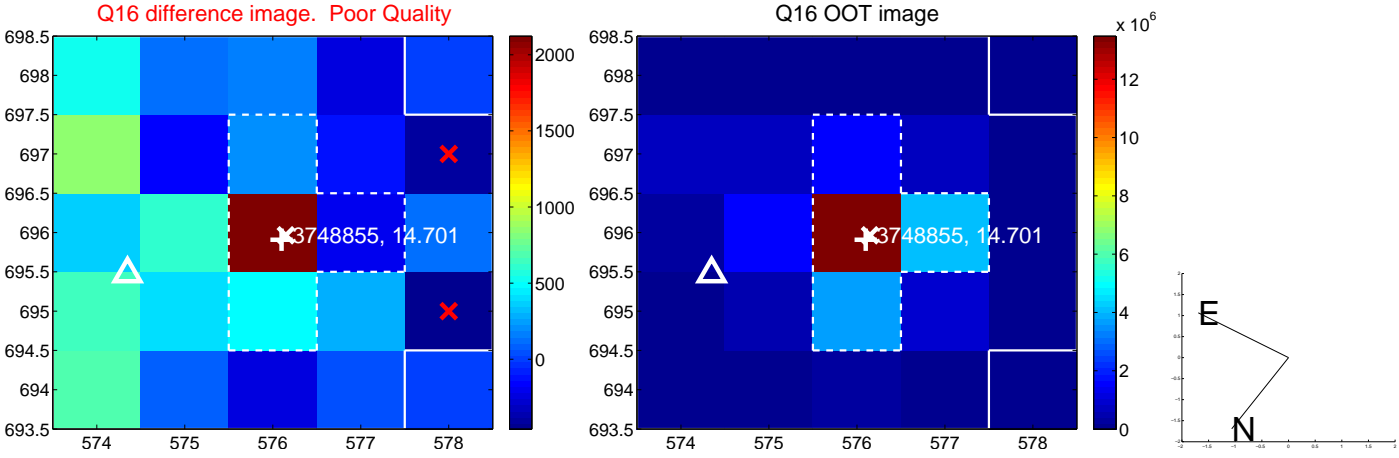
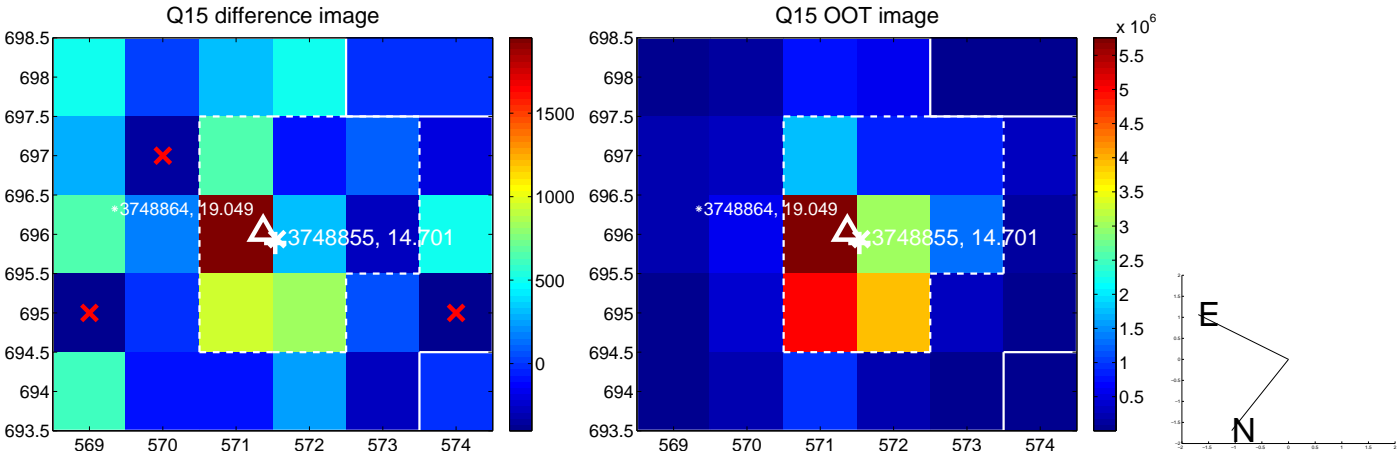
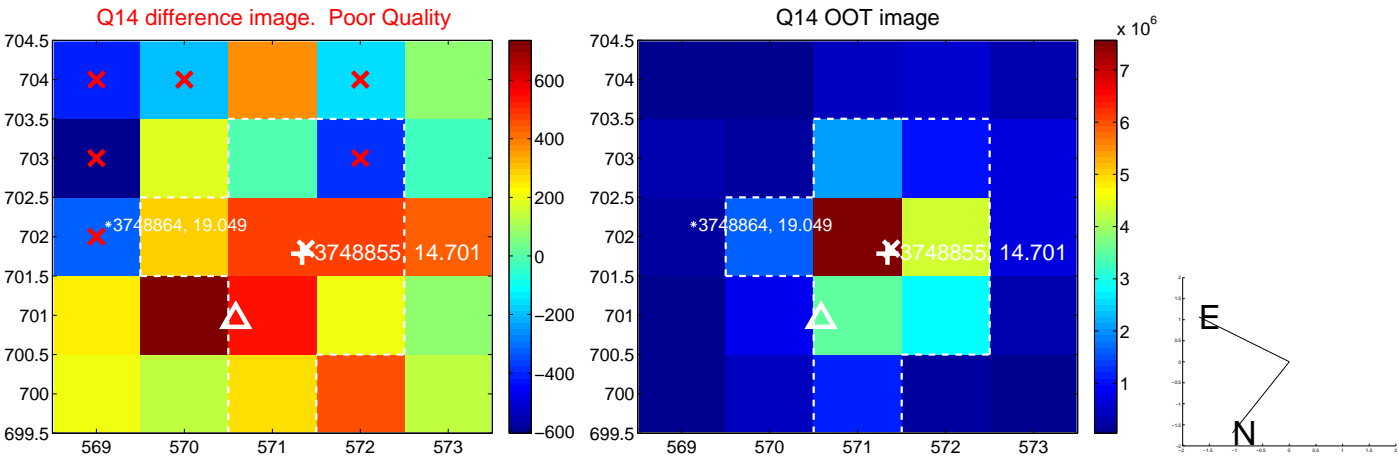
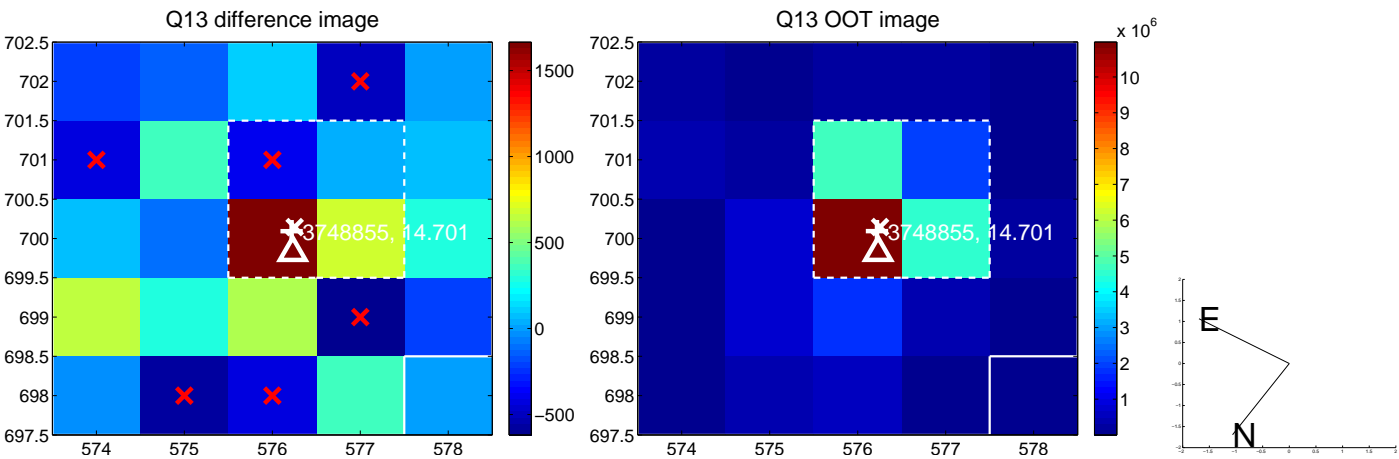




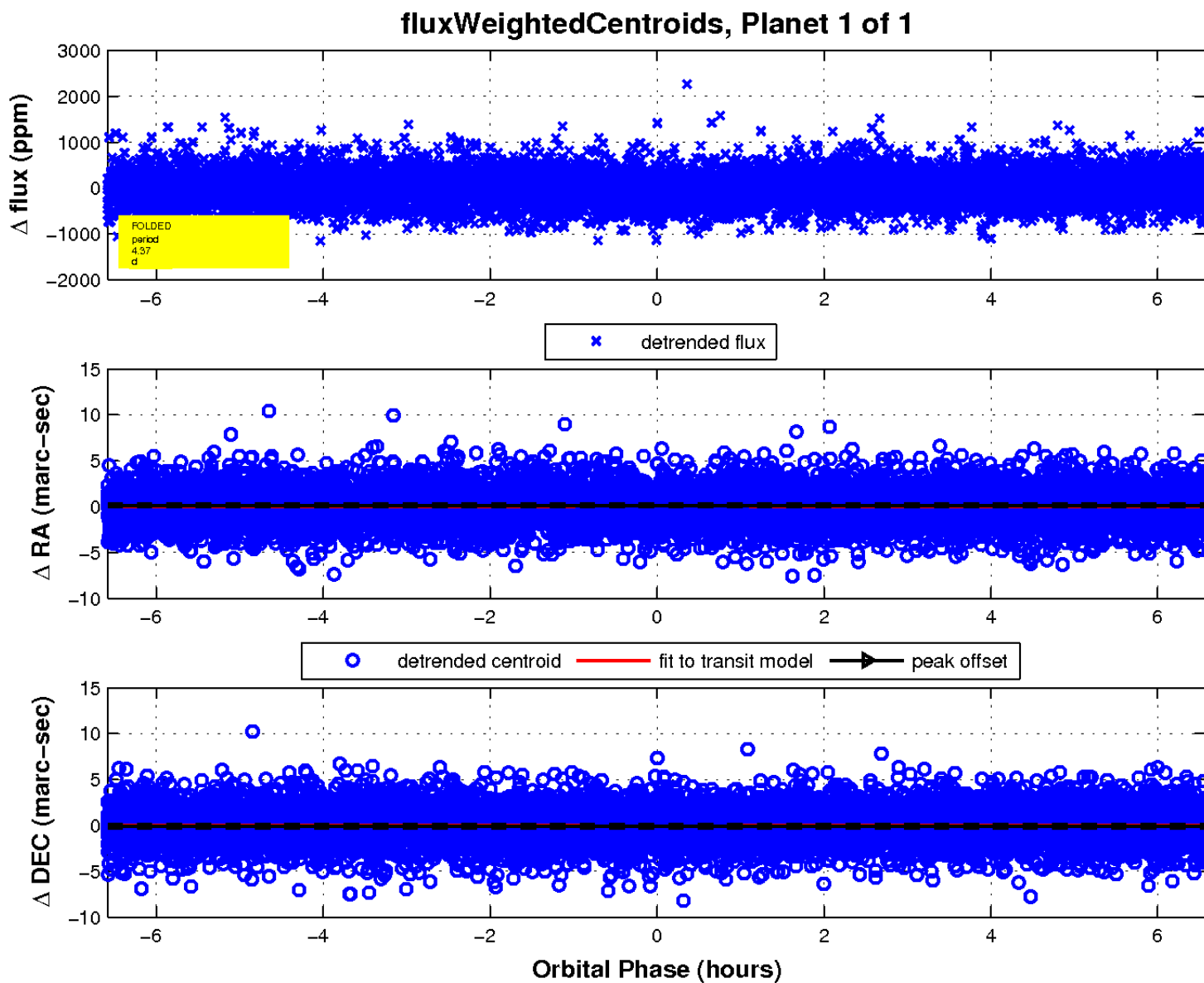
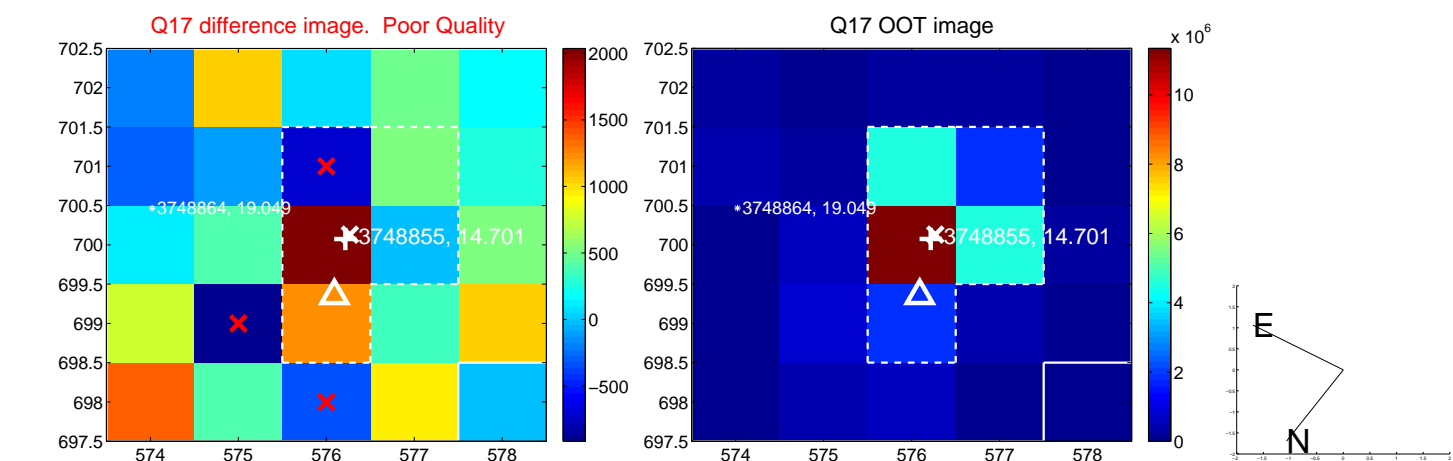
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



# UKIRT Image

Declination

