

# KIC 005802637

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005802637-01	OBS	4398.01	7.342334	131.545872	334.3	2.145	10.6	11.5	0.84	5573	1.64	116.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005802637-01	OBS	PC	0.98	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.

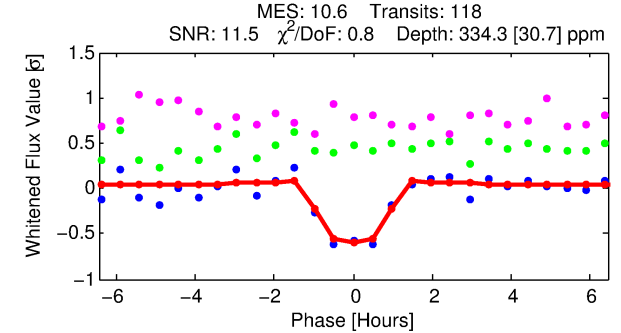
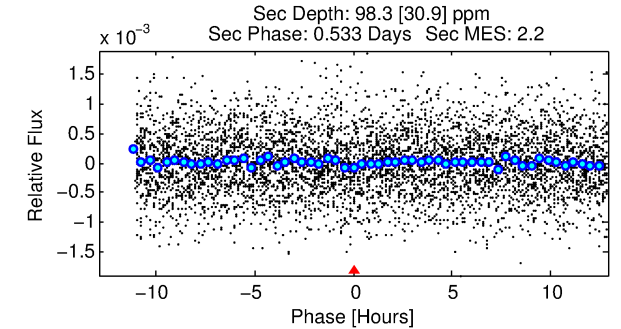
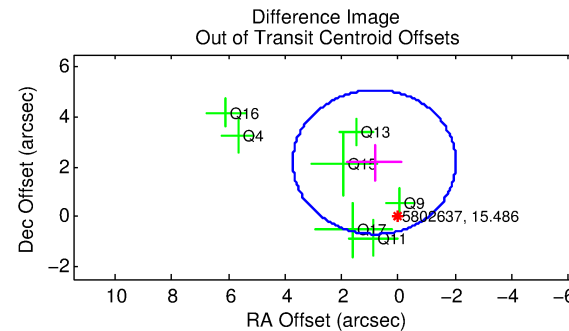
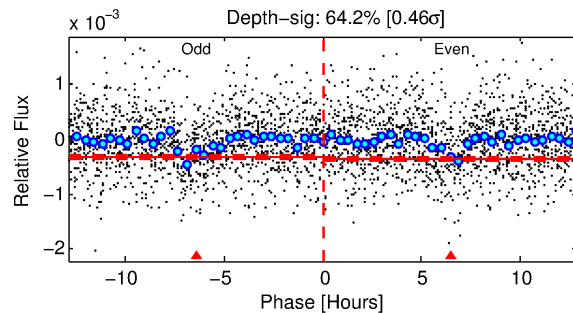
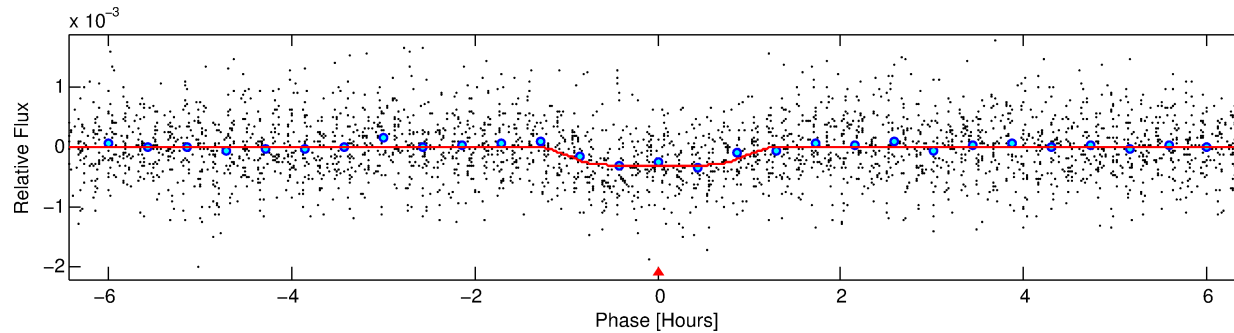
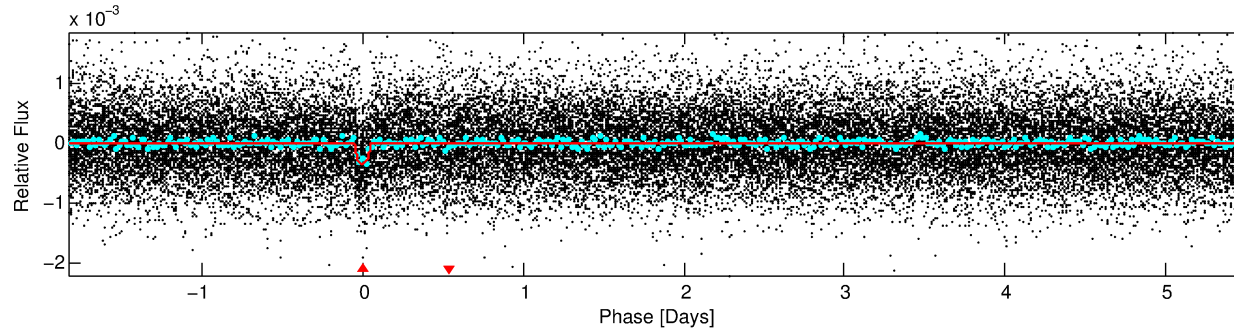
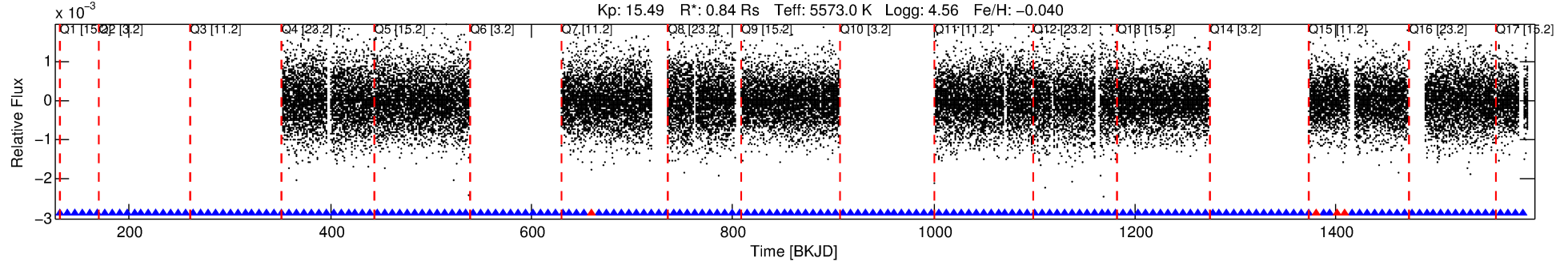
## Ephemeris Match Information For 005802637-01

No Significant Match Found

# DV One-Page Summary

KIC: 5802637 Candidate: 1 of 1 Period: 7.342 d  
KOI: K04398.01 Corr: 0.935

Kp: 15.49 R\*: 0.84 Rs Teff: 5573.0 K Logg: 4.56 Fe/H: -0.040



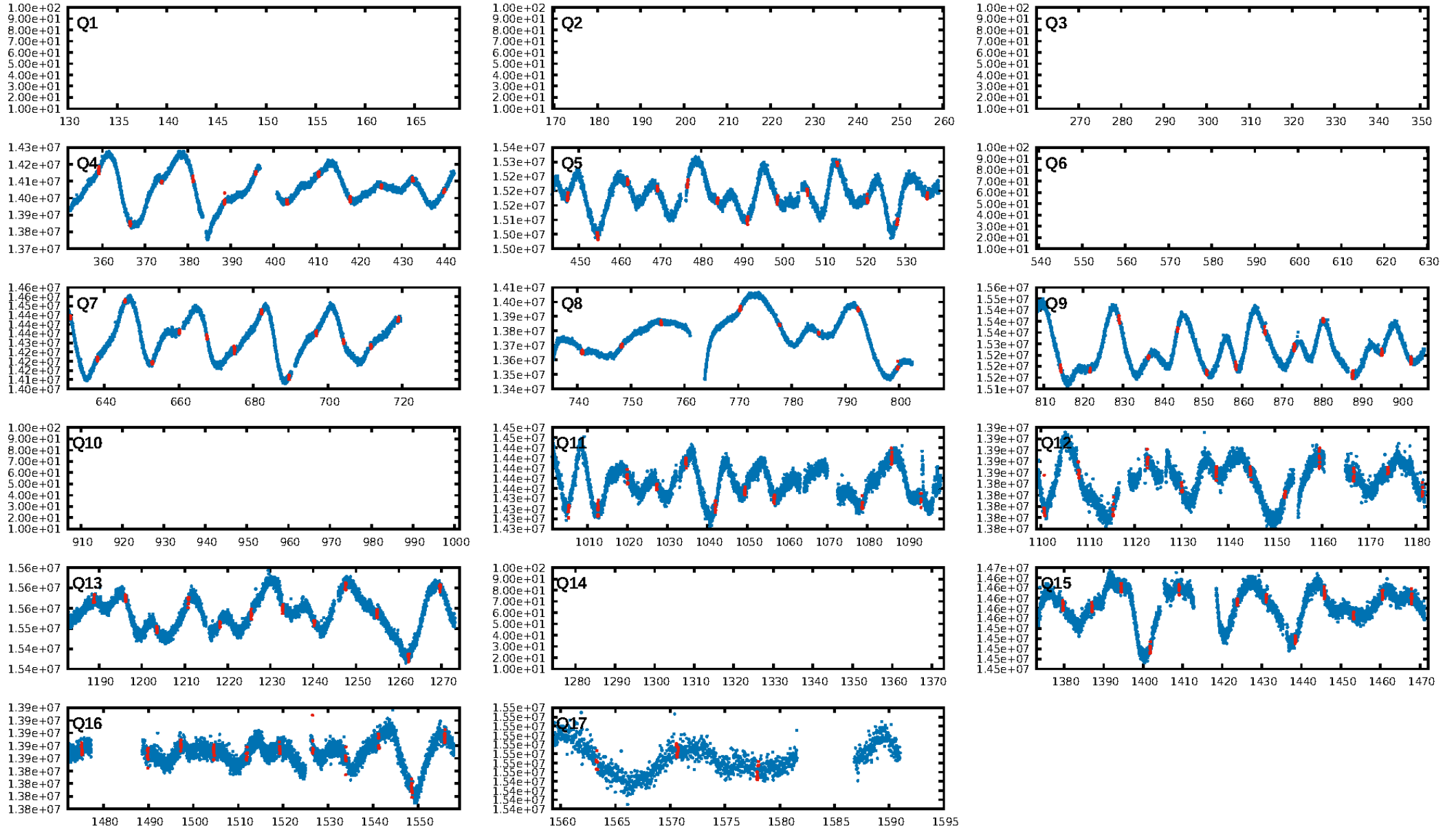
## DV Fit Results:

Period = 7.34233 [0.00004] d  
Epoch = 131.5459 [0.0044] BKJD  
Rp/R\* = 0.0180 [0.0217]  
a/R\* = 19.15 [95.67]  
b = 0.71 [3.60]  
Seff = 116.23 [34.44]  
Teq = 837 [62] K  
Rp = 1.64 [2.02] Re  
a = 0.0723 [0.0129] AU  
Ag = 104.66 [256.75] [0.40σ]  
Teff = 4140 [2529] K [1.31σ]

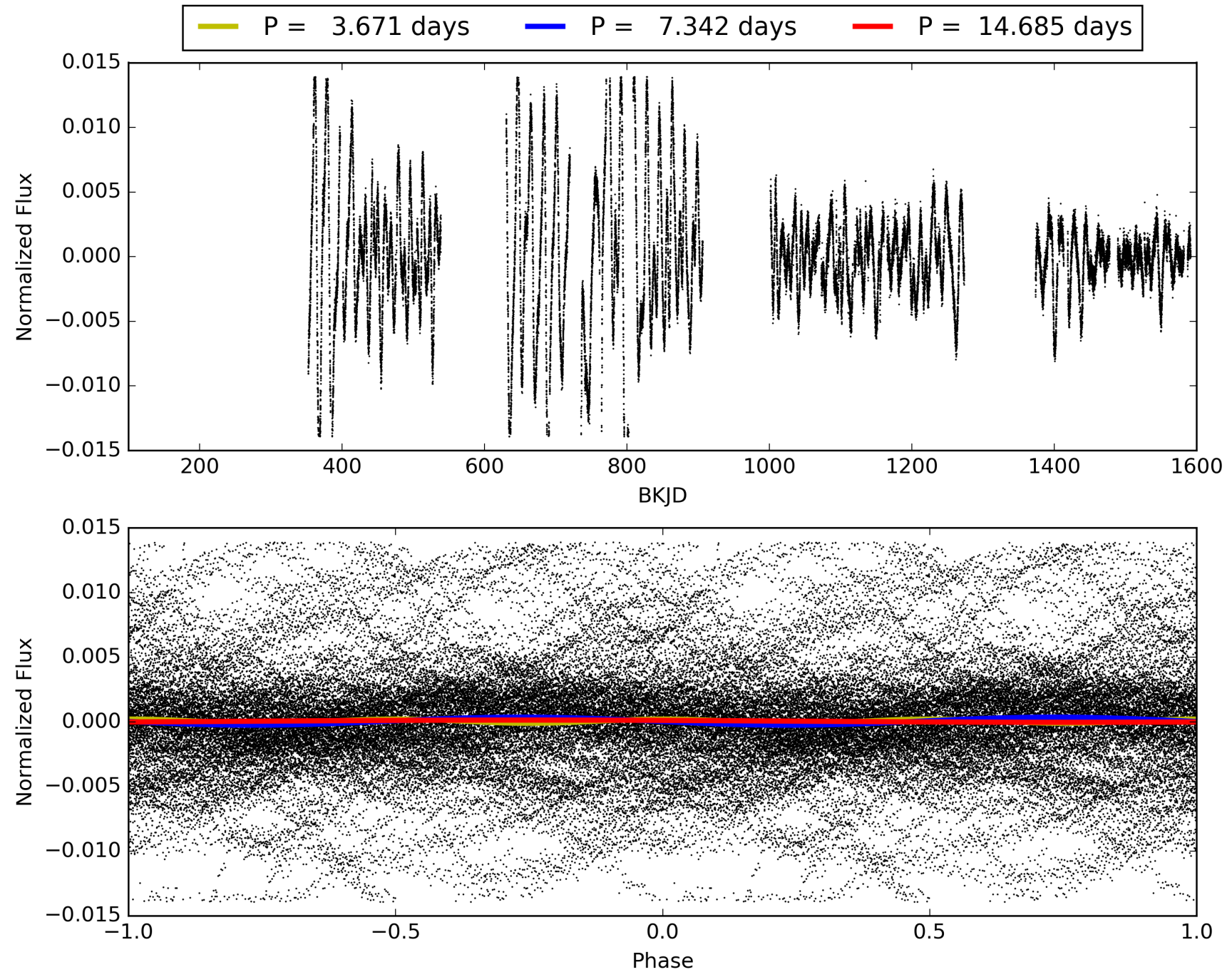
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.25e-25  
RollingBand-fgt: 0.97 [111/115]  
GhostDiagnostic-chr: -44.6  
Centroid-sig: 0.0%  
Centroid-so: 1.737 arcsec [2.42σ]  
OotOffset-rm: 2.338 arcsec [2.43σ]  
KicOffset-rm: 0.486 arcsec [0.98σ]  
OotOffset-st: 0/2/2/3 [7]  
KicOffset-st: 0/2/2/3 [7]  
DiffImageQuality-fgm: 0.86 [6/7]  
DiffImageOverlap-fno: 1.00 [11/11]

# TCE 005802637-01, PDC Light Curves

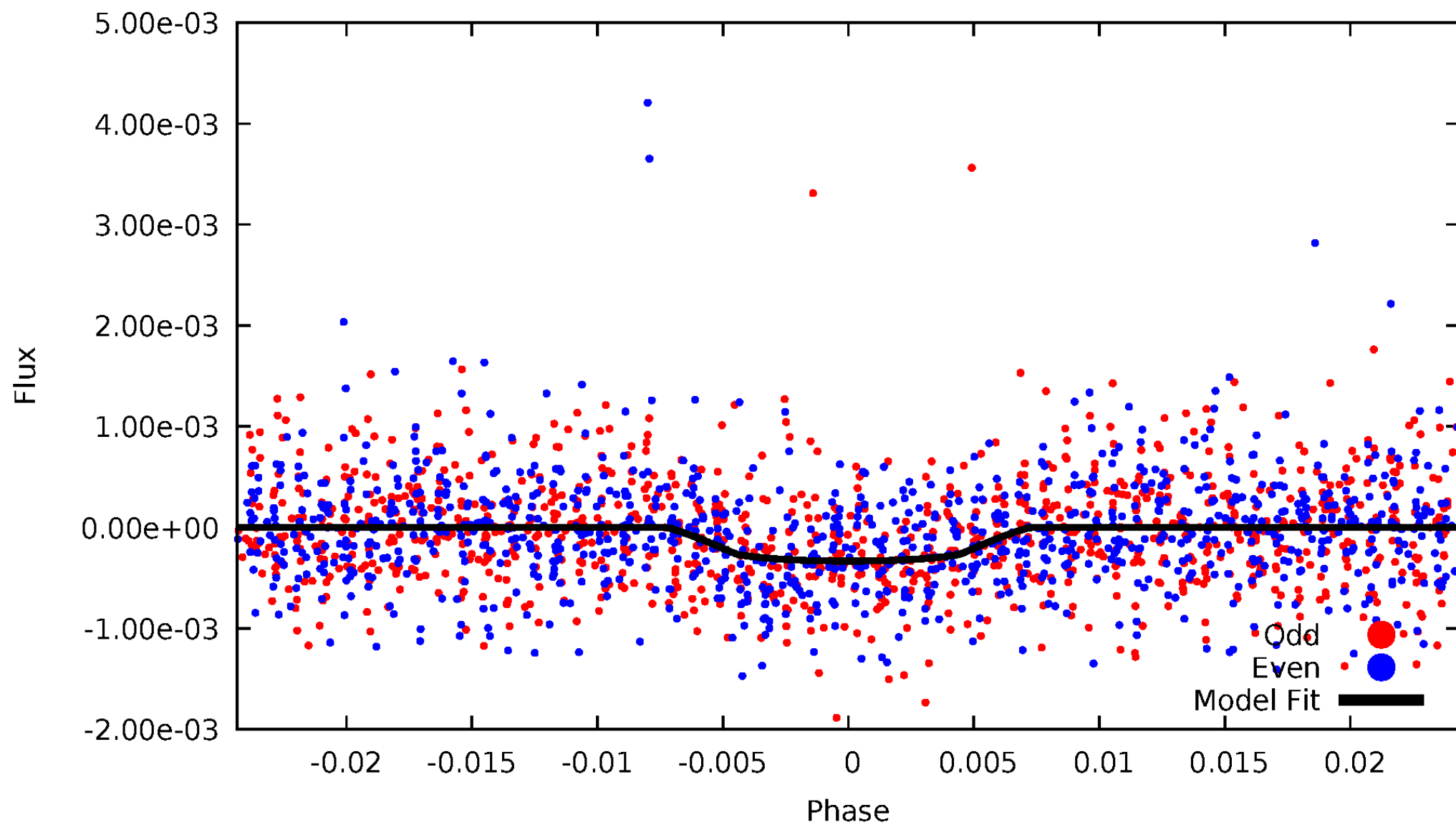


TCE 005802637-01



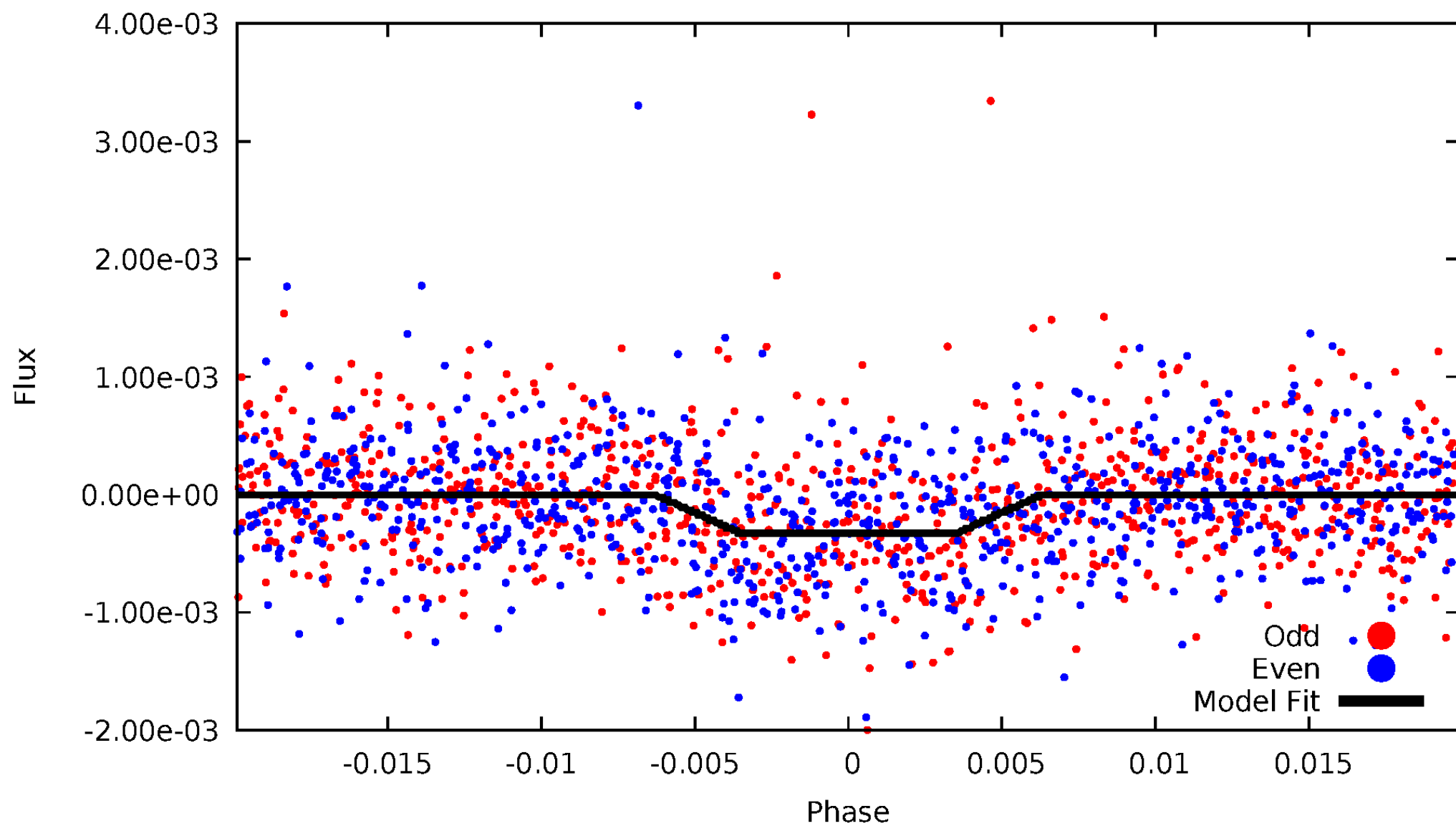
# DV Odd/Even

TCE 005802637-01



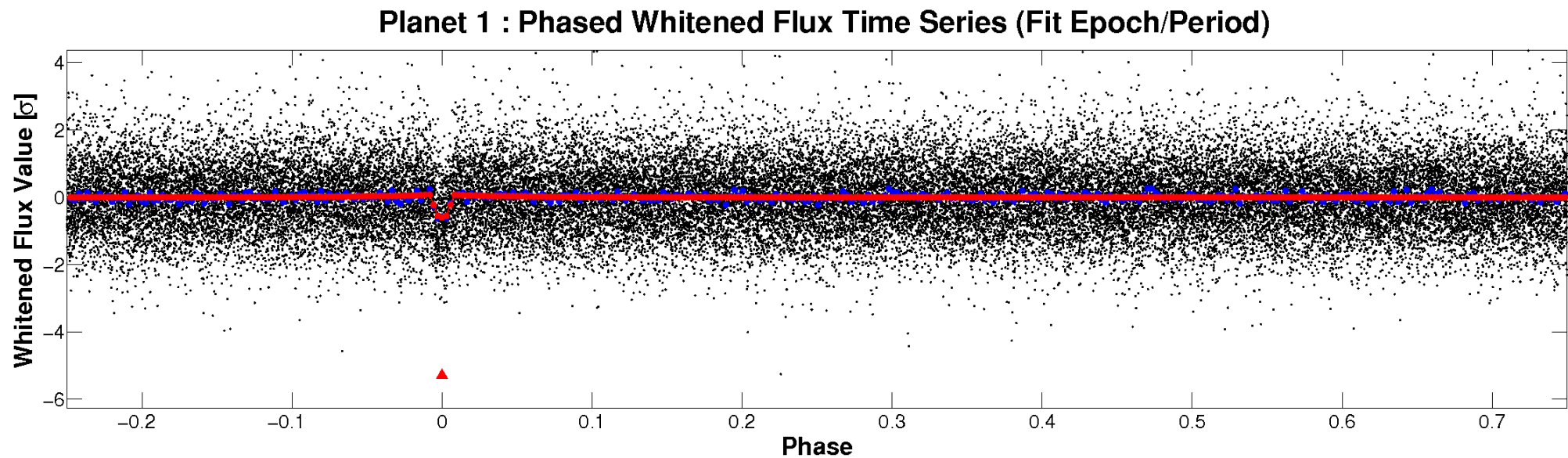
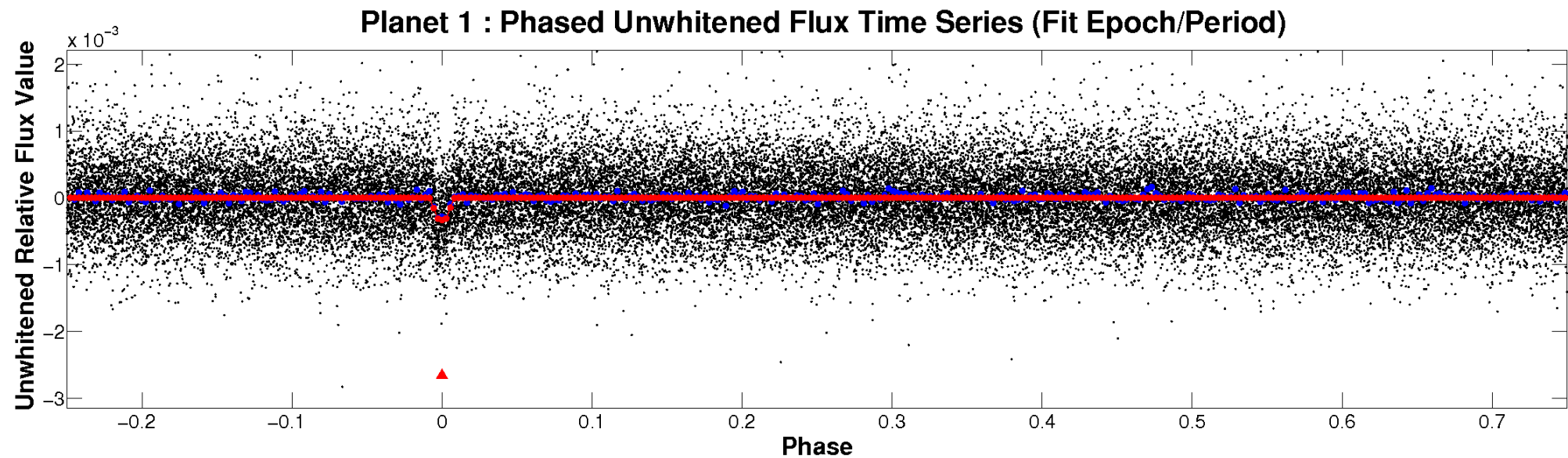
# ALT Odd/Even

TCE 005802637-01



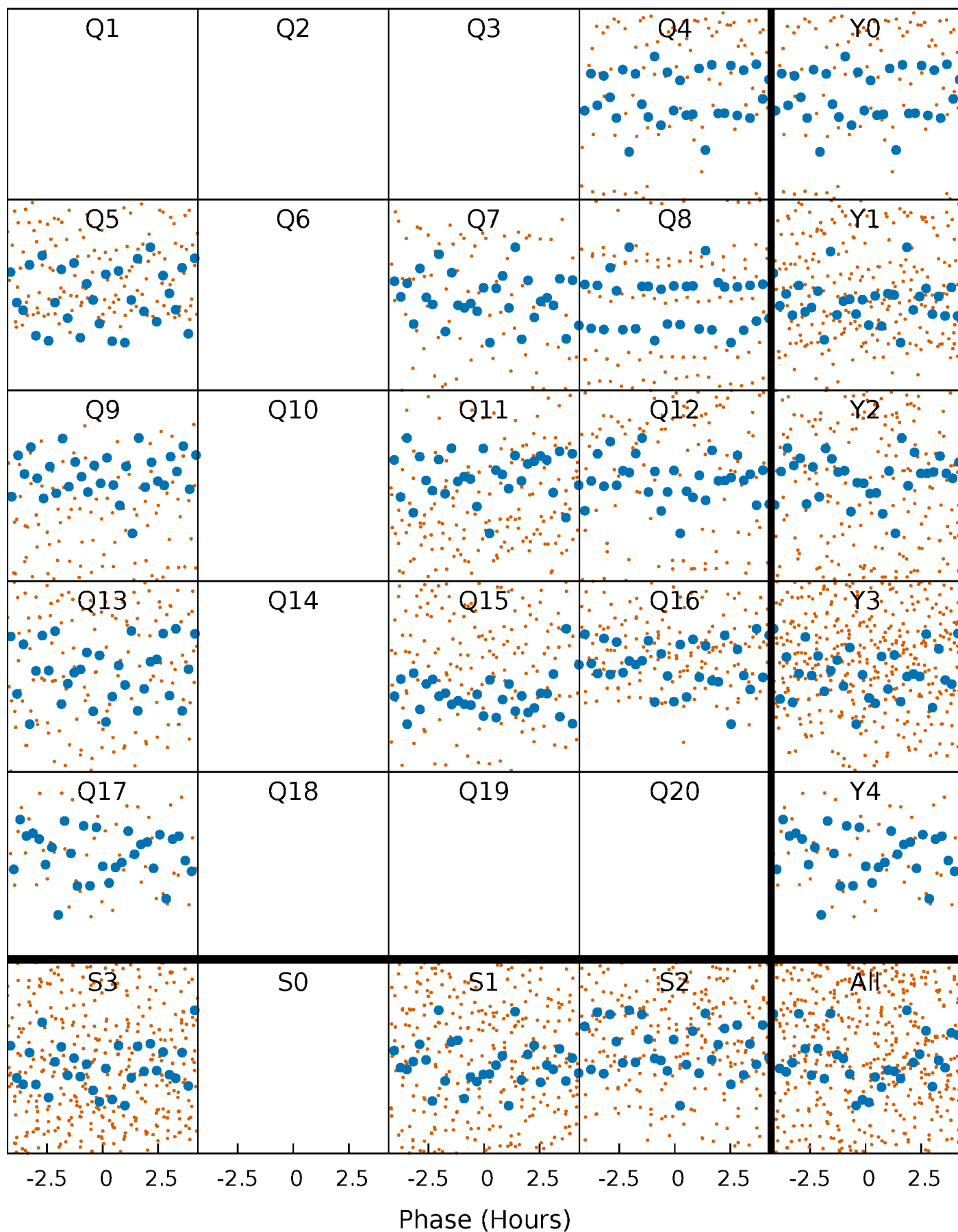


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

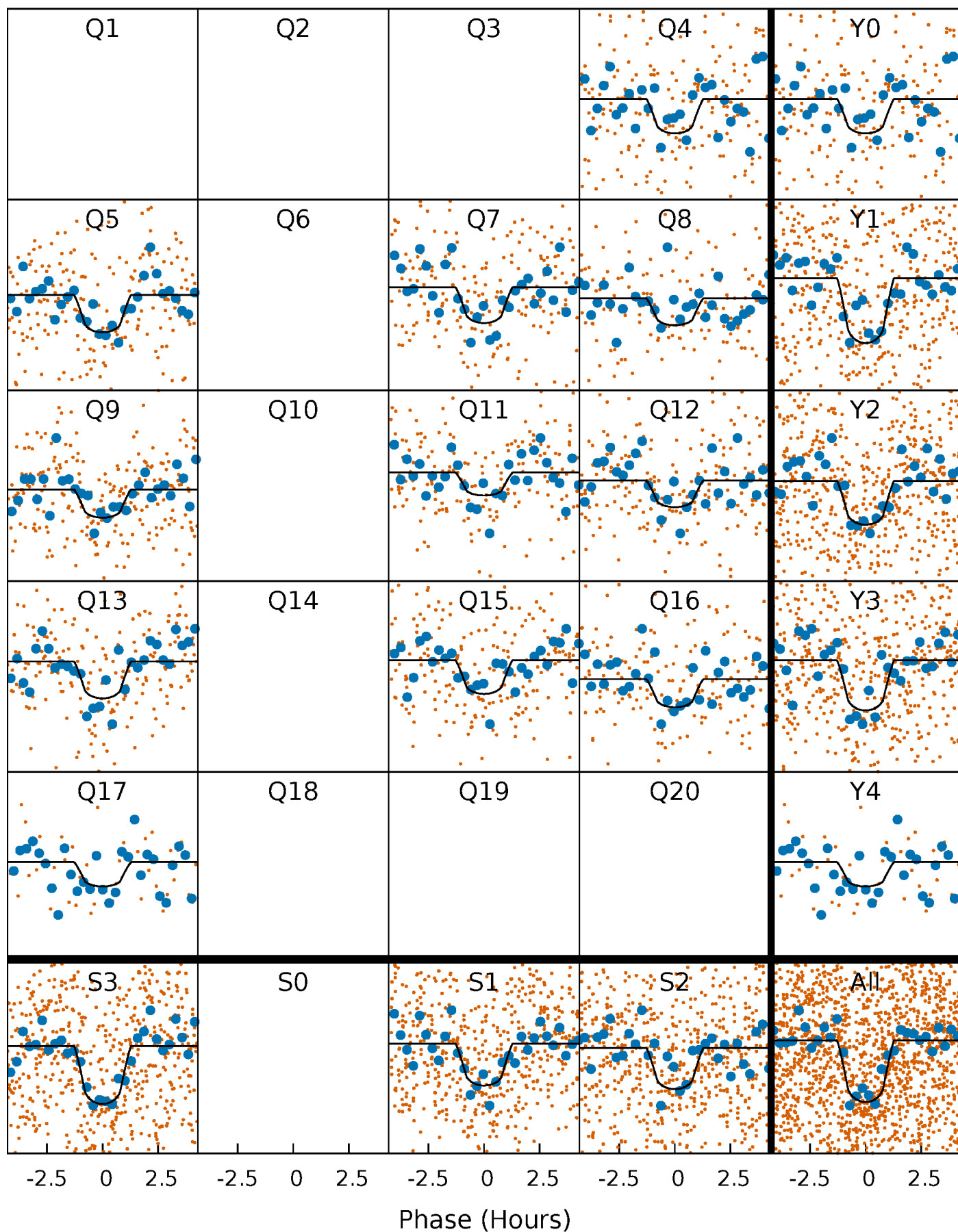
TCE 005802637-01   P= 7.342334 Days    $T_0=131.545872$  (BKJD)





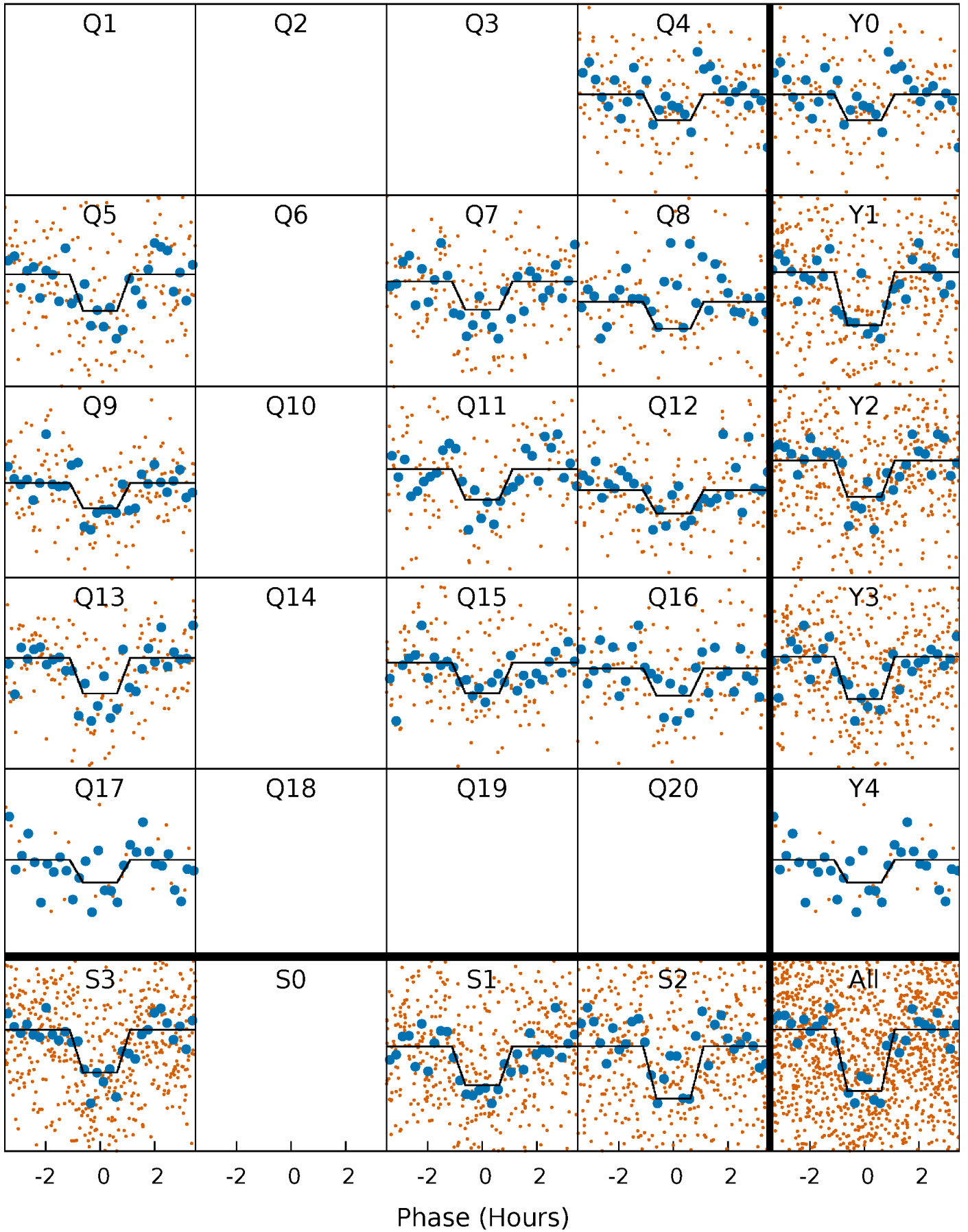
# DV Quarter-Phased Transit Curves

TCE 005802637-01 P= 7.342334 Days  $T_0=131.545872$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

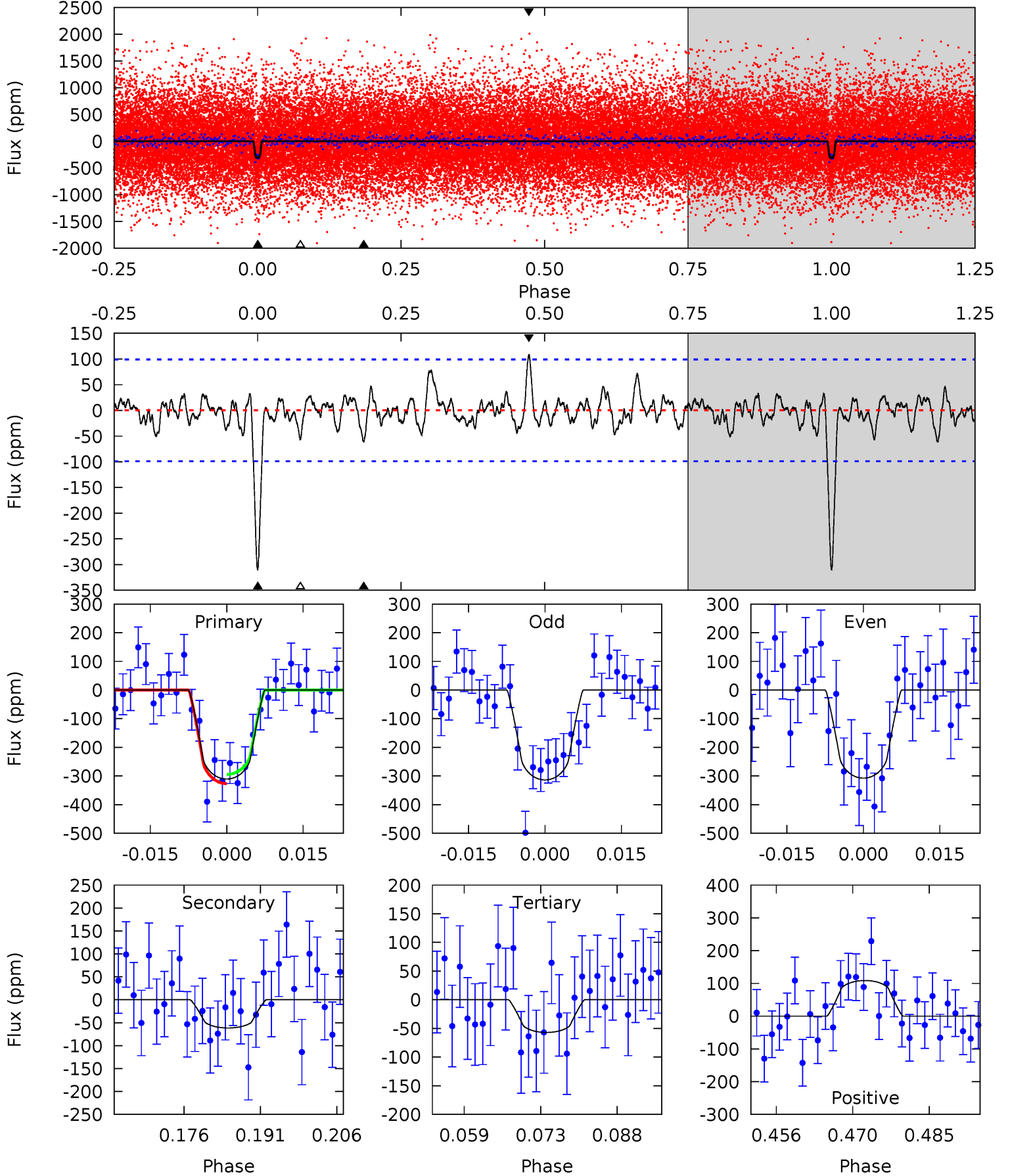
TCE 005802637-01 P= 7.342270 Days  $T_0=131.550191$  (BKJD)



# DV Model-Shift Uniqueness Test

005802637-01, P = 7.342334 Days, E = 131.545872 Days

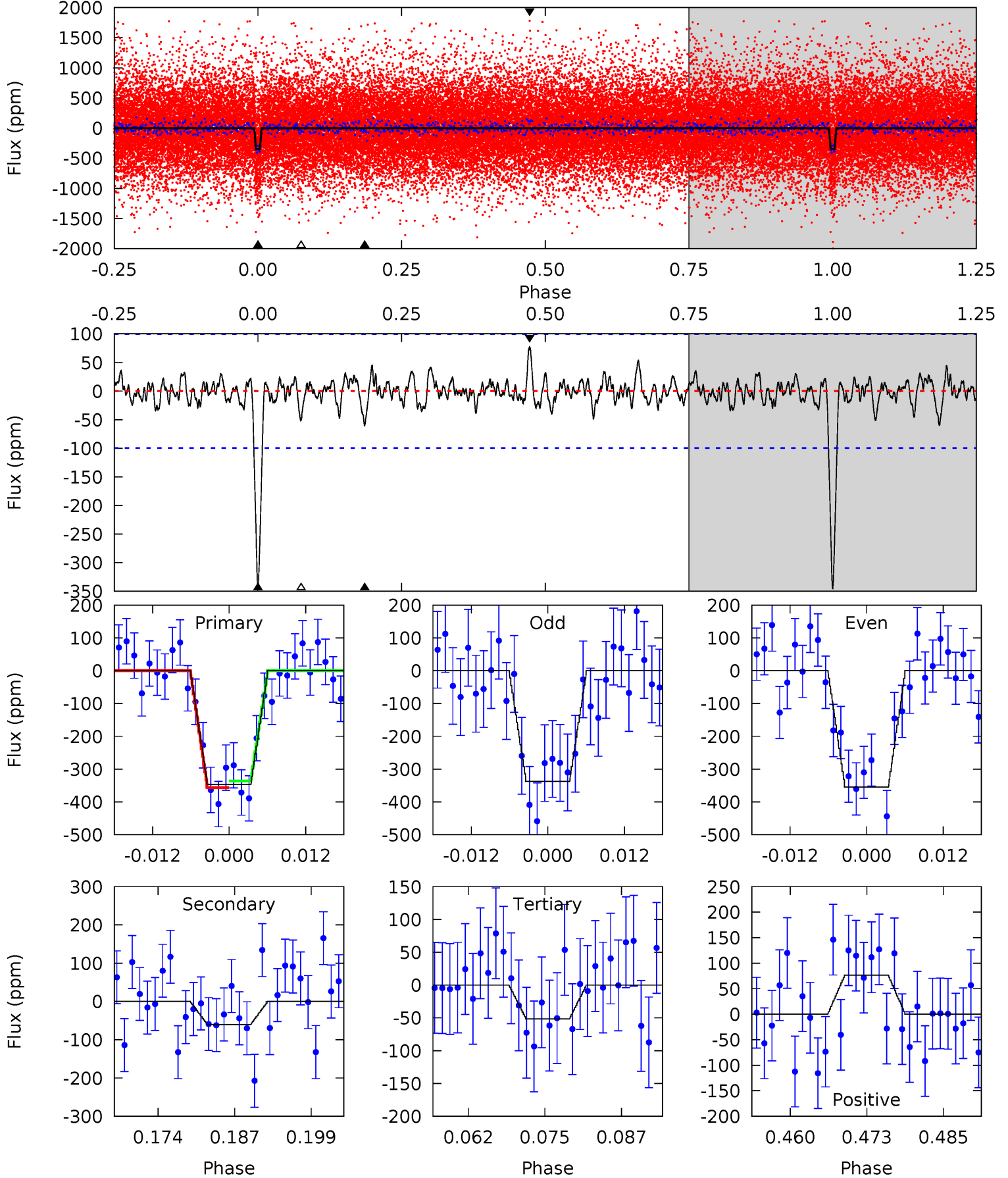
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	3.07	2.85	5.43	4.95	2.44	1.17	12.7	10.1	0.23	-2.35	0.15	0.93	0.26	0.80



# Alt Model-Shift Uniqueness Test

005802637-01, P = 7.342270 Days, E = 131.550191 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
17.3	3.01	2.58	3.84	4.98	2.50	0.88	14.7	13.5	0.43	-0.83	0.44	1.06	0.18	0.52



### Stellar Parameters For KIC 005802637

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5573^{+174}_{-194}$	$4.562^{+0.036}_{-0.144}$	$-0.040^{+0.250}_{-0.300}$	$0.839^{+0.176}_{-0.075}$	$0.939^{+0.083}_{-0.120}$	$2.238^{+0.427}_{-0.915}$
	+3%/-3%	+1%/-3%	+625%/-750%	+21%/-9%	+9%/-13%	+19%/-41%
Source	KIC0	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 005802637-01 / KOI 4398.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-62 \pm 20$	$2.18^{+1.89}_{-1.39}$	$1185^{+68}_{-48}$	$3616^{+1806}_{-630}$	$33^{+234}_{-24}$
Alt.	$-60 \pm 20$	$2.40^{+1.88}_{-1.54}$	$1193^{+68}_{-55}$	$3519^{+1546}_{-579}$	$29^{+197}_{-20}$

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

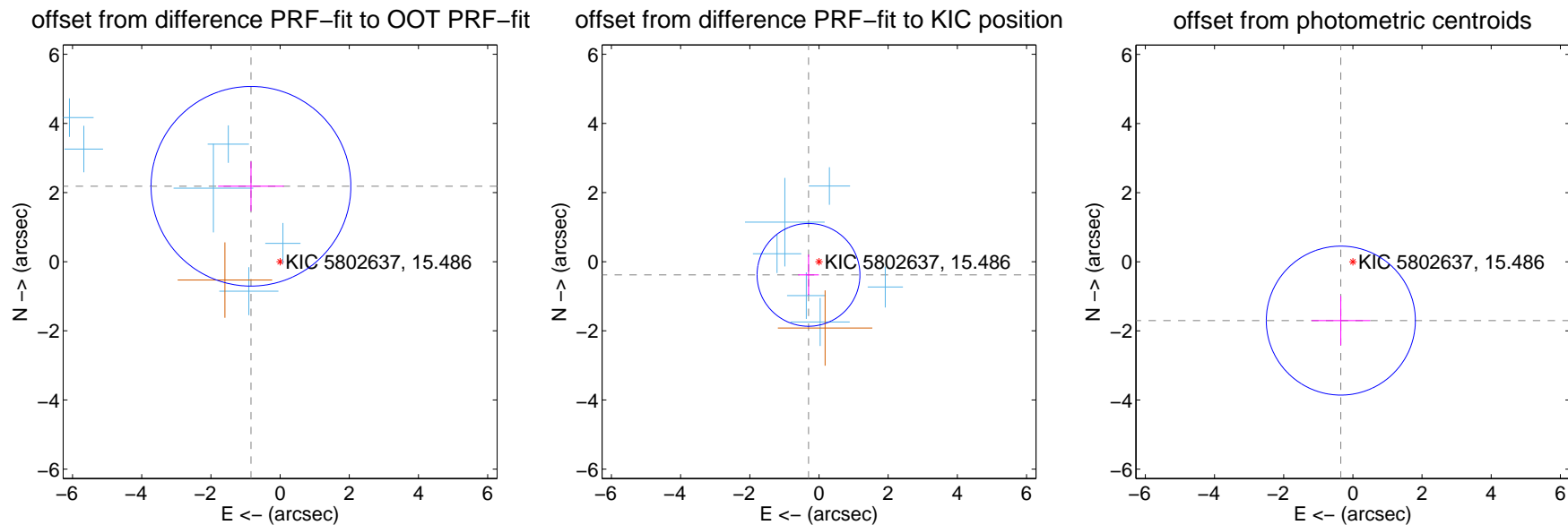
## DV Centroid Data

Supplemental centroid analysis for 005802637-01. Kepler magnitude: 15.49. Transit SNR 11.53

There are 6 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 2.25 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

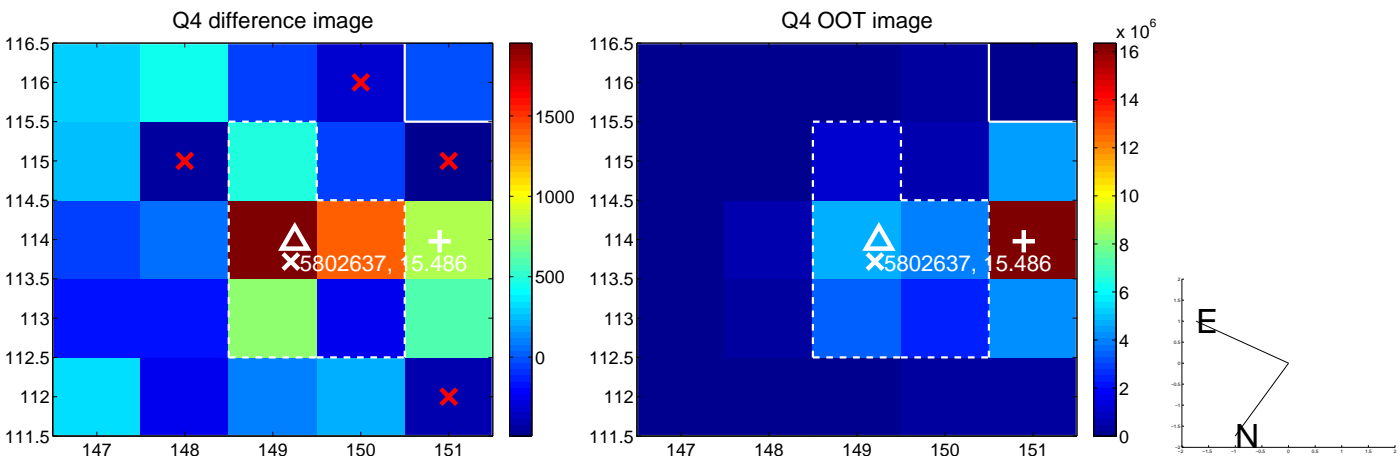
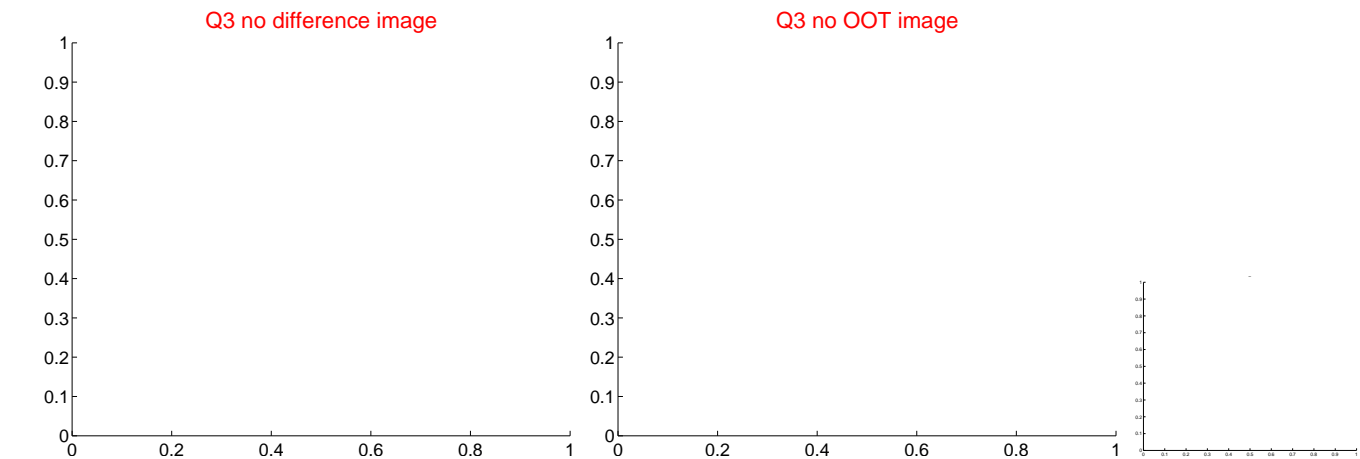
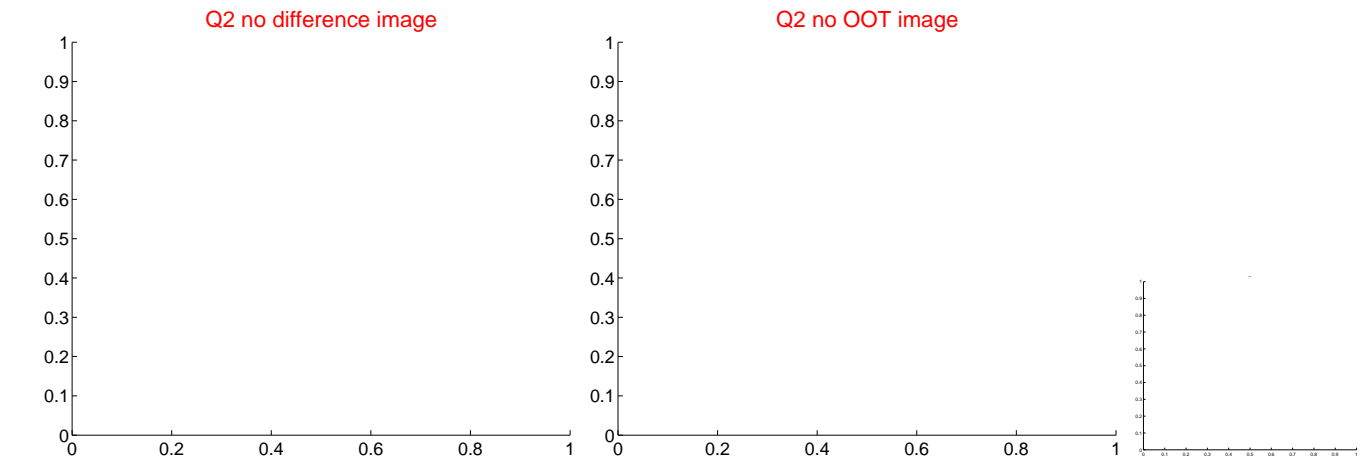
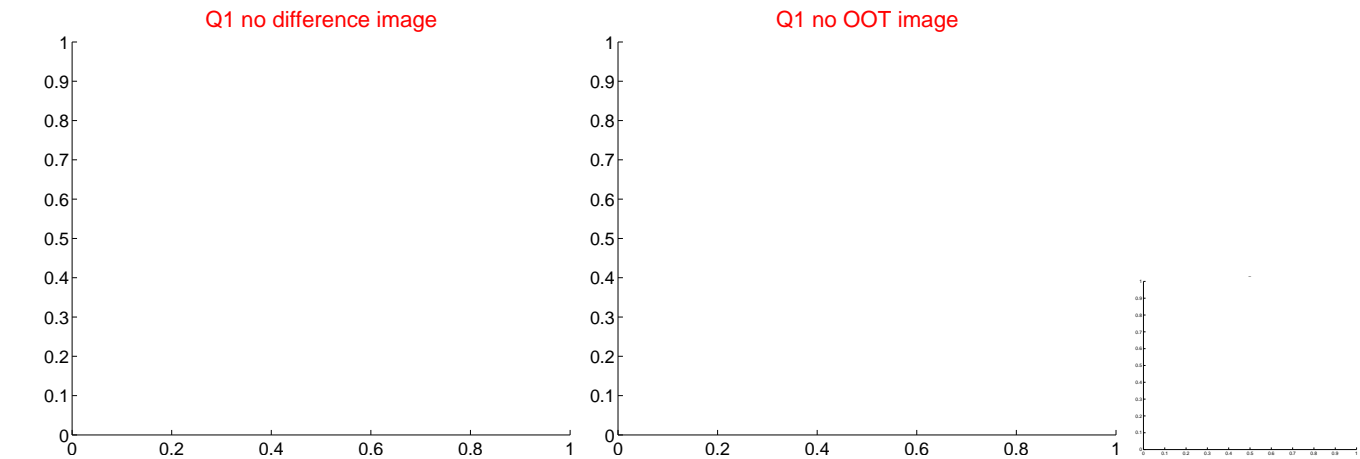
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.338 \pm 0.962$	2.43	$0.842 \pm 0.952$	$2.181 \pm 0.717$
PRF-fit source offset from KIC position	$0.486 \pm 0.495$	0.98	$0.303 \pm 0.298$	$-0.381 \pm 0.587$
photometric centroid source offset	$1.74 \pm 0.72$	2.42	$0.35 \pm 0.85$	$-1.70 \pm 0.71$



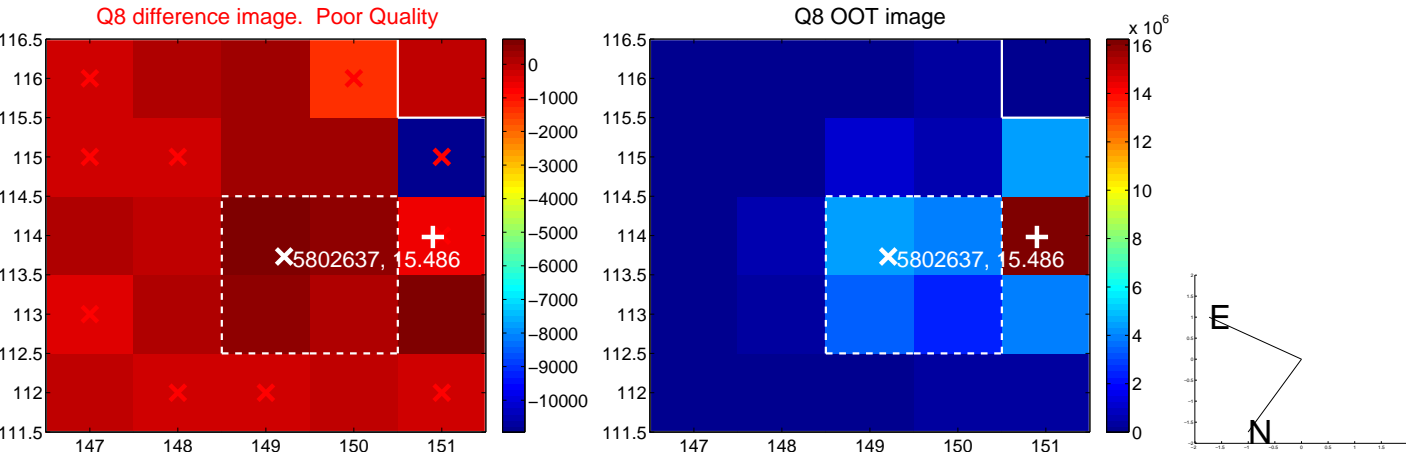
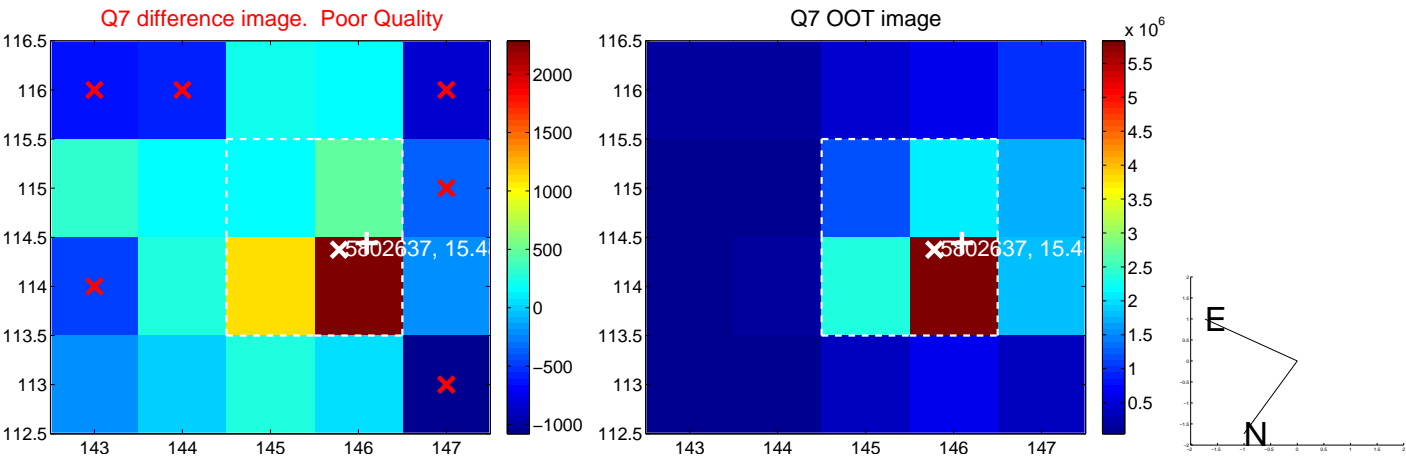
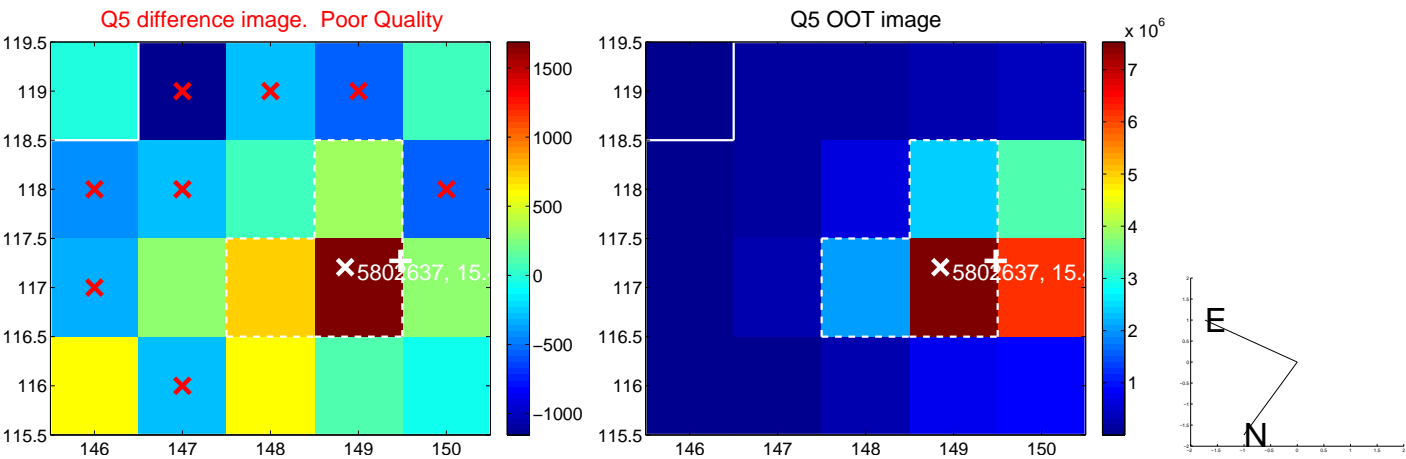
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



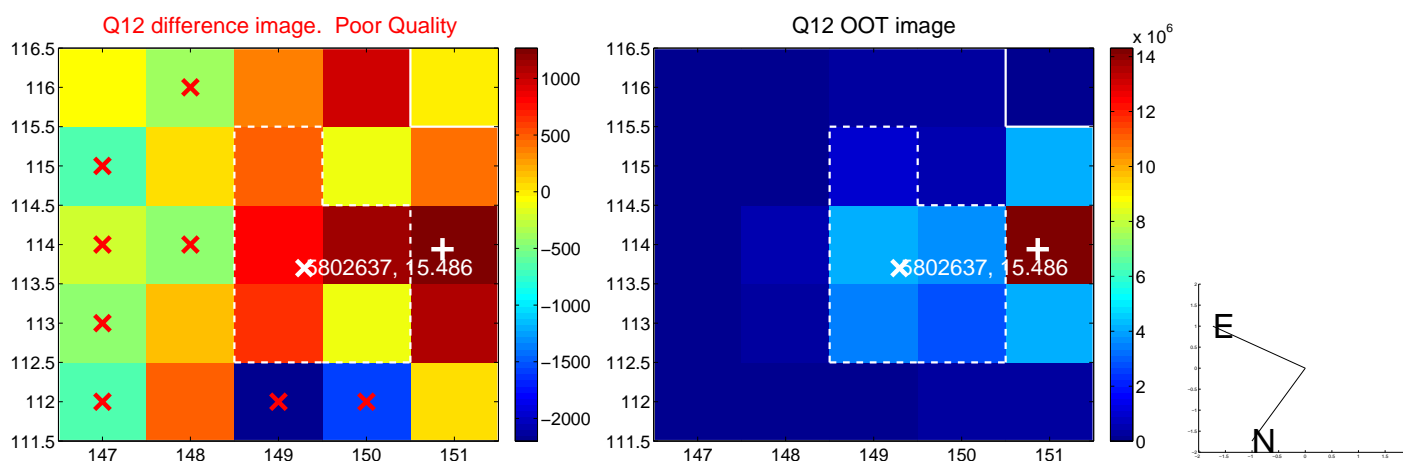
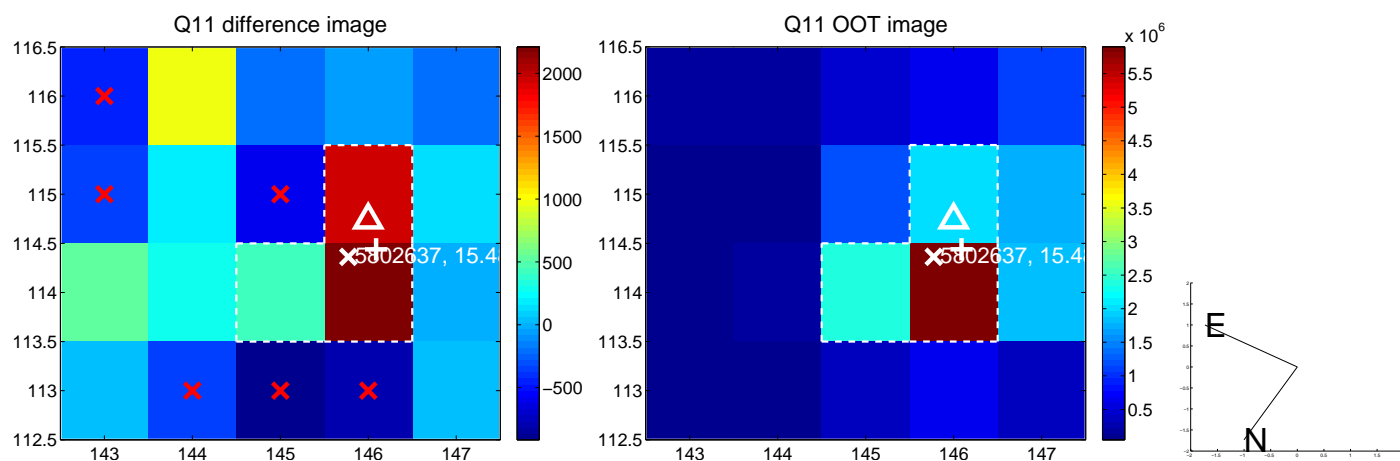
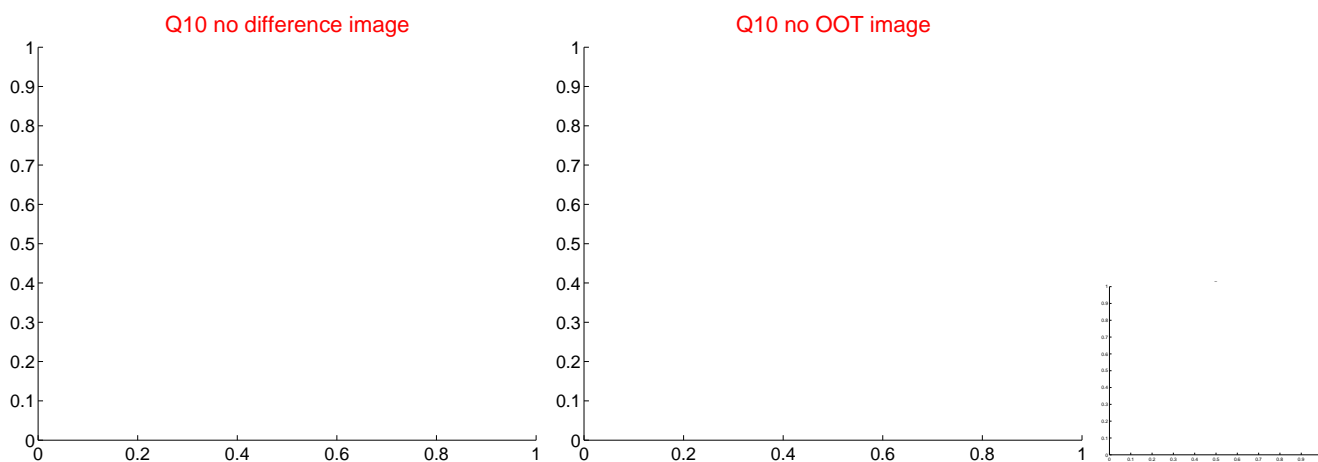
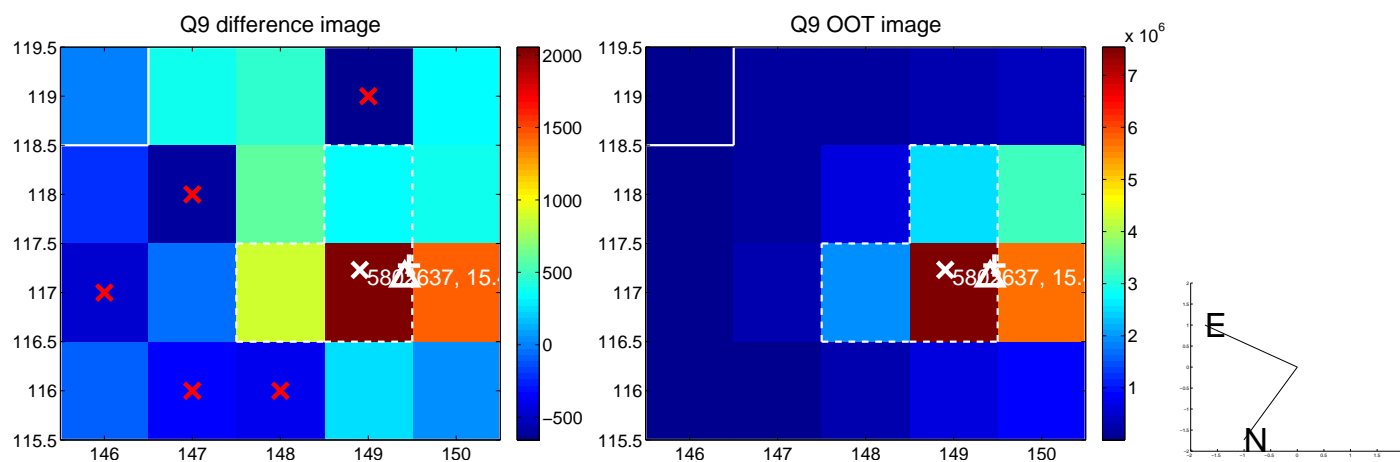
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



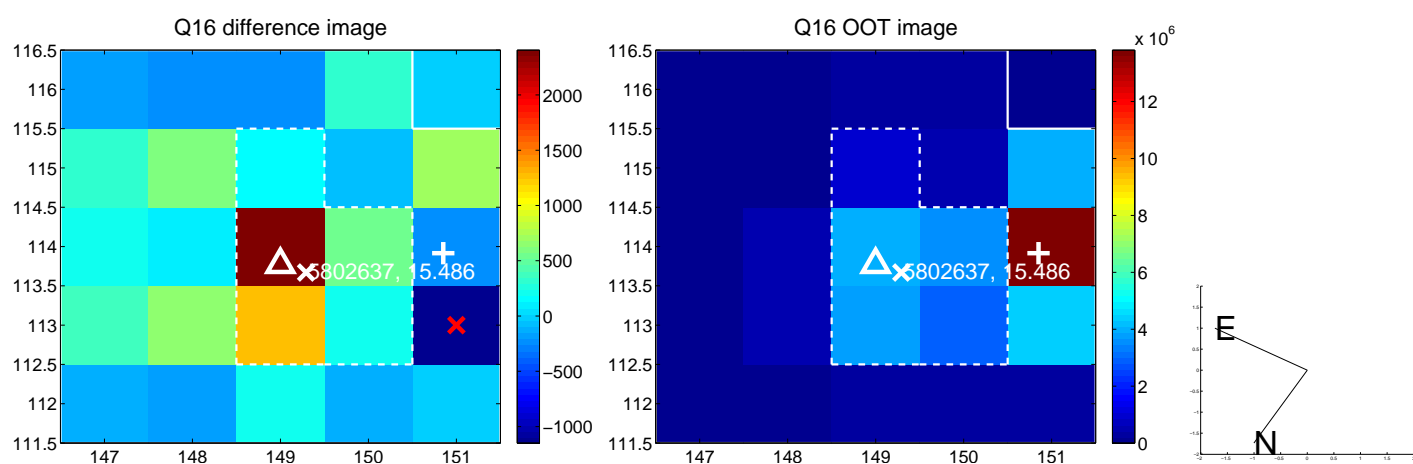
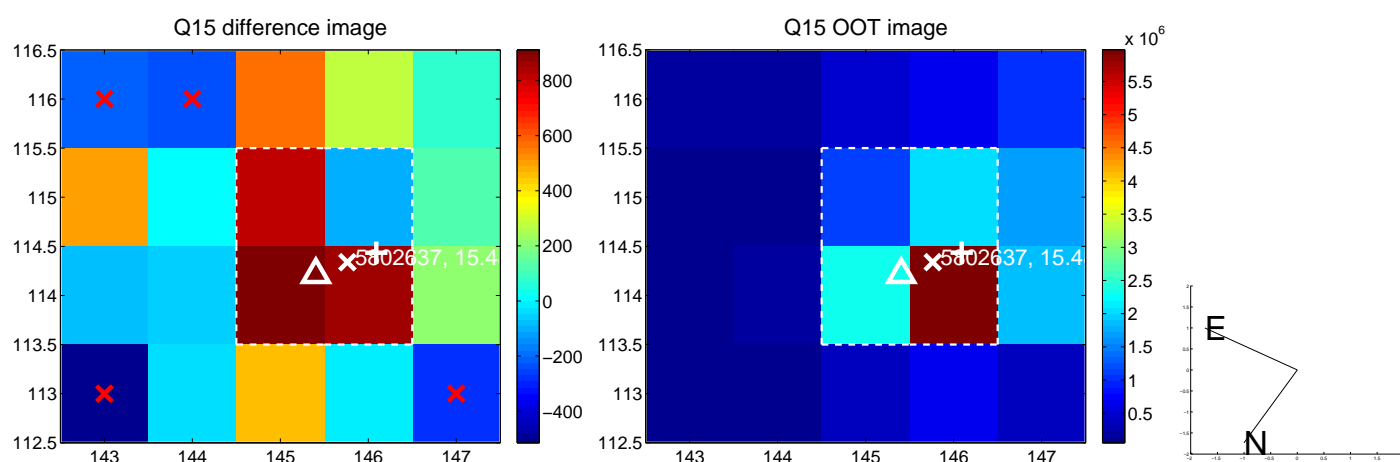
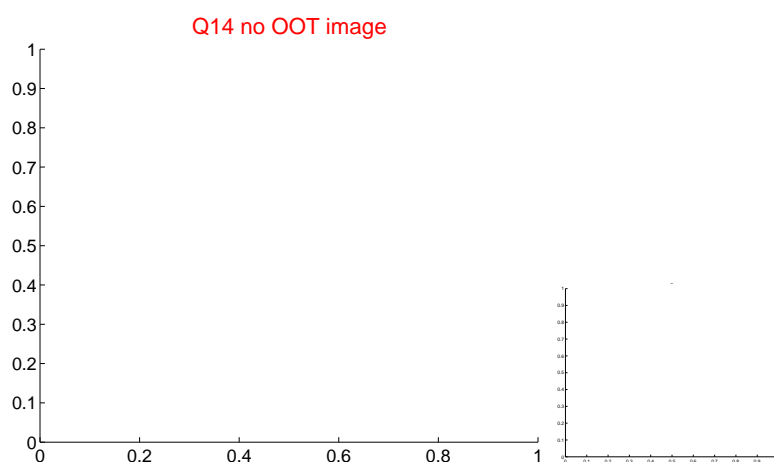
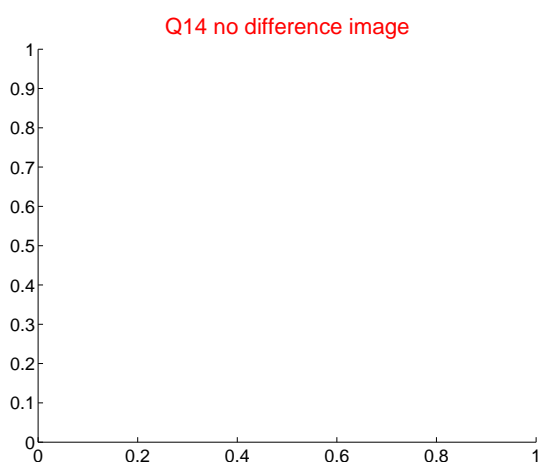
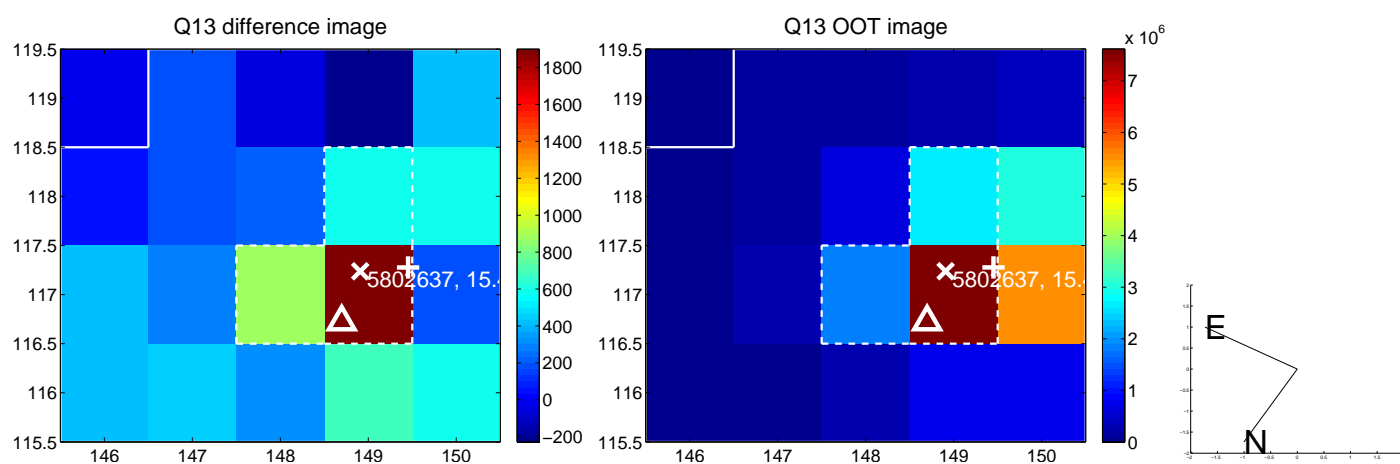
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



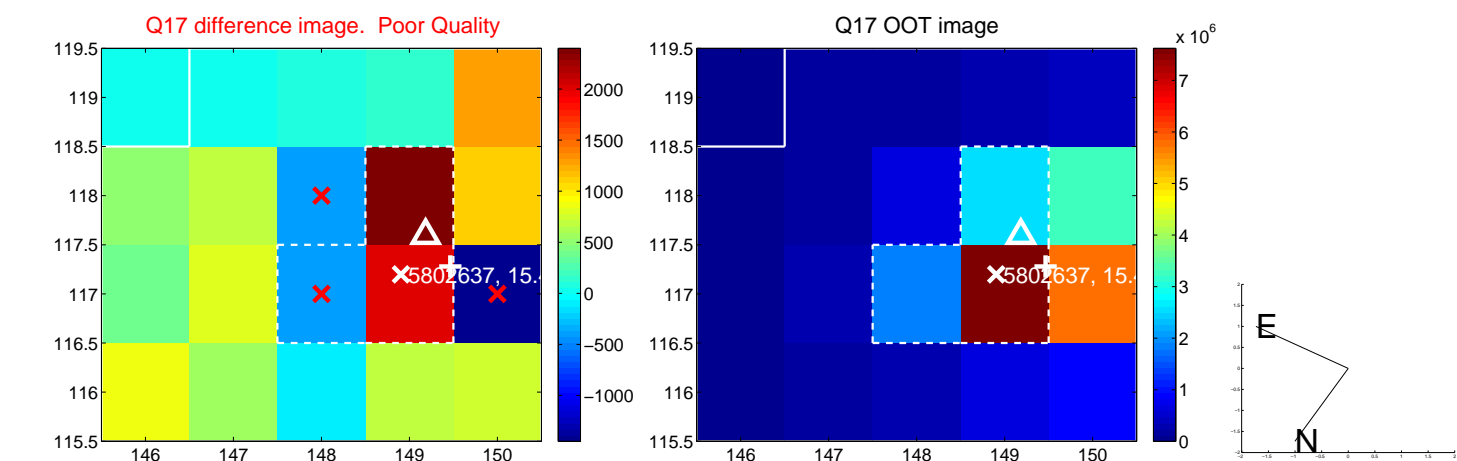
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



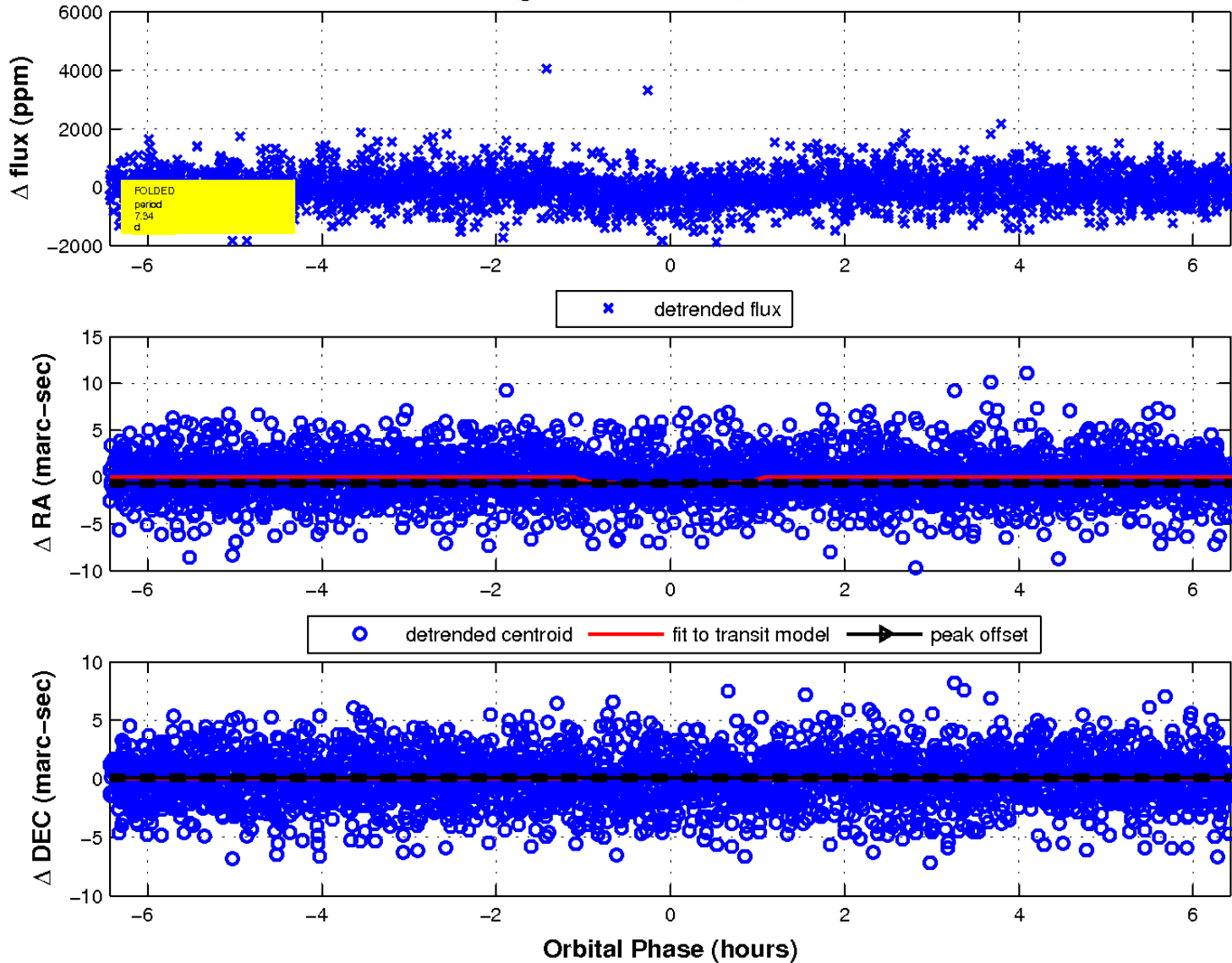
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

