

# KIC 006057684

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006057684-01	OBS	3972.01	0.540286	131.847447	76.4	1.649	19.1	19.9	0.99	5997	0.93	6384.08

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006057684-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—CENT_RESOLVED_OFFSET—HALO_GHOST

**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.

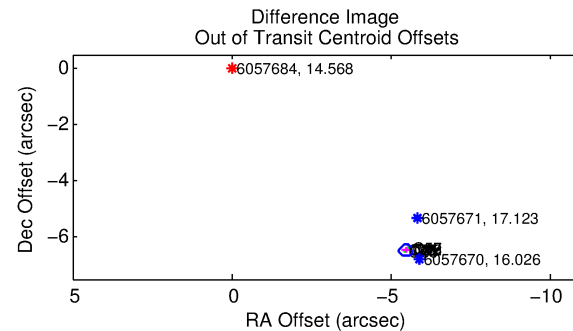
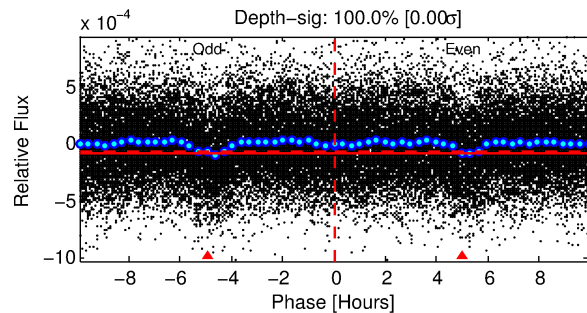
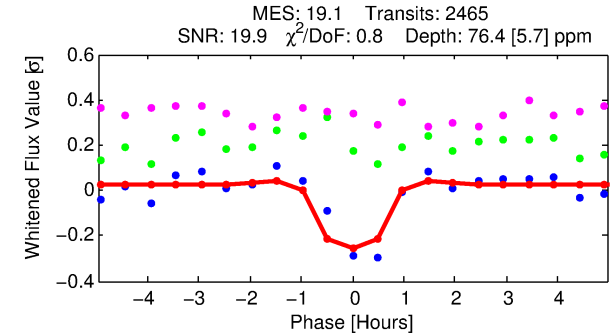
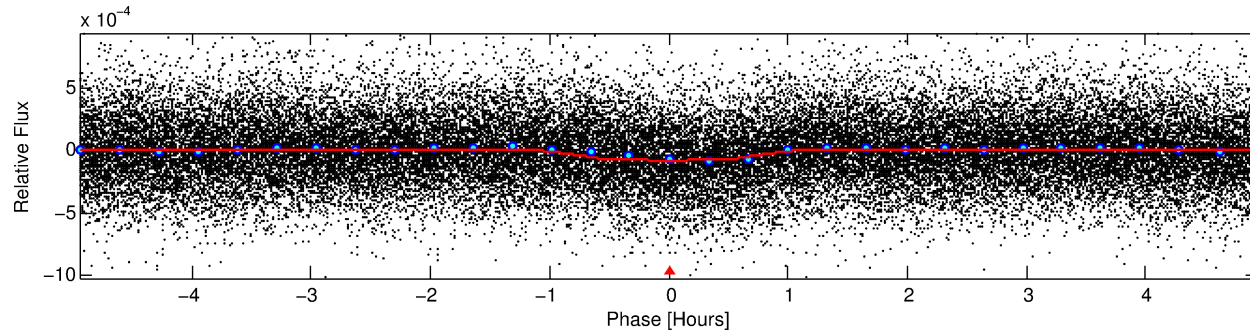
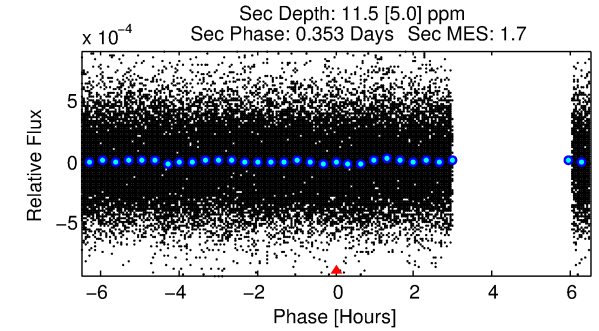
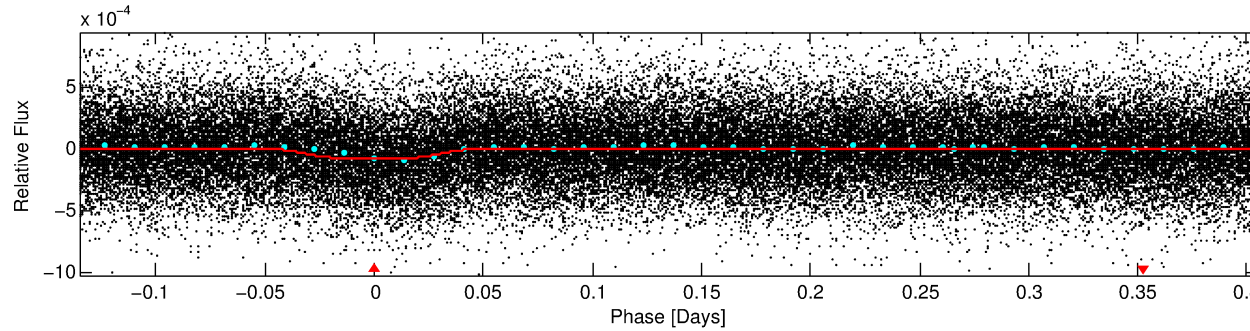
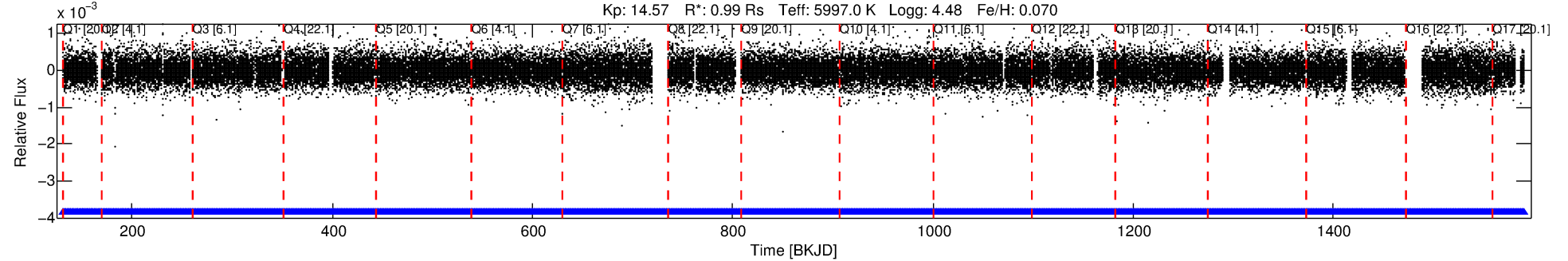
## Ephemeris Match Information For 006057684-01

No Significant Match Found

# DV One-Page Summary

KIC: 6057684 Candidate: 1 of 1 Period: 0.540 d  
KOI: K03972 Corr: No Ephemeris Match

Kp: 14.57 R\*: 0.99 Rs Teff: 5997.0 K Logg: 4.48 Fe/H: 0.070



## DV Fit Results:

Period = 0.54029 [0.00001] d  
Epoch = 131.8474 [0.0011] BKJD  
Rp/R\* = 0.0086 [0.0019]  
a/R\* = 1.99 [1.55]  
b = 0.70 [0.77]  
Seff = 6384.08 [2768.24]  
Teq = 2279 [247] K  
Rp = 0.93 [0.38] Re  
a = 0.0134 [0.0038] AU  
Ag = 1.31 [0.98] [0.31σ]  
Teff = 3767 [606] K [2.27σ]

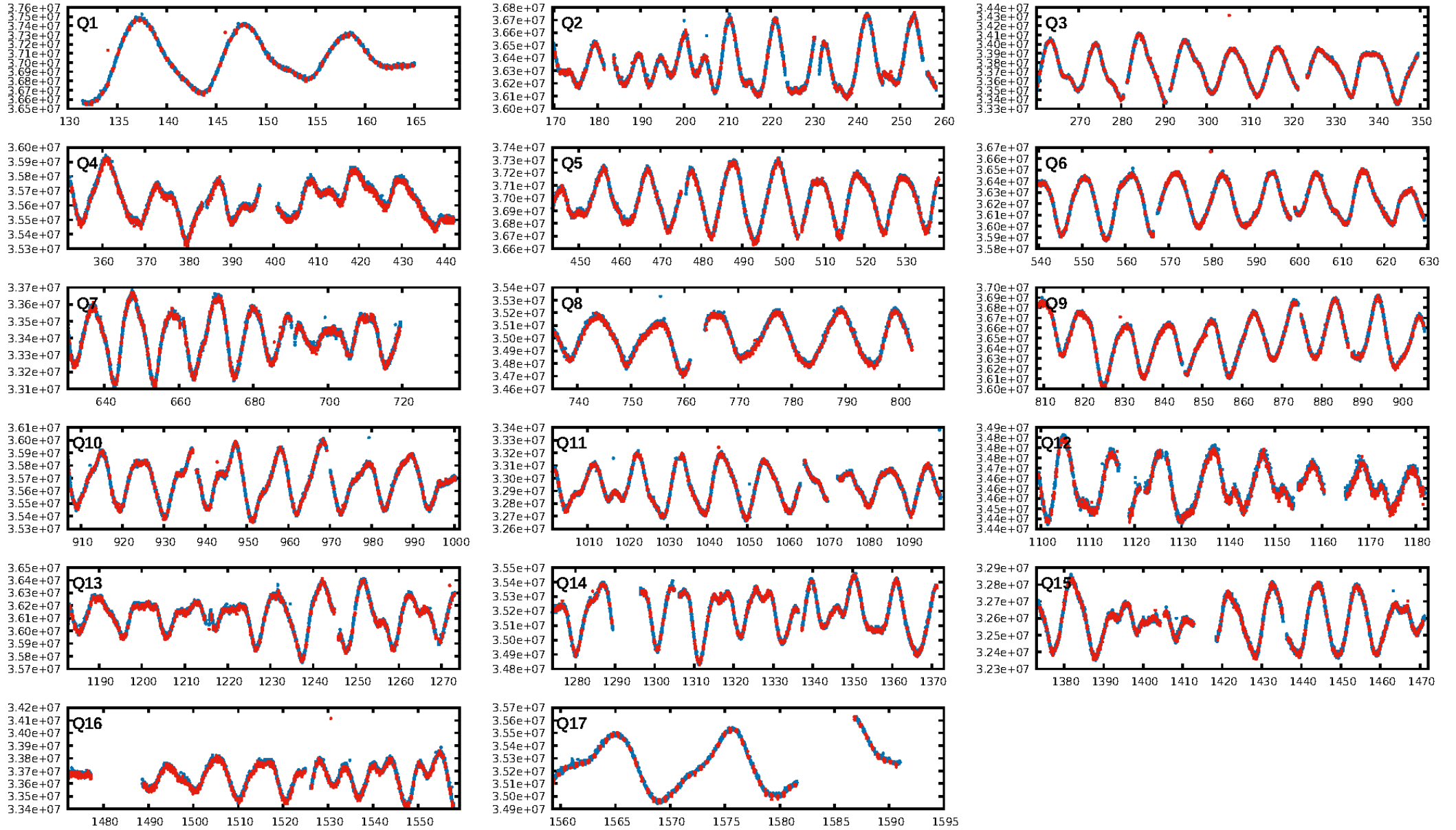
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGoF-sig: N/A  
Bootstrap-pfa: 6.19e-74  
RollingBand-fgt: 1.00 [2354/2354]  
GhostDiagnostic-chr: -0.2292  
Centroid-sig: N/A  
Centroid-so: 74.973 arcsec [97.65σ]  
OotOffset-rm: 8.491 arcsec [124.89σ]  
KicOffset-rm: 8.538 arcsec [120.74σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

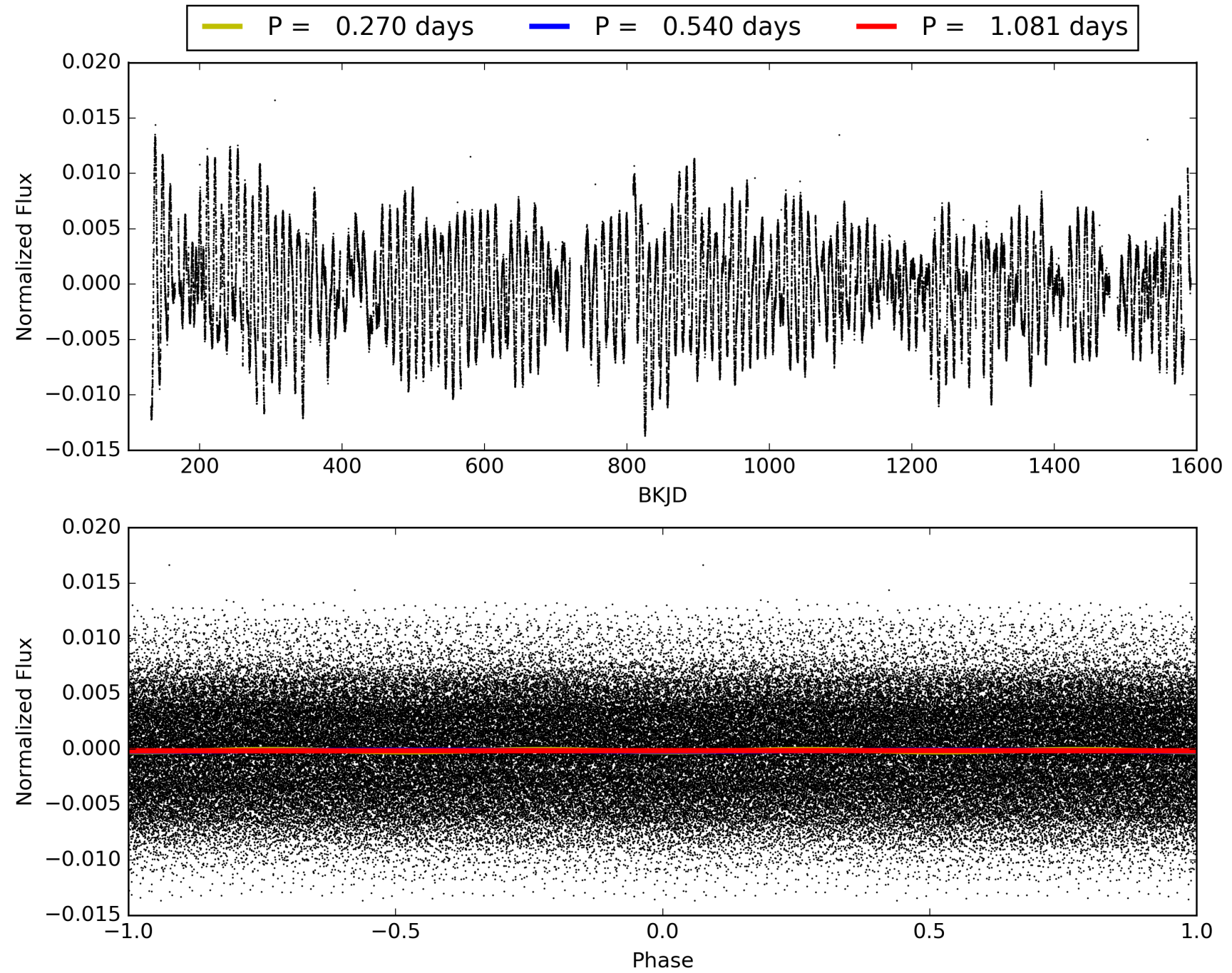
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 21:32:00 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 006057684-01, PDC Light Curves

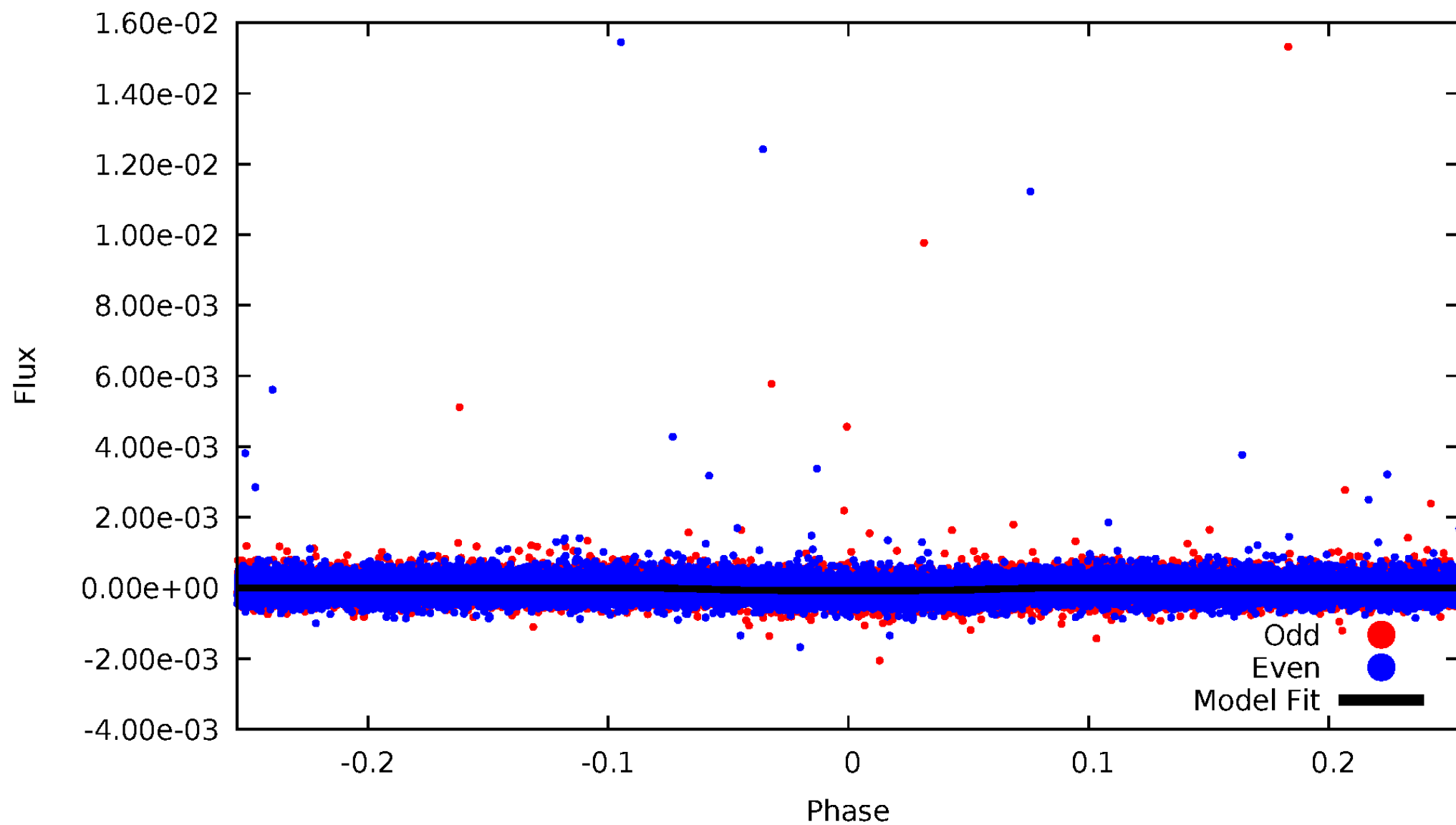


TCE 006057684-01



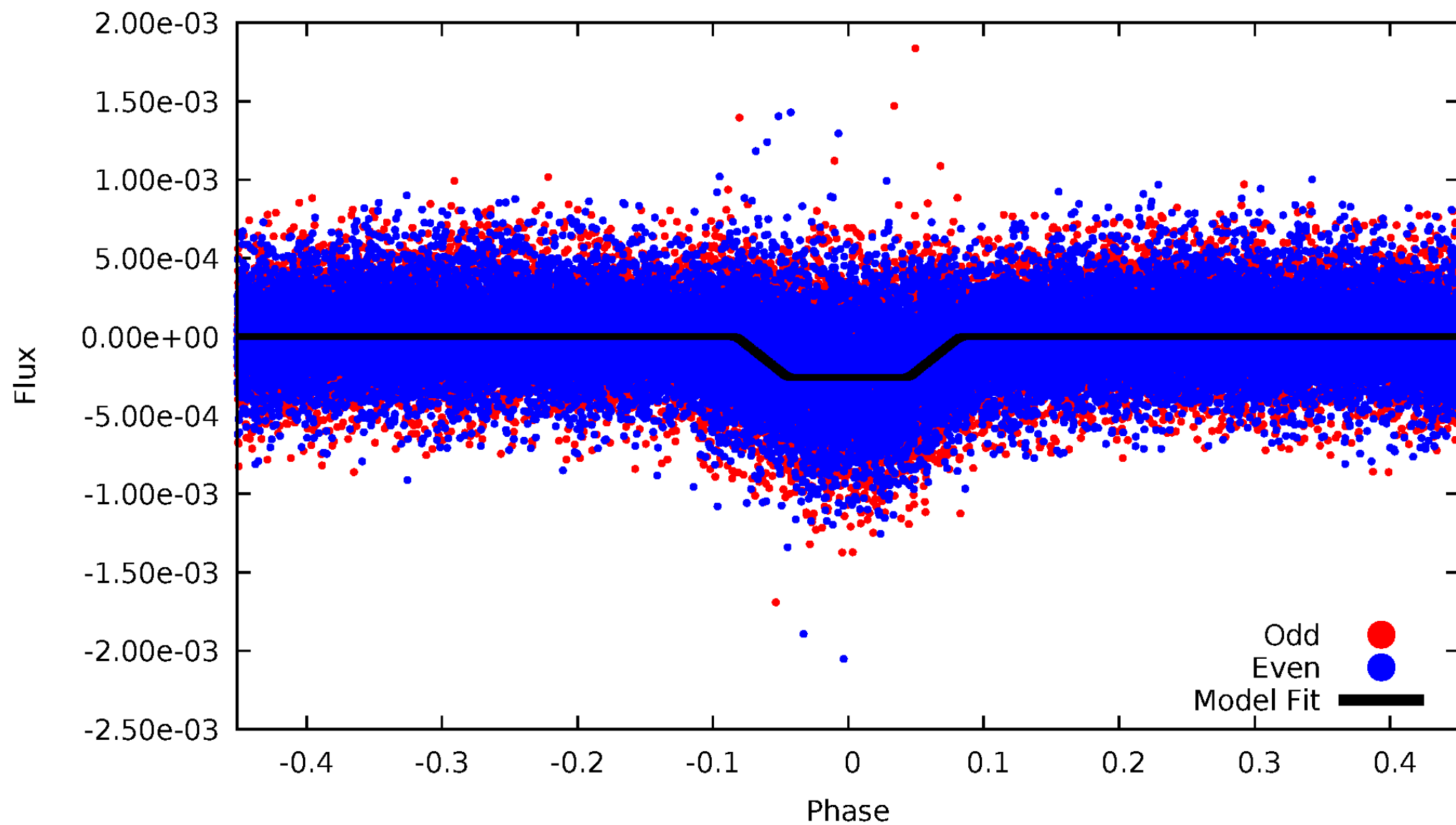
# DV Odd/Even

TCE 006057684-01



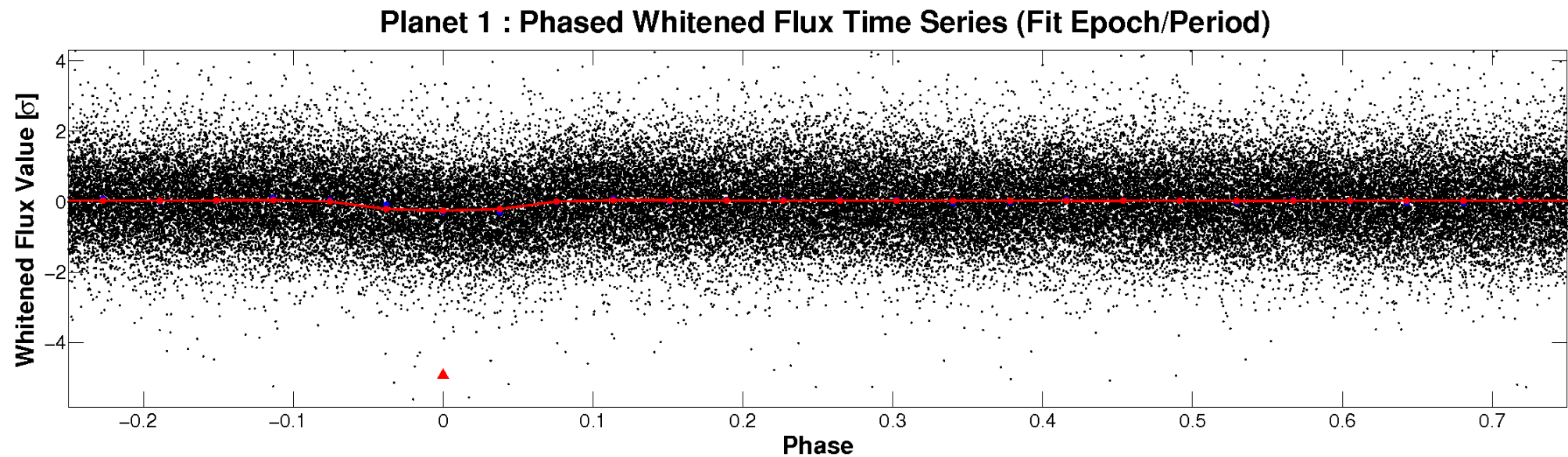
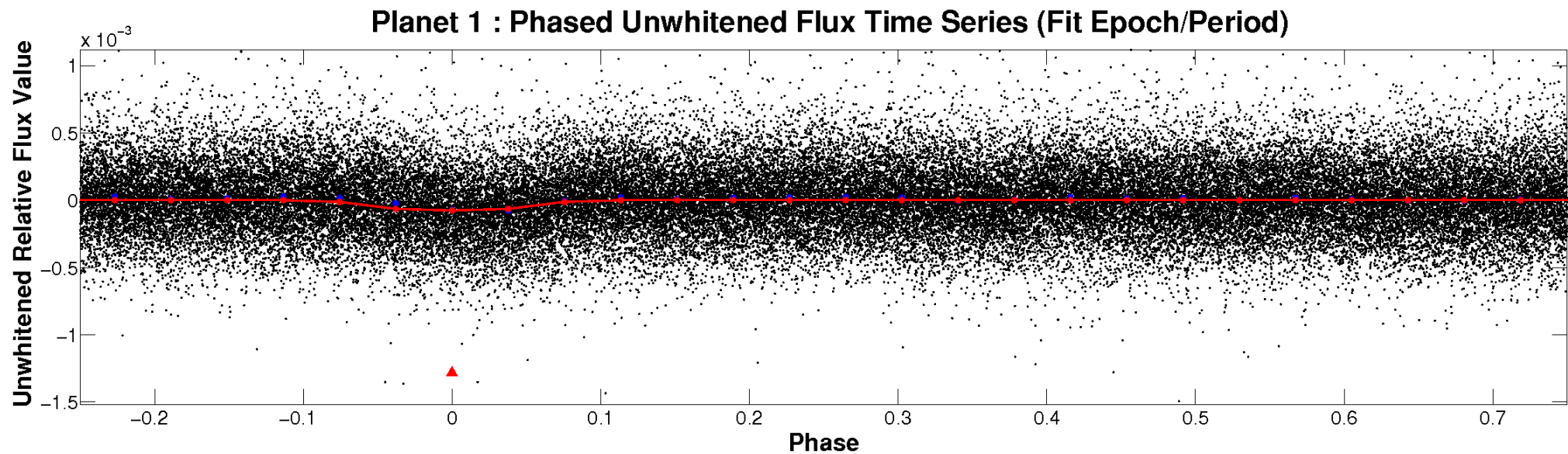
# ALT Odd/Even

TCE 006057684-01



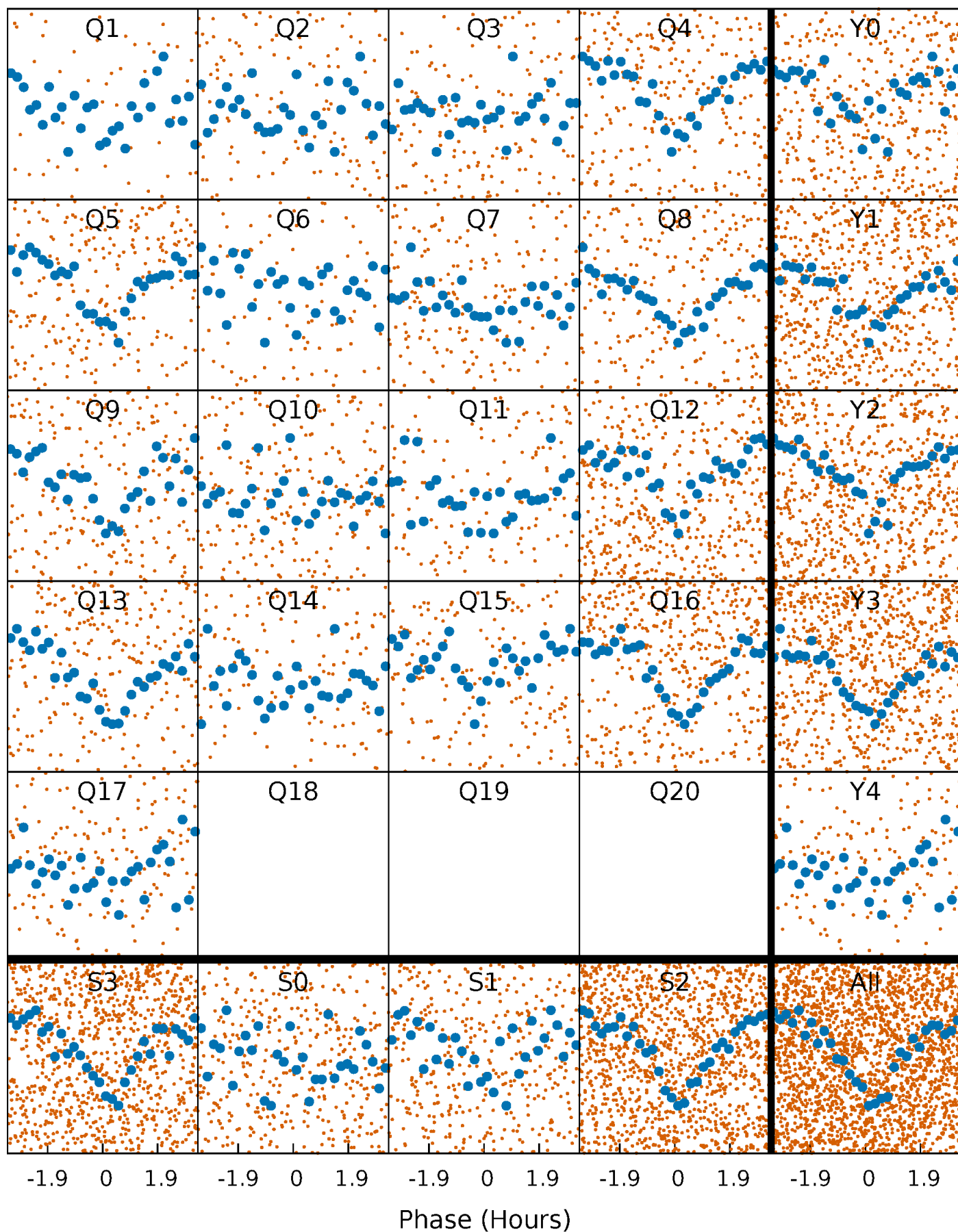


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

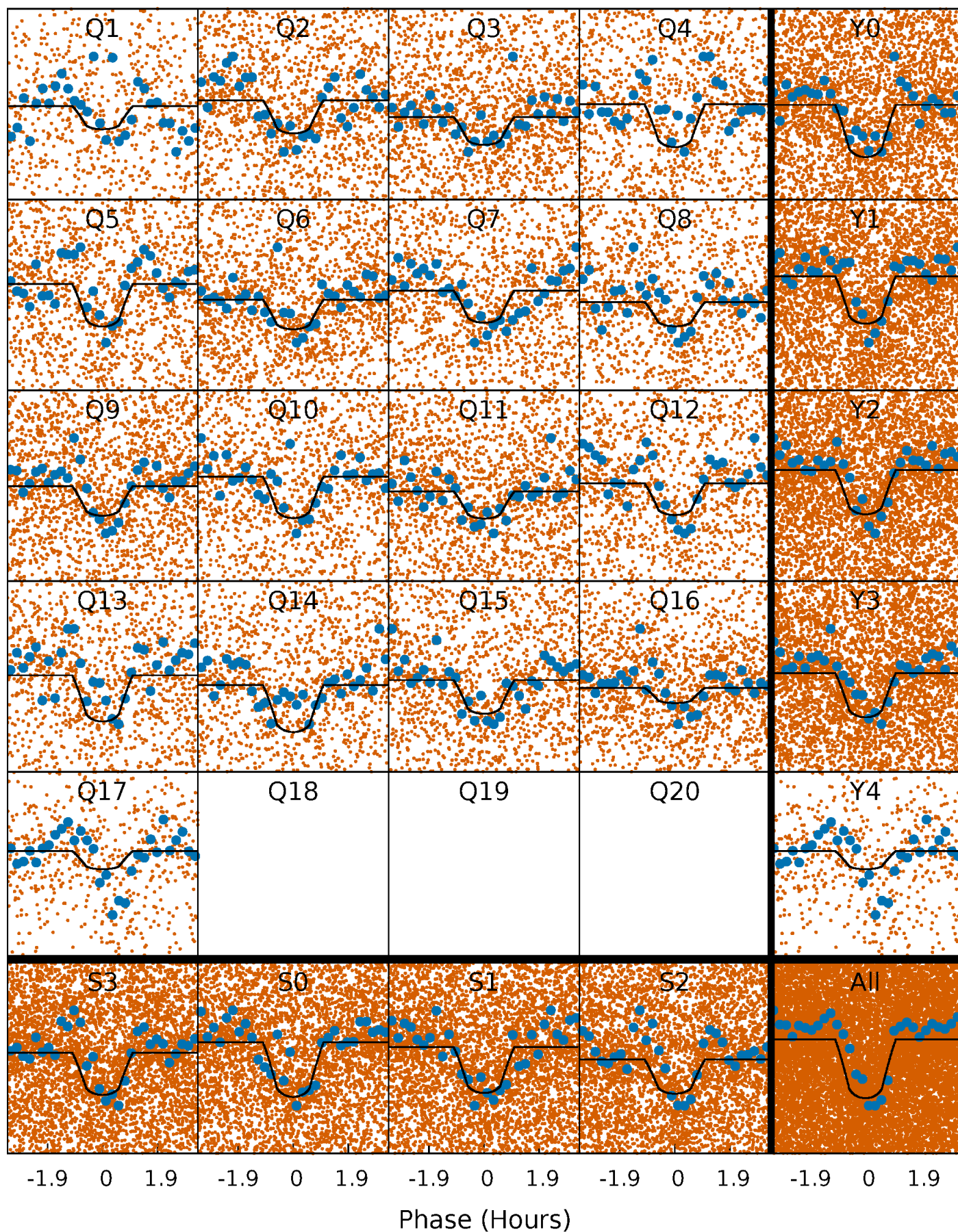
TCE 006057684-01 P= 0.540286 Days  $T_0=131.847447$  (BKJD)





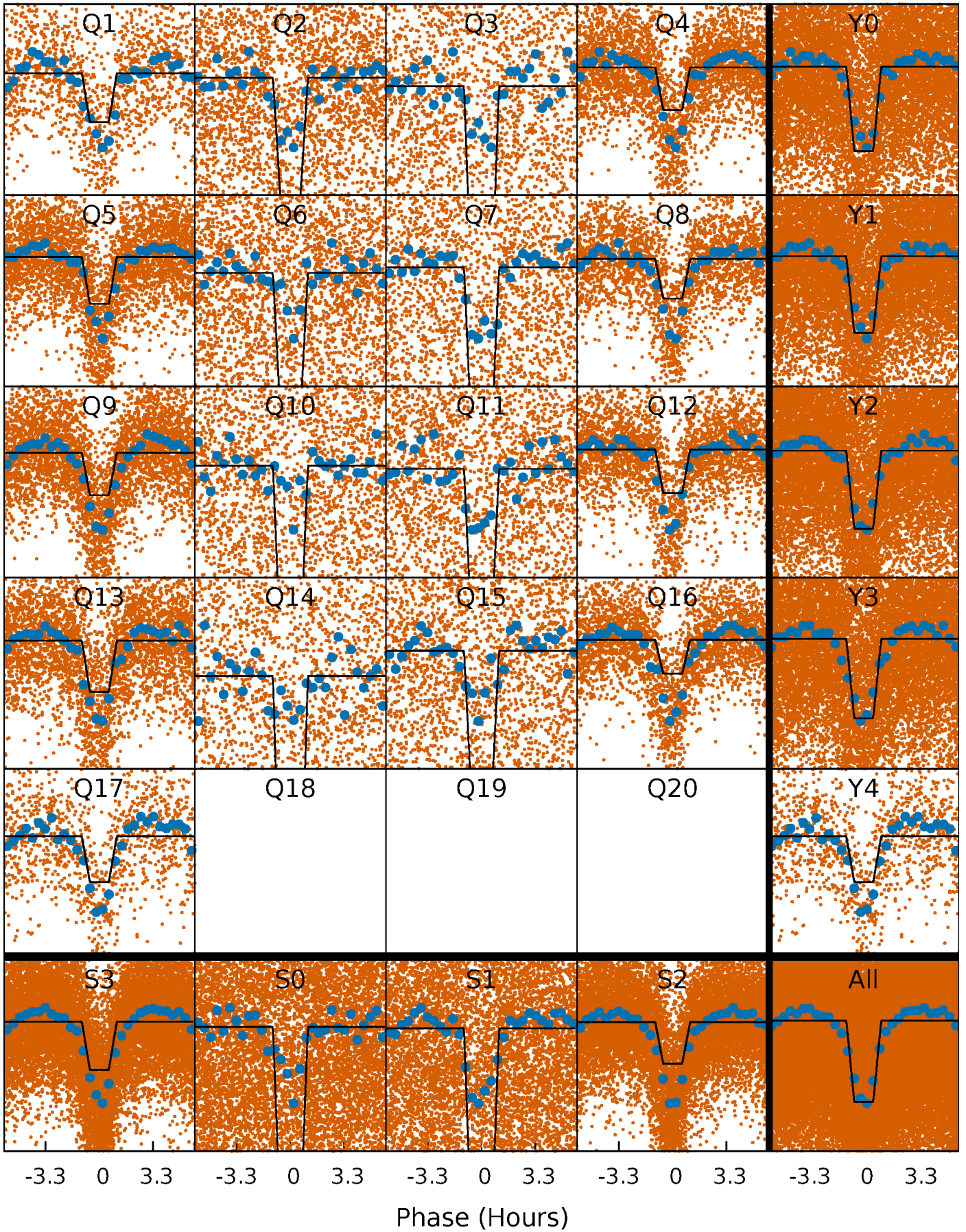
# DV Quarter-Phased Transit Curves

TCE 006057684-01 P= 0.540286 Days  $T_0=131.847447$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 006057684-01 P= 0.540293 Days  $T_0=131.845545$  (BKJD)

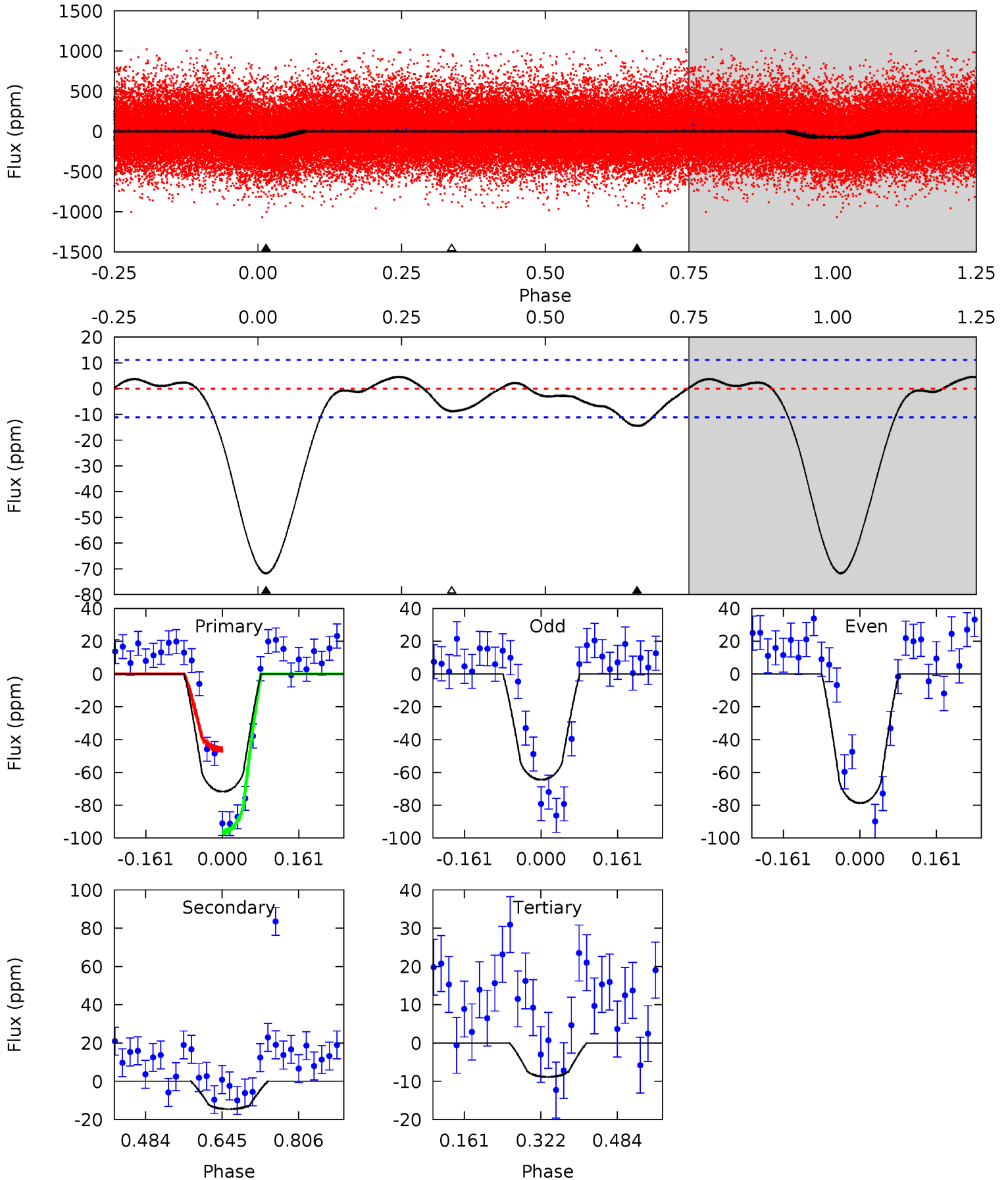




# DV Model-Shift Uniqueness Test

006057684-01, P = 0.540286 Days, E = 131.307161 Days

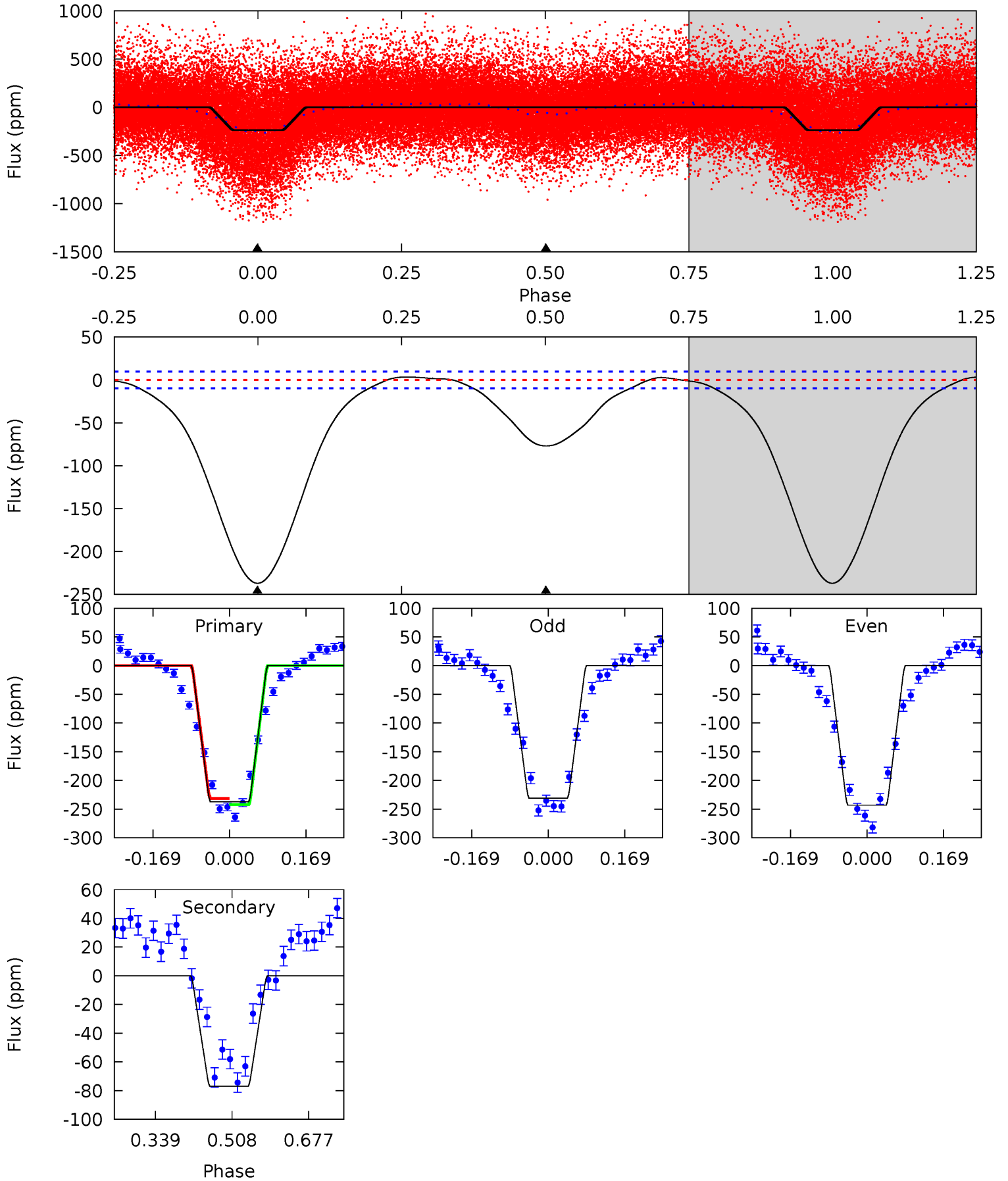
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.7	5.81	3.54	0	4.46	1.40	1.61	25.2	28.7	2.27	5.81	2.86	0.86	0.06	10.1



# Alt Model-Shift Uniqueness Test

006057684-01, P = 0.540293 Days, E = 131.305252 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
109.9	35.7	0	0	4.45	1.37	3.29	109.9	109.9	35.7	35.7	2.84	1.07	0.01	2.50



### Stellar Parameters For KIC 006057684

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5997^{+169}_{-211}$	$4.483^{+0.056}_{-0.224}$	$0.070^{+0.250}_{-0.300}$	$0.993^{+0.333}_{-0.089}$	$1.093^{+0.134}_{-0.147}$	$1.574^{+0.353}_{-0.874}$
	+3%/-4%	+1%/-5%	+357%/-429%	+34%/-9%	+12%/-13%	+22%/-56%
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 006057684-01 / KOI 3972.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-15 \pm 2$	$0.97^{+0.30}_{-0.22}$	$3254^{+241}_{-161}$	$4061^{+499}_{-445}$	$1.466^{+1.067}_{-0.616}$
Alt.	$-77 \pm 2$	$1.80^{+0.33}_{-0.26}$	$3249^{+260}_{-174}$	$4461^{+308}_{-251}$	$2.294^{+0.827}_{-0.659}$

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



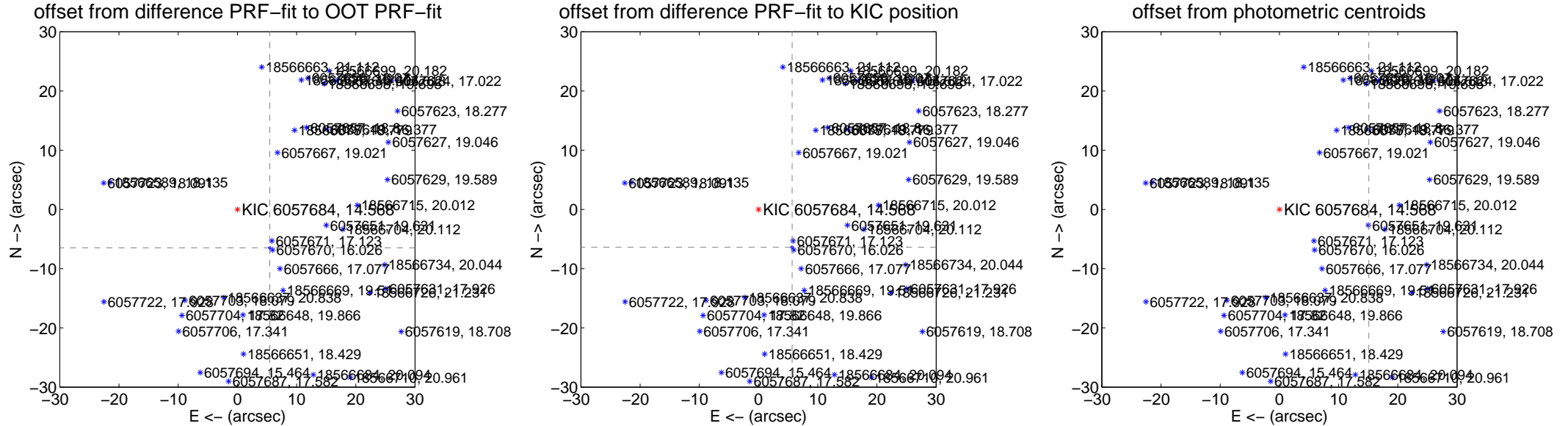
## DV Centroid Data

Supplemental centroid analysis for 006057684-01. Kepler magnitude: 14.57. Transit SNR 19.86

There are 17 quarters with good PRF difference image offsets

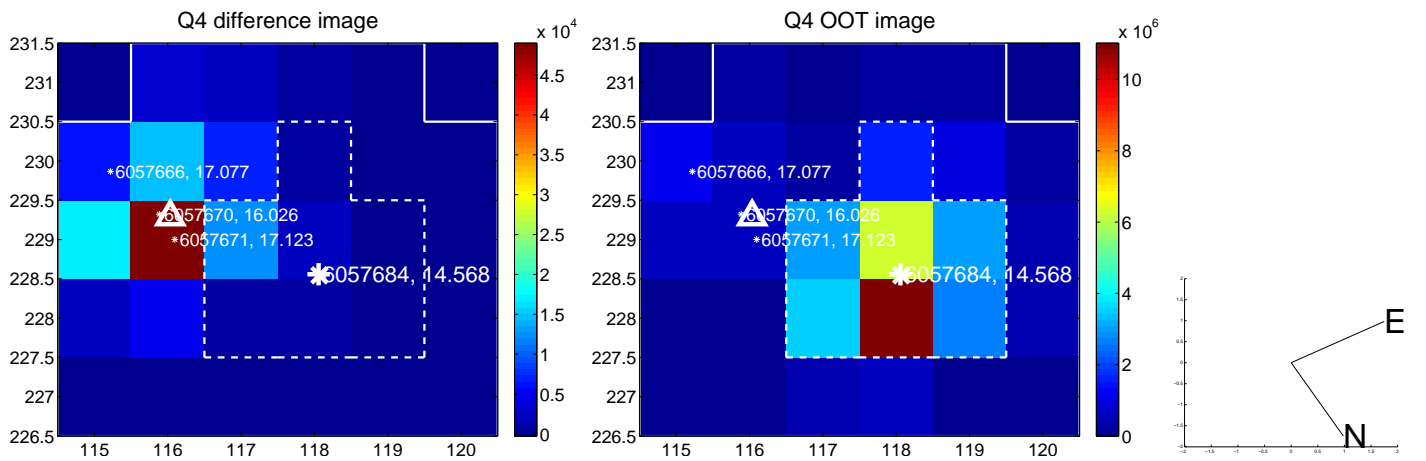
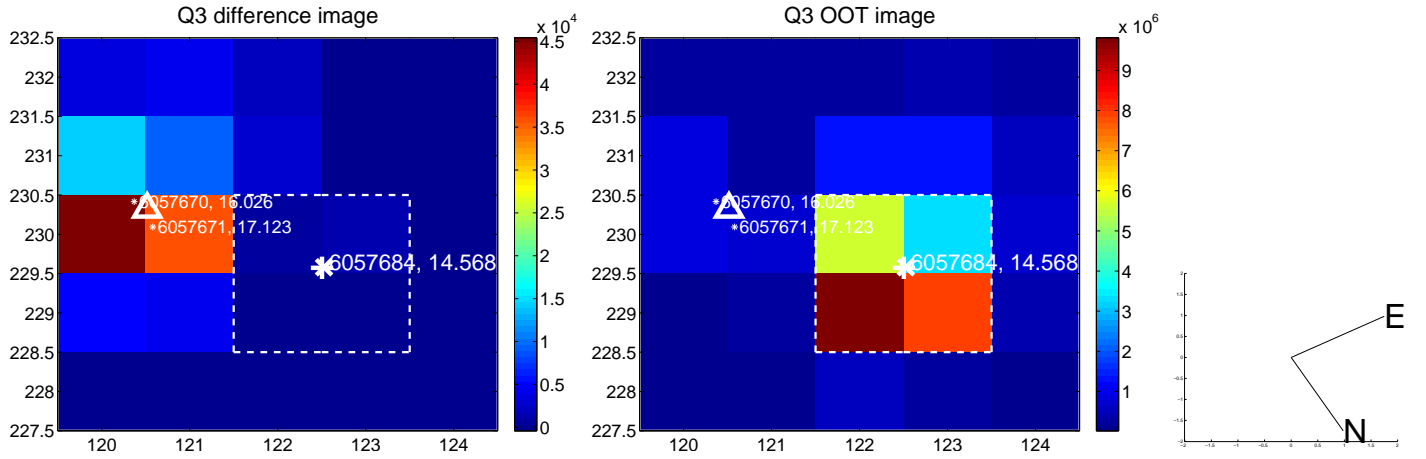
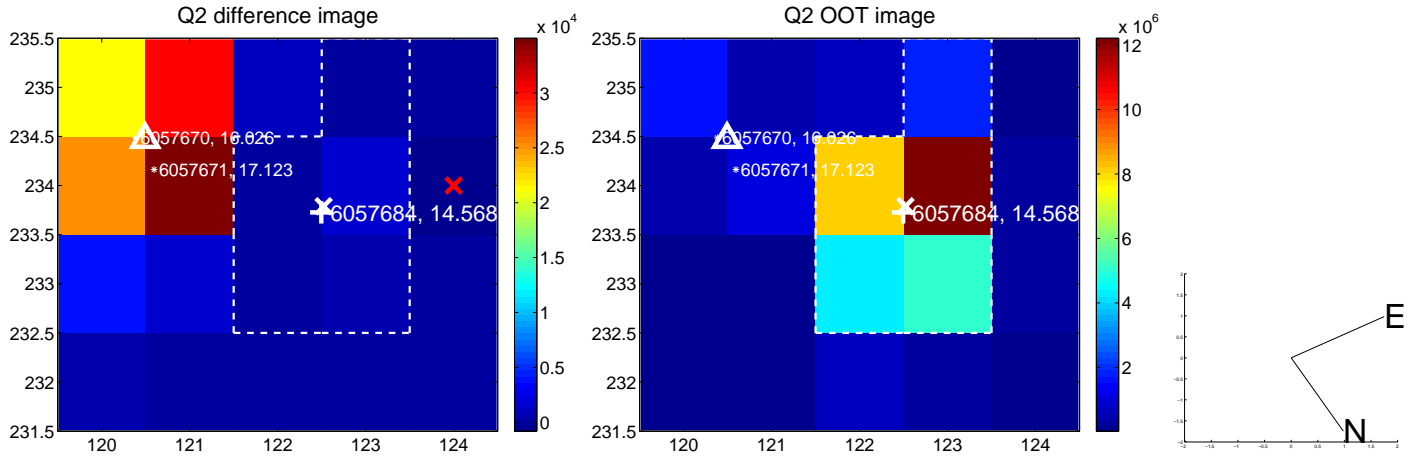
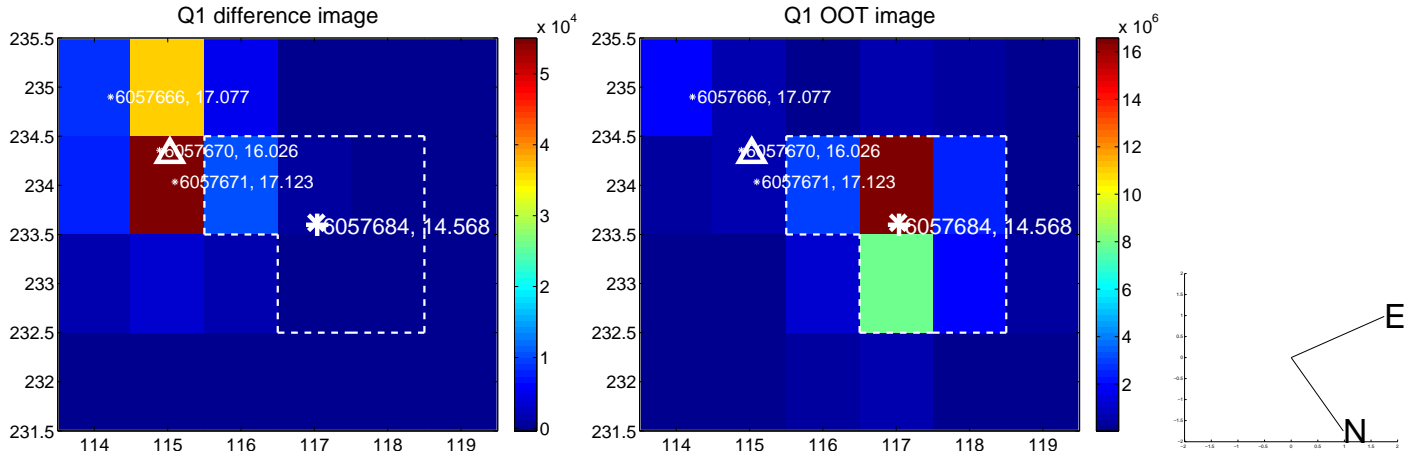
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$8.491 \pm 0.068$	124.89	$-5.479 \pm 0.068$	$-6.486 \pm 0.068$
PRF-fit source offset from KIC position	$8.538 \pm 0.071$	120.74	$-5.665 \pm 0.072$	$-6.388 \pm 0.069$
photometric centroid source offset	$74.97 \pm 0.77$	97.65	$-15.09 \pm 0.60$	$-73.44 \pm 0.77$

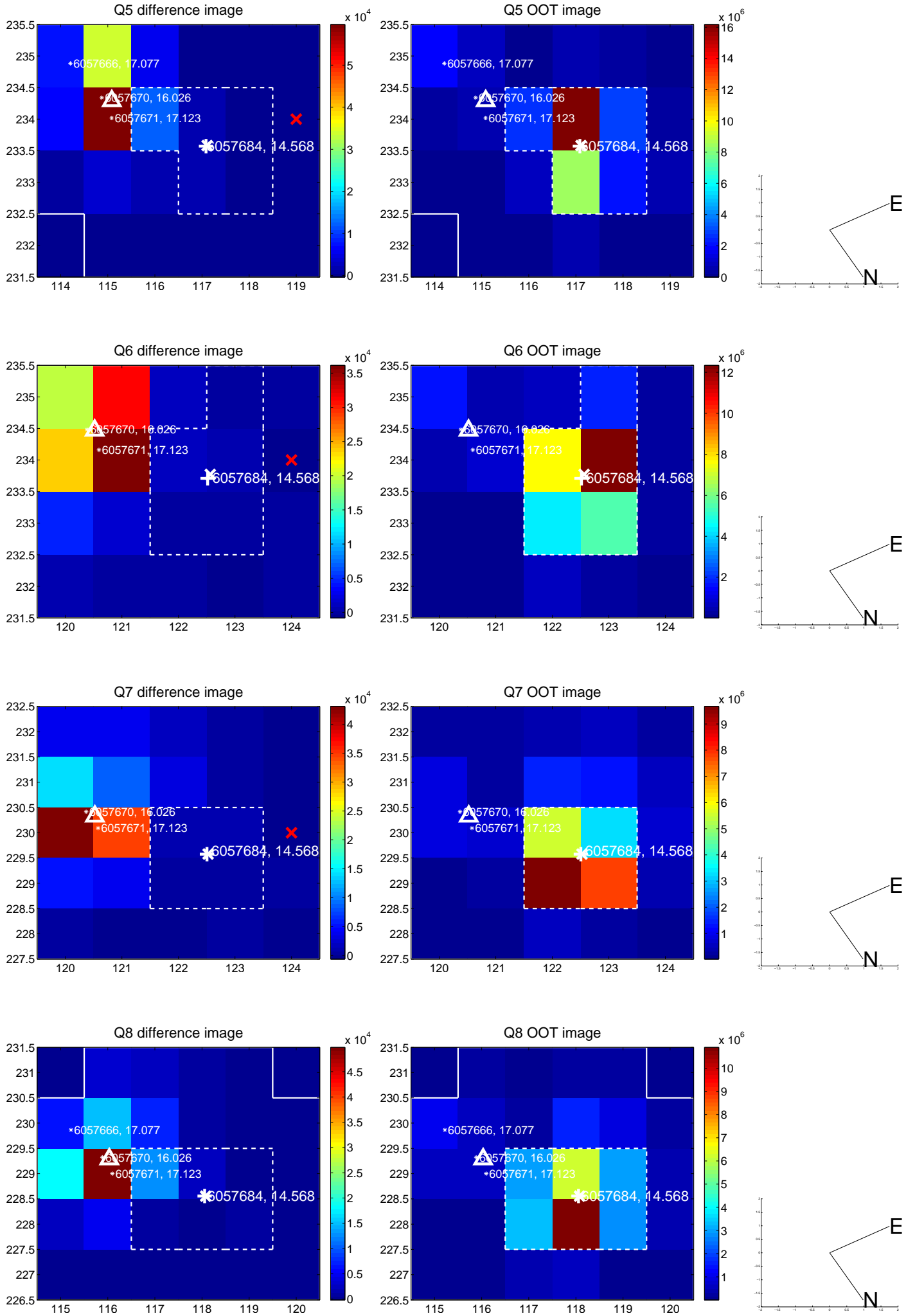


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

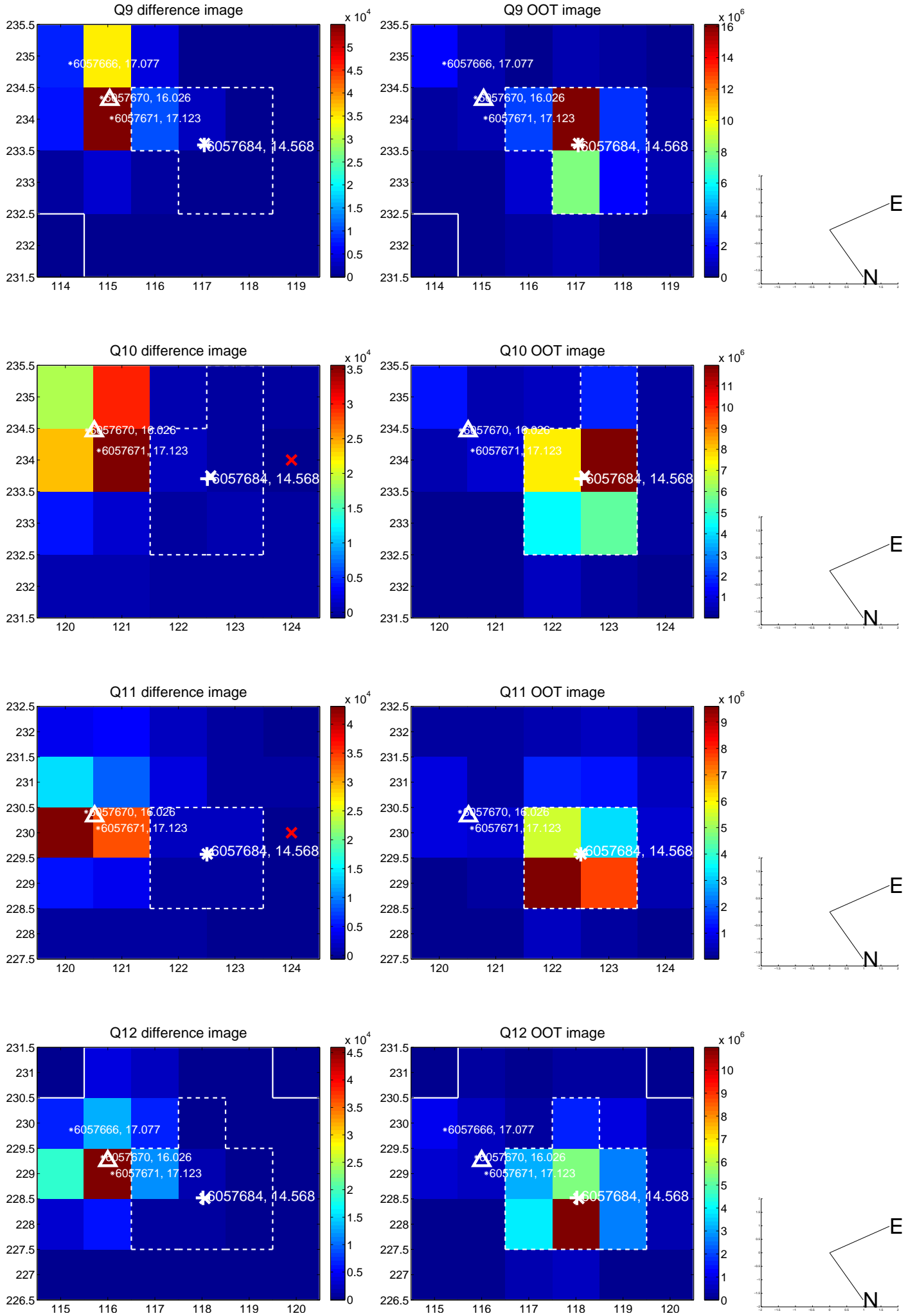
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



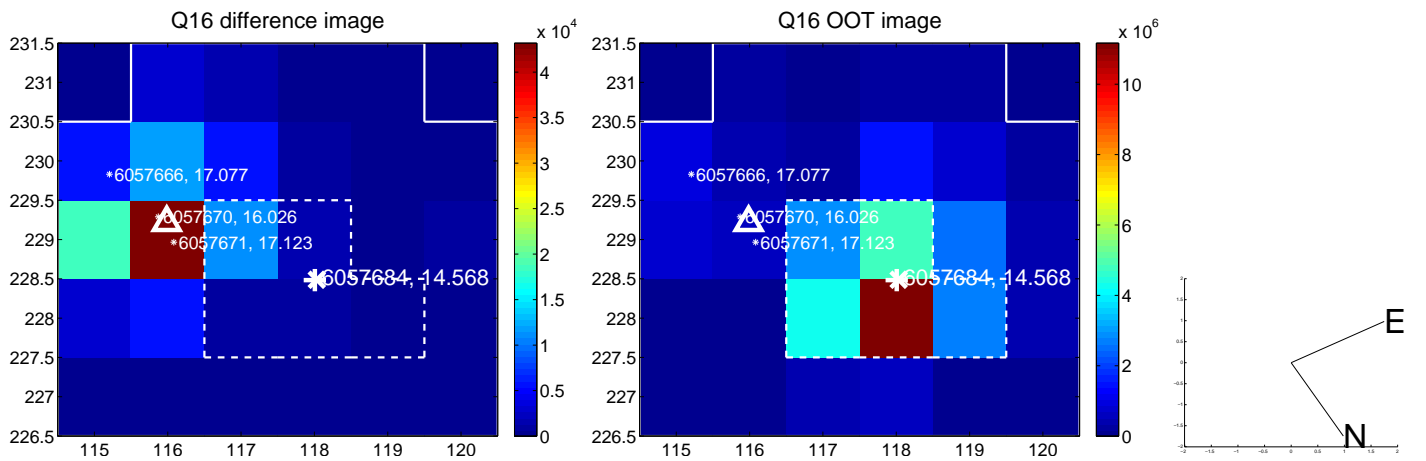
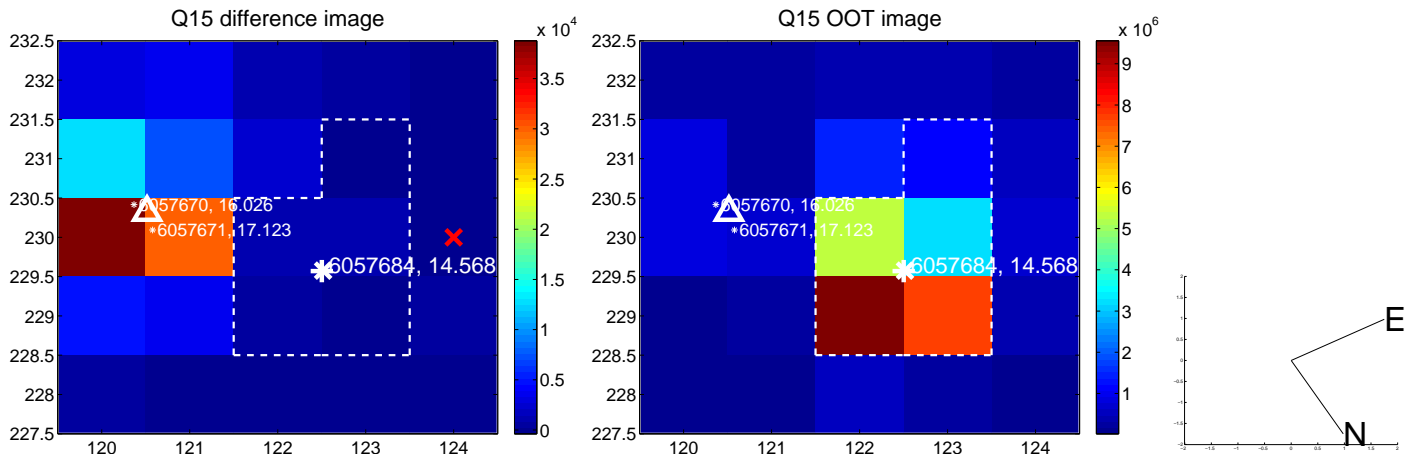
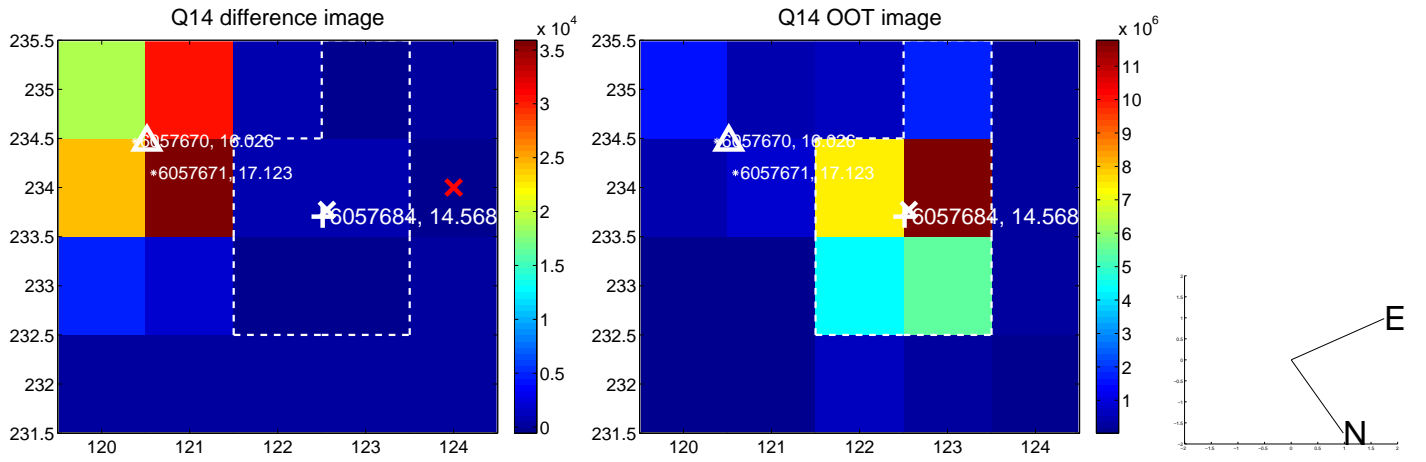
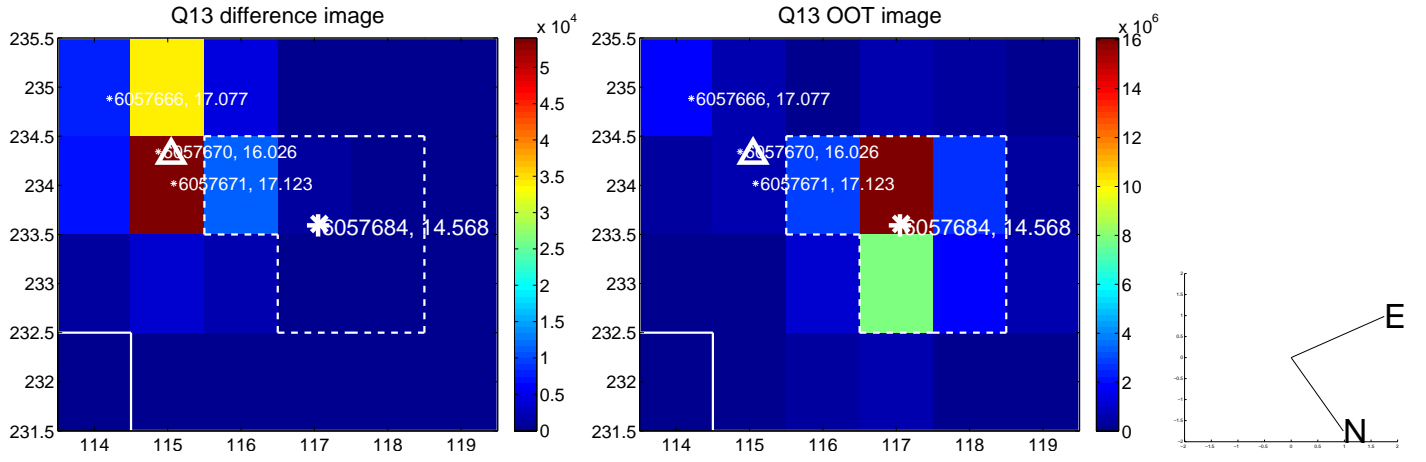
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

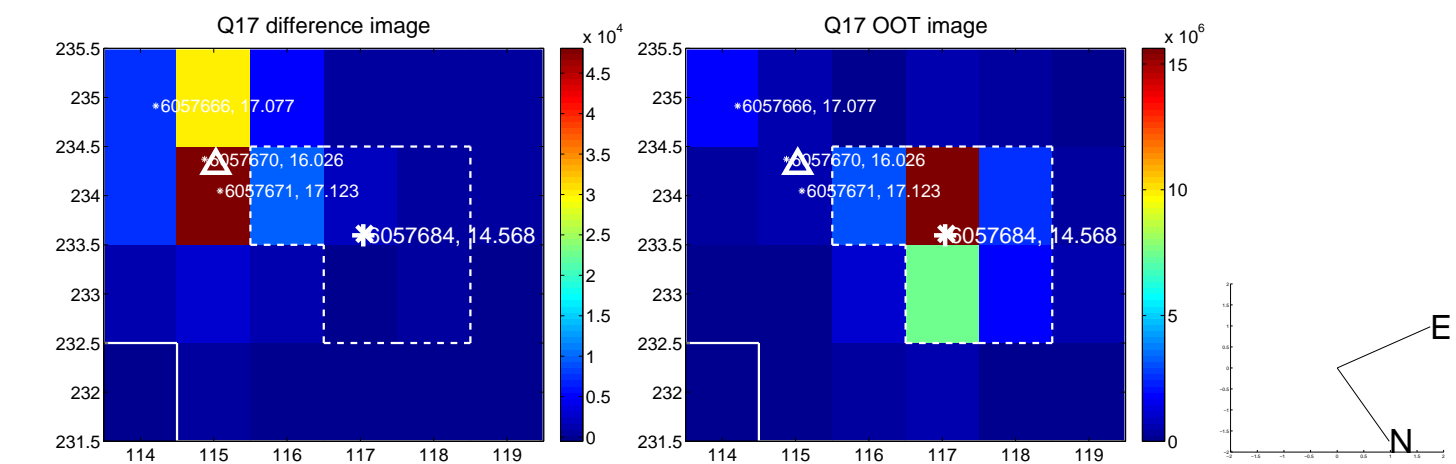


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

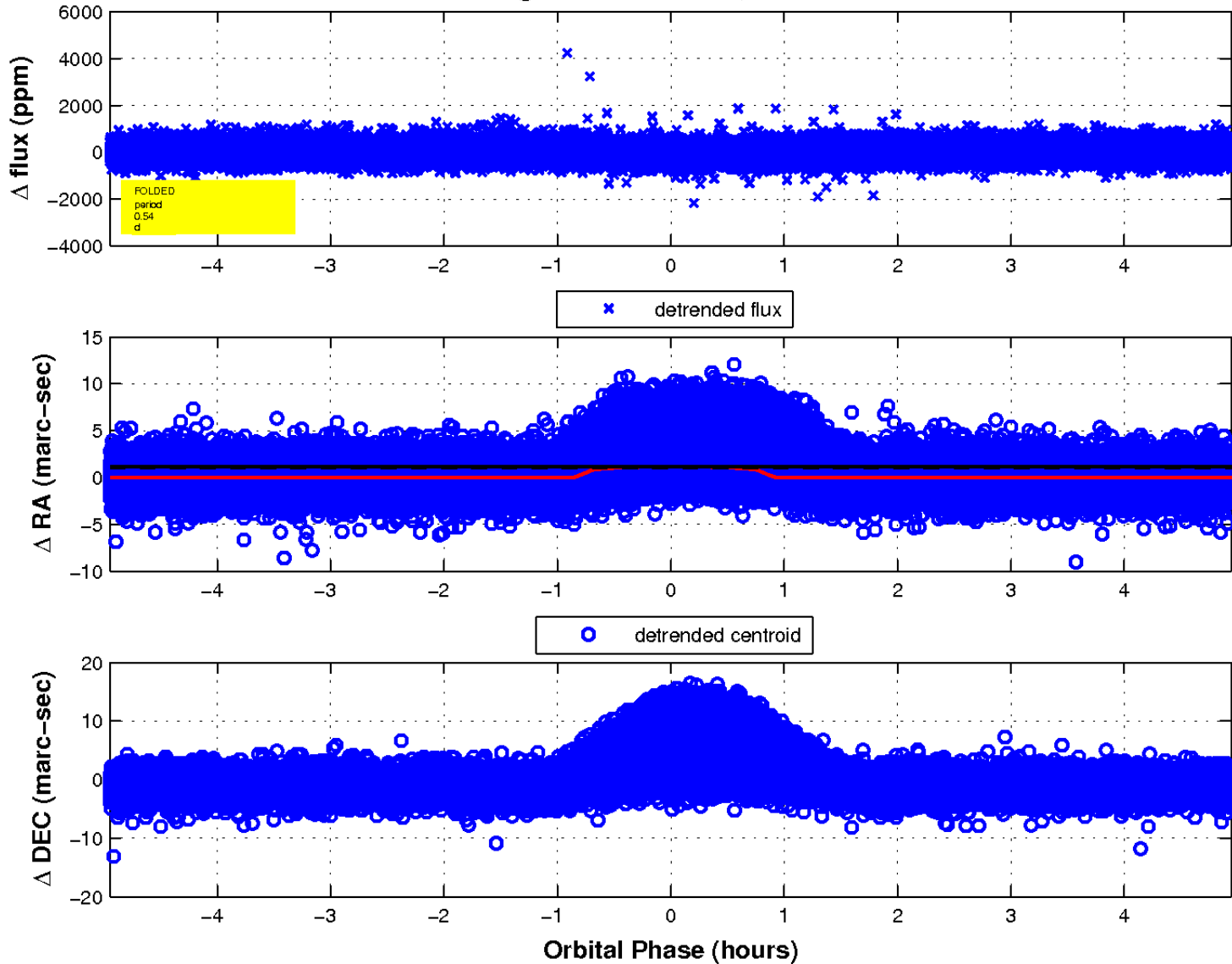




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

