

# KIC 003544678

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003544678-01	OBS	6340.01	6.375937	132.071430	265.7	2.477	9.1	10.1	0.85	5818	1.55	169.90

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003544678-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—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.

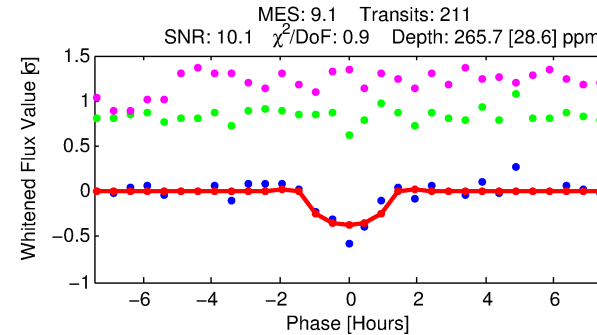
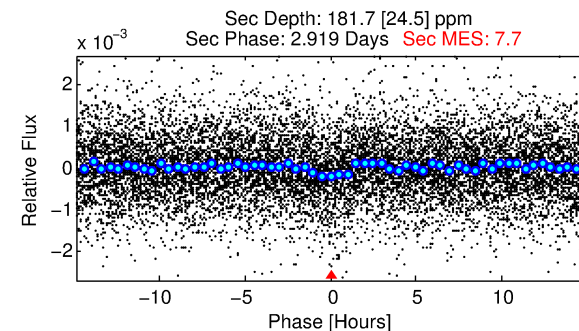
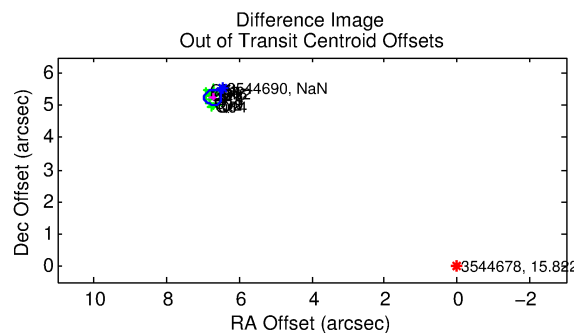
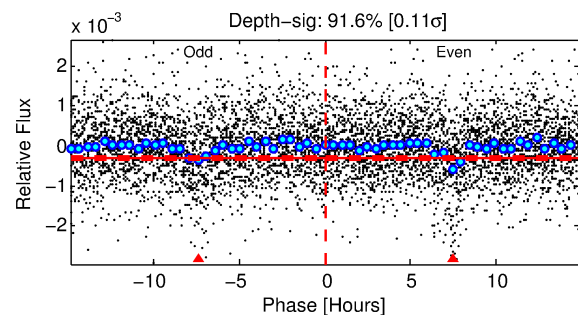
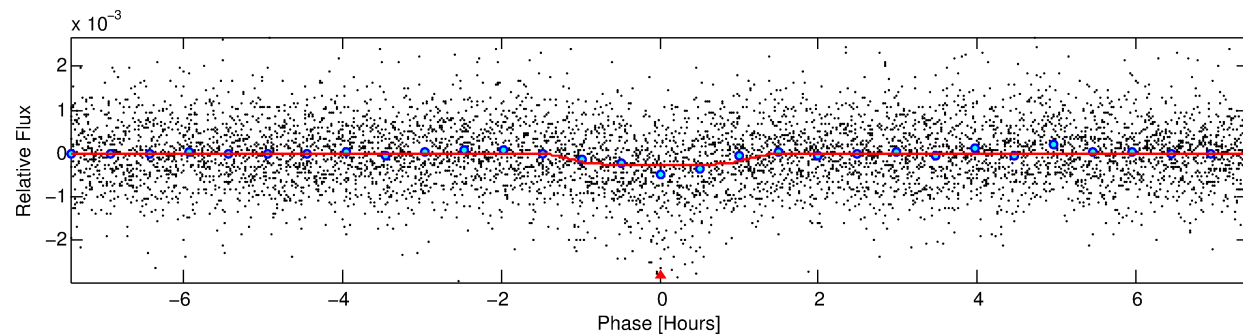
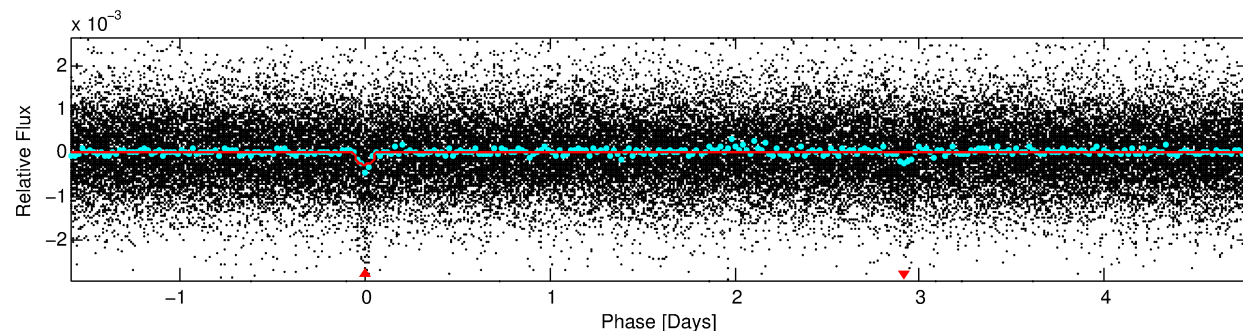
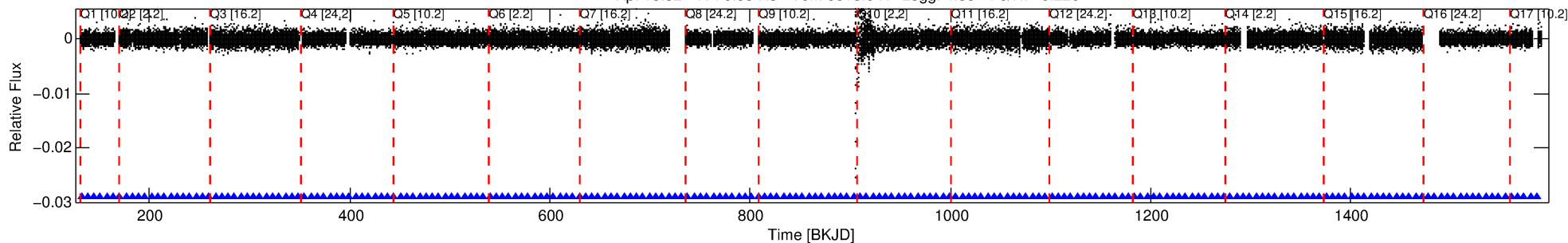
## Ephemeris Match Information For 003544678-01

No Significant Match Found

# DV One-Page Summary

KIC: 3544678 Candidate: 1 of 1 Period: 6.376 d  
KOI: K06340 Corr: No Ephemeris Match

Kp: 15.82 R\*: 0.85 Rs Teff: 5818.0 K Logg: 4.55 Fe/H: -0.220



## DV Fit Results:

Period = 6.37594 [0.00004] d  
Epoch = 132.0714 [0.0051] BKJD  
Rp/R\* = 0.0168 [0.0154]  
a/R\* = 11.70 [50.47]  
b = 0.83 [1.70]  
Seff = 169.90 [53.55]  
Teq = 921 [73] K  
Rp = 1.55 [1.47] Re  
a = 0.0659 [0.0132] AU  
Ag = 179.78 [335.10] [0.53σ]  
Teffp = 5212 [2404] K [1.78σ]

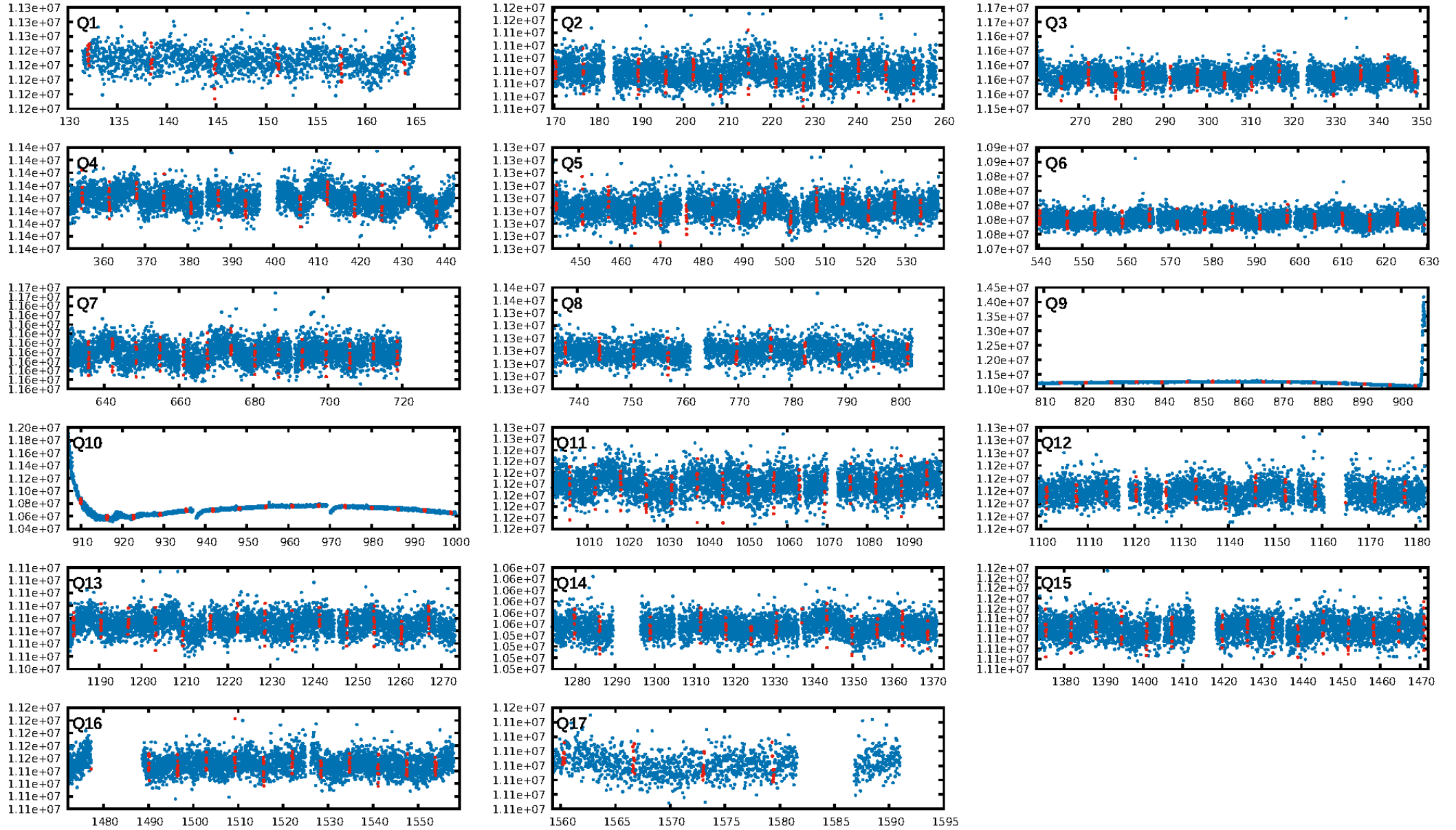
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.27e-19  
RollingBand-fgt: 1.00 [201/201]  
GhostDiagnostic-chr: -0.2478  
Centroid-sig: 0.0%  
Centroid-so: 35.623 arcsec [22.96σ]  
OotOffset-rm: 8.524 arcsec [108.29σ]  
KicOffset-rm: 8.540 arcsec [104.08σ]  
OotOffset-st: 4/4/4/4 [16]  
KicOffset-st: 4/4/4/4 [16]  
DiffImageQuality-fgm: 1.00 [16/16]  
DiffImageOverlap-fno: 1.00 [17/17]

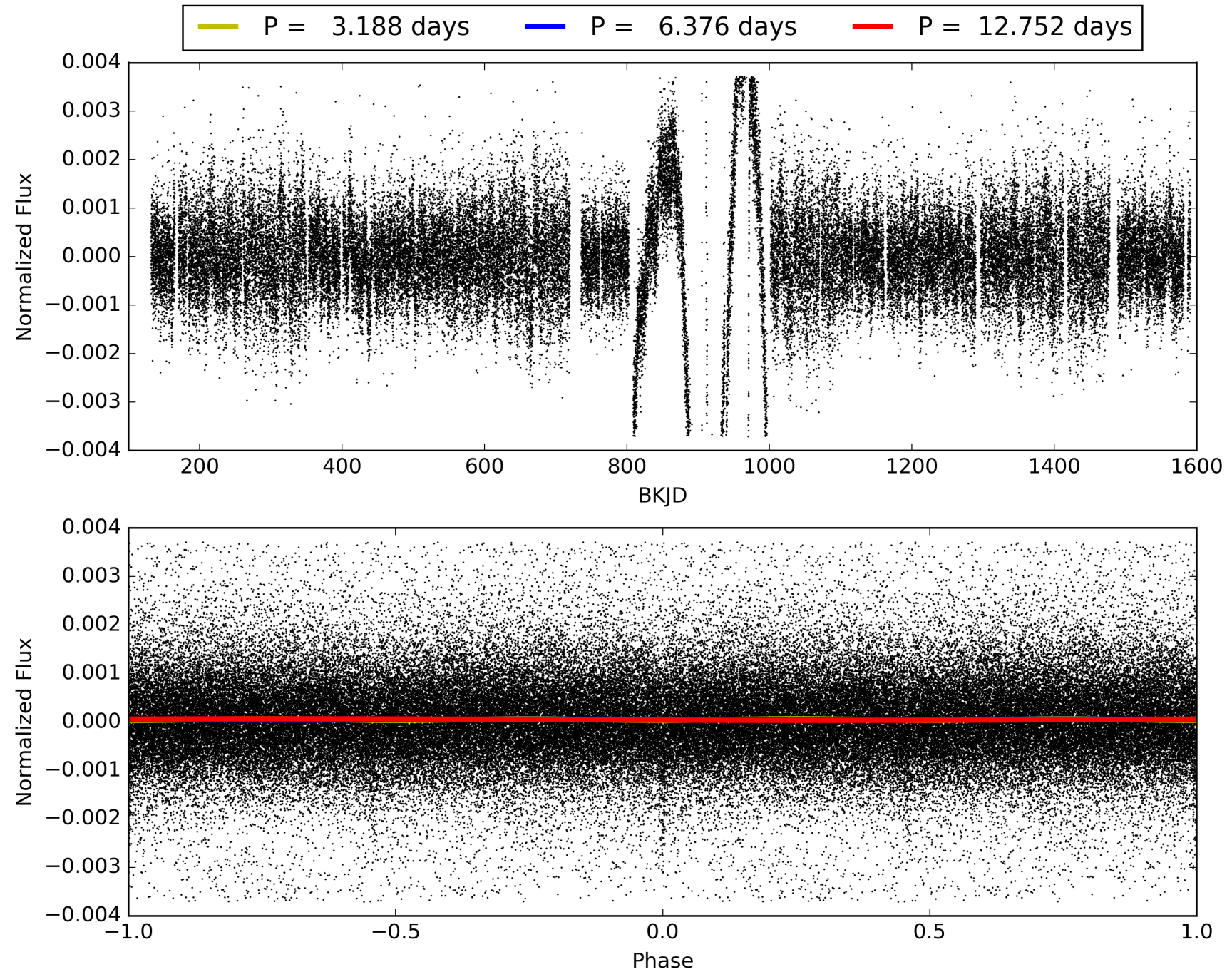
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 03:21:01 Z

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

# TCE 003544678-01, PDC Light Curves

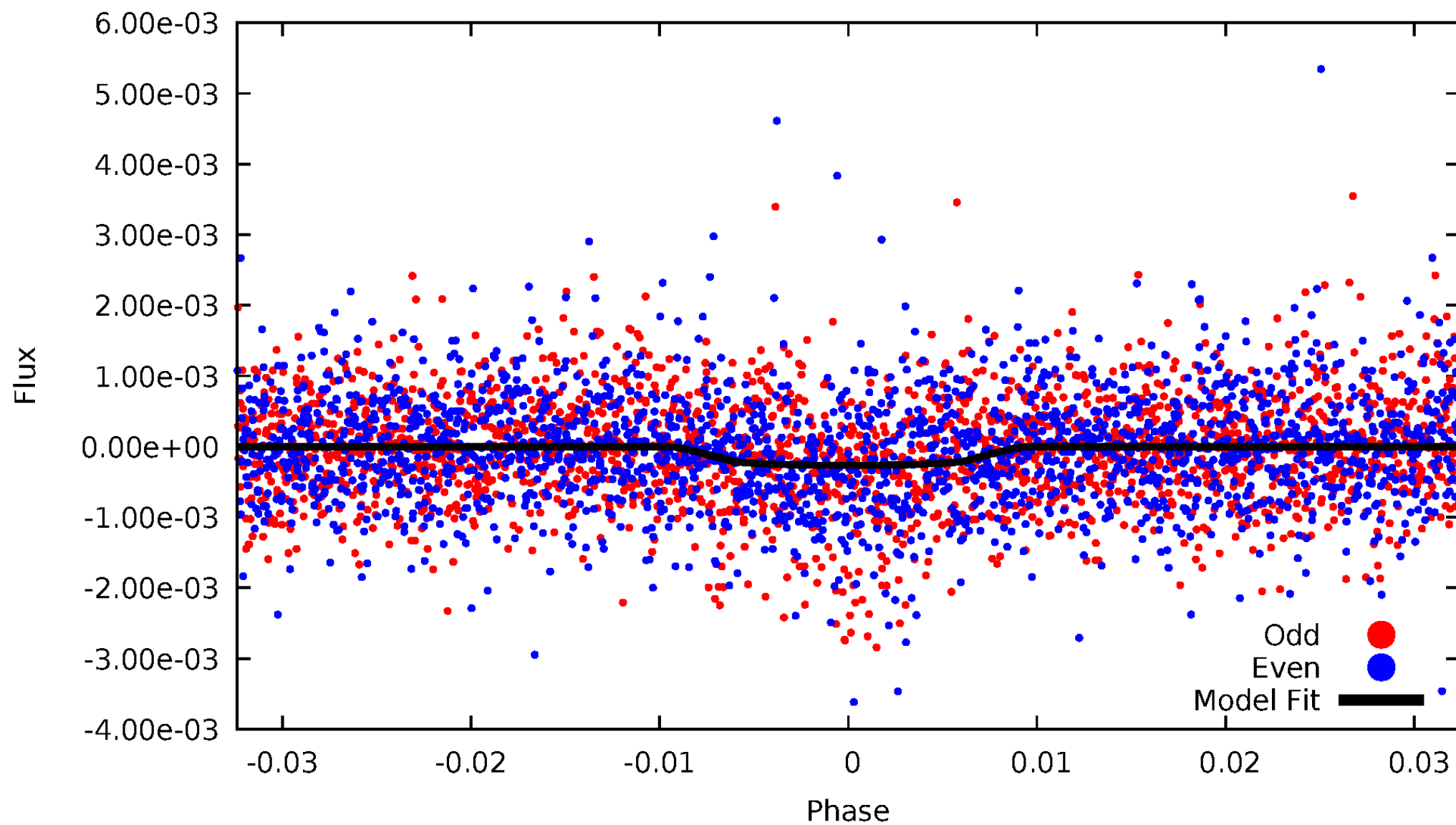


TCE 003544678-01



# DV Odd/Even

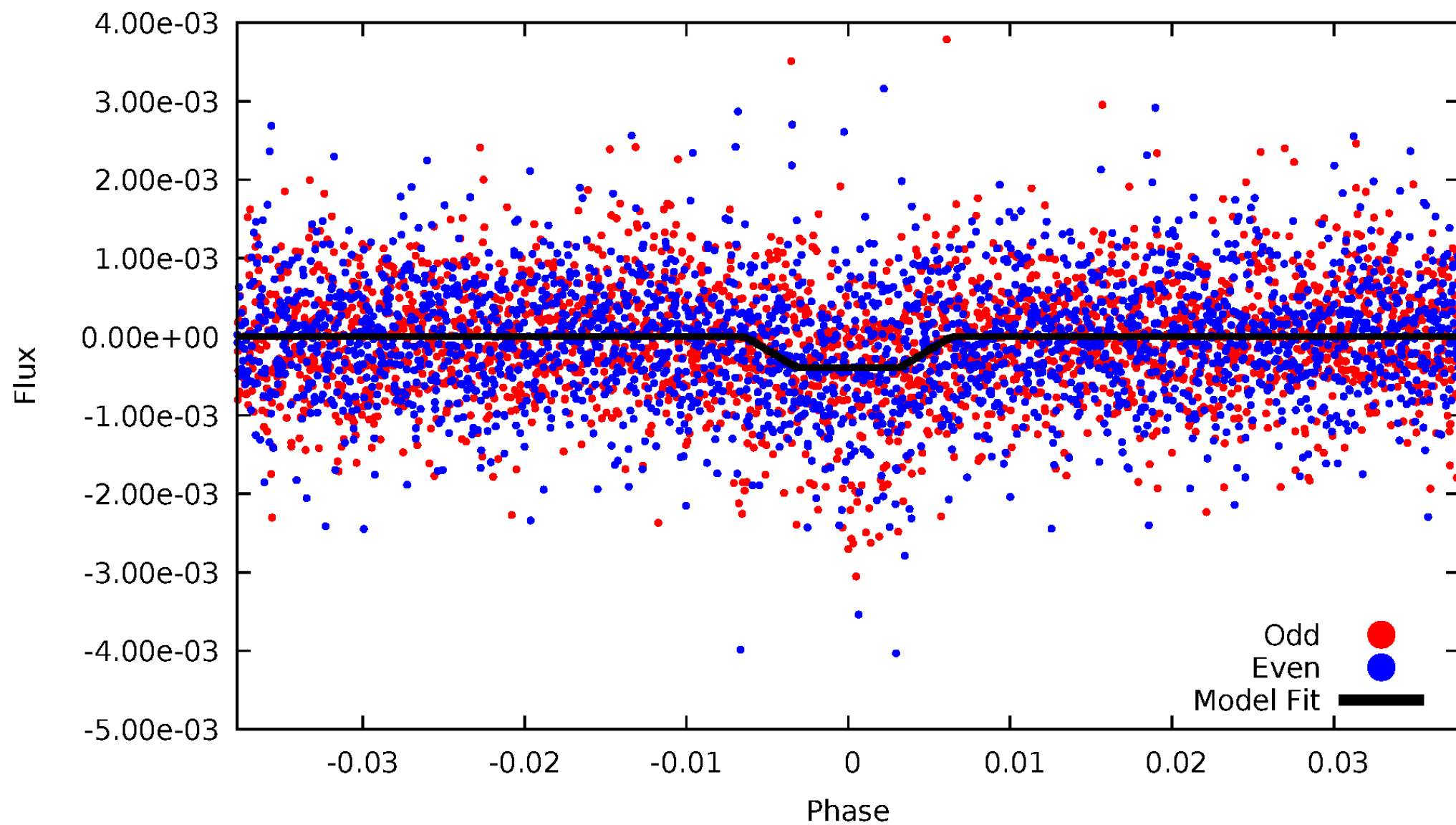
TCE 003544678-01





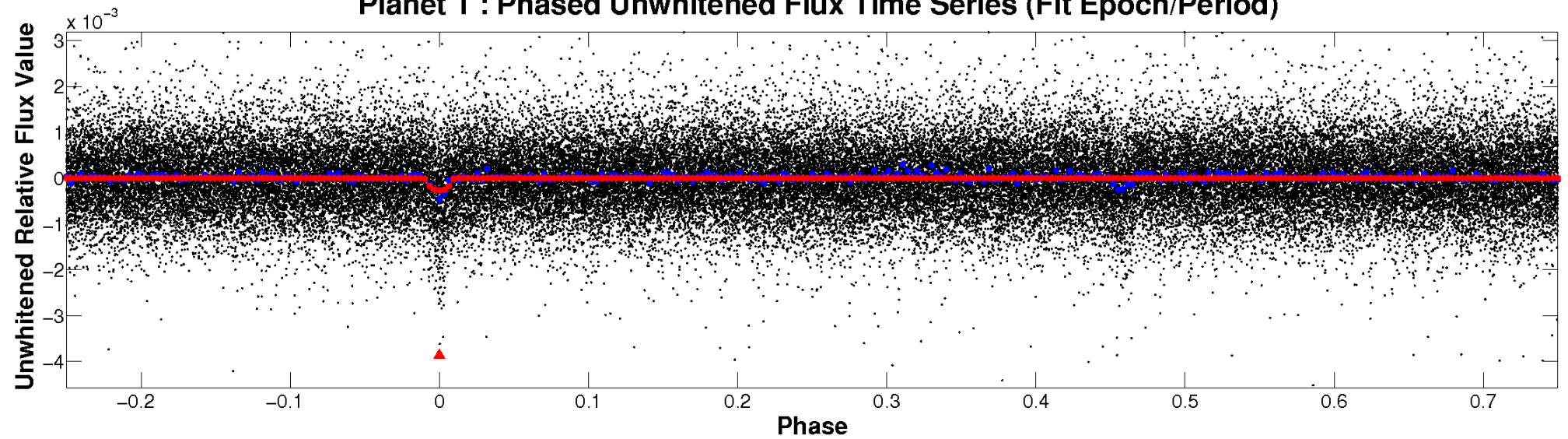
# ALT Odd/Even

TCE 003544678-01

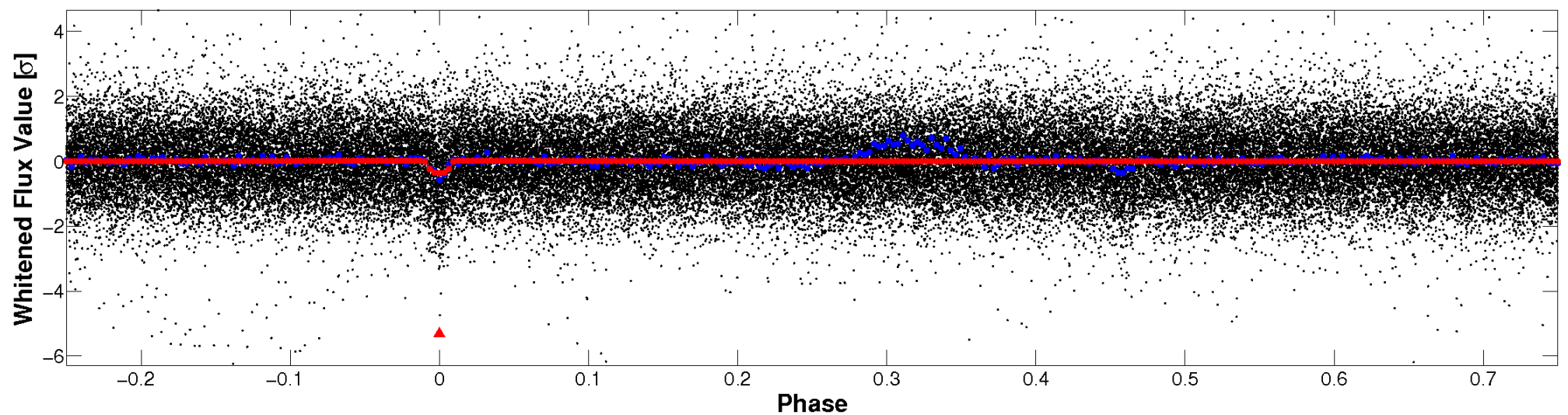


# Non-Whitened Vs. Whitened Light Curve

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

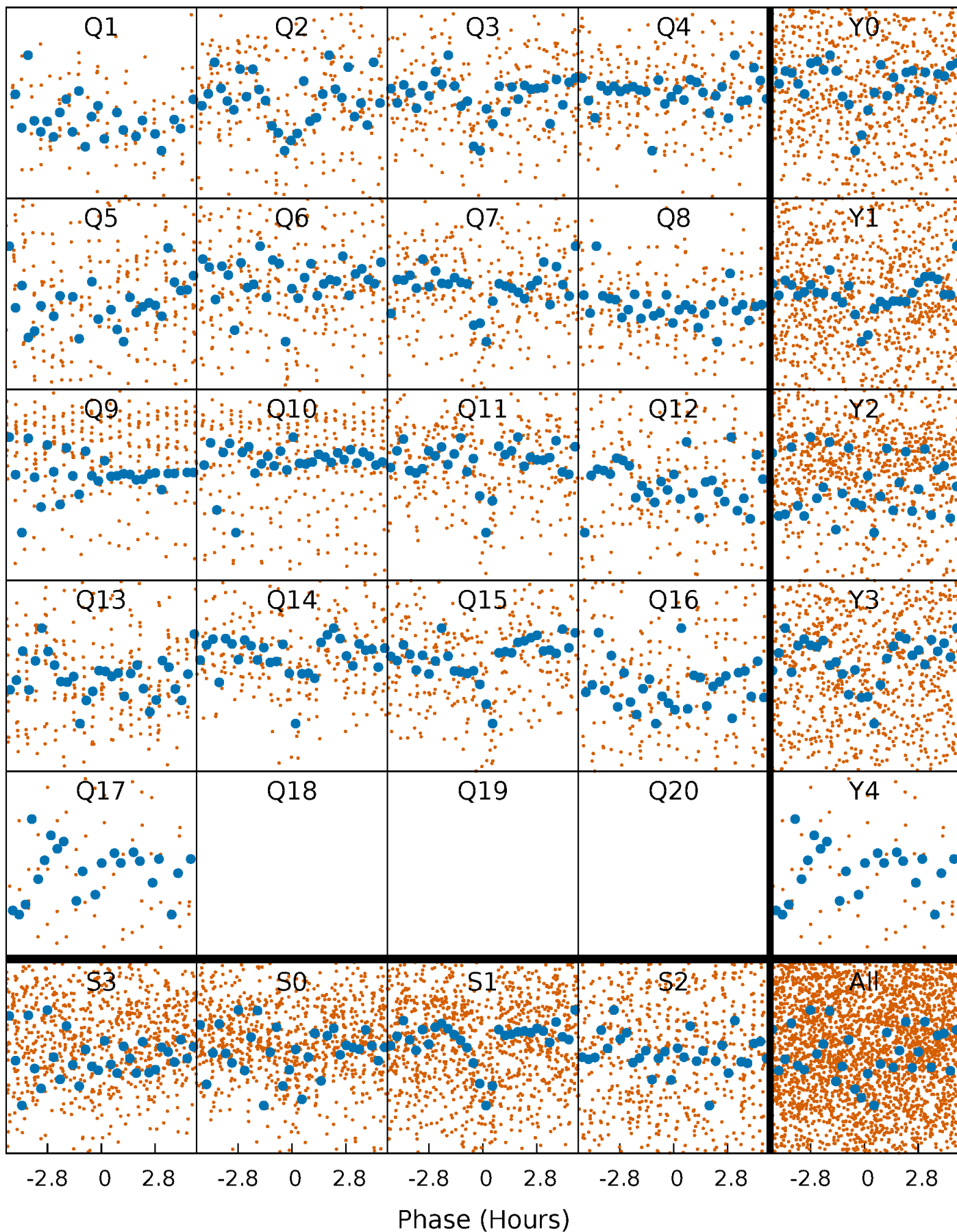


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

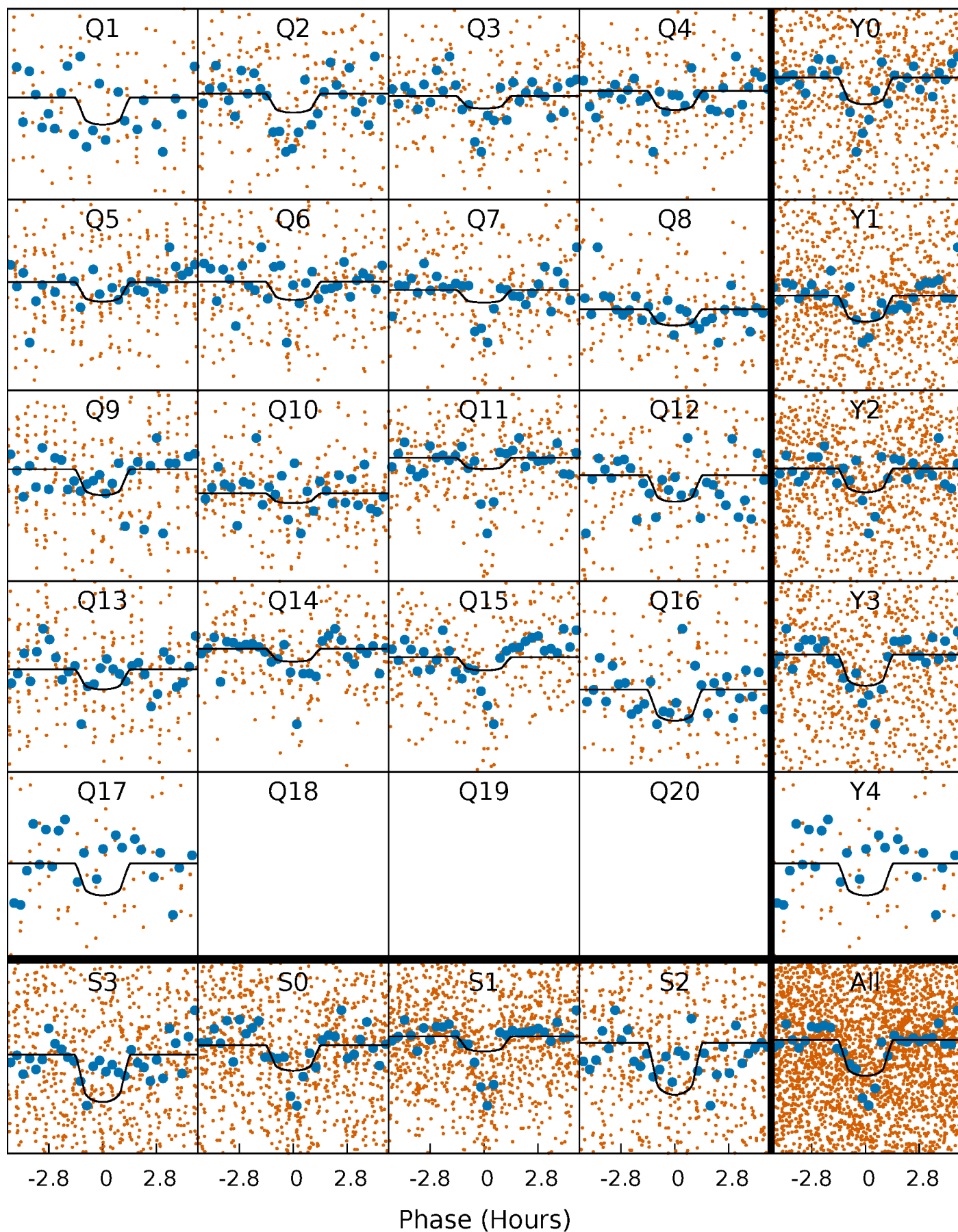
TCE 003544678-01 P= 6.375937 Days  $T_0=132.071430$  (BKJD)





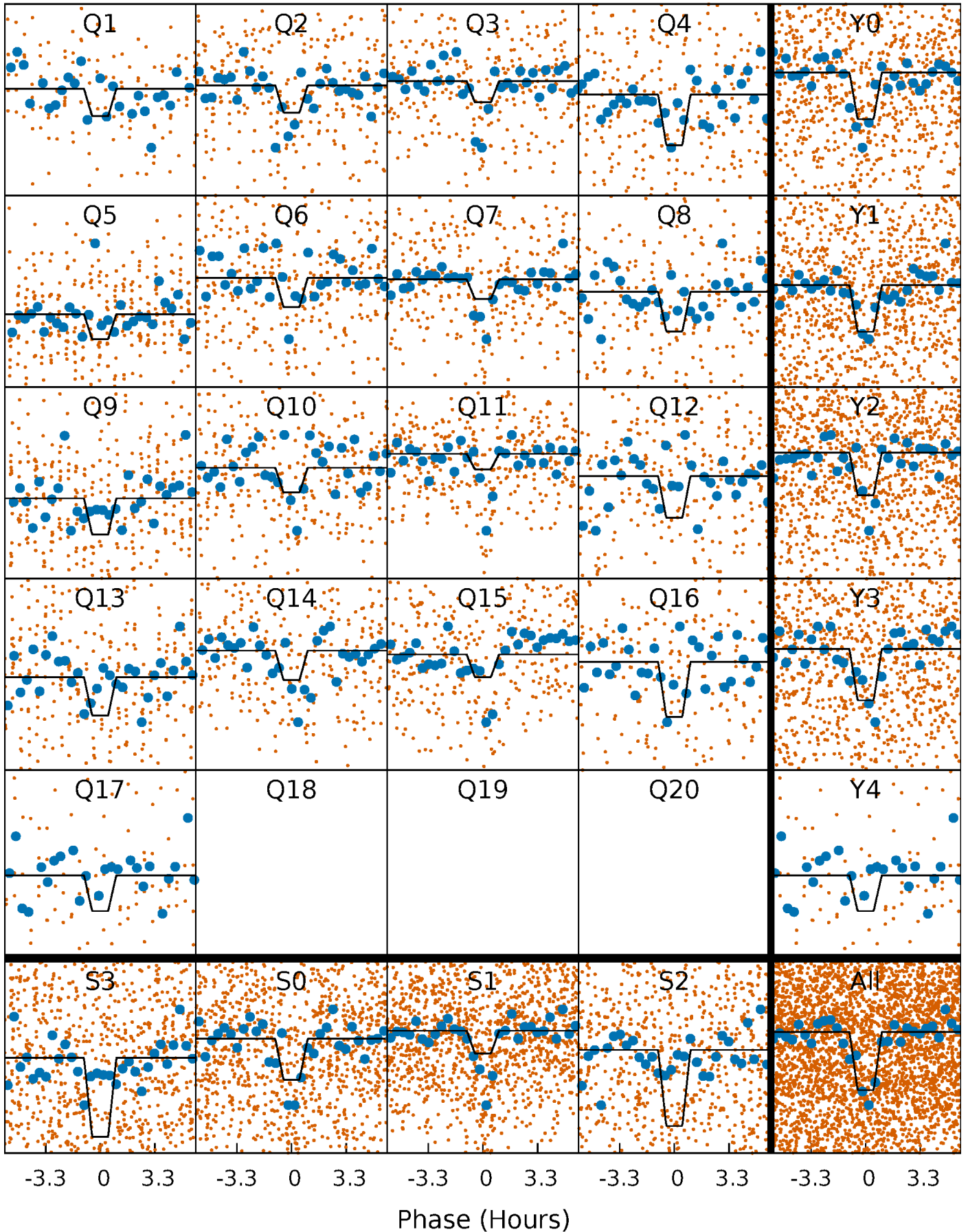
# DV Quarter-Phased Transit Curves

TCE 003544678-01 P= 6.375937 Days  $T_0=132.071430$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

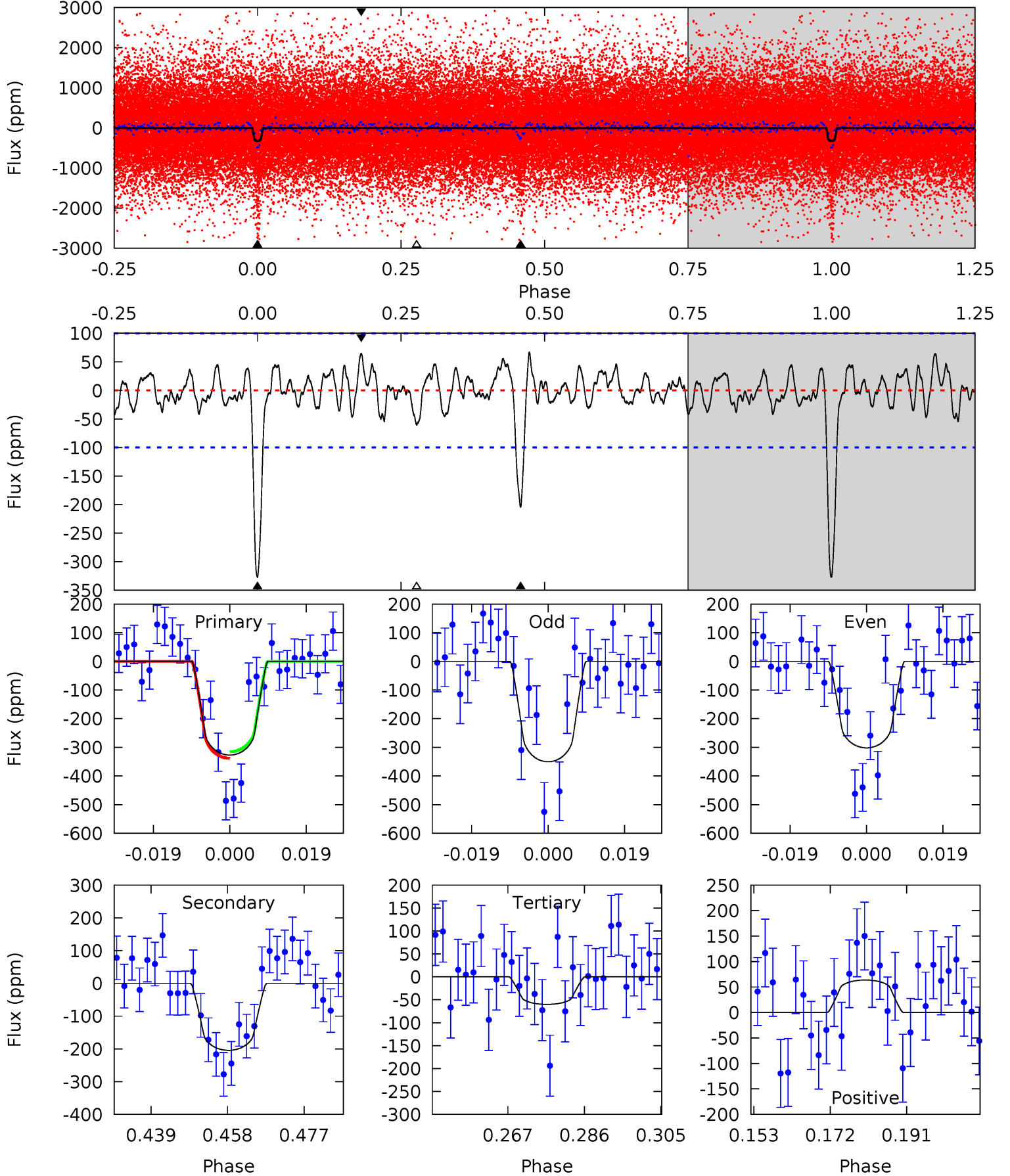
TCE 003544678-01 P= 6.375929 Days  $T_0=132.070278$  (BKJD)



# DV Model-Shift Uniqueness Test

003544678-01, P = 6.375937 Days, E = 125.695493 Days

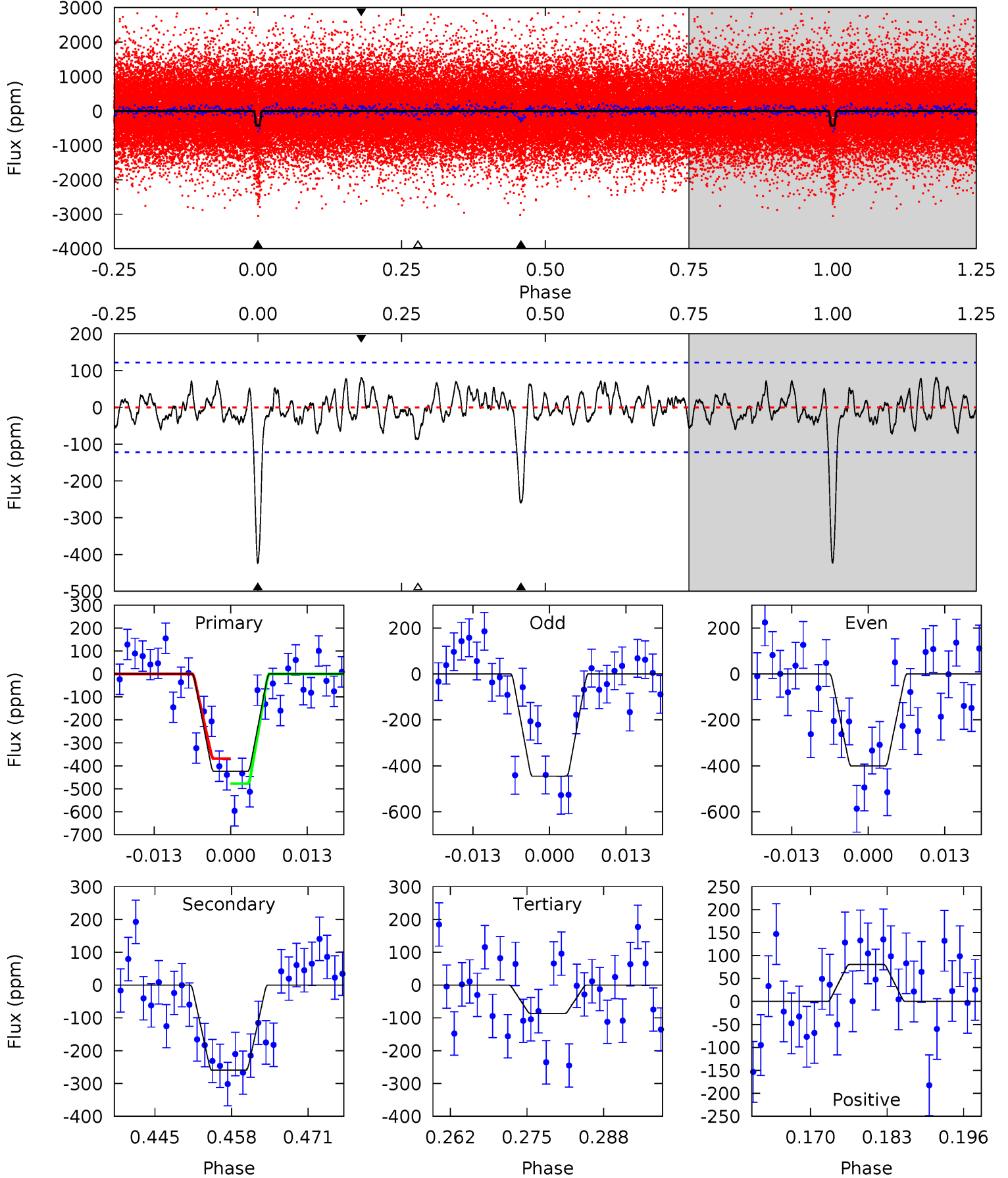
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.1	10.0	2.95	3.13	4.90	2.34	1.15	13.1	12.9	7.08	6.91	1.19	1.03	0.17	0.56



# Alt Model-Shift Uniqueness Test

003544678-01, P = 6.375929 Days, E = 125.694349 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	10.6	3.55	3.29	4.97	2.48	1.28	13.8	14.0	7.05	7.31	0.91	1.26	0.16	2.22



### Stellar Parameters For KIC 003544678

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5818^{+145}_{-174}$	$4.554^{+0.040}_{-0.160}$	$-0.220^{+0.300}_{-0.300}$	$0.848^{+0.200}_{-0.071}$	$0.937^{+0.101}_{-0.111}$	$2.166^{+0.449}_{-0.931}$
	+2%/-3%	+1%/-4%	+136%/-136%	+24%/-8%	+11%/-12%	+21%/-43%
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 003544678-01 / KOI 6340.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-204 \pm 20$	$1.91^{+1.34}_{-1.23}$	$1311^{+69}_{-55}$	$5003^{+3633}_{-942}$	$133^{+908}_{-88}$
Alt.	$-259 \pm 24$	$2.10^{+1.32}_{-1.25}$	$1309^{+80}_{-58}$	$5067^{+3070}_{-906}$	$140^{+725}_{-88}$

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



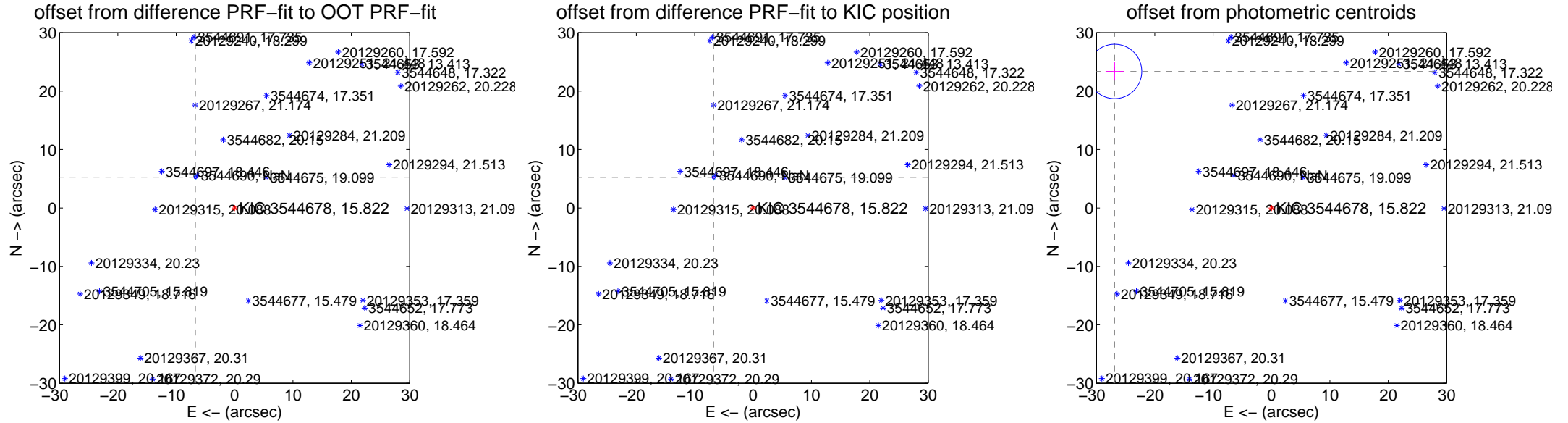
## DV Centroid Data

Supplemental centroid analysis for 003544678-01. Kepler magnitude: 15.82. Transit SNR 10.07

There are 16 quarters with good PRF difference image offsets

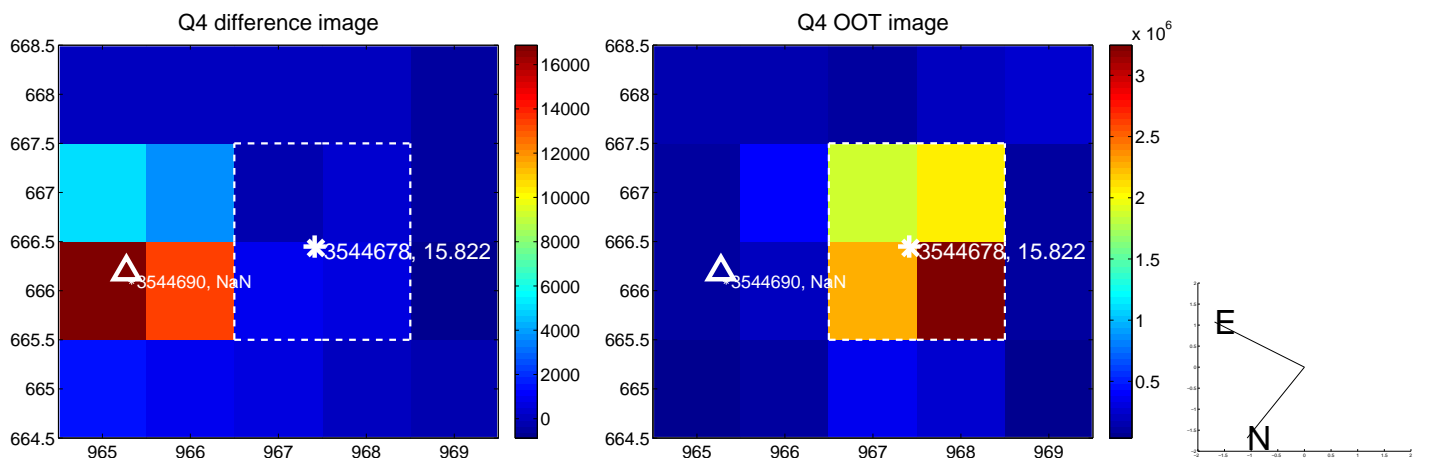
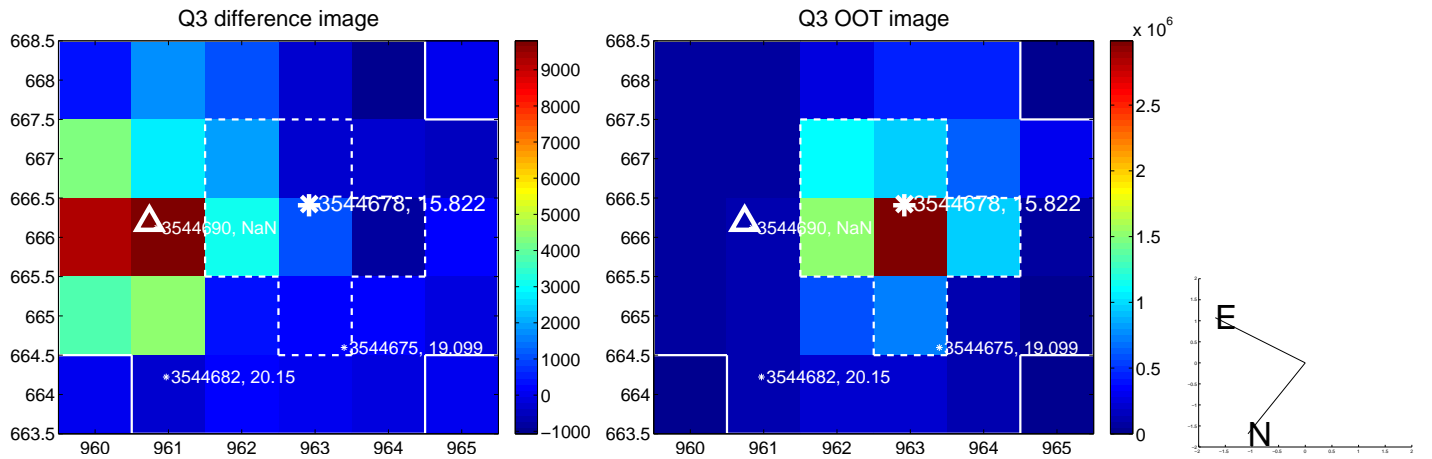
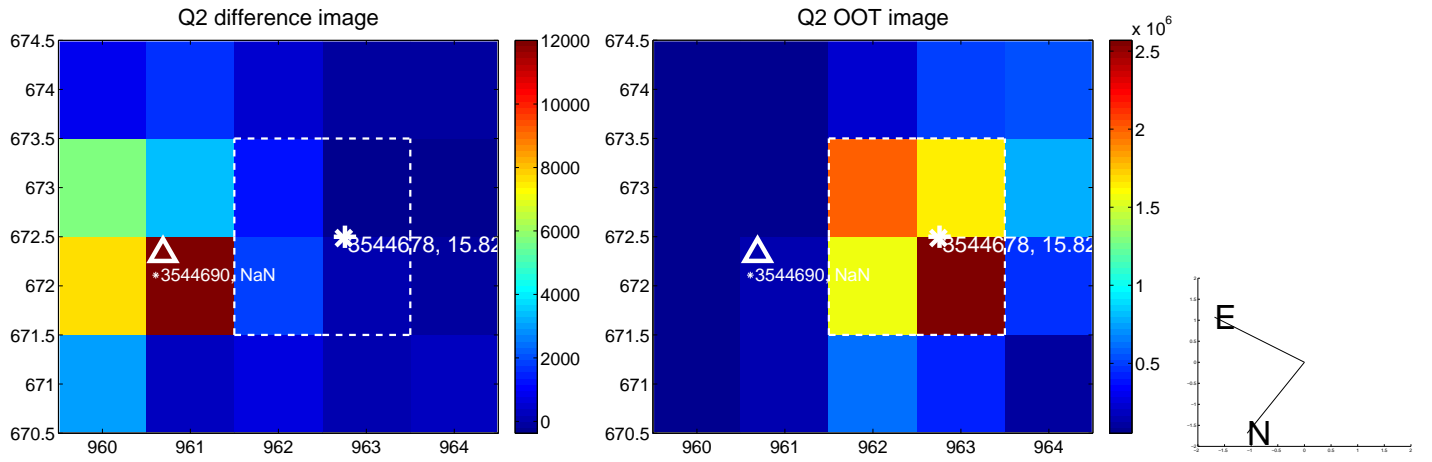
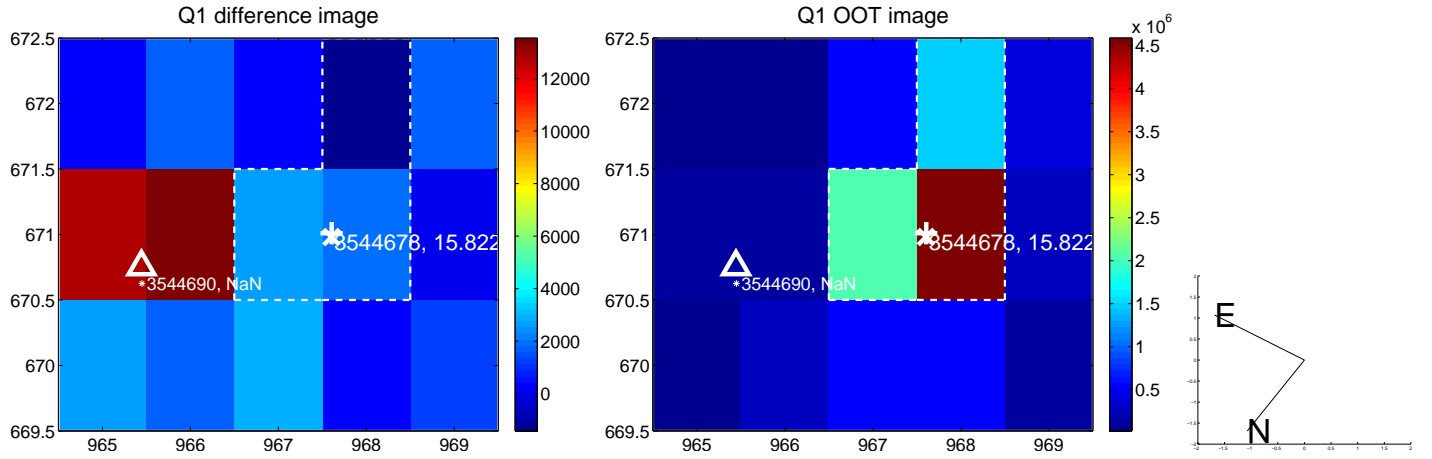
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>8.524 <math>\pm</math> 0.079</b>	<b>108.29</b>	6.710 $\pm$ 0.073	5.258 $\pm$ 0.088
PRF-fit source offset from KIC position	<b>8.540 <math>\pm</math> 0.082</b>	<b>104.08</b>	6.753 $\pm$ 0.071	5.228 $\pm$ 0.098
photometric centroid source offset	<b>35.62 <math>\pm</math> 1.55</b>	<b>22.96</b>	26.88 $\pm$ 1.55	23.37 $\pm$ 1.55

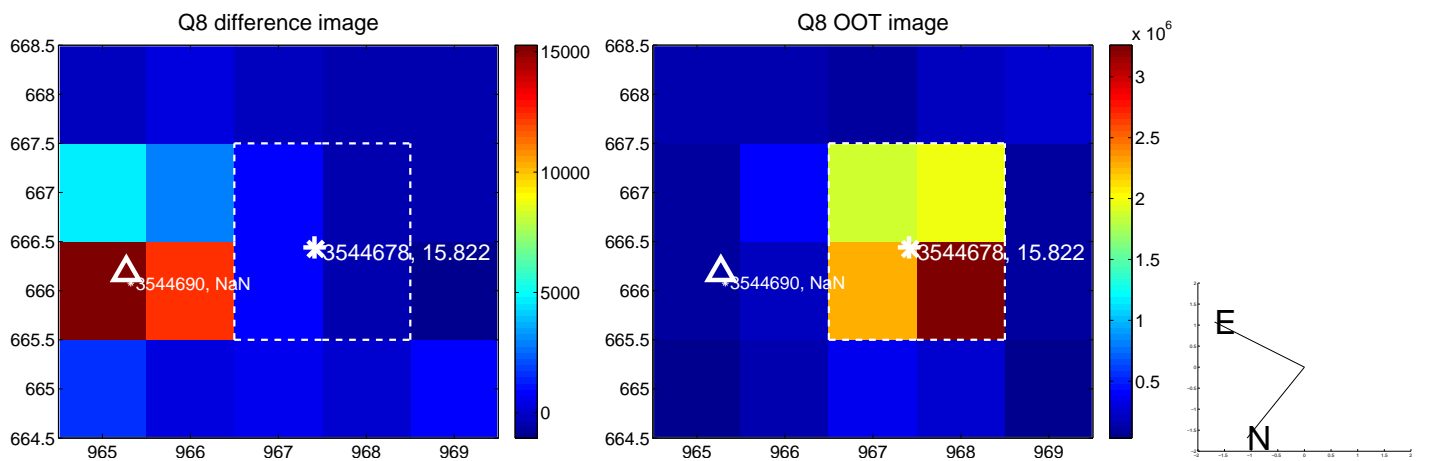
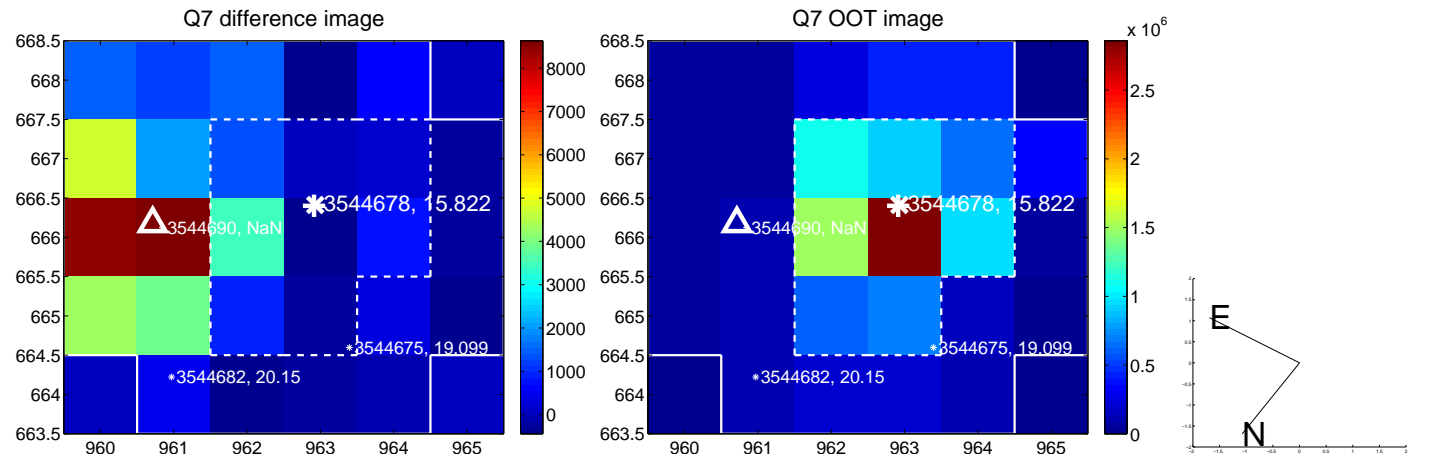
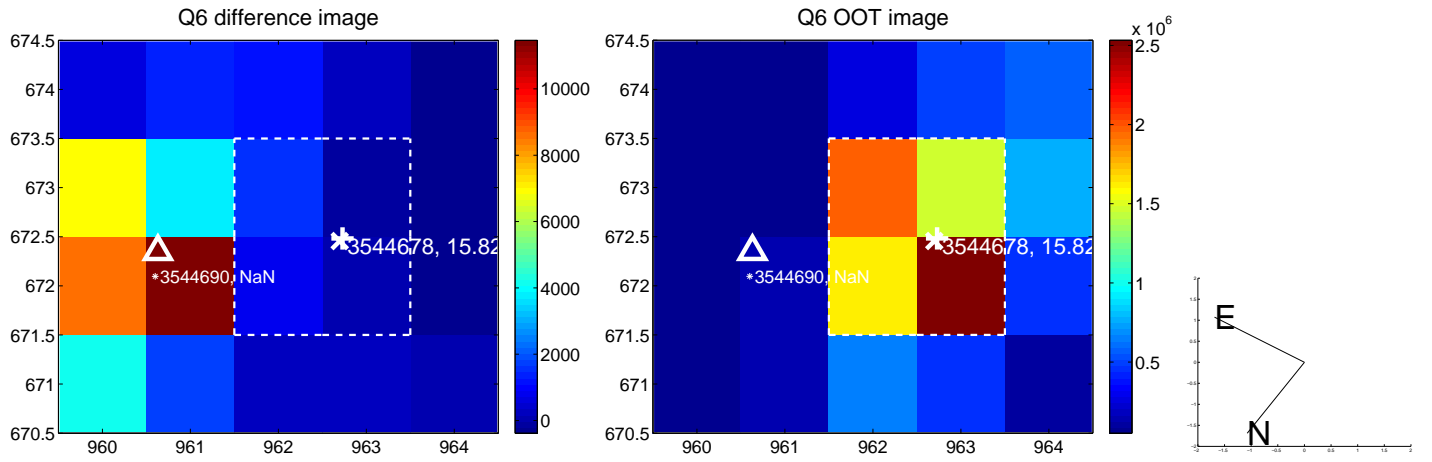
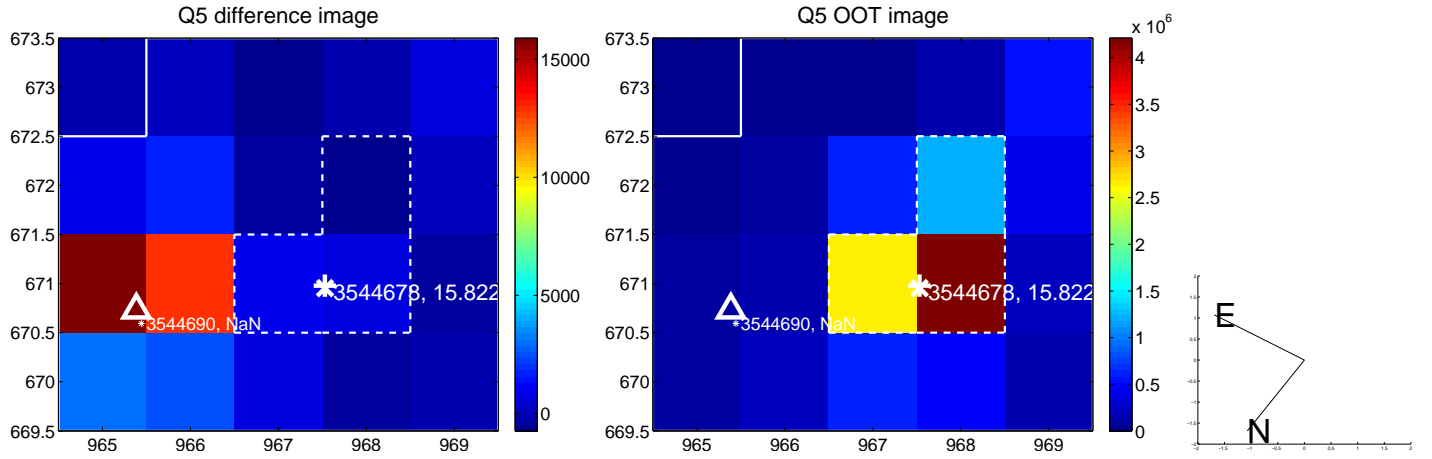


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

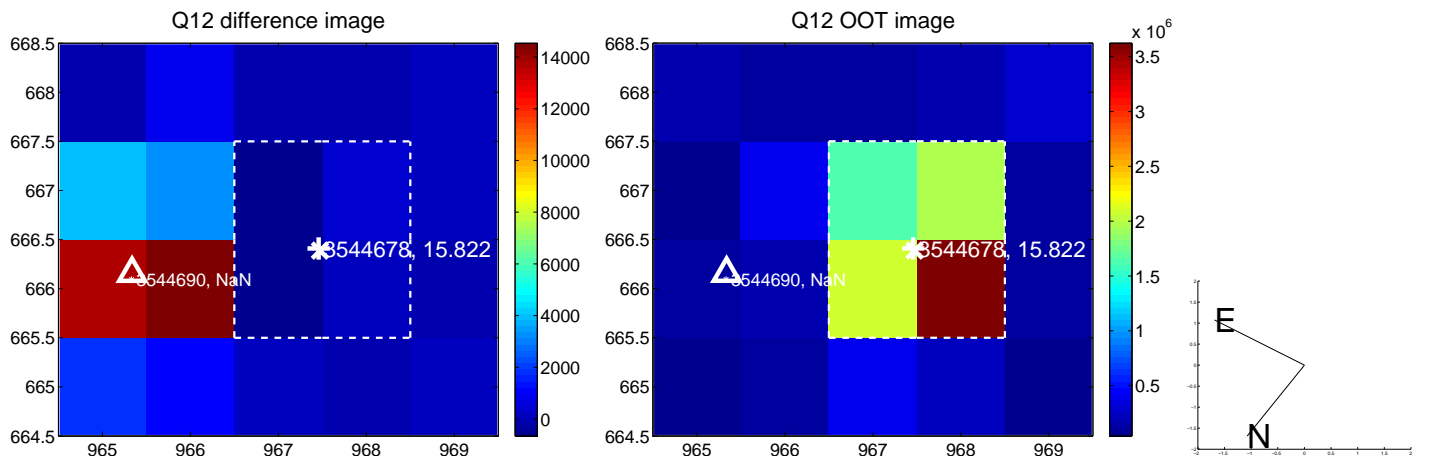
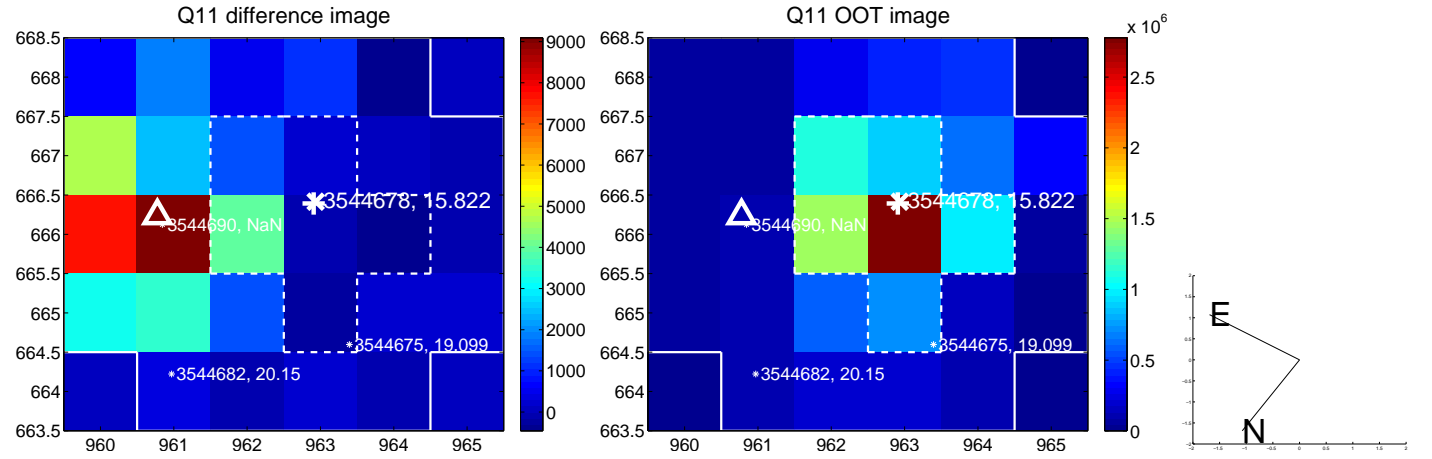
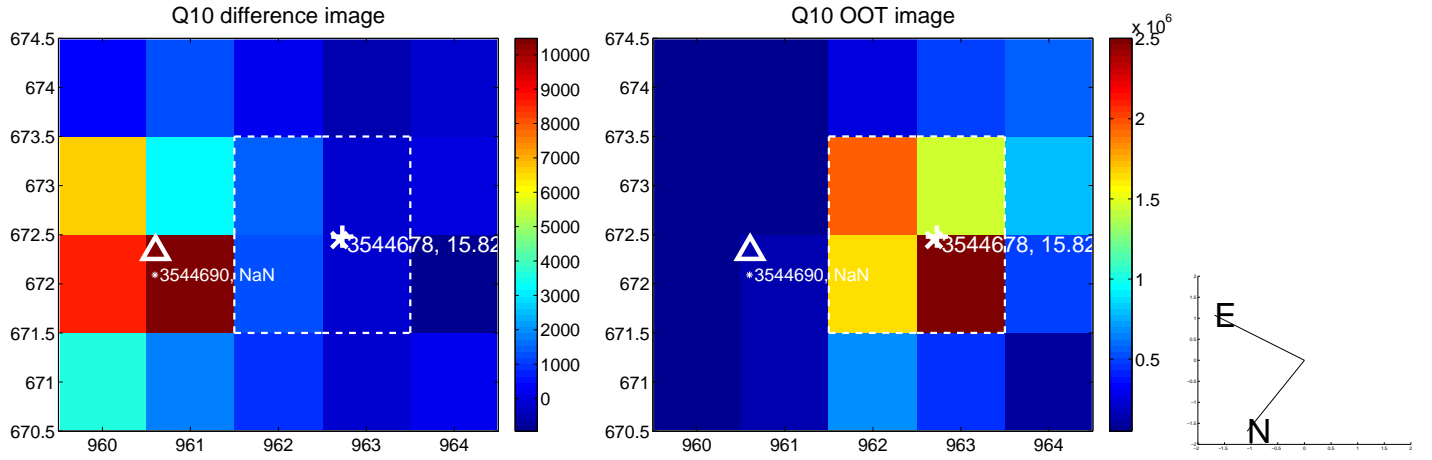
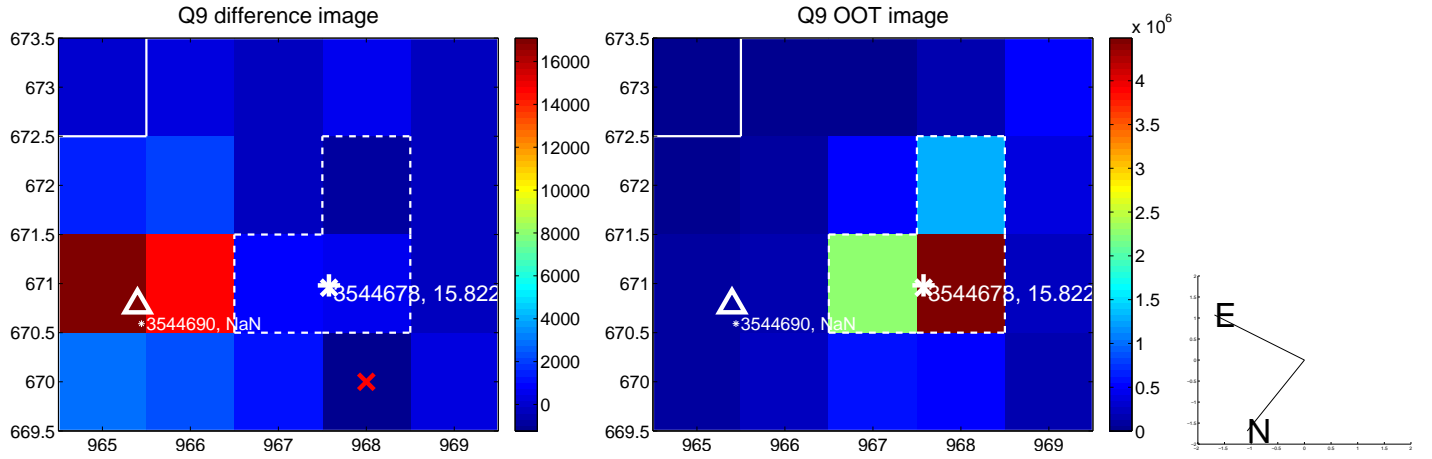
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



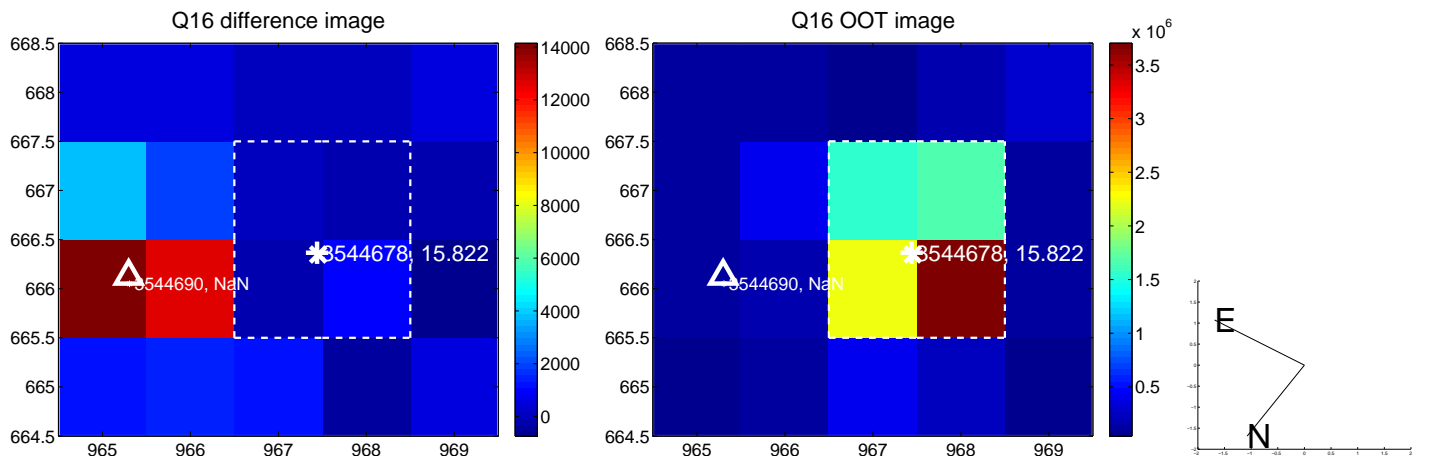
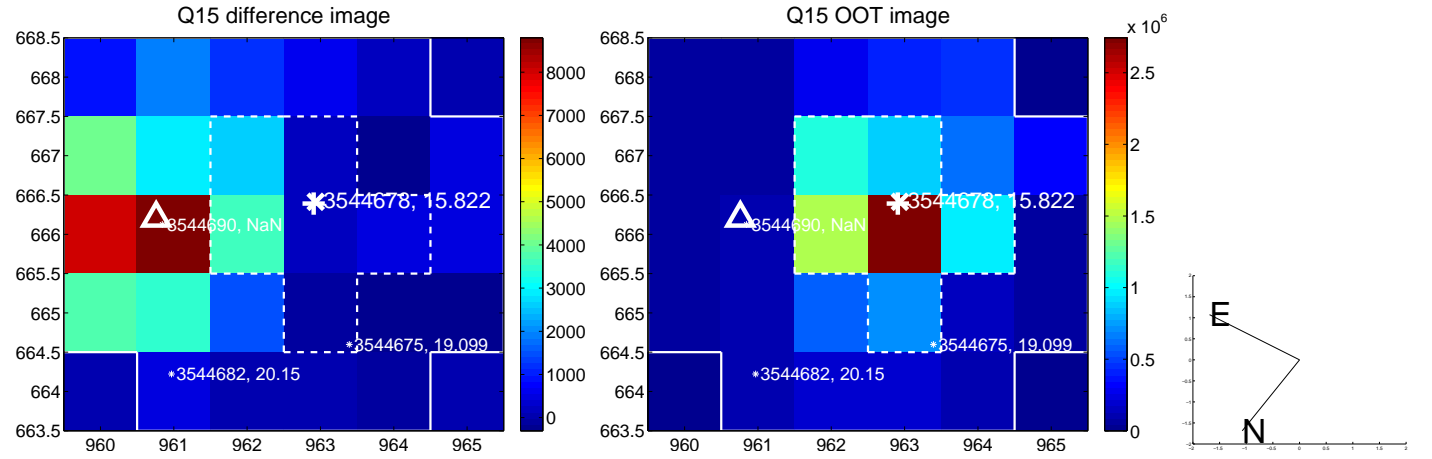
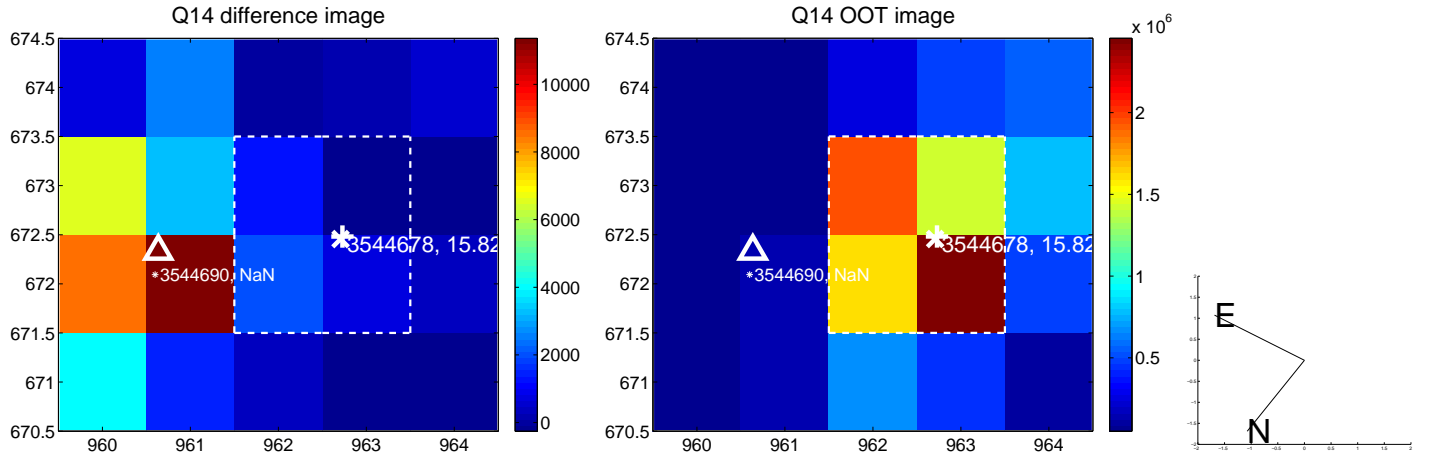
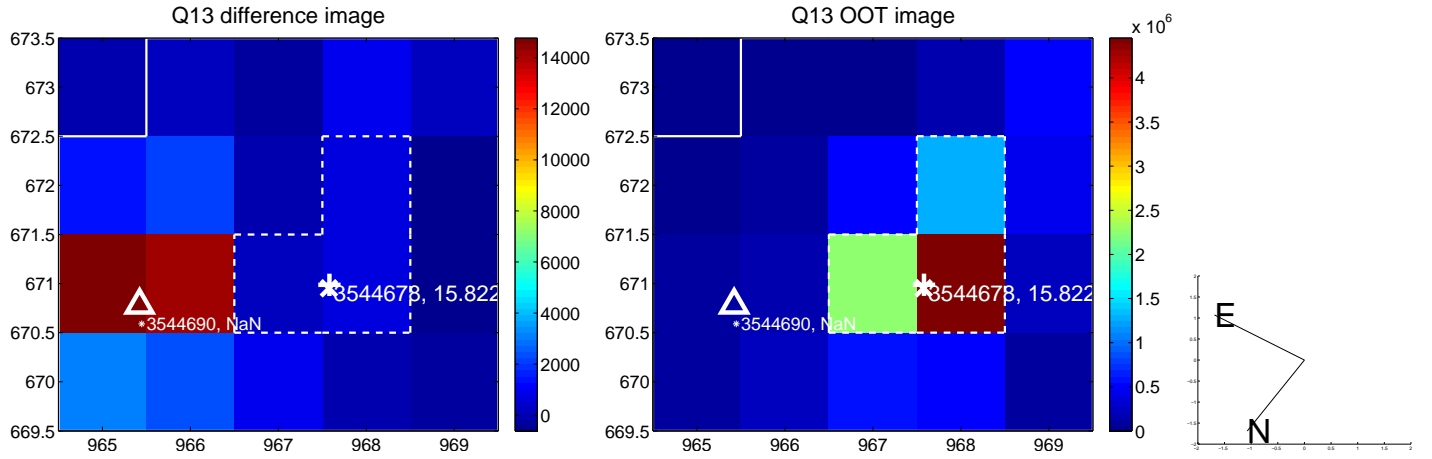
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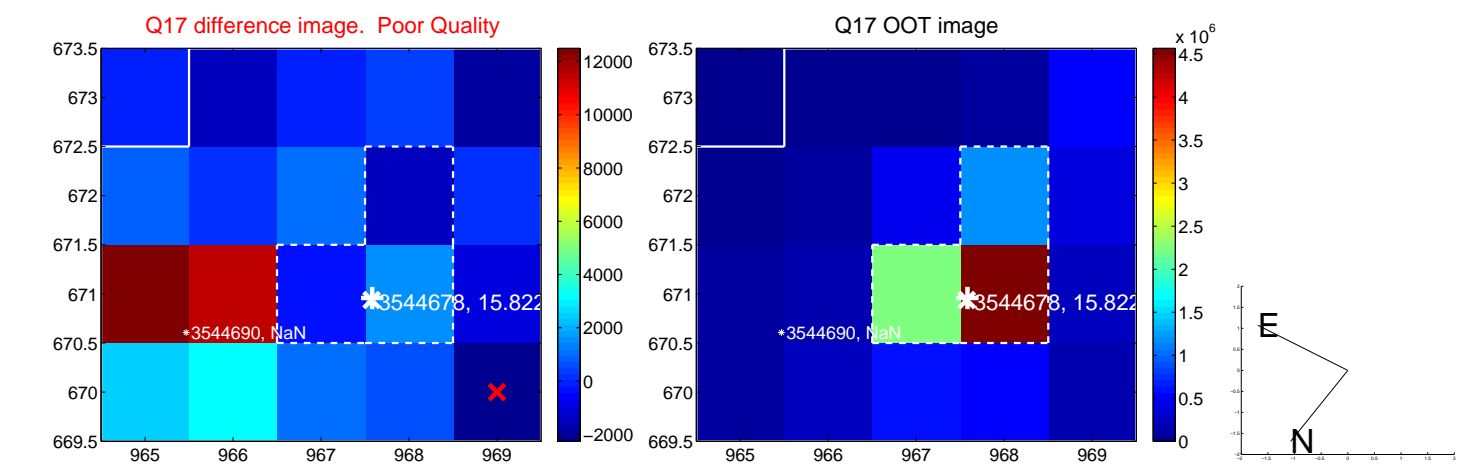


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

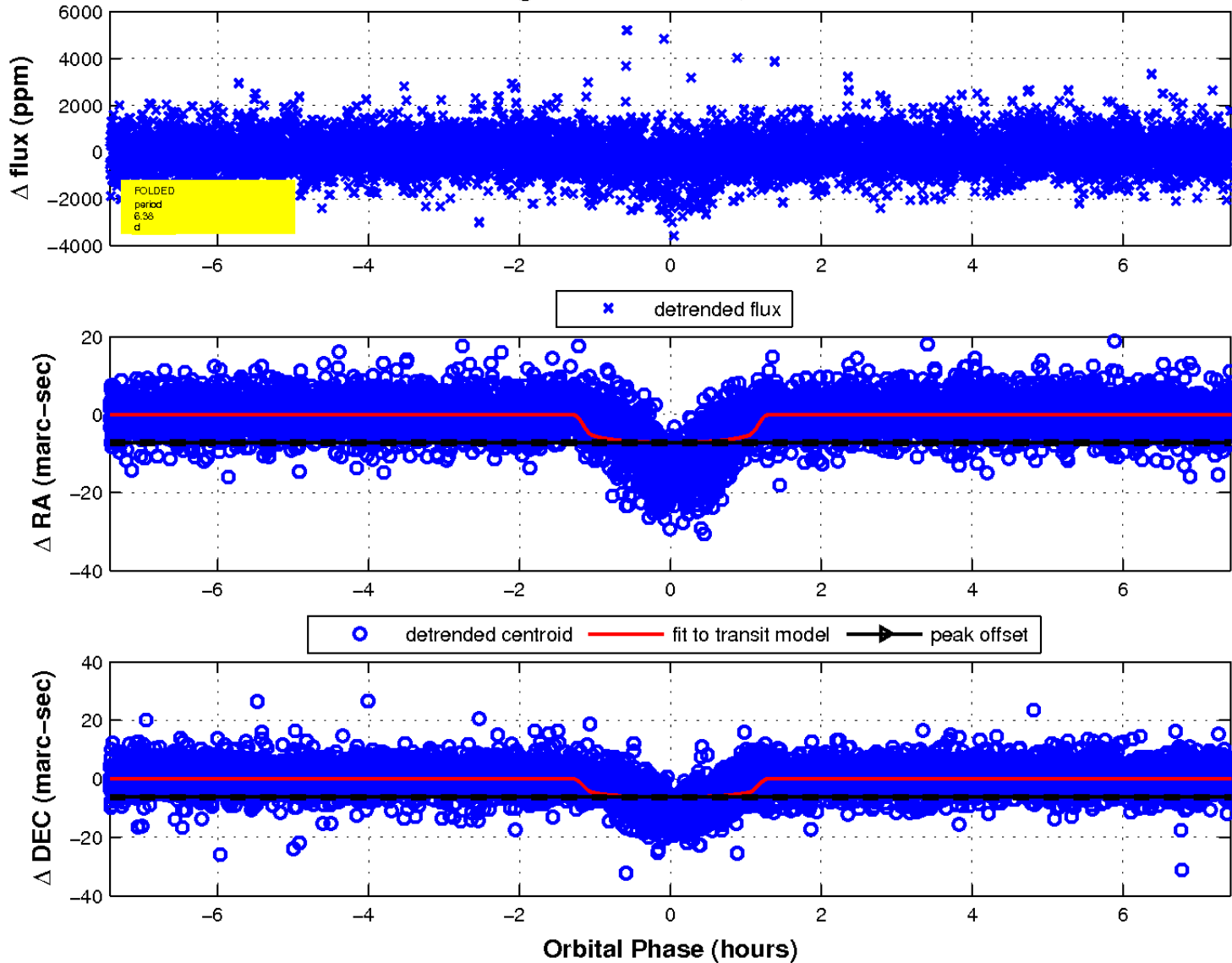




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

