

# KIC 004374339

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004374339-01	OBS	2987.01	0.993719	132.135634	55.4	0.904	13.6	16.3	2.71	6854	2.37	26637.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004374339-01	OBS	FP	0.00	0	0	1	0	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.

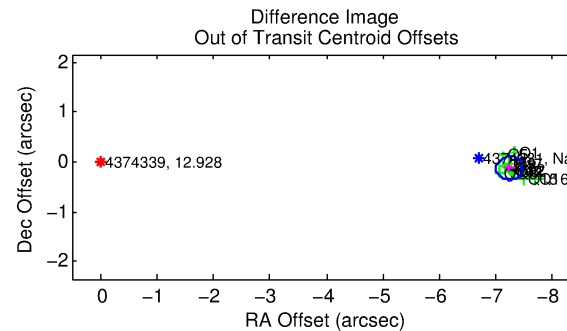
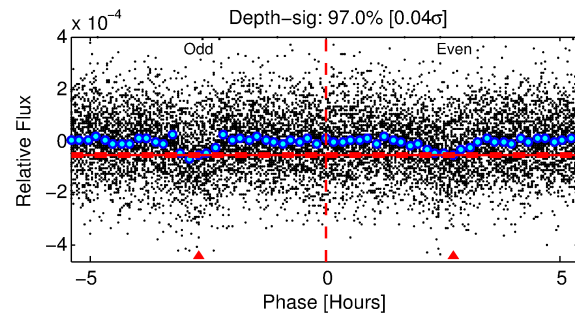
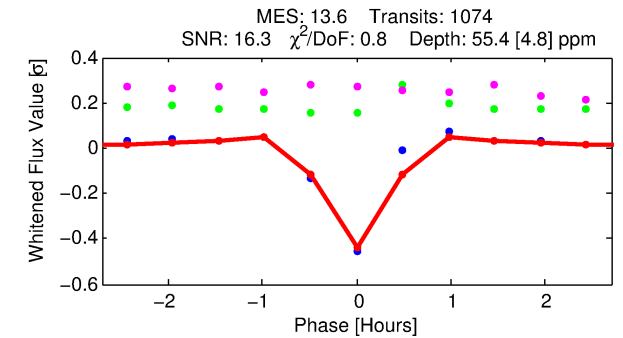
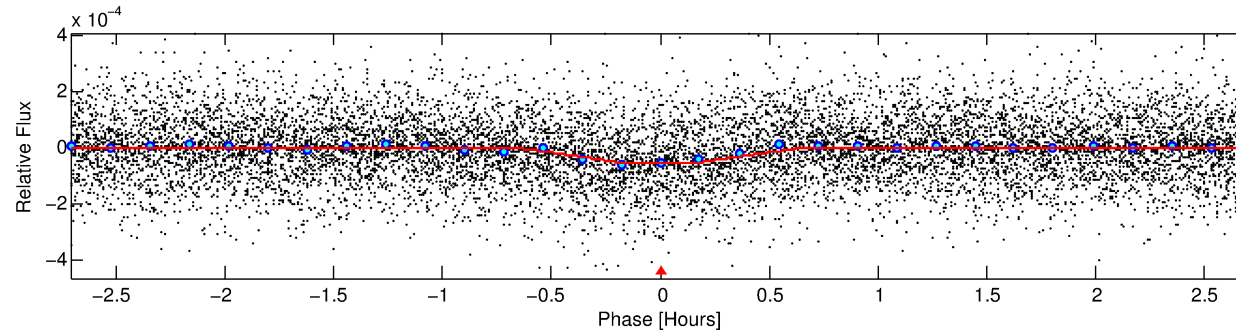
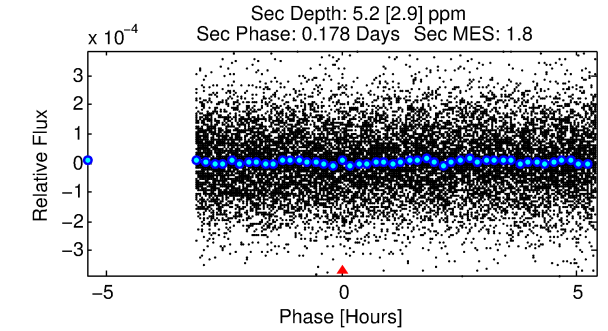
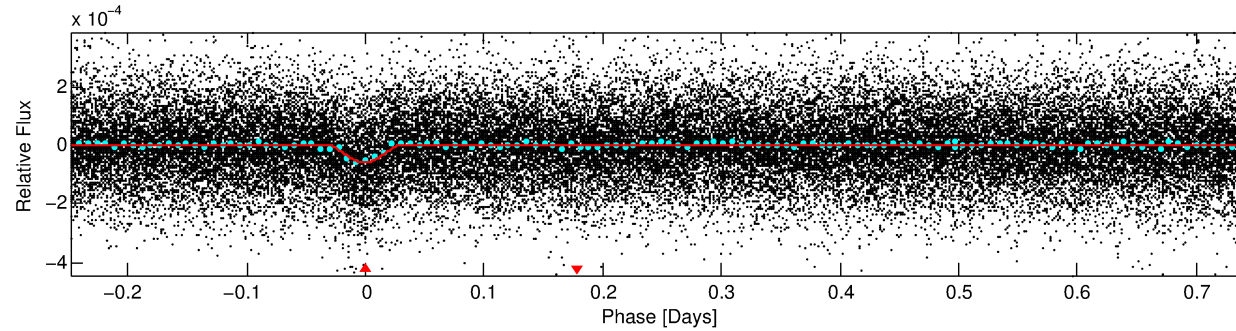
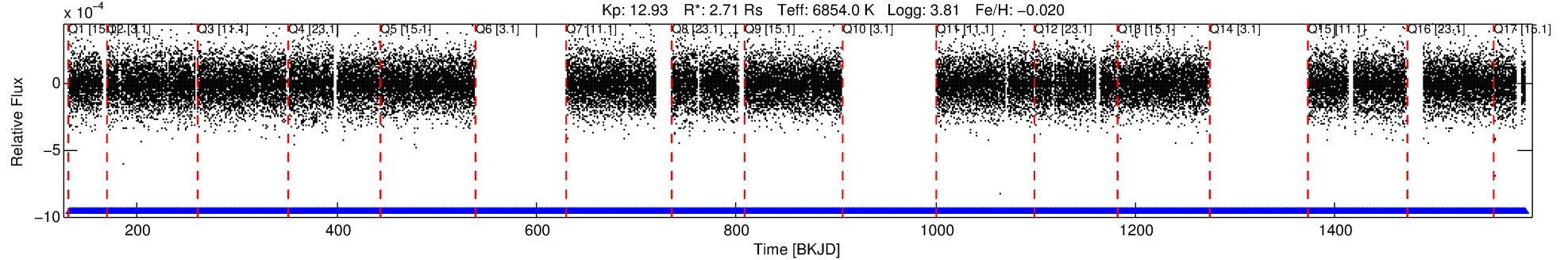
## Ephemeris Match Information For 004374339-01

No Significant Match Found

# DV One-Page Summary

KIC: 4374339 Candidate: 1 of 1 Period: 0.994 d  
KOI: K02987.01 Corr: 0.819

Kp: 12.93 R\*: 2.71 Rs Teff: 6854.0 K Logg: 3.81 Fe/H: -0.020



## DV Fit Results:

Period = 0.99372 [0.00001] d  
Epoch = 132.1356 [0.0009] BKJD  
Rp/R\* = 0.0080 [0.0013]  
a/R\* = 3.92 [3.41]  
b = 0.90 [0.20]  
Seff = 26637.87 [13754.08]  
Teq = 3258 [421] K  
Rp = 2.37 [0.91] Re  
a = 0.0234 [0.0075] AU  
Ag = 0.28 [0.23] [-3.17σ]  
Teffp = 3664 [602] K [0.55σ]

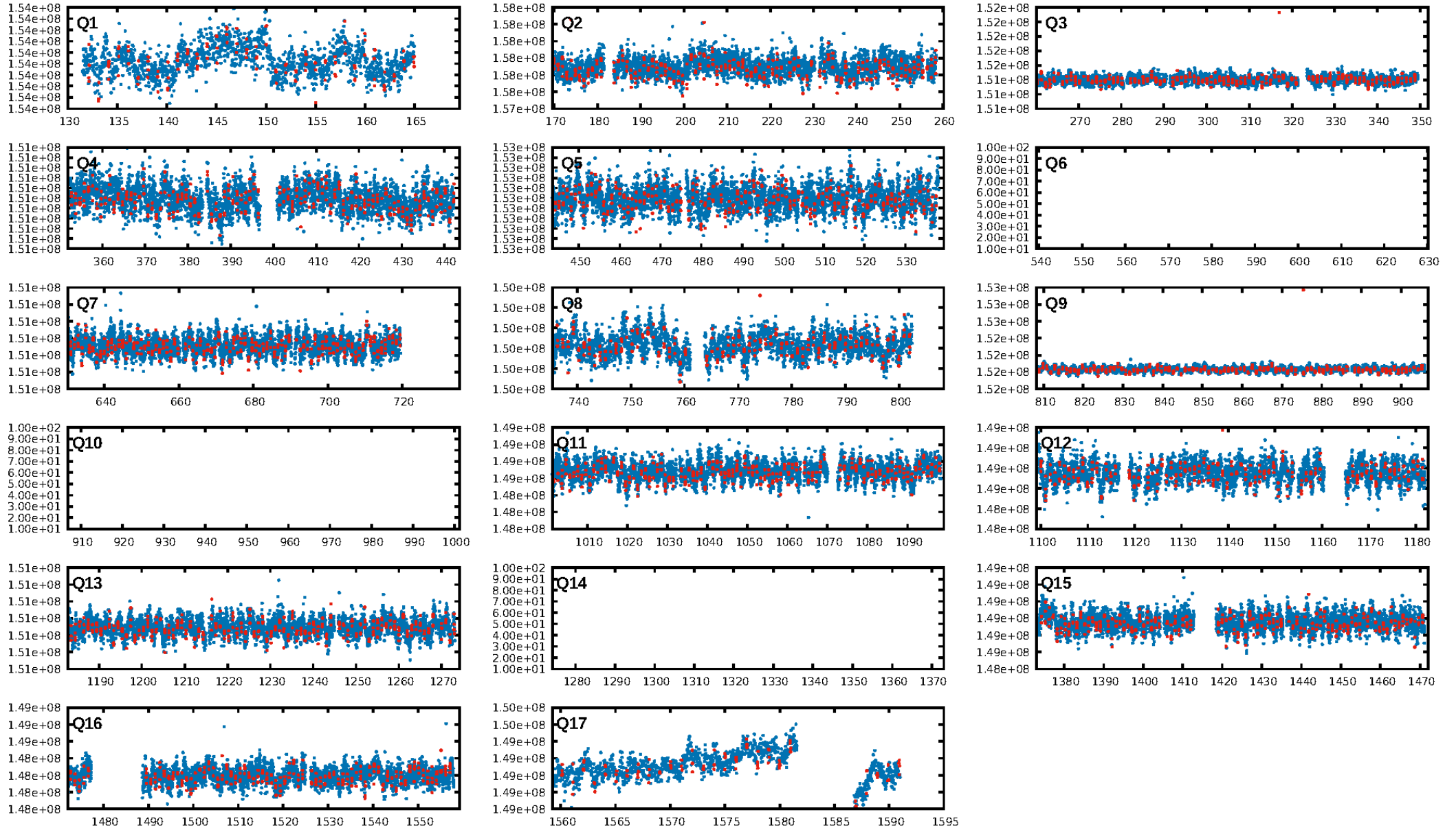
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.05e-40  
RollingBand-fgt: 1.00 [1013/1013]  
GhostDiagnostic-chr: -0.1588  
Centroid-sig: 0.0%  
Centroid-so: 12.851 arcsec [18.42σ]  
OotOffset-rm: 7.240 arcsec [92.88σ]  
KicOffset-rm: 7.172 arcsec [89.81σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

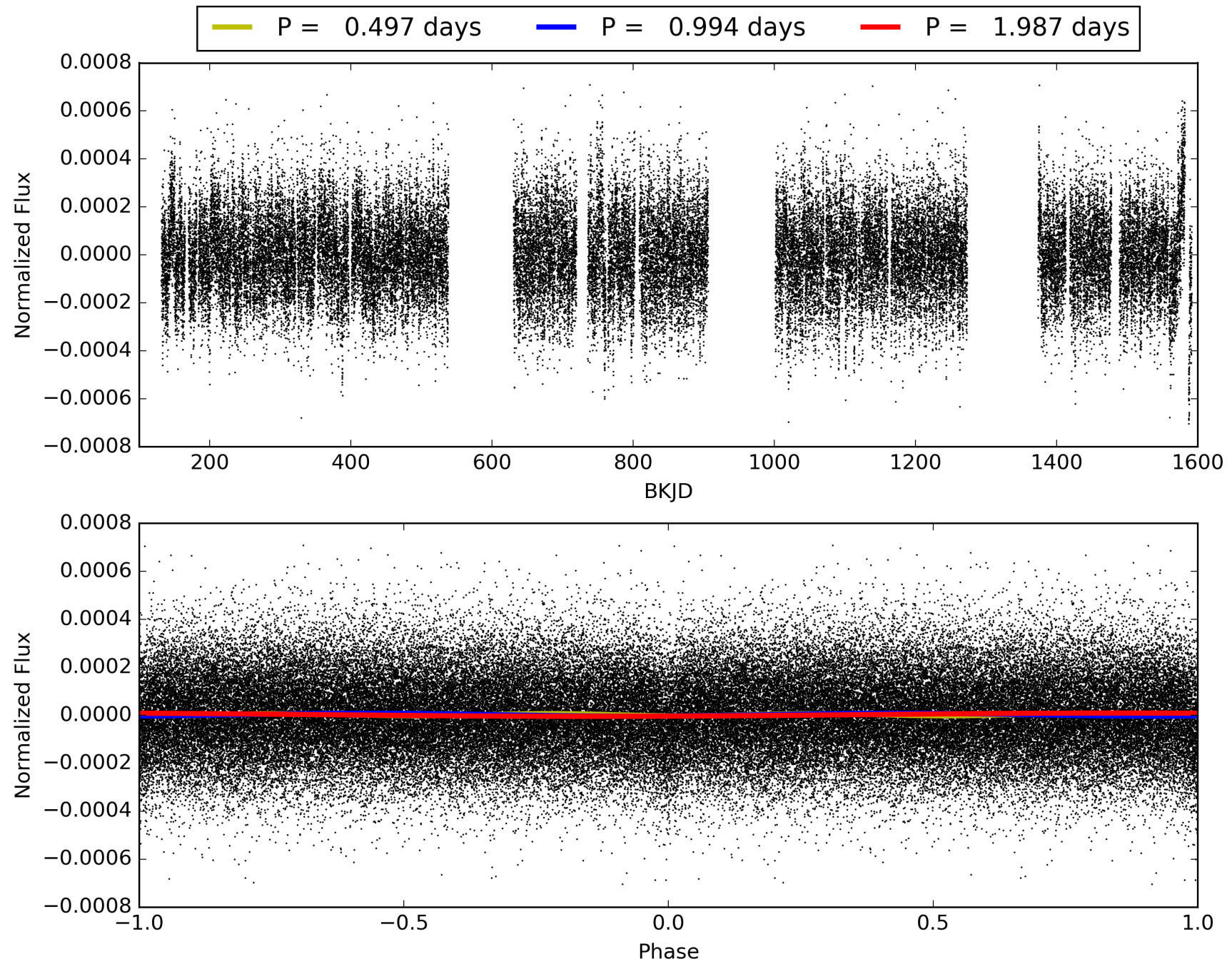
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 07:51:53 Z

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

# TCE 004374339-01, PDC Light Curves

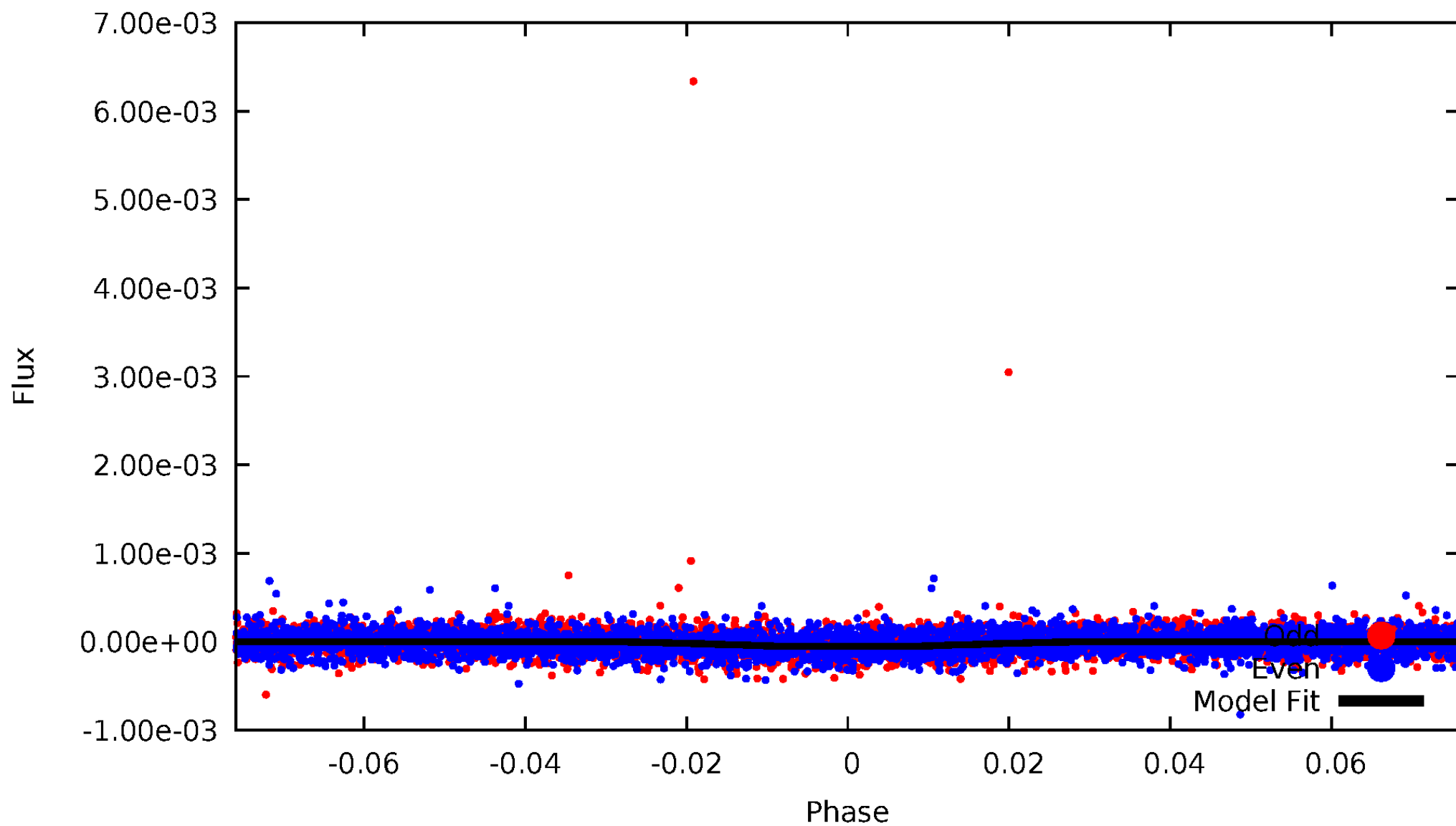


TCE 004374339-01



# DV Odd/Even

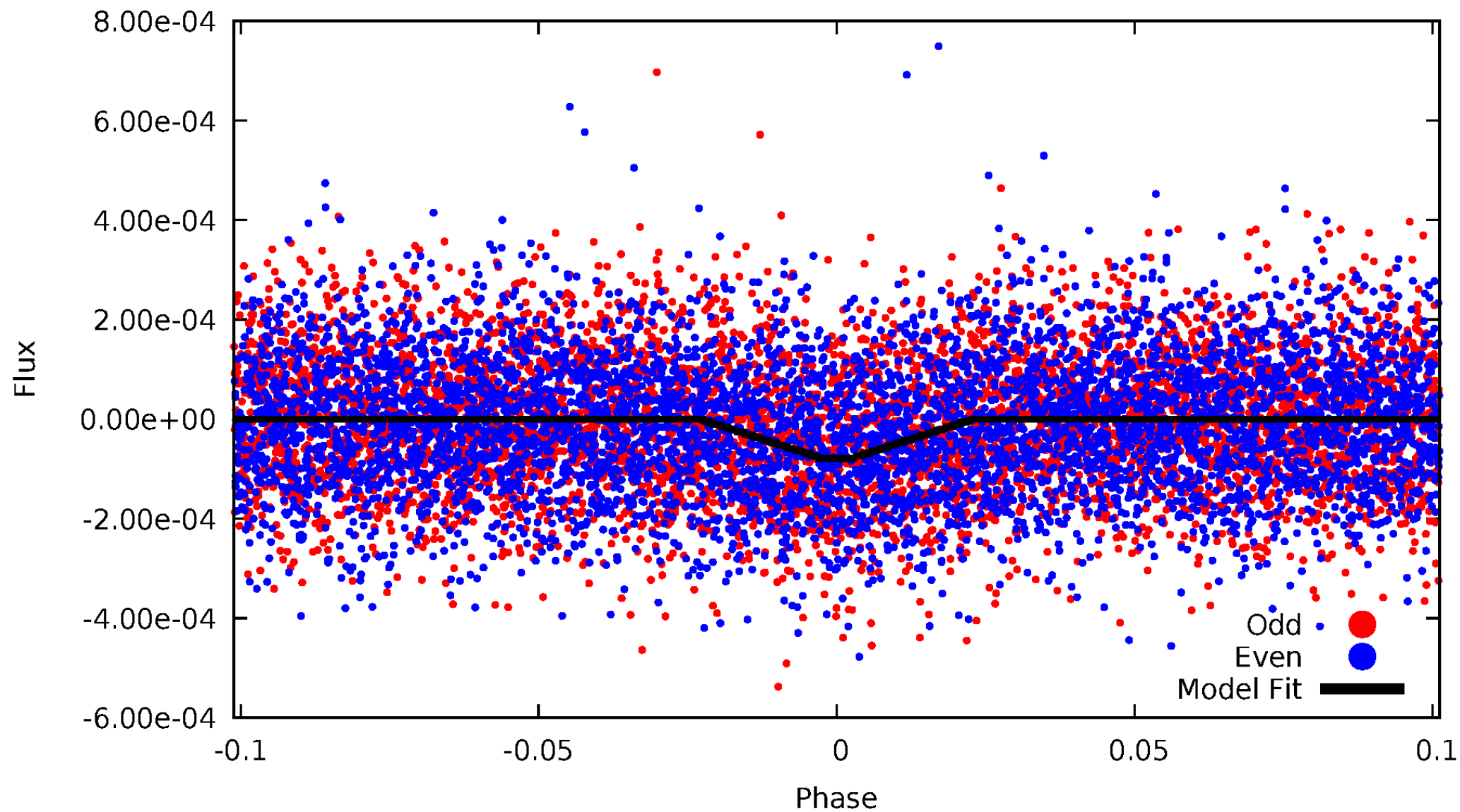
TCE 004374339-01



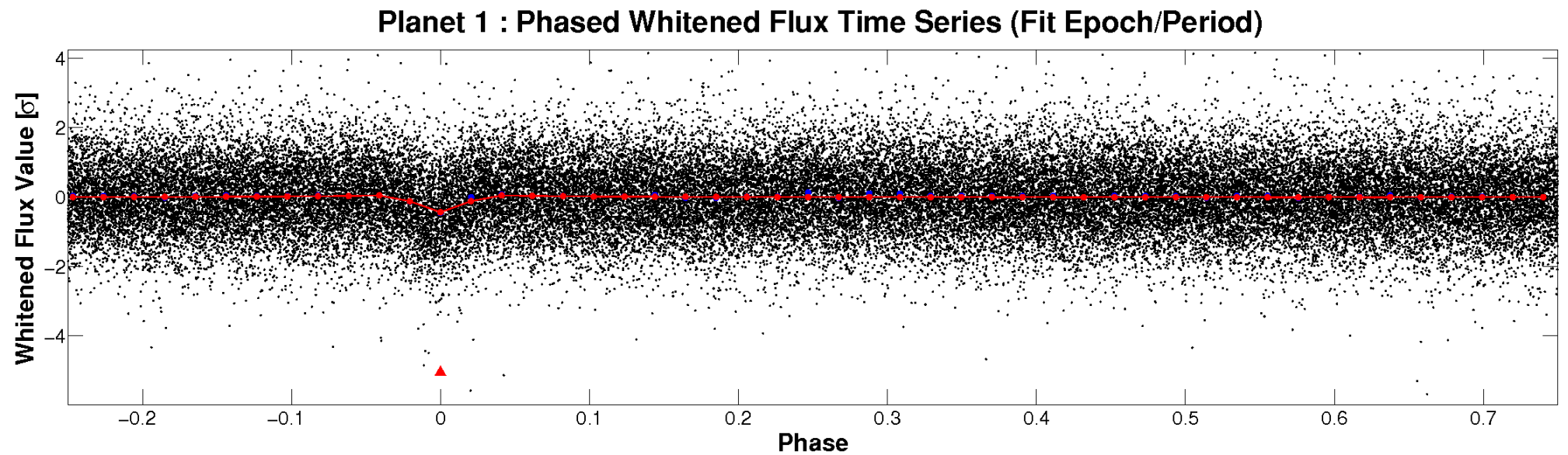
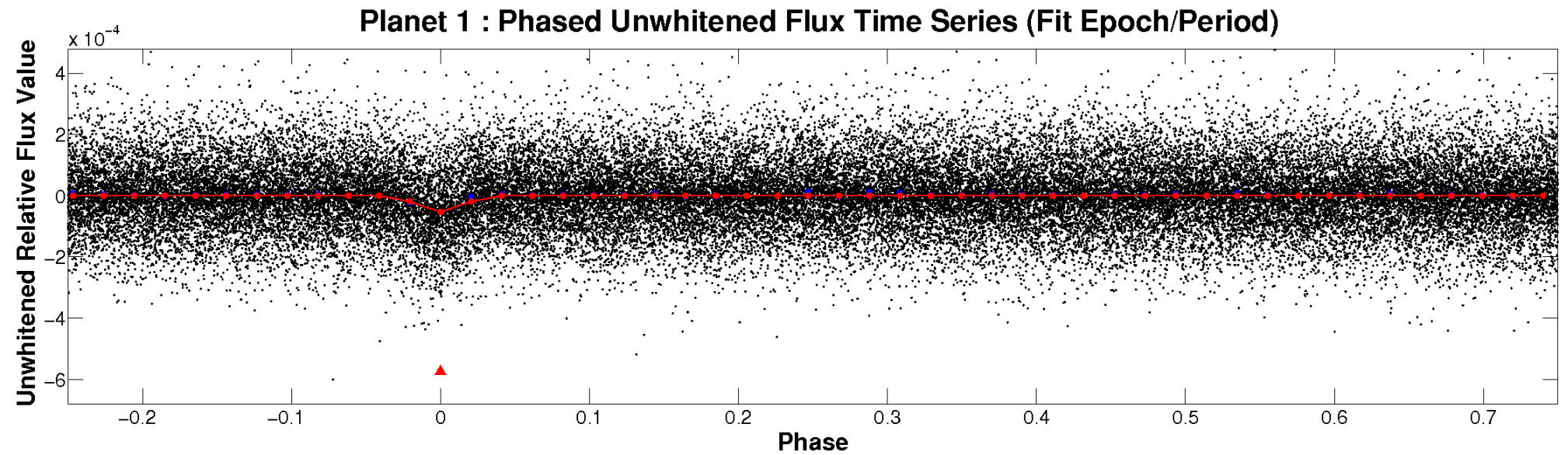


# ALT Odd/Even

TCE 004374339-01

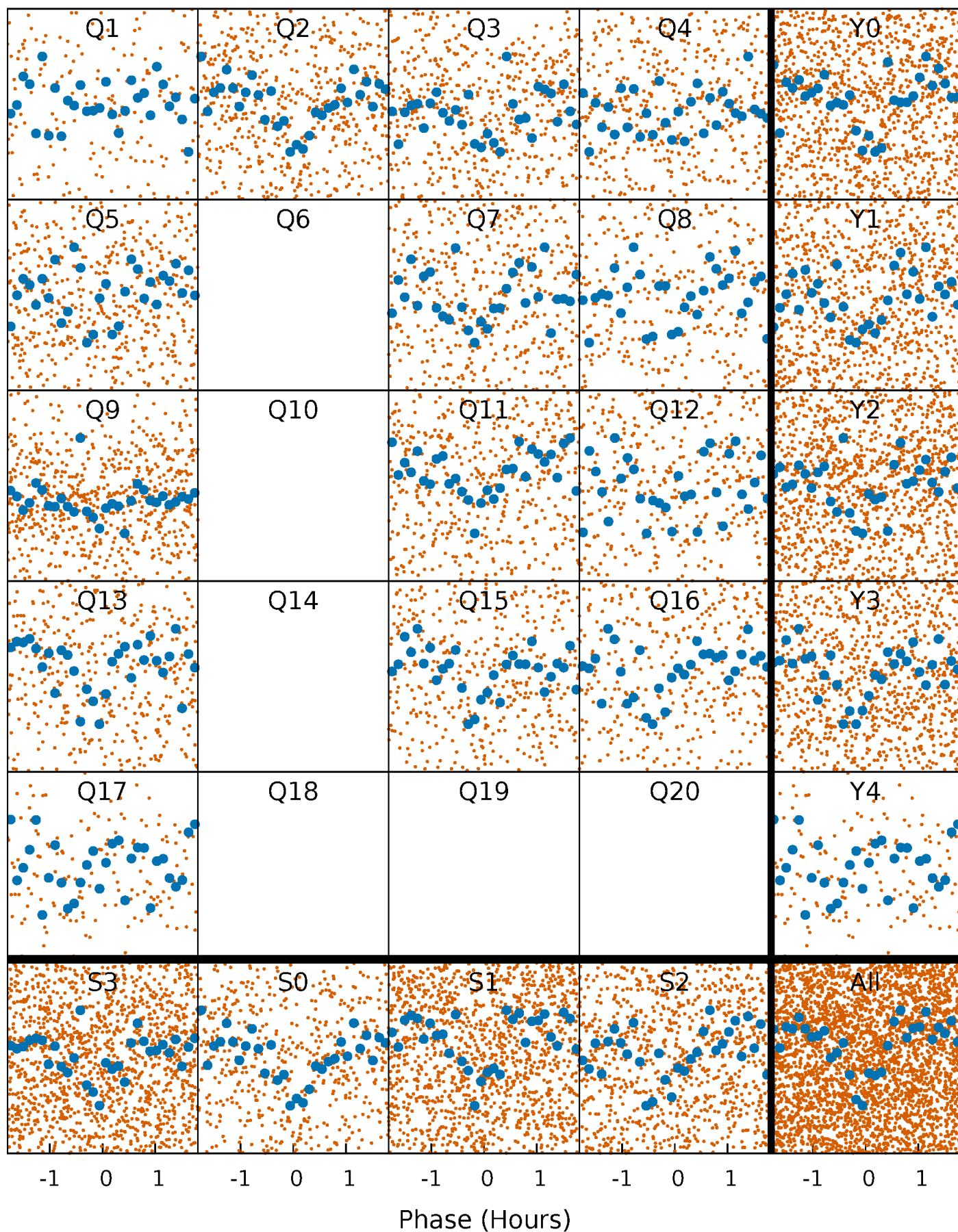


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

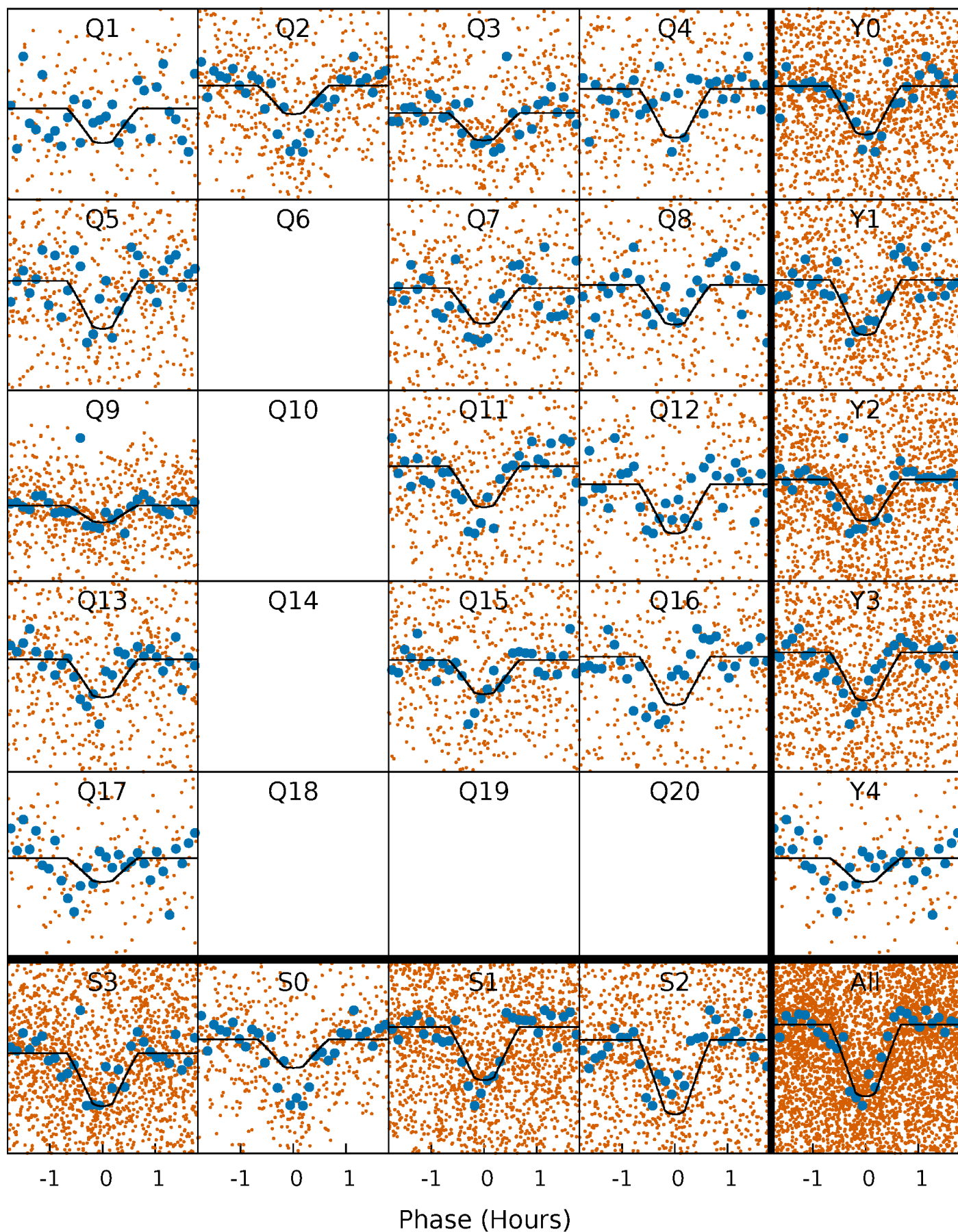
TCE 004374339-01 P= 0.993719 Days  $T_0=132.135634$  (BKJD)





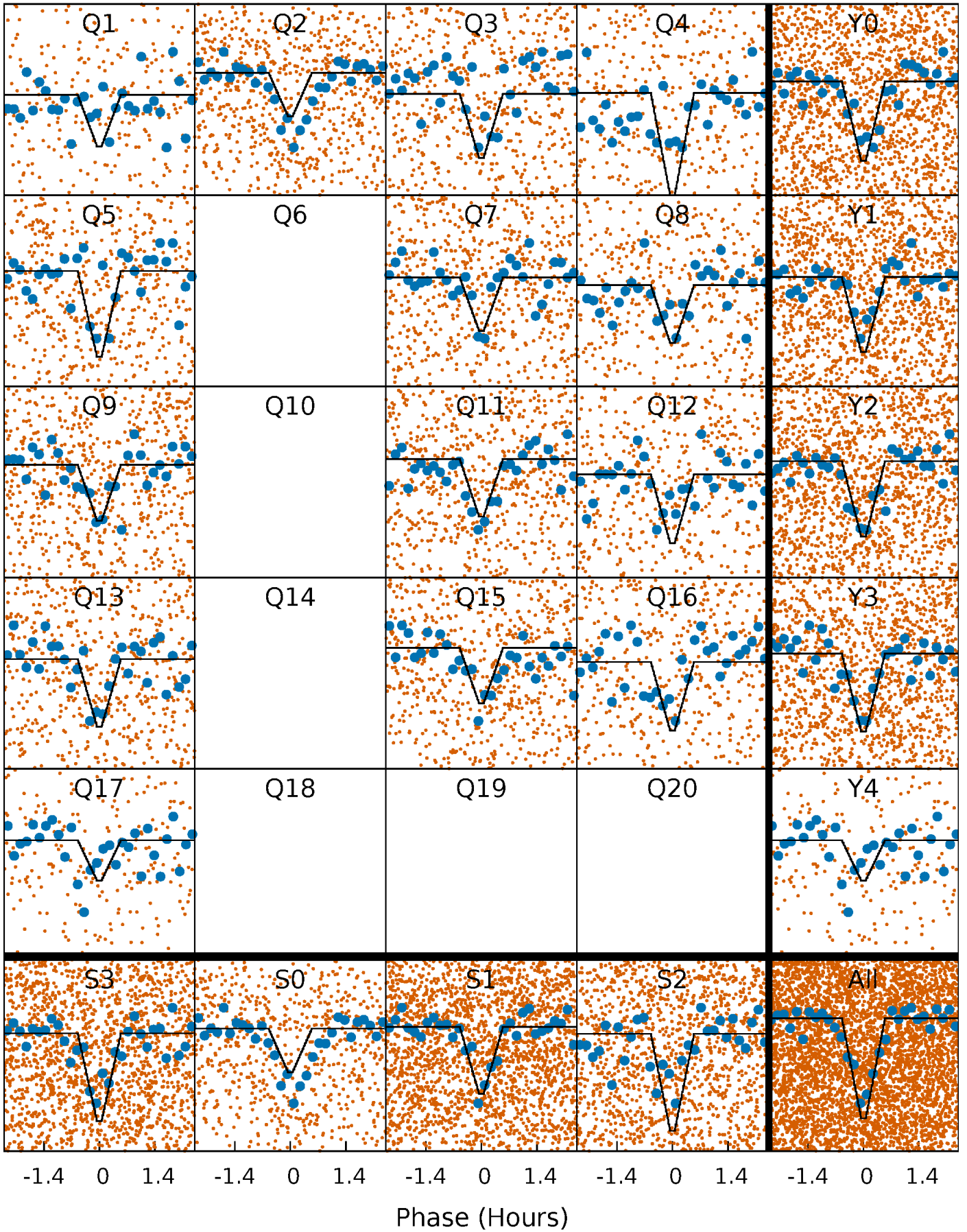
# DV Quarter-Phased Transit Curves

TCE 004374339-01 P= 0.993719 Days  $T_0=132.135634$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

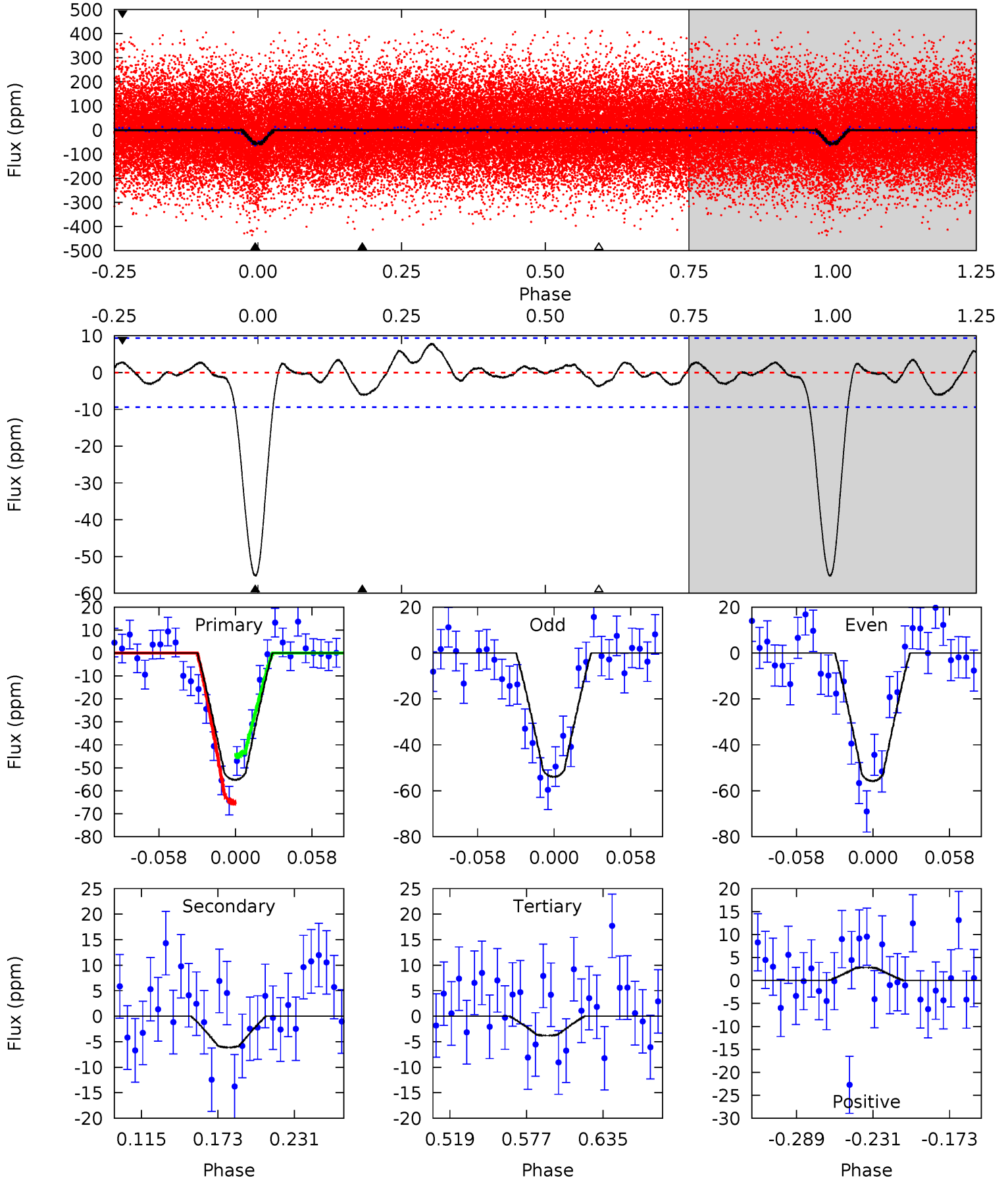
TCE 004374339-01 P= 0.993713 Days  $T_0=132.134662$  (BKJD)



# DV Model-Shift Uniqueness Test

004374339-01, P = 0.993719 Days, E = 131.141915 Days

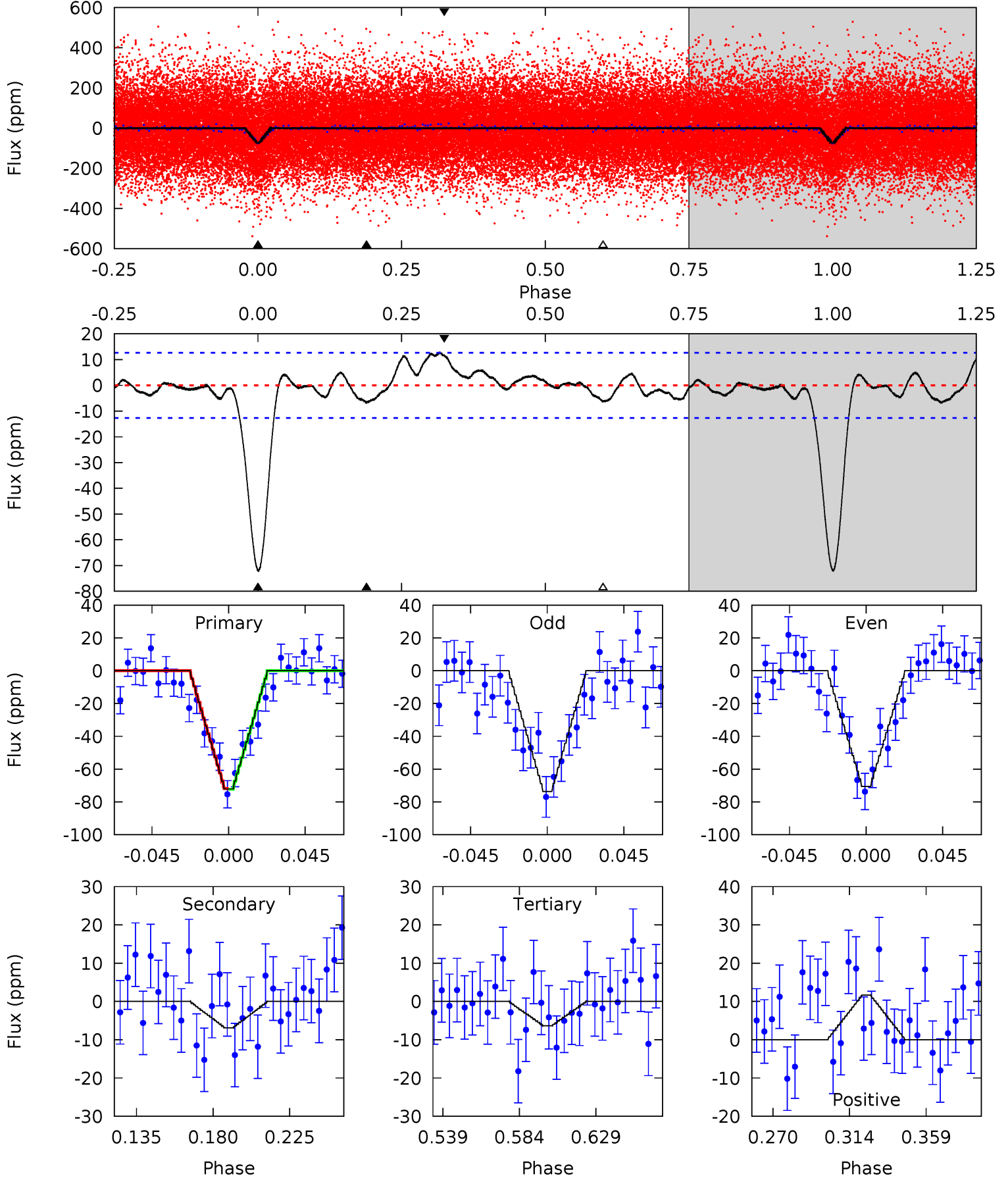
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.5	3.04	1.89	1.41	4.68	1.90	1.15	25.6	26.1	1.15	1.64	0.47	0.88	0.12	5.06



# Alt Model-Shift Uniqueness Test

004374339-01, P = 0.993713 Days, E = 131.140949 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
27.0	2.57	2.38	4.37	4.73	2.01	1.57	24.6	22.6	0.18	-1.80	0.56	0.97	0.15	0.08





### Stellar Parameters For KIC 004374339

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6854^{+184}_{-245}$	$3.808^{+0.285}_{-0.095}$	$-0.020^{+0.250}_{-0.300}$	$2.715^{+0.440}_{-0.953}$	$1.728^{+0.154}_{-0.386}$	$0.122^{+0.251}_{-0.038}$
	+3%/-4%	+7%/-2%	+1250%/-1500%	+16%/-35%	+9%/-22%	+207%/-31%
Source	PHO1	FLK73	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 004374339-01 / KOI 2987.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-6 \pm 2$	$2.22^{+0.50}_{-0.51}$	$4451^{+281}_{-433}$	$3090^{+807}_{-6377}$	$0.365^{+0.279}_{-0.155}$
Alt.	$-7 \pm 3$	$2.49^{+0.56}_{-0.49}$	$4481^{+259}_{-407}$	$2688^{+1051}_{-6147}$	$0.321^{+0.239}_{-0.144}$

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

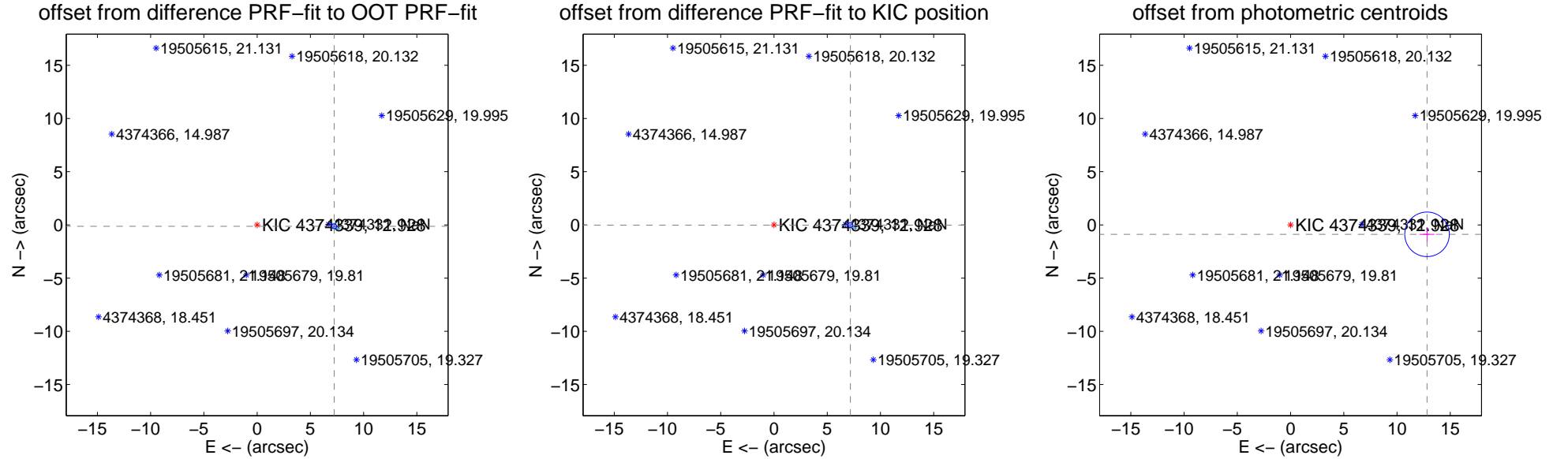
## DV Centroid Data

Supplemental centroid analysis for 004374339-01. Kepler magnitude: 12.93. Transit SNR 16.34

There are 14 quarters with good PRF difference image offsets

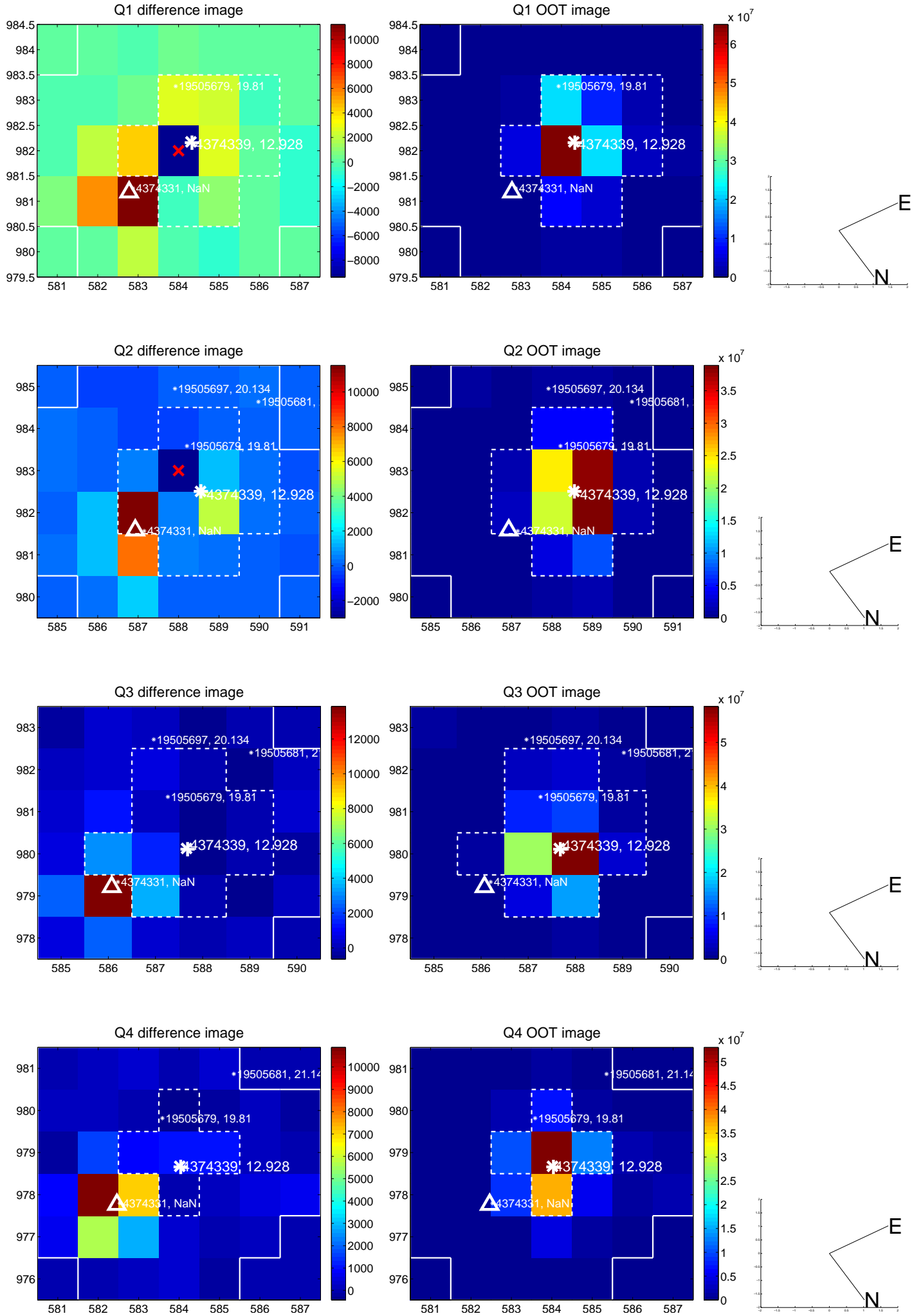
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	7.240 $\pm$ 0.078	92.88	-7.239 $\pm$ 0.078	-0.131 $\pm$ 0.078
PRF-fit source offset from KIC position	7.172 $\pm$ 0.080	89.81	-7.172 $\pm$ 0.080	-0.020 $\pm$ 0.080
photometric centroid source offset	12.85 $\pm$ 0.70	18.42	-12.82 $\pm$ 0.70	-0.89 $\pm$ 0.64

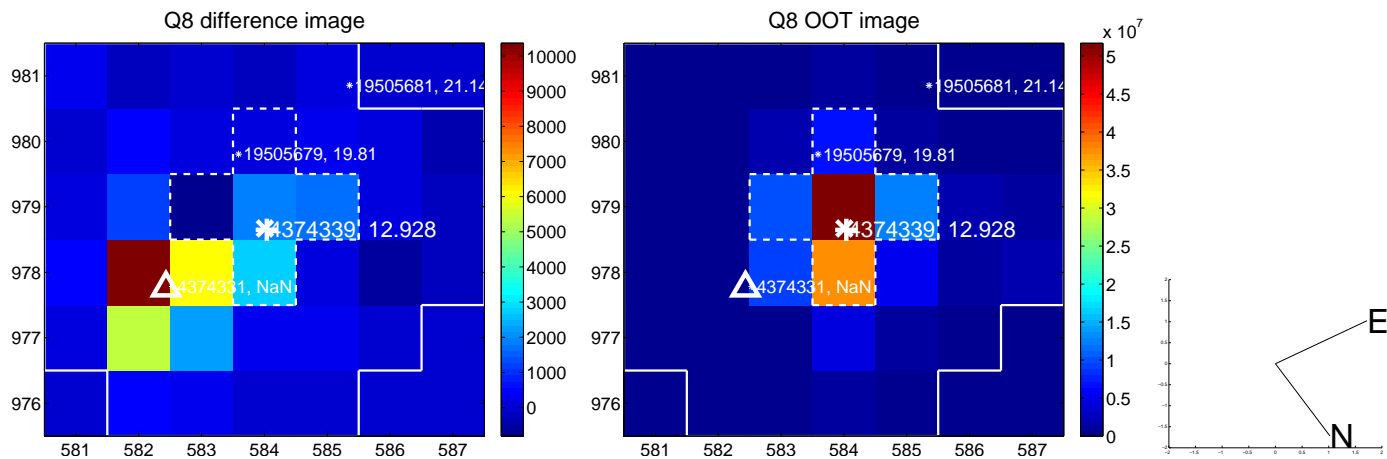
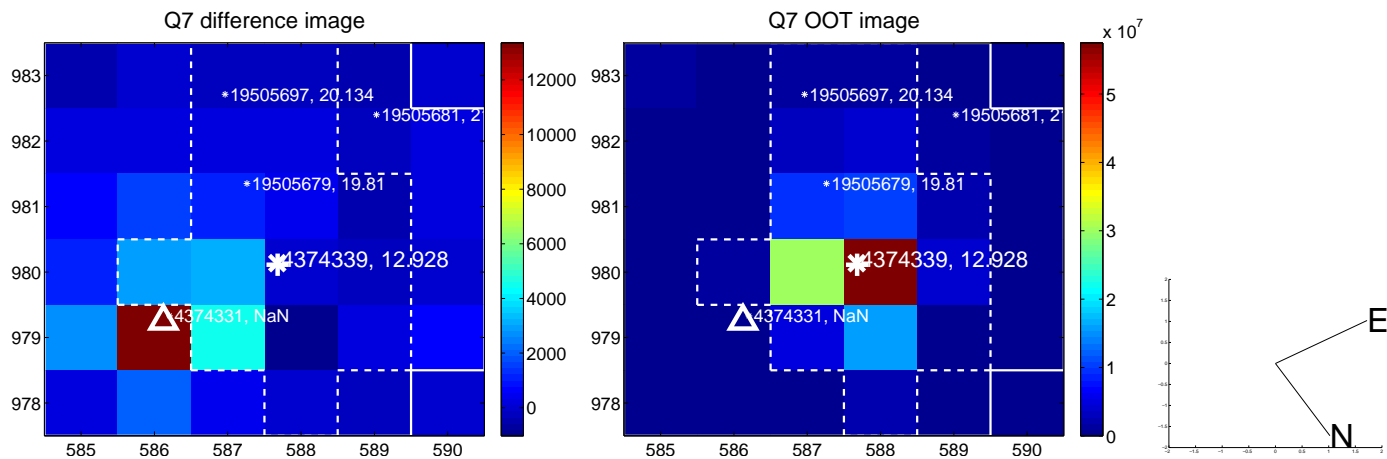
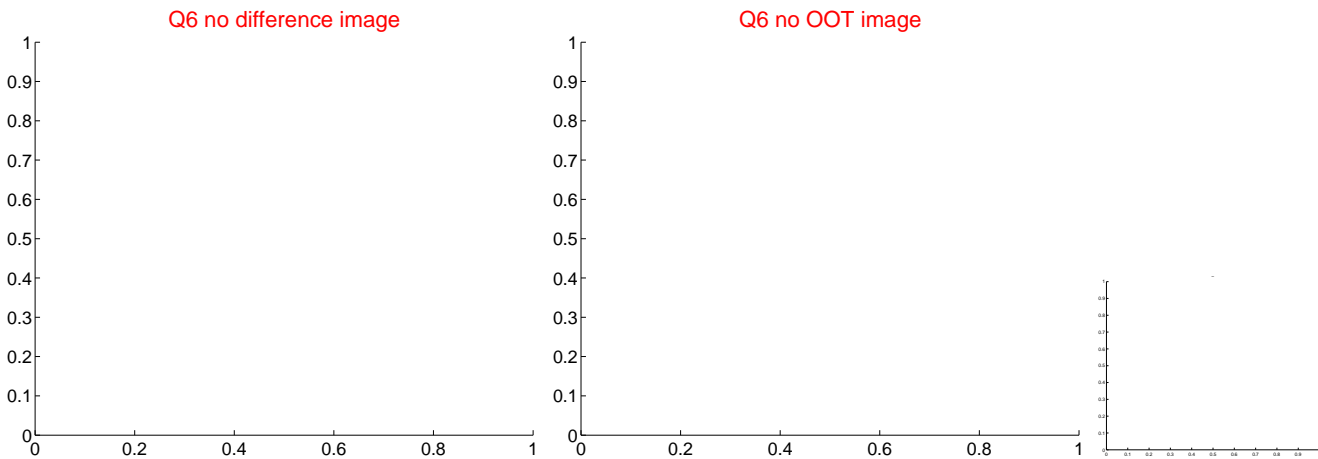
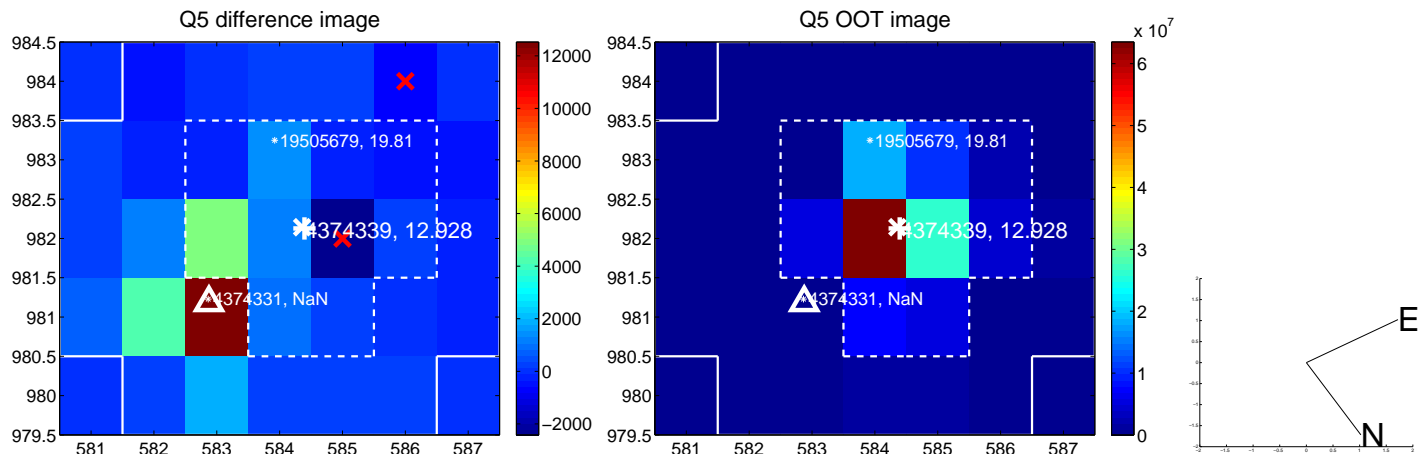


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

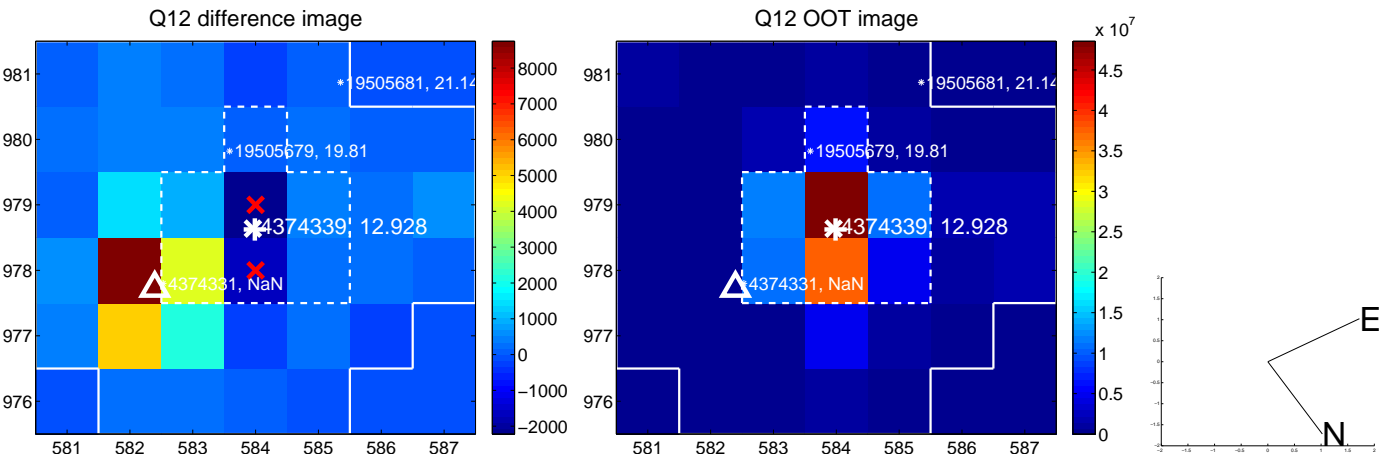
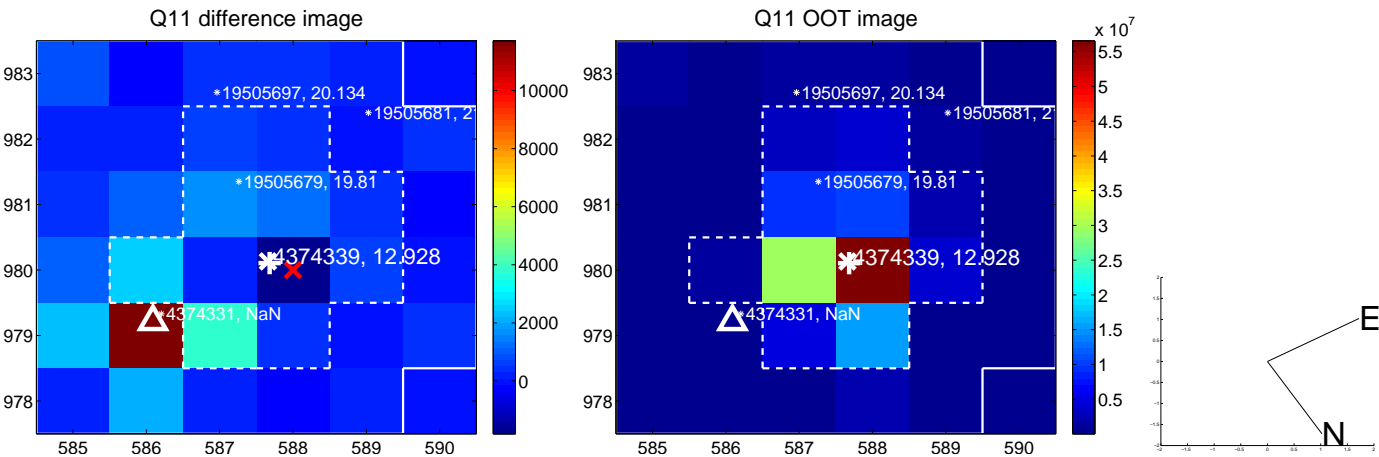
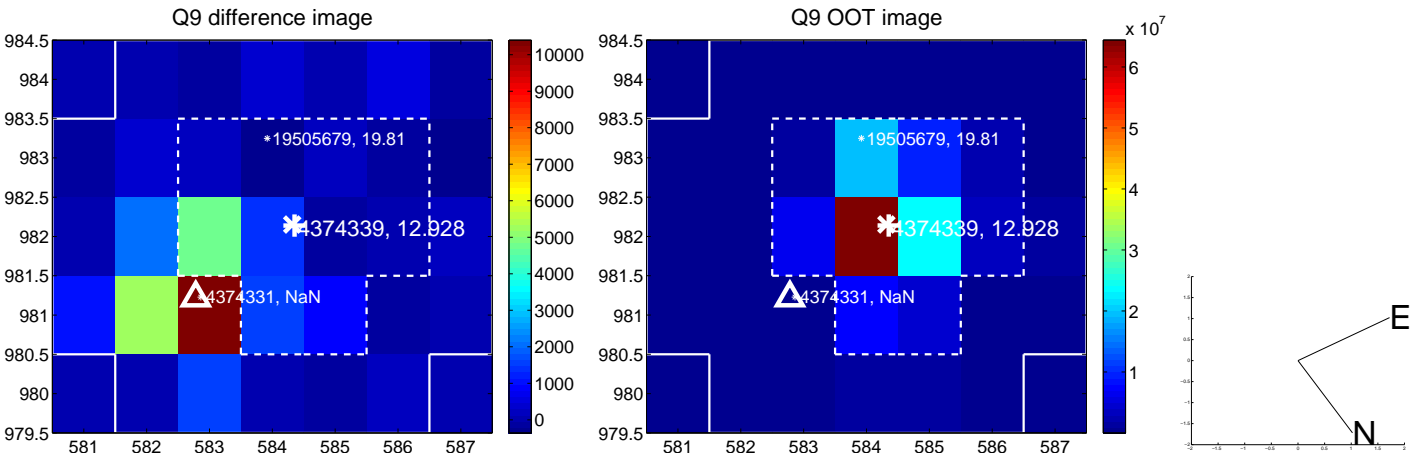


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

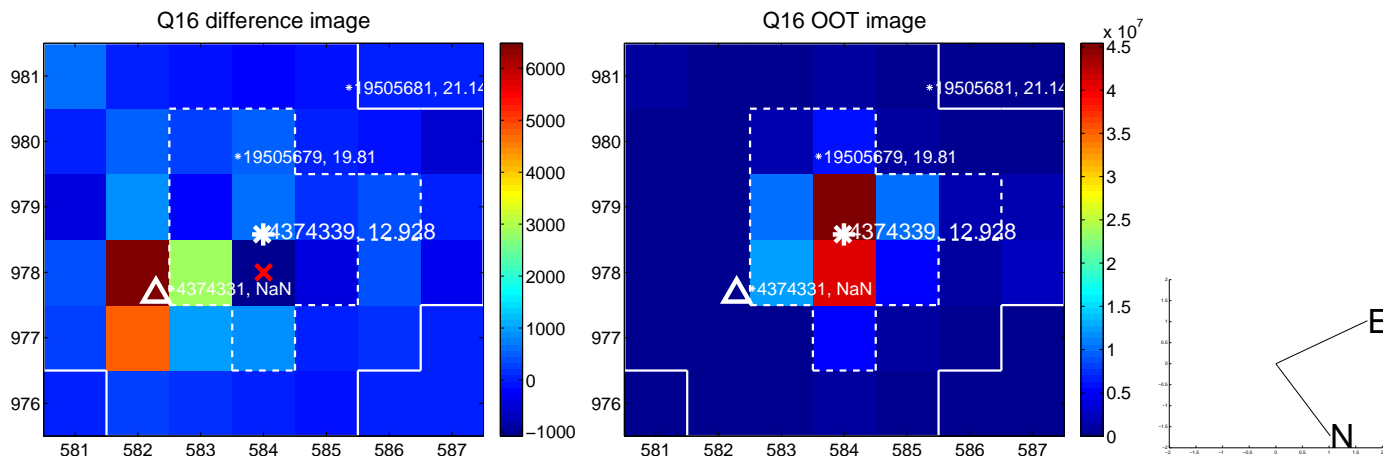
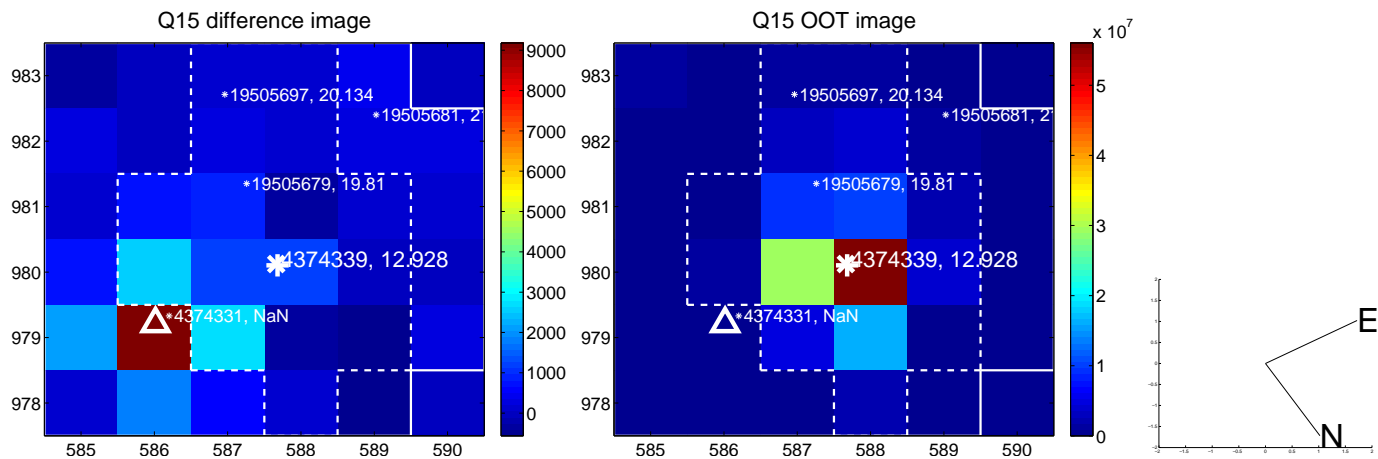
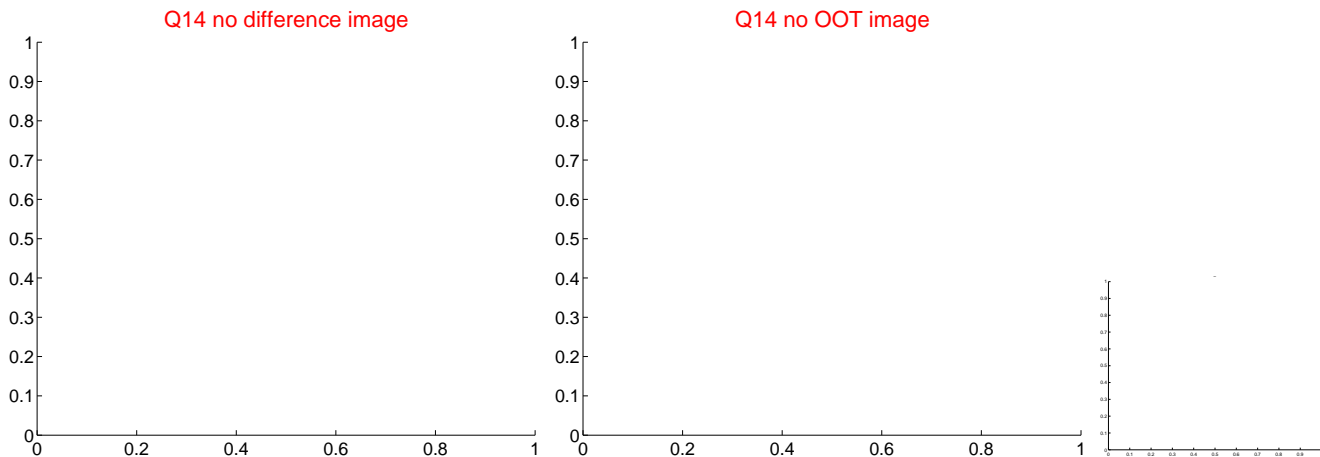
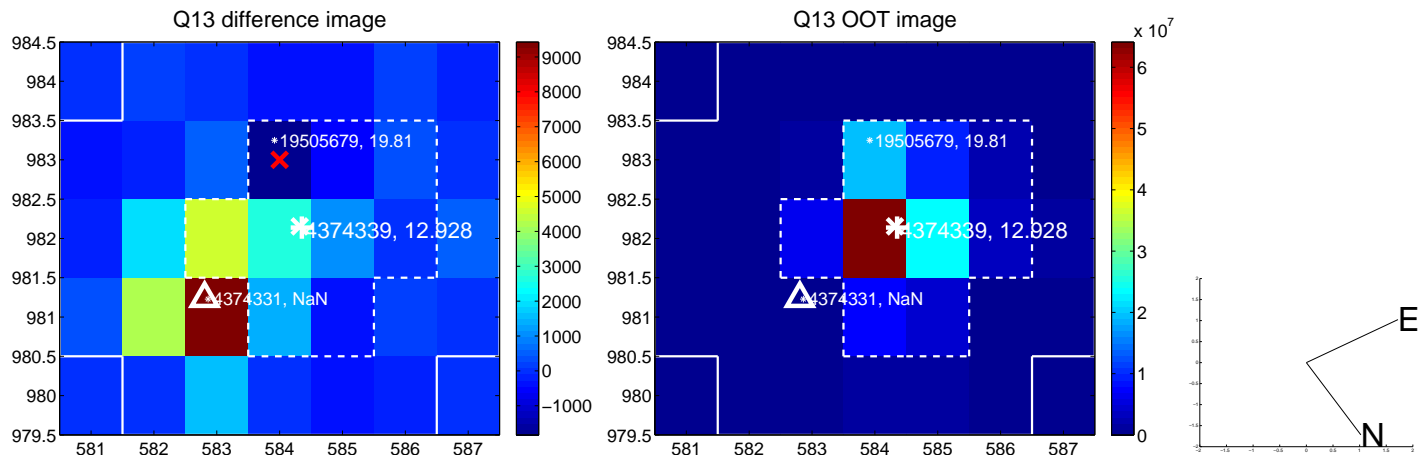




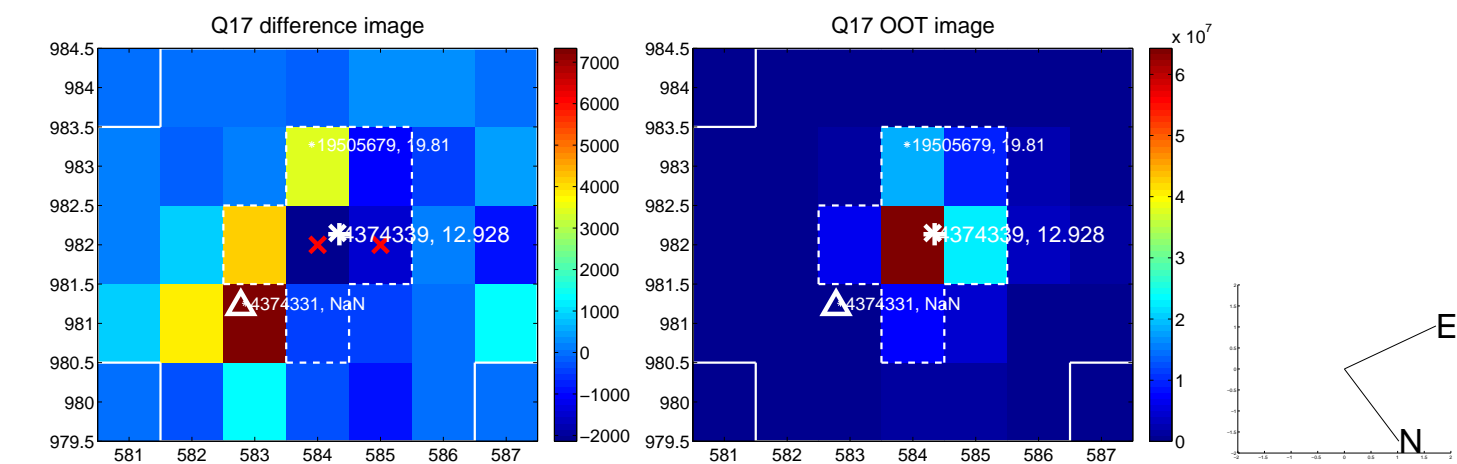
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



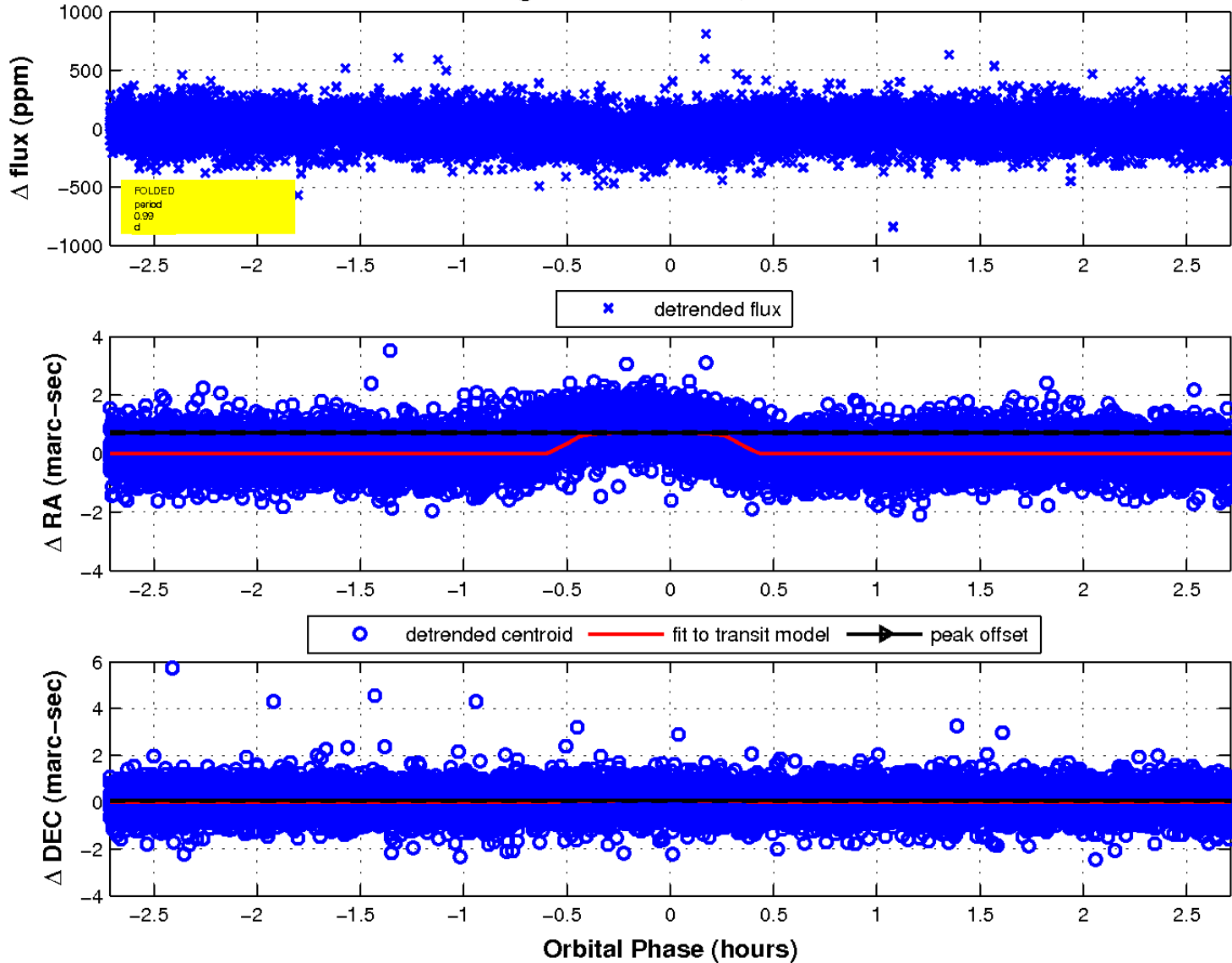
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

