

# KIC 008975368

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008975368-01	OBS	3227.01	2.426498	133.701326	29.9	1.817	14.0	14.2	1.32	6033	0.86	1705.66

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008975368-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET

**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.

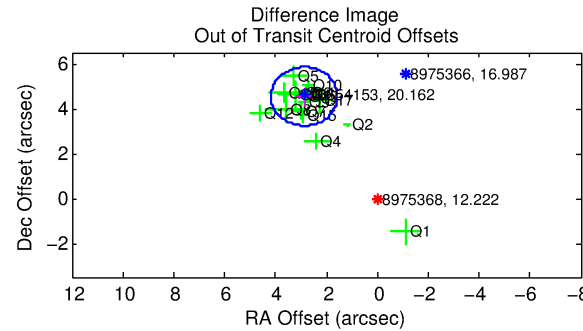
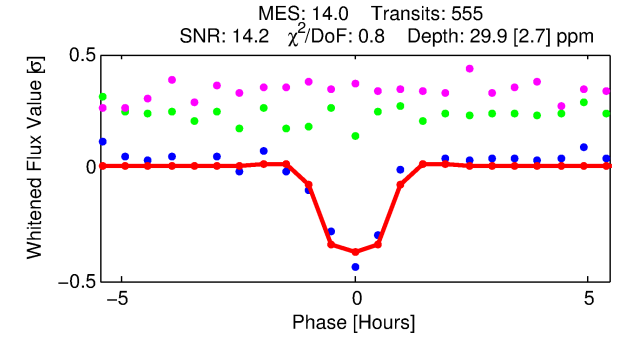
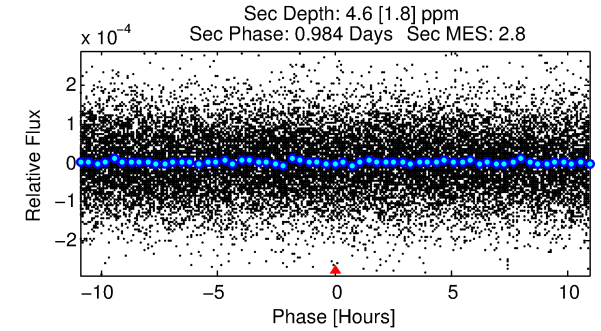
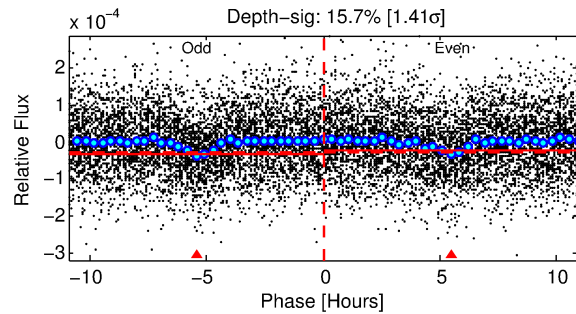
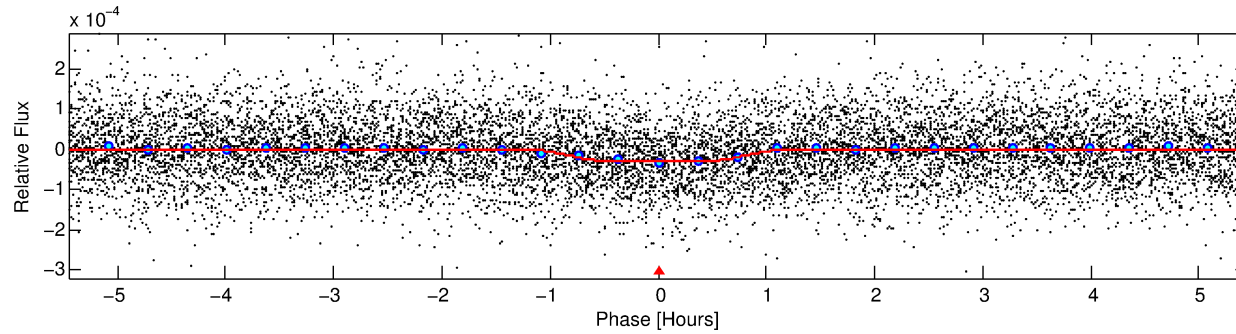
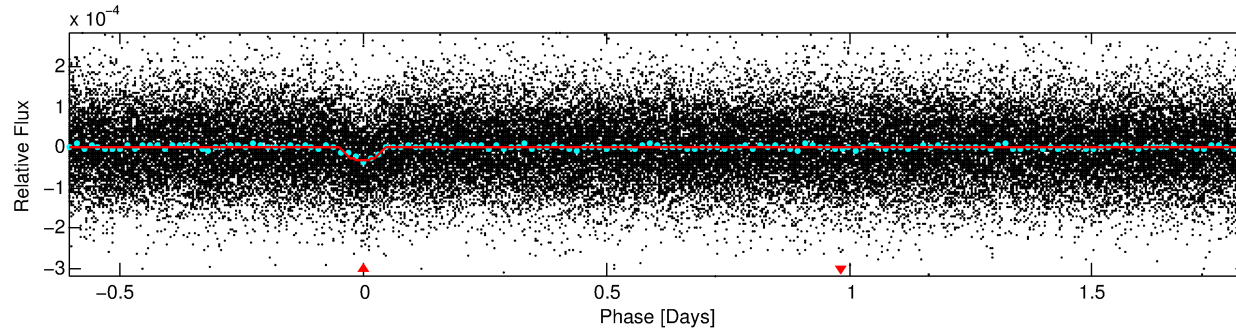
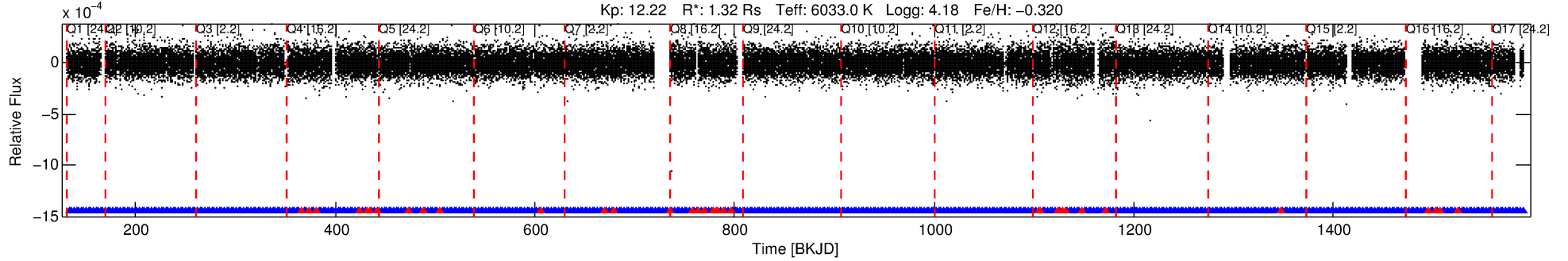
## Ephemeris Match Information For 008975368-01

No Significant Match Found

# DV One-Page Summary

KIC: 8975368 Candidate: 1 of 1 Period: 2.426 d  
KOI: K03227.01 Corr: 0.861

Kp: 12.22 R\*: 1.32 Rs Teff: 6033.0 K Logg: 4.18 Fe/H: -0.320



## DV Fit Results:

Period = 2.42650 [0.00001] d  
Epoch = 133.7013 [0.0022] BKJD  
Rp/R\* = 0.0060 [0.0021]  
a/R\* = 4.27 [7.55]  
b = 0.92 [0.32]  
Seff = 1705.66 [705.06]  
Teq = 1639 [169] K  
Rp = 0.86 [0.37] Re  
a = 0.0347 [0.0085] AU  
Ag = 4.11 [3.62] [0.86σ]  
Teffp = 3607 [717] K [2.67σ]

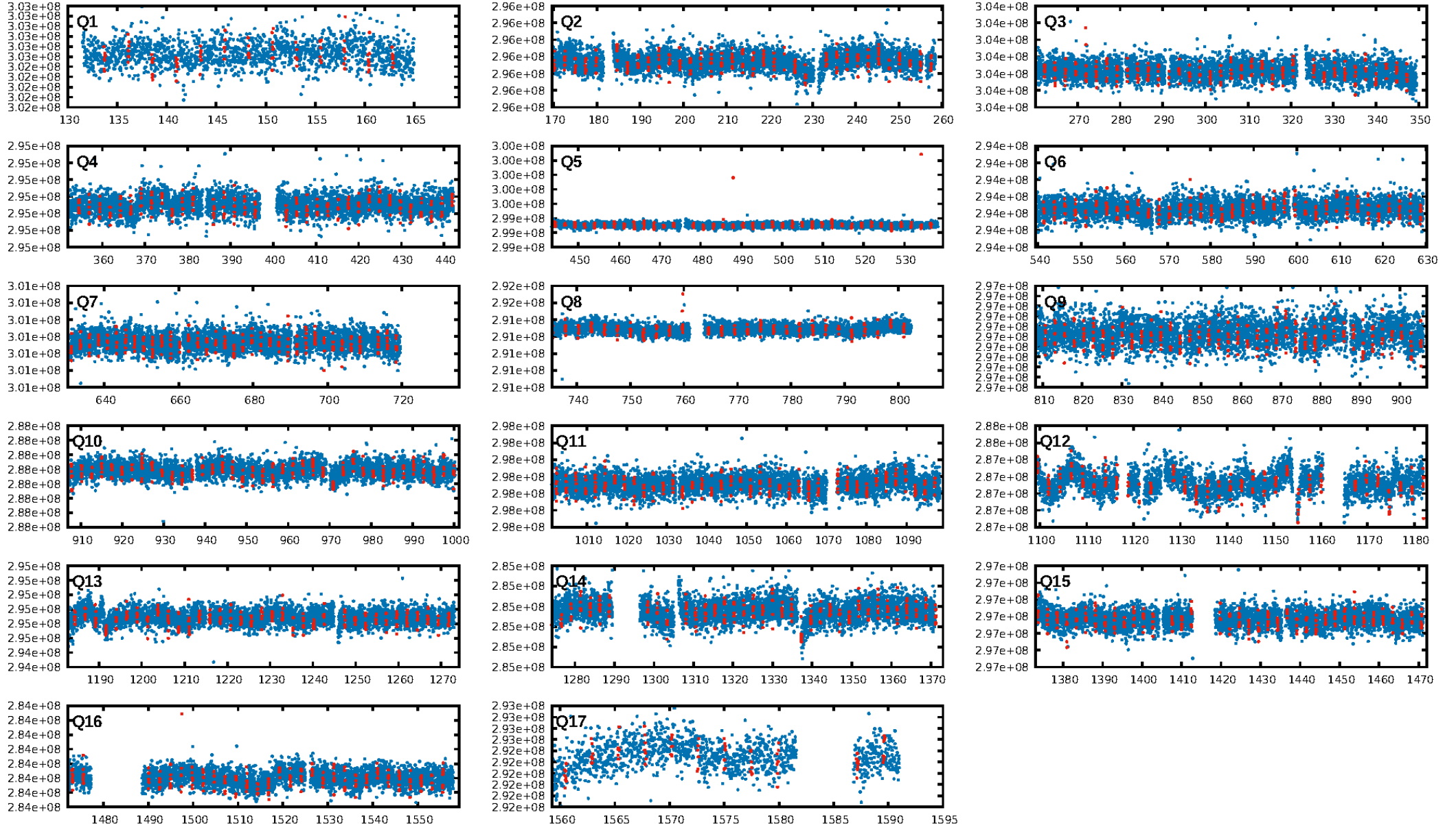
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 7.36e-42  
RollingBand-fgt: 0.94 [497/531]  
GhostDiagnostic-chr: 0.5439  
Centroid-sig: 0.0%  
Centroid-so: 7.168 arcsec [7.78σ]  
OotOffset-rm: 5.375 arcsec [12.35σ]  
KicOffset-rm: 5.484 arcsec [11.15σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.82 [14/17]  
DiffImageOverlap-fno: 1.00 [17/17]

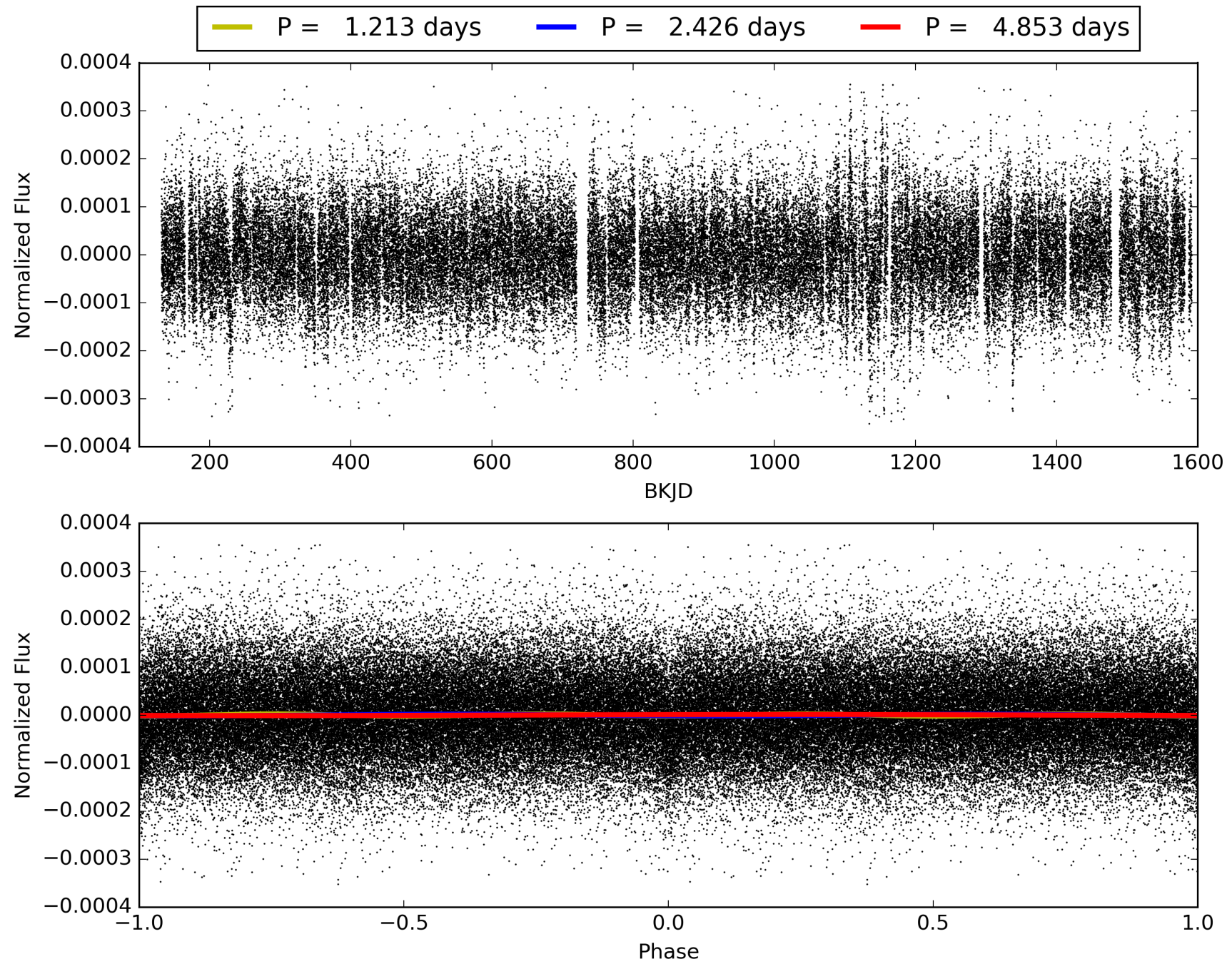
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:35:07 Z

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

# TCE 008975368-01, PDC Light Curves

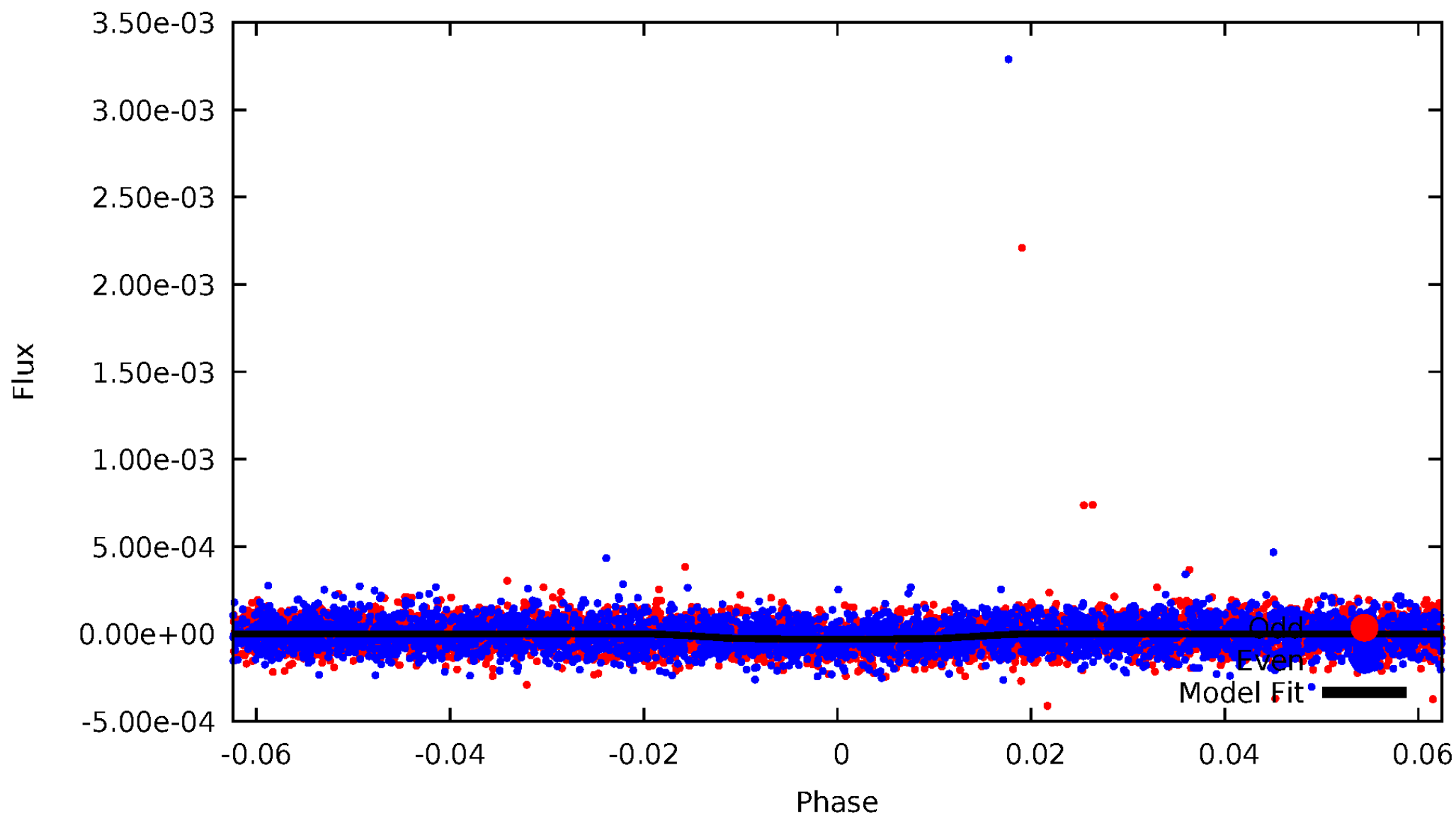


TCE 008975368-01



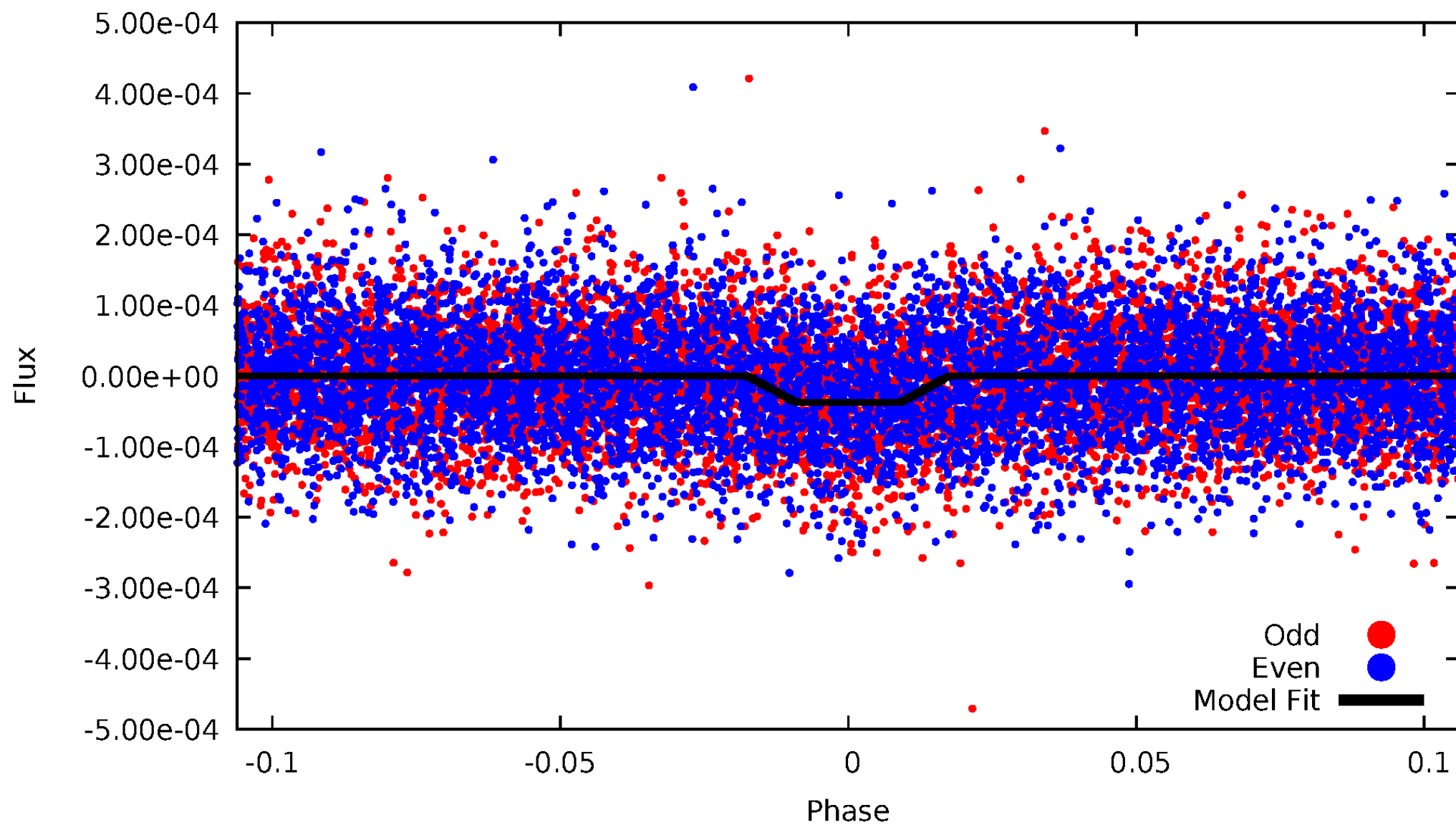
# DV Odd/Even

TCE 008975368-01



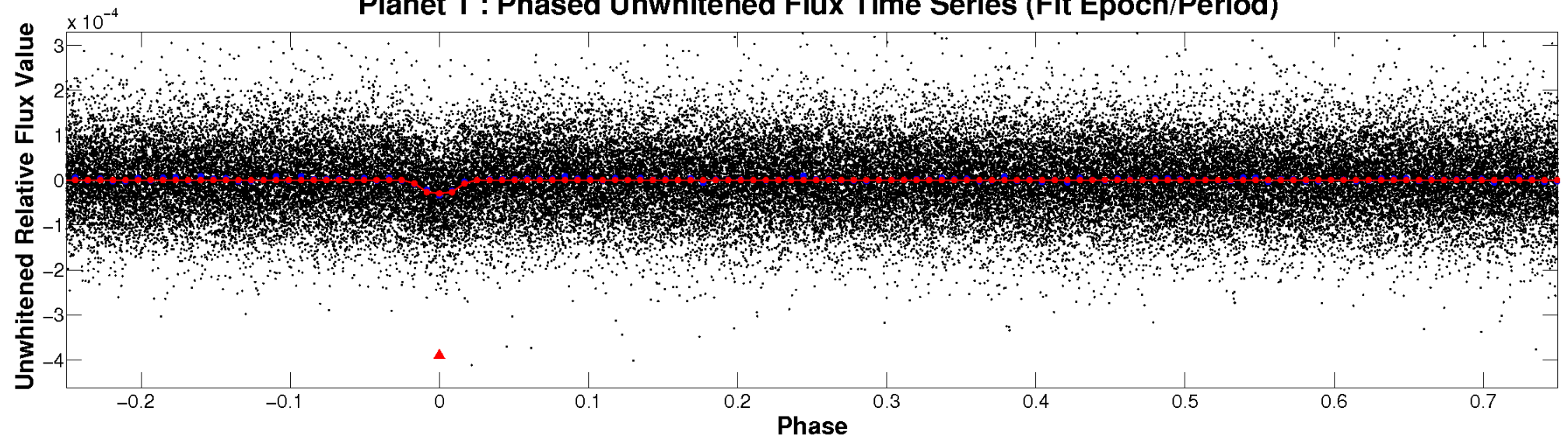
# ALT Odd/Even

TCE 008975368-01

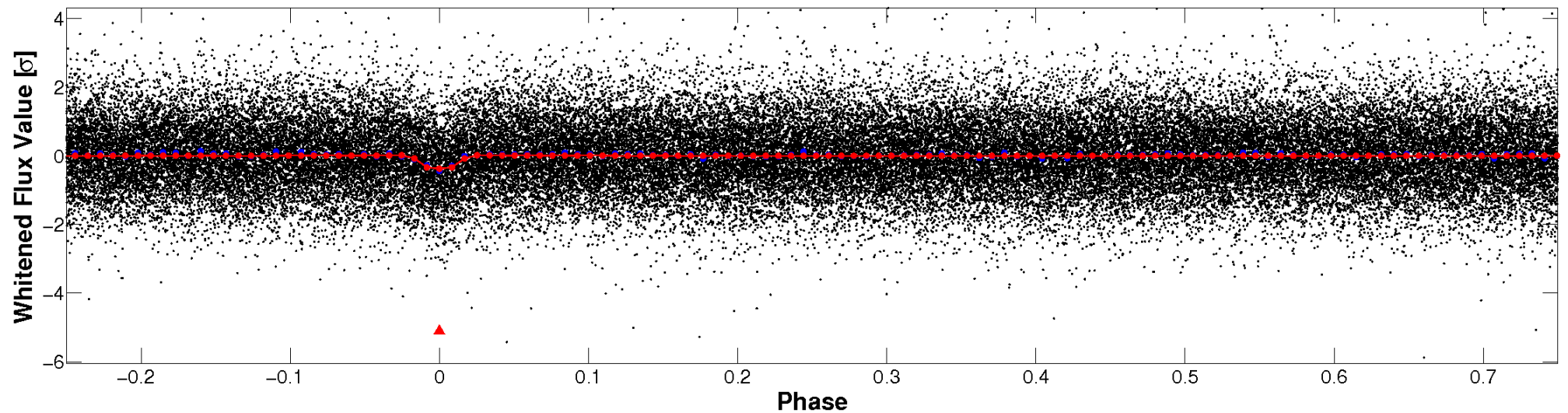


# Non-Whitened Vs. Whitened Light Curve

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

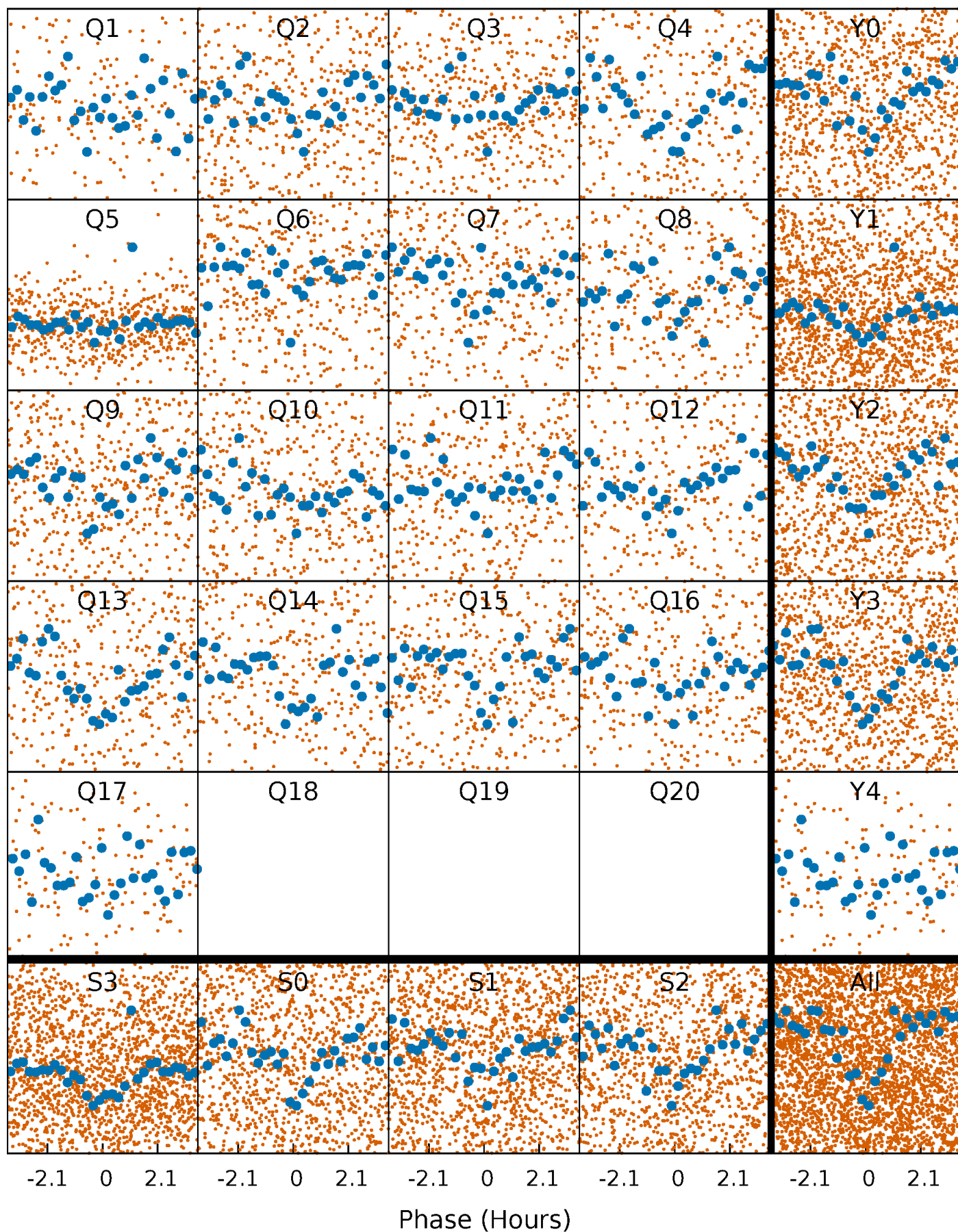


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



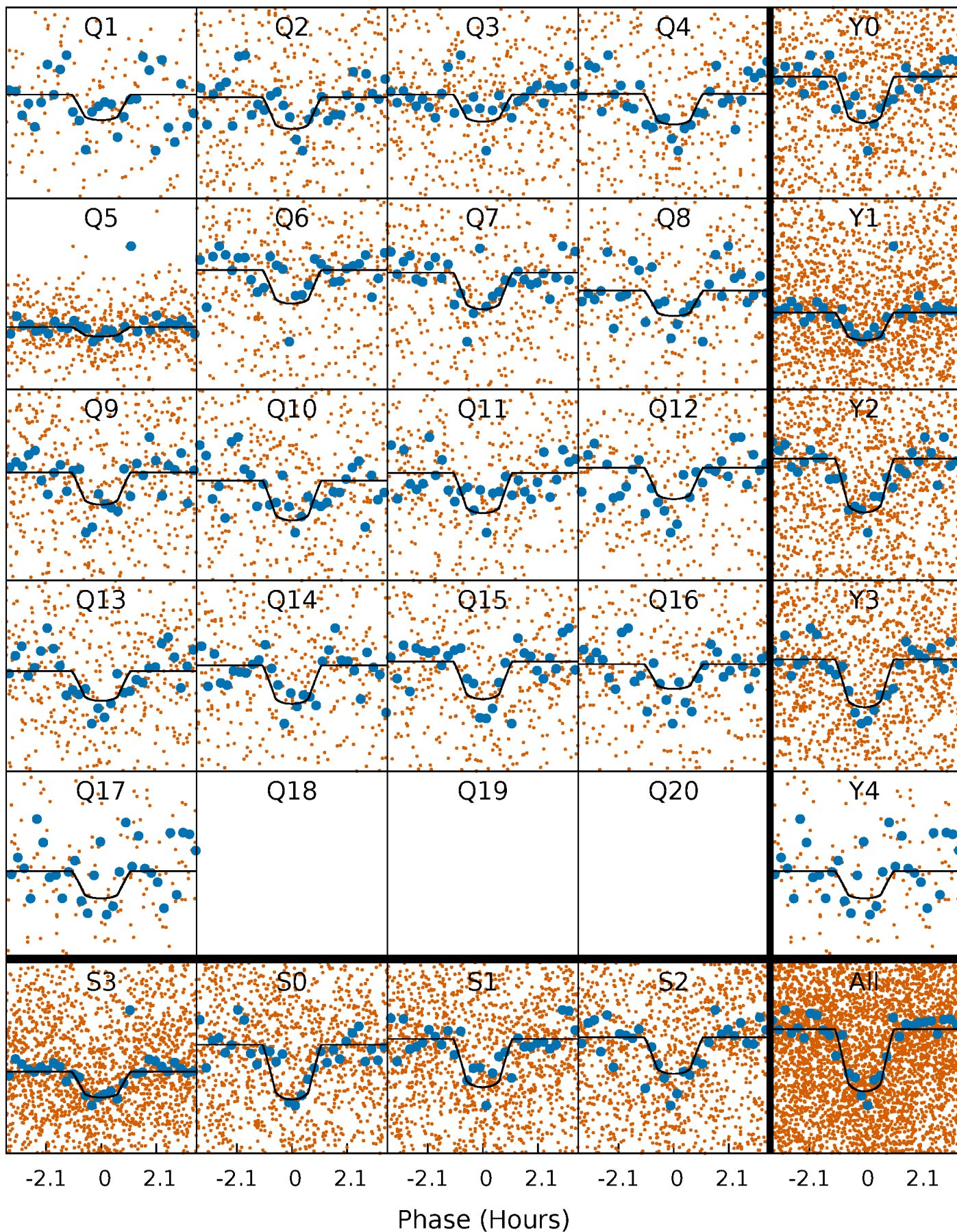
# PDC Quarter-Phased Transit Curves

TCE 008975368-01 P= 2.426498 Days  $T_0=133.701326$  (BKJD)



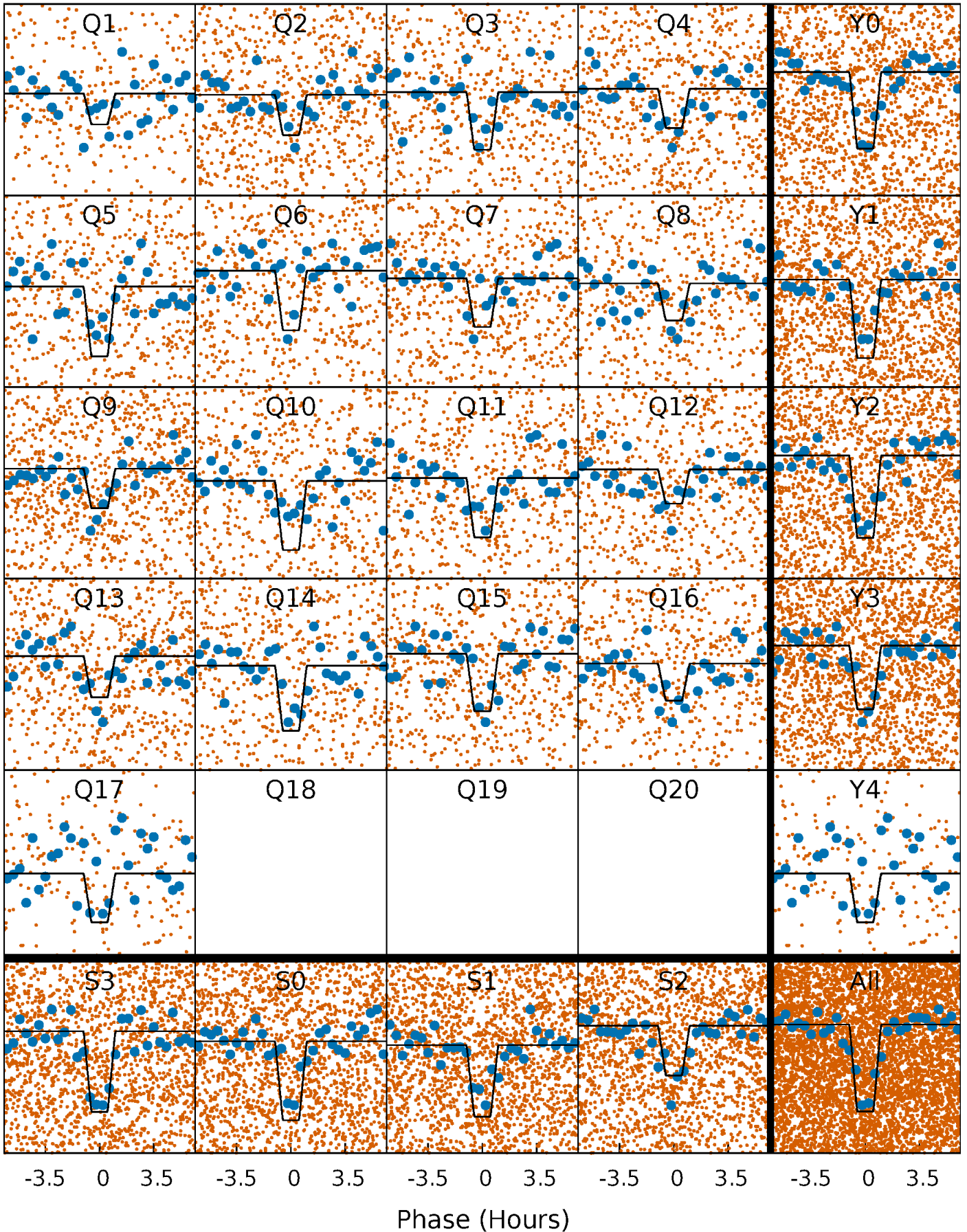
# DV Quarter-Phased Transit Curves

TCE 008975368-01   P= 2.426498 Days    $T_0=133.701326$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

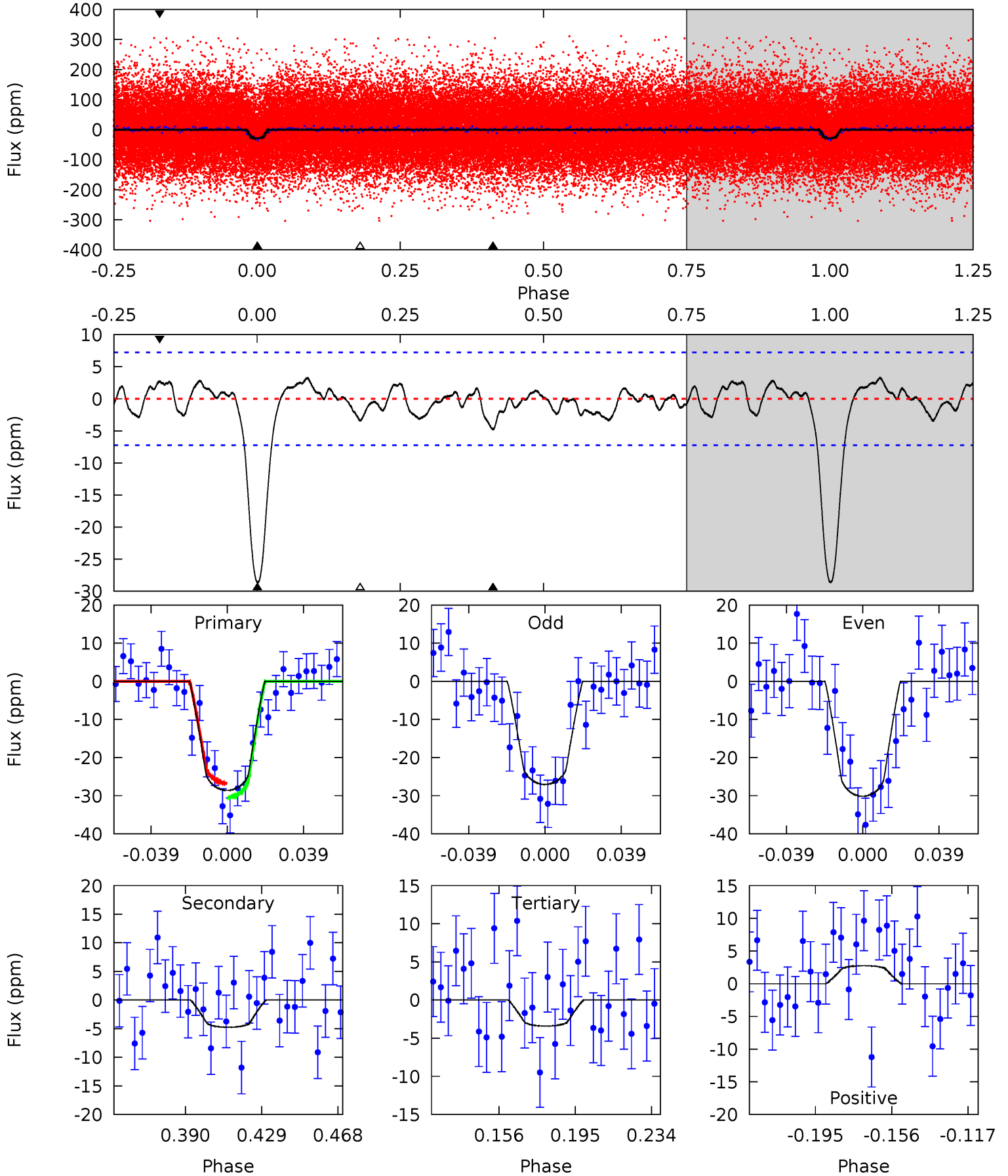
TCE 008975368-01 P= 2.426479 Days  $T_0=133.709838$  (BKJD)



# DV Model-Shift Uniqueness Test

008975368-01, P = 2.426498 Days, E = 131.274828 Days

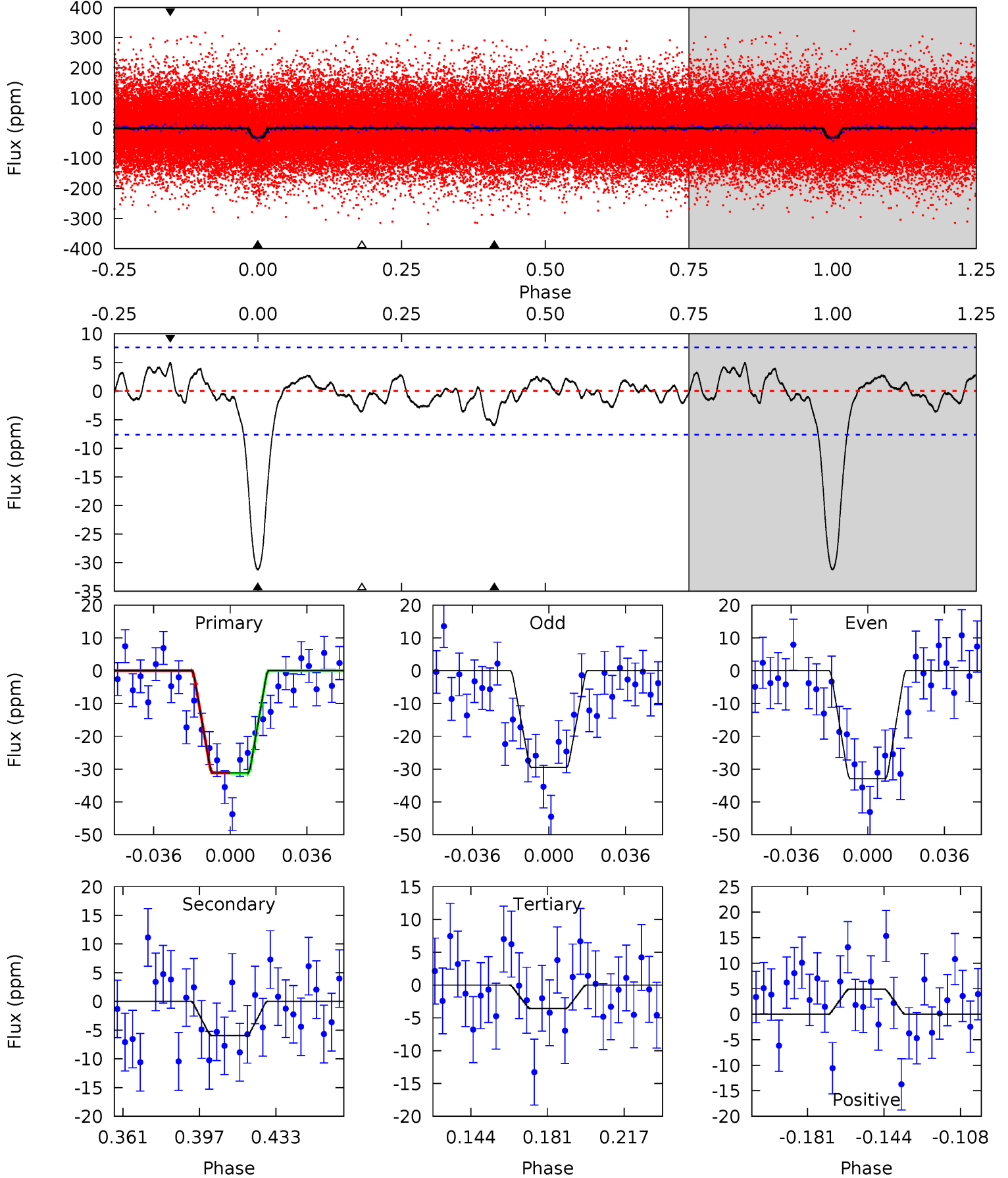
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
18.8	3.13	2.25	1.81	4.76	2.06	1.04	16.5	17.0	0.89	1.33	1.03	1.03	0.10	1.23



# Alt Model-Shift Uniqueness Test

008975368-01, P = 2.426479 Days, E = 131.283359 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
19.5	3.72	2.24	3.07	4.77	2.10	1.11	17.3	16.4	1.48	0.65	1.08	1.02	0.14	0.04



### Stellar Parameters For KIC 008975368

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6033^{+181}_{-181}$	$4.176^{+0.234}_{-0.126}$	$-0.320^{+0.300}_{-0.250}$	$1.316^{+0.267}_{-0.327}$	$0.948^{+0.146}_{-0.098}$	$0.586^{+0.700}_{-0.242}$
	+3%/-3%	+6%/-3%	+94%/-78%	+20%/-25%	+15%/-10%	+119%/-41%
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 008975368-01 / KOI 3227.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-5 \pm 2$	$0.83^{+0.32}_{-0.29}$	$2268^{+146}_{-158}$	$3937^{+711}_{-515}$	$4.525^{+6.548}_{-2.401}$
Alt.	$-6 \pm 2$	$0.87^{+0.33}_{-0.28}$	$2261^{+157}_{-154}$	$4022^{+690}_{-464}$	$5.104^{+6.641}_{-2.546}$

$T_{\text{max}}$  = 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

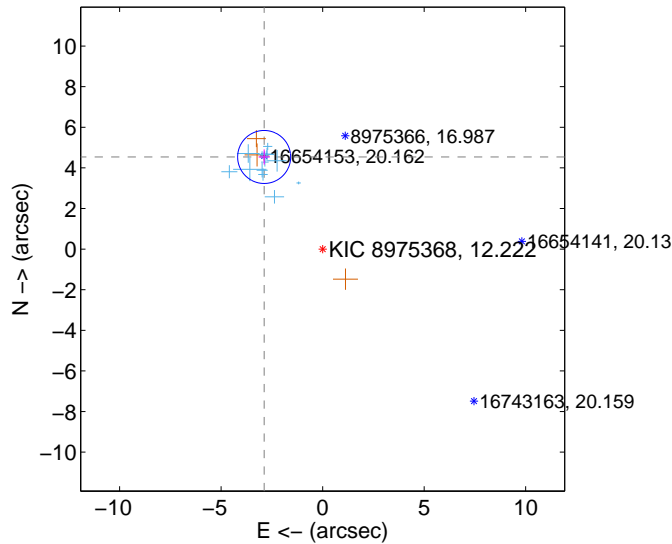
Supplemental centroid analysis for 008975368-01. Kepler magnitude: 12.22. Transit SNR 14.20

There are 14 quarters with good PRF difference image offsets

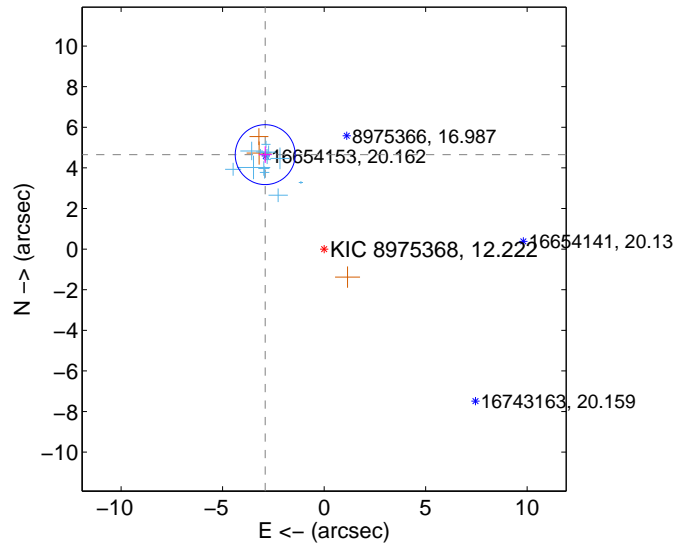
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.375 \pm 0.435$	12.35	$2.881 \pm 0.275$	$4.537 \pm 0.371$
PRF-fit source offset from KIC position	$5.484 \pm 0.492$	11.15	$2.903 \pm 0.314$	$4.652 \pm 0.408$
photometric centroid source offset	$7.17 \pm 0.92$	7.78	$-0.69 \pm 1.05$	$7.13 \pm 0.92$

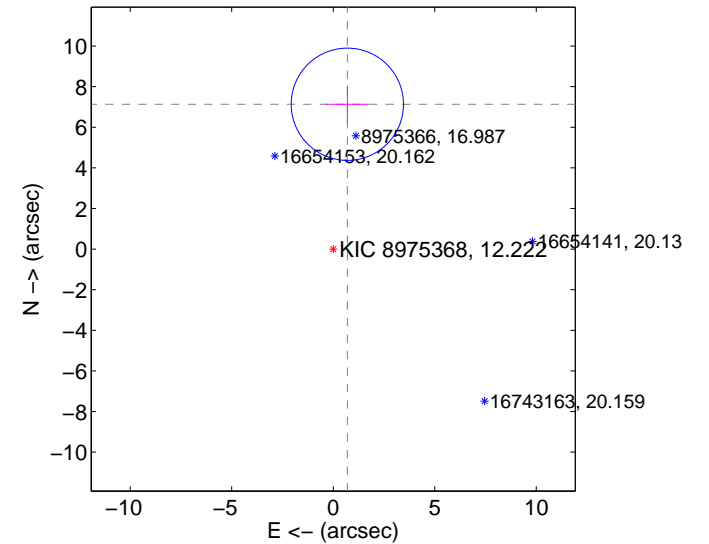
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

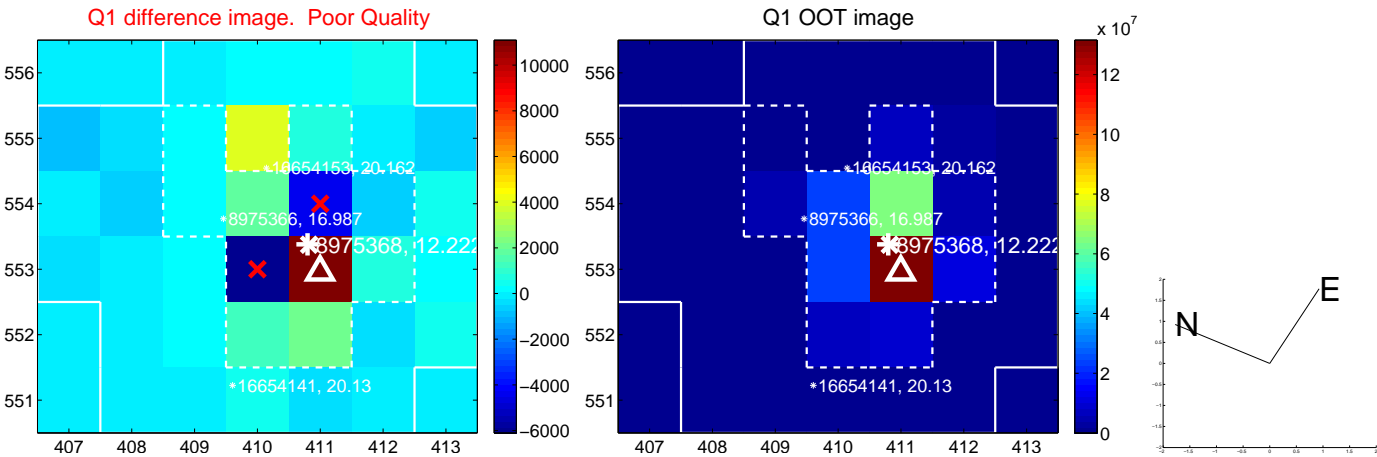


offset from photometric centroids

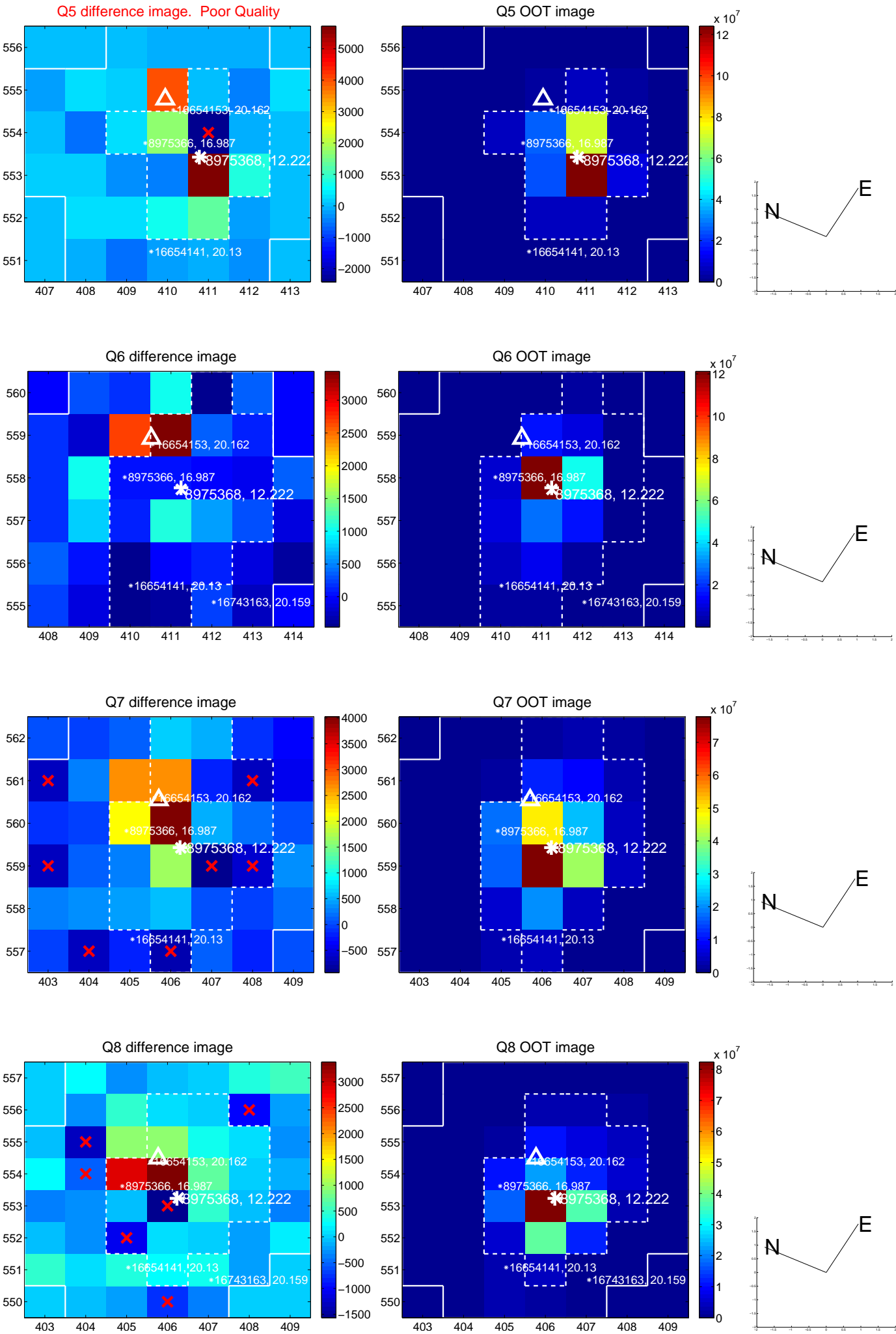


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

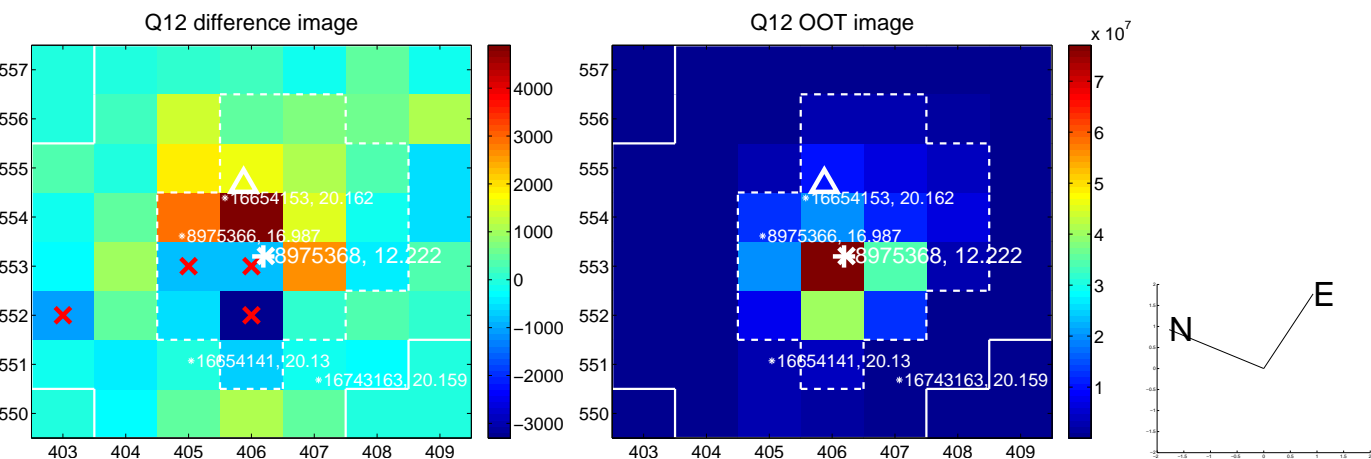
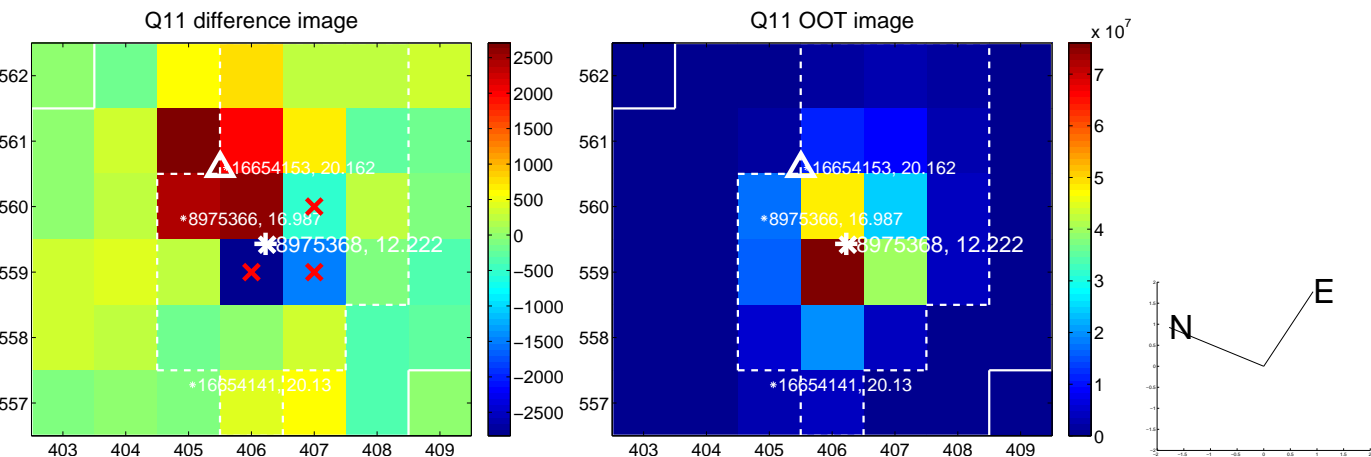
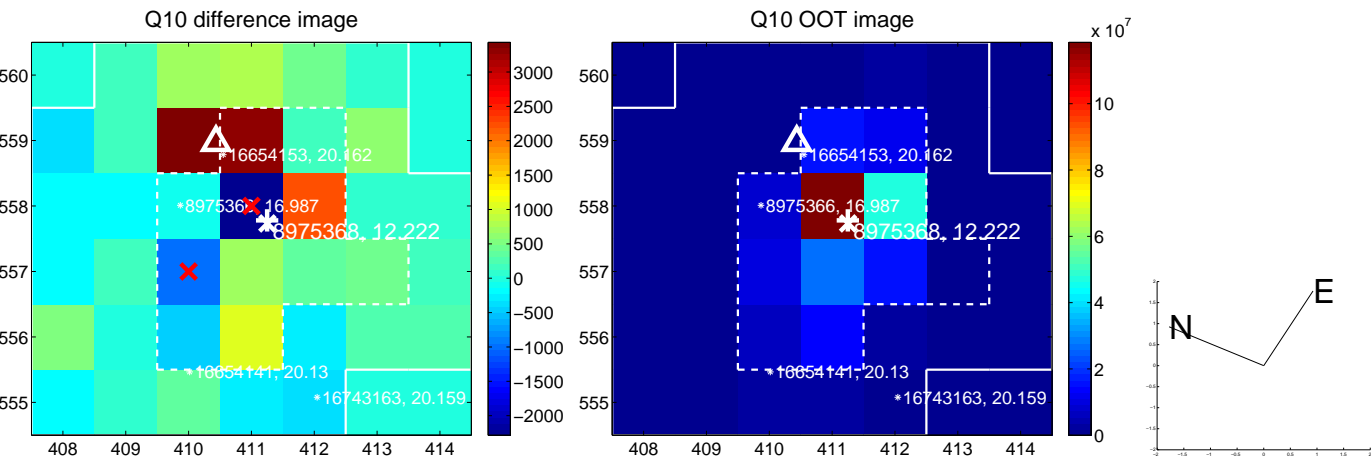
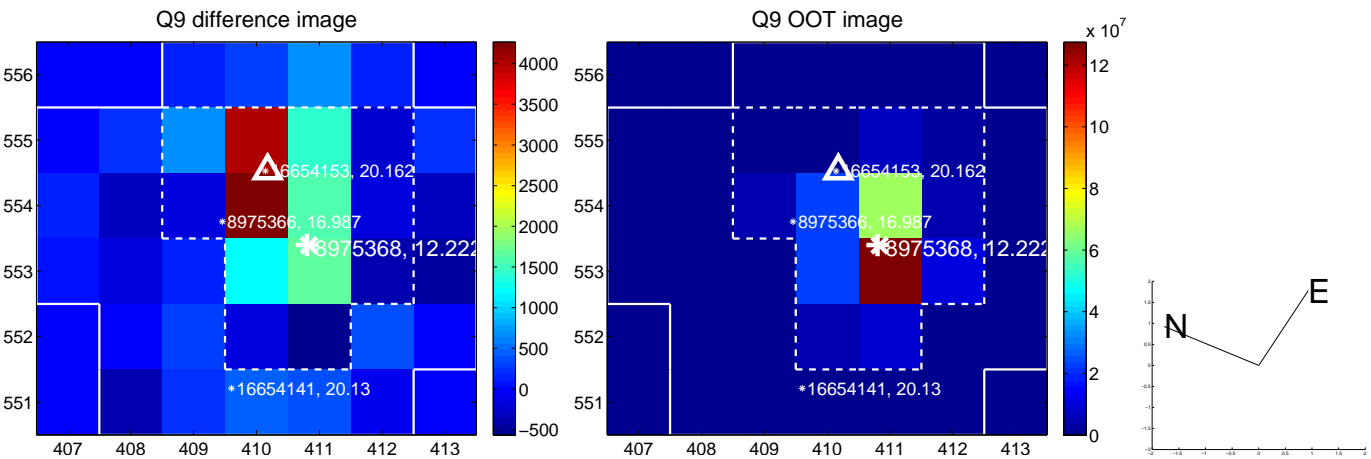
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



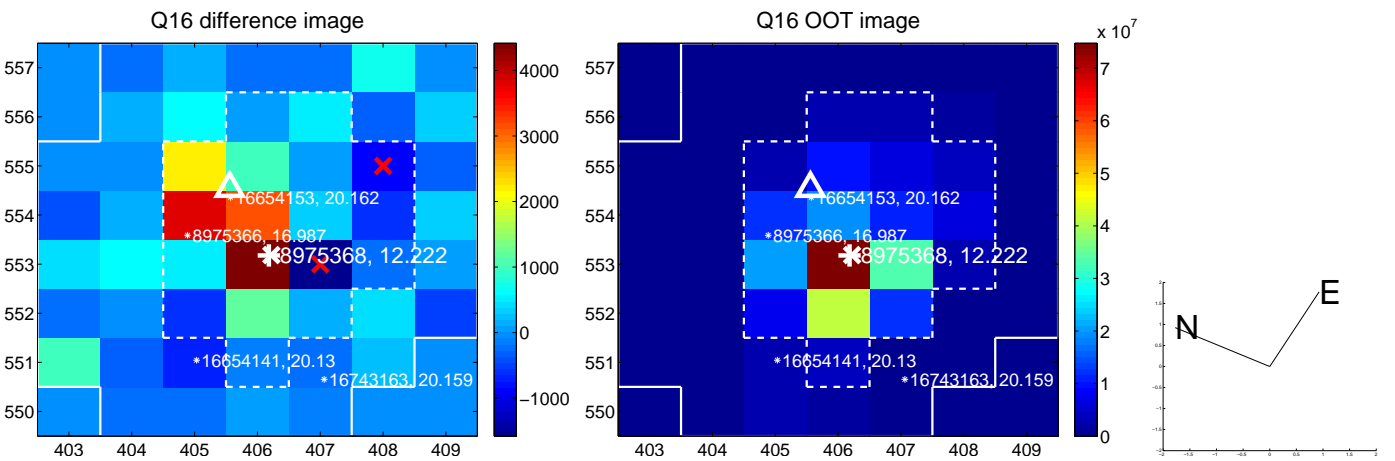
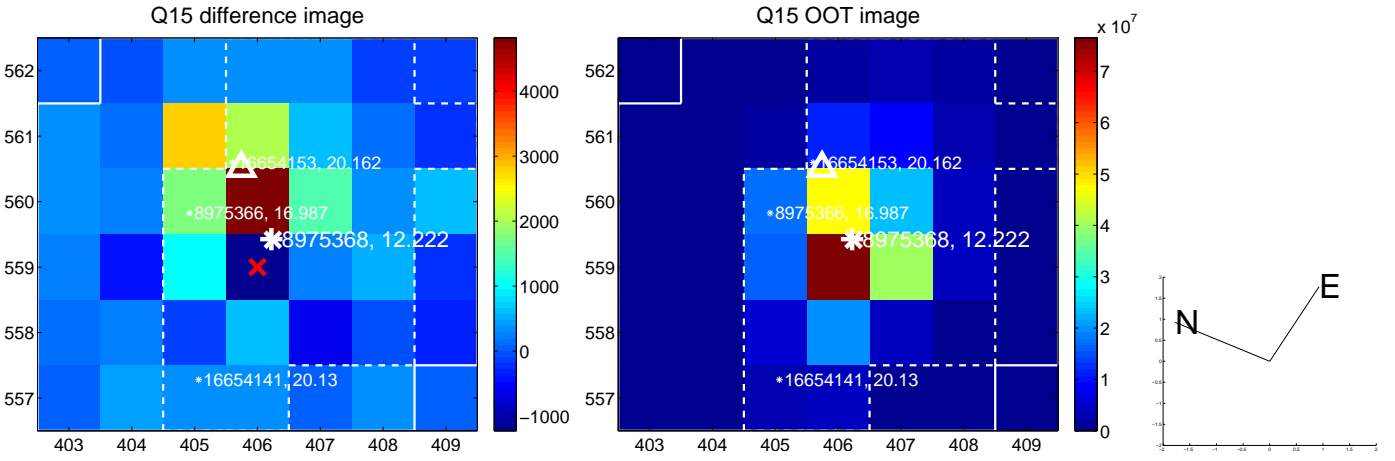
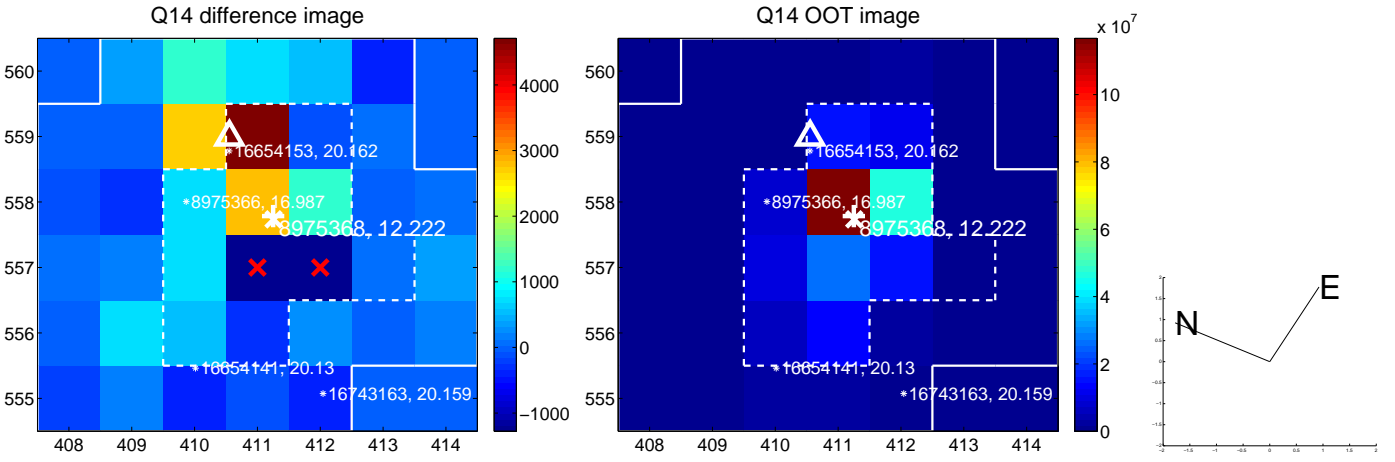
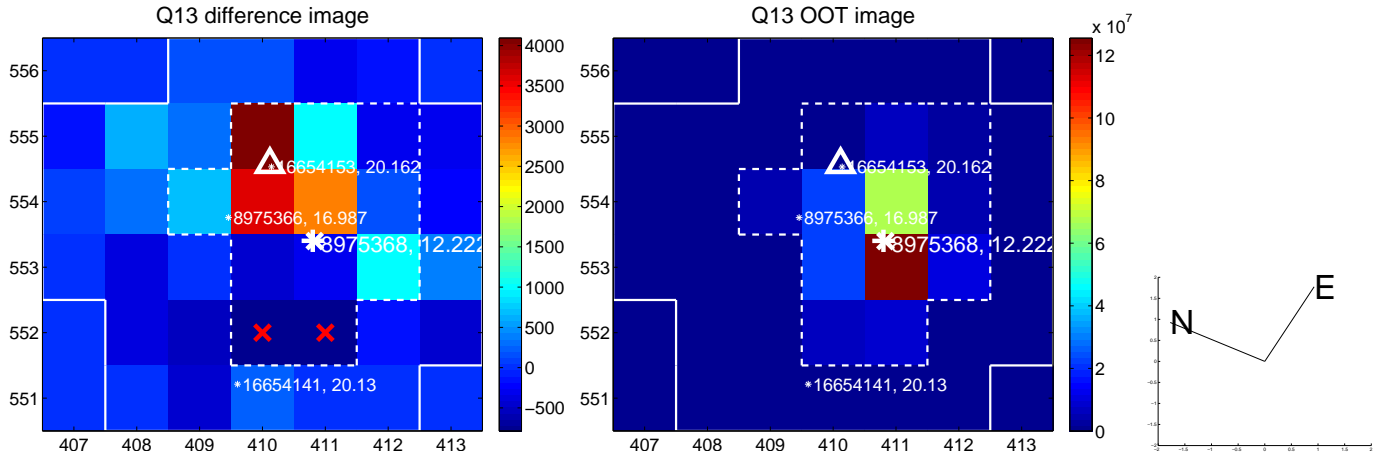
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



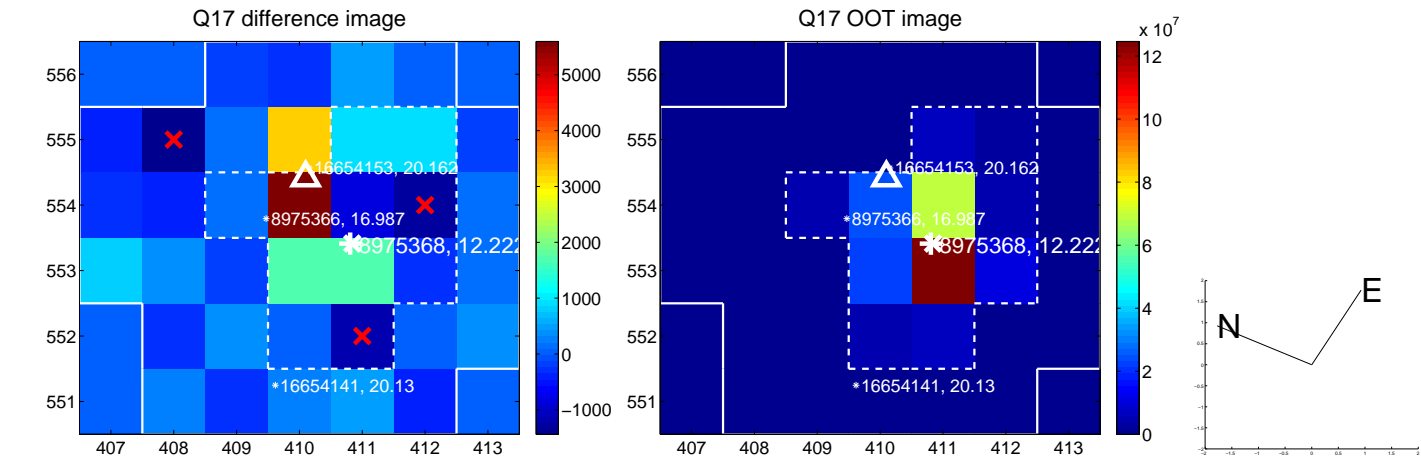
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



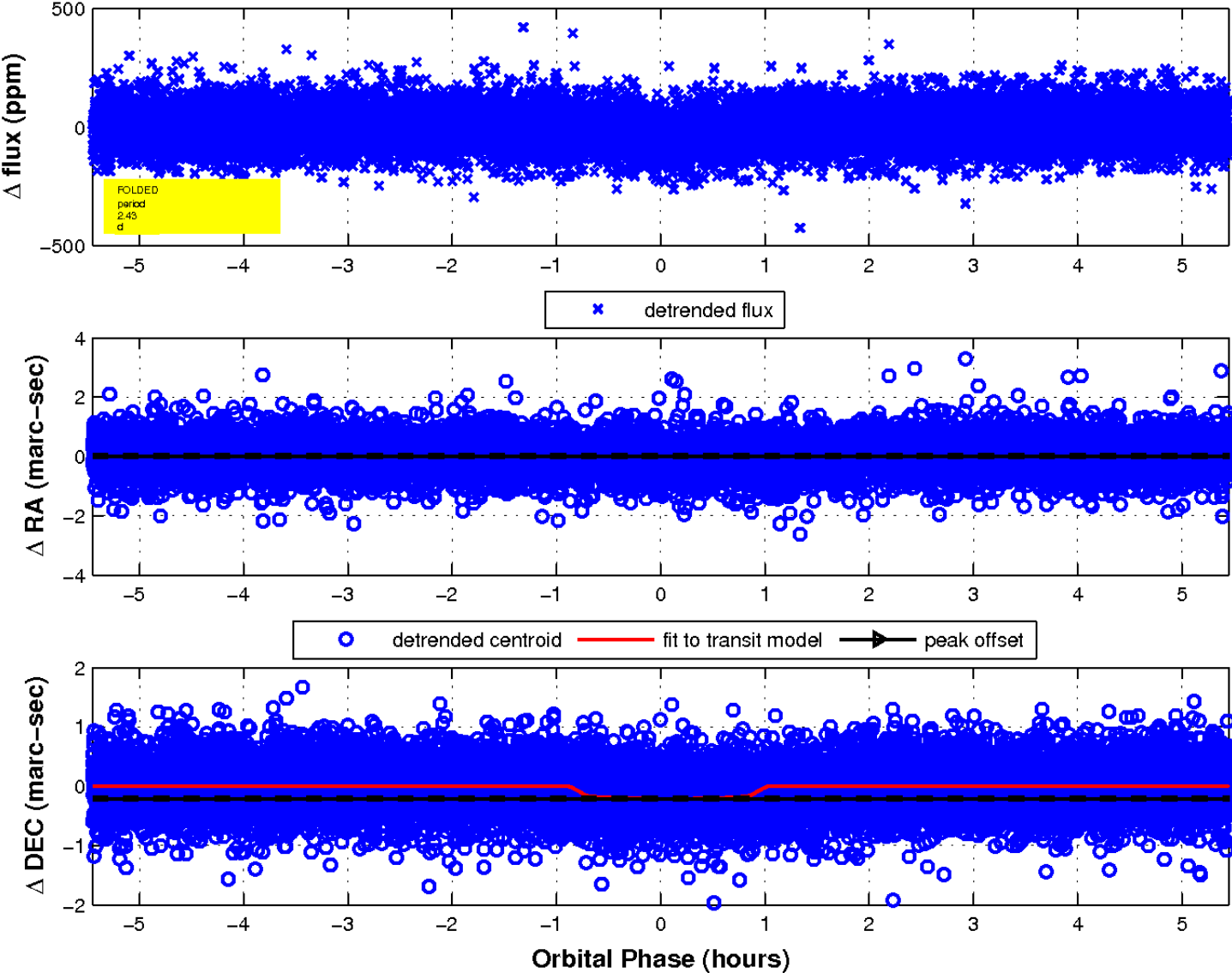
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

