

# KIC 006937402

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006937402-01	OBS	2894.01	10.310783	141.512880	201.7	5.702	12.9	13.3	0.89	5708	1.43	90.30

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006937402-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT

**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.

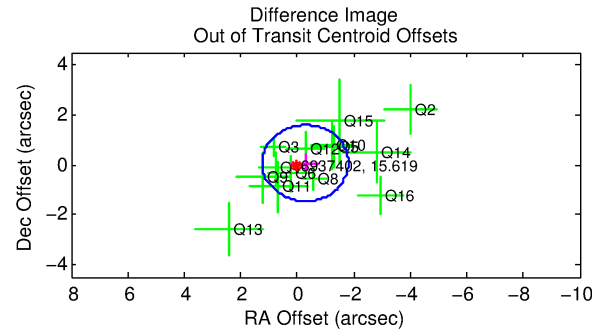
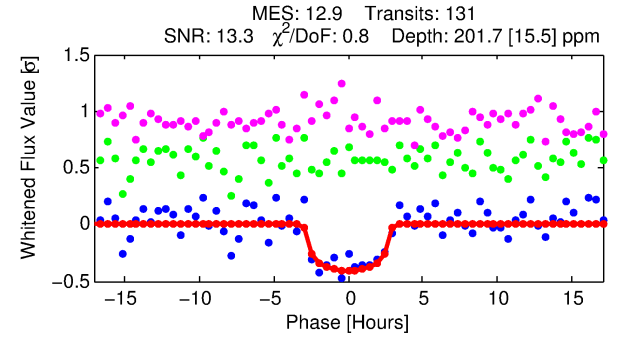
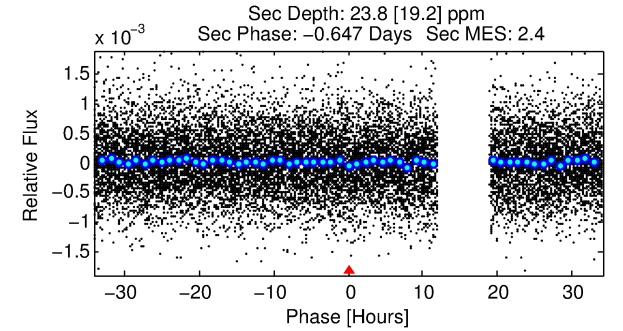
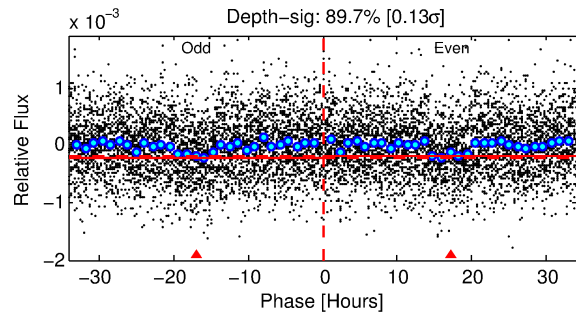
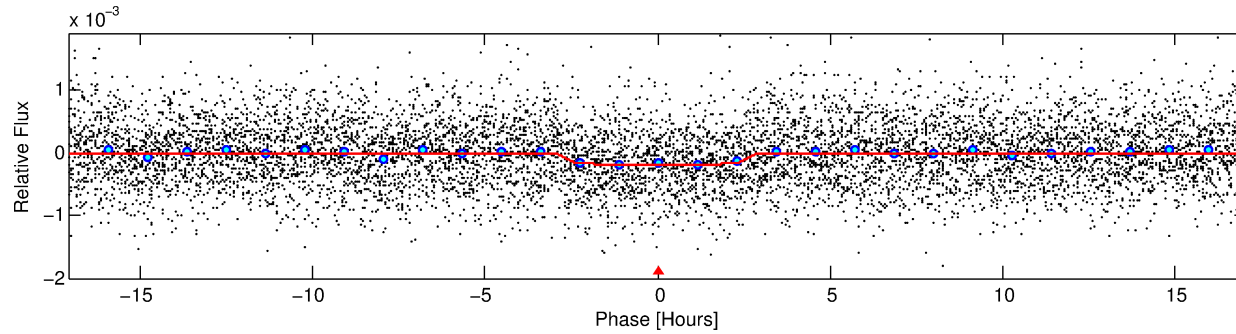
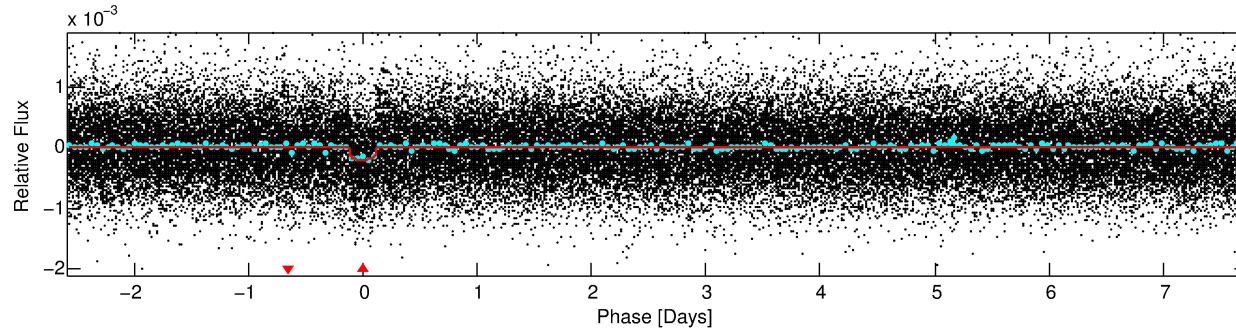
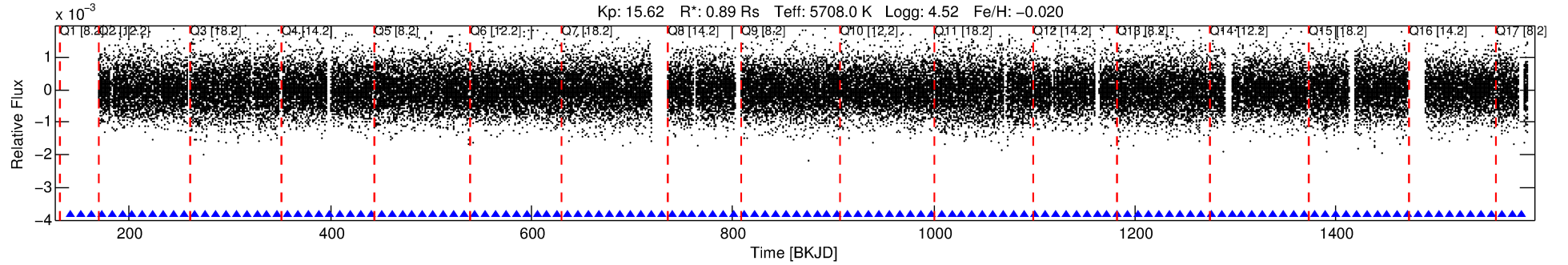
## Ephemeris Match Information For 006937402-01

No Significant Match Found

# DV One-Page Summary

KIC: 6937402 Candidate: 1 of 1 Period: 10.311 d

KOI: K02894.01 Corr: 0.991



## DV Fit Results:

Period = 10.31078 [0.00011] d  
Epoch = 141.5129 [0.0085] BKJD  
Rp/R\* = 0.0147 [0.0072]  
a/R\* = 8.14 [17.75]  
b = 0.83 [0.85]  
Seff = 90.30 [34.46]  
Teq = 786 [75] K  
Rp = 1.43 [0.82] Re  
a = 0.0916 [0.0226] AU  
Ag = 53.70 [70.97] [0.74 $\sigma$ ]  
Teffp = 3290 [1050] K [2.38 $\sigma$ ]

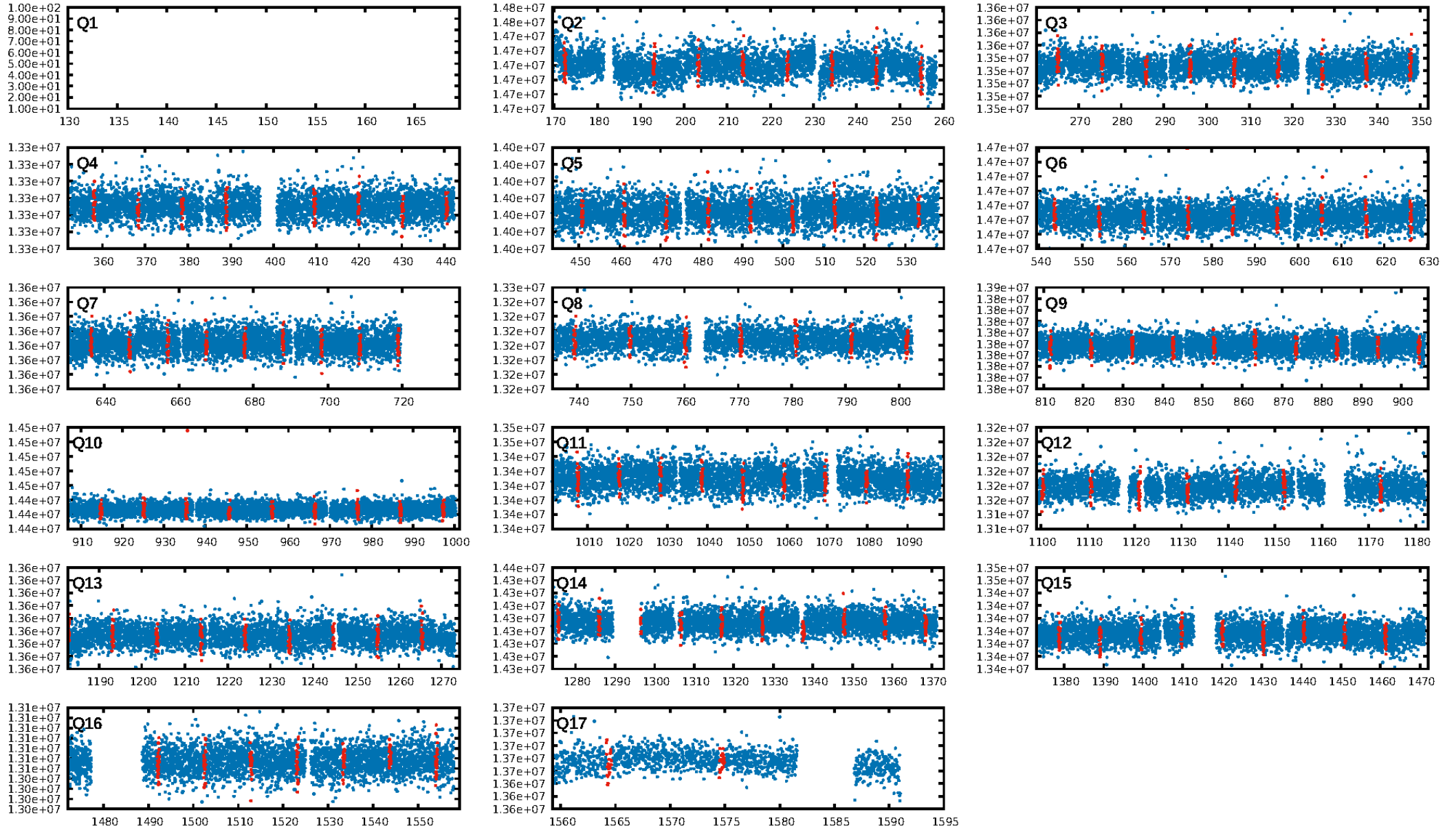
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 4.17e-38  
RollingBand-fgt: 1.00 [129/129]  
GhostDiagnostic-chr: 23.02  
Centroid-sig: 13.8%  
Centroid-so: 1.398 arcsec [1.41 $\sigma$ ]  
OotOffset-rm: 0.287 arcsec [0.56 $\sigma$ ]  
KicOffset-rm: 0.346 arcsec [0.69 $\sigma$ ]  
OotOffset-st: 4/3/4/3 [14]  
KicOffset-st: 4/3/4/3 [14]  
DiffImageQuality-fgm: 0.64 [9/14]  
DiffImageOverlap-fno: 1.00 [16/16]

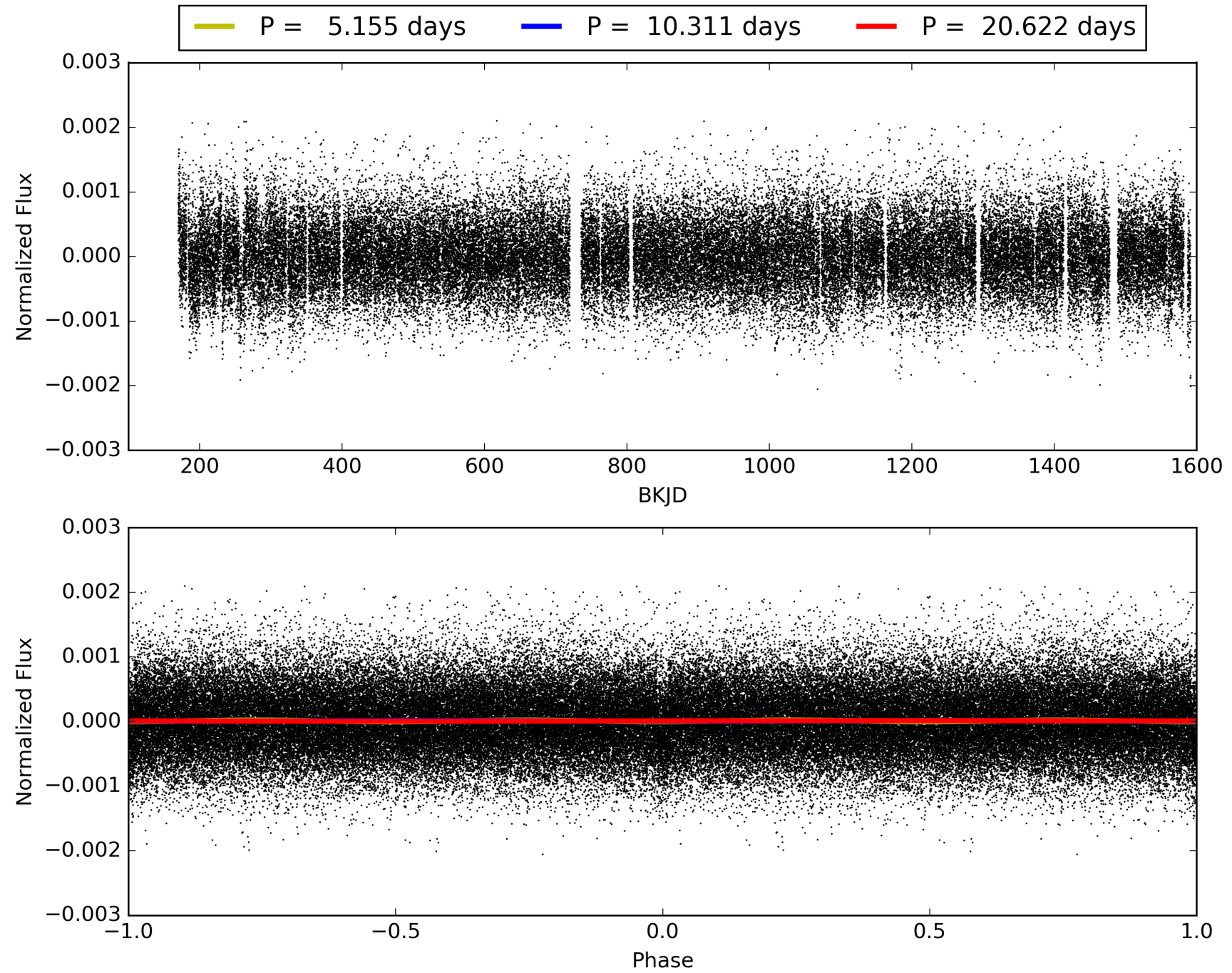
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:25:47 Z

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

# TCE 006937402-01, PDC Light Curves

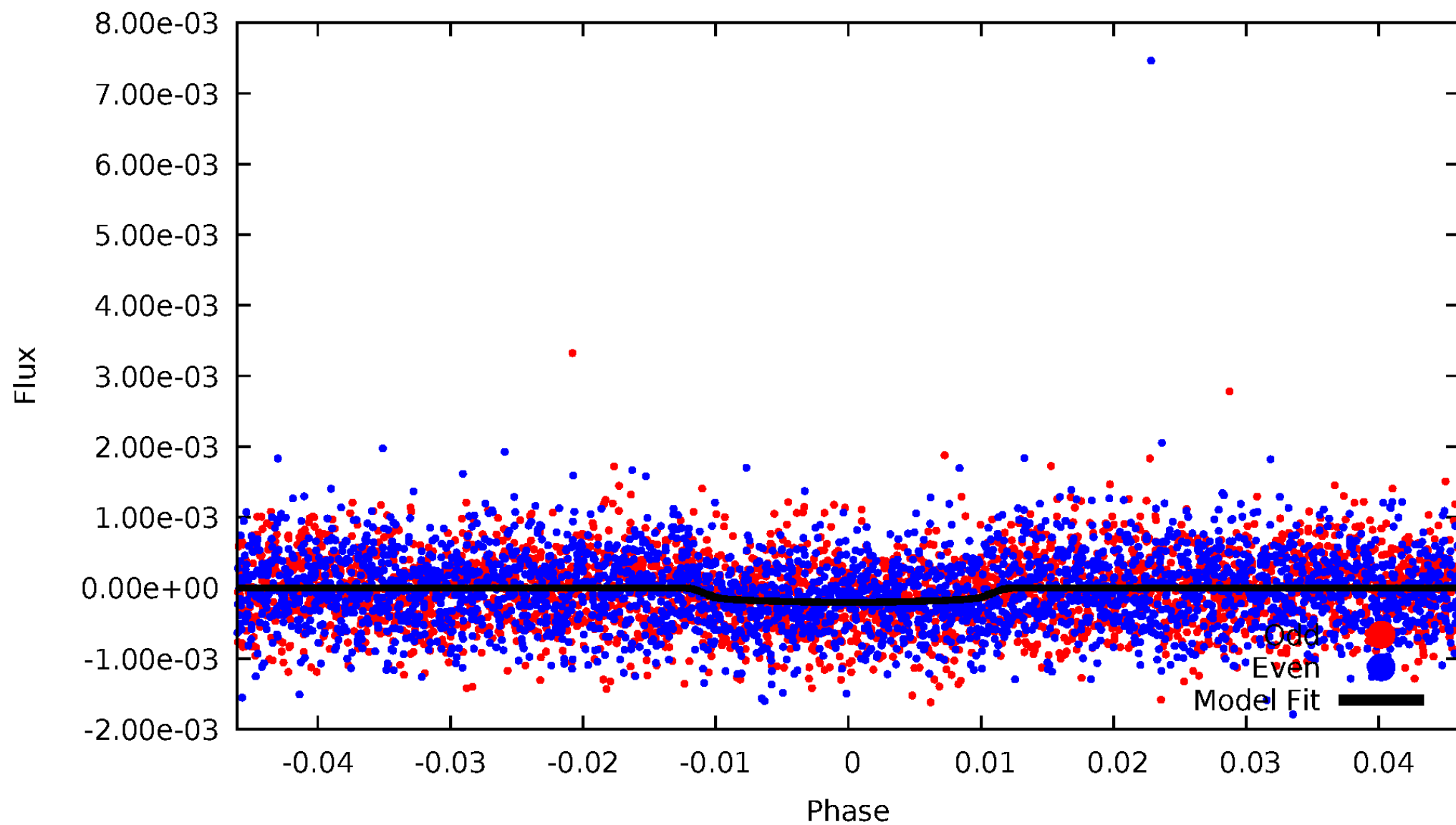


TCE 006937402-01



# DV Odd/Even

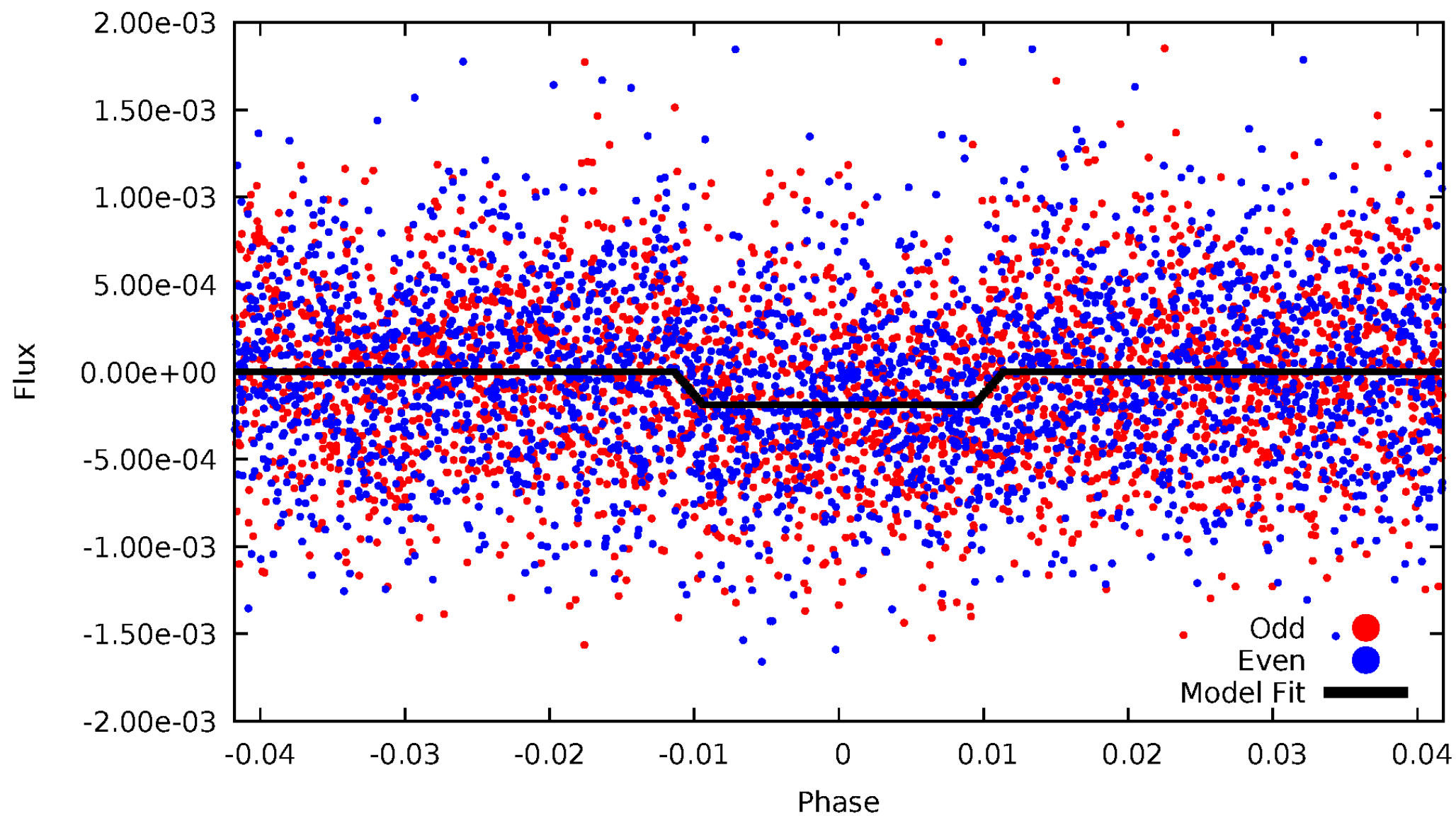
TCE 006937402-01





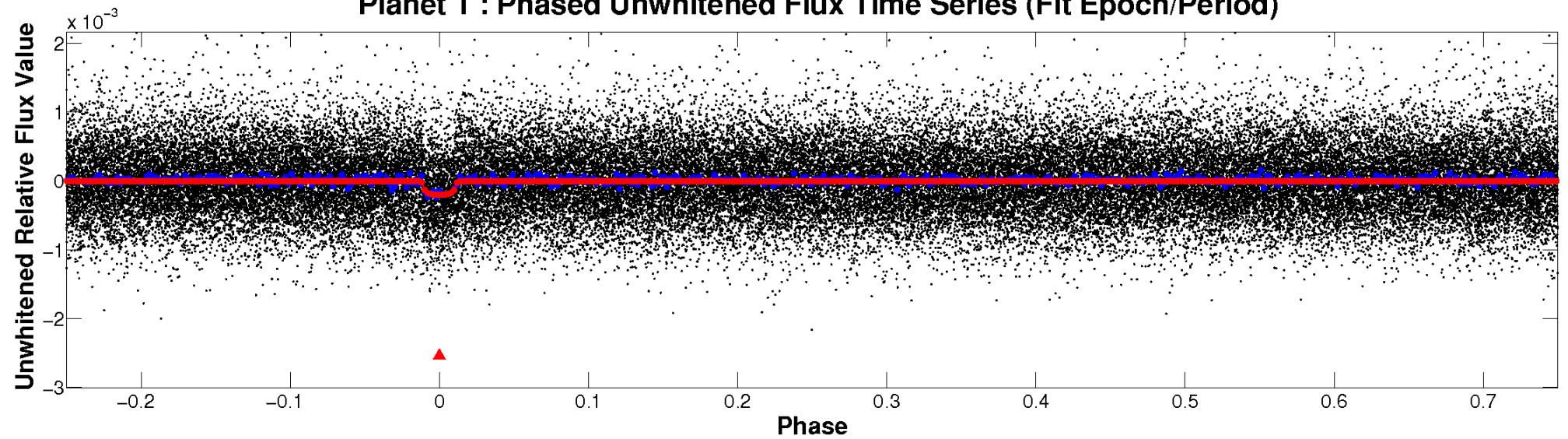
# ALT Odd/Even

TCE 006937402-01

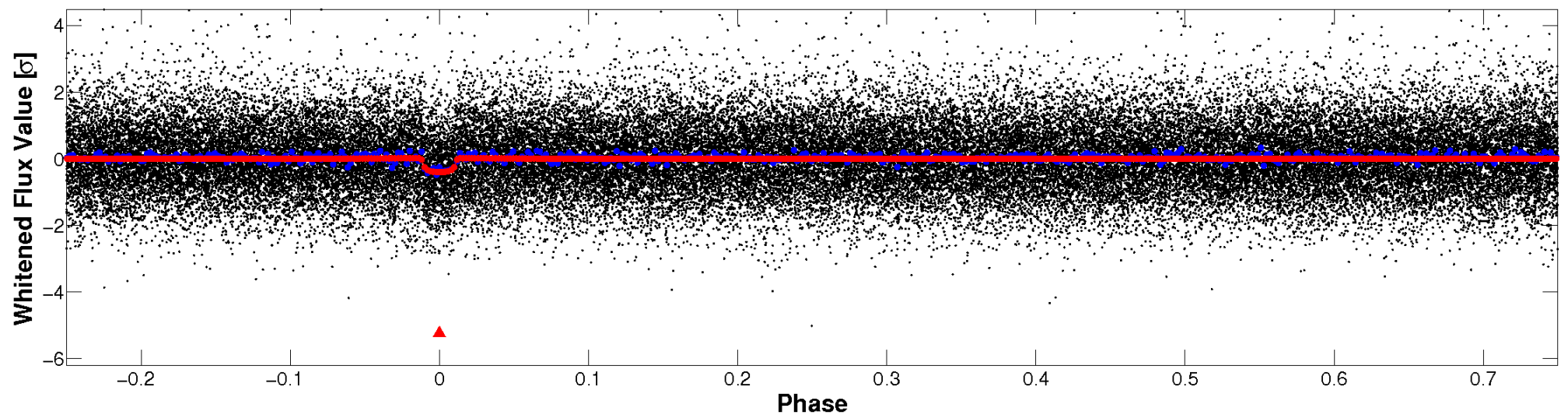


# Non-Whitened Vs. Whitened Light Curve

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

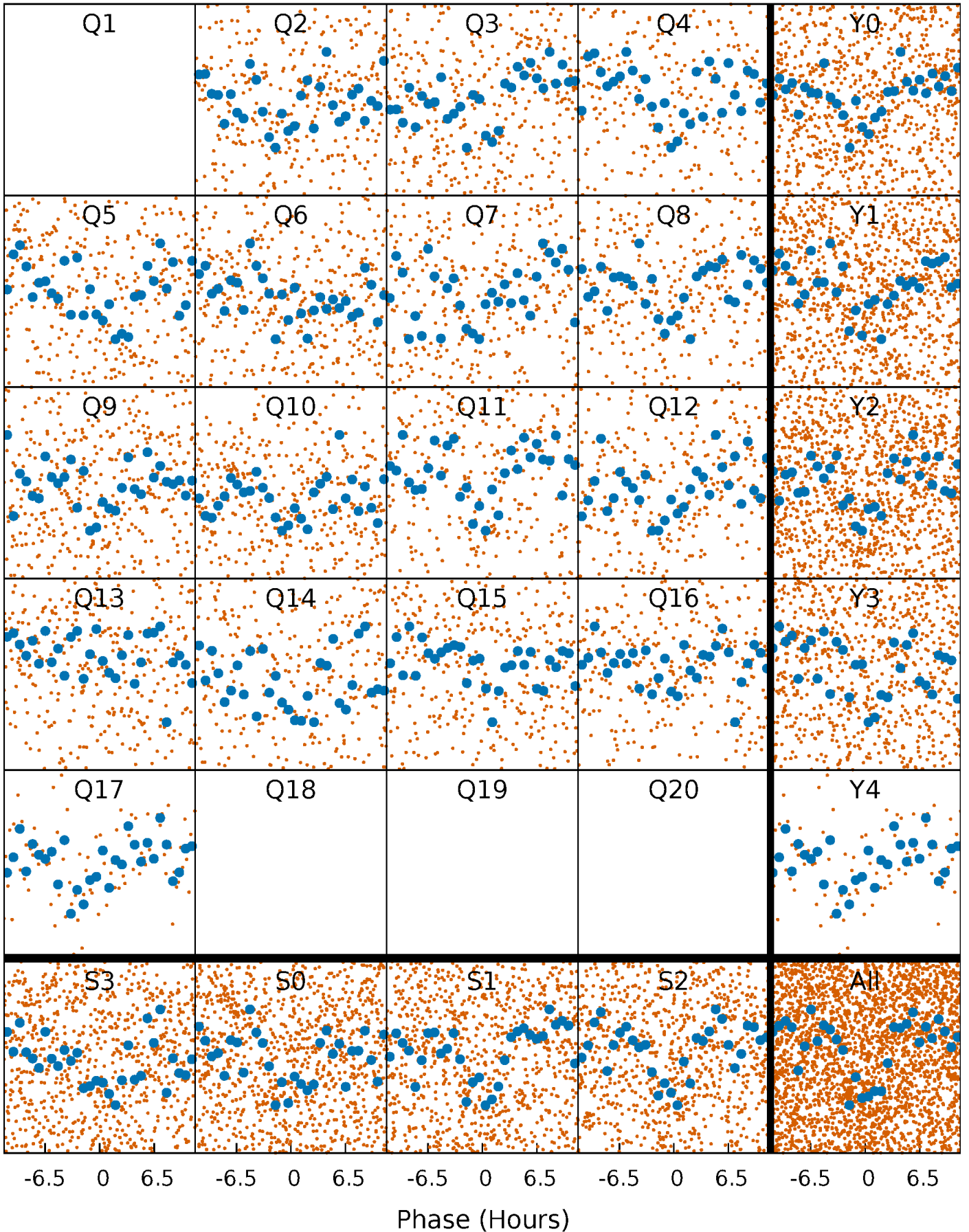


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

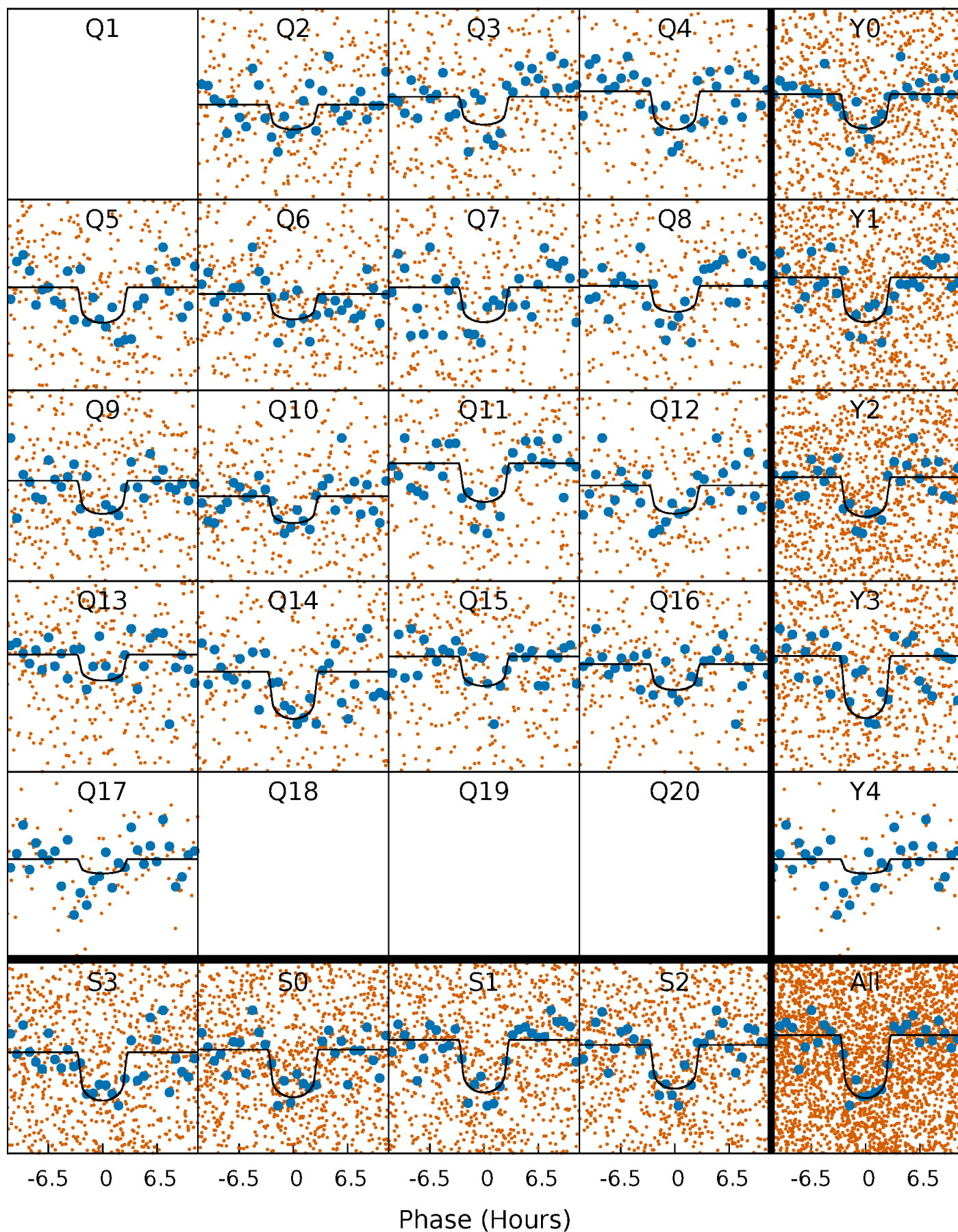
TCE 006937402-01 P= 10.310783 Days  $T_0=141.512880$  (BKJD)





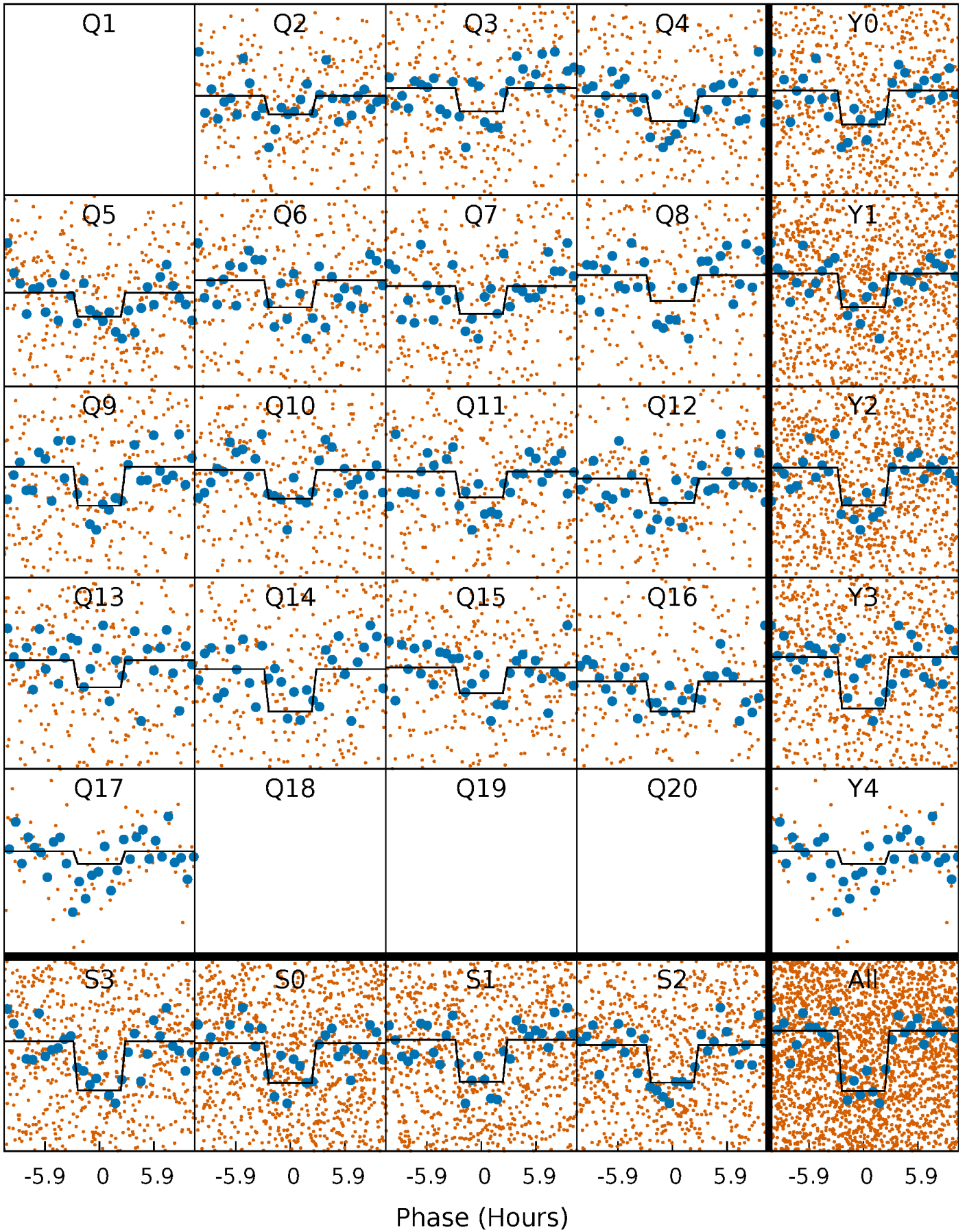
# DV Quarter-Phased Transit Curves

TCE 006937402-01 P= 10.310783 Days  $T_0=141.512880$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

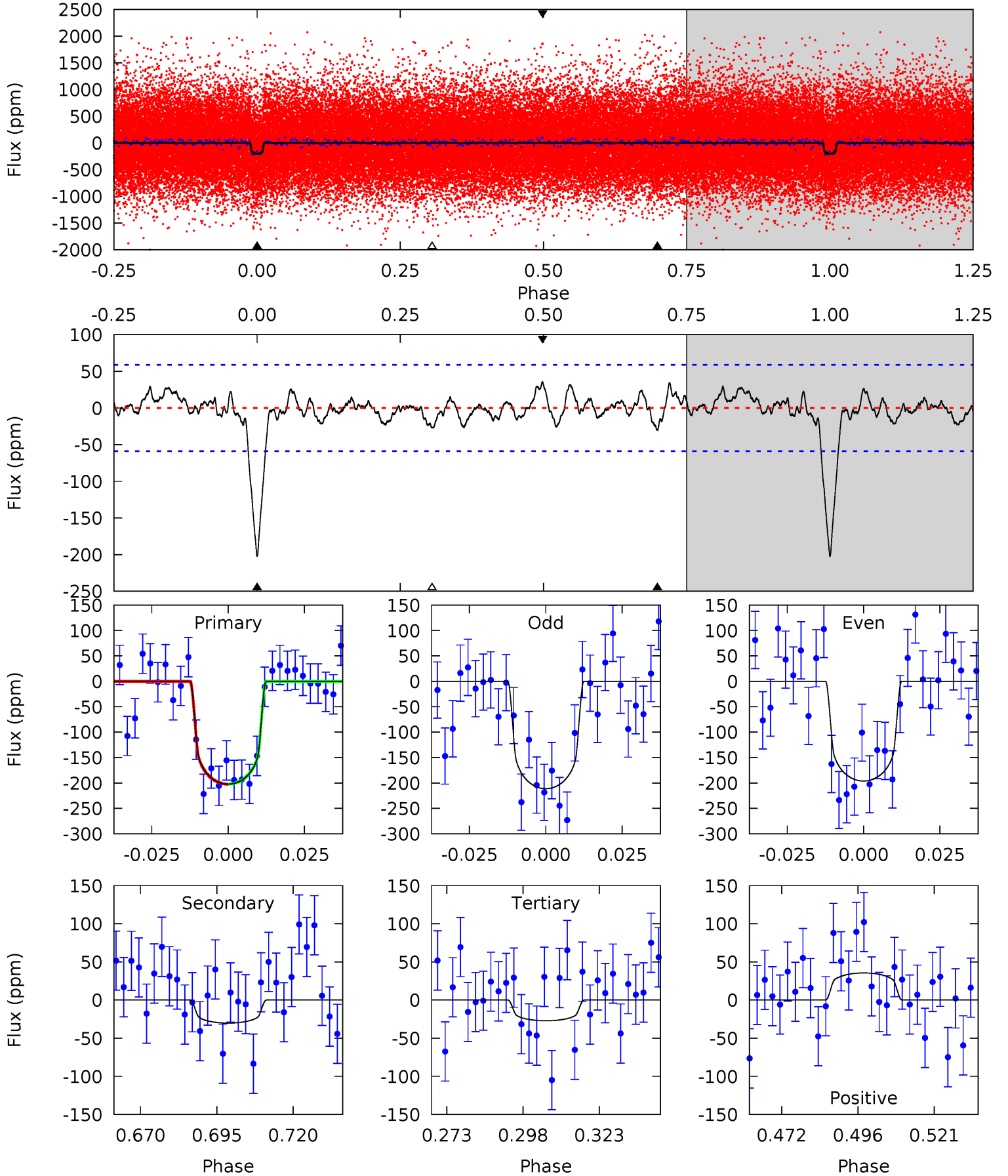
TCE 006937402-01 P= 10.310652 Days  $T_0=141.517704$  (BKJD)



# DV Model-Shift Uniqueness Test

006937402-01, P = 10.310783 Days, E = 141.512880 Days

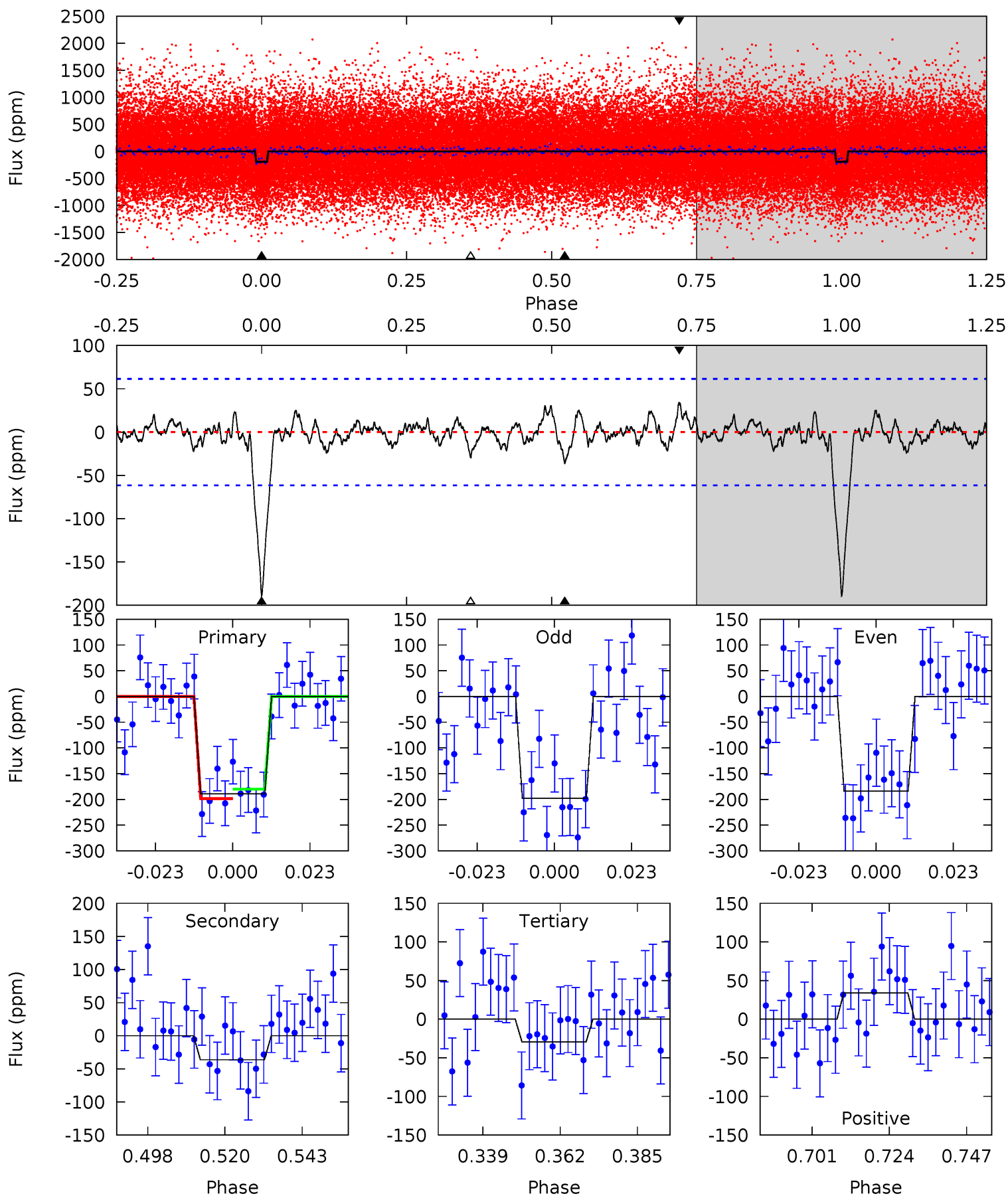
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	2.49	2.24	2.93	4.85	2.24	1.01	14.4	13.7	0.25	-0.44	0.62	1.10	0.15	0.01



# Alt Model-Shift Uniqueness Test

006937402-01, P = 10.310652 Days, E = 141.517704 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
15.0	2.87	2.33	2.69	4.87	2.28	0.83	12.7	12.3	0.54	0.19	0.57	0.96	0.15	0.73



### Stellar Parameters For KIC 006937402

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5708^{+152}_{-169}$	$4.521^{+0.050}_{-0.200}$	$-0.020^{+0.300}_{-0.300}$	$0.893^{+0.259}_{-0.086}$	$0.967^{+0.102}_{-0.114}$	$1.911^{+0.477}_{-0.929}$
	+3%/-3%	+1%/-4%	+1500%/-1500%	+29%/-10%	+11%/-12%	+25%/-49%
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 006937402-01 / KOI 2894.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-30 \pm 12$	$1.52^{+0.76}_{-0.68}$	$1122^{+79}_{-52}$	$3816^{+1020}_{-543}$	$59^{+150}_{-37}$
Alt.	$-36 \pm 13$	$1.44^{+0.75}_{-0.70}$	$1119^{+76}_{-54}$	$4003^{+1272}_{-554}$	$76^{+205}_{-46}$

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



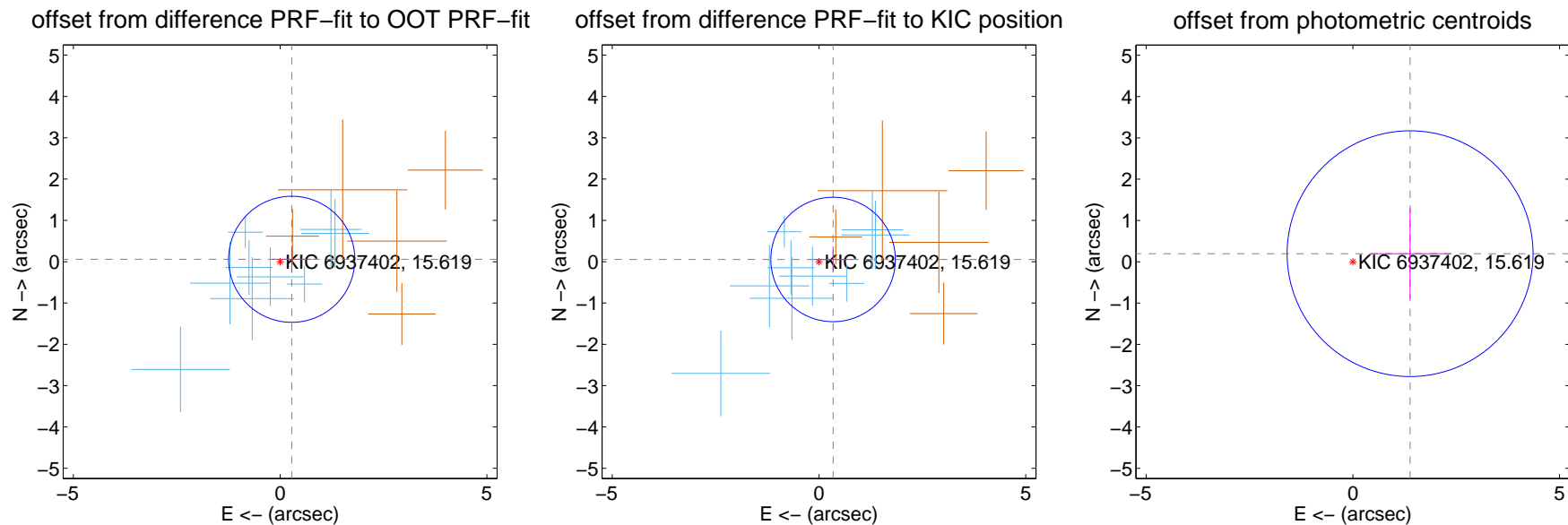
## DV Centroid Data

Supplemental centroid analysis for 006937402-01. Kepler magnitude: 15.62. Transit SNR 13.26

There are 9 quarters with good PRF difference image offsets

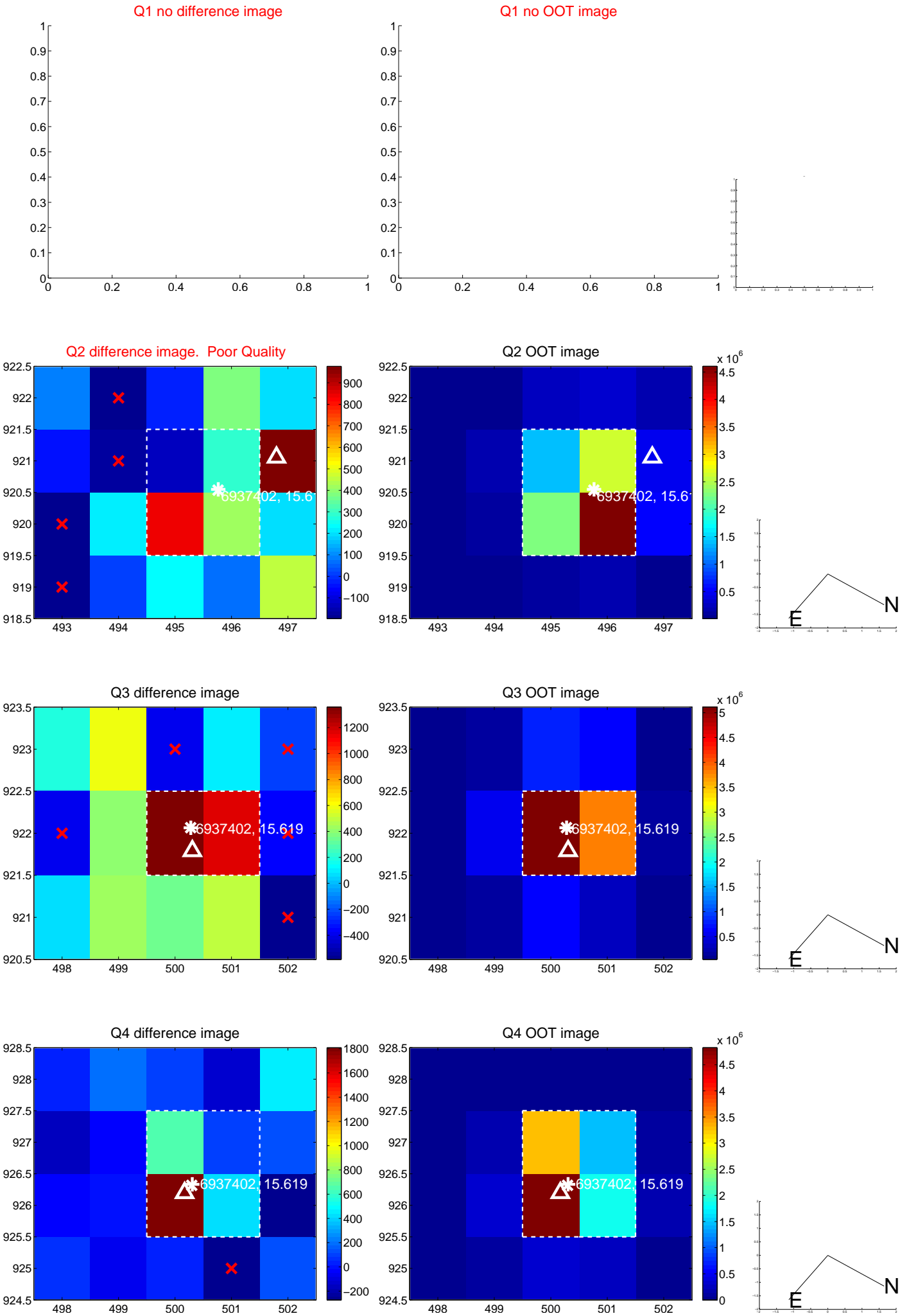
The direct PRF centroid is offset from the target star catalog position by about 0.07 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.287 \pm 0.509$	0.56	$-0.281 \pm 0.478$	$0.058 \pm 0.327$
PRF-fit source offset from KIC position	$0.346 \pm 0.502$	0.69	$-0.341 \pm 0.477$	$0.054 \pm 0.318$
photometric centroid source offset	$1.40 \pm 0.99$	1.41	$-1.38 \pm 0.99$	$0.20 \pm 1.10$

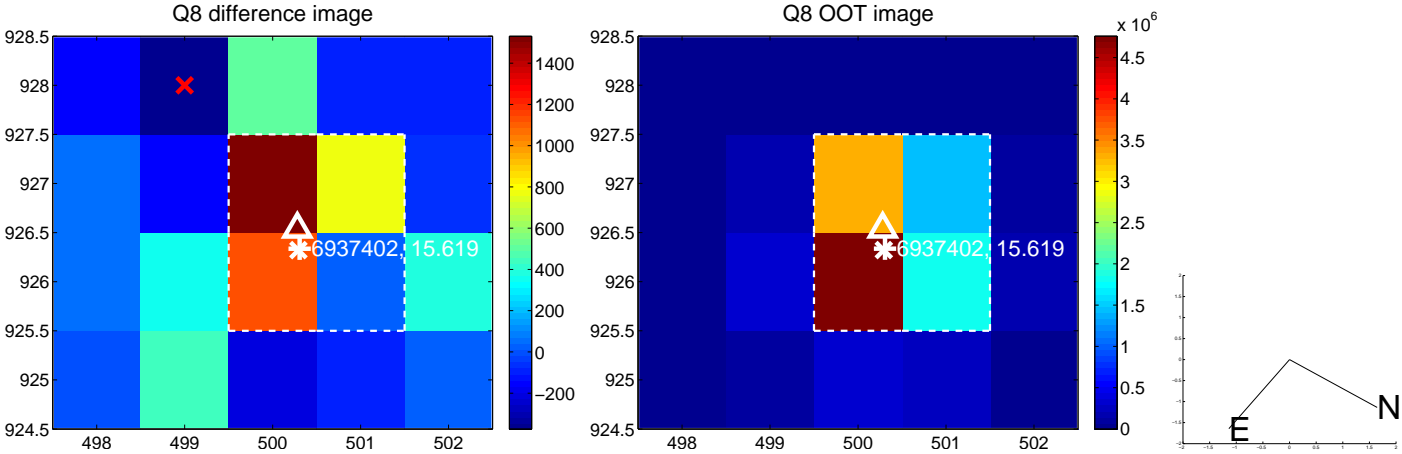
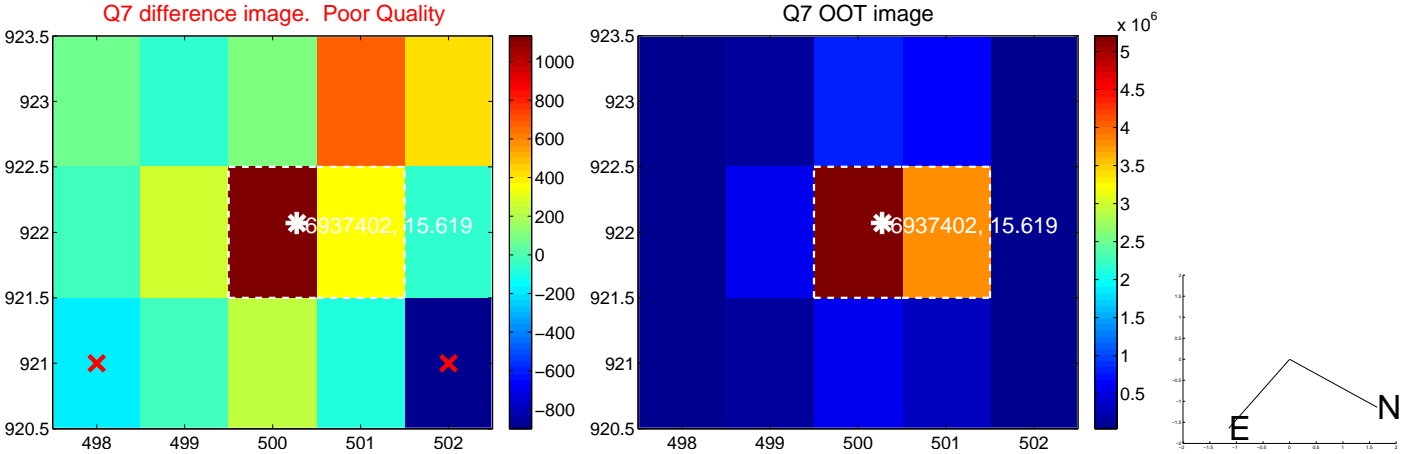
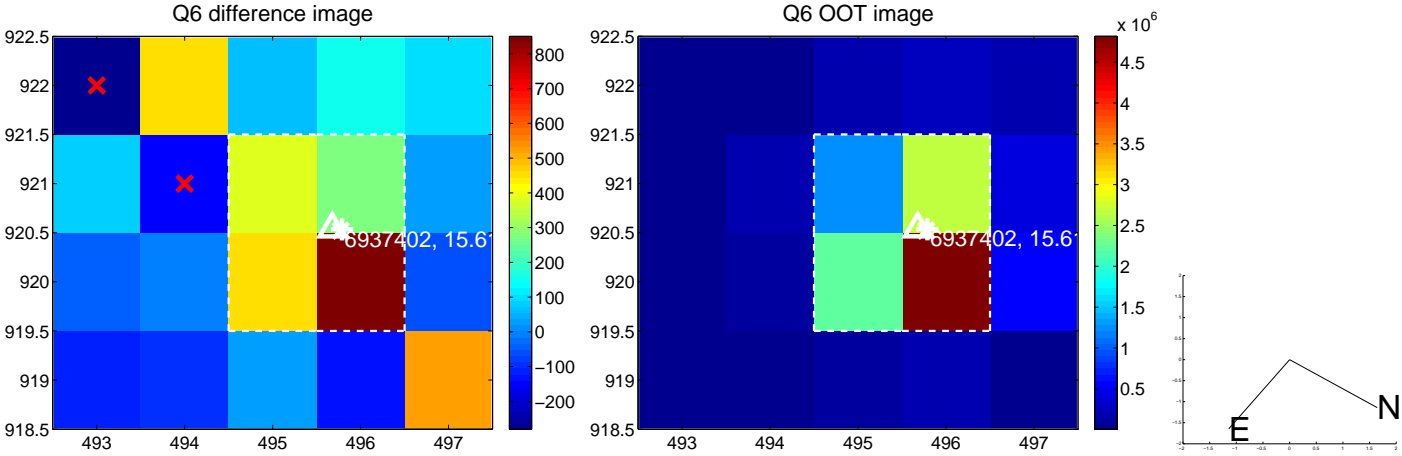
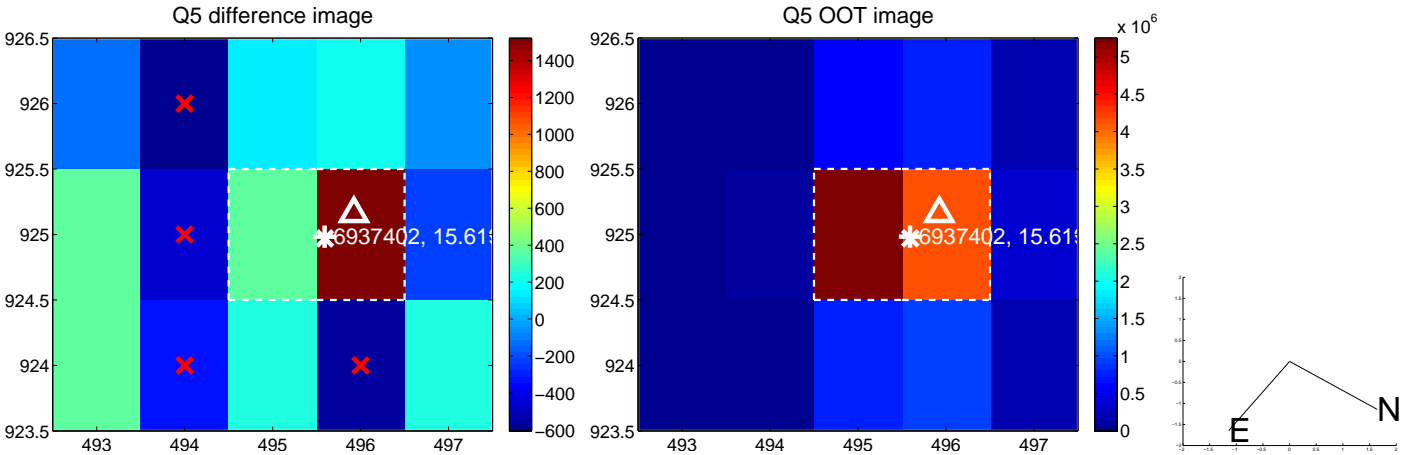


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

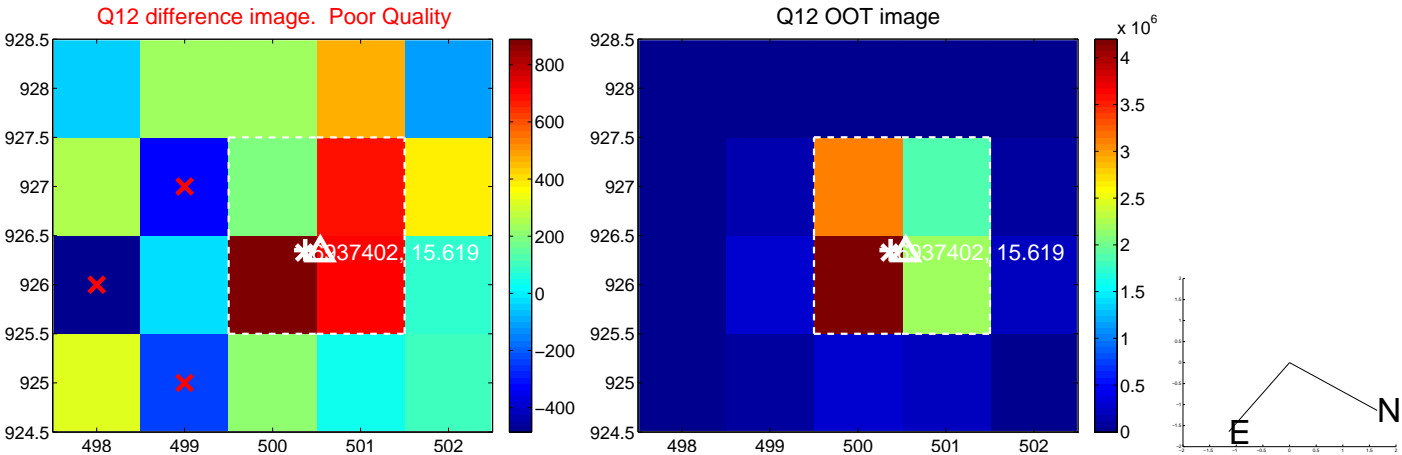
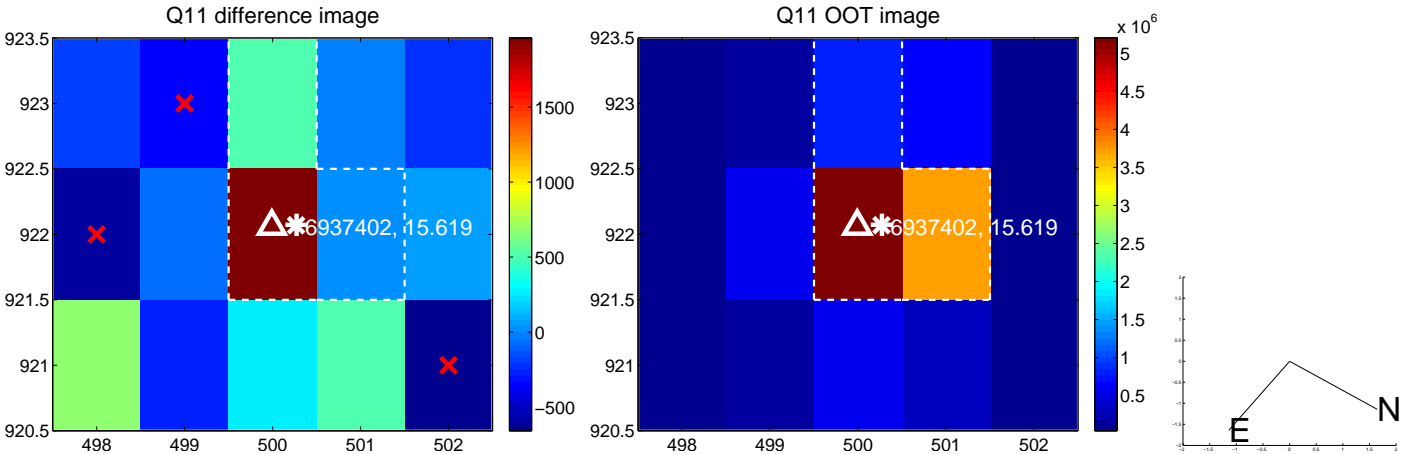
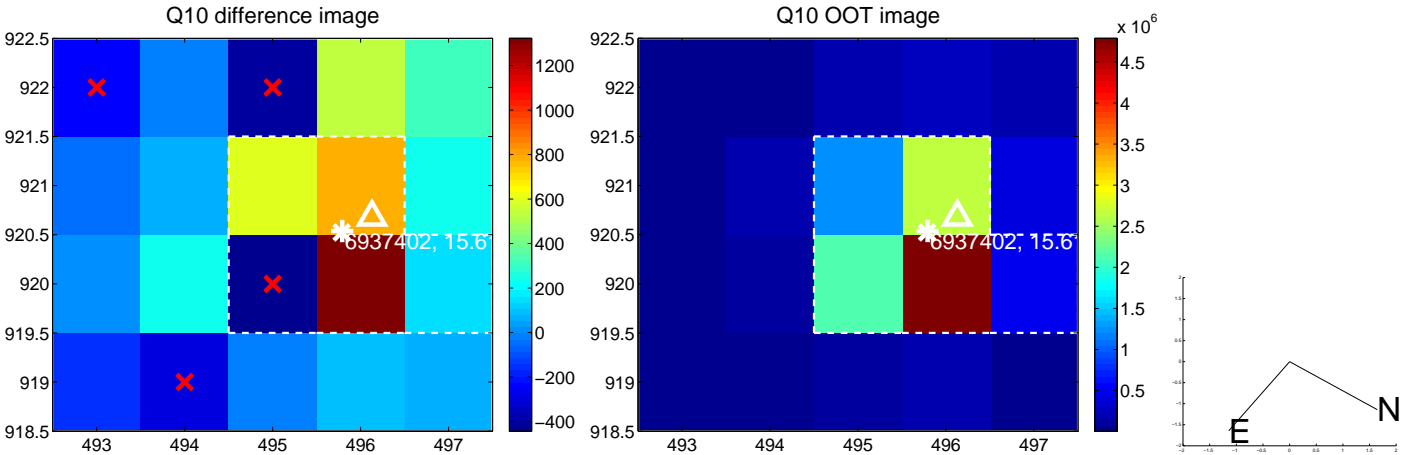
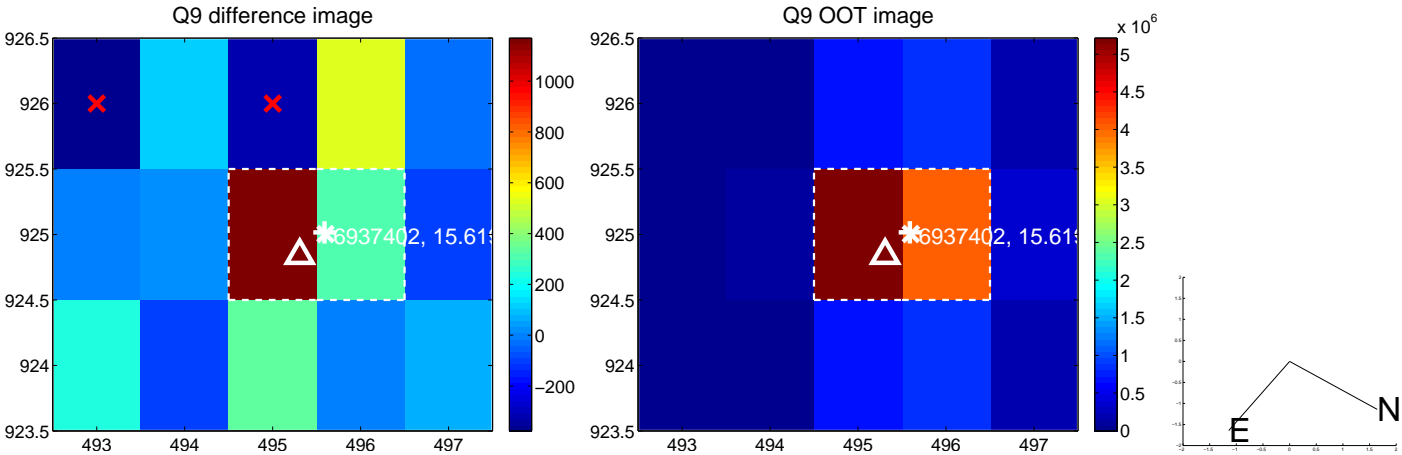
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



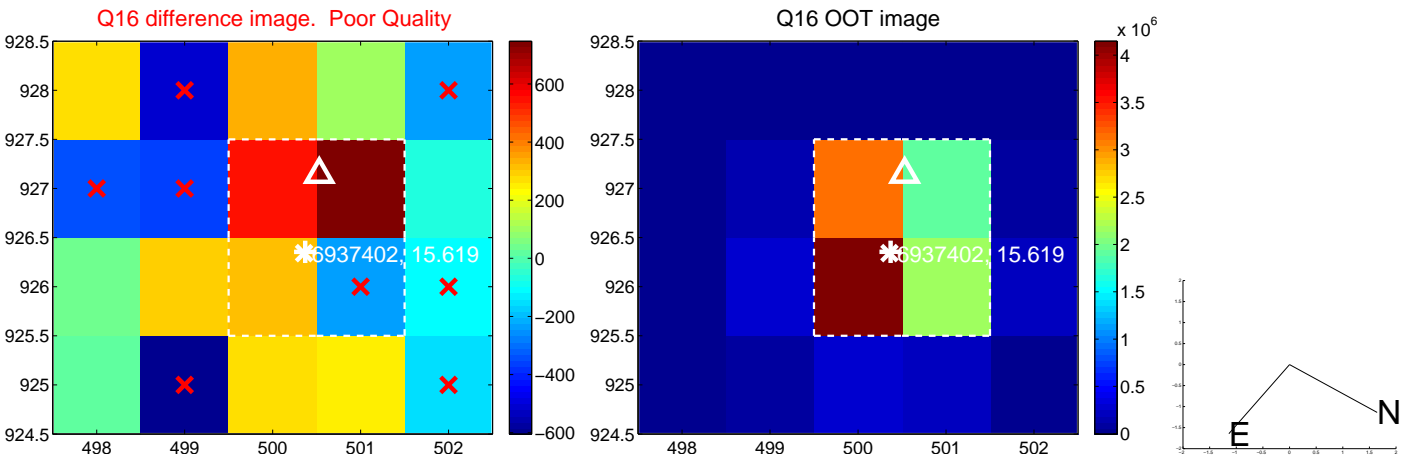
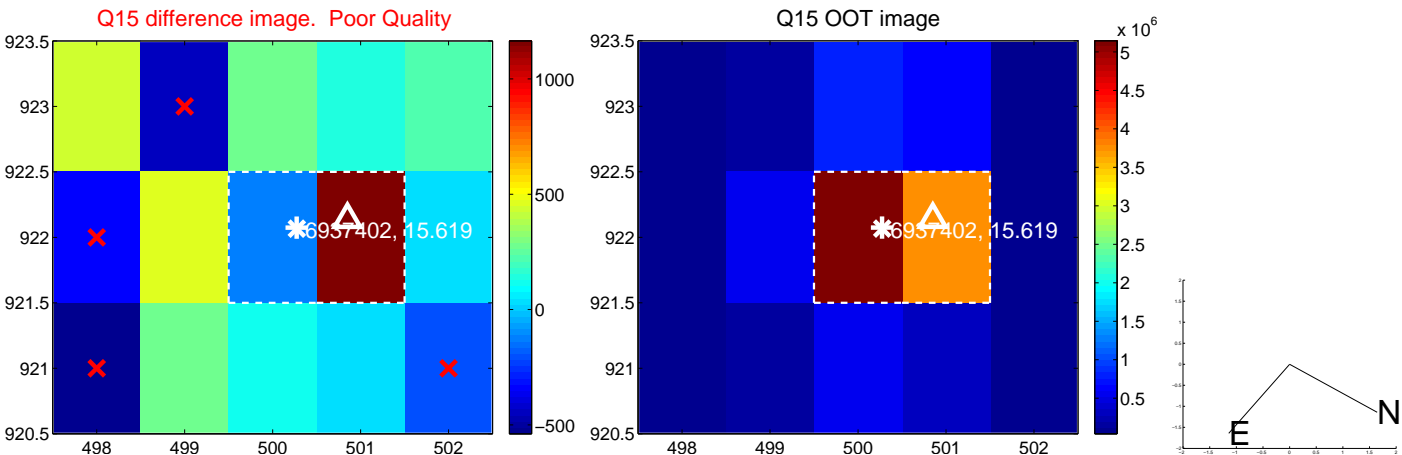
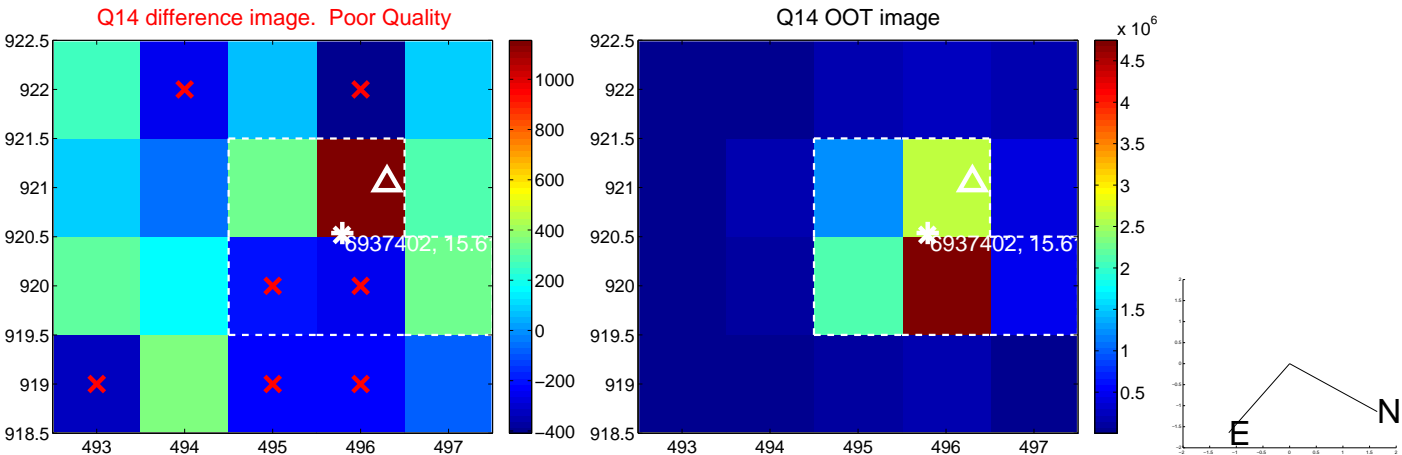
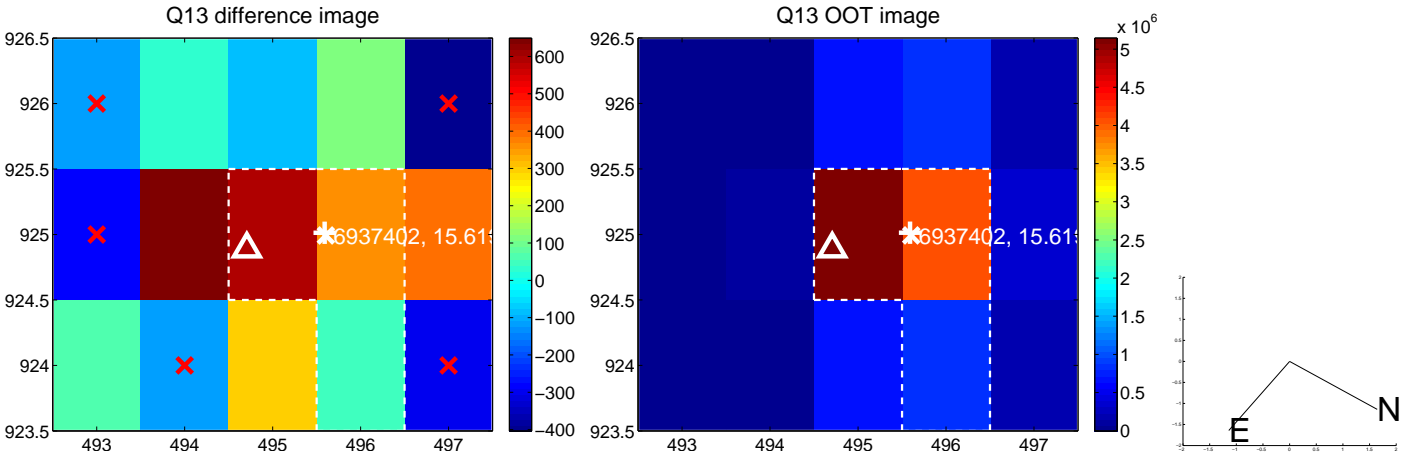
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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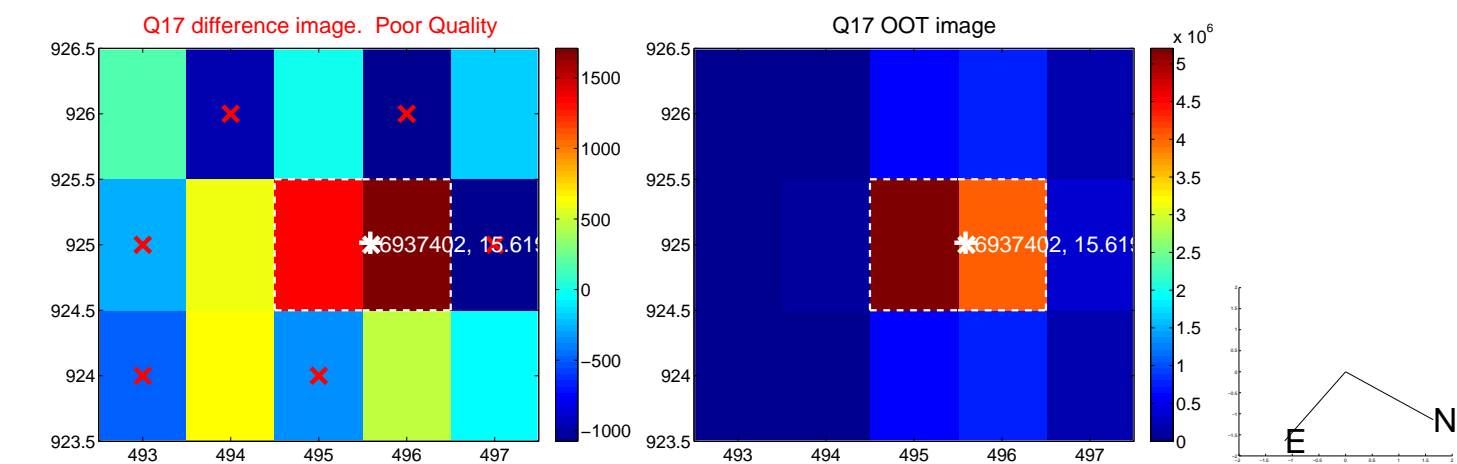


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

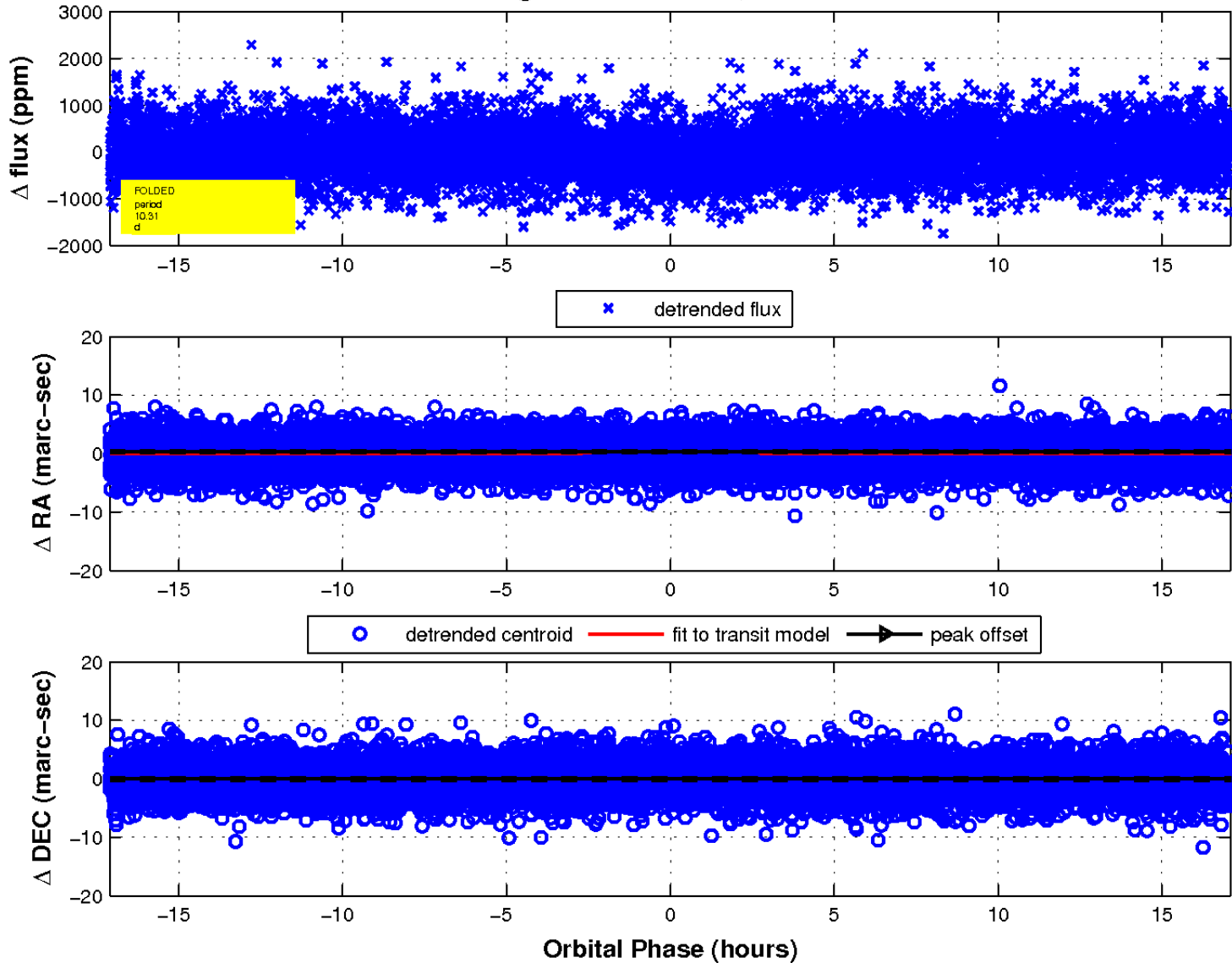




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

