

# KIC 002994092

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002994092-01	OBS	6301.01	50.272406	160.460657	531.0	6.166	8.2	8.3	1.22	6520	2.97	28.57

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002994092-01	OBS	PC	0.79	0	0	0	0	CENT_FEW_DIFFS

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

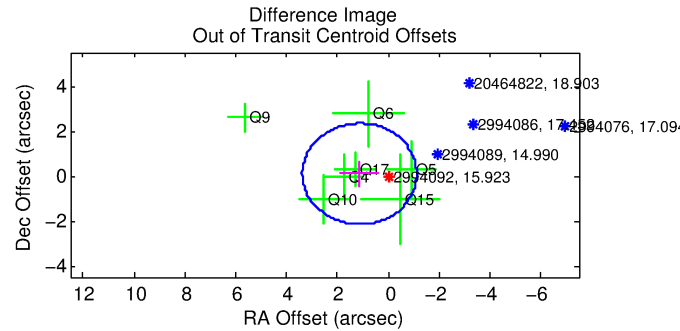
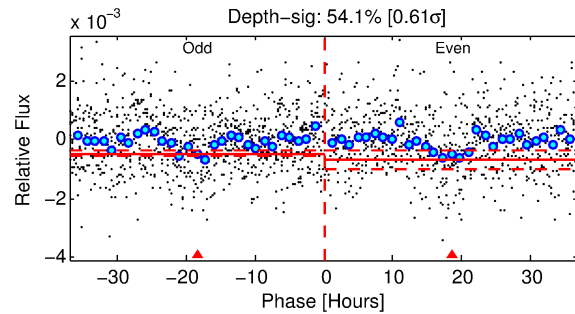
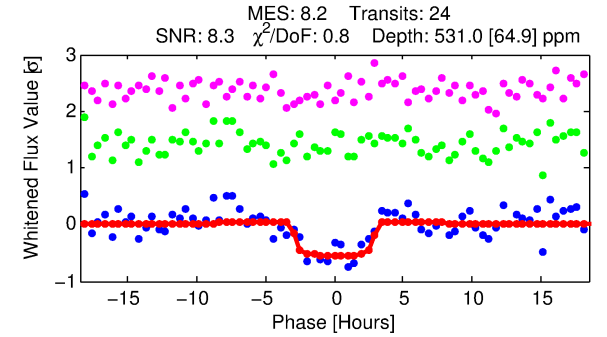
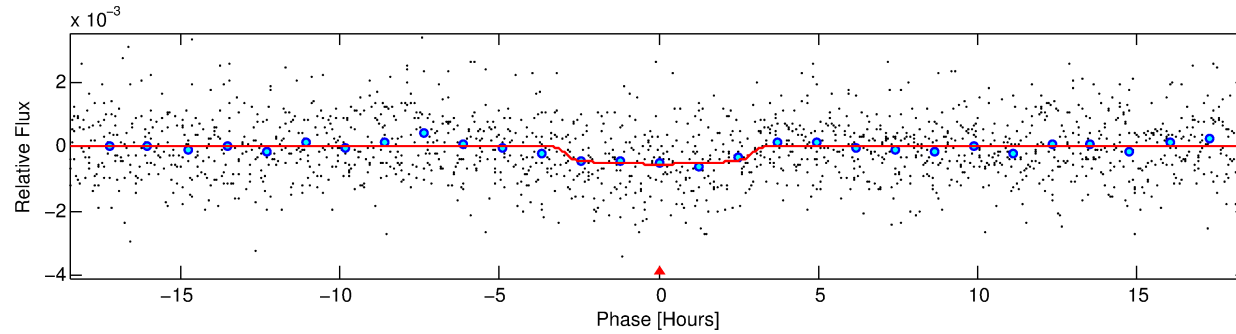
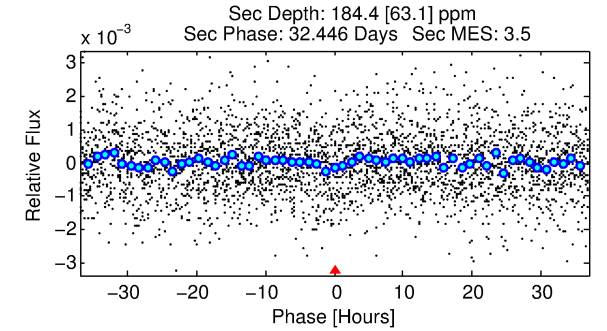
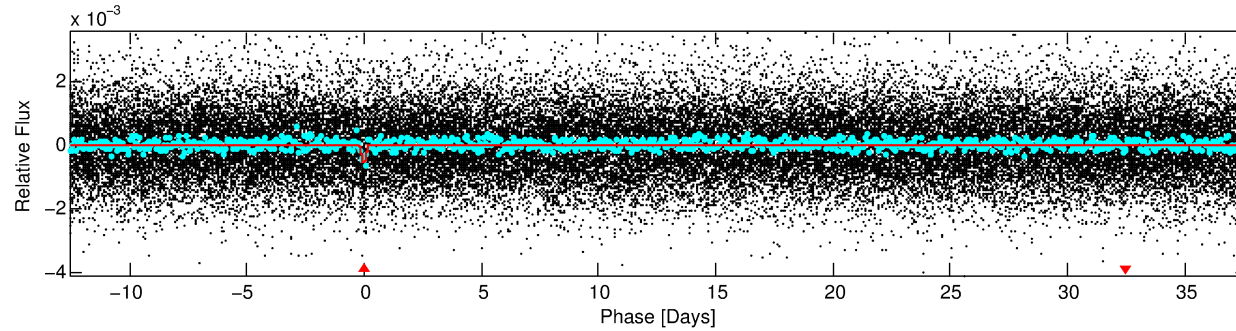
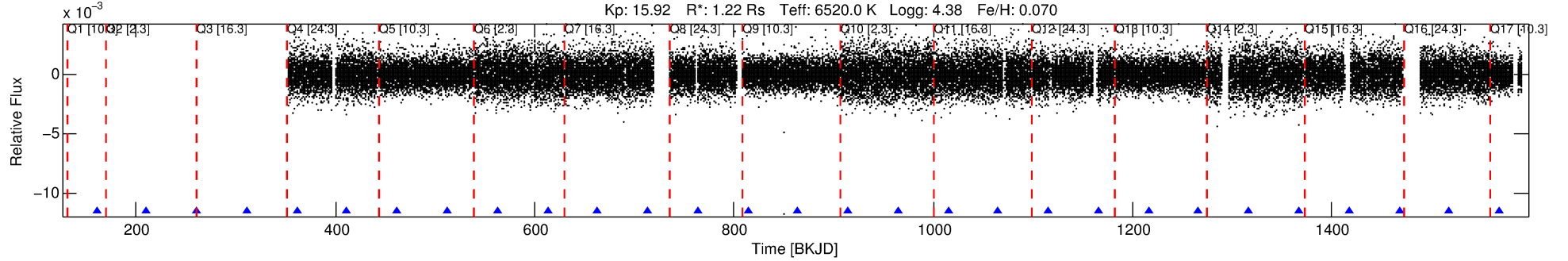
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002994092-01

No Significant Match Found

# DV One-Page Summary

KIC: 2994092 Candidate: 1 of 1 Period: 50.272 d  
KOI: K06301.01 Corr: 0.980



## DV Fit Results:

Period = 50.27241 [0.00101] d  
Epoch = 160.4607 [0.0181] BKJD  
Rp/R\* = 0.0224 [0.0185]  
a/R\* = 48.27 [210.80]  
b = 0.67 [3.66]  
Seff = 28.56 [11.07]  
Teq = 589 [57] K  
Rp = 2.97 [2.60] Re  
a = 0.2893 [0.0710] AU  
Ag = 961.25 [1652.60] [0.58σ]  
Teffp = 5075 [2146] K [2.09σ]

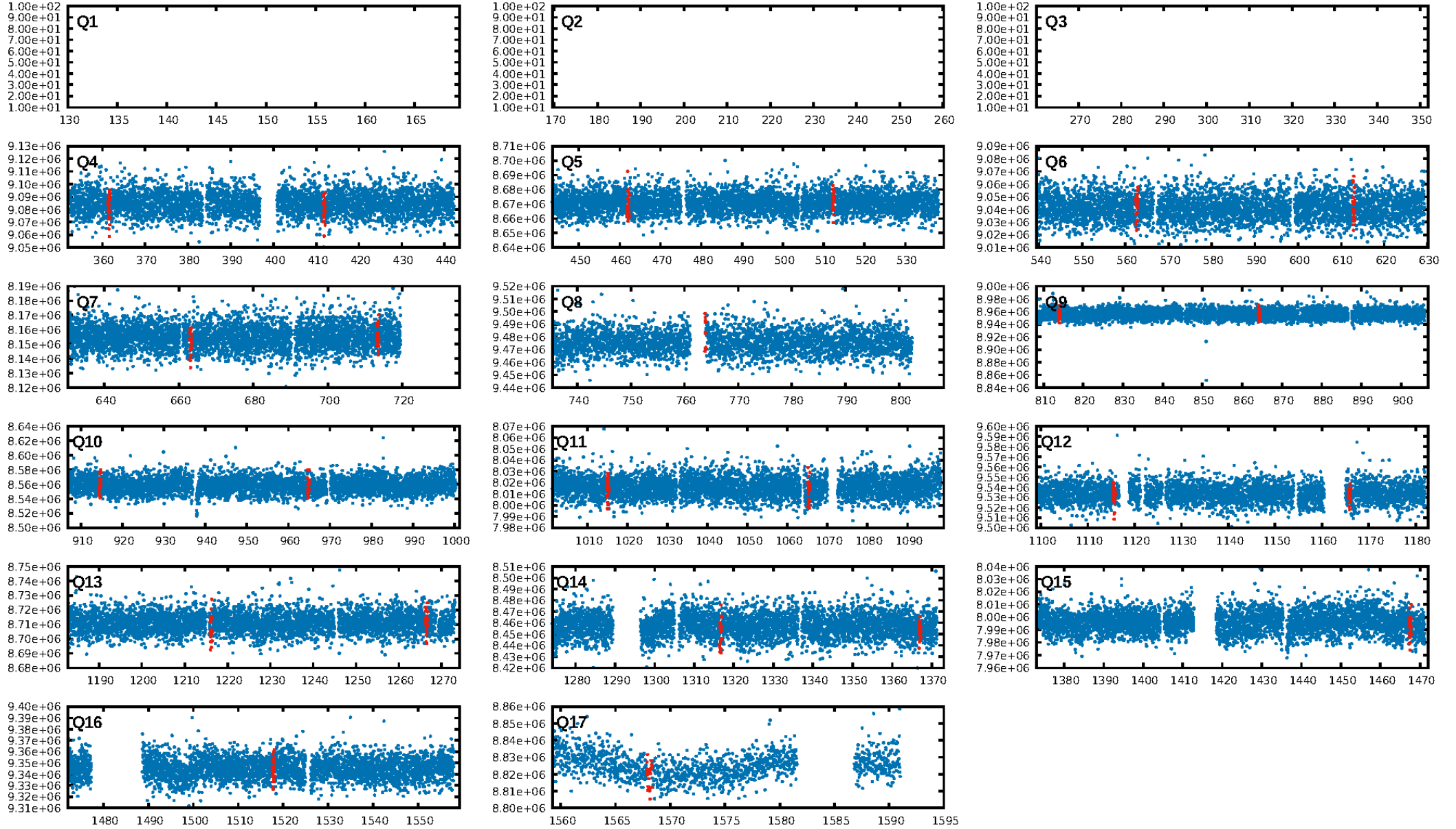
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.8%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.25e-16  
RollingBand-fgt: 1.00 [23/23]  
GhostDiagnostic-chr: 17.6  
Centroid-sig: 9.0%  
Centroid-so: 0.762 arcsec [0.57σ]  
OotOffset-rm: 1.136 arcsec [1.52σ]  
KicOffset-rm: 0.819 arcsec [1.12σ]  
OotOffset-st: 2/1/1/3 [7]  
KicOffset-st: 2/1/1/3 [7]  
DiffImageQuality-fgm: 0.43 [3/7]  
DiffImageOverlap-fno: 1.00 [13/13]

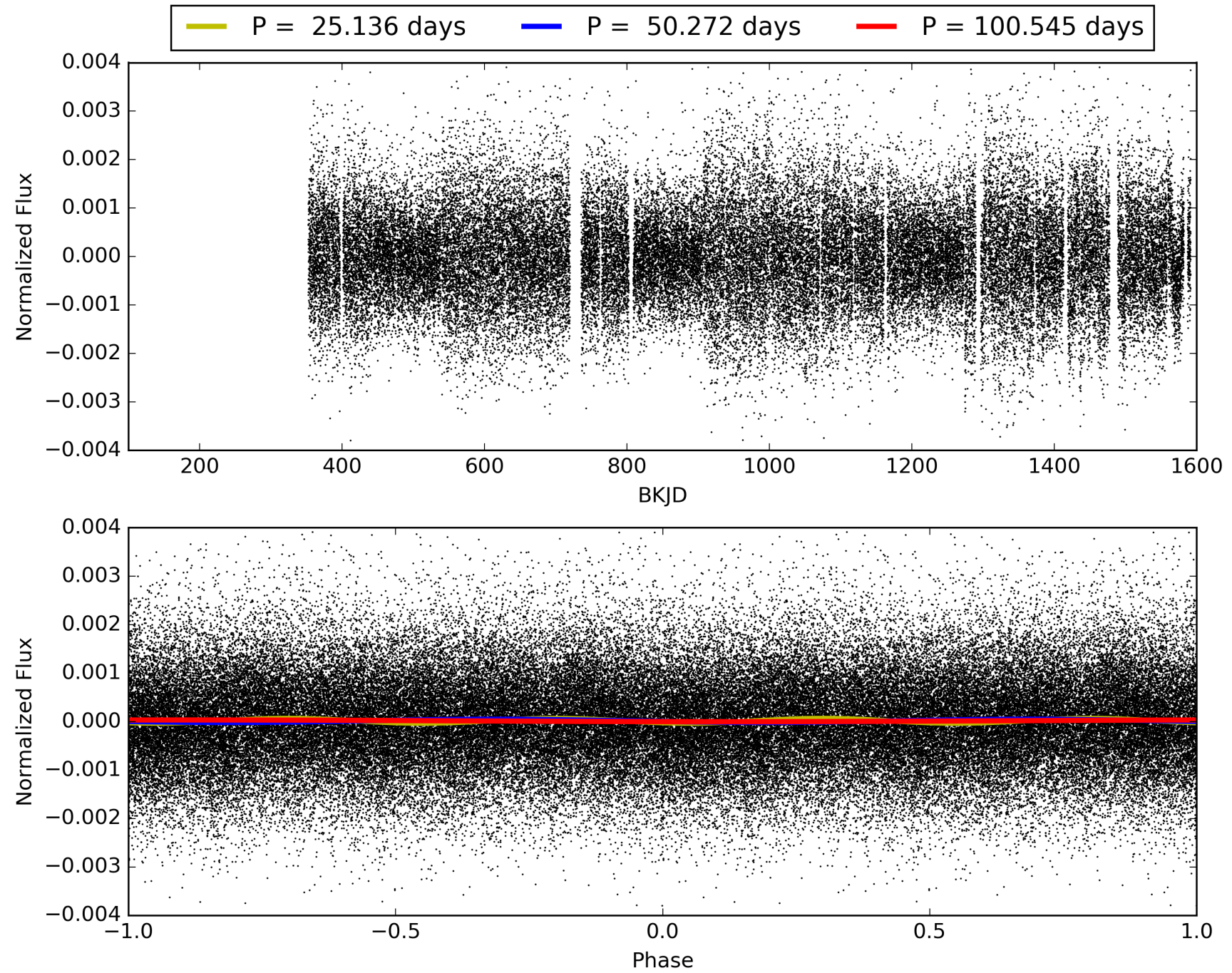
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:58:12 Z

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

# TCE 002994092-01, PDC Light Curves

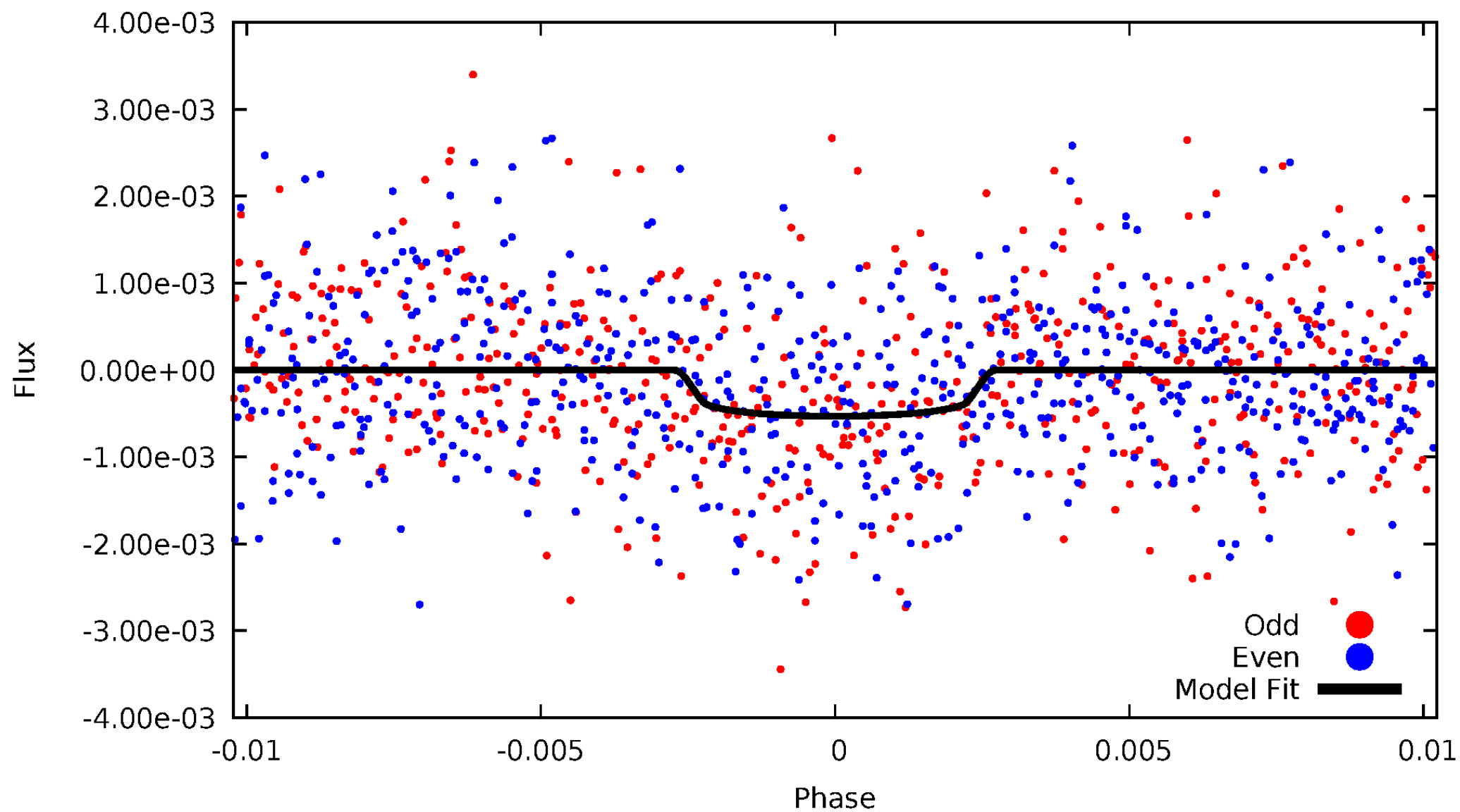


TCE 002994092-01



# DV Odd/Even

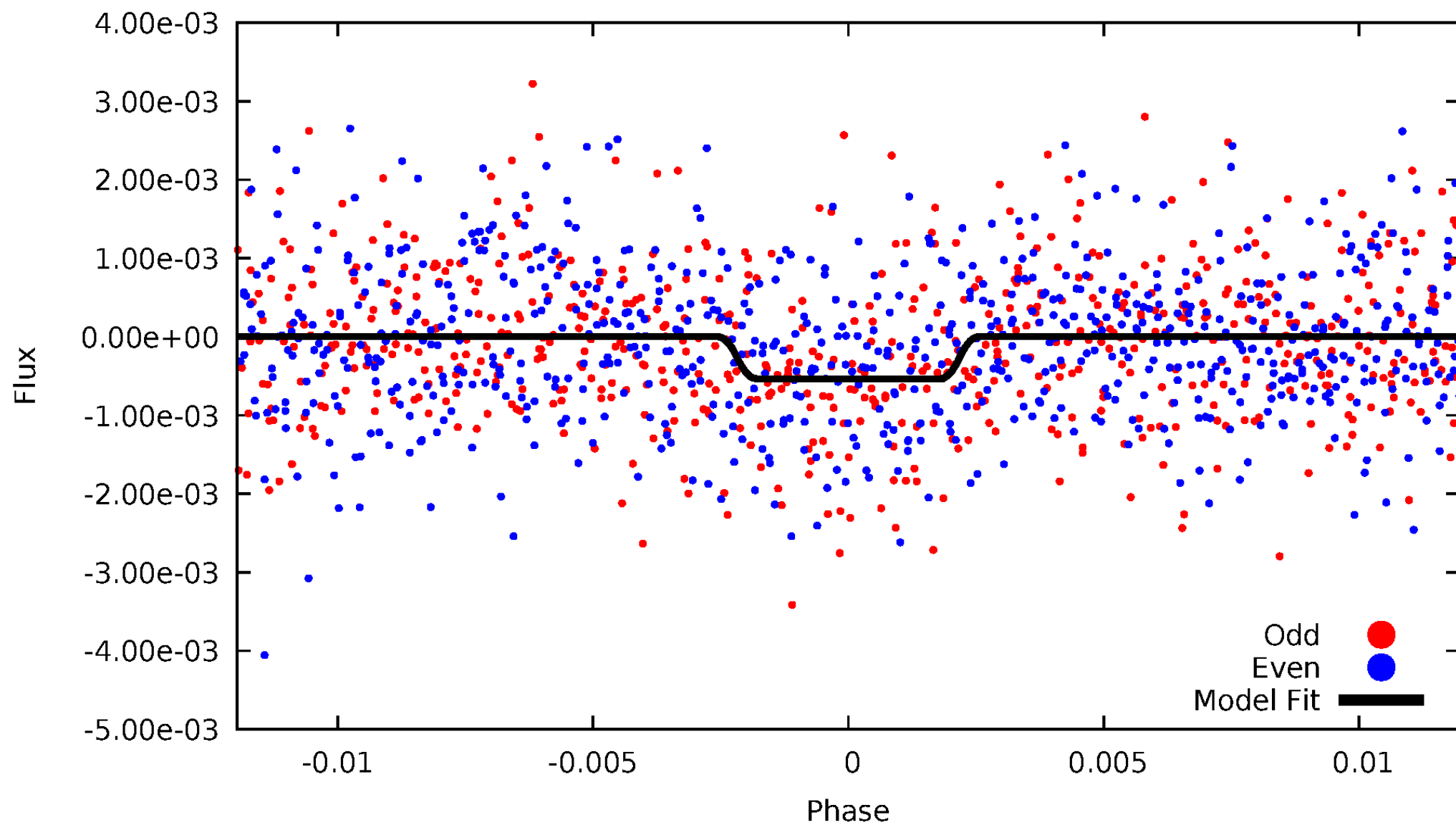
TCE 002994092-01





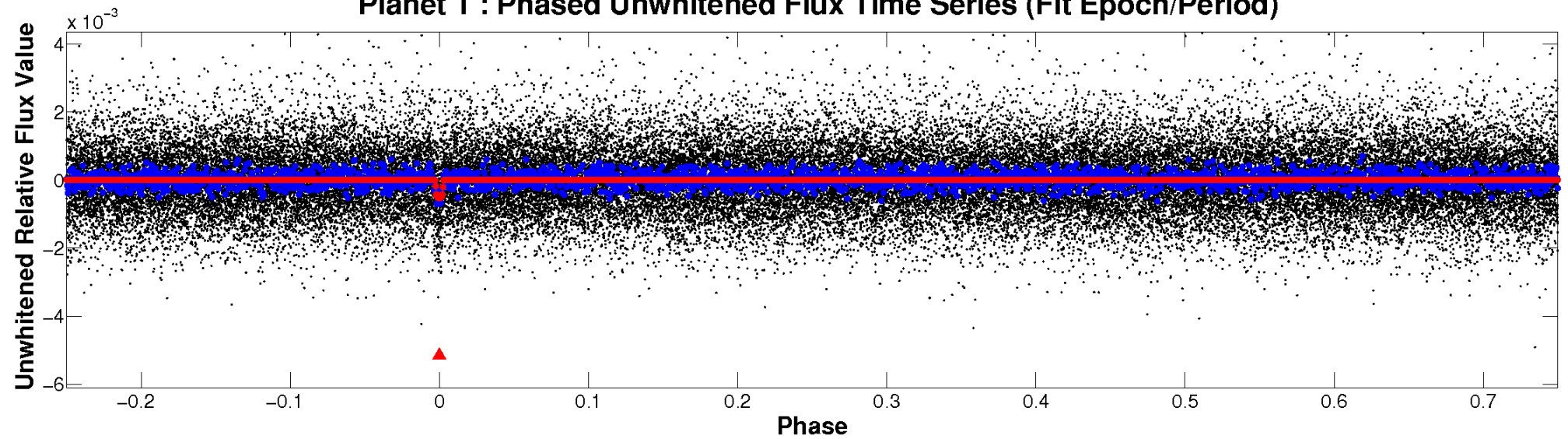
# ALT Odd/Even

TCE 002994092-01

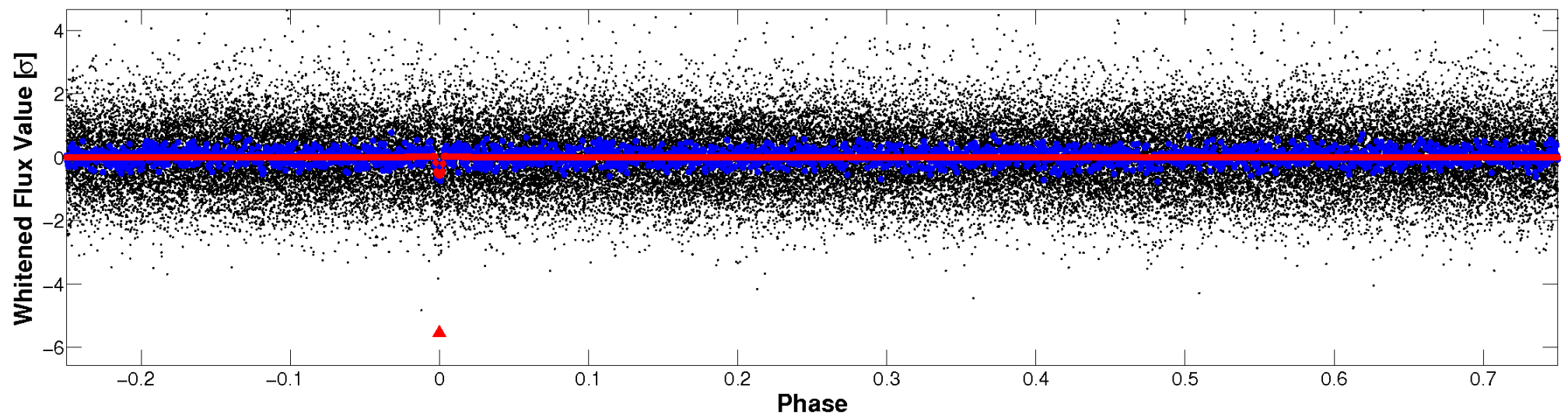


# Non-Whitened Vs. Whitened Light Curve

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

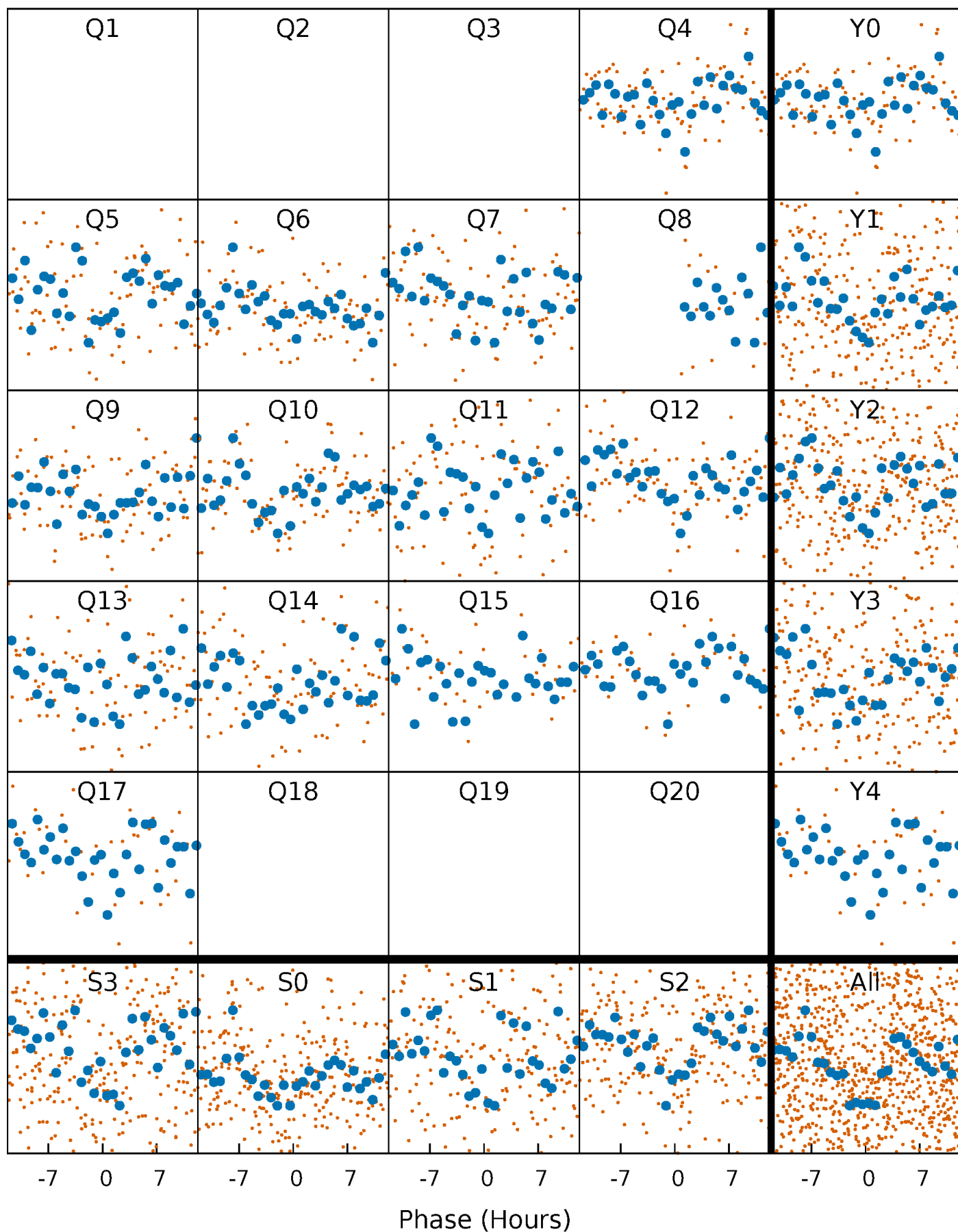


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

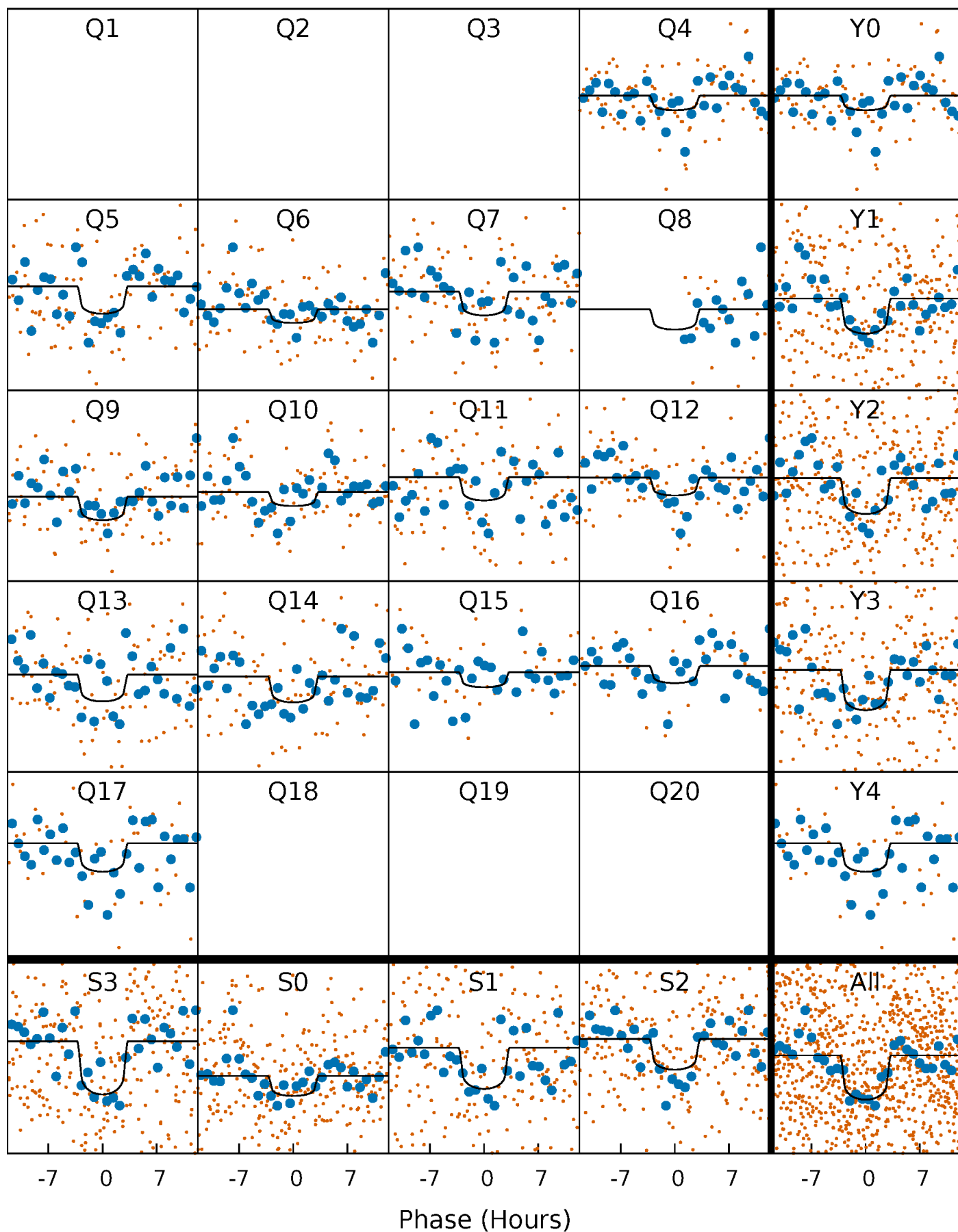
TCE 002994092-01 P= 50.272406 Days  $T_0=160.460657$  (BKJD)





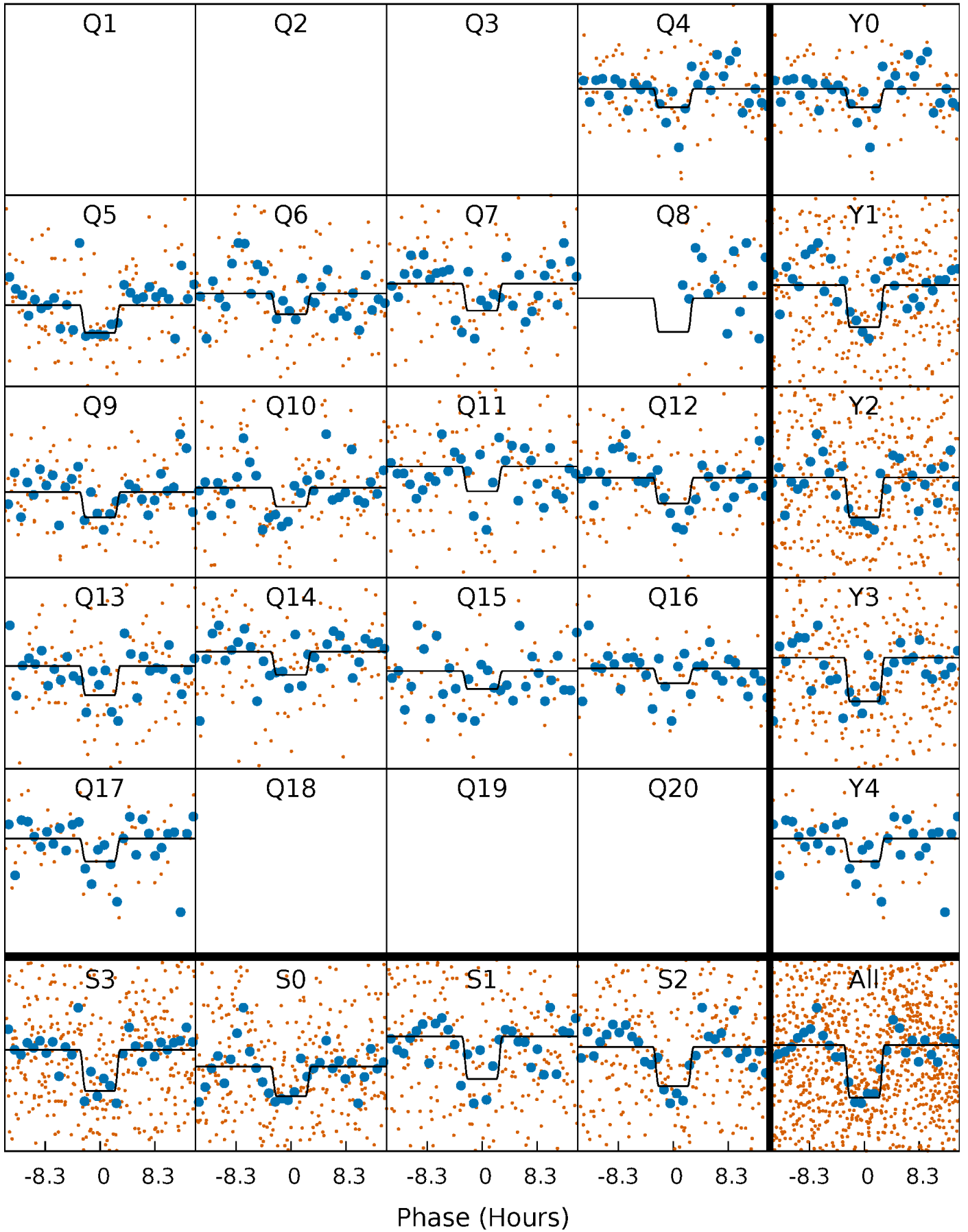
# DV Quarter-Phased Transit Curves

TCE 002994092-01   P= 50.272406 Days    $T_0=160.460657$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

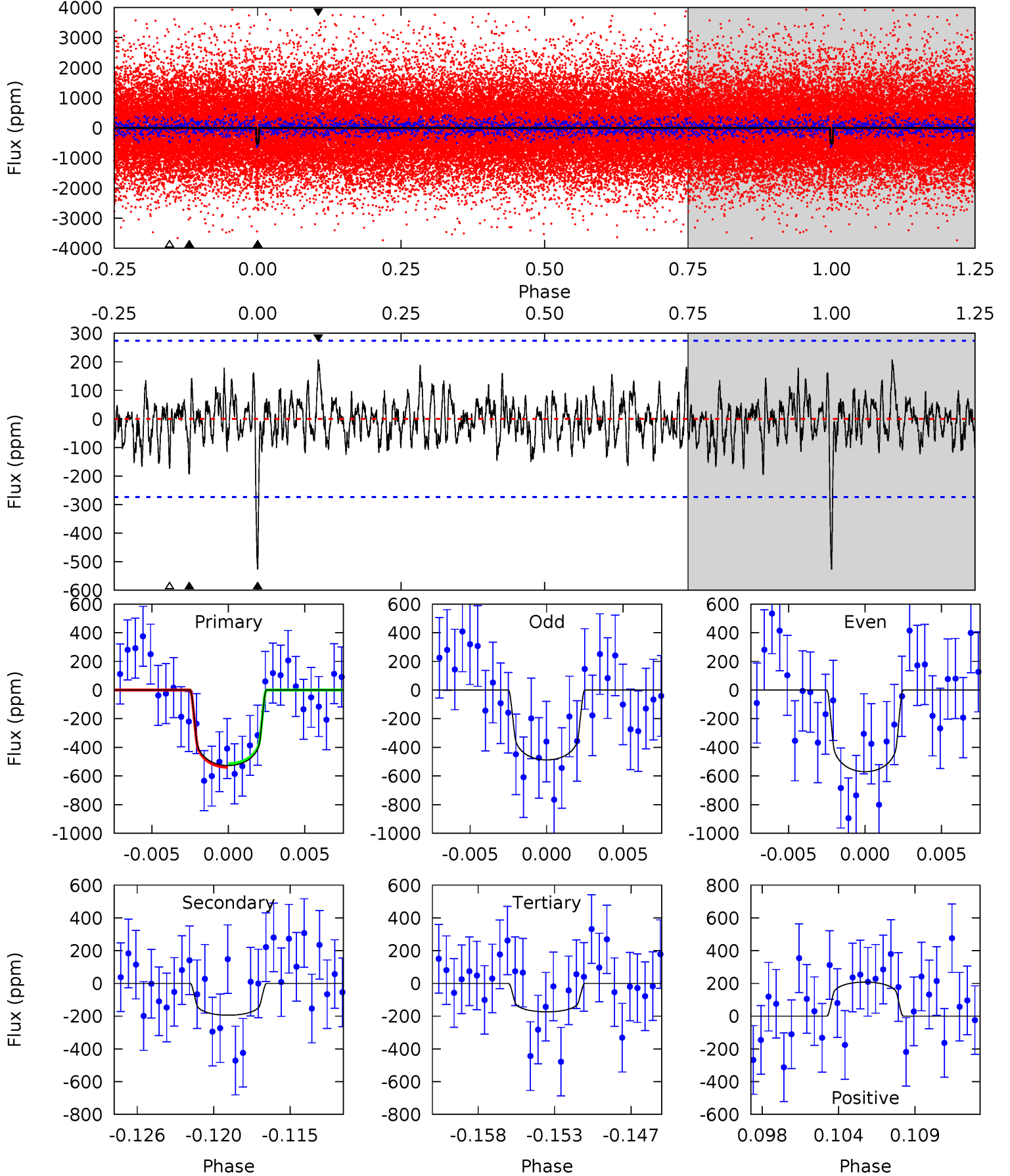
TCE 002994092-01 P= 50.270612 Days  $T_0=160.478451$  (BKJD)



# DV Model-Shift Uniqueness Test

002994092-01, P = 50.272406 Days, E = 160.460657 Days

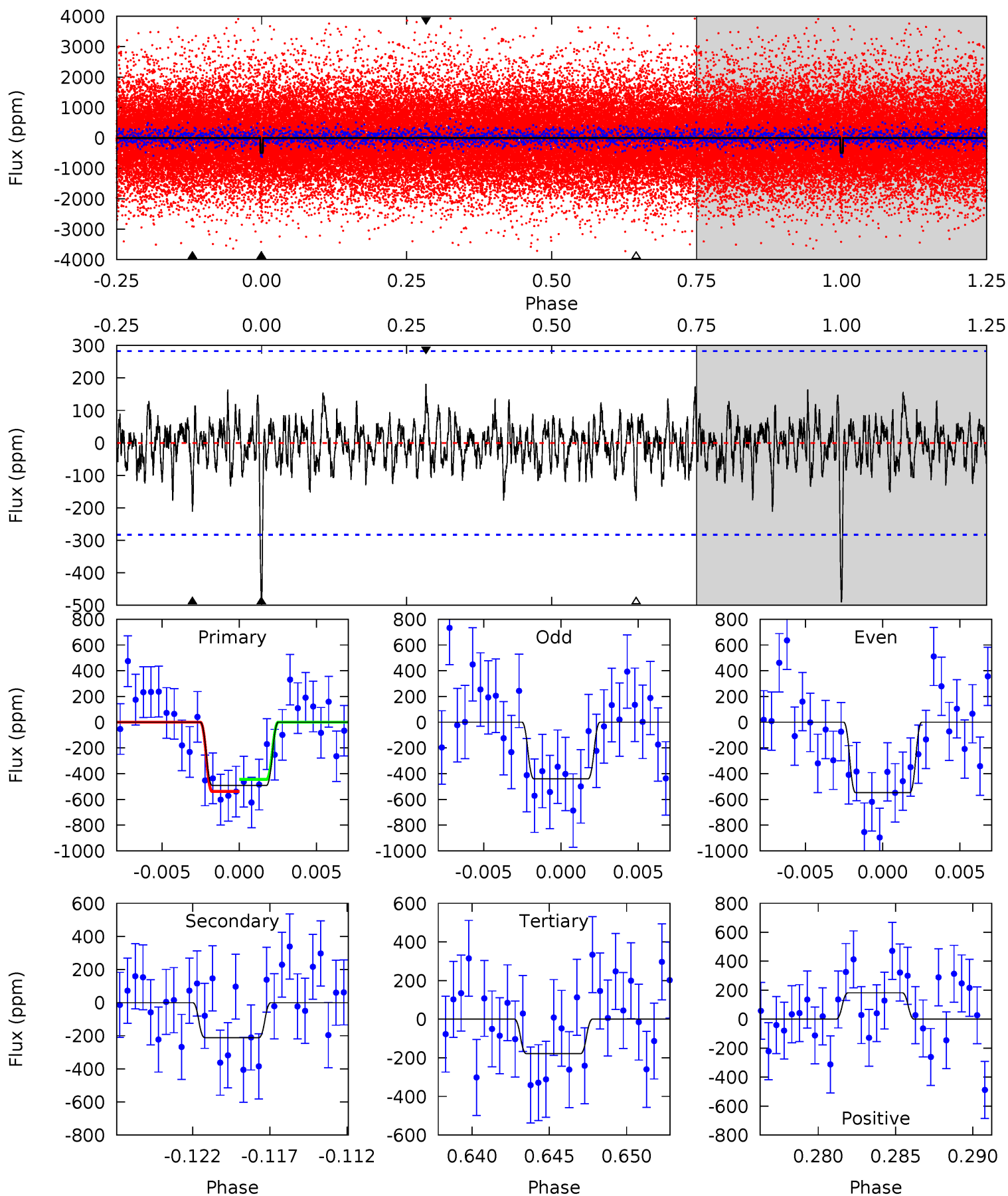
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.90	3.65	3.26	3.90	5.14	2.78	1.14	6.63	5.99	0.39	-0.25	0.77	0.90	0.28	0.24



# Alt Model-Shift Uniqueness Test

002994092-01, P = 50.270612 Days, E = 160.478451 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
8.94	3.85	3.25	3.31	5.15	2.80	1.01	5.69	5.62	0.60	0.54	0.97	1.00	0.27	0.85



### Stellar Parameters For KIC 002994092

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6520^{+158}_{-270}$	$4.375^{+0.062}_{-0.188}$	$0.070^{+0.250}_{-0.300}$	$1.215^{+0.362}_{-0.155}$	$1.279^{+0.154}_{-0.188}$	$1.005^{+0.326}_{-0.481}$
	+2%/-4%	+1%/-4%	+357%/-429%	+30%/-13%	+12%/-15%	+32%/-48%
Source	KIC0	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 002994092-01 / KOI 6301.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-194 \pm 53$	$3.29^{+2.49}_{-2.14}$	$834^{+59}_{-41}$	$4981^{+3742}_{-988}$	$743^{+5833}_{-500}$
Alt.	$-211 \pm 55$	$3.46^{+2.44}_{-1.95}$	$836^{+58}_{-47}$	$4965^{+2580}_{-935}$	$779^{+3349}_{-523}$

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



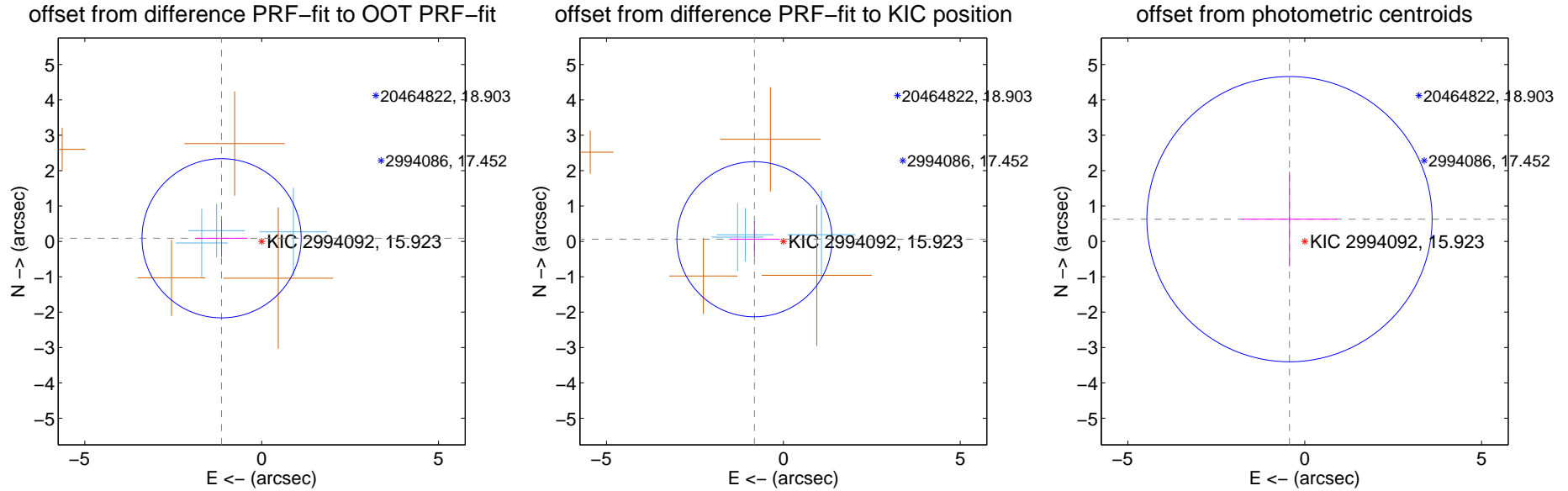
## DV Centroid Data

Supplemental centroid analysis for 002994092-01. Kepler magnitude: 15.92. Transit SNR 8.35

There are 3 quarters with good PRF difference image offsets

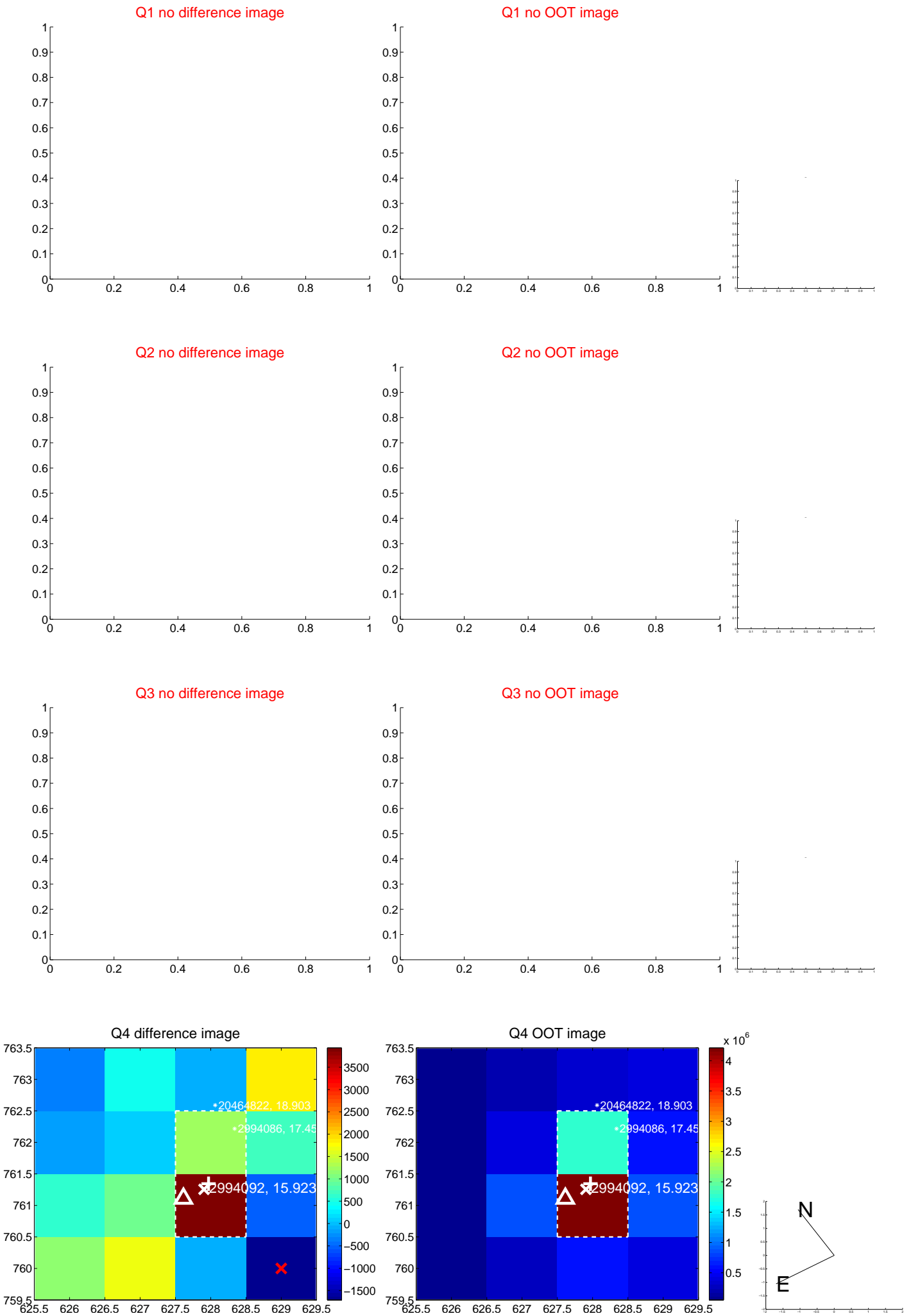
The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.136 \pm 0.750$	1.52	$1.133 \pm 0.736$	$0.088 \pm 0.531$
PRF-fit source offset from KIC position	$0.819 \pm 0.731$	1.12	$0.817 \pm 0.714$	$0.060 \pm 0.508$
photometric centroid source offset	$0.76 \pm 1.34$	0.57	$0.43 \pm 1.36$	$0.63 \pm 1.34$

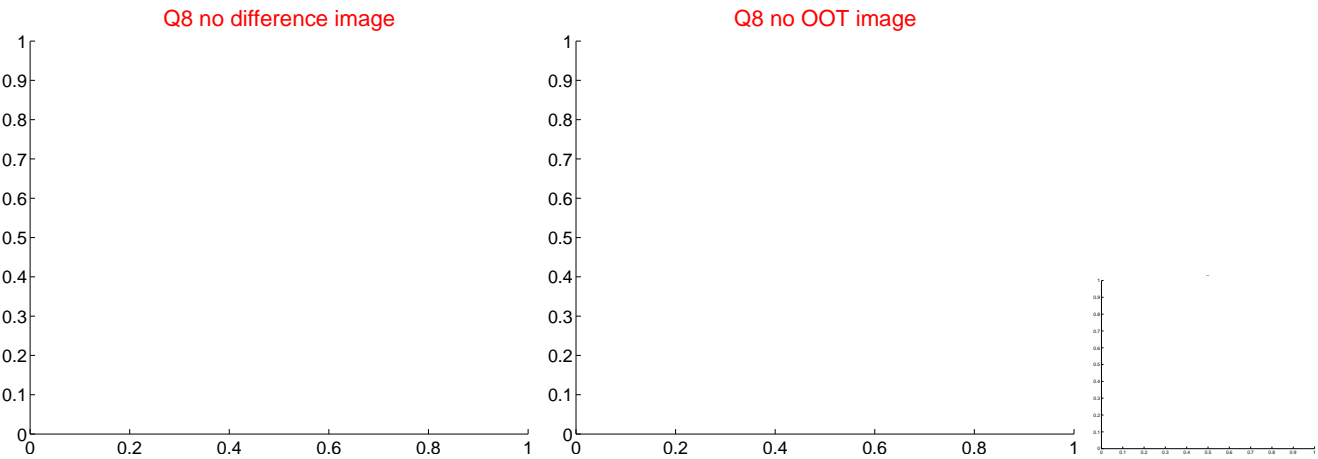
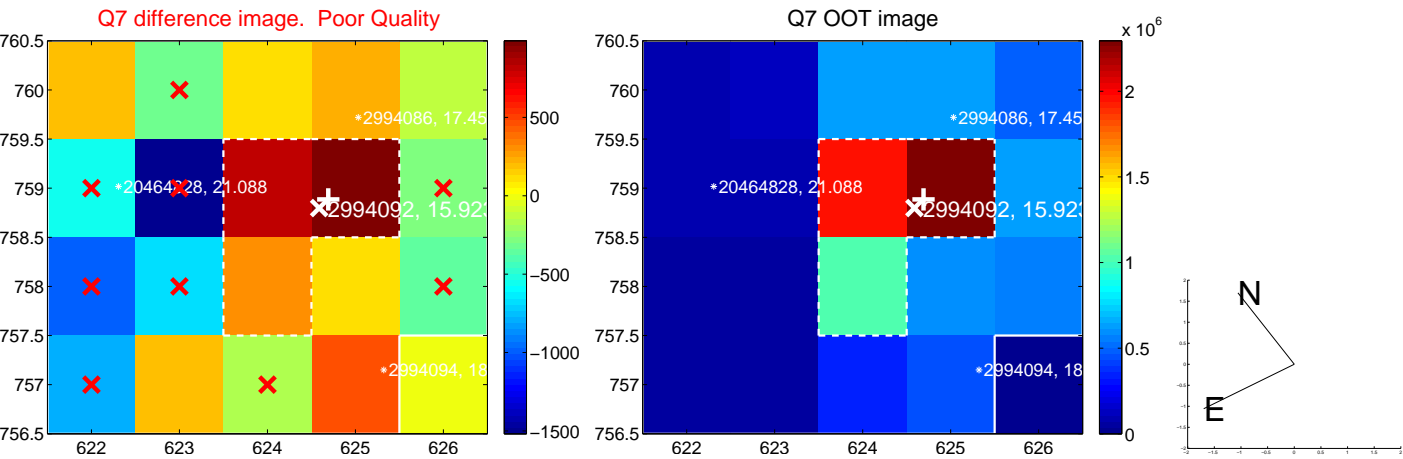
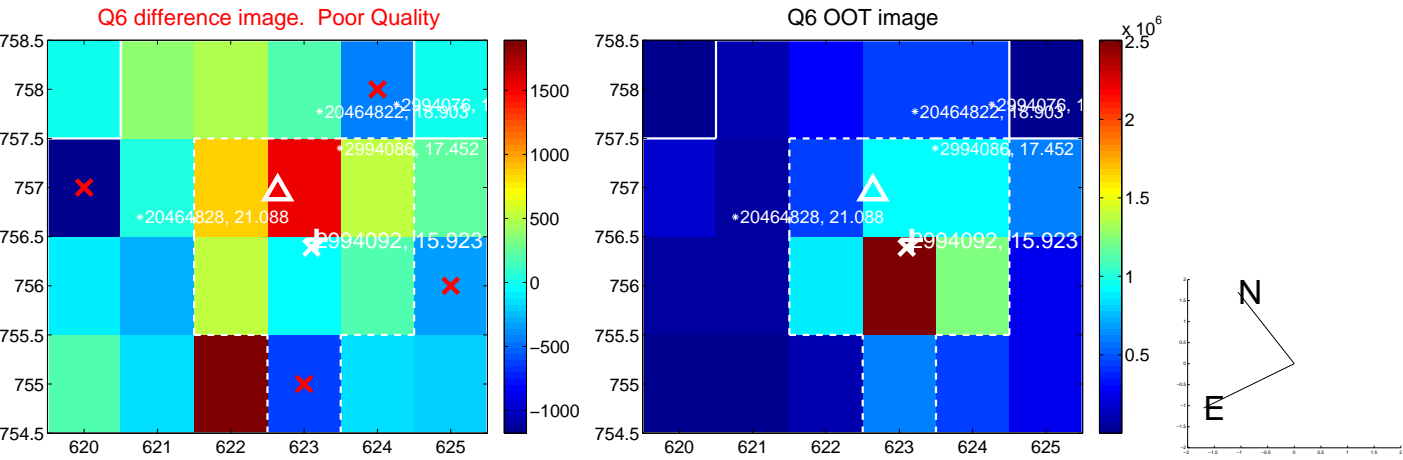
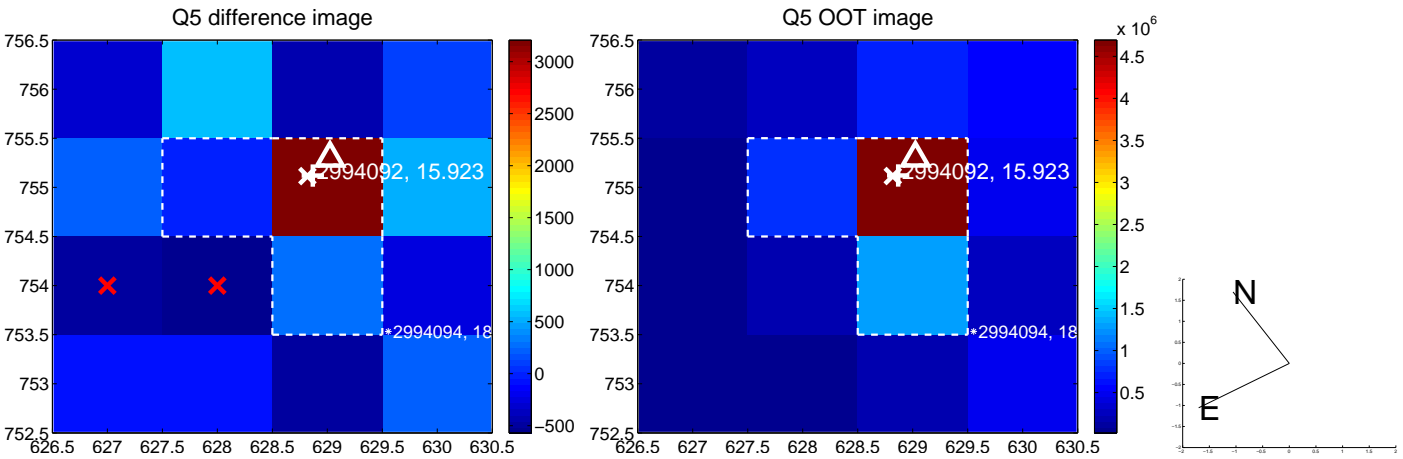


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

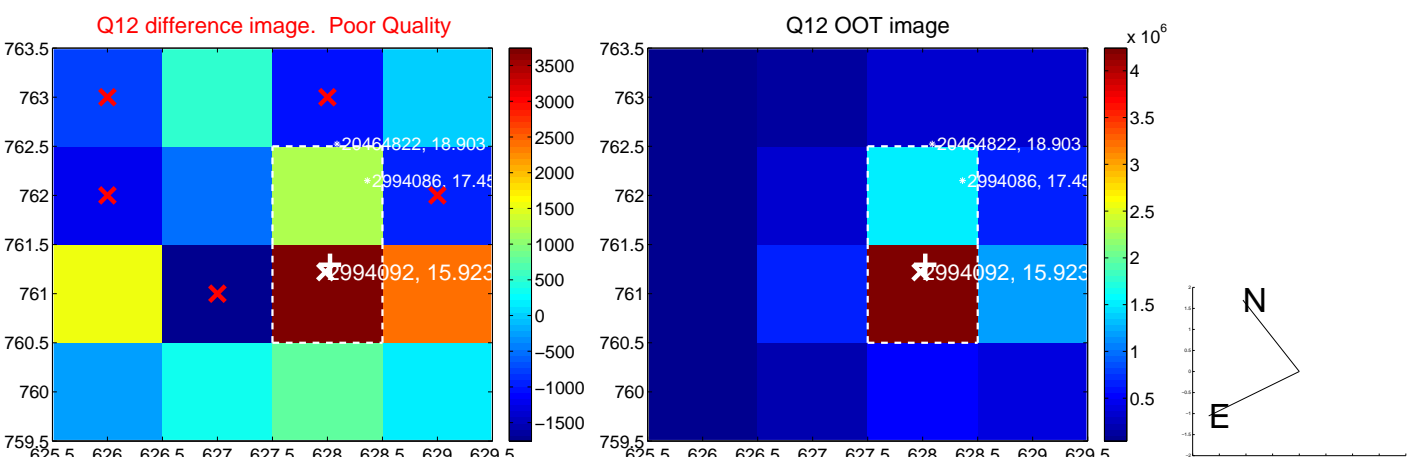
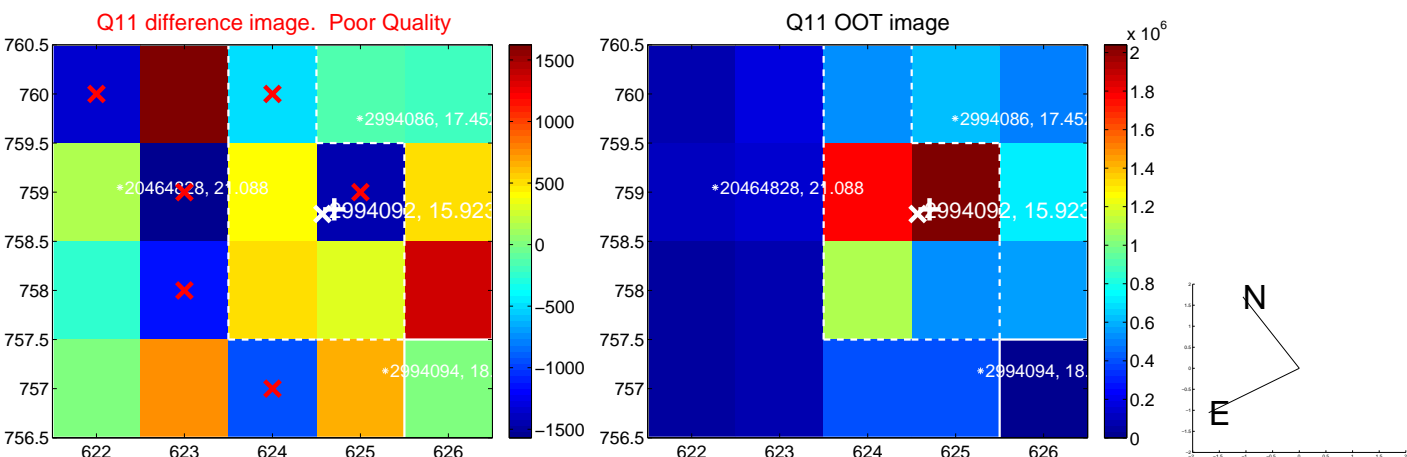
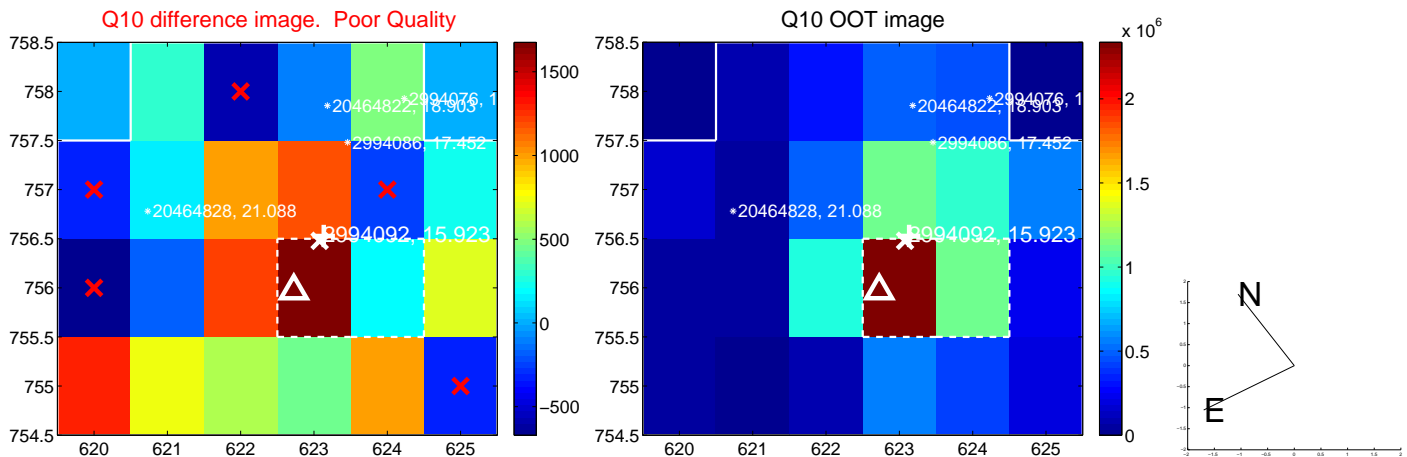
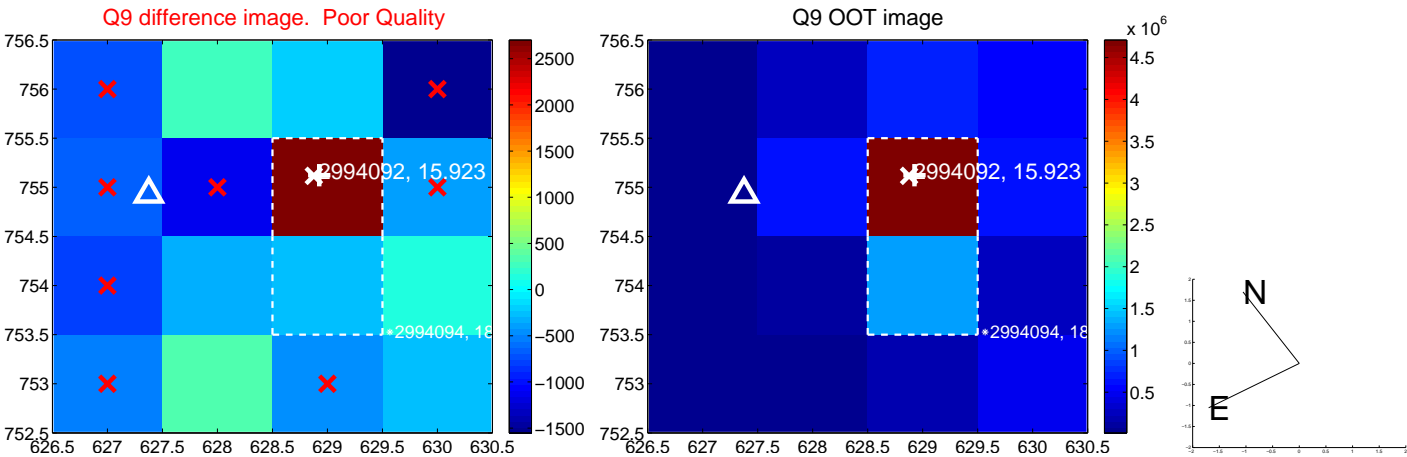
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



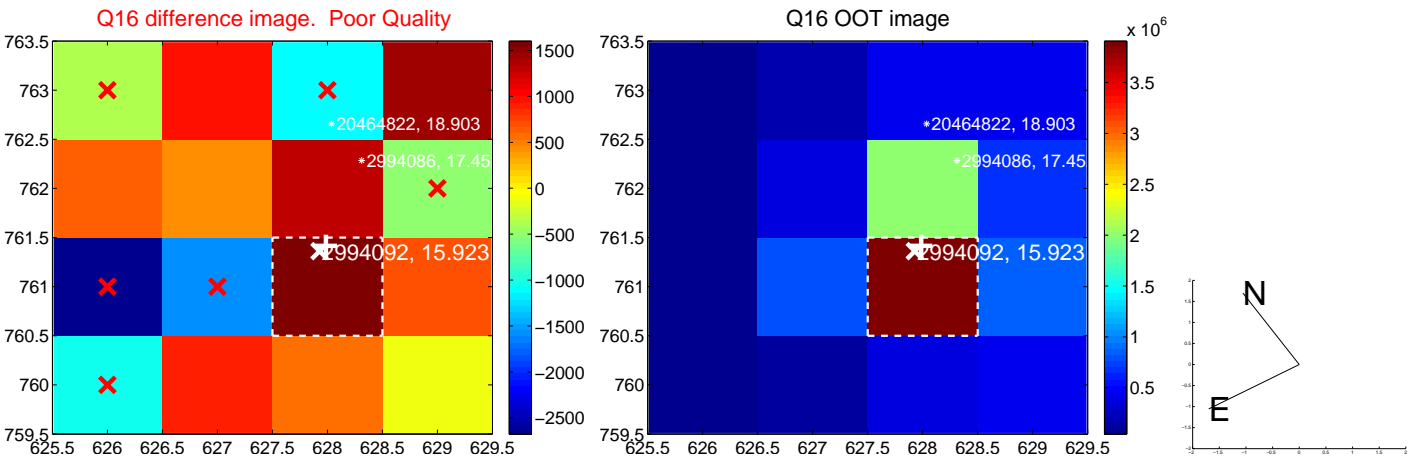
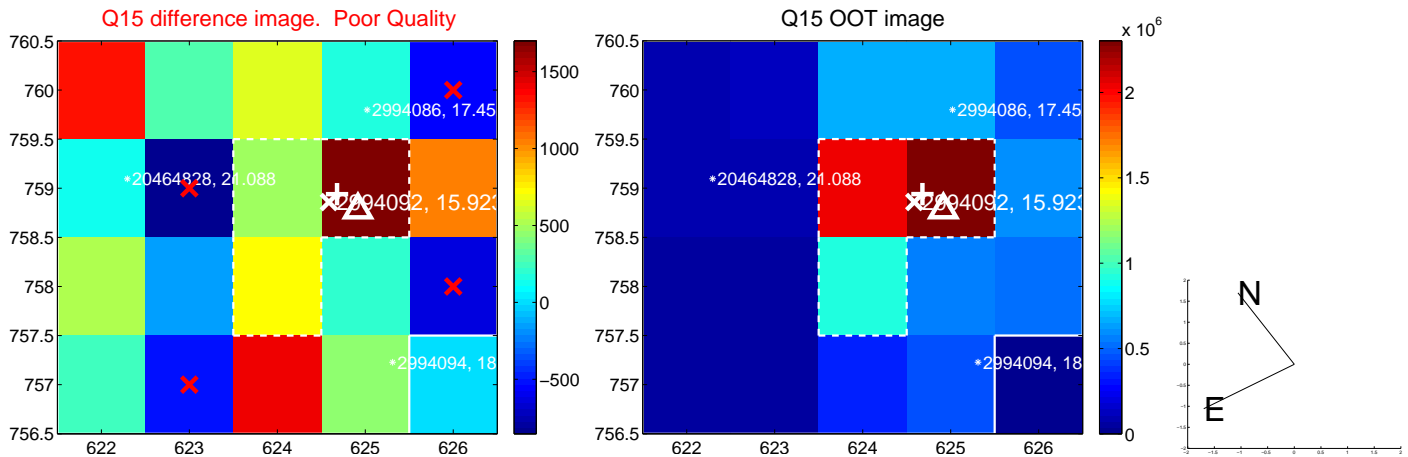
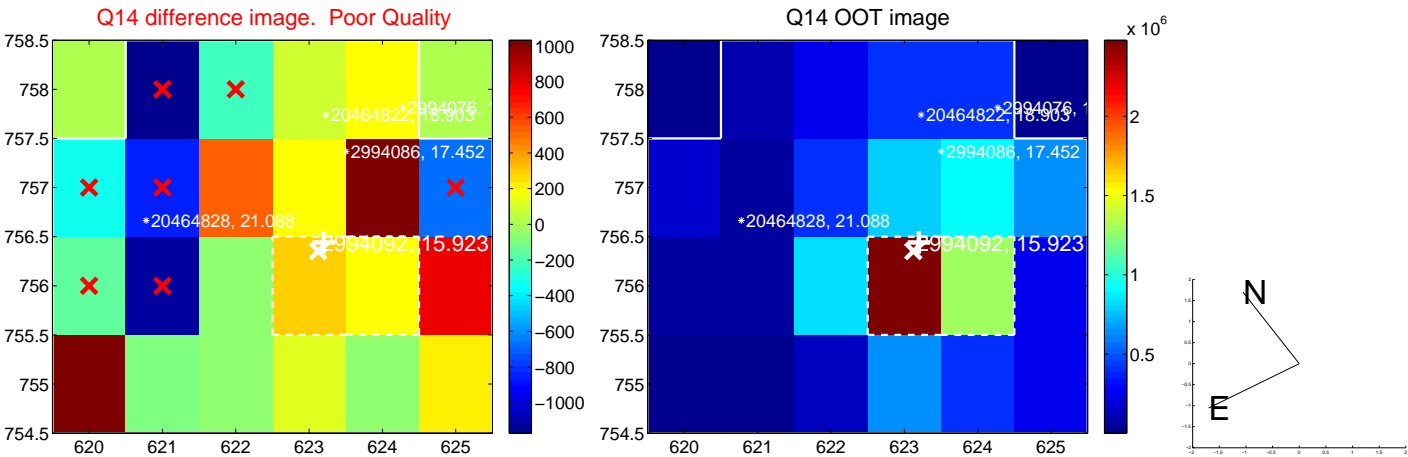
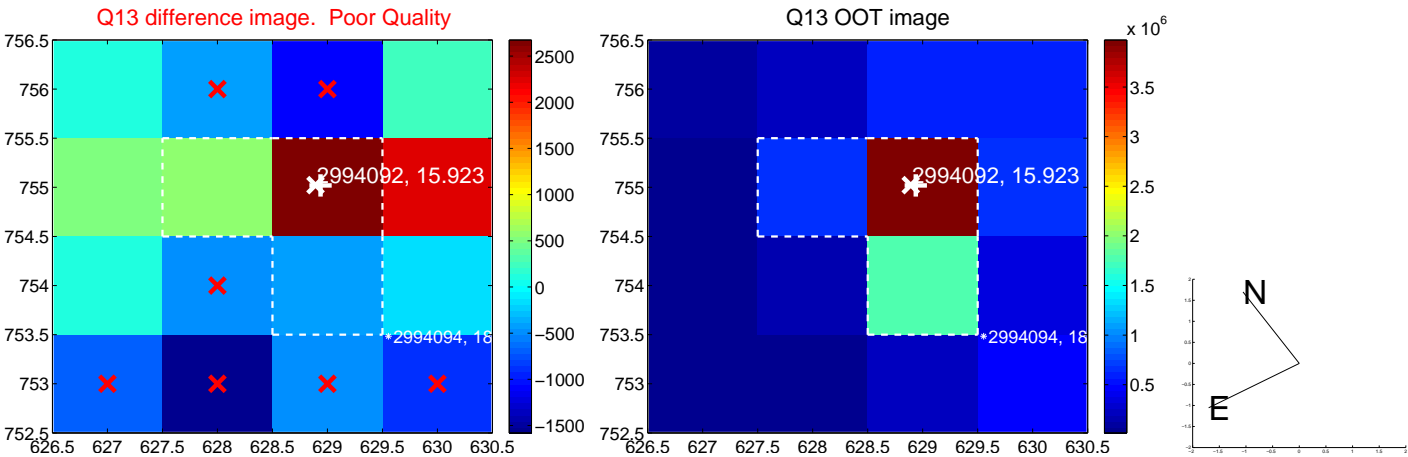
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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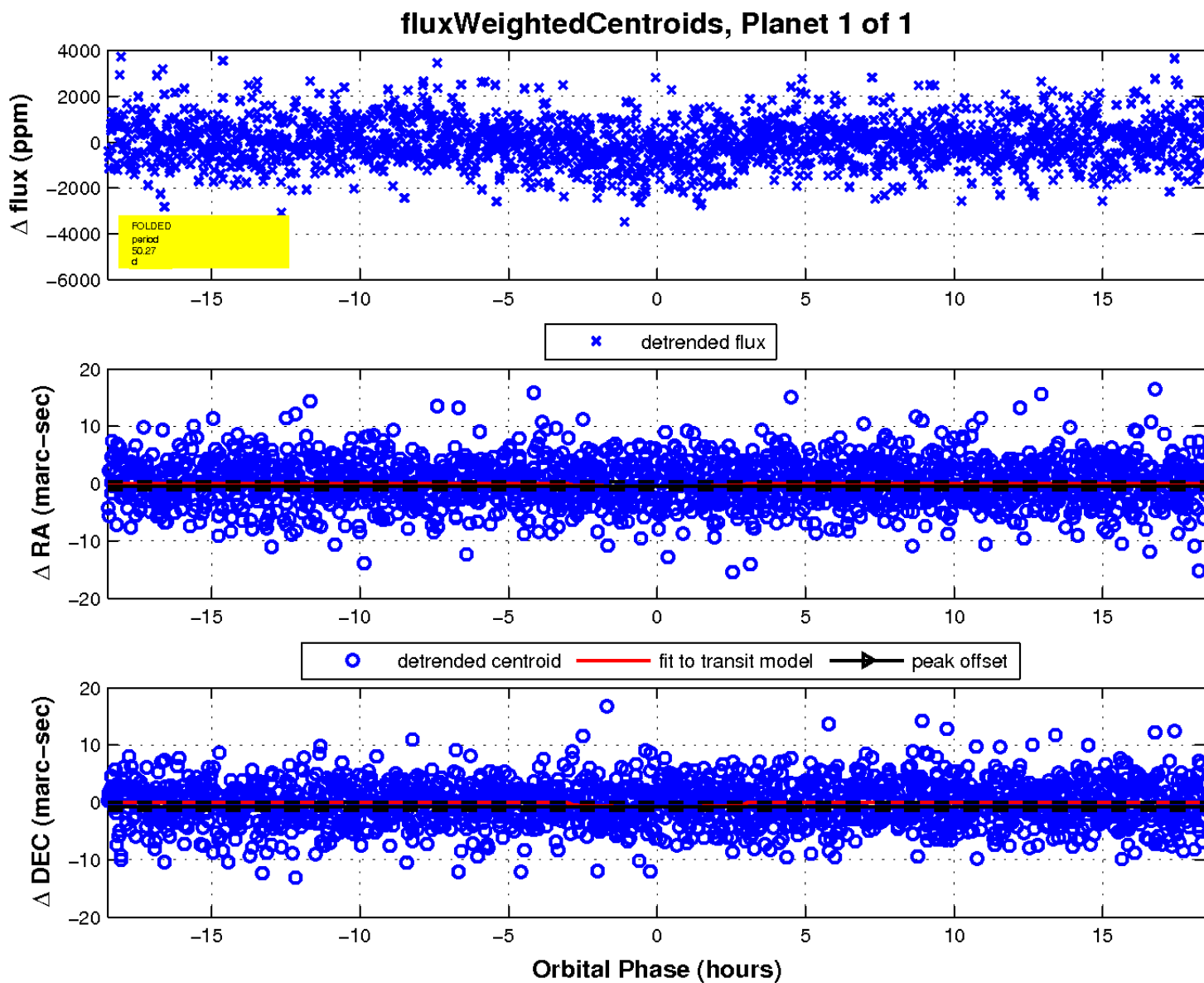
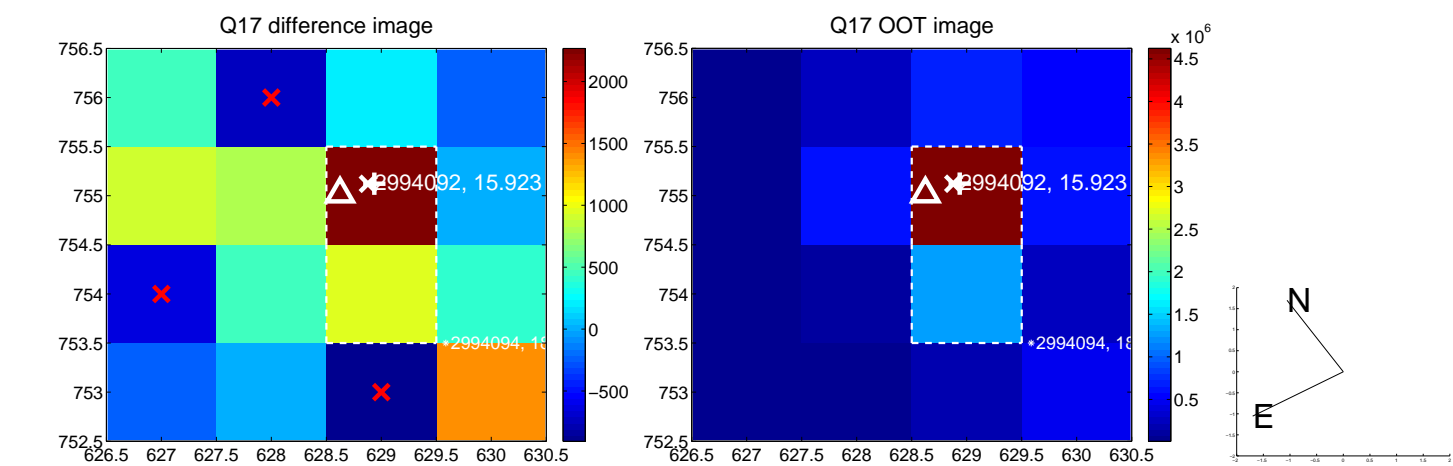


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

