

# KIC 010908248

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010908248-01	OBS	3146.01	39.858722	154.781991	157.1	8.385	12.0	12.7	1.29	5675	1.87	30.03

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010908248-01	OBS	PC	0.77	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.

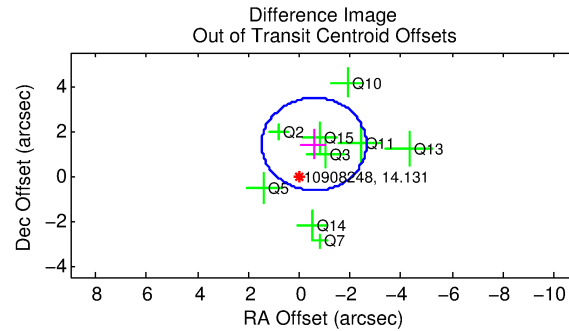
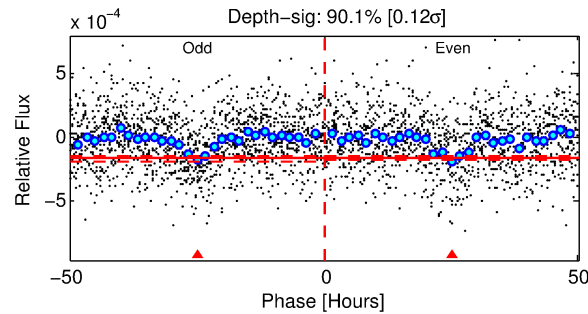
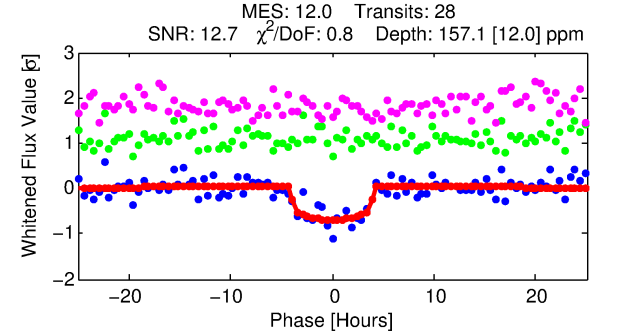
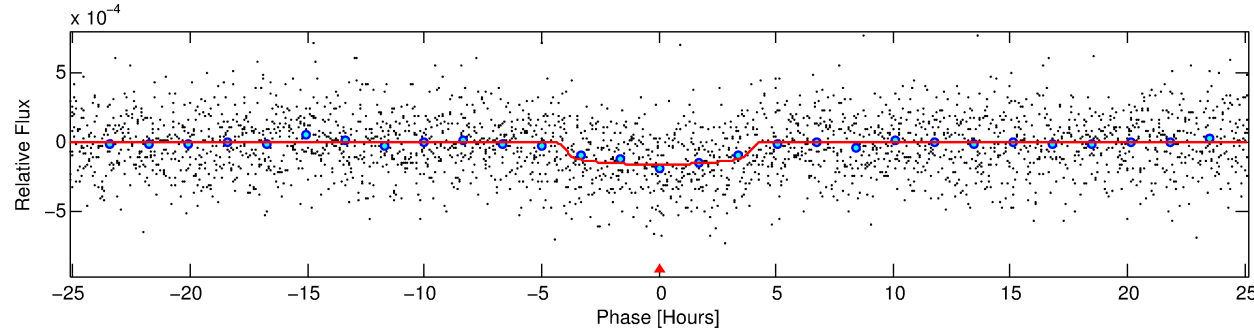
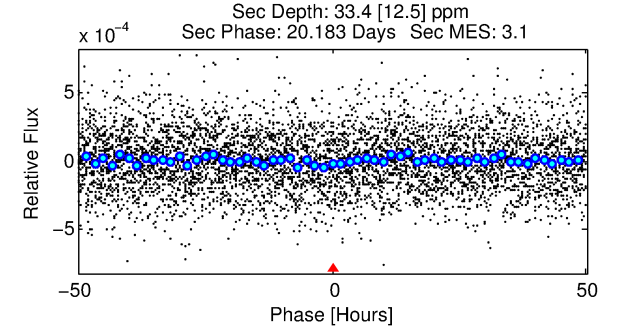
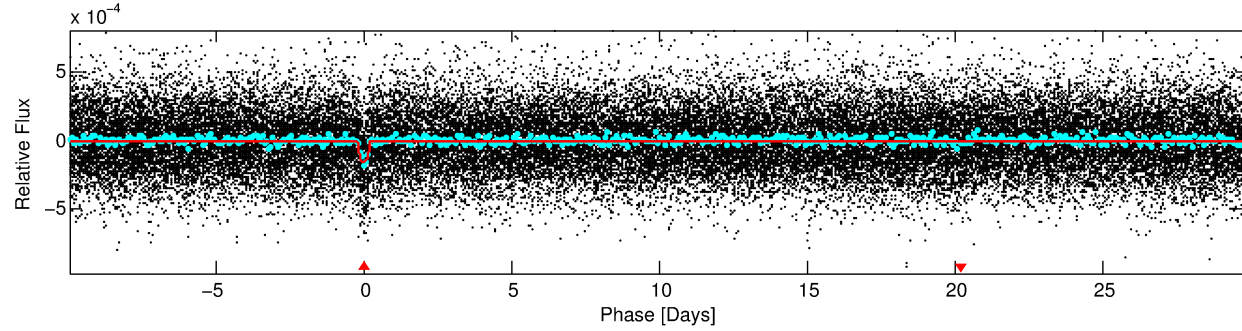
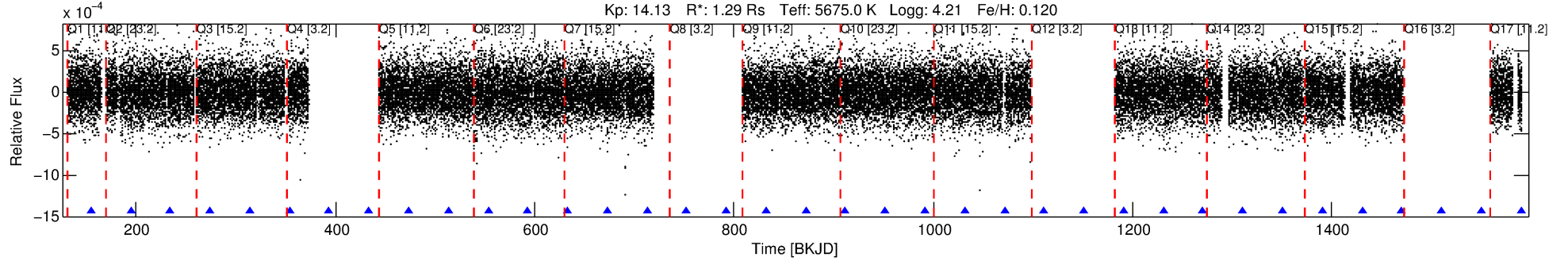
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010908248-01

No Significant Match Found

# DV One-Page Summary

KIC: 10908248 Candidate: 1 of 1 Period: 39.859 d  
KOI: K03146.01 Corr: 0.969



## DV Fit Results:

Period = 39.85872 [0.00053] d  
Epoch = 154.7820 [0.0109] BKJD  
Rp/R\* = 0.0132 [0.0039]  
a/R\* = 19.50 [25.61]  
b = 0.86 [0.41]  
Seff = 30.03 [9.11]  
Teq = 597 [45] K  
Rp = 1.87 [0.65] Re  
a = 0.2273 [0.0422] AU  
Ag = 272.52 [206.63] [1.31σ]  
Teffp = 3750 [655] K [4.80σ]

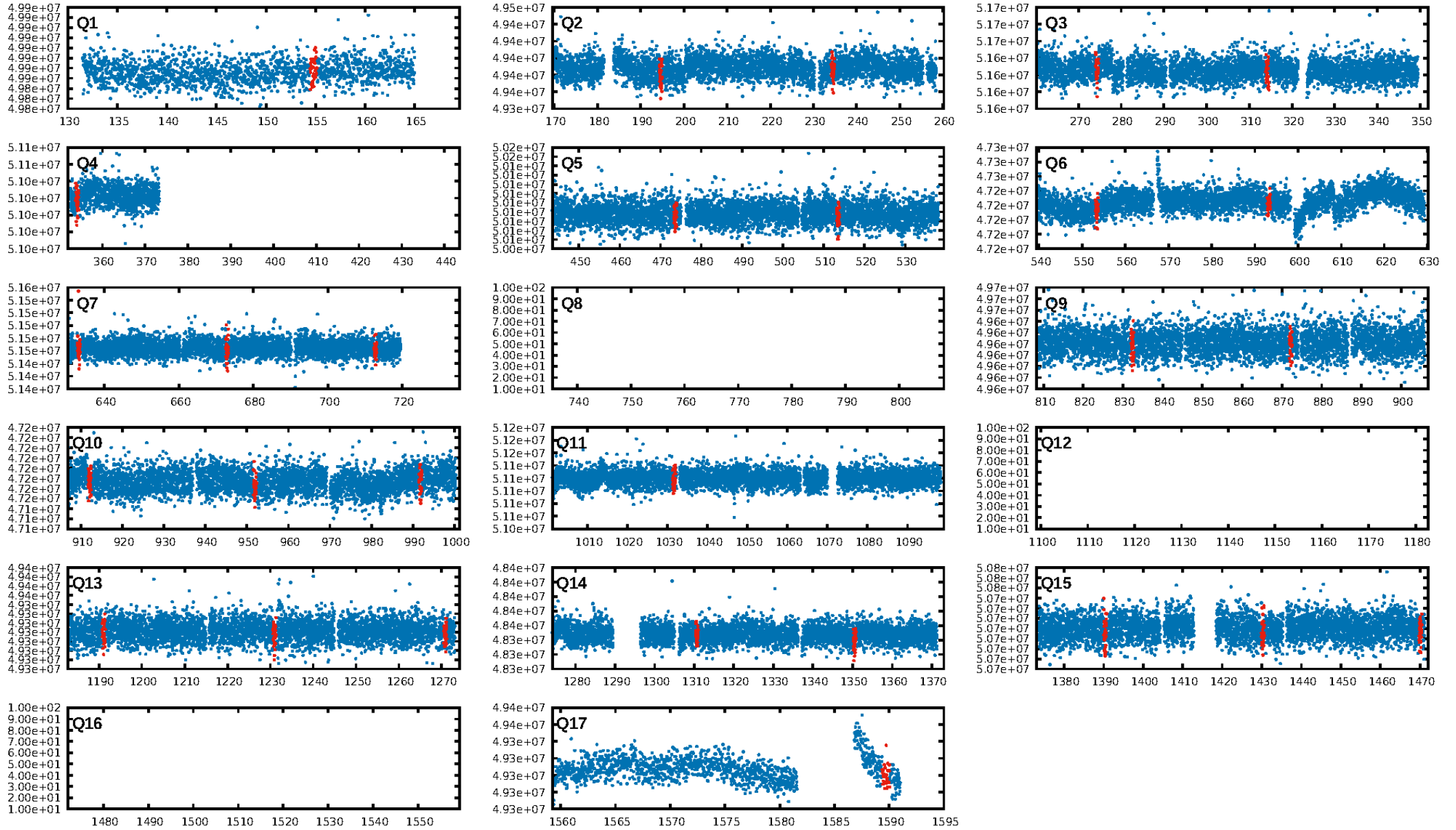
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 99.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.85e-27  
RollingBand-fgt: 1.00 [25/25]  
GhostDiagnostic-chr: -172.1  
Centroid-sig: 59.5%  
Centroid-so: 0.771 arcsec [0.76σ]  
OotOffset-rm: 1.526 arcsec [2.22σ]  
OotOffset-st: 3/4/0/2 [9]  
KicOffset-rm: 1.461 arcsec [2.07σ]  
KicOffset-st: 3/4/0/2 [9]  
DiffImageQuality-fgm: 0.78 [7/9]  
DiffImageOverlap-fno: 1.00 [14/14]

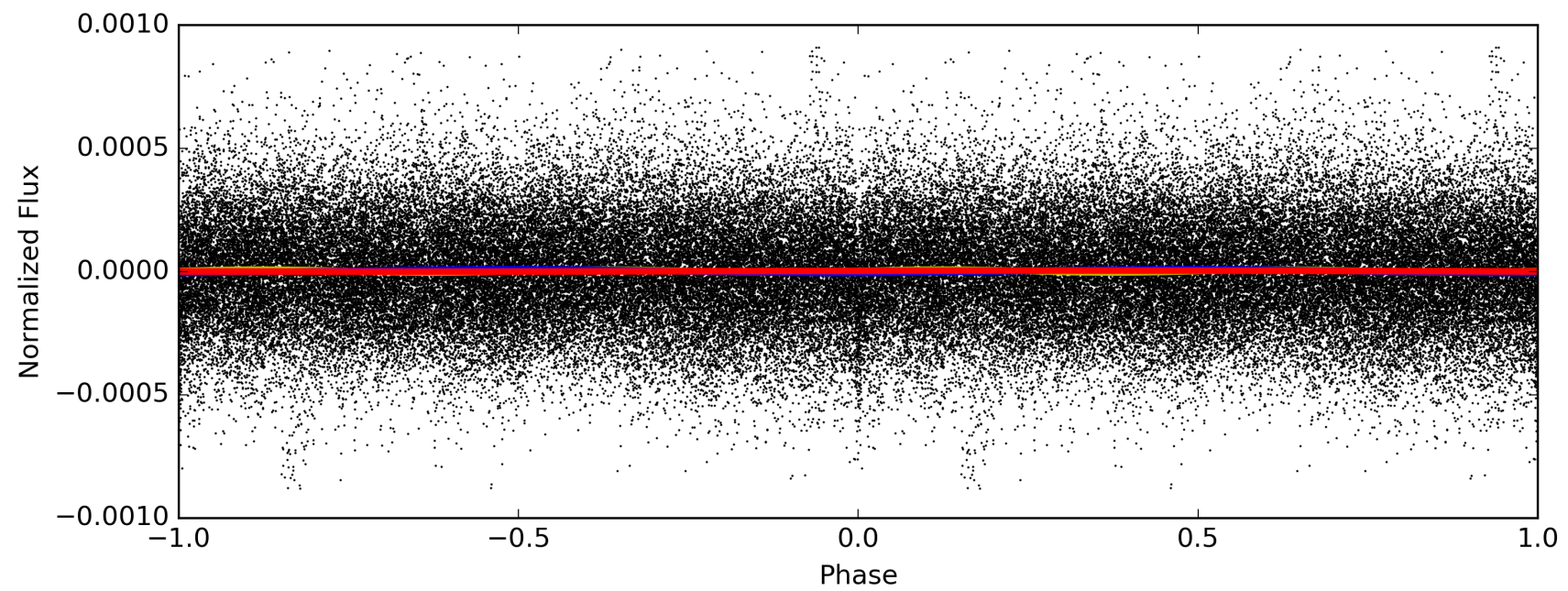
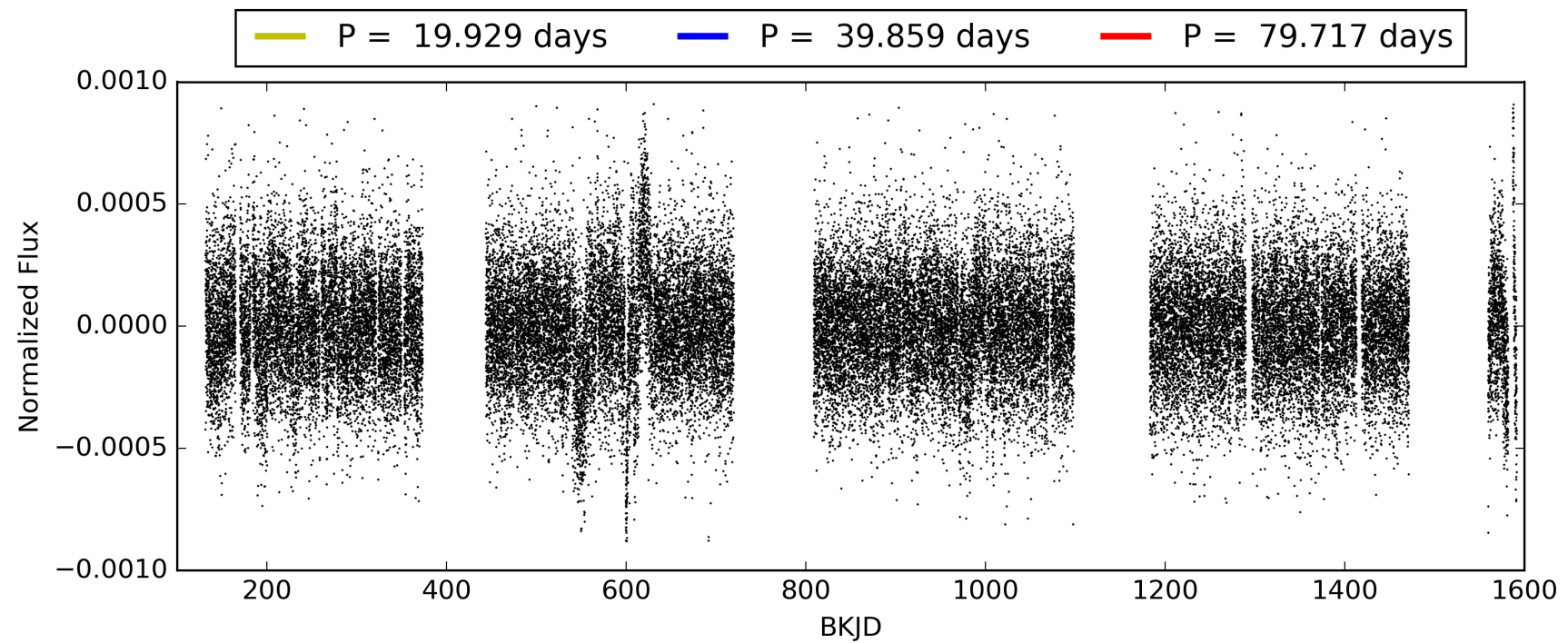
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:33:27 Z

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

# TCE 010908248-01, PDC Light Curves

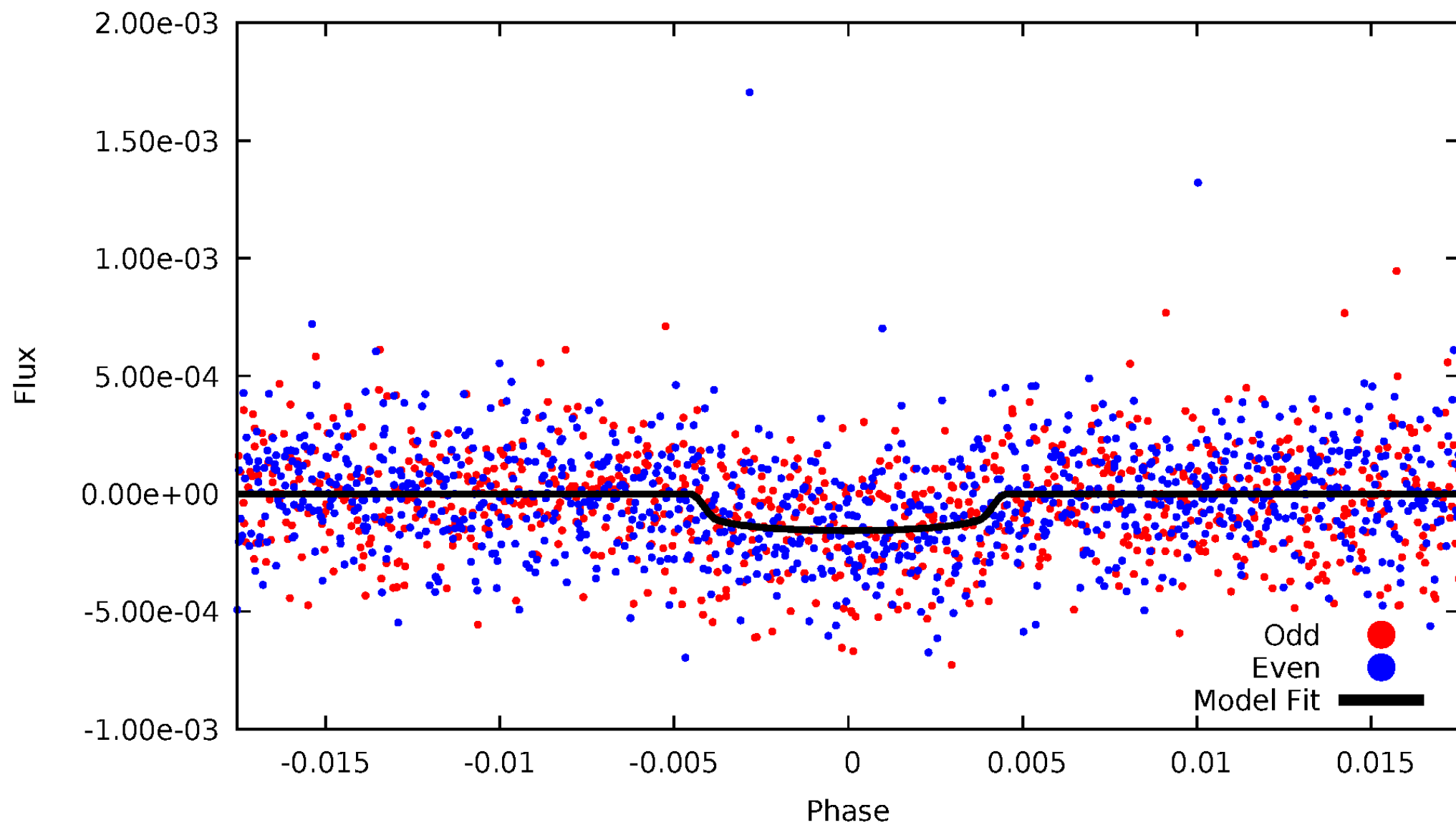


TCE 010908248-01



# DV Odd/Even

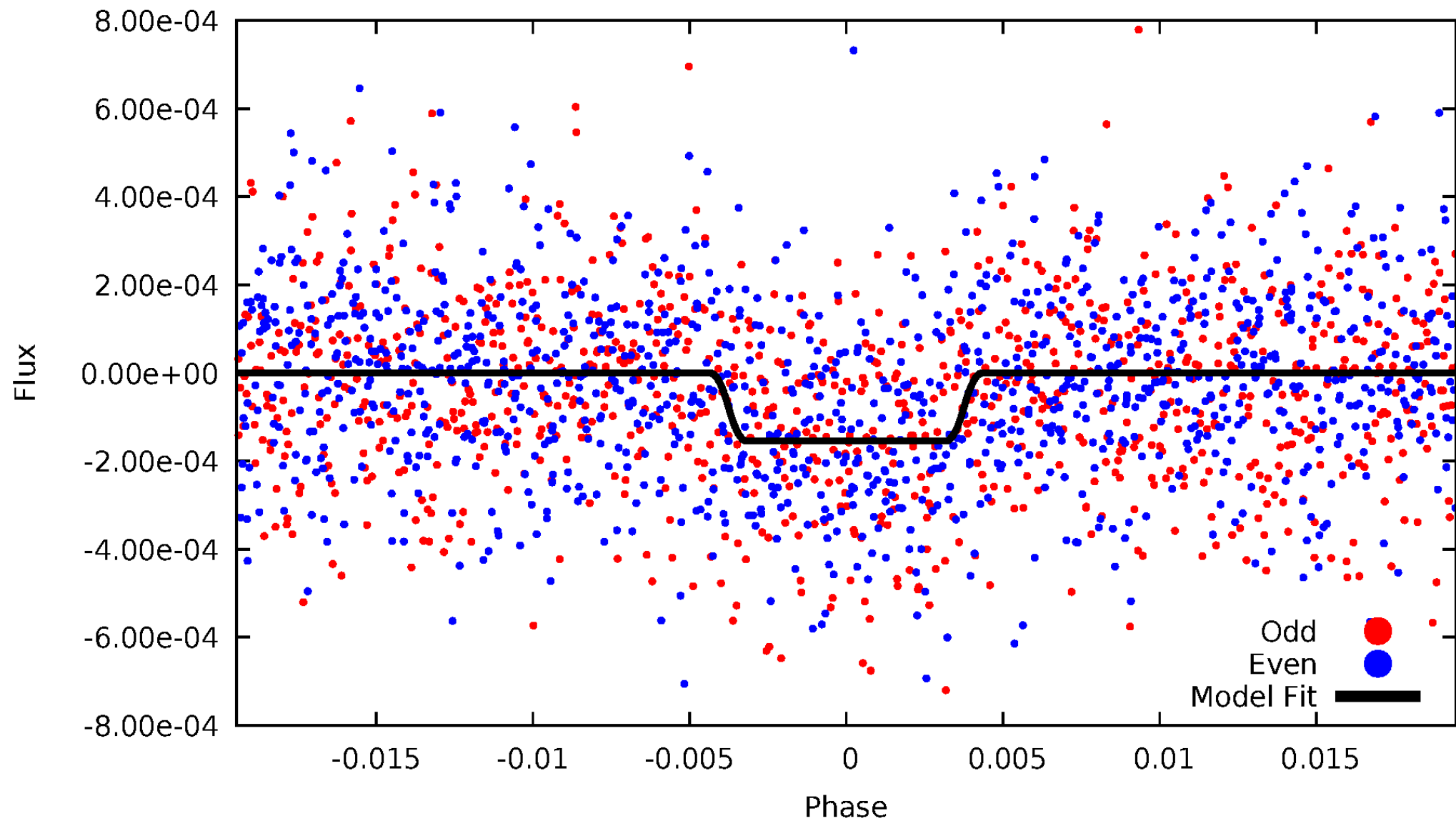
TCE 010908248-01





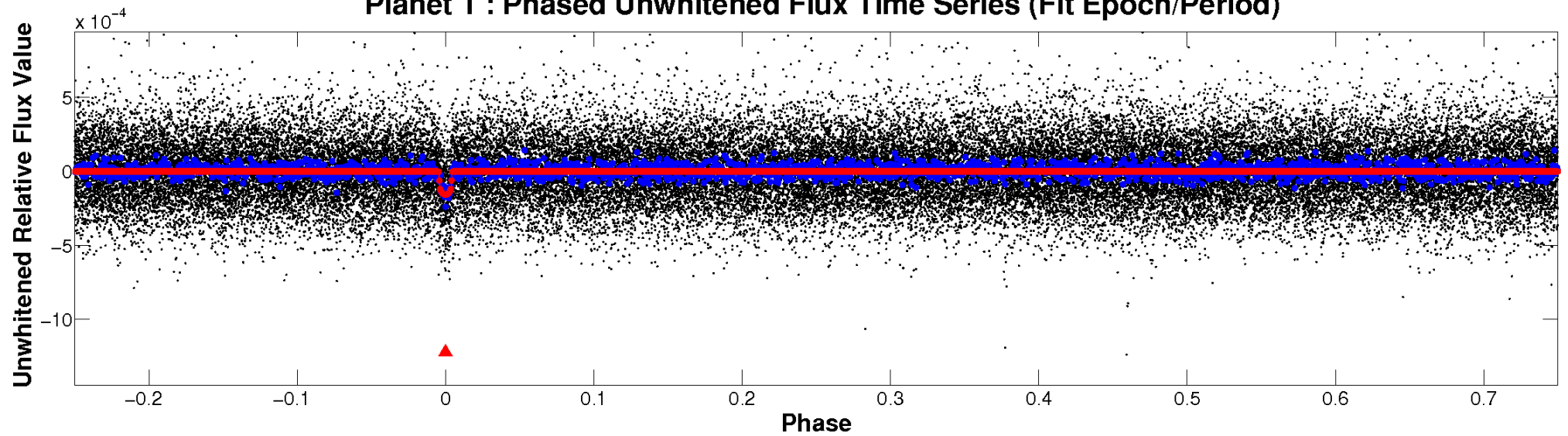
# ALT Odd/Even

TCE 010908248-01

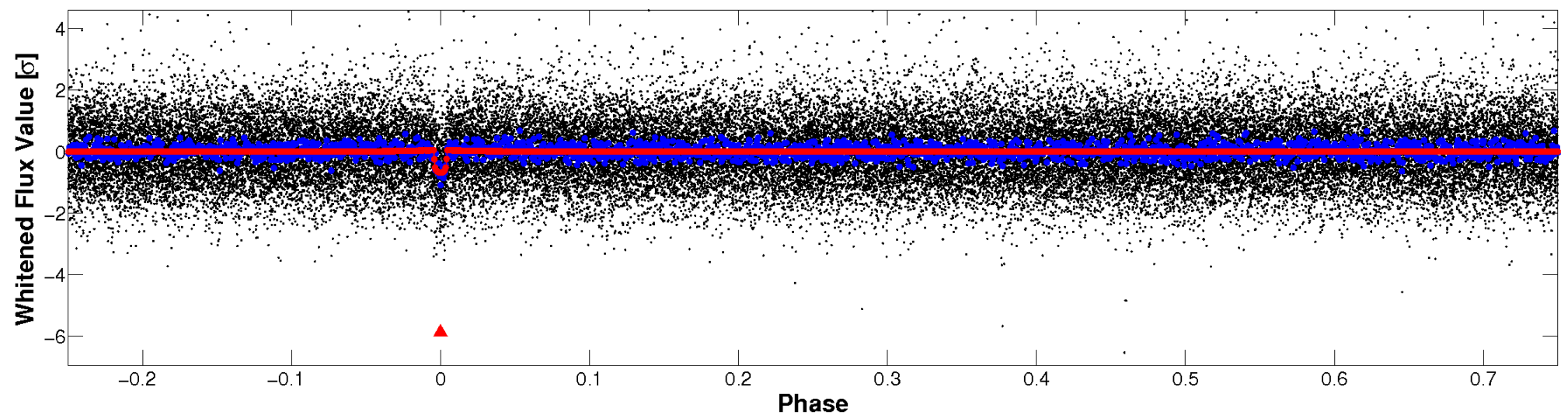


# Non-Whitened Vs. Whitened Light Curve

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

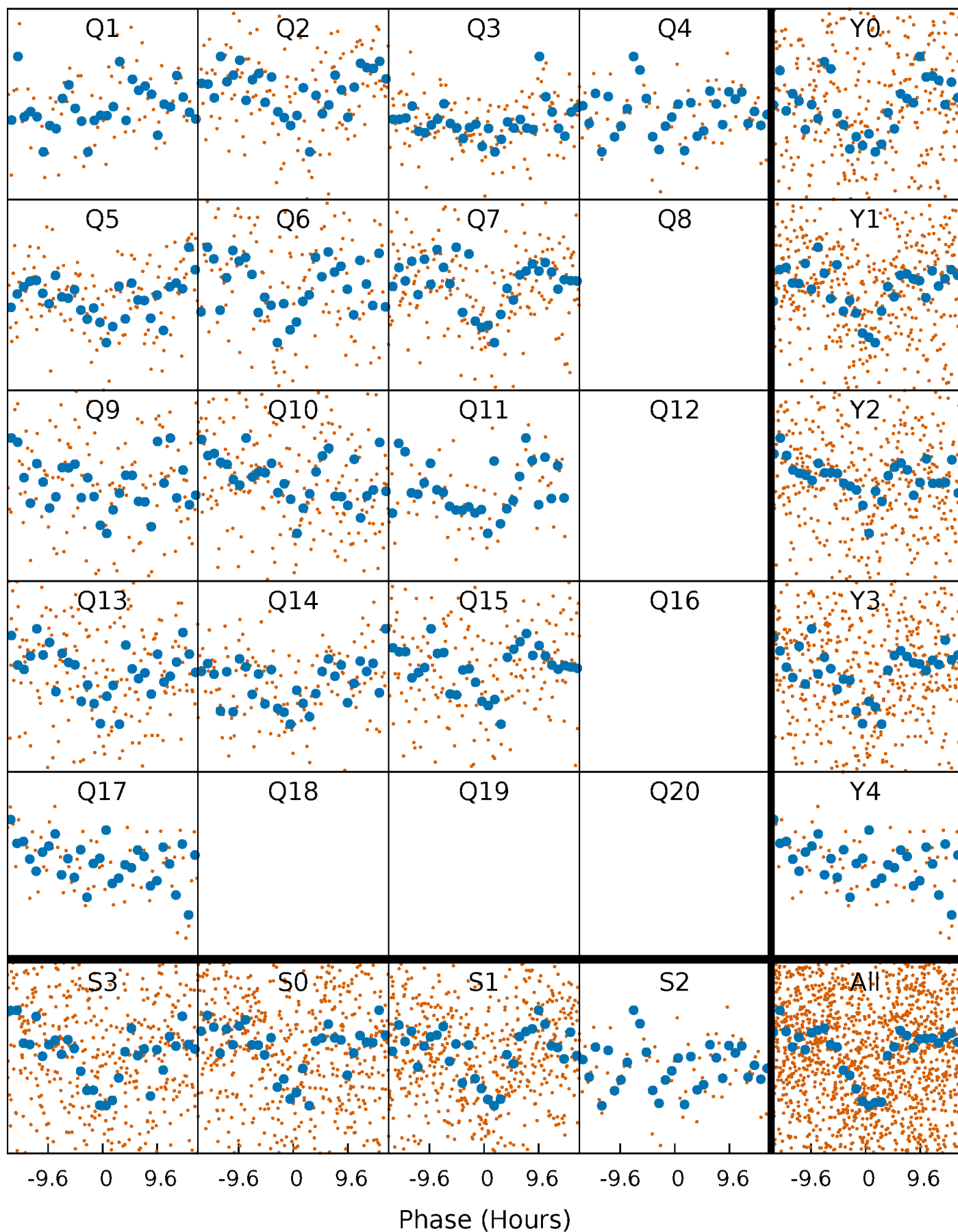


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

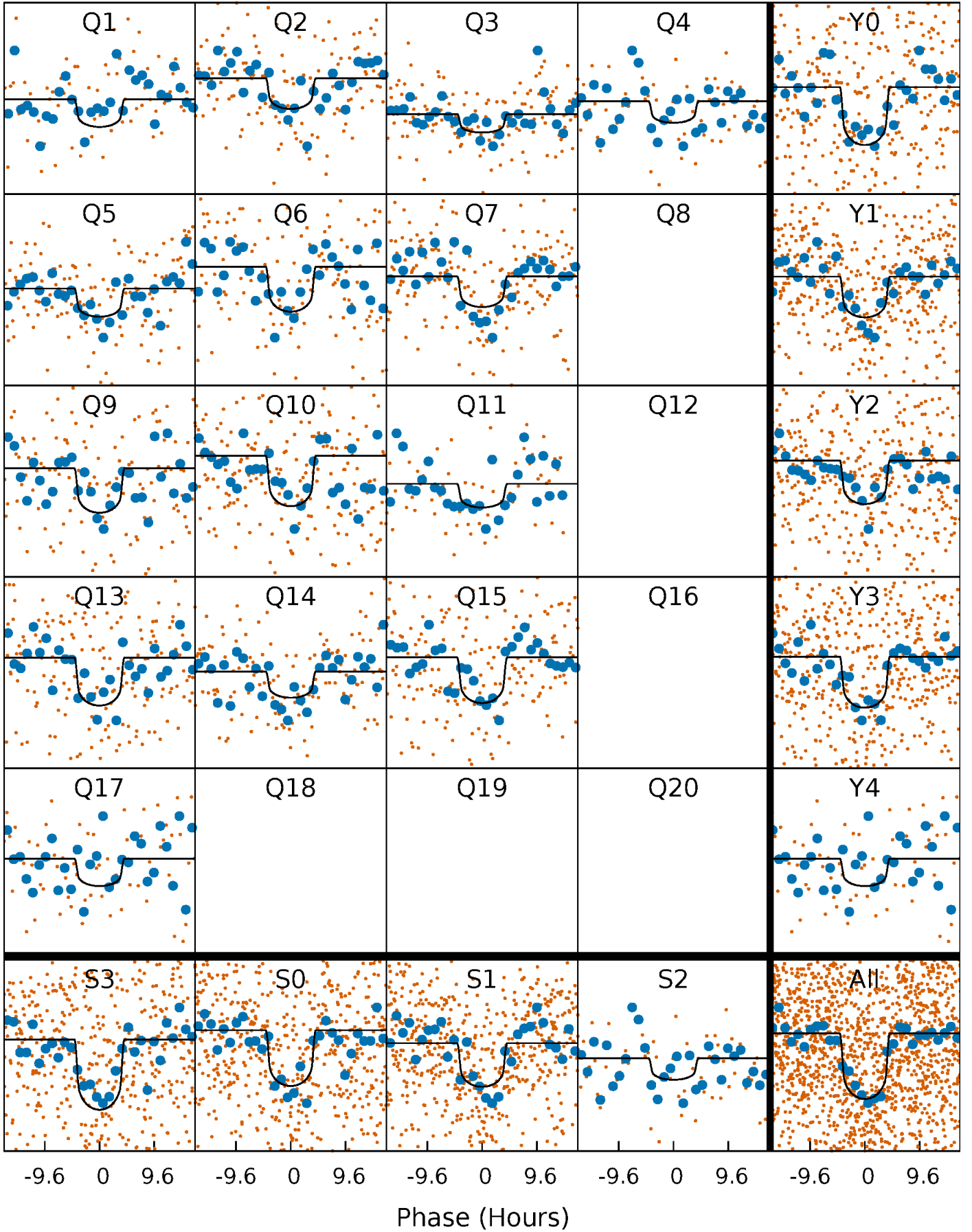
TCE 010908248-01 P= 39.858722 Days  $T_0=154.781991$  (BKJD)





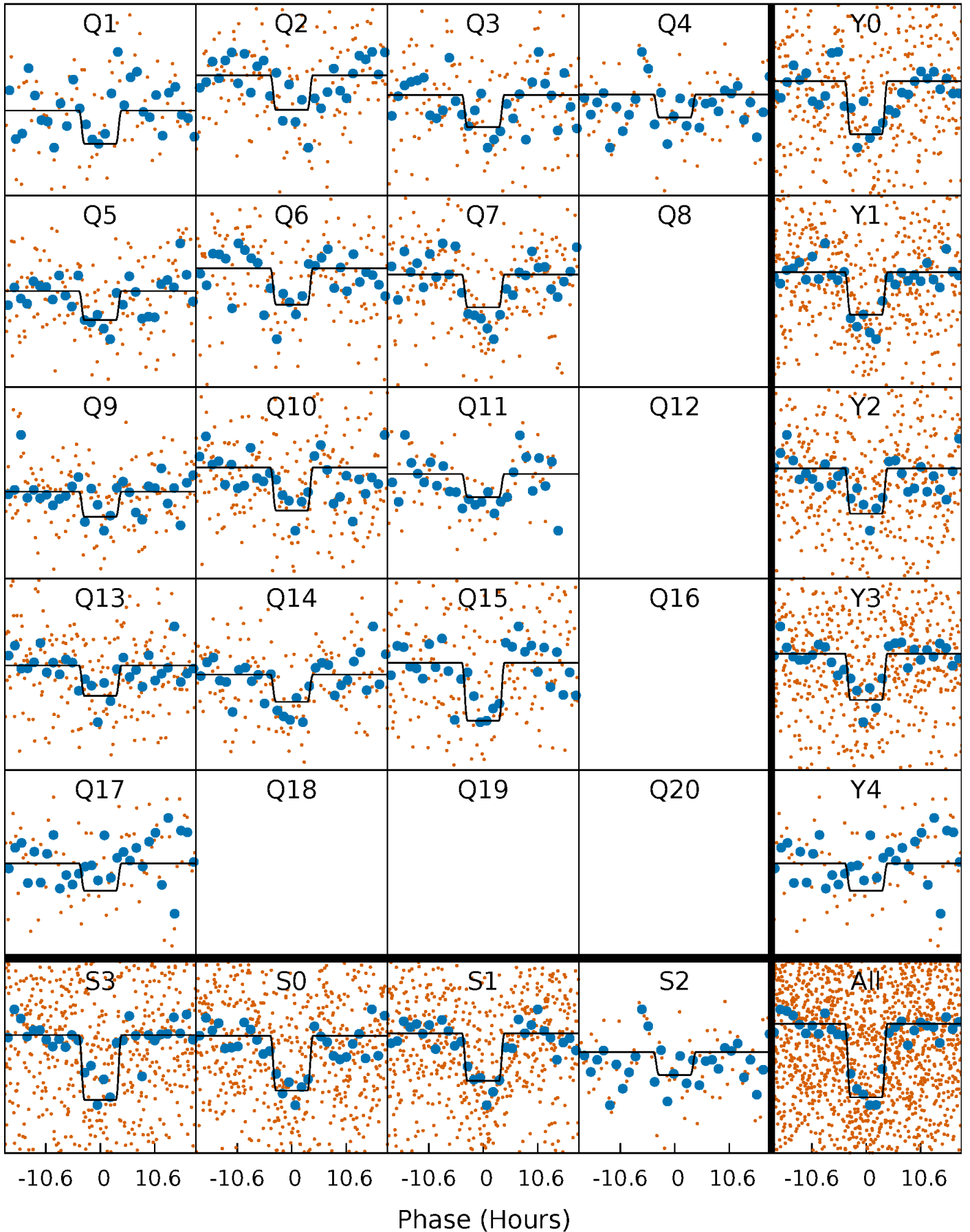
# DV Quarter-Phased Transit Curves

TCE 010908248-01   P= 39.858722 Days    $T_0=154.781991$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

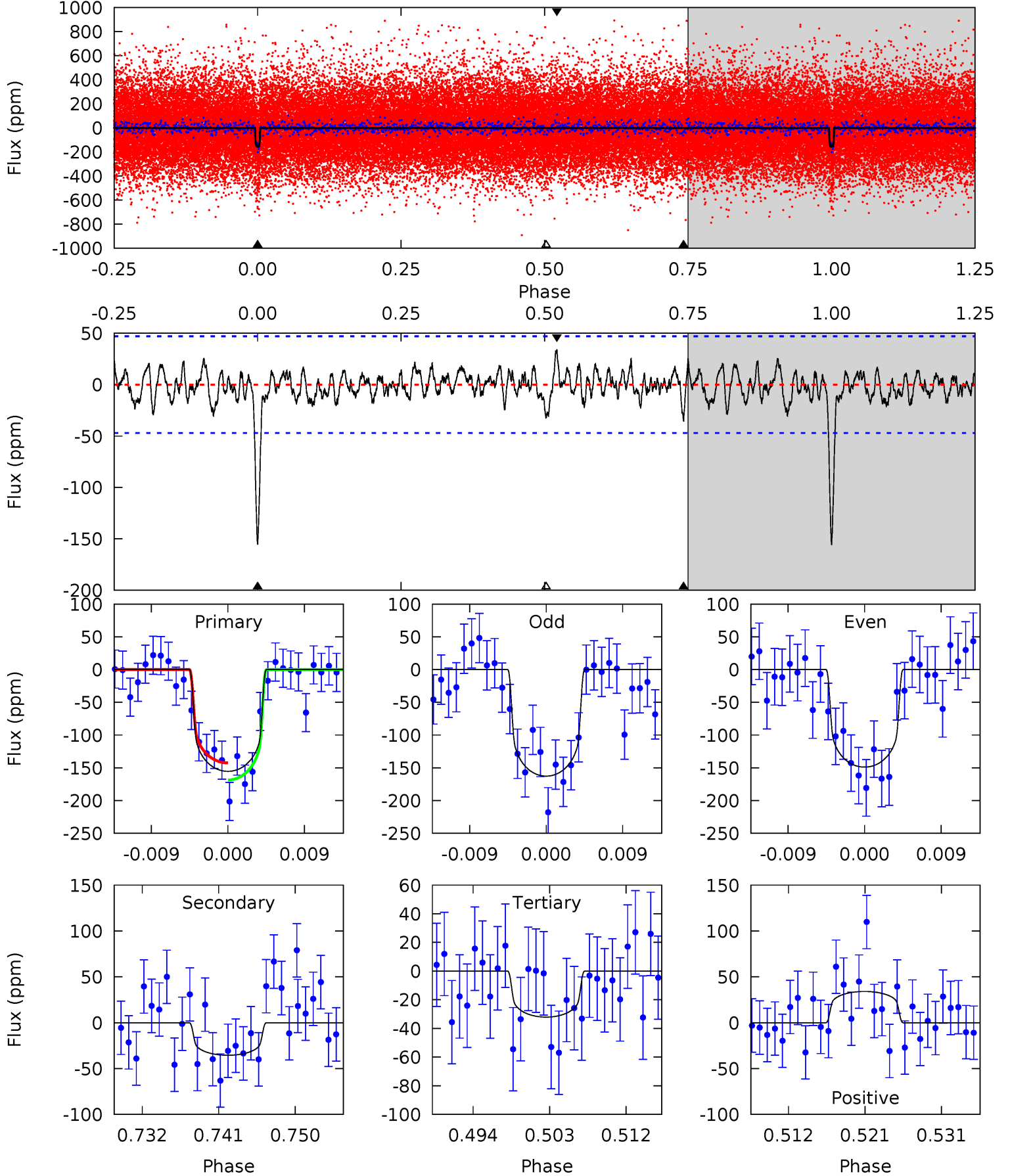
TCE 010908248-01   P= 39.860382 Days    $T_0=154.751654$  (BKJD)



# DV Model-Shift Uniqueness Test

010908248-01, P = 39.858722 Days, E = 114.923269 Days

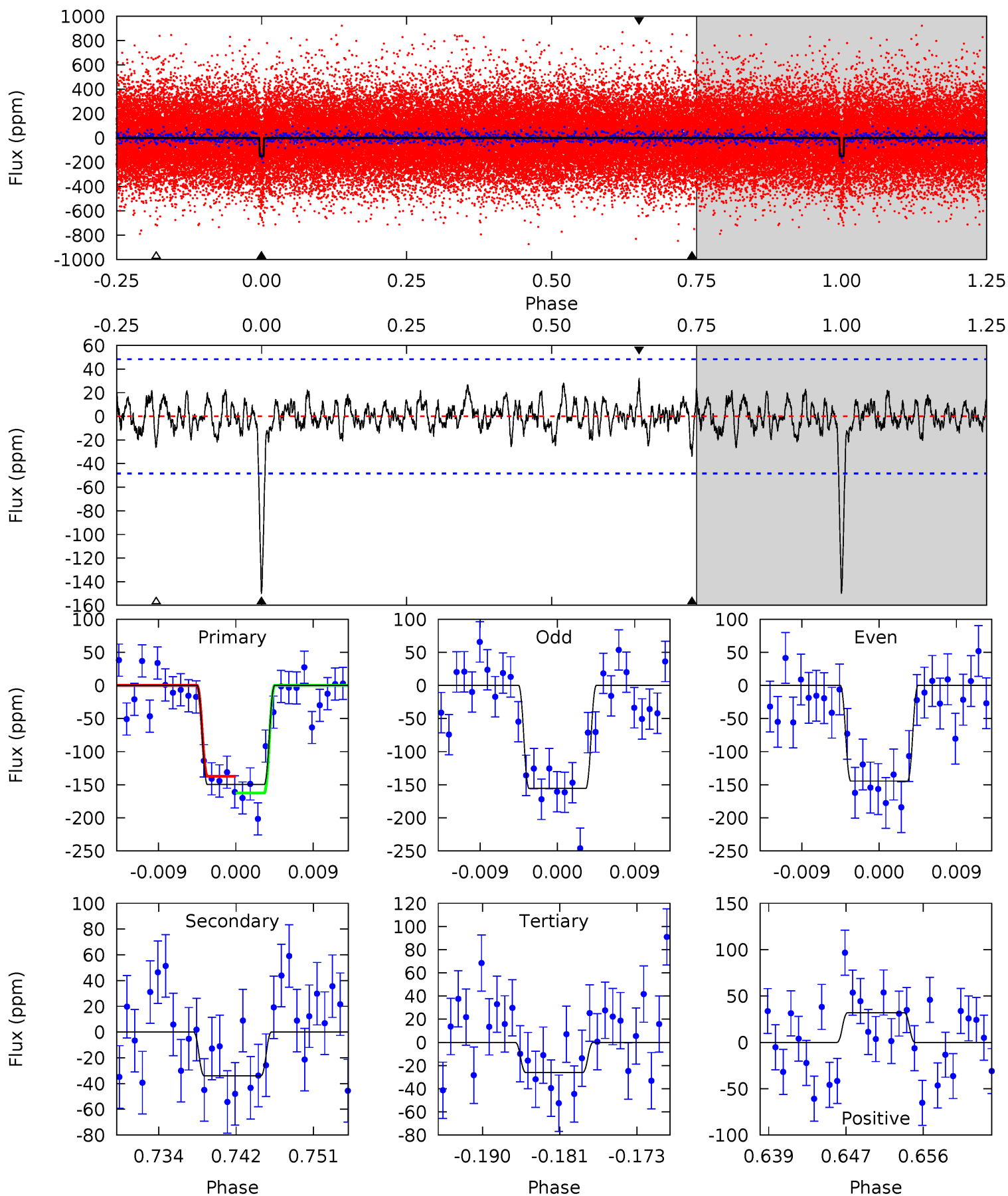
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	3.81	3.44	3.65	5.04	2.61	1.15	13.2	13.0	0.37	0.16	0.74	0.99	0.18	1.40



# Alt Model-Shift Uniqueness Test

010908248-01, P = 39.860382 Days, E = 114.891272 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
15.6	3.54	2.72	3.33	5.05	2.63	1.00	12.9	12.3	0.82	0.21	0.58	1.04	0.18	1.34



### Stellar Parameters For KIC 010908248

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5675^{+76}_{-76}$	$4.209^{+0.176}_{-0.108}$	$0.120^{+0.150}_{-0.150}$	$1.292^{+0.202}_{-0.247}$	$0.984^{+0.074}_{-0.067}$	$0.643^{+0.529}_{-0.213}$
	+1%/-1%	+4%/-3%	+125%/-125%	+16%/-19%	+8%/-7%	+82%/-33%
Source	SPE90	SPE90	SPE90	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010908248-01 / KOI 3146.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-36 \pm 9$	$1.86^{+0.58}_{-0.60}$	$831^{+41}_{-45}$	$4058^{+612}_{-376}$	$279^{+343}_{-119}$
Alt.	$-34 \pm 10$	$1.66^{+0.66}_{-0.52}$	$833^{+36}_{-45}$	$4163^{+648}_{-439}$	$336^{+402}_{-173}$

$T_{max}$  = 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

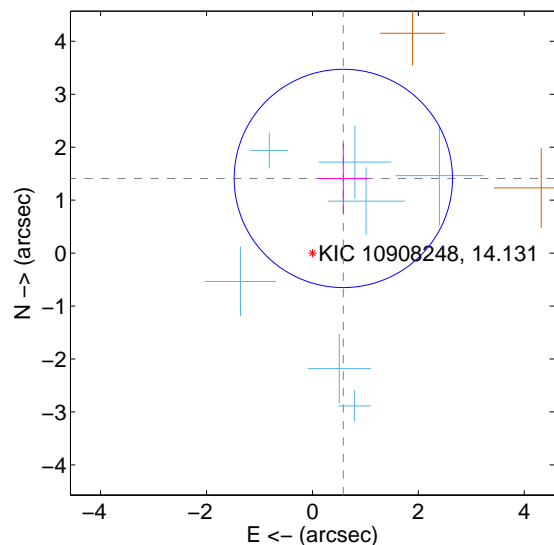
Supplemental centroid analysis for 010908248-01. Kepler magnitude: 14.13. Transit SNR 12.69

There are 7 quarters with good PRF difference image offsets

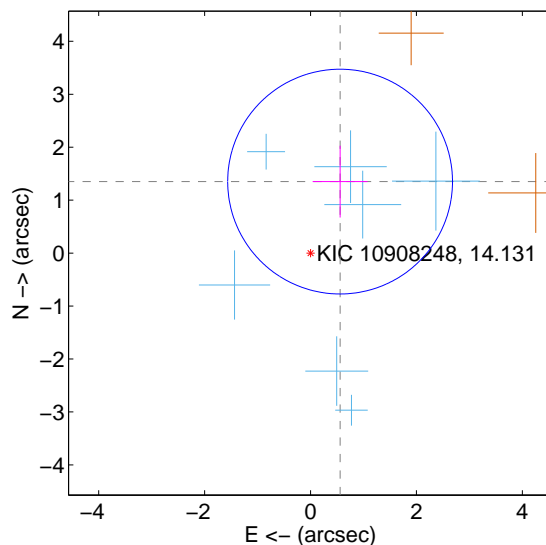
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.526 \pm 0.687$	2.22	$-0.584 \pm 0.474$	$1.410 \pm 0.657$
PRF-fit source offset from KIC position	$1.461 \pm 0.708$	2.07	$-0.558 \pm 0.518$	$1.350 \pm 0.678$
photometric centroid source offset	$0.77 \pm 1.01$	0.76	$0.68 \pm 1.00$	$0.36 \pm 1.05$

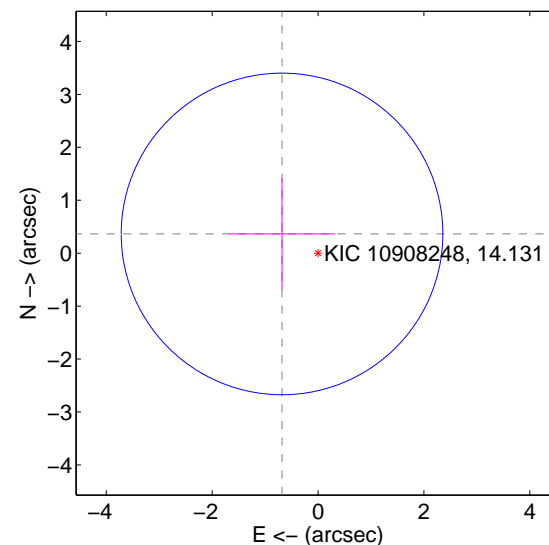
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

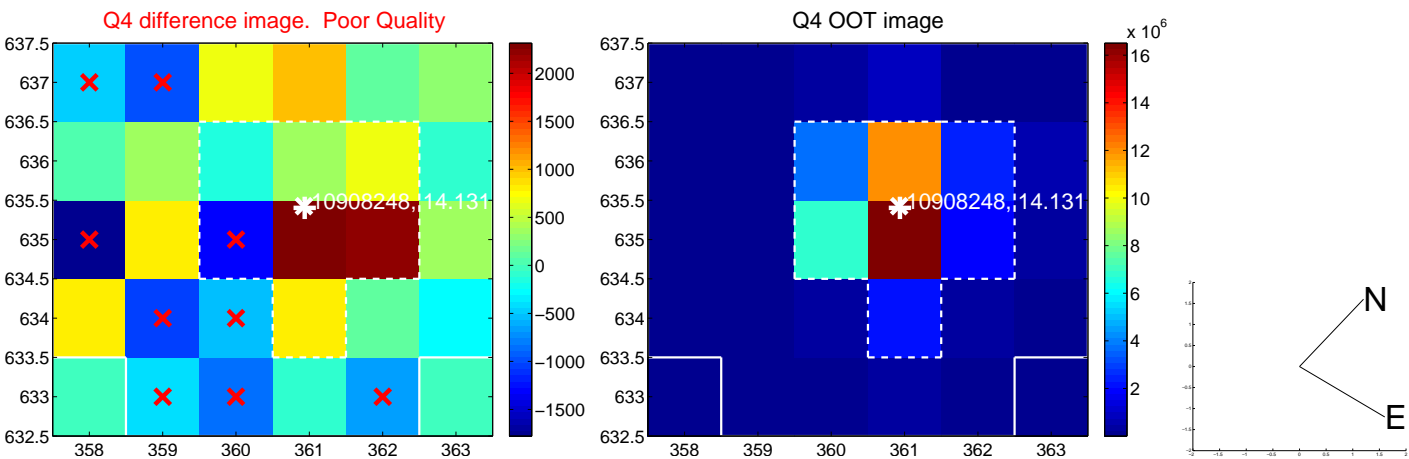
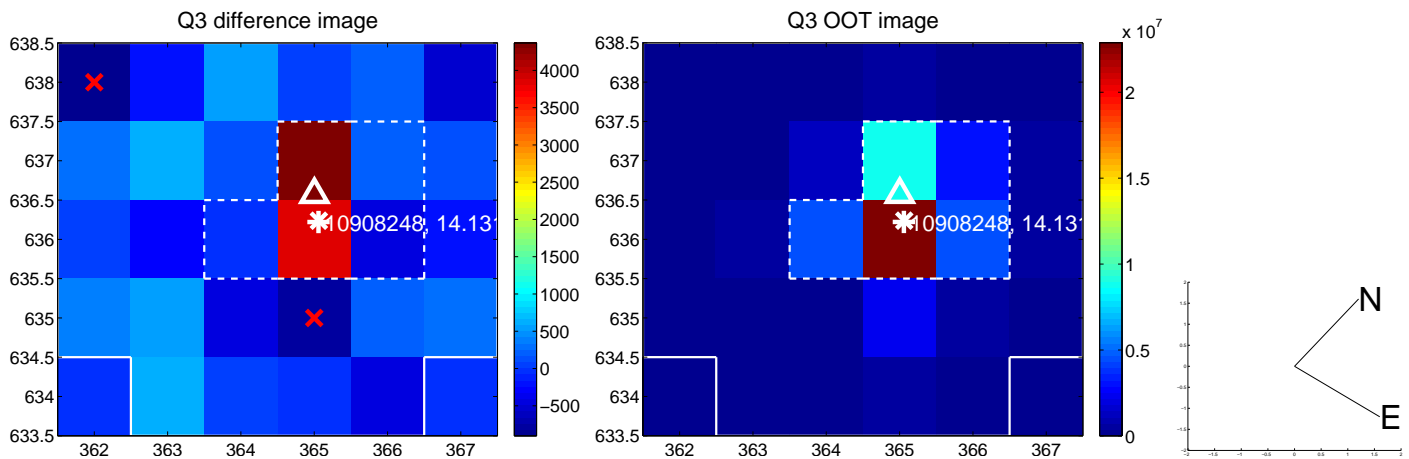
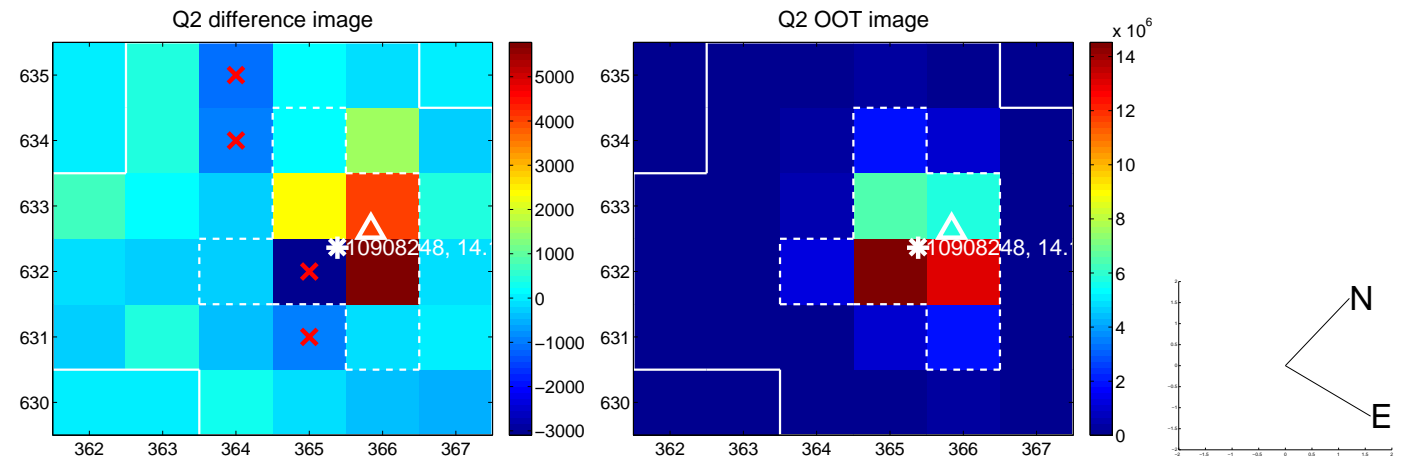
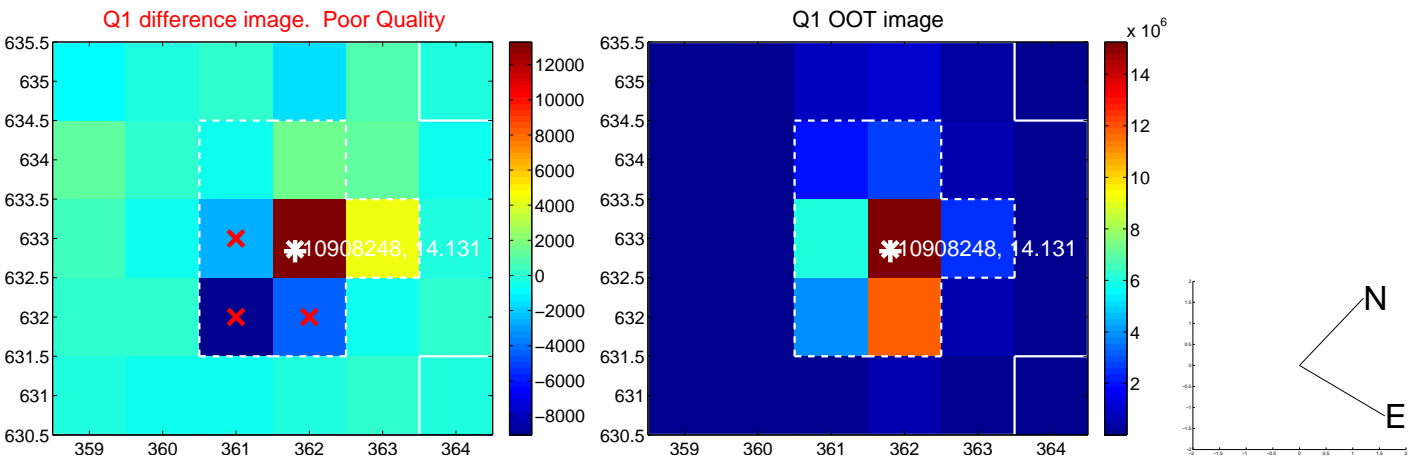


offset from photometric centroids

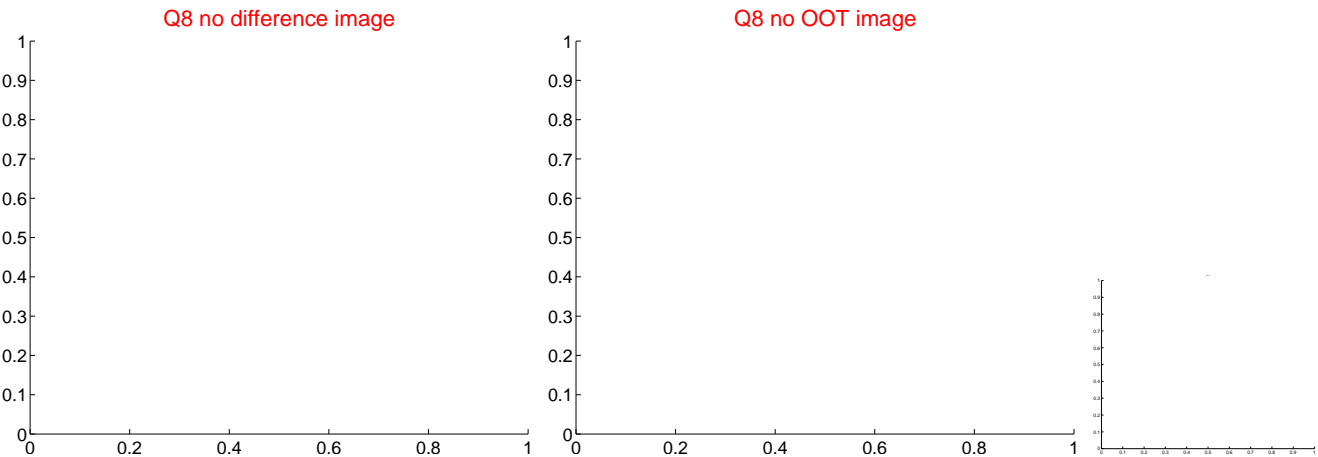
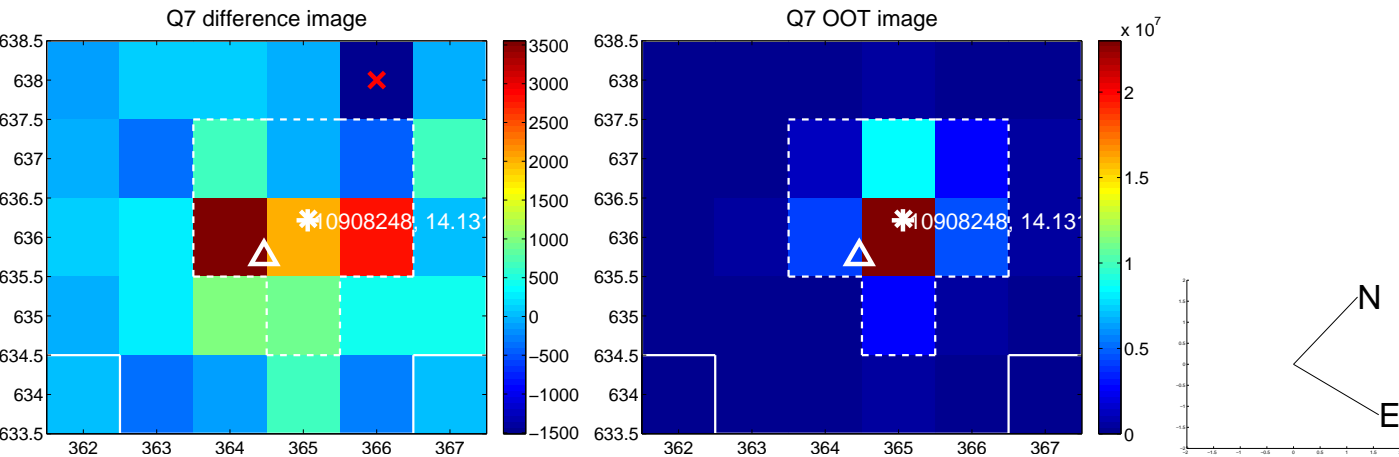
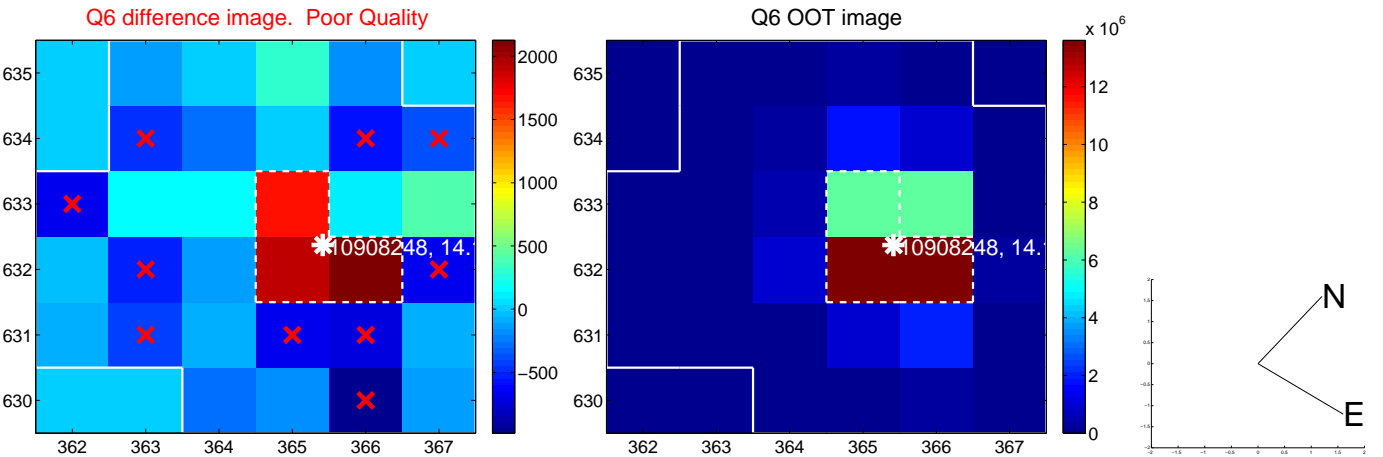
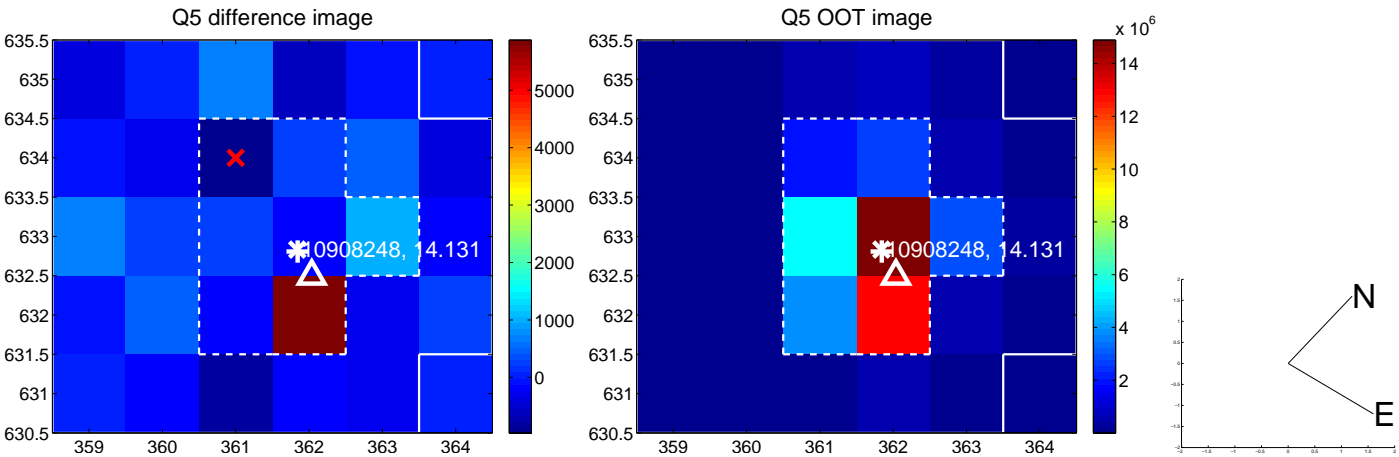


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

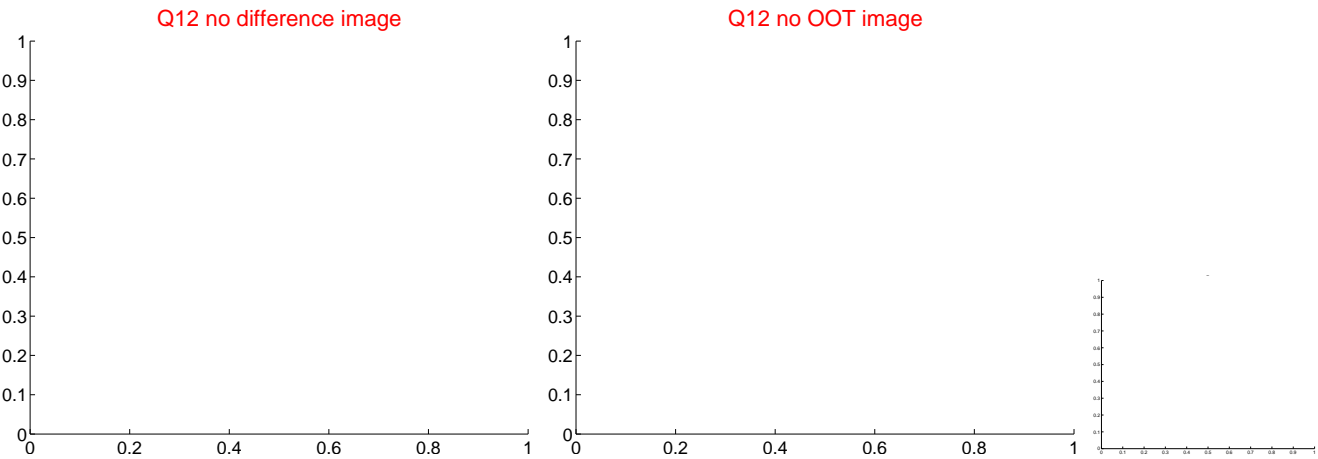
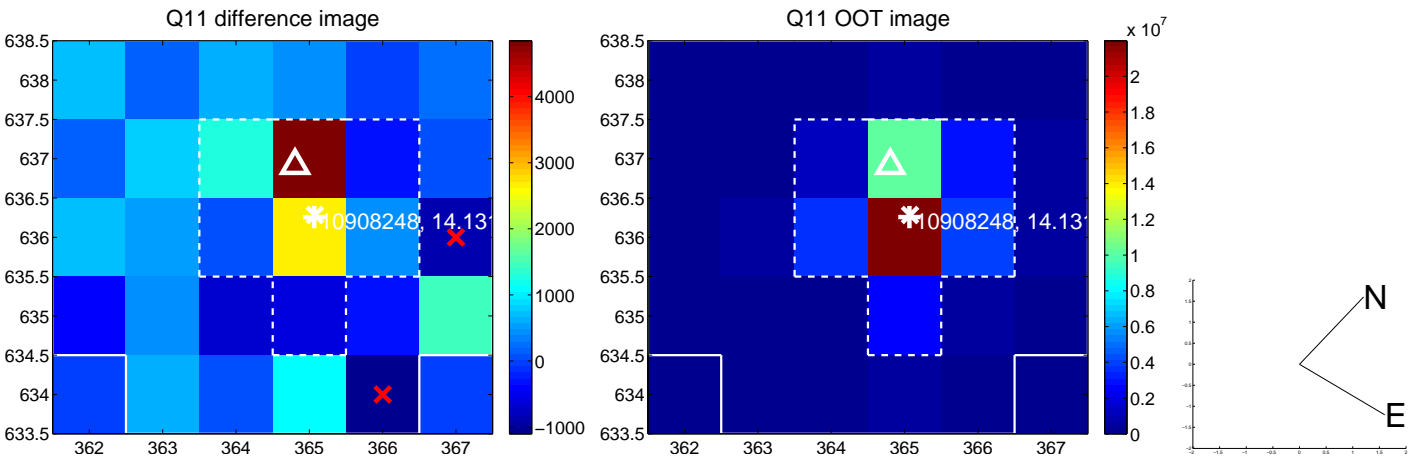
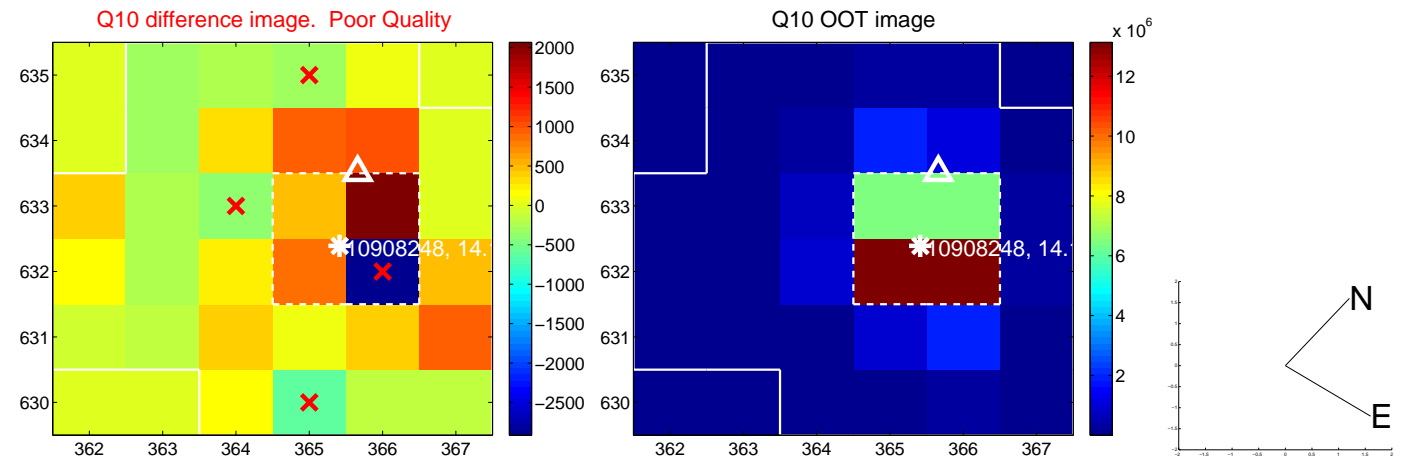
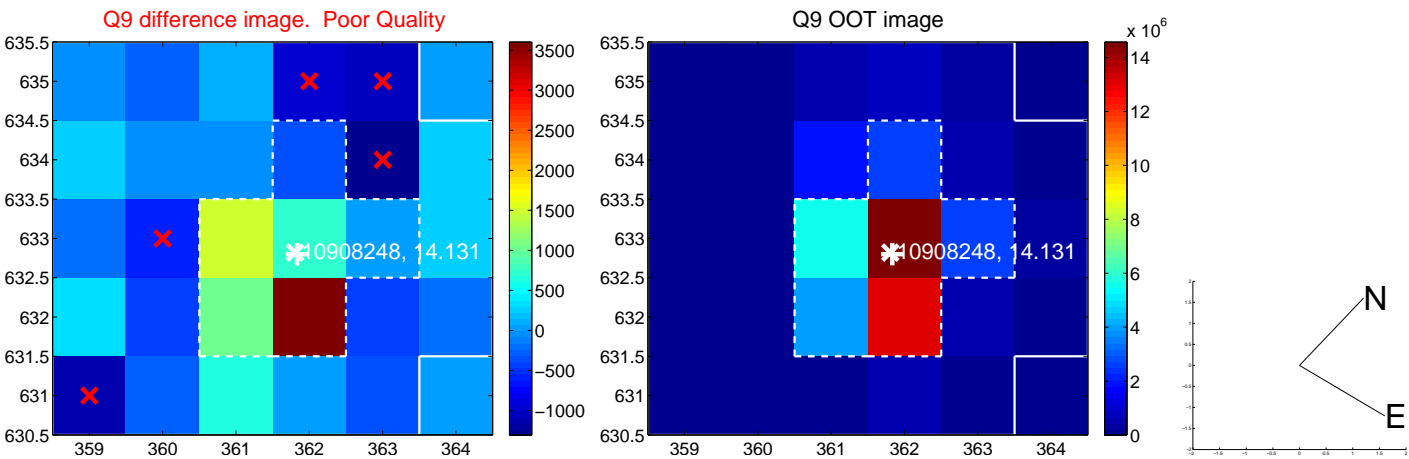
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



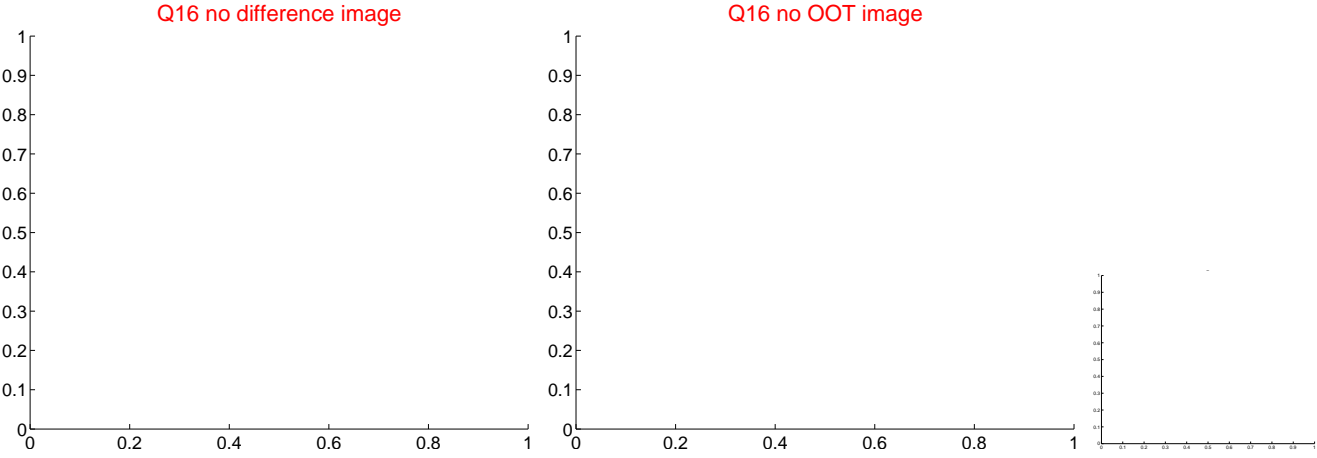
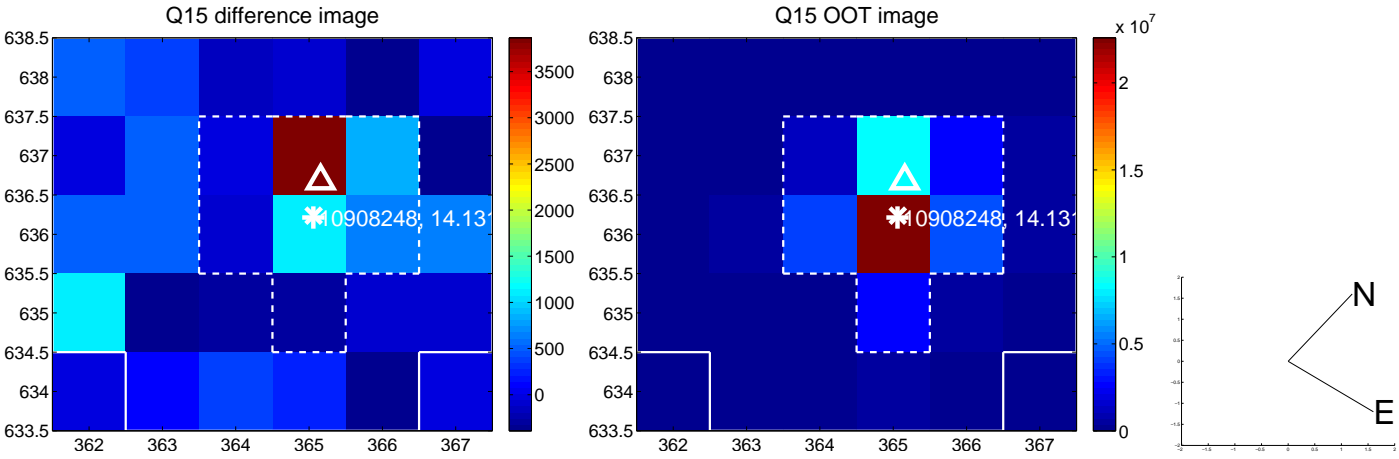
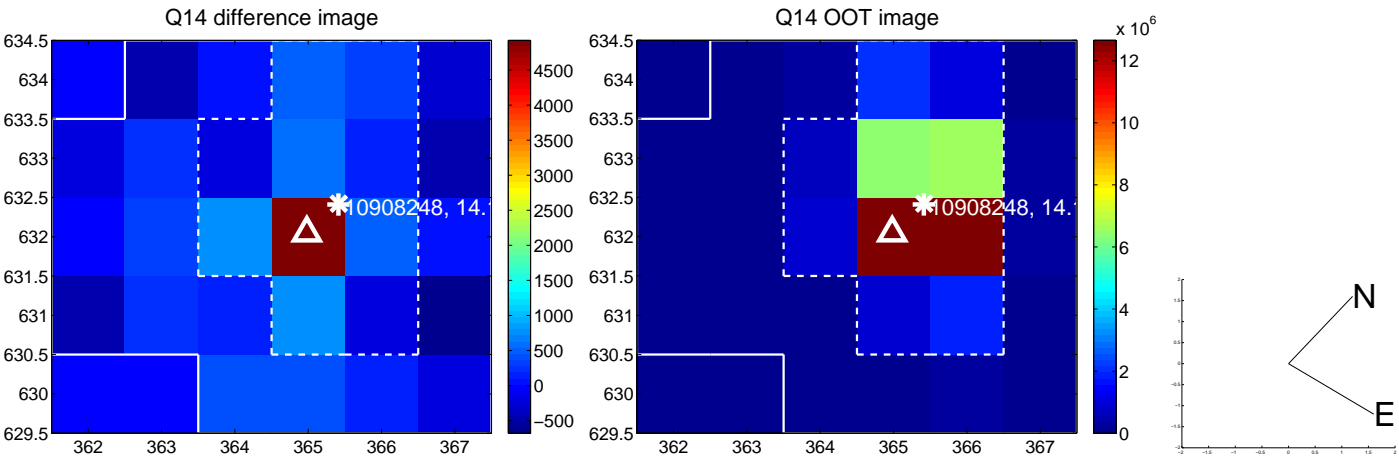
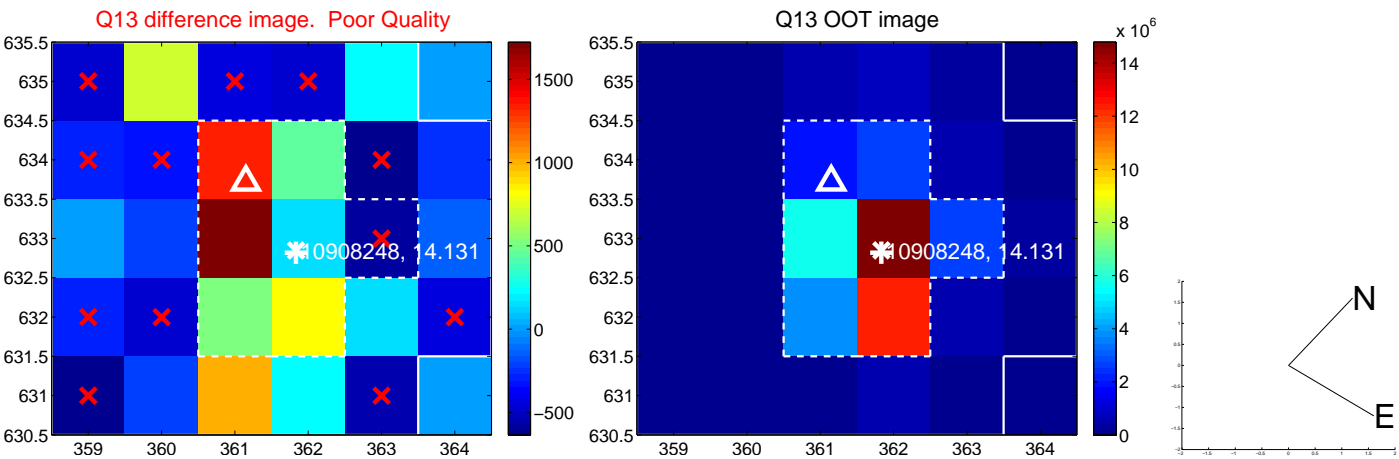
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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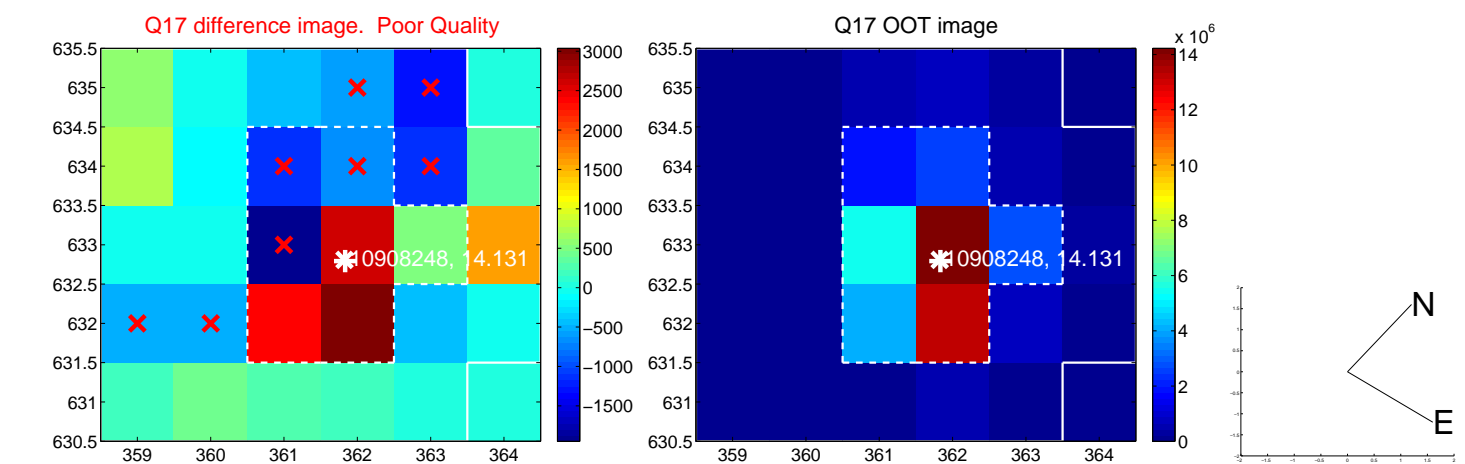


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

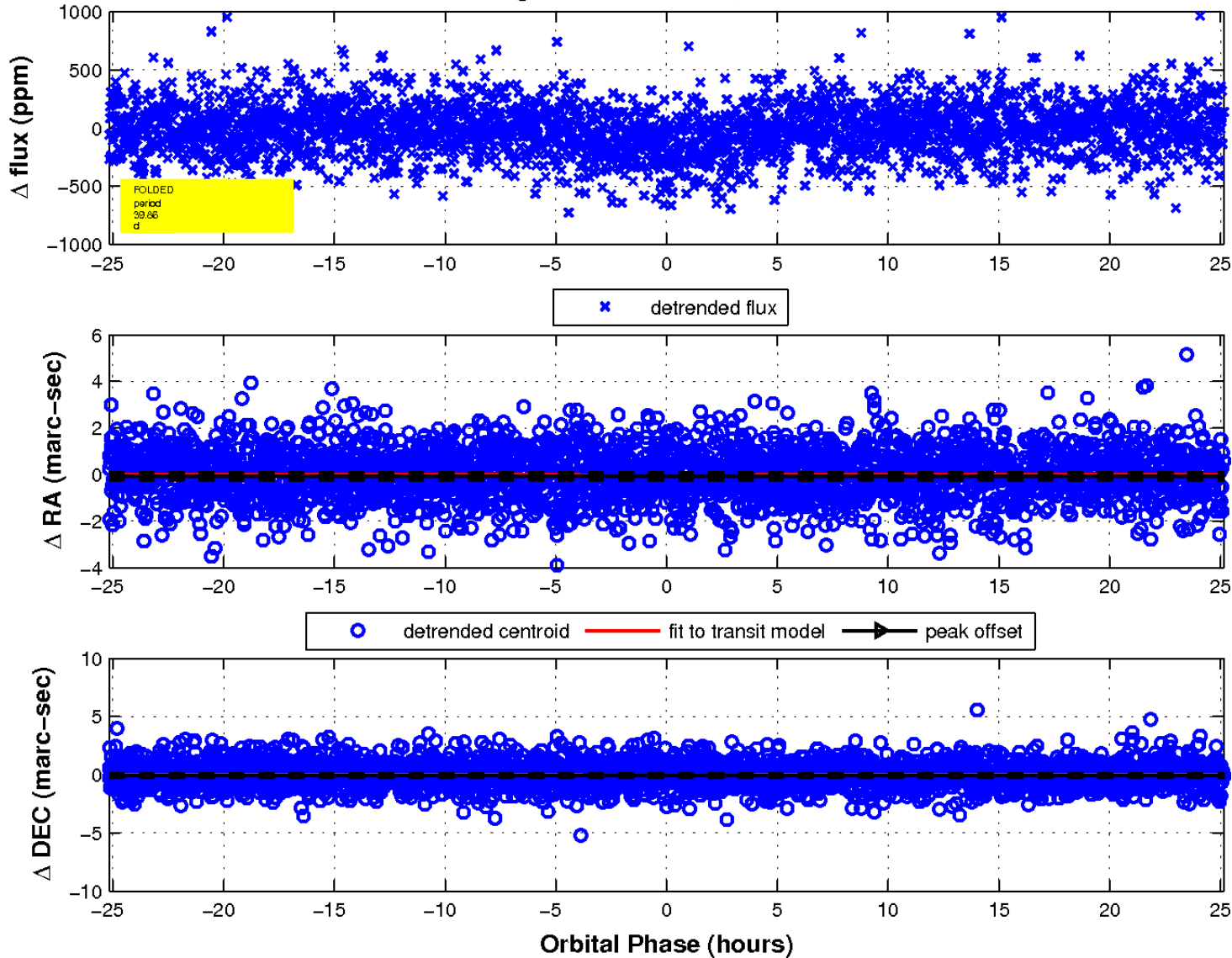




white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

