

# KIC 005738634

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R <sub>★</sub> (R <sub>☉</sub> )	T <sub>★</sub> (K)	R <sub>p</sub> (R <sub>⊕</sub> )	S <sub>p</sub> (S <sub>⊕</sub> )
005738634-01	OBS	3951.01	2.404393	133.219268	64.4	4.704	22.6	24.0	3.36	6103	3.20	8585.80

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005738634-01	OBS	FP	0.00	0	0	1	1	HALO_GHOST—EPHEM_MATCH

**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.

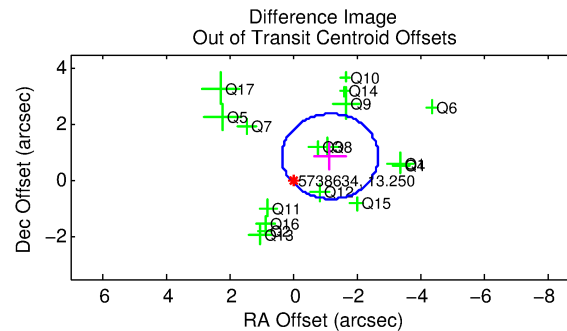
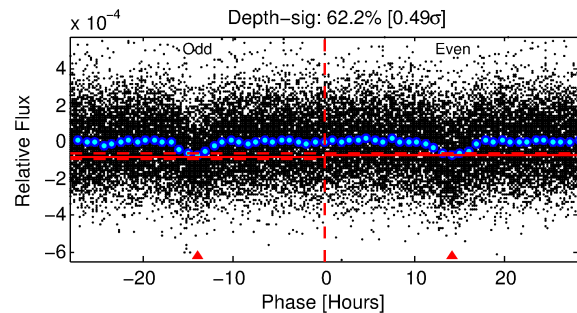
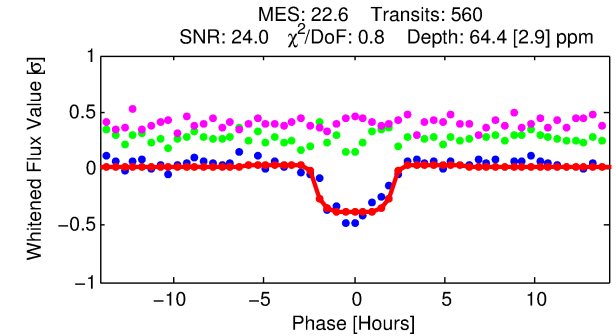
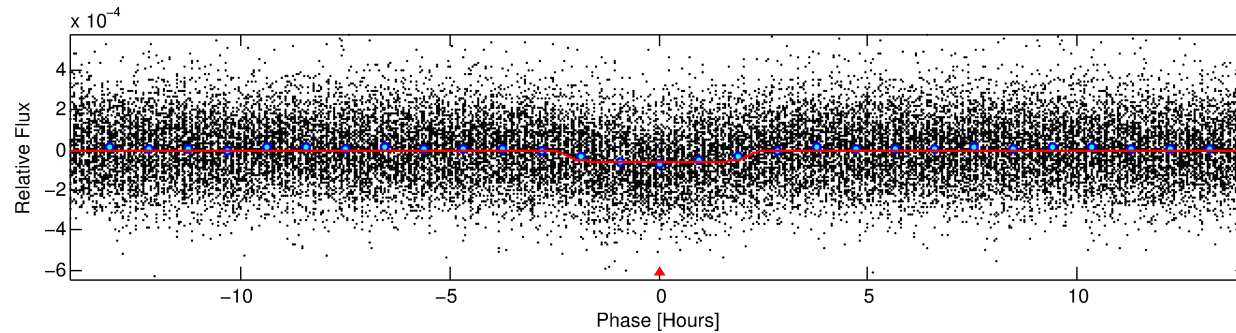
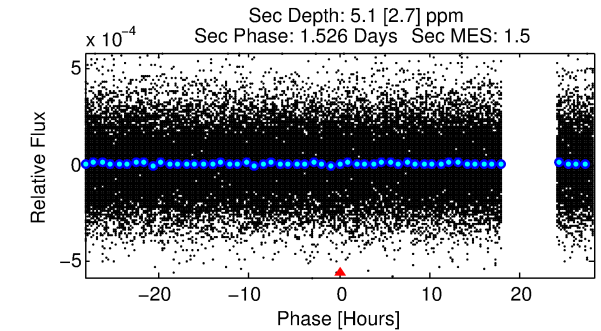
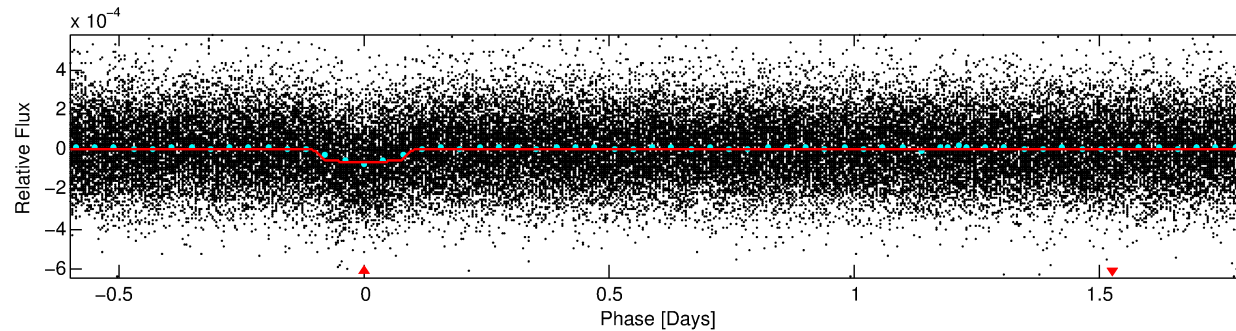
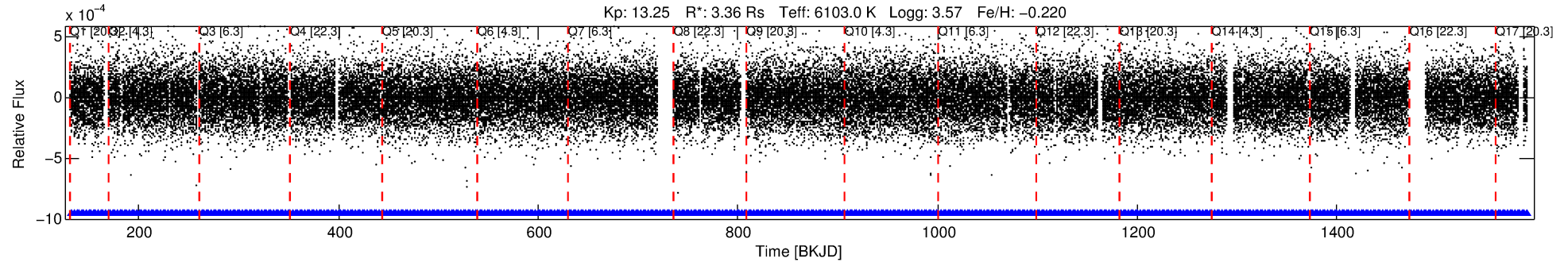
## Ephemeris Match Information For 005738634-01

TCE (1)	KIC	Parent (2)	Parent KIC	P <sub>1</sub> :P <sub>2</sub>	Dist (″)	ΔRow	ΔCol	m <sub>2</sub>	m <sub>1</sub>	D <sub>2</sub> /D <sub>1</sub>	Mechanism	Flag	σ <sub>P</sub>	σ <sub>T</sub>
005738634-01	5738634	6134.01	5738698	1:1	72.0	18	-1	11.94	13.25	5005.60	Direct-PRF	0	0.17	0.46

**Notes:** P<sub>1</sub>:P<sub>2</sub> is the period ratio. Dist is the distance in arcseconds. ΔRow and ΔCol are the number of pixels apart in row and column. m<sub>2</sub> and m<sub>1</sub> are the magnitudes of the parent and child. D<sub>2</sub>/D<sub>1</sub> is the parent's transit depth divided by the child's. σ<sub>P</sub> and σ<sub>T</sub> are the significance of the match in period and epoch. For a match to be considered significant σ<sub>P</sub> < 5.0 and σ<sub>T</sub> < 5.0. Matches which have σ<sub>P</sub> and σ<sub>T</sub> very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 5738634 Candidate: 1 of 1 Period: 2.404 d  
KOI: K03951.01 Corr: 0.962



## DV Fit Results:

Period = 2.40439 [0.00001] d  
Epoch = 133.2193 [0.0024] BKJD  
Rp/R\* = 0.0087 [0.0015]  
a/R\* = 1.94 [1.36]  
b = 0.91 [0.18]  
Seff = 8585.80 [5469.60]  
Teq = 2455 [391] K  
Rp = 3.20 [1.52] Re  
a = 0.0404 [0.0163] AU  
Ag = 0.45 [0.40] [-1.38σ]  
Teffp = 3108 [499] K [1.03σ]

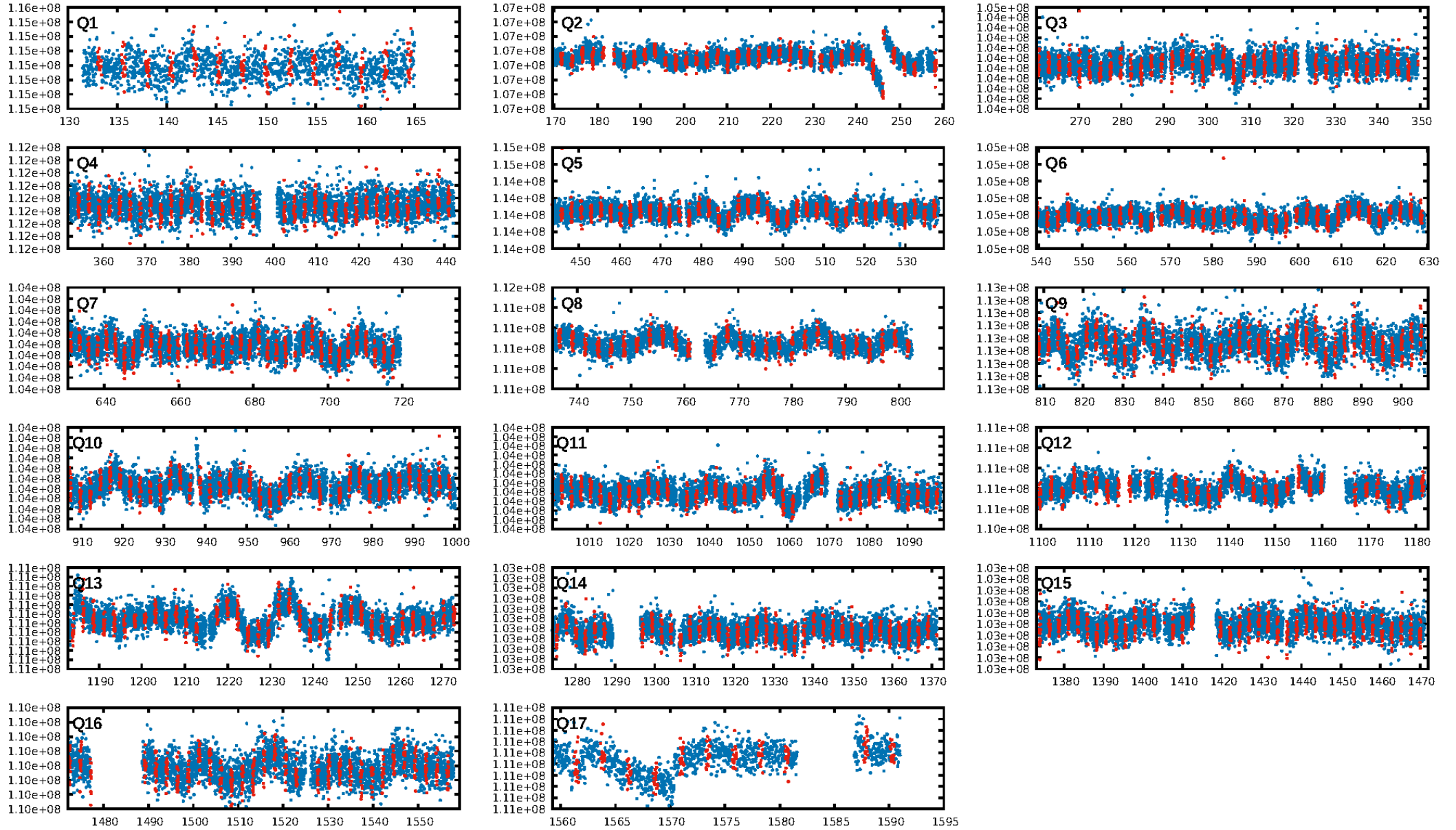
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 8.68e-105  
RollingBand-fgt: 1.00 [535/535]  
GhostDiagnostic-chr: 0.2056  
Centroid-sig: 0.0%  
Centroid-so: 1.622 arcsec [3.23σ]  
OotOffset-rm: 1.461 arcsec [2.89σ]  
KicOffset-rm: 1.403 arcsec [2.76σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.24 [4/17]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 09:00:09 Z

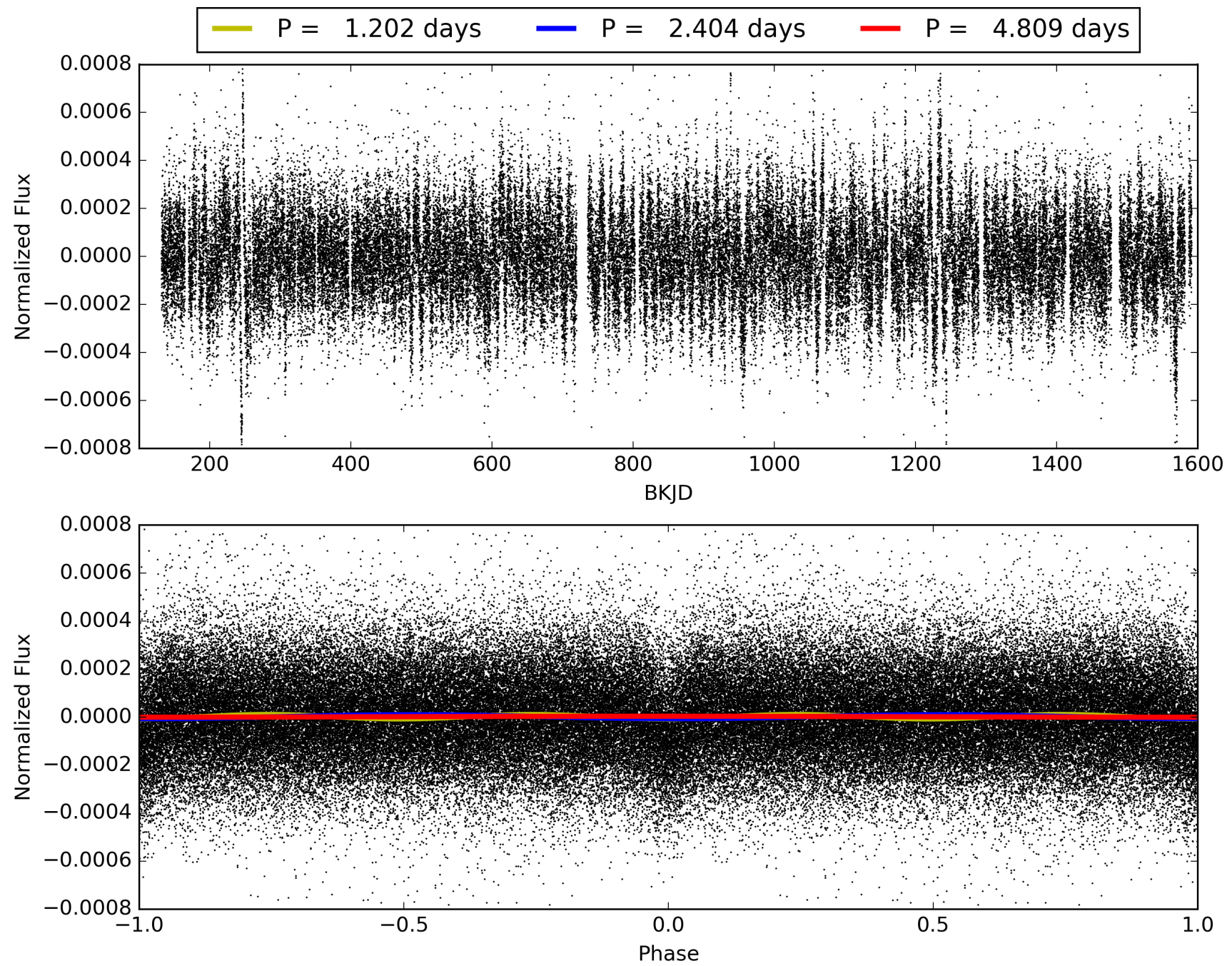
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 005738634-01, PDC Light Curves



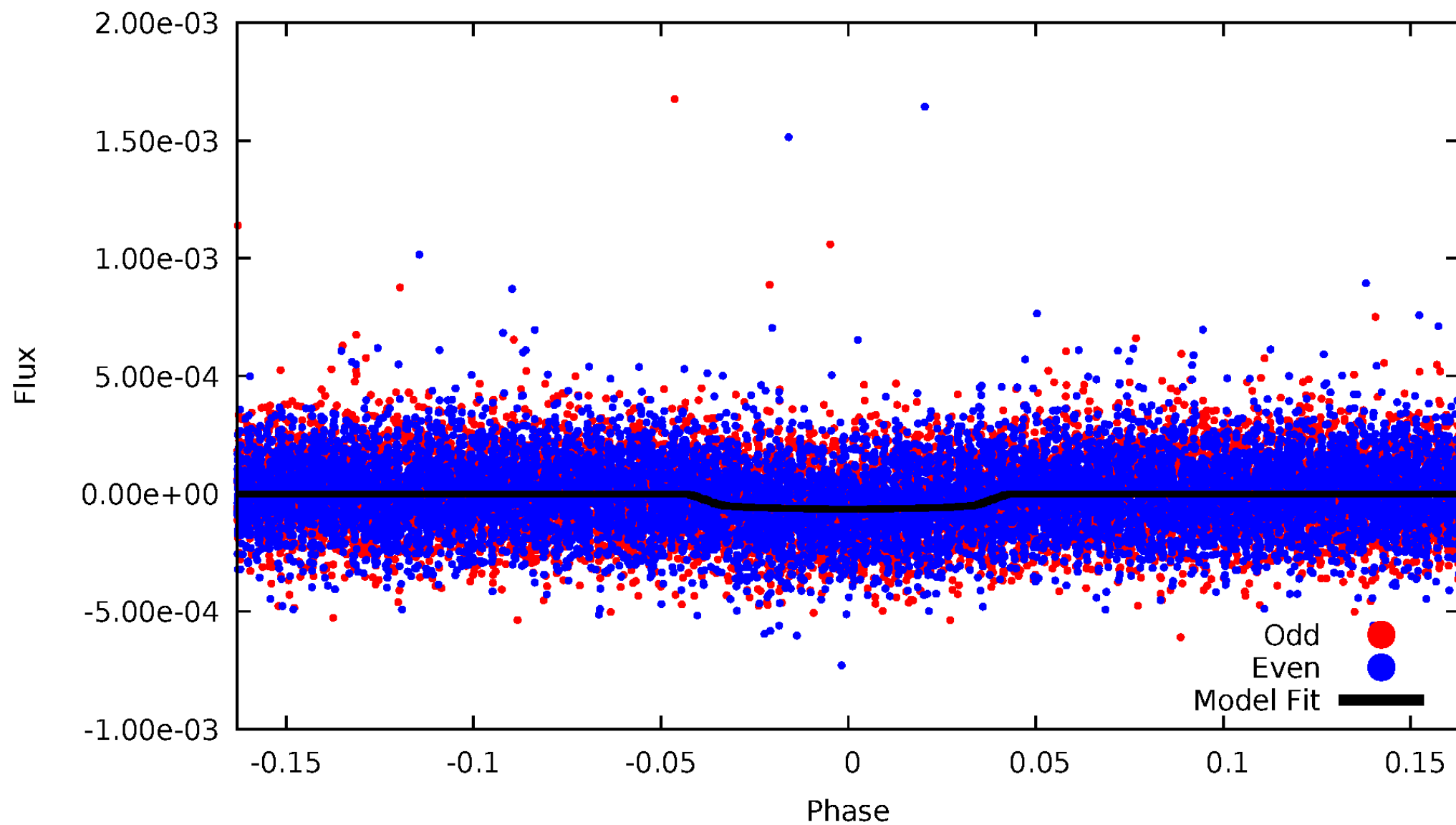


TCE 005738634-01



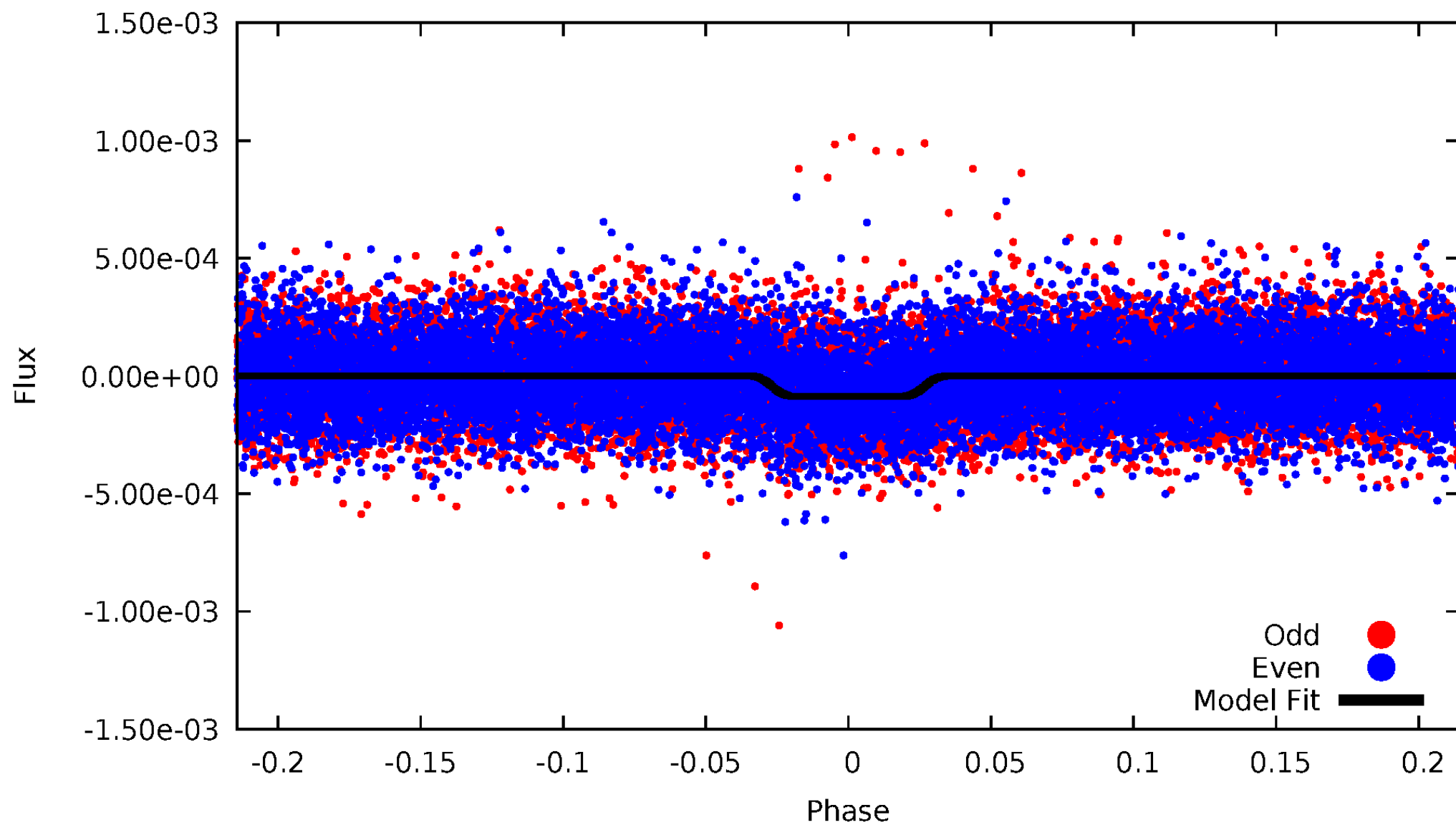
# DV Odd/Even

TCE 005738634-01



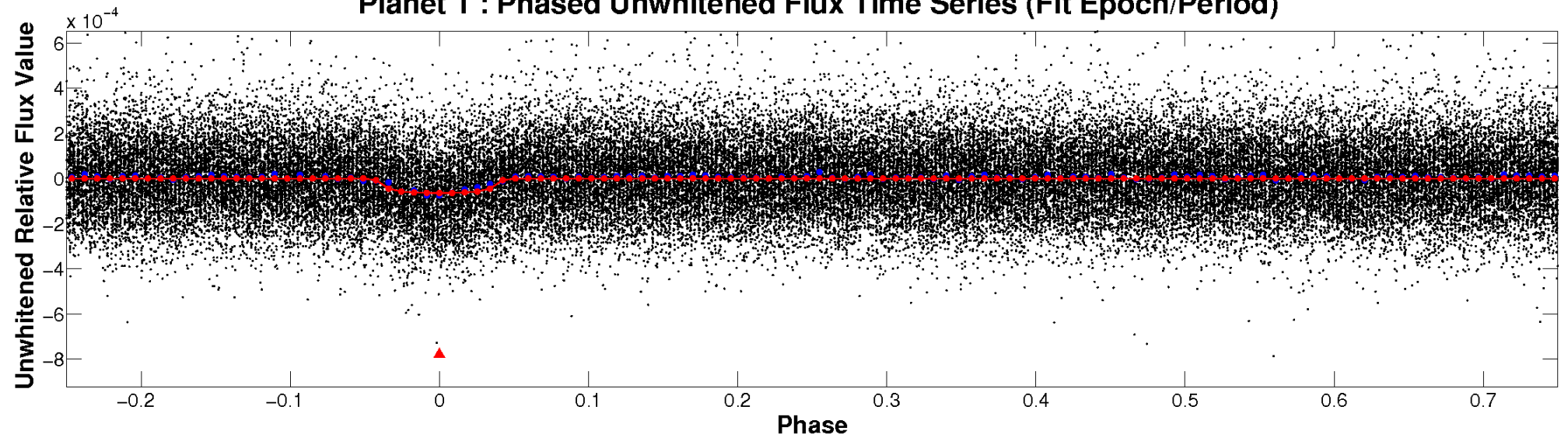
# ALT Odd/Even

TCE 005738634-01

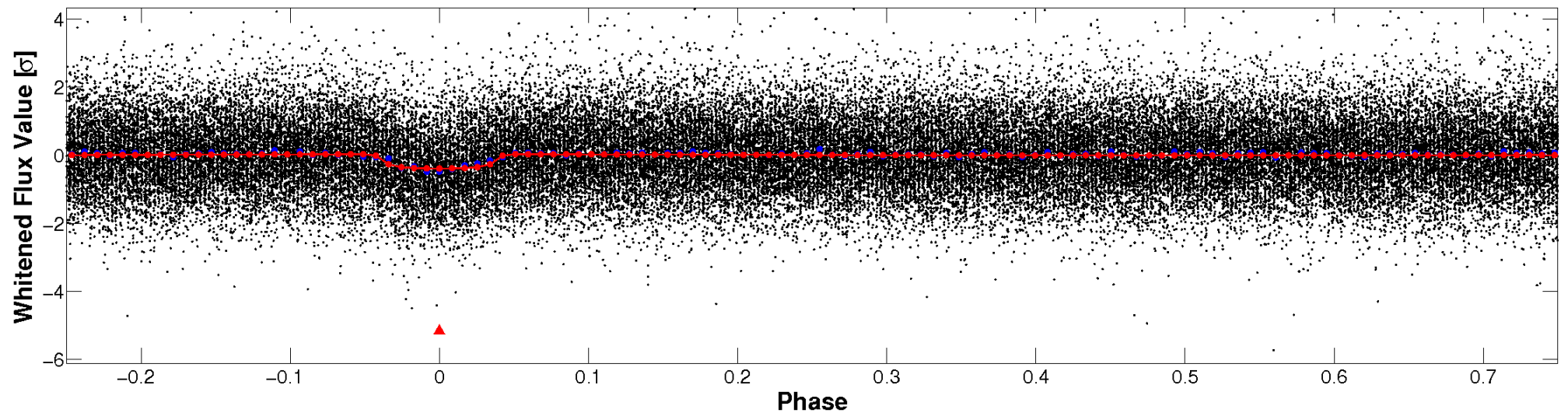


# Non-Whitened Vs. Whitened Light Curve

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



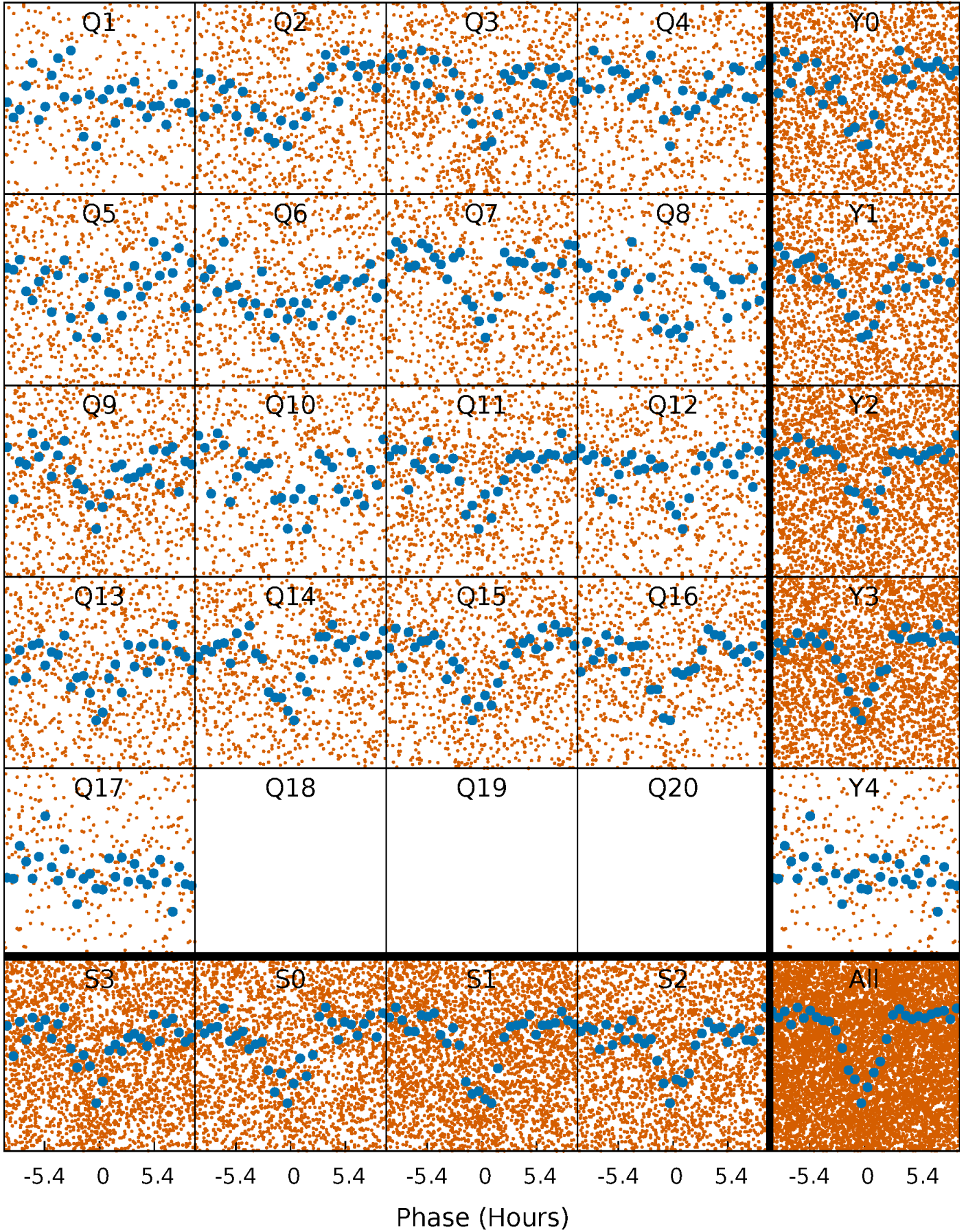
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

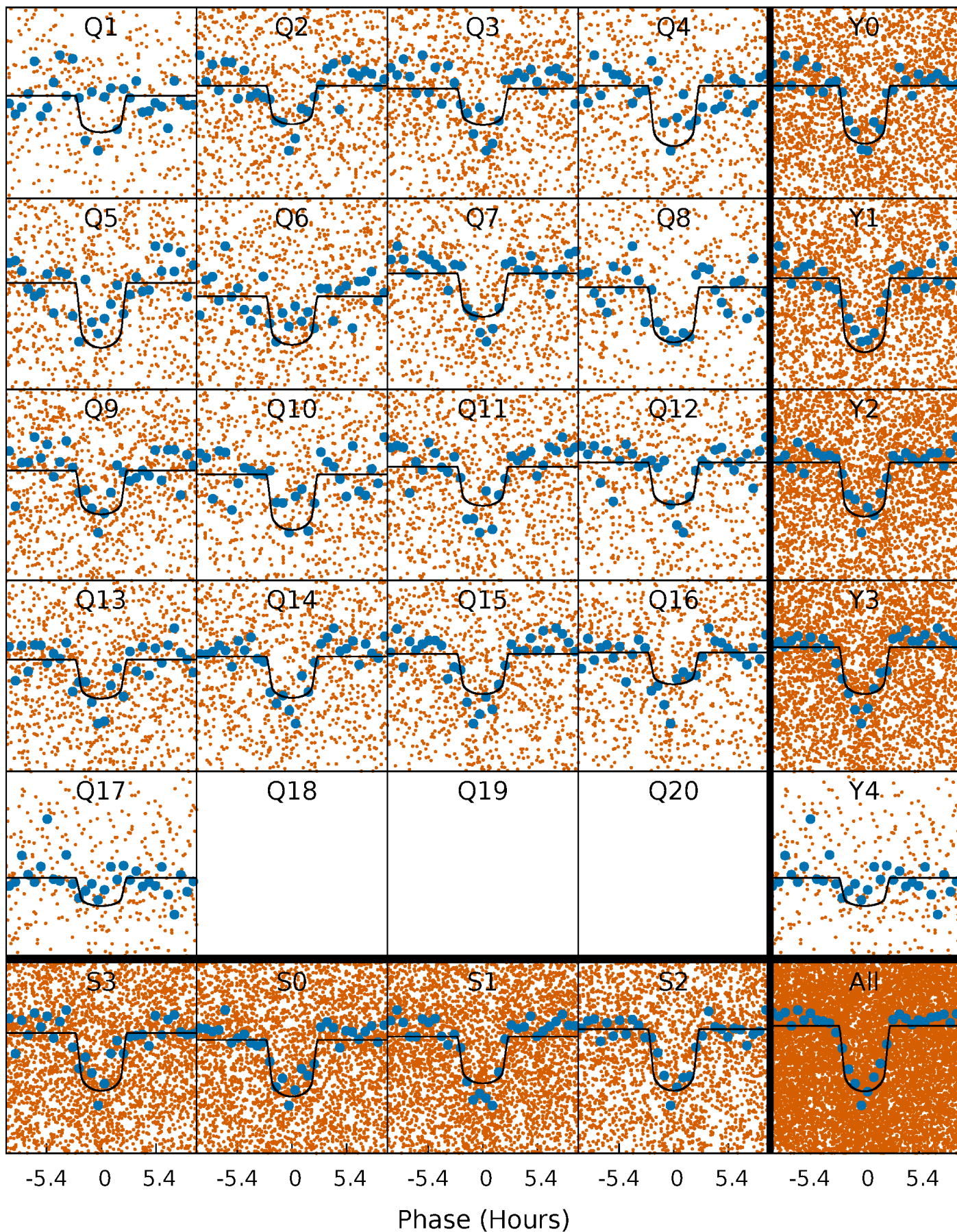
TCE 005738634-01 P= 2.404393 Days  $T_0=133.219268$  (BKJD)





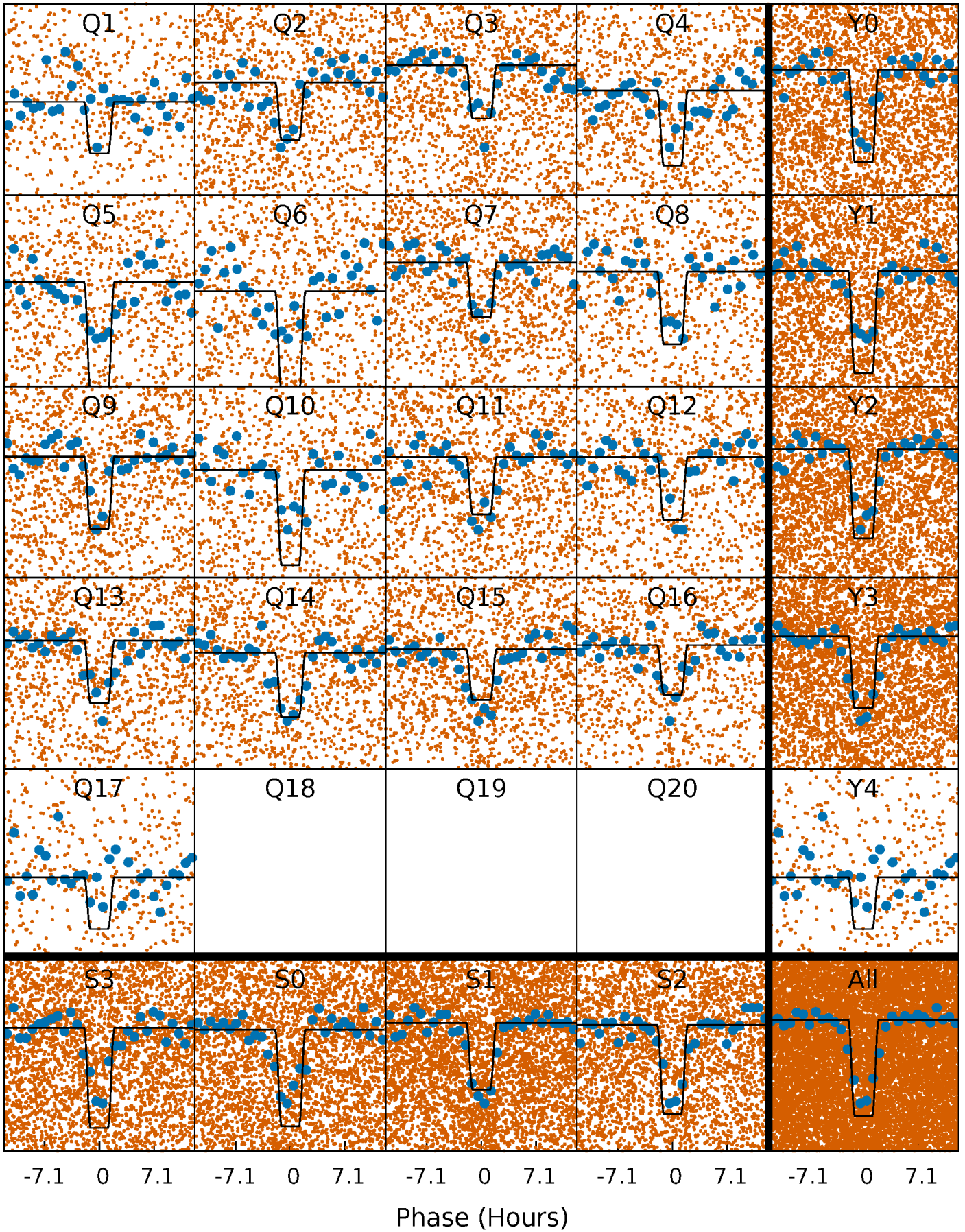
# DV Quarter-Phased Transit Curves

TCE 005738634-01 P= 2.404393 Days  $T_0=133.219268$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 005738634-01 P= 2.404366 Days  $T_0=133.220602$  (BKJD)

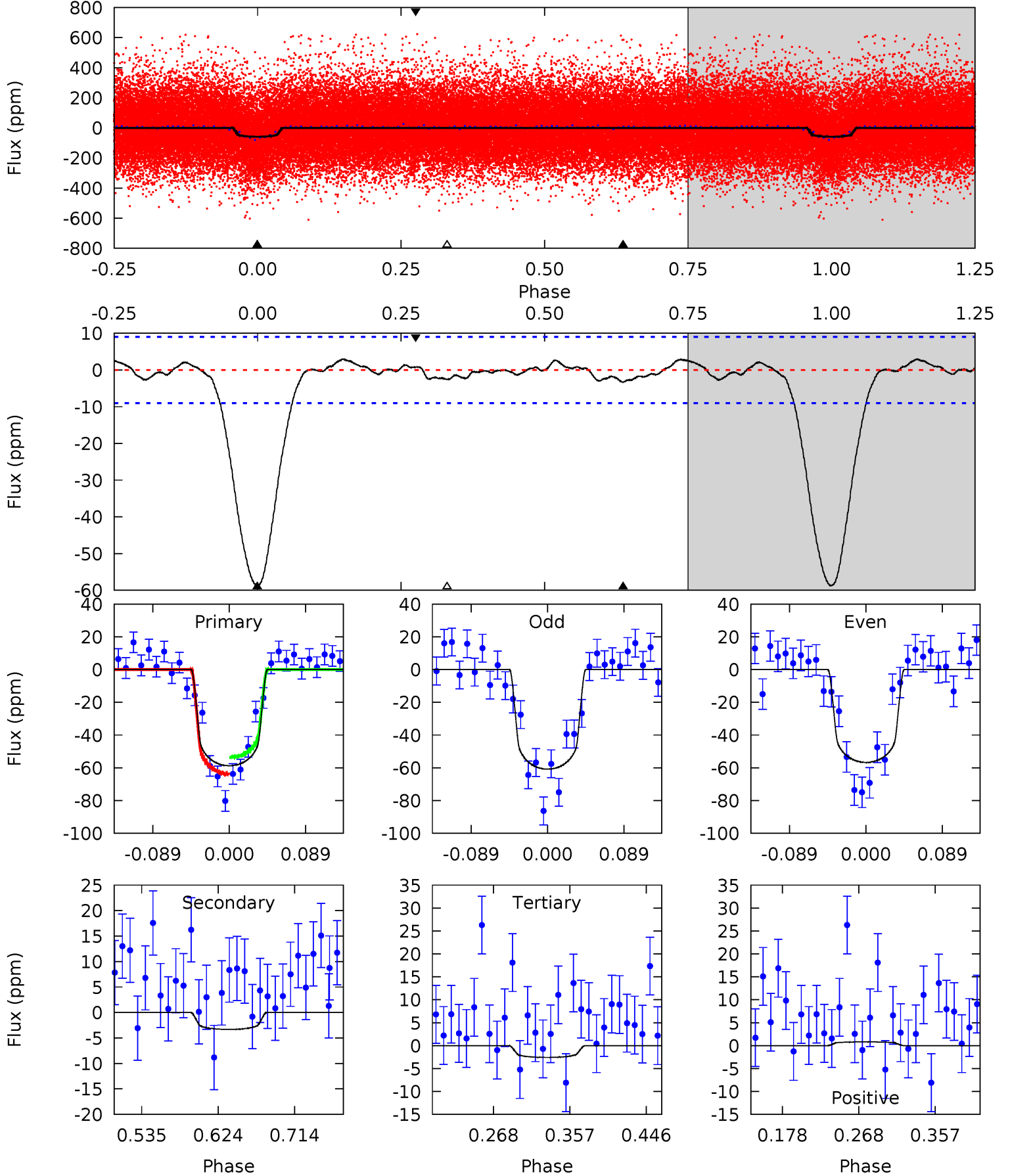




# DV Model-Shift Uniqueness Test

005738634-01, P = 2.404393 Days, E = 130.814875 Days

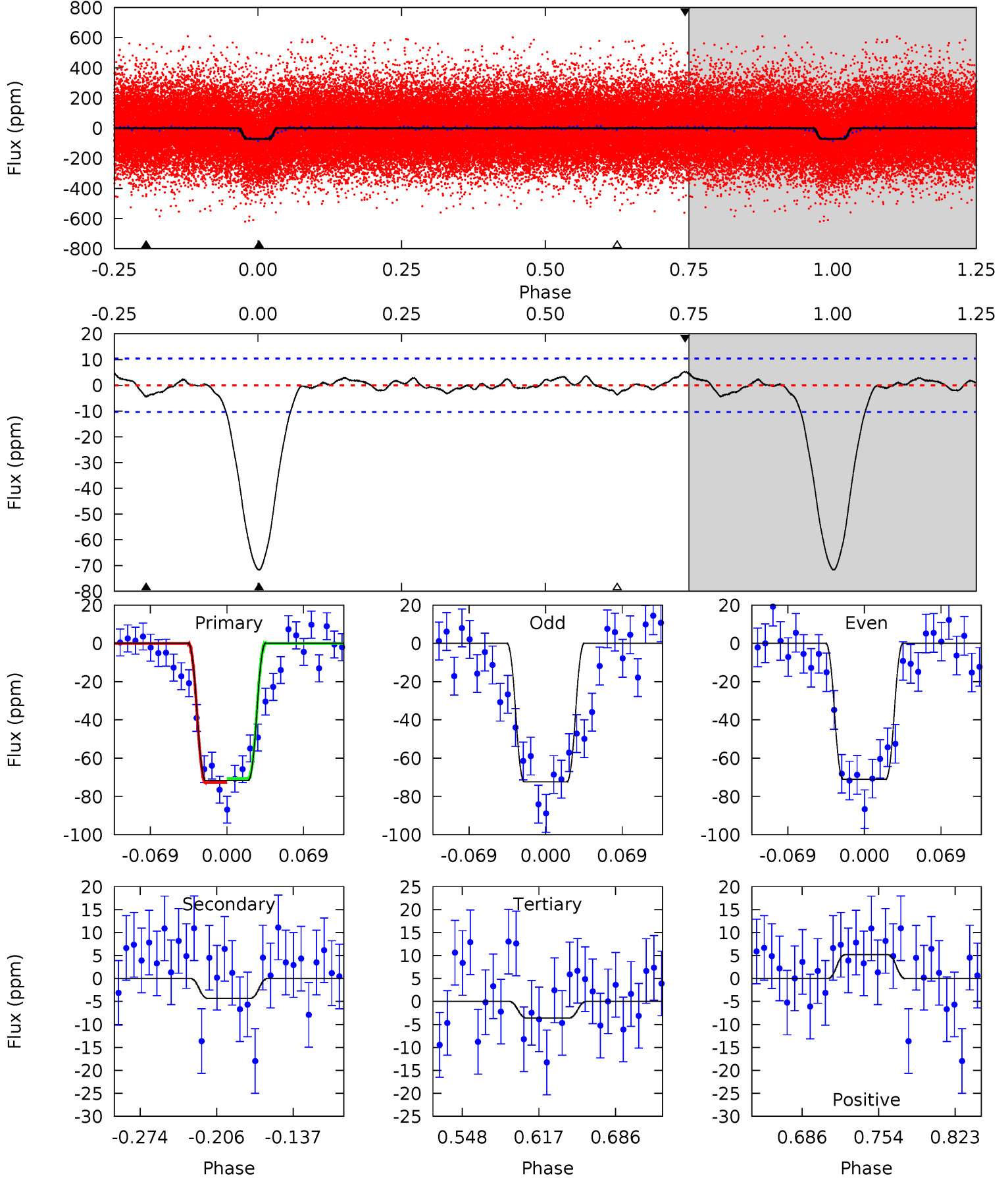
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.9	1.69	1.31	0.41	4.59	1.70	0.73	28.6	29.5	0.38	1.28	1.05	1.00	0.05	2.56



# Alt Model-Shift Uniqueness Test

005738634-01, P = 2.404366 Days, E = 130.816236 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
32.1	1.94	1.61	2.32	4.64	1.82	0.77	30.5	29.8	0.33	-0.38	0.30	0.99	0.07	0.41





### Stellar Parameters For KIC 005738634

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6103^{+182}_{-163}$	$3.568^{+0.360}_{-0.120}$	$-0.220^{+0.350}_{-0.300}$	$3.358^{+0.592}_{-1.479}$	$1.522^{+0.201}_{-0.402}$	$0.057^{+0.178}_{-0.020}$
	+3%/-3%	+10%/-3%	+159%/-136%	+18%/-44%	+13%/-26%	+315%/-35%
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 005738634-01 / KOI 3951.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-3\pm 2$	$3.03^{+0.79}_{-0.82}$	$3388^{+216}_{-383}$	$2252^{+1044}_{-5401}$	$0.319^{+0.335}_{-0.220}$
Alt.	$-4\pm 2$	$3.22^{+0.82}_{-0.85}$	$3376^{+224}_{-353}$	$2662^{+721}_{-5687}$	$0.362^{+0.355}_{-0.207}$

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

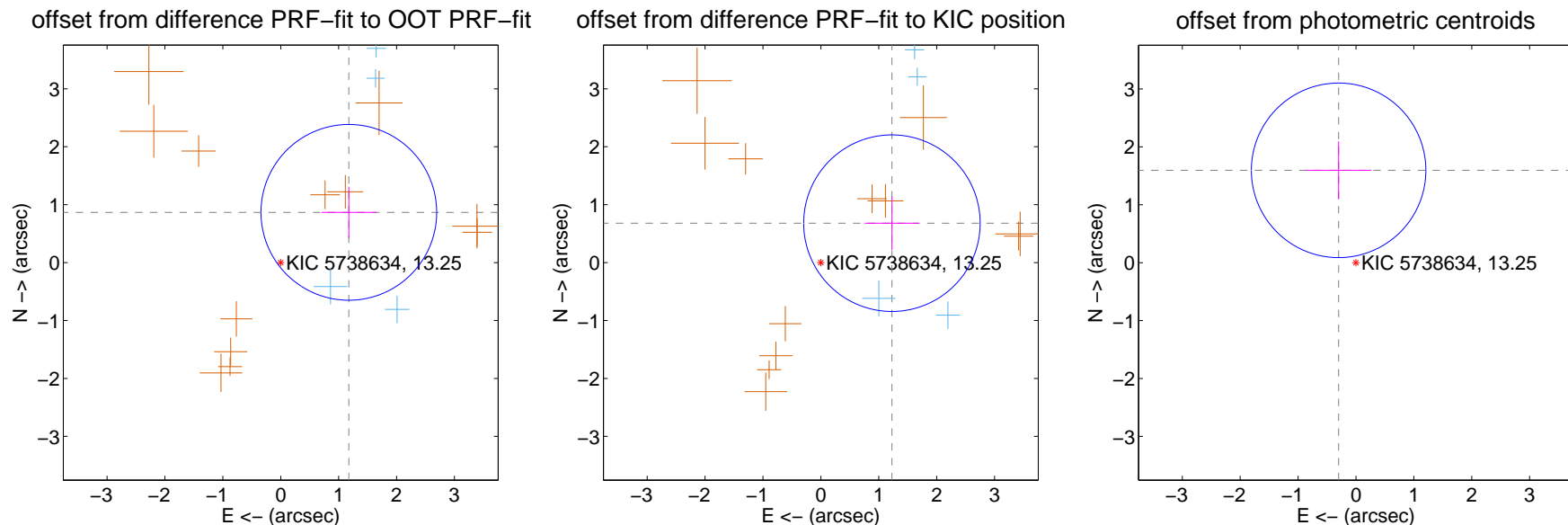
## DV Centroid Data

Supplemental centroid analysis for 005738634-01. Kepler magnitude: 13.25. Transit SNR 24.05

There are 4 quarters with good PRF difference image offsets

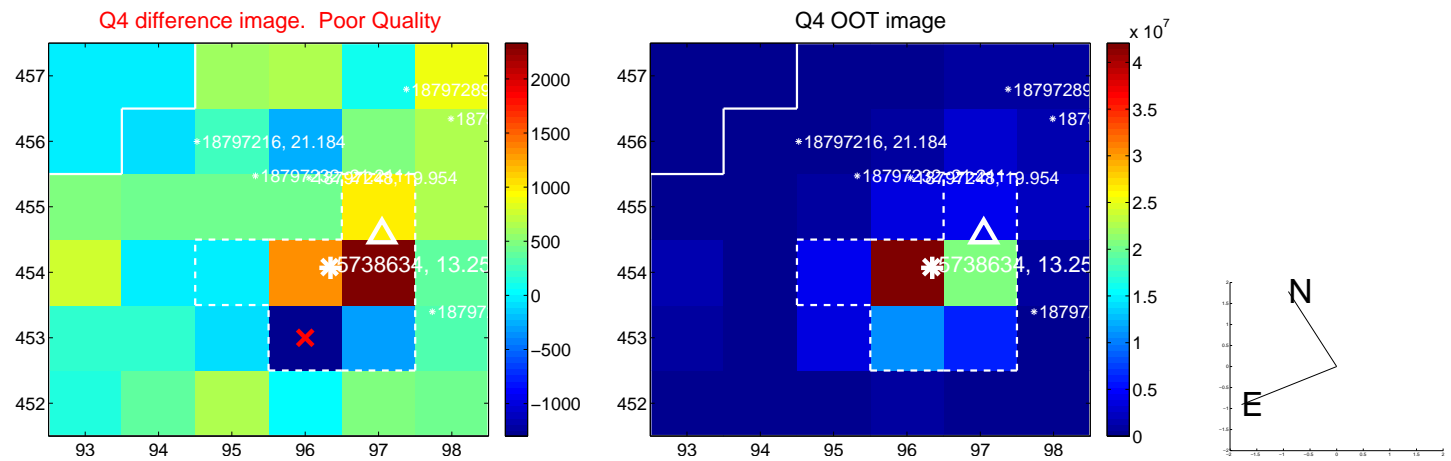
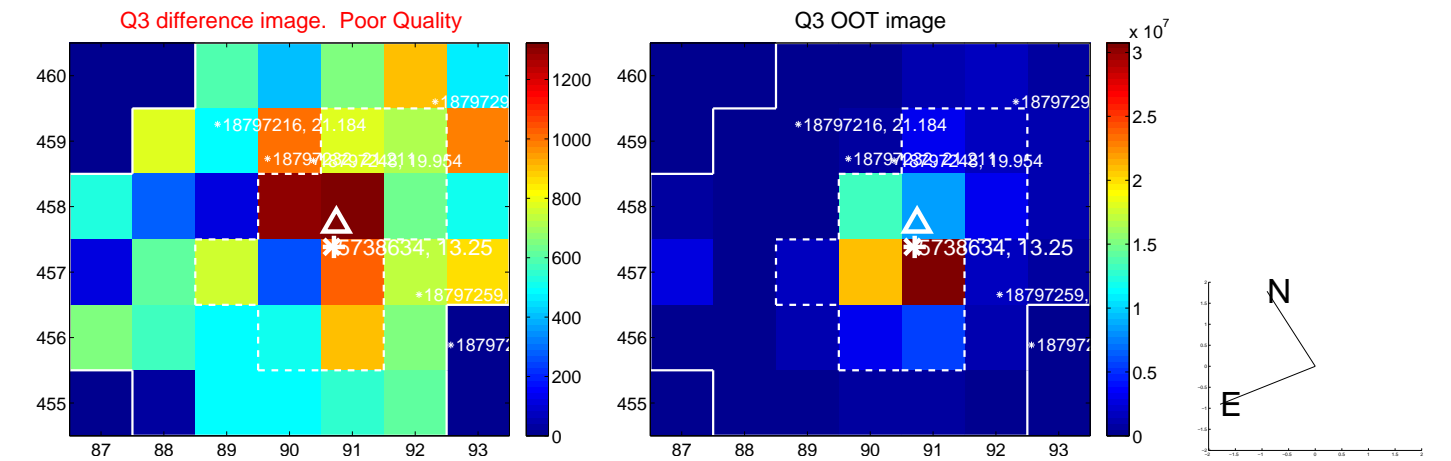
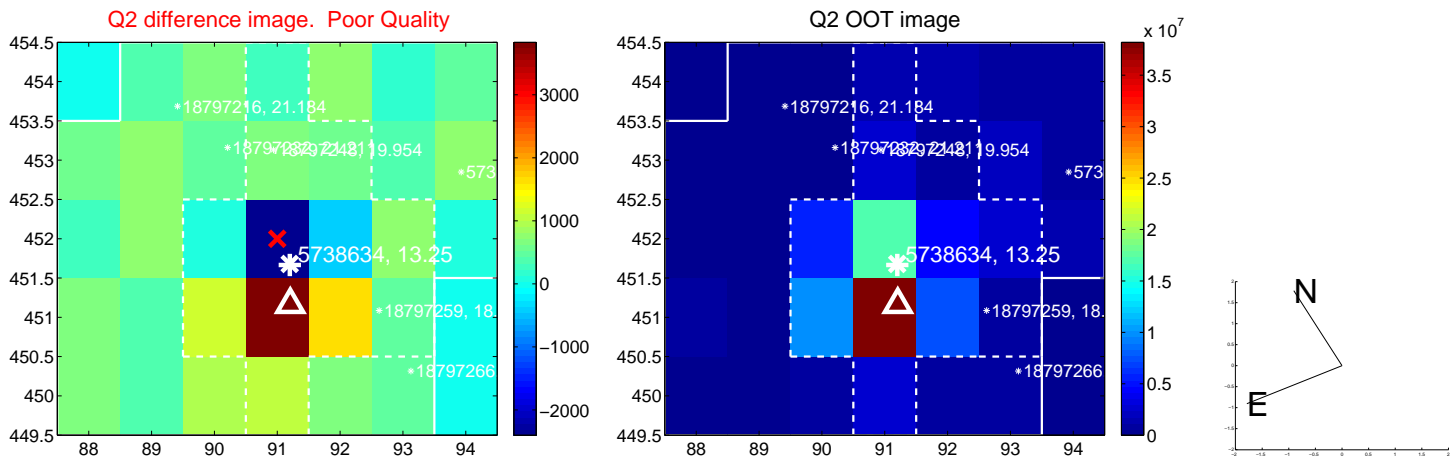
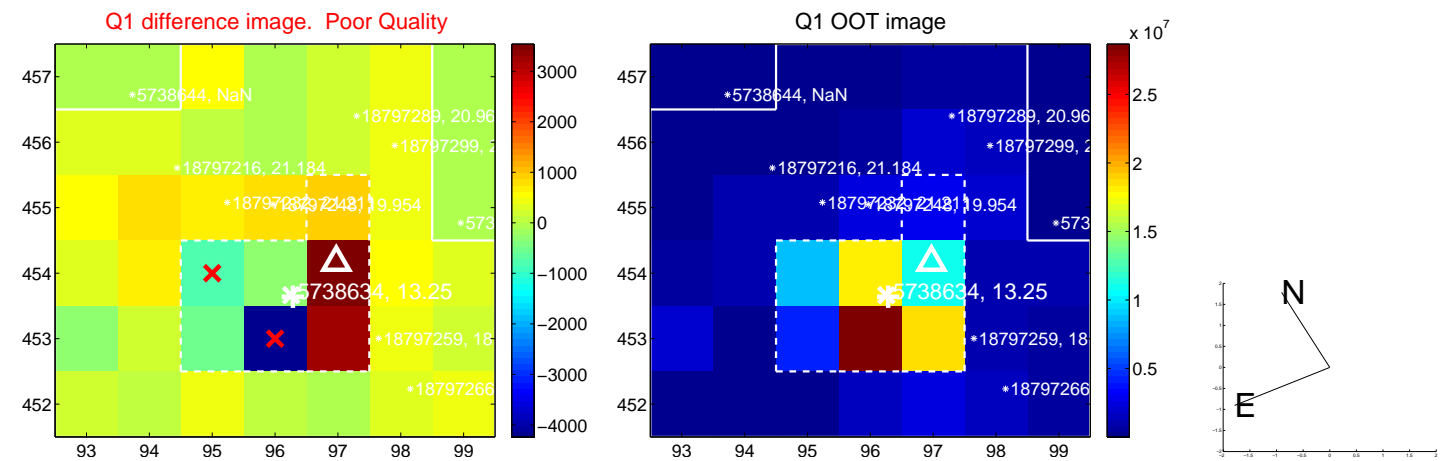
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.461 \pm 0.506$	2.89	$-1.176 \pm 0.472$	$0.867 \pm 0.443$
PRF-fit source offset from KIC position	$1.403 \pm 0.508$	2.76	$-1.227 \pm 0.470$	$0.680 \pm 0.462$
photometric centroid source offset	$1.62 \pm 0.50$	<b>3.23</b>	$0.30 \pm 0.57$	$1.59 \pm 0.50$

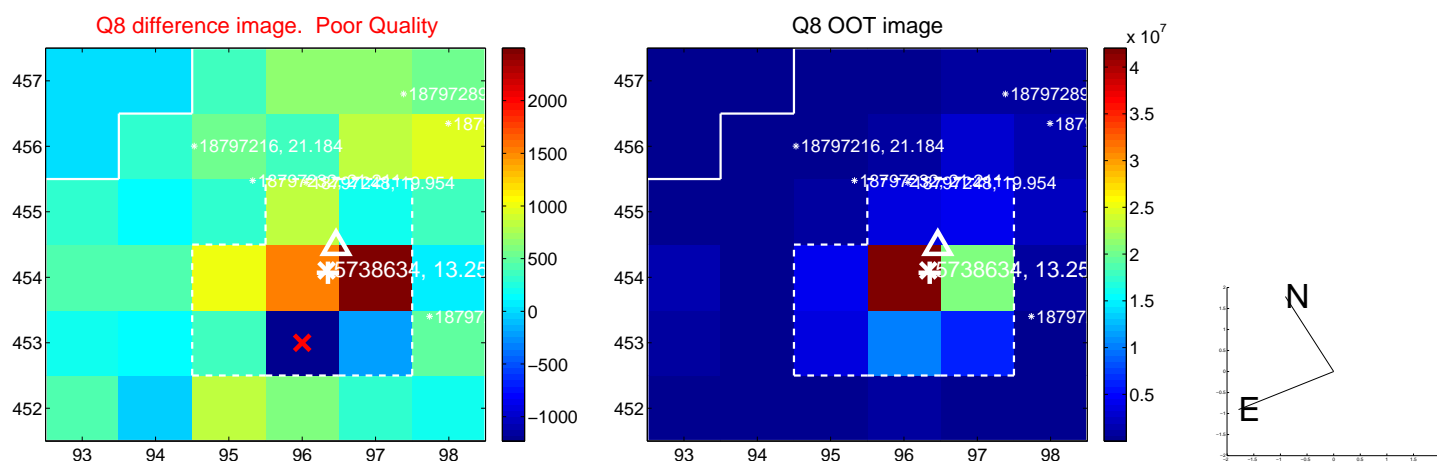
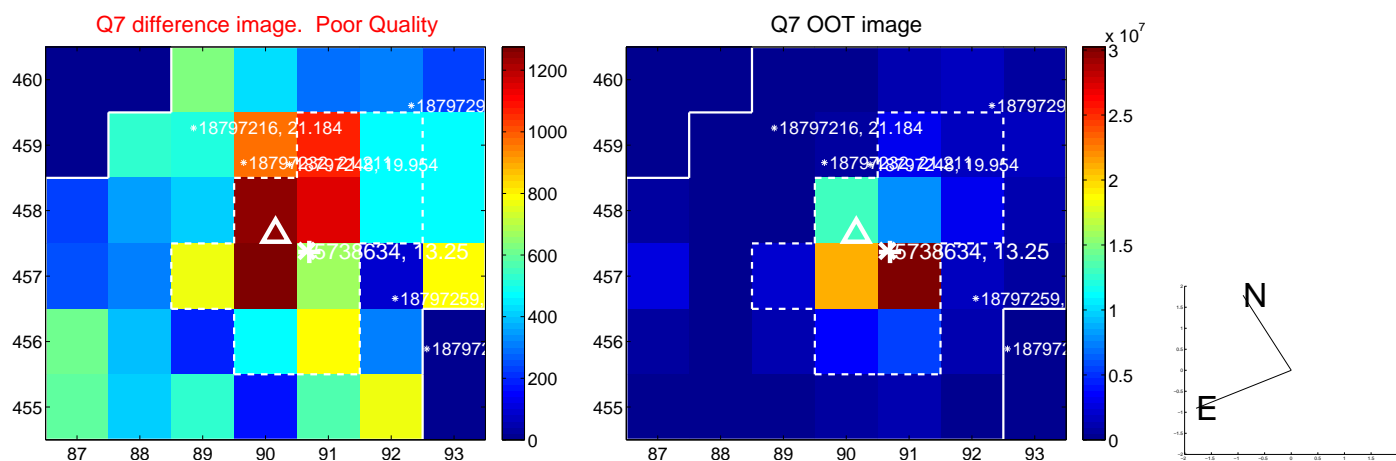
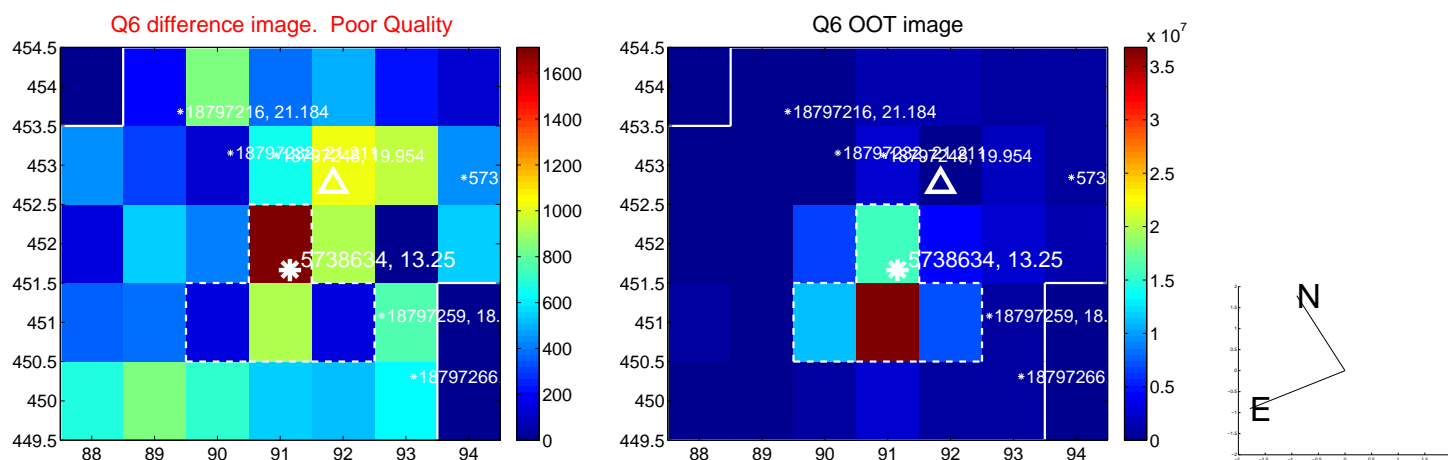
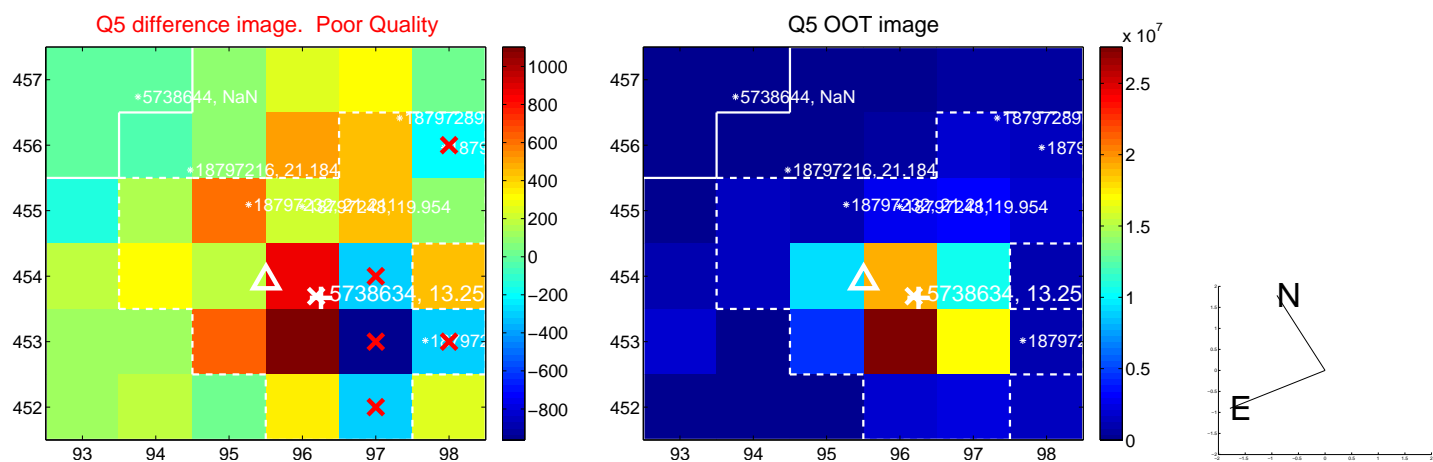


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

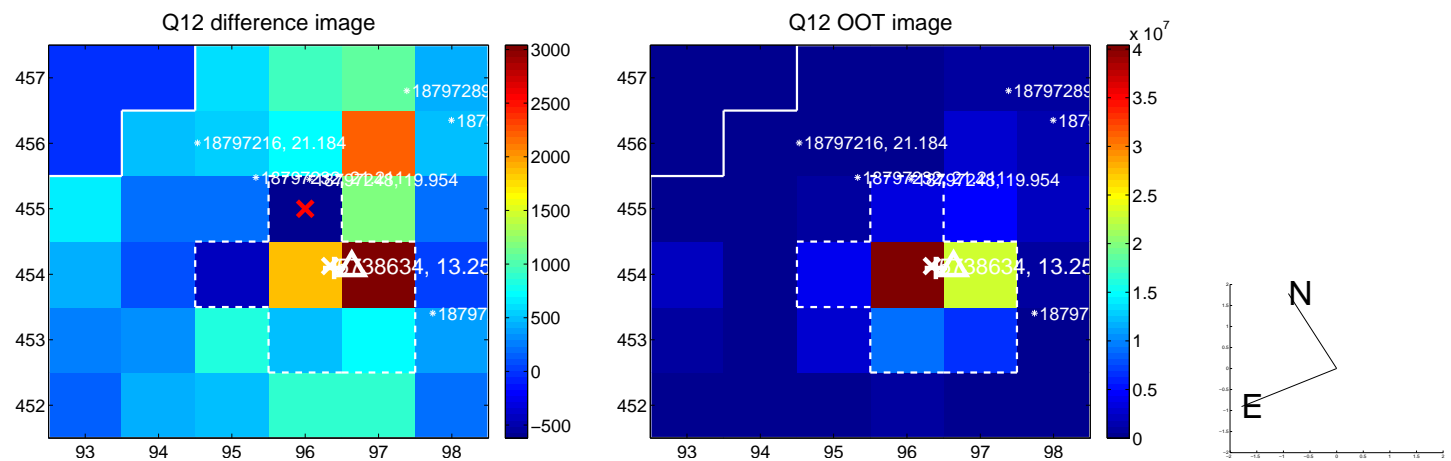
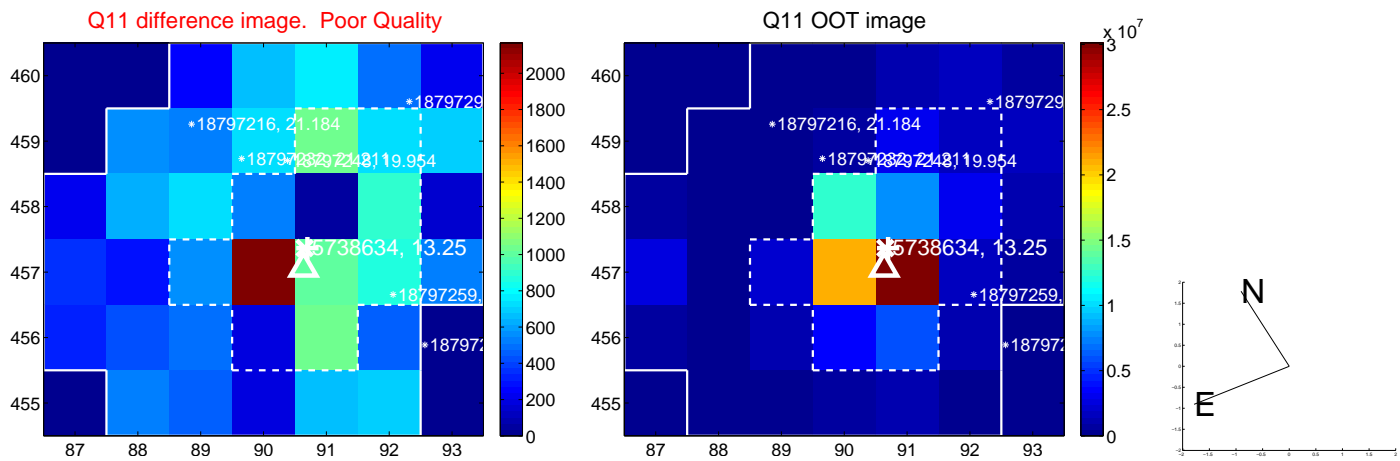
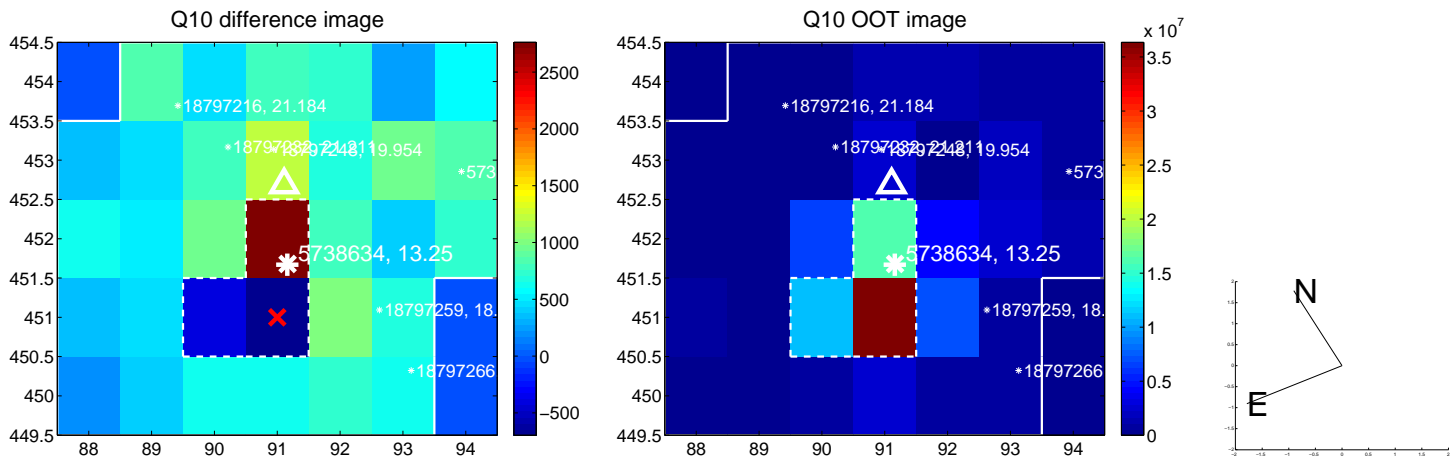
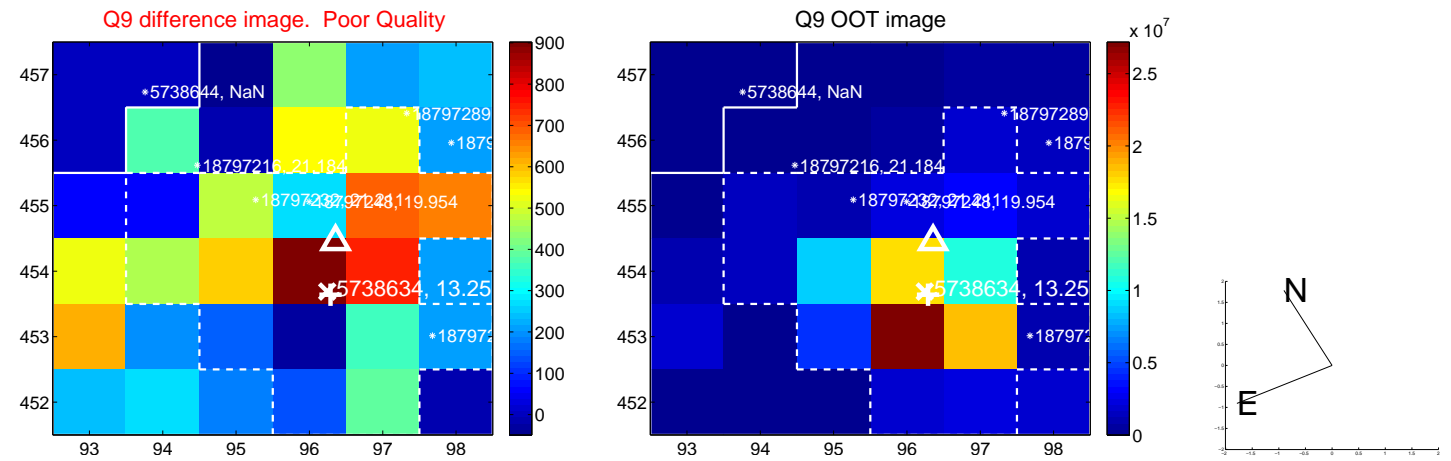


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

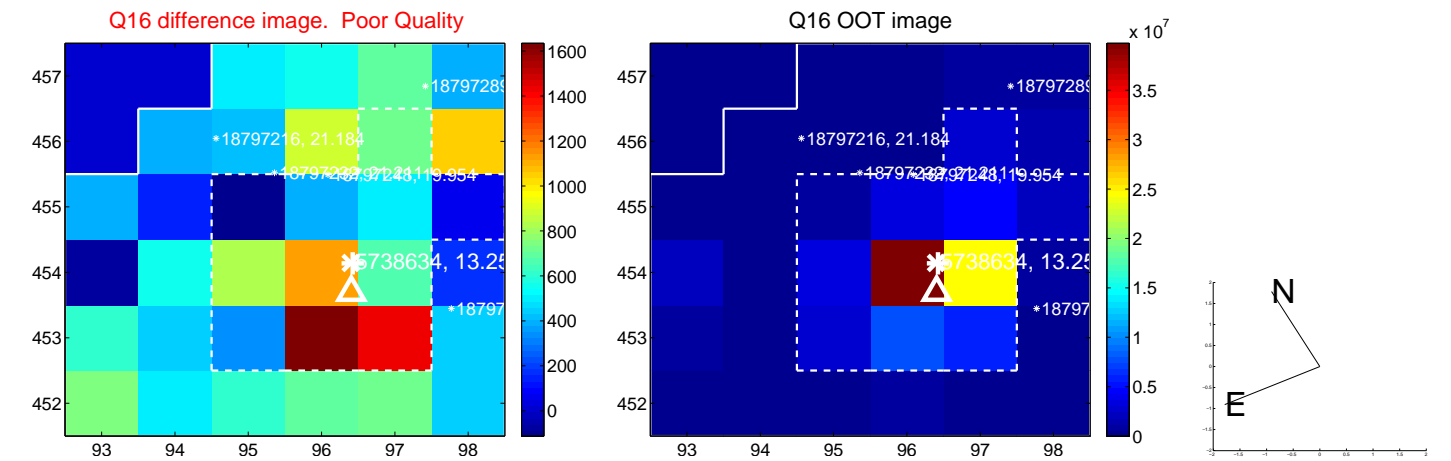
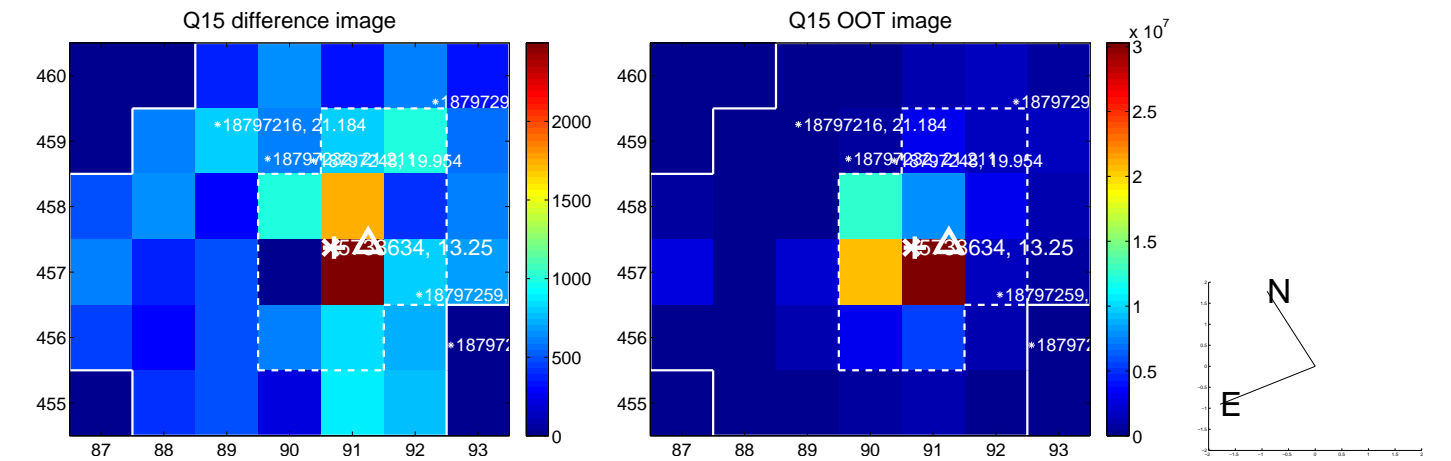
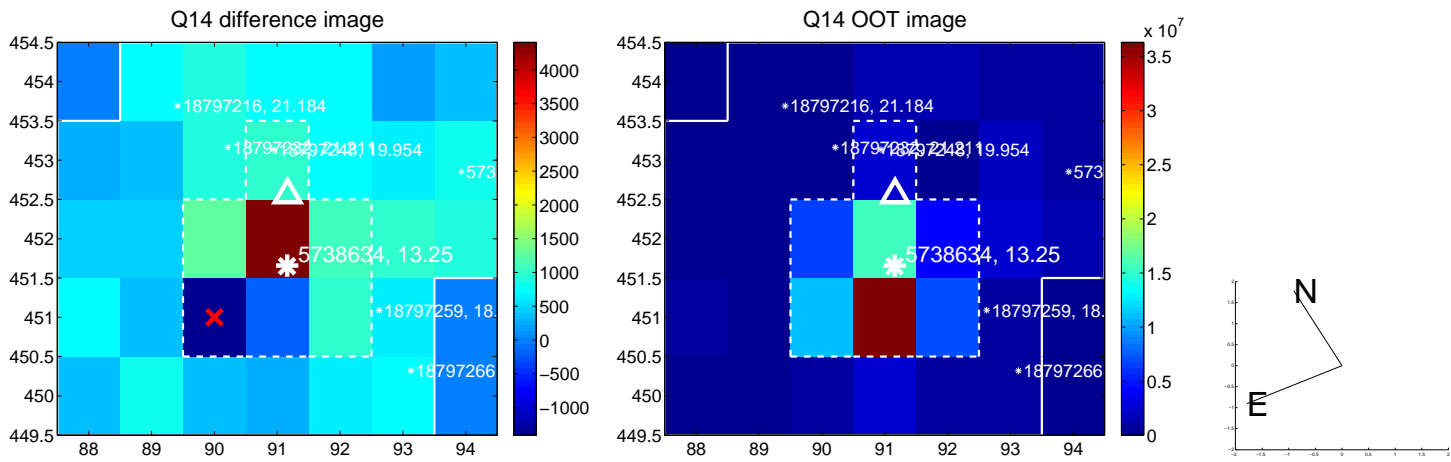
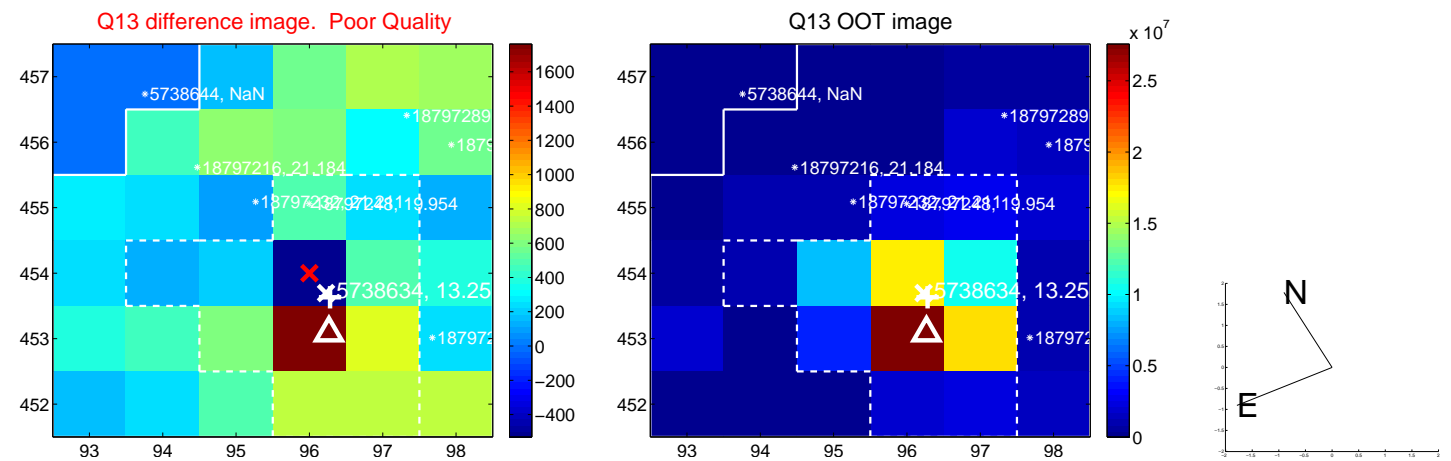




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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image

Declination

