

# KIC 003836558

## 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> )
003836558-01	OBS	4086.01	1.540392	131.999071	119.4	1.919	12.9	14.6	0.88	5649	1.14	1265.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003836558-01	OBS	FP	0.00	0	0	1	1	CENT_CROWDED—HALO_GHOST—EPEM_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.

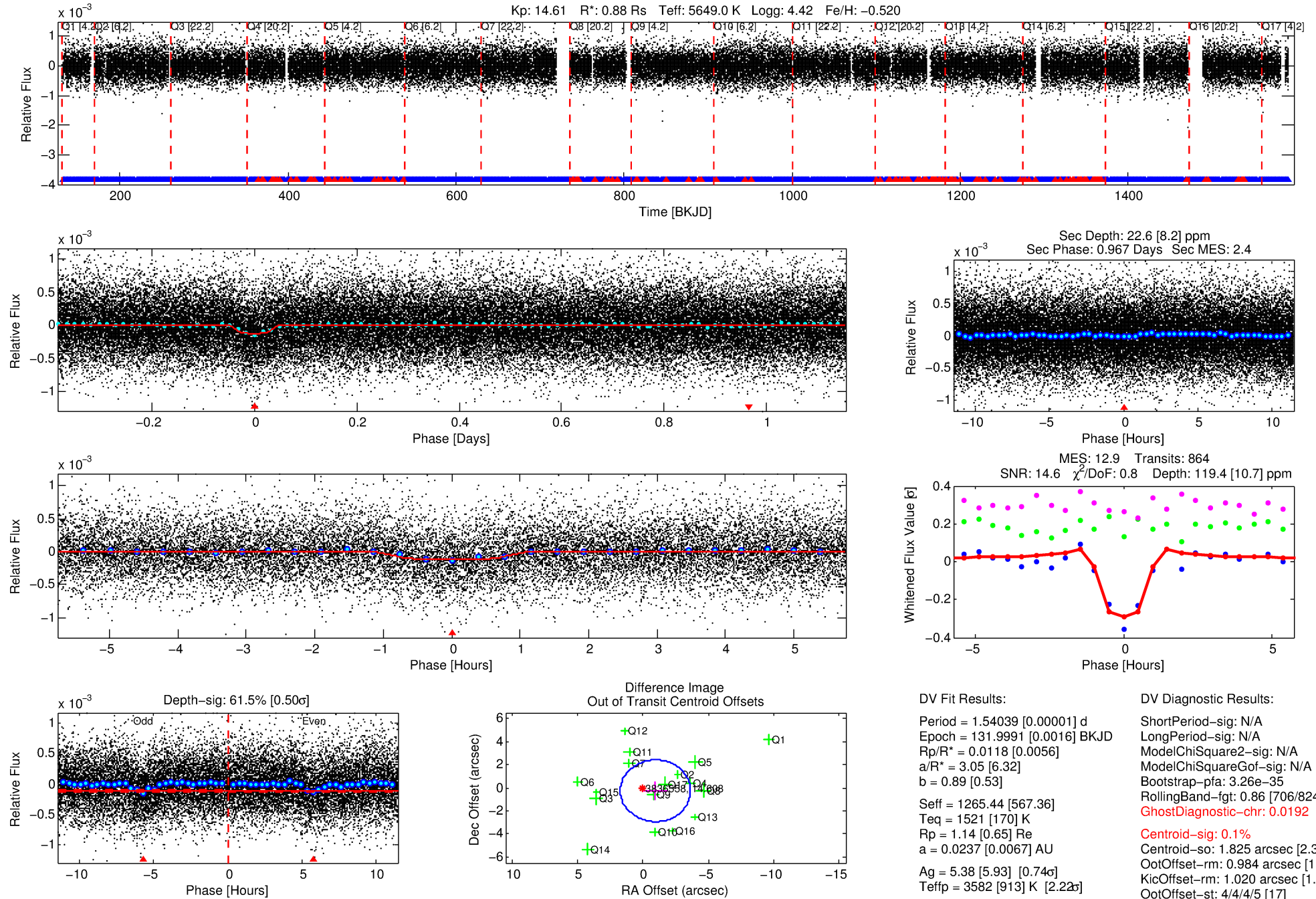
## Ephemeris Match Information For 003836558-01

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>
003836558-01	3836558	6364.01	3836439	1:1	126.6	-18	-26	7.57	14.61	594.45	Direct-PRF	0	0.15	0.16

**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

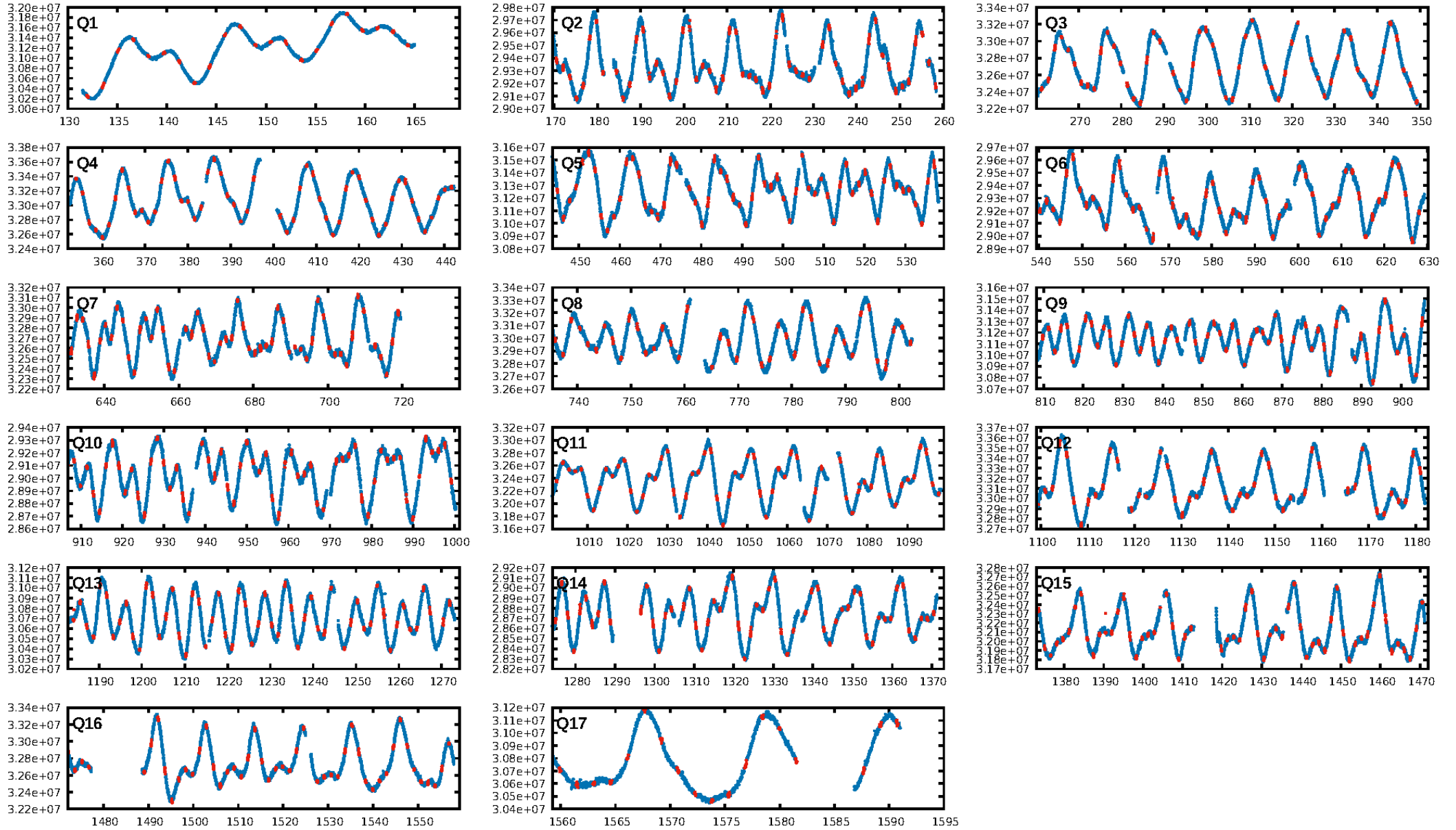
KIC: 3836558 Candidate: 1 of 1 Period: 1.540 d  
KOI: K04086.01 Corr: 0.953



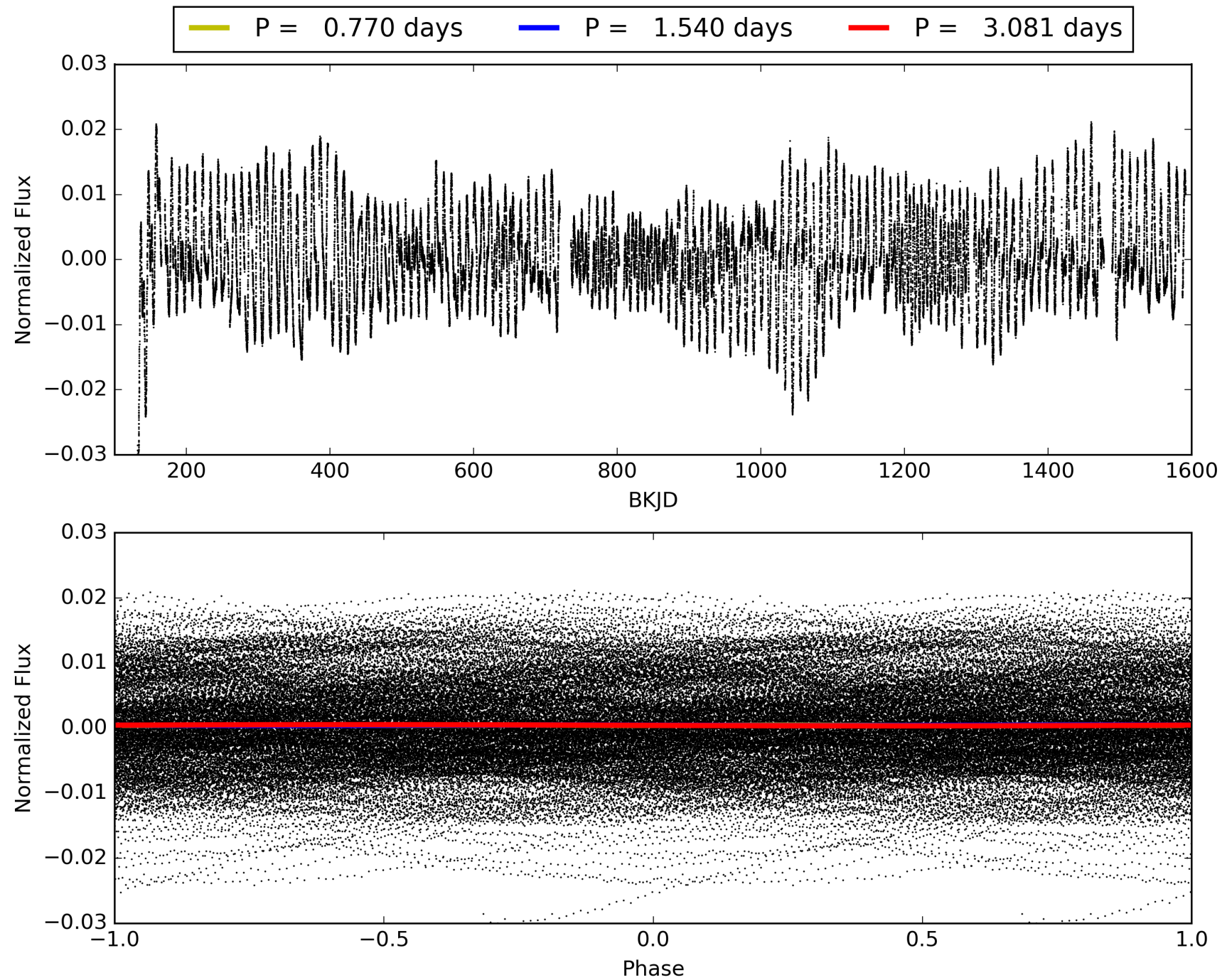
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:11:03 Z

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

# TCE 003836558-01, PDC Light Curves

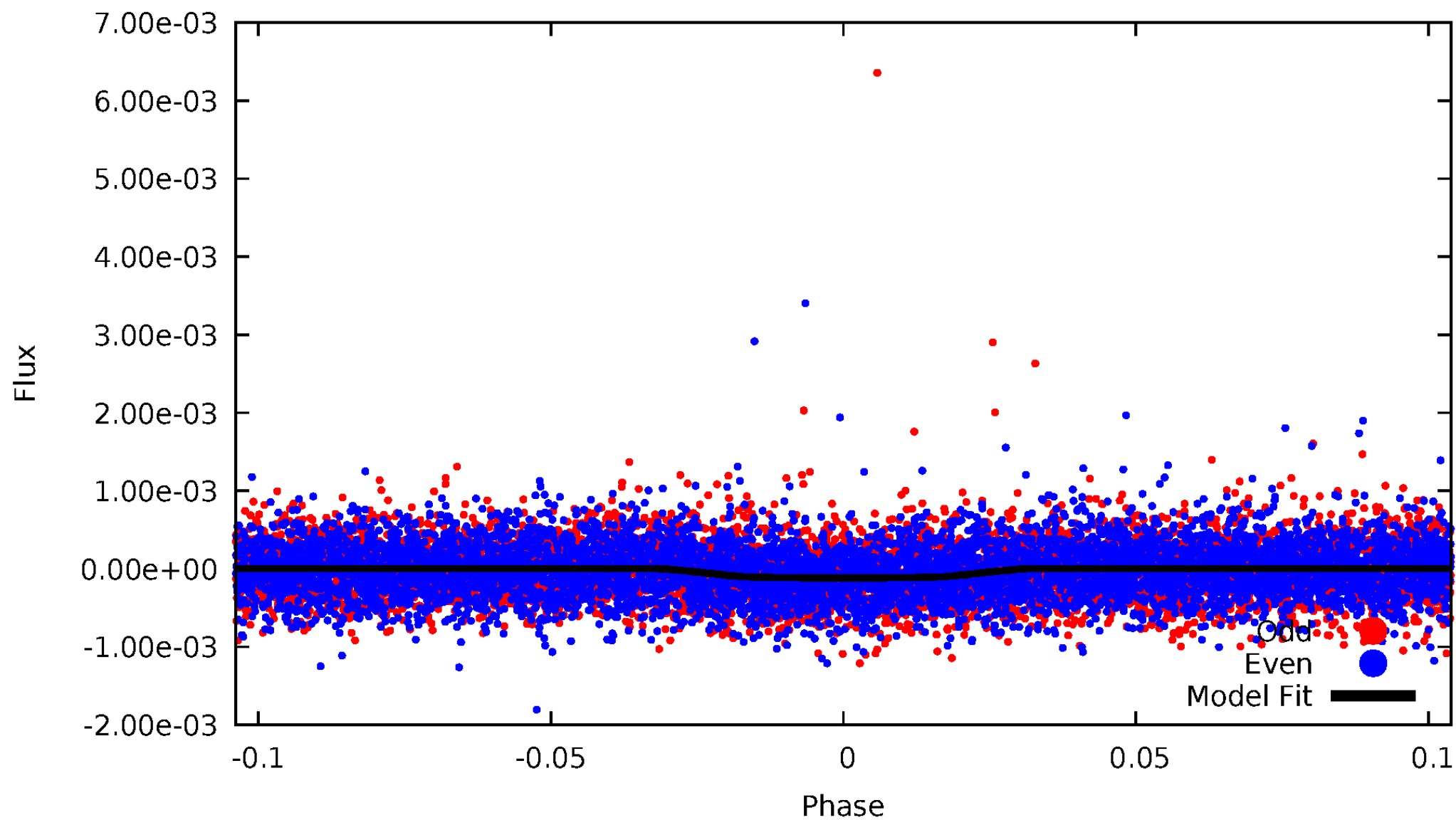


TCE 003836558-01



# DV Odd/Even

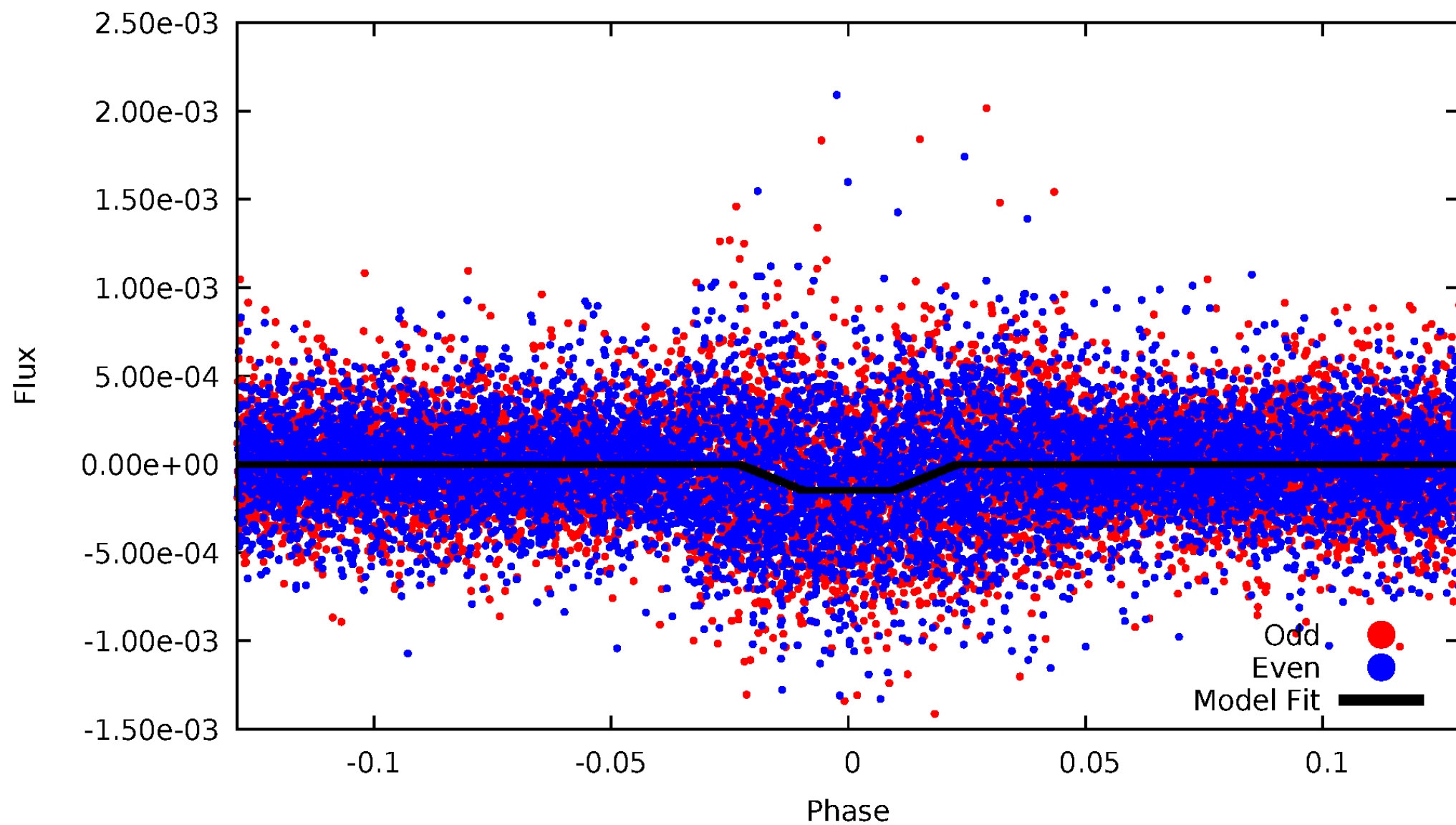
TCE 003836558-01



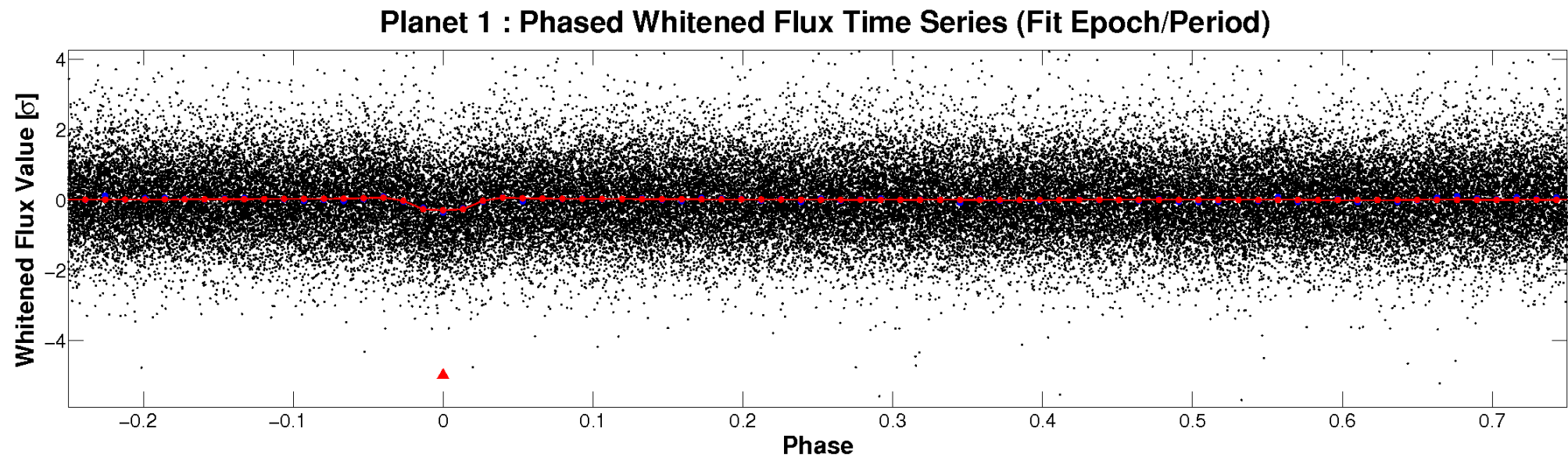
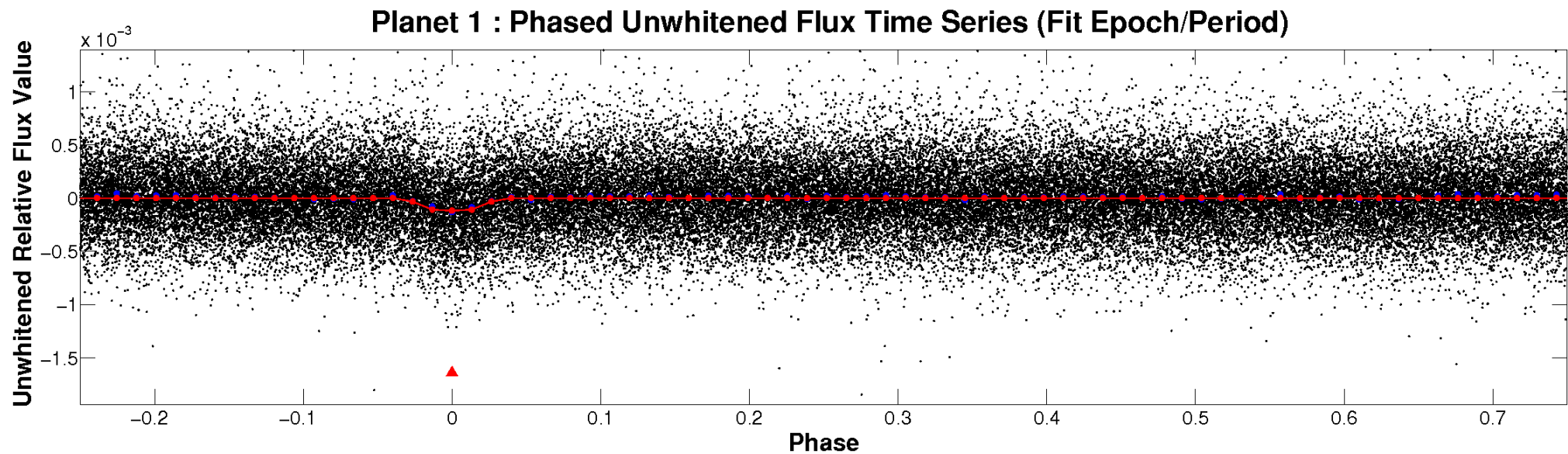


# ALT Odd/Even

TCE 003836558-01

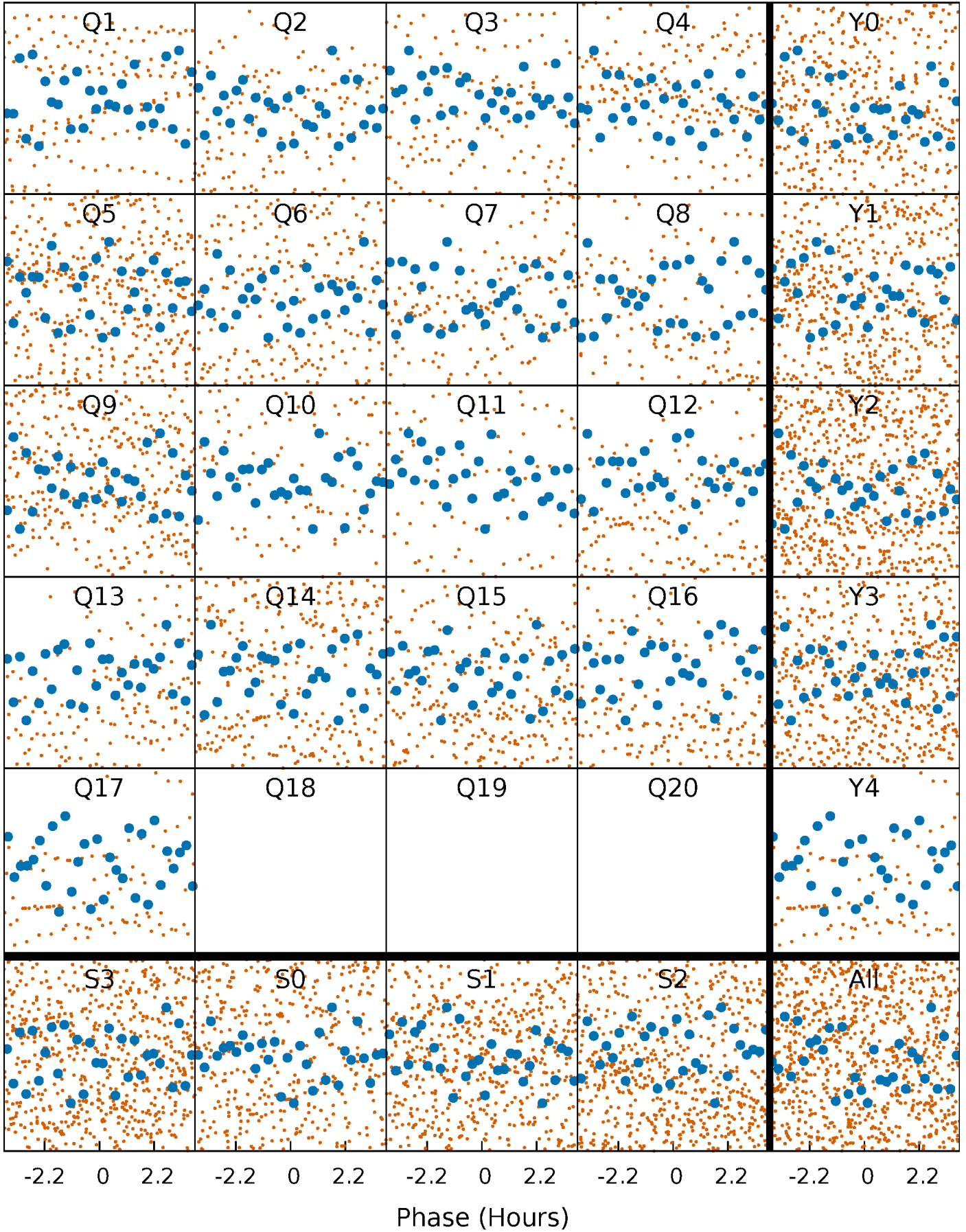


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

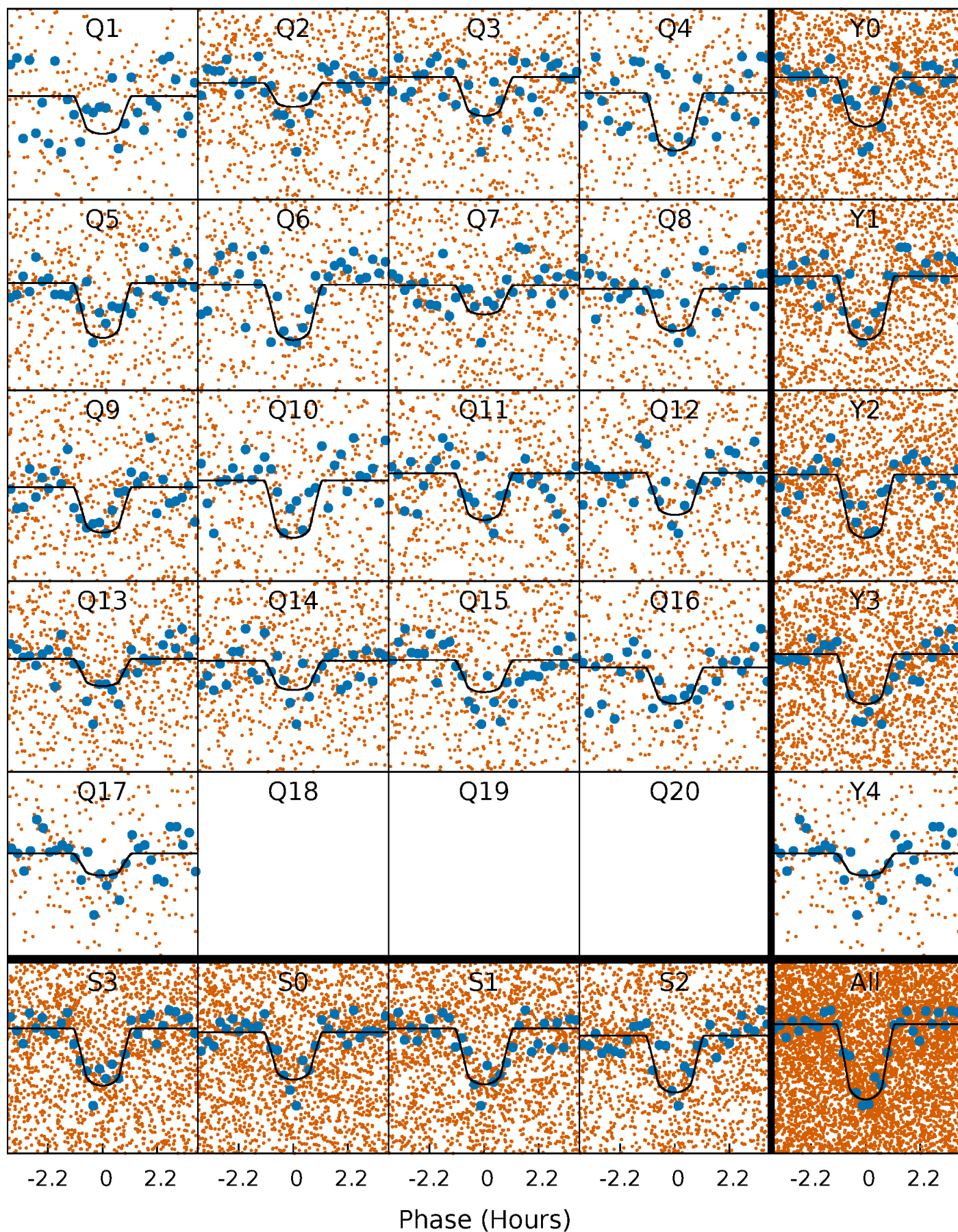
TCE 003836558-01 P= 1.540392 Days  $T_0=131.999071$  (BKJD)





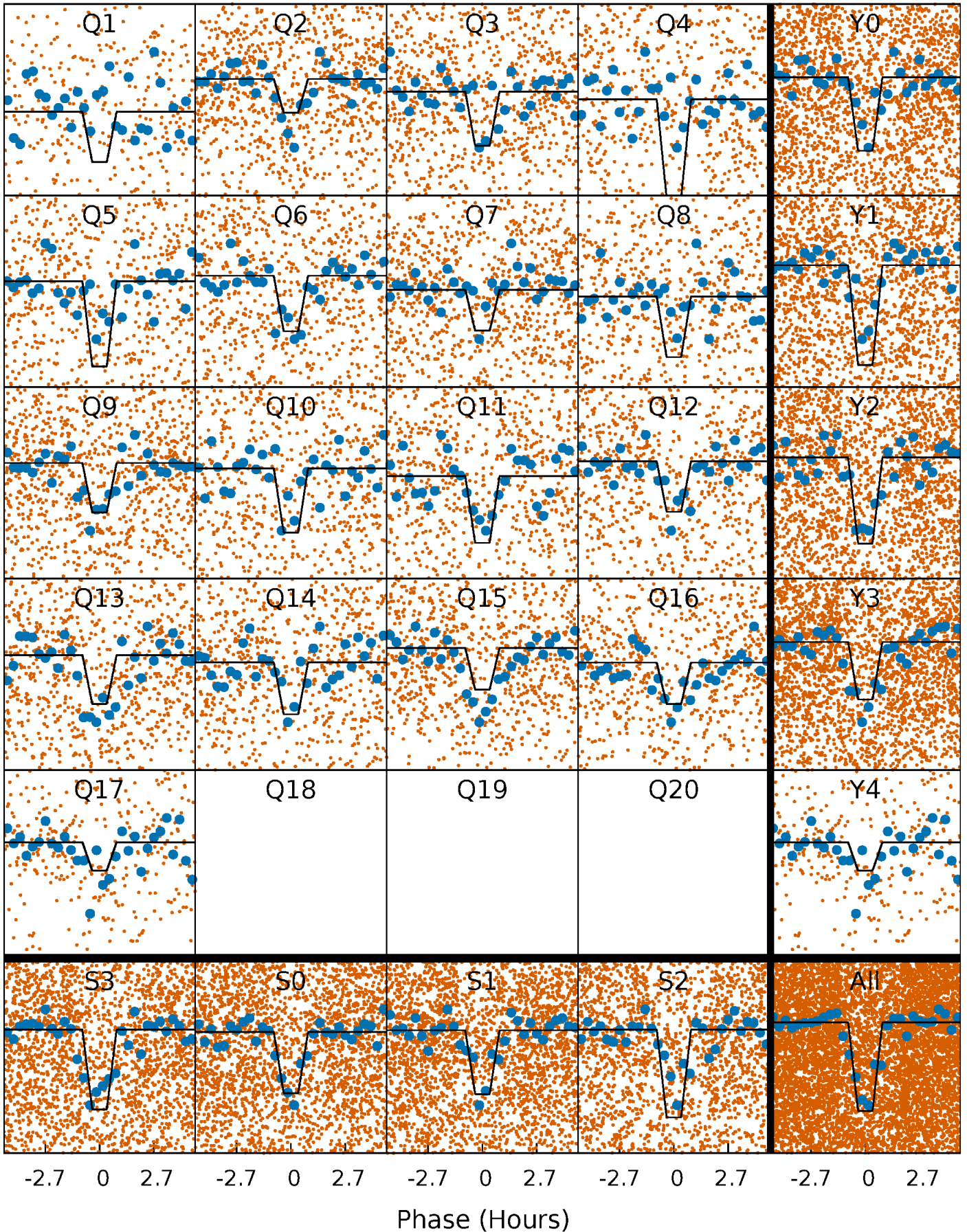
# DV Quarter-Phased Transit Curves

TCE 003836558-01 P= 1.540392 Days  $T_0=131.999071$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

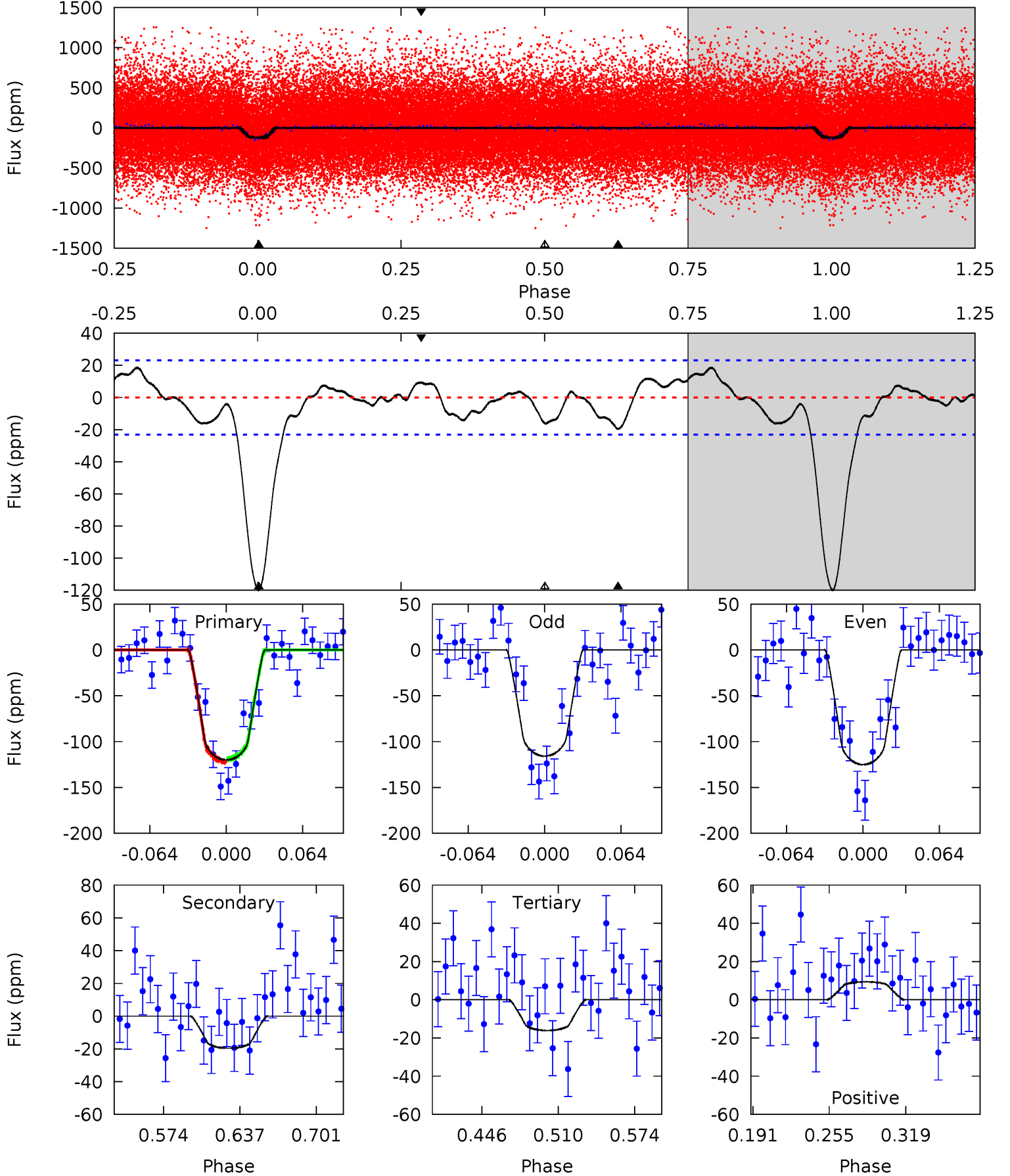
TCE 003836558-01 P= 1.540406 Days  $T_0=131.993561$  (BKJD)



# DV Model-Shift Uniqueness Test

003836558-01, P = 1.540392 Days, E = 130.458679 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
24.2	3.95	3.24	1.89	4.66	1.85	1.71	21.0	22.3	0.71	2.06	0.94	0.93	0.13	0.27

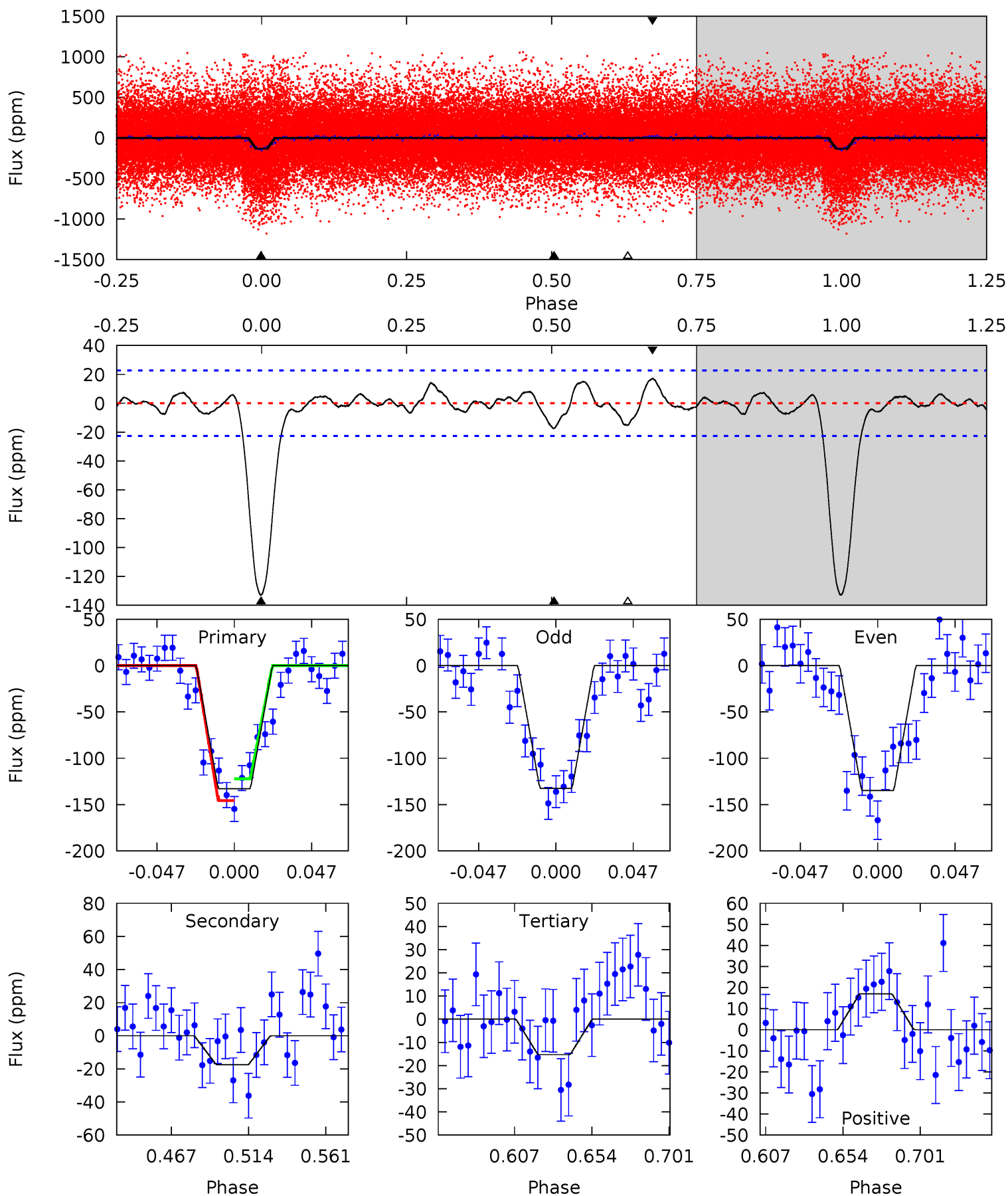




# Alt Model-Shift Uniqueness Test

003836558-01, P = 1.540406 Days, E = 130.453155 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
27.7	3.64	3.18	3.55	4.72	1.99	1.19	24.5	24.1	0.46	0.09	0.24	0.96	0.11	2.44



### Stellar Parameters For KIC 003836558

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5649^{+168}_{-168}$	$4.421^{+0.164}_{-0.246}$	$-0.520^{+0.300}_{-0.300}$	$0.884^{+0.279}_{-0.150}$	$0.751^{+0.119}_{-0.048}$	$1.531^{+1.172}_{-0.866}$
	+3%/-3%	+4%/-6%	+58%/-58%	+32%/-17%	+16%/-6%	+77%/-57%
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 003836558-01 / KOI 4086.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-20 \pm 5$	$1.21^{+0.62}_{-0.57}$	$2145^{+196}_{-138}$	$3734^{+1042}_{-526}$	$4.170^{+11.876}_{-2.440}$
Alt.	$-17 \pm 5$	$1.22^{+0.59}_{-0.55}$	$2131^{+197}_{-139}$	$3637^{+892}_{-507}$	$3.643^{+9.193}_{-2.104}$

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



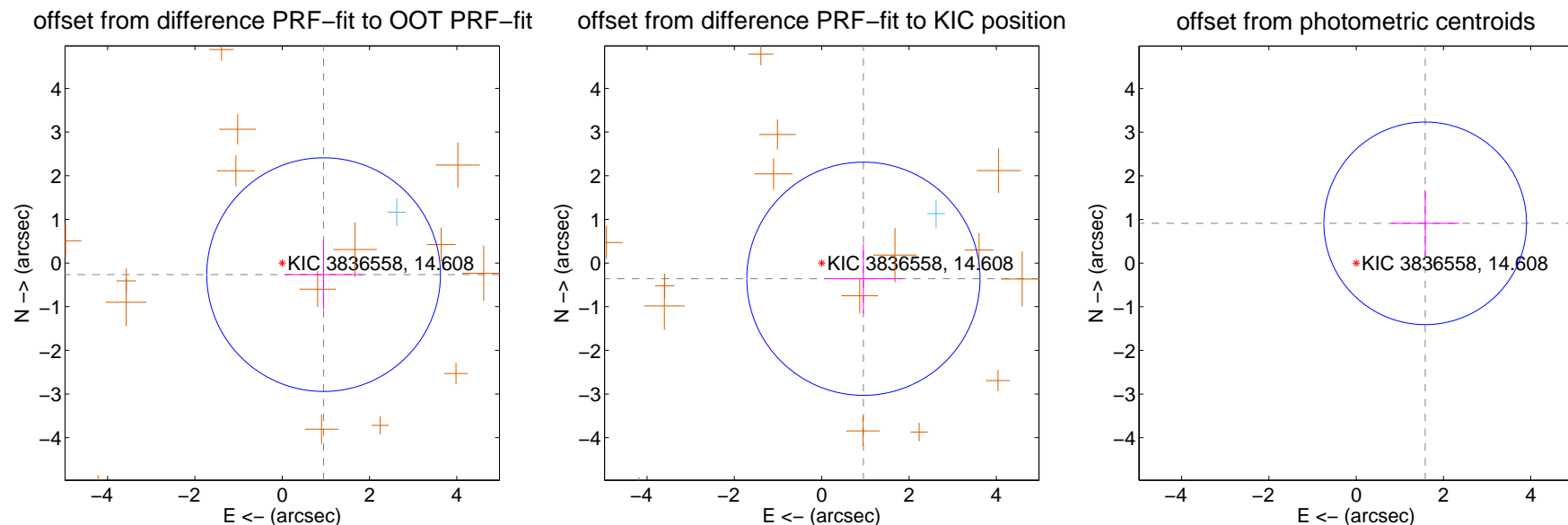
## DV Centroid Data

Supplemental centroid analysis for 003836558-01. Kepler magnitude: 14.61. Transit SNR 14.60

There are 1 quarters with good PRF difference image offsets

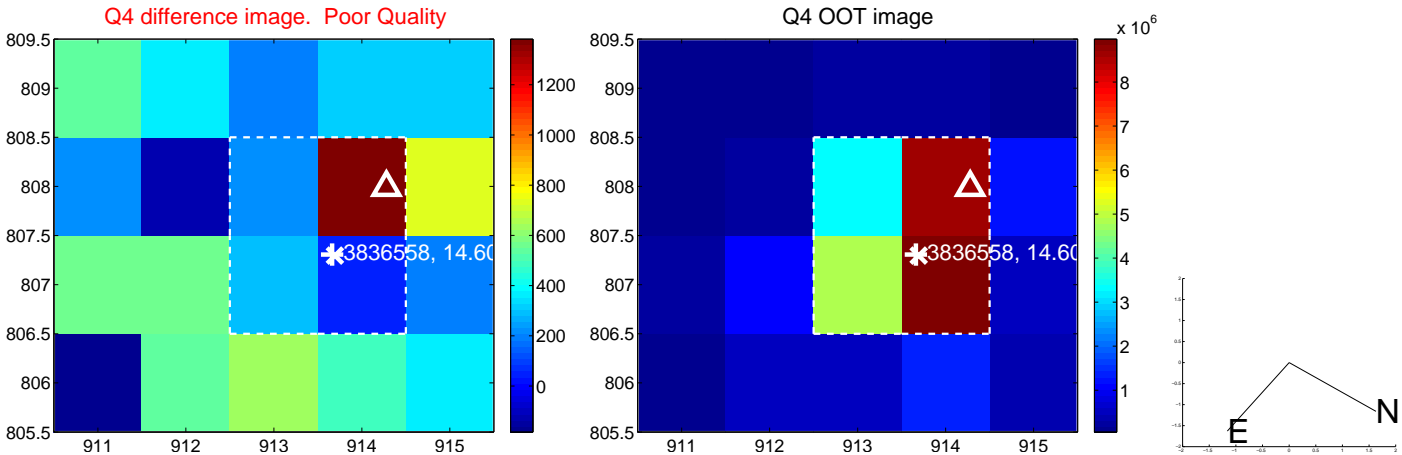
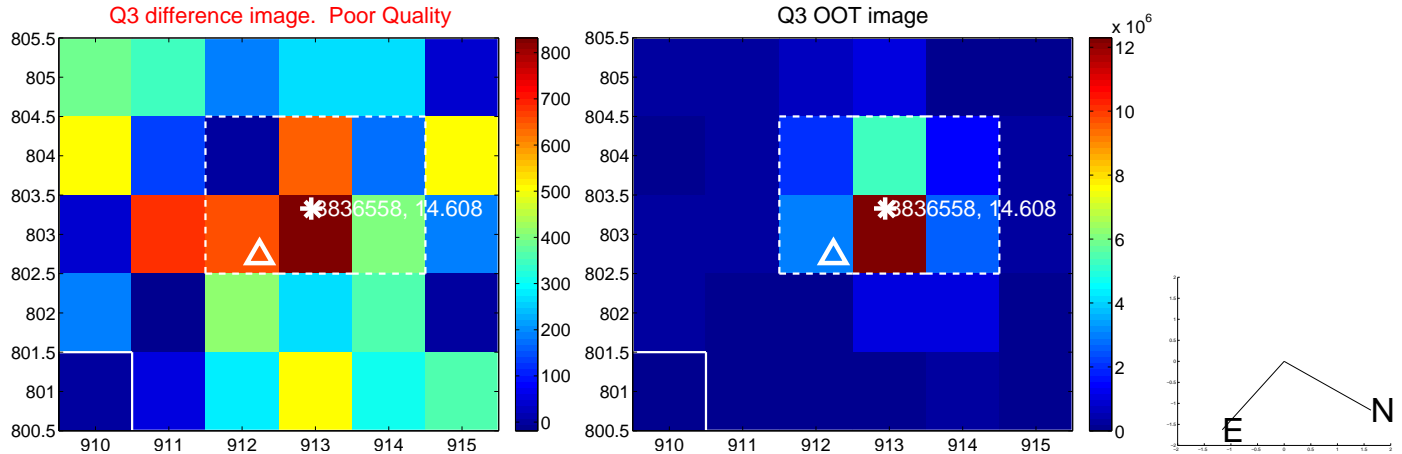
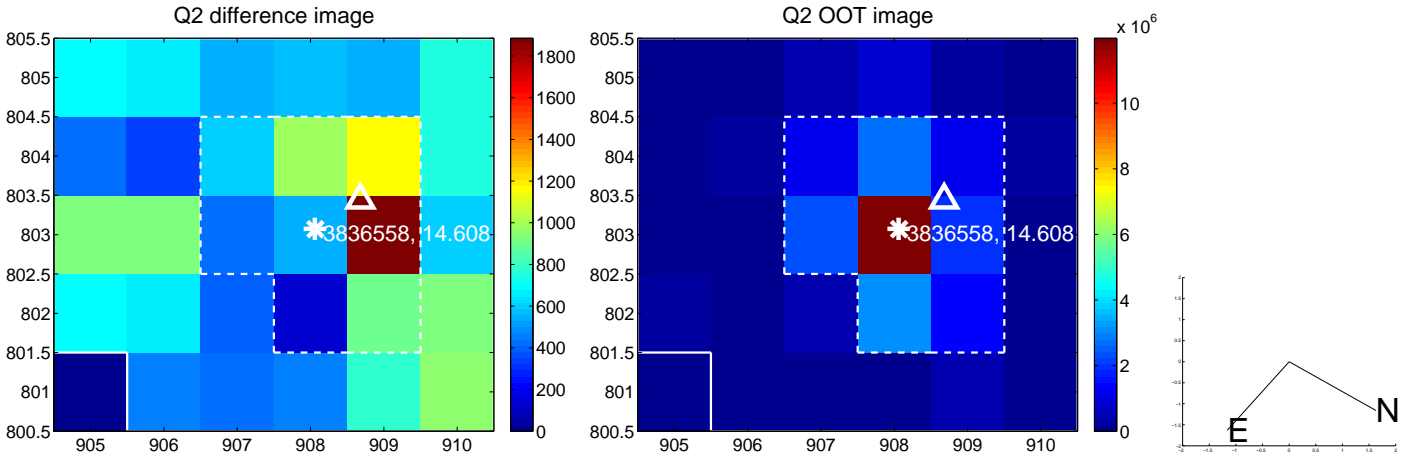
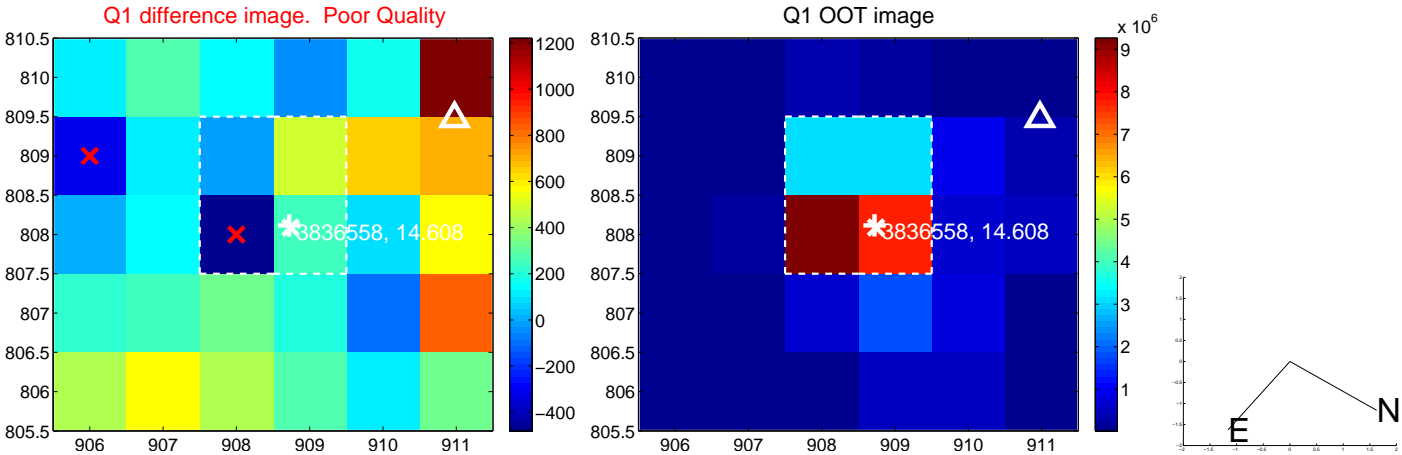
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.984 \pm 0.892$	1.10	$-0.948 \pm 0.899$	$-0.266 \pm 0.793$
PRF-fit source offset from KIC position	$1.020 \pm 0.890$	1.15	$-0.955 \pm 0.903$	$-0.360 \pm 0.797$
photometric centroid source offset	$1.82 \pm 0.77$	2.36	$-1.58 \pm 0.78$	$0.91 \pm 0.77$

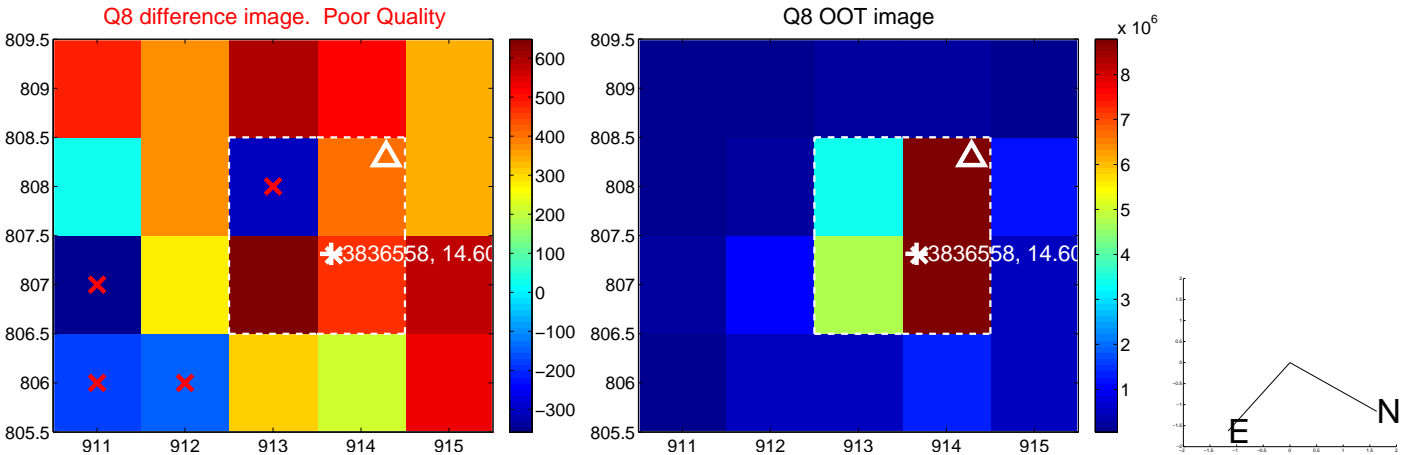
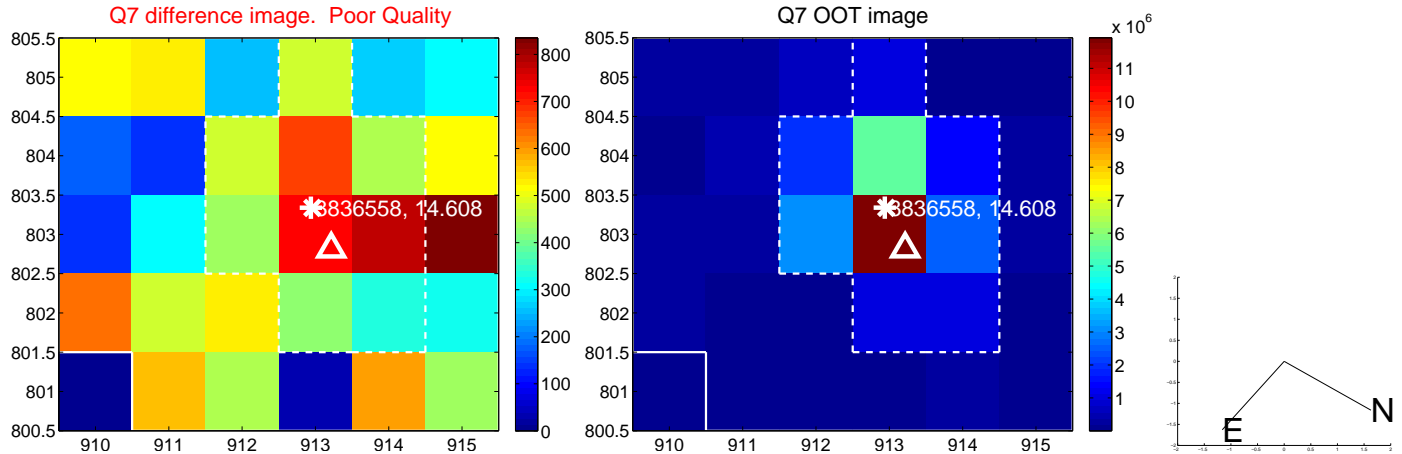
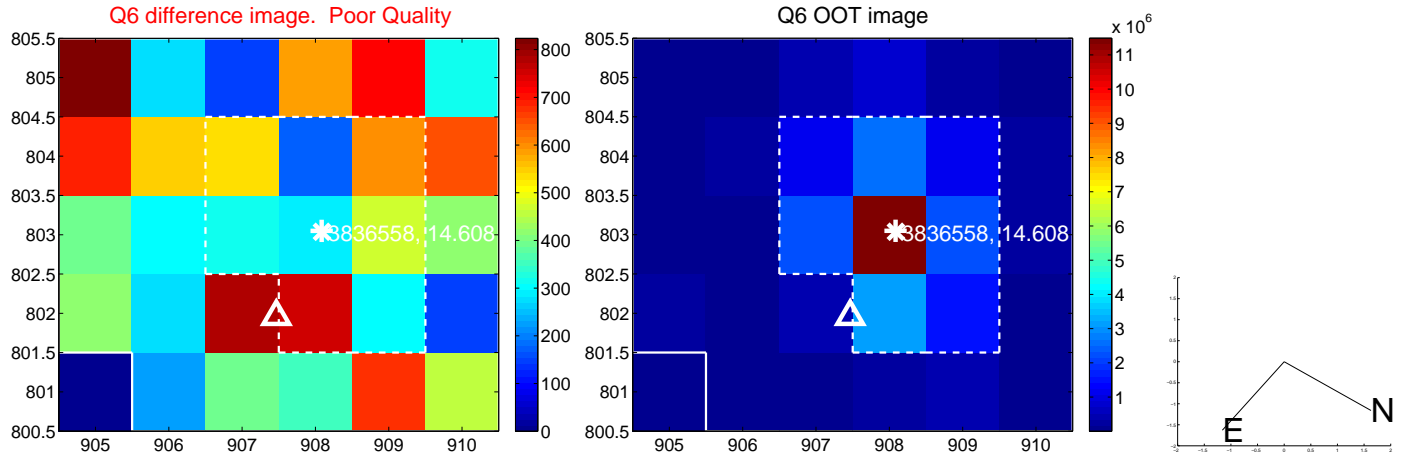
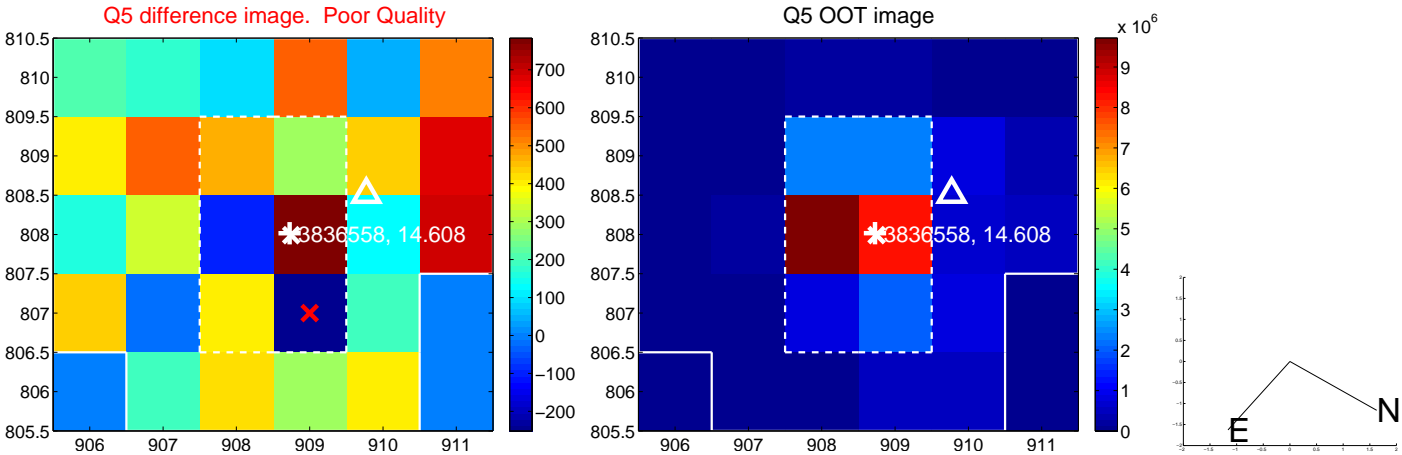


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

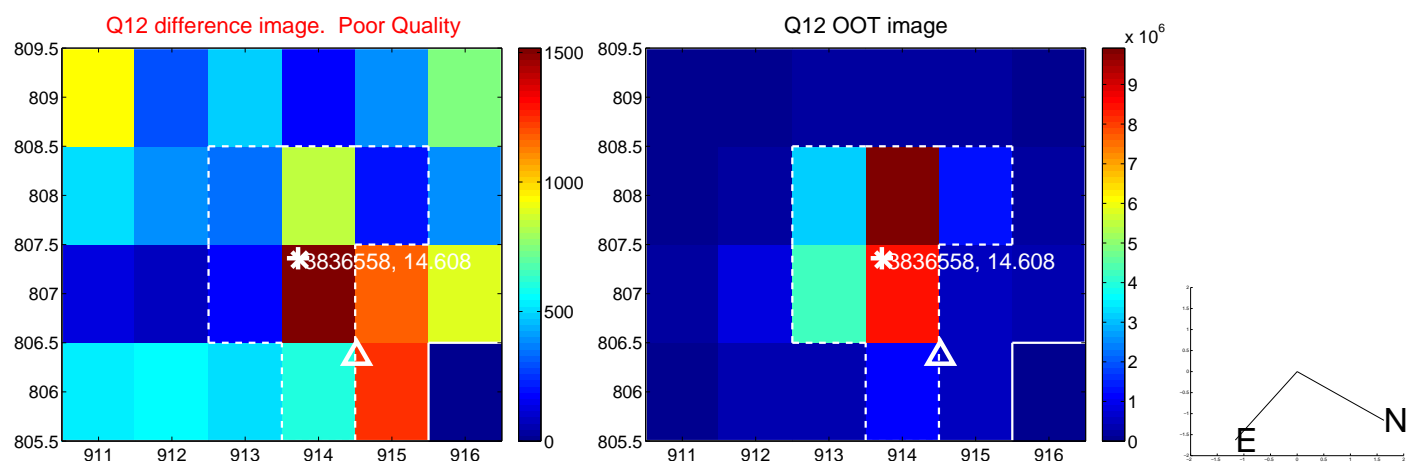
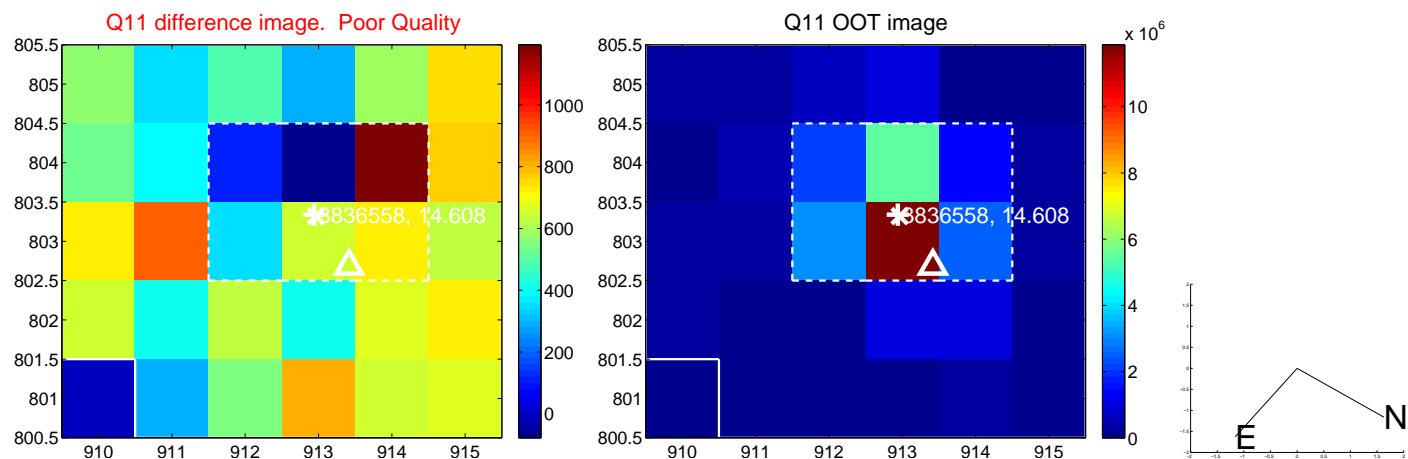
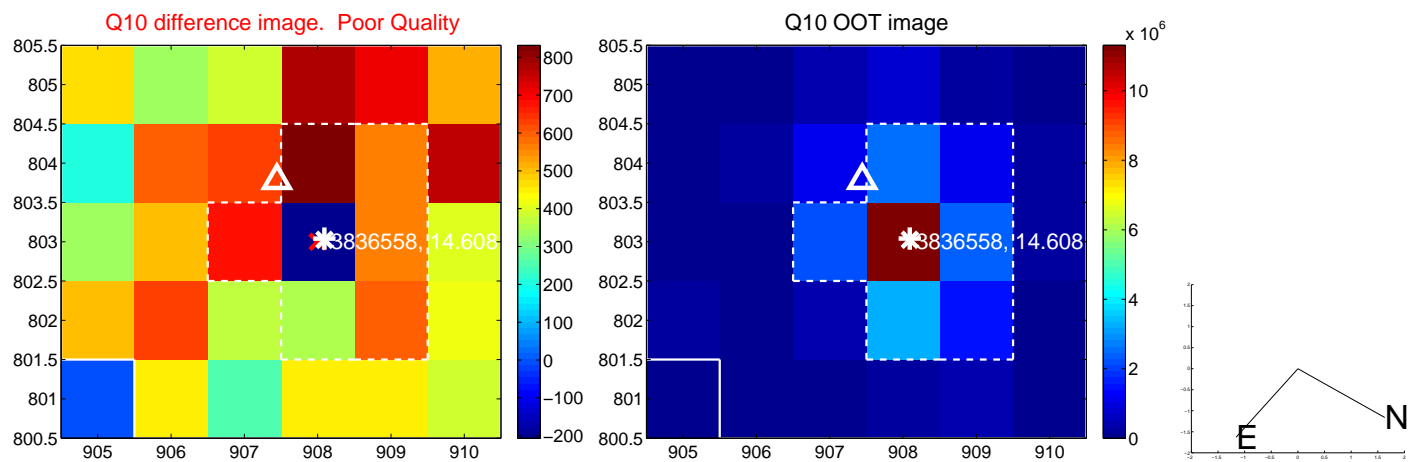
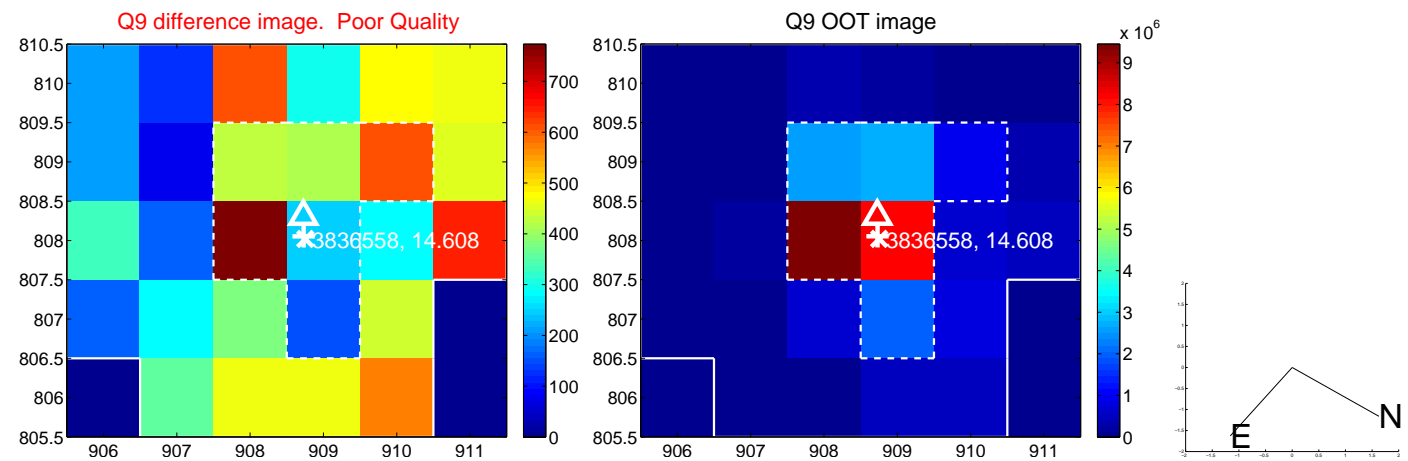
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



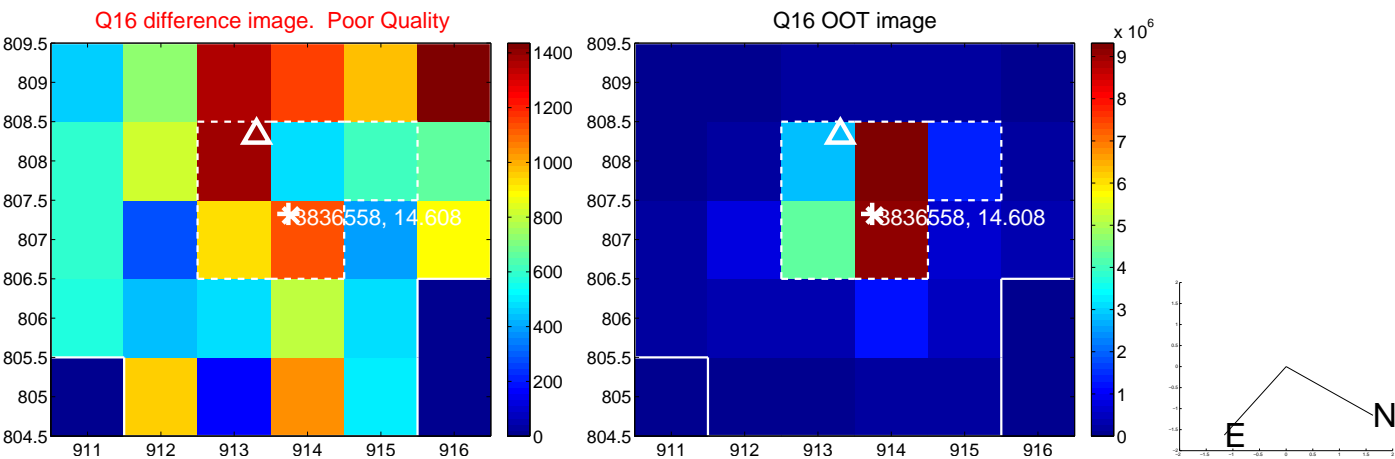
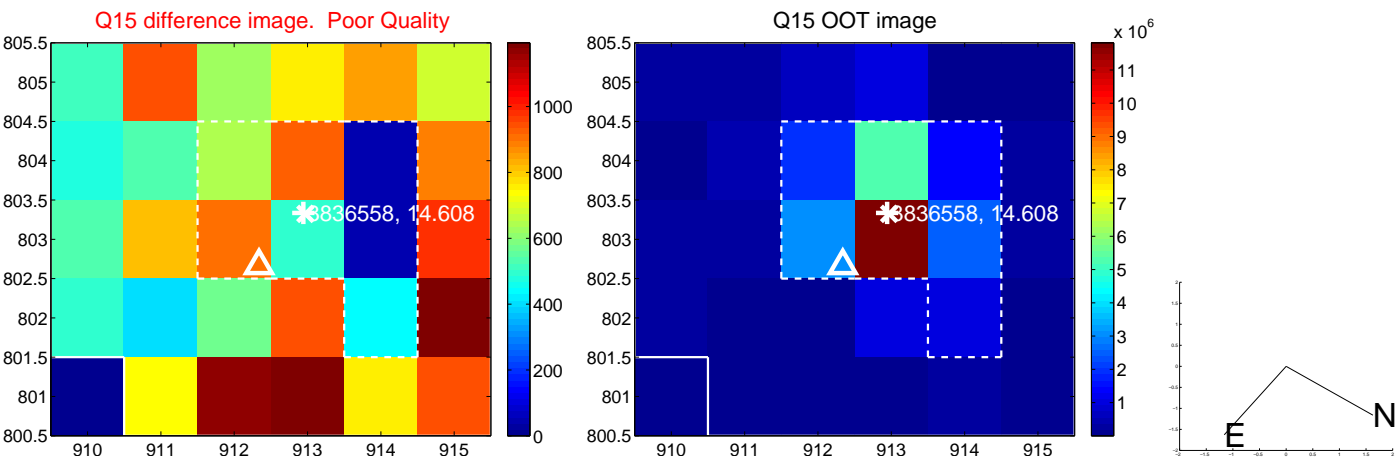
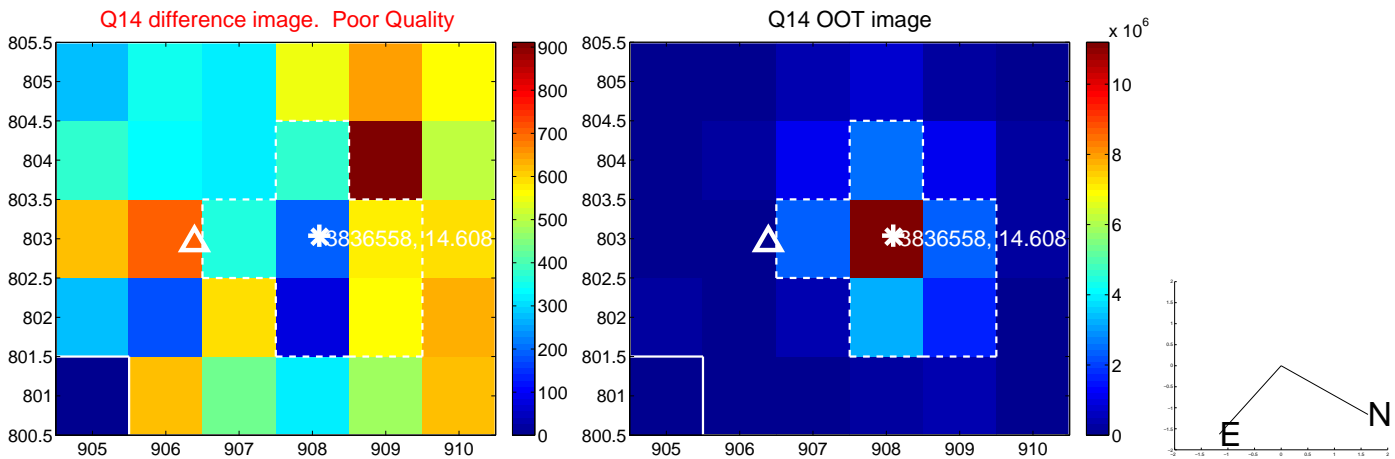
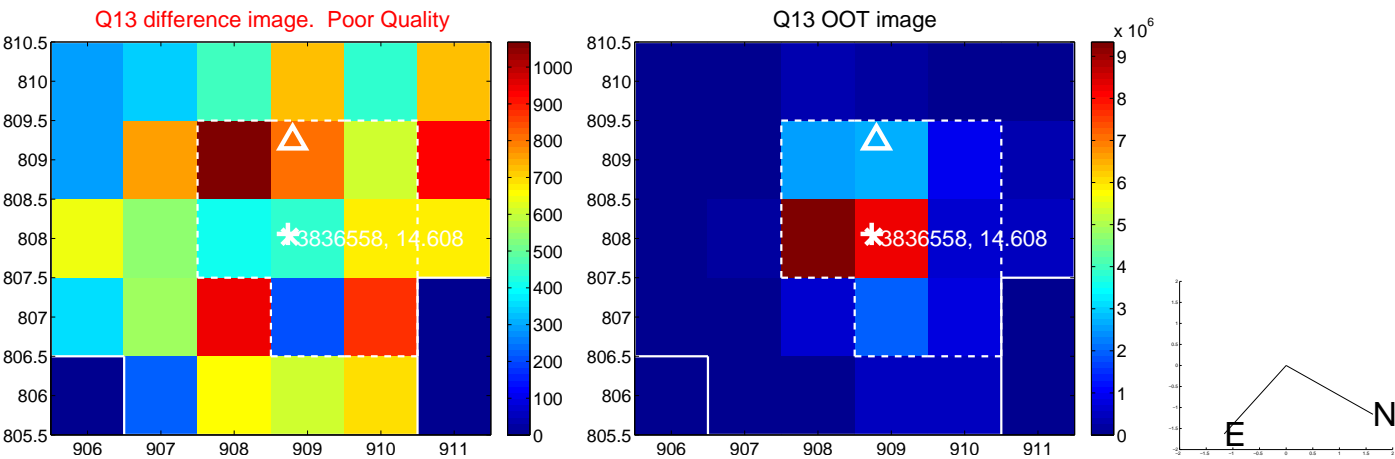
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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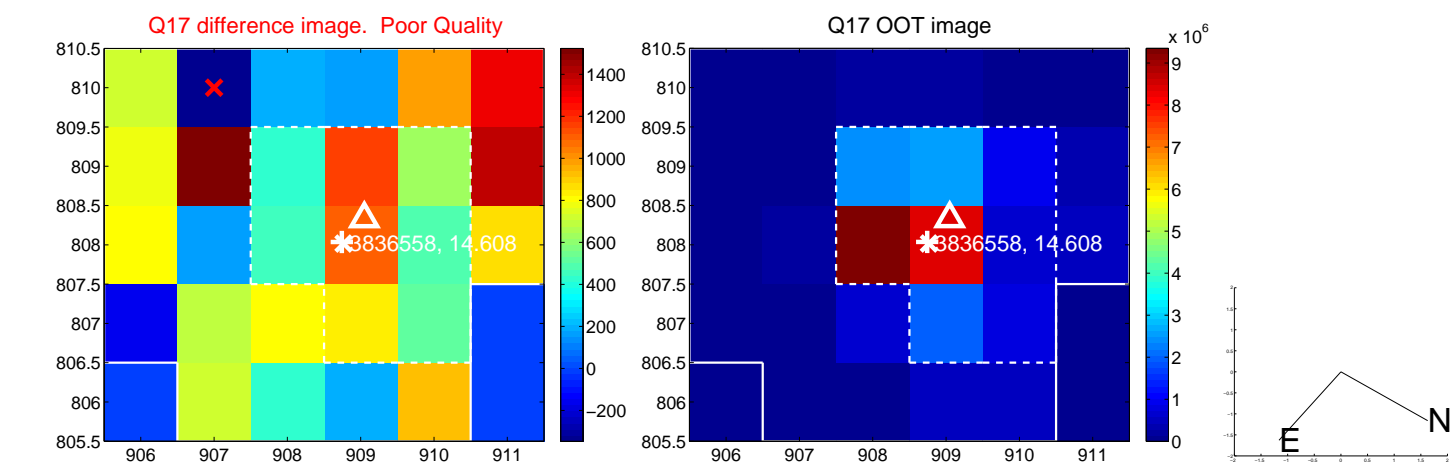


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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fluxWeightedCentroids, Planet 1 of 1

