

# KIC 008460634

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008460634-01	OBS	7887.01	6.352181	134.197181	140.0	3.331	10.0	10.5	13.65	4820	19.20	12551.39

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008460634-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—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.

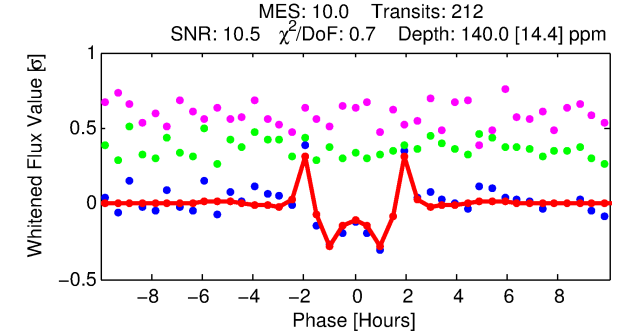
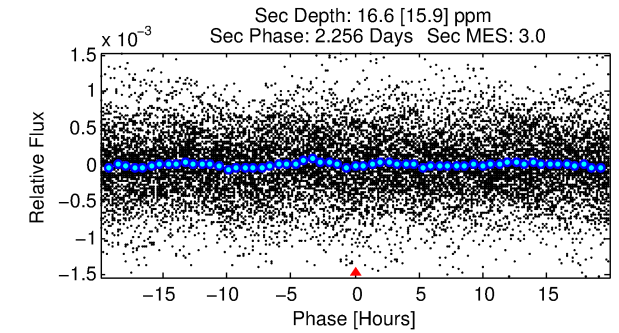
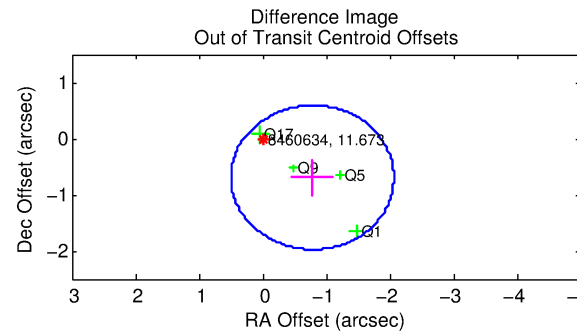
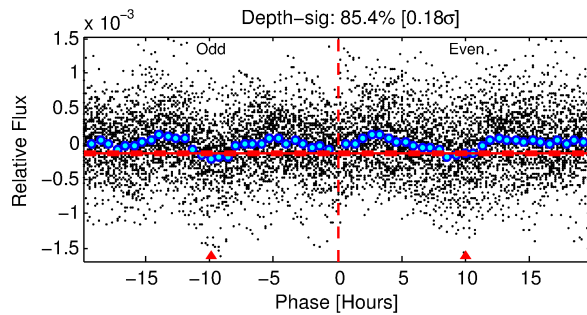
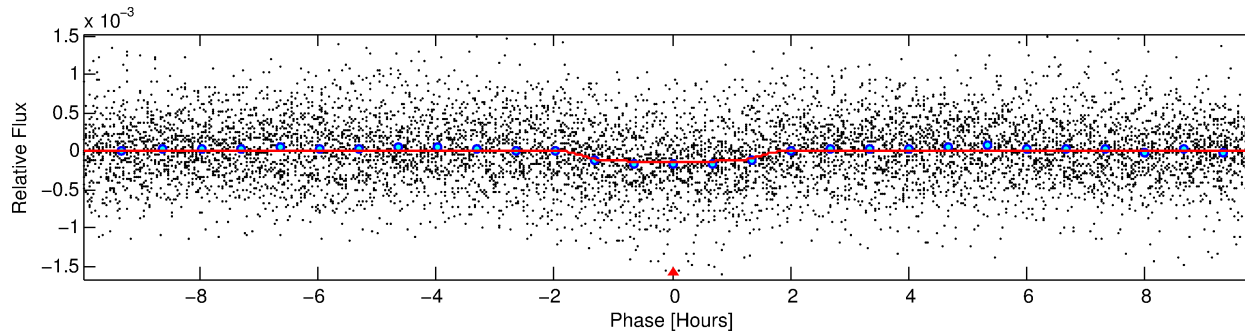
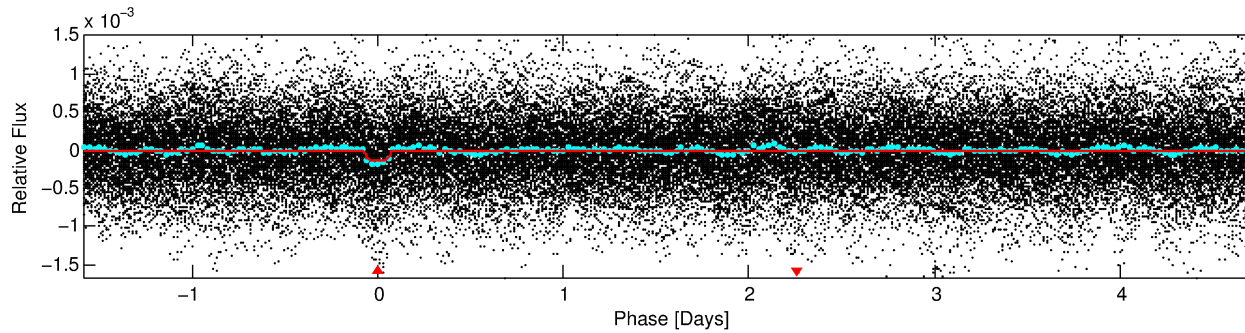
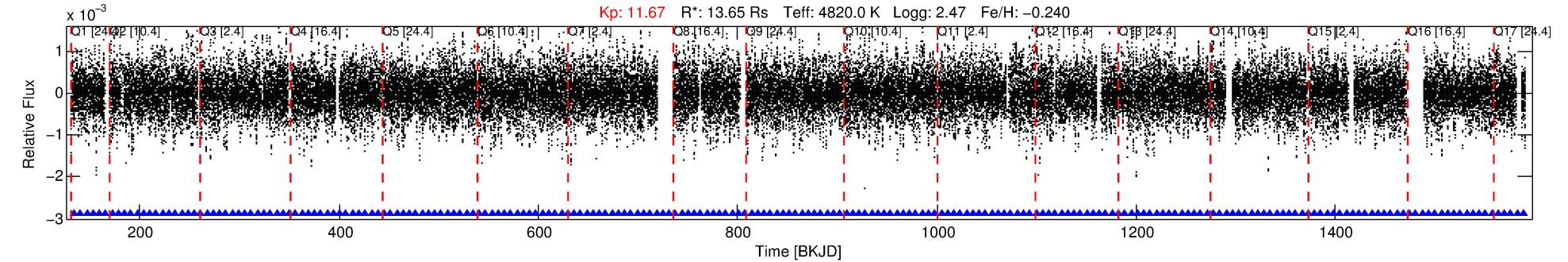
## Ephemeris Match Information For 008460634-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
008460634-01	8460634	1730.01	8460600	1:1	22.0	-6	-1	14.93	11.67	552.43	Direct-PRF	0	0.66	0.37

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 8460634 Candidate: 1 of 1 Period: 6.352 d



## DV Fit Results:

Period = 6.35218 [0.00002] d  
Epoch = 134.1972 [0.0015] BKJD  
Rp/R\* = 0.0129 [0.0023]  
a/R\* = 7.46 [4.92]  
b = 0.88 [0.18]  
Seff = 12551.39 [2152.31]  
Teq = 2699 [116] K  
Rp = 19.20 [5.31] Re  
a = 0.0848 [0.0122] AU  
Ag = 0.18 [0.18] [-4.47 $\sigma$ ]  
Teffp = 2710 [696] K [0.02 $\sigma$ ]

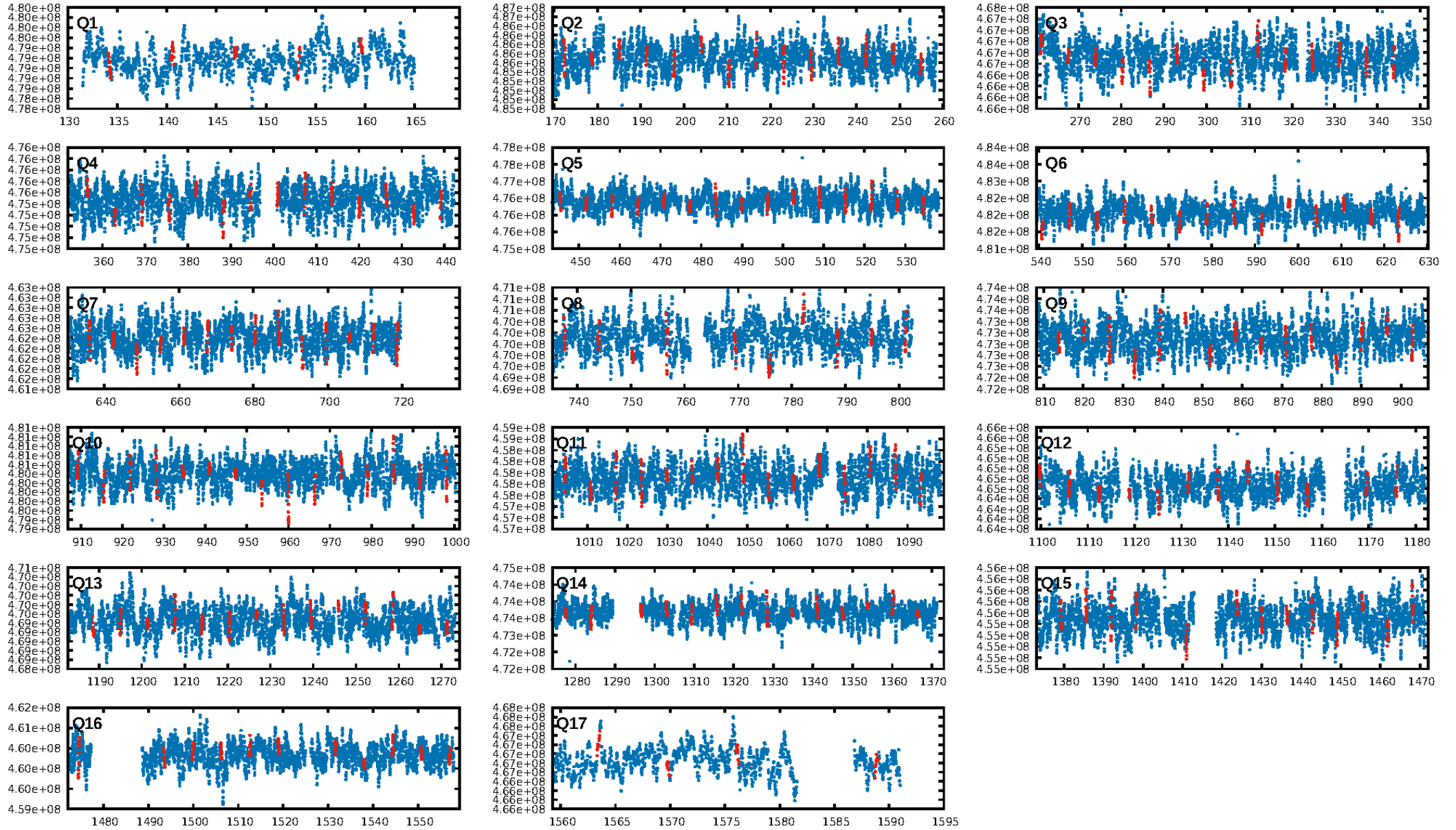
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.79e-22  
RollingBand-fgt: 1.00 [203/203]  
GhostDiagnostic-chr: -0.07243  
Centroid-sig: 0.0%  
Centroid-so: 30.779 arcsec [76.38 $\sigma$ ]  
OotOffset-rm: 1.045 arcsec [2.45 $\sigma$ ]  
KicOffset-rm: 0.908 arcsec [2.49 $\sigma$ ]  
OotOffset-st: 0/0/0/4 [4]  
KicOffset-st: 0/0/0/4 [4]  
DiffImageQuality-fgm: 0.50 [2/4]  
DiffImageOverlap-fno: 1.00 [17/17]

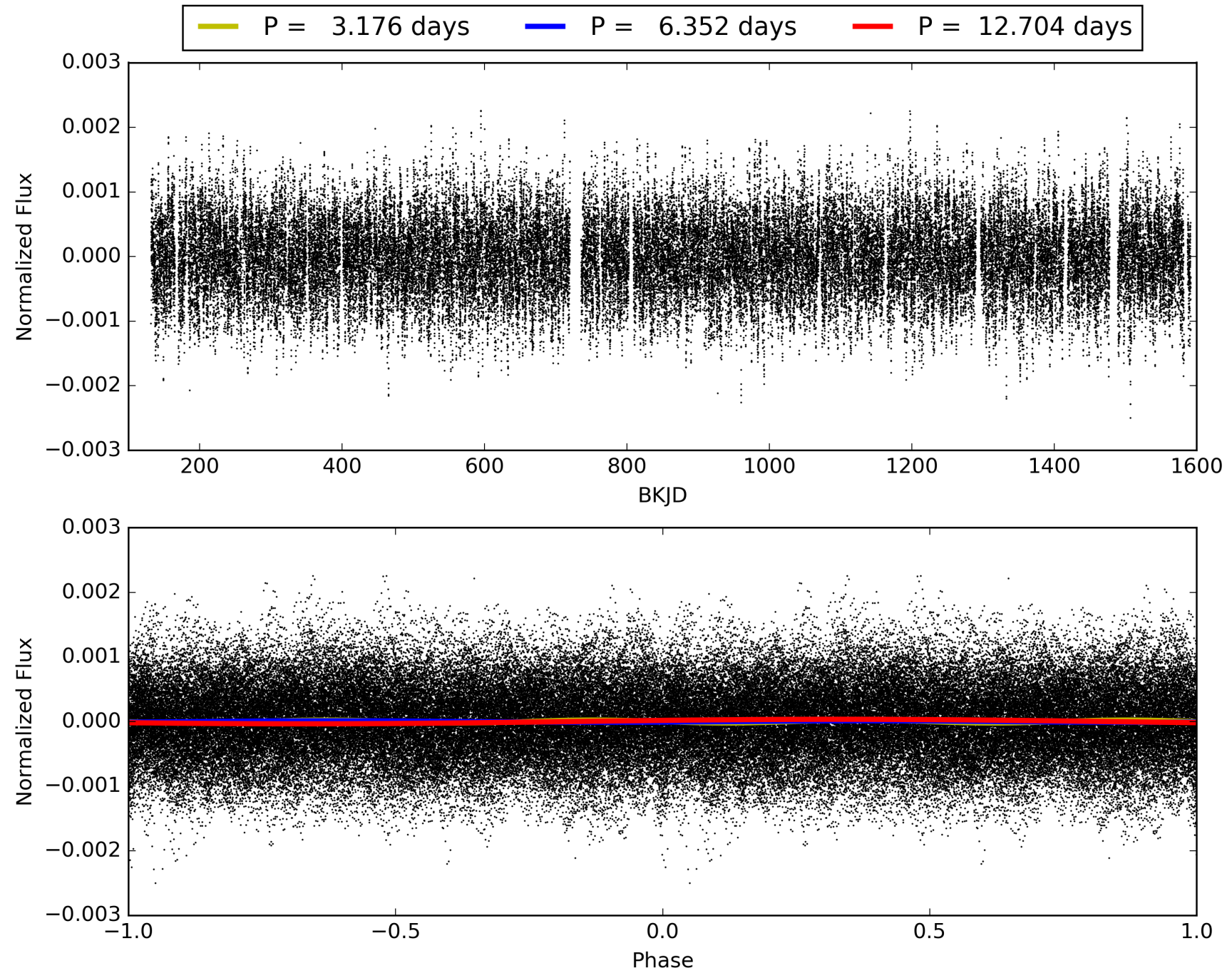
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 22:46:12 Z

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

# TCE 008460634-01, PDC Light Curves



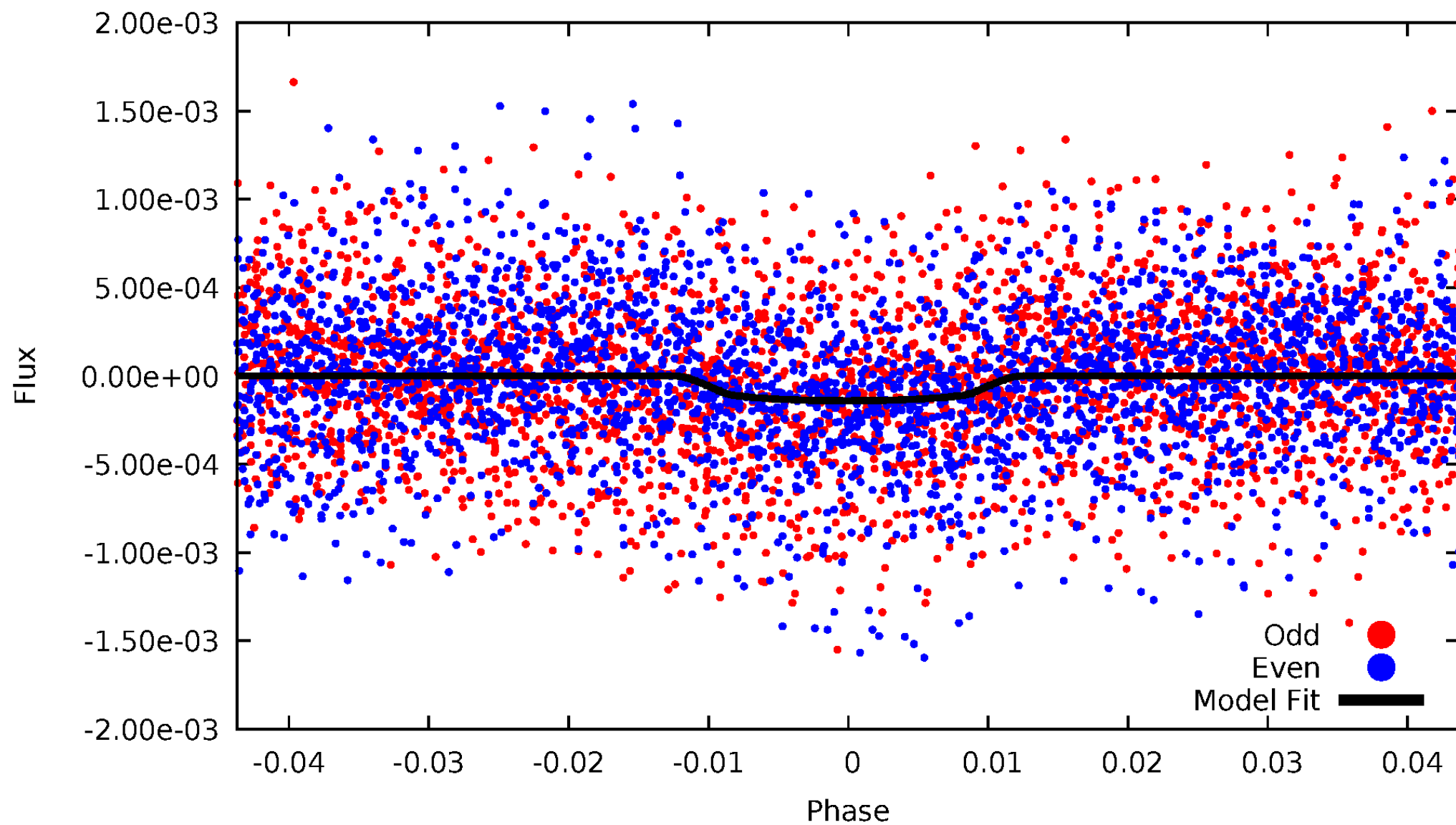
TCE 008460634-01





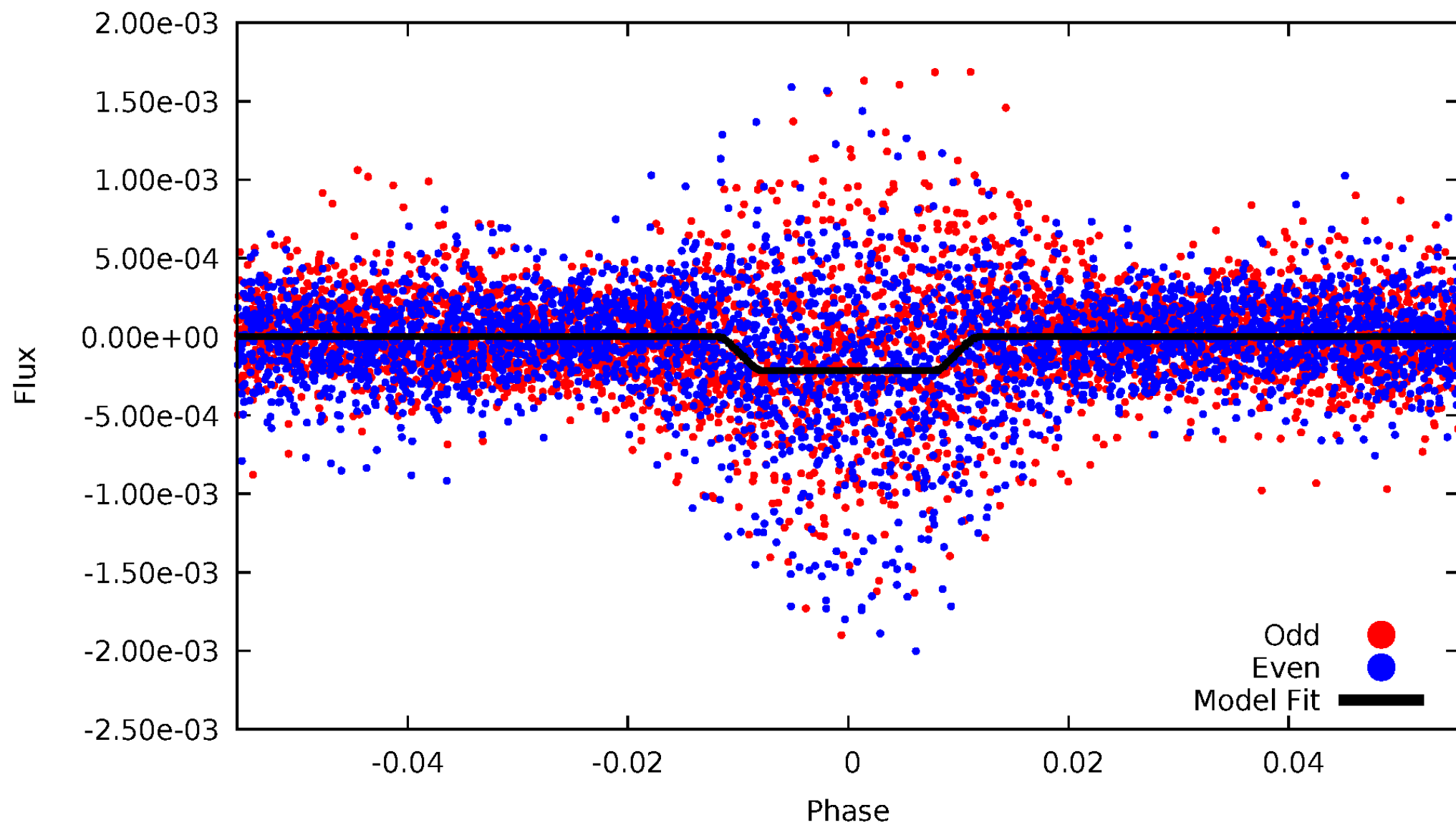
# DV Odd/Even

TCE 008460634-01

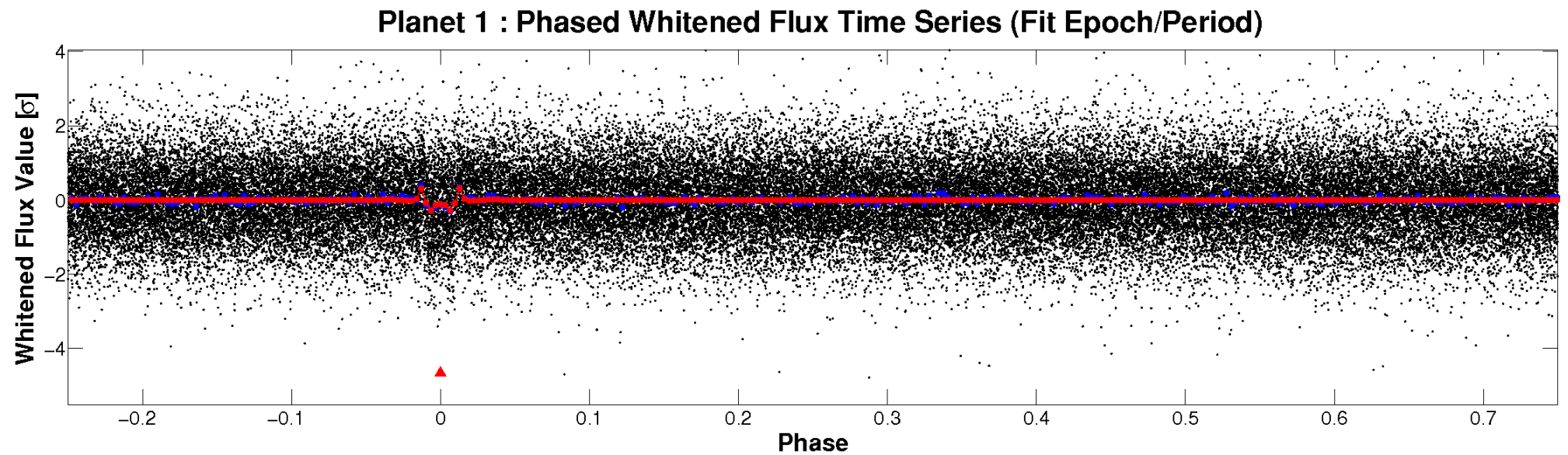
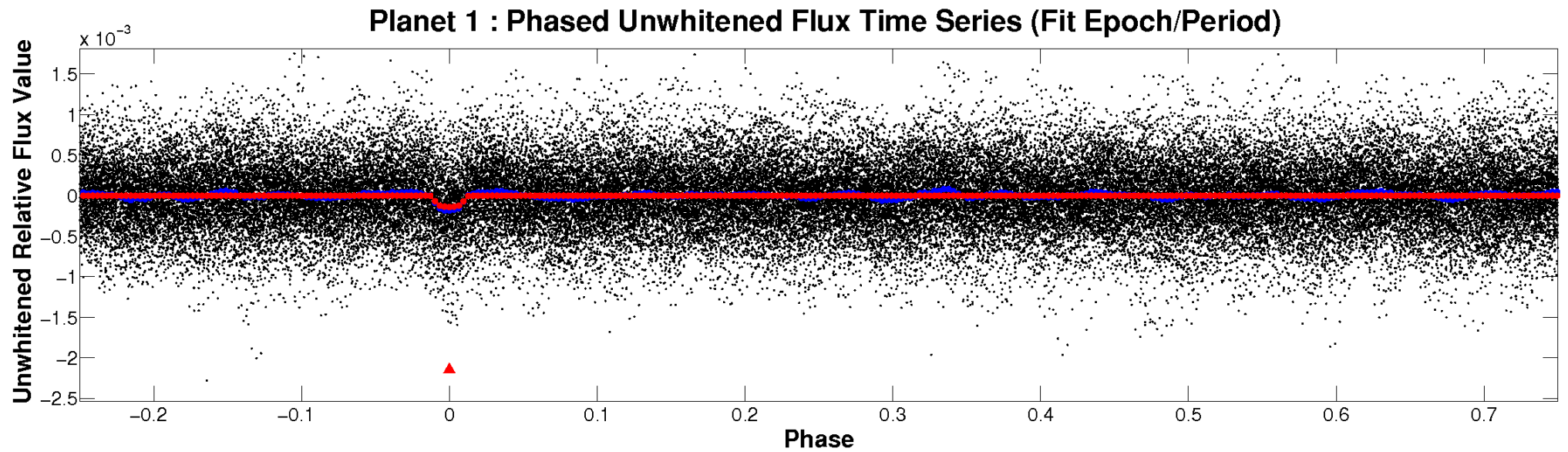


# ALT Odd/Even

TCE 008460634-01

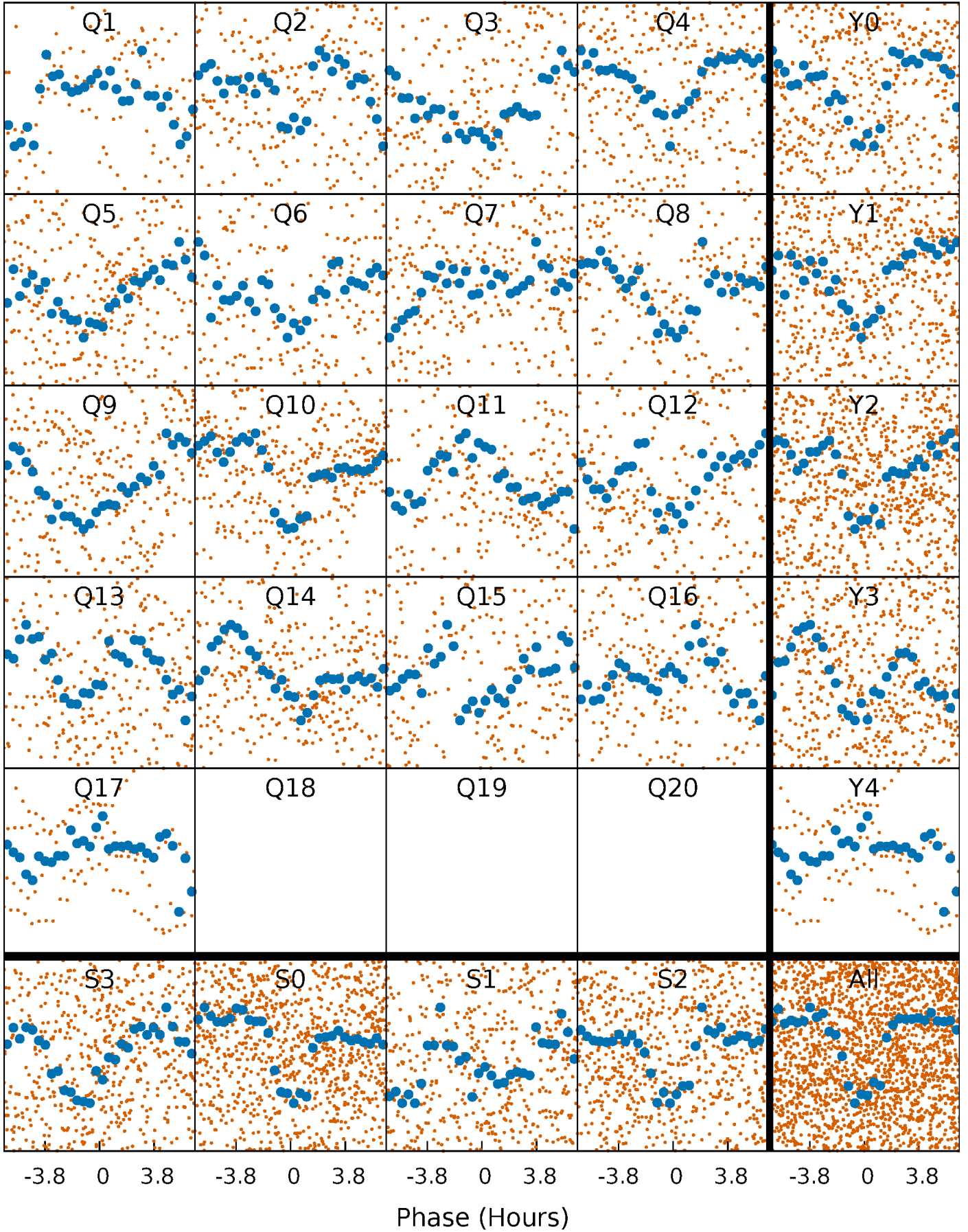


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

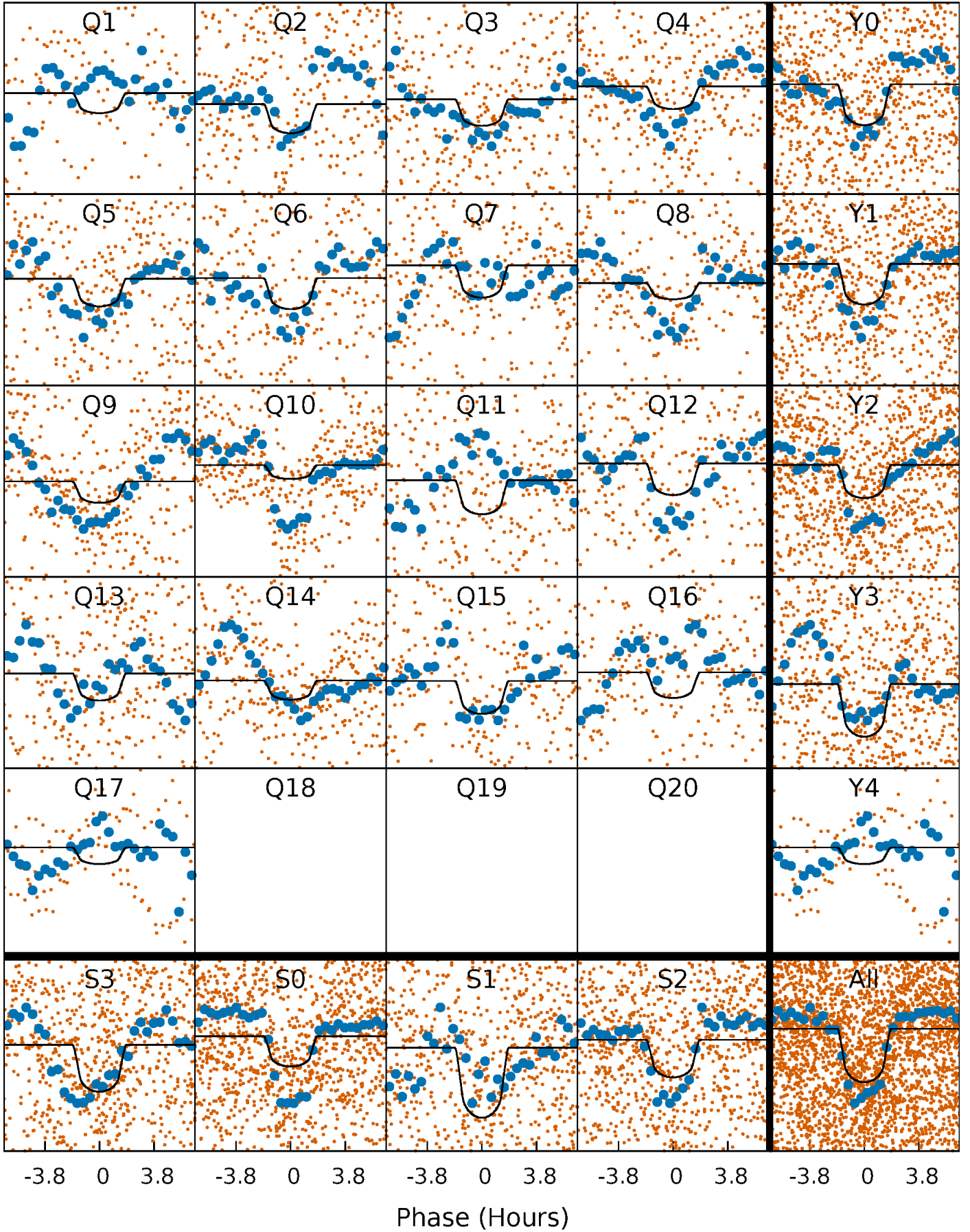
TCE 008460634-01   P= 6.352181 Days    $T_0=134.197181$  (BKJD)





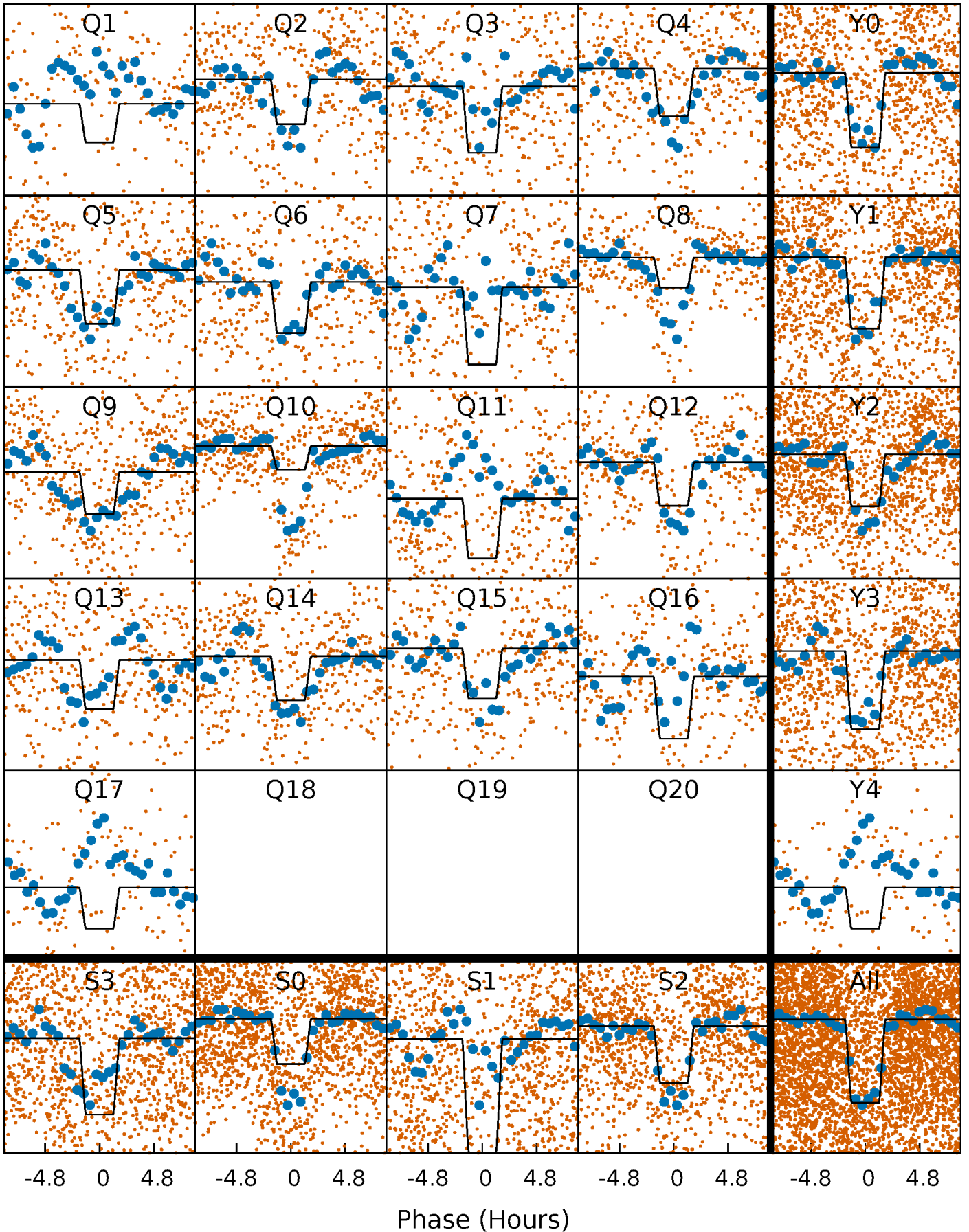
# DV Quarter-Phased Transit Curves

TCE 008460634-01 P= 6.352181 Days  $T_0=134.197181$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

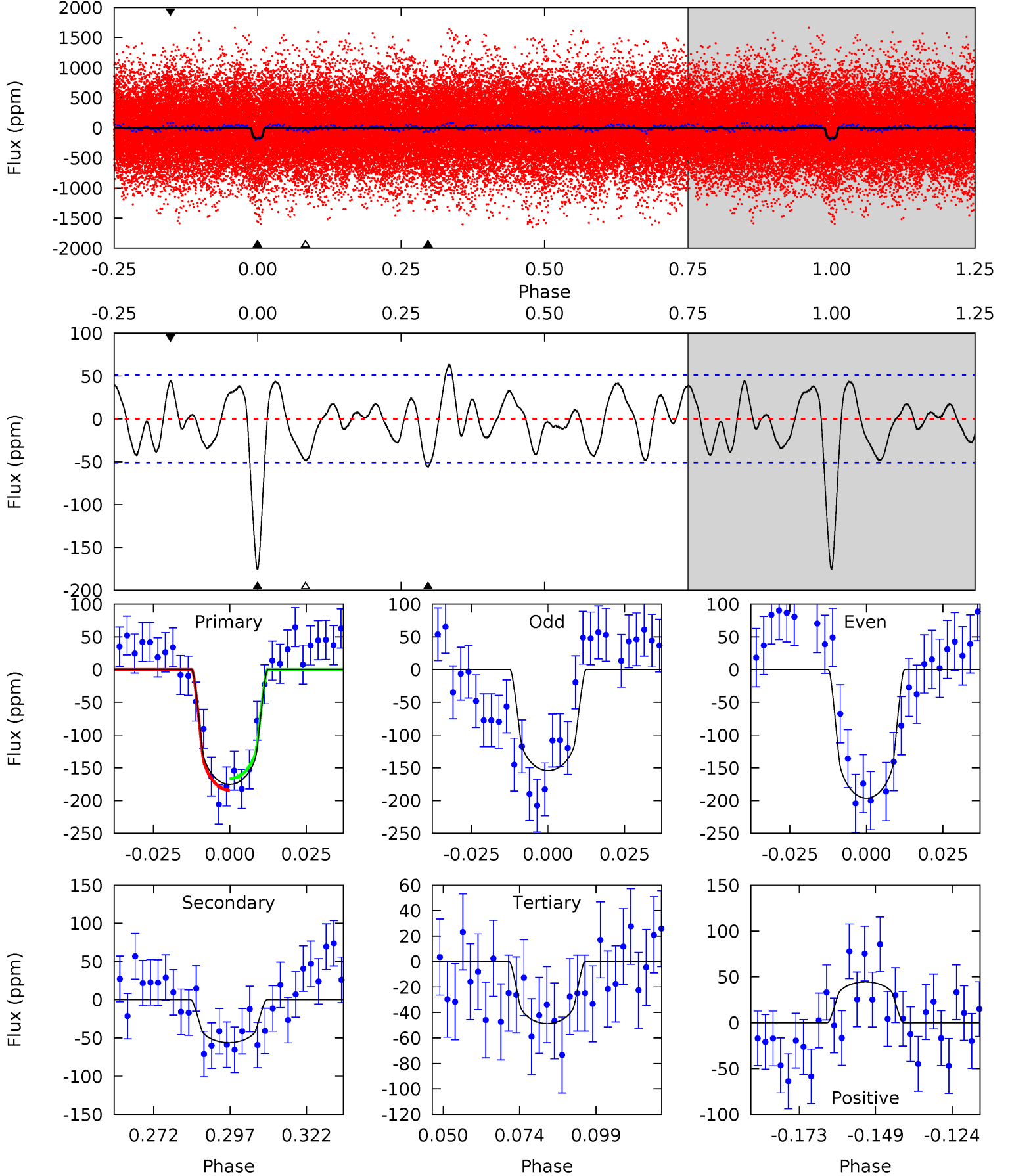
TCE 008460634-01 P= 6.352114 Days  $T_0=134.201377$  (BKJD)



# DV Model-Shift Uniqueness Test

008460634-01, P = 6.352181 Days, E = 127.845000 Days

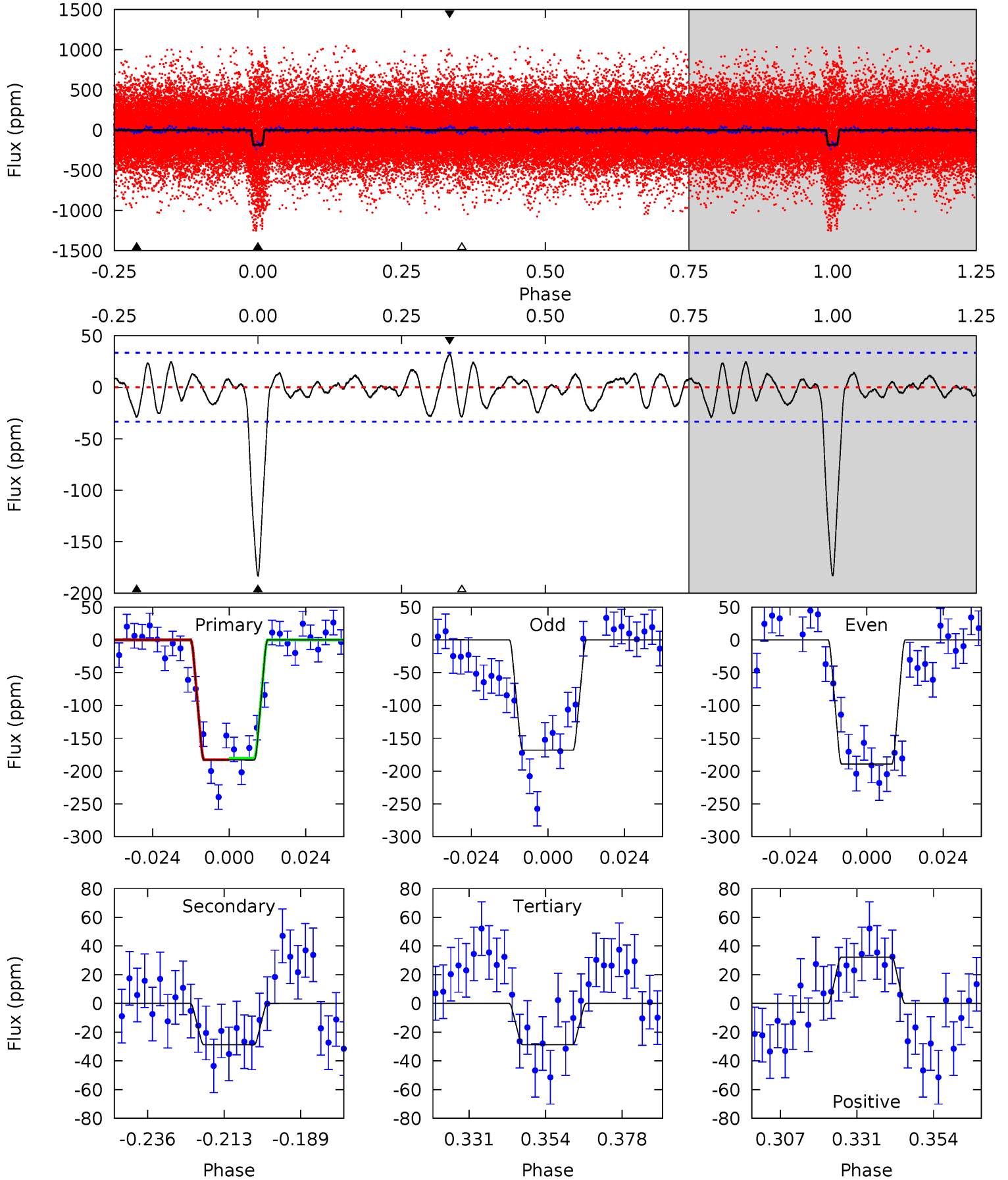
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.6	5.31	4.61	4.21	4.85	2.24	2.28	12.0	12.4	0.70	1.10	2.00	1.04	0.26	0.85



# Alt Model-Shift Uniqueness Test

008460634-01, P = 6.352114 Days, E = 127.849263 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
26.6	4.18	4.16	4.69	4.86	2.26	1.64	22.4	21.9	0.01	-0.51	1.52	1.09	0.15	0.16





### Stellar Parameters For KIC 008460634

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4820^{+43}_{-100}$	$2.471^{+0.027}_{-0.033}$	$-0.240^{+0.100}_{-0.150}$	$13.654^{+2.604}_{-2.893}$	$2.009^{+0.832}_{-0.666}$	$0.001^{+0.000}_{-0.000}$
	+1%/-2%	+1%/-1%	+42%/-62%	+19%/-21%	+41%/-33%	+32%/-11%
Source	SPE74	AST9	SPE74	DSEP		

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

### Secondary Eclipse Parameters for KIC 008460634-01 / KOI 7887.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-56 \pm 11$	$19.54^{+4.50}_{-4.26}$	$3774^{+112}_{-113}$	$3437^{+498}_{-516}$	$0.574^{+0.327}_{-0.191}$
Alt.	$-29 \pm 7$	$22.10^{+4.79}_{-4.24}$	$3774^{+102}_{-120}$	$-2787^{+5491}_{-355}$	$0.235^{+0.116}_{-0.083}$

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

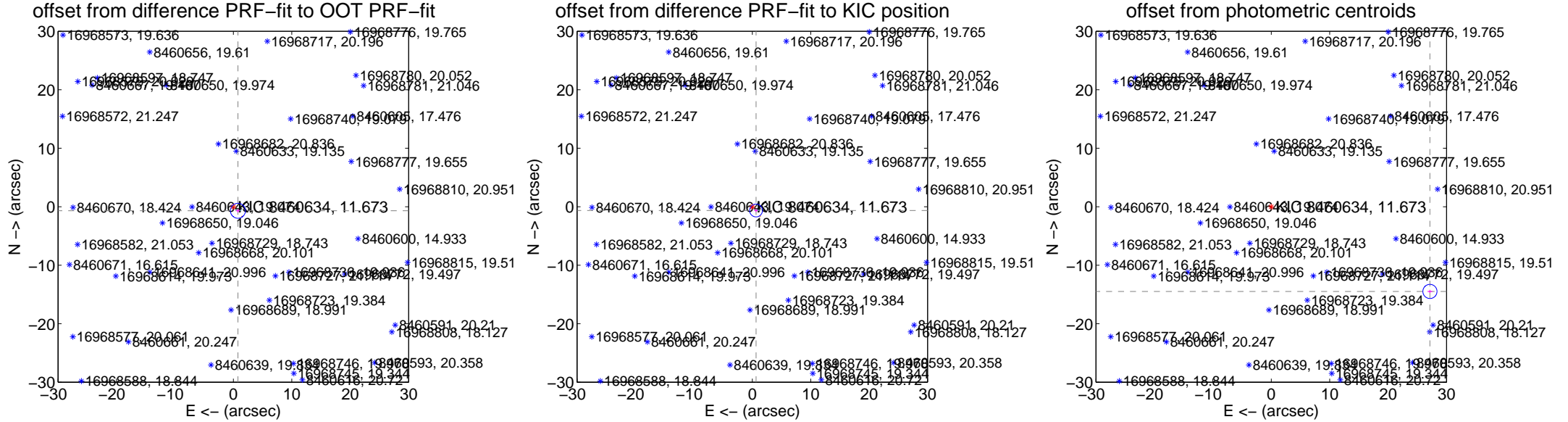
## DV Centroid Data

Supplemental centroid analysis for 008460634-01. **Kepler magnitude: 11.67.** Transit SNR 10.51

**There are 2 quarters with good PRF difference image offsets**

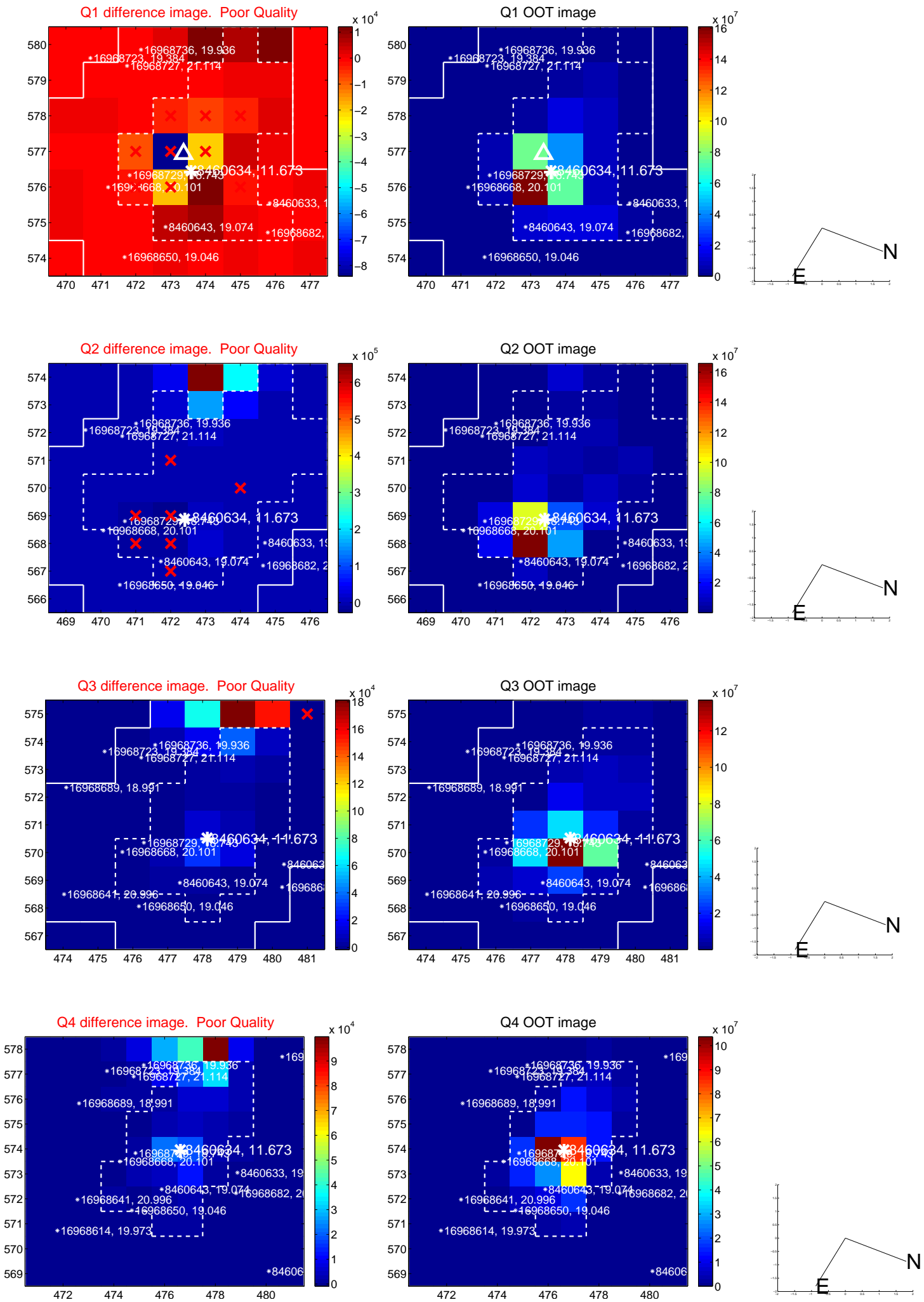
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.045 \pm 0.427$	2.45	$-0.783 \pm 0.319$	$-0.692 \pm 0.314$
PRF-fit source offset from KIC position	$0.908 \pm 0.365$	2.49	$-0.641 \pm 0.274$	$-0.644 \pm 0.281$
photometric centroid source offset	<b><math>30.78 \pm 0.40</math></b>	<b>76.38</b>	$-27.16 \pm 0.43$	$-14.48 \pm 0.27$

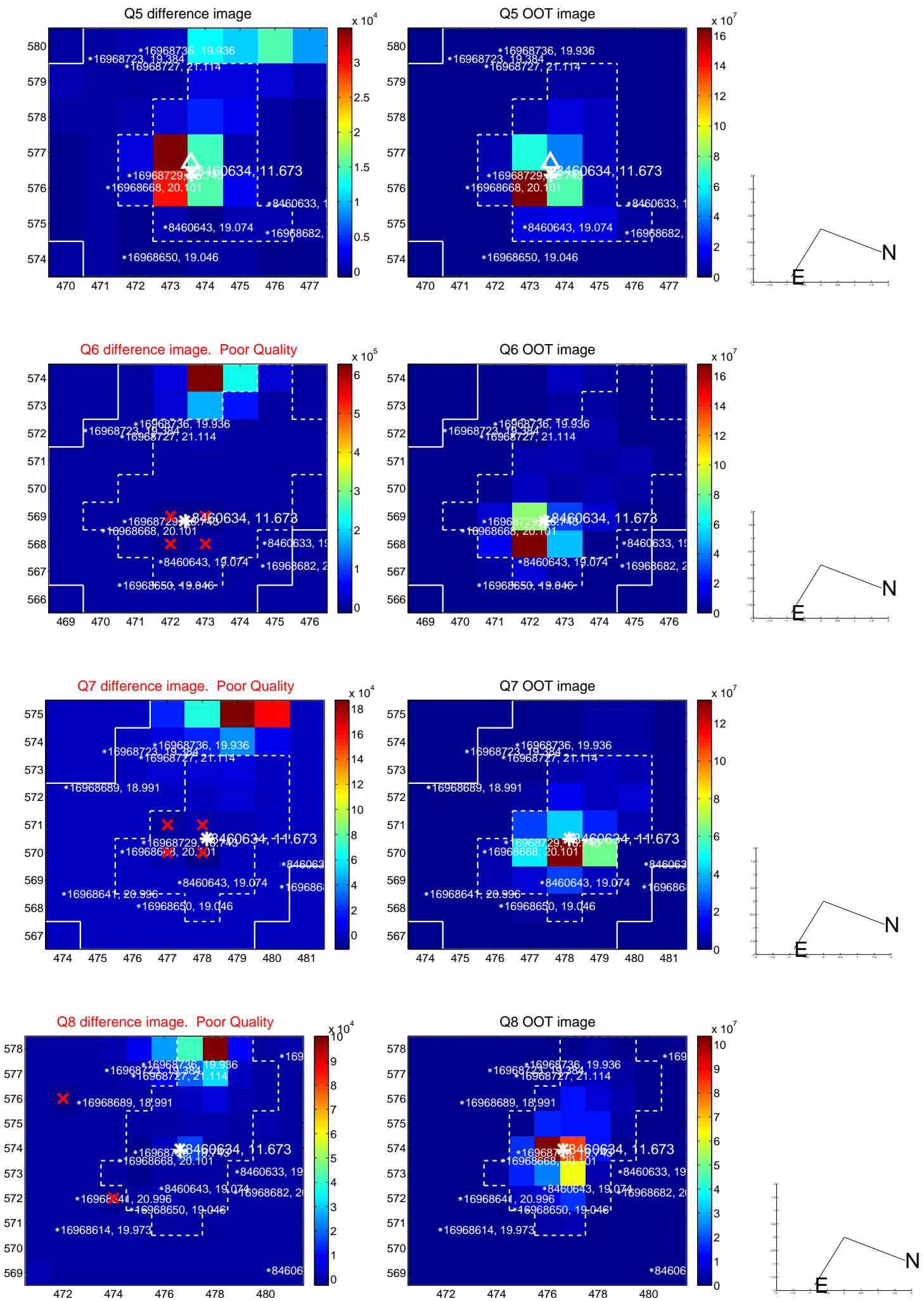


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

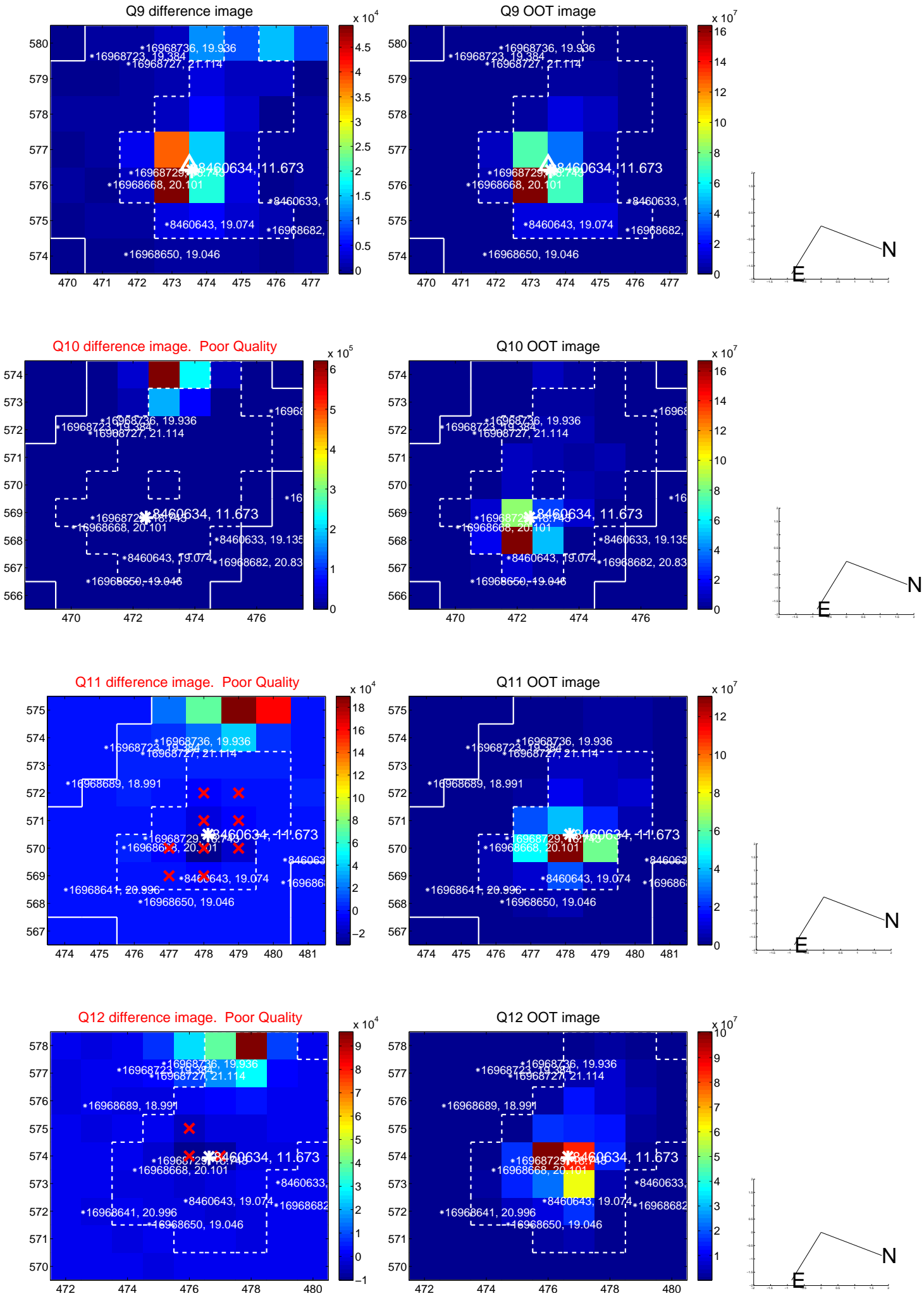


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

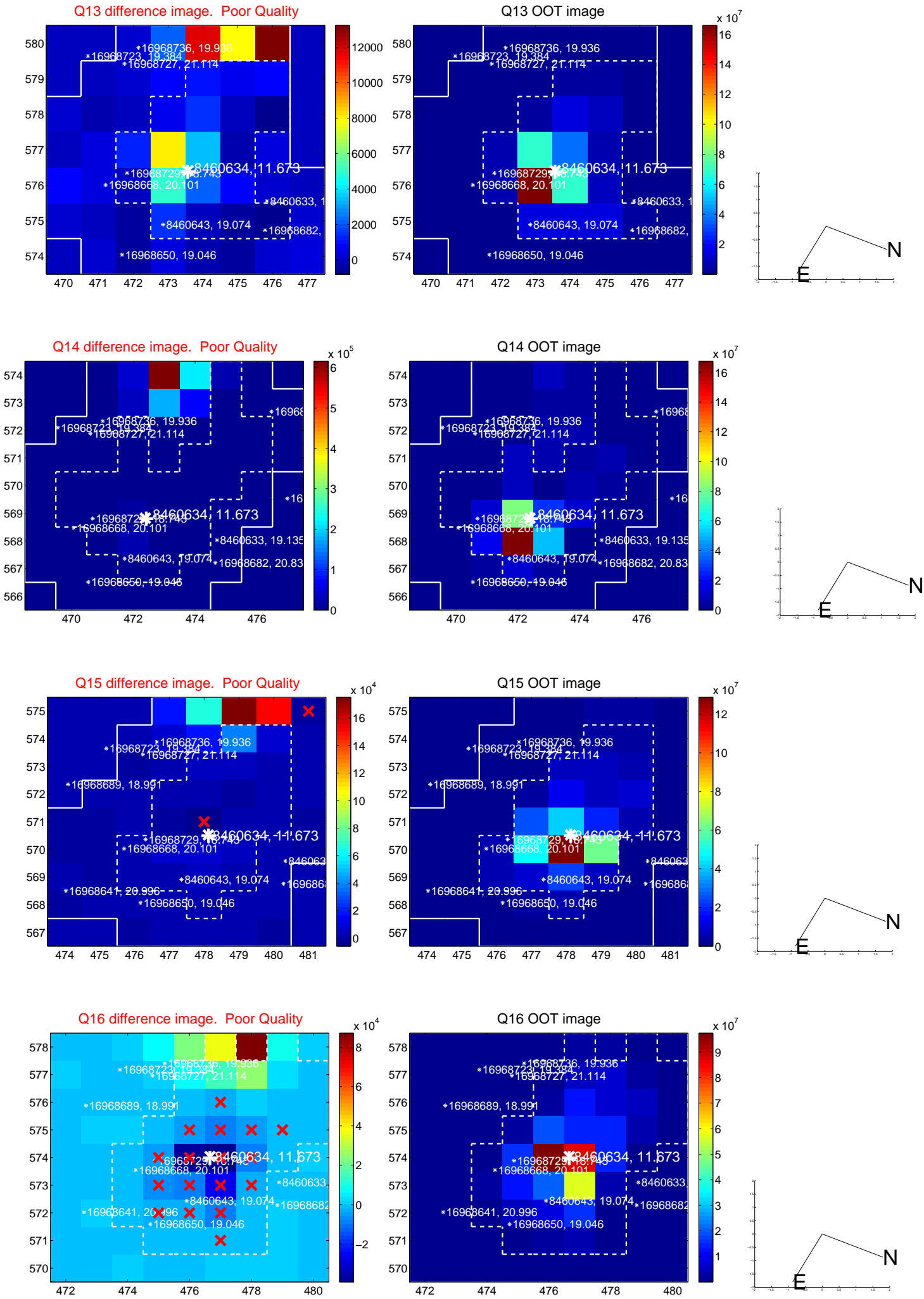




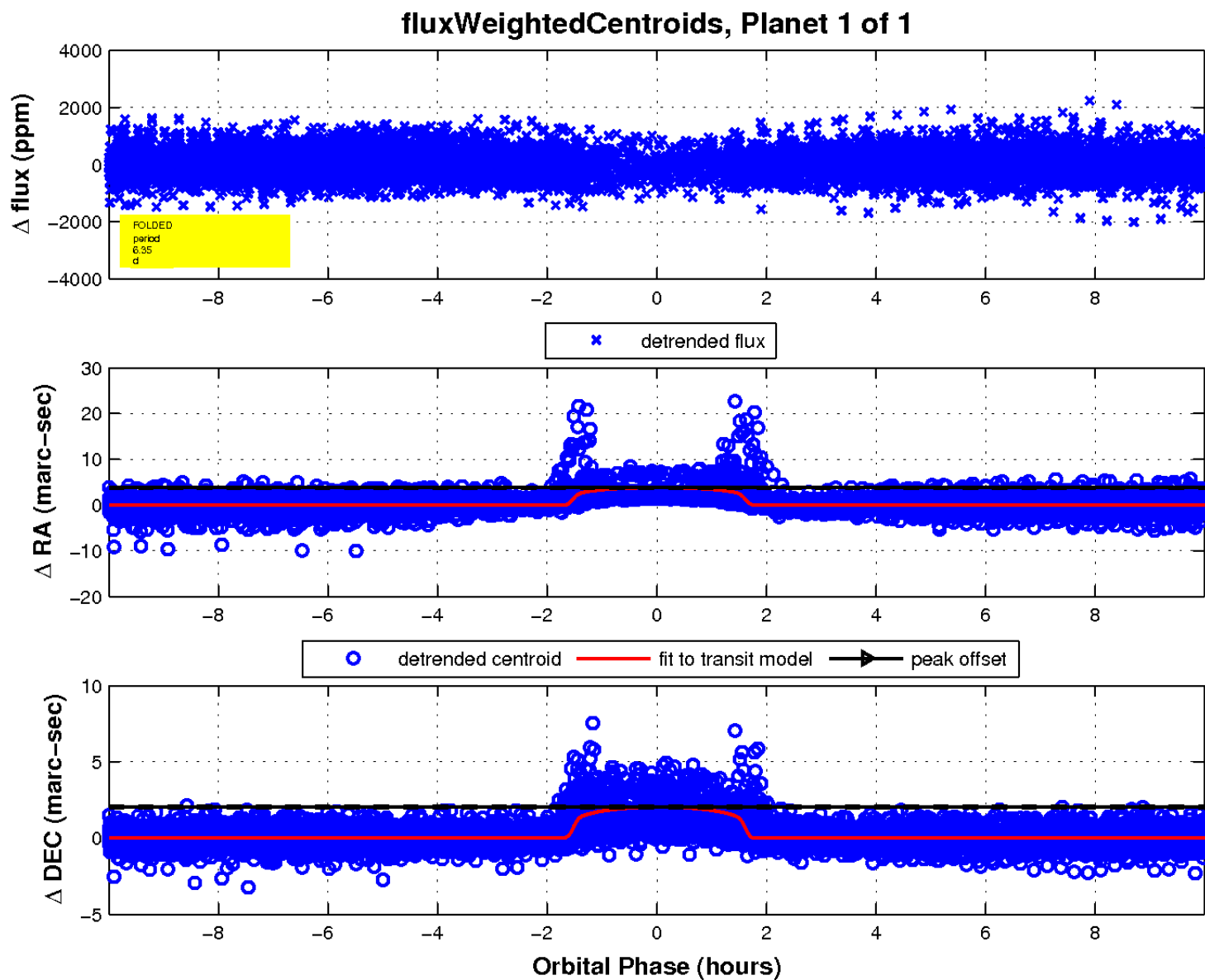
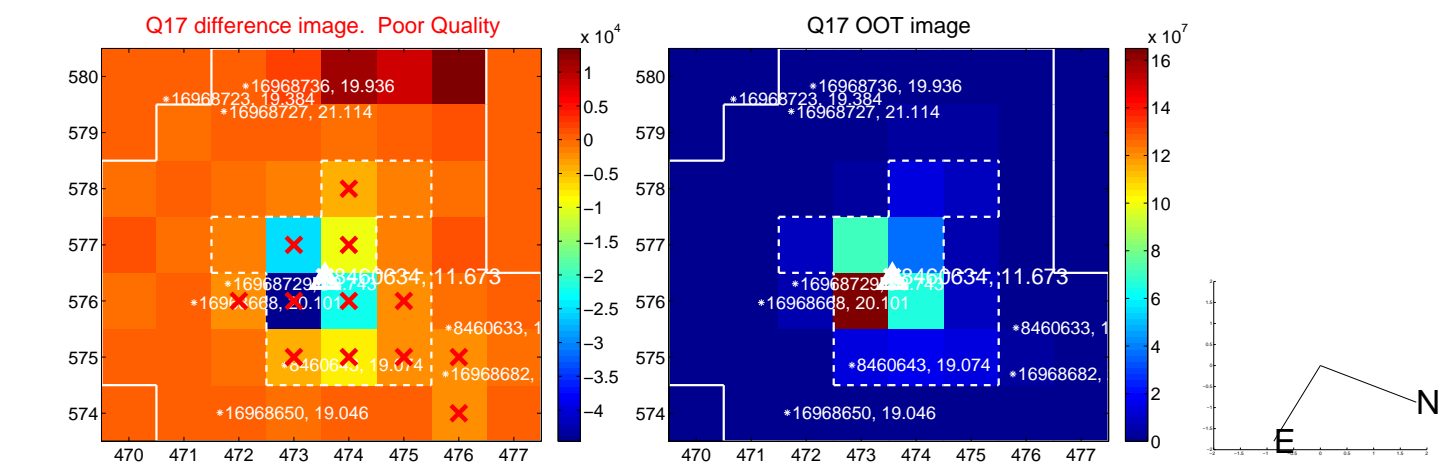
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

