

# KIC 008462258

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008462258-01	OBS	1253.01	3.611534	133.337051	1908.0	7.556	122.5	88.2	0.80	5203	4.72	241.23

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008462258-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET—HALO_GHOST

**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.

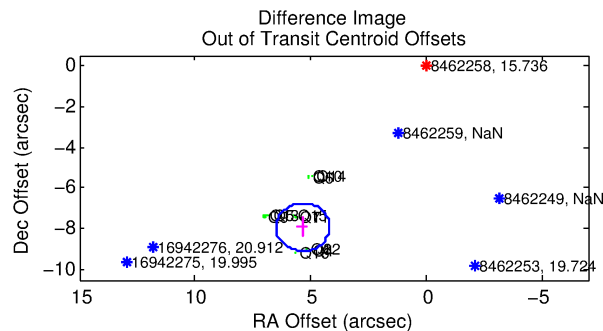
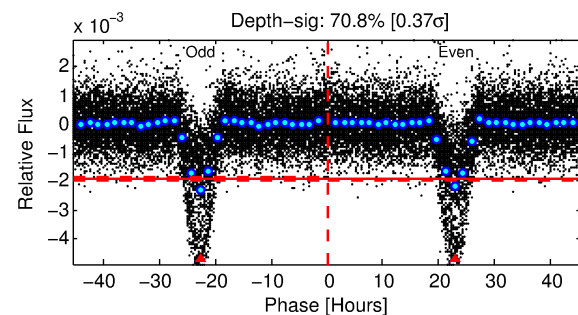
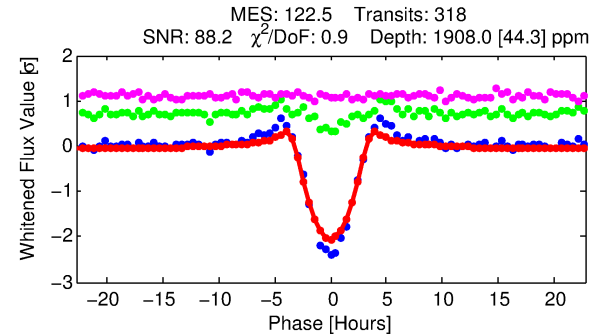
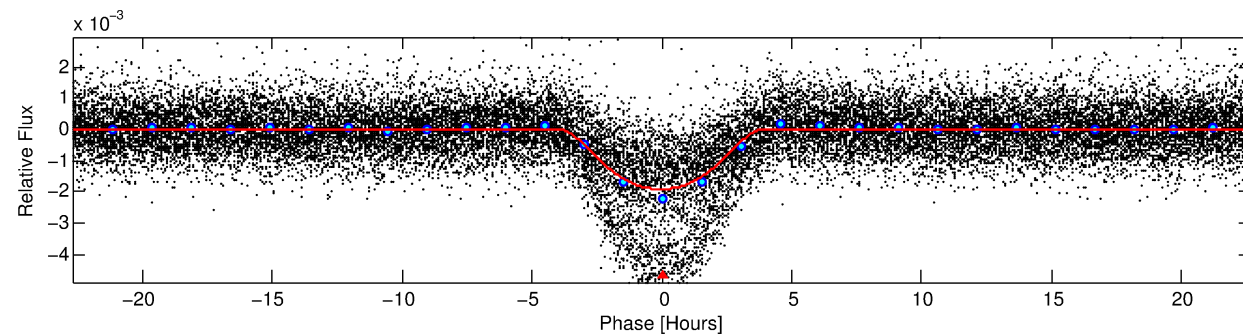
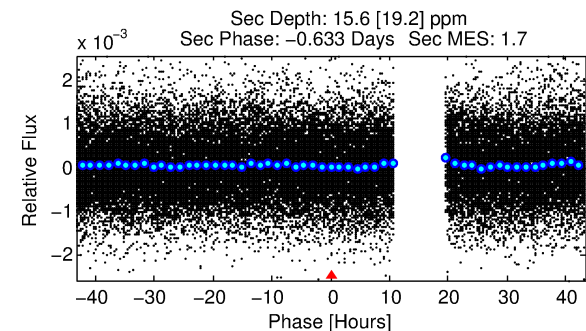
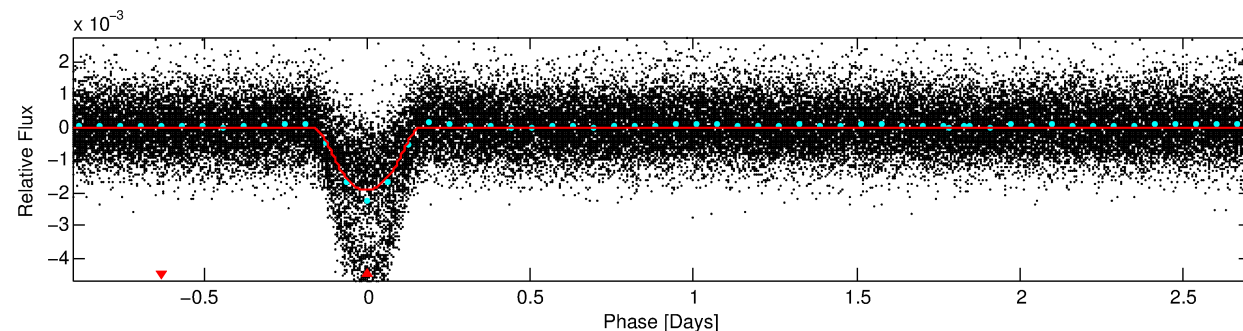
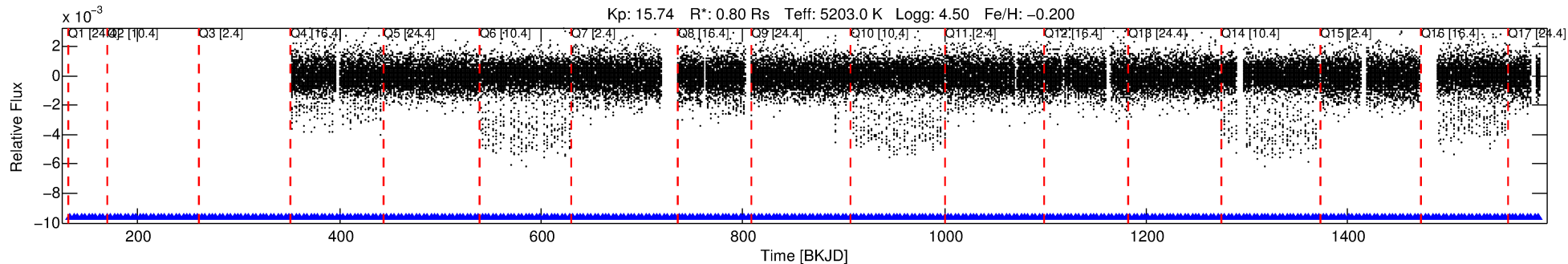
## Ephemeris Match Information For 008462258-01

No Significant Match Found

# DV One-Page Summary

KIC: 8462258 Candidate: 1 of 1 Period: 3.612 d  
KOI: K01253.01 Corr: 0.944

Kp: 15.74 R\*: 0.80 Rs Teff: 5203.0 K Logg: 4.50 Fe/H: -0.200



## DV Fit Results:

Period = 3.61153 [0.00001] d  
Epoch = 133.3371 [0.0021] BKJD  
Rp/R\* = 0.0540 [0.0022]  
a/R\* = 1.91 [0.04]  
b = 0.95 [0.01]  
Seff = 241.23 [54.17]  
Teq = 1005 [56] K  
Rp = 4.73 [0.64] Re  
a = 0.0418 [0.0047] AU  
Ag = 0.67 [0.84] [-0.39σ]  
Teff = 1407 [437] K [0.91σ]

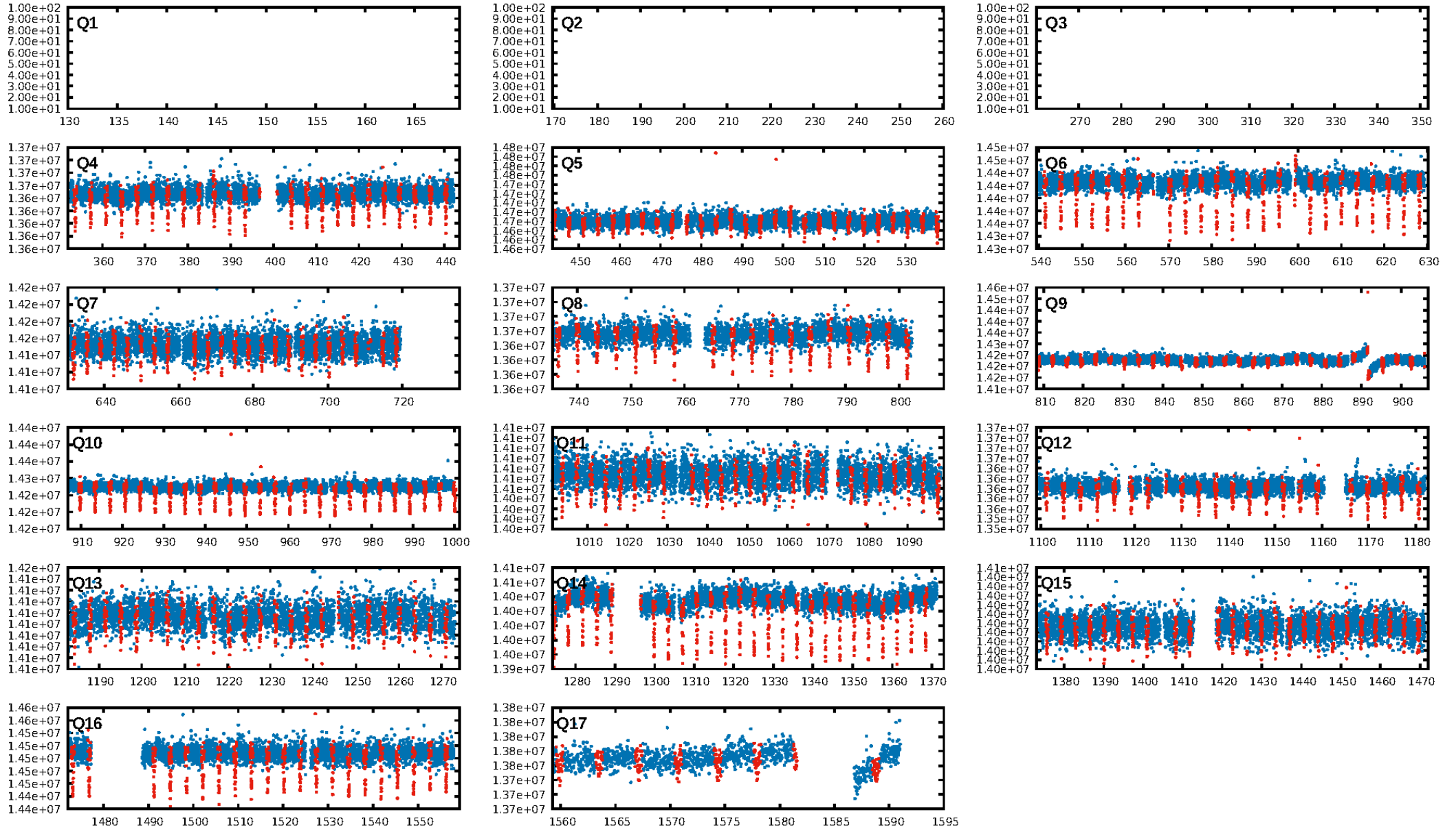
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [310/310]  
GhostDiagnostic-chr: -0.1127  
Centroid-sig: 0.0%  
Centroid-so: 25.931 arcsec [197.71σ]  
OotOffset-rm: 9.545 arcsec [24.61σ]  
KicOffset-rm: 10.386 arcsec [27.82σ]  
OotOffset-st: 3/3/4/3 [13]  
KicOffset-st: 3/3/4/3 [13]  
DiffImageQuality-fgm: 0.69 [9/13]  
DiffImageOverlap-fno: 1.00 [14/14]

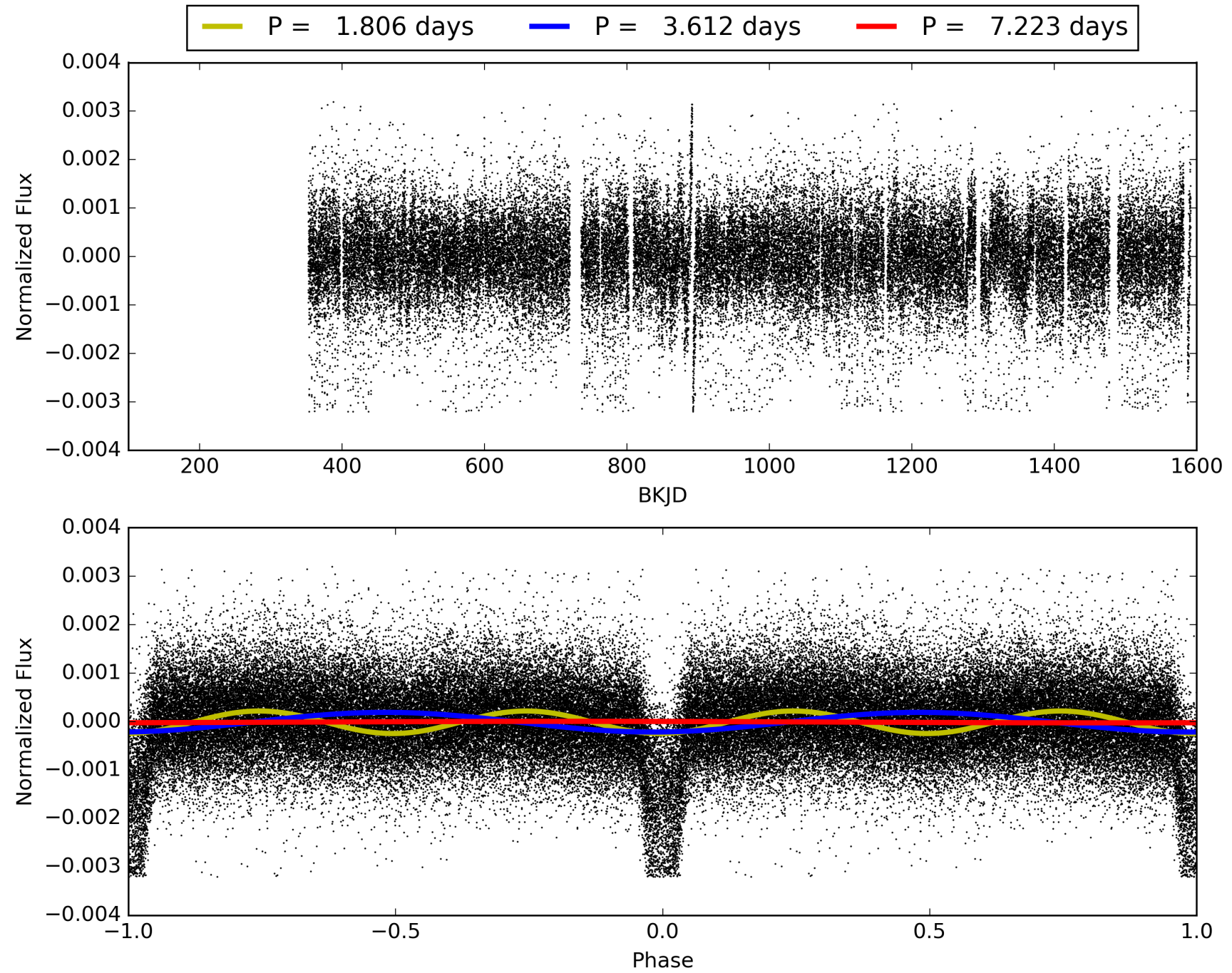
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 09:22:19 Z

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

# TCE 008462258-01, PDC Light Curves

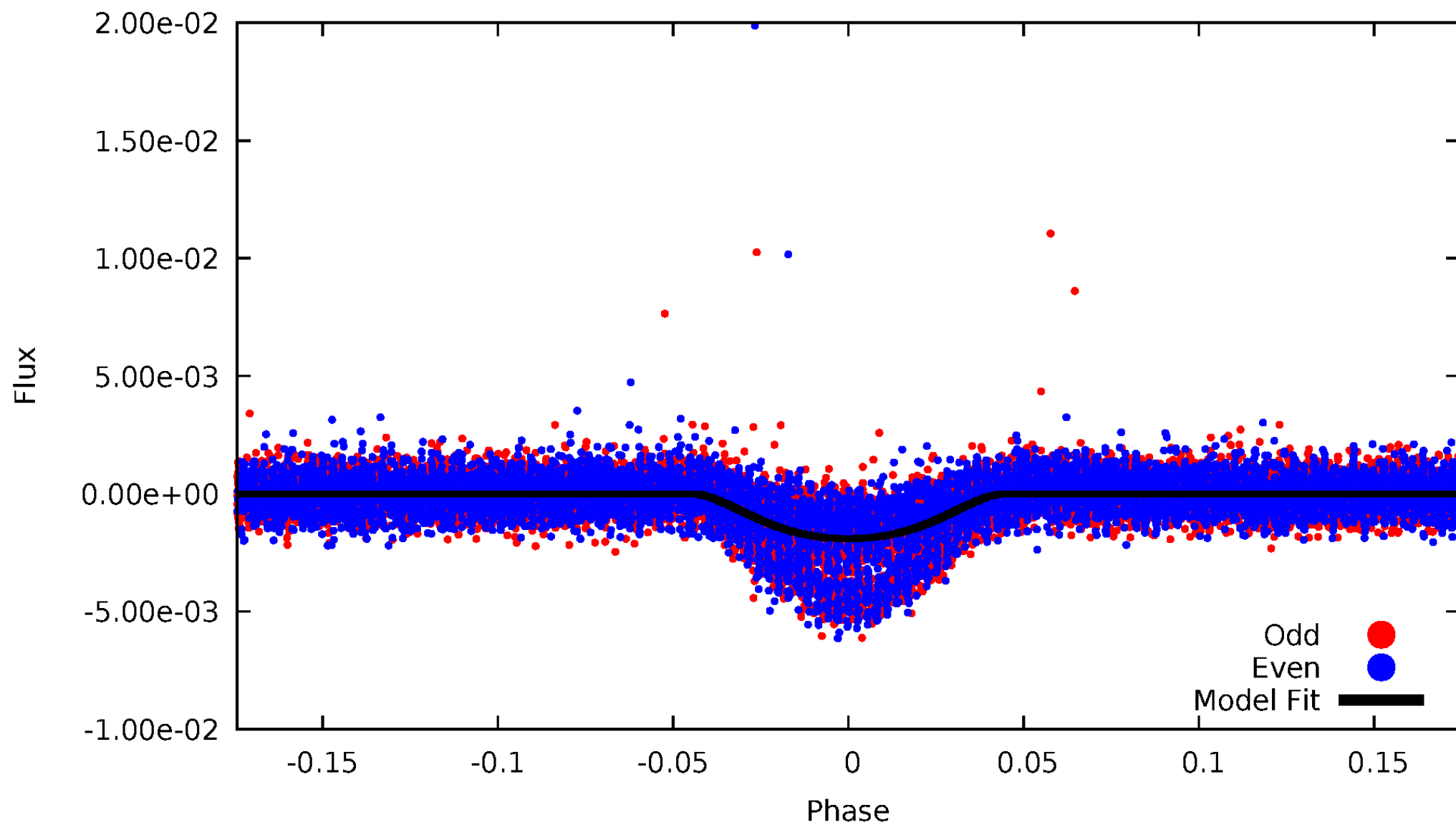


TCE 008462258-01



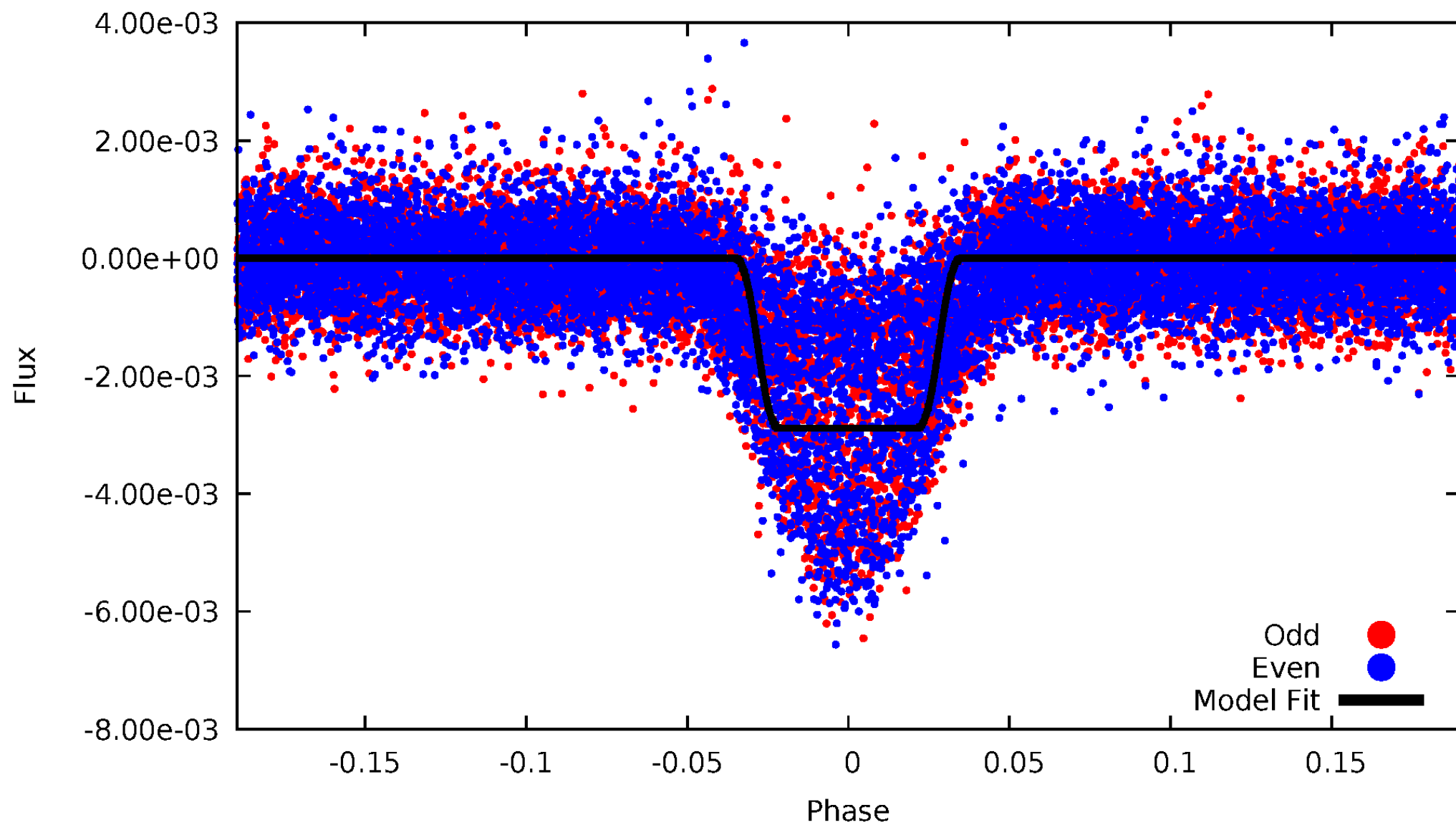
# DV Odd/Even

TCE 008462258-01



# ALT Odd/Even

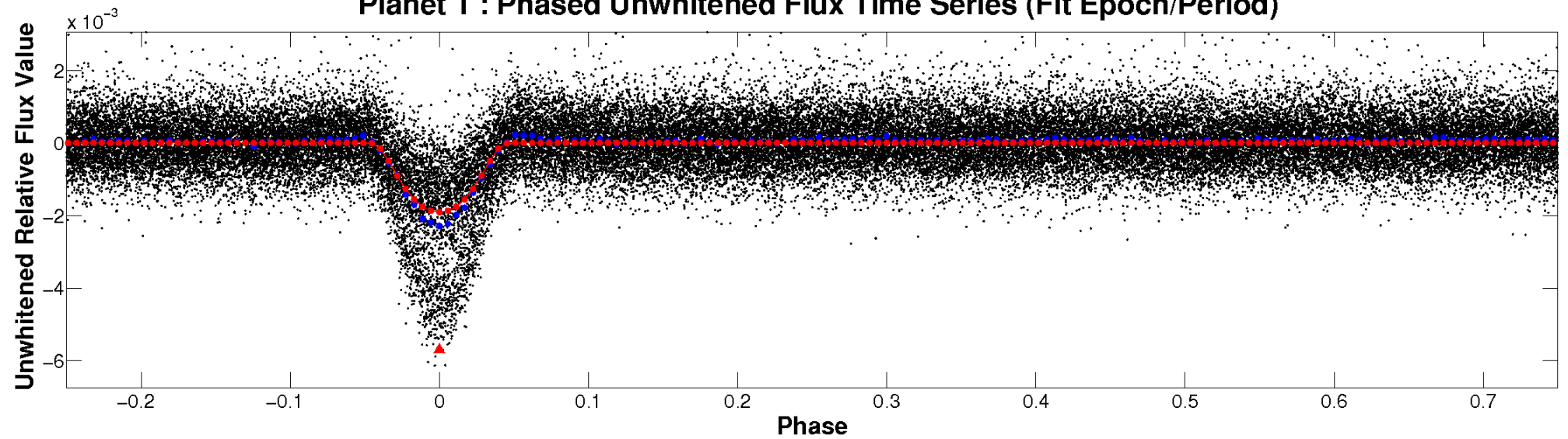
TCE 008462258-01



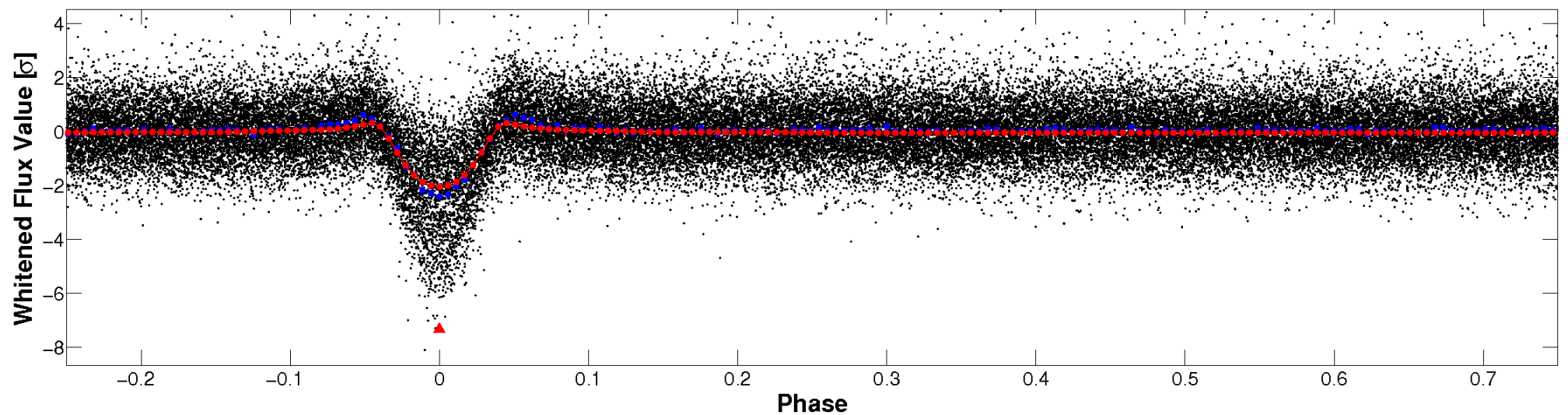


# Non-Whitened Vs. Whitened Light Curve

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

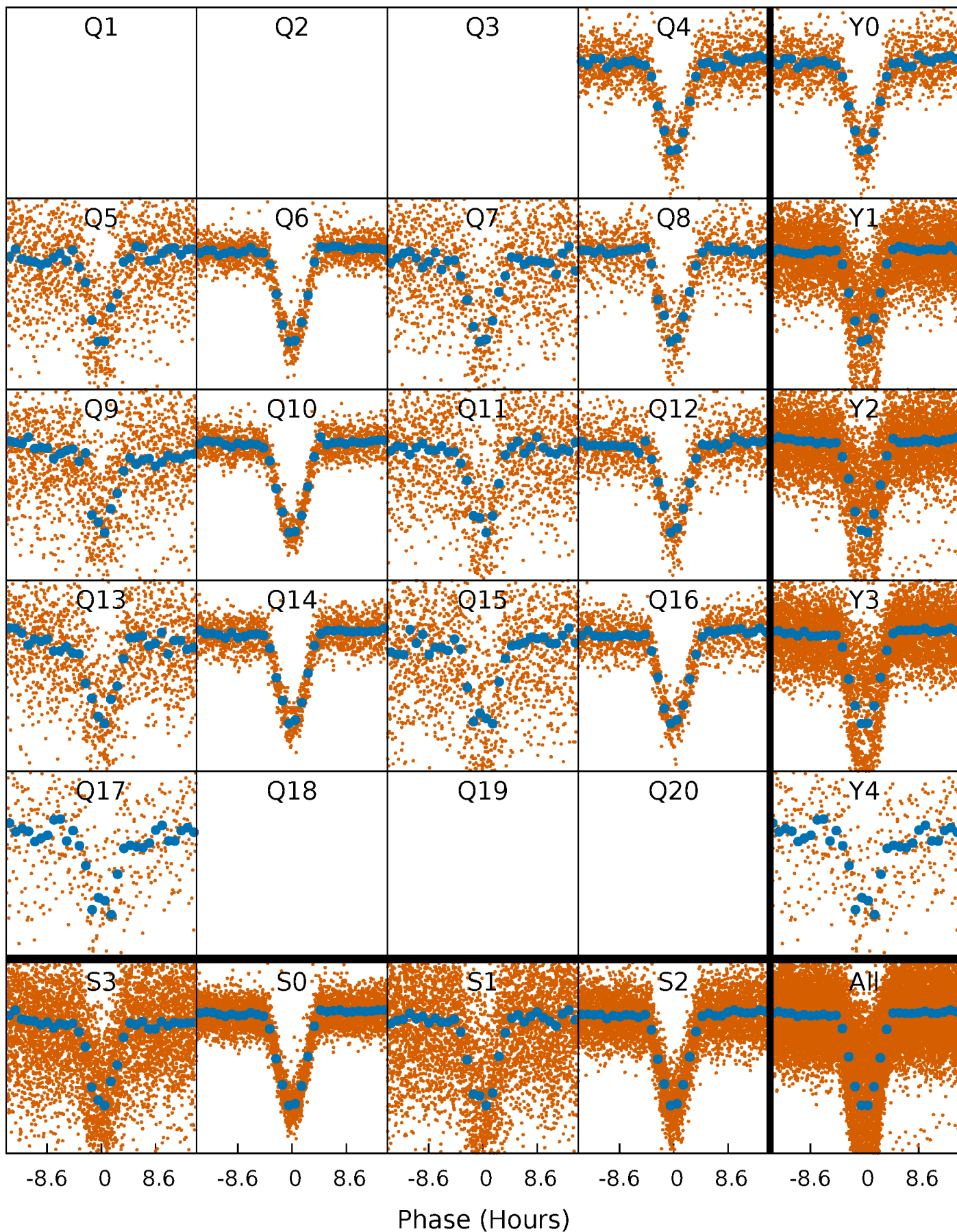


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

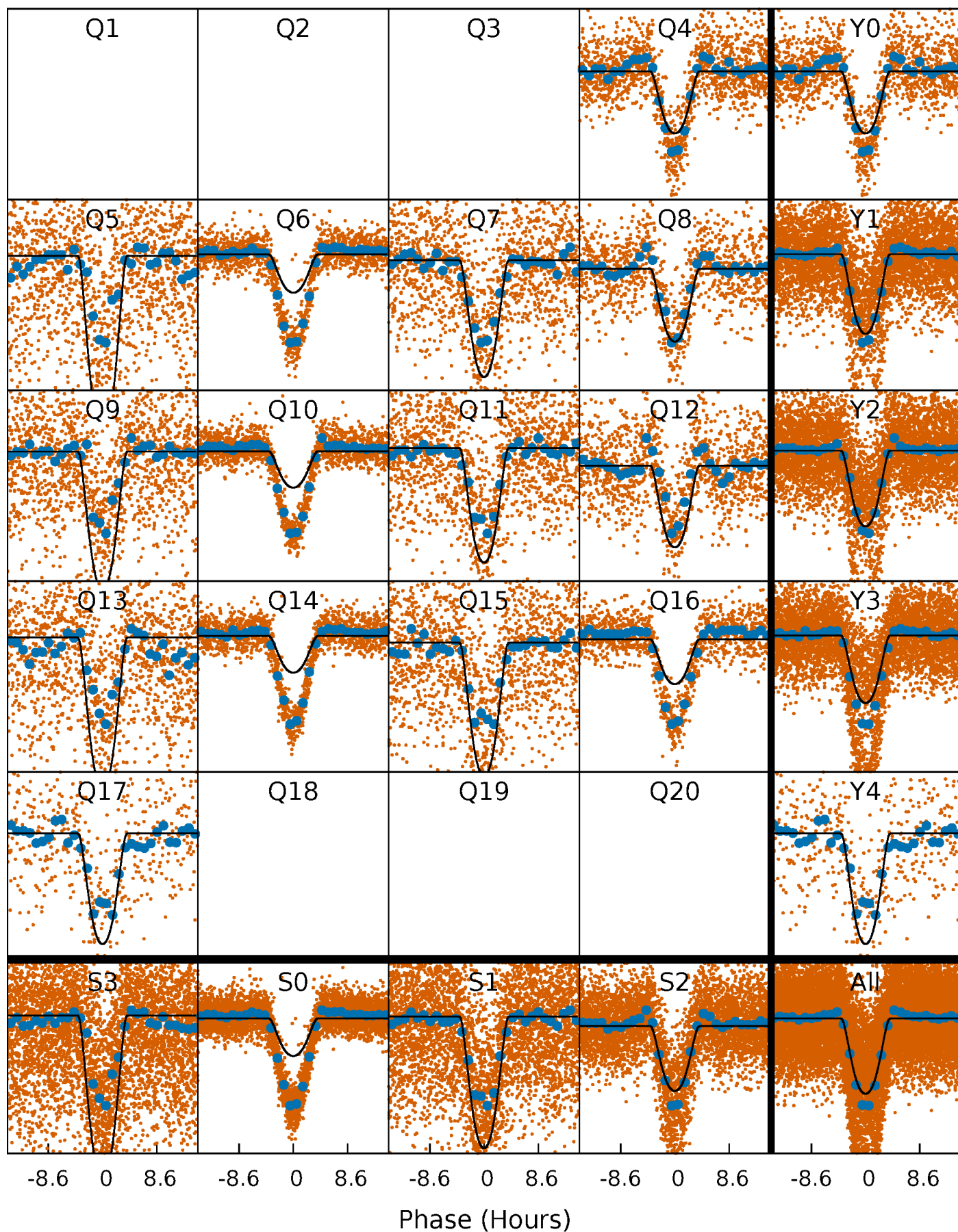
TCE 008462258-01 P= 3.611534 Days  $T_0=133.337051$  (BKJD)





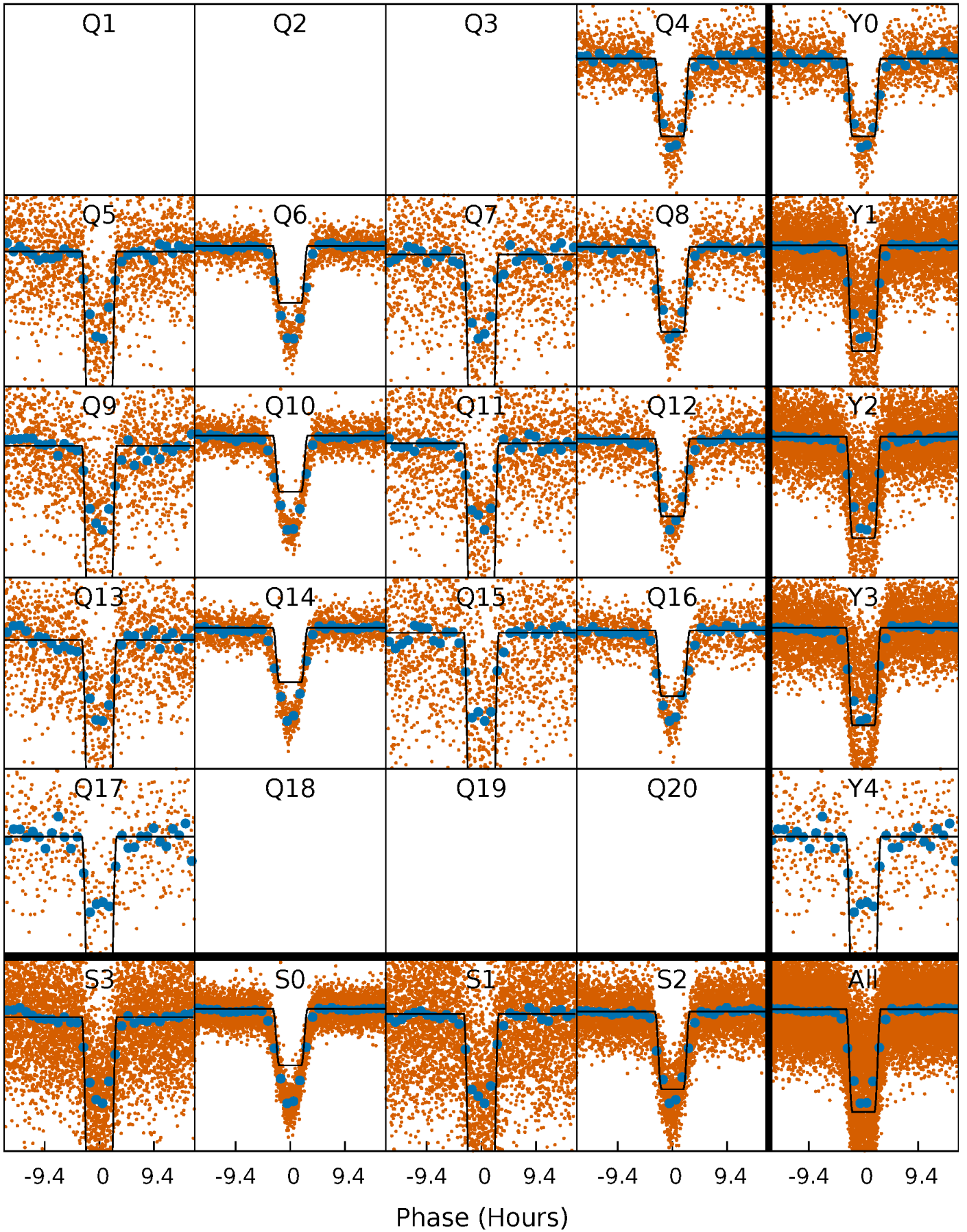
# DV Quarter-Phased Transit Curves

TCE 008462258-01 P= 3.611534 Days  $T_0=133.337051$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

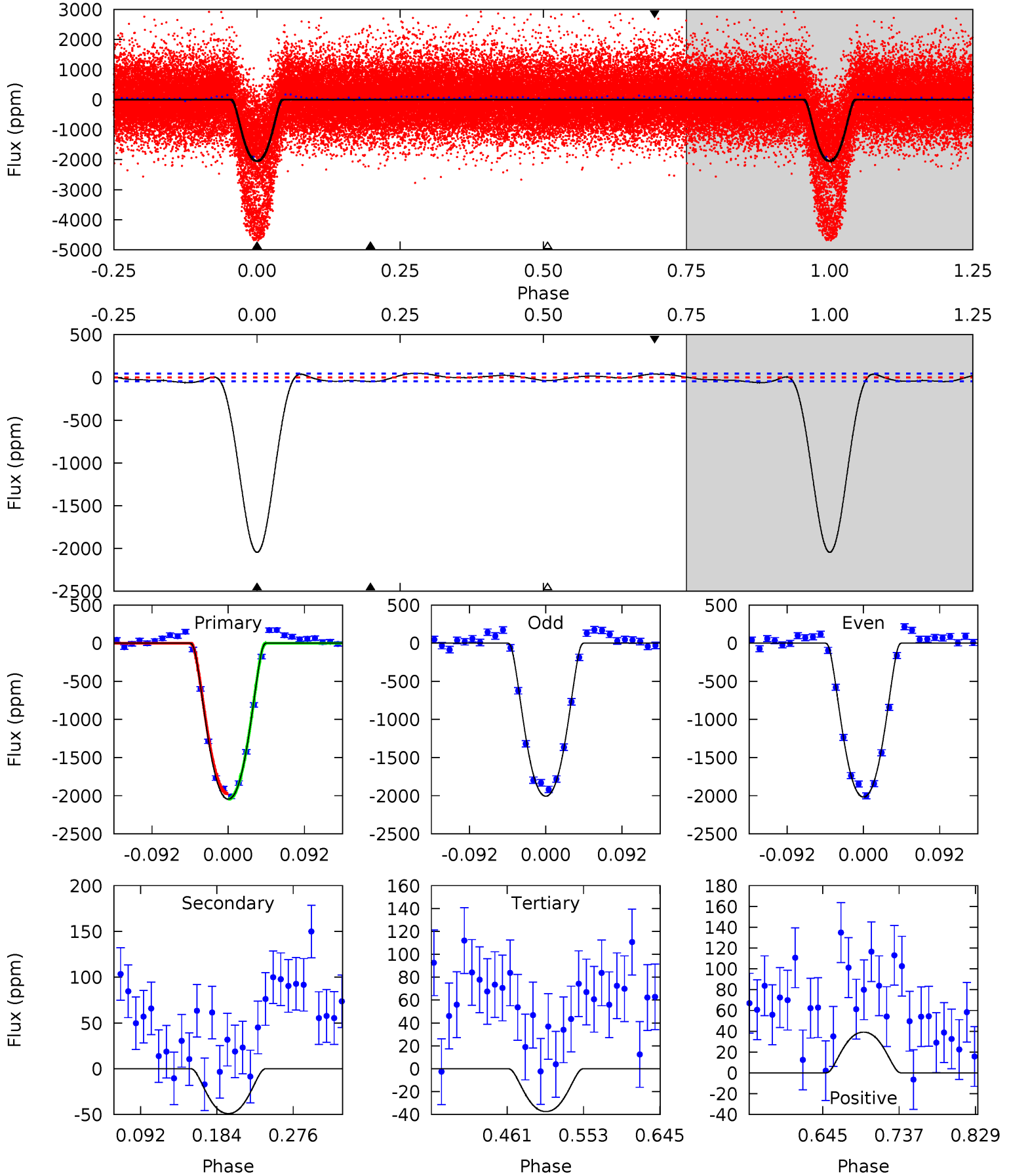
TCE 008462258-01 P= 3.611565 Days  $T_0=133.330307$  (BKJD)



# DV Model-Shift Uniqueness Test

008462258-01, P = 3.611534 Days, E = 133.337051 Days

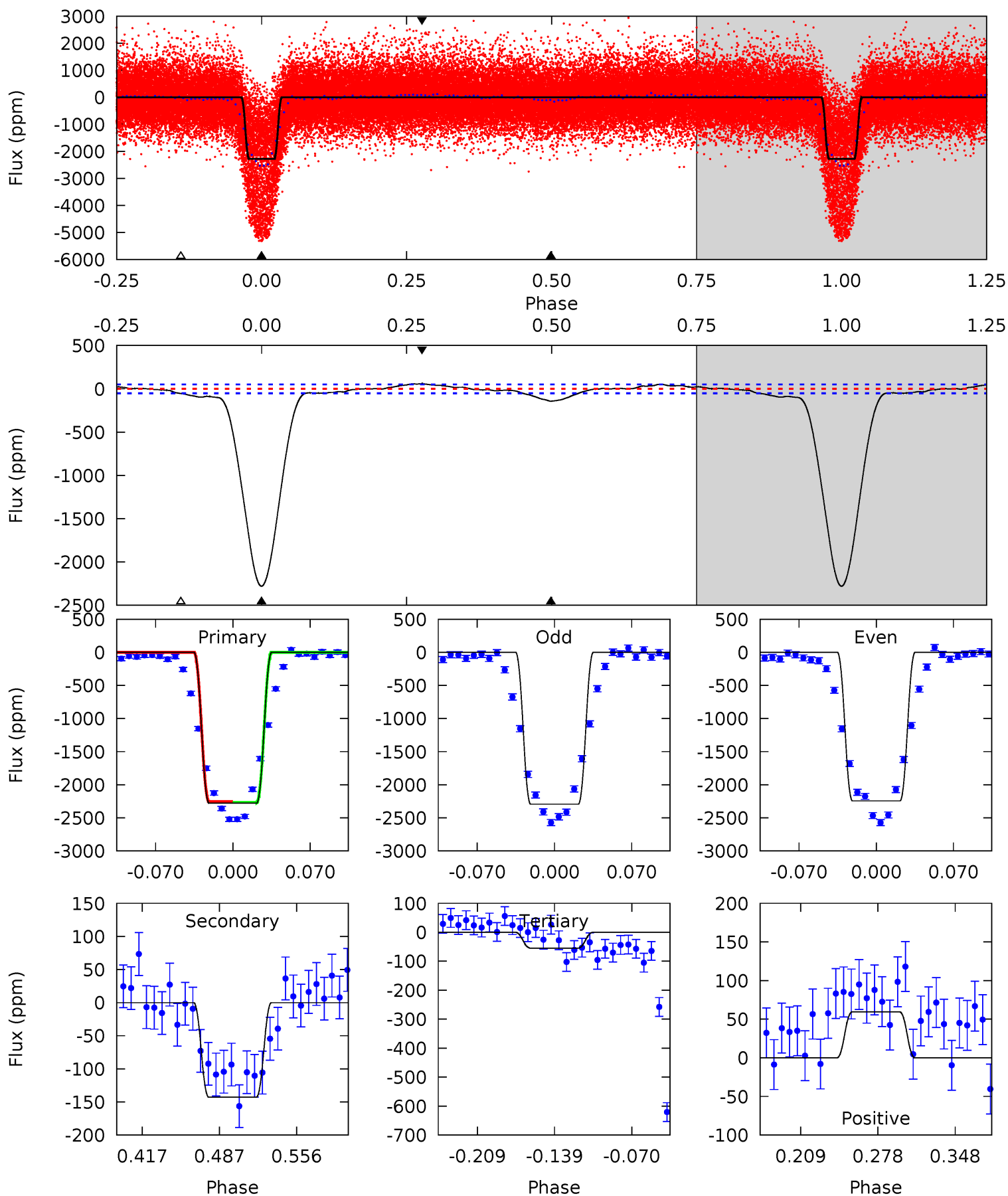
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
212.8	5.10	3.90	4.08	4.58	1.68	2.70	208.9	208.7	1.20	1.02	0.56	1.39	0.02	0



# Alt Model-Shift Uniqueness Test

008462258-01, P = 3.611565 Days, E = 133.330307 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
208.6	13.1	5.00	5.43	4.64	1.81	3.55	203.6	203.2	8.07	7.64	2.32	1.17	0.03	0.67



### Stellar Parameters For KIC 008462258

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5203^{+196}_{-179}$	$4.504^{+0.093}_{-0.085}$	$-0.200^{+0.300}_{-0.300}$	$0.802^{+0.103}_{-0.093}$	$0.750^{+0.114}_{-0.057}$	$2.046^{+0.837}_{-0.548}$
	+4%/-3%	+2%/-2%	+150%/-150%	+13%/-12%	+15%/-8%	+41%/-27%
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 008462258-01 / KOI 1253.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-49 \pm 10$	$4.76^{+0.43}_{-0.37}$	$1408^{+71}_{-70}$	$2608^{+90}_{-109}$	$2.114^{+0.528}_{-0.481}$
Alt.	$-143 \pm 11$	$4.77^{+0.41}_{-0.41}$	$1409^{+67}_{-67}$	$3052^{+85}_{-90}$	$6.169^{+1.203}_{-0.965}$

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



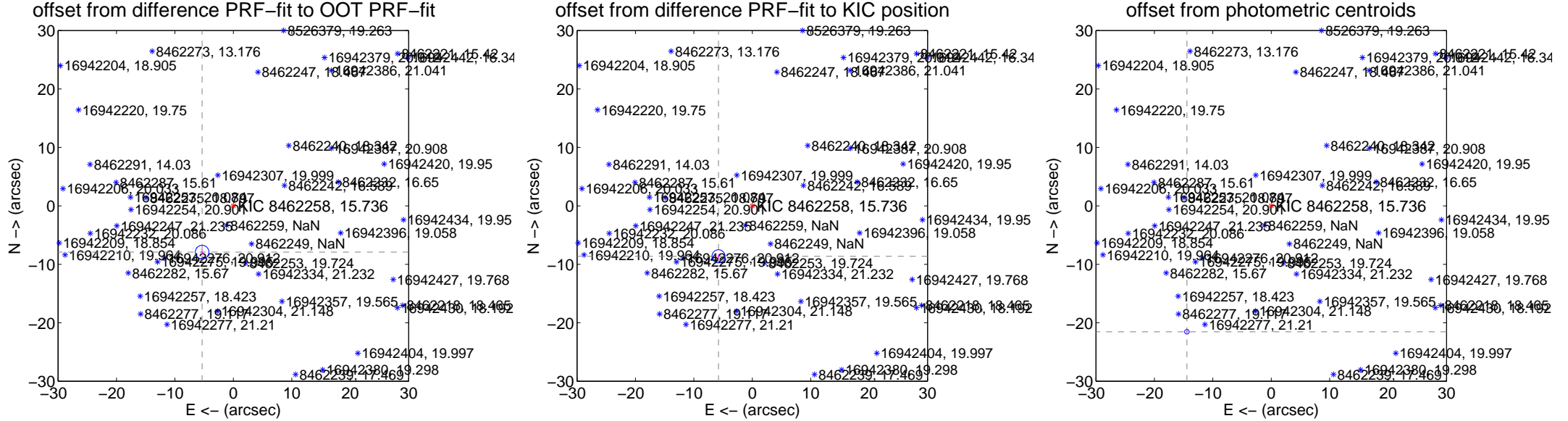
## DV Centroid Data

Supplemental centroid analysis for 008462258-01. Kepler magnitude: 15.74. Transit SNR 88.15

There are 9 quarters with good PRF difference image offsets

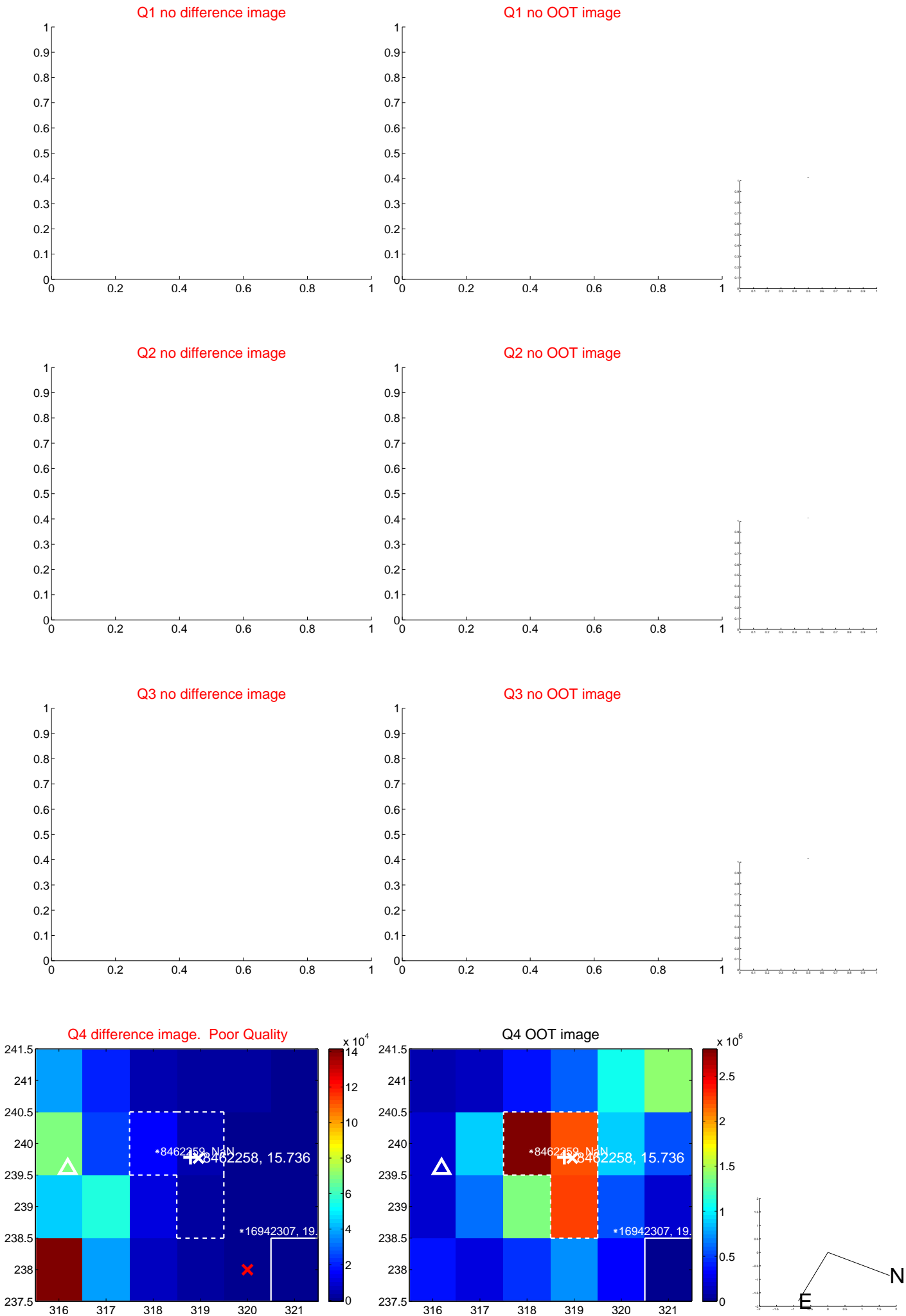
The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	9.545 $\pm$ 0.388	24.61	5.342 $\pm$ 0.198	-7.910 $\pm$ 0.449
PRF-fit source offset from KIC position	10.386 $\pm$ 0.373	27.82	5.780 $\pm$ 0.175	-8.629 $\pm$ 0.434
photometric centroid source offset	25.93 $\pm$ 0.13	197.71	14.44 $\pm$ 0.11	-21.54 $\pm$ 0.14

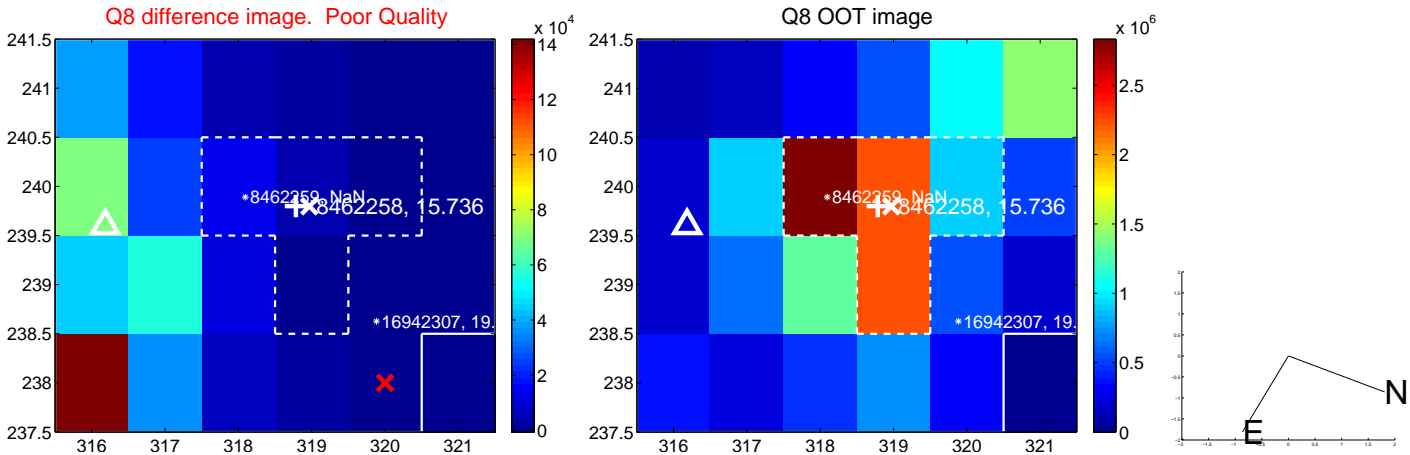
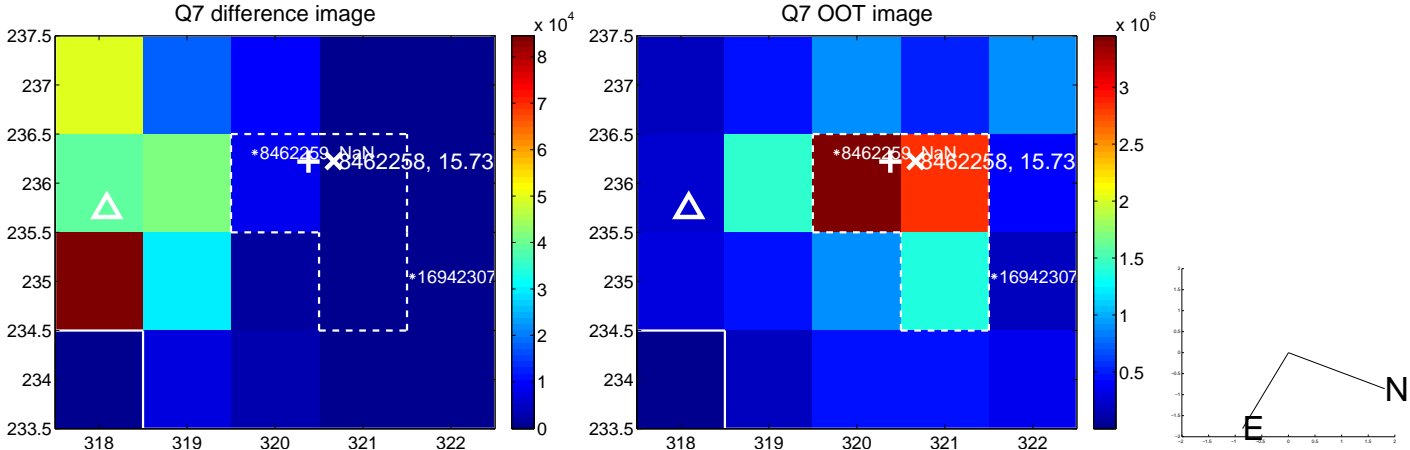
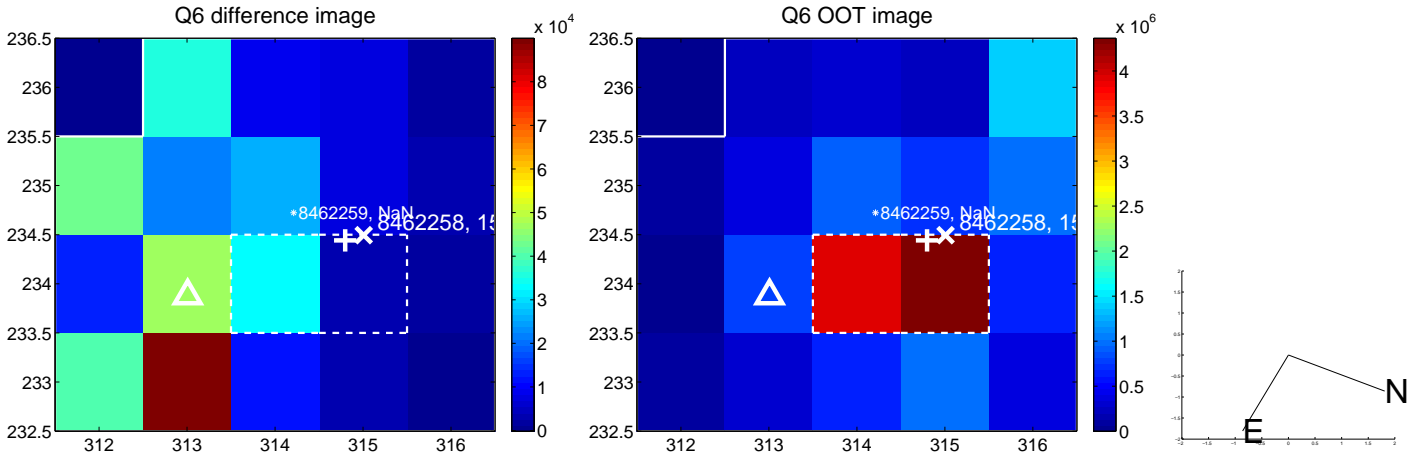
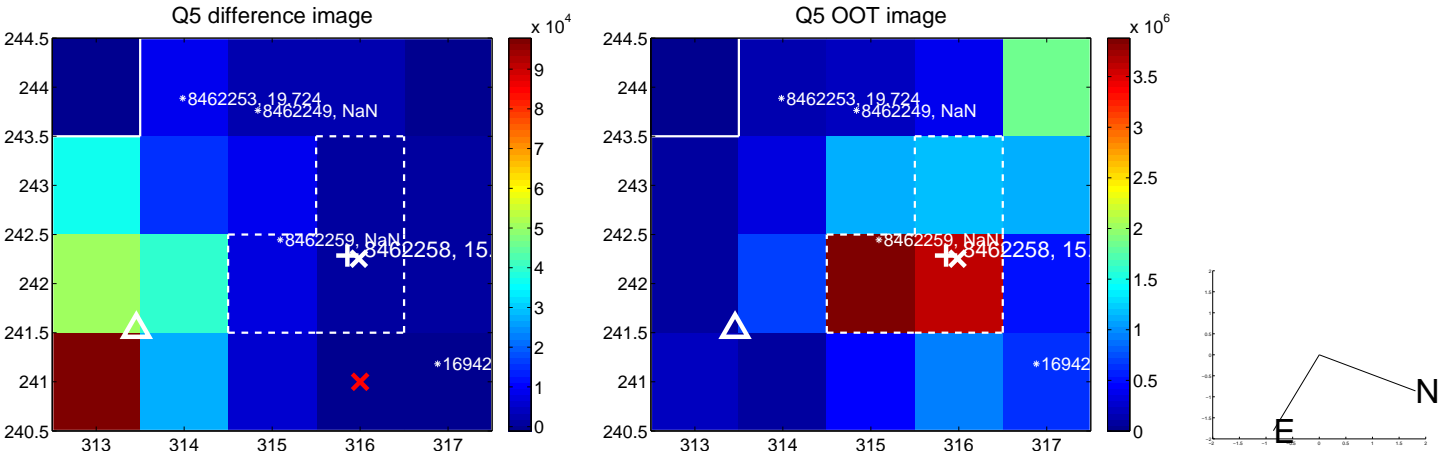


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

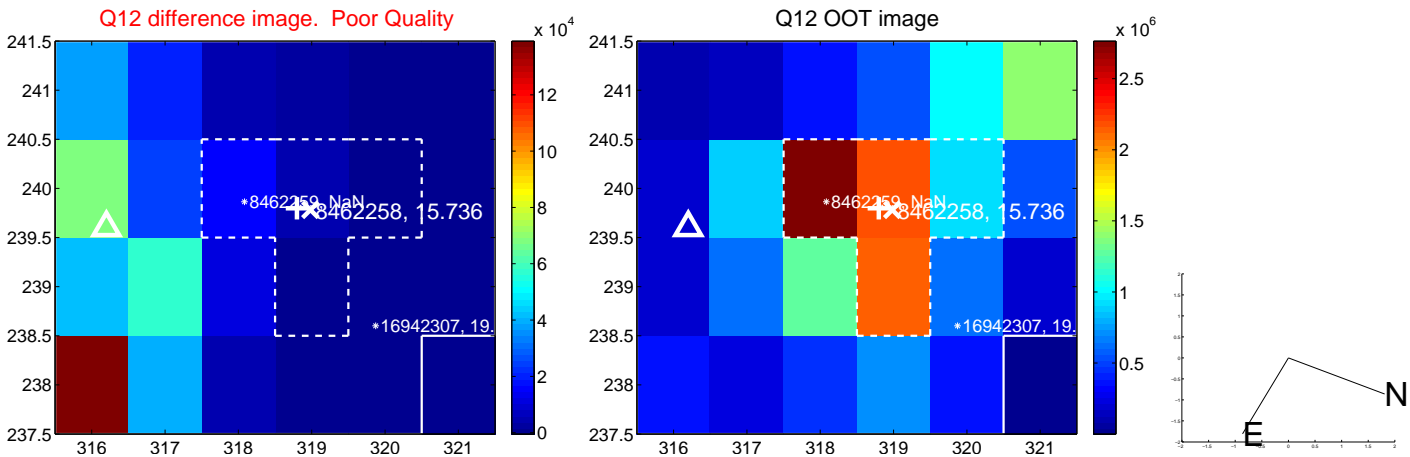
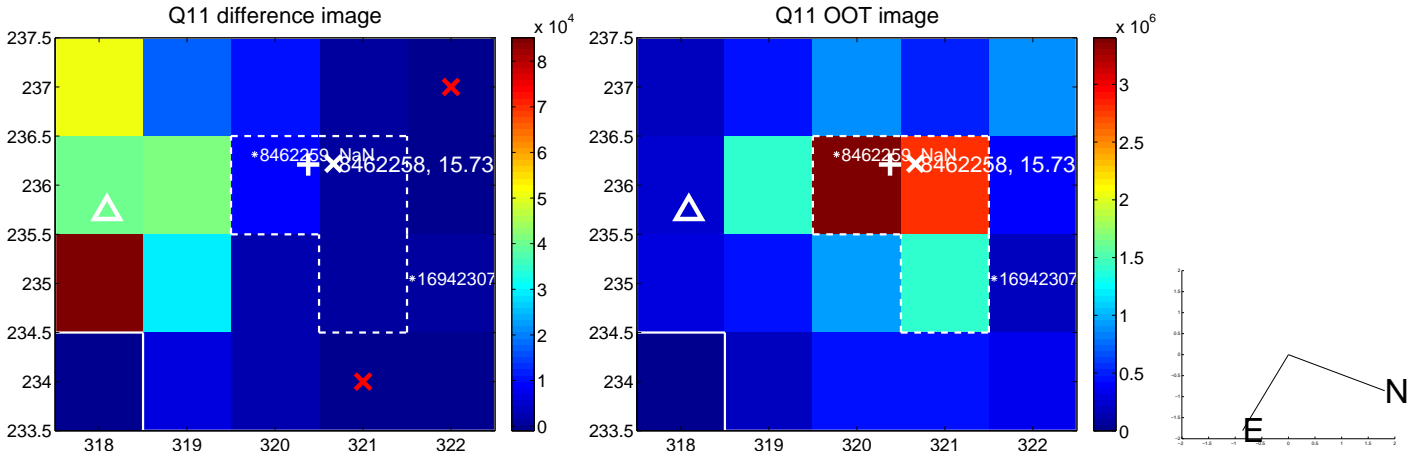
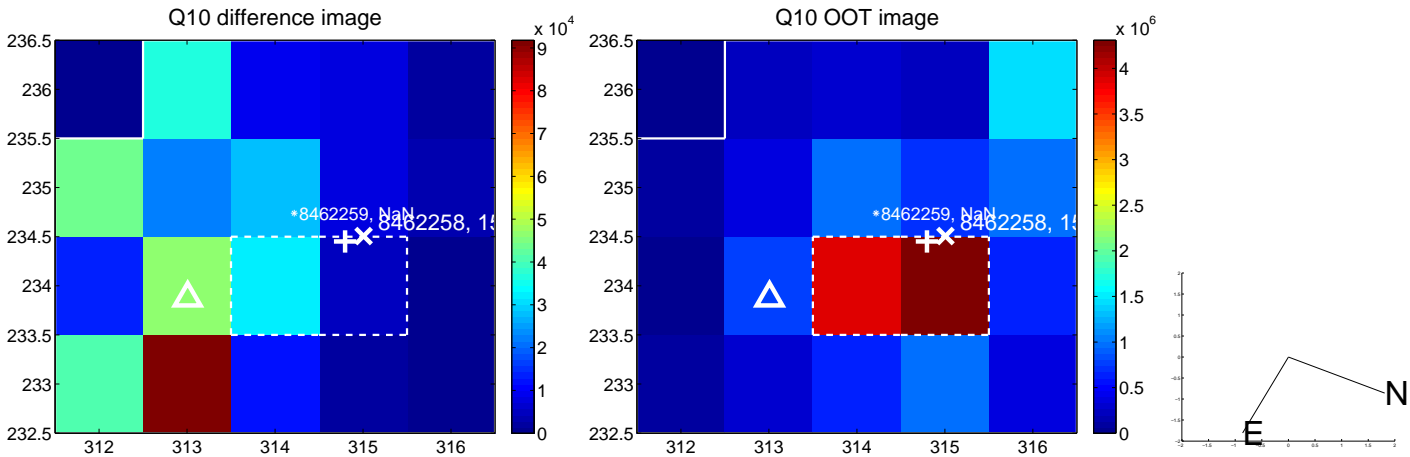
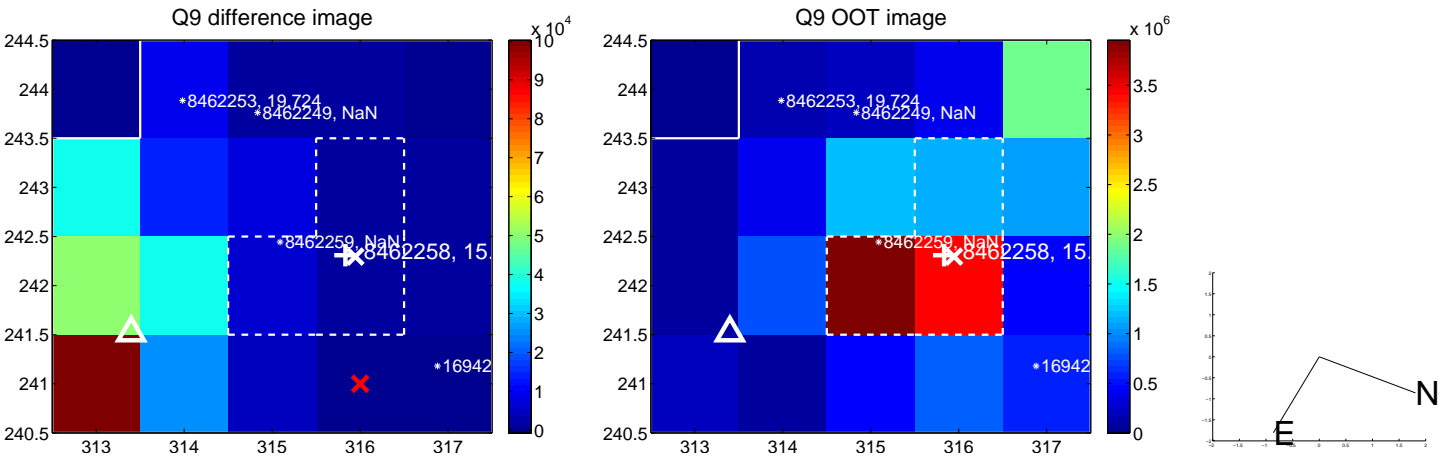
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



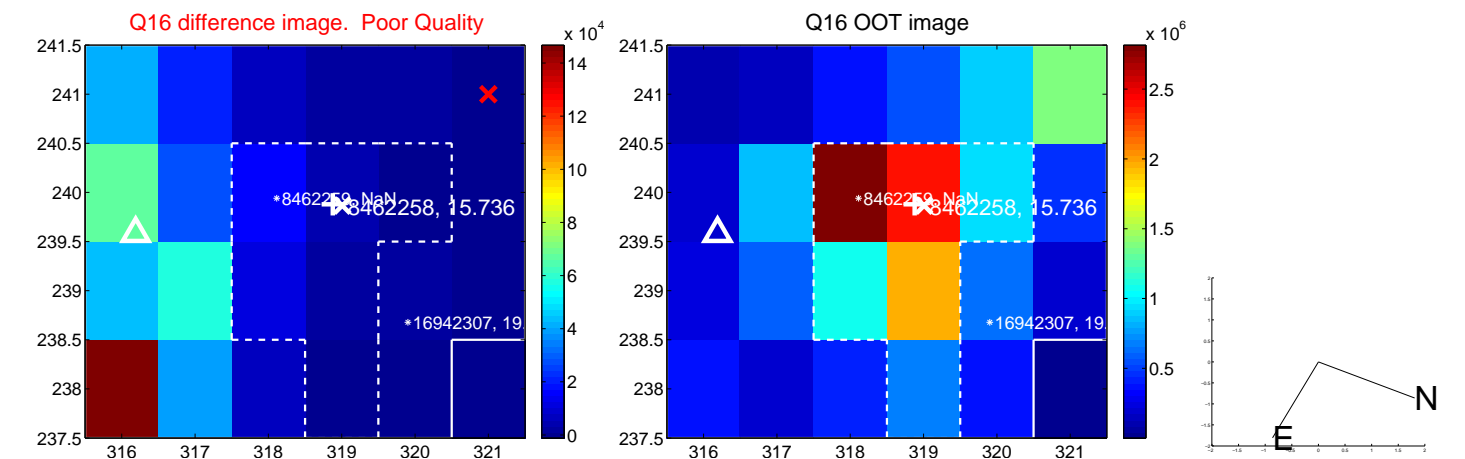
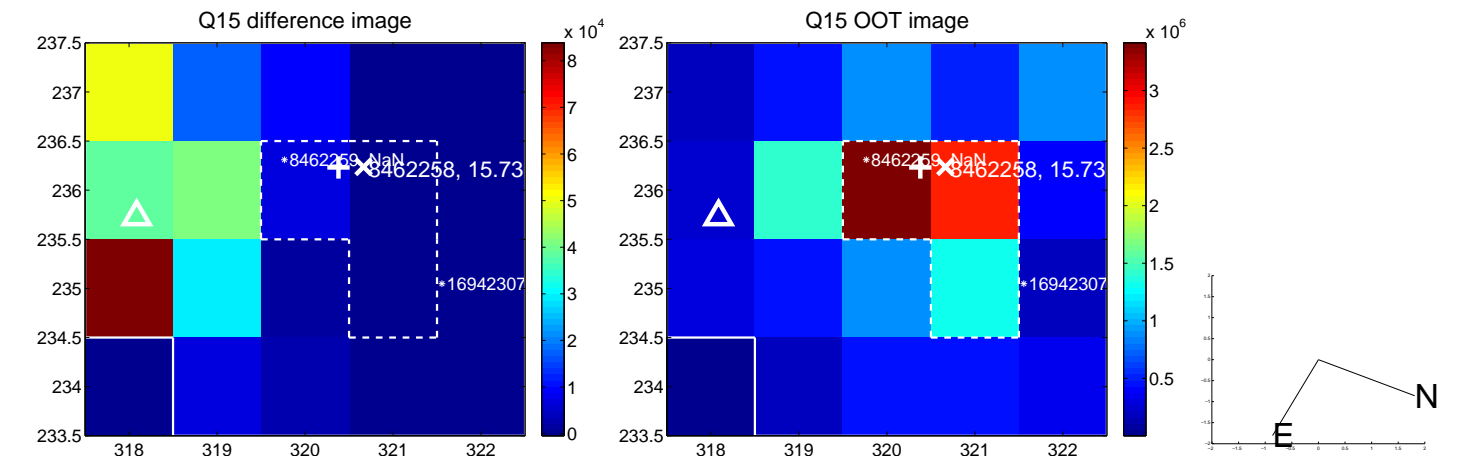
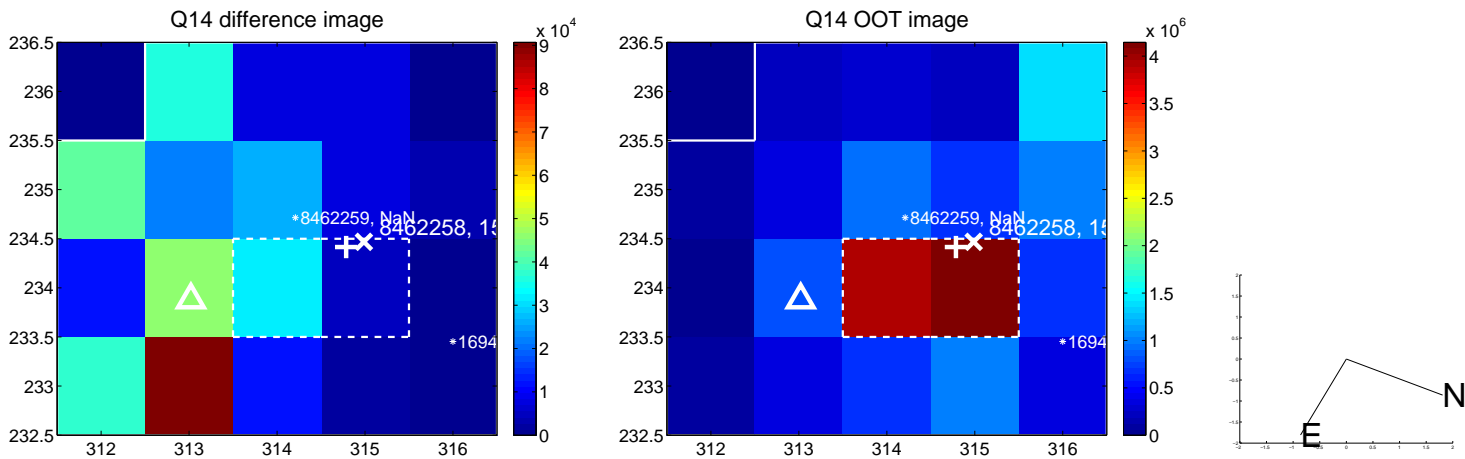
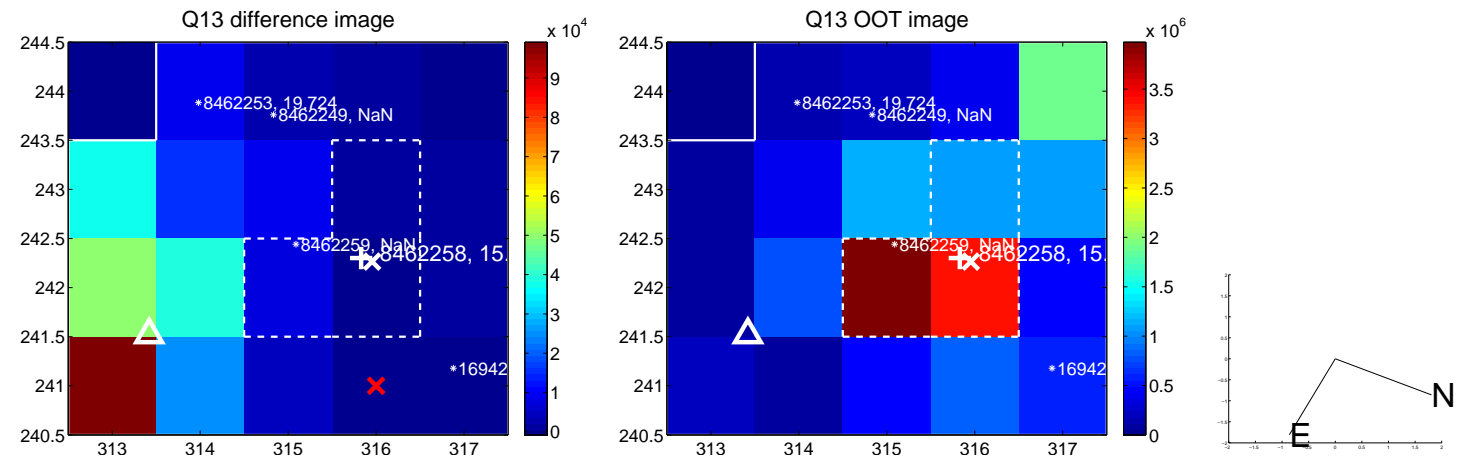
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

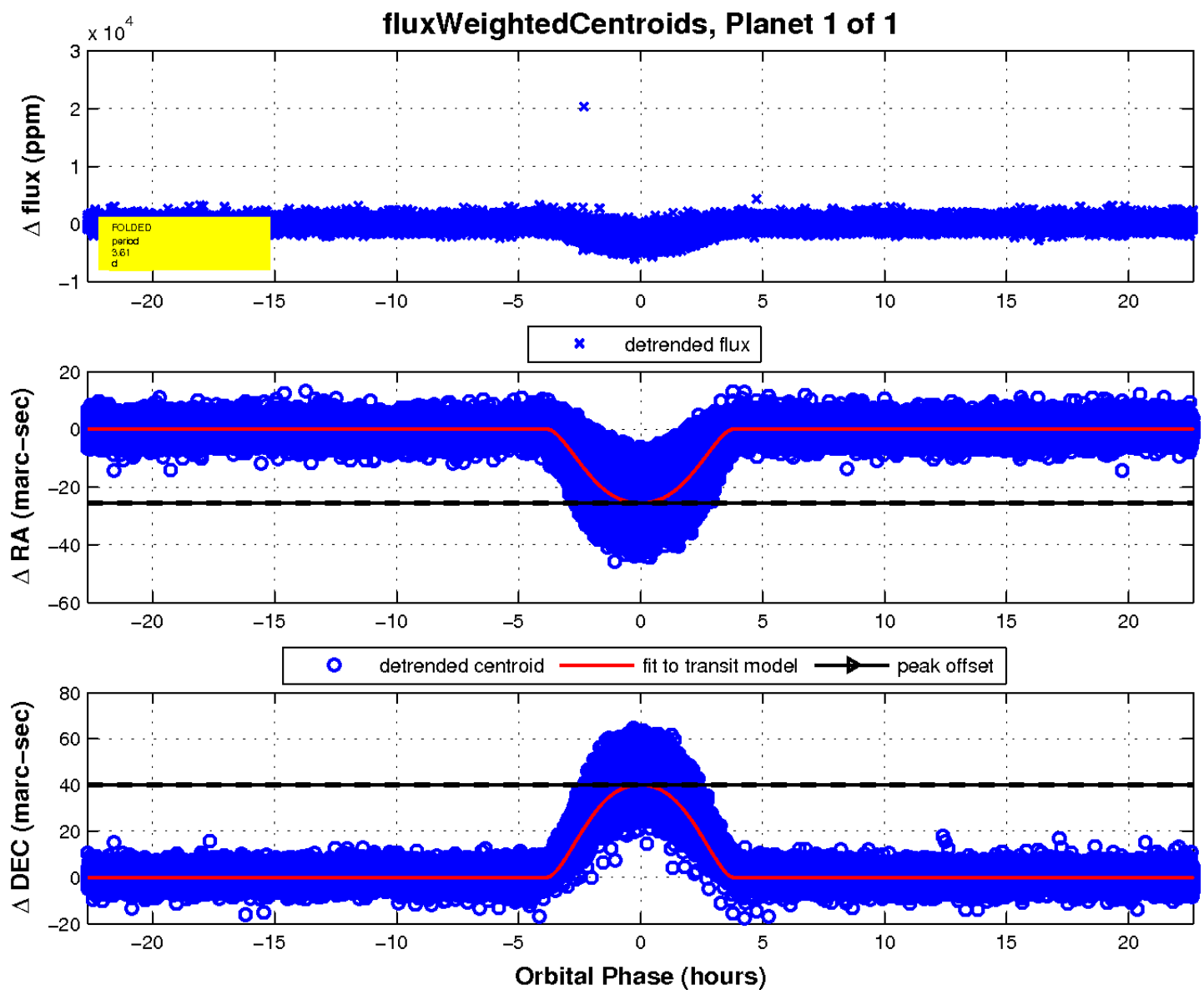
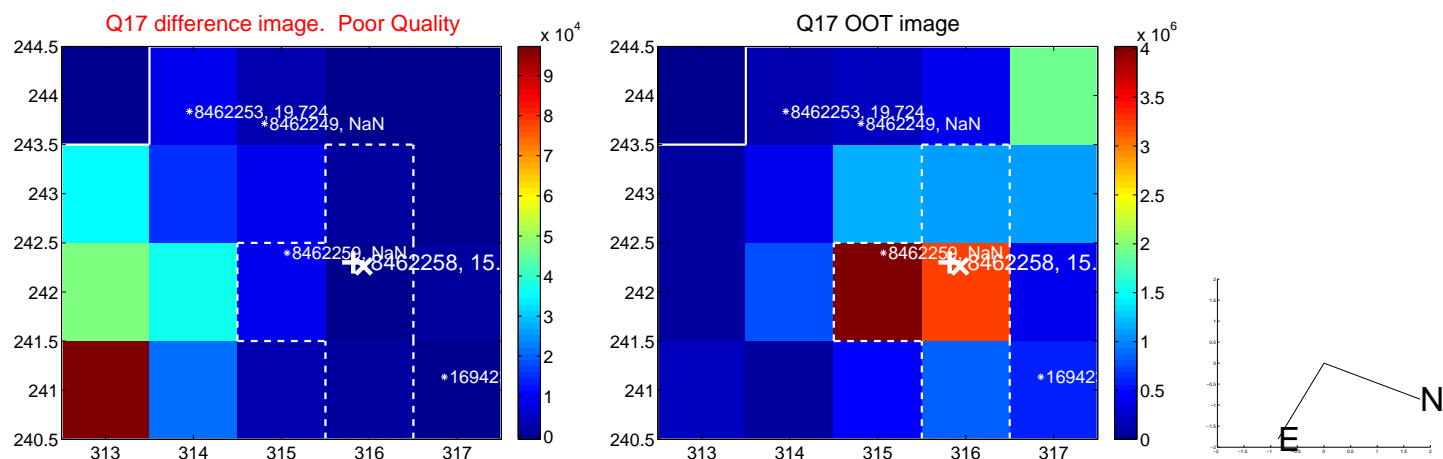


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

