

# KIC 002837174

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002837174-01	OBS	No	0.584973	132.018934	22.6	1.864	8.3	10.0	2.05	7370	1.13	42154.34

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002837174-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

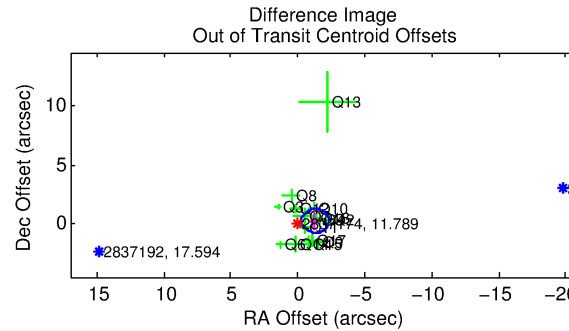
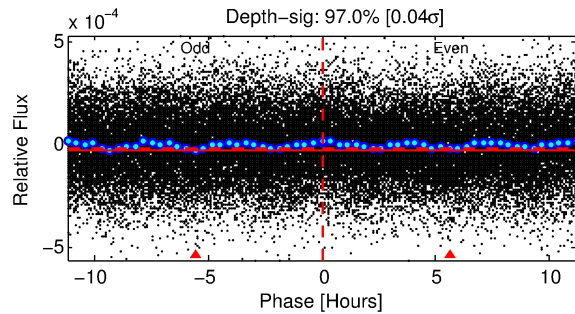
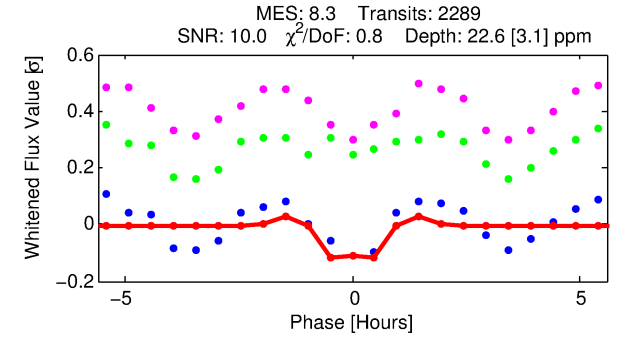
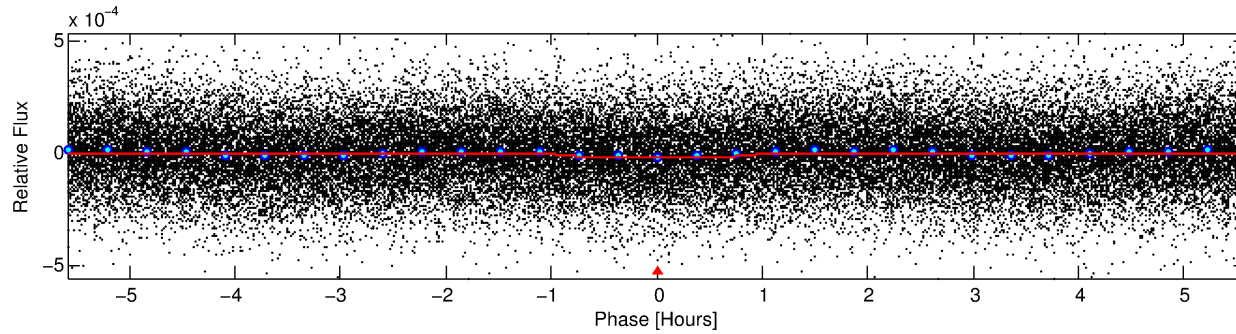
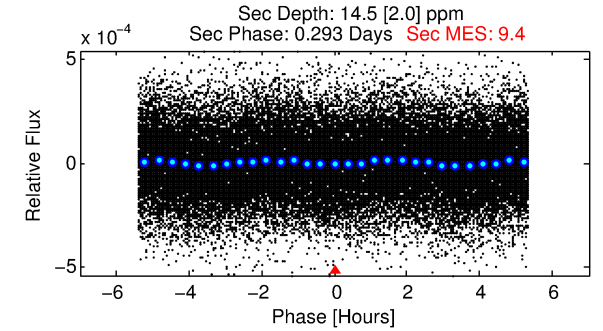
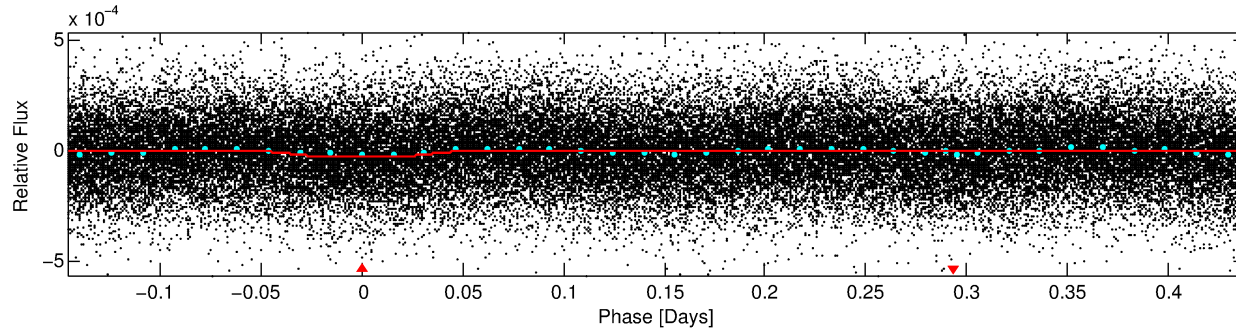
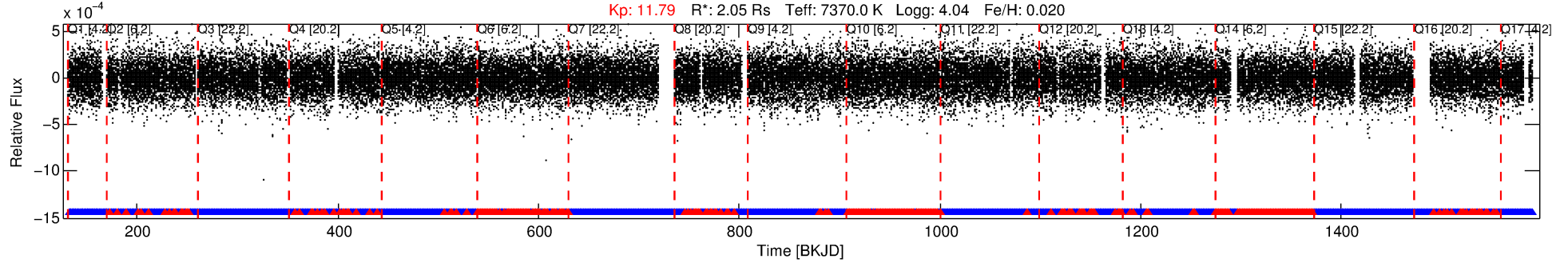
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002837174-01

No Significant Match Found

# DV One-Page Summary

KIC: 2837174 Candidate: 1 of 1 Period: 0.585 d



## DV Fit Results:

Period = 0.58497 [0.00001] d  
Epoch = 132.0189 [0.0017] BKJD  
Rp/R\* = 0.0050 [0.0010]  
a/R\* = 1.42 [0.93]  
b = 0.90 [0.28]  
Seff = 42154.34 [14947.52]  
Teq = 3654 [324] K  
Rp = 1.13 [0.37] Re  
a = 0.0163 [0.0035] AU  
Ag = 1.65 [0.89] [0.73σ]  
Teffp = 6405 [751] K [3.36σ]

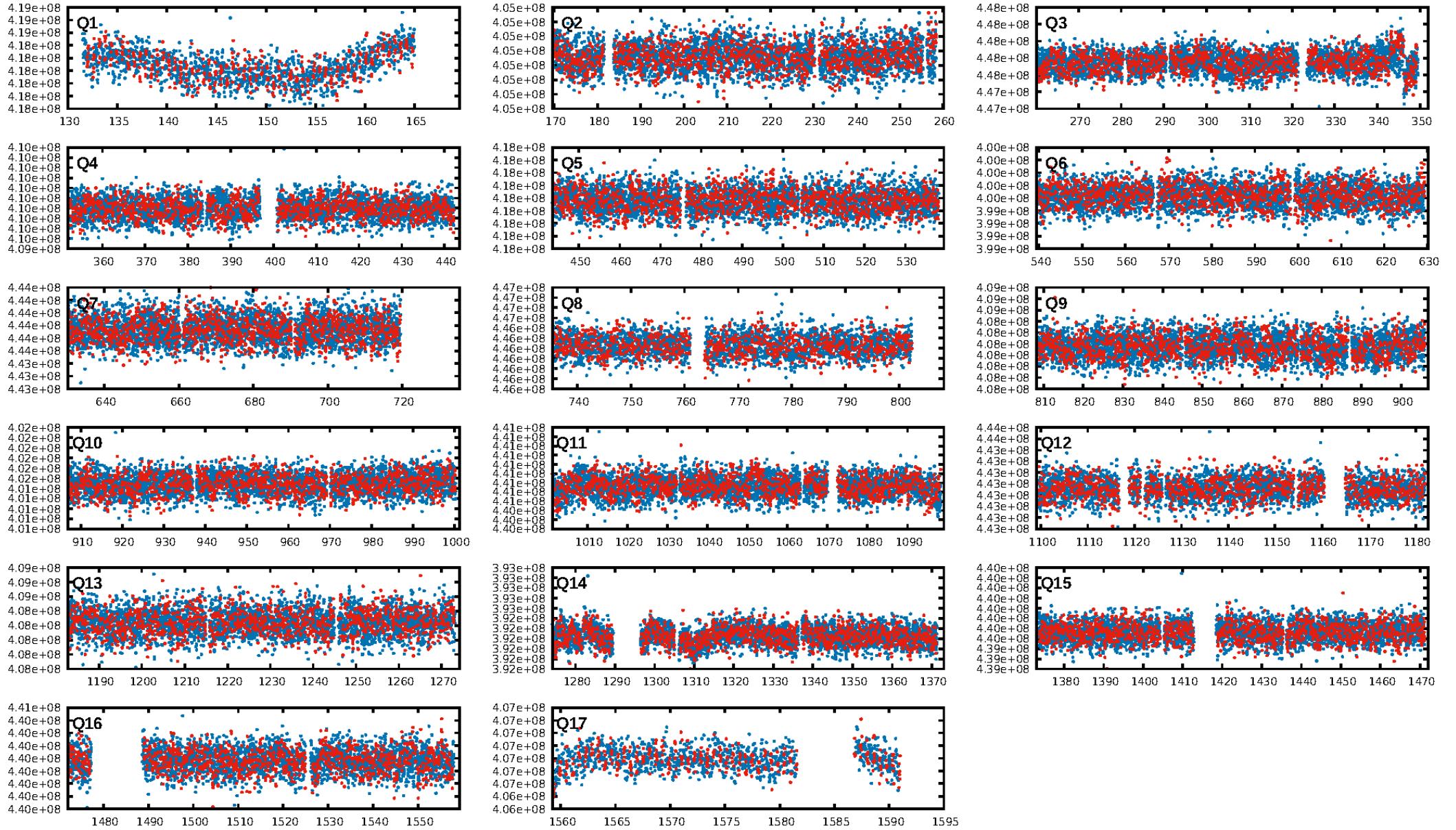
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.64e-13  
RollingBand-fgt: 0.80 [1747/2185]  
GhostDiagnostic-chr: 2.187  
Centroid-sig: N/A  
Centroid-so: 1.202 arcsec [2.05σ]  
OotOffset-rm: 1.312 arcsec [3.91σ]  
KicOffset-rm: 1.345 arcsec [4.84σ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 0.60 [9/15]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 21:48:20 Z

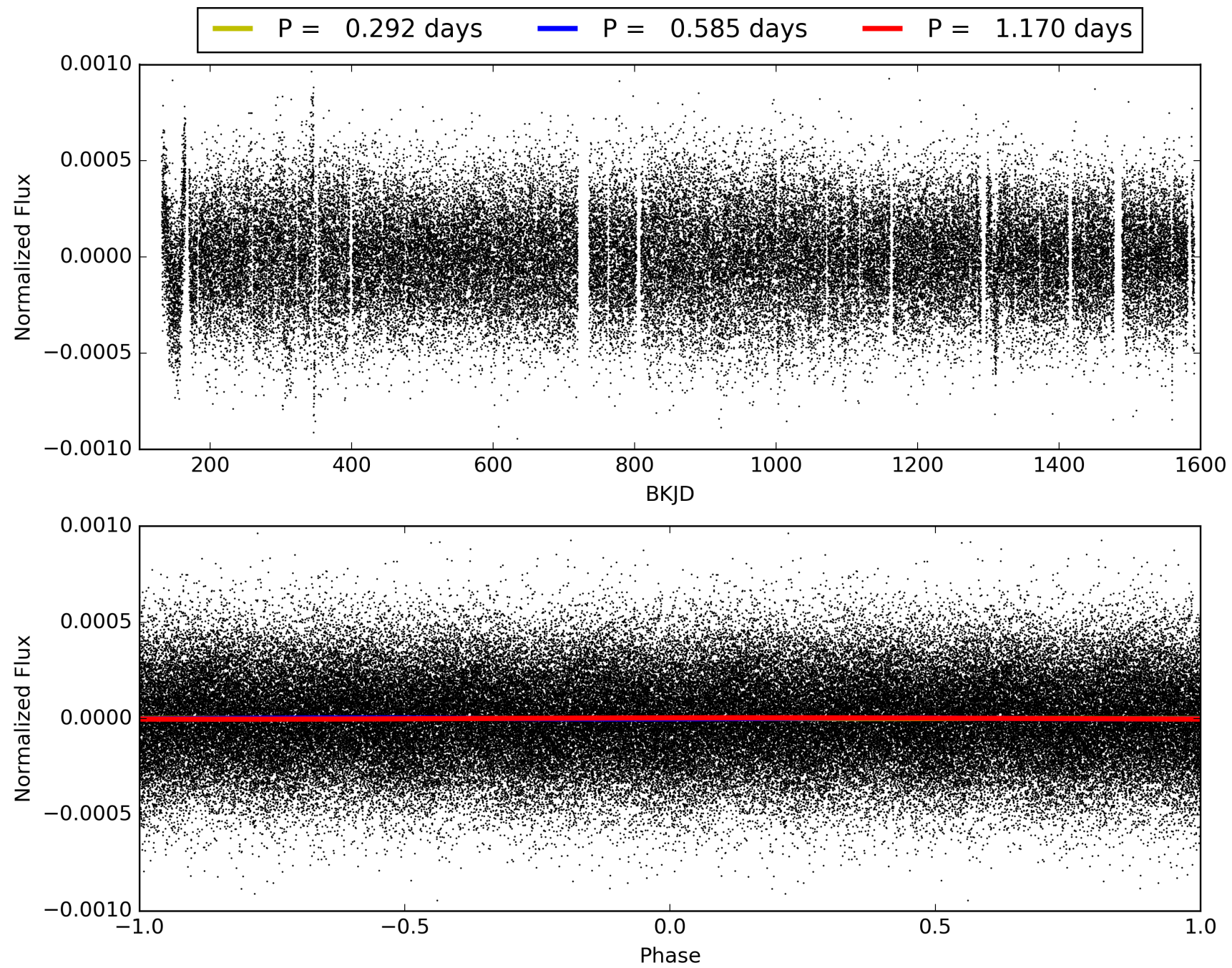
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 002837174-01, PDC Light Curves



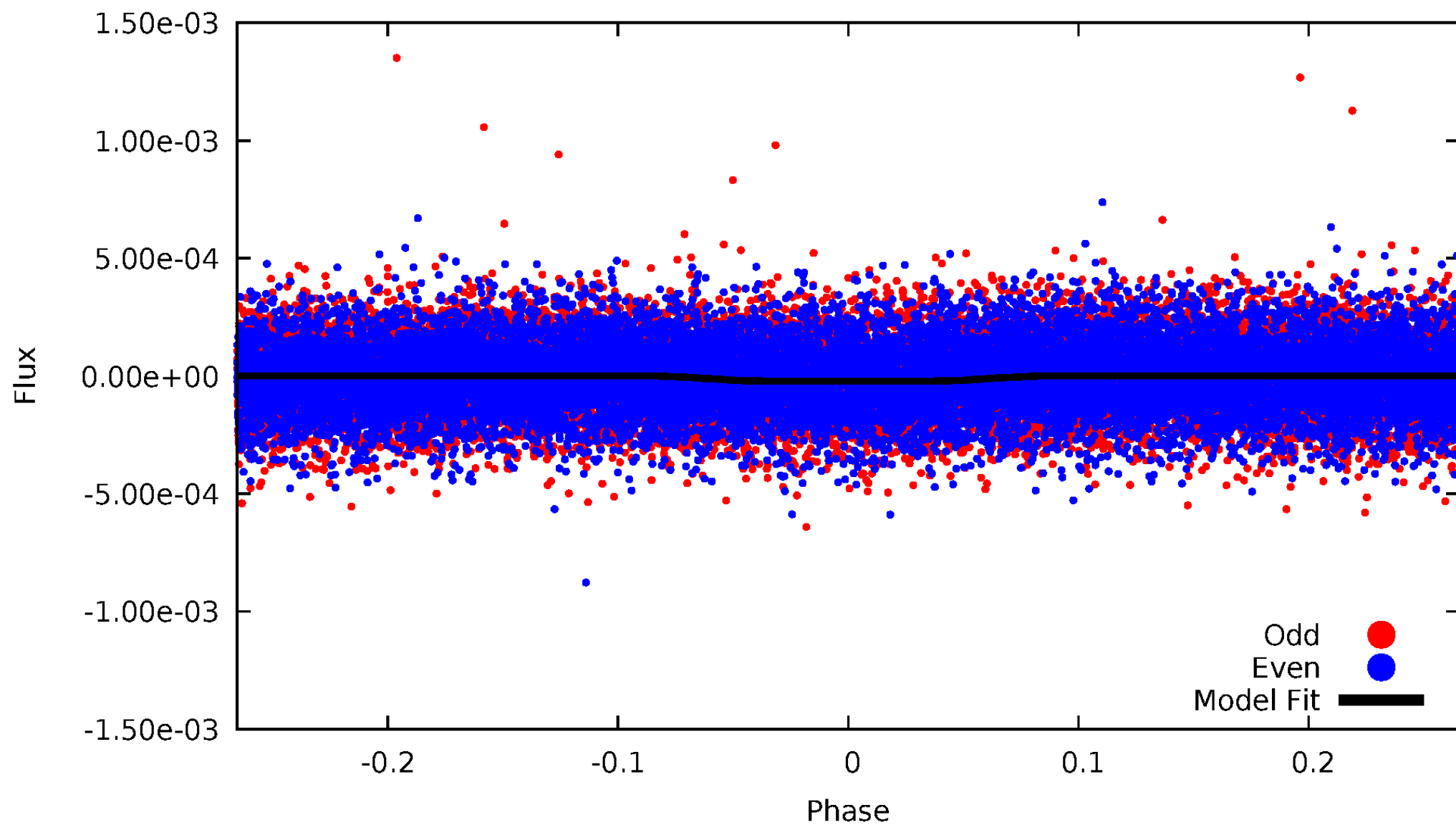


TCE 002837174-01



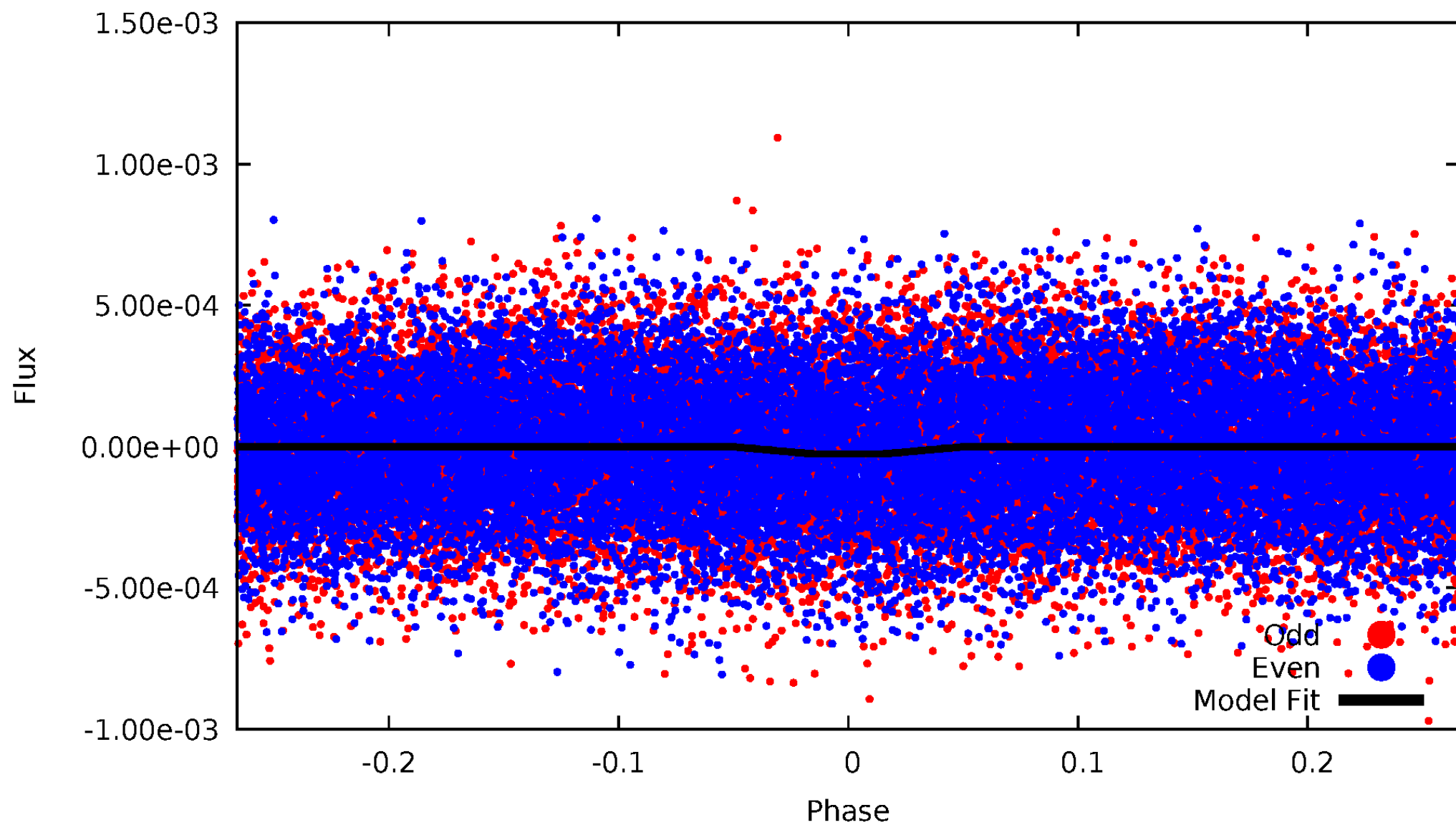
# DV Odd/Even

TCE 002837174-01



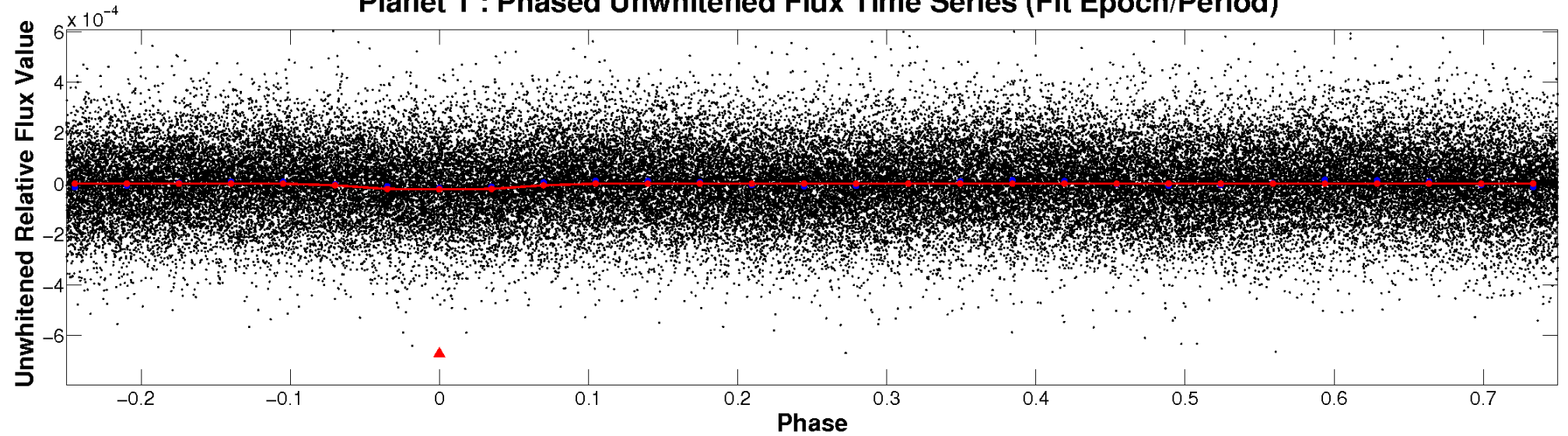
# ALT Odd/Even

TCE 002837174-01

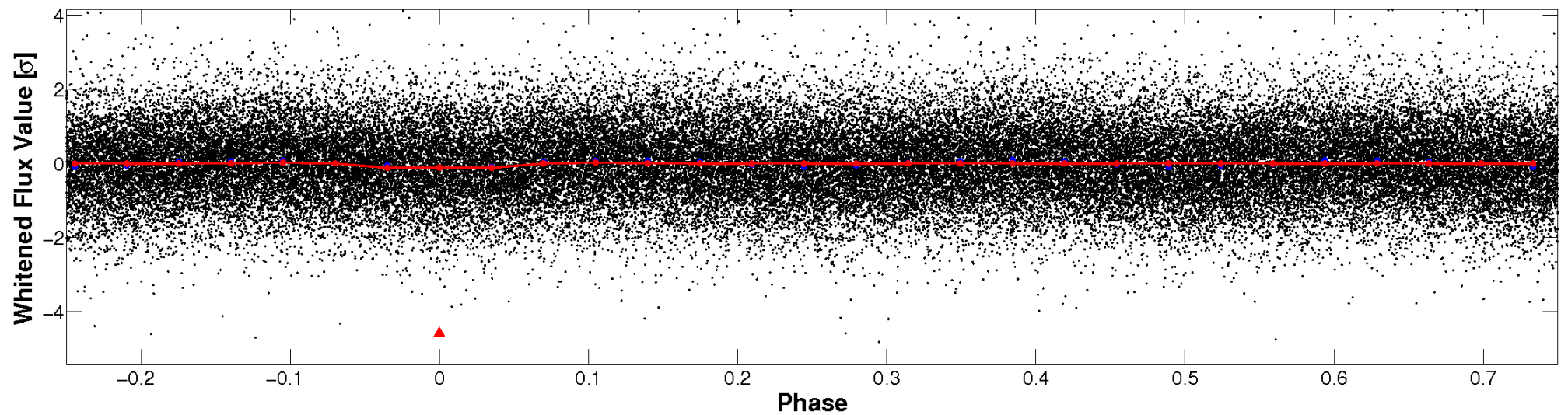


# Non-Whitened Vs. Whitened Light Curve

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



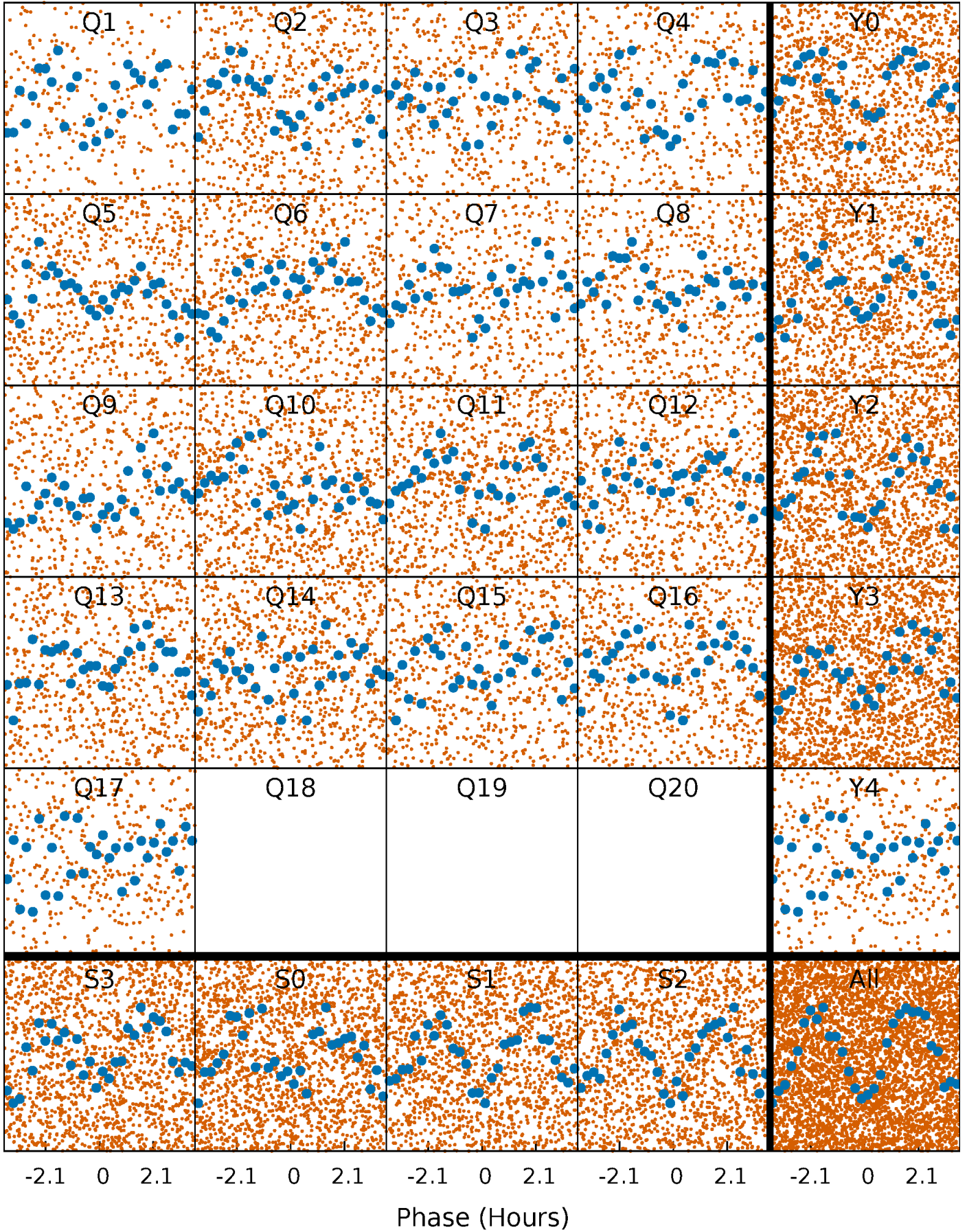
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

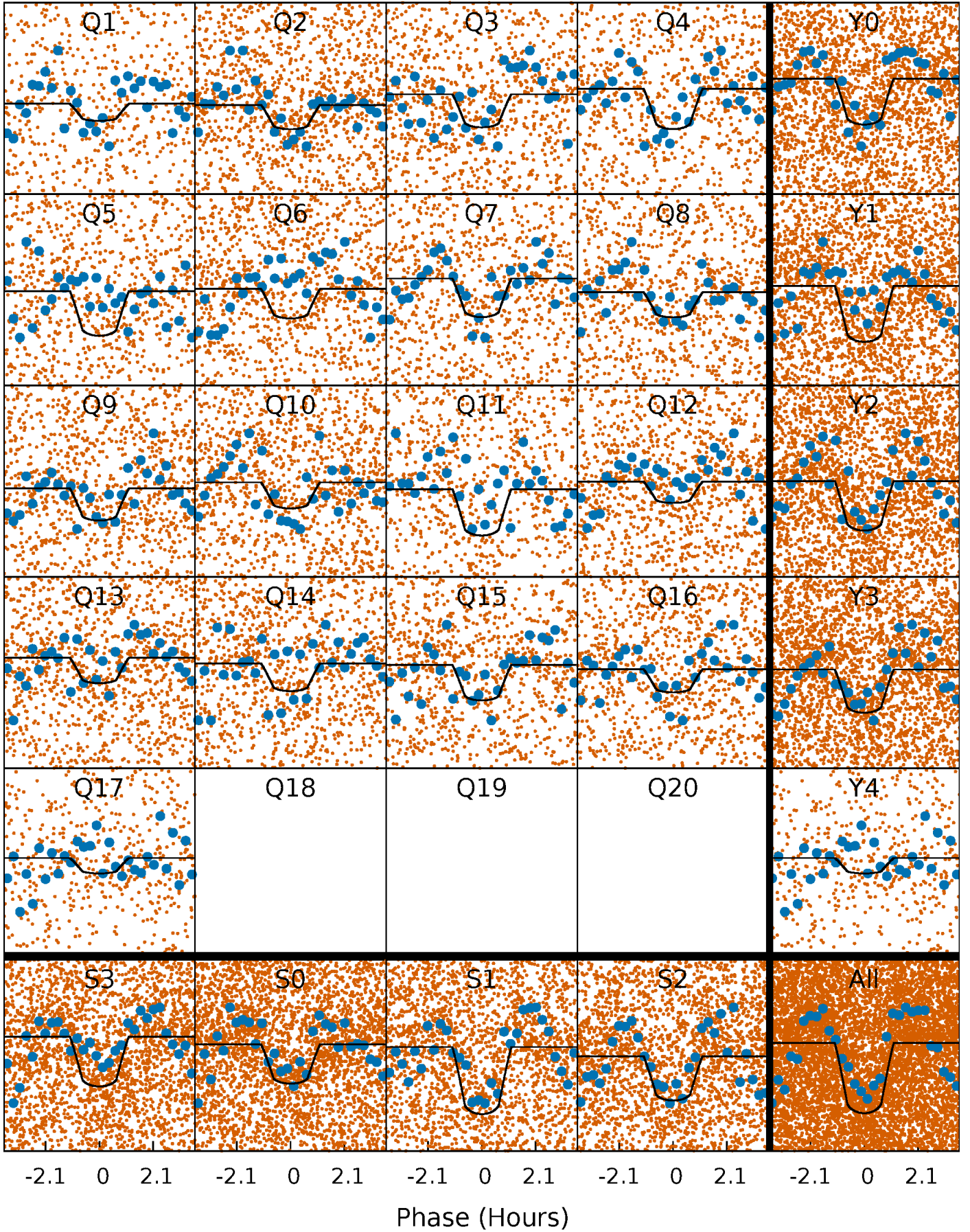
TCE 002837174-01 P= 0.584973 Days  $T_0=132.018934$  (BKJD)





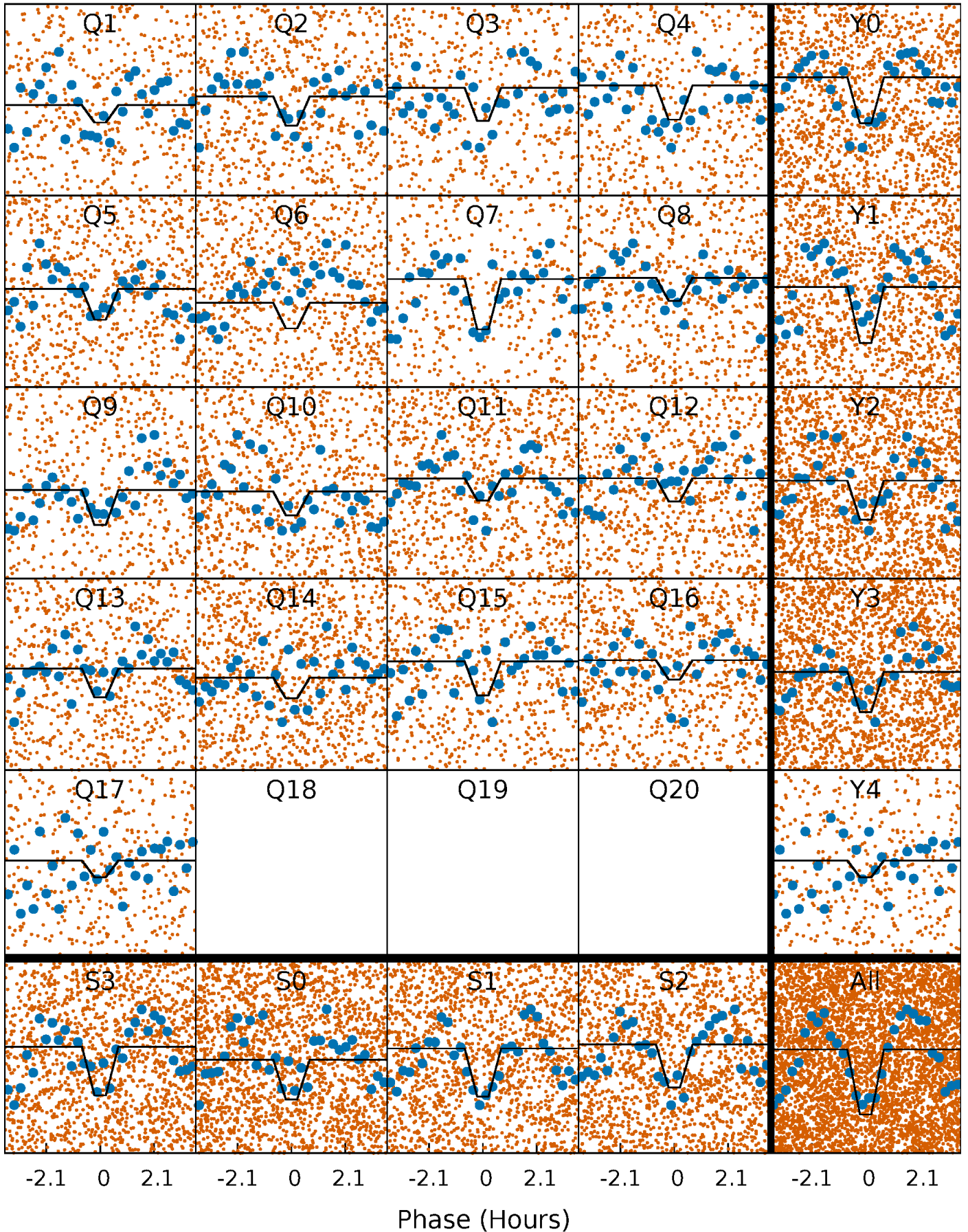
# DV Quarter-Phased Transit Curves

TCE 002837174-01 P= 0.584973 Days  $T_0=132.018934$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 002837174-01 P= 0.584973 Days  $T_0=132.018909$  (BKJD)

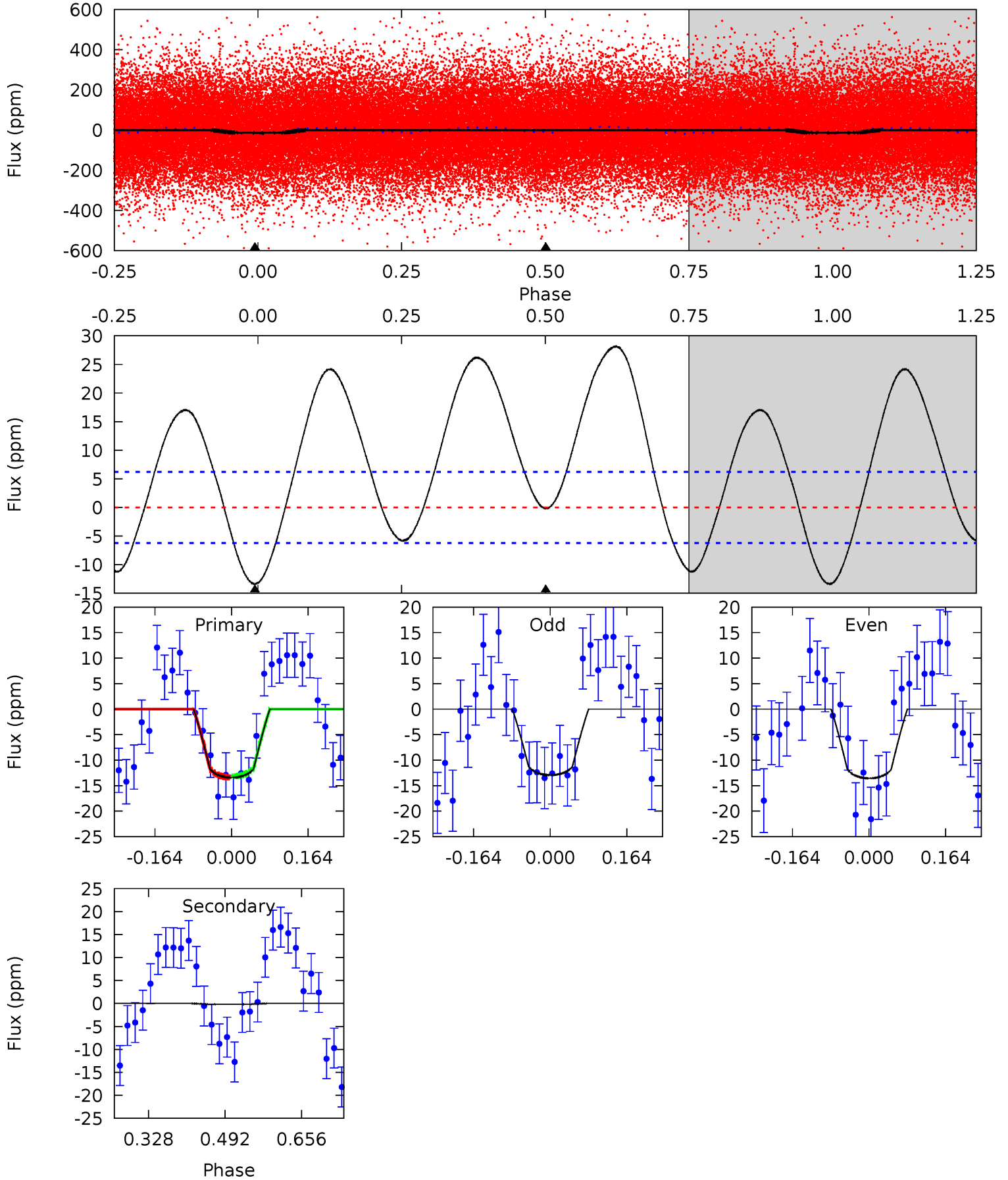




# DV Model-Shift Uniqueness Test

002837174-01, P = 0.584973 Days, E = 131.433961 Days

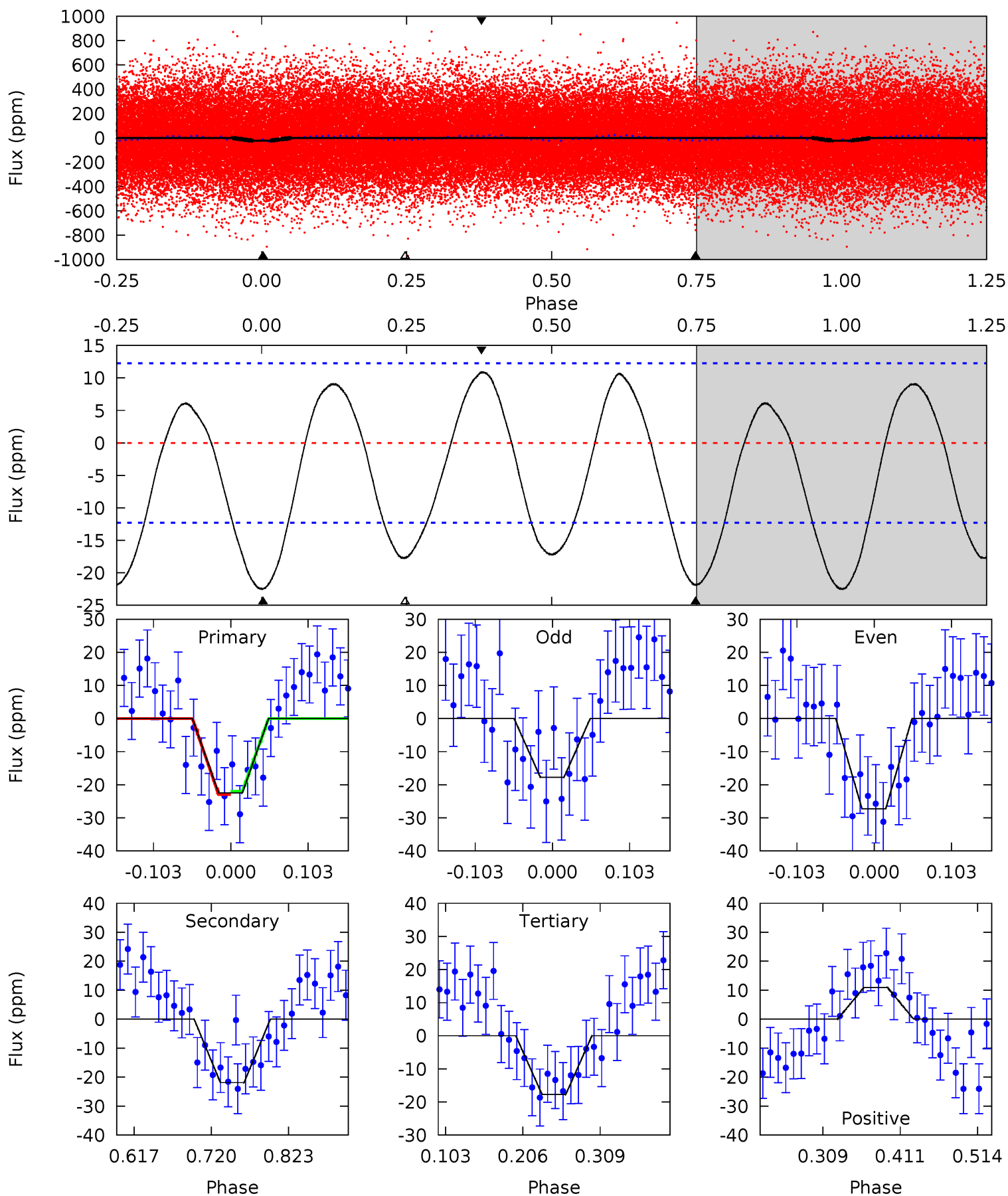
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.62	0.13	0	0	4.46	1.39	5.83	9.62	9.62	0.13	0.13	0.23	0.85	0.68	0.07



# Alt Model-Shift Uniqueness Test

002837174-01, P = 0.584973 Days, E = 131.433936 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
8.36	8.13	6.59	4.05	4.56	1.63	3.66	1.76	4.31	1.53	4.08	1.78	0.99	0.33	0.17





### Stellar Parameters For KIC 002837174

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7370^{+232}_{-309}$	$4.037^{+0.170}_{-0.170}$	$0.020^{+0.200}_{-0.350}$	$2.053^{+0.529}_{-0.476}$	$1.672^{+0.197}_{-0.271}$	$0.272^{+0.281}_{-0.129}$
	+3%/-4%	+4%/-4%	+1000%/-1750%	+26%/-23%	+12%/-16%	+103%/-48%
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 002837174-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-0 \pm 1$	$1.12^{+0.28}_{-0.26}$	$5092^{+356}_{-346}$	$-4307^{+787}_{-493}$	$0.016^{+0.179}_{-0.167}$
Alt.	$-22 \pm 3$	$1.13^{+0.29}_{-0.28}$	$5096^{+402}_{-346}$	$6738^{+1137}_{-782}$	$2.413^{+1.857}_{-0.908}$

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

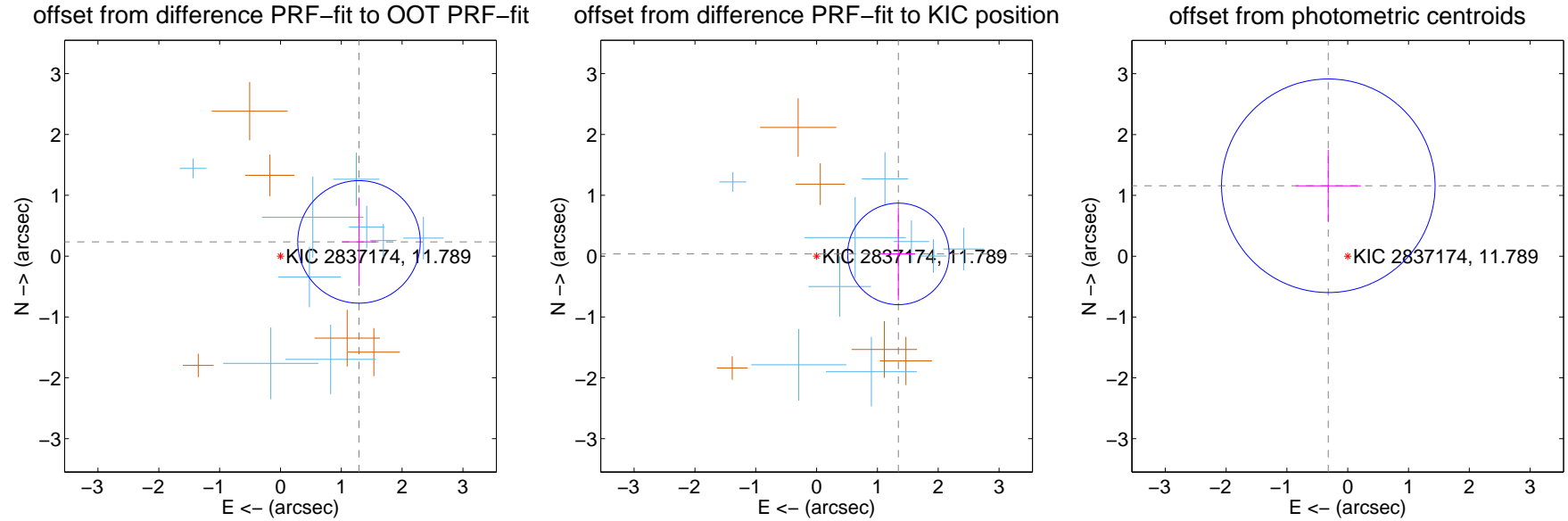
## DV Centroid Data

Supplemental centroid analysis for 002837174-01. **Kepler magnitude: 11.79.** Transit SNR 9.95

There are 9 quarters with good PRF difference image offsets

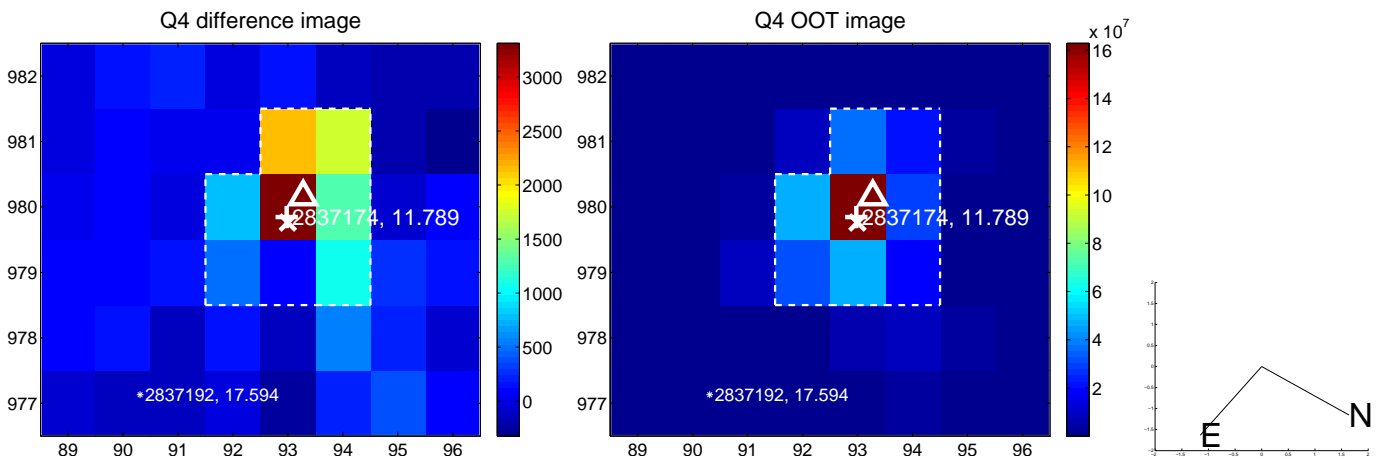
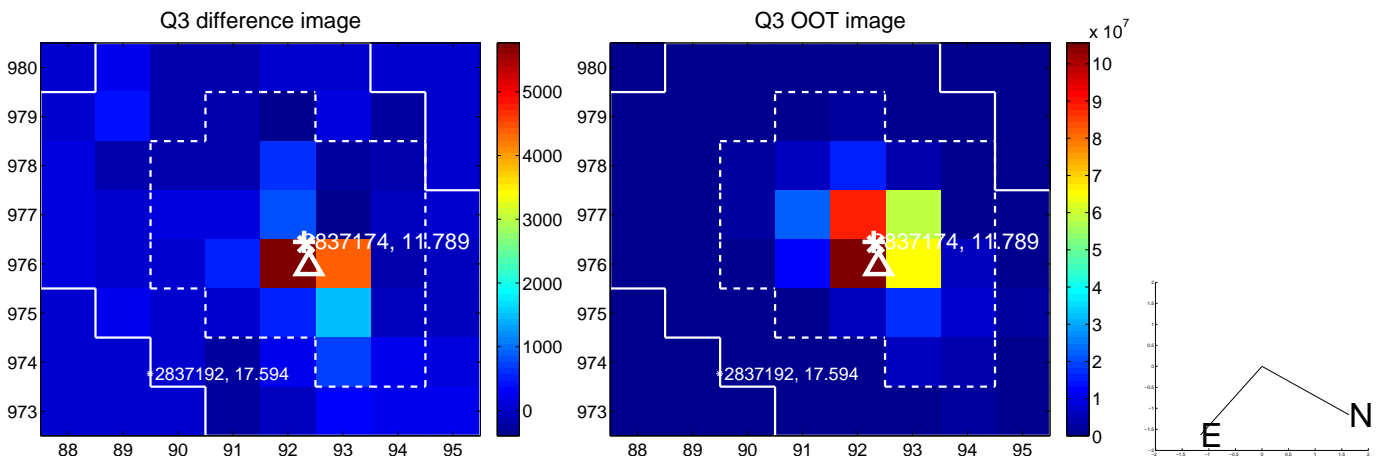
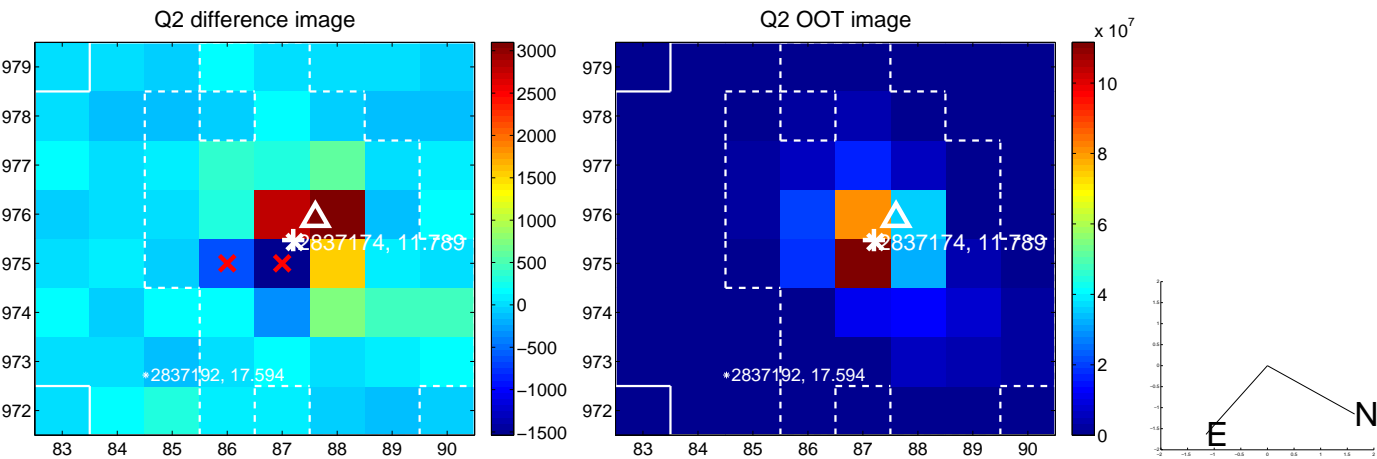
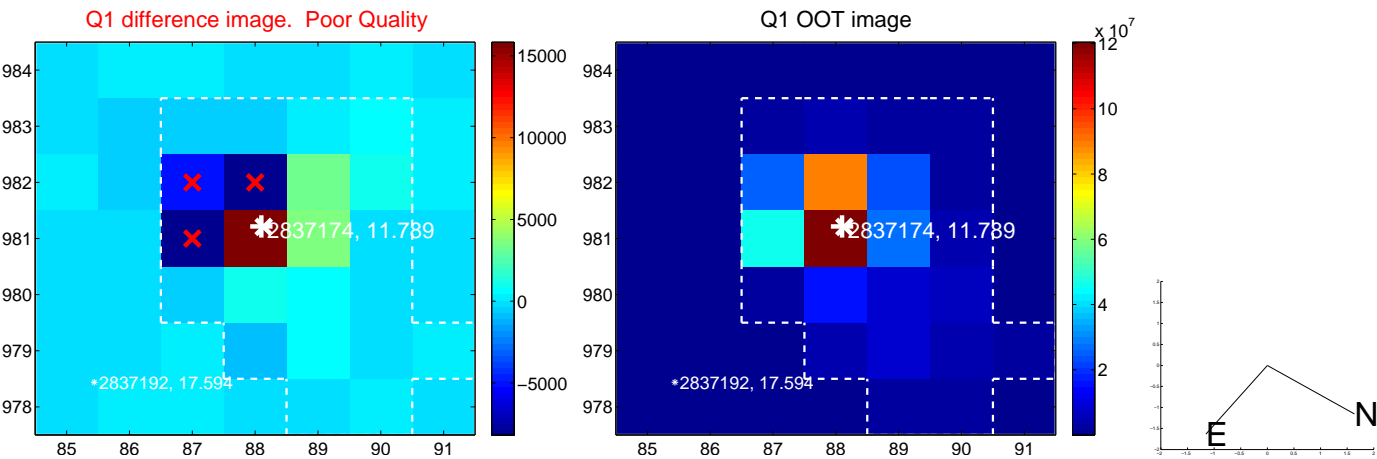
The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.312 \pm 0.336</math></b>	<b>3.91</b>	$-1.291 \pm 0.280$	$0.234 \pm 0.727$
PRF-fit source offset from KIC position	<b><math>1.345 \pm 0.278</math></b>	<b>4.84</b>	$-1.345 \pm 0.276$	$0.037 \pm 0.764$
photometric centroid source offset	$1.20 \pm 0.59$	2.05	$0.32 \pm 0.54$	$1.16 \pm 0.59$

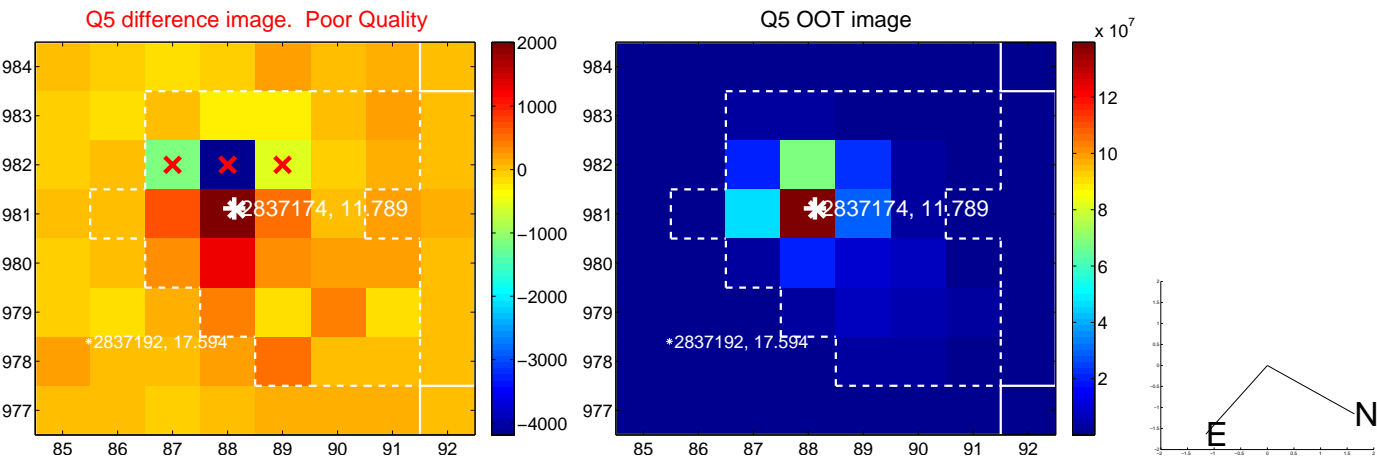


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

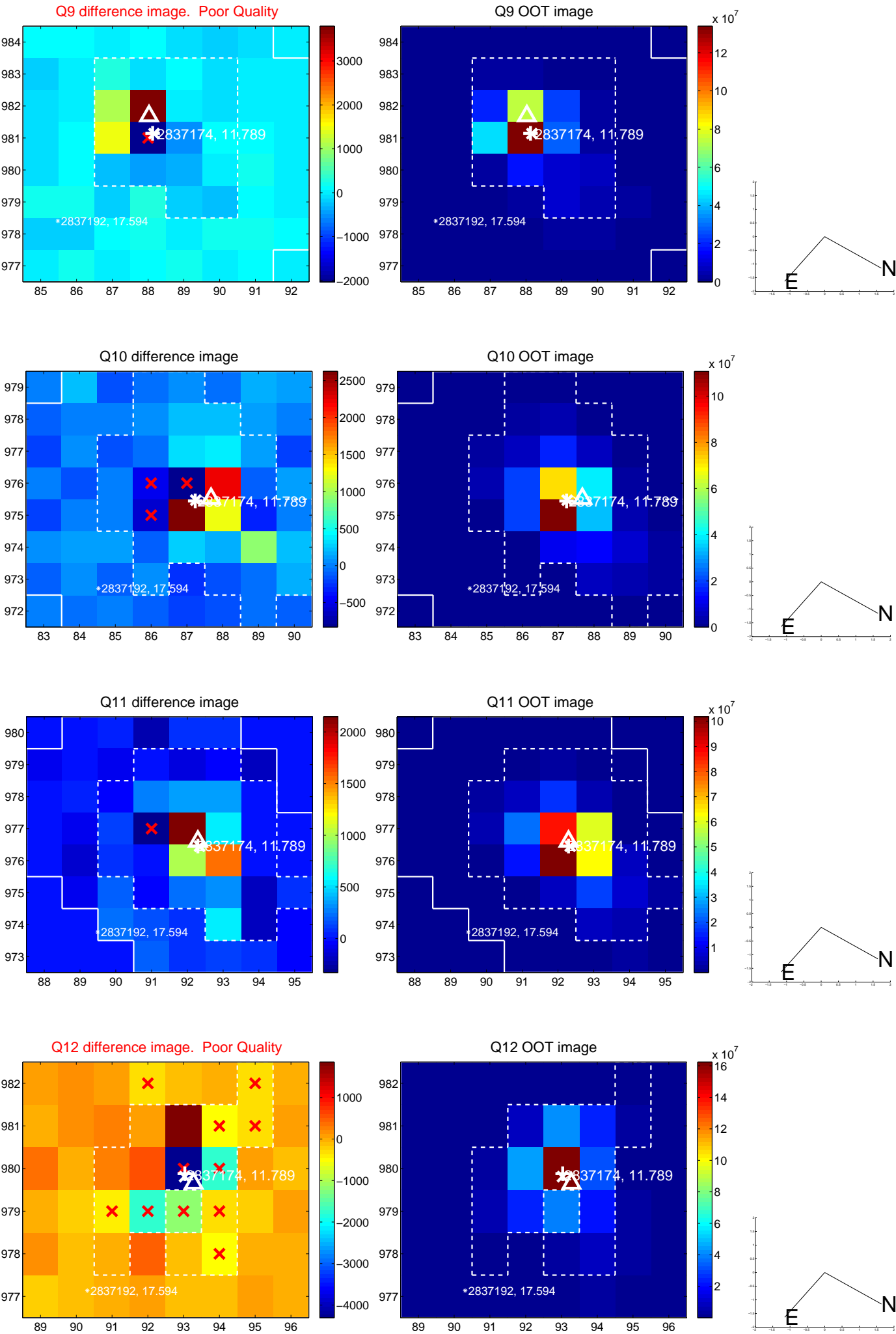


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

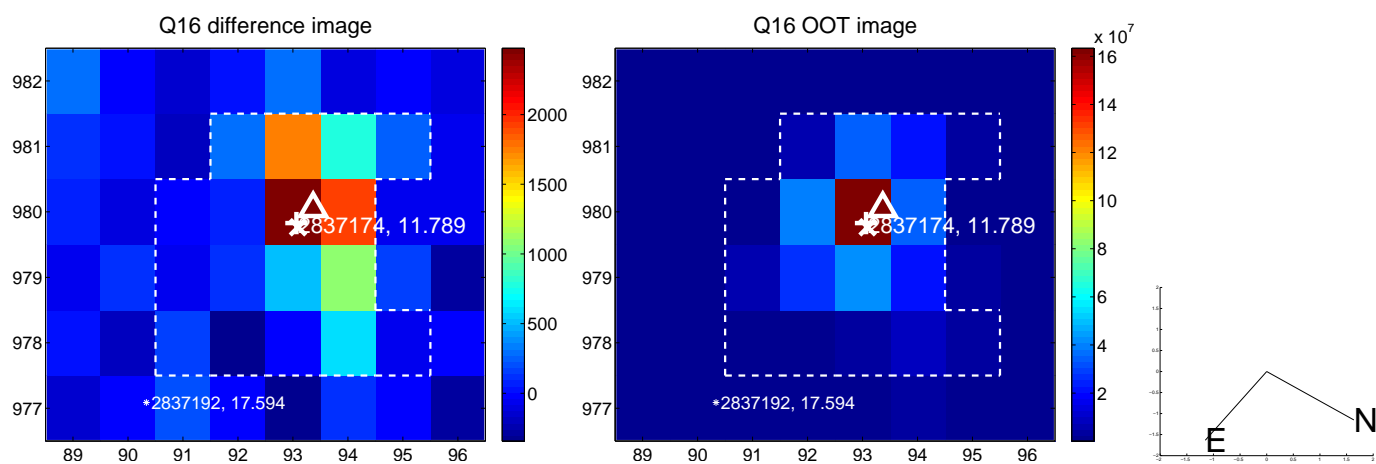
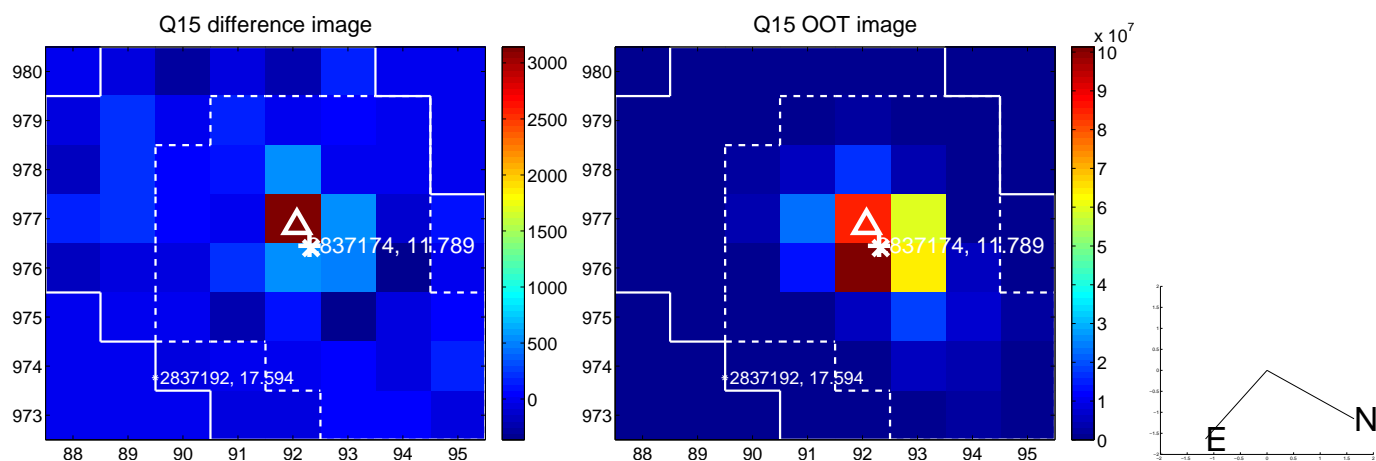
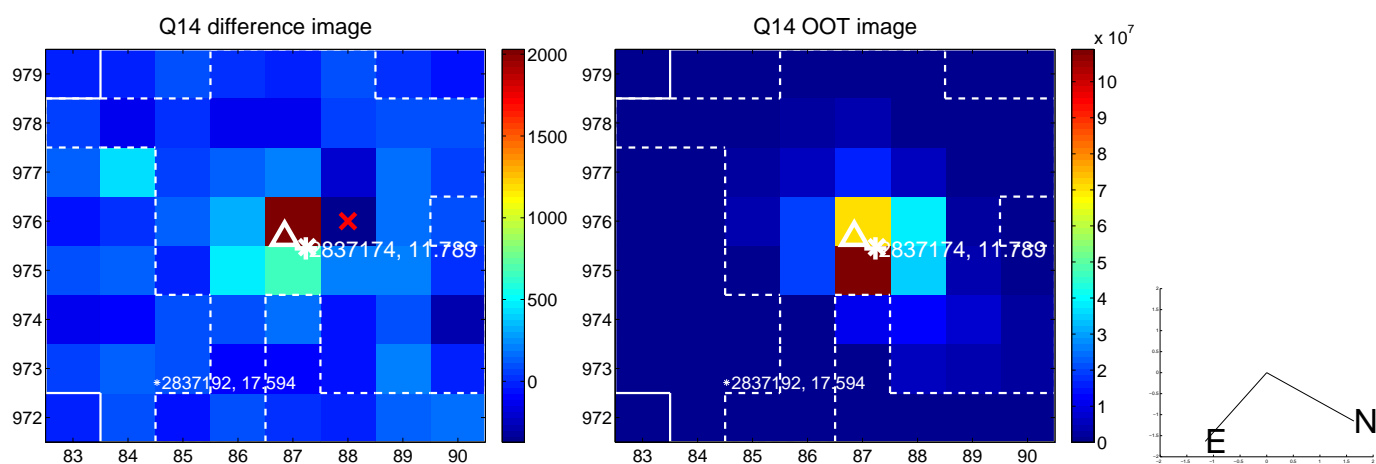
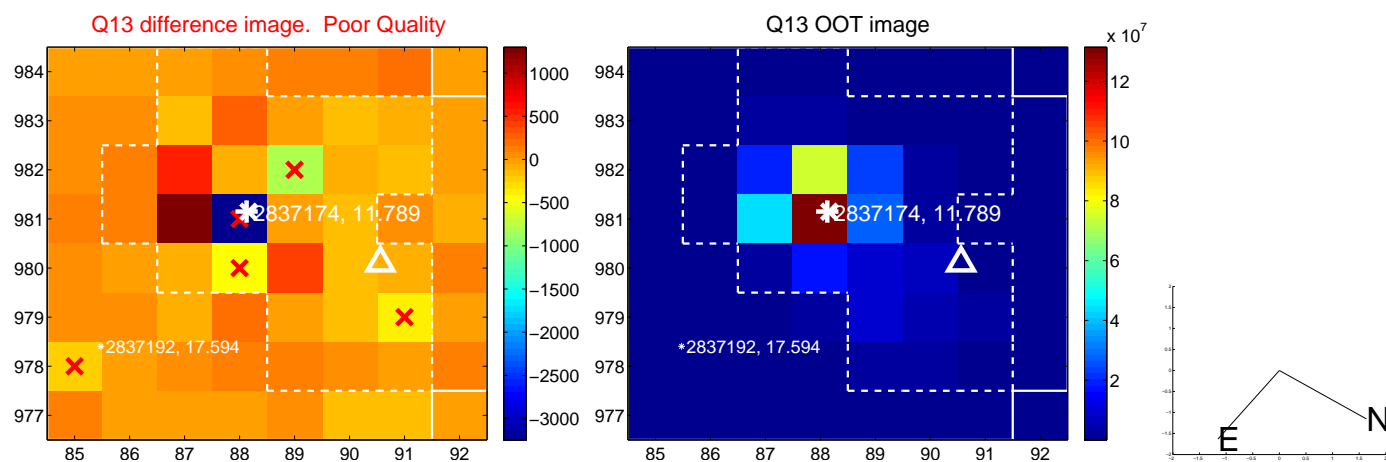




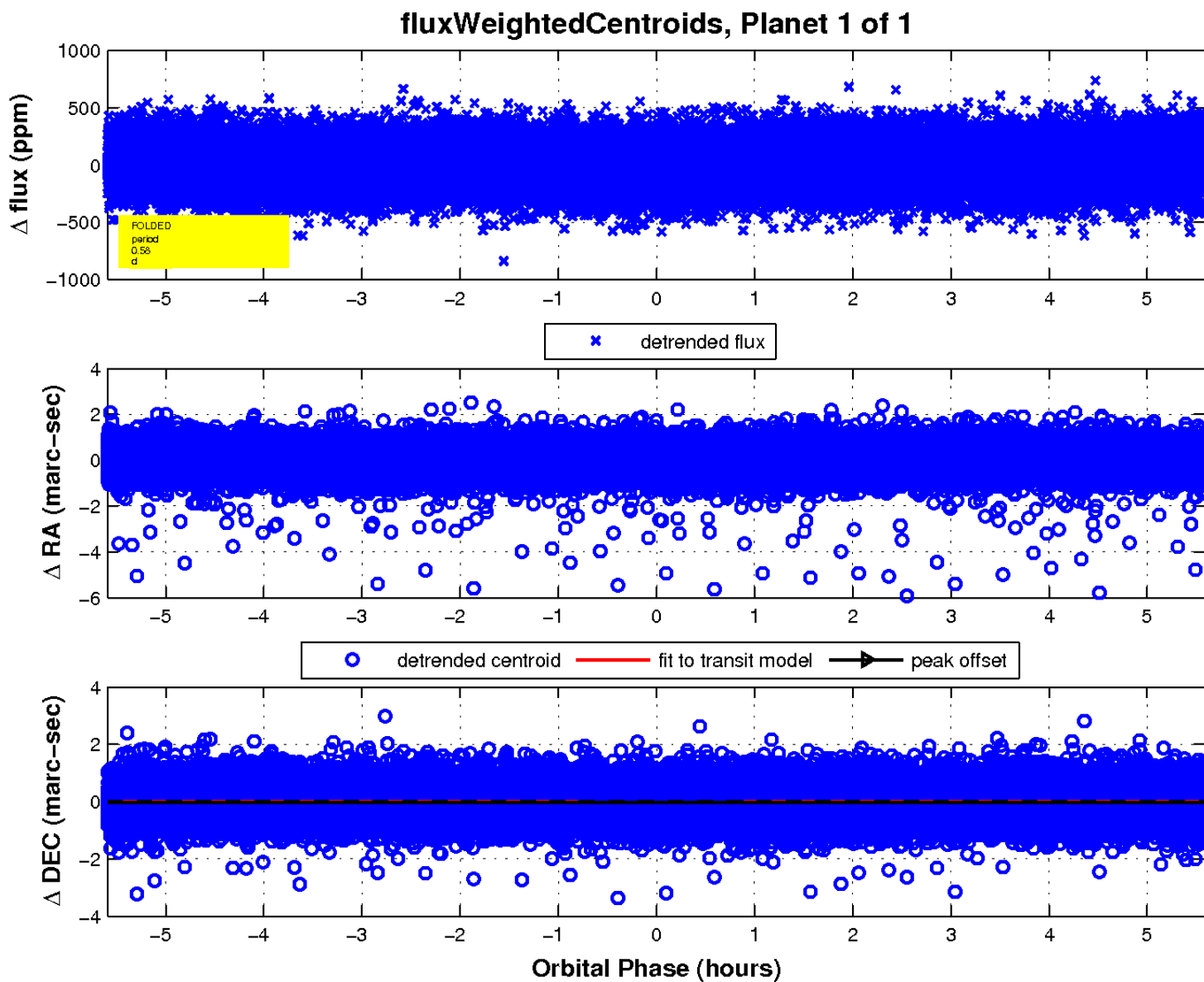
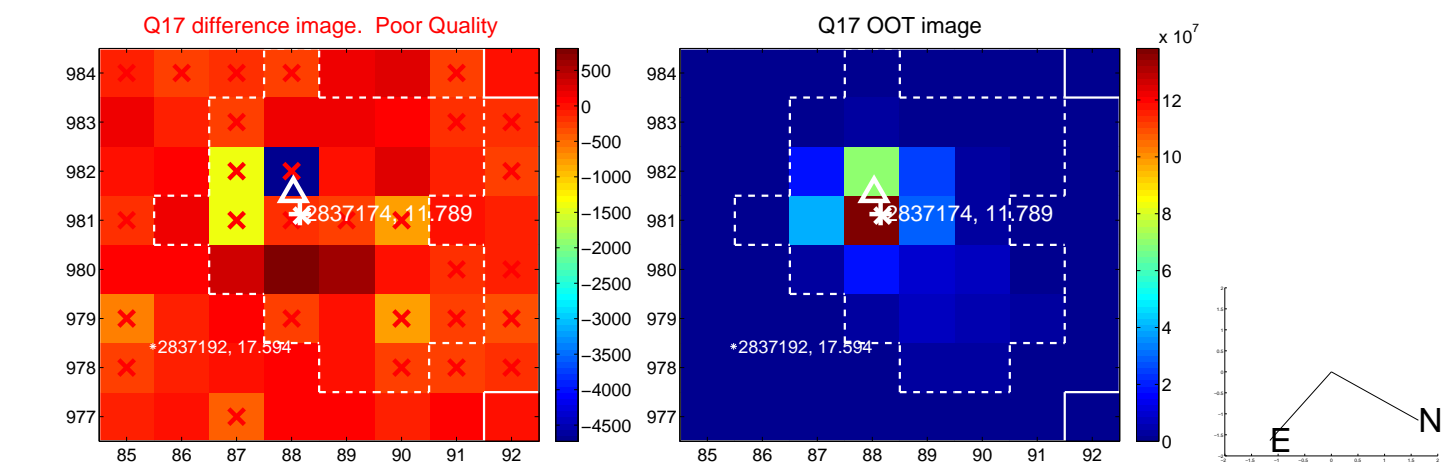
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

Declination

