

# KIC 008360041

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008360041-01	OBS	4854.01	2.635321	133.970768	58.8	2.199	8.0	9.0	0.86	5215	0.80	394.28

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008360041-01	OBS	PC	0.98	0	0	0	0	NO_COMMENT

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

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

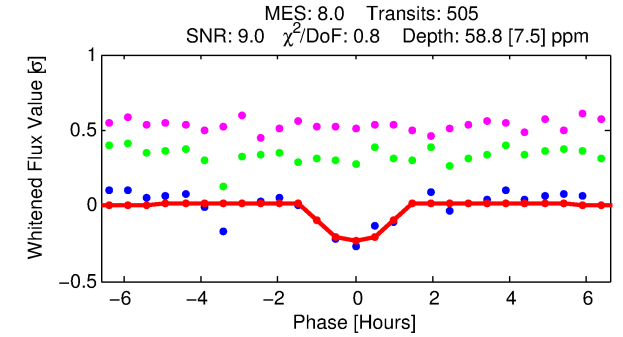
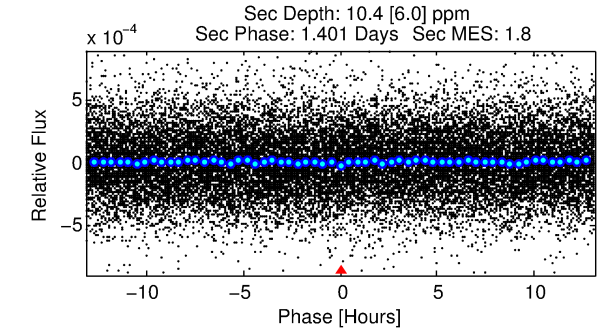
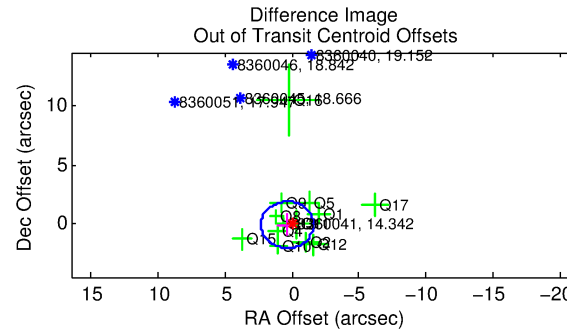
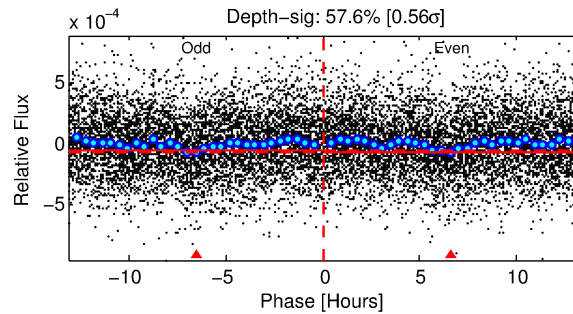
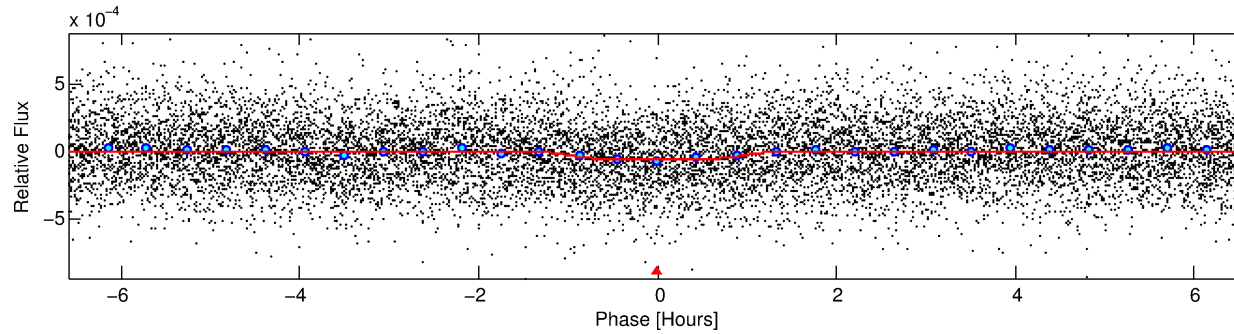
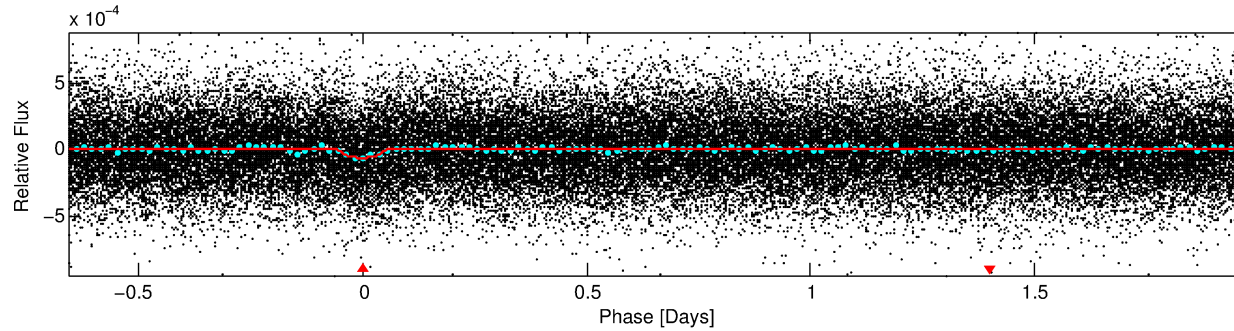
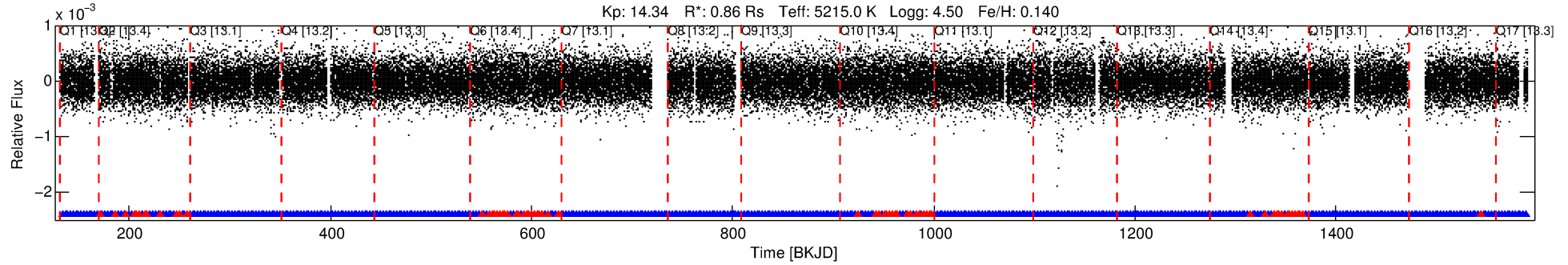
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008360041-01

No Significant Match Found

# DV One-Page Summary

KIC: 8360041 Candidate: 1 of 1 Period: 2.635 d  
KOI: K04854.01 Corr: 0.953



## DV Fit Results:

Period = 2.63532 [0.00002] d  
Epoch = 133.9708 [0.0038] BKJD  
Rp/R\* = 0.0085 [0.0062]  
a/R\* = 4.30 [12.23]  
b = 0.90 [0.66]  
Seff = 394.28 [51.04]  
Teq = 1136 [37] K  
Rp = 0.80 [0.58] Re  
a = 0.0354 [0.0025] AU  
Ag = 11.21 [17.49] [0.58 $\sigma$ ]  
Teffp = 3215 [1251] K [1.66 $\sigma$ ]

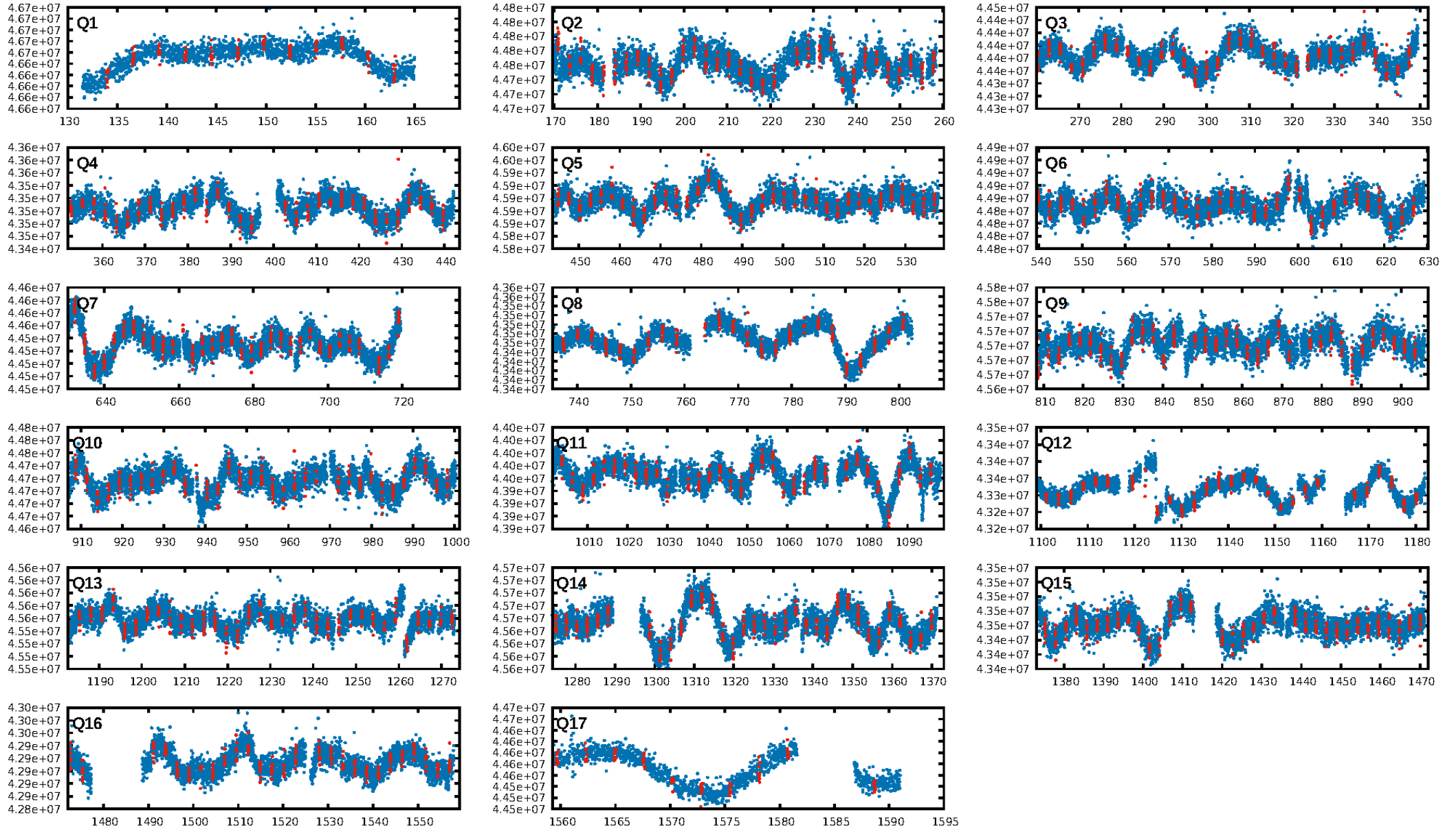
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.18e-14  
RollingBand-fgt: 0.87 [419/483]  
GhostDiagnostic-chr: 1.806  
Centroid-sig: 1.8%  
Centroid-so: 2.754 arcsec [2.11 $\sigma$ ]  
OotOffset-rm: 0.391 arcsec [0.60 $\sigma$ ]  
KicOffset-rm: 0.263 arcsec [0.48 $\sigma$ ]  
OotOffset-st: 2/2/4/5 [13]  
KicOffset-st: 2/2/4/5 [13]  
DiffImageQuality-fgm: 0.62 [8/13]  
DiffImageOverlap-fno: 1.00 [17/17]

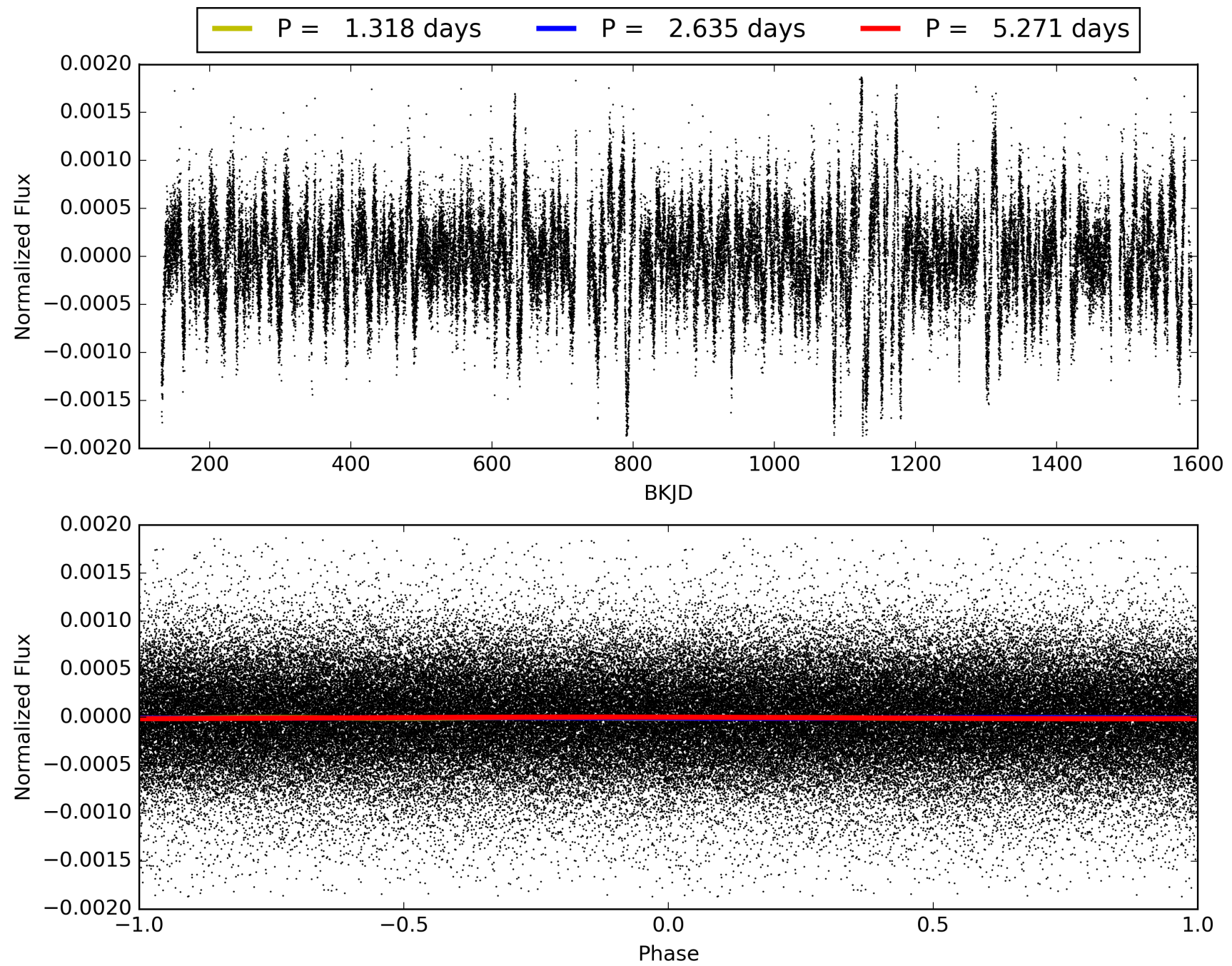
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:25:54 Z

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

# TCE 008360041-01, PDC Light Curves



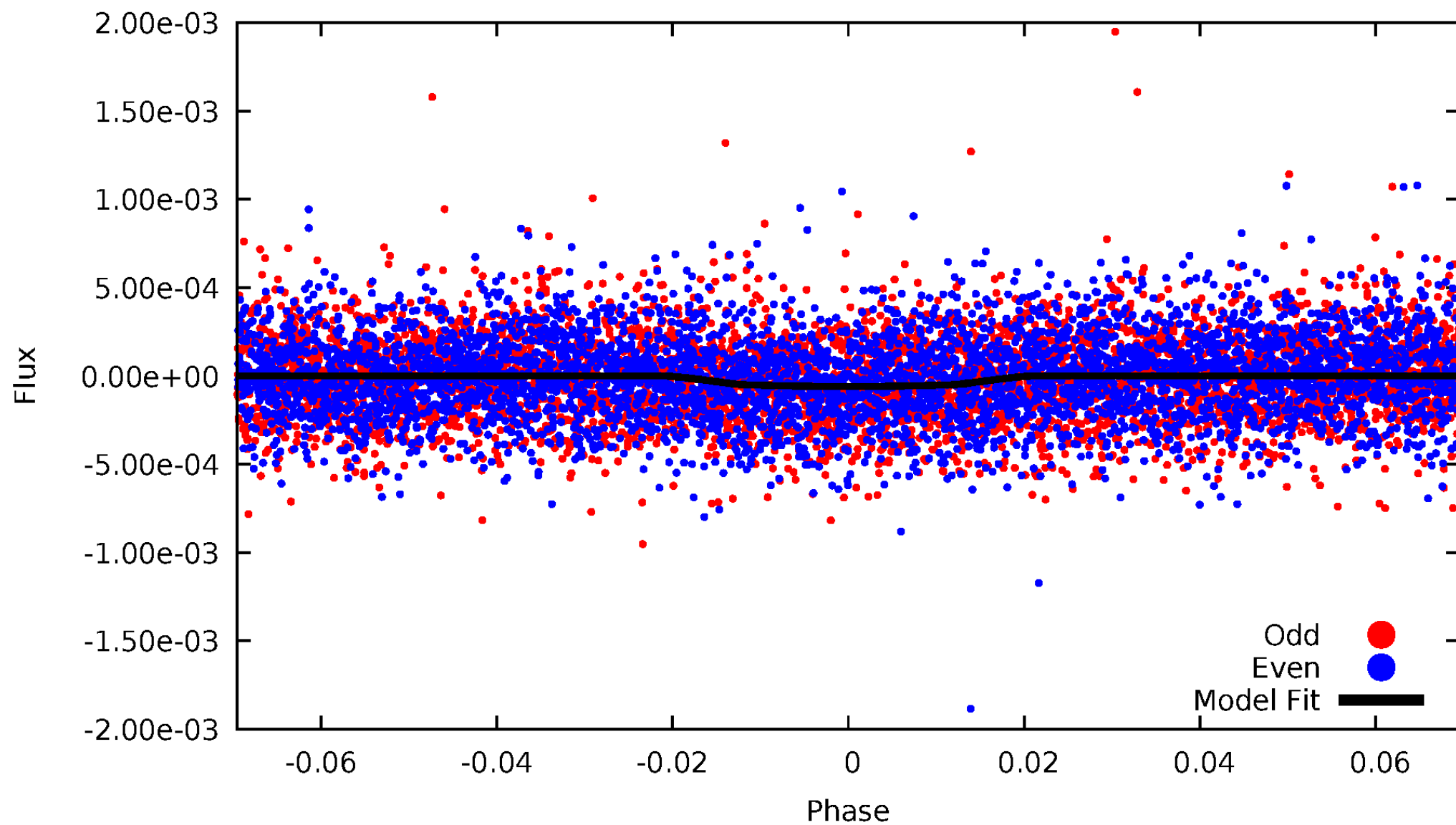
TCE 008360041-01





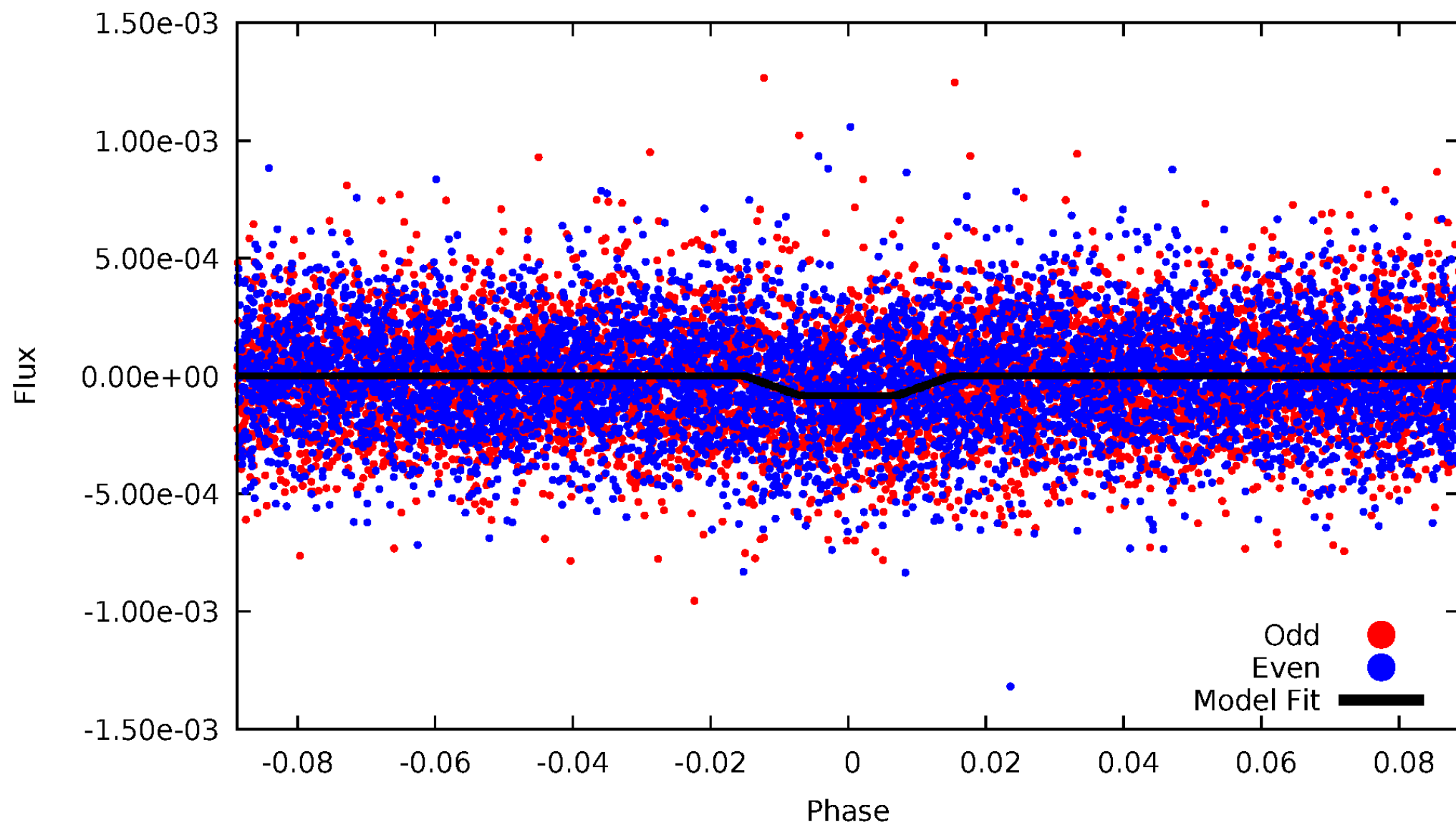
# DV Odd/Even

TCE 008360041-01



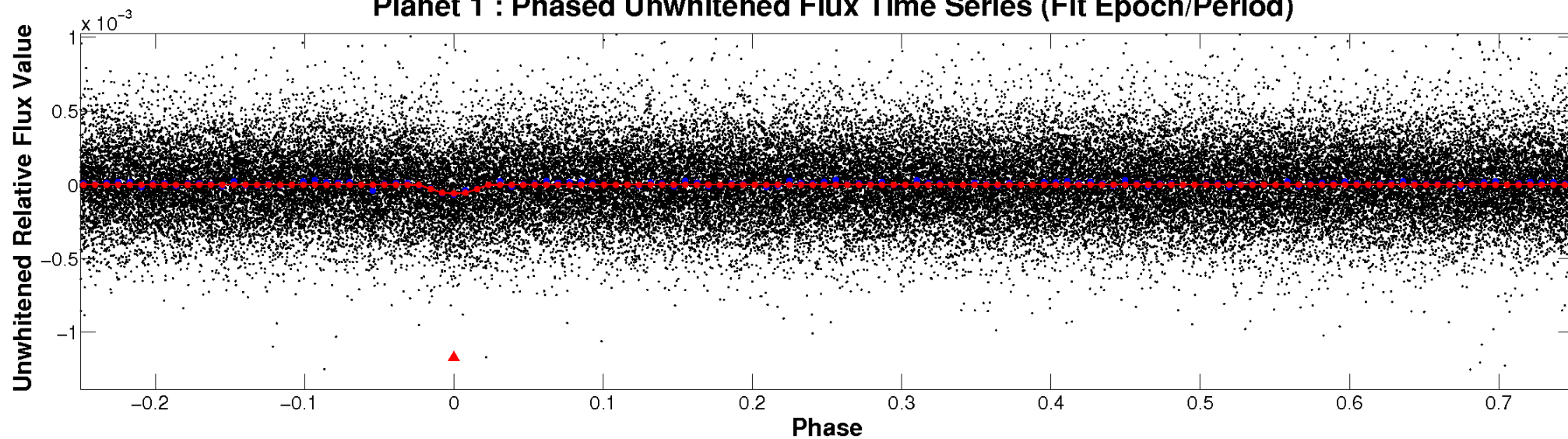
# ALT Odd/Even

TCE 008360041-01

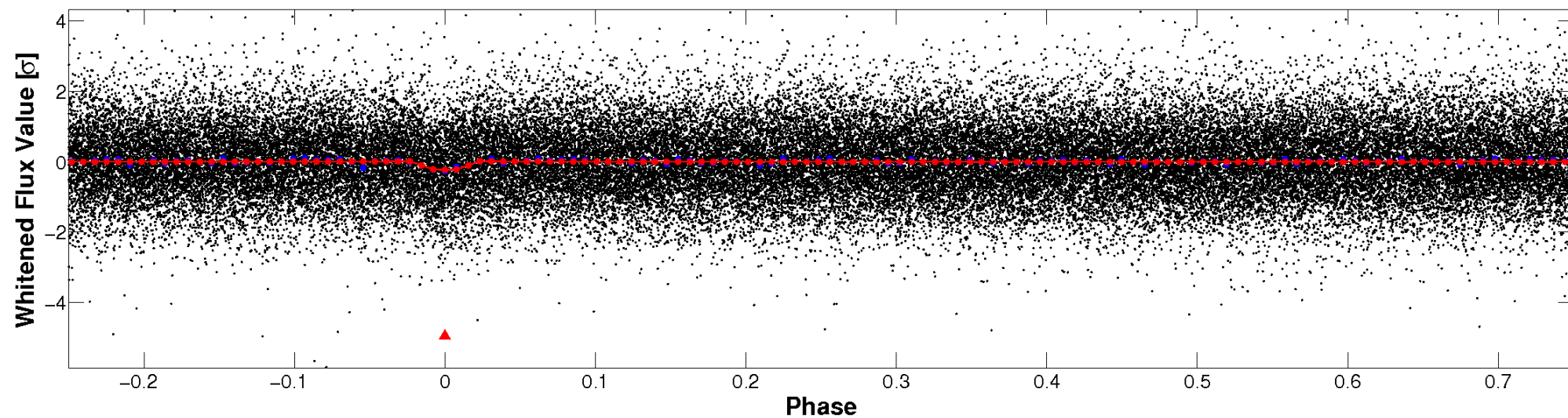


# Non-Whitened Vs. Whitened Light Curve

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

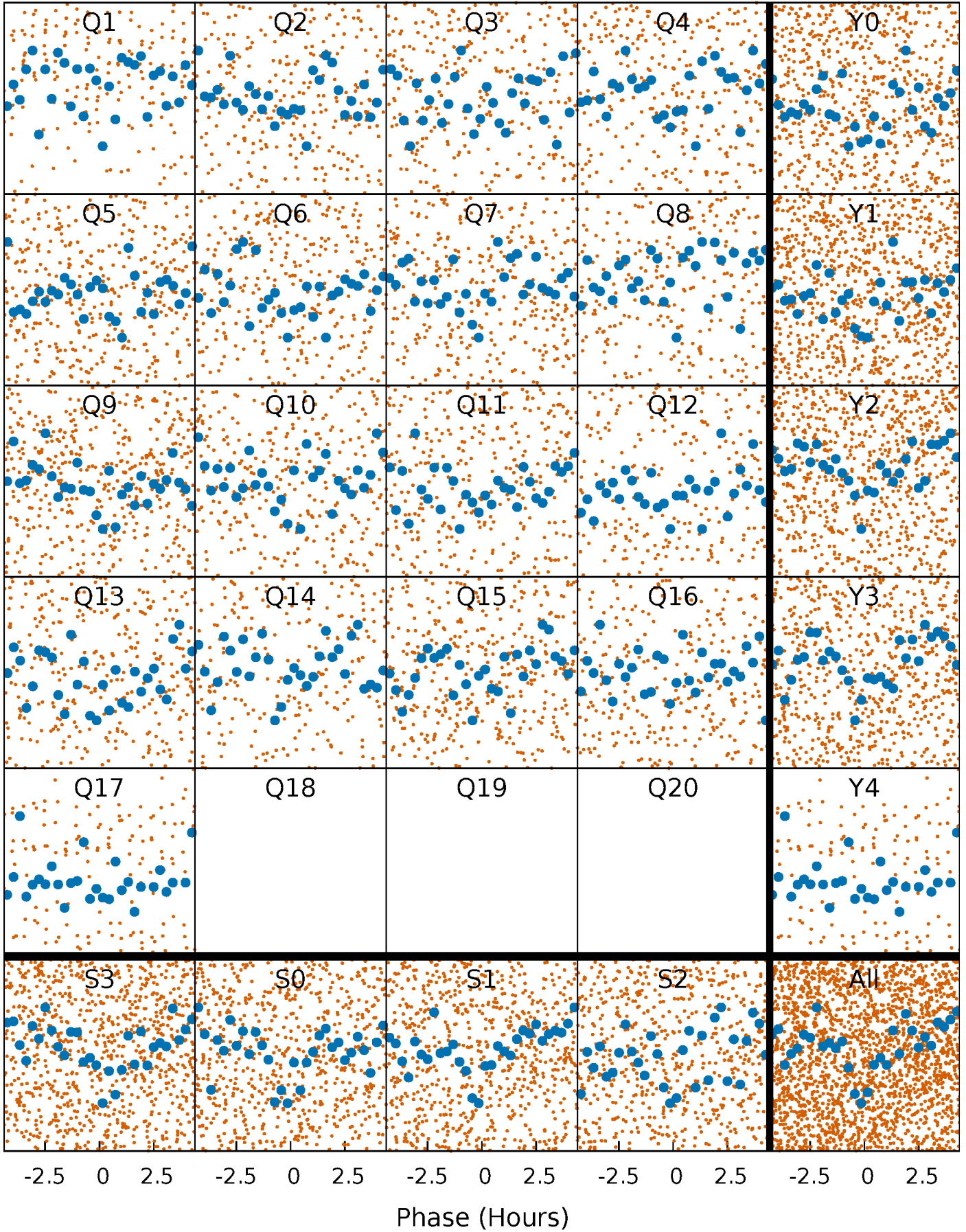


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

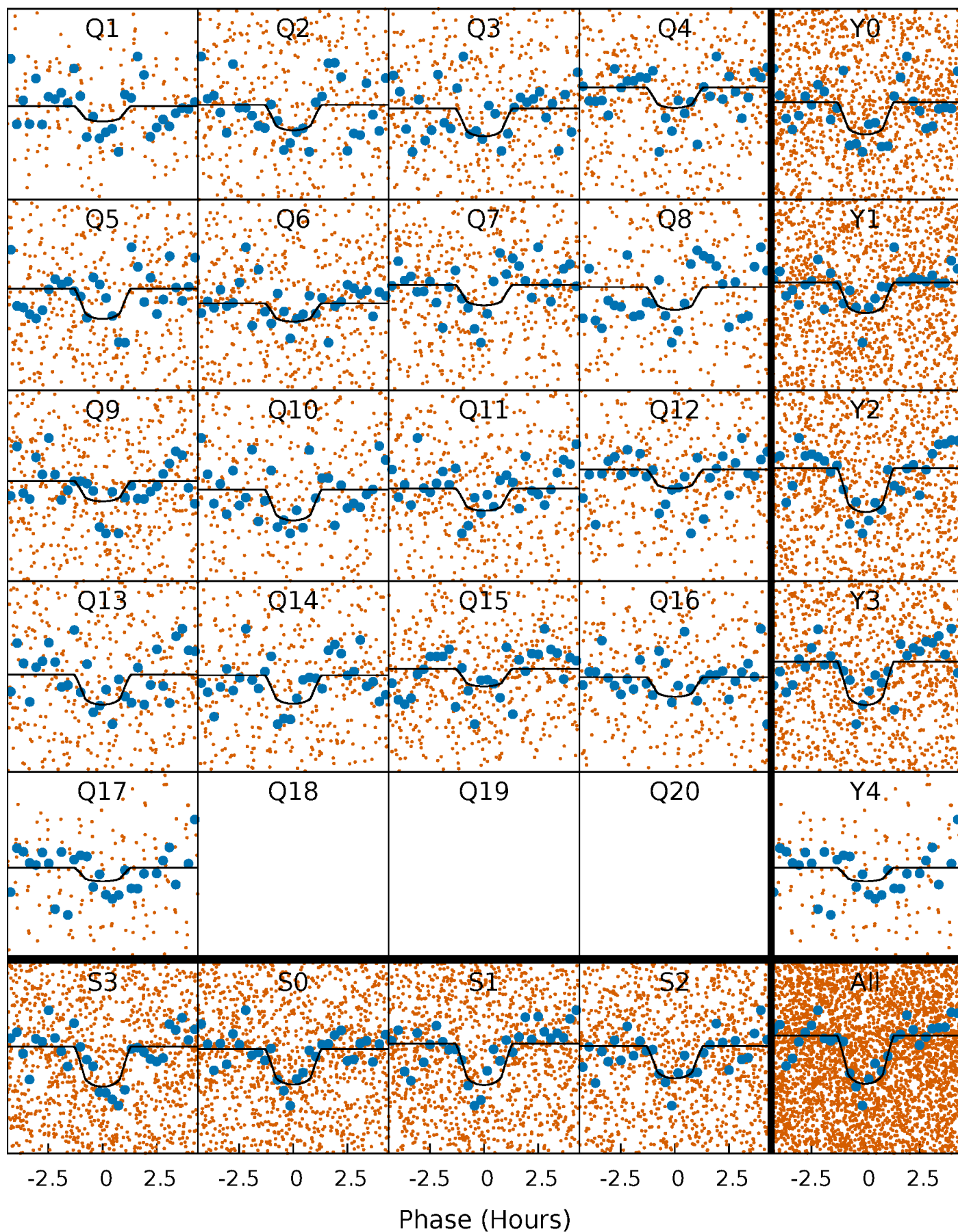
TCE 008360041-01 P= 2.635321 Days  $T_0=133.970768$  (BKJD)





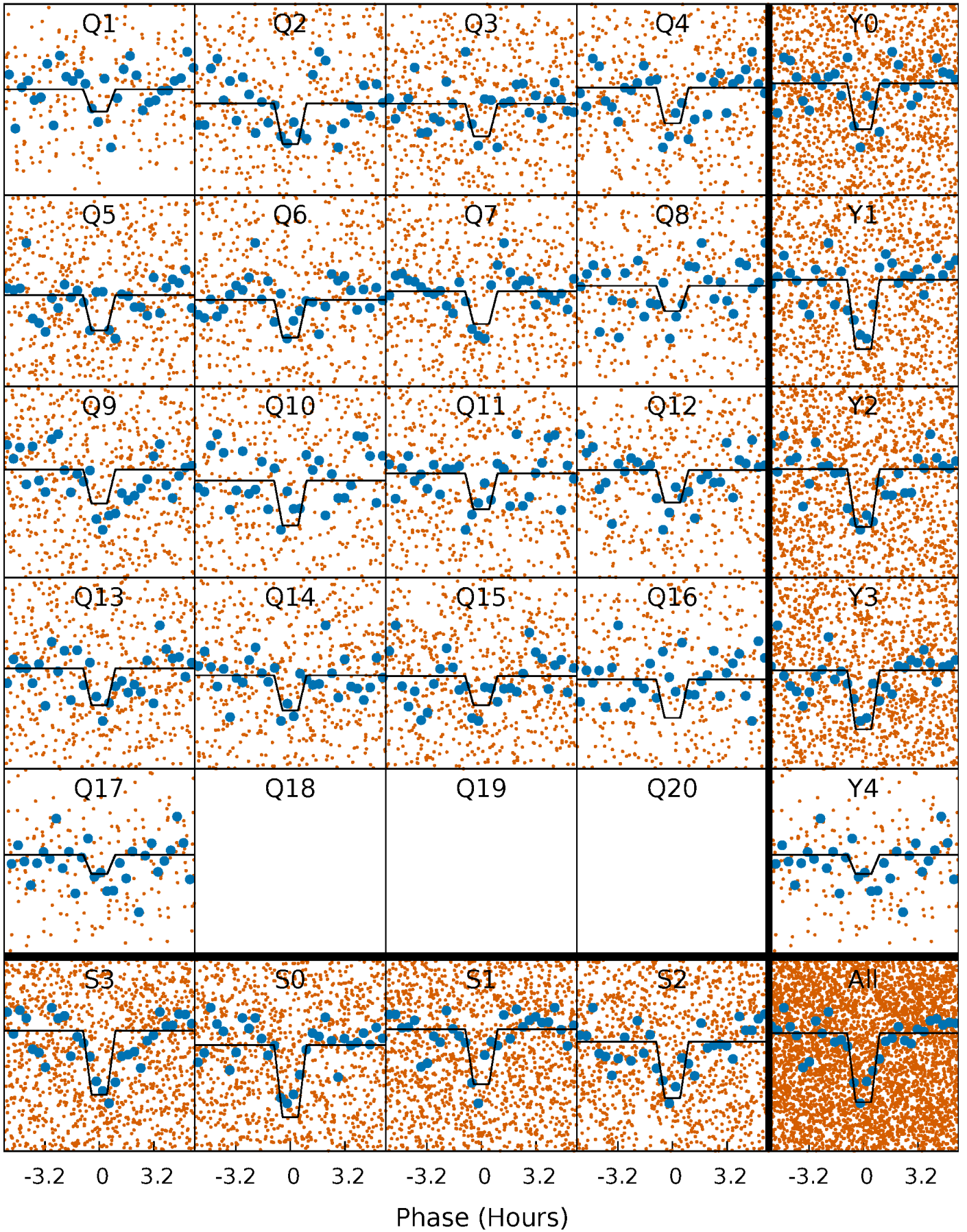
# DV Quarter-Phased Transit Curves

TCE 008360041-01 P= 2.635321 Days  $T_0=133.970768$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

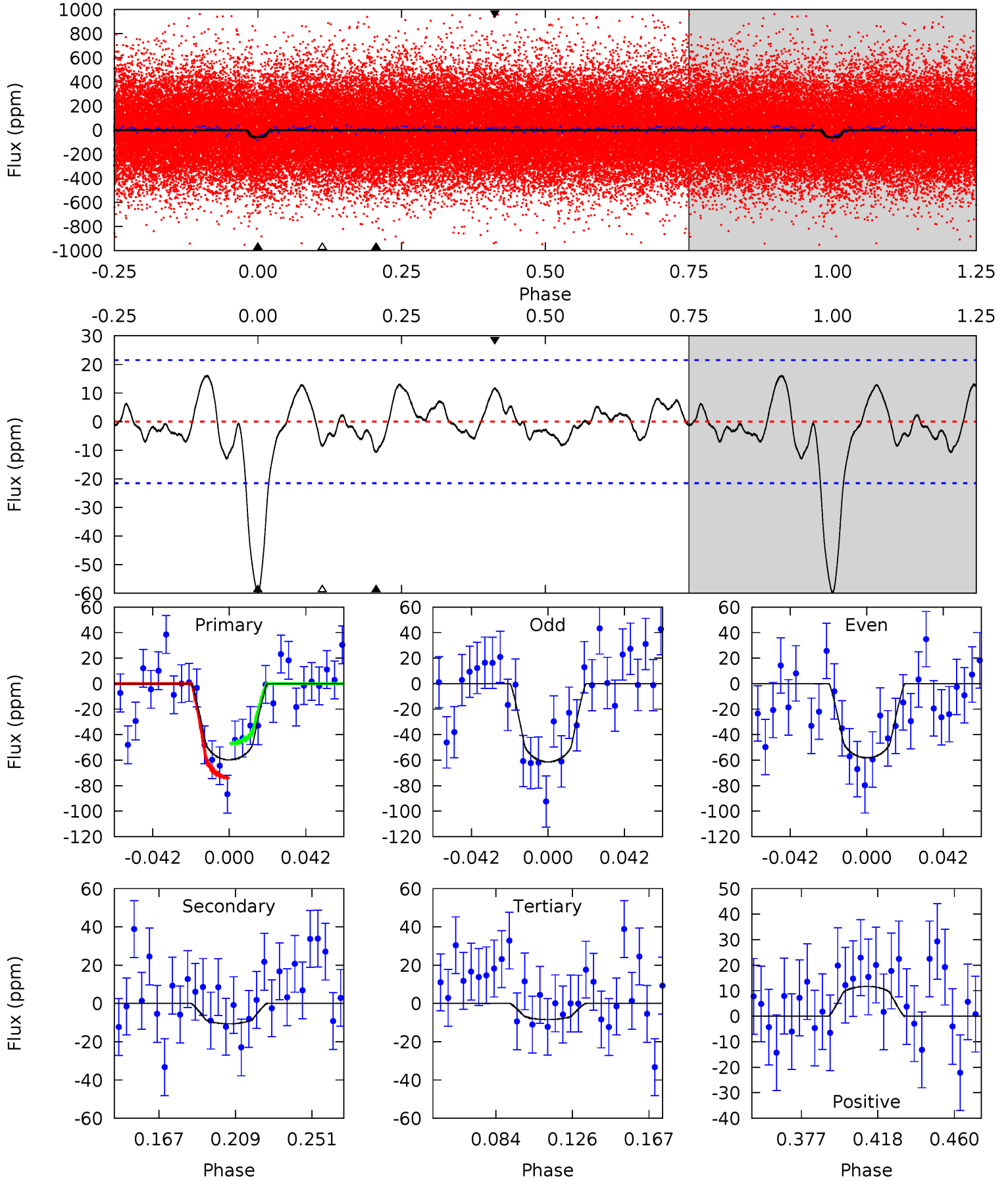
TCE 008360041-01 P= 2.635314 Days  $T_0=133.968594$  (BKJD)



# DV Model-Shift Uniqueness Test

008360041-01, P = 2.635321 Days, E = 131.335447 Days

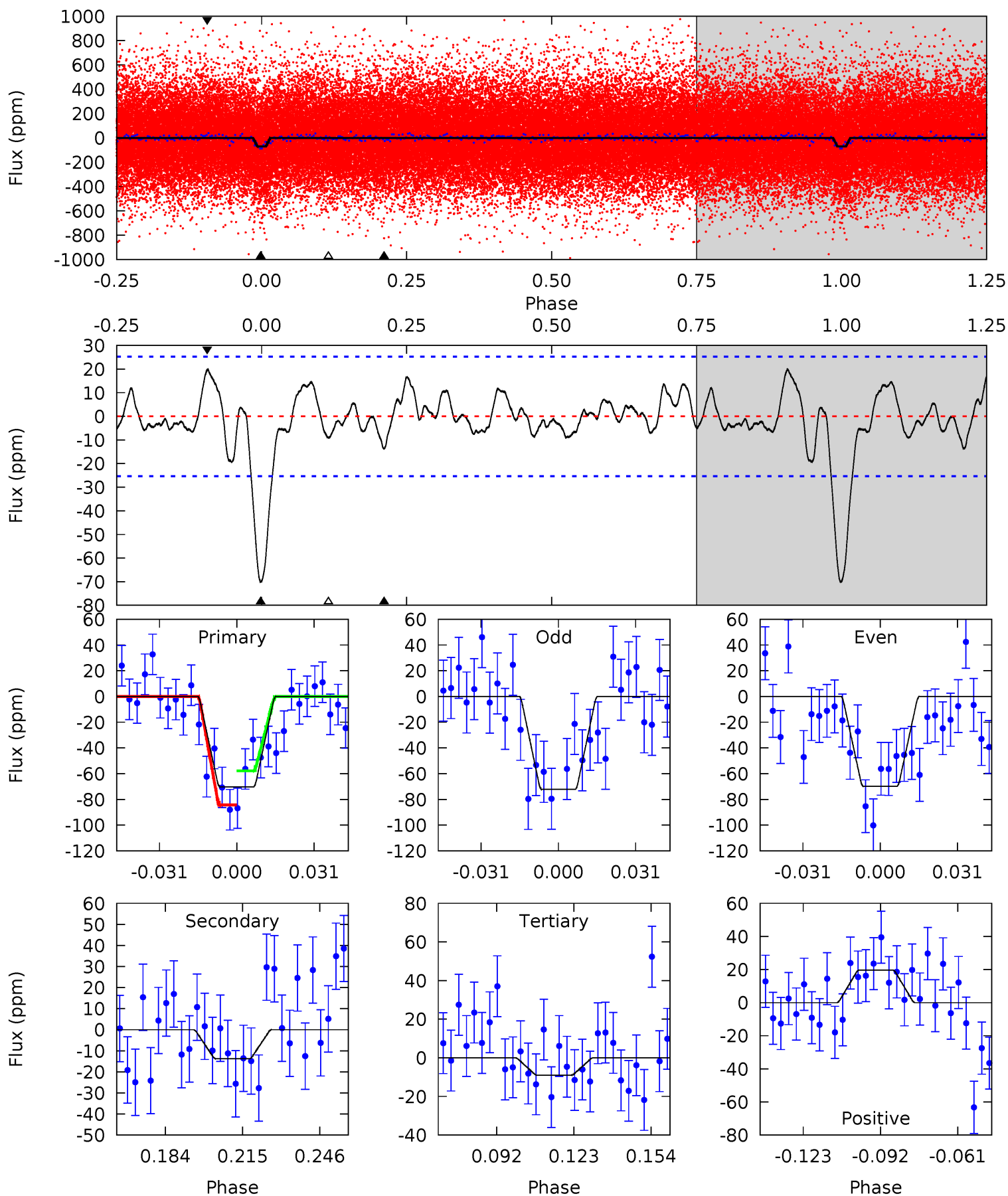
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	2.34	1.86	2.58	4.74	2.04	1.26	11.3	10.6	0.48	-0.24	0.35	1.05	0.21	2.99



# Alt Model-Shift Uniqueness Test

008360041-01, P = 2.635314 Days, E = 131.333280 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
13.3	2.61	1.72	3.74	4.81	2.16	1.34	11.6	9.60	0.89	-1.12	0.22	0.92	0.22	2.52





### Stellar Parameters For KIC 008360041

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5215^{+83}_{-83}$	$4.496^{+0.066}_{-0.050}$	$0.140^{+0.150}_{-0.150}$	$0.864^{+0.058}_{-0.064}$	$0.854^{+0.049}_{-0.040}$	$1.863^{+0.448}_{-0.301}$
	+2%/-2%	+1%/-1%	+107%/-107%	+7%/-7%	+6%/-5%	+24%/-16%
Source	SPE90	SPE90	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 008360041-01 / KOI 4854.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-11 \pm 5$	$0.85^{+0.57}_{-0.48}$	$1586^{+42}_{-42}$	$3514^{+1236}_{-559}$	$9.432^{+43.073}_{-6.288}$
Alt.	$-14 \pm 5$	$0.91^{+0.56}_{-0.52}$	$1586^{+35}_{-42}$	$3591^{+1281}_{-602}$	$11^{+48}_{-8}$

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

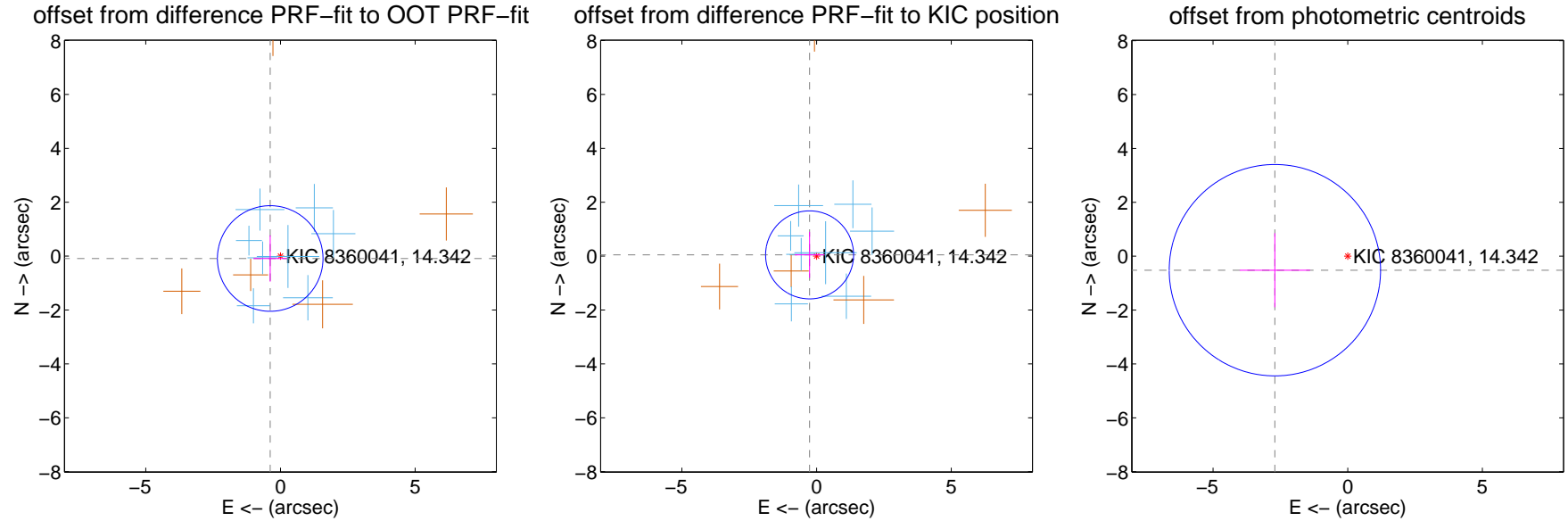
## DV Centroid Data

Supplemental centroid analysis for 008360041-01. Kepler magnitude: 14.34. Transit SNR 8.98

There are 8 quarters with good PRF difference image offsets

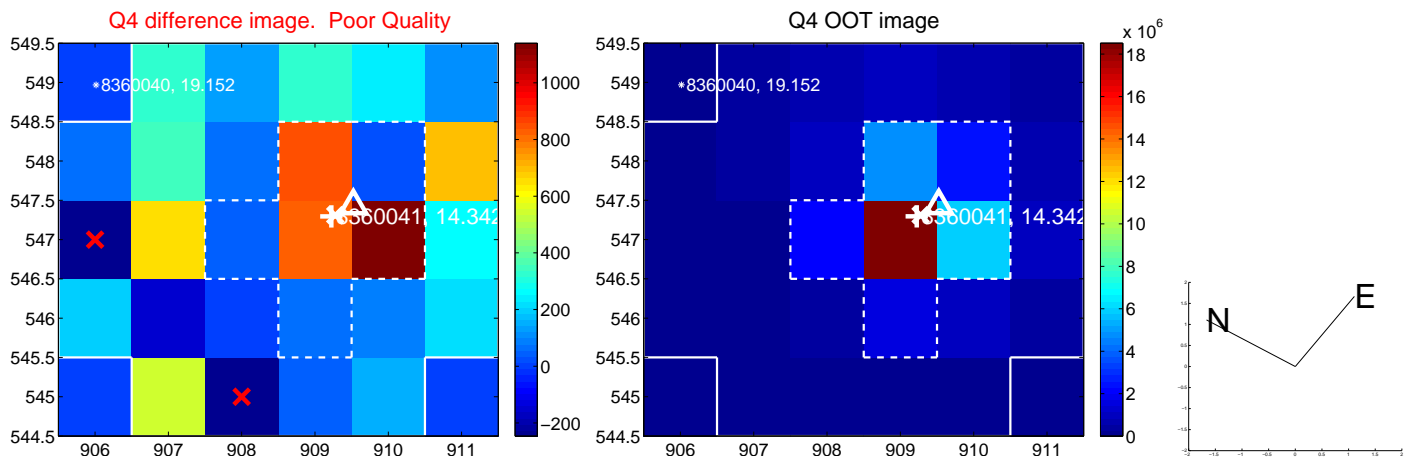
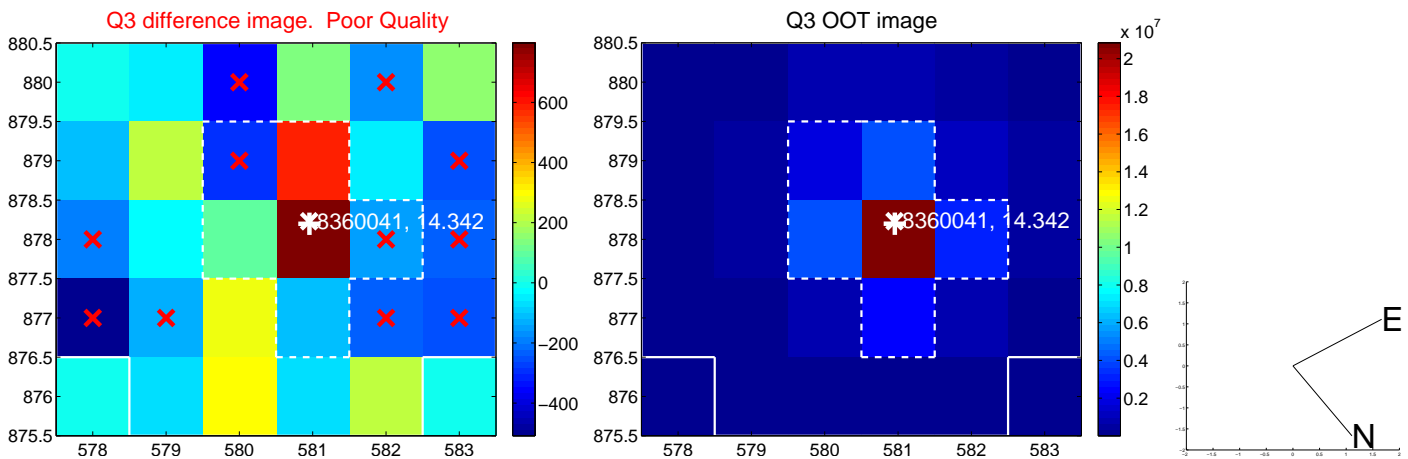
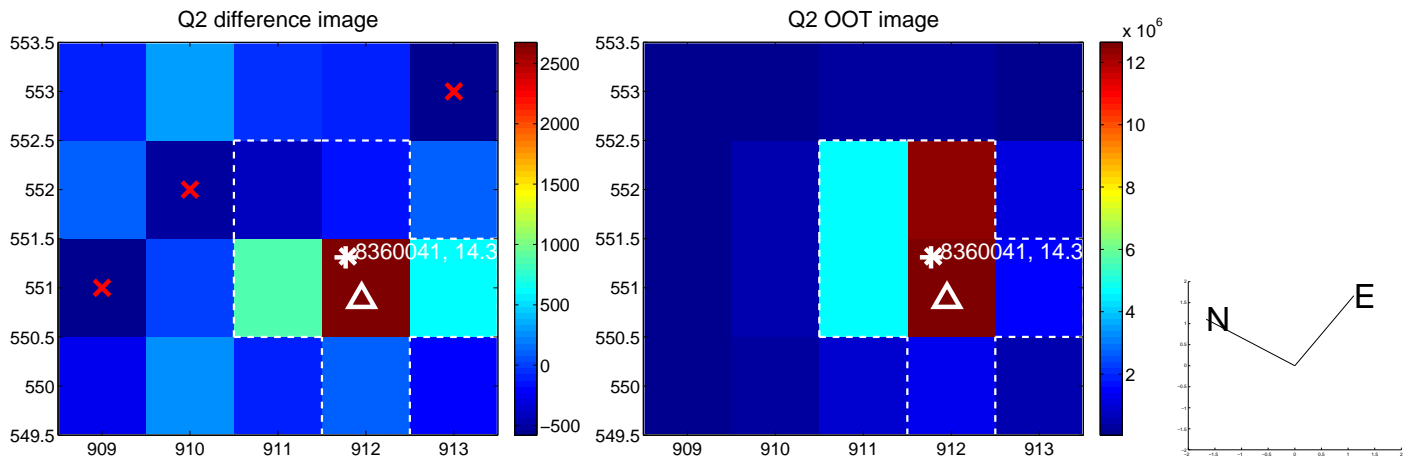
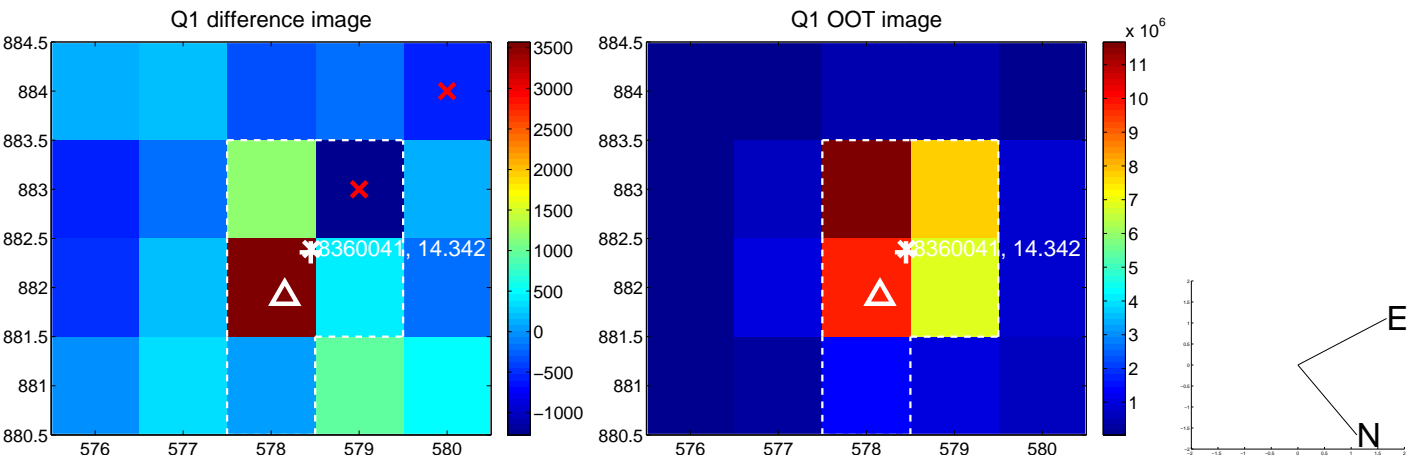
The direct PRF centroid is offset from the target star catalog position by about 0.18 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.391 \pm 0.653$	0.60	$0.381 \pm 0.622$	$-0.088 \pm 0.858$
PRF-fit source offset from KIC position	$0.263 \pm 0.544$	0.48	$0.259 \pm 0.551$	$0.046 \pm 0.854$
photometric centroid source offset	$2.75 \pm 1.31$	2.11	$2.70 \pm 1.31$	$-0.52 \pm 1.38$

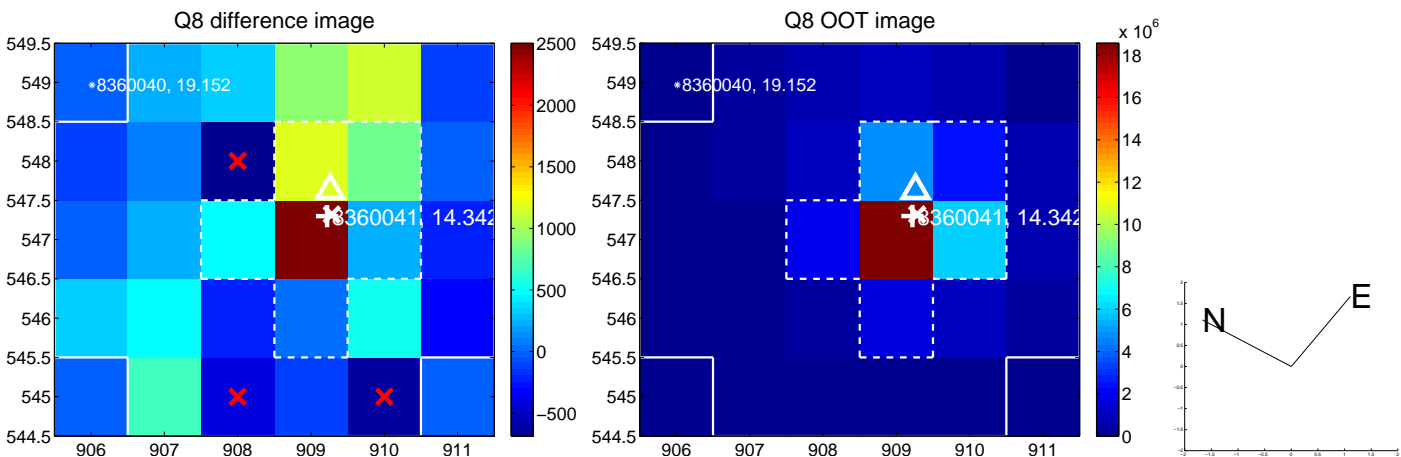
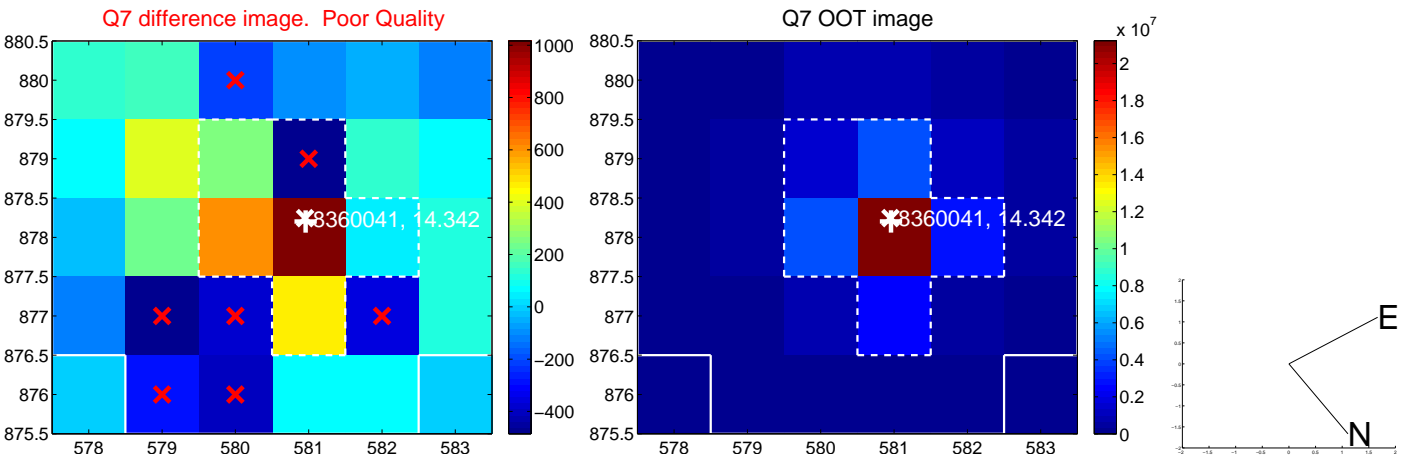
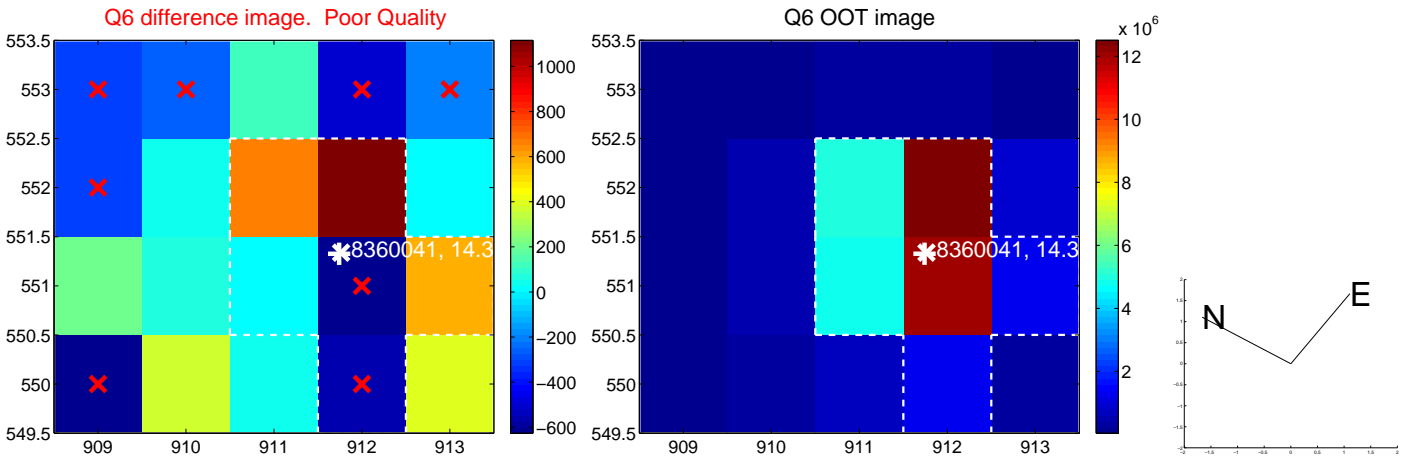
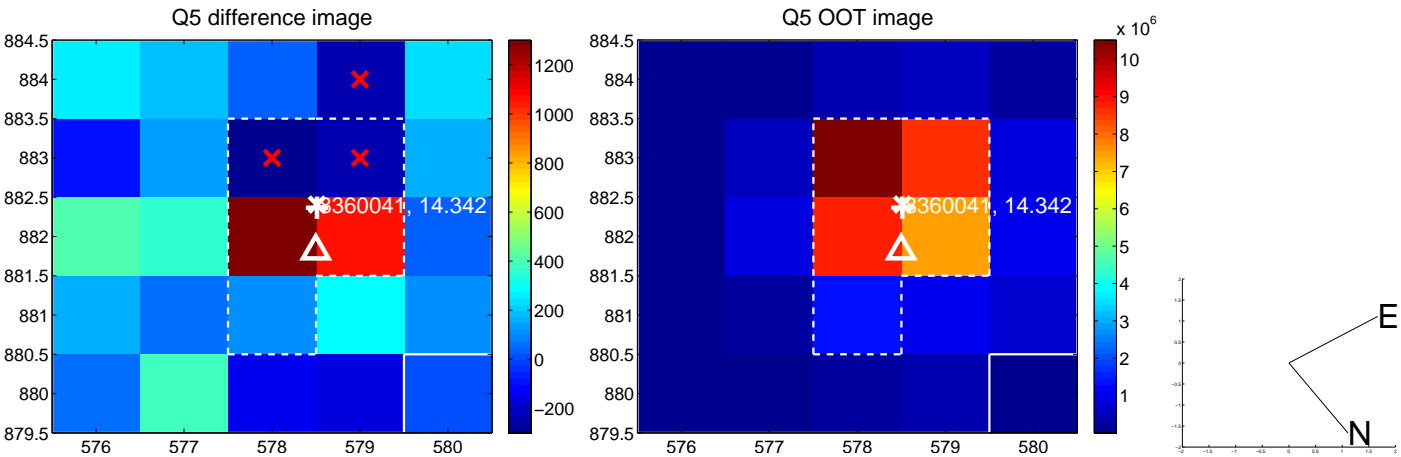


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

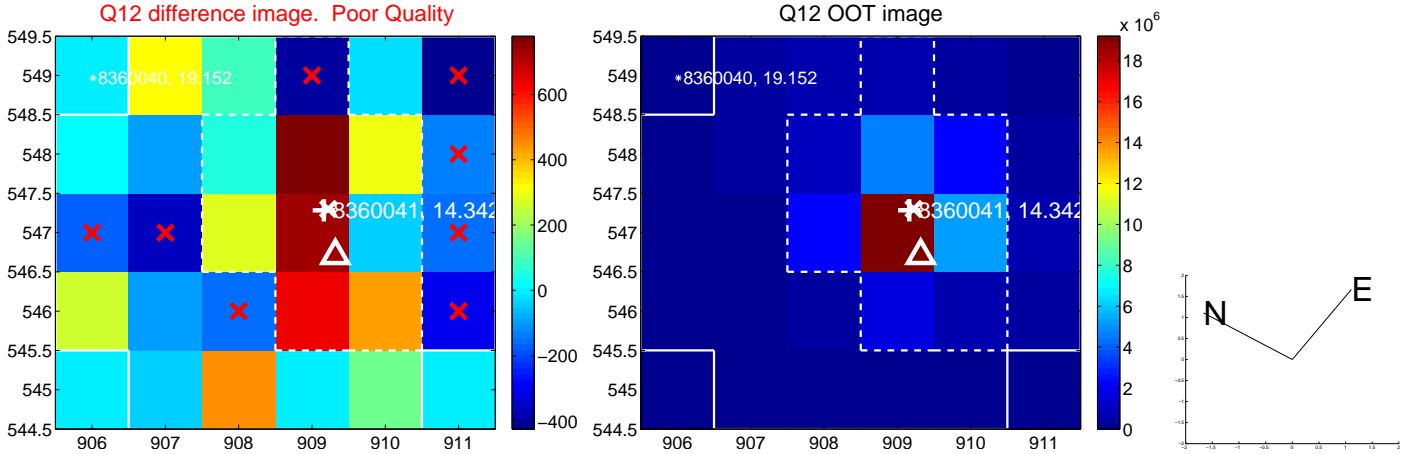
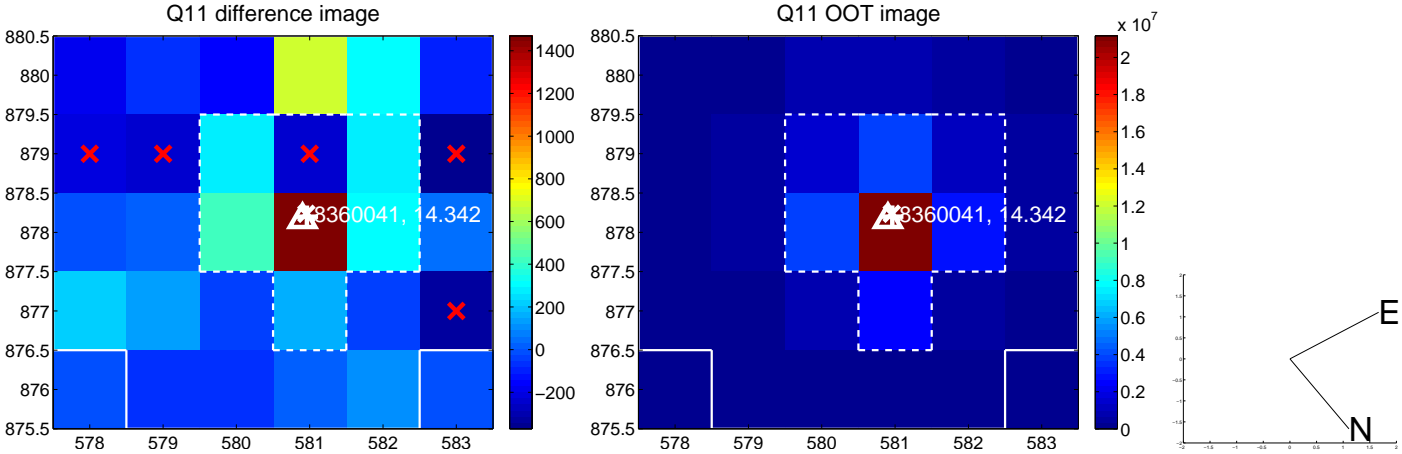
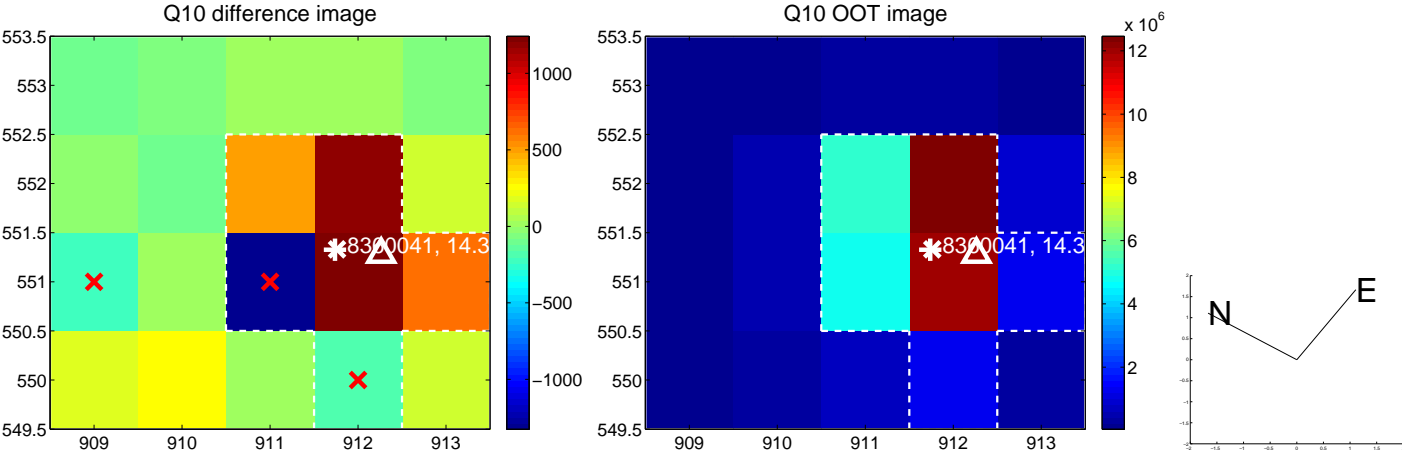
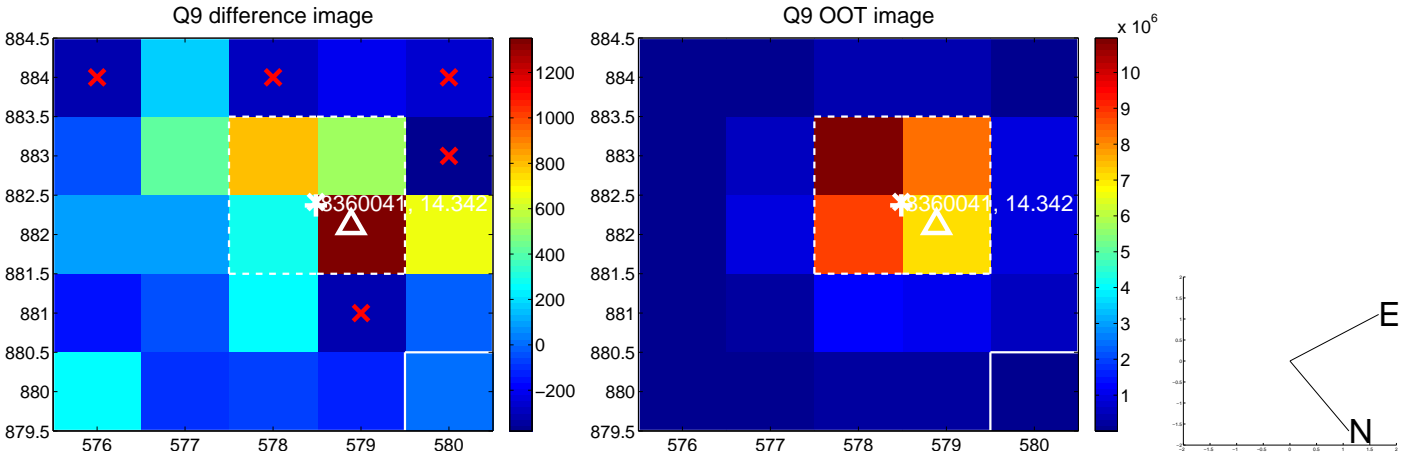


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

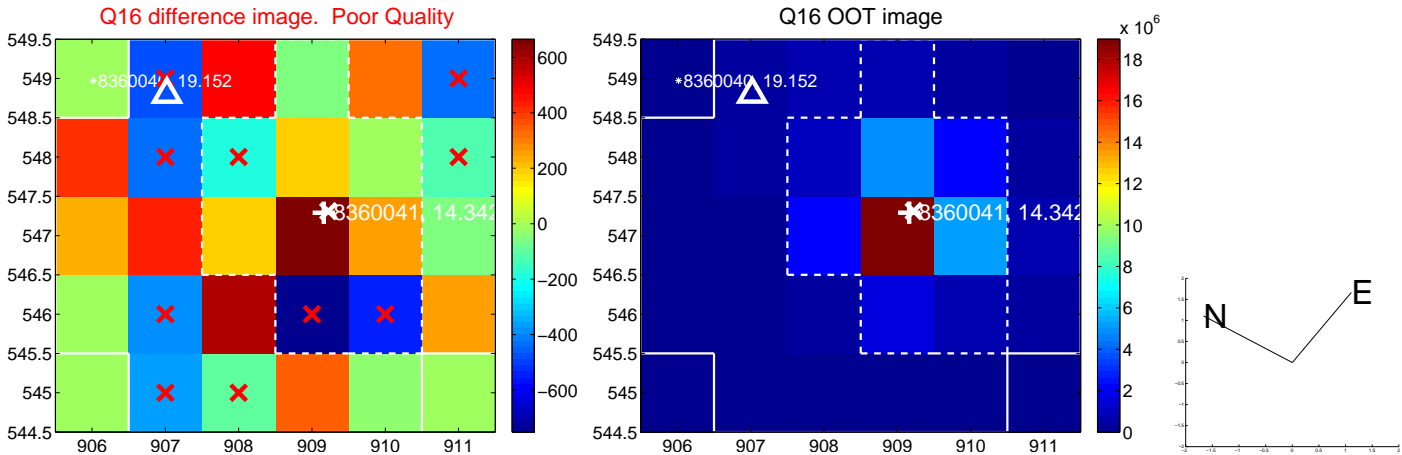
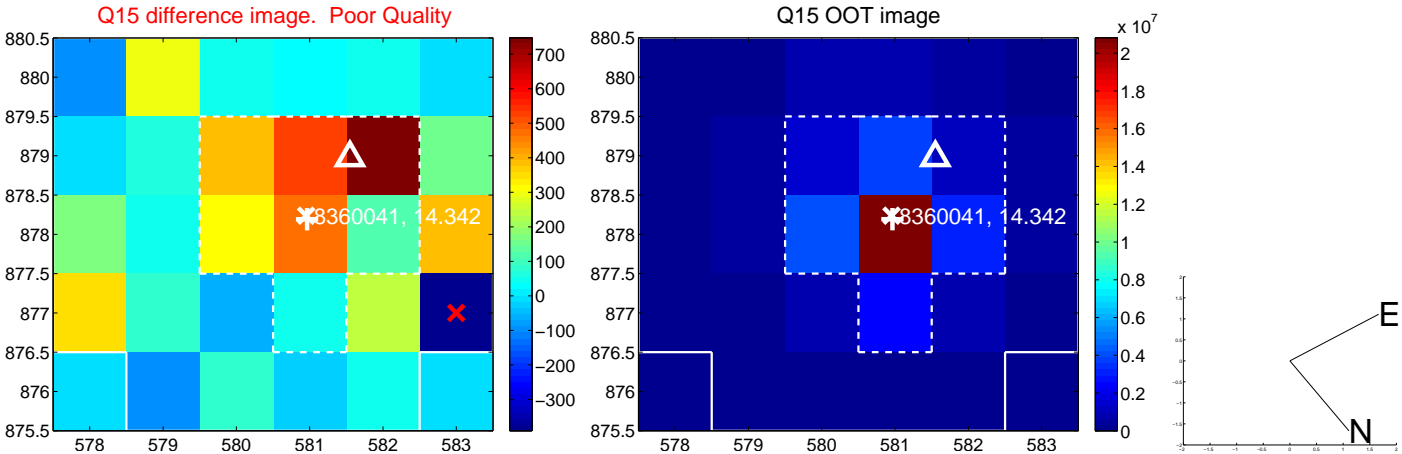
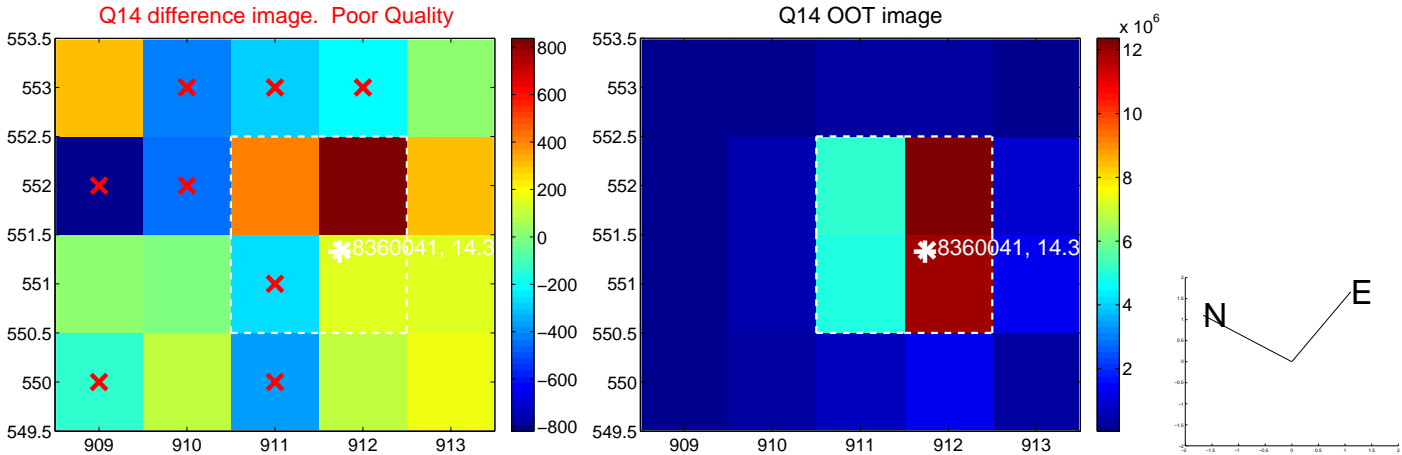
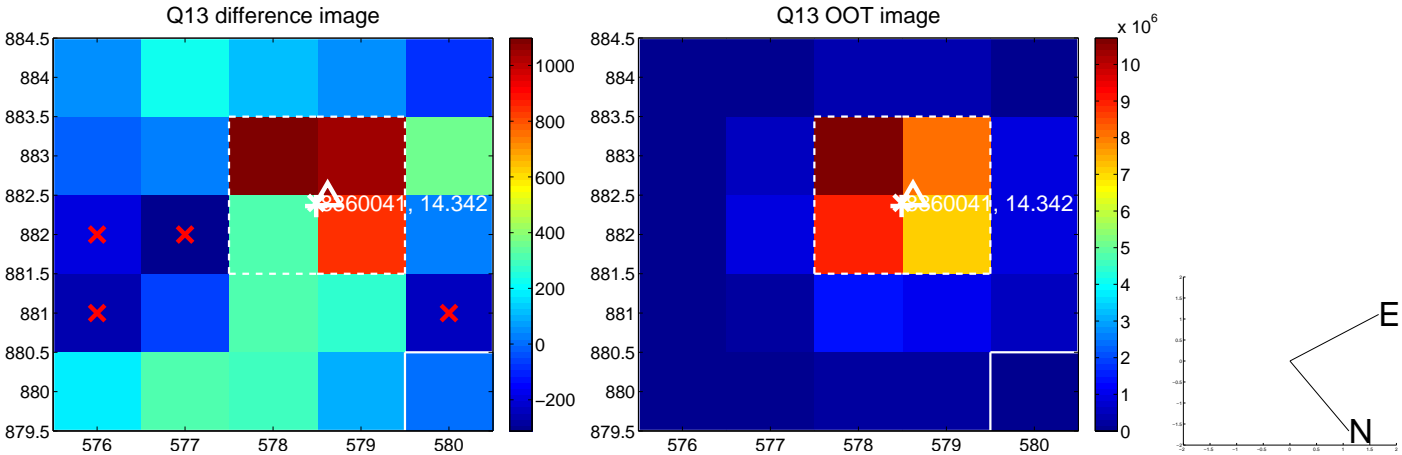




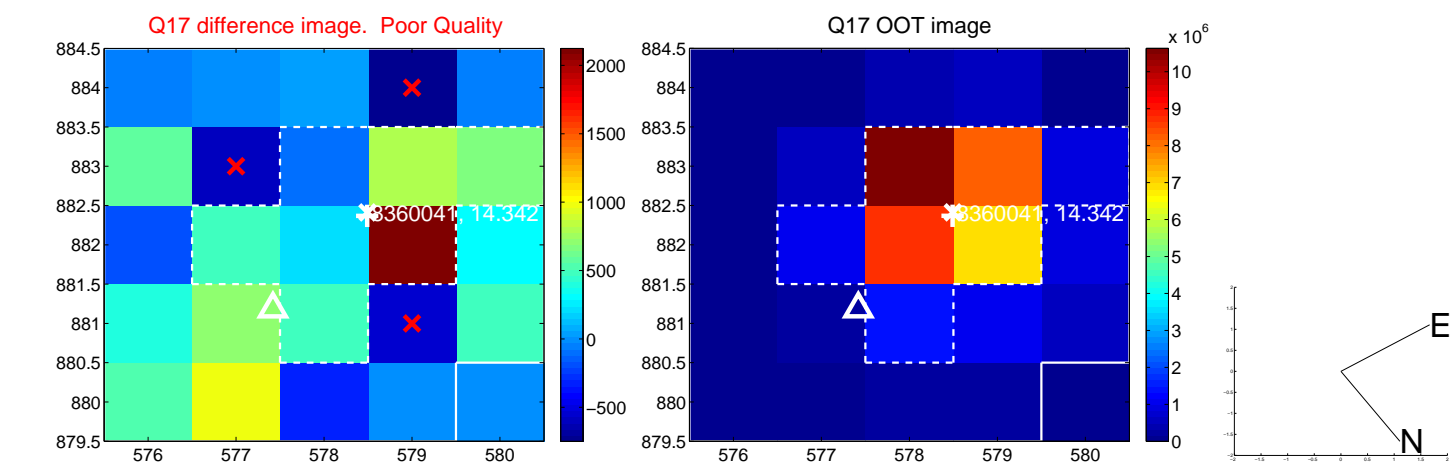
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



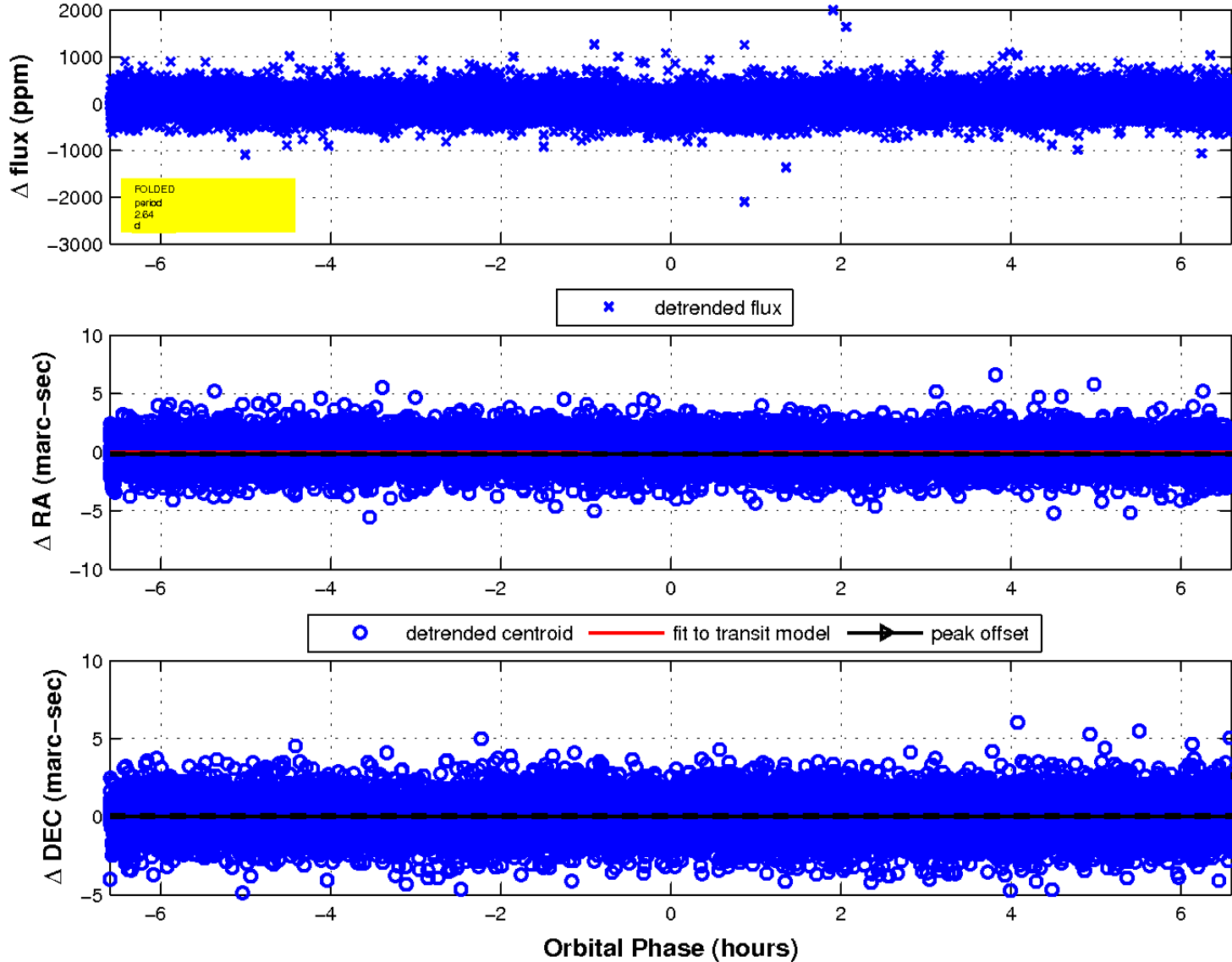
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

