

# KIC 008073806

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008073806-01	OBS	2411.01	11.964085	133.157316	750.4	4.406	19.7	20.5	0.96	5903	3.13	101.20

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008073806-01	OBS	PC	1.00	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.

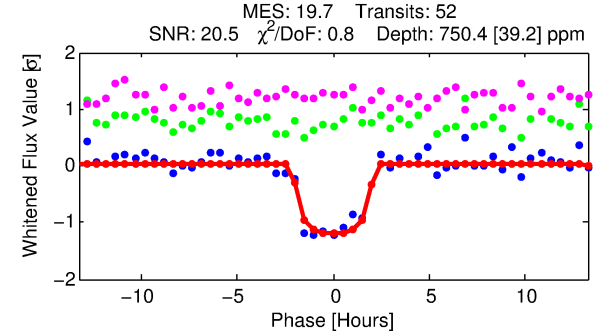
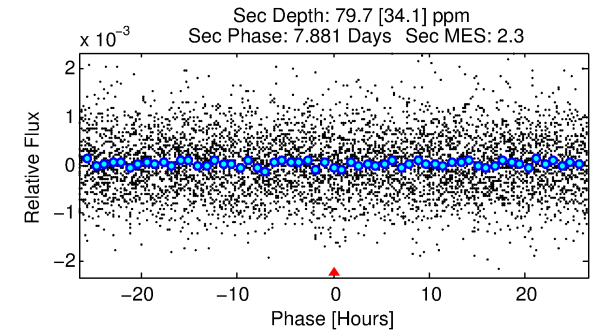
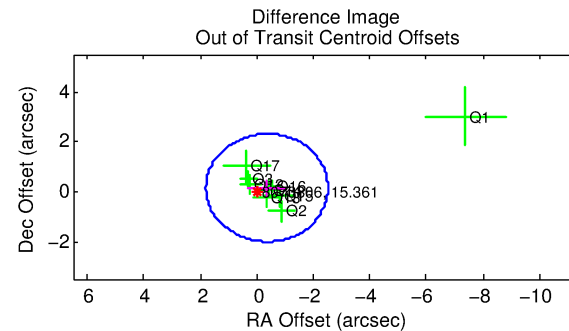
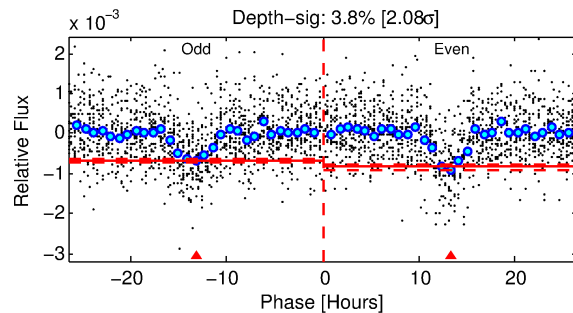
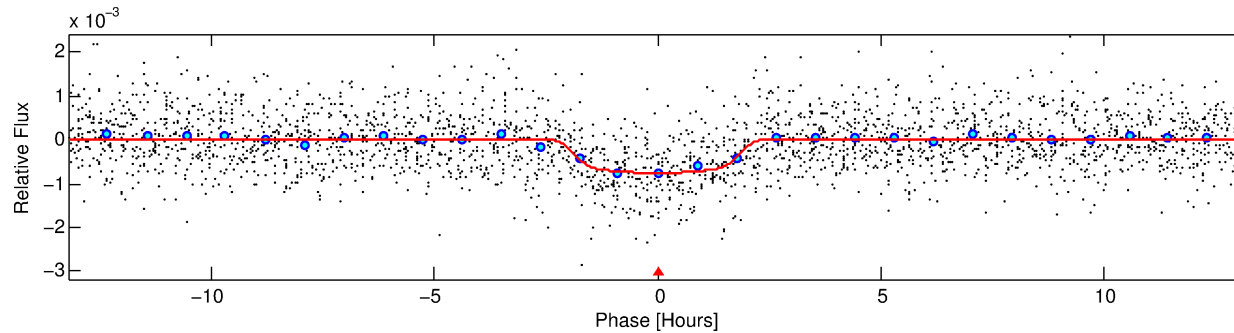
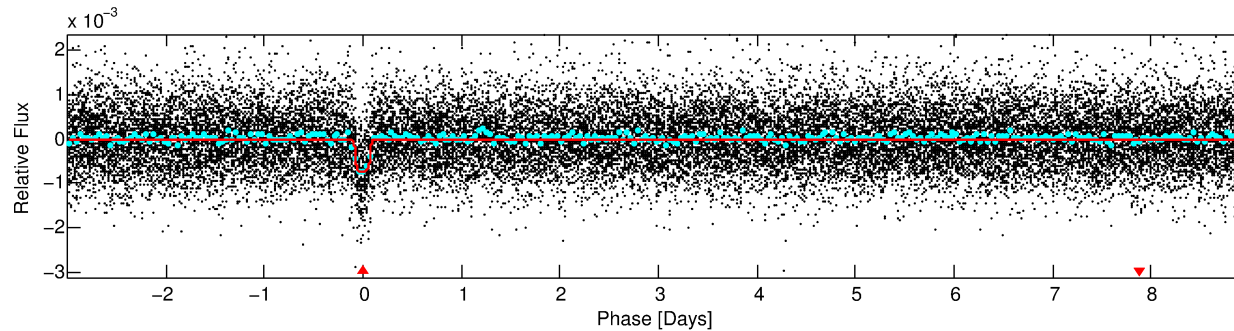
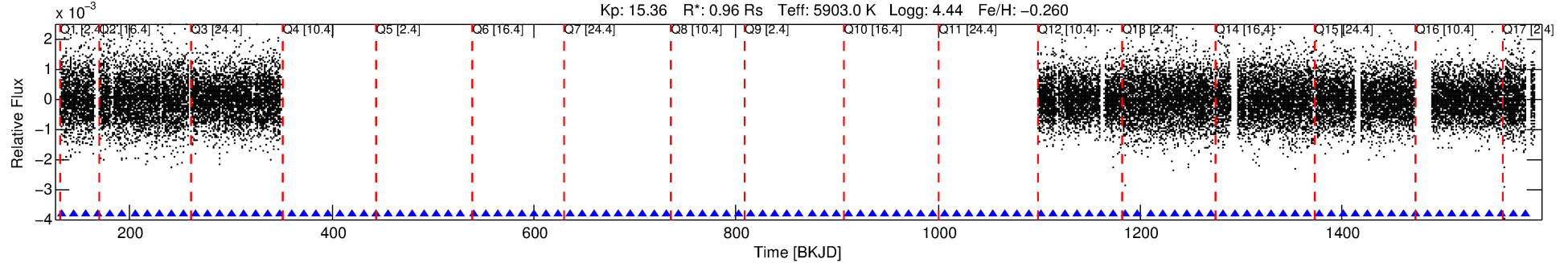
## Ephemeris Match Information For 008073806-01

No Significant Match Found

# DV One-Page Summary

KIC: 8073806 Candidate: 1 of 1 Period: 11.964 d  
KOI: K02411 Corr: No Ephemeris Match

Kp: 15.36 R\*: 0.96 Rs Teff: 5903.0 K Logg: 4.44 Fe/H: -0.260



## DV Fit Results:

Period = 11.96409 [0.00005] d  
Epoch = 133.1573 [0.0046] BKJD  
Rp/R\* = 0.0298 [0.0024]  
a/R\* = 10.23 [3.58]  
b = 0.91 [0.07]  
Seff = 101.20 [37.12]  
Teq = 809 [74] K  
Rp = 3.13 [0.94] Re  
a = 0.0996 [0.0240] AU  
Ag = 44.54 [25.57] [1.70σ]  
Teffp = 3230 [381] K [6.23σ]

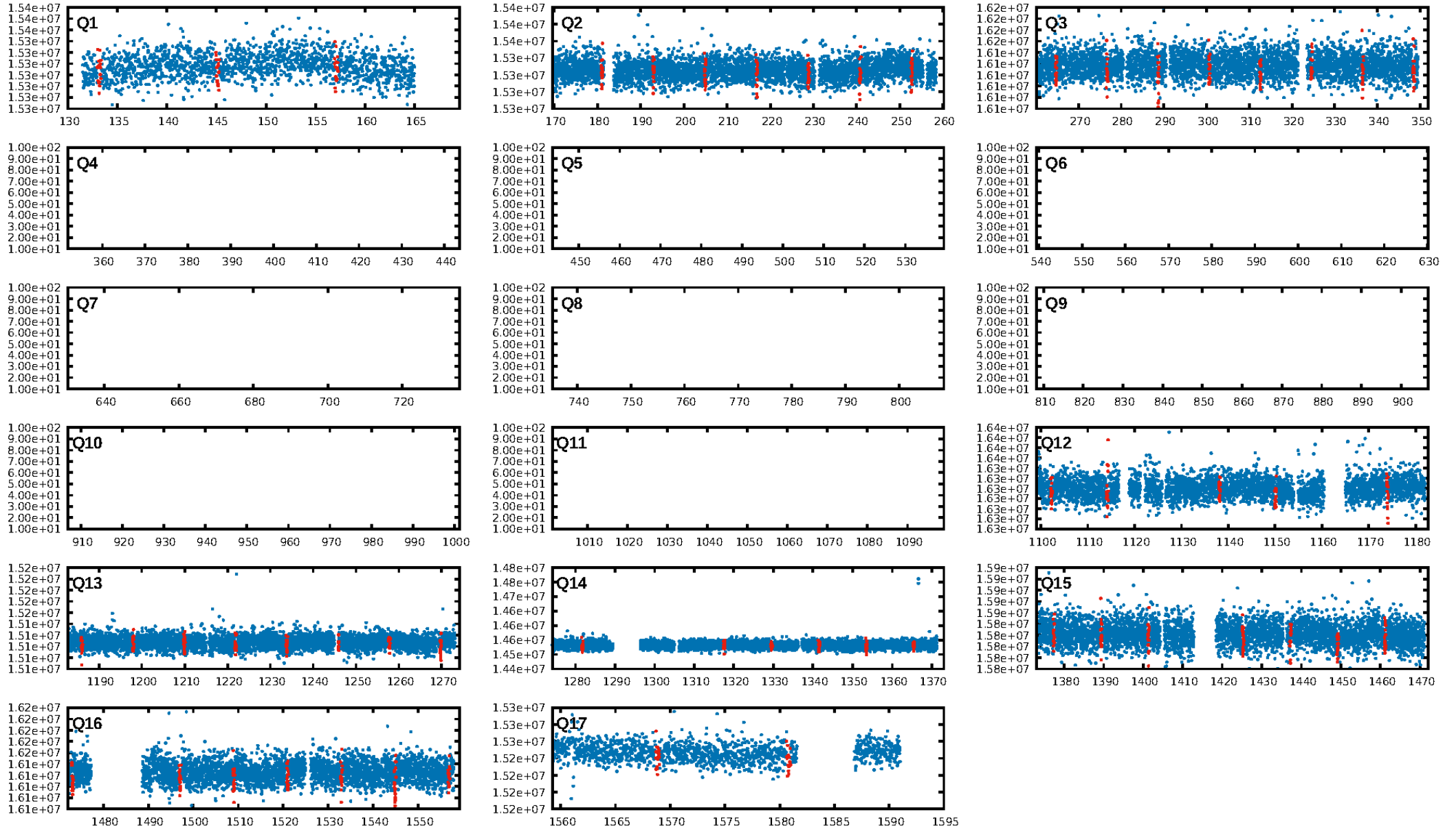
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 52.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.17e-86  
RollingBand-fgt: 1.00 [47/47]  
GhostDiagnostic-chr: 5.843  
Centroid-sig: 1.4%  
Centroid-so: 0.574 arcsec [0.73σ]  
OotOffset-rm: 0.387 arcsec [0.54σ]  
KicOffset-rm: 0.478 arcsec [0.62σ]  
OotOffset-st: 2/2/2/3 [9]  
KicOffset-st: 2/2/2/3 [9]  
DiffImageQuality-fgm: 0.89 [8/9]  
DiffImageOverlap-fno: 1.00 [9/9]

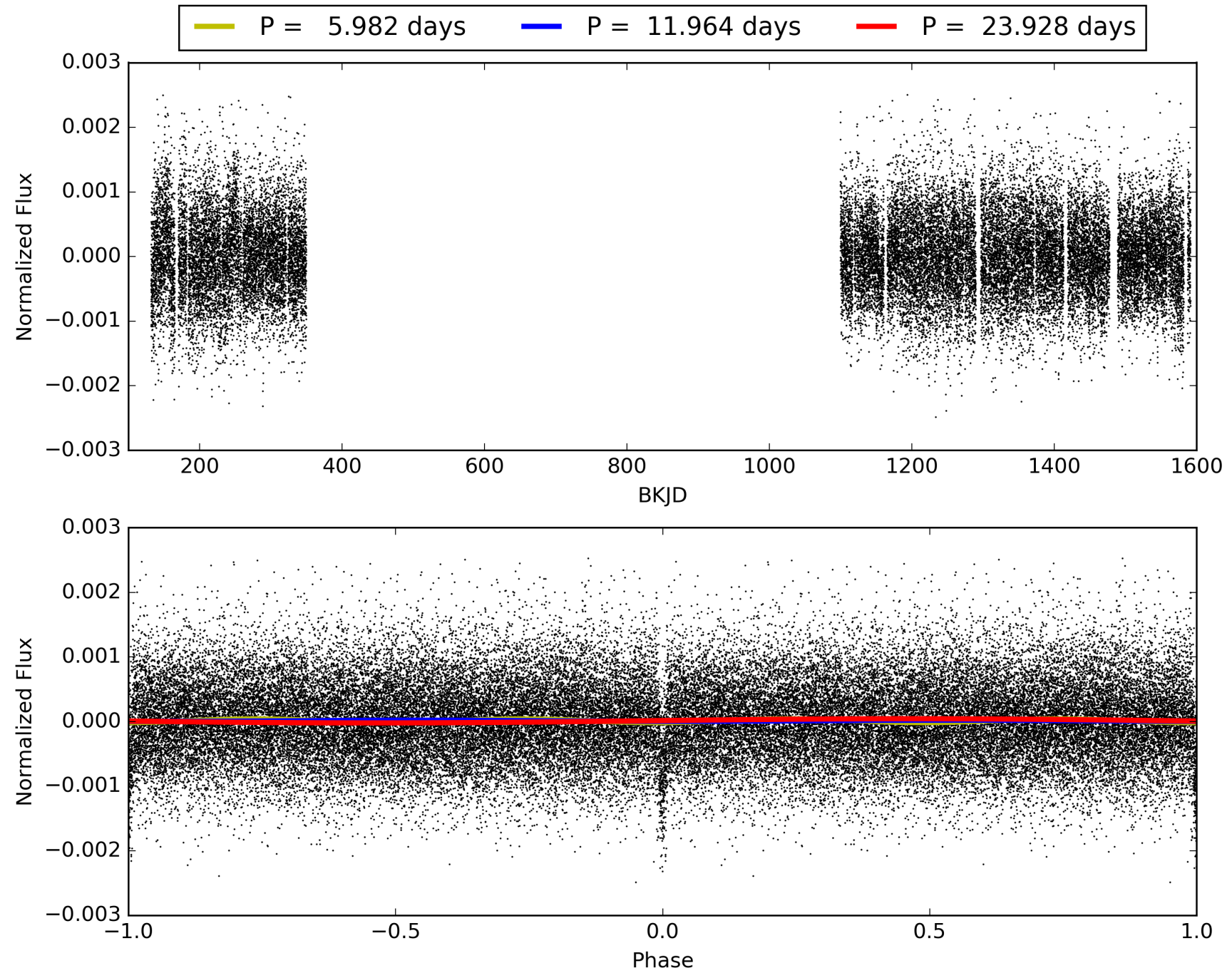
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 05:45:00 Z

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

# TCE 008073806-01, PDC Light Curves

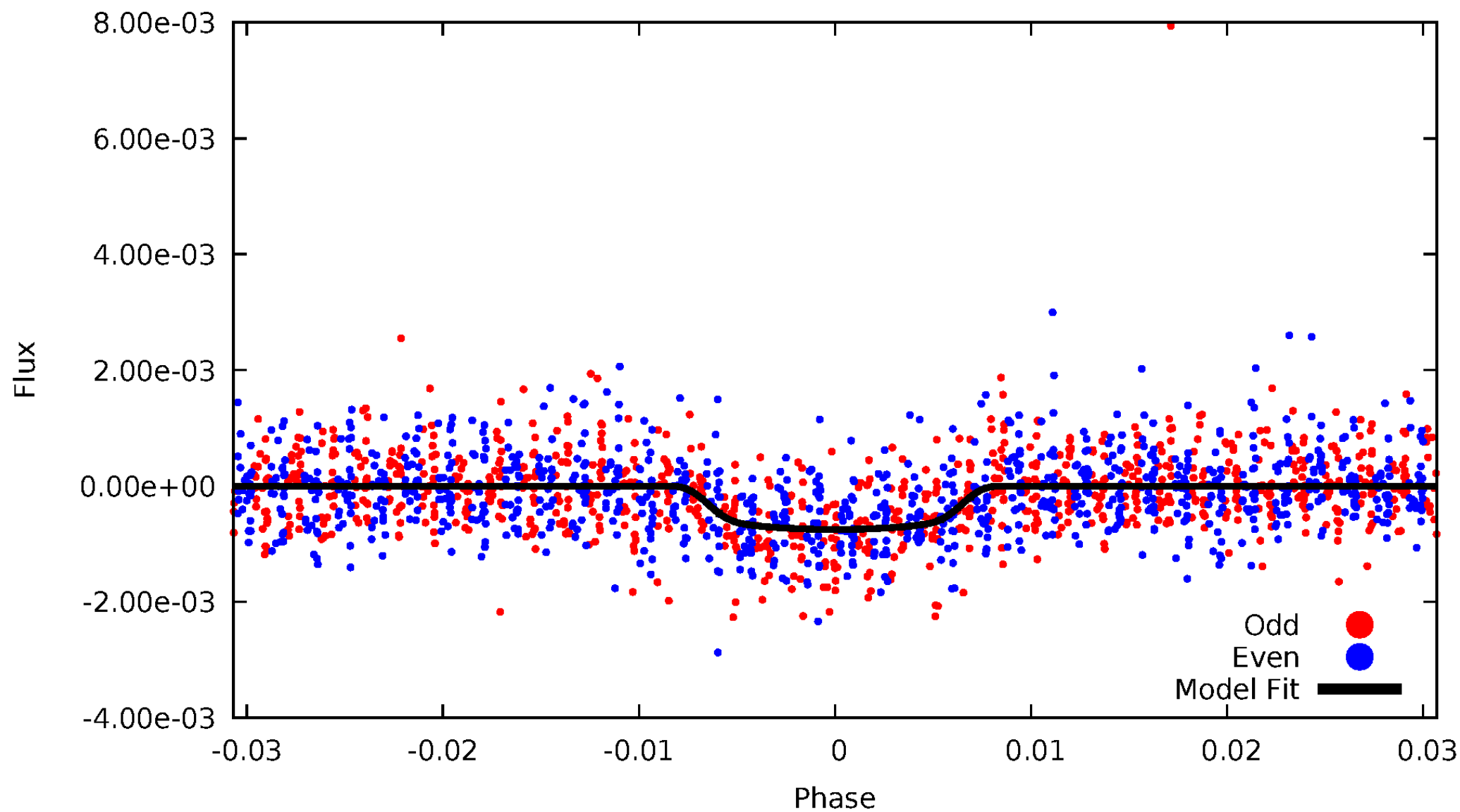


TCE 008073806-01



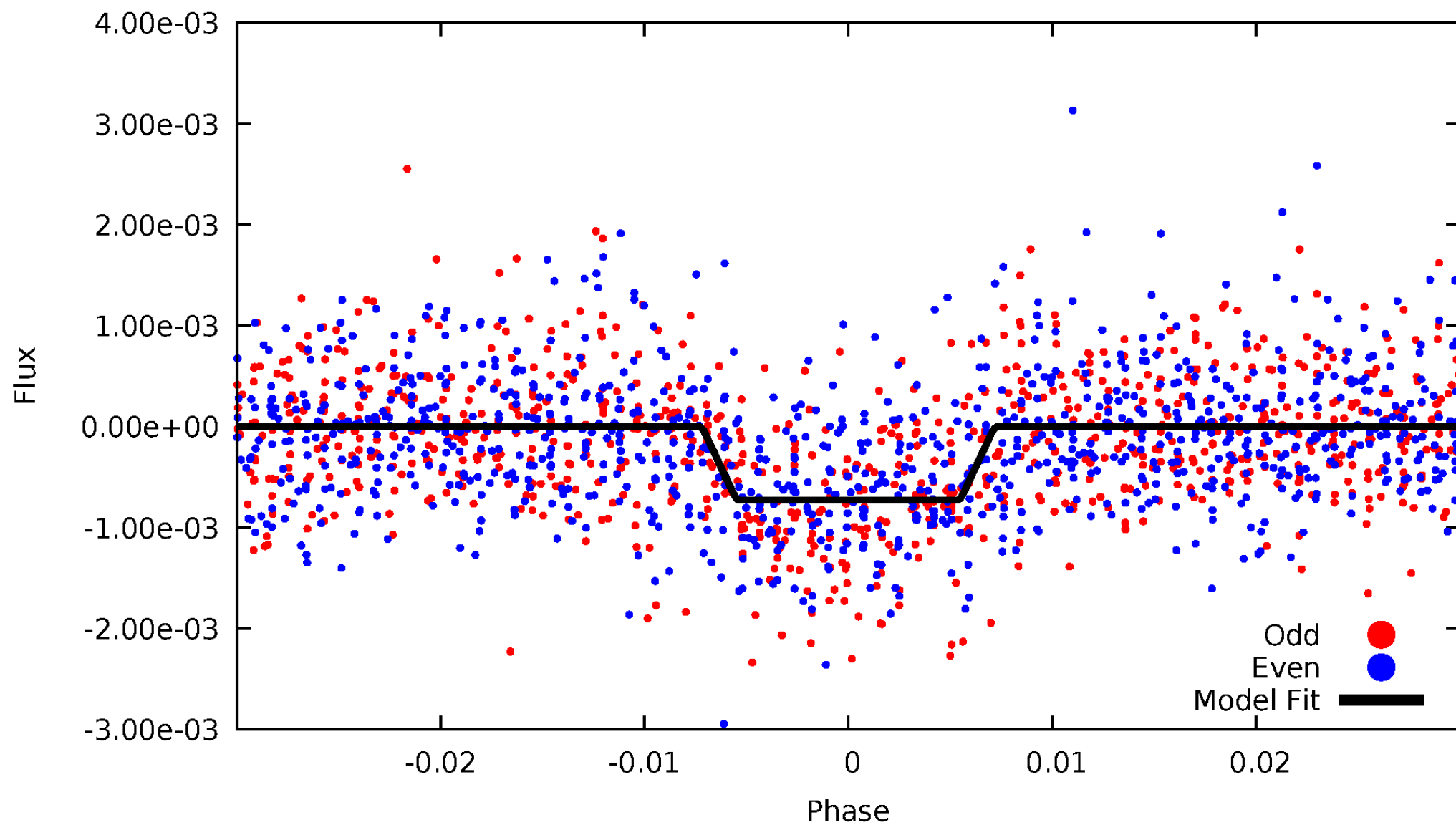
# DV Odd/Even

TCE 008073806-01



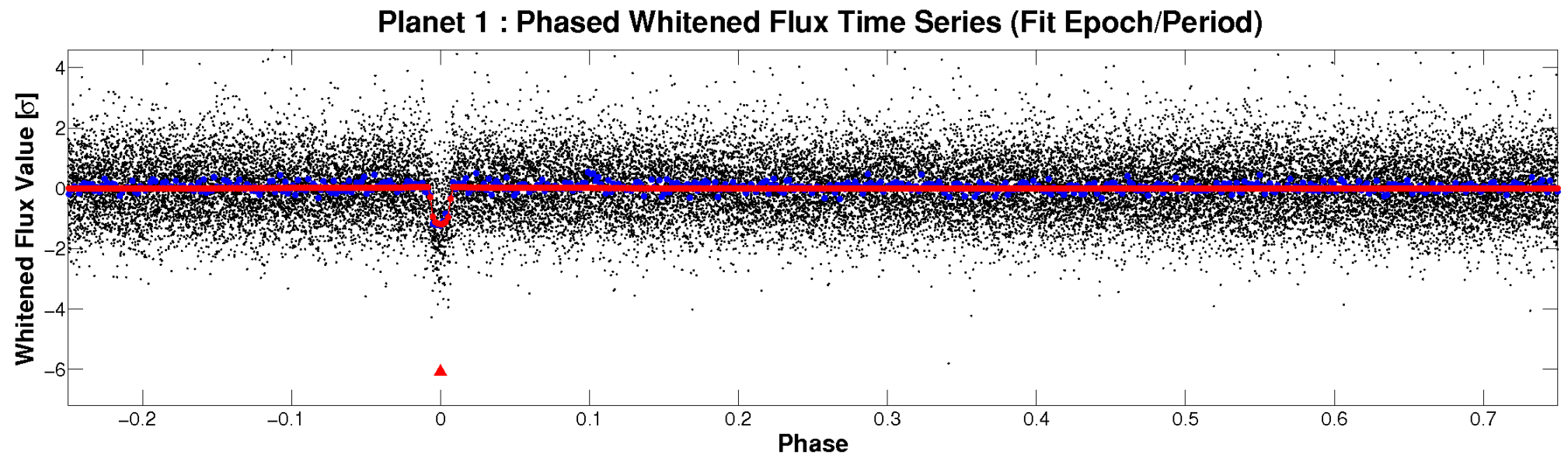
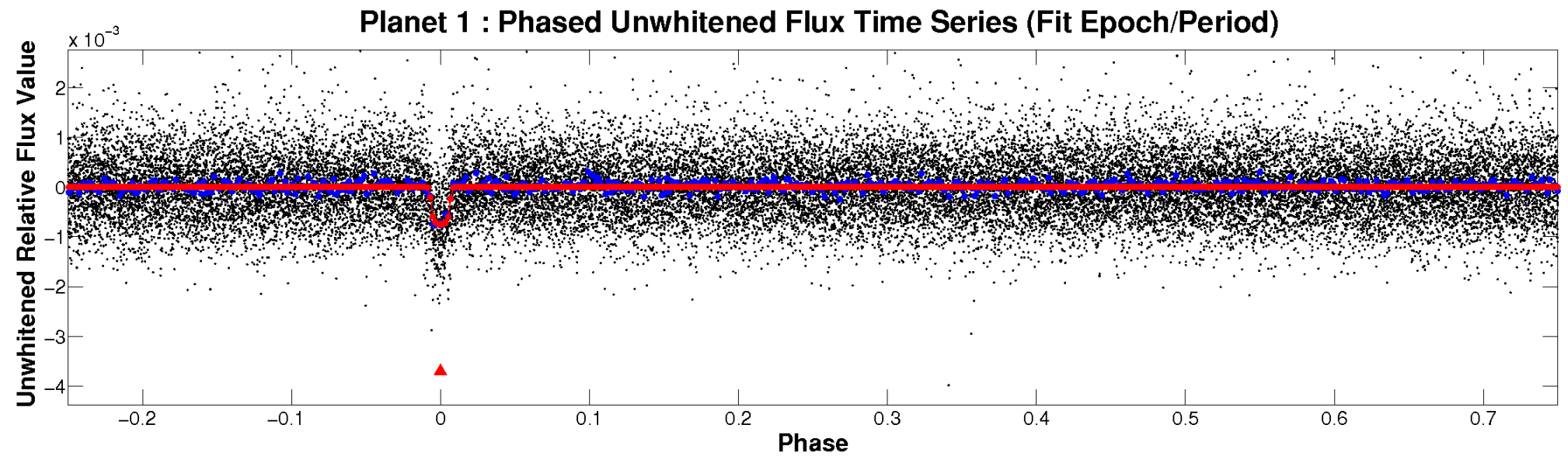
# ALT Odd/Even

TCE 008073806-01



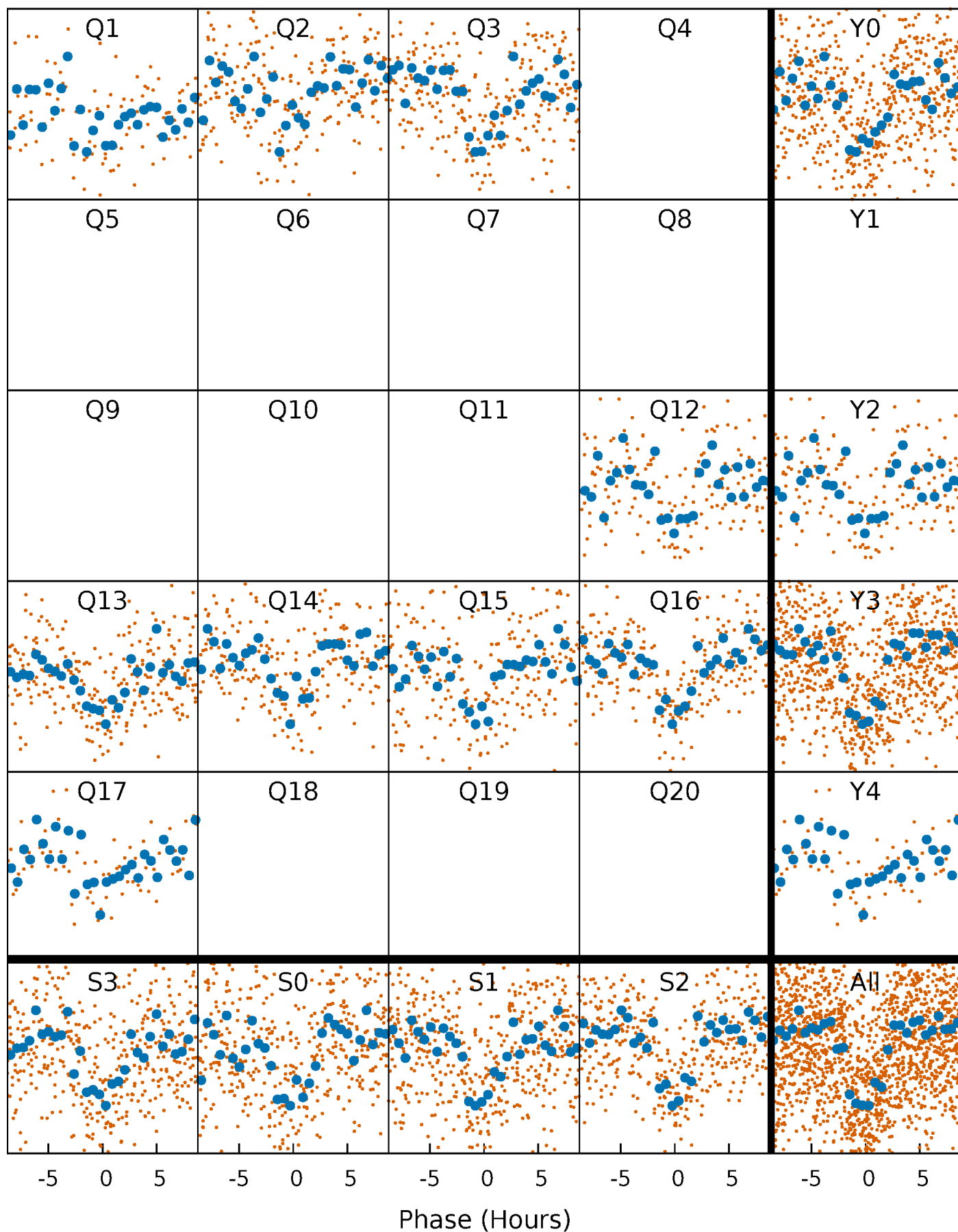


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

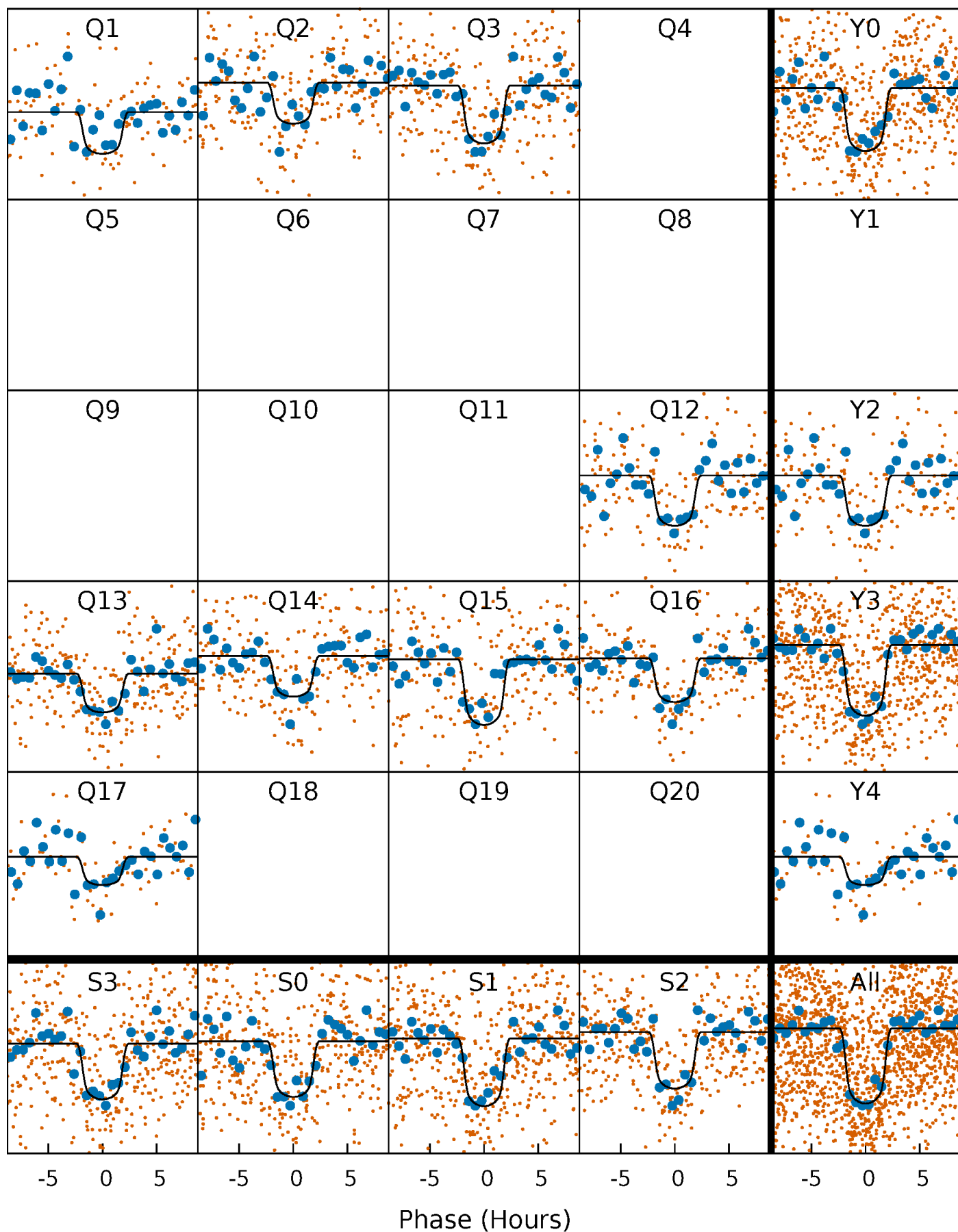
TCE 008073806-01 P= 11.964085 Days  $T_0=133.157316$  (BKJD)





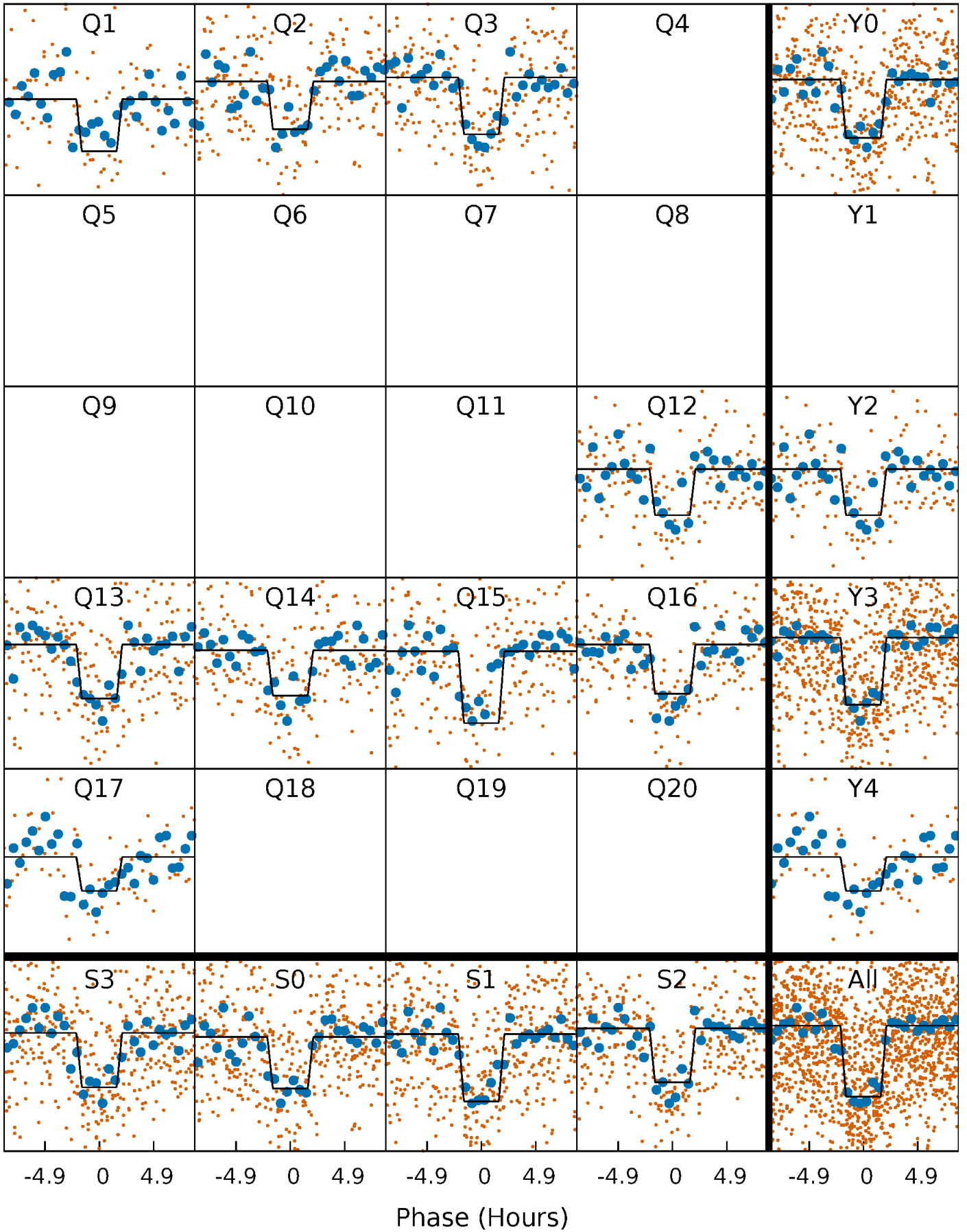
# DV Quarter-Phased Transit Curves

TCE 008073806-01 P= 11.964085 Days  $T_0=133.157316$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

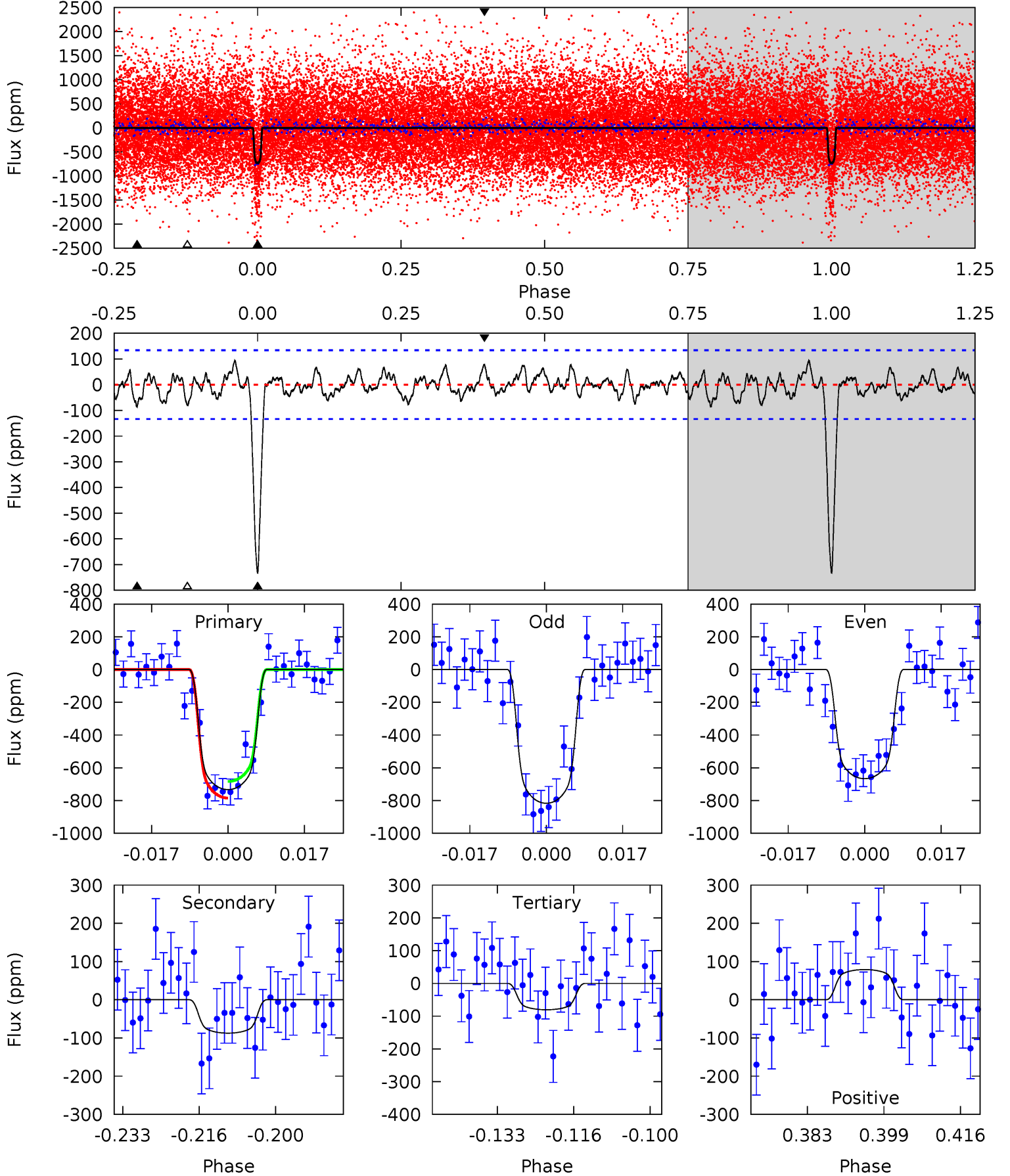
TCE 008073806-01 P= 11.964177 Days  $T_0=133.150759$  (BKJD)



# DV Model-Shift Uniqueness Test

008073806-01,  $P = 11.964085$  Days,  $E = 121.193231$  Days

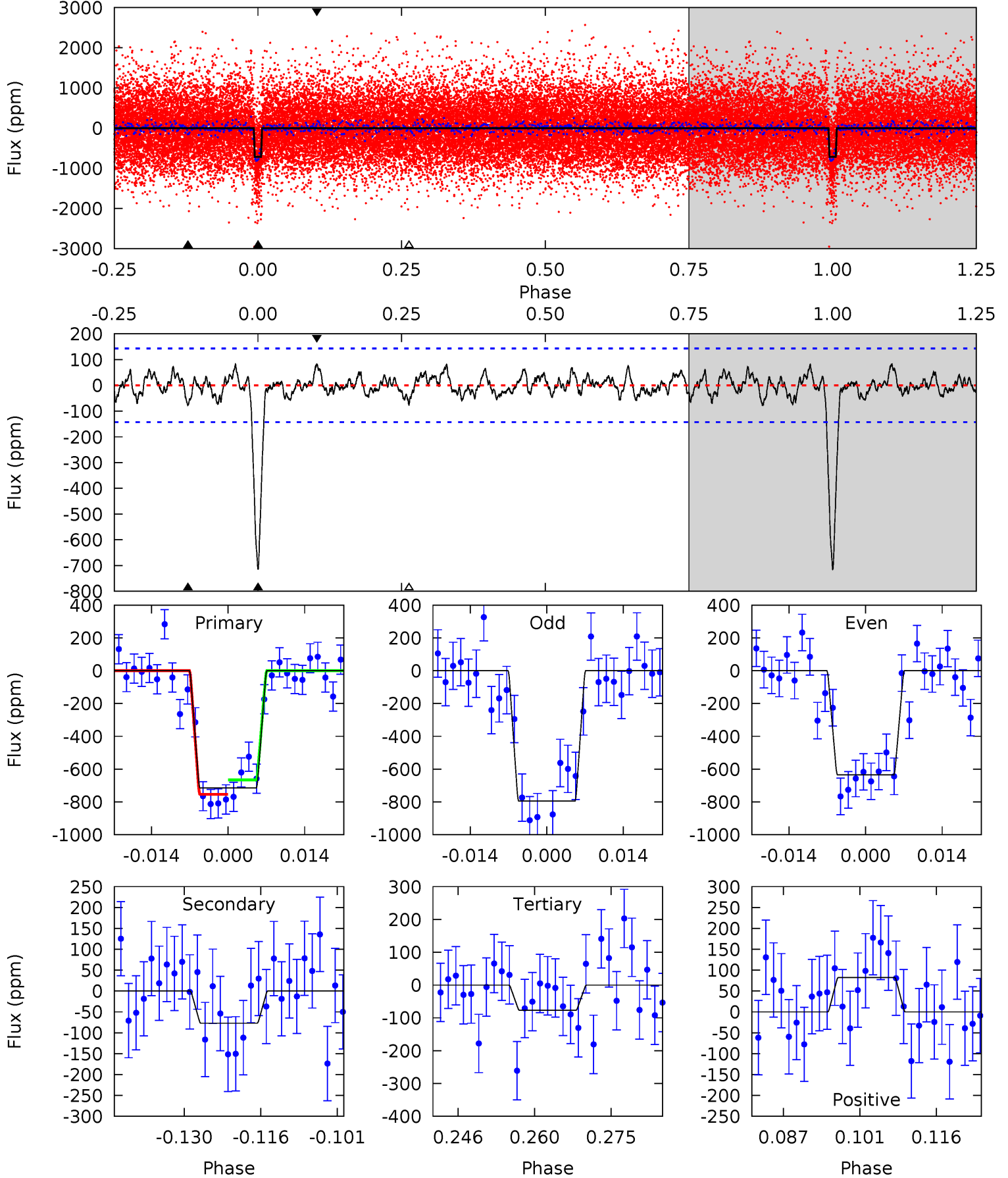
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
27.0	3.22	2.97	2.91	4.93	2.39	1.19	24.0	24.1	0.25	0.31	2.76	1.01	0.11	1.87



# Alt Model-Shift Uniqueness Test

008073806-01, P = 11.964177 Days, E = 121.186582 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
24.8	2.67	2.67	2.85	4.95	2.45	1.06	22.1	21.9	0.00	-0.18	2.76	1.04	0.10	1.52



### Stellar Parameters For KIC 008073806

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5903^{+158}_{-175}$	$4.437^{+0.101}_{-0.188}$	$-0.260^{+0.300}_{-0.300}$	$0.961^{+0.278}_{-0.139}$	$0.922^{+0.119}_{-0.097}$	$1.465^{+0.663}_{-0.735}$
	+3%/-3%	+2%/-4%	+115%/-115%	+29%/-14%	+13%/-11%	+45%/-50%
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 008073806-01 / KOI 2411.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-87 \pm 27$	$3.21^{+0.56}_{-0.41}$	$1145^{+80}_{-63}$	$3698^{+217}_{-220}$	$44^{+23}_{-16}$
Alt.	$-77 \pm 29$	$2.91^{+0.47}_{-0.36}$	$1137^{+84}_{-57}$	$3758^{+233}_{-298}$	$49^{+24}_{-21}$

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

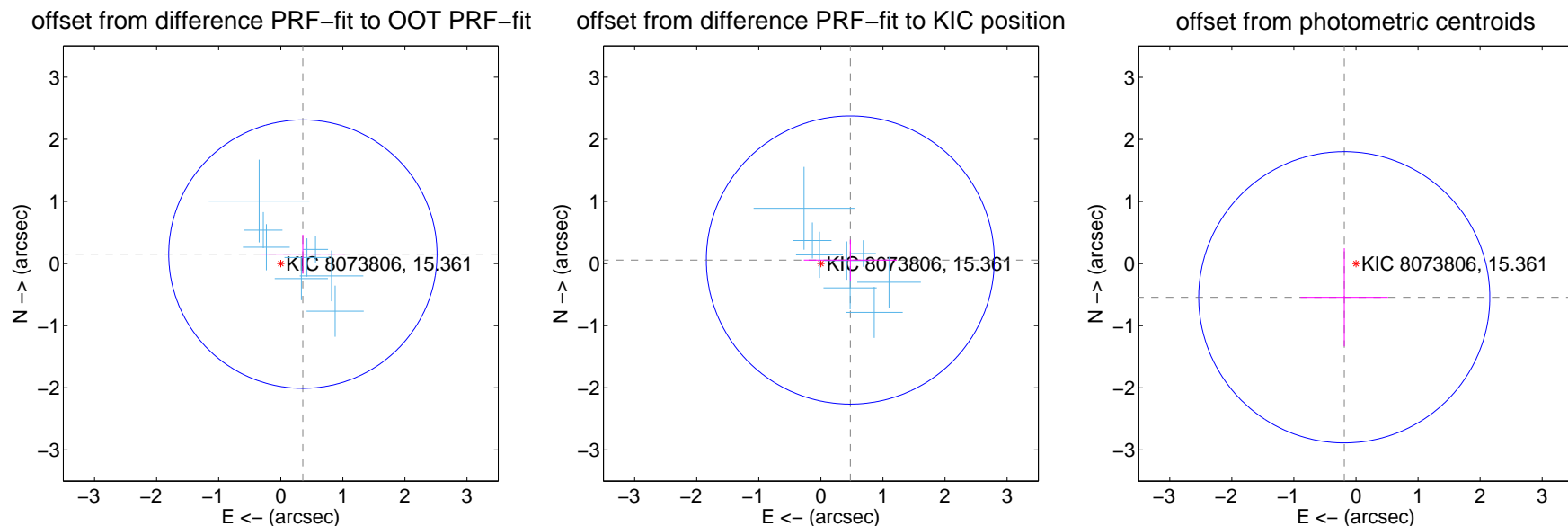
## DV Centroid Data

Supplemental centroid analysis for 008073806-01. Kepler magnitude: 15.36. Transit SNR 20.52

There are 8 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

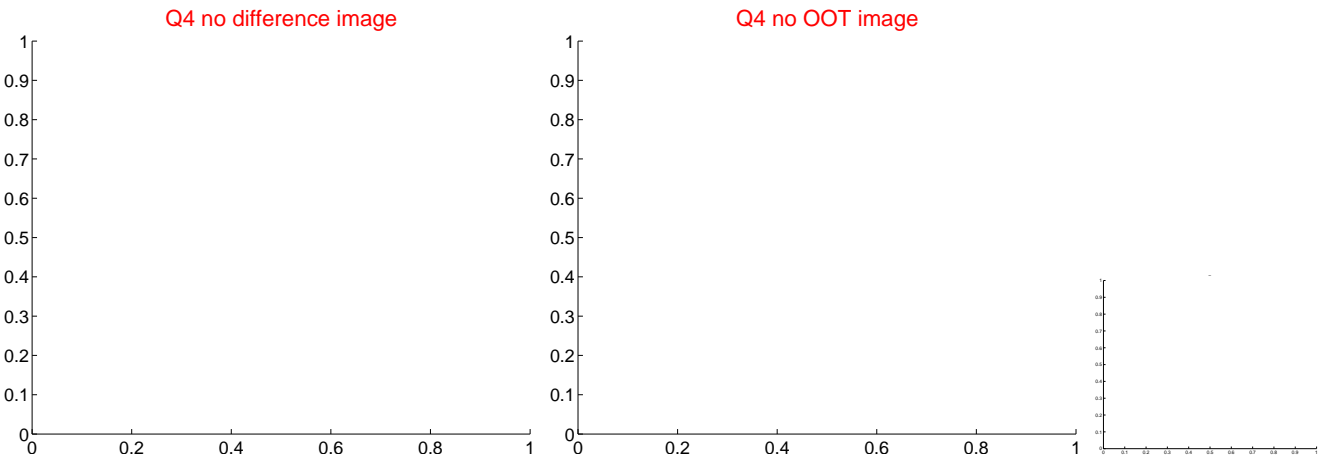
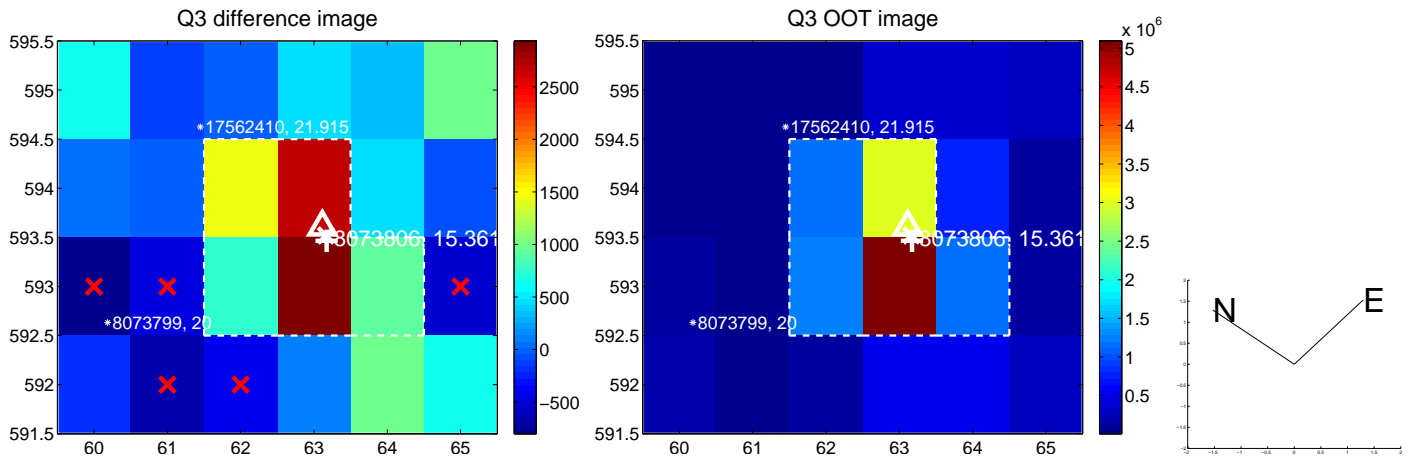
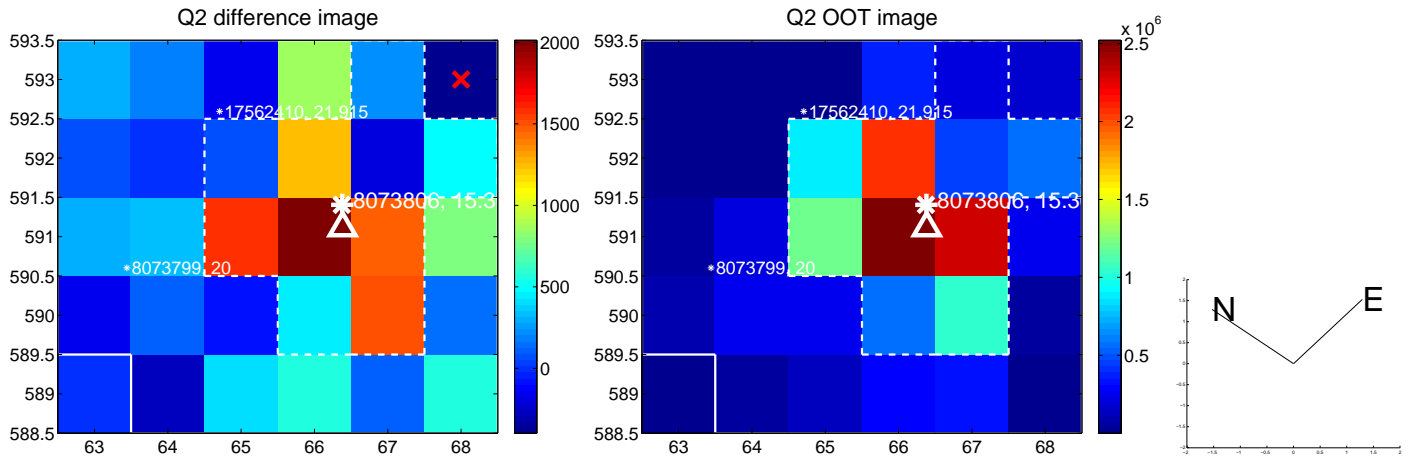
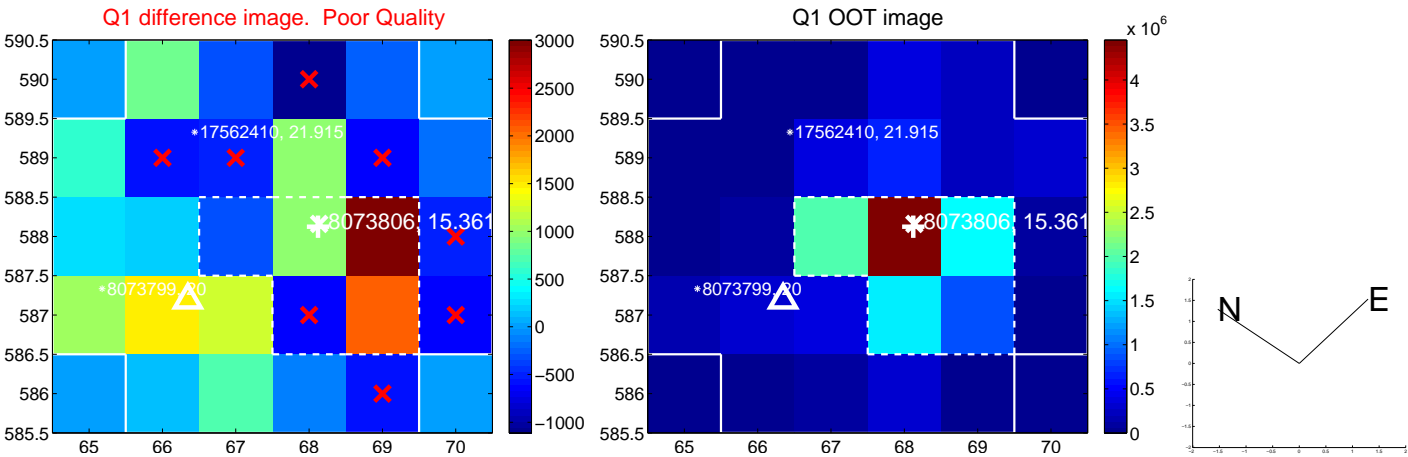
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.387 \pm 0.720$	0.54	$-0.356 \pm 0.679$	$0.151 \pm 0.313$
PRF-fit source offset from KIC position	$0.478 \pm 0.773$	0.62	$-0.474 \pm 0.748$	$0.056 \pm 0.328$
photometric centroid source offset	$0.57 \pm 0.78$	0.73	$0.19 \pm 0.70$	$-0.54 \pm 0.79$



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.



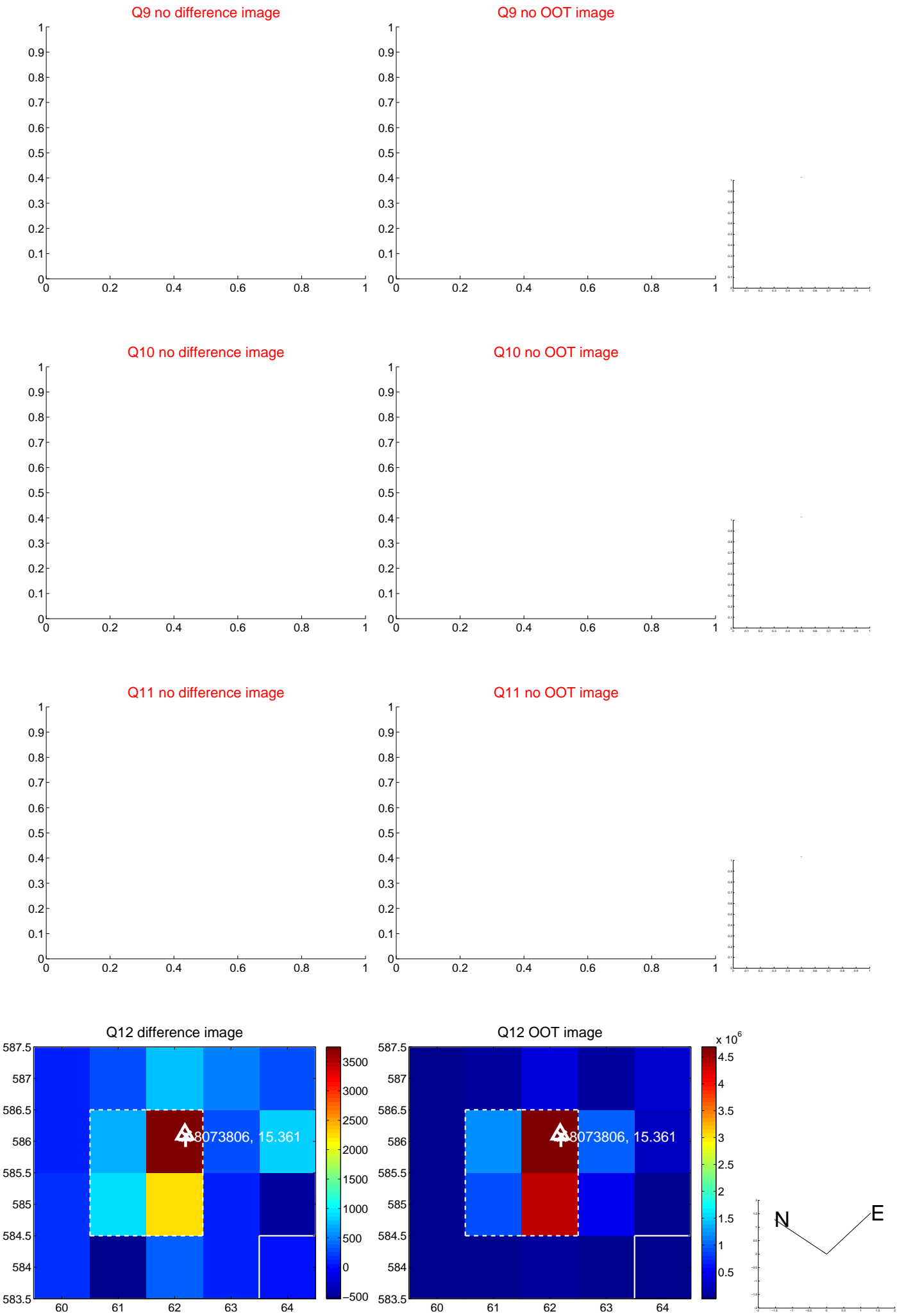
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



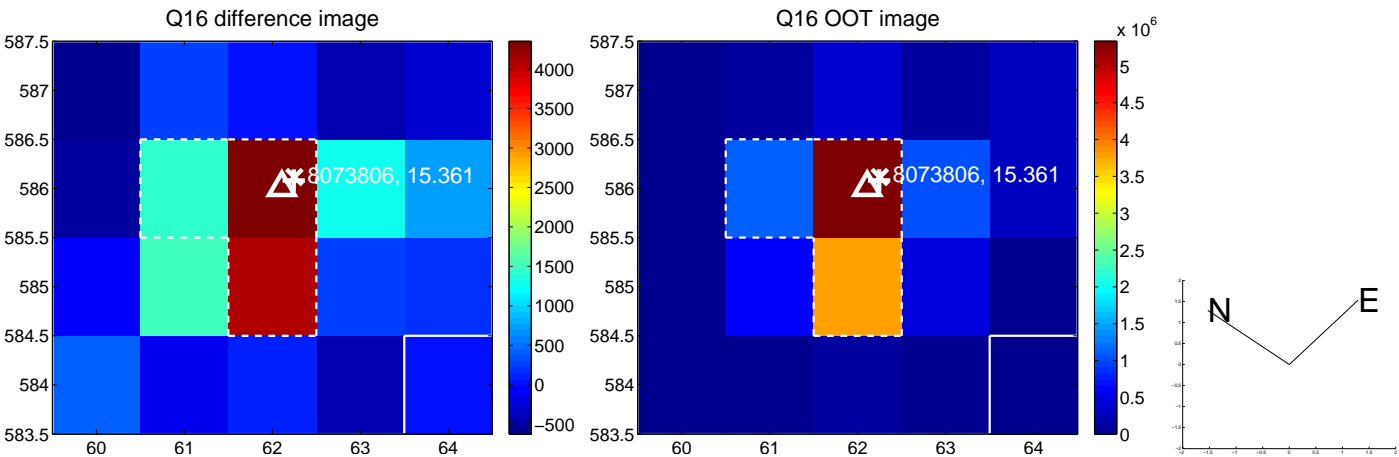
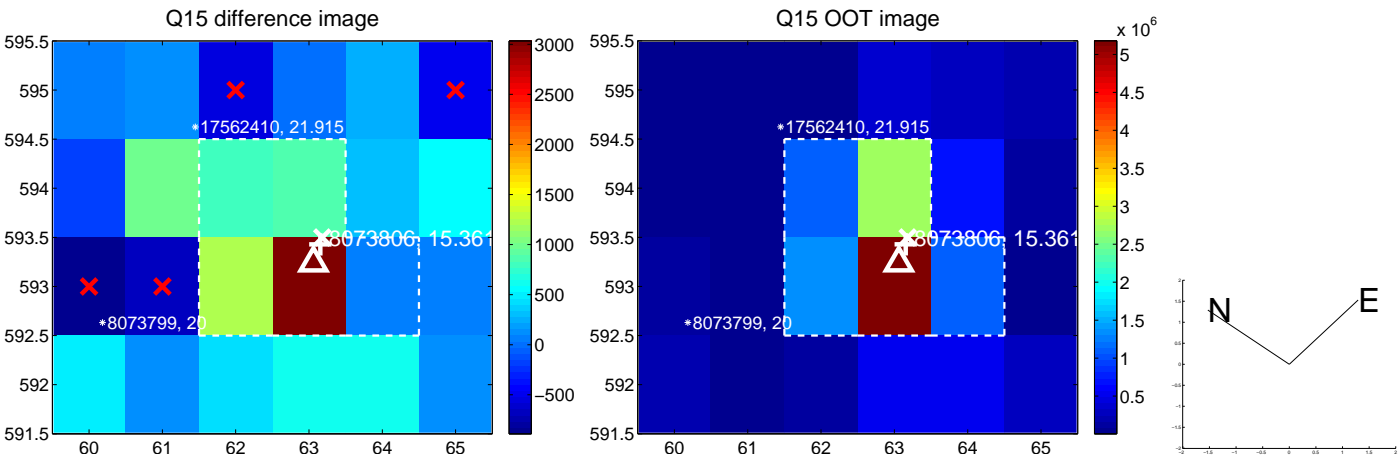
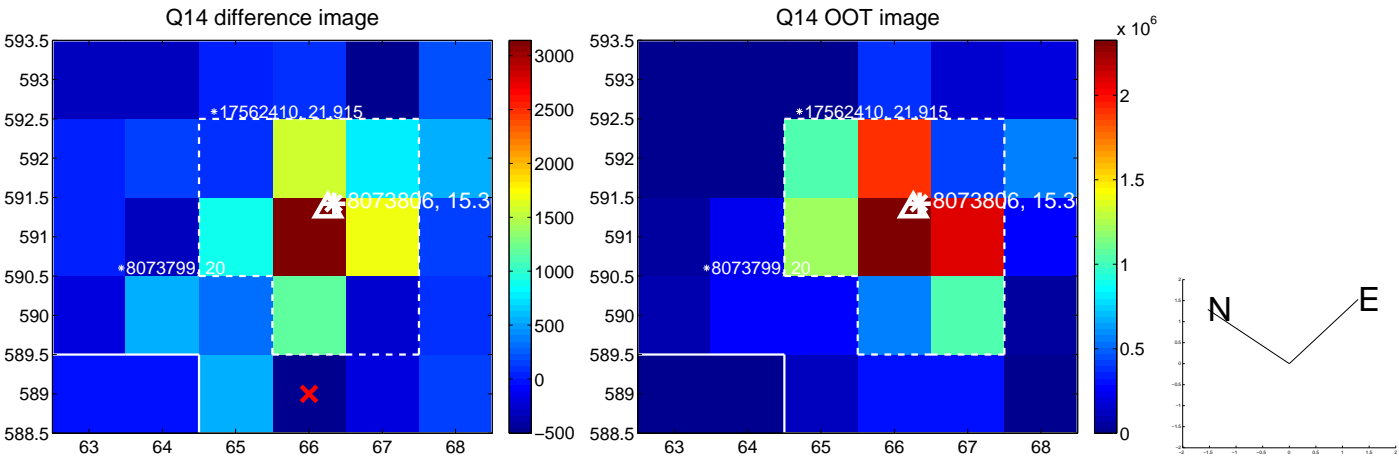
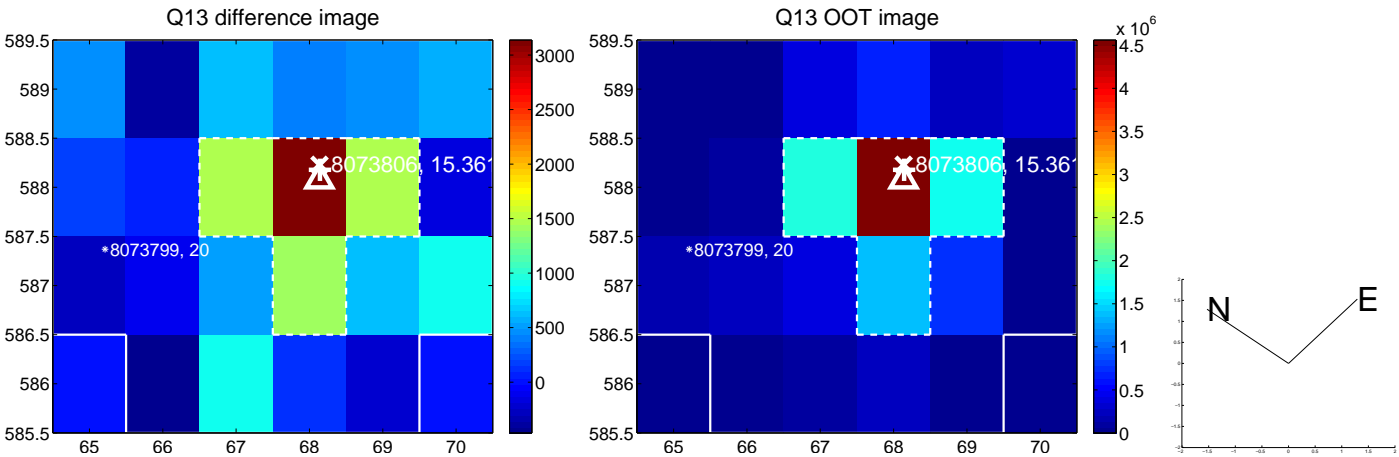
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



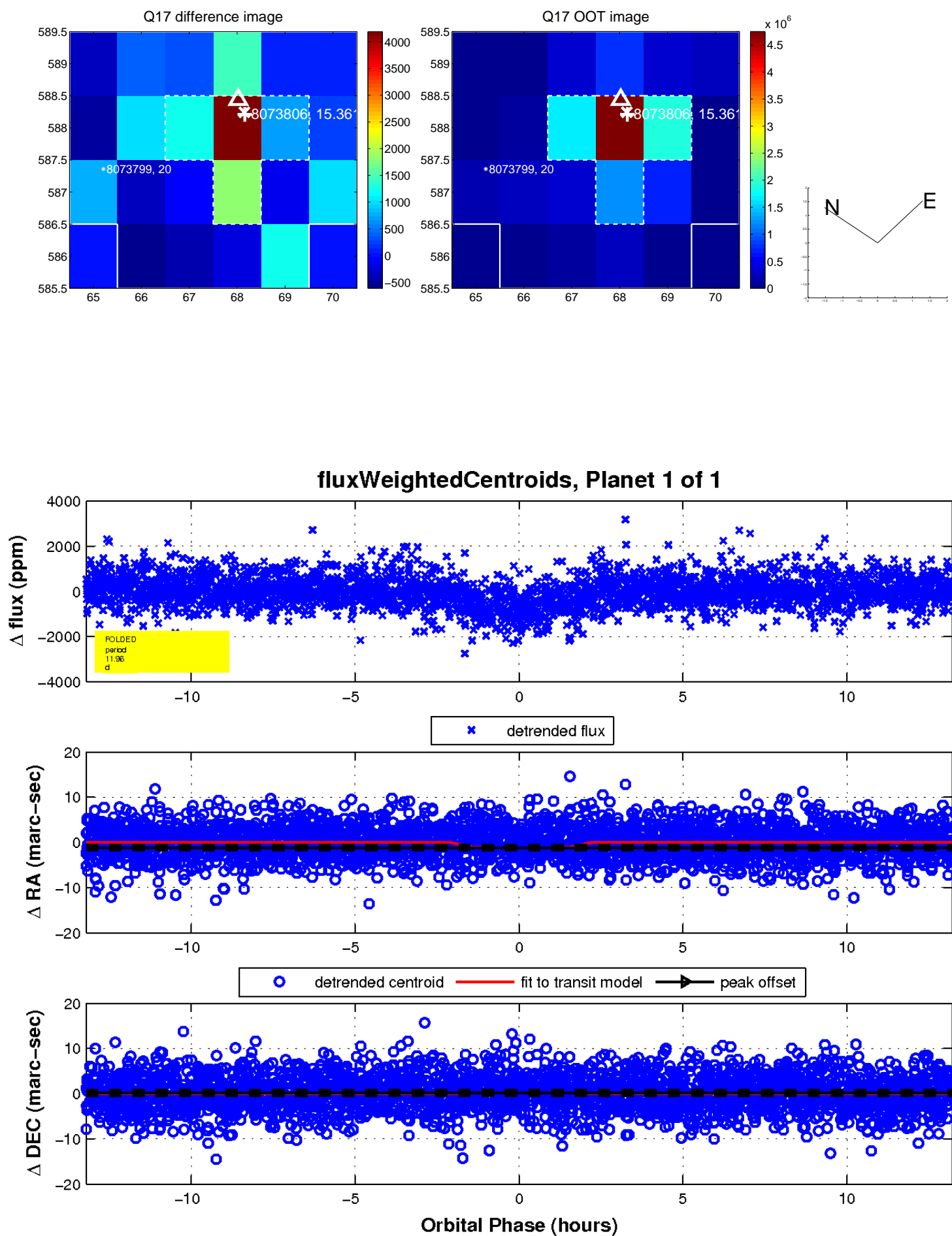
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

