

# KIC 008803882

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008803882-01	OBS	2659.01	89.603098	170.129983	243.1	55.785	11.4	17.7	2.46	5192	5.61	21.43

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008803882-01	OBS	FP	0.05	1	0	0	0	LPP_DV

**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.

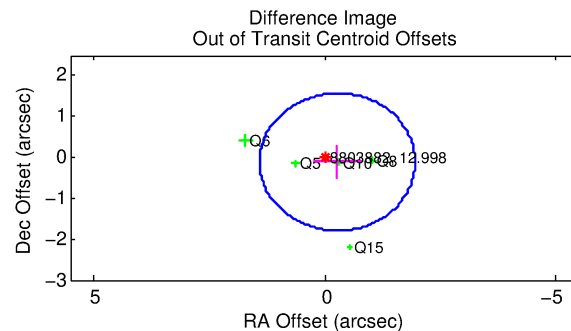
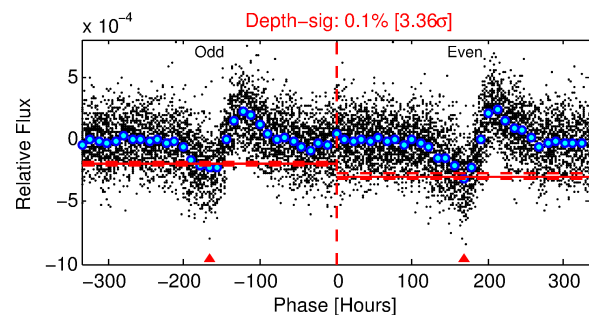
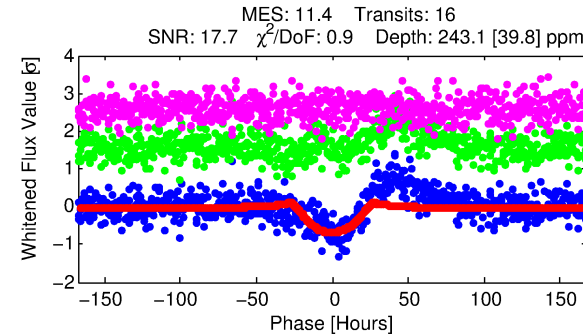
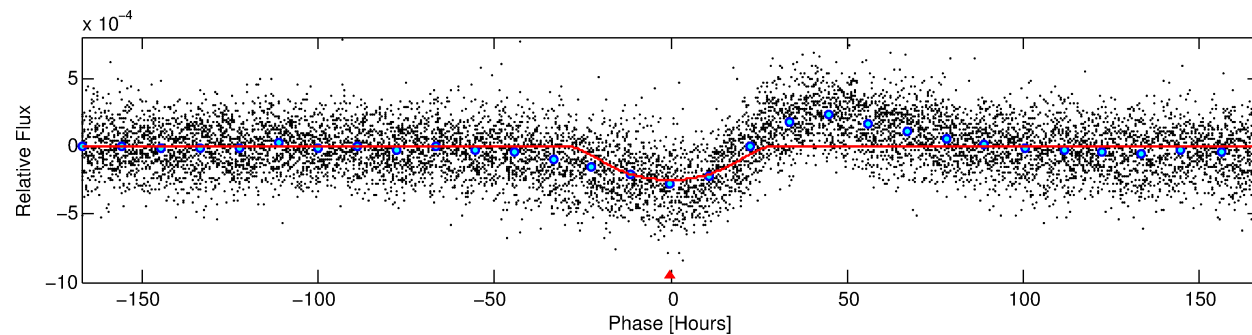
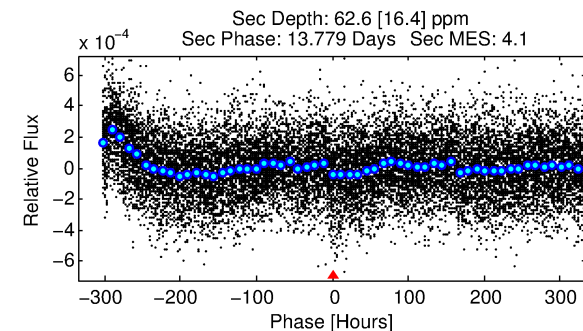
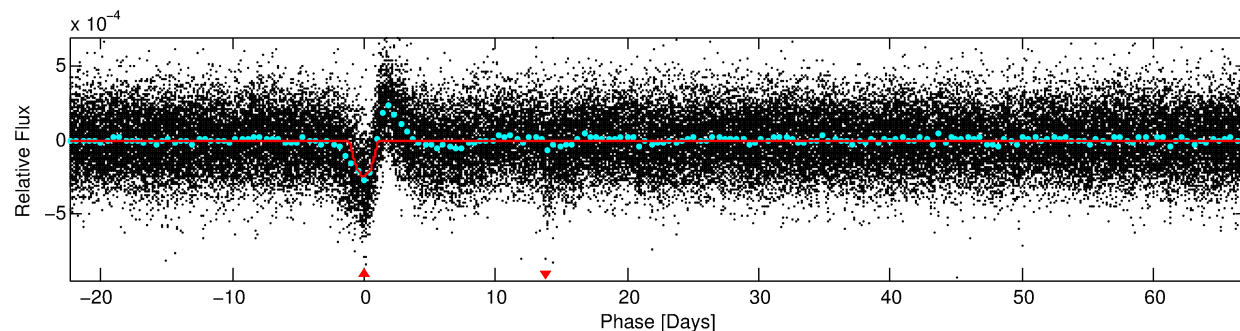
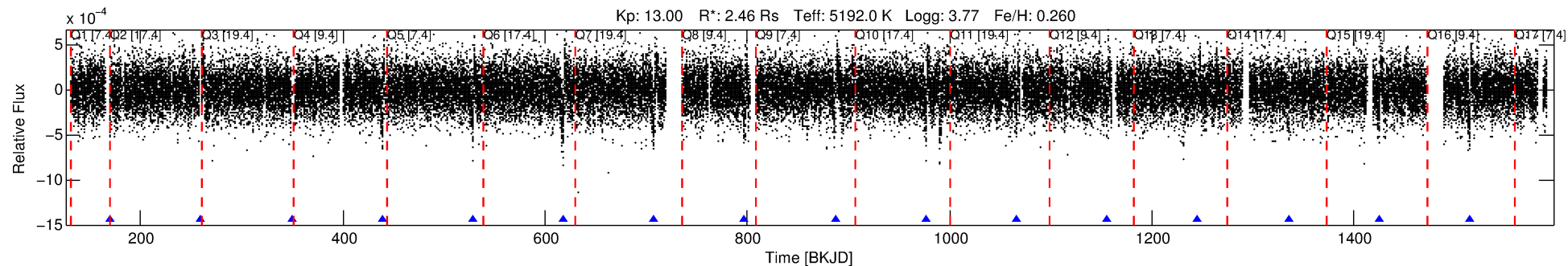
## Ephemeris Match Information For 008803882-01

No Significant Match Found

# DV One-Page Summary

KIC: 8803882 Candidate: 1 of 1 Period: 89.603 d  
KOI: K02659 Corr: No Ephemeris Match

Kp: 13.00 R\*: 2.46 Rs Teff: 5192.0 K Logg: 3.77 Fe/H: 0.260



## DV Fit Results:

Period = 89.60310 [0.00784] d  
Epoch = 170.1300 [0.0684] BKJD  
Rp/R\* = 0.0209 [0.0032]  
a/R\* = 3.59 [0.42]  
b = 0.98 [0.01]  
Seff = 21.43 [7.63]  
Teff = 549 [49] K  
Rp = 5.61 [1.80] Re  
a = 0.4287 [0.1016] AU  
Ag = 200.98 [106.94] [1.87σ]  
Teffp = 3194 [331] K [7.91σ]

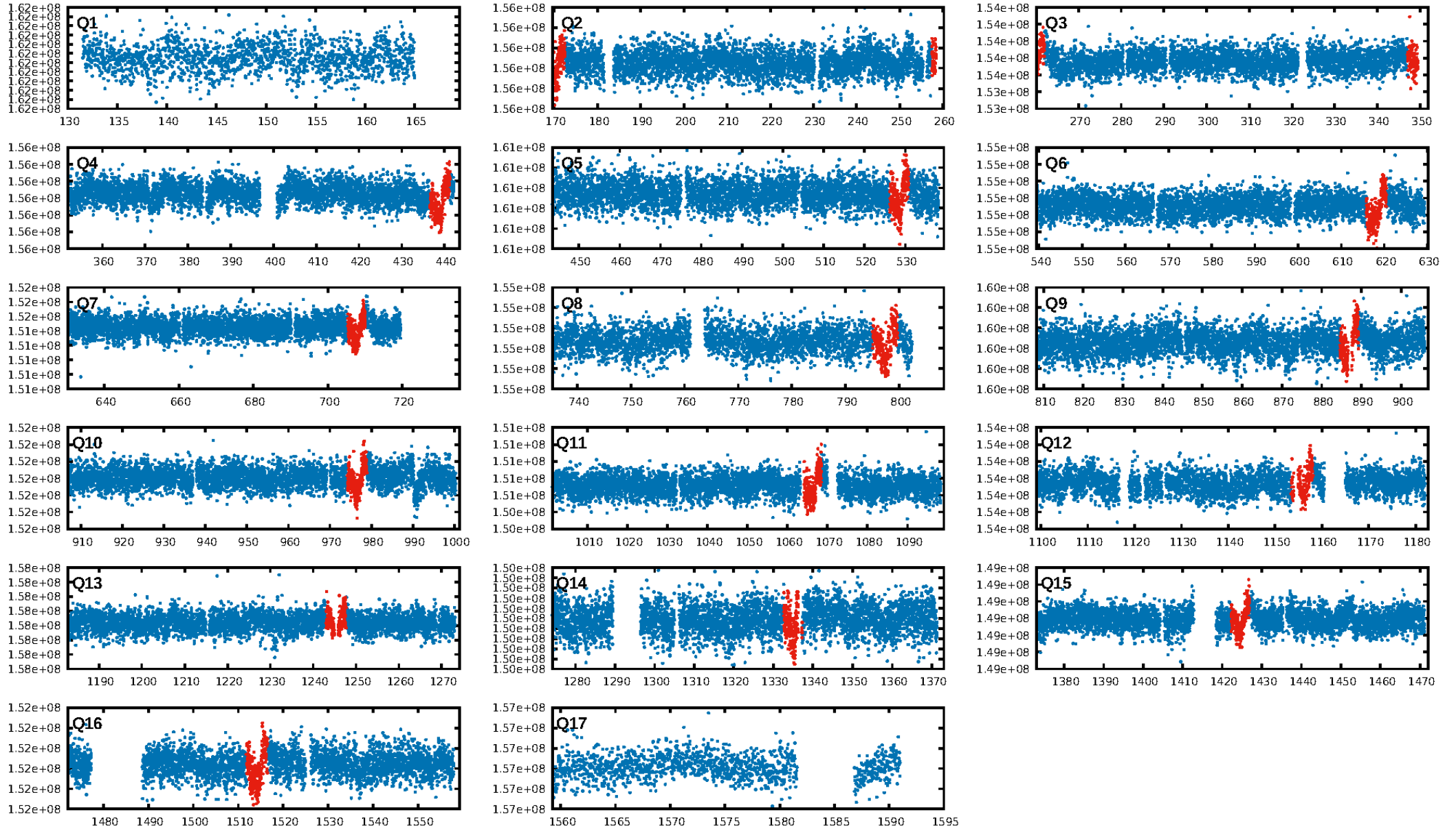
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 11.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 3.21e-28  
RollingBand-fgt: 1.00 [16/16]  
GhostDiagnostic-chr: 5.053  
Centroid-sig: 29.8%  
Centroid-so: 0.378 arcsec [1.23σ]  
OotOffset-rm: 0.296 arcsec [0.53σ]  
OotOffset-st: 2/1/1/1 [5]  
KicOffset-rm: 0.337 arcsec [0.82σ]  
KicOffset-st: 2/1/1/1 [5]  
DiffImageQuality-fgm: 1.00 [5/5]  
DiffImageOverlap-fno: 1.00 [5/5]

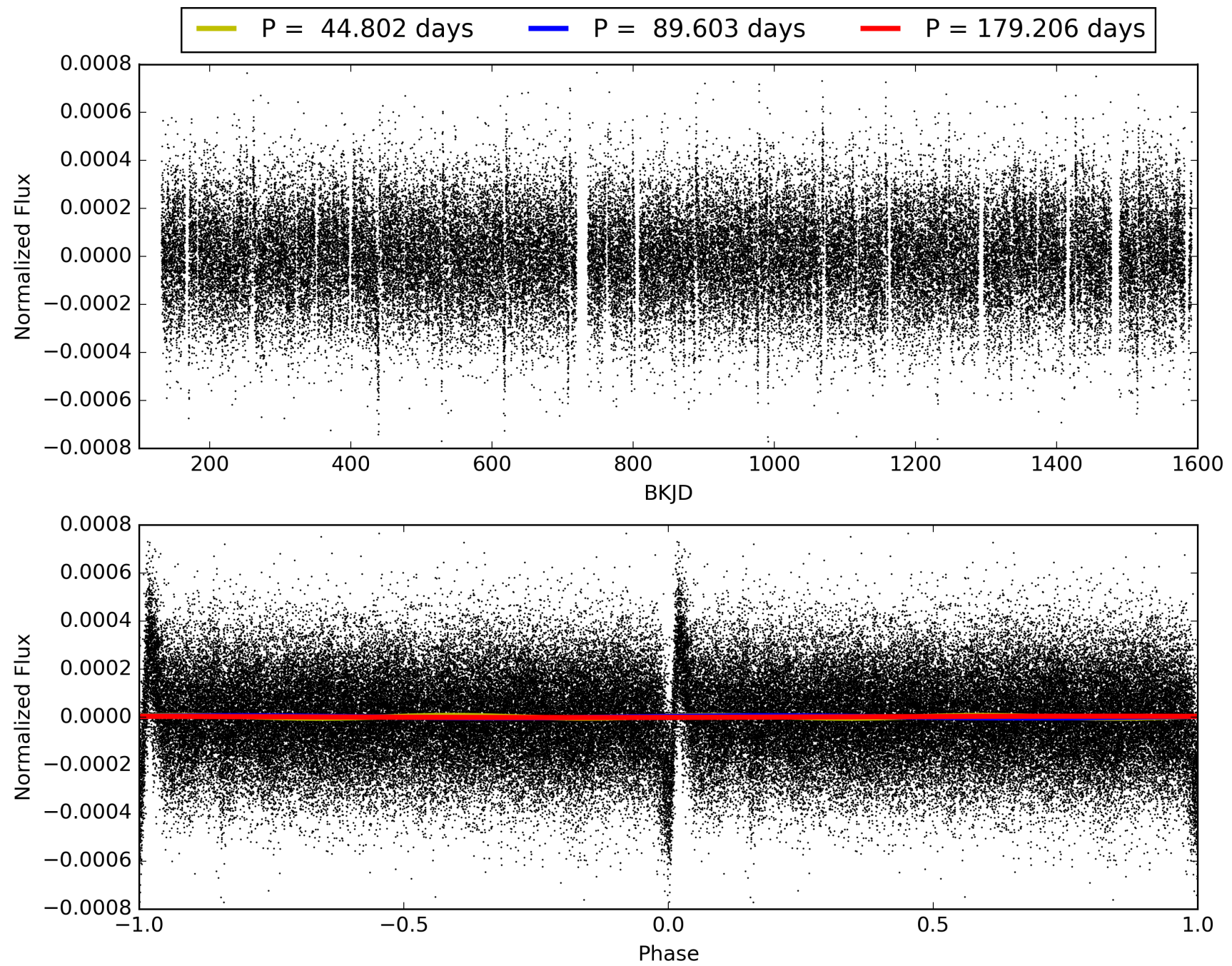
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:11:47 Z

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

# TCE 008803882-01, PDC Light Curves



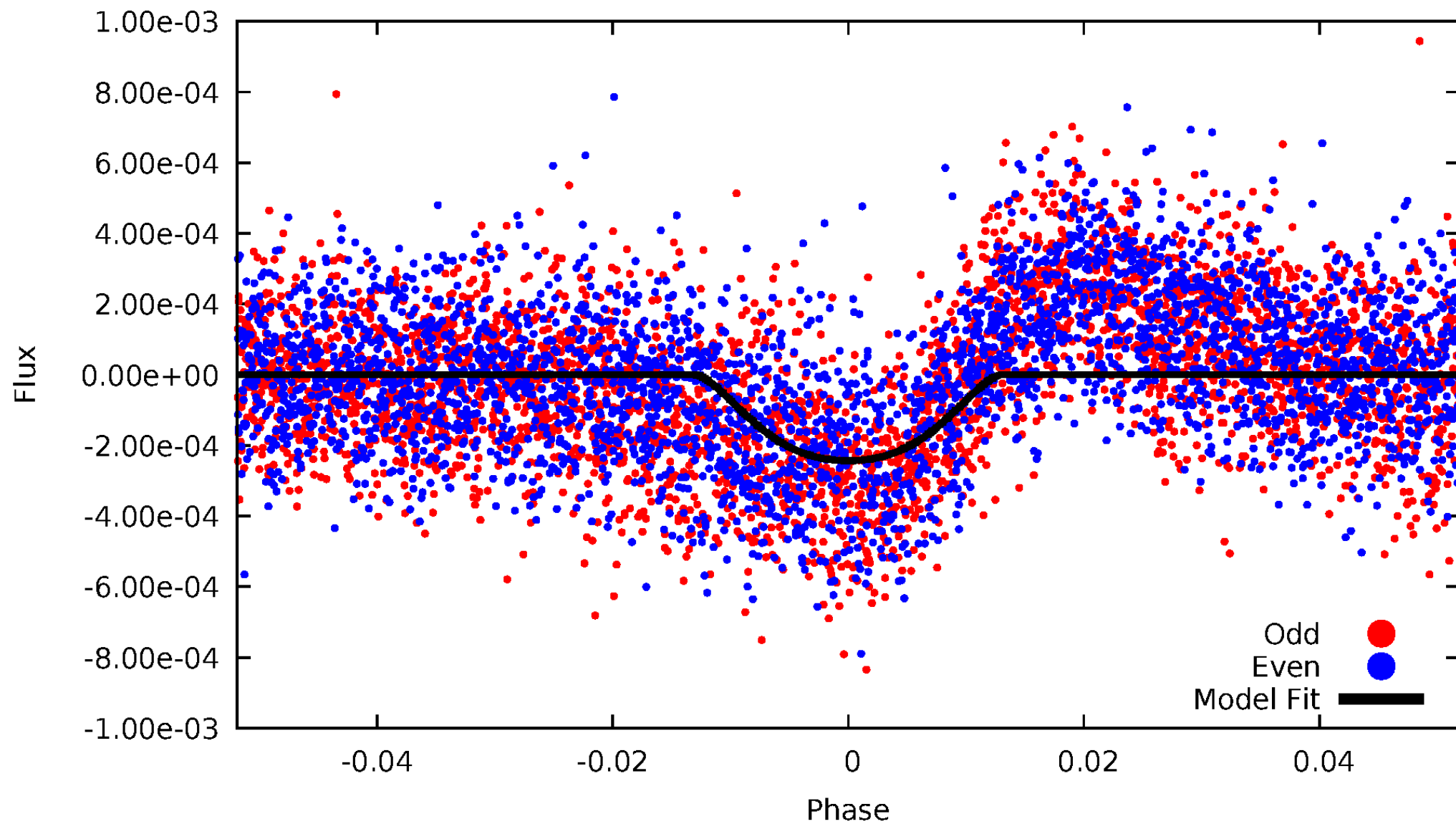
TCE 008803882-01





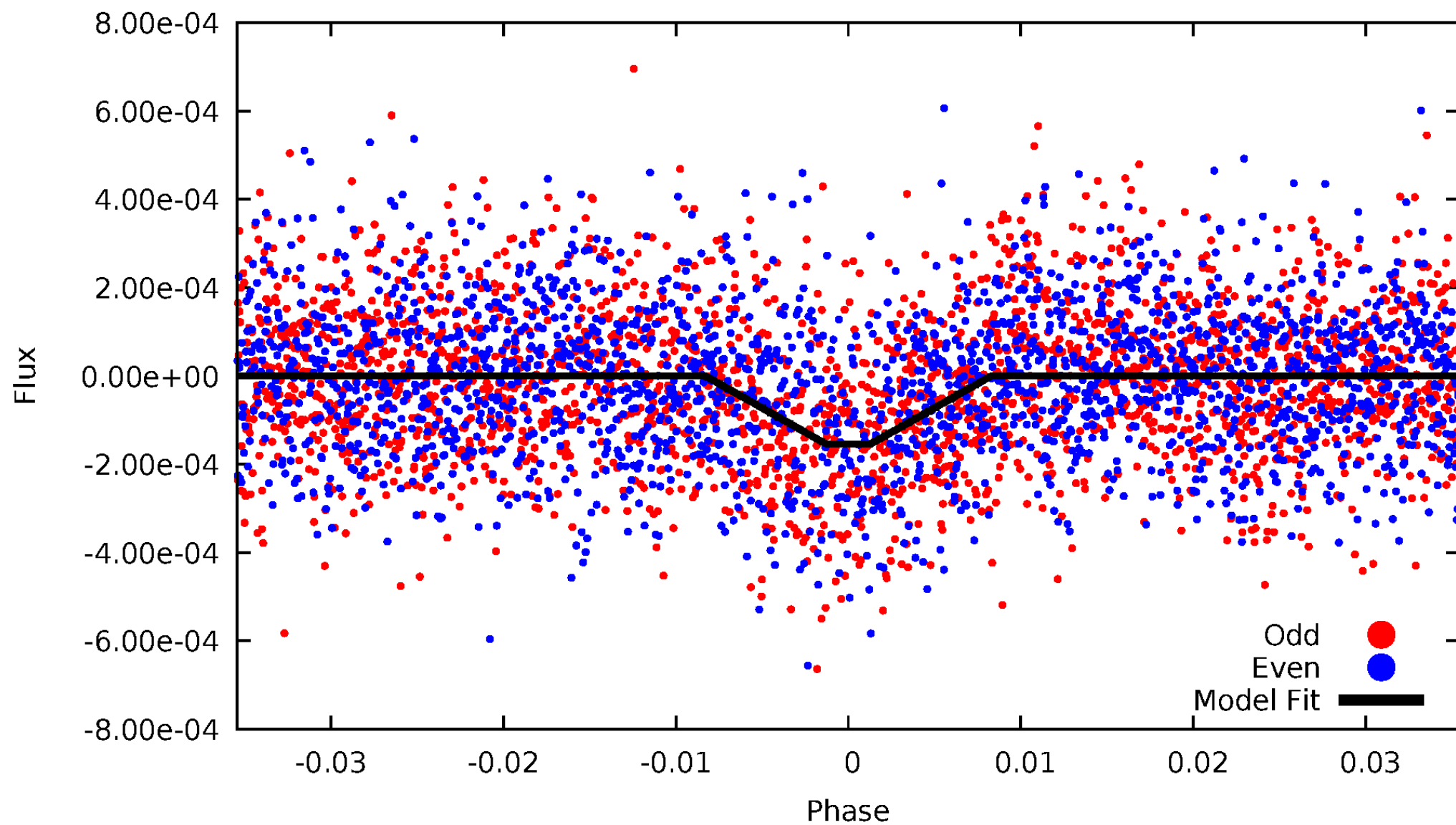
# DV Odd/Even

TCE 008803882-01

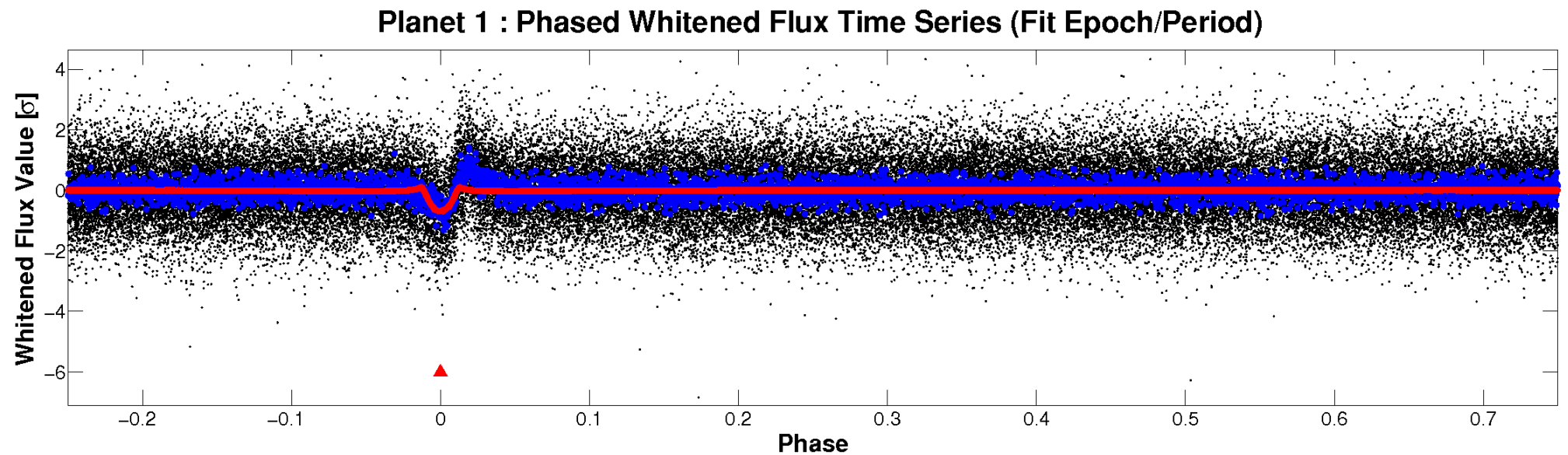
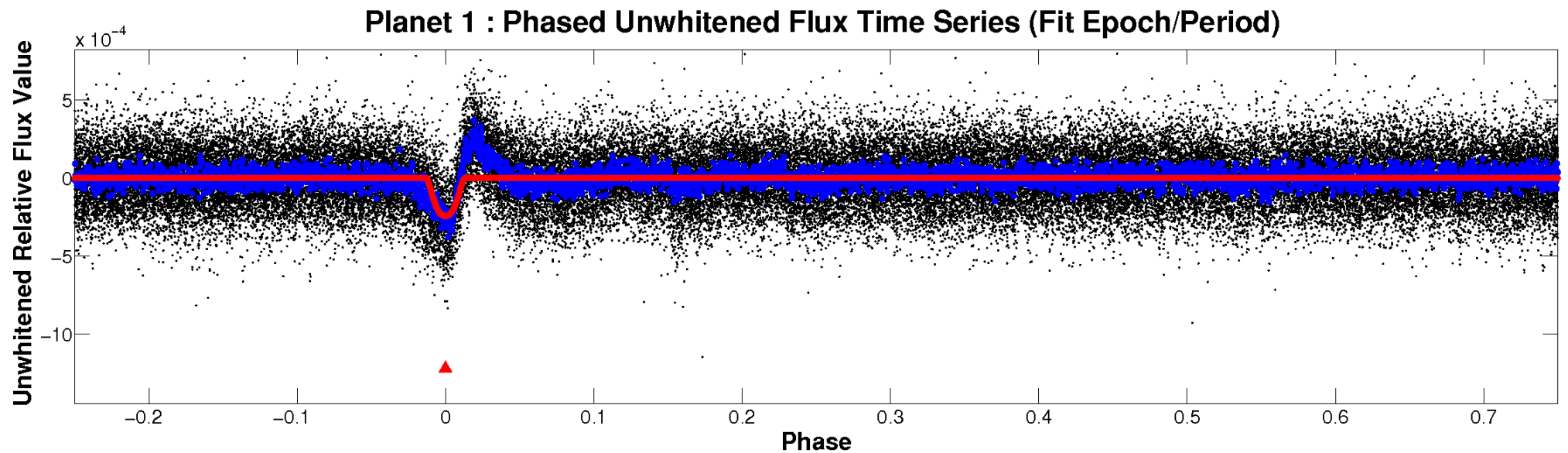


# ALT Odd/Even

TCE 008803882-01

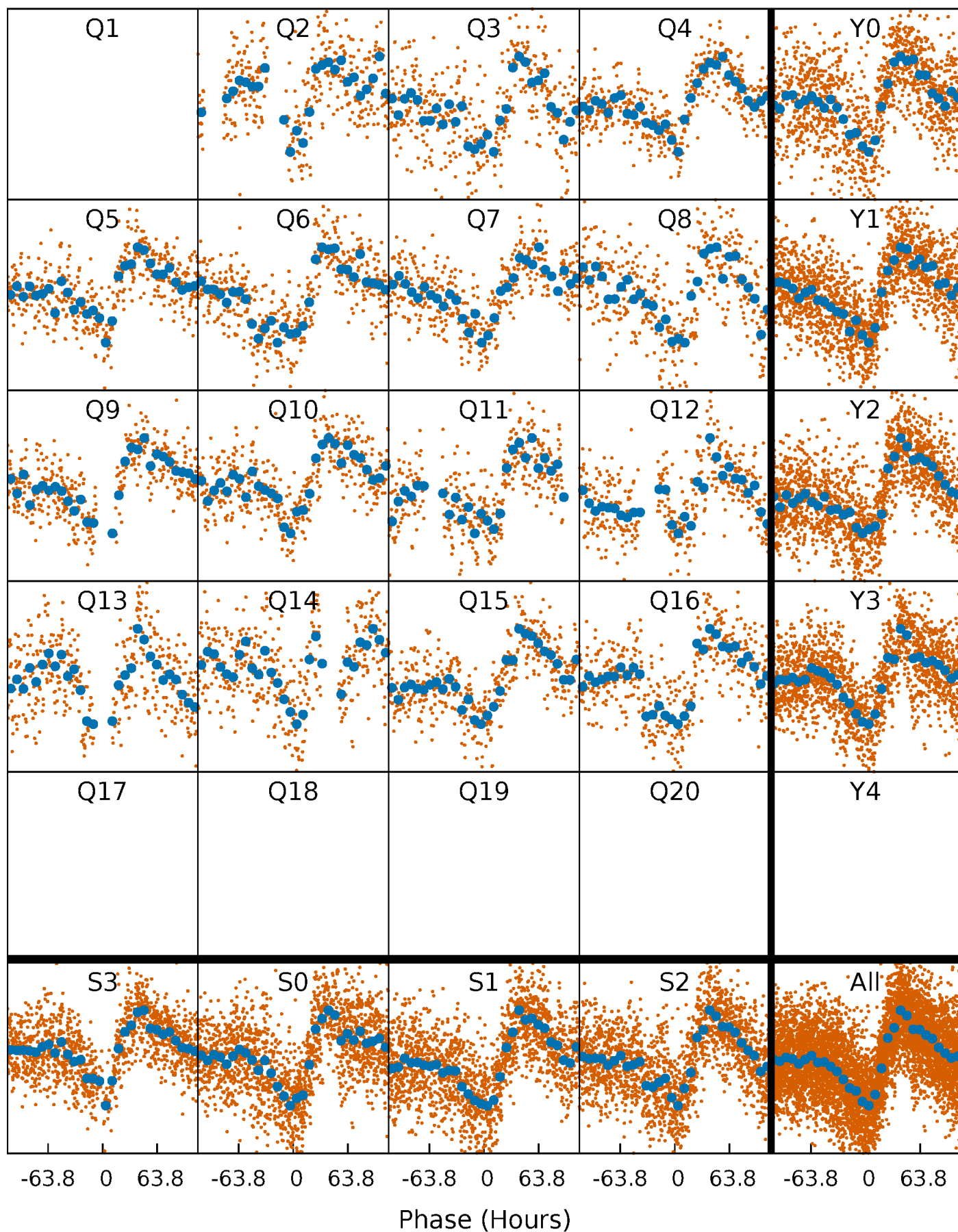


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

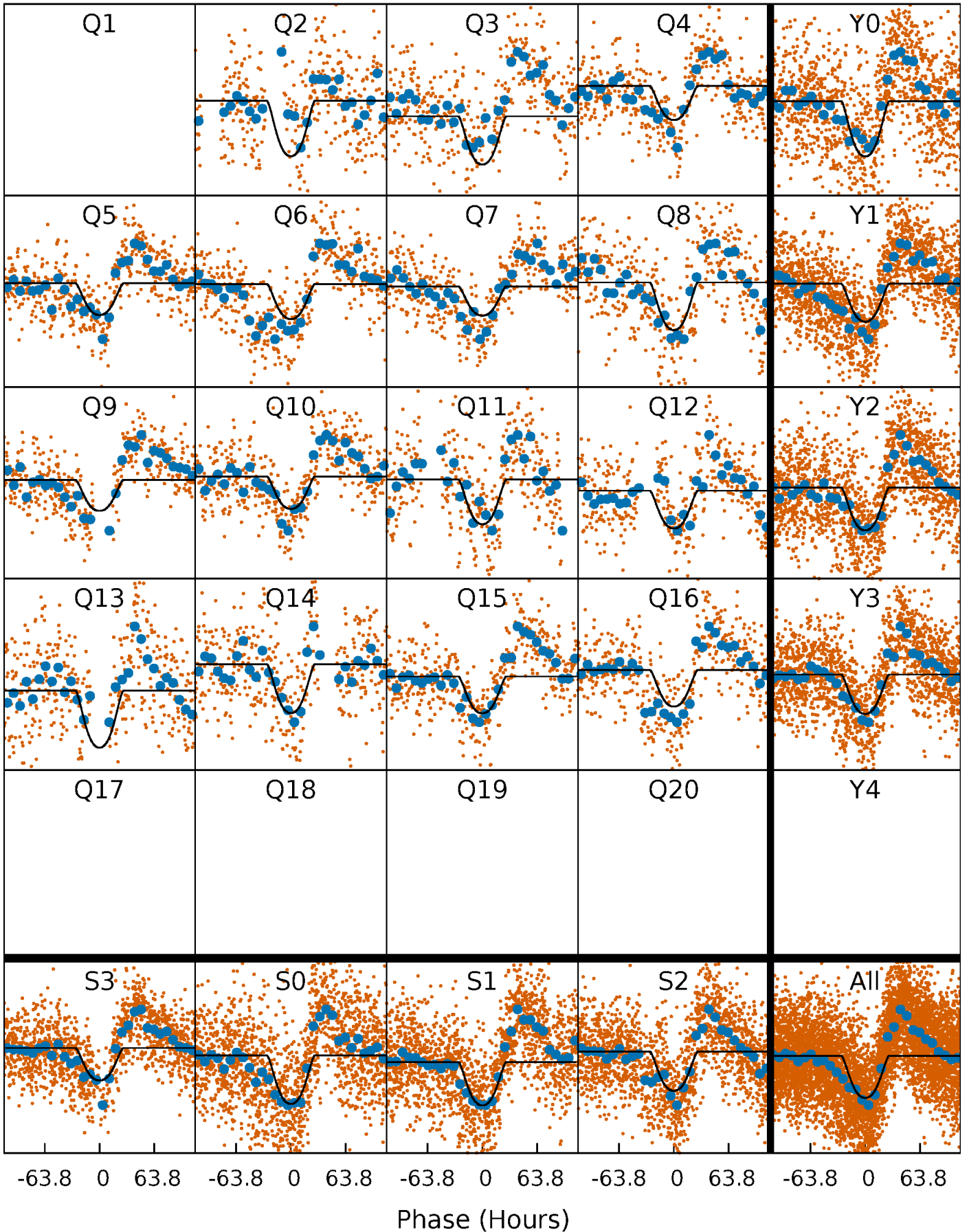
TCE 008803882-01   P= 89.603098 Days    $T_0=170.129983$  (BKJD)





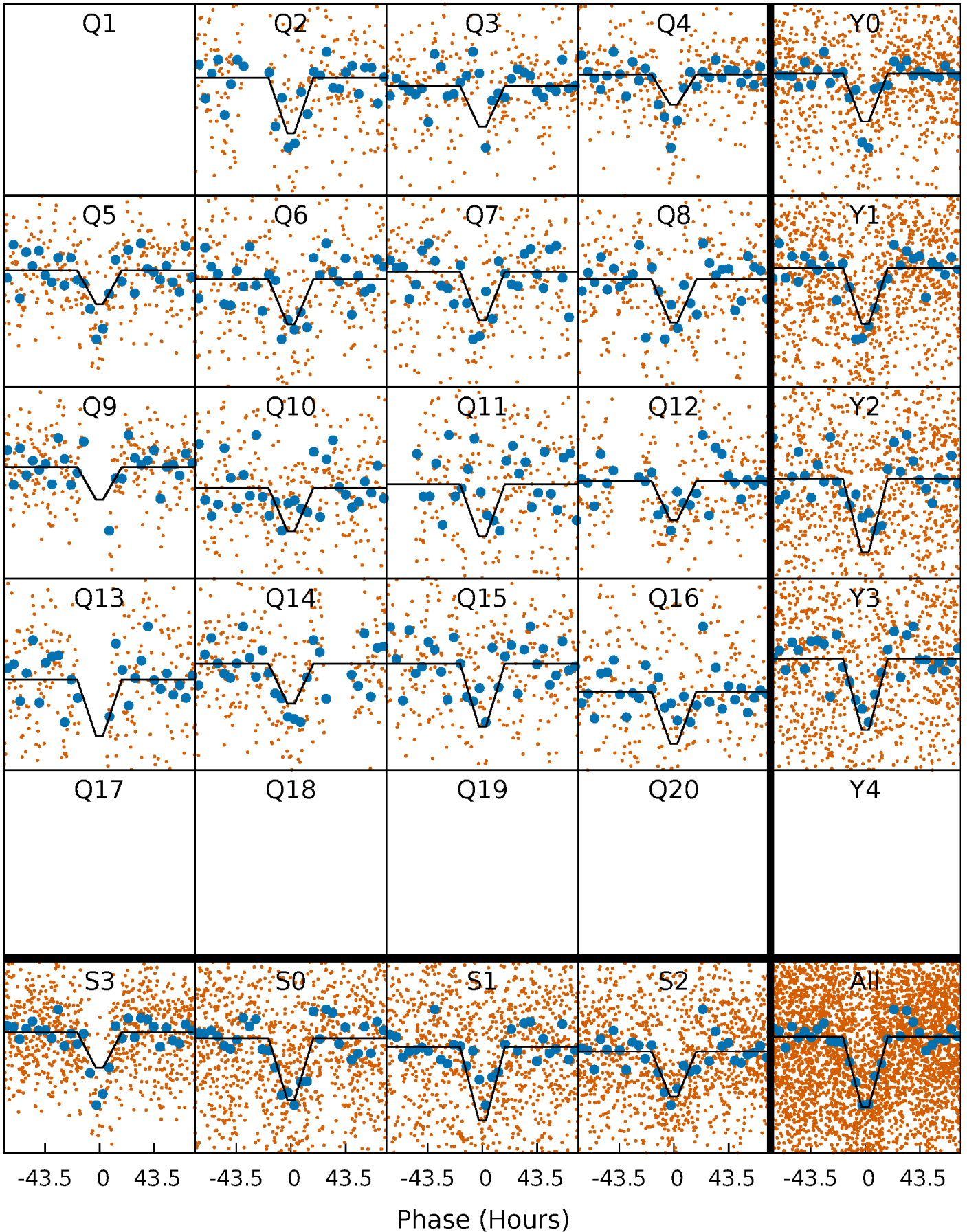
# DV Quarter-Phased Transit Curves

TCE 008803882-01 P= 89.603098 Days  $T_0=170.129983$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

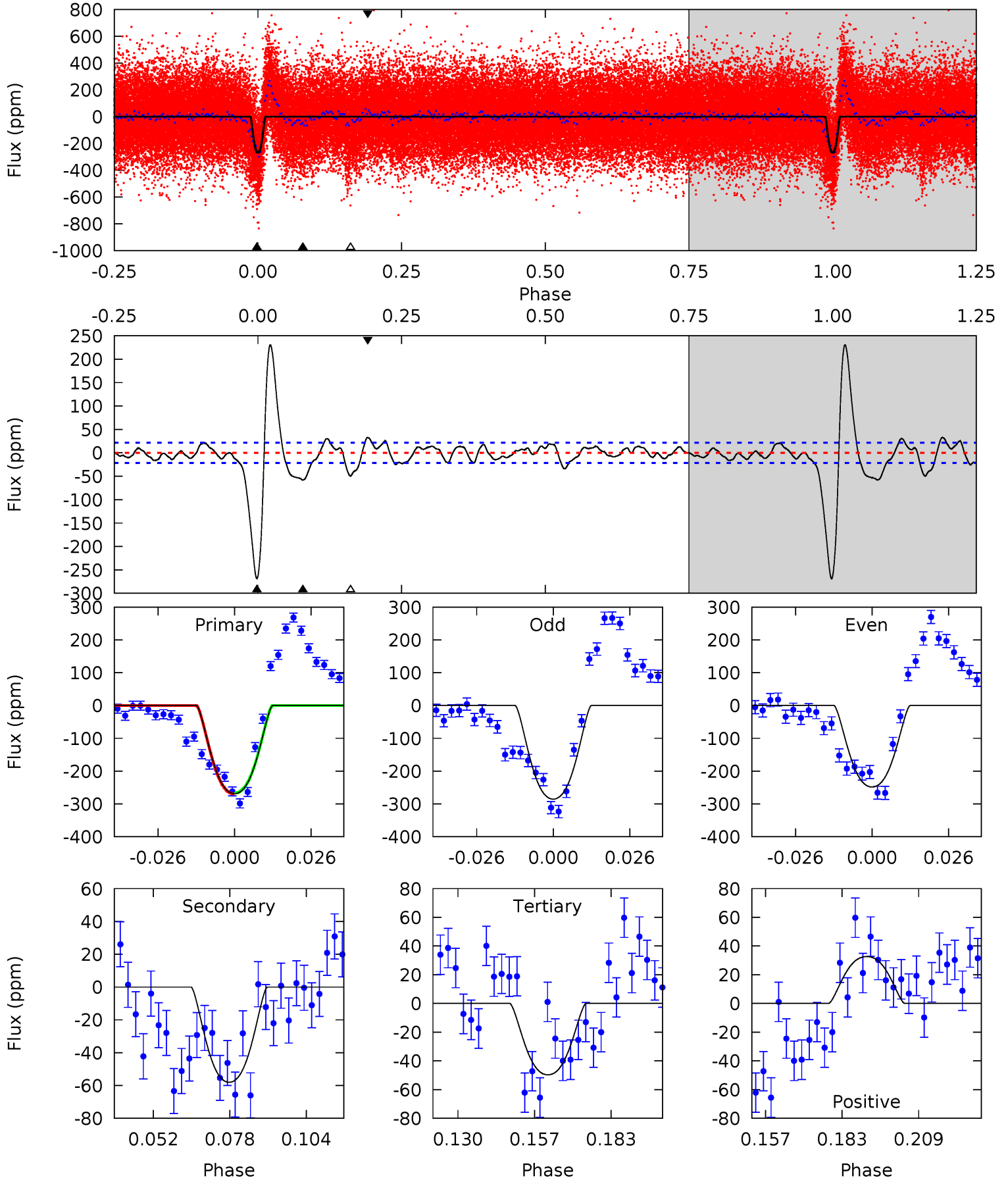
TCE 008803882-01 P= 89.594349 Days  $T_0=170.473655$  (BKJD)



# DV Model-Shift Uniqueness Test

008803882-01, P = 89.603098 Days, E = 80.526885 Days

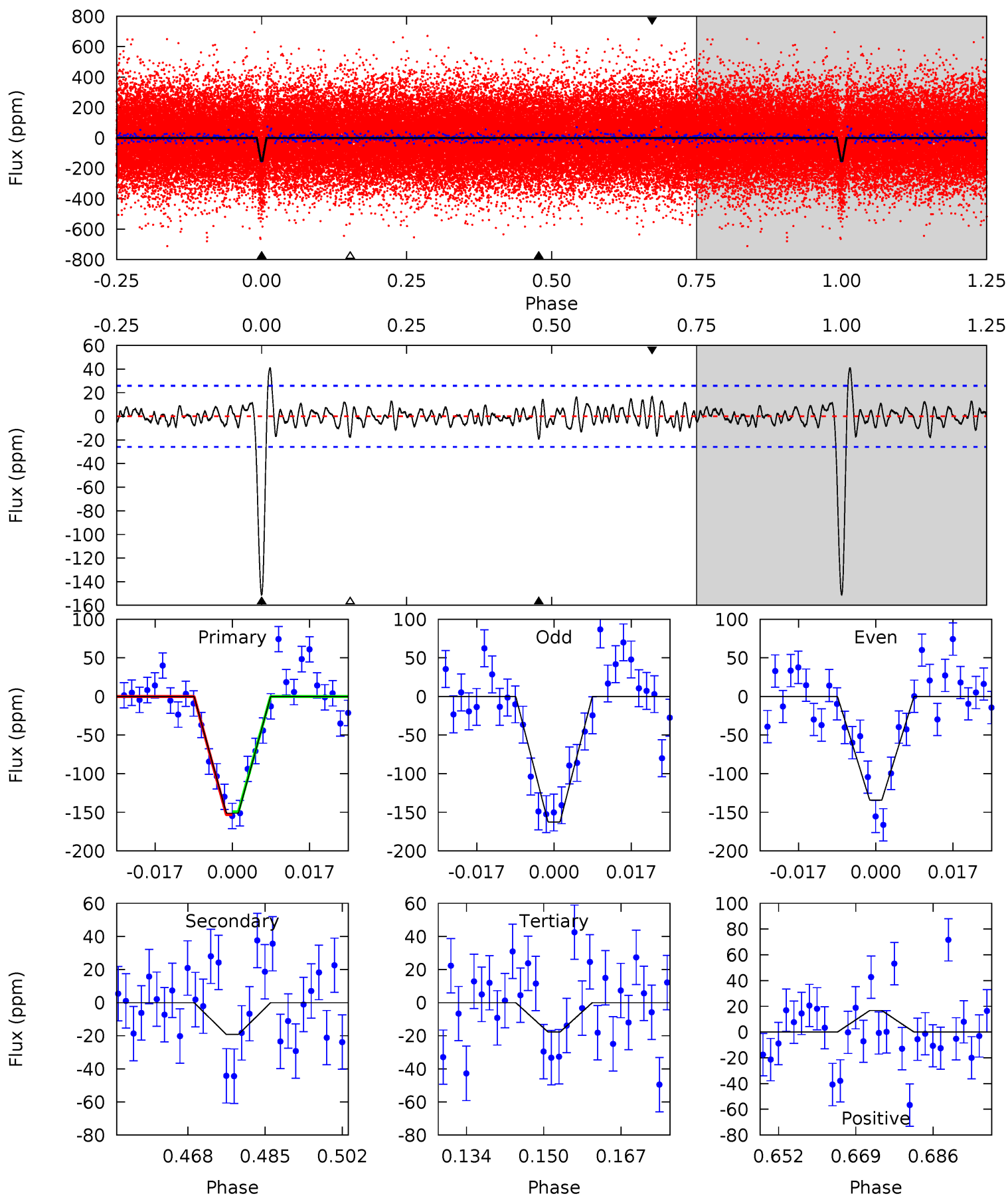
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.7	13.1	11.2	7.37	4.84	2.22	5.18	49.4	53.3	1.88	5.73	4.16	0.87	0.46	0.32



# Alt Model-Shift Uniqueness Test

008803882-01, P = 89.594349 Days, E = 80.879306 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
28.8	3.66	3.38	3.19	4.93	2.39	1.11	25.4	25.6	0.29	0.47	2.68	0.93	0.21	0.38





### Stellar Parameters For KIC 008803882

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5192^{+113}_{-113}$	$3.773^{+0.189}_{-0.081}$	$0.260^{+0.150}_{-0.150}$	$2.460^{+0.372}_{-0.691}$	$1.309^{+0.120}_{-0.279}$	$0.124^{+0.128}_{-0.035}$
	+2%/-2%	+5%/-2%	+58%/-58%	+15%/-28%	+9%/-21%	+103%/-28%
Source	SPE59	SPE59	SPE59	DSEP		

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

### Secondary Eclipse Parameters for KIC 008803882-01 / KOI 2659.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-58 \pm 4$	$5.39^{+1.07}_{-1.06}$	$757^{+36}_{-49}$	$3555^{+203}_{-178}$	$202^{+98}_{-65}$
Alt.	$-19 \pm 5$	$3.18^{+0.88}_{-0.89}$	$759^{+35}_{-49}$	$3537^{+420}_{-296}$	$190^{+189}_{-84}$

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

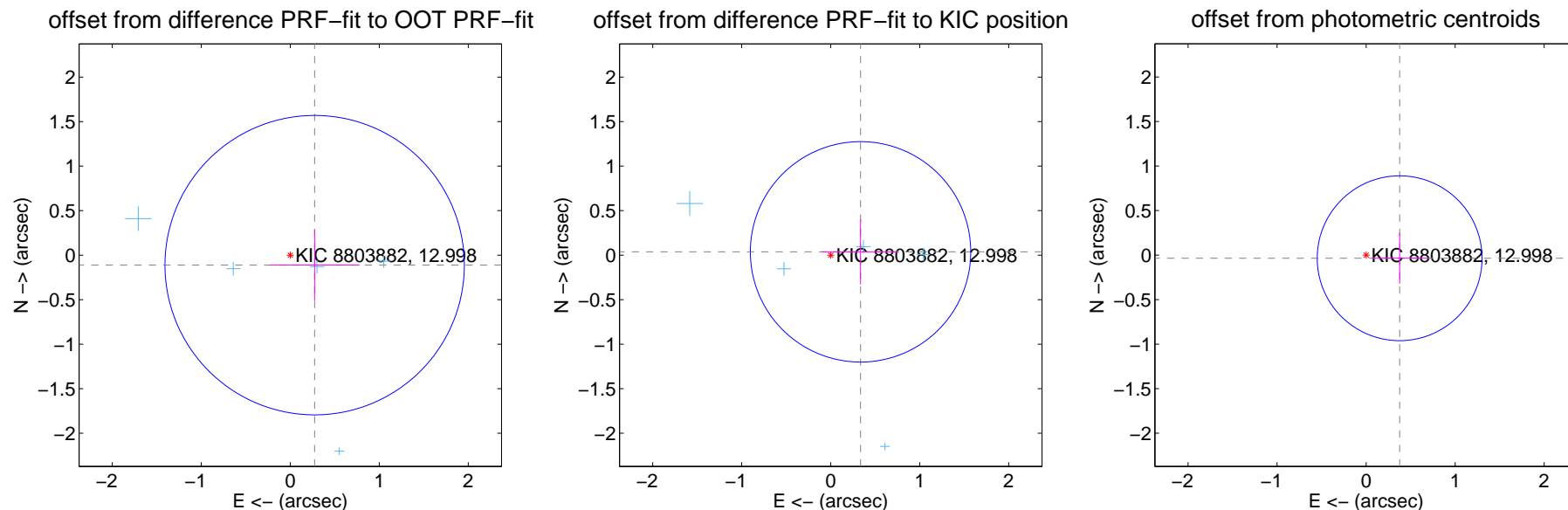
## DV Centroid Data

Supplemental centroid analysis for 008803882-01. Kepler magnitude: 13.00. Transit SNR 17.66

There are 5 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.296 \pm 0.560$	0.53	$-0.274 \pm 0.504$	$-0.112 \pm 0.399$
PRF-fit source offset from KIC position	$0.337 \pm 0.413$	0.82	$-0.335 \pm 0.432$	$0.037 \pm 0.366$
photometric centroid source offset	$0.38 \pm 0.31$	1.23	$-0.38 \pm 0.31$	$-0.04 \pm 0.29$

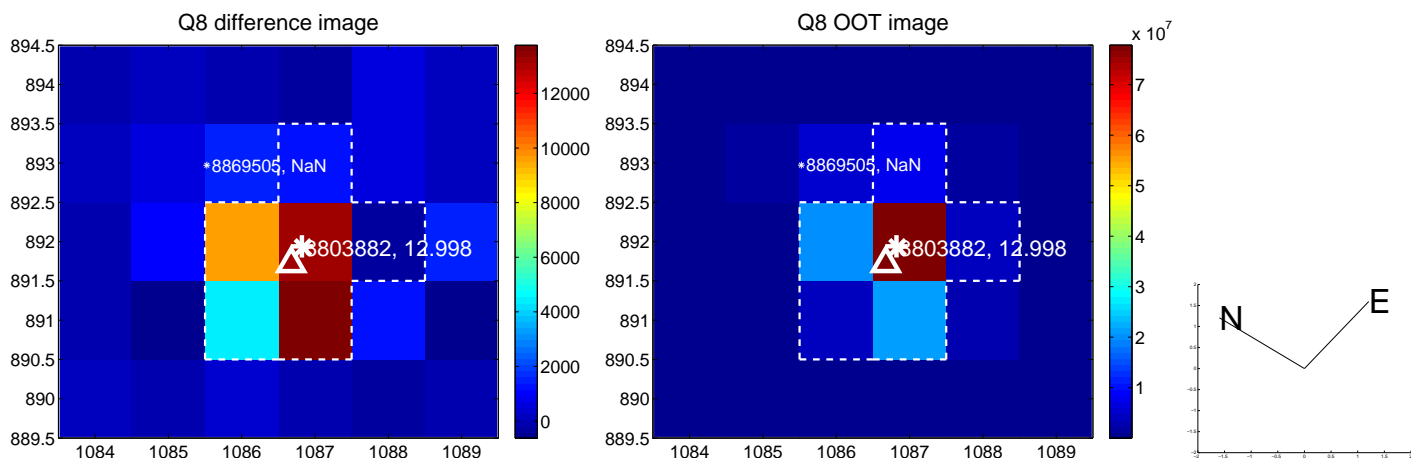
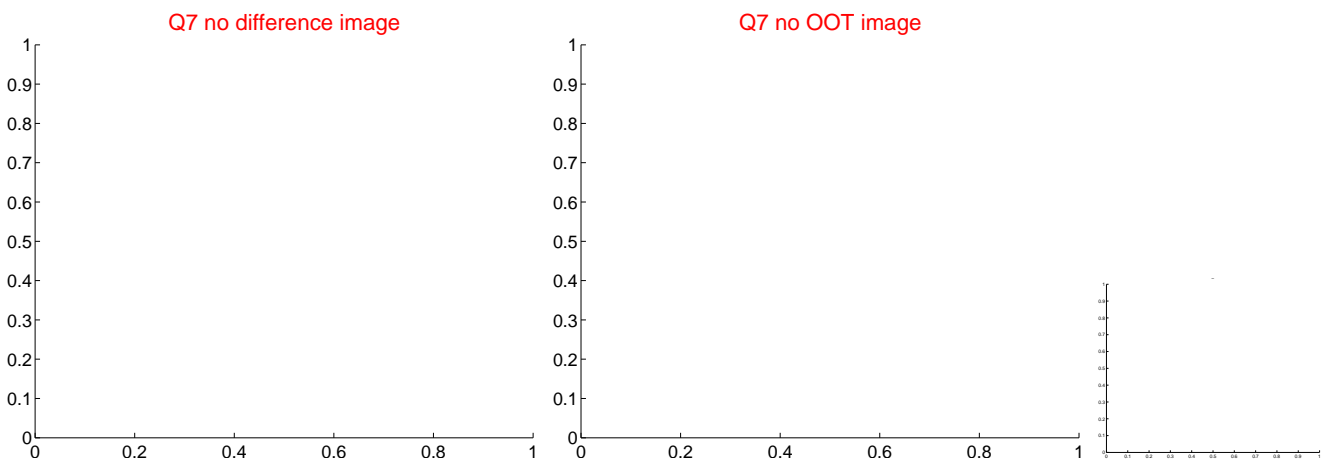
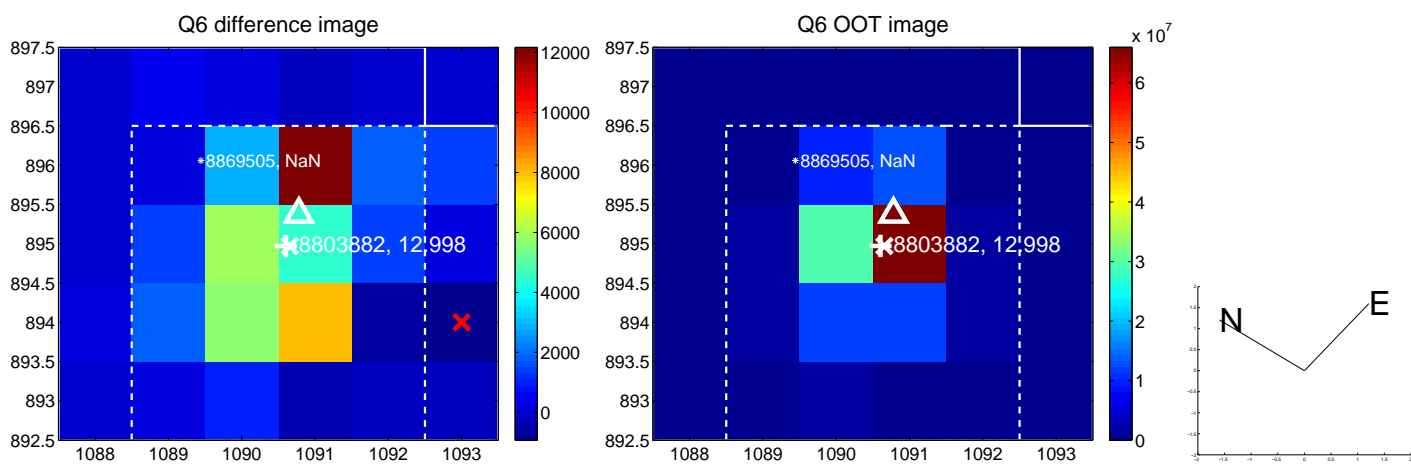
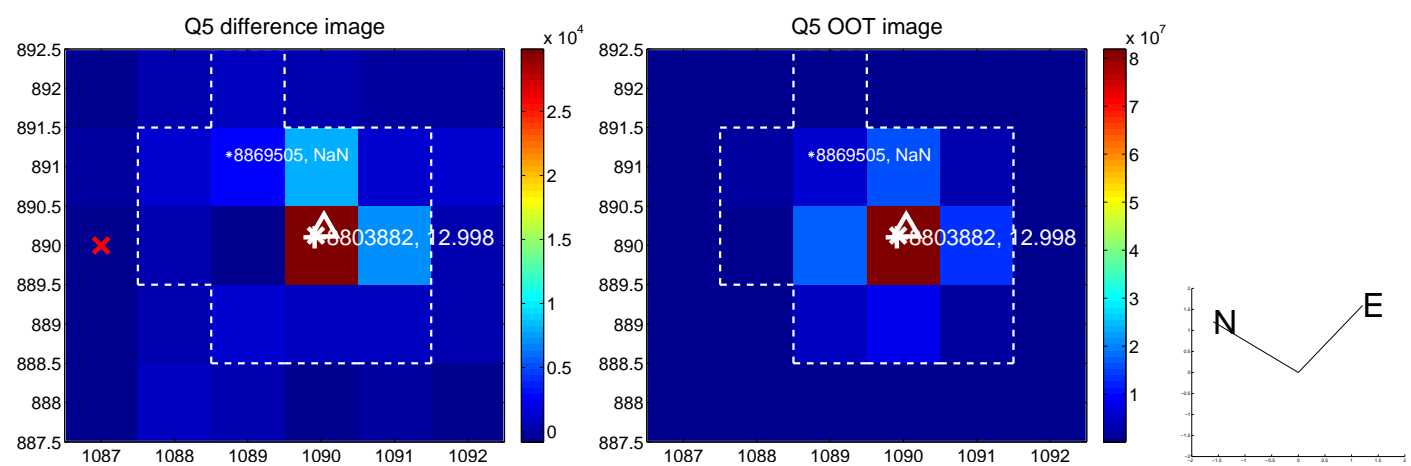


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

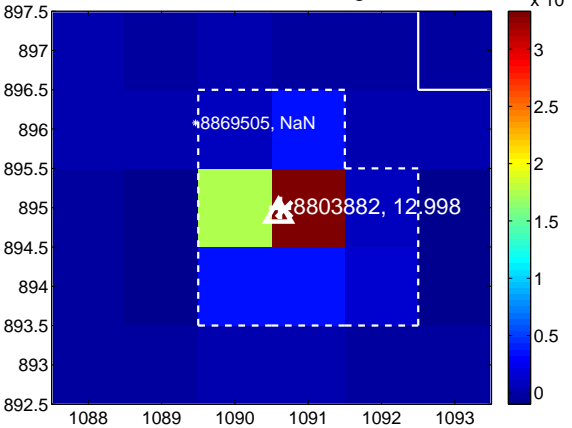
Q9 no difference image



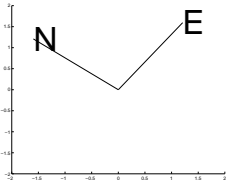
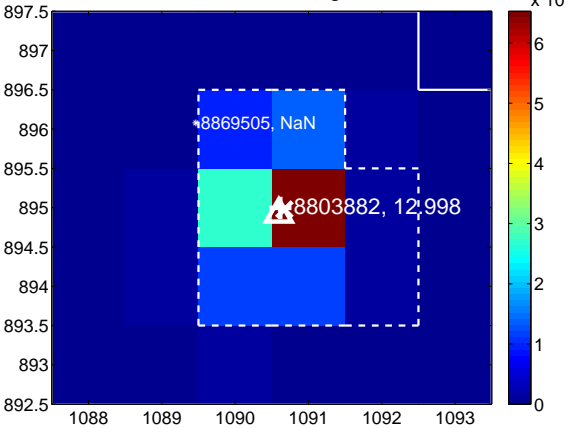
Q9 no OOT image



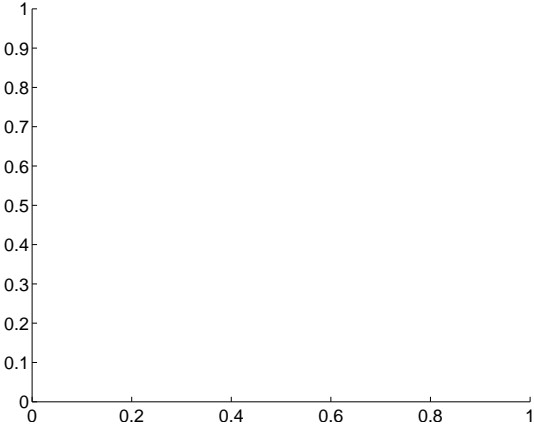
Q10 difference image



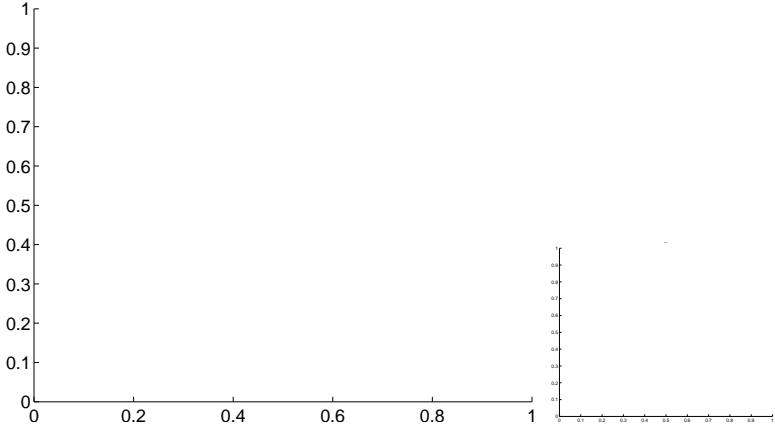
Q10 OOT image



Q11 no difference image



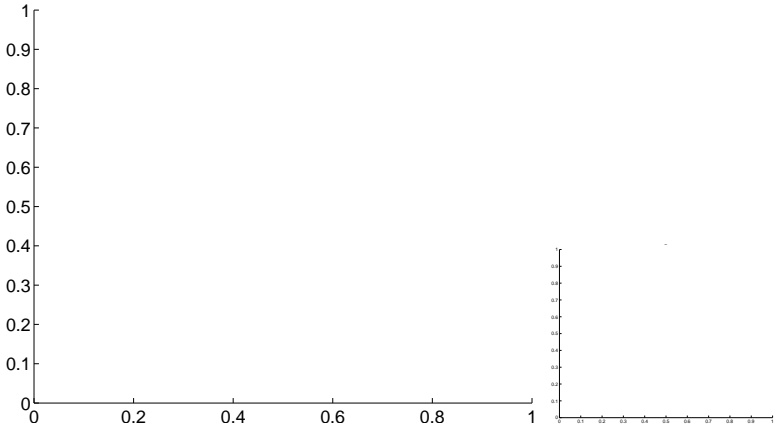
Q11 no OOT image



Q12 no difference image



Q12 no OOT image



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

Q13 no difference image



Q13 no OOT image



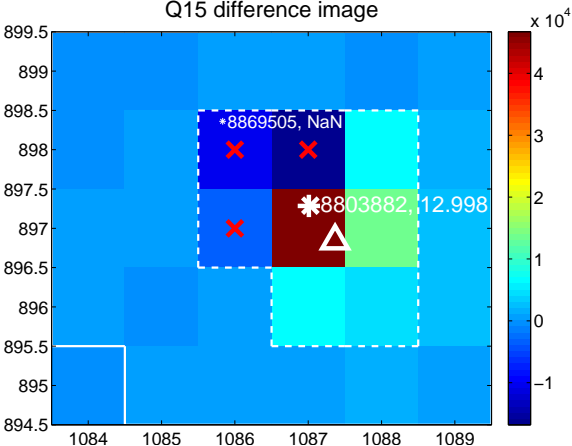
Q14 no difference image



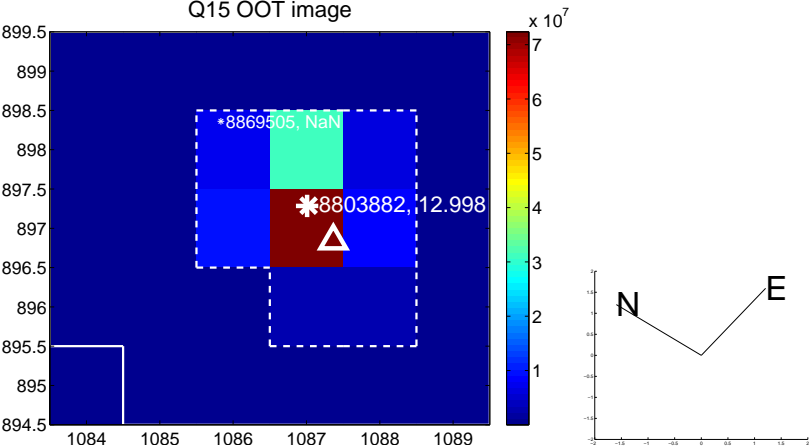
Q14 no OOT image



Q15 difference image



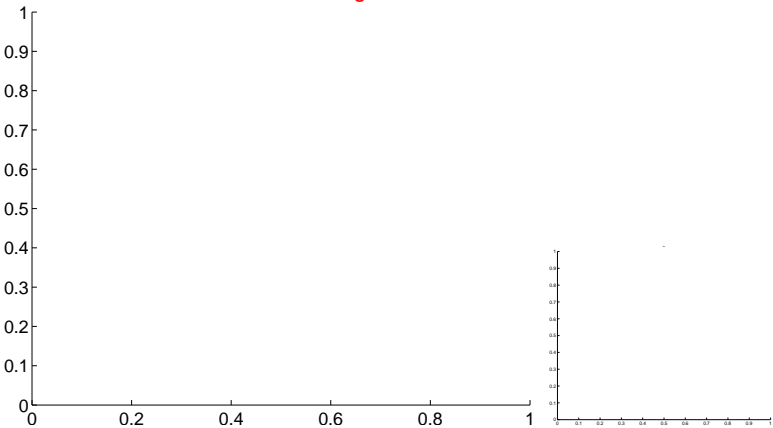
Q15 OOT image



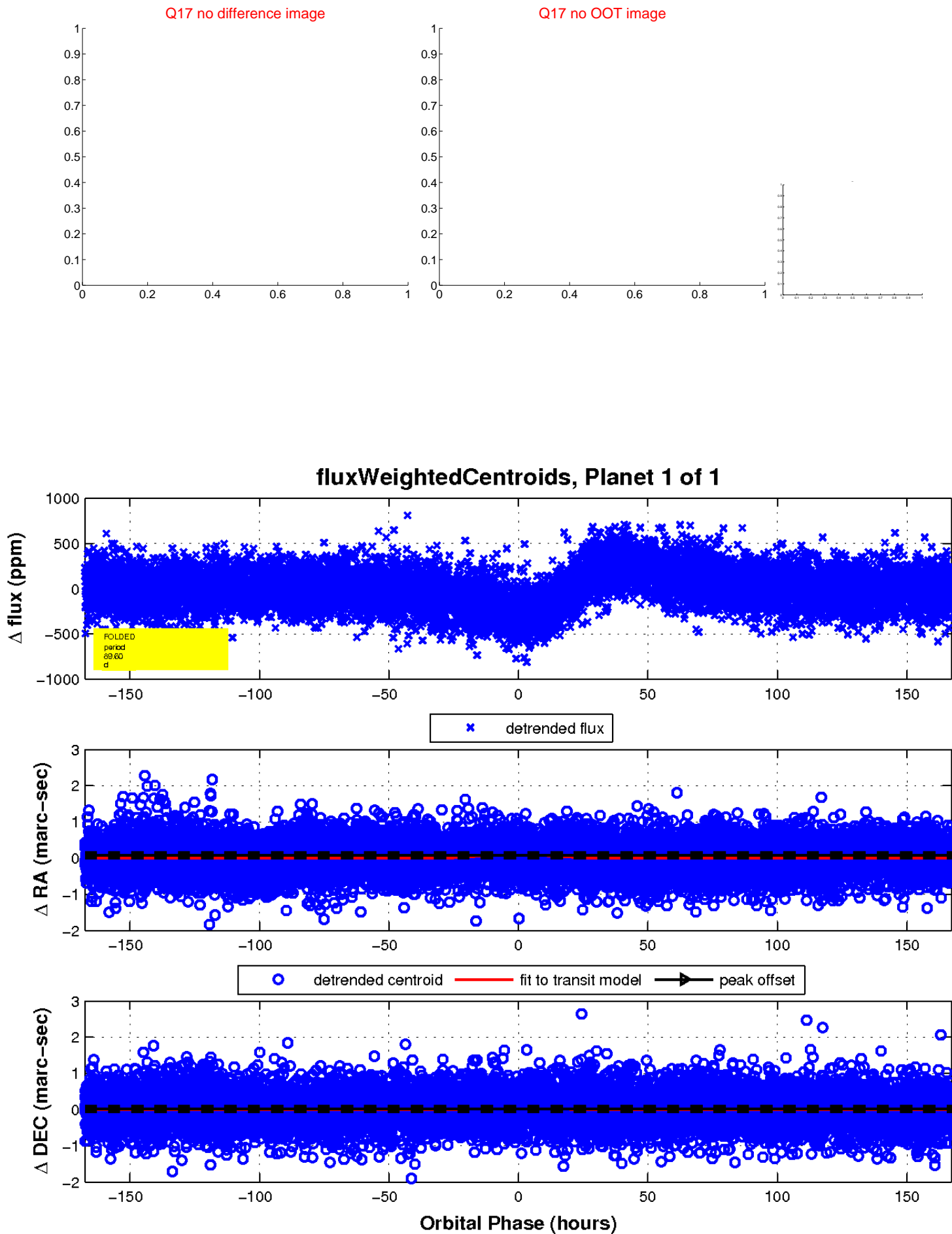
Q16 no difference image



Q16 no OOT image



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



# UKIRT Image

Declination

