

# KIC 008880317

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008880317-01	OBS	7915.01	382.569033	372.867671	253.5	11.512	7.2	6.7	1.24	6337	2.20	2.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008880317-01	OBS	PC	0.32	0	0	0	0	CENT_FEW_DIFFS

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

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

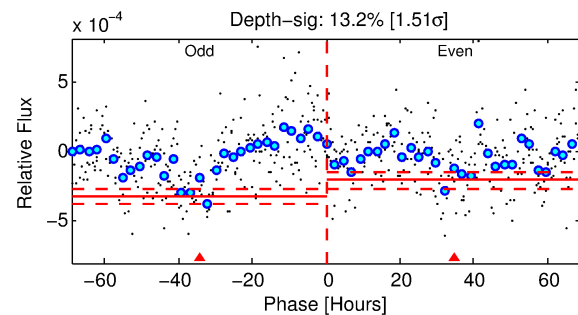
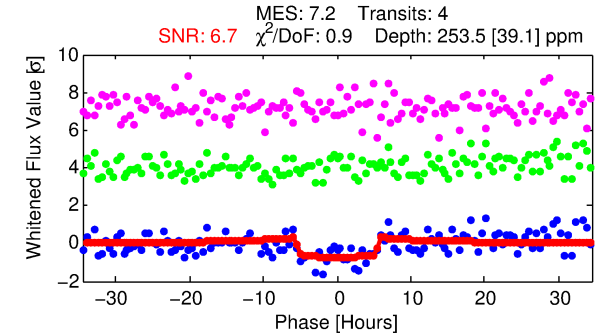
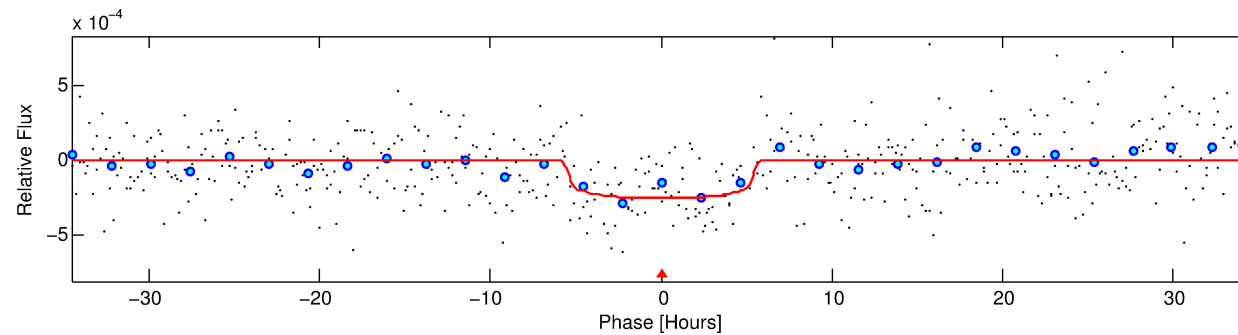
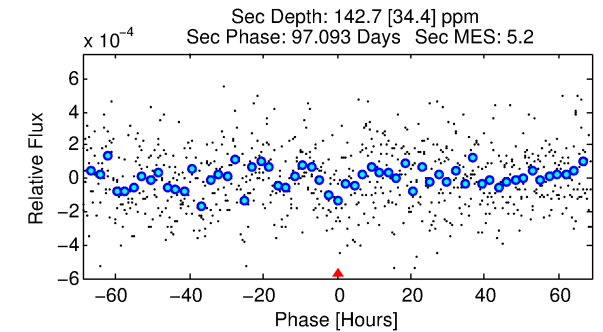
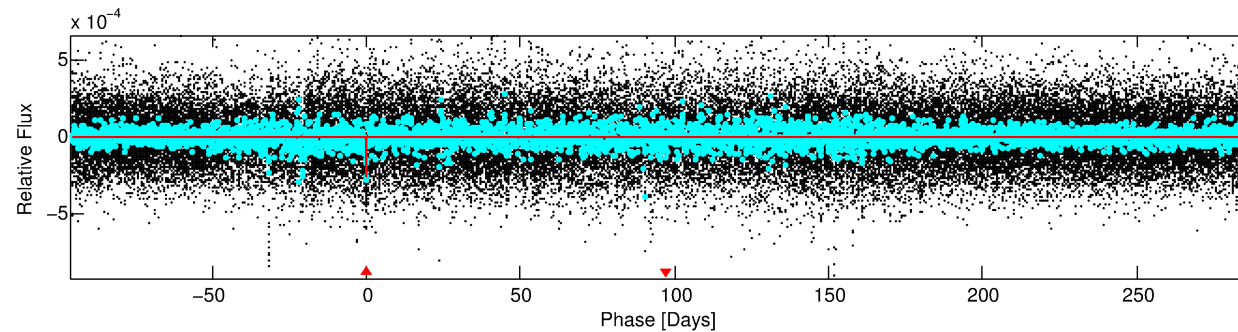
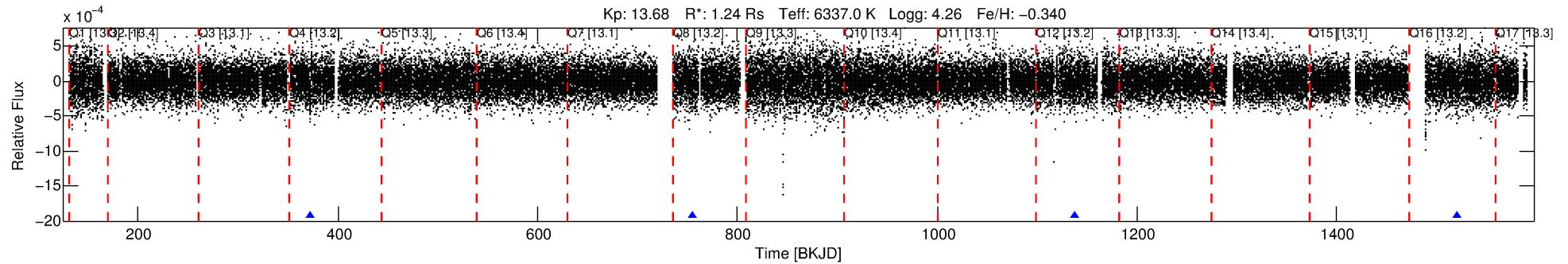
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008880317-01

No Significant Match Found

# DV One-Page Summary

KIC: 8880317 Candidate: 1 of 1 Period: 382.569 d



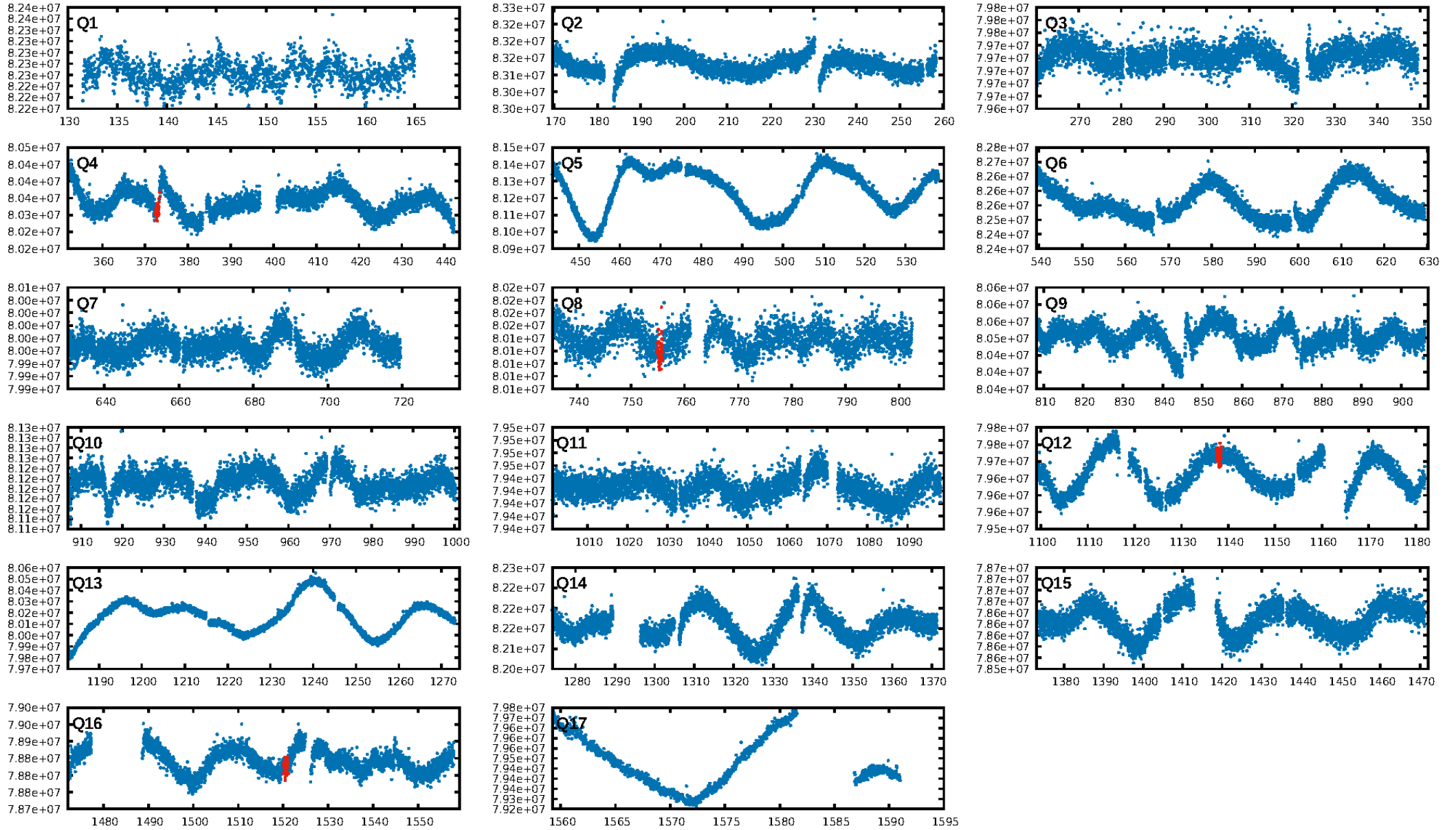
## DV Fit Results:

Period = 382.56903 [0.00896] d  
Epoch = 372.8677 [0.0164] BKJD  
Rp/R\* = 0.0163 [0.0039]  
a/R\* = 150.65 [181.46]  
b = 0.83 [0.47]  
Seff = 2.06 [0.74]  
Teq = 305 [28] K  
Rp = 2.20 [0.84] Re  
a = 1.0388 [0.2500] AU  
Ag = 17457.69 [10993.93] [1.59σ]  
Teffp = 5426 [748] K [6.84σ]

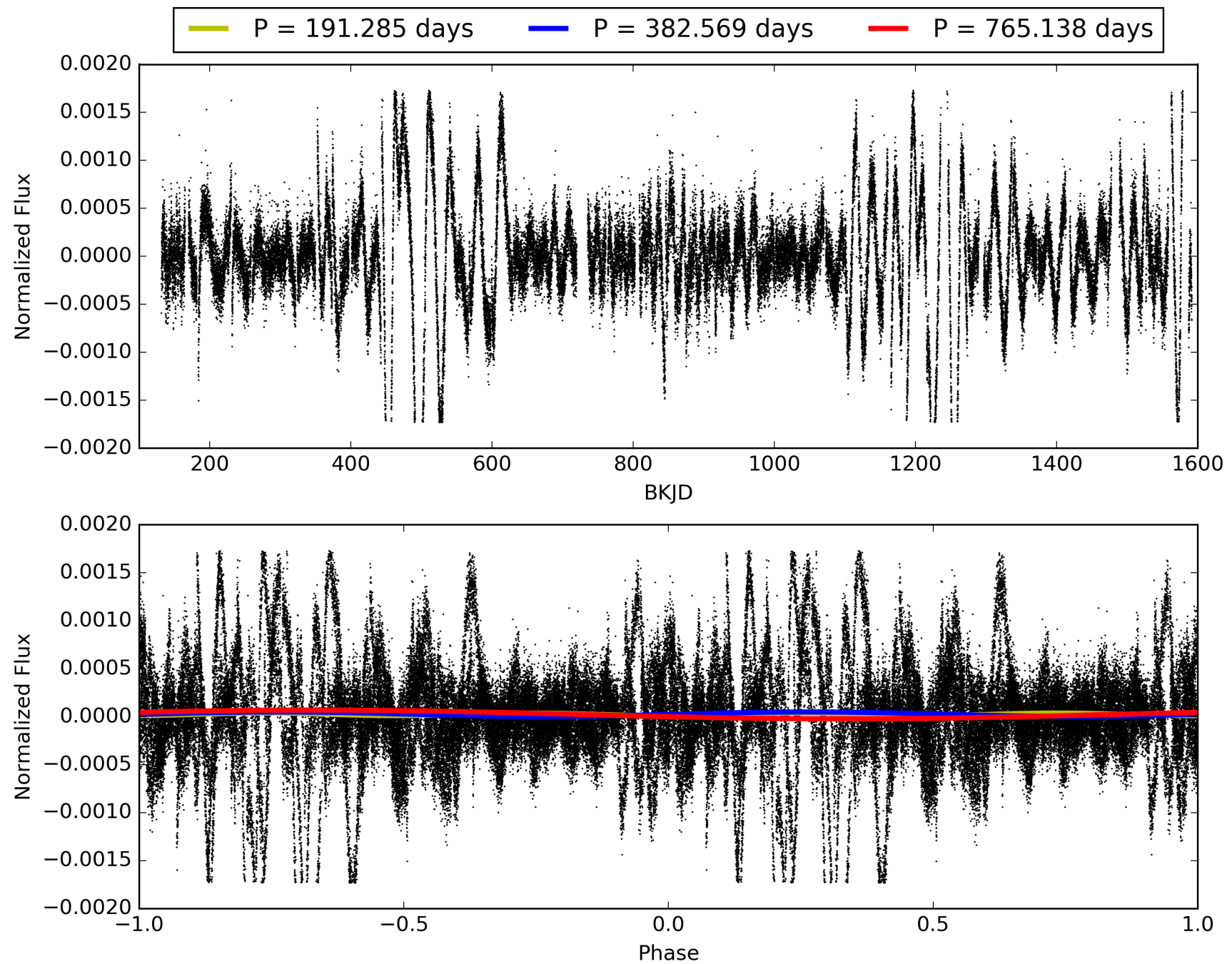
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 21.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.49e-08  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 0.3086  
Centroid-sig: 99.0%  
Centroid-so: 3.019 arcsec [0.32σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0 [0]  
KicOffset-st: 0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [3/3]

# TCE 008880317-01, PDC Light Curves

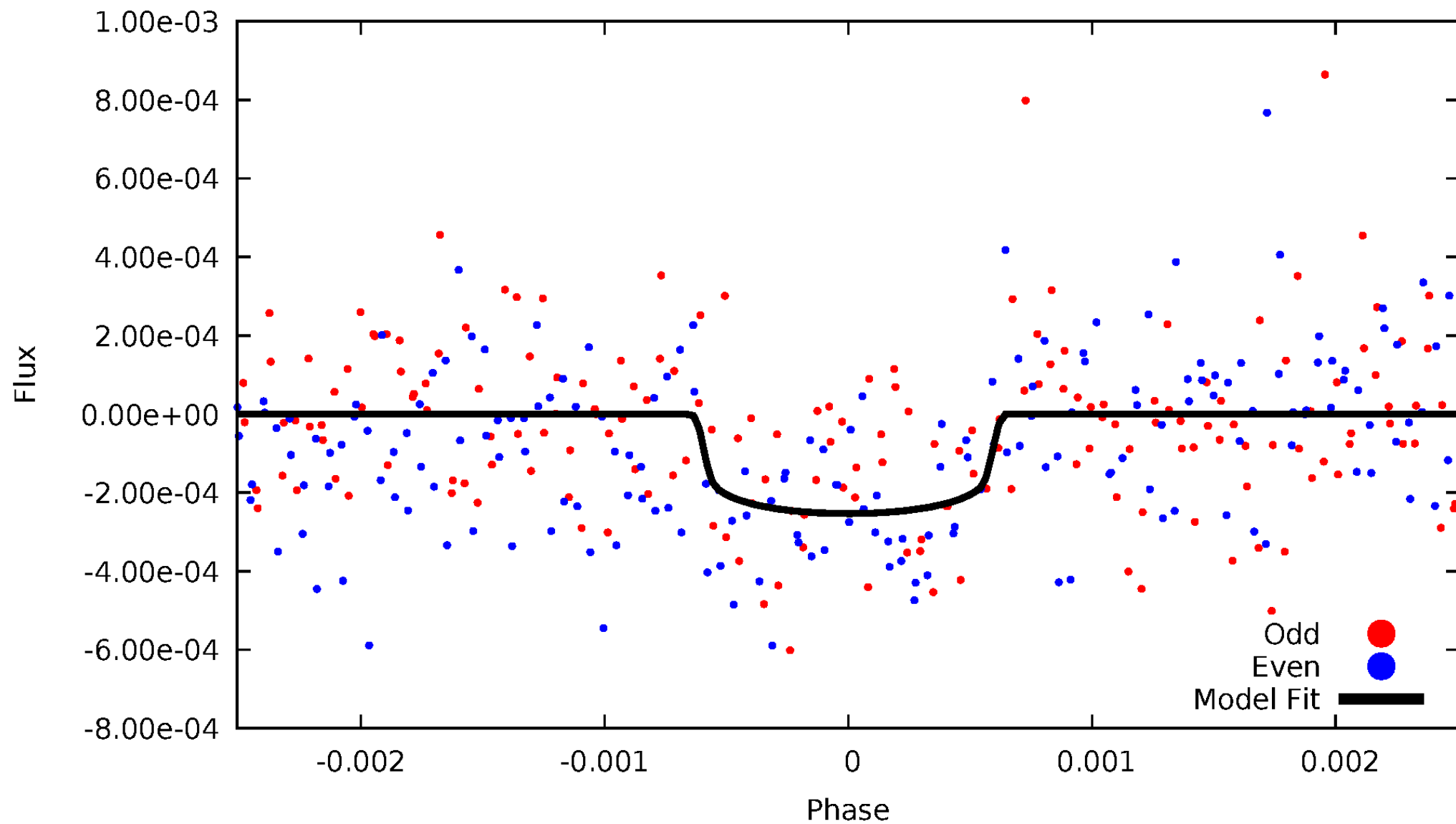


# TCE 008880317-01



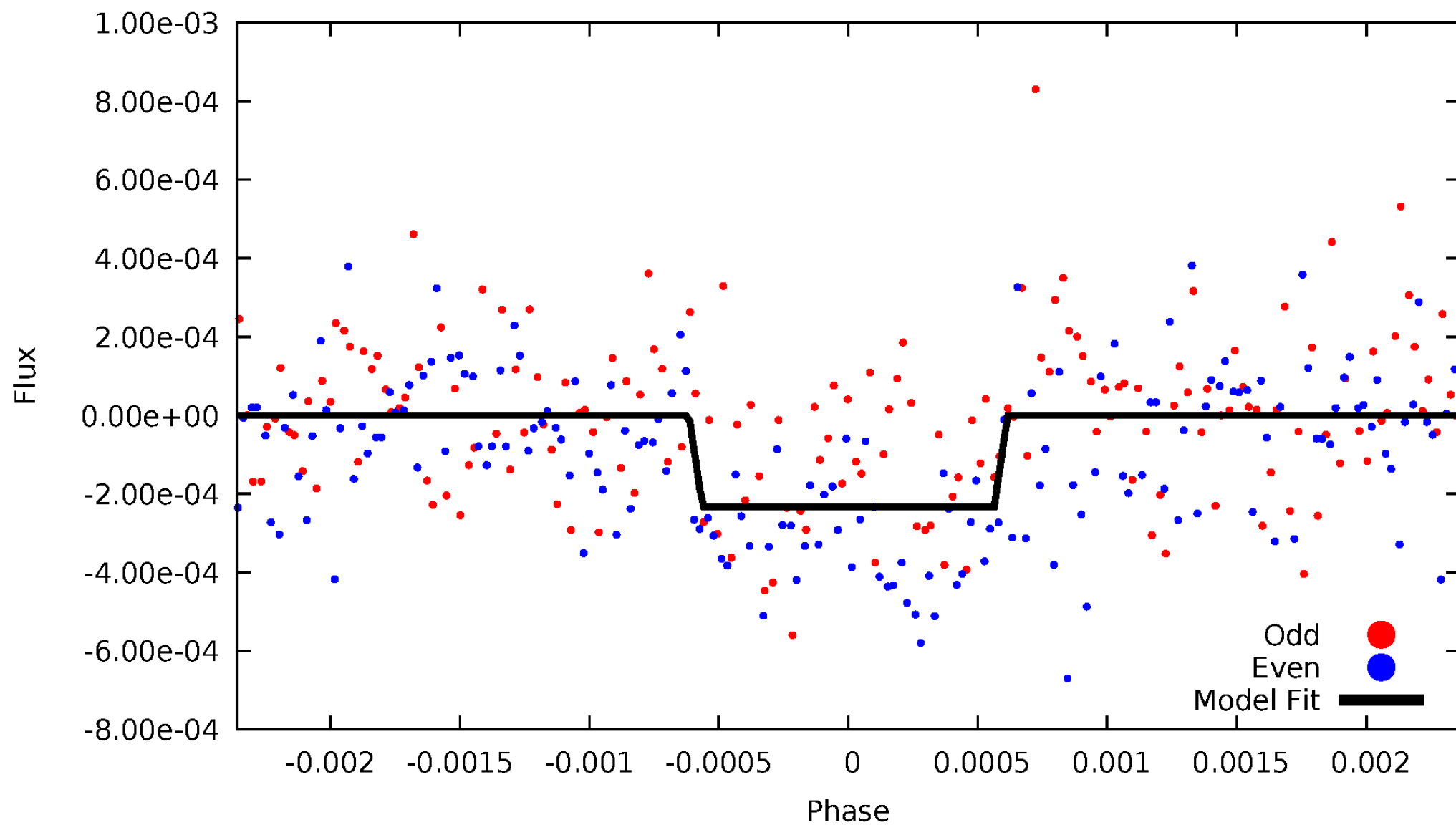
# DV Odd/Even

TCE 008880317-01



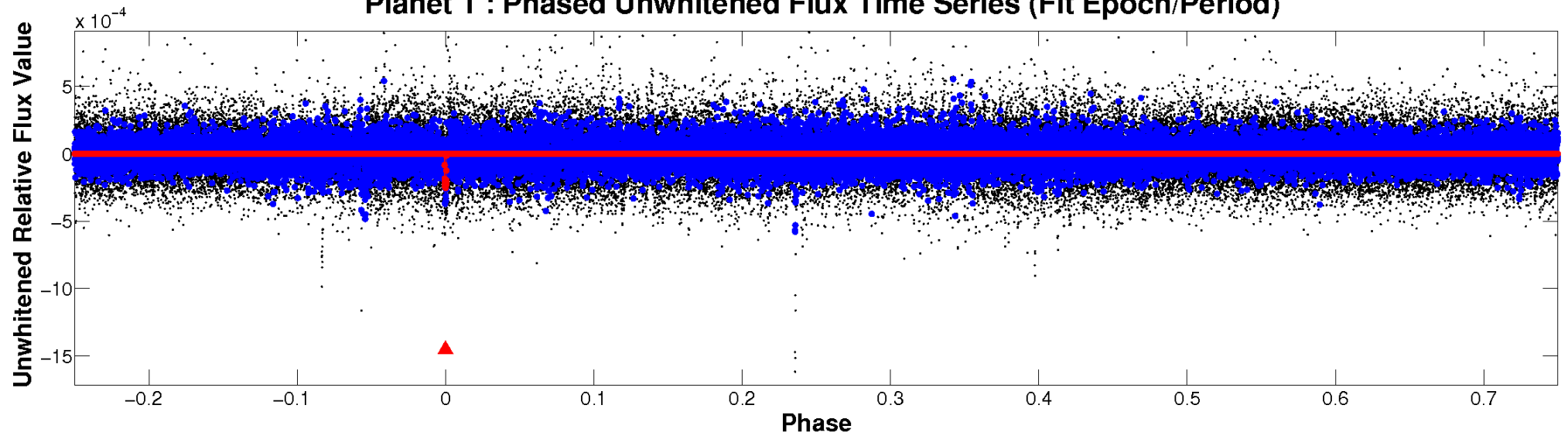
# ALT Odd/Even

TCE 008880317-01

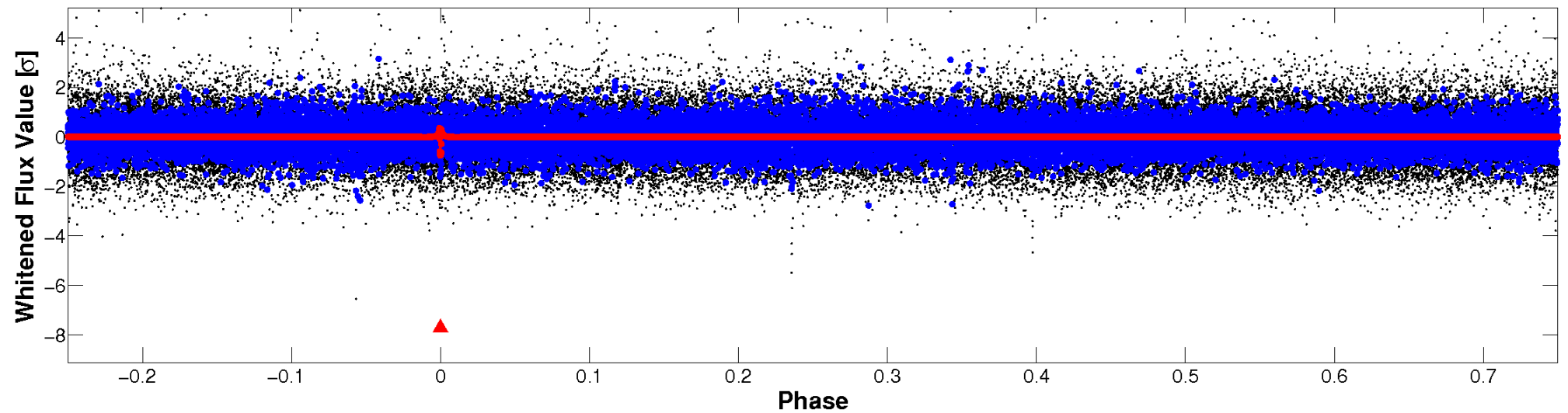


# Non-Whitened Vs. Whitened Light Curve

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

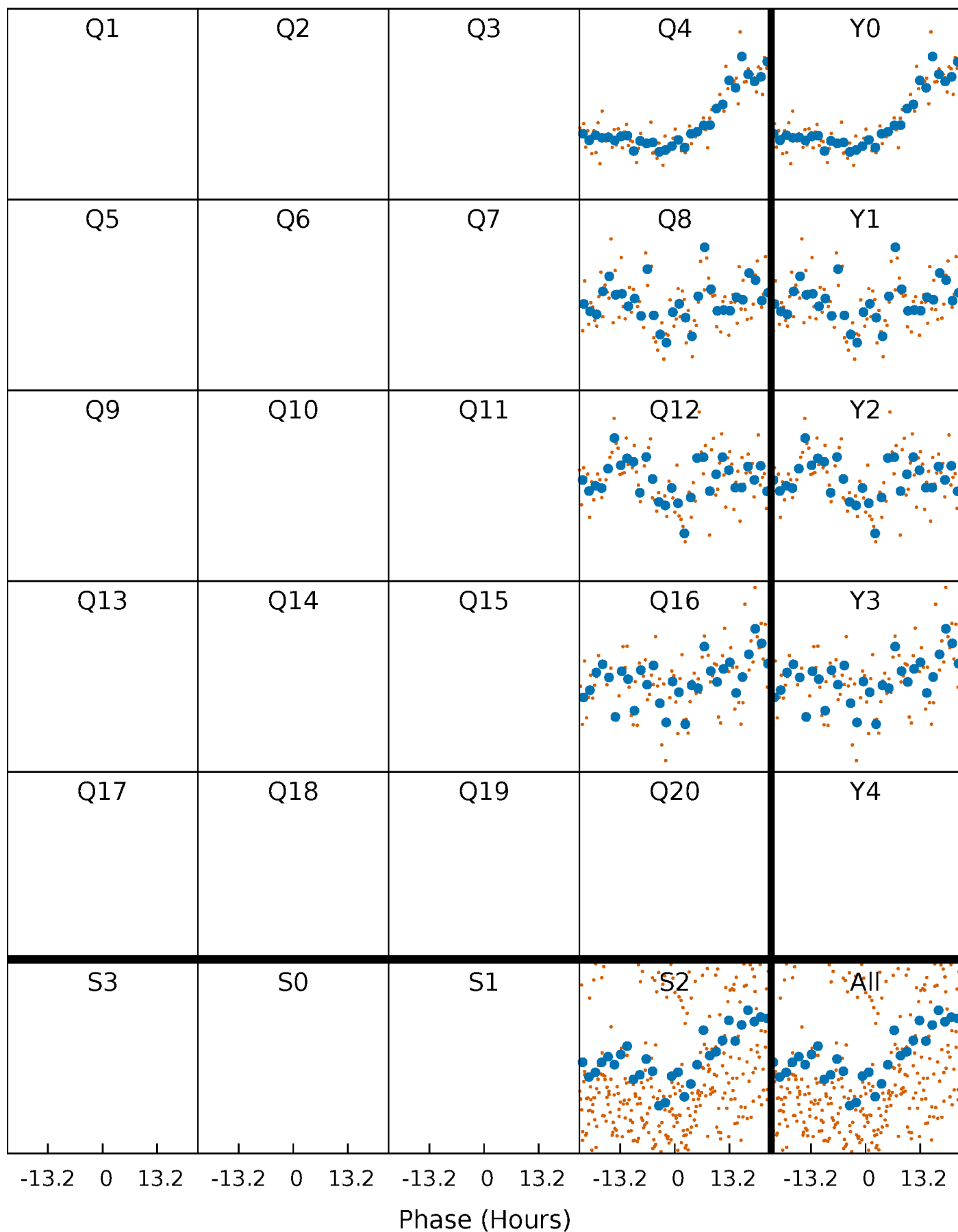


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

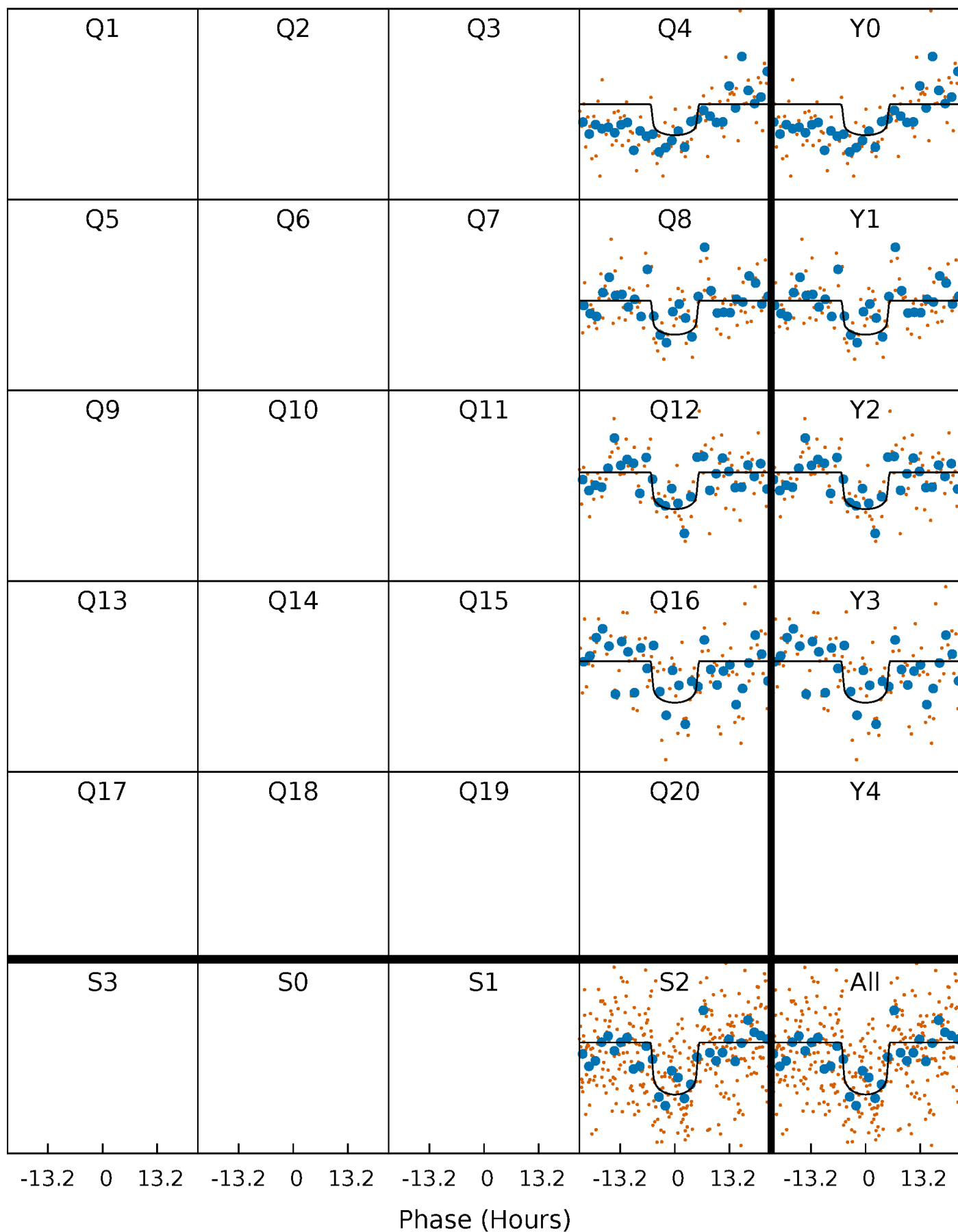
TCE 008880317-01     $P=382.569033$  Days     $T_0=372.867671$  (BKJD)





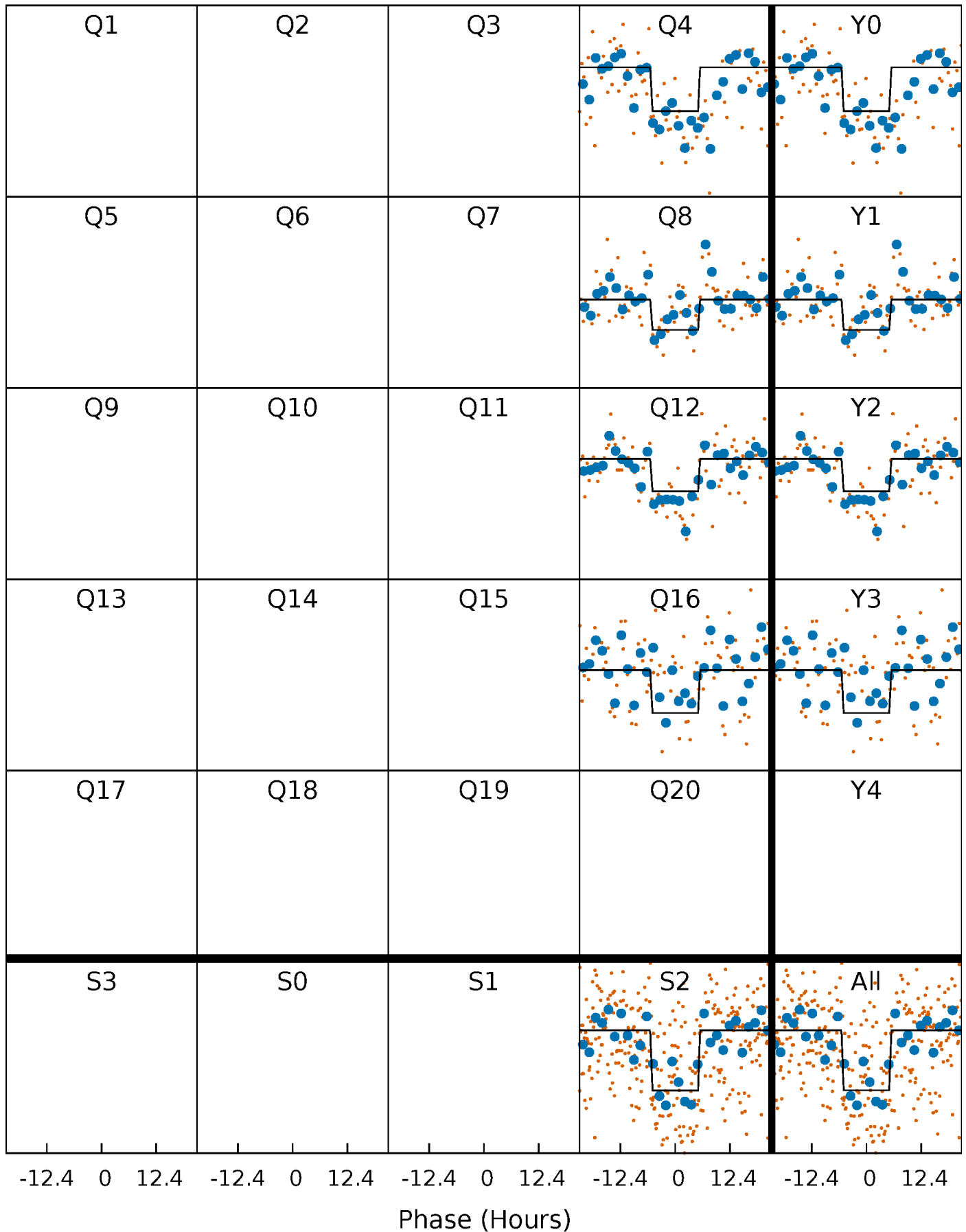
# DV Quarter-Phased Transit Curves

TCE 008880317-01 P=382.569033 Days  $T_0=372.867671$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

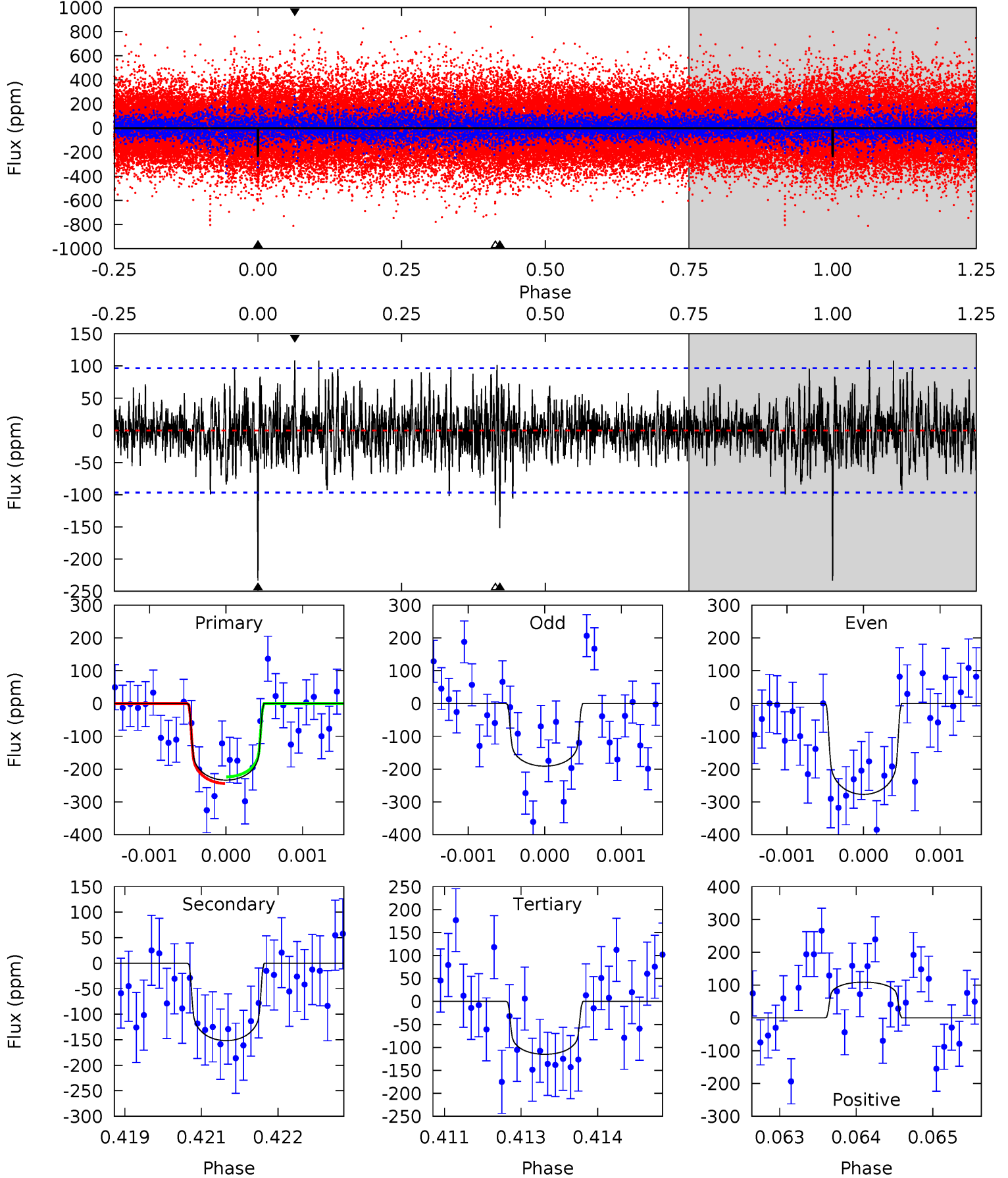
TCE 008880317-01 P=382.563921 Days  $T_0=372.874271$  (BKJD)



# DV Model-Shift Uniqueness Test

008880317-01, P = 382.569033 Days, E = 372.867671 Days

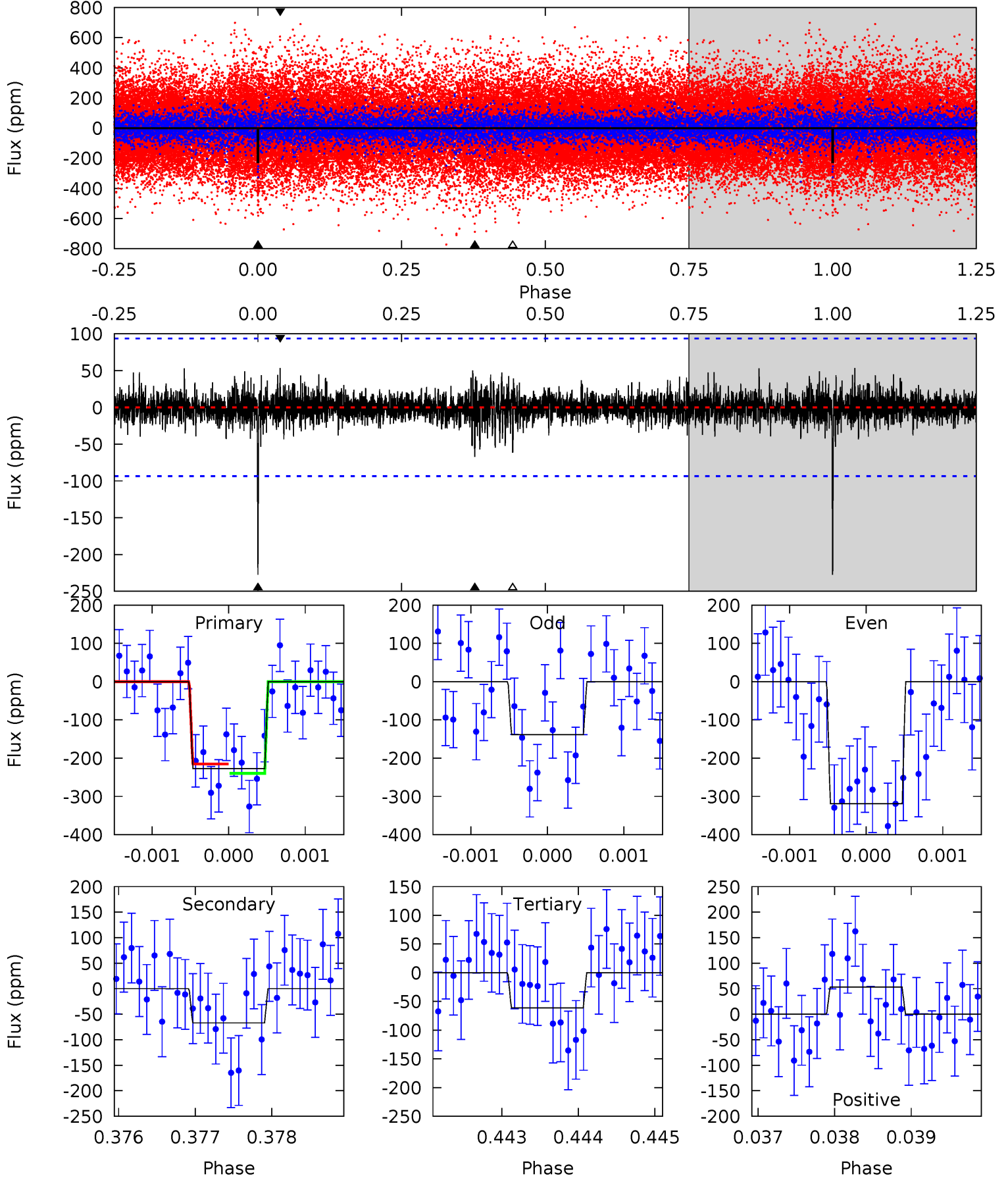
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	8.49	6.44	6.09	5.40	3.21	1.57	6.63	6.98	2.05	2.40	2.39	1.09	0.32	0.56



# Alt Model-Shift Uniqueness Test

008880317-01, P = 382.563921 Days, E = 372.874271 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	3.88	3.56	3.09	5.42	3.24	0.73	9.61	10.1	0.33	0.79	5.20	0.97	0.19	0.71



### Stellar Parameters For KIC 008880317

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6337^{+176}_{-220}$	$4.261^{+0.175}_{-0.175}$	$-0.340^{+0.300}_{-0.300}$	$1.239^{+0.371}_{-0.247}$	$1.019^{+0.172}_{-0.114}$	$0.754^{+0.680}_{-0.357}$
	+3%/-3%	+4%/-4%	+88%/-88%	+30%/-20%	+17%/-11%	+90%/-47%
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 008880317-01 / KOI 7915.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-152 \pm 18$	$2.24^{+0.63}_{-0.61}$	$426^{+30}_{-29}$	$5480^{+798}_{-507}$	$18417^{+15006}_{-7730}$
Alt.	$-67 \pm 17$	$2.10^{+0.65}_{-0.60}$	$425^{+30}_{-29}$	$4743^{+654}_{-507}$	$9159^{+8896}_{-4208}$

$T_{\text{max}}$  = 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

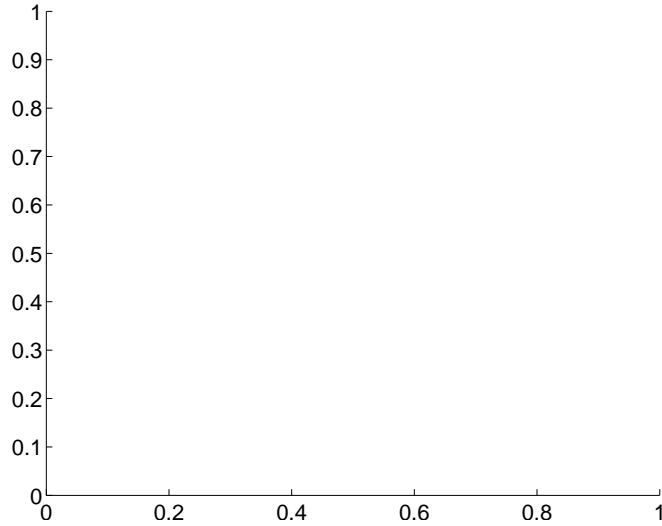
Supplemental centroid analysis for 008880317-01. Kepler magnitude: 13.68. Transit SNR 6.72

There are 0 quarters with good PRF difference image offsets

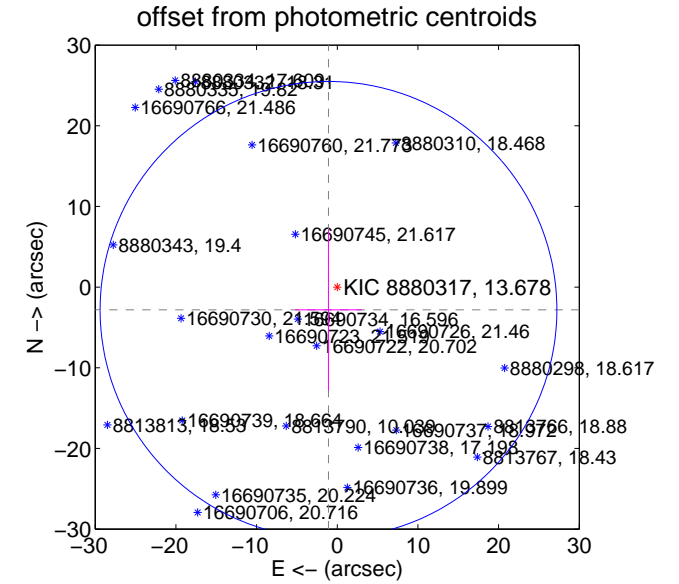
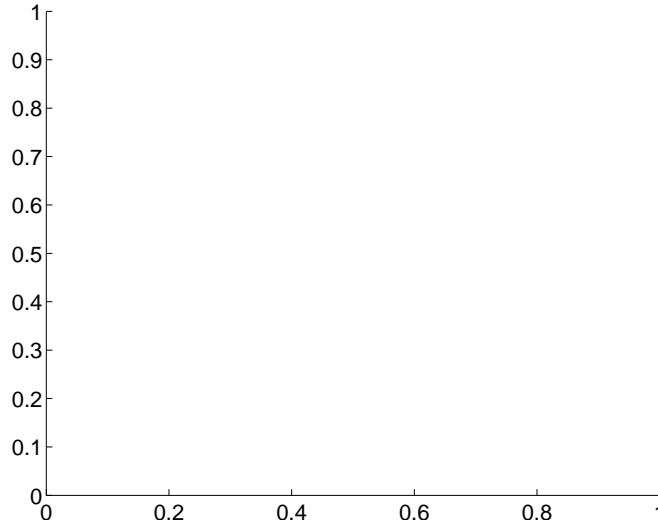
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$3.02 \pm 9.44$	0.32	$1.08 \pm 4.14$	$-2.82 \pm 9.98$

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC

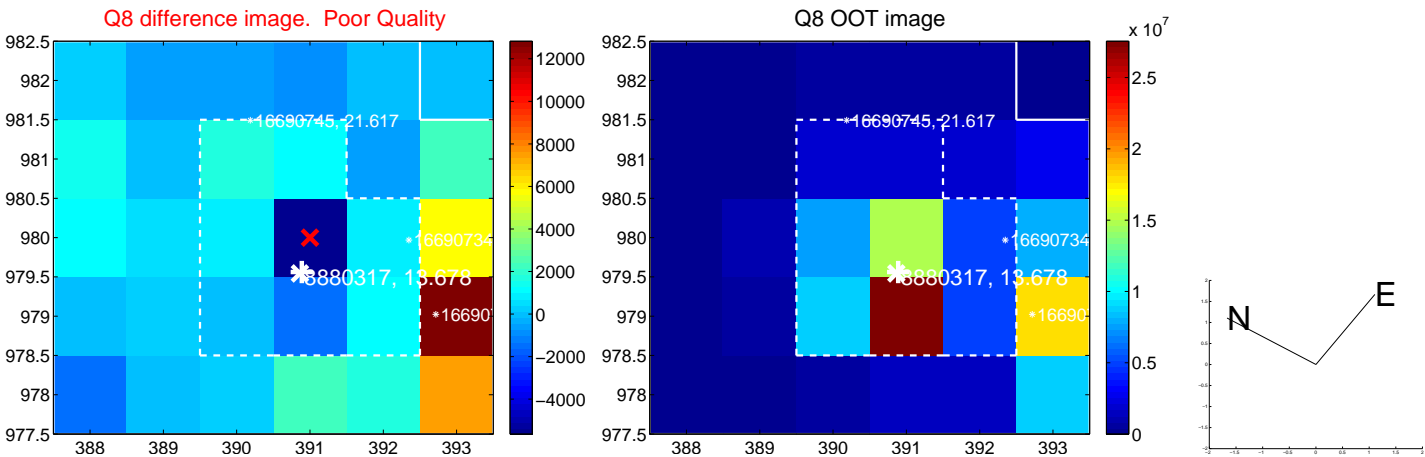


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

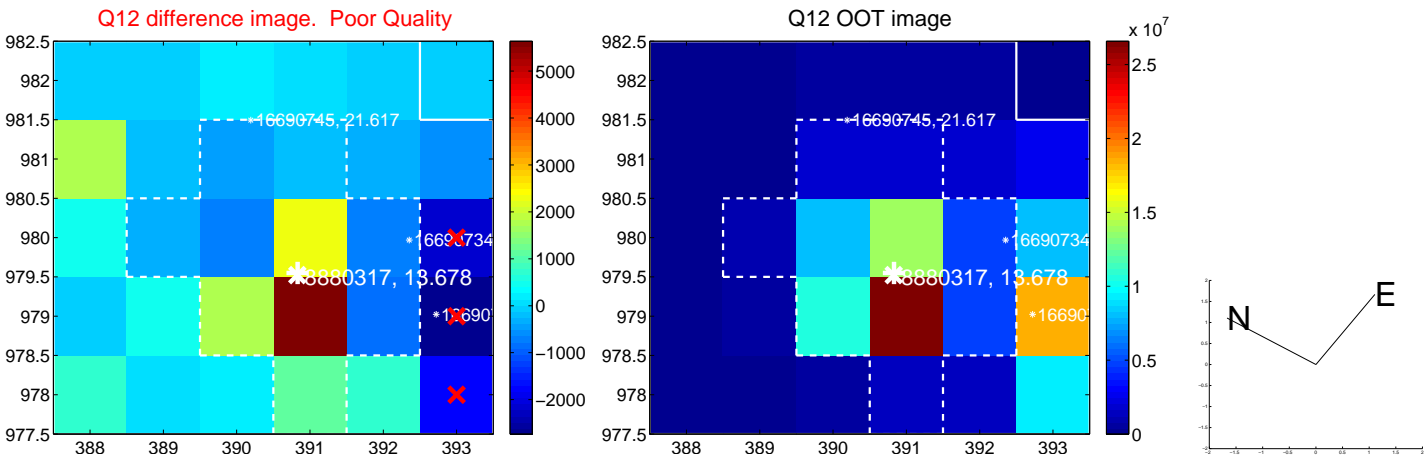


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

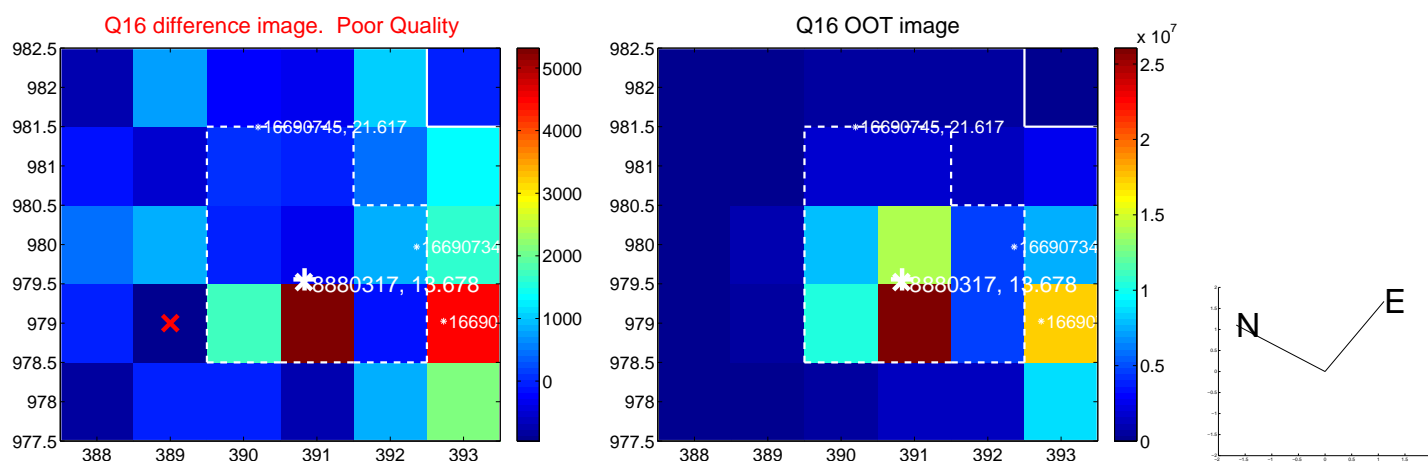
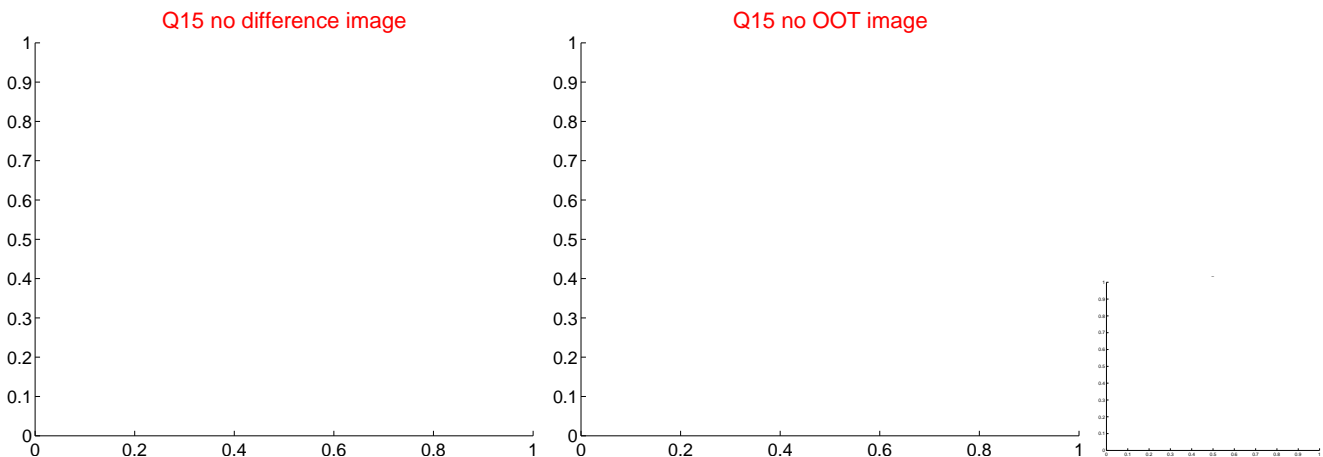
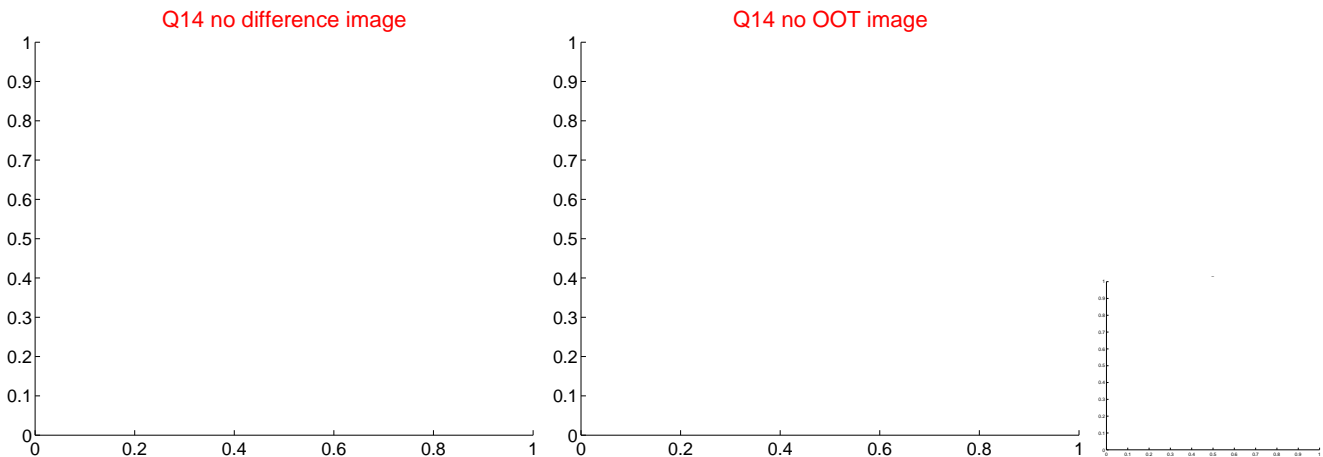




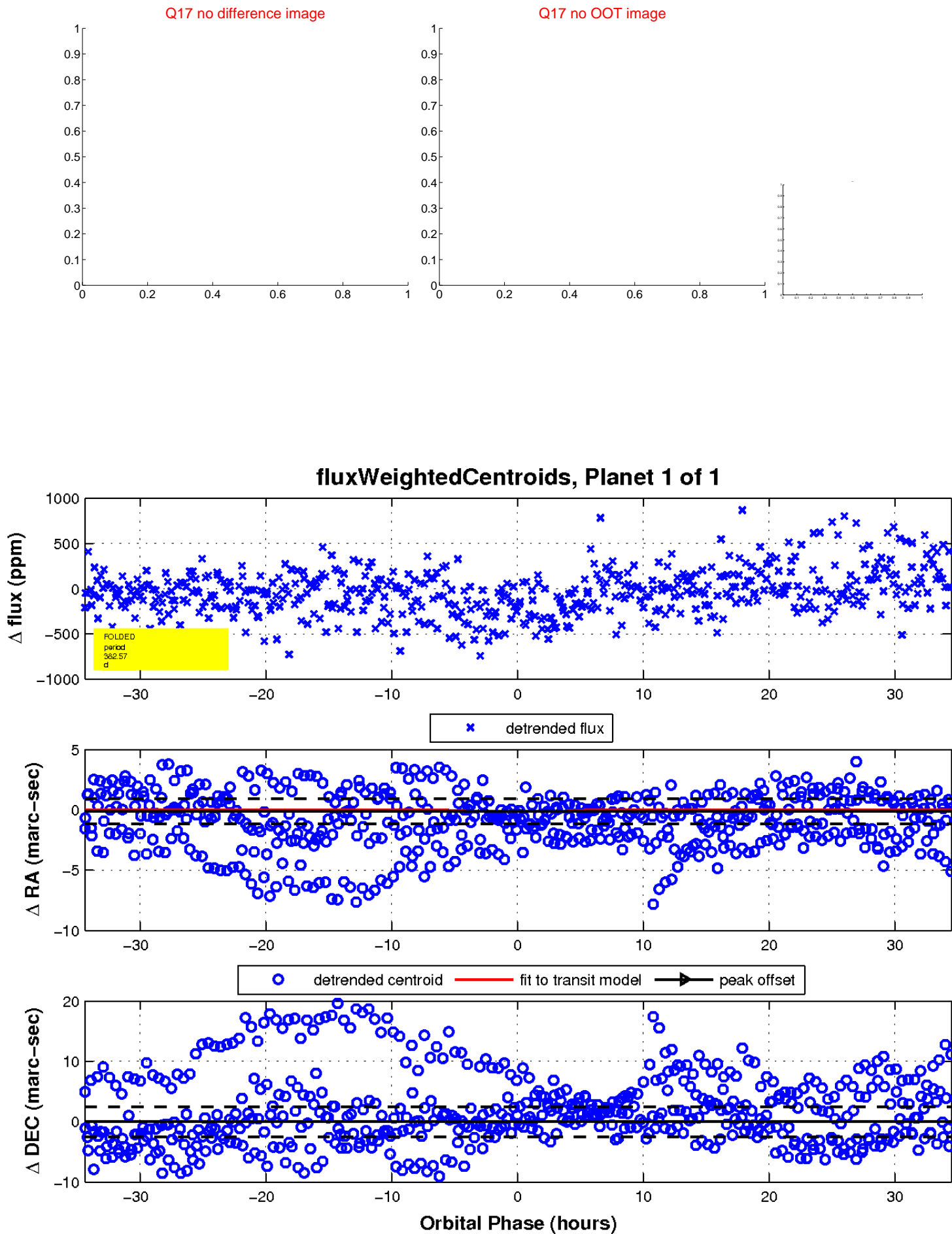
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

