

# KIC 008059443

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008059443-01	OBS	No	271.286158	204.069411	77.0	13.225	7.2	4.5	2.75	5877	2.84	10.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008059443-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_DV—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—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.

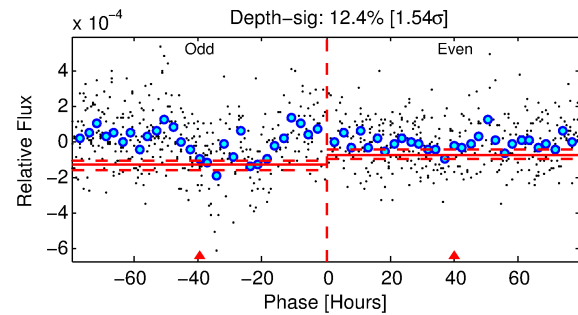
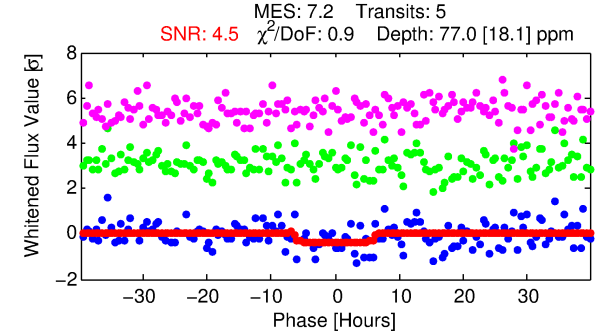
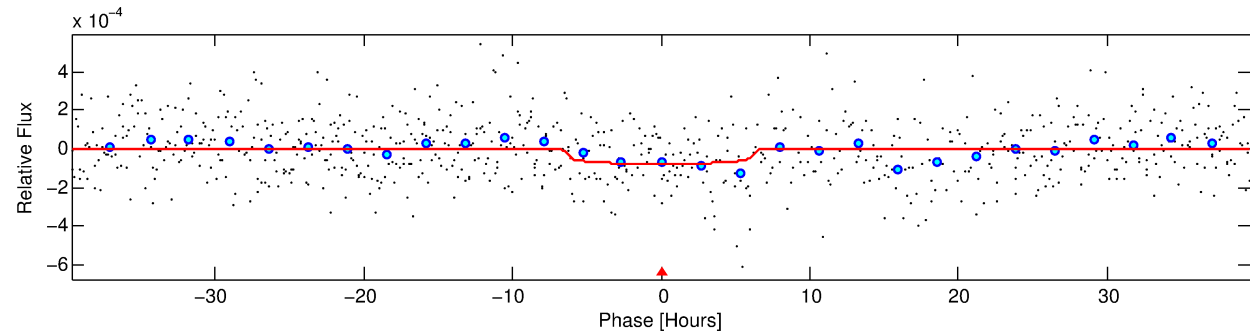
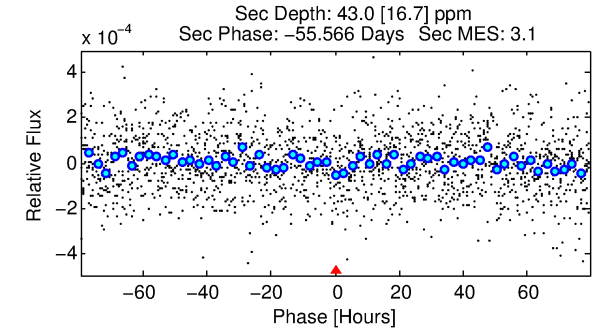
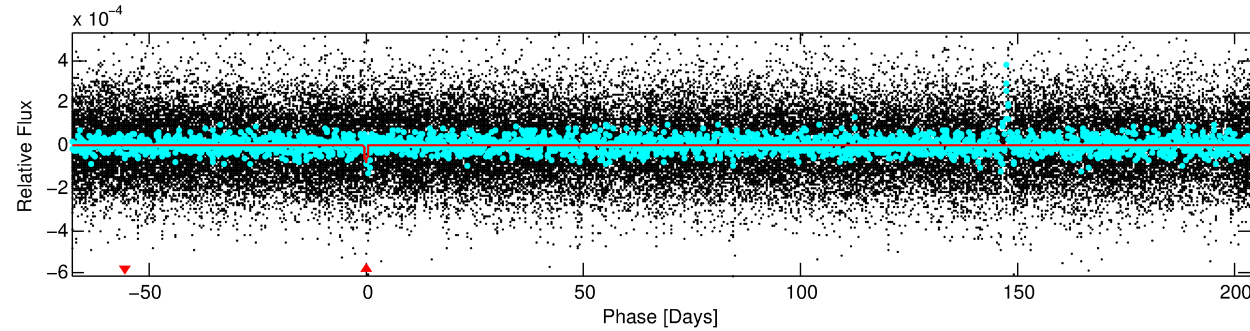
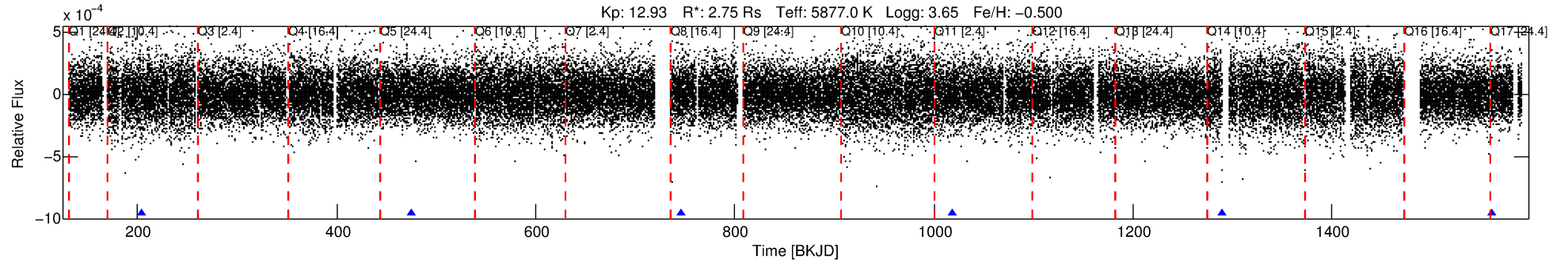
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008059443-01

No Significant Match Found

# DV One-Page Summary

KIC: 8059443 Candidate: 1 of 1 Period: 271.286 d



## DV Fit Results:

Period = 271.28616 [0.01327] d  
Epoch = 204.0694 [0.0438] BKJD  
Rp/R\* = 0.0095 [0.0038]  
a/R\* = 71.68 [144.75]  
b = 0.90 [0.43]  
Seff = 10.41 [6.02]  
Teq = 458 [66] K  
Rp = 2.84 [1.56] Re  
a = 0.8819 [0.3146] AU  
Ag = 2282.60 [2405.29] [0.95σ]  
Teffp = 4895 [1098] K [4.03σ]

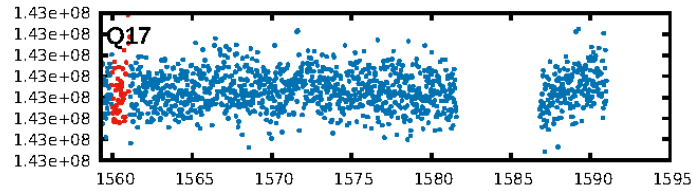
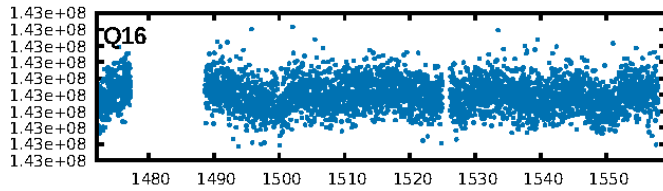
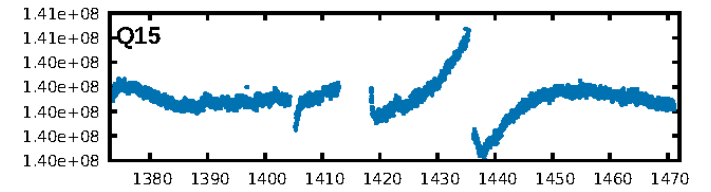
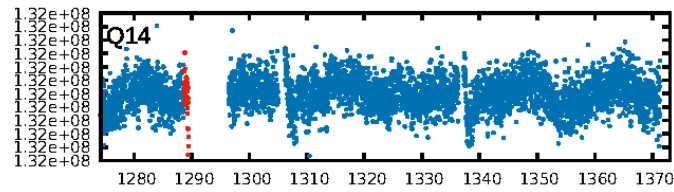
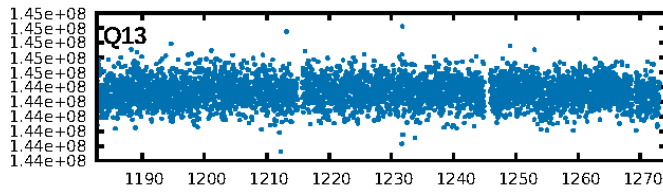
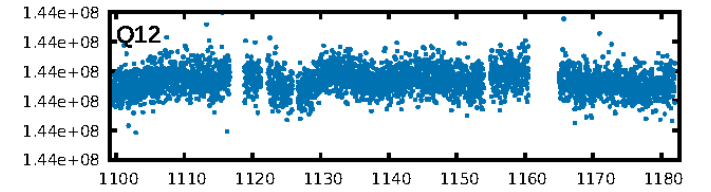
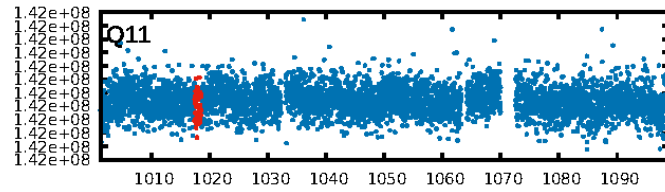
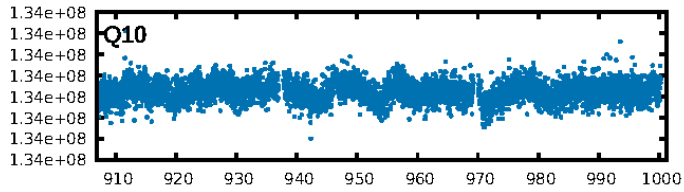
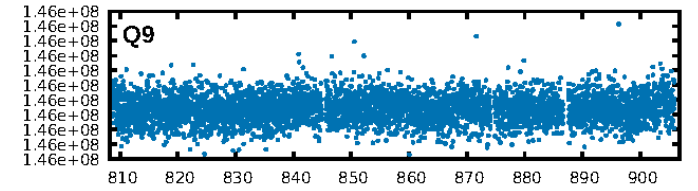
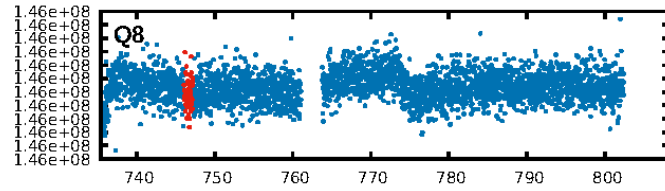
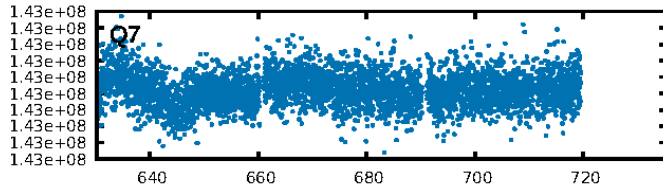
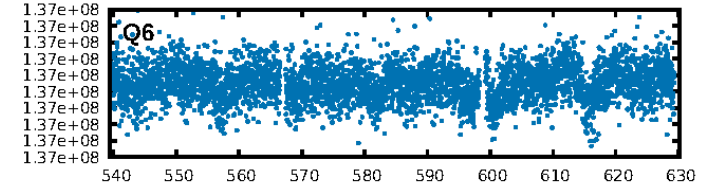
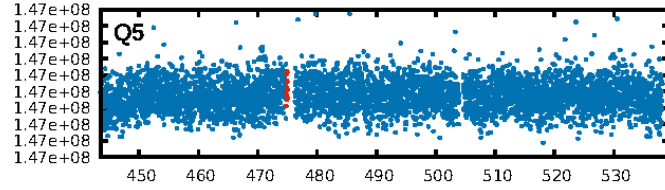
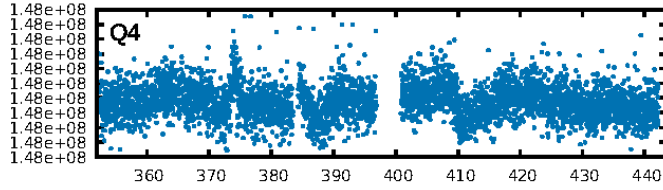
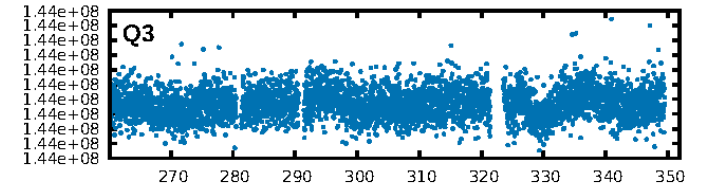
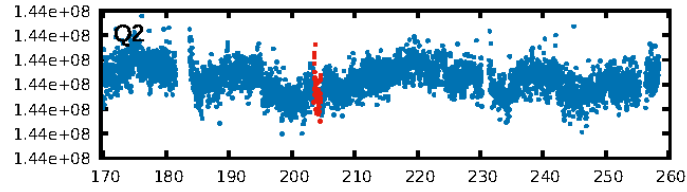
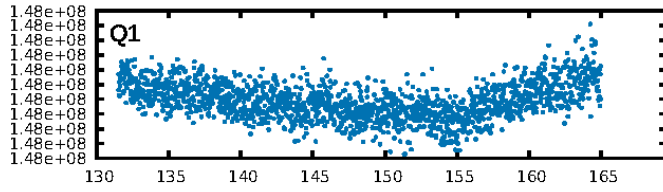
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 33.1%  
ModelChiSquareGof-sig: 99.8%  
**Bootstrap-pfa: 2.21e-11**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 3.057  
Centroid-sig: 0.5%  
Centroid-so: 5.698 arcsec [1.99σ]  
OotOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-rm: N/A  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [3/3]

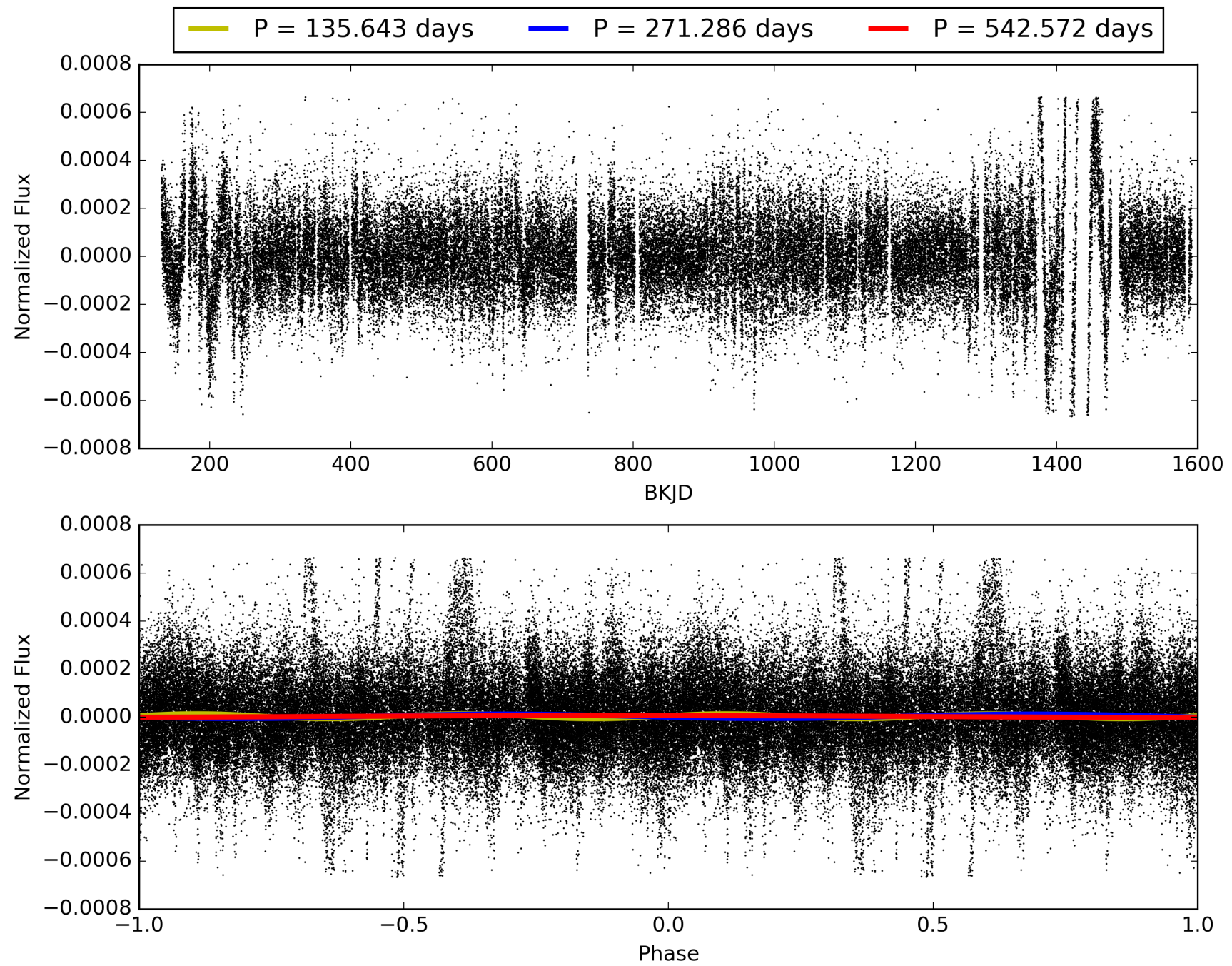
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:19:32 Z

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

# TCE 008059443-01, PDC Light Curves

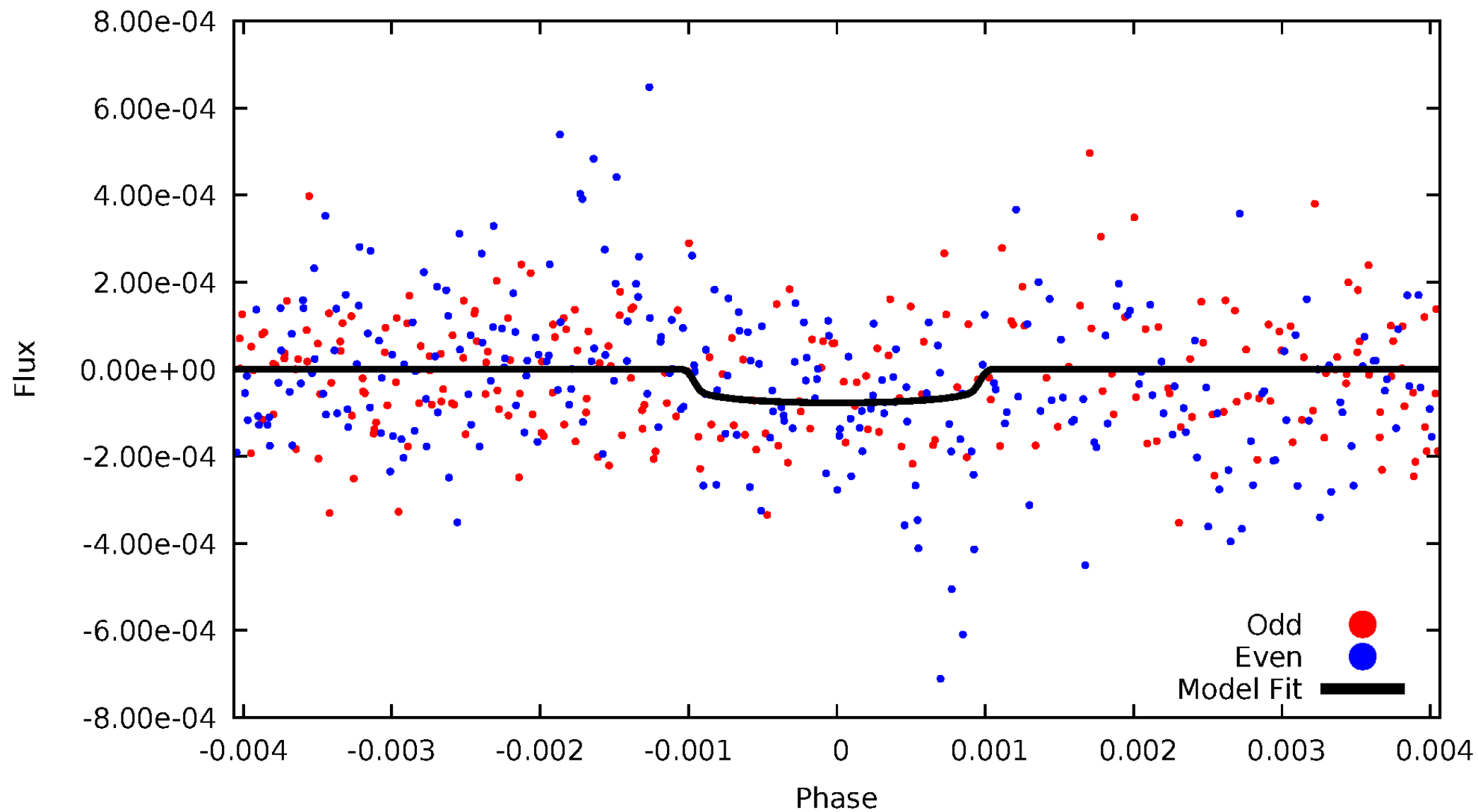


TCE 008059443-01



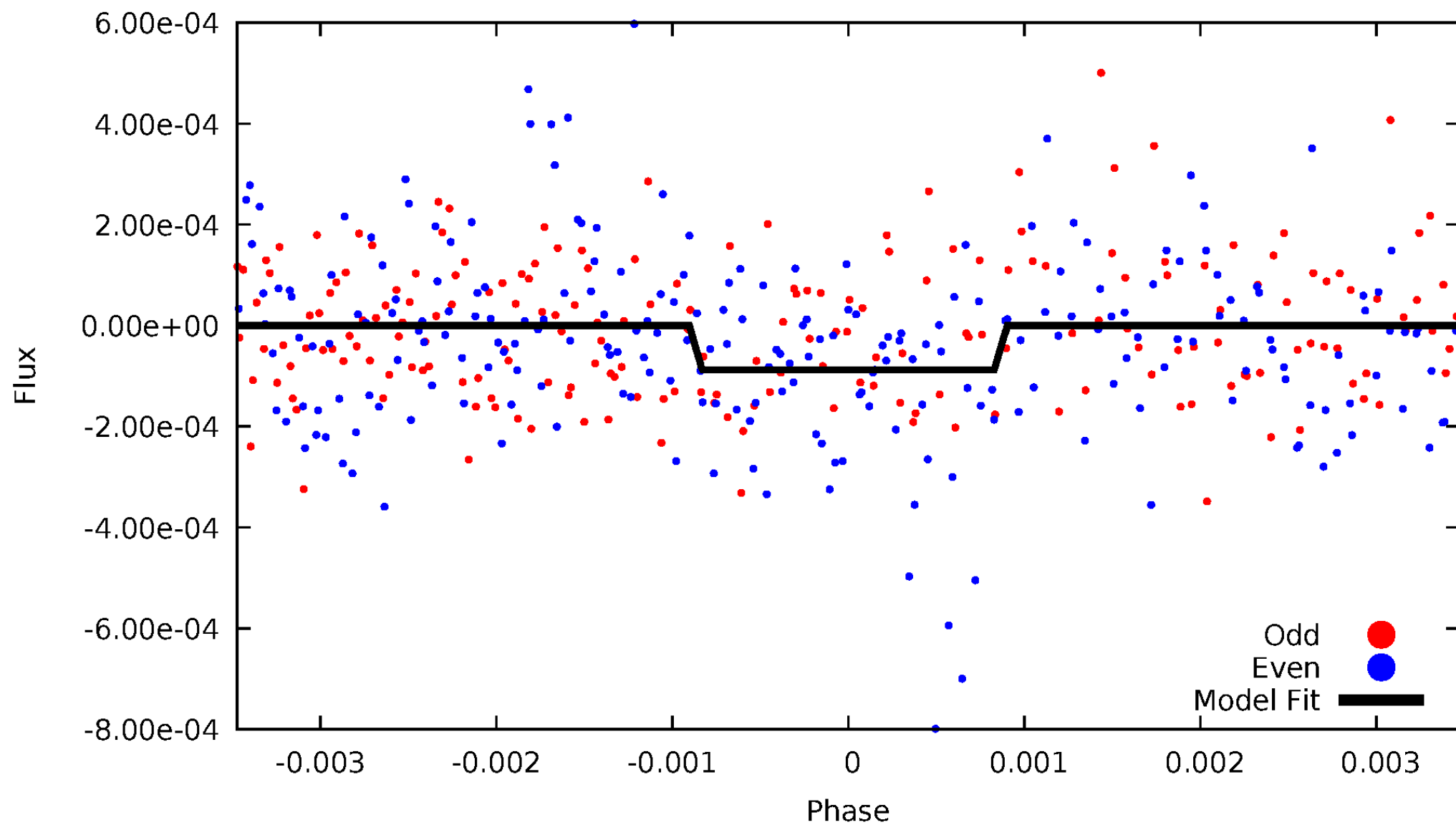
# DV Odd/Even

TCE 008059443-01



# ALT Odd/Even

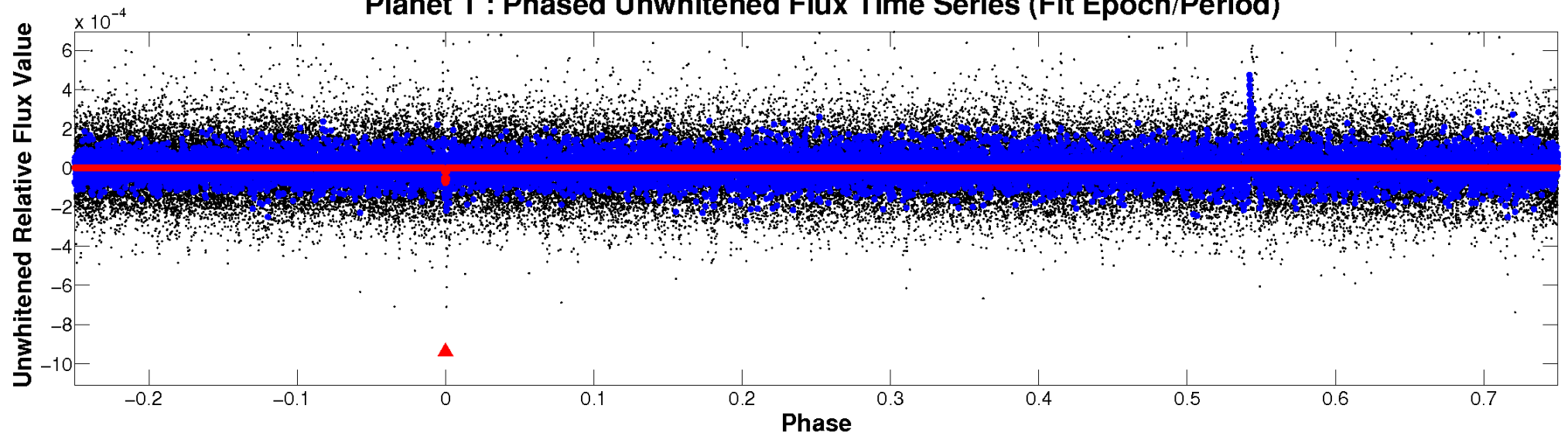
TCE 008059443-01



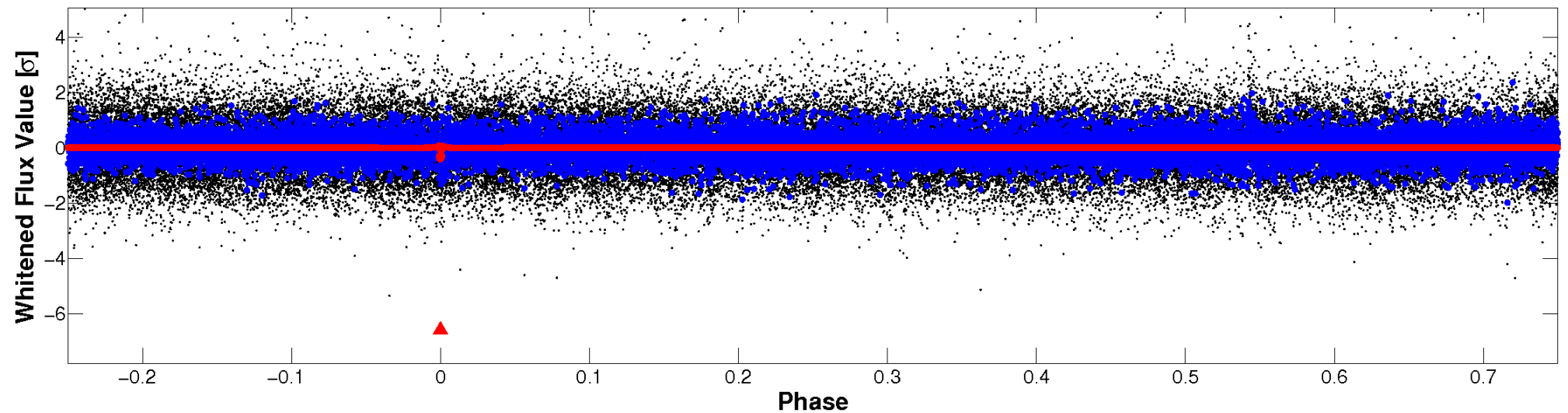


# Non-Whitened Vs. Whitened Light Curve

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

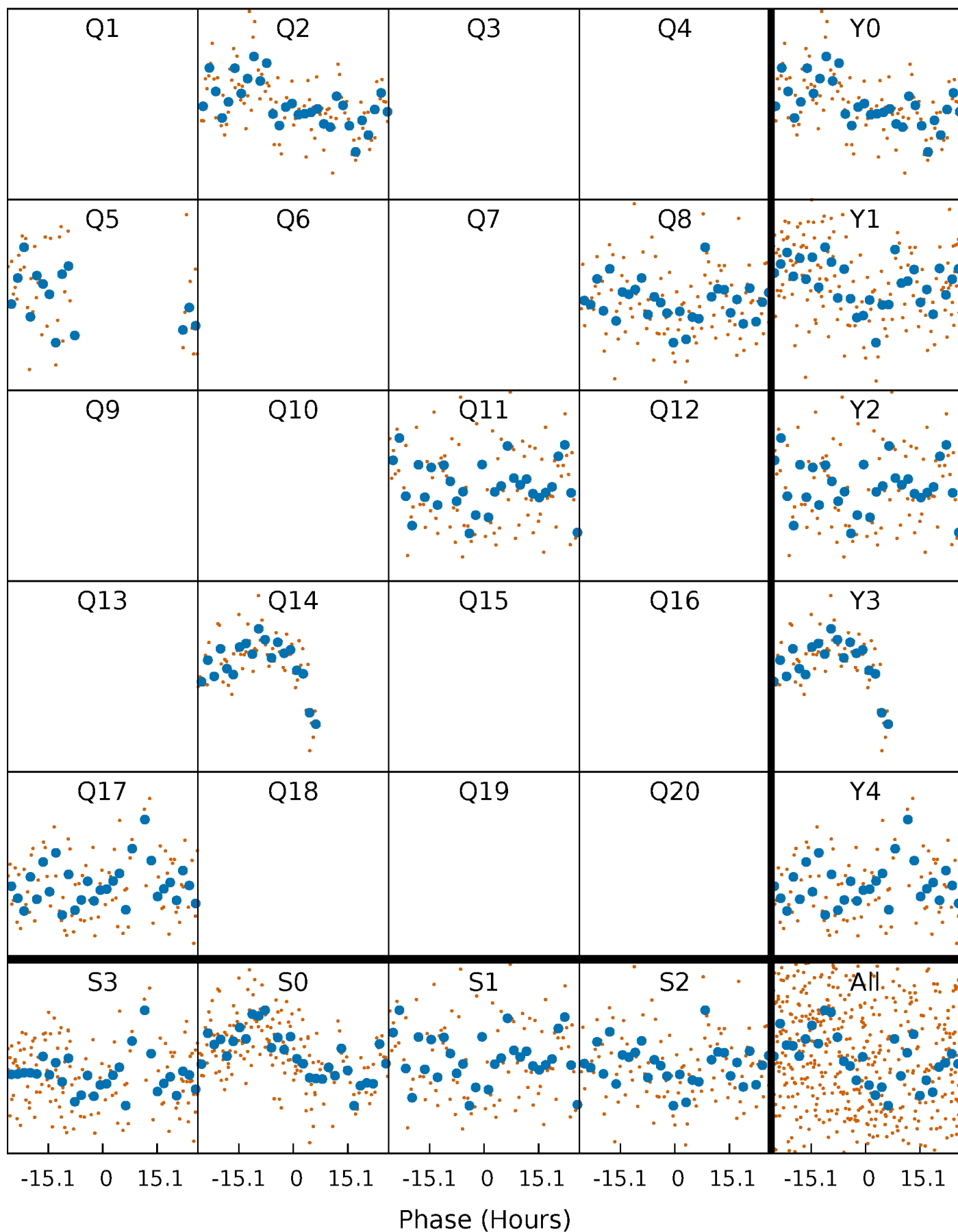


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

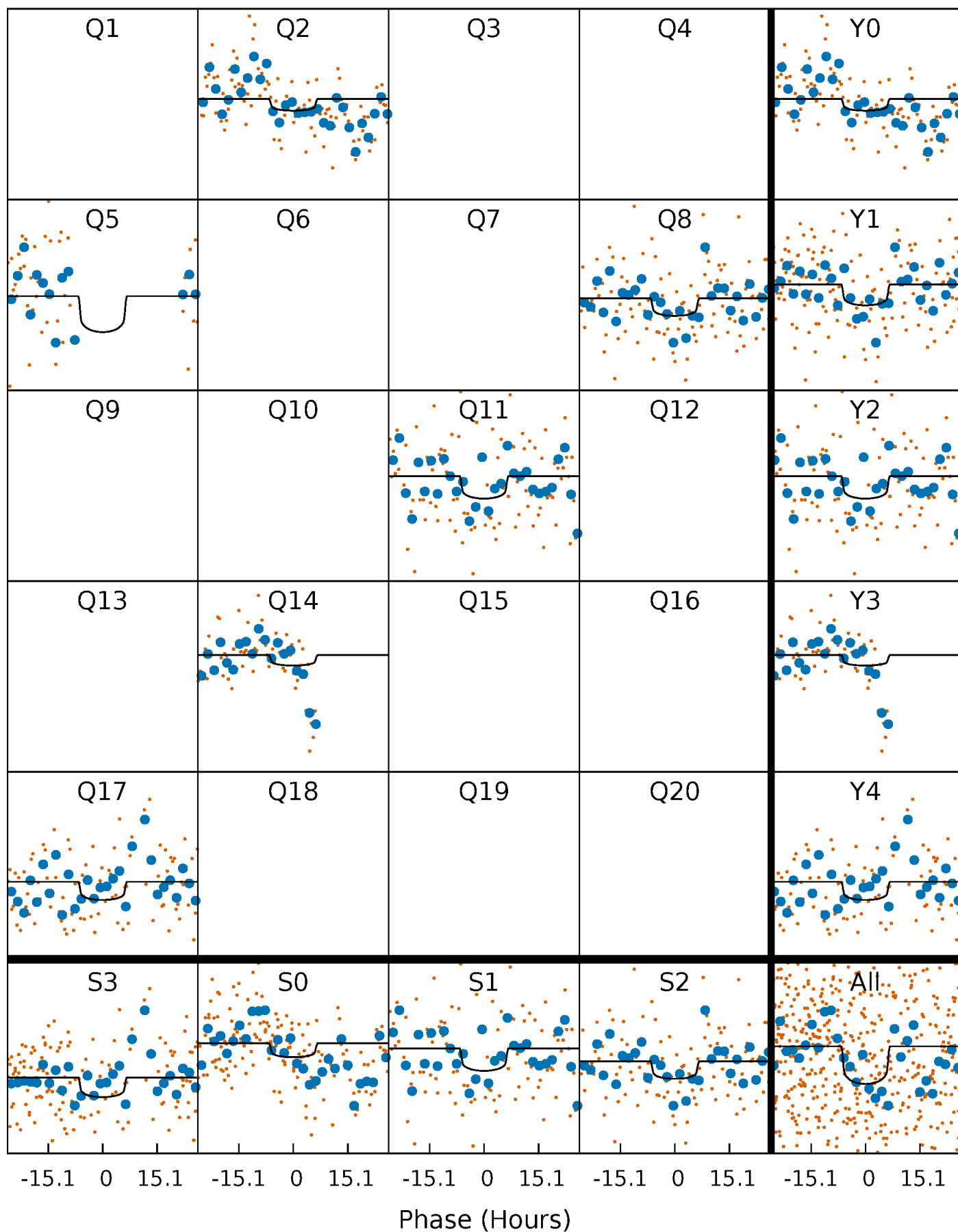
TCE 008059443-01 P=271.286158 Days  $T_0=204.069411$  (BKJD)





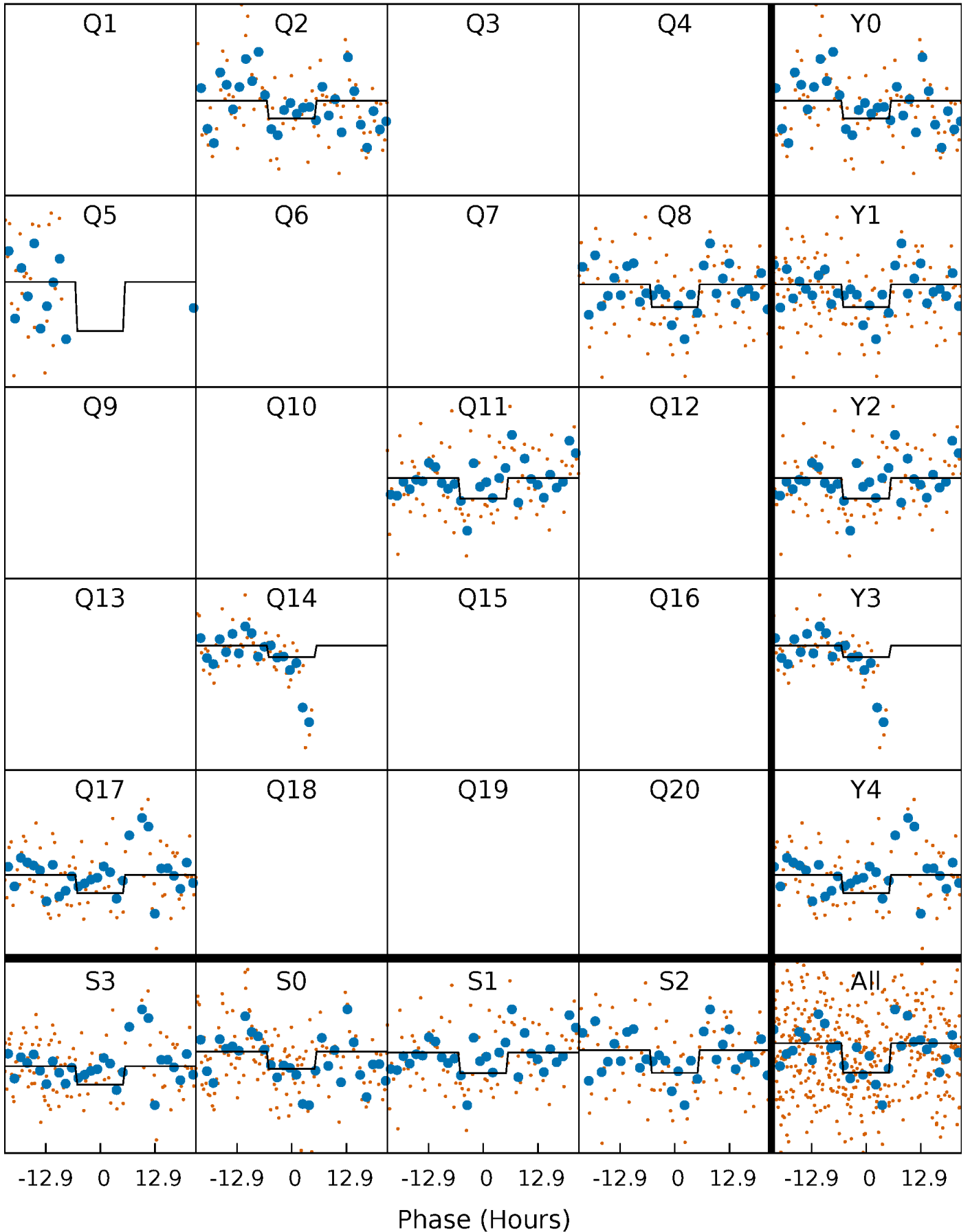
# DV Quarter-Phased Transit Curves

TCE 008059443-01 P=271.286158 Days  $T_0=204.069411$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

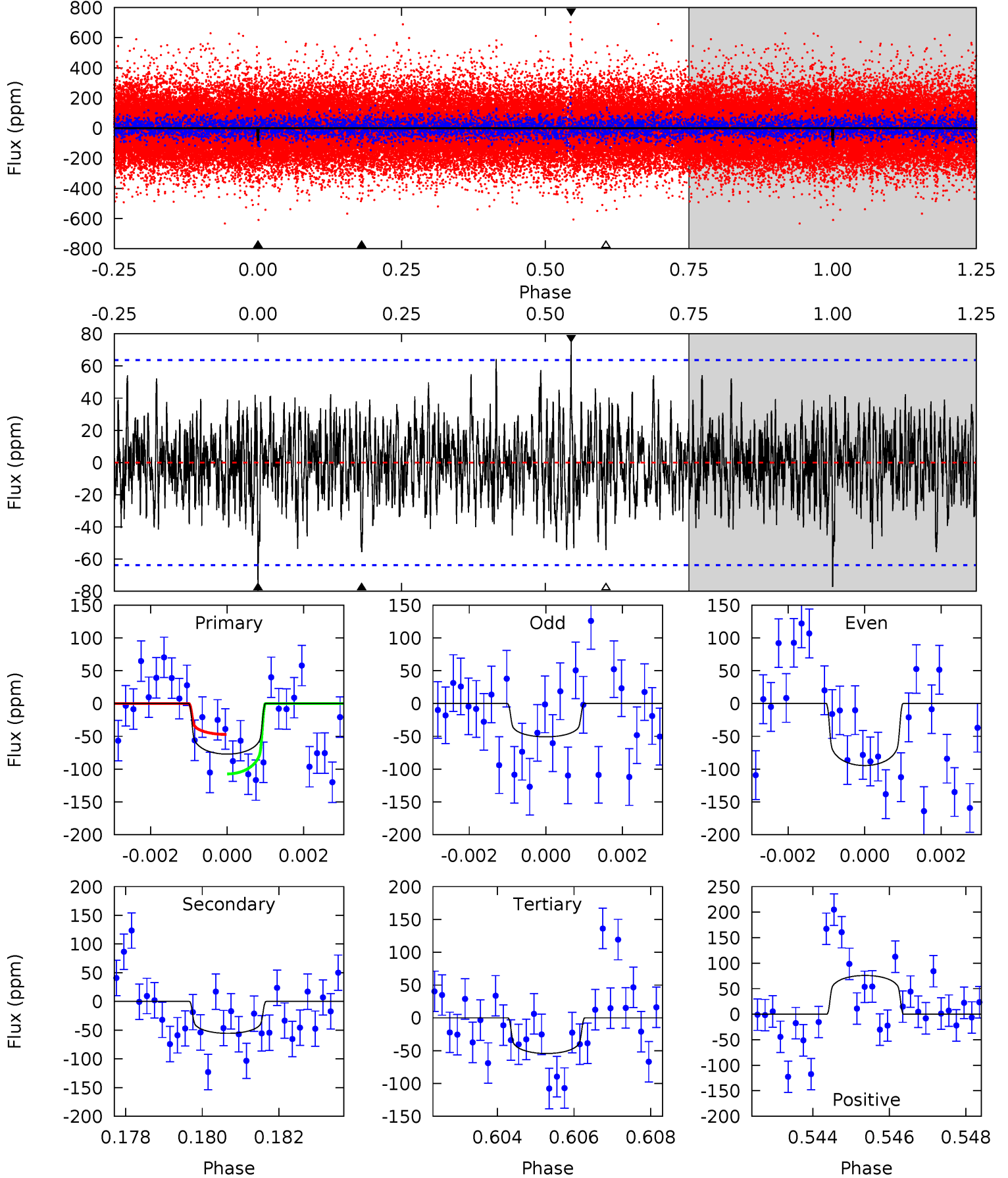
TCE 008059443-01 P=271.303187 Days  $T_0=204.056590$  (BKJD)



# DV Model-Shift Uniqueness Test

008059443-01, P = 271.286158 Days, E = 204.069411 Days

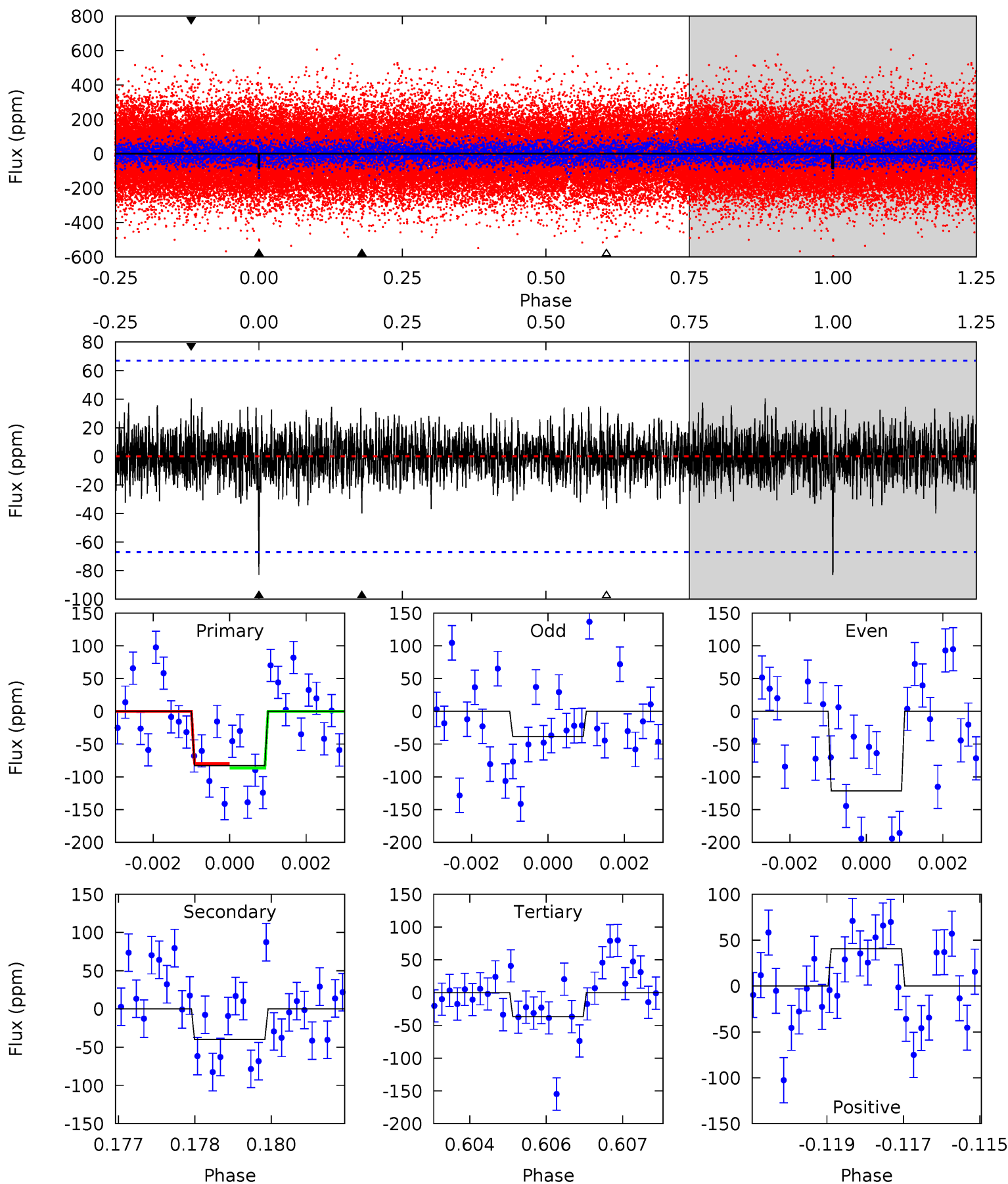
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.44	4.64	4.54	6.34	5.32	3.08	1.53	1.90	0.10	0.10	-1.70	1.77	0.89	0.50	2.51



# Alt Model-Shift Uniqueness Test

008059443-01, P = 271.303187 Days, E = 204.056590 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
6.61	3.18	2.93	3.23	5.35	3.12	0.89	3.68	3.38	0.25	-0.05	3.24	1.32	0.33	0.27



### Stellar Parameters For KIC 008059443

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5877^{+177}_{-159}$	$3.653^{+0.330}_{-0.110}$	$-0.500^{+0.300}_{-0.250}$	$2.752^{+0.558}_{-1.037}$	$1.242^{+0.170}_{-0.315}$	$0.084^{+0.209}_{-0.028}$
	+3%/-3%	+9%/-3%	+60%/-50%	+20%/-38%	+14%/-25%	+249%/-34%
Source	PHO1	FLK73	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 008059443-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-56 \pm 12$	$2.66^{+1.22}_{-1.11}$	$630^{+40}_{-60}$	$5233^{+1416}_{-715}$	$3373^{+6727}_{-1832}$
Alt.	$-40 \pm 13$	$2.54^{+1.25}_{-1.10}$	$626^{+43}_{-63}$	$4982^{+1401}_{-758}$	$2643^{+6023}_{-1546}$

$T_{max}$  = 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

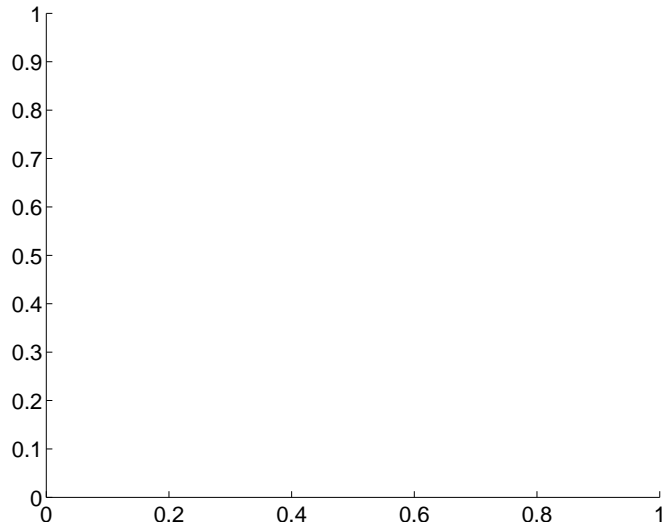
Supplemental centroid analysis for 008059443-01. Kepler magnitude: 12.93. Transit SNR 4.50

There are 0 quarters with good PRF difference image offsets

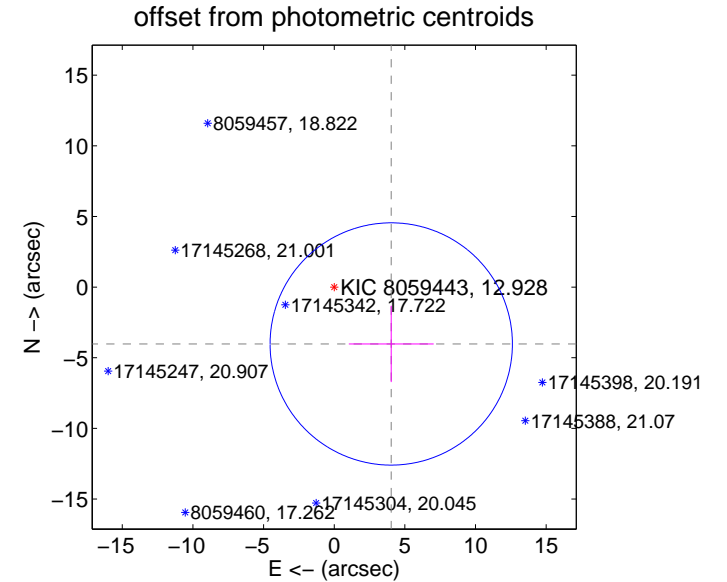
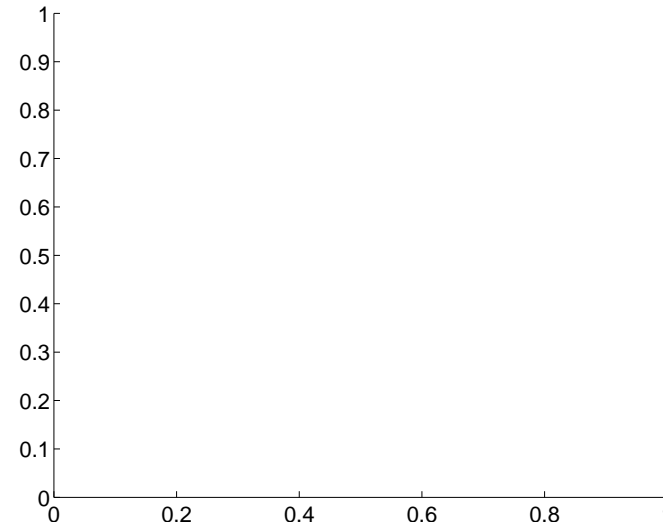
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	$5.70 \pm 2.86$	1.99	$-4.03 \pm 3.00$	$-4.02 \pm 2.70$

There is no PRF-fit offset from OOT-fit



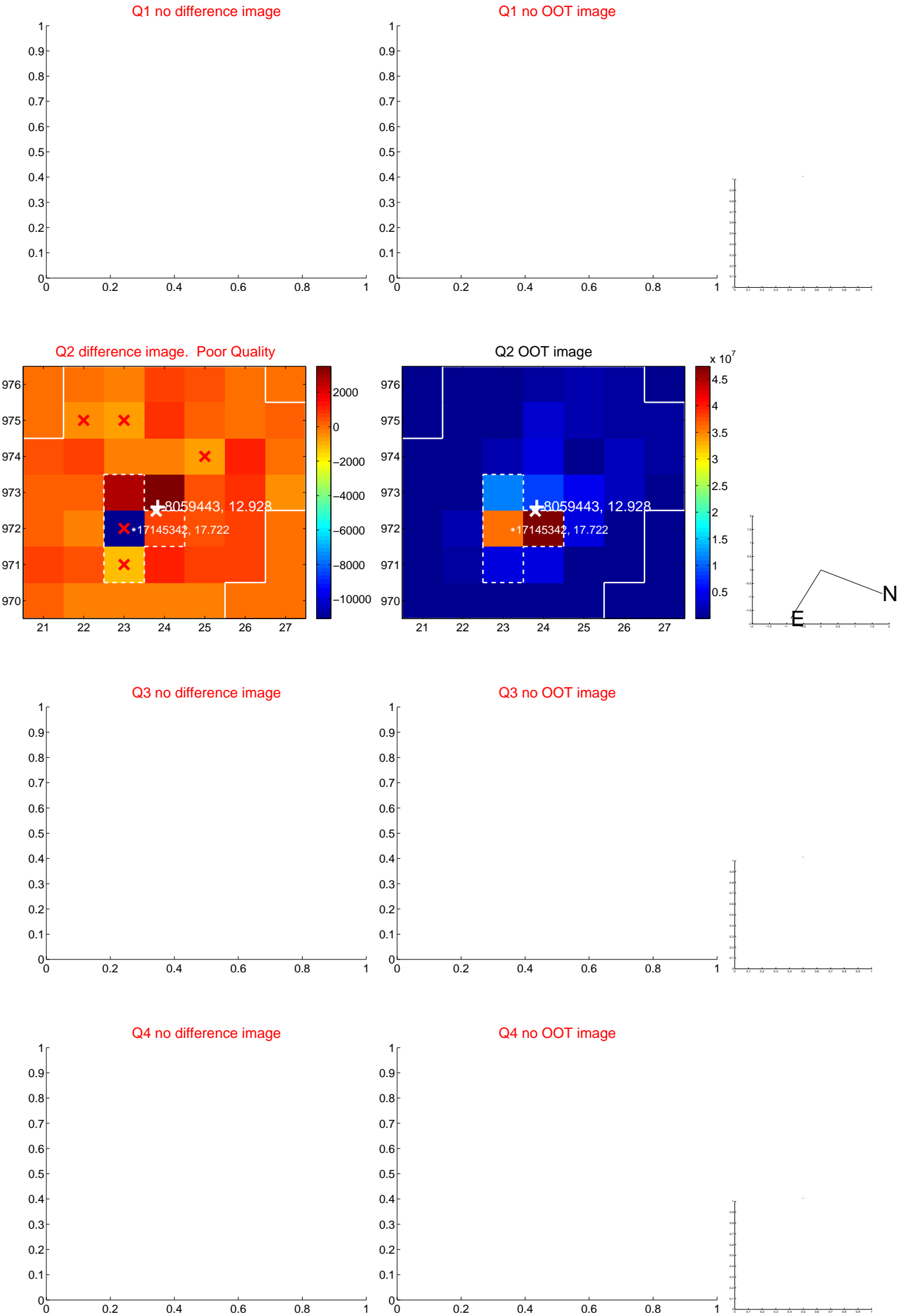
There is no PRF-fit offset from KIC



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.

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



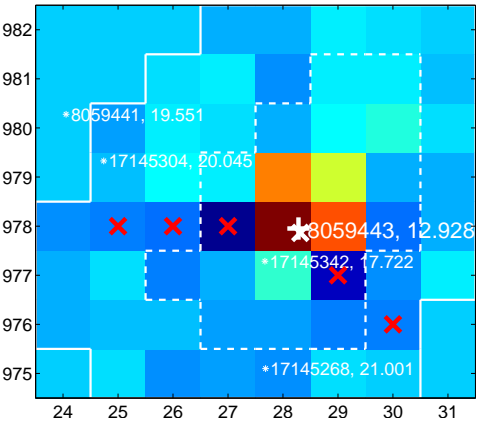
Q7 no difference image



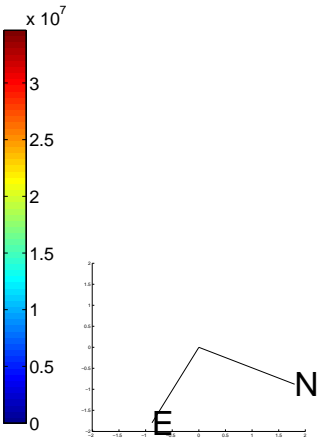
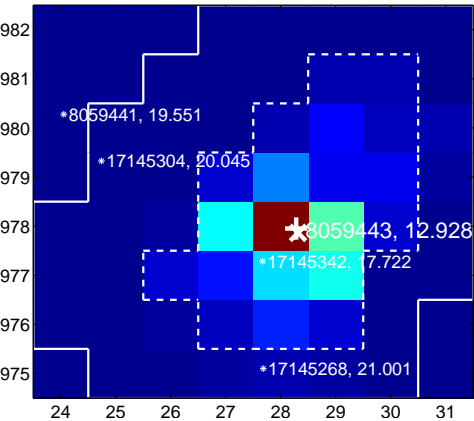
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image



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

Q9 no difference image



Q9 no OOT image



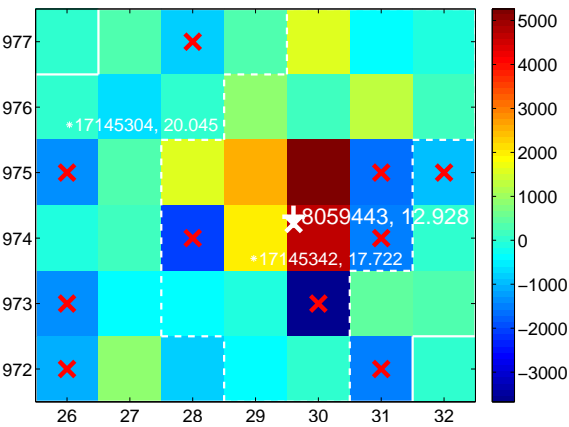
Q10 no difference image



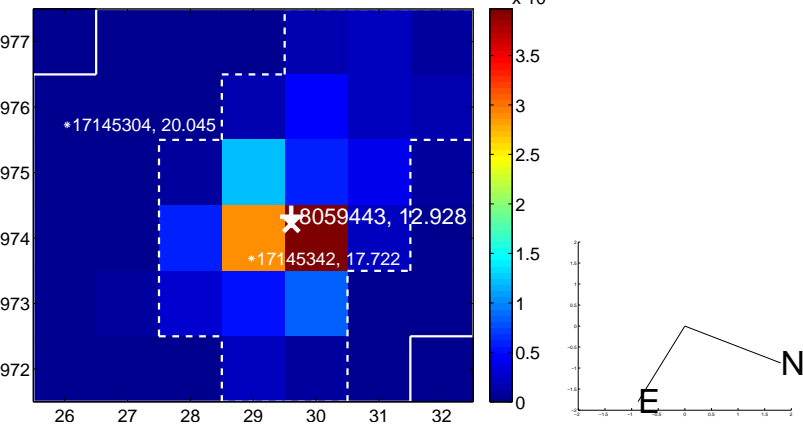
Q10 no OOT image



Q11 difference image. Poor Quality



Q11 OOT image



Q12 no difference image



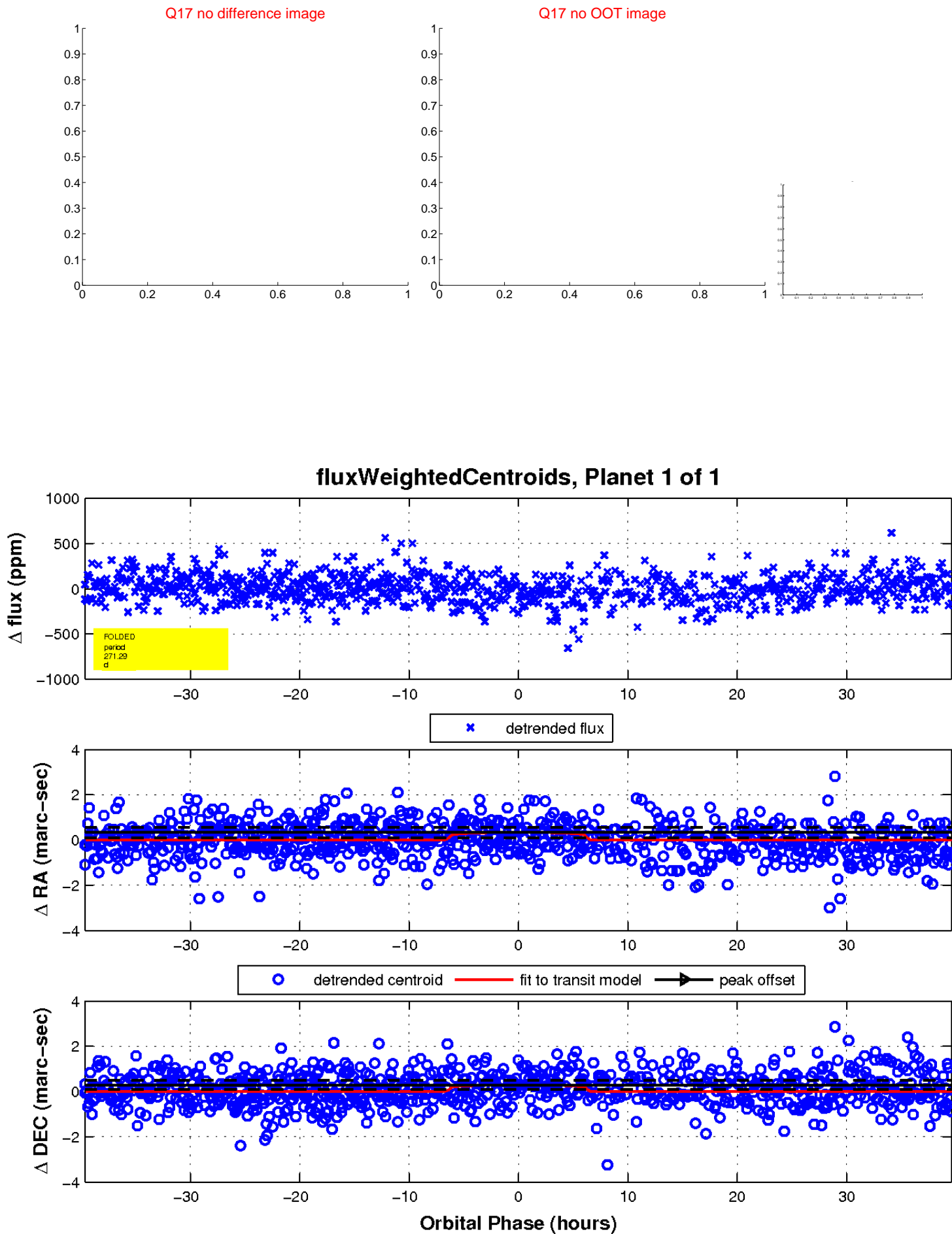
Q12 no OOT image



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



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



UKIRT Image

Declination

