

# KIC 008391741

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008391741-01	OBS	No	378.753755	355.064057	268.7	10.633	7.5	7.8	1.63	5256	2.82	1.87

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008391741-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

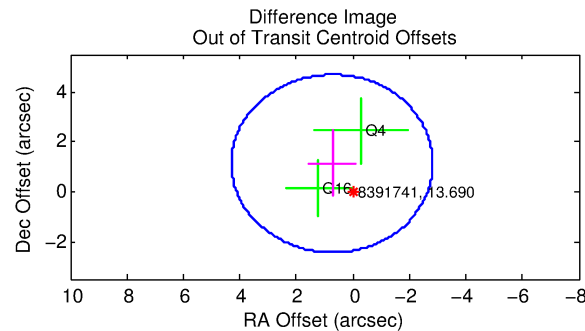
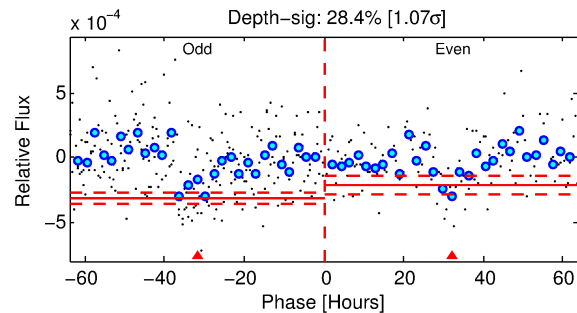
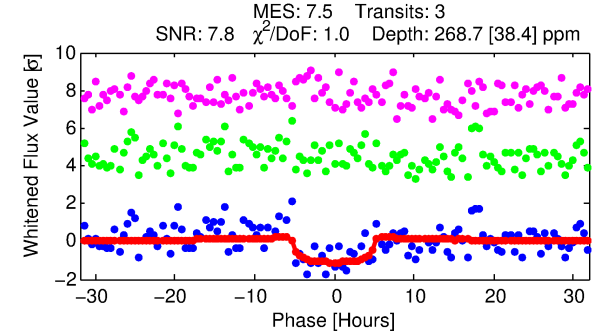
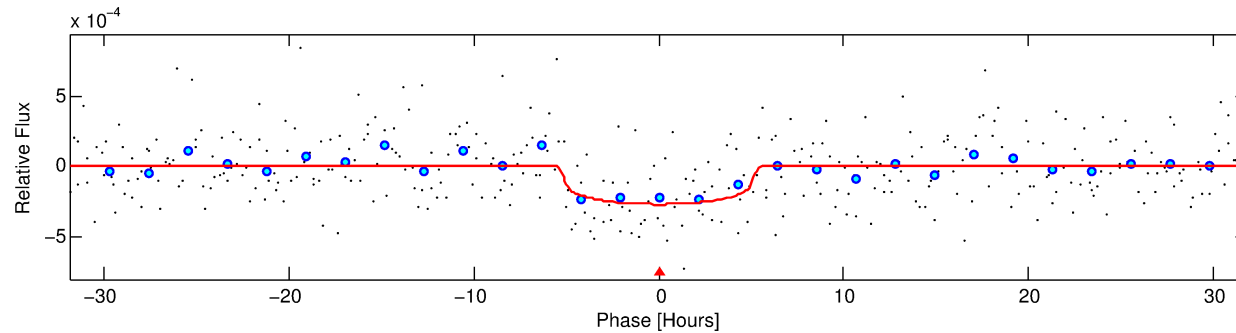
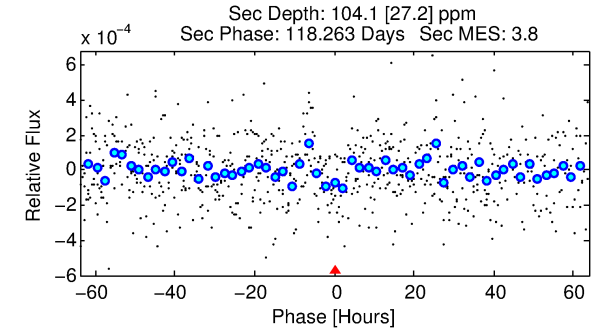
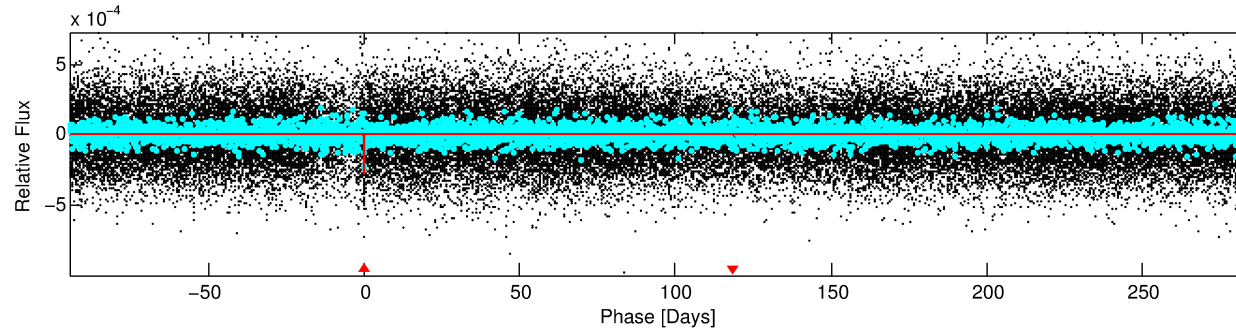
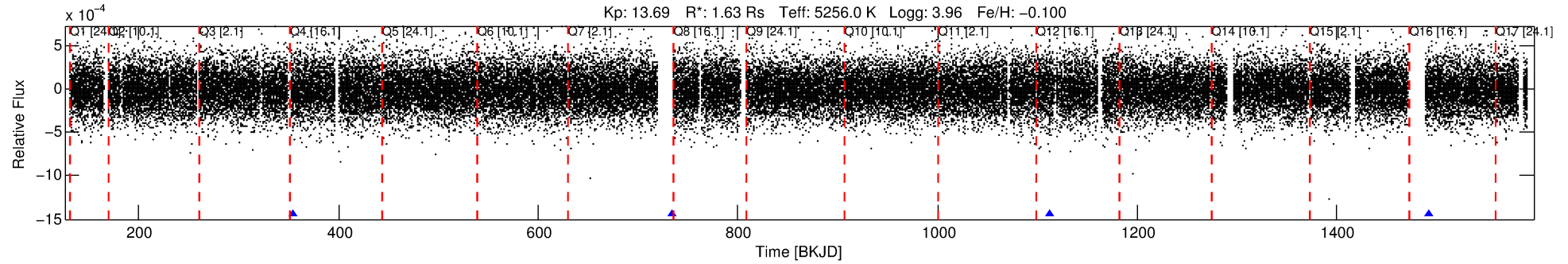
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008391741-01

No Significant Match Found

# DV One-Page Summary

KIC: 8391741 Candidate: 1 of 1 Period: 378.754 d



## DV Fit Results:

Period = 378.75375 [0.01057] d  
Epoch = 355.0641 [0.0207] BKJD  
Rp/R\* = 0.0158 [0.0186]  
a/R\* = 209.49 [941.11]  
b = 0.66 [3.86]  
Seff = 1.87 [1.88]  
Teq = 298 [75] K  
Rp = 2.82 [3.61] Re  
a = 0.9869 [0.5709] AU  
Ag = 7021.14 [17981.18] [0.39σ]  
Teffp = 4221 [2494] K [1.57σ]

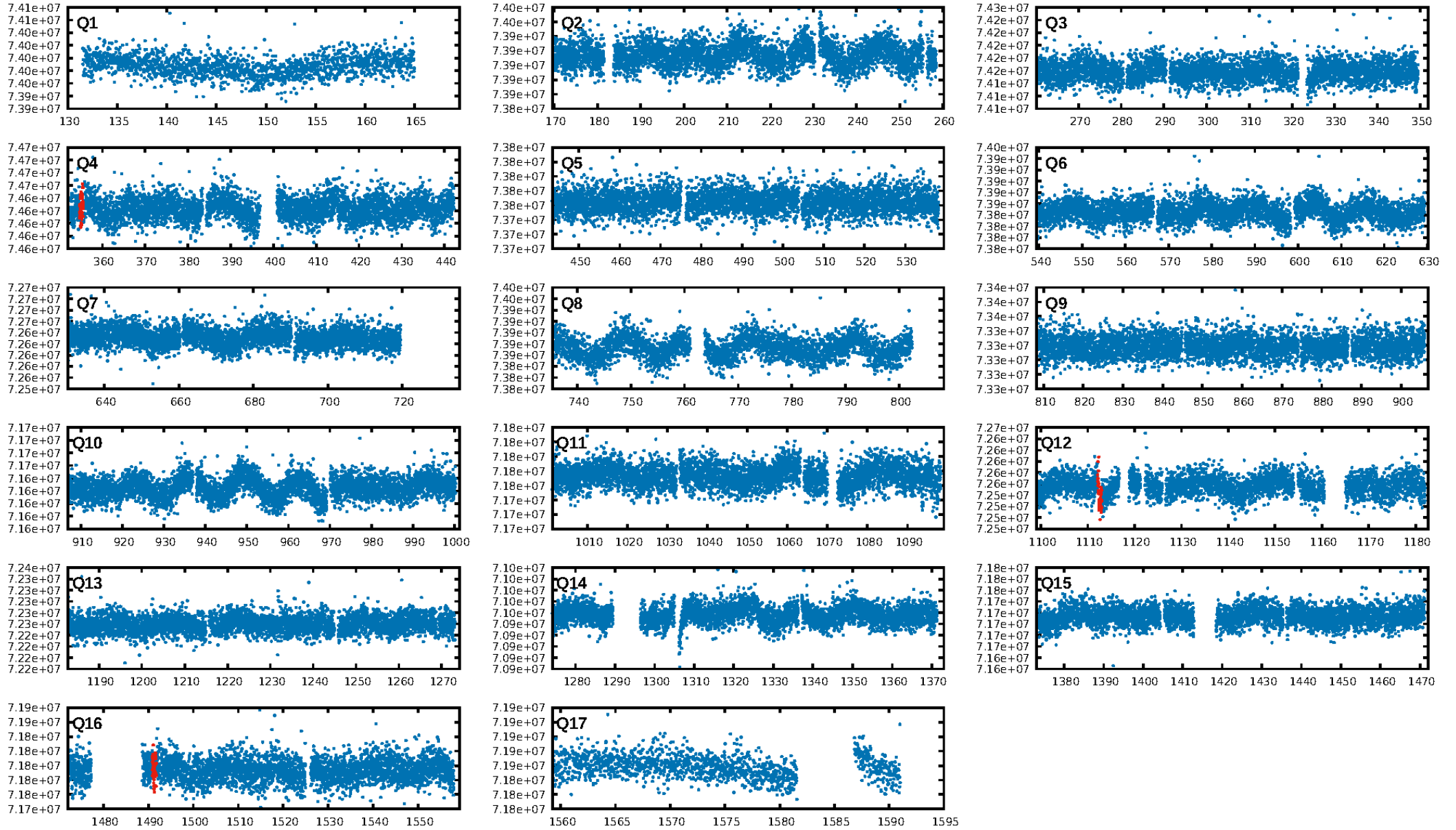
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.8%  
ModelChiSquareGof-sig: 95.1%  
**Bootstrap-pfa: 3.41e-11**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -9.549  
Centroid-sig: 34.9%  
Centroid-so: 2.203 arcsec [0.86σ]  
OotOffset-rm: 1.342 arcsec [1.13σ]  
OotOffset-st: 0/0/2/0 [2]  
KicOffset-rm: 1.421 arcsec [1.24σ]  
KicOffset-st: 0/0/2/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [2/2]

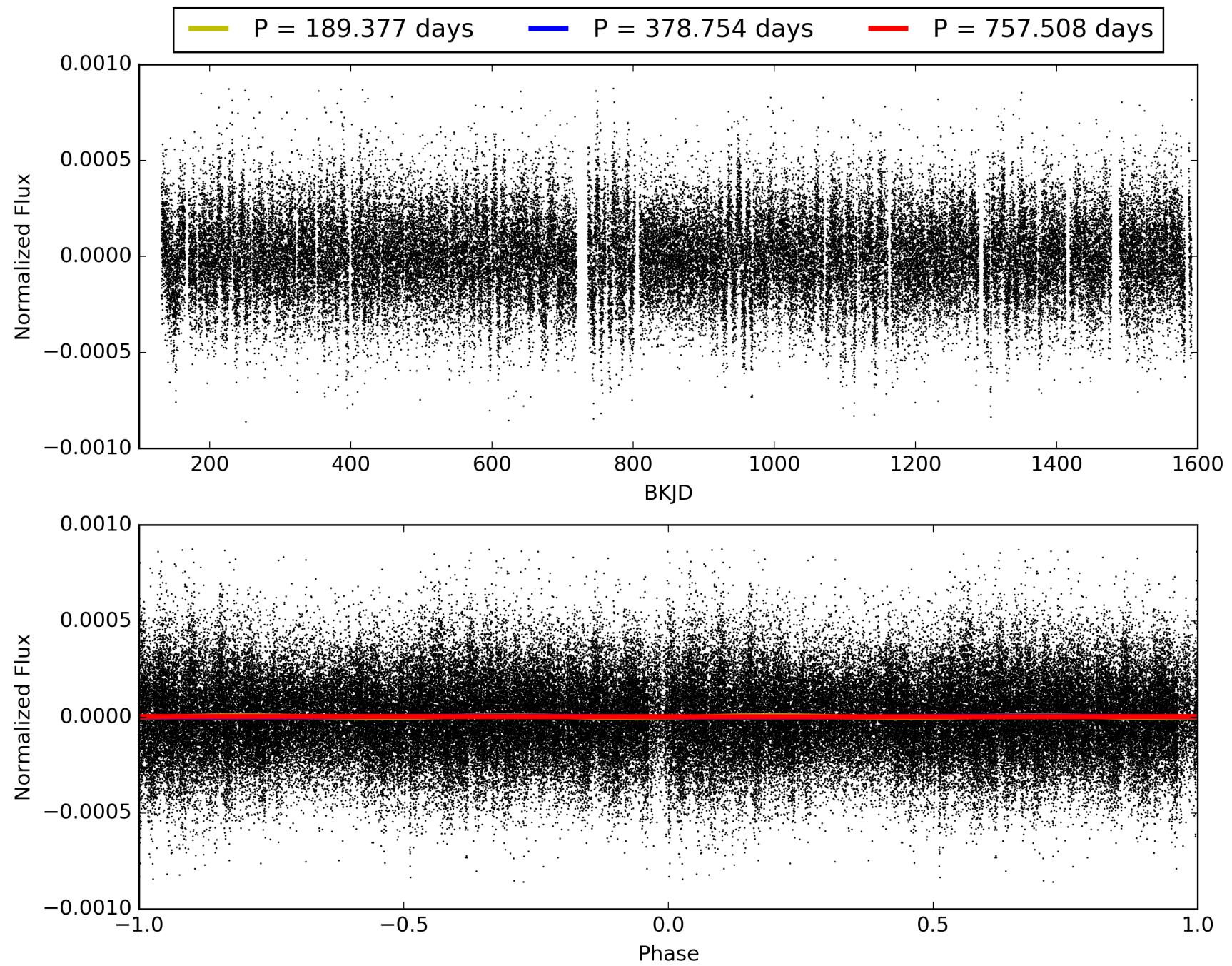
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 14:15:21 Z

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

# TCE 008391741-01, PDC Light Curves

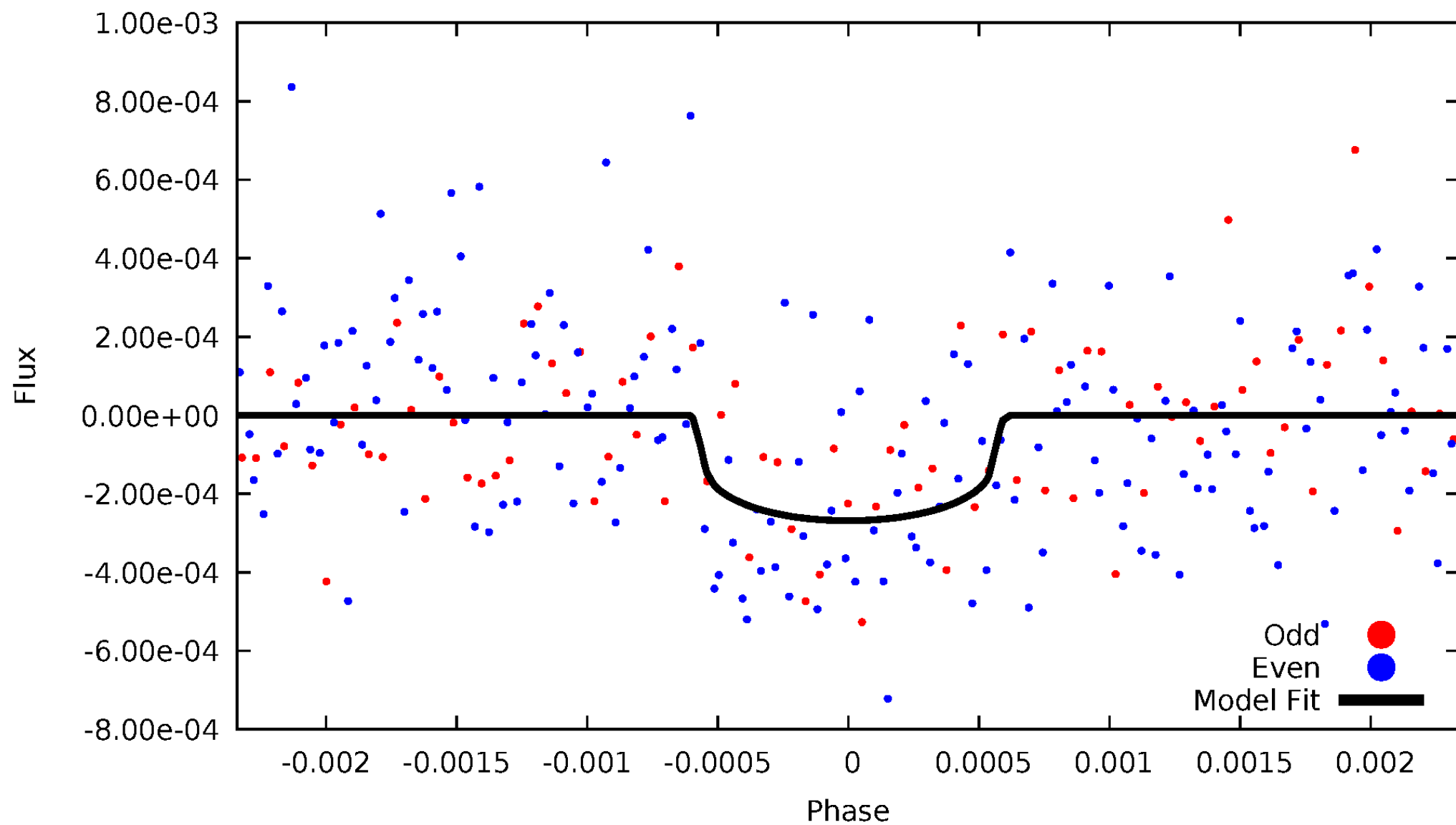


TCE 008391741-01



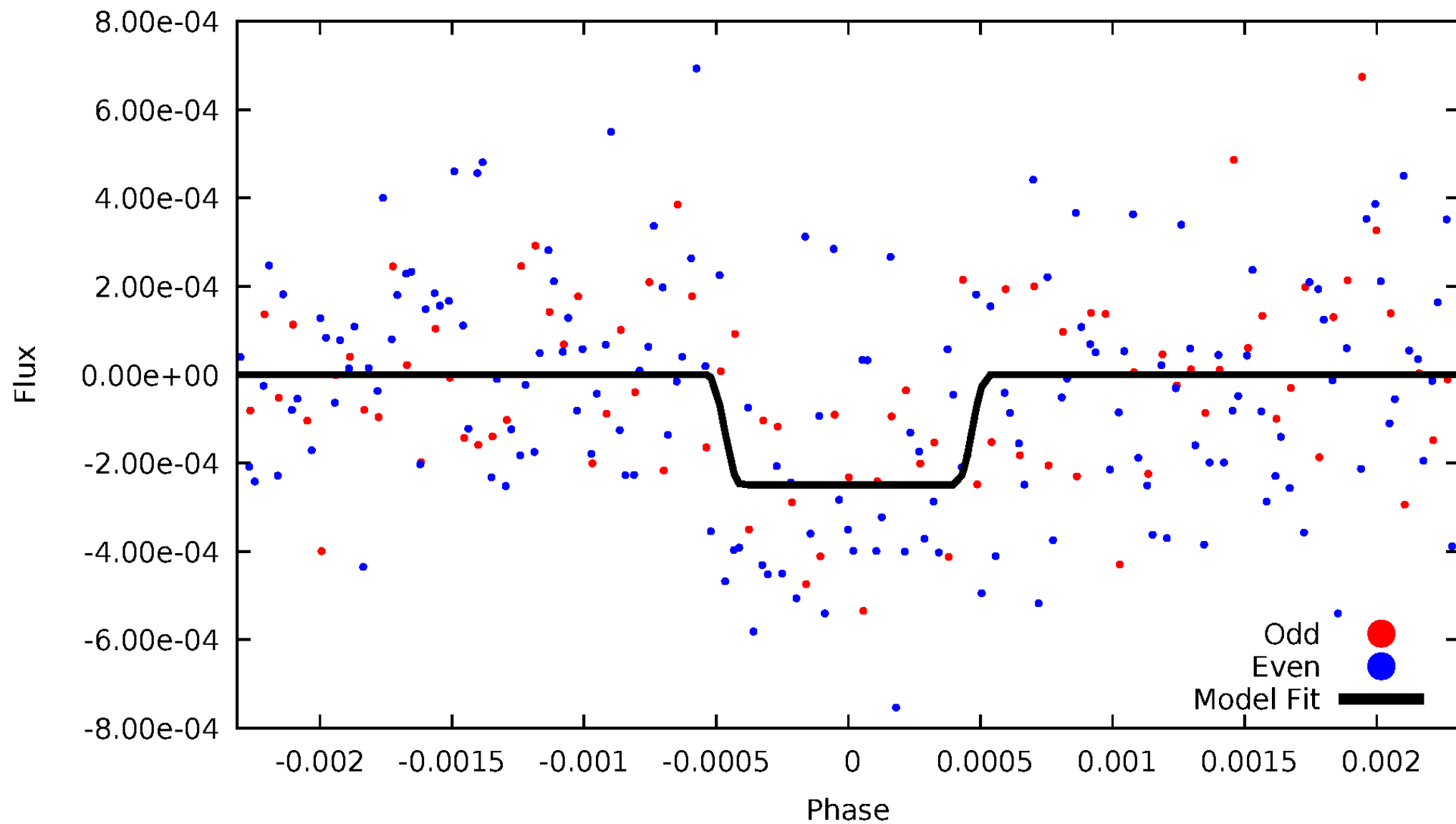
# DV Odd/Even

TCE 008391741-01



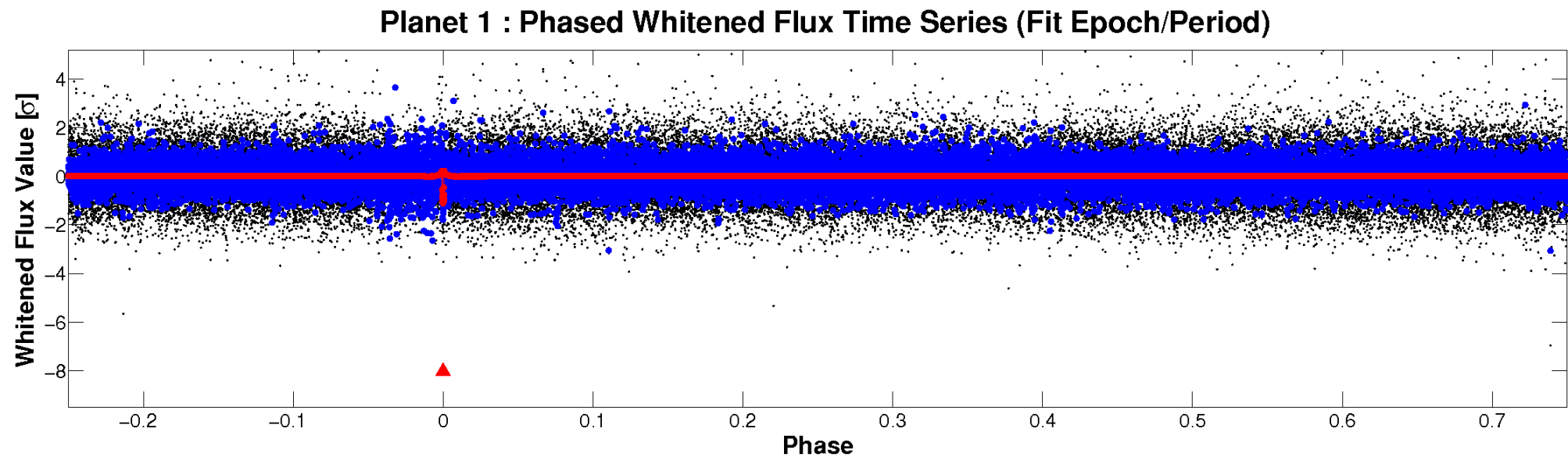
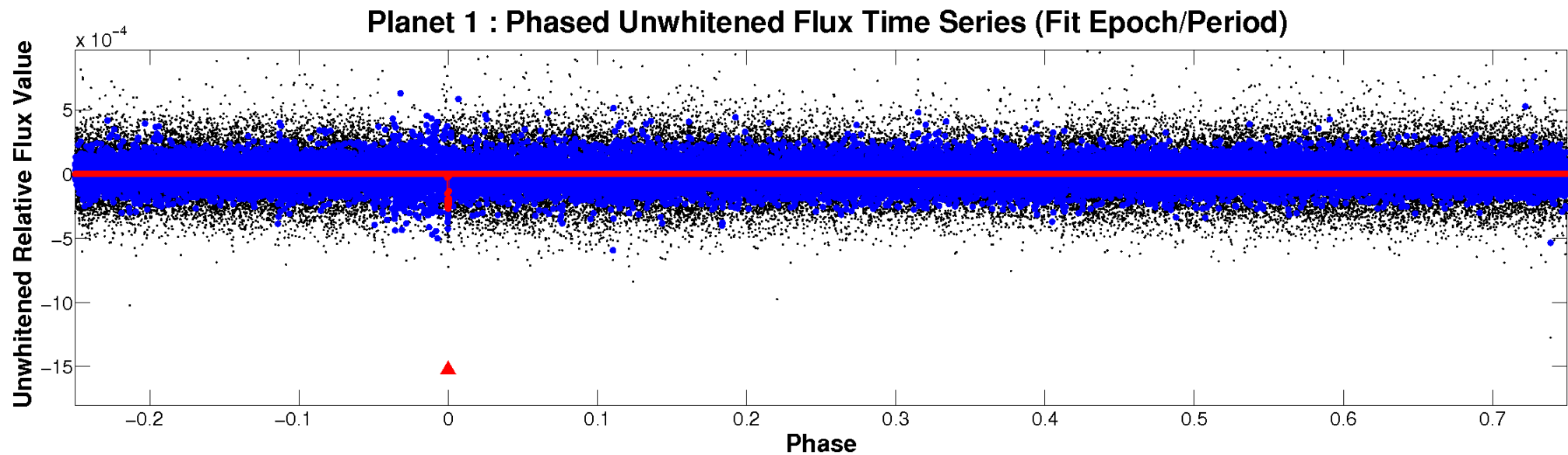
# ALT Odd/Even

TCE 008391741-01



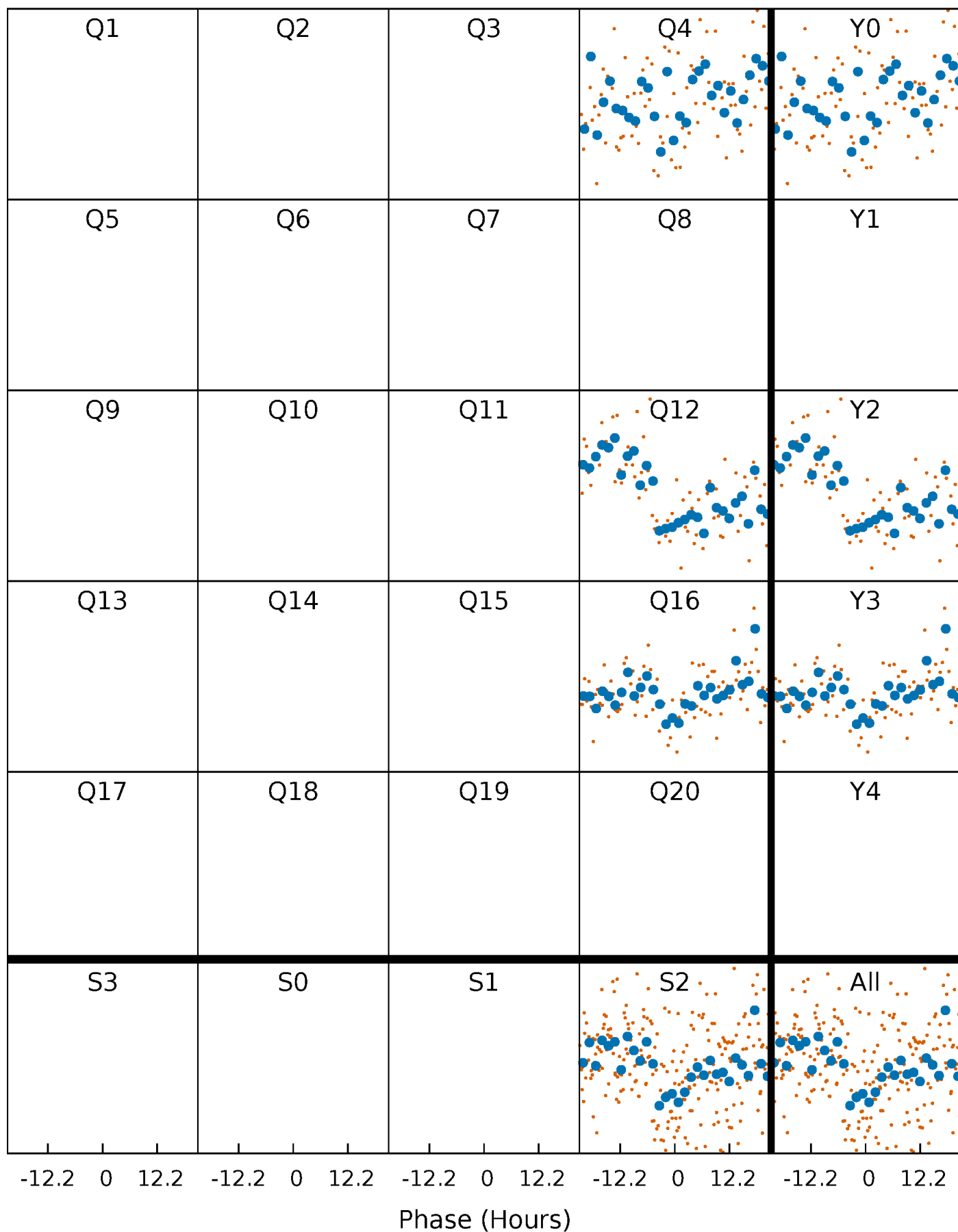


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

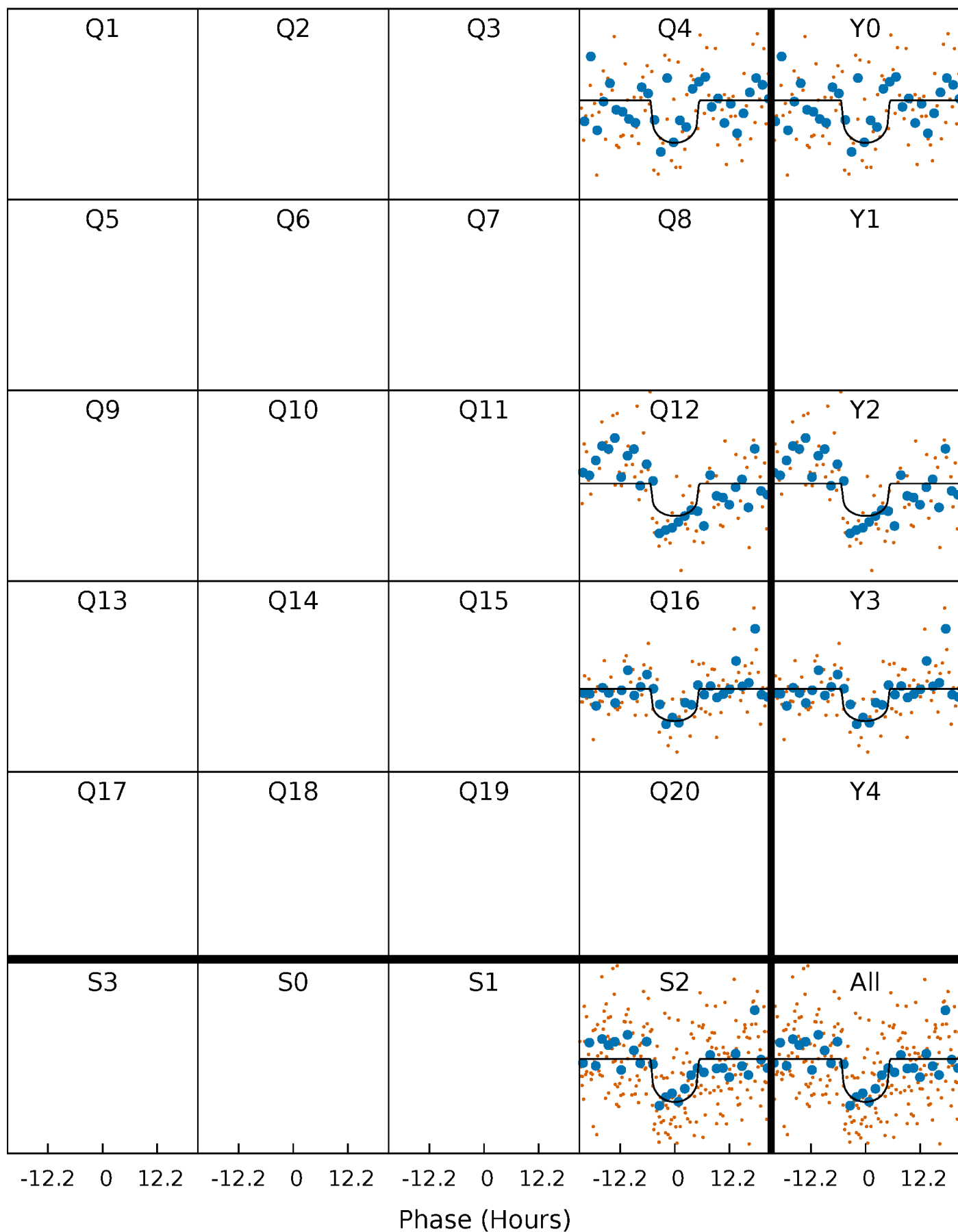
TCE 008391741-01 P=378.753755 Days  $T_0=355.064057$  (BKJD)





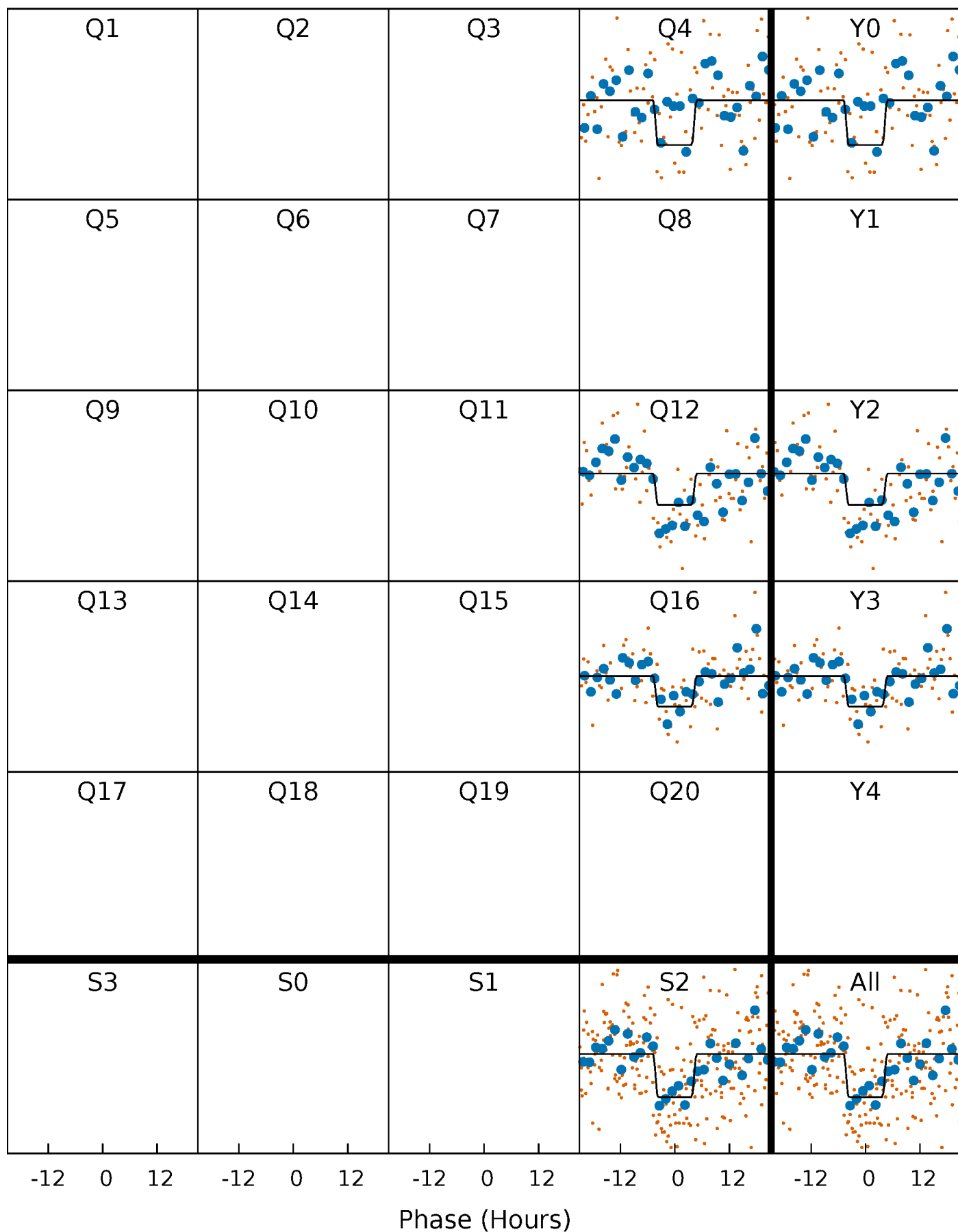
# DV Quarter-Phased Transit Curves

TCE 008391741-01     $P=378.753755$  Days     $T_0=355.064057$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

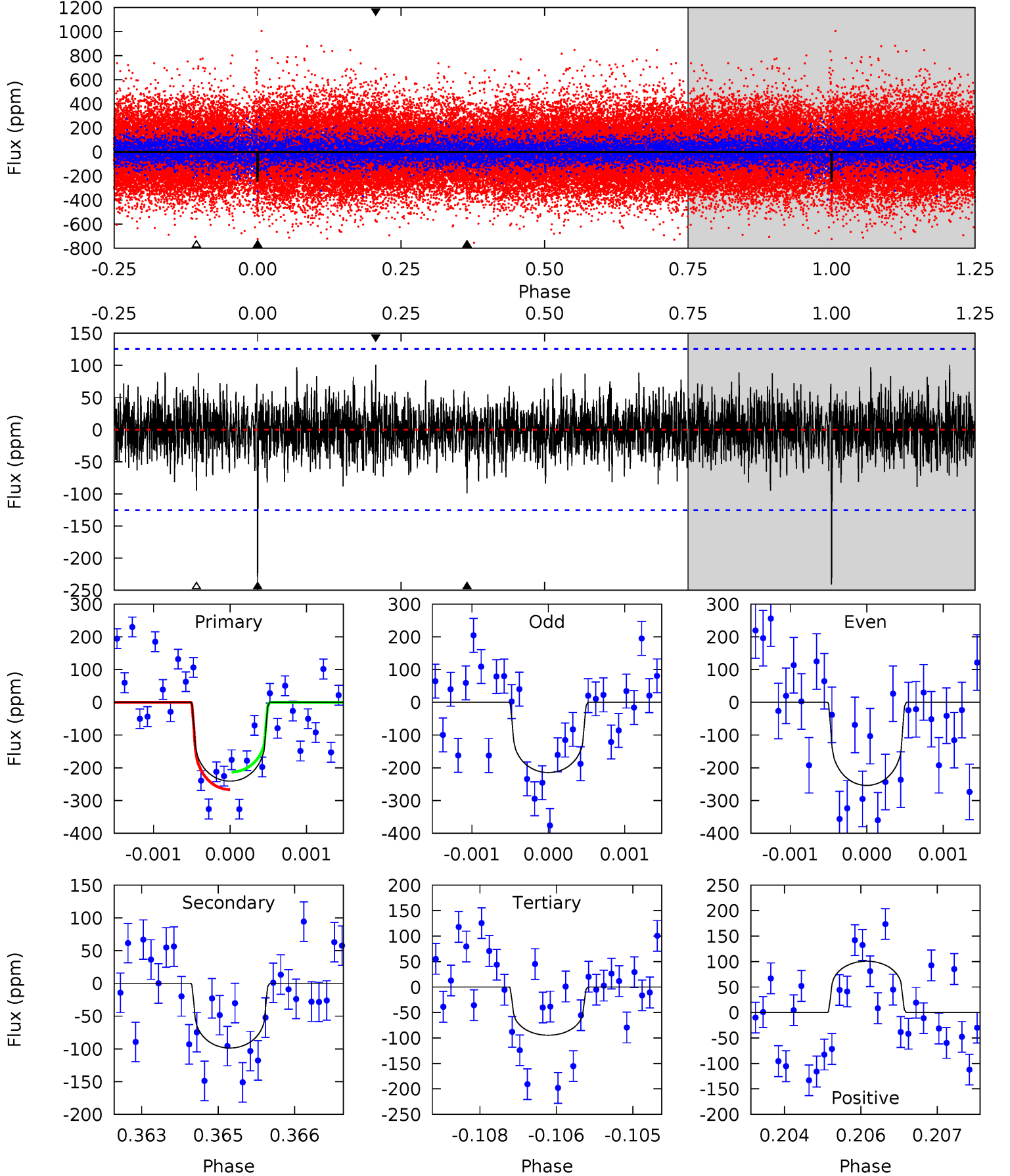
TCE 008391741-01 P=378.763279 Days  $T_0=355.033988$  (BKJD)



# DV Model-Shift Uniqueness Test

008391741-01,  $P = 378.753755$  Days,  $E = 355.064057$  Days

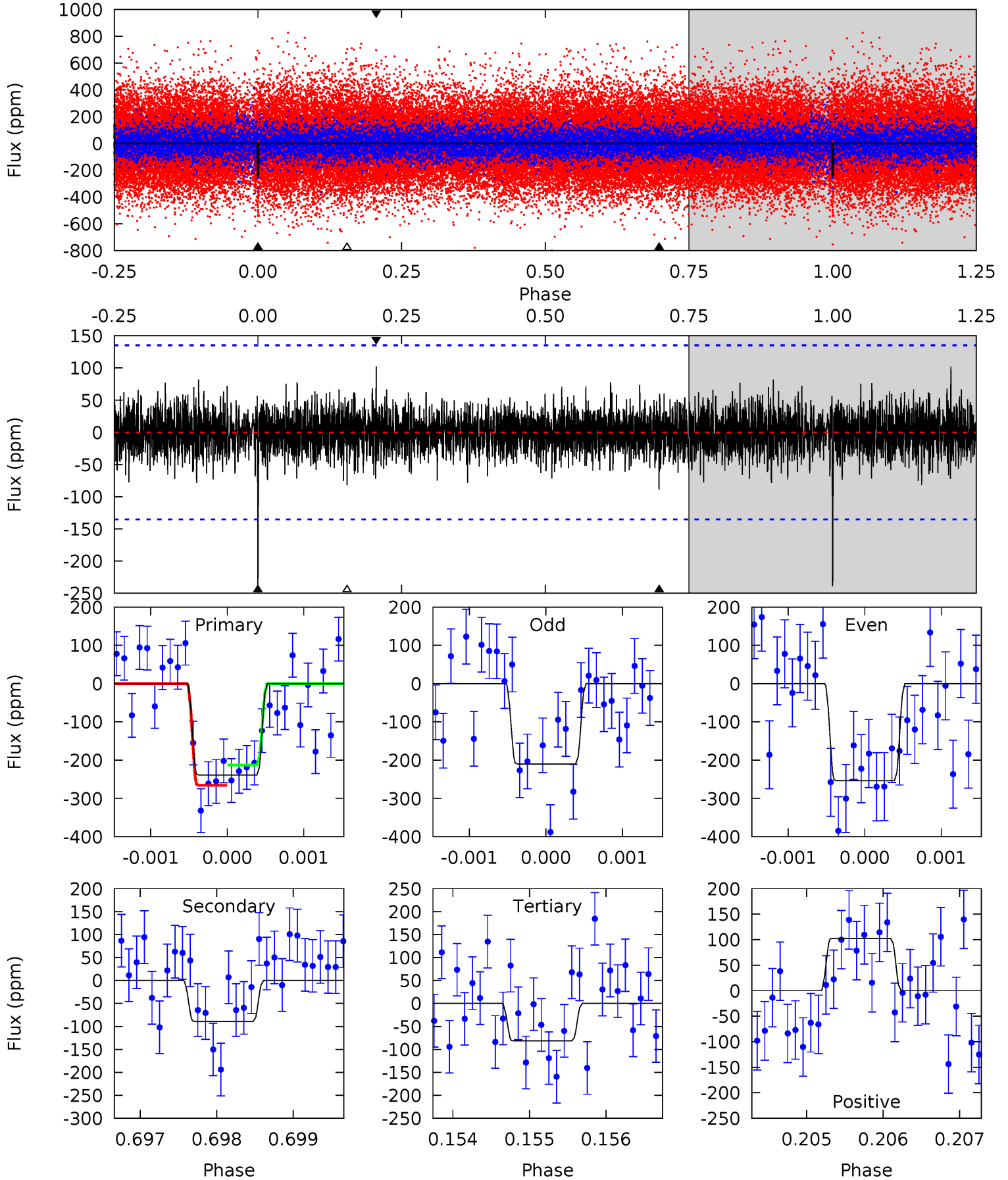
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.4	4.26	4.09	4.35	5.42	3.24	1.16	6.32	6.05	0.18	-0.09	0.80	1.12	0.29	1.15



# Alt Model-Shift Uniqueness Test

008391741-01,  $P = 378.763279$  Days,  $E = 355.033988$  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
9.63	3.59	3.29	4.13	5.45	3.28	0.93	6.35	5.51	0.30	-0.54	0.84	1.14	0.30	1.06



### Stellar Parameters For KIC 008391741

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5256^{+166}_{-147}$	$3.963^{+0.609}_{-0.261}$	$-0.100^{+0.350}_{-0.250}$	$1.633^{+0.835}_{-0.835}$	$0.895^{+0.093}_{-0.114}$	$0.289^{+1.949}_{-0.195}$
	+3%/-3%	+15%/-7%	+350%/-250%	+51%/-51%	+10%/-13%	+673%/-67%
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 008391741-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-99 \pm 23$	$3.10^{+3.37}_{-2.00}$	$408^{+50}_{-60}$	$3993^{+2107}_{-756}$	$5168^{+37028}_{-3912}$
Alt.	$-89 \pm 25$	$3.48^{+2.90}_{-2.39}$	$412^{+54}_{-59}$	$3827^{+2279}_{-609}$	$3922^{+38026}_{-2832}$

$T_{\text{max}}$  = 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

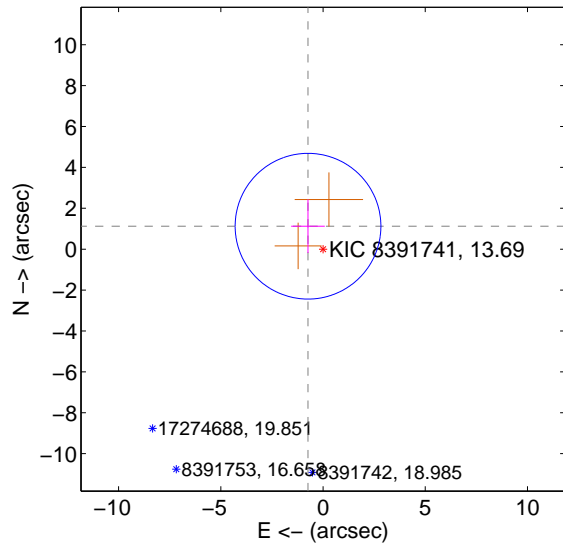
Supplemental centroid analysis for 008391741-01. Kepler magnitude: 13.69. Transit SNR 7.77

There are 0 quarters with good PRF difference image offsets

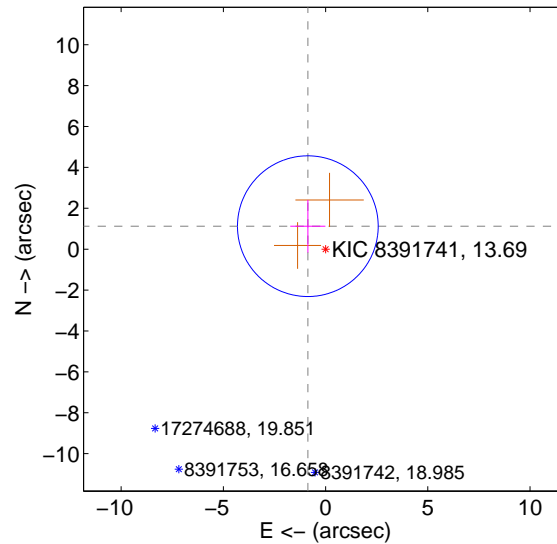
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.342 \pm 1.188$	1.13	$0.735 \pm 0.824$	$1.123 \pm 1.313$
PRF-fit source offset from KIC position	$1.421 \pm 1.147$	1.24	$0.868 \pm 0.858$	$1.125 \pm 1.289$
photometric centroid source offset	$2.20 \pm 2.55$	0.86	$1.36 \pm 2.65$	$1.73 \pm 2.49$

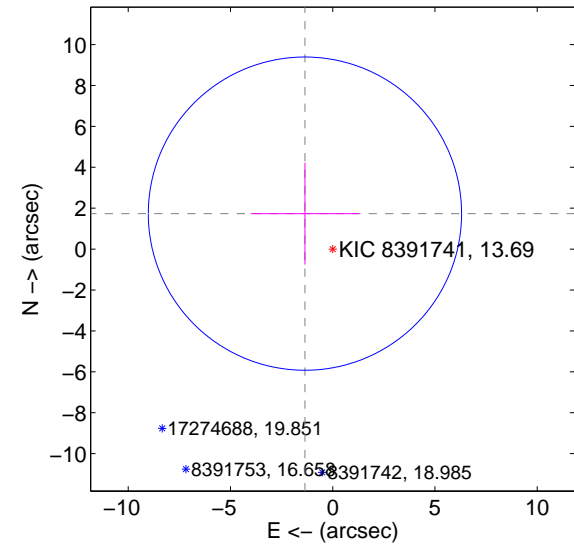
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



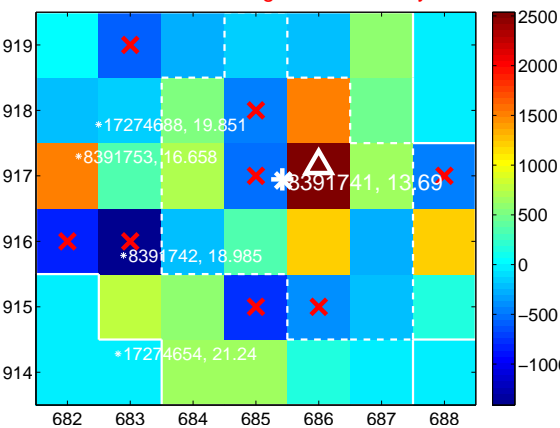
Q3 no difference image



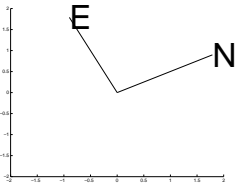
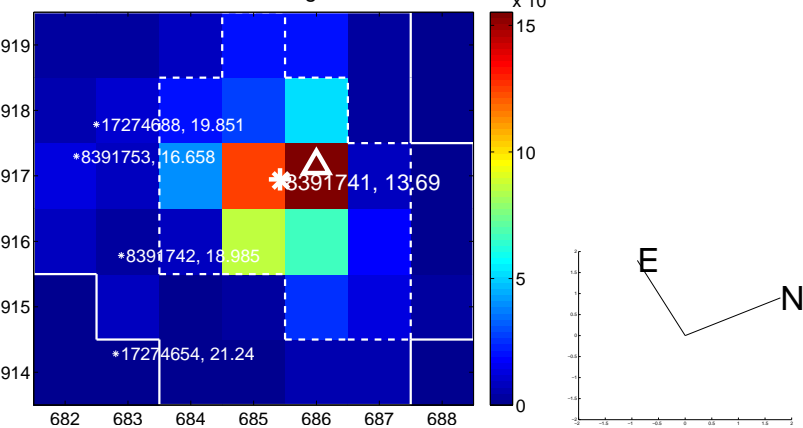
Q3 no OOT image



Q4 difference image. Poor Quality



Q4 OOT image





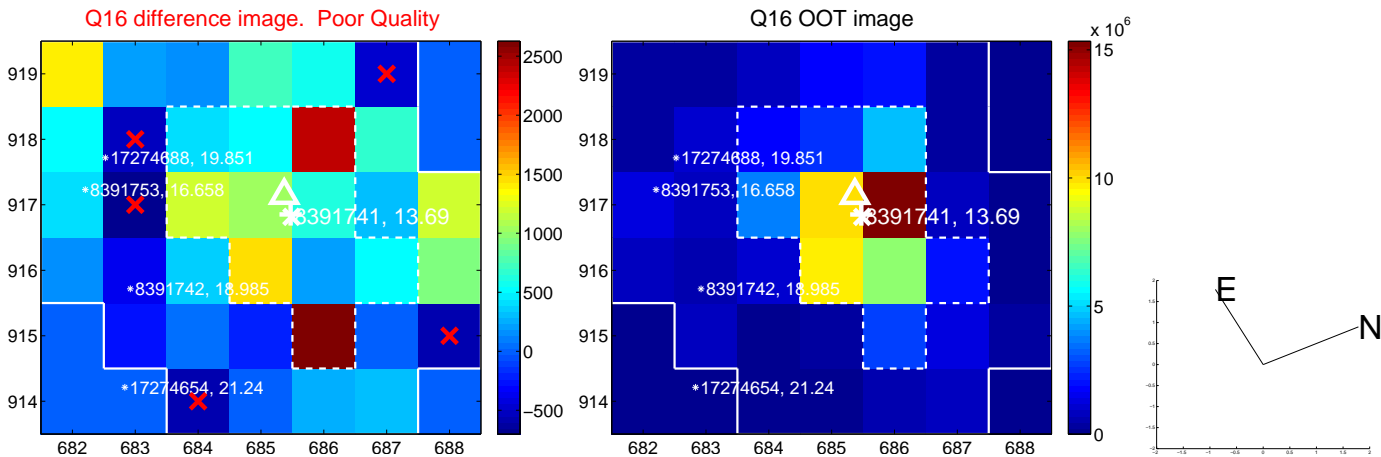
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



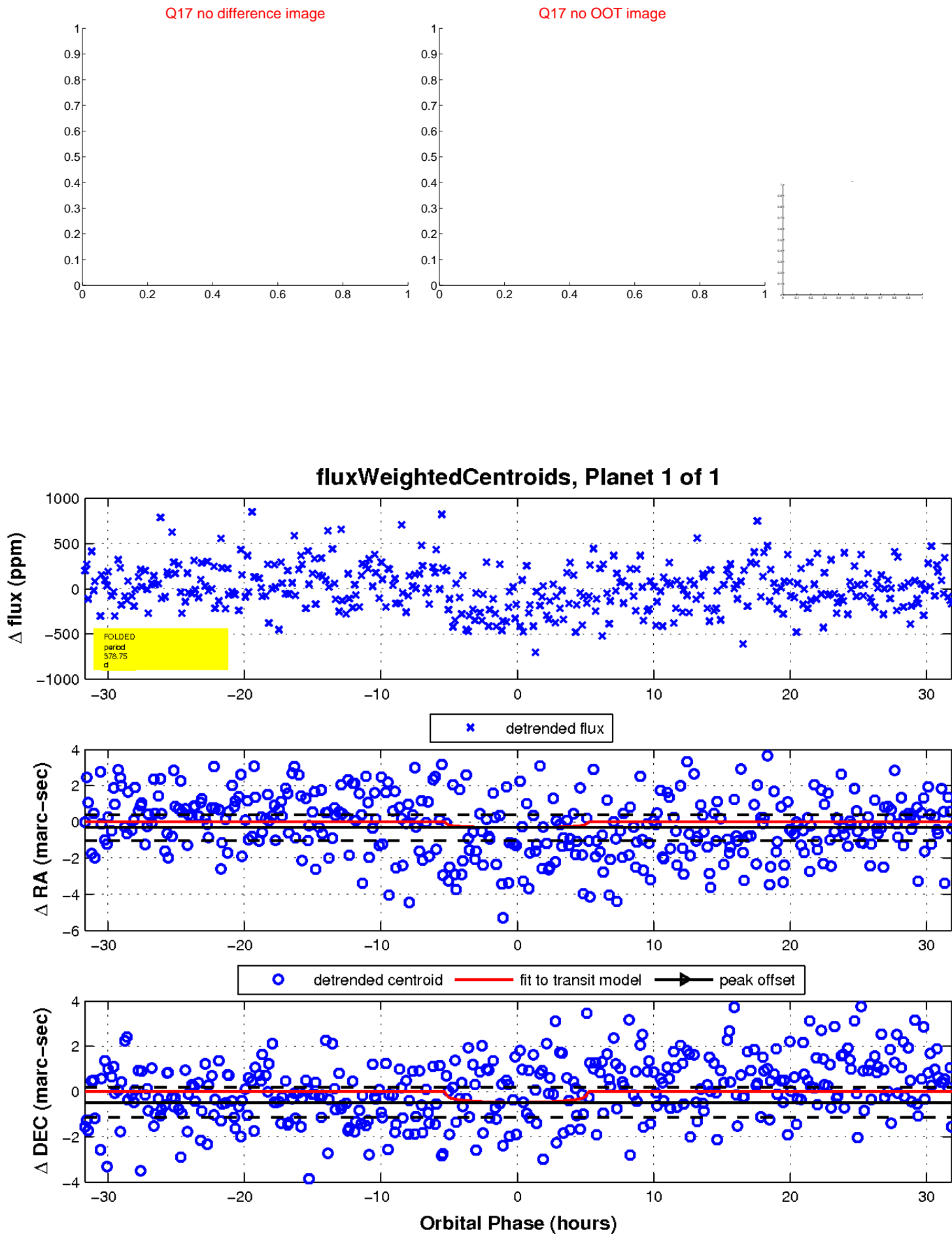
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

