

# KIC 010803385

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010803385-01	OBS	No	383.422411	327.430836	712.1	5.997	8.7	7.0	0.82	5487	2.35	0.57

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010803385-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—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.

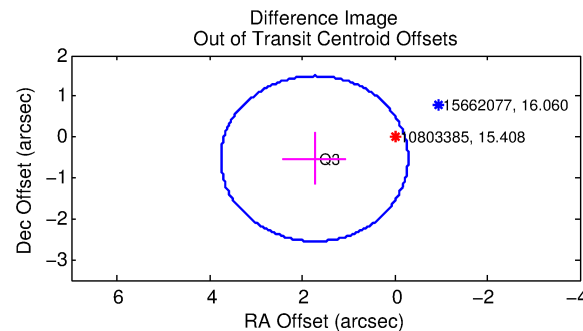
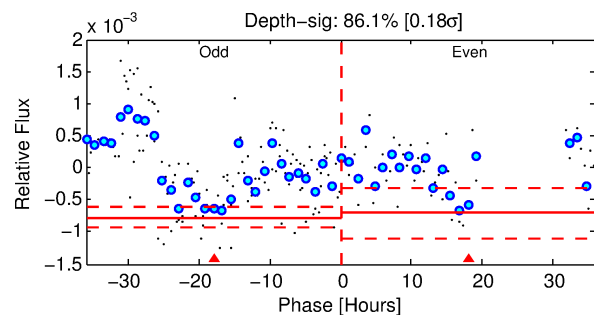
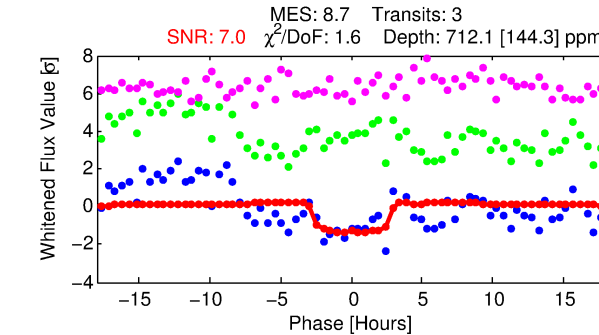
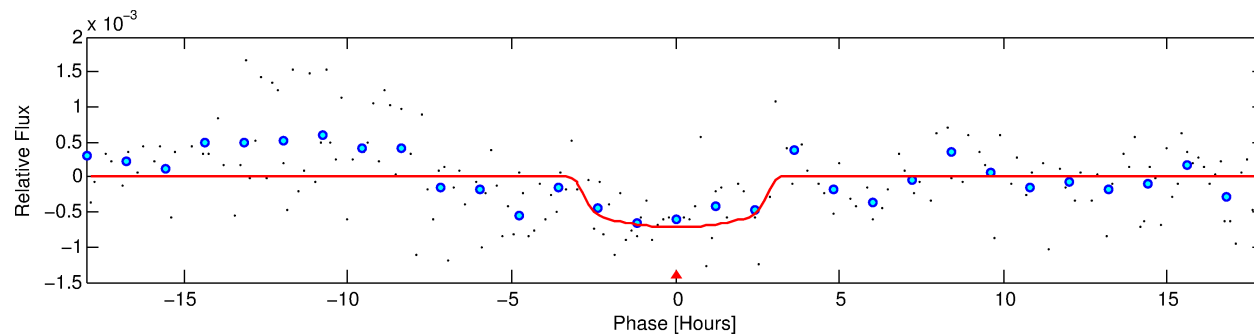
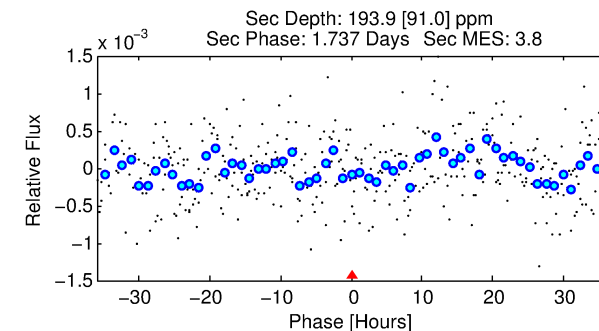
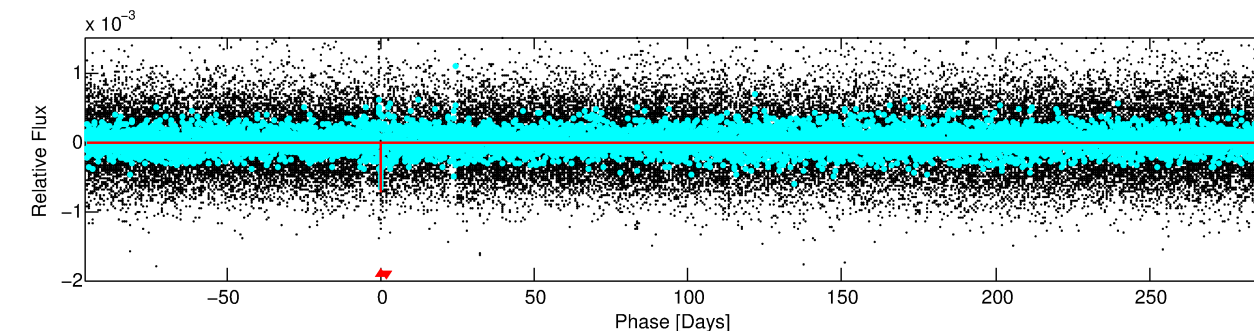
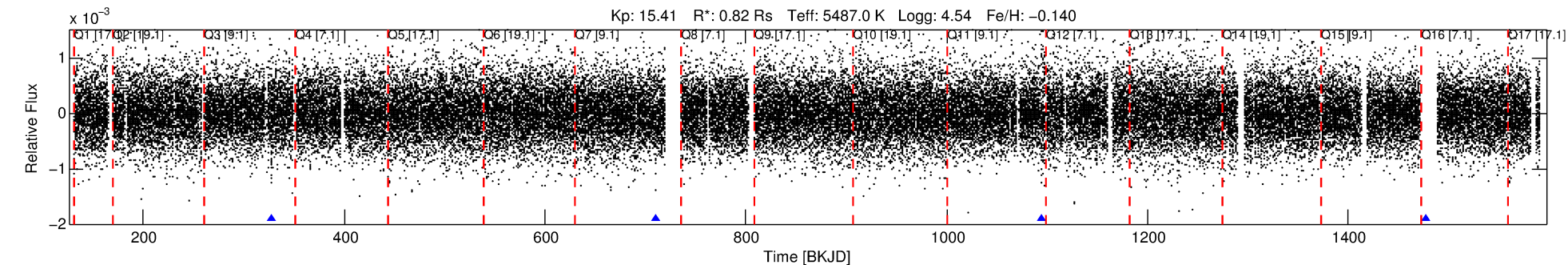
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010803385-01

No Significant Match Found

# DV One-Page Summary

KIC: 10803385 Candidate: 1 of 1 Period: 383.422 d



## DV Fit Results:

Period = 383.42241 [0.01367] d  
Epoch = 327.4308 [0.0171] BKJD  
Rp/R\* = 0.0261 [0.0404]  
a/R\* = 367.30 [2319.09]  
b = 0.70 [4.71]  
Seff = 0.57 [0.18]  
Teff = 221 [18] K  
Rp = 2.34 [3.67] Re  
a = 0.9842 [0.1859] AU  
Ag = 18799.87 [59073.37] [0.32 $\sigma$ ]  
Teffp = 4010 [3142] K [1.21 $\sigma$ ]

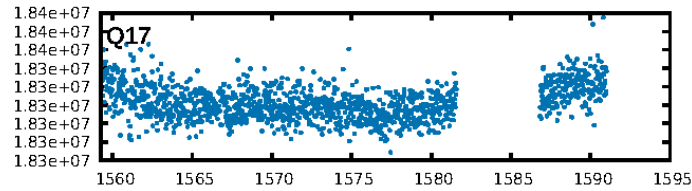
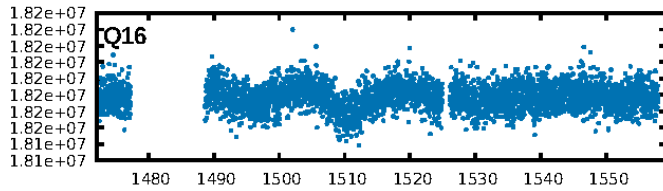
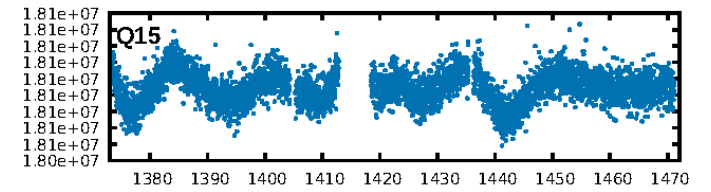
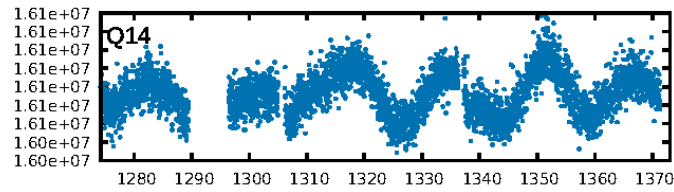
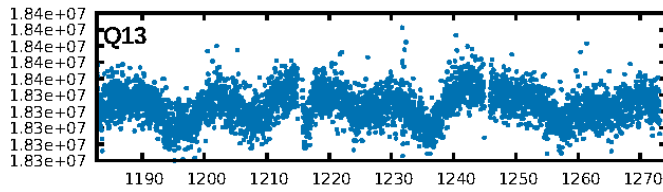
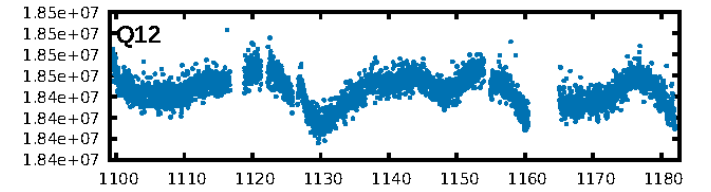
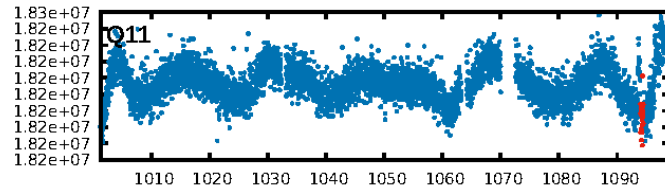
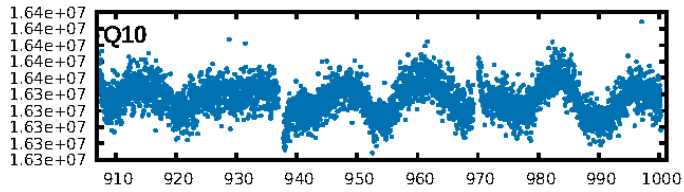
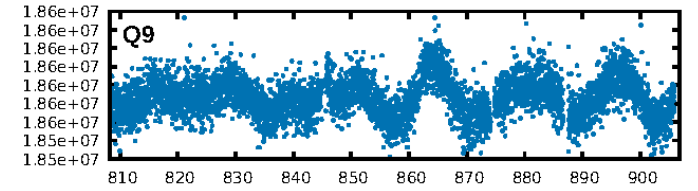
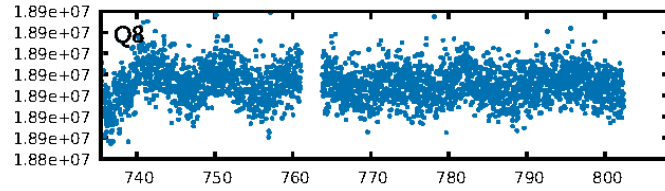
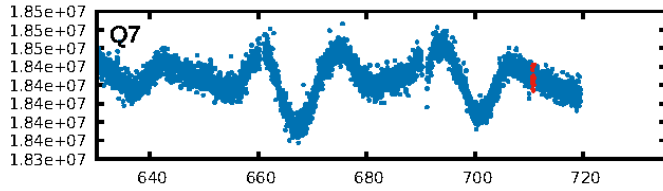
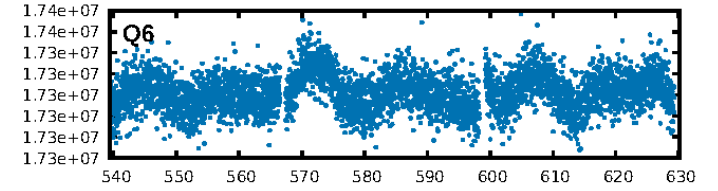
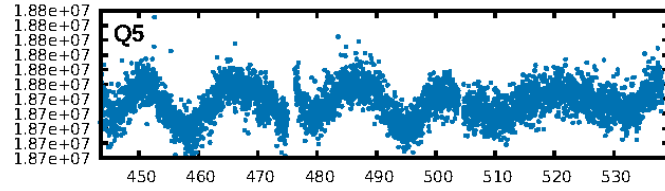
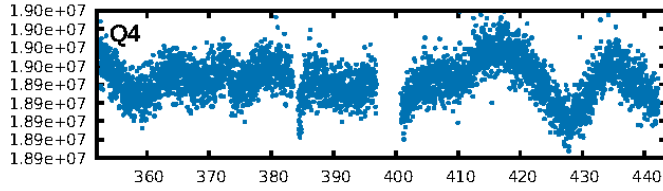
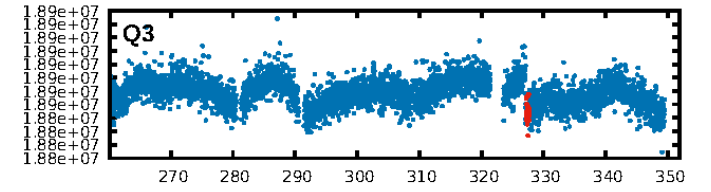
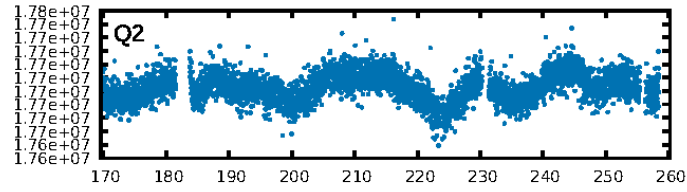
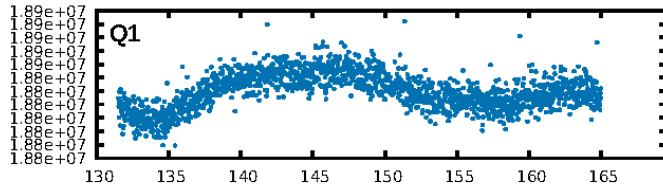
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 39.6%  
ModelChiSquareGof-sig: 98.5%  
**Bootstrap-pfa: 1.35e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.321  
Centroid-sig: 13.7%  
Centroid-so: 2.997 arcsec [1.77 $\sigma$ ]  
OotOffset-rm: 1.817 arcsec [2.69 $\sigma$ ]  
KicOffset-rm: 1.988 arcsec [2.99 $\sigma$ ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

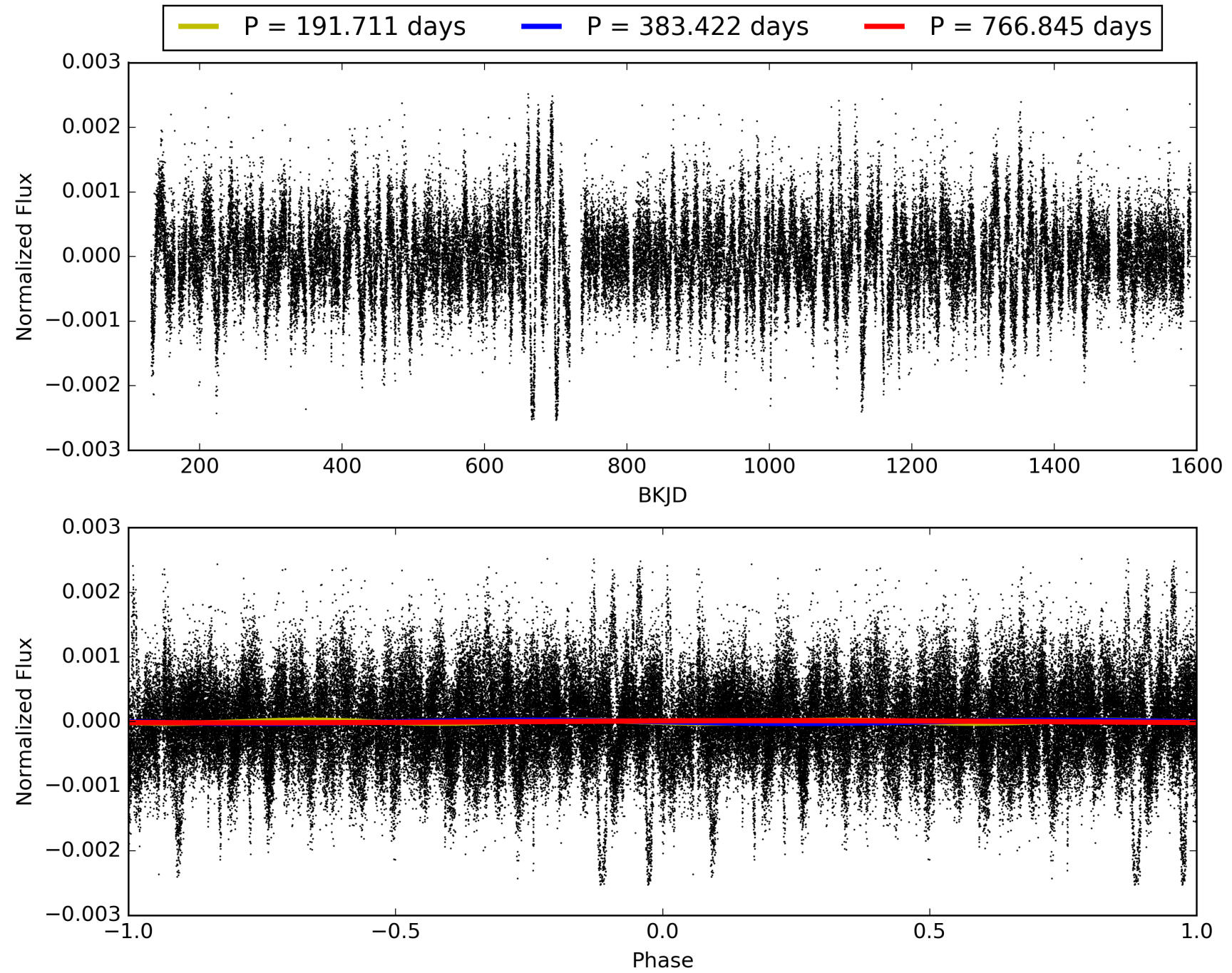
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:01:59 Z

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

# TCE 010803385-01, PDC Light Curves

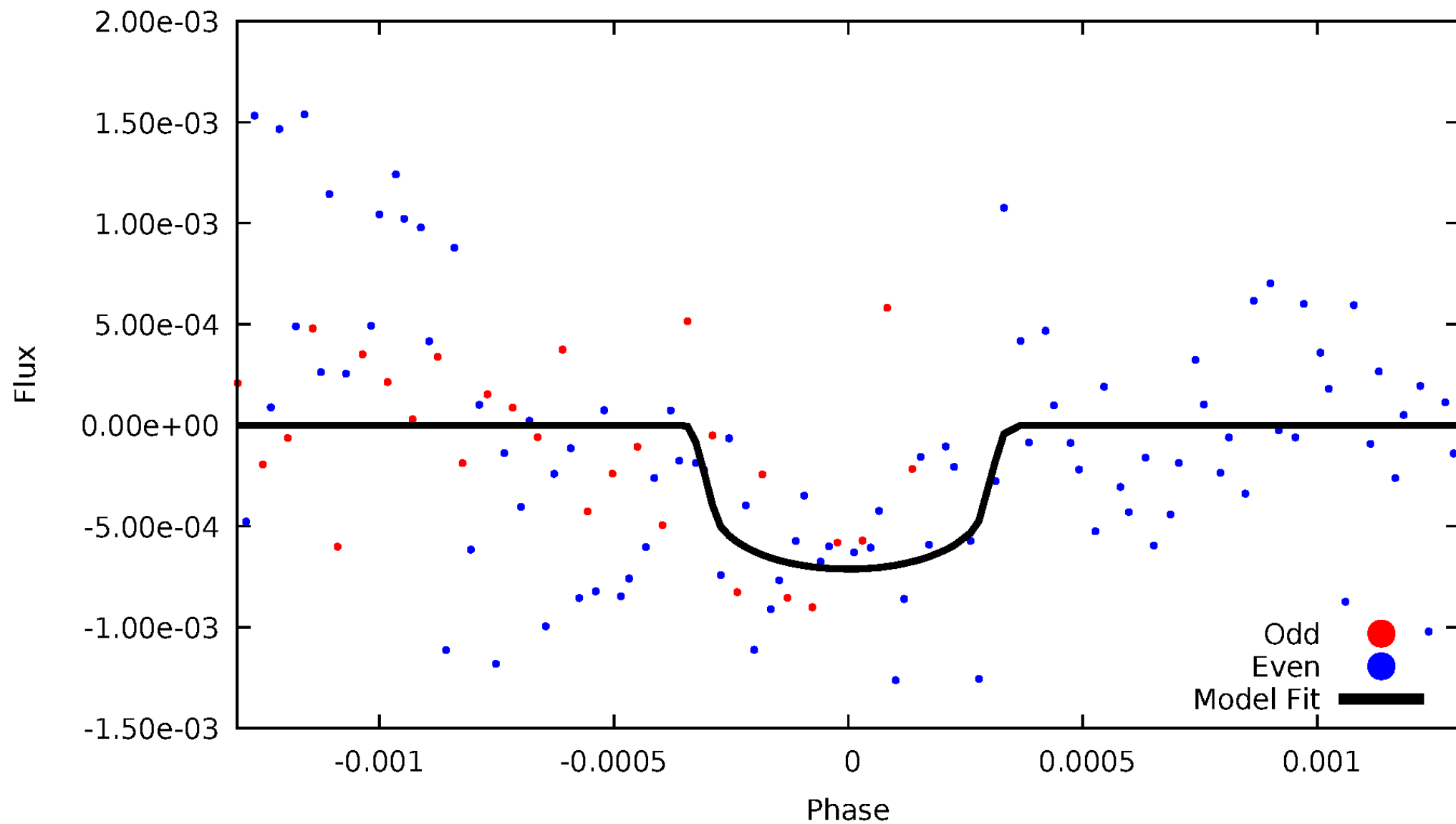


TCE 010803385-01



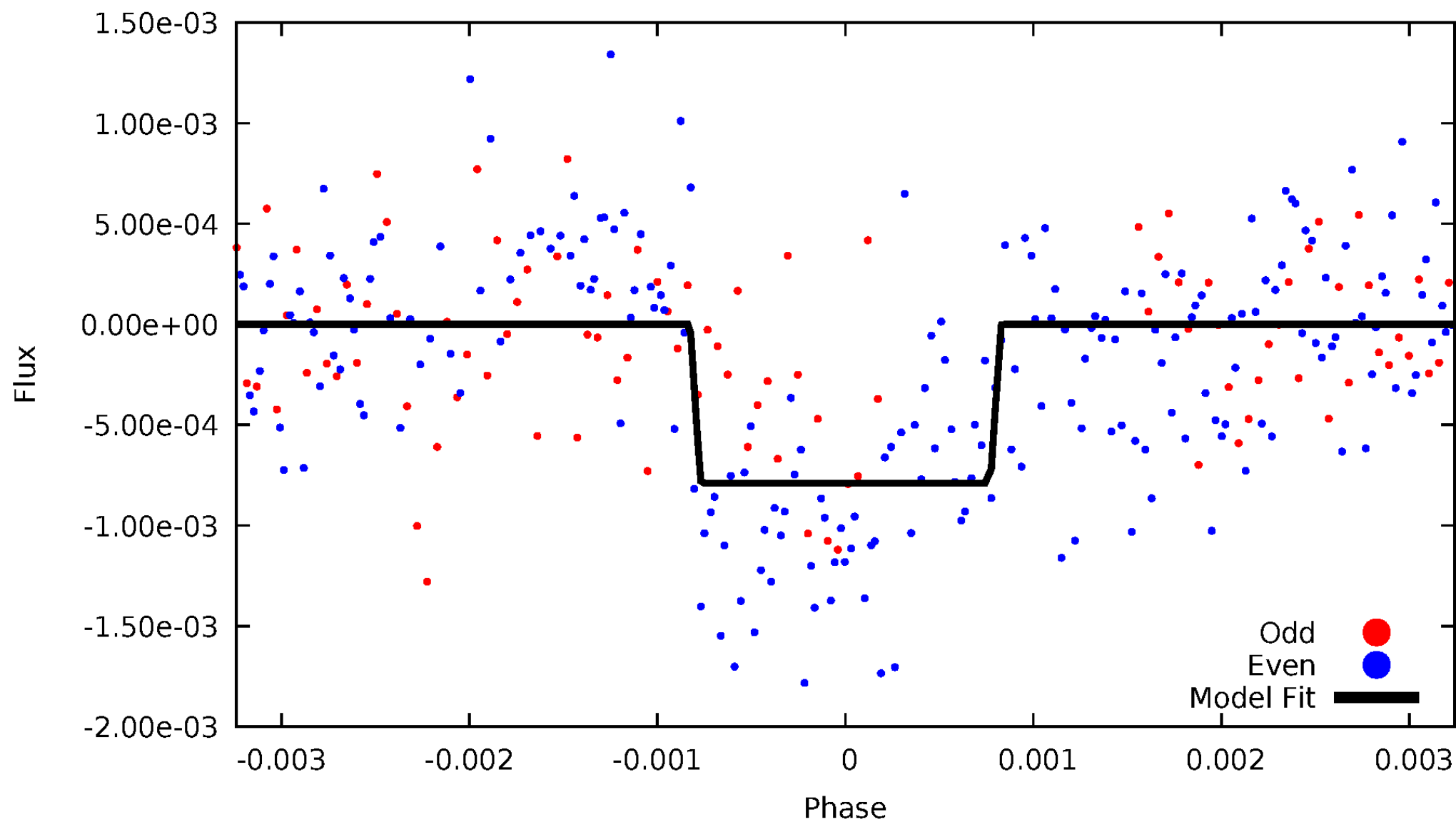
# DV Odd/Even

TCE 010803385-01



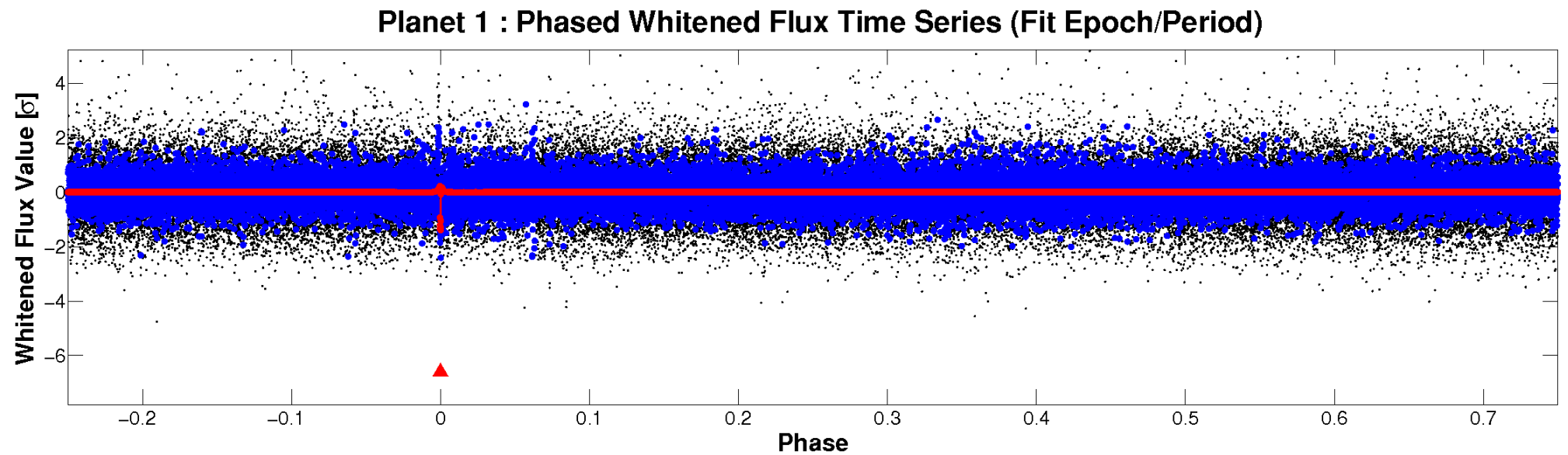
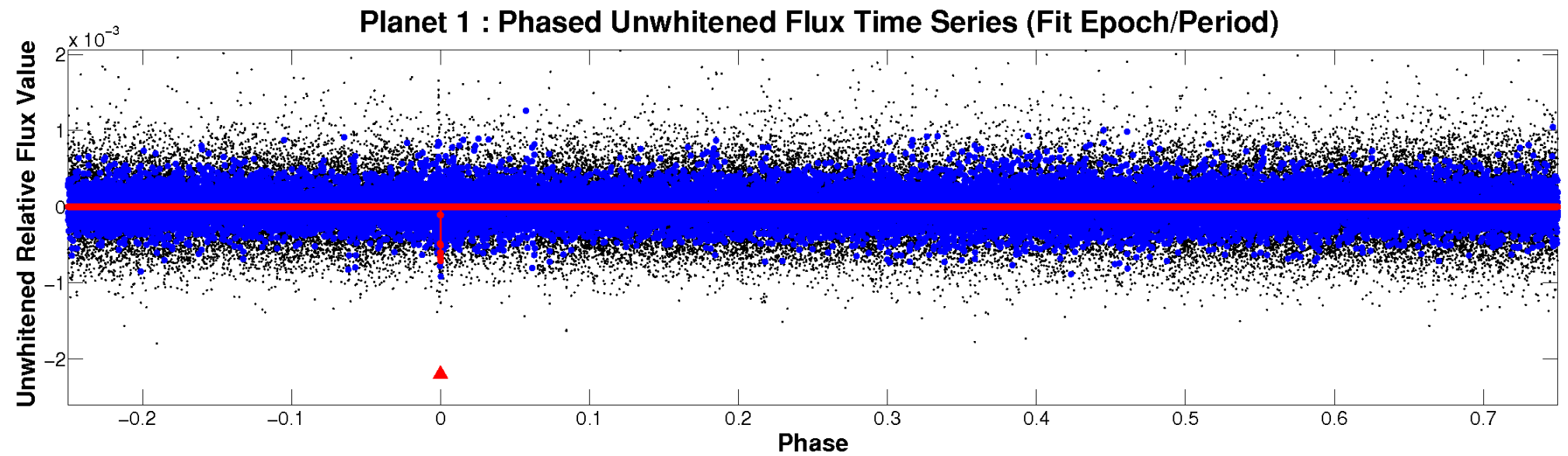
# ALT Odd/Even

TCE 010803385-01



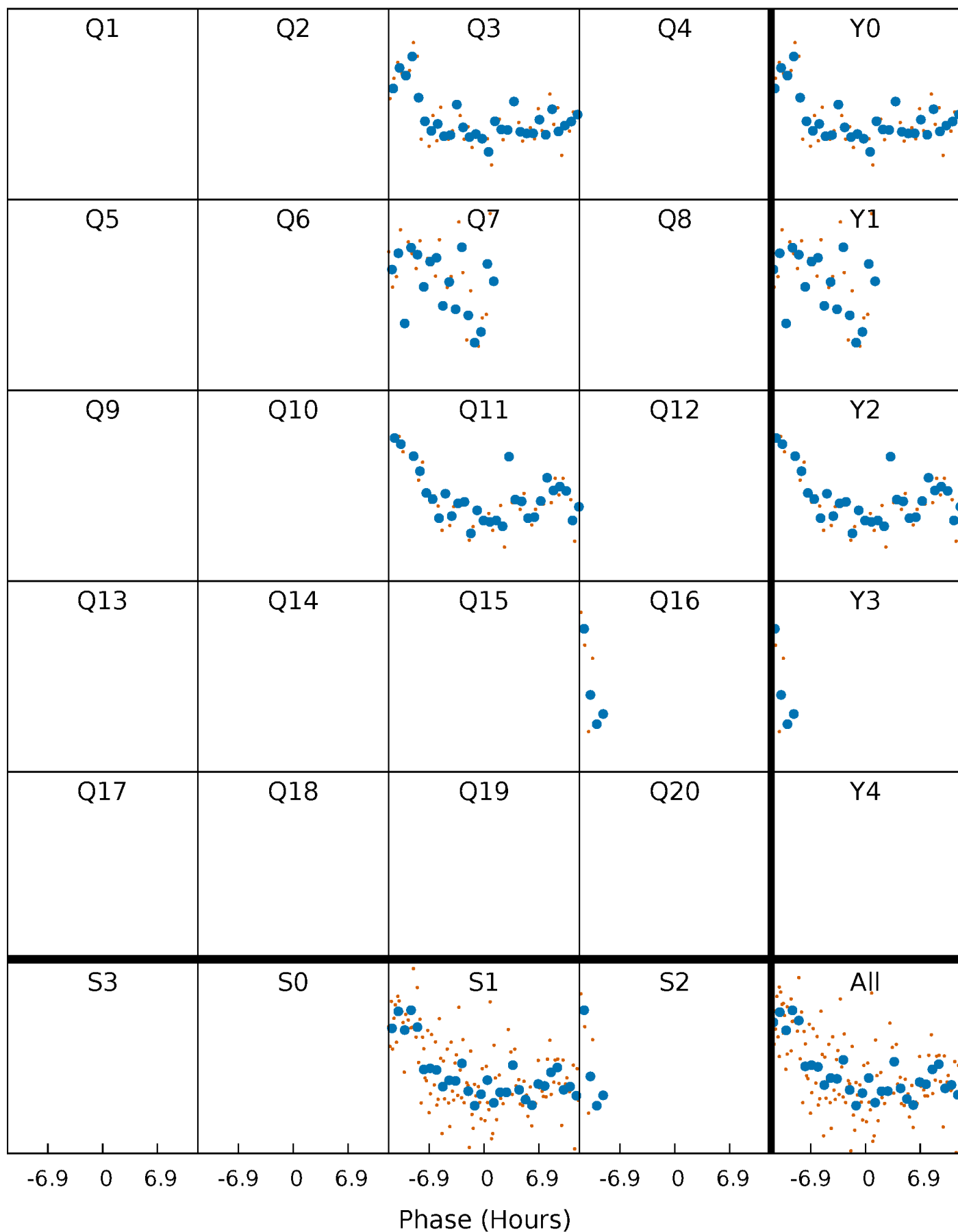


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

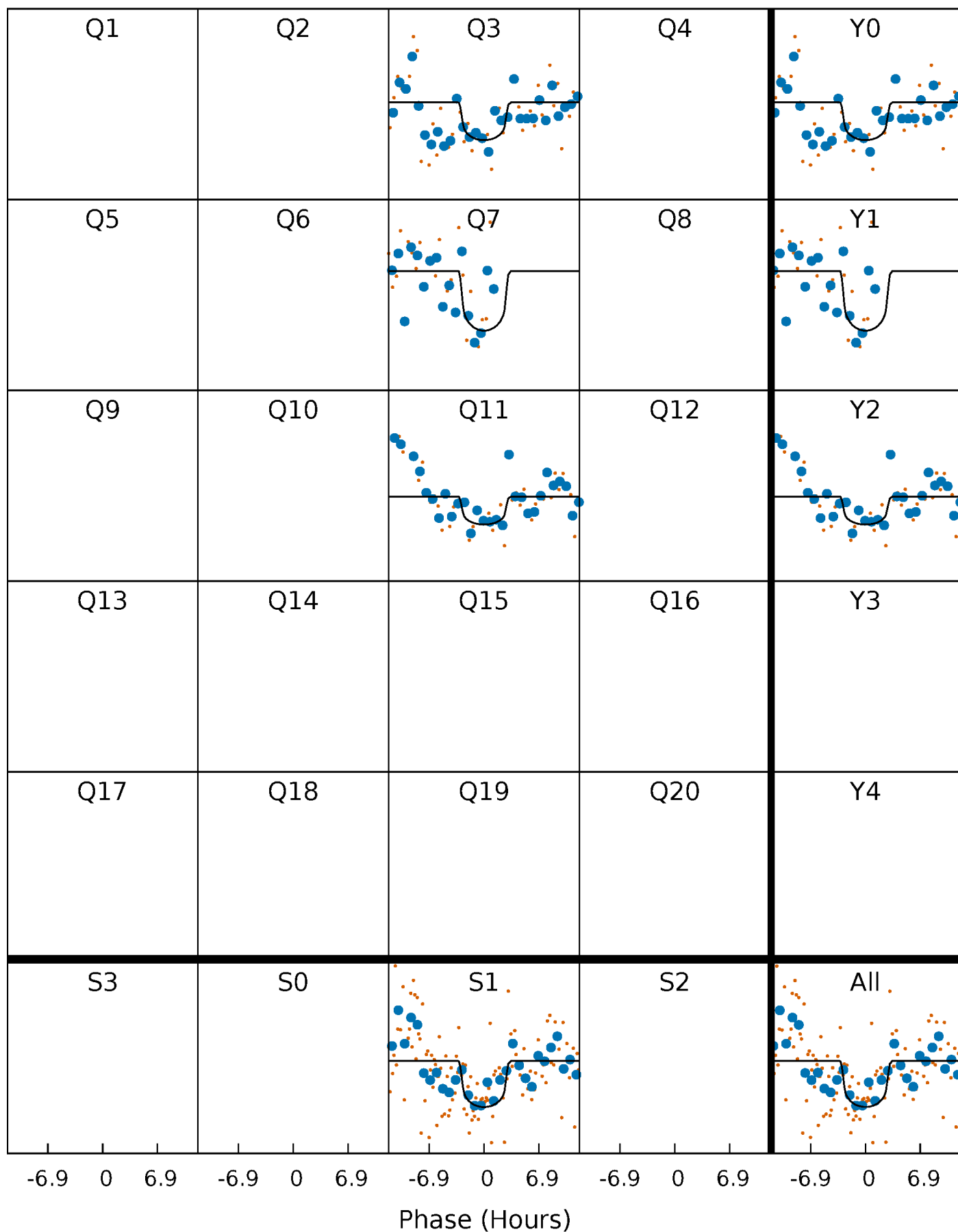
TCE 010803385-01 P=383.422411 Days  $T_0=327.430836$  (BKJD)





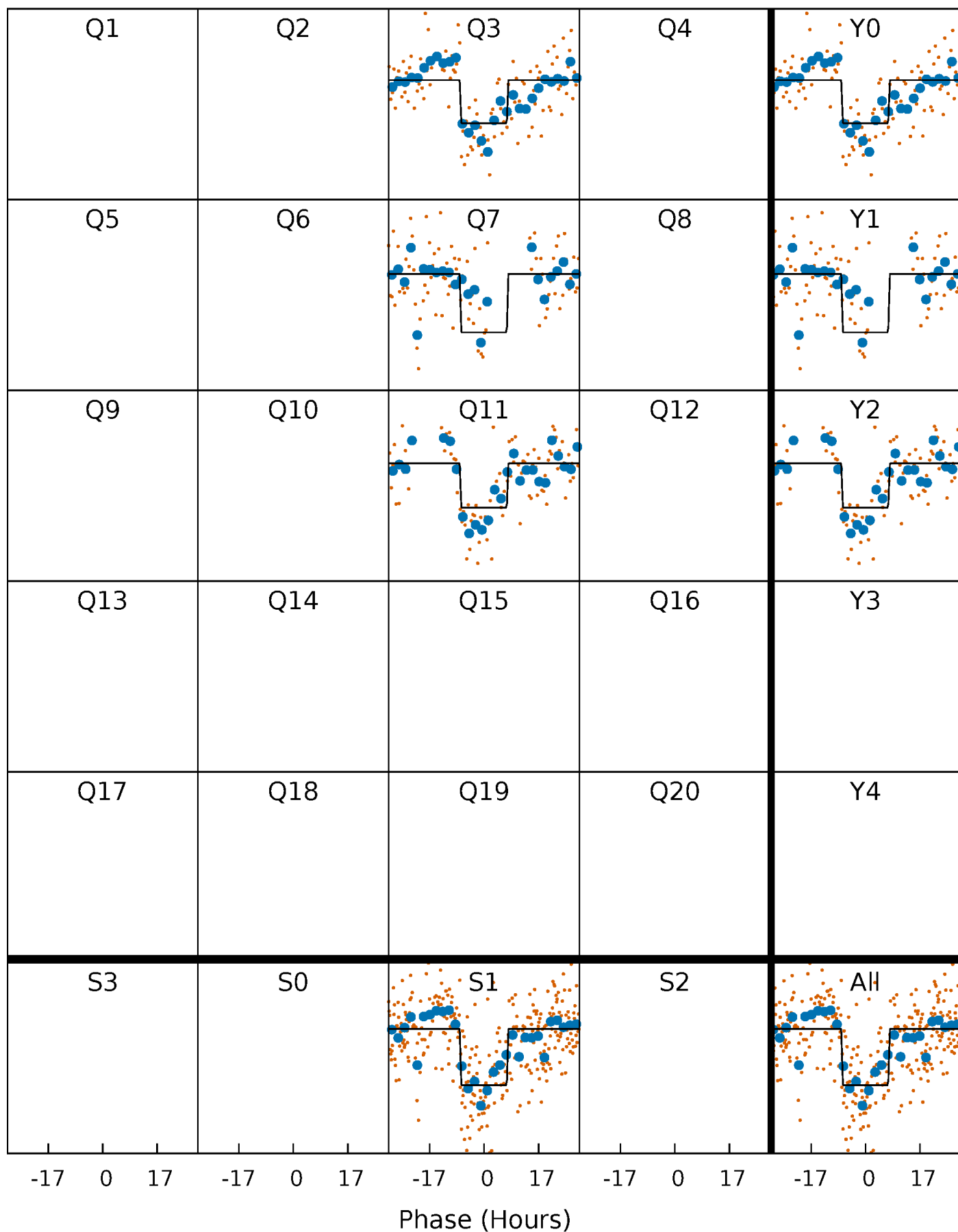
# DV Quarter-Phased Transit Curves

TCE 010803385-01     $P=383.422411$  Days     $T_0=327.430836$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

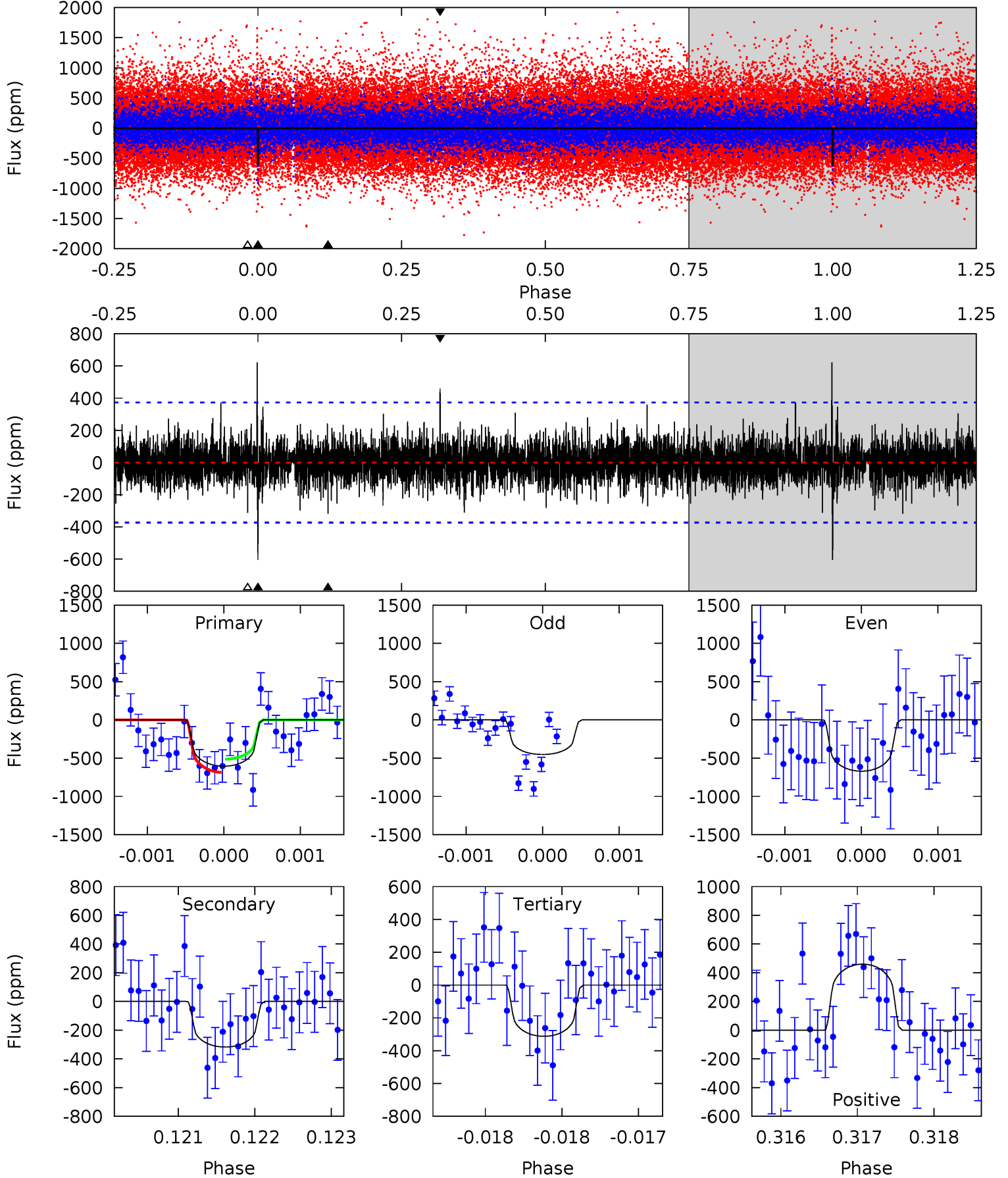
TCE 010803385-01 P=383.442565 Days  $T_0=327.396665$  (BKJD)



# DV Model-Shift Uniqueness Test

010803385-01, P = 383.422411 Days, E = 327.430836 Days

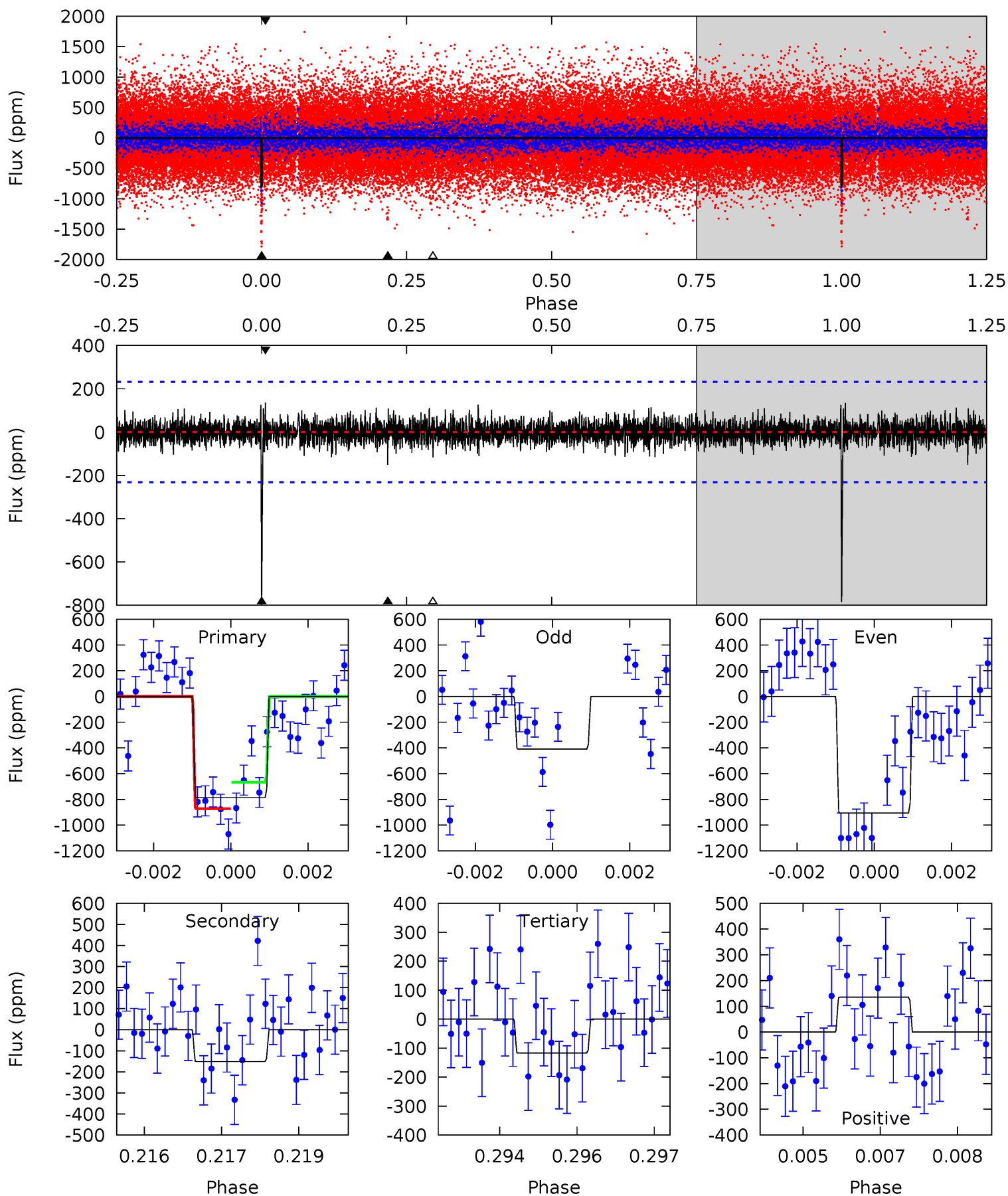
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.91	4.68	4.61	6.78	5.51	3.39	1.25	4.30	2.13	0.07	-2.10	1.43	0.90	0.51	1.27



# Alt Model-Shift Uniqueness Test

010803385-01, P = 383.442565 Days, E = 327.396665 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
18.2	3.50	2.70	3.13	5.36	3.14	0.78	15.5	15.0	0.80	0.37	4.94	0.82	0.15	2.36



### Stellar Parameters For KIC 010803385

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5487^{+221}_{-221}$	$4.543^{+0.050}_{-0.150}$	$-0.140^{+0.300}_{-0.300}$	$0.824^{+0.185}_{-0.085}$	$0.864^{+0.102}_{-0.091}$	$2.178^{+0.571}_{-0.911}$
	+4%/-4%	+1%/-3%	+214%/-214%	+22%/-10%	+12%/-11%	+26%/-42%
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 010803385-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-317 \pm 68$	$3.84^{+3.38}_{-2.63}$	$314^{+21}_{-16}$	$3923^{+2550}_{-726}$	$11472^{+100637}_{-8268}$
Alt.	$-151 \pm 43$	$3.69^{+3.49}_{-2.34}$	$315^{+19}_{-17}$	$3528^{+1377}_{-658}$	$5794^{+34329}_{-4256}$

$T_{max}$  = 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

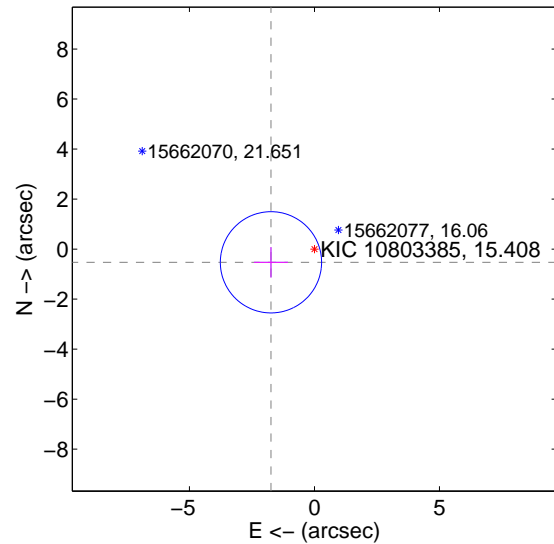
Supplemental centroid analysis for 010803385-01. Kepler magnitude: 15.41. Transit SNR 7.03

There are 1 quarters with good PRF difference image offsets

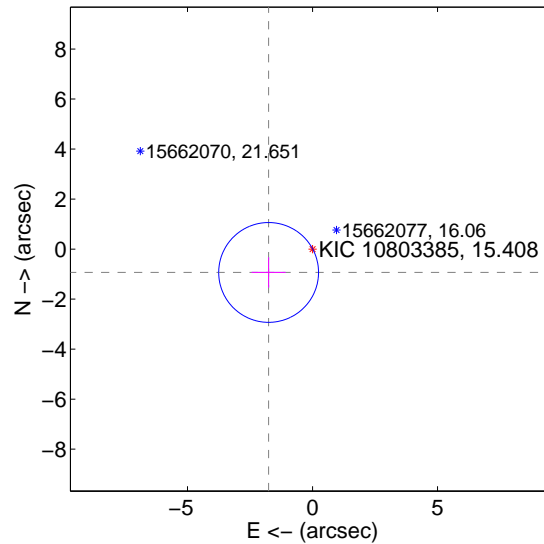
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.817 \pm 0.675$	2.69	$1.739 \pm 0.681$	$-0.528 \pm 0.608$
PRF-fit source offset from KIC position	$1.988 \pm 0.665$	2.99	$1.756 \pm 0.681$	$-0.933 \pm 0.608$
photometric centroid source offset	$3.00 \pm 1.69$	1.77	$2.99 \pm 1.69$	$-0.15 \pm 1.63$

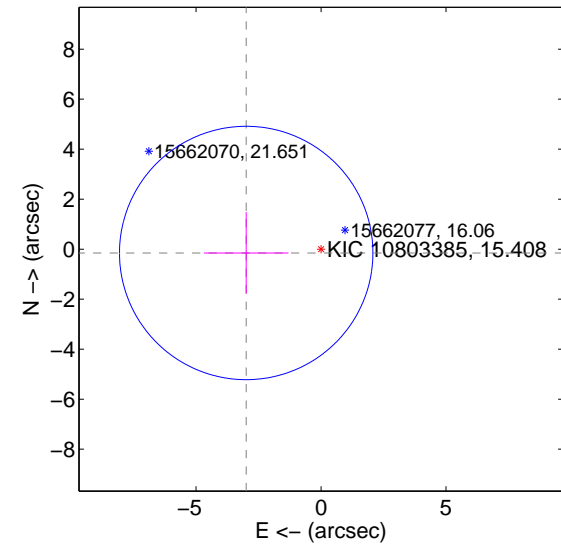
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

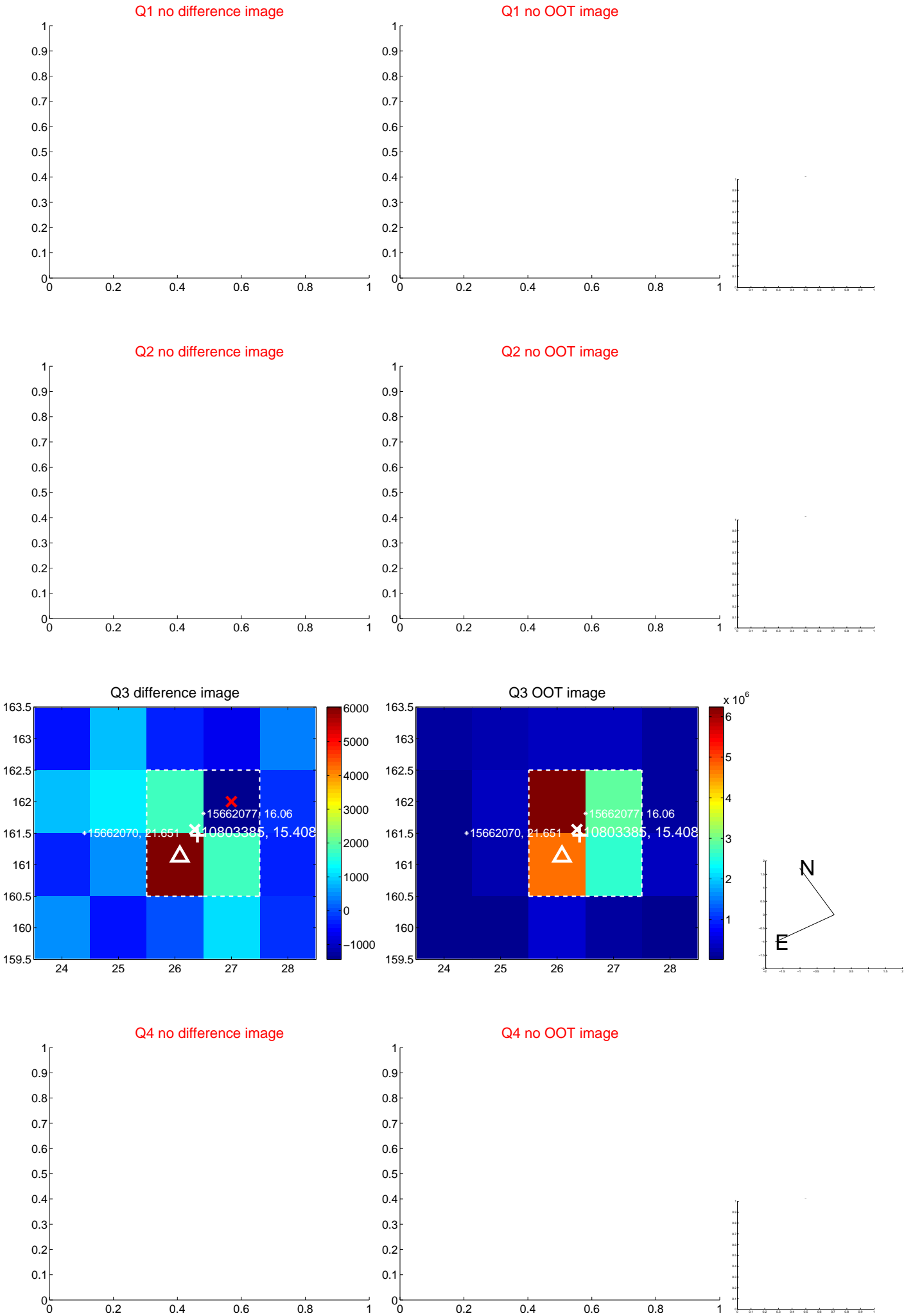


offset from photometric centroids



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.





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



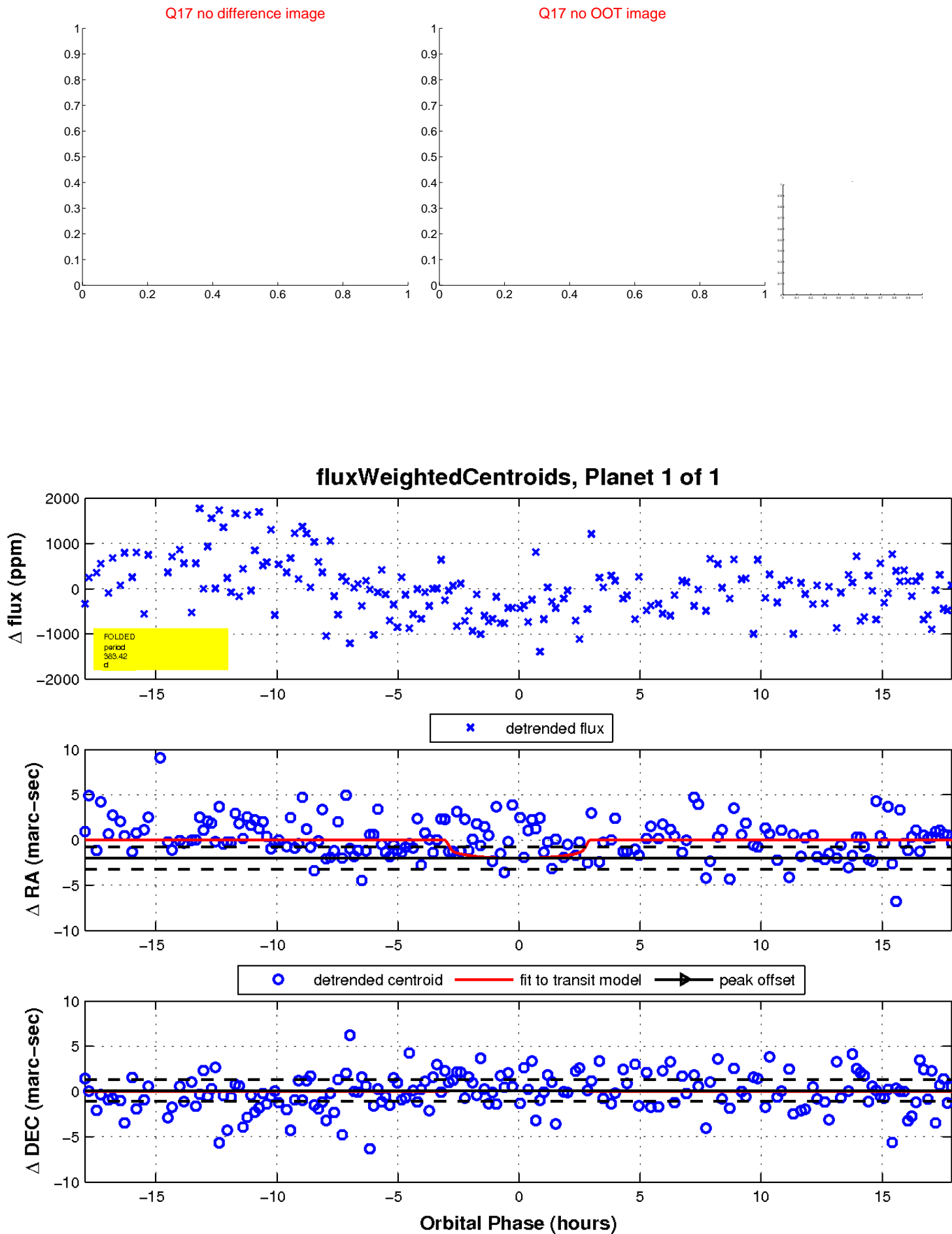
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

