

# KIC 004763020

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004763020-01	OBS	8097.01	384.084496	418.706361	117.4	13.383	7.2	7.2	1.63	5884	2.00	2.81

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004763020-01	OBS	FP	0.02	1	0	0	0	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.

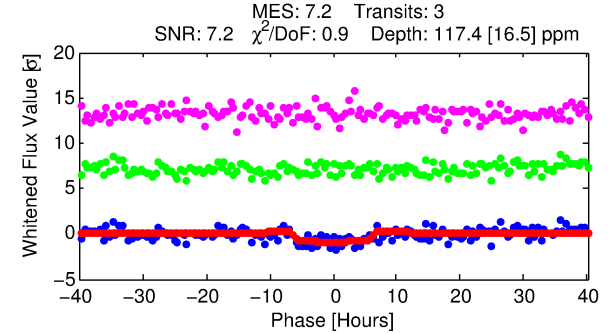
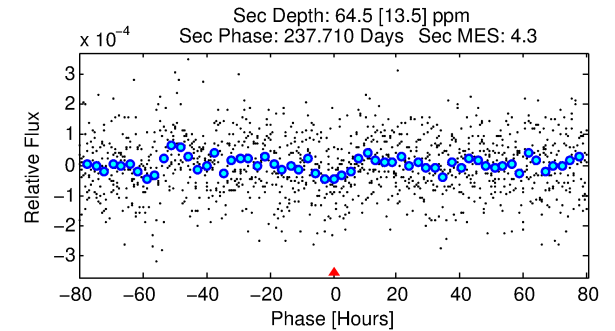
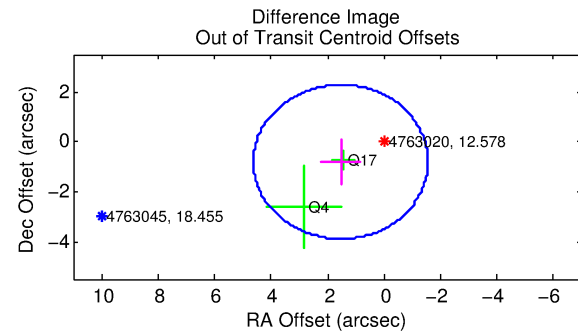
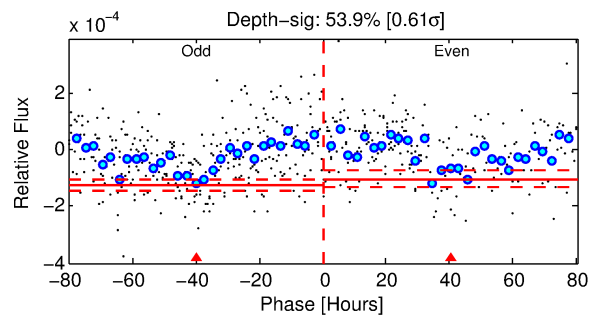
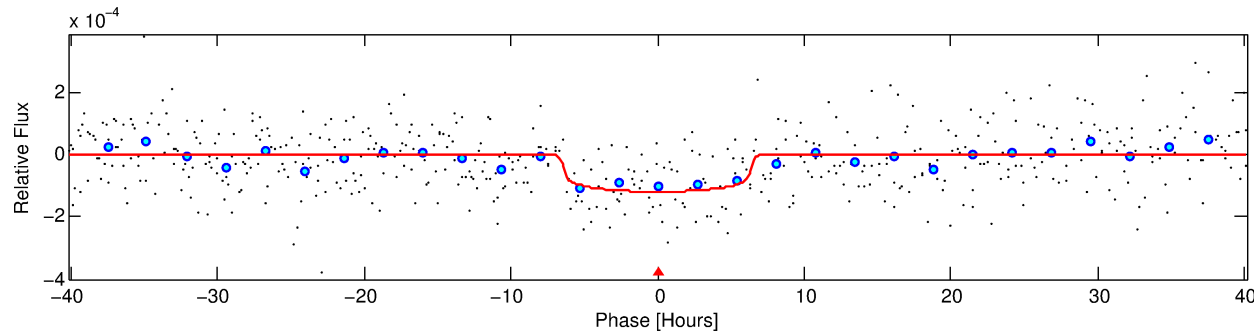
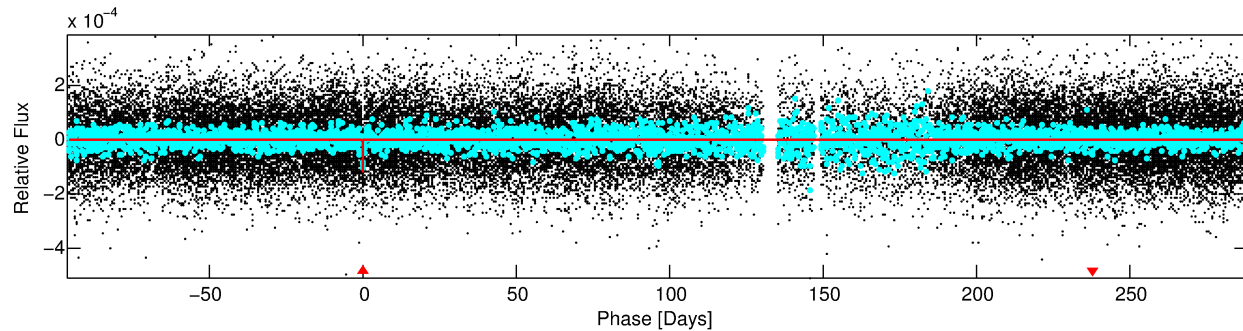
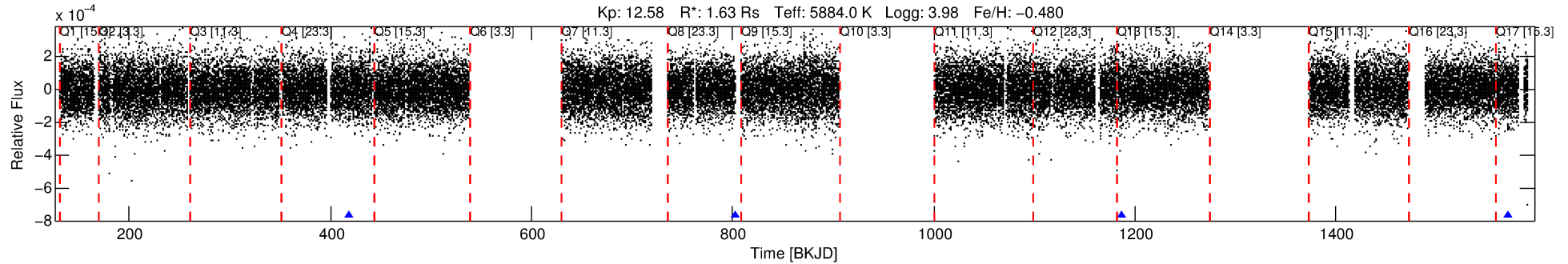
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004763020-01

No Significant Match Found

# DV One-Page Summary

KIC: 4763020 Candidate: 1 of 1 Period: 384.084 d



## DV Fit Results:

Period = 384.08450 [0.00936] d  
Epoch = 418.7064 [0.0191] BKJD  
Rp/R\* = 0.0113 [0.0031]  
a/R\* = 119.49 [158.79]  
b = 0.85 [0.43]  
Seff = 2.81 [1.55]  
Teq = 330 [46] K  
Rp = 2.00 [0.83] Re  
a = 1.0064 [0.3265] AU  
Ag = 8944.38 [7081.04] [1.26 $\sigma$ ]  
Teff = 4964 [736] K [6.29 $\sigma$ ]

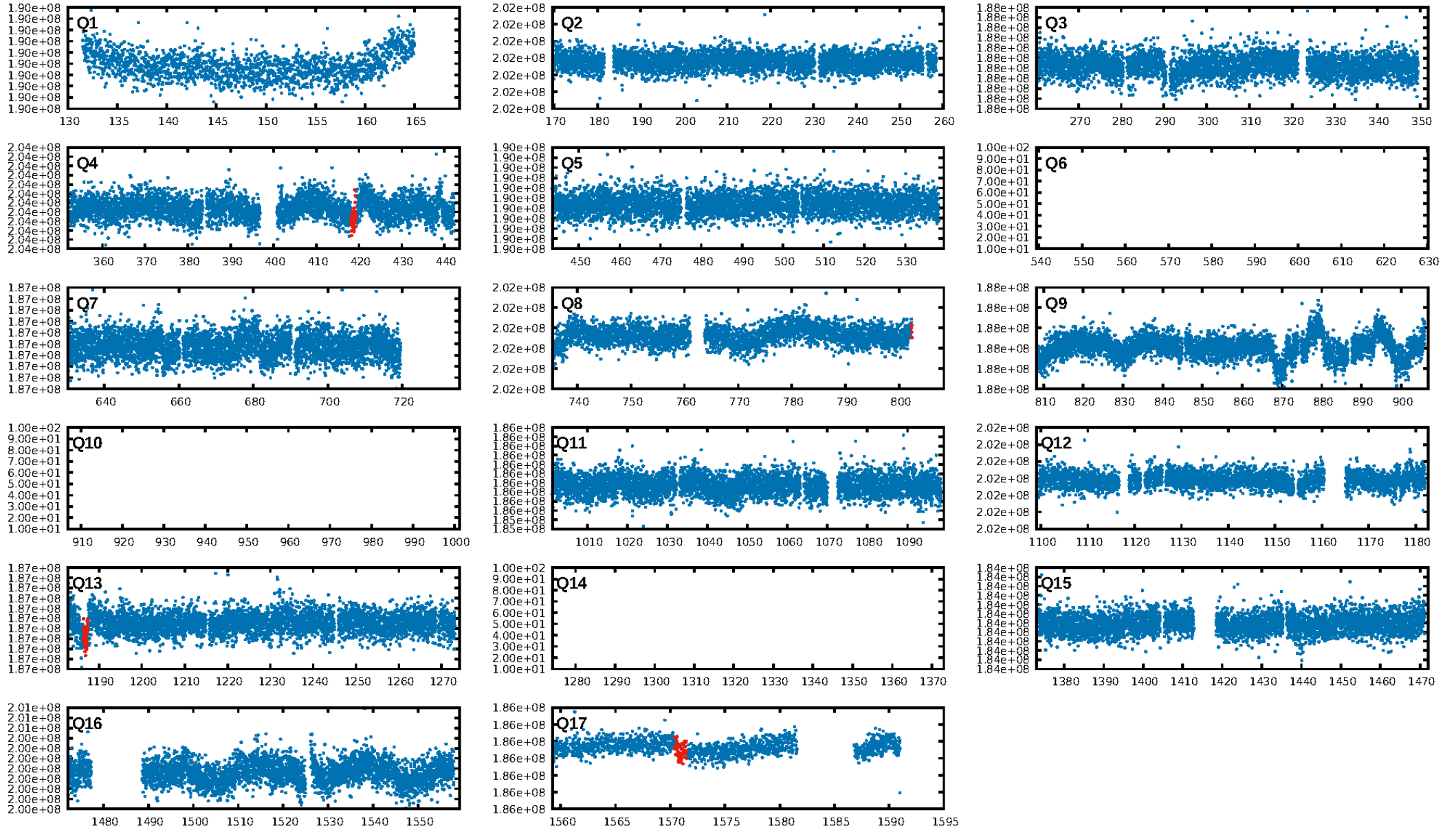
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 8.4%  
ModelChiSquareGof-sig: 99.8%  
**Bootstrap-pfa: 1.92e-09**  
RollingBand-fgt: 1.00 [2/2]  
GhostDiagnostic-chr: -1.702  
Centroid-sig: 33.5%  
Centroid-so: 1.739 arcsec [0.98 $\sigma$ ]  
OotOffset-rm: 1.735 arcsec [1.69 $\sigma$ ]  
KicOffset-rm: 1.833 arcsec [2.60 $\sigma$ ]  
OotOffset-st: 0/0/1/1 [2]  
KicOffset-st: 0/0/1/1 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [2/2]

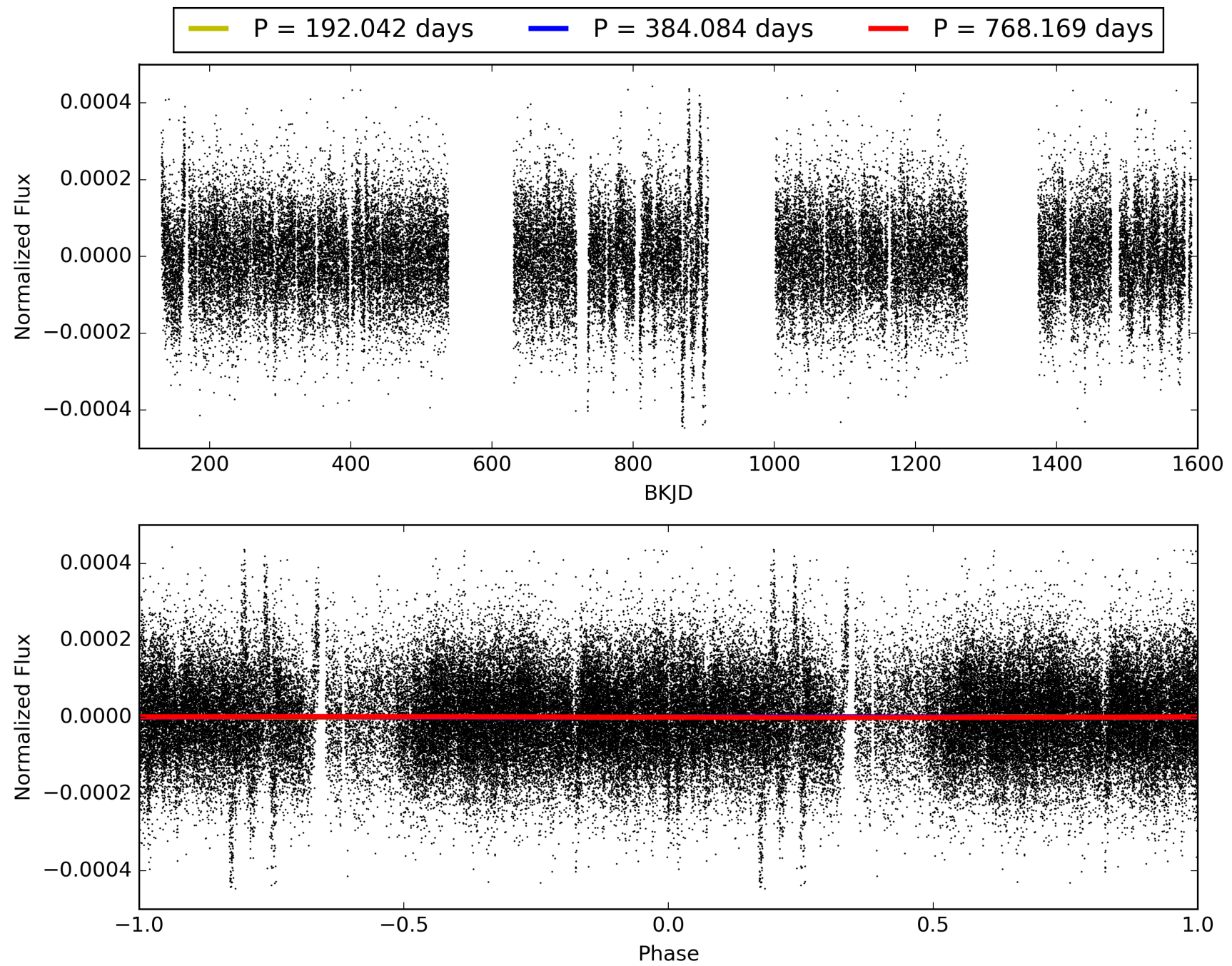
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 18:43:40 Z

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

# TCE 004763020-01, PDC Light Curves

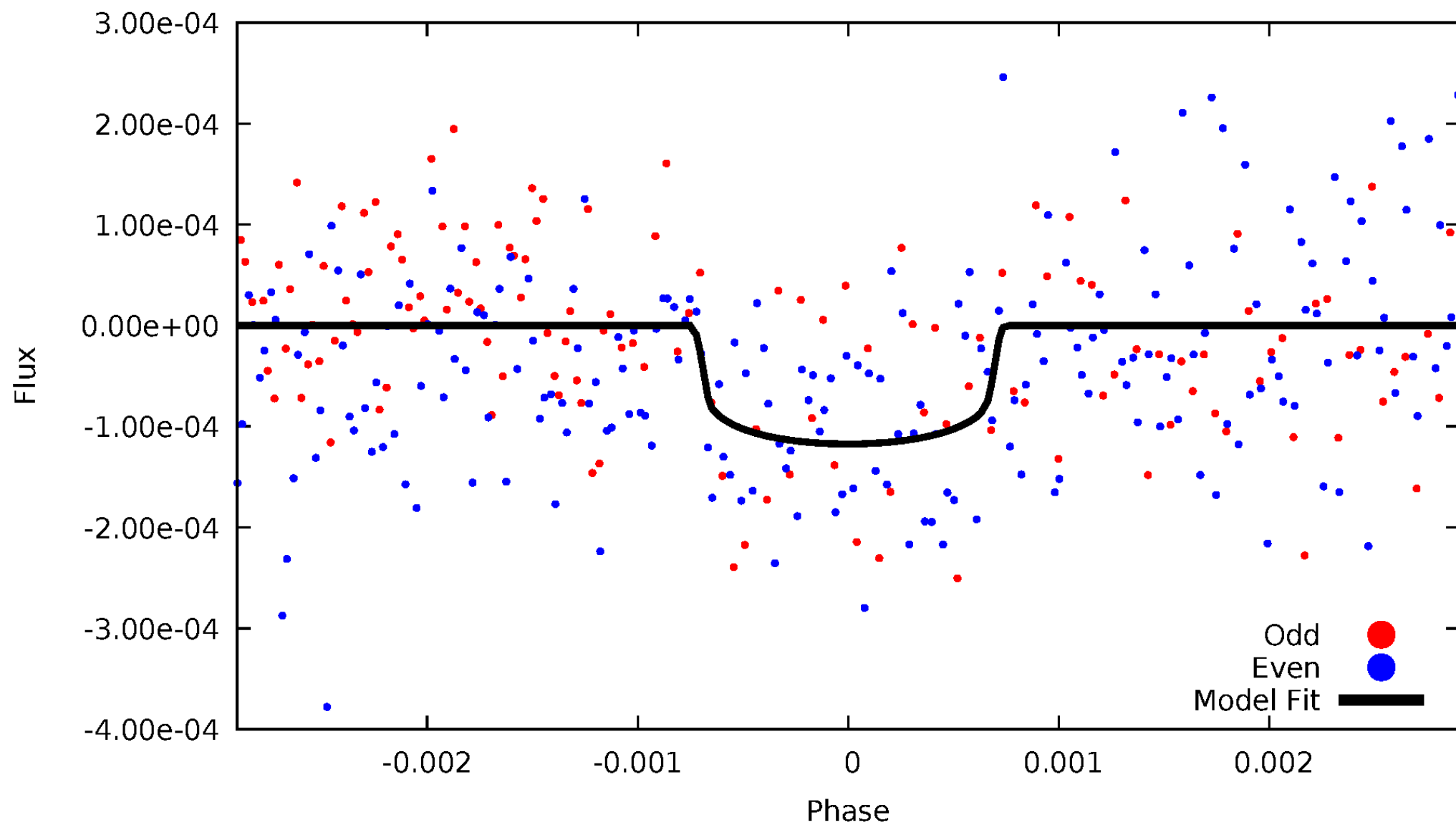


TCE 004763020-01



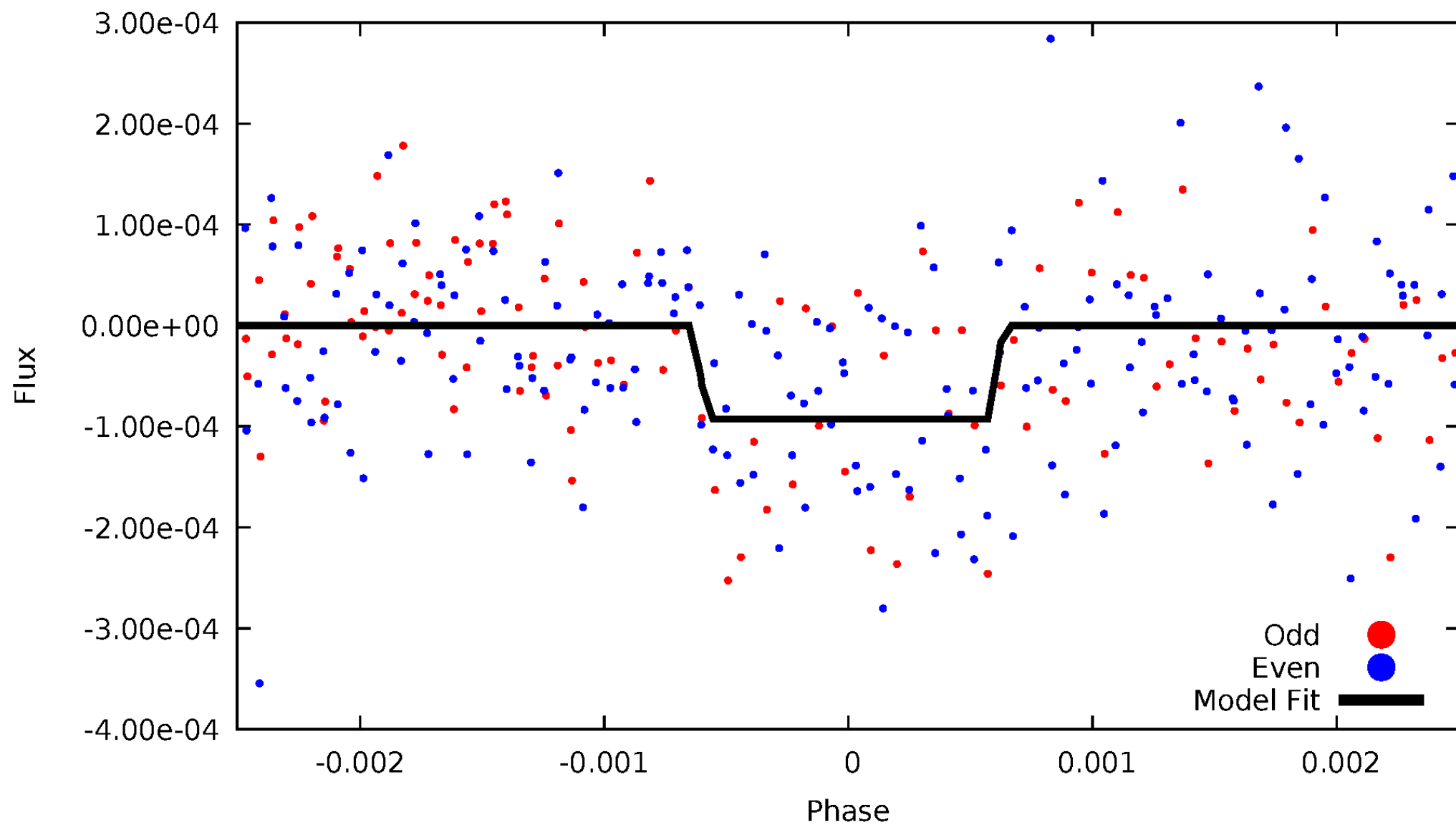
# DV Odd/Even

TCE 004763020-01



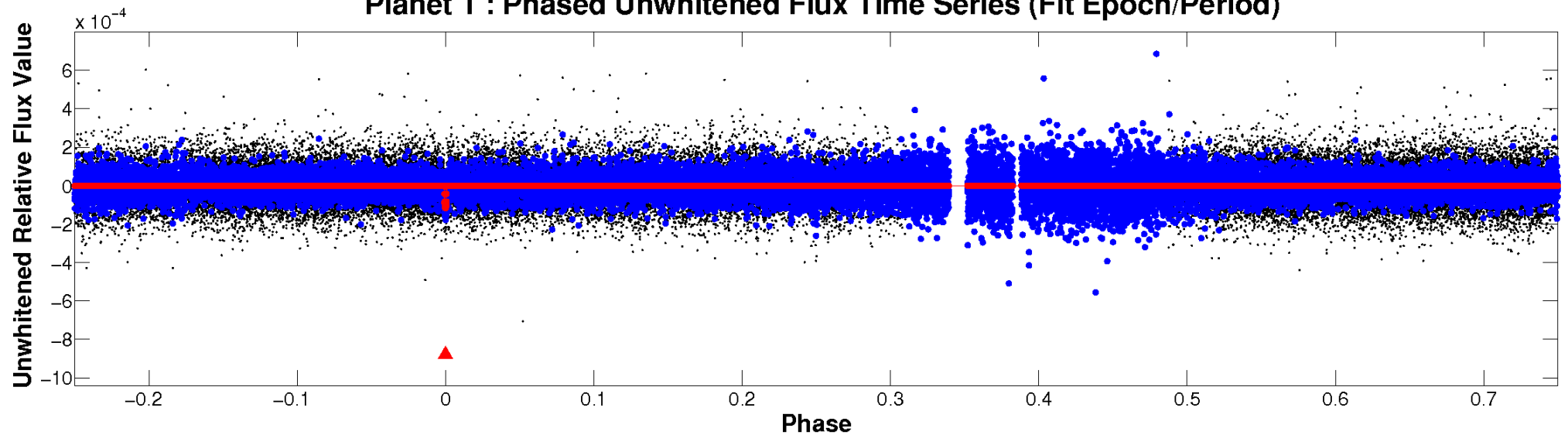
# ALT Odd/Even

TCE 004763020-01

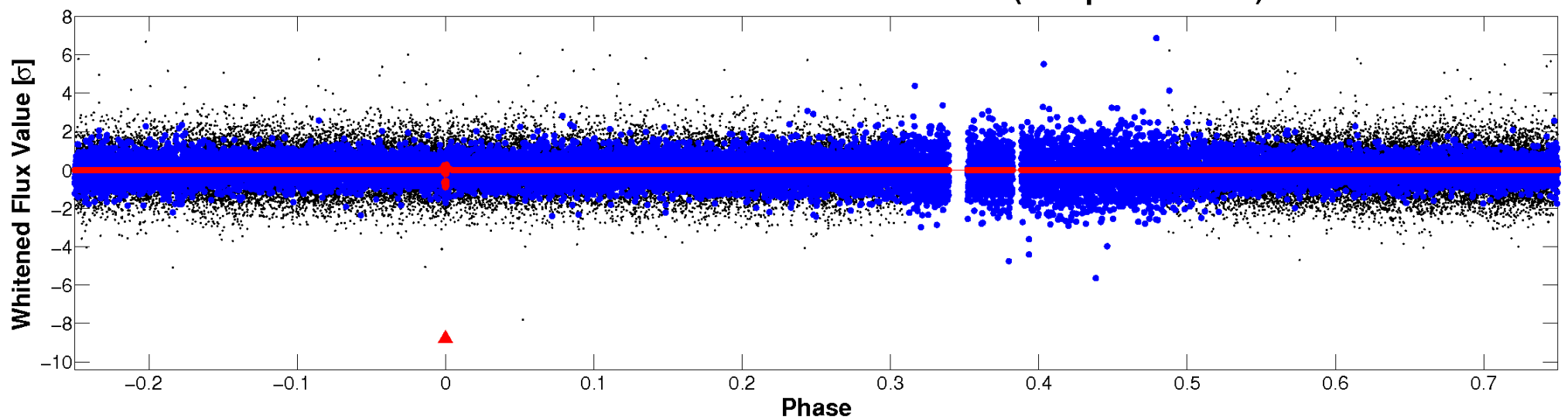


# Non-Whitened Vs. Whitened Light Curve

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



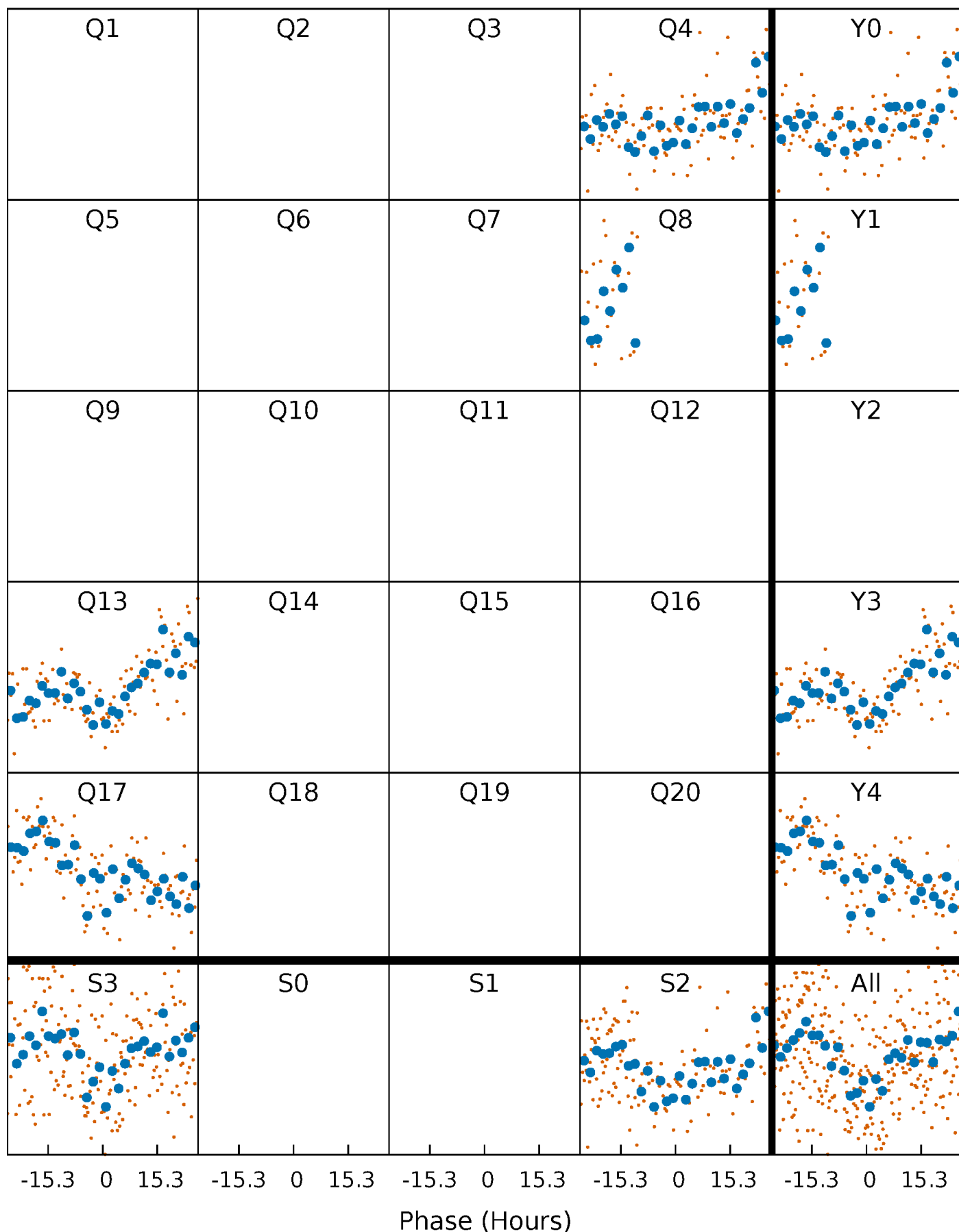
Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)





# PDC Quarter-Phased Transit Curves

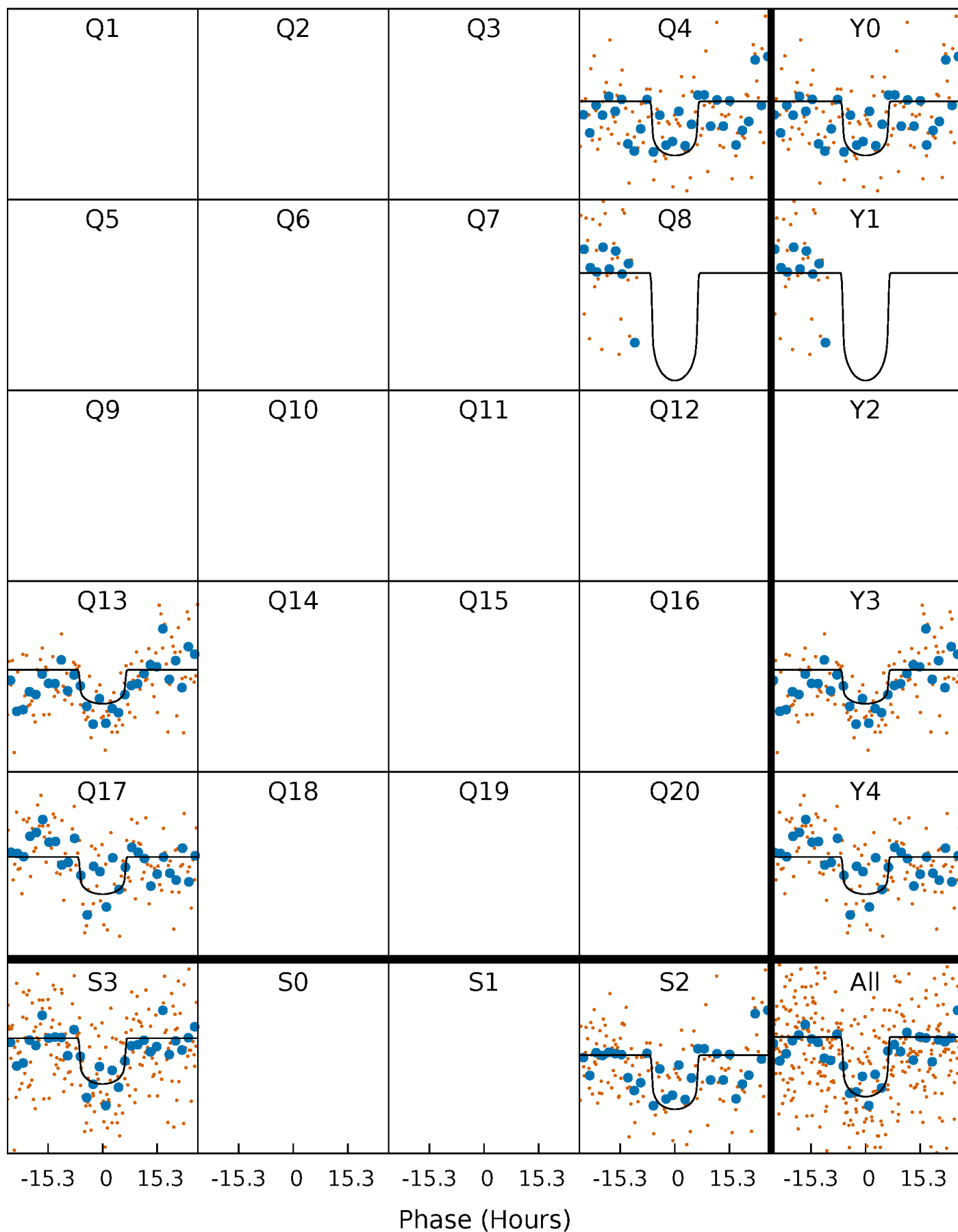
TCE 004763020-01 P=384.084496 Days  $T_0=418.706361$  (BKJD)





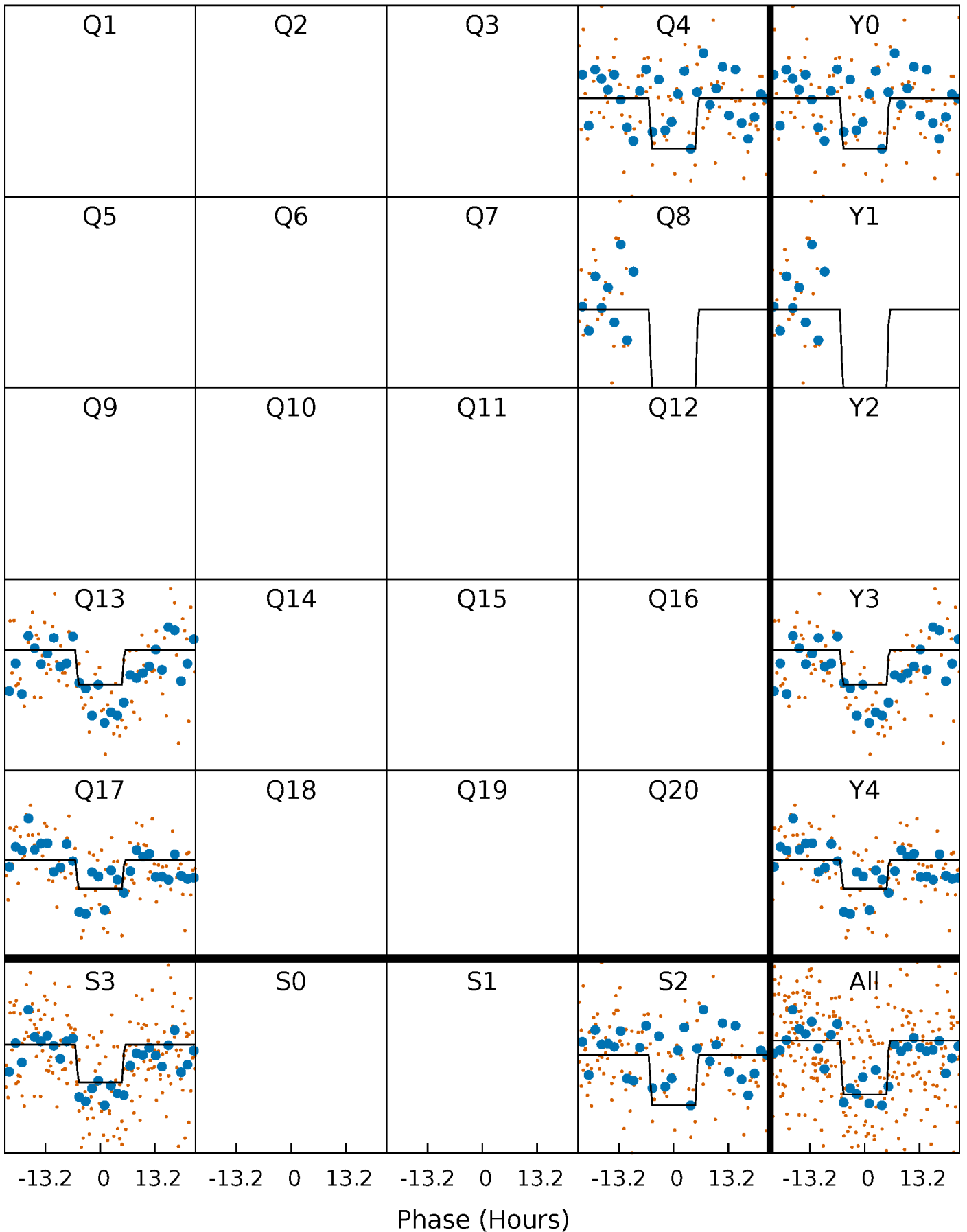
# DV Quarter-Phased Transit Curves

TCE 004763020-01     $P=384.084496$  Days     $T_0=418.706361$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

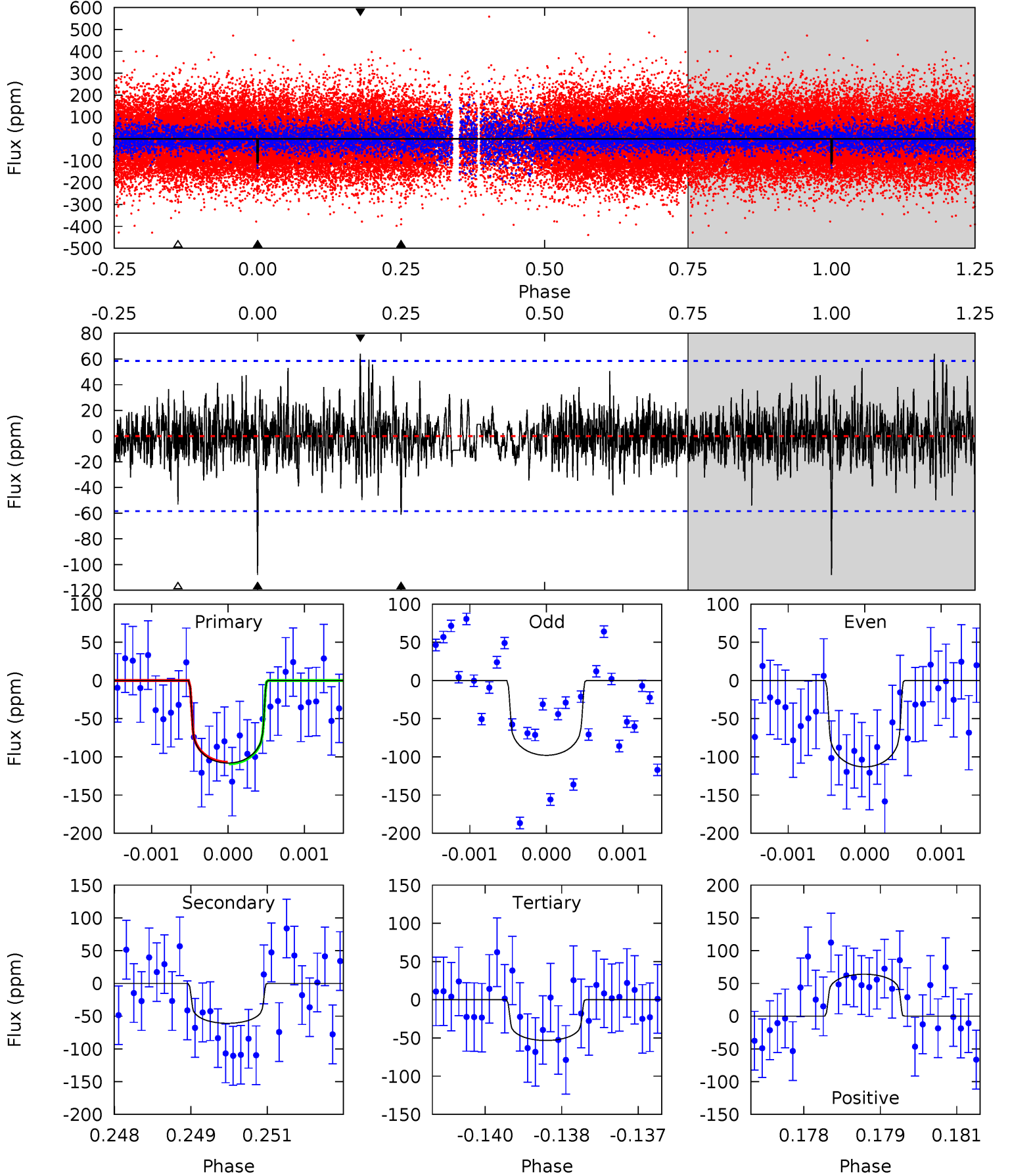
TCE 004763020-01 P=384.089627 Days  $T_0=418.670959$  (BKJD)



# DV Model-Shift Uniqueness Test

004763020-01,  $P = 384.084496$  Days,  $E = 34.621865$  Days

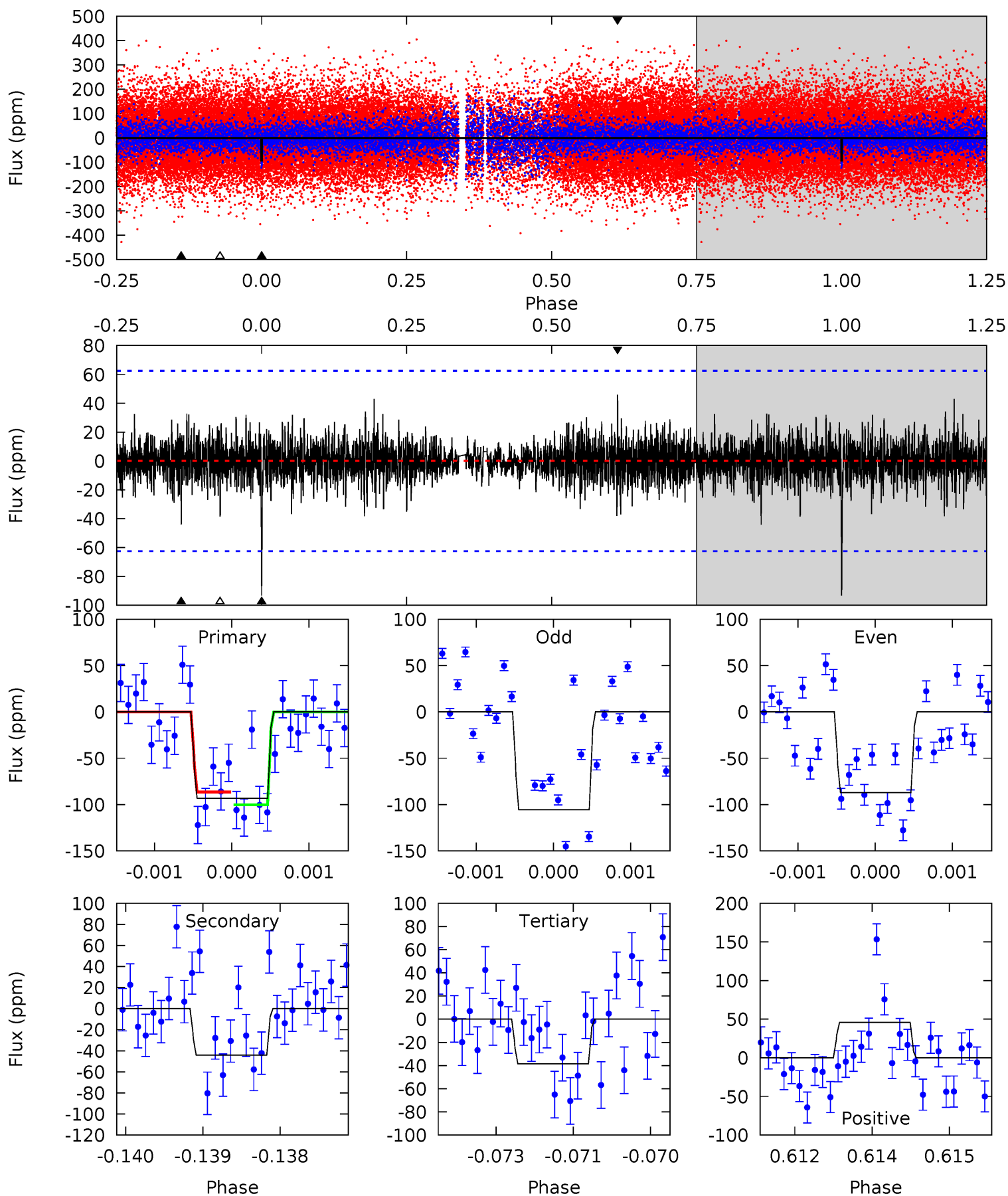
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.95	5.61	4.90	5.89	5.38	3.18	1.27	5.04	4.06	0.71	-0.28	0.66	1.10	0.37	0.10



# Alt Model-Shift Uniqueness Test

004763020-01,  $P = 384.089627$  Days,  $E = 34.581332$  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
8.08	3.82	3.33	3.97	5.41	3.23	0.87	4.75	4.11	0.49	-0.15	0.75	0.88	0.33	0.60



### Stellar Parameters For KIC 004763020

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5884^{+177}_{-133}$	$3.979^{+0.323}_{-0.129}$	$-0.480^{+0.350}_{-0.200}$	$1.628^{+0.341}_{-0.511}$	$0.921^{+0.142}_{-0.095}$	$0.301^{+0.621}_{-0.117}$
	+3%/-2%	+8%/-3%	+73%/-42%	+21%/-31%	+15%/-10%	+206%/-39%
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 004763020-01 / KOI 8097.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-61 \pm 11$	$1.95^{+0.65}_{-0.60}$	$458^{+29}_{-41}$	$4965^{+730}_{-501}$	$9029^{+9997}_{-4071}$
Alt.	$-44 \pm 12$	$1.63^{+0.61}_{-0.58}$	$455^{+33}_{-38}$	$4967^{+1019}_{-555}$	$9328^{+14114}_{-4715}$

$T_{max}$  = 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

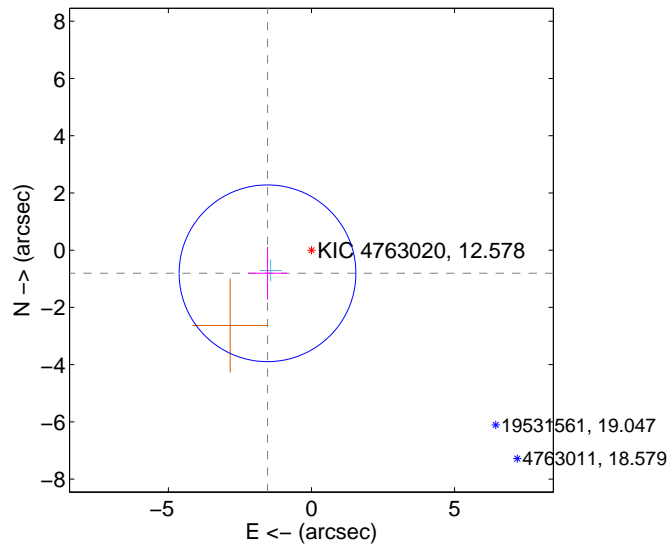
Supplemental centroid analysis for 004763020-01. Kepler magnitude: 12.58. Transit SNR 7.22

There are 1 quarters with good PRF difference image offsets

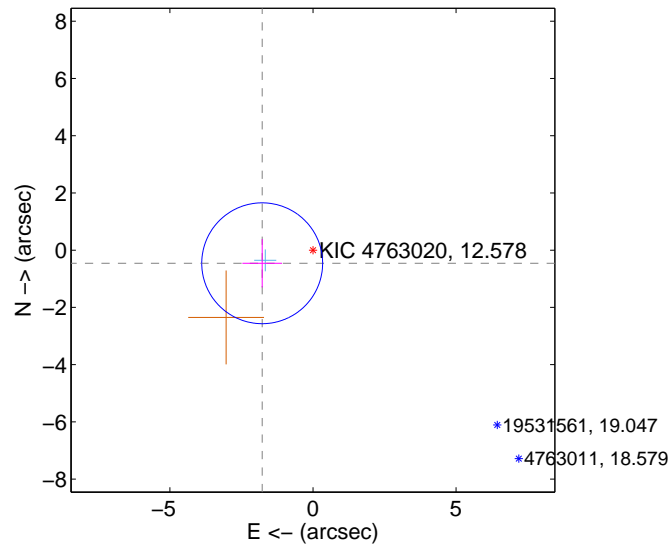
The direct PRF centroid is offset from the target star catalog position by about 0.43 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.735 \pm 1.029$	1.69	$1.536 \pm 0.680$	$-0.808 \pm 0.922$
PRF-fit source offset from KIC position	$1.833 \pm 0.704$	2.60	$1.775 \pm 0.693$	$-0.458 \pm 0.845$
photometric centroid source offset	$1.74 \pm 1.77$	0.98	$-1.66 \pm 1.76$	$0.53 \pm 1.84$

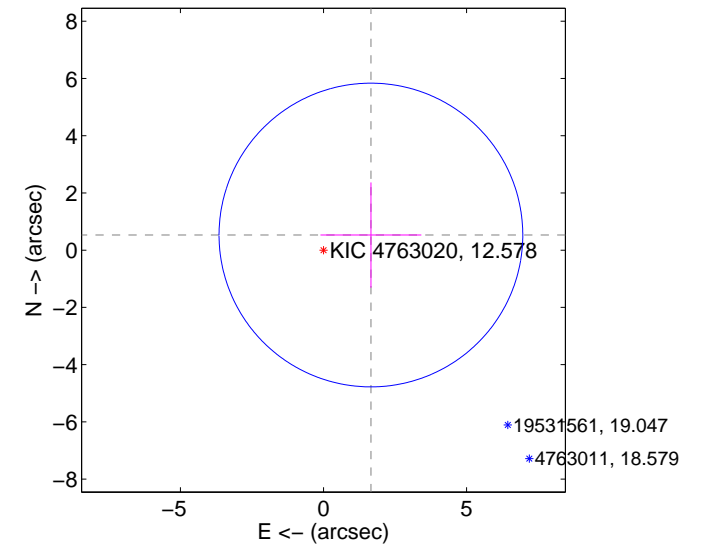
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

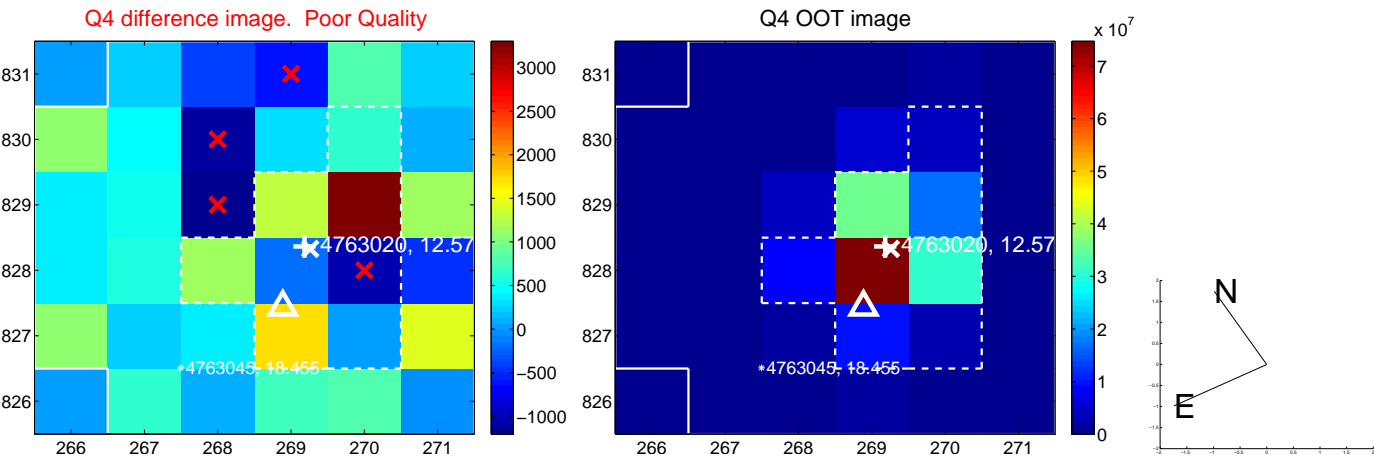
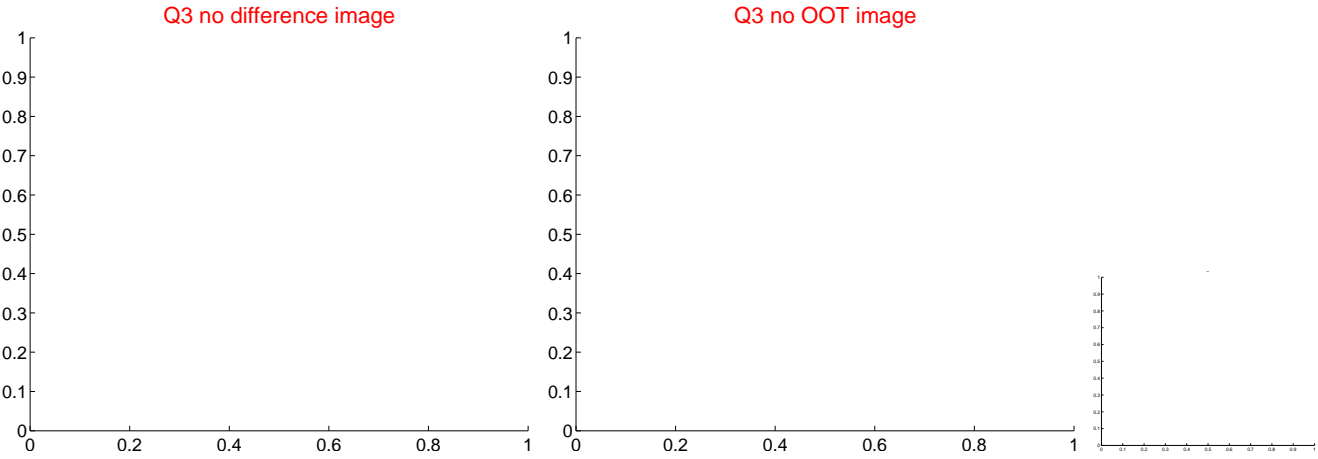
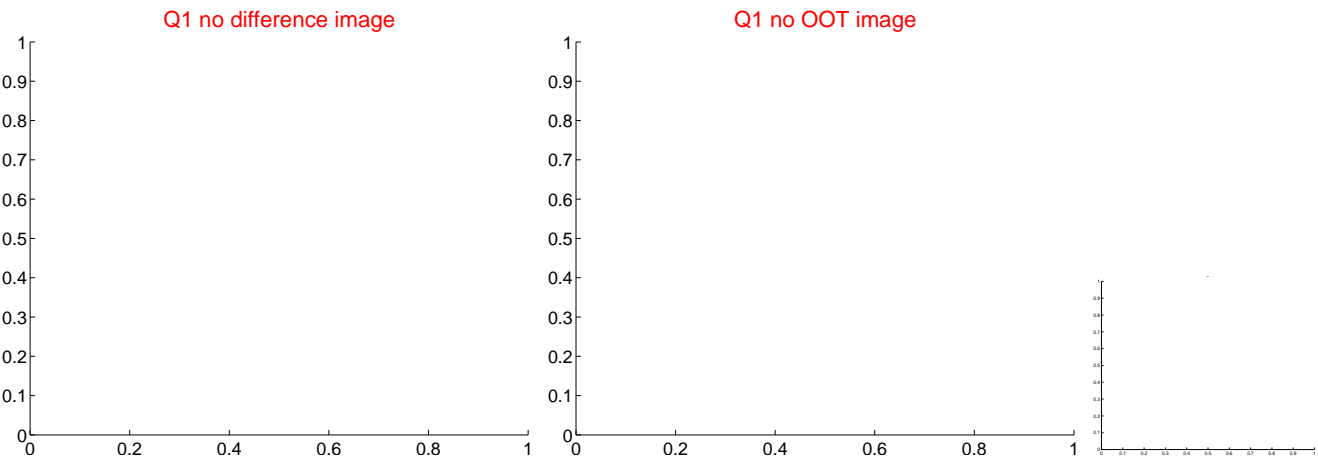


offset from photometric centroids



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.



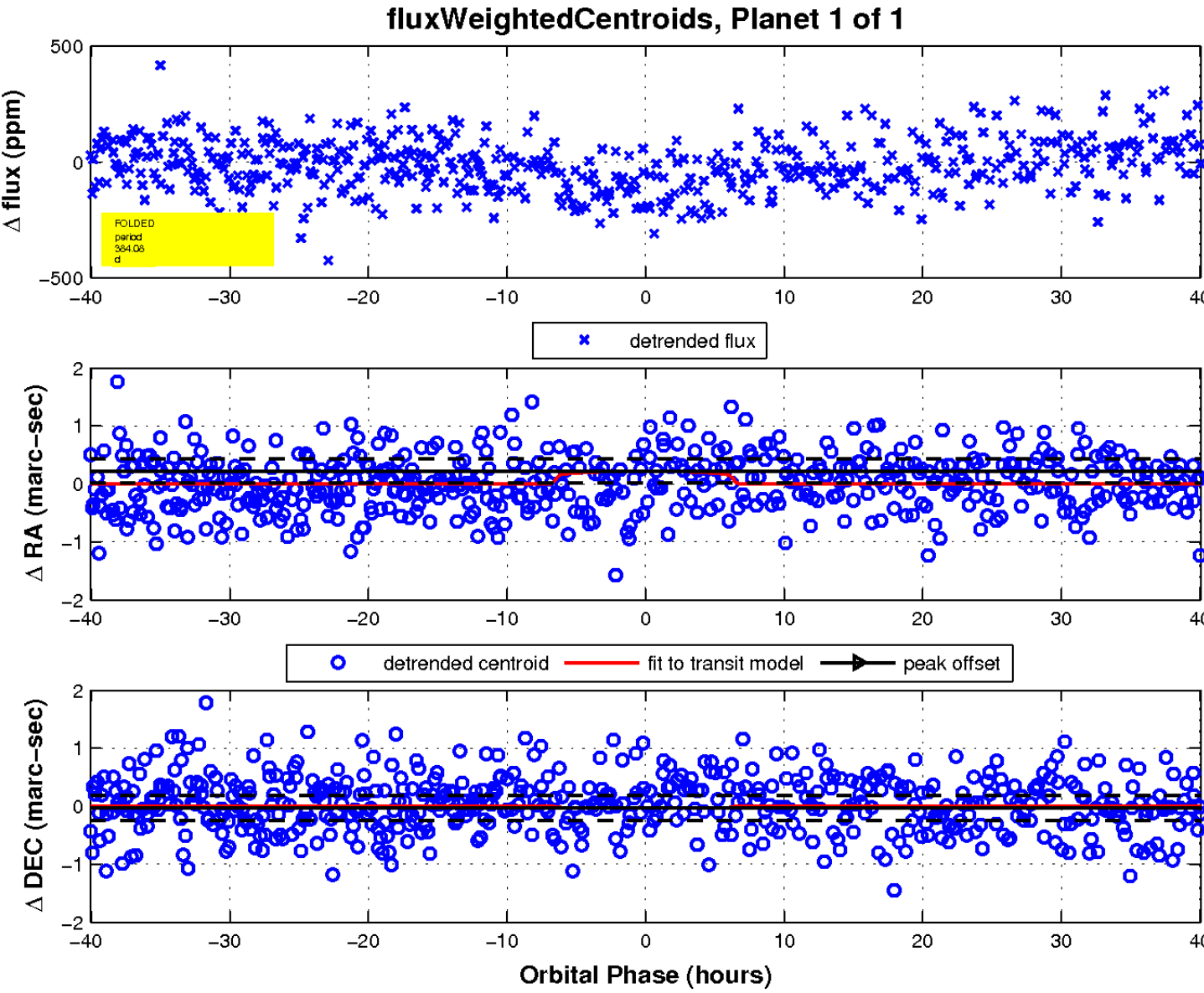
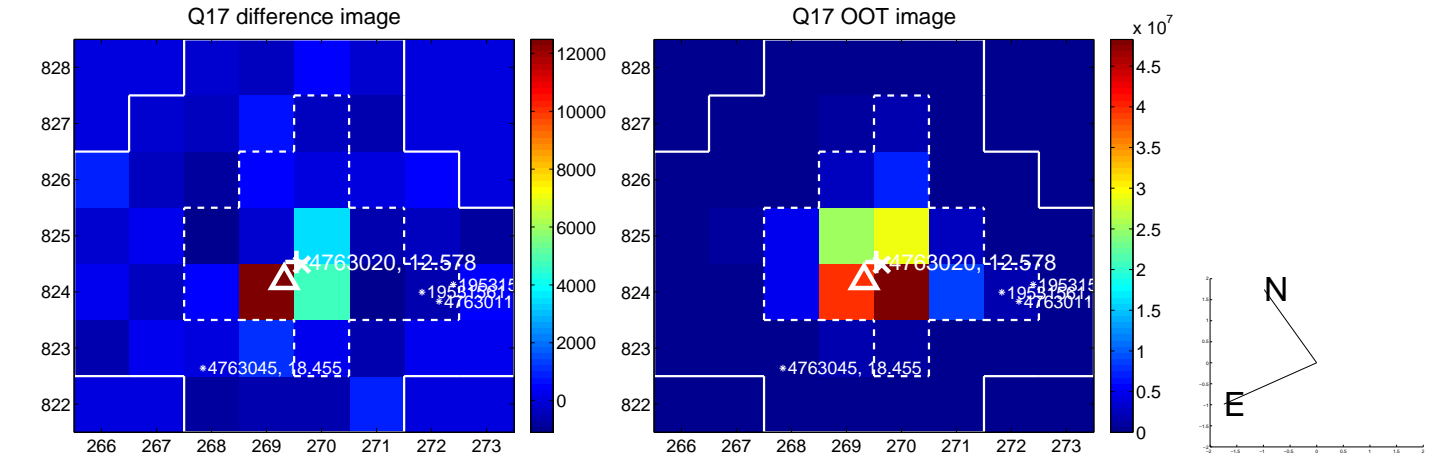
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

