

# KIC 008741820

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008741820-01	OBS	No	368.455172	235.109779	861.1	23.795	9.6	9.9	0.99	6106	3.99	1.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008741820-01	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.

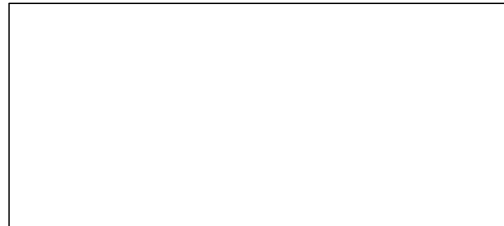
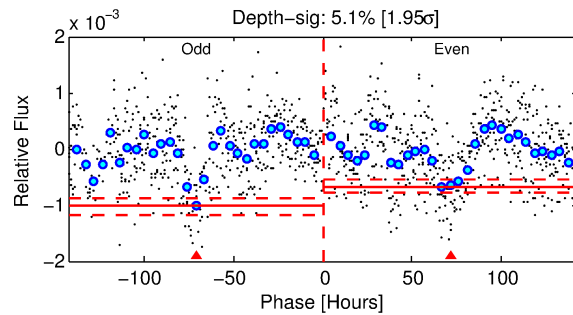
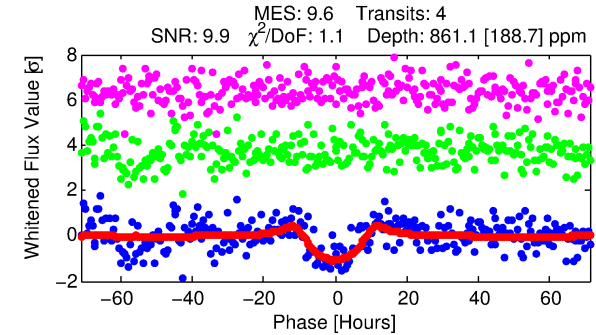
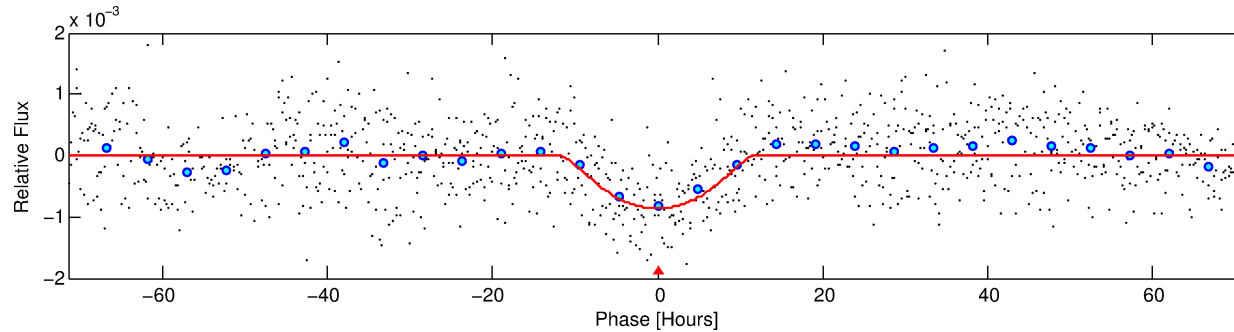
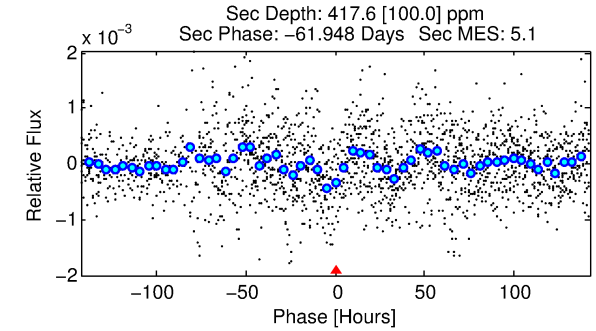
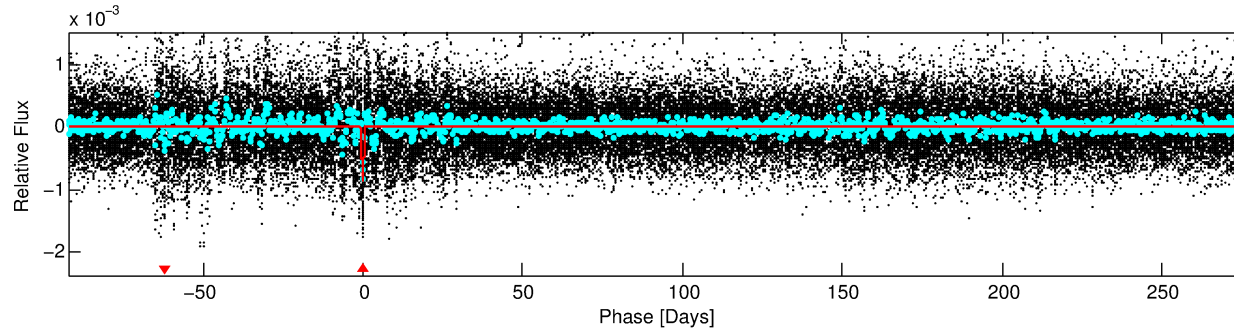
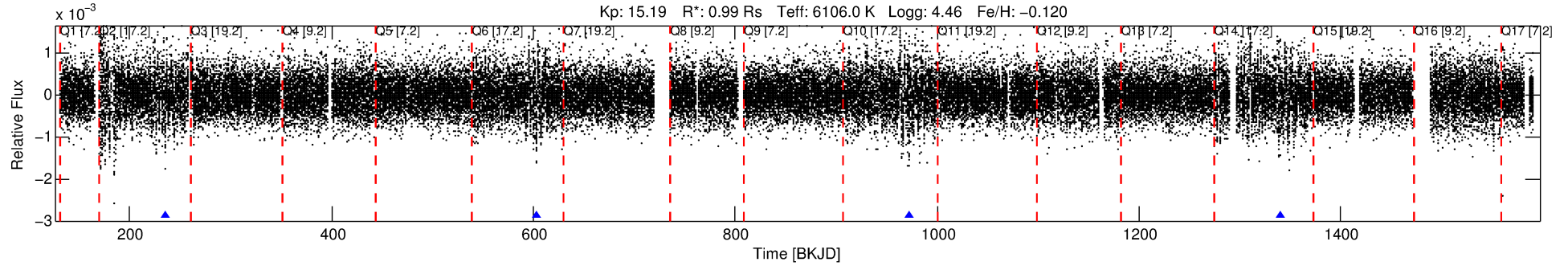
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008741820-01

No Significant Match Found

# DV One-Page Summary

KIC: 8741820 Candidate: 1 of 1 Period: 368.455 d



## DV Fit Results:

Period = 368.45517 [0.02128] d  
Epoch = 235.1098 [0.0363] BKJD  
Rp/R\* = 0.0369 [0.0143]  
a/R\* = 42.56 [10.15]  
b = 0.97 [0.04]  
Seff = 1.18 [0.51]  
Teq = 266 [29] K  
Rp = 3.99 [2.04] Re  
a = 1.0201 [0.2857] AU  
Ag = 15011.26 [13660.96] [1.10σ]  
Teffp = 4546 [938] K [4.56σ]

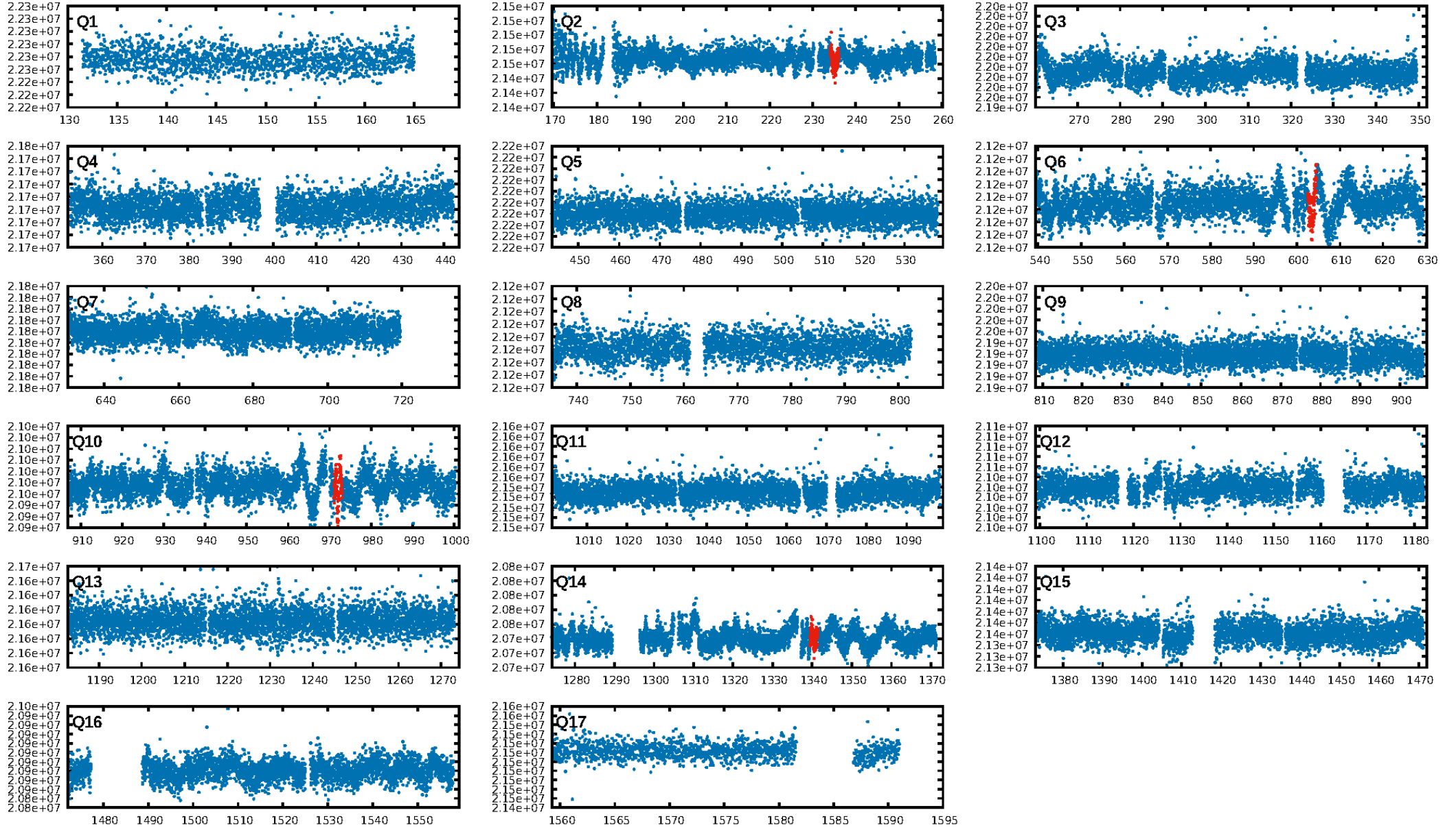
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 5.4%  
ModelChiSquareGof-sig: 99.9%  
**Bootstrap-pfa: 1.37e-09**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: 36.45  
Centroid-sig: 1.2%  
Centroid-so: 4.023 arcsec [2.05σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [3/3]

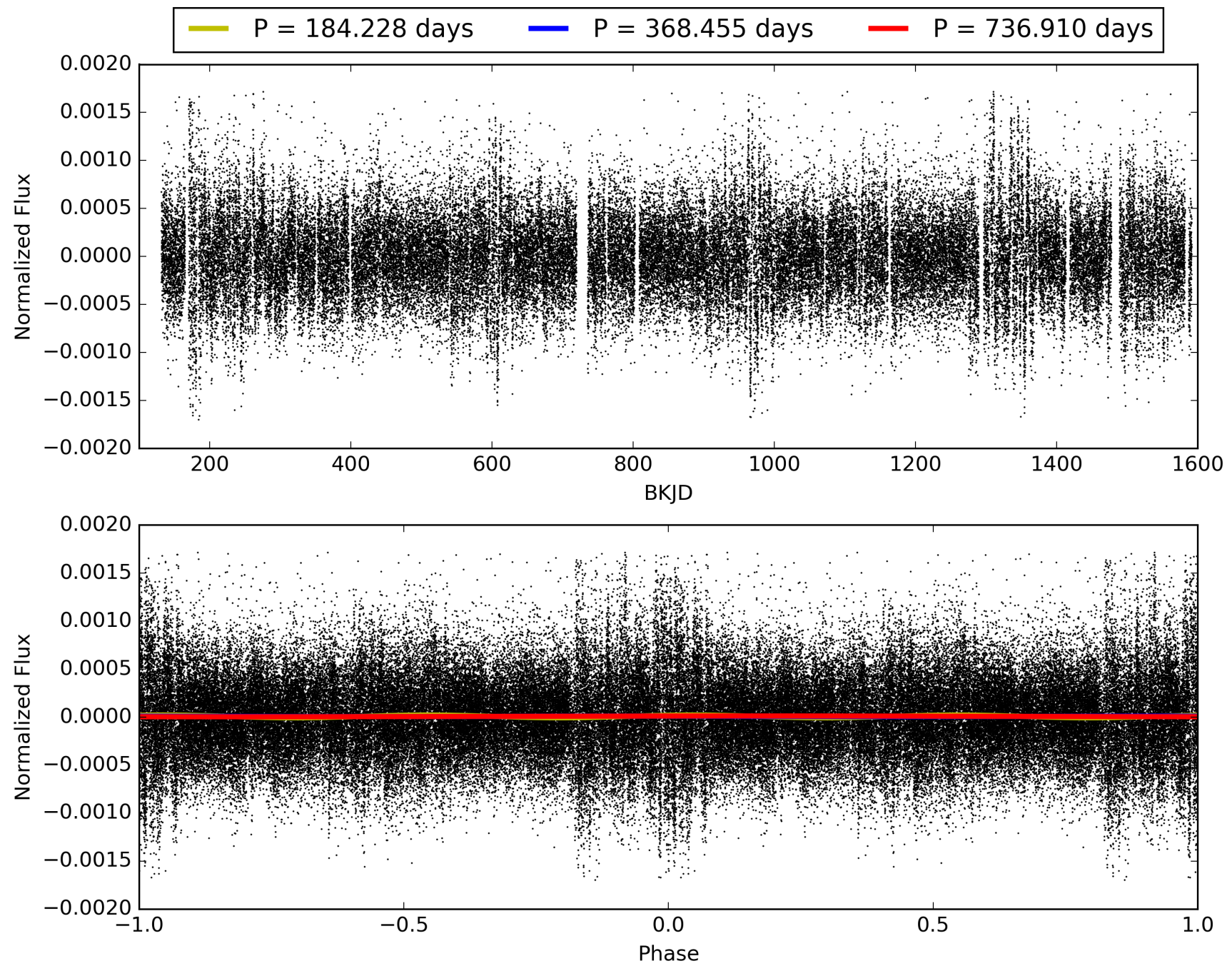
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:57:25 Z

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

# TCE 008741820-01, PDC Light Curves

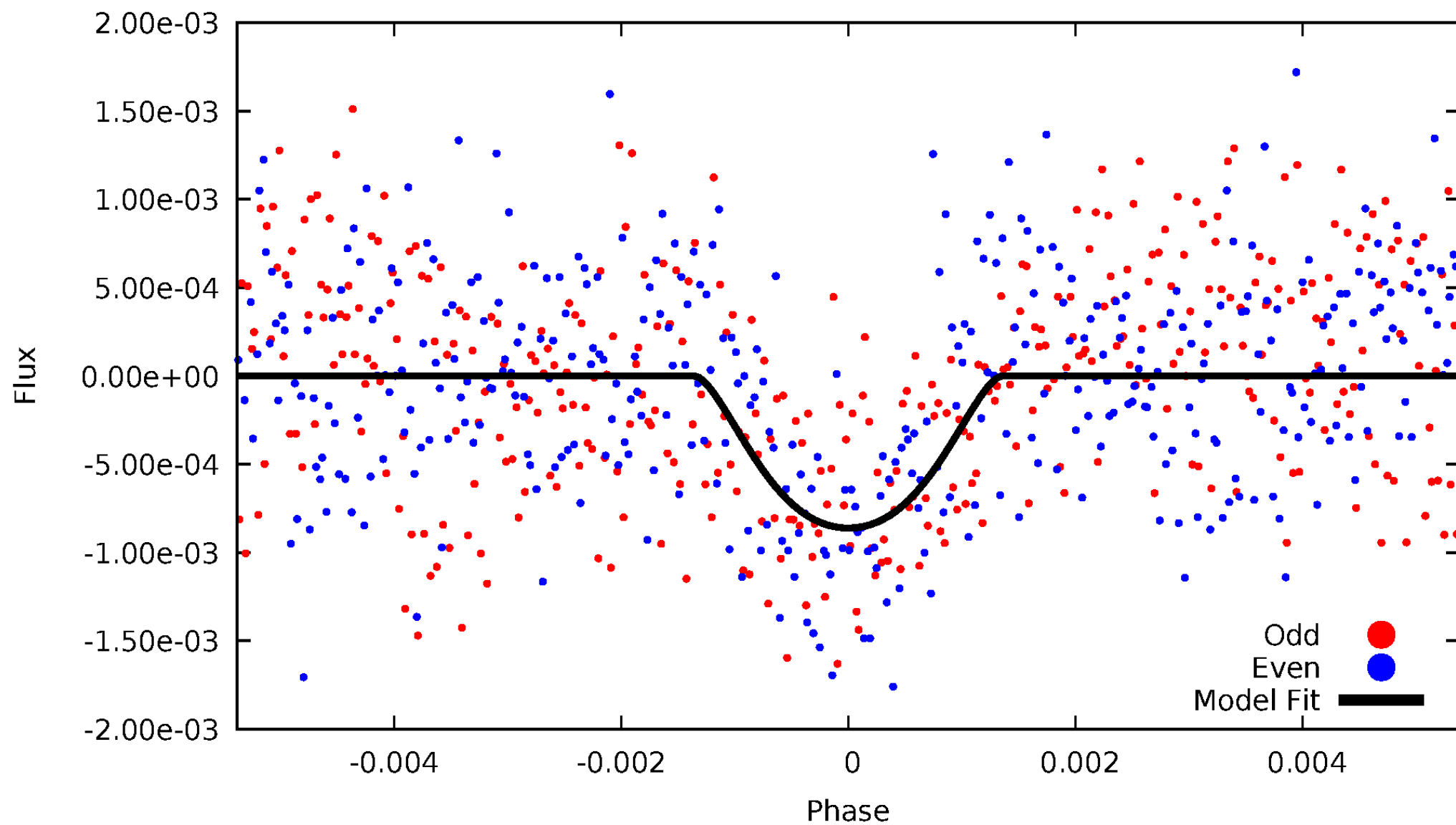


TCE 008741820-01



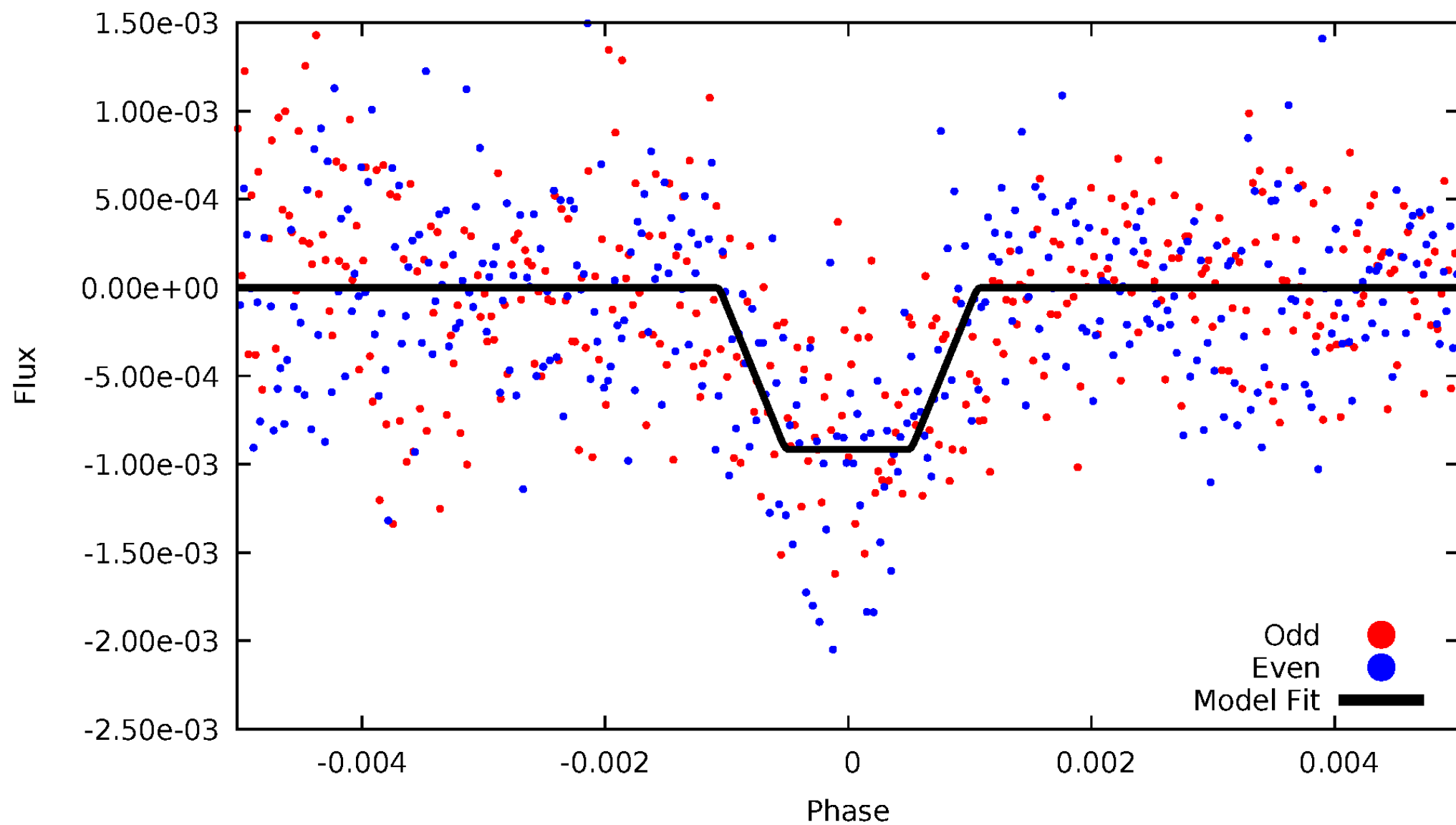
# DV Odd/Even

TCE 008741820-01



# ALT Odd/Even

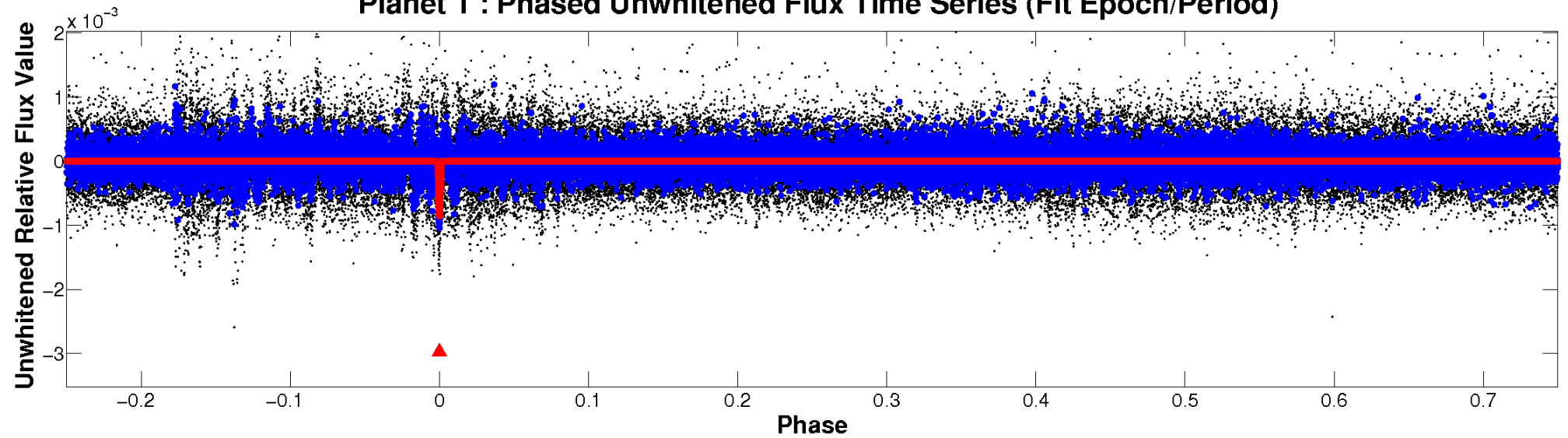
TCE 008741820-01



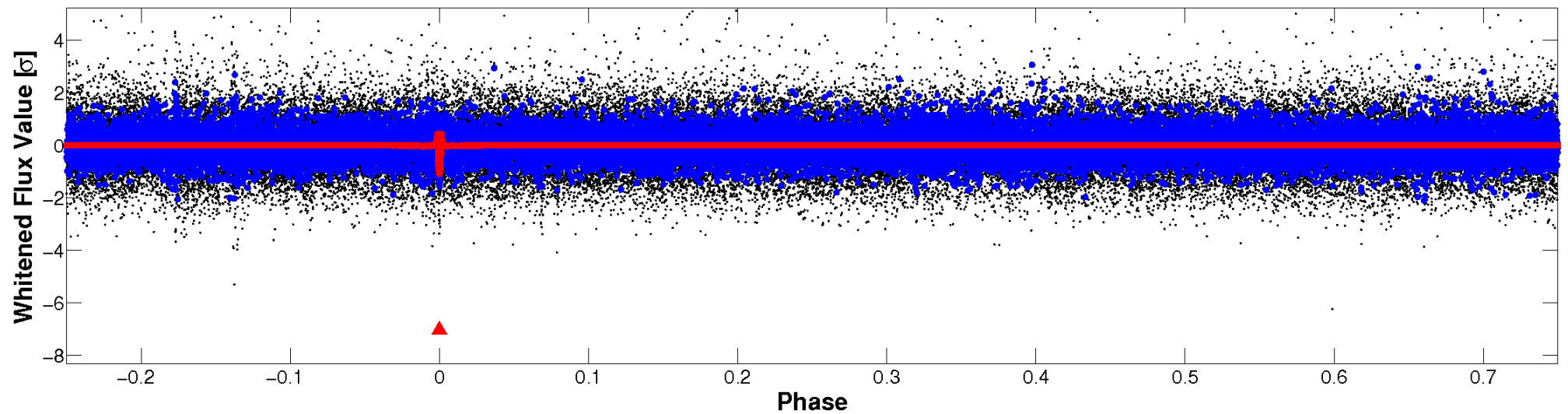


# Non-Whitened Vs. Whitened Light Curve

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

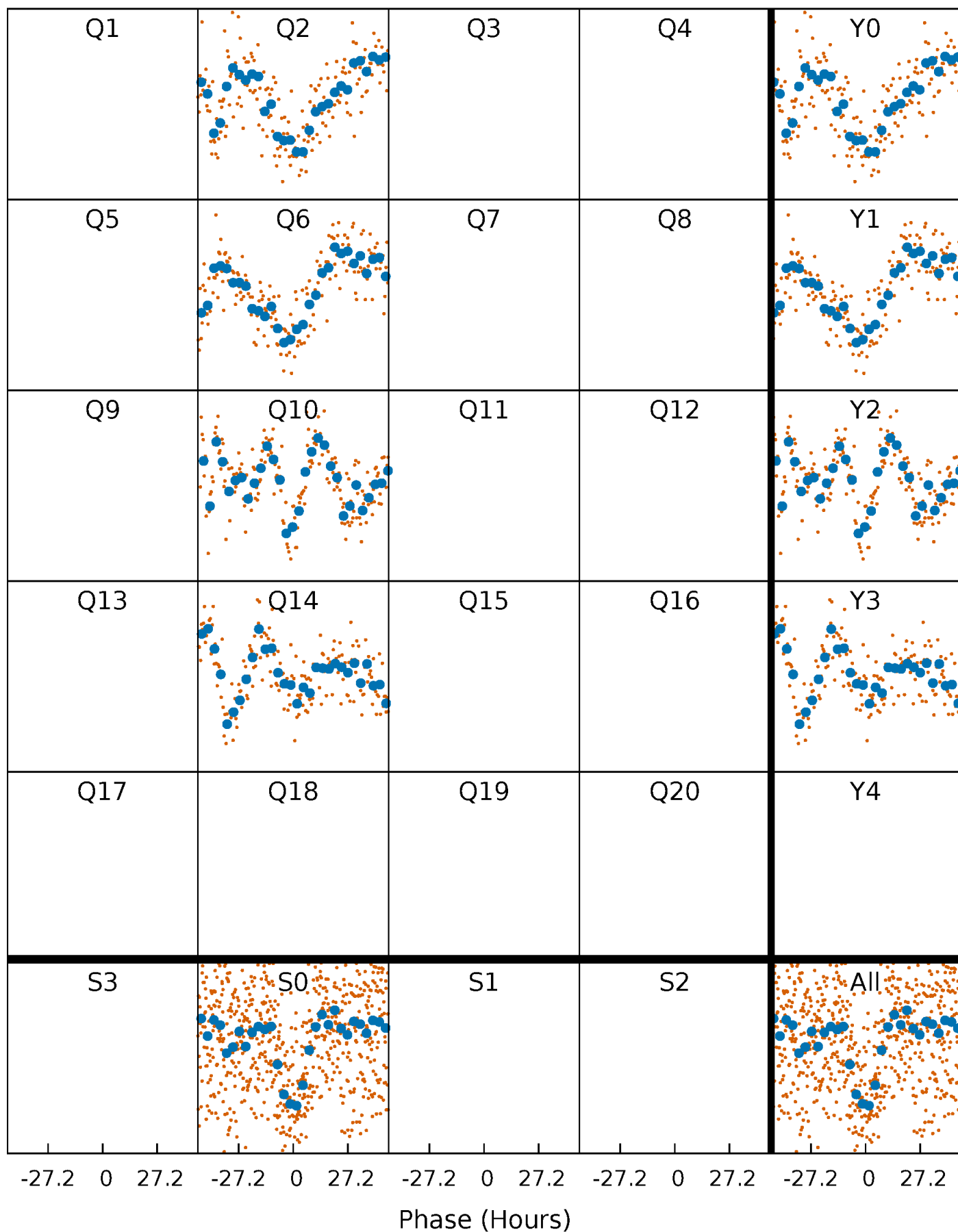


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

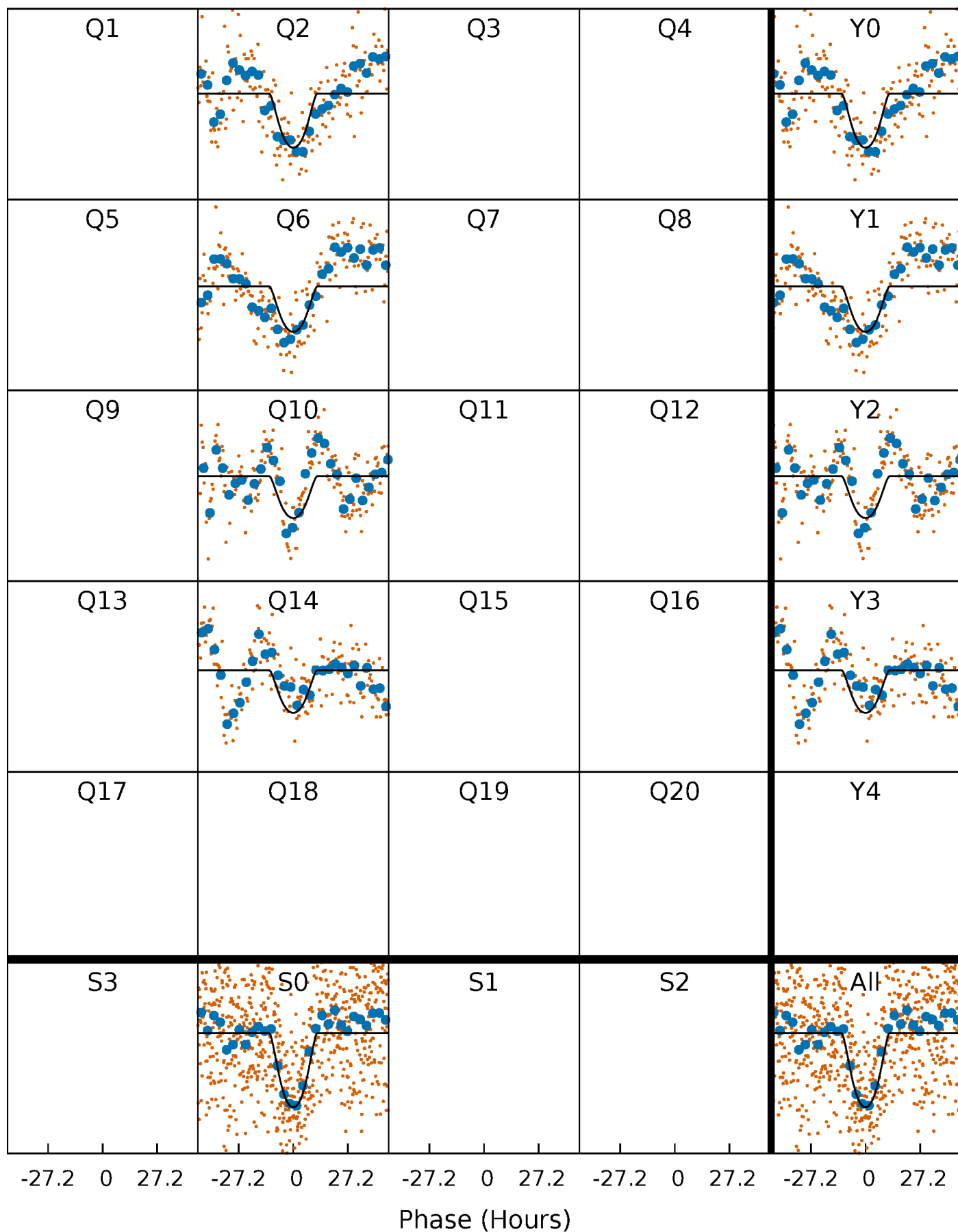
TCE 008741820-01 P=368.455172 Days  $T_0=235.109779$  (BKJD)





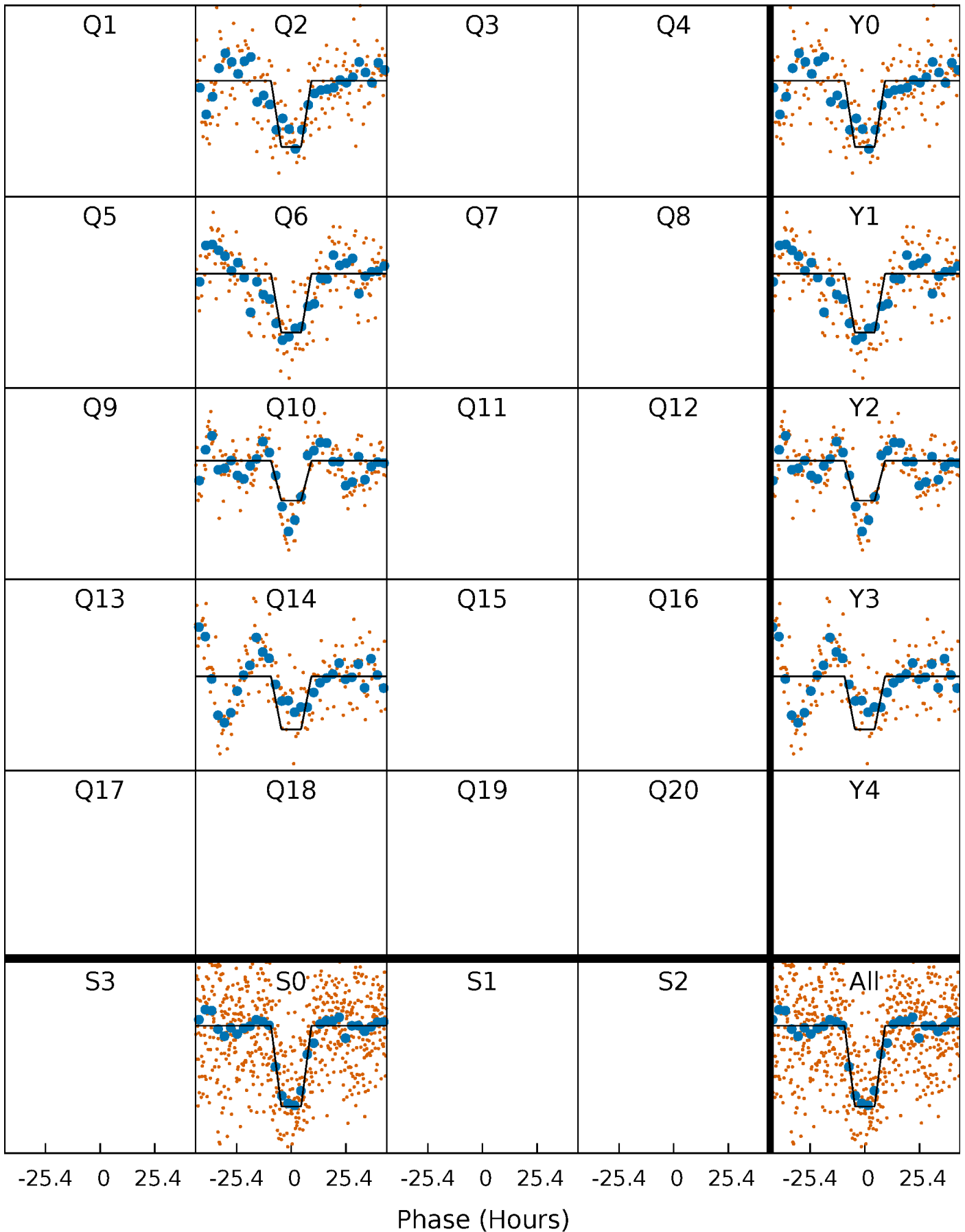
# DV Quarter-Phased Transit Curves

TCE 008741820-01 P=368.455172 Days  $T_0=235.109779$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

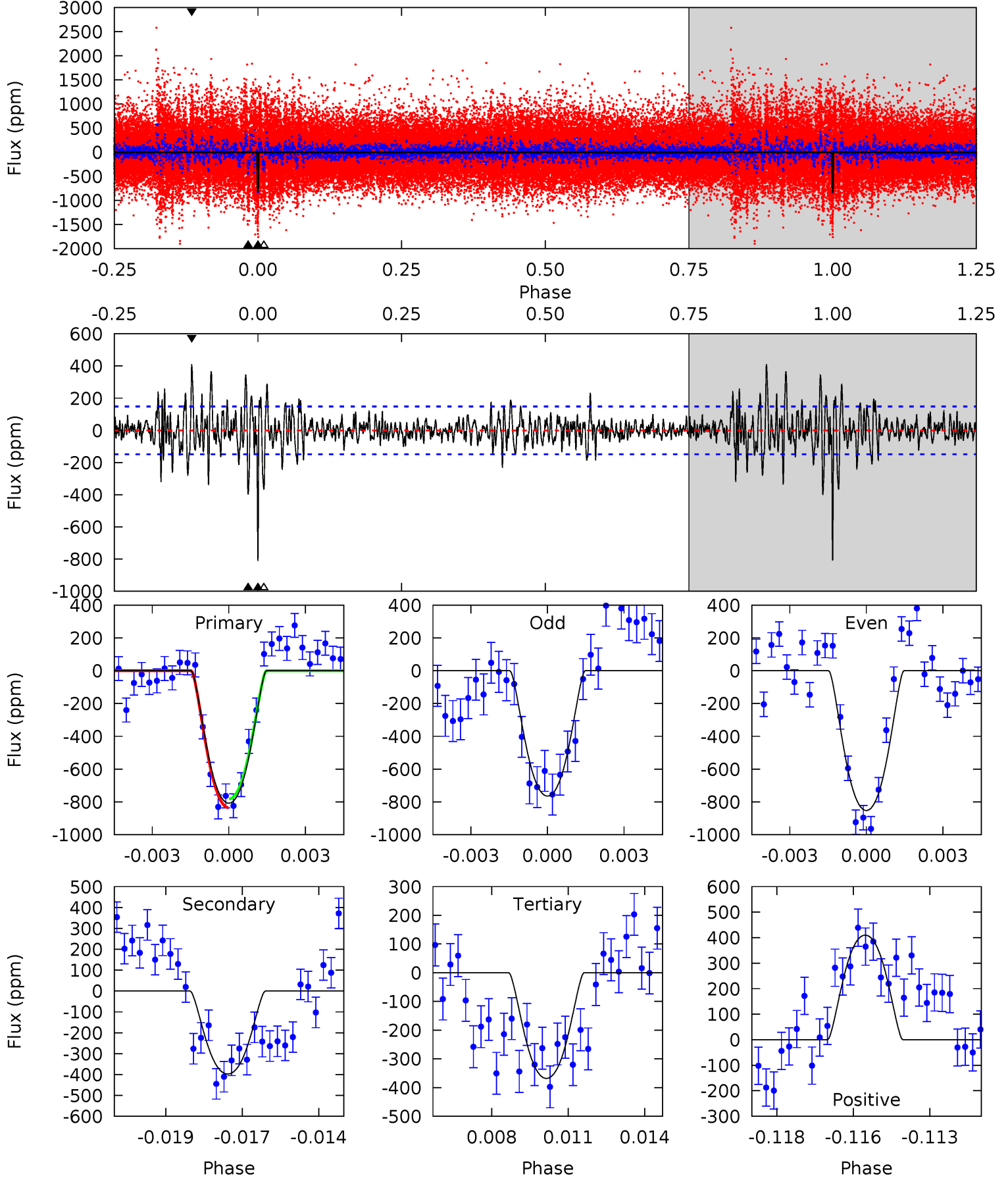
TCE 008741820-01 P=368.444331 Days  $T_0=235.125948$  (BKJD)



# DV Model-Shift Uniqueness Test

008741820-01, P = 368.455172 Days, E = 235.109779 Days

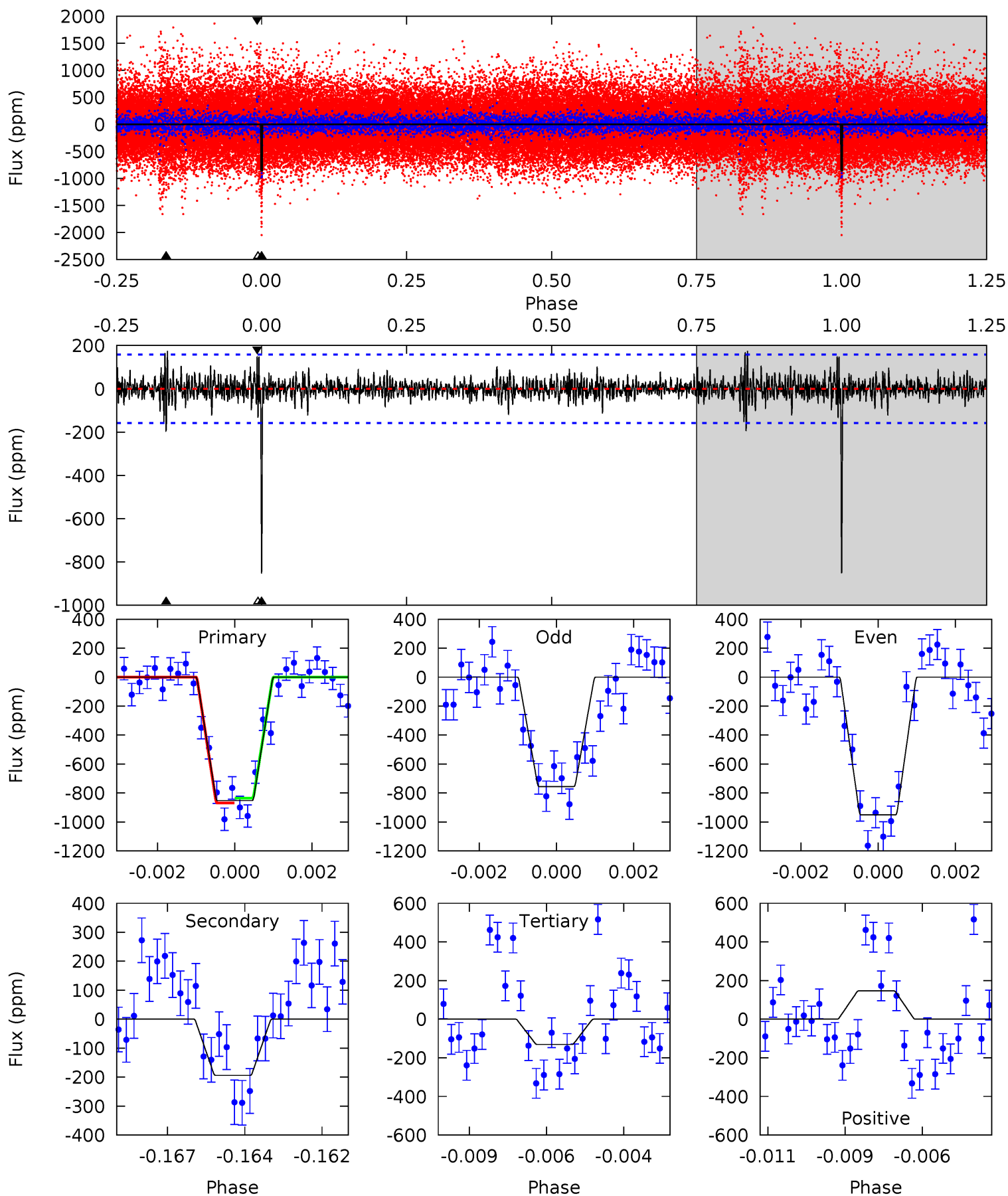
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
28.6	14.1	13.0	14.5	5.27	2.99	2.86	15.6	14.1	1.04	-0.44	1.55	0.95	0.34	0.94



# Alt Model-Shift Uniqueness Test

008741820-01, P = 368.444331 Days, E = 235.125948 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
28.6	6.51	4.39	4.93	5.31	3.07	1.09	24.2	23.7	2.12	1.58	3.29	0.98	0.17	0.56



### Stellar Parameters For KIC 008741820

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6106^{+183}_{-220}$	$4.463^{+0.056}_{-0.224}$	$-0.120^{+0.250}_{-0.350}$	$0.992^{+0.329}_{-0.110}$	$1.036^{+0.148}_{-0.133}$	$1.495^{+0.453}_{-0.828}$
	+3%/-4%	+1%/-5%	+208%/-292%	+33%/-11%	+14%/-13%	+30%/-55%
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 008741820-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-397 \pm 28$	$4.19^{+1.91}_{-1.65}$	$380^{+29}_{-20}$	$4633^{+1129}_{-568}$	$12644^{+21273}_{-6608}$
Alt.	$-194 \pm 30$	$3.54^{+1.66}_{-1.71}$	$378^{+27}_{-18}$	$4321^{+1336}_{-553}$	$8785^{+23276}_{-4856}$

$T_{\text{max}}$  = 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

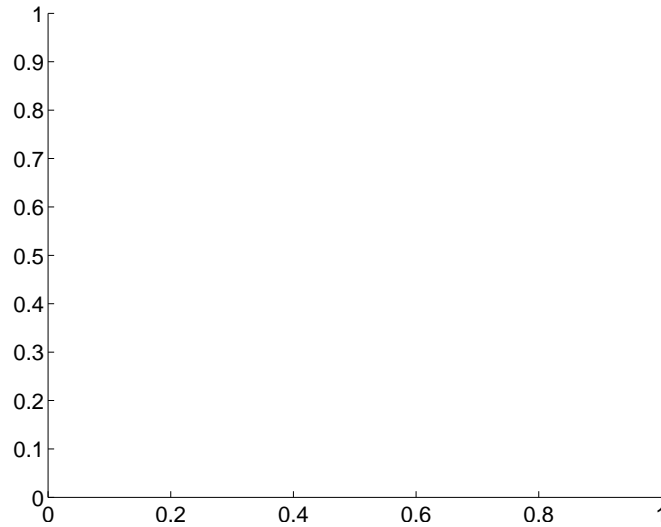
Supplemental centroid analysis for 008741820-01. Kepler magnitude: 15.19. Transit SNR 9.88

There are 0 quarters with good PRF difference image offsets

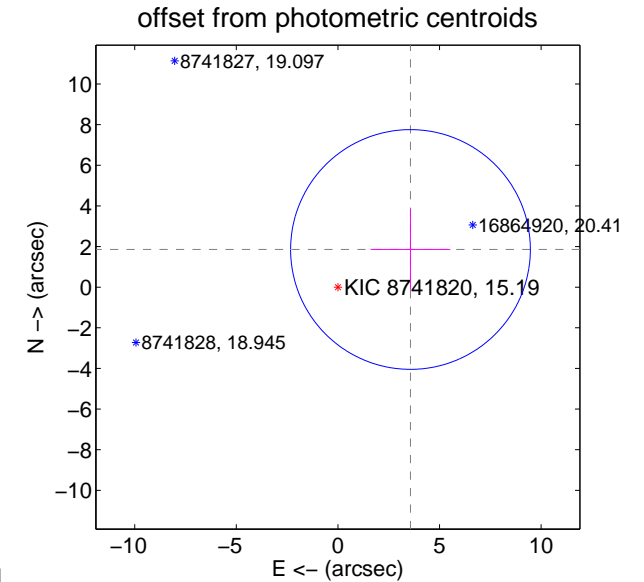
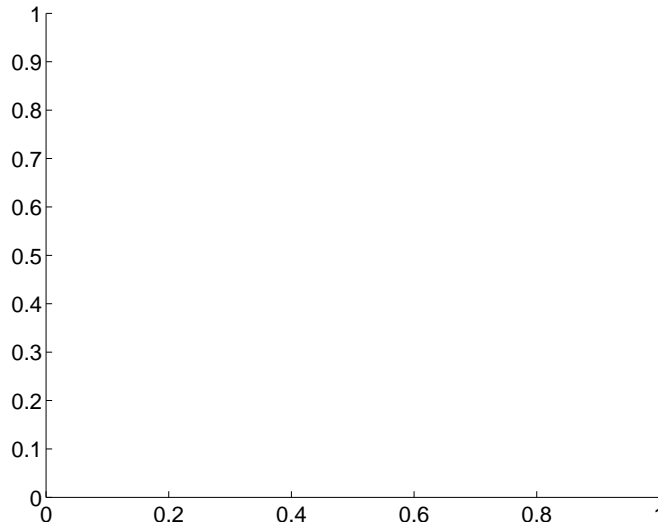
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	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	$4.02 \pm 1.97$	2.05	$-3.57 \pm 1.96$	$1.85 \pm 1.98$

There is no PRF-fit offset from OOT-fit



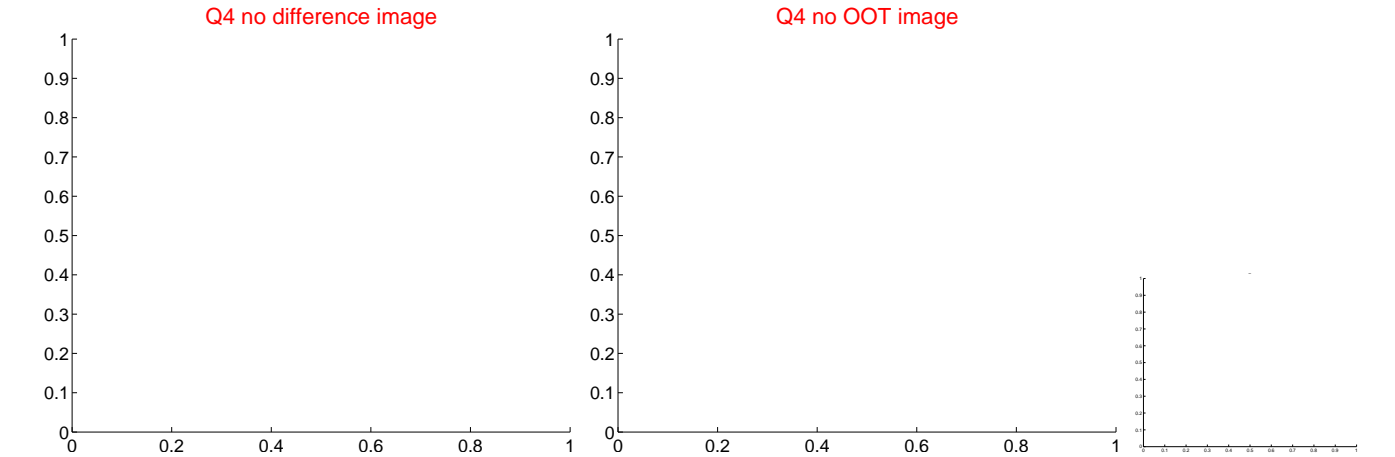
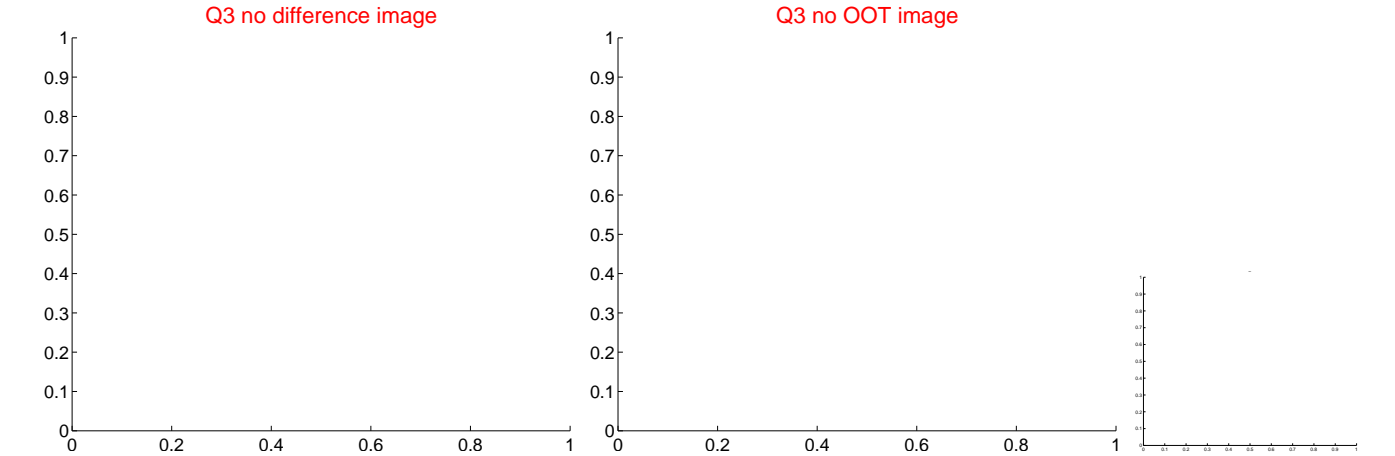
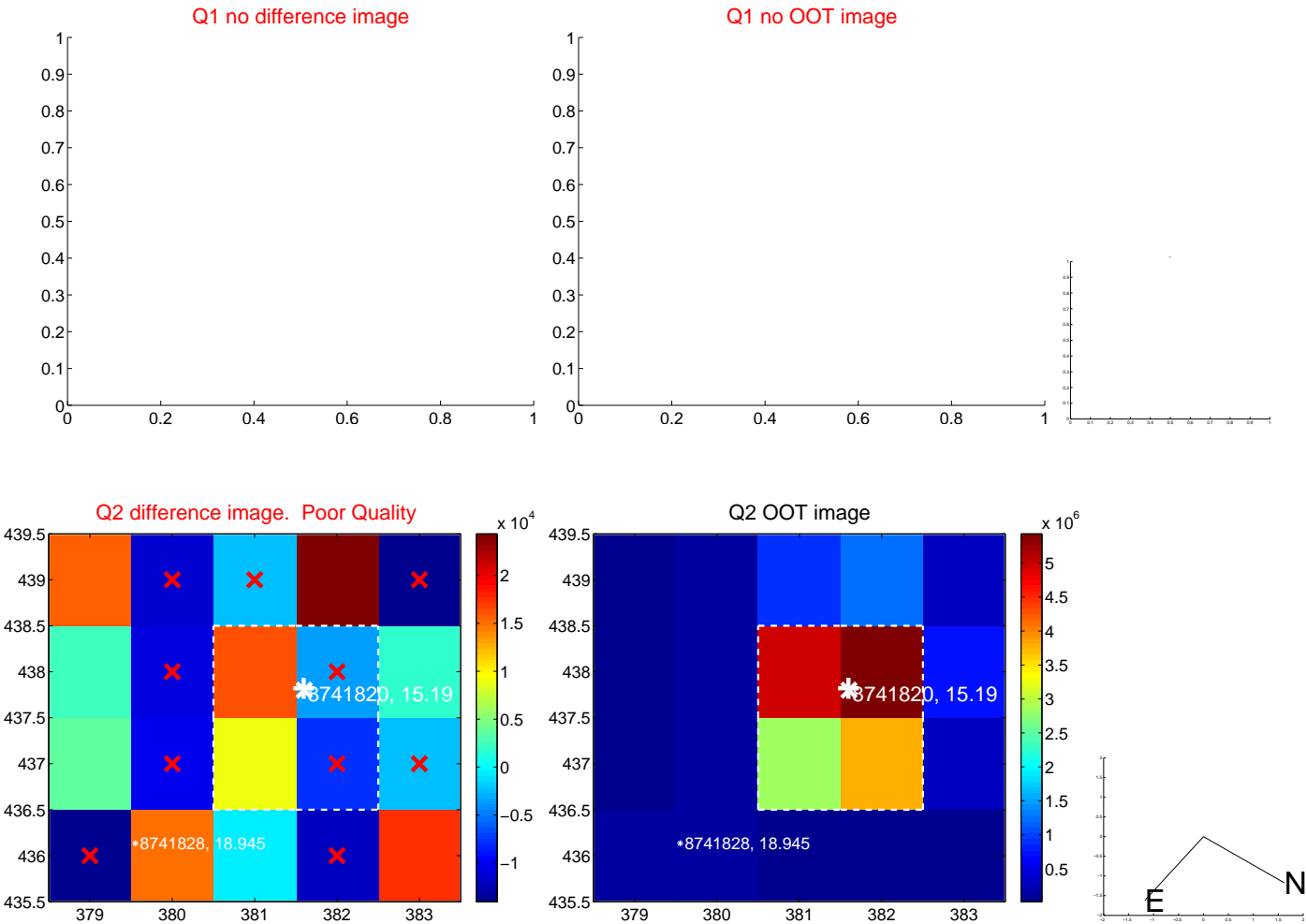
There is no PRF-fit offset from KIC



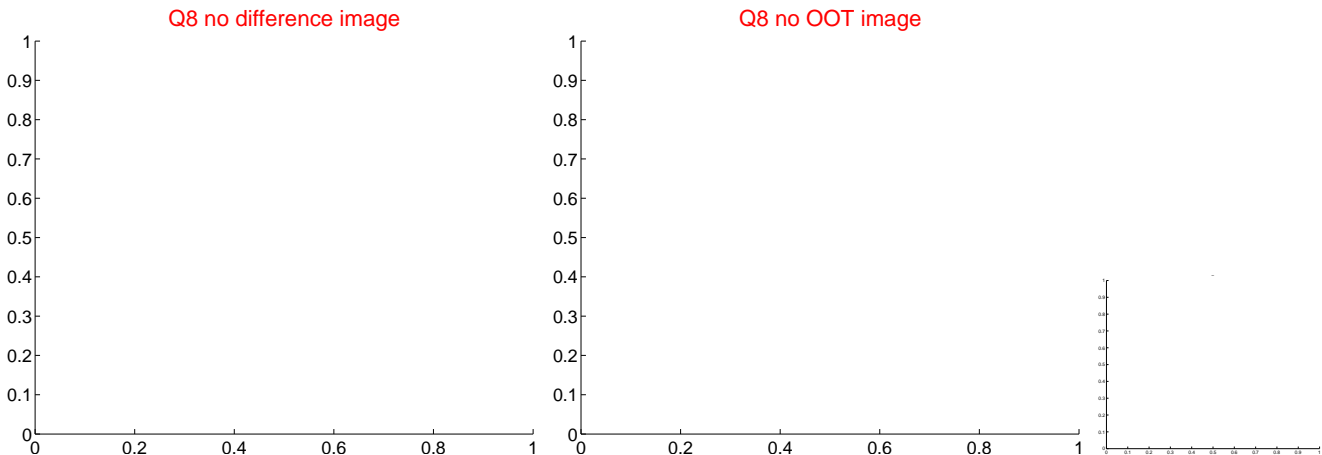
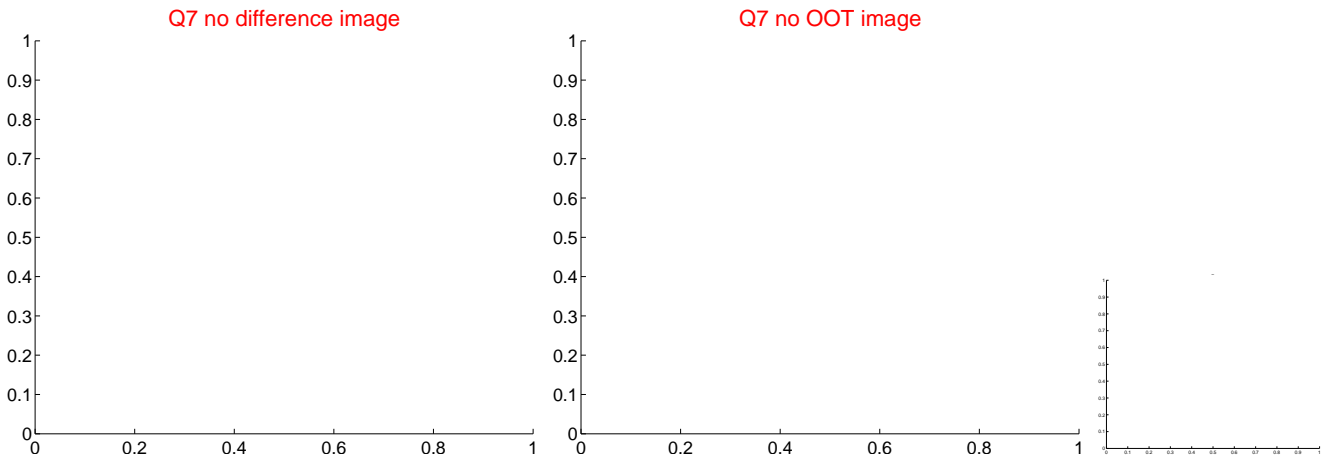
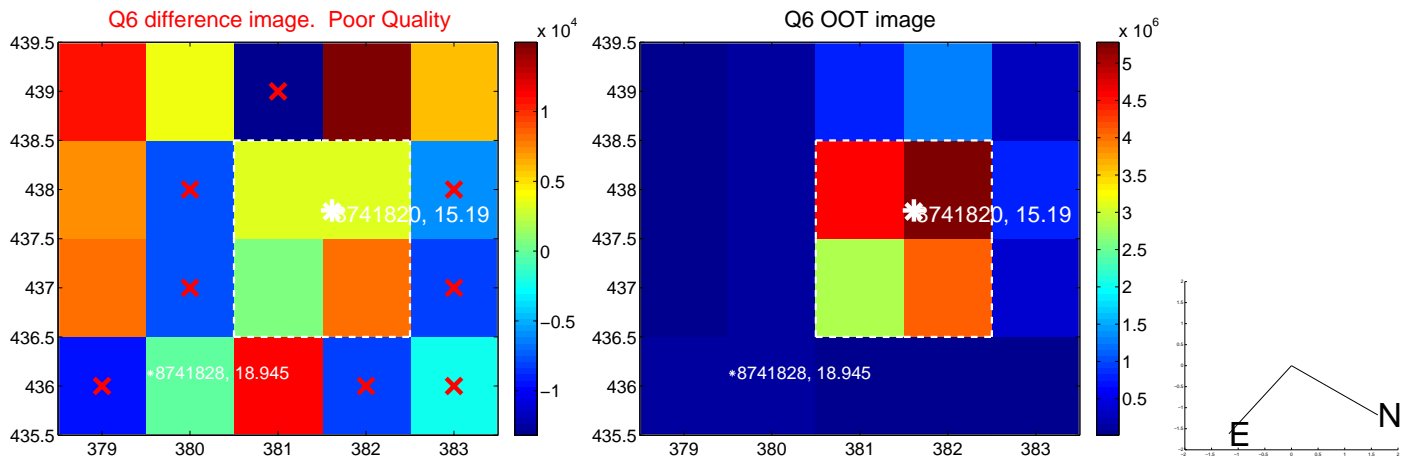
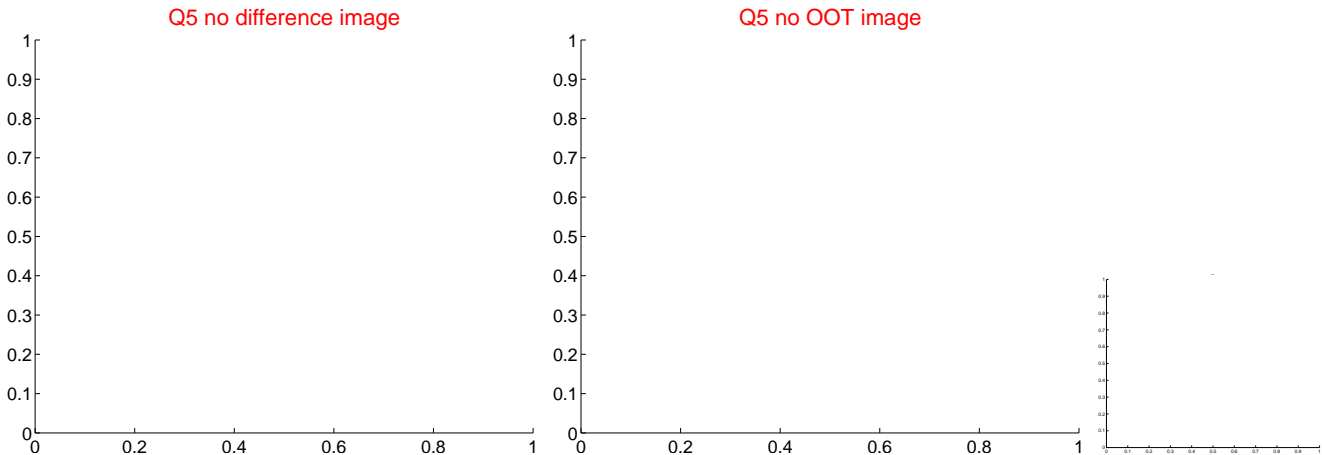
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



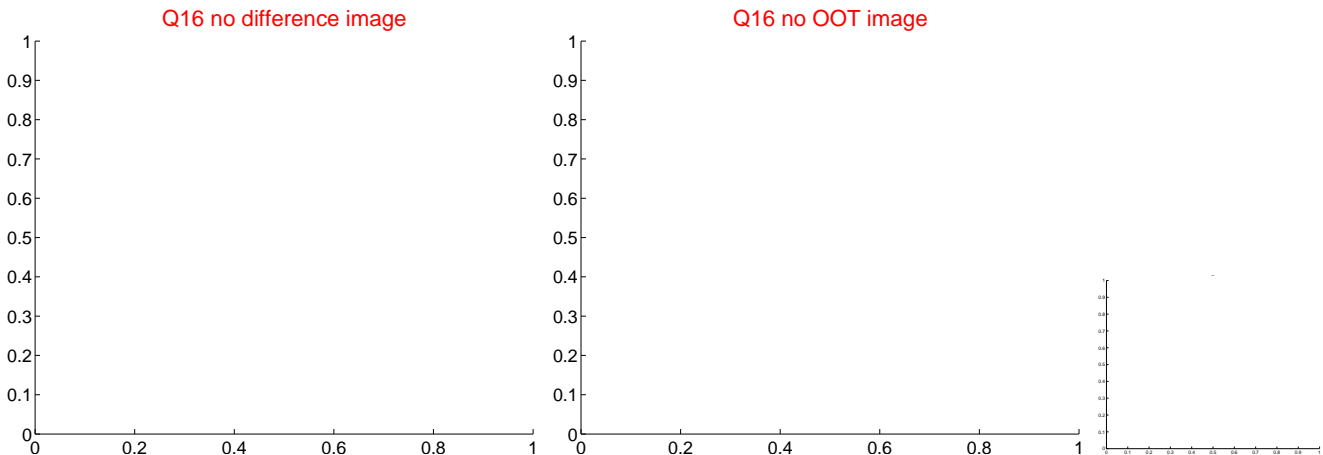
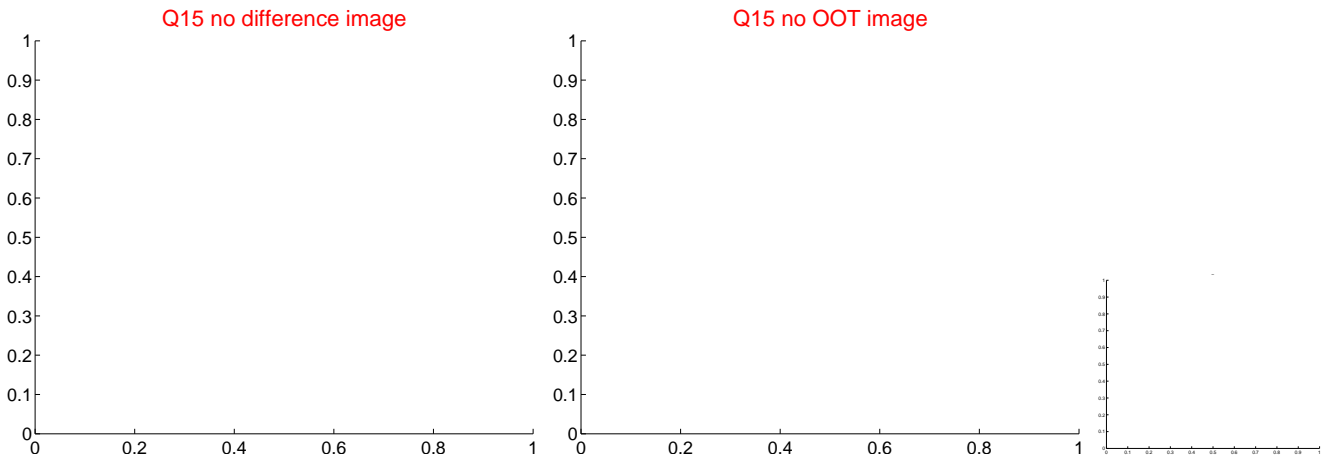
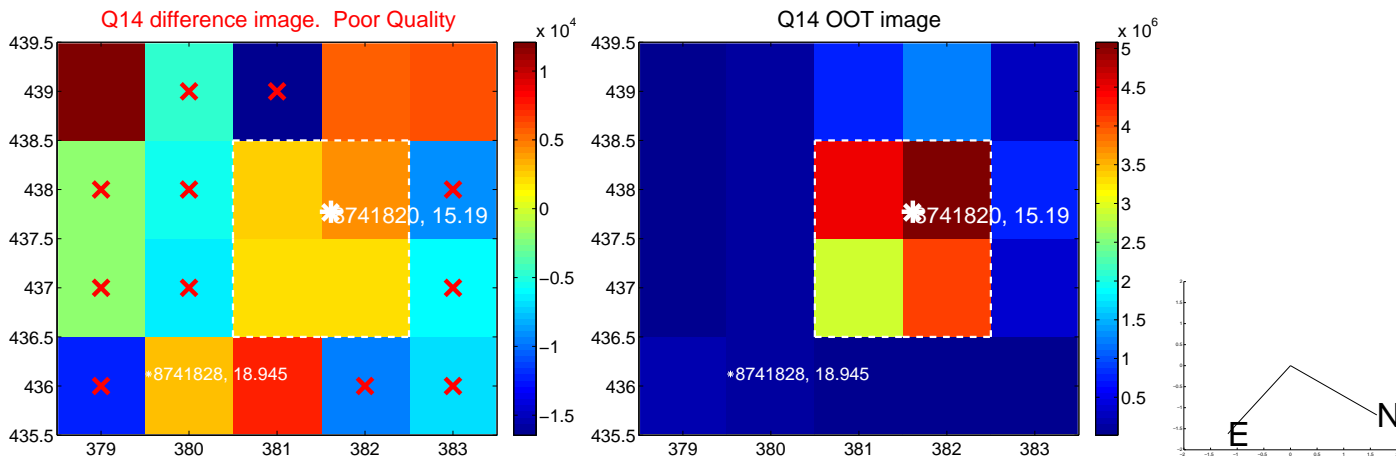
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



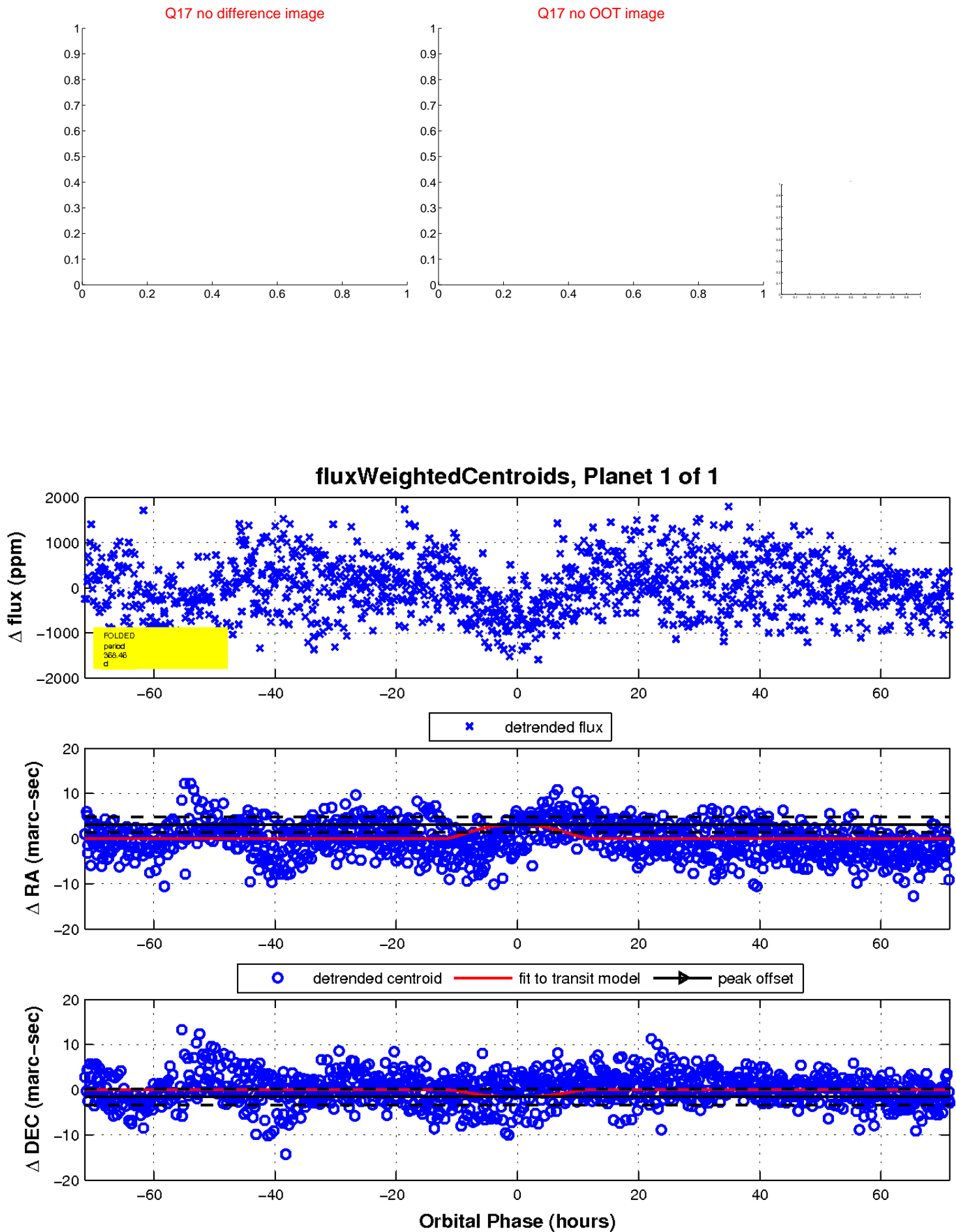
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

