

# KIC 007048016

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007048016-01	OBS	No	1.388420	132.813272	125.5	6.937	8.8	10.8	1.21	6506	1.76	3445.57

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007048016-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

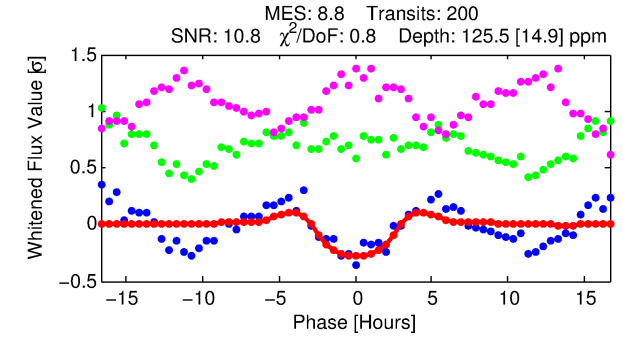
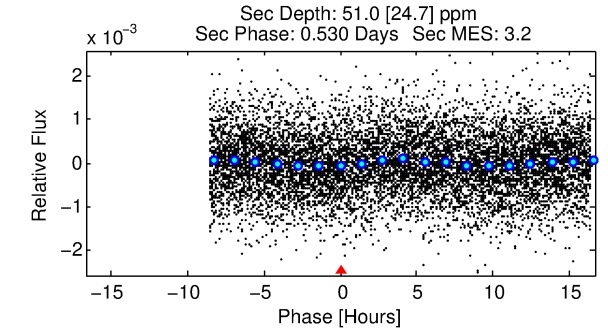
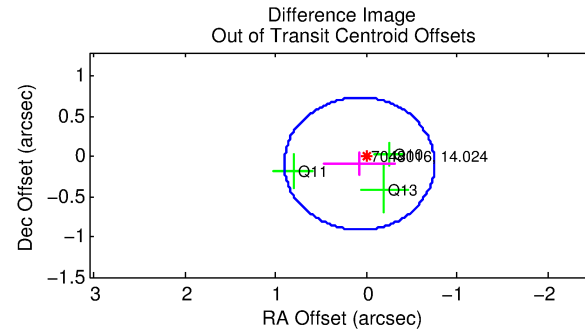
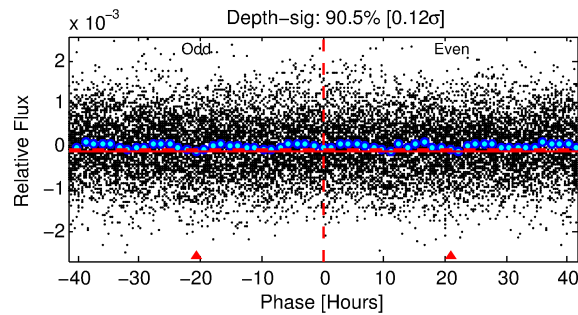
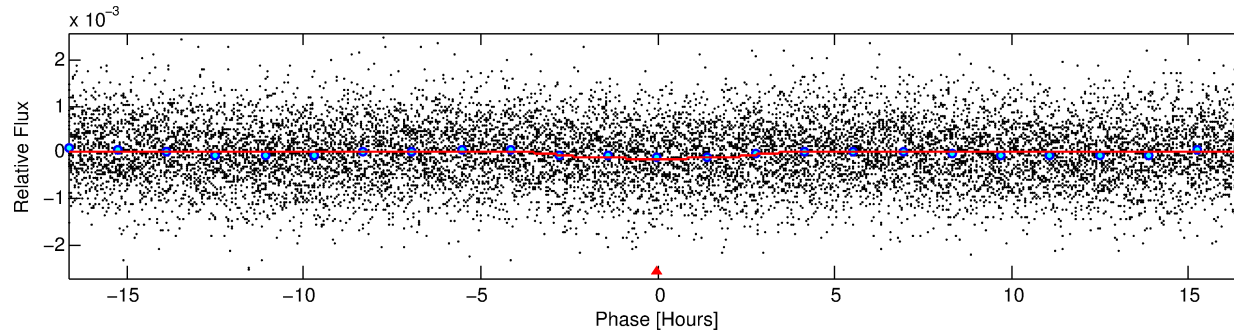
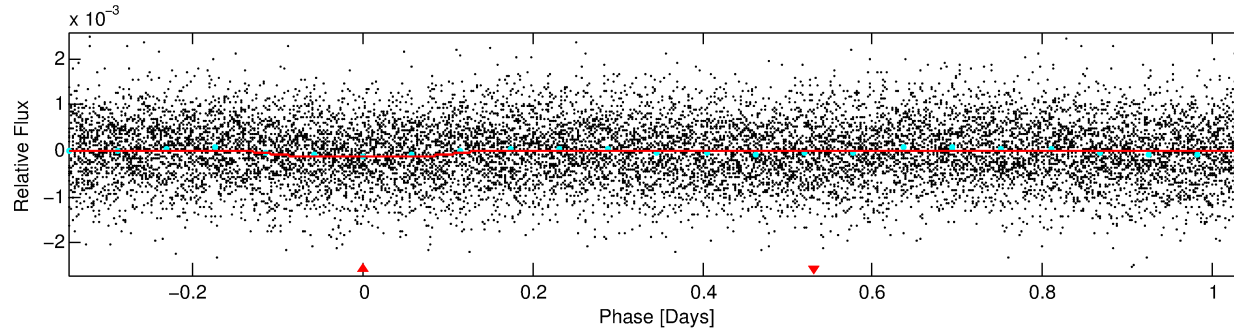
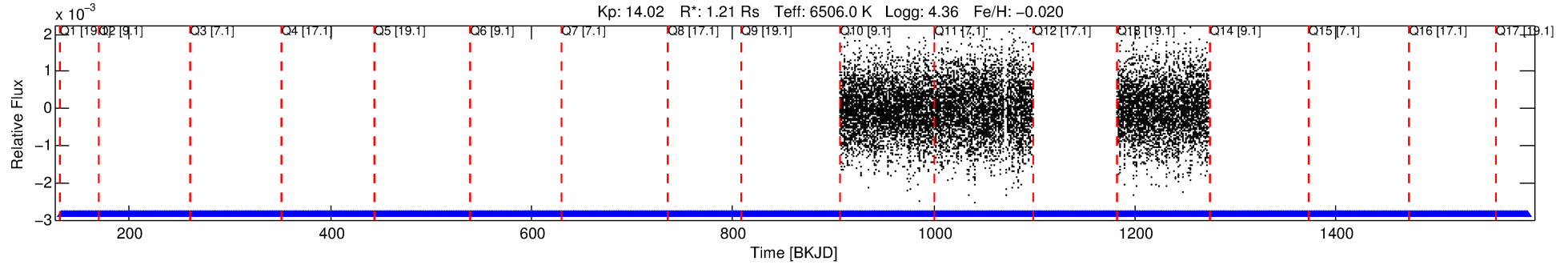
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007048016-01

No Significant Match Found

# DV One-Page Summary

KIC: 7048016 Candidate: 1 of 1 Period: 1.388 d



## DV Fit Results:

Period = 1.38842 [0.00002] d  
Epoch = 132.8133 [0.0116] BKJD  
Rp/R\* = 0.0134 [0.0012]  
a/R\* = 1.08 [0.06]  
b = 0.97 [0.02]  
Seff = 3445.57 [1500.78]  
Teq = 1954 [213] K  
Rp = 1.76 [0.64] Re  
a = 0.0261 [0.0075] AU  
Ag = 6.15 [4.06] [1.27 $\sigma$ ]  
Teffp = 4757 [642] K [4.15 $\sigma$ ]

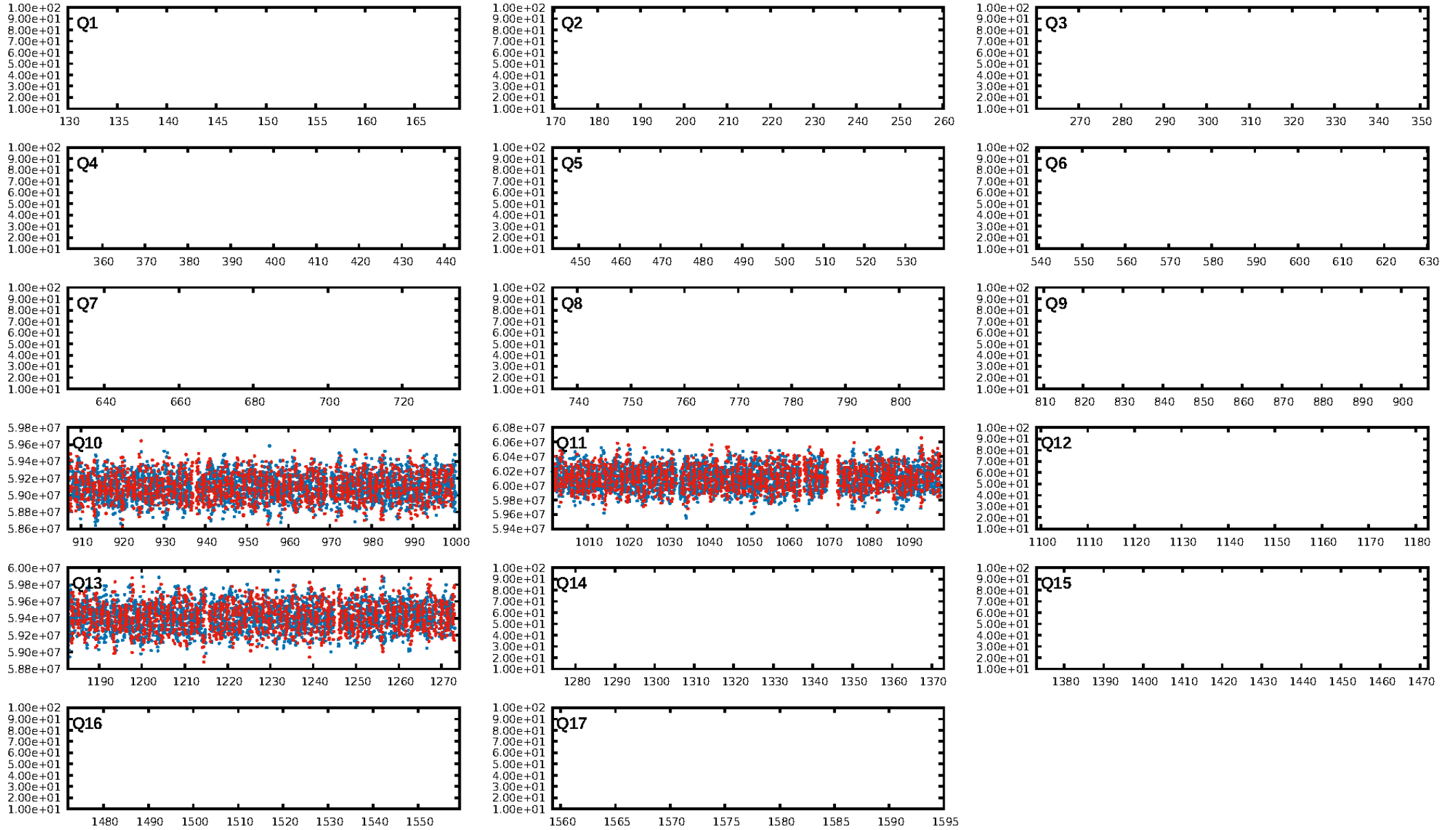
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.45e-27  
RollingBand-fgt: 1.00 [200/200]  
GhostDiagnostic-chr: -2.622  
Centroid-sig: 7.4%  
Centroid-so: 0.577 arcsec [1.20 $\sigma$ ]  
OotOffset-rm: 0.117 arcsec [0.42 $\sigma$ ]  
OotOffset-st: 1/1/0/1 [3]  
KicOffset-rm: 0.134 arcsec [0.53 $\sigma$ ]  
KicOffset-st: 1/1/0/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

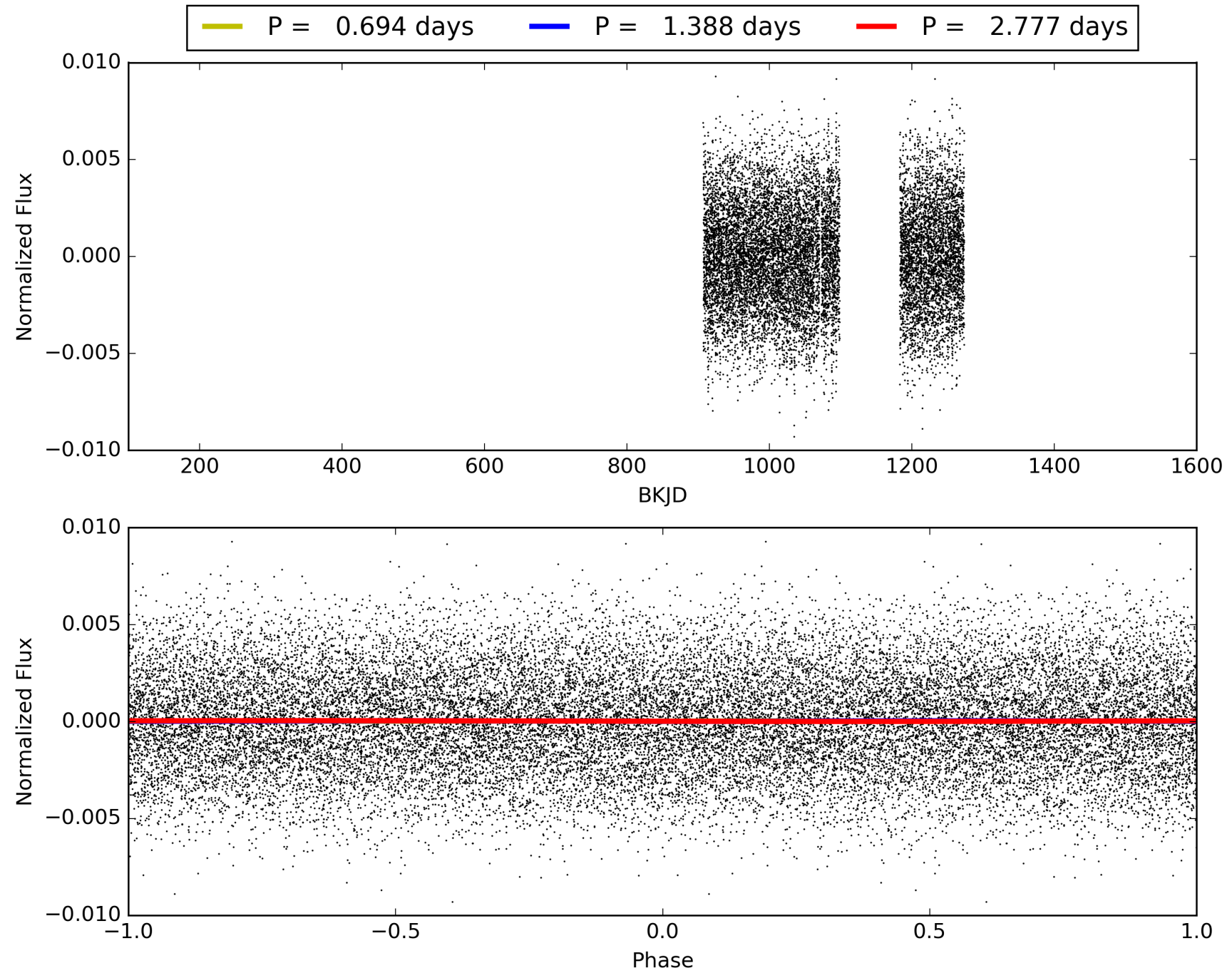
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 20:01:46 Z

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

# TCE 007048016-01, PDC Light Curves

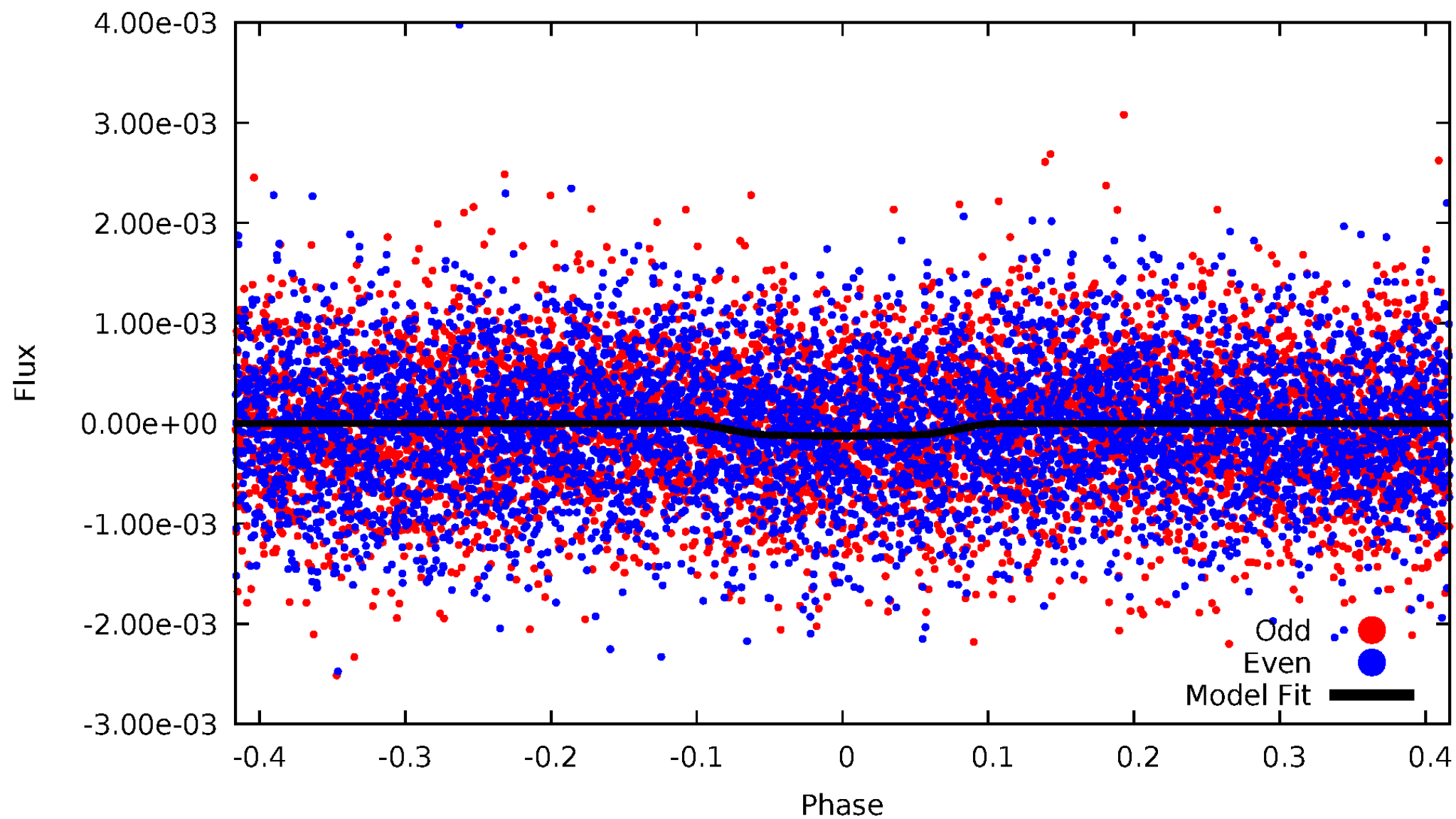


TCE 007048016-01



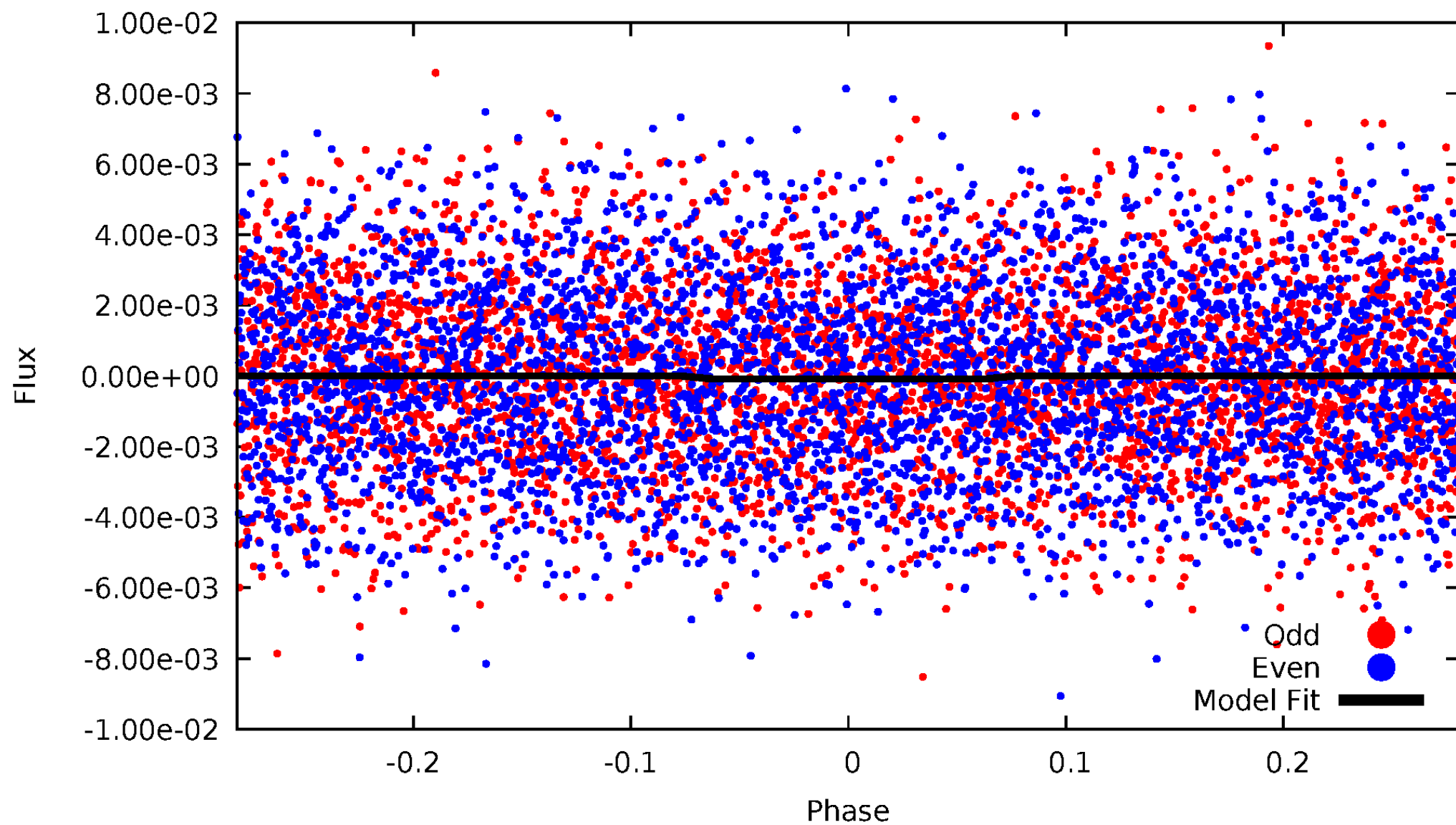
# DV Odd/Even

TCE 007048016-01



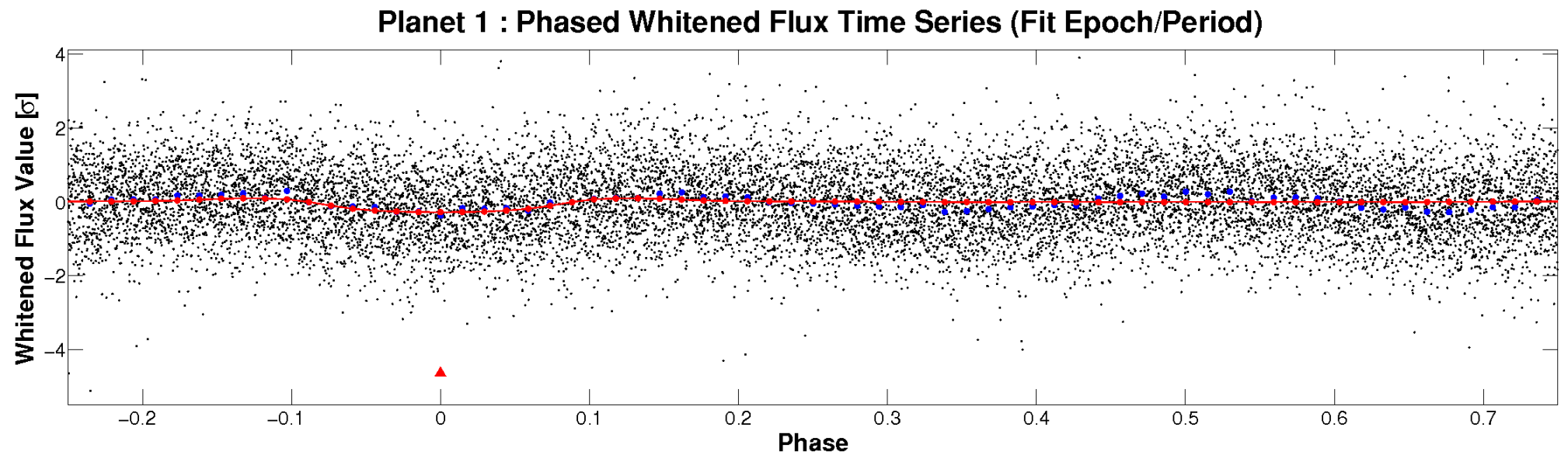
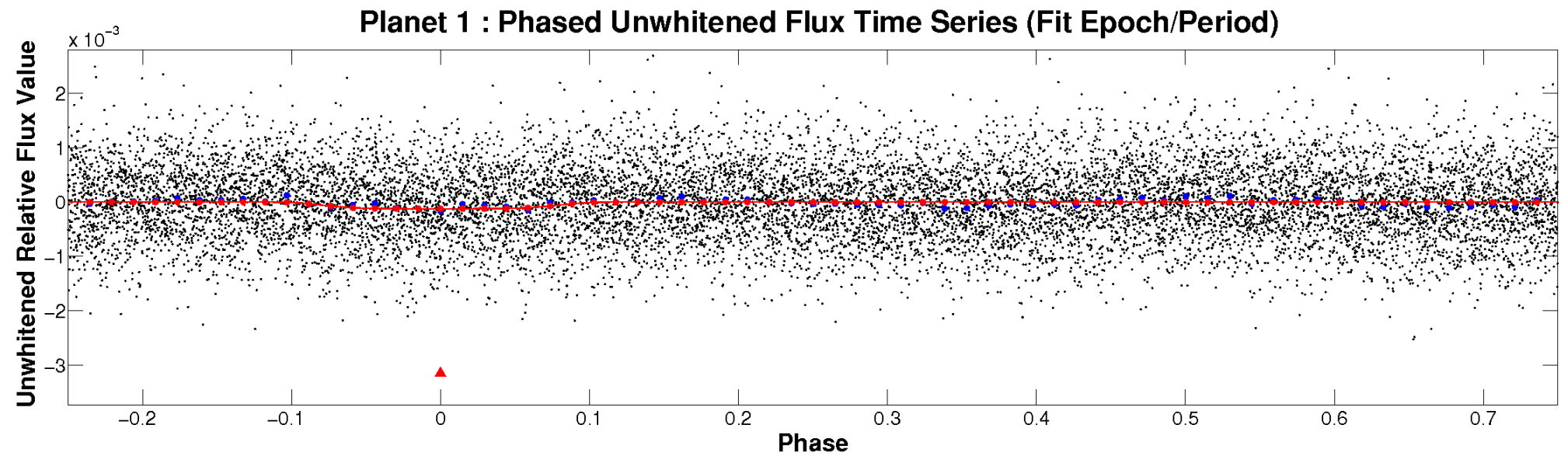
# ALT Odd/Even

TCE 007048016-01



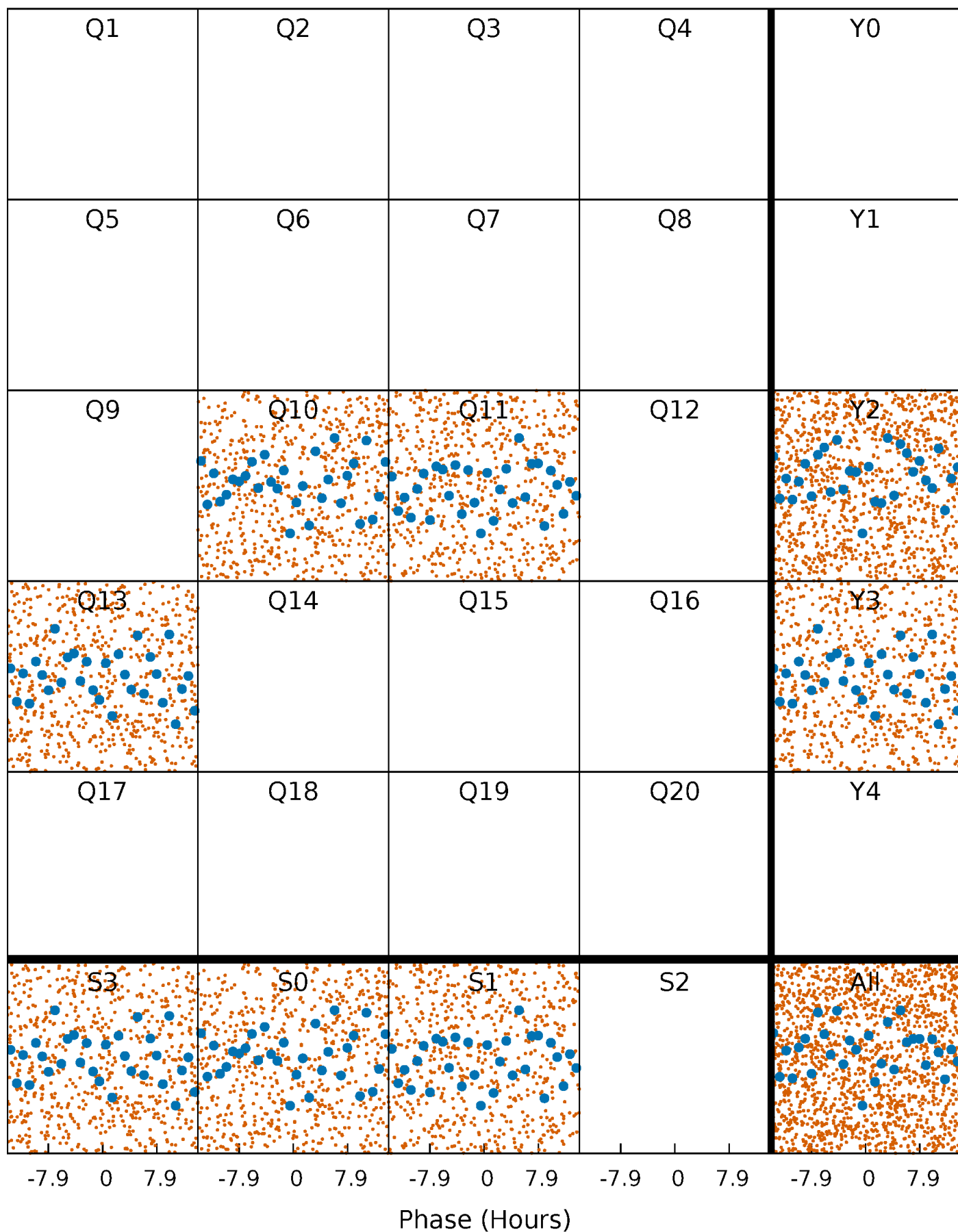


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

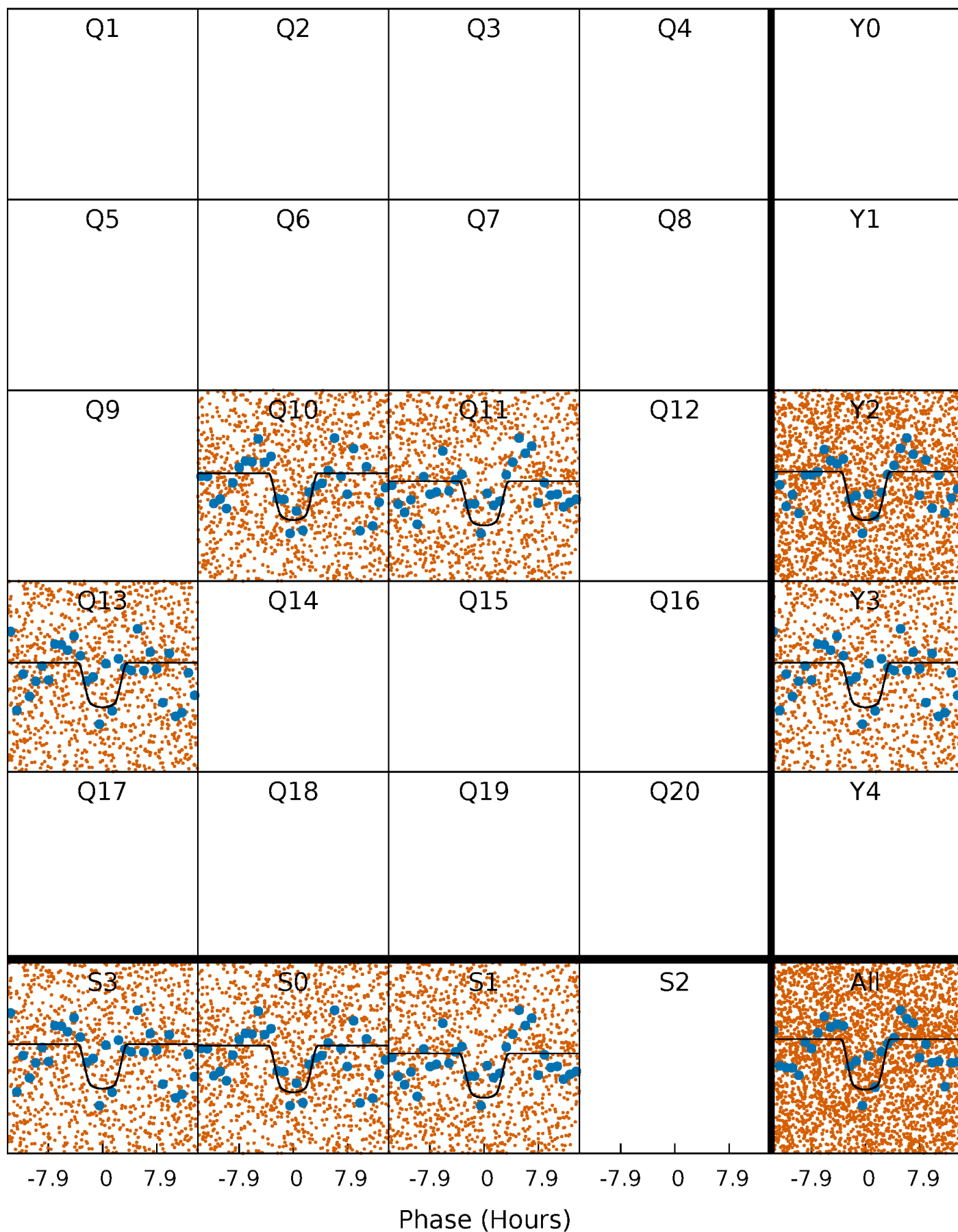
TCE 007048016-01 P= 1.388420 Days  $T_0=132.813272$  (BKJD)





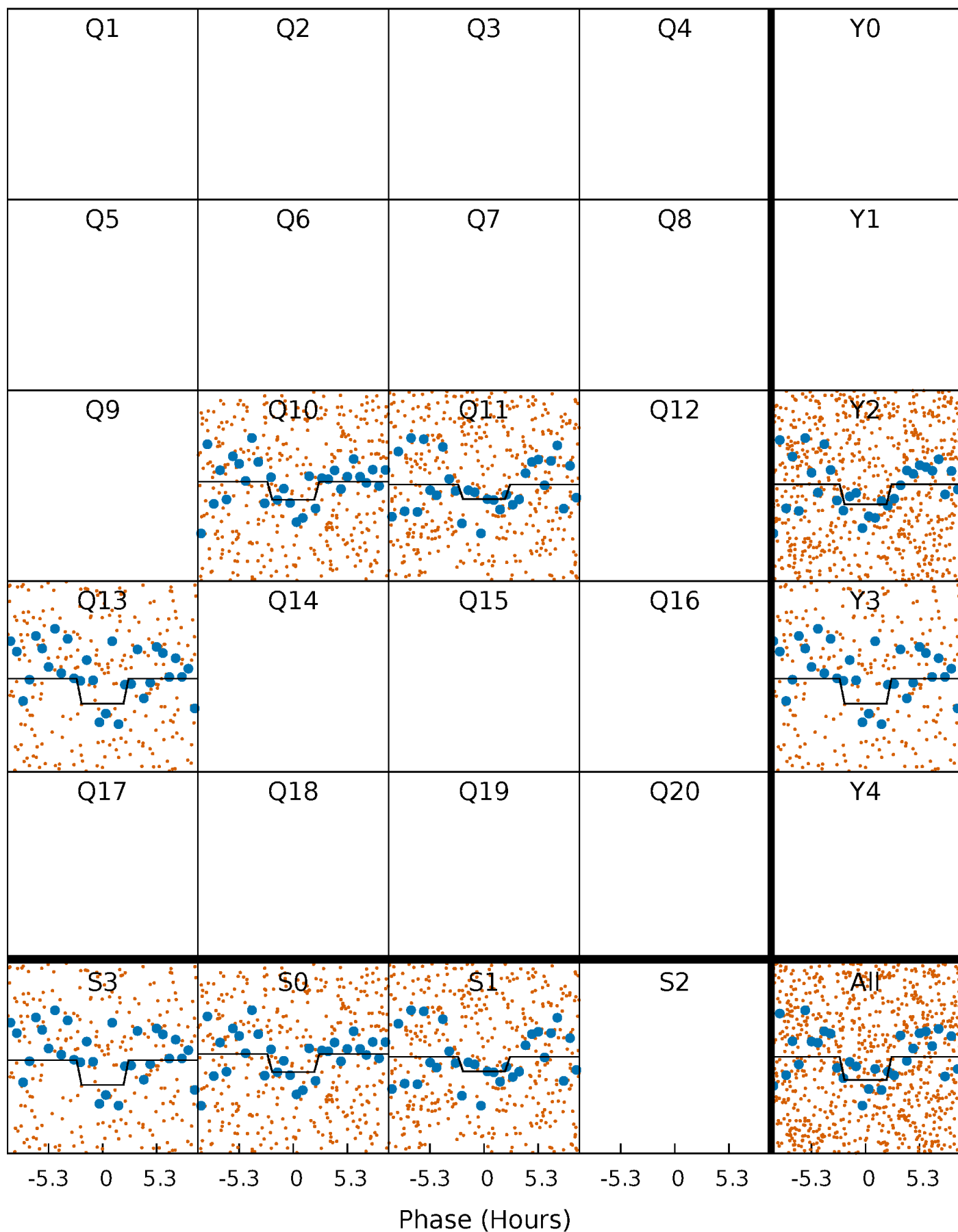
# DV Quarter-Phased Transit Curves

TCE 007048016-01 P= 1.388420 Days  $T_0=132.813272$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

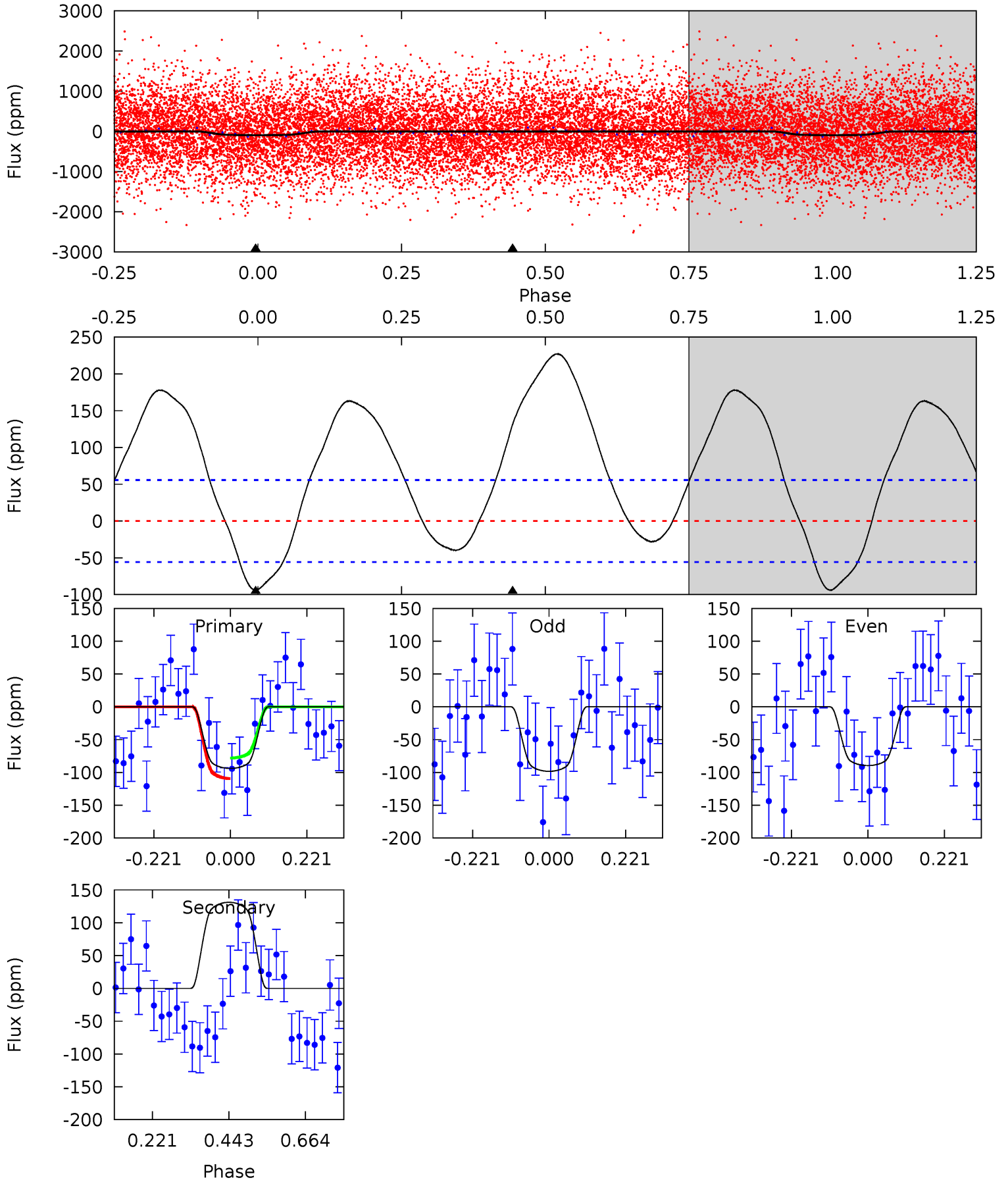
TCE 007048016-01 P= 1.388345 Days  $T_0=132.855975$  (BKJD)



# DV Model-Shift Uniqueness Test

007048016-01, P = 1.388420 Days, E = 132.813272 Days

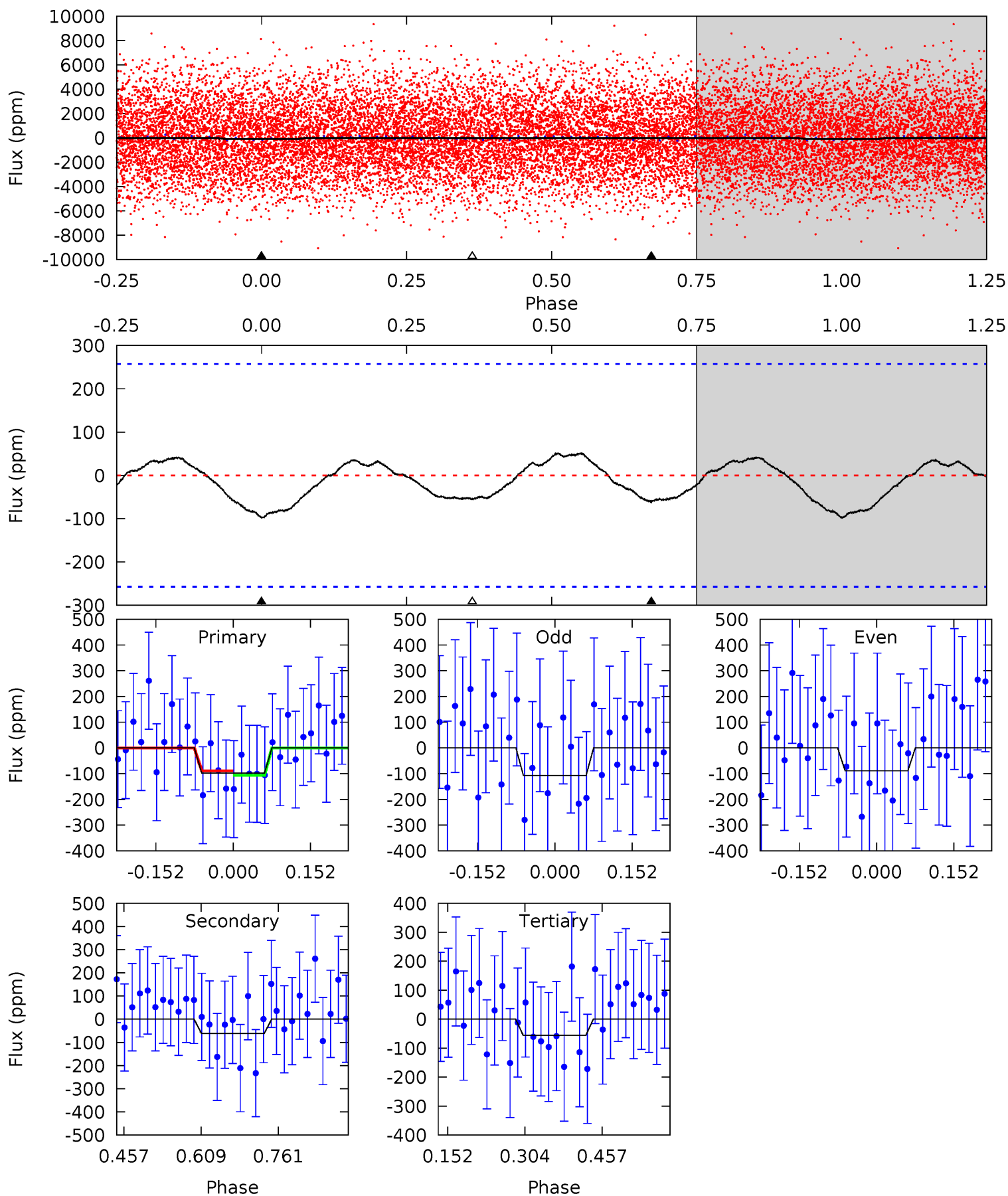
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.41	-10.4	0	0	4.40	1.22	3.55	7.41	7.41	-10.4	-10.4	0.35	0.89	0.71	1.25



# Alt Model-Shift Uniqueness Test

007048016-01, P = 1.388345 Days, E = 132.855975 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
1.70	1.07	0.97	0	4.48	1.43	0.61	0.73	1.70	0.10	1.07	0.16	1.56	0.34	0.15



### Stellar Parameters For KIC 007048016

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6506^{+179}_{-246}$	$4.362^{+0.072}_{-0.217}$	$-0.020^{+0.250}_{-0.300}$	$1.207^{+0.428}_{-0.143}$	$1.226^{+0.193}_{-0.173}$	$0.981^{+0.301}_{-0.539}$
	+3%/-4%	+2%/-5%	+1250%/-1500%	+35%/-12%	+16%/-14%	+31%/-55%
Source	KIC0	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 007048016-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$131 \pm 13$	$1.83^{+0.35}_{-0.26}$	$2775^{+232}_{-152}$	$-6034^{+340}_{-390}$	$-14.336^{+4.207}_{-4.721}$
Alt.	$-62 \pm 57$	$1.29^{+0.25}_{-0.22}$	$2778^{+223}_{-159}$	$5855^{+1295}_{-3002}$	$13^{+15}_{-12}$

$T_{\text{max}}$  = 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  $A_{\text{obs}} \gg 1.0$

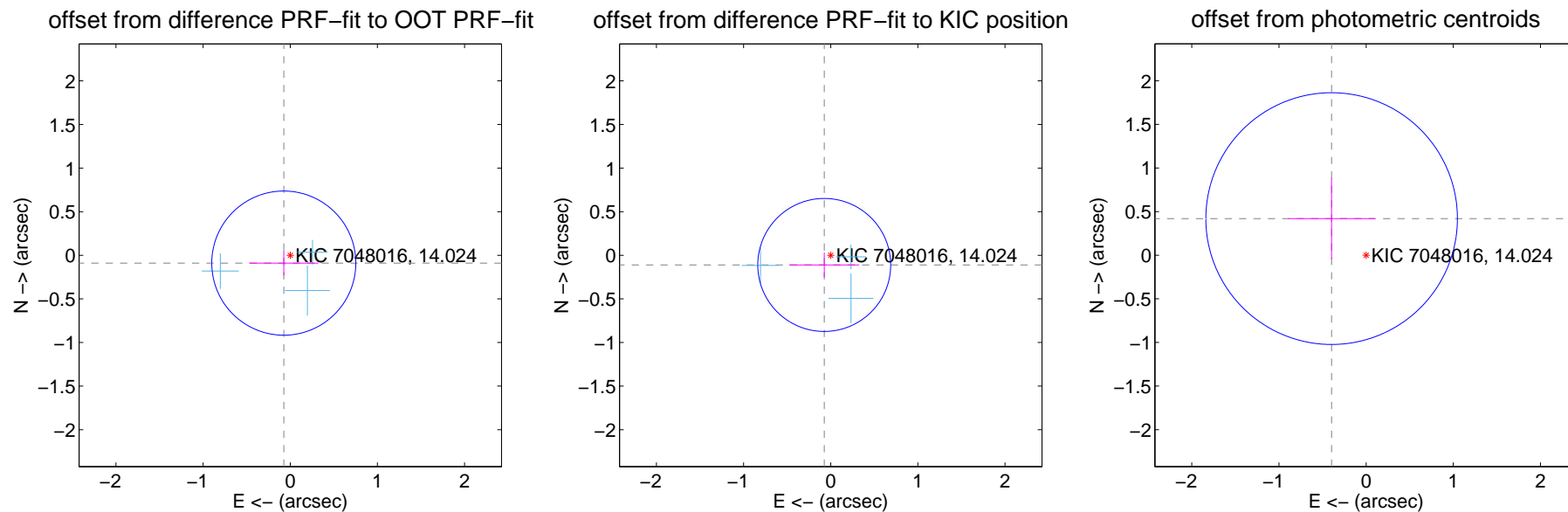
## DV Centroid Data

Supplemental centroid analysis for 007048016-01. Kepler magnitude: 14.02. Transit SNR 10.79

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.117 \pm 0.275$	0.42	$0.074 \pm 0.397$	$-0.090 \pm 0.141$
PRF-fit source offset from KIC position	$0.134 \pm 0.254$	0.53	$0.075 \pm 0.404$	$-0.111 \pm 0.142$
photometric centroid source offset	$0.58 \pm 0.48$	1.20	$0.40 \pm 0.50$	$0.42 \pm 0.47$



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.

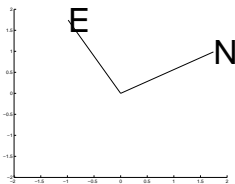
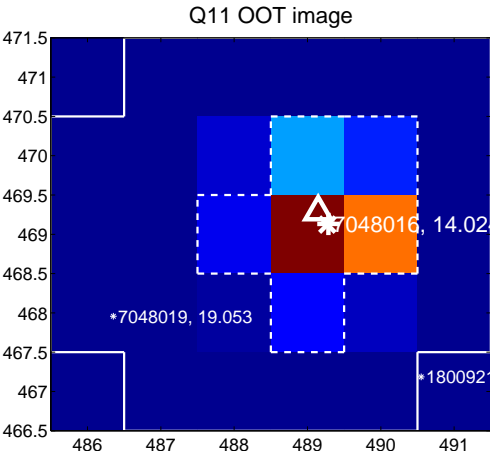
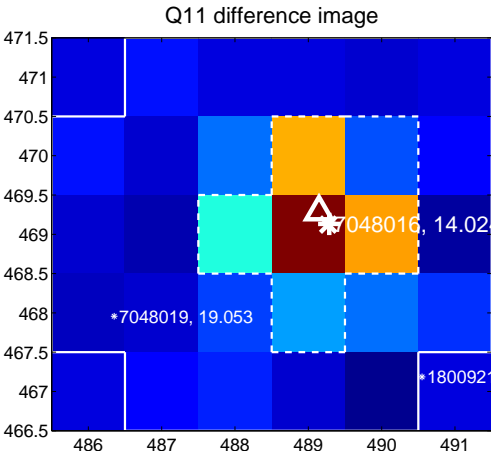
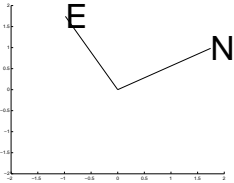
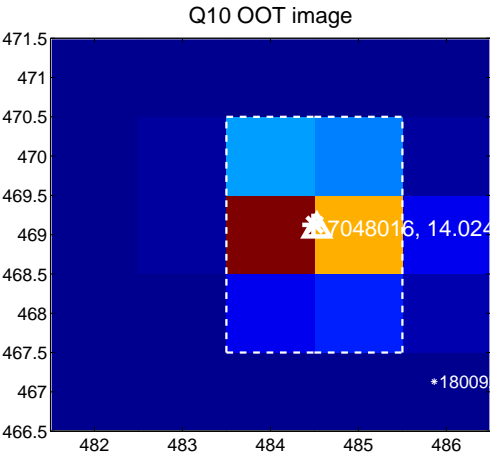
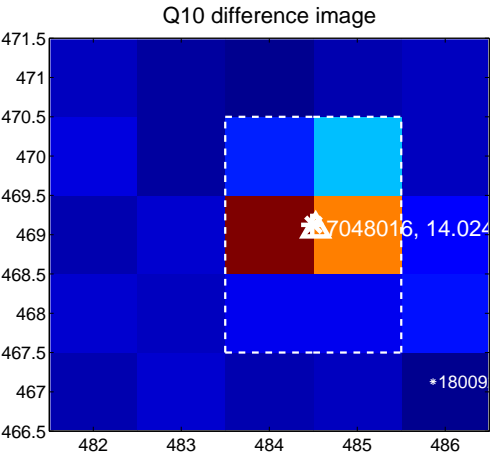
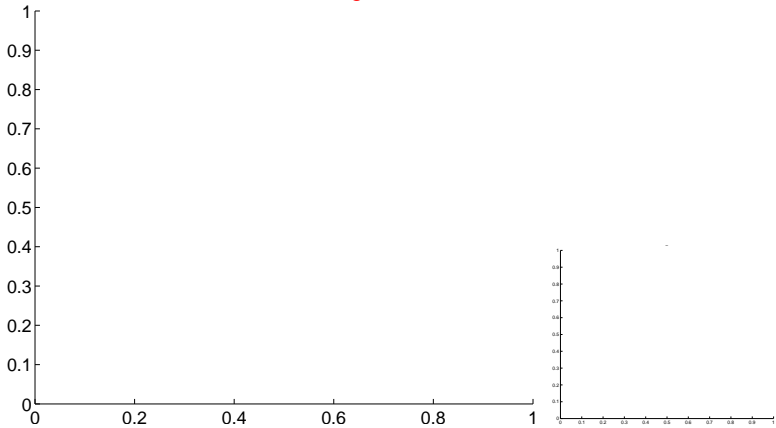


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

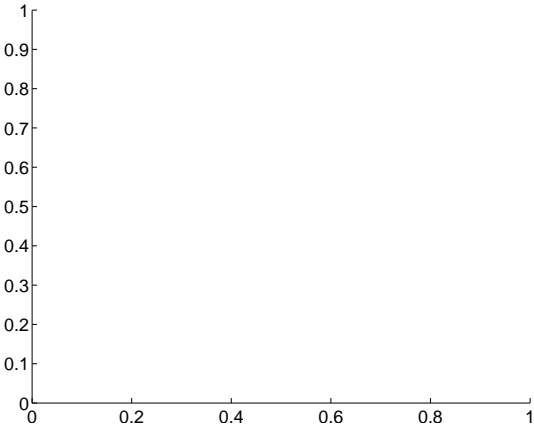
Q9 no difference image



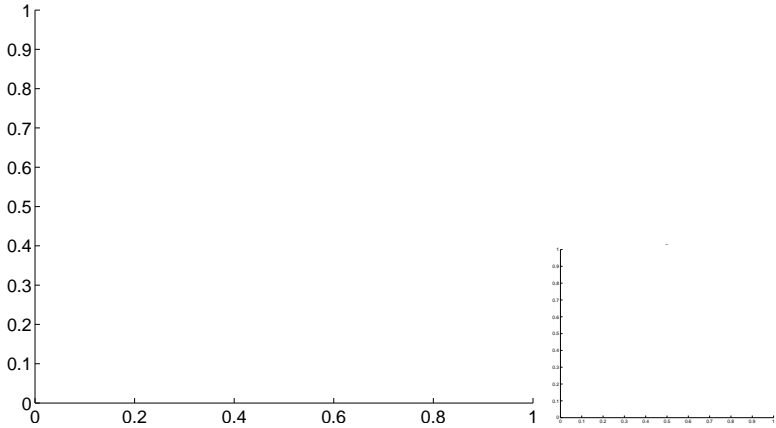
Q9 no OOT image



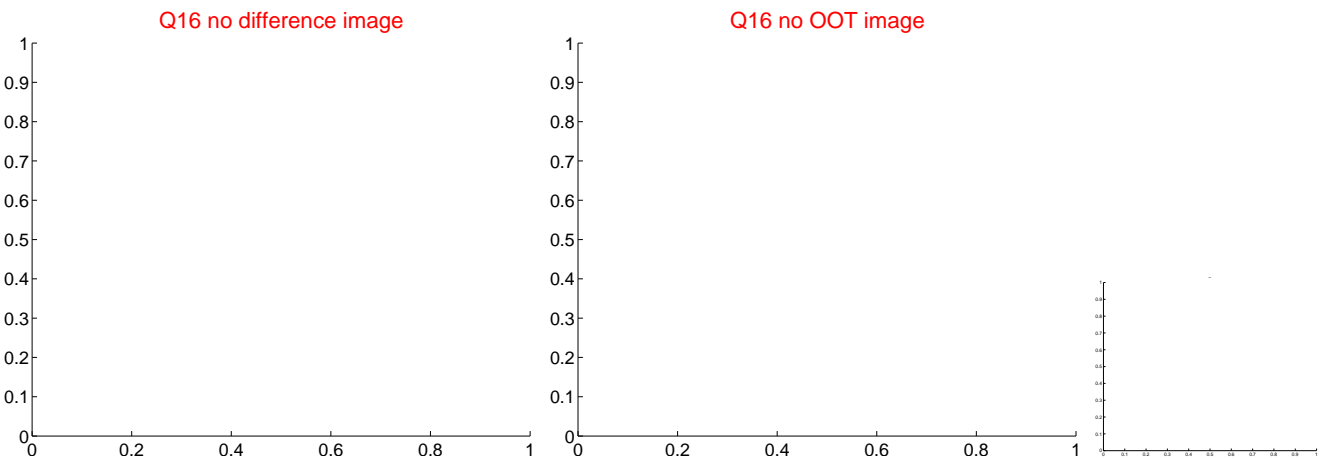
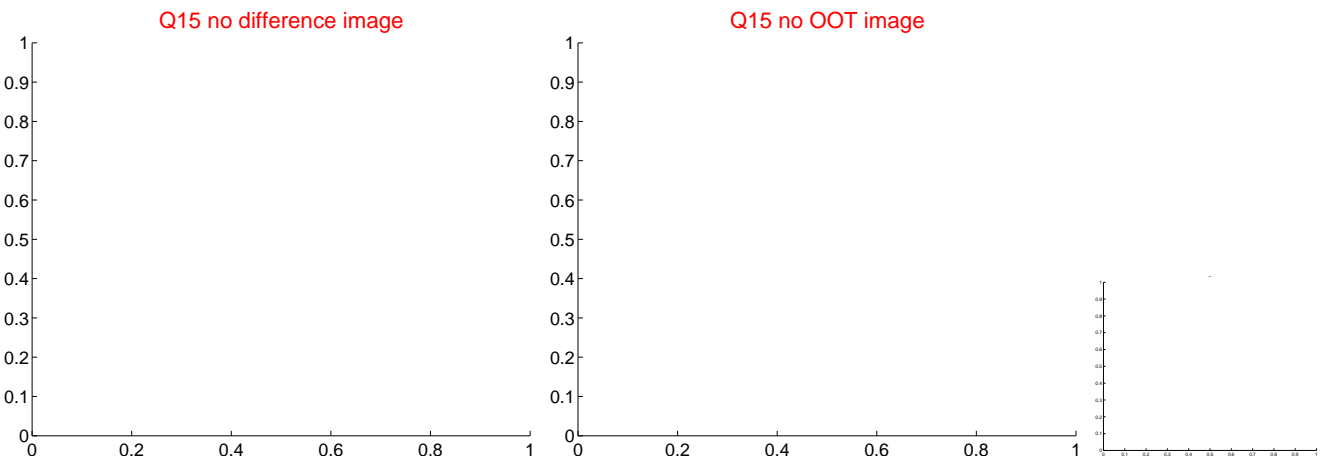
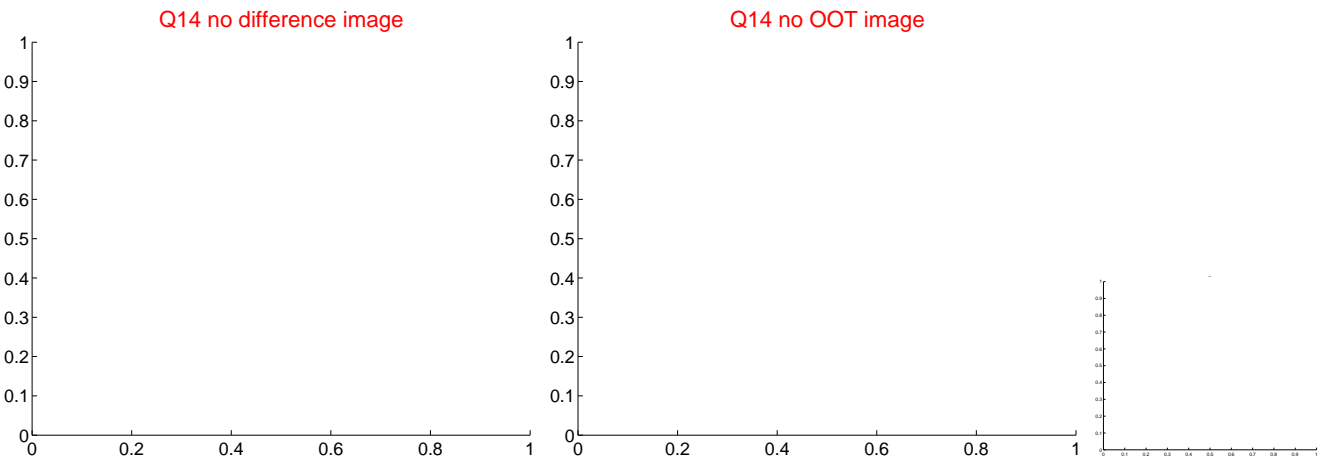
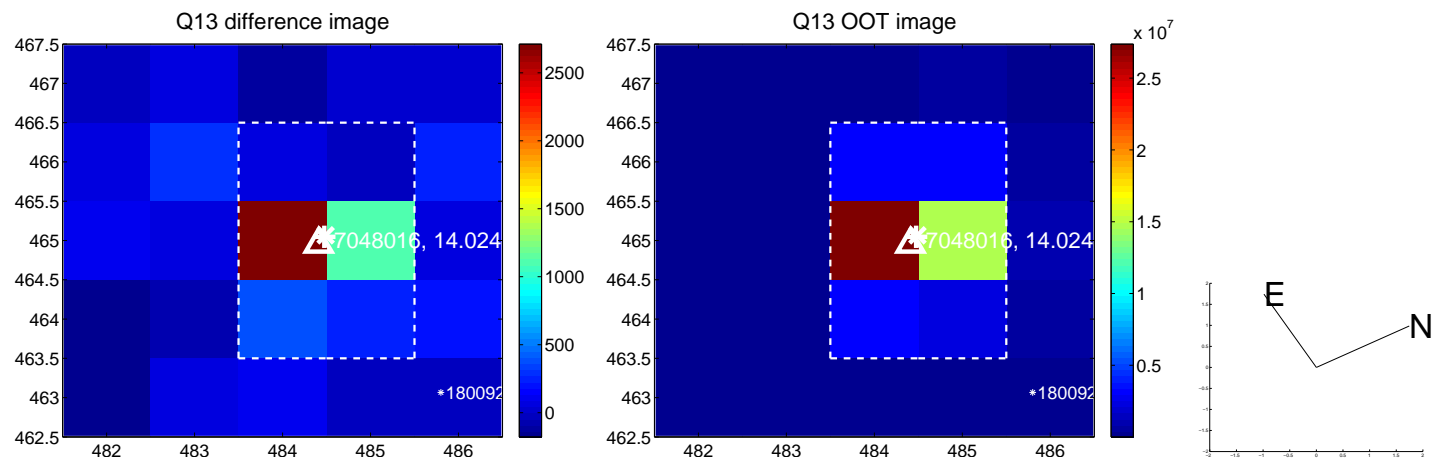
Q12 no difference image



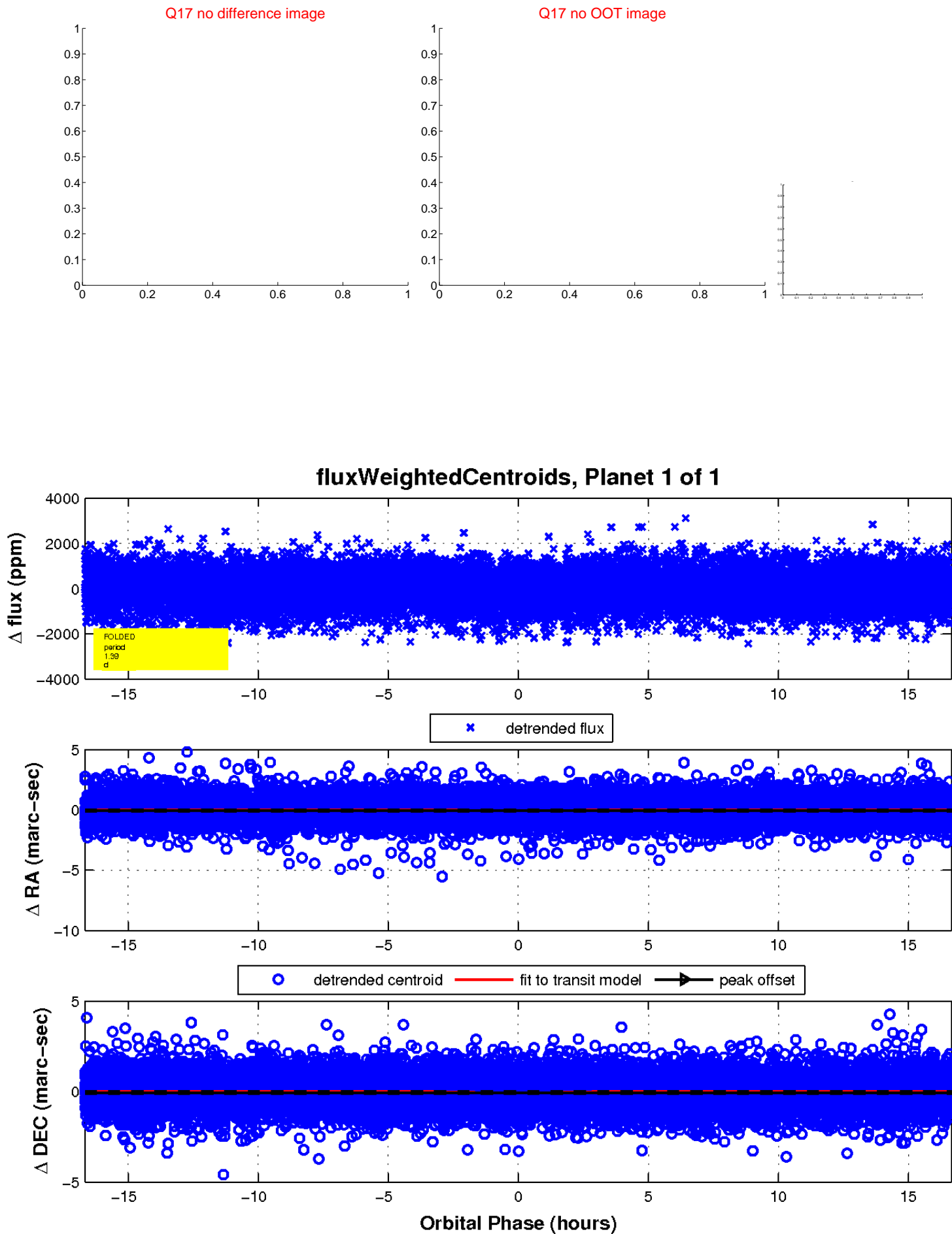
Q12 no OOT image



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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



# UKIRT Image

Declination

