

# KIC 003852476

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003852476-01	OBS	7672.01	111.742092	166.330390	256.6	4.191	7.3	7.5	4.53	5267	8.34	49.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003852476-01	OBS	FP	0.31	1	0	0	0	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.

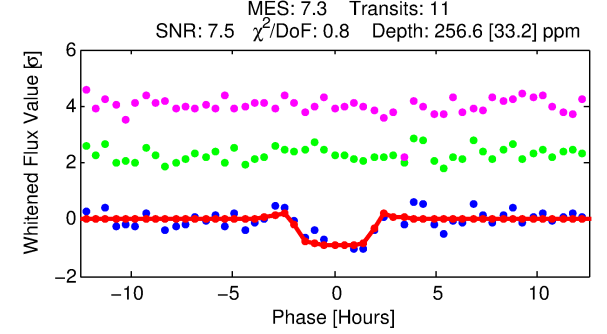
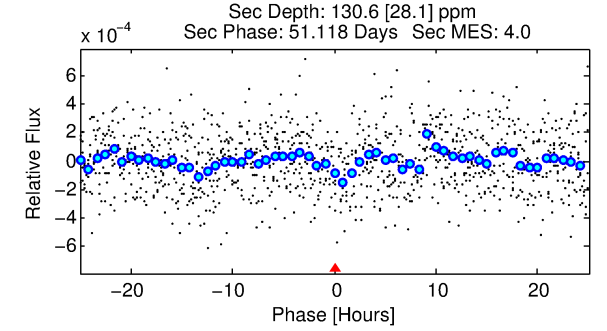
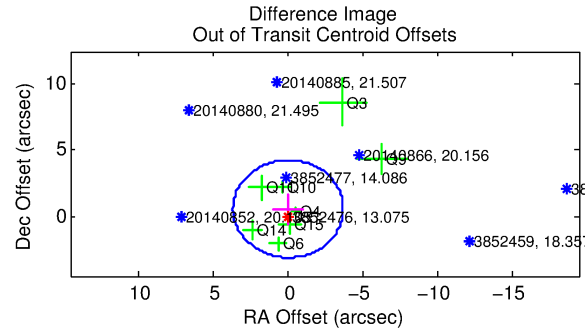
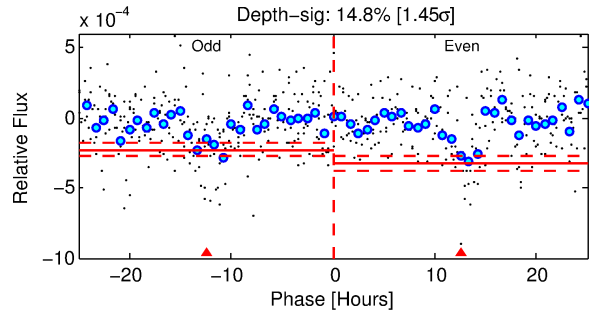
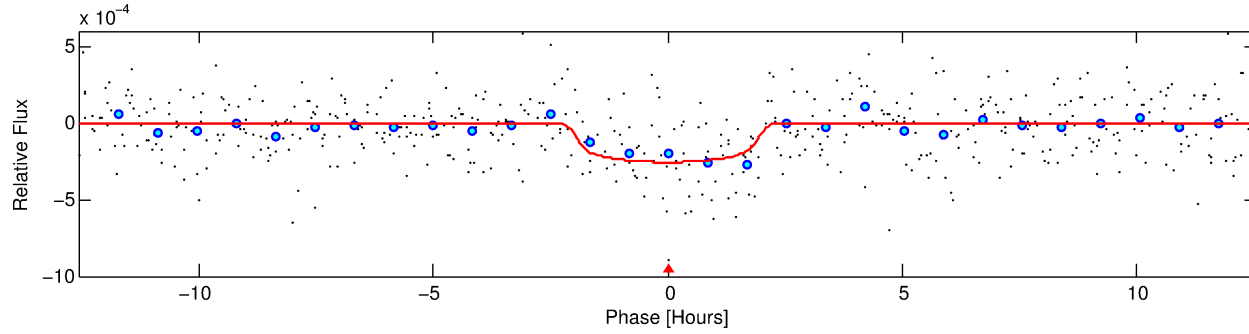
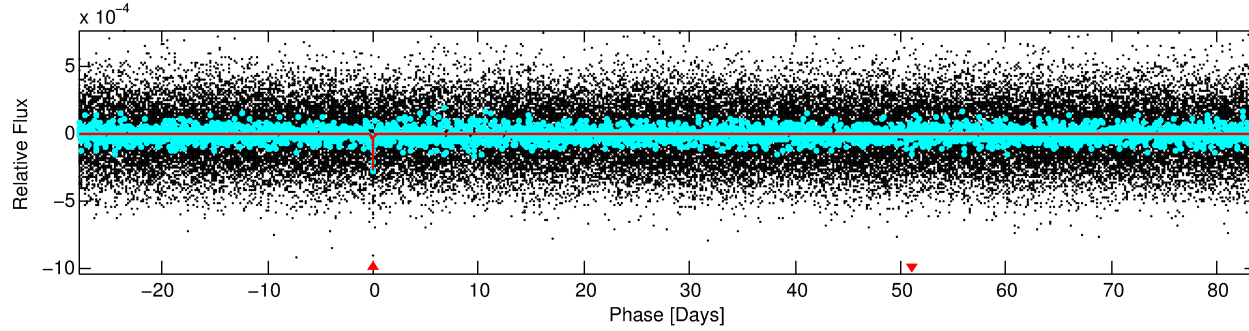
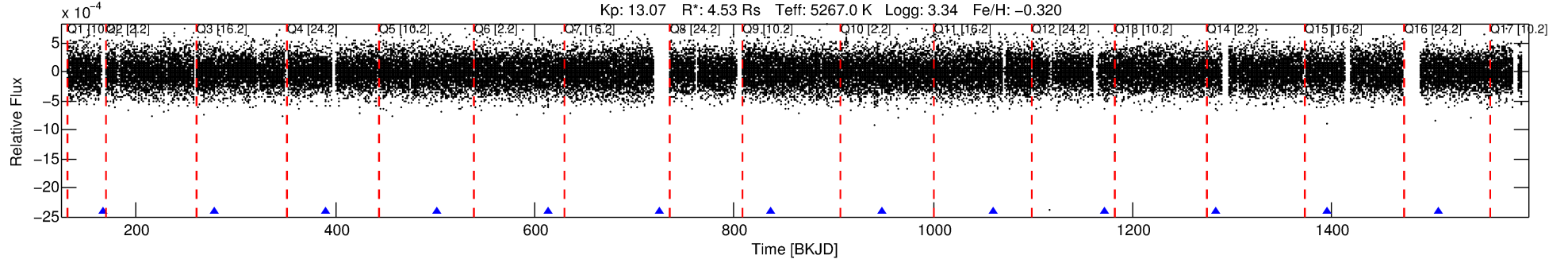
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003852476-01

No Significant Match Found

# DV One-Page Summary

KIC: 3852476 Candidate: 1 of 1 Period: 111.742 d



## DV Fit Results:

Period = 111.74209 [0.00133] d  
Epoch = 166.3304 [0.0105] BKJD  
Rp/R\* = 0.0169 [0.0117]  
a/R\* = 113.12 [330.44]  
b = 0.85 [0.96]  
Seff = 49.50 [19.55]  
Teff = 676 [67] K  
Rp = 8.34 [6.37] Re  
a = 0.5341 [0.1407] AU  
Ag = 294.94 [427.69] [0.69 $\sigma$ ]  
Teffp = 4334 [1525] K [2.40 $\sigma$ ]

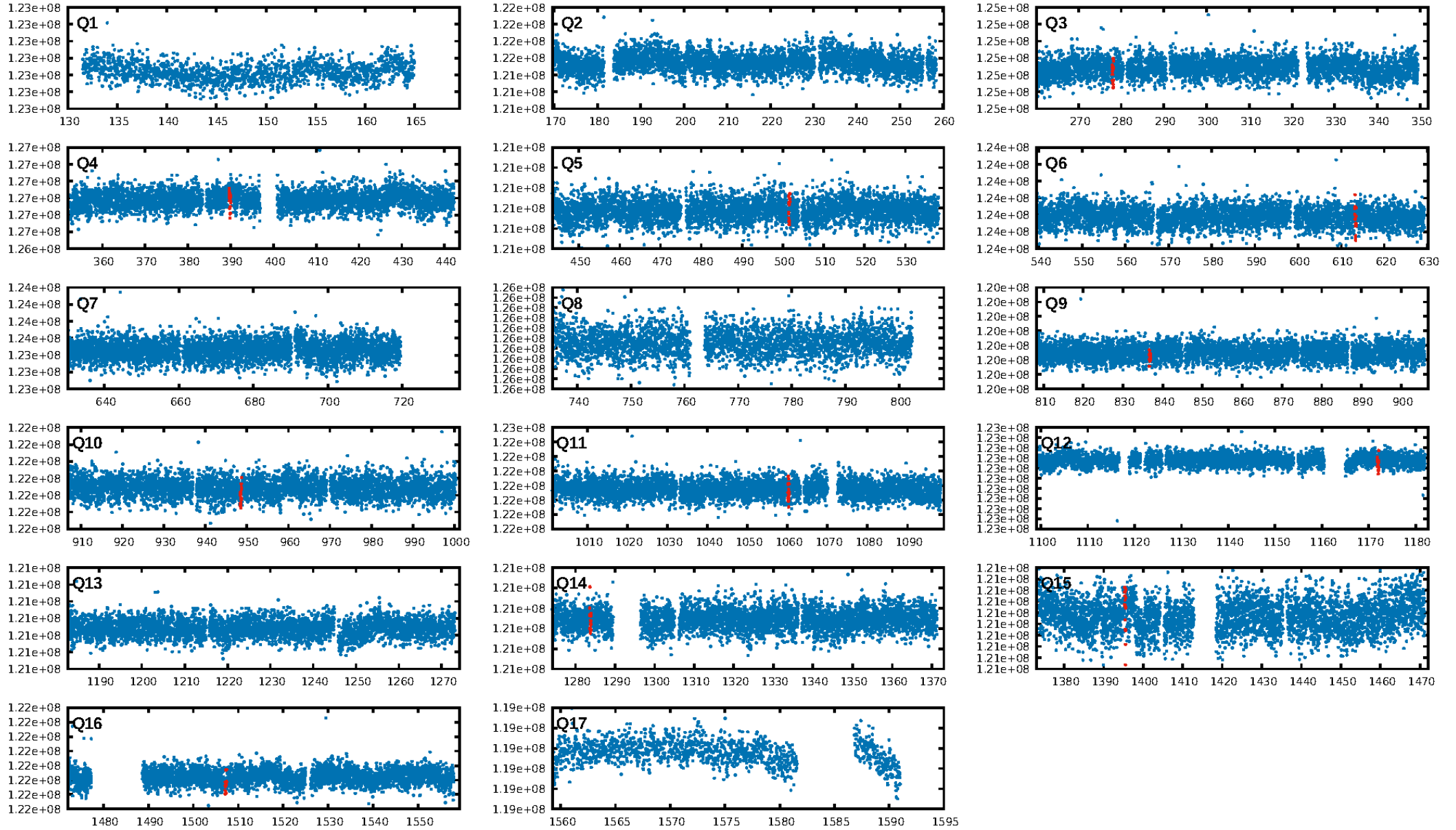
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 94.2%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 1.08e-12**  
RollingBand-fgt: 1.00 [11/11]  
GhostDiagnostic-chr: 6.804  
Centroid-sig: 45.5%  
Centroid-so: 0.708 arcsec [0.65 $\sigma$ ]  
OotOffset-rm: 0.580 arcsec [0.47 $\sigma$ ]  
OotOffset-st: 3/3/1/1 [8]  
KicOffset-rm: 0.578 arcsec [0.48 $\sigma$ ]  
KicOffset-st: 3/3/1/1 [8]  
DiffImageQuality-fgm: 0.25 [2/8]  
DiffImageOverlap-fno: 1.00 [10/10]

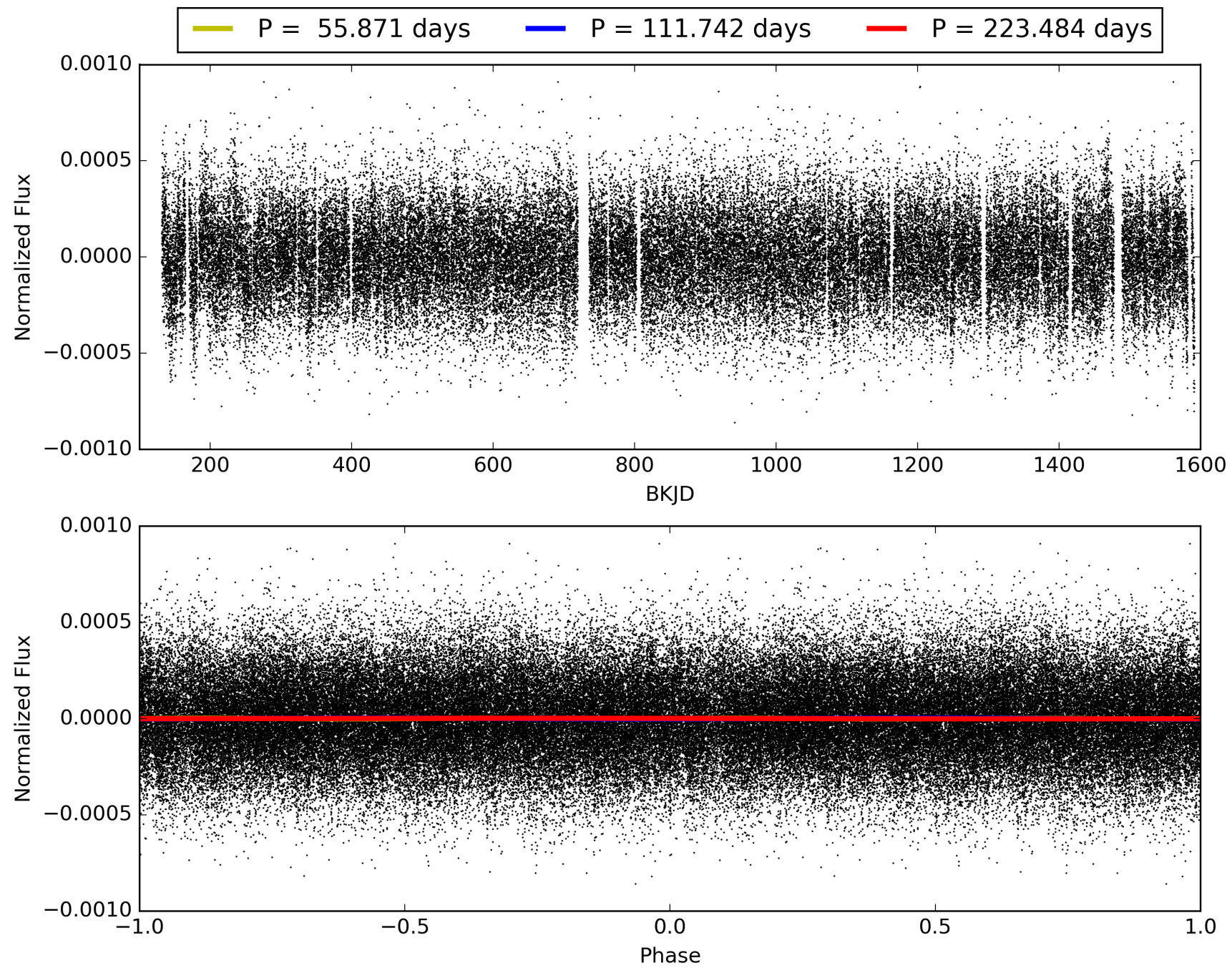
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 19:26:36 Z

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

# TCE 003852476-01, PDC Light Curves

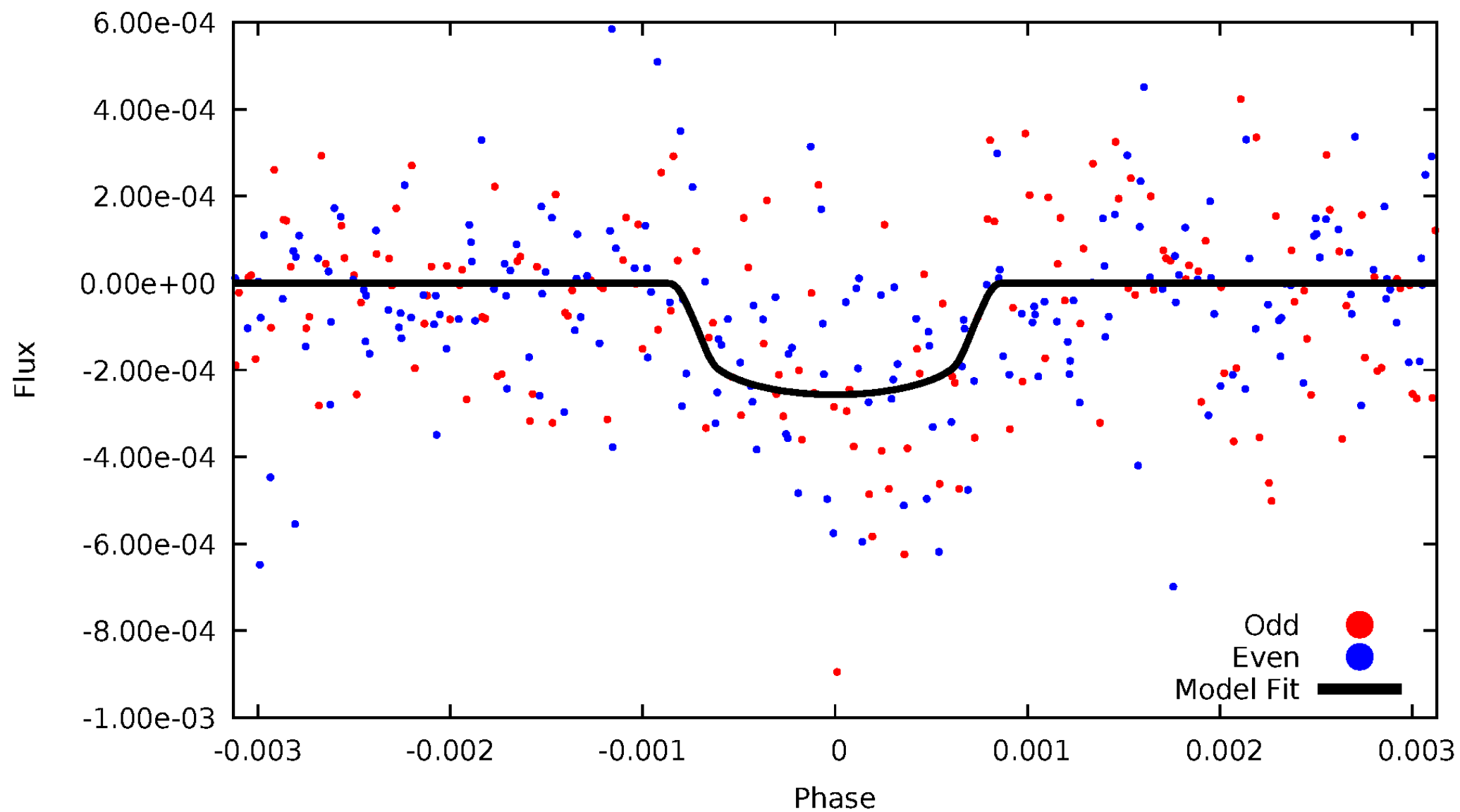


TCE 003852476-01



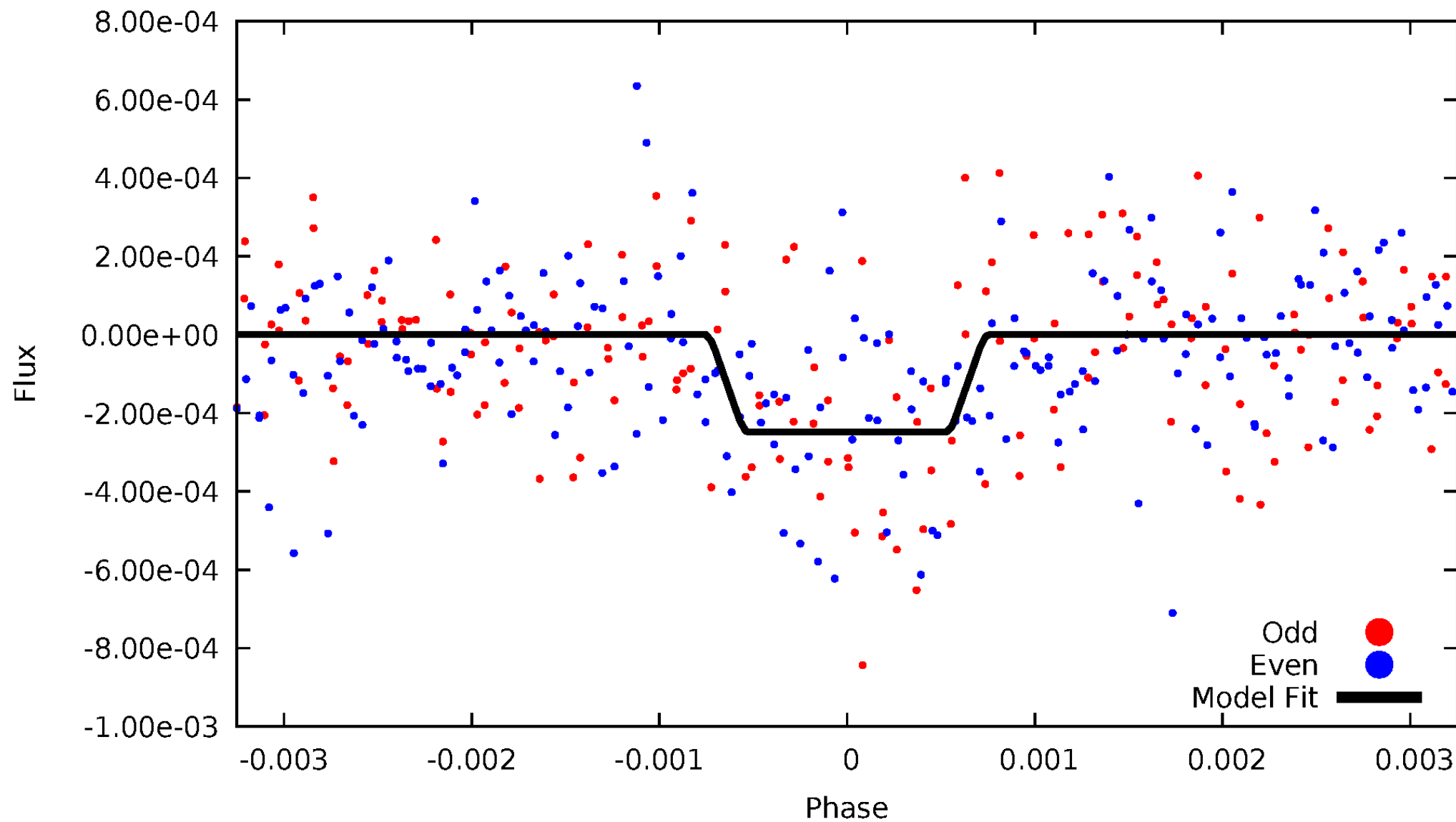
# DV Odd/Even

TCE 003852476-01



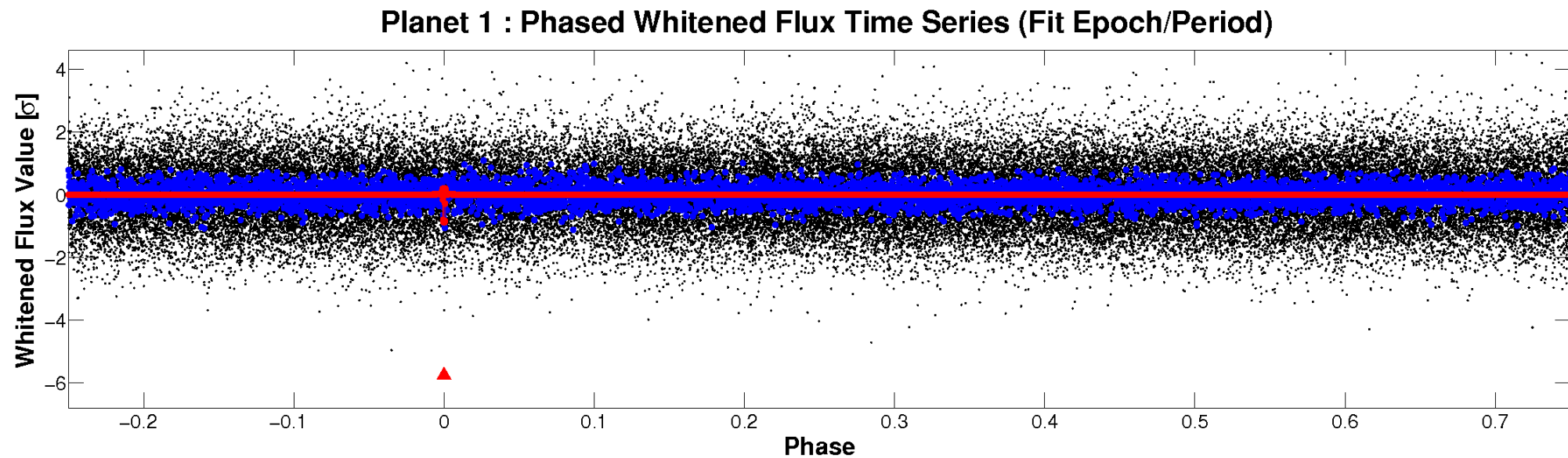
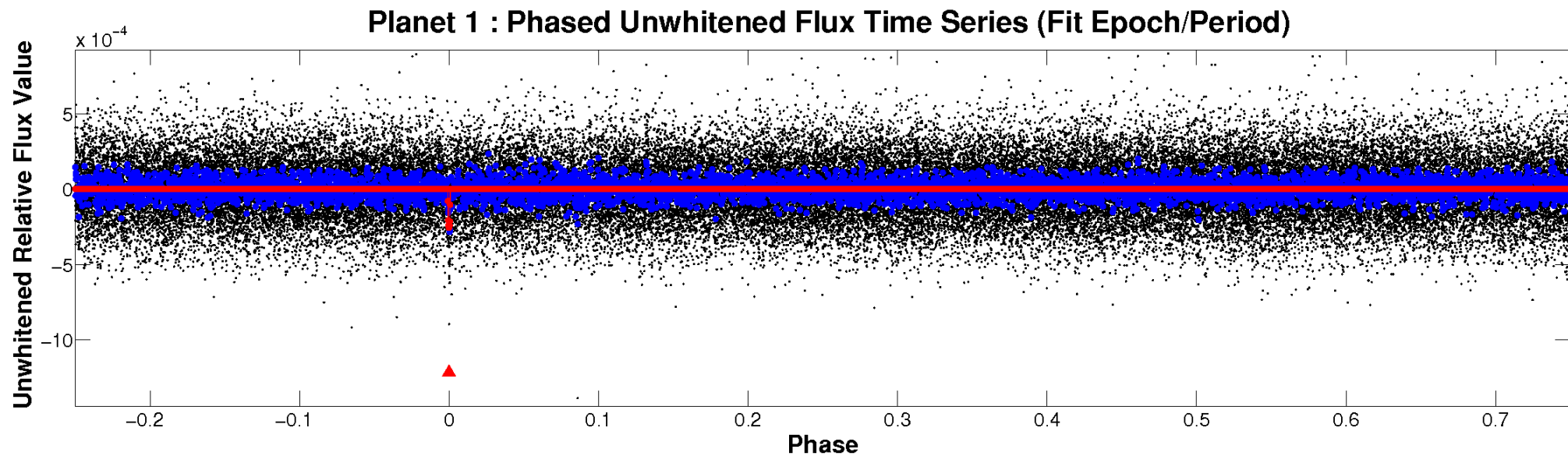
# ALT Odd/Even

TCE 003852476-01



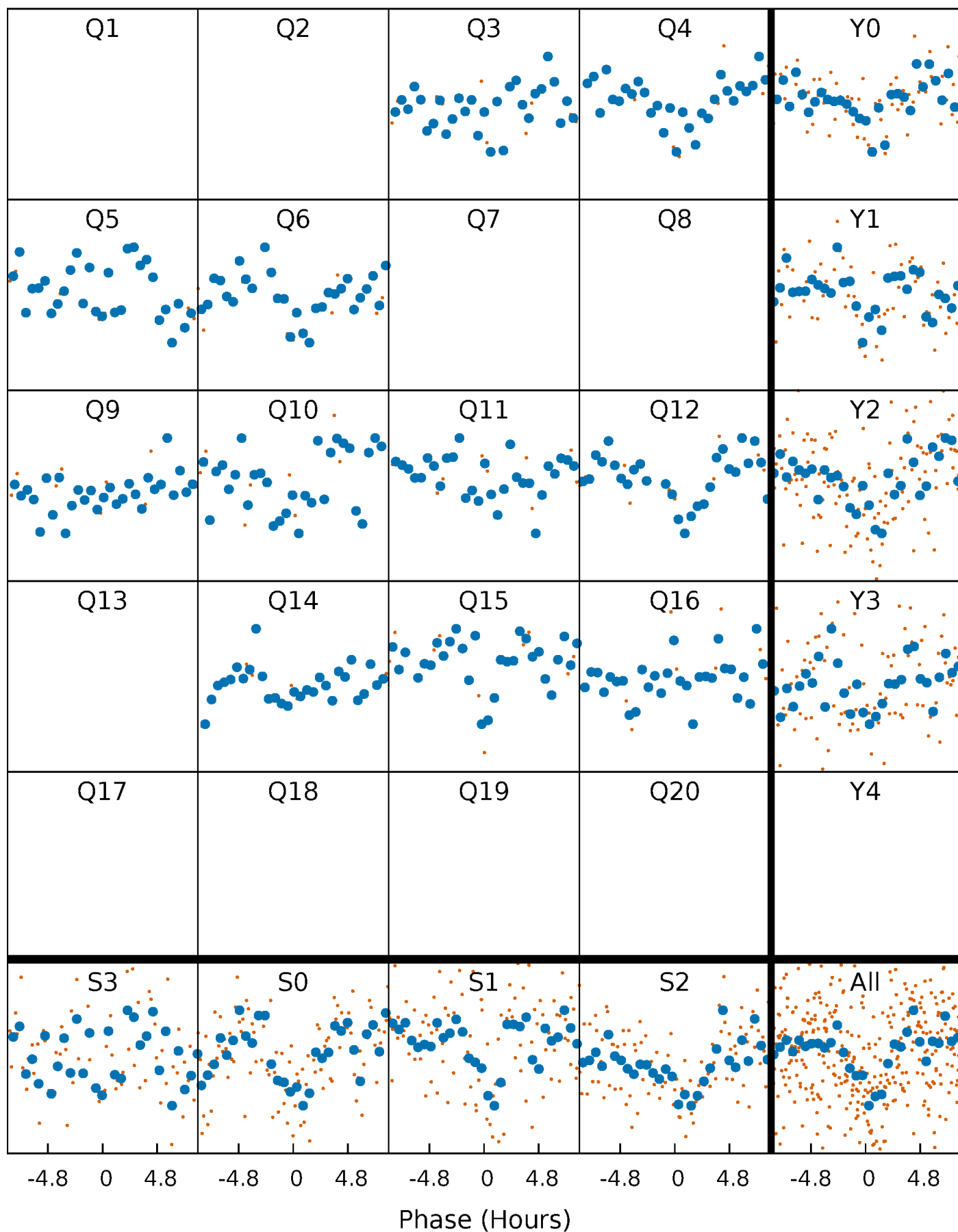


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

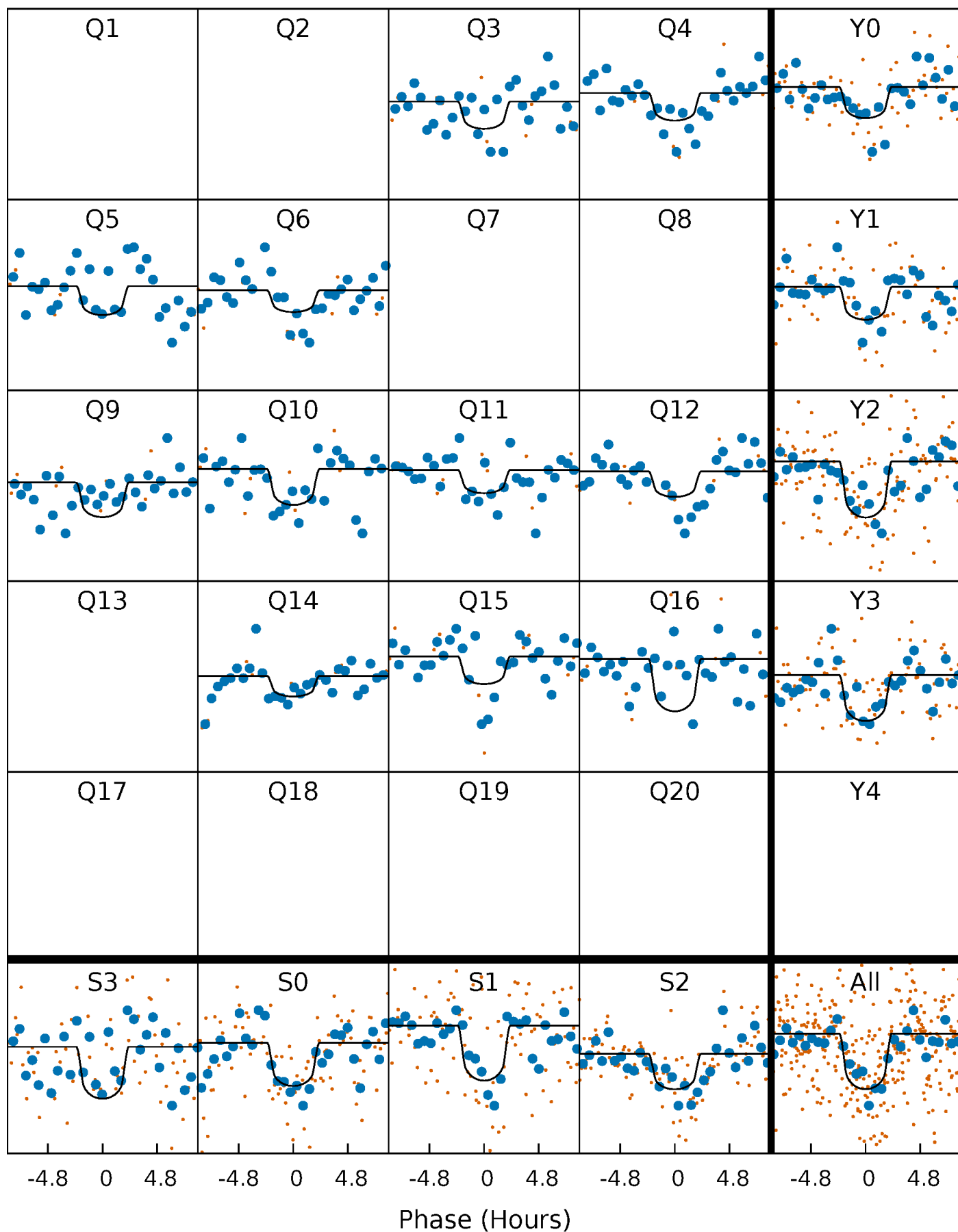
TCE 003852476-01 P=111.742092 Days  $T_0=166.330390$  (BKJD)





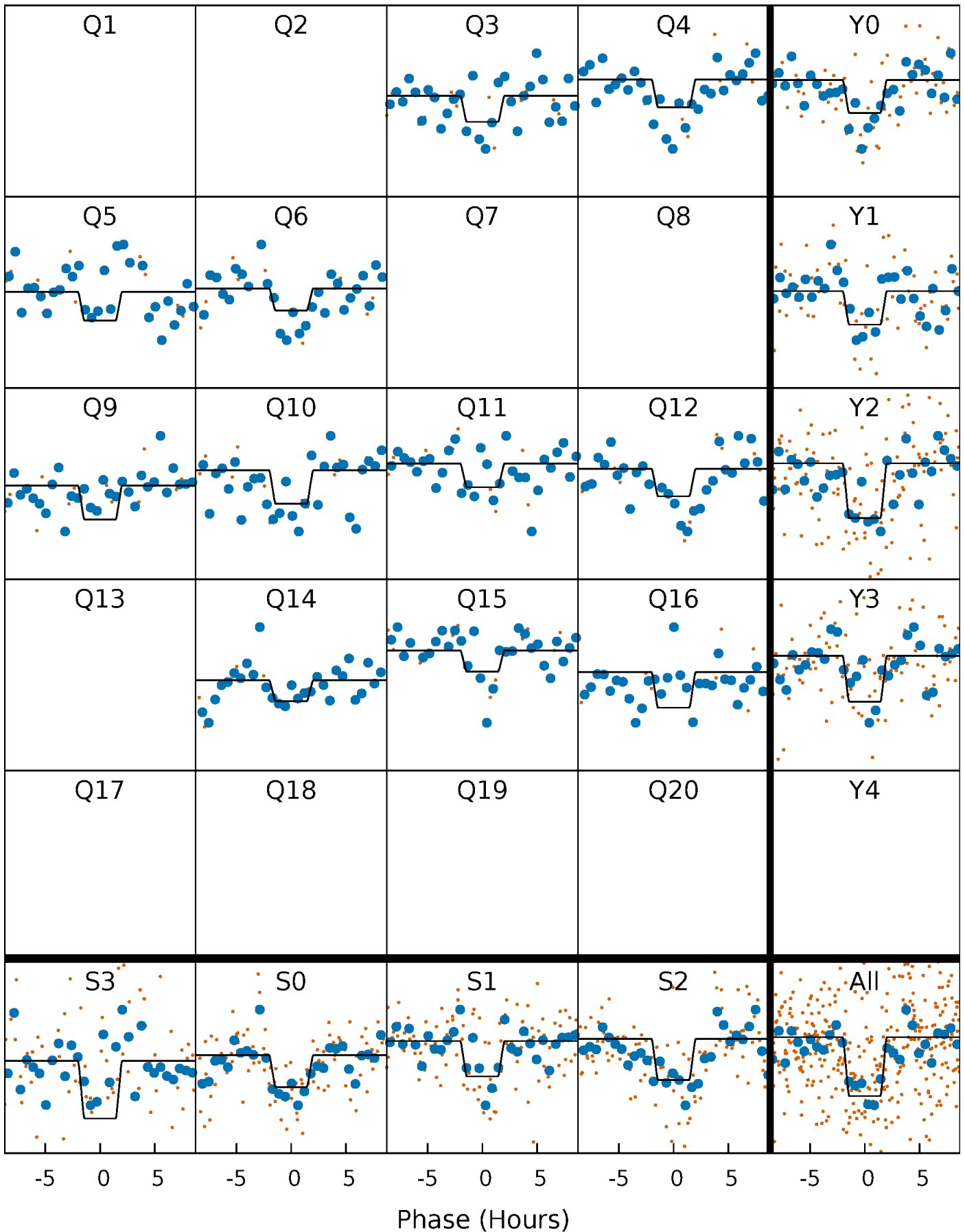
# DV Quarter-Phased Transit Curves

TCE 003852476-01 P=111.742092 Days  $T_0=166.330390$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

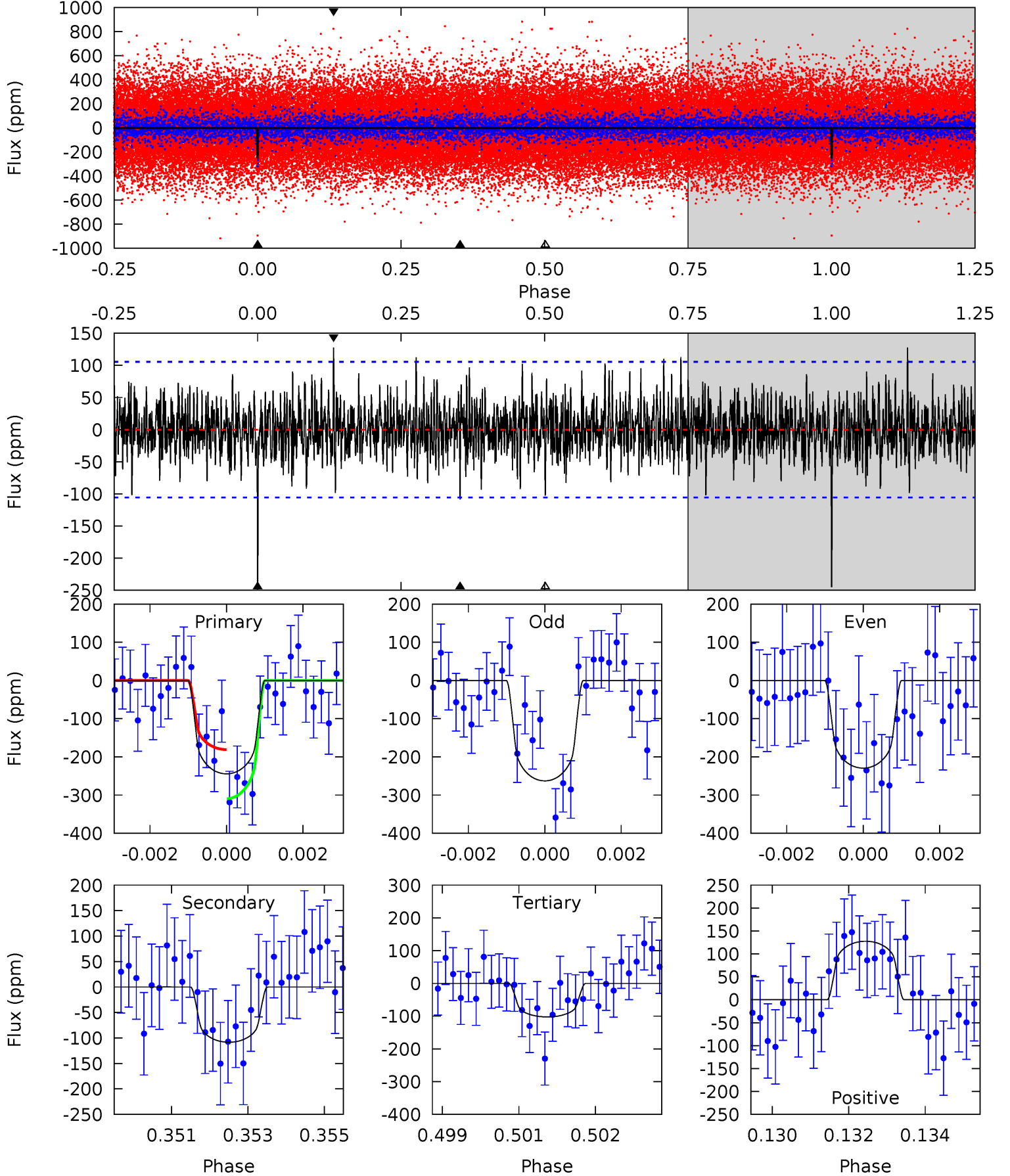
TCE 003852476-01 P=111.738618 Days  $T_0=166.360557$  (BKJD)



# DV Model-Shift Uniqueness Test

003852476-01,  $P = 111.742092$  Days,  $E = 54.588298$  Days

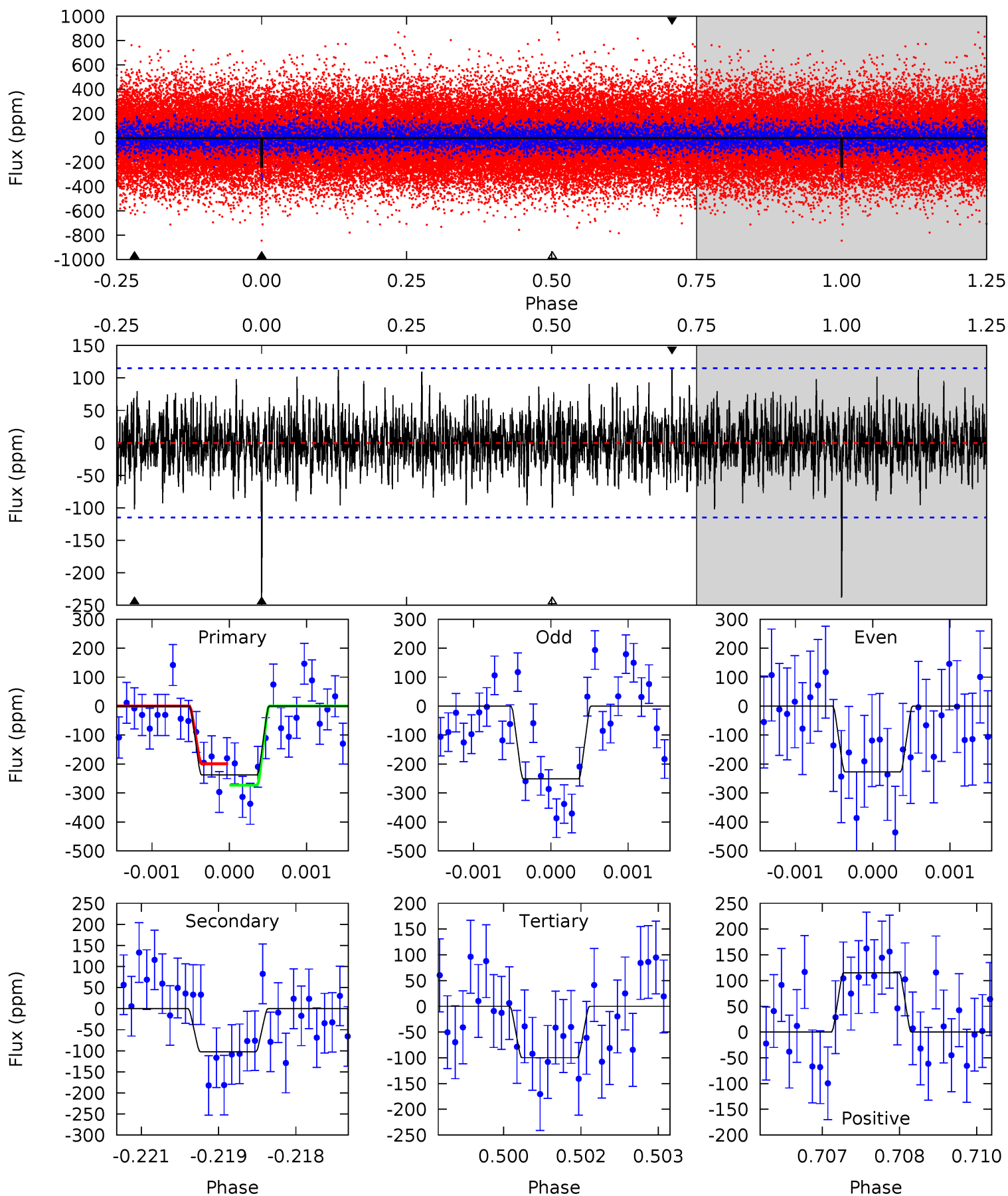
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	5.50	5.20	6.48	5.35	3.14	1.61	7.21	5.93	0.30	-0.98	0.84	1.08	0.34	3.26



# Alt Model-Shift Uniqueness Test

003852476-01, P = 111.738618 Days, E = 54.621939 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
11.1	4.79	4.67	5.40	5.38	3.18	1.43	6.48	5.75	0.12	-0.61	0.57	1.08	0.33	1.74



### Stellar Parameters For KIC 003852476

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5267^{+110}_{-173}$	$3.338^{+0.198}_{-0.144}$	$-0.320^{+0.200}_{-0.300}$	$4.525^{+0.787}_{-1.461}$	$1.628^{+0.205}_{-0.575}$	$0.025^{+0.034}_{-0.009}$
	+2%/-3%	+6%/-4%	+62%/-94%	+17%/-32%	+13%/-35%	+138%/-37%
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 003852476-01 / KOI 7672.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-108 \pm 20$	$8.63^{+5.61}_{-5.13}$	$940^{+55}_{-69}$	$4227^{+1798}_{-710}$	$225^{+1120}_{-144}$
Alt.	$-102 \pm 21$	$8.13^{+5.61}_{-4.65}$	$944^{+55}_{-66}$	$4260^{+1805}_{-692}$	$233^{+990}_{-152}$

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

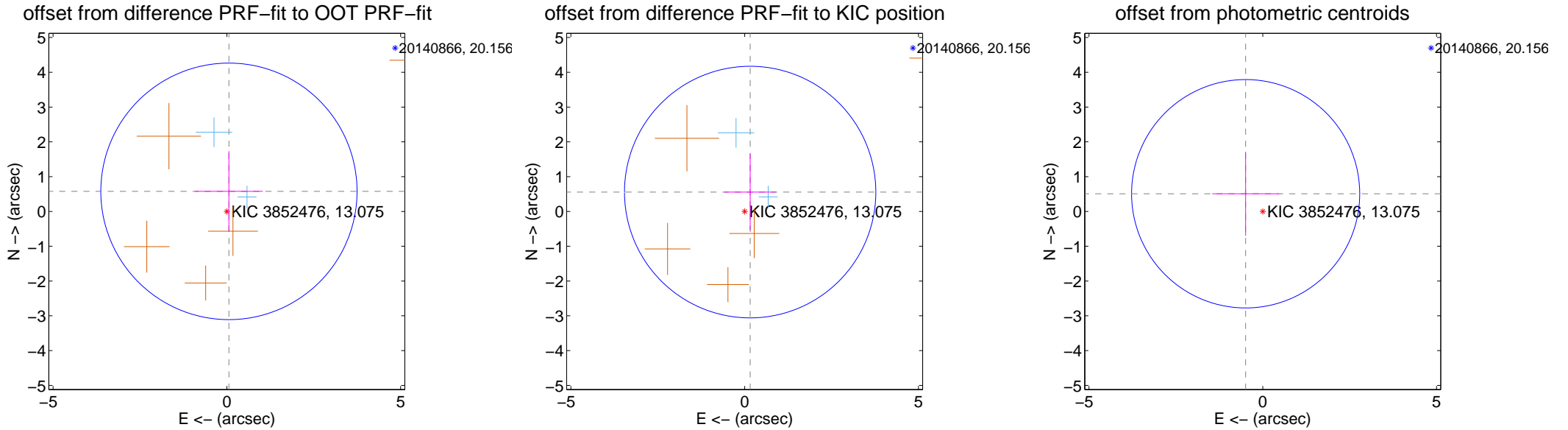
## DV Centroid Data

Supplemental centroid analysis for 003852476-01. Kepler magnitude: 13.07. Transit SNR 7.47

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

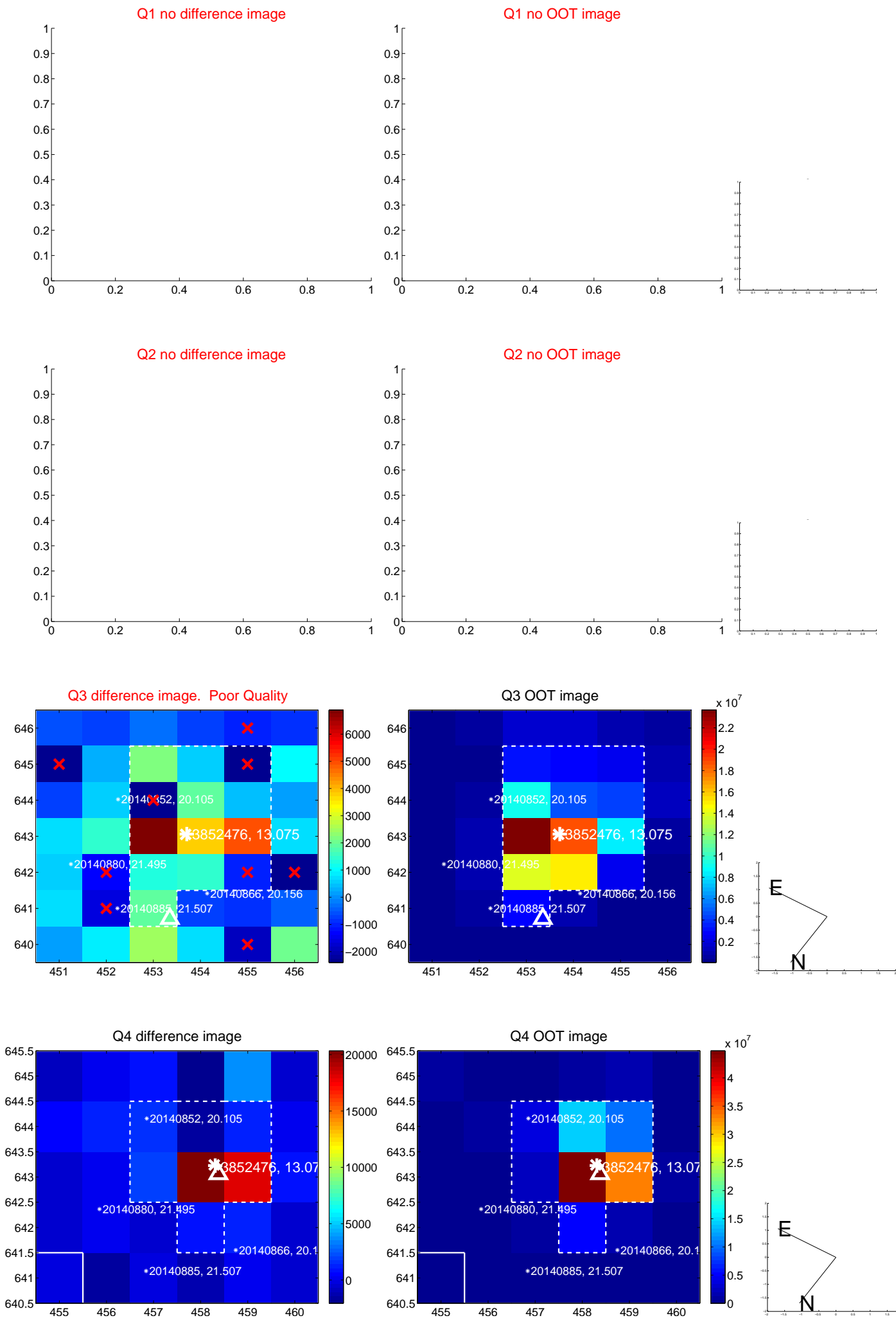
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.580 \pm 1.229$	0.47	$-0.060 \pm 0.976$	$0.577 \pm 1.156$
PRF-fit source offset from KIC position	$0.578 \pm 1.205$	0.48	$-0.158 \pm 0.747$	$0.556 \pm 1.097$
photometric centroid source offset	$0.71 \pm 1.09$	0.65	$0.49 \pm 0.96$	$0.51 \pm 1.21$



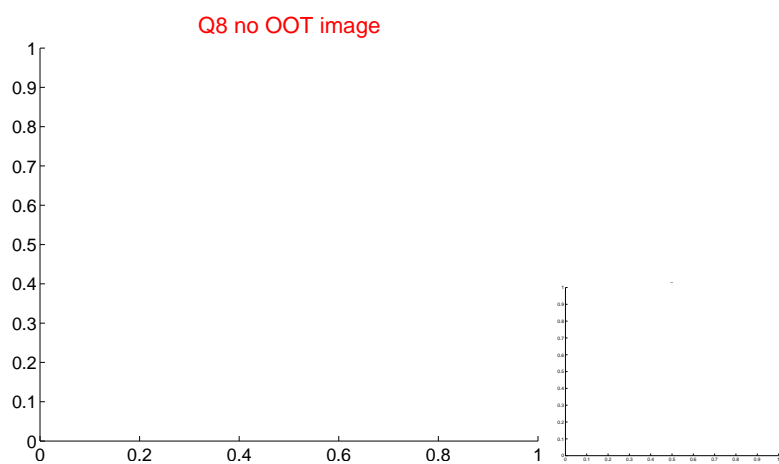
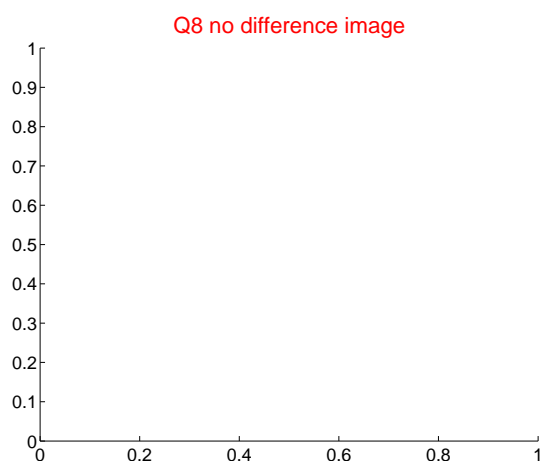
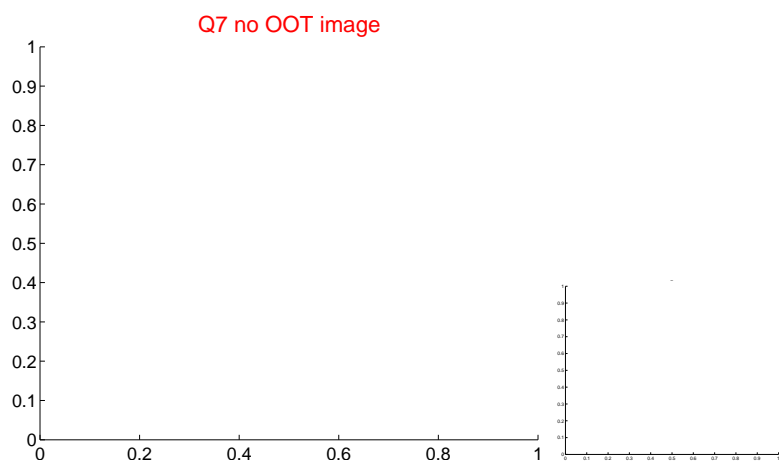
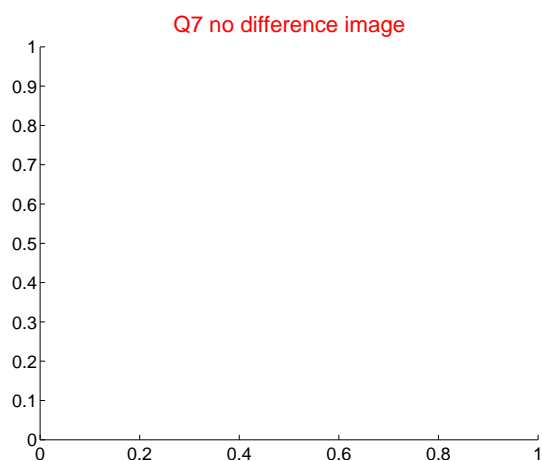
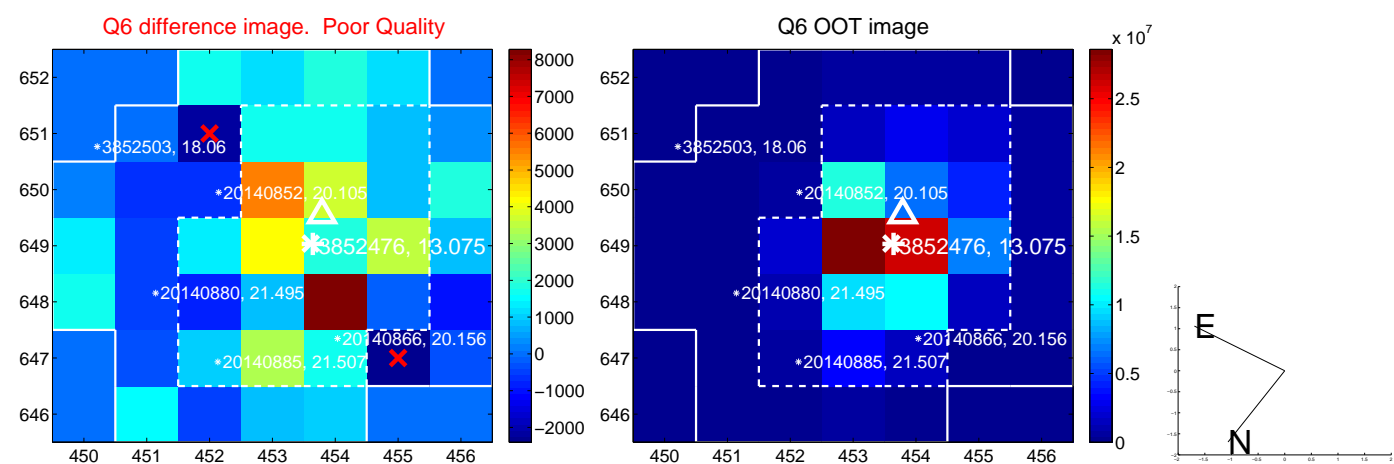
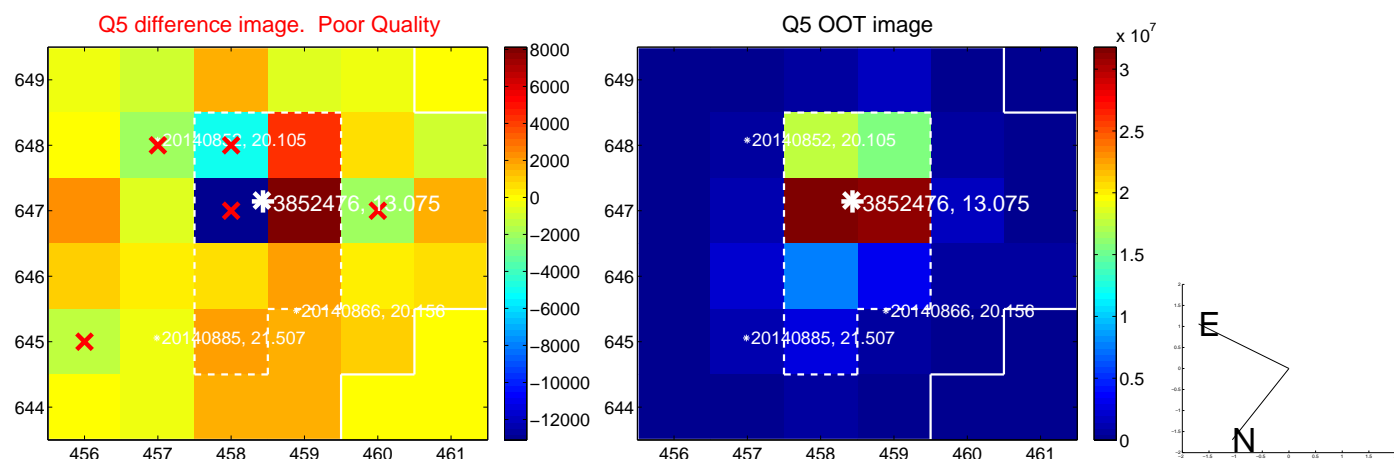
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



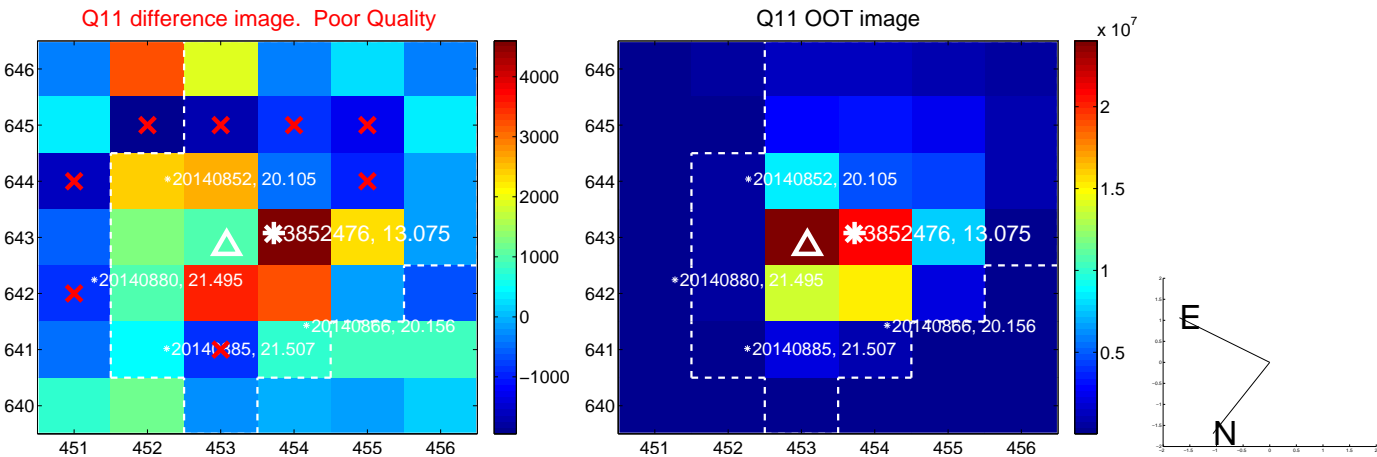
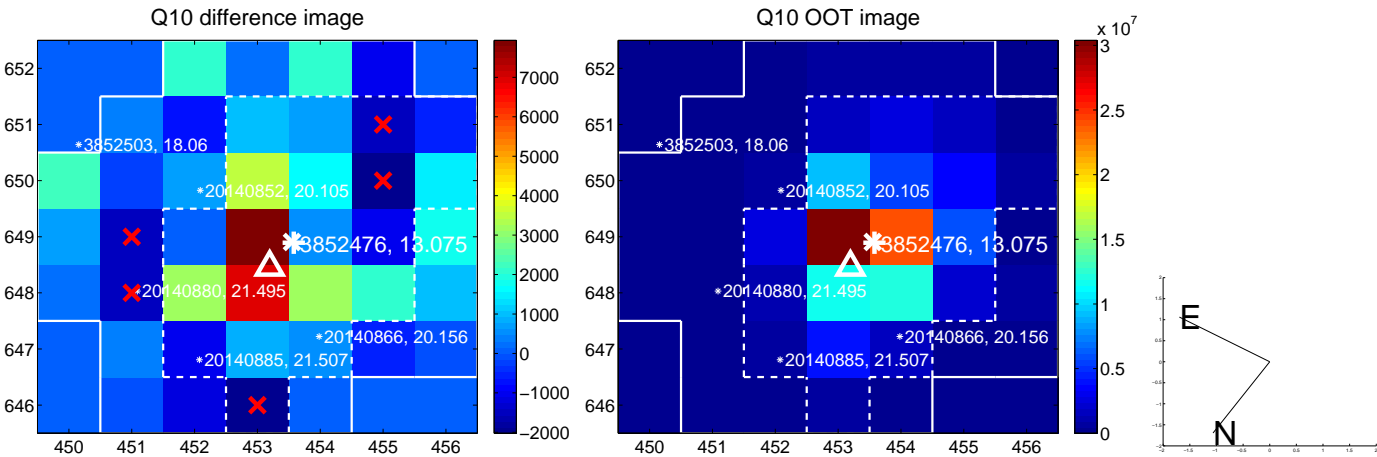
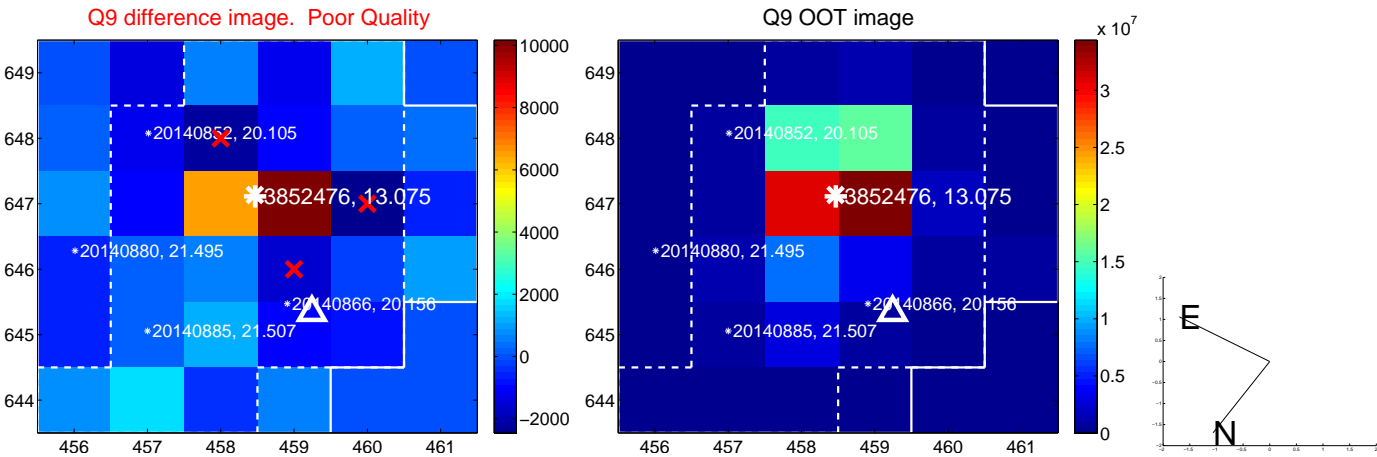
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



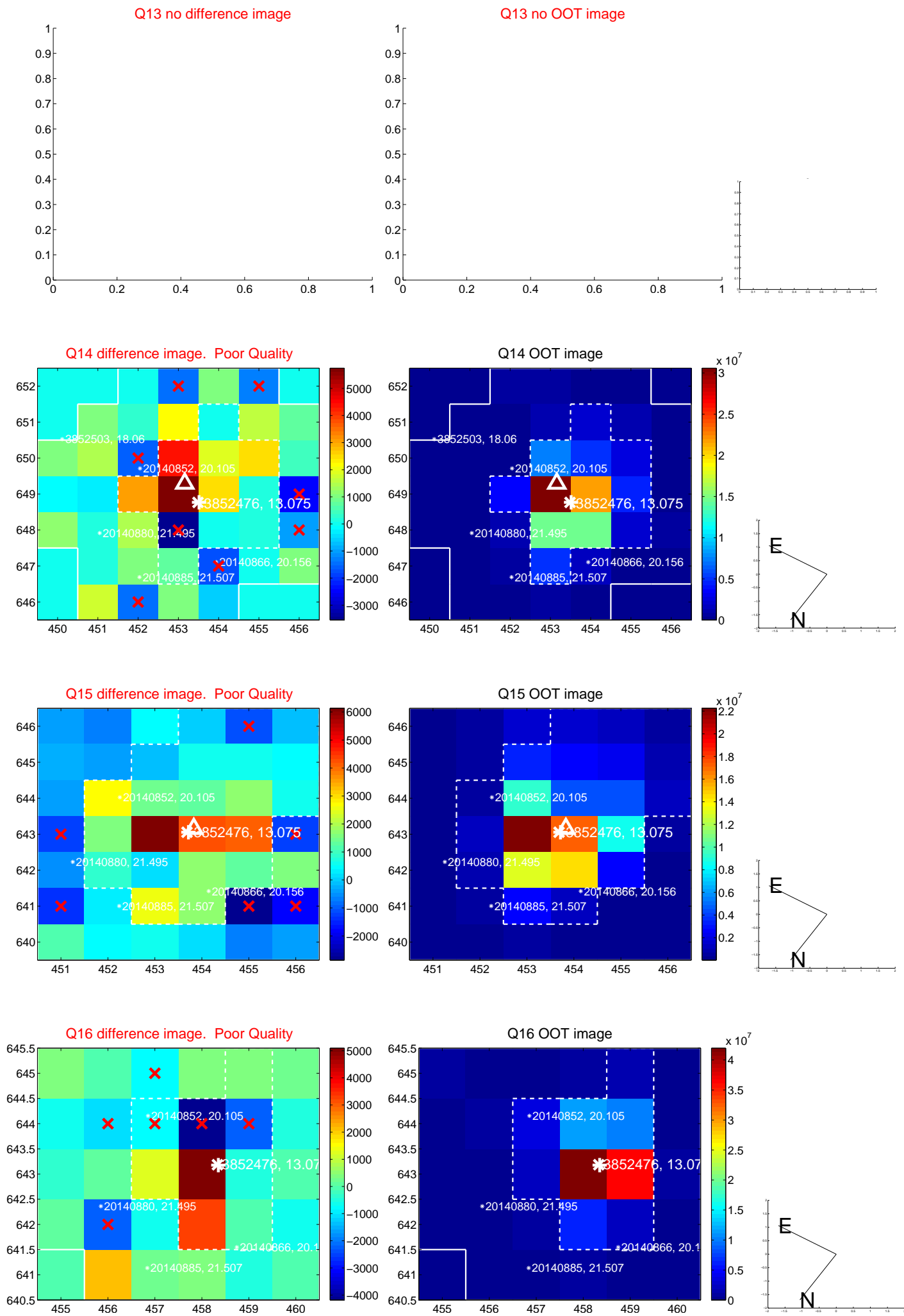
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



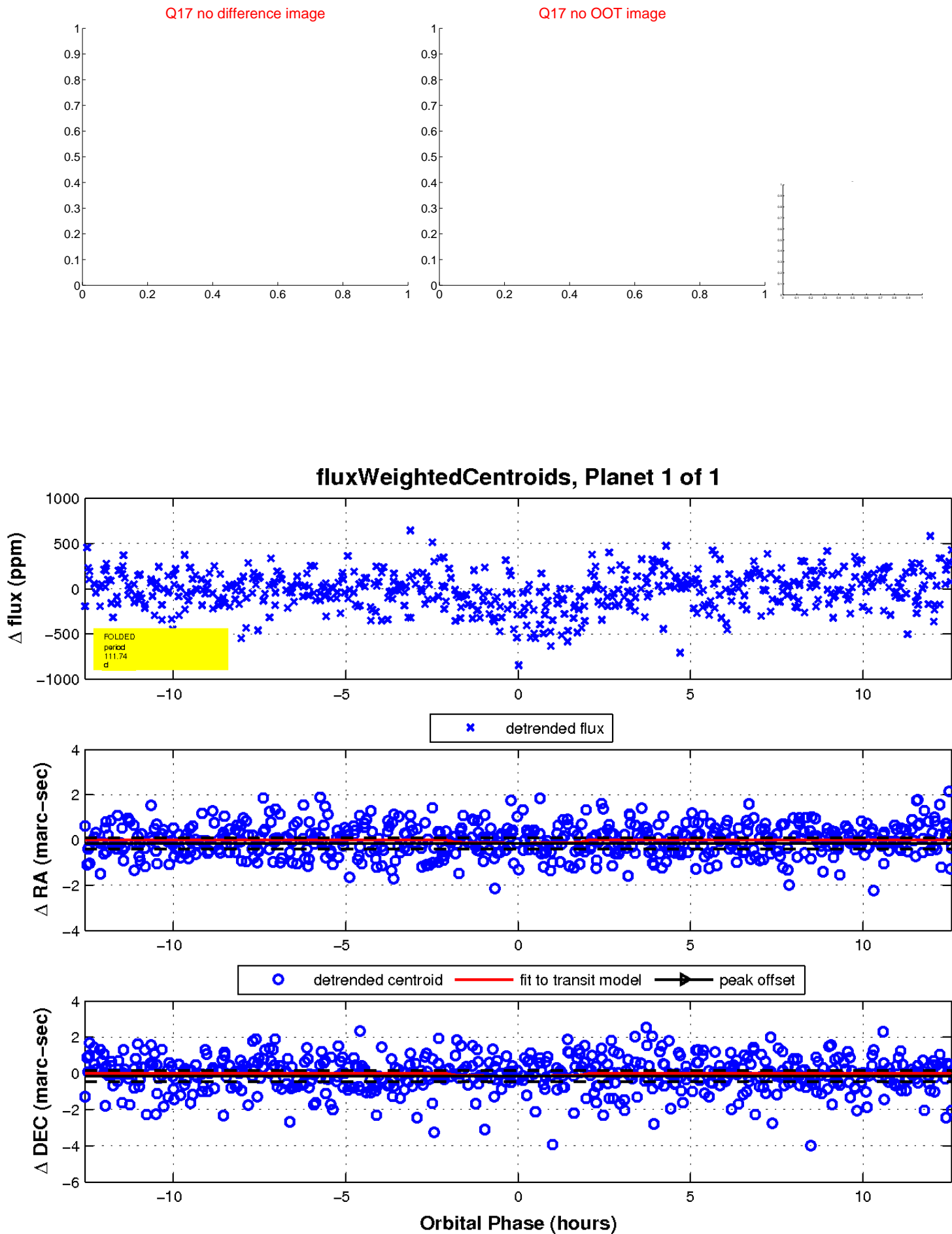
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

