

# KIC 008871285

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008871285-01	OBS	No	368.192466	234.704124	1398.6	23.992	9.4	10.0	0.81	5215	5.75	0.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008871285-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_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.

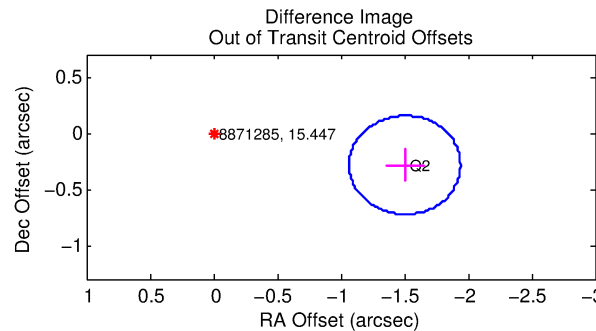
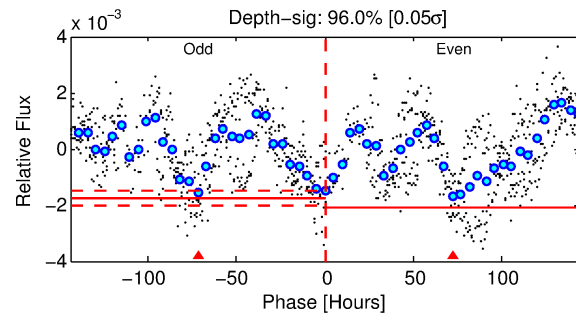
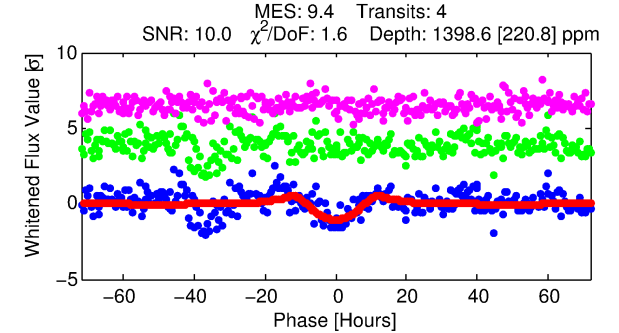
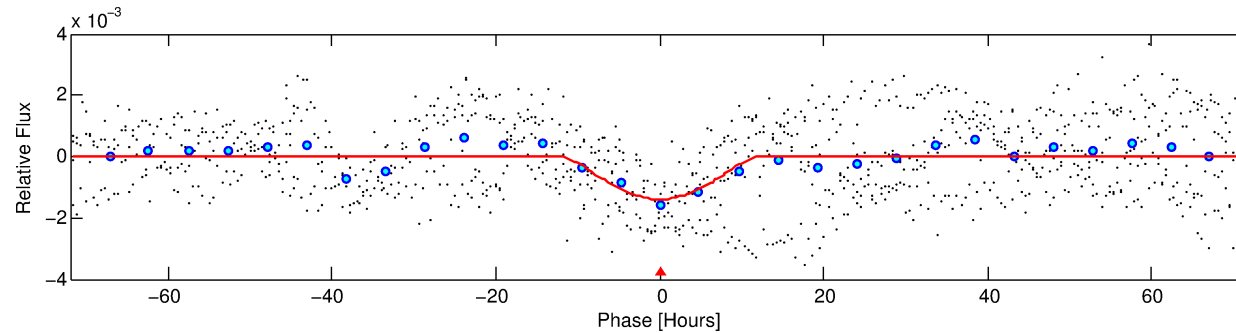
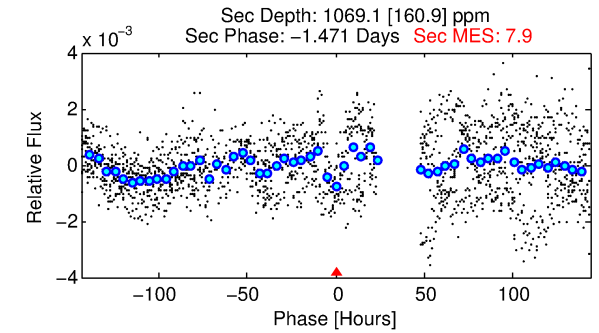
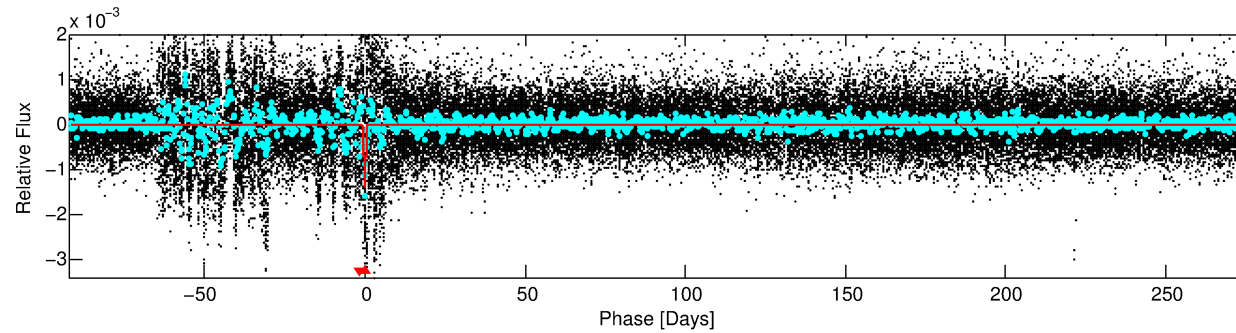
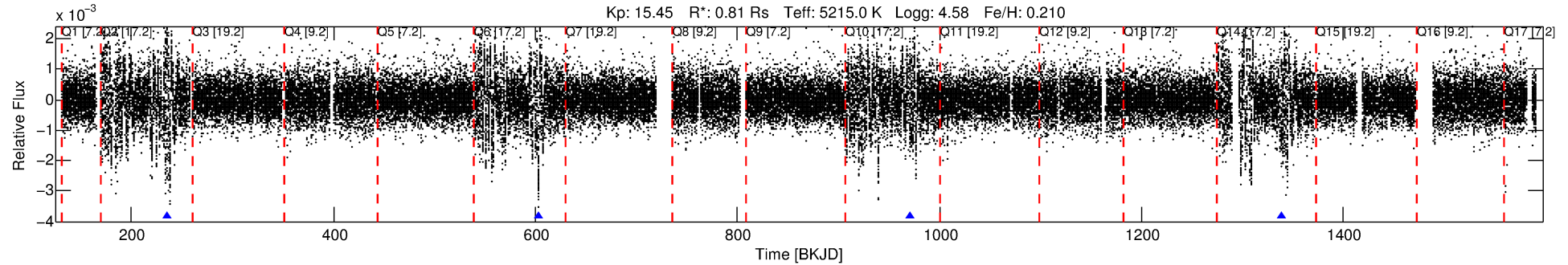
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008871285-01

No Significant Match Found

# DV One-Page Summary

KIC: 8871285 Candidate: 1 of 1 Period: 368.192 d



## DV Fit Results:

Period = 368.19247 [0.02443] d  
Epoch = 234.7041 [0.0473] BKJD  
Rp/R\* = 0.0653 [0.1641]  
a/R\* = 44.48 [26.23]  
b = 1.00 [0.25]  
Seff = 0.45 [0.10]  
Teq = 209 [12] K  
Rp = 5.75 [14.49] Re  
a = 0.9765 [0.1283] AU  
Ag = 16936.60 [85268.32] [0.20 $\sigma$ ]  
Teff = 3691 [4644] K [0.75 $\sigma$ ]

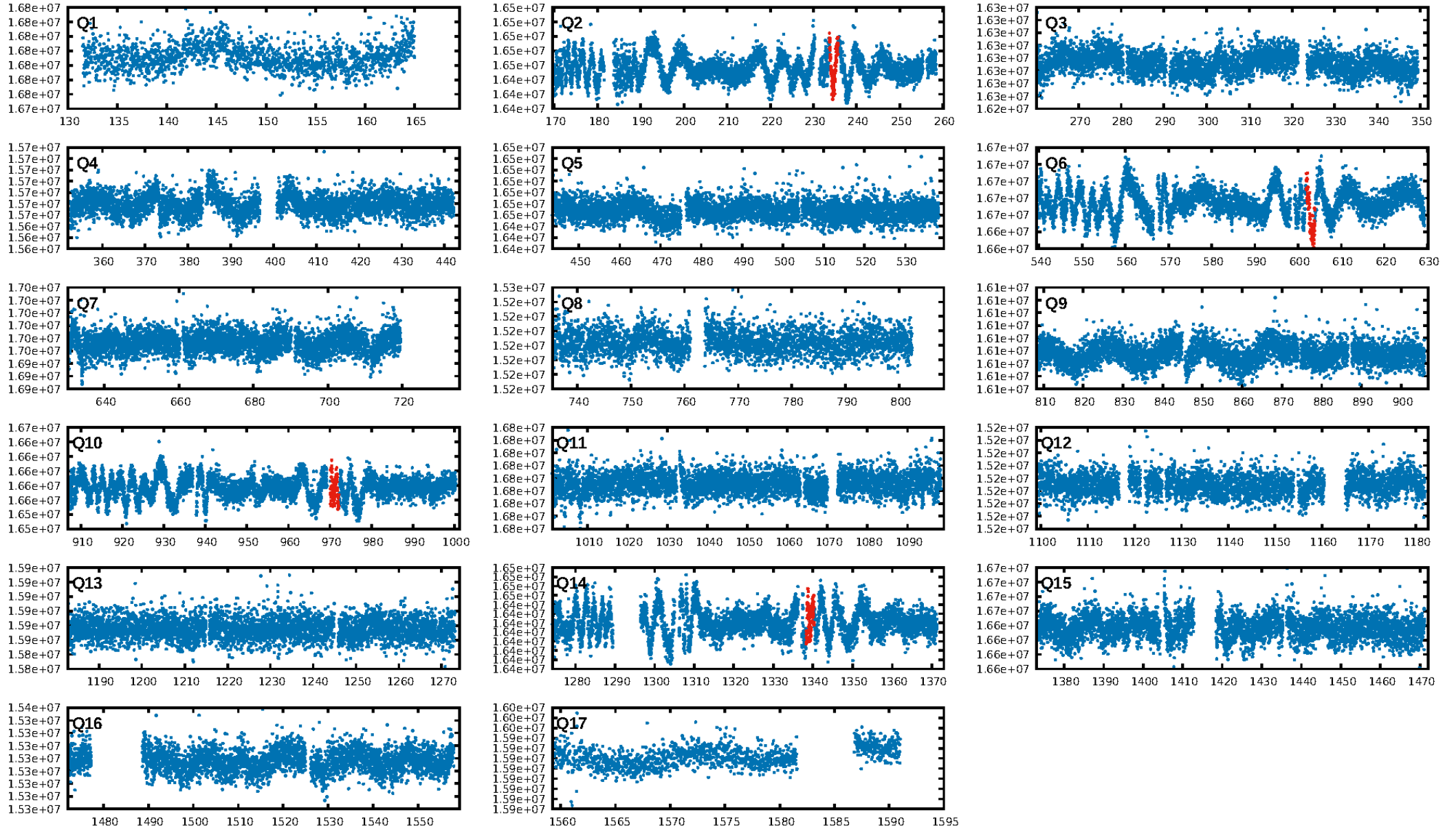
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.3%  
ModelChiSquareGoF-sig: 55.4%  
**Bootstrap-pfa: 1.53e-12**  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -1.486  
Centroid-sig: 0.0%  
Centroid-so: 5.796 arcsec [4.23 $\sigma$ ]  
OotOffset-rm: 1.530 arcsec [10.46 $\sigma$ ]  
**KicOffset-rm: 2.006 arcsec [13.74 $\sigma$ ]**  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

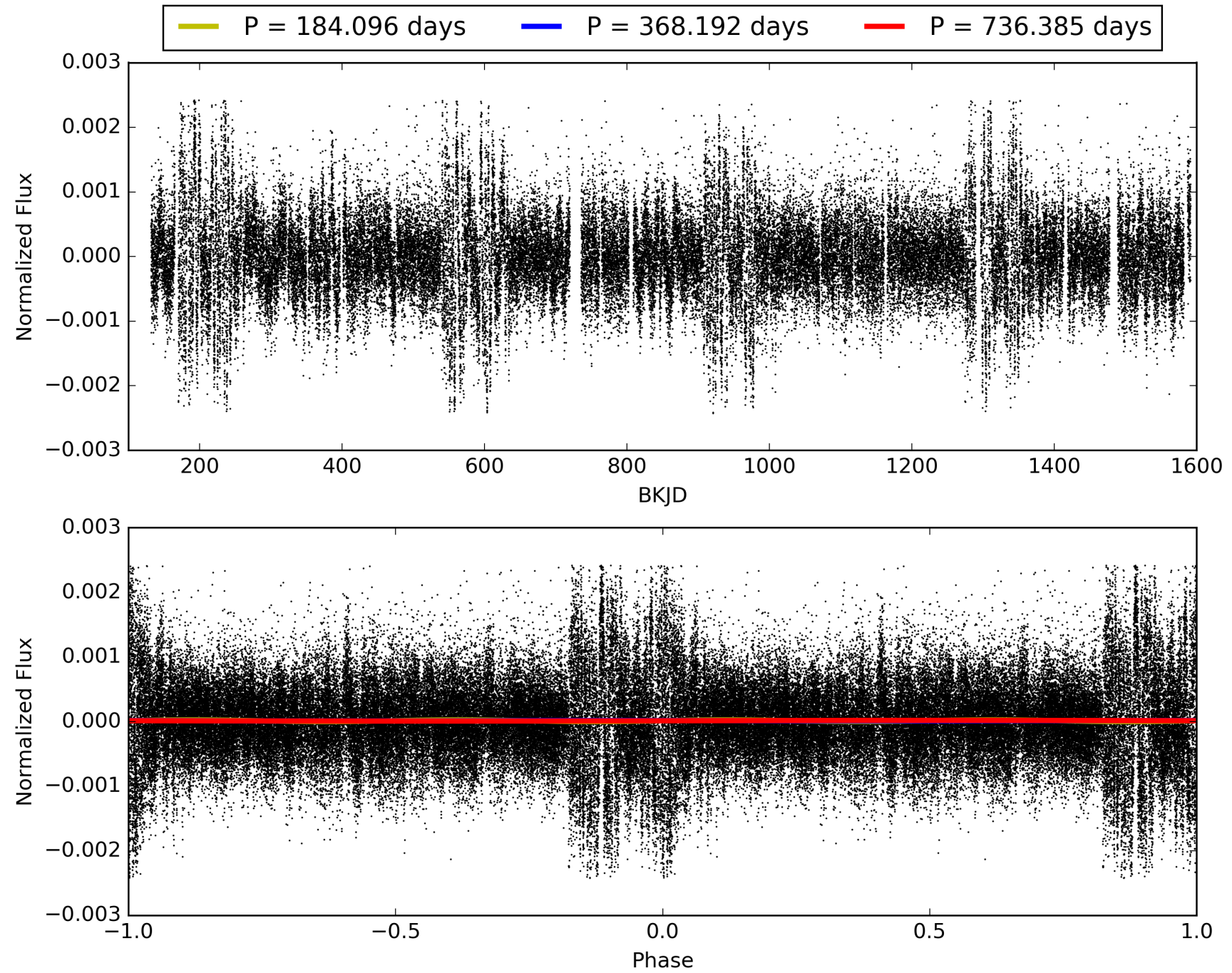
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:24:25 Z

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

# TCE 008871285-01, PDC Light Curves

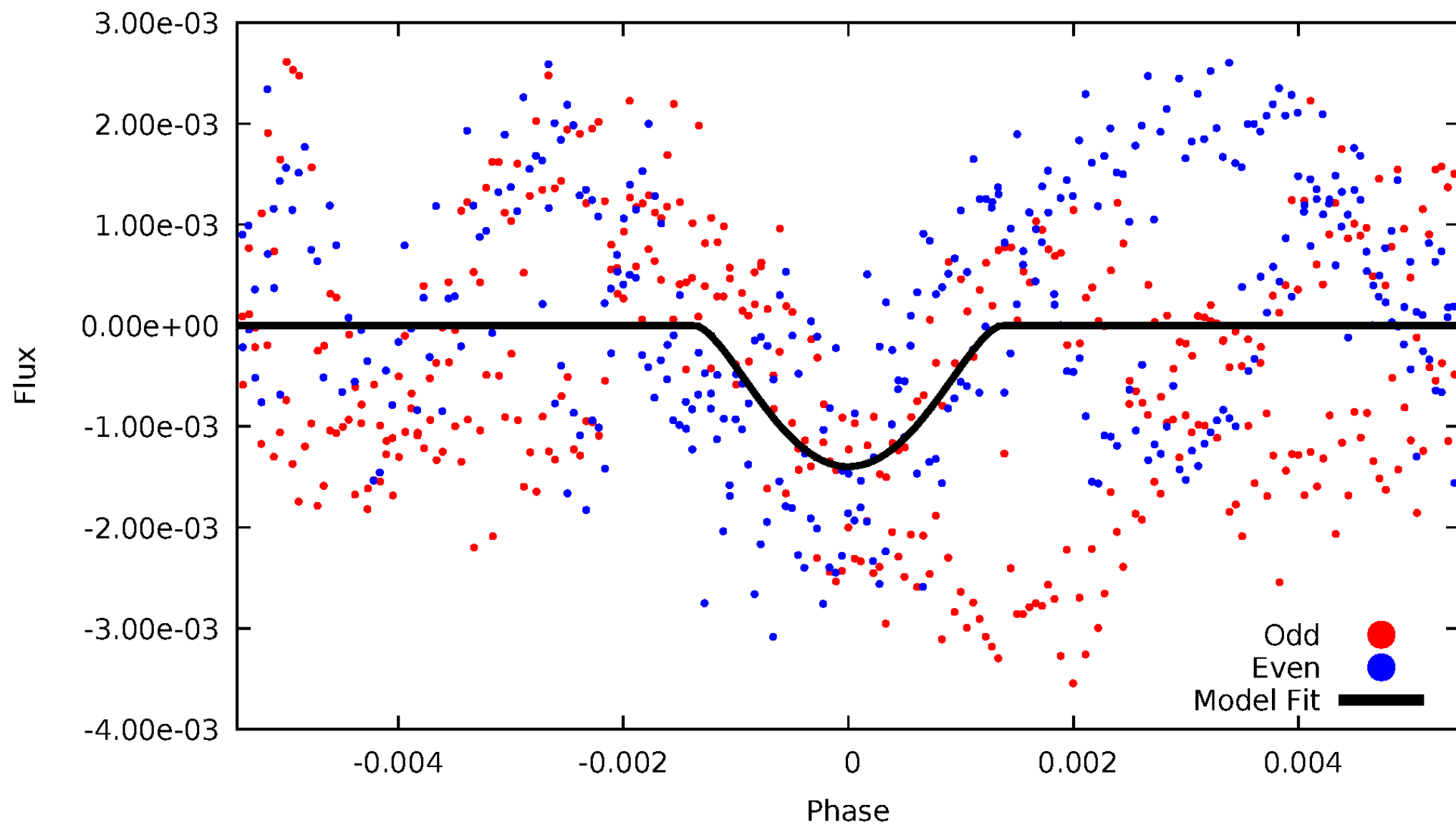


TCE 008871285-01



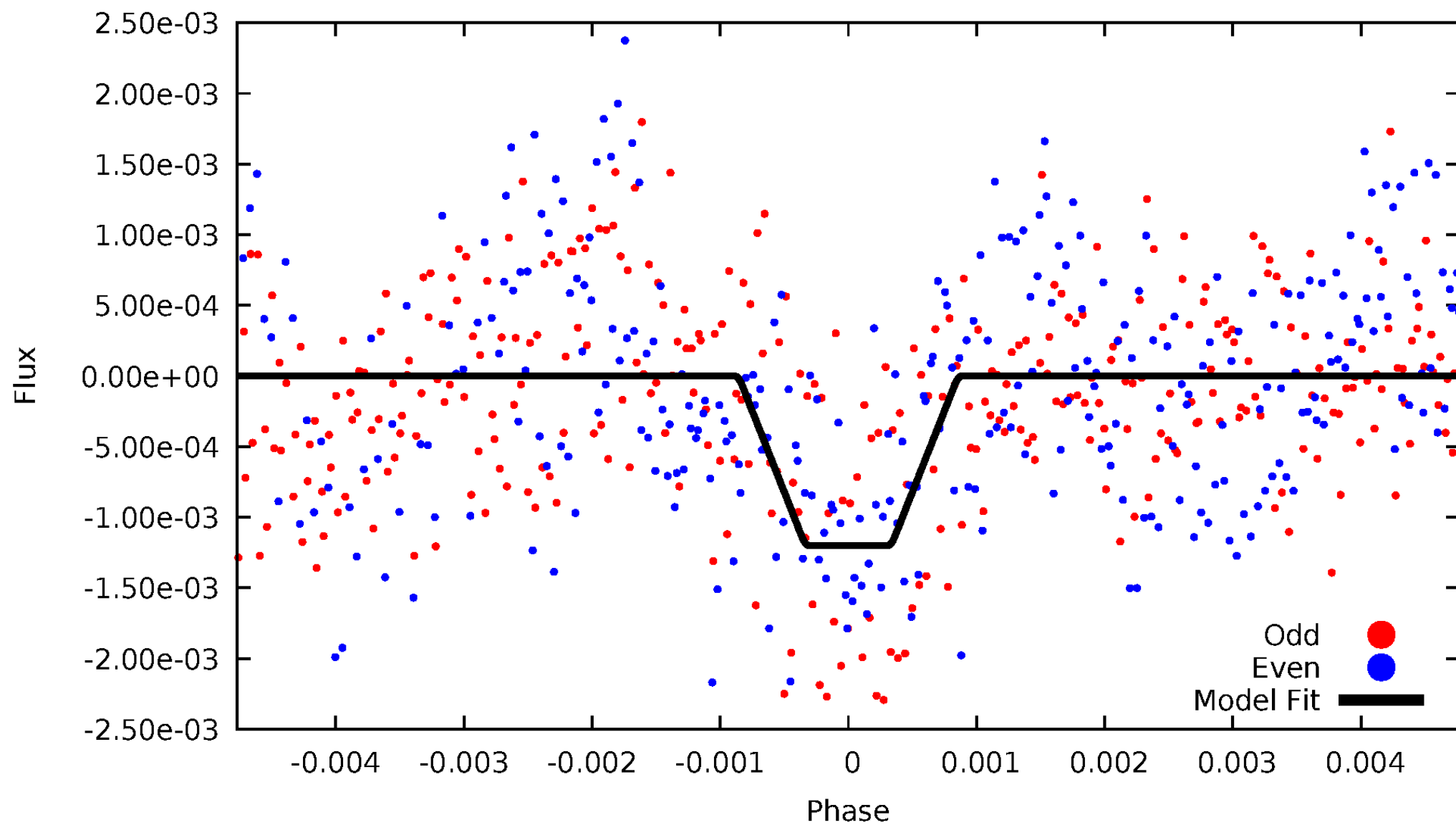
# DV Odd/Even

TCE 008871285-01



# ALT Odd/Even

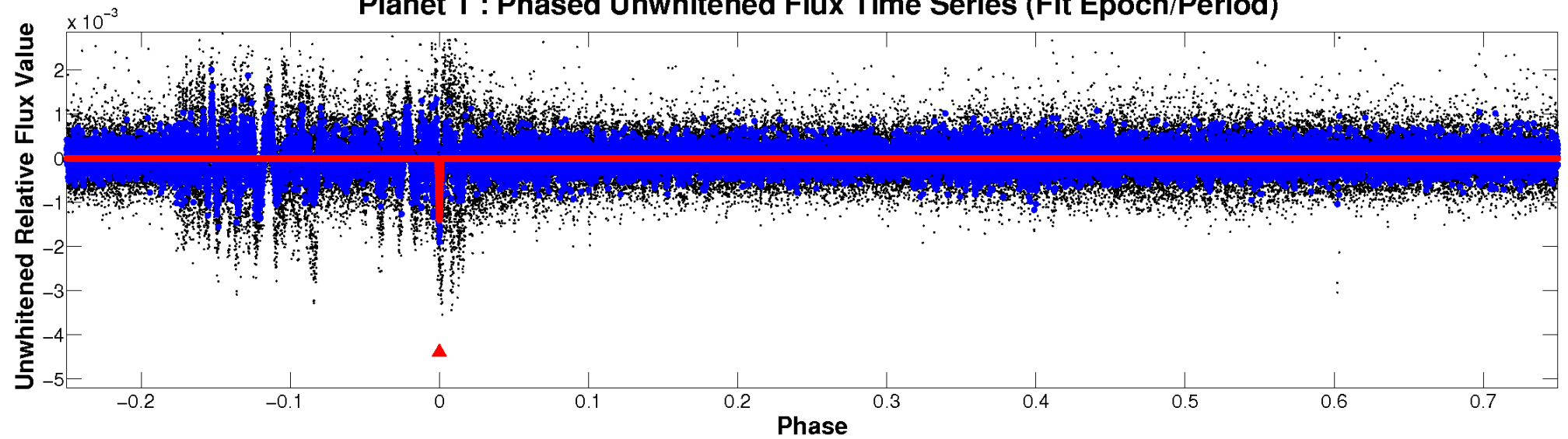
TCE 008871285-01



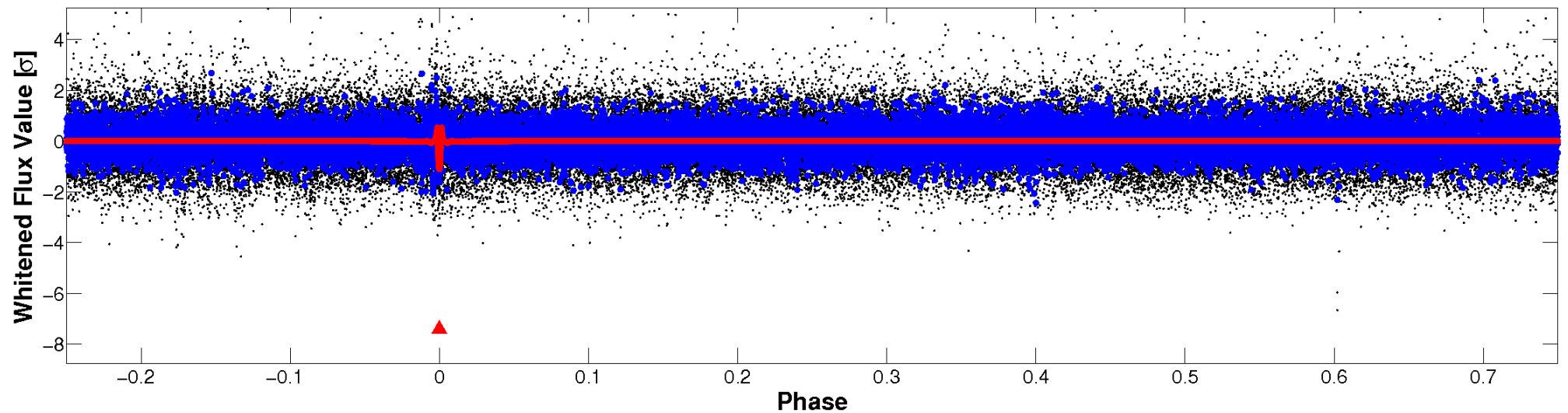


# Non-Whitened Vs. Whitened Light Curve

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

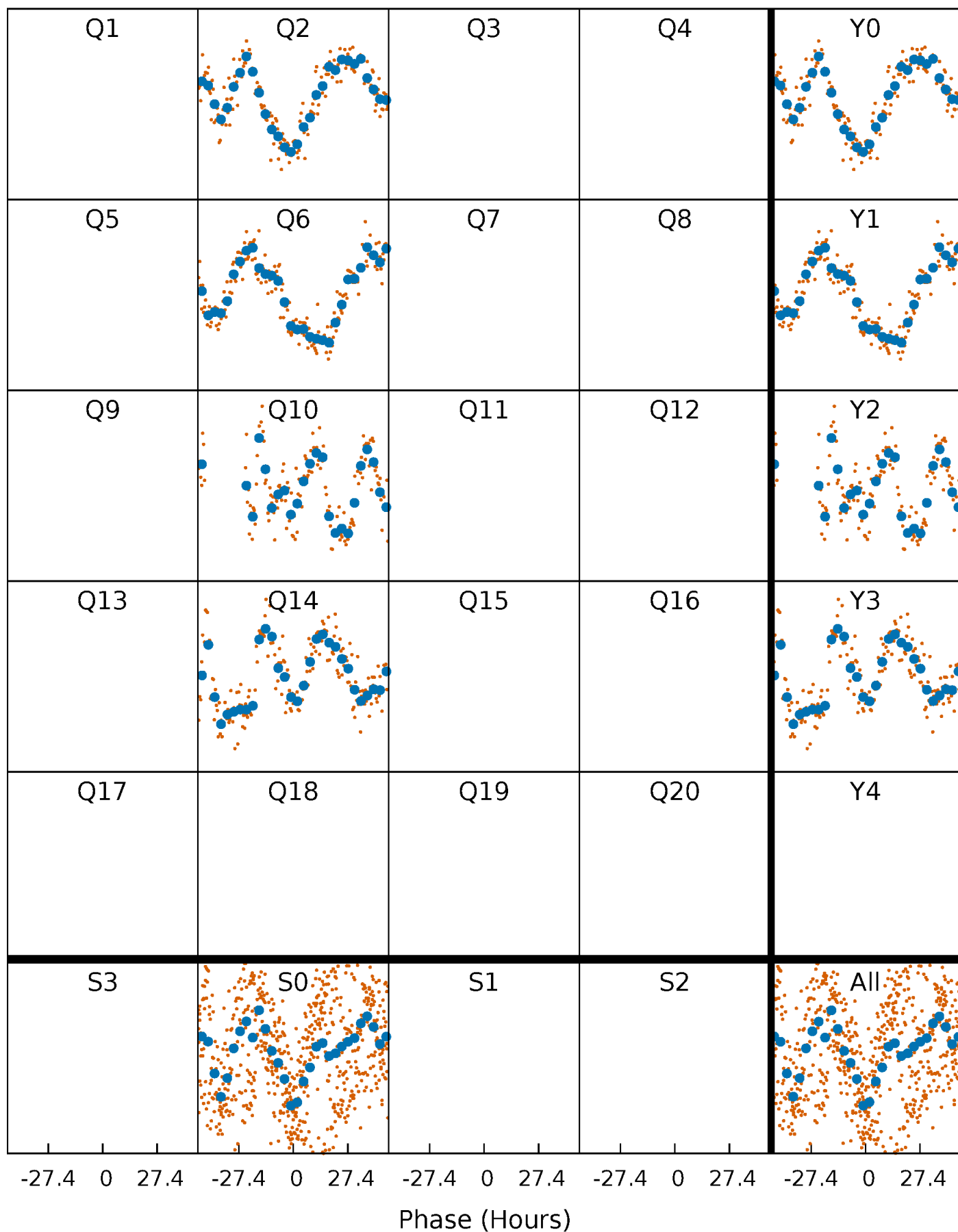


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

TCE 008871285-01 P=368.192466 Days  $T_0=234.704124$  (BKJD)





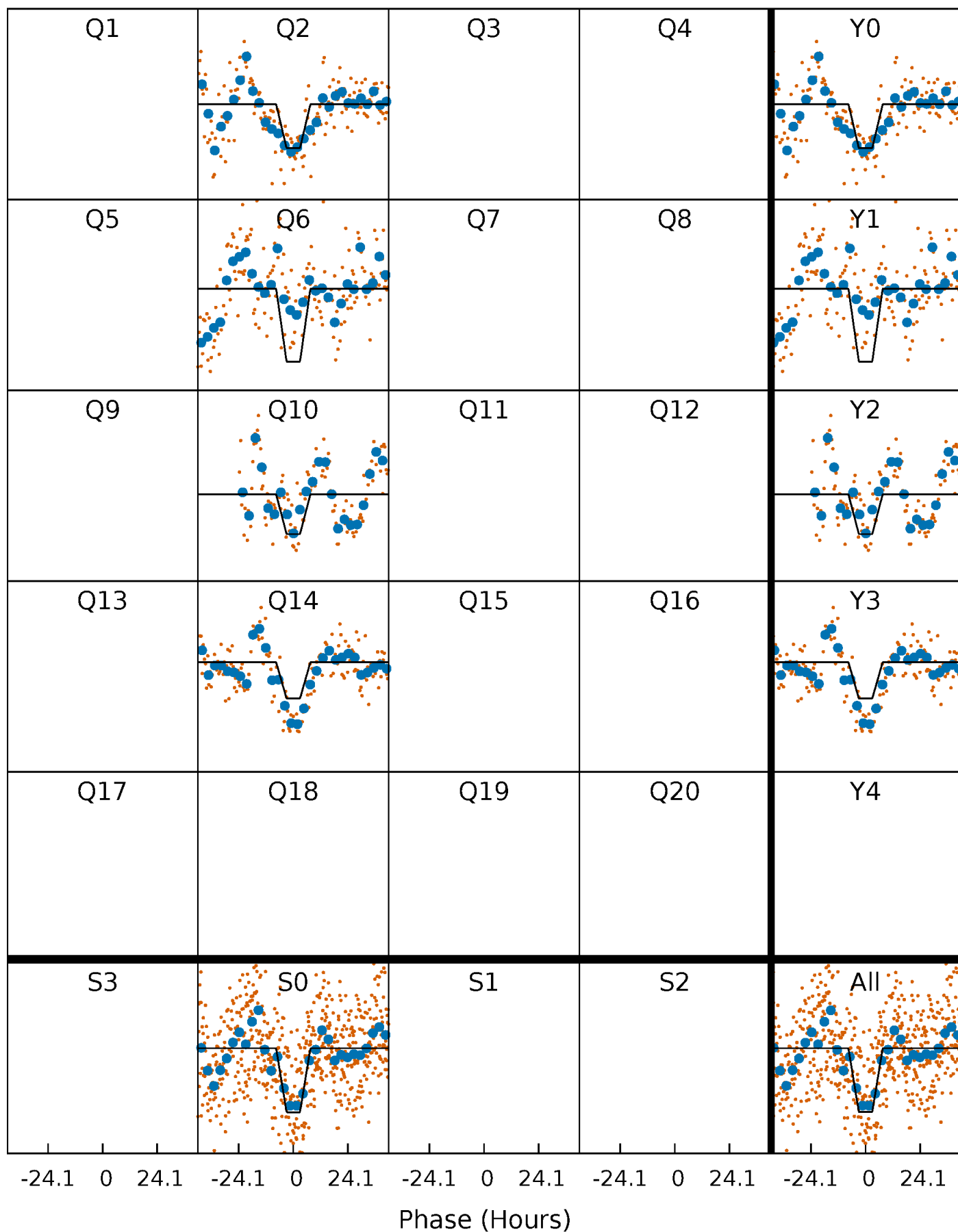
# DV Quarter-Phased Transit Curves

TCE 008871285-01 P=368.192466 Days  $T_0=234.704124$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

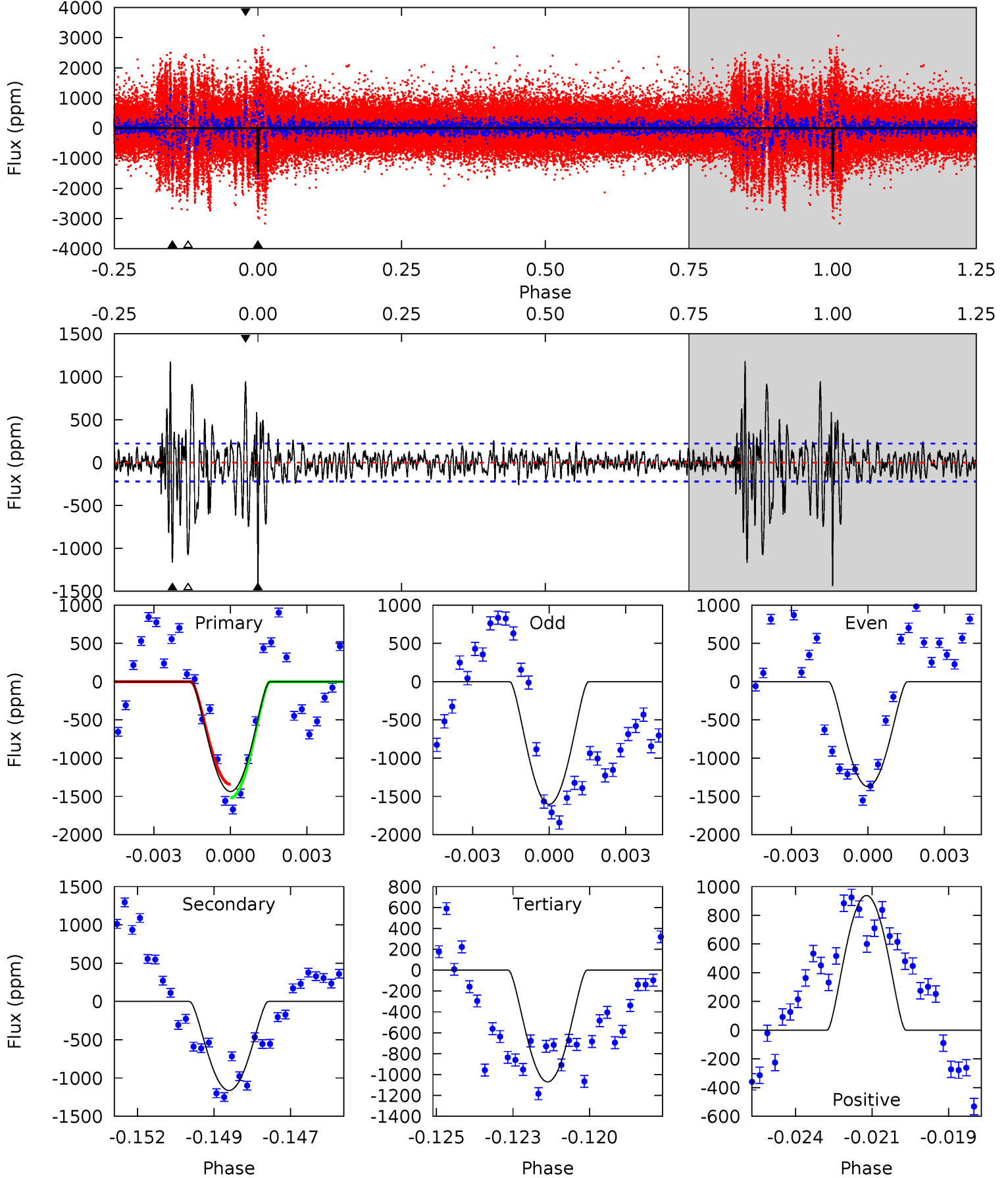
TCE 008871285-01 P=368.226374 Days  $T_0=234.624511$  (BKJD)



# DV Model-Shift Uniqueness Test

008871285-01, P = 368.192466 Days, E = 234.704124 Days

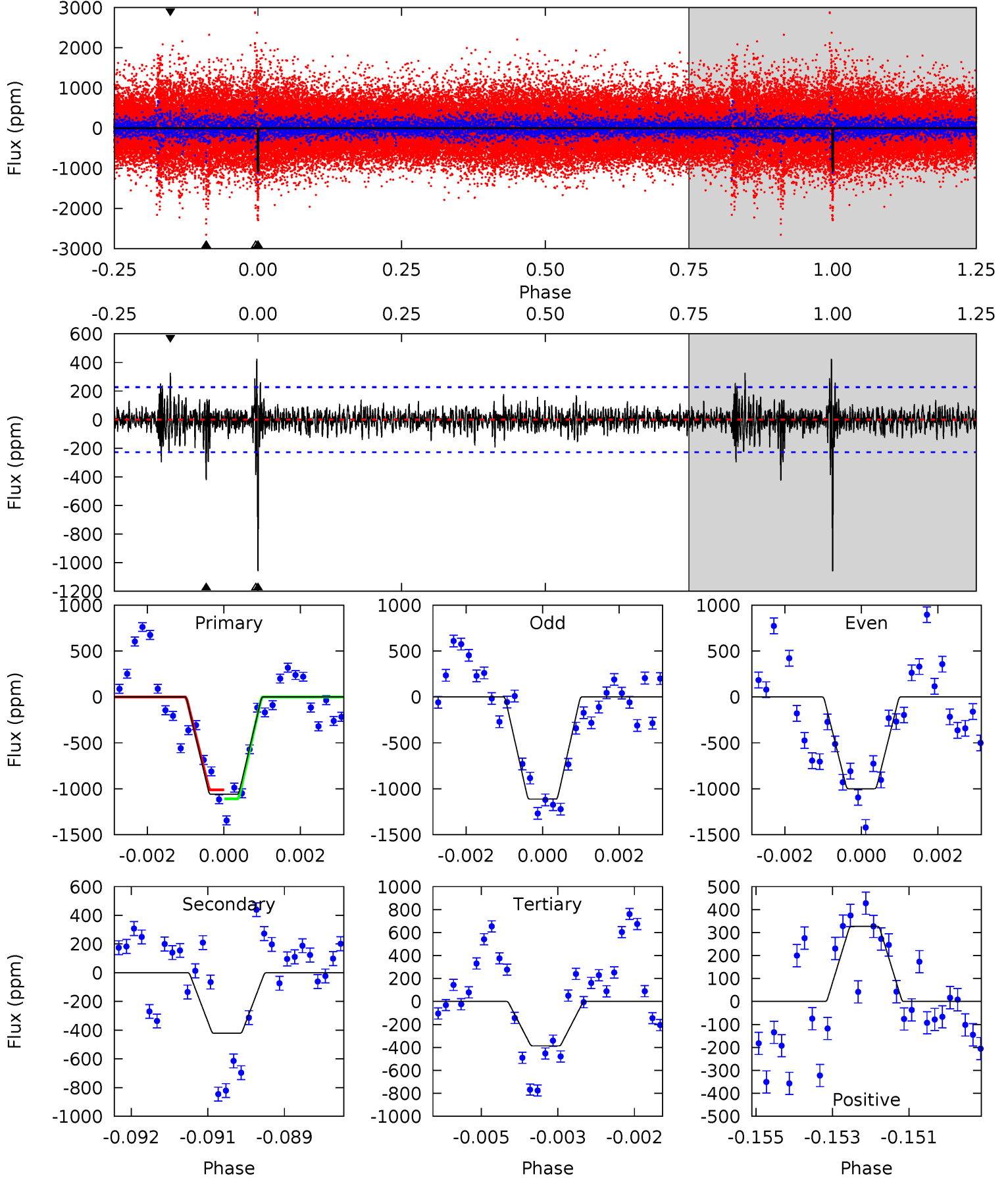
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
34.3	27.7	25.5	22.4	5.27	3.00	4.39	8.73	11.9	2.20	5.35	2.83	0.93	0.45	2.11



# Alt Model-Shift Uniqueness Test

008871285-01, P = 368.226374 Days, E = 234.624511 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
25.0	9.92	9.12	7.70	5.35	3.13	1.36	15.8	17.3	0.80	2.22	1.33	1.07	0.29	1.16



### Stellar Parameters For KIC 008871285

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5215^{+157}_{-157}$	$4.585^{+0.026}_{-0.110}$	$0.210^{+0.200}_{-0.250}$	$0.808^{+0.122}_{-0.052}$	$0.917^{+0.046}_{-0.093}$	$2.448^{+0.344}_{-0.797}$
	+3%/-3%	+1%/-2%	+95%/-119%	+15%/-6%	+5%/-10%	+14%/-33%
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 008871285-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1163 \pm 42$	$13.32^{+11.49}_{-9.12}$	$297^{+13}_{-11}$	$3135^{+1522}_{-499}$	$3443^{+30608}_{-2476}$
Alt.	$-421 \pm 42$	$11.64^{+11.86}_{-7.96}$	$297^{+12}_{-11}$	$2797^{+1191}_{-440}$	$1573^{+15334}_{-1184}$

$T_{max}$  = 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

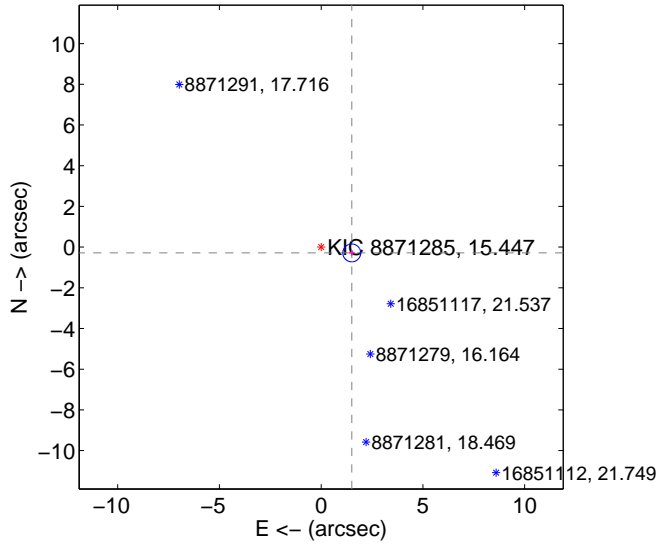
Supplemental centroid analysis for 008871285-01. Kepler magnitude: 15.45. Transit SNR 9.97

There are 0 quarters with good PRF difference image offsets

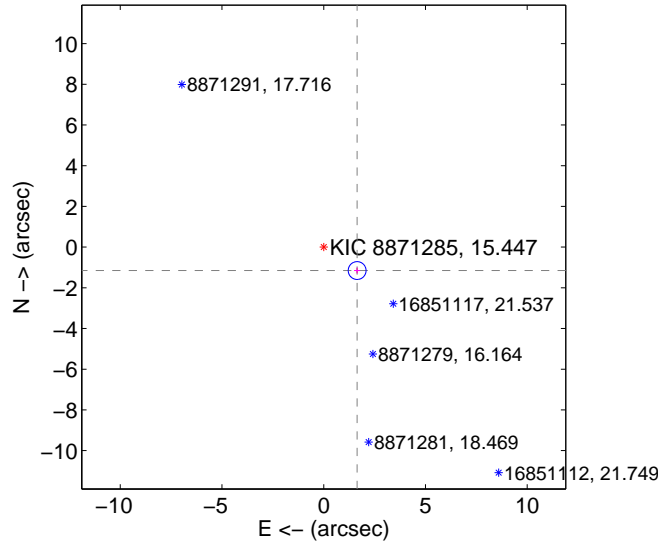
The direct PRF centroid is offset from the target star catalog position by about 0.88 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.530 \pm 0.146$	10.46	$-1.503 \pm 0.146$	$-0.286 \pm 0.145$
PRF-fit source offset from KIC position	$2.006 \pm 0.146$	13.74	$-1.642 \pm 0.146$	$-1.152 \pm 0.145$
photometric centroid source offset	$5.80 \pm 1.37$	4.23	$1.65 \pm 1.17$	$-5.56 \pm 1.39$

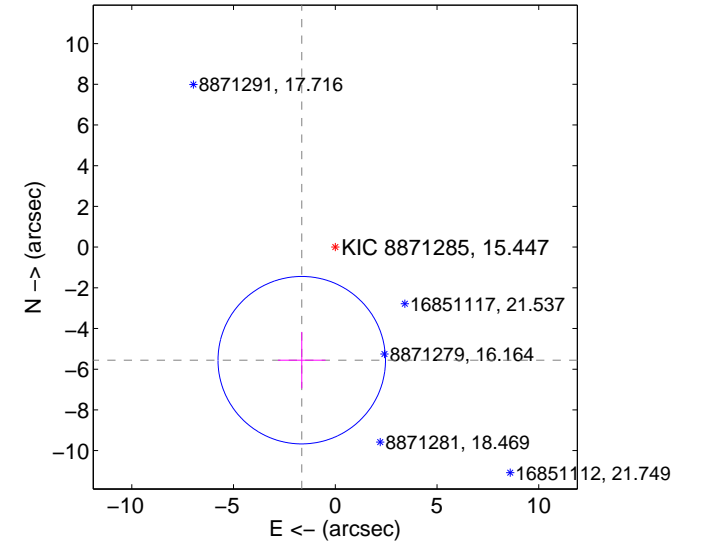
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



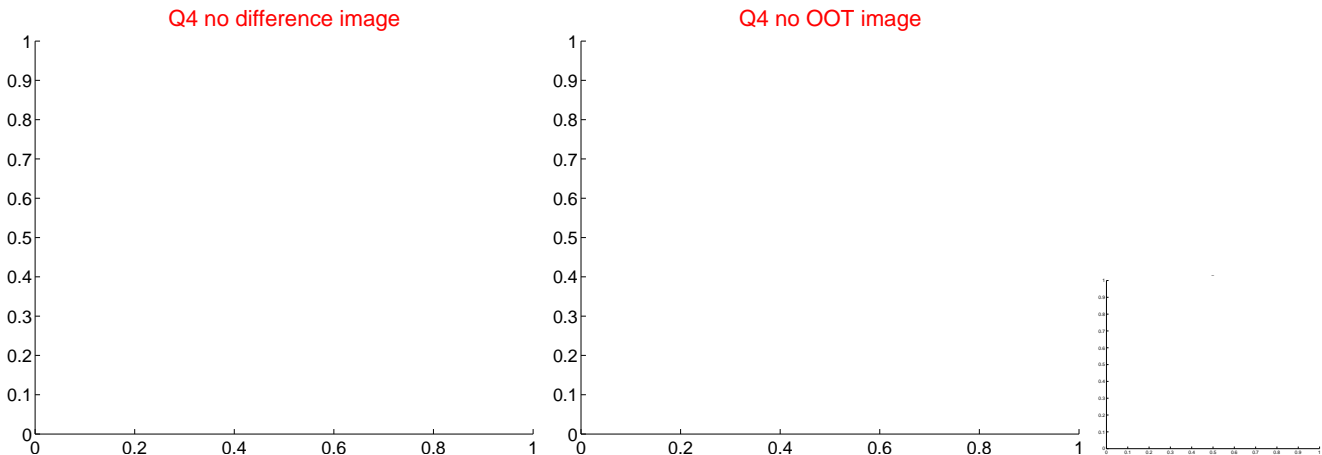
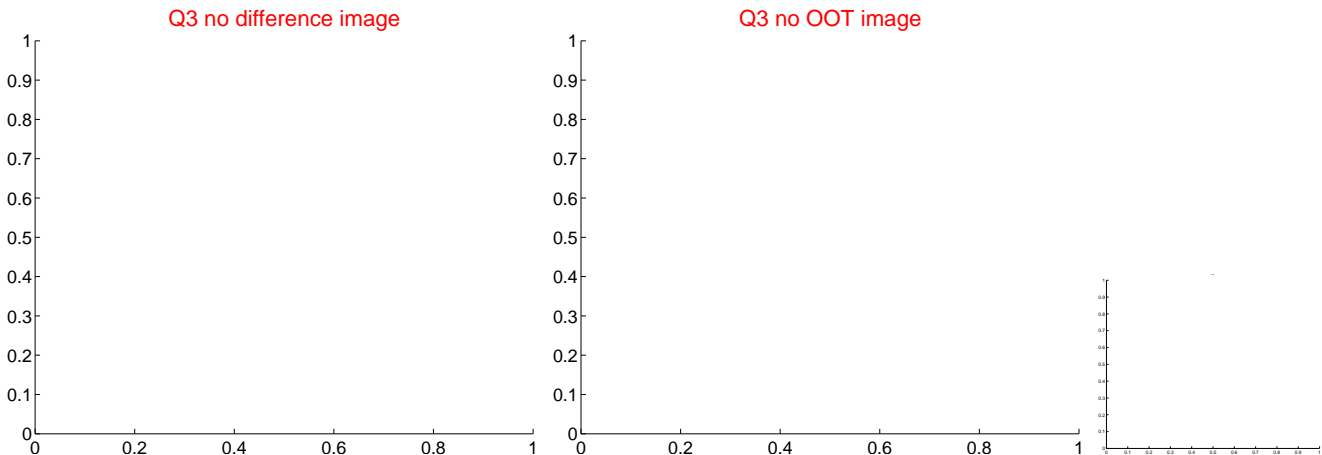
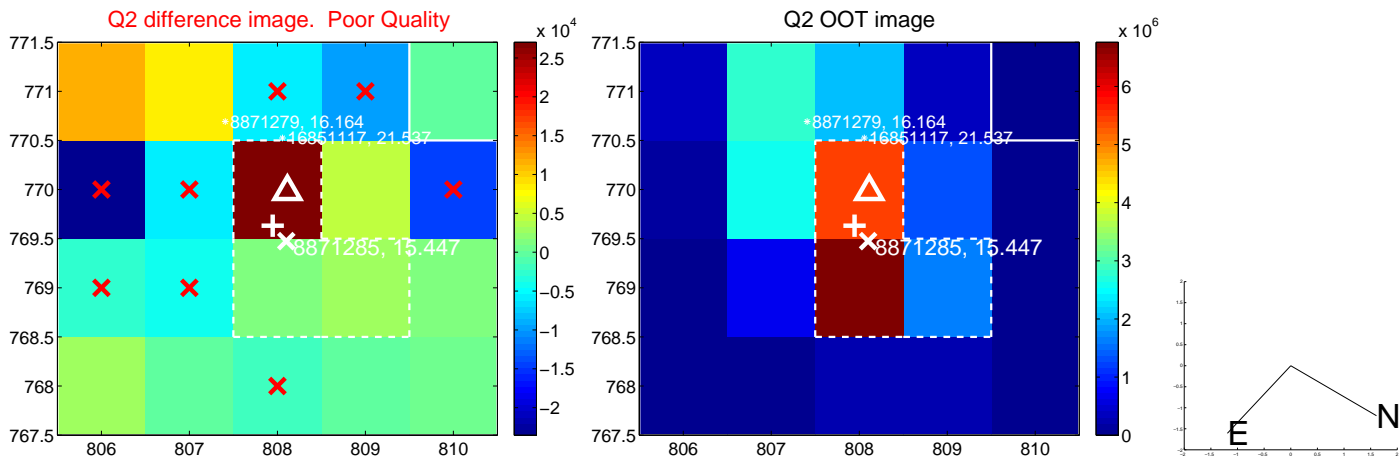
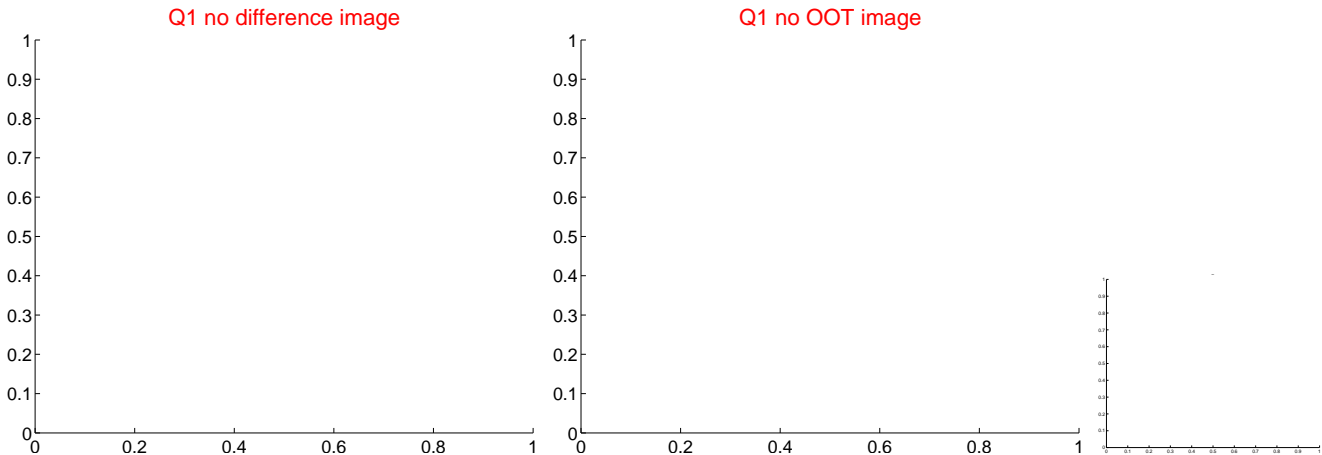
offset from photometric centroids



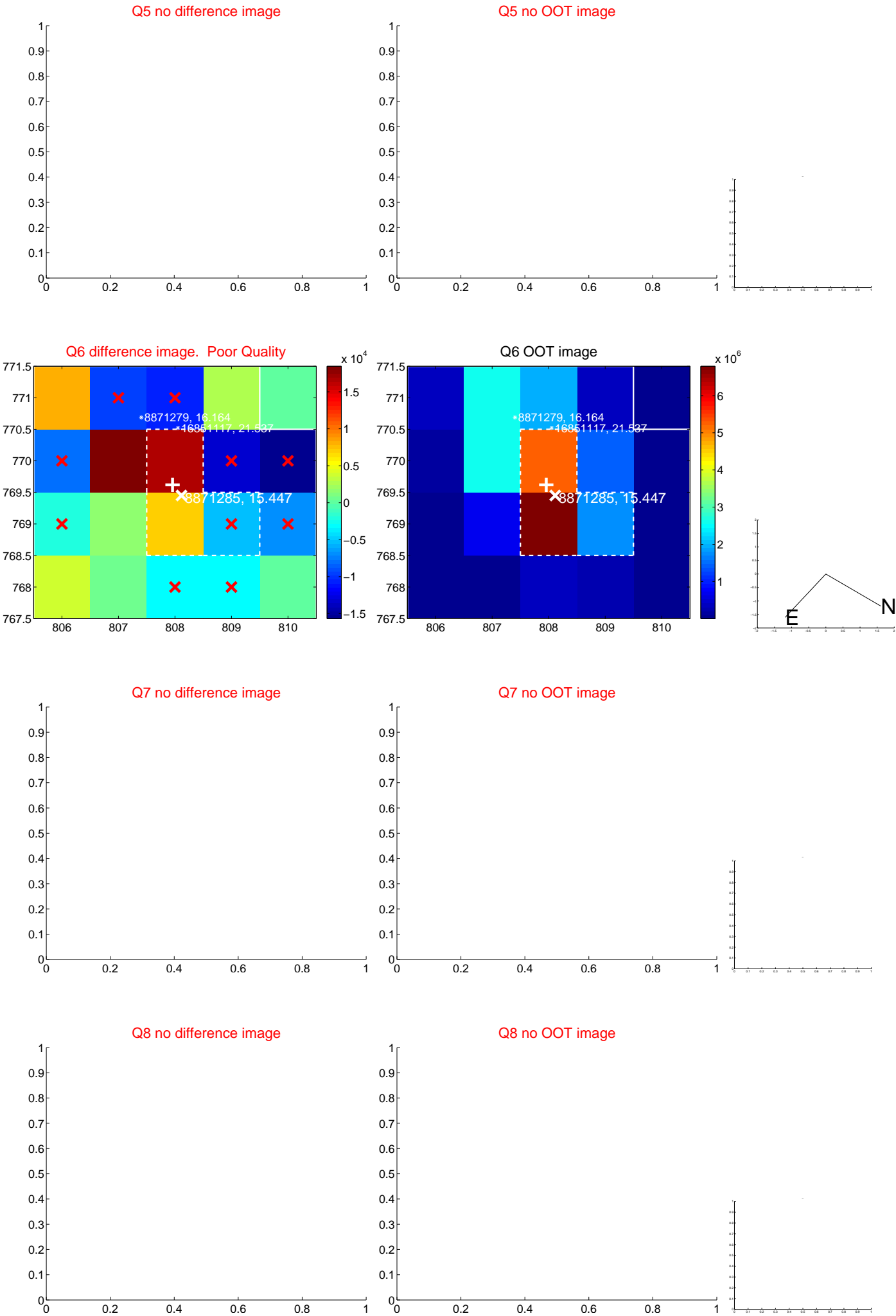
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . 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 ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



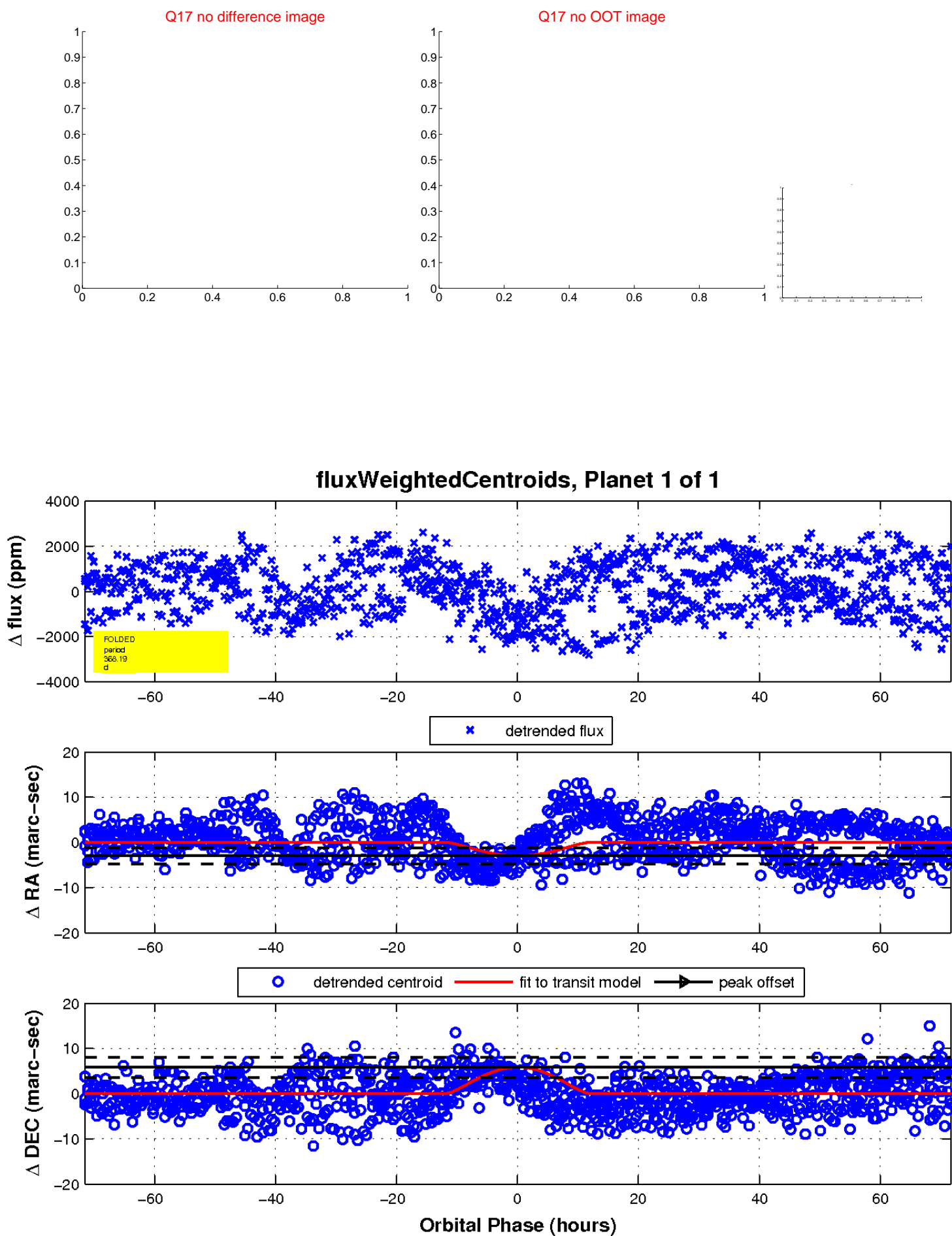
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

