

# KIC 009652299

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009652299-01	OBS	No	352.677240	427.125123	243.8	17.171	7.5	7.4	1.04	5130	1.67	0.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009652299-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—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.

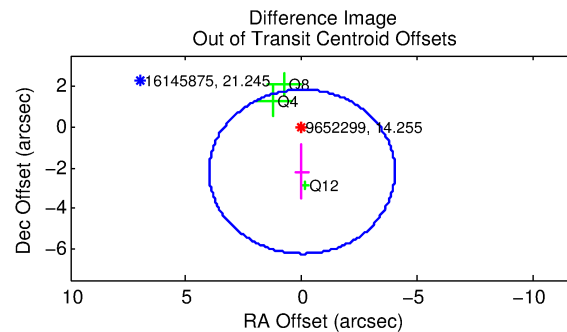
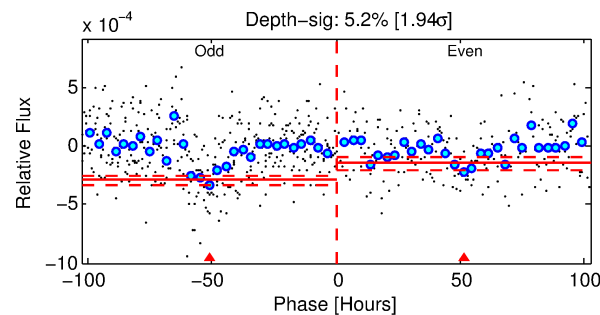
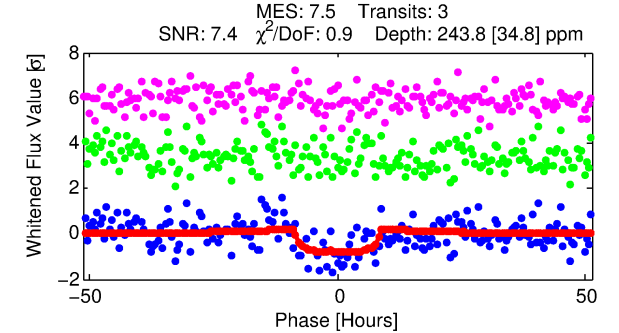
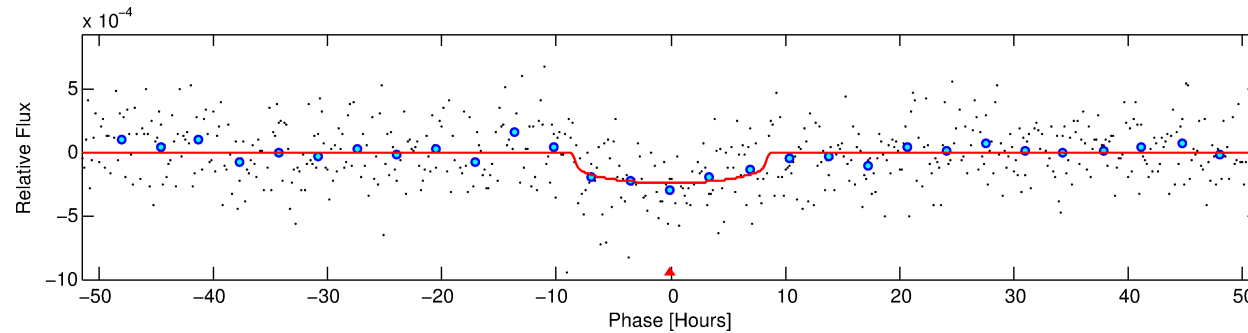
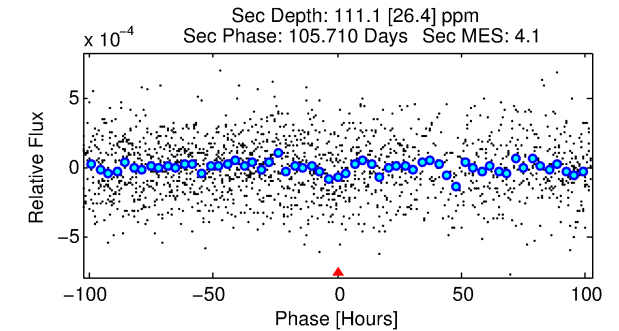
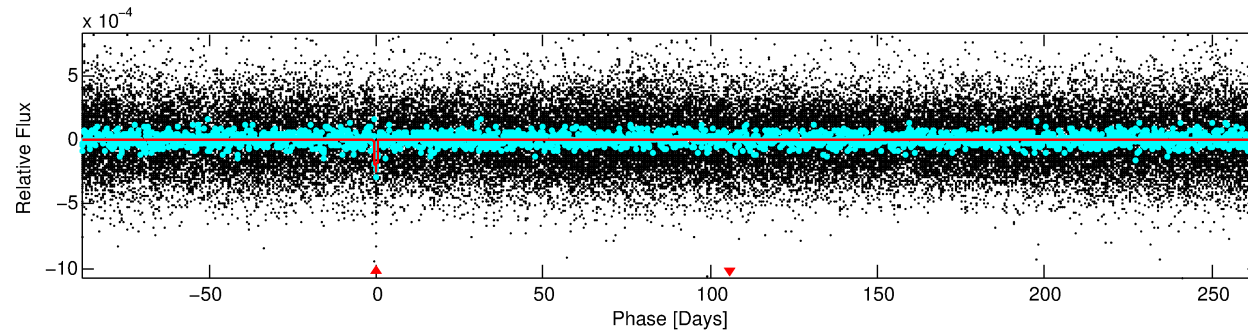
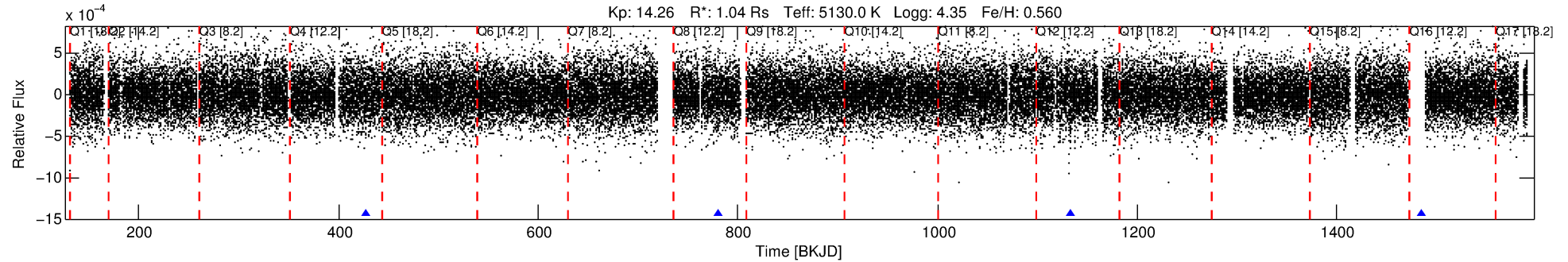
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009652299-01

No Significant Match Found

# DV One-Page Summary

KIC: 9652299 Candidate: 1 of 1 Period: 352.677 d



## DV Fit Results:

Period = 352.67724 [0.02044] d  
Epoch = 427.1251 [0.0227] BKJD  
Rp/R\* = 0.0146 [0.0130]  
a/R\* = 131.54 [397.30]  
b = 0.57 [3.60]  
Seff = 0.77 [0.51]  
Teq = 239 [39] K  
Rp = 1.66 [1.74] Re  
a = 0.9380 [0.4229] AU  
Ag = 19400.48 [37089.02] [0.52σ]  
Teffp = 4353 [1962] K [2.10σ]

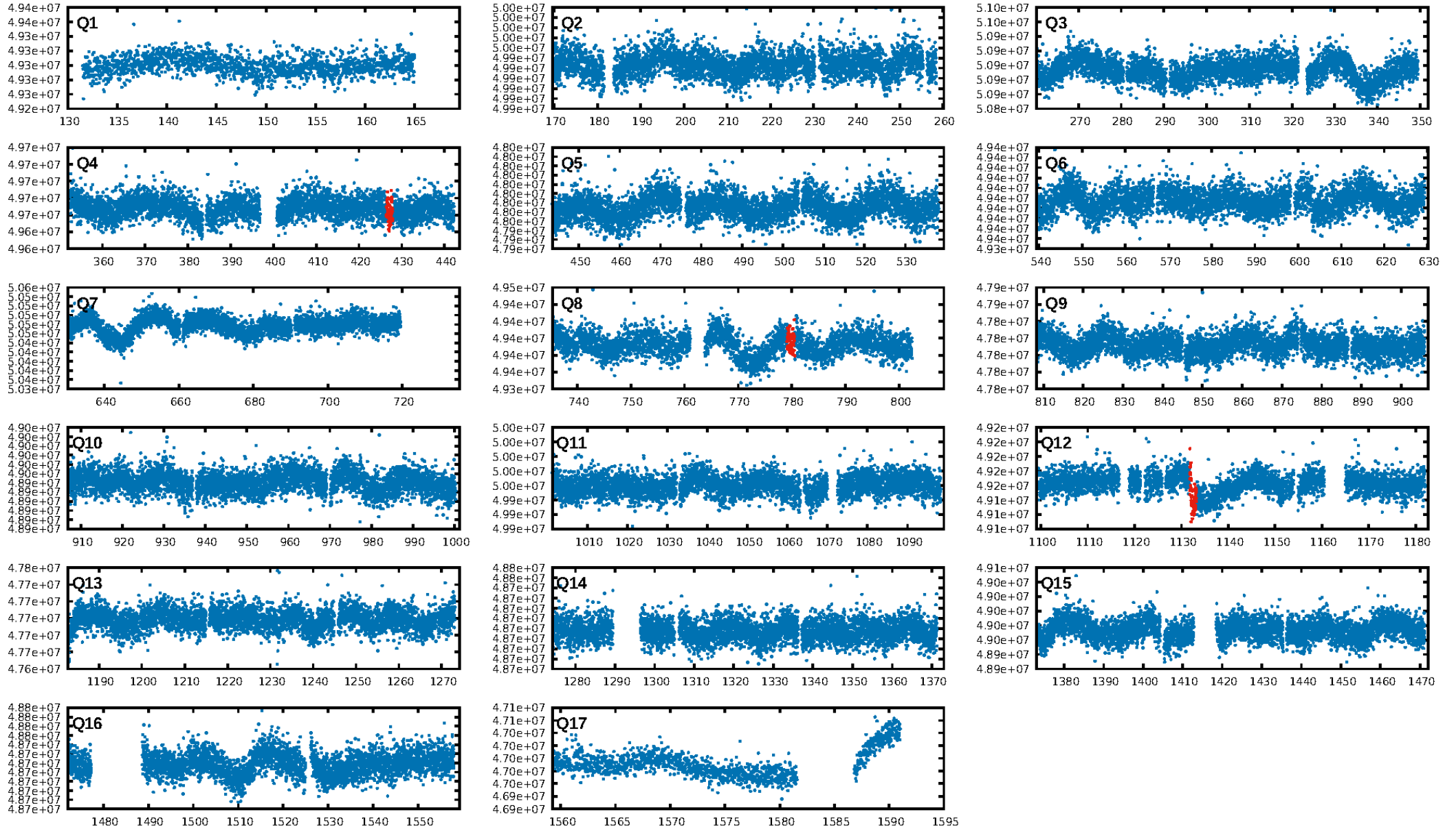
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.2%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 7.67e-11  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 3.049  
Centroid-sig: 0.2%  
Centroid-so: 3.845 arcsec [2.09σ]  
OotOffset-rm: 2.200 arcsec [1.64σ]  
KicOffset-rm: 2.257 arcsec [1.70σ]  
OotOffset-st: 0/0/3/0 [3]  
KicOffset-st: 0/0/3/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

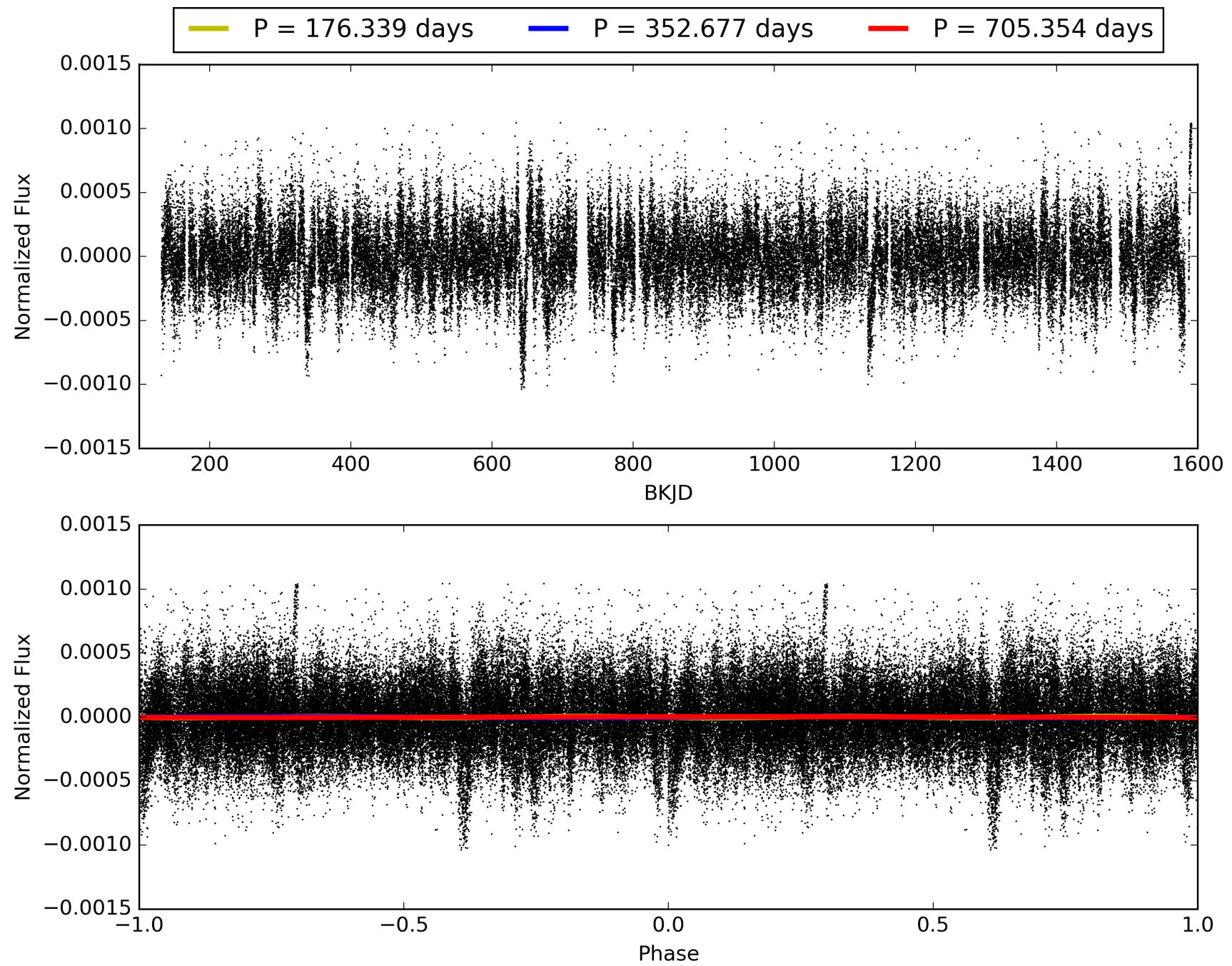
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:43:36 Z

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

# TCE 009652299-01, PDC Light Curves

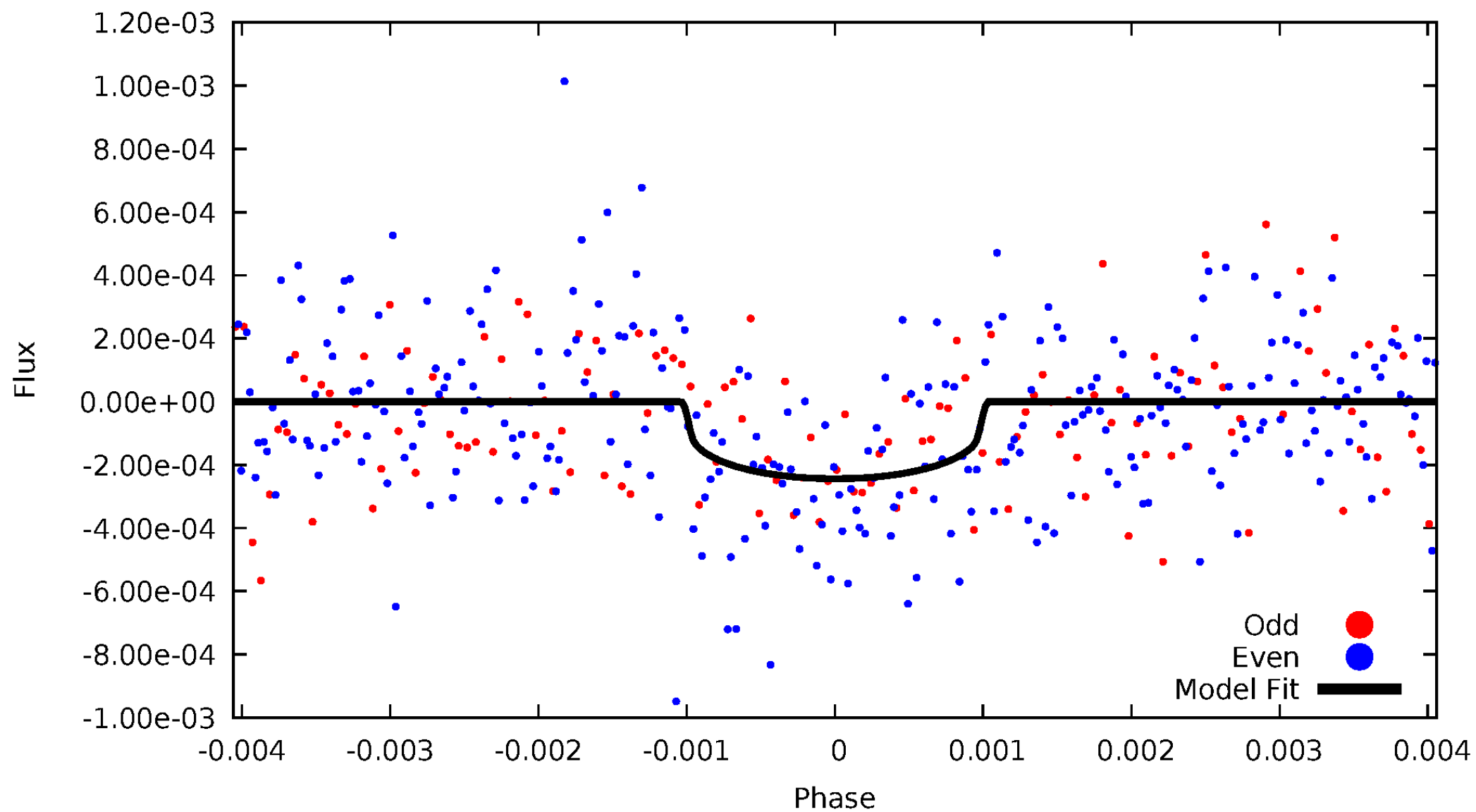


TCE 009652299-01



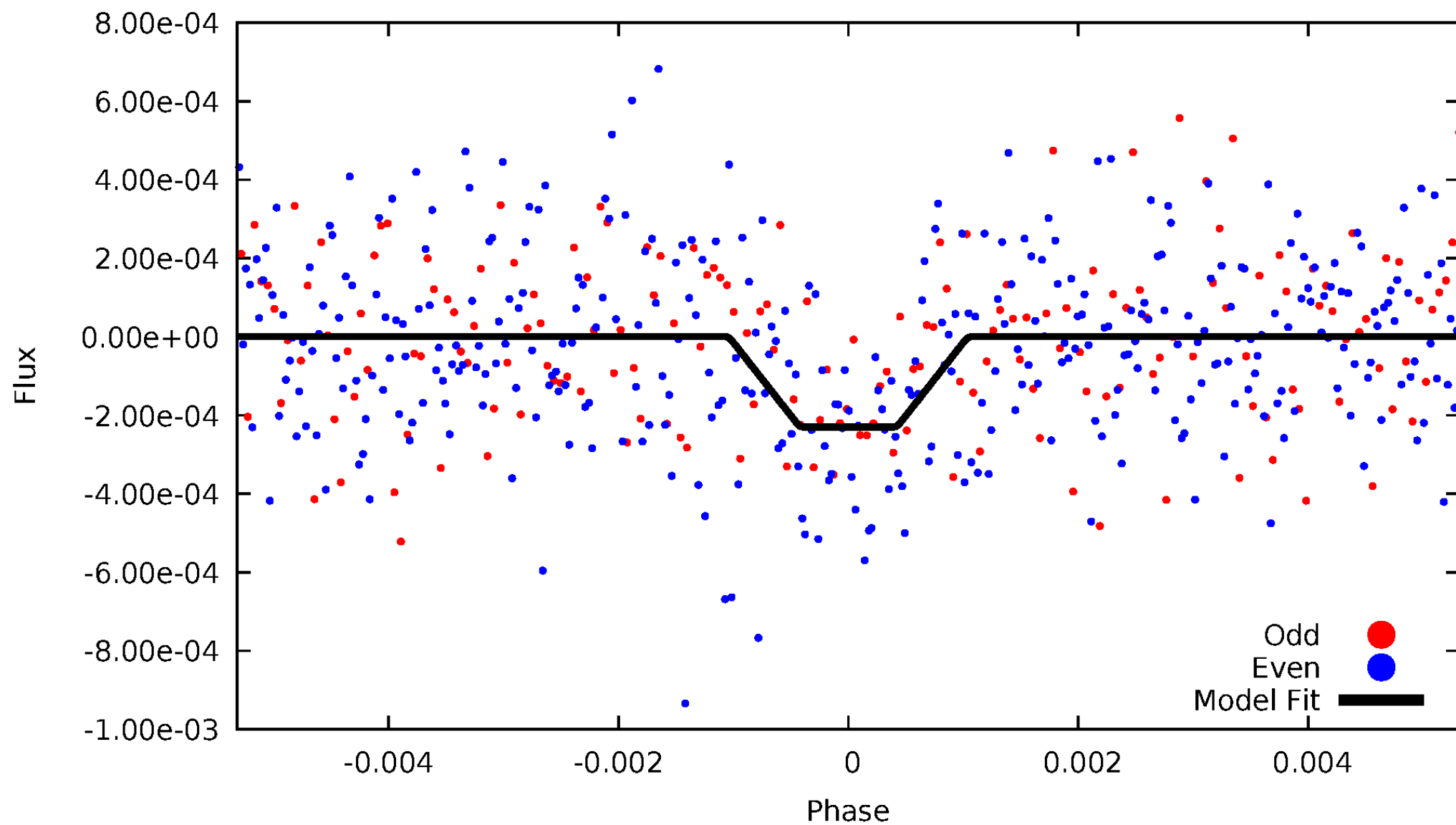
# DV Odd/Even

TCE 009652299-01



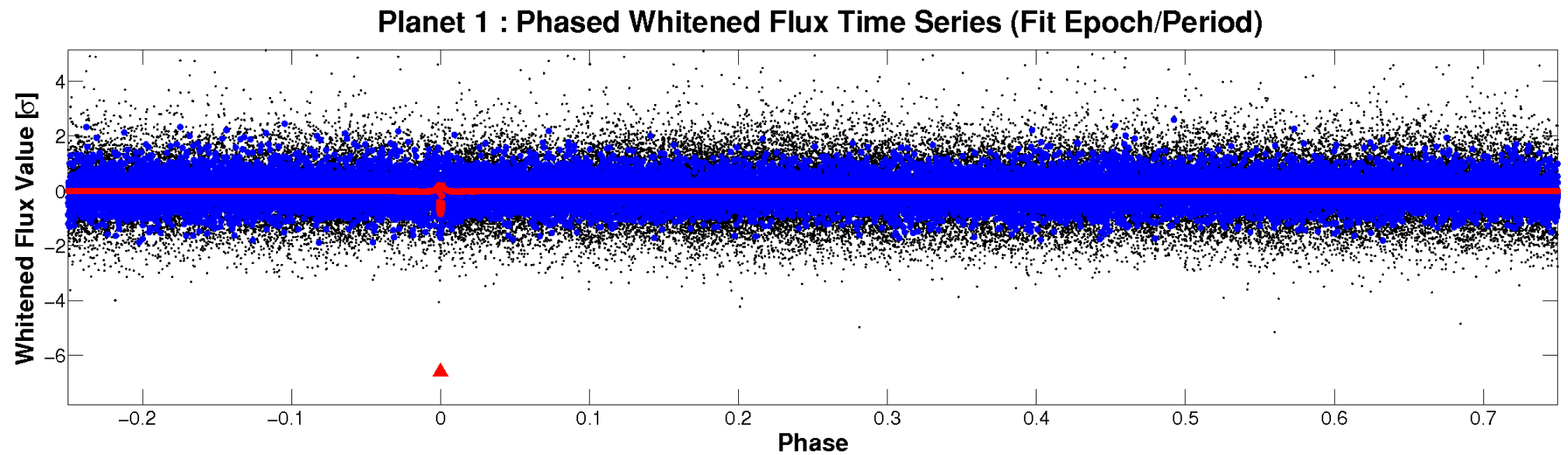
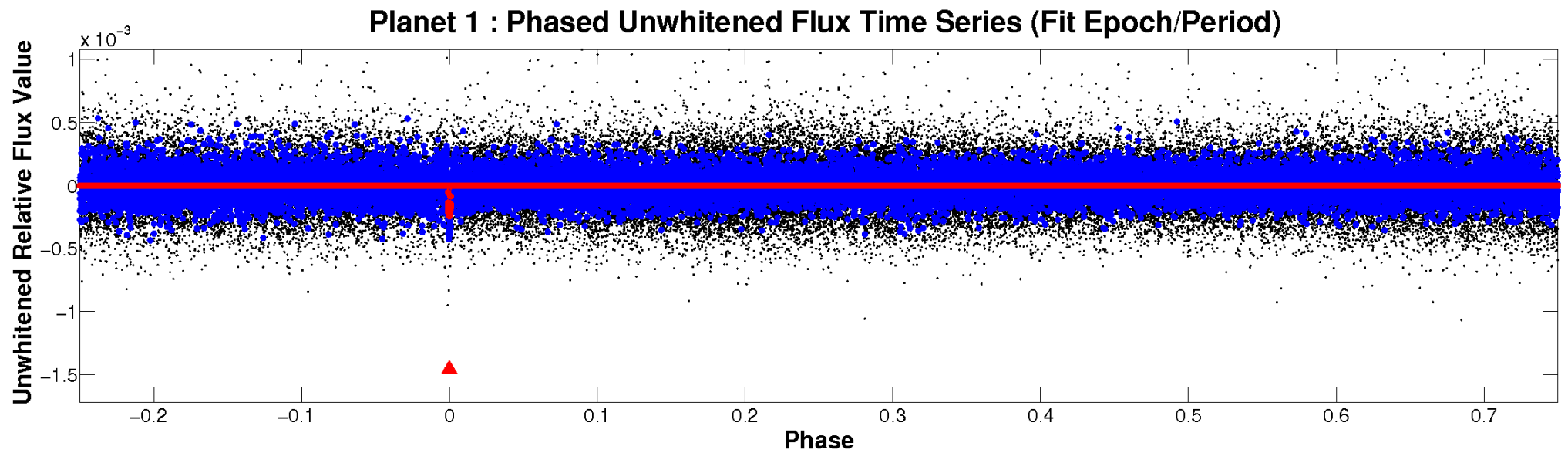
# ALT Odd/Even

TCE 009652299-01



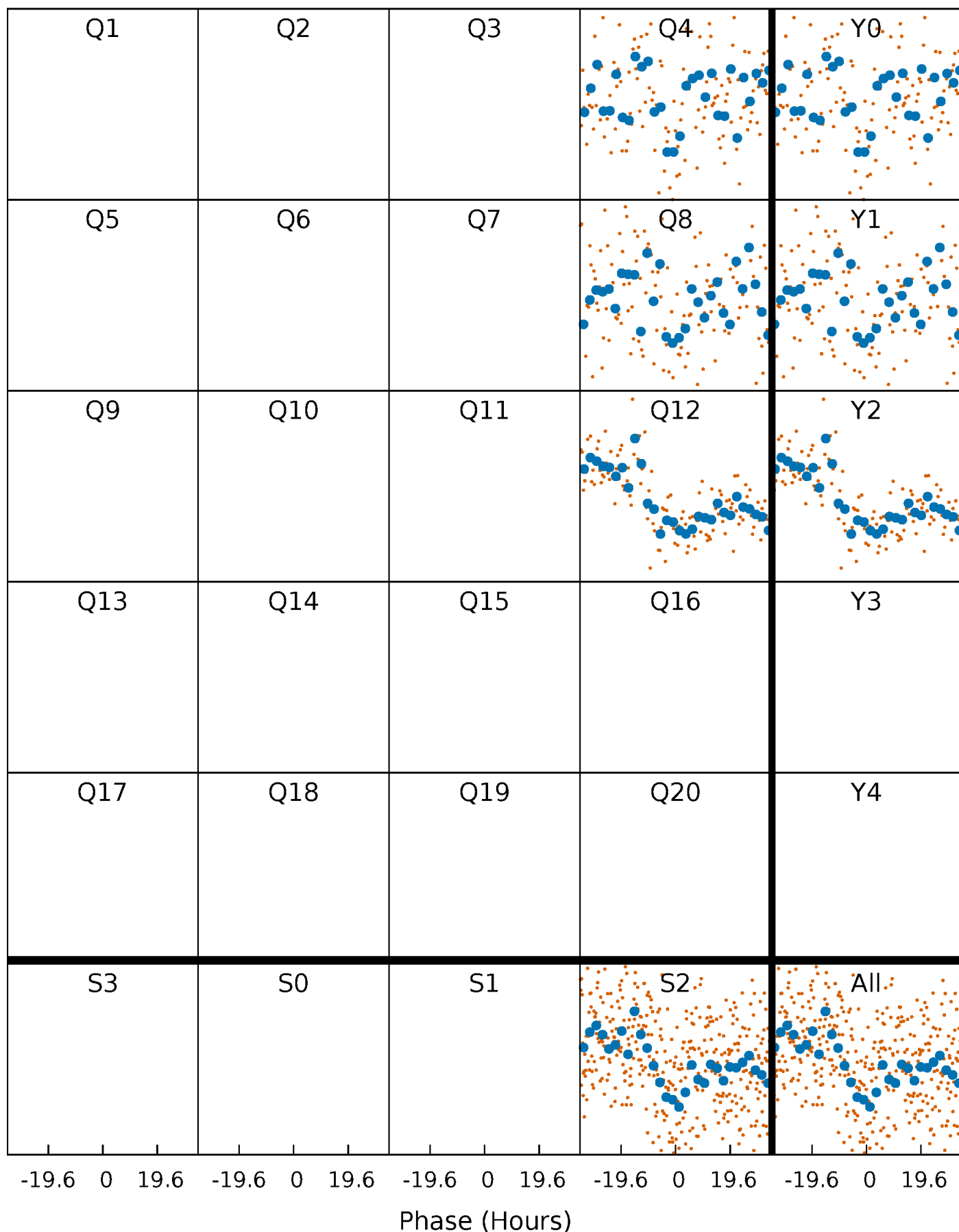


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 009652299-01     $P=352.677240$  Days     $T_0=427.125123$  (BKJD)





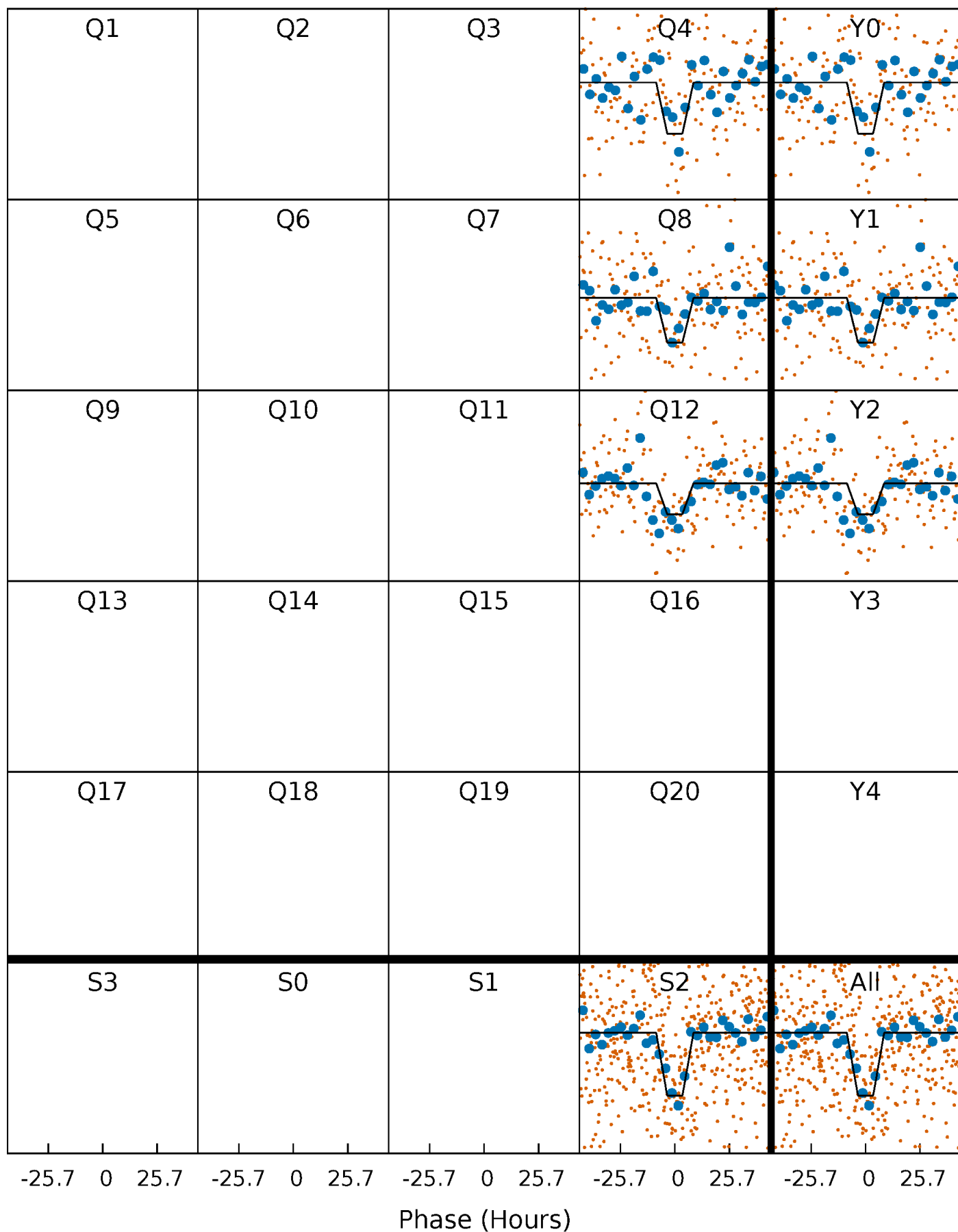
# DV Quarter-Phased Transit Curves

TCE 009652299-01     $P=352.677240$  Days     $T_0=427.125123$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

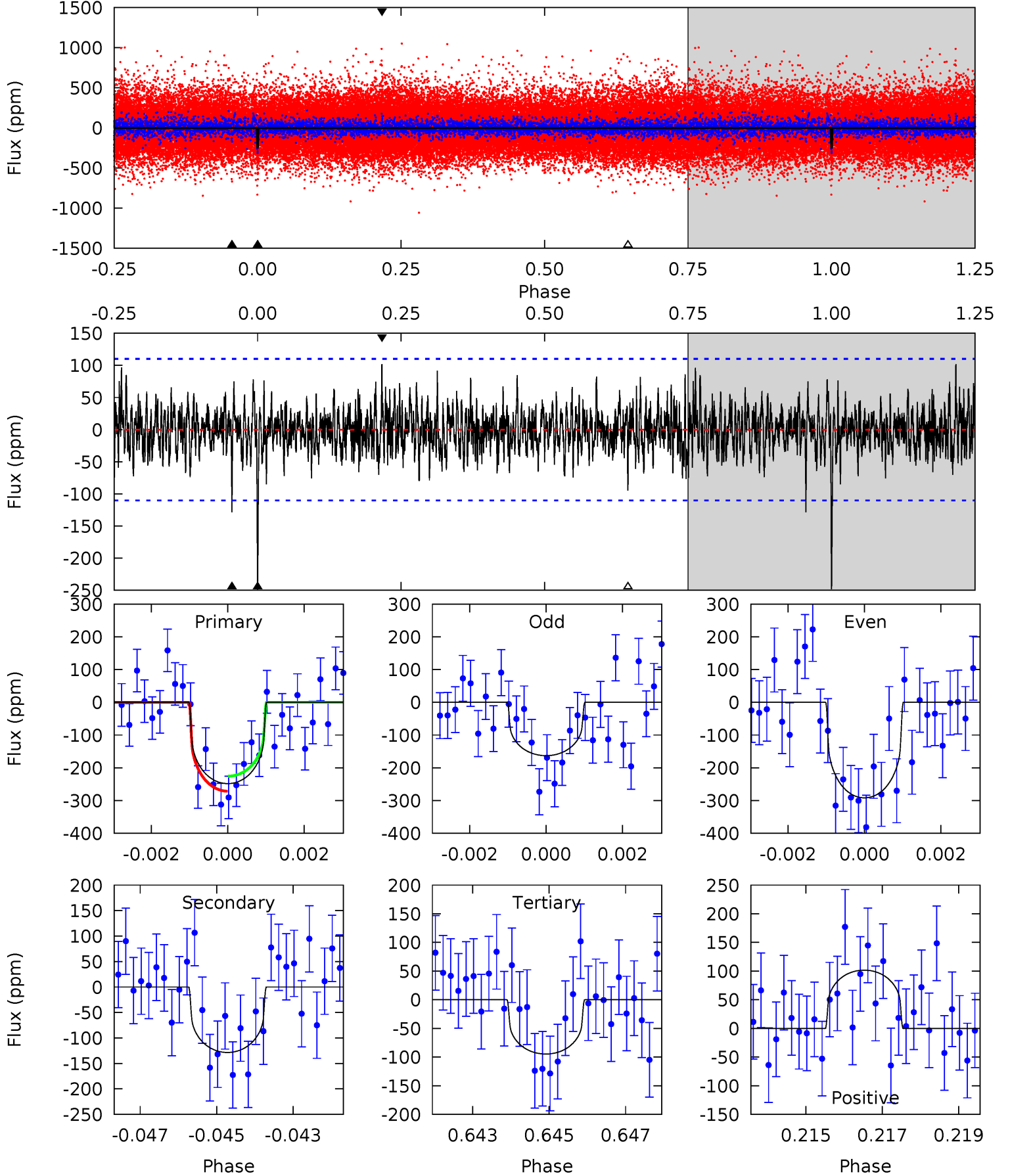
TCE 009652299-01 P=352.792225 Days  $T_0=427.018584$  (BKJD)



# DV Model-Shift Uniqueness Test

009652299-01,  $P = 352.677240$  Days,  $E = 74.447883$  Days

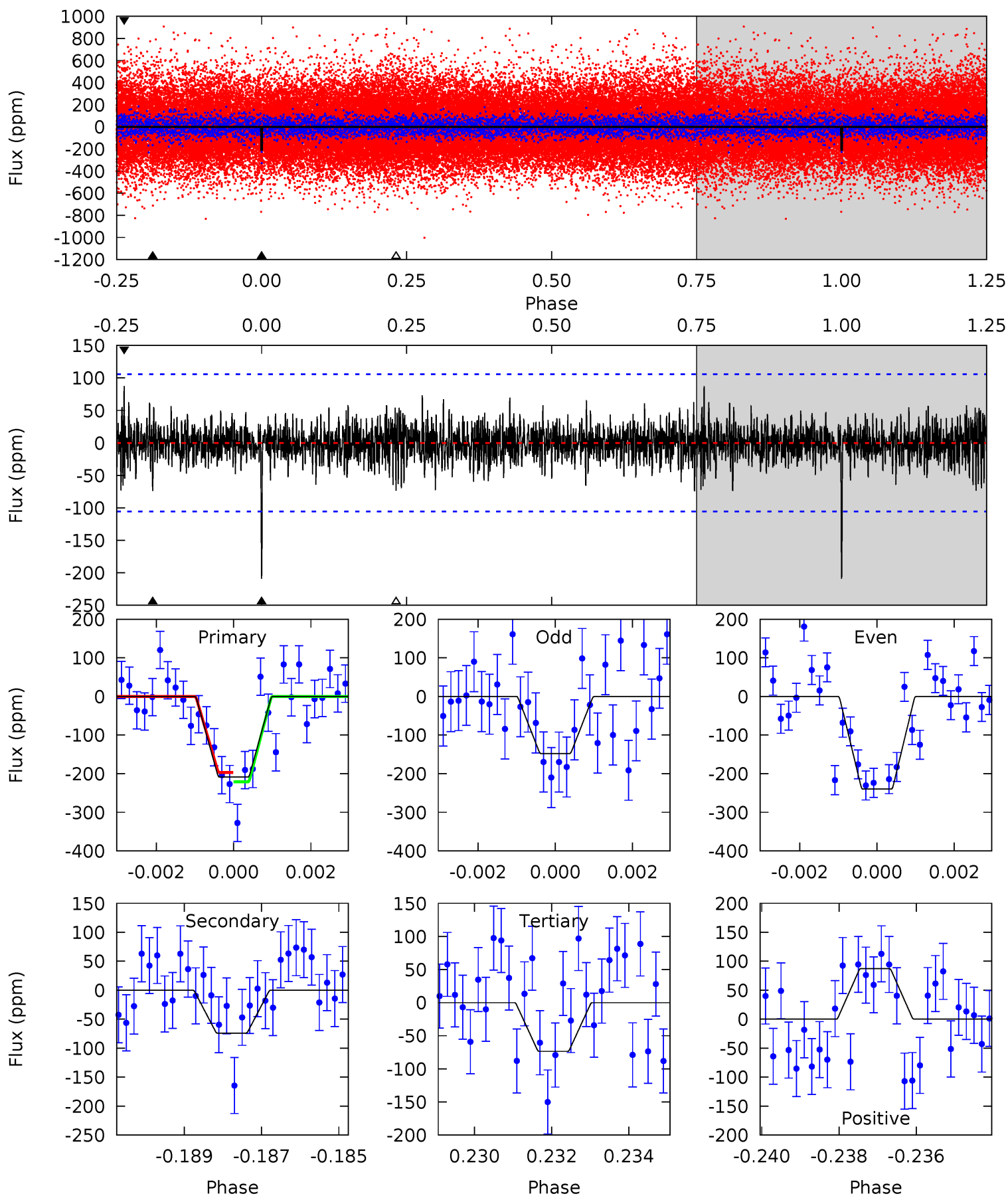
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.0	6.20	4.57	4.91	5.32	3.08	1.34	7.42	7.08	1.63	1.29	2.95	1.44	0.29	1.11



# Alt Model-Shift Uniqueness Test

009652299-01,  $P = 352.792225$  Days,  $E = 74.226359$  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
10.5	3.73	3.70	4.39	5.32	3.07	1.07	6.80	6.12	0.02	-0.66	2.19	1.17	0.29	0.61



### Stellar Parameters For KIC 009652299

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5130^{+169}_{-154}$	$4.349^{+0.189}_{-0.351}$	$0.560^{+0.050}_{-0.300}$	$1.042^{+0.565}_{-0.202}$	$0.884^{+0.067}_{-0.051}$	$1.102^{+1.005}_{-0.758}$
	+3%/-3%	+4%/-8%	+9%/-54%	+54%/-19%	+8%/-6%	+91%/-69%
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 009652299-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-128 \pm 21$	$1.95^{+1.55}_{-1.20}$	$336^{+44}_{-25}$	$4364^{+2214}_{-755}$	$16053^{+95983}_{-10950}$
Alt.	$-74 \pm 20$	$2.04^{+1.44}_{-1.21}$	$334^{+41}_{-23}$	$3905^{+1694}_{-606}$	$8250^{+43270}_{-5615}$

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

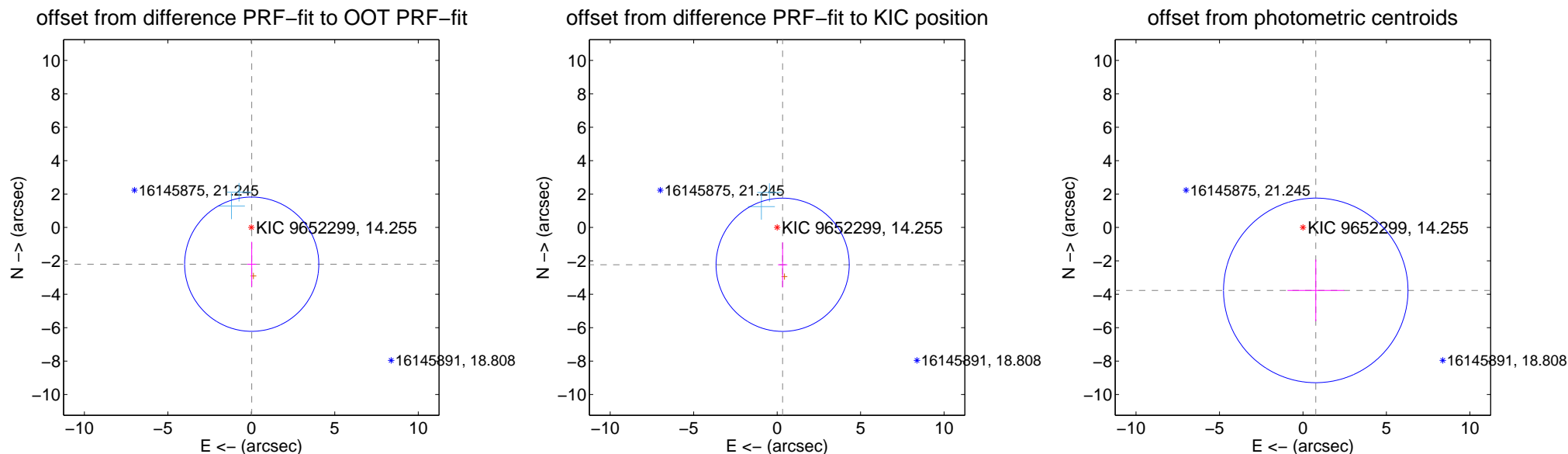
## DV Centroid Data

Supplemental centroid analysis for 009652299-01. Kepler magnitude: 14.26. Transit SNR 7.39

There are 2 quarters with good PRF difference image offsets

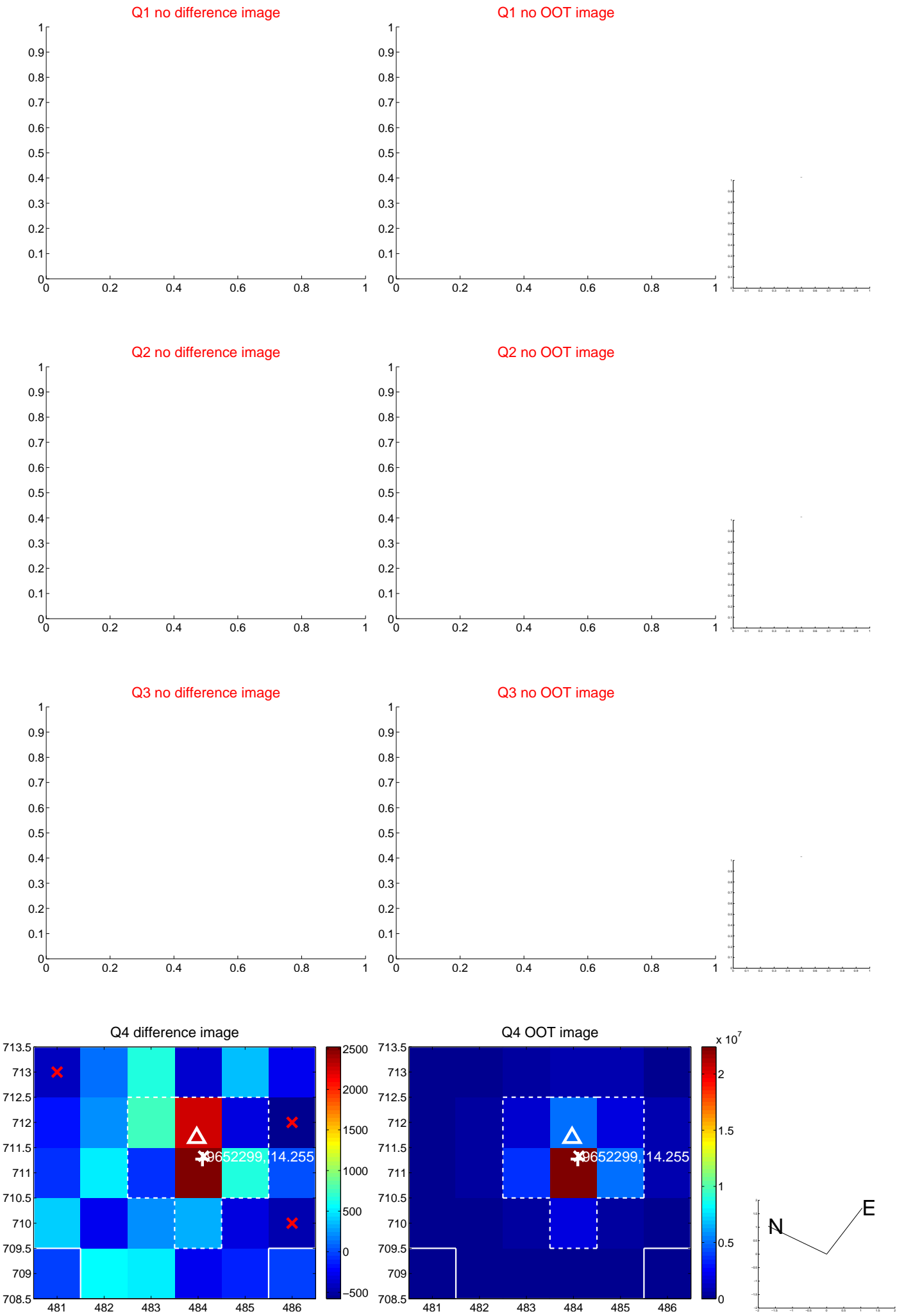
The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.200 \pm 1.340$	1.64	$-0.023 \pm 0.267$	$-2.200 \pm 1.340$
PRF-fit source offset from KIC position	$2.257 \pm 1.330$	1.70	$-0.330 \pm 0.279$	$-2.233 \pm 1.344$
photometric centroid source offset	$3.85 \pm 1.84$	2.09	$-0.77 \pm 1.70$	$-3.77 \pm 1.85$



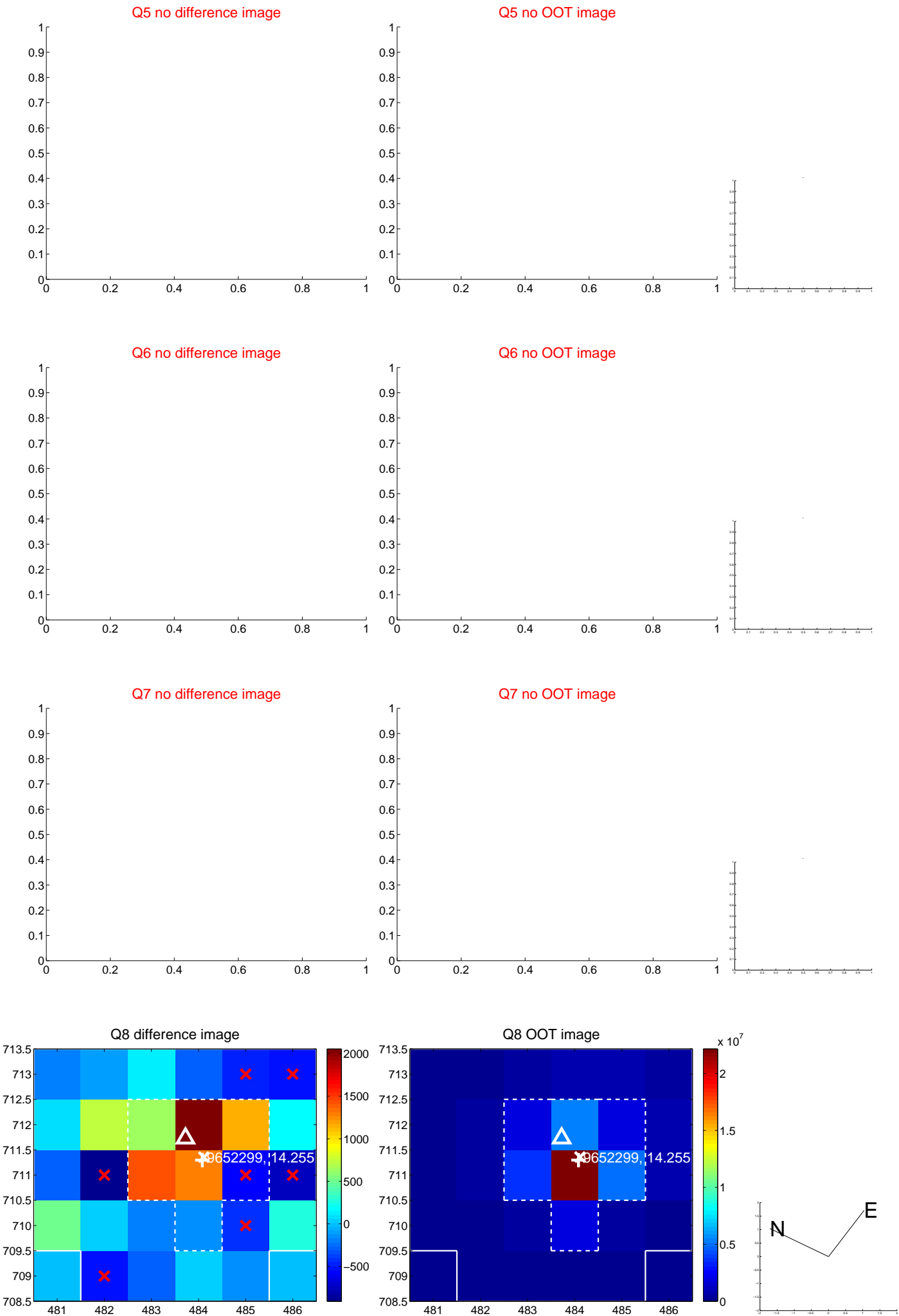
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

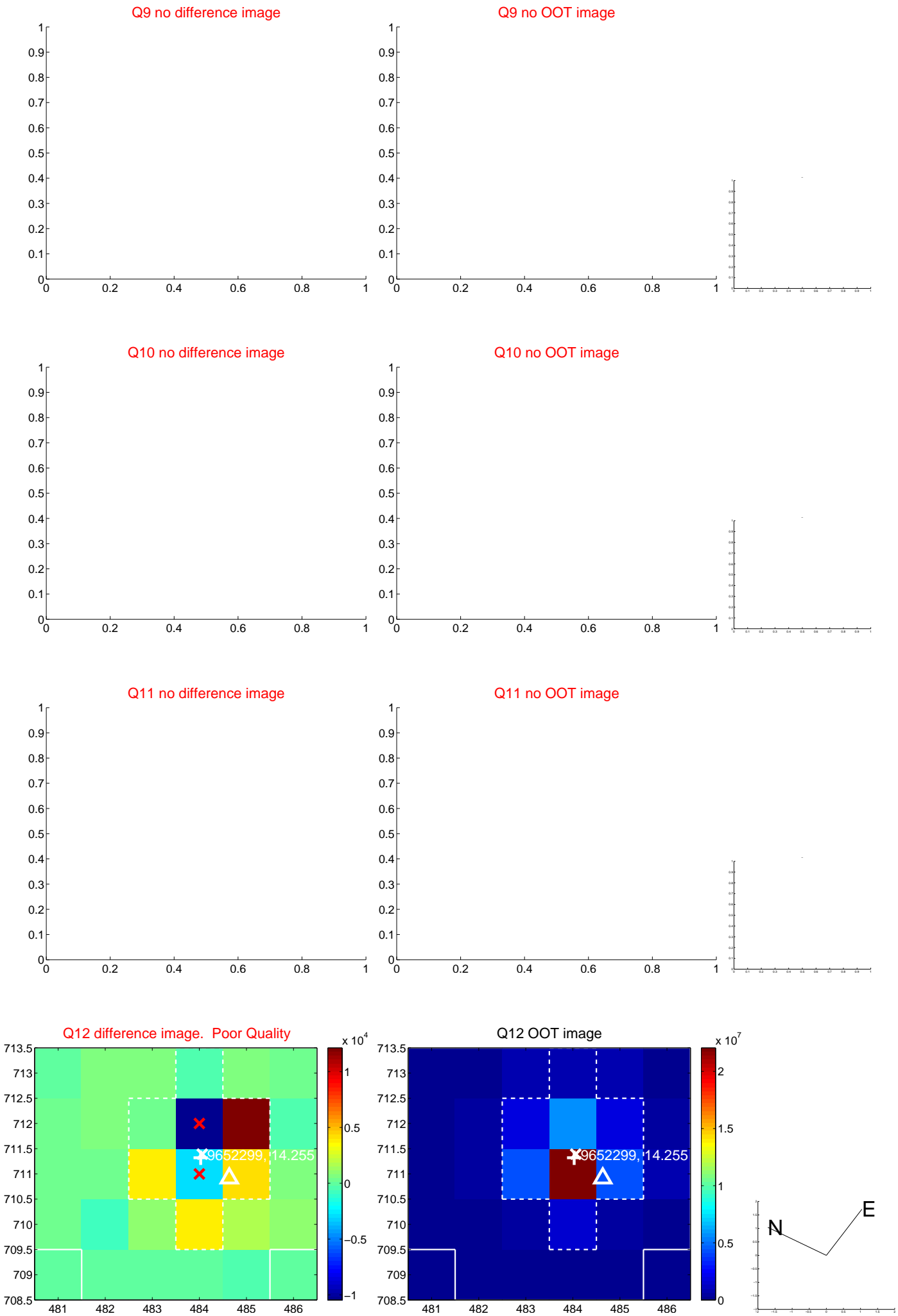




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



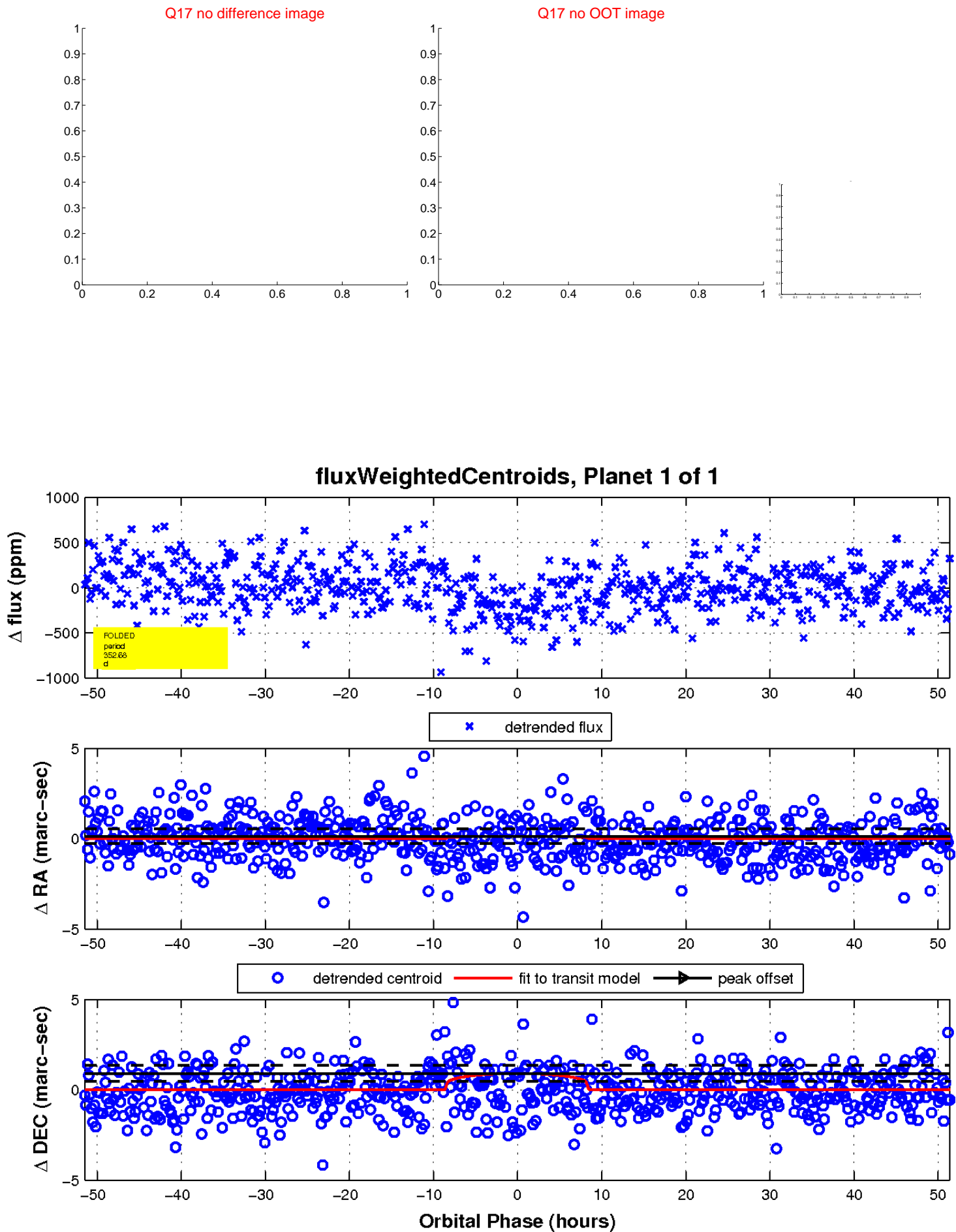
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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.



UKIRT Image

Declination

