

# KIC 010014886

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010014886-01	OBS	No	366.163596	159.267515	592.1	34.712	7.8	7.4	0.89	5691	2.22	0.73

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010014886-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—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.

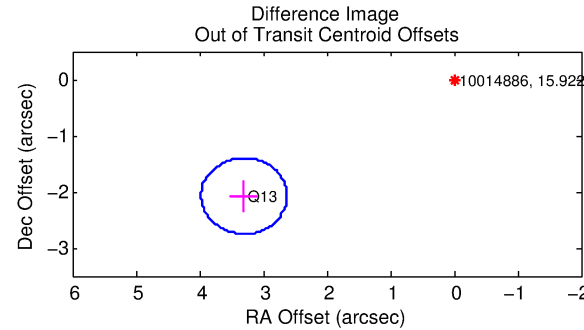
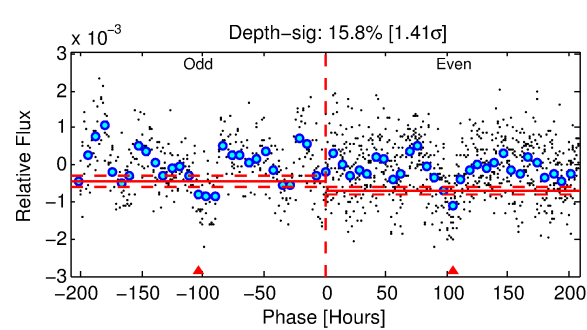
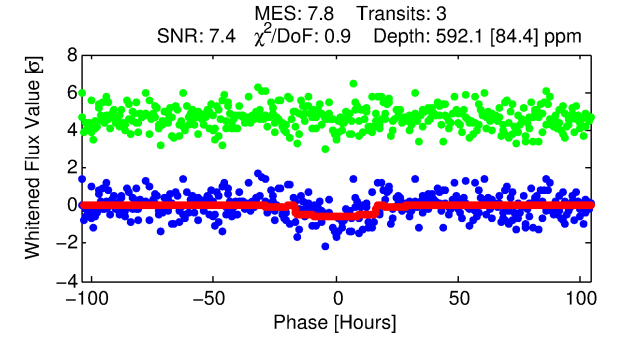
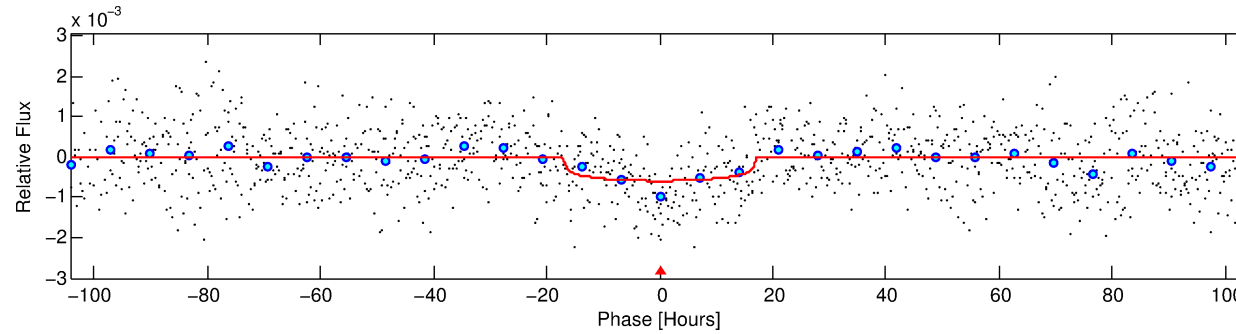
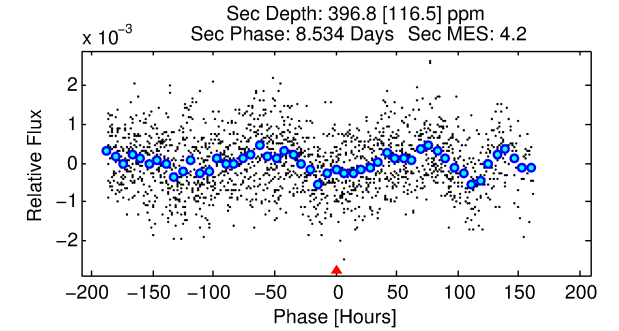
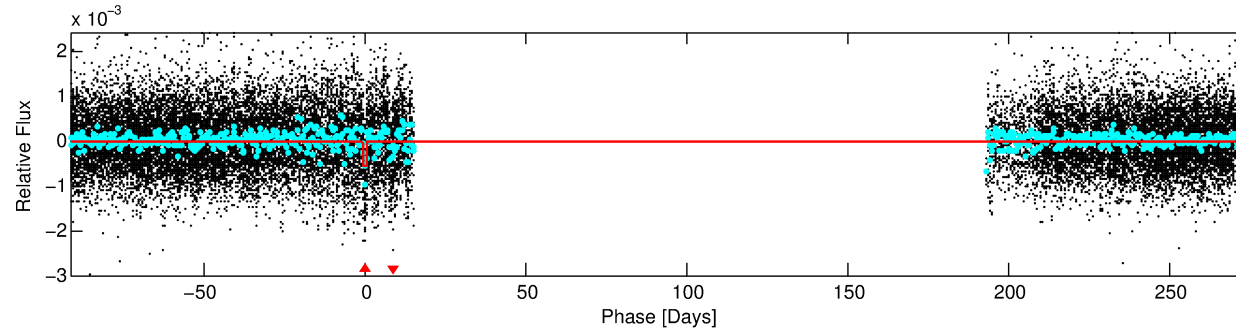
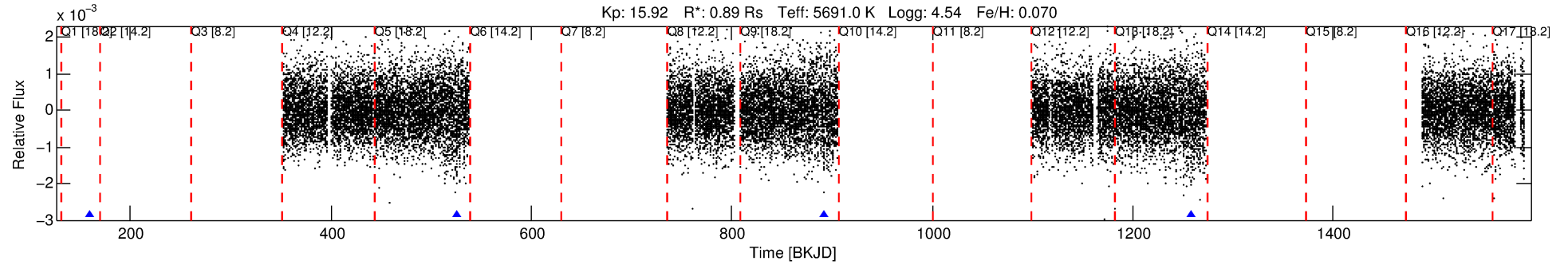
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010014886-01

No Significant Match Found

# DV One-Page Summary

KIC: 10014886 Candidate: 1 of 1 Period: 366.164 d



## DV Fit Results:

Period = 366.16360 [0.03695] d  
Epoch = 159.2675 [0.0842] BKJD  
Rp/R\* = 0.0229 [0.0071]  
a/R\* = 69.28 [88.12]  
b = 0.55 [1.60]  
Seff = 0.73 [0.25]  
Teq = 236 [20] K  
Rp = 2.22 [0.87] Re  
a = 1.0033 [0.2096] AU  
Ag = 44538.62 [33343.98] [1.34σ]  
Teff = 5302 [924] K [5.48σ]

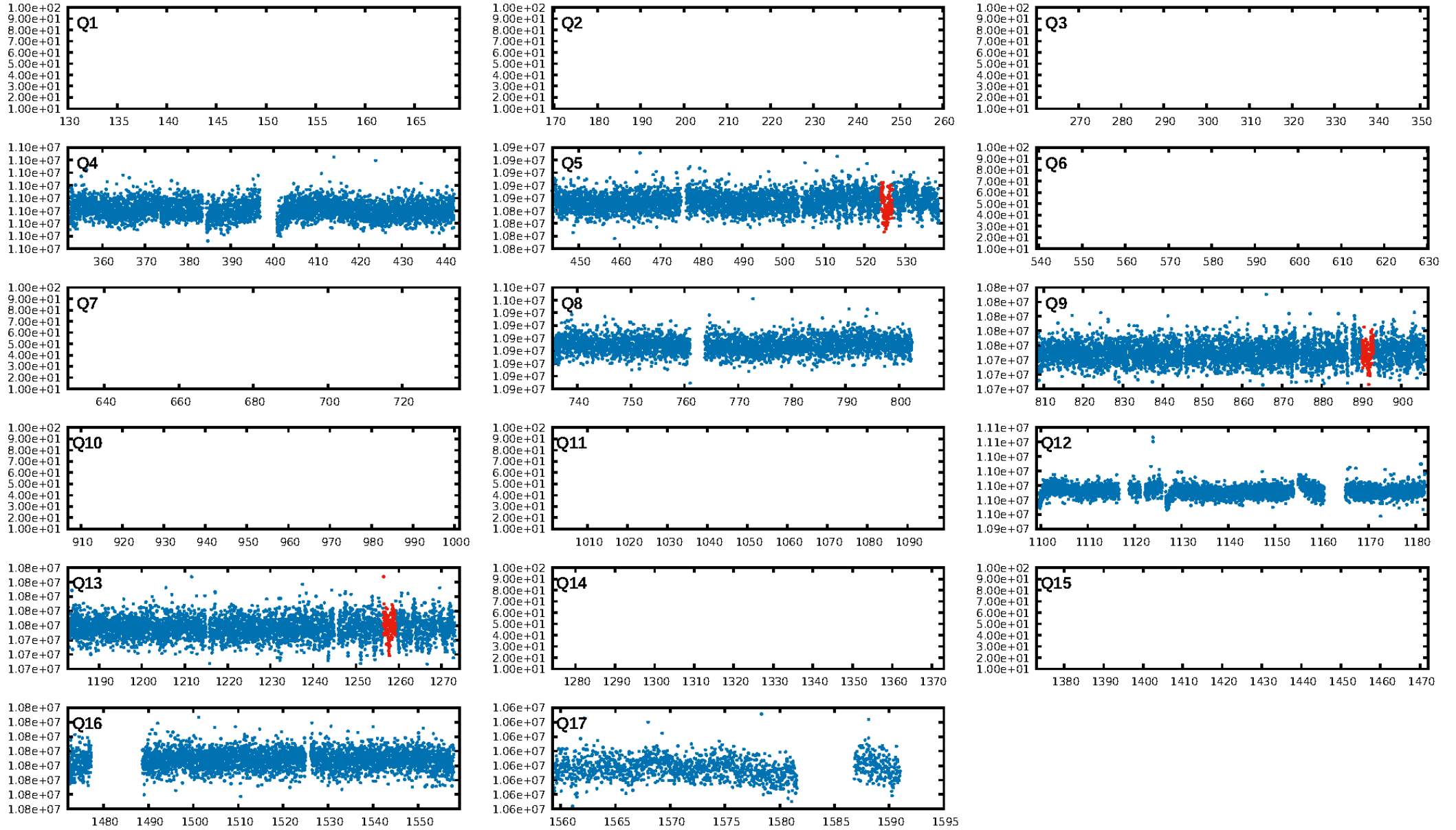
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.8%  
ModelChiSquareGoF-sig: 100.0%  
**Bootstrap-pfa: 2.91e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -1.627  
Centroid-sig: 0.3%  
Centroid-so: 5.906 arcsec [2.04σ]  
**OotOffset-rm: 3.900 arcsec [17.33σ]**  
**KicOffset-rm: 3.777 arcsec [16.64σ]**  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

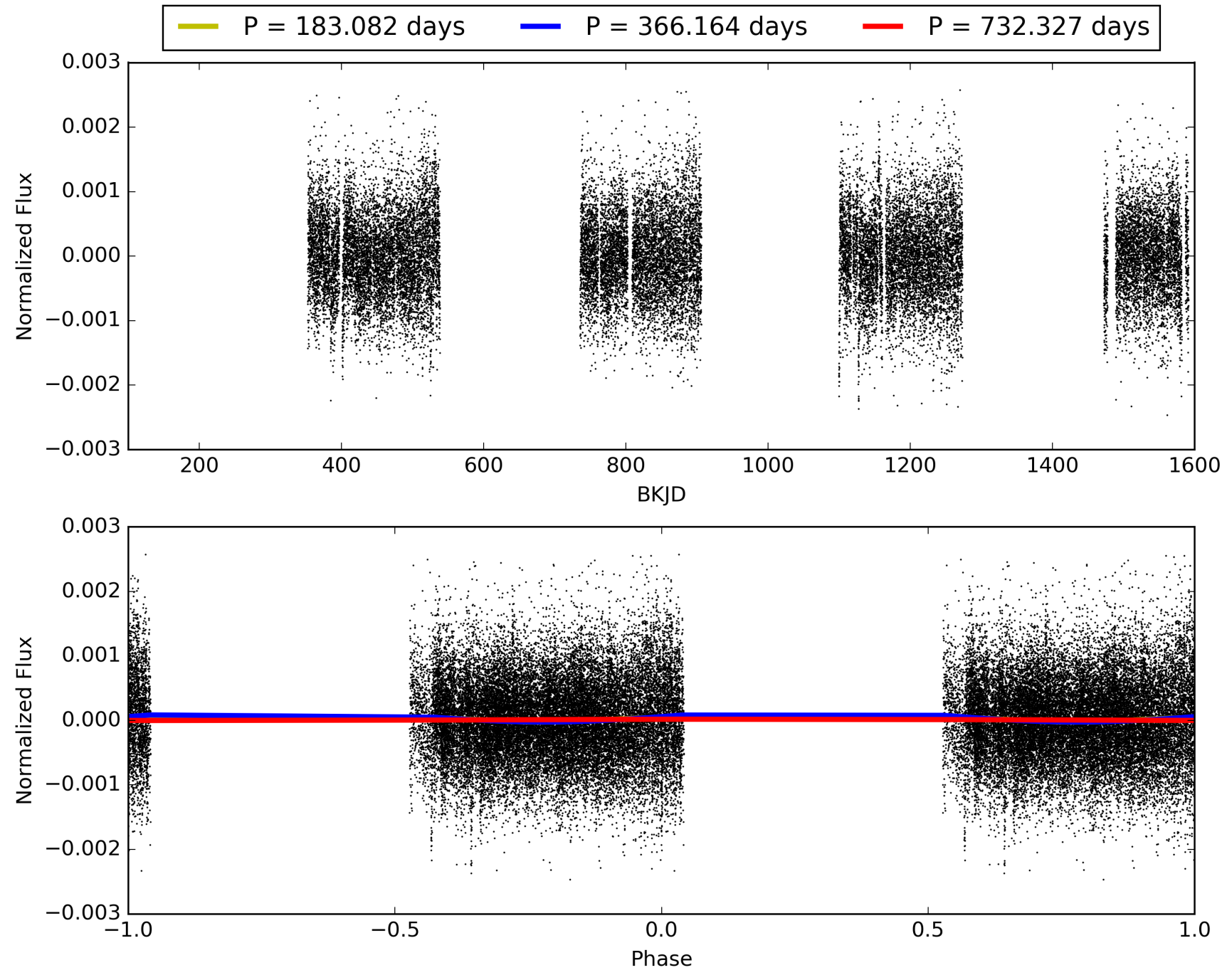
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:53:27 Z

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

# TCE 010014886-01, PDC Light Curves

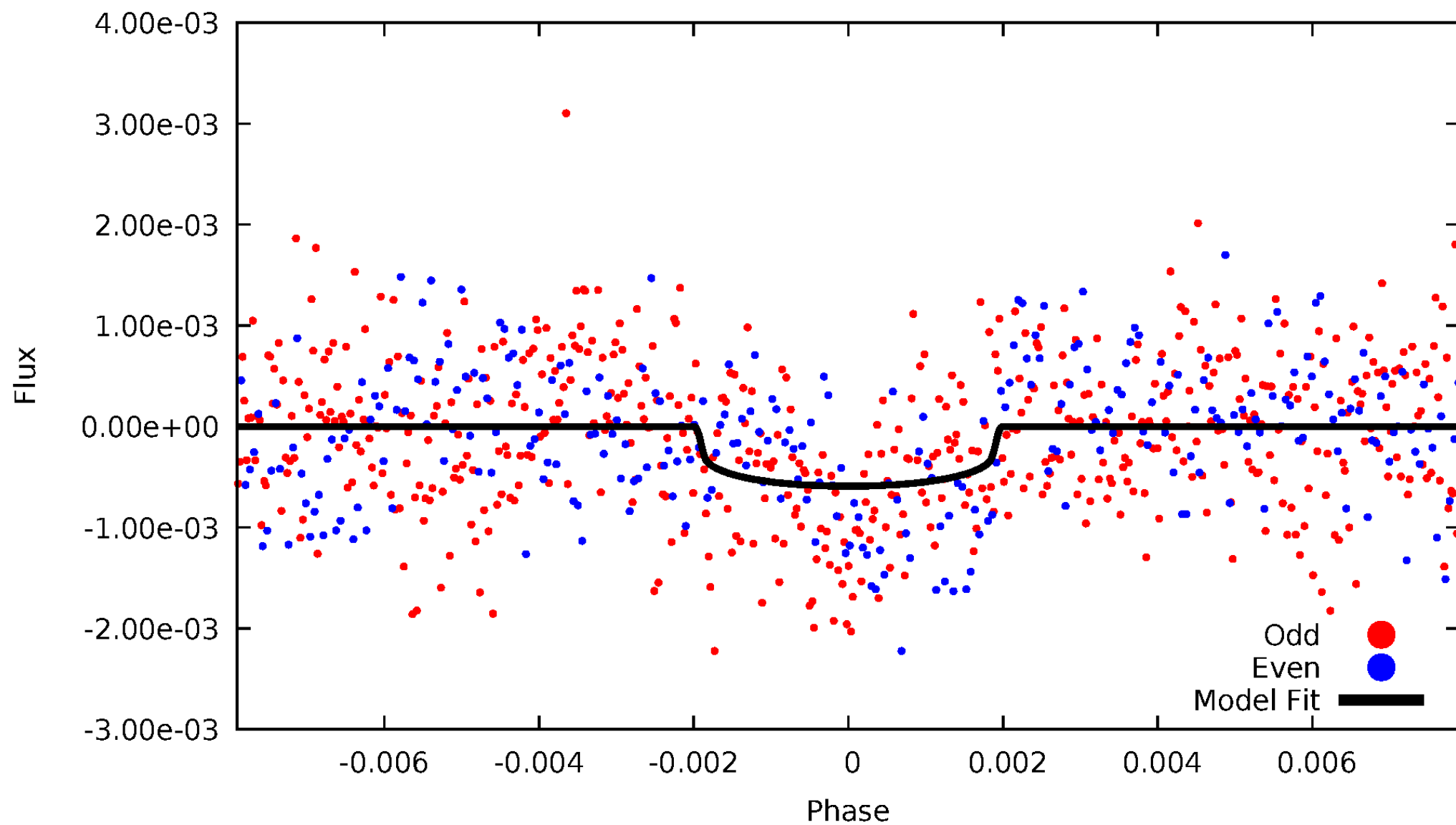


# TCE 010014886-01



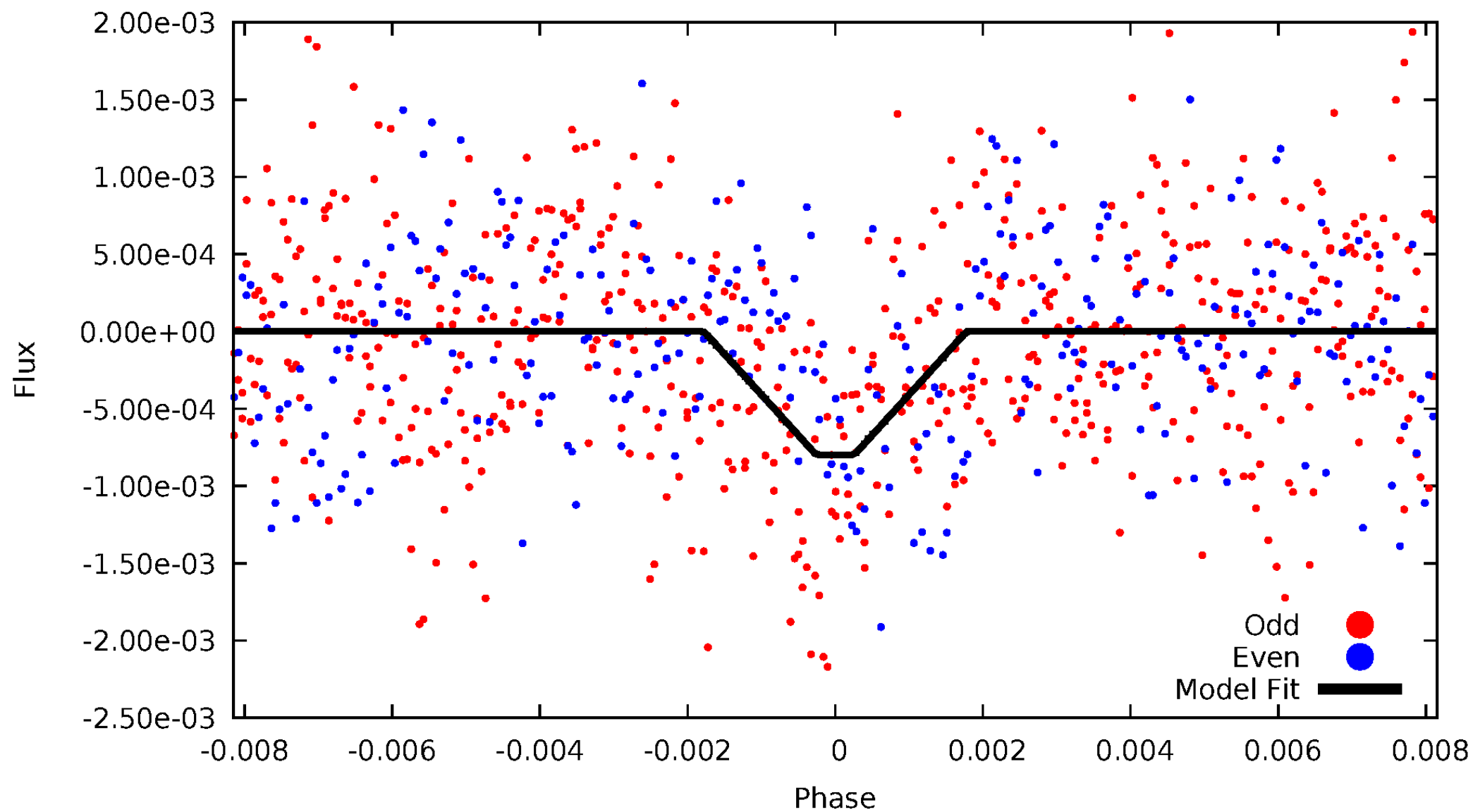
# DV Odd/Even

TCE 010014886-01



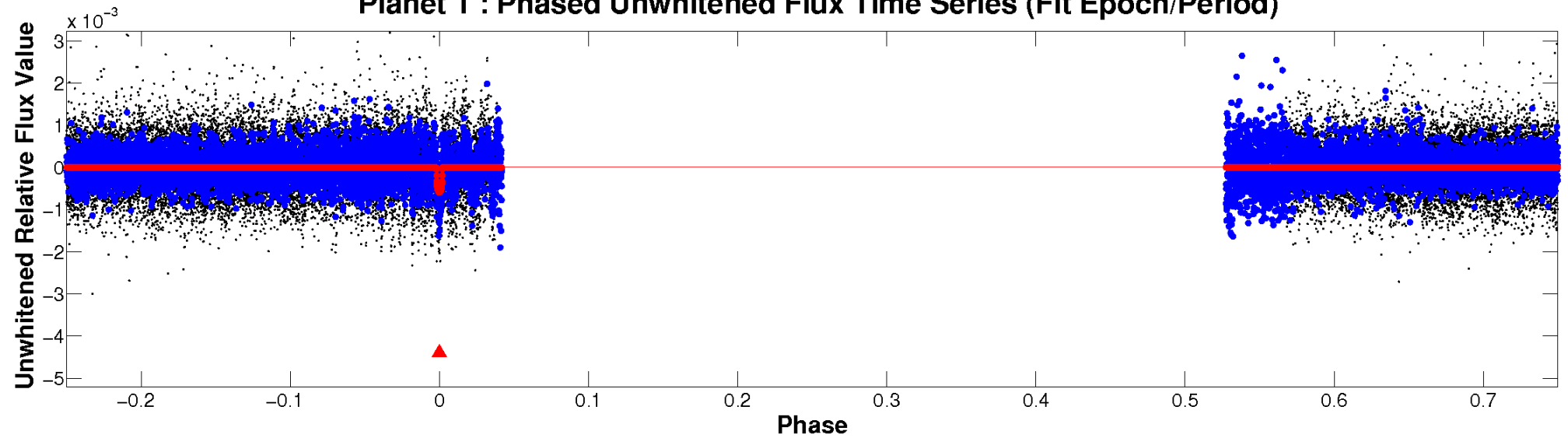
# ALT Odd/Even

TCE 010014886-01

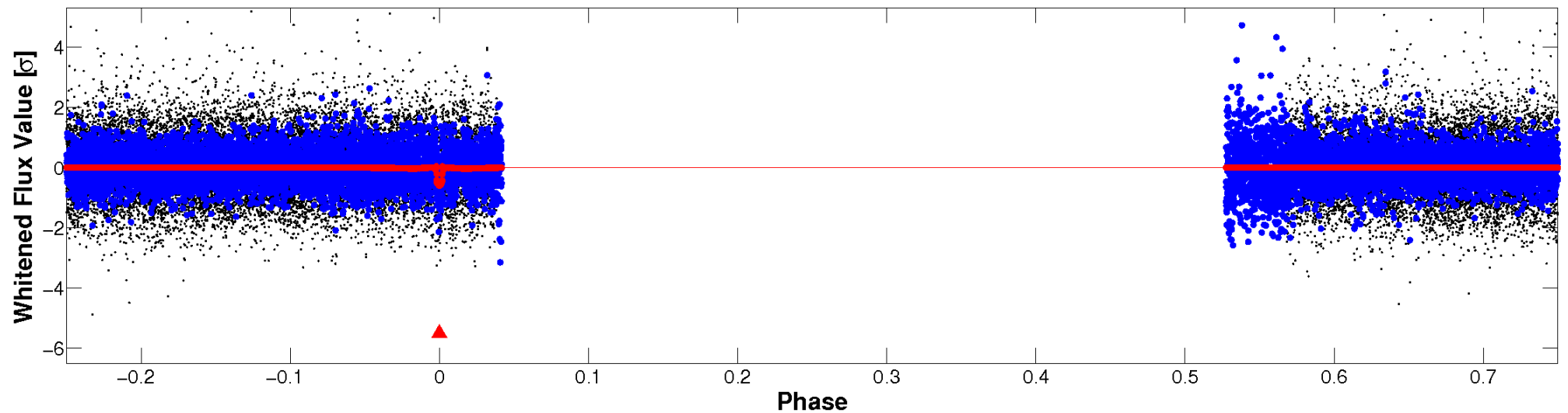


# Non-Whitened Vs. Whitened Light Curve

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

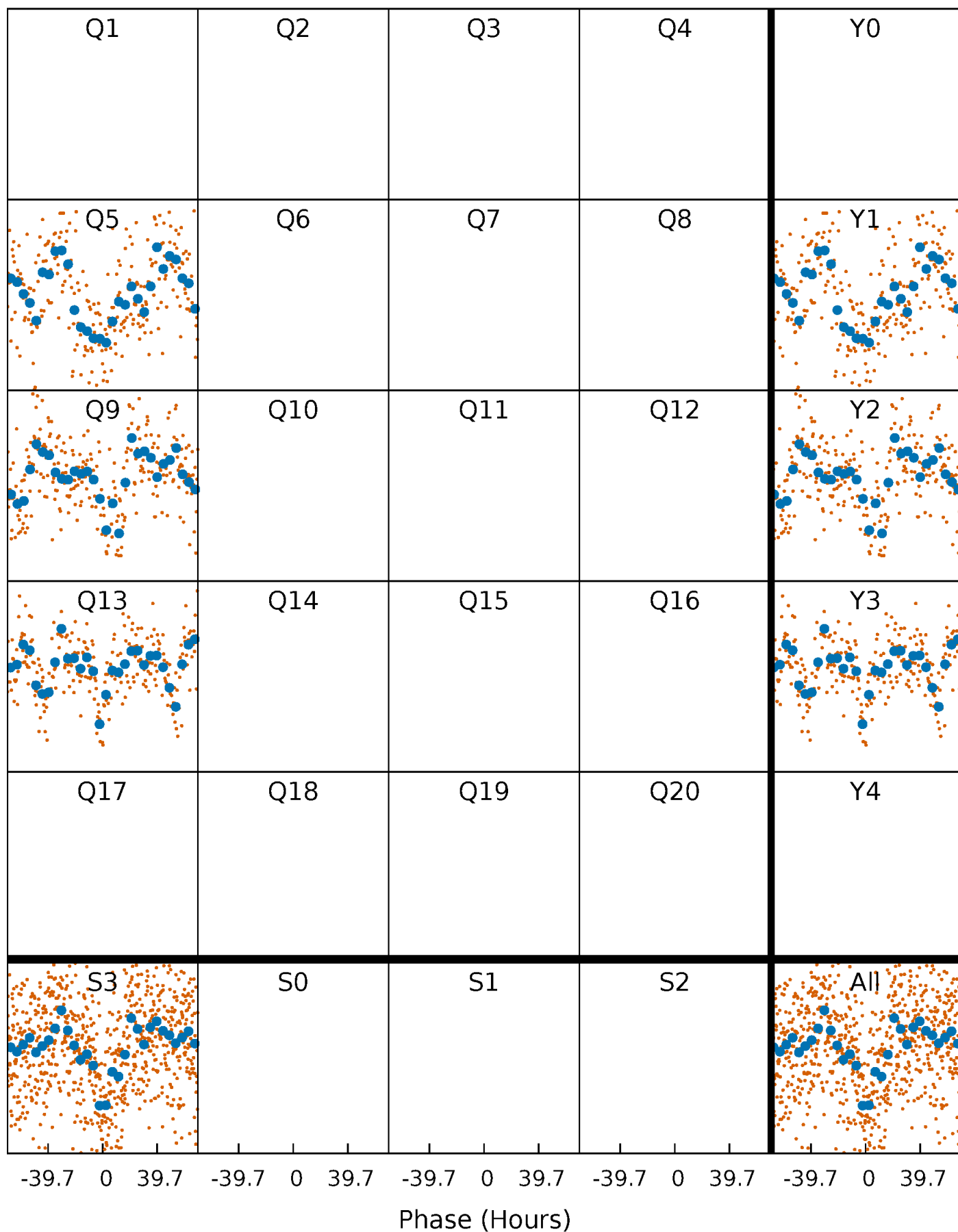


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

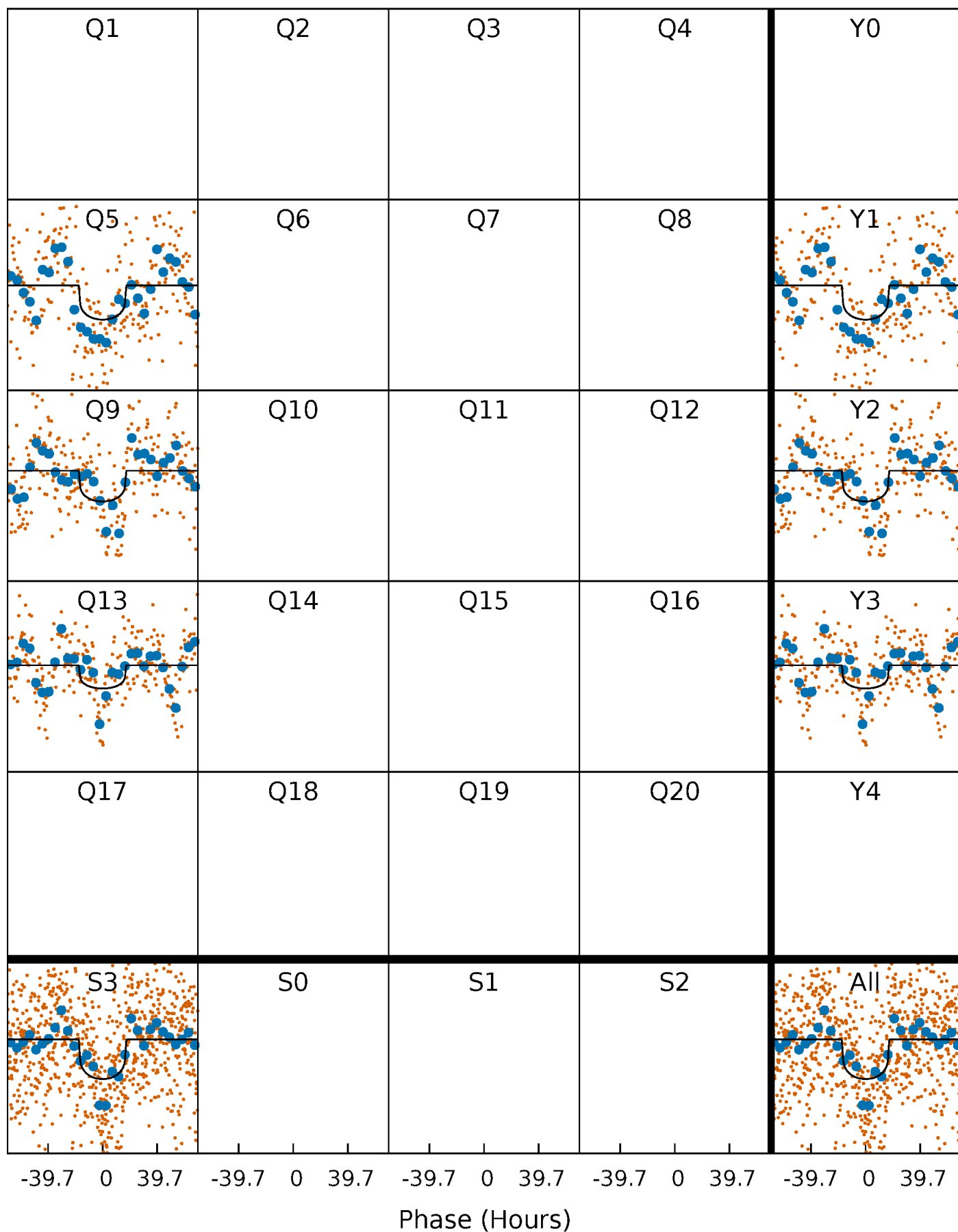
TCE 010014886-01 P=366.163596 Days  $T_0=159.267515$  (BKJD)





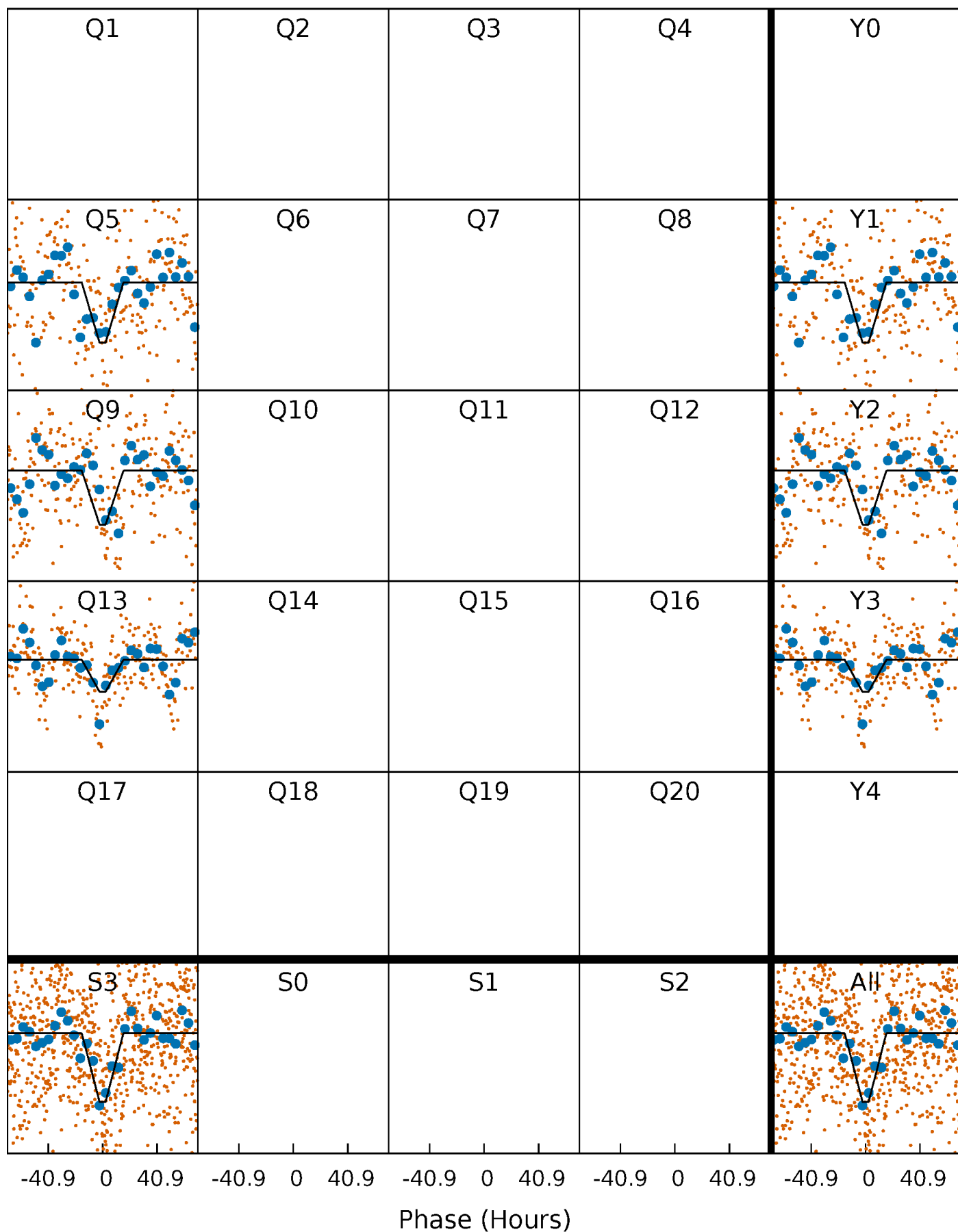
# DV Quarter-Phased Transit Curves

TCE 010014886-01 P=366.163596 Days  $T_0=159.267515$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

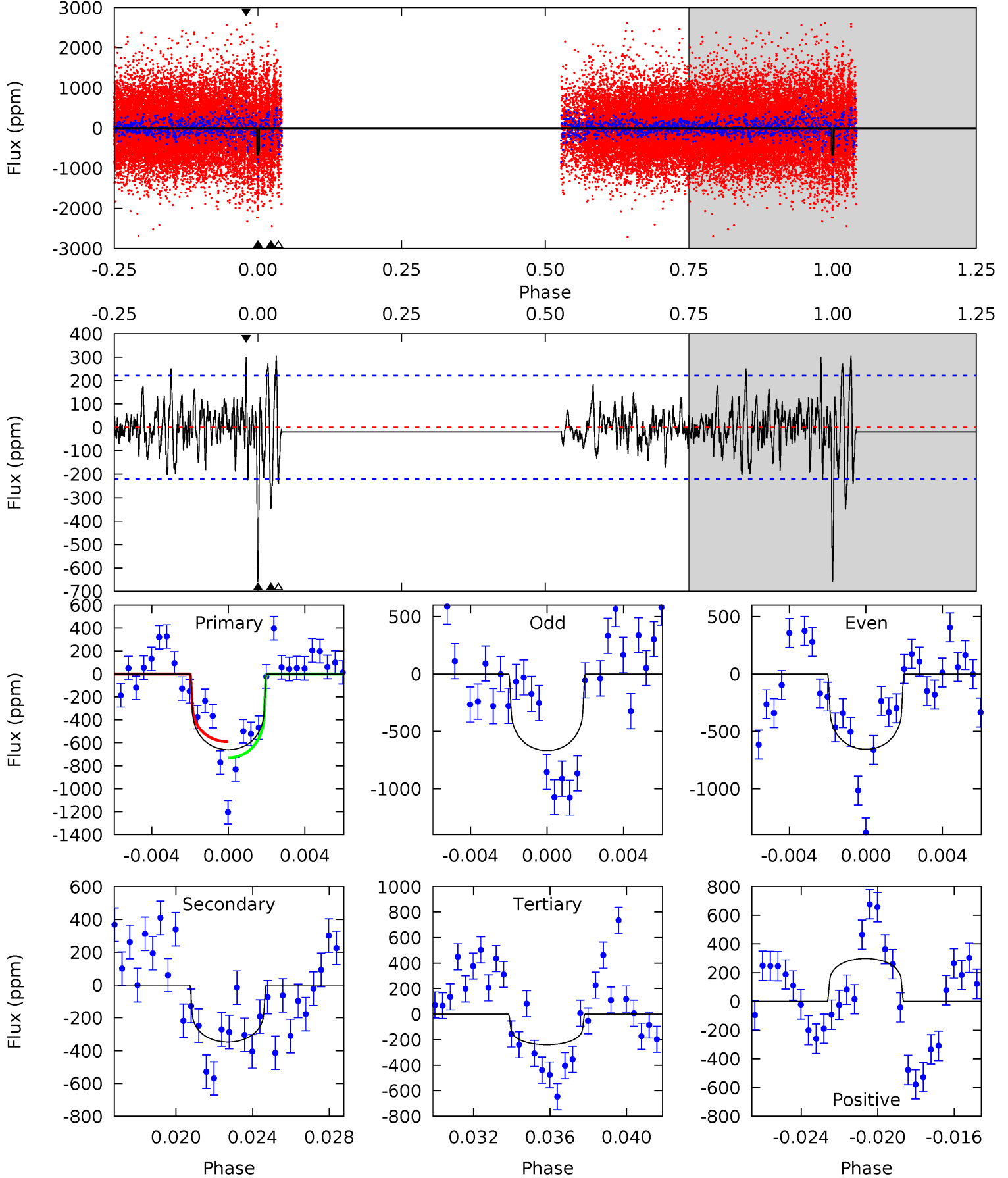
TCE 010014886-01 P=366.189829 Days  $T_0=159.240298$  (BKJD)



# DV Model-Shift Uniqueness Test

010014886-01, P = 366.163596 Days, E = 159.267515 Days

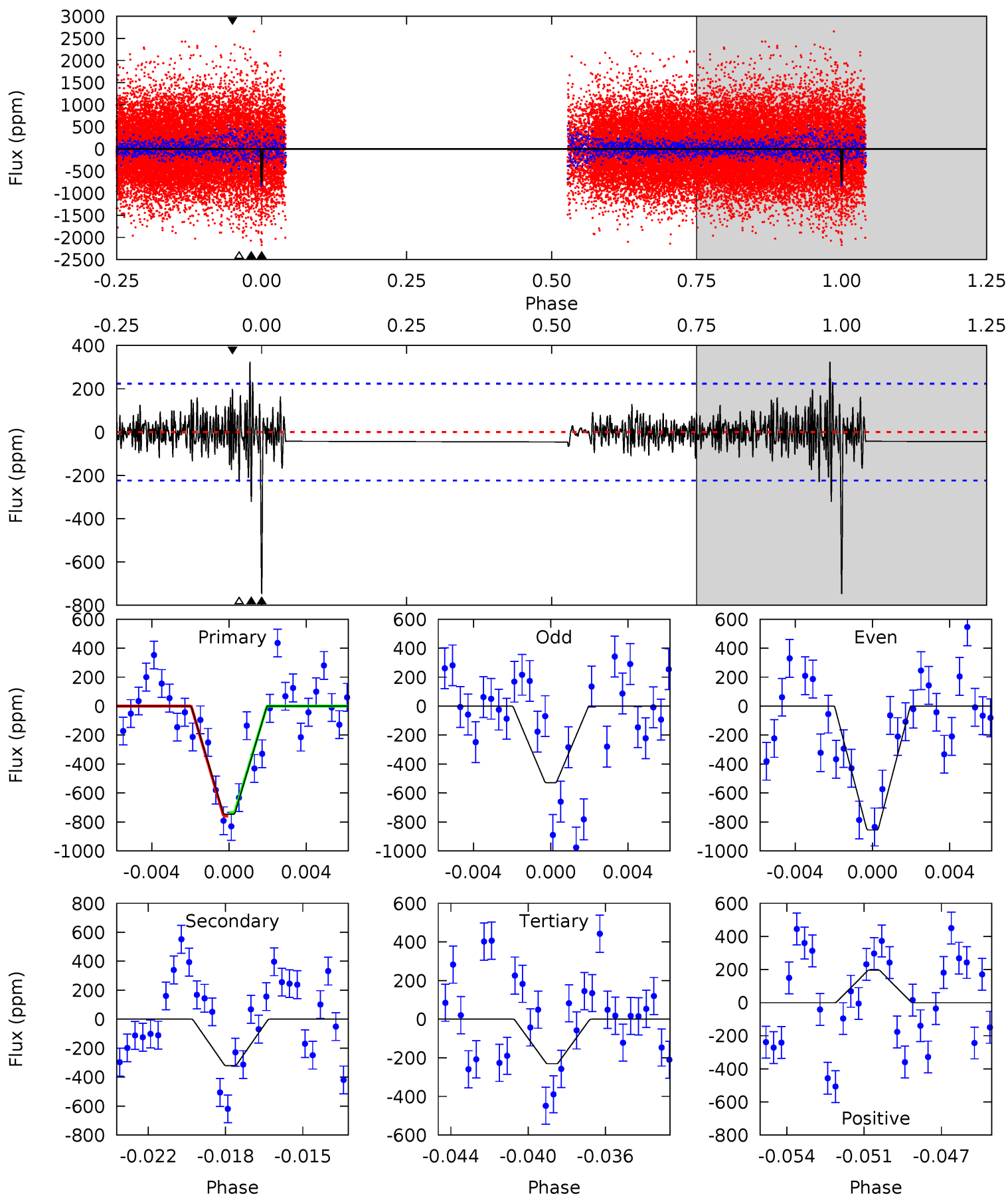
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	8.18	5.63	7.04	5.20	2.88	1.86	9.91	8.50	2.55	1.14	0.13	0.99	0.32	1.54



# Alt Model-Shift Uniqueness Test

010014886-01, P = 366.189829 Days, E = 159.240298 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
17.4	7.48	5.37	4.59	5.22	2.91	1.25	12.0	12.8	2.11	2.89	3.59	1.10	0.30	0.26



### Stellar Parameters For KIC 010014886

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5691^{+180}_{-200}$	$4.544^{+0.030}_{-0.170}$	$0.070^{+0.250}_{-0.300}$	$0.887^{+0.217}_{-0.078}$	$1.003^{+0.090}_{-0.130}$	$2.025^{+0.339}_{-0.888}$
	+3%/-4%	+1%/-4%	+357%/-429%	+24%/-9%	+9%/-13%	+17%/-44%
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 010014886-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-347 \pm 42$	$2.31^{+0.75}_{-0.72}$	$338^{+18}_{-16}$	$5194^{+958}_{-565}$	$36460^{+35599}_{-16352}$
Alt.	$-321 \pm 43$	$2.88^{+0.78}_{-0.79}$	$337^{+23}_{-15}$	$4657^{+625}_{-416}$	$20793^{+18046}_{-8256}$

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

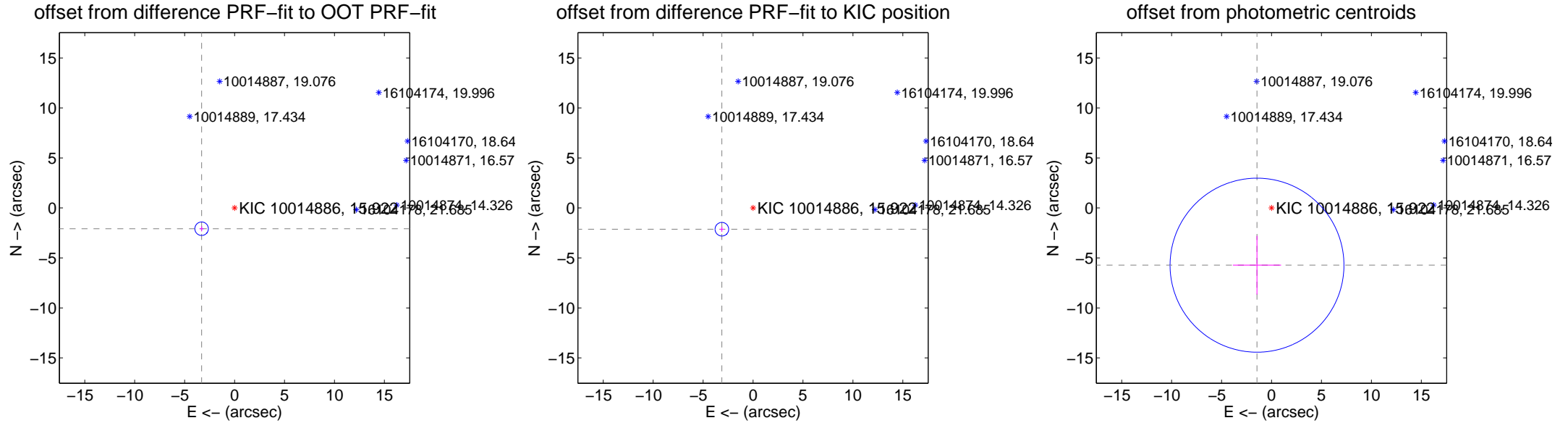
## DV Centroid Data

Supplemental centroid analysis for 010014886-01. Kepler magnitude: 15.92. Transit SNR 7.39

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.900 \pm 0.225$	17.33	$3.301 \pm 0.209$	$-2.077 \pm 0.262$
PRF-fit source offset from KIC position	$3.777 \pm 0.227$	16.64	$3.121 \pm 0.209$	$-2.127 \pm 0.262$
photometric centroid source offset	$5.91 \pm 2.90$	2.04	$1.45 \pm 2.41$	$-5.72 \pm 2.93$

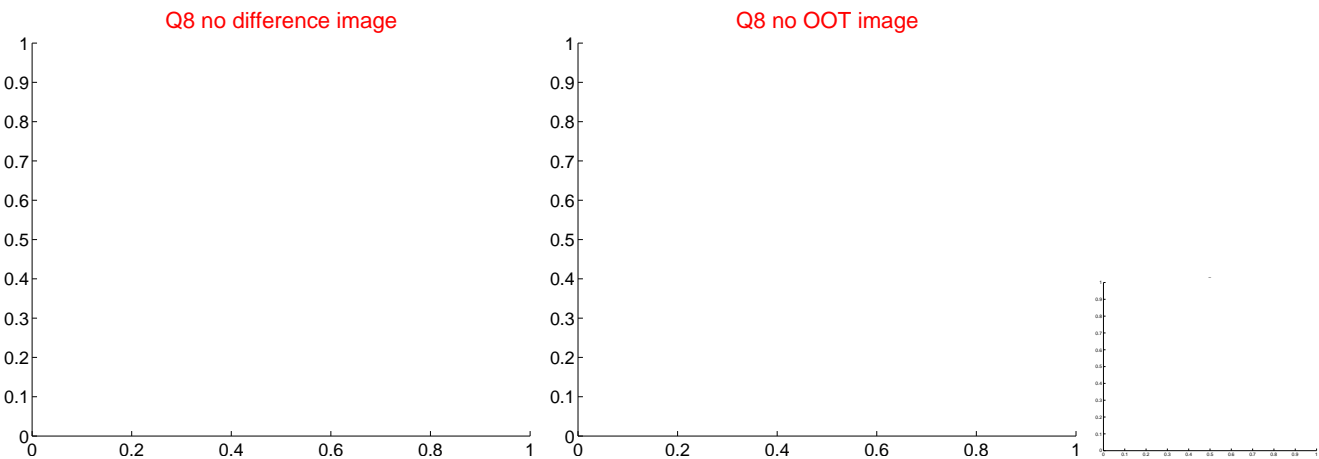
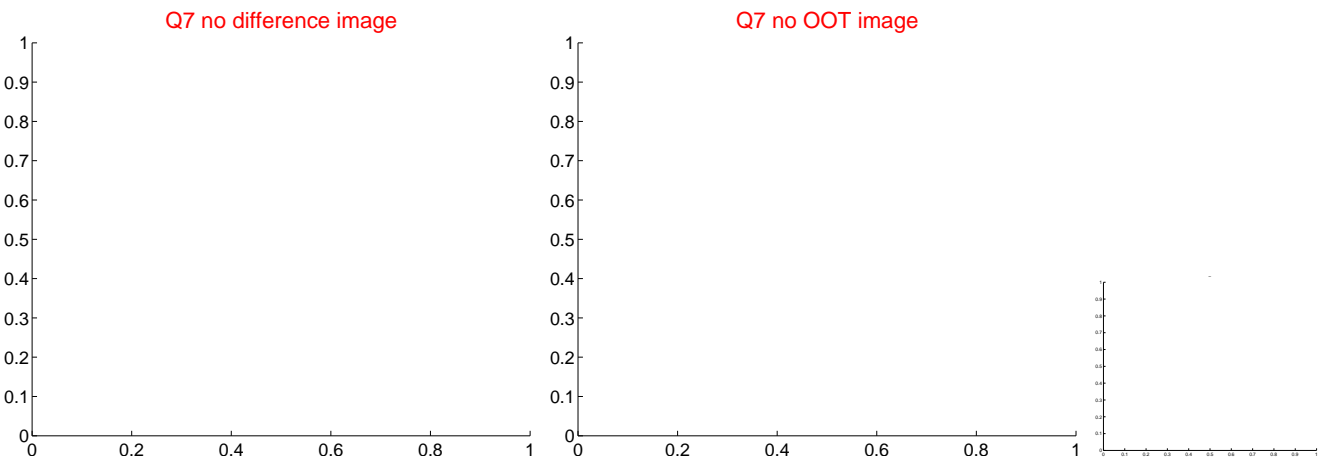
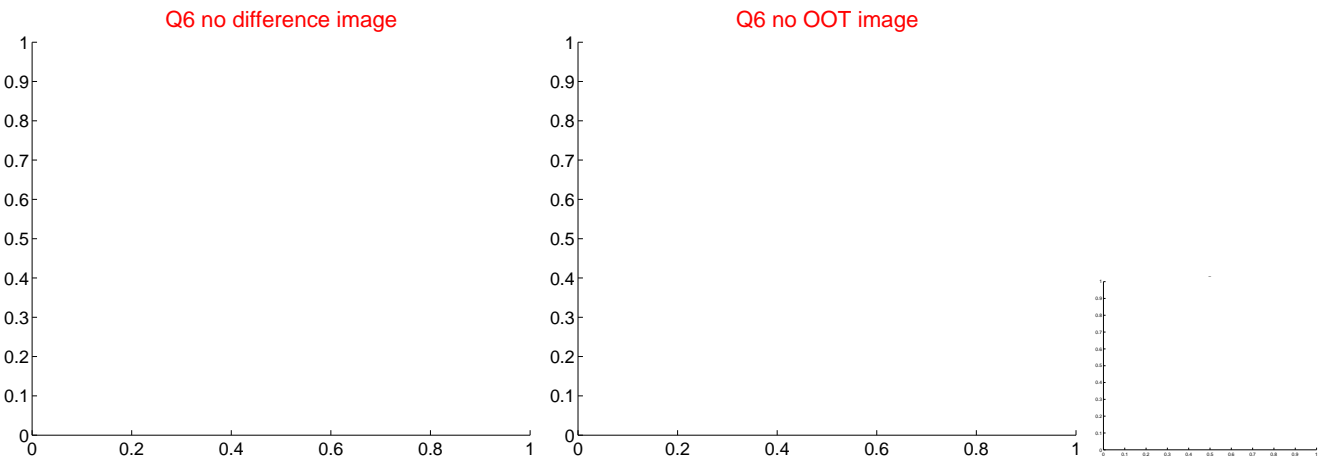
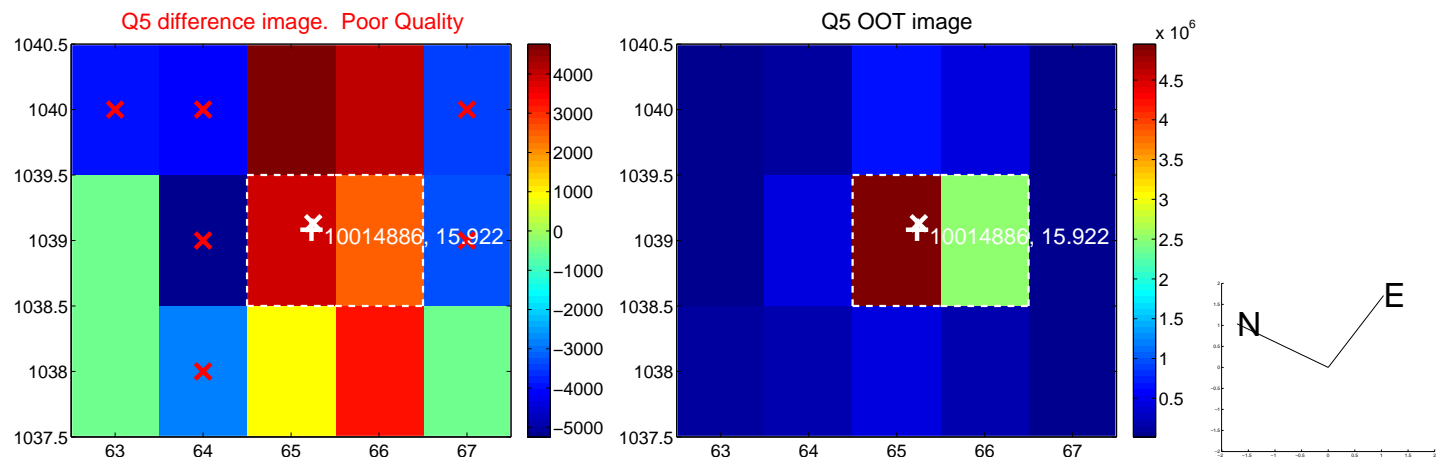


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

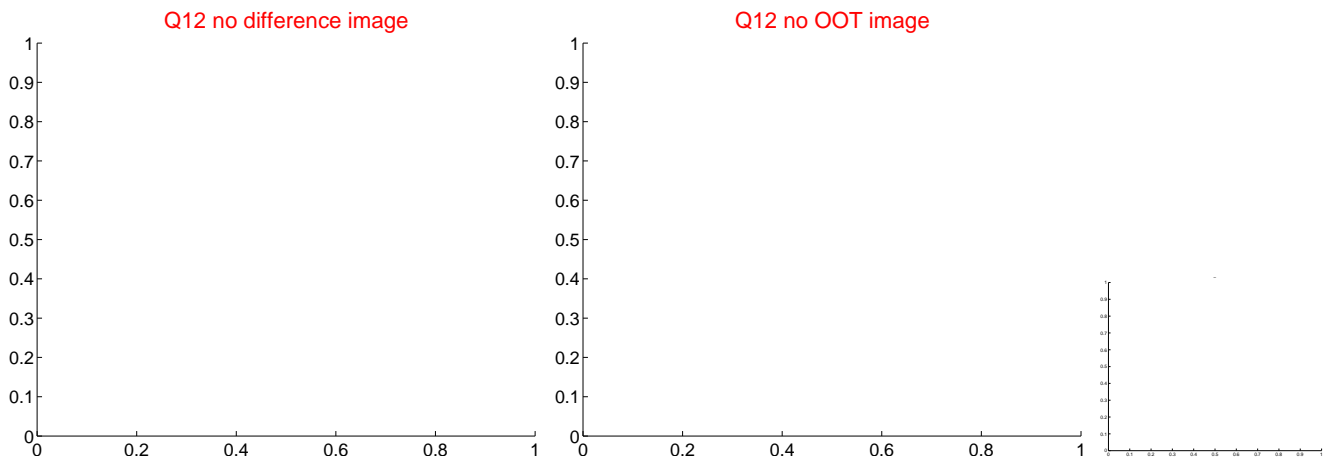
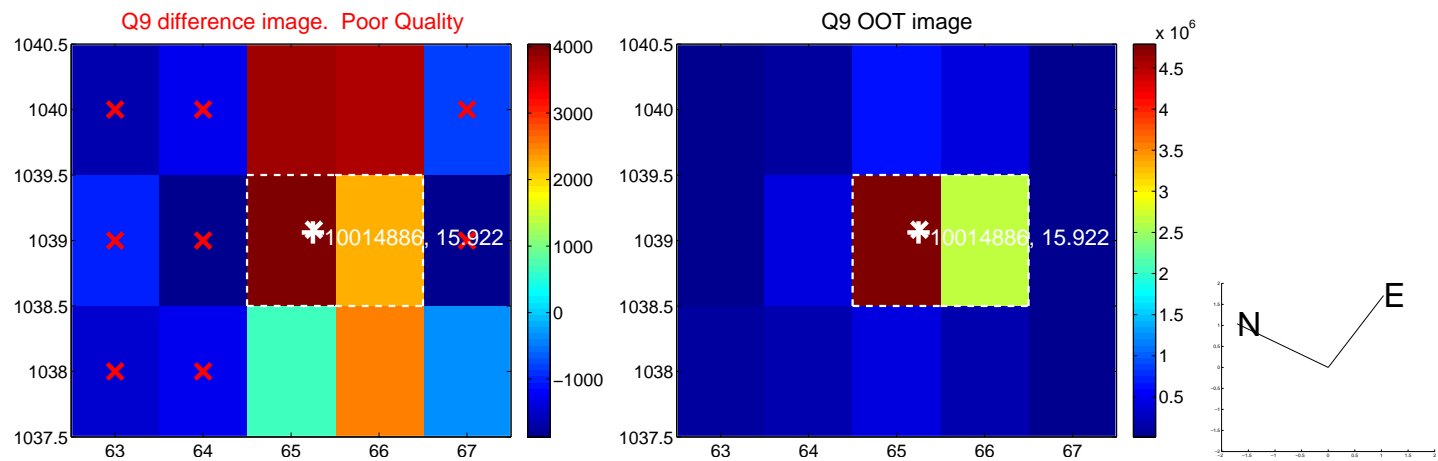


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

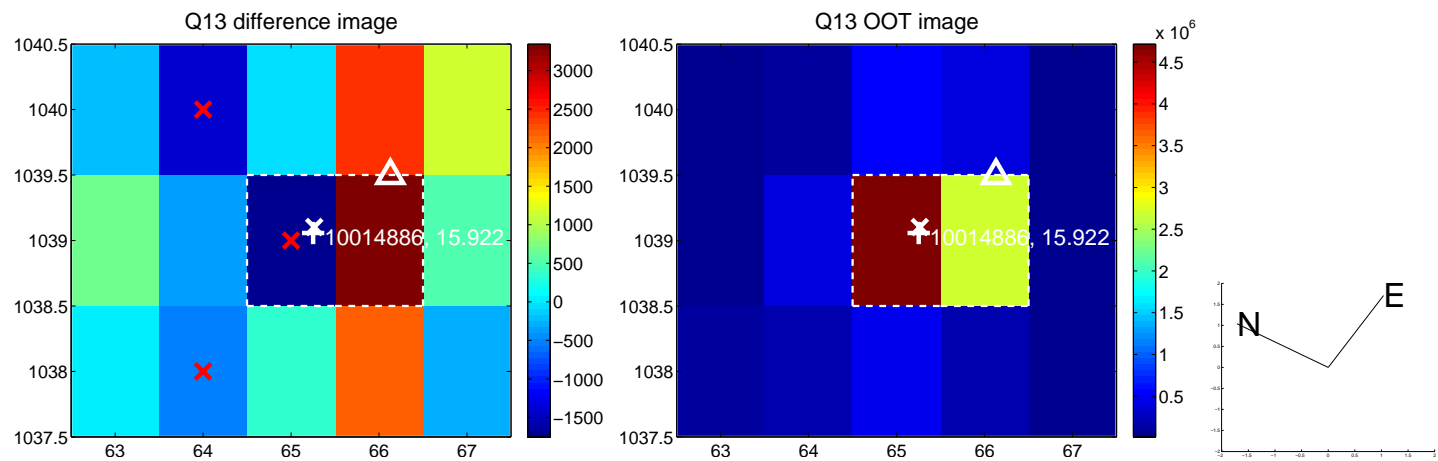




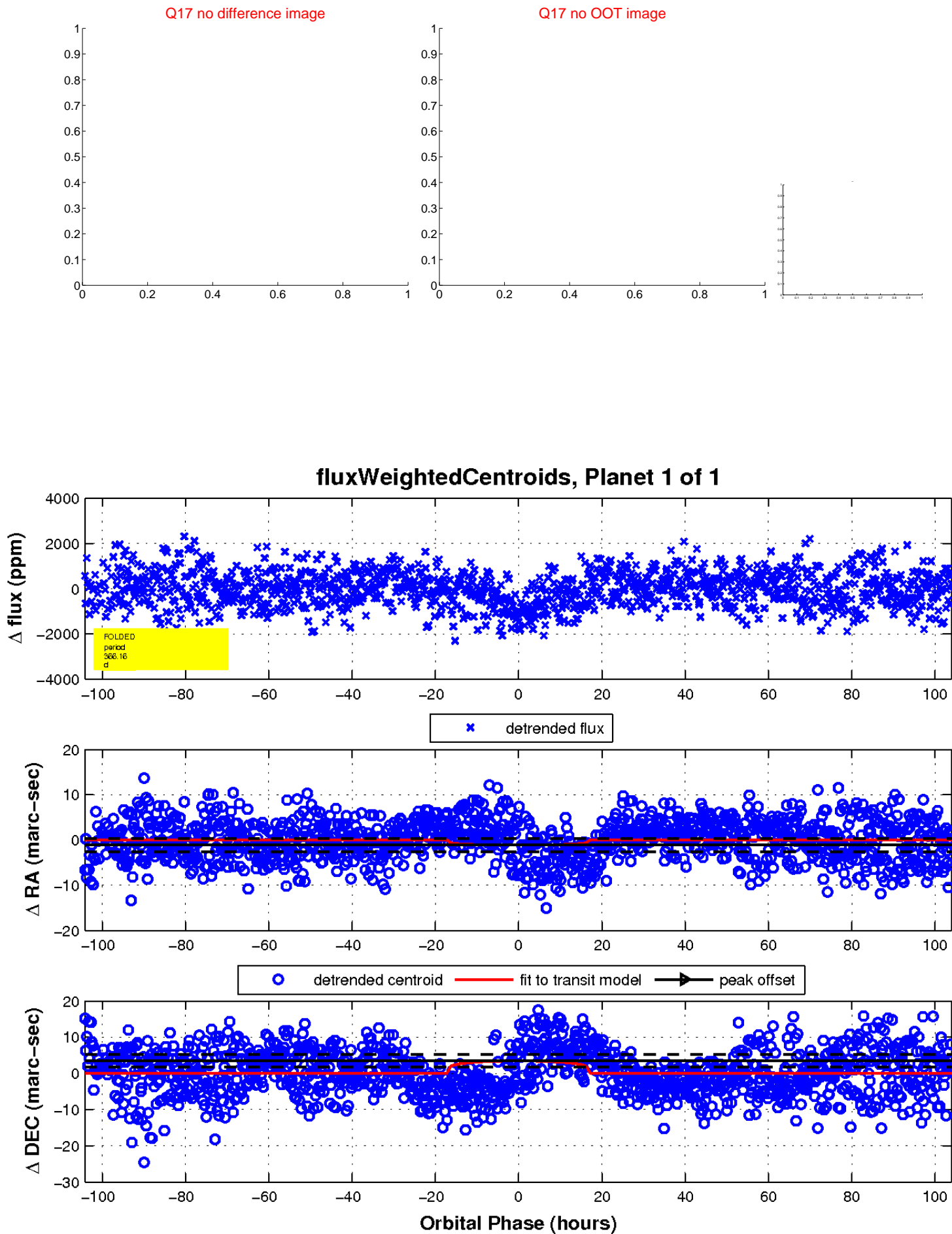
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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

