

# KIC 007686367

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007686367-01	OBS	No	364.091521	403.420248	866.8	19.271	7.5	7.3	1.22	6245	3.58	1.71

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007686367-01	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.

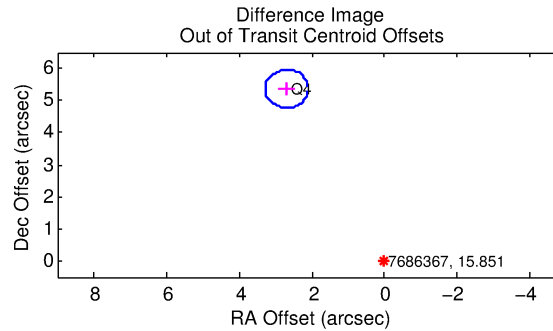
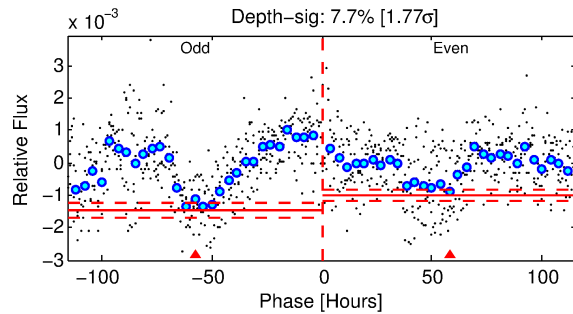
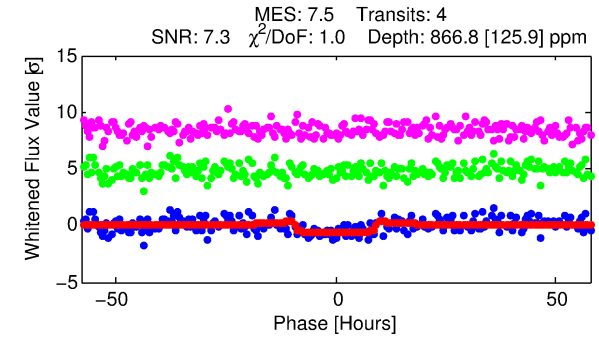
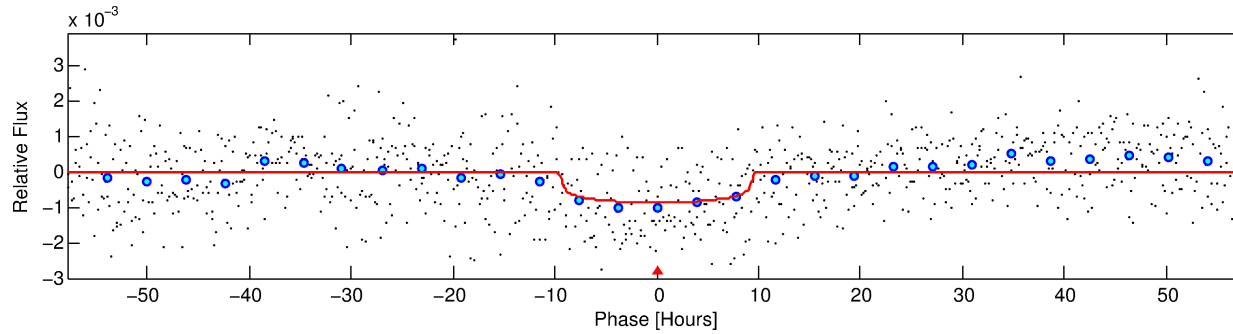
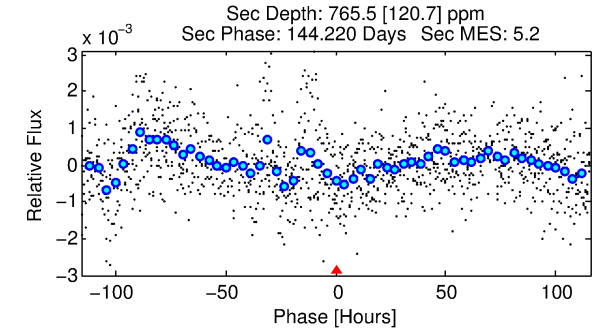
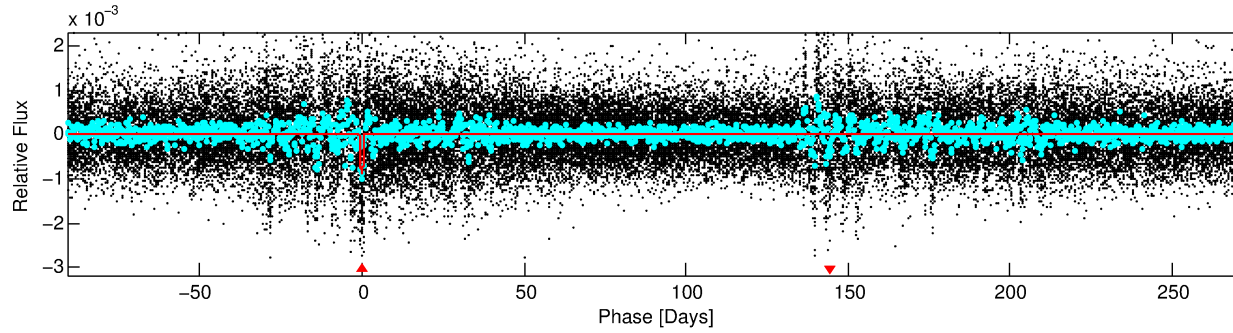
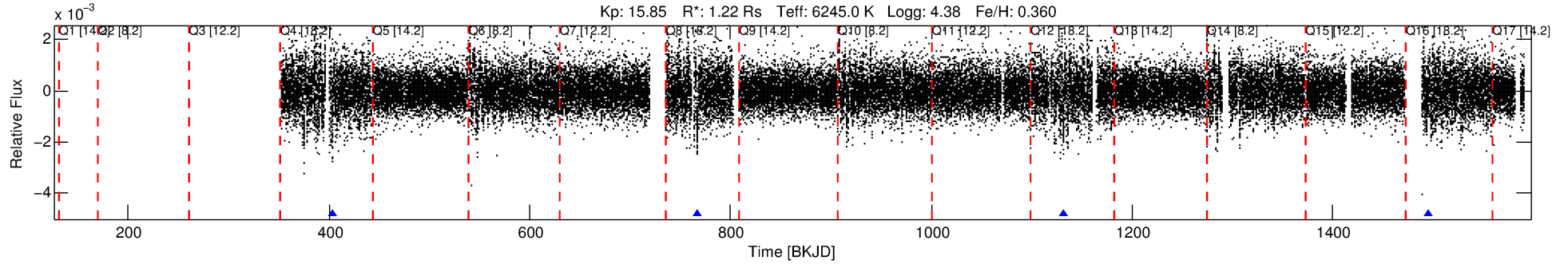
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007686367-01

No Significant Match Found

# DV One-Page Summary

KIC: 7686367 Candidate: 1 of 1 Period: 364.092 d



## DV Fit Results:

Period = 364.09152 [0.01052] d  
Epoch = 403.4202 [0.0207] BKJD  
Rp/R\* = 0.0270 [0.0141]  
a/R\* = 144.56 [352.99]  
b = 0.23 [10.23]  
Seff = 1.71 [0.68]  
Teq = 292 [29] K  
Rp = 3.58 [2.17] Re  
a = 1.0842 [0.2738] AU  
Ag = 38537.00 [43013.40] [0.90 $\sigma$ ]  
Teff = 6320 [1689] K [3.57 $\sigma$ ]

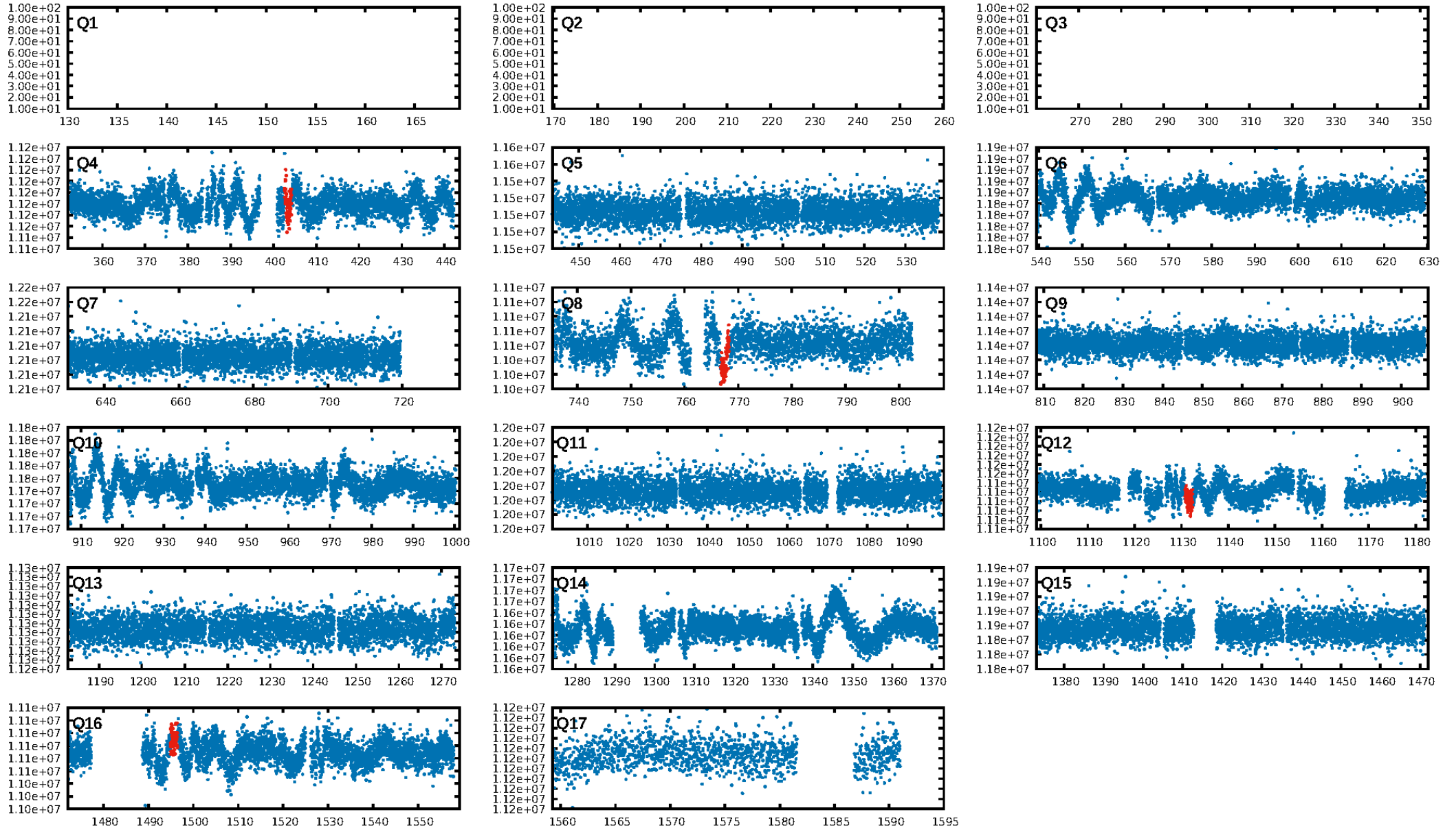
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGoF-sig: 99.9%  
Bootstrap-pfa: 1.04e-08  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -2.895  
Centroid-sig: 2.1%  
Centroid-so: 2.466 arcsec [1.41 $\sigma$ ]  
OotOffset-rm: 6.005 arcsec [30.38 $\sigma$ ]  
KicOffset-rm: 5.865 arcsec [29.70 $\sigma$ ]  
OotOffset-st: 0/0/1/0 [1]  
KicOffset-st: 0/0/1/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [4/4]

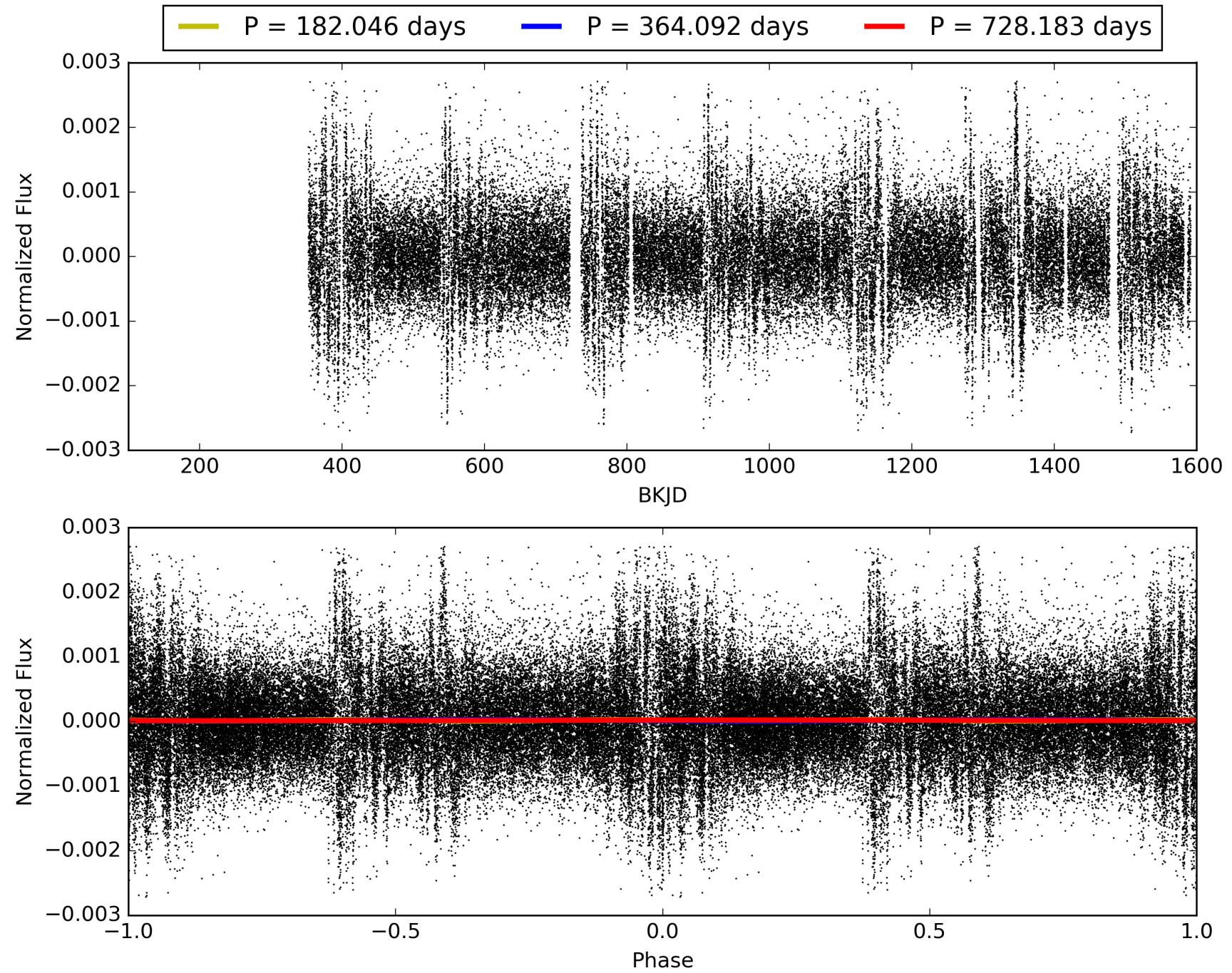
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 04:28:04 Z

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

# TCE 007686367-01, PDC Light Curves

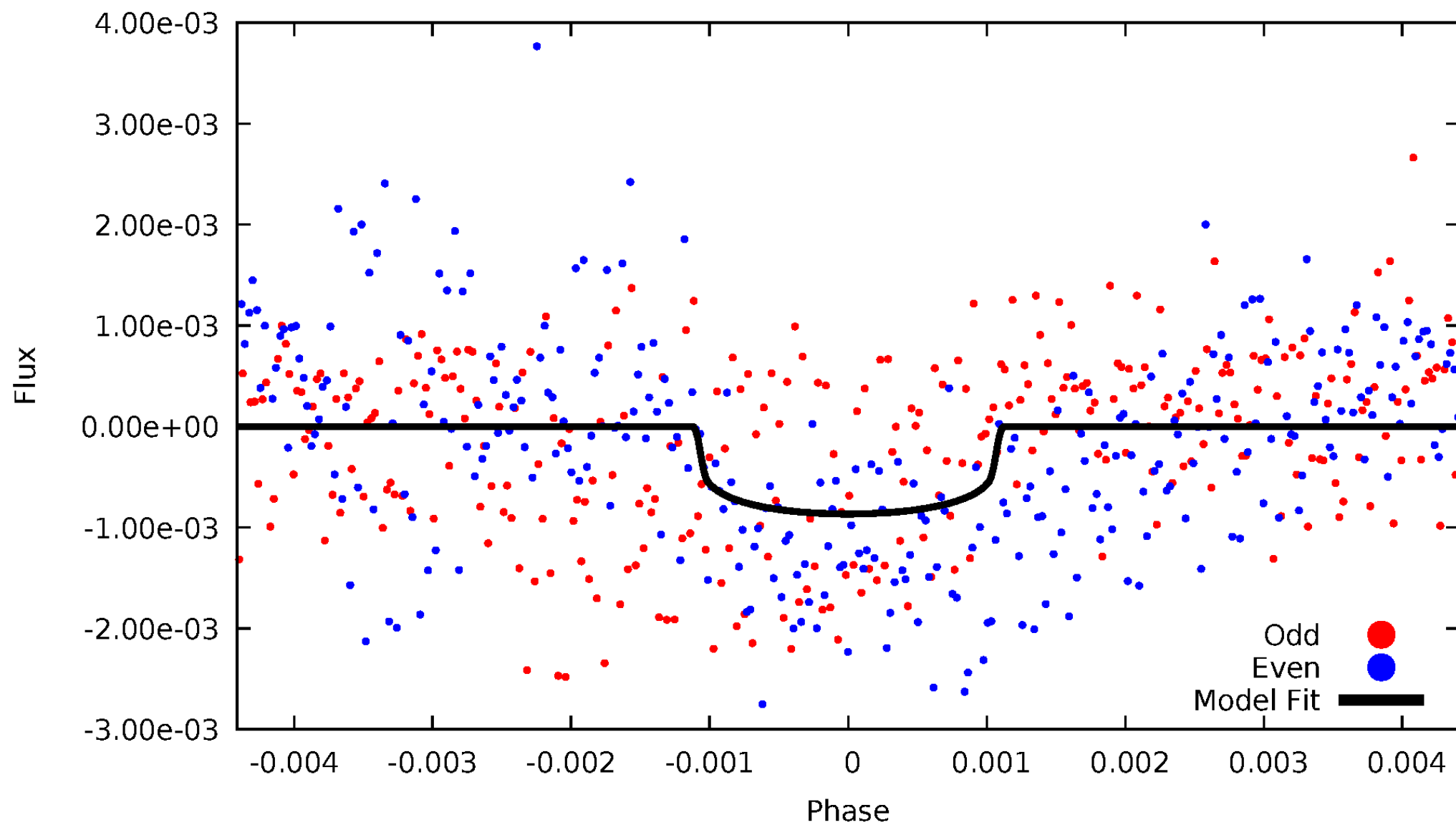


TCE 007686367-01



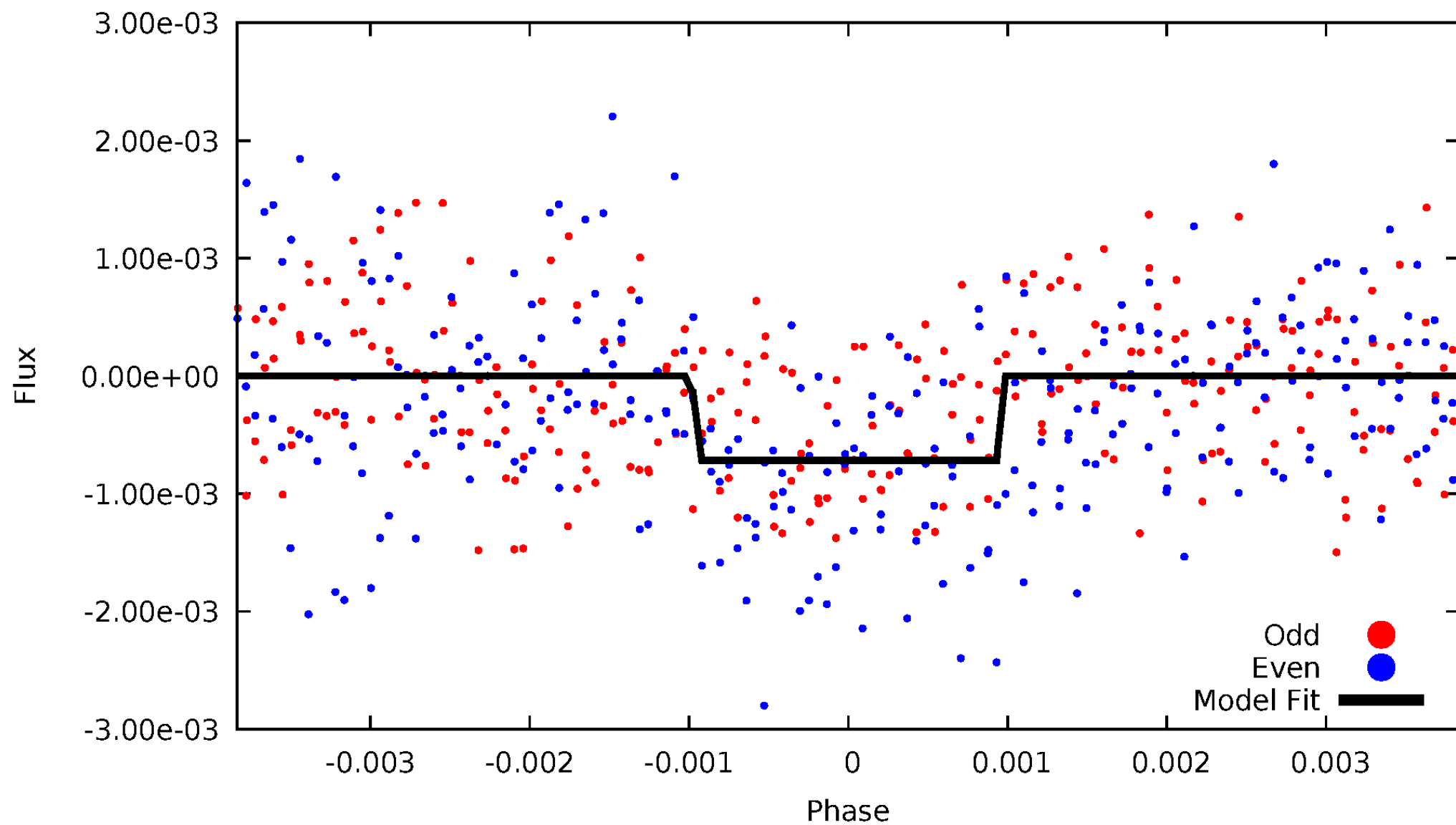
# DV Odd/Even

TCE 007686367-01



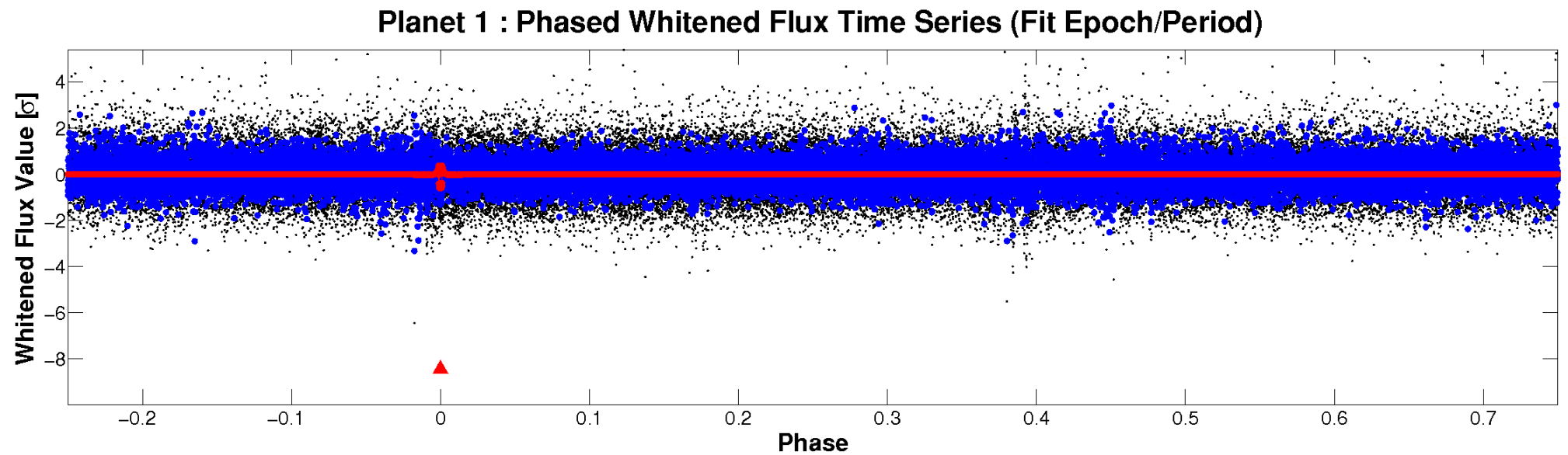
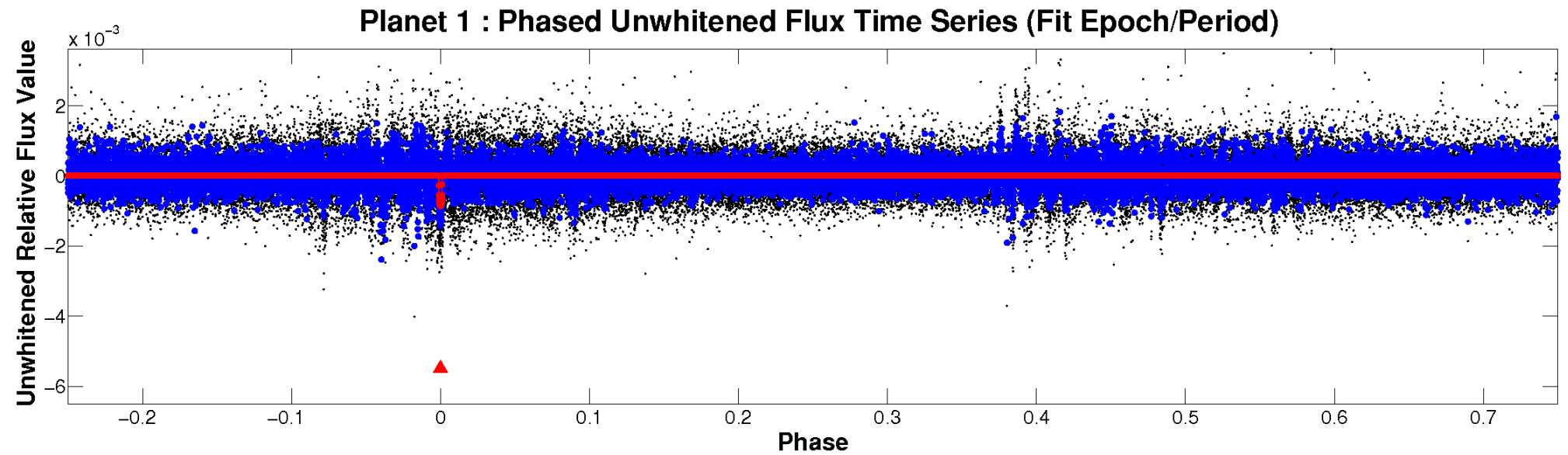
# ALT Odd/Even

TCE 007686367-01



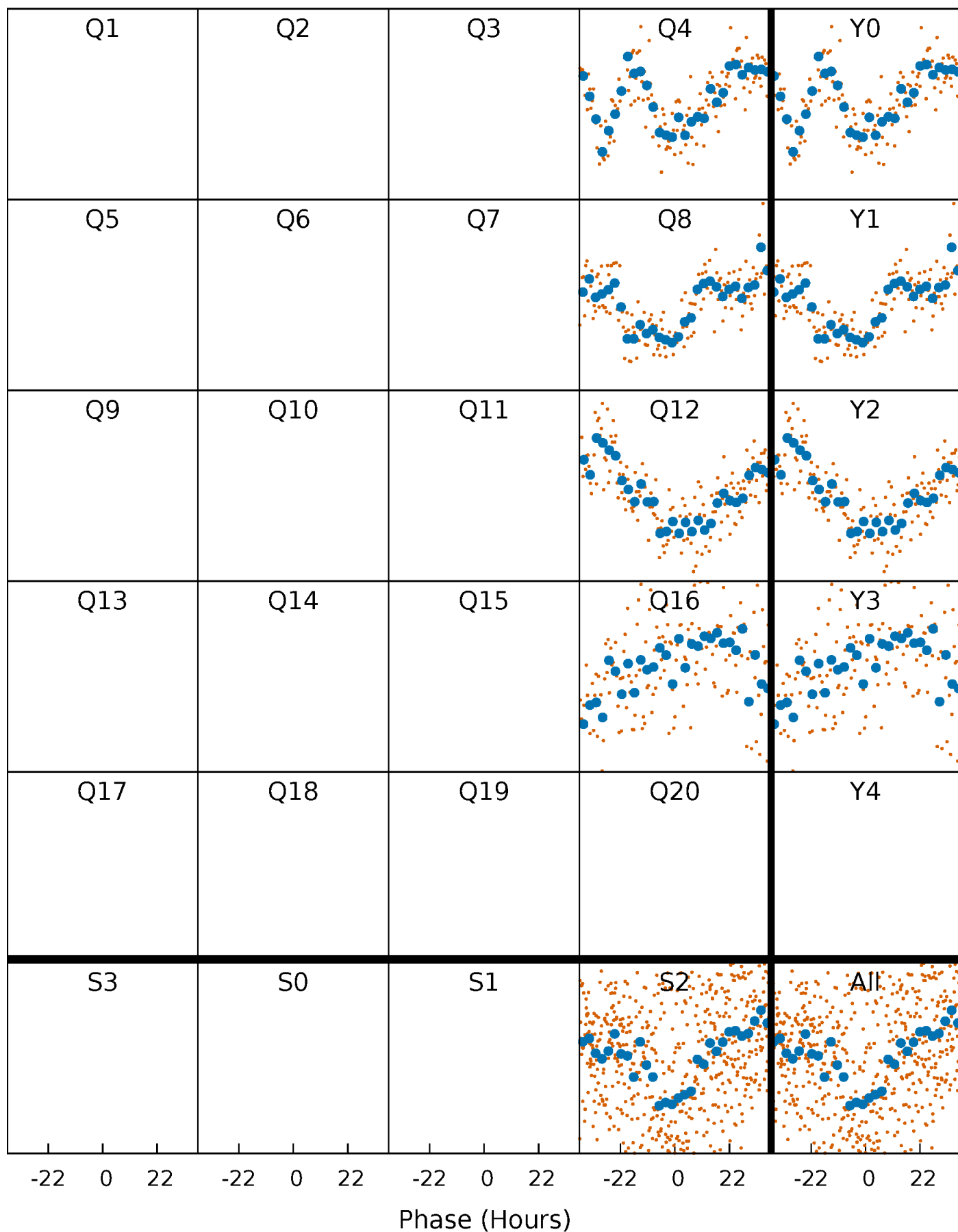


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

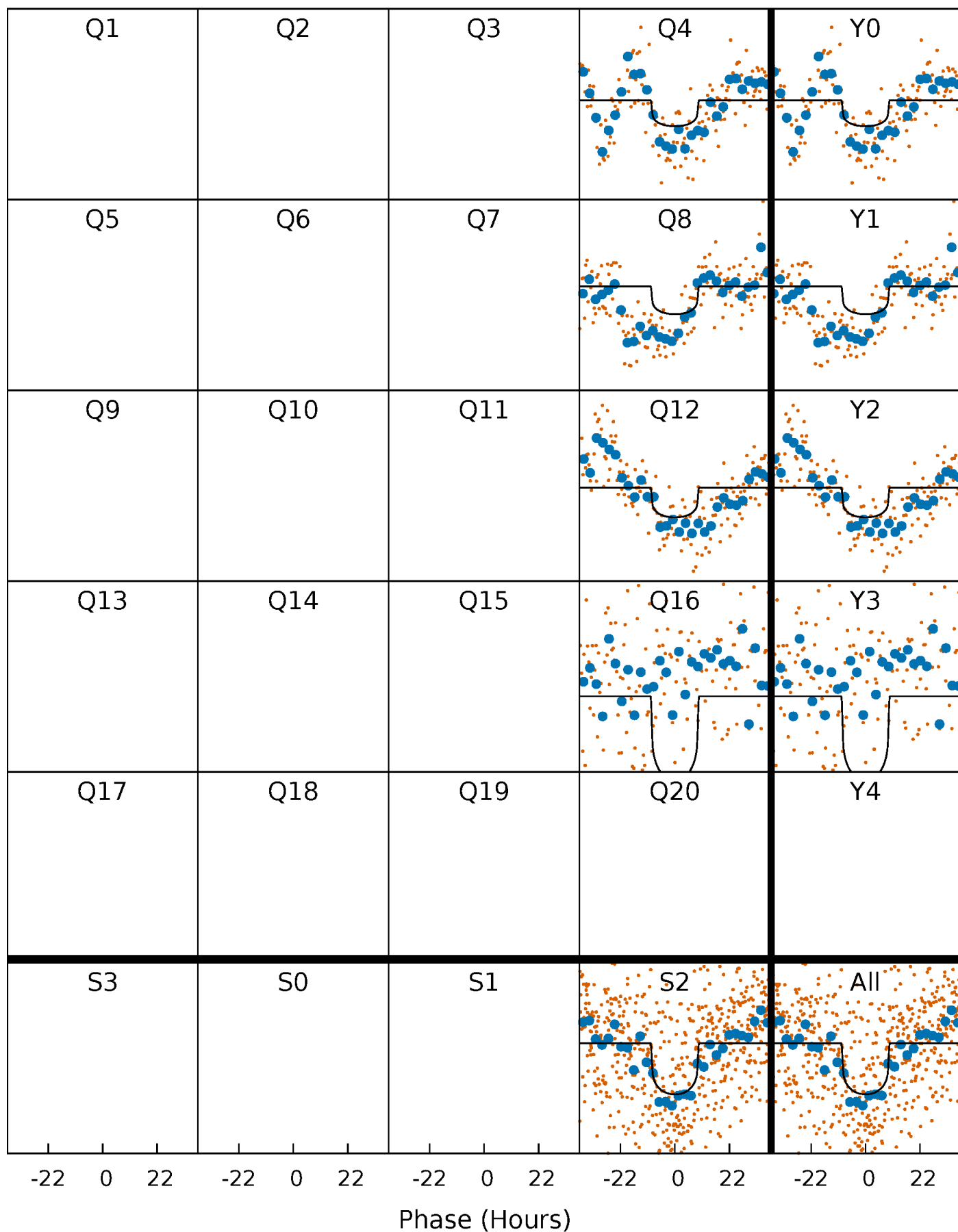
TCE 007686367-01 P=364.091521 Days  $T_0=403.420248$  (BKJD)





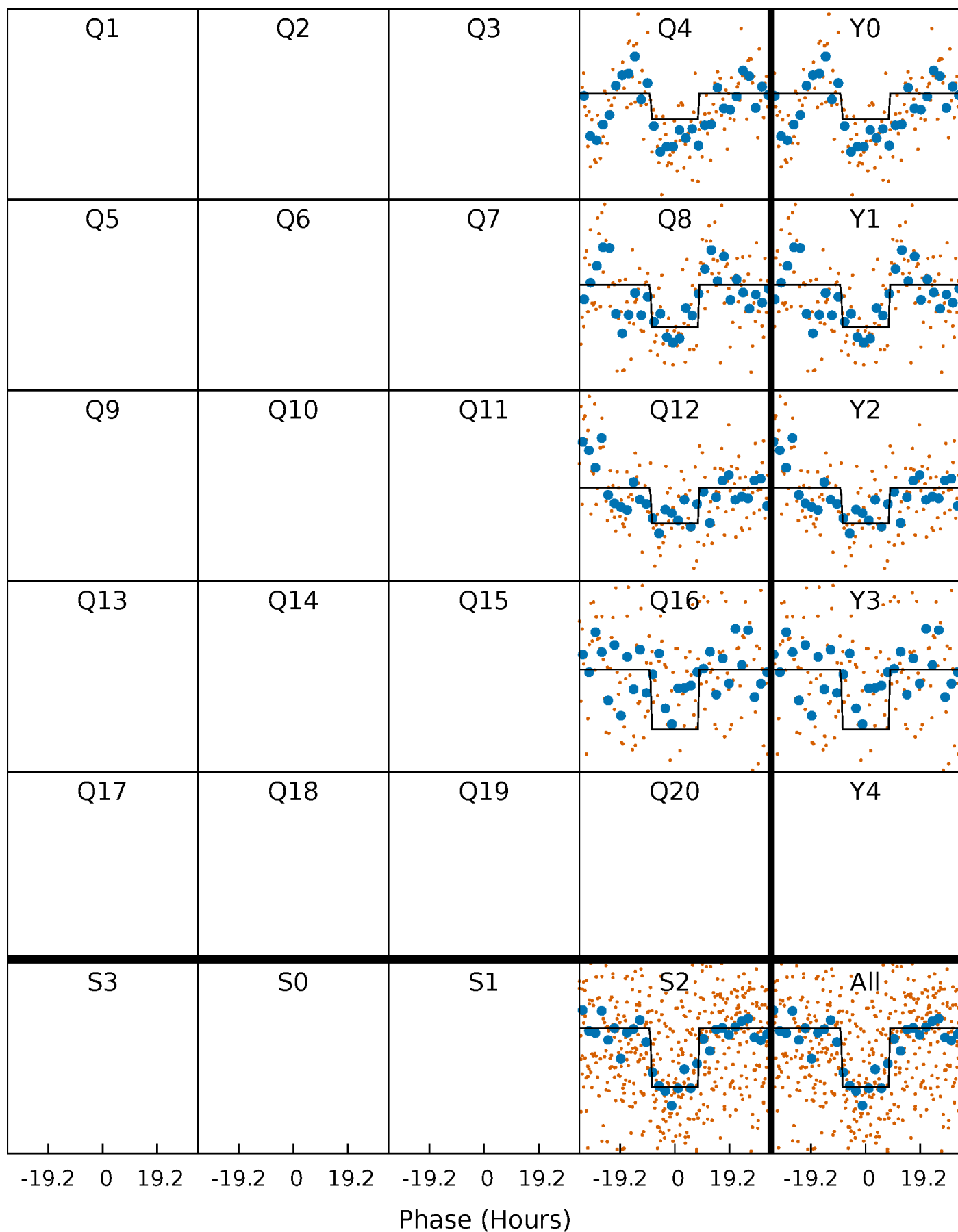
# DV Quarter-Phased Transit Curves

TCE 007686367-01 P=364.091521 Days  $T_0=403.420248$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

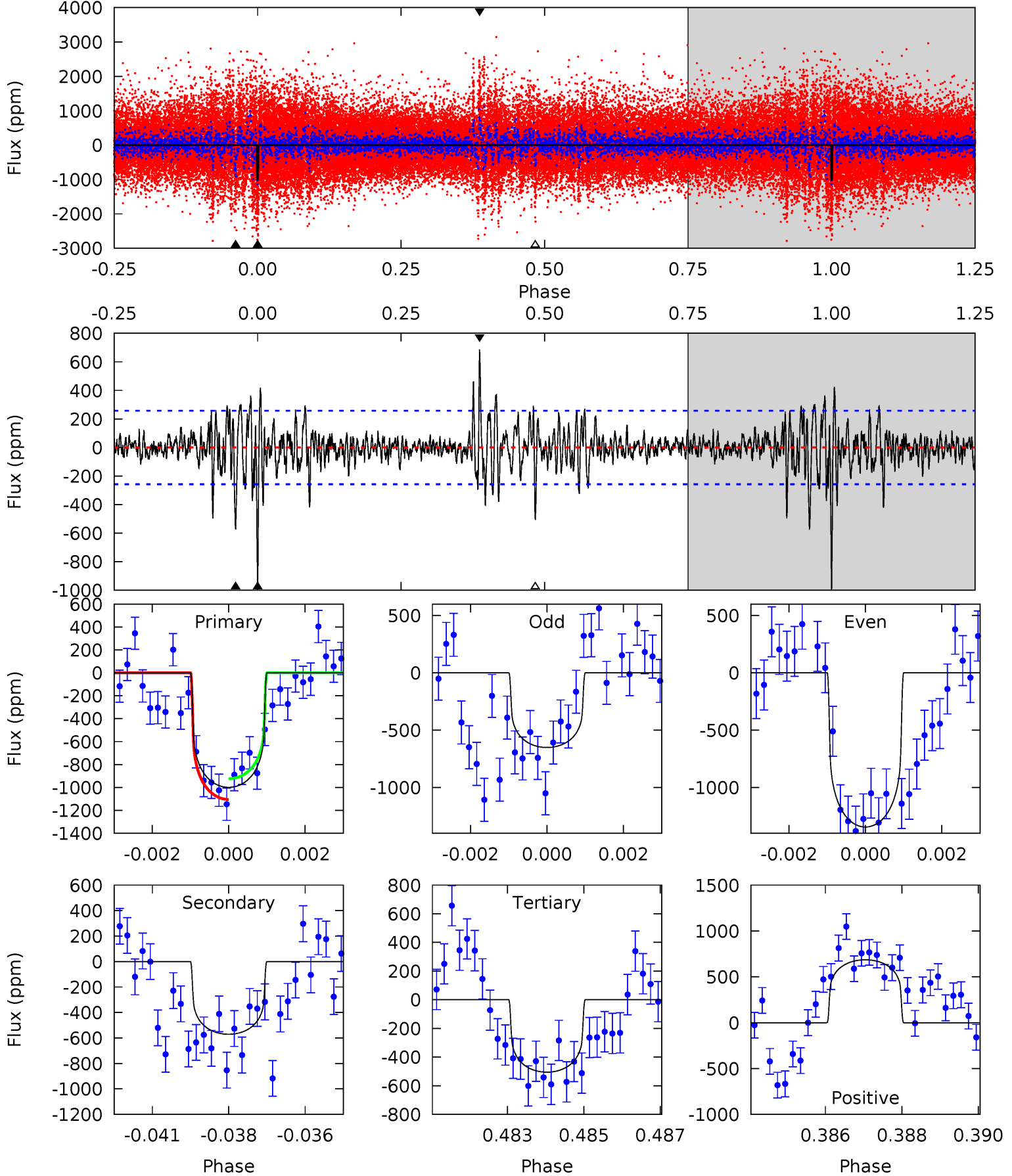
TCE 007686367-01 P=364.126039 Days  $T_0=403.386610$  (BKJD)



# DV Model-Shift Uniqueness Test

007686367-01, P = 364.091521 Days, E = 39.328727 Days

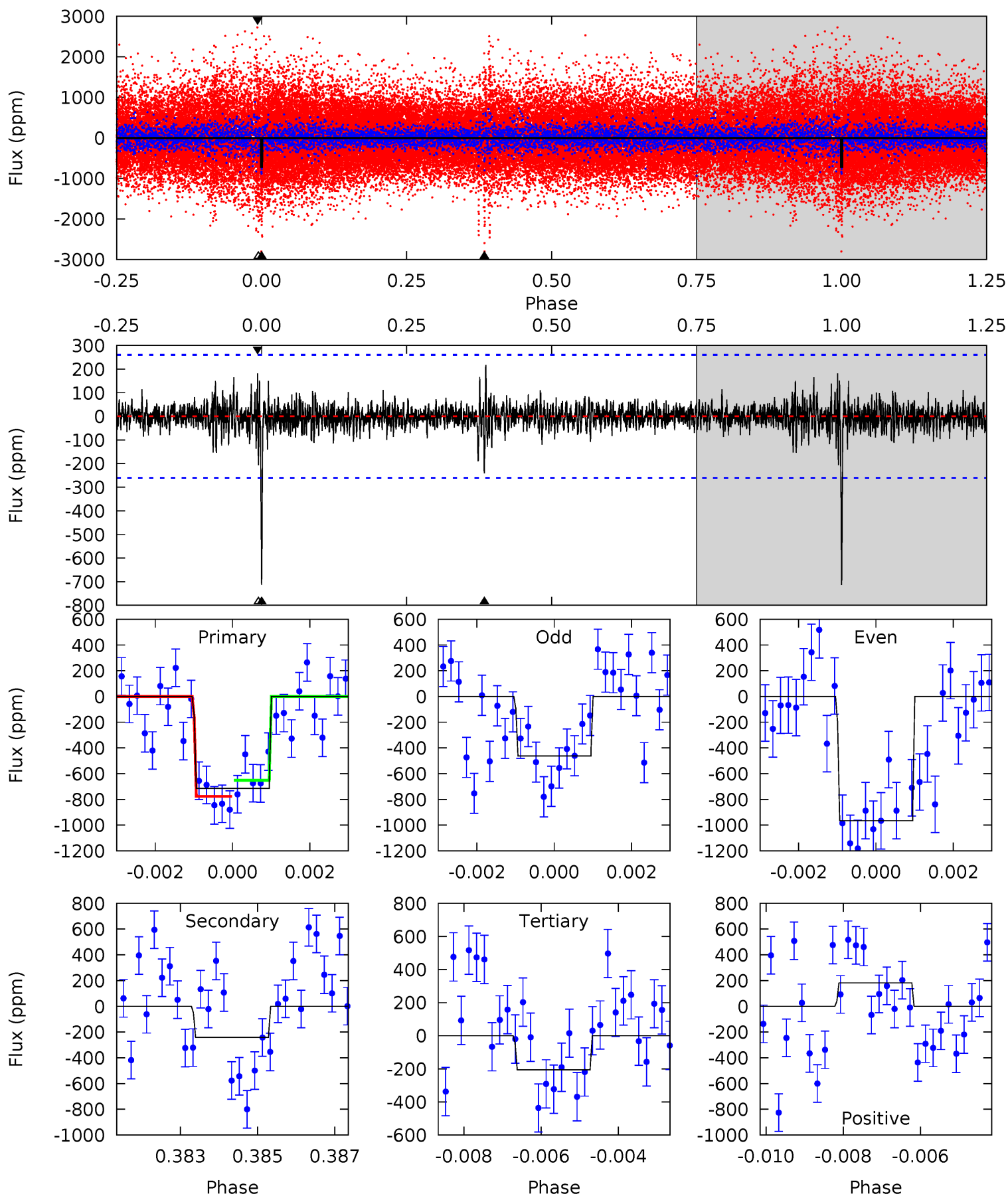
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.5	11.7	10.4	14.1	5.30	3.05	2.31	10.2	6.44	1.35	-2.36	7.15	0.75	0.41	1.86



# Alt Model-Shift Uniqueness Test

007686367-01,  $P = 364.126039$  Days,  $E = 39.260571$  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
14.6	4.93	4.22	3.72	5.33	3.10	0.76	10.4	10.9	0.71	1.21	5.16	1.08	0.23	1.26



### Stellar Parameters For KIC 007686367

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6245^{+174}_{-261}$	$4.376^{+0.065}_{-0.195}$	$0.360^{+0.100}_{-0.350}$	$1.216^{+0.371}_{-0.159}$	$1.282^{+0.141}_{-0.188}$	$1.003^{+0.347}_{-0.502}$
	+3%/-4%	+1%/-4%	+28%/-97%	+31%/-13%	+11%/-15%	+35%/-50%
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 007686367-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-571 \pm 49$	$3.74^{+2.02}_{-1.80}$	$413^{+29}_{-22}$	$5828^{+2533}_{-985}$	$26243^{+69381}_{-15172}$
Alt.	$-241 \pm 49$	$3.87^{+1.95}_{-1.82}$	$414^{+28}_{-21}$	$4756^{+1600}_{-706}$	$10056^{+26445}_{-5653}$

$T_{\text{max}}$  = 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

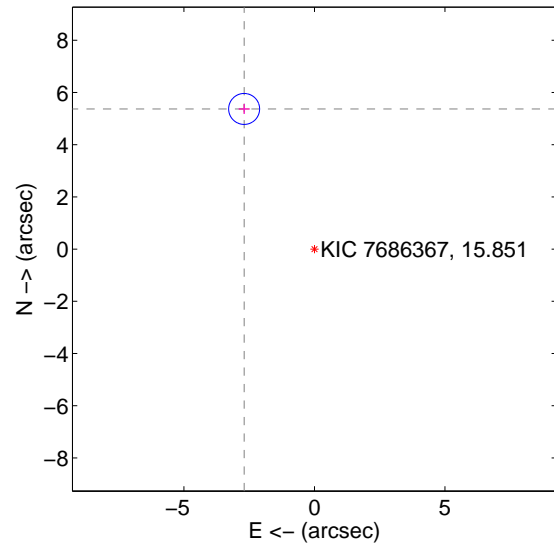
Supplemental centroid analysis for 007686367-01. Kepler magnitude: 15.85. Transit SNR 7.34

There are 0 quarters with good PRF difference image offsets

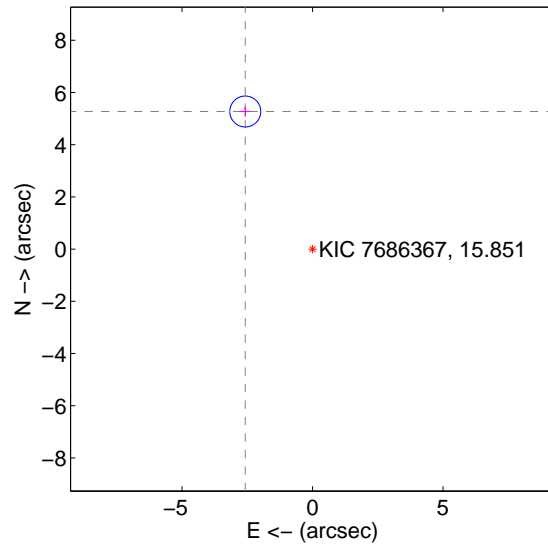
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$6.005 \pm 0.198$	30.38	$2.693 \pm 0.213$	$5.368 \pm 0.194$
PRF-fit source offset from KIC position	$5.865 \pm 0.197$	29.70	$2.575 \pm 0.213$	$5.270 \pm 0.194$
photometric centroid source offset	$2.47 \pm 1.75$	1.41	$-0.00 \pm 1.98$	$2.47 \pm 1.75$

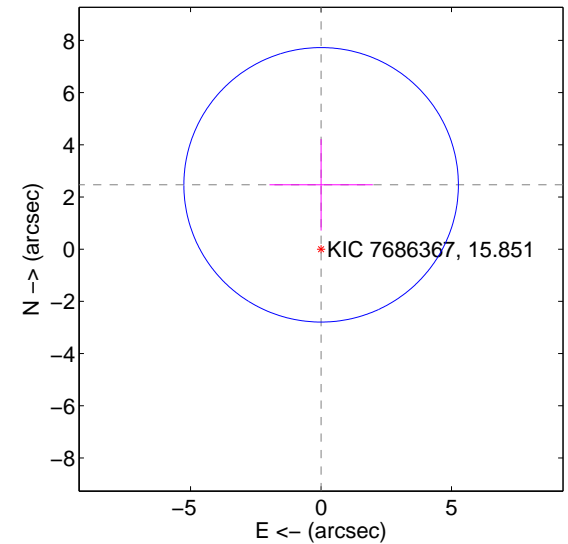
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

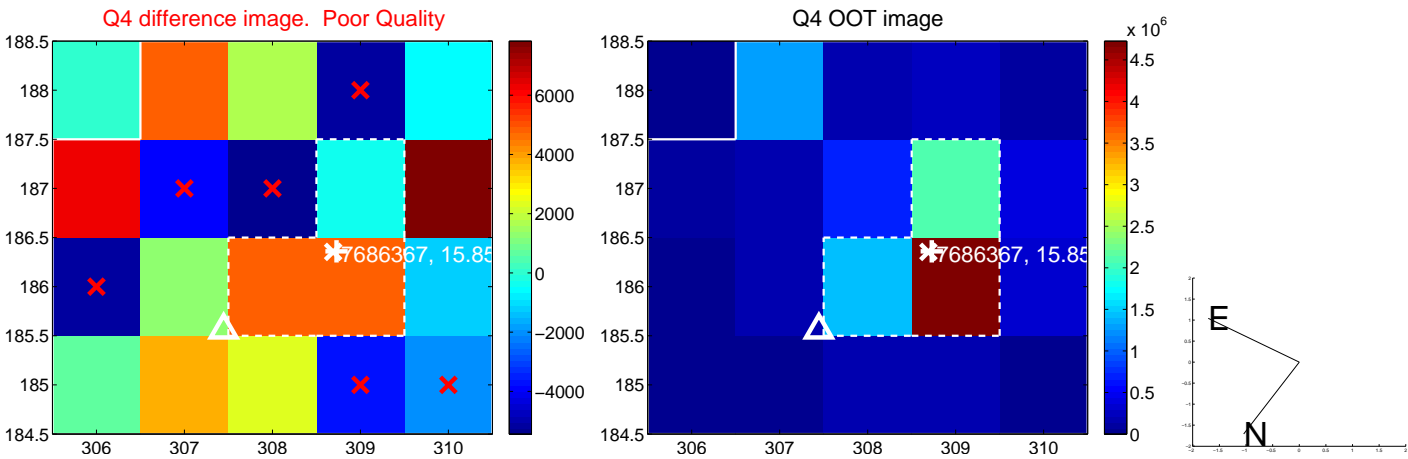


offset from photometric centroids



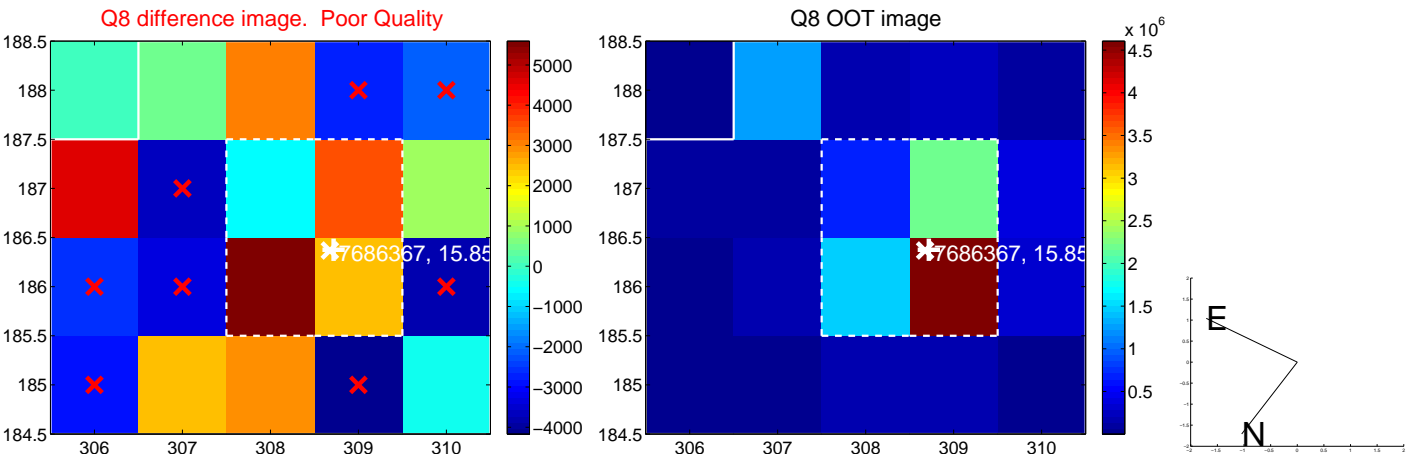
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

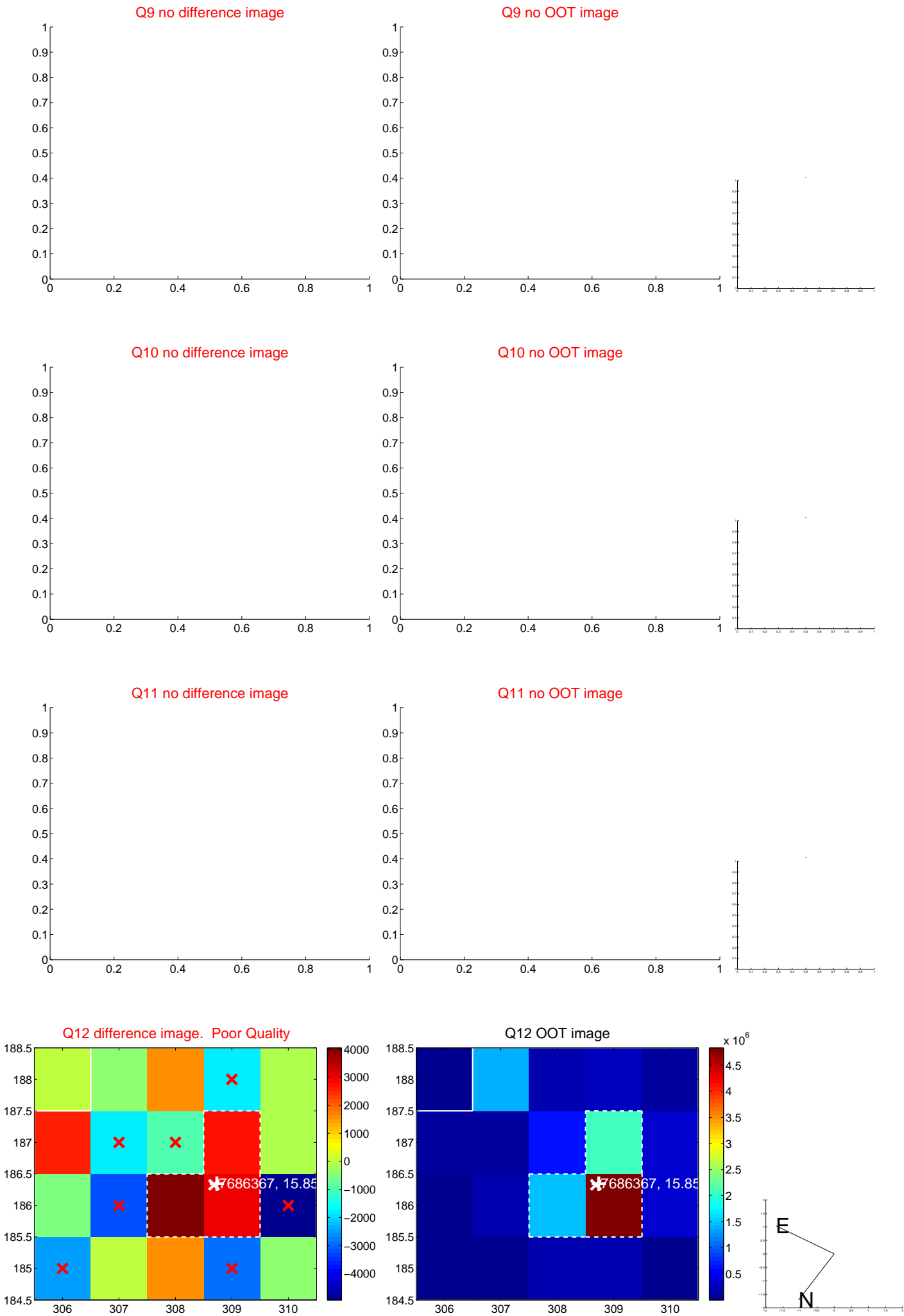




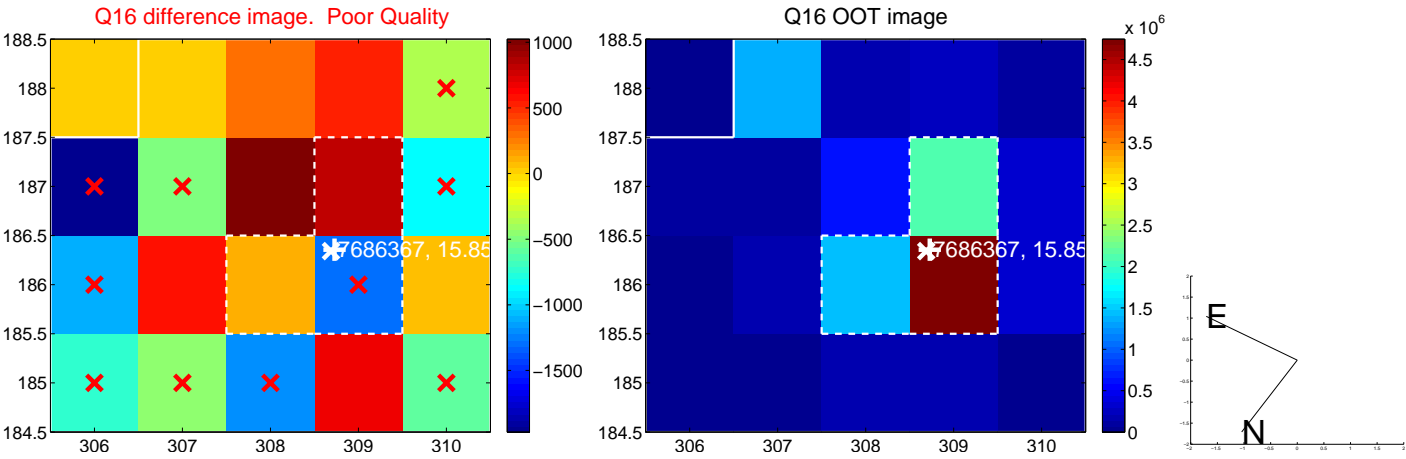
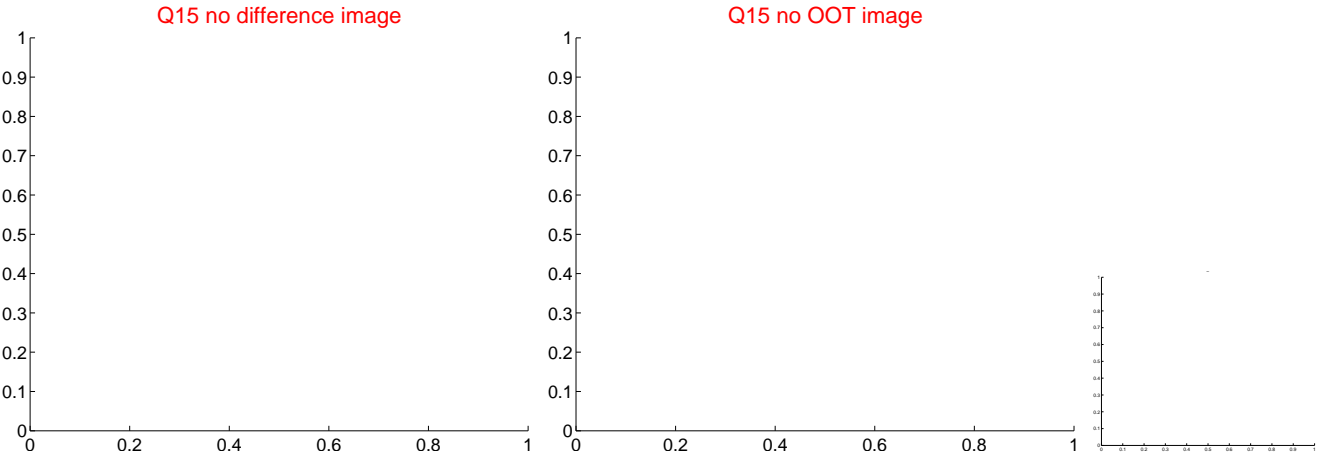
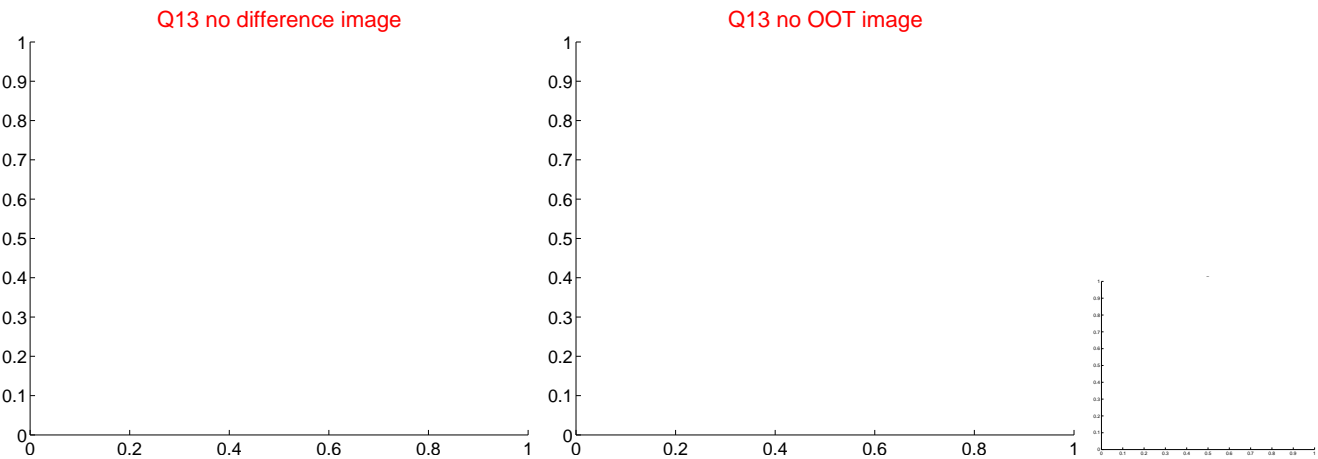
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



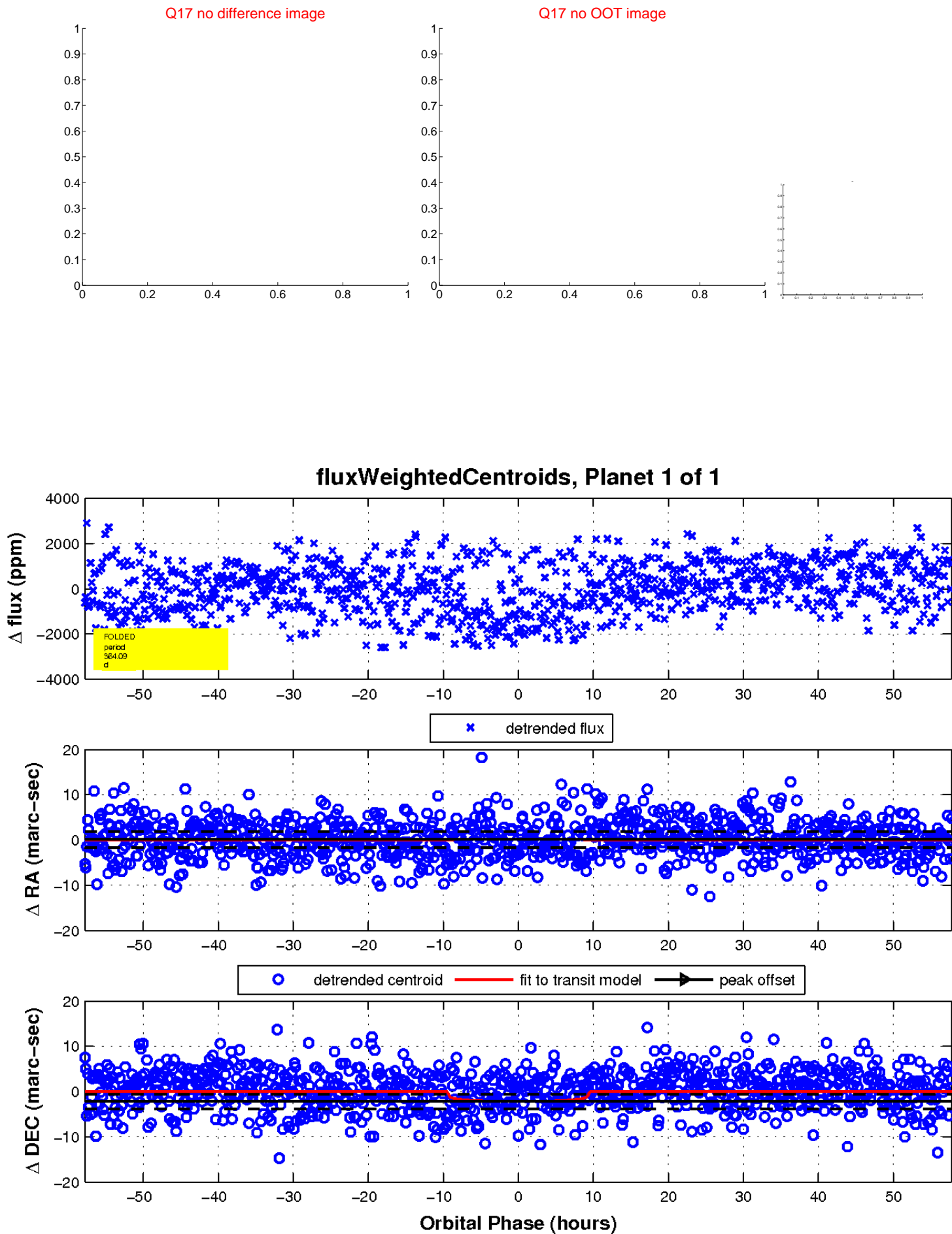
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



# UKIRT Image

Declination

