

# KIC 008107132

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008107132-01	OBS	No	591.659759	325.688142	757.2	16.720	10.1	8.4	0.63	4491	1.77	0.10

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008107132-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—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.

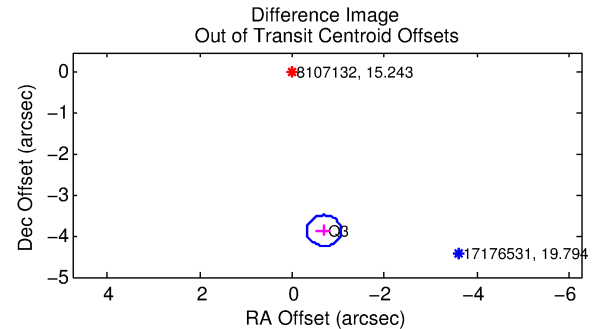
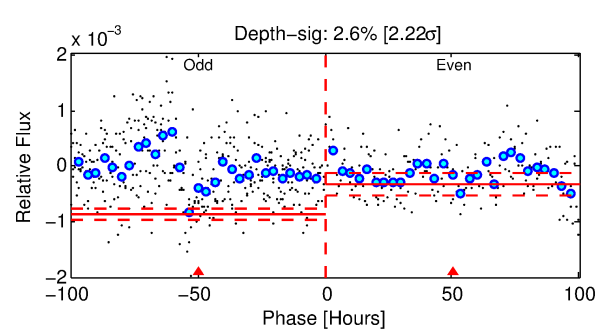
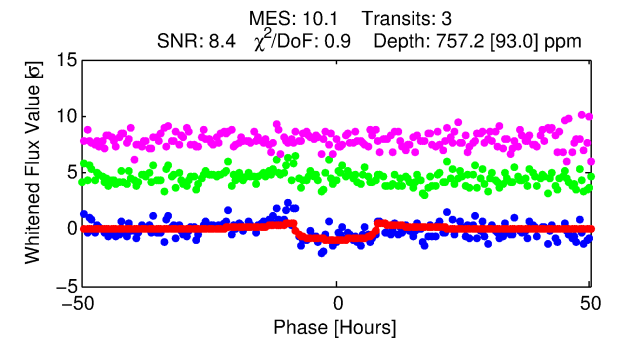
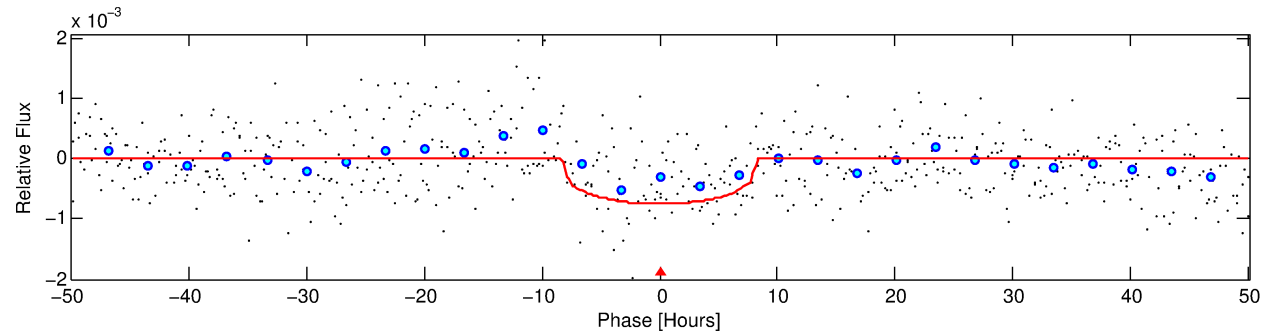
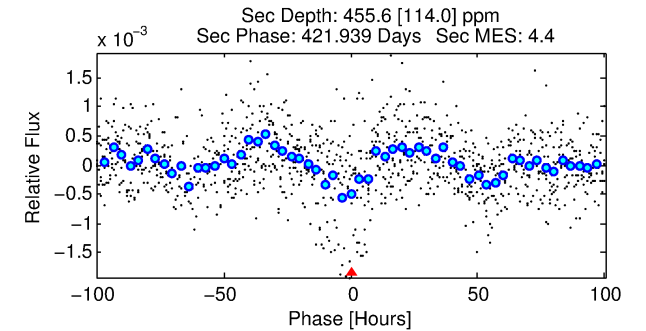
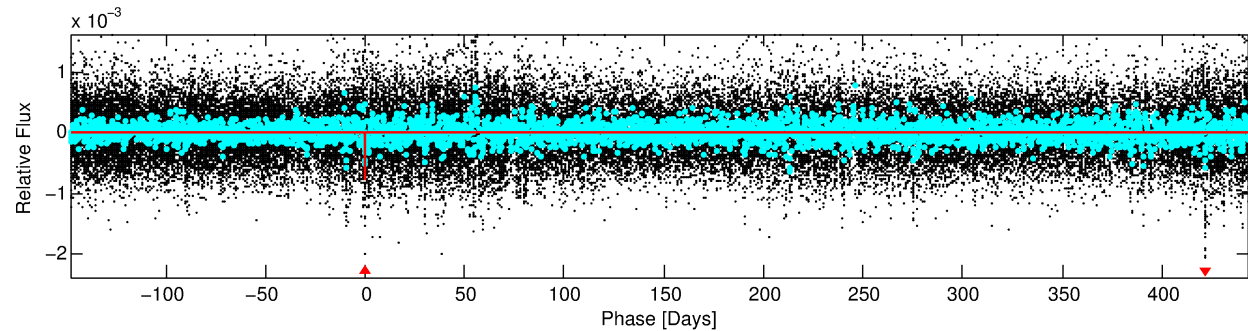
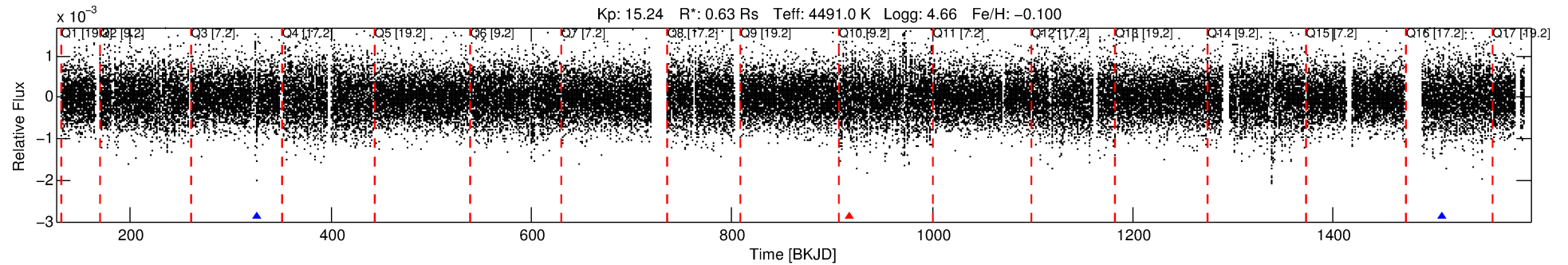
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008107132-01

No Significant Match Found

# DV One-Page Summary

KIC: 8107132 Candidate: 1 of 1 Period: 591.660 d



## DV Fit Results:

Period = 591.65976 [0.01385] d  
Epoch = 325.6881 [0.0172] BKJD  
Rp/R\* = 0.0257 [0.0118]  
a/R\* = 231.31 [323.81]  
b = 0.57 [1.71]  
Seff = 0.10 [0.02]  
Teq = 143 [6] K  
Rp = 1.77 [0.83] Re  
a = 1.2062 [0.0956] AU  
Ag = 116712.78 [111561.23] [1.05σ]  
Teff = 4095 [981] K [4.03σ]

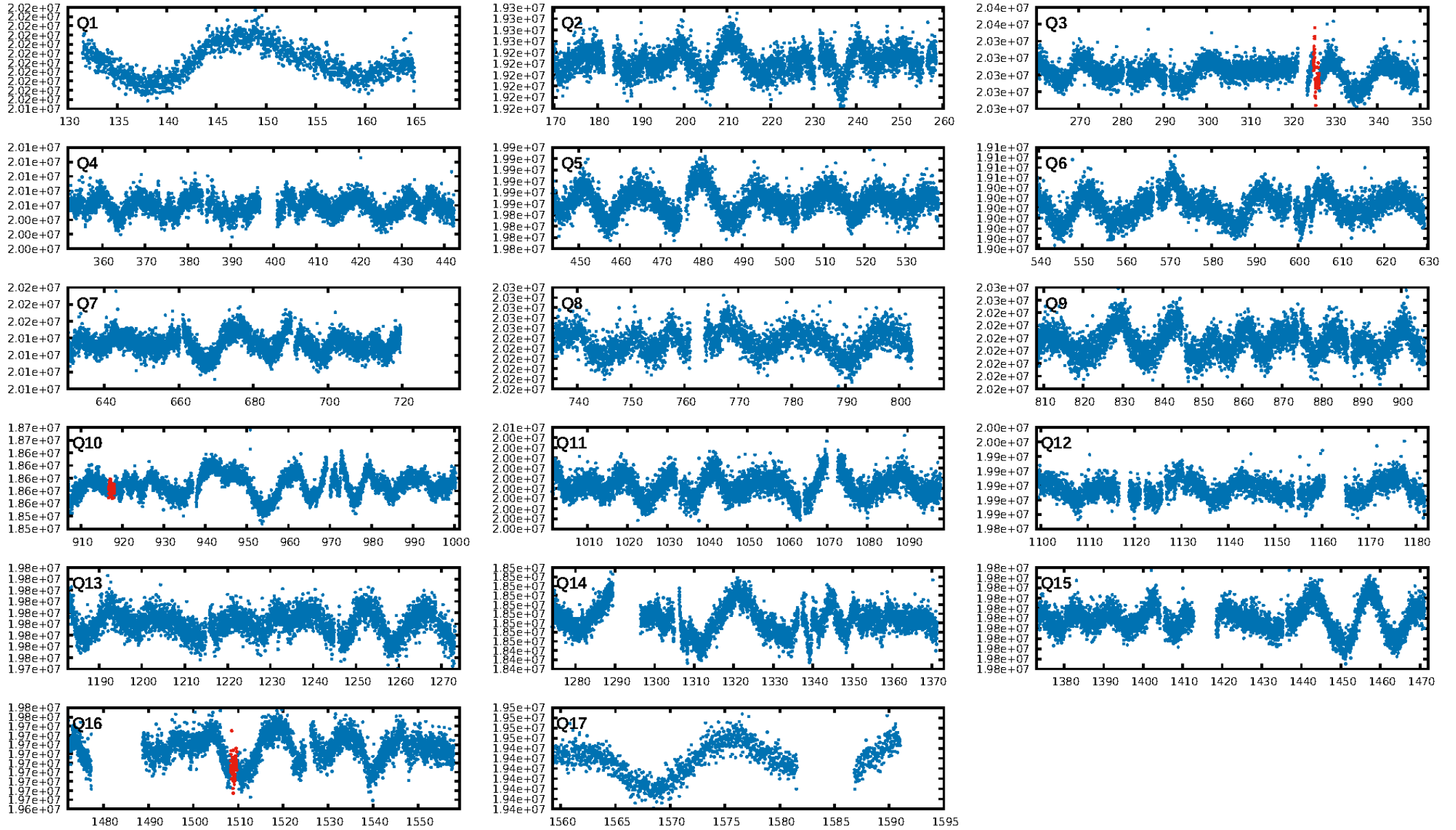
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 10.0%  
ModelChiSquareGoF-sig: 100.0%  
Bootstrap-pfa: 6.37e-16  
RollingBand-fgt: 0.67 [2/3]  
GhostDiagnostic-chr: 0.5087  
Centroid-sig: 8.1%  
Centroid-so: 2.698 arcsec [1.61σ]  
OotOffset-rm: 3.922 arcsec [31.35σ]  
KicOffset-rm: 4.249 arcsec [33.98σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

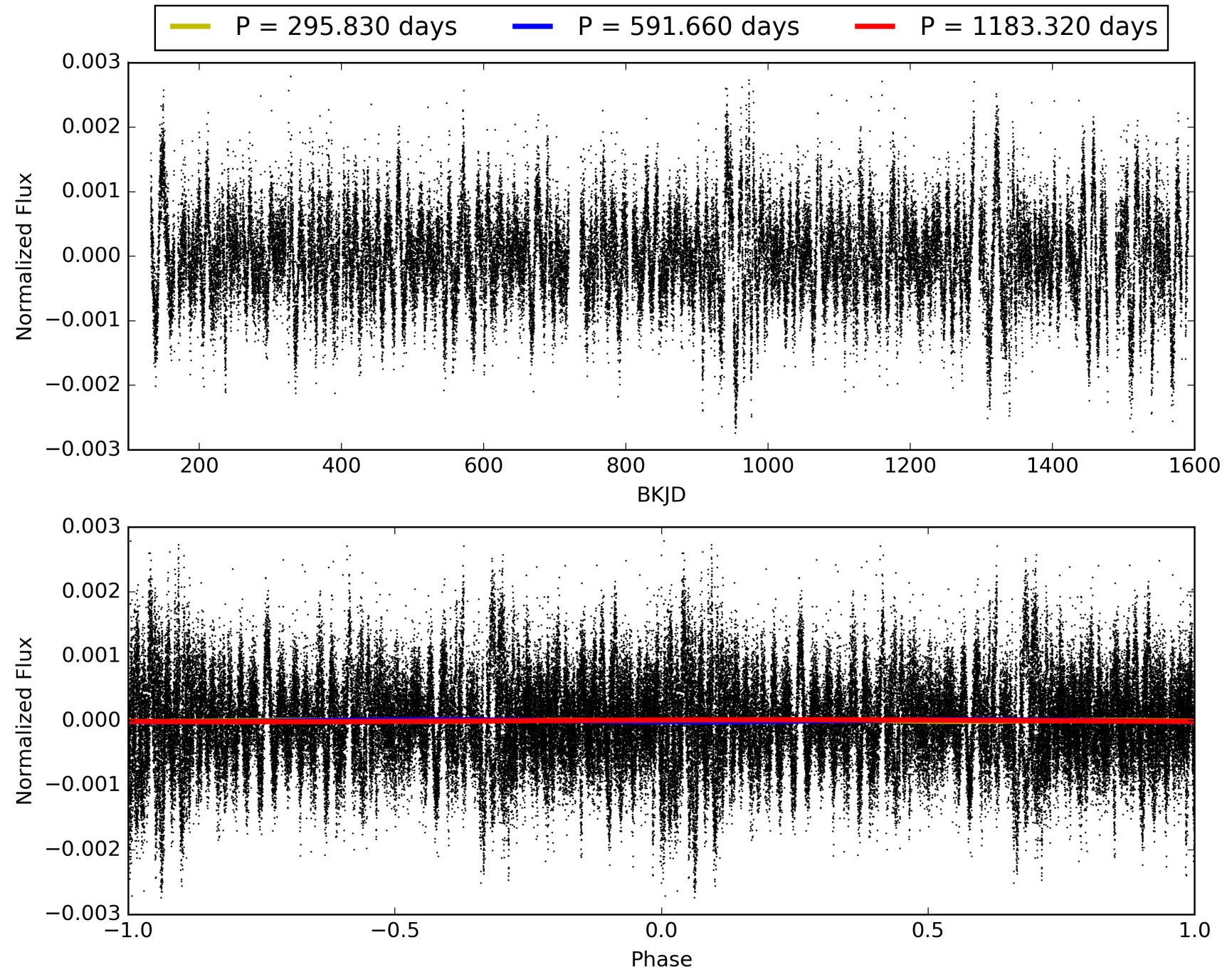
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:42:45 Z

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

# TCE 008107132-01, PDC Light Curves

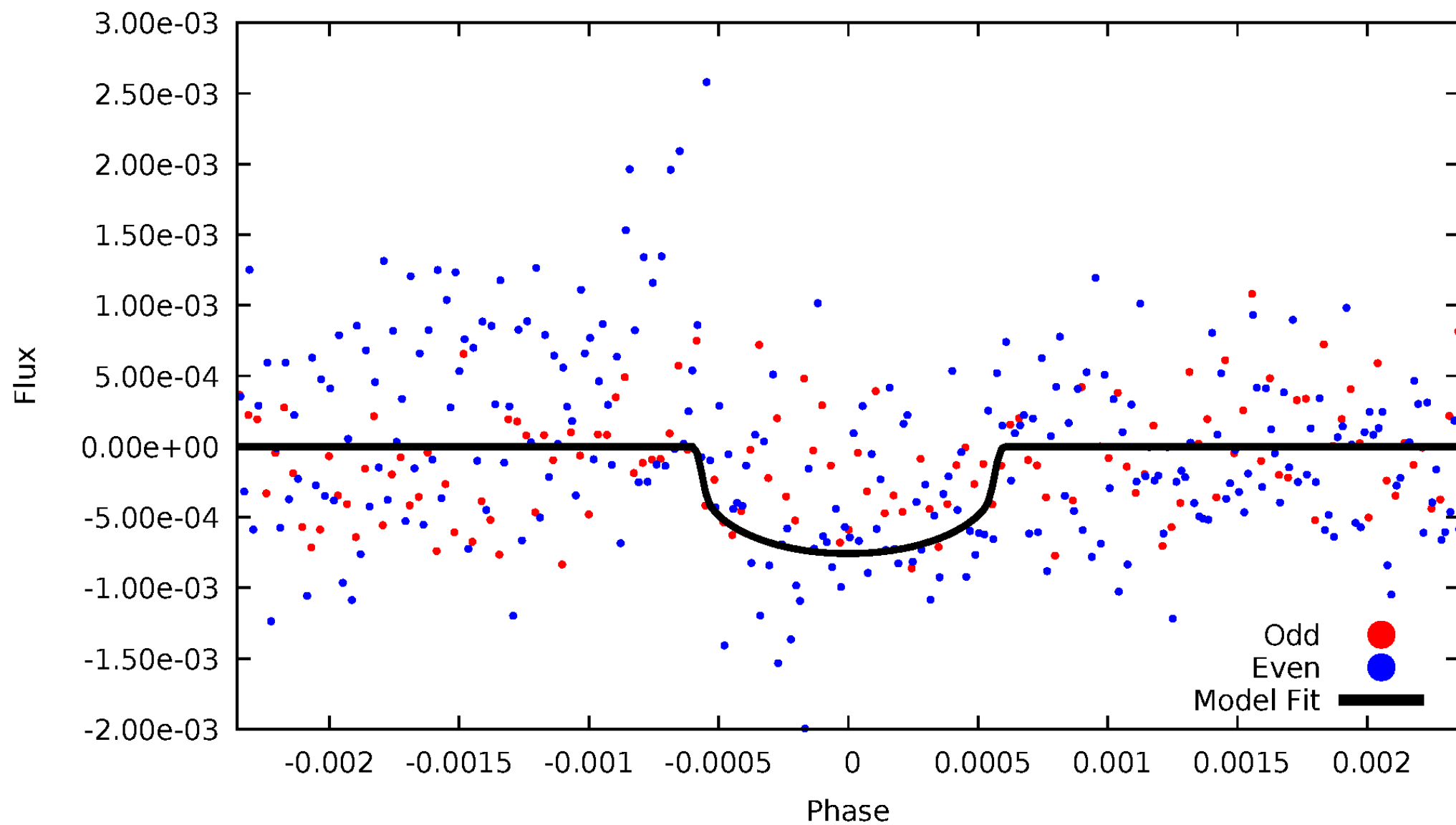


# TCE 008107132-01



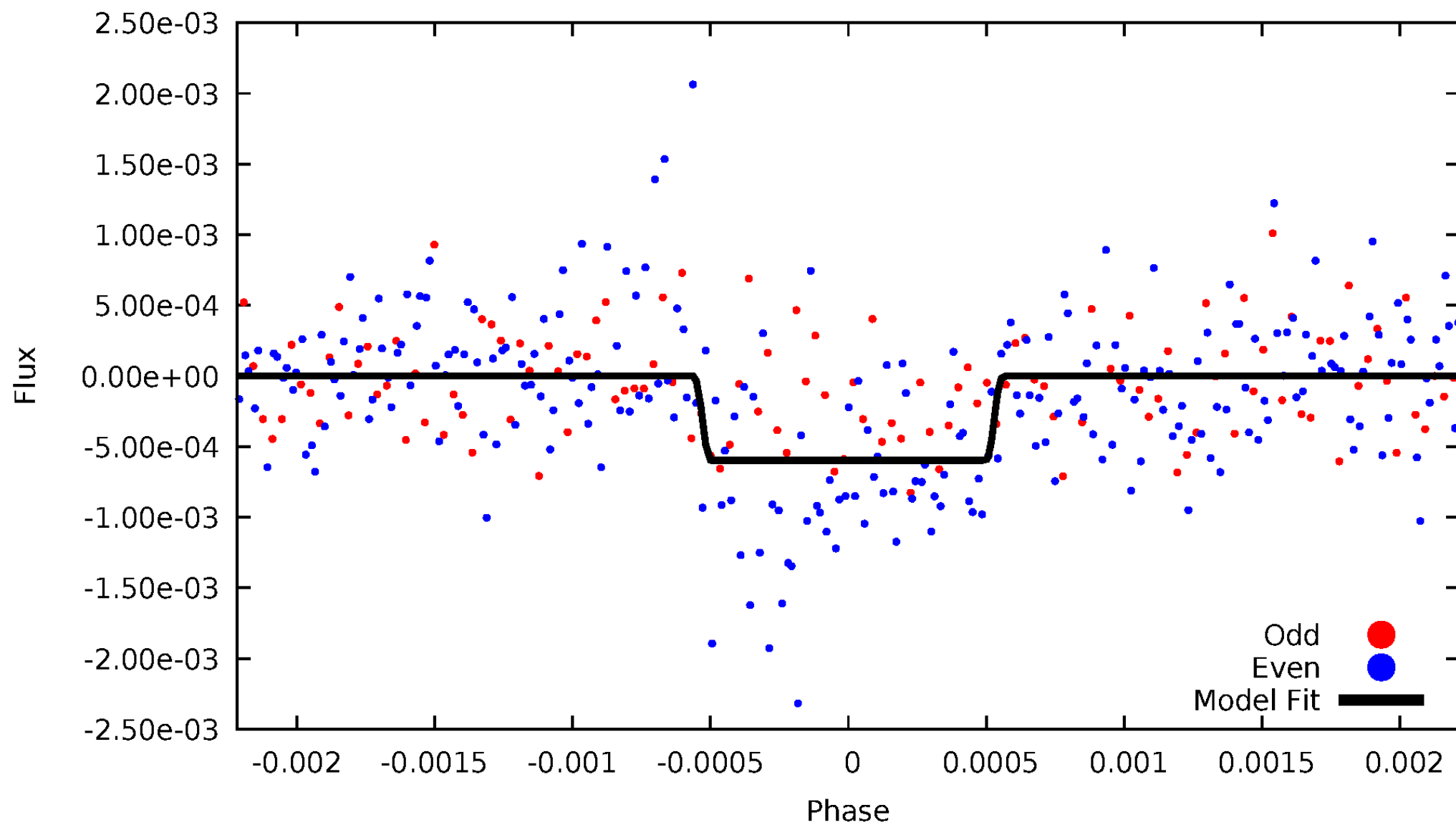
# DV Odd/Even

TCE 008107132-01



# ALT Odd/Even

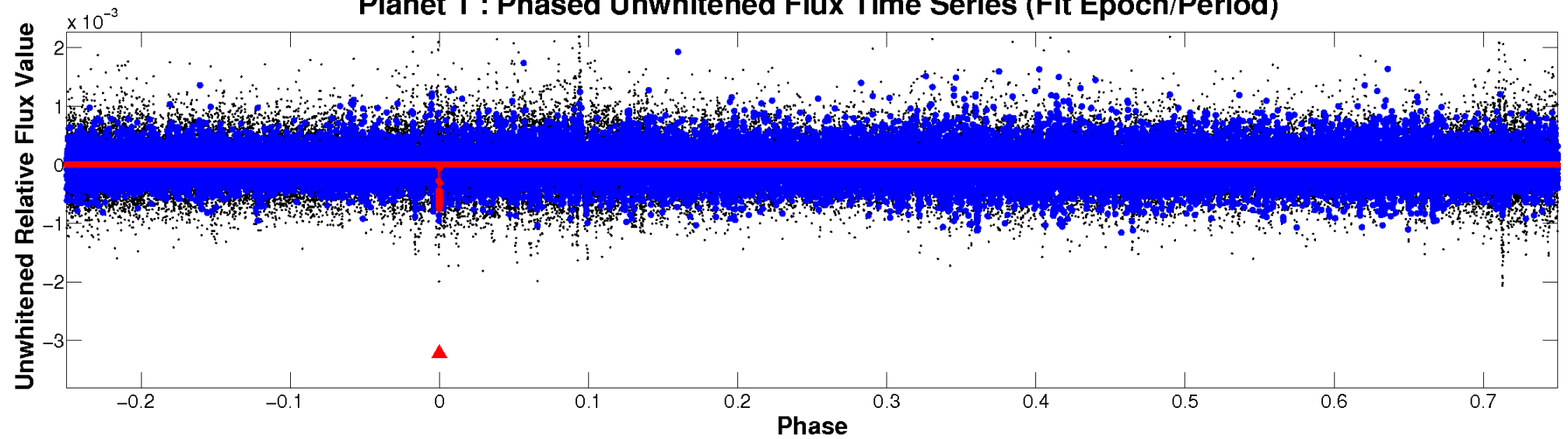
TCE 008107132-01



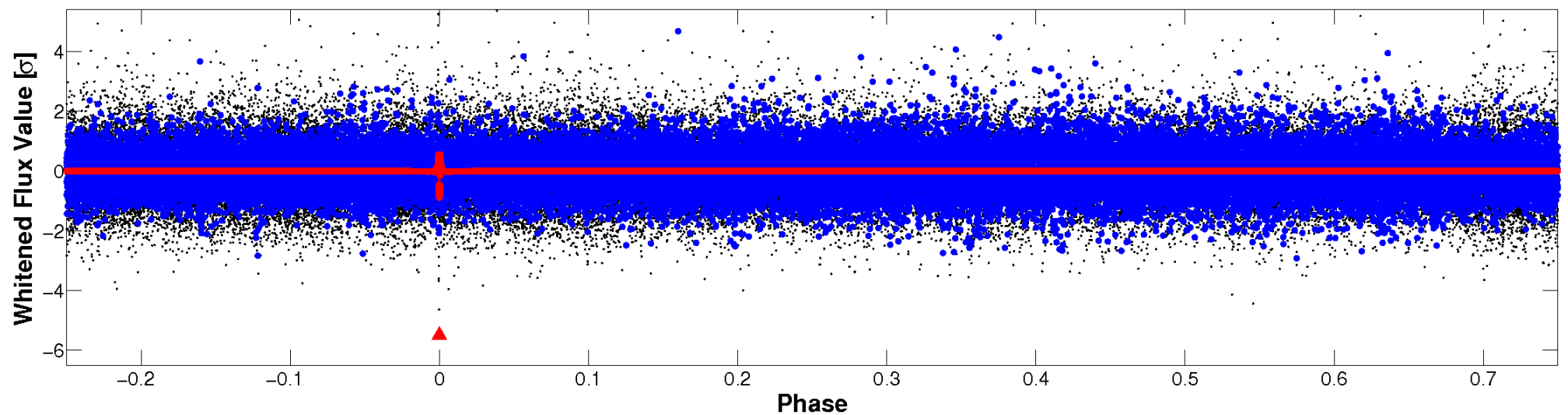


# Non-Whitened Vs. Whitened Light Curve

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

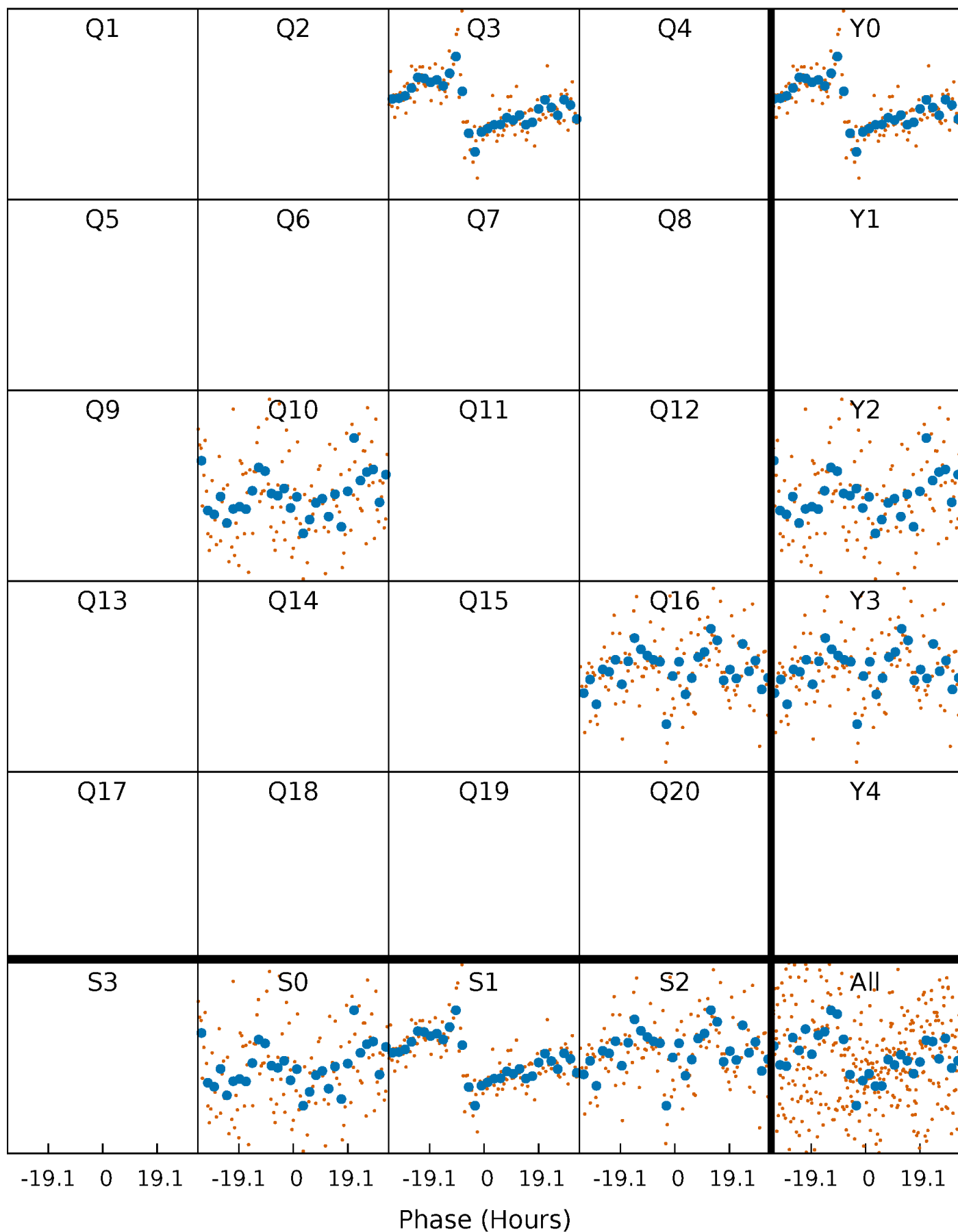


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

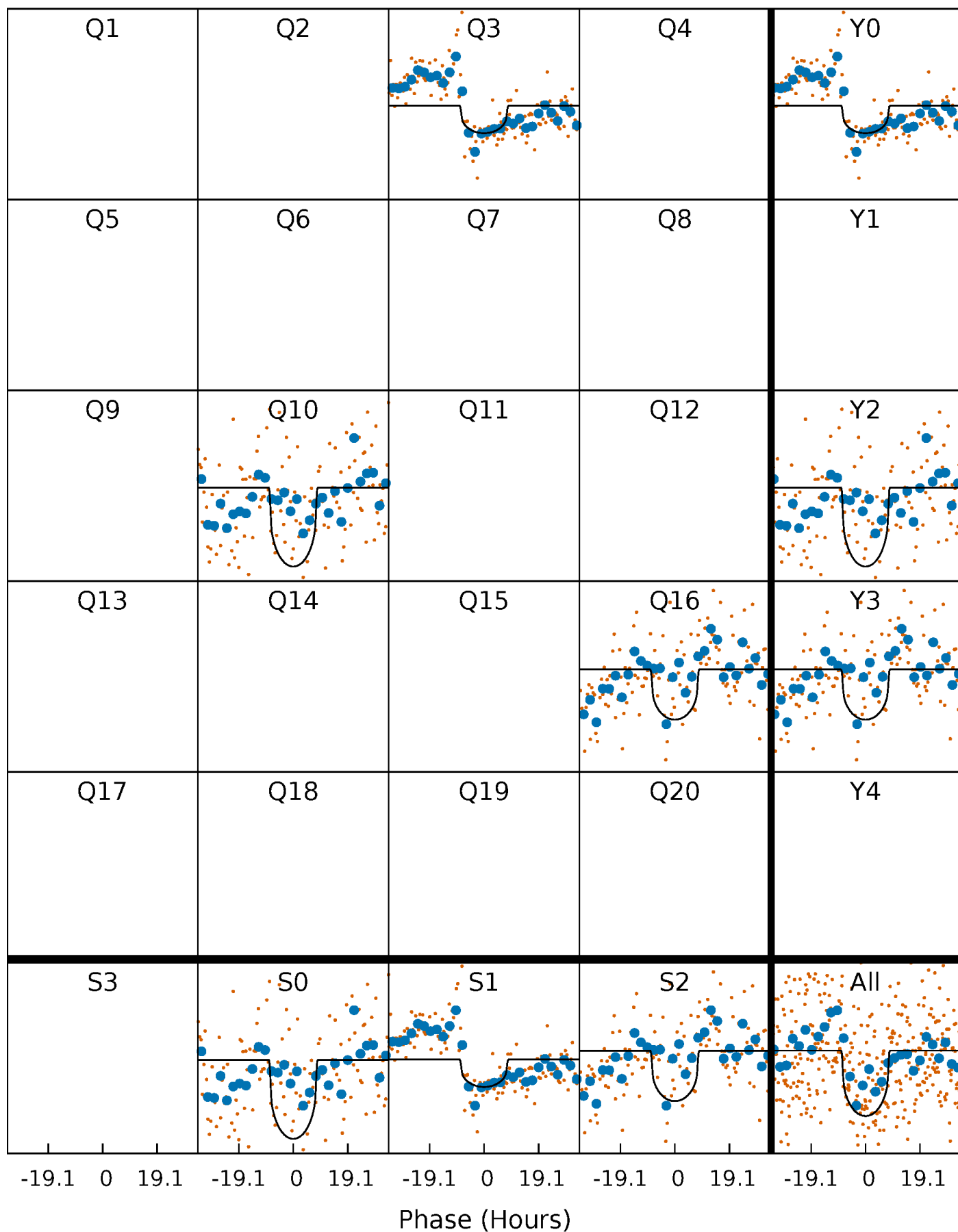
TCE 008107132-01 P=591.659759 Days  $T_0=325.688142$  (BKJD)





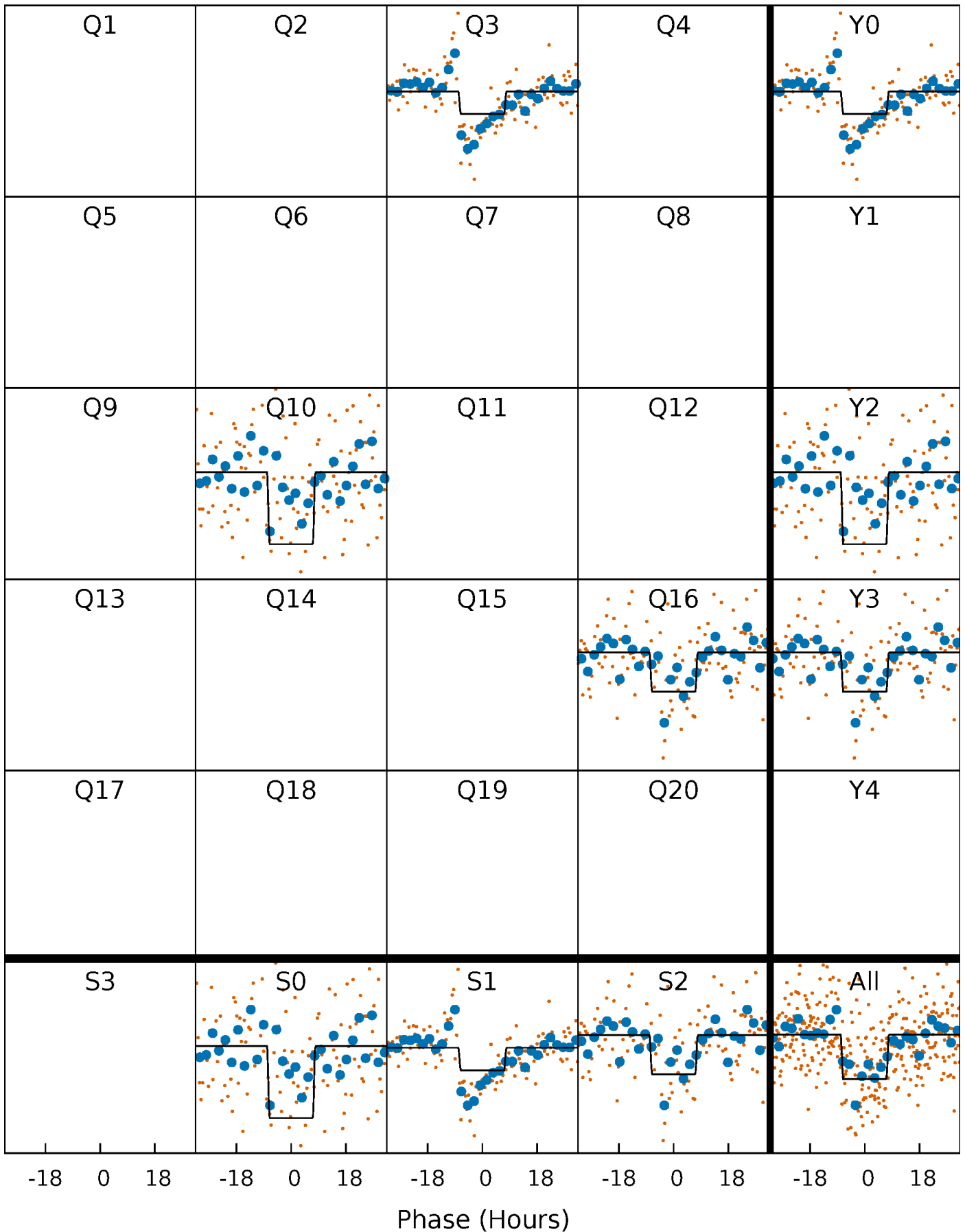
# DV Quarter-Phased Transit Curves

TCE 008107132-01 P=591.659759 Days  $T_0=325.688142$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

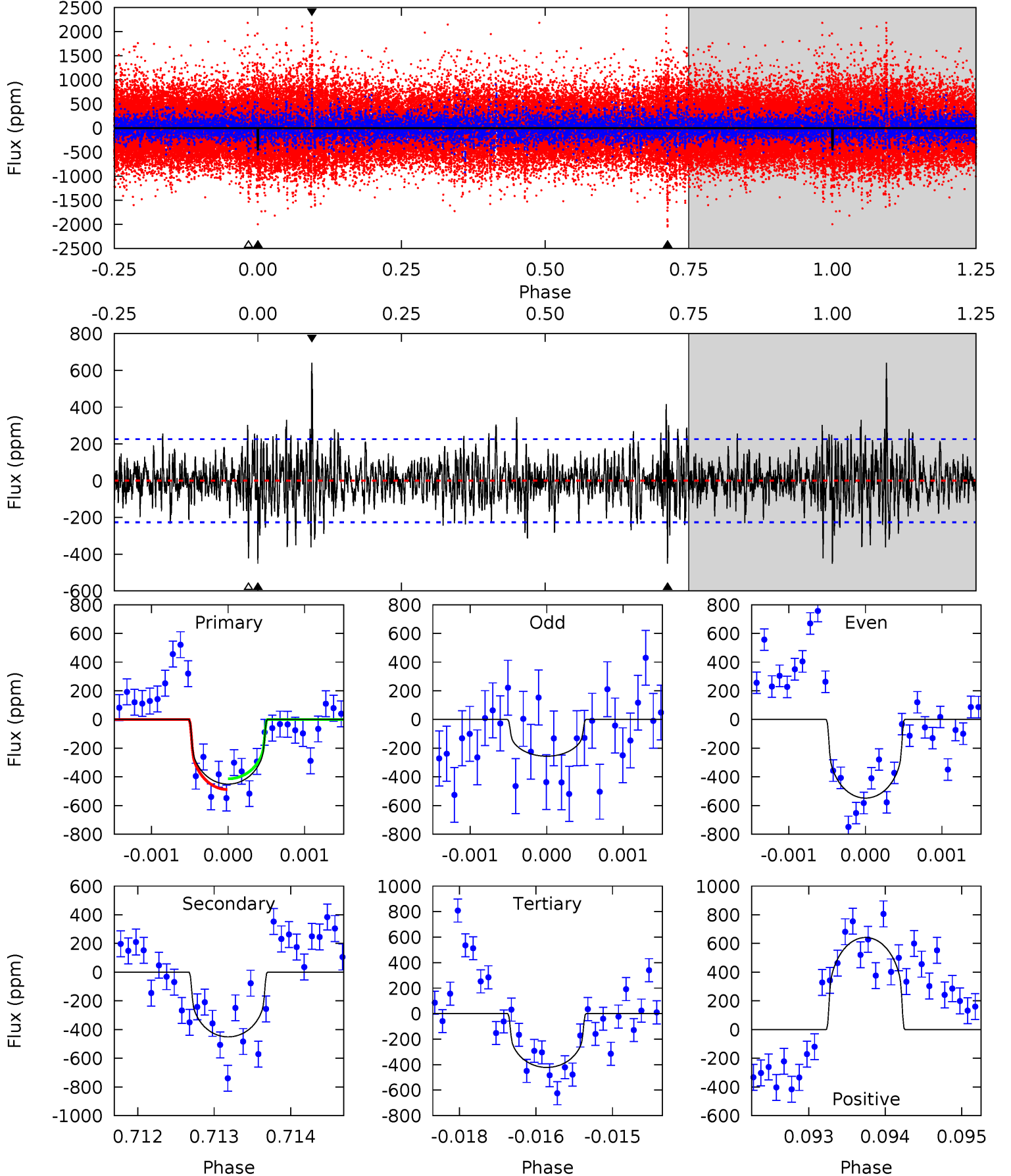
TCE 008107132-01 P=591.660541 Days  $T_0=325.697893$  (BKJD)



# DV Model-Shift Uniqueness Test

008107132-01, P = 591.659759 Days, E = 325.688142 Days

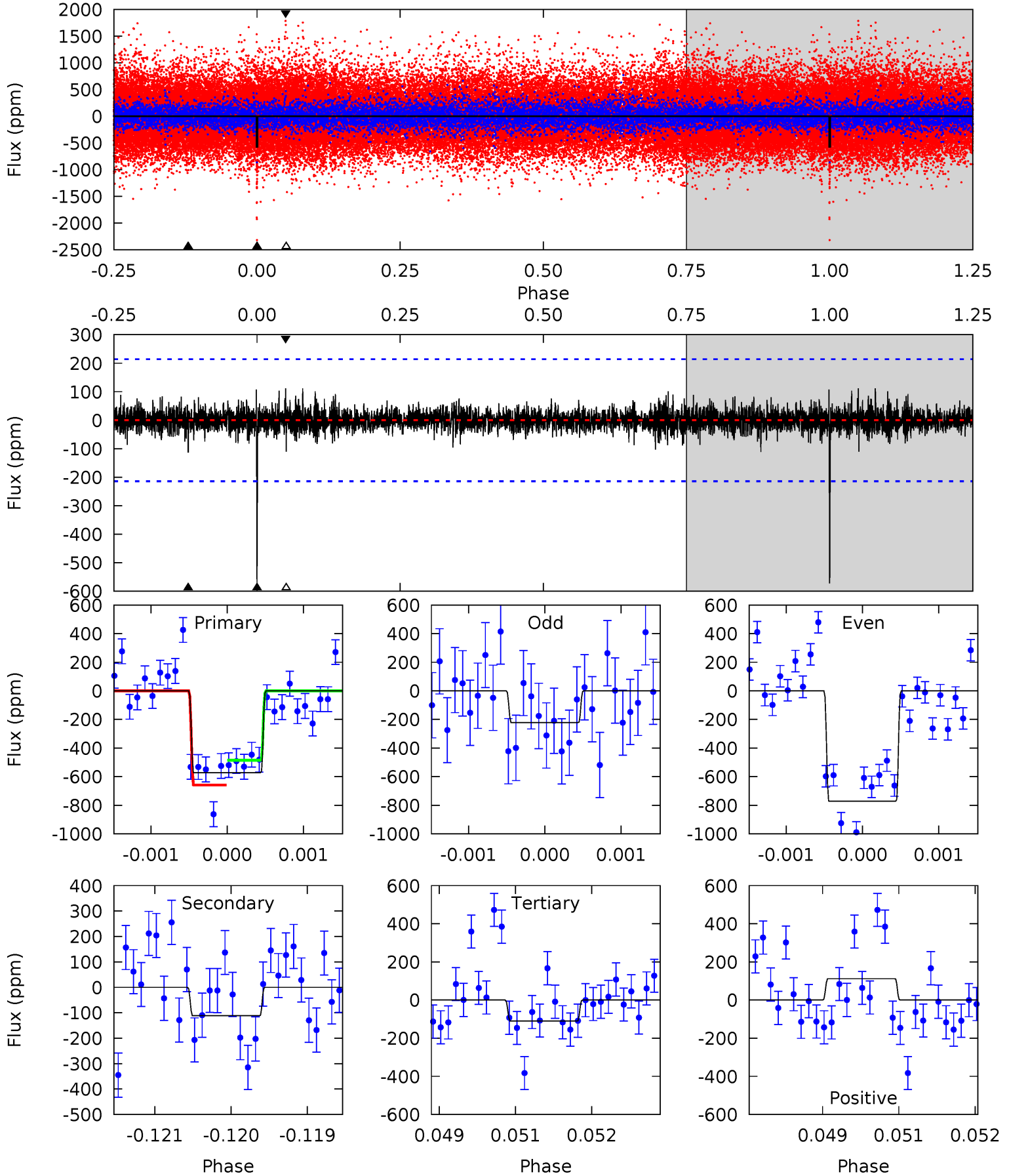
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.8	10.8	10.1	15.4	5.42	3.24	2.44	0.69	-4.58	0.70	-4.57	3.30	1.69	0.59	0.90



# Alt Model-Shift Uniqueness Test

008107132-01, P = 591.660541 Days, E = 325.697893 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
14.5	2.83	2.78	2.84	5.43	3.26	0.64	11.7	11.7	0.05	-0.01	6.57	1.19	0.16	2.20



### Stellar Parameters For KIC 008107132

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4491^{+121}_{-134}$	$4.663^{+0.024}_{-0.049}$	$-0.100^{+0.300}_{-0.300}$	$0.631^{+0.066}_{-0.038}$	$0.693^{+0.054}_{-0.066}$	$3.876^{+0.454}_{-0.827}$
	+3%/-3%	+1%/-1%	+300%/-300%	+10%/-6%	+8%/-10%	+12%/-21%
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 008107132-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-451 \pm 42$	$1.86^{+0.78}_{-0.78}$	$202^{+6}_{-7}$	$4132^{+998}_{-491}$	$105277^{+200196}_{-54023}$
Alt.	$-112 \pm 39$	$1.80^{+0.82}_{-0.85}$	$202^{+7}_{-6}$	$3313^{+840}_{-401}$	$27178^{+79044}_{-15486}$

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

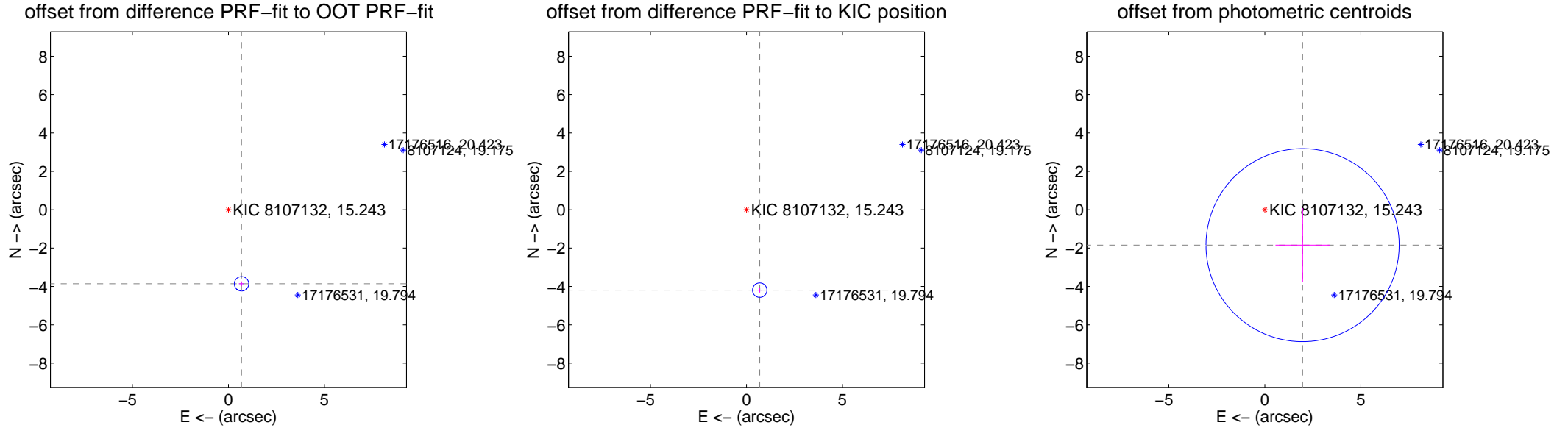
## DV Centroid Data

Supplemental centroid analysis for 008107132-01. Kepler magnitude: 15.24. Transit SNR 8.43

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.33 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	3.922 $\pm$ 0.125	31.35	-0.683 $\pm$ 0.138	-3.862 $\pm$ 0.125
PRF-fit source offset from KIC position	4.249 $\pm$ 0.125	33.98	-0.689 $\pm$ 0.138	-4.193 $\pm$ 0.125
photometric centroid source offset	2.70 $\pm$ 1.68	1.61	-1.97 $\pm$ 1.41	-1.85 $\pm$ 1.93



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.

Q1 no difference image



Q1 no OOT image



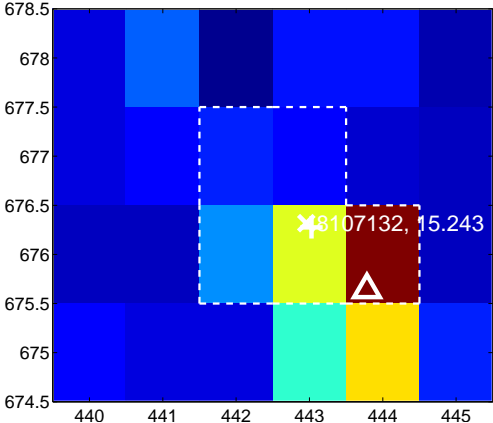
Q2 no difference image



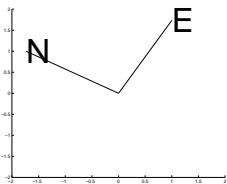
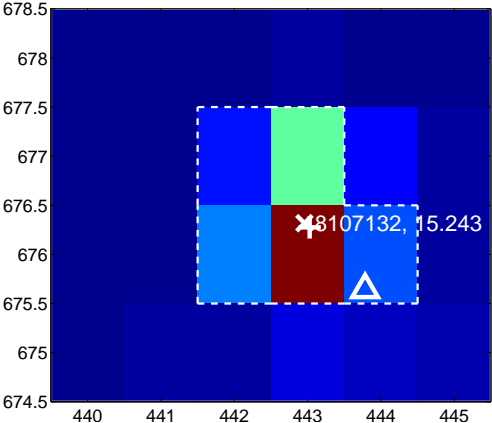
Q2 no OOT image



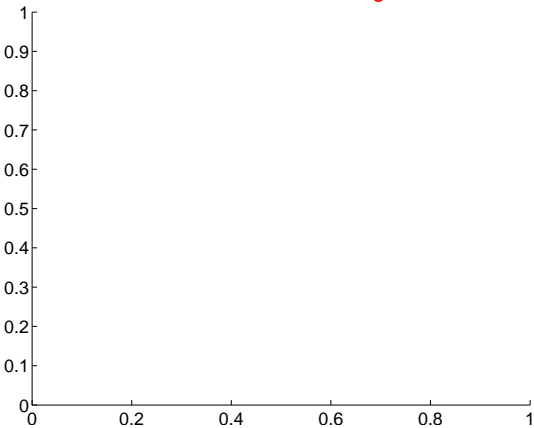
Q3 difference image



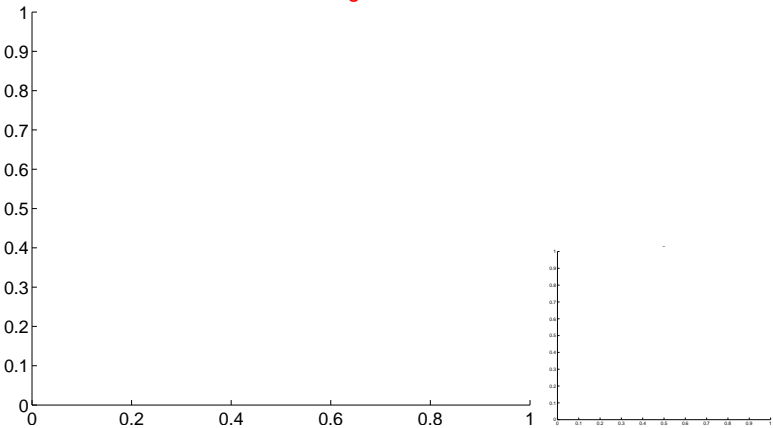
Q3 OOT image



Q4 no difference image



Q4 no OOT image

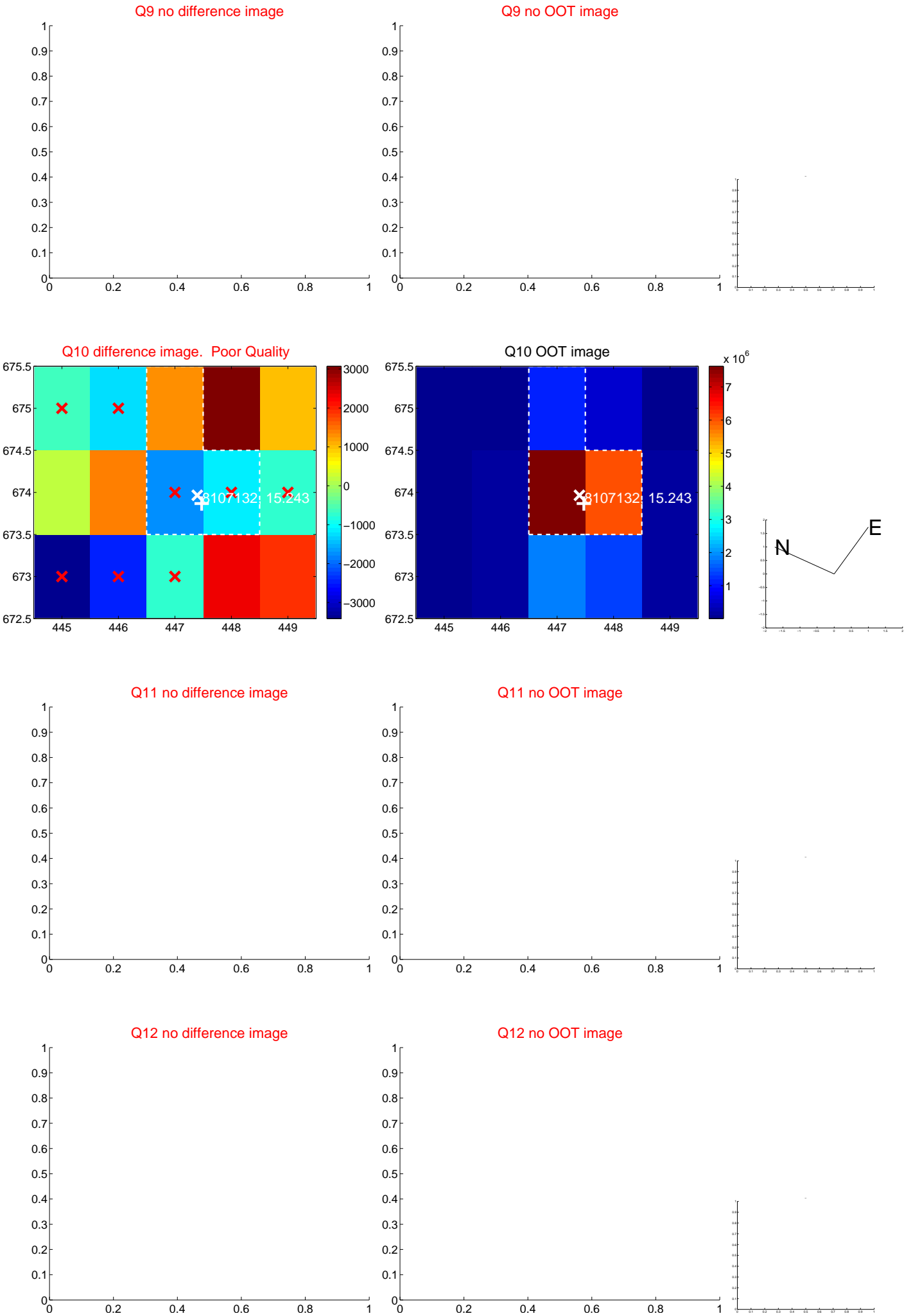




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



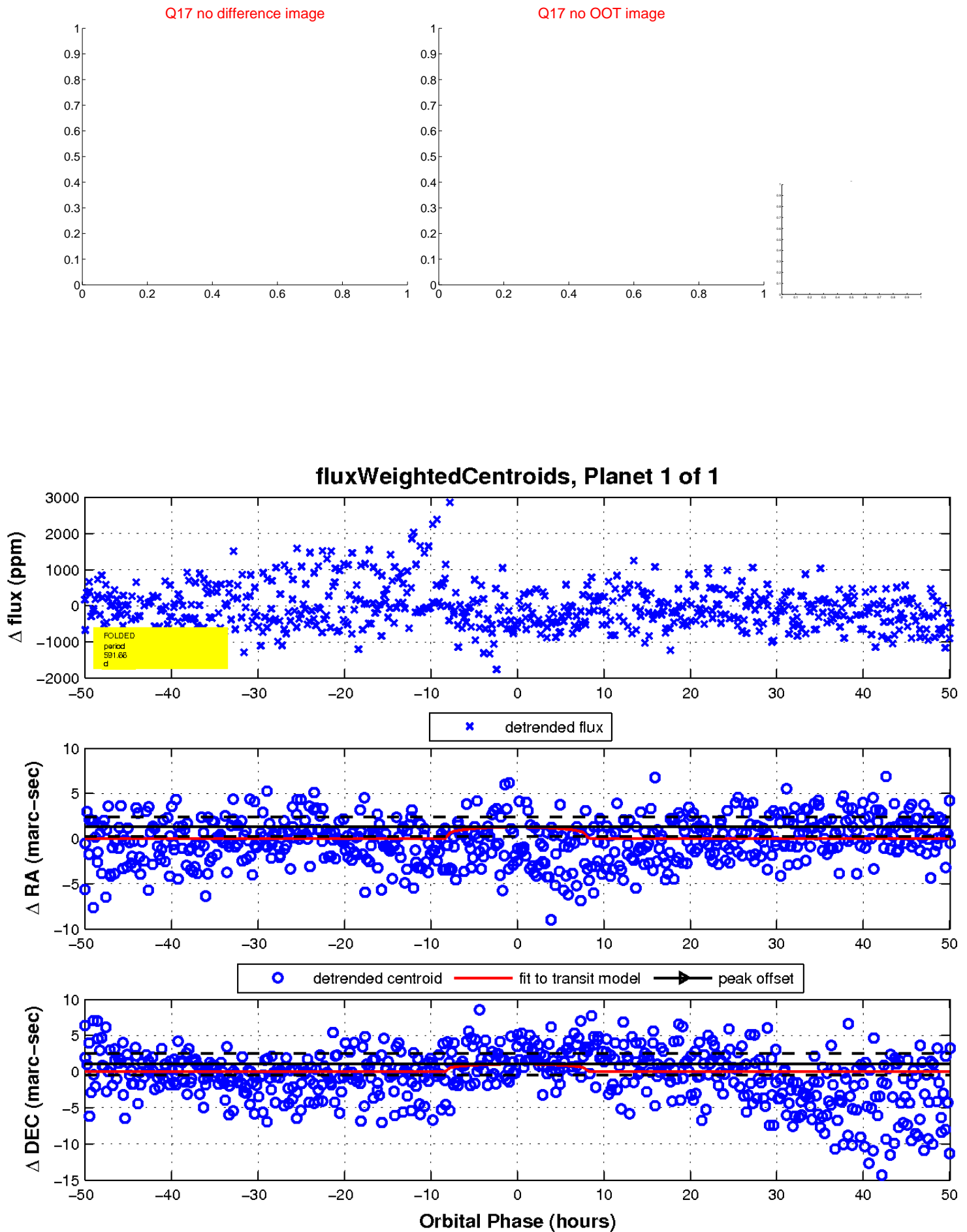
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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

