

# KIC 010069342

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010069342-01	OBS	No	545.262468	267.616175	761.8	12.086	9.8	9.3	0.91	5992	2.59	0.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010069342-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

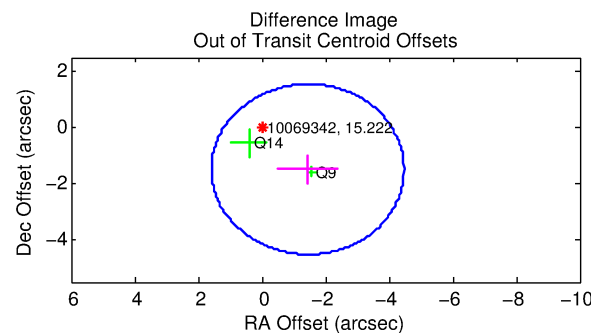
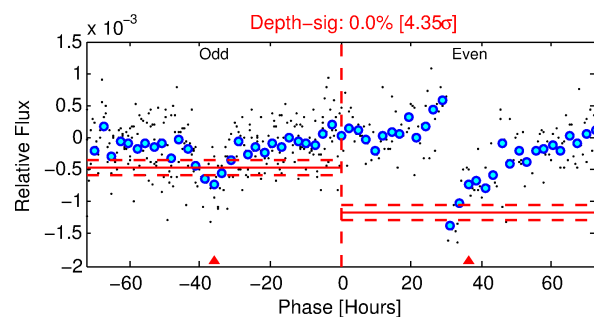
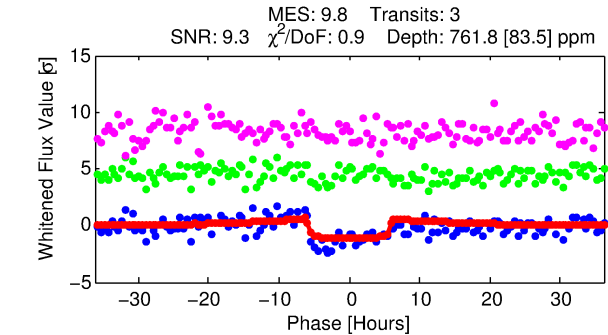
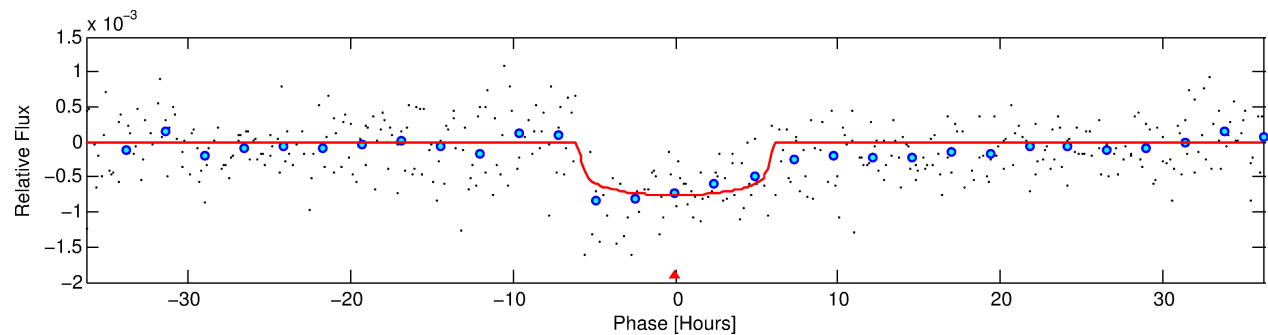
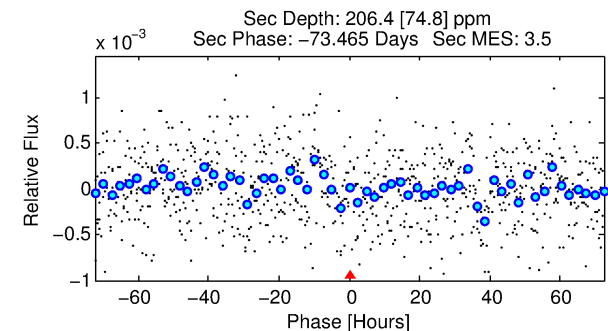
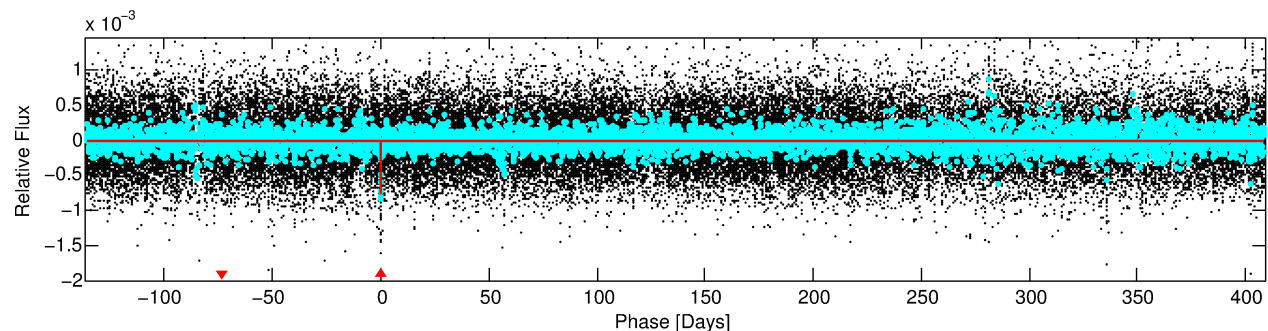
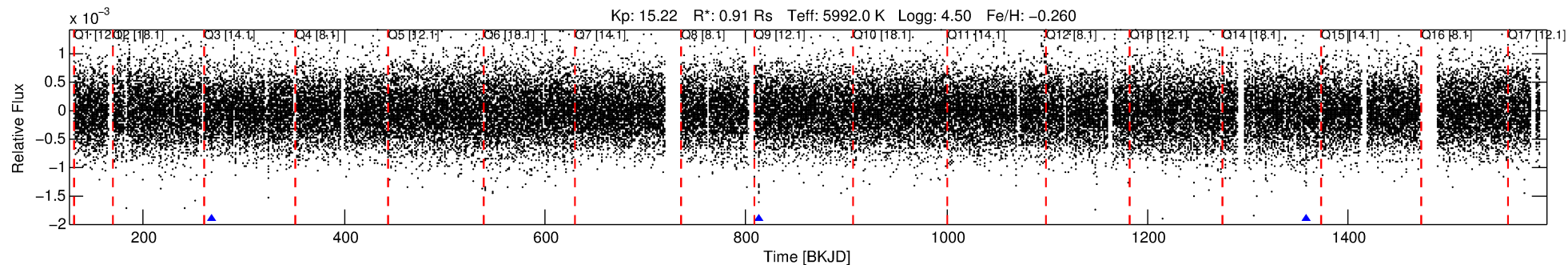
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010069342-01

No Significant Match Found

# DV One-Page Summary

KIC: 10069342 Candidate: 1 of 1 Period: 545.262 d



## DV Fit Results:

Period = 545.26247 [0.00869] d  
Epoch = 267.6162 [0.0115] BKJD  
Rp/R\* = 0.0260 [0.0116]  
a/R\* = 305.57 [648.96]  
b = 0.52 [3.03]  
Seff = 0.58 [0.23]  
Teq = 222 [22] K  
Rp = 2.59 [1.40] Re  
a = 1.2915 [0.3338] AU  
Ag = 28206.08 [29152.48] [0.97 $\sigma$ ]  
Teff = 4451 [1078] K [3.92 $\sigma$ ]

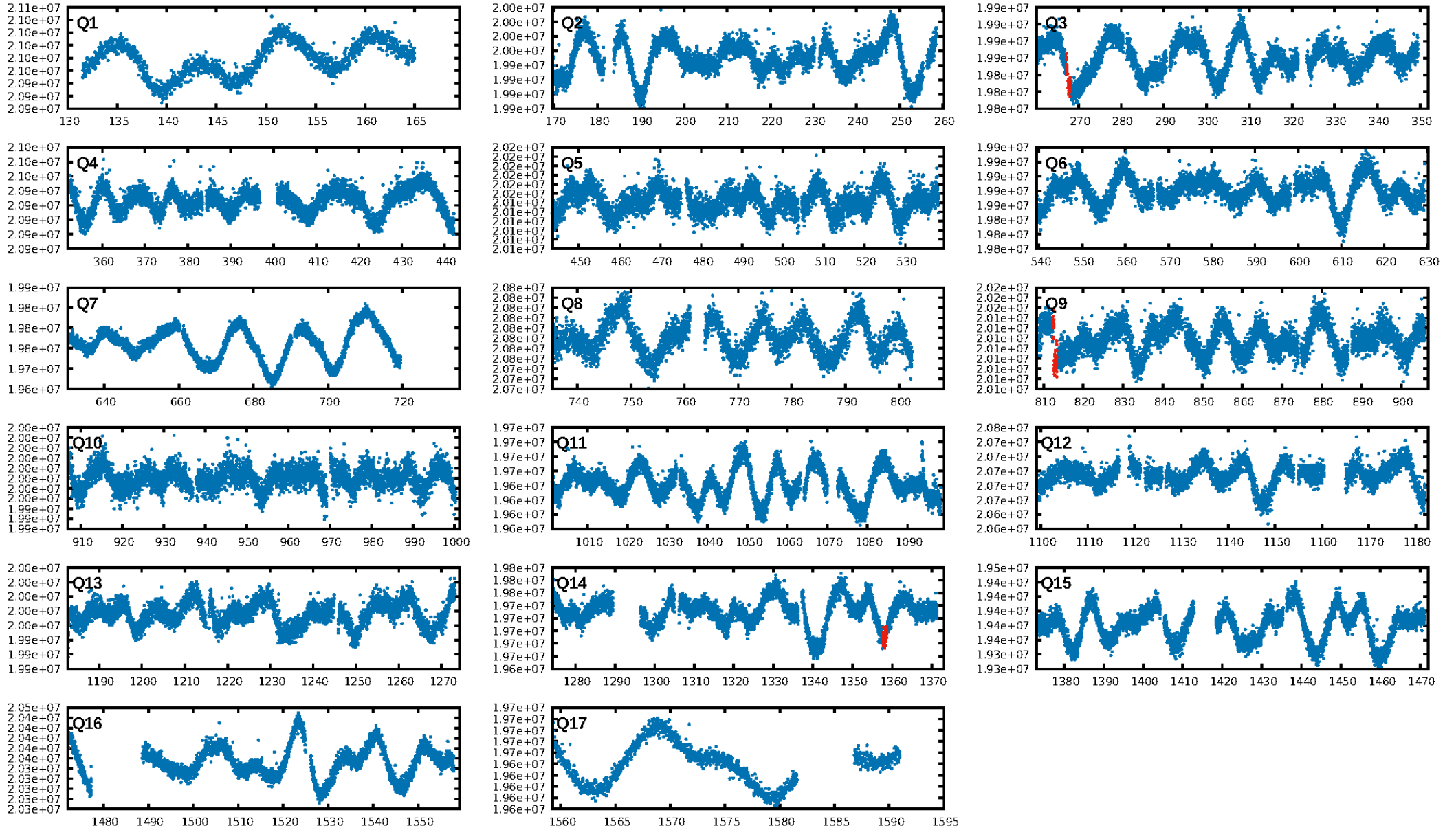
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 1.5%  
ModelChiSquareGof-sig: 99.9%  
Bootstrap-pfa: 1.20e-17  
RollingBand-fgt: 1.00 [3/3]  
**GhostDiagnostic-chr: 0.3964**  
Centroid-sig: 3.0%  
Centroid-so: 1.643 arcsec [1.60 $\sigma$ ]  
OotOffset-rm: 2.074 arcsec [2.05 $\sigma$ ]  
**KicOffset-rm: 2.300 arcsec [4.80 $\sigma$ ]**  
OotOffset-st: 1/0/0/1 [2]  
KicOffset-st: 1/0/0/1 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

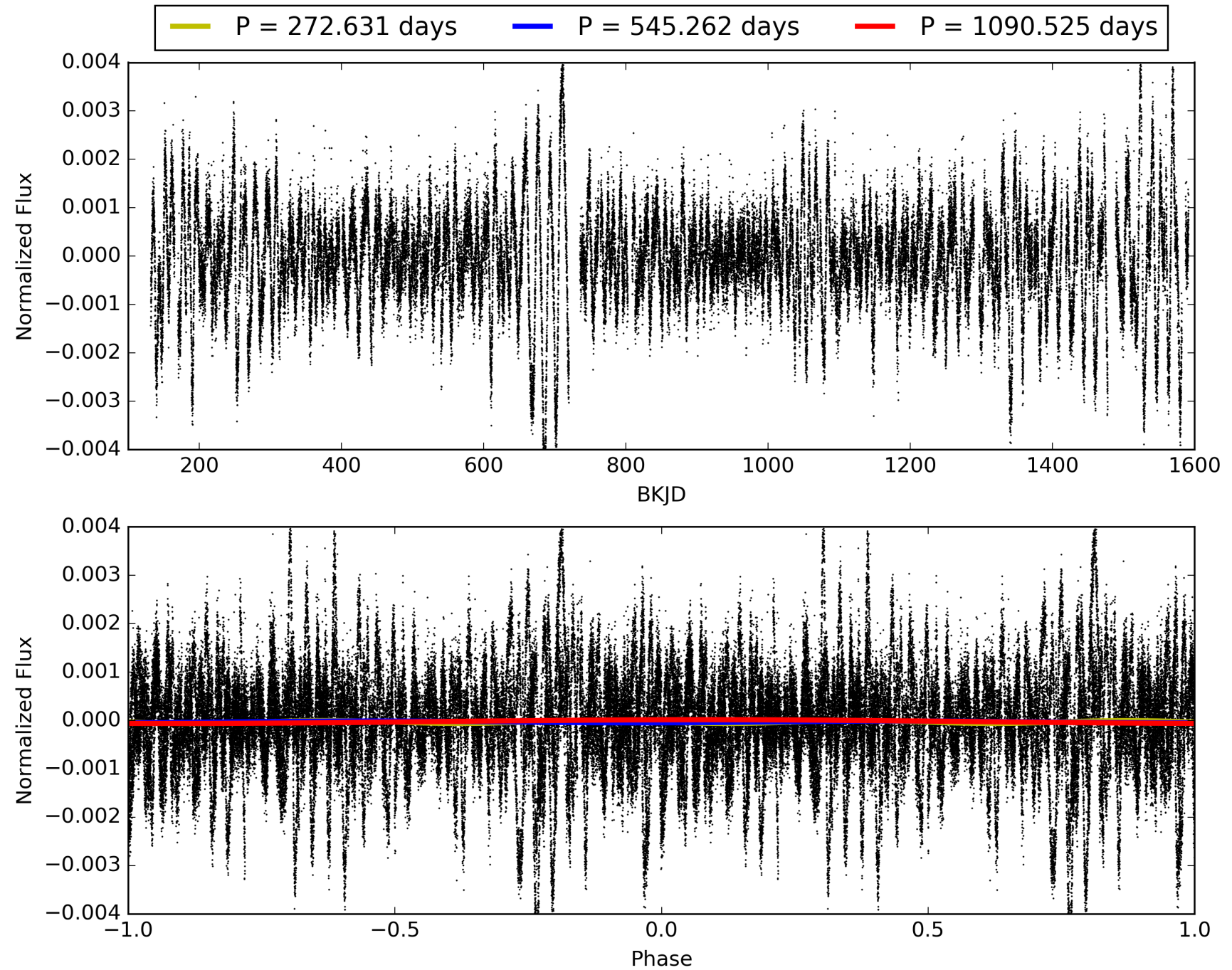
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 21:03:22 Z

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

# TCE 010069342-01, PDC Light Curves

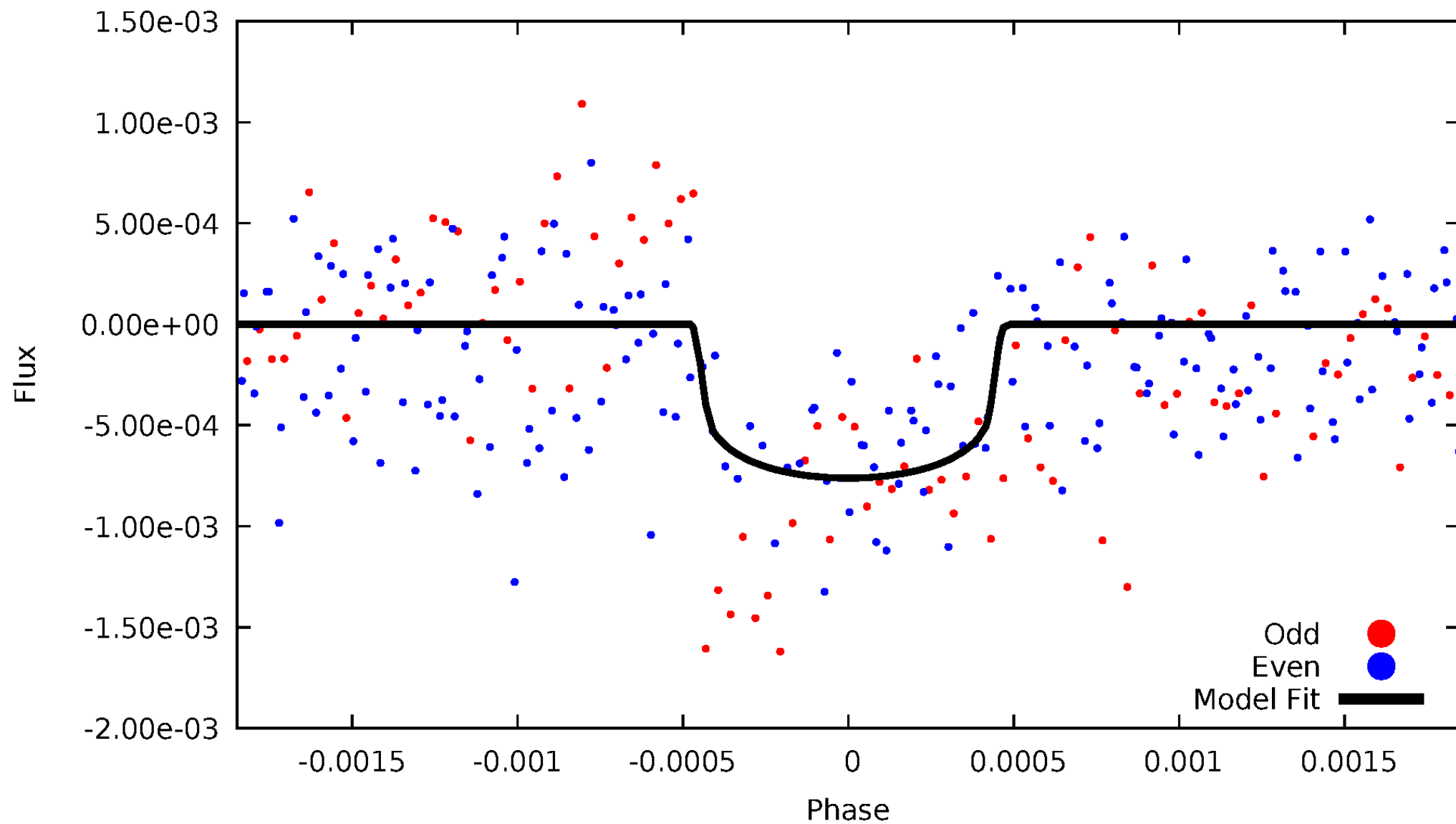


# TCE 010069342-01



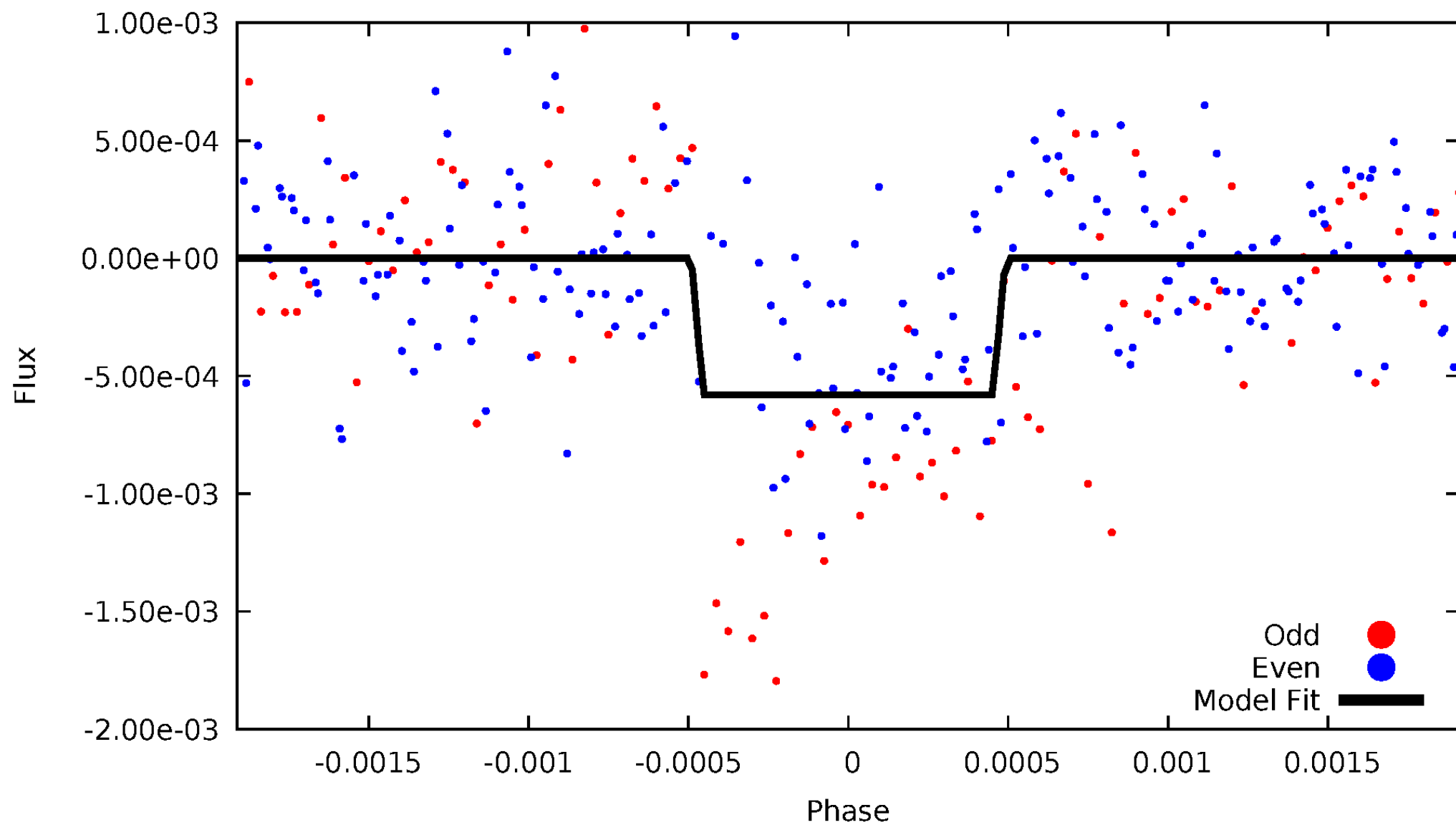
# DV Odd/Even

TCE 010069342-01

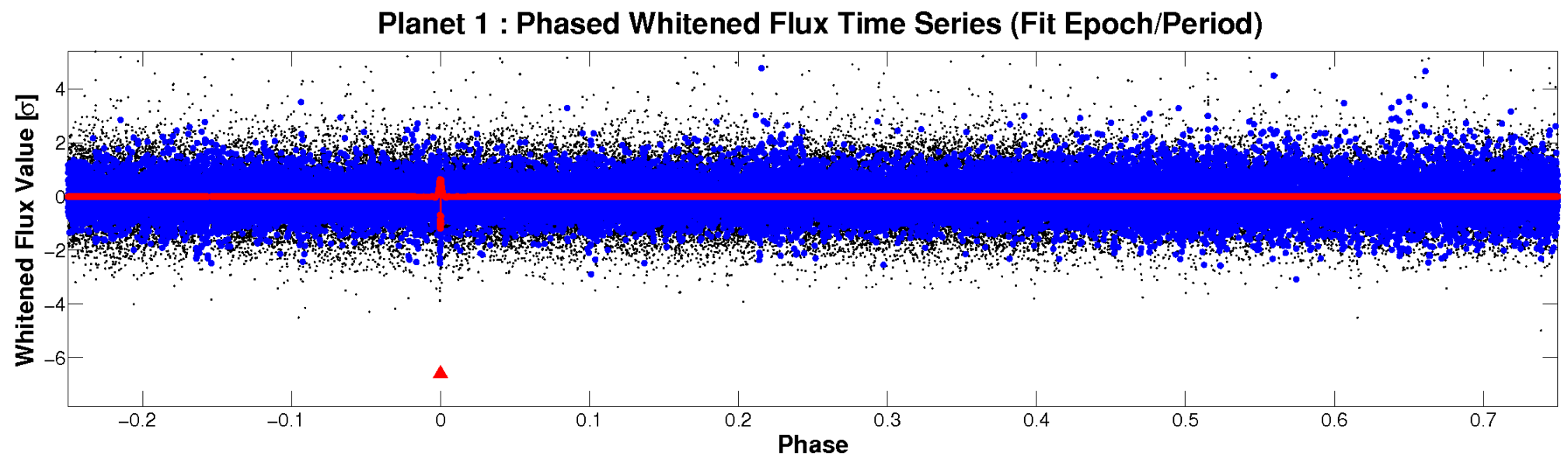
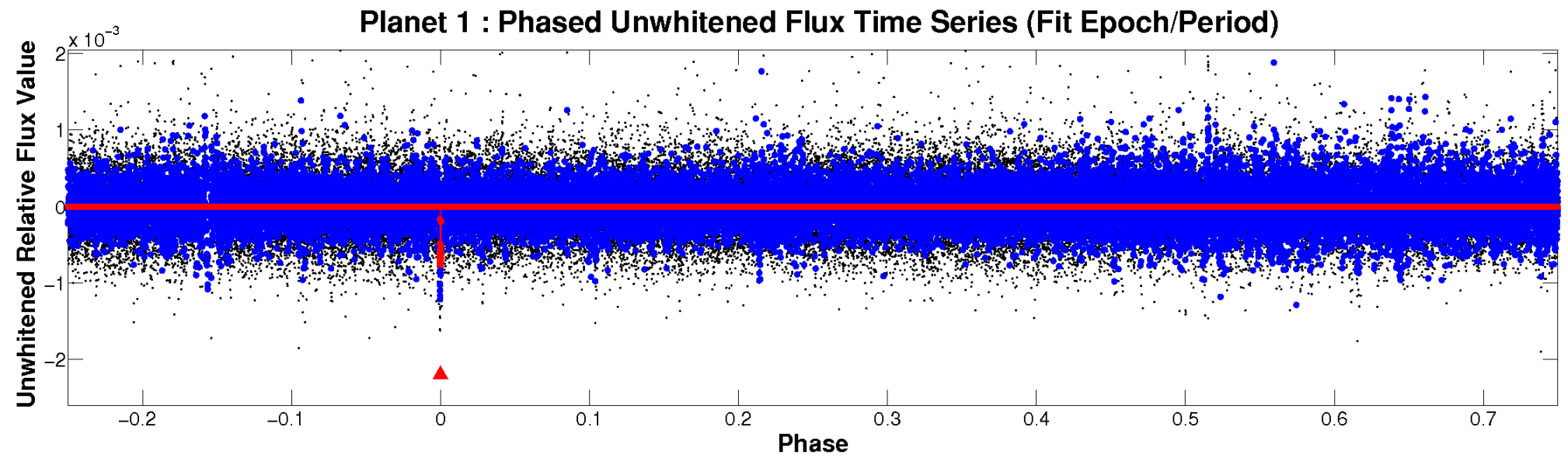


# ALT Odd/Even

TCE 010069342-01



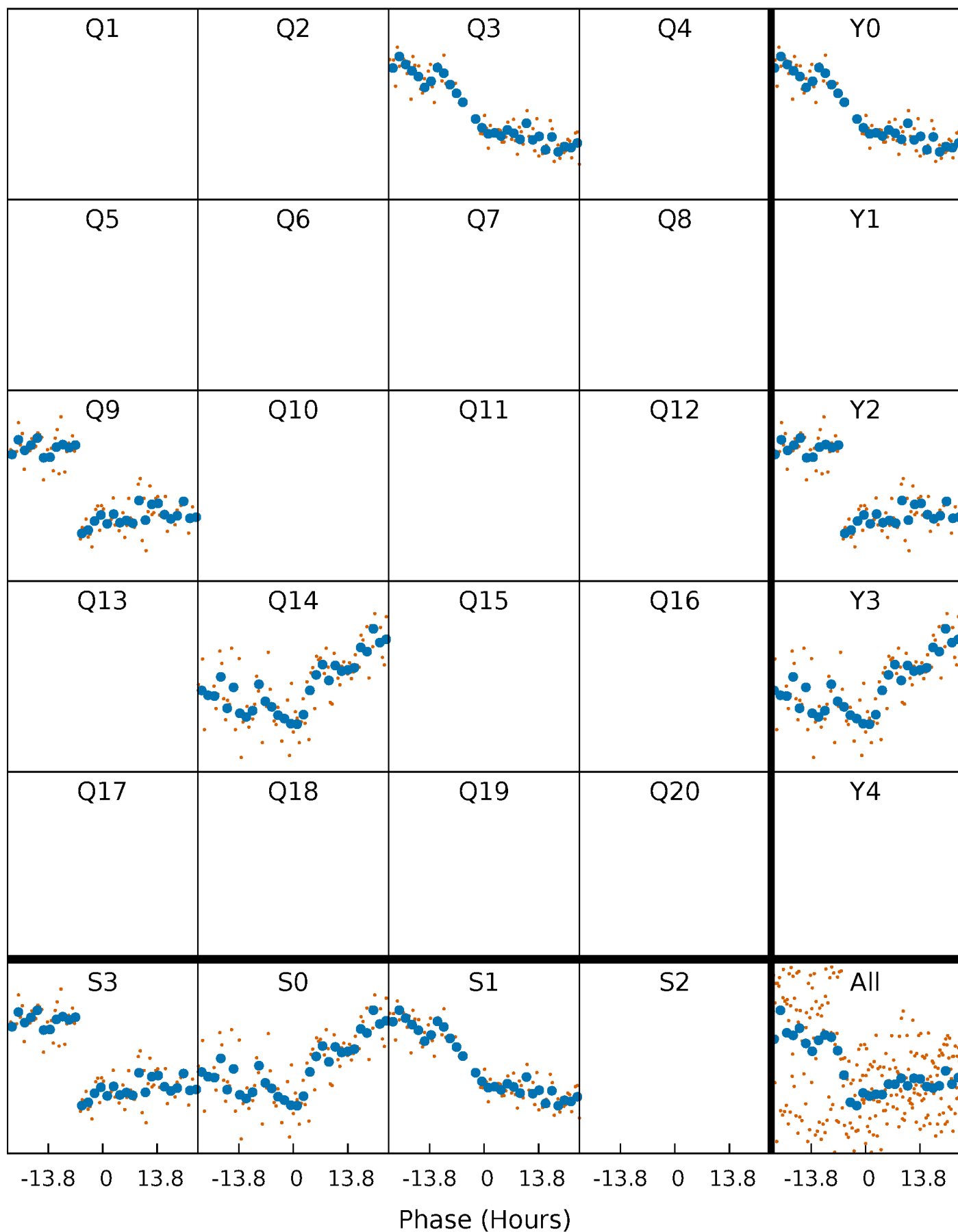
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

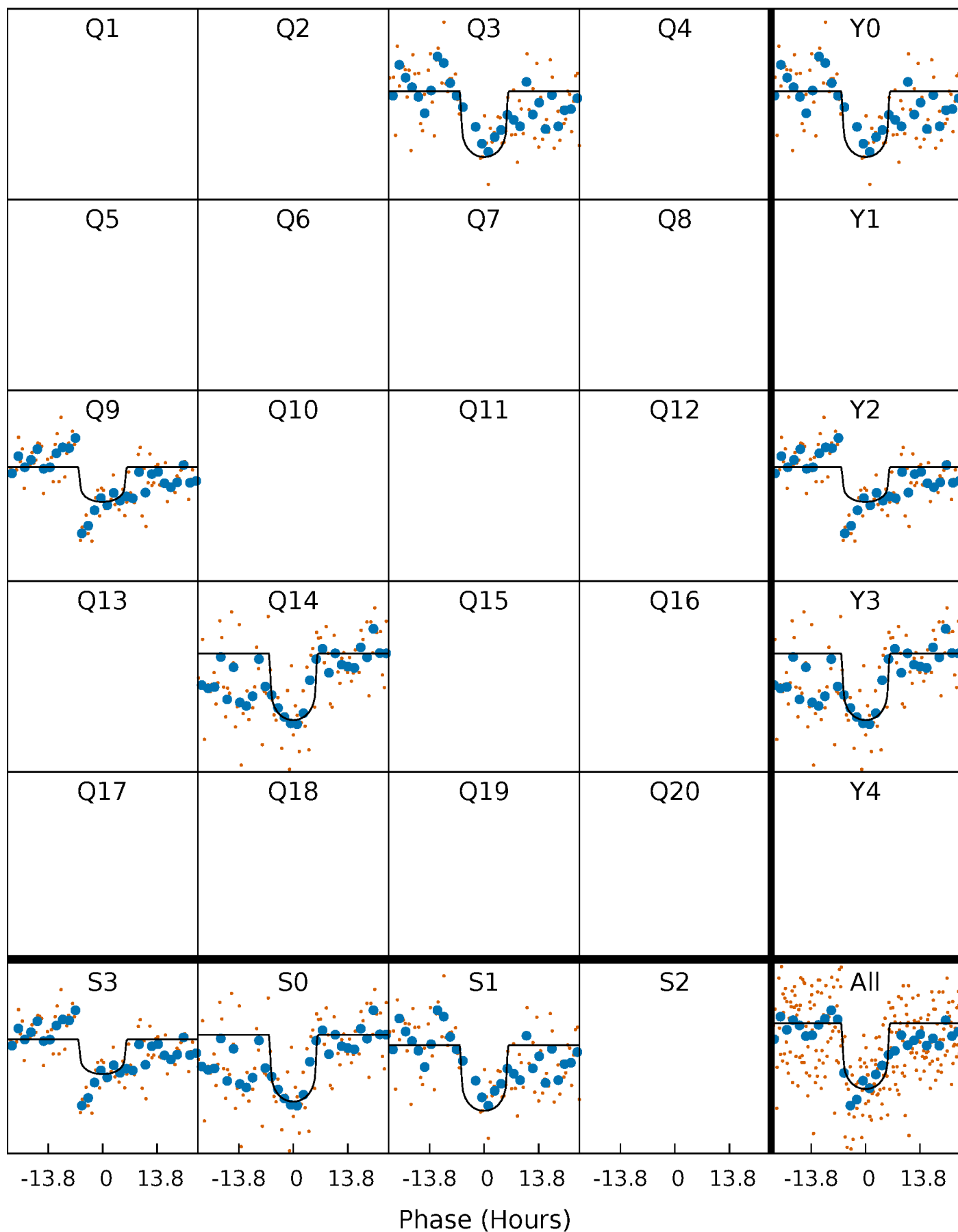
TCE 010069342-01     $P=545.262468$  Days     $T_0=267.616175$  (BKJD)





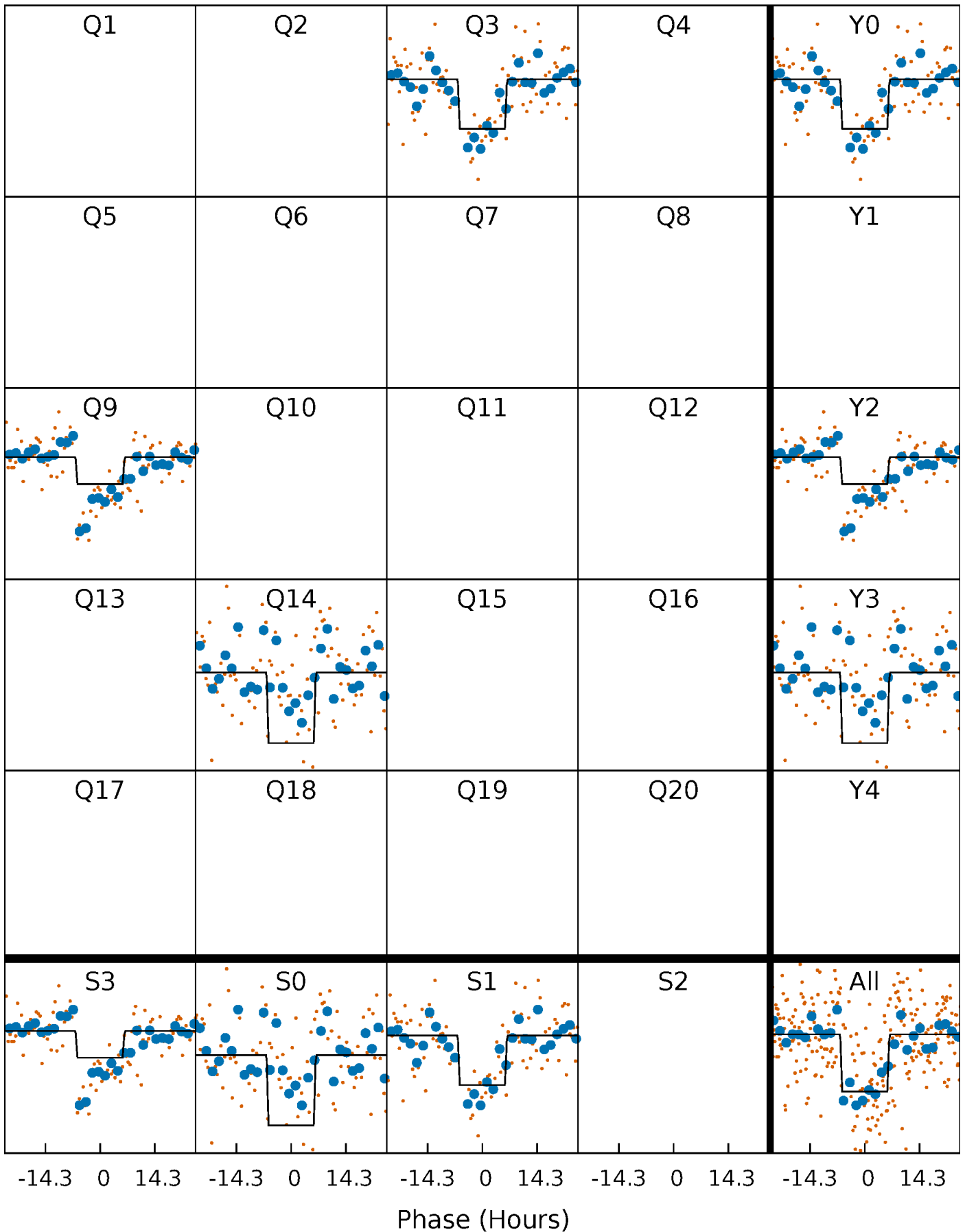
# DV Quarter-Phased Transit Curves

TCE 010069342-01 P=545.262468 Days  $T_0=267.616175$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

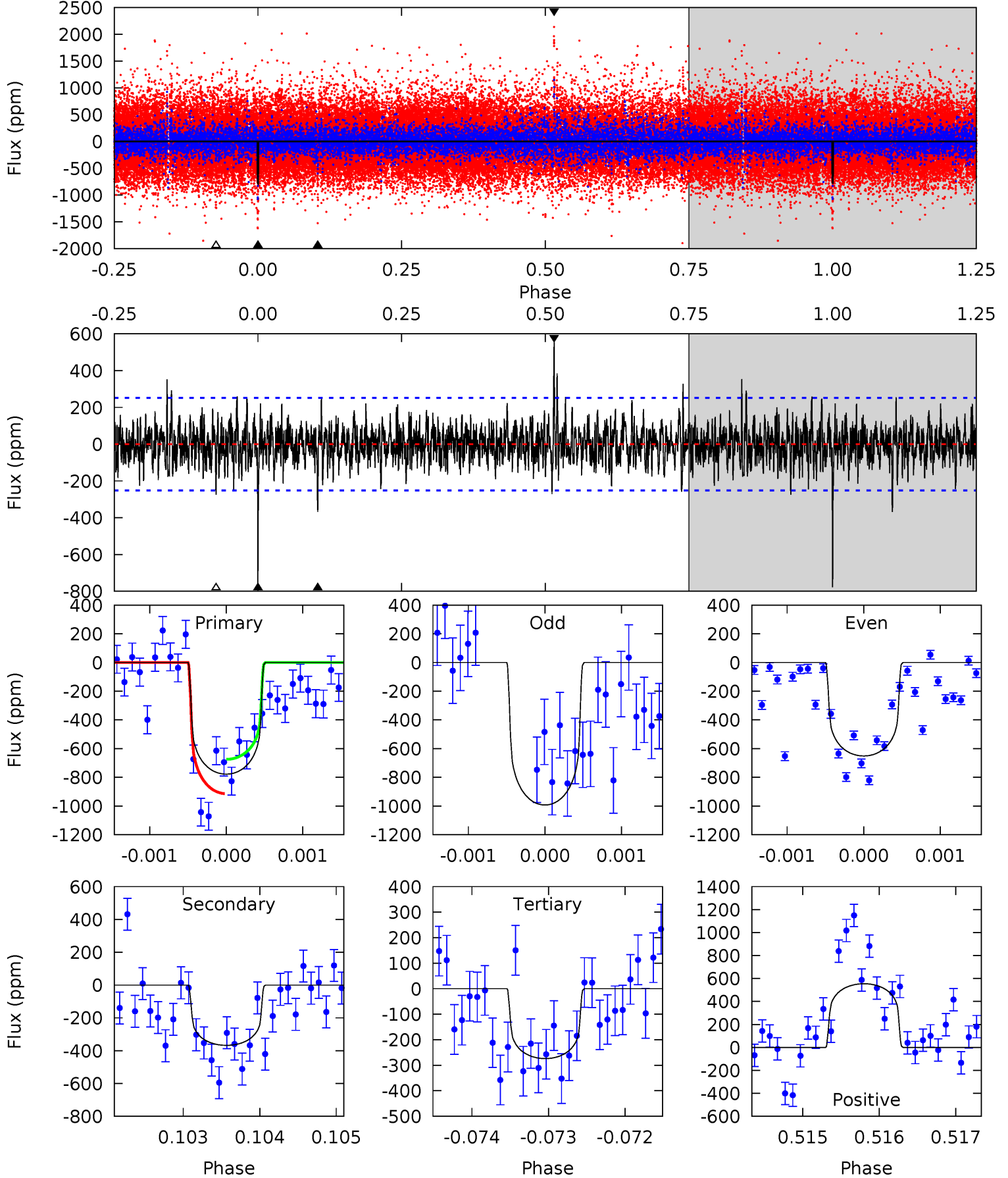
TCE 010069342-01 P=545.181003 Days  $T_0=267.708284$  (BKJD)



# DV Model-Shift Uniqueness Test

010069342-01, P = 545.262468 Days, E = 267.616175 Days

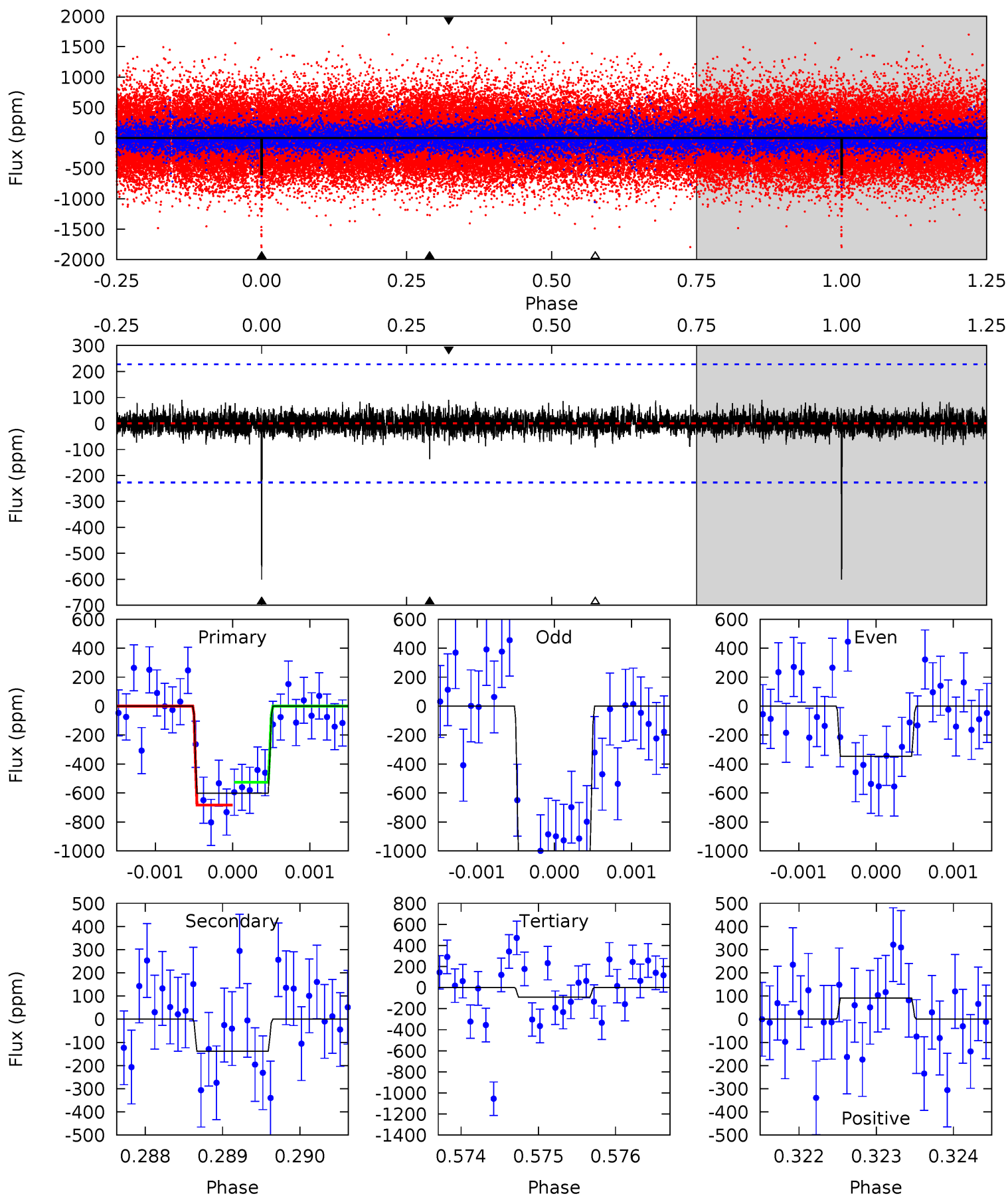
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	7.97	5.94	12.0	5.46	3.30	1.75	10.9	4.85	2.03	-4.05	3.59	1.08	0.42	2.55



# Alt Model-Shift Uniqueness Test

010069342-01, P = 545.181003 Days, E = 267.708284 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
14.4	3.31	2.20	2.19	5.46	3.30	0.56	12.2	12.2	1.11	1.12	8.14	1.05	0.13	1.89



### Stellar Parameters For KIC 010069342

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5992^{+162}_{-180}$	$4.503^{+0.052}_{-0.208}$	$-0.260^{+0.300}_{-0.300}$	$0.912^{+0.278}_{-0.093}$	$0.967^{+0.121}_{-0.121}$	$1.793^{+0.490}_{-0.924}$
	+3%/-3%	+1%/-5%	+115%/-115%	+30%/-10%	+13%/-13%	+27%/-52%
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 010069342-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-368 \pm 46$	$2.74^{+1.26}_{-1.23}$	$317^{+22}_{-15}$	$5162^{+1623}_{-730}$	$44248^{+92317}_{-23471}$
Alt.	$-138 \pm 42$	$2.50^{+1.36}_{-1.15}$	$318^{+20}_{-15}$	$4336^{+1439}_{-610}$	$18625^{+54869}_{-11159}$

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

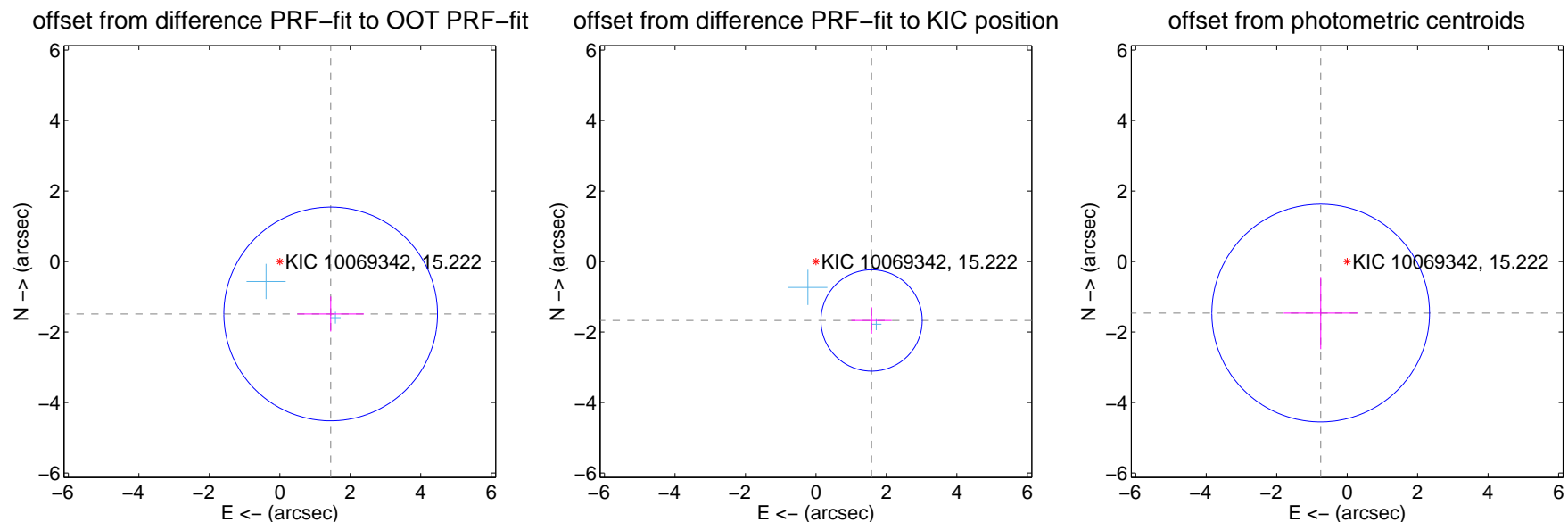
## DV Centroid Data

Supplemental centroid analysis for 010069342-01. Kepler magnitude: 15.22. Transit SNR 9.34

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.23 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.074 \pm 1.011$	2.05	$-1.444 \pm 0.944$	$-1.488 \pm 0.496$
PRF-fit source offset from KIC position	<b><math>2.300 \pm 0.479</math></b>	<b>4.80</b>	$-1.579 \pm 0.574$	$-1.672 \pm 0.375$
photometric centroid source offset	$1.64 \pm 1.03$	1.60	$0.75 \pm 1.05$	$-1.46 \pm 1.02$



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.

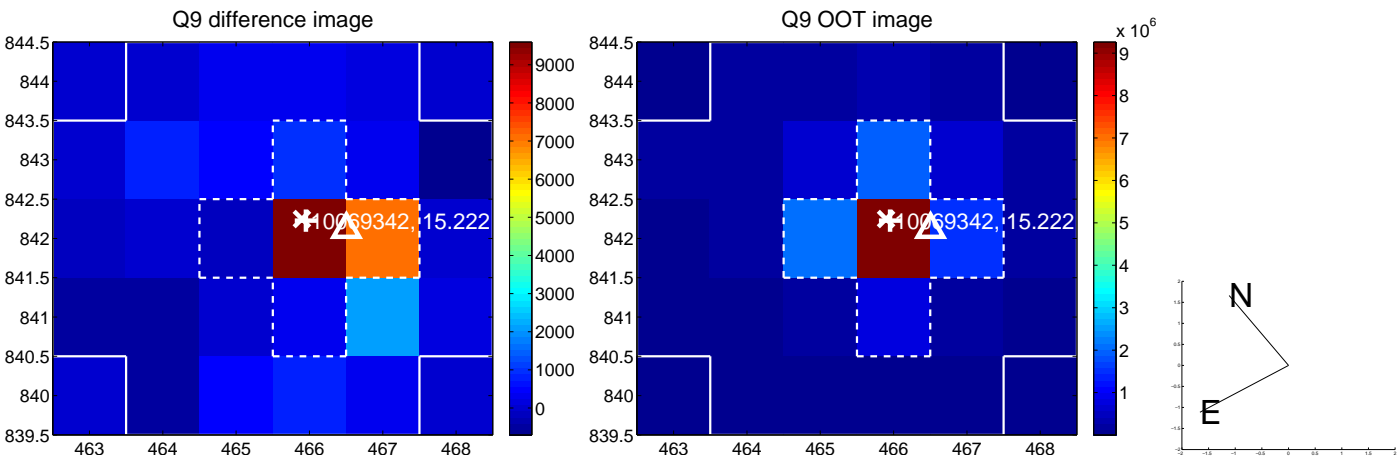




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.

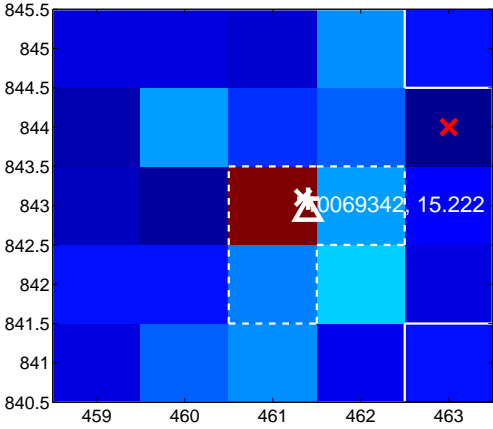
Q13 no difference image



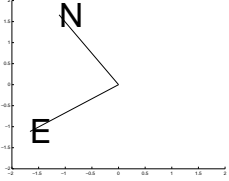
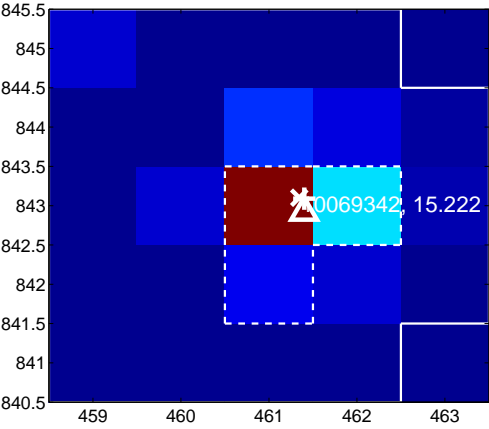
Q13 no OOT image



Q14 difference image



Q14 OOT image



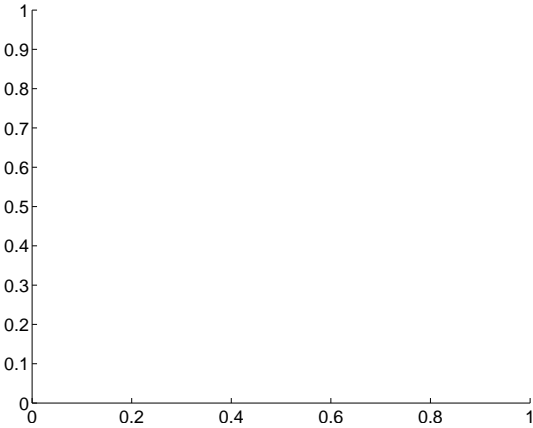
Q15 no difference image



Q15 no OOT image



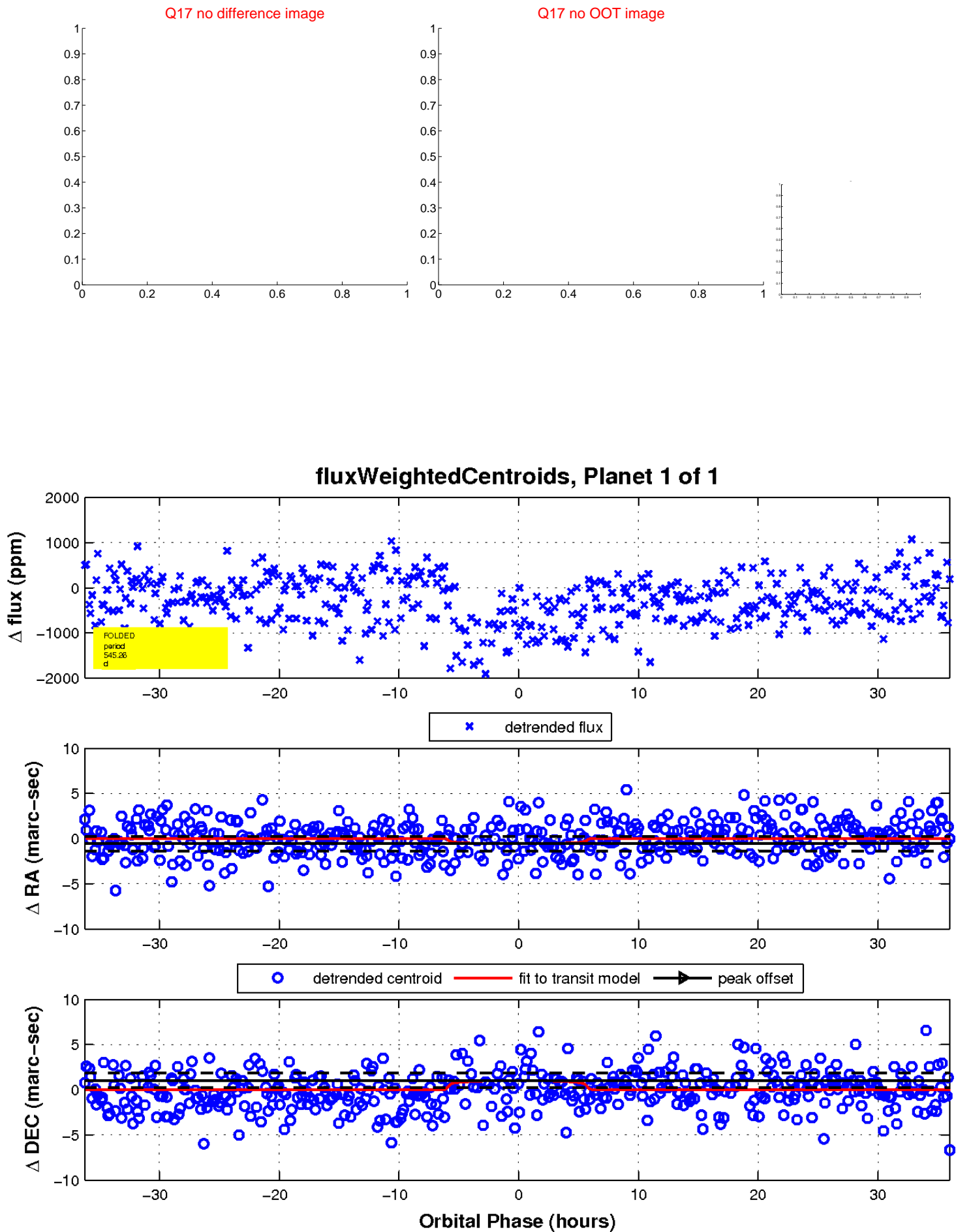
Q16 no difference image



Q16 no OOT image



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



# UKIRT Image

Declination

