

# KIC 010068519

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010068519-01	OBS	No	345.150506	242.857785	50.2	21.015	13.6	2.7	94.28	3634	76.90	1058.51

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010068519-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

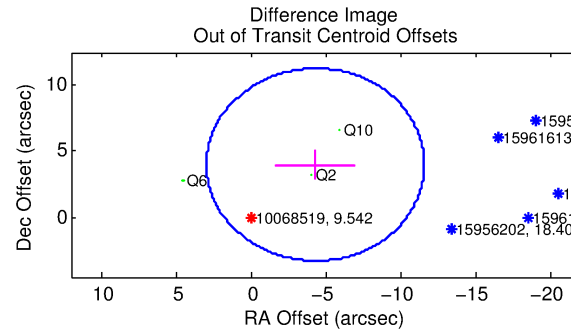
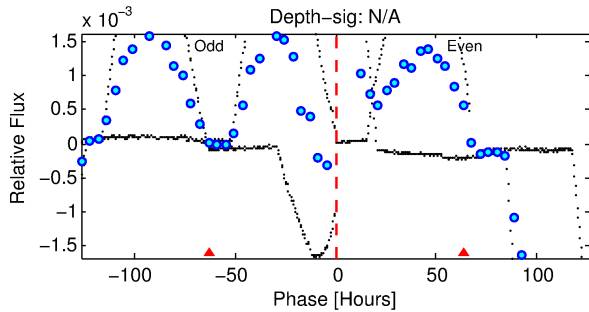
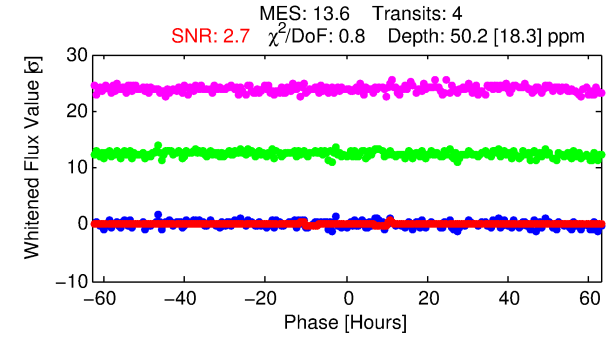
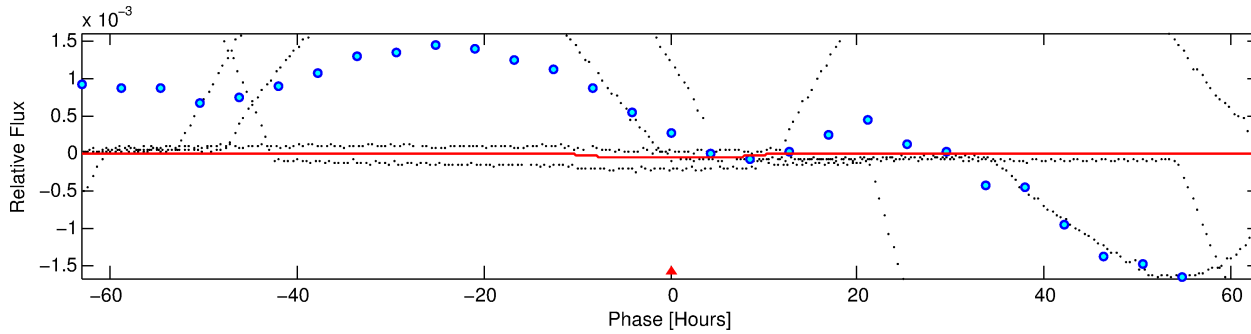
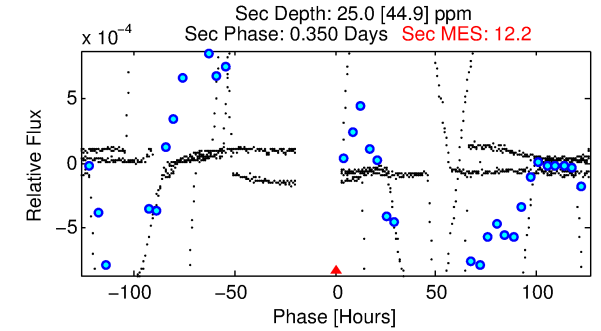
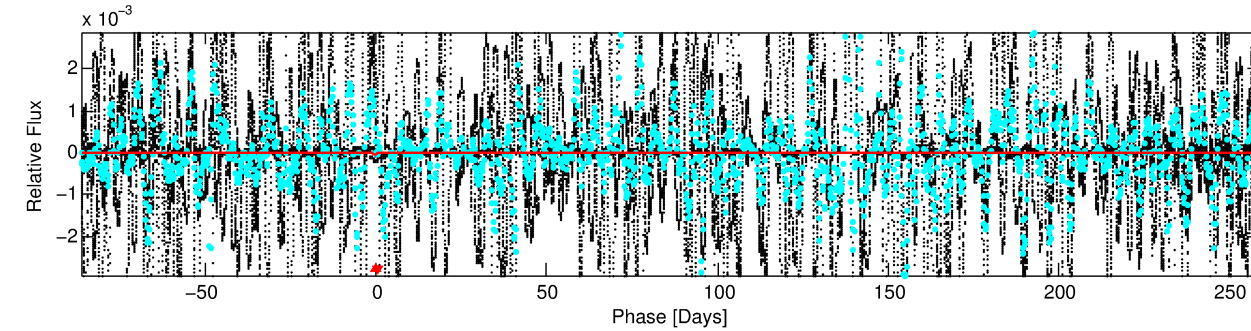
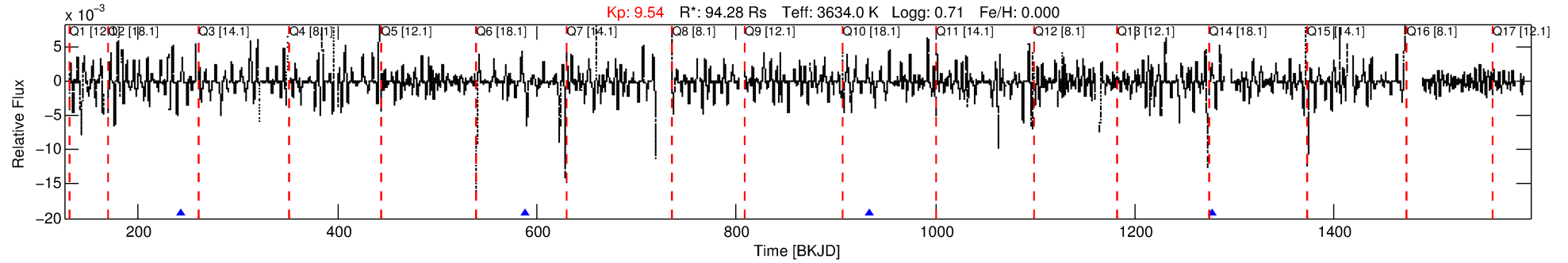
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010068519-01

No Significant Match Found

# DV One-Page Summary

KIC: 10068519 Candidate: 1 of 1 Period: 345.151 d



## DV Fit Results:

Period = 345.15051 [0.00697] d  
Epoch = 242.8578 [0.0152] BKJD  
Rp/R\* = 0.0075 [0.0020]  
a/R\* = 75.60 [43.63]  
b = 0.81 [0.25]  
Seff = 1058.51 [519.18]  
Teff = 1454 [178] K  
Rp = 76.90 [33.60] Re  
a = 1.1454 [0.3593] AU  
Ag = 3.06 [5.90] [0.35 $\sigma$ ]  
Teffp = 2973 [1392] K [1.08 $\sigma$ ]

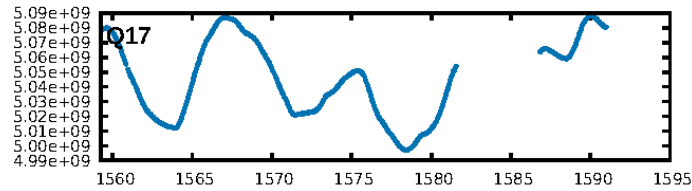
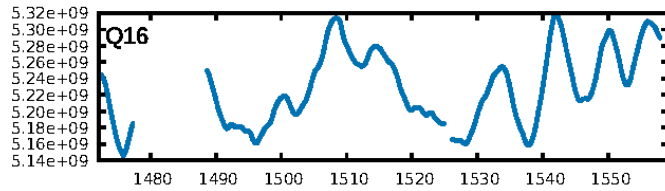
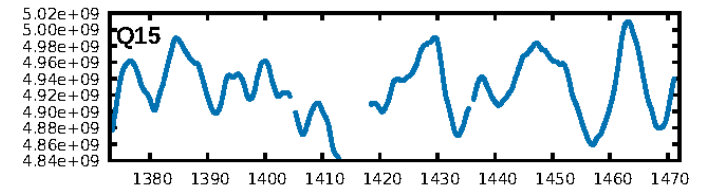
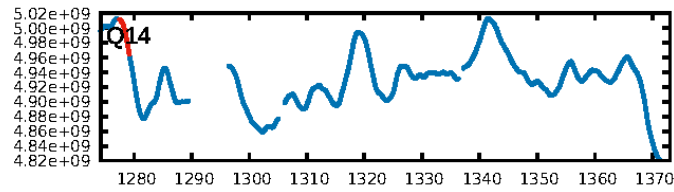
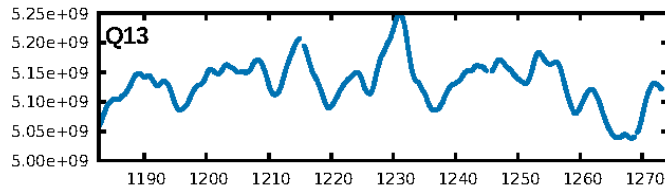
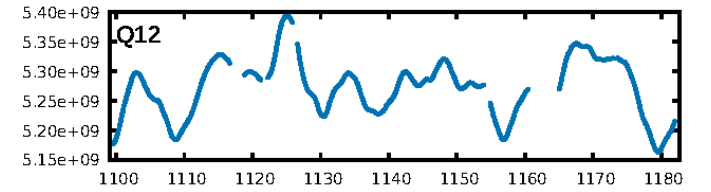
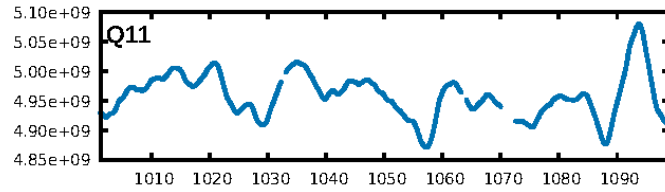
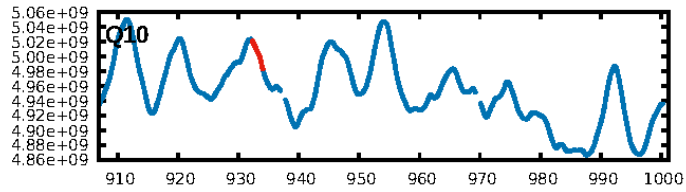
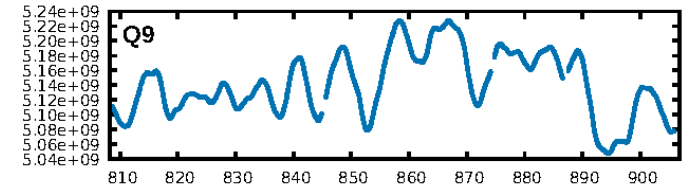
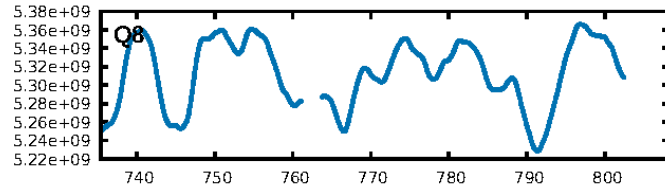
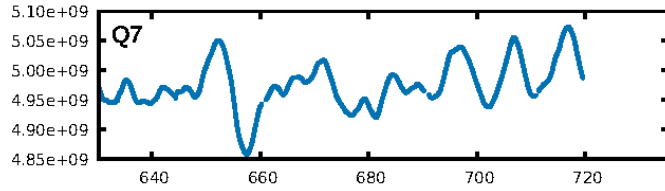
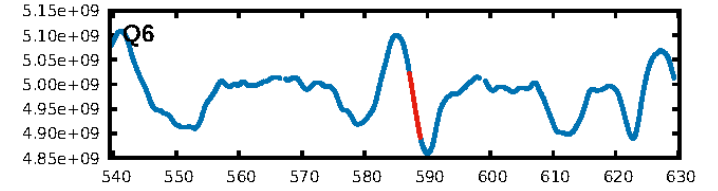
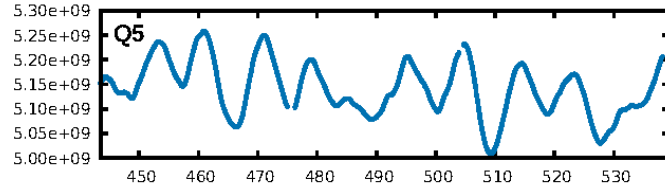
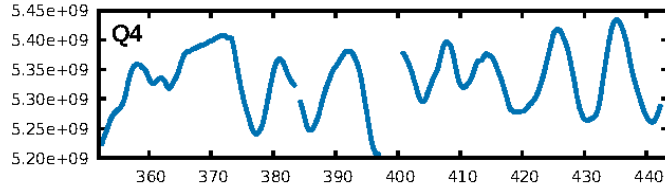
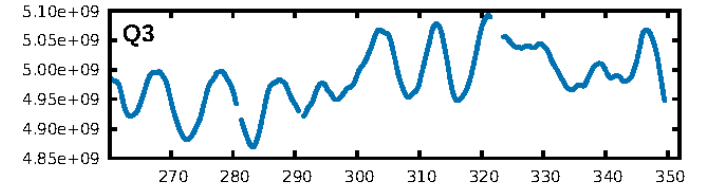
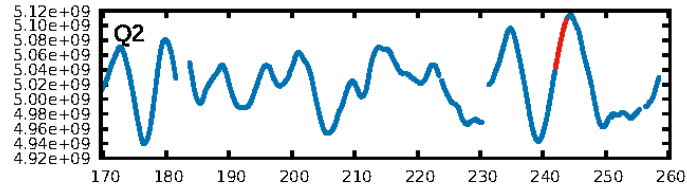
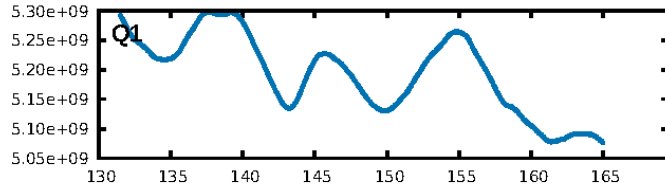
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 17.1%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 8.68e-06  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 3.2%  
Centroid-so: 14.141 arcsec [1.67 $\sigma$ ]  
OotOffset-rm: 5.891 arcsec [2.43 $\sigma$ ]  
OotOffset-st: 3/0/0/0 [3]  
KicOffset-rm: 5.509 arcsec [3.08 $\sigma$ ]  
KicOffset-st: 3/0/0/0 [3]  
DiffImageQuality-fgm: 0.00 [0/3]  
DiffImageOverlap-fno: 1.00 [3/3]

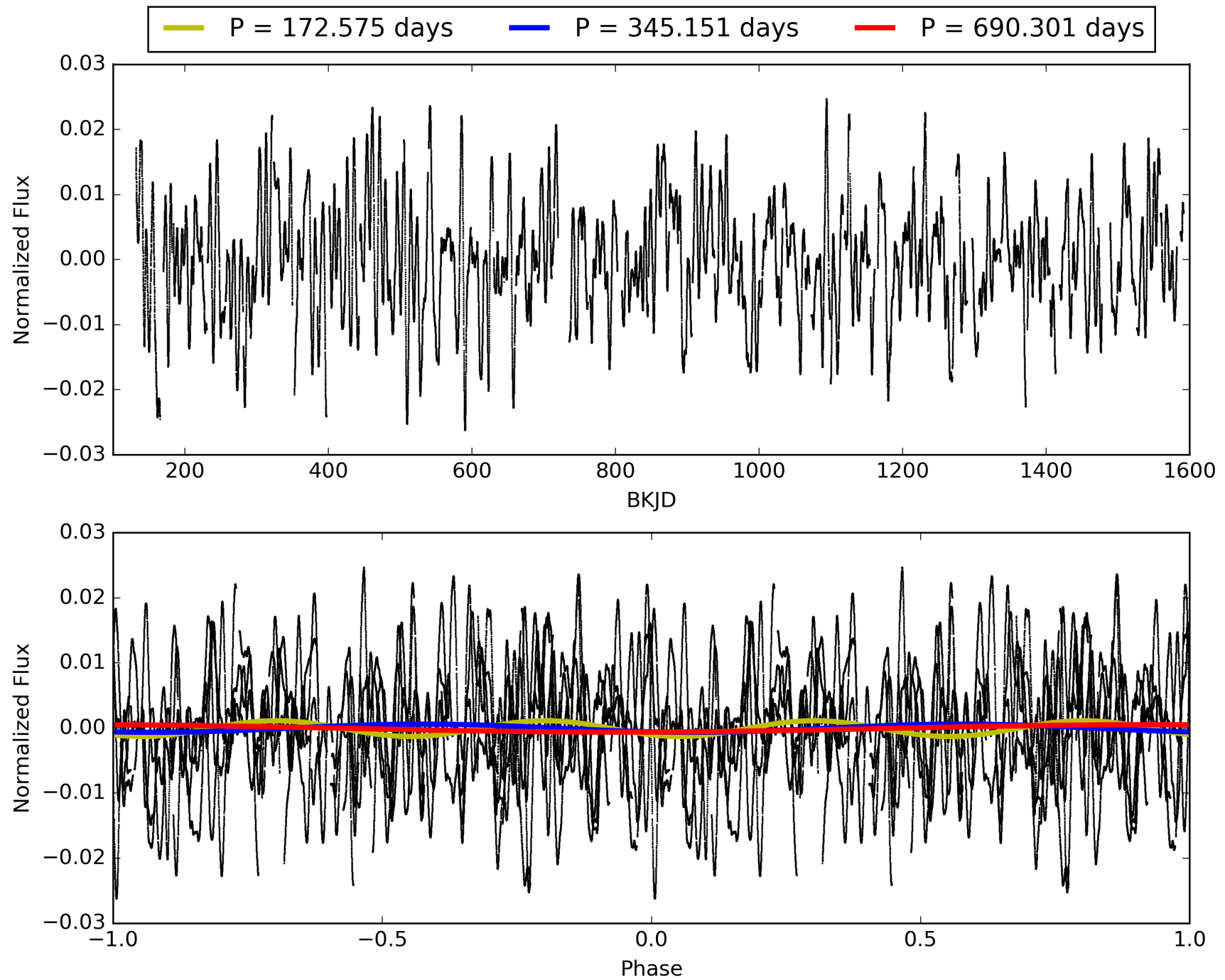
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:20:51 Z

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

# TCE 010068519-01, PDC Light Curves

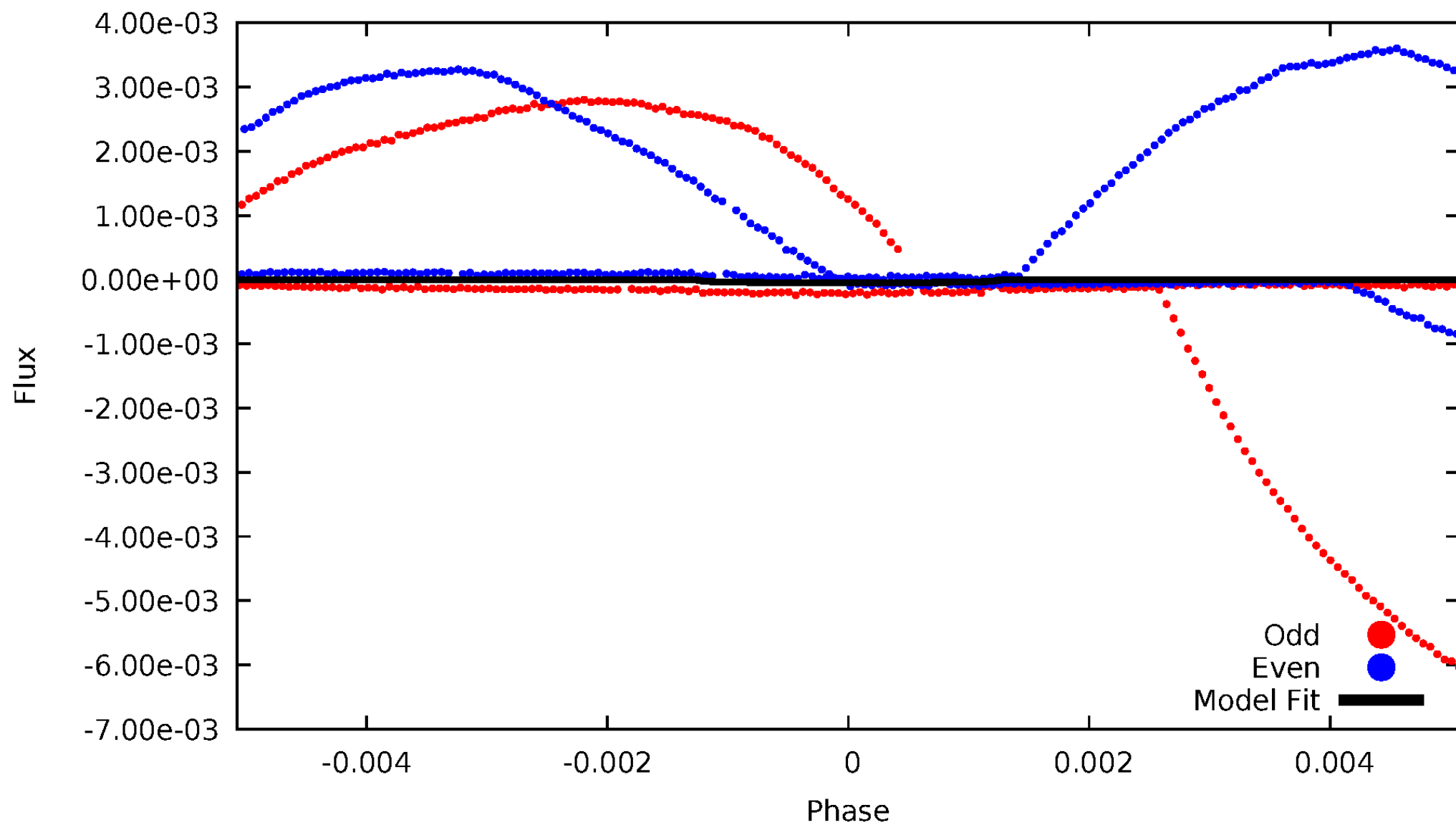


TCE 010068519-01



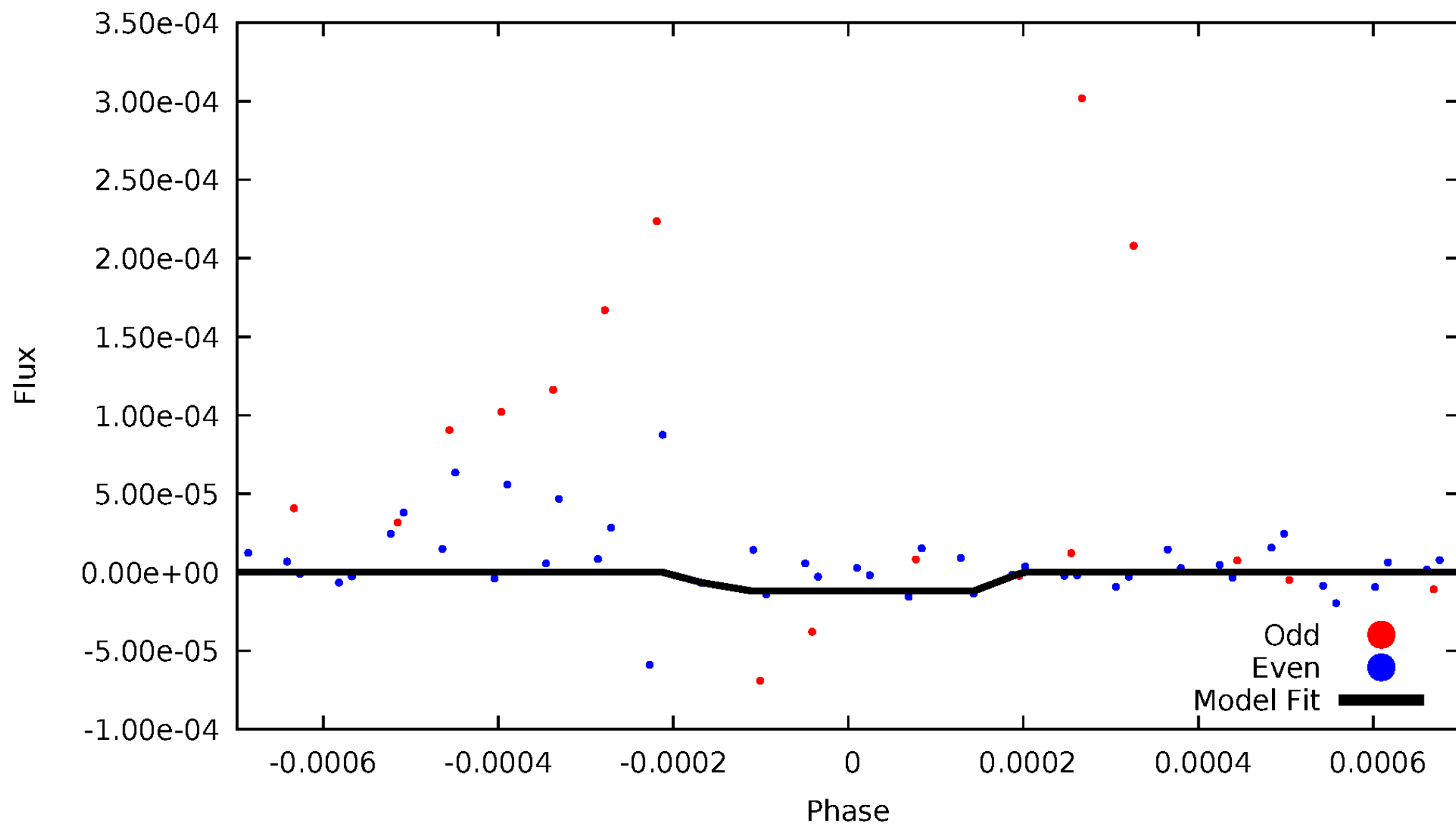
# DV Odd/Even

TCE 010068519-01

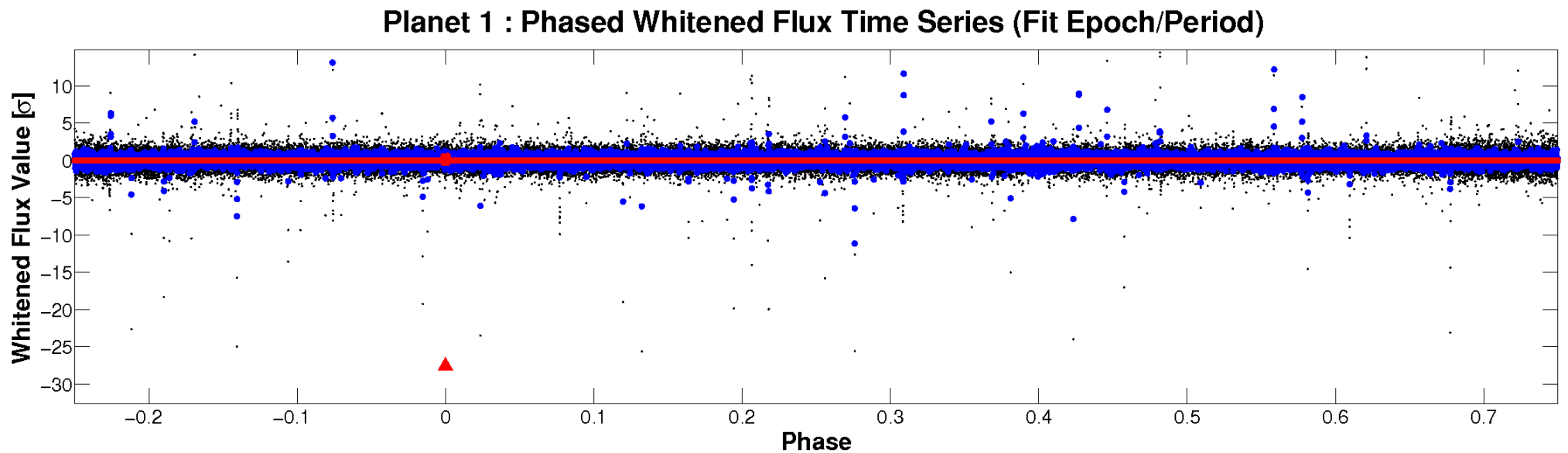
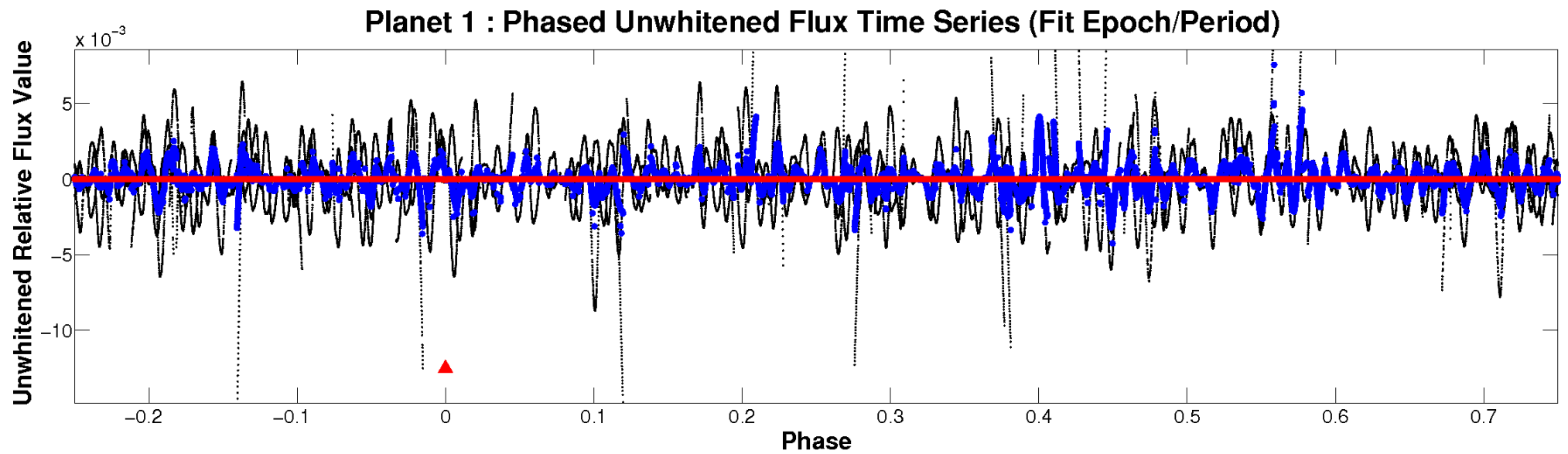


# ALT Odd/Even

TCE 010068519-01

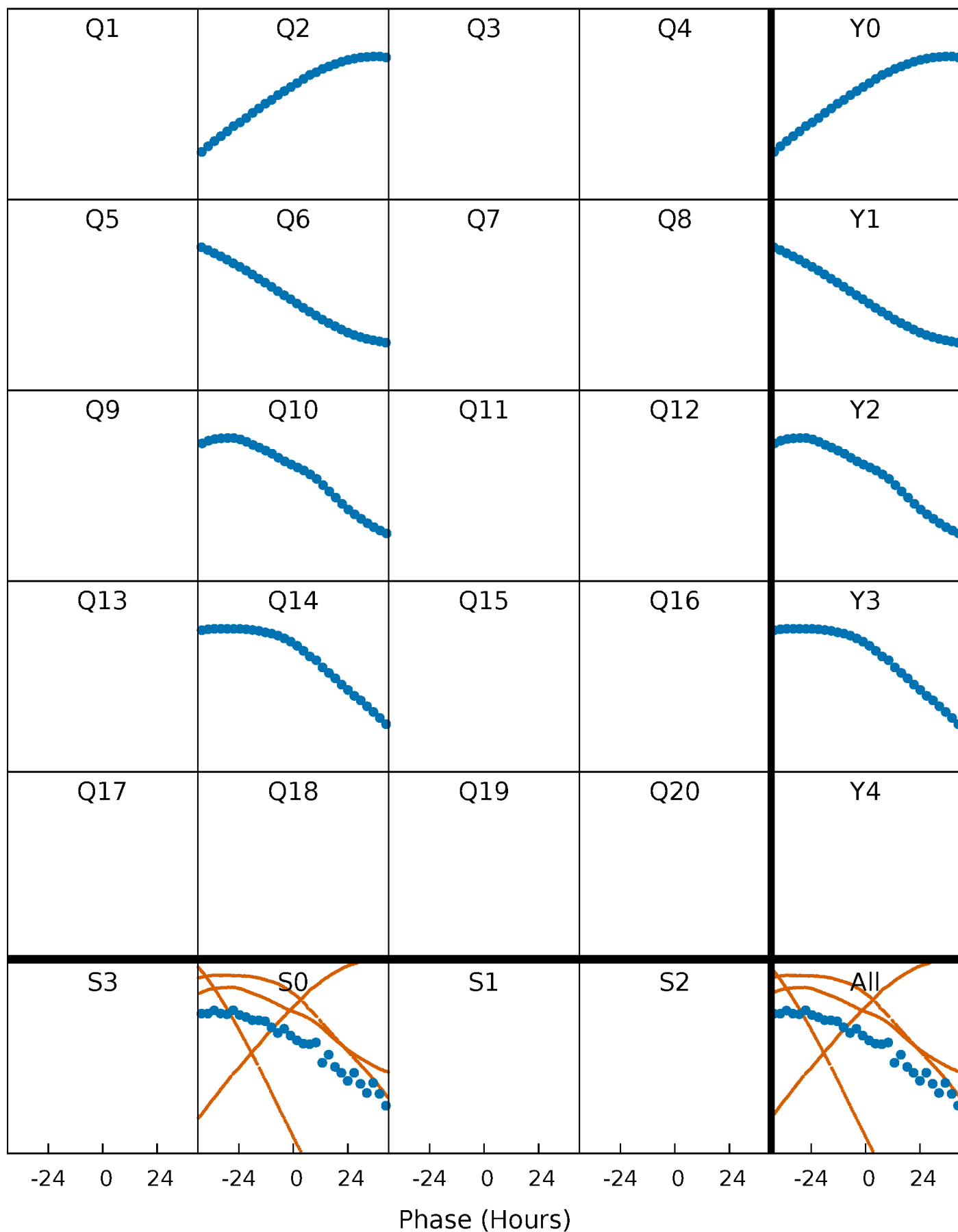


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

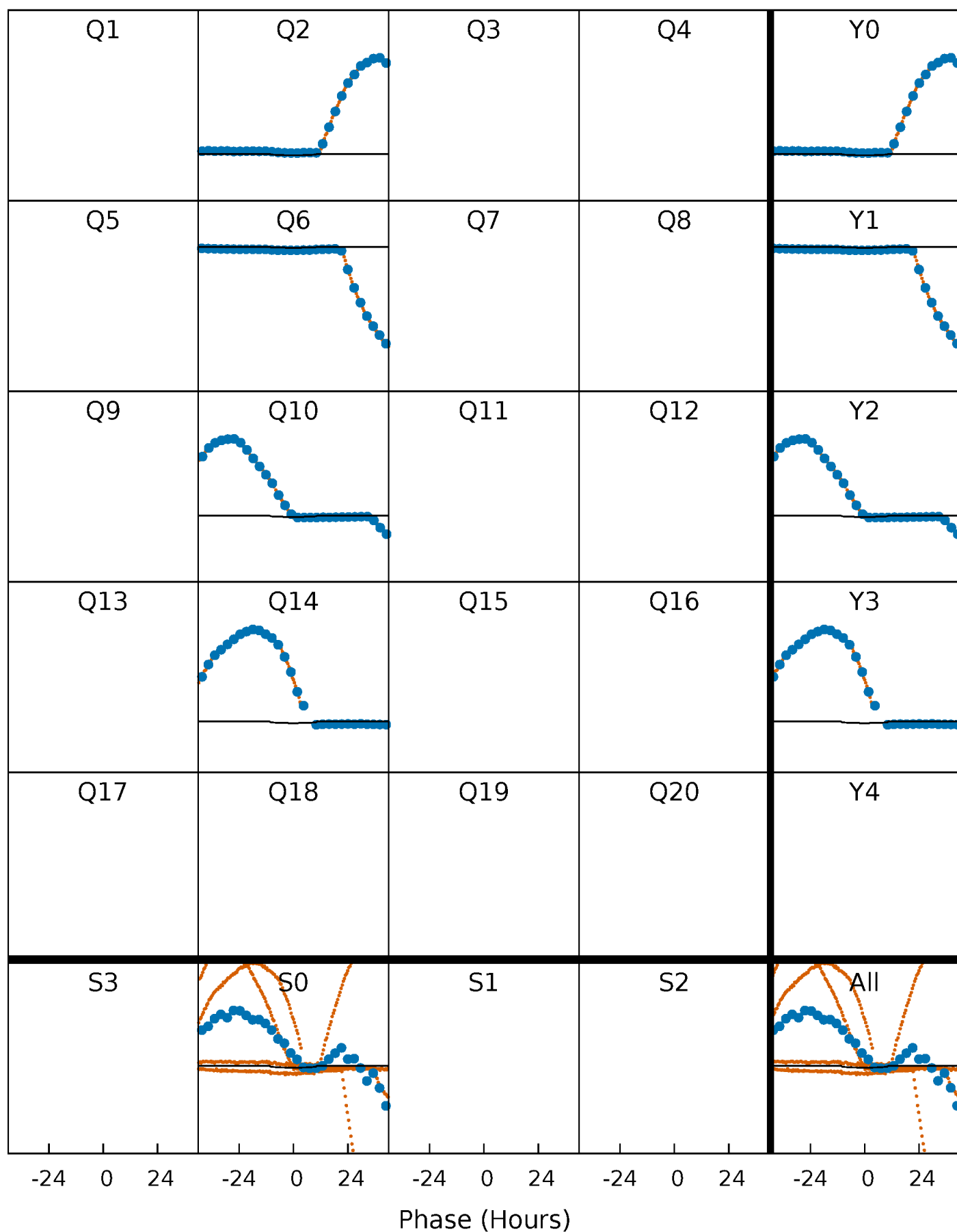
TCE 010068519-01 P=345.150506 Days  $T_0=242.857785$  (BKJD)





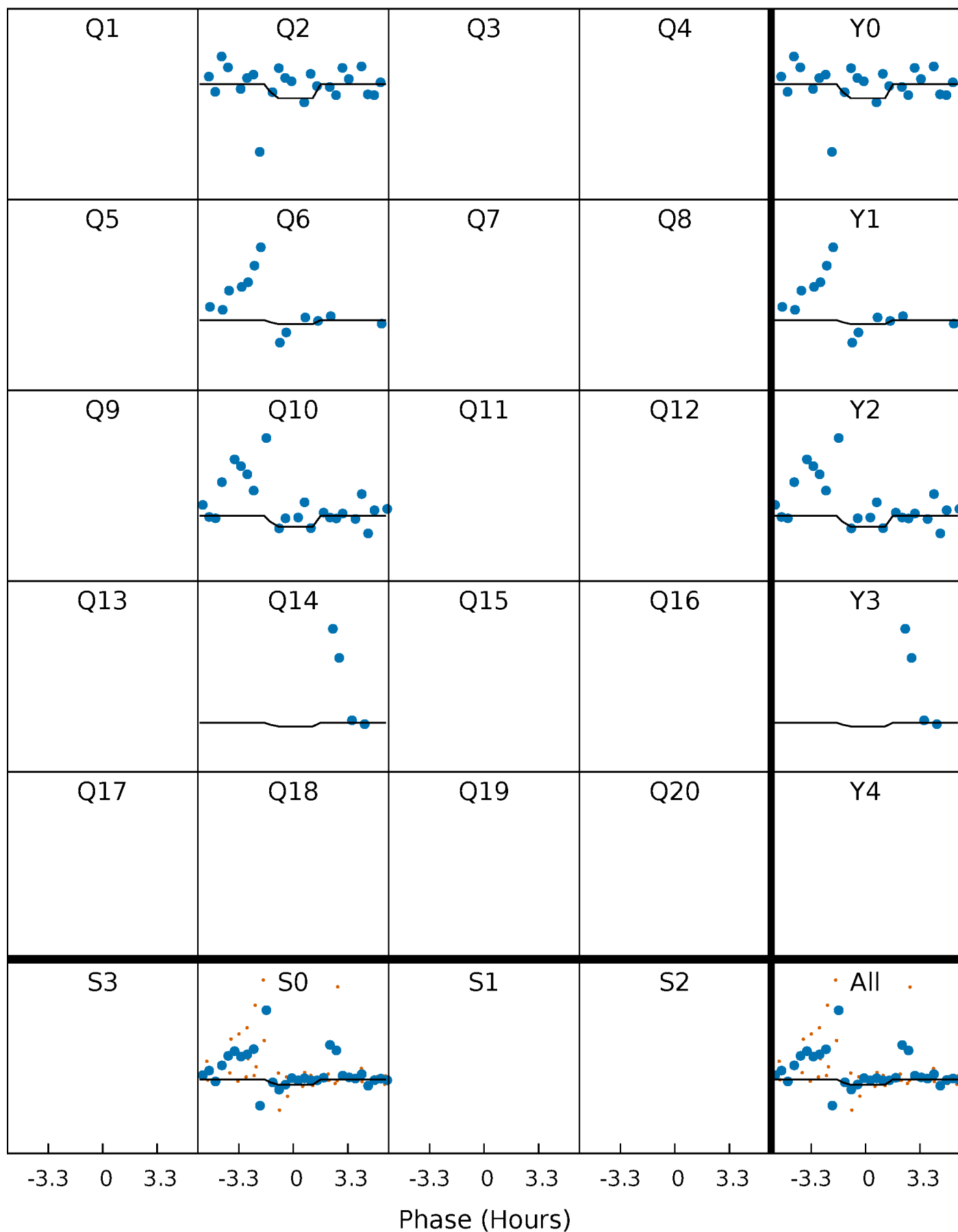
# DV Quarter-Phased Transit Curves

TCE 010068519-01 P=345.150506 Days  $T_0=242.857785$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

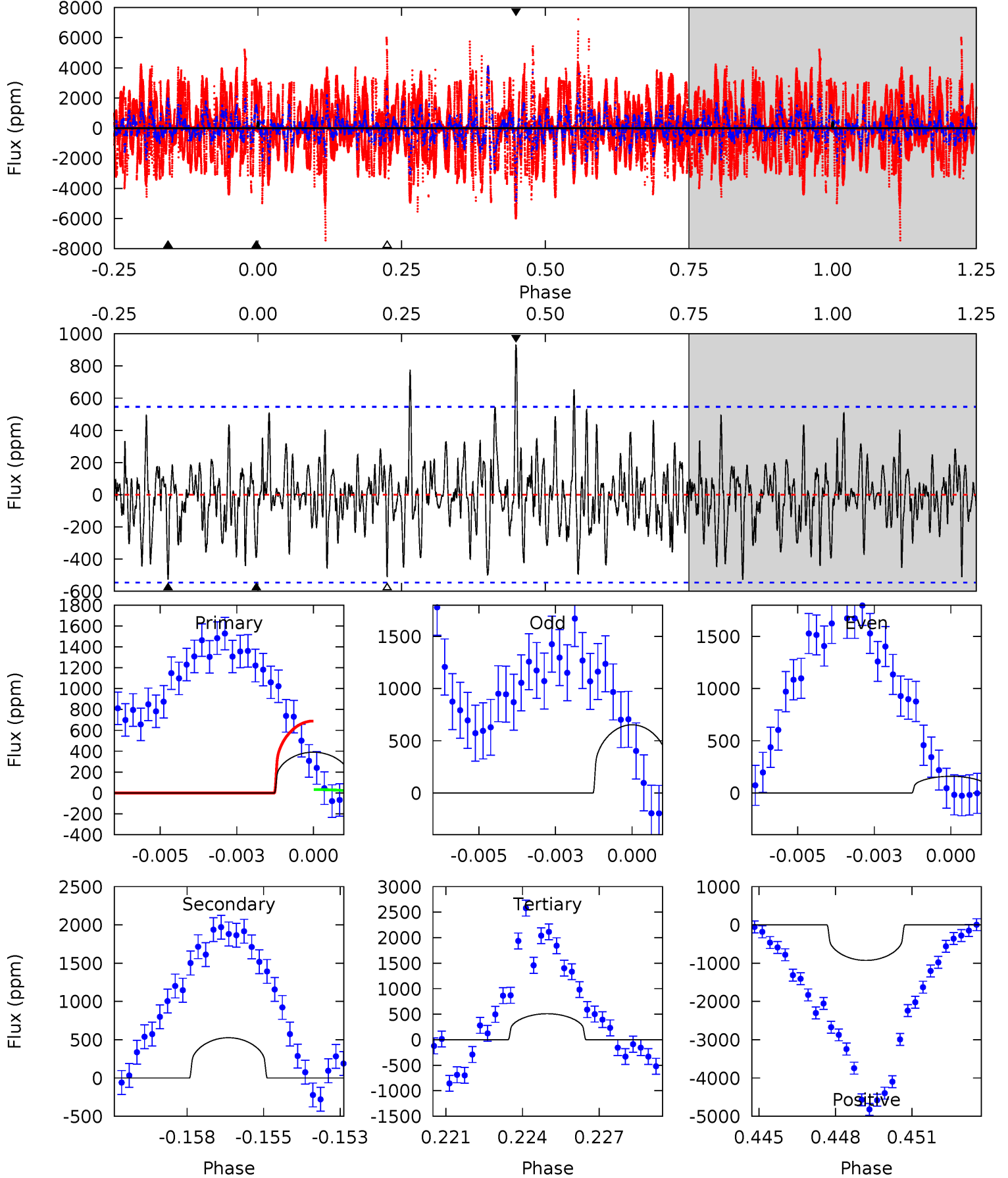
TCE 010068519-01 P=345.223182 Days  $T_0=243.036870$  (BKJD)



# DV Model-Shift Uniqueness Test

010068519-01, P = 345.150506 Days, E = 242.857785 Days

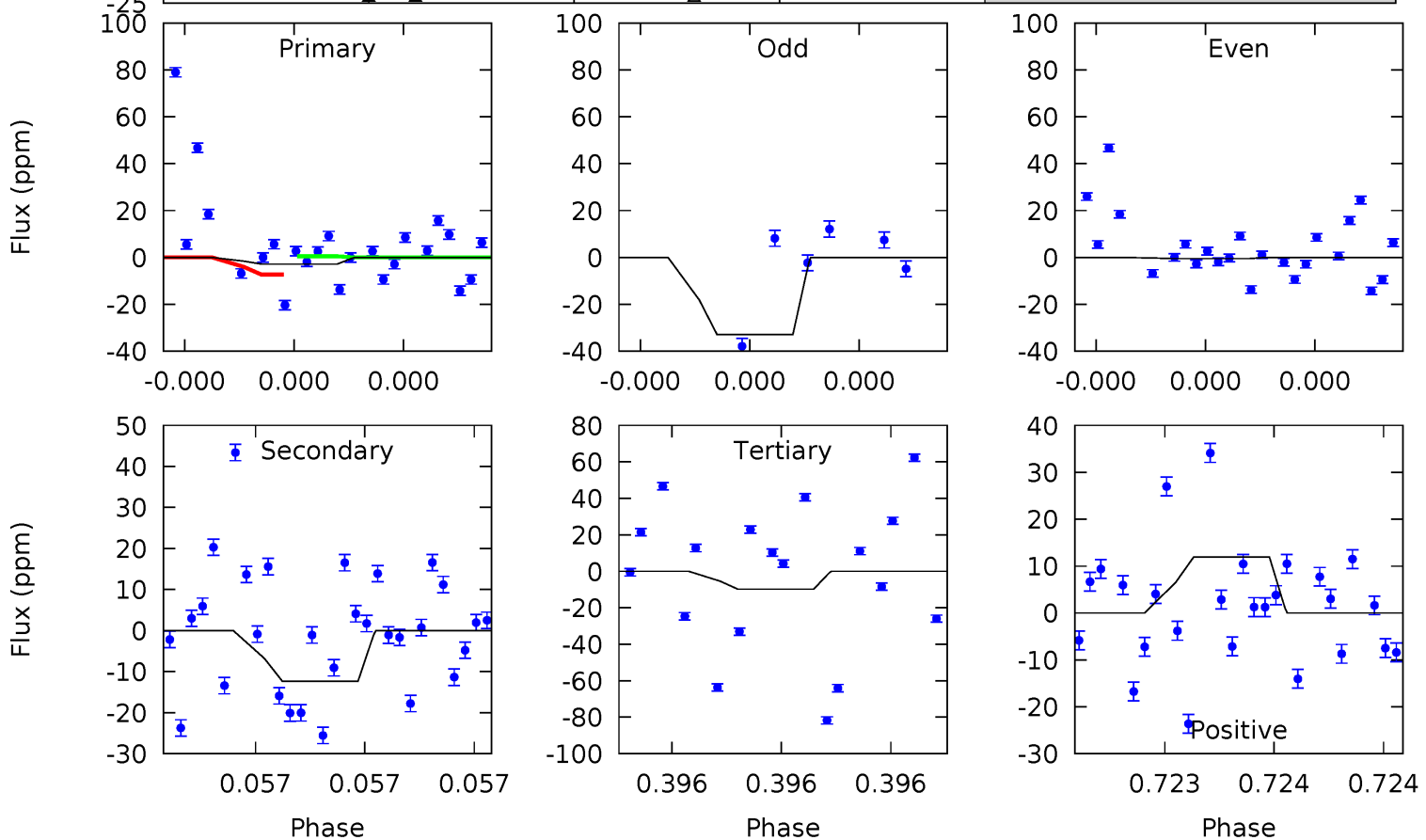
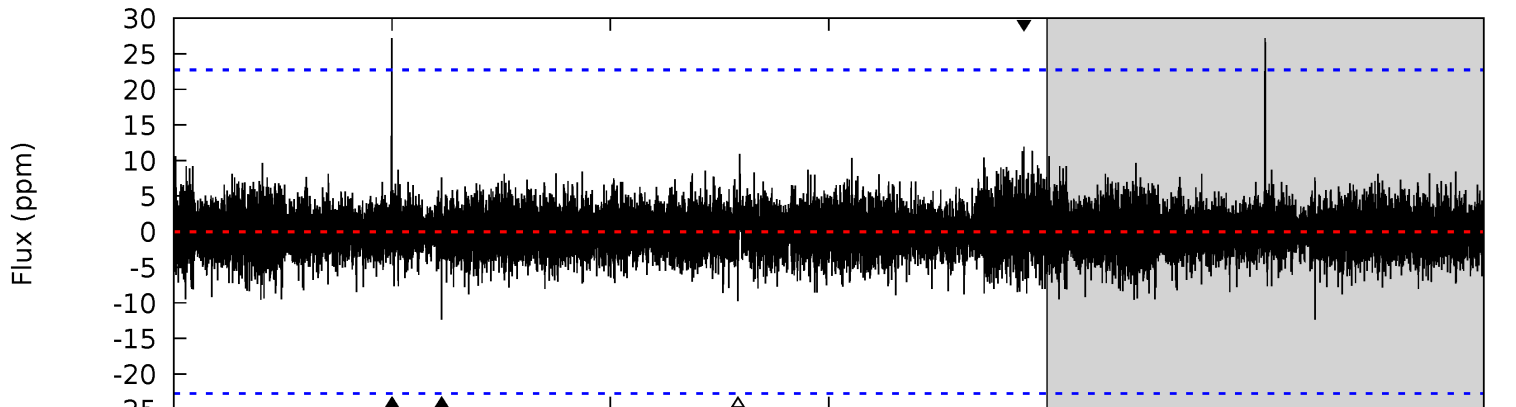
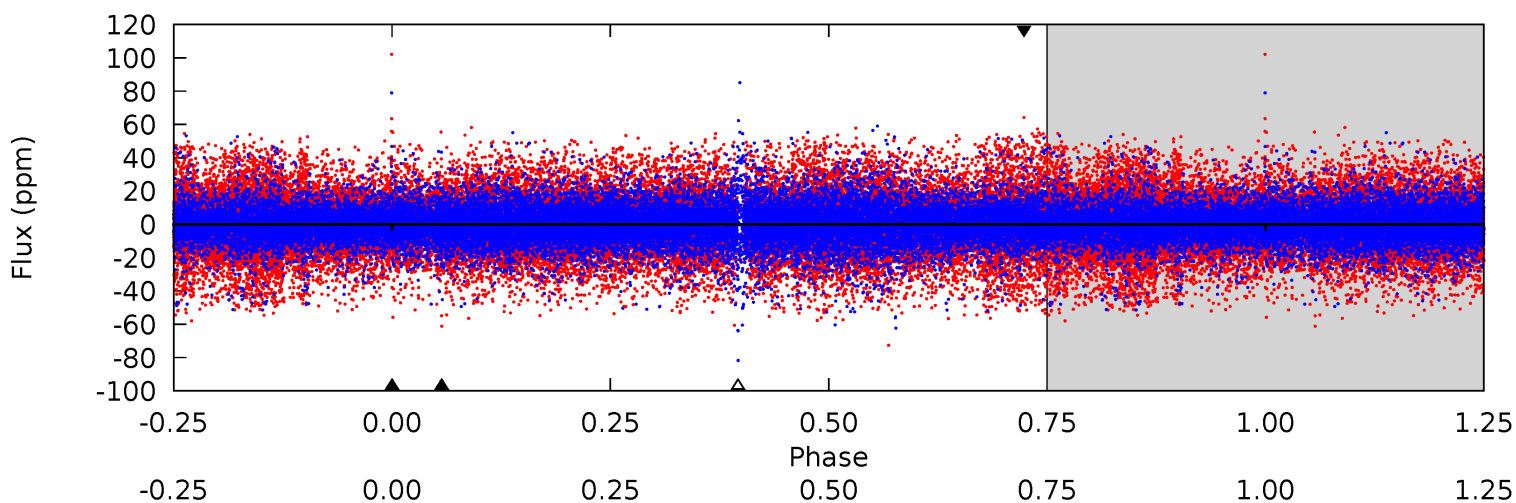
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.78	5.09	4.93	8.98	5.28	3.02	1.74	-1.15	-5.20	0.16	-3.89	1.86	2.90	0.64	3.22



# Alt Model-Shift Uniqueness Test

010068519-01, P = 345.223182 Days, E = 243.036870 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
0.71	3.05	2.42	2.96	5.63	3.57	0.58	-1.71	-2.25	0.63	0.10	3.53	3.29	0.69	0.83



### Stellar Parameters For KIC 010068519

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$3634^{+79}_{-72}$	$0.715^{+0.276}_{-0.184}$	$0.000^{+0.250}_{-0.250}$	$94.277^{+20.131}_{-32.713}$	$1.679^{+0.097}_{-0.547}$	$0.000^{+0.000}_{-0.000}$
	+2%/-2%	+39%/-26%	+inf%/-inf%	+21%/-35%	+6%/-33%	+183%/-43%
Source	SPE14	PHO54	PHO54	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 010068519-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-526 \pm 103$	$73.24^{+24.37}_{-21.99}$	$2028^{+145}_{-173}$	$5605^{+928}_{-636}$	$68^{+67}_{-32}$
Alt.	$-12 \pm 4$	$34.86^{+20.83}_{-17.36}$	$2035^{+152}_{-173}$	$3562^{+1018}_{-492}$	$6.698^{+19.924}_{-4.209}$

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

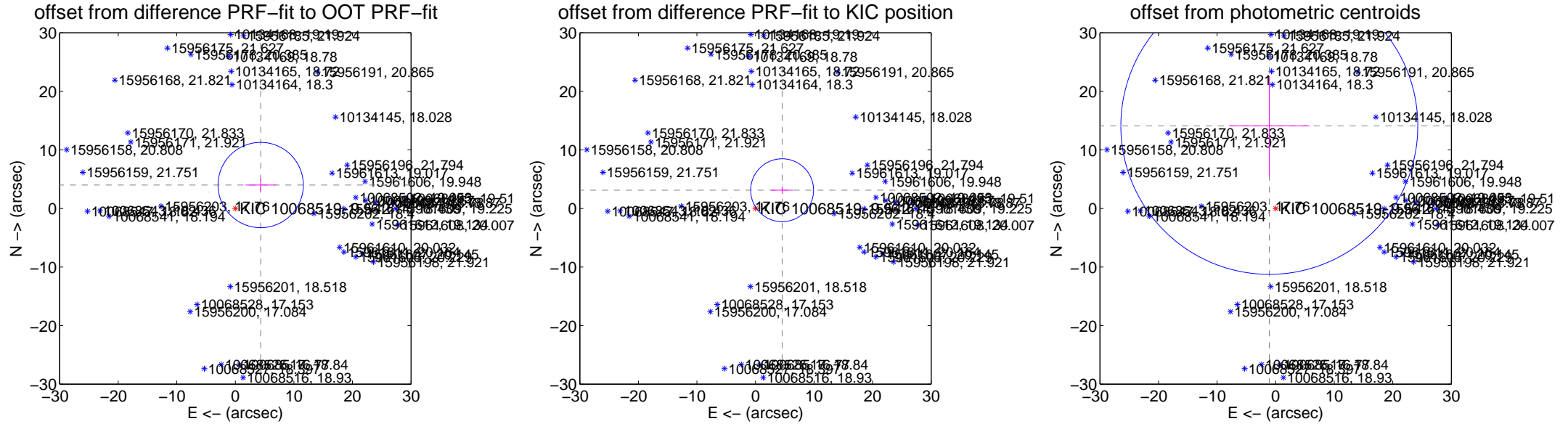
## DV Centroid Data

Supplemental centroid analysis for 010068519-01. **Kepler magnitude: 9.54.** Transit SNR 2.69

**There are 0 quarters with good PRF difference image offsets**

The direct PRF centroid is offset from the target star catalog position by about 0.88 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.891 \pm 2.427$	2.43	$-4.327 \pm 2.619$	$3.998 \pm 1.095$
PRF-fit source offset from KIC position	<b><math>5.509 \pm 1.790</math></b>	<b>3.08</b>	$-4.548 \pm 1.860$	$3.110 \pm 0.630$
photometric centroid source offset	$14.14 \pm 8.45$	1.67	$1.08 \pm 6.86$	$14.10 \pm 8.46$



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.

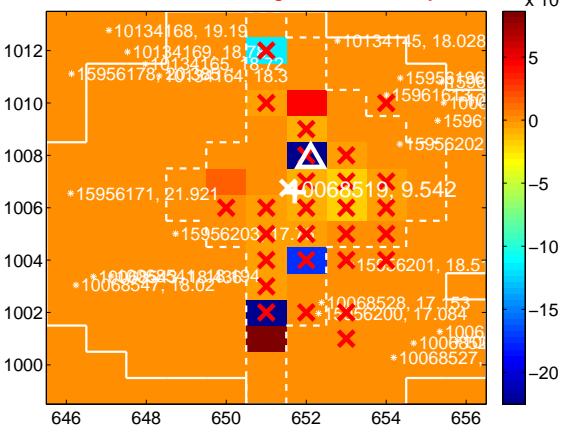
Q1 no difference image



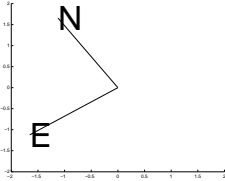
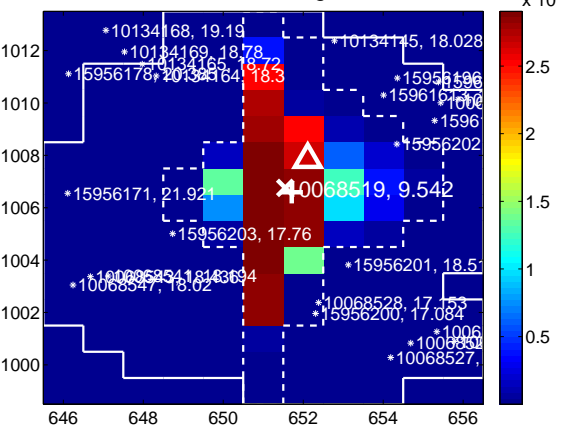
Q1 no OOT image



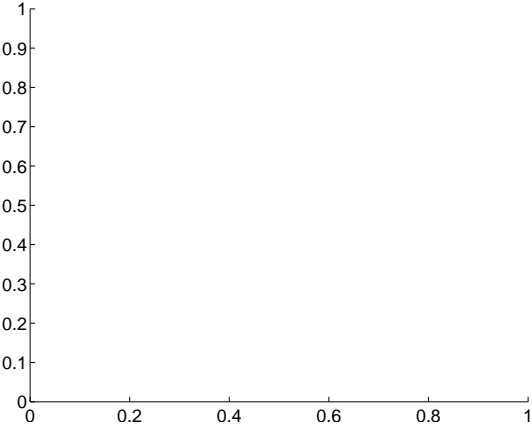
Q2 difference image. Poor Quality



Q2 OOT image



Q3 no difference image



Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

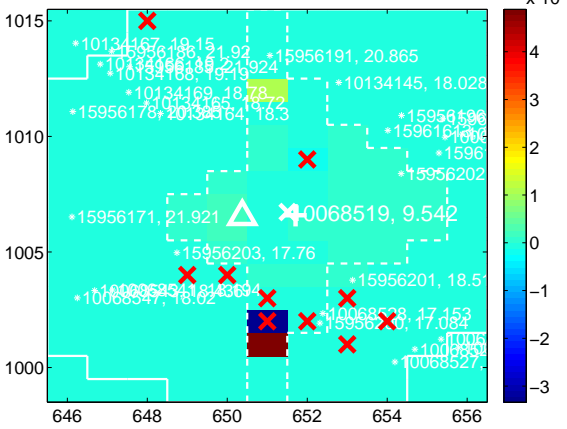
Q5 no difference image



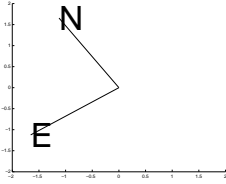
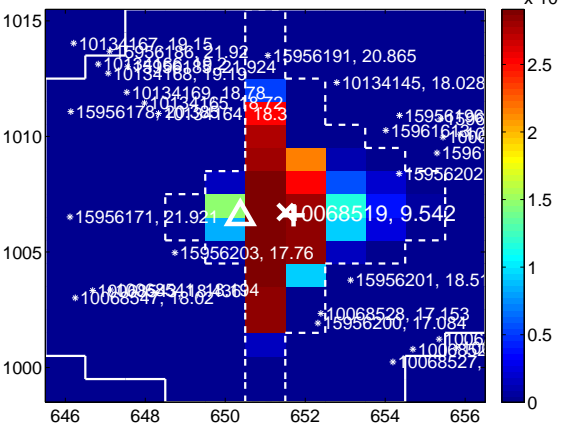
Q5 no OOT image



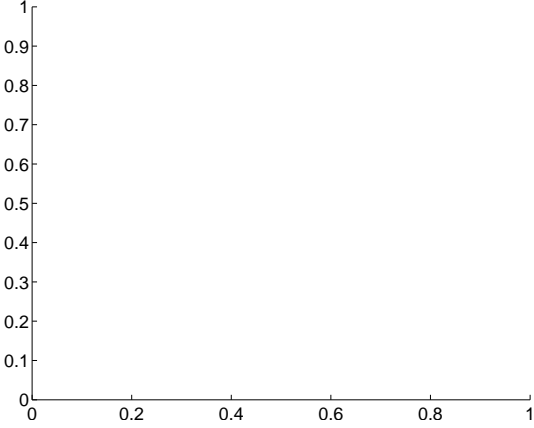
Q6 difference image. Poor Quality



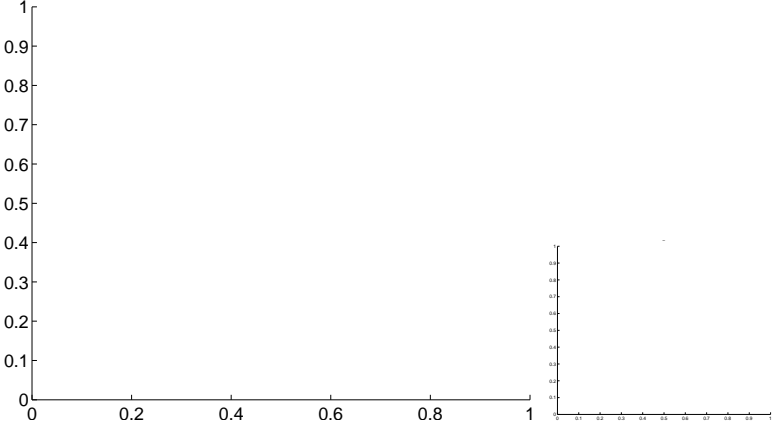
Q6 OOT image



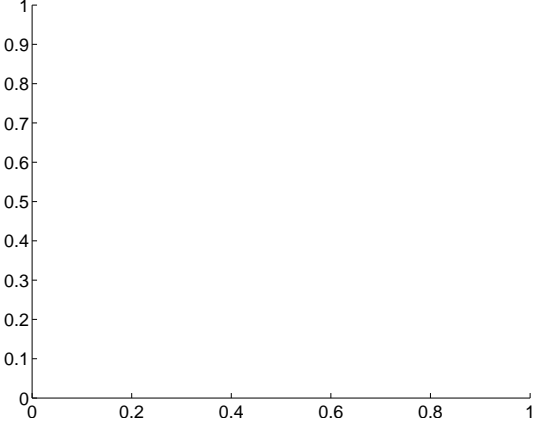
Q7 no difference image



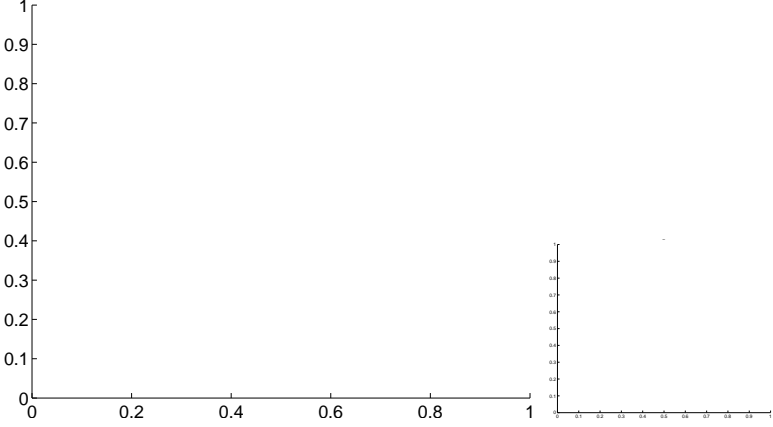
Q7 no OOT image



Q8 no difference image



Q8 no OOT image





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

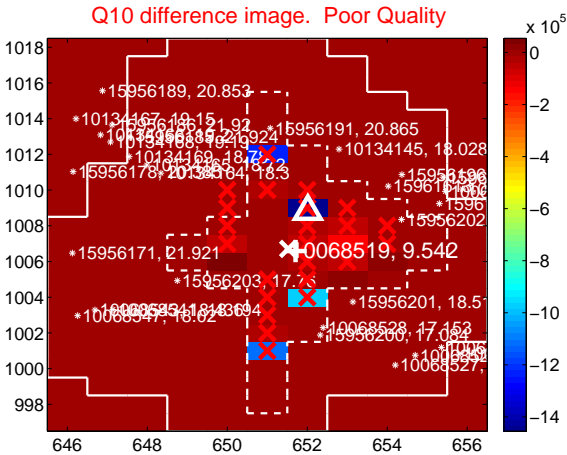
Q9 no difference image



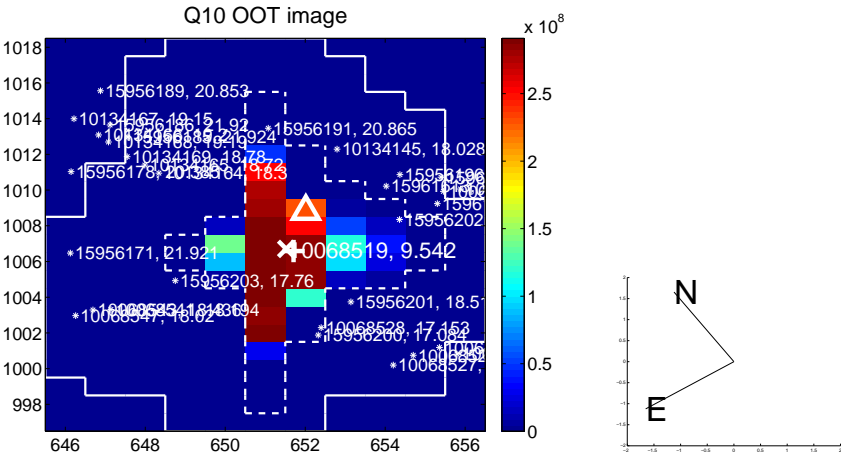
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



Q12 no difference image



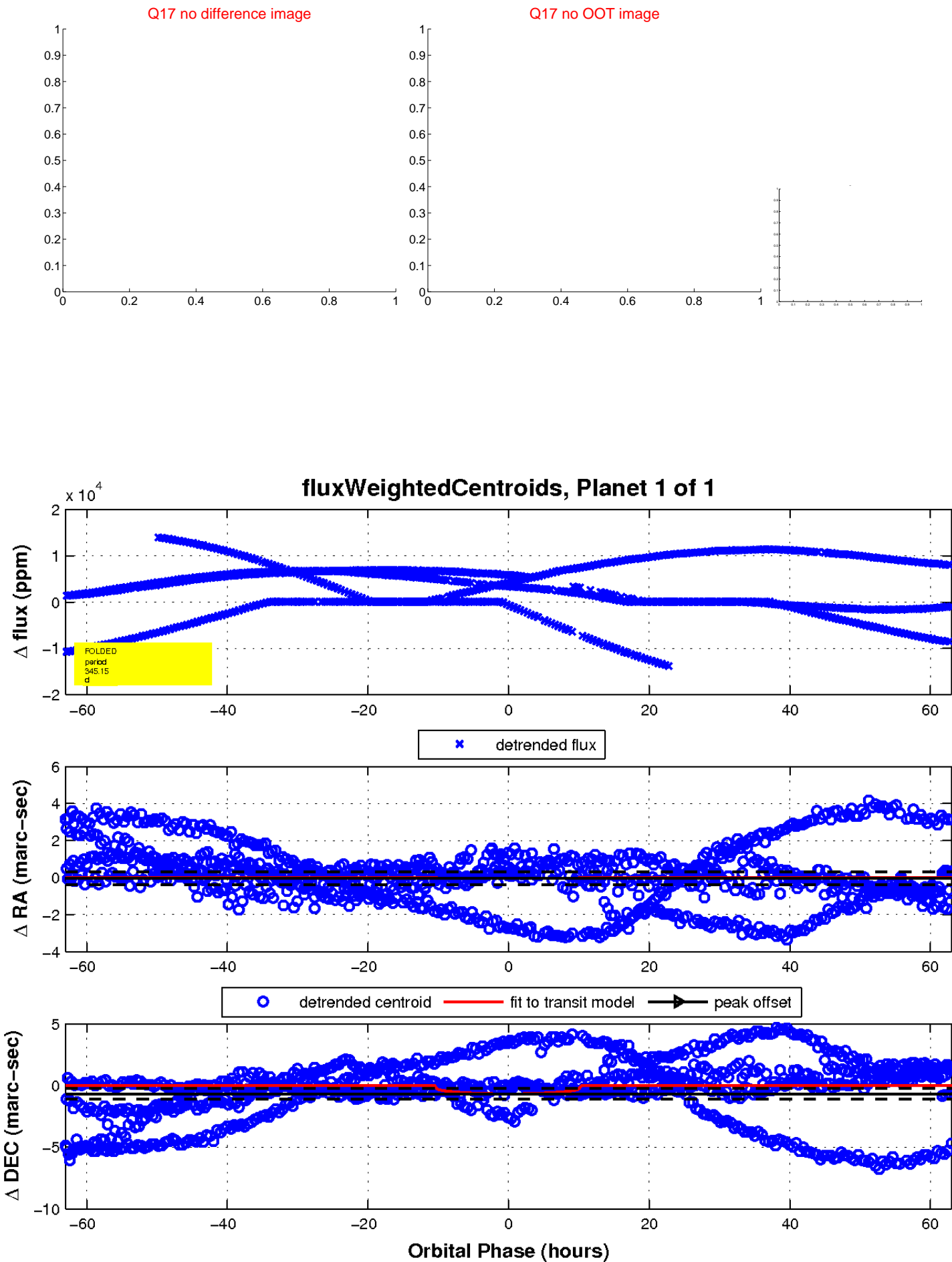
Q12 no OOT image



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

