

# KIC 008242048

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008242048-01	OBS	No	367.035099	238.463357	1790.9	28.401	10.8	10.4	0.98	5867	7.93	0.97

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008242048-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—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.

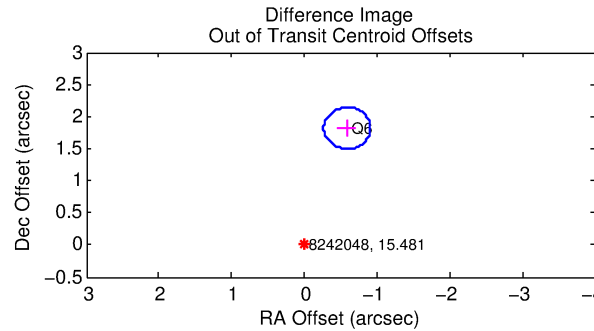
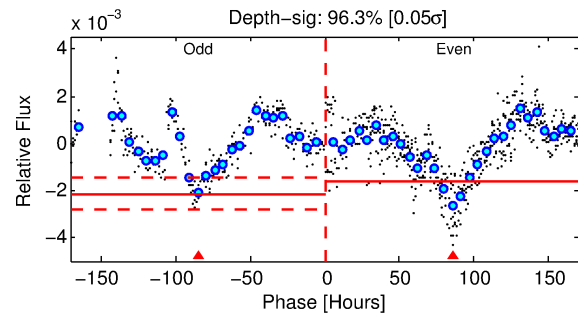
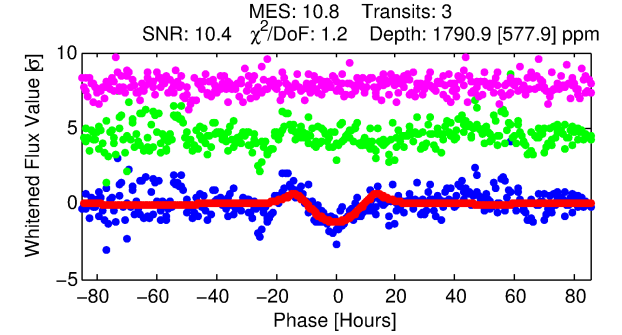
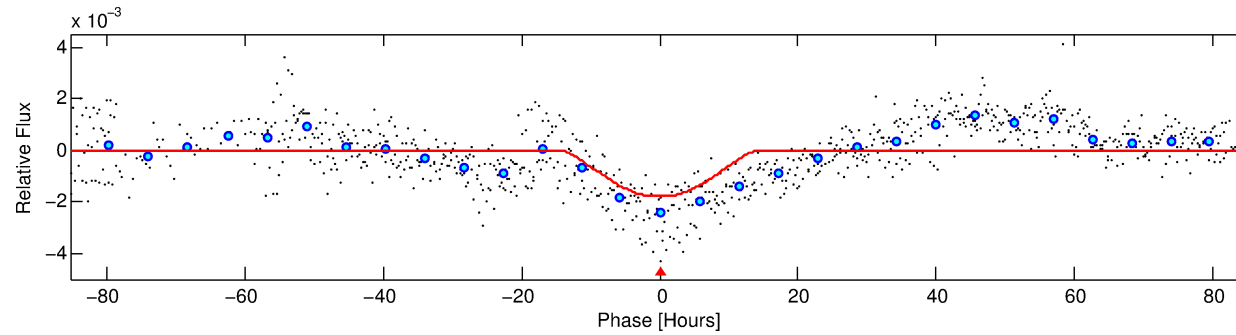
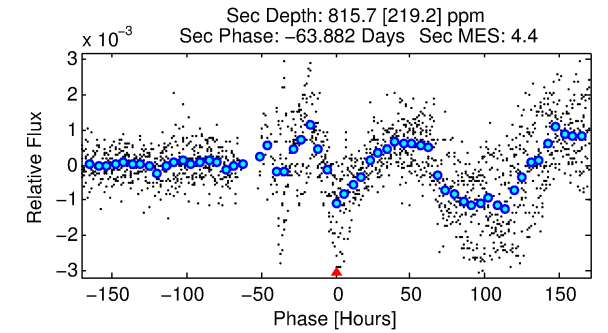
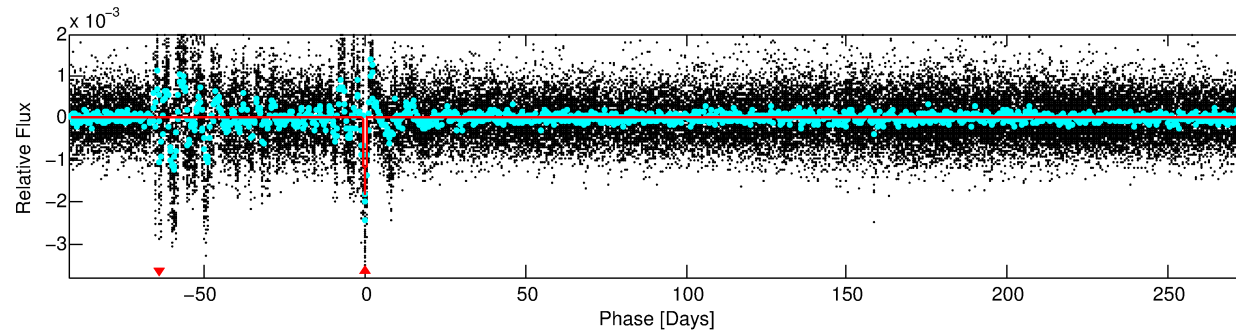
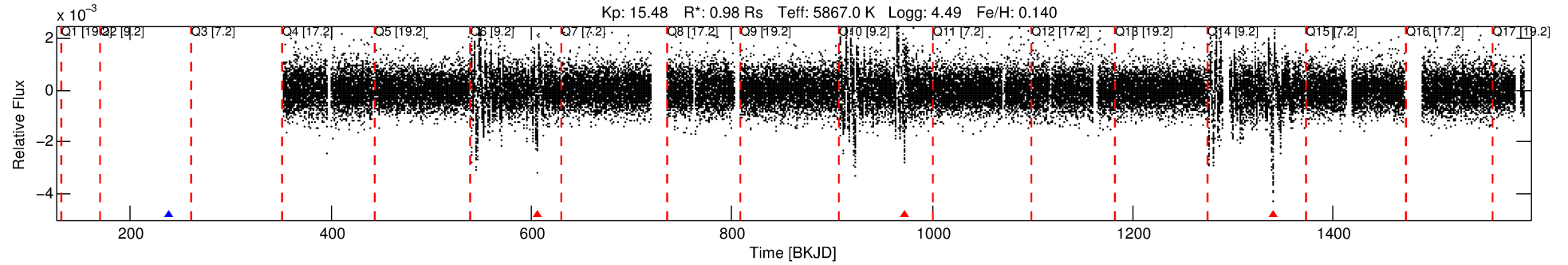
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008242048-01

No Significant Match Found

# DV One-Page Summary

KIC: 8242048 Candidate: 1 of 1 Period: 367.035 d



## DV Fit Results:

Period = 367.03510 [0.03026] d  
Epoch = 238.4634 [0.0643] BKJD  
Rp/R\* = 0.0741 [0.1523]  
a/R\* = 38.73 [17.42]  
b = 1.00 [0.20]  
Seff = 0.97 [0.39]  
Teq = 253 [26] K  
Rp = 7.93 [16.49] Re  
a = 1.0271 [0.2687] AU  
Ag = 7520.64 [31115.21] [0.24σ]  
Teff = 3642 [3753] K [0.90σ]

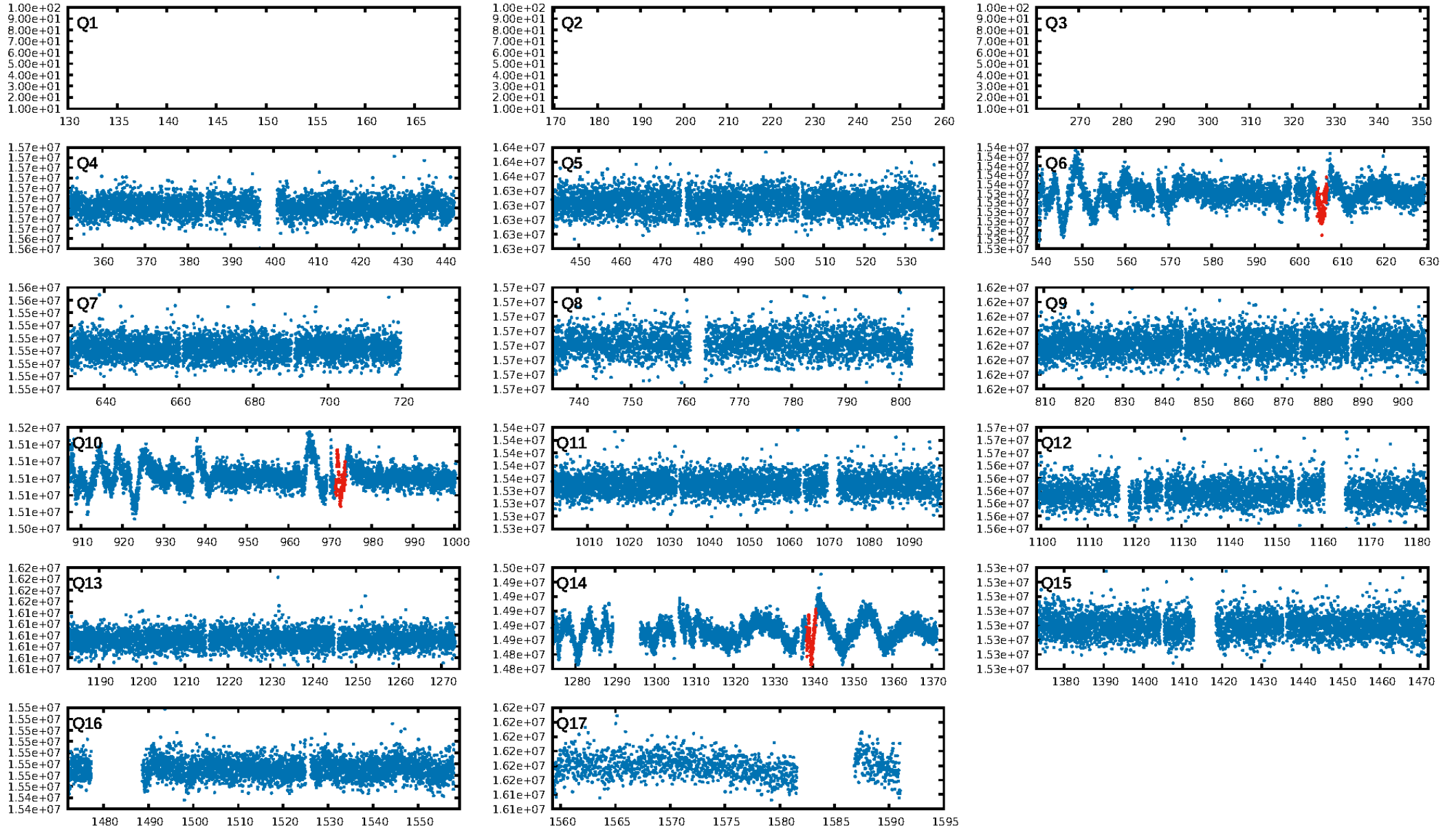
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGoF-sig: 89.7%  
Bootstrap-pfa: 7.36e-14  
RollingBand-fgt: 0.00 [0/3]  
GhostDiagnostic-chr: 1.23  
Centroid-sig: 0.1%  
Centroid-so: 5.363 arcsec [3.38σ]  
OotOffset-rm: 1.911 arcsec [17.70σ]  
KicOffset-rm: 1.968 arcsec [18.31σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

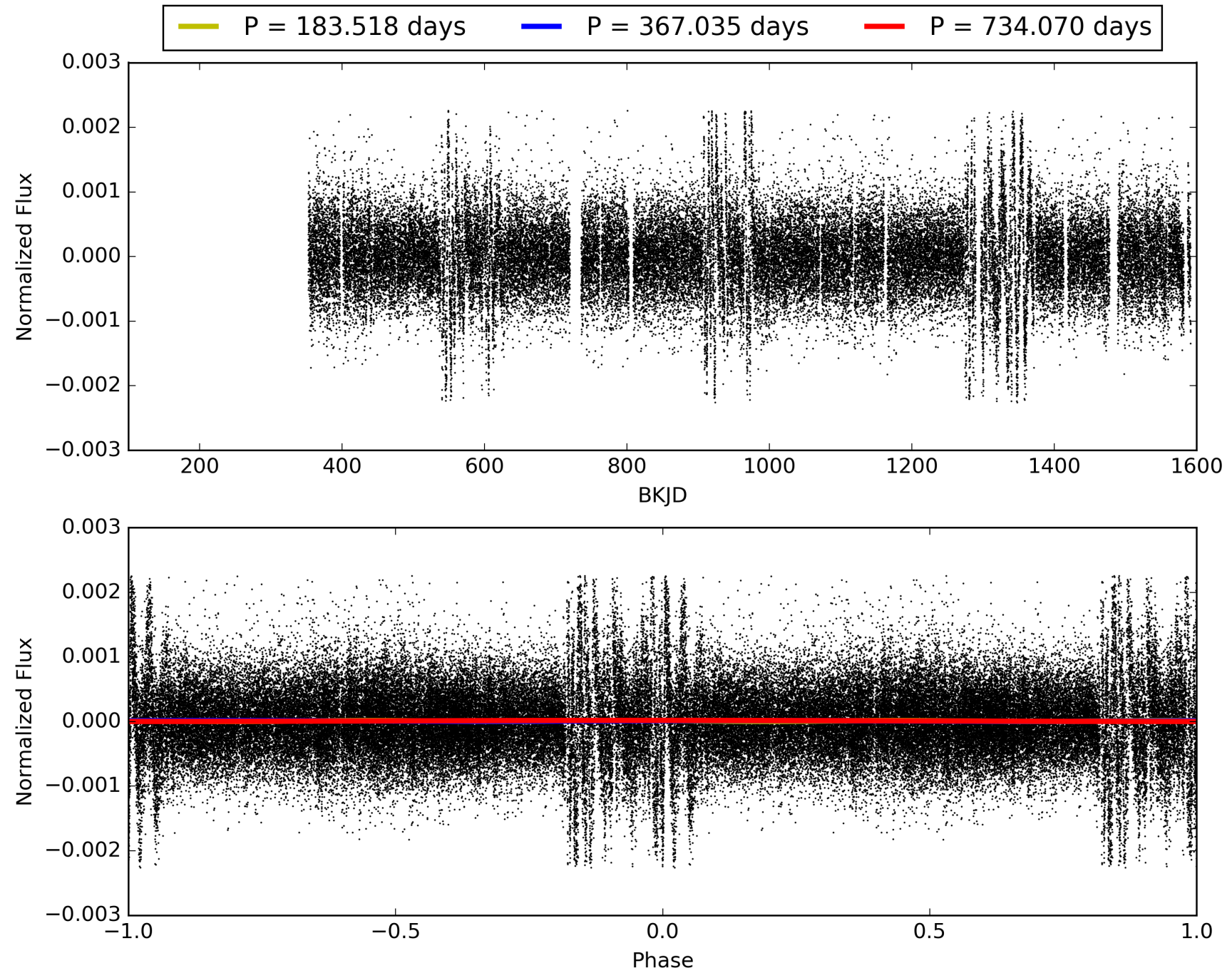
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:39:29 Z

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

# TCE 008242048-01, PDC Light Curves

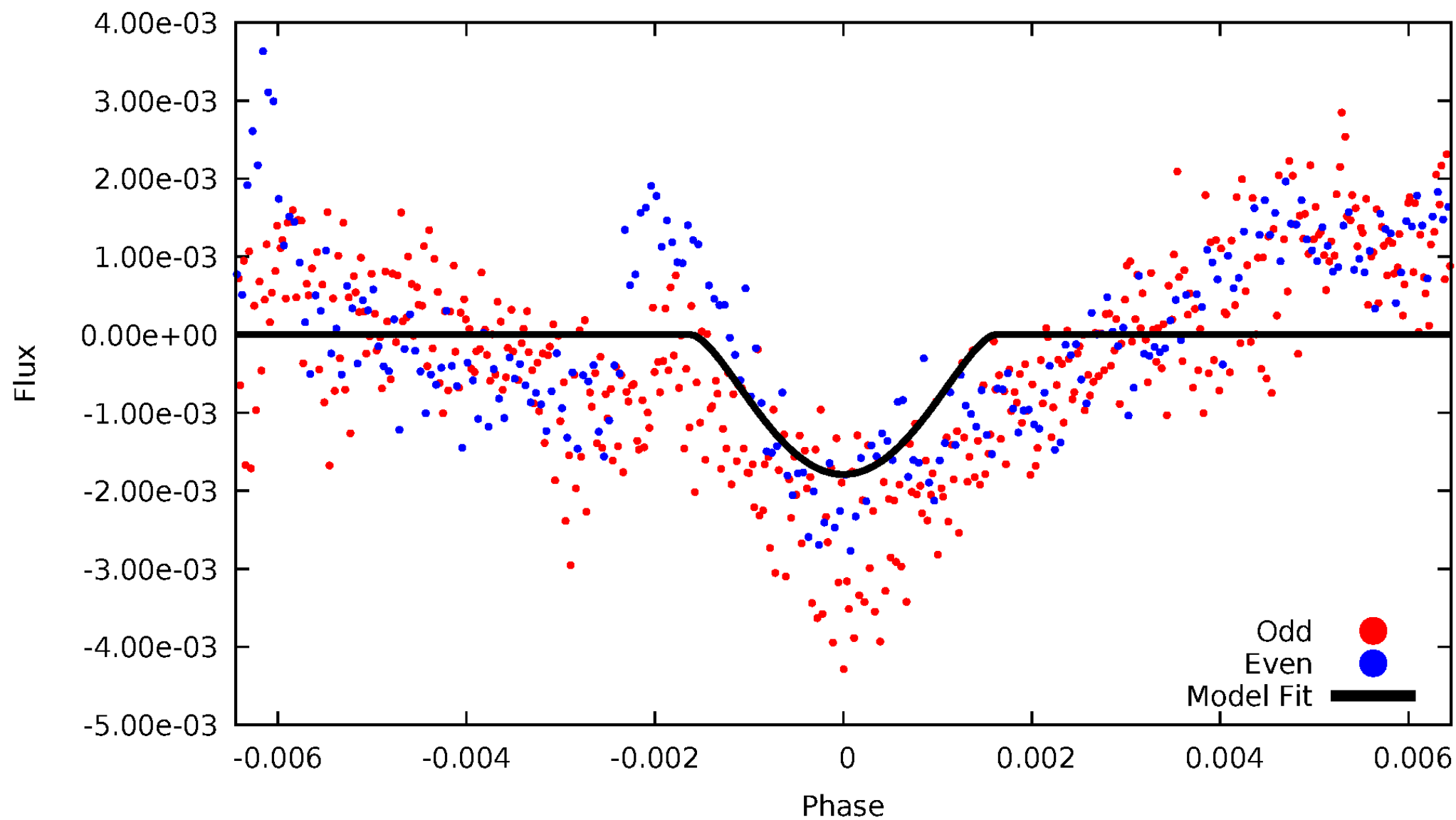


TCE 008242048-01



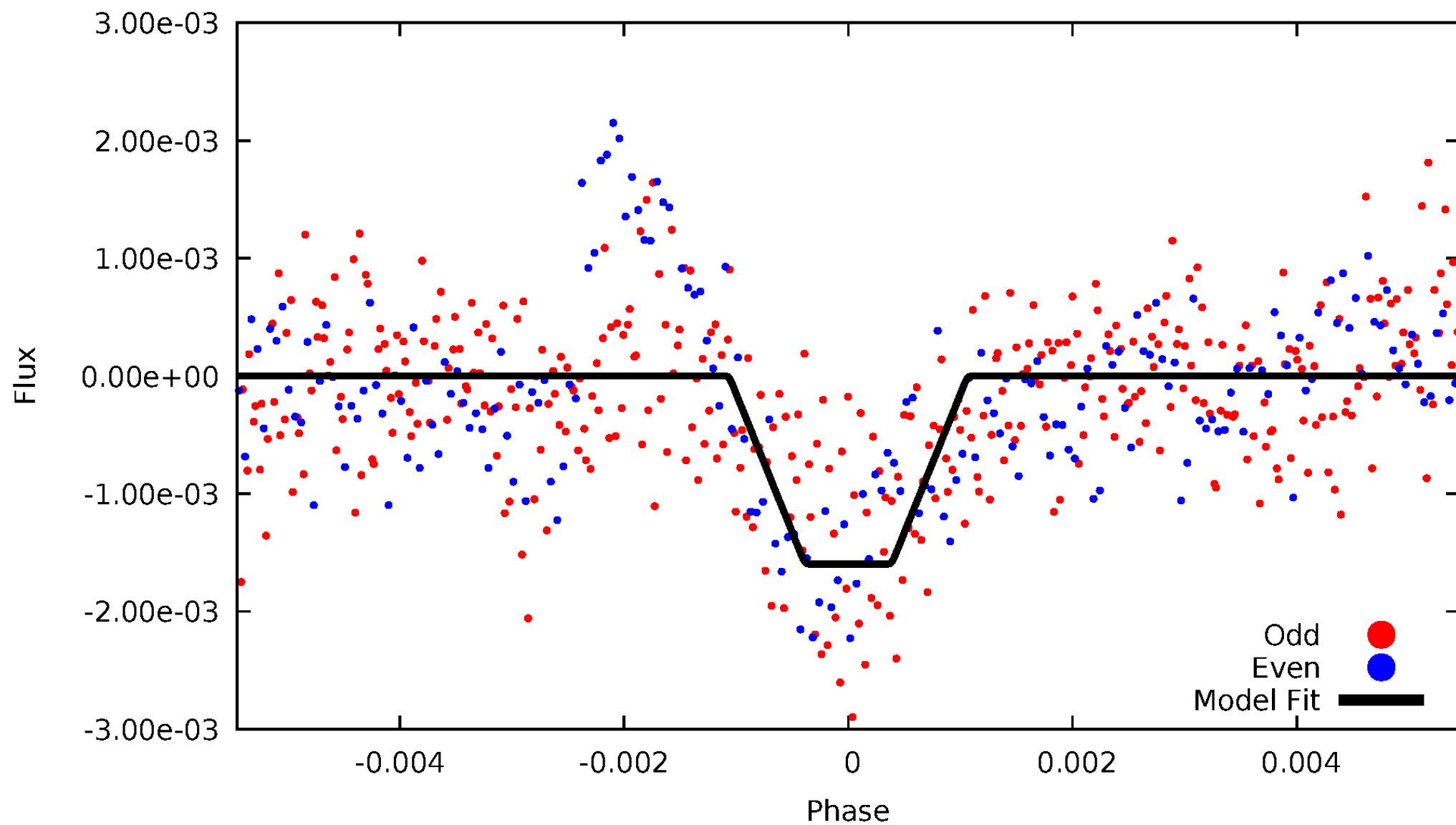
# DV Odd/Even

TCE 008242048-01



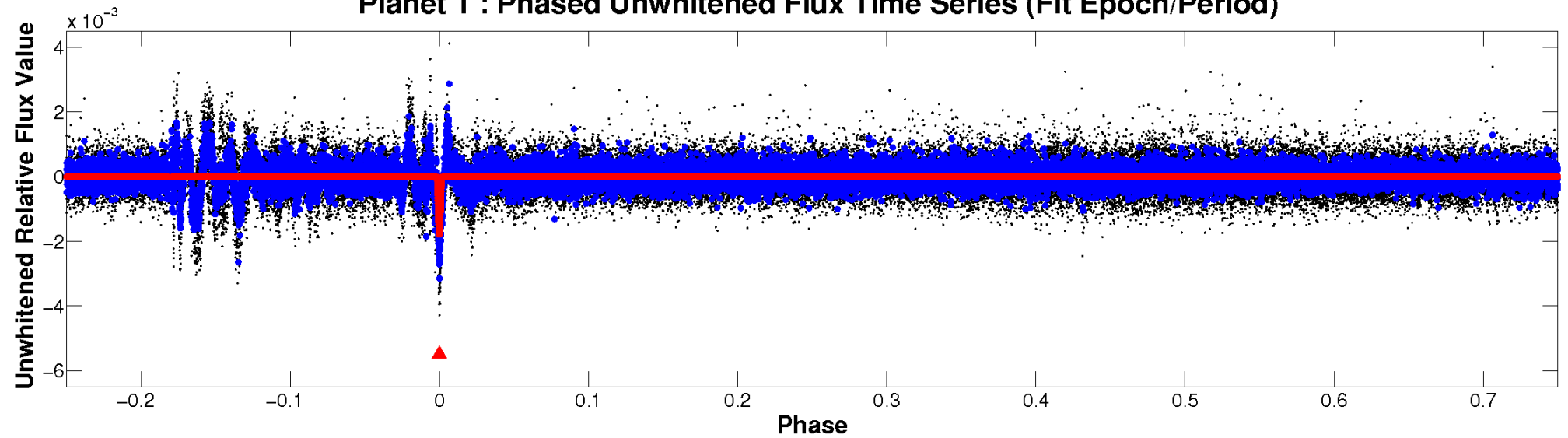
# ALT Odd/Even

TCE 008242048-01

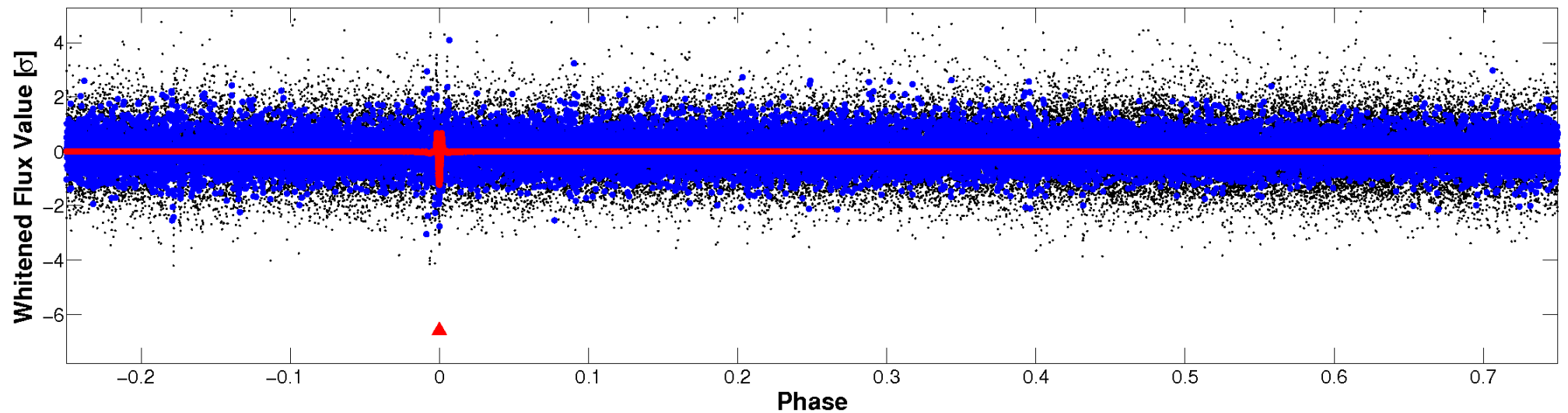


# Non-Whitened Vs. Whitened Light Curve

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



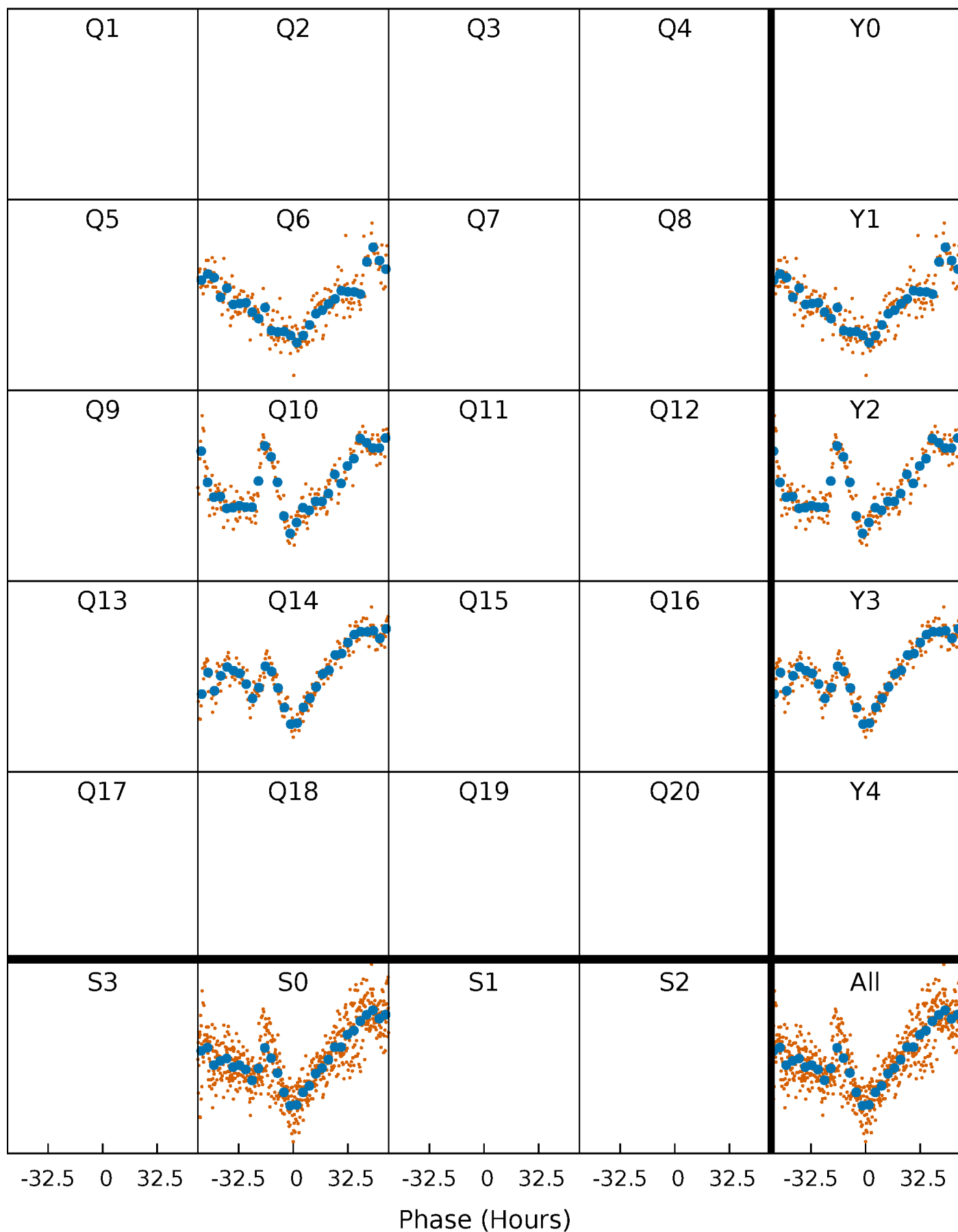
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

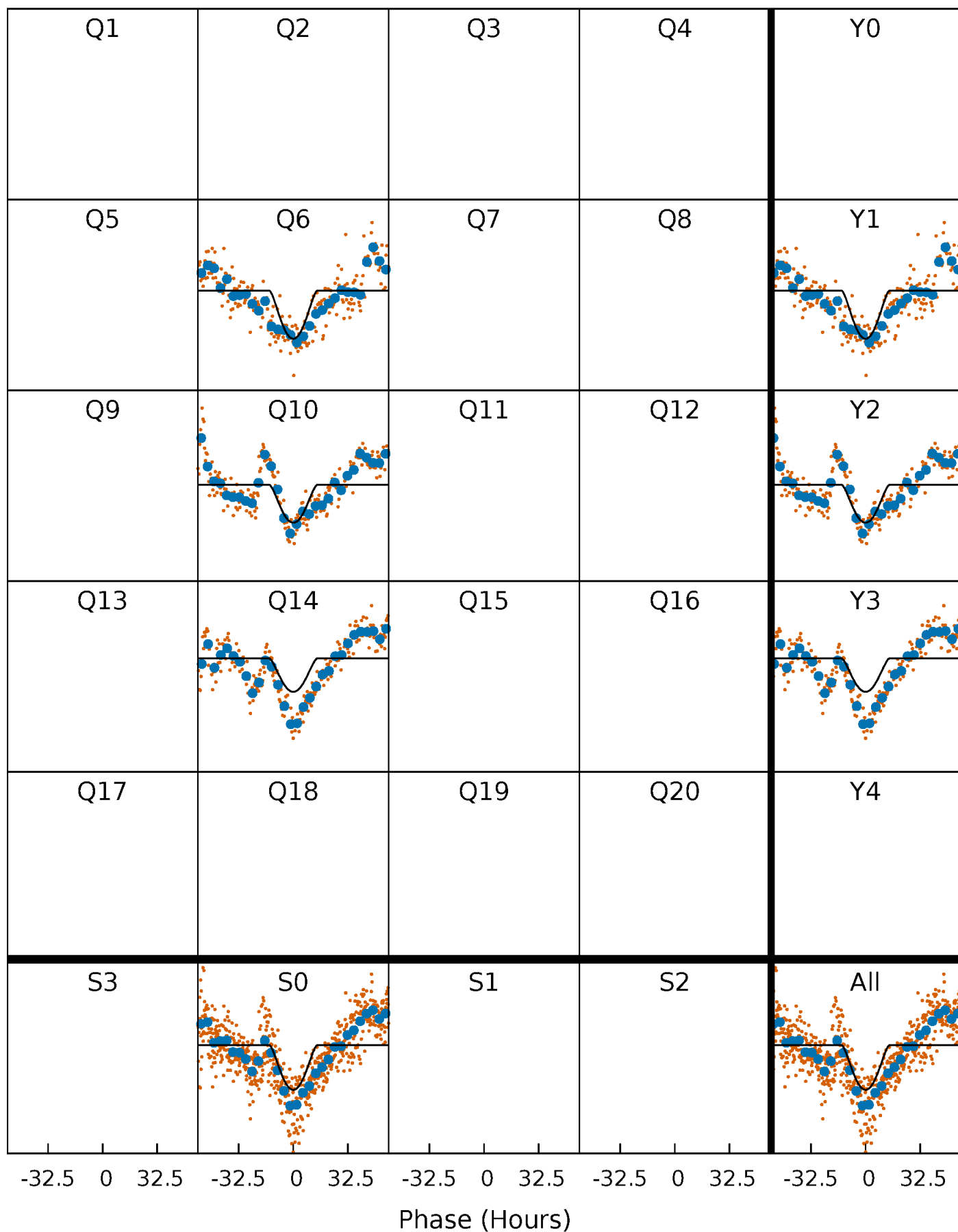
TCE 008242048-01 P=367.035099 Days  $T_0=238.463357$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 008242048-01 P=367.035099 Days  $T_0=238.463357$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

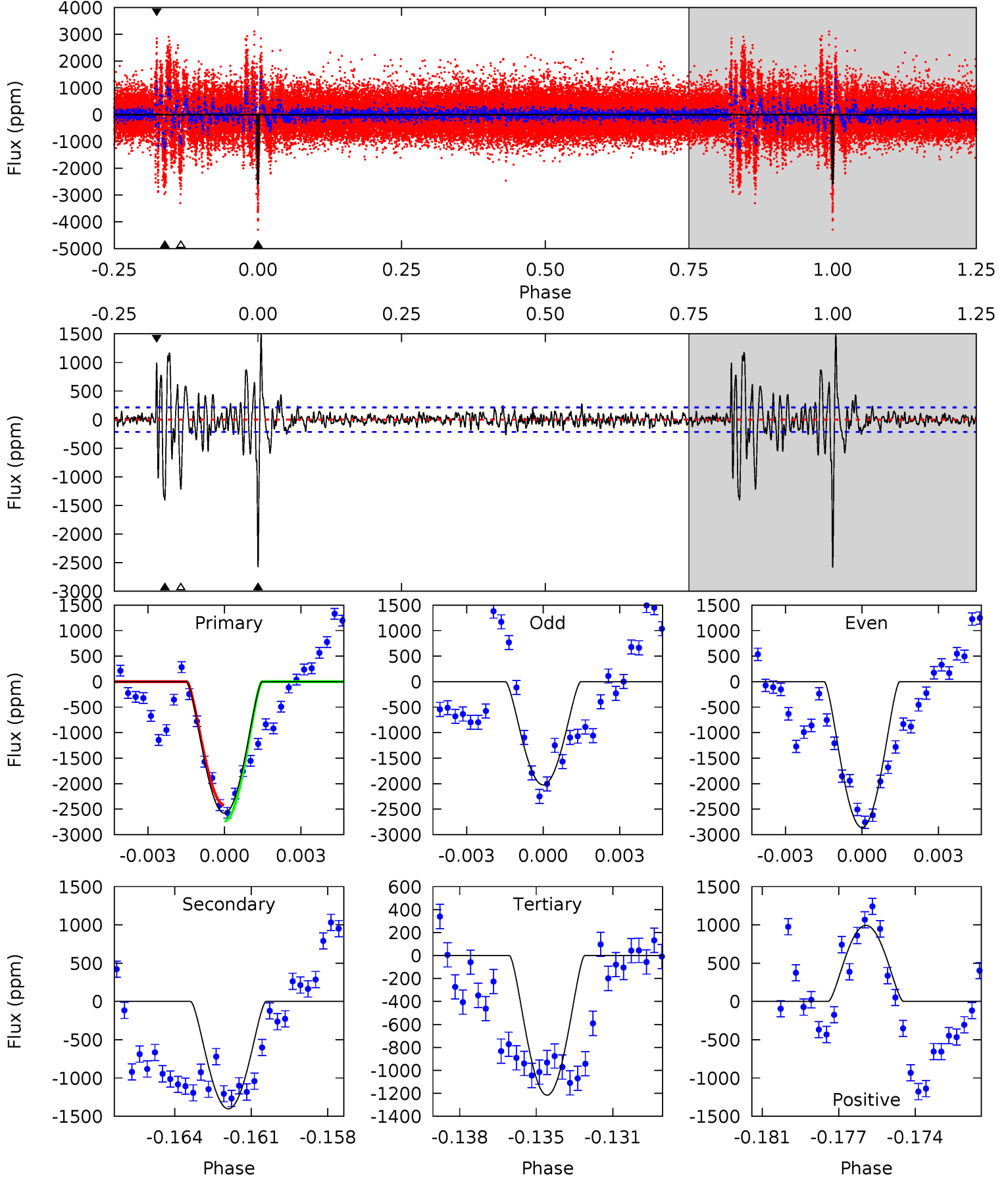
TCE 008242048-01 P=367.000360 Days  $T_0=238.554124$  (BKJD)



# DV Model-Shift Uniqueness Test

008242048-01, P = 367.035099 Days, E = 238.463357 Days

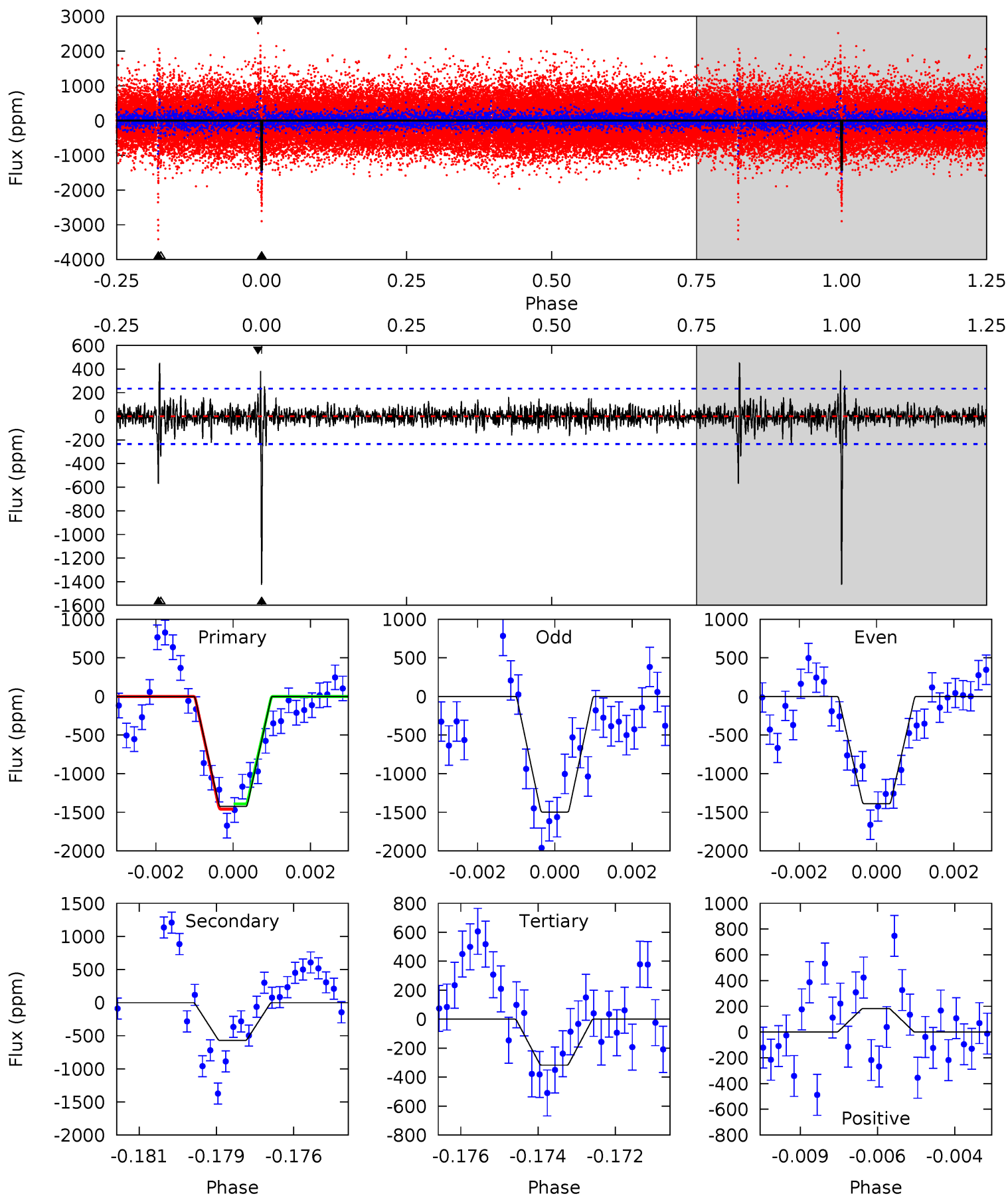
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
63.0	34.2	29.7	24.3	5.24	2.94	4.83	33.3	38.7	4.54	9.98	9.62	1.22	0.37	3.81



# Alt Model-Shift Uniqueness Test

008242048-01, P = 367.000360 Days, E = 238.554124 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
32.3	12.9	7.19	4.12	5.31	3.07	1.19	25.1	28.2	5.73	8.79	1.14	0.95	0.24	0.75



### Stellar Parameters For KIC 008242048

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5867^{+182}_{-203}$	$4.485^{+0.052}_{-0.208}$	$0.140^{+0.200}_{-0.300}$	$0.981^{+0.305}_{-0.102}$	$1.072^{+0.125}_{-0.137}$	$1.600^{+0.417}_{-0.831}$
	+3%/-3%	+1%/-5%	+143%/-214%	+31%/-10%	+12%/-13%	+26%/-52%
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 008242048-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-1402 \pm 41$	$15.91^{+14.64}_{-10.46}$	$360^{+27}_{-18}$	$3503^{+1670}_{-576}$	$3106^{+24601}_{-2222}$
Alt.	$-570 \pm 44$	$13.78^{+12.95}_{-9.71}$	$361^{+27}_{-18}$	$3175^{+1589}_{-512}$	$1693^{+16864}_{-1231}$

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

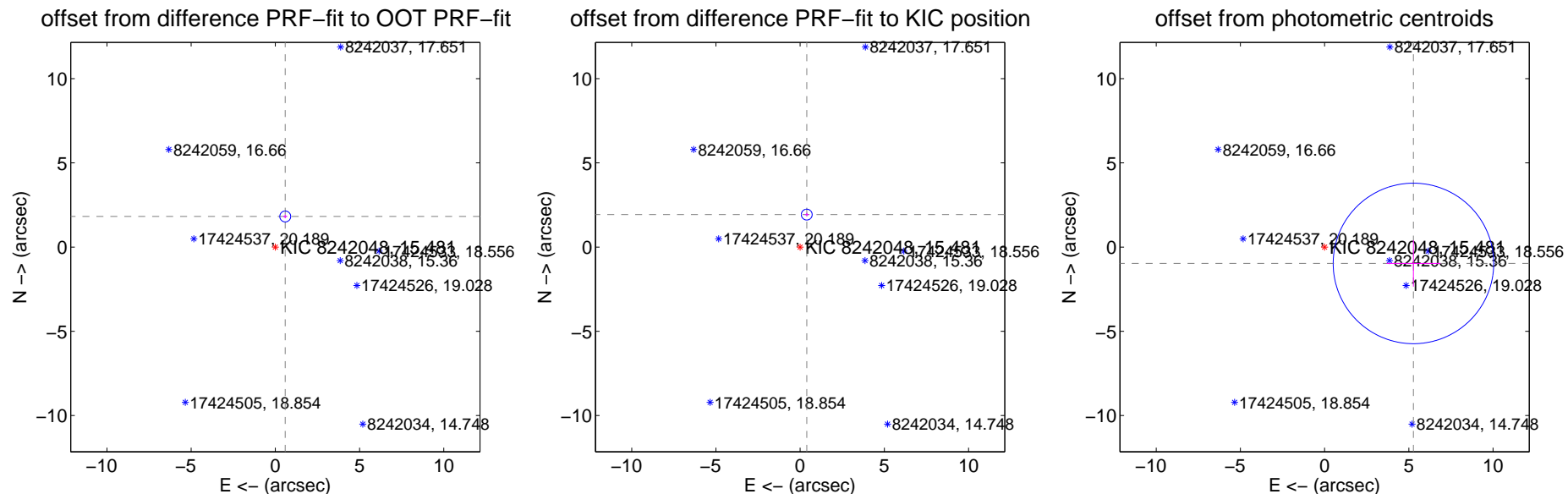
## DV Centroid Data

Supplemental centroid analysis for 008242048-01. Kepler magnitude: 15.48. Transit SNR 10.41

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.911 \pm 0.108$	17.70	$-0.587 \pm 0.116$	$1.818 \pm 0.107$
PRF-fit source offset from KIC position	$1.968 \pm 0.107$	18.31	$-0.391 \pm 0.116$	$1.929 \pm 0.107$
photometric centroid source offset	$5.36 \pm 1.59$	3.38	$-5.27 \pm 1.60$	$-0.97 \pm 1.38$



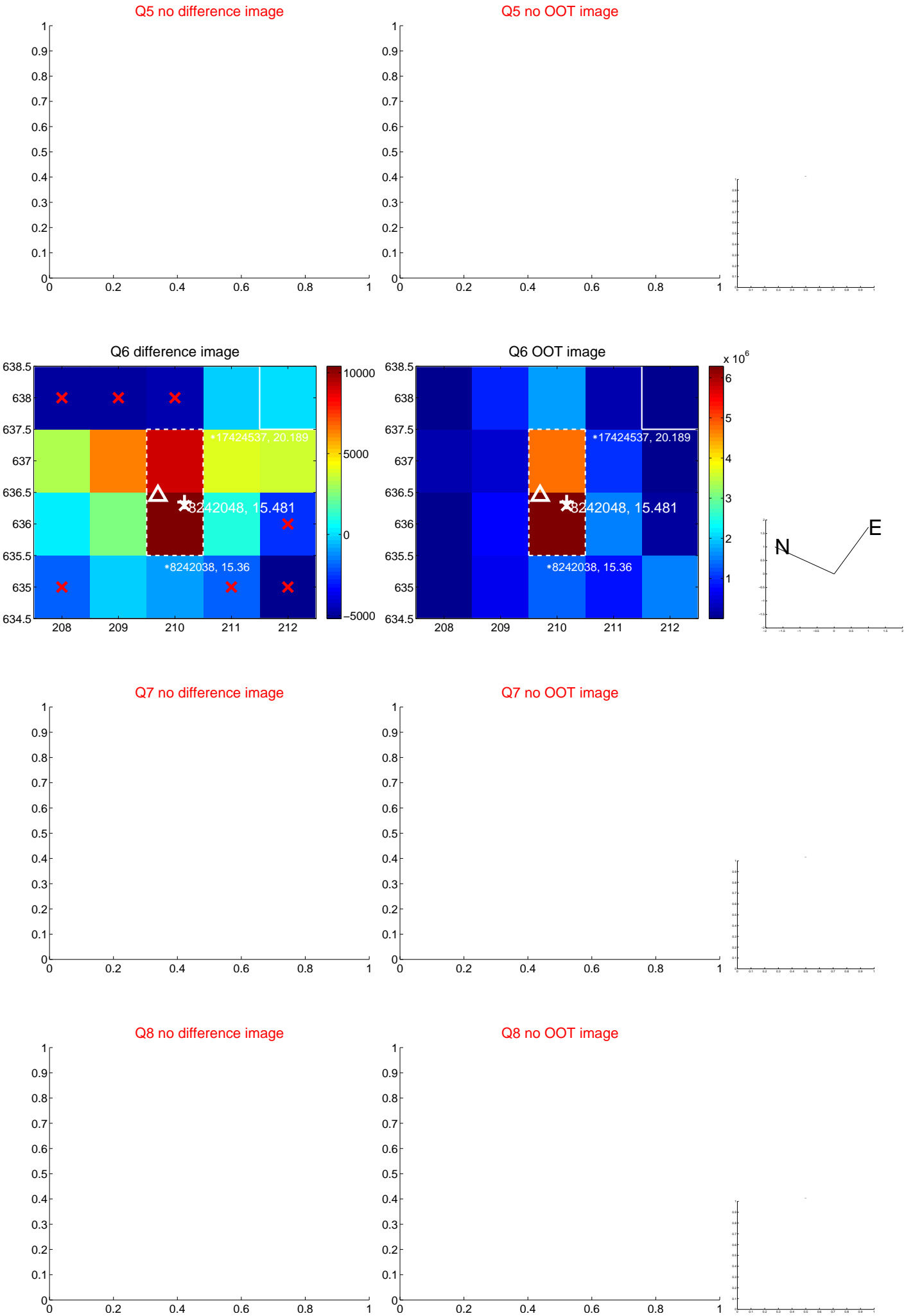
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



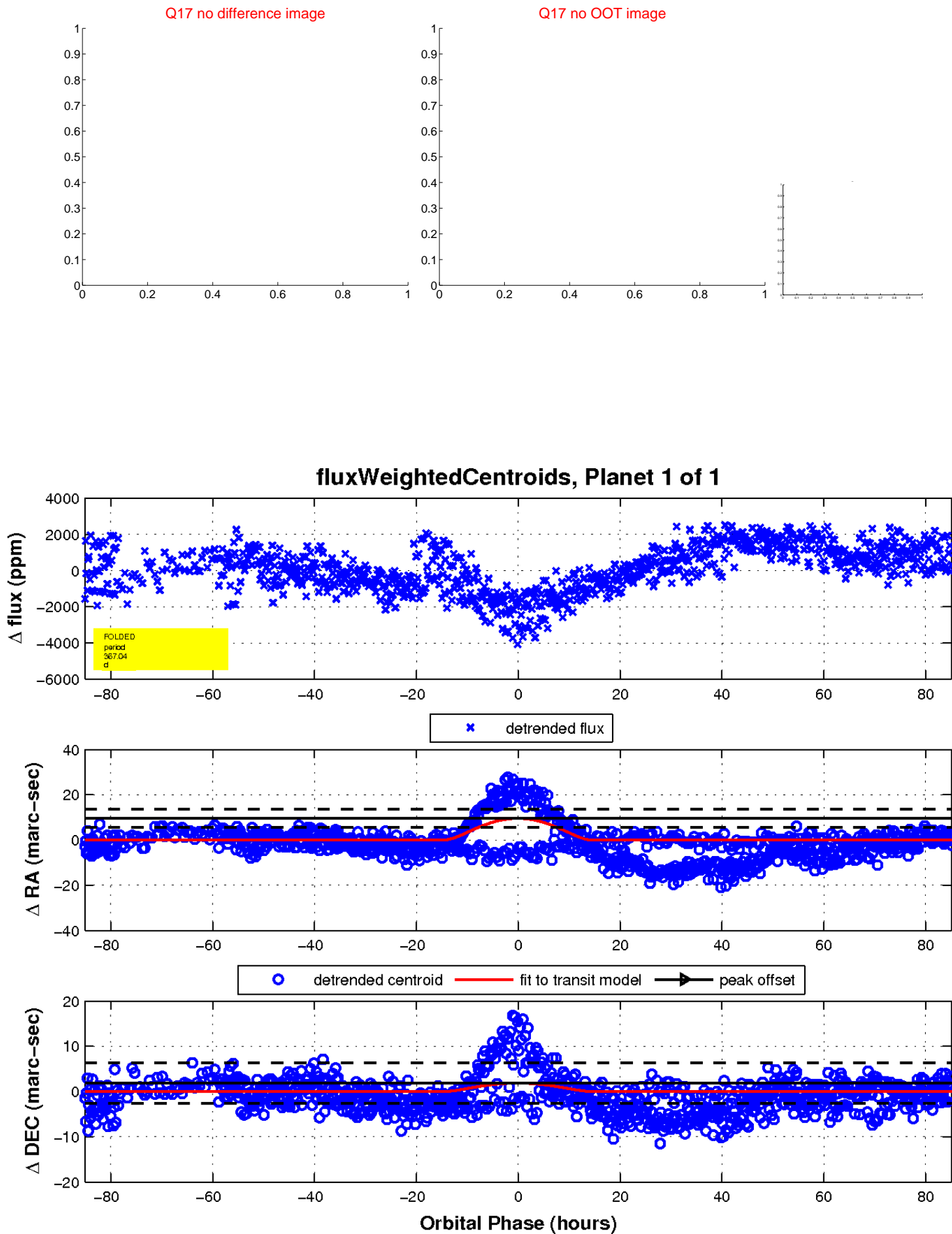
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : 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

