

# KIC 005374838

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005374838-01	OBS	5155.01	230.180804	230.052312	3518.9	13.329	52.8	53.4	1.25	6313	7.37	3.42

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005374838-01	OBS	PC	0.95	0	0	0	0	NO_COMMENT

**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.

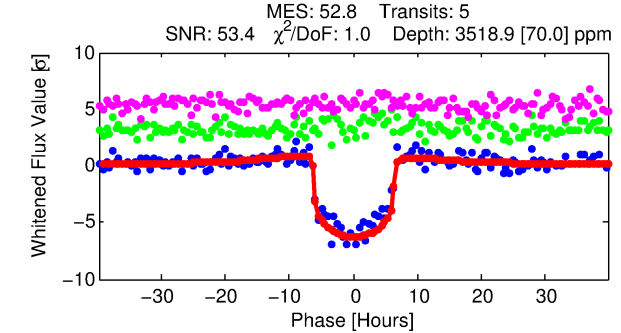
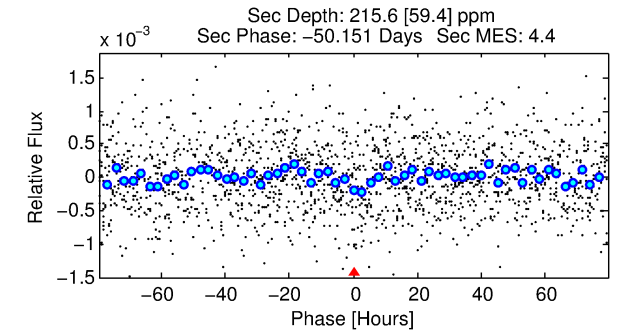
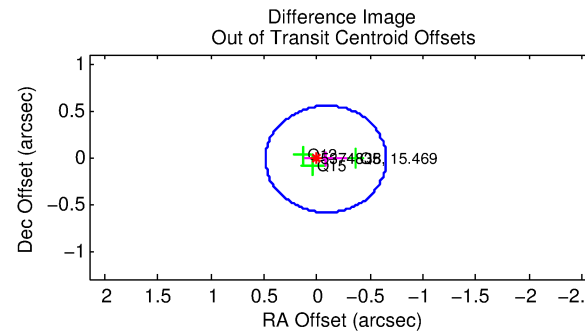
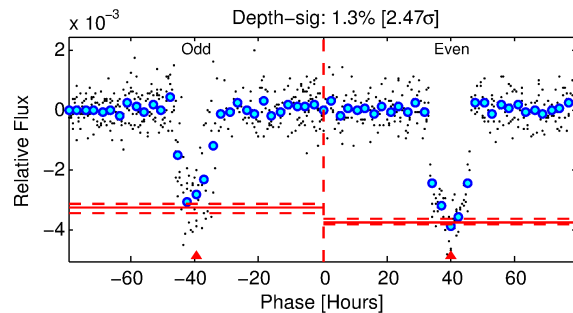
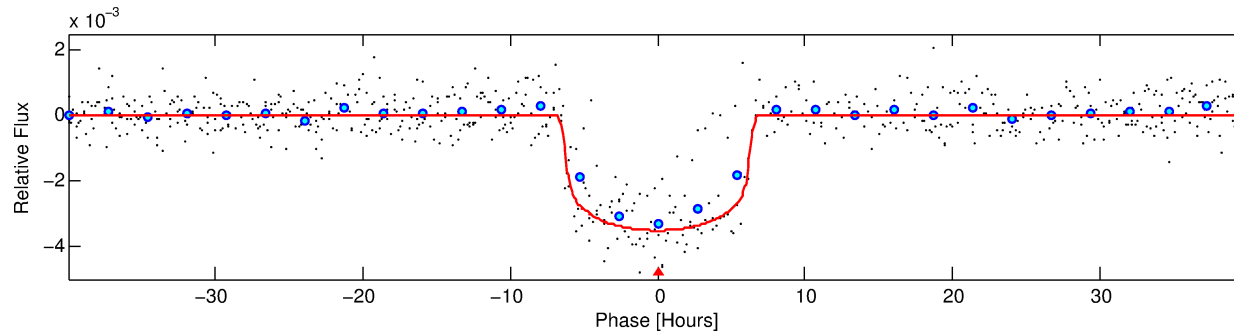
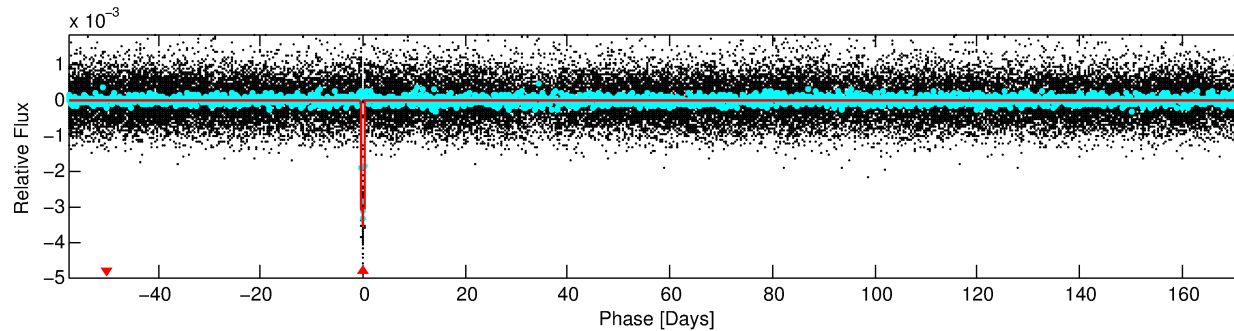
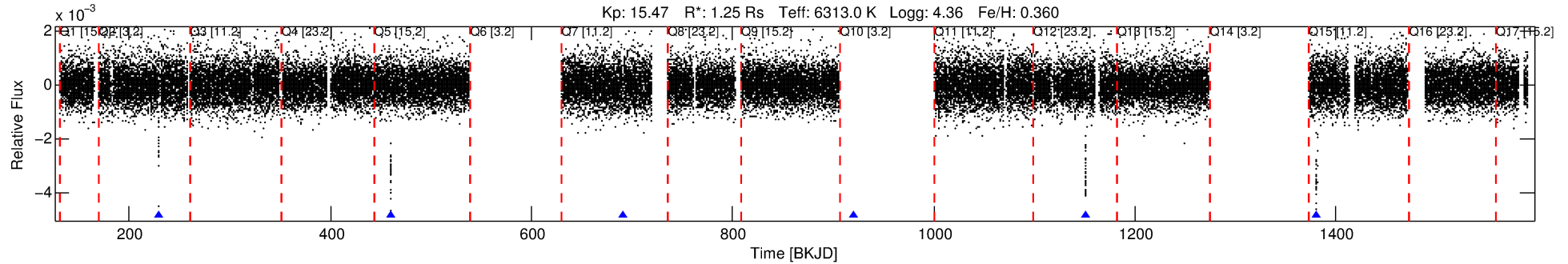
## Ephemeris Match Information For 005374838-01

No Significant Match Found

# DV One-Page Summary

KIC: 5374838 Candidate: 1 of 1 Period: 230.181 d

KOI: K05155.01 Corr: 0.999



## DV Fit Results:

Period = 230.18080 [0.00122] d  
Epoch = 230.0523 [0.0041] BKJD  
Rp/R\* = 0.0542 [0.0031]  
a/R\* = 138.76 [37.66]  
b = 0.07 [3.76]  
Seff = 3.42 [0.54]  
Teq = 347 [14] K  
Rp = 7.37 [0.97] Re  
a = 0.8043 [0.0810] AU  
Ag = 1411.17 [470.63] [3.00 $\sigma$ ]  
Teffp = 3285 [249] K [11.77 $\sigma$ ]

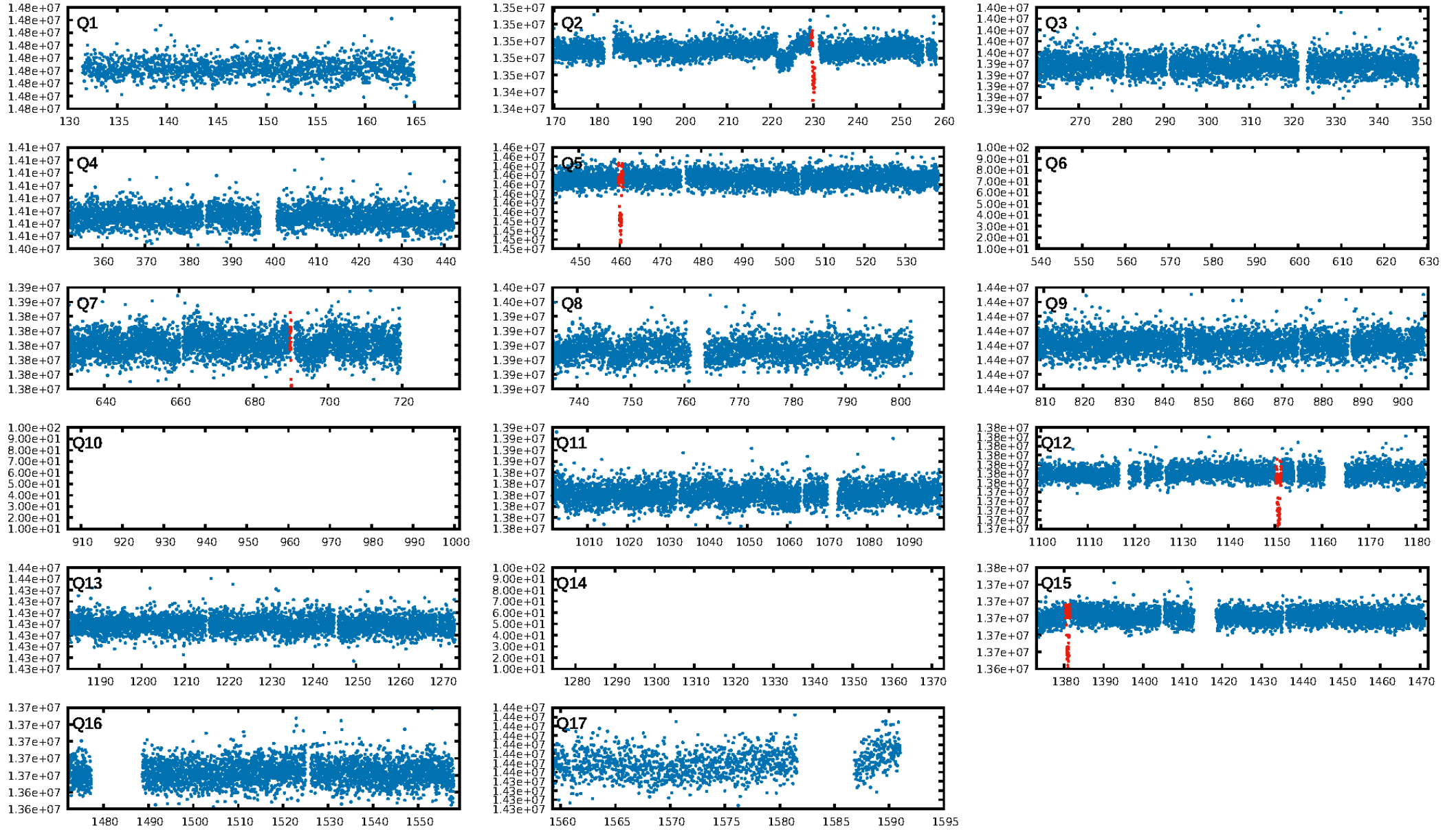
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 7.487  
Centroid-sig: 15.3%  
Centroid-so: 0.335 arcsec [1.34 $\sigma$ ]  
OotOffset-rm: 0.087 arcsec [0.46 $\sigma$ ]  
KicOffset-rm: 0.175 arcsec [1.06 $\sigma$ ]  
OotOffset-st: 0/1/1/1 [3]  
KicOffset-st: 0/1/1/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

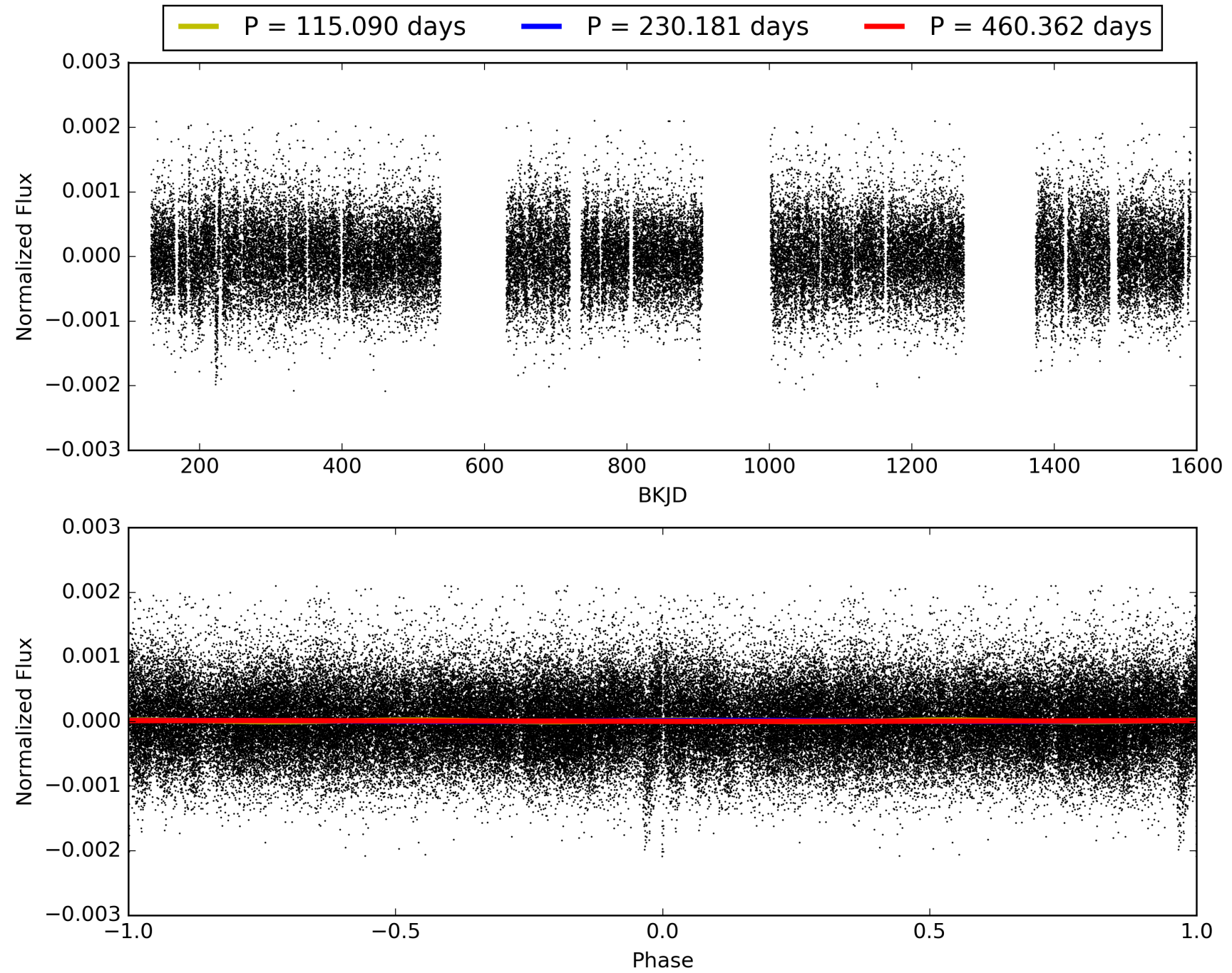
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 19:21:47 Z

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

# TCE 005374838-01, PDC Light Curves

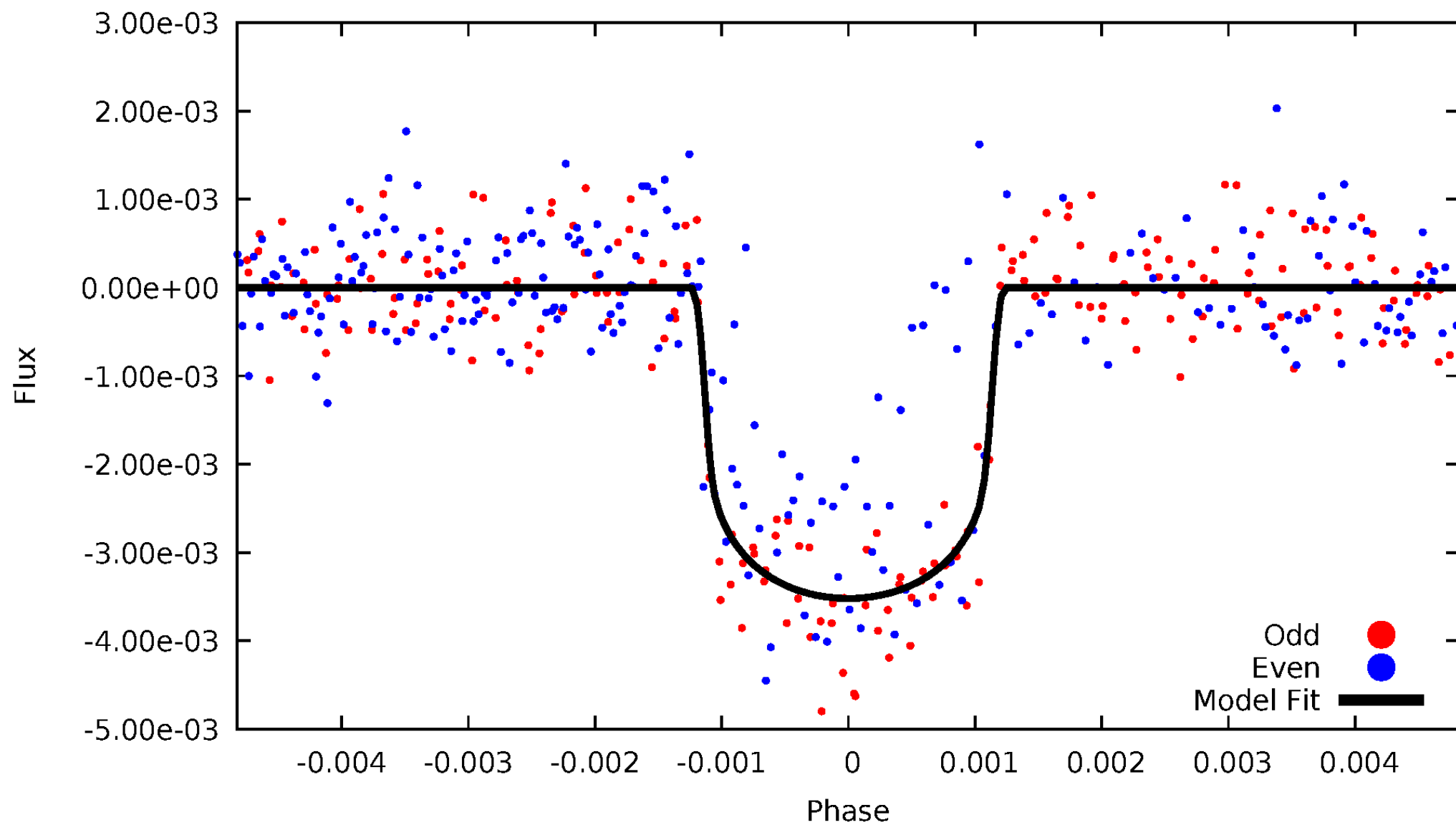


TCE 005374838-01



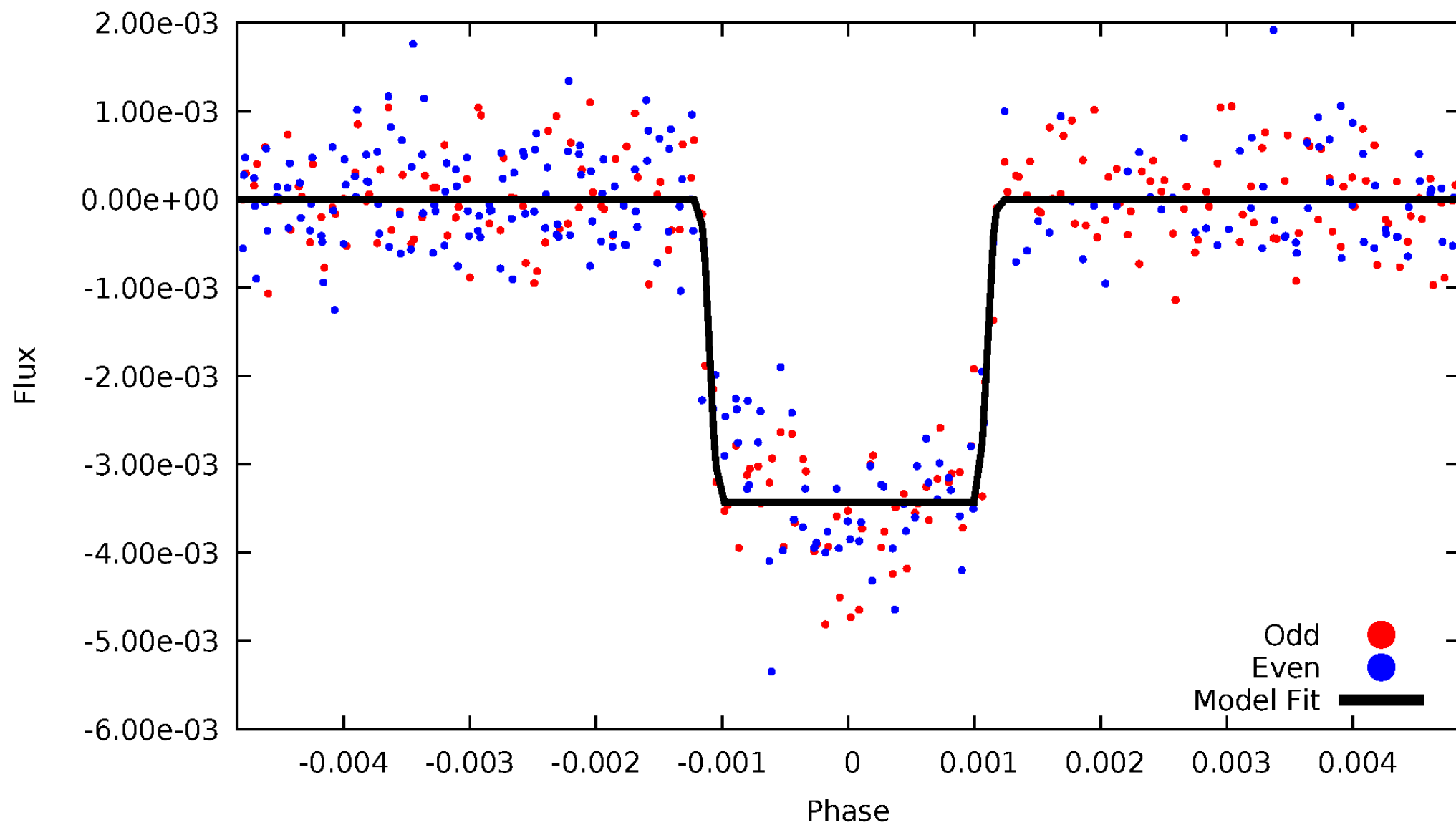
# DV Odd/Even

TCE 005374838-01



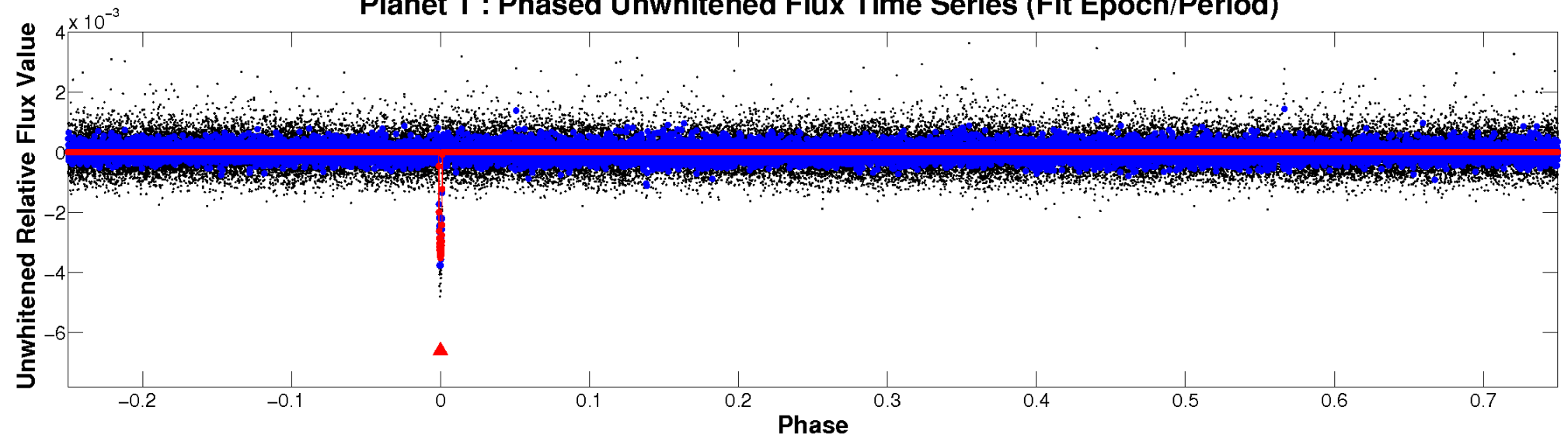
# ALT Odd/Even

TCE 005374838-01

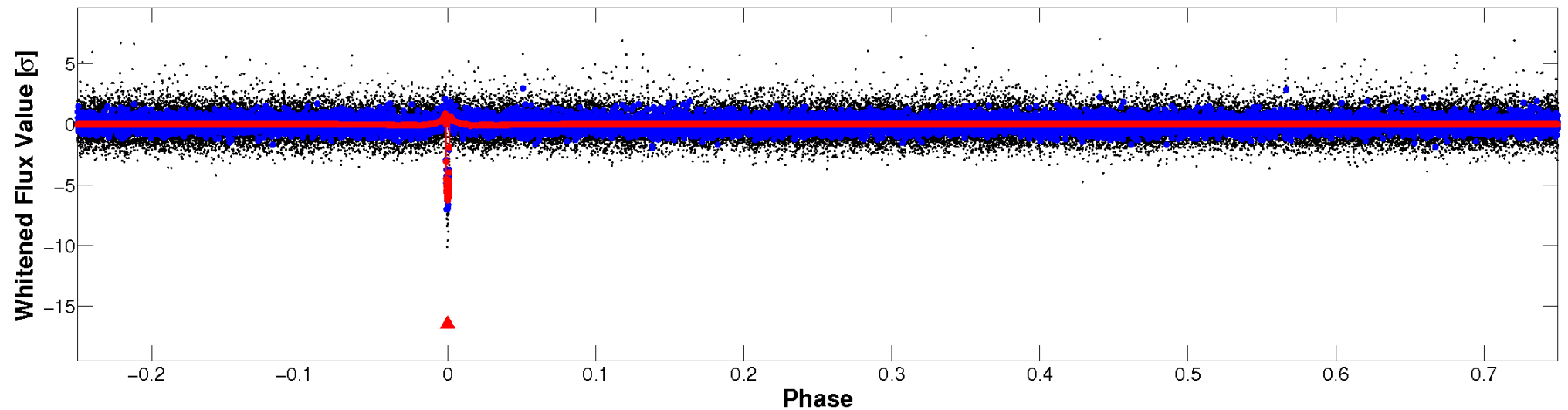


# Non-Whitened Vs. Whitened Light Curve

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

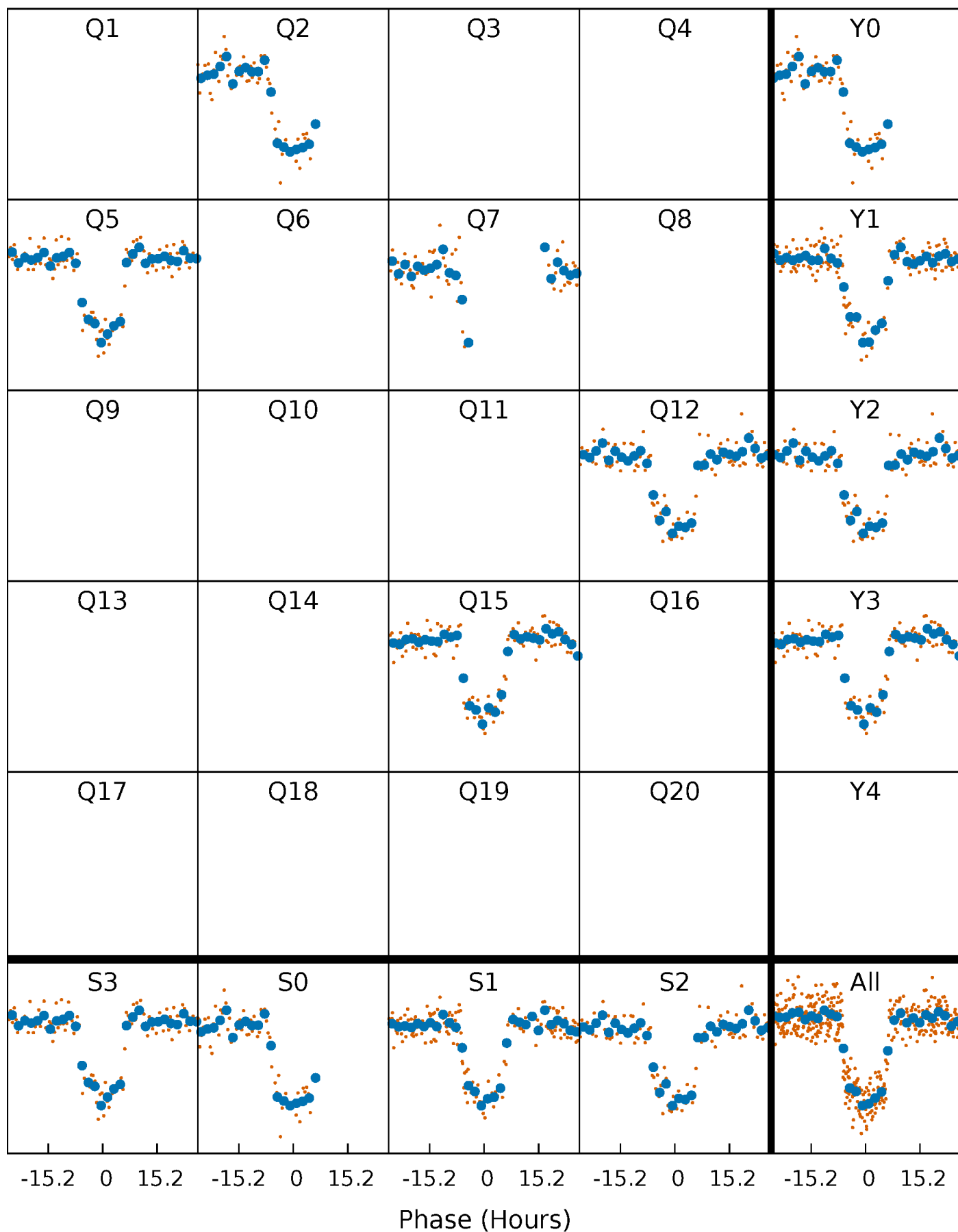


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

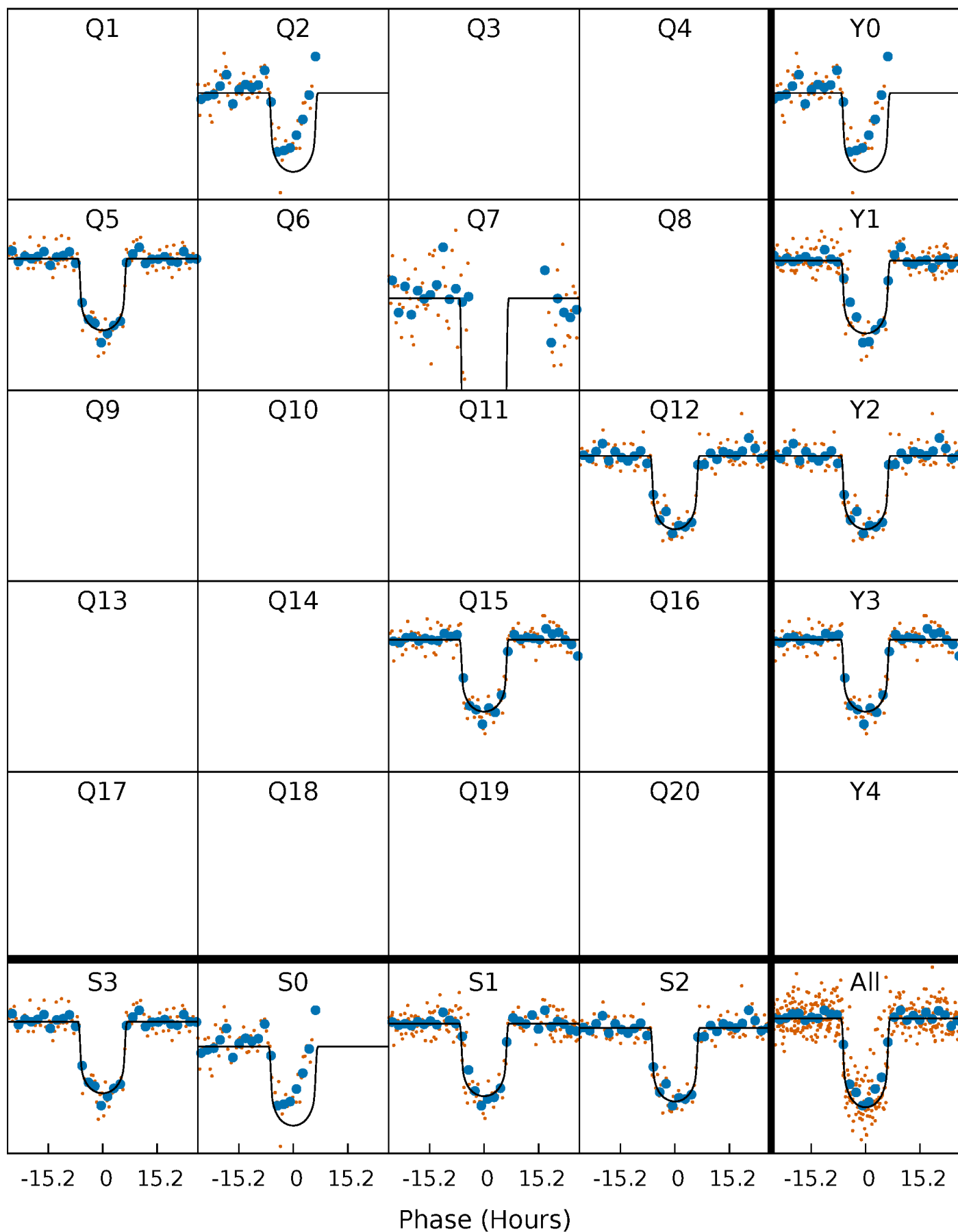
TCE 005374838-01 P=230.180804 Days  $T_0=230.052312$  (BKJD)





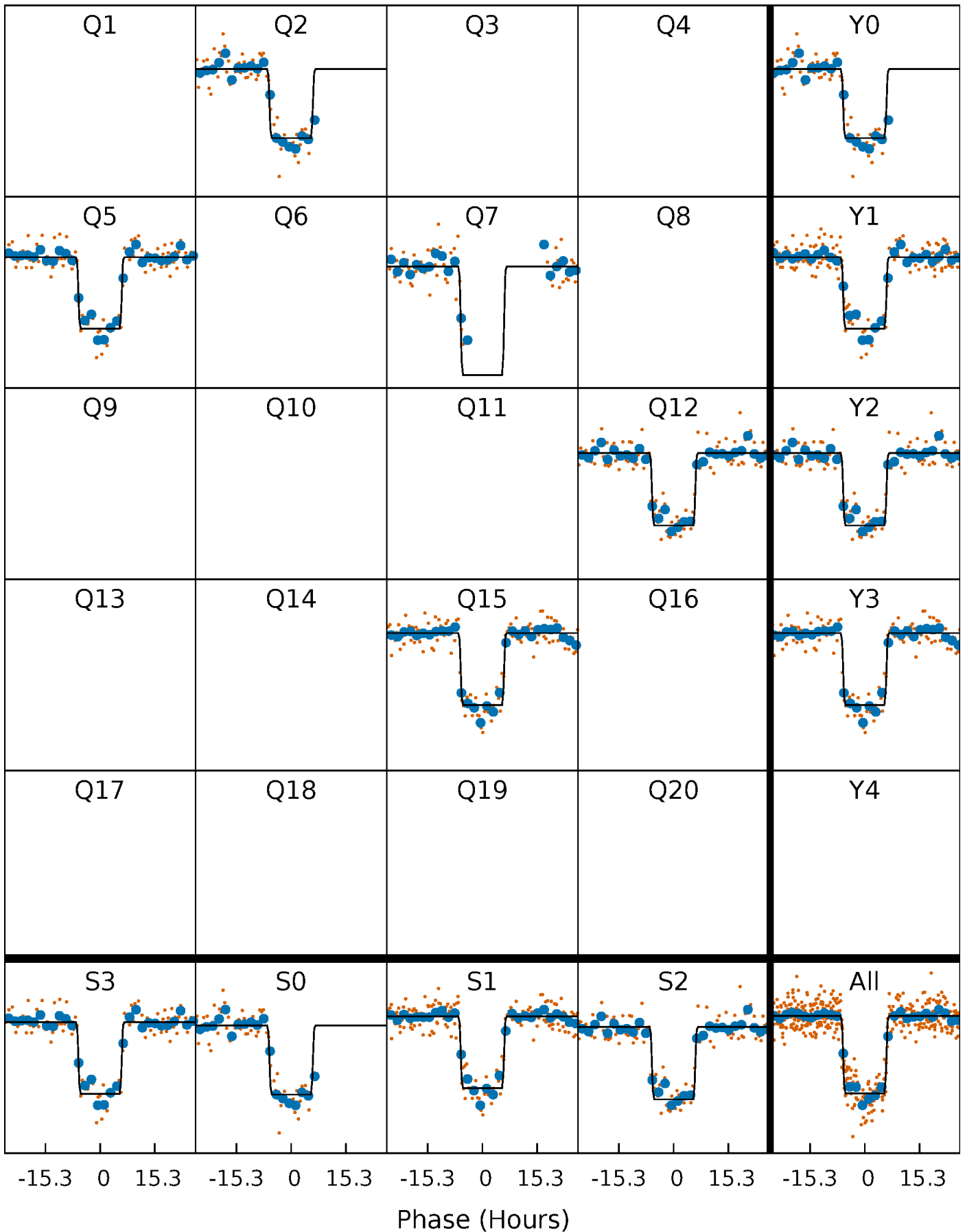
# DV Quarter-Phased Transit Curves

TCE 005374838-01 P=230.180804 Days  $T_0=230.052312$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

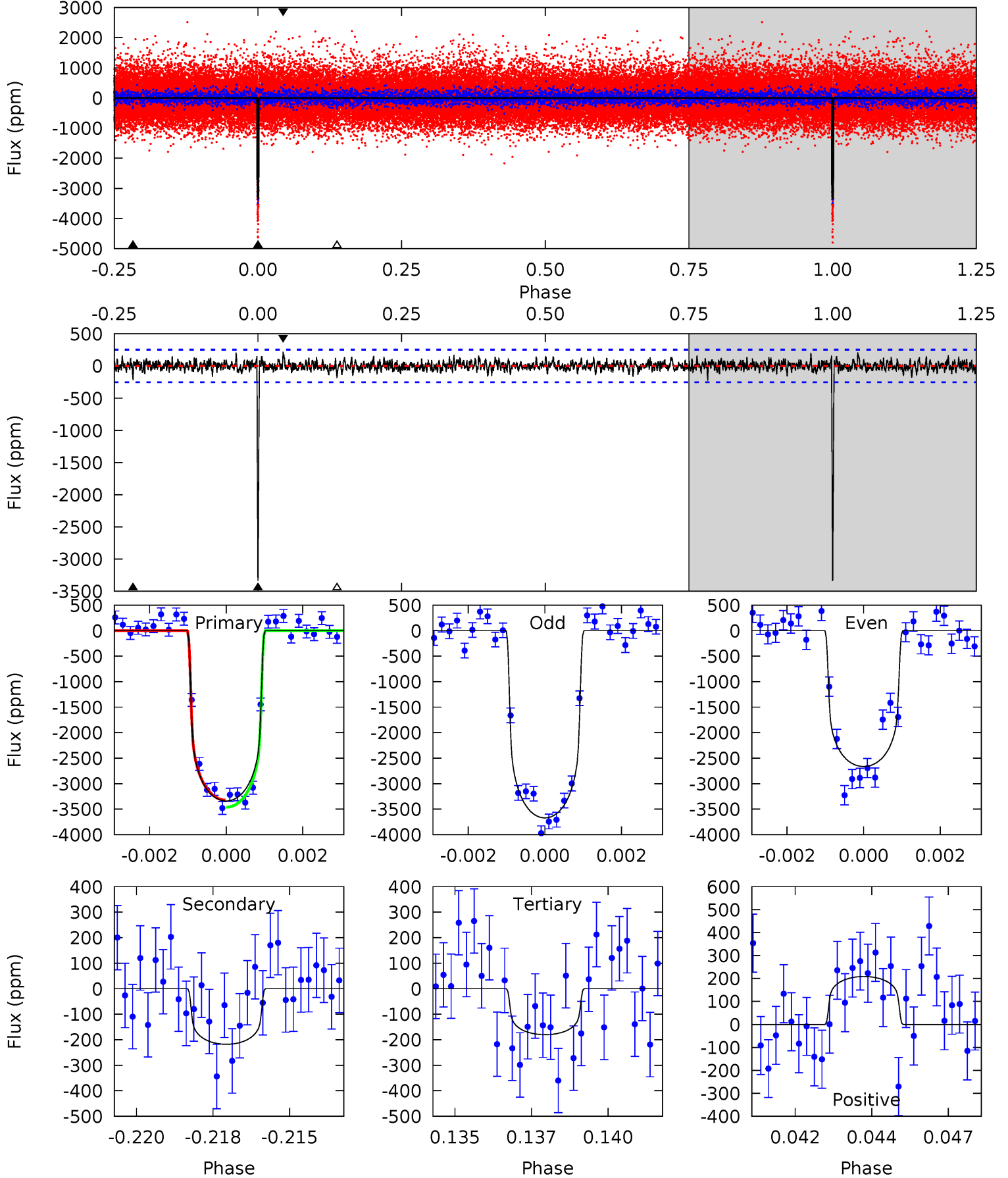
TCE 005374838-01 P=230.184053 Days  $T_0=230.042460$  (BKJD)



# DV Model-Shift Uniqueness Test

005374838-01, P = 230.180804 Days, E = 230.052312 Days

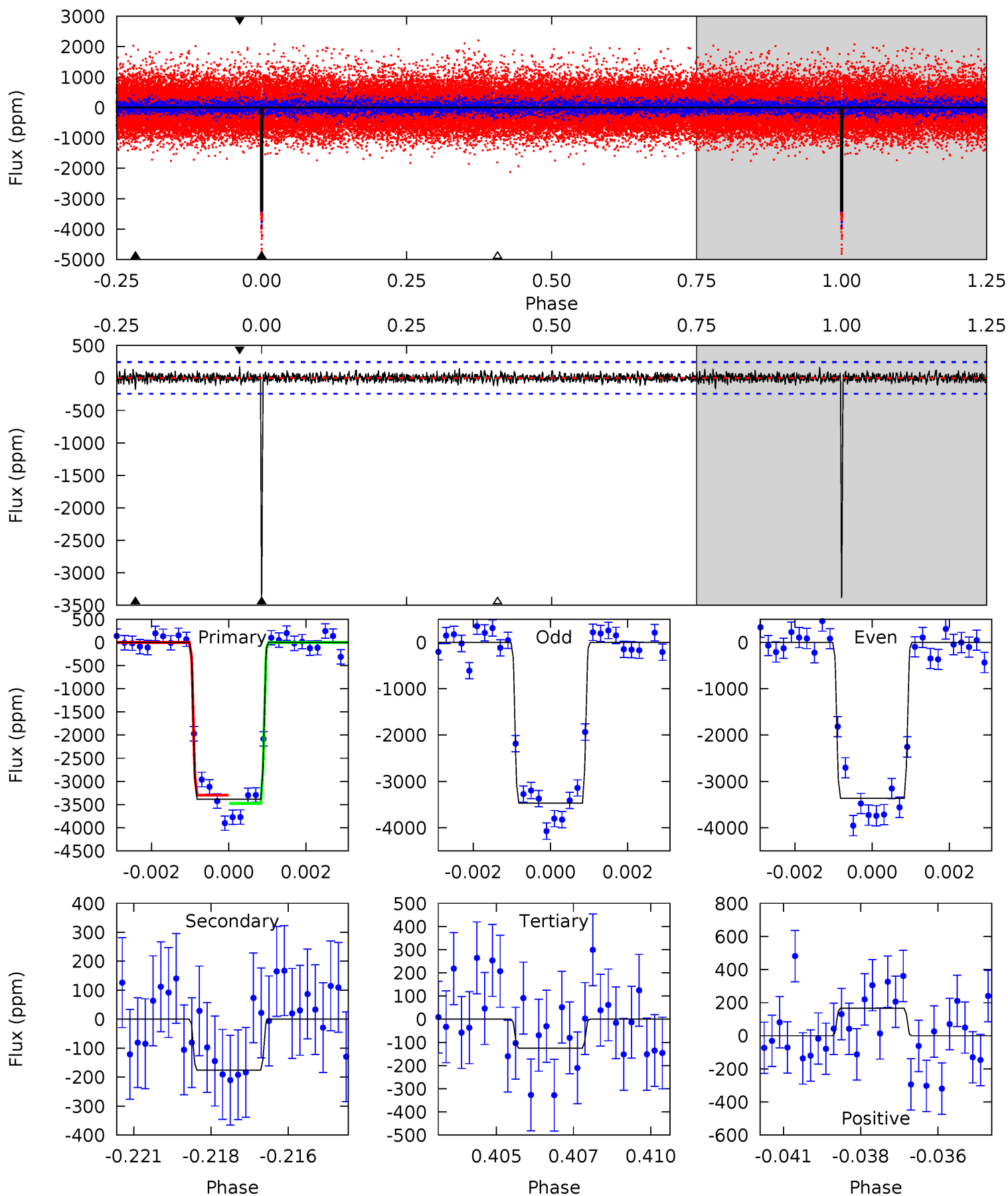
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
69.8	4.55	3.77	4.36	5.29	3.03	1.07	66.1	65.5	0.78	0.19	11.0	0.75	0.06	1.42



# Alt Model-Shift Uniqueness Test

005374838-01, P = 230.184053 Days, E = 230.042460 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
73.3	3.81	2.72	3.61	5.29	3.04	0.82	70.6	69.7	1.09	0.20	1.12	0.95	0.05	1.95



### Stellar Parameters For KIC 005374838

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6313^{+75}_{-85}$	$4.364^{+0.027}_{-0.082}$	$0.360^{+0.100}_{-0.150}$	$1.246^{+0.147}_{-0.069}$	$1.310^{+0.049}_{-0.070}$	$0.953^{+0.104}_{-0.240}$
	+1%/-1%	+1%/-2%	+28%/-42%	+12%/-6%	+4%/-5%	+11%/-25%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 005374838-01 / KOI 5155.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-218 \pm 48$	$7.47^{+0.66}_{-0.50}$	$488^{+13}_{-10}$	$3708^{+158}_{-168}$	$1372^{+399}_{-357}$
Alt.	$-176 \pm 46$	$8.09^{+0.59}_{-0.51}$	$488^{+14}_{-10}$	$3482^{+153}_{-173}$	$925^{+298}_{-264}$

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

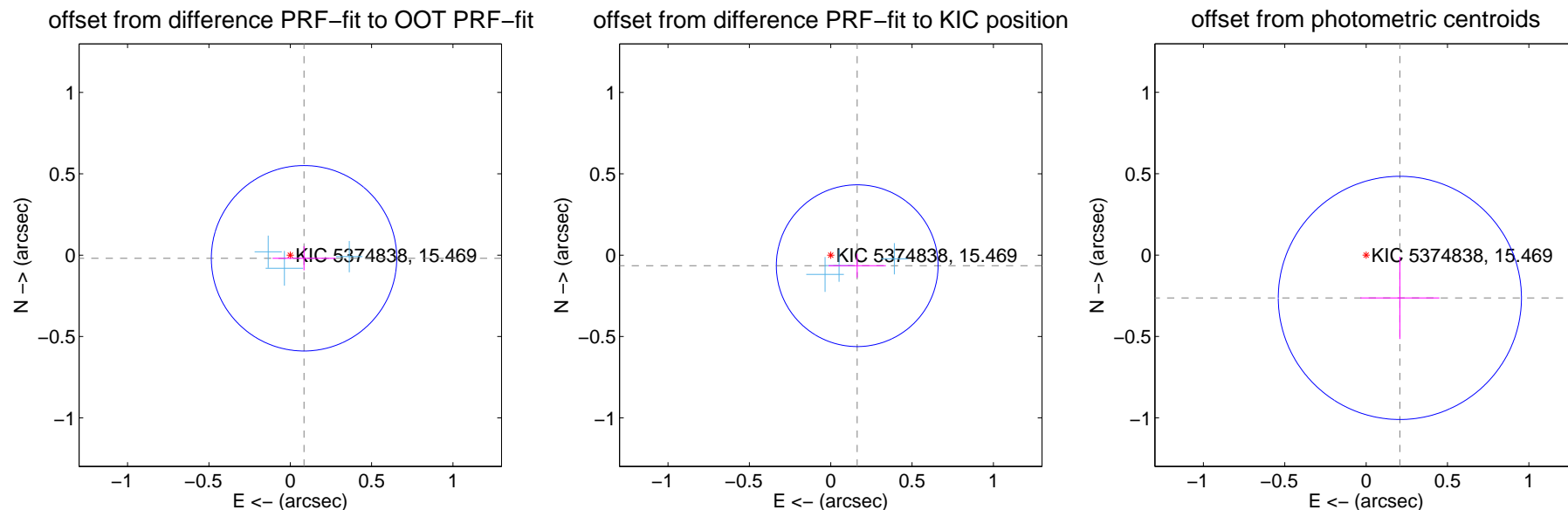
## DV Centroid Data

Supplemental centroid analysis for 005374838-01. Kepler magnitude: 15.47. Transit SNR 53.44

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.04 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.087 \pm 0.190$	0.46	$-0.085 \pm 0.194$	$-0.019 \pm 0.074$
PRF-fit source offset from KIC position	$0.175 \pm 0.166$	1.06	$-0.163 \pm 0.176$	$-0.065 \pm 0.073$
photometric centroid source offset	$0.33 \pm 0.25$	1.34	$-0.21 \pm 0.24$	$-0.26 \pm 0.25$

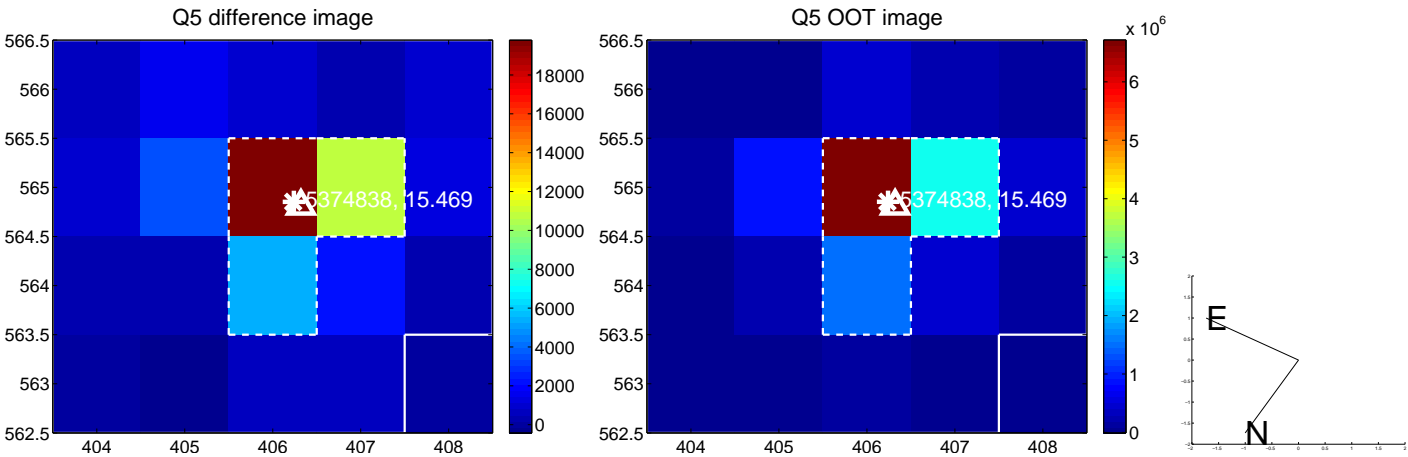


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

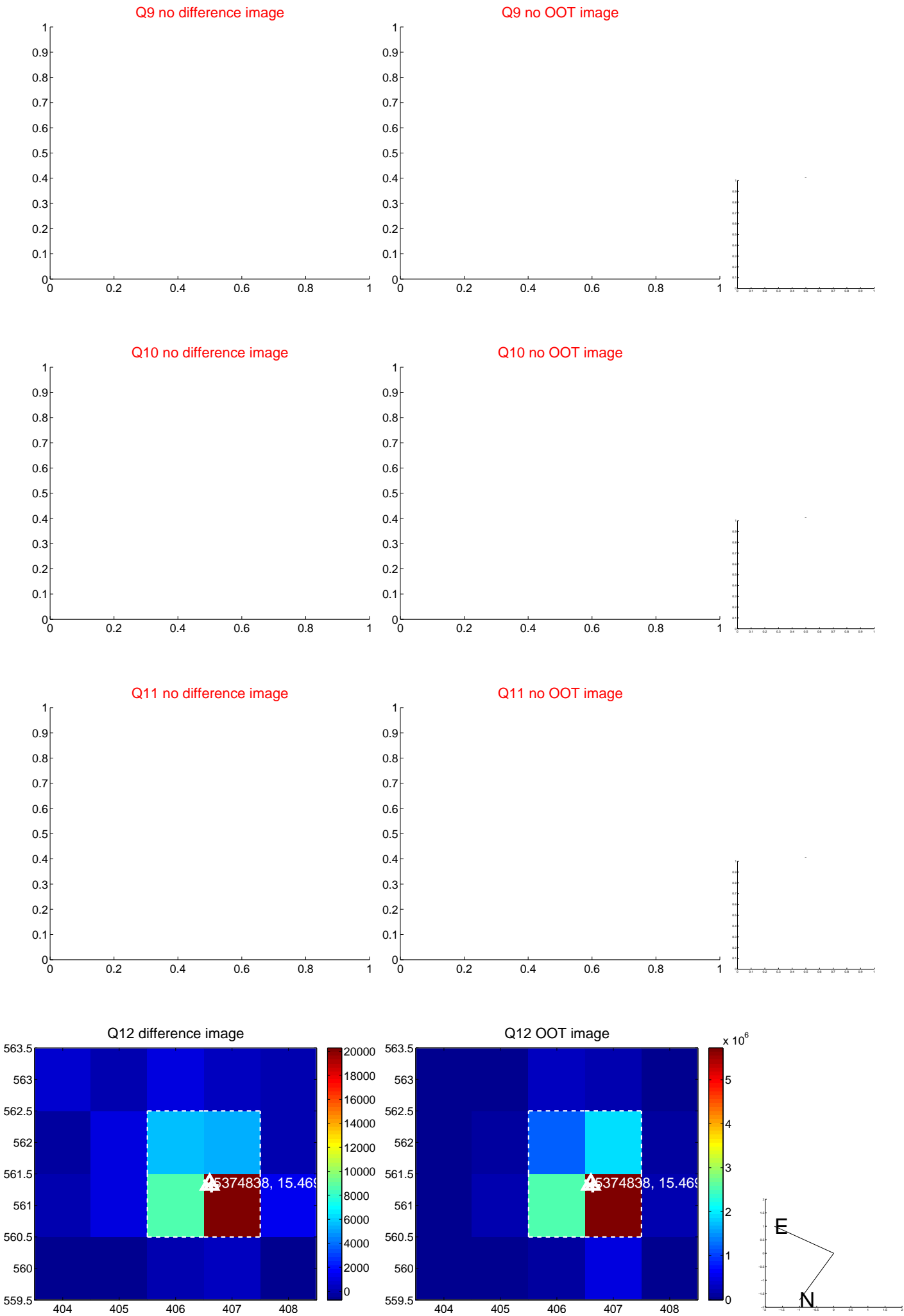


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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.

Q13 no difference image



Q13 no OOT image



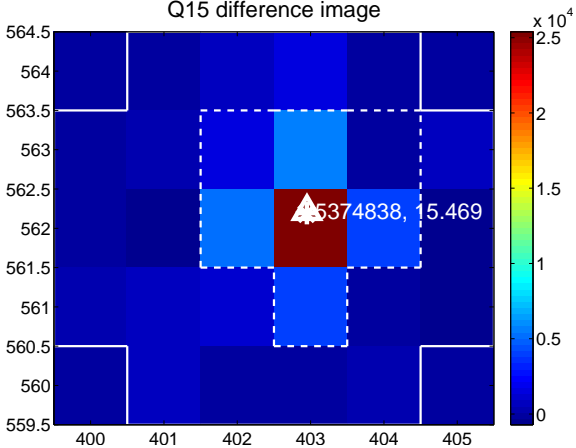
Q14 no difference image



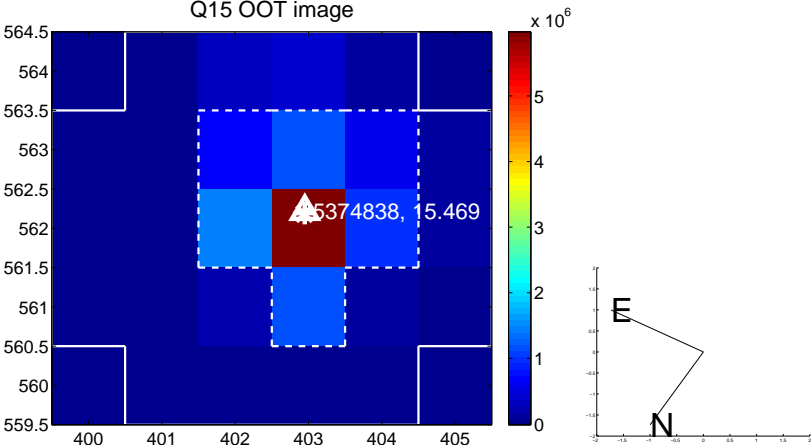
Q14 no OOT image



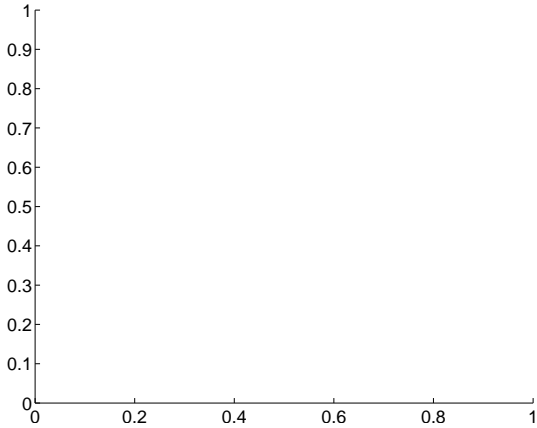
Q15 difference image



Q15 OOT image



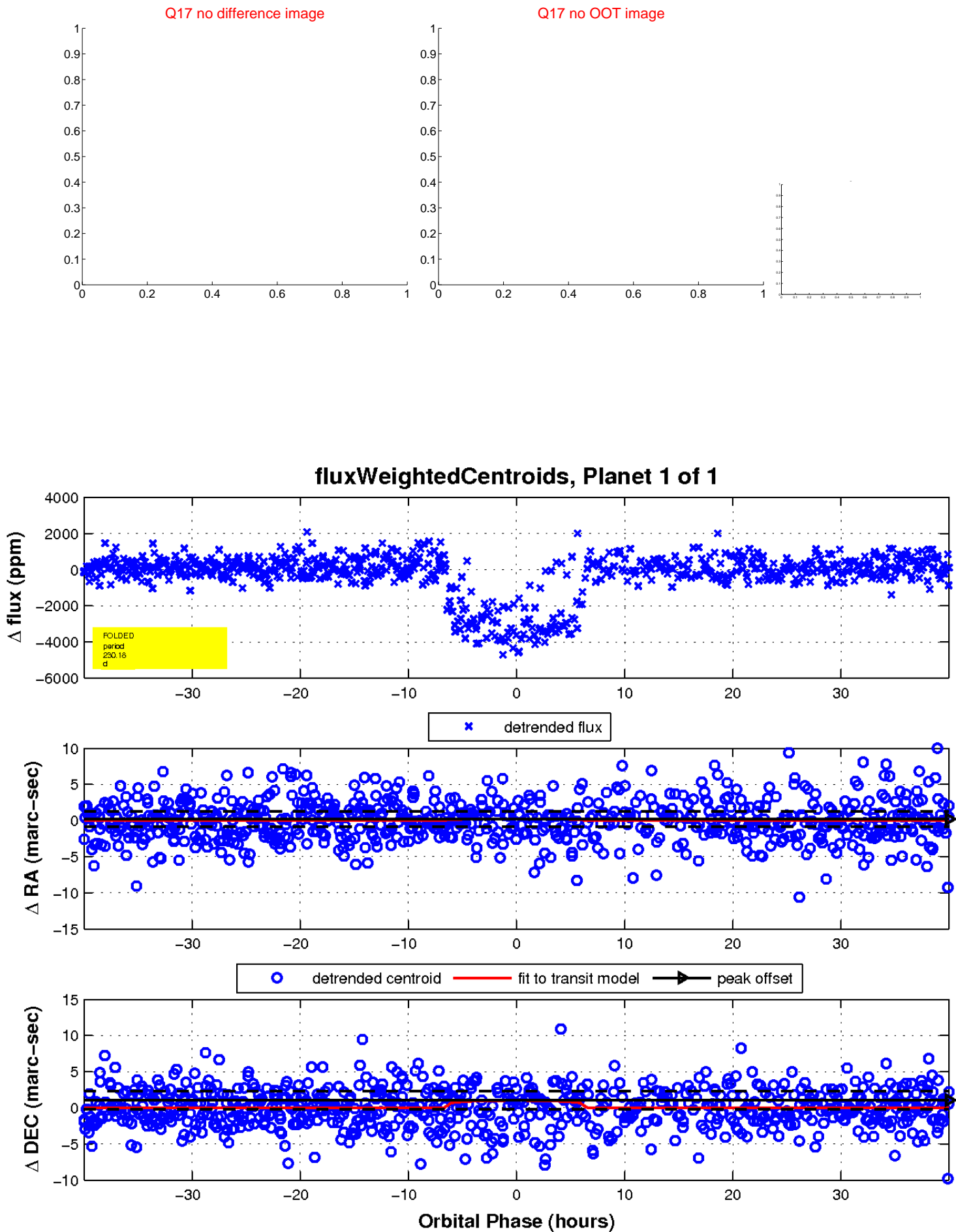
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

