

# KIC 008039454

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008039454-01	OBS	No	464.138171	449.778926	230.2	14.945	7.5	7.2	1.00	6347	1.57	1.01

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008039454-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—LPP_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.

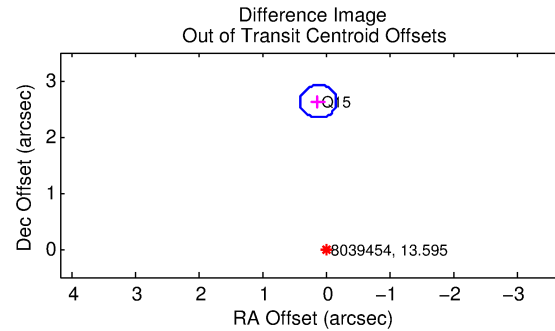
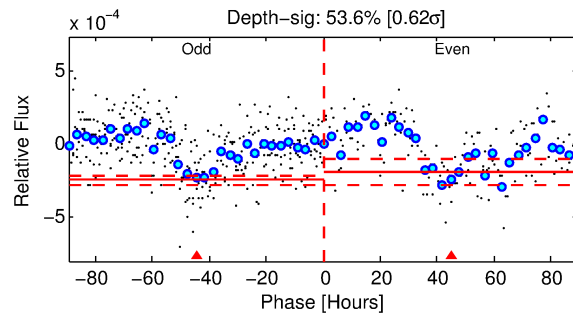
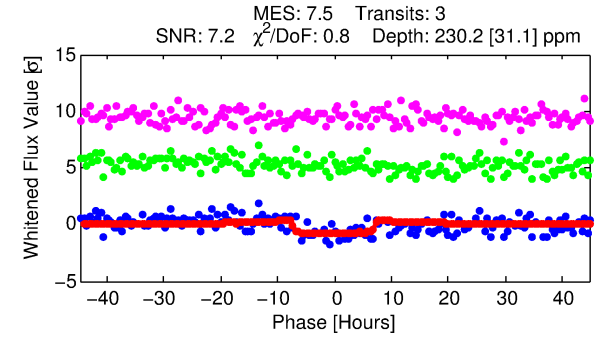
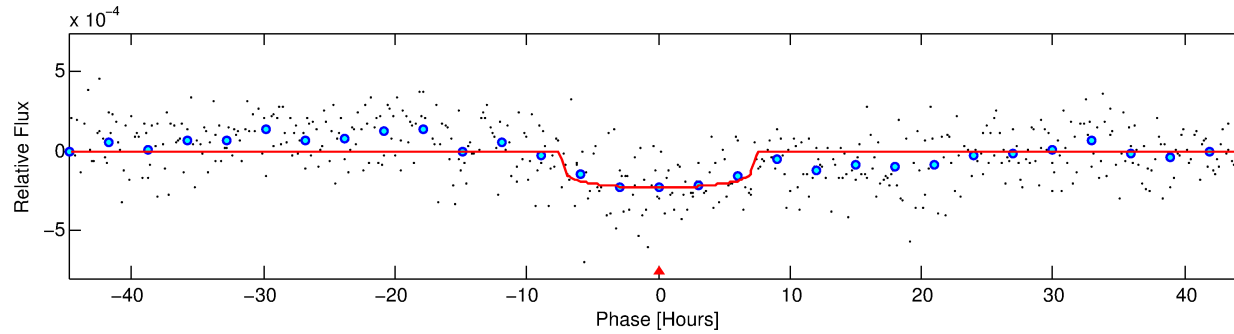
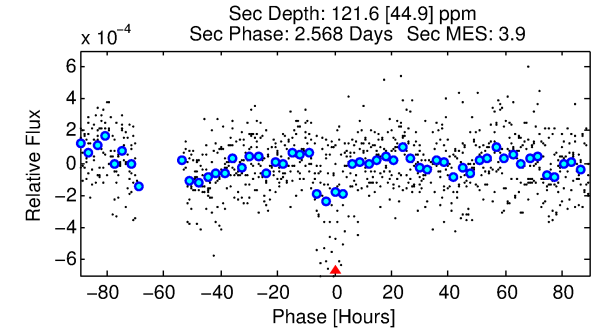
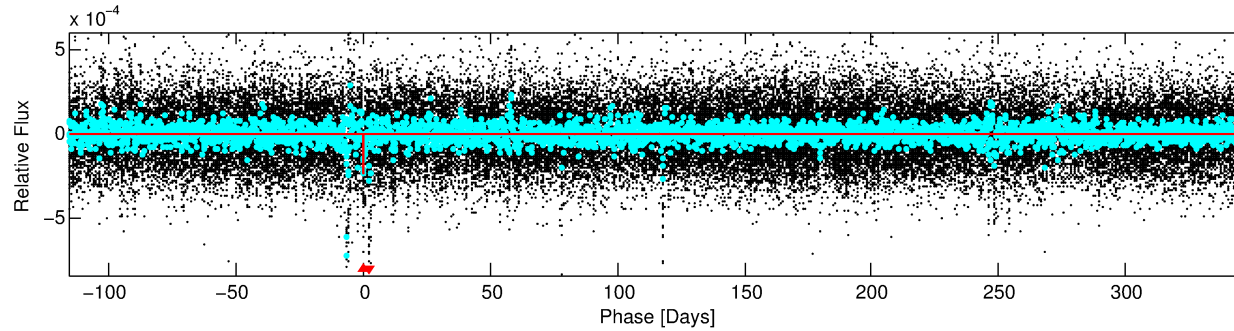
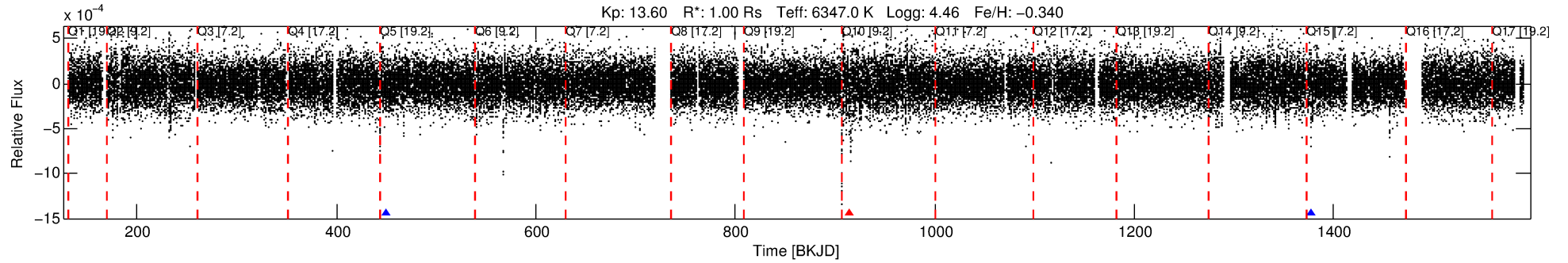
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008039454-01

No Significant Match Found

# DV One-Page Summary

KIC: 8039454 Candidate: 1 of 1 Period: 464.138 d



## DV Fit Results:

Period = 464.13817 [0.01194] d  
Epoch = 449.7789 [0.0161] BKJD  
Rp/R\* = 0.0144 [0.0067]  
a/R\* = 202.19 [490.63]  
b = 0.55 [3.10]  
Seff = 1.01 [0.41]  
Teq = 256 [26] K  
Rp = 1.57 [0.89] Re  
a = 1.1939 [0.3183] AU  
Ag = 38681.16 [41608.47] [0.93σ]  
Teffp = 5545 [1404] K [3.77σ]

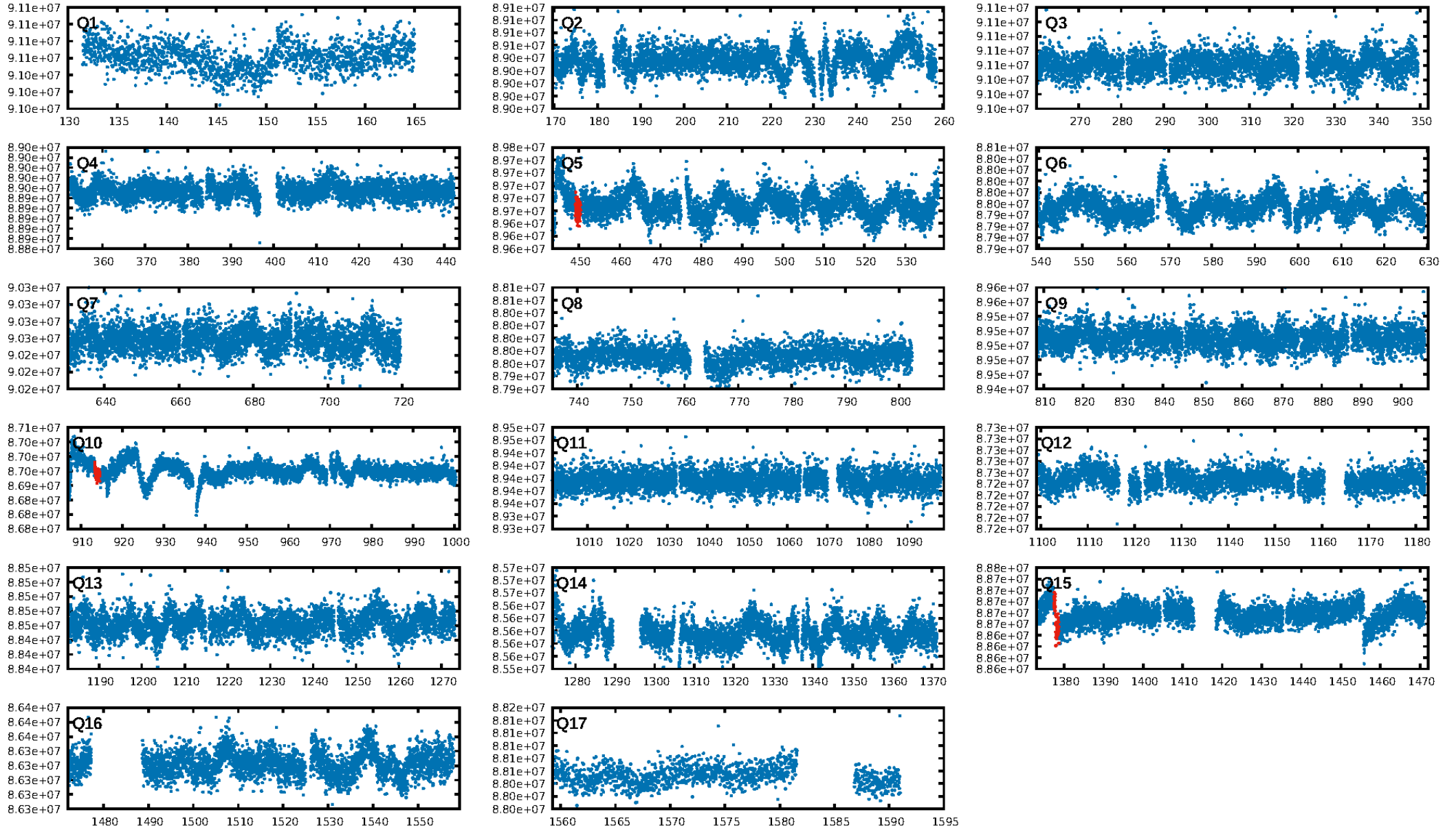
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 6.5%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.22e-07  
RollingBand-fgt: 0.67 [2/3]  
GhostDiagnostic-chr: 2.19  
Centroid-sig: 0.8%  
Centroid-so: 3.080 arcsec [2.07σ]  
OotOffset-rm: 2.629 arcsec [27.21σ]  
KicOffset-rm: 2.701 arcsec [27.94σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [3/3]

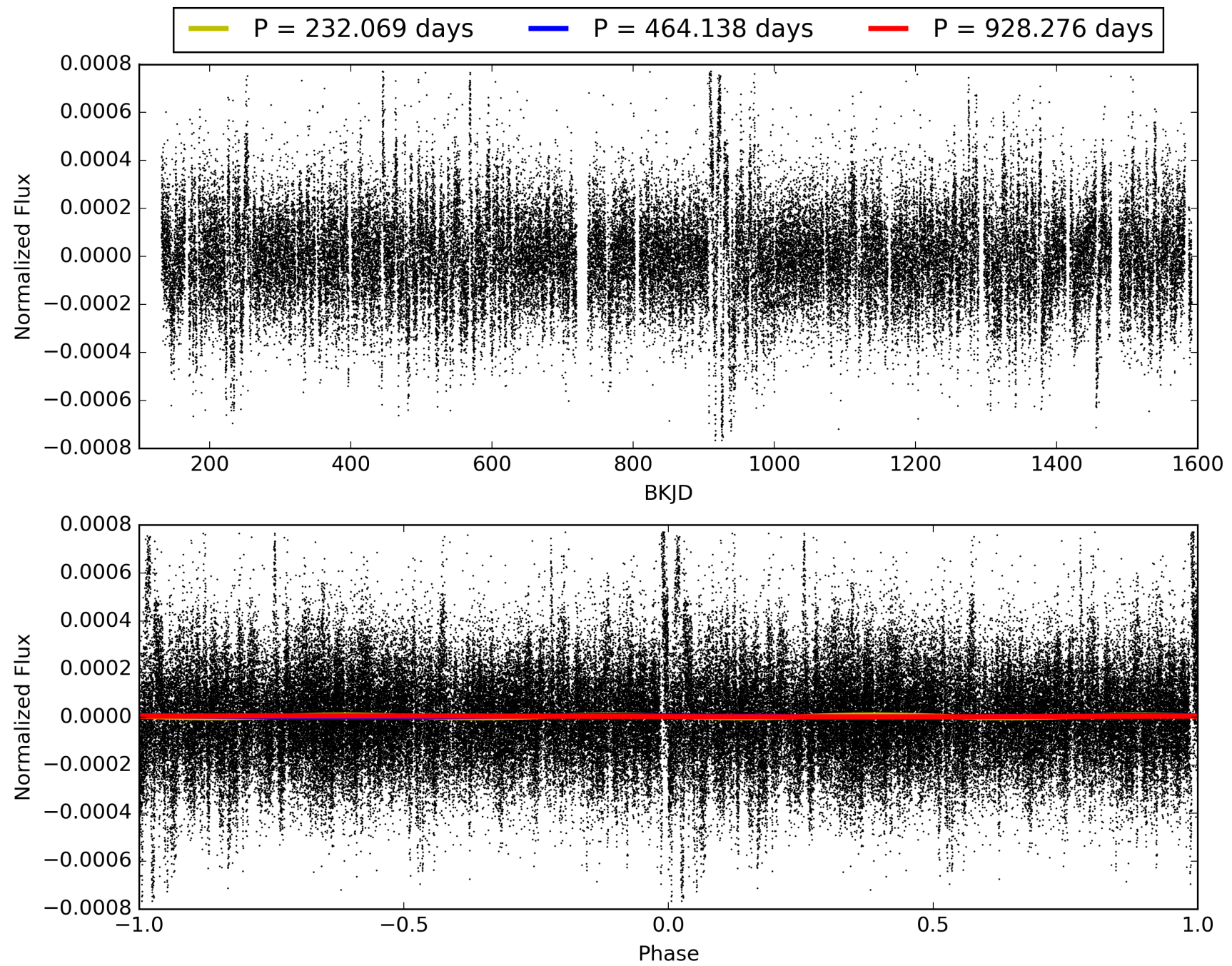
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:30:59 Z

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

# TCE 008039454-01, PDC Light Curves

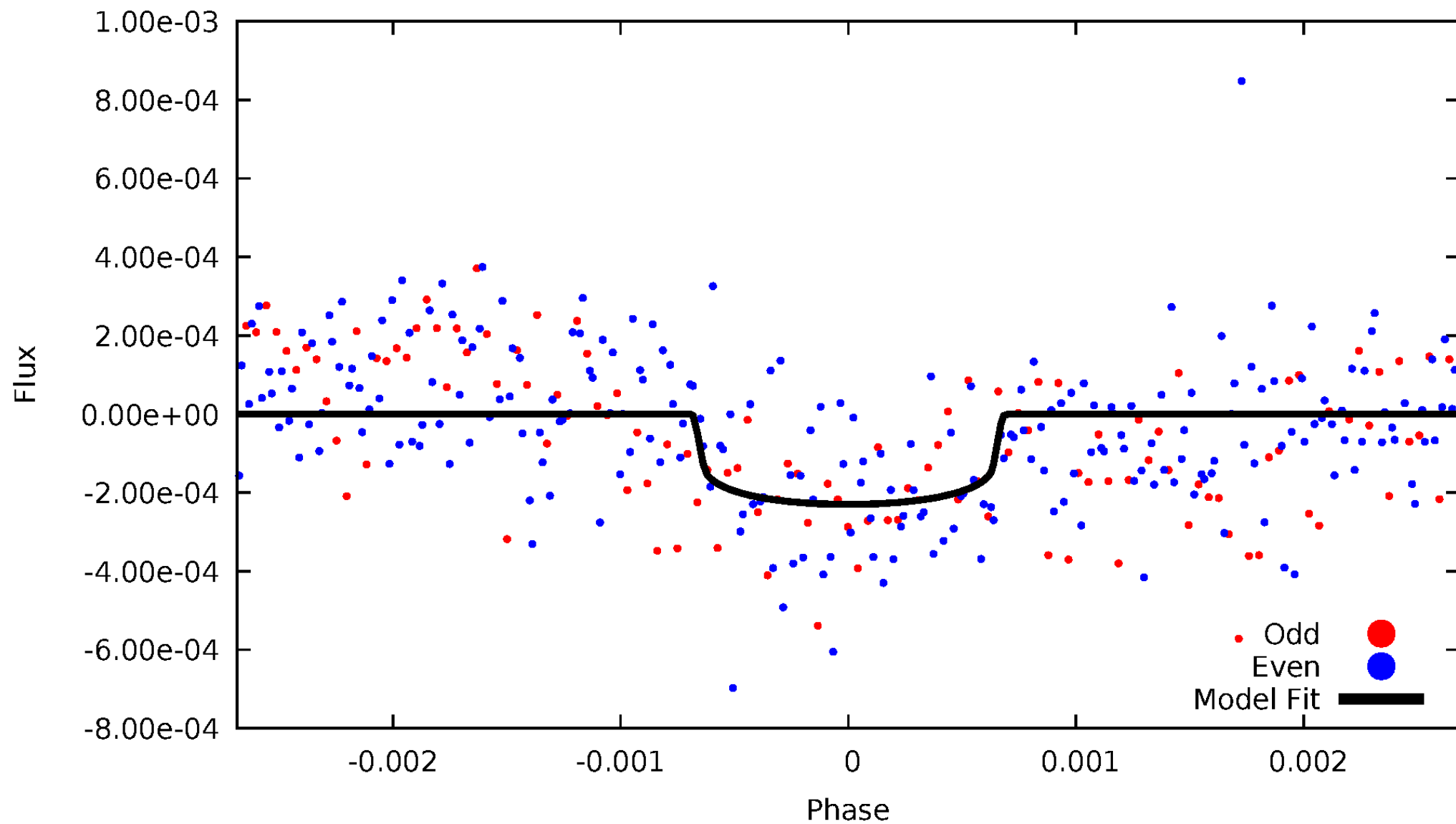


TCE 008039454-01



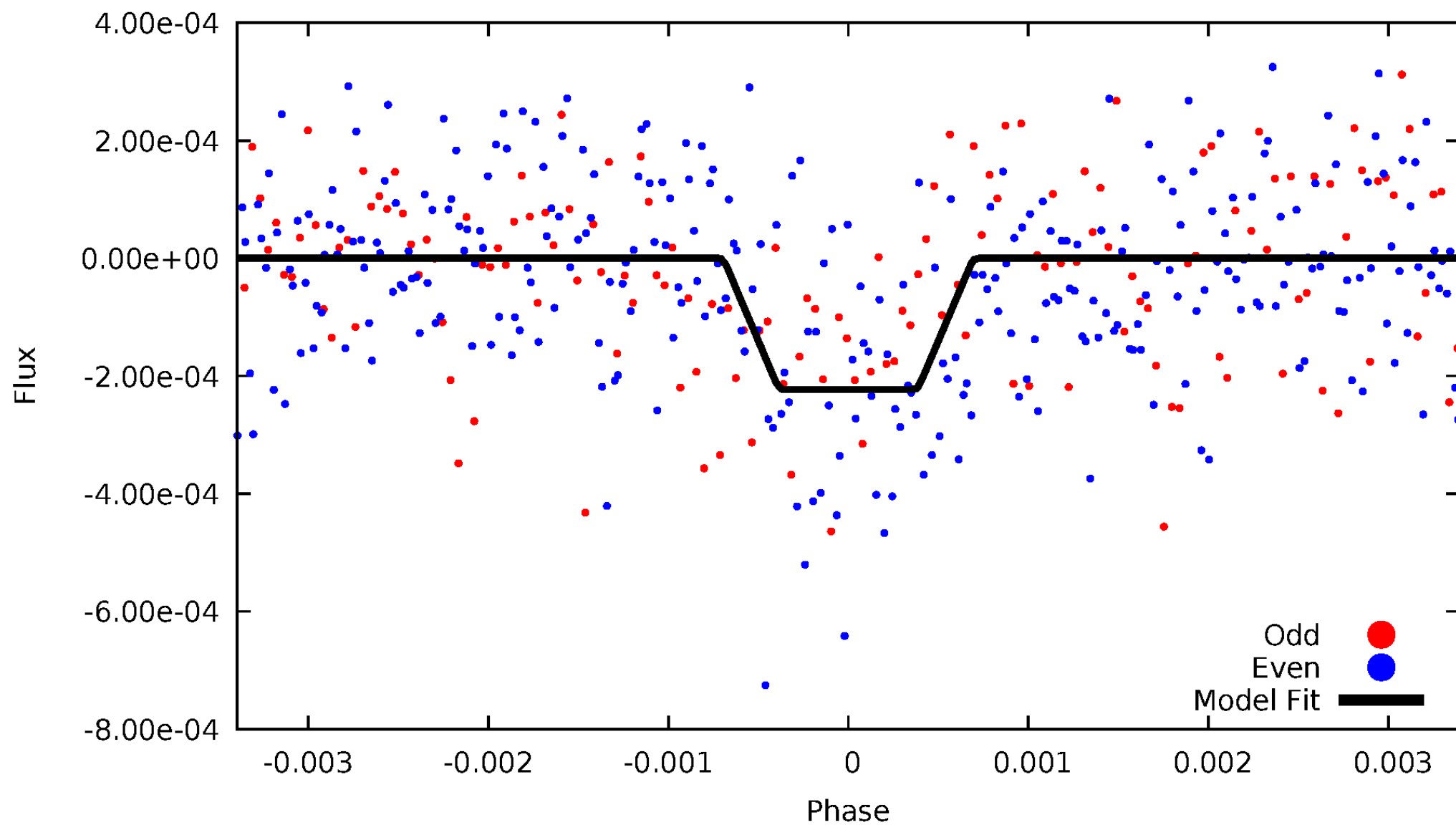
# DV Odd/Even

TCE 008039454-01



# ALT Odd/Even

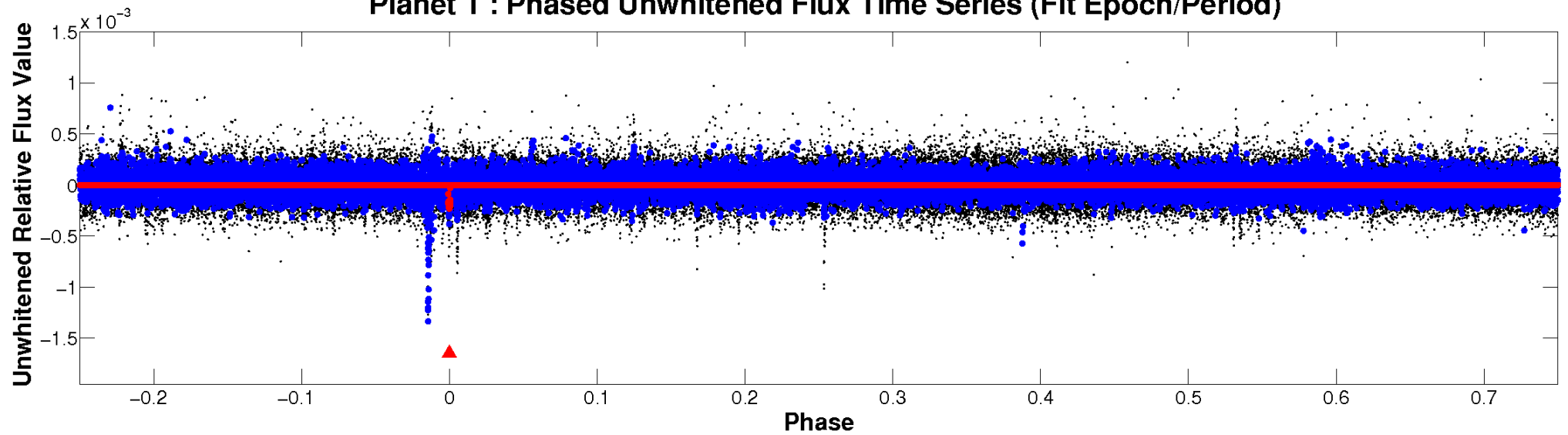
TCE 008039454-01



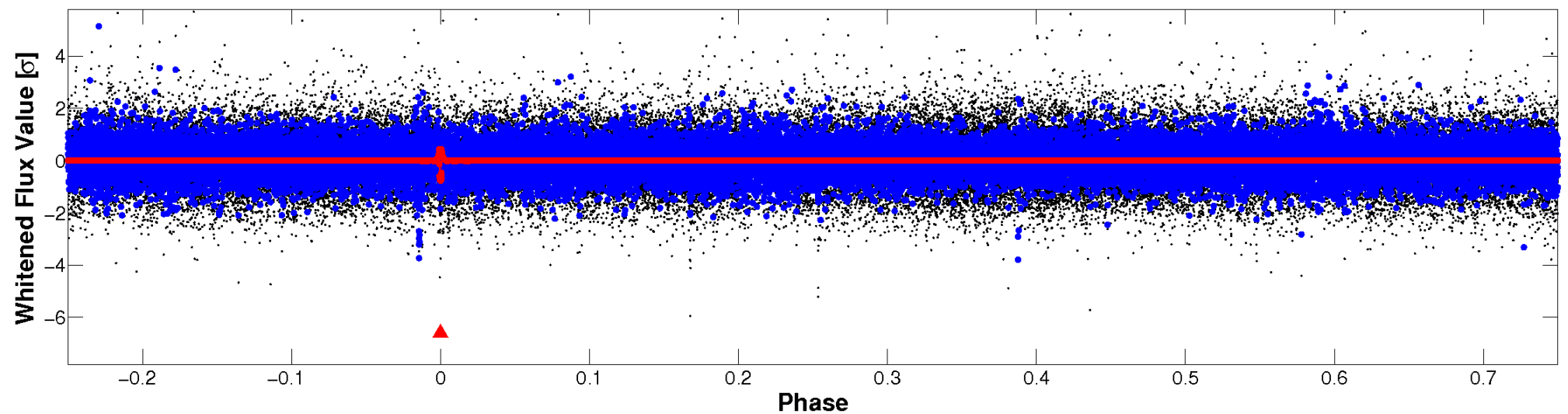


# Non-Whitened Vs. Whitened Light Curve

**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 008039454-01 P=464.138171 Days  $T_0=449.778926$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 008039454-01 P=464.138171 Days  $T_0=449.778926$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

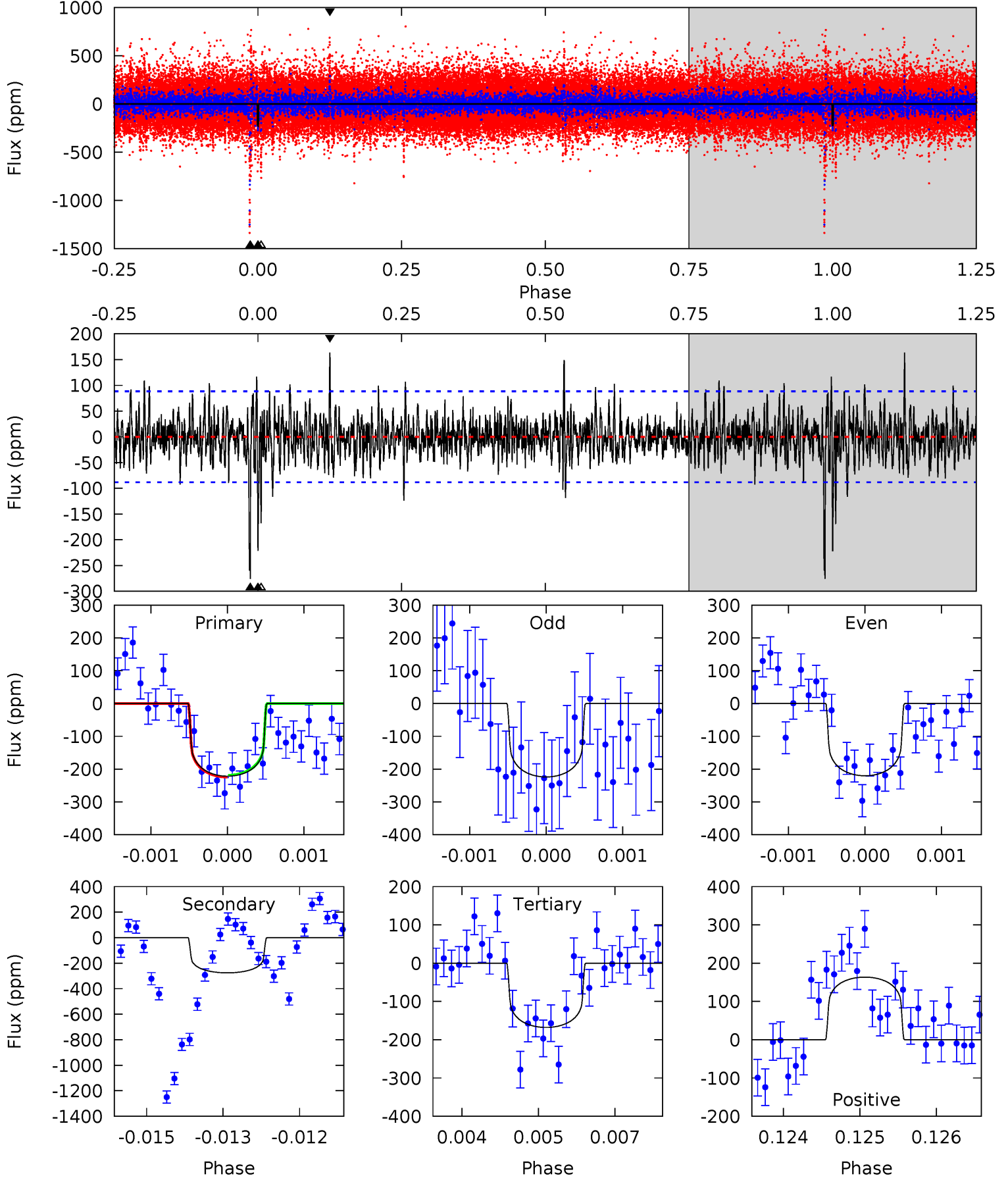
TCE 008039454-01 P=464.134693 Days  $T_0=449.764778$  (BKJD)



# DV Model-Shift Uniqueness Test

008039454-01, P = 464.138171 Days, E = 449.778926 Days

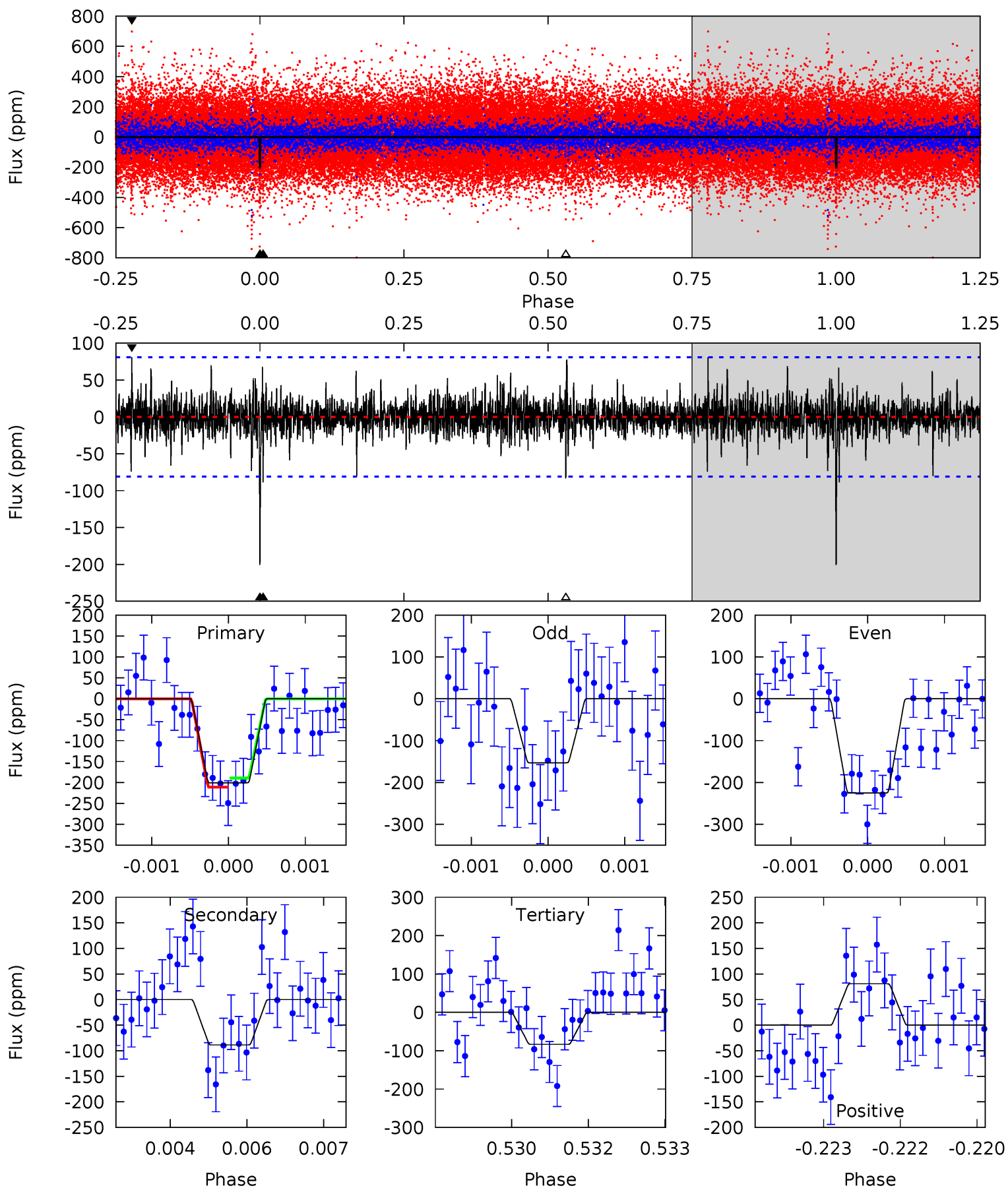
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.5	16.8	10.3	9.99	5.40	3.21	1.93	3.28	3.54	6.59	6.86	0.10	0.98	0.37	0.16



# Alt Model-Shift Uniqueness Test

008039454-01, P = 464.134693 Days, E = 449.764778 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
13.4	5.90	5.55	5.38	5.39	3.19	1.12	7.81	7.99	0.35	0.52	2.27	1.31	0.29	0.73



### Stellar Parameters For KIC 008039454

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6347^{+157}_{-204}$	$4.464^{+0.052}_{-0.208}$	$-0.340^{+0.250}_{-0.300}$	$0.996^{+0.319}_{-0.106}$	$1.053^{+0.146}_{-0.133}$	$1.501^{+0.416}_{-0.776}$
	+2%/-3%	+1%/-5%	+74%/-88%	+32%/-11%	+14%/-13%	+28%/-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 008039454-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-276 \pm 16$	$1.69^{+0.81}_{-0.81}$	$364^{+26}_{-17}$	$6748^{+3291}_{-1218}$	$75107^{+192815}_{-41068}$
Alt.	$-89 \pm 15$	$1.70^{+0.77}_{-0.79}$	$366^{+24}_{-18}$	$5097^{+1937}_{-697}$	$23094^{+63261}_{-11984}$

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

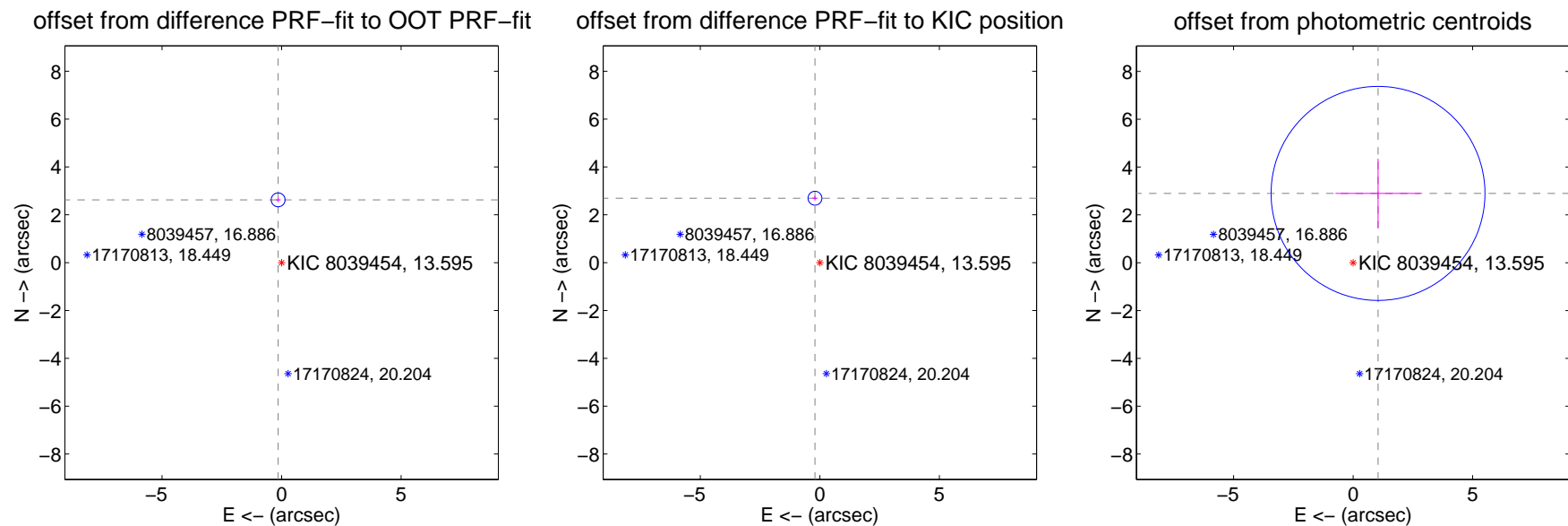
## DV Centroid Data

Supplemental centroid analysis for 008039454-01. Kepler magnitude: 13.60. Transit SNR 7.22

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.629 \pm 0.097$	27.21	$0.143 \pm 0.106$	$2.625 \pm 0.097$
PRF-fit source offset from KIC position	$2.701 \pm 0.097$	27.94	$0.204 \pm 0.106$	$2.693 \pm 0.097$
photometric centroid source offset	$3.08 \pm 1.49$	2.07	$-1.04 \pm 1.78$	$2.90 \pm 1.45$



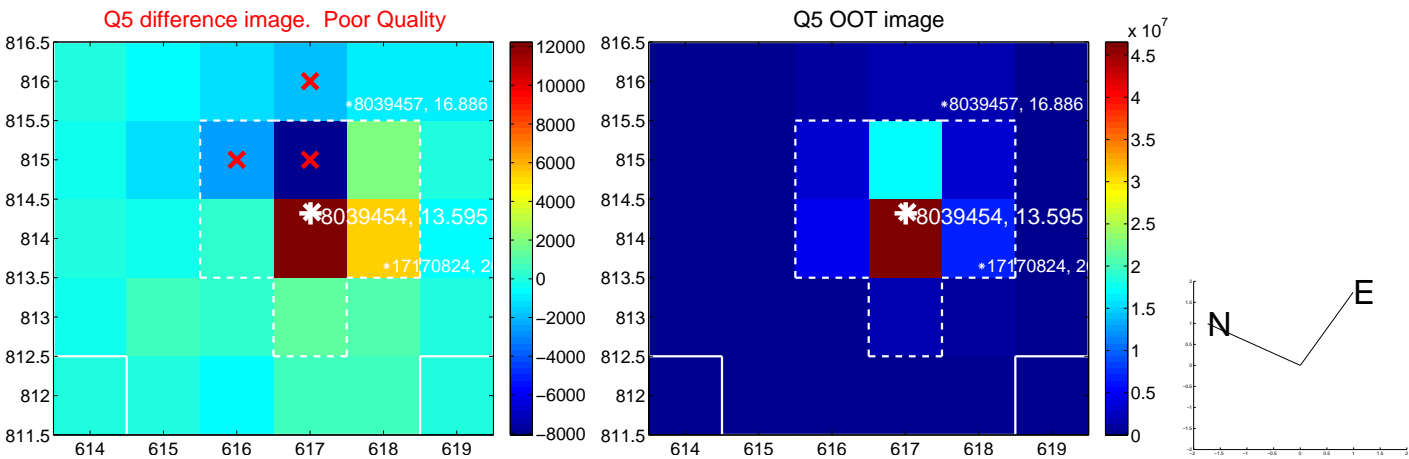
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

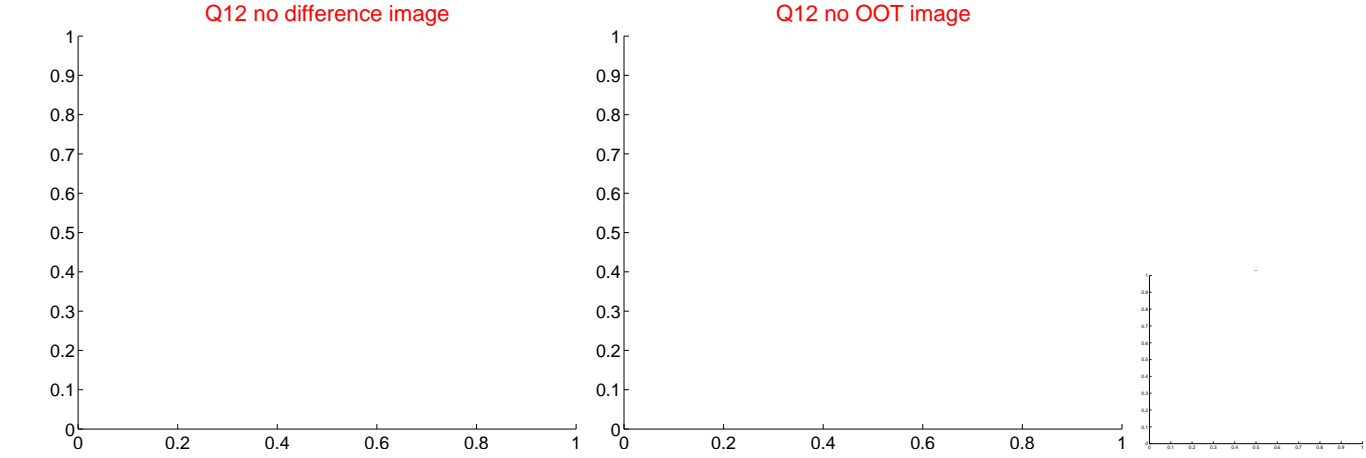
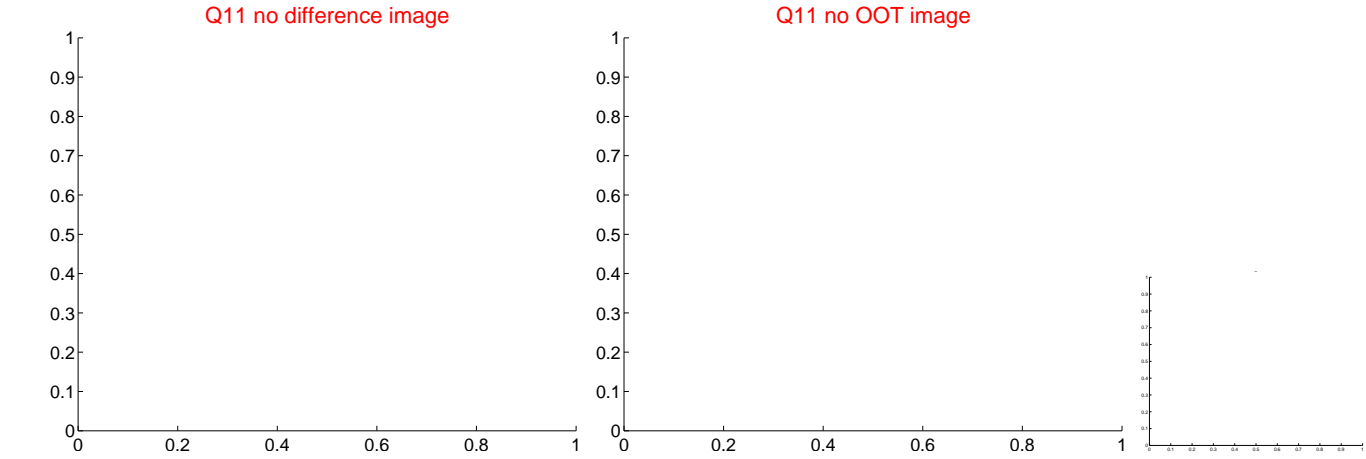
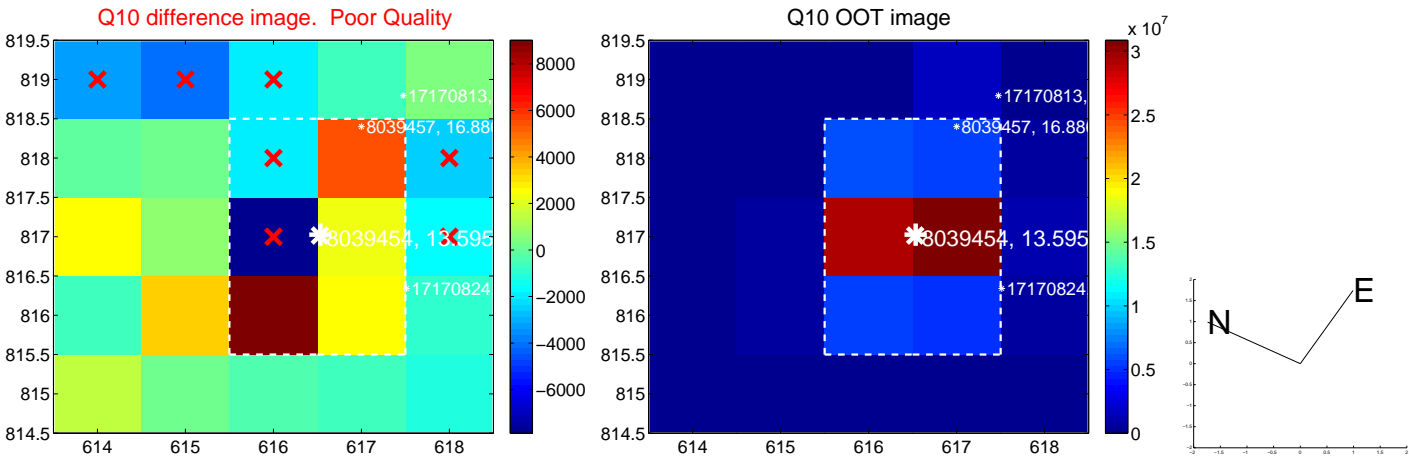
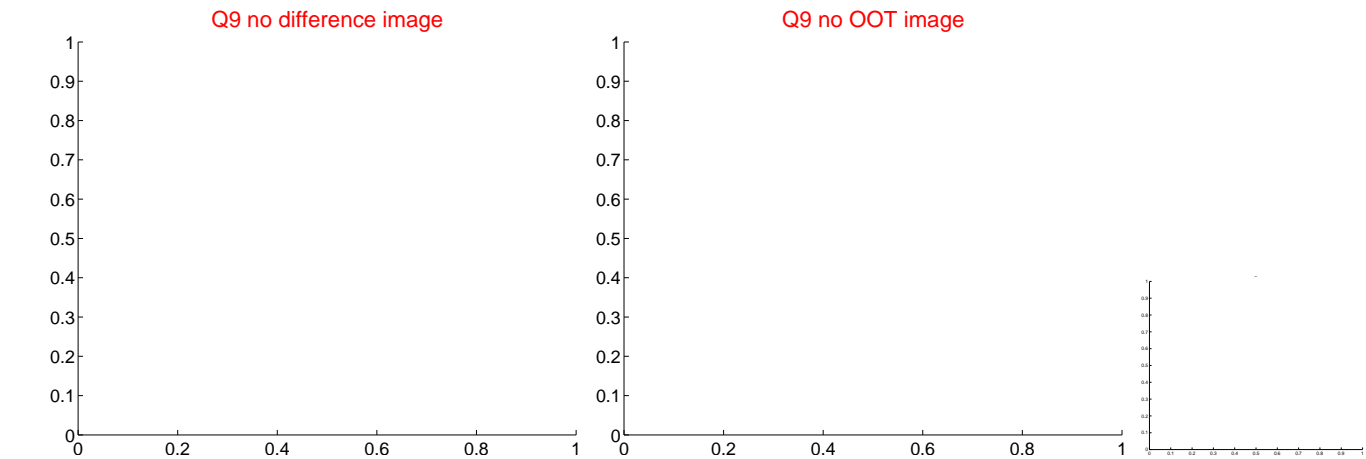




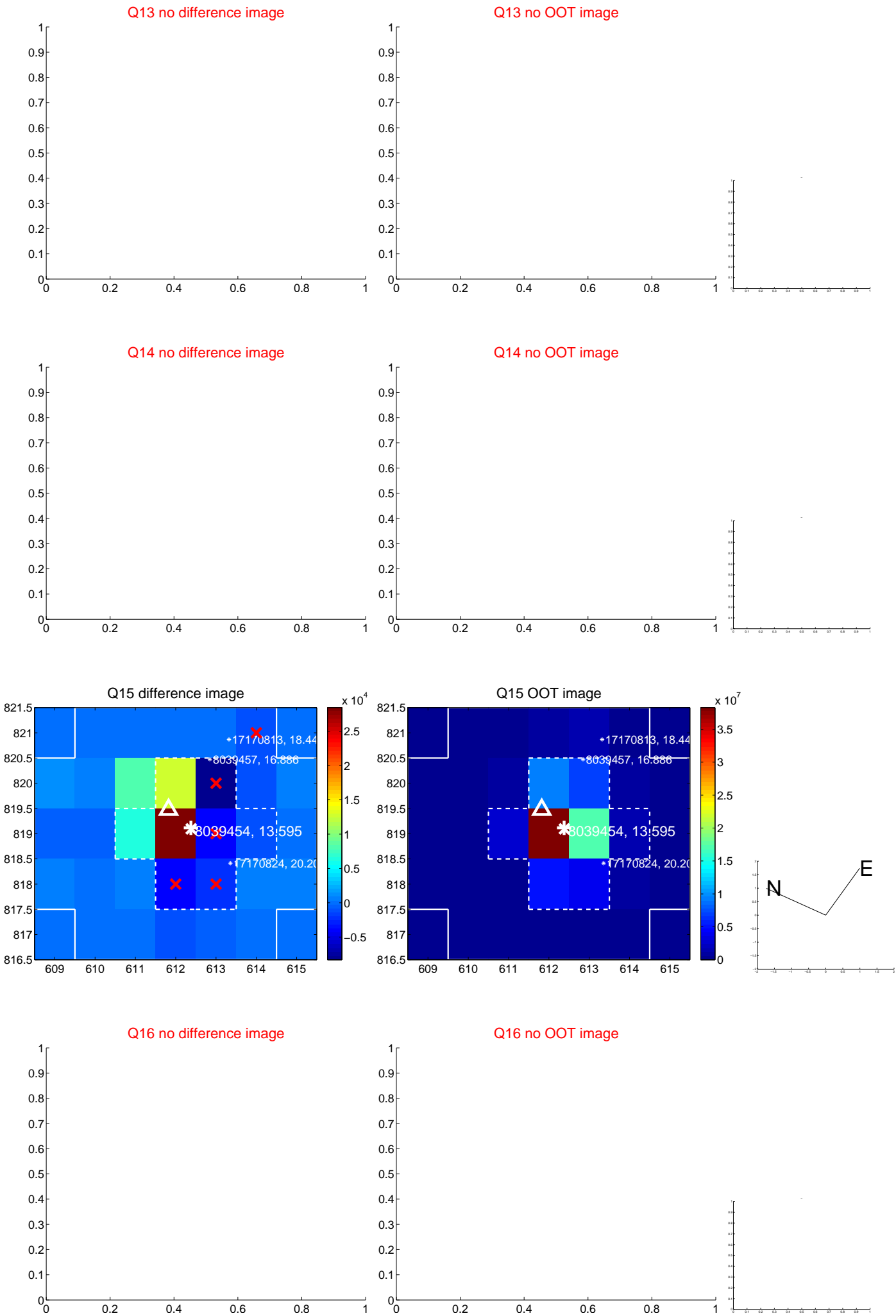
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



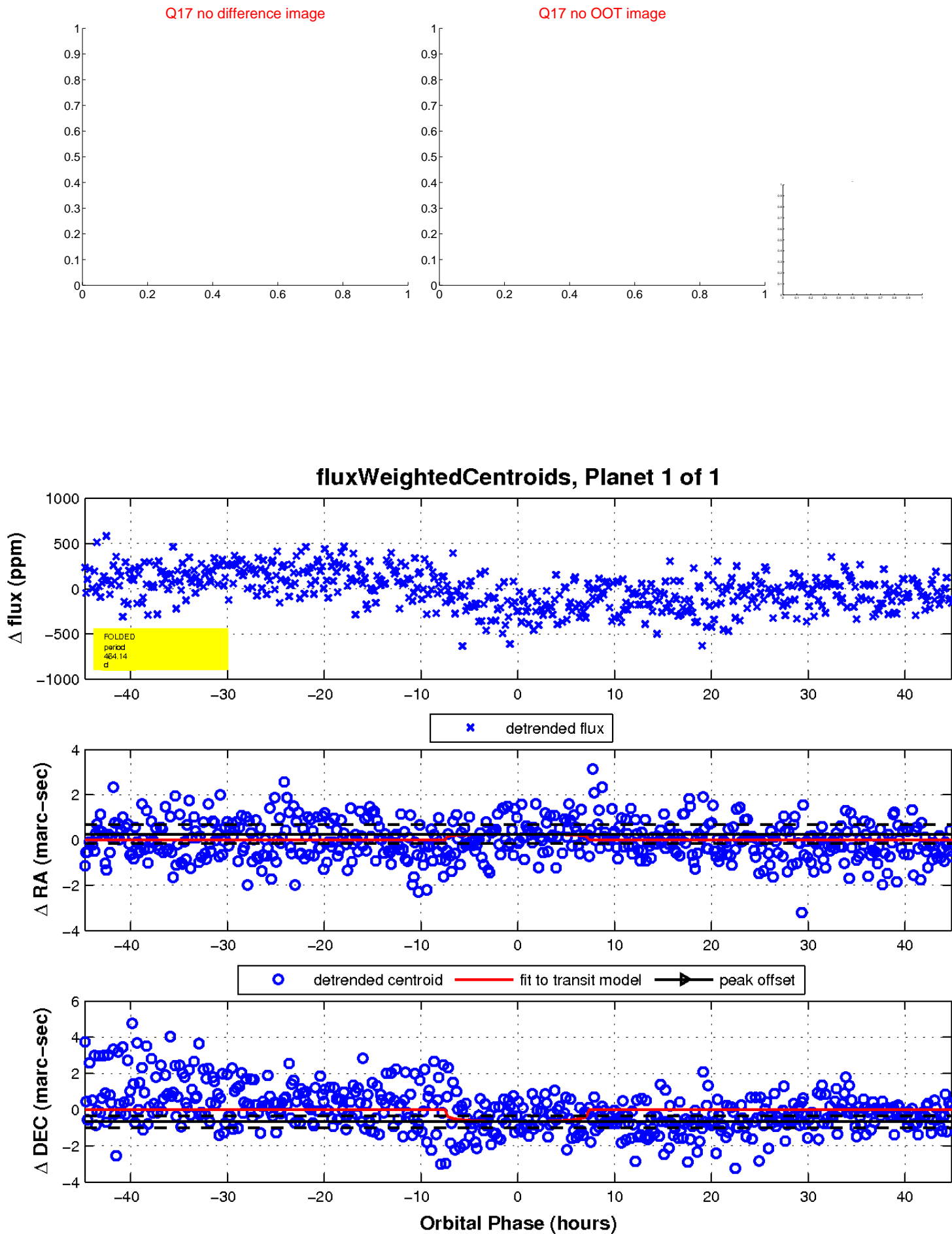
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



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



UKIRT Image

Declination

