

# KIC 008613446

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008613446-01	OBS	7069.01	1.014874	131.617687	242.9	1.784	8.6	9.5	1.02	6158	1.72	3273.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008613446-01	OBS	PC	1.00	0	0	0	0	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 008613446-01

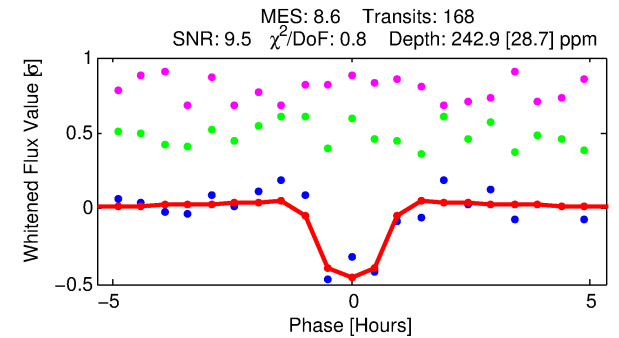
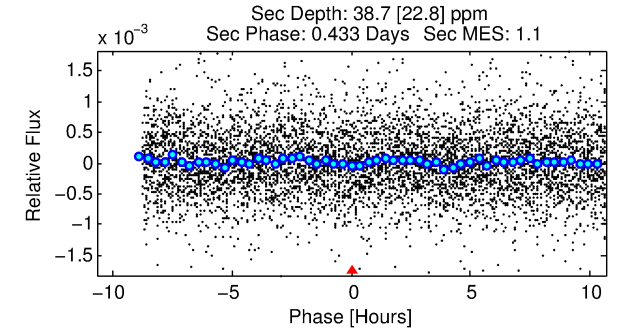
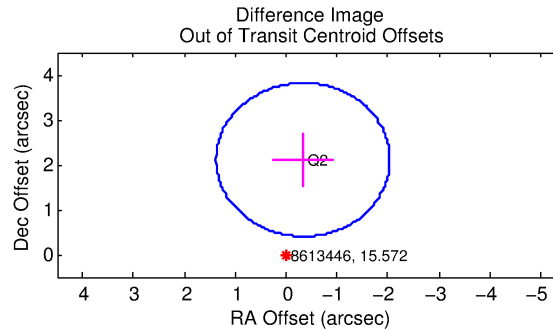
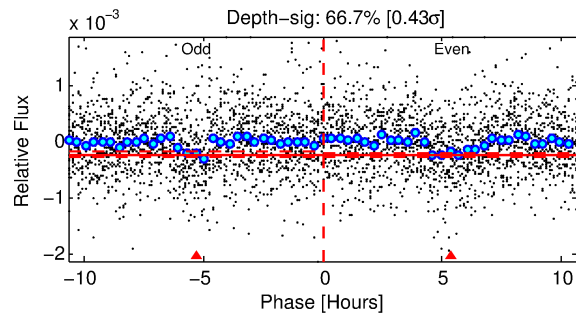
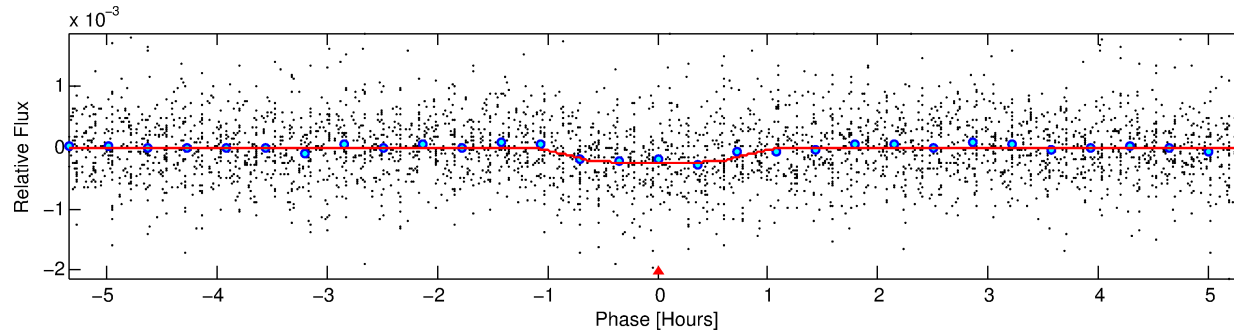
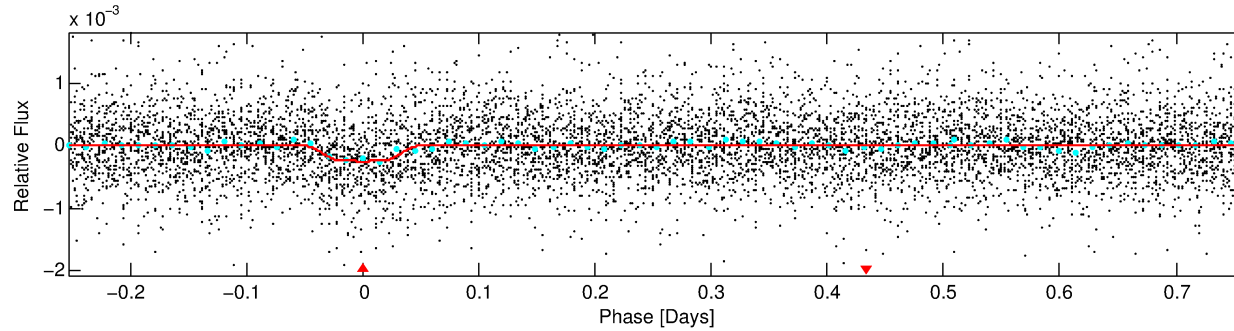
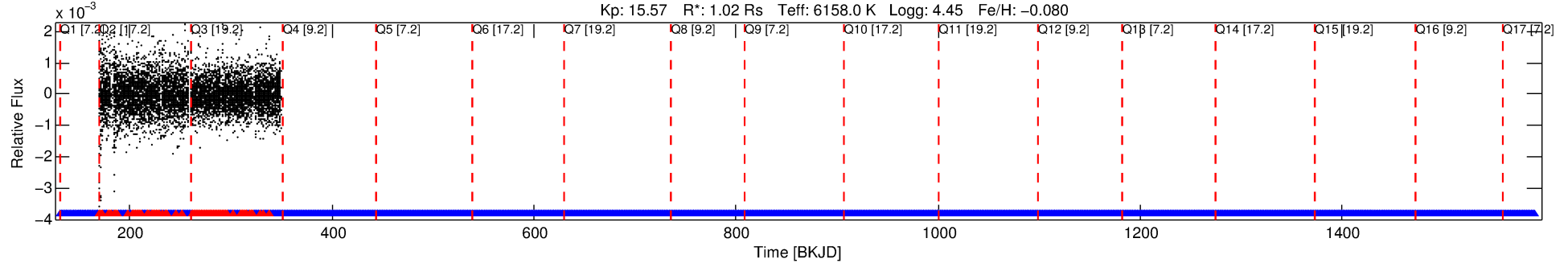
No Significant Match Found

# DV One-Page Summary

KIC: 8613446 Candidate: 1 of 1 Period: 1.015 d

KOI: K07069.01 Corr: 0.838

Kp: 15.57 R\*: 1.02 Rs Teff: 6158.0 K Logg: 4.45 Fe/H: -0.080



## DV Fit Results:

Period = 1.01487 [0.00004] d  
Epoch = 131.6177 [0.0048] BKJD  
Rp/R\* = 0.0154 [0.0153]  
a/R\* = 3.19 [14.21]  
b = 0.73 [3.25]  
Seff = 3273.18 [1449.31]  
Teq = 1929 [214] K  
Rp = 1.72 [1.82] Re  
a = 0.0203 [0.0059] AU  
Ag = 2.96 [6.25] [0.31σ]  
Teffp = 3911 [2032] K [0.97σ]

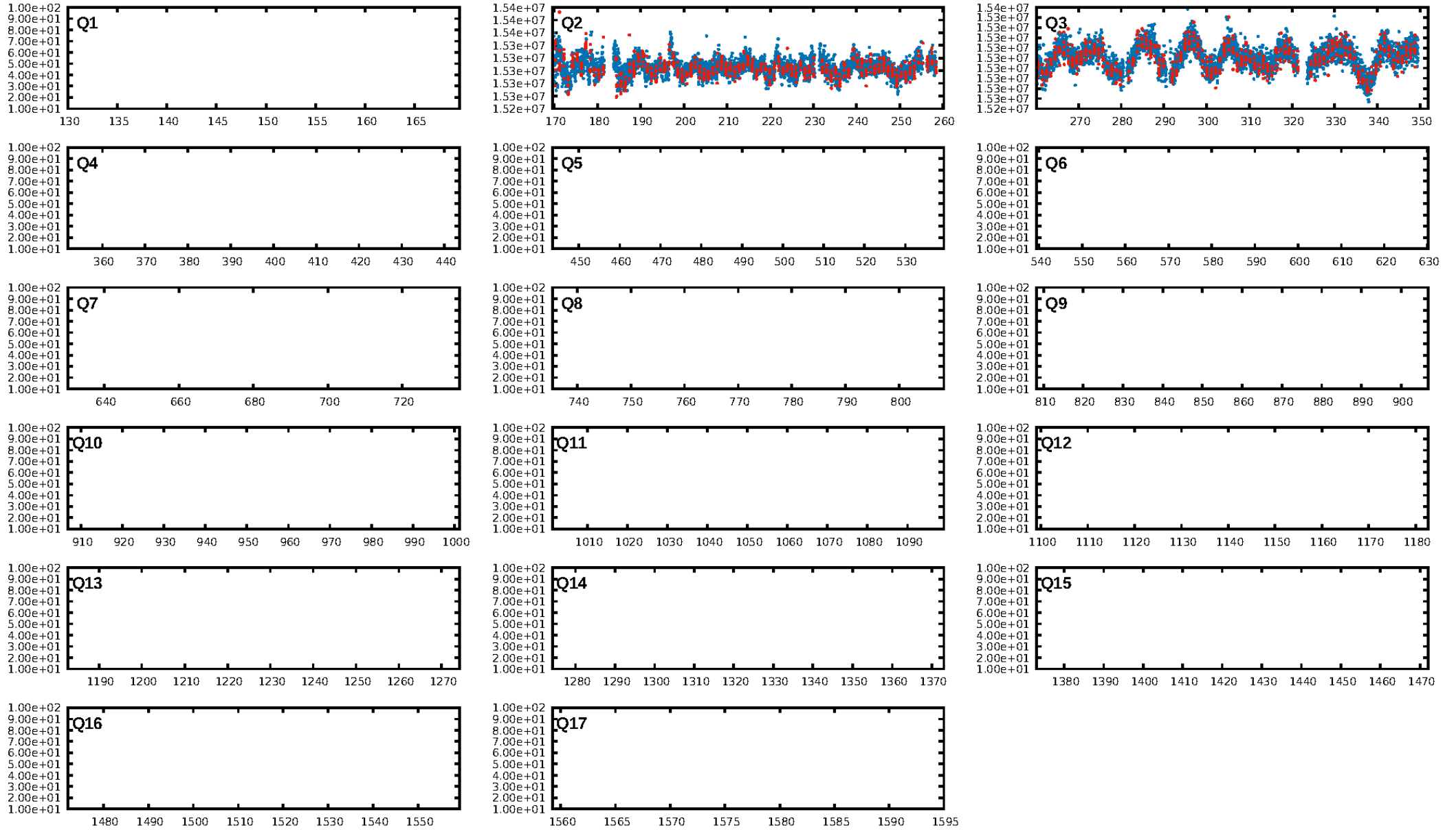
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.31e-18  
RollingBand-fgt: 0.49 [83/168]  
GhostDiagnostic-chr: -26.39  
Centroid-sig: 13.2%  
Centroid-so: 1.764 arcsec [1.03σ]  
OotOffset-rm: 2.136 arcsec [3.75σ]  
KicOffset-rm: 2.080 arcsec [3.65σ]  
OotOffset-st: 1/0/0/0 [1]  
KicOffset-st: 1/0/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

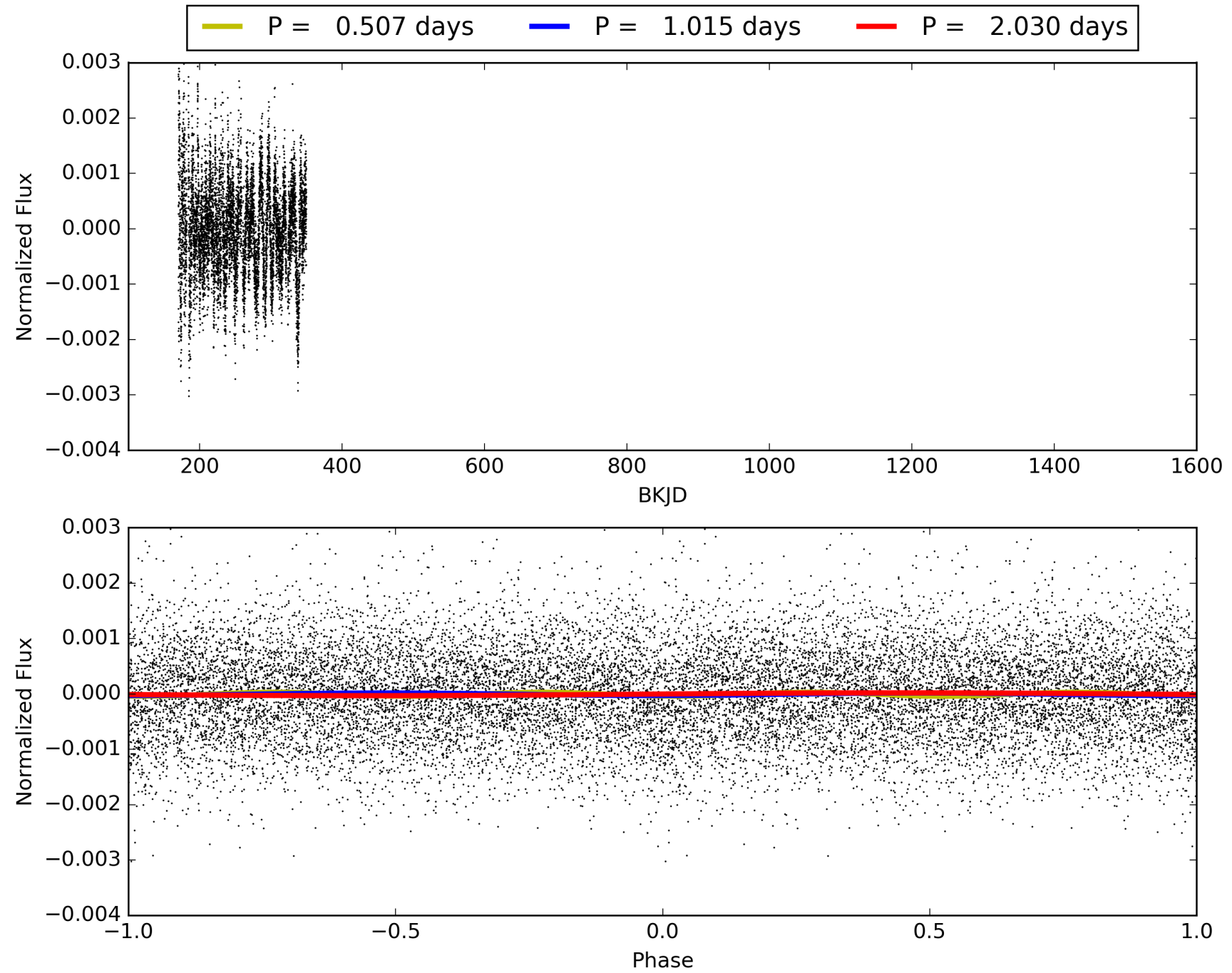
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 03:23:07 Z

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

# TCE 008613446-01, PDC Light Curves

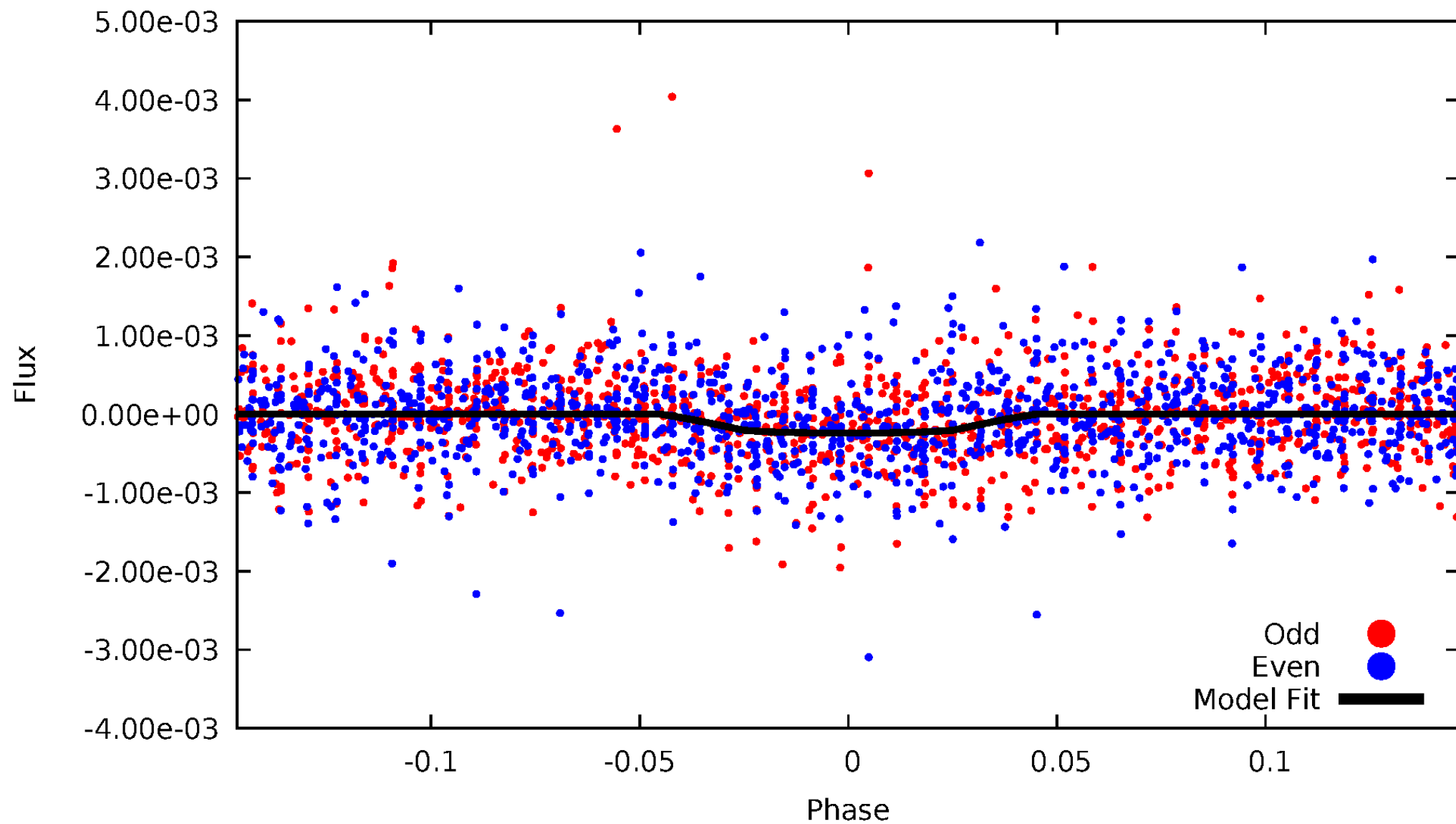


TCE 008613446-01



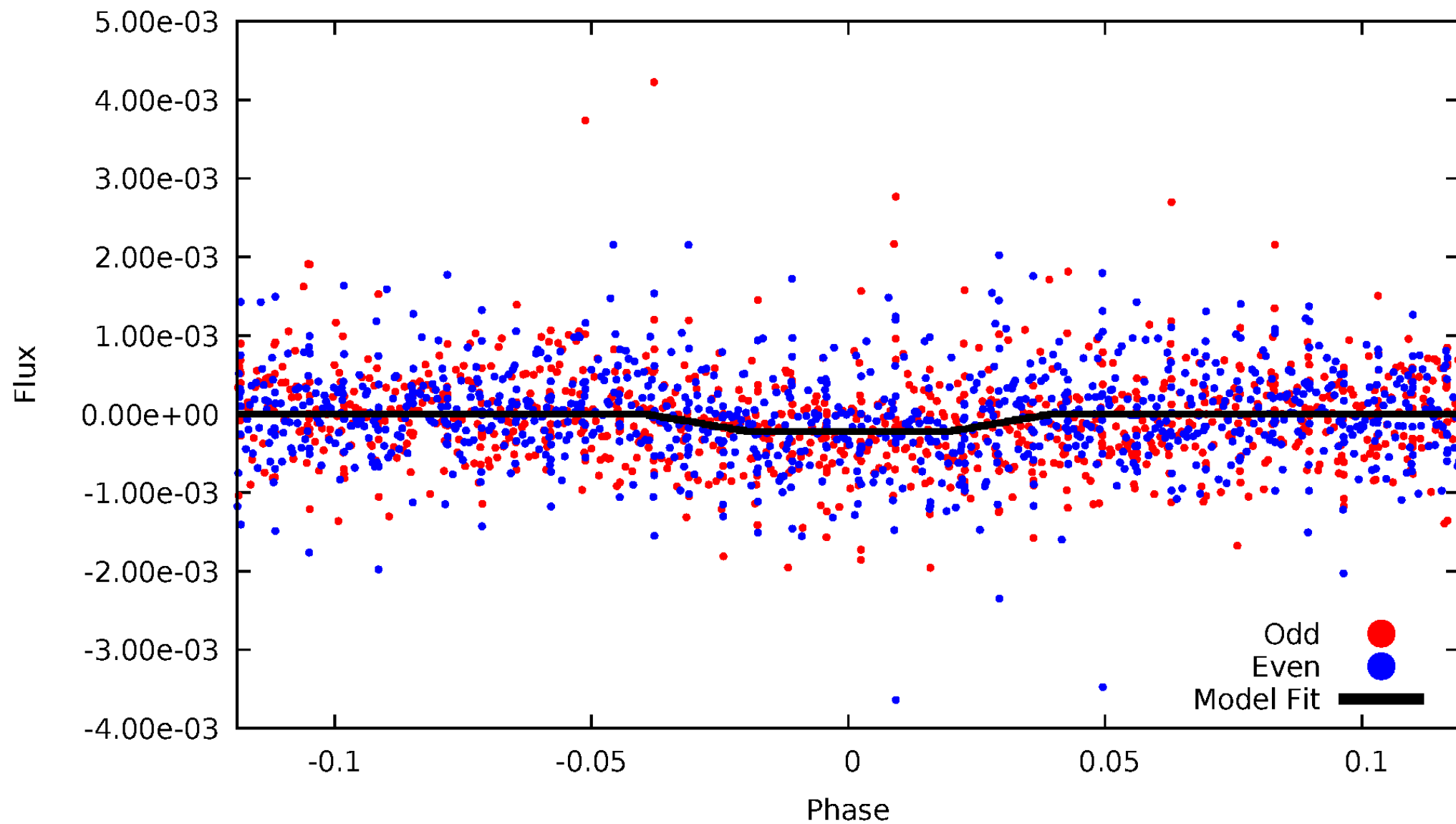
# DV Odd/Even

TCE 008613446-01



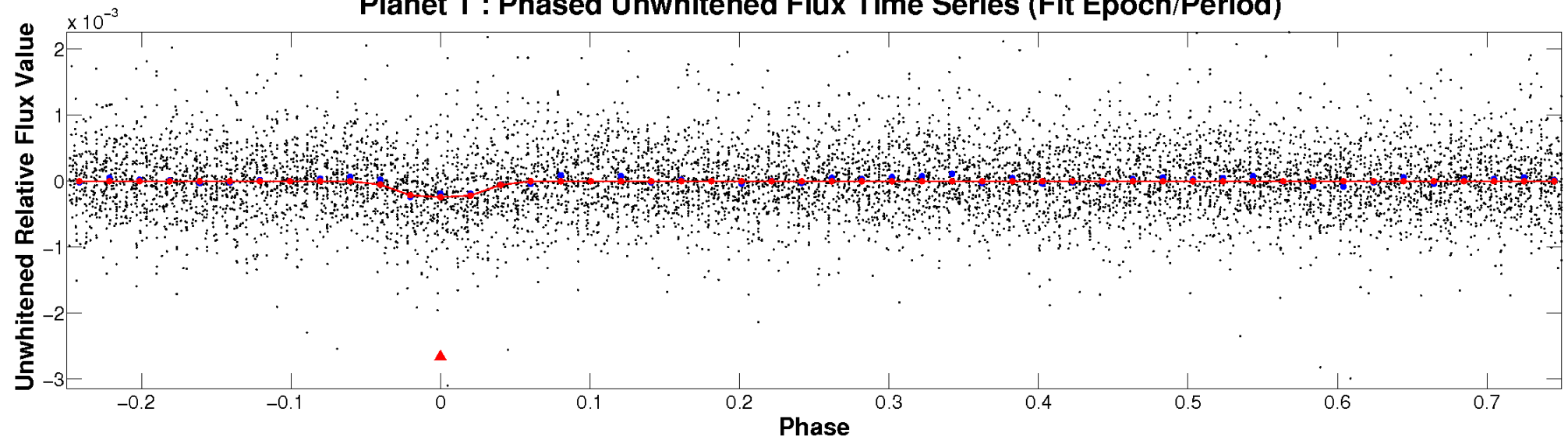
# ALT Odd/Even

TCE 008613446-01

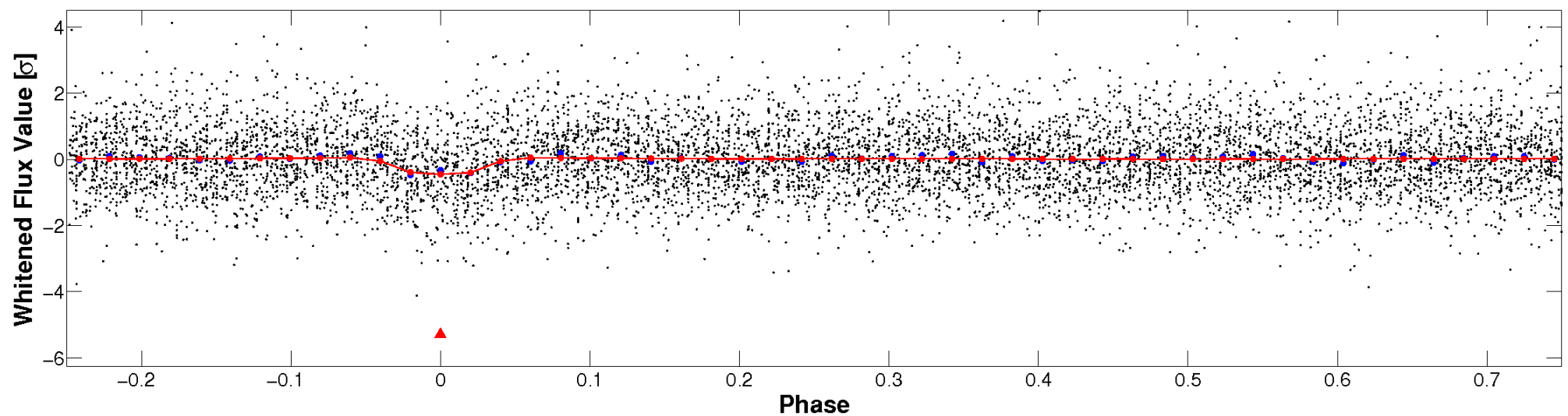


# Non-Whitened Vs. Whitened Light Curve

**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 008613446-01 P= 1.014874 Days  $T_0=131.617687$  (BKJD)





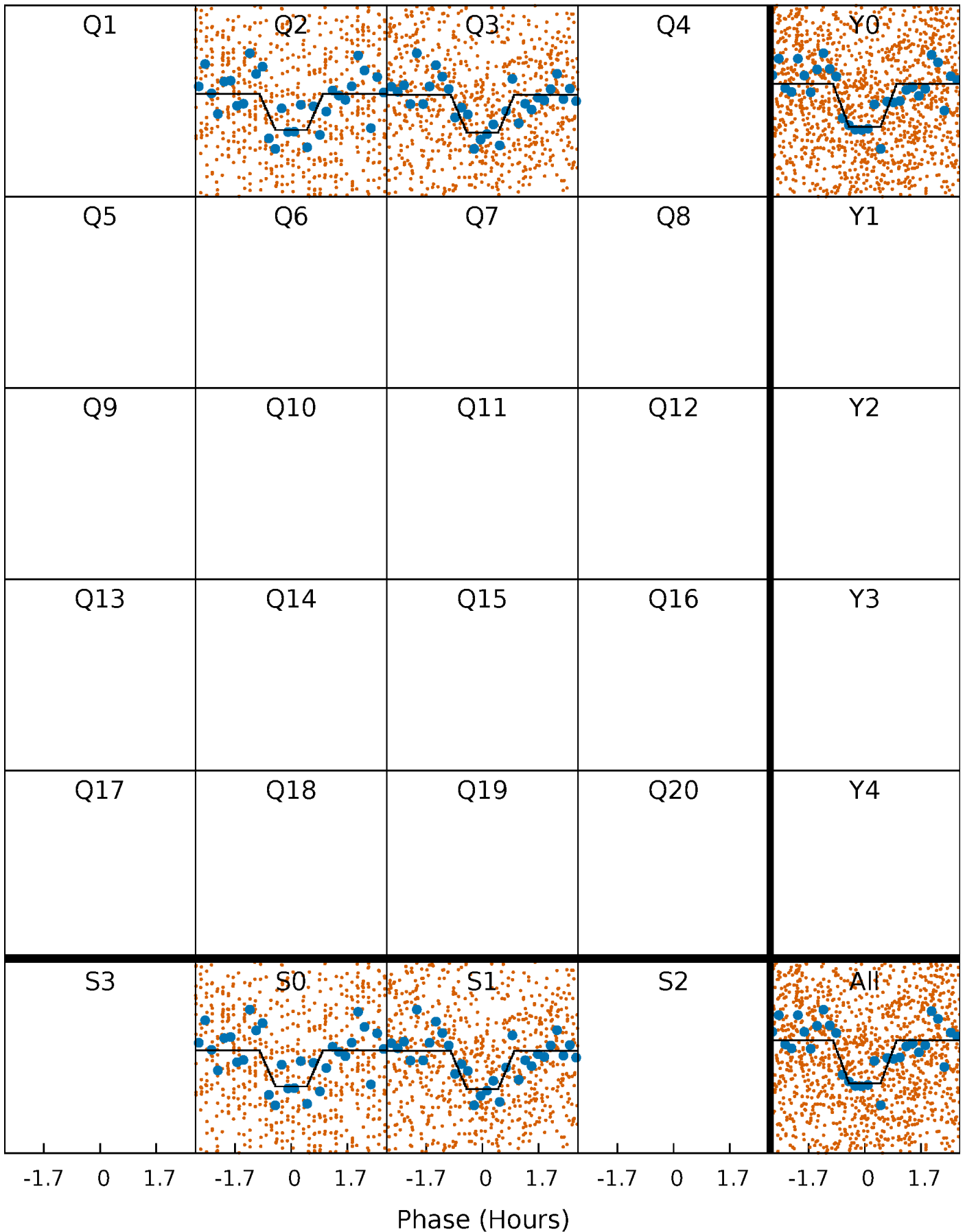
# DV Quarter-Phased Transit Curves

TCE 008613446-01 P= 1.014874 Days  $T_0=131.617687$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

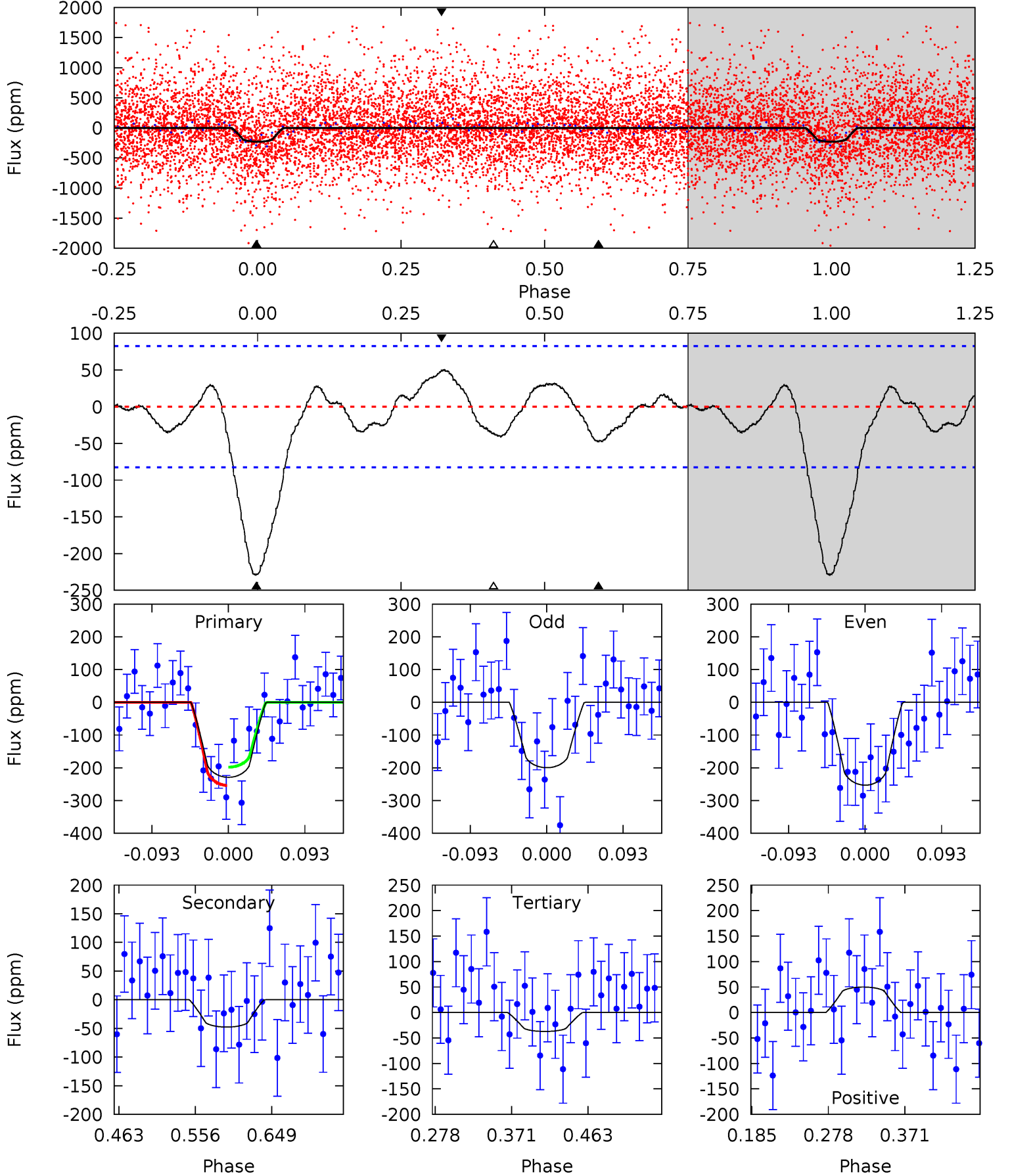
TCE 008613446-01 P= 1.014880 Days  $T_0=131.612994$  (BKJD)



# DV Model-Shift Uniqueness Test

008613446-01, P = 1.014874 Days, E = 131.617687 Days

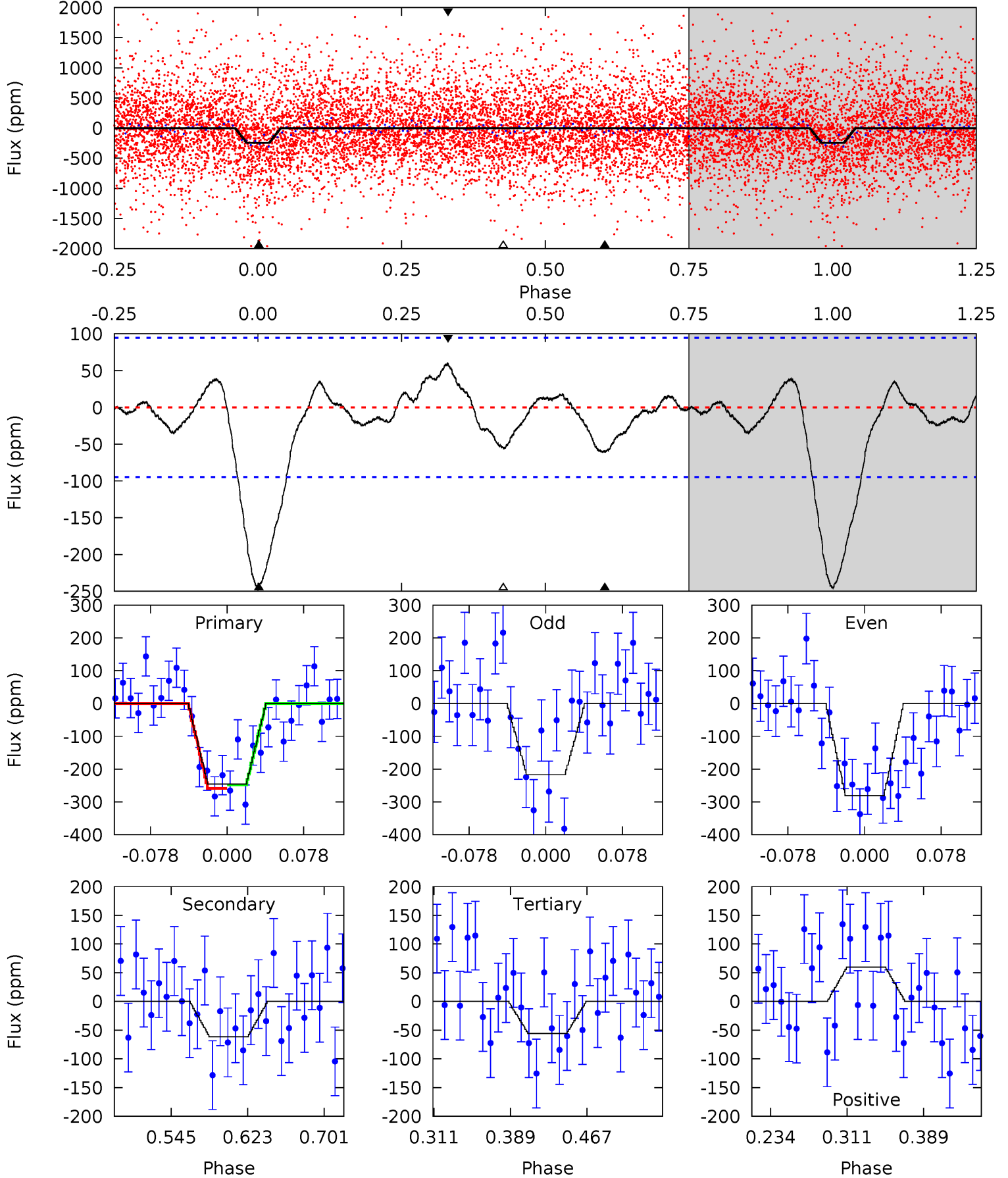
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.7	2.65	2.06	2.77	4.58	1.68	1.29	10.7	9.94	0.58	-0.13	1.50	0.82	0.18	1.57



# Alt Model-Shift Uniqueness Test

008613446-01, P = 1.014880 Days, E = 131.612994 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
12.0	2.99	2.72	2.91	4.62	1.76	1.16	9.24	9.04	0.28	0.08	1.58	0.84	0.20	0.26



### Stellar Parameters For KIC 008613446

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6158^{+171}_{-236}$	$4.453^{+0.056}_{-0.224}$	$-0.080^{+0.250}_{-0.300}$	$1.024^{+0.358}_{-0.119}$	$1.080^{+0.166}_{-0.135}$	$1.419^{+0.442}_{-0.832}$
	+3%/-4%	+1%/-5%	+312%/-375%	+35%/-12%	+15%/-12%	+31%/-59%
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 008613446-01 / KOI 7069.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-48 \pm 18$	$2.29^{+1.75}_{-1.30}$	$2755^{+207}_{-148}$	$3879^{+1751}_{-1001}$	$2.018^{+9.410}_{-1.466}$
Alt.	$-61 \pm 21$	$2.06^{+1.72}_{-1.26}$	$2754^{+214}_{-150}$	$4179^{+2489}_{-957}$	$3.006^{+18.583}_{-2.171}$

$T_{max}$  = 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

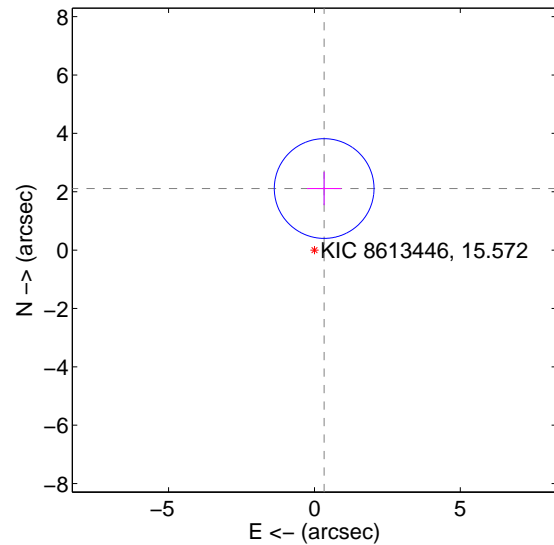
Supplemental centroid analysis for 008613446-01. Kepler magnitude: 15.57. Transit SNR 9.49

There are 1 quarters with good PRF difference image offsets

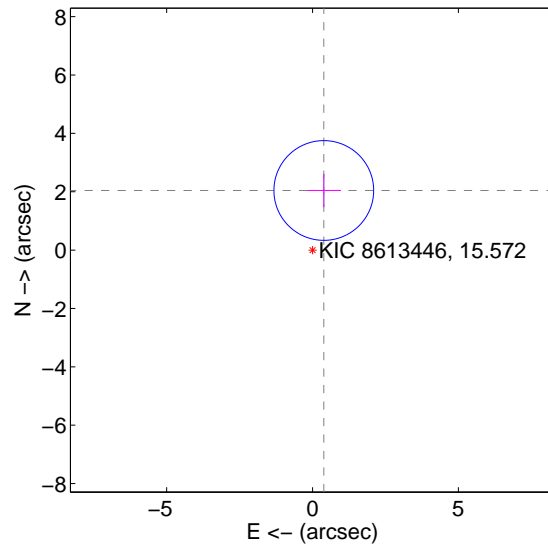
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.136 \pm 0.570$	3.75	$-0.333 \pm 0.585$	$2.110 \pm 0.569$
PRF-fit source offset from KIC position	$2.080 \pm 0.570$	3.65	$-0.386 \pm 0.585$	$2.043 \pm 0.569$
photometric centroid source offset	$1.76 \pm 1.72$	1.03	$-0.64 \pm 1.52$	$1.64 \pm 1.74$

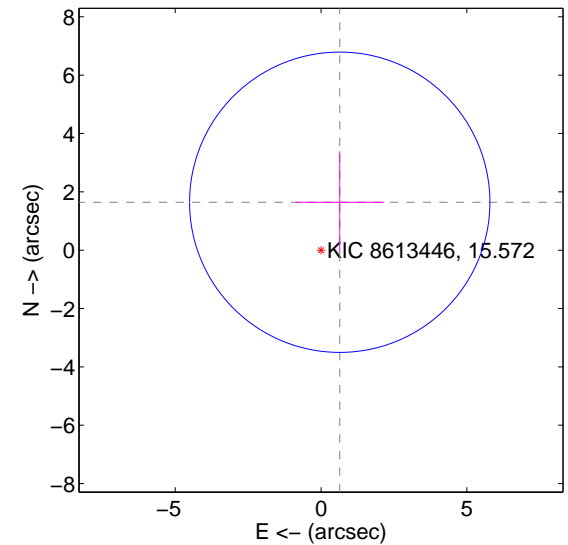
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

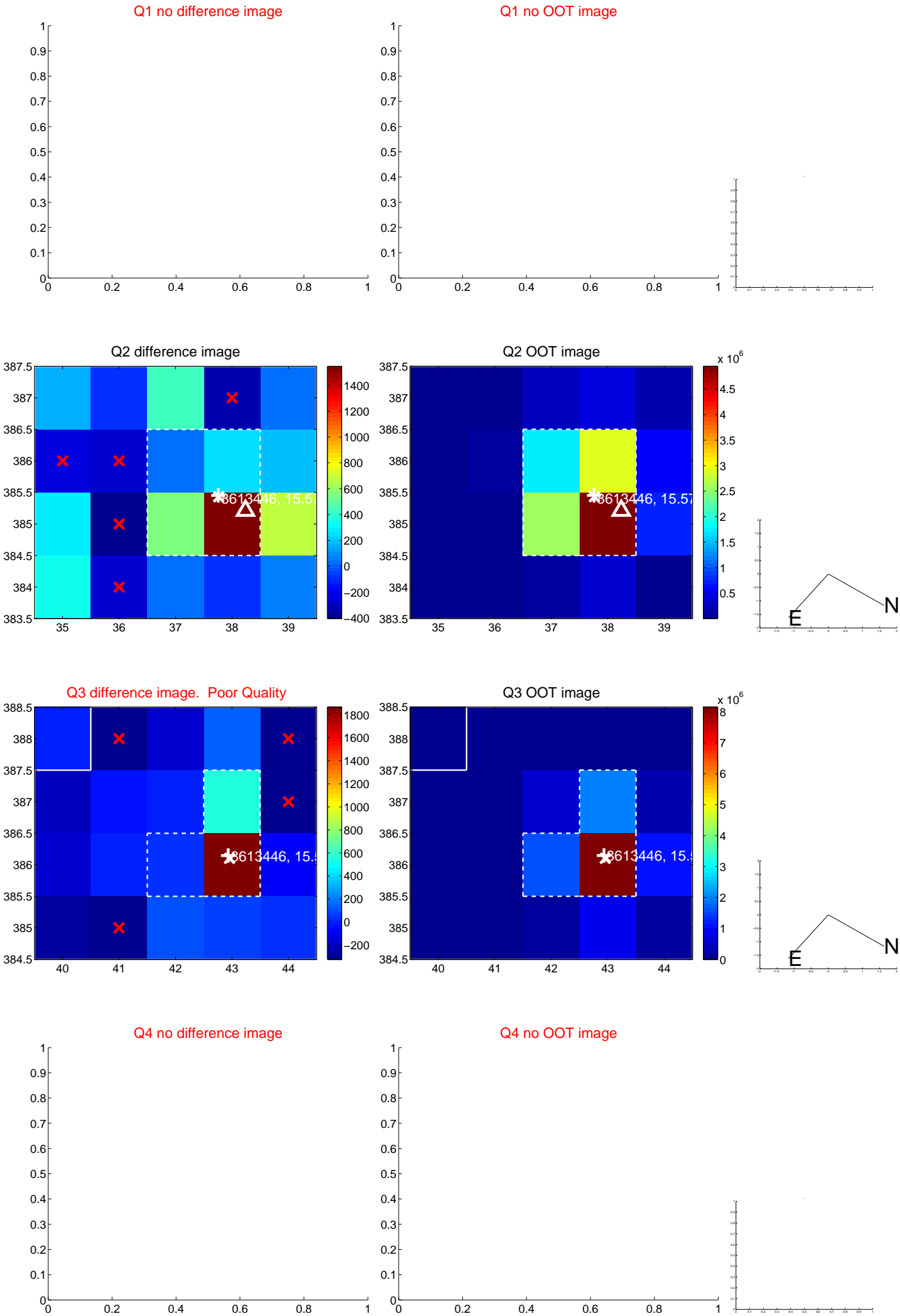


offset from photometric centroids



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.





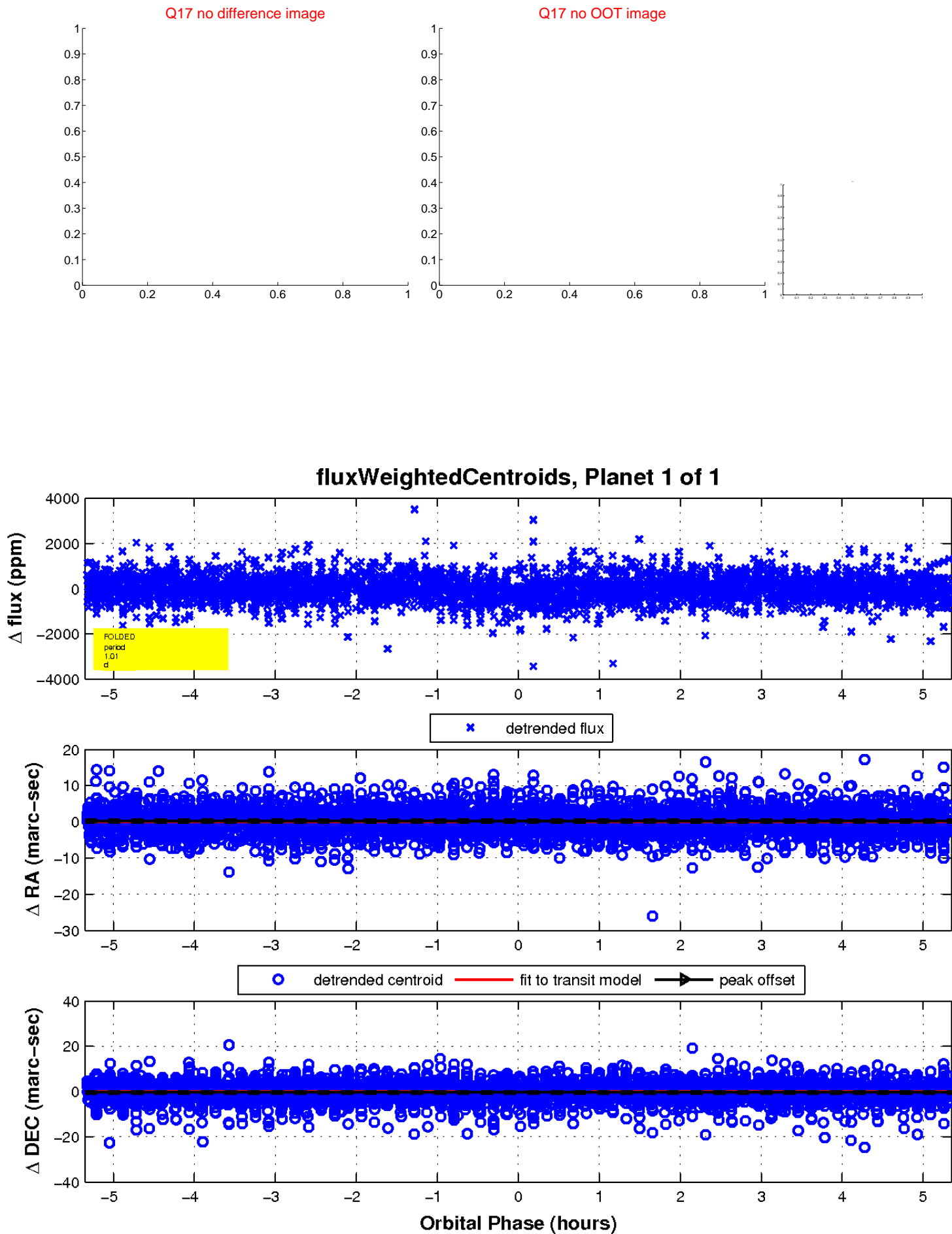
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

