

# KIC 006049470

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
006049470-01	OBS	8115.01	354.776485	434.376324	75.6	11.600	10.8	5.9	0.52	3778	0.50	0.08

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006049470-01	OBS	FP	0.05	1	0	0	0	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.

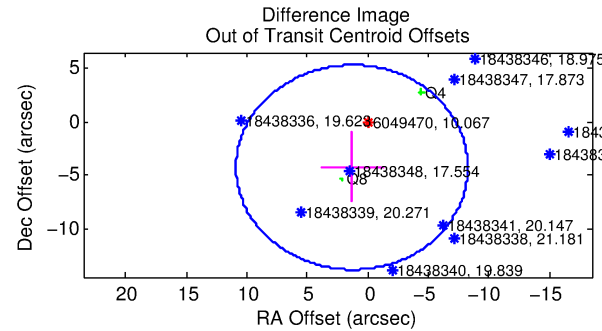
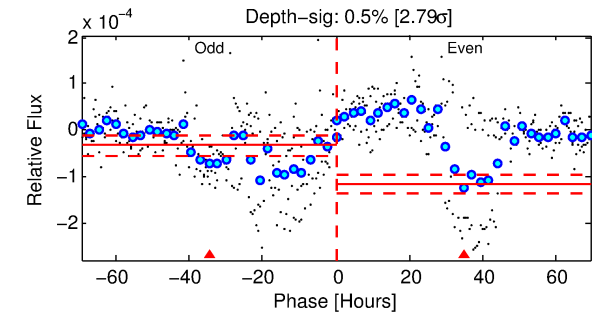
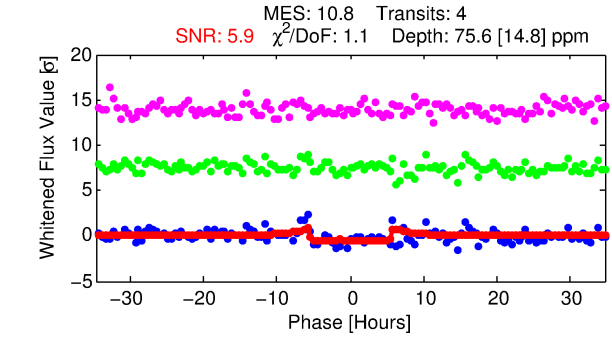
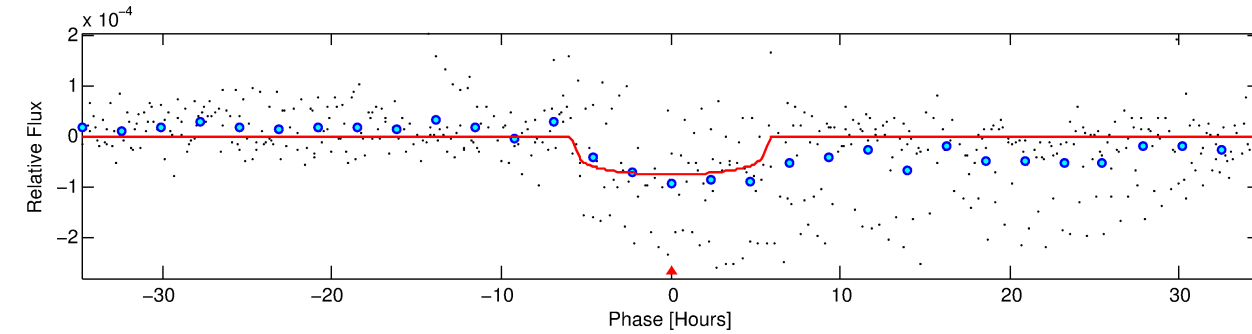
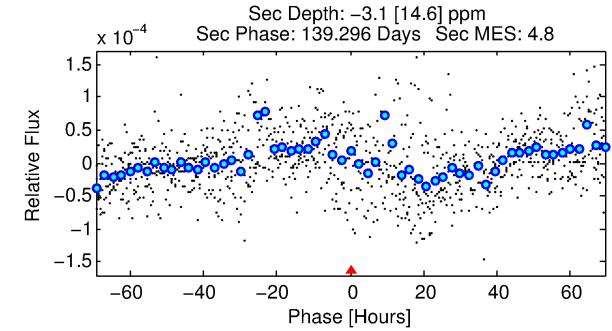
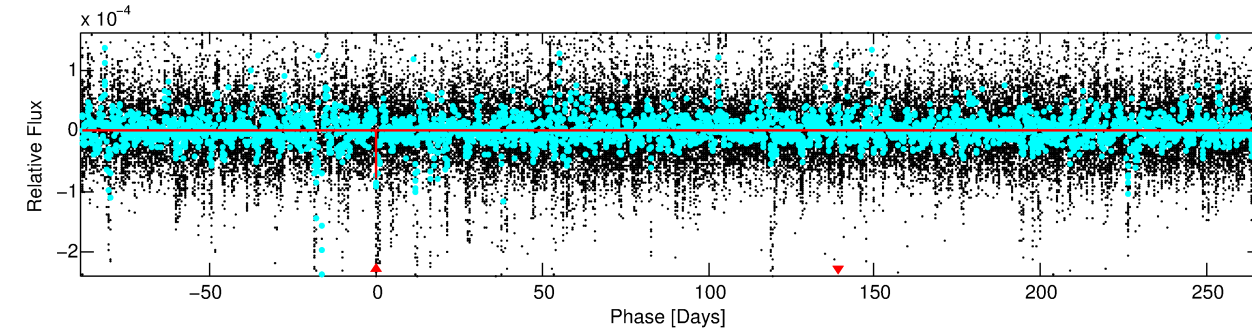
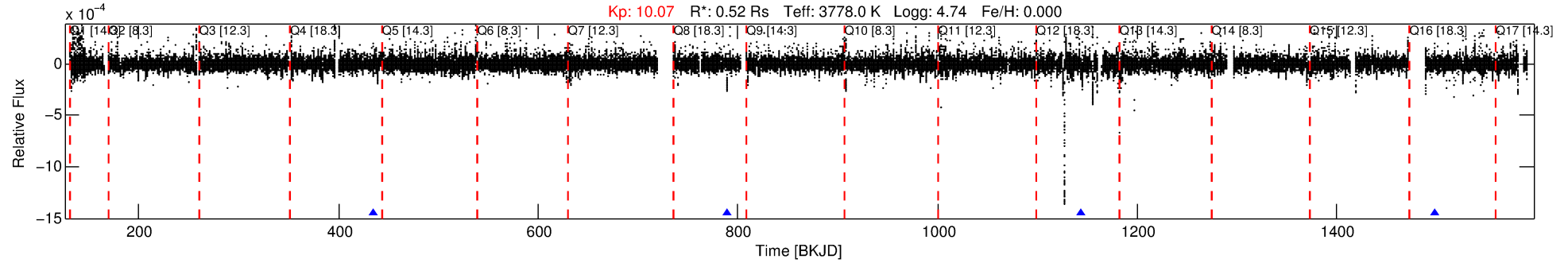
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 006049470-01

No Significant Match Found

# DV One-Page Summary

KIC: 6049470 Candidate: 1 of 1 Period: 354.776 d



## DV Fit Results:

Period = 354.77649 [0.00621] d  
Epoch = 434.3763 [0.0121] BKJD  
Rp/R\* = 0.0088 [0.0023]  
a/R\* = 144.26 [144.64]  
b = 0.80 [0.46]  
Seff = 0.08 [0.01]  
Teq = 134 [6] K  
Rp = 0.50 [0.15] Re  
a = 0.7959 [0.0850] AU  
Ag = N/A  
Teffp = N/A

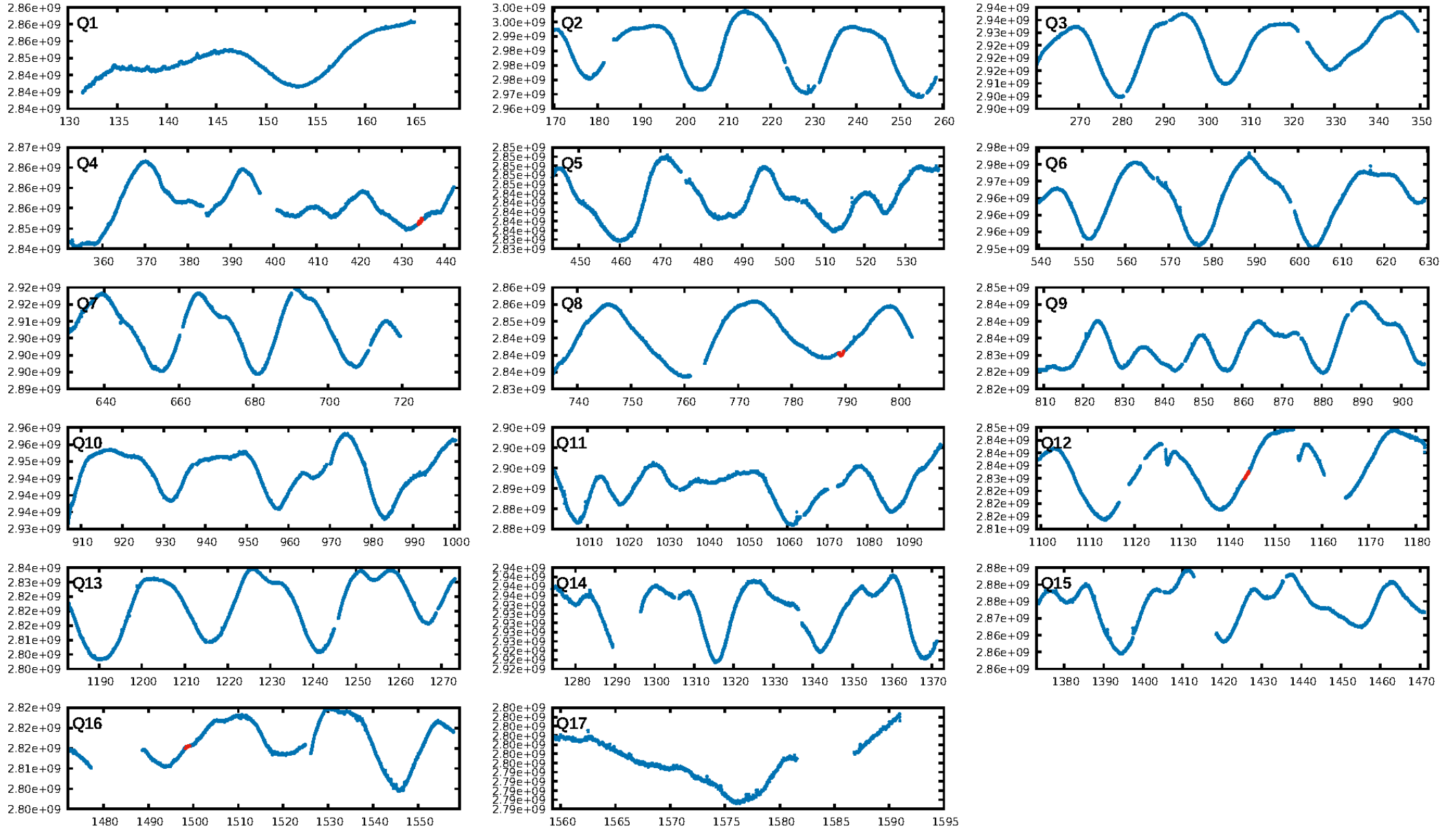
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 91.5%  
Bootstrap-pfa: 8.89e-10  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 0.1%  
Centroid-so: 7.343 arcsec [2.23σ]  
OotOffset-rm: 4.450 arcsec [1.40σ]  
KicOffset-rm: 7.130 arcsec [2.22σ]  
OotOffset-st: 0/0/2/0 [2]  
KicOffset-st: 0/0/2/0 [2]  
DiffImageQuality-fgm: 0.00 [0/2]  
DiffImageOverlap-fno: 1.00 [3/3]

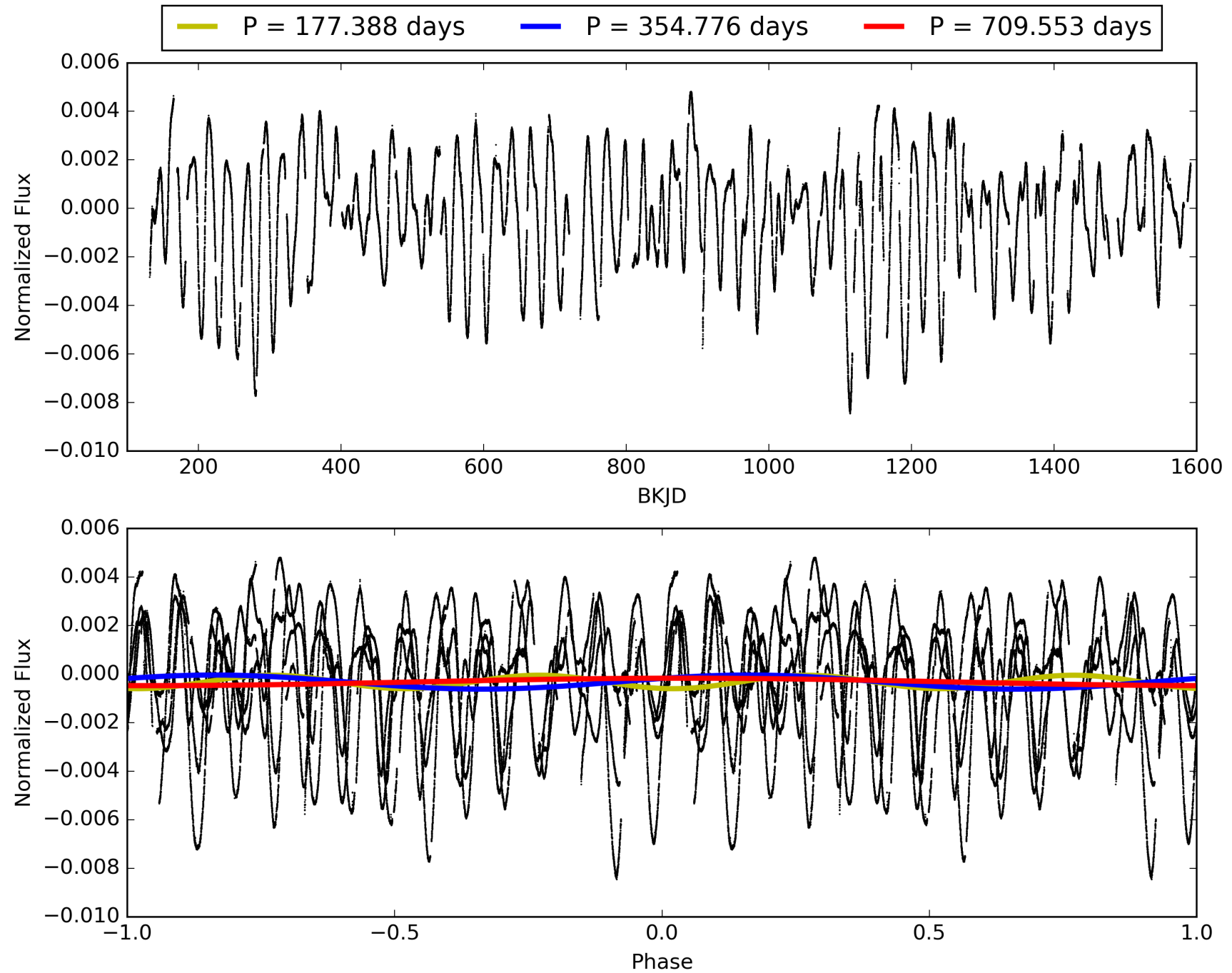
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 18:49:10 Z

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

# TCE 006049470-01, PDC Light Curves

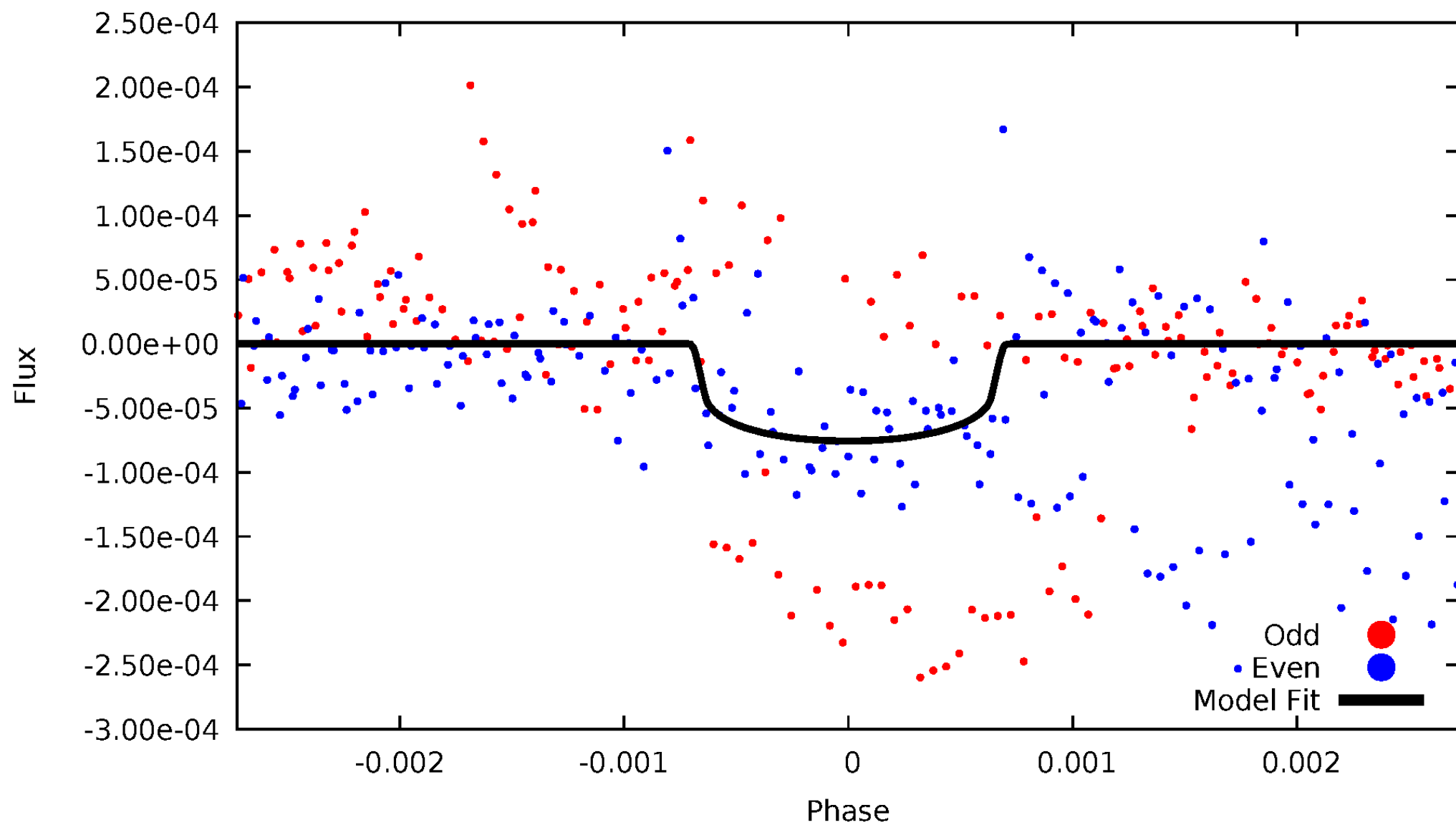


TCE 006049470-01



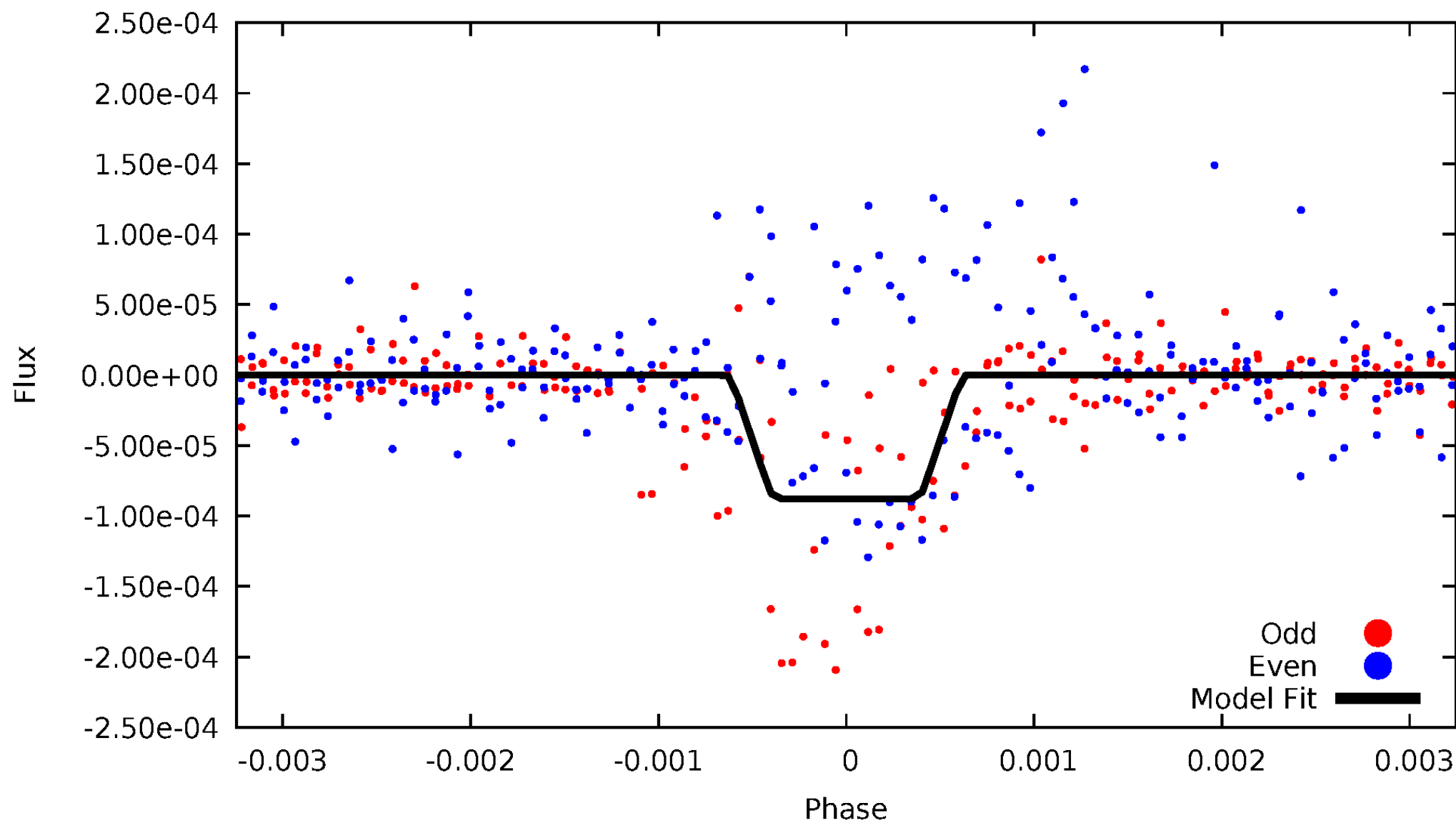
# DV Odd/Even

TCE 006049470-01

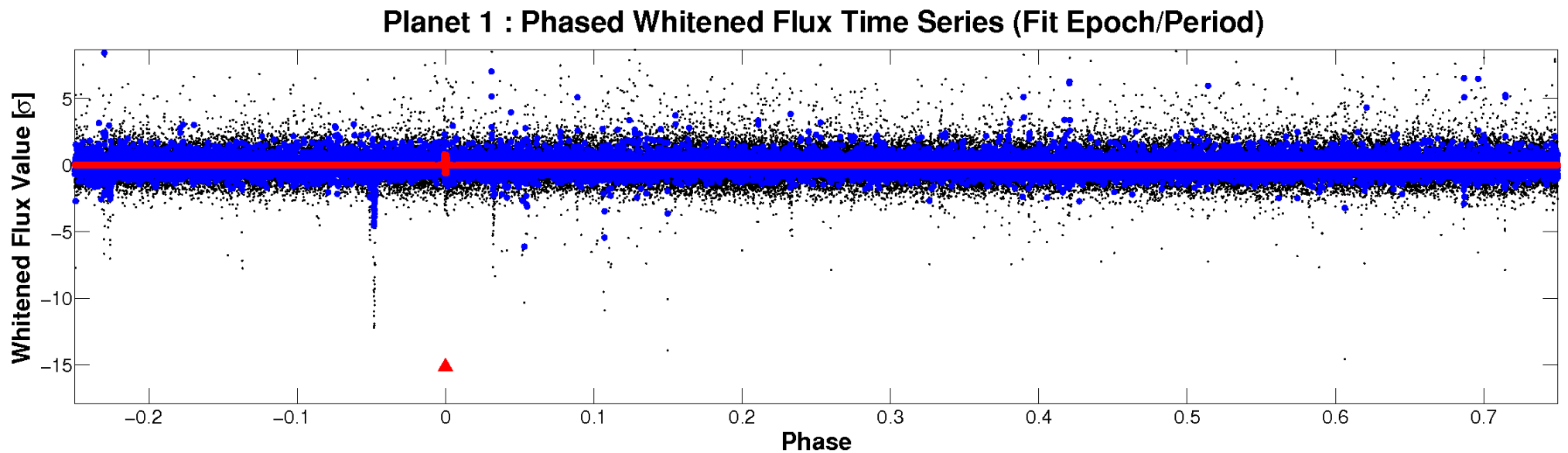
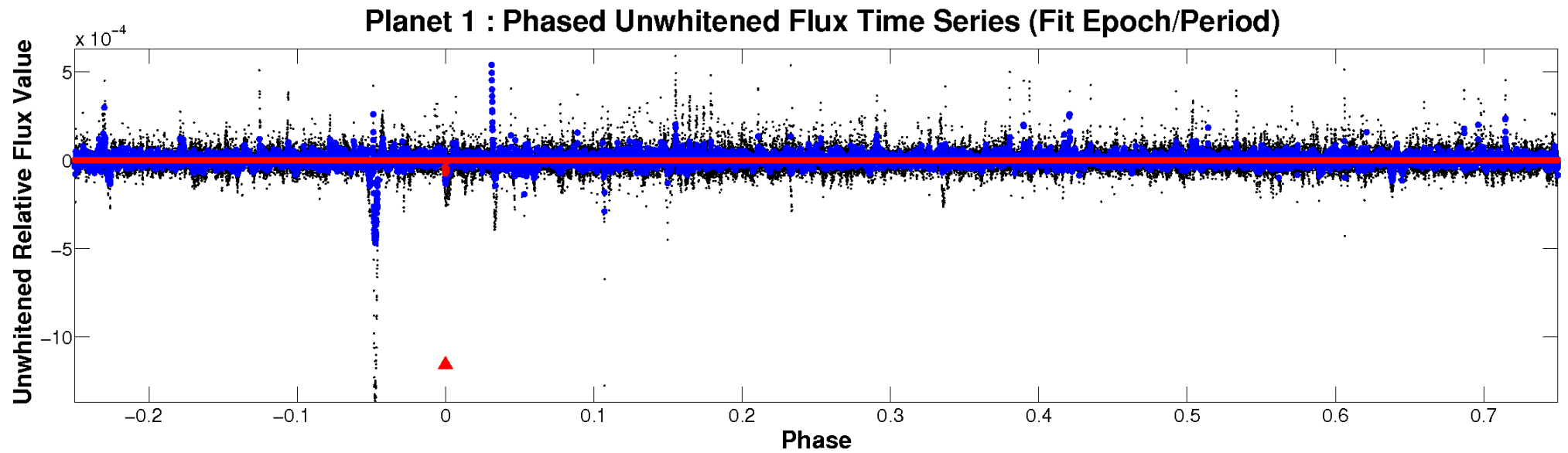


# ALT Odd/Even

TCE 006049470-01

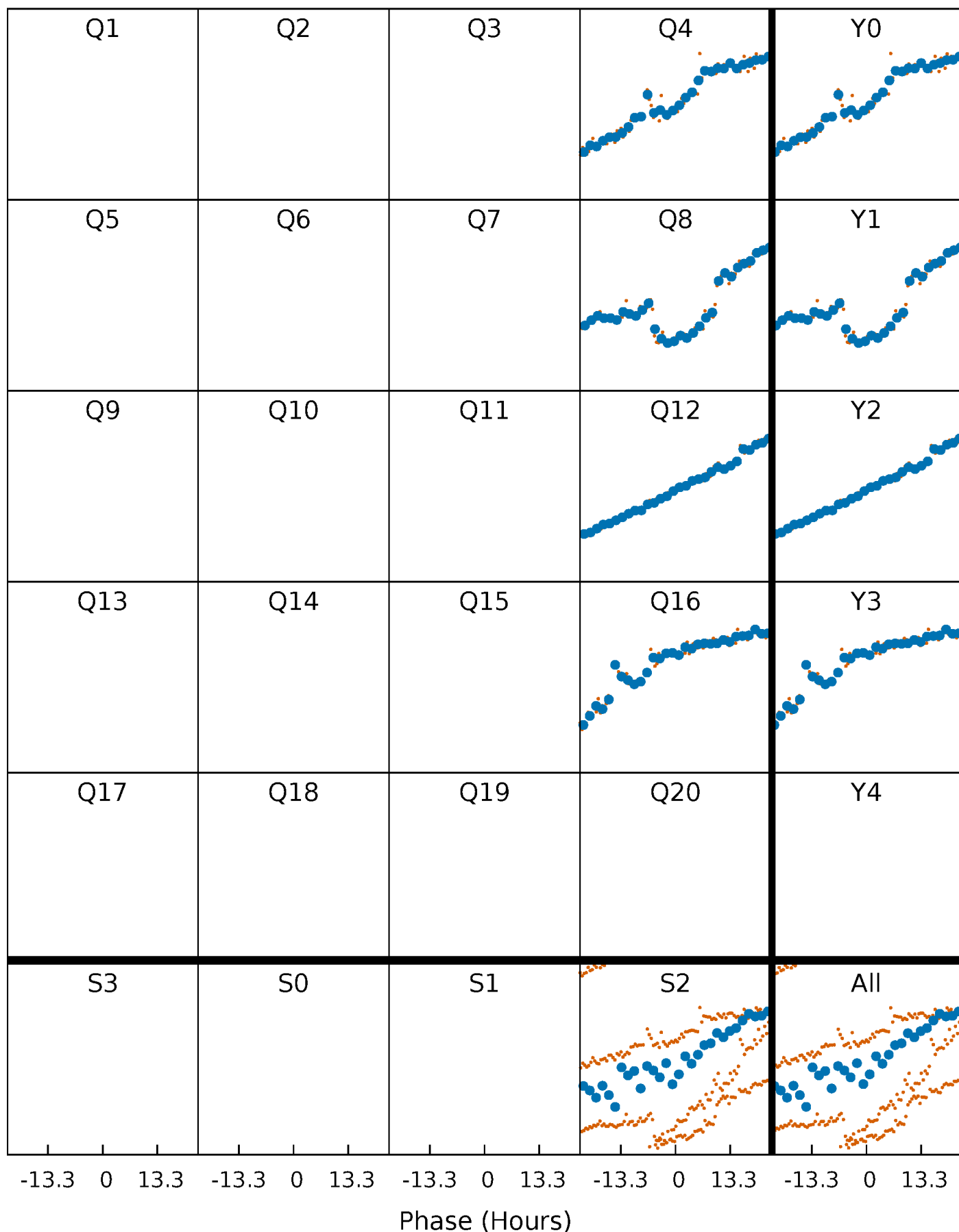


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

TCE 006049470-01 P=354.776485 Days  $T_0=434.376324$  (BKJD)





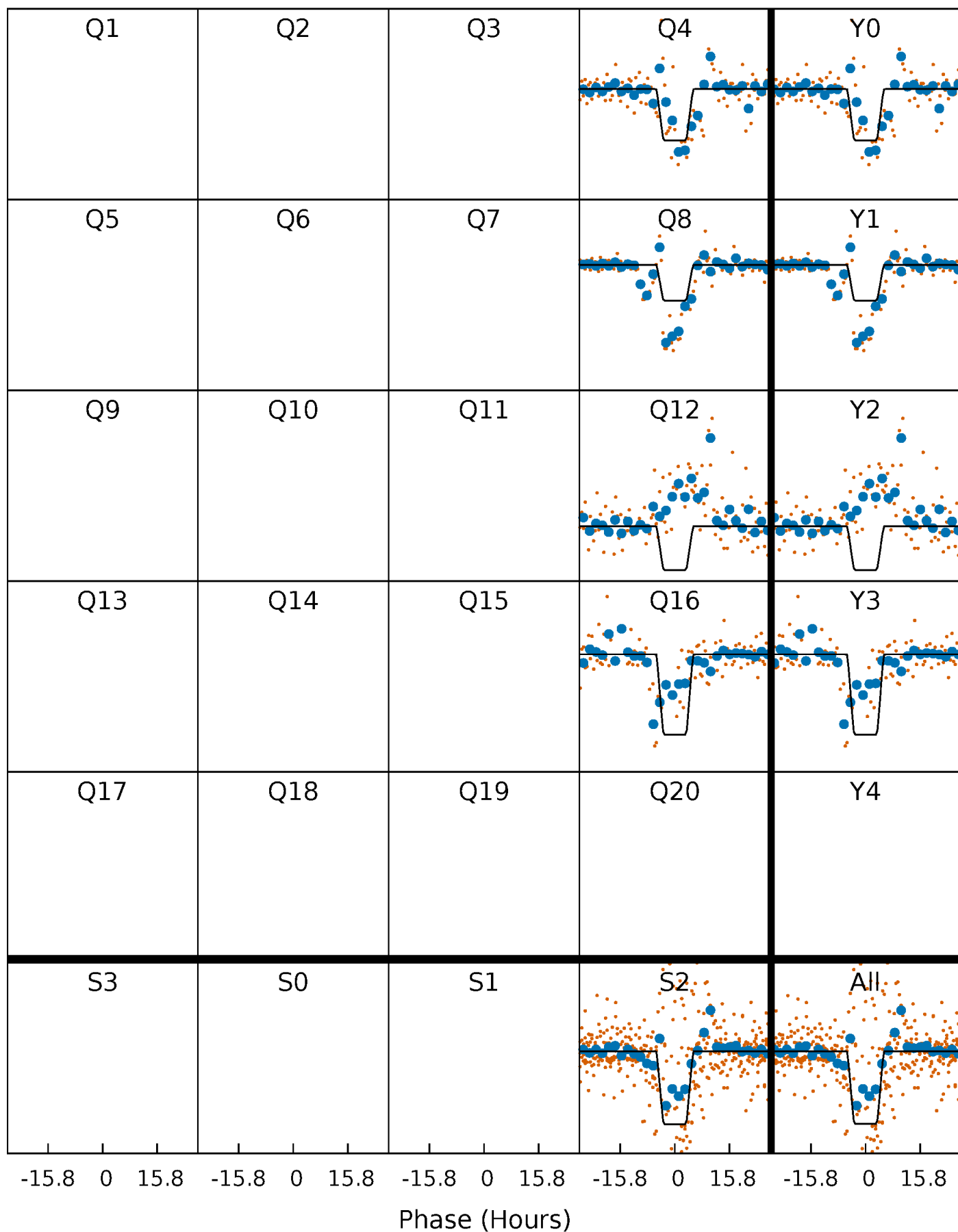
# DV Quarter-Phased Transit Curves

TCE 006049470-01 P=354.776485 Days  $T_0=434.376324$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

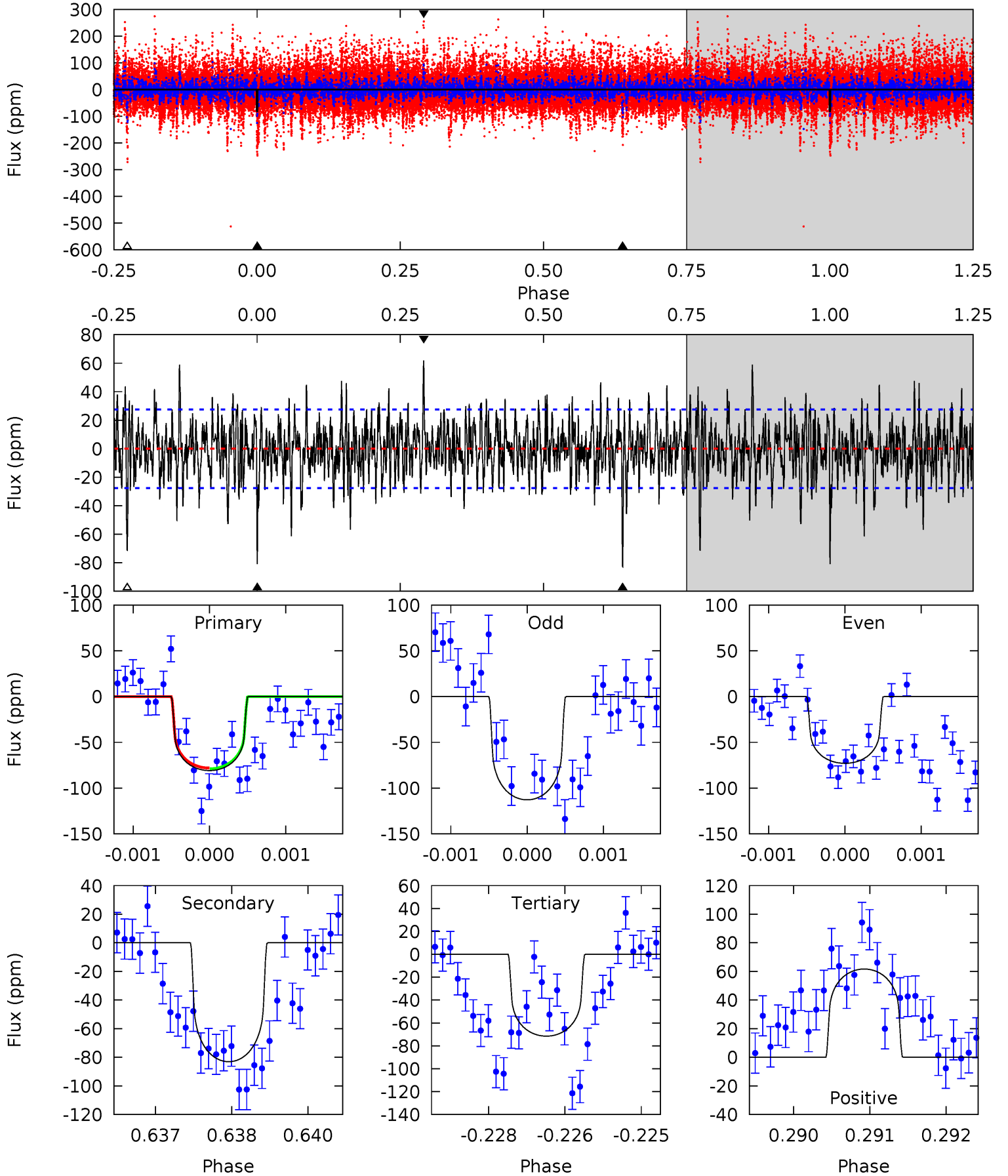
TCE 006049470-01 P=354.828769 Days  $T_0=434.253514$  (BKJD)



# DV Model-Shift Uniqueness Test

006049470-01,  $P = 354.776485$  Days,  $E = 79.599839$  Days

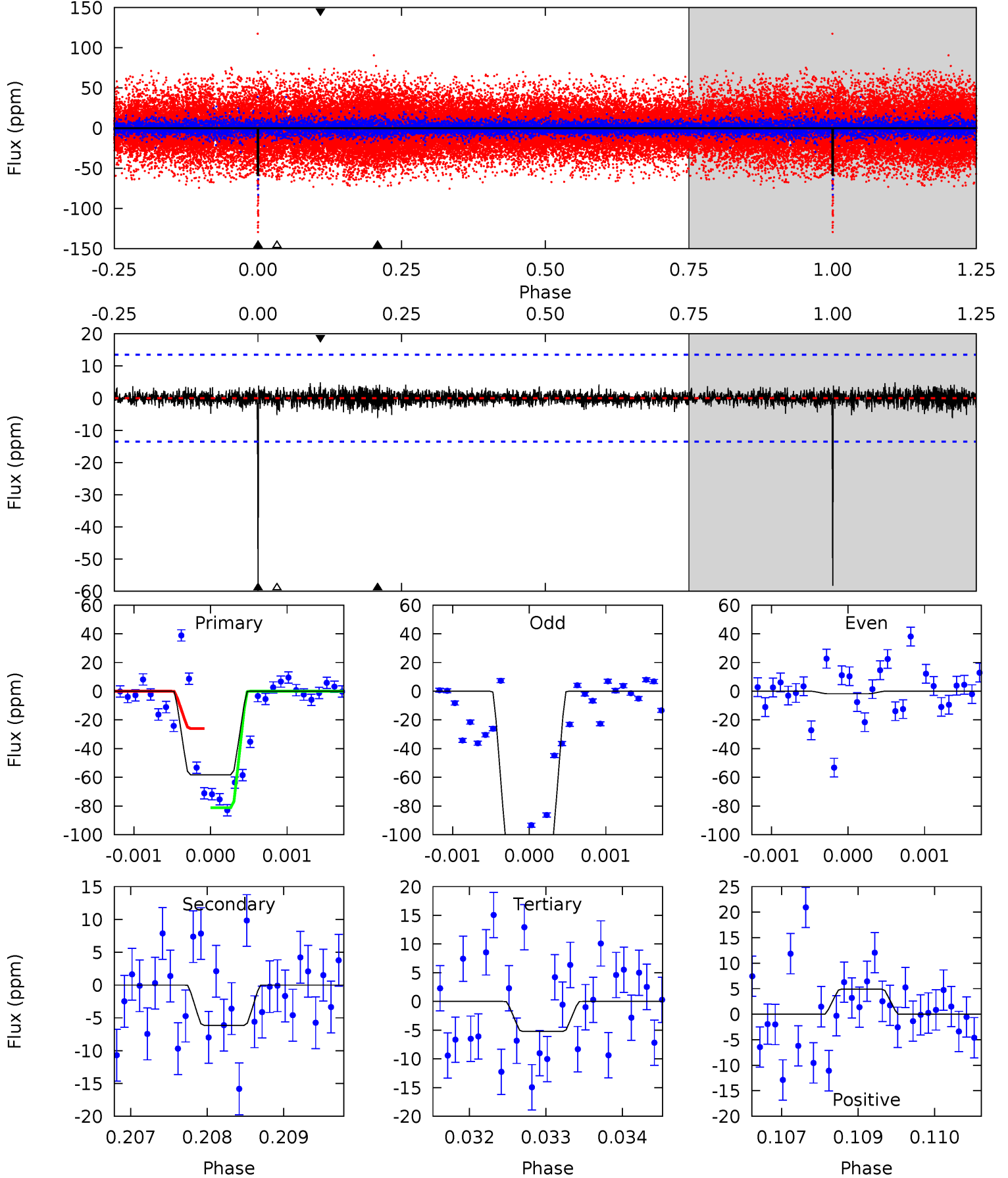
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.8	16.3	14.0	12.1	5.39	3.19	3.09	1.82	3.75	2.26	4.19	3.60	1.06	0.43	0.08



# Alt Model-Shift Uniqueness Test

006049470-01, P = 354.828769 Days, E = 79.424745 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
23.3	2.45	2.09	1.96	5.40	3.21	0.46	21.2	21.3	0.37	0.49	25.2	0.90	0.08	0



### Stellar Parameters For KIC 006049470

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3778^{+76}_{-83}$	$4.742^{+0.071}_{-0.038}$	$0.000^{+0.250}_{-0.300}$	$0.515^{+0.048}_{-0.071}$	$0.533^{+0.046}_{-0.074}$	$5.503^{+1.941}_{-0.888}$
	+2%/-2%	+1%/-1%	+inf%/-inf%	+9%/-14%	+9%/-14%	+35%/-16%
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 006049470-01 / KOI 8115.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-83 \pm 5$	$0.49^{+0.14}_{-0.14}$	$186^{+6}_{-6}$	$3821^{+454}_{-305}$	$120987^{+108041}_{-45626}$
Alt.	$-6 \pm 3$	$0.51^{+0.13}_{-0.13}$	$186^{+6}_{-7}$	$2571^{+250}_{-200}$	$7907^{+8177}_{-3909}$

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

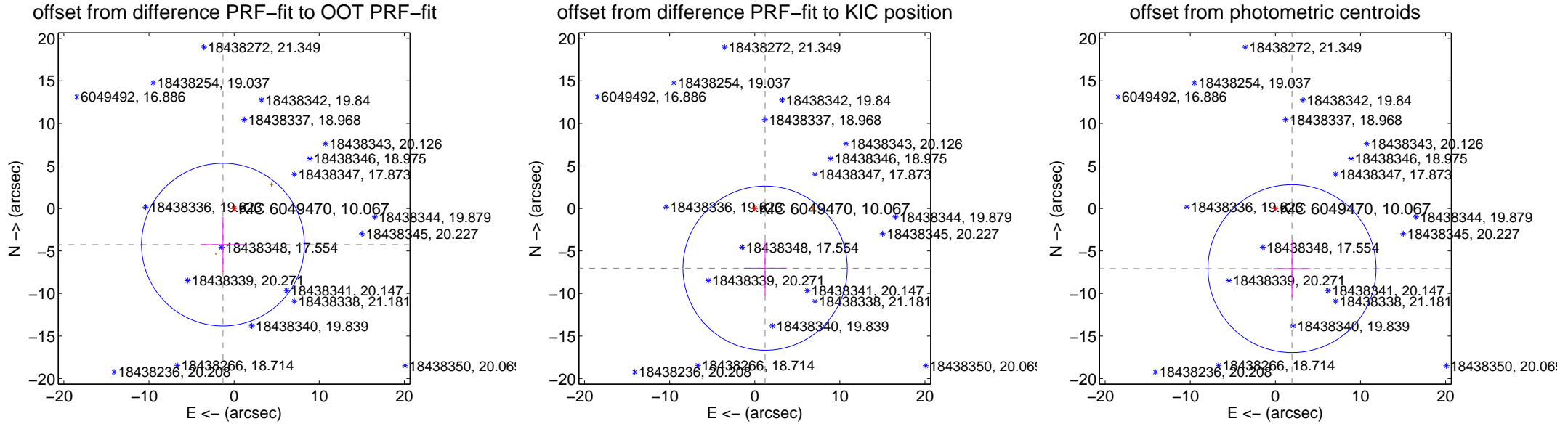
## DV Centroid Data

Supplemental centroid analysis for 006049470-01. **Kepler magnitude: 10.07.** Transit SNR 5.87

There are 0 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 3.76 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.450 \pm 3.188$	1.40	$1.310 \pm 2.546$	$-4.253 \pm 3.243$
PRF-fit source offset from KIC position	$7.130 \pm 3.217$	2.22	$-1.221 \pm 2.505$	$-7.025 \pm 3.236$
photometric centroid source offset	$7.34 \pm 3.29$	2.23	$-1.95 \pm 2.16$	$-7.08 \pm 3.36$



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

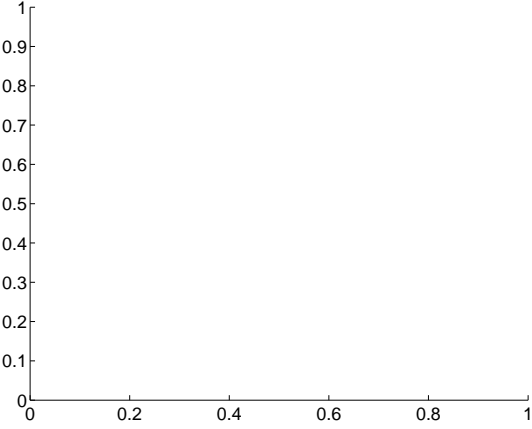
Q1 no difference image



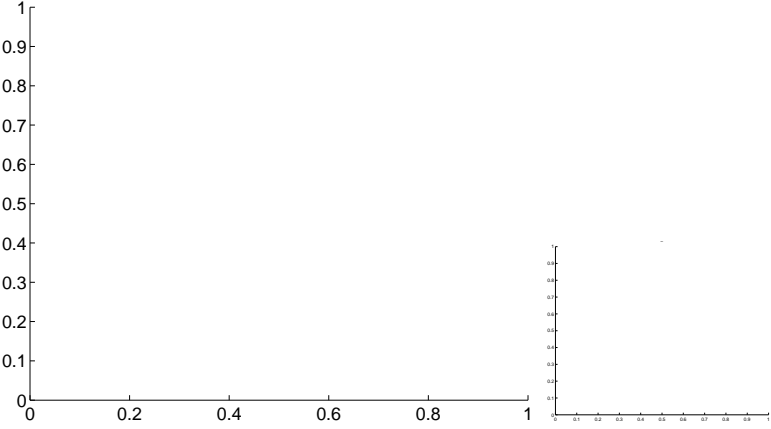
Q1 no OOT image



Q2 no difference image



Q2 no OOT image



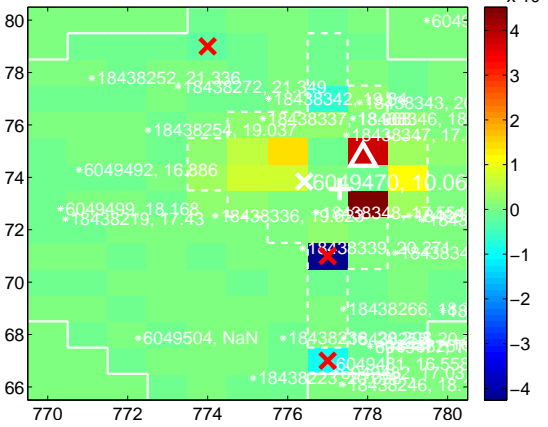
Q3 no difference image



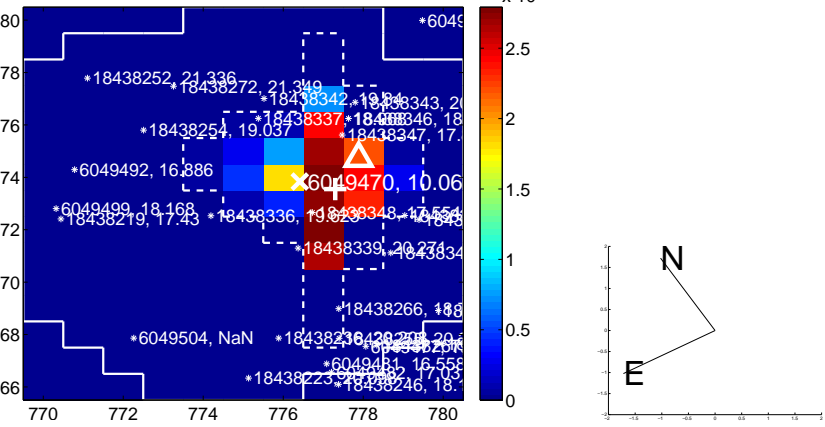
Q3 no OOT image



Q4 difference image. Poor Quality



Q4 OOT image



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

Q5 no difference image



Q5 no OOT image



Q6 no difference image



Q6 no OOT image



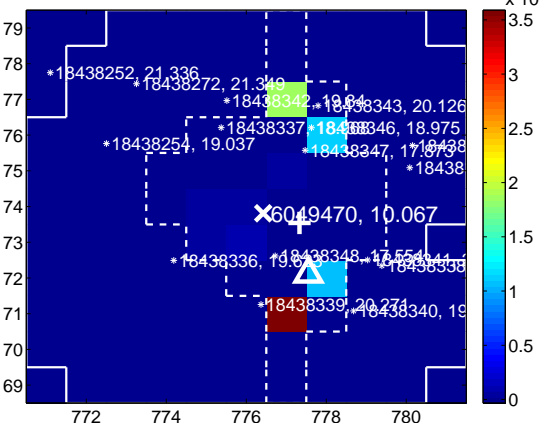
Q7 no difference image



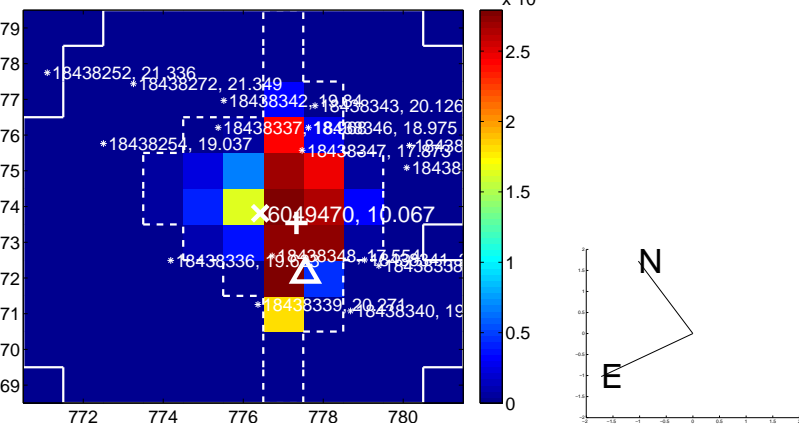
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image





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

Q9 no difference image



Q9 no OOT image



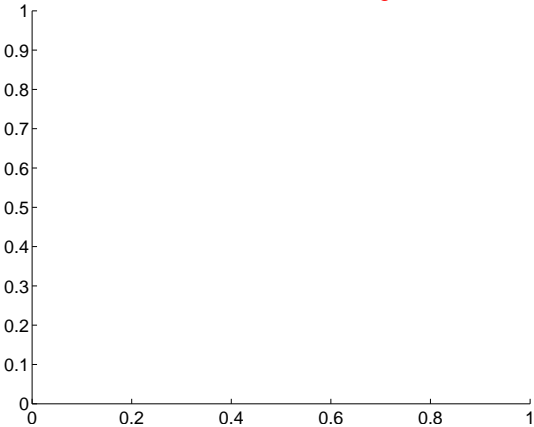
Q10 no difference image



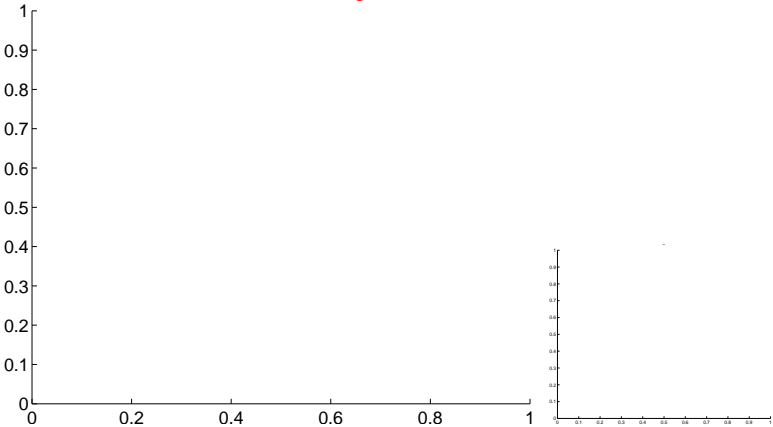
Q10 no OOT image



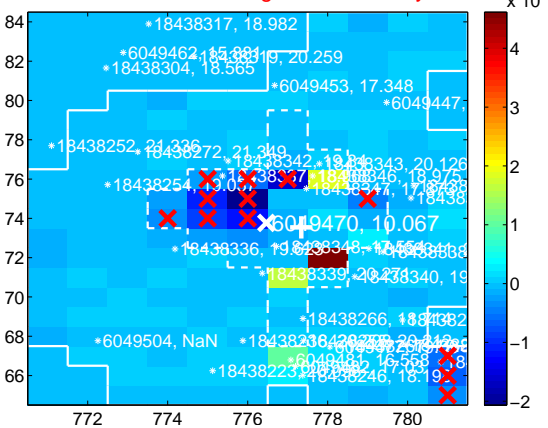
Q11 no difference image



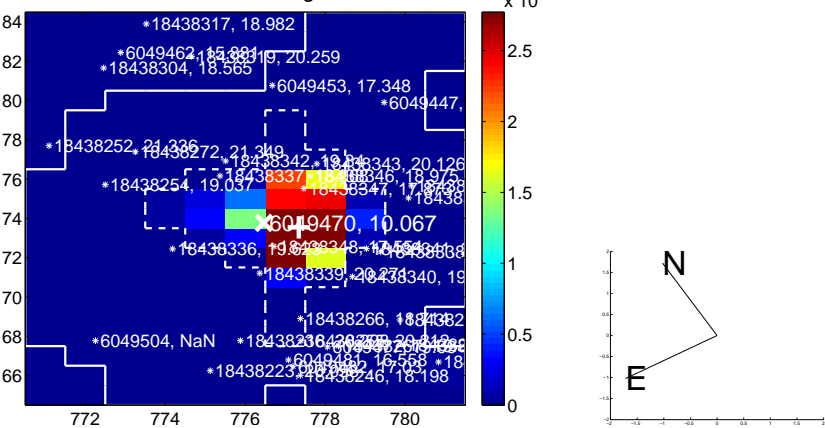
Q11 no OOT image



Q12 difference image. Poor Quality



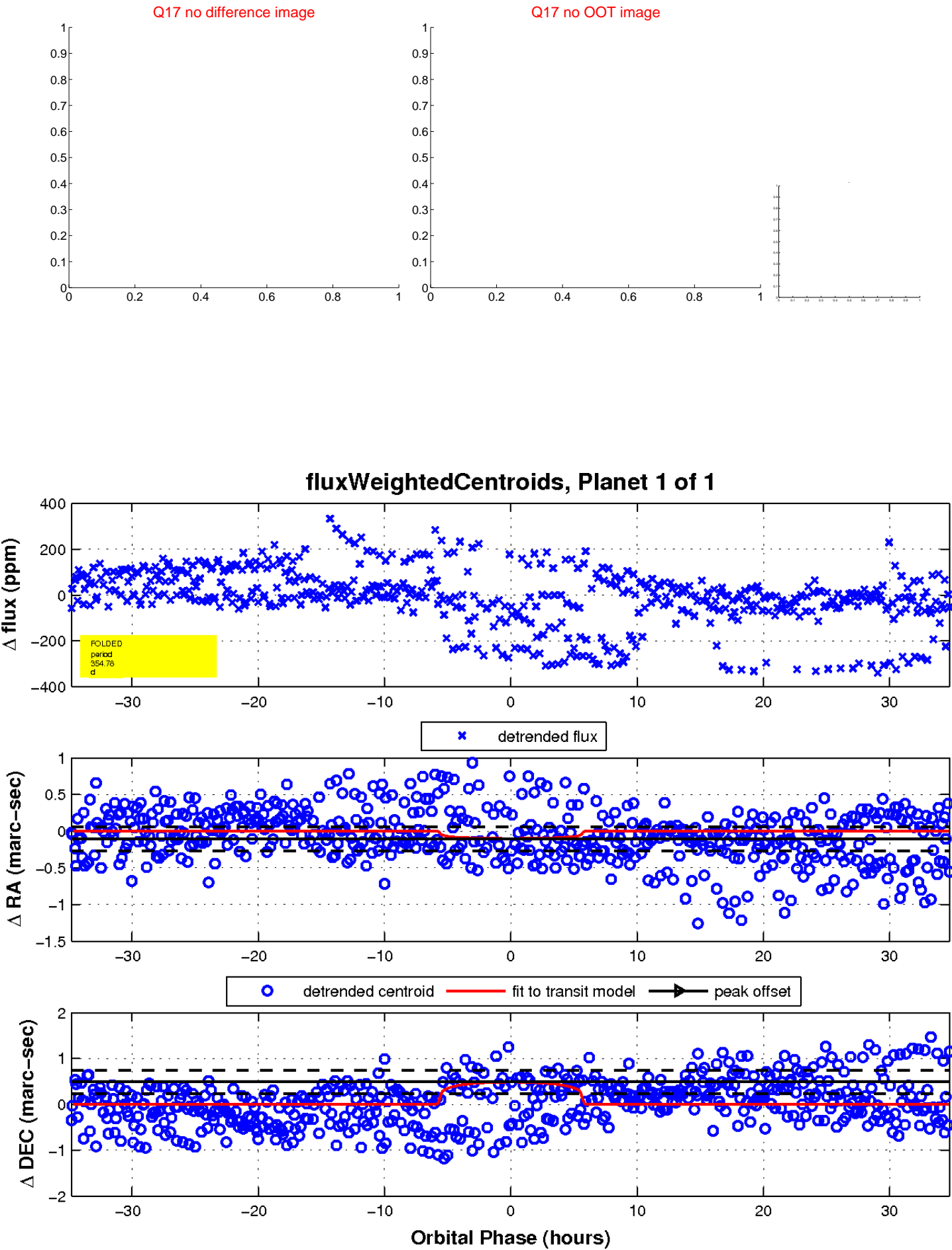
Q12 OOT image



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

