

# KIC 003247039

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003247039-01	OBS	No	1.552719	133.034940	207.1	3.559	9.6	9.5	2.48	7563	4.19	17973.44

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003247039-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

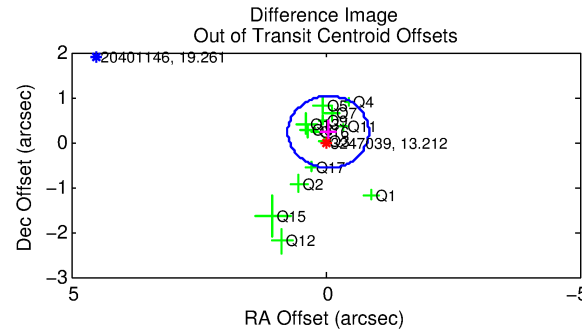
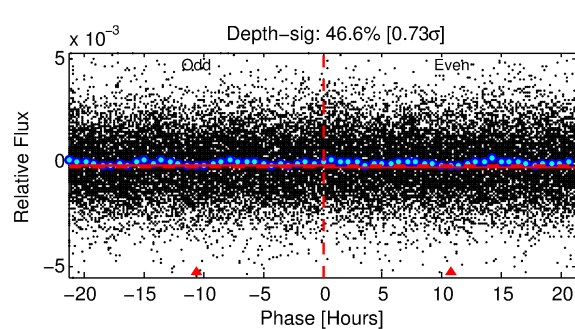
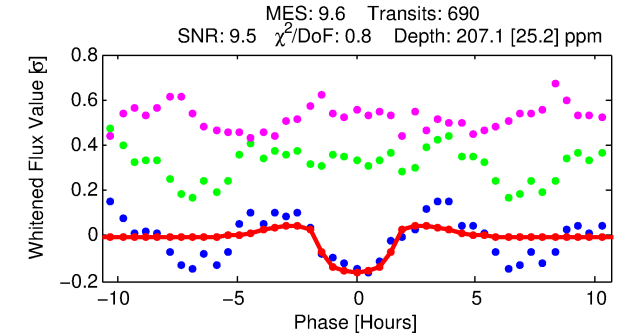
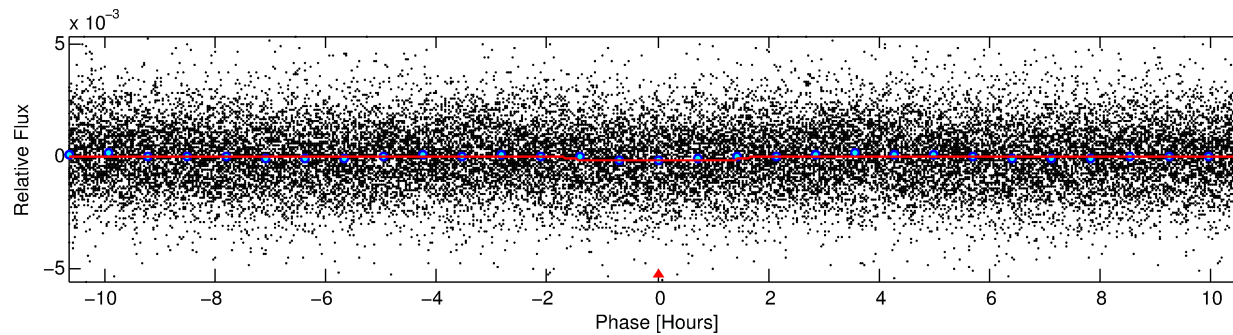
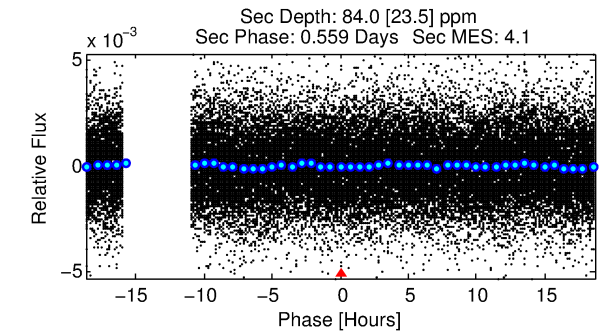
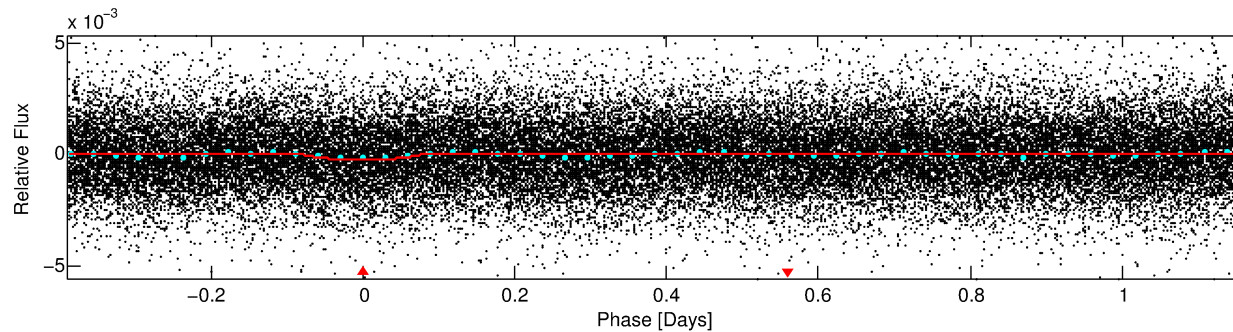
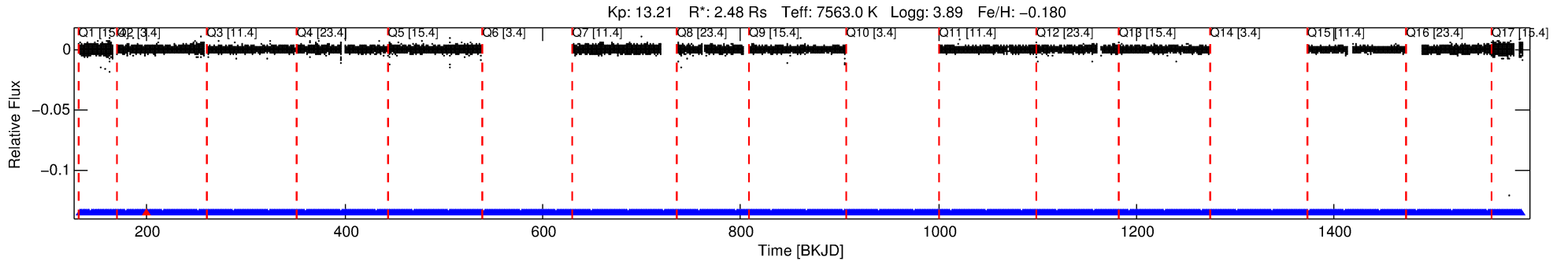
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003247039-01

No Significant Match Found

# DV One-Page Summary

KIC: 3247039 Candidate: 1 of 1 Period: 1.553 d



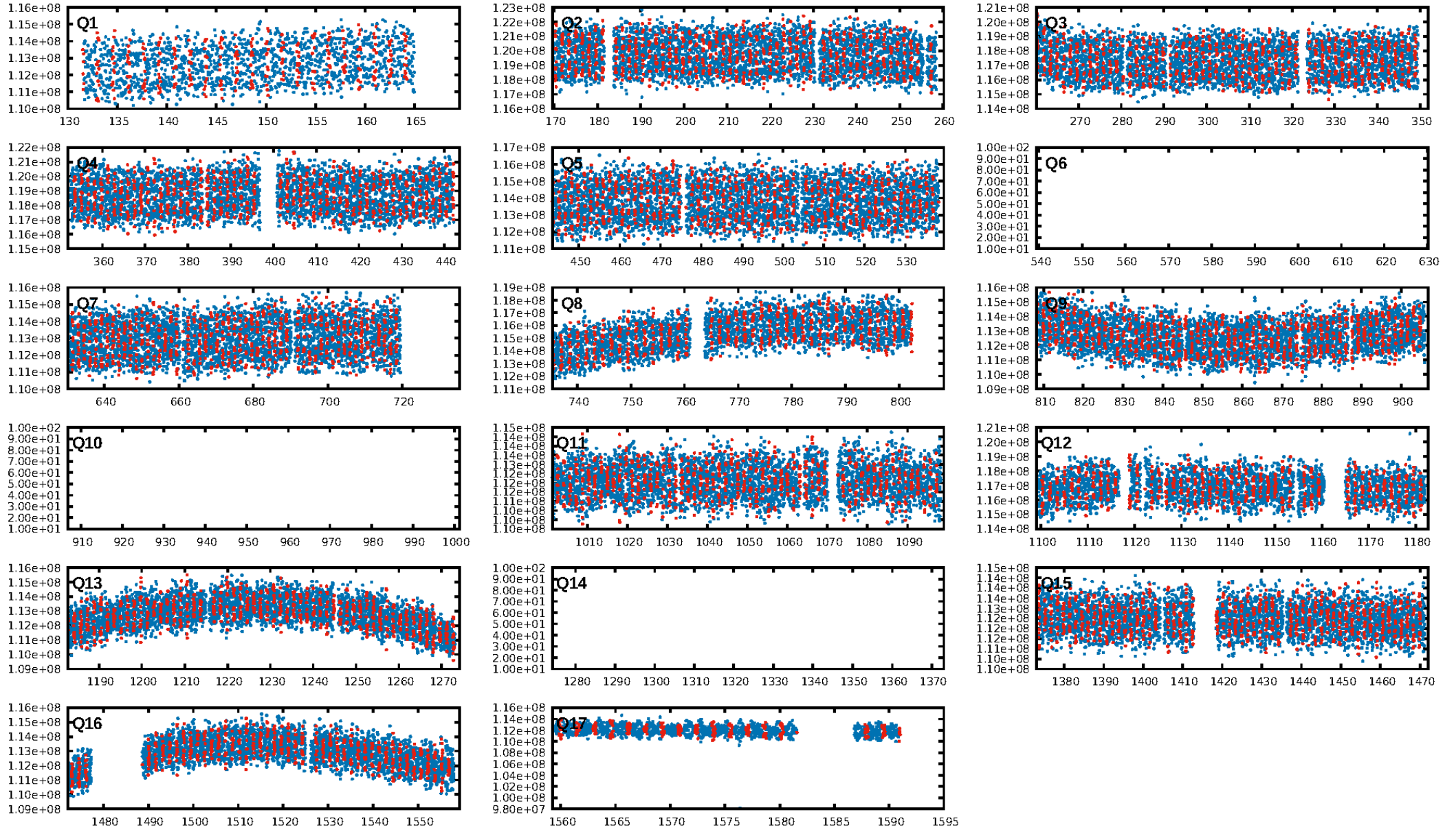
## DV Fit Results:

Period = 1.55272 [0.00001] d  
Epoch = 133.0349 [0.0046] BKJD  
Rp/R\* = 0.0155 [0.0059]  
a/R\* = 1.82 [2.71]  
b = 0.90 [0.45]  
Seff = 17973.44 [9717.73]  
Teq = 2952 [399] K  
Rp = 4.19 [2.23] Re  
a = 0.0317 [0.0106] AU  
Ag = 2.64 [2.54] [0.65σ]  
Teffp = 5817 [1207] K [2.25σ]

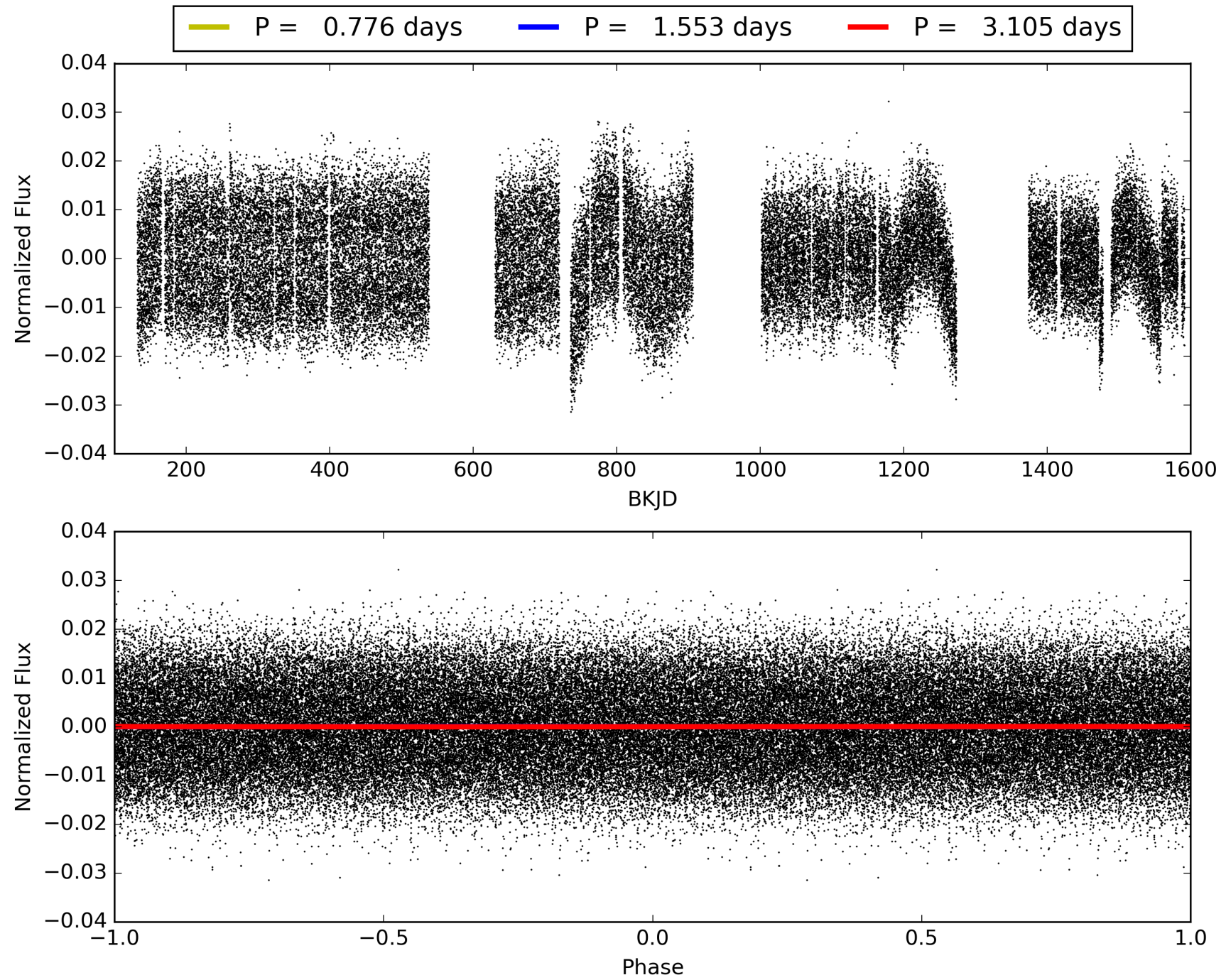
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.71e-23  
RollingBand-fgt: 1.00 [650/651]  
GhostDiagnostic-chr: 1.904  
Centroid-sig: 76.0%  
Centroid-so: 0.221 arcsec [1.22σ]  
OotOffset-rm: 0.234 arcsec [0.88σ]  
KicOffset-rm: 0.219 arcsec [0.99σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 0.50 [7/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 003247039-01, PDC Light Curves



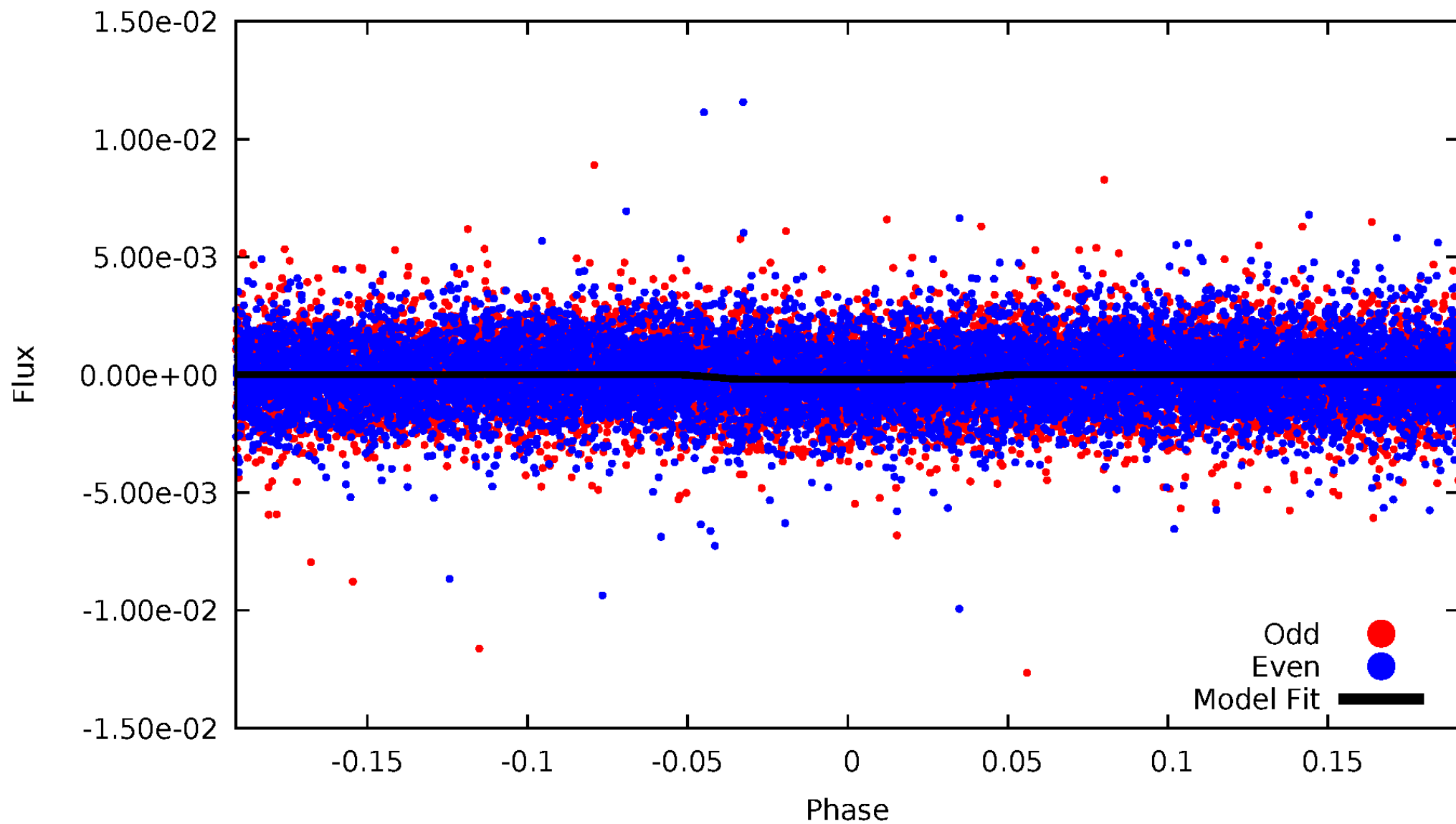
TCE 003247039-01





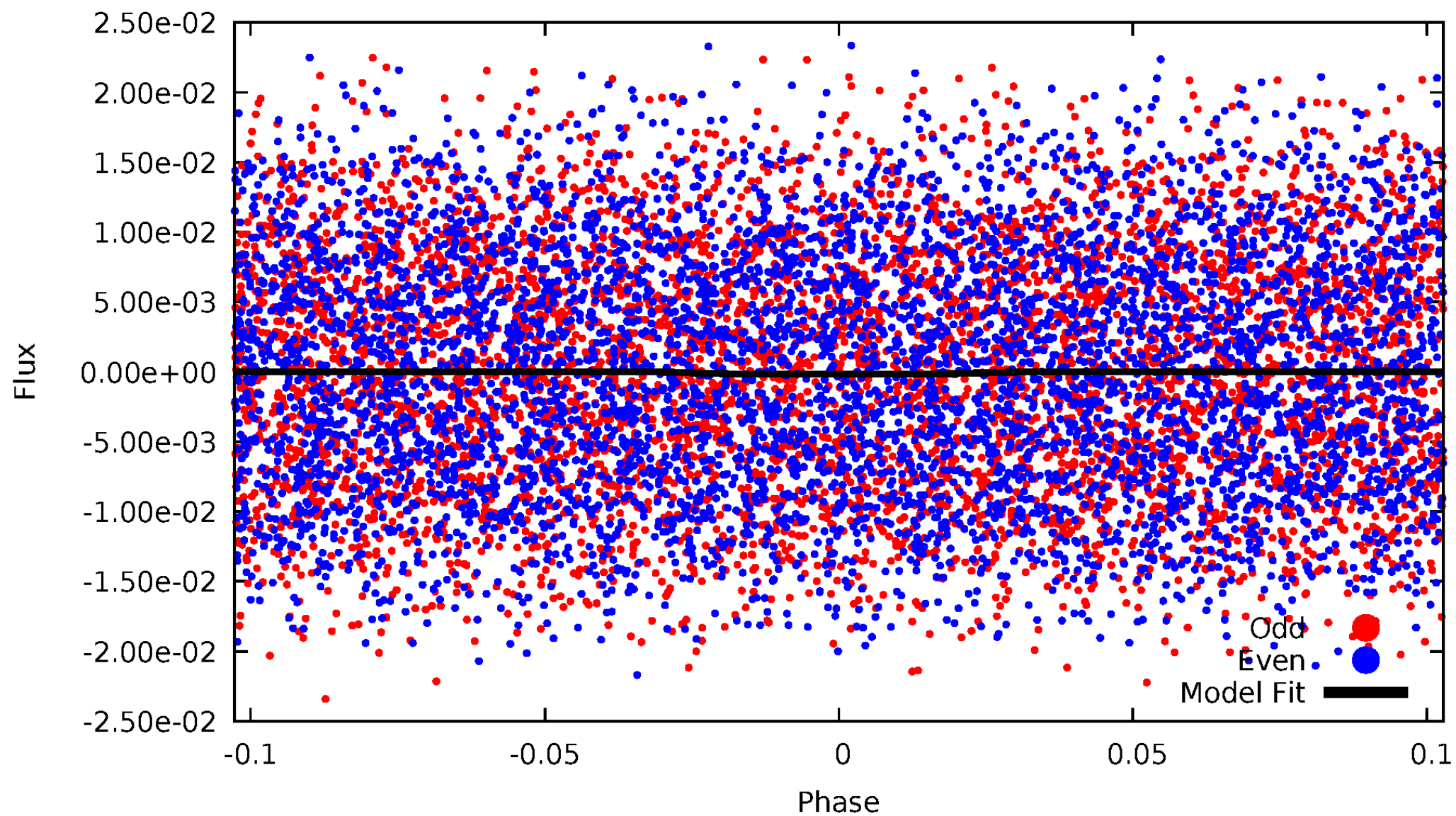
# DV Odd/Even

TCE 003247039-01

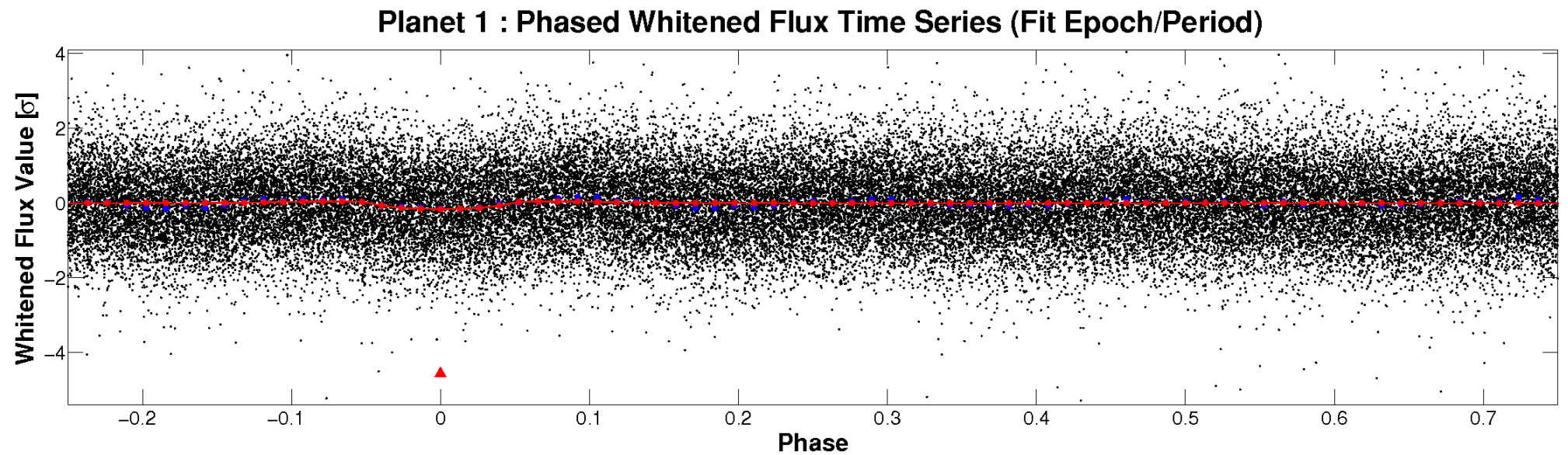
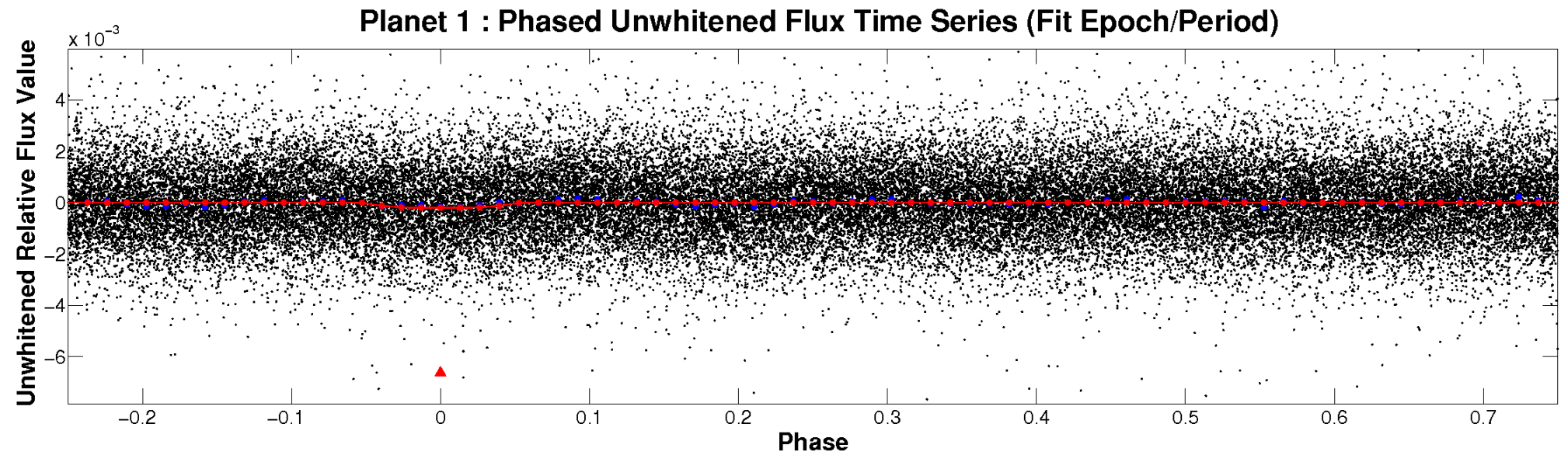


# ALT Odd/Even

TCE 003247039-01

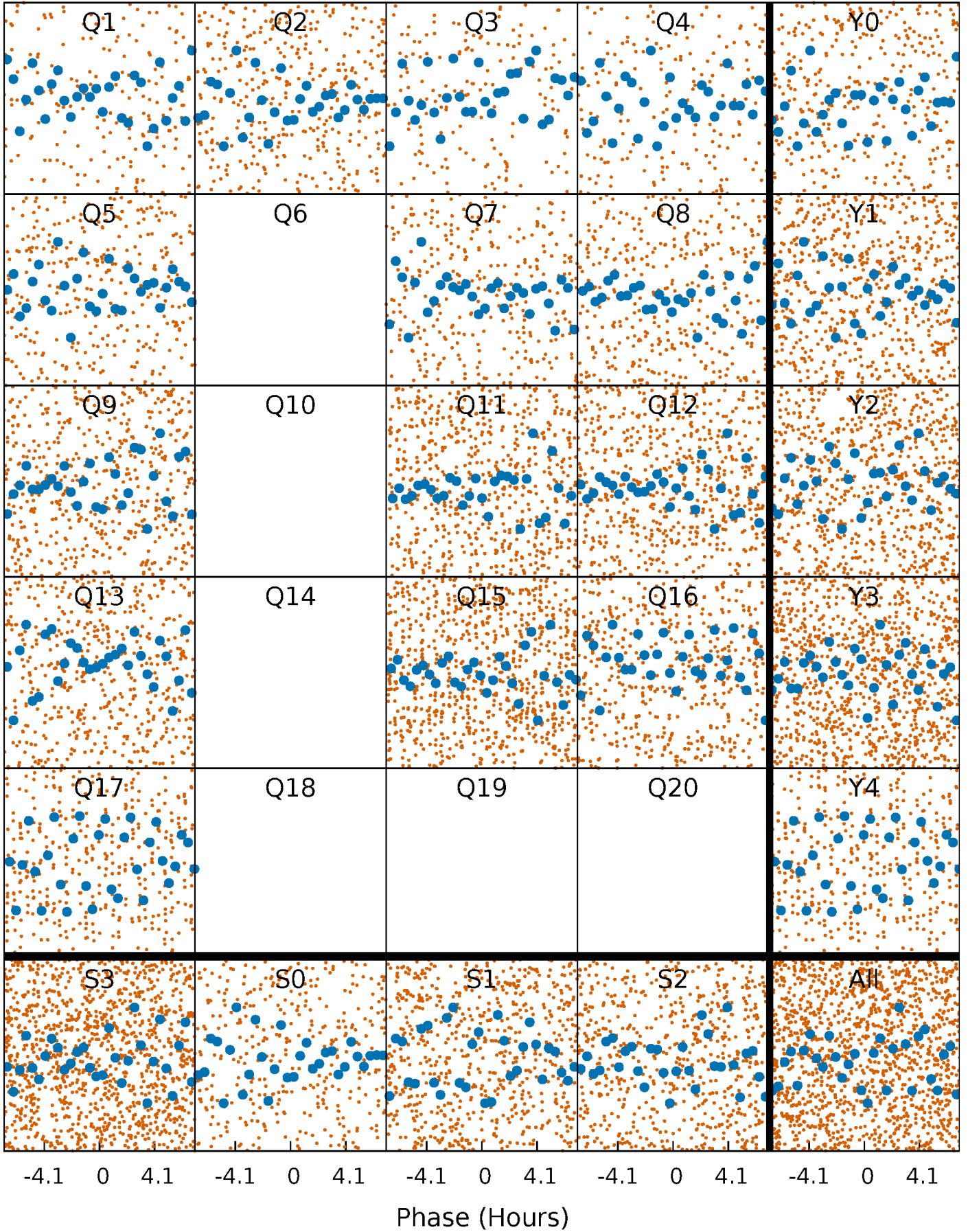


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

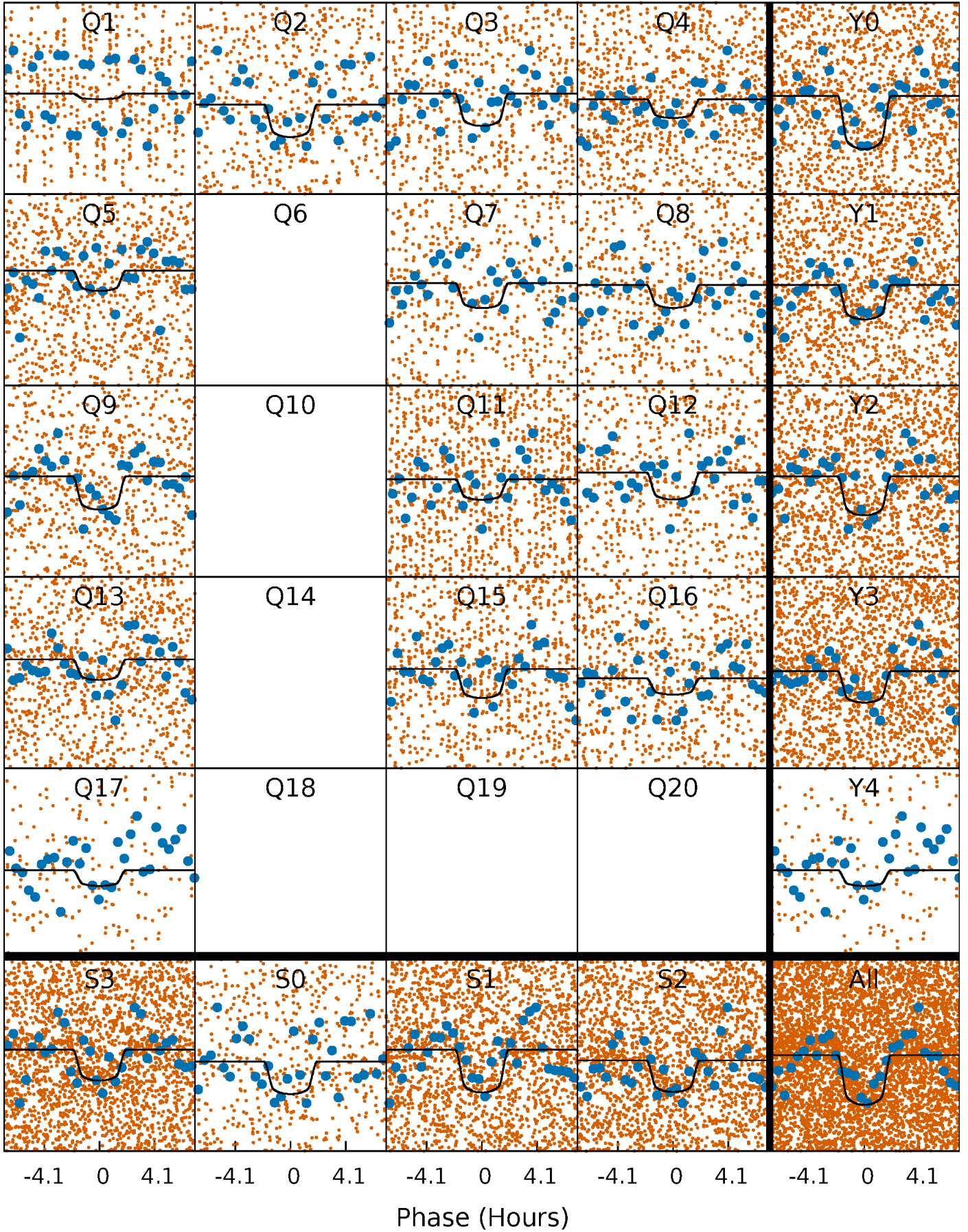
TCE 003247039-01   P= 1.552719 Days    $T_0=133.034940$  (BKJD)





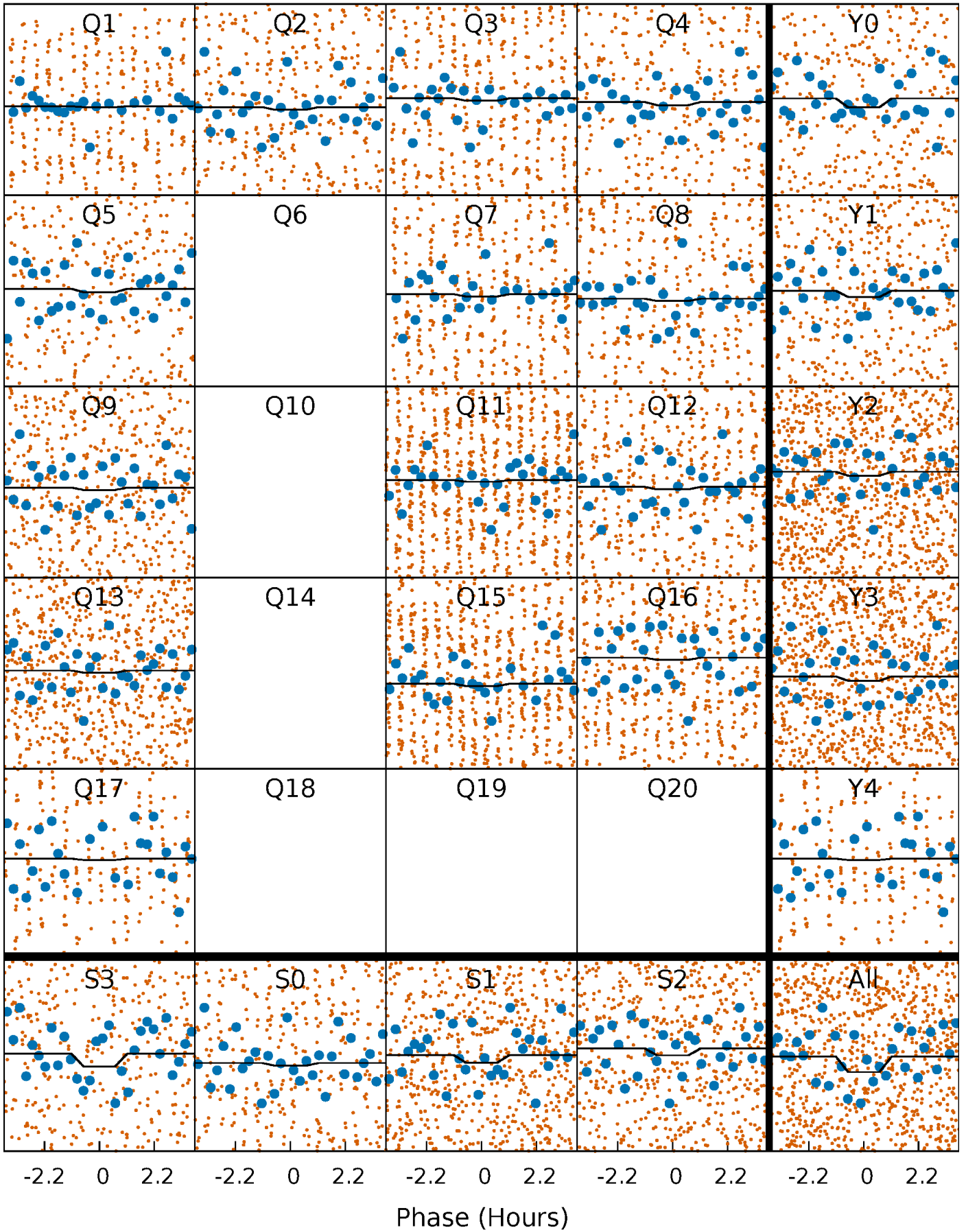
# DV Quarter-Phased Transit Curves

TCE 003247039-01 P= 1.552719 Days  $T_0=133.034940$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

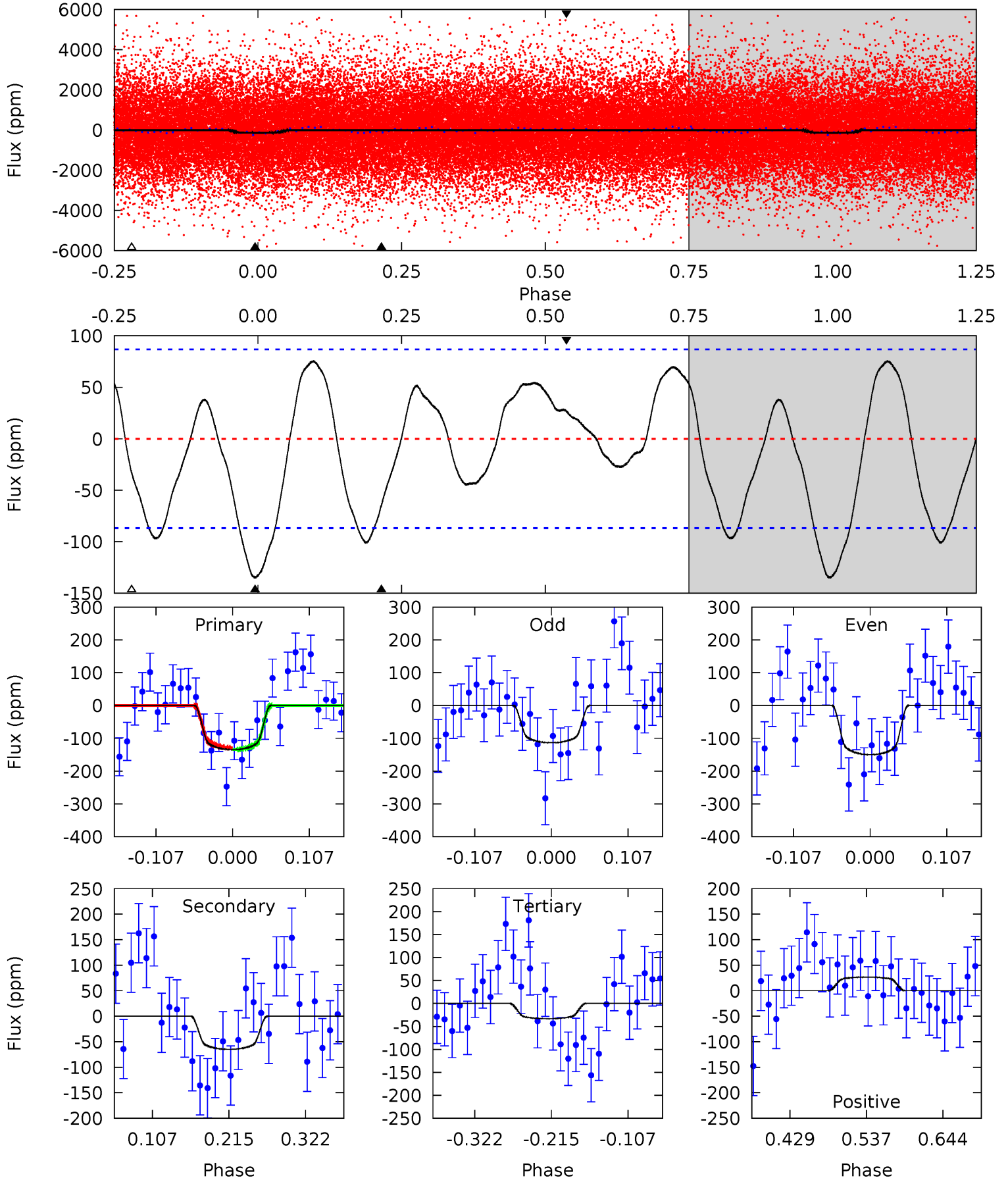
TCE 003247039-01 P= 1.552764 Days  $T_0=133.009951$  (BKJD)



# DV Model-Shift Uniqueness Test

003247039-01, P = 1.552719 Days, E = 131.482221 Days

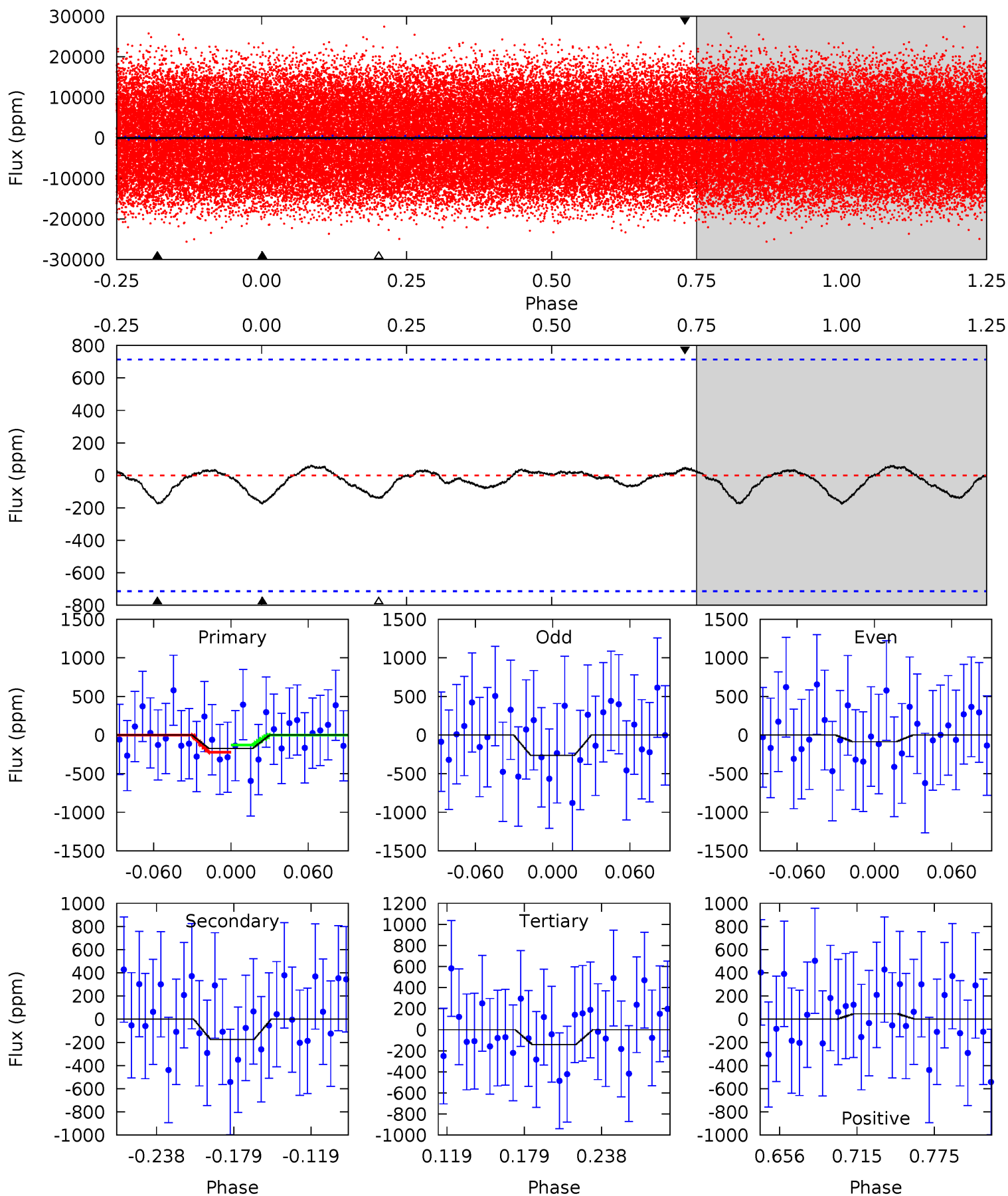
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7.07	3.41	1.74	1.40	4.55	1.61	2.28	5.32	5.67	1.66	2.01	0.96	1.30	0.36	0.14



# Alt Model-Shift Uniqueness Test

003247039-01, P = 1.552764 Days, E = 131.457187 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
1.14	1.14	0.93	0.30	4.67	1.88	0.29	0.22	0.84	0.21	0.84	0.58	2.68	0.26	0.31





### Stellar Parameters For KIC 003247039

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$7563^{+211}_{-316}$	$3.894^{+0.294}_{-0.126}$	$-0.180^{+0.250}_{-0.300}$	$2.481^{+0.494}_{-0.917}$	$1.760^{+0.194}_{-0.388}$	$0.162^{+0.339}_{-0.063}$
	+3%/-4%	+8%/-3%	+139%/-167%	+20%/-37%	+11%/-22%	+209%/-39%
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 003247039-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-65 \pm 19$	$3.97^{+1.89}_{-1.60}$	$4044^{+293}_{-359}$	$5112^{+1566}_{-881}$	$2.129^{+3.940}_{-1.155}$
Alt.	$-174 \pm 153$	$3.35^{+1.68}_{-1.46}$	$4034^{+274}_{-352}$	$7221^{+3990}_{-3038}$	$7.256^{+22.498}_{-6.389}$

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

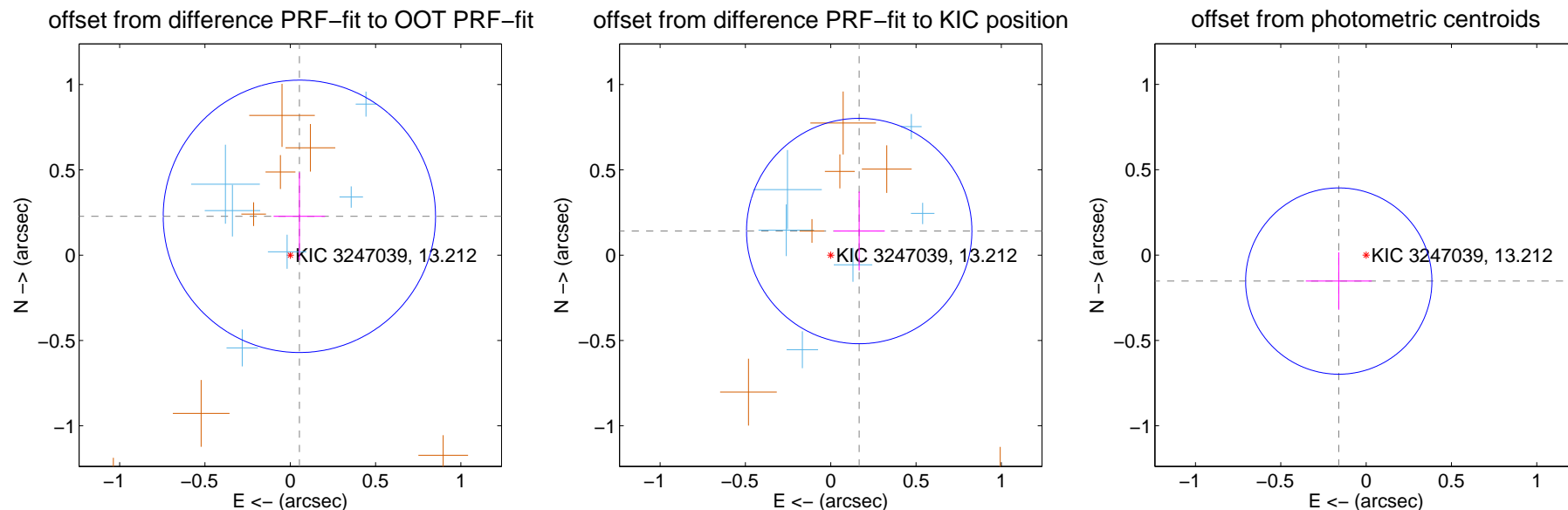
## DV Centroid Data

Supplemental centroid analysis for 003247039-01. Kepler magnitude: 13.21. Transit SNR 9.51

There are 7 quarters with good PRF difference image offsets

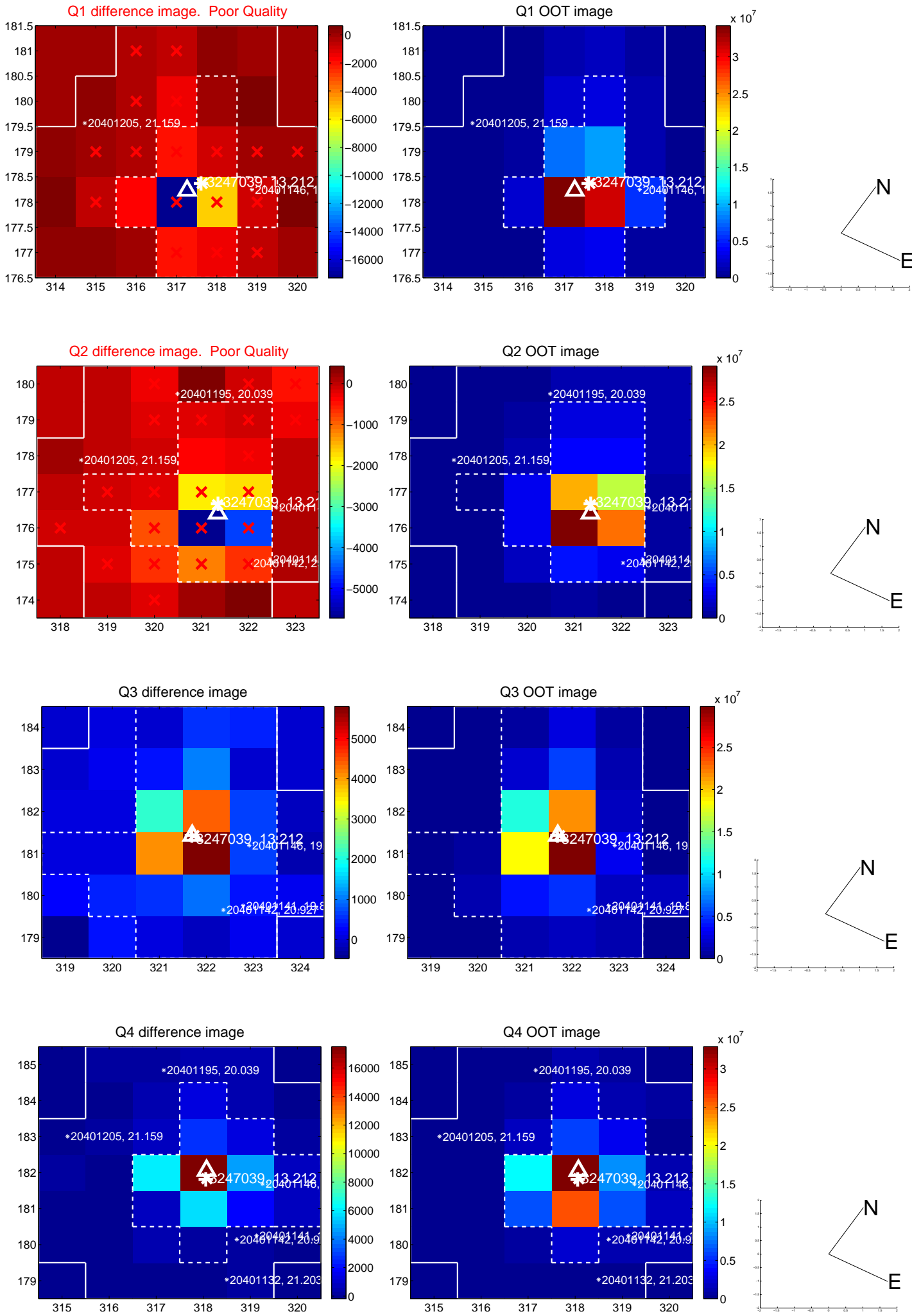
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.234 \pm 0.266$	0.88	$-0.053 \pm 0.151$	$0.228 \pm 0.257$
PRF-fit source offset from KIC position	$0.219 \pm 0.220$	0.99	$-0.167 \pm 0.150$	$0.141 \pm 0.231$
photometric centroid source offset	$0.22 \pm 0.18$	1.22	$0.16 \pm 0.19$	$-0.15 \pm 0.17$

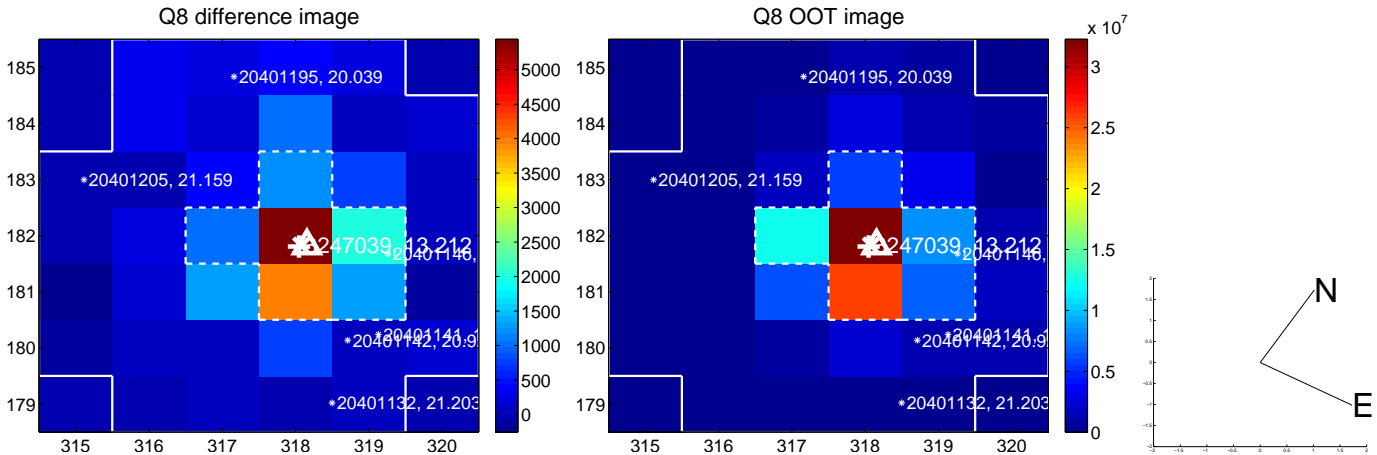
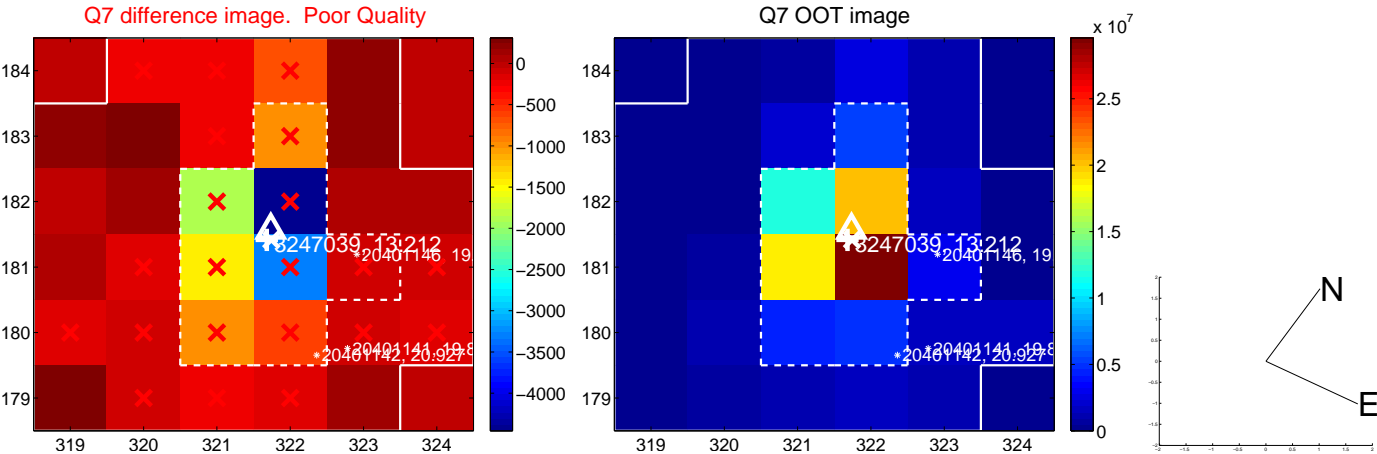
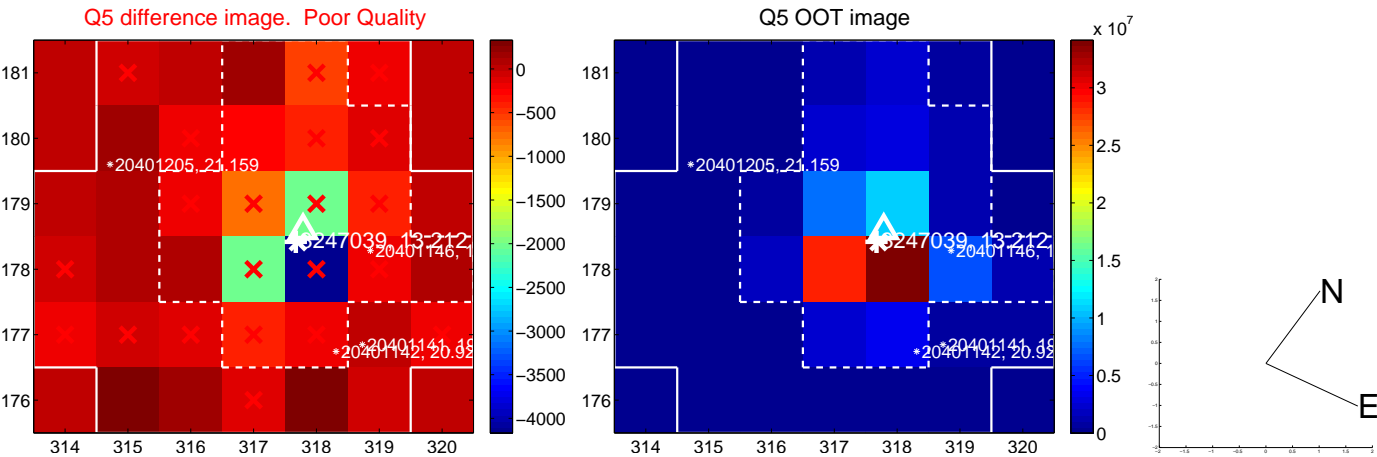


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

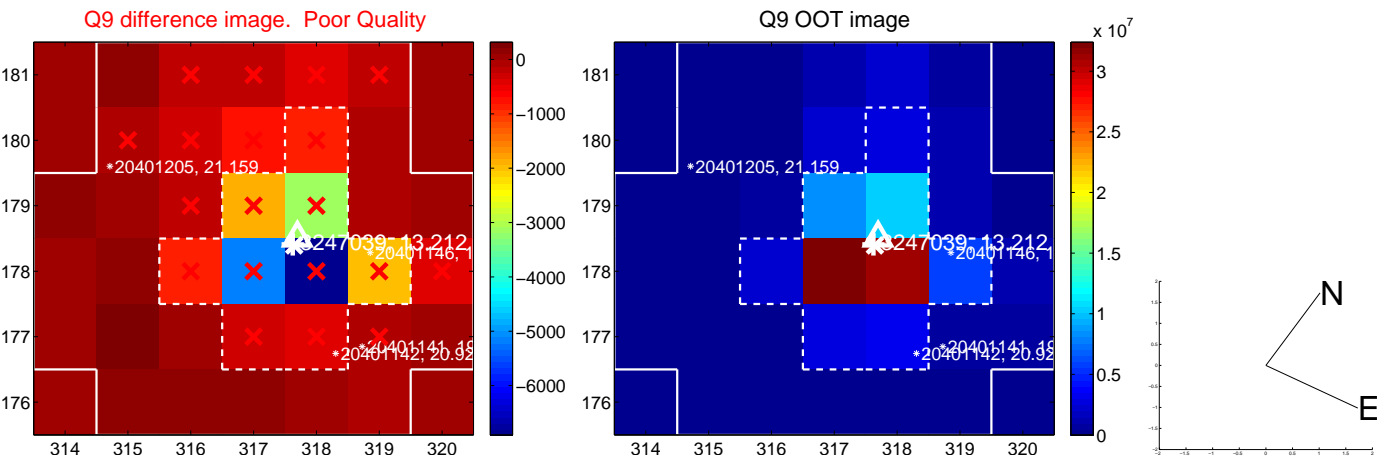


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

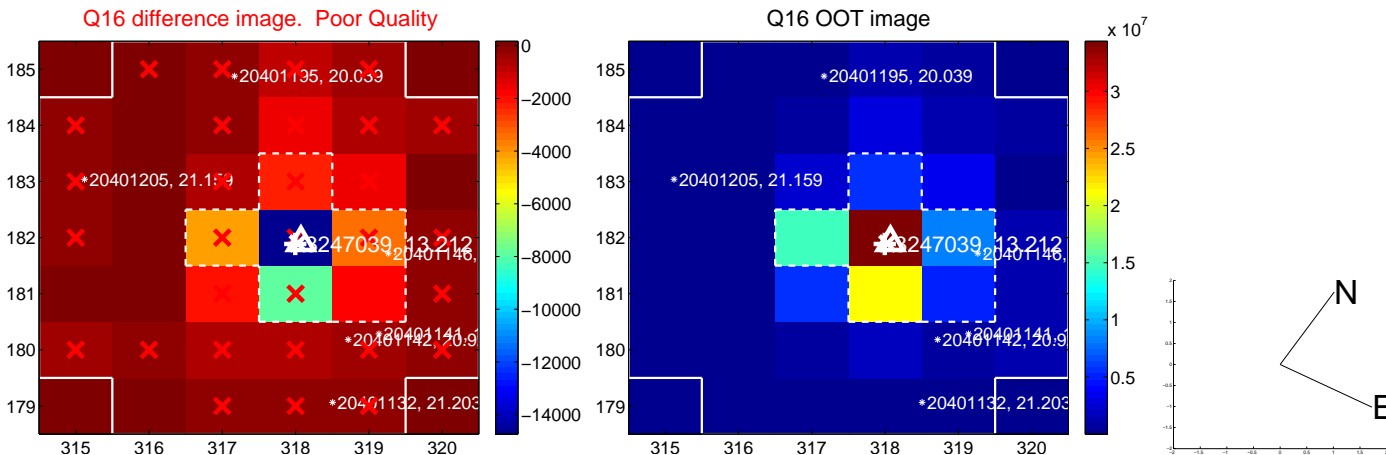
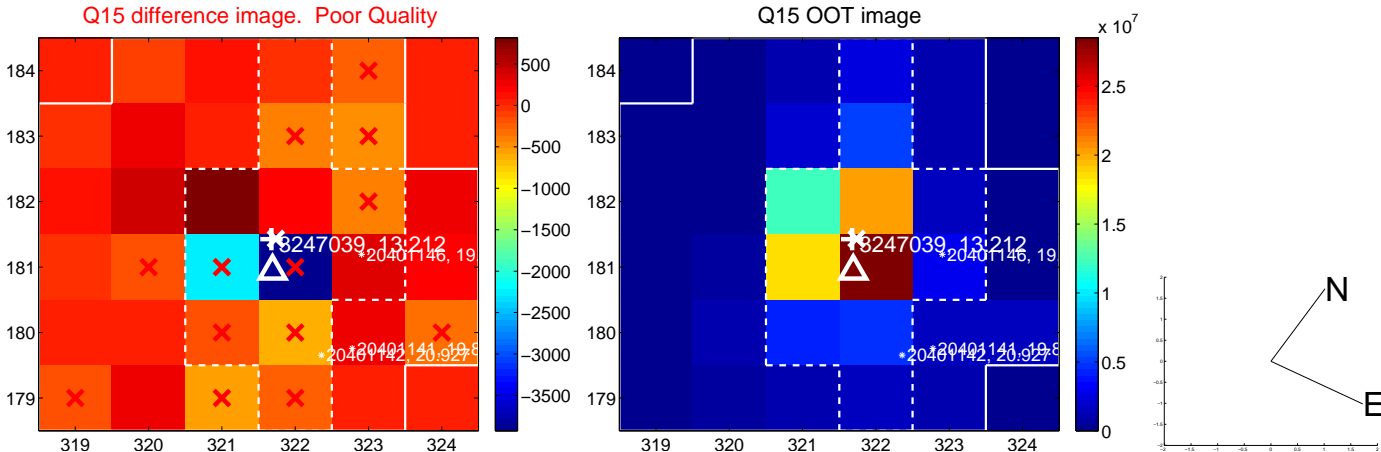
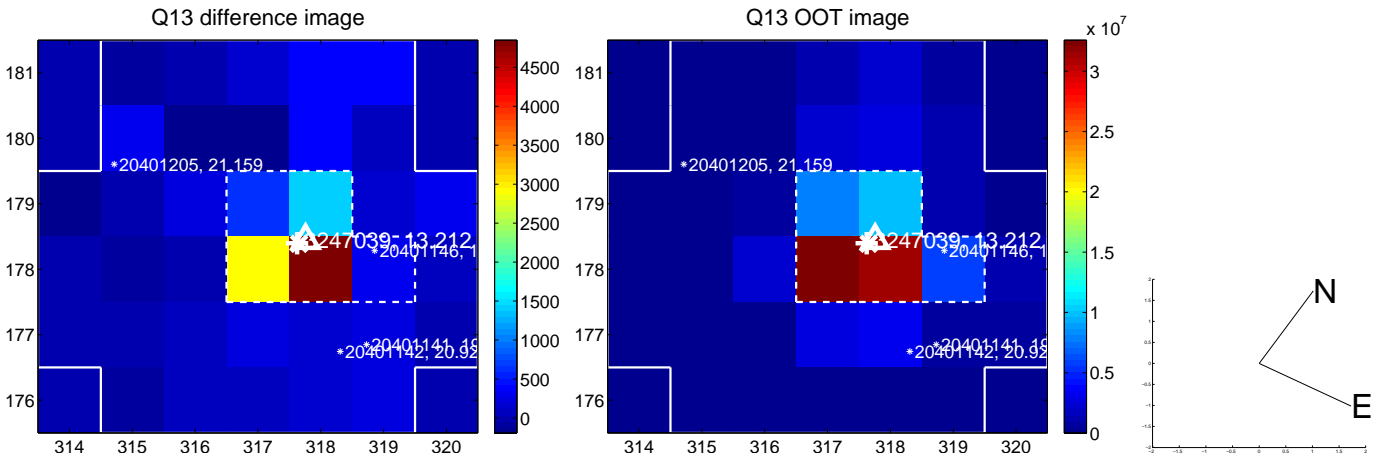




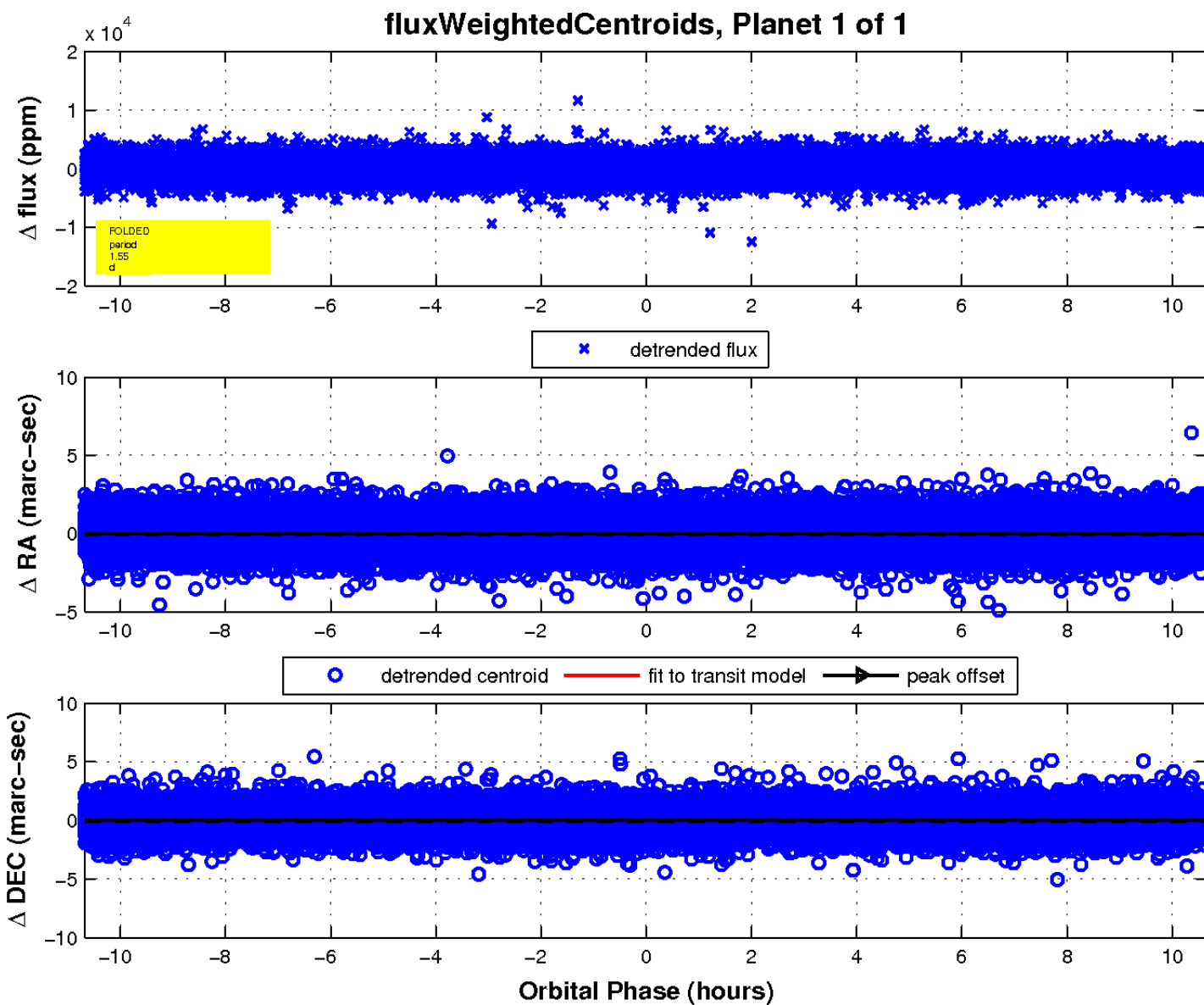
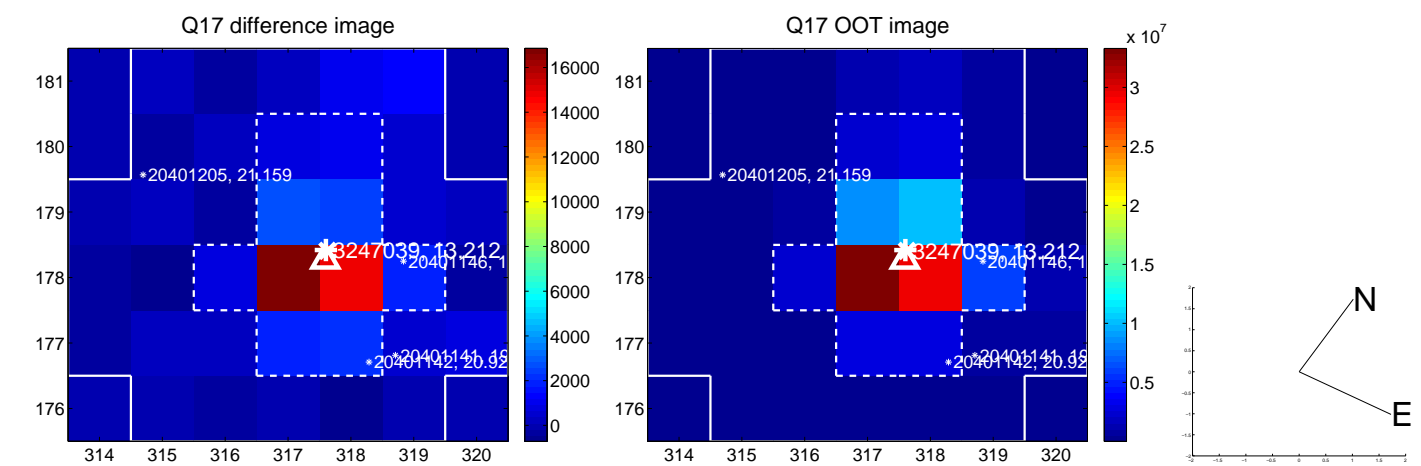
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: 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.



UKIRT Image

Declination

