

# KIC 003247404

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003247404-01	OBS	4035.01	8.810921	136.478100	23054.2	4.589	20.9	22.0	1.00	5780	19.96	143.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003247404-01	OBS	FP	0.00	0	1	1	0	DEEP_V_SHAPED—CENT_KIC_POS—HALO_GHOST

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

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

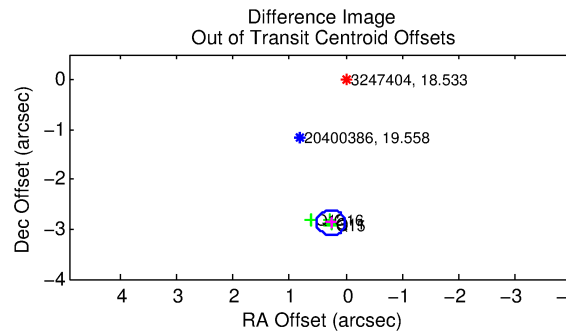
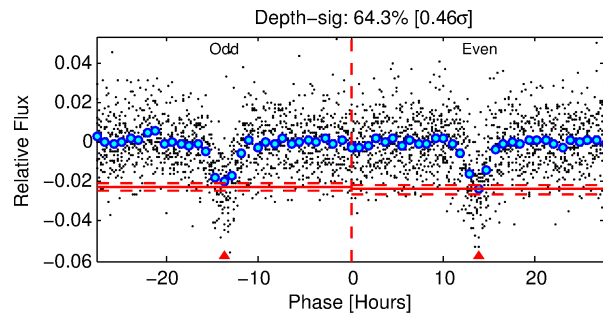
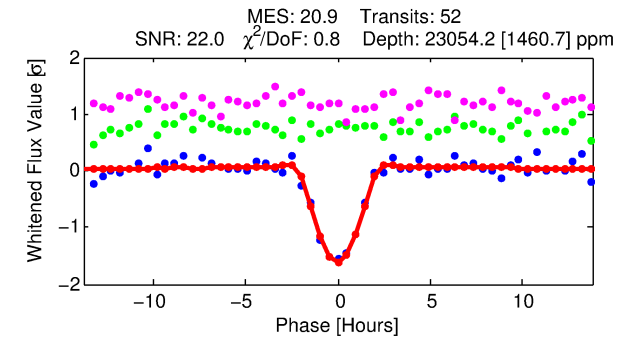
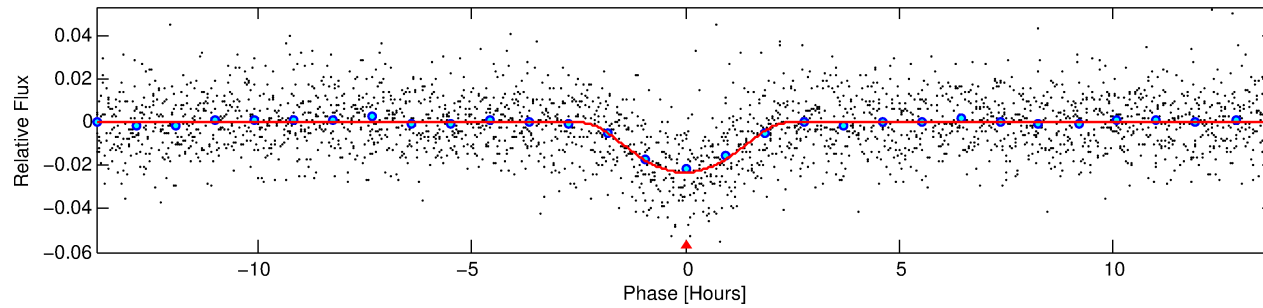
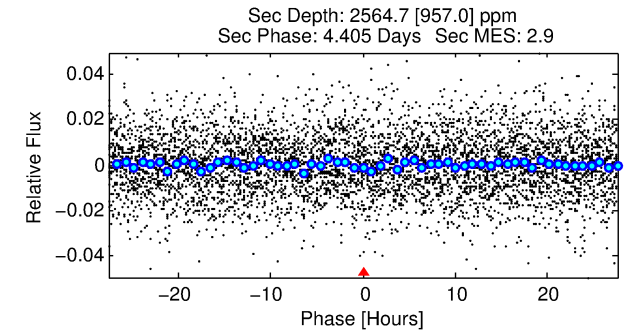
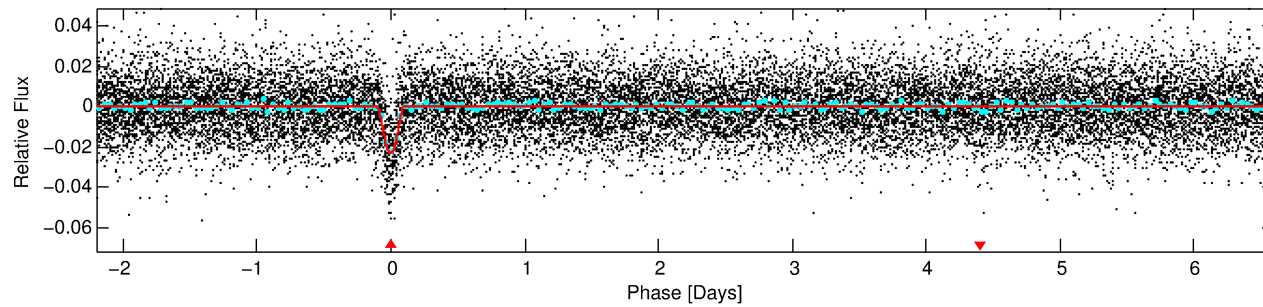
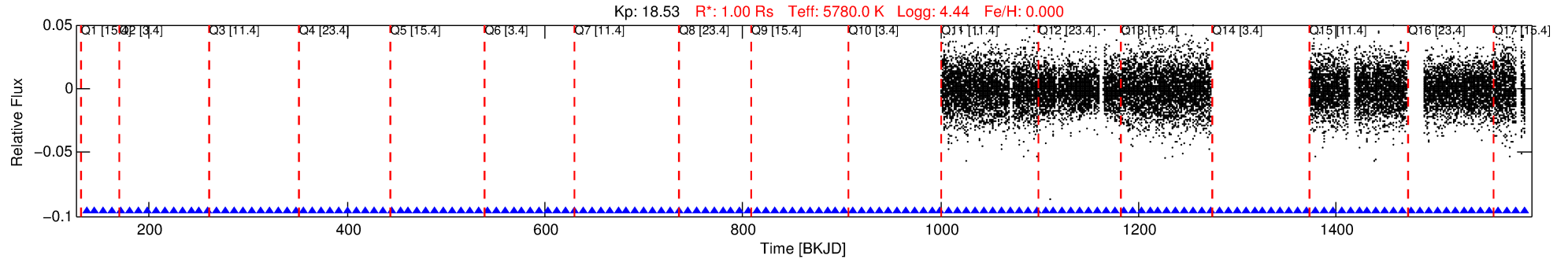
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003247404-01

No Significant Match Found

# DV One-Page Summary

KIC: 3247404 Candidate: 1 of 1 Period: 8.811 d  
KOI: K04035.01 Corr: 0.950



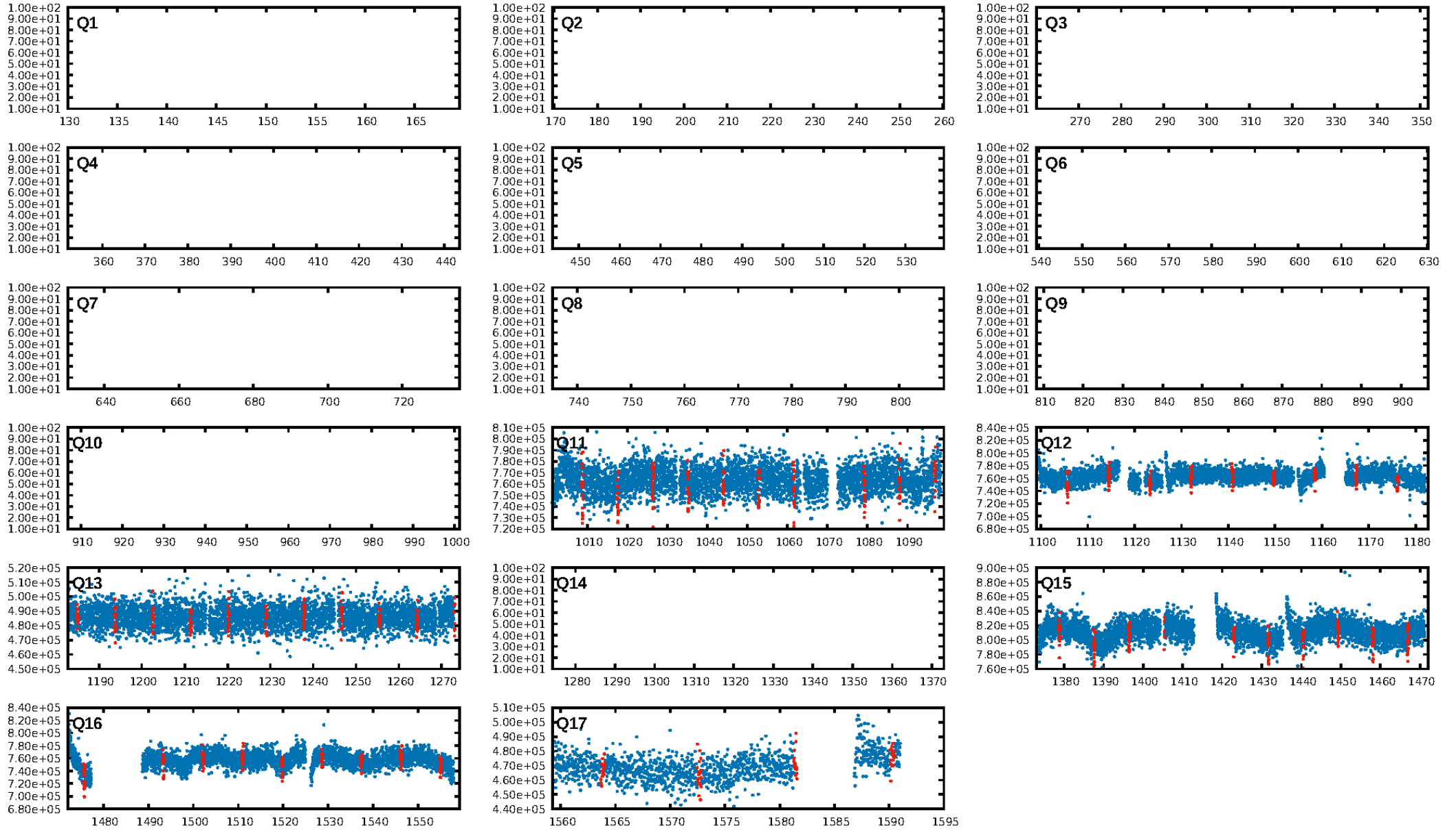
## DV Fit Results:

Period = 8.81092 [0.00010] d  
Epoch = 136.4781 [0.0132] BKJD  
Rp/R\* = 0.1829 [0.1170]  
a/R\* = 11.30 [2.14]  
b = 0.90 [0.23]  
Seff = 143.41 [0.00]  
Teq = 882 [0] K  
Rp = 19.96 [12.77] Re  
a = 0.0835 [0.0000] AU  
Ag = 24.69 [32.89] [0.72σ]  
Teffp = 3041 [1013] K [2.13σ]

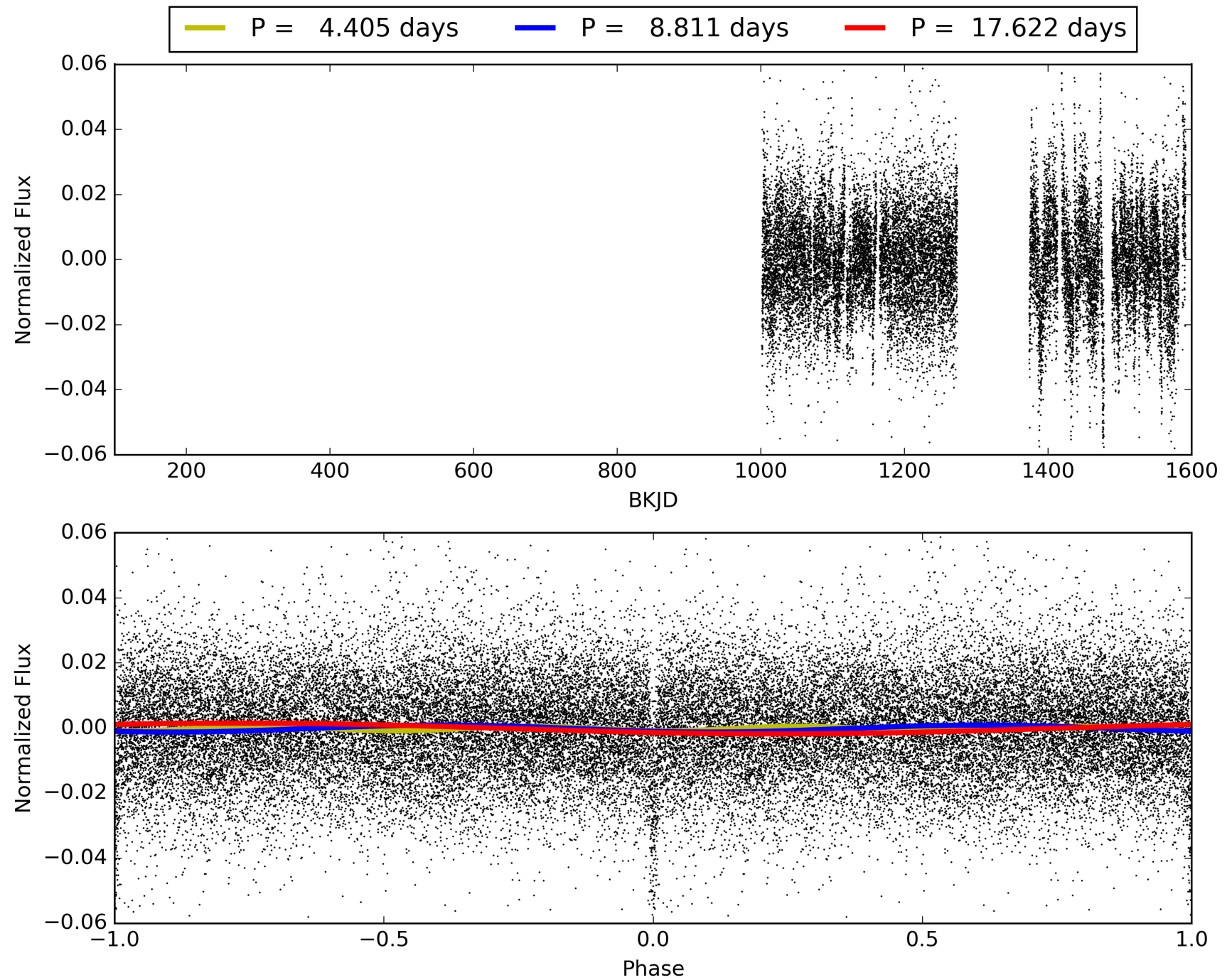
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 5.30e-97  
RollingBand-fgt: 1.00 [48/48]  
GhostDiagnostic-chr: -0.04361  
Centroid-sig: 0.0%  
Centroid-so: 2.985 arcsec [285.18σ]  
OotOffset-rm: 2.886 arcsec [34.33σ]  
KicOffset-rm: 4.434 arcsec [45.35σ]  
OotOffset-st: 0/2/2/0 [4]  
KicOffset-st: 0/2/2/2 [6]  
DiffImageQuality-fgm: 1.00 [6/6]  
DiffImageOverlap-fno: 1.00 [6/6]

# TCE 003247404-01, PDC Light Curves

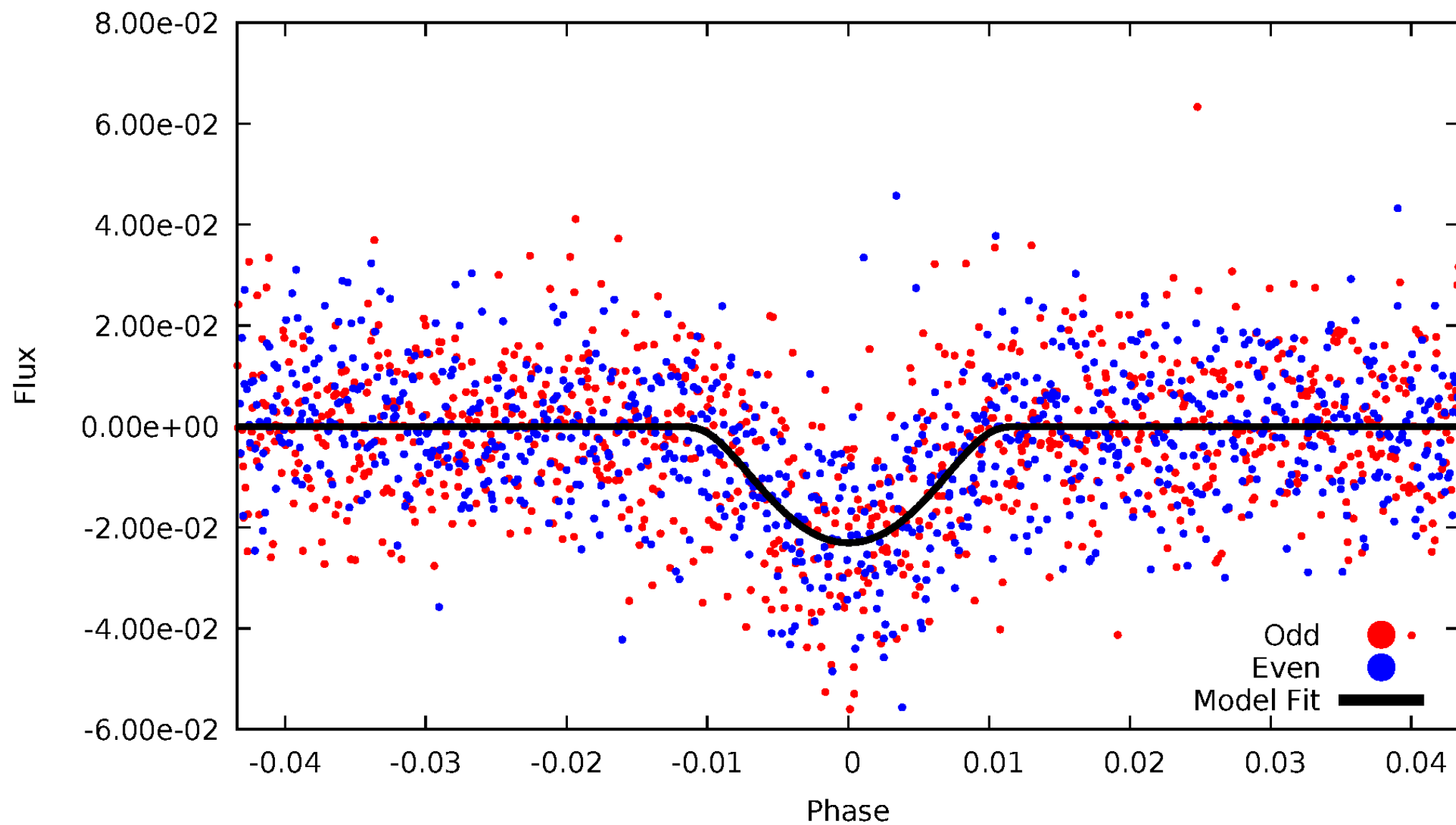


TCE 003247404-01



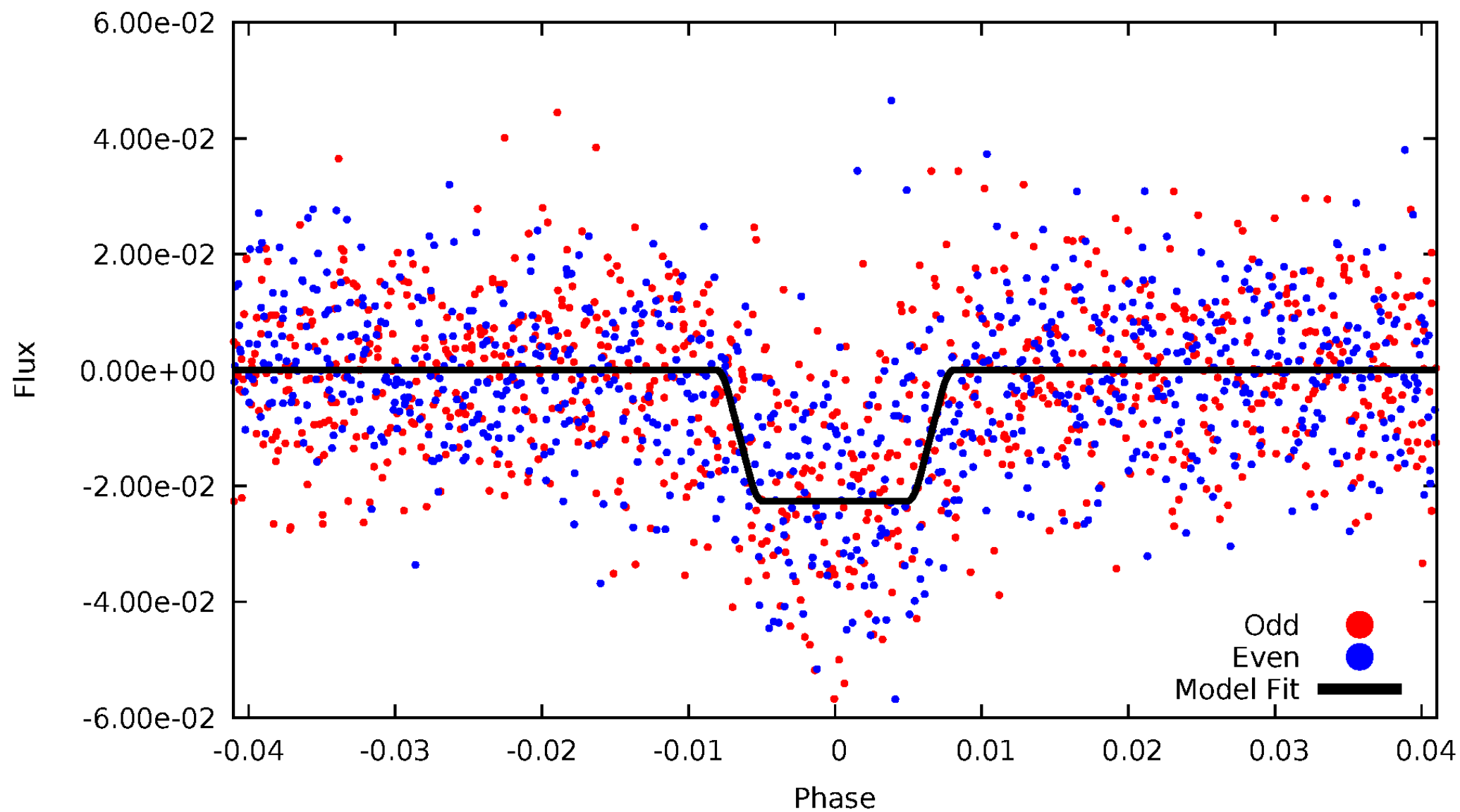
# DV Odd/Even

TCE 003247404-01



# ALT Odd/Even

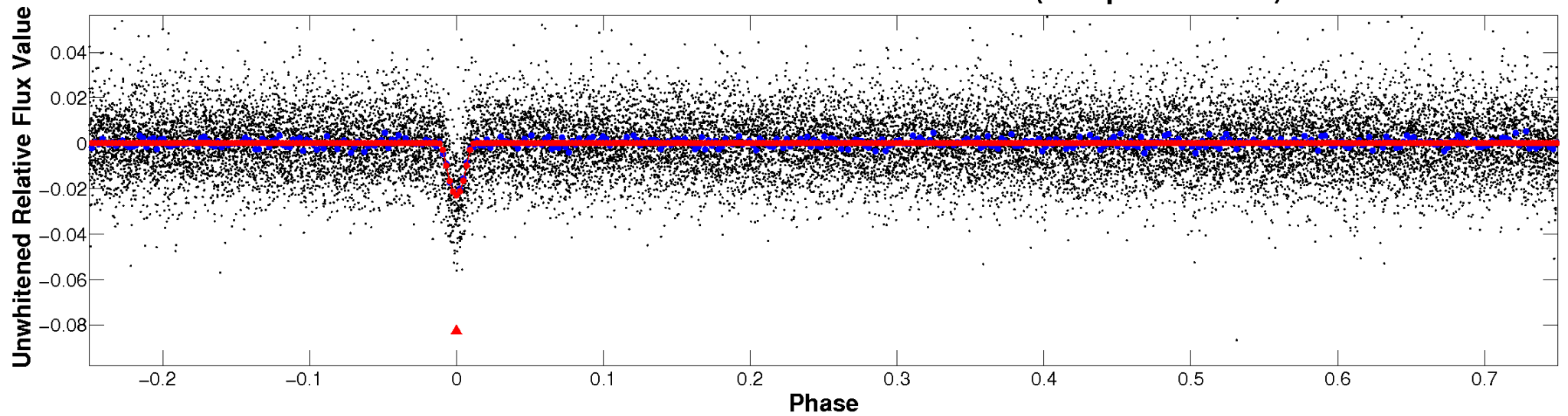
TCE 003247404-01



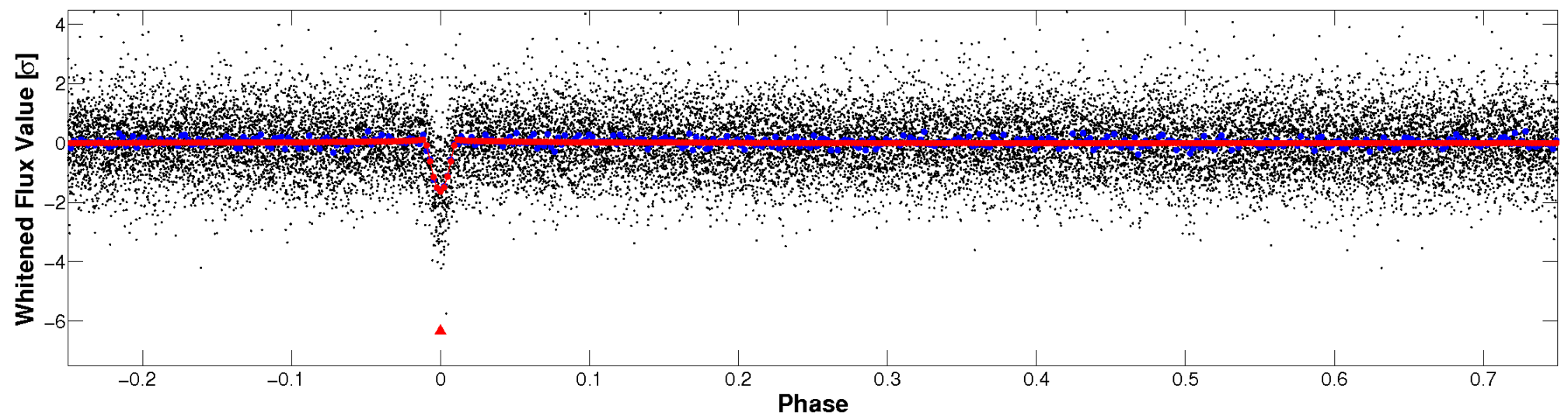


# Non-Whitened Vs. Whitened Light Curve

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

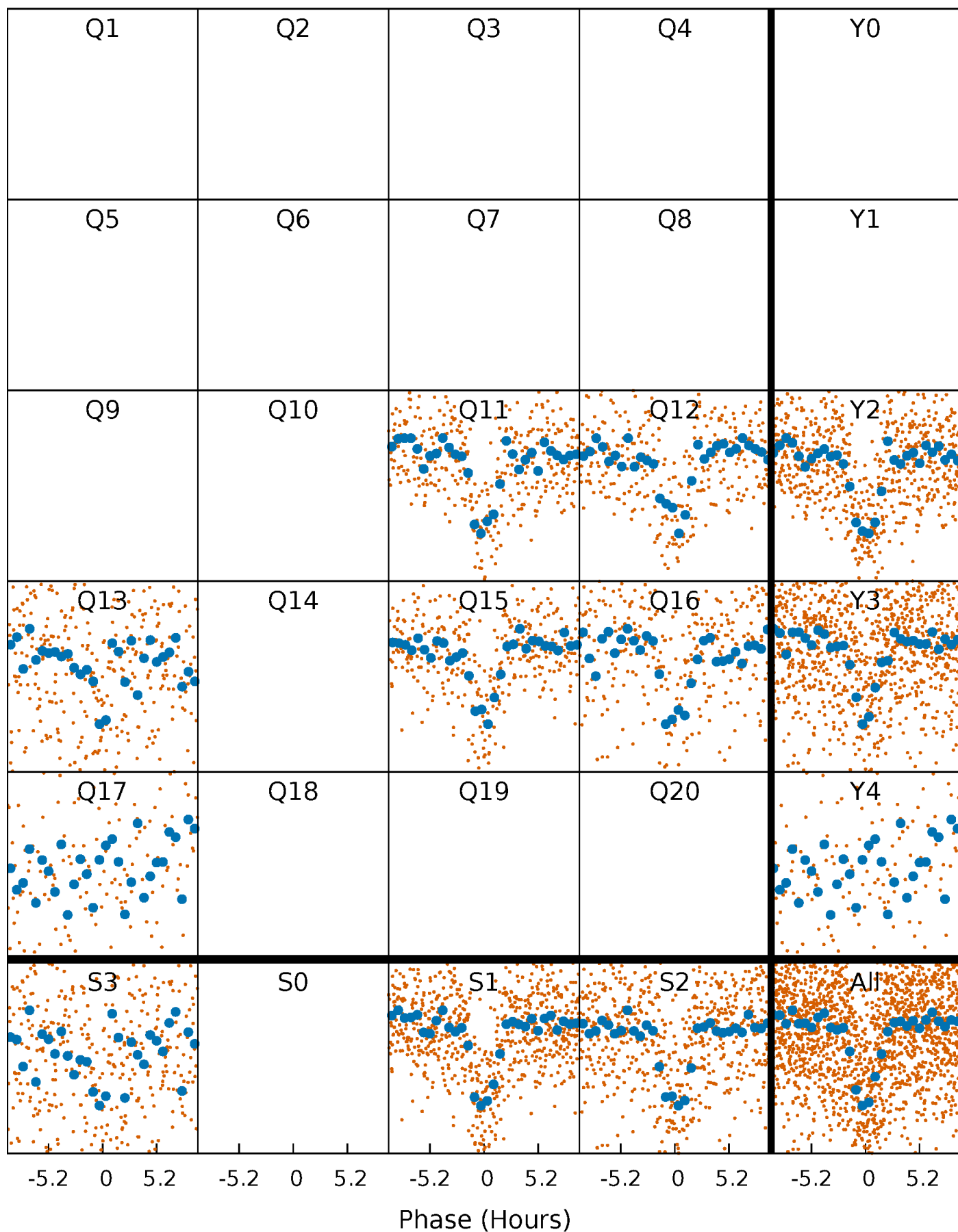


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

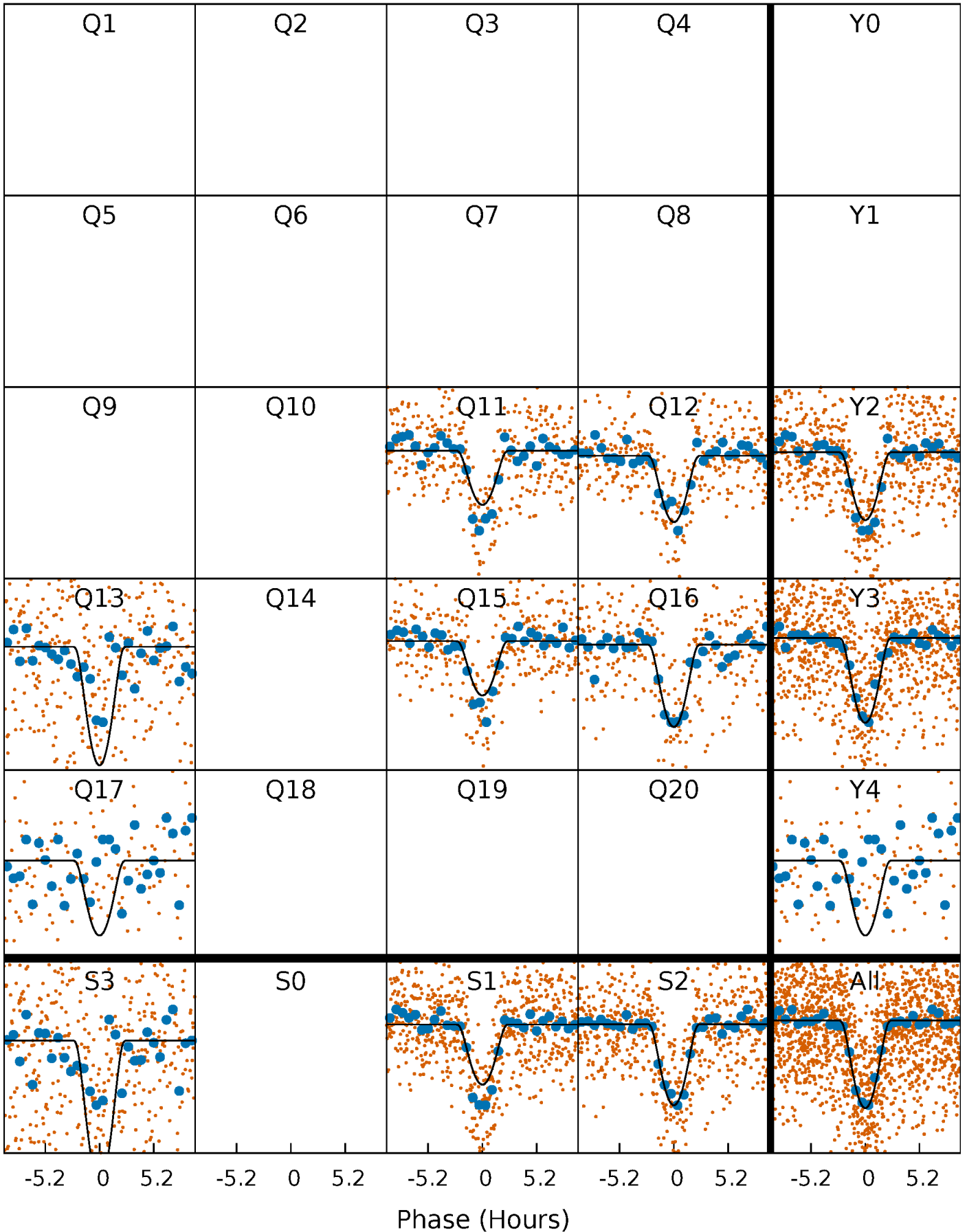
TCE 003247404-01   P= 8.810921 Days    $T_0=136.478100$  (BKJD)





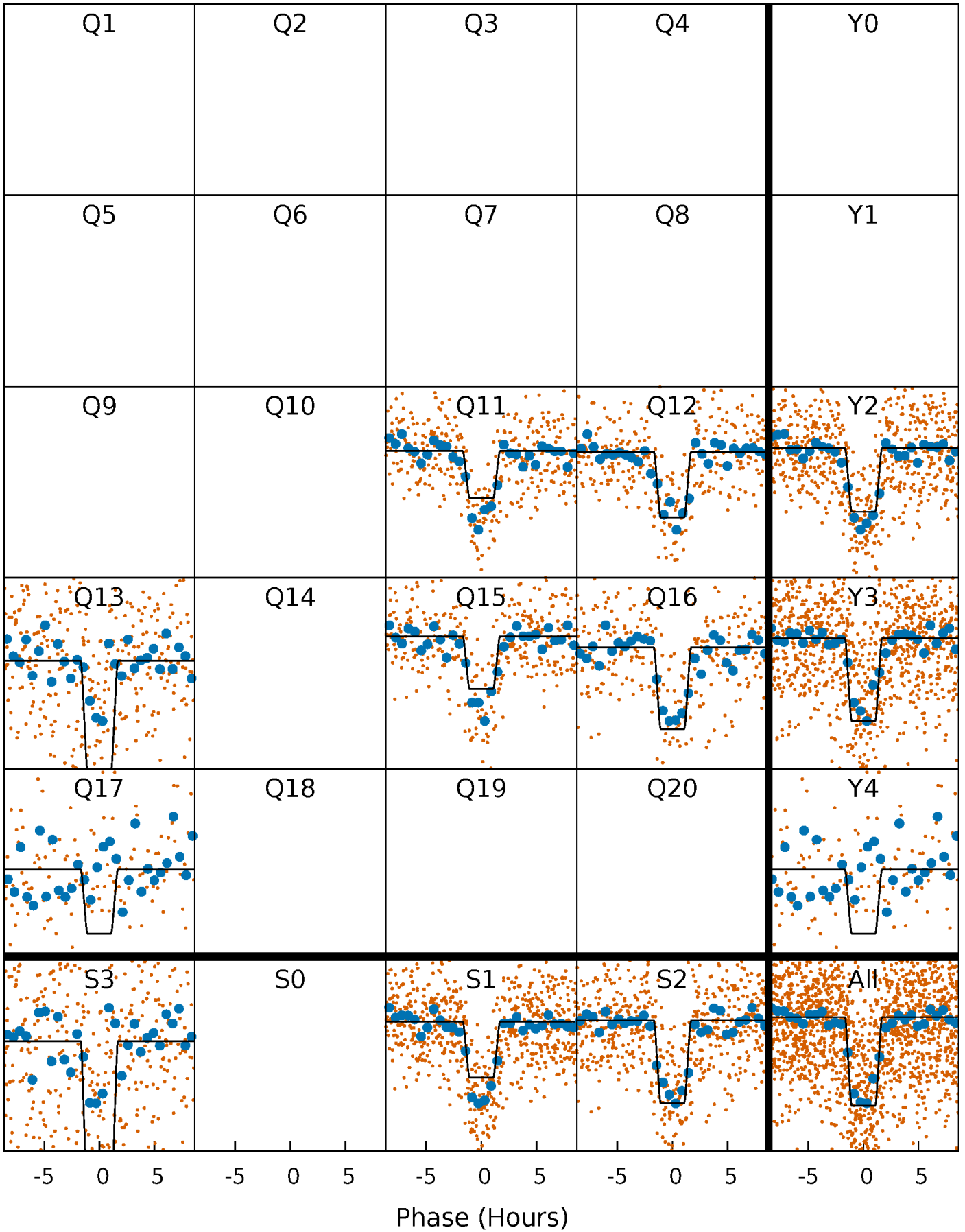
# DV Quarter-Phased Transit Curves

TCE 003247404-01   P= 8.810921 Days    $T_0=136.478100$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

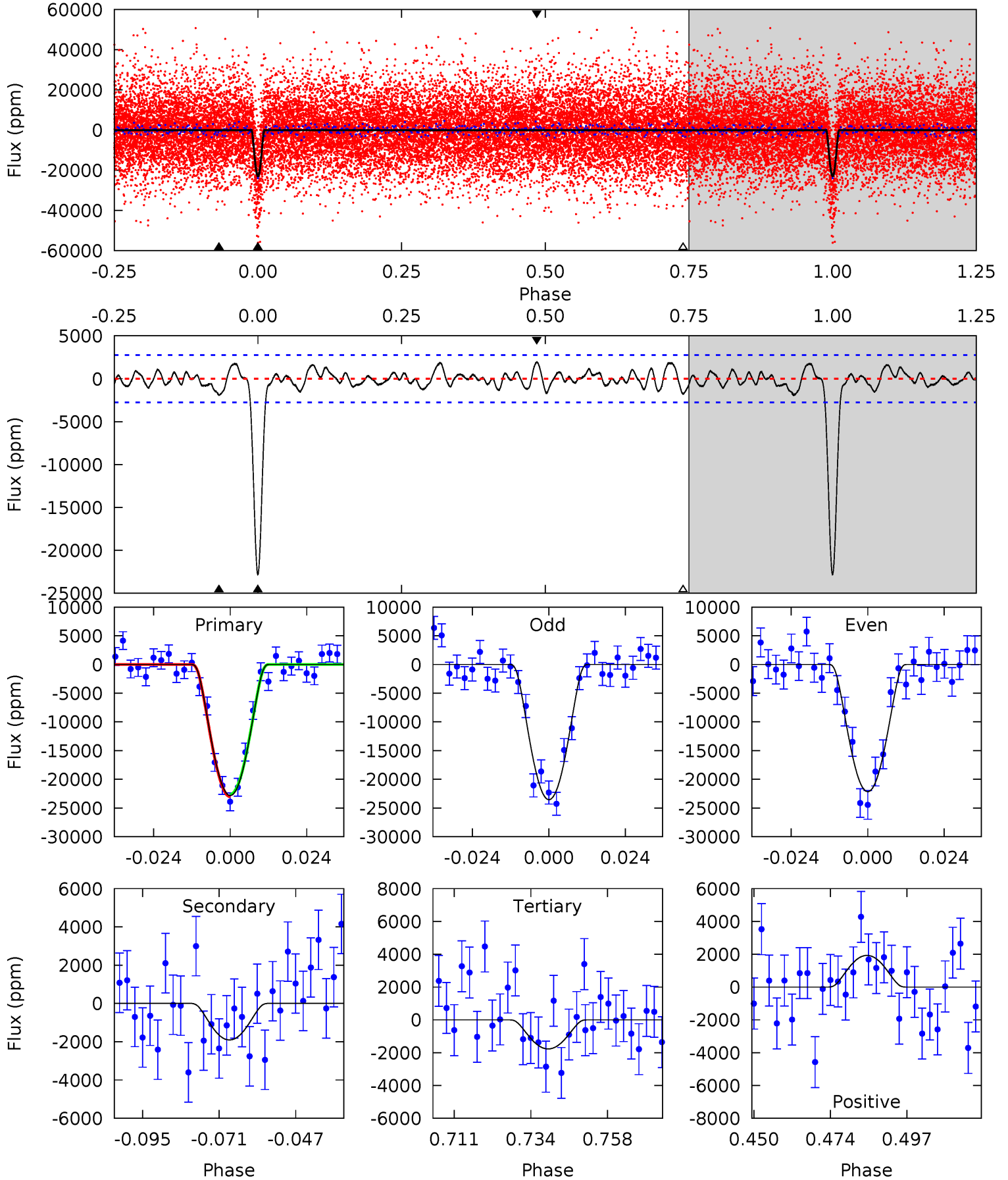
TCE 003247404-01   P= 8.810837 Days    $T_0=136.488069$  (BKJD)



# DV Model-Shift Uniqueness Test

003247404-01, P = 8.810921 Days, E = 136.478100 Days

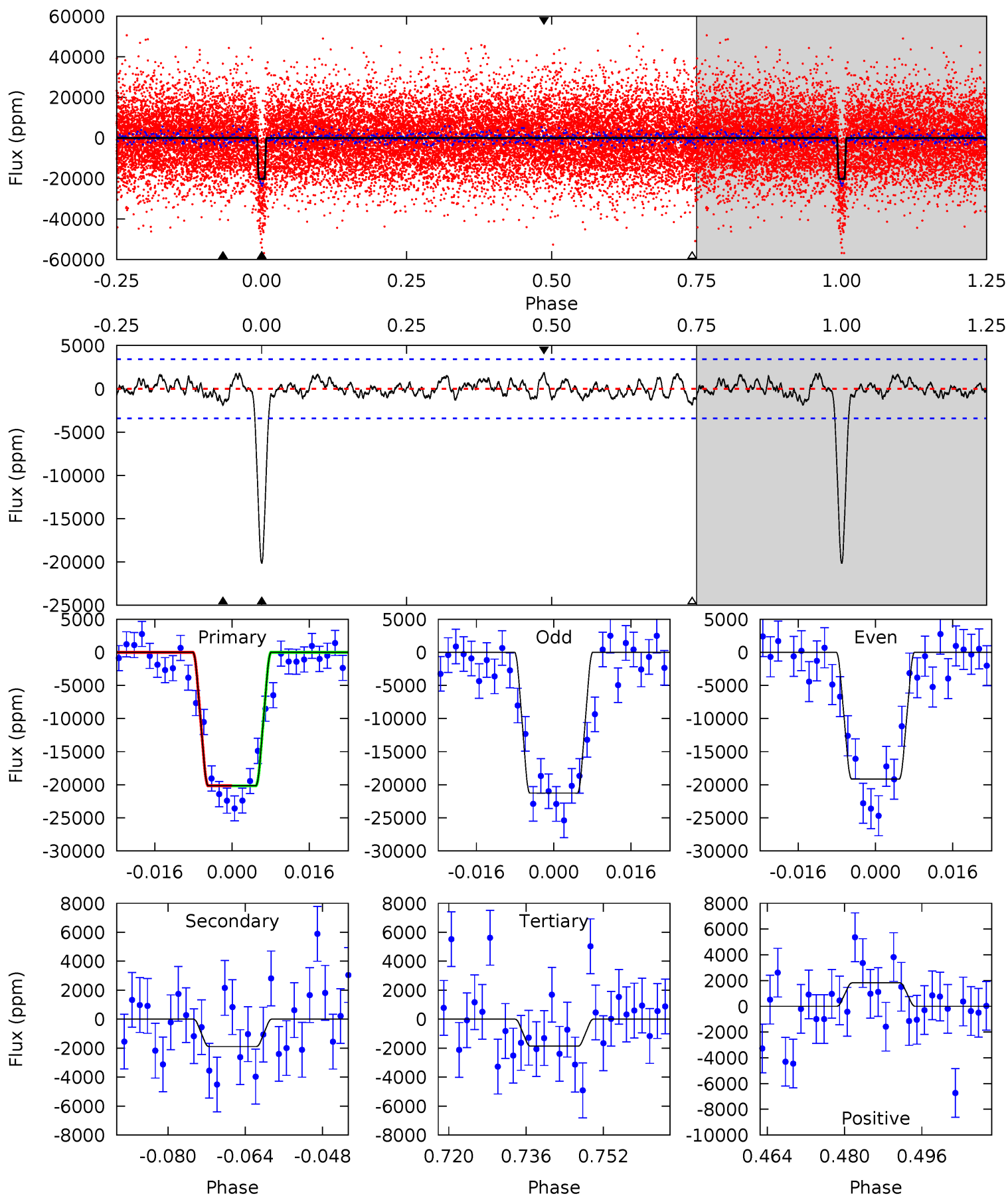
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.3	3.36	3.12	3.40	4.86	2.26	1.32	37.1	36.9	0.24	-0.04	1.23	0.91	0.08	0.35



# Alt Model-Shift Uniqueness Test

003247404-01, P = 8.810837 Days, E = 136.488069 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
29.1	2.73	2.69	2.63	4.94	2.41	1.03	26.4	26.5	0.03	0.09	1.54	1.10	0.08	0.00



### Stellar Parameters For KIC 003247404

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5780^{+1}_{-1}$	$4.438^{+1.000}_{-1.000}$	$0.000^{+1.000}_{-1.000}$	$1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$	$-1.000^{+1.000}_{-1.000}$
	+0%/-0%	+23%/-23%	+inf%/-inf%	+100%/-100%	+100%/-100%	+100%/-100%
Source	Solar	Solar	Solar	Solar		

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

### Secondary Eclipse Parameters for KIC 003247404-01 / KOI 4035.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-1906 \pm 567$	$20.86^{+12.97}_{-11.45}$	$1234^{+56}_{-59}$	$3285^{+1026}_{-461}$	$16^{+63}_{-11}$
Alt.	$-1887 \pm 692$	$17.72^{+12.24}_{-10.68}$	$1234^{+64}_{-55}$	$3431^{+1385}_{-549}$	$22^{+118}_{-15}$

$T_{\text{max}}$  = 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

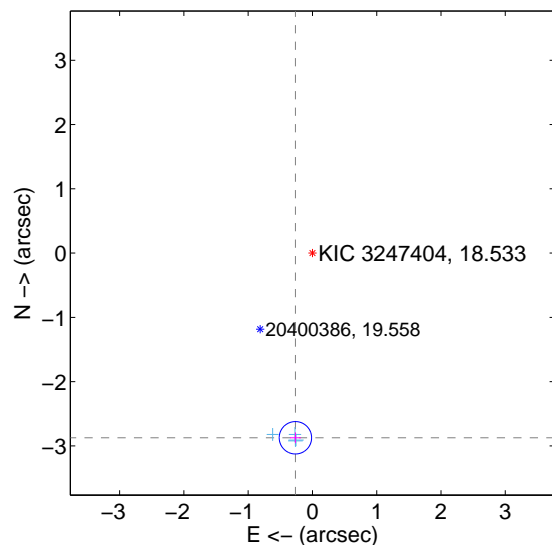
Supplemental centroid analysis for 003247404-01. Kepler magnitude: 18.53. Transit SNR 22.01

There are 6 quarters with good PRF difference image offsets

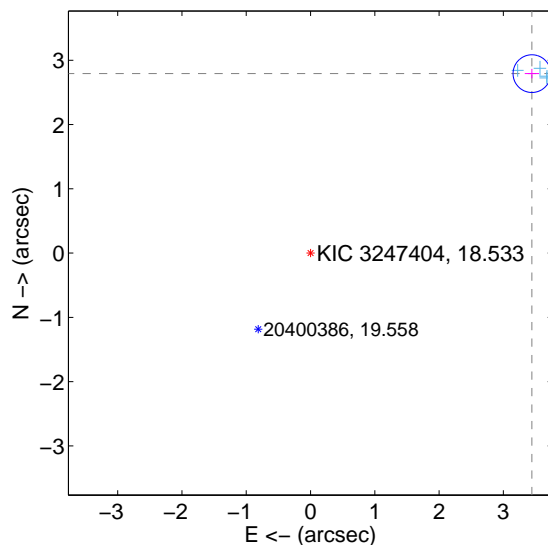
The OOT PRF centroid is offset from the target star catalog position by about 6.87 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.886 \pm 0.084$	34.33	$0.265 \pm 0.085$	$-2.873 \pm 0.084$
PRF-fit source offset from KIC position	$4.434 \pm 0.098$	45.35	$-3.444 \pm 0.111$	$2.792 \pm 0.074$
photometric centroid source offset	$2.99 \pm 0.01$	285.18	$-1.97 \pm 0.01$	$2.24 \pm 0.01$

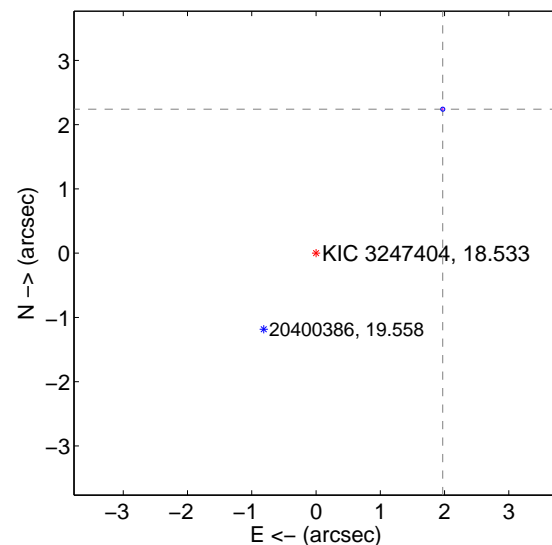
offset from difference PRF-fit to OOT PRF-fit



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.



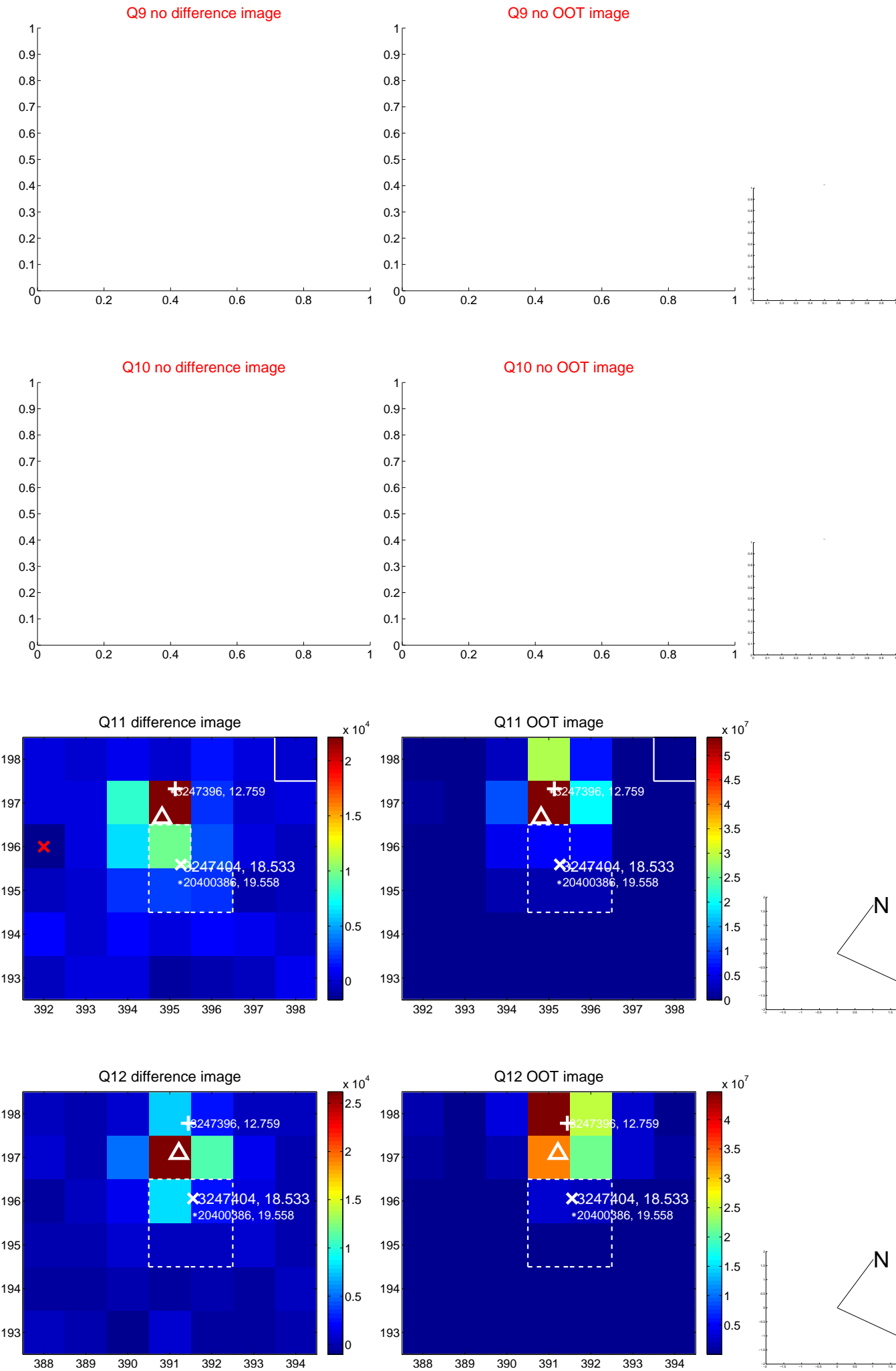
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



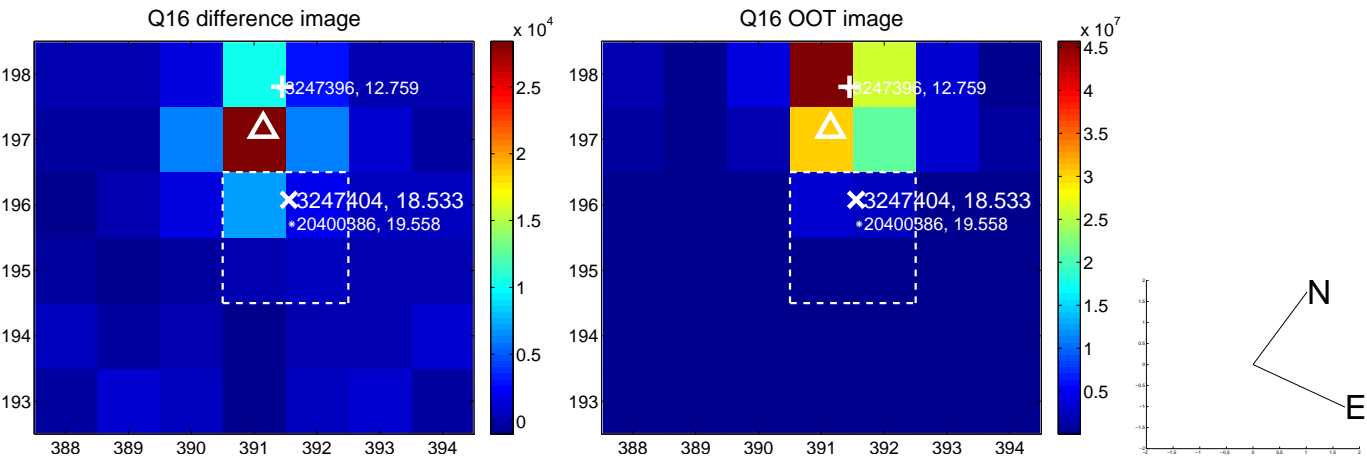
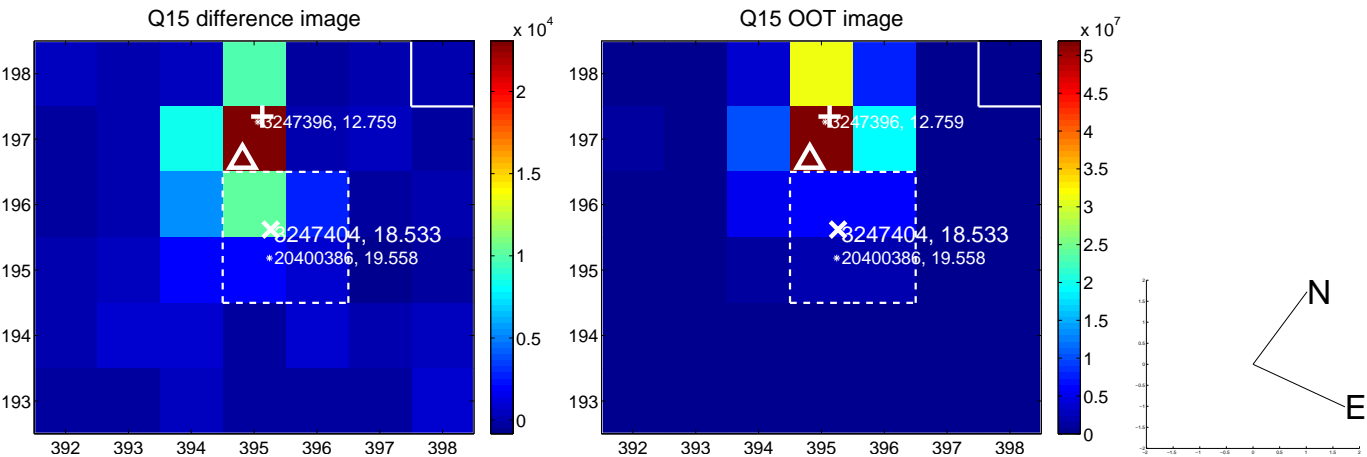
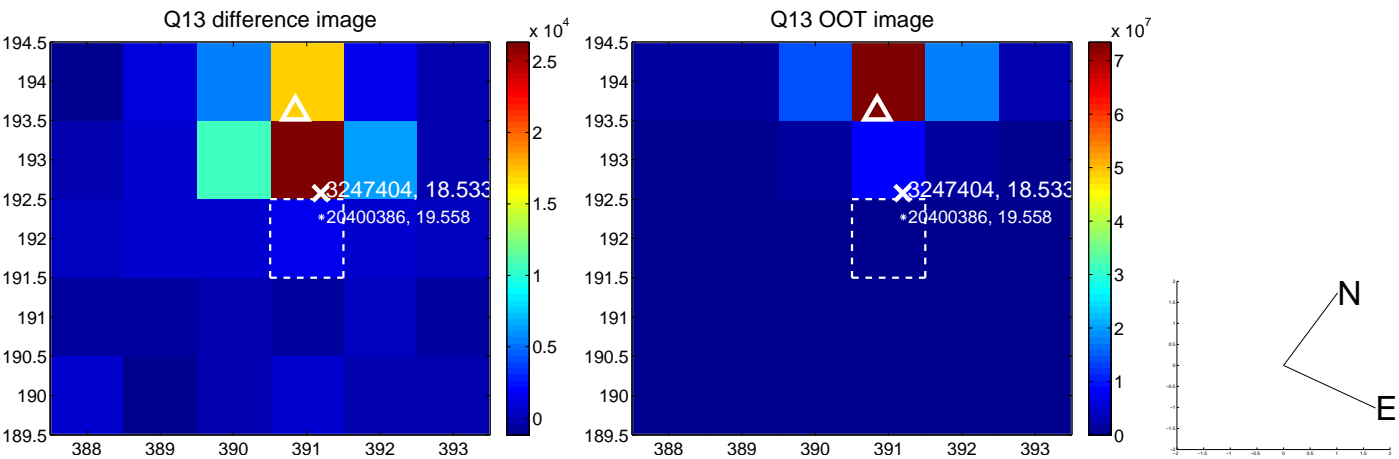
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



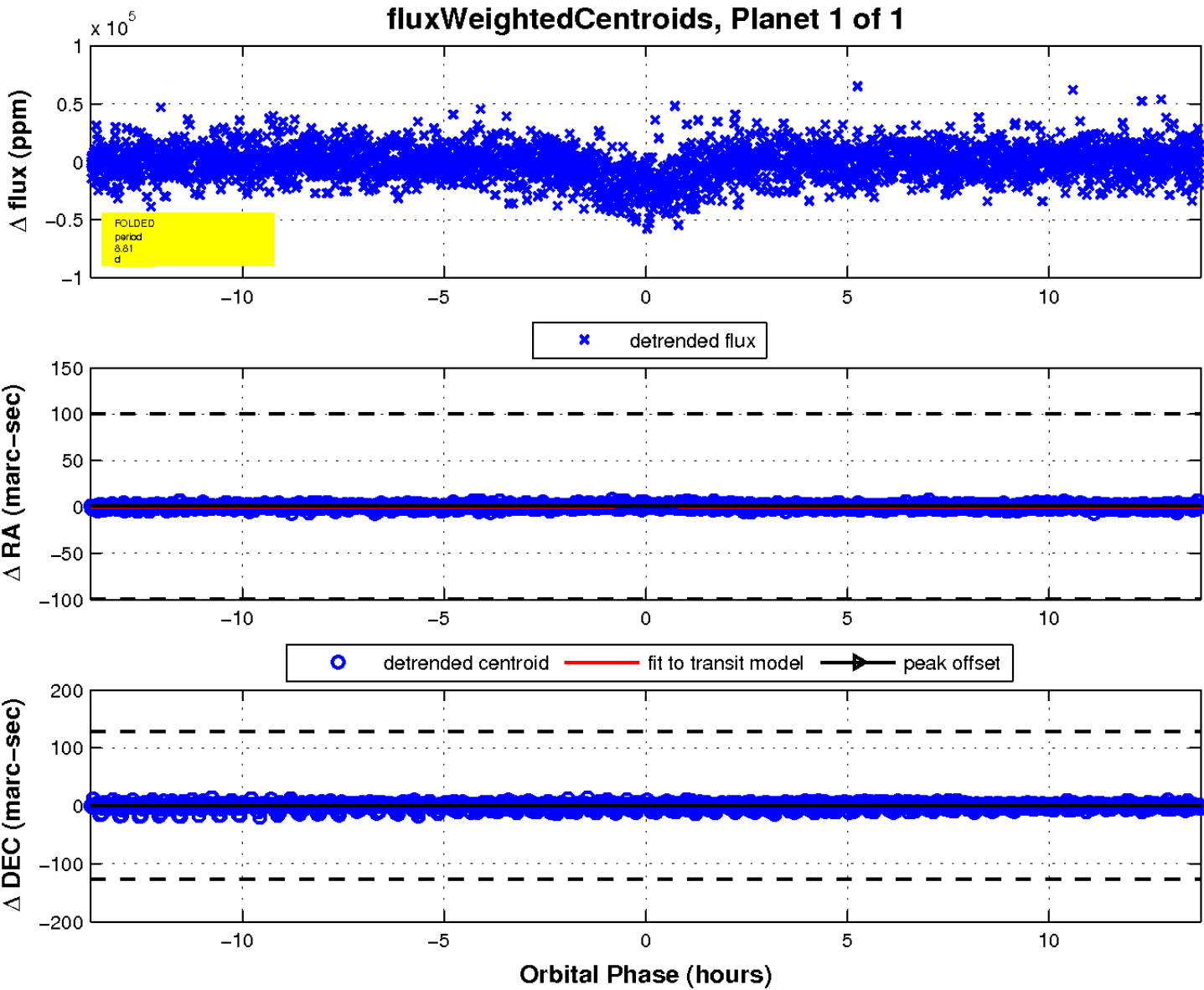
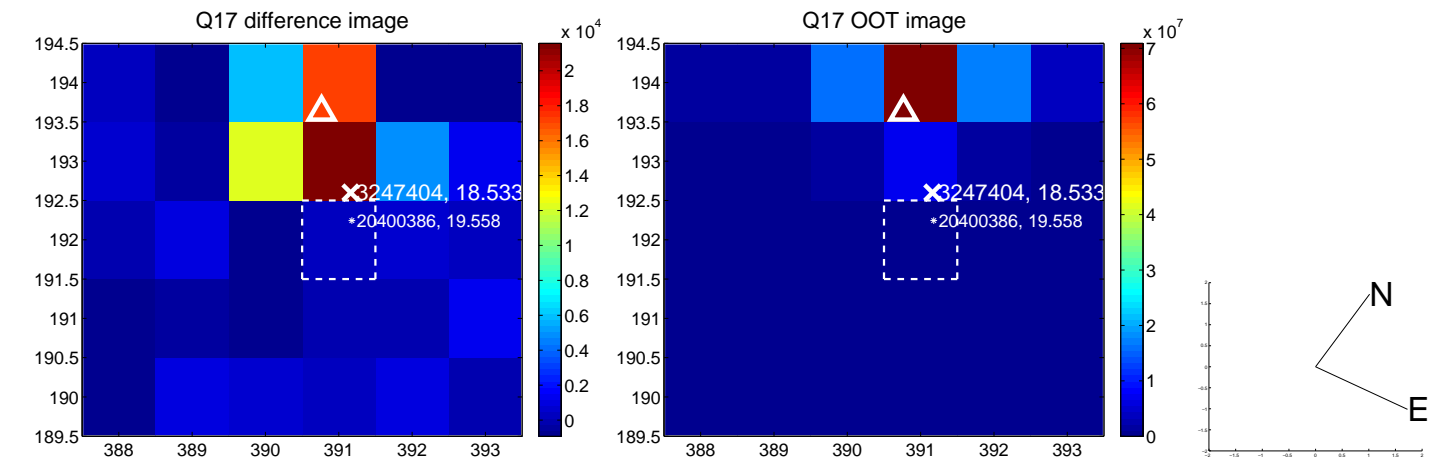
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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This astronomical image shows a field of stars against a dark background. A blue grid is overlaid on the image. Green text labels the axes: the horizontal axis (Right Ascension) is labeled from 53.0 to 49.0, and the vertical axis (Declination) is labeled from 40.0 to 20.0. The central coordinates are 19:37:50.0 and 50:03:23.0.

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