

# KIC 004274548

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004274548-01	OBS	1331.01	6.800861	134.748136	720.1	2.175	21.3	23.8	0.69	4805	2.27	55.89

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004274548-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

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

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

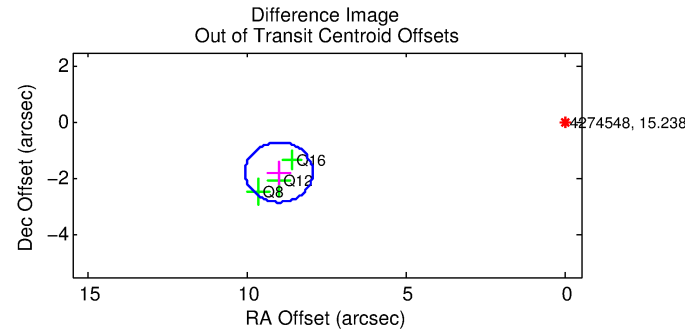
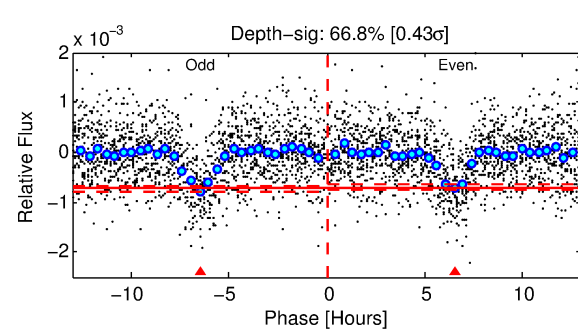
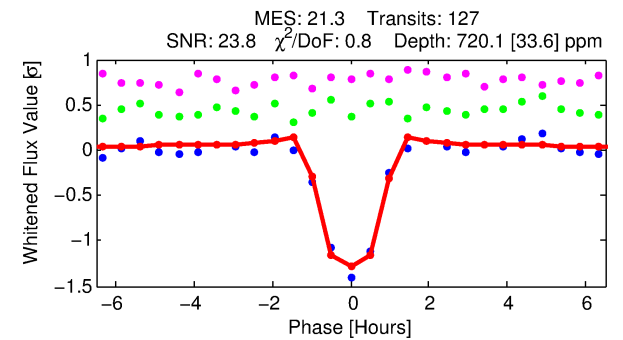
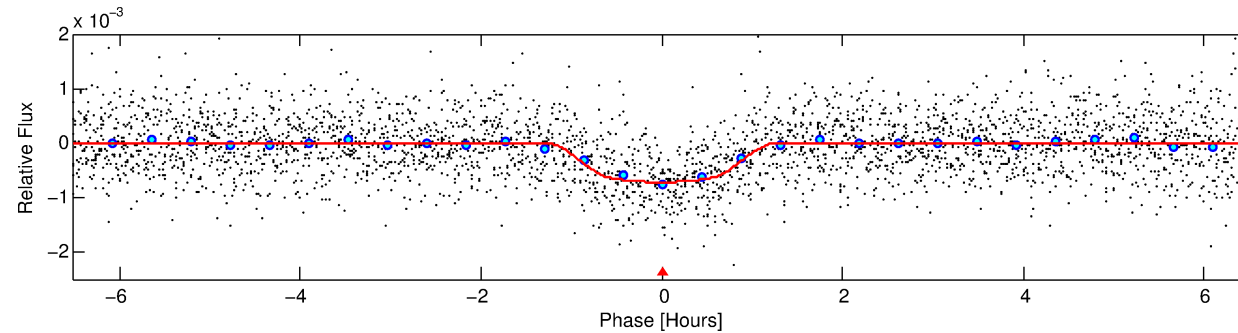
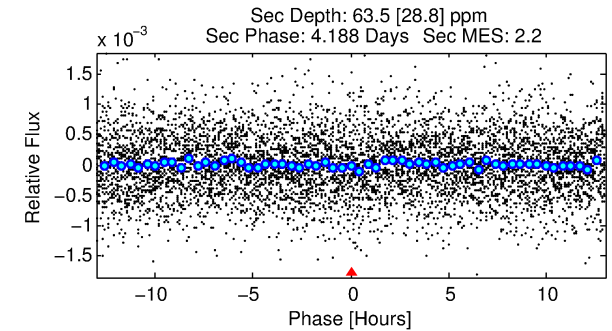
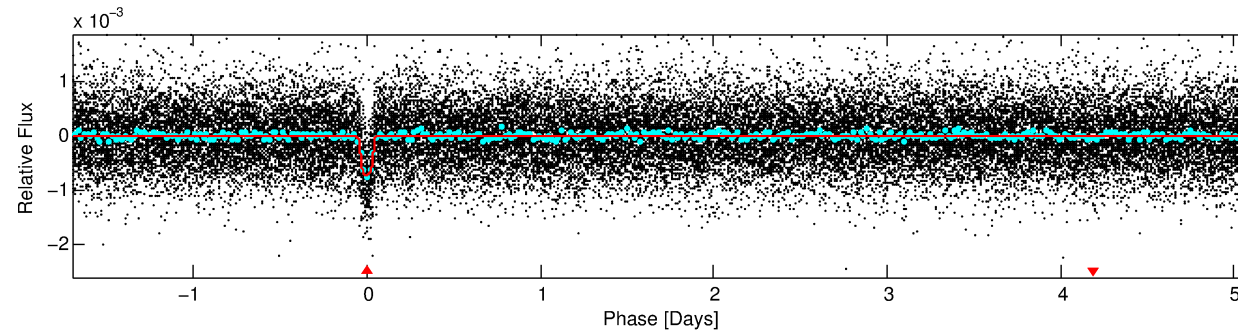
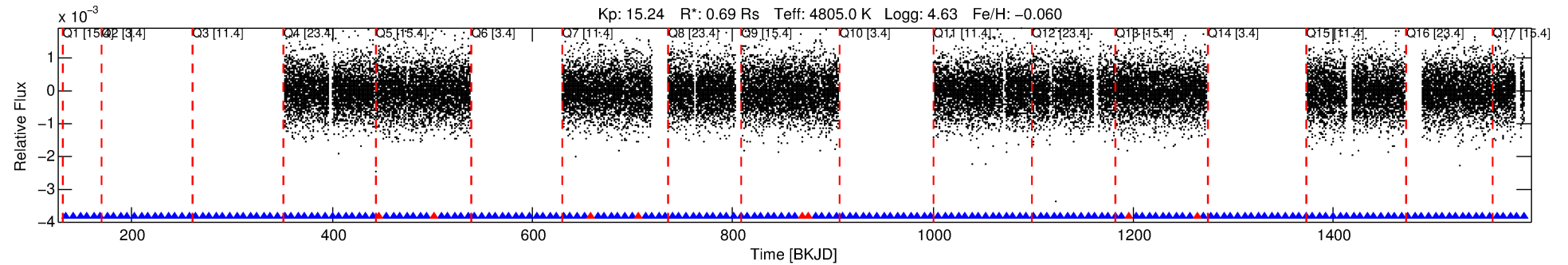
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 004274548-01

No Significant Match Found

# DV One-Page Summary

KIC: 4274548 Candidate: 1 of 1 Period: 6.801 d  
KOI: K01331.01 Corr: 0.969



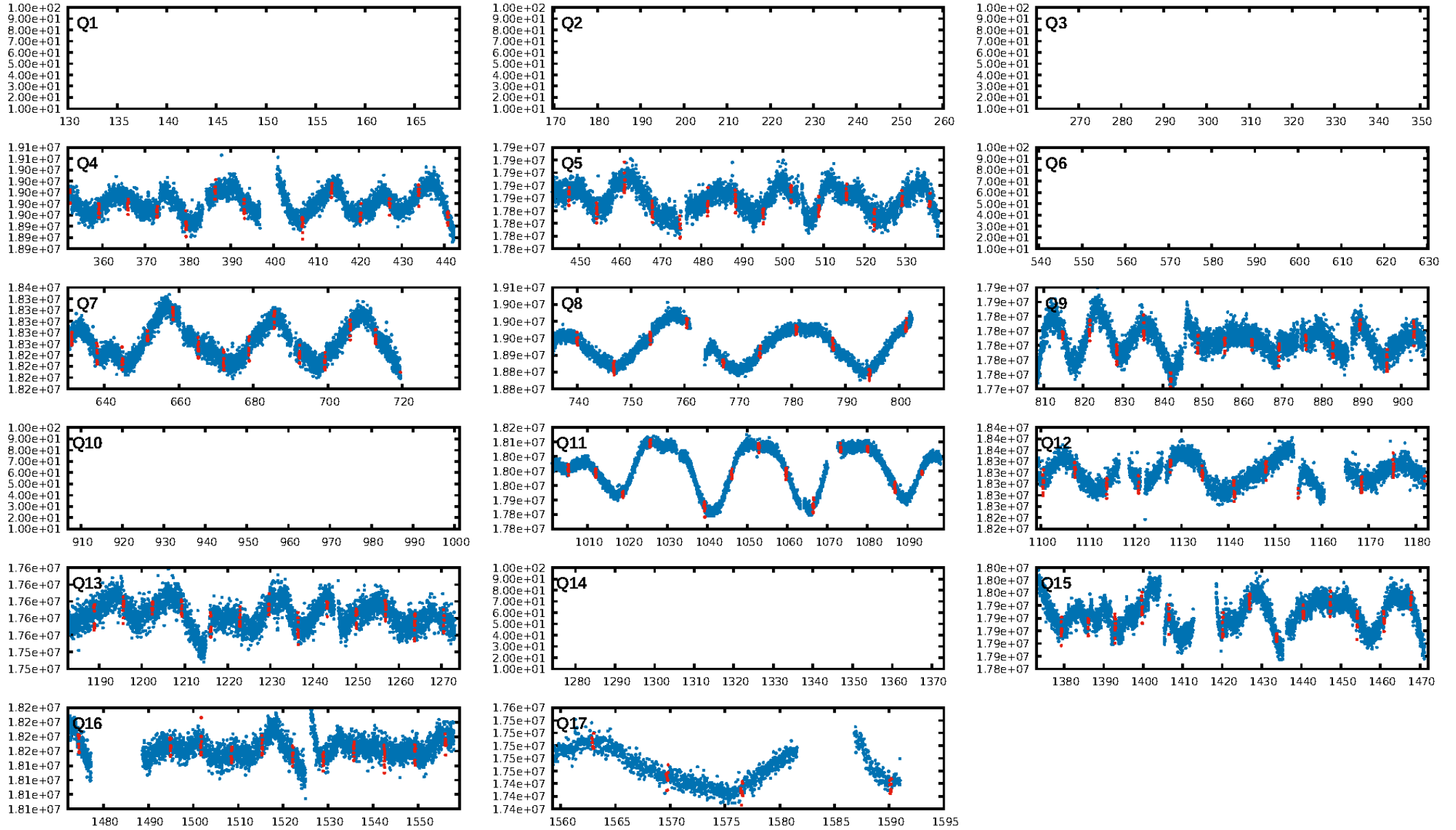
## DV Fit Results:

Period = 6.80086 [0.00002] d  
Epoch = 134.7481 [0.0020] BKJD  
Rp/R\* = 0.0302 [0.0056]  
a/R\* = 12.05 [8.09]  
b = 0.90 [0.15]  
Seff = 55.89 [10.65]  
Teq = 697 [33] K  
Rp = 2.26 [0.50] Re  
a = 0.0636 [0.0060] AU  
Ag = 27.53 [16.48] [1.61σ]  
Teff = 2469 [372] K [4.75σ]

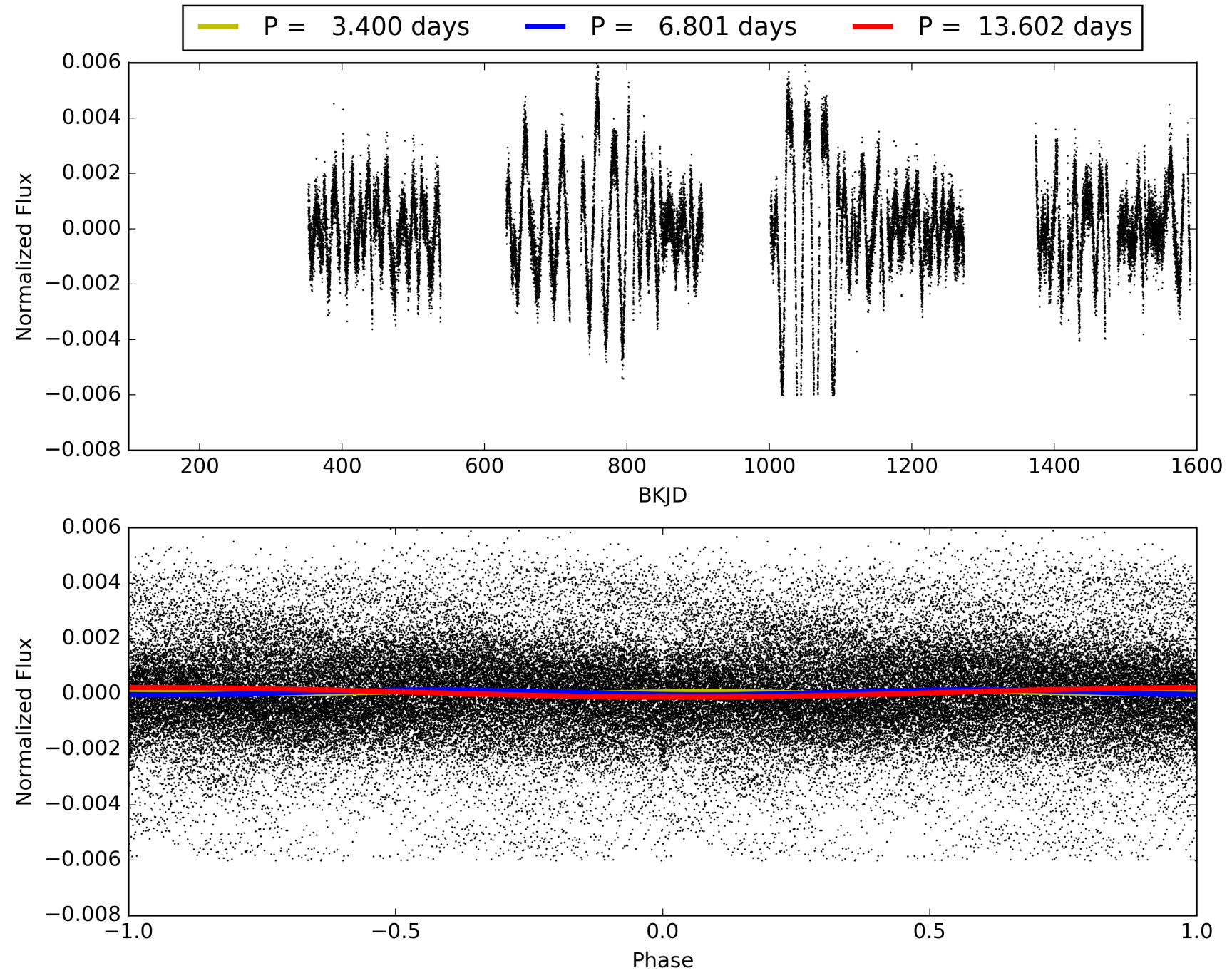
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.7%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.19e-97  
RollingBand-fgt: 0.93 [115/123]  
GhostDiagnostic-chr: 5.479  
Centroid-sig: 0.0%  
Centroid-so: 3.395 arcsec [11.43σ]  
OotOffset-rm: 9.184 arcsec [25.89σ]  
KicOffset-rm: 0.472 arcsec [2.73σ]  
OotOffset-st: 0/0/3/0 [3]  
KicOffset-st: 0/2/3/4 [9]  
DiffImageQuality-fgm: 0.67 [6/9]  
DiffImageOverlap-fno: 1.00 [11/11]

# TCE 004274548-01, PDC Light Curves

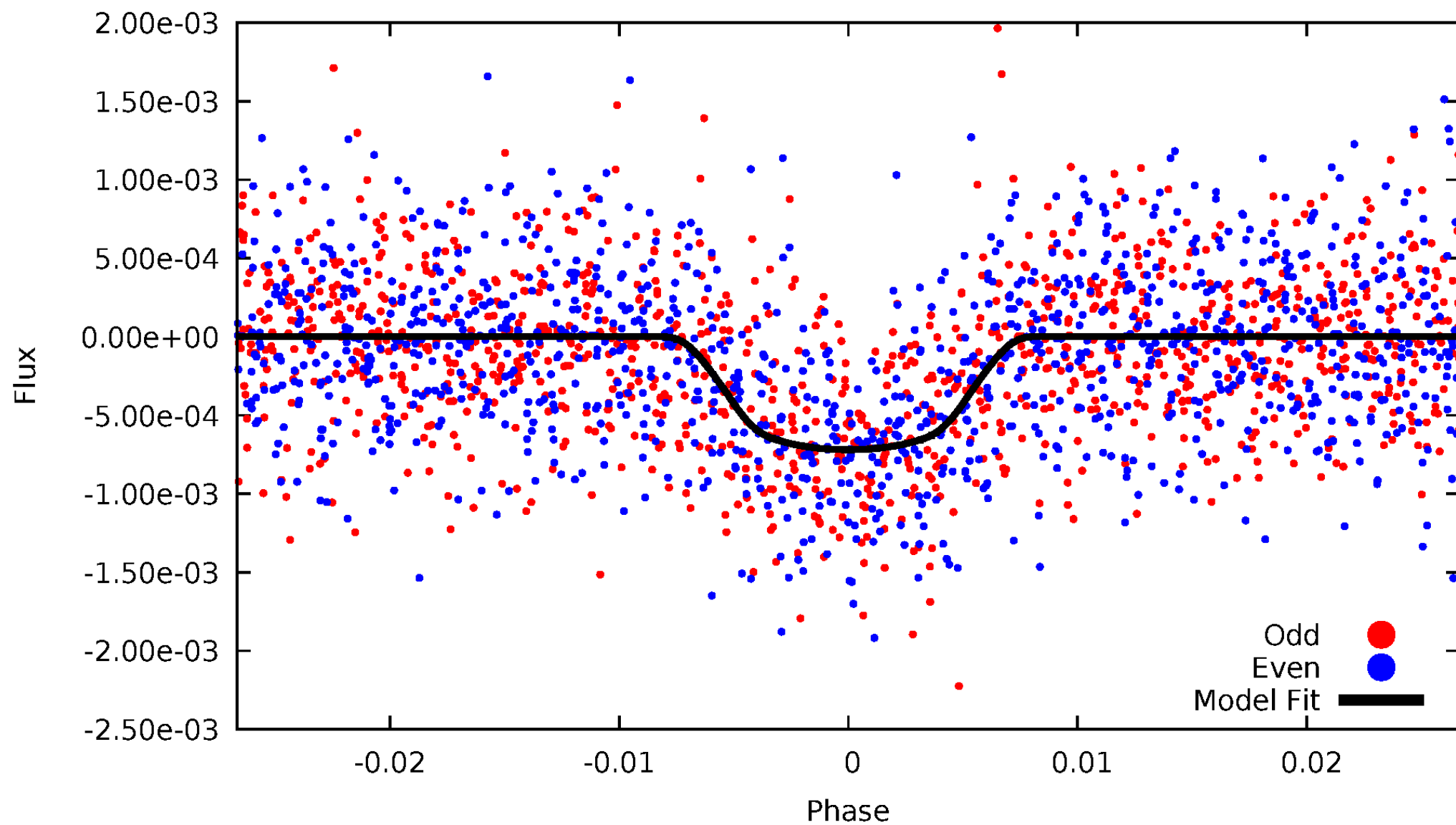


TCE 004274548-01



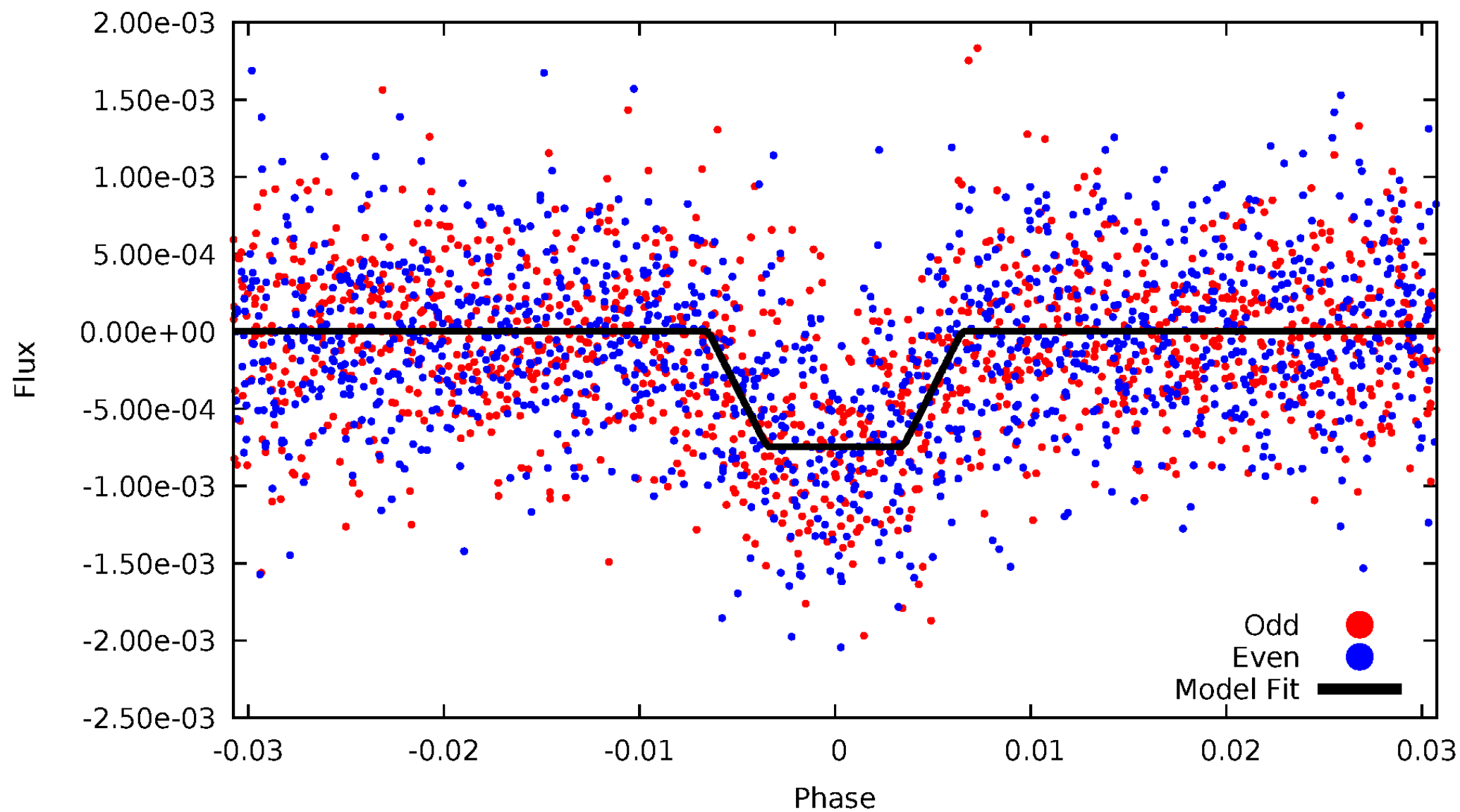
# DV Odd/Even

TCE 004274548-01



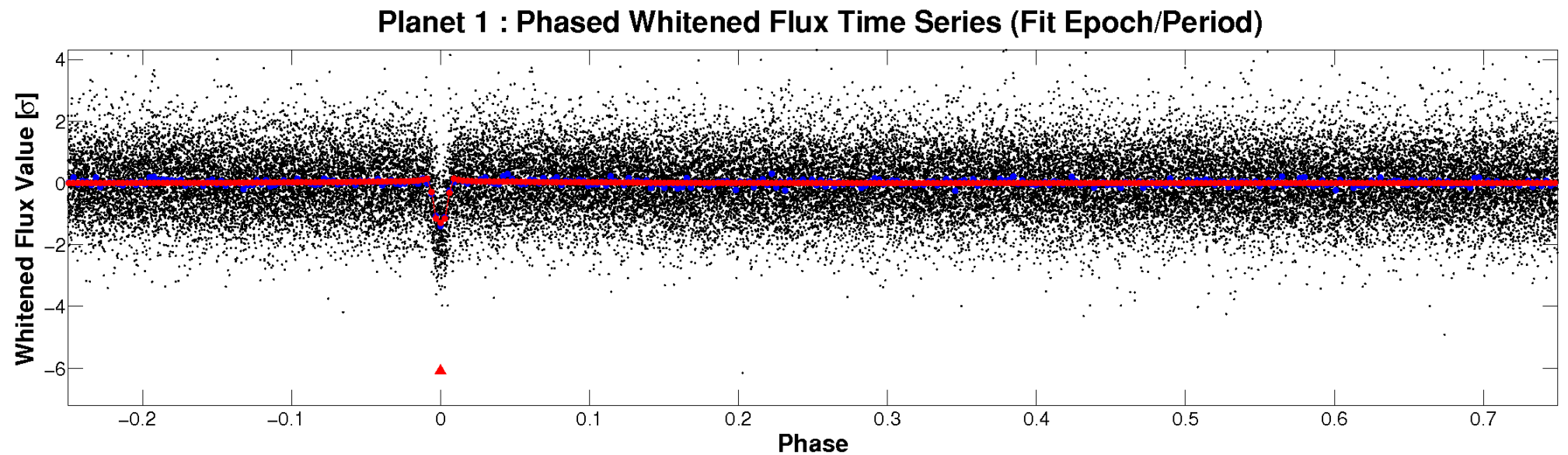
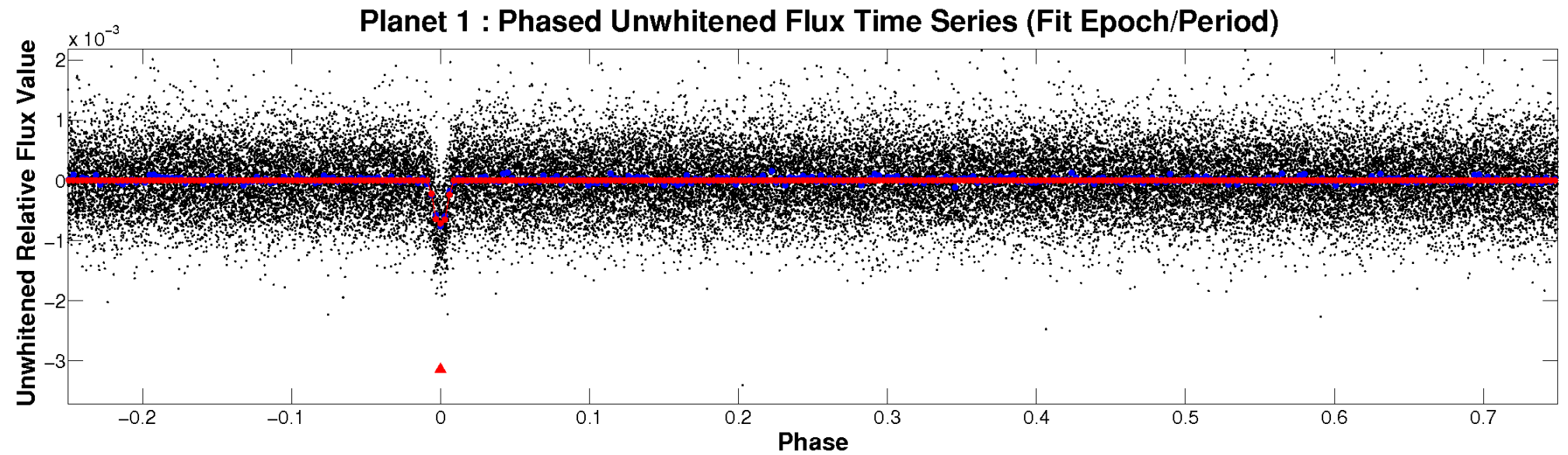
# ALT Odd/Even

TCE 004274548-01



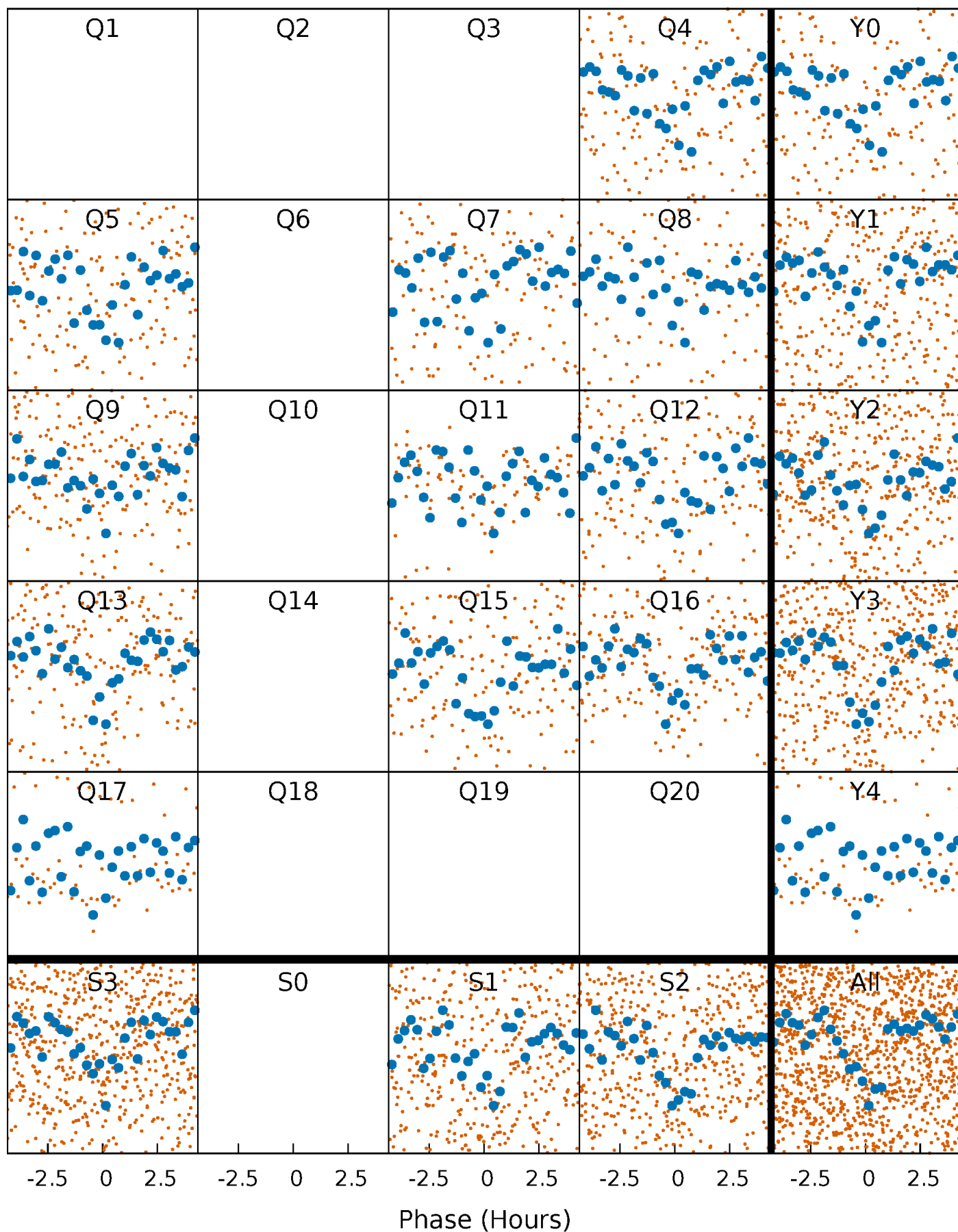


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

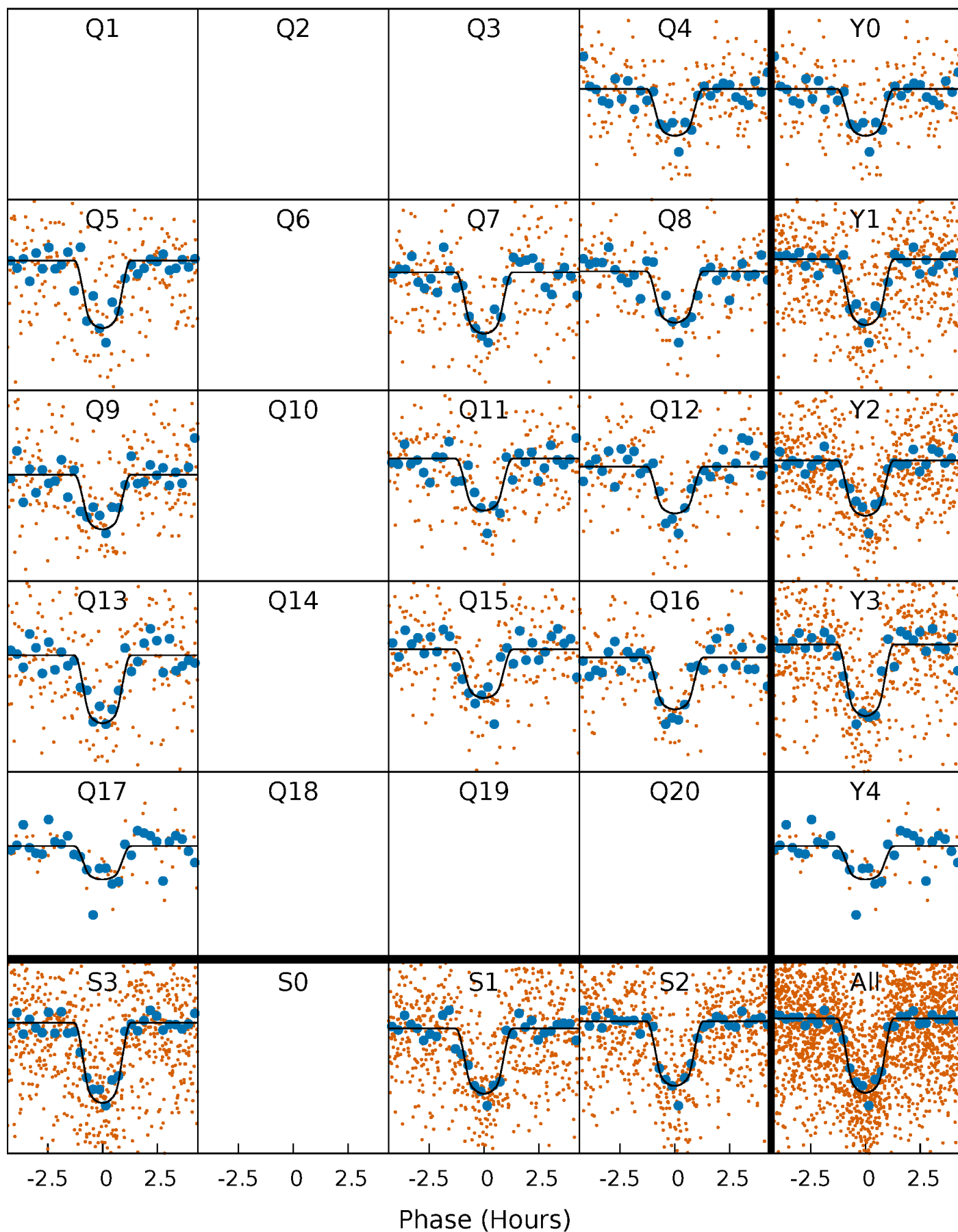
TCE 004274548-01 P= 6.800861 Days  $T_0=134.748136$  (BKJD)





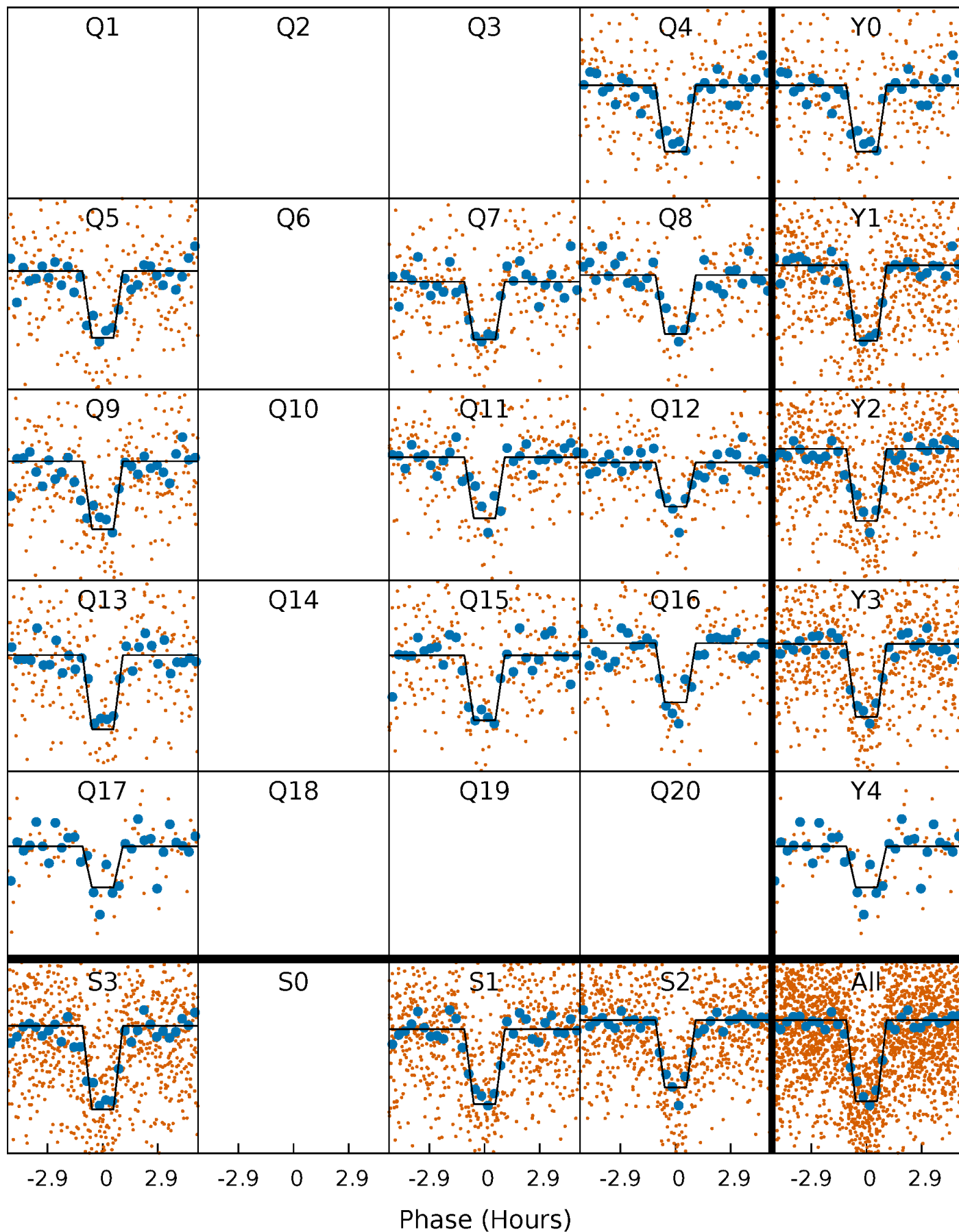
# DV Quarter-Phased Transit Curves

TCE 004274548-01   P= 6.800861 Days    $T_0=134.748136$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

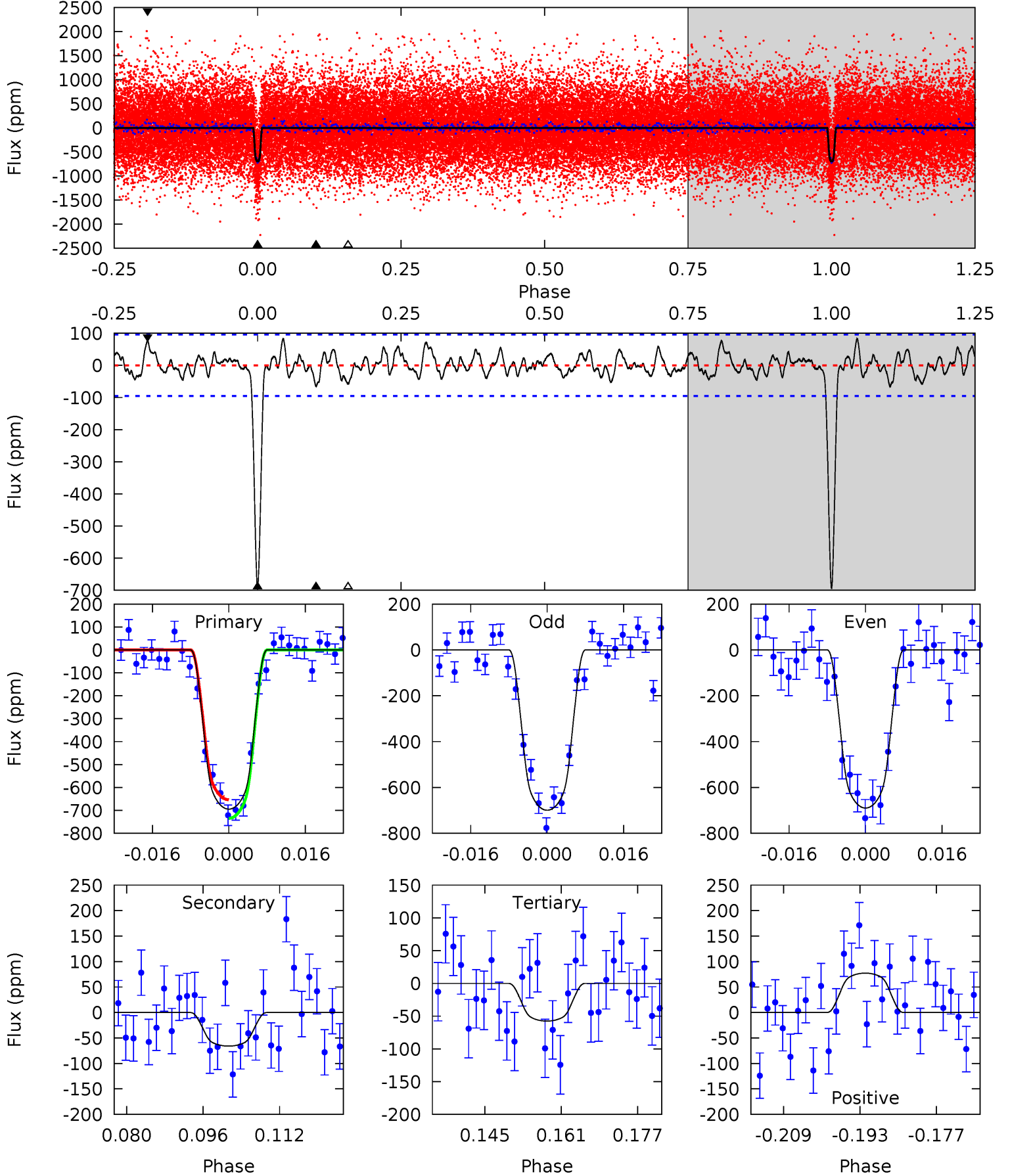
TCE 004274548-01 P= 6.800793 Days  $T_0=134.756585$  (BKJD)



# DV Model-Shift Uniqueness Test

004274548-01, P = 6.800861 Days, E = 134.748136 Days

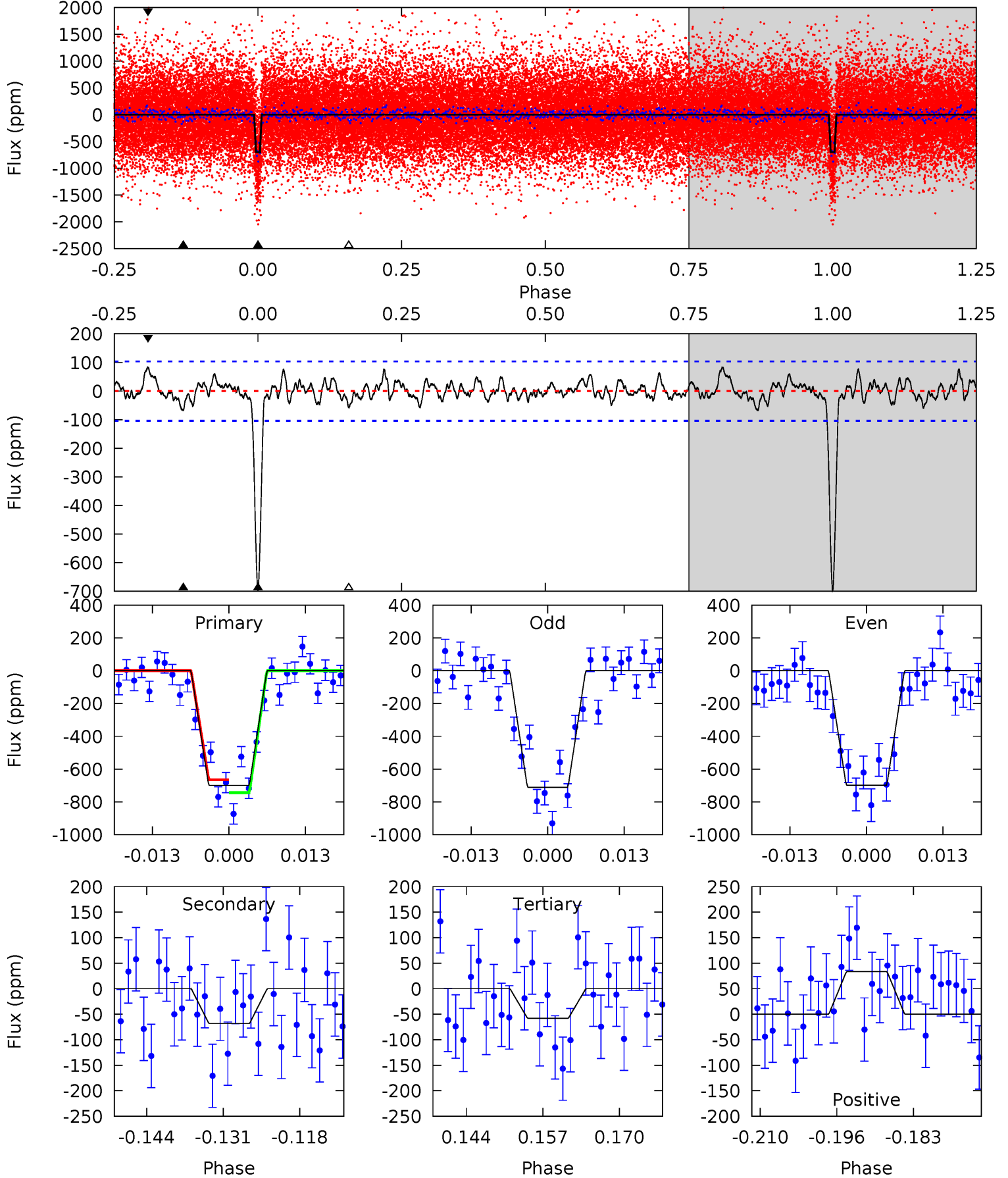
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.9	3.40	2.97	3.99	4.93	2.41	1.35	32.9	31.9	0.43	-0.59	0.25	0.96	0.11	2.10



# Alt Model-Shift Uniqueness Test

004274548-01, P = 6.800793 Days, E = 134.756585 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
33.5	3.28	2.79	4.00	4.97	2.48	1.19	30.8	29.5	0.48	-0.73	0.30	0.99	0.11	1.89



### Stellar Parameters For KIC 004274548

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4805^{+172}_{-172}$	$4.633^{+0.027}_{-0.063}$	$-0.060^{+0.300}_{-0.300}$	$0.688^{+0.083}_{-0.045}$	$0.769^{+0.058}_{-0.080}$	$3.325^{+0.410}_{-0.789}$
	+4%/-4%	+1%/-1%	+500%/-500%	+12%/-7%	+8%/-10%	+12%/-24%
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 004274548-01 / KOI 1331.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-66 \pm 19$	$2.32^{+0.44}_{-0.46}$	$983^{+42}_{-40}$	$3069^{+233}_{-225}$	$28^{+16}_{-11}$
Alt.	$-68 \pm 21$	$2.13^{+0.41}_{-0.43}$	$982^{+39}_{-40}$	$3149^{+274}_{-228}$	$33^{+23}_{-13}$

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

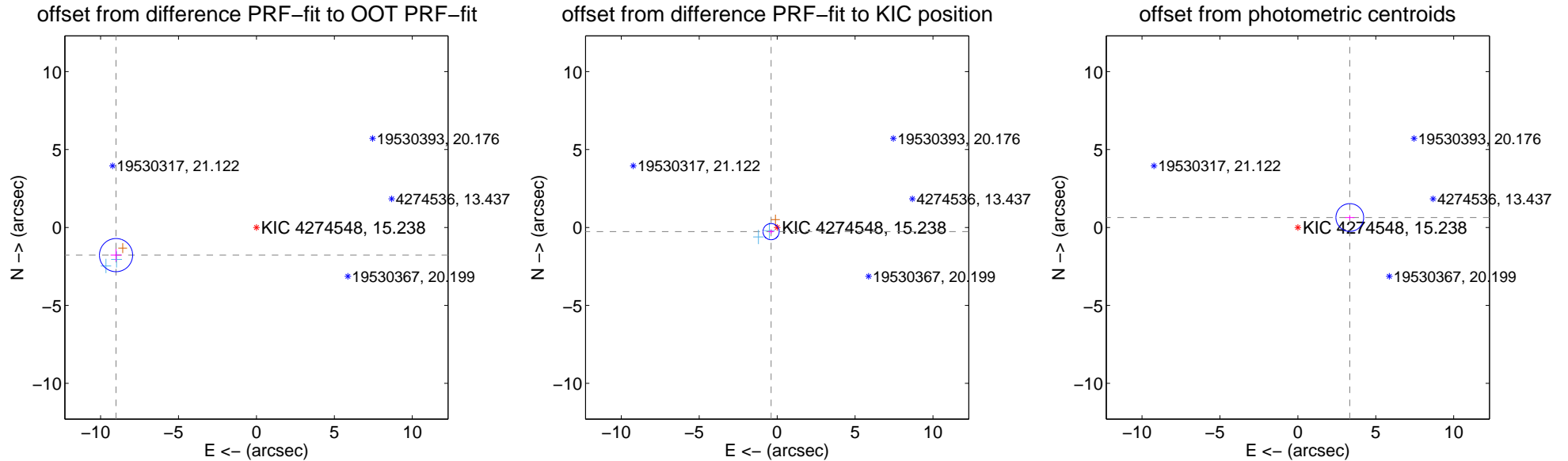
## DV Centroid Data

Supplemental centroid analysis for 004274548-01. Kepler magnitude: 15.24. Transit SNR 23.82

There are 6 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 8.67 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

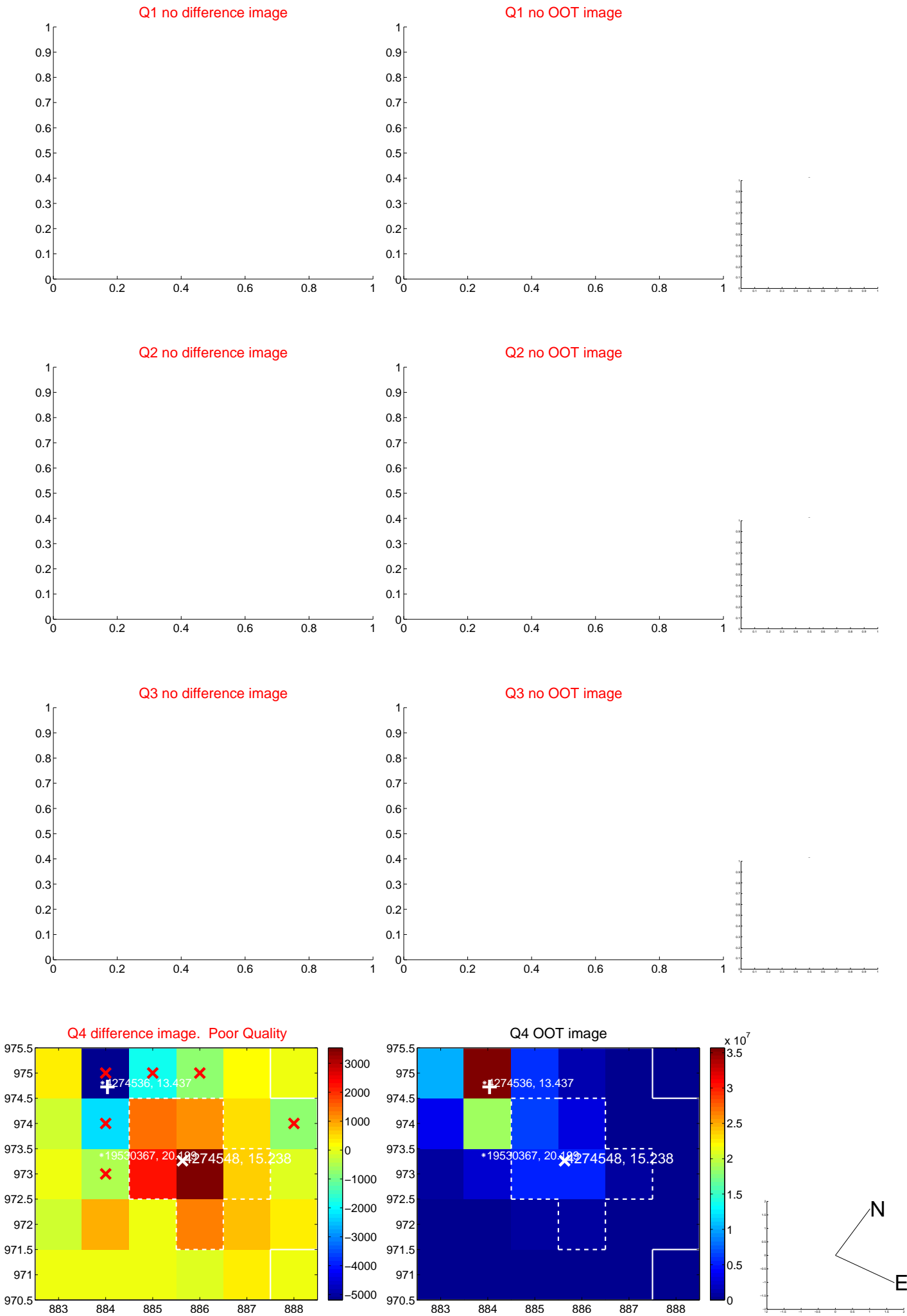
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$9.184 \pm 0.355$	25.89	$9.011 \pm 0.353$	$-1.774 \pm 0.395$
PRF-fit source offset from KIC position	$0.472 \pm 0.173$	2.73	$0.389 \pm 0.186$	$-0.268 \pm 0.140$
photometric centroid source offset	$3.39 \pm 0.30$	11.43	$-3.33 \pm 0.30$	$0.64 \pm 0.15$



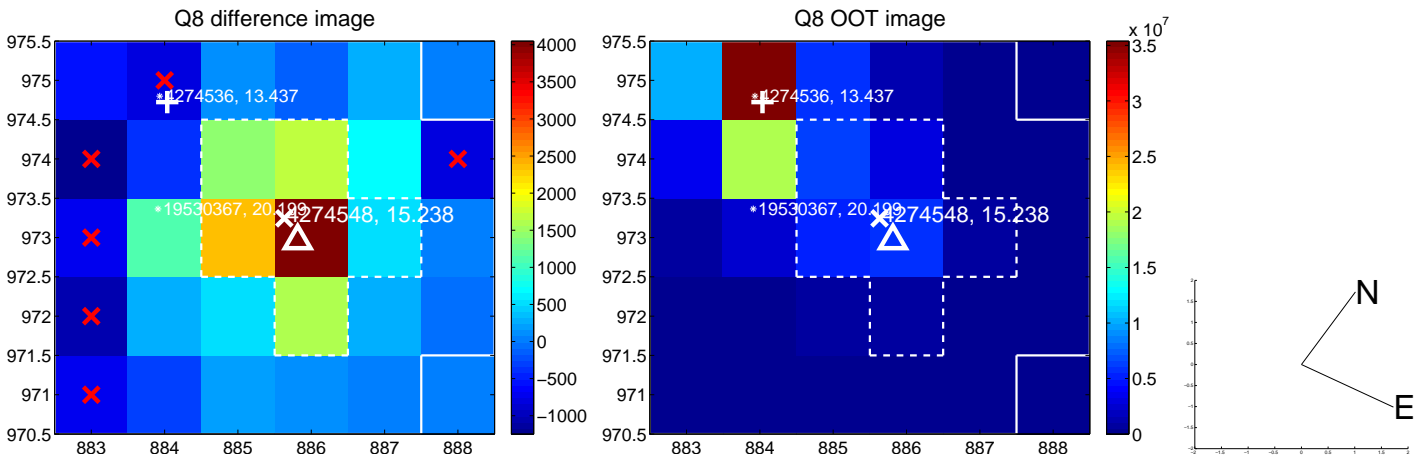
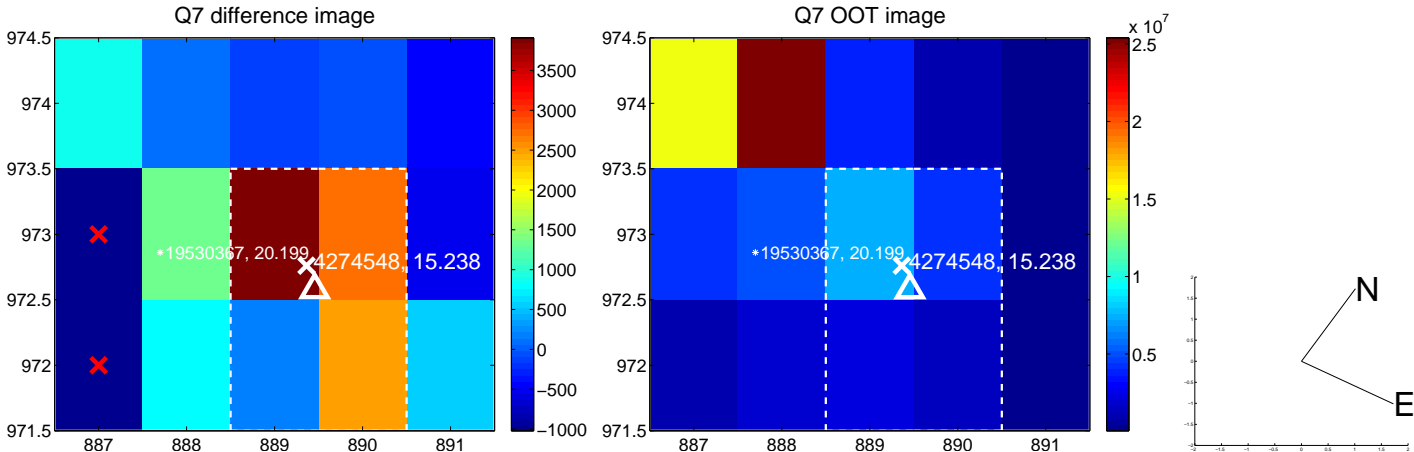
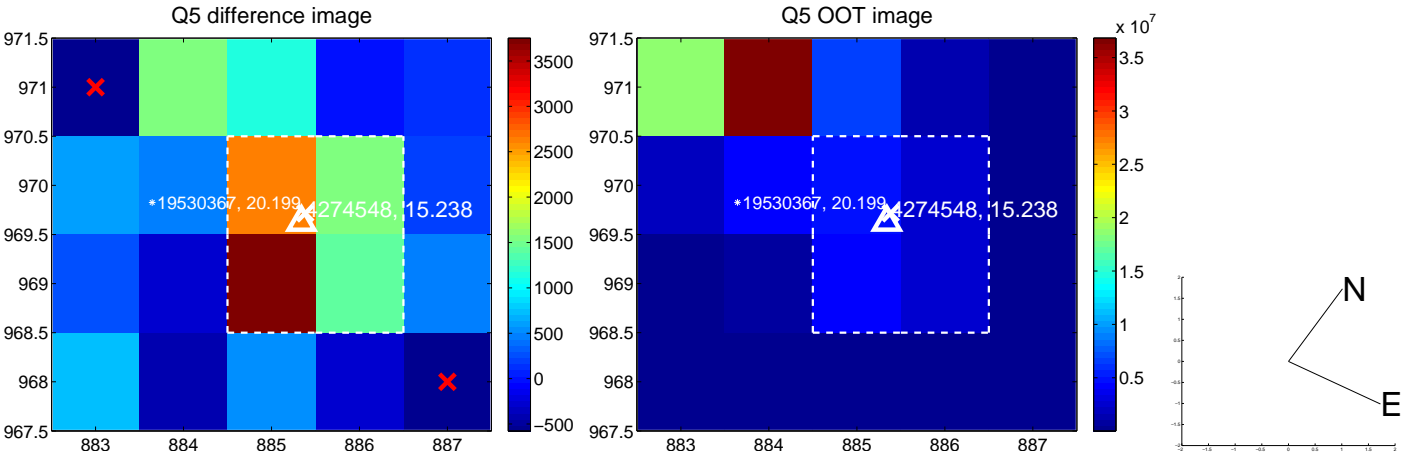
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



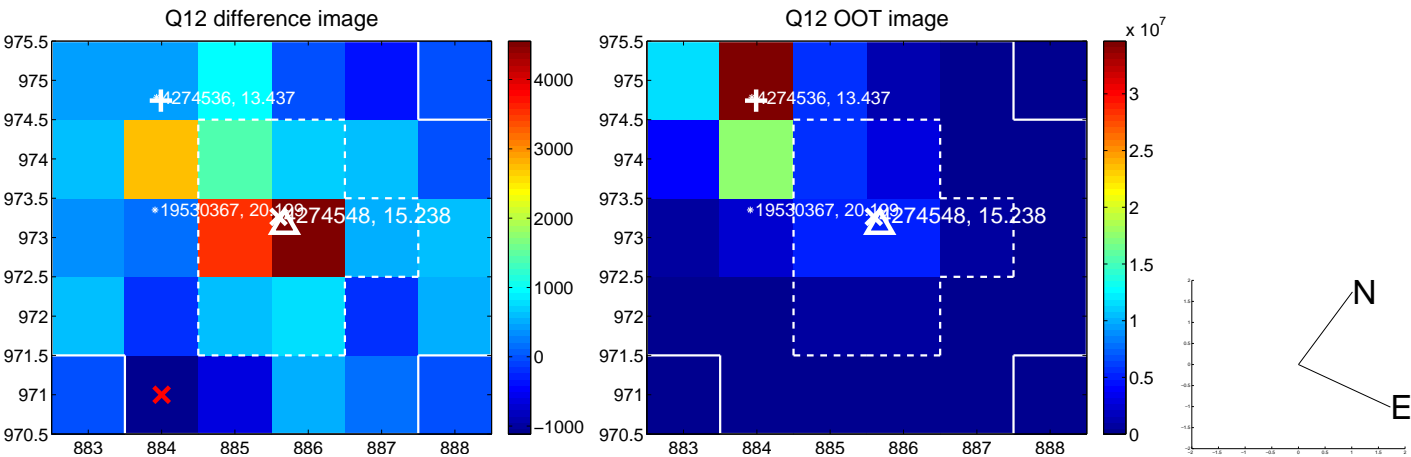
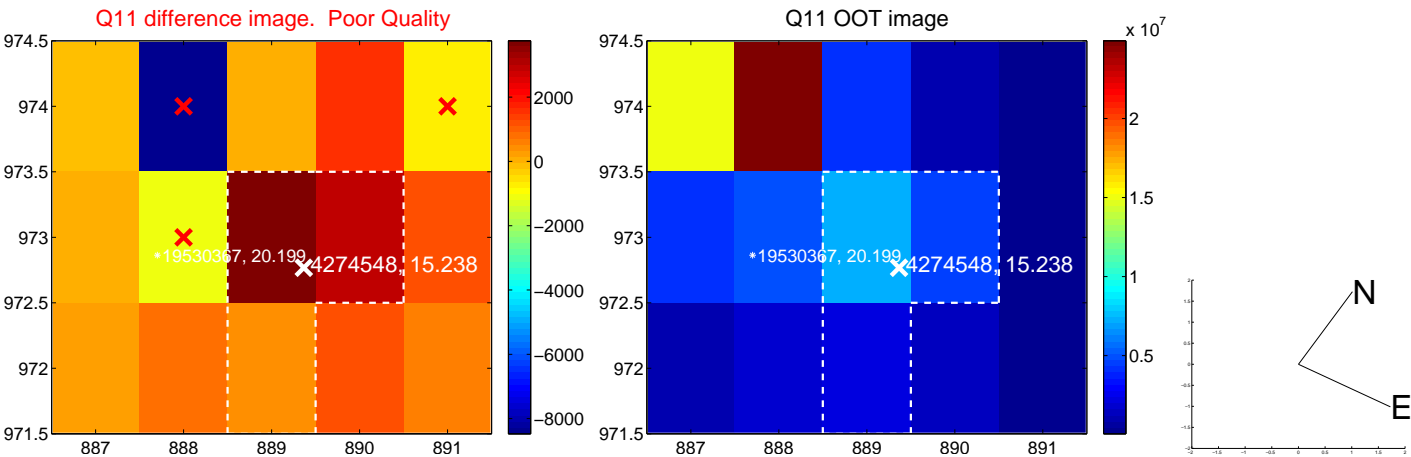
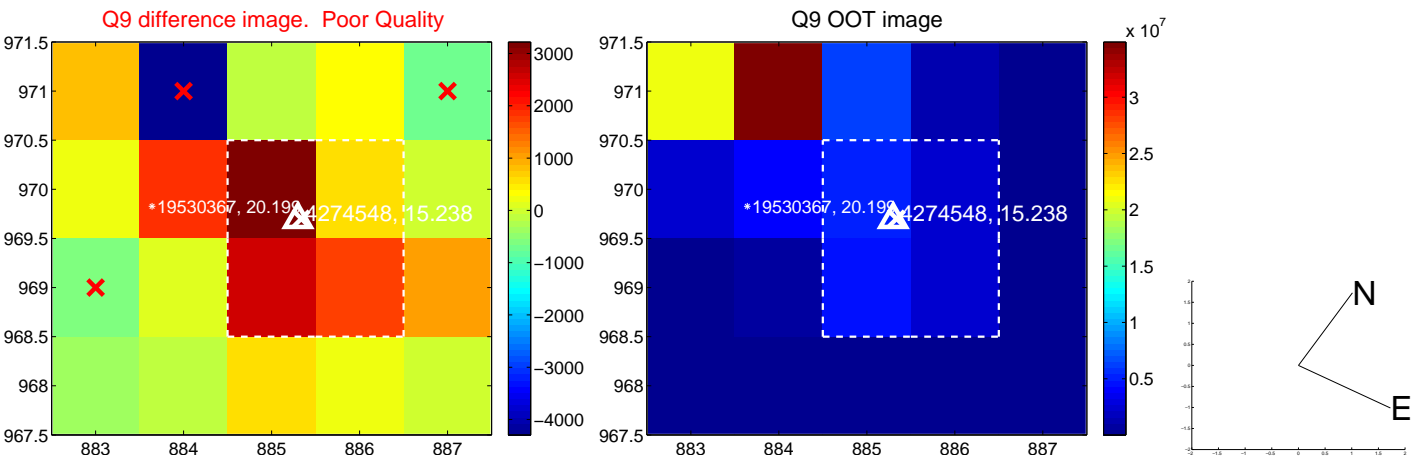
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



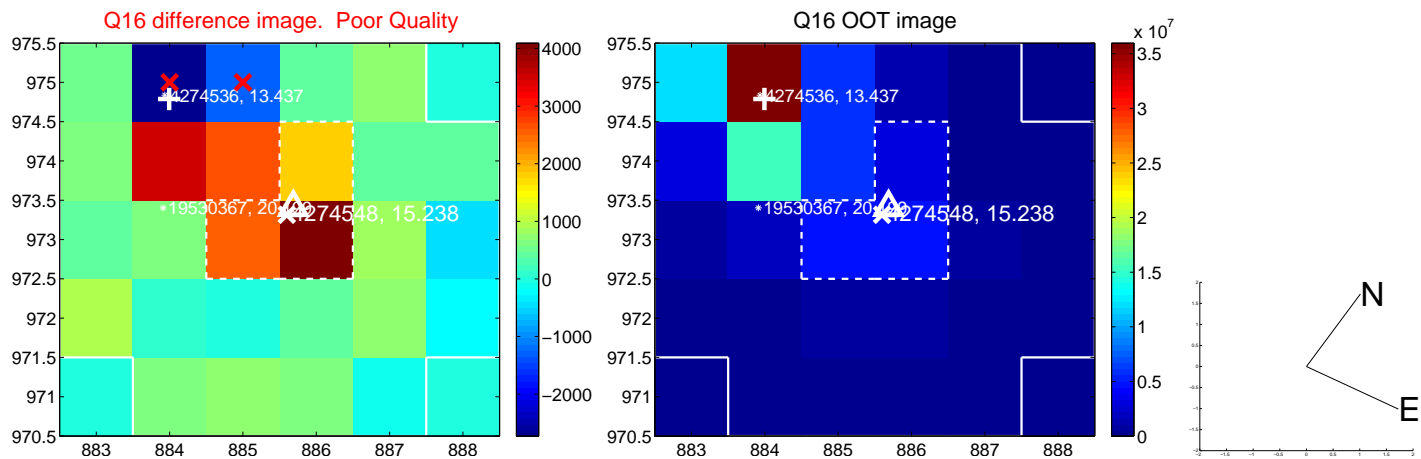
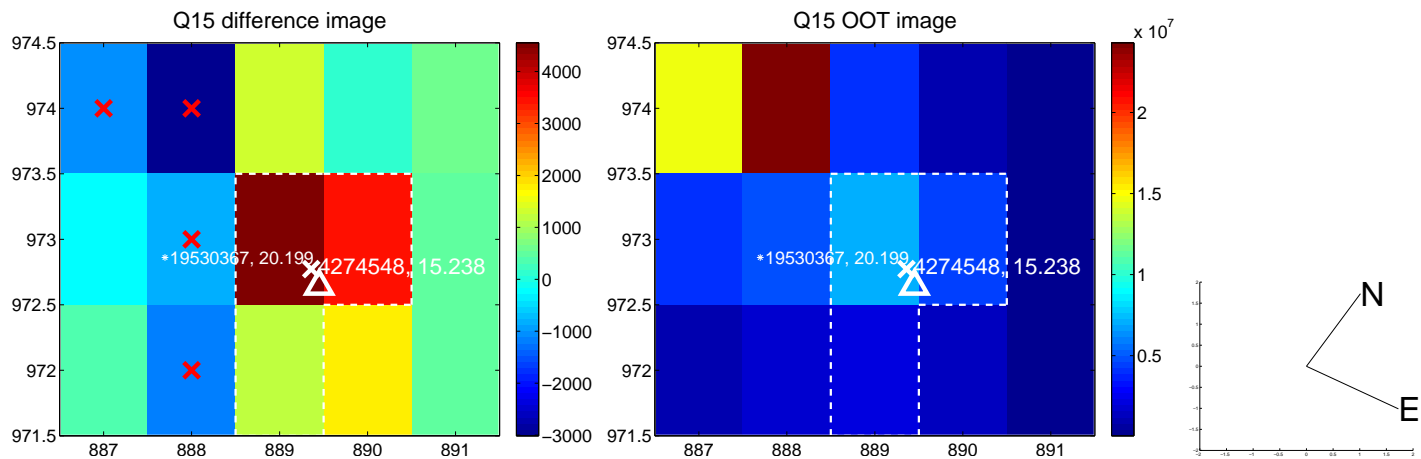
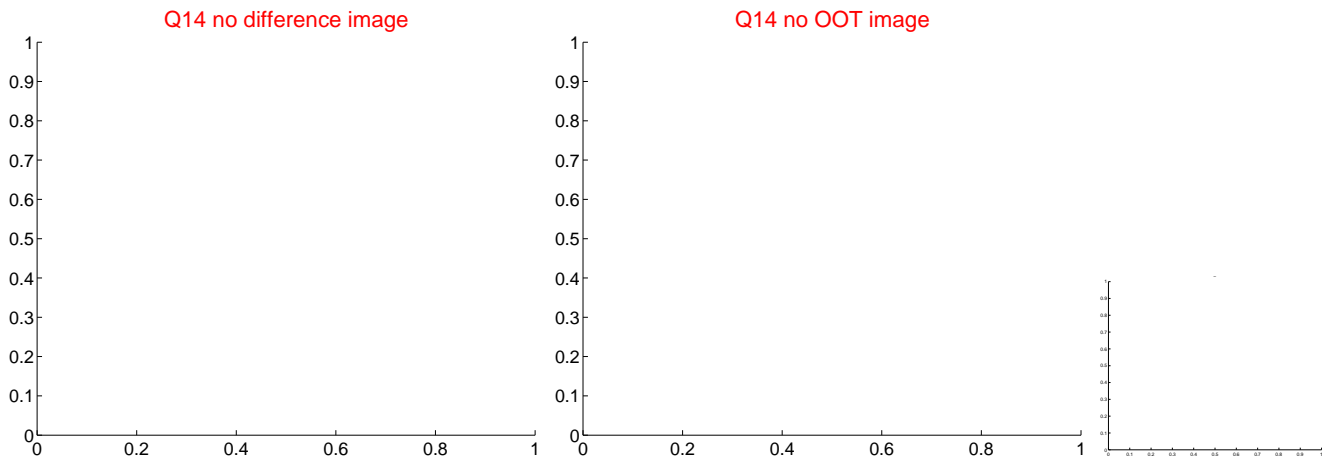
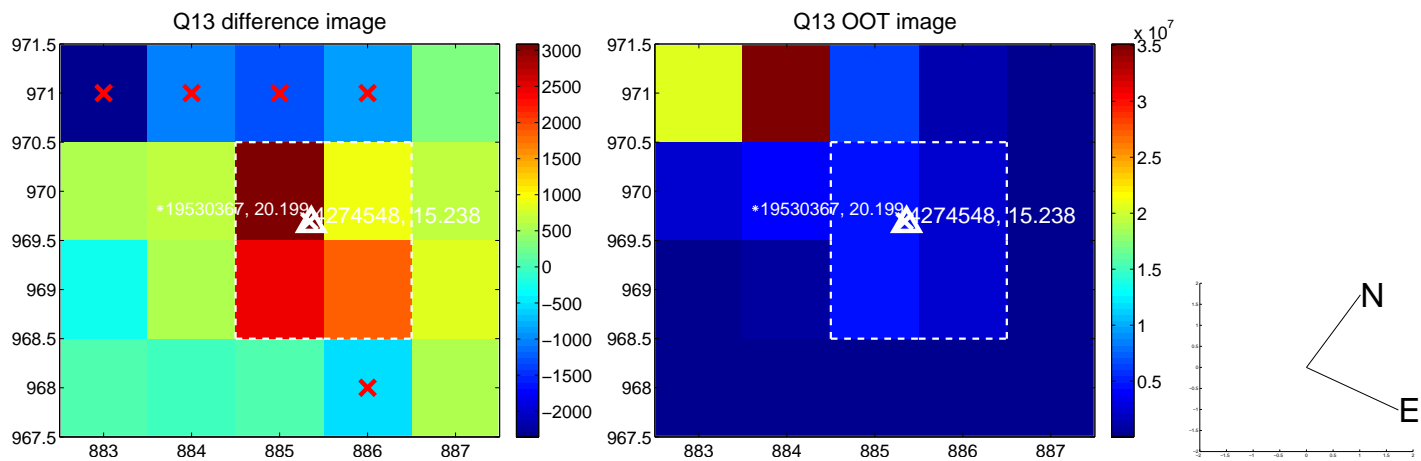
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



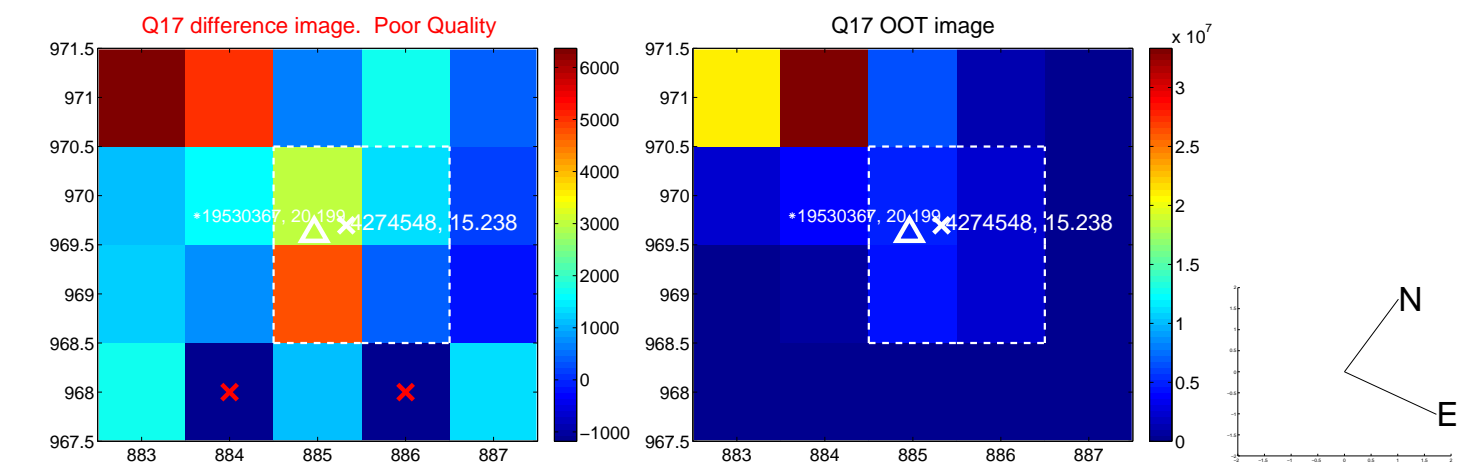
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



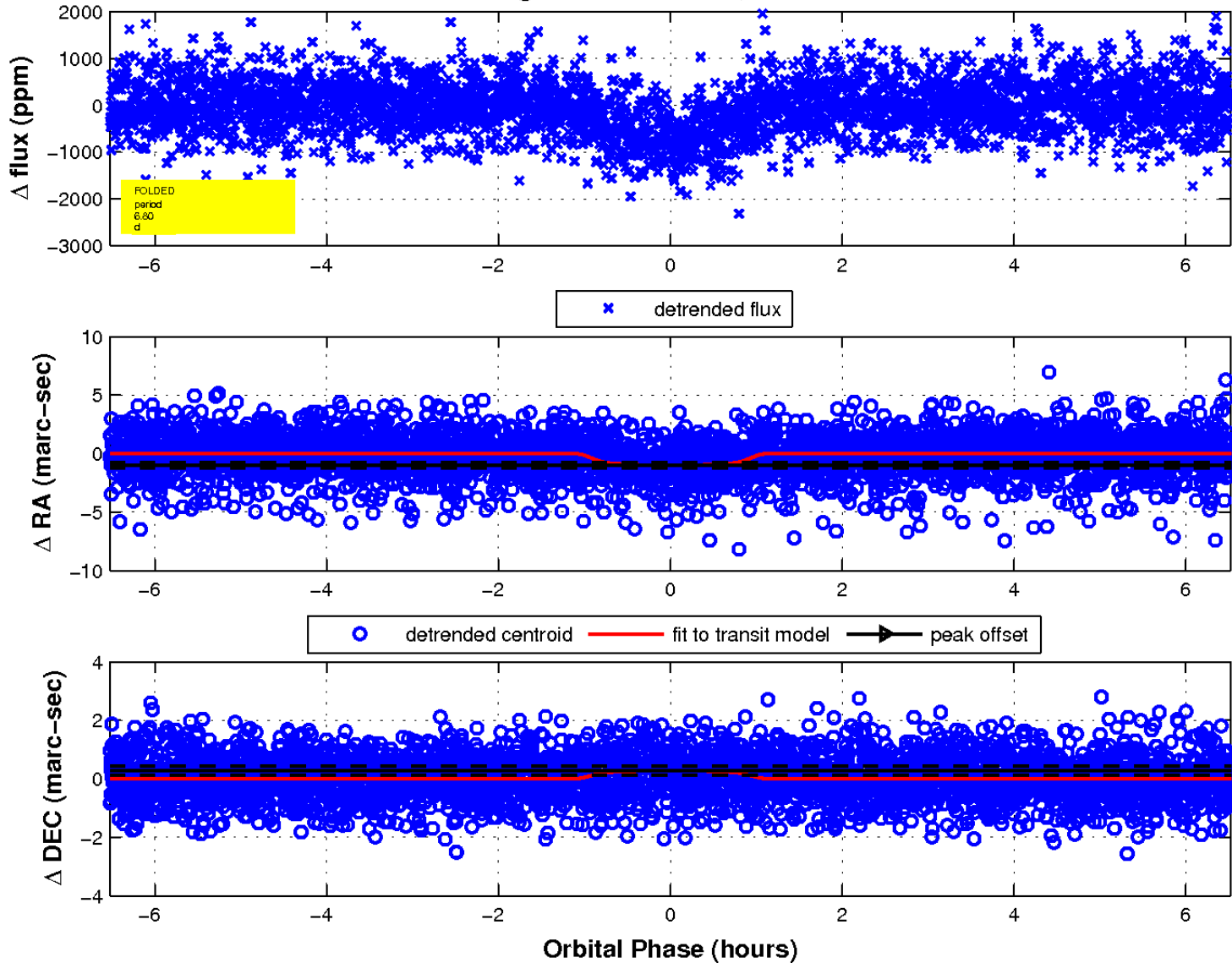
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

