

# KIC 004840263

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
004840263-01	OBS	6457.01	0.957829	132.410282	136161.7	3.672	9342.4	6425.5	2.03	5908	95.61	11668.92

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004840263-01	OBS	FP	0.00	0	1	0	0	DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_ALT—DEEP_V_SHAPED

**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.

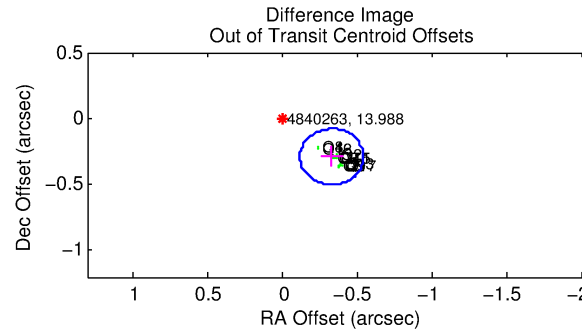
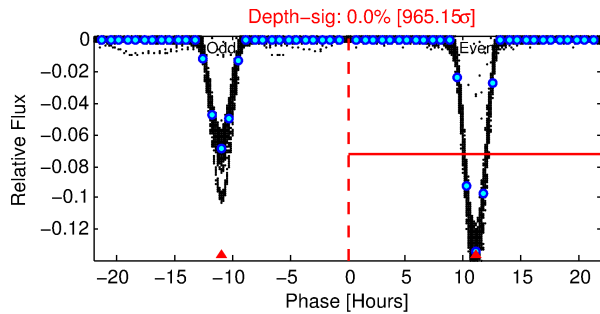
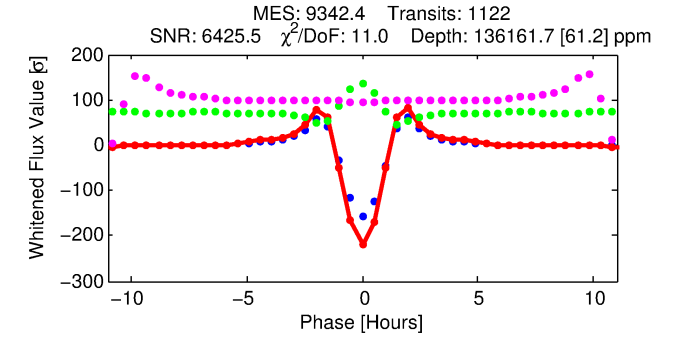
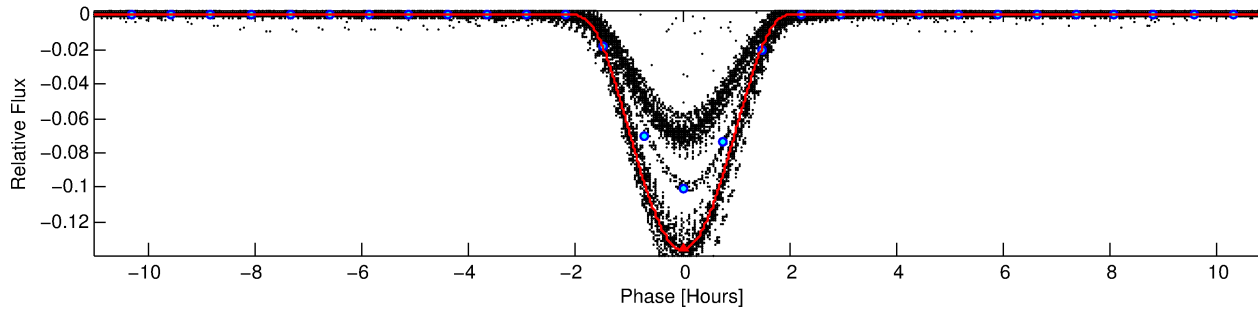
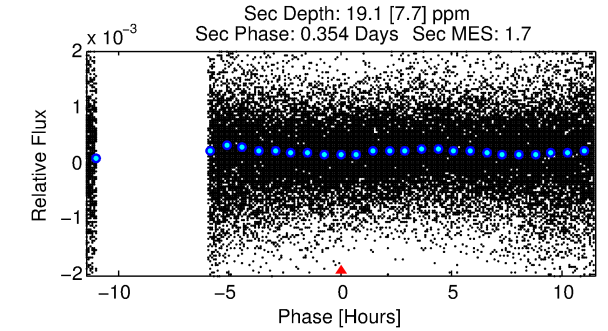
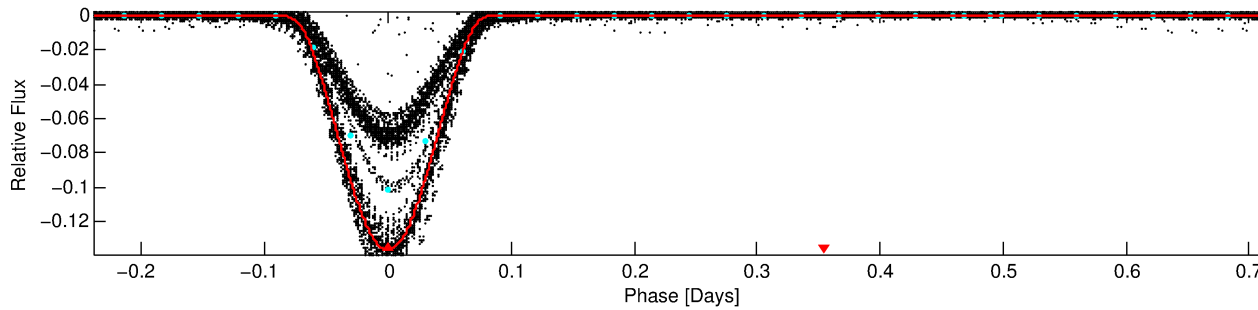
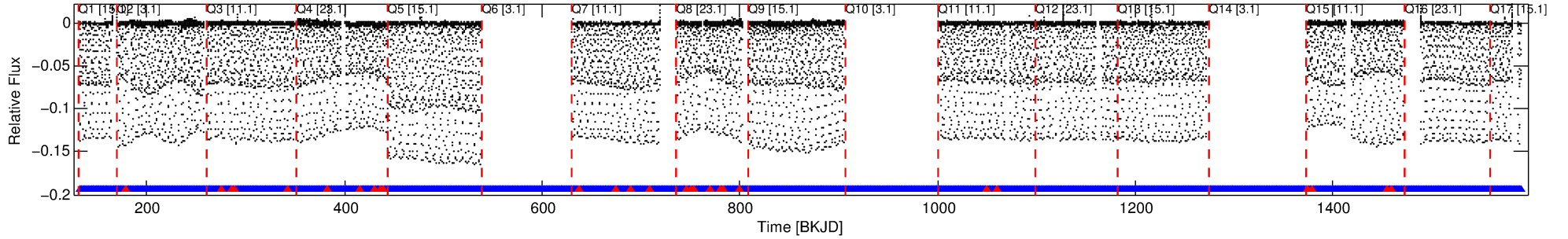
## Ephemeris Match Information For 004840263-01

No Significant Match Found

# DV One-Page Summary

KIC: 4840263 Candidate: 1 of 1 Period: 0.958 d  
KOI: K06457.01 Corr: 0.987

Kp: 13.99 R\*: 2.03 Rs Teff: 5908.0 K Logg: 3.87 Fe/H: -0.280



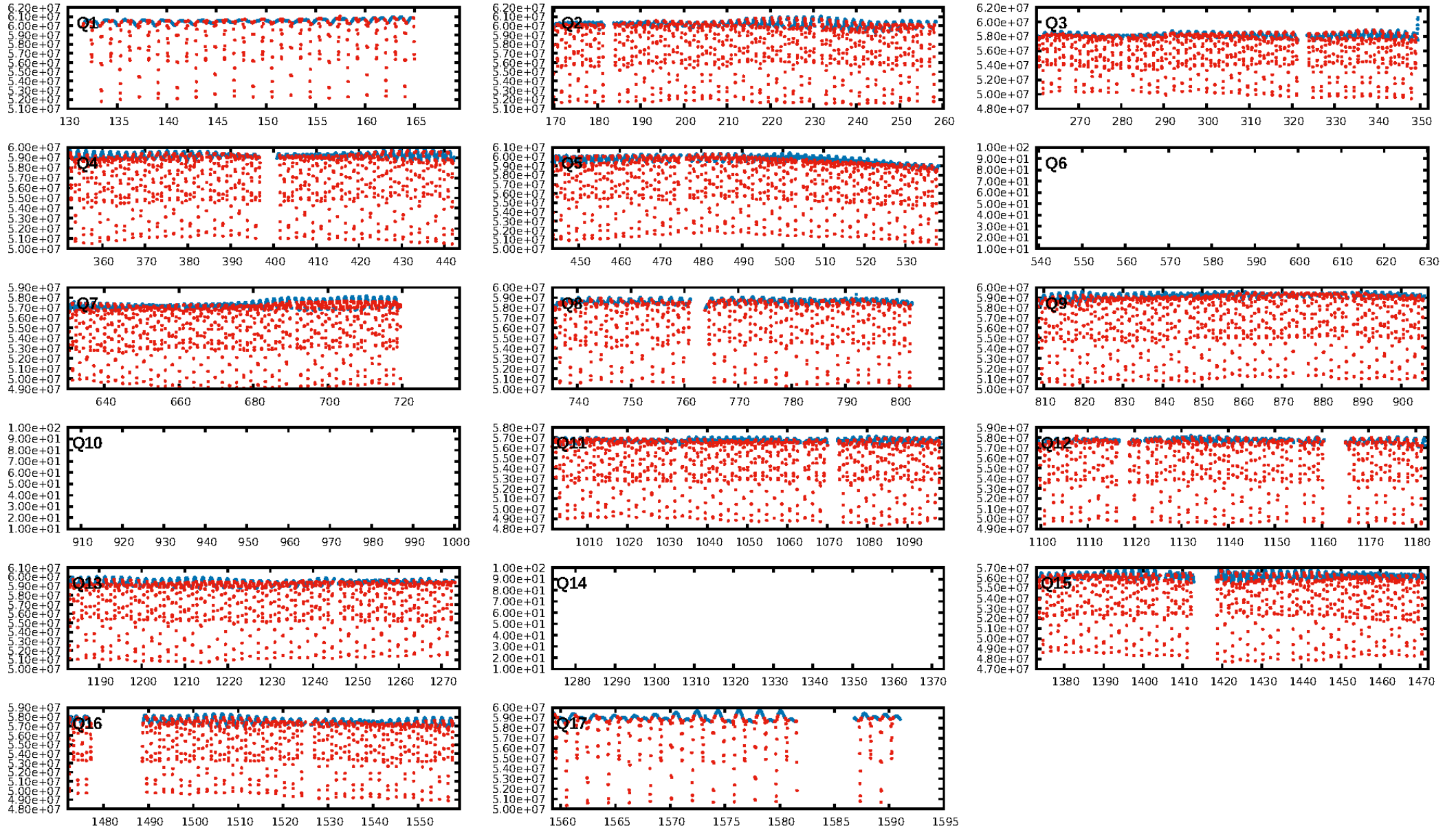
## DV Fit Results:

Period = 0.95783 [0.00000] d  
Epoch = 132.4103 [0.0000] BKJD  
Rp/R\* = 0.4310 [0.0030]  
a/R\* = 2.60 [0.00]  
b = 0.79 [0.01]  
Seff = 11668.92 [4515.53]  
Teq = 2650 [256] K  
Rp = 95.61 [27.19] Re  
a = 0.0197 [0.0050] AU  
Ag = 0.00 [0.00] [-4043.73σ]  
Teffp = 595 [60] K [-7.80σ]

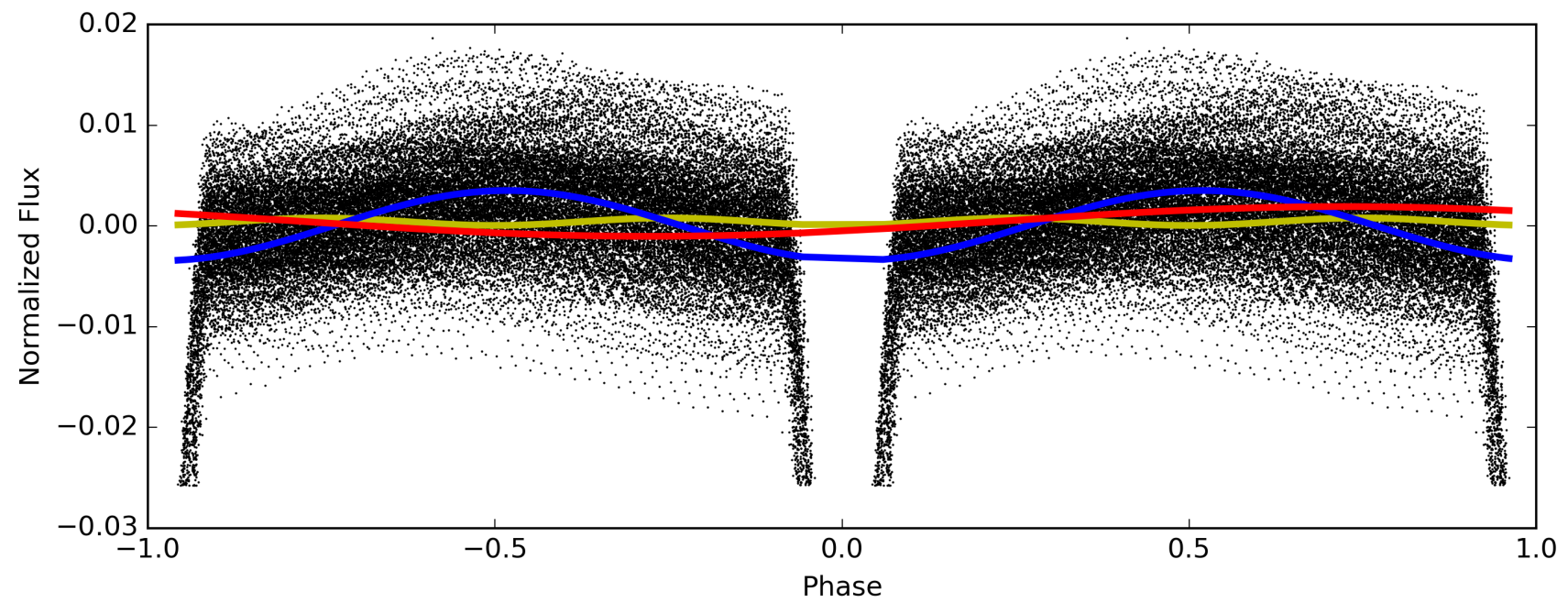
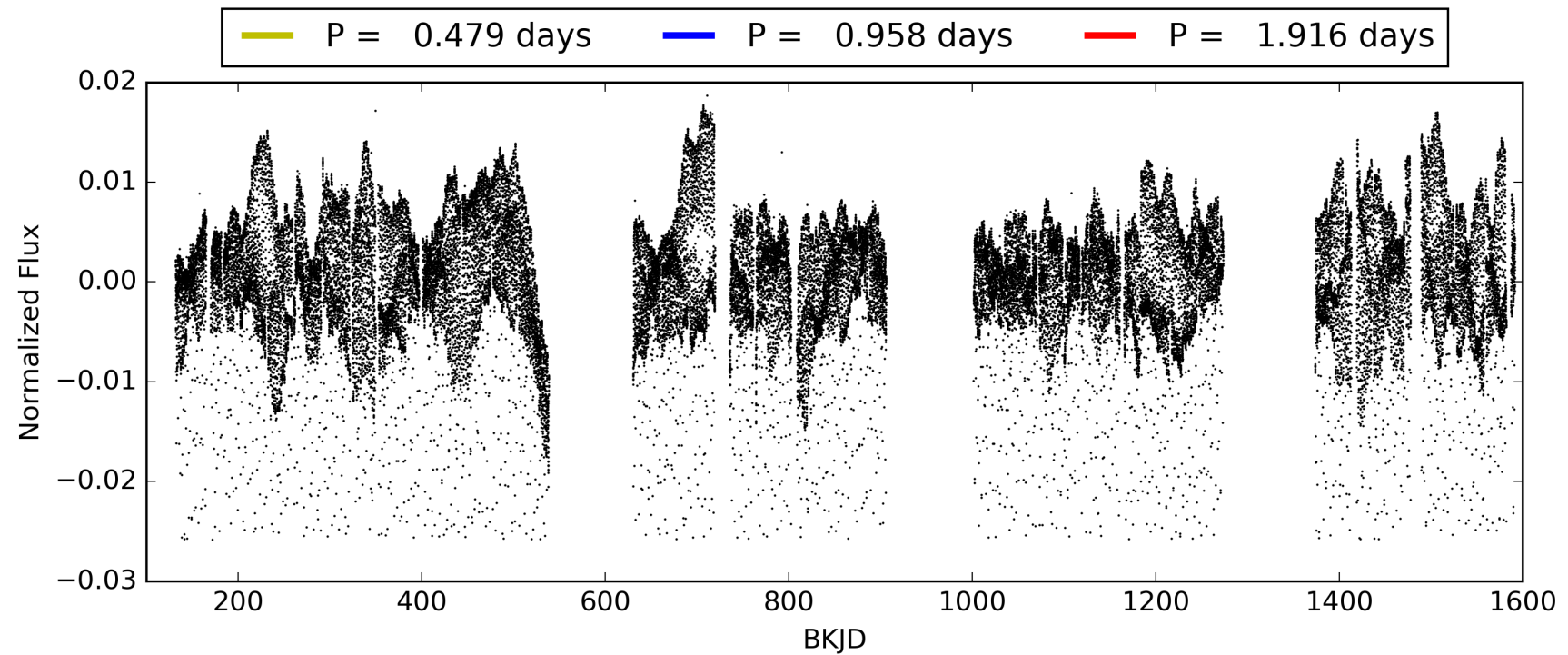
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 0.97 [1031/1058]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 0.442 arcsec [6.26σ]  
KicOffset-rm: 0.372 arcsec [5.56σ]  
OotOffset-st: 1/4/4/5 [14]  
KicOffset-st: 1/4/4/5 [14]  
DiffImageQuality-fgm: 1.00 [14/14]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 004840263-01, PDC Light Curves

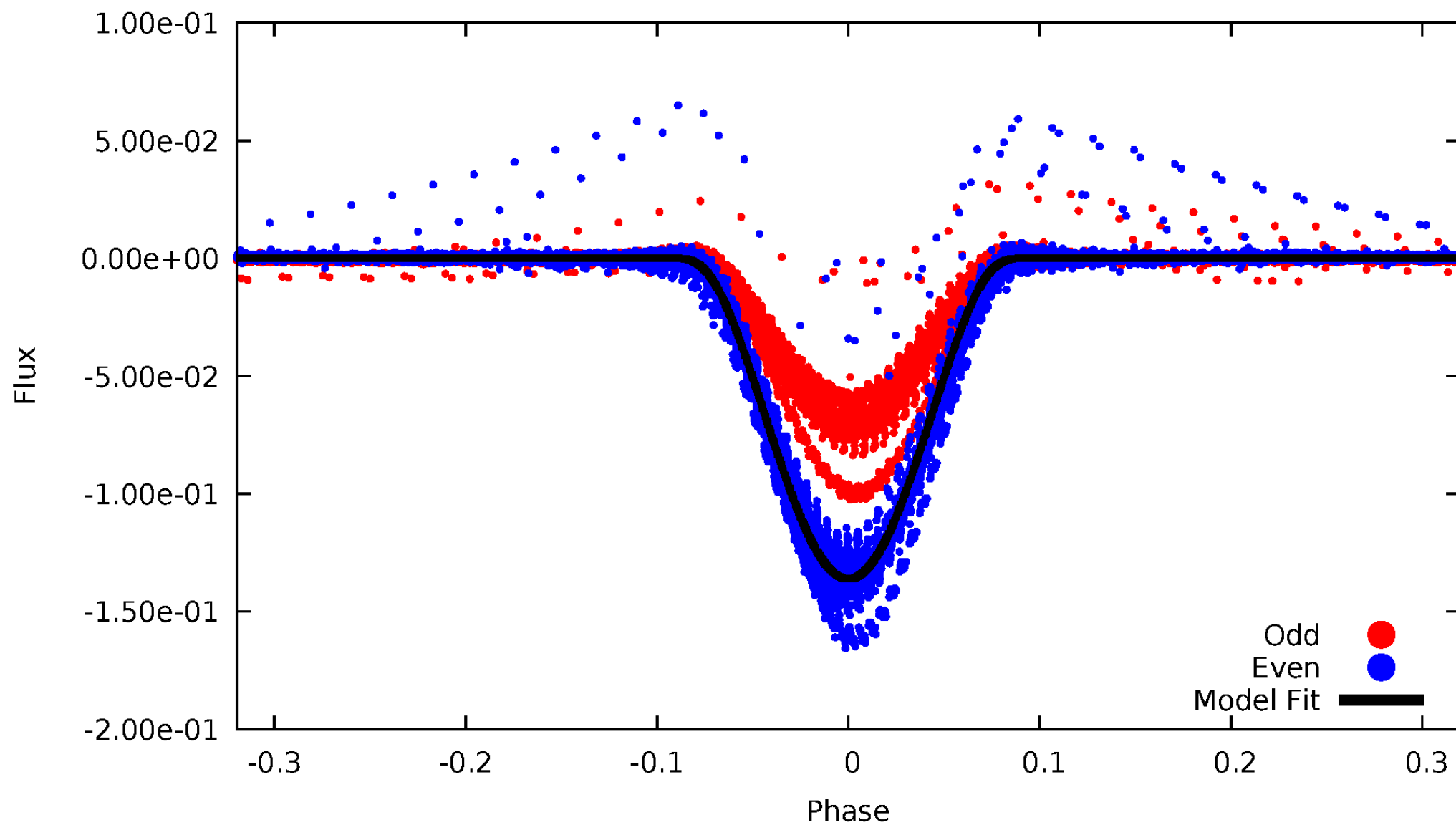


TCE 004840263-01



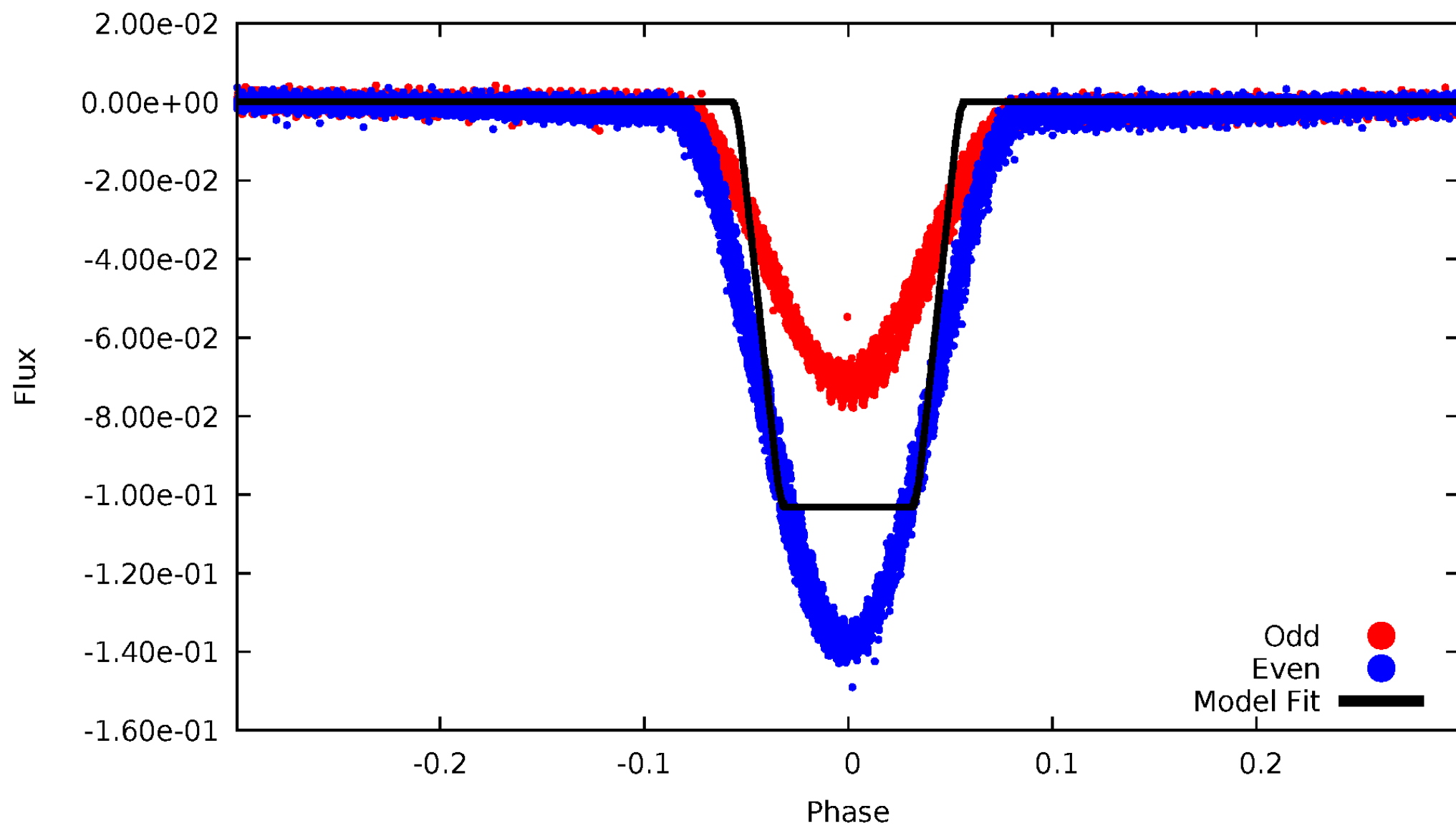
# DV Odd/Even

TCE 004840263-01



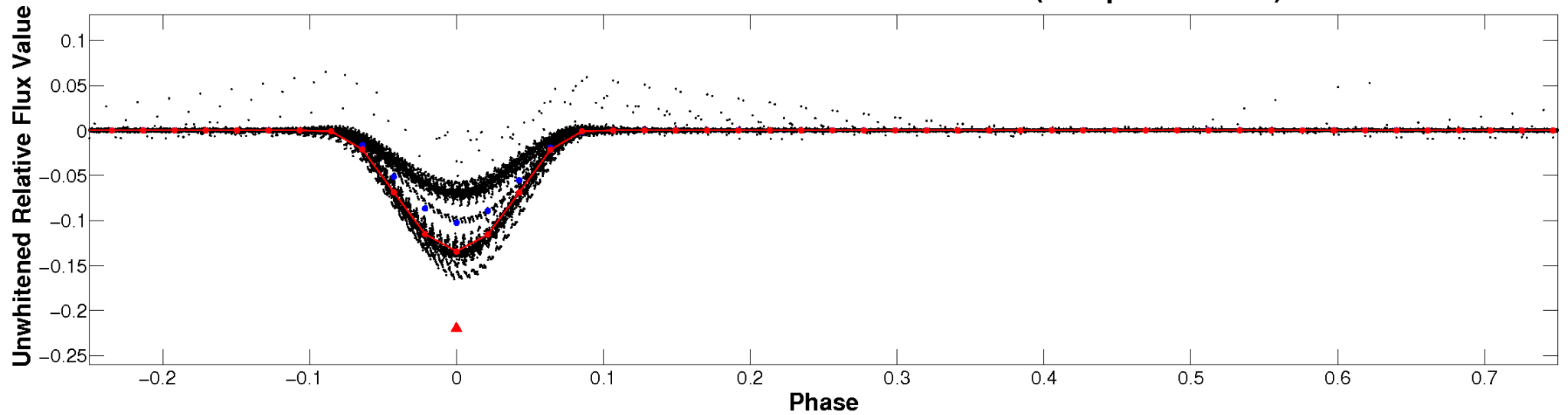
# ALT Odd/Even

TCE 004840263-01

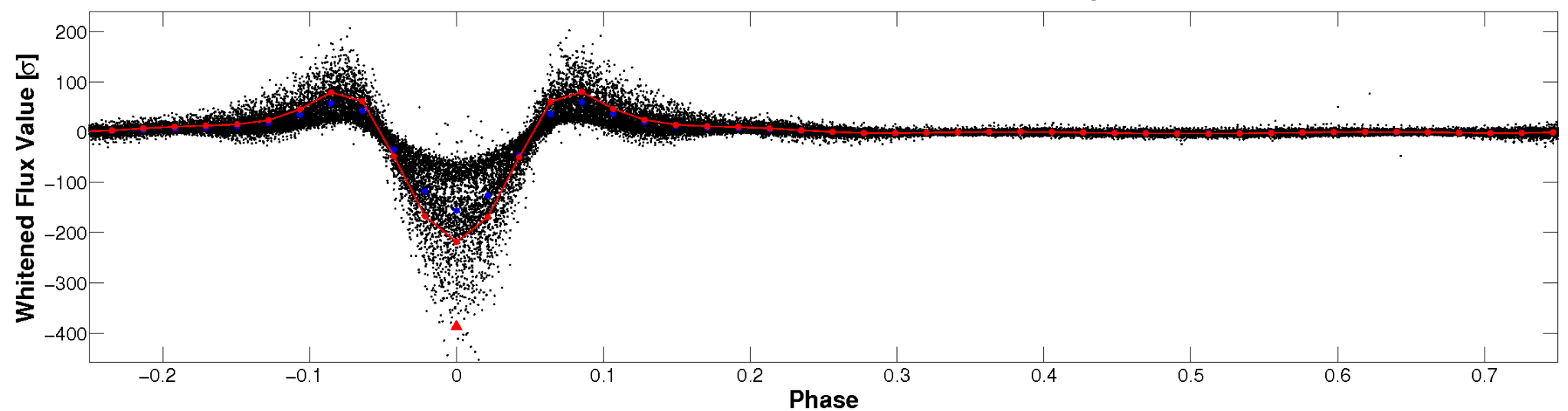


# Non-Whitened Vs. Whitened Light Curve

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



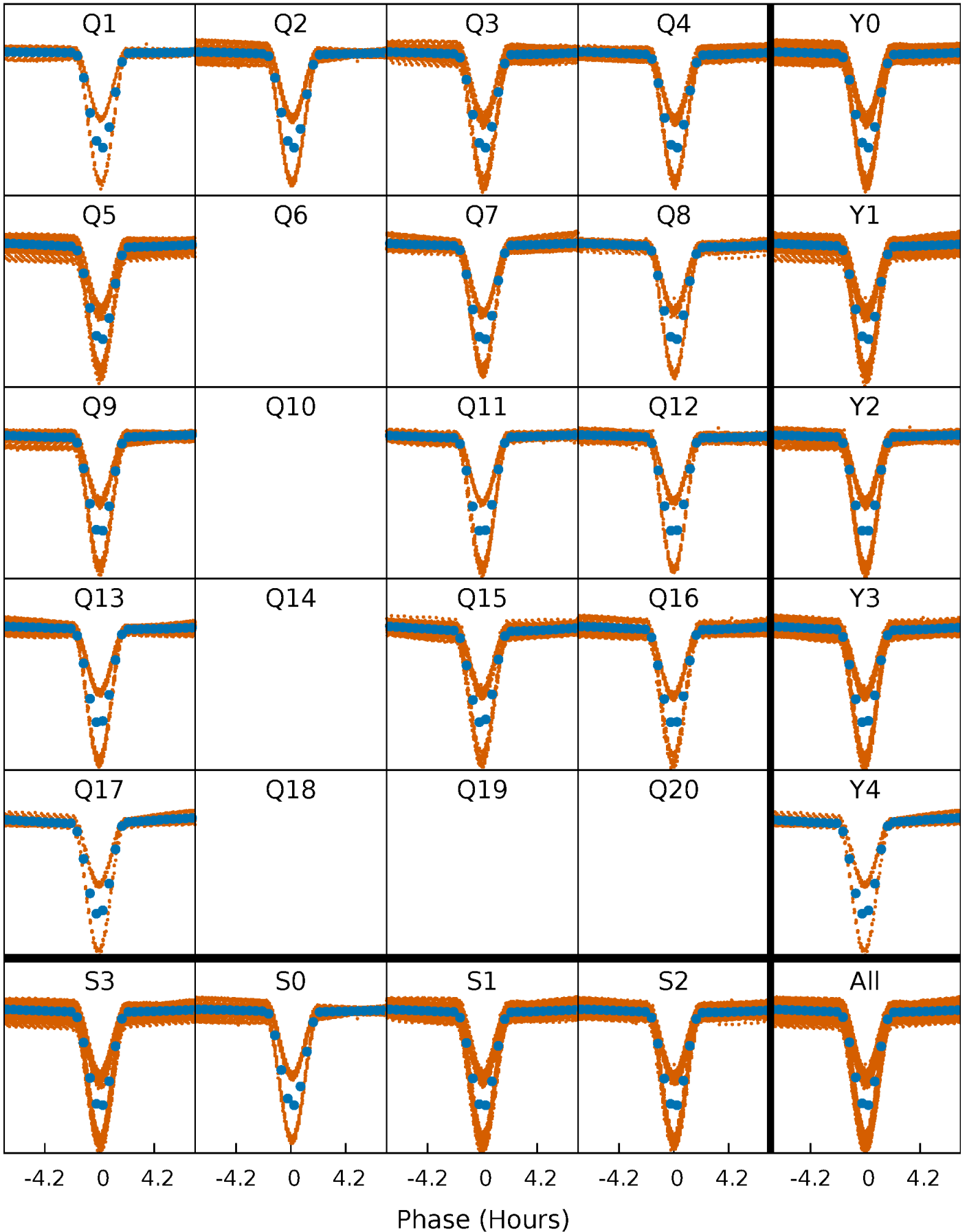
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

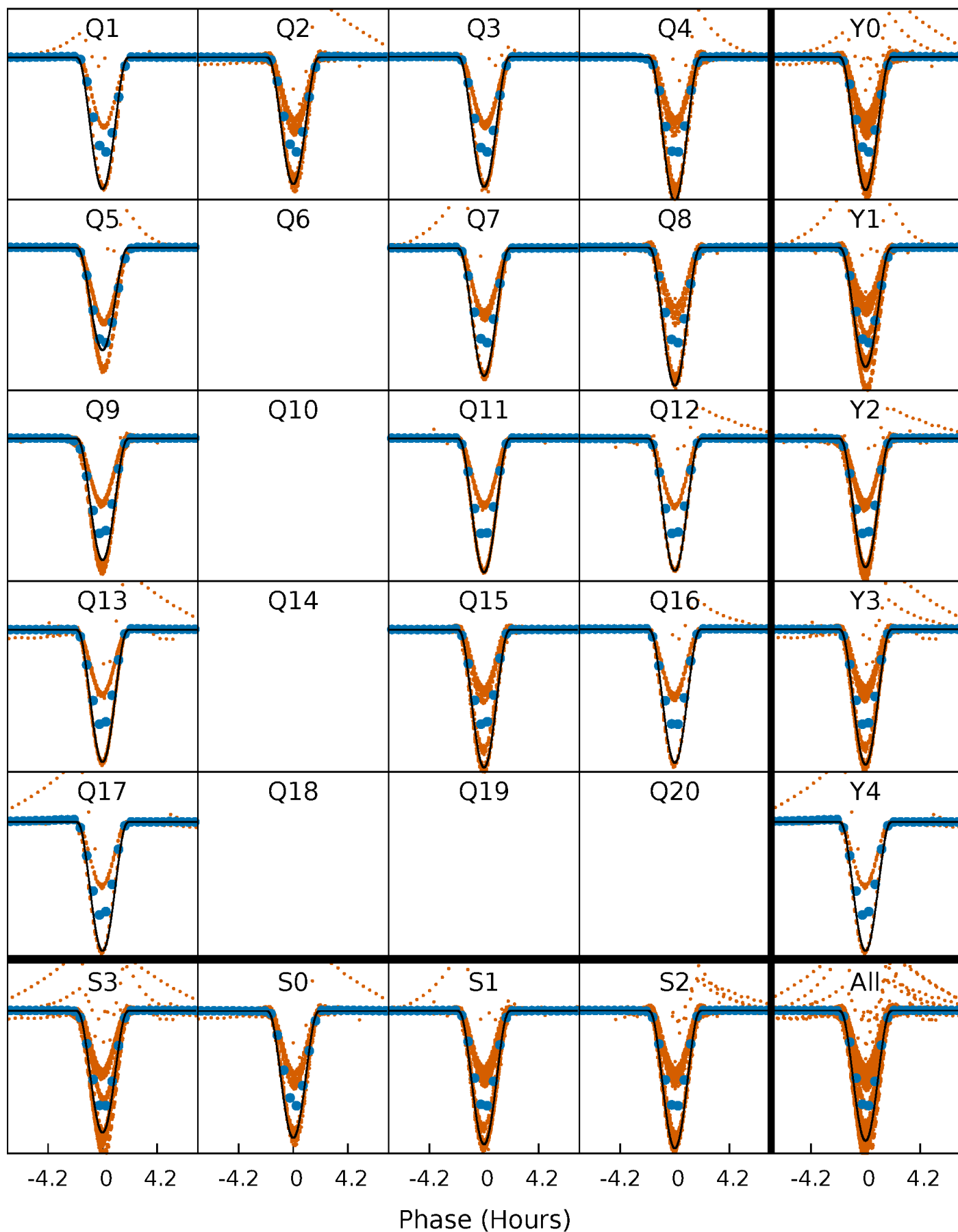
TCE 004840263-01 P= 0.957829 Days  $T_0=132.410282$  (BKJD)





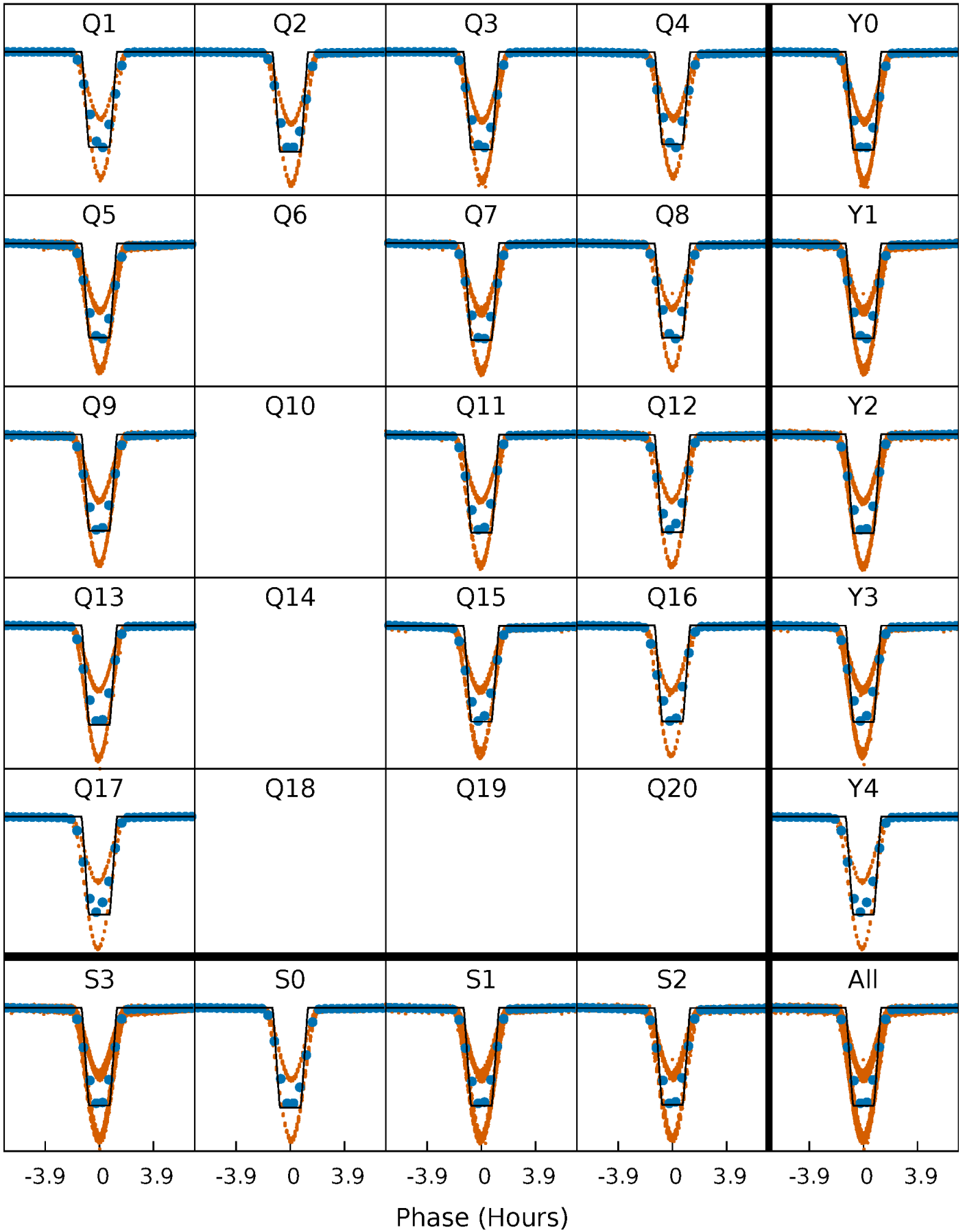
# DV Quarter-Phased Transit Curves

TCE 004840263-01 P= 0.957829 Days  $T_0=132.410282$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

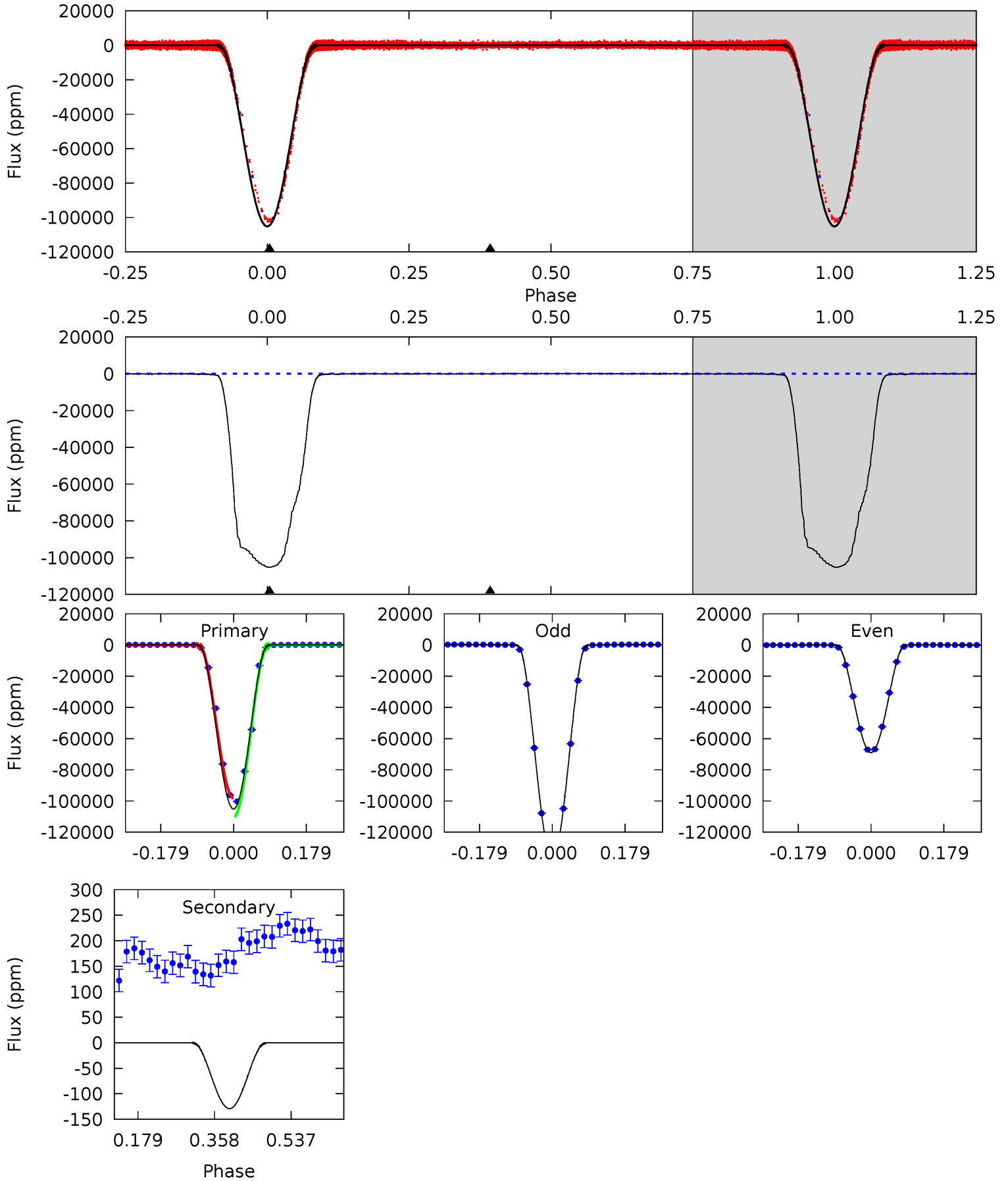
TCE 004840263-01   P= 0.957829 Days    $T_0=132.411389$  (BKJD)



# DV Model-Shift Uniqueness Test

004840263-01, P = 0.957829 Days, E = 131.452453 Days

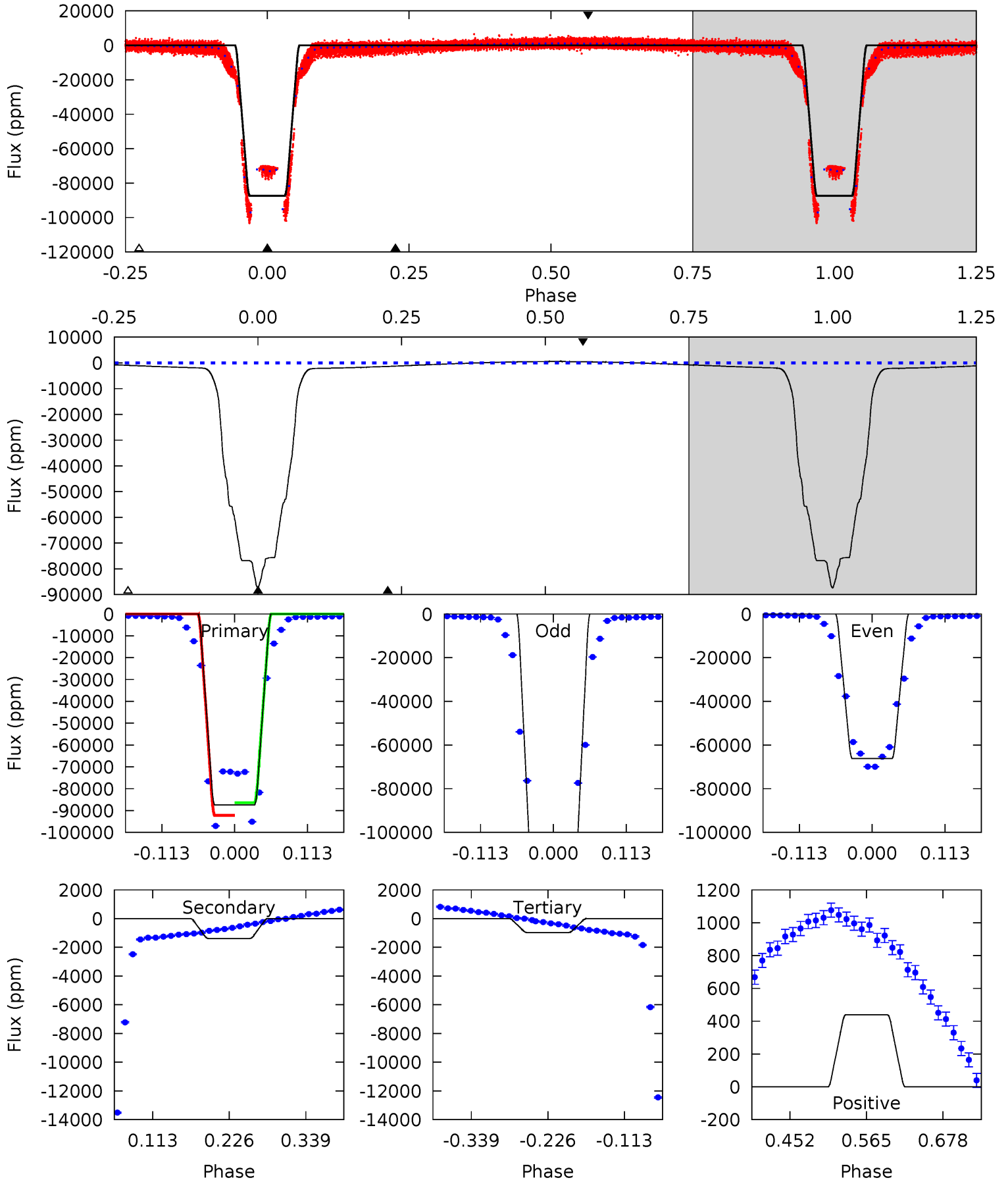
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
7198	8.84	0	0	4.44	1.34	4.90	7198	7198	8.84	8.84	3494	1.02	0.00	0



# Alt Model-Shift Uniqueness Test

004840263-01, P = 0.957829 Days, E = 131.453560 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
2312	36.5	25.6	11.6	4.54	1.58	19.2	2286	2300	10.8	24.9	1416	1.32	0.01	0



### Stellar Parameters For KIC 004840263

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5908^{+79}_{-79}$	$3.865^{+0.217}_{-0.093}$	$-0.280^{+0.150}_{-0.150}$	$2.033^{+0.311}_{-0.578}$	$1.103^{+0.113}_{-0.155}$	$0.185^{+0.234}_{-0.055}$
	+1%/-1%	+6%/-2%	+54%/-54%	+15%/-28%	+10%/-14%	+127%/-30%
Source	SPE68	SPE68	SPE68	DSEP		

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

### Secondary Eclipse Parameters for KIC 004840263-01 / KOI 6457.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-129 \pm 15$	$95.25^{+8.65}_{-14.09}$	$3682^{+164}_{-257}$	$-3494^{+155}_{-102}$	$0.003^{+0.001}_{-0.001}$
Alt.	$-1378 \pm 38$	$71.19^{+6.23}_{-9.98}$	$3683^{+164}_{-232}$	$-3388^{+171}_{-110}$	$0.059^{+0.018}_{-0.009}$

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

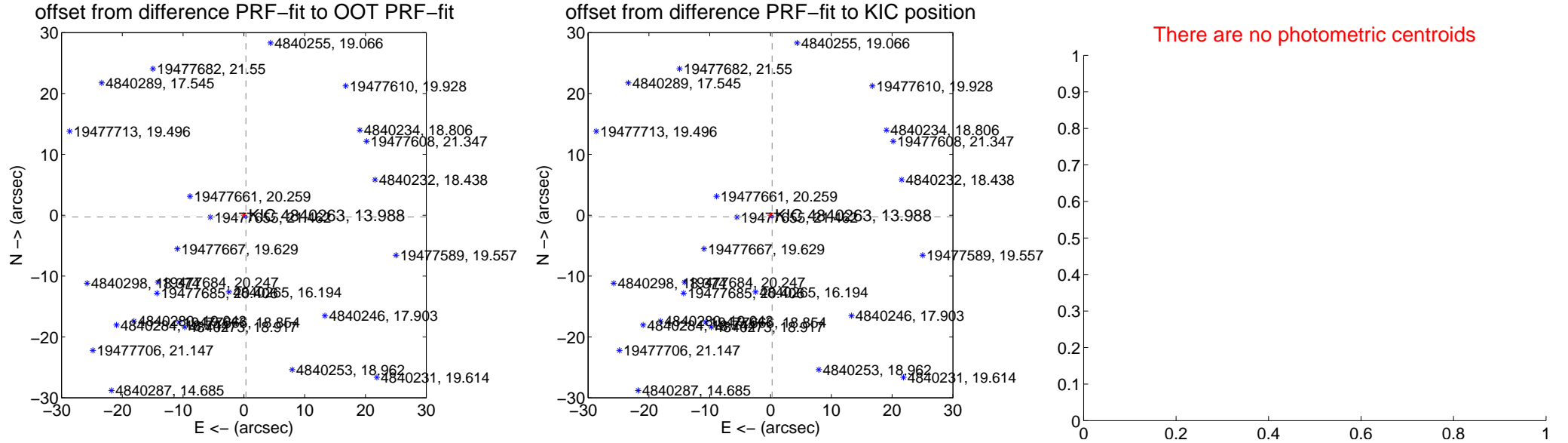
## DV Centroid Data

Supplemental centroid analysis for 004840263-01. Kepler magnitude: 13.99. Transit SNR 6425.54

There are 14 quarters with good PRF difference image offsets

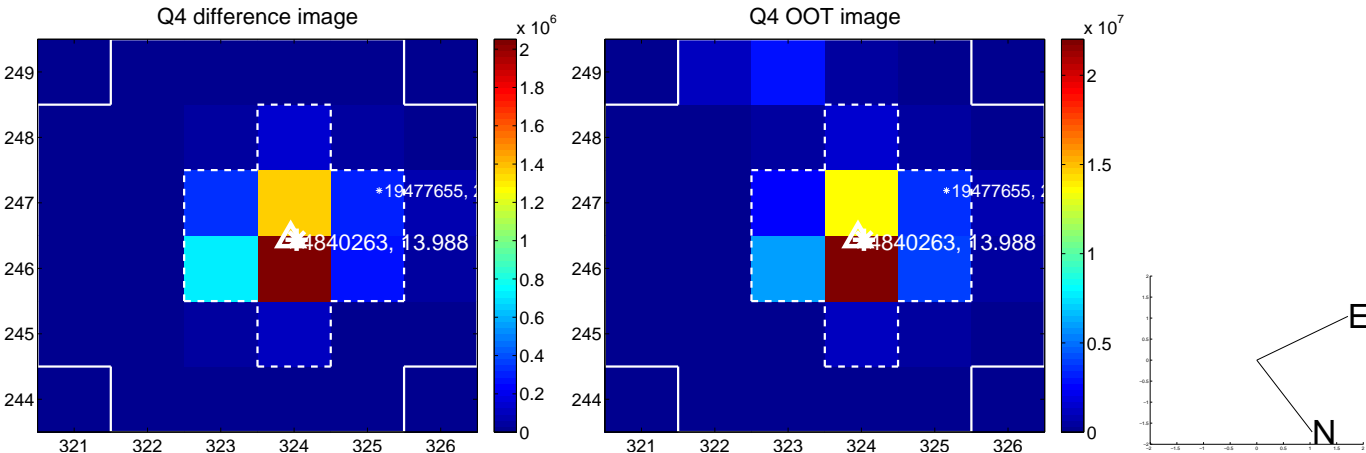
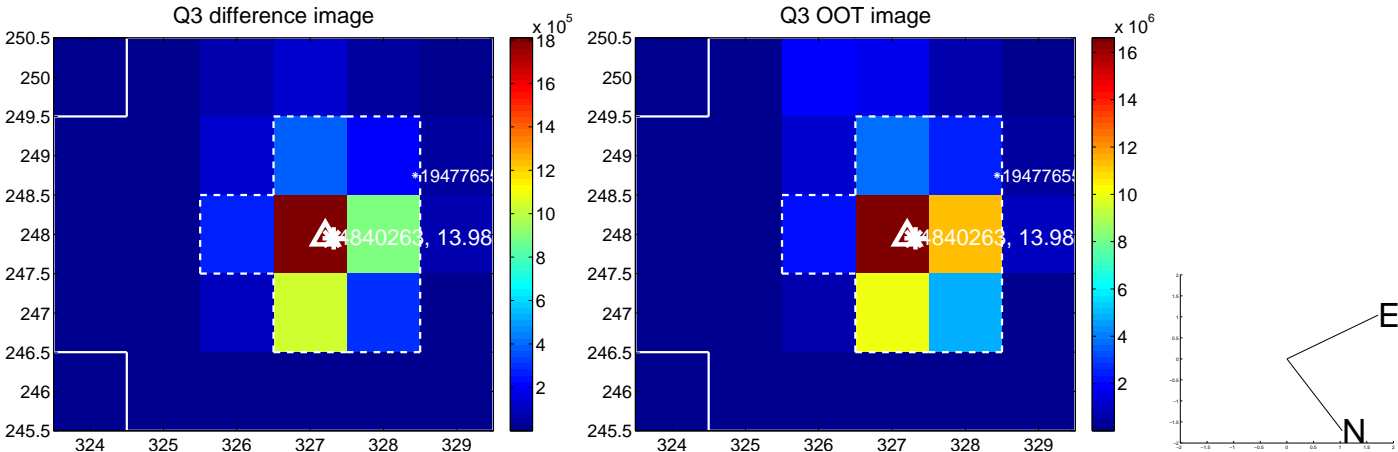
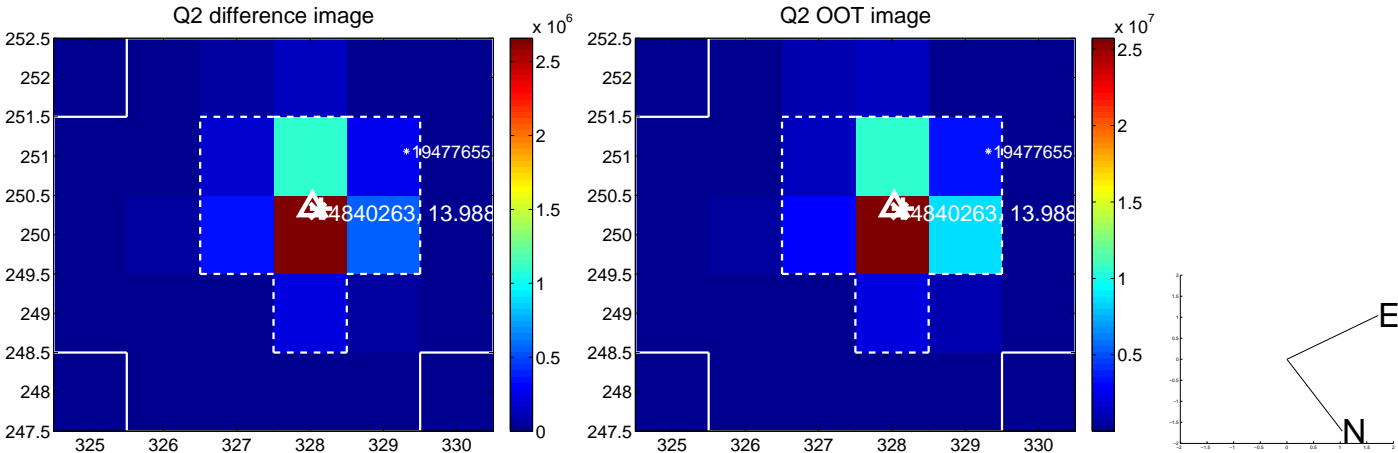
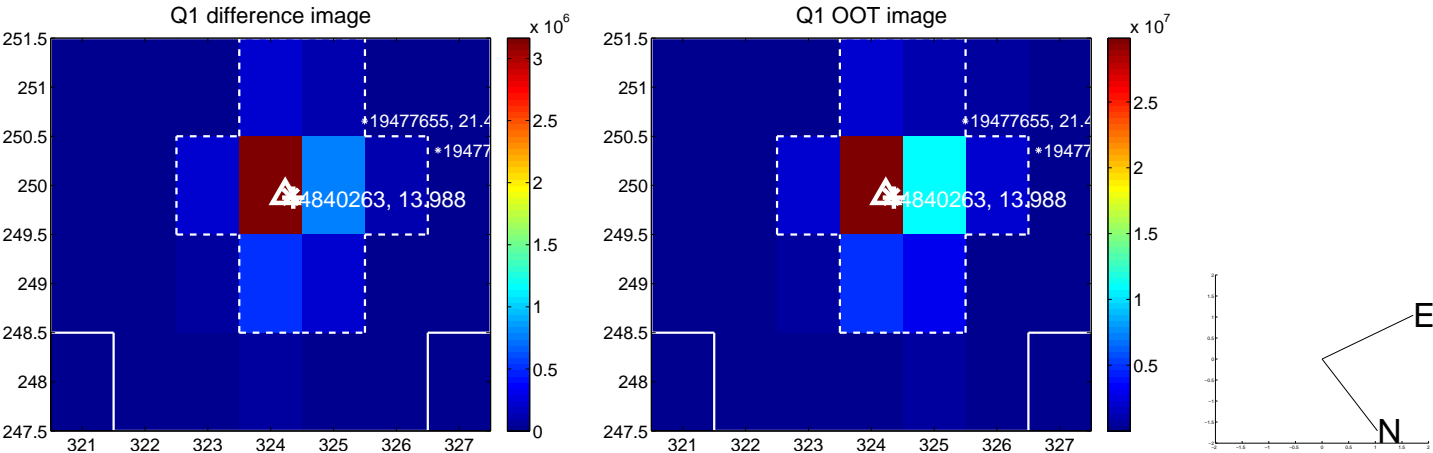
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	0.442 $\pm$ 0.071	6.26	-0.333 $\pm$ 0.069	-0.290 $\pm$ 0.068
PRF-fit source offset from KIC position	0.372 $\pm$ 0.067	5.56	-0.267 $\pm$ 0.067	-0.259 $\pm$ 0.067
photometric centroid source offset	—	—	—	—



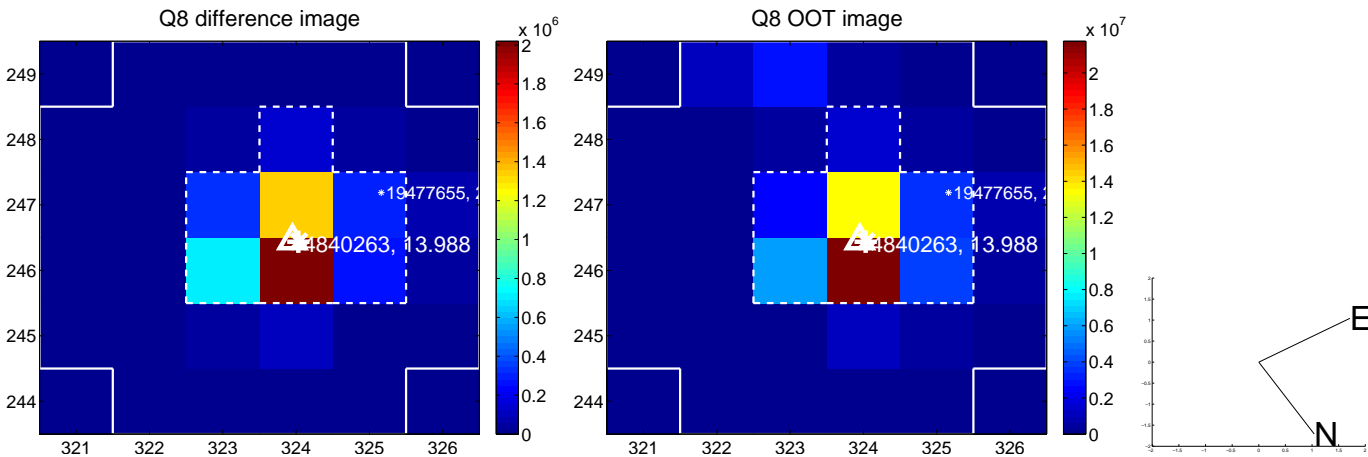
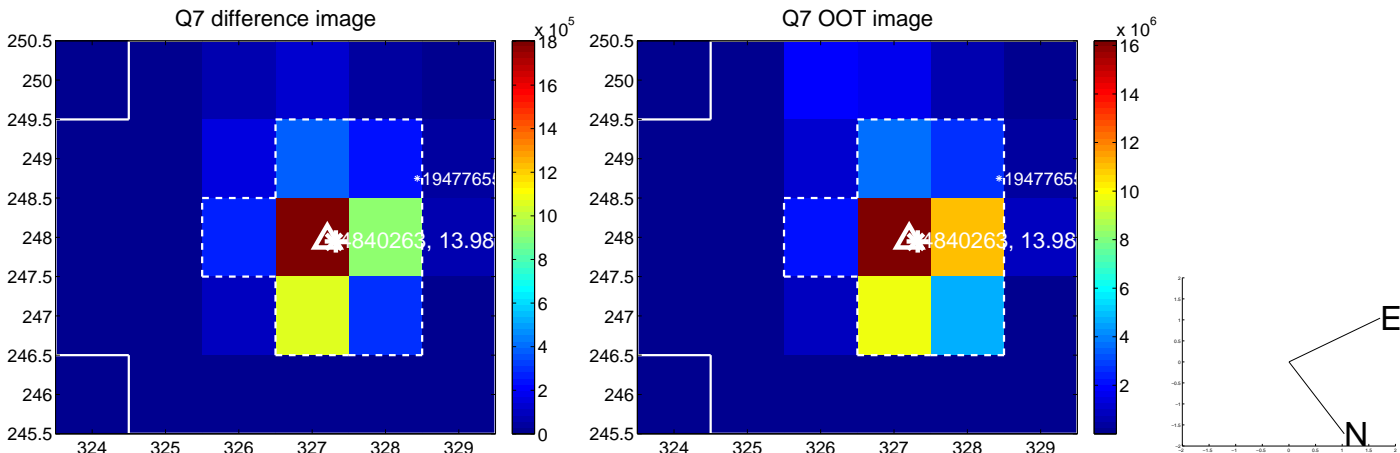
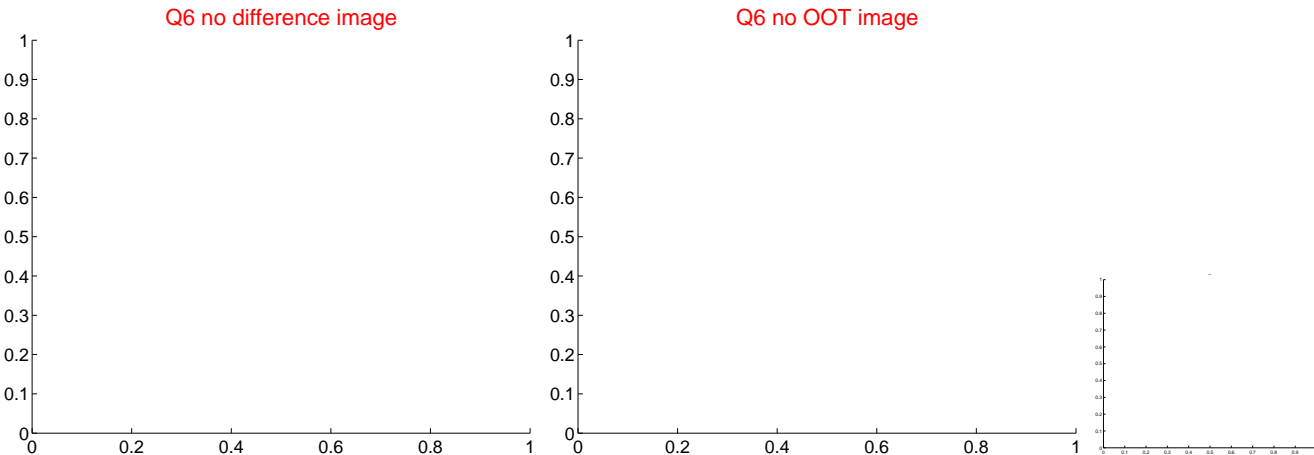
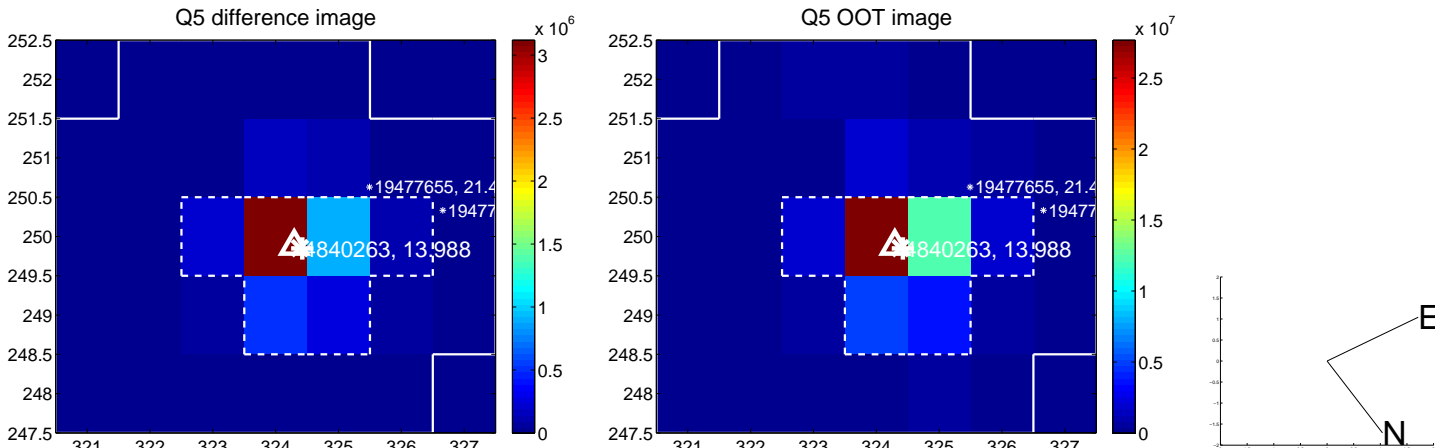
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

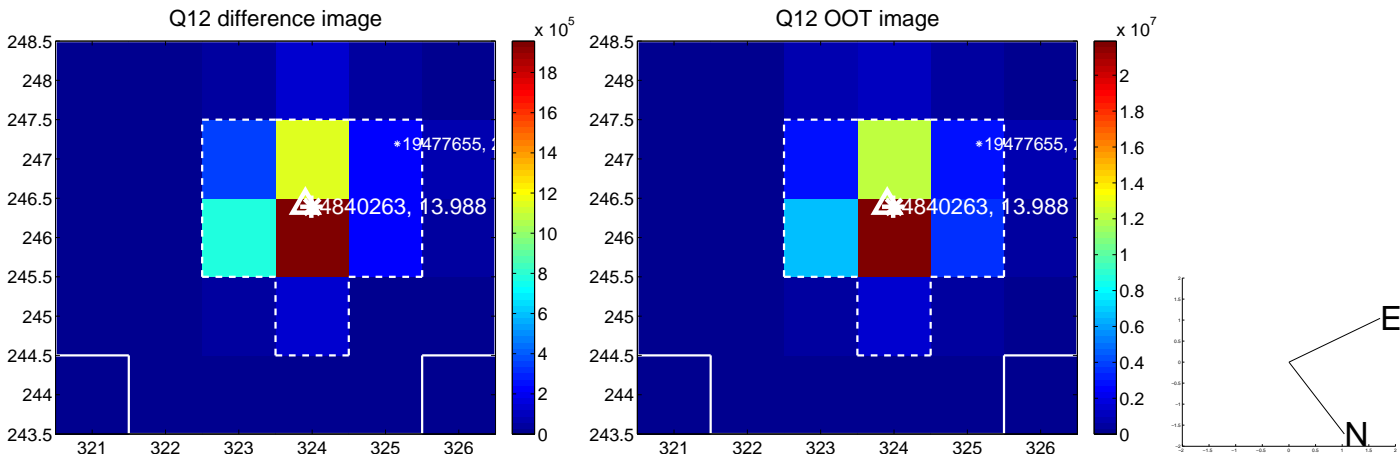
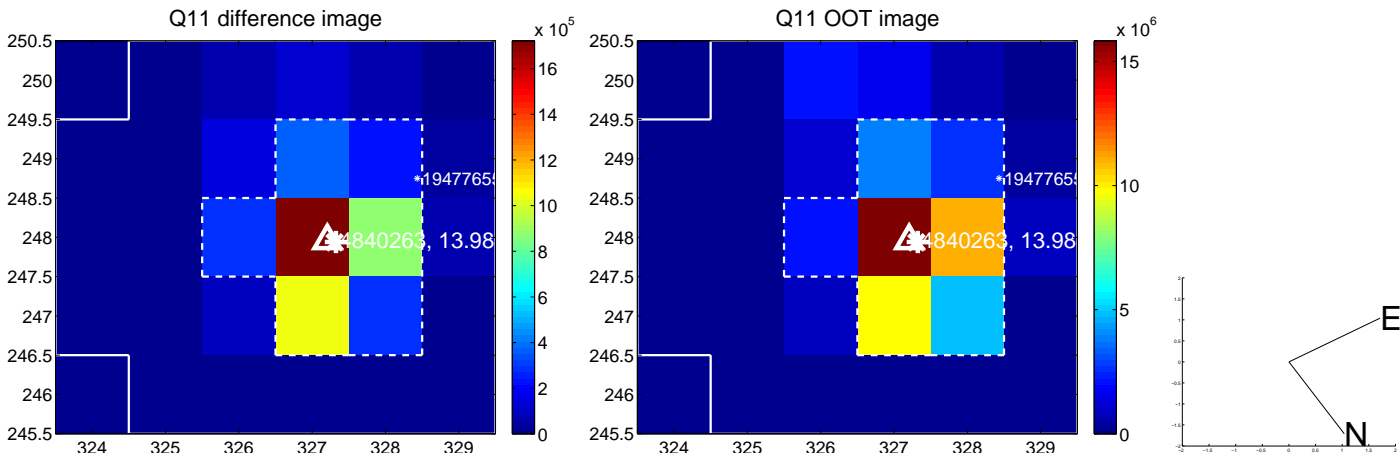
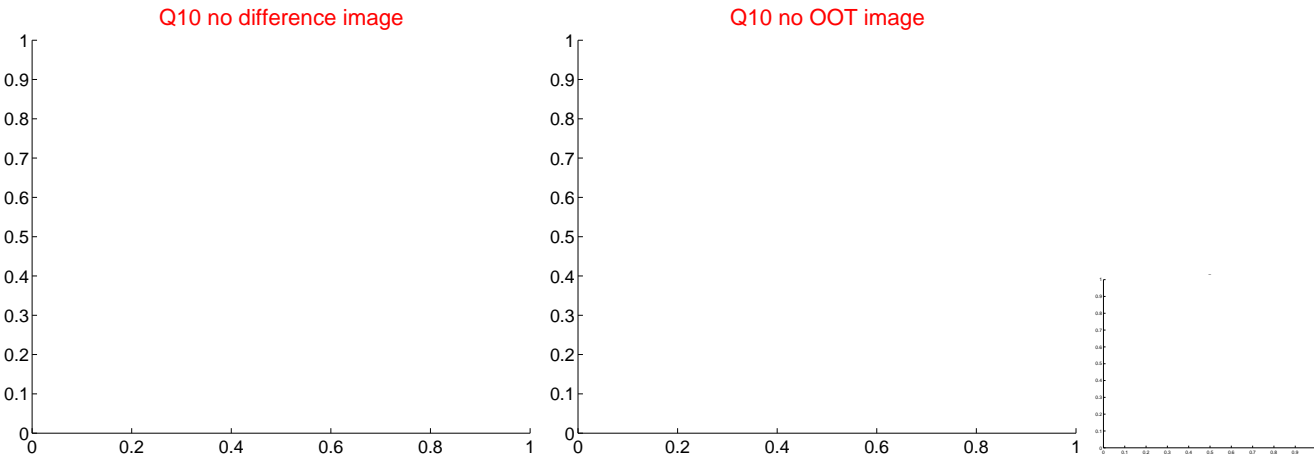
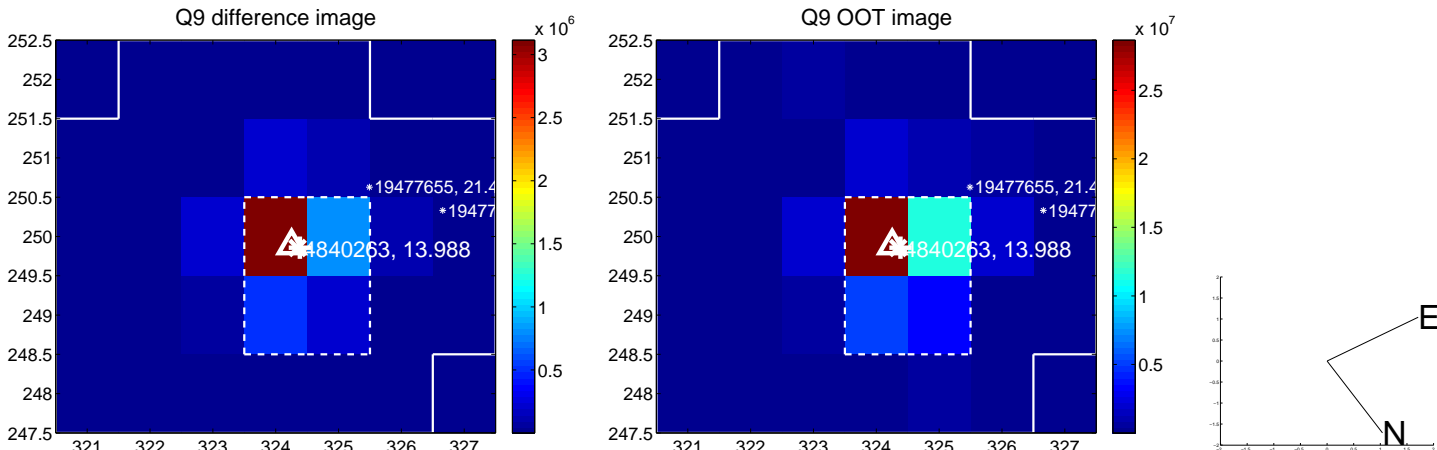




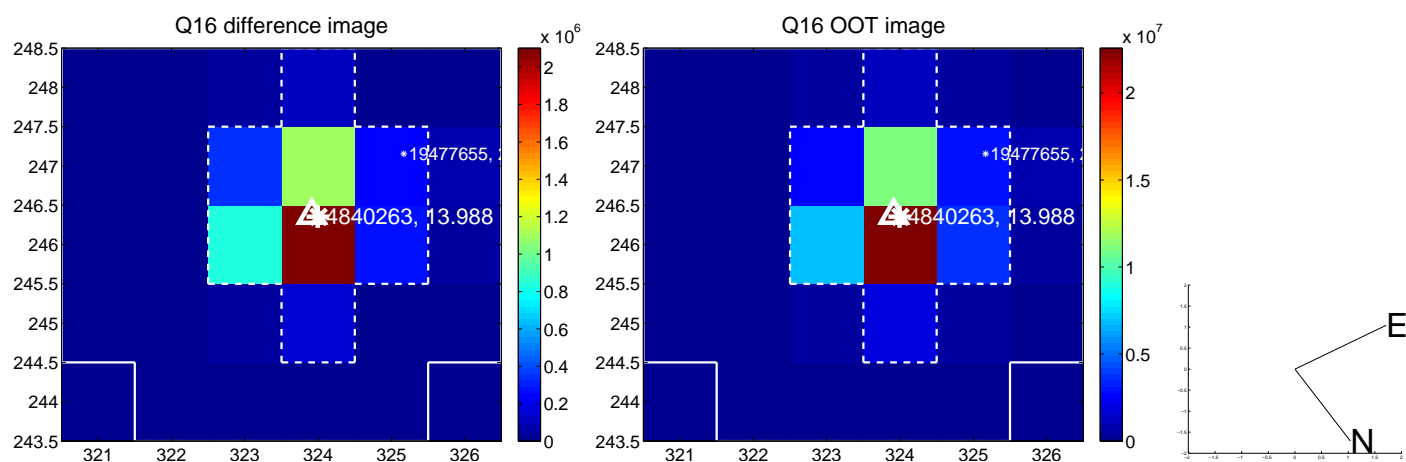
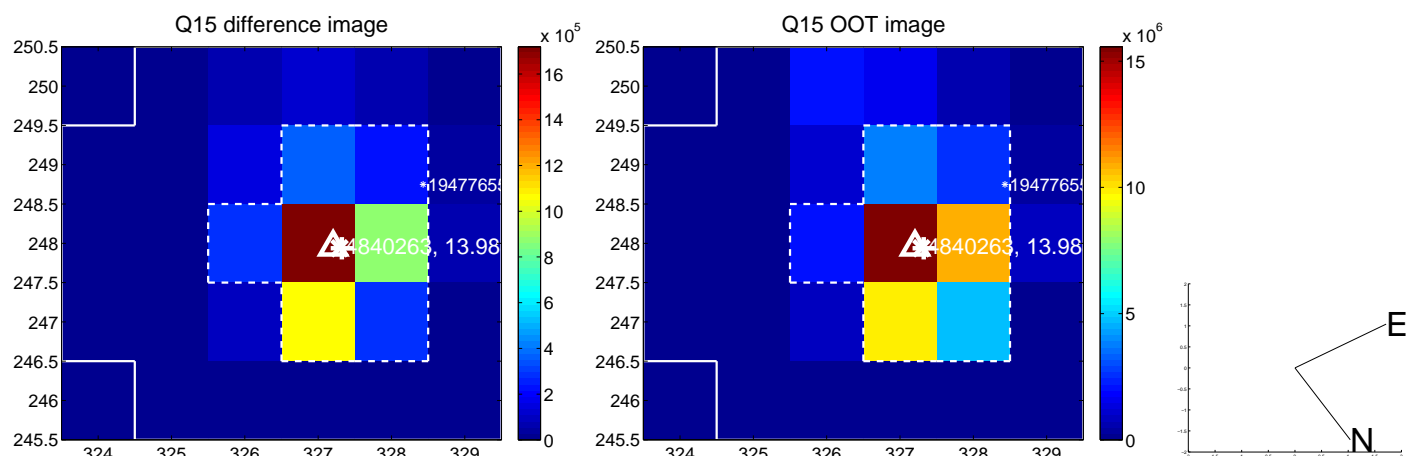
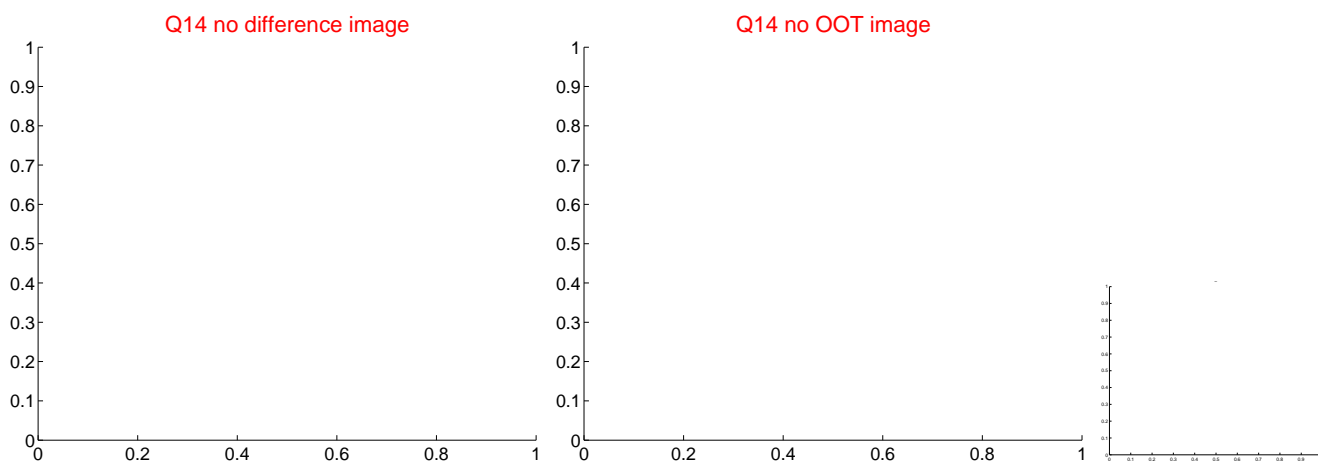
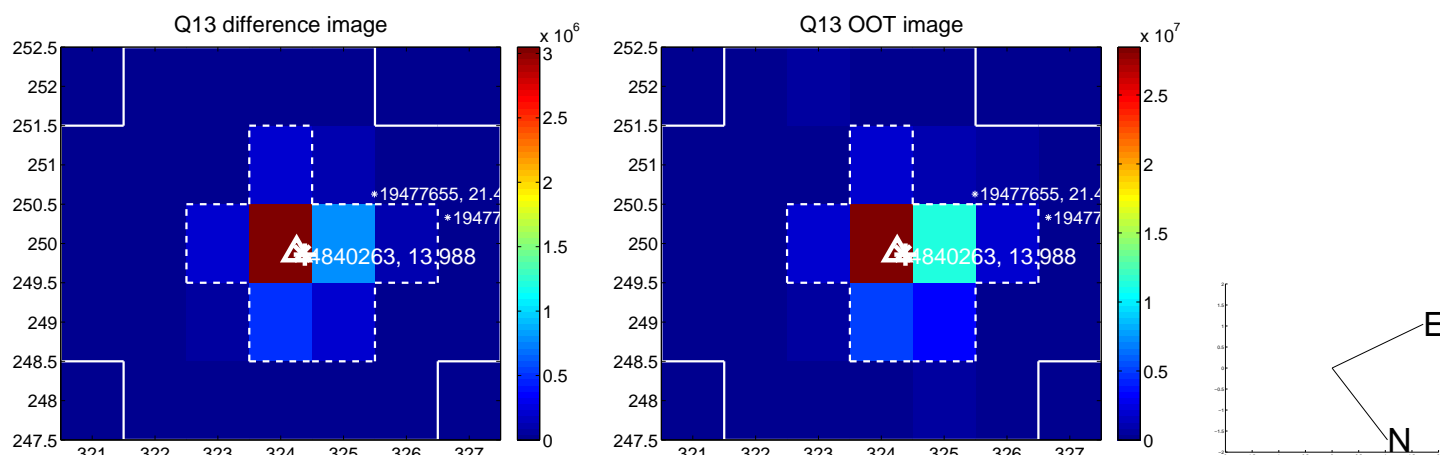
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



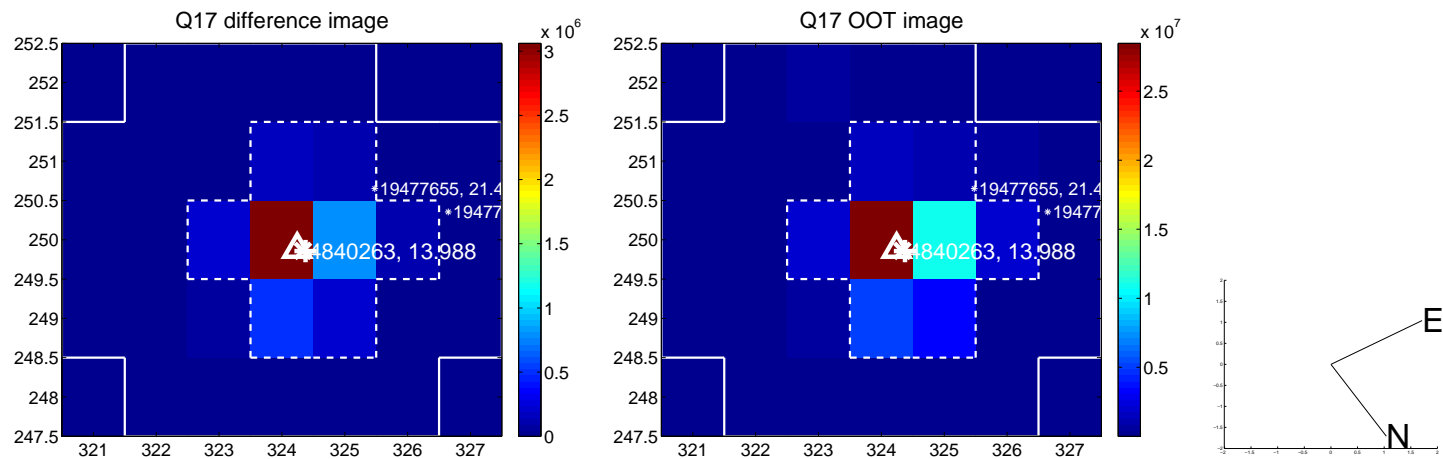
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white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



folded centroid time series figure for this object.

UKIRT Image

Declination

