

# KIC 011811454

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011811454-01	OBS	7481.01	2.274628	132.017141	100910.9	4.389	13958.1	10071.6	1.95	6389	94.06	4539.31

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011811454-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—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.

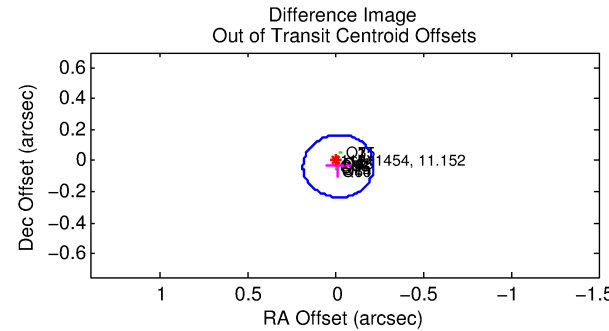
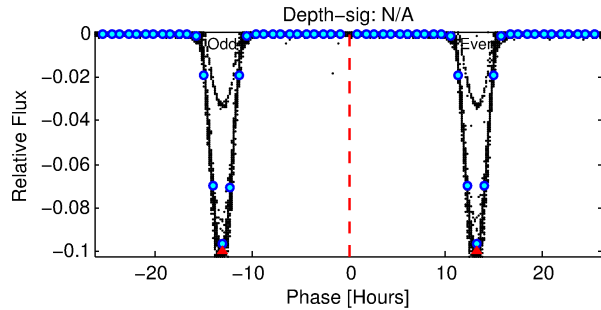
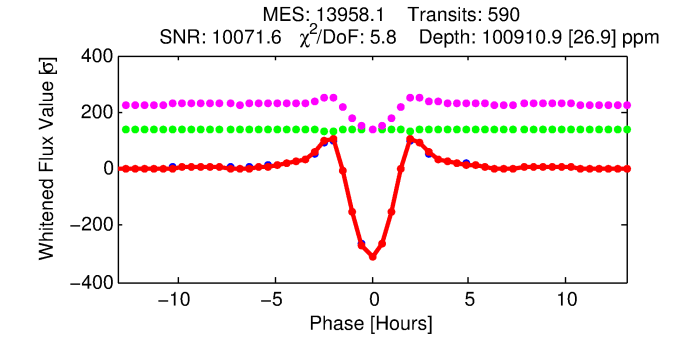
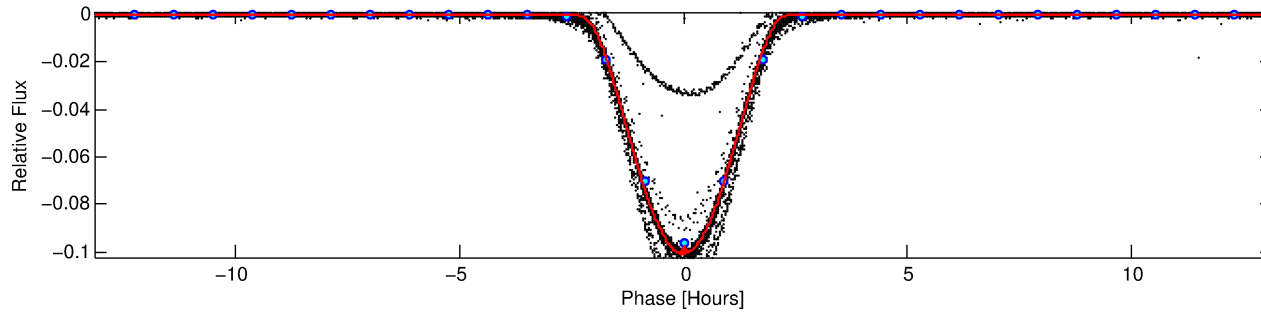
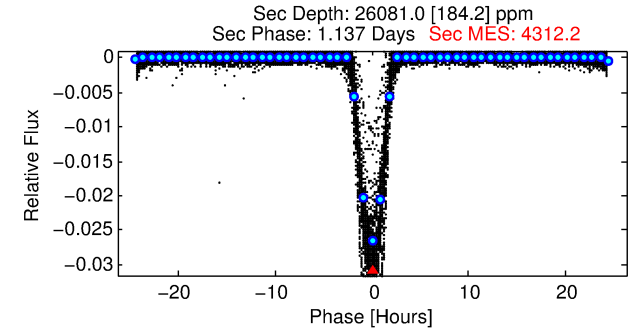
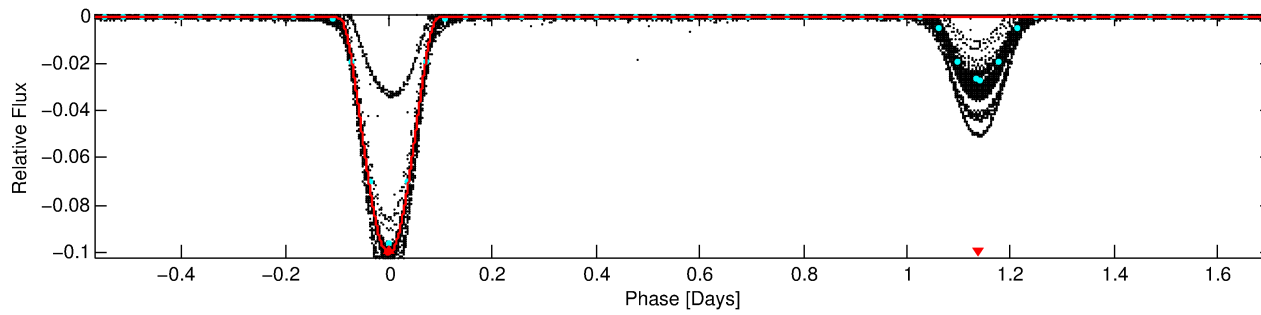
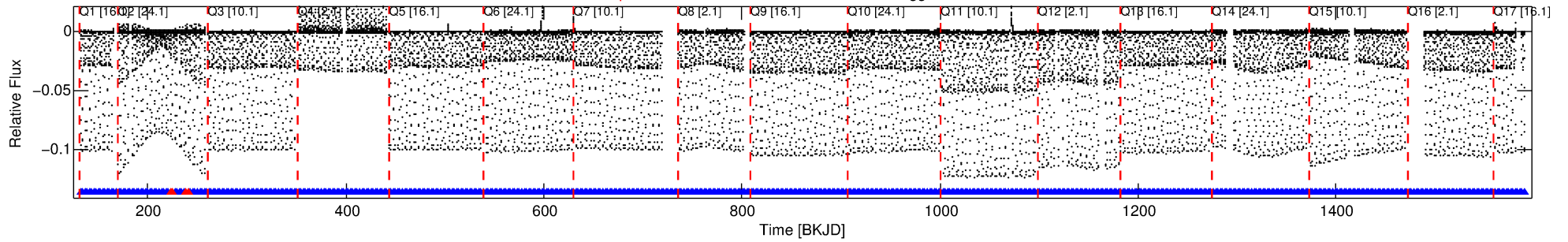
## Ephemeris Match Information For 011811454-01

No Significant Match Found

# DV One-Page Summary

KIC: 11811454 Candidate: 1 of 1 Period: 2.275 d  
KOI: K07481.01 Corr: 0.985

Kp: 11.15 R\*: 1.95 Rs Teff: 6389.0 K Logg: 3.91 Fe/H: -0.440



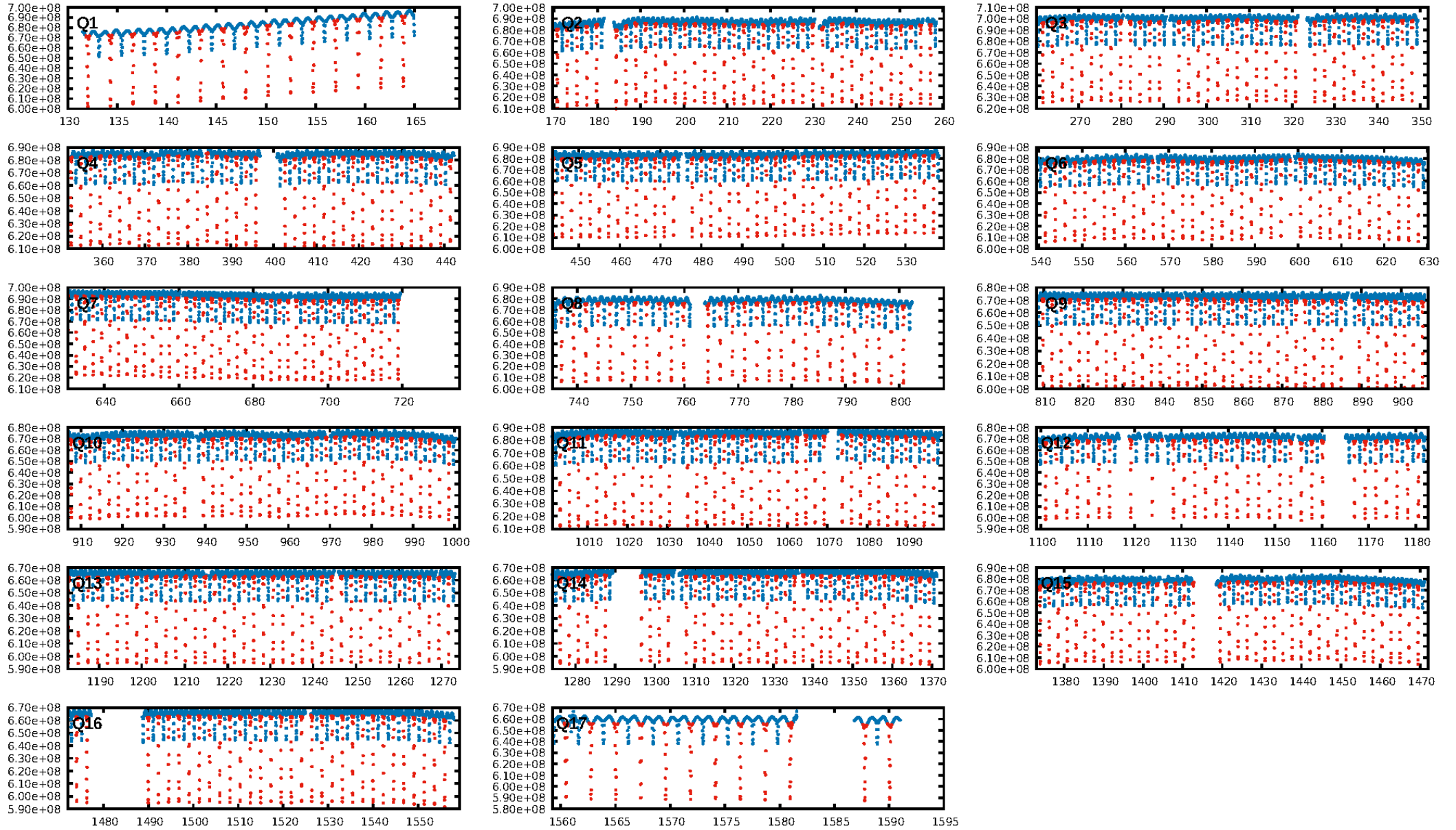
## DV Fit Results:

Period = 2.27463 [0.00000] d  
Epoch = 132.0171 [0.0000] BKJD  
Rp/R\* = 0.4427 [0.0064]  
a/R\* = 4.51 [0.00]  
b = 0.93 [0.01]  
Seff = 4539.31 [3372.54]  
Teff = 2093 [389] K  
Rp = 94.05 [41.37] Re  
a = 0.0353 [0.0157] AU  
Ag = 2.02 [1.48] [0.69σ]  
Teffp = 3859 [140] K [4.27σ]

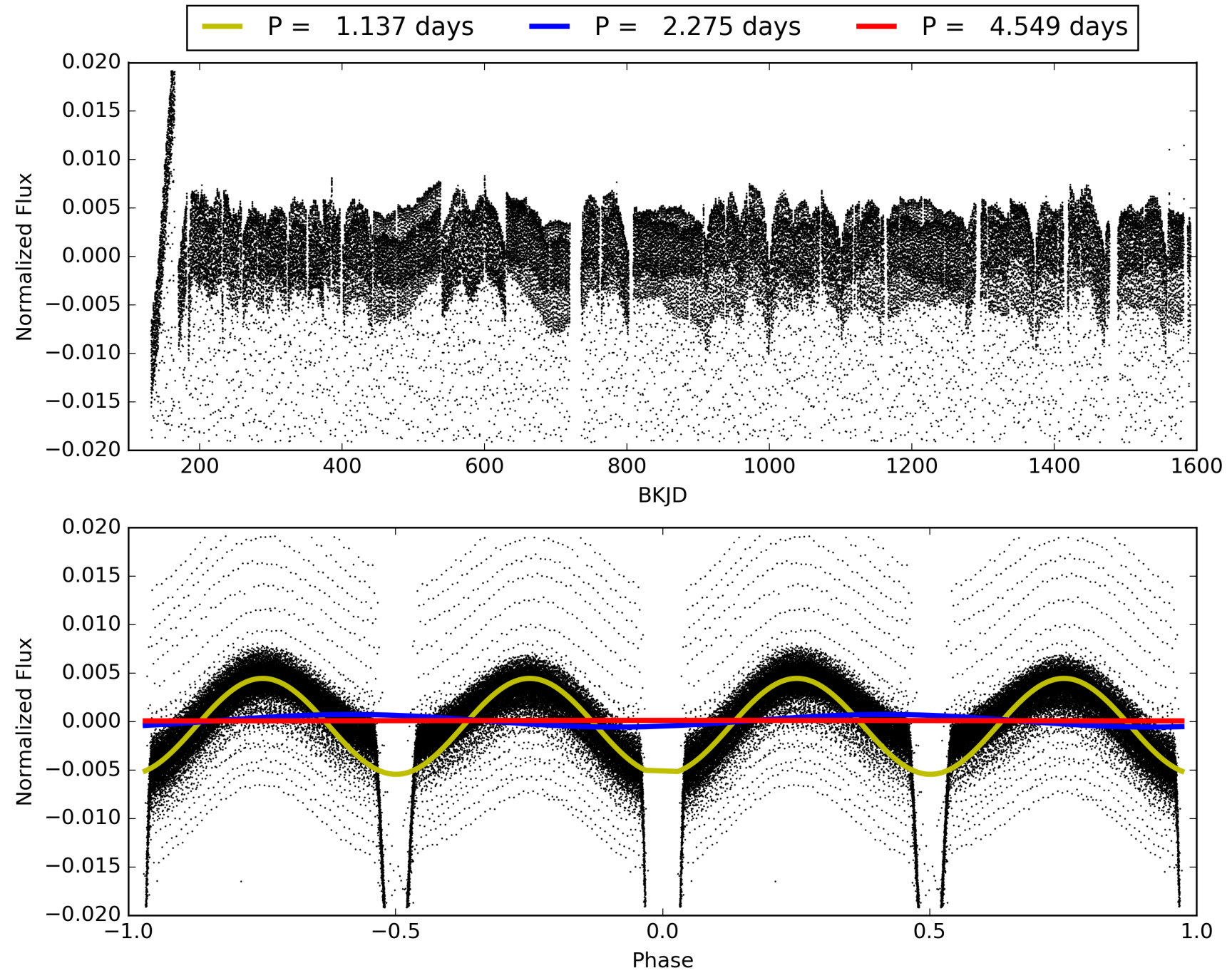
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 0.99 [559/563]  
GhostDiagnostic-chr: 2.829  
Centroid-sig: 0.0%  
Centroid-so: 0.136 arcsec [519.58σ]  
OotOffset-rm: 0.038 arcsec [0.57σ]  
KicOffset-rm: 0.049 arcsec [0.64σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 011811454-01, PDC Light Curves

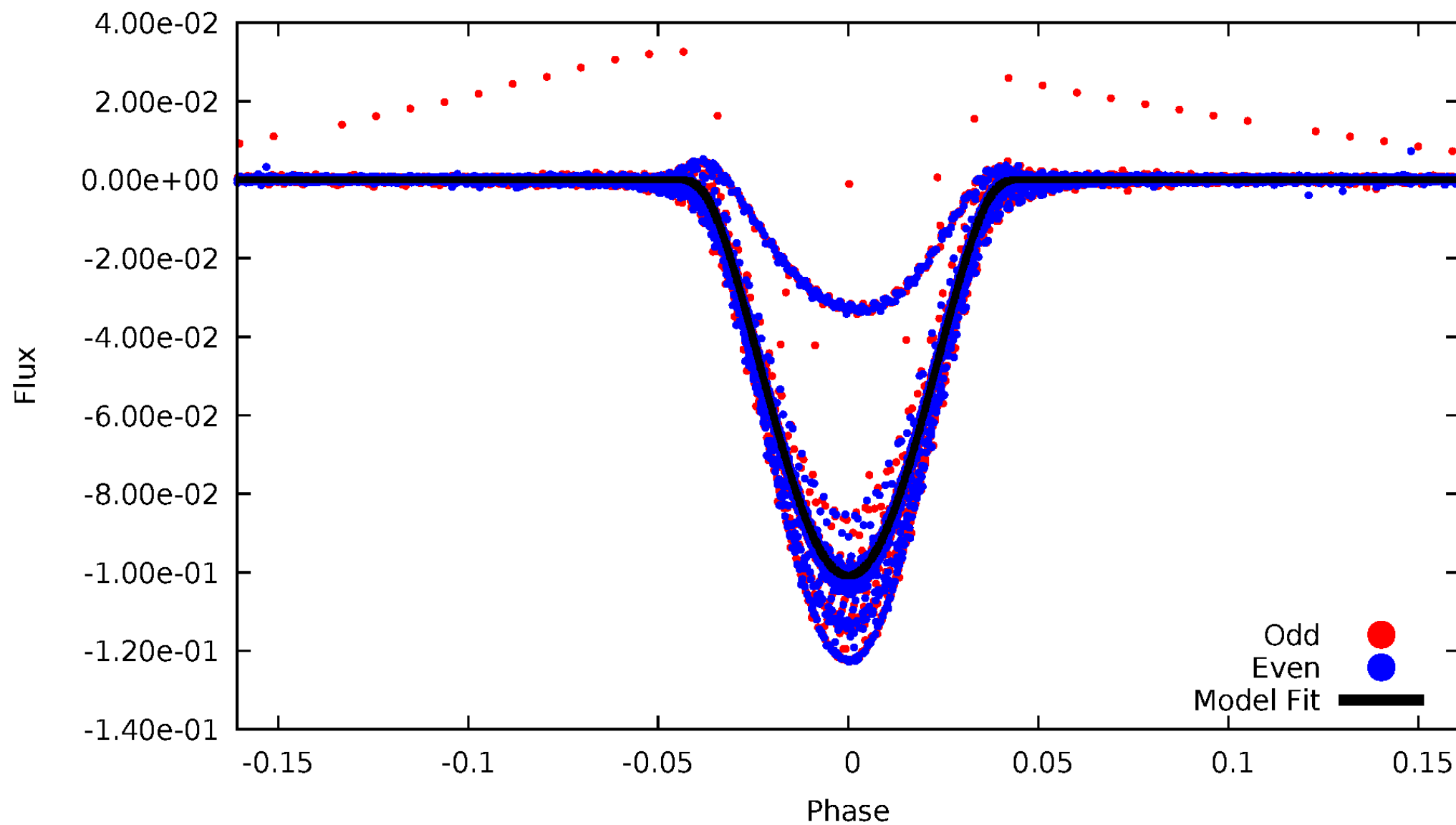


# TCE 011811454-01



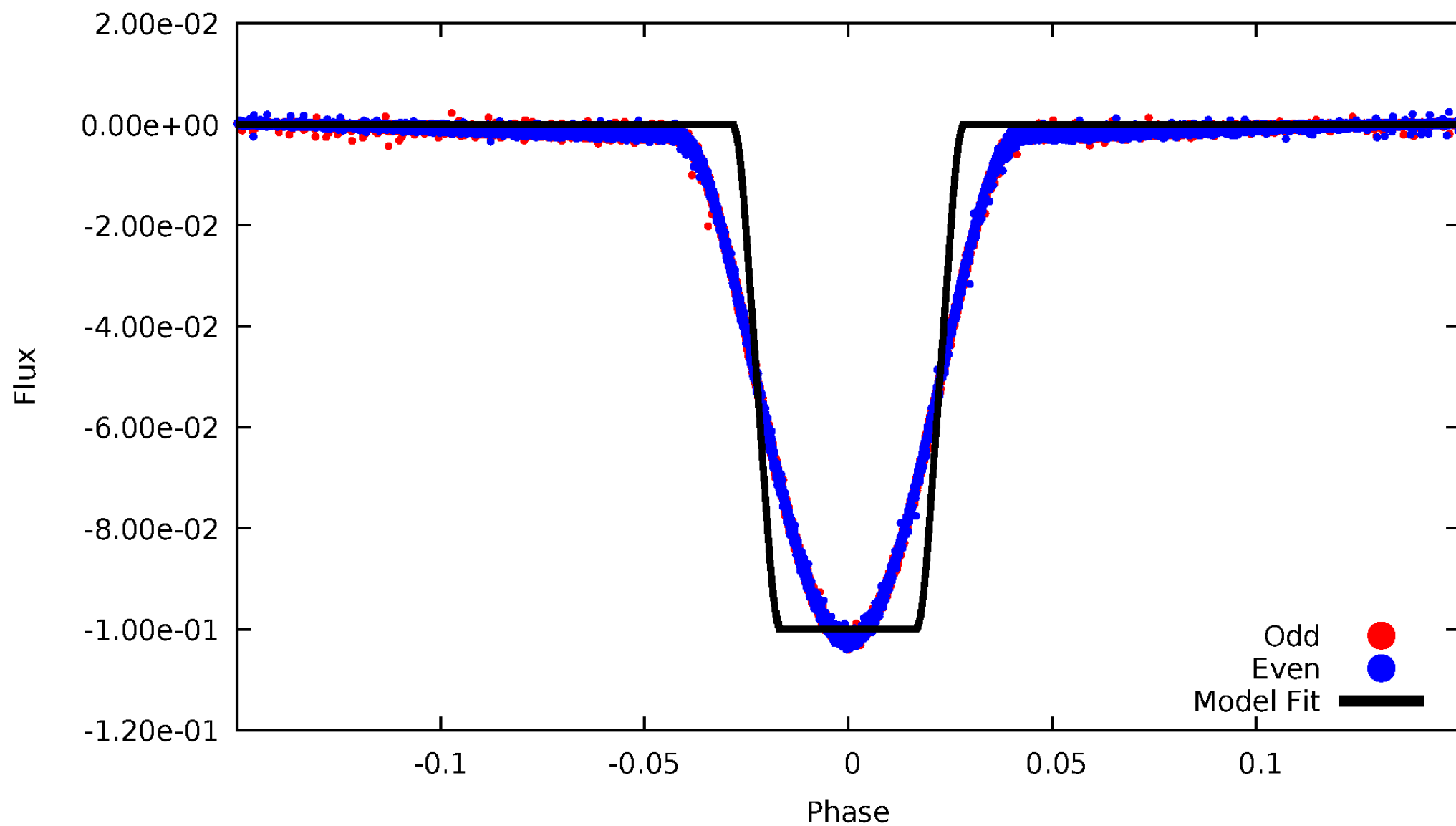
# DV Odd/Even

TCE 011811454-01



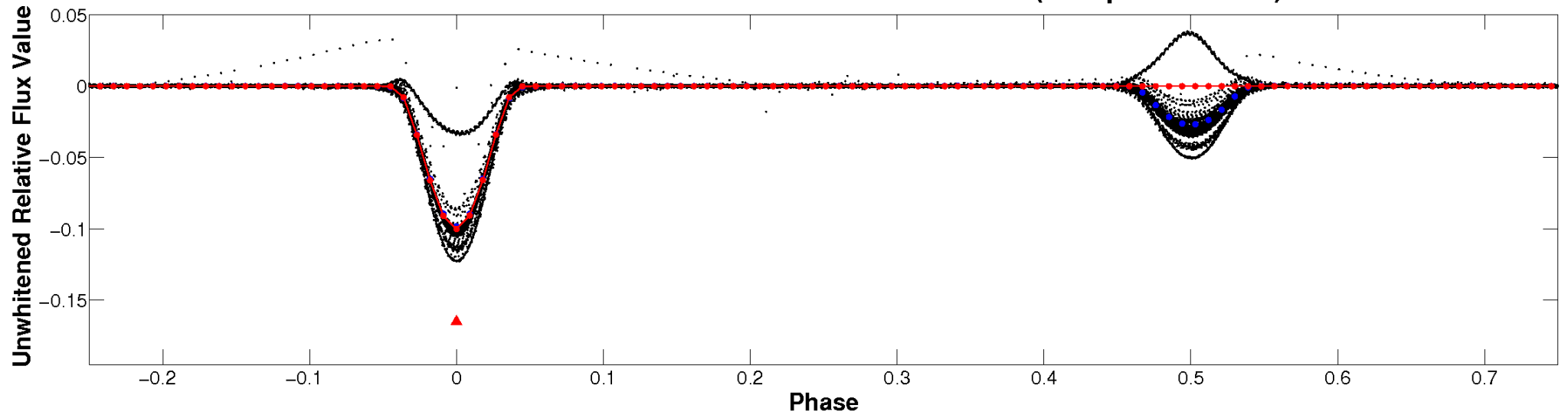
# ALT Odd/Even

TCE 011811454-01

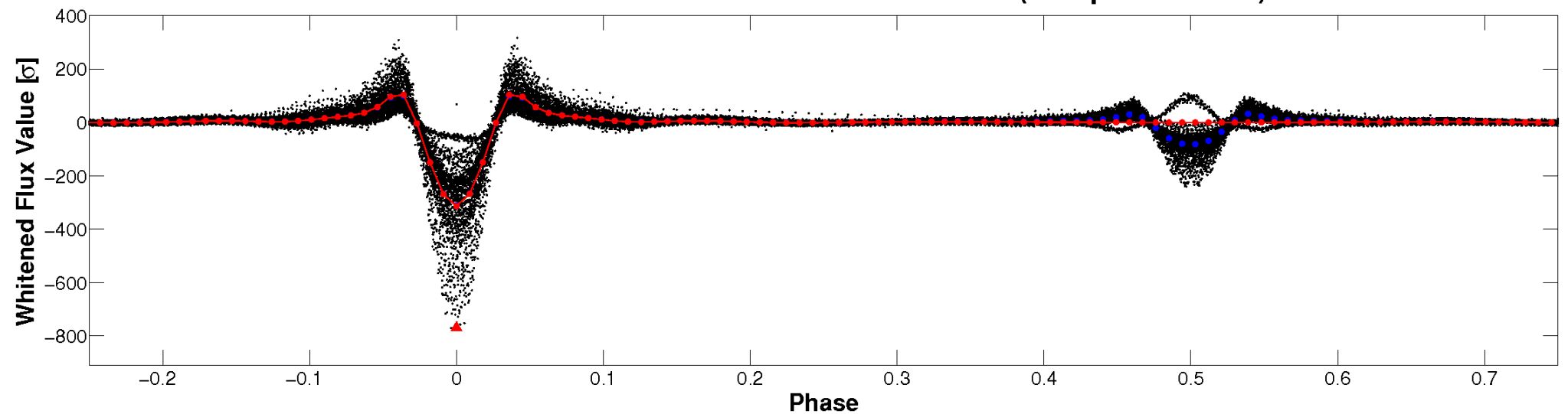


# Non-Whitened Vs. Whitened Light Curve

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

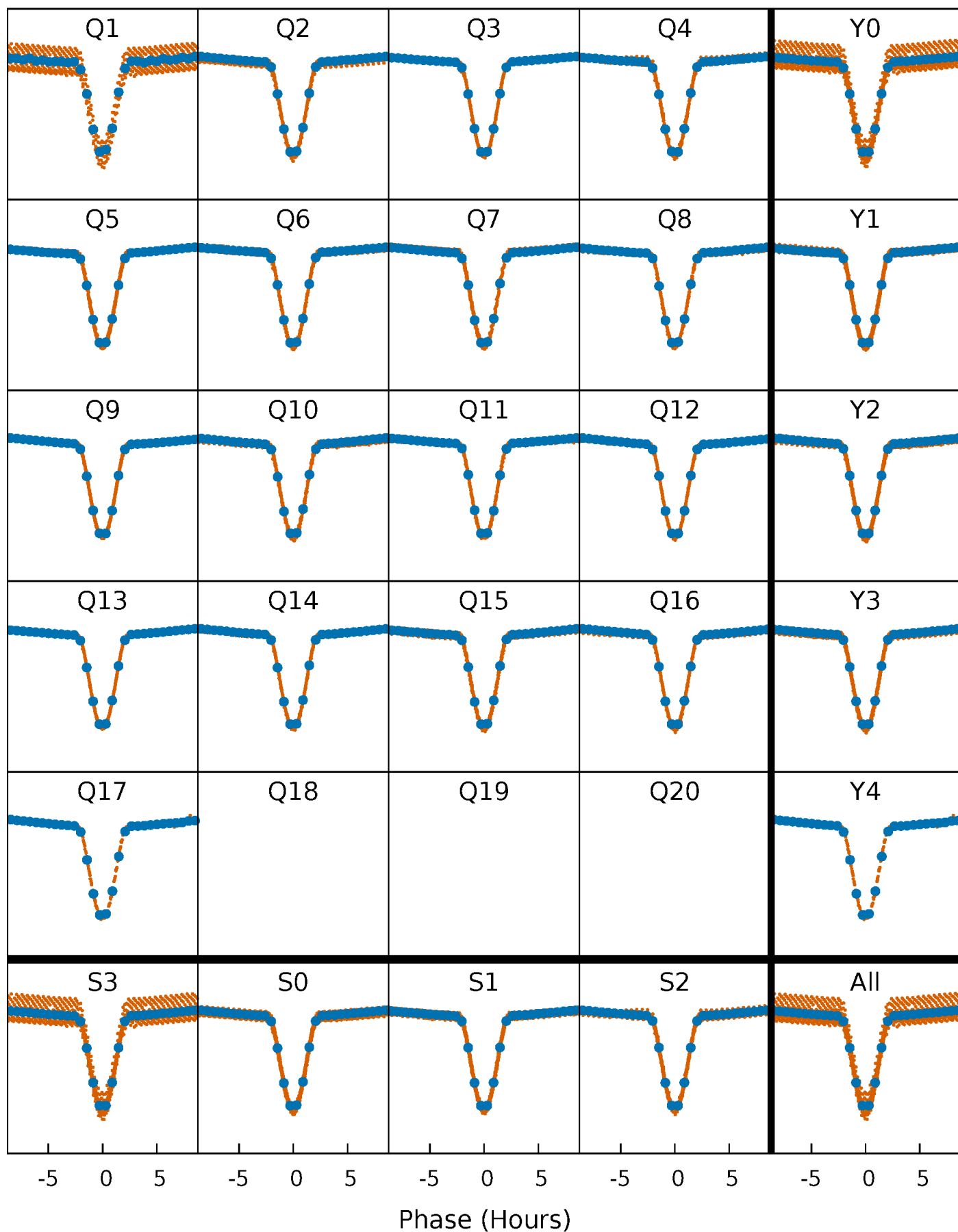


## Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

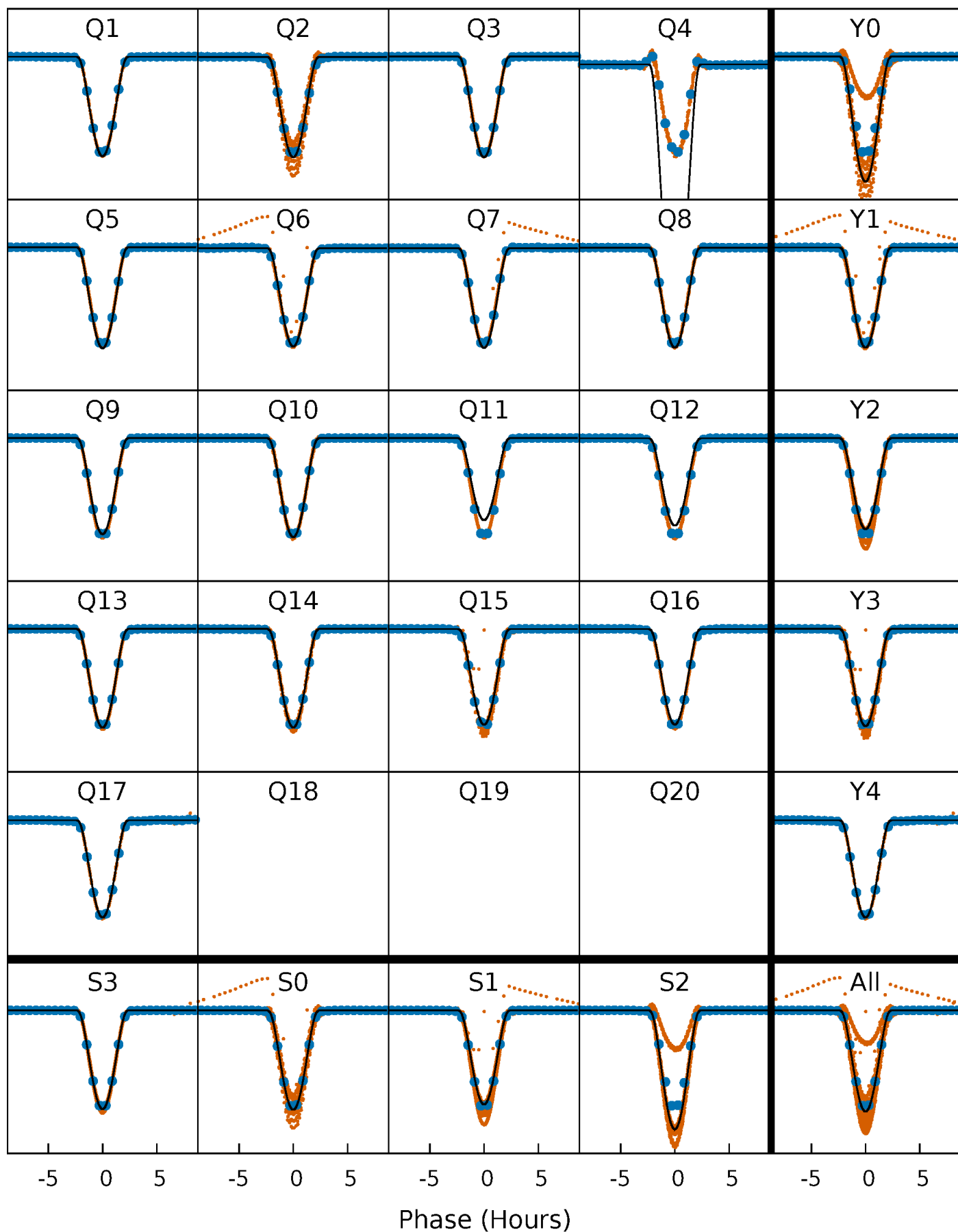
TCE 011811454-01 P= 2.274628 Days  $T_0=132.017141$  (BKJD)





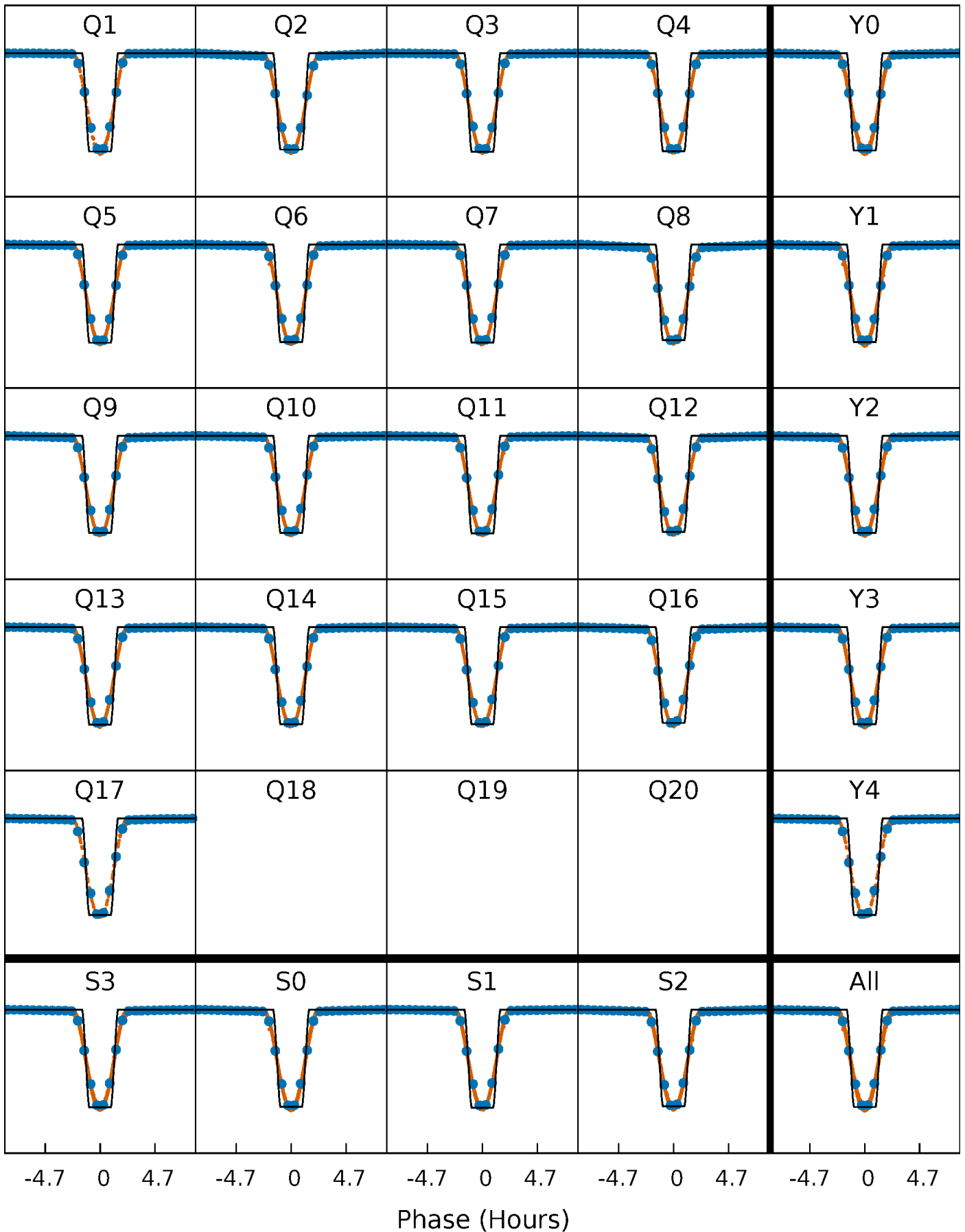
# DV Quarter-Phased Transit Curves

TCE 011811454-01 P= 2.274628 Days  $T_0=132.017141$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

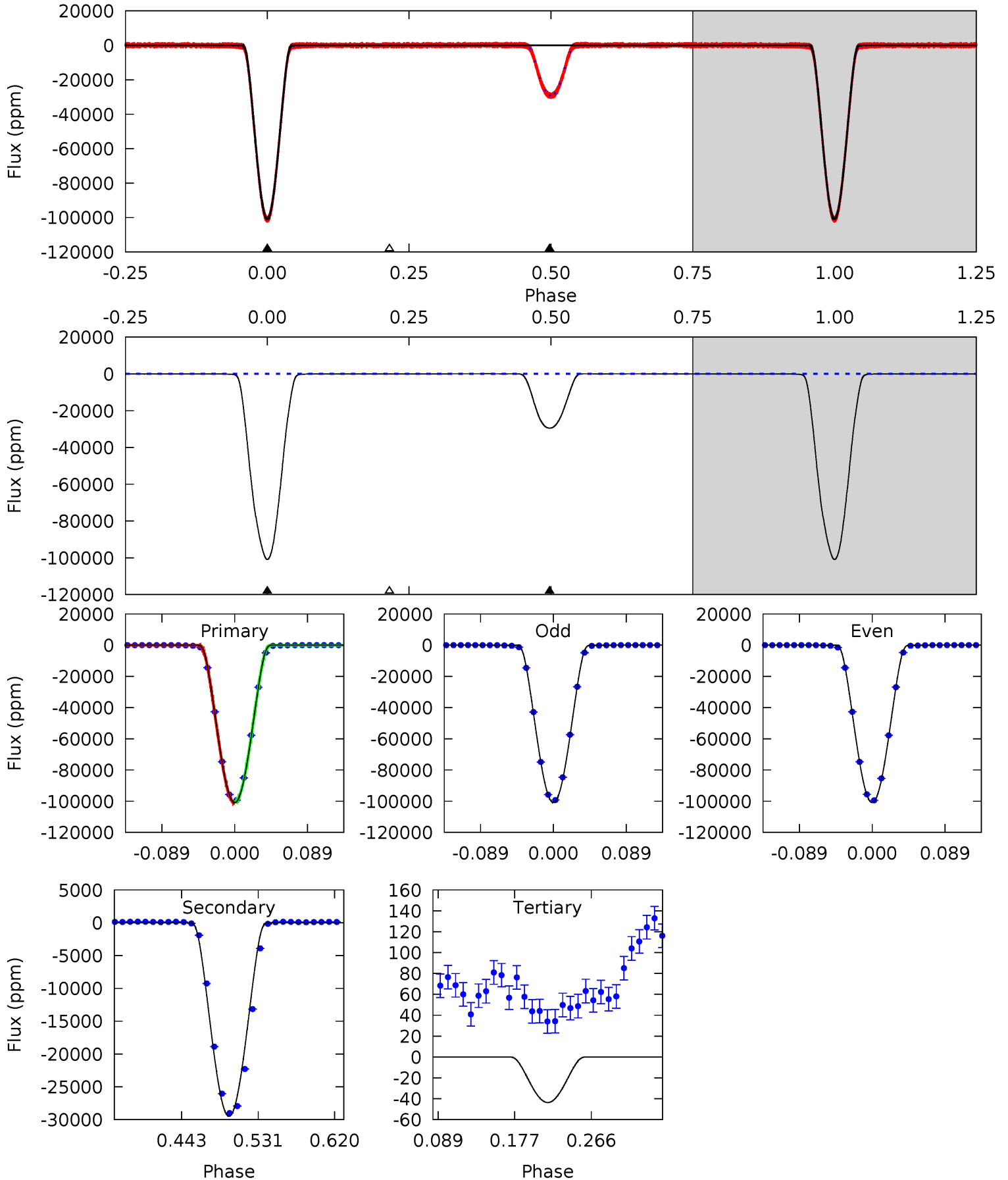
TCE 011811454-01 P= 2.274630 Days  $T_0=132.016536$  (BKJD)



# DV Model-Shift Uniqueness Test

011811454-01, P = 2.274628 Days, E = 129.742513 Days

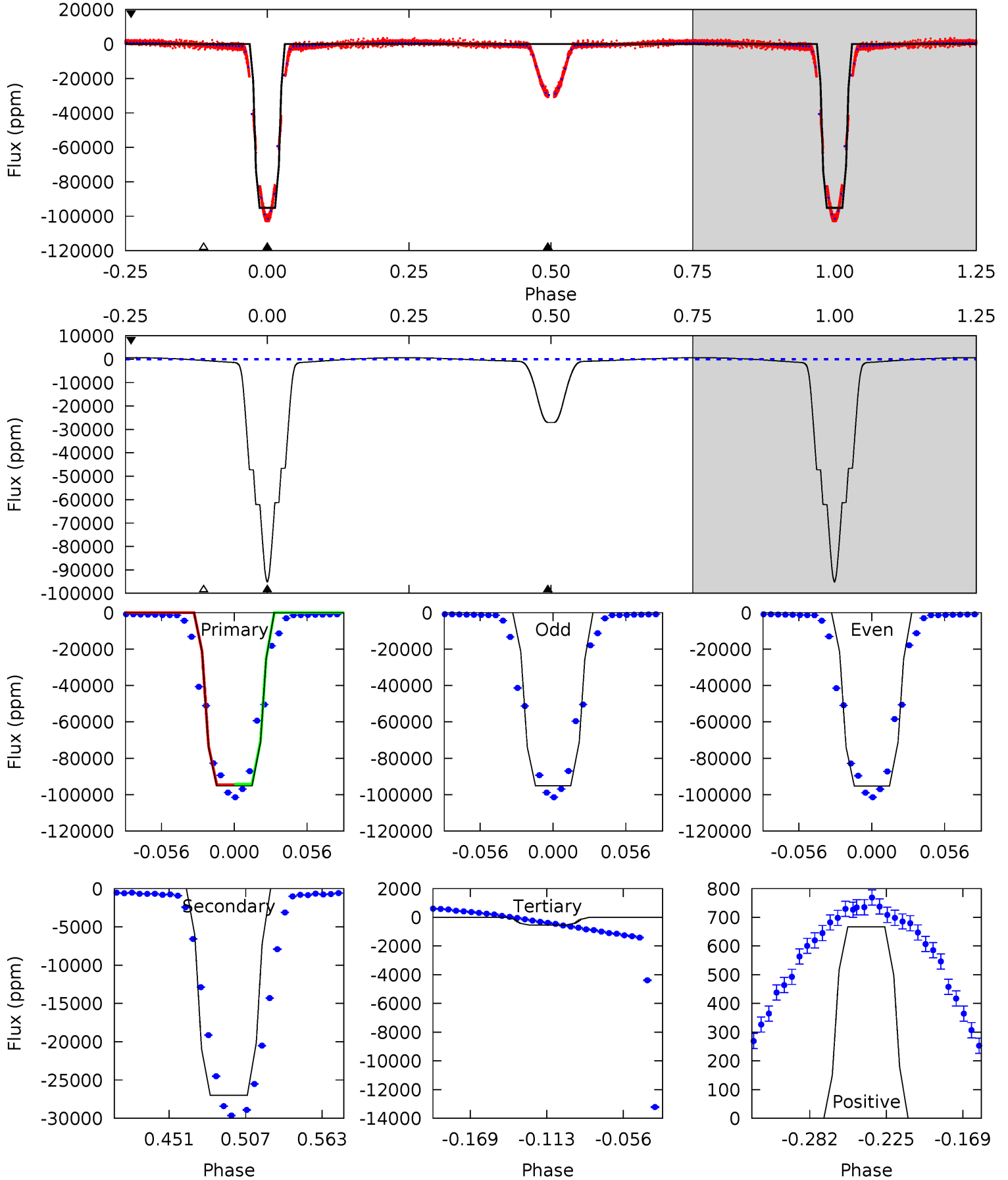
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16667	4876	7.20	0	4.59	1.70	6.72	16659	16667	4869	4876	2.18	0.98	0.00	62.1



# Alt Model-Shift Uniqueness Test

011811454-01, P = 2.274630 Days, E = 129.741906 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
6533	1854	36.8	45.7	4.68	1.91	40.7	6497	6488	1817	1808	2.77	1.00	0.01	0



### Stellar Parameters For KIC 011811454

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6389^{+181}_{-227}$	$3.914^{+0.435}_{-0.145}$	$-0.440^{+0.300}_{-0.300}$	$1.947^{+0.461}_{-0.856}$	$1.134^{+0.169}_{-0.206}$	$0.216^{+0.913}_{-0.084}$
	+3%/-4%	+11%/-4%	+68%/-68%	+24%/-44%	+15%/-18%	+422%/-39%
Source	PHO54	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 011811454-01 / KOI 7481.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-29513 \pm 6$	$92.27^{+14.04}_{-23.47}$	$2865^{+223}_{-342}$	$4153^{+101}_{-111}$	$2.467^{+1.697}_{-0.561}$
Alt.	$-27012 \pm 15$	$64.92^{+9.51}_{-13.61}$	$2853^{+221}_{-309}$	$4703^{+120}_{-134}$	$4.531^{+2.586}_{-0.996}$

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

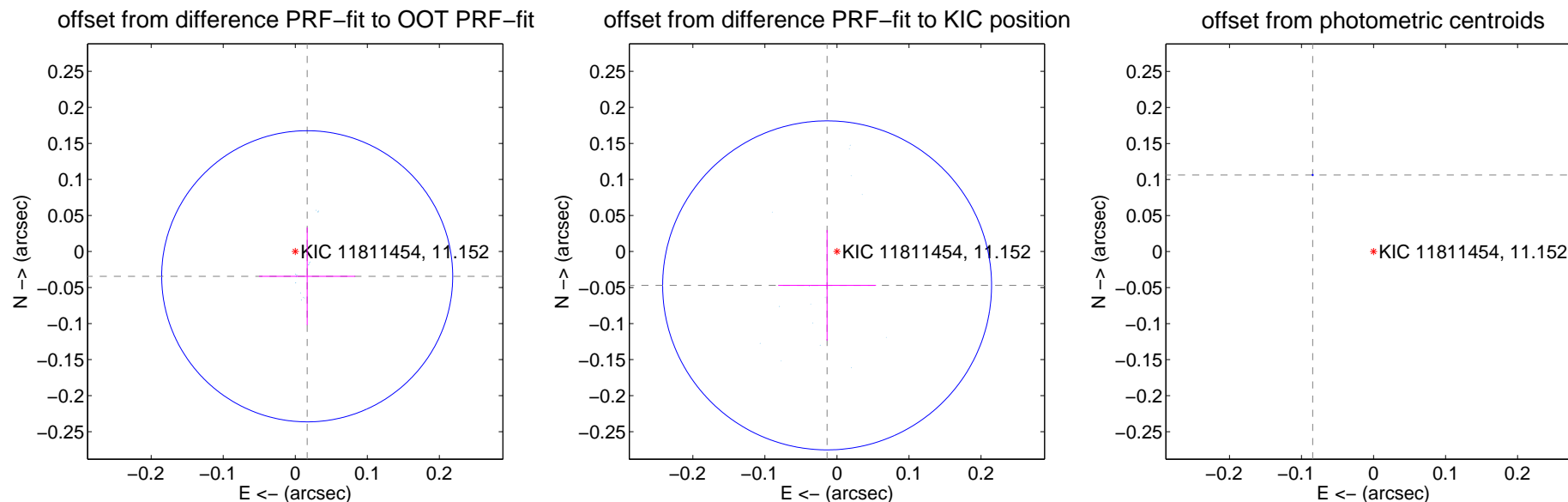
## DV Centroid Data

Supplemental centroid analysis for 011811454-01. **Kepler magnitude: 11.15**. Transit SNR 10071.62

There are 17 quarters with good PRF difference image offsets

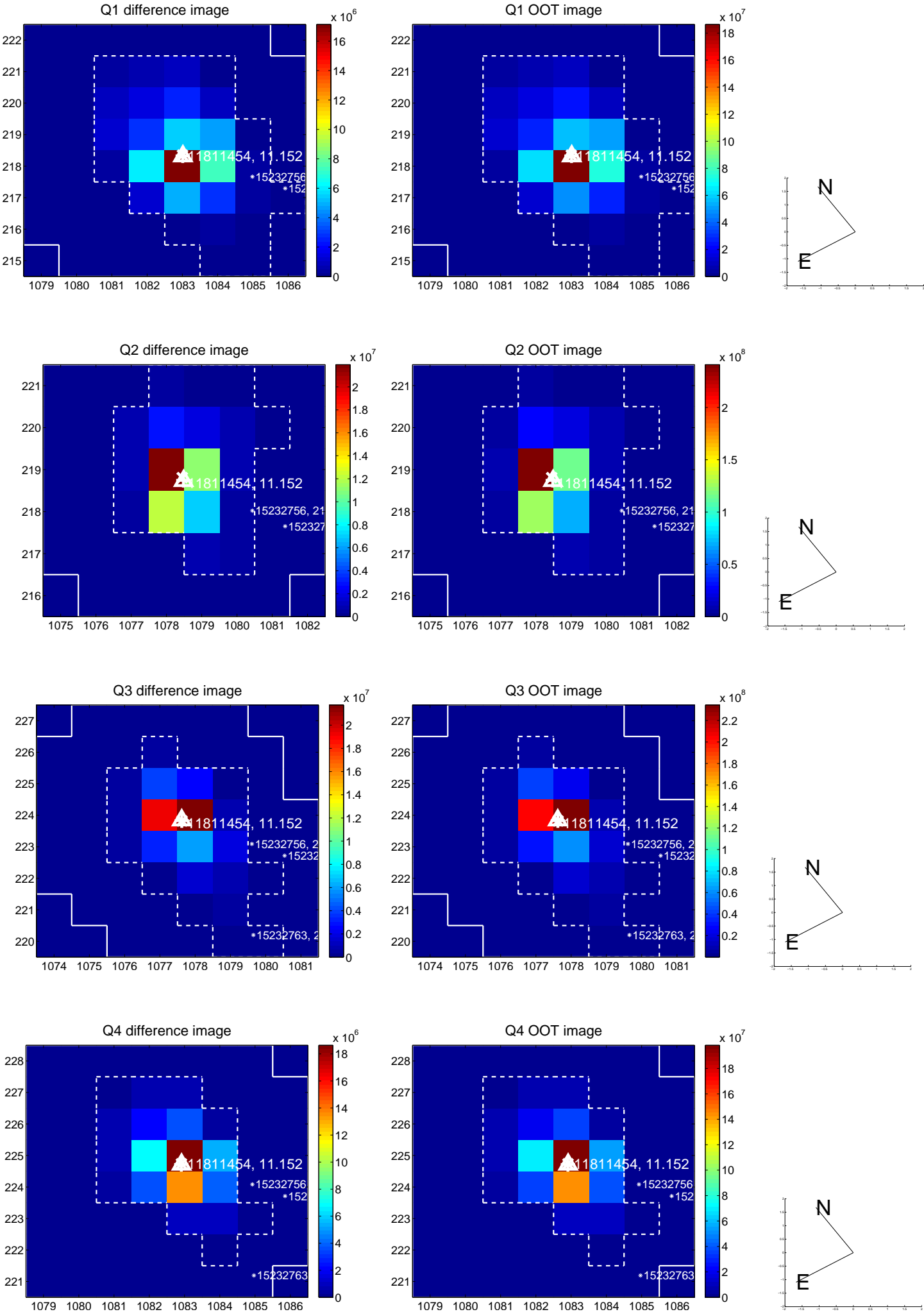
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.038 \pm 0.067$	0.57	$-0.017 \pm 0.067$	$-0.034 \pm 0.068$
PRF-fit source offset from KIC position	$0.049 \pm 0.076$	0.64	$0.014 \pm 0.068$	$-0.047 \pm 0.077$
photometric centroid source offset	<b><math>0.14 \pm 0.00</math></b>	<b>519.58</b>	$0.08 \pm 0.00$	$0.11 \pm 0.00$

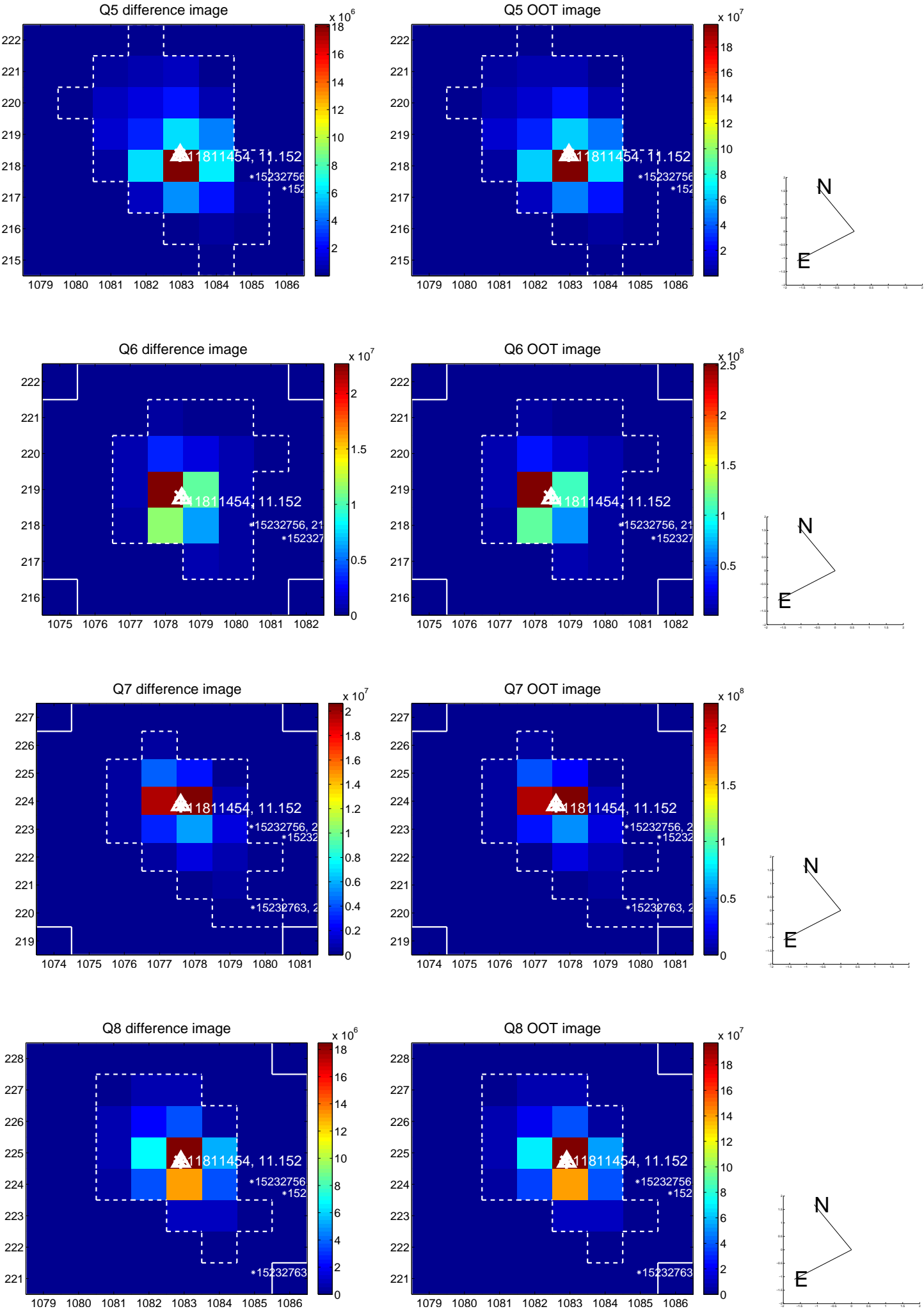


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

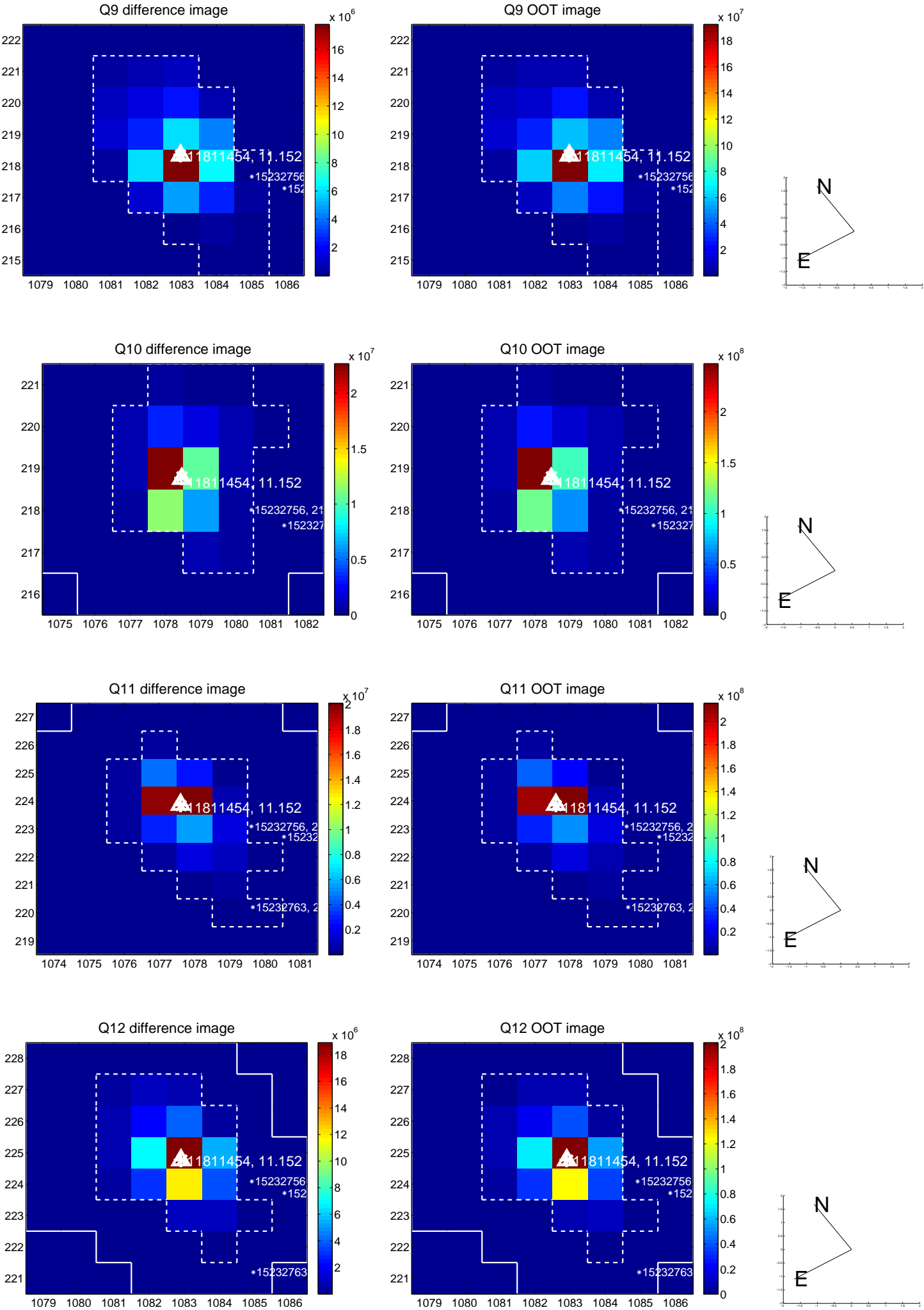


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

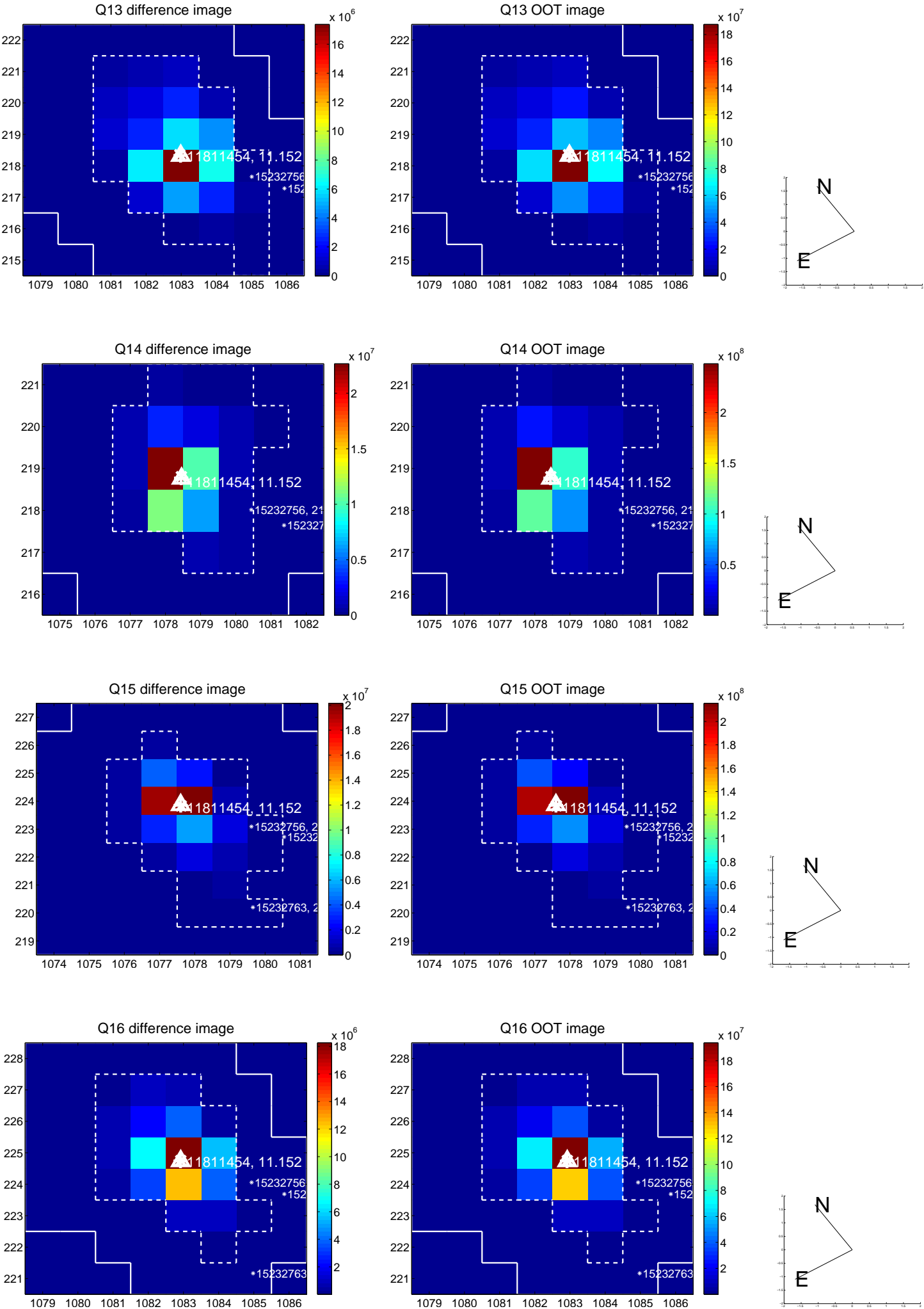




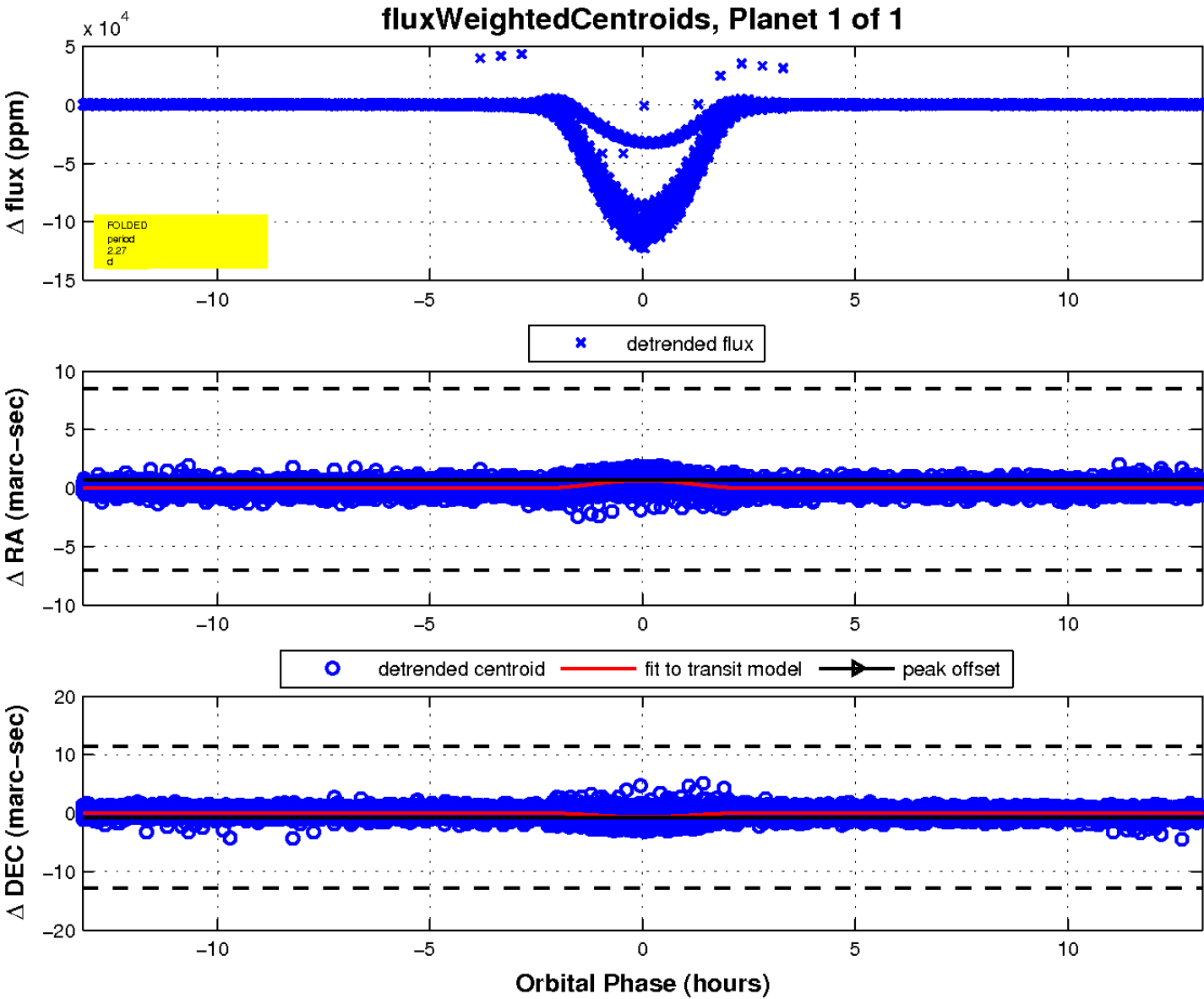
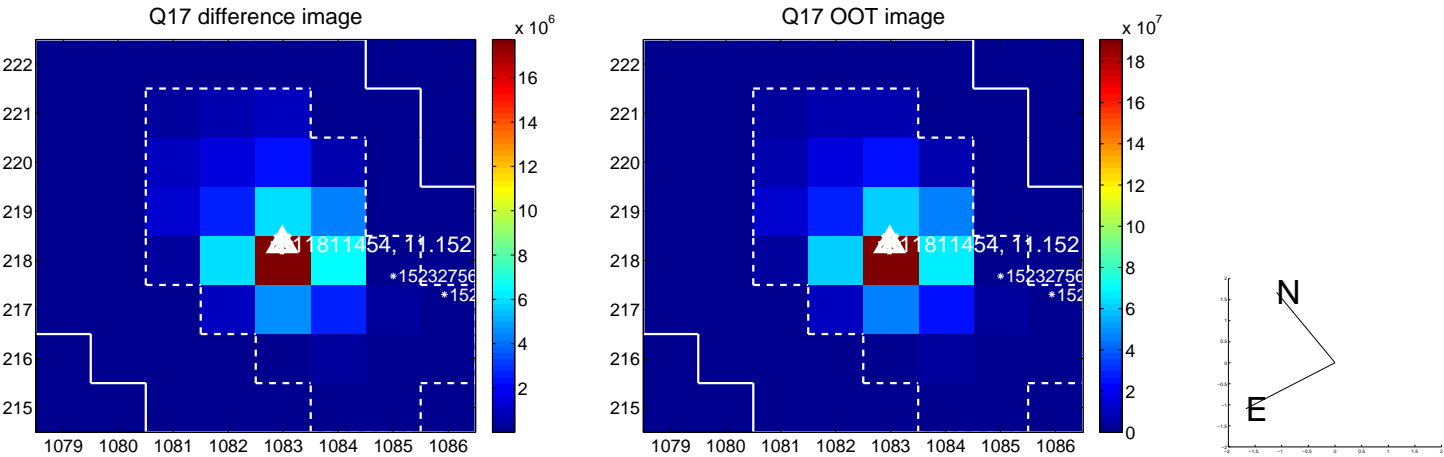
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

