

# KIC 008234477

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008234477-01	OBS	6997.01	2.014333	131.941182	51434.1	7.887	8886.4	3184.9	1.53	6327	35.29	2957.51

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008234477-01	OBS	FP	0.00	0	1	0	0	SWEET_EB—DEPTH_ODDEVEN_DV—DEPTH_ODDEVEN_ALT—MOD_ODDEVEN_DV—MOD_ODDEVEN_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.

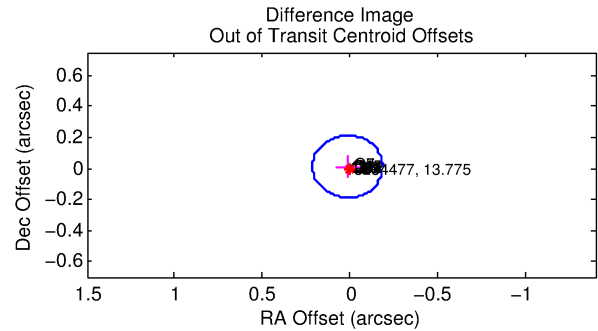
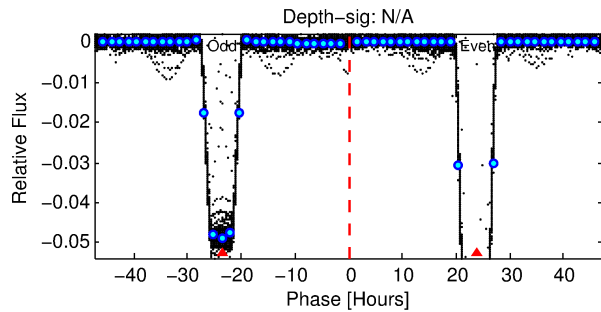
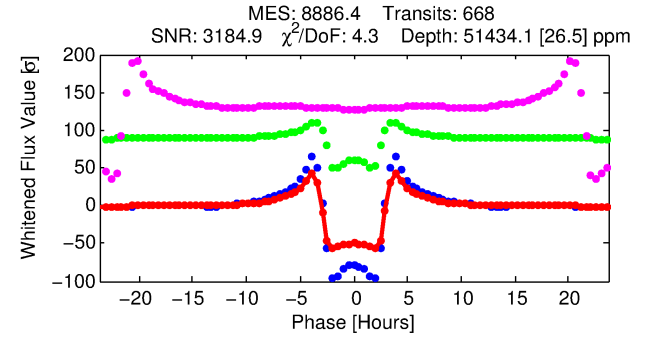
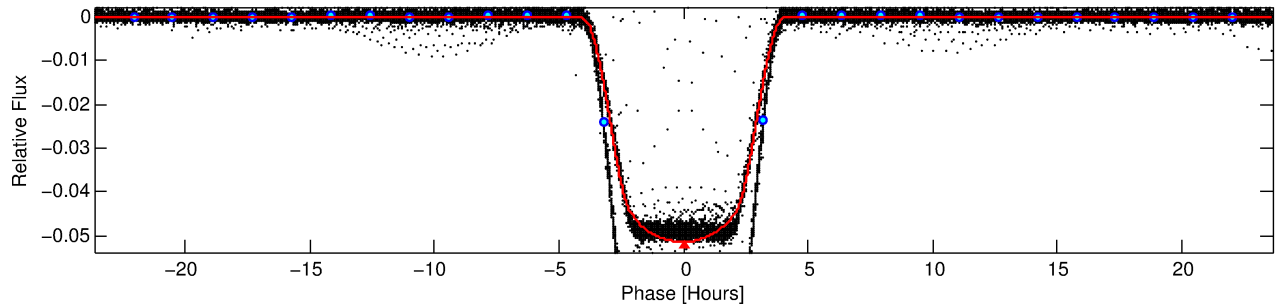
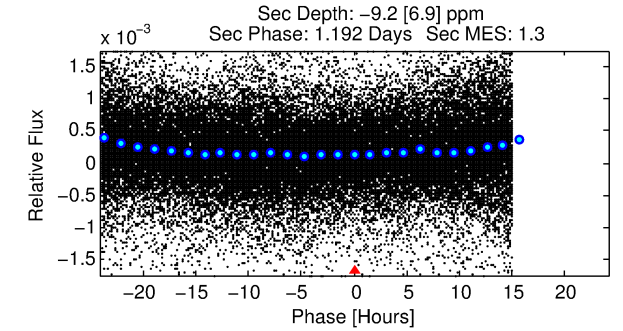
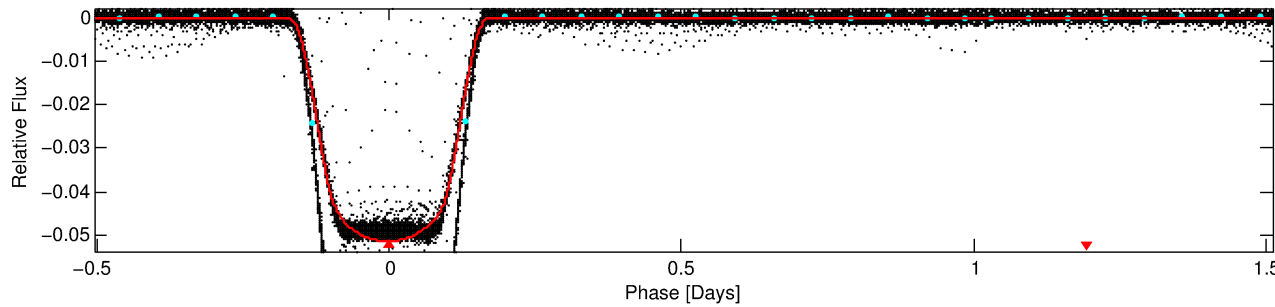
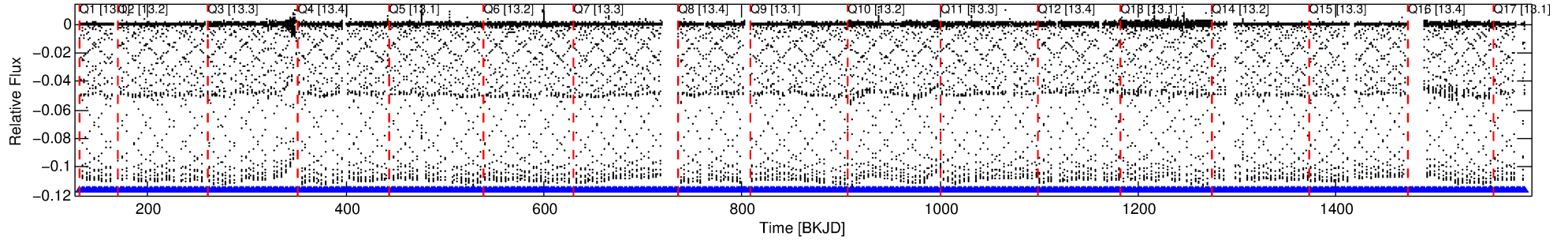
## Ephemeris Match Information For 008234477-01

No Significant Match Found

# DV One-Page Summary

KIC: 8234477 Candidate: 1 of 1 Period: 2.014 d  
KOI: K06997 Corr: No Ephemeris Match

Kp: 13.77 R\*: 1.53 Rs Teff: 6327.0 K Logg: 4.17 Fe/H: 0.020



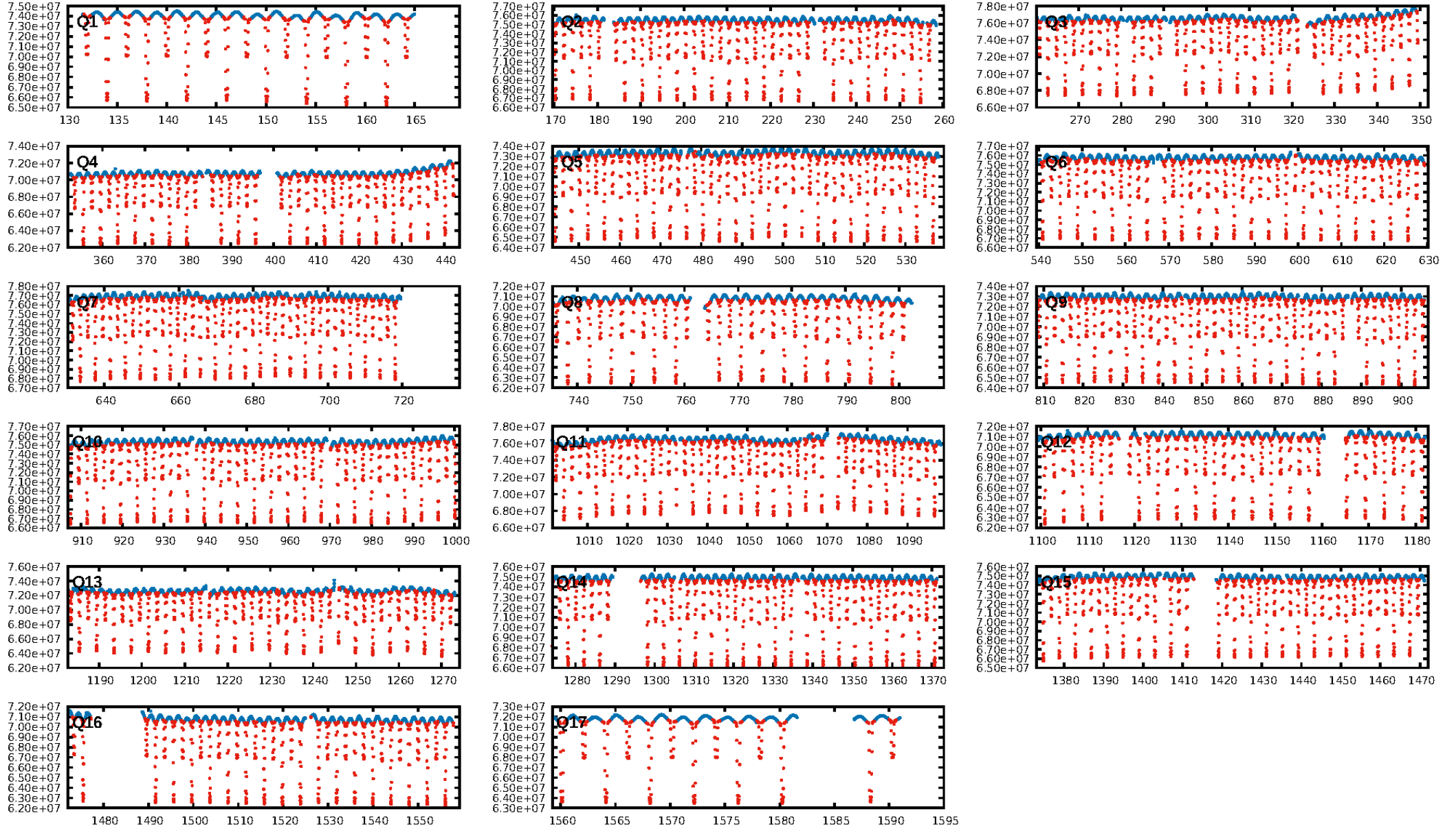
## DV Fit Results:

Period = 2.01433 [0.00000] d  
Epoch = 131.9412 [0.0000] BKJD  
Rp/R\* = 0.2117 [0.0001]  
a/R\* = 2.38 [0.00]  
b = 0.37 [0.00]  
Seff = 2957.51 [1125.28]  
Teff = 1880 [179] K  
Rp = 35.29 [10.90] Re  
a = 0.0337 [0.0085] AU  
Ag = N/A  
Teffp = N/A

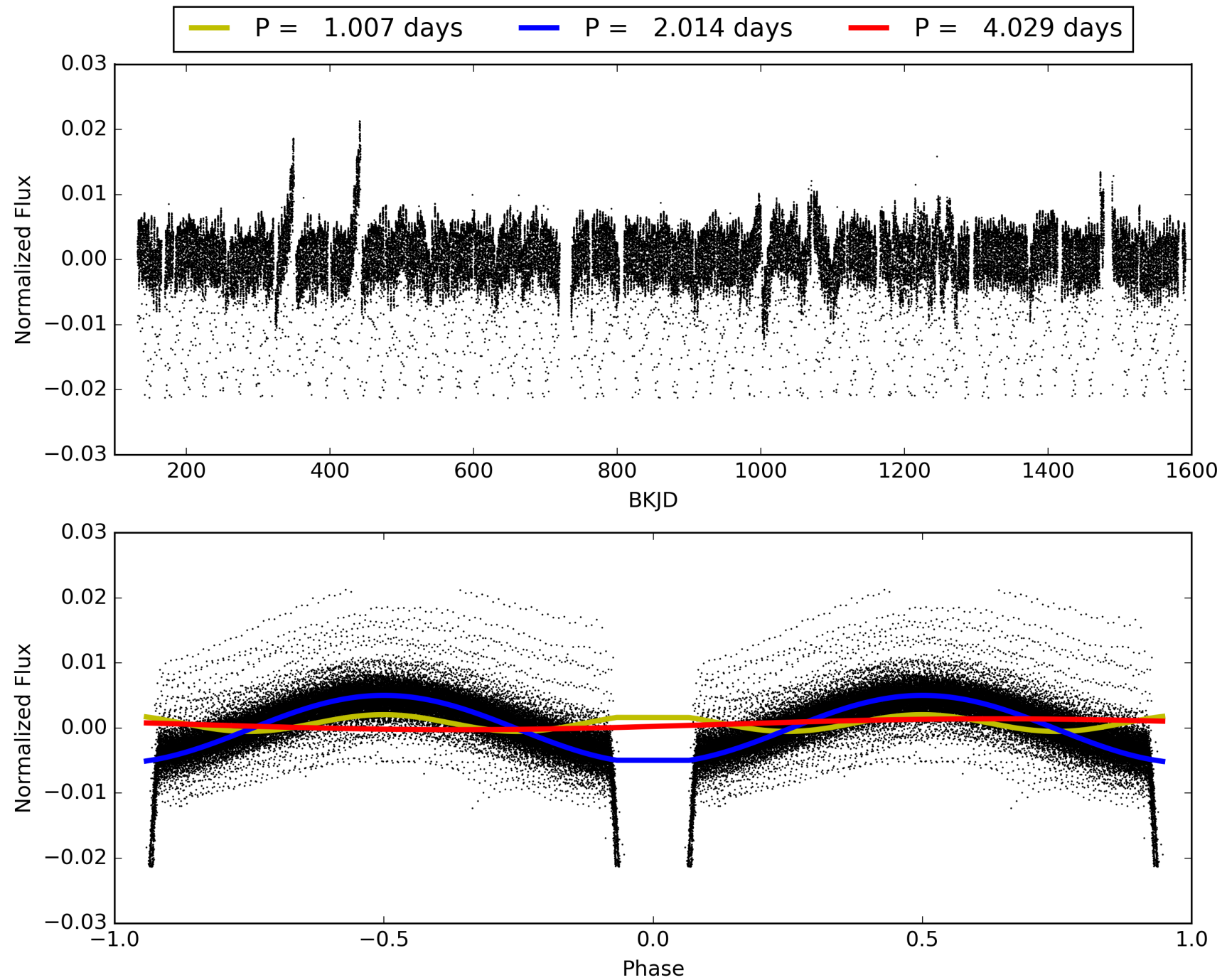
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [638/638]  
GhostDiagnostic-chr: 1.032  
Centroid-sig: N/A  
Centroid-so: 0.096 arcsec [120.30σ]  
OotOffset-rm: 0.019 arcsec [0.28σ]  
KicOffset-rm: 0.053 arcsec [0.78σ]  
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 008234477-01, PDC Light Curves

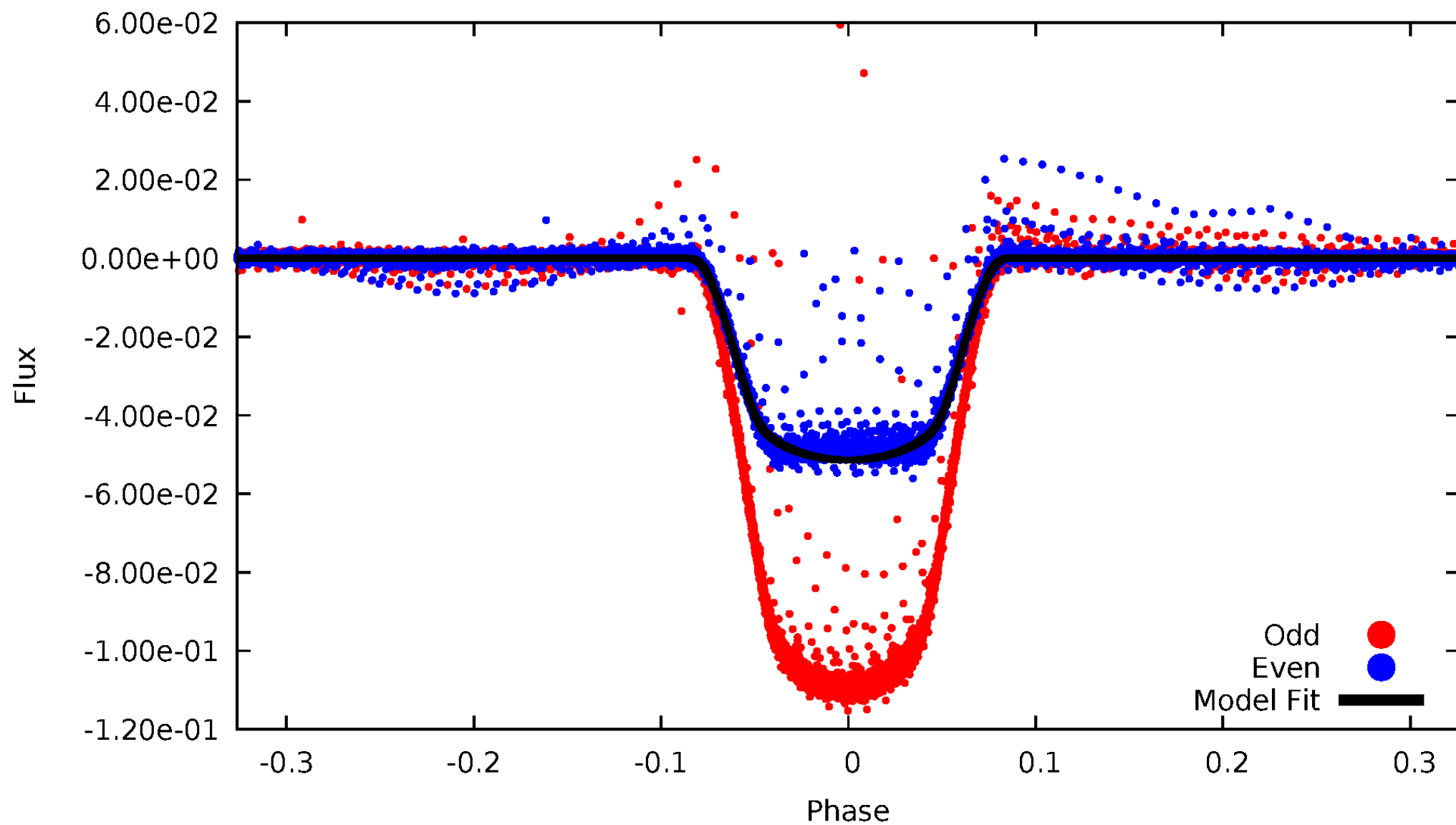


TCE 008234477-01



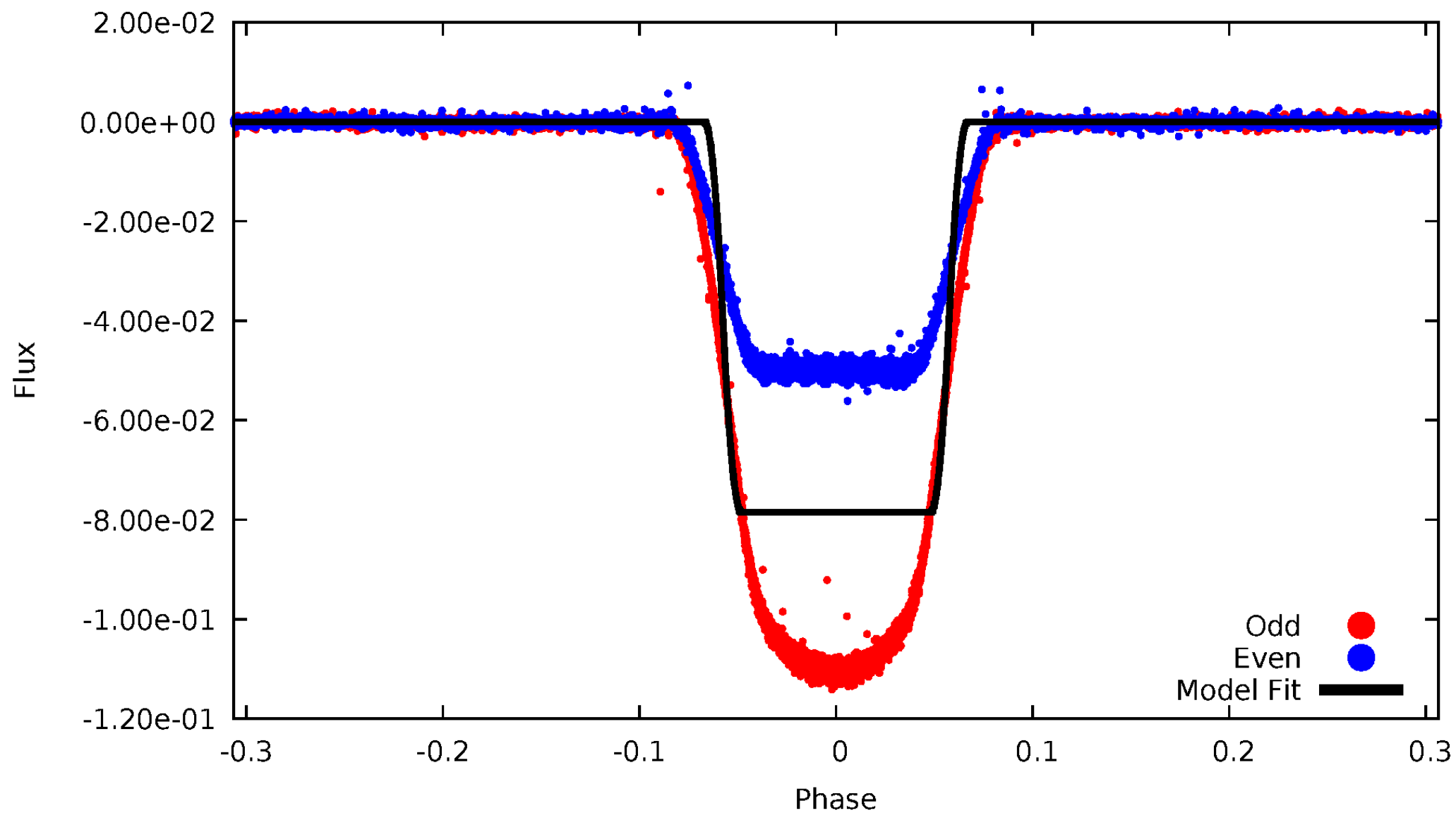
# DV Odd/Even

TCE 008234477-01



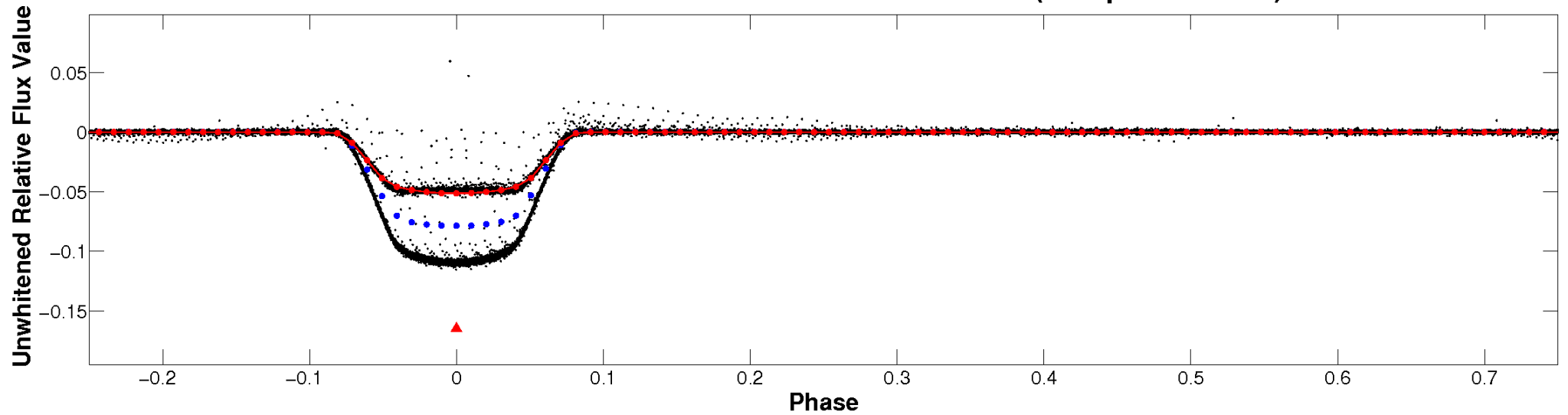
# ALT Odd/Even

TCE 008234477-01

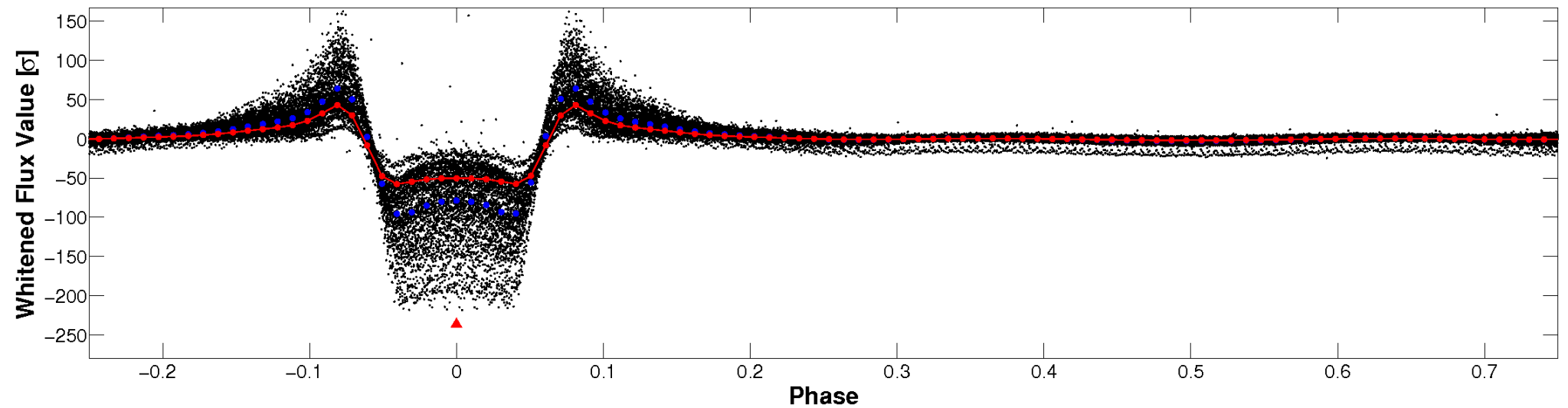


# Non-Whitened Vs. Whitened Light Curve

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

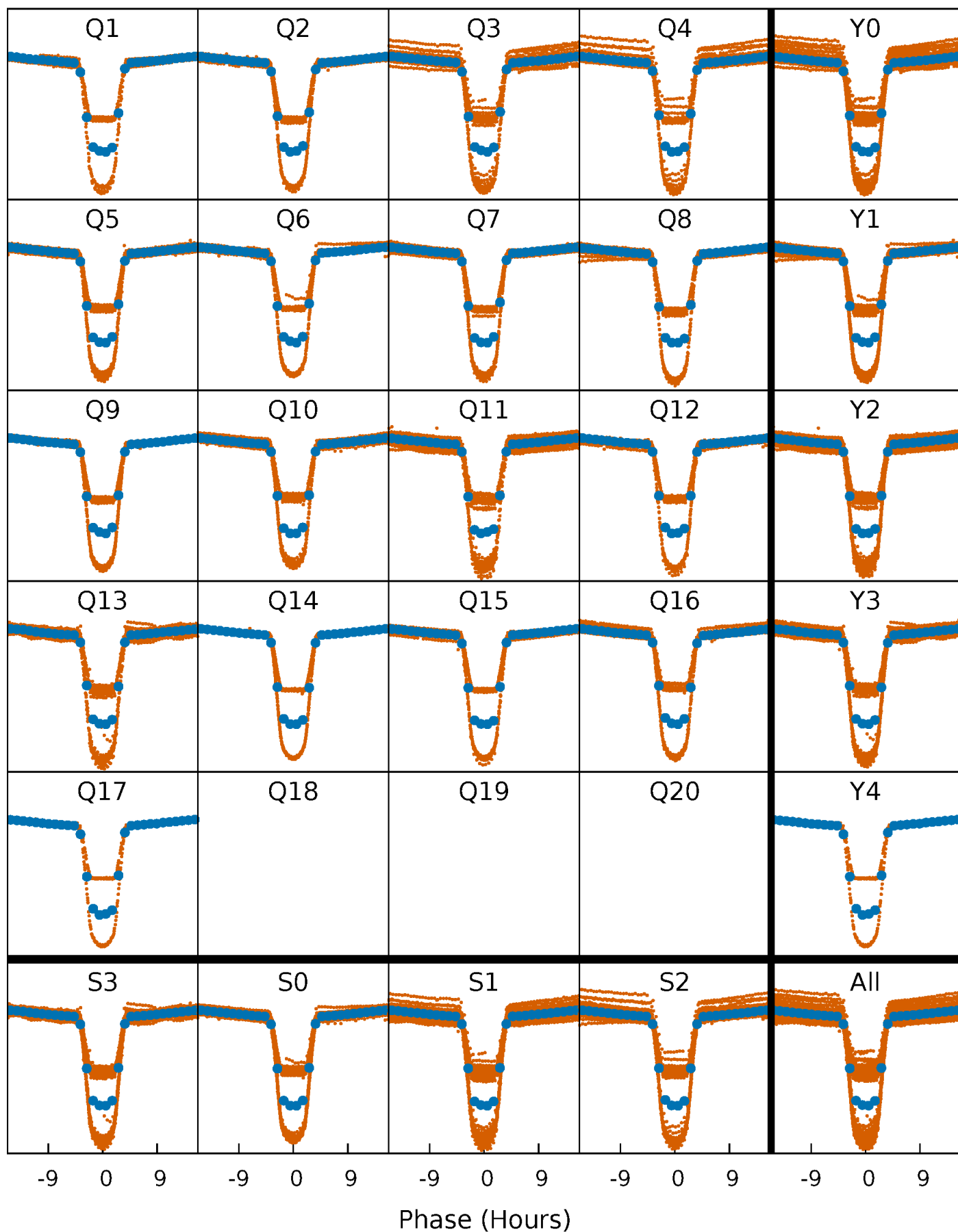


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

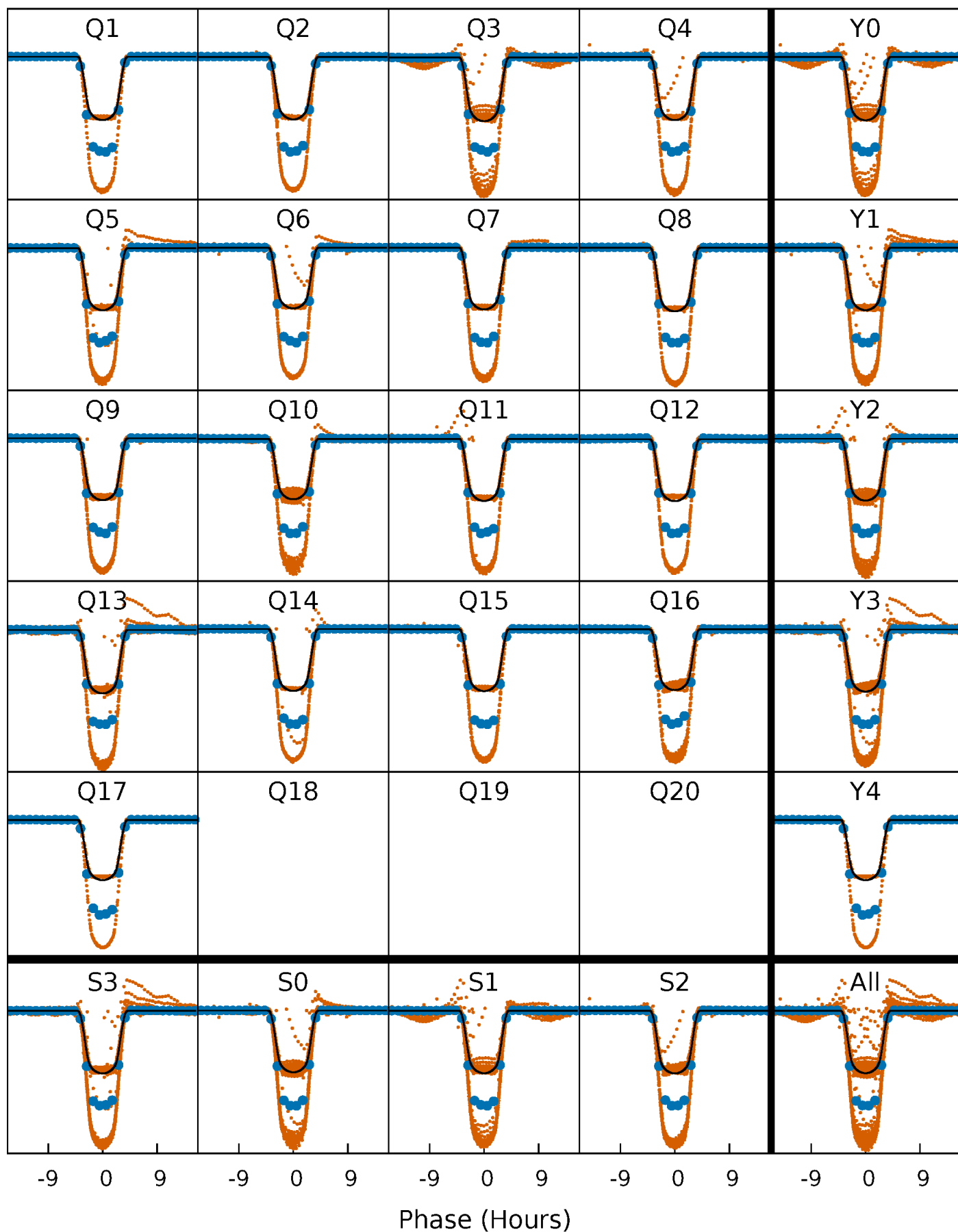
TCE 008234477-01 P= 2.014333 Days  $T_0=131.941182$  (BKJD)





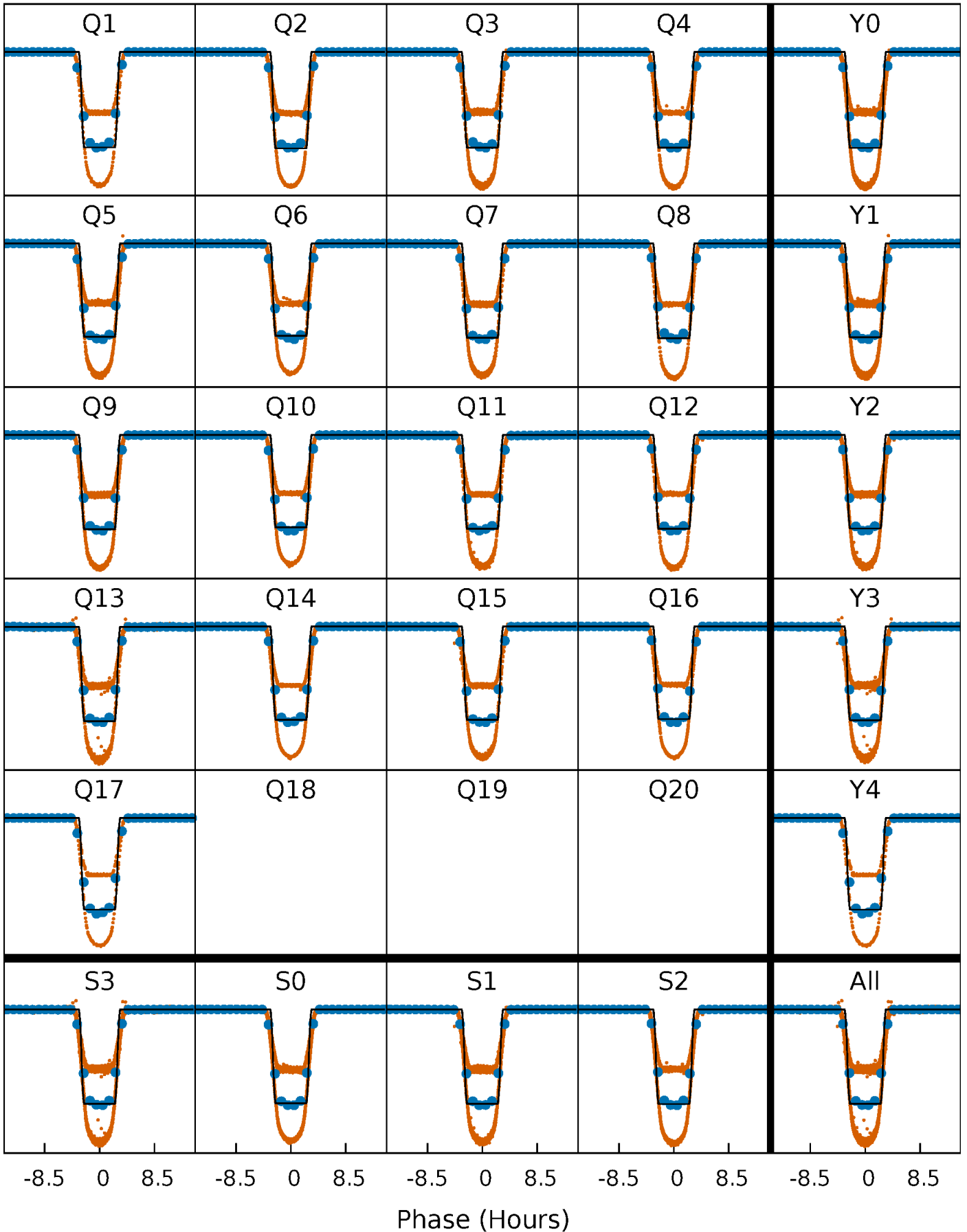
# DV Quarter-Phased Transit Curves

TCE 008234477-01 P= 2.014333 Days  $T_0=131.941182$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

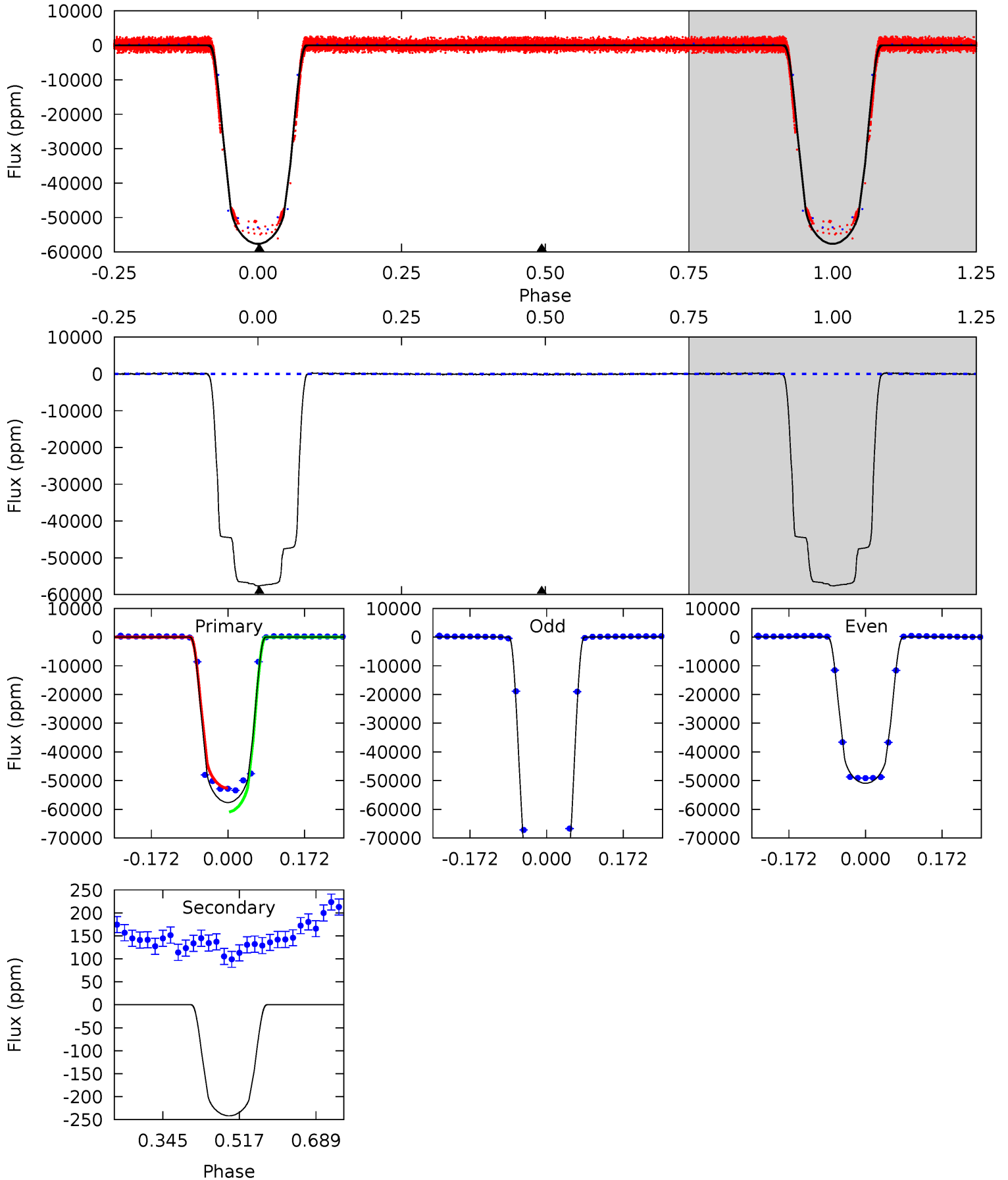
TCE 008234477-01 P= 2.014335 Days  $T_0=131.940453$  (BKJD)



# DV Model-Shift Uniqueness Test

008234477-01, P = 2.014333 Days, E = 129.926849 Days

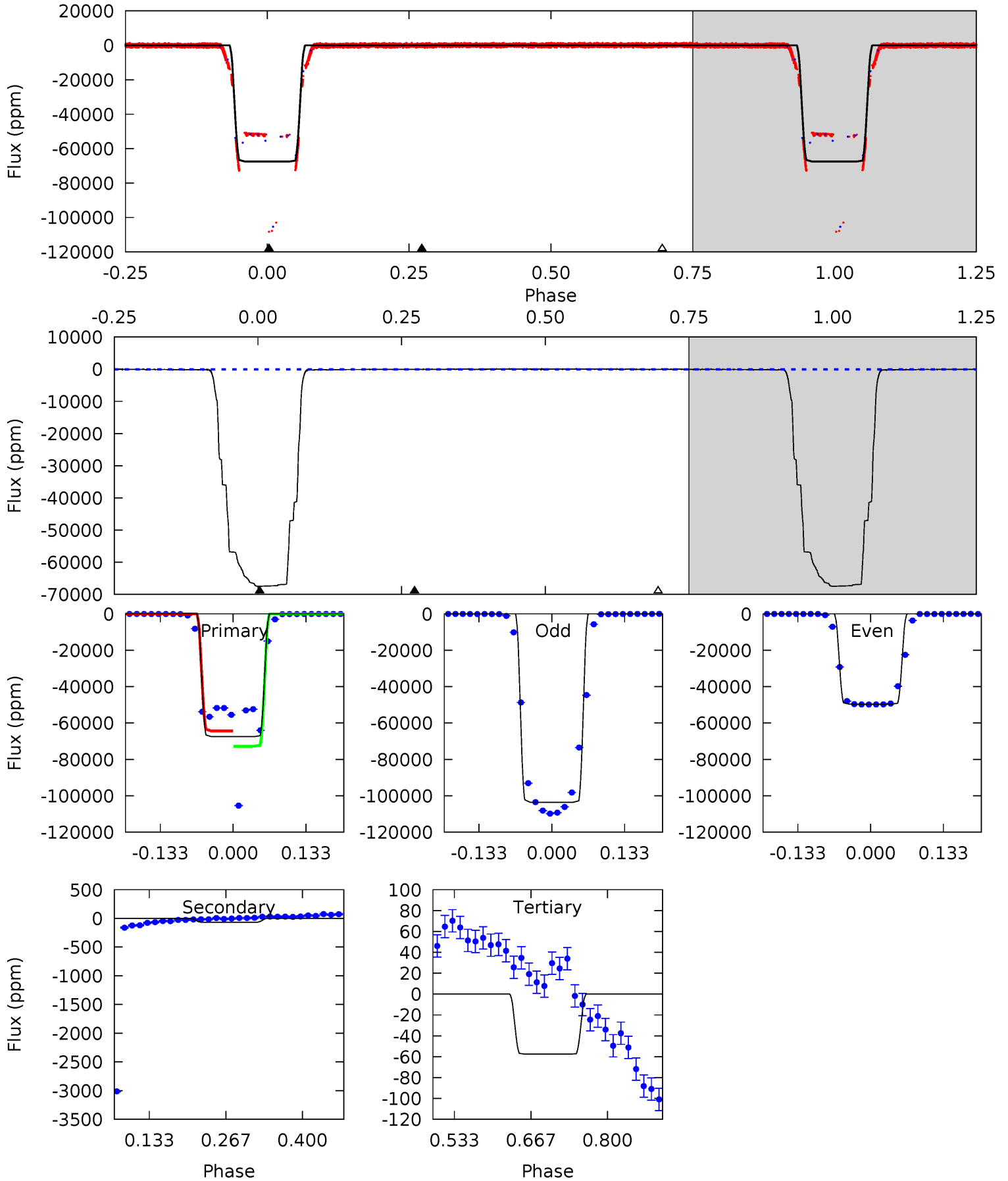
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4638	19.5	0	0	4.45	1.36	5.33	4638	4638	19.5	19.5	4958	1.45	0.01	0



# Alt Model-Shift Uniqueness Test

008234477-01, P = 2.014335 Days, E = 129.926118 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
4756	4.67	4.06	0	4.50	1.50	3.50	4752	4756	0.61	4.67	6507	1.10	0.00	0



### Stellar Parameters For KIC 008234477

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6327^{+170}_{-208}$	$4.168^{+0.190}_{-0.190}$	$0.020^{+0.250}_{-0.300}$	$1.528^{+0.472}_{-0.387}$	$1.252^{+0.189}_{-0.208}$	$0.494^{+0.516}_{-0.253}$
	+3%/-3%	+5%/-5%	+1250%/-1500%	+31%/-25%	+15%/-17%	+104%/-51%
Source	PHO1	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 008234477-01 / KOI 6997.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-242 \pm 12$	$35.48^{+6.24}_{-4.87}$	$2632^{+200}_{-202}$	$-2687^{+172}_{-161}$	$0.119^{+0.036}_{-0.030}$
Alt.	$-66 \pm 14$	$45.98^{+8.14}_{-5.82}$	$2614^{+201}_{-184}$	$-2838^{+113}_{-122}$	$0.019^{+0.008}_{-0.006}$

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

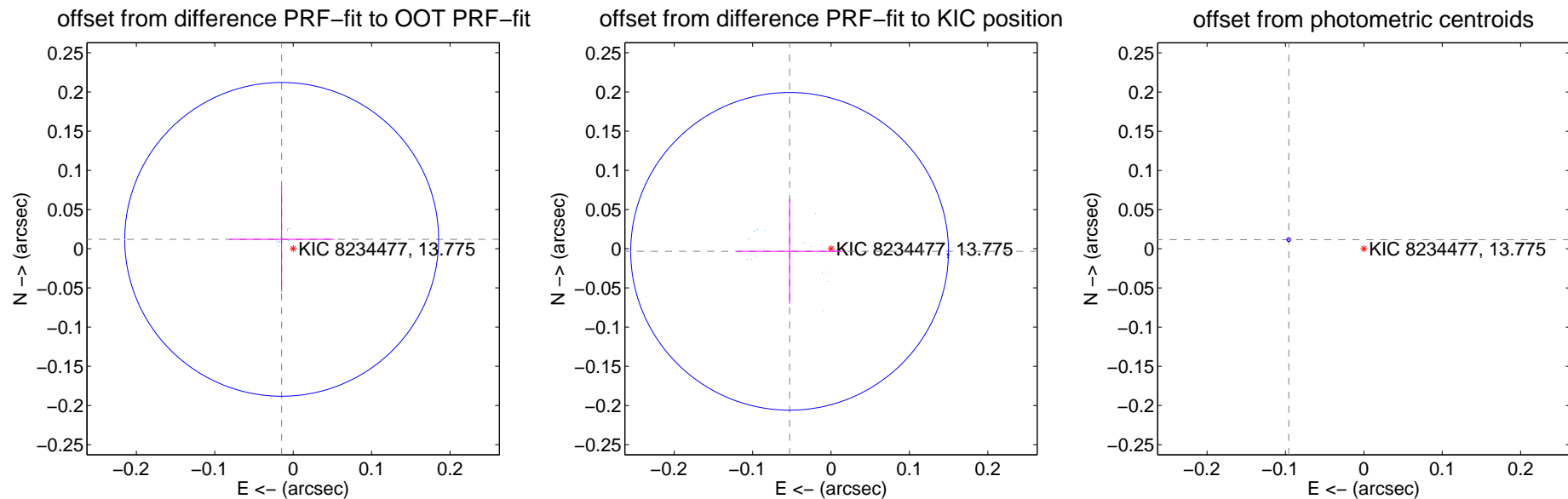
## DV Centroid Data

Supplemental centroid analysis for 008234477-01. Kepler magnitude: 13.78. Transit SNR 3184.93

There are 17 quarters with good PRF difference image offsets

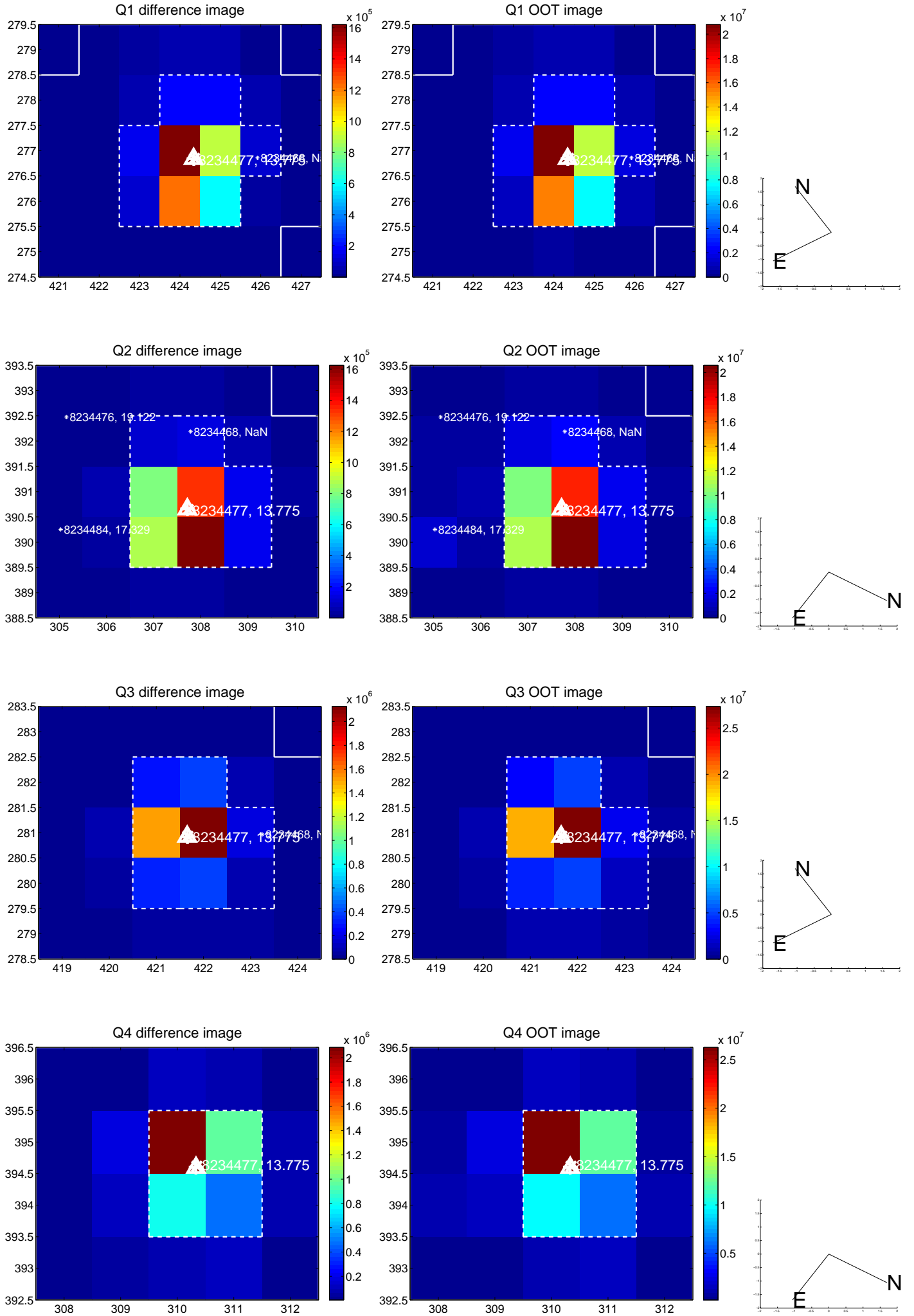
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.019 \pm 0.067$	0.28	$0.015 \pm 0.067$	$0.012 \pm 0.067$
PRF-fit source offset from KIC position	$0.053 \pm 0.068$	0.78	$0.053 \pm 0.068$	$-0.003 \pm 0.067$
photometric centroid source offset	$0.10 \pm 0.00$	120.30	$0.10 \pm 0.00$	$0.01 \pm 0.00$

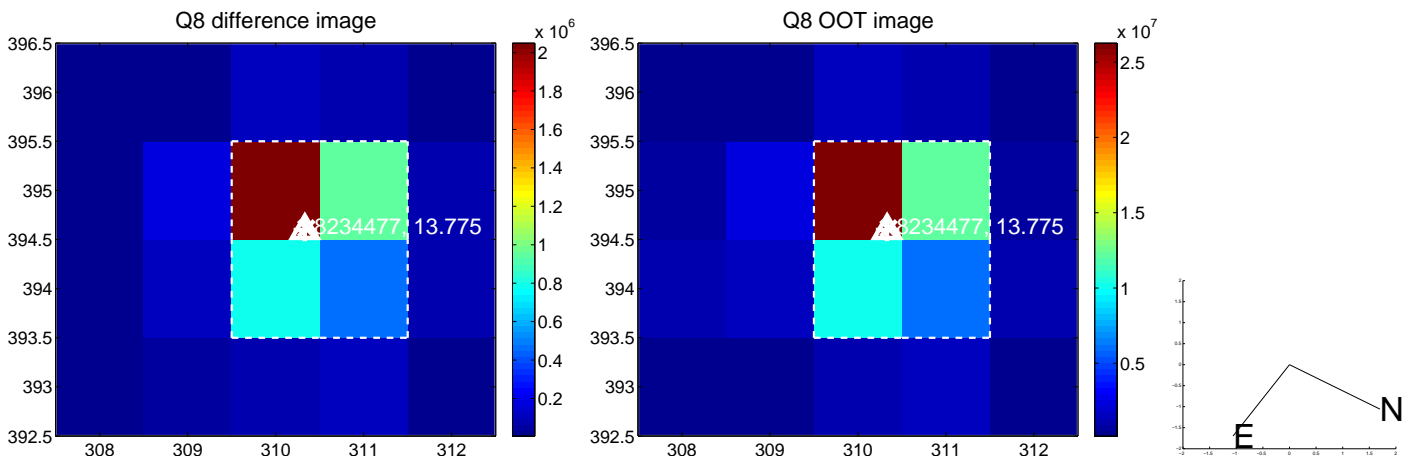
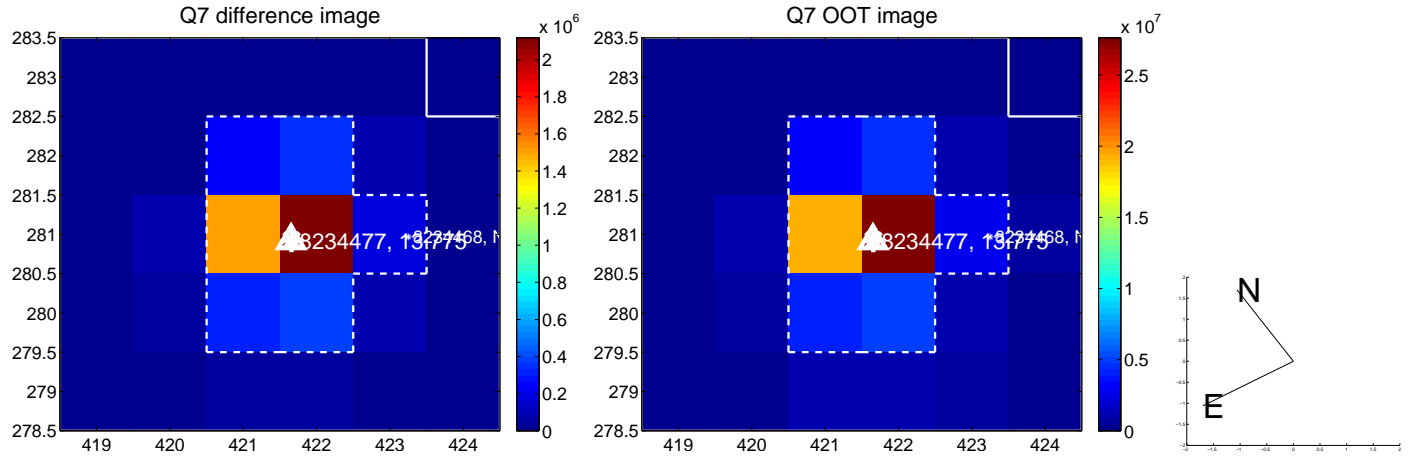
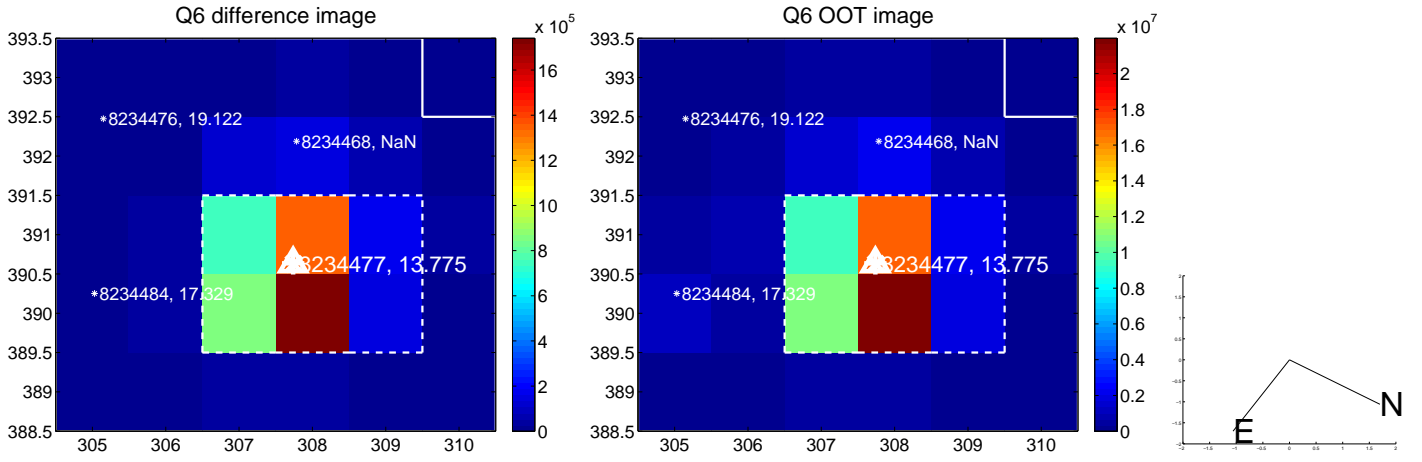
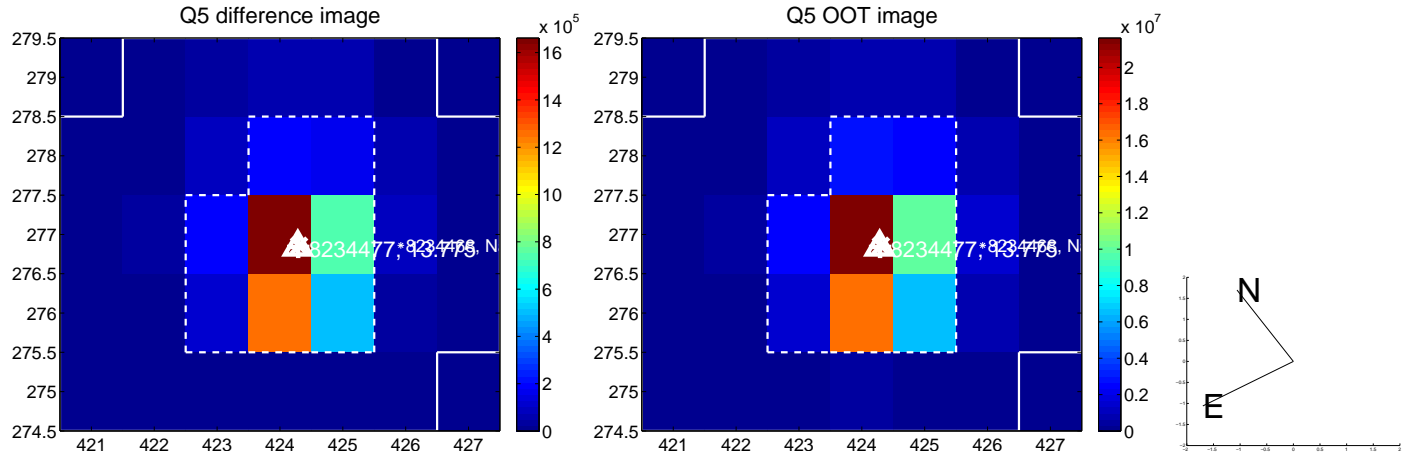


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

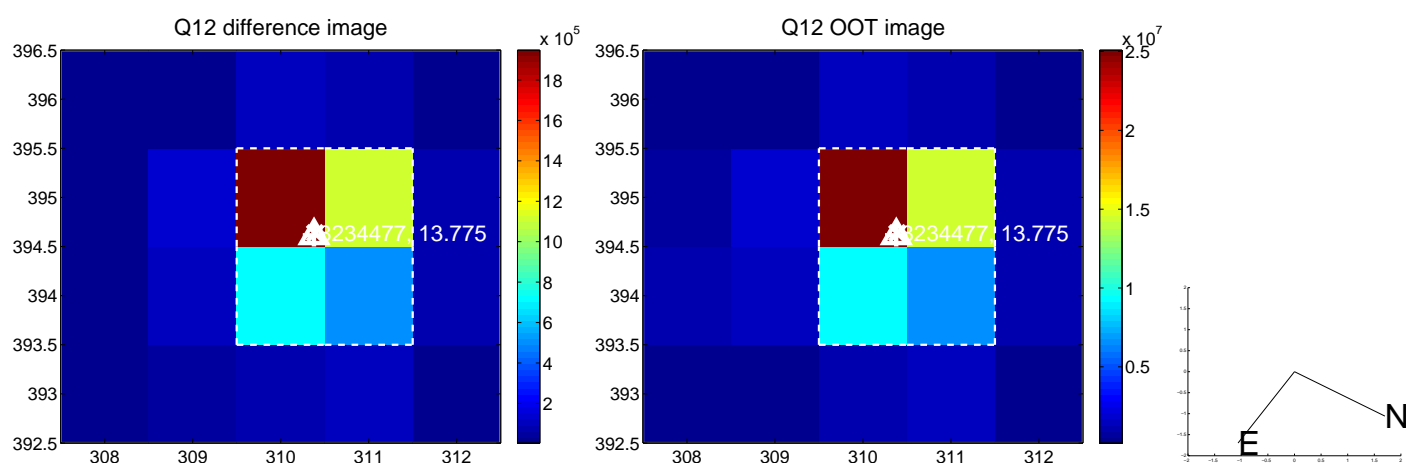
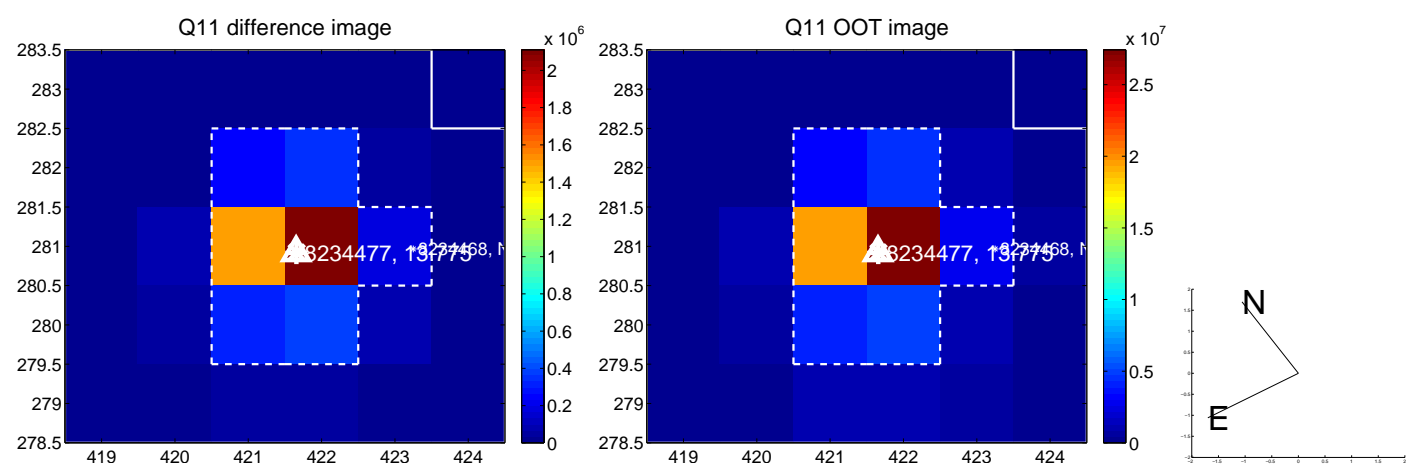
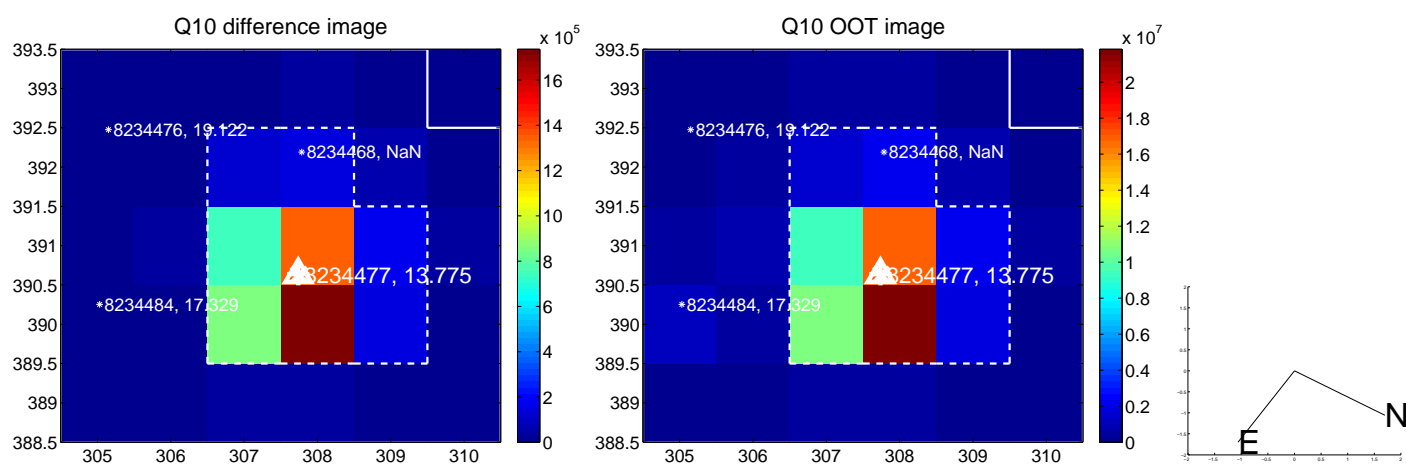
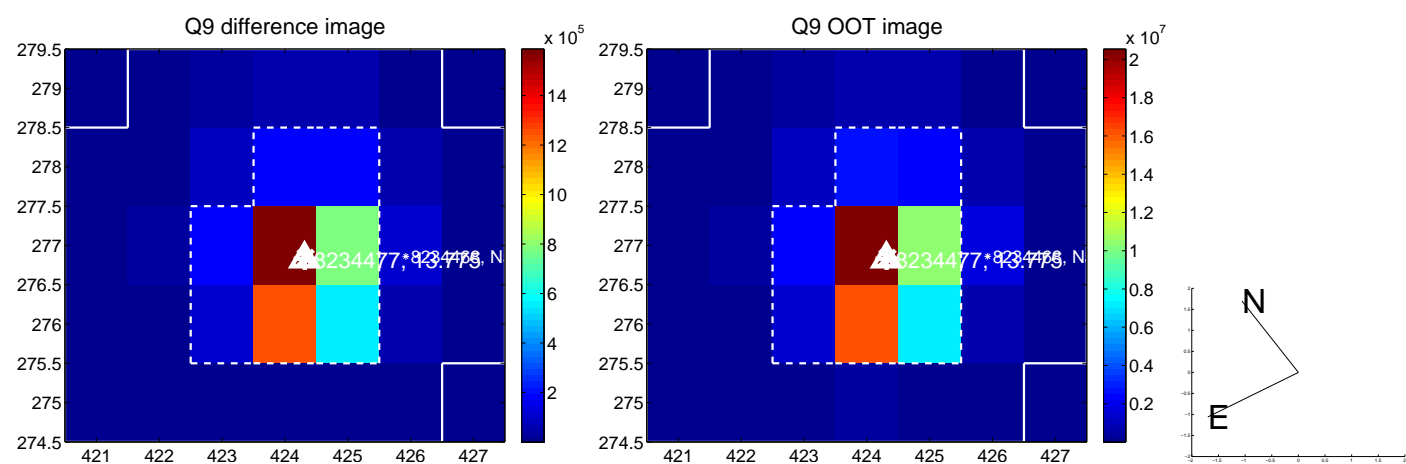


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

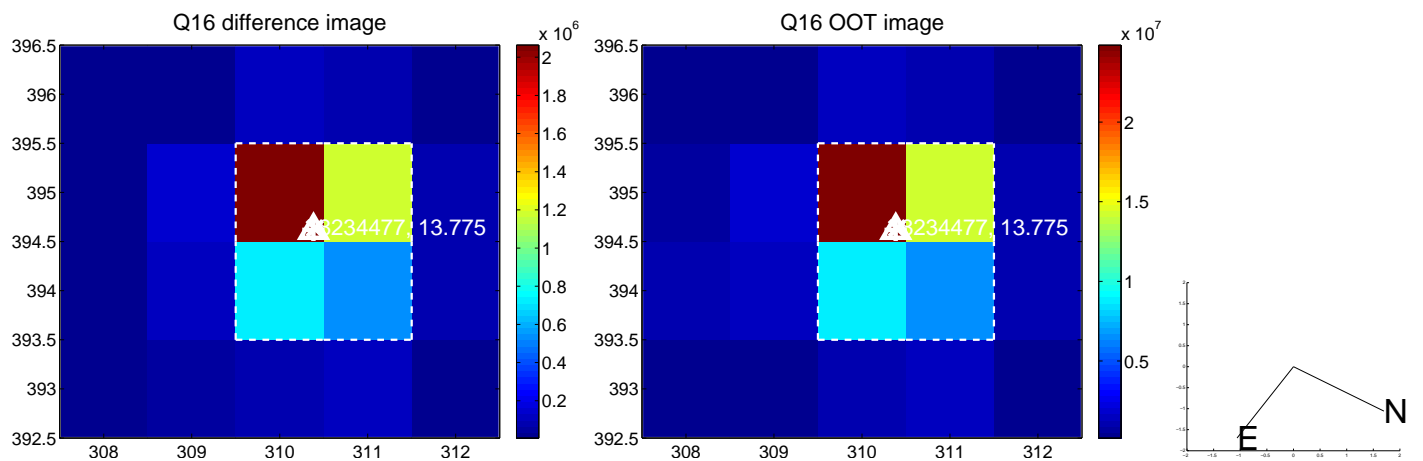
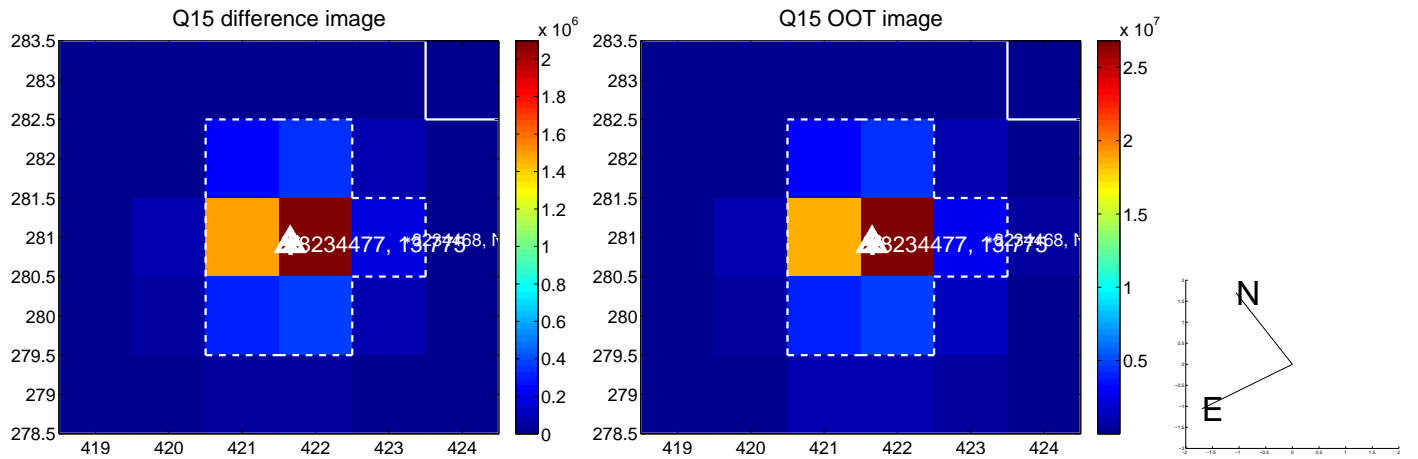
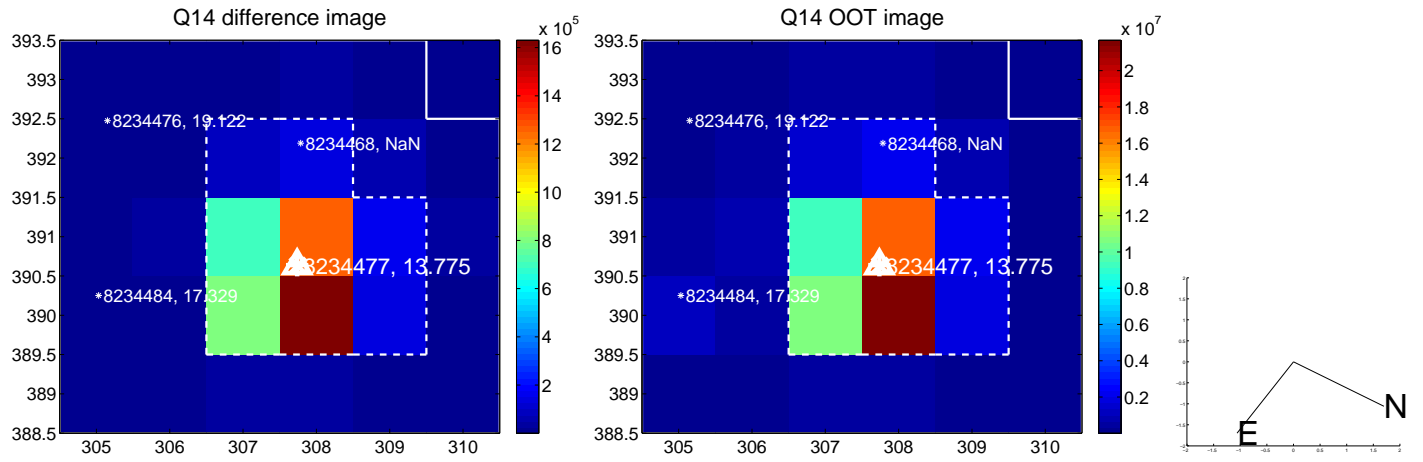
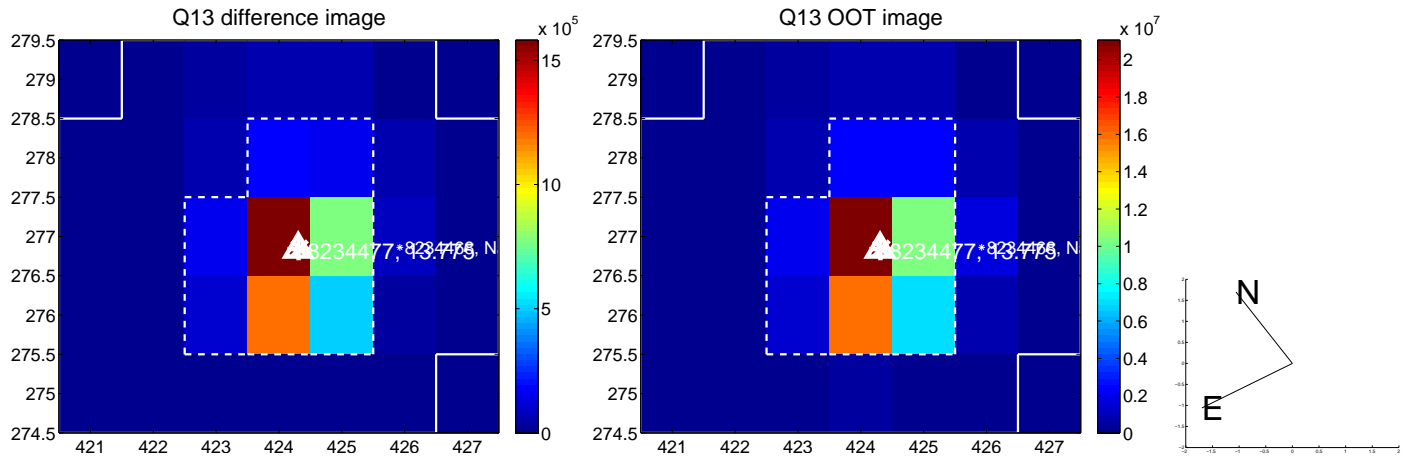




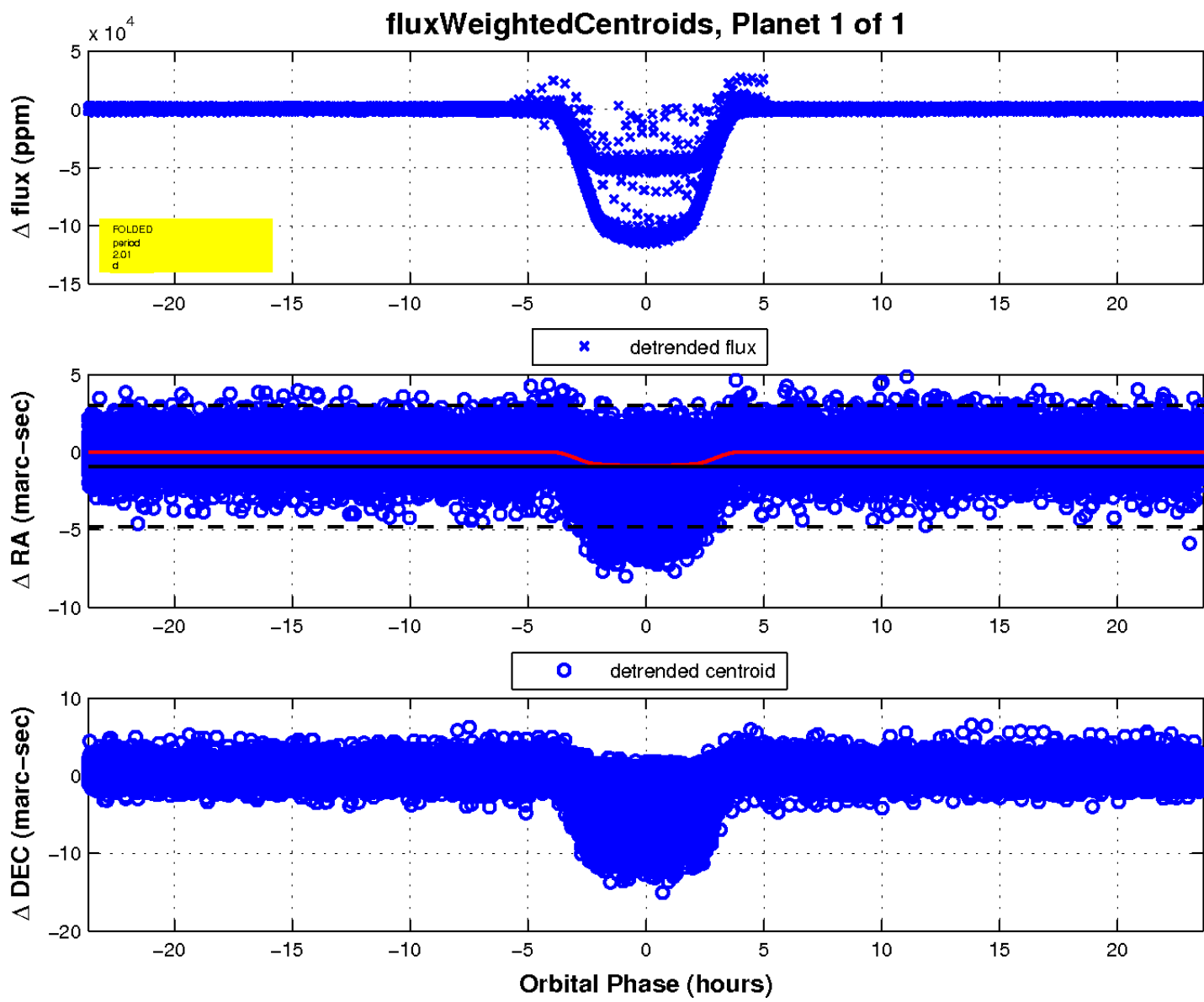
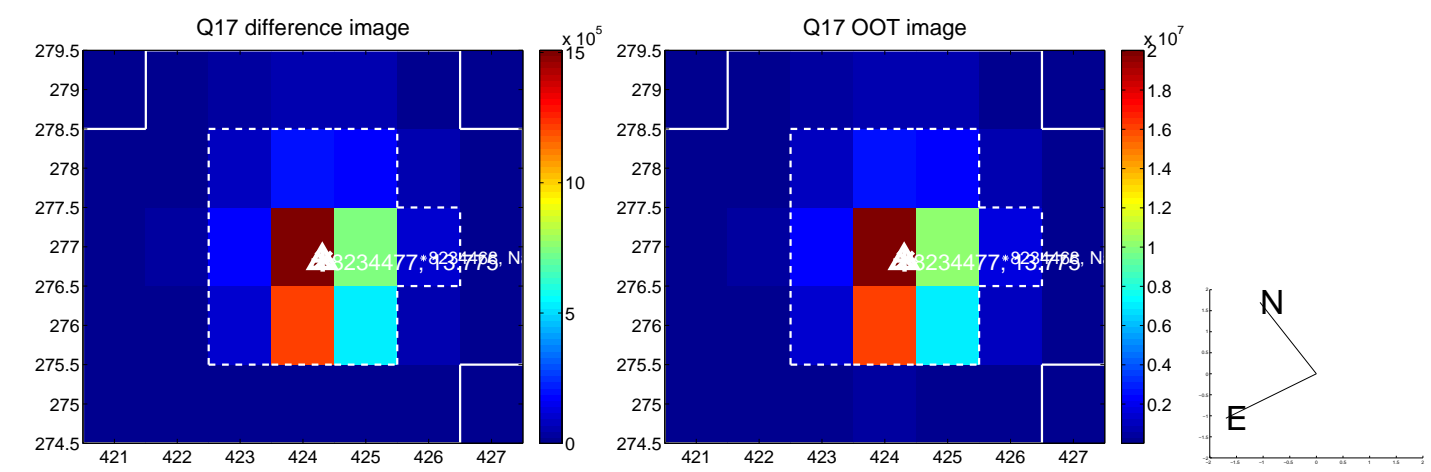
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



# UKIRT Image

Declination

