

# KIC 003339538

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003339538-01	OBS	6326.01	14.658015	140.475557	127335.8	3.053	9141.6	5654.5	1.63	5146	69.01	126.50

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003339538-01	OBS	FP	0.00	0	1	0	0	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.

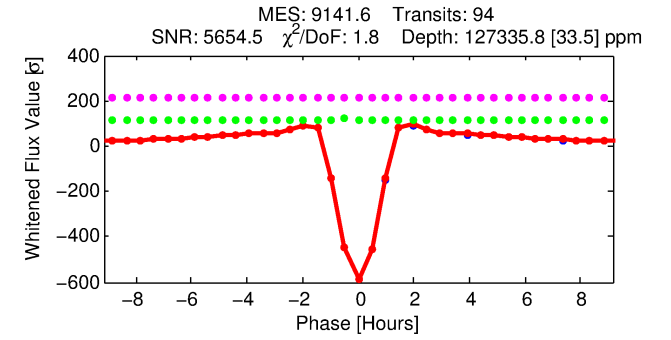
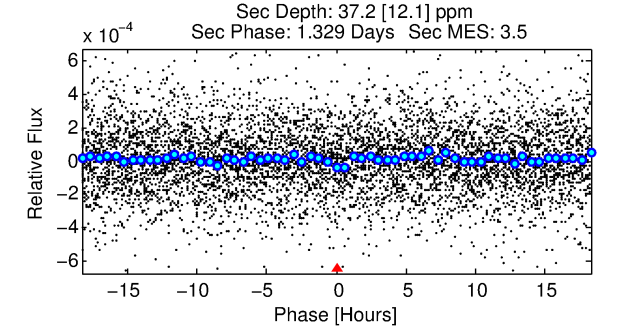
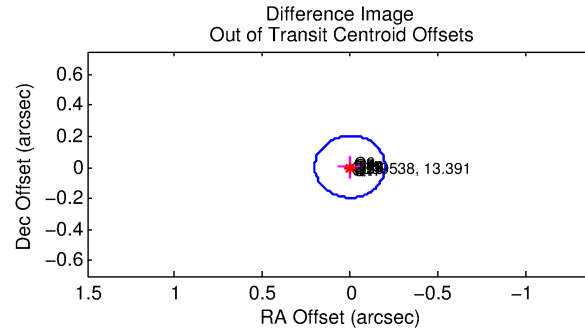
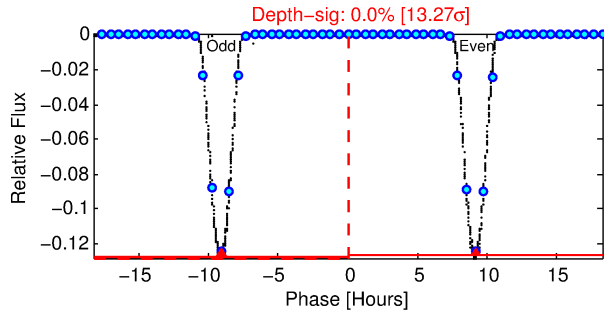
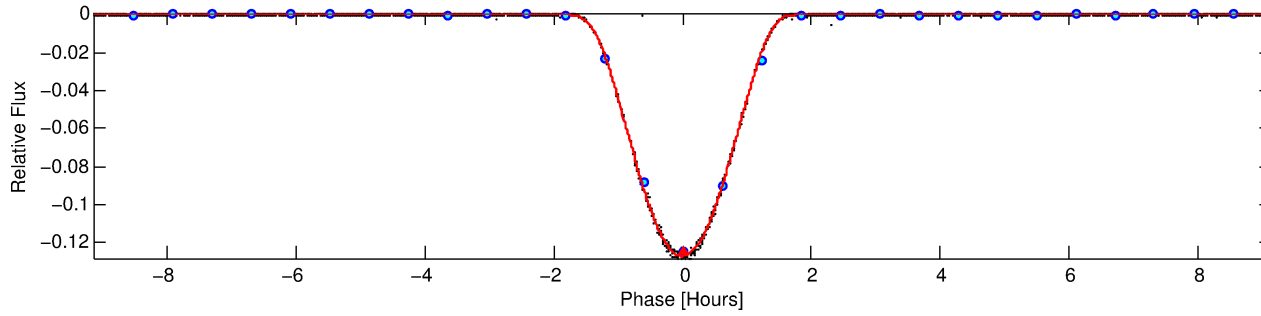
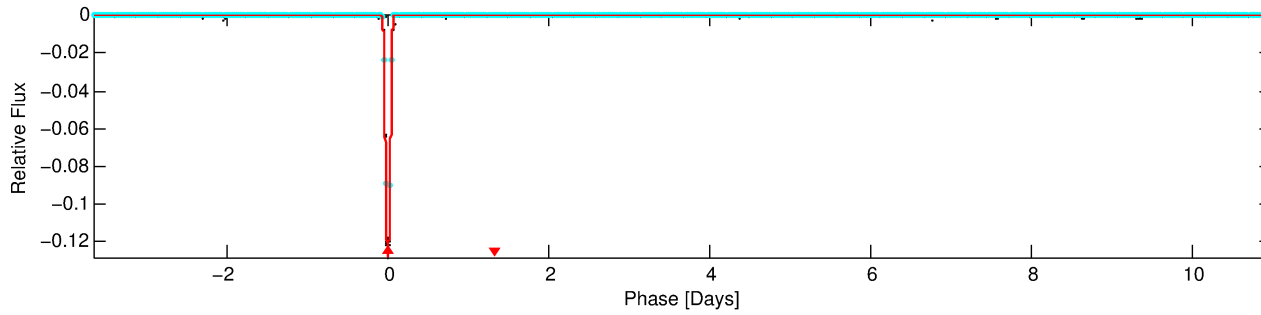
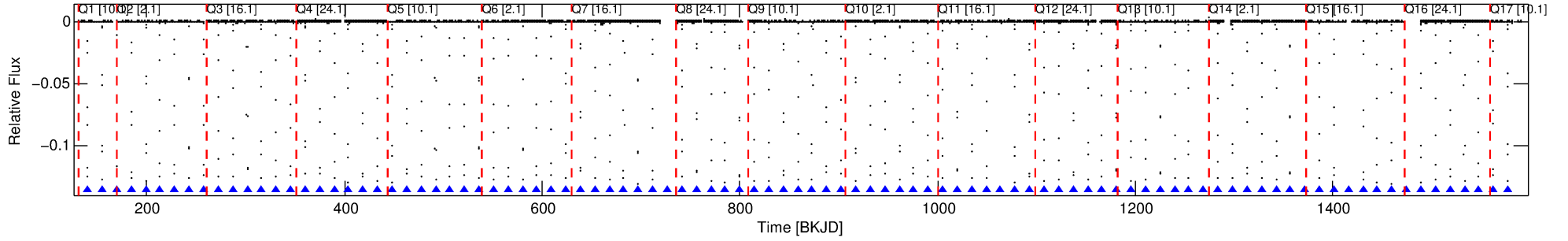
## Ephemeris Match Information For 003339538-01

No Significant Match Found

# DV One-Page Summary

KIC: 3339538 Candidate: 1 of 1 Period: 14.658 d  
KOI: K06326.01 Corr: 0.995

Kp: 13.39 R\*: 1.63 Rs Teff: 5146.0 K Logg: 3.99 Fe/H: 0.140



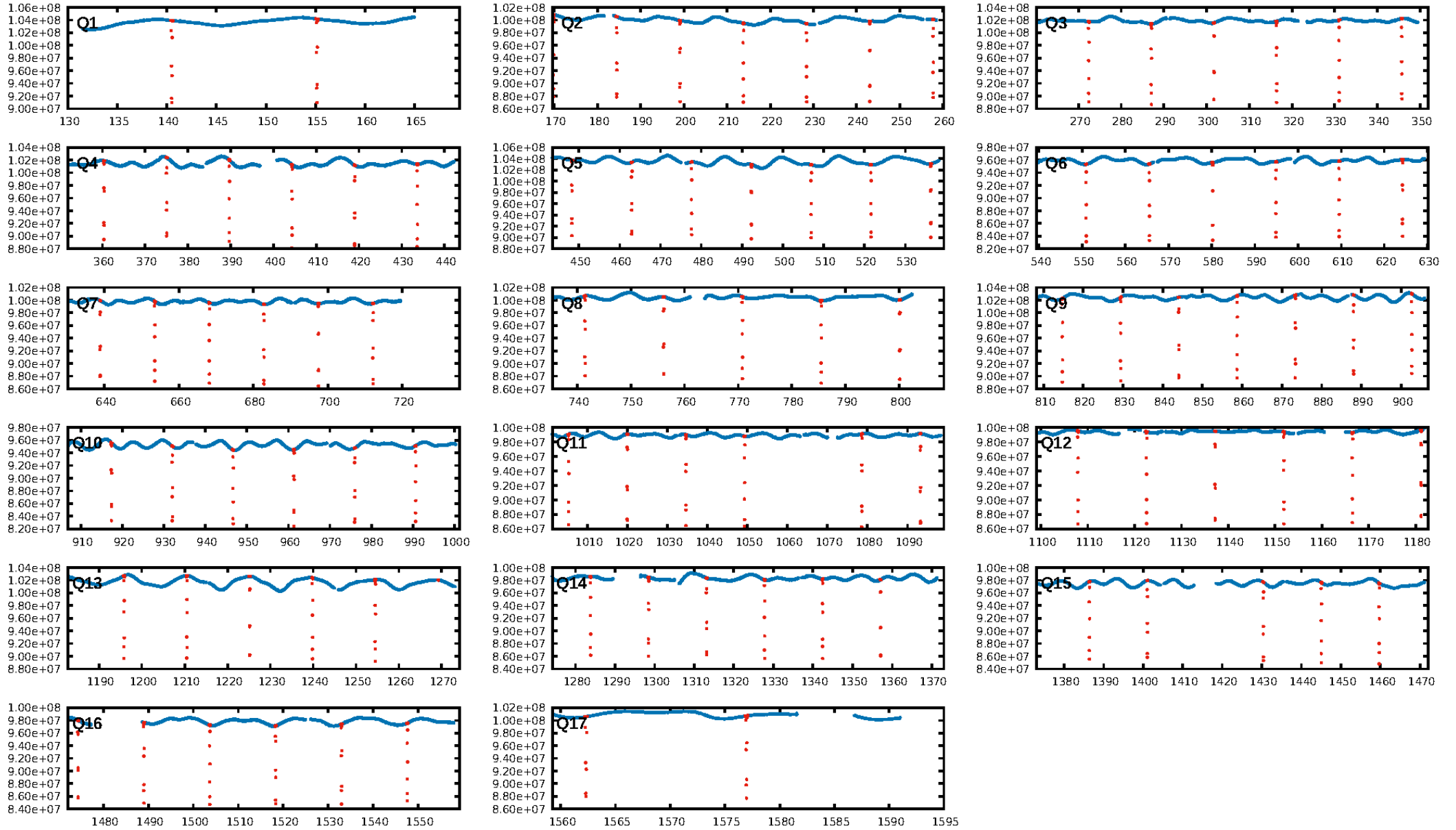
## DV Fit Results:

Period = 14.65801 [0.00000] d  
Epoch = 140.4756 [0.0000] BKJD  
Rp/R\* = 0.3889 [0.0014]  
a/R\* = 43.18 [0.02]  
b = 0.74 [0.00]  
Seff = 126.50 [122.65]  
Teq = 855 [207] K  
Rp = 69.01 [36.92] Re  
a = 0.1146 [0.0654] AU  
Ag = 0.06 [0.06] [-16.47σ]  
Teffp = 645 [56] K [-0.98σ]

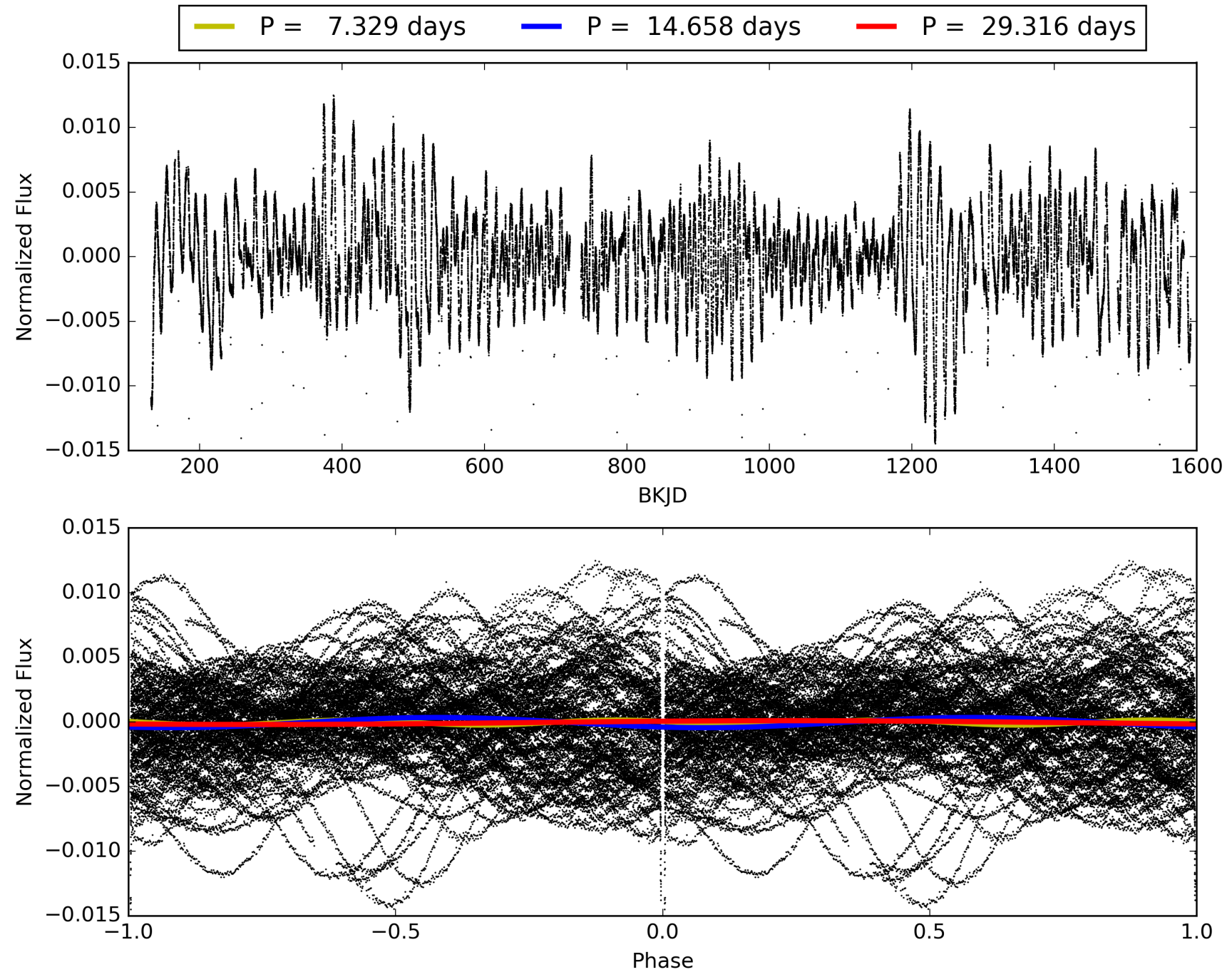
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 0.0%  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [90/90]  
GhostDiagnostic-chr: 3.132  
Centroid-sig: 0.0%  
Centroid-so: 0.023 arcsec [20.63σ]  
OotOffset-rm: 0.006 arcsec [0.09σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-rm: 0.023 arcsec [0.33σ]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 1.00 [17/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 003339538-01, PDC Light Curves

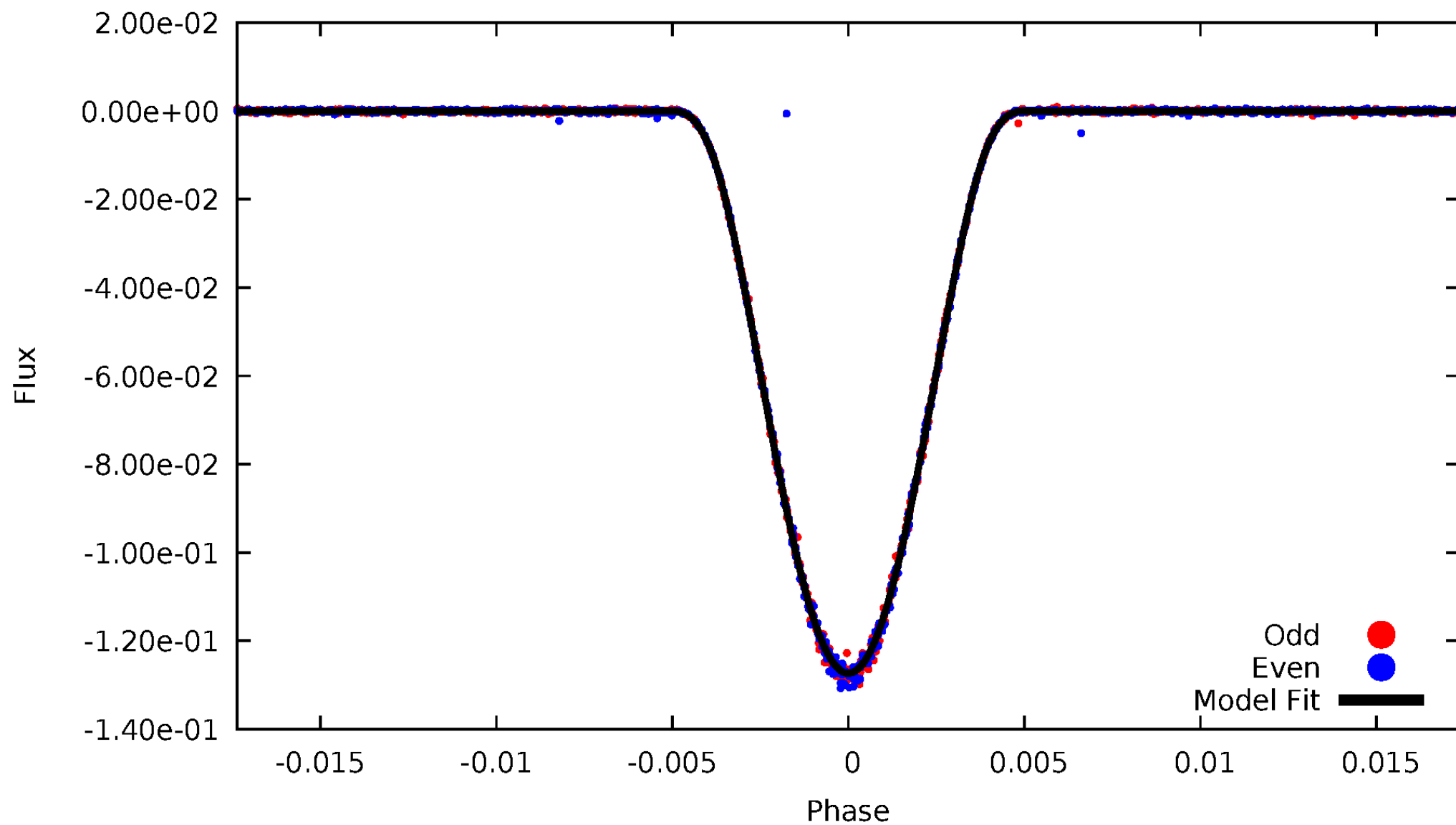


TCE 003339538-01



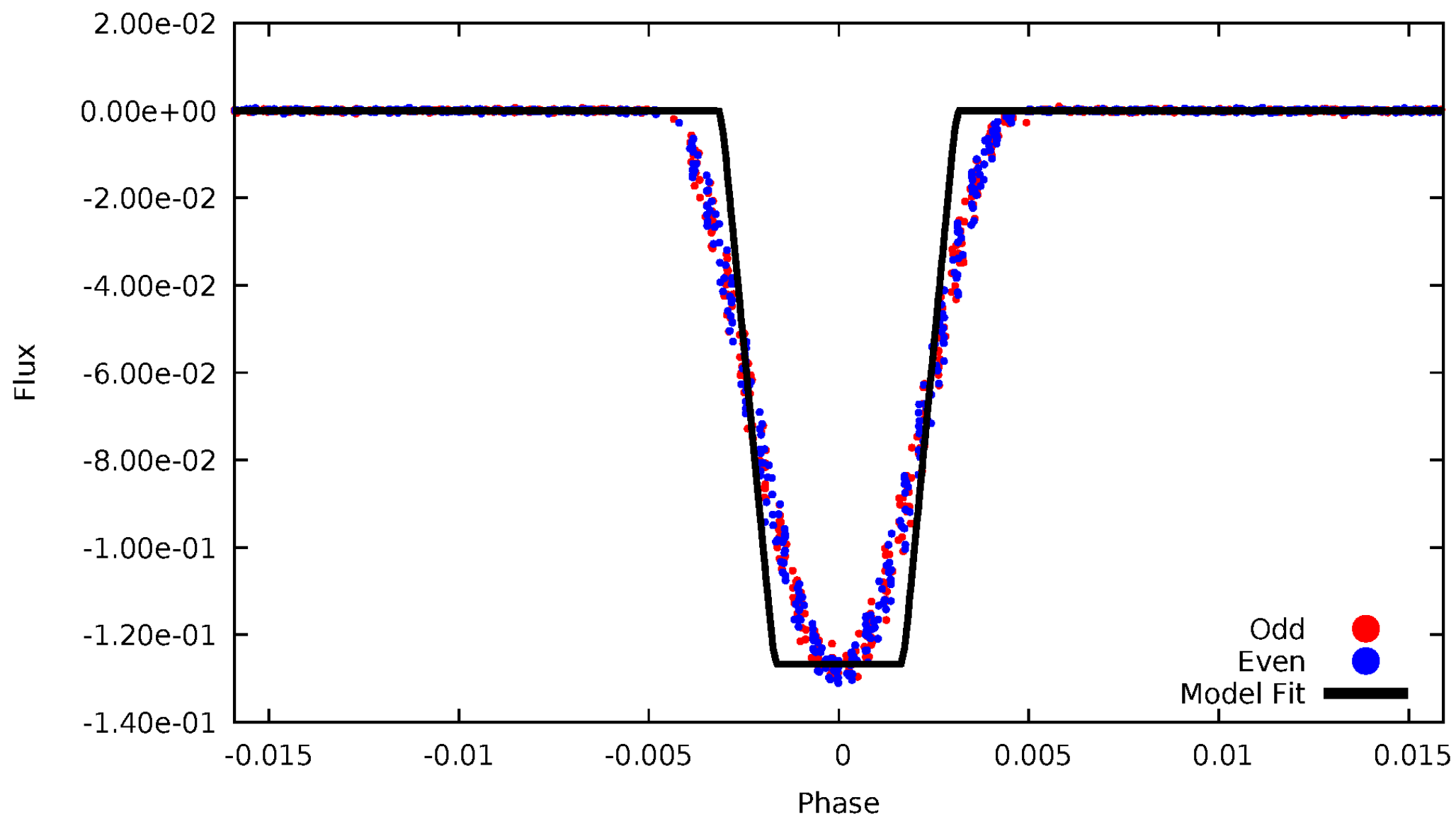
# DV Odd/Even

TCE 003339538-01



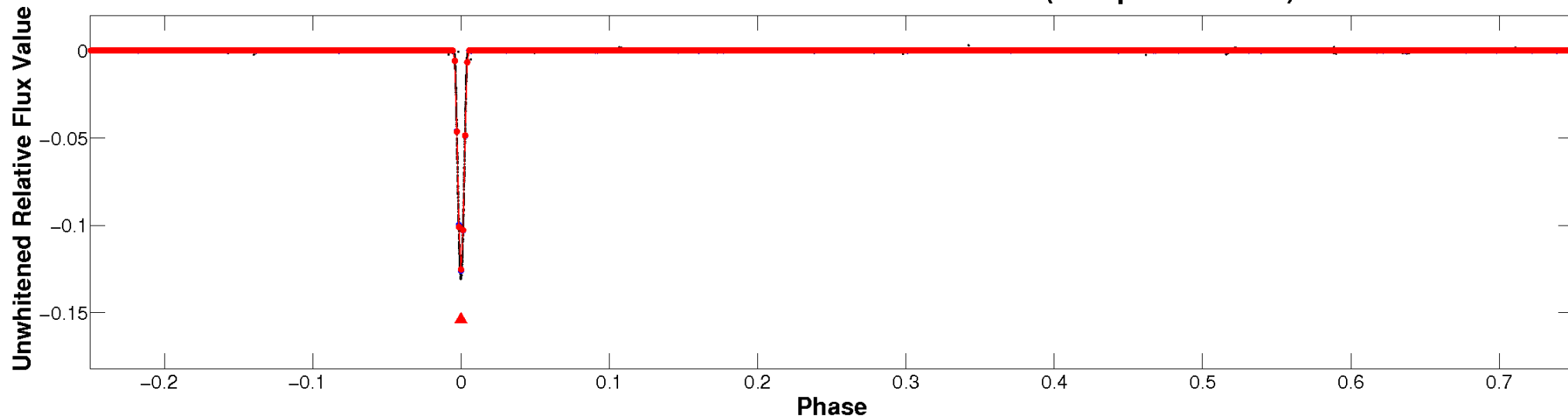
# ALT Odd/Even

TCE 003339538-01

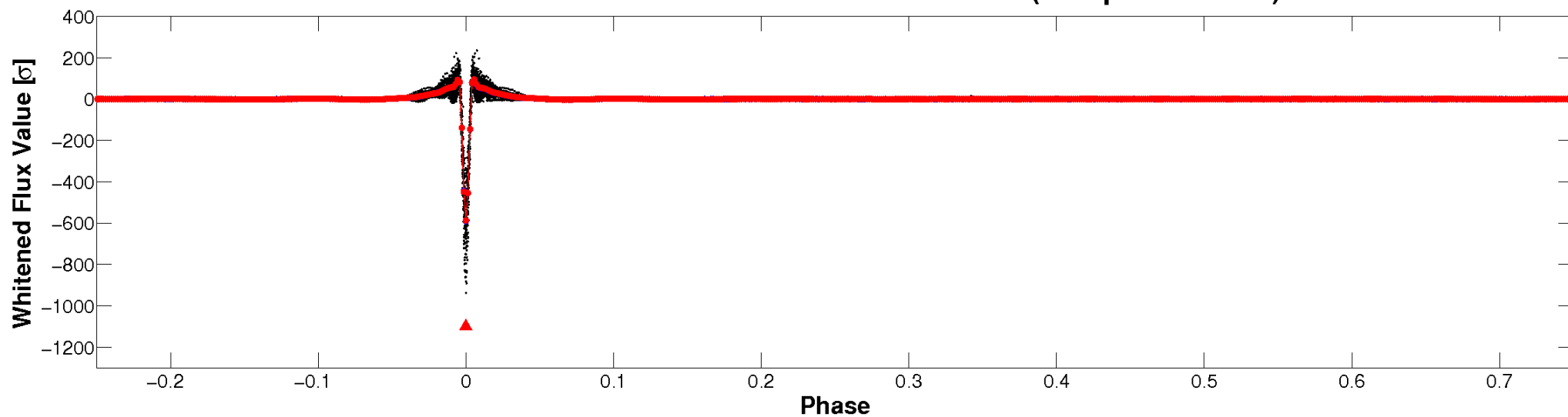


# Non-Whitened Vs. Whitened Light Curve

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

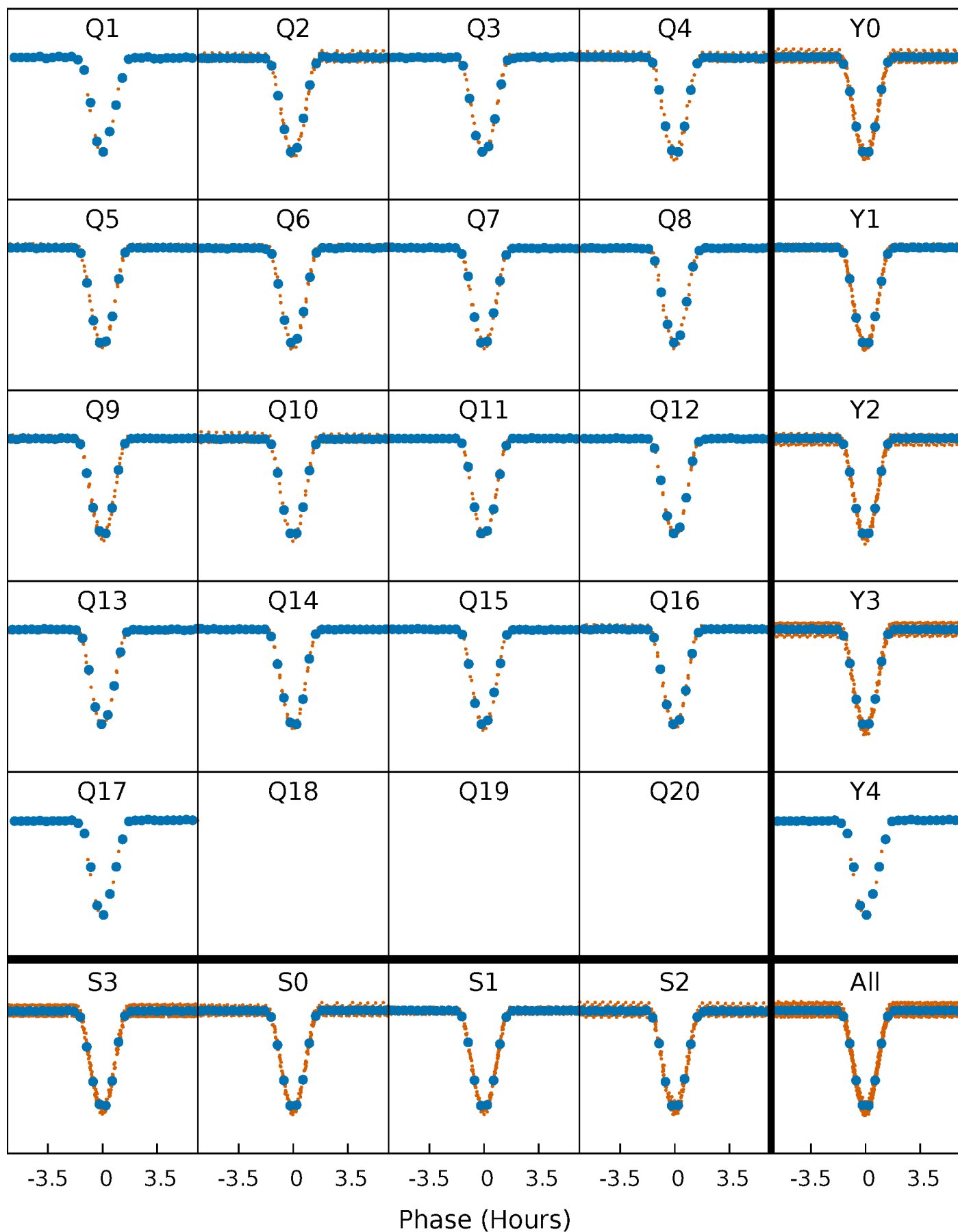


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

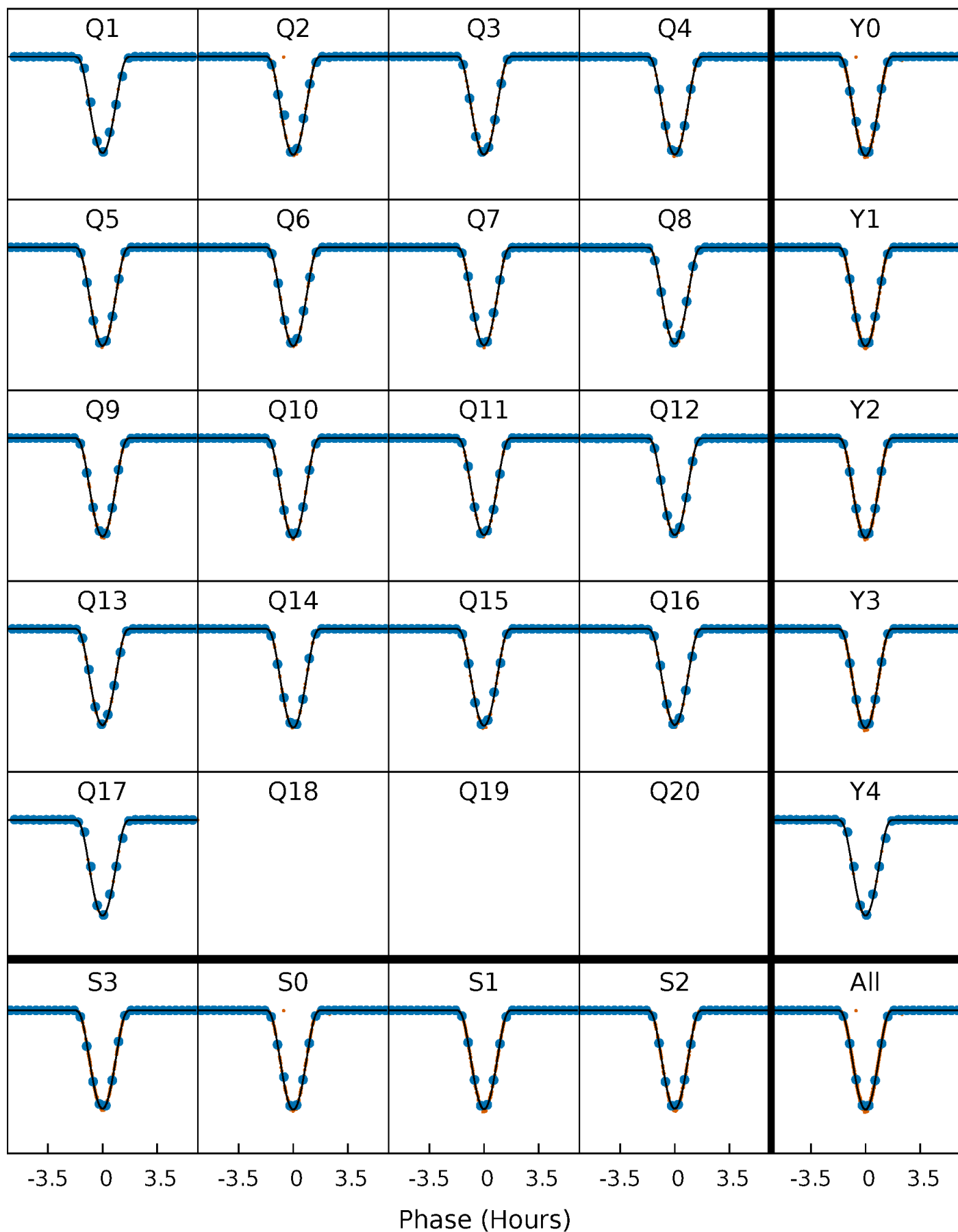
TCE 003339538-01 P= 14.658015 Days  $T_0=140.475557$  (BKJD)





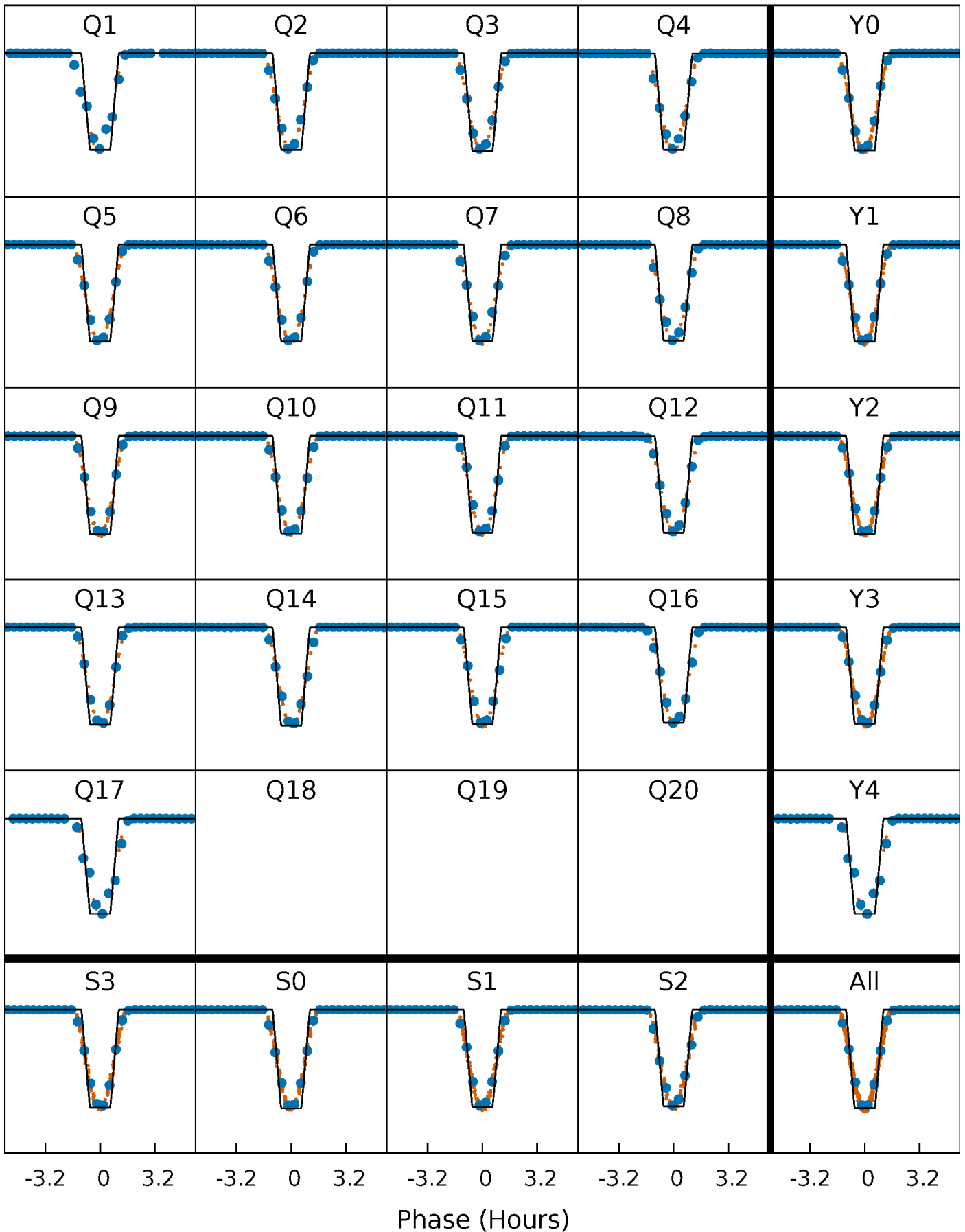
# DV Quarter-Phased Transit Curves

TCE 003339538-01 P= 14.658015 Days  $T_0=140.475557$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

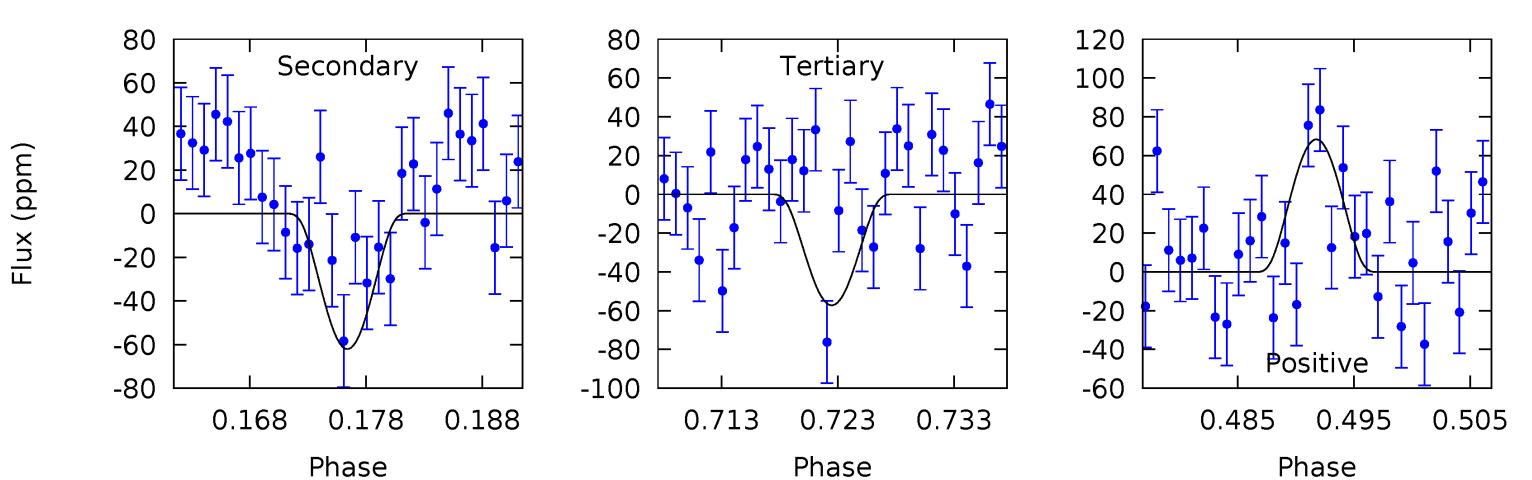
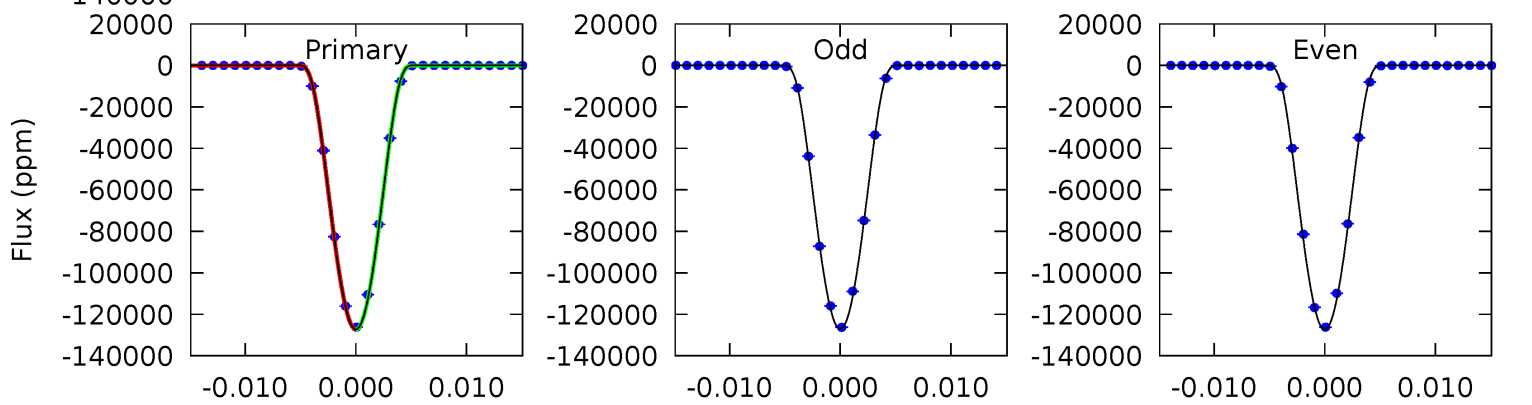
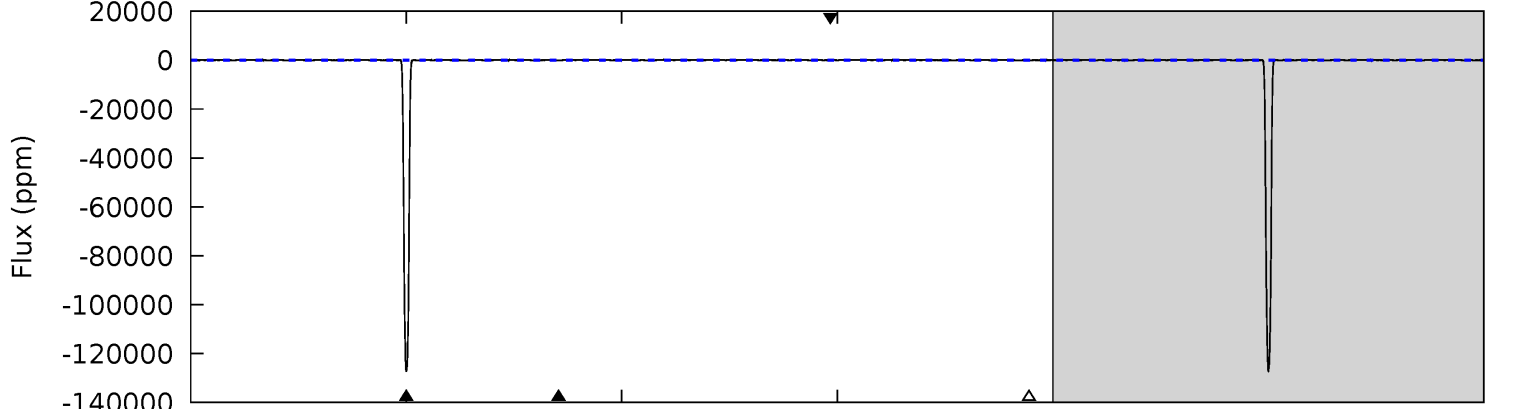
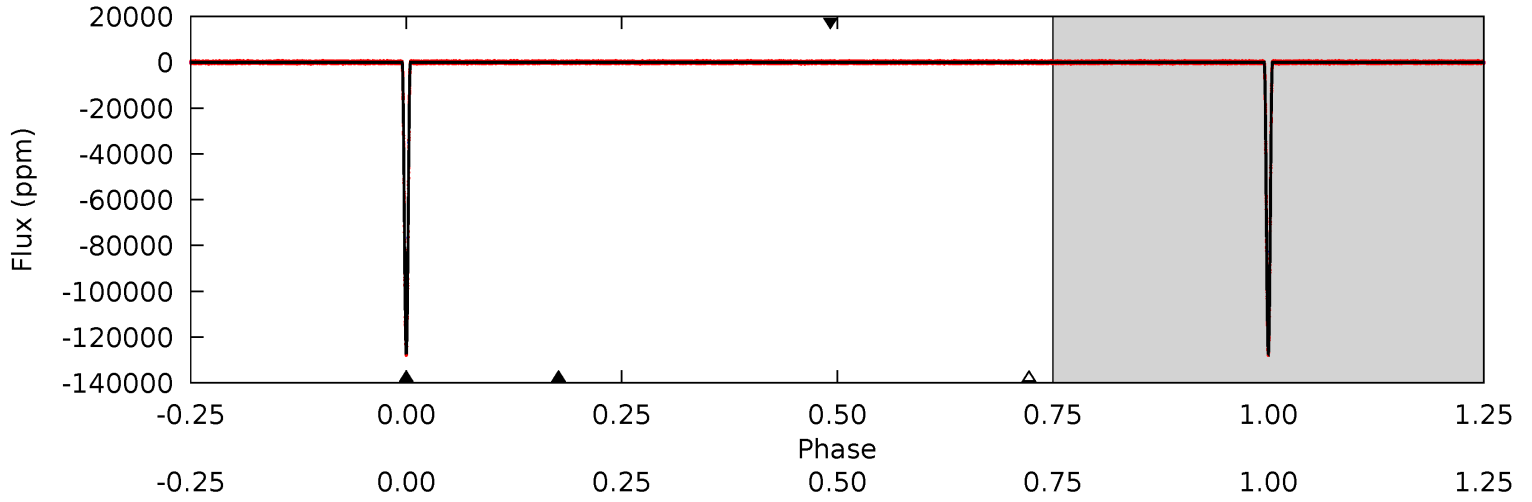
TCE 003339538-01 P= 14.657951 Days  $T_0=140.478505$  (BKJD)



# DV Model-Shift Uniqueness Test

003339538-01, P = 14.658015 Days, E = 125.817542 Days

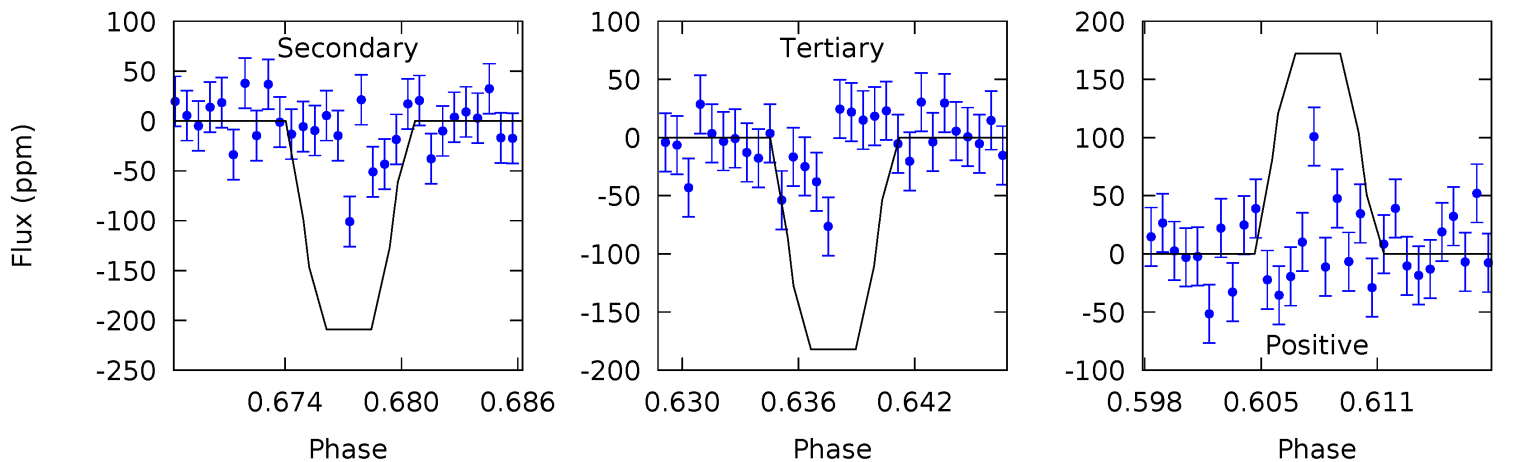
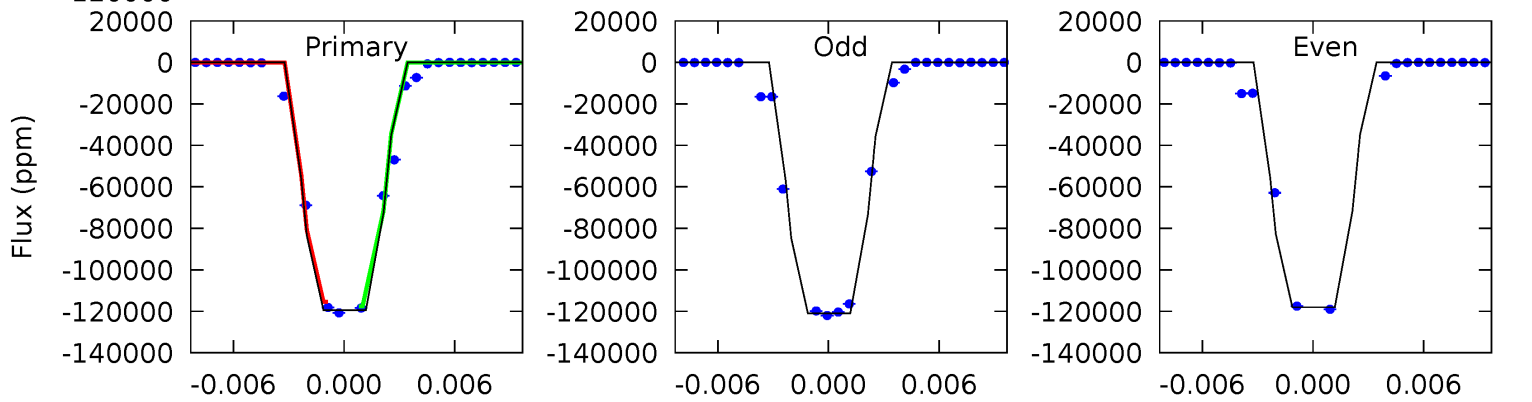
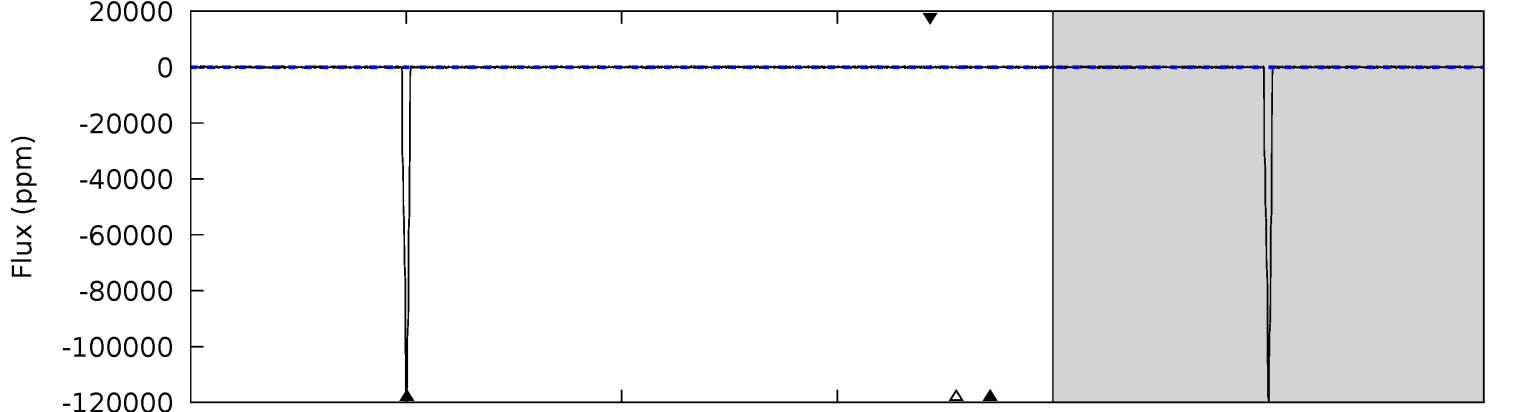
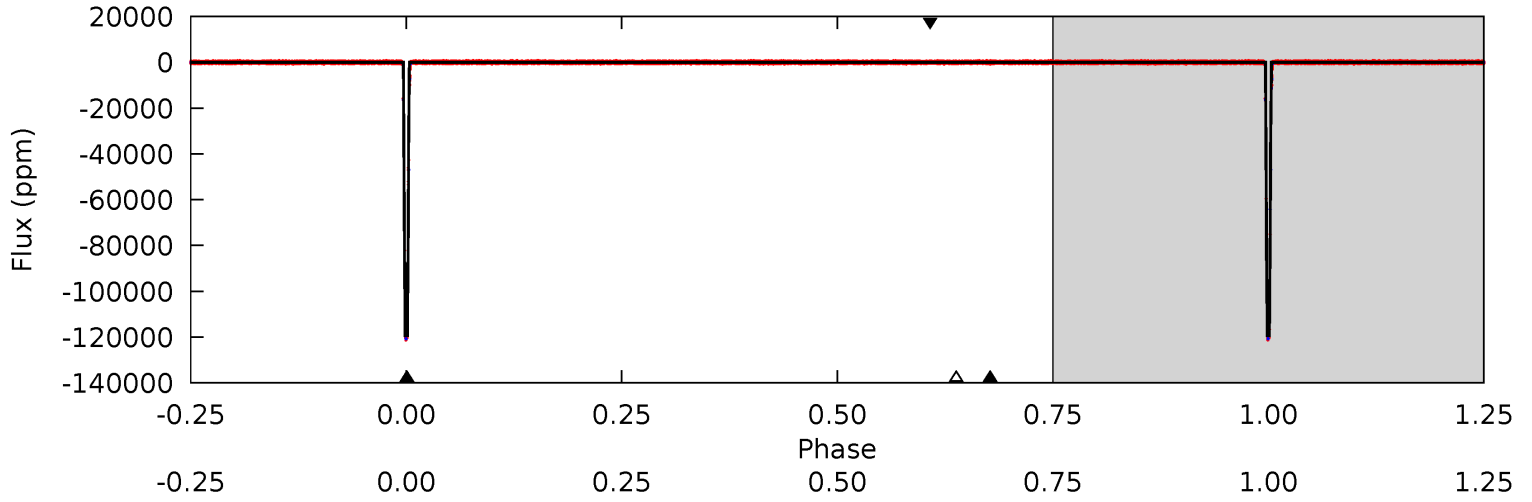
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13740	6.70	6.18	7.38	5.03	2.58	2.18	13734	13733	0.52	-0.68	9.73	1.00	0.00	14.5



# Alt Model-Shift Uniqueness Test

003339538-01, P = 14.657951 Days, E = 125.820554 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
3148	5.51	4.80	4.54	5.11	2.73	1.18	3143	3143	0.71	0.98	35.9	1.00	0.00	0



### Stellar Parameters For KIC 003339538

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5146^{+170}_{-139}$	$3.986^{+0.581}_{-0.249}$	$0.140^{+0.250}_{-0.250}$	$1.626^{+0.791}_{-0.870}$	$0.934^{+0.096}_{-0.127}$	$0.306^{+1.877}_{-0.203}$
	+3%/-3%	+15%/-6%	+179%/-179%	+49%/-54%	+10%/-14%	+614%/-66%
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 003339538-01 / KOI 6326.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-62 \pm 9$	$66.57^{+17.67}_{-18.41}$	$1177^{+152}_{-181}$	$-1885^{+215}_{-130}$	$0.099^{+0.096}_{-0.038}$
Alt.	$-209 \pm 38$	$60.85^{+15.01}_{-16.64}$	$1177^{+143}_{-179}$	$1759^{+172}_{-3497}$	$0.397^{+0.368}_{-0.152}$

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

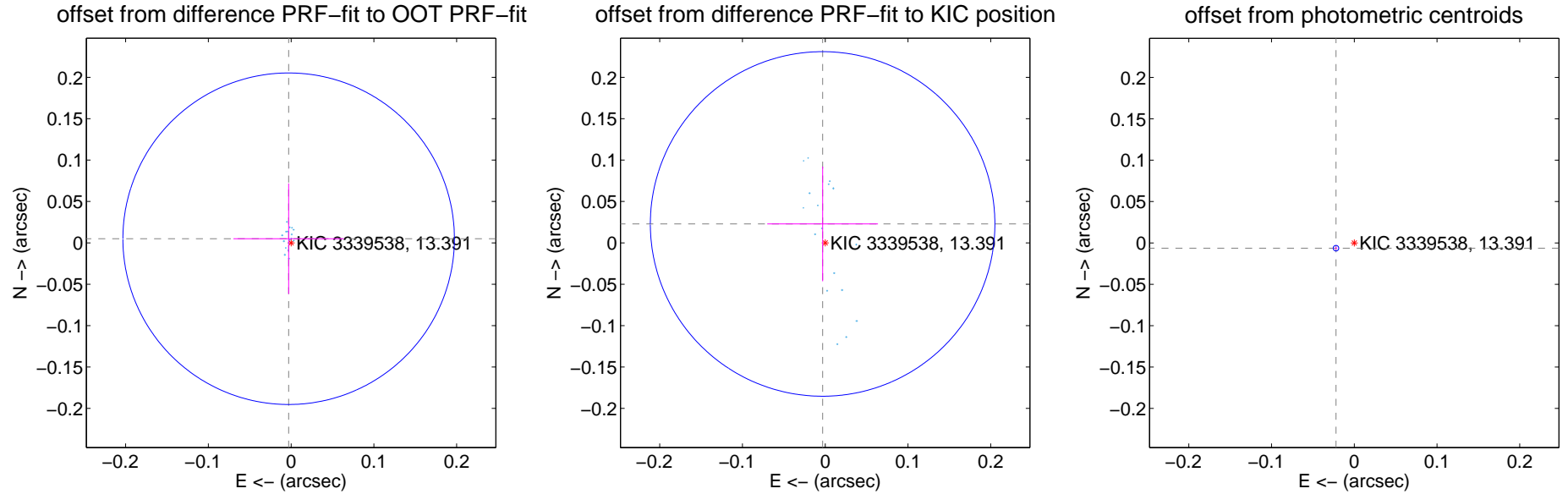
## DV Centroid Data

Supplemental centroid analysis for 003339538-01. Kepler magnitude: 13.39. Transit SNR 5654.48

There are 17 quarters with good PRF difference image offsets

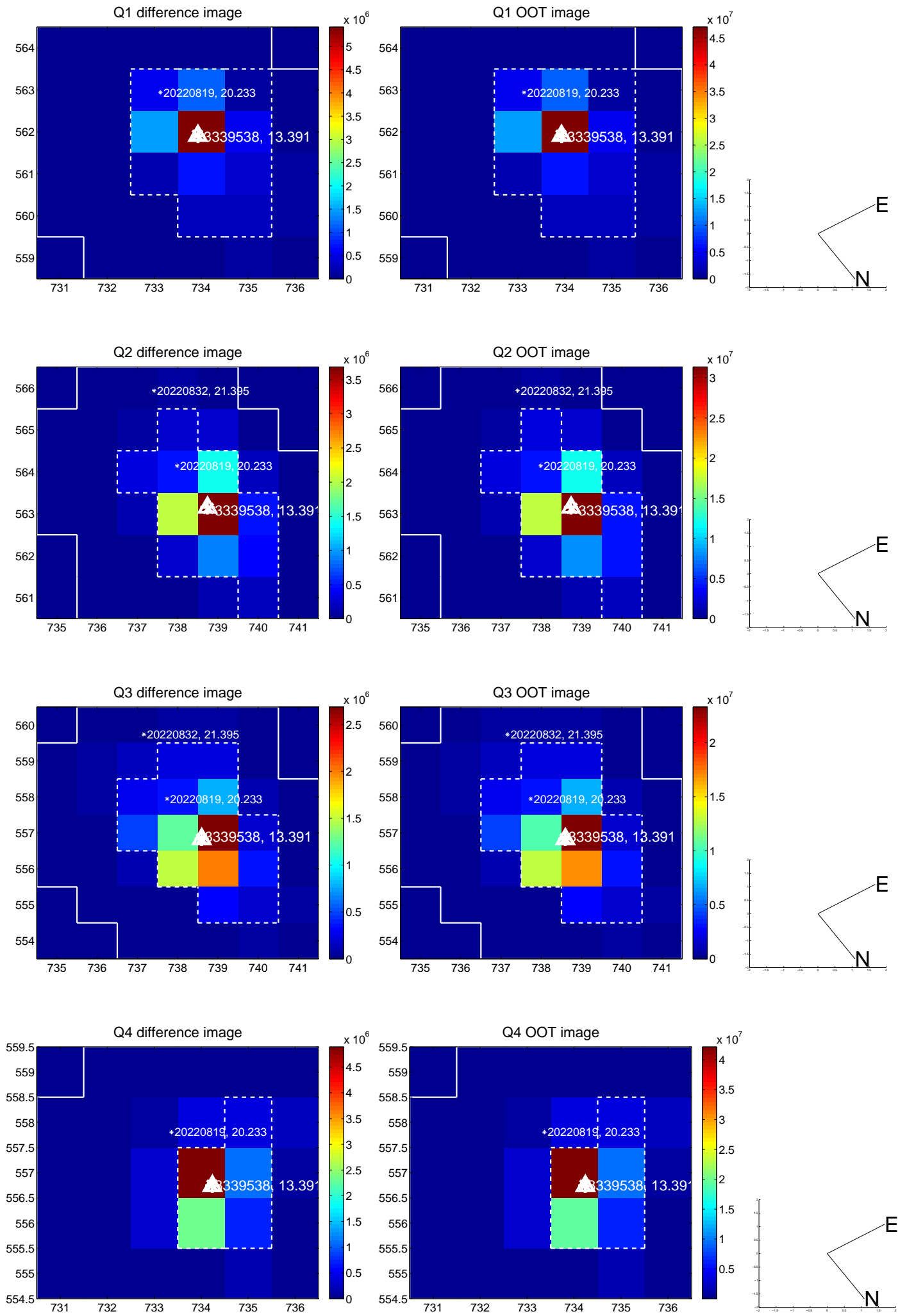
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.006 \pm 0.067$	0.09	$0.003 \pm 0.067$	$0.005 \pm 0.067$
PRF-fit source offset from KIC position	$0.023 \pm 0.069$	0.33	$0.003 \pm 0.067$	$0.023 \pm 0.069$
photometric centroid source offset	$0.02 \pm 0.00$	20.63	$0.02 \pm 0.00$	$-0.01 \pm 0.00$

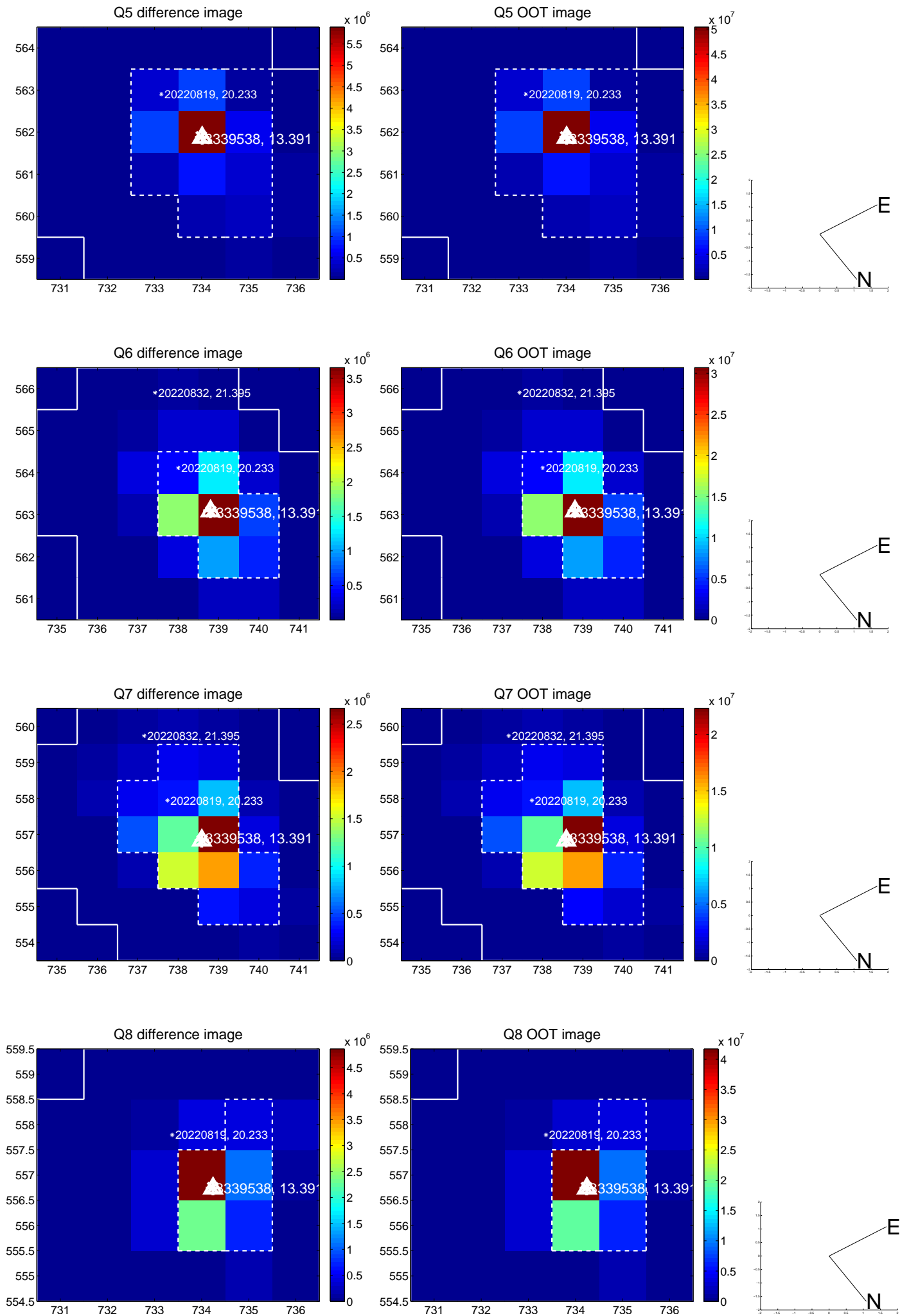


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

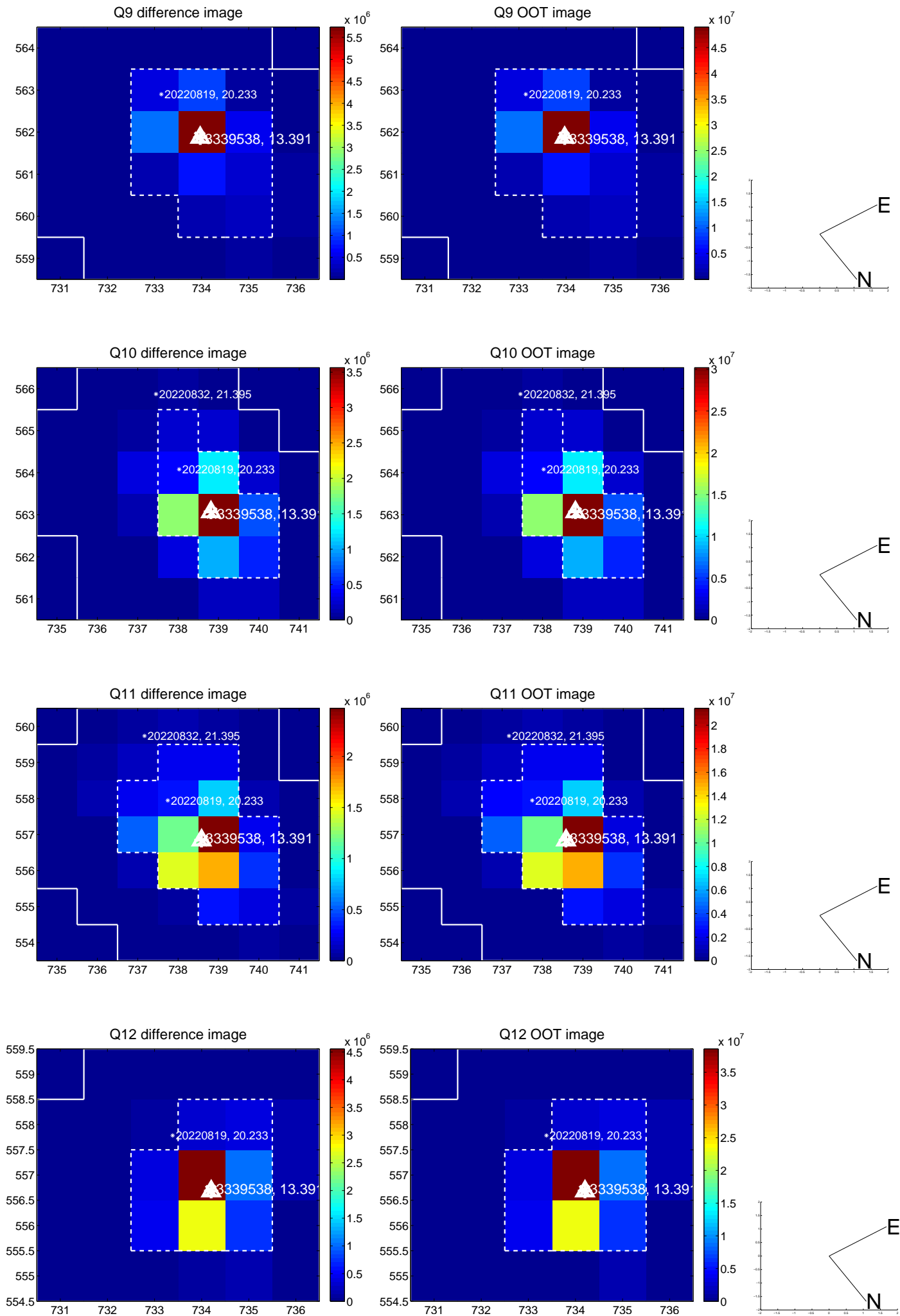


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

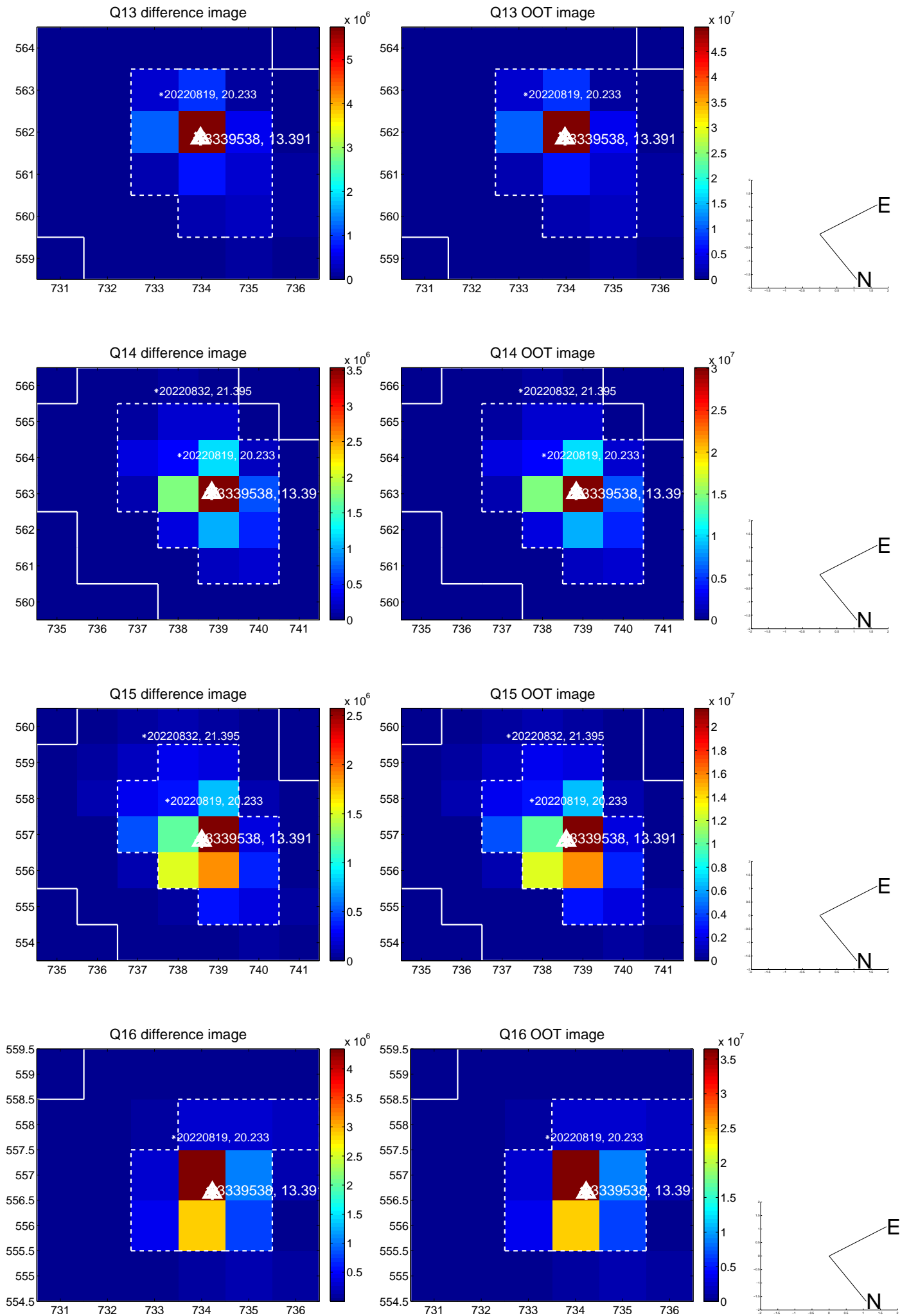




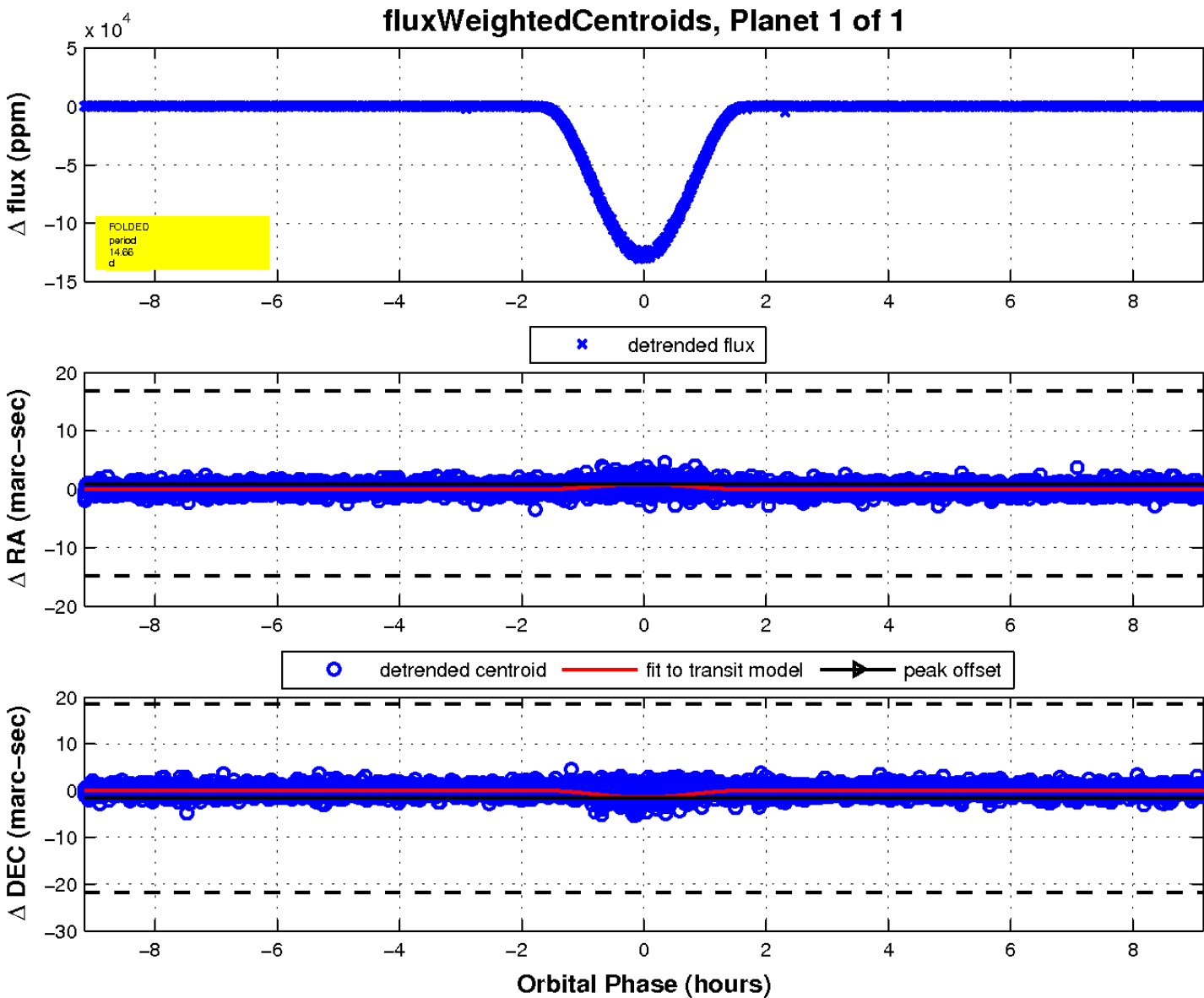
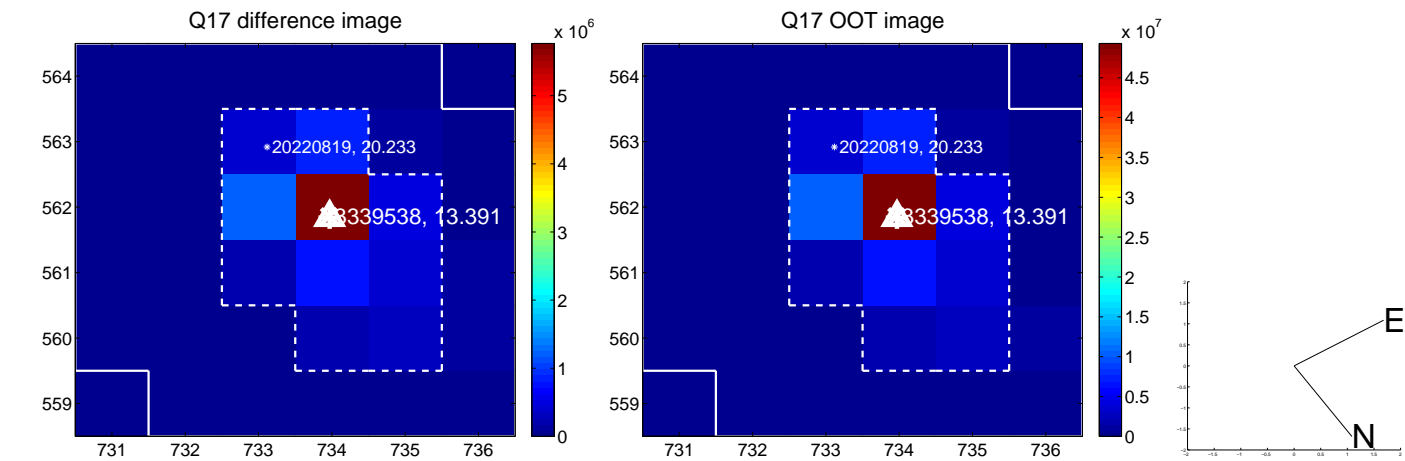
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

