

# KIC 003335816

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003335816-01	OBS	6323.01	3.711014	132.488354	12809.7	3.610	5466.5	2667.6	1.25	6338	24.01	1006.06

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003335816-01	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.

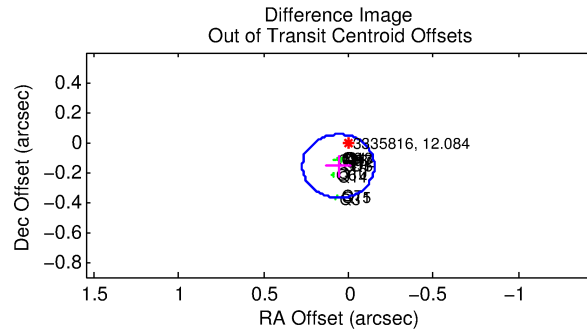
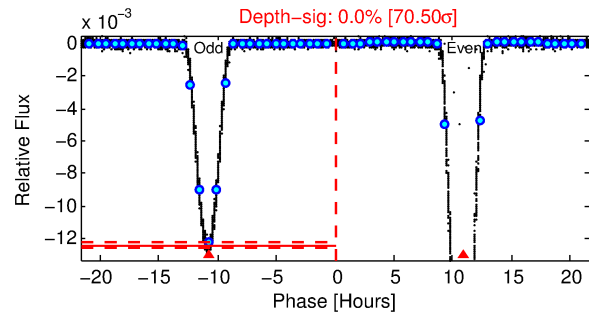
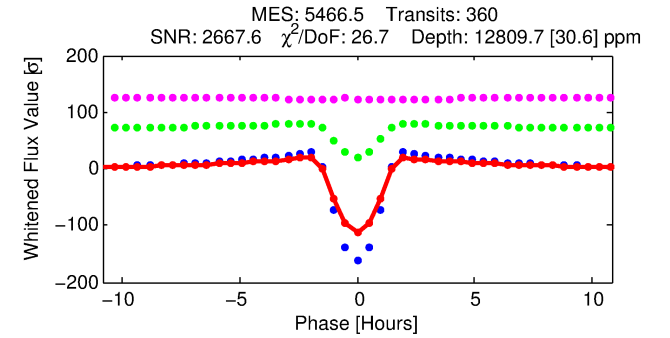
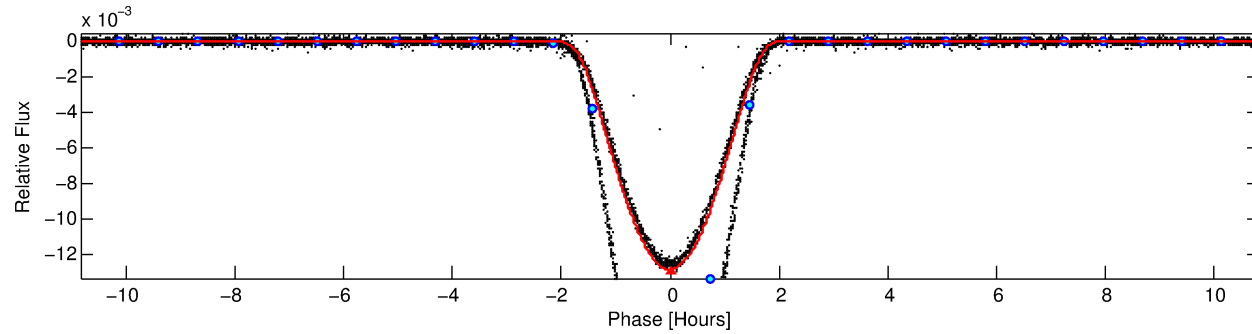
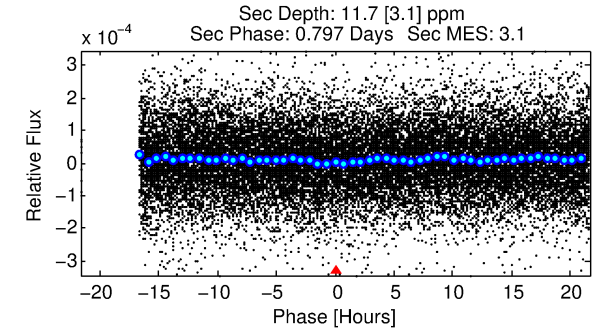
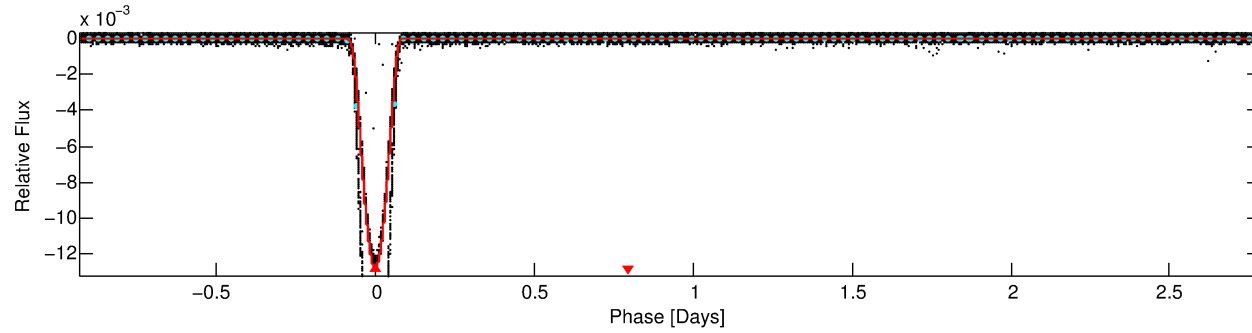
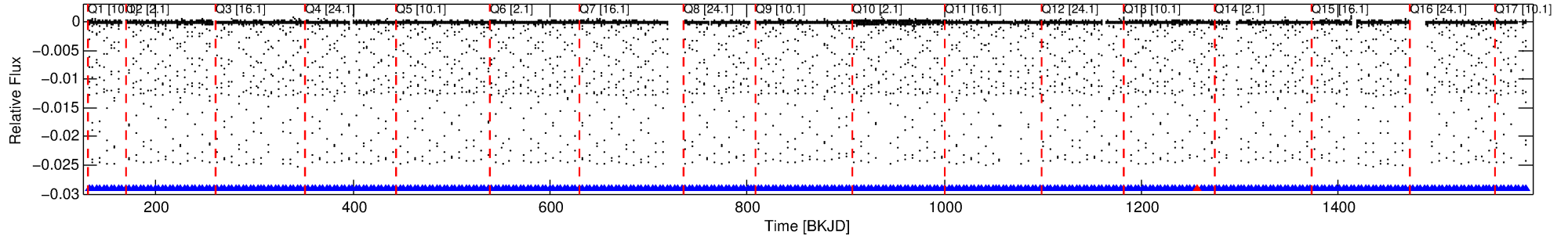
## Ephemeris Match Information For 003335816-01

No Significant Match Found

# DV One-Page Summary

KIC: 3335816 Candidate: 1 of 1 Period: 3.711 d  
KOI: K06323.01 Corr: 0.992

Kp: 12.08 R\*: 1.25 Rs Teff: 6338.0 K Logg: 4.26 Fe/H: -0.340



## DV Fit Results:

Period = 3.71101 [0.00000] d  
Epoch = 132.4884 [0.0001] BKJD  
Rp/R\* = 0.1764 [0.0126]  
a/R\* = 5.10 [0.05]  
b = 0.99 [0.02]  
Seff = 1006.06 [356.74]  
Teq = 1436 [127] K  
Rp = 24.01 [7.34] Re  
a = 0.0473 [0.0113] AU  
Ag = 0.02 [0.01] [-86.94σ]  
Teff = 882 [72] K [-3.79σ]

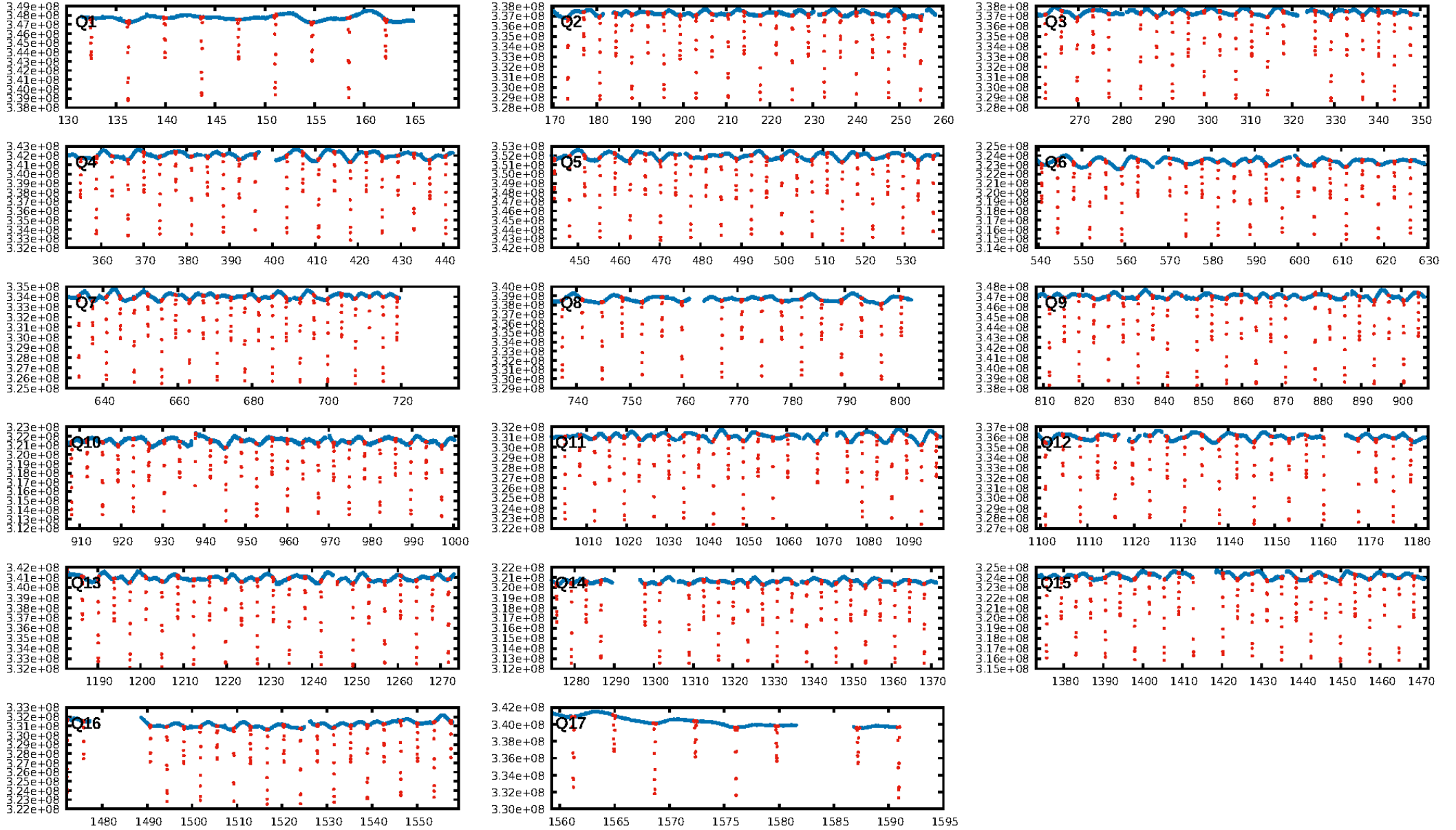
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 0.00e+00  
RollingBand-fgt: 1.00 [342/343]  
GhostDiagnostic-chr: 0.9593  
Centroid-sig: 0.0%  
Centroid-so: 0.223 arcsec [74.70σ]  
OotOffset-rm: 0.171 arcsec [2.41σ]  
KicOffset-rm: 0.109 arcsec [1.59σ]  
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]

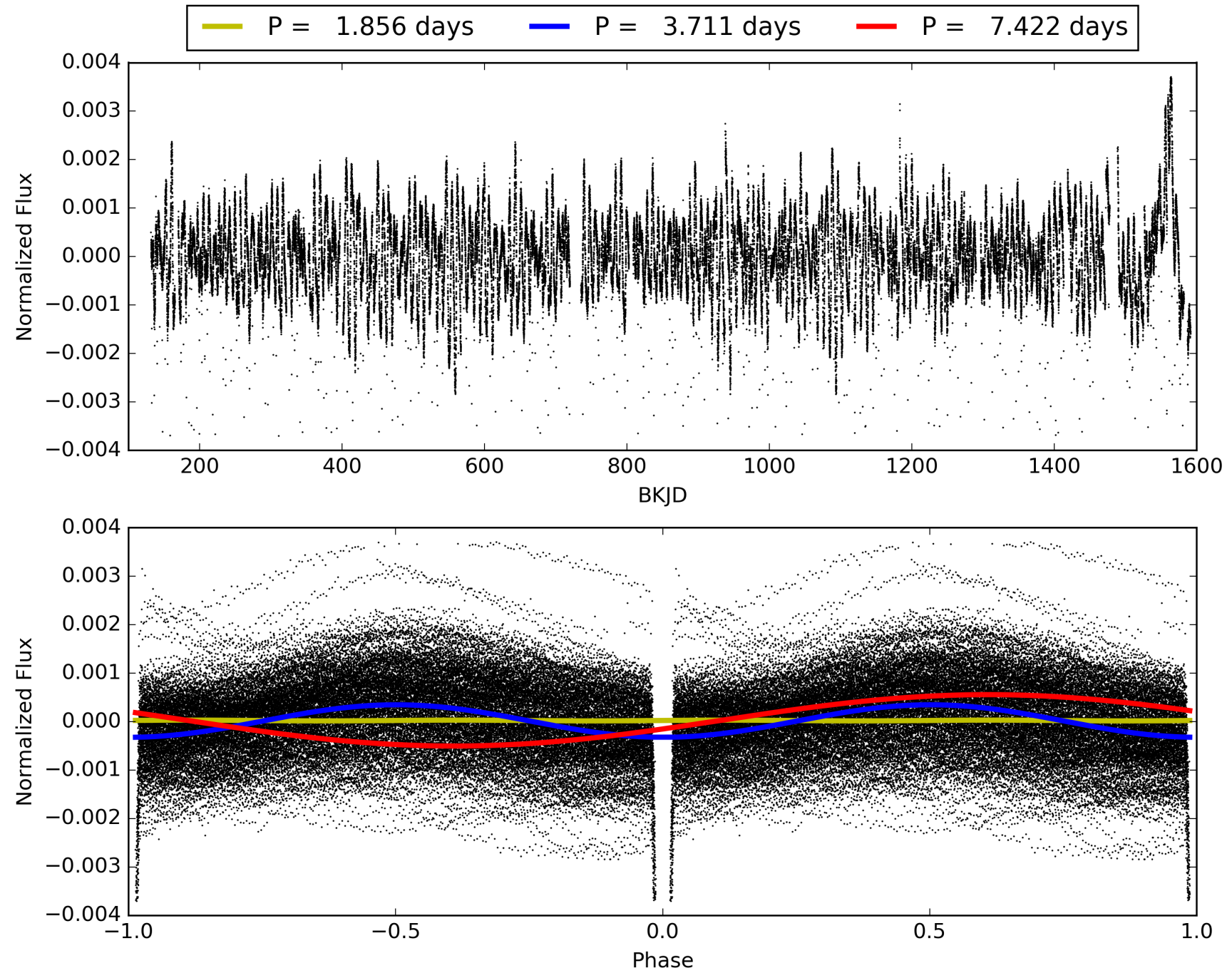
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 10:00:01 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 003335816-01, PDC Light Curves

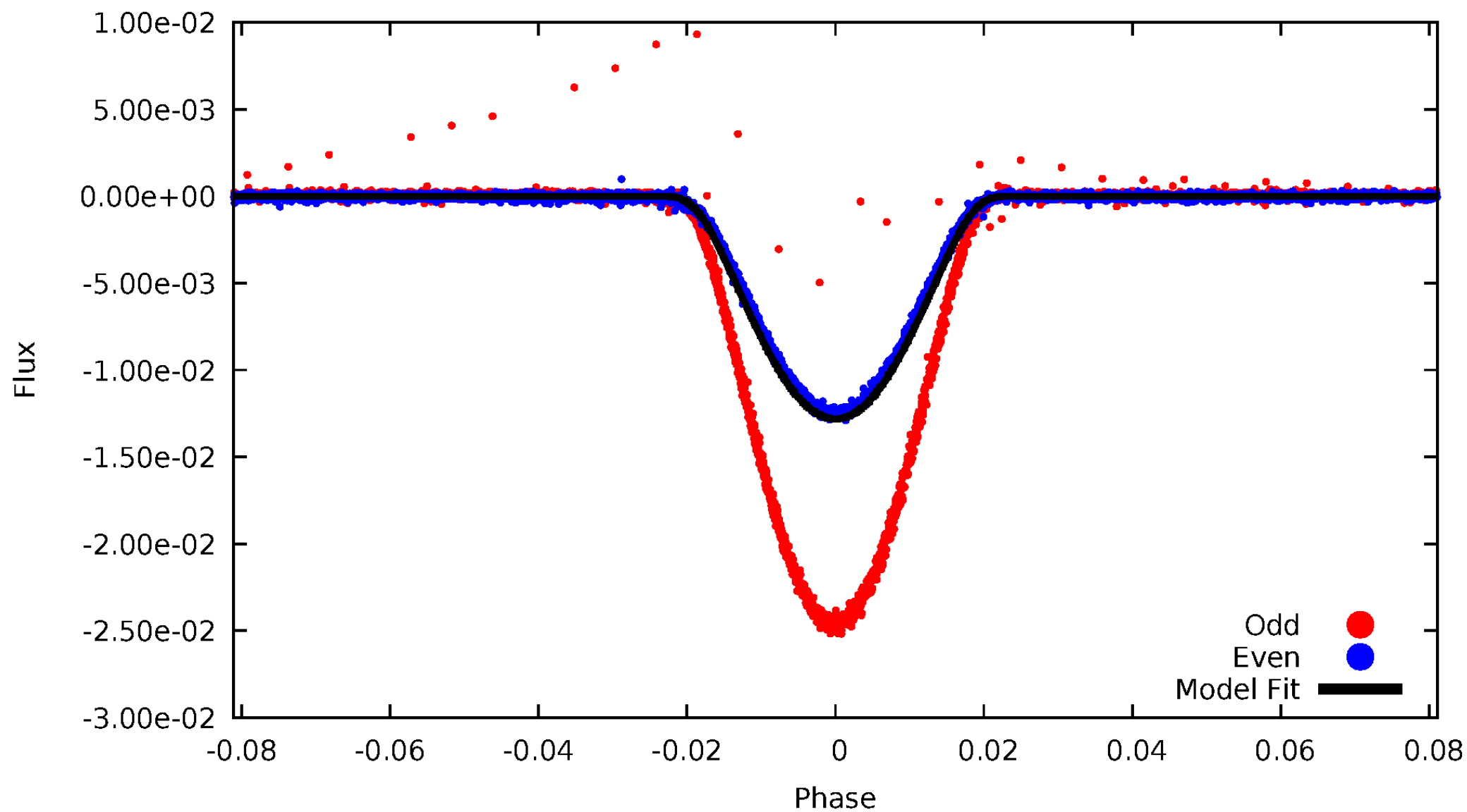


TCE 003335816-01



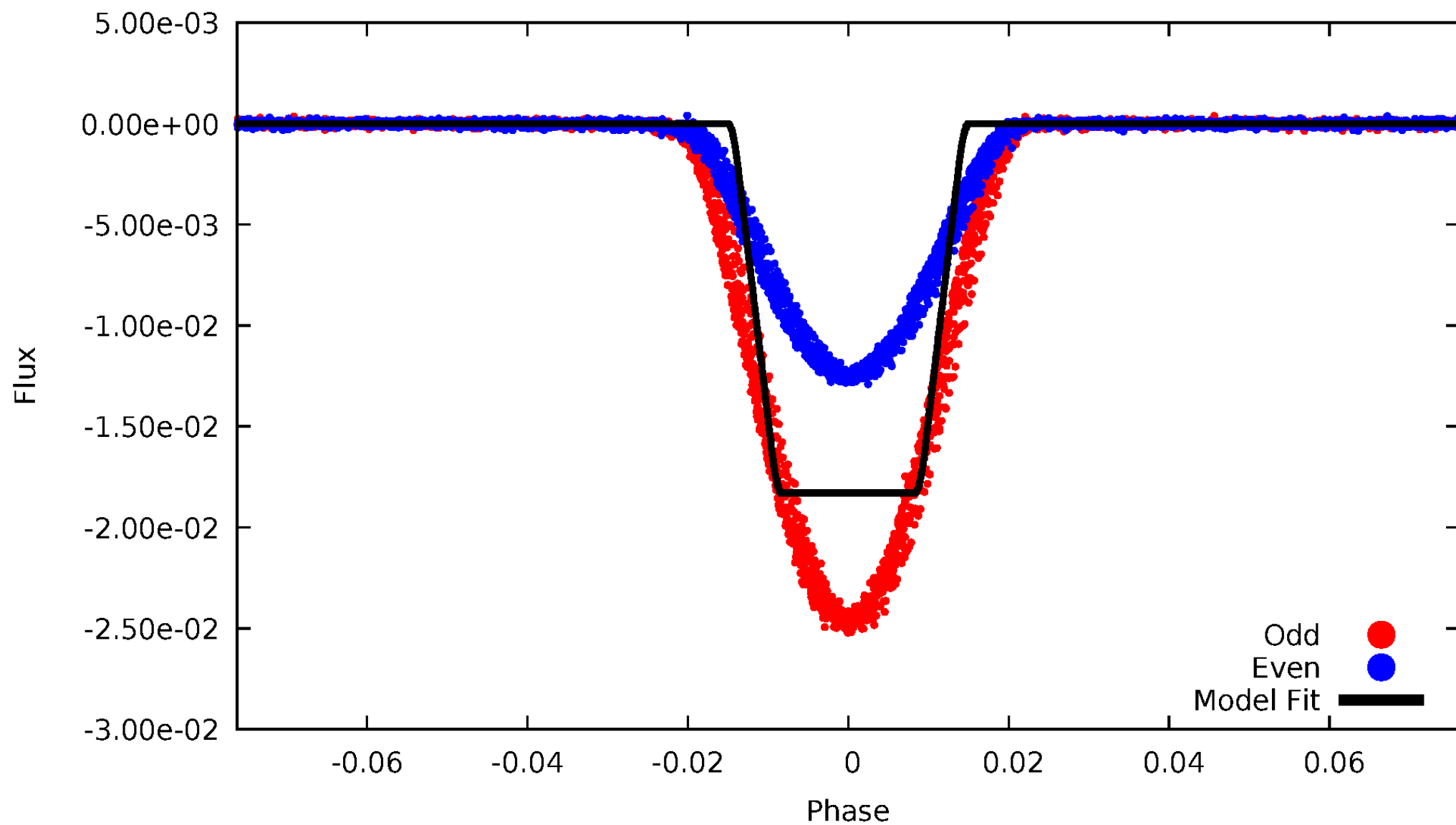
# DV Odd/Even

TCE 003335816-01



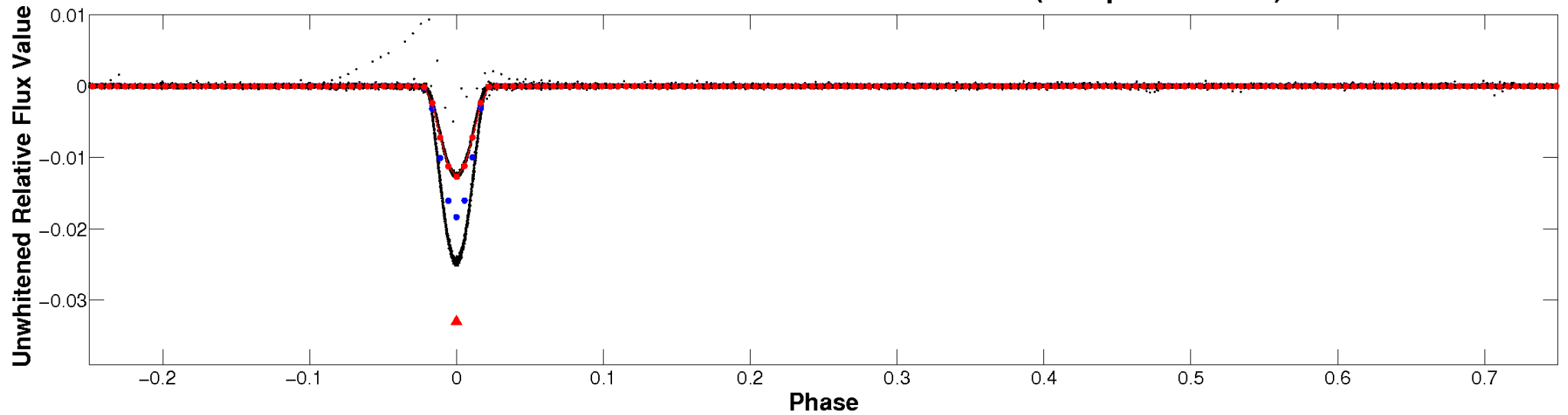
# ALT Odd/Even

TCE 003335816-01

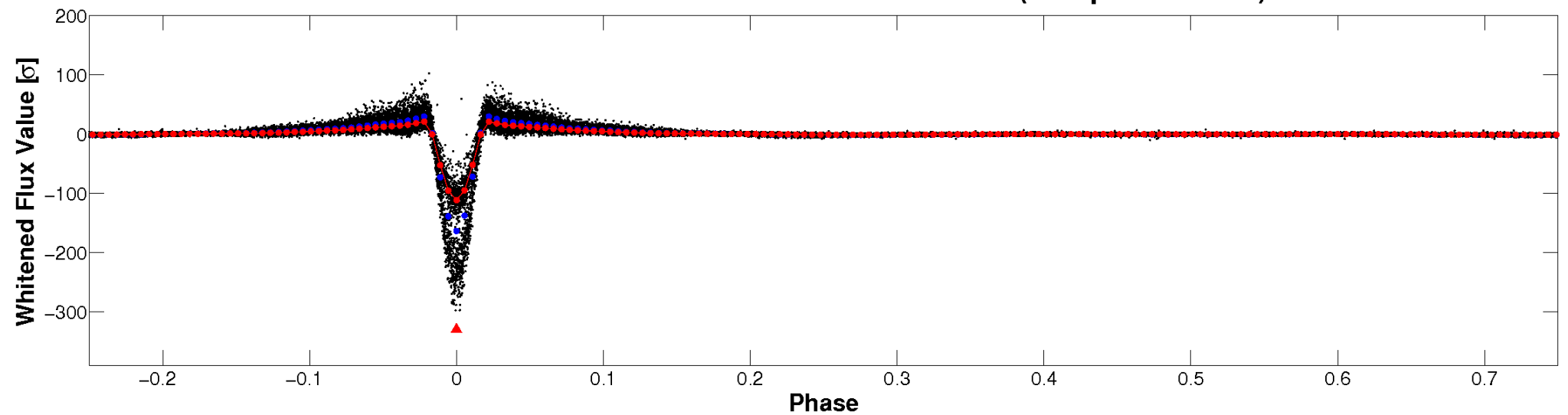


# Non-Whitened Vs. Whitened Light Curve

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

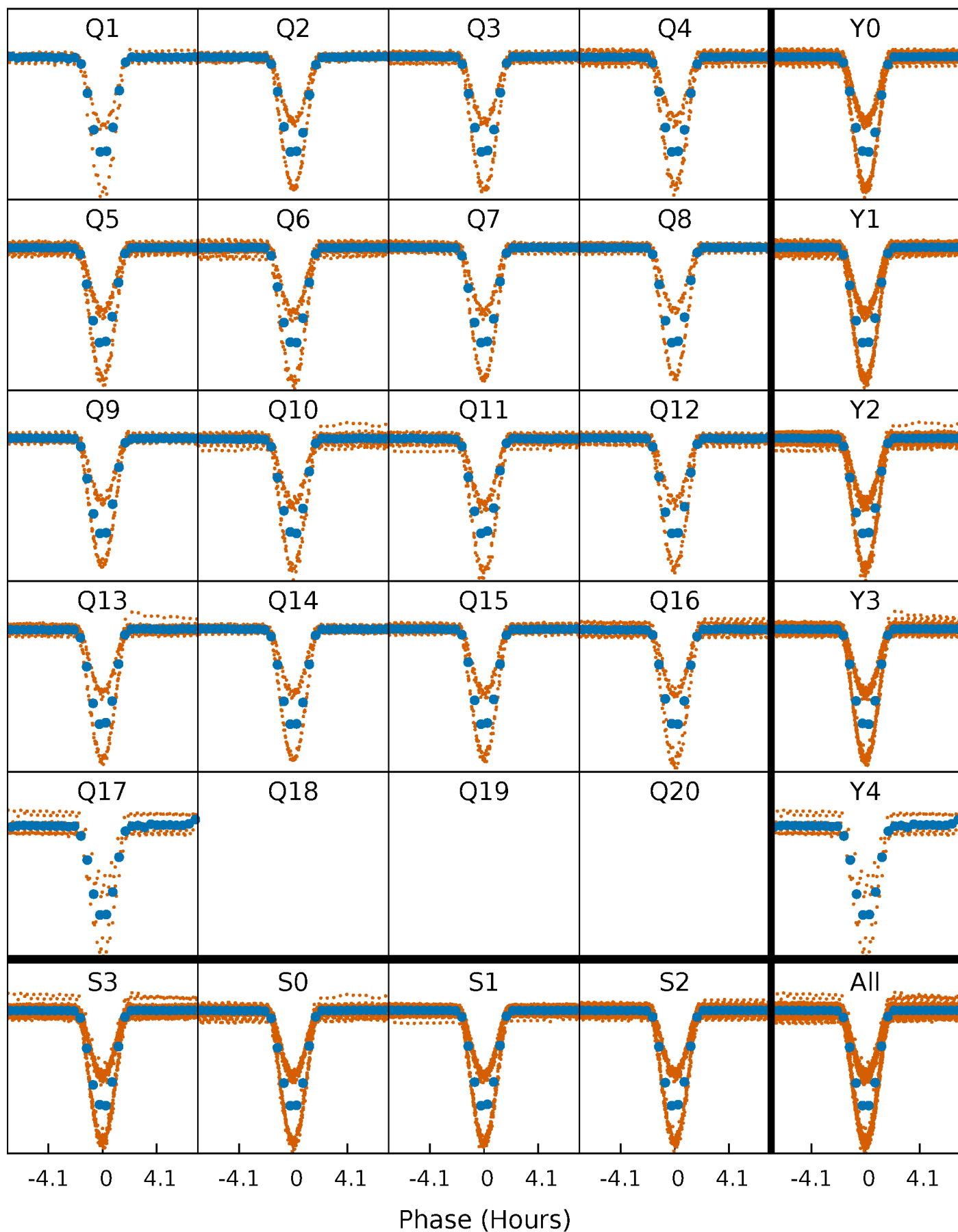


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

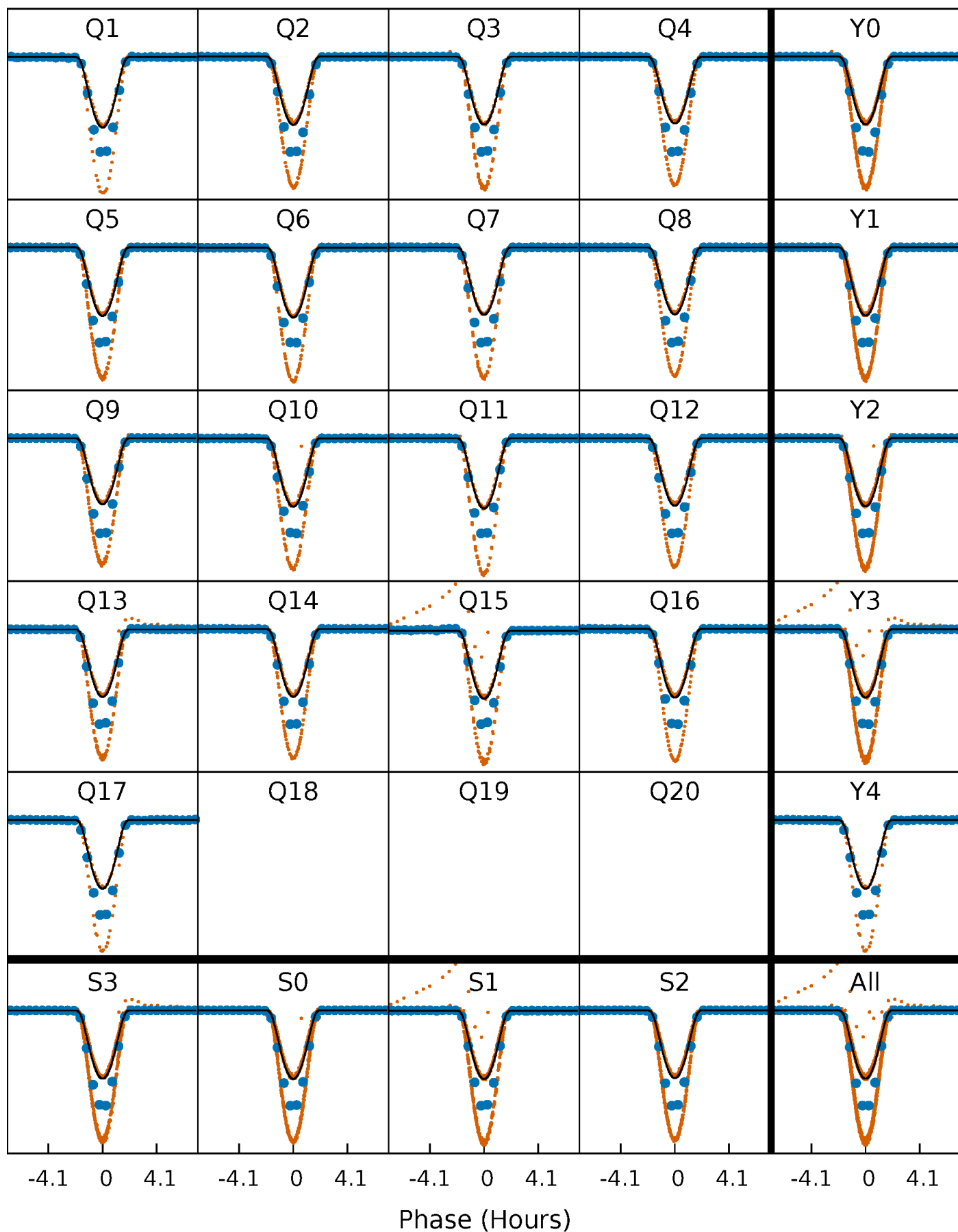
TCE 003335816-01 P= 3.711014 Days  $T_0=132.488354$  (BKJD)





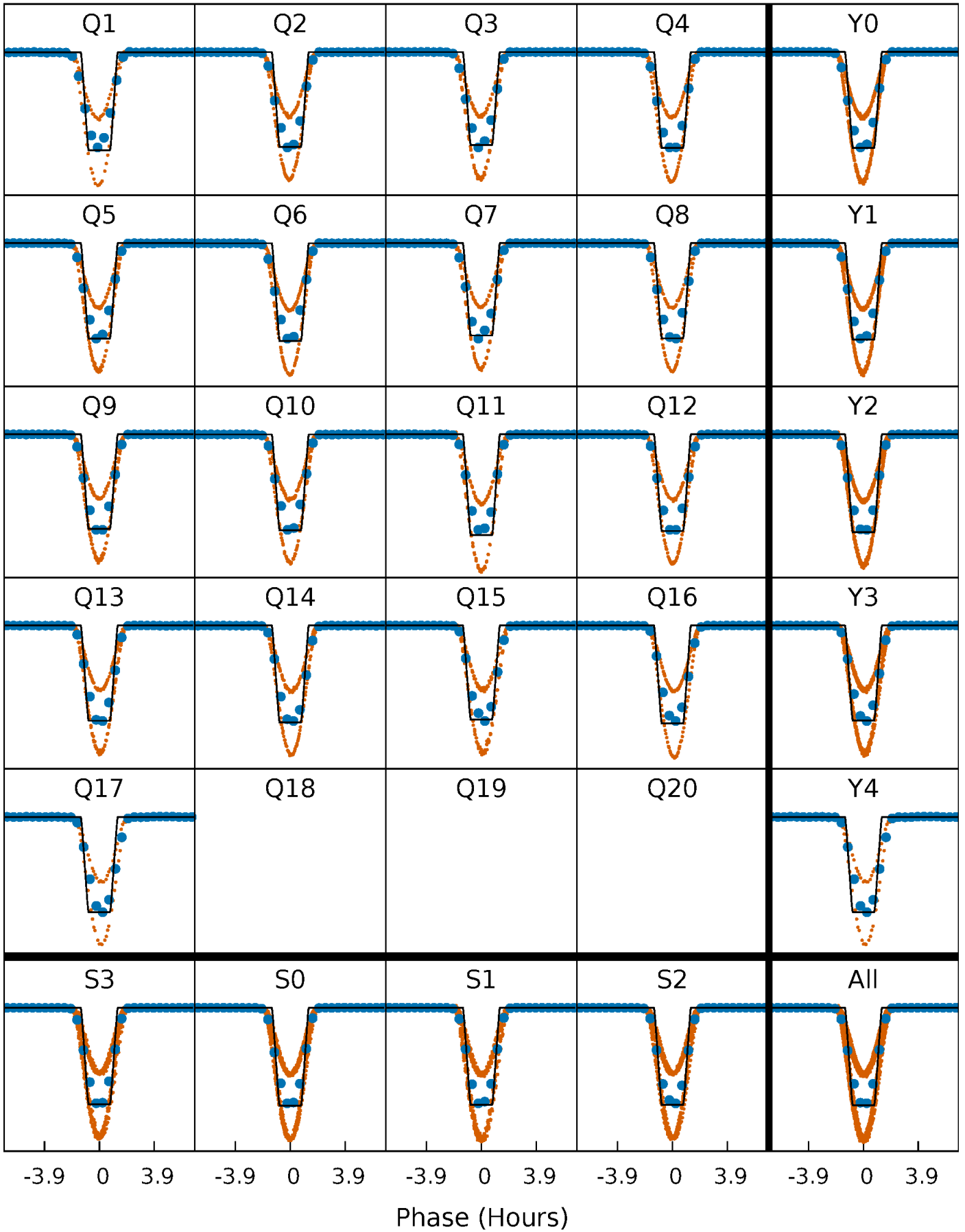
# DV Quarter-Phased Transit Curves

TCE 003335816-01 P= 3.711014 Days  $T_0=132.488354$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

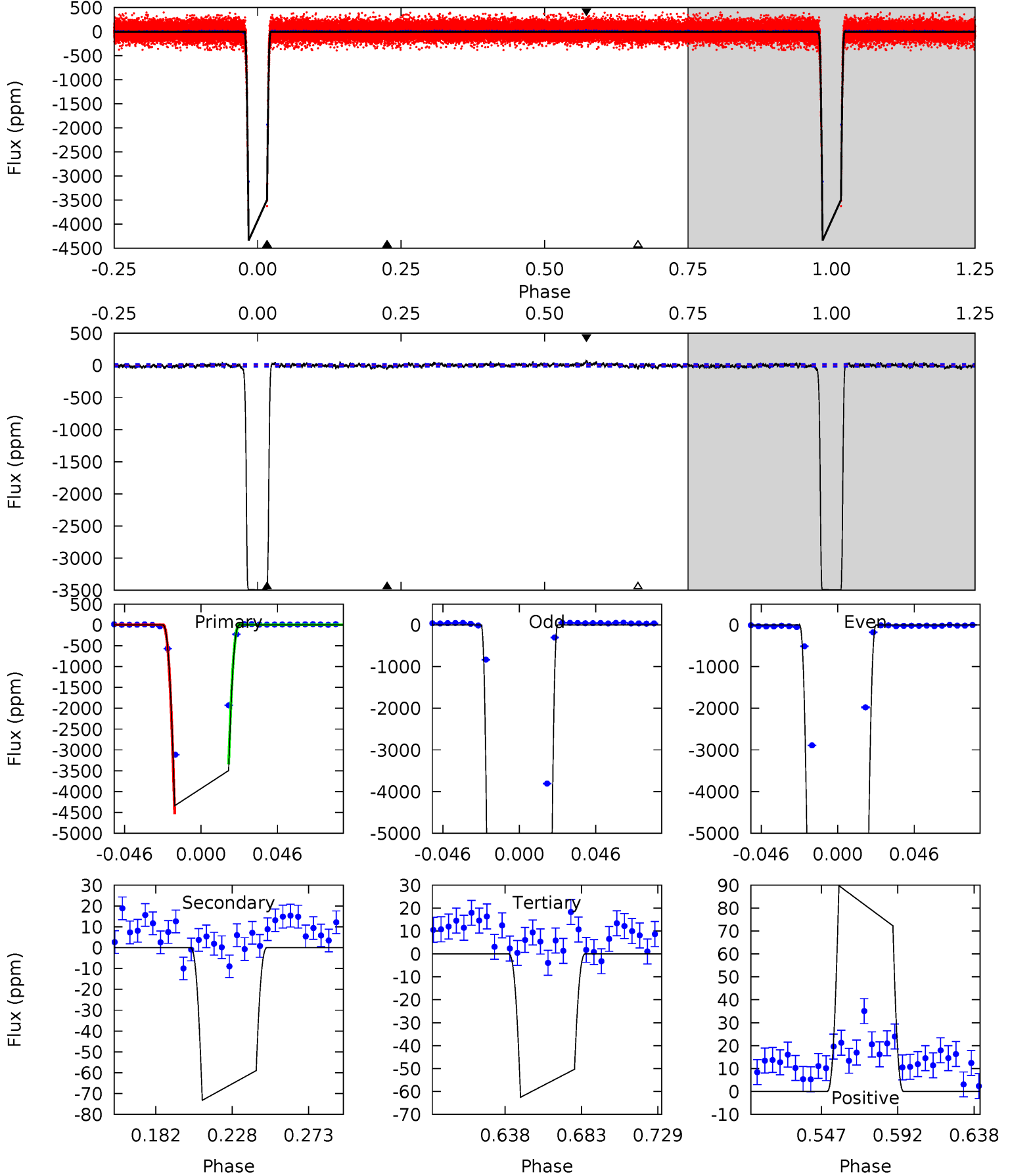
TCE 003335816-01 P= 3.710990 Days  $T_0=132.493047$  (BKJD)



# DV Model-Shift Uniqueness Test

003335816-01, P = 3.711014 Days, E = 128.777340 Days

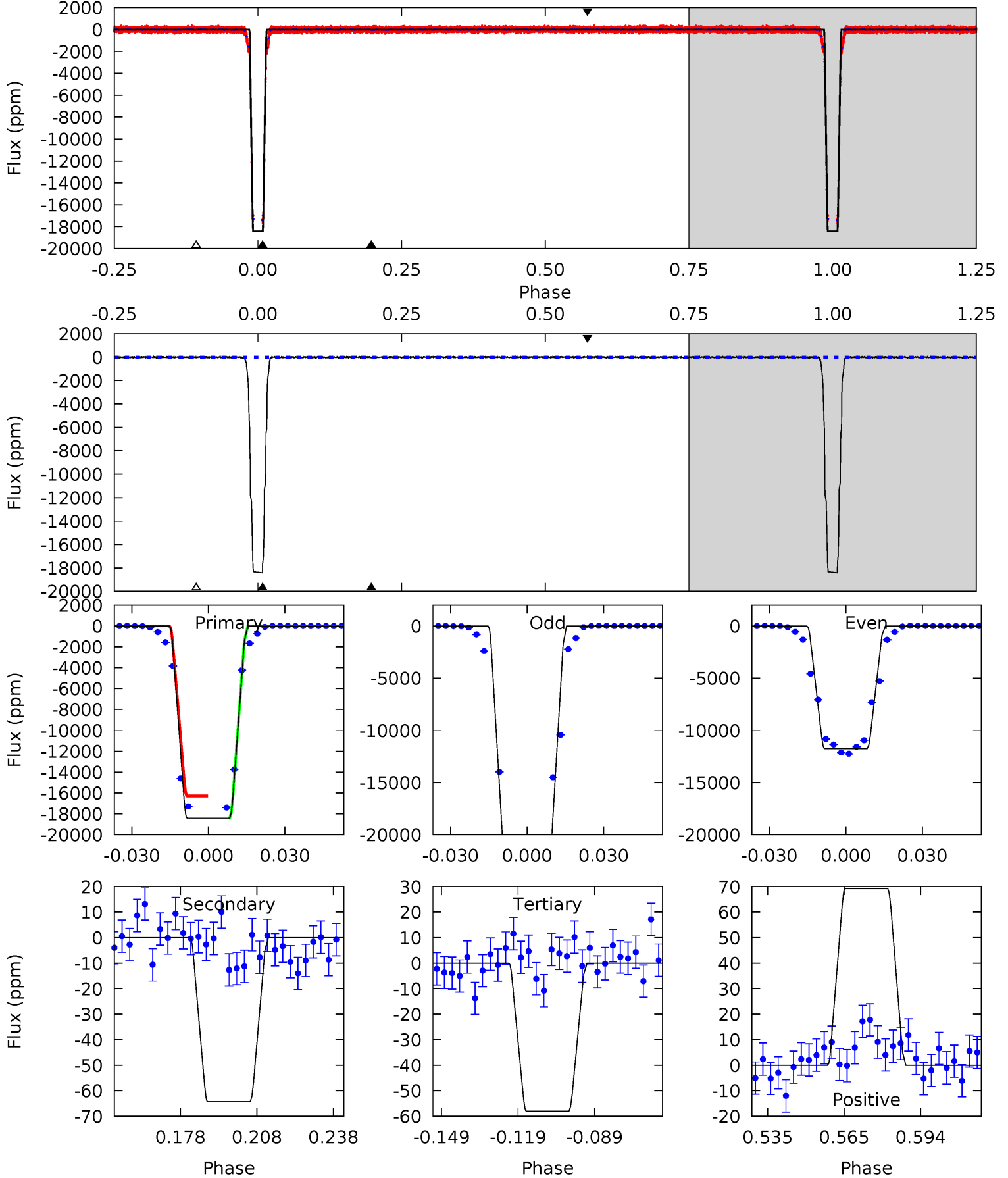
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
866.8	14.6	12.5	17.9	4.73	2.00	4.19	854.3	848.8	2.14	-3.29	3136	1.44	0.02	0



# Alt Model-Shift Uniqueness Test

003335816-01, P = 3.710990 Days, E = 128.782057 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
1668	5.82	5.25	6.27	4.81	2.17	1.68	1662	1661	0.57	-0.45	1333	0.81	0.00	0



### Stellar Parameters For KIC 003335816

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6338^{+151}_{-189}$	$4.256^{+0.175}_{-0.175}$	$-0.340^{+0.300}_{-0.300}$	$1.247^{+0.371}_{-0.247}$	$1.021^{+0.173}_{-0.106}$	$0.741^{+0.657}_{-0.373}$
	+2%/-3%	+4%/-4%	+88%/-88%	+30%/-20%	+17%/-10%	+89%/-50%
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 003335816-01 / KOI 6323.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-59 \pm 4$	$23.78^{+4.20}_{-3.04}$	$1997^{+138}_{-125}$	$-2332^{+126}_{-127}$	$0.126^{+0.044}_{-0.032}$
Alt.	$-64 \pm 11$	$18.61^{+2.99}_{-2.88}$	$1995^{+155}_{-126}$	$-2105^{+4010}_{-217}$	$0.230^{+0.101}_{-0.070}$

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

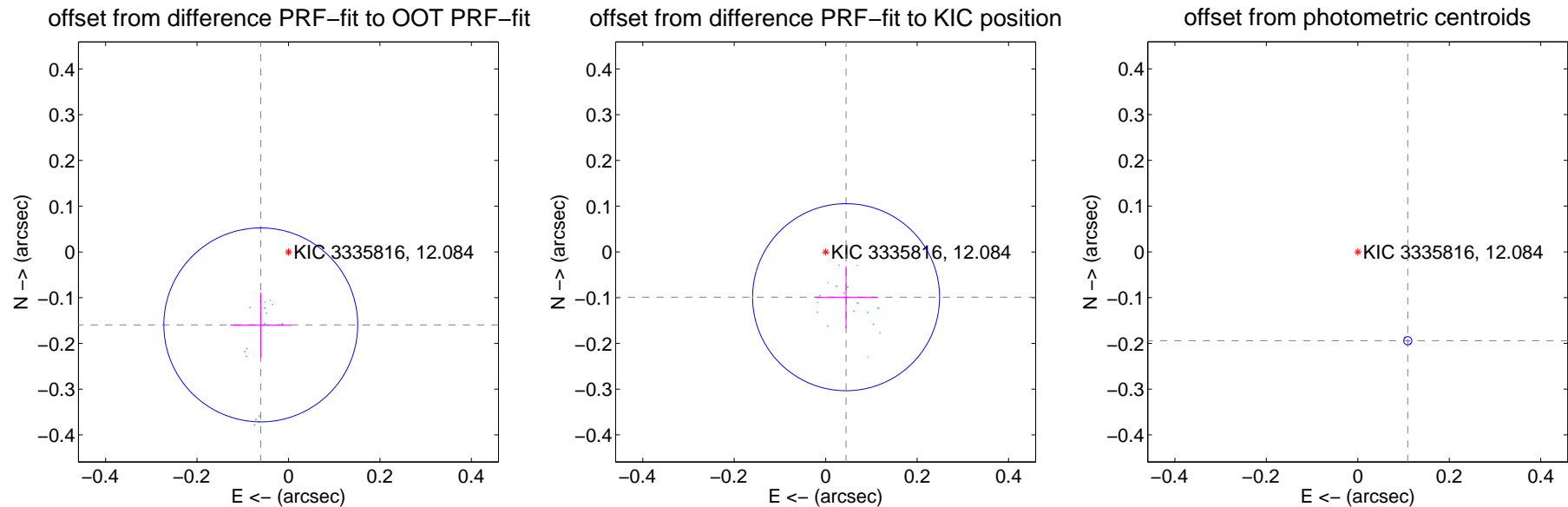
## DV Centroid Data

Supplemental centroid analysis for 003335816-01. Kepler magnitude: 12.08. Transit SNR 2667.60

There are 17 quarters with good PRF difference image offsets

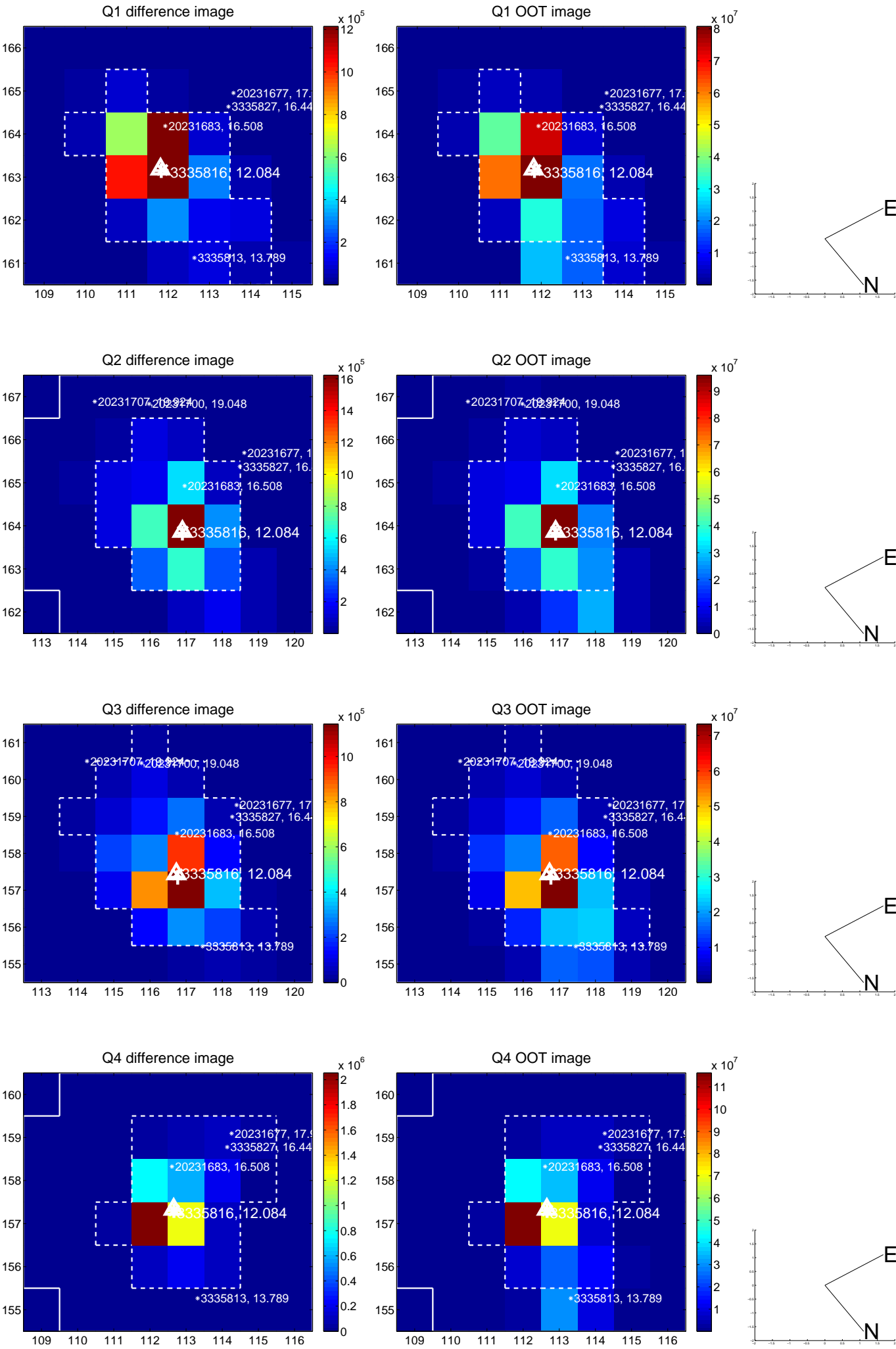
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.171 \pm 0.071$	2.41	$0.061 \pm 0.067$	$-0.160 \pm 0.071$
PRF-fit source offset from KIC position	$0.109 \pm 0.068$	1.59	$-0.045 \pm 0.068$	$-0.099 \pm 0.068$
photometric centroid source offset	$0.22 \pm 0.00$	74.70	$-0.11 \pm 0.00$	$-0.19 \pm 0.00$

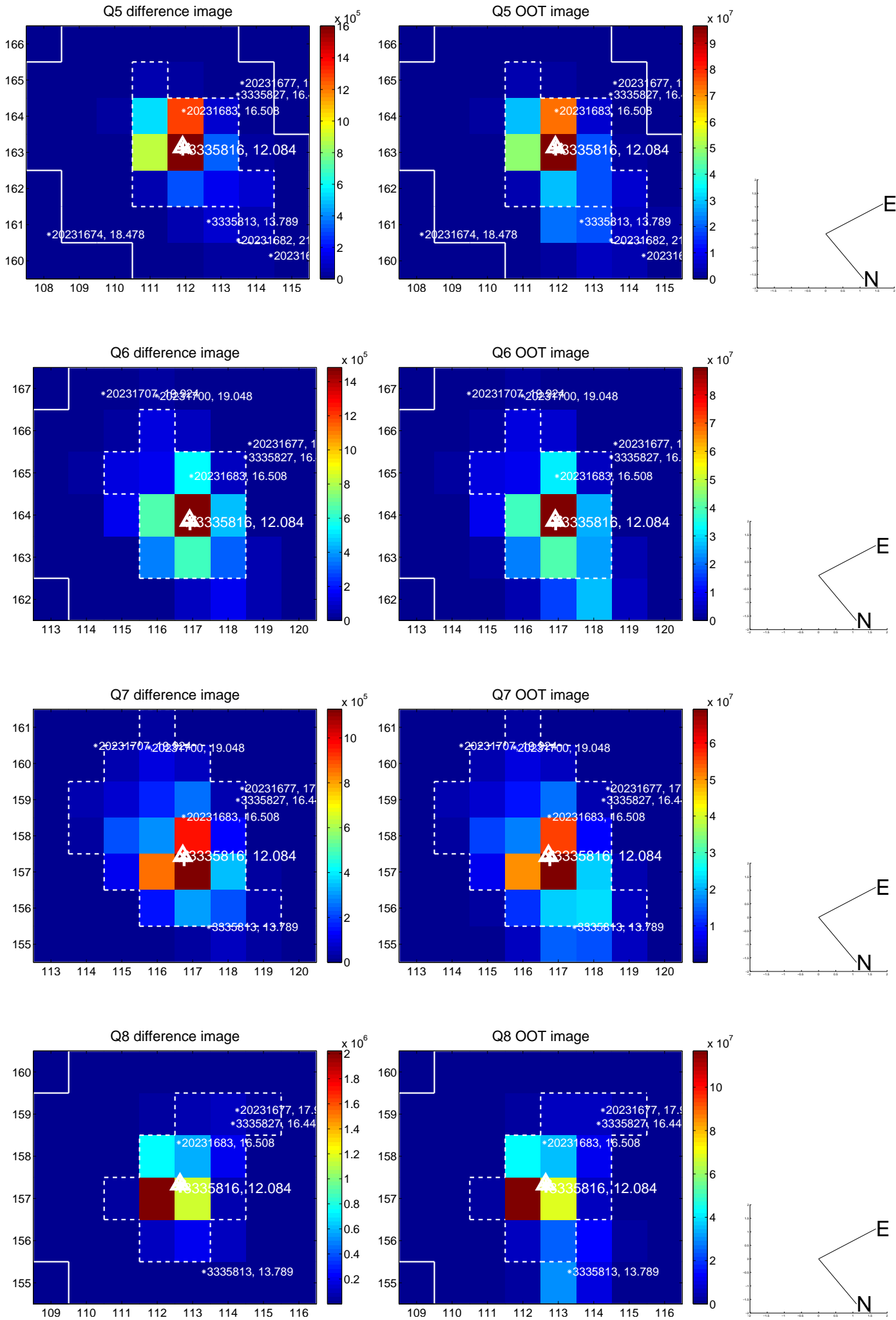


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

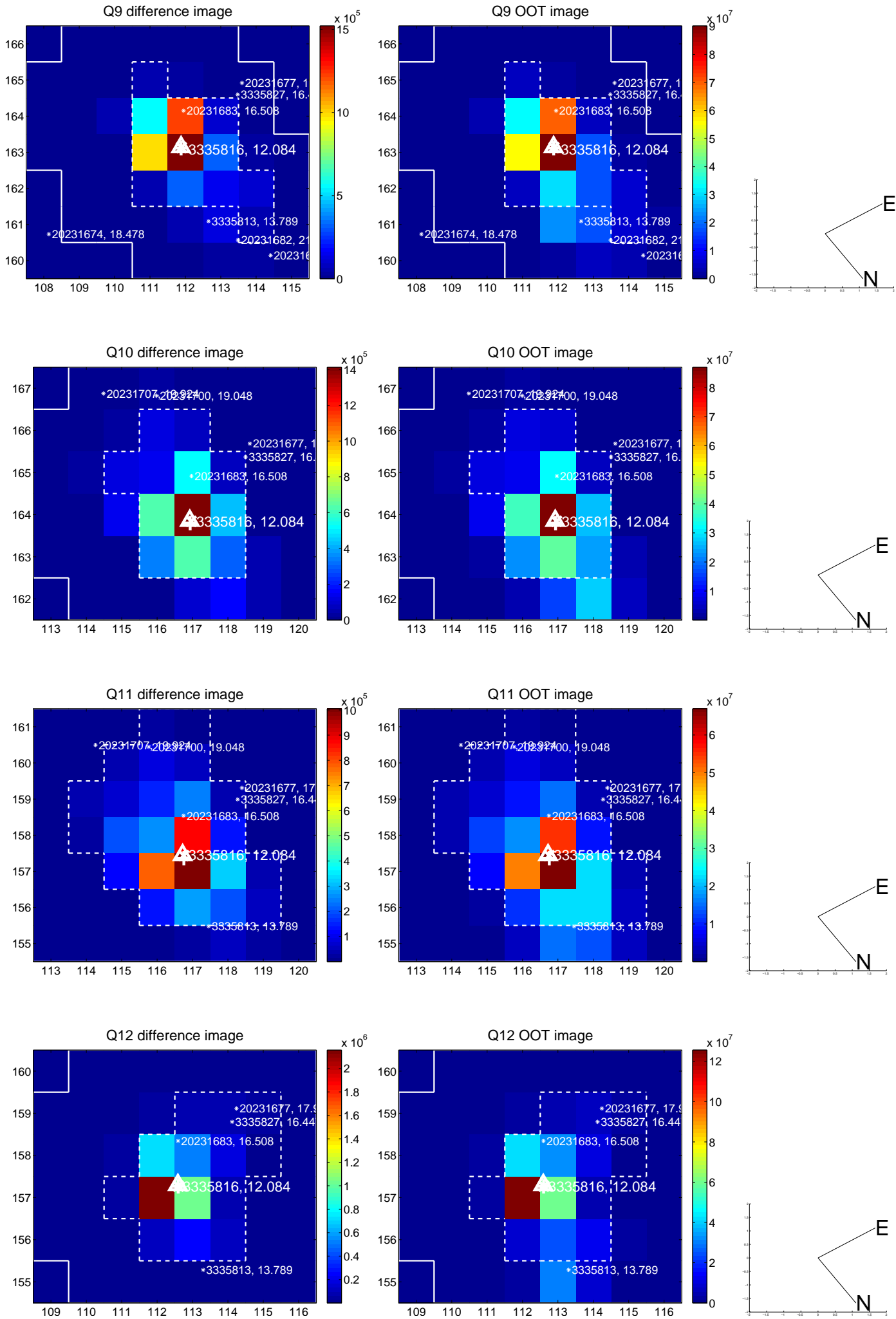


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

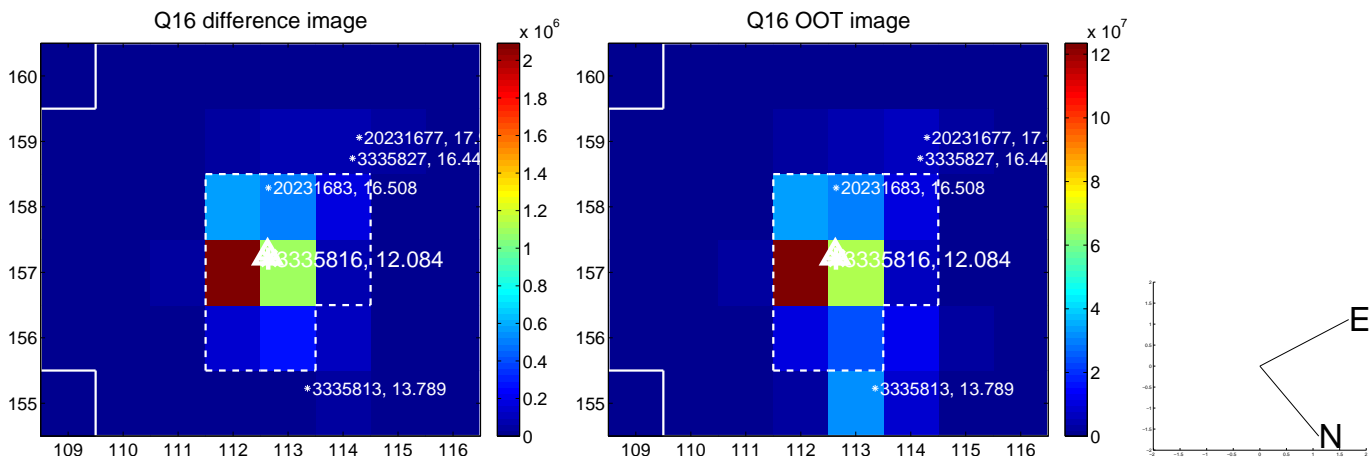
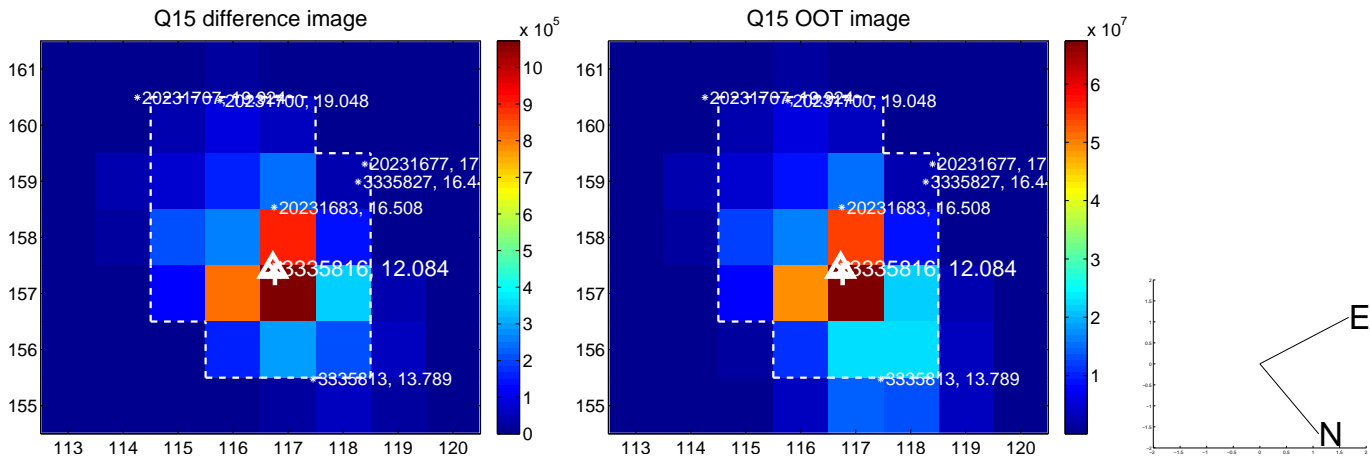
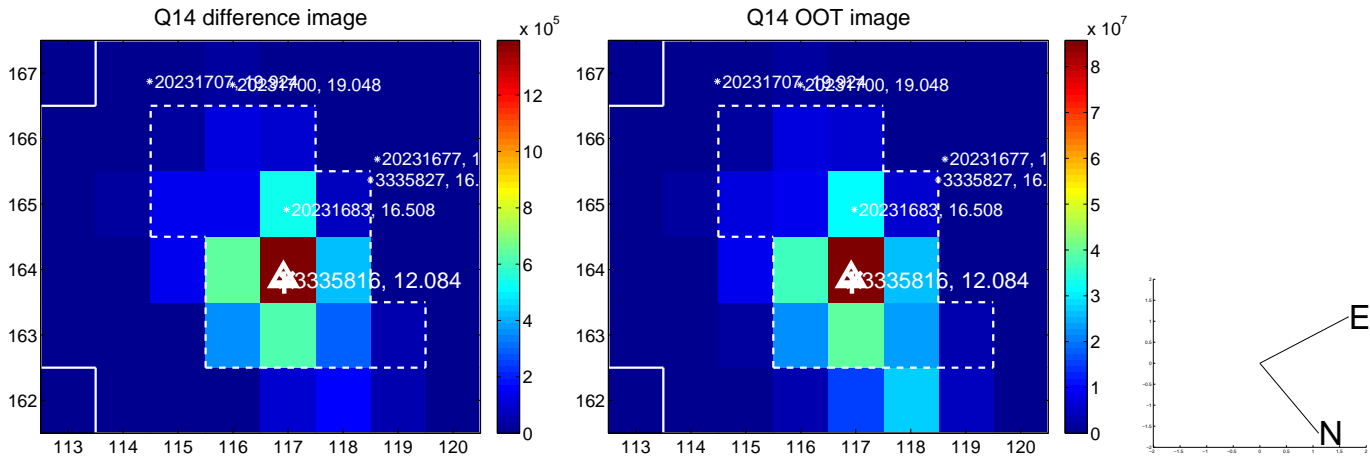
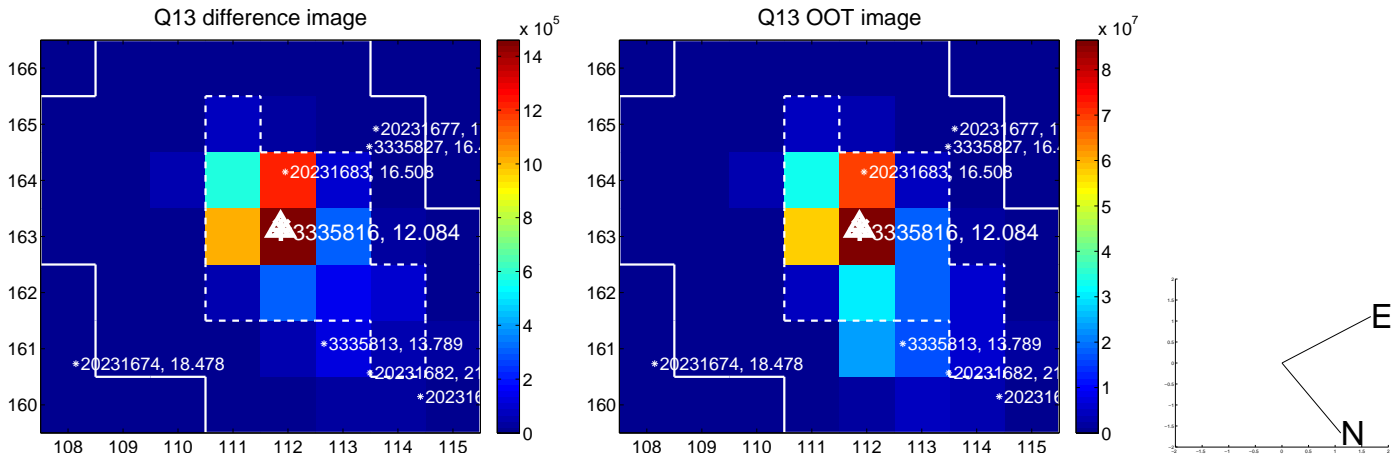




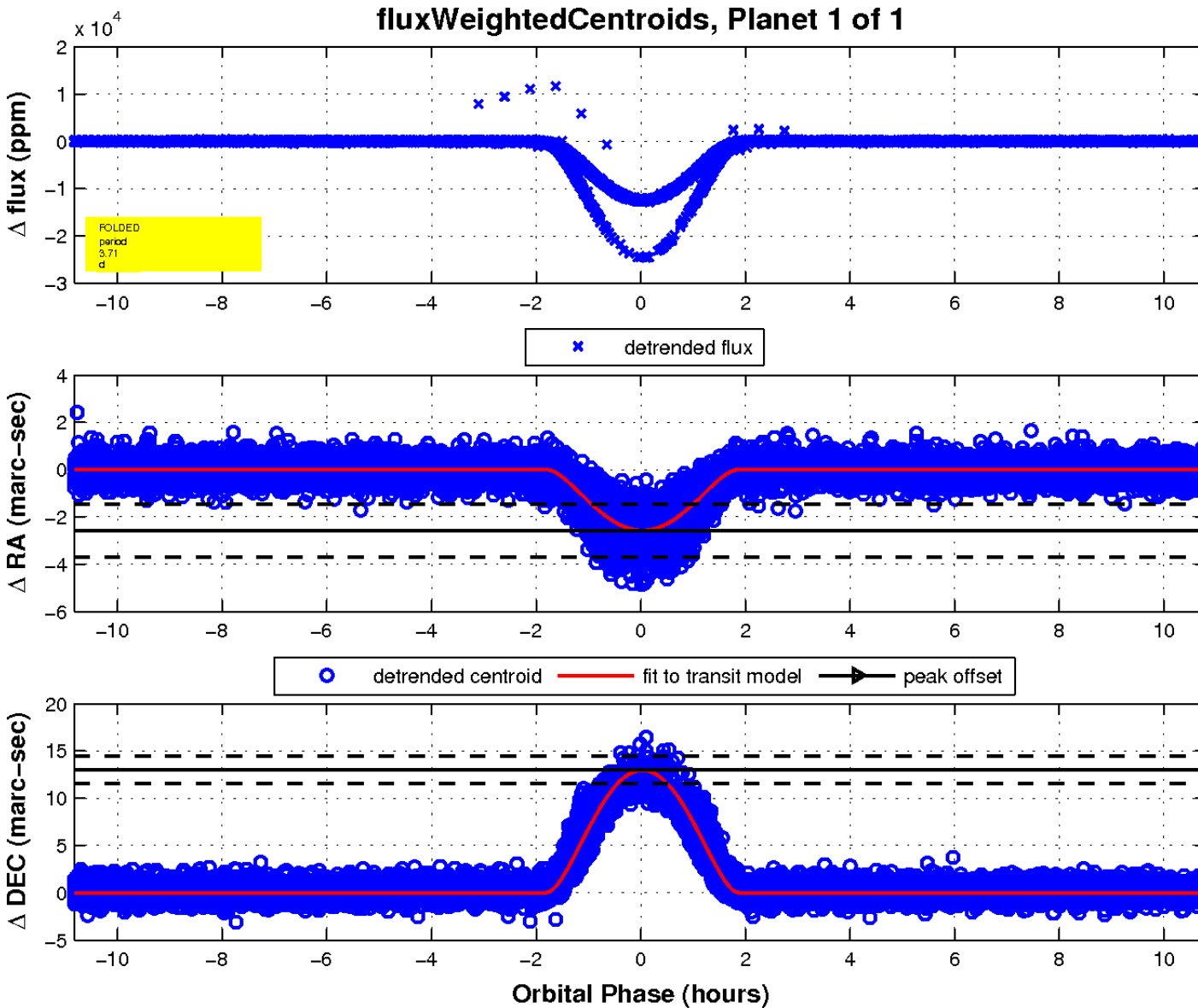
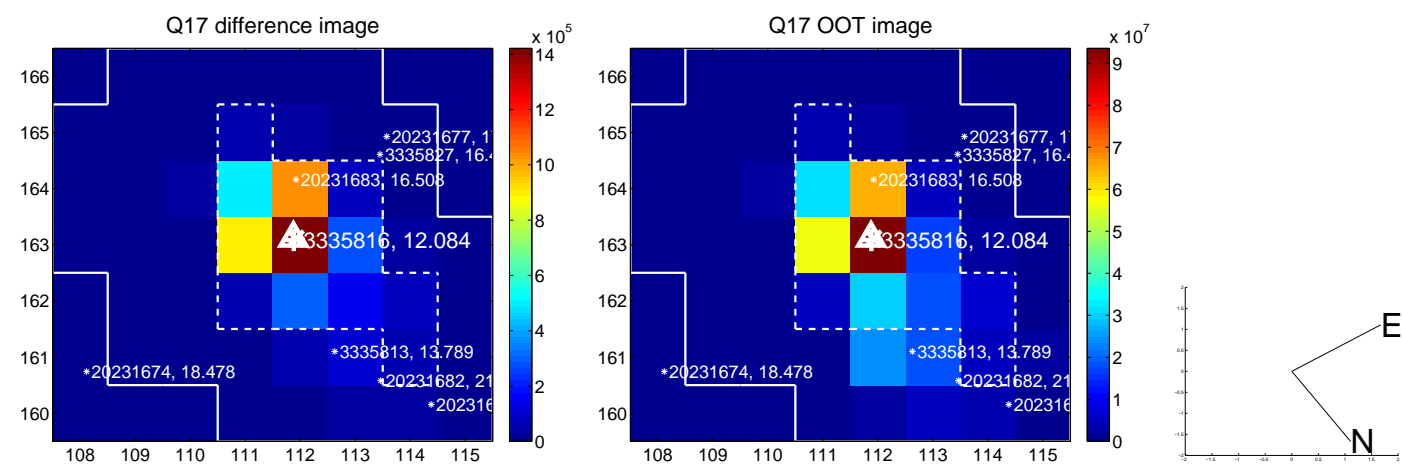
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

