

# KIC 003245661

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003245661-01	OBS	3977.01	0.708805	132.168286	15118.1	3.377	910.2	388.5	0.91	5989	17.61	4058.20

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003245661-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—SEASONAL_DEPTH_DV—SEASONAL_DEPTH_ALT—CENT_RESOLVED_OFFSET

**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.

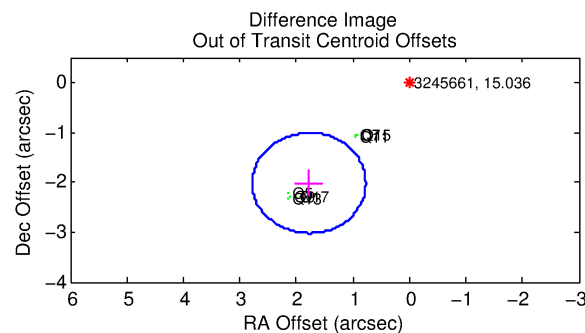
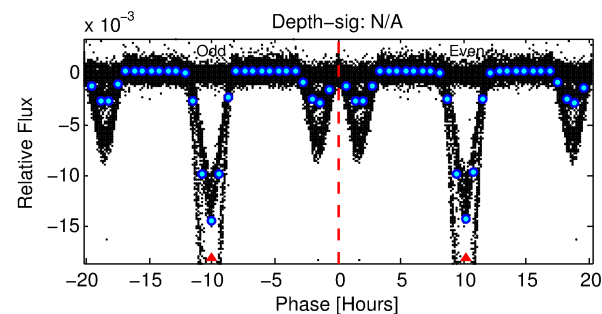
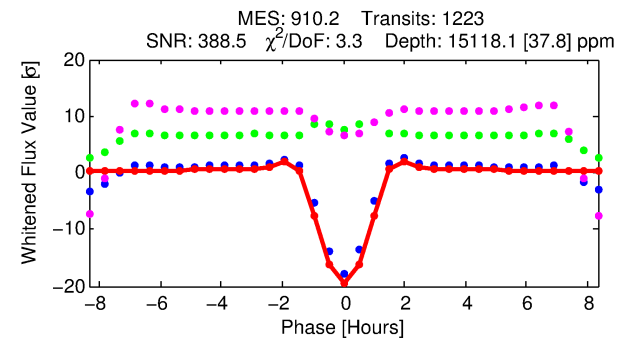
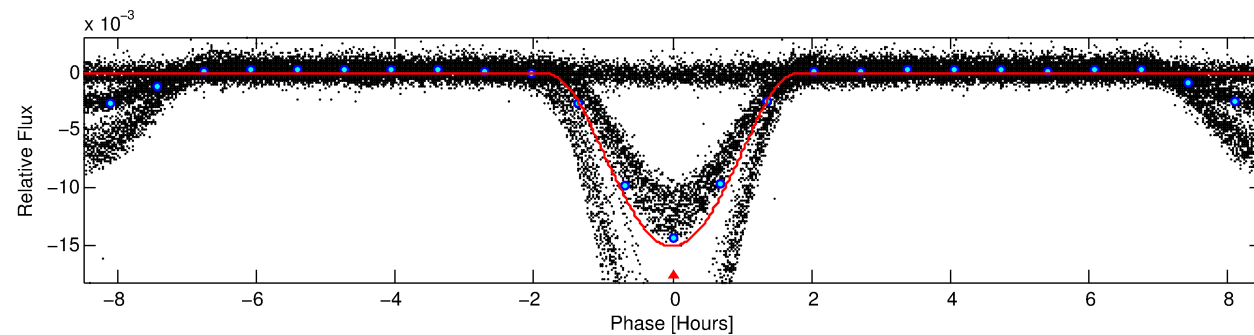
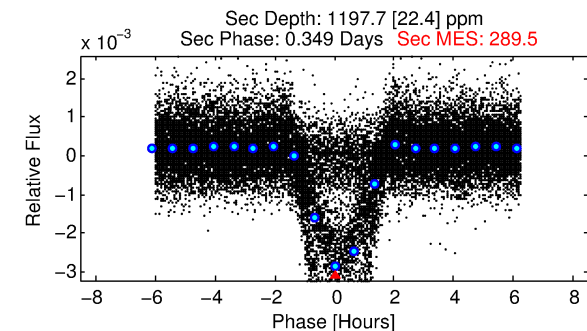
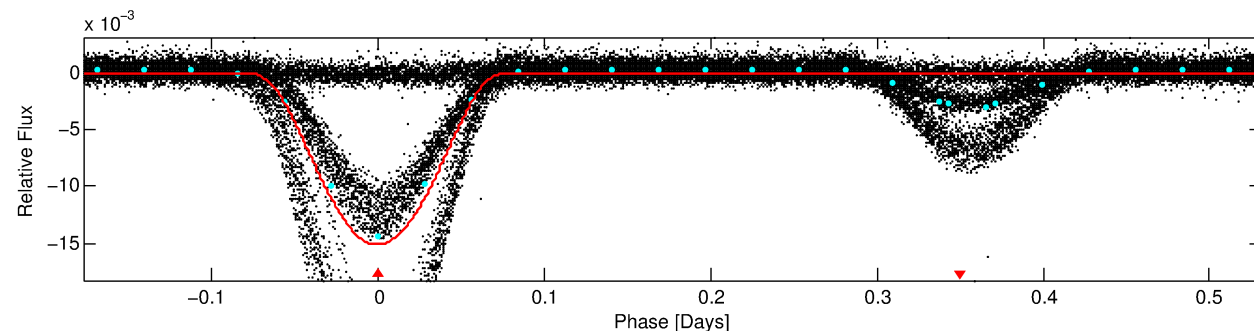
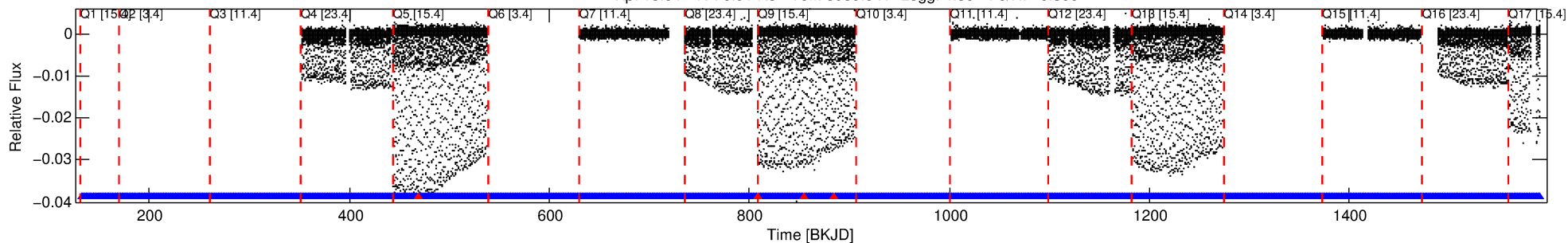
## Ephemeris Match Information For 003245661-01

No Significant Match Found

# DV One-Page Summary

KIC: 3245661 Candidate: 1 of 1 Period: 0.709 d  
KOI: K03977.01 Corr: 0.953

Kp: 15.04 R\*: 0.91 Rs Teff: 5989.0 K Logg: 4.50 Fe/H: -0.300



## DV Fit Results:

Period = 0.70880 [0.00000] d  
Epoch = 132.1683 [0.0001] BKJD  
Rp/R\* = 0.1778 [0.0092]  
a/R\* = 1.50 [0.00]  
b = 0.97 [0.01]  
Seff = 4058.20 [1626.46]  
Teq = 2035 [204] K  
Rp = 17.61 [5.30] Re  
a = 0.0153 [0.0039] AU  
Ag = 0.50 [0.19] [-2.59σ]  
Teffp = 2642 [116] K [2.59σ]

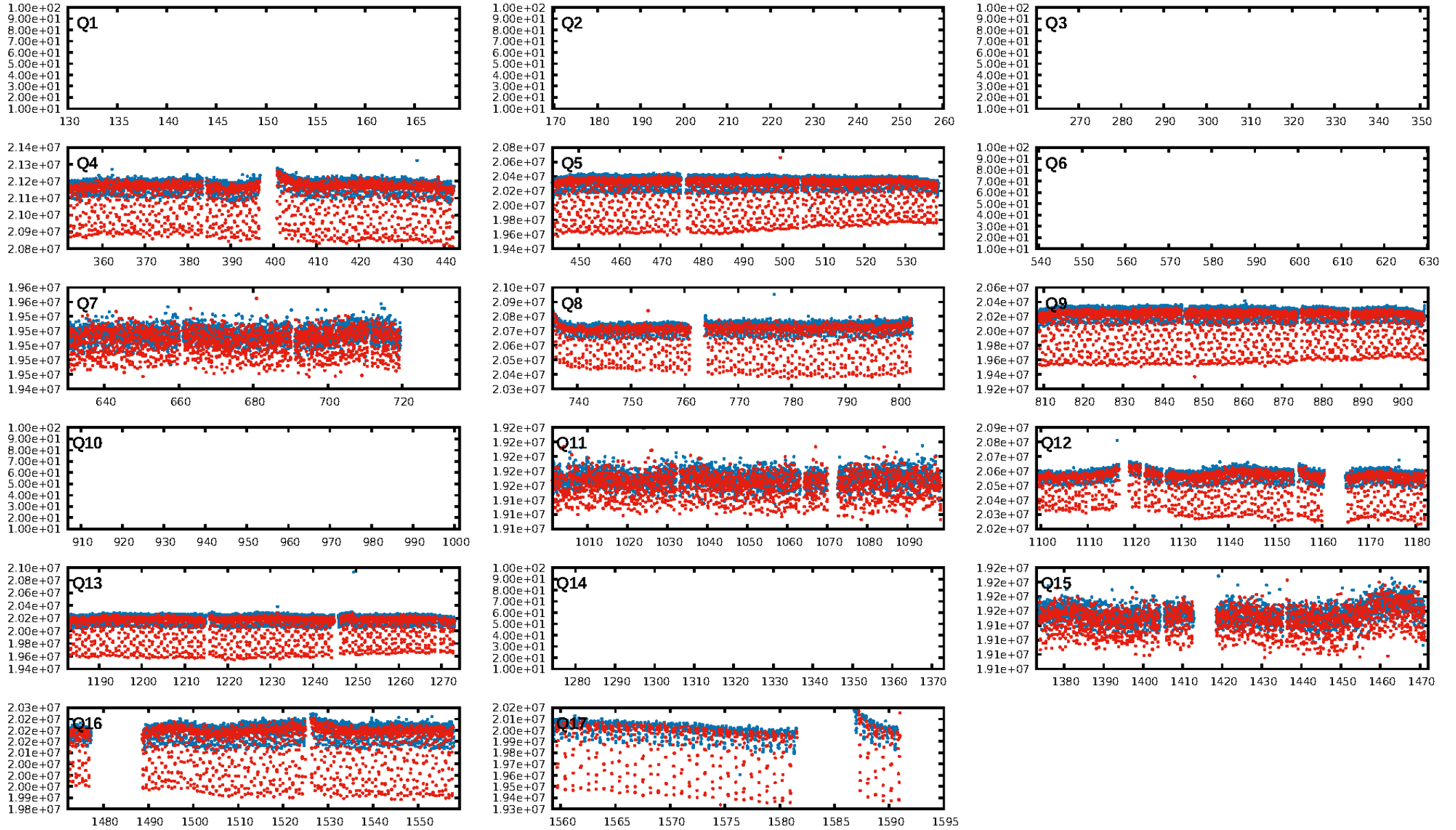
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1182/1186]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
OotOffset-rm: 2.690 arcsec [8.02σ]  
KicOffset-rm: 8.774 arcsec [126.31σ]  
OotOffset-st: 0/3/0/4 [7]  
KicOffset-st: 0/3/4/4 [11]  
DiffImageQuality-fgm: 1.00 [11/11]  
DiffImageOverlap-fno: 1.00 [11/11]

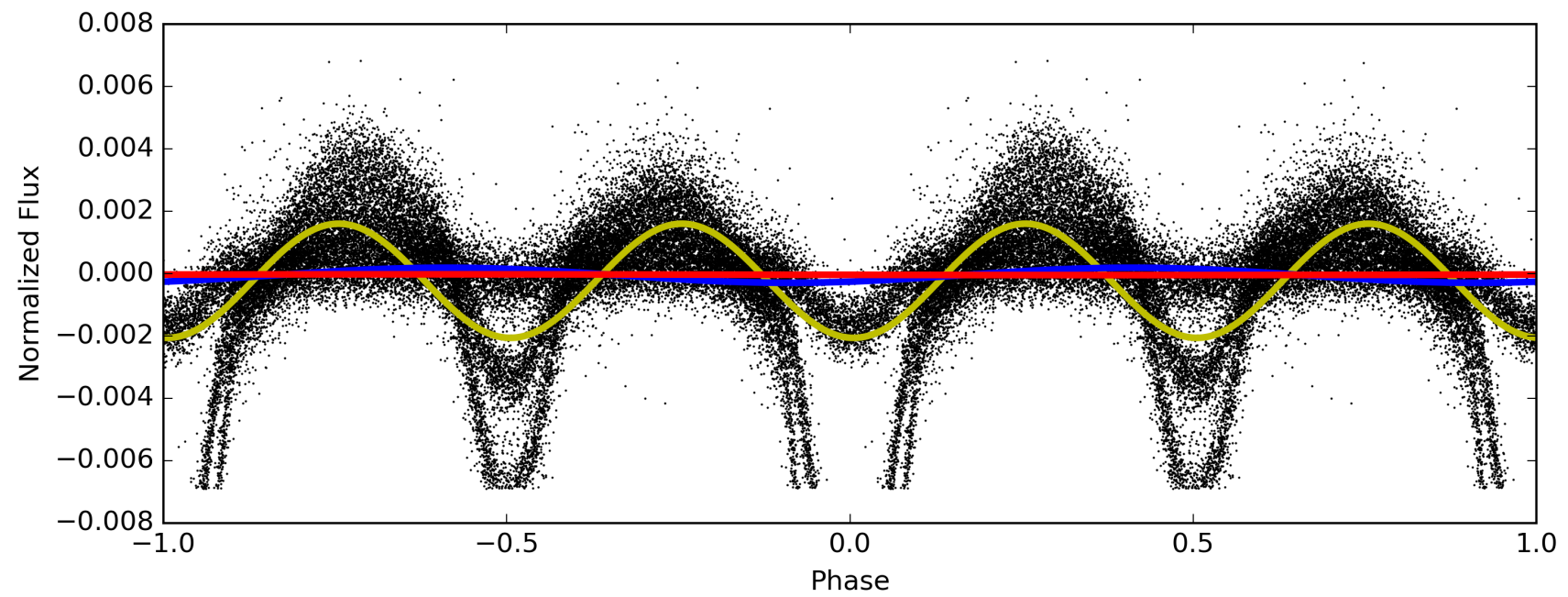
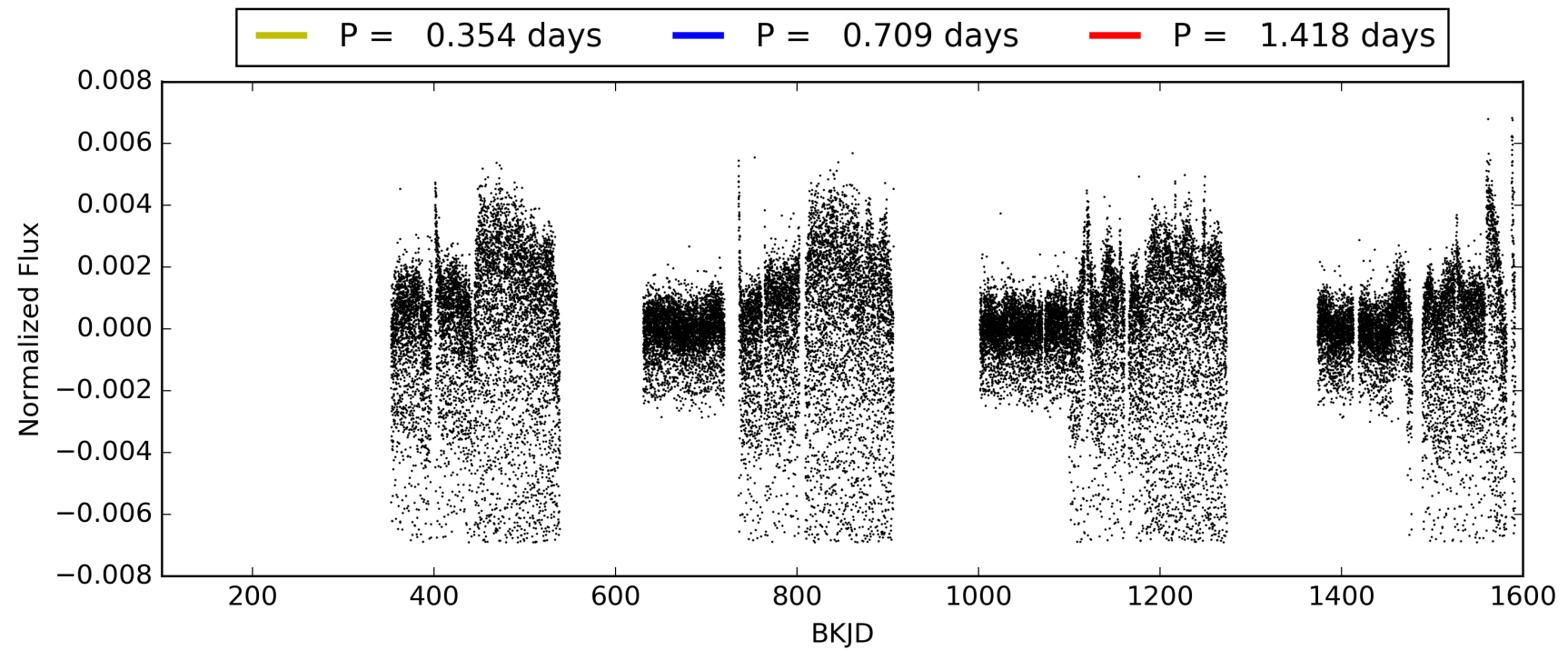
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 00:24:46 Z

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

# TCE 003245661-01, PDC Light Curves

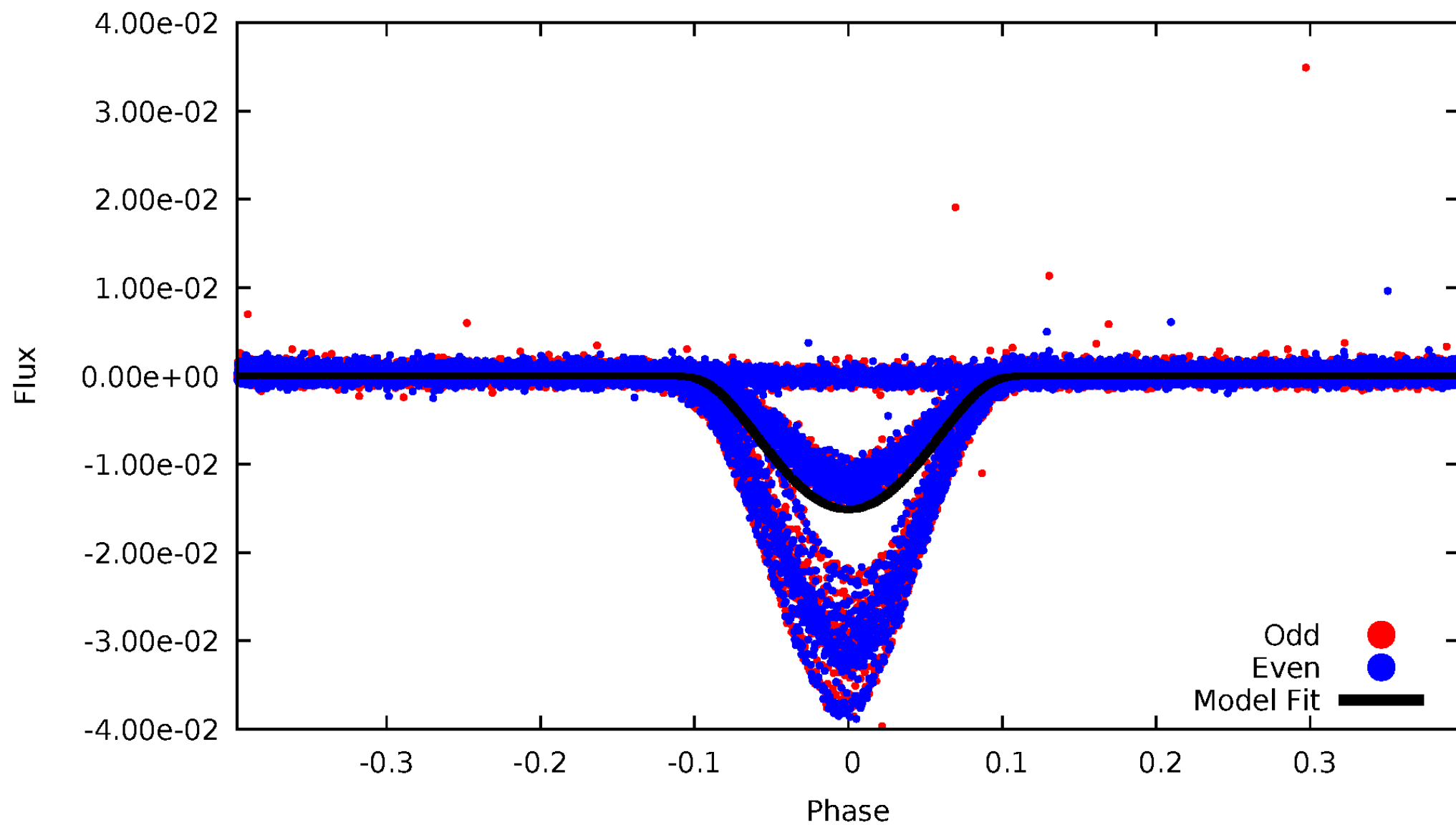


TCE 003245661-01



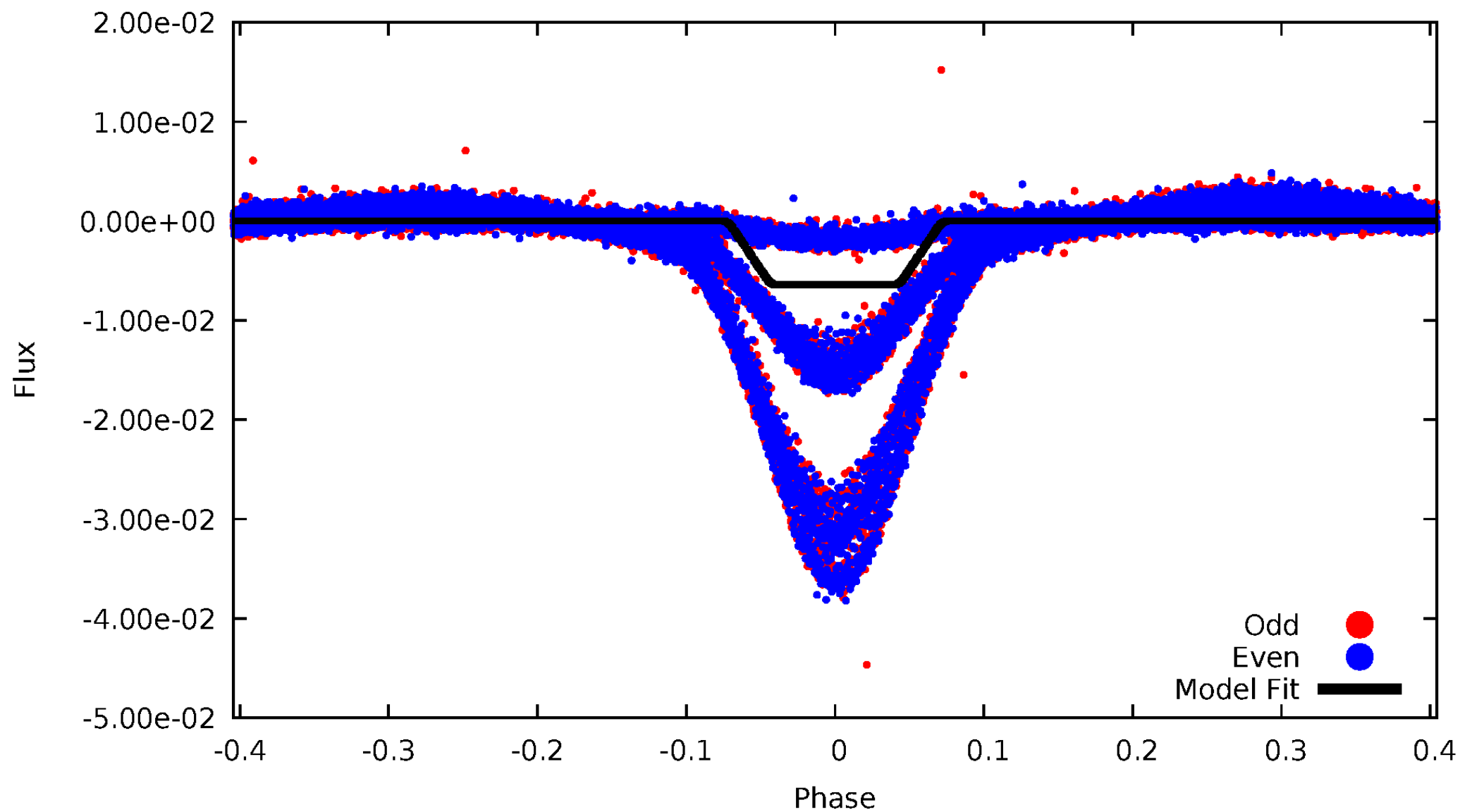
# DV Odd/Even

TCE 003245661-01



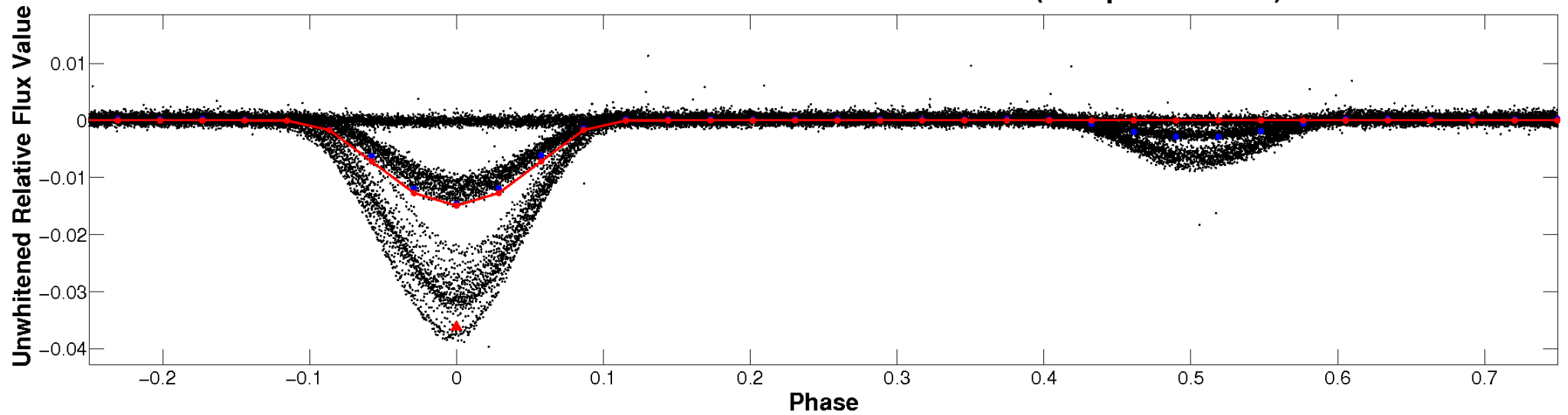
# ALT Odd/Even

TCE 003245661-01

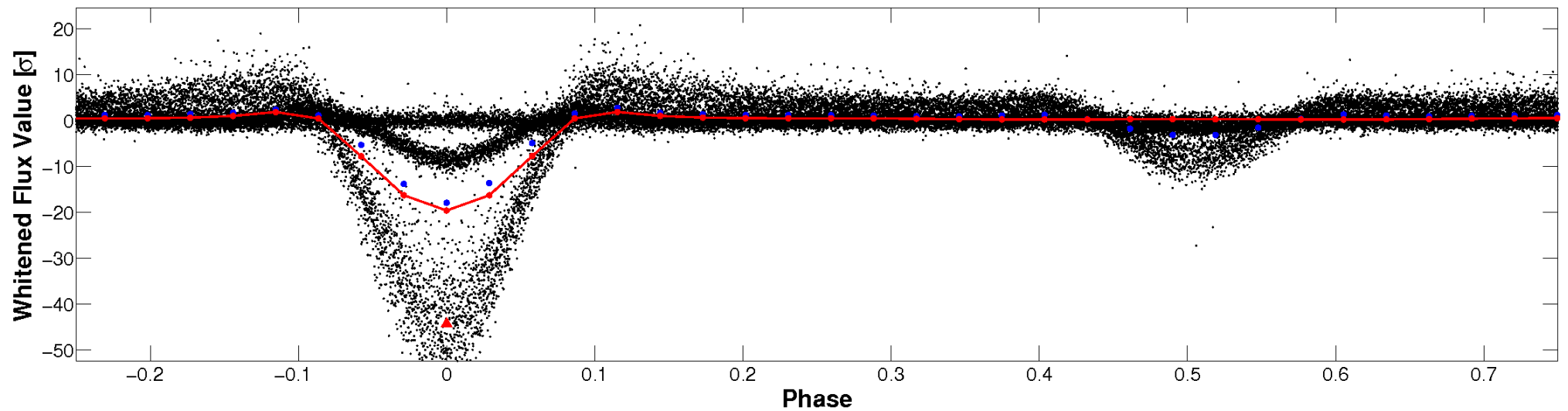


# Non-Whitened Vs. Whitened Light Curve

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



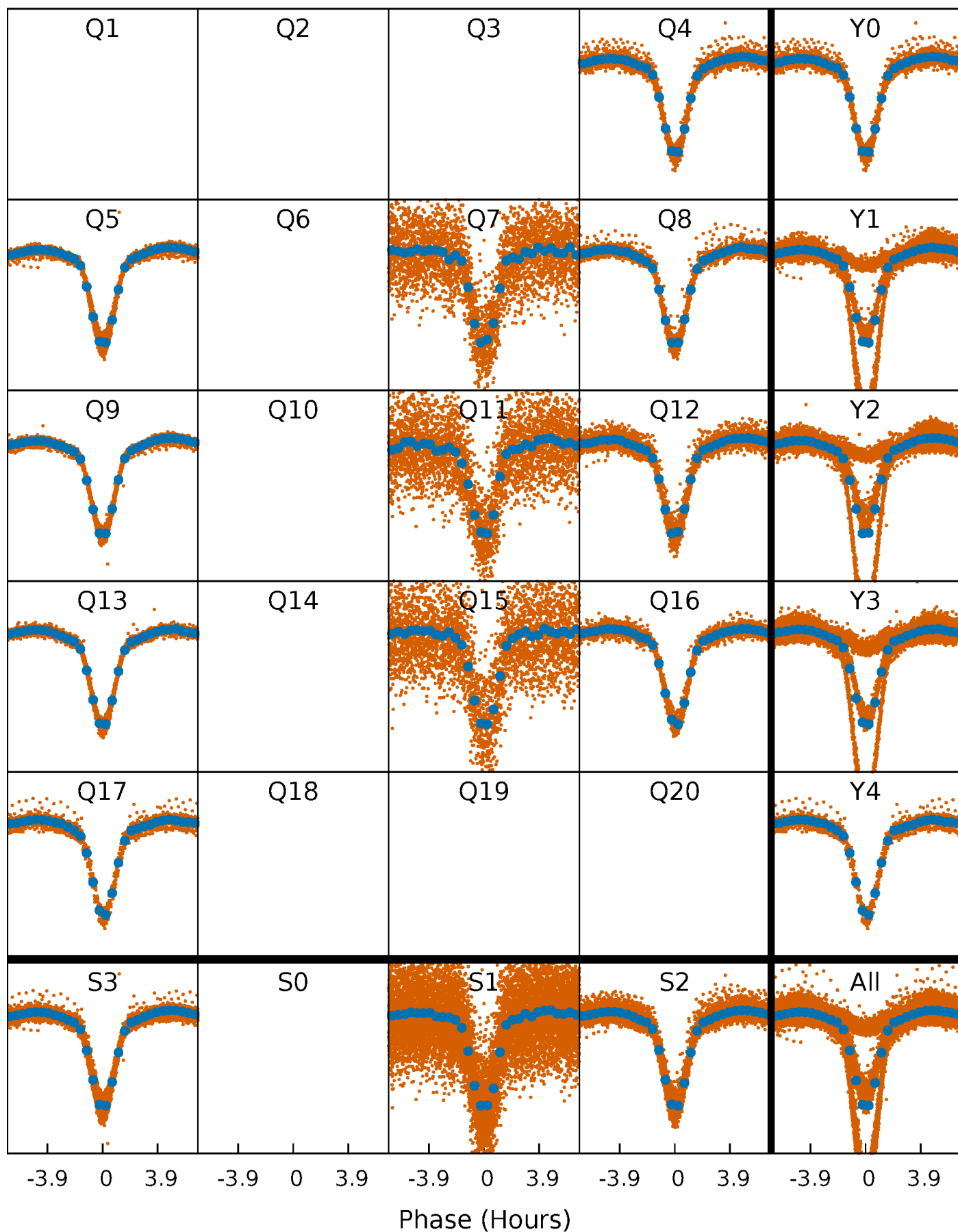
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

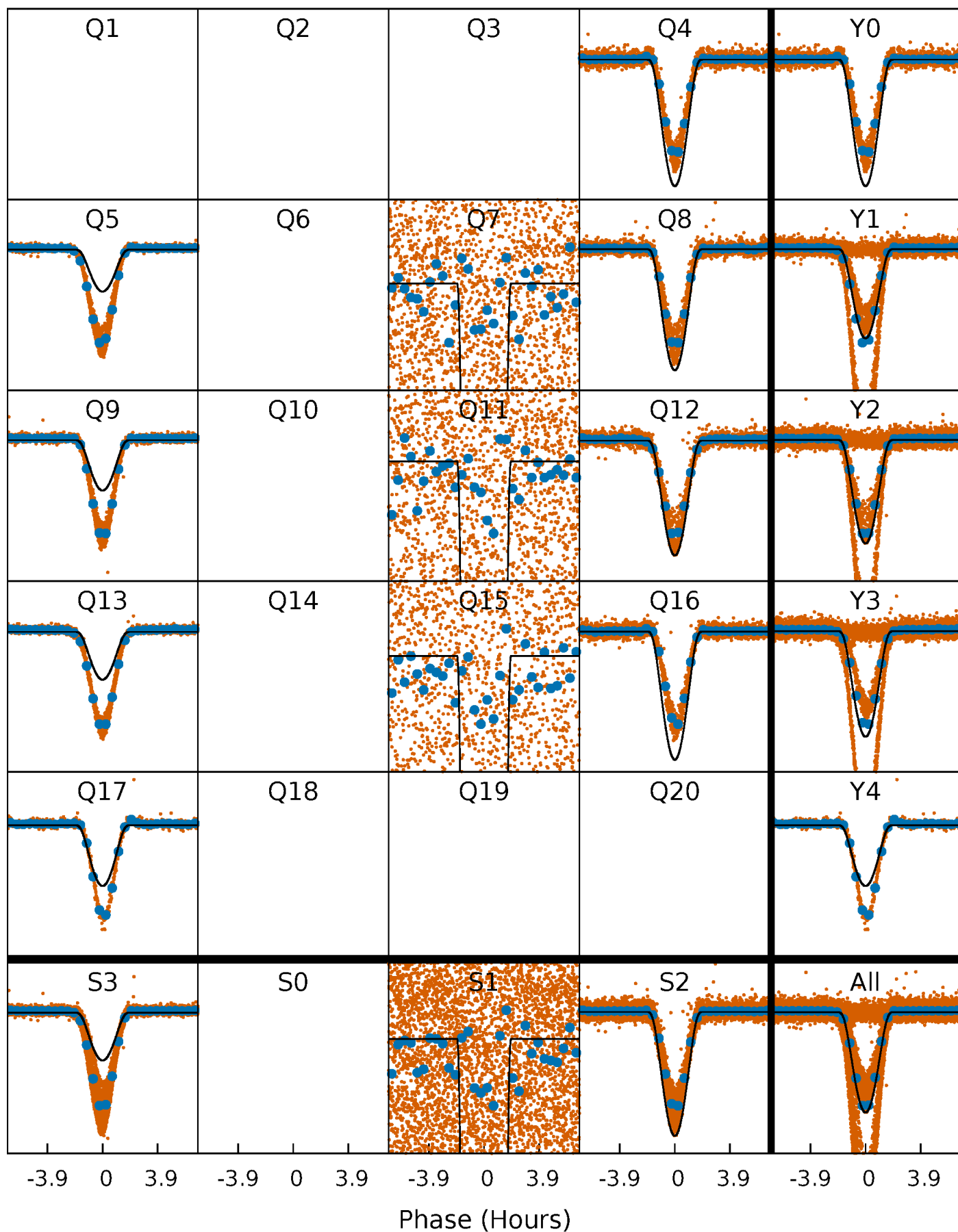
TCE 003245661-01 P= 0.708805 Days  $T_0=132.168286$  (BKJD)





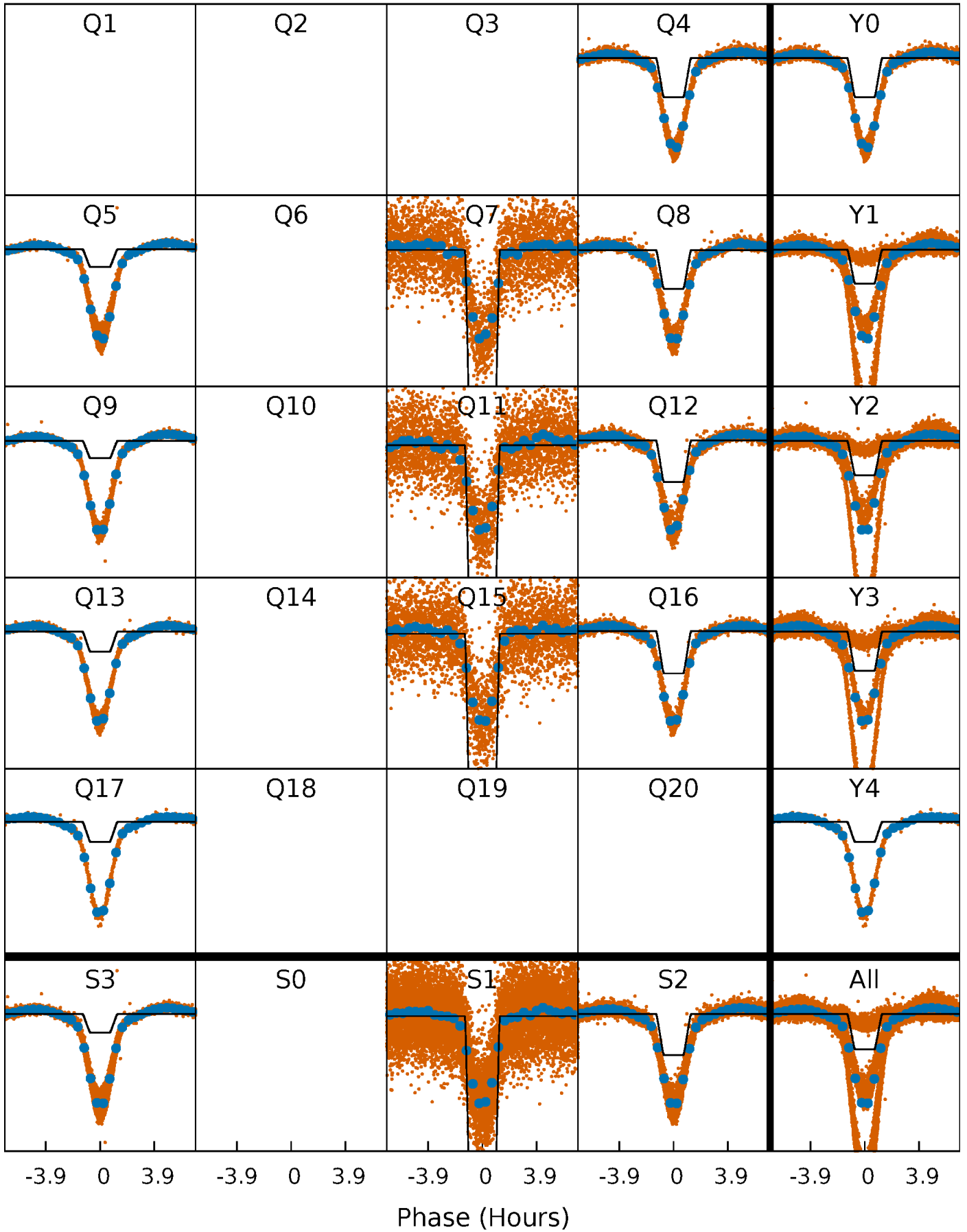
# DV Quarter-Phased Transit Curves

TCE 003245661-01 P= 0.708805 Days  $T_0=132.168286$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

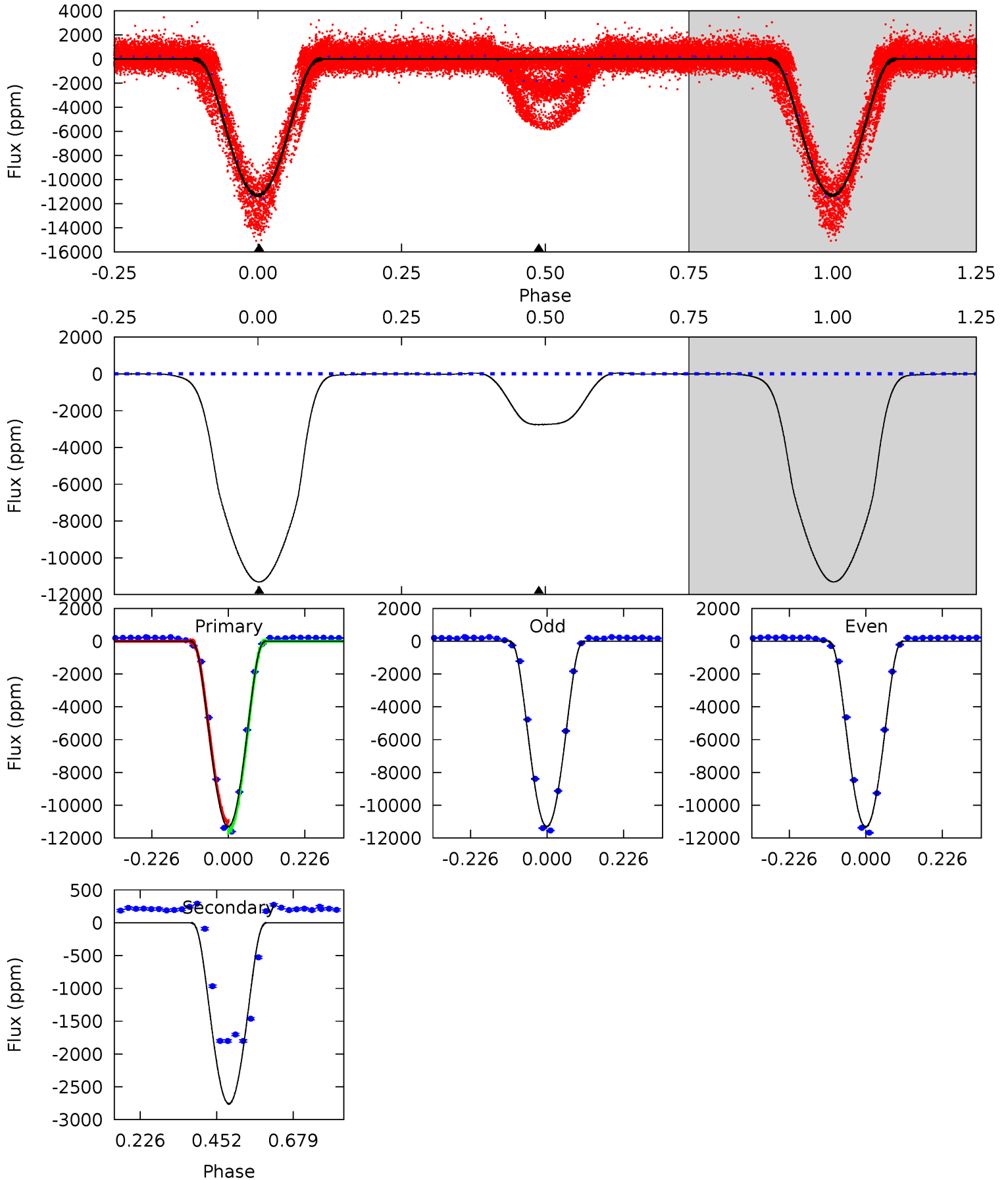
TCE 003245661-01 P= 0.708808 Days  $T_0=132.165181$  (BKJD)



# DV Model-Shift Uniqueness Test

003245661-01, P = 0.708805 Days, E = 132.168286 Days

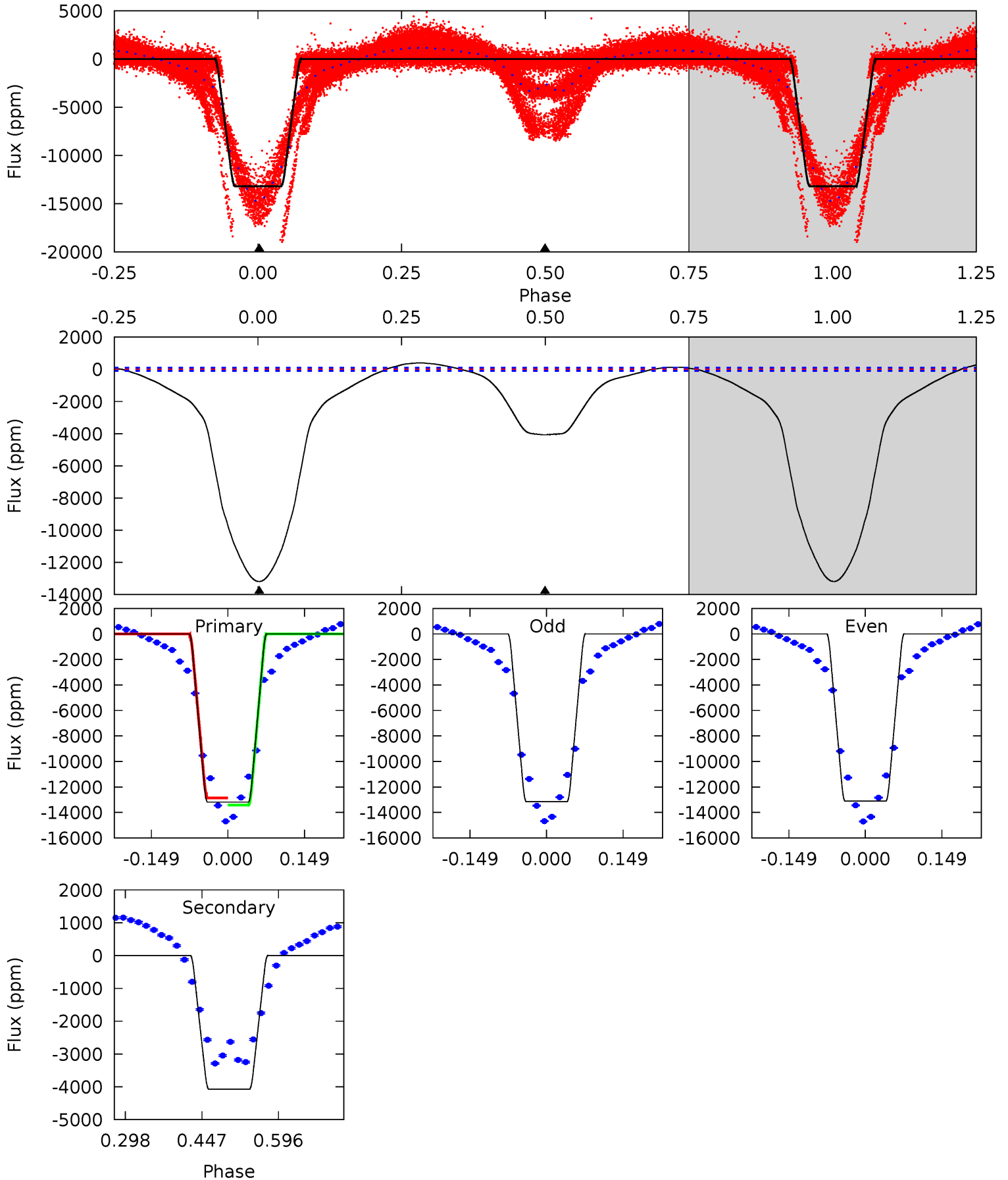
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1370	334.2	0	0	4.39	1.21	0.56	1370	1370	334.2	334.2	1.21	1.25	0.00	0



# Alt Model-Shift Uniqueness Test

003245661-01, P = 0.708808 Days, E = 132.165181 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
612.9	189.1	0	0	4.48	1.44	21.5	612.9	612.9	189.1	189.1	0.95	1.13	0.03	13.1



### Stellar Parameters For KIC 003245661

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5989^{+189}_{-210}$	$4.500^{+0.052}_{-0.208}$	$-0.300^{+0.300}_{-0.300}$	$0.908^{+0.269}_{-0.090}$	$0.950^{+0.117}_{-0.117}$	$1.788^{+0.501}_{-0.936}$
	+3%/-4%	+1%/-5%	+100%/-100%	+30%/-10%	+12%/-12%	+28%/-52%
Source	KIC0	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 003245661-01 / KOI 3977.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-2759 \pm 8$	$18.21^{+2.99}_{-1.65}$	$2903^{+213}_{-134}$	$3472^{+124}_{-129}$	$1.044^{+0.211}_{-0.242}$
Alt.	$-4069 \pm 22$	$8.23^{+1.46}_{-1.19}$	$2898^{+213}_{-138}$	$5345^{+338}_{-301}$	$7.644^{+2.564}_{-2.030}$

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

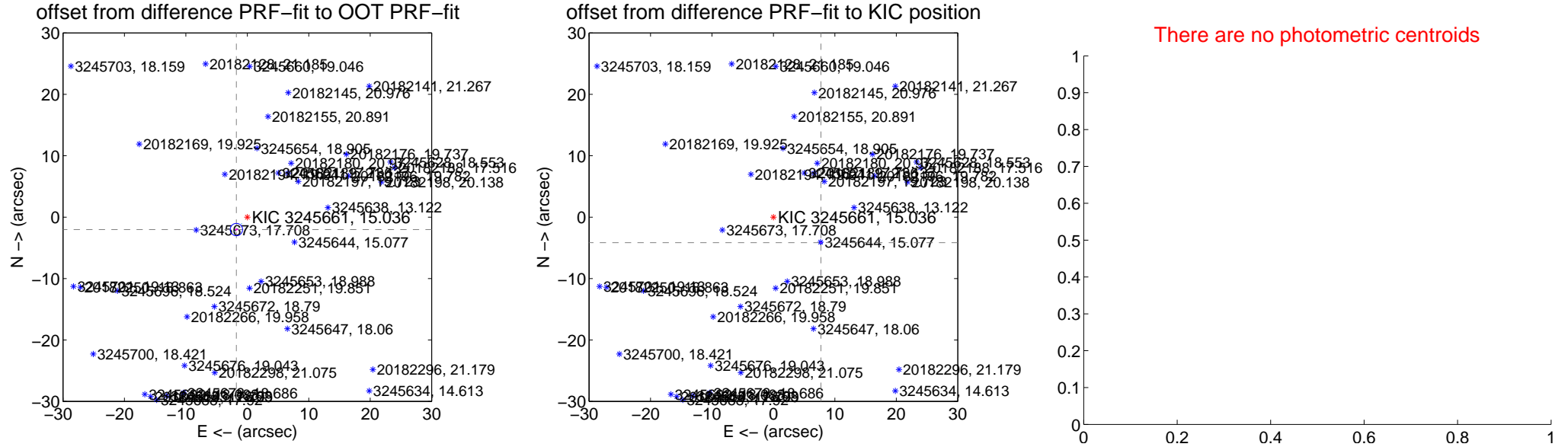
## DV Centroid Data

Supplemental centroid analysis for 003245661-01. Kepler magnitude: 15.04. Transit SNR 388.51

There are 11 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 9.93 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.690 \pm 0.335$	8.02	$1.776 \pm 0.234$	$-2.020 \pm 0.250$
PRF-fit source offset from KIC position	$8.774 \pm 0.069$	126.31	$-7.729 \pm 0.068$	$-4.153 \pm 0.071$
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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



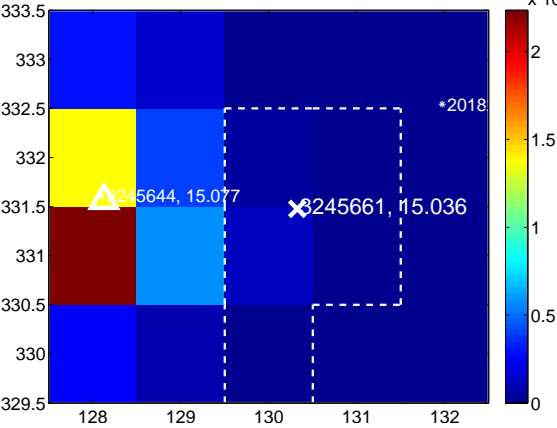
Q3 no difference image



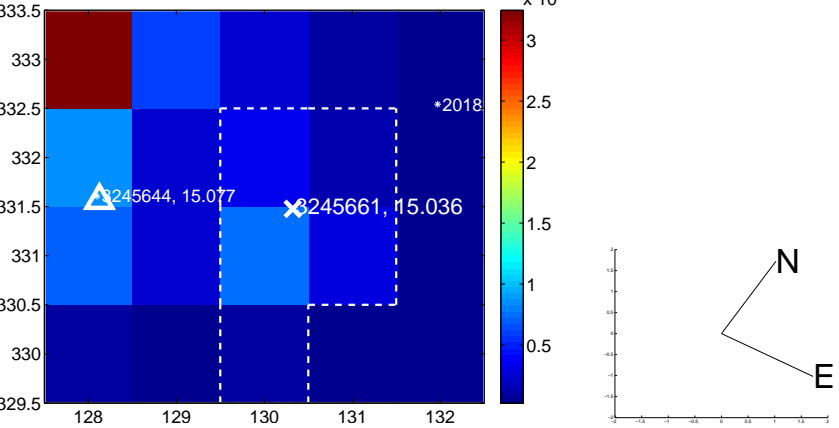
Q3 no OOT image



Q4 difference image

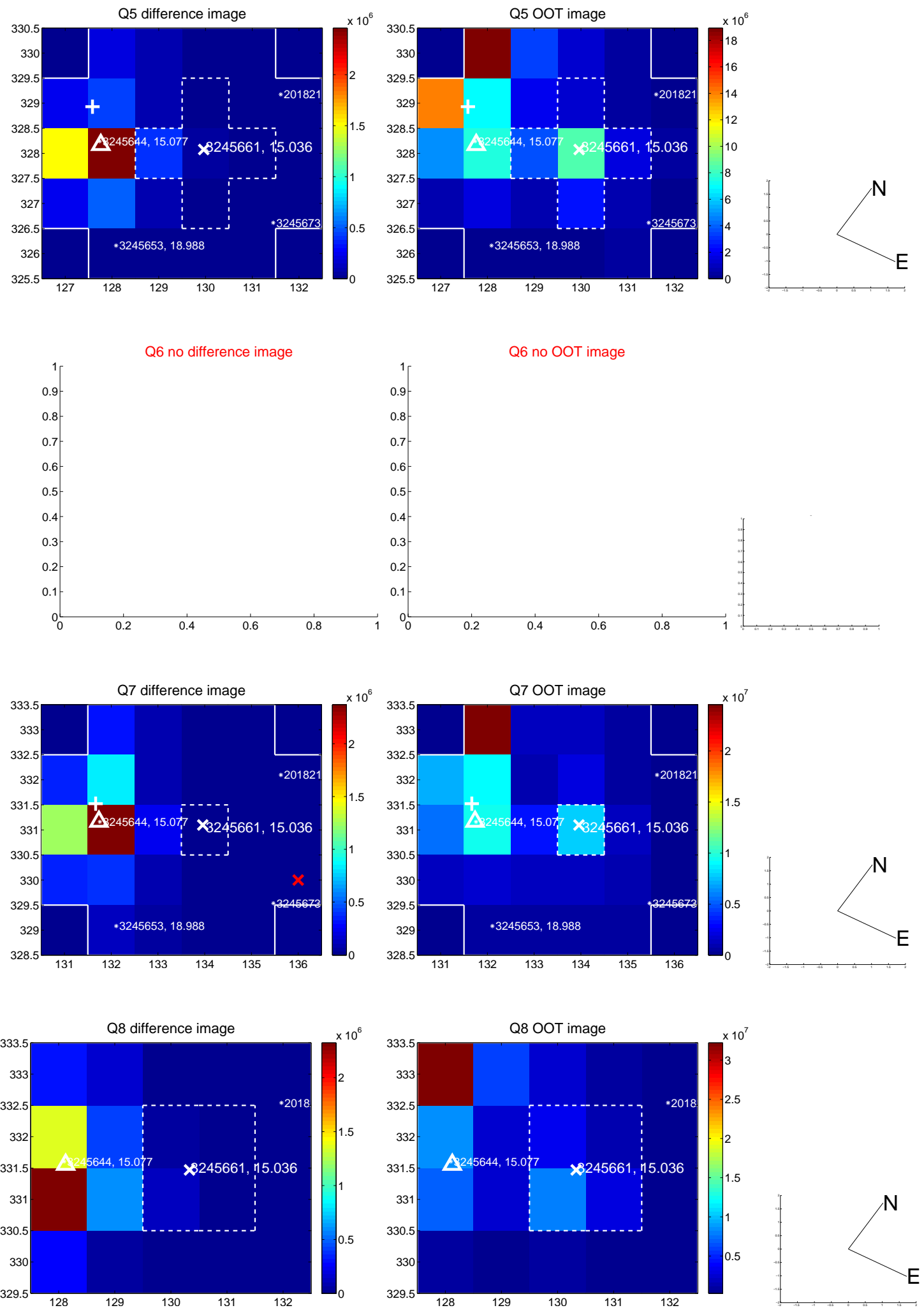


Q4 OOT image

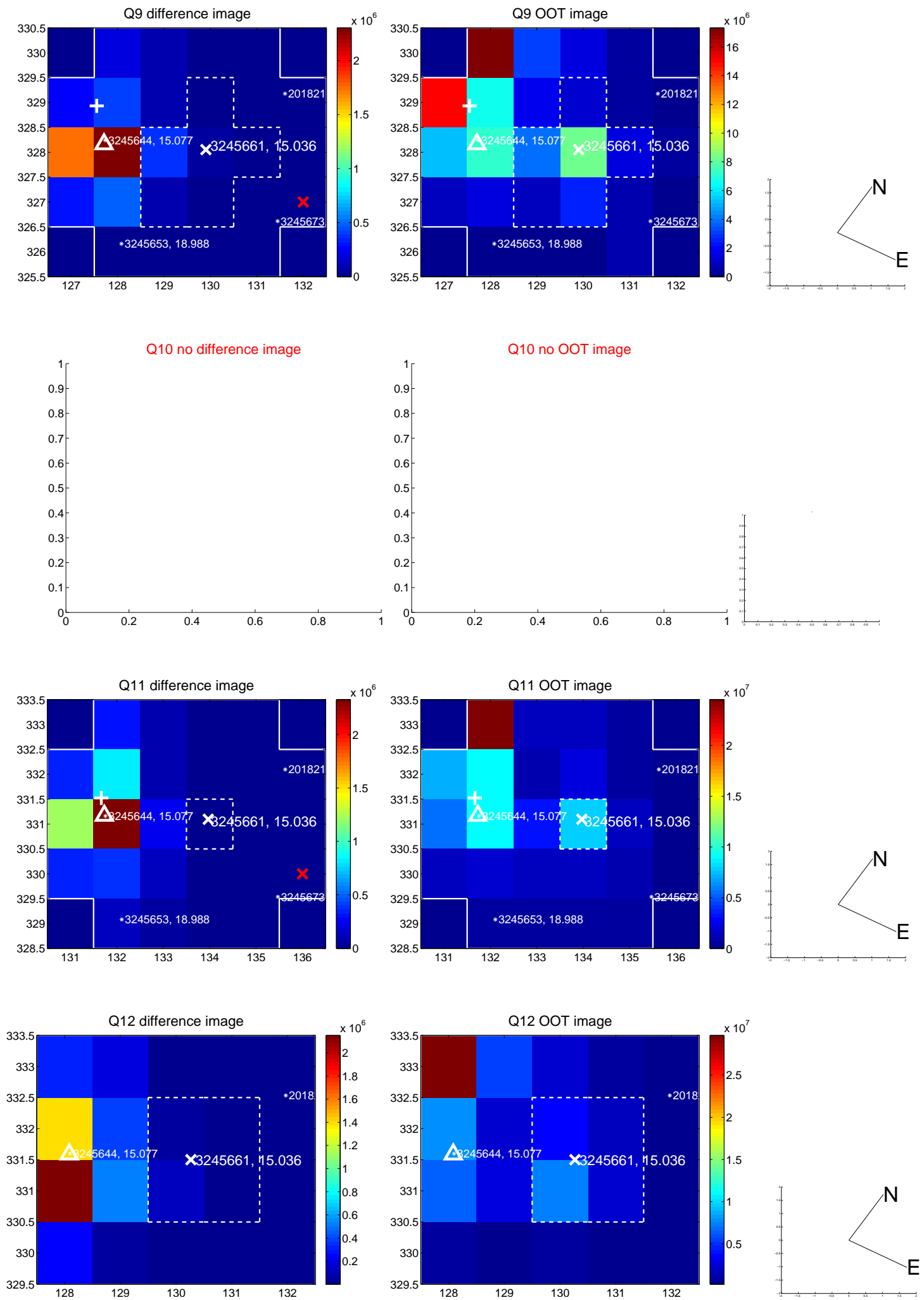




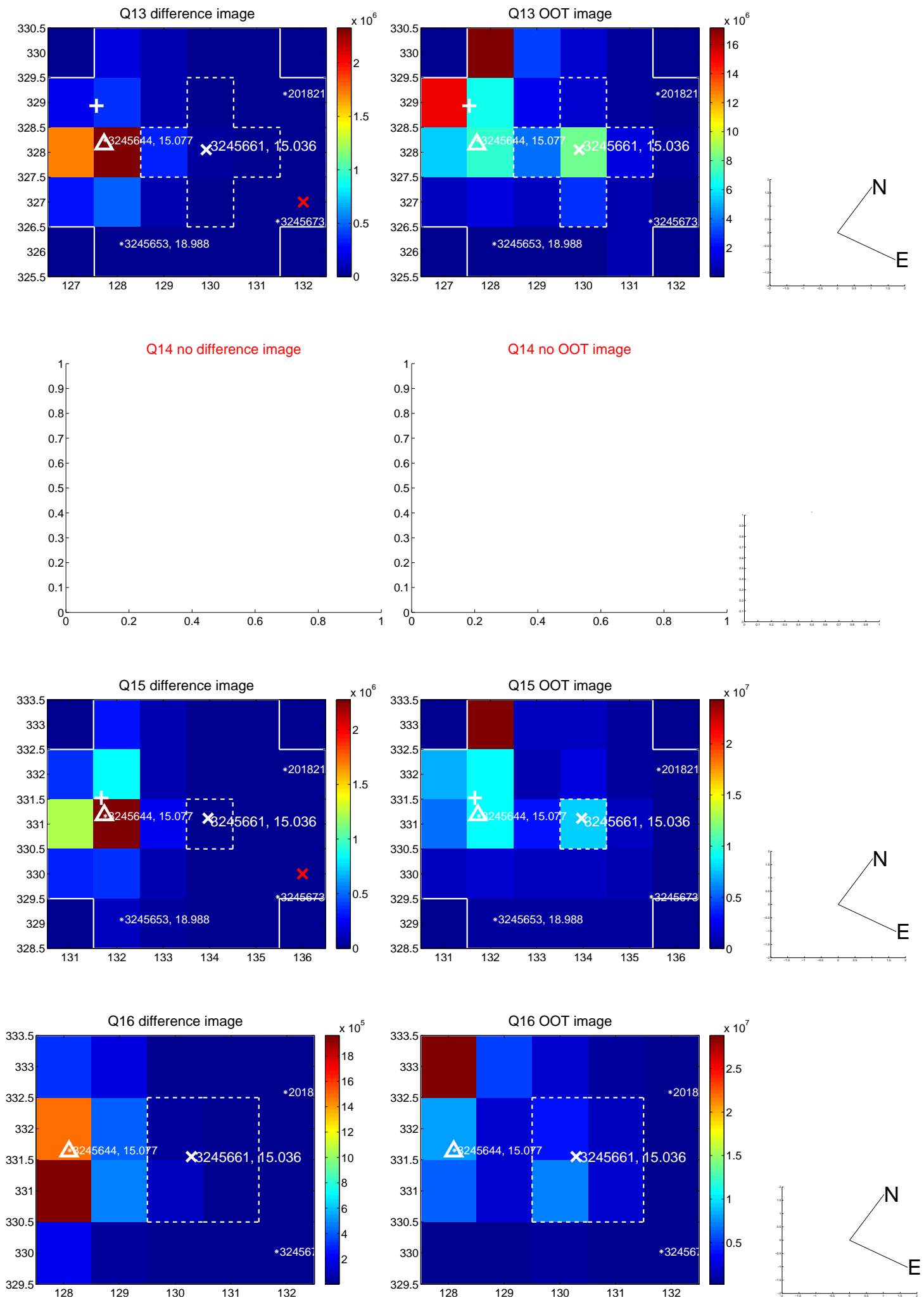
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



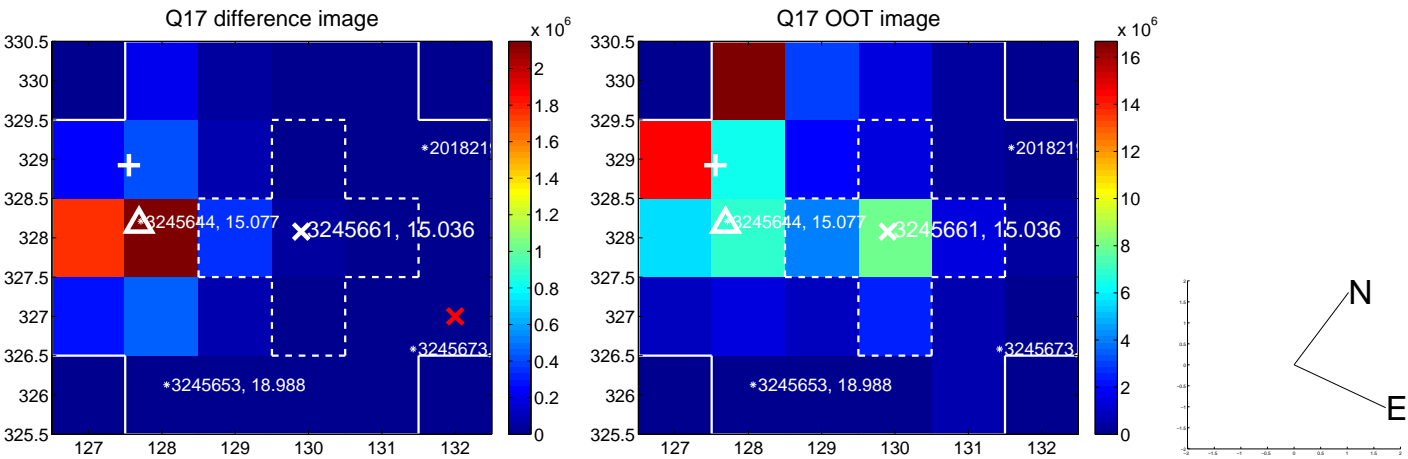
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



folded centroid time series figure for this object.

# UKIRT Image

Declination

