

# KIC 002308957

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002308957-01	OBS	6266.01	1.111634	132.087130	60778.8	13.340	8039.8	132.3	3.21	5788	85.84	17761.77

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002308957-01	OBS	FP	0.00	1	0	0	0	LPP_DV—LPP_ALT—CENT_KIC_POS

**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.

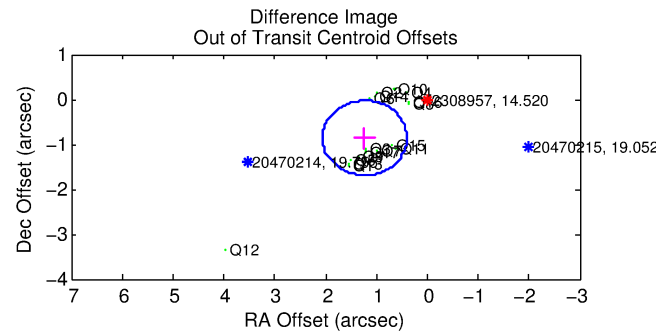
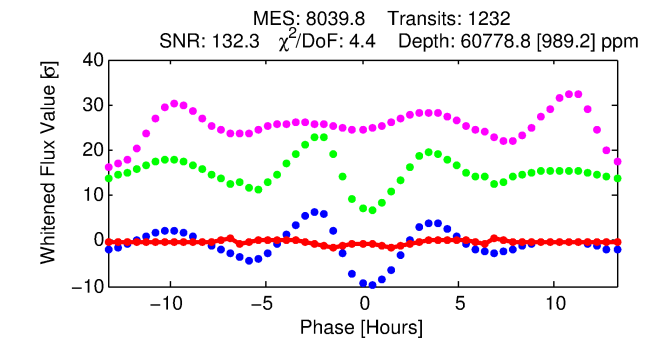
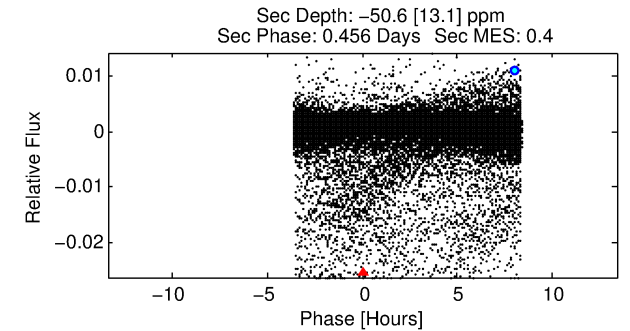
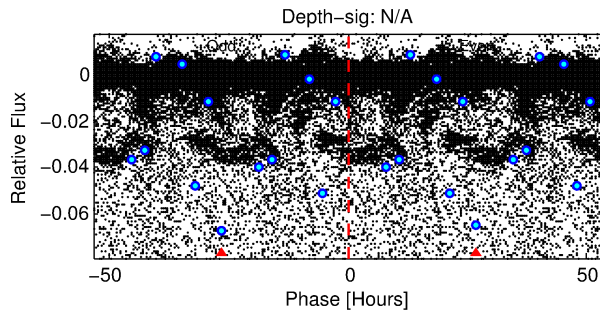
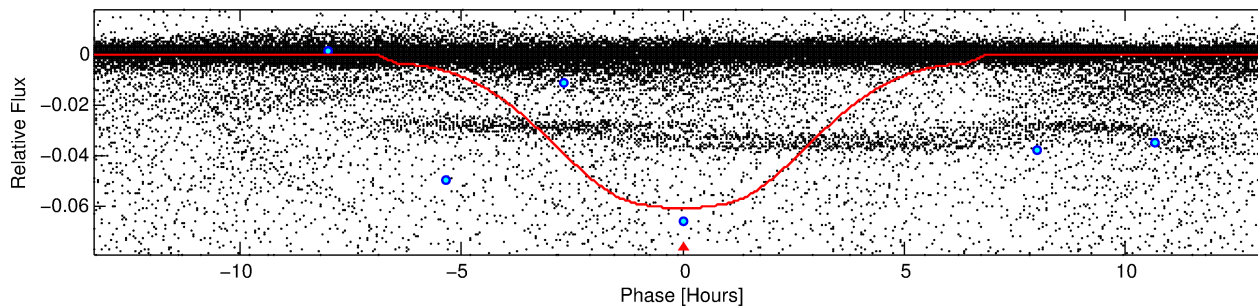
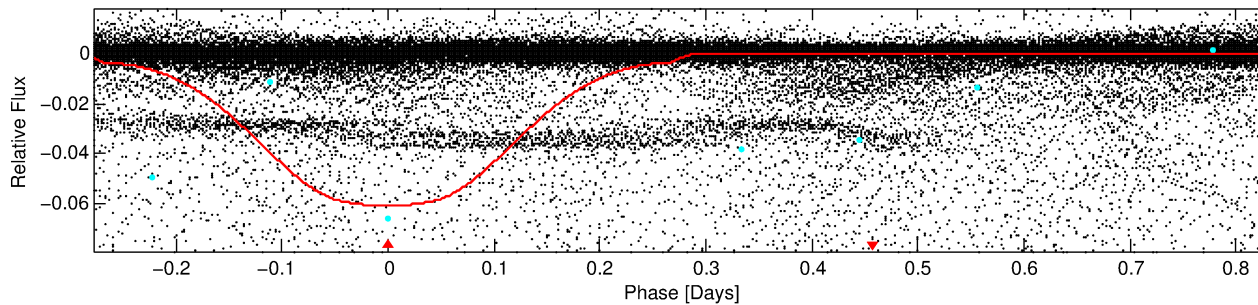
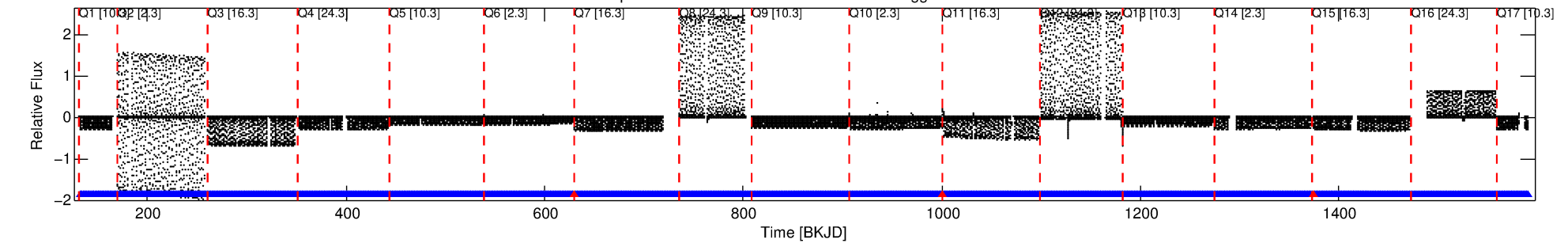
## Ephemeris Match Information For 002308957-01

No Significant Match Found

# DV One-Page Summary

KIC: 2308957 Candidate: 1 of 1 Period: 1.112 d  
KOI: K06266 Corr: No Ephemeris Match

Kp: 14.52 R\*: 3.21 Rs Teff: 5788.0 K Logg: 3.61 Fe/H: -0.040



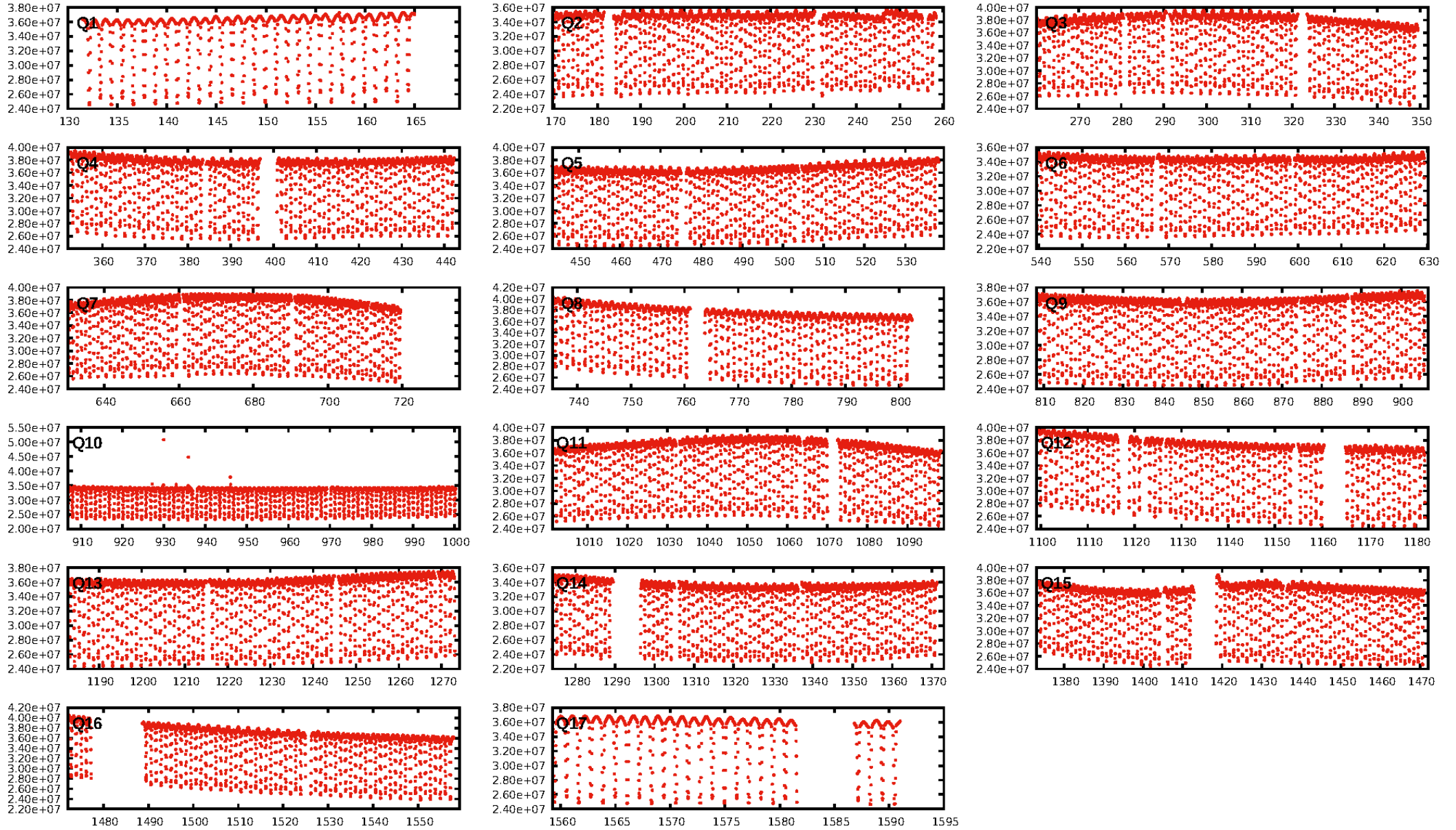
## DV Fit Results:

Period = 1.11163 [0.00000] d  
Epoch = 132.0871 [0.0004] BKJD  
Rp/R\* = 0.2450 [0.0019]  
a/R\* = 1.17 [0.00]  
b = 0.71 [0.00]  
Seff = 17761.77 [8745.13]  
Teff = 2944 [362] K  
**Rp = 85.84 [31.20] Re**  
a = 0.0242 [0.0078] AU  
Ag = N/A  
Teffp = N/A

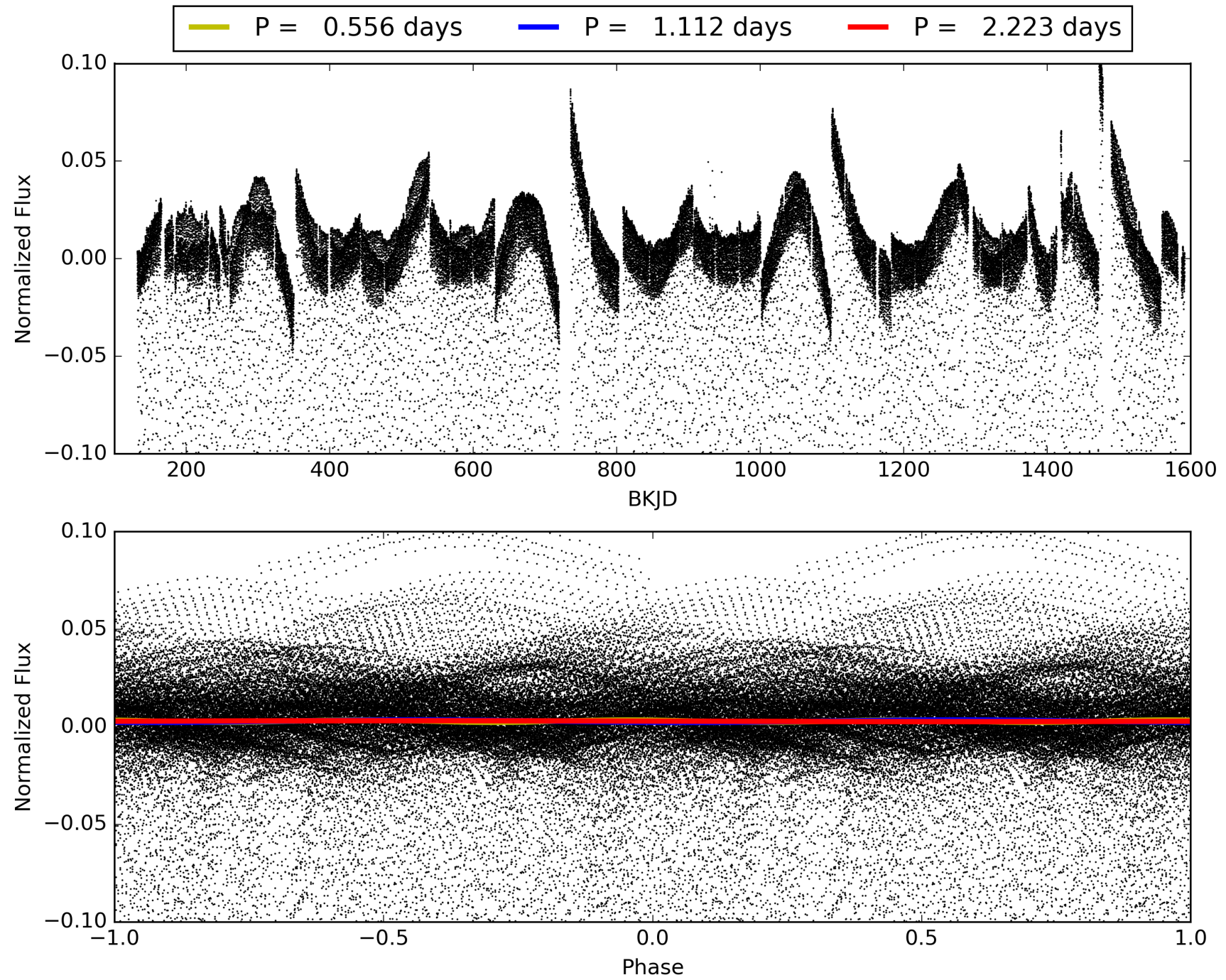
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1174/1177]  
GhostDiagnostic-chr: N/A  
Centroid-sig: N/A  
Centroid-so: N/A  
**OotOffset-rm: 1.505 arcsec [5.44σ]**  
KicOffset-rm: 0.023 arcsec [0.30σ]  
OotOffset-st: 4/4/4/5 [17]  
KicOffset-st: 4/4/4/5 [17]  
DiffImageQuality-fgm: 0.53 [9/17]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 002308957-01, PDC Light Curves



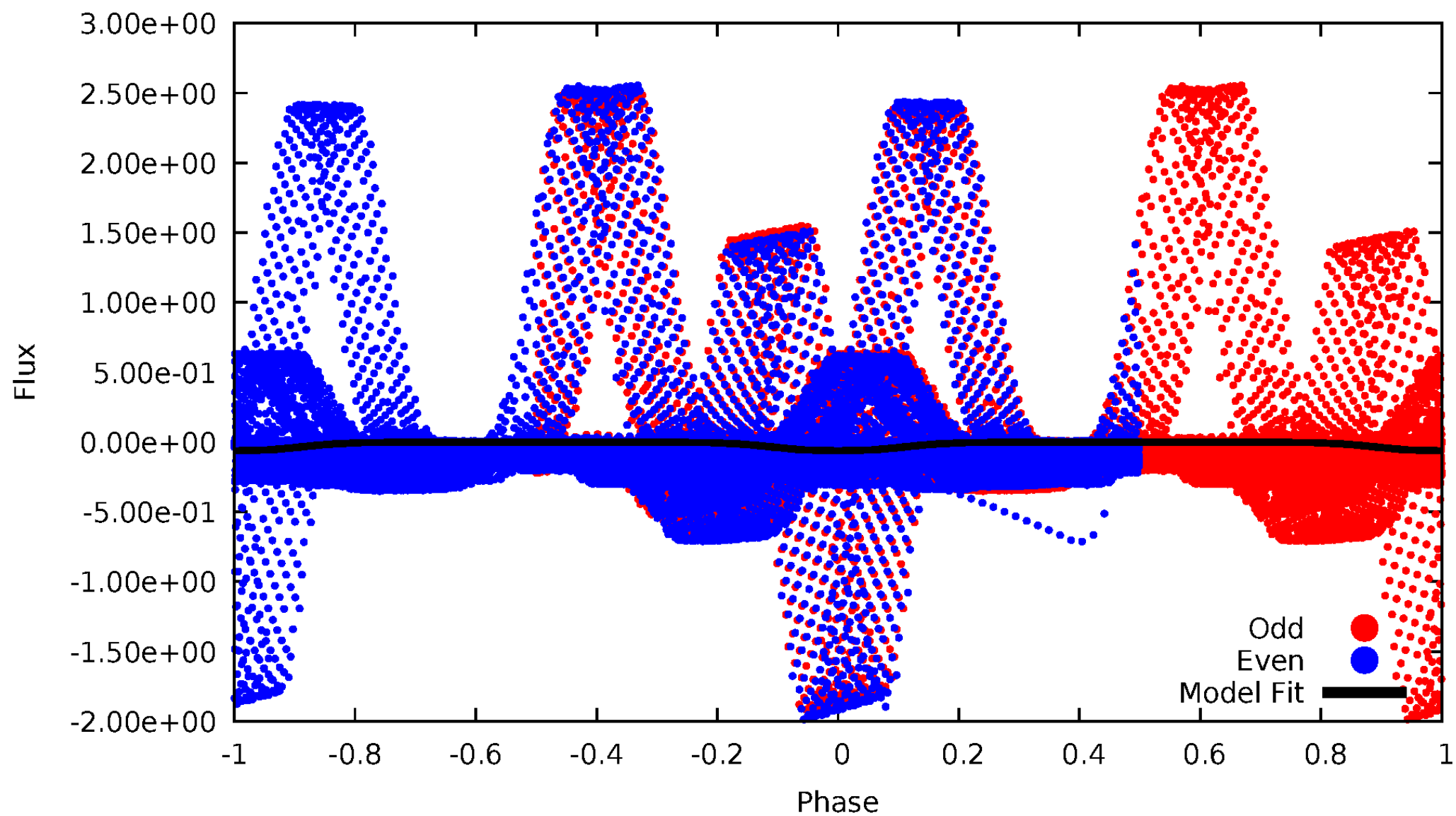
TCE 002308957-01





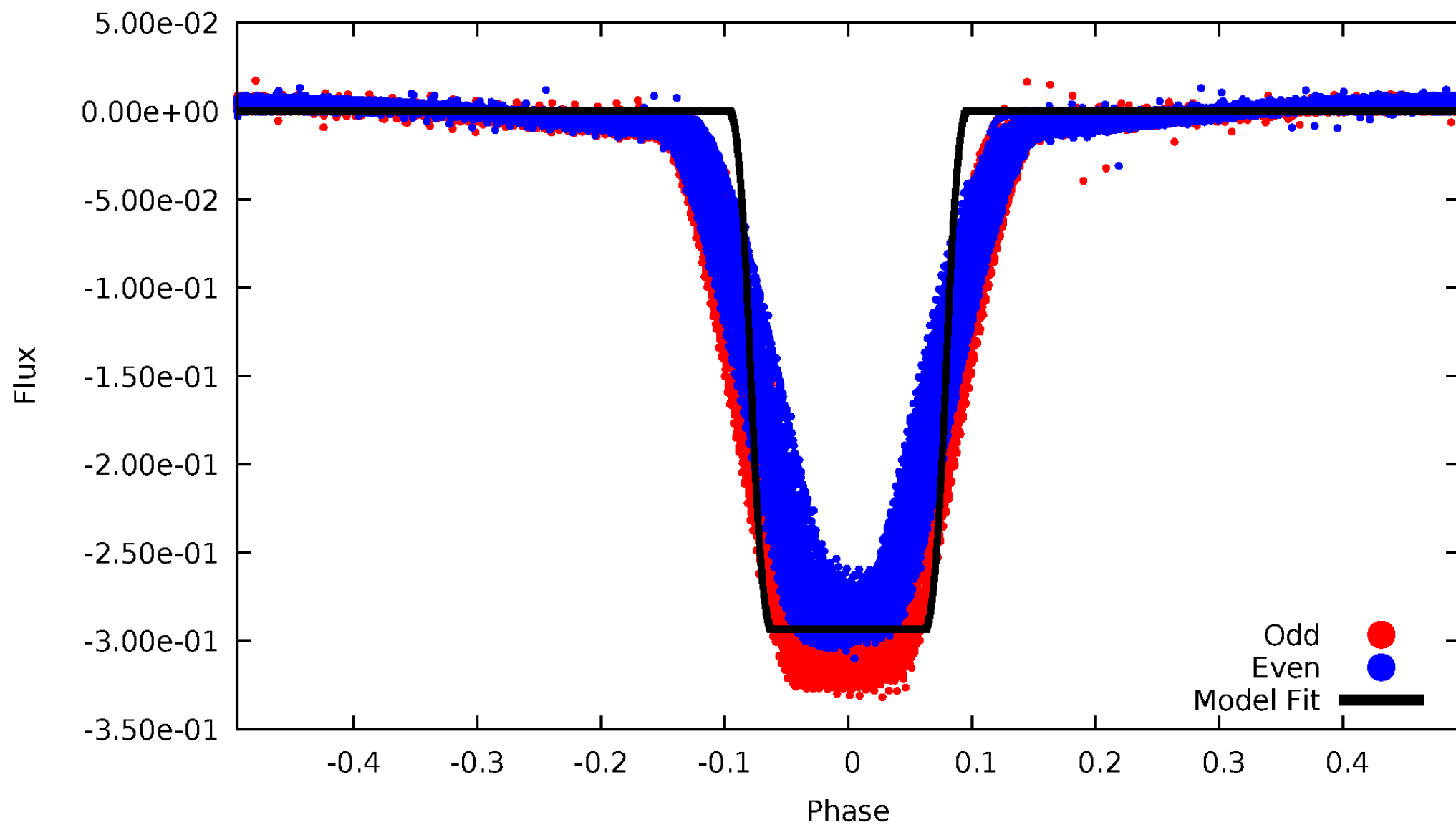
# DV Odd/Even

TCE 002308957-01



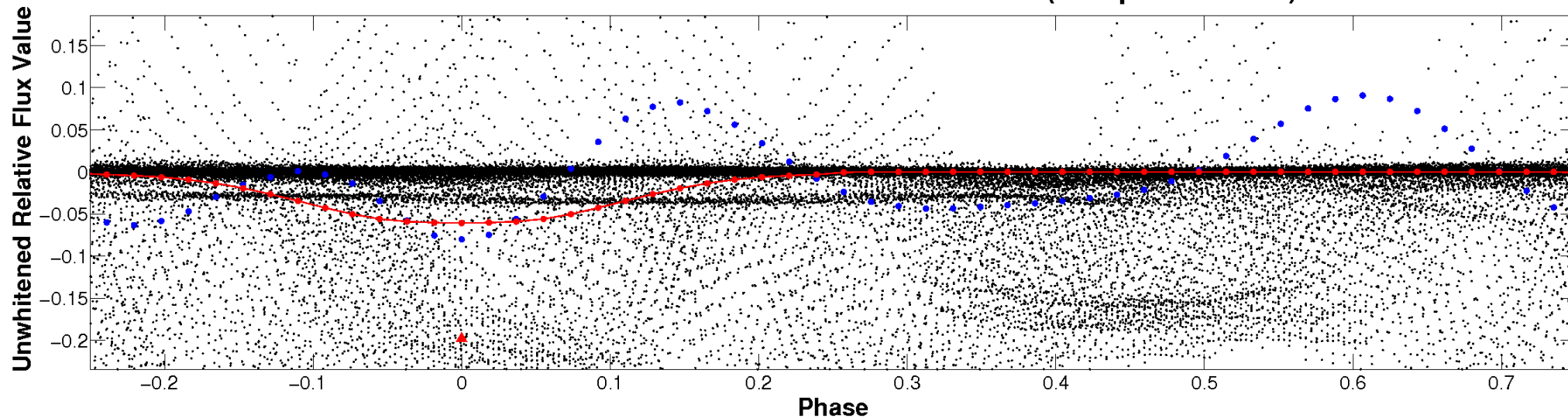
# ALT Odd/Even

TCE 002308957-01

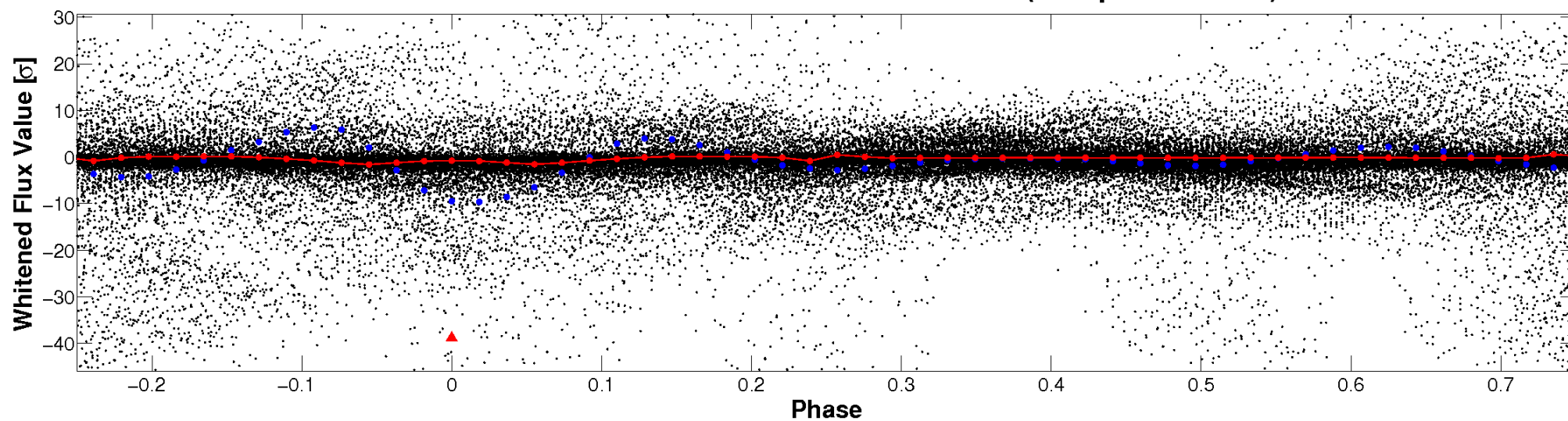


# Non-Whitened Vs. Whitened Light Curve

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

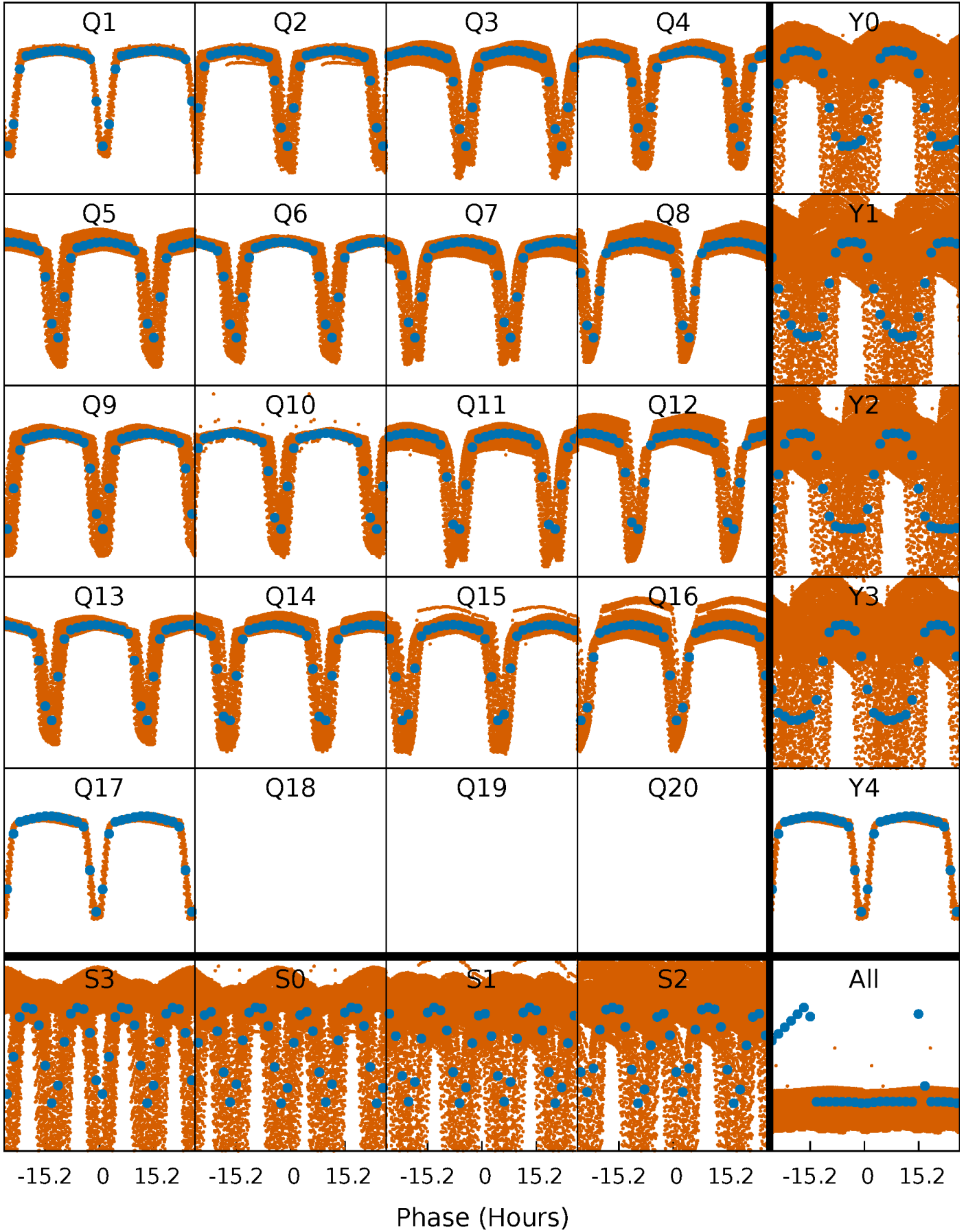


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

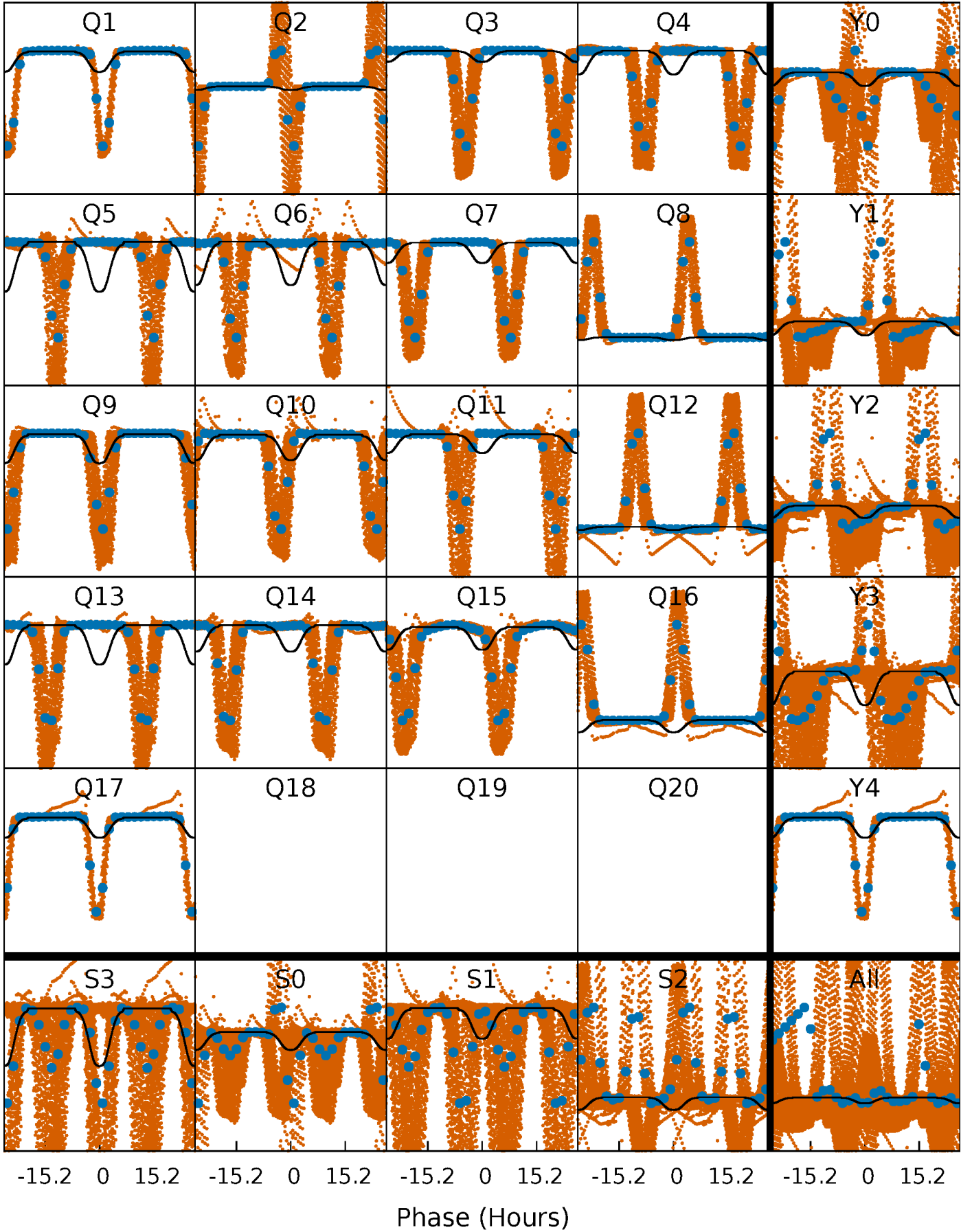
TCE 002308957-01   P= 1.111634 Days    $T_0=132.087130$  (BKJD)





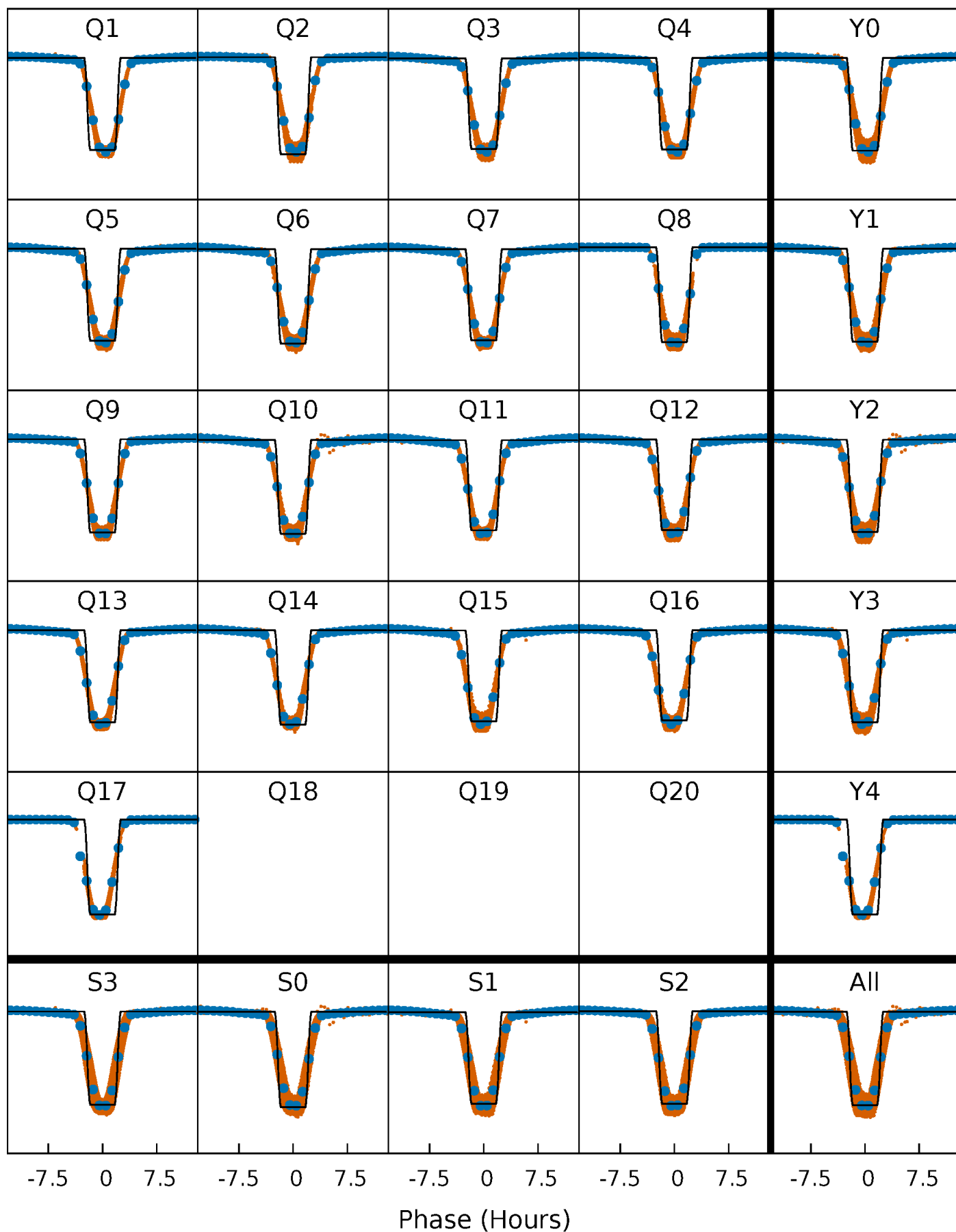
# DV Quarter-Phased Transit Curves

TCE 002308957-01     $P = 1.111634$  Days     $T_0 = 132.087130$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

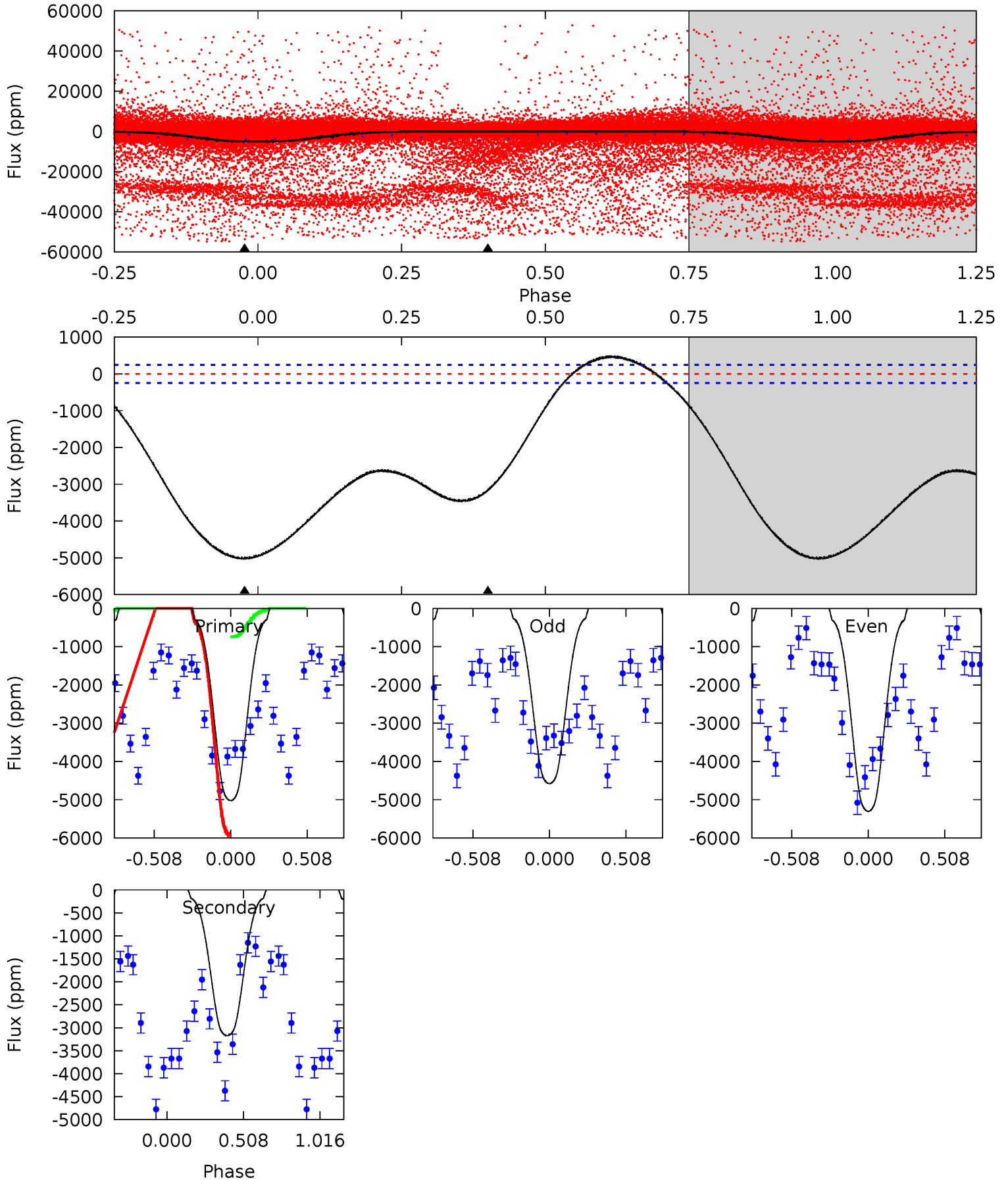
TCE 002308957-01 P= 1.109869 Days  $T_0=132.147604$  (BKJD)



# DV Model-Shift Uniqueness Test

002308957-01, P = 1.111634 Days, E = 130.975496 Days

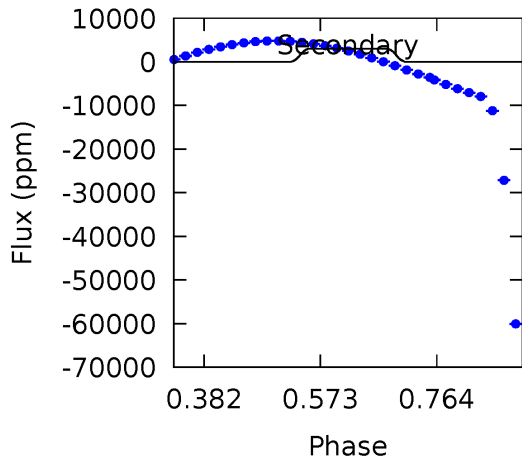
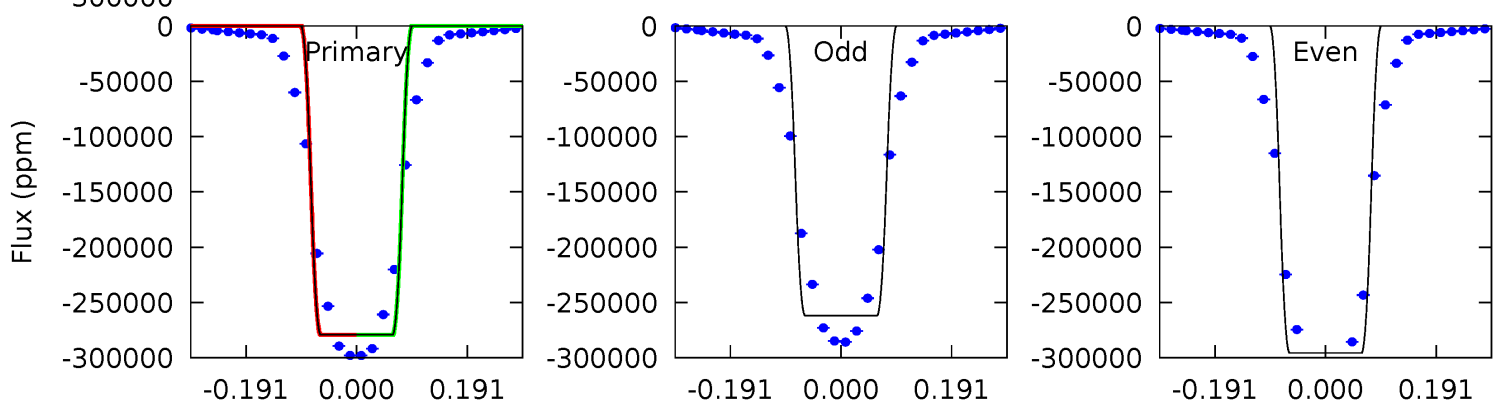
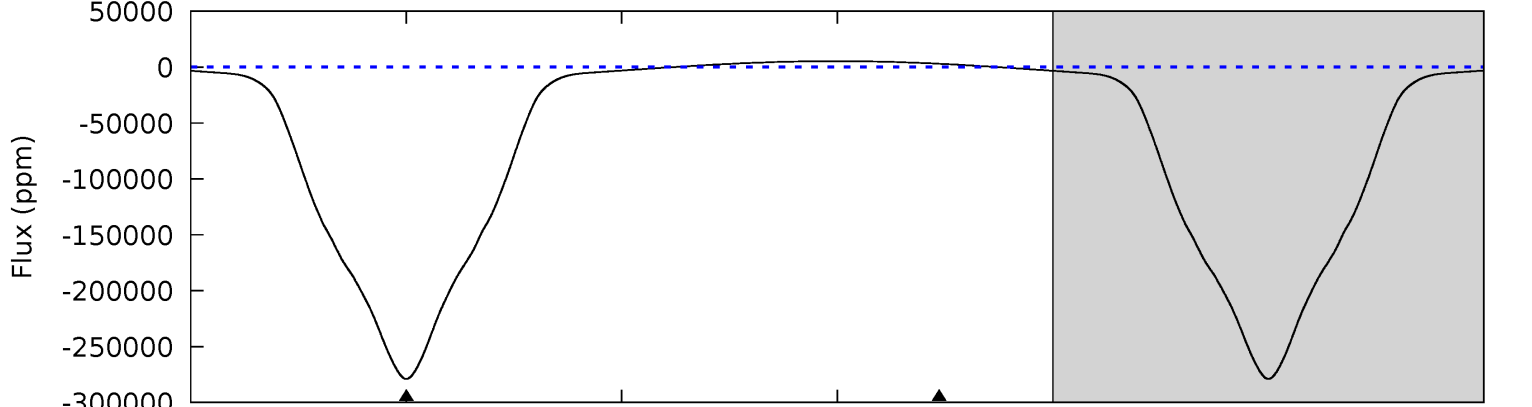
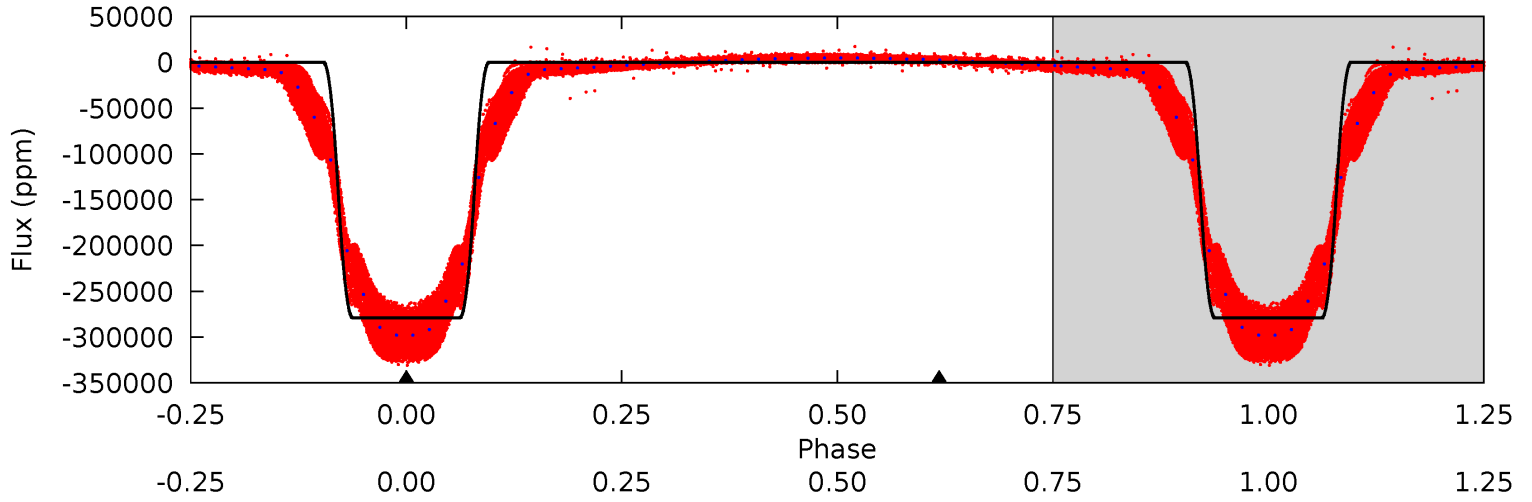
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
85.4	54.0	0	0	4.21	0.66	5.49	85.4	85.4	54.0	54.0	6.43	2.60	0.09	46.9



# Alt Model-Shift Uniqueness Test

002308957-01, P = 1.109869 Days, E = 131.037735 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
7173	-78.0	0	0	4.43	1.31	83.5	7173	7173	-78.0	-78.0	446.2	1.02	0.02	0.01



### Stellar Parameters For KIC 002308957

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5788^{+78}_{-78}$	$3.607^{+0.277}_{-0.111}$	$-0.040^{+0.150}_{-0.150}$	$3.211^{+0.667}_{-1.167}$	$1.520^{+0.147}_{-0.368}$	$0.065^{+0.121}_{-0.024}$
	+1%/-1%	+8%/-3%	+375%/-375%	+21%/-36%	+10%/-24%	+187%/-37%
Source	SPE68	SPE68	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 002308957-01 / KOI 6266.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-3173 \pm 59$	$83.46^{+10.47}_{-15.95}$	$4058^{+227}_{-352}$	$-3352^{+412}_{-204}$	$0.147^{+0.062}_{-0.028}$
Alt.	$3035 \pm 39$	$185.59^{+22.69}_{-37.04}$	$4067^{+235}_{-325}$	$-3788^{+183}_{-141}$	$-0.028^{+0.005}_{-0.012}$

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



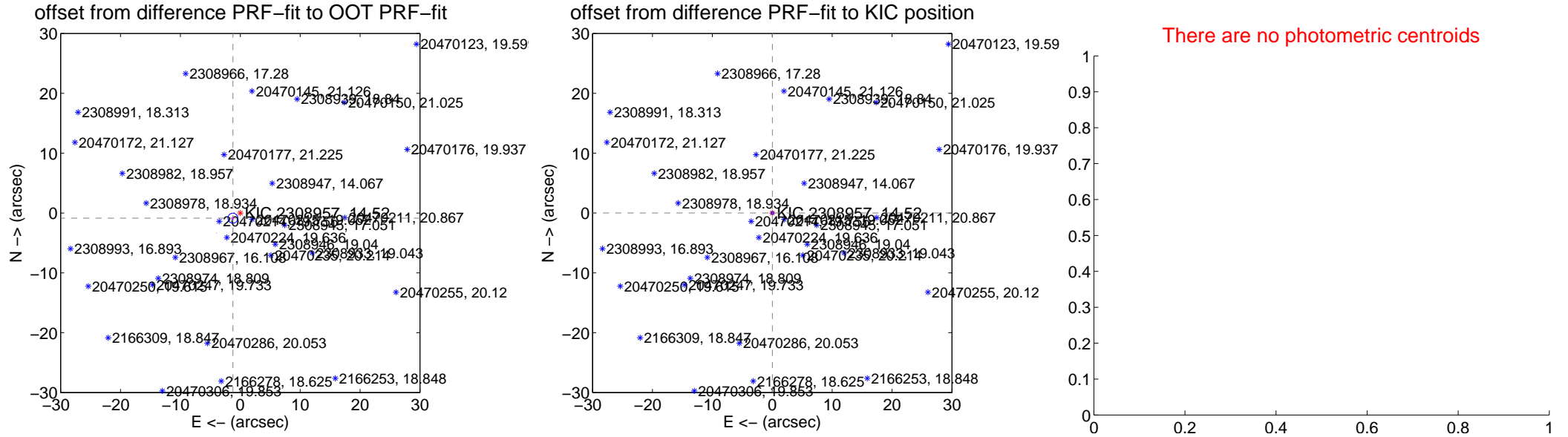
## DV Centroid Data

Supplemental centroid analysis for 002308957-01. Kepler magnitude: 14.52. Transit SNR 132.34

There are 9 quarters with good PRF difference image offsets

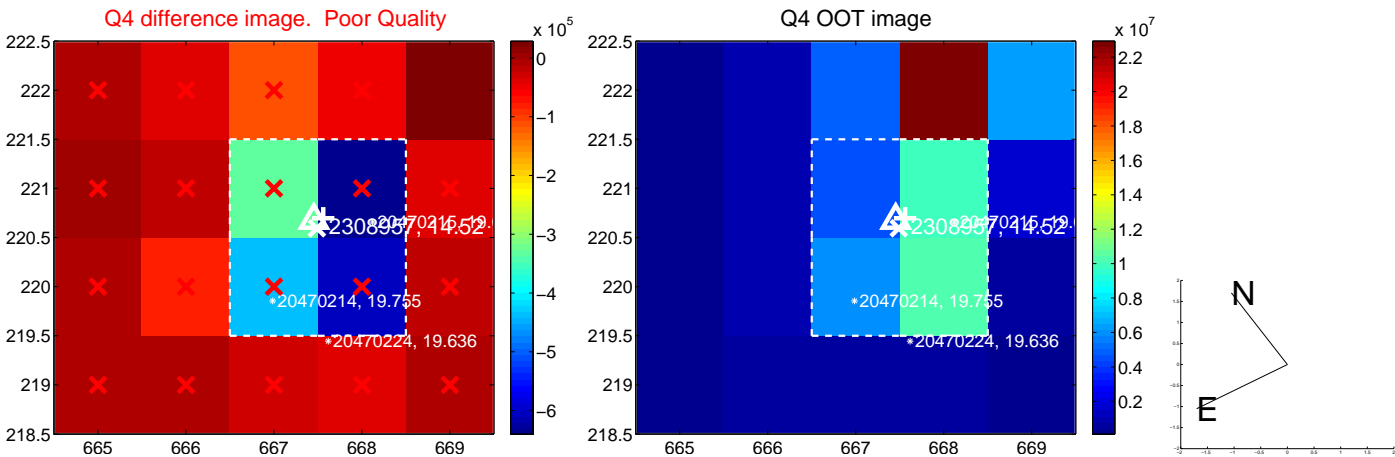
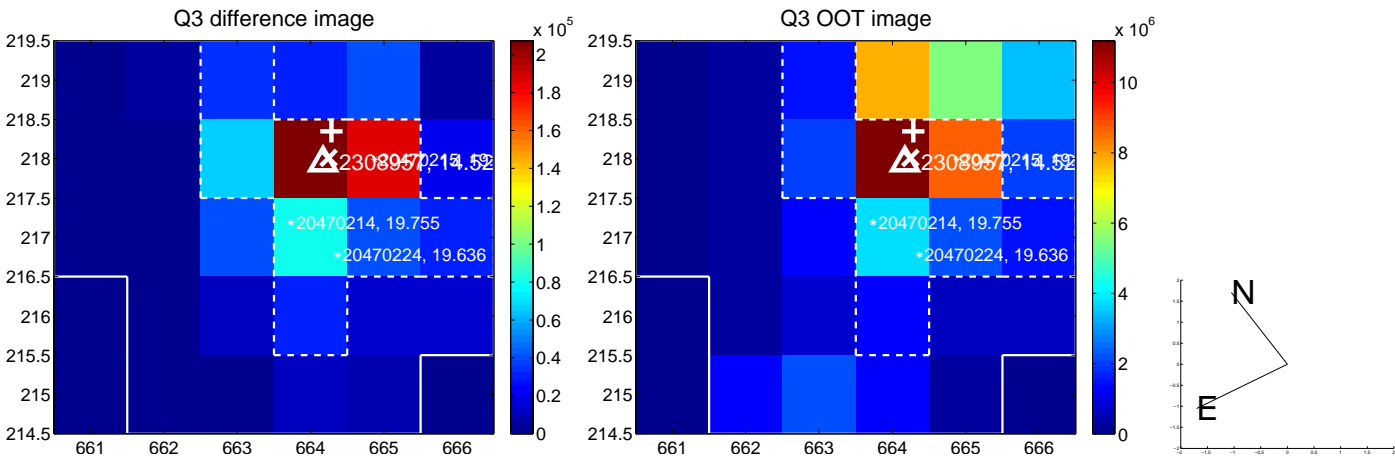
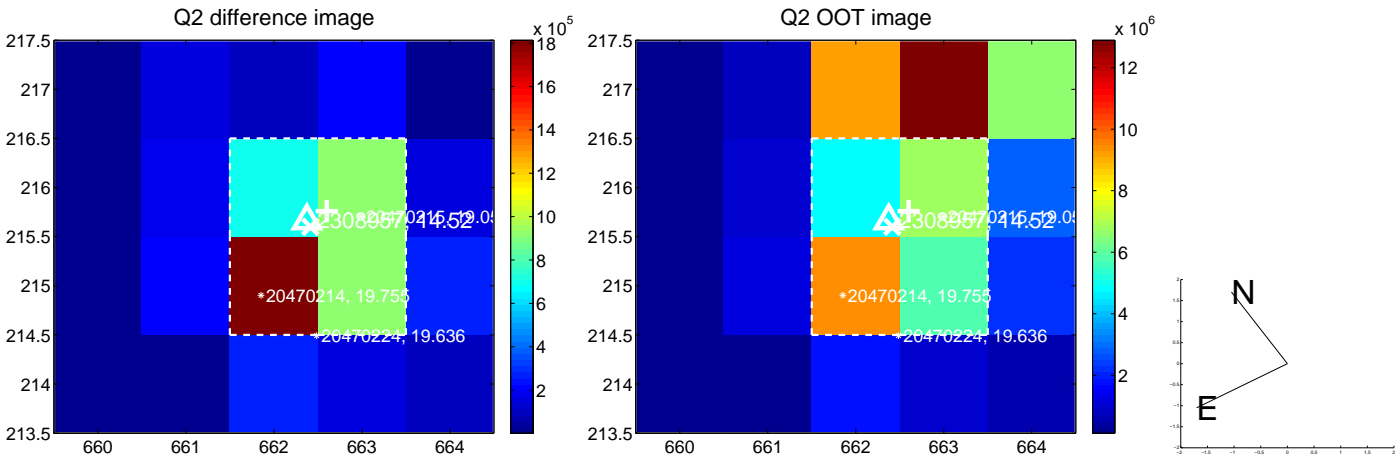
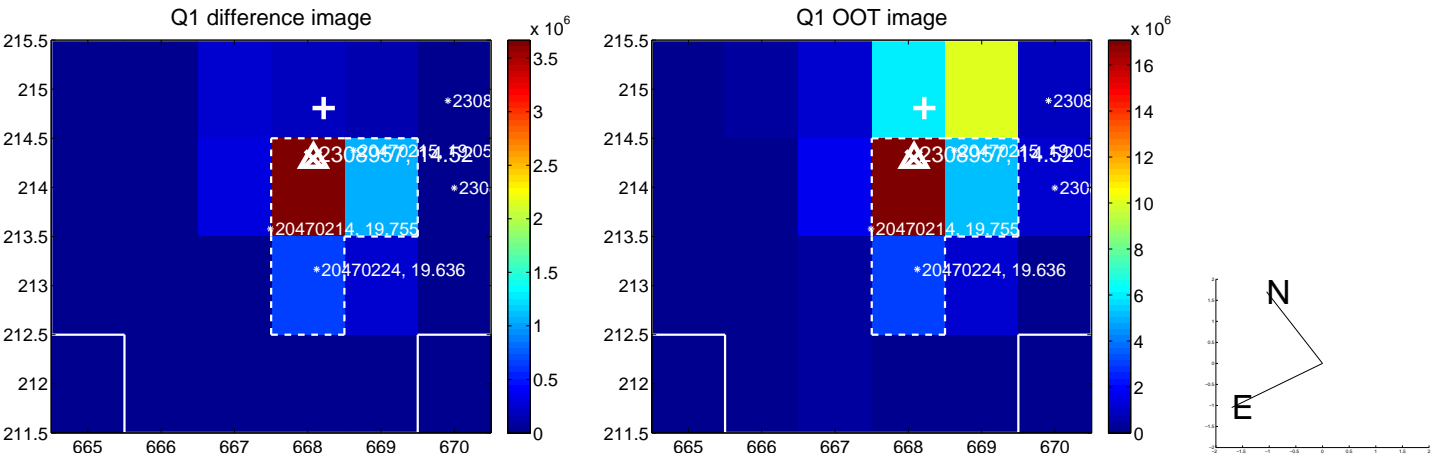
The direct PRF centroid is offset from the target star catalog position by about 1.69 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	1.505 $\pm$ 0.277	5.44	1.234 $\pm$ 0.201	-0.862 $\pm$ 0.227
PRF-fit source offset from KIC position	0.023 $\pm$ 0.077	0.30	-0.021 $\pm$ 0.074	0.011 $\pm$ 0.078
photometric centroid source offset	—	—	—	—

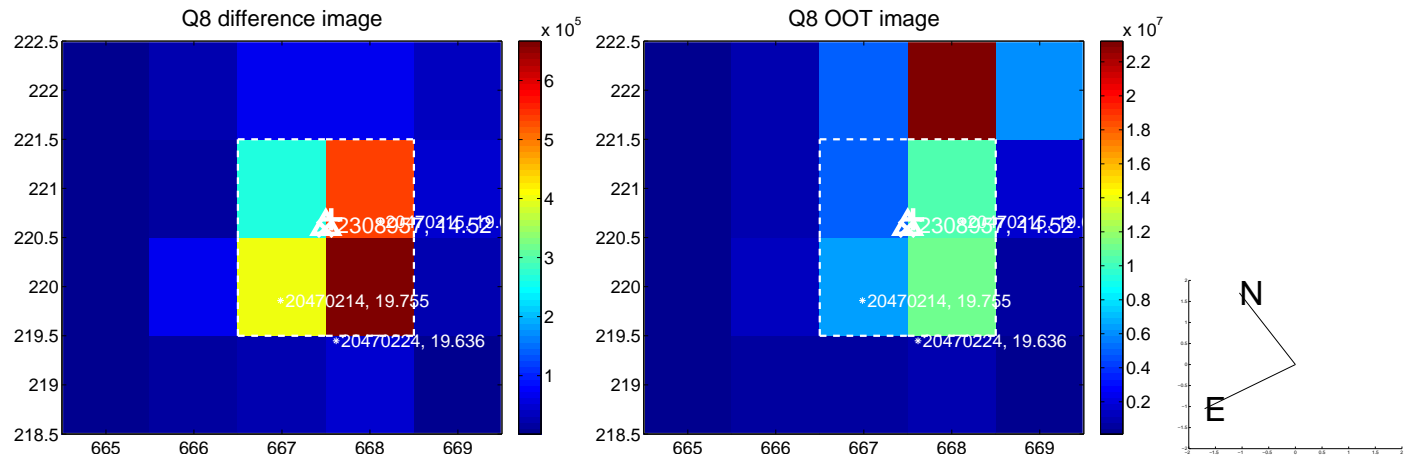
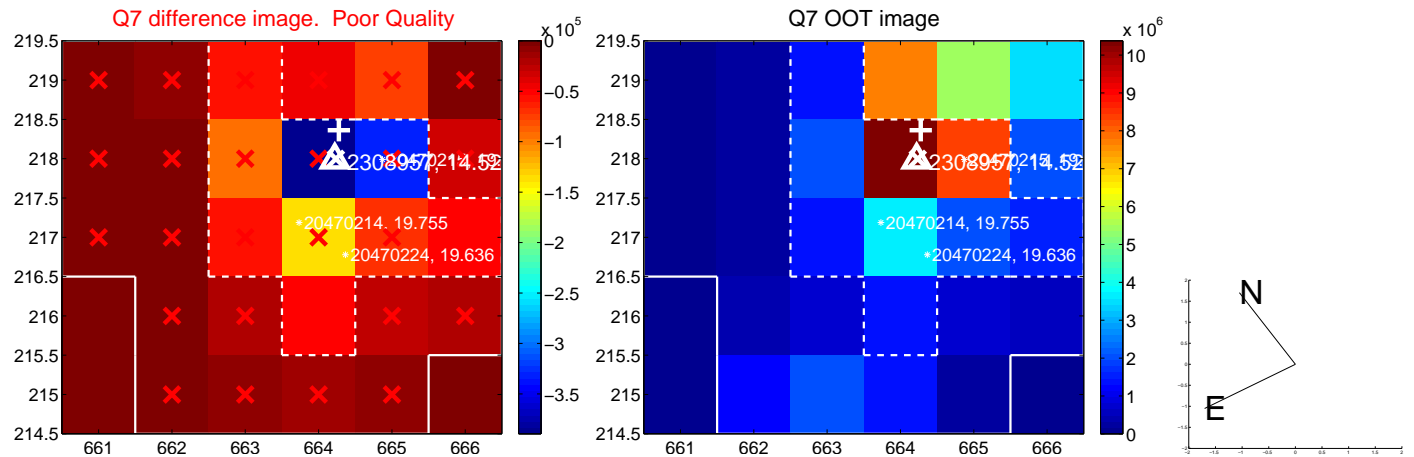
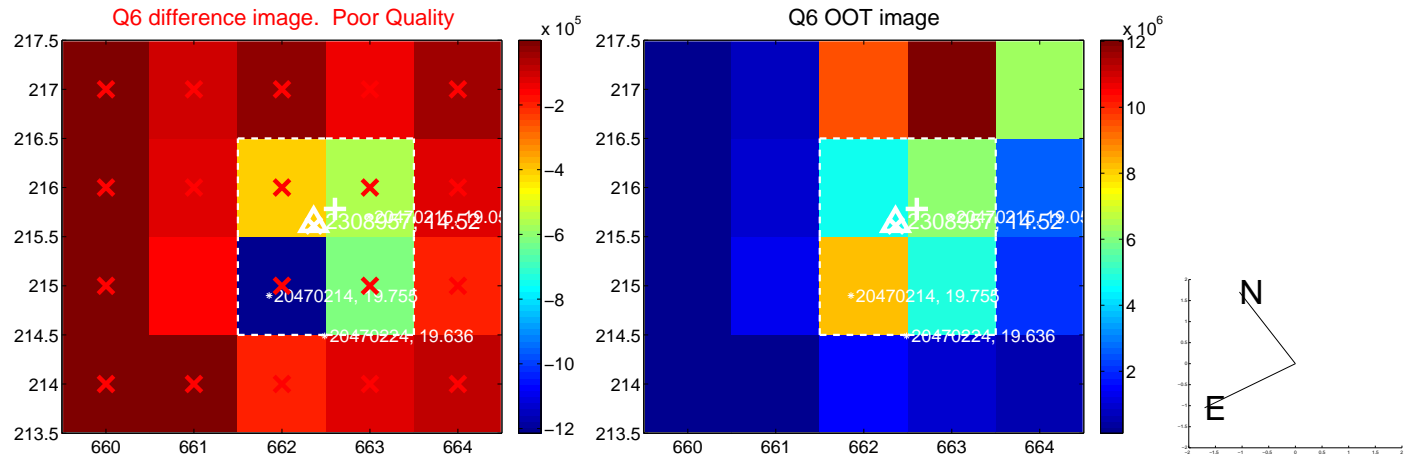
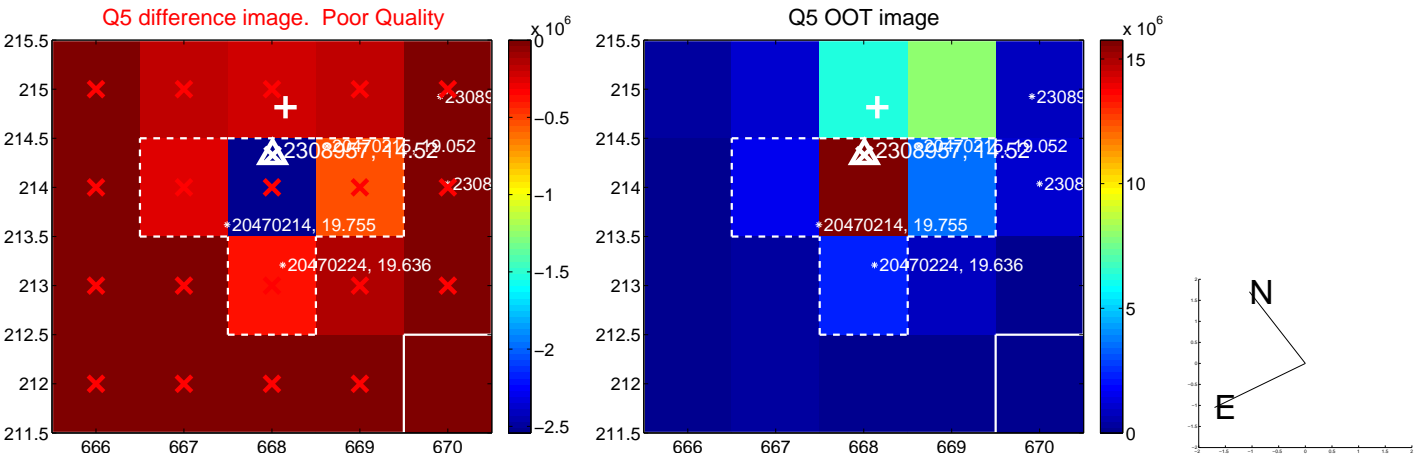


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

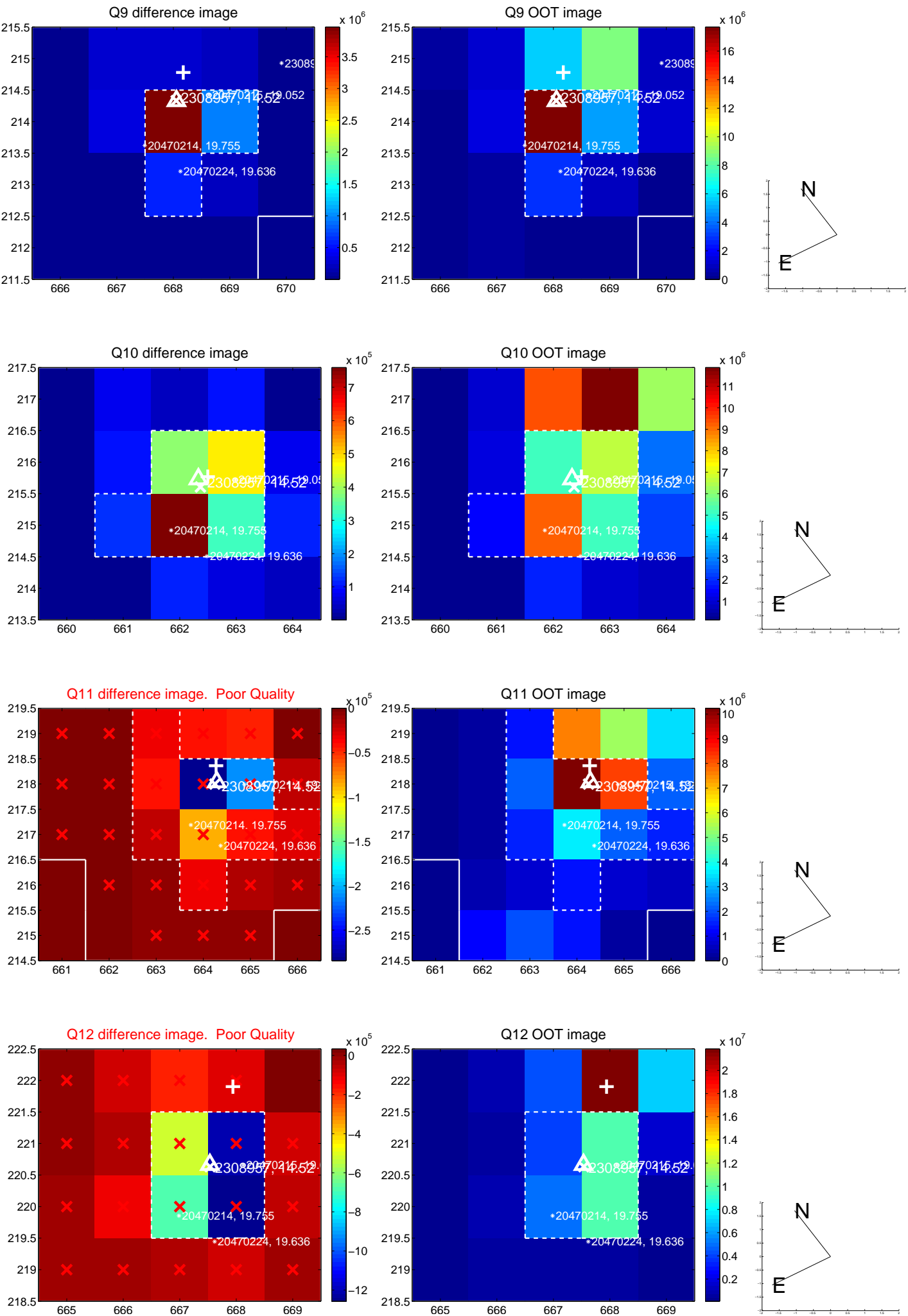
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



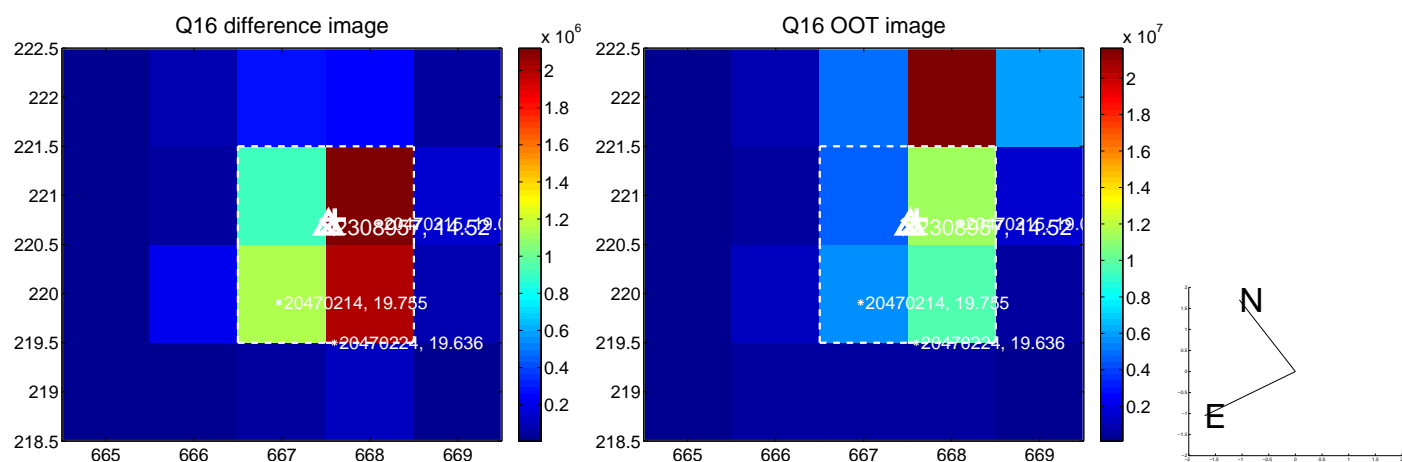
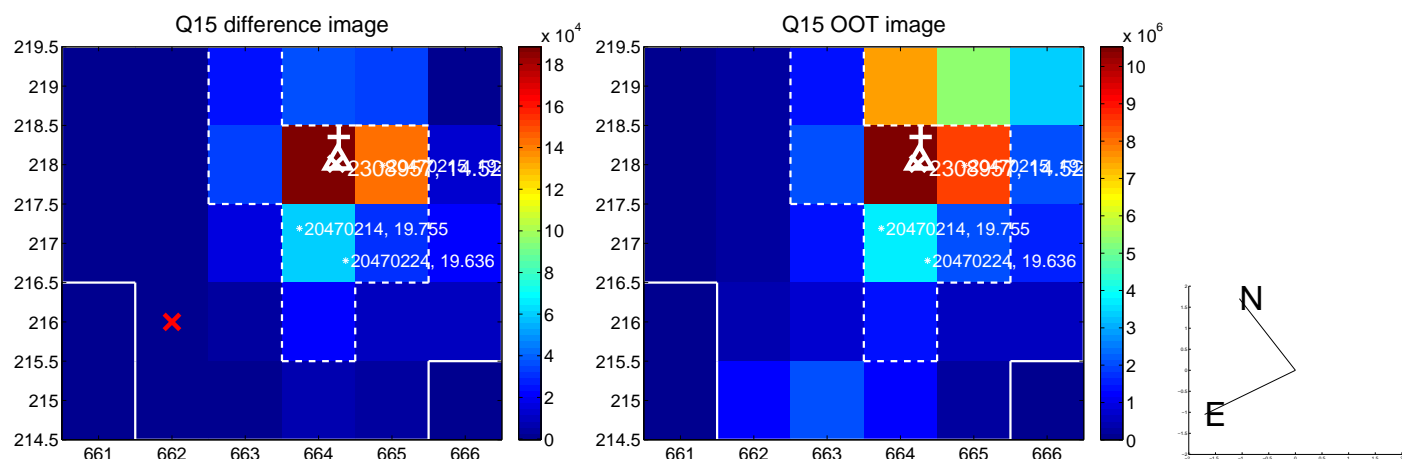
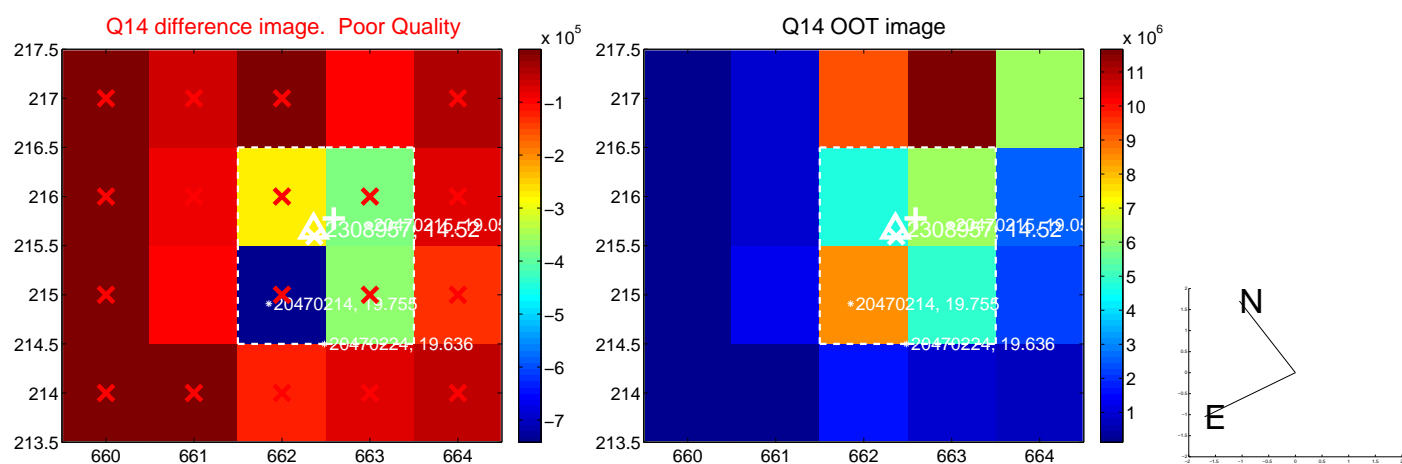
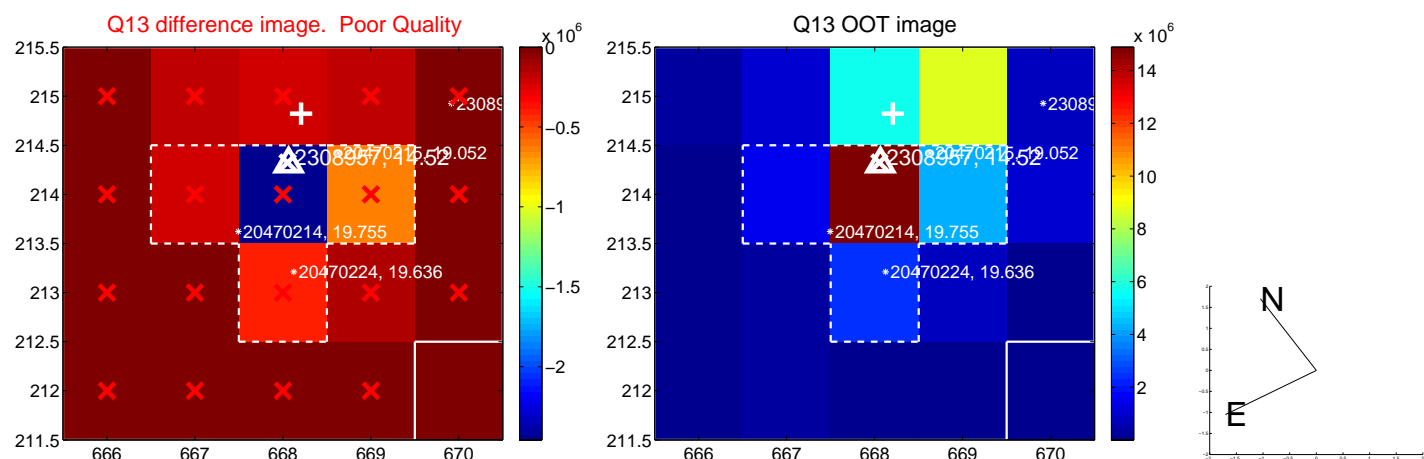
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

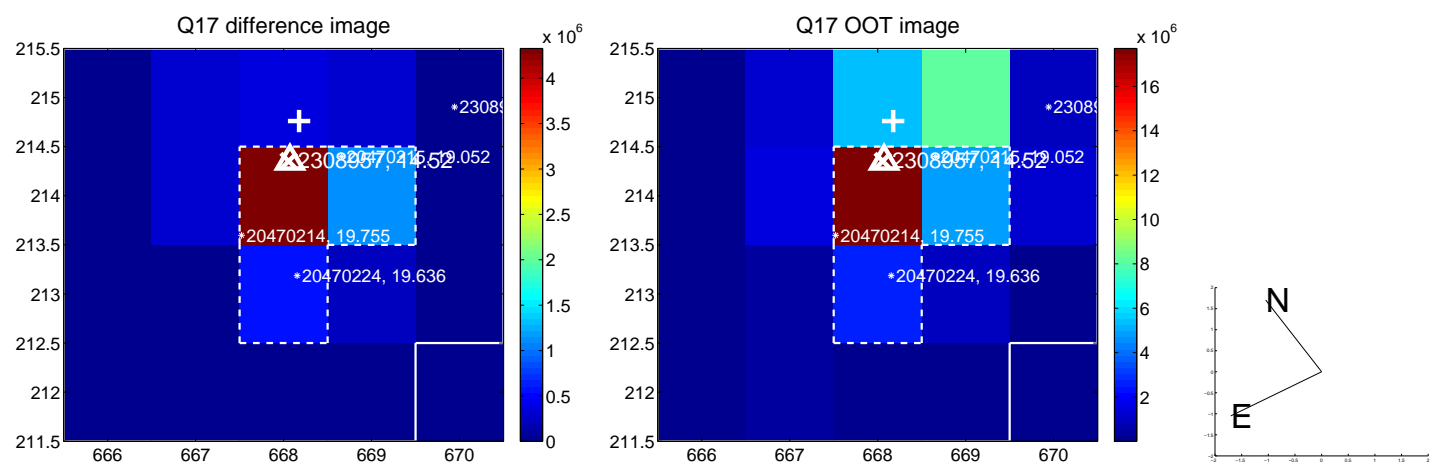


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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

