

# KIC 010063208

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010063208-01	OBS	4292.01	9.328076	132.867502	42.0	4.305	11.1	11.8	0.89	5525	0.69	91.22

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010063208-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

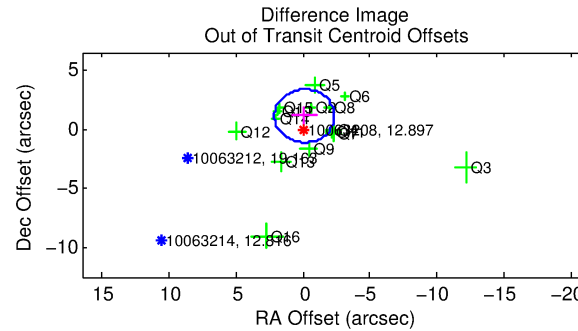
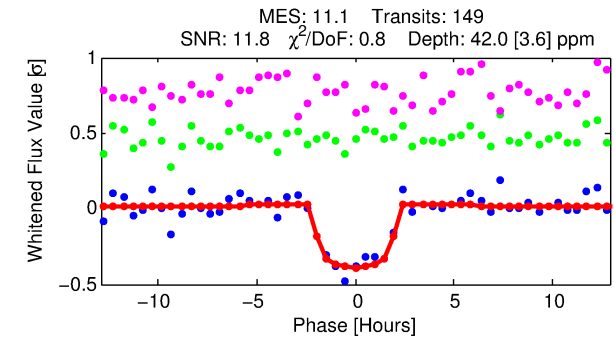
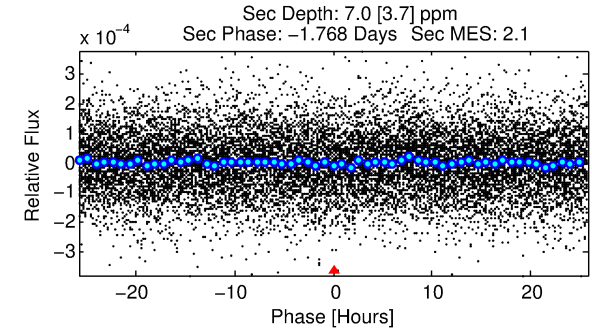
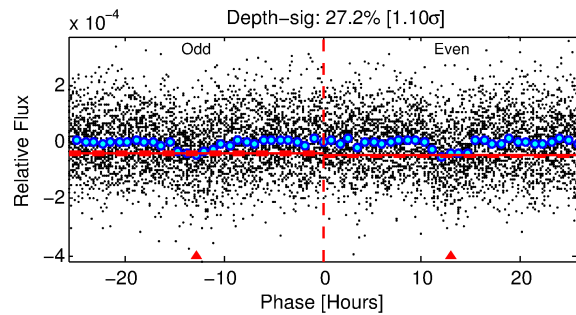
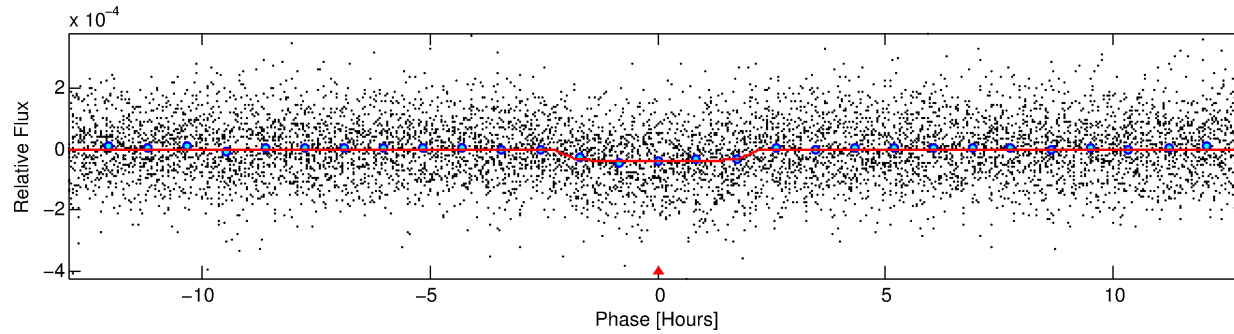
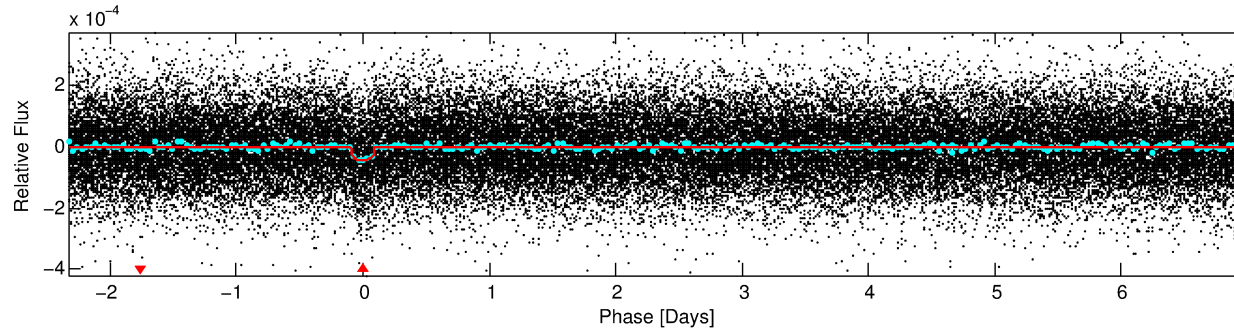
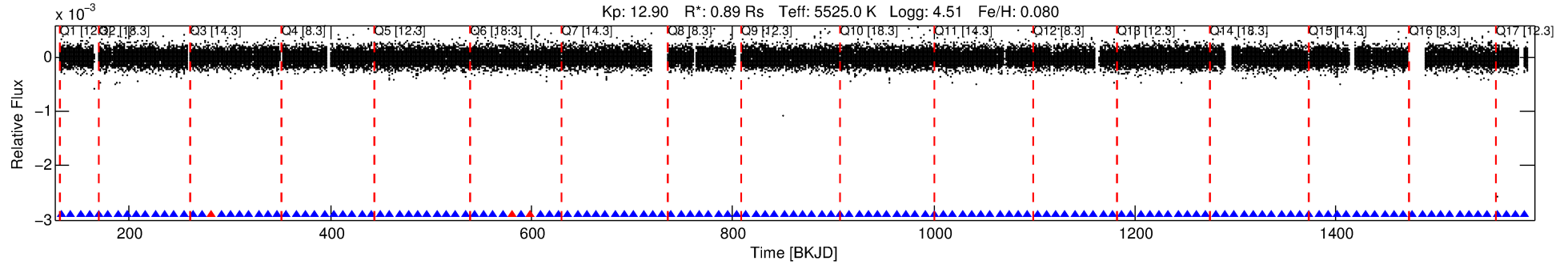
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010063208-01

No Significant Match Found

# DV One-Page Summary

KIC: 10063208 Candidate: 1 of 1 Period: 9.328 d  
KOI: K04292.01 Corr: 0.917



## DV Fit Results:

Period = 9.32808 [0.00008] d  
Epoch = 132.8675 [0.0068] BKJD  
Rp/R\* = 0.0071 [0.0035]  
a/R\* = 7.54 [16.51]  
b = 0.90 [0.48]  
Seff = 91.22 [20.97]  
Teq = 788 [45] K  
Rp = 0.69 [0.35] Re  
a = 0.0850 [0.0121] AU  
Ag = 58.28 [66.05] [0.87 $\sigma$ ]  
Teff = 3366 [937] K [2.75 $\sigma$ ]

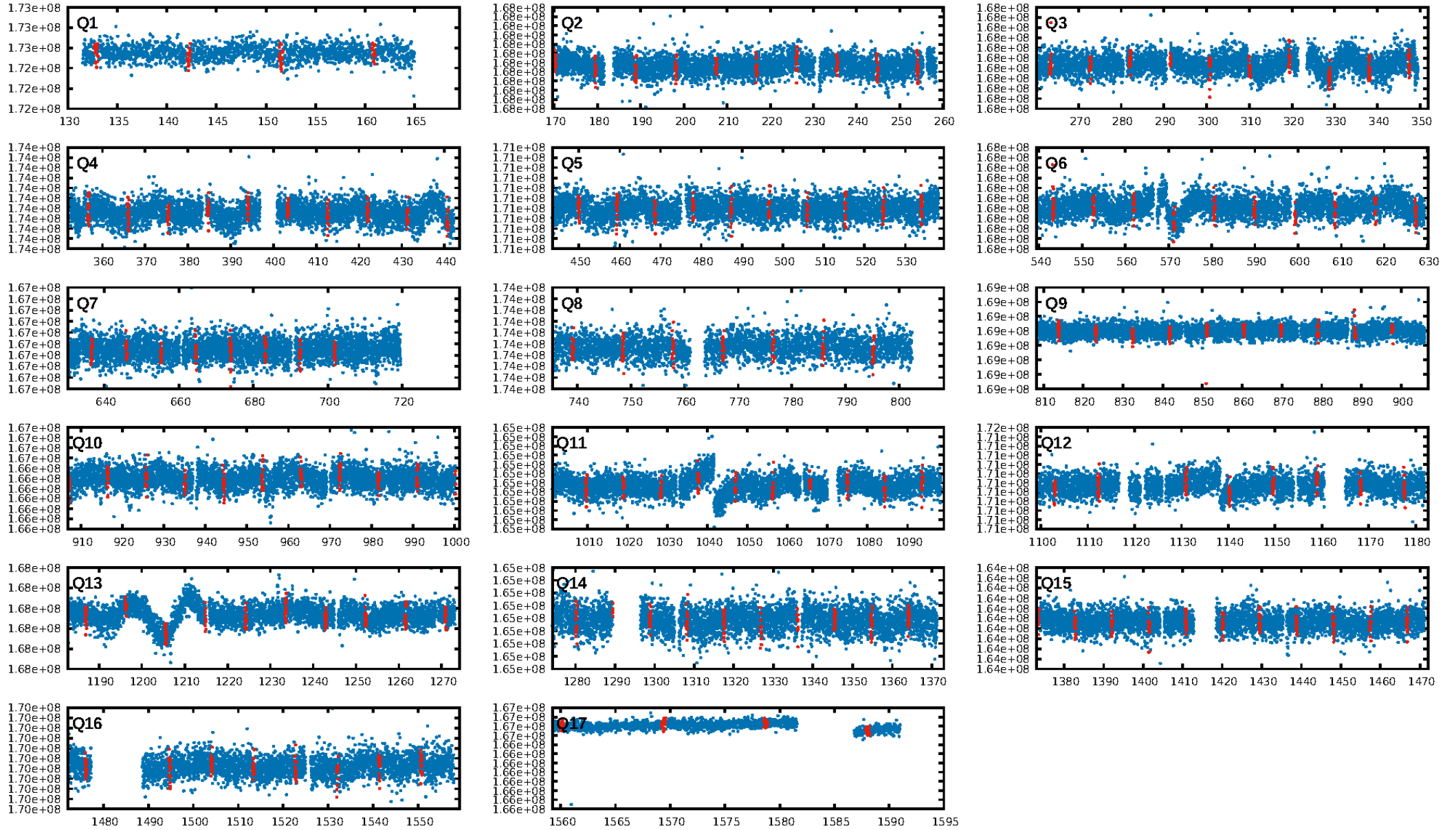
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 100.0%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.41e-27  
RollingBand-fgt: 0.98 [138/141]  
GhostDiagnostic-chr: -14.78  
Centroid-sig: 90.2%  
Centroid-so: 0.400 arcsec [0.37 $\sigma$ ]  
OotOffset-rm: 1.129 arcsec [1.51 $\sigma$ ]  
KicOffset-rm: 0.939 arcsec [1.19 $\sigma$ ]  
OotOffset-st: 4/4/4/3 [15]  
KicOffset-st: 4/4/4/3 [15]  
DiffImageQuality-fgm: 0.80 [12/15]  
DiffImageOverlap-fno: 1.00 [17/17]

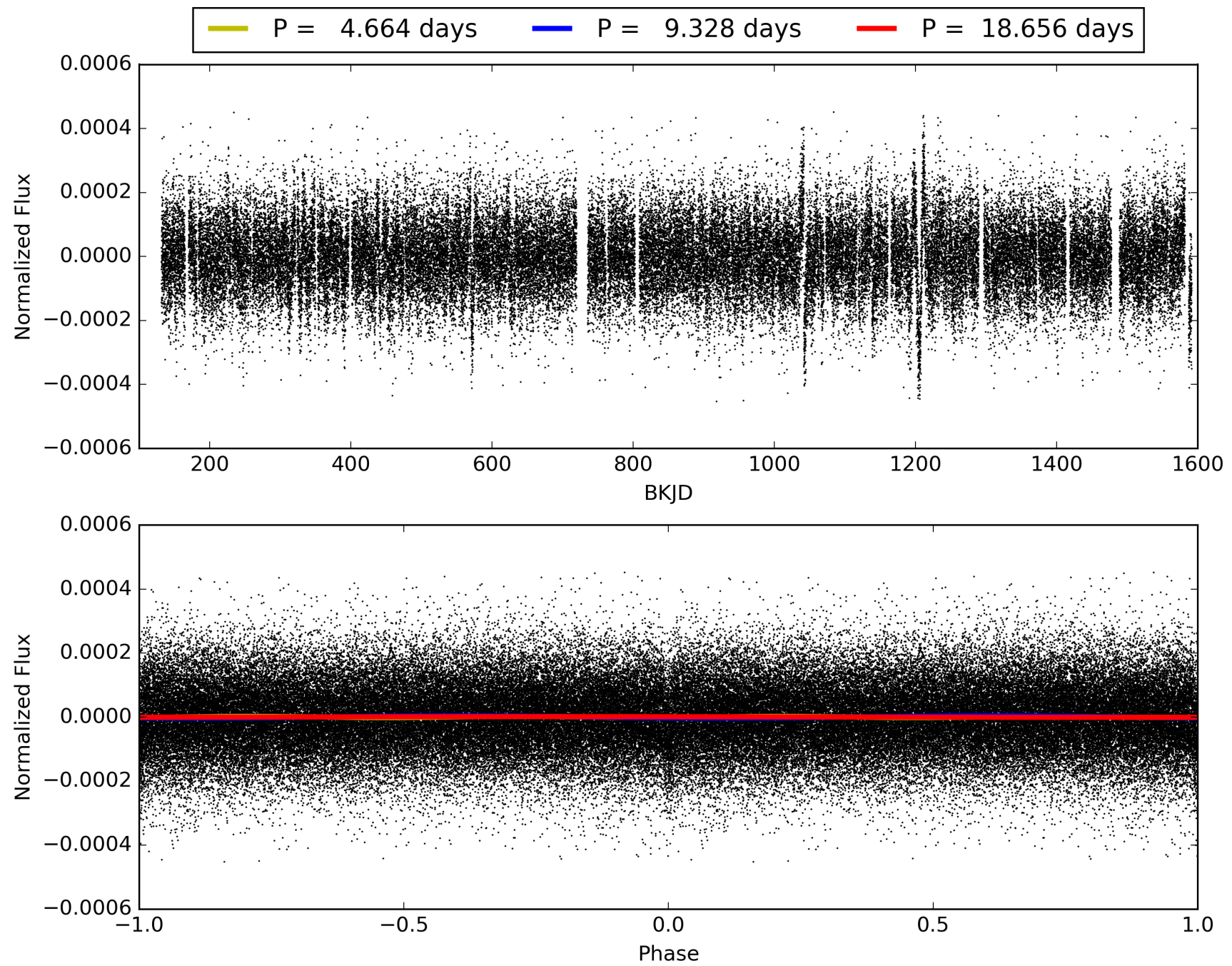
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 23:30:10 Z

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

# TCE 010063208-01, PDC Light Curves

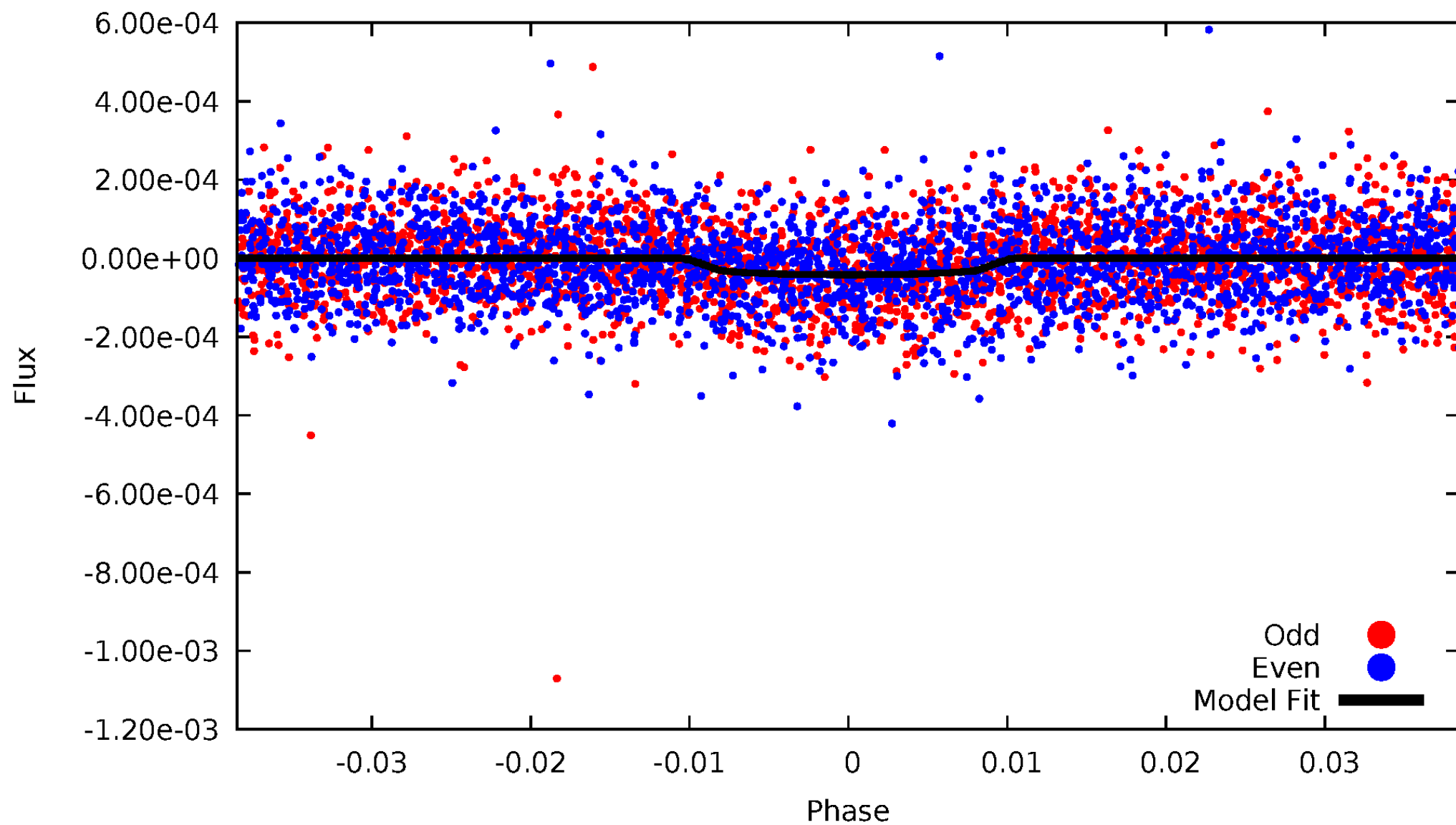


# TCE 010063208-01



# DV Odd/Even

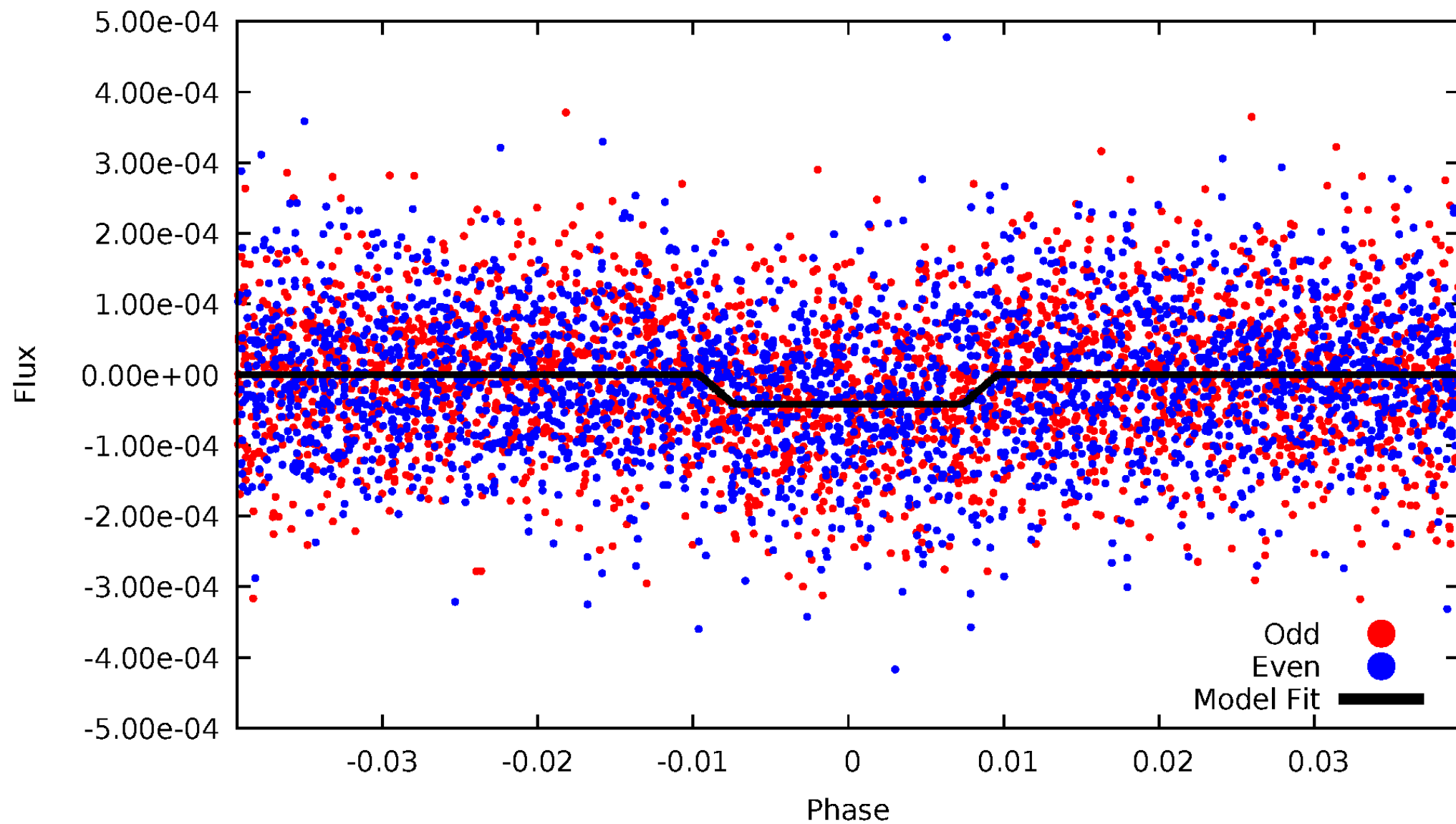
TCE 010063208-01





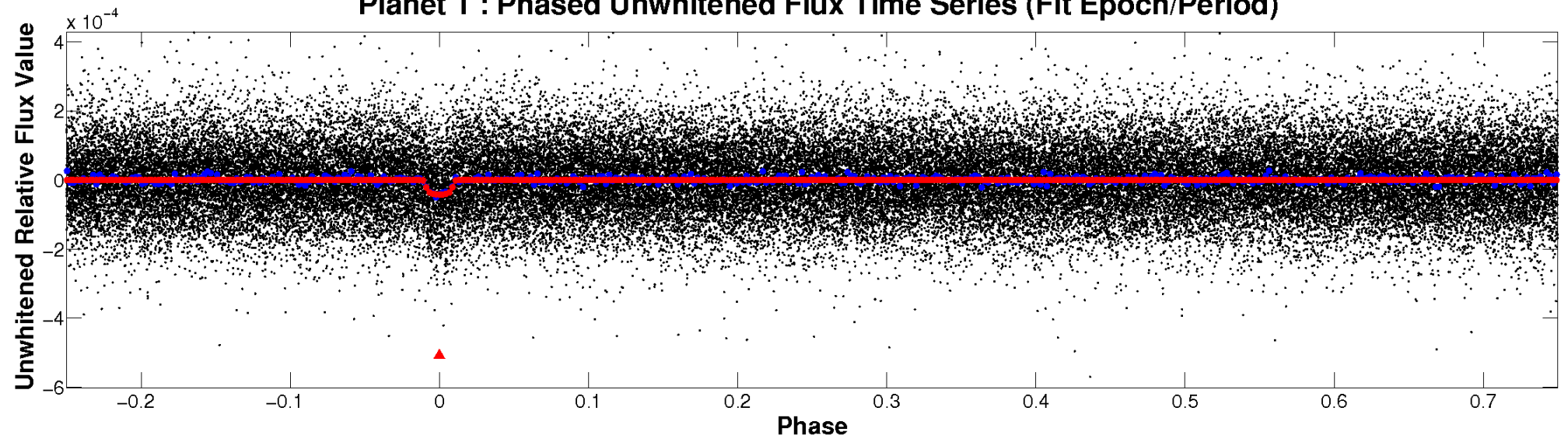
# ALT Odd/Even

TCE 010063208-01

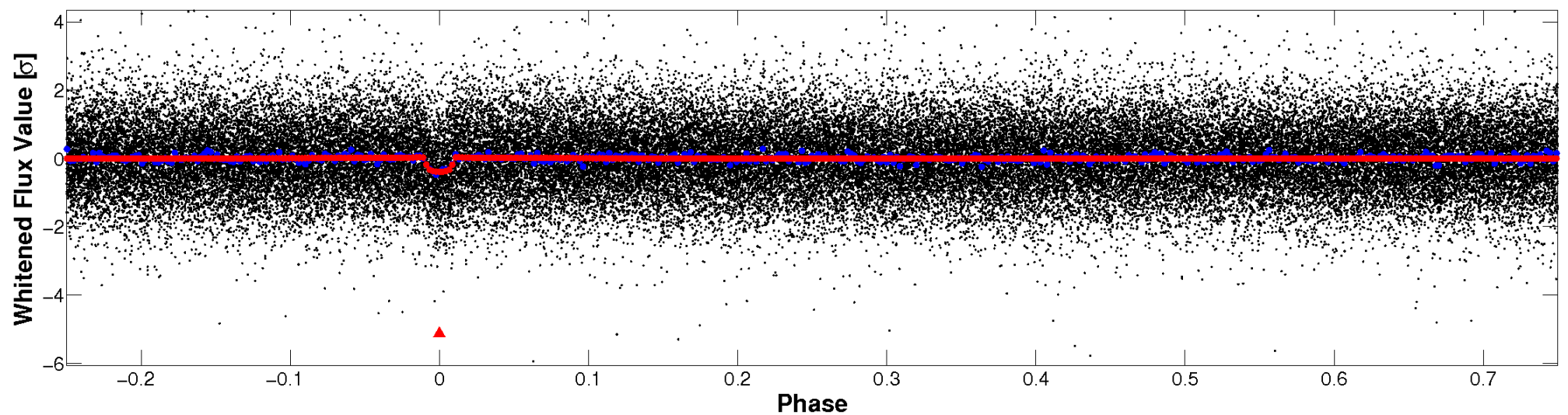


# Non-Whitened Vs. Whitened Light Curve

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

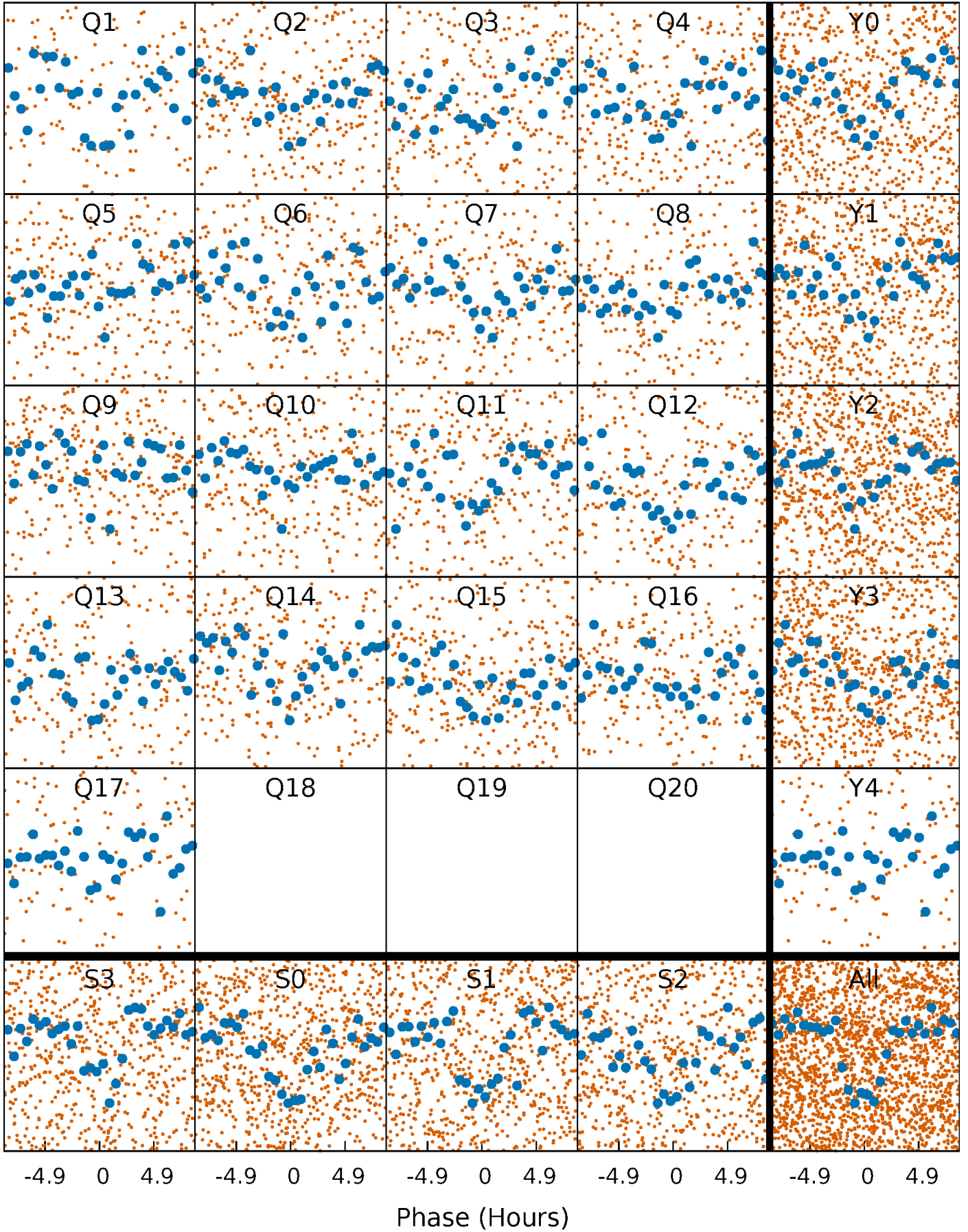


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

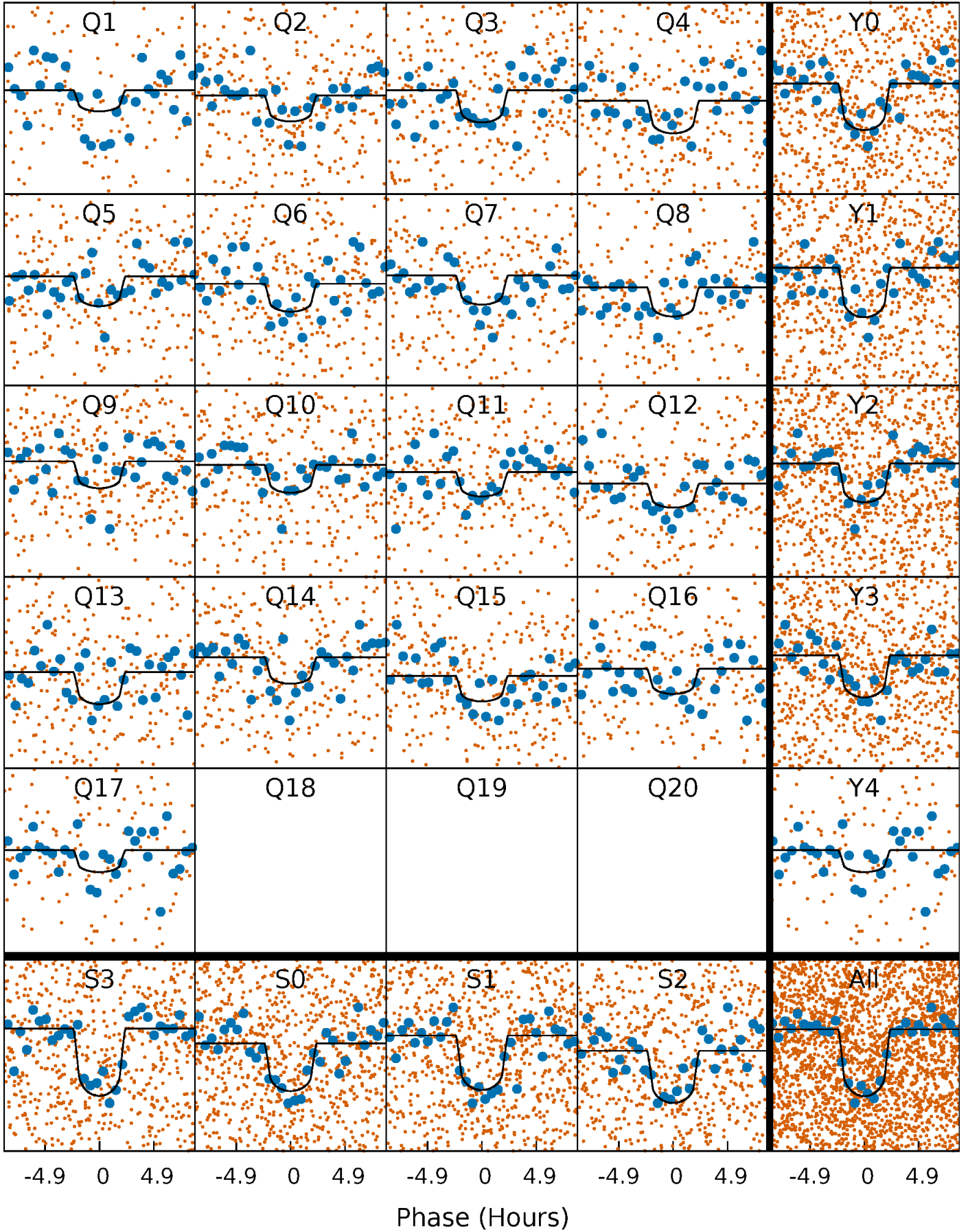
TCE 010063208-01 P= 9.328076 Days  $T_0=132.867502$  (BKJD)





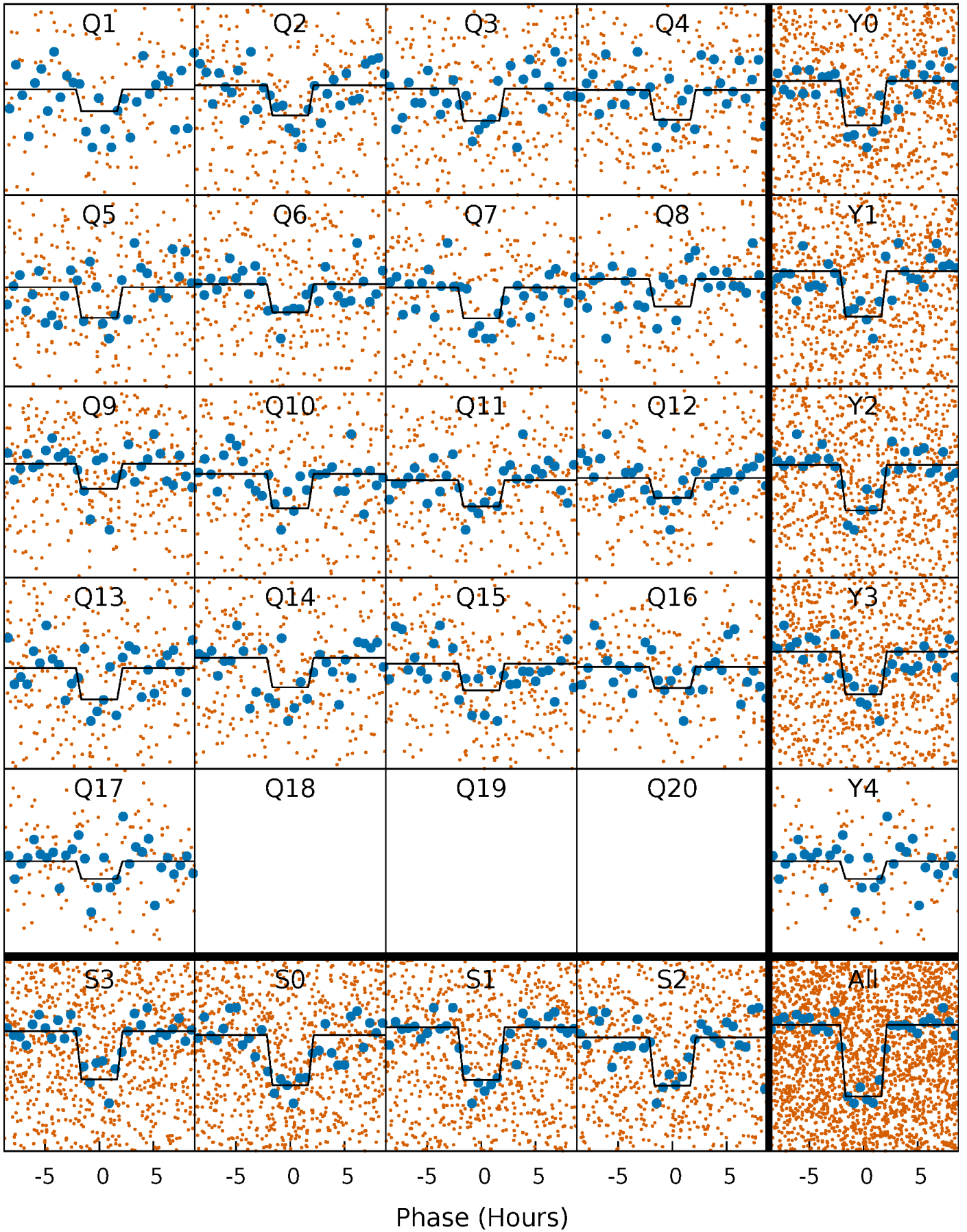
# DV Quarter-Phased Transit Curves

TCE 010063208-01   P= 9.328076 Days    $T_0=132.867502$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

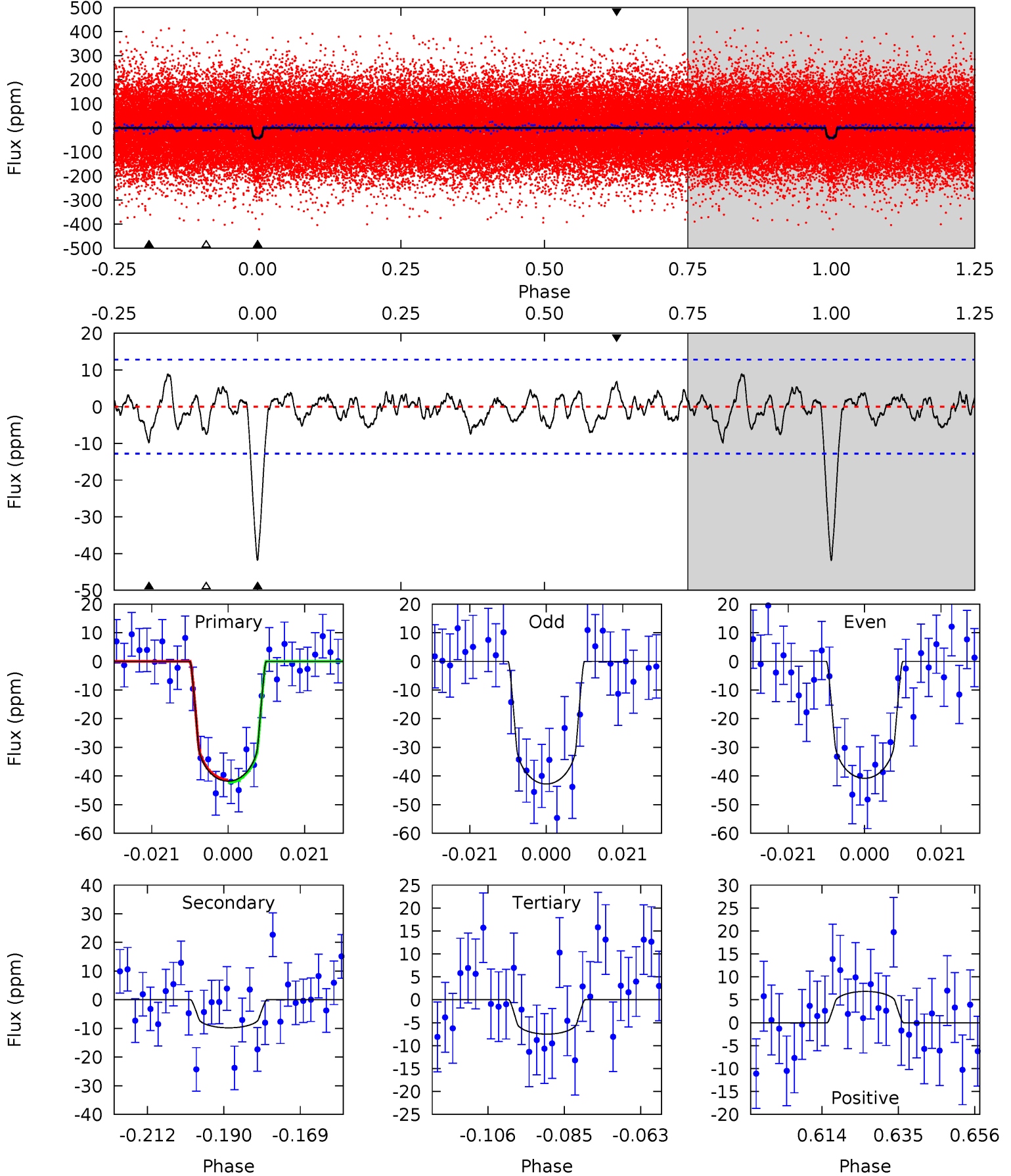
TCE 010063208-01 P= 9.328148 Days  $T_0=132.860876$  (BKJD)



# DV Model-Shift Uniqueness Test

010063208-01, P = 9.328076 Days, E = 123.539426 Days

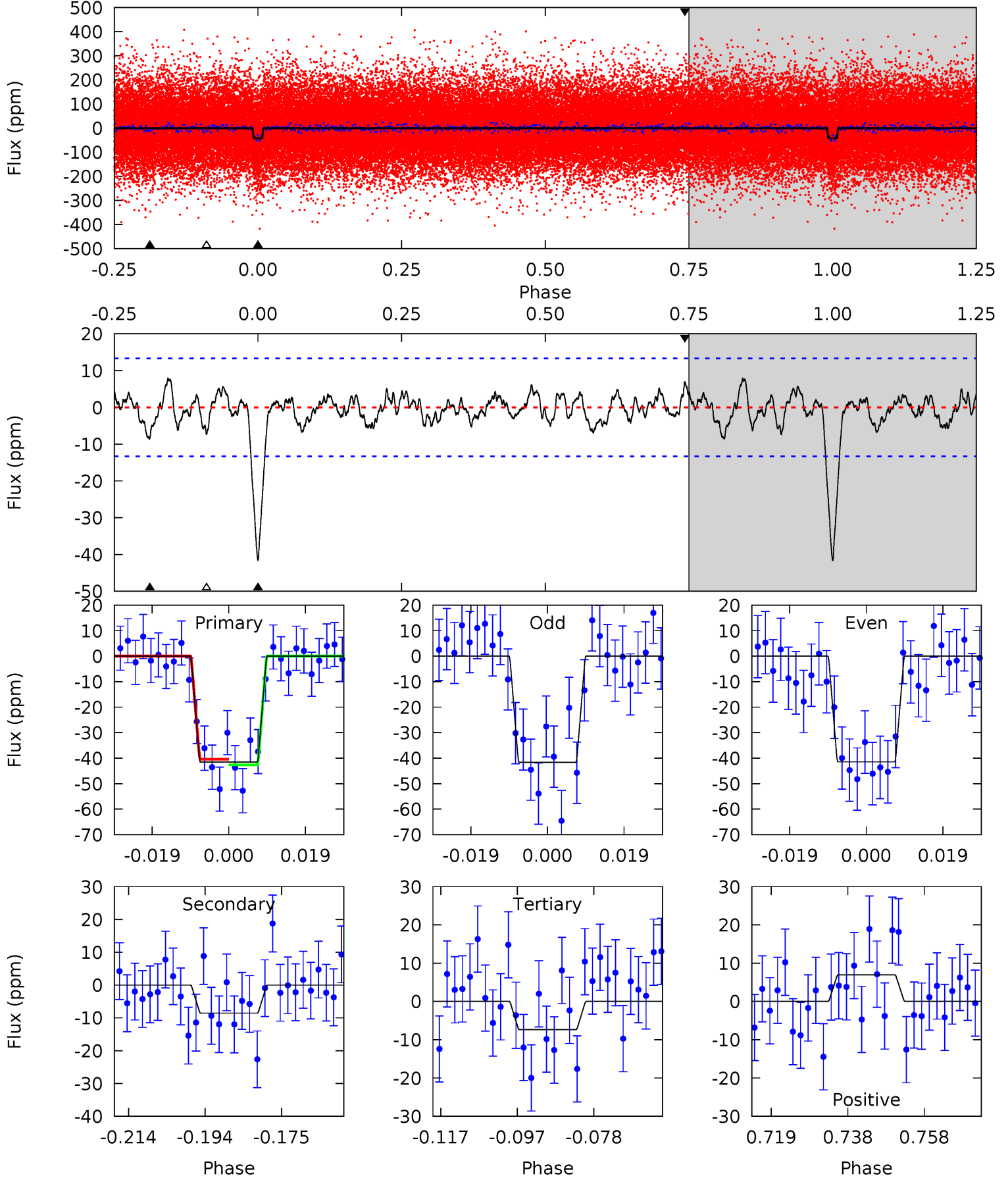
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.9	3.74	2.86	2.60	4.88	2.31	1.13	13.1	13.3	0.88	1.14	0.38	1.05	0.18	0.17



# Alt Model-Shift Uniqueness Test

010063208-01, P = 9.328148 Days, E = 123.532728 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
15.3	3.15	2.71	2.55	4.90	2.34	1.06	12.6	12.7	0.44	0.59	0.03	1.08	0.16	0.40



### Stellar Parameters For KIC 010063208

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	$5525^{+74}_{-82}$	$4.514^{+0.032}_{-0.128}$	$0.080^{+0.150}_{-0.150}$	$0.888^{+0.138}_{-0.046}$	$0.939^{+0.045}_{-0.056}$	$1.887^{+0.292}_{-0.662}$
	+1%/-1%	+1%/-3%	+188%/-188%	+16%/-5%	+5%/-6%	+15%/-35%
Source	SPE90	FLK73	SPE90	DSEP		

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

### Secondary Eclipse Parameters for KIC 010063208-01 / KOI 4292.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-10 \pm 3$	$0.74^{+0.34}_{-0.33}$	$1111^{+42}_{-28}$	$3890^{+1058}_{-466}$	$69^{+168}_{-37}$
Alt.	$-9 \pm 3$	$0.67^{+0.32}_{-0.32}$	$1113^{+42}_{-27}$	$3956^{+1089}_{-552}$	$75^{+197}_{-44}$

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



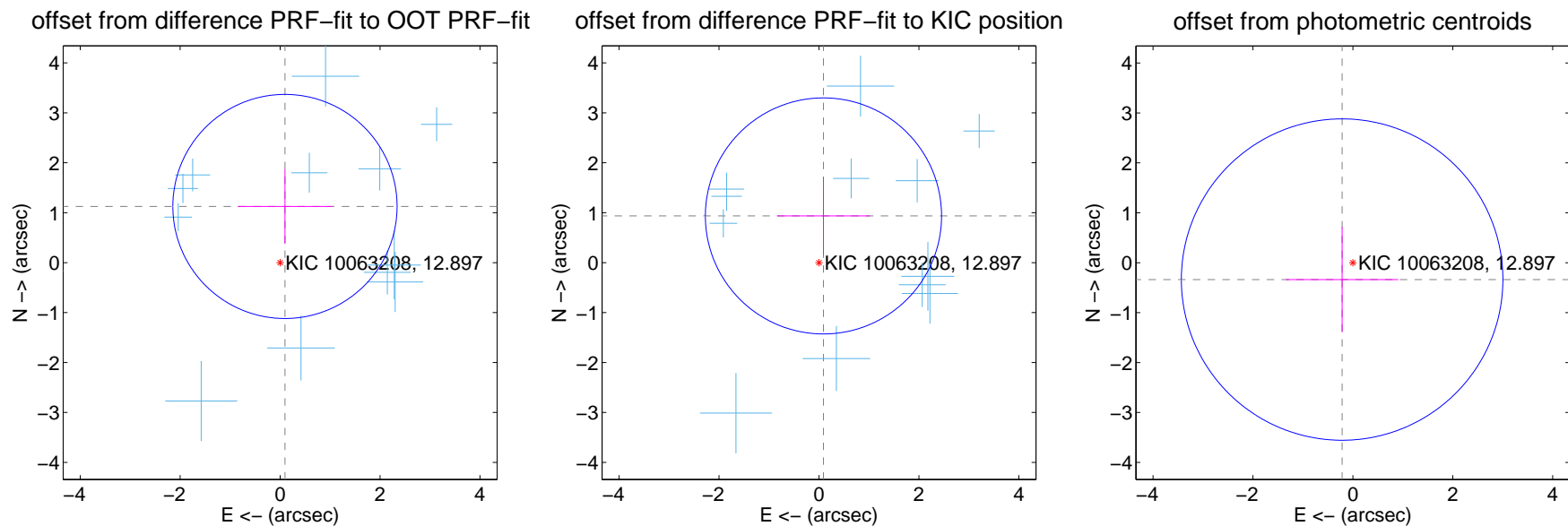
## DV Centroid Data

Supplemental centroid analysis for 010063208-01. Kepler magnitude: 12.90. Transit SNR 11.81

There are 12 quarters with good PRF difference image offsets

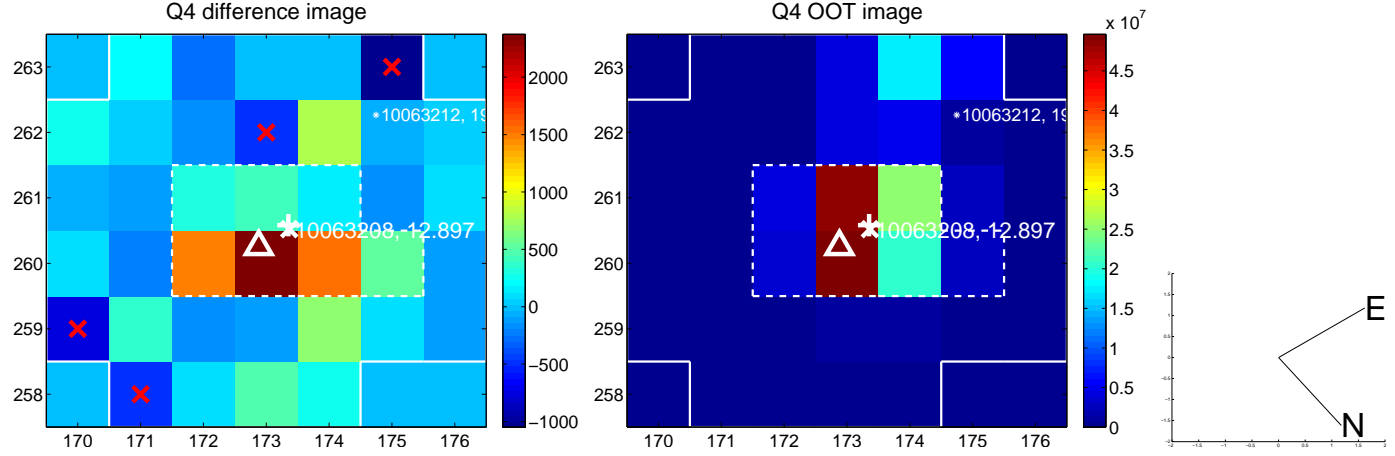
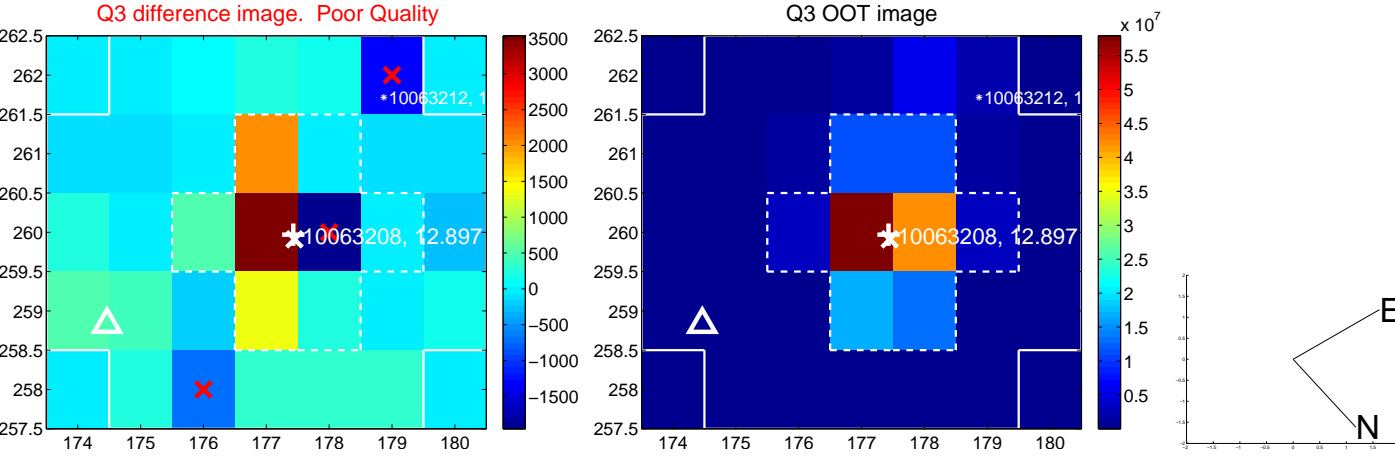
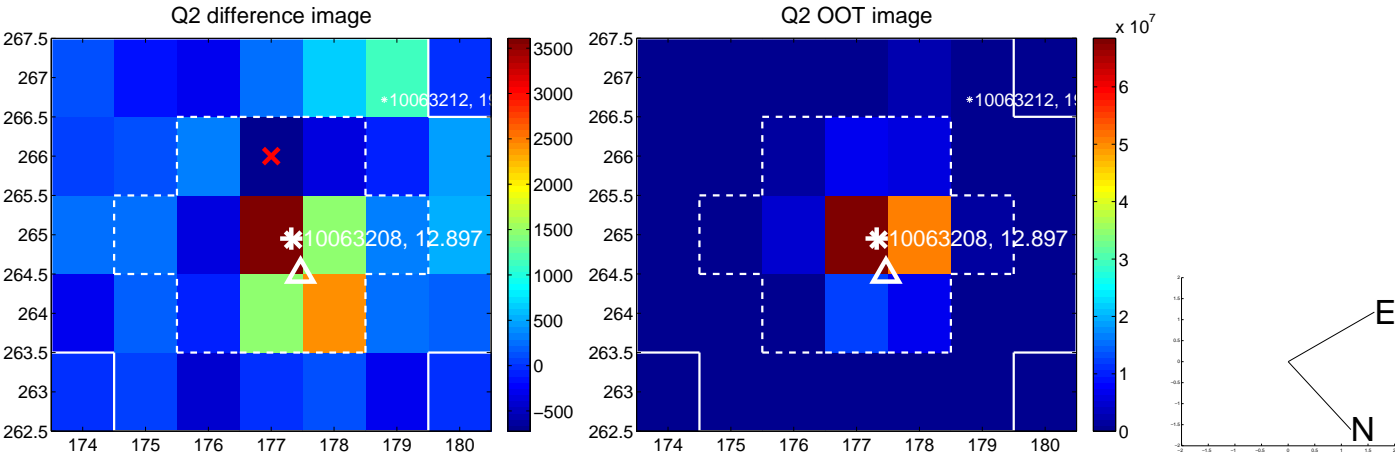
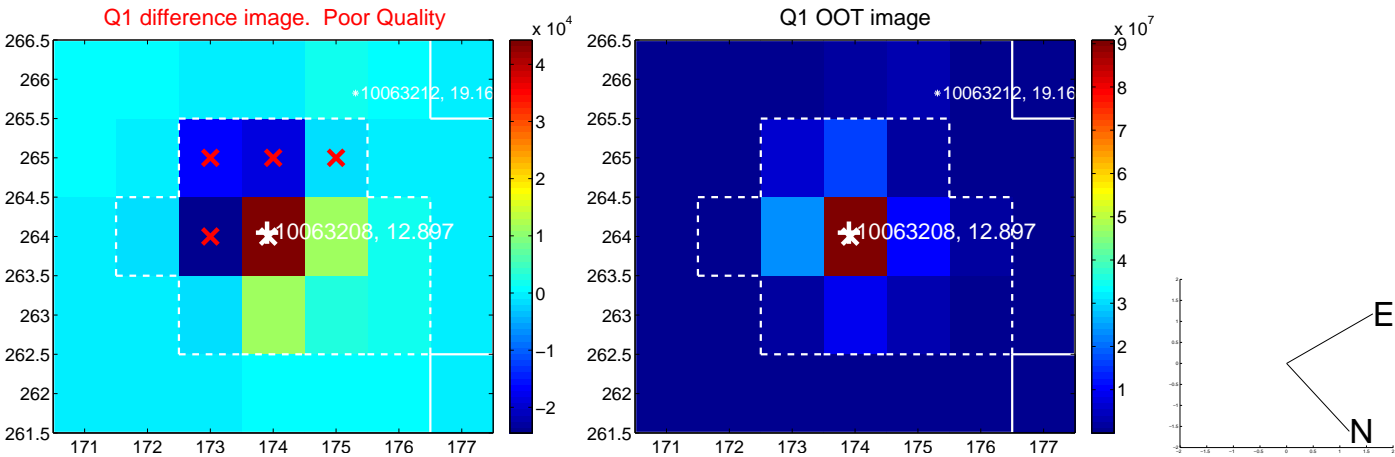
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.129 \pm 0.748$	1.51	$-0.097 \pm 0.945$	$1.125 \pm 0.749$
PRF-fit source offset from KIC position	$0.939 \pm 0.788$	1.19	$-0.090 \pm 0.931$	$0.935 \pm 0.780$
photometric centroid source offset	$0.40 \pm 1.07$	0.37	$0.22 \pm 1.12$	$-0.34 \pm 1.05$

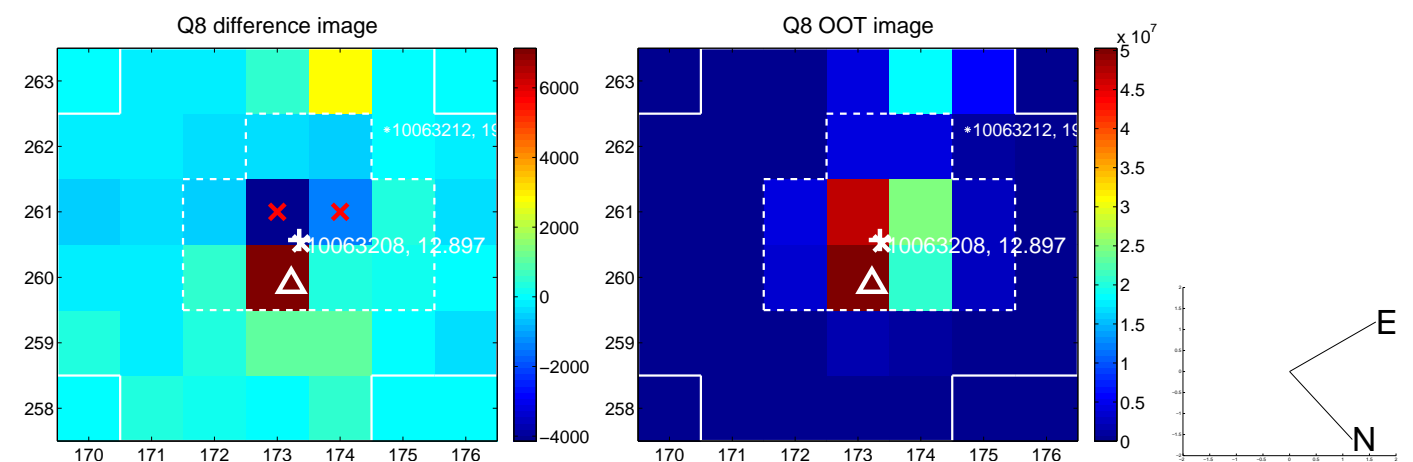
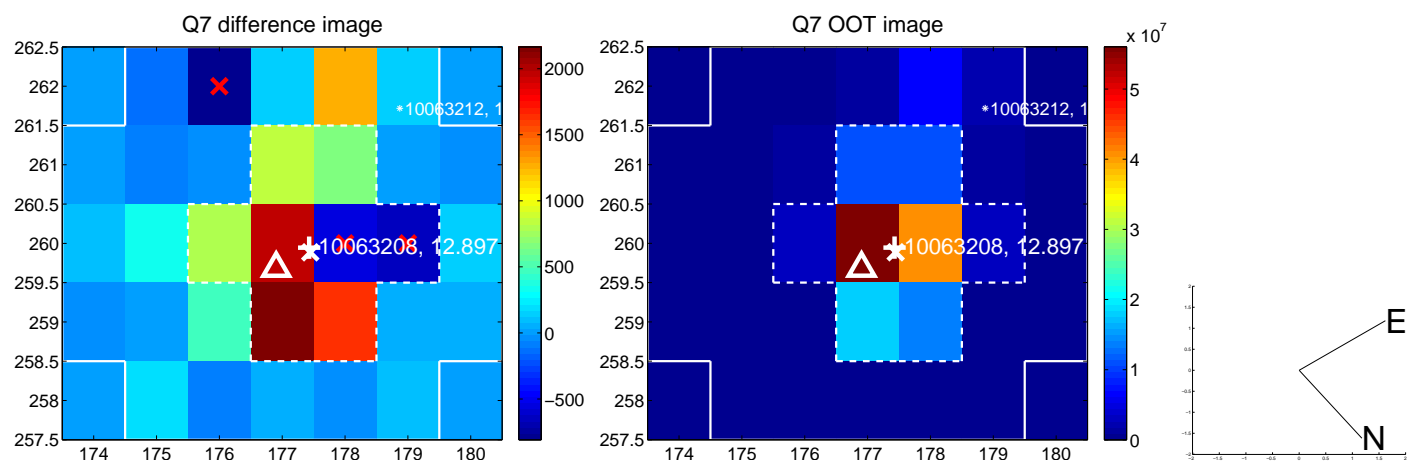
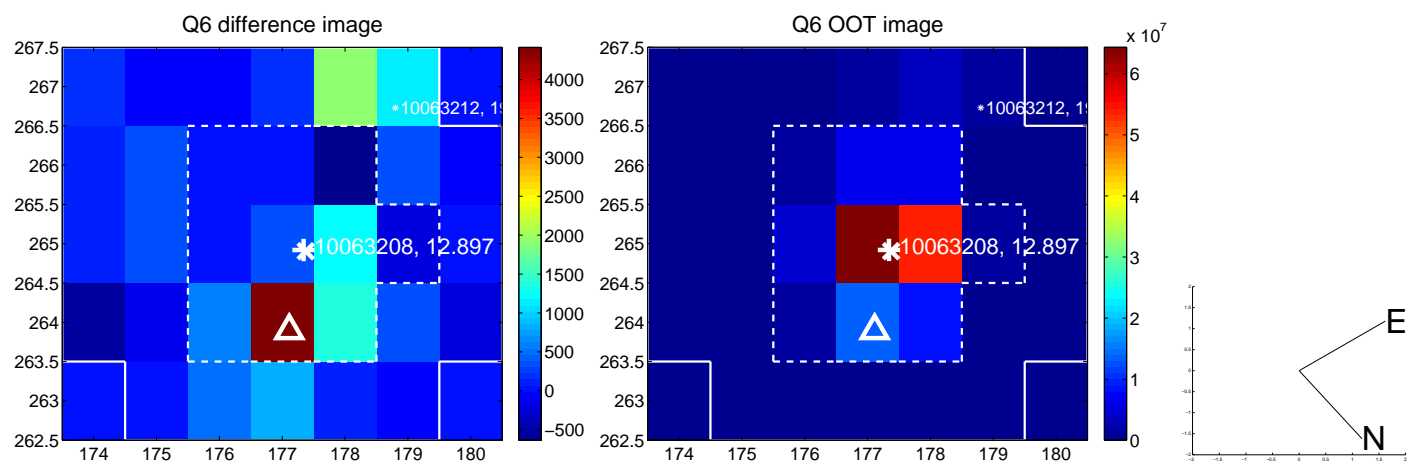
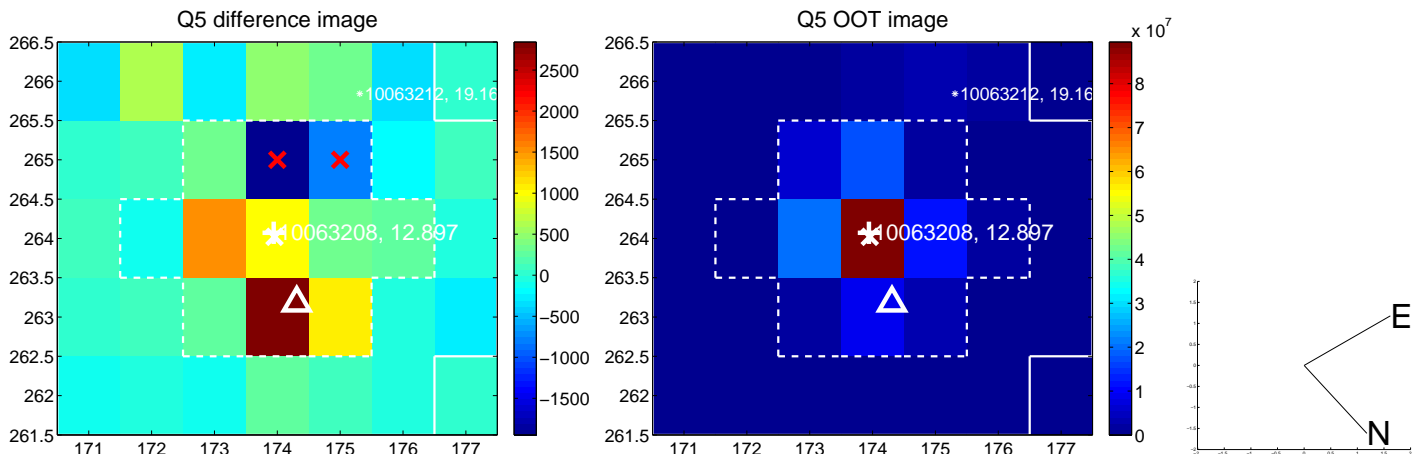


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

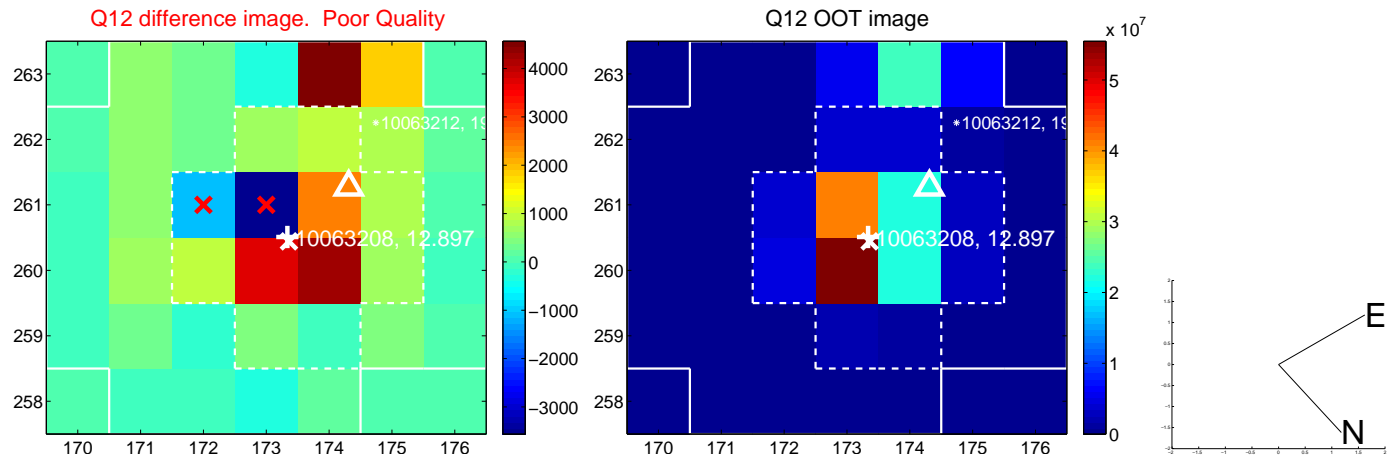
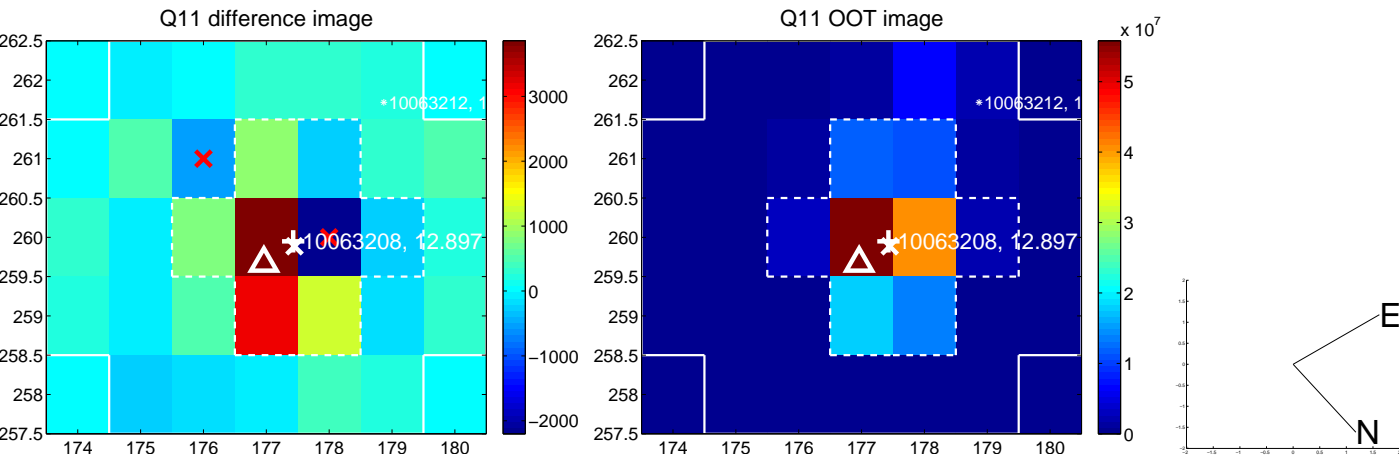
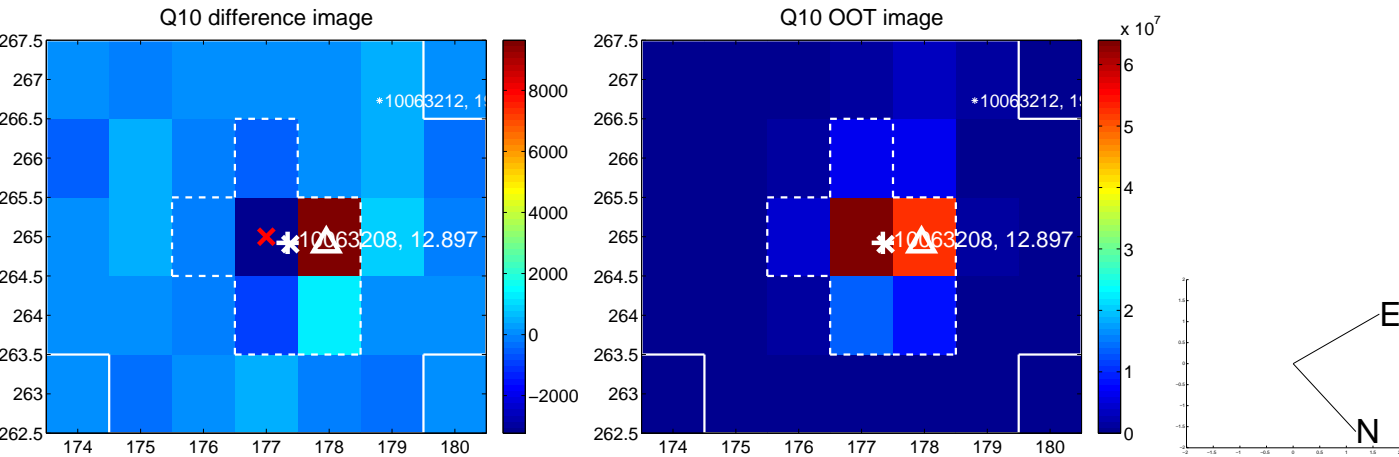
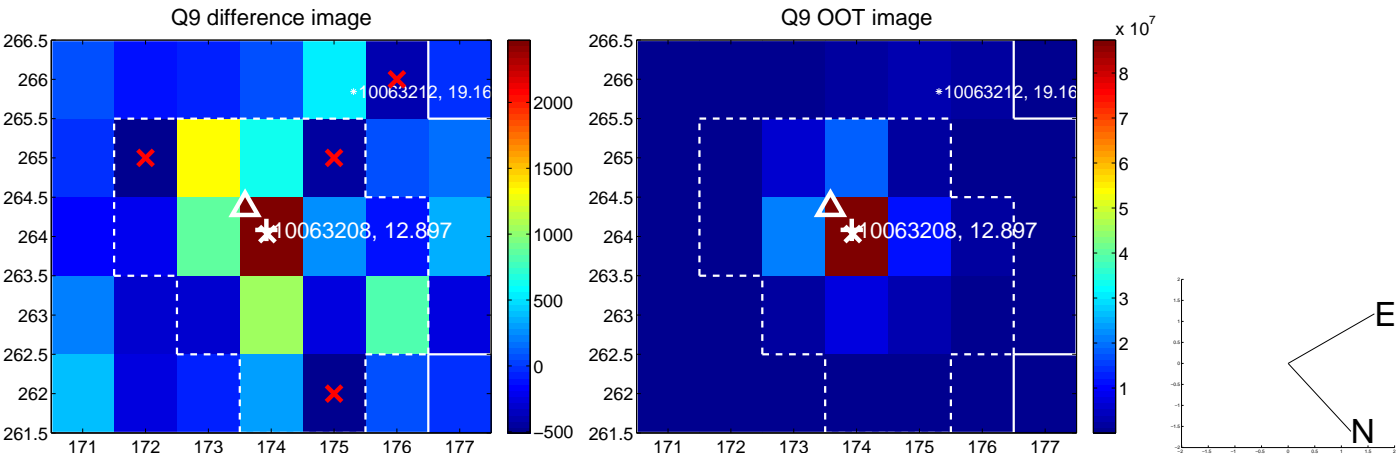
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



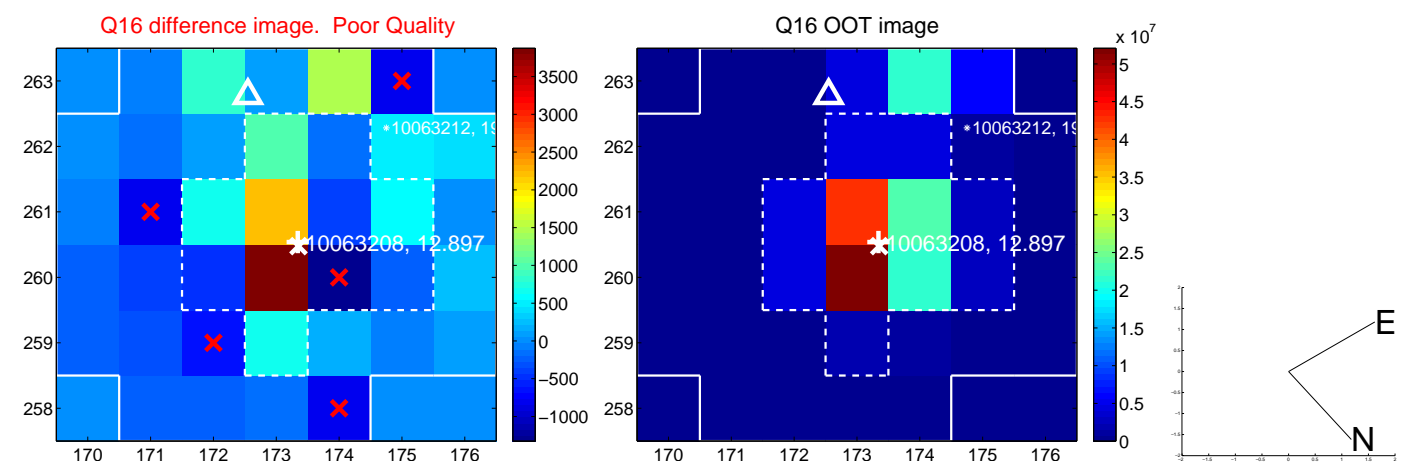
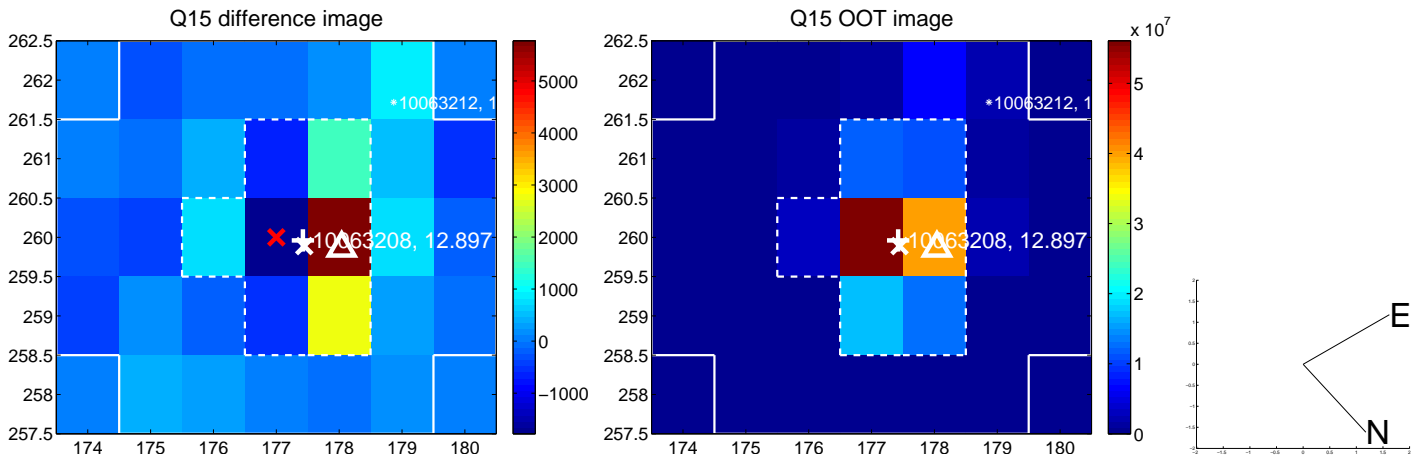
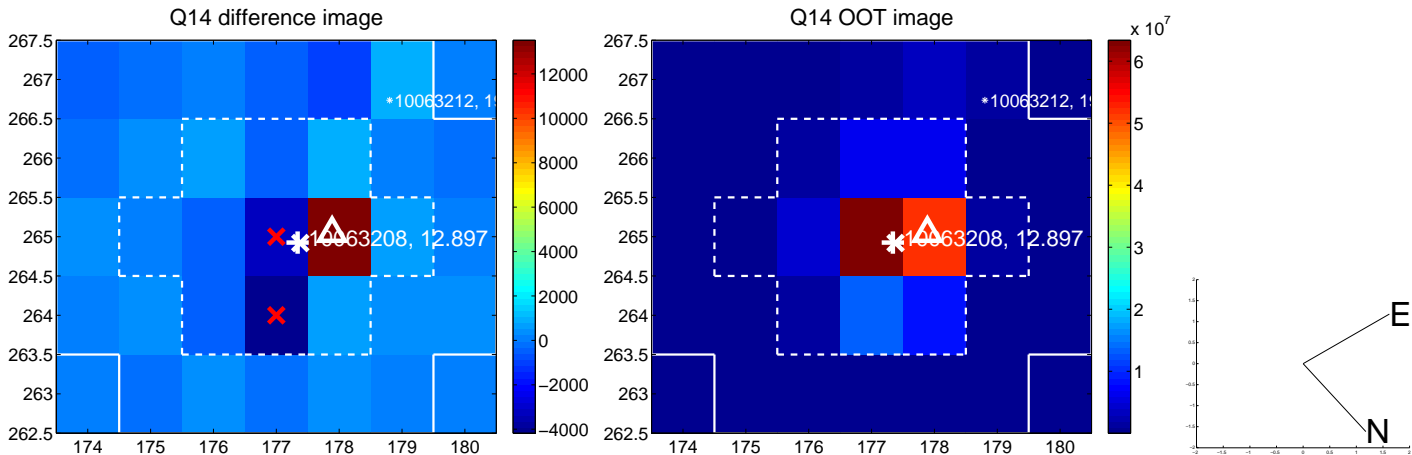
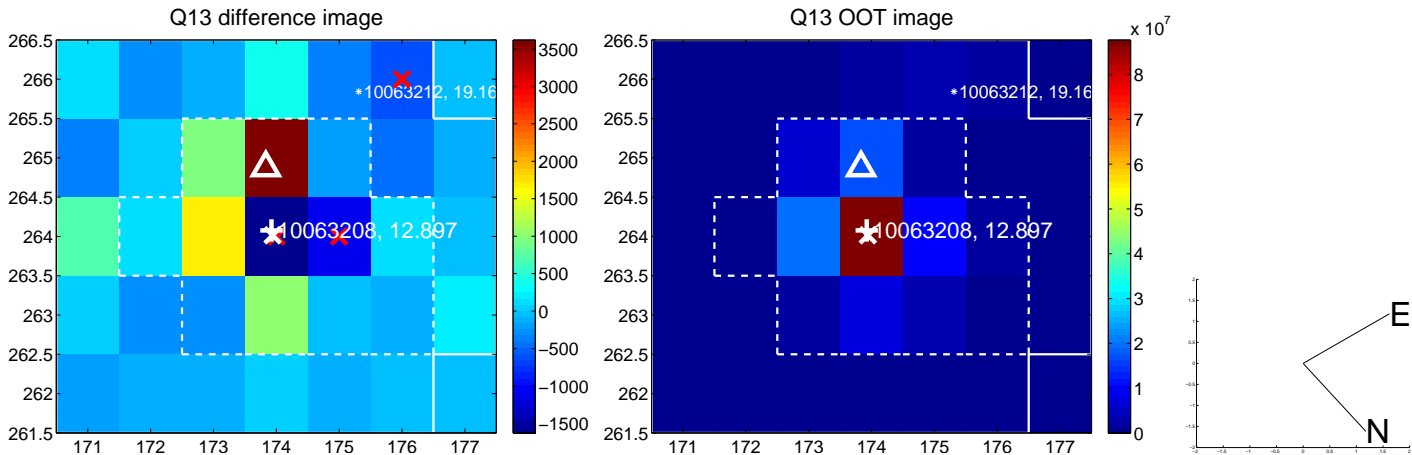
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

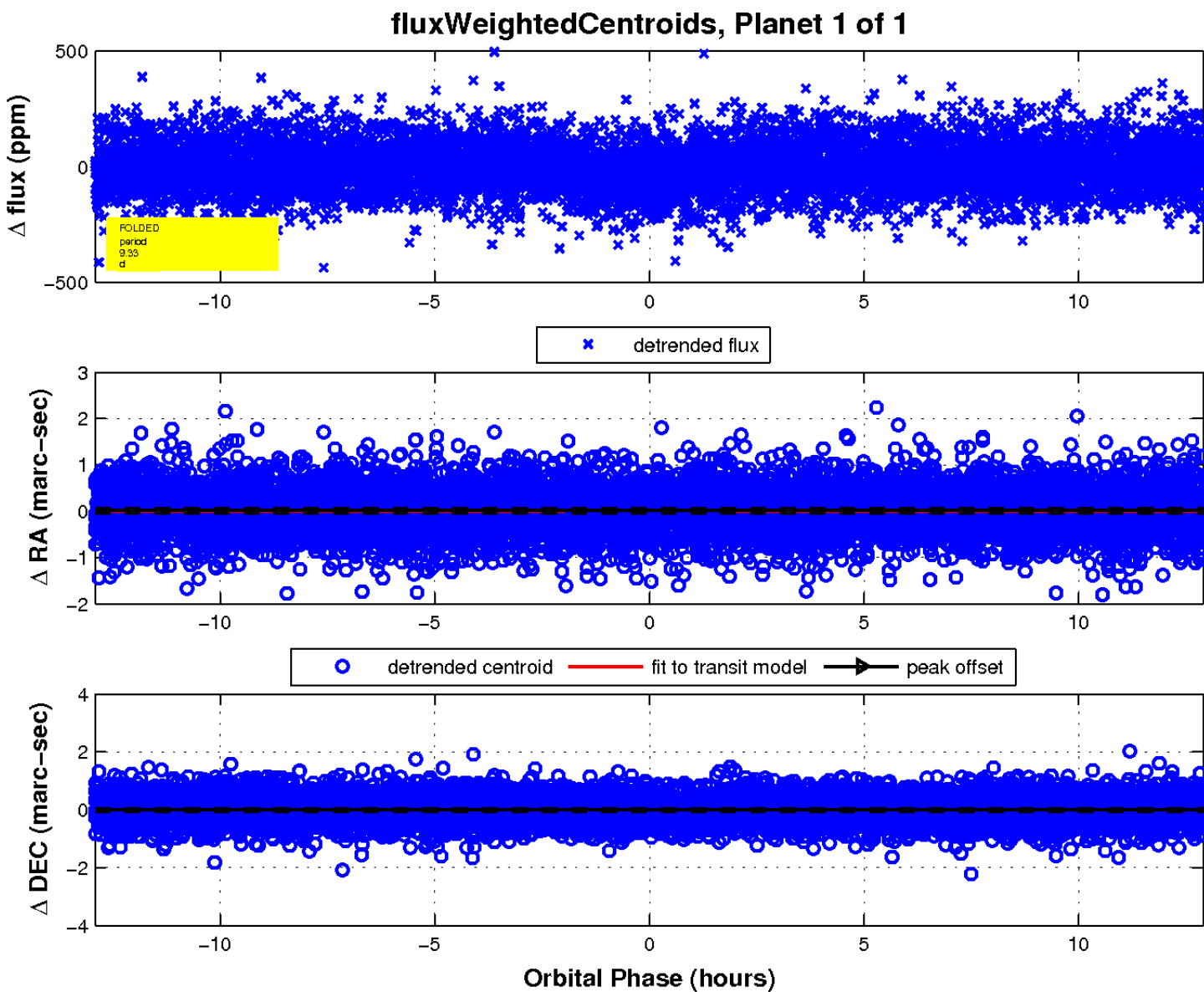
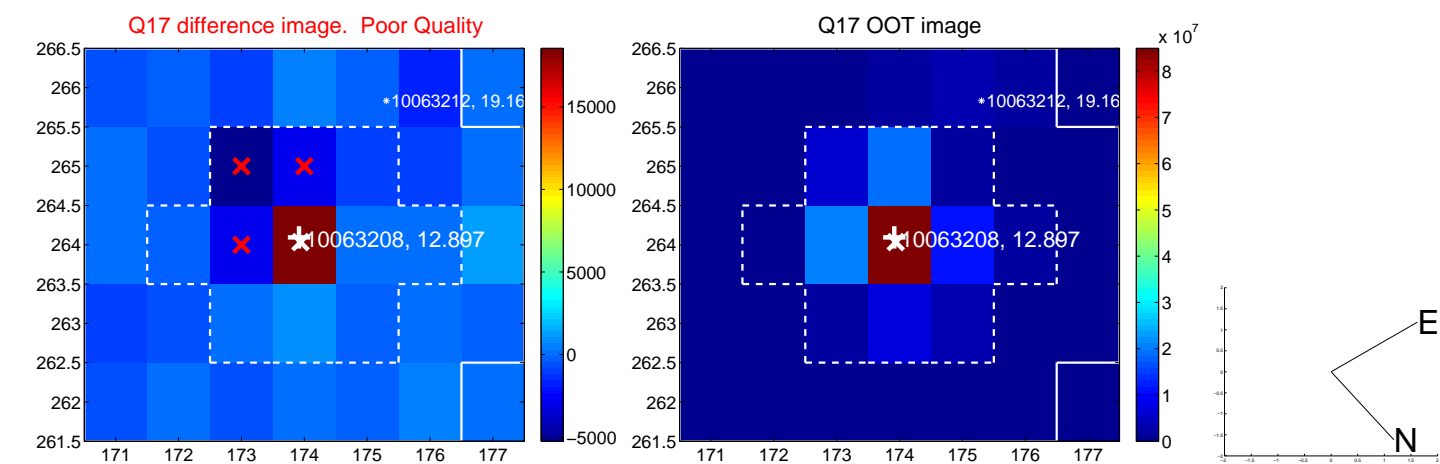


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

