

# KIC 010907132

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010907132-01	OBS	4503.01	5.891015	132.424528	232.2	2.478	8.6	10.0	0.94	5869	1.66	223.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010907132-01	OBS	PC	1.00	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.

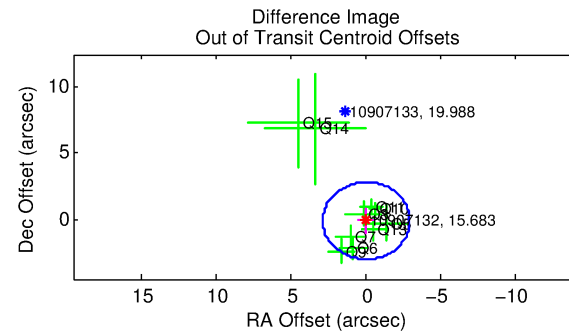
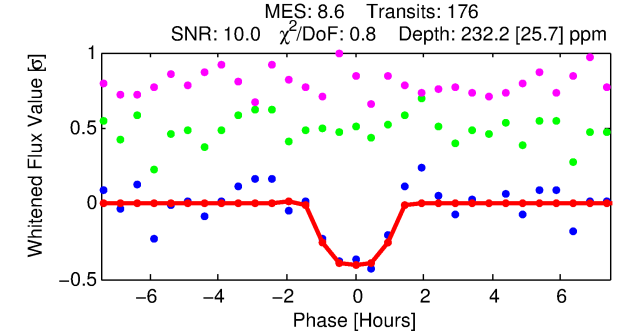
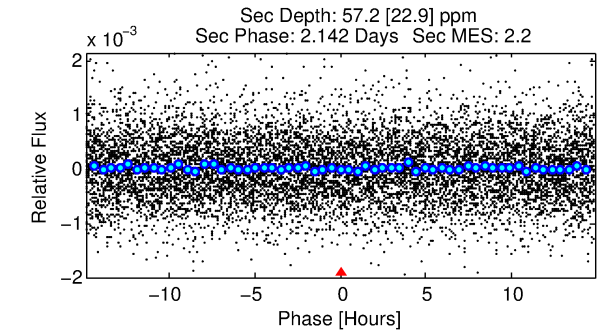
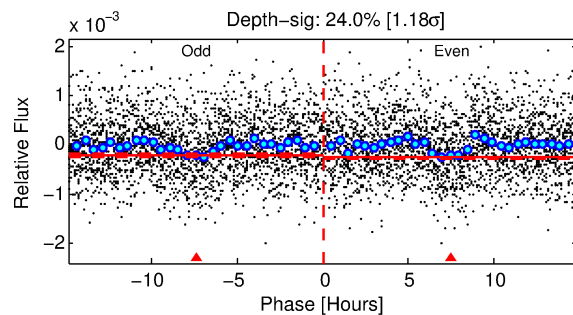
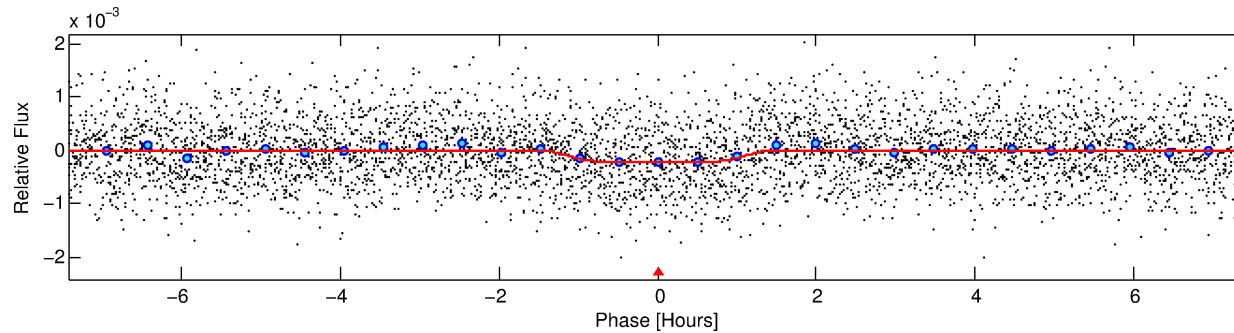
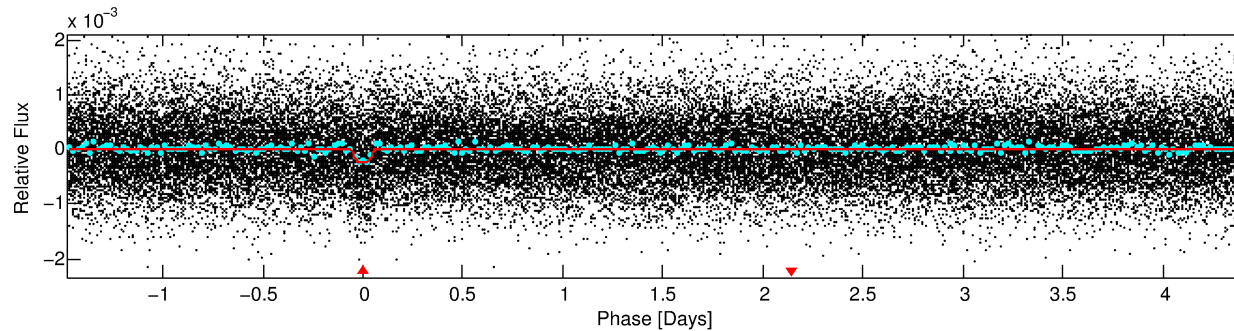
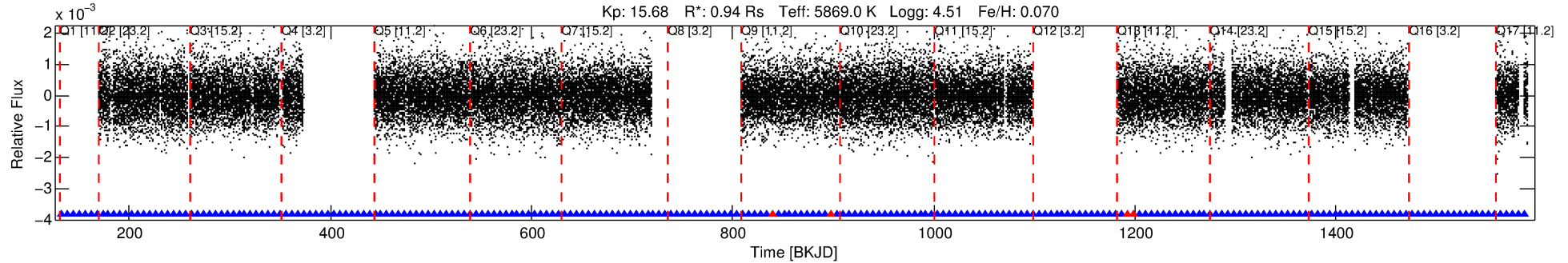
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010907132-01

No Significant Match Found

# DV One-Page Summary

KIC: 10907132 Candidate: 1 of 1 Period: 5.891 d  
KOI: K04503.01 Corr: 0.938



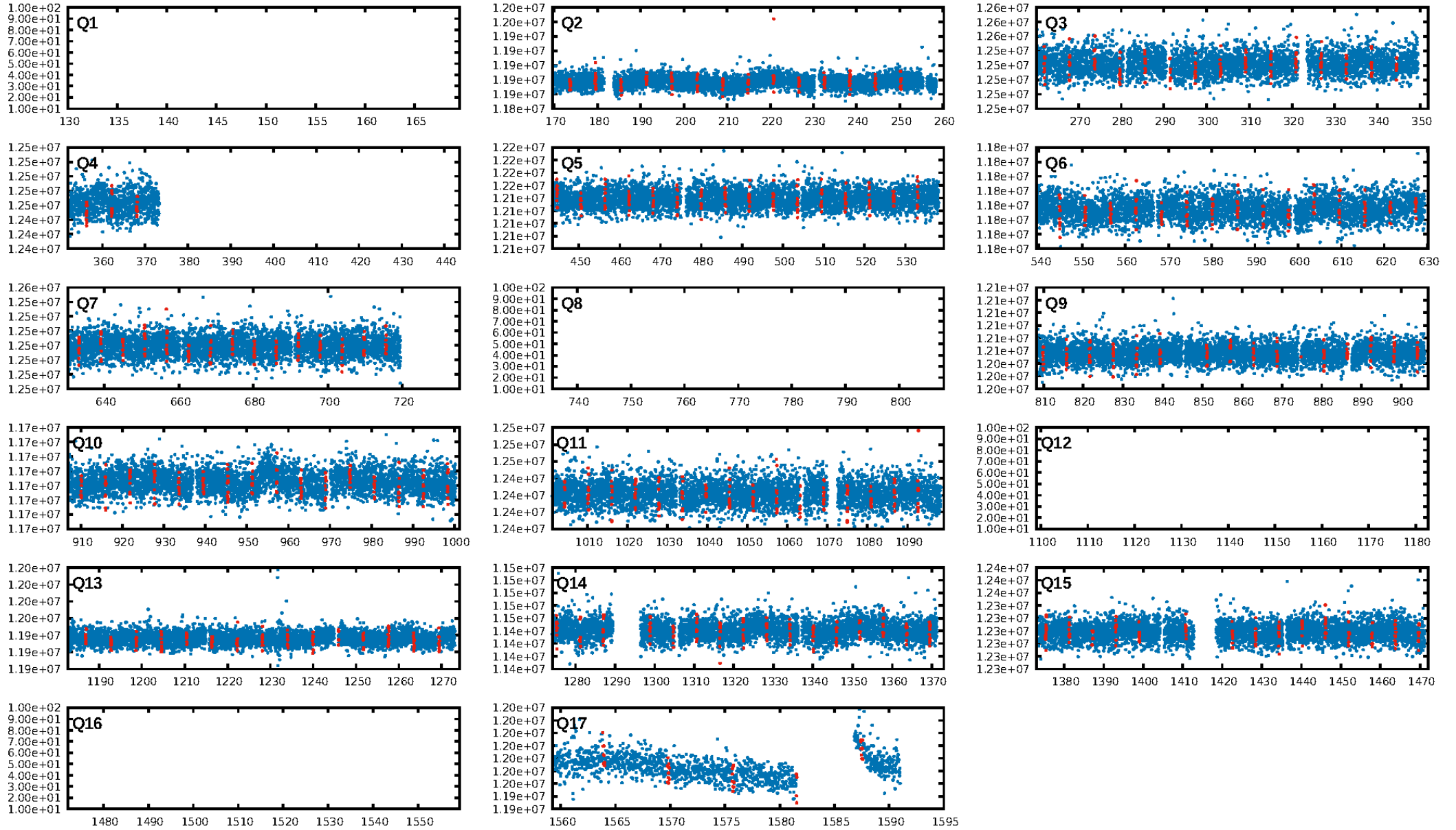
## DV Fit Results:

Period = 5.89101 [0.00004] d  
Epoch = 132.4245 [0.0051] BKJD  
Rp/R\* = 0.0162 [0.0150]  
a/R\* = 9.64 [41.75]  
b = 0.87 [1.27]  
Seff = 223.32 [91.38]  
Teq = 986 [101] K  
Rp = 1.66 [1.62] Re  
a = 0.0650 [0.0168] AU  
Ag = 48.21 [93.36] [0.51 $\sigma$ ]  
Teffp = 4016 [1911] K [1.58 $\sigma$ ]

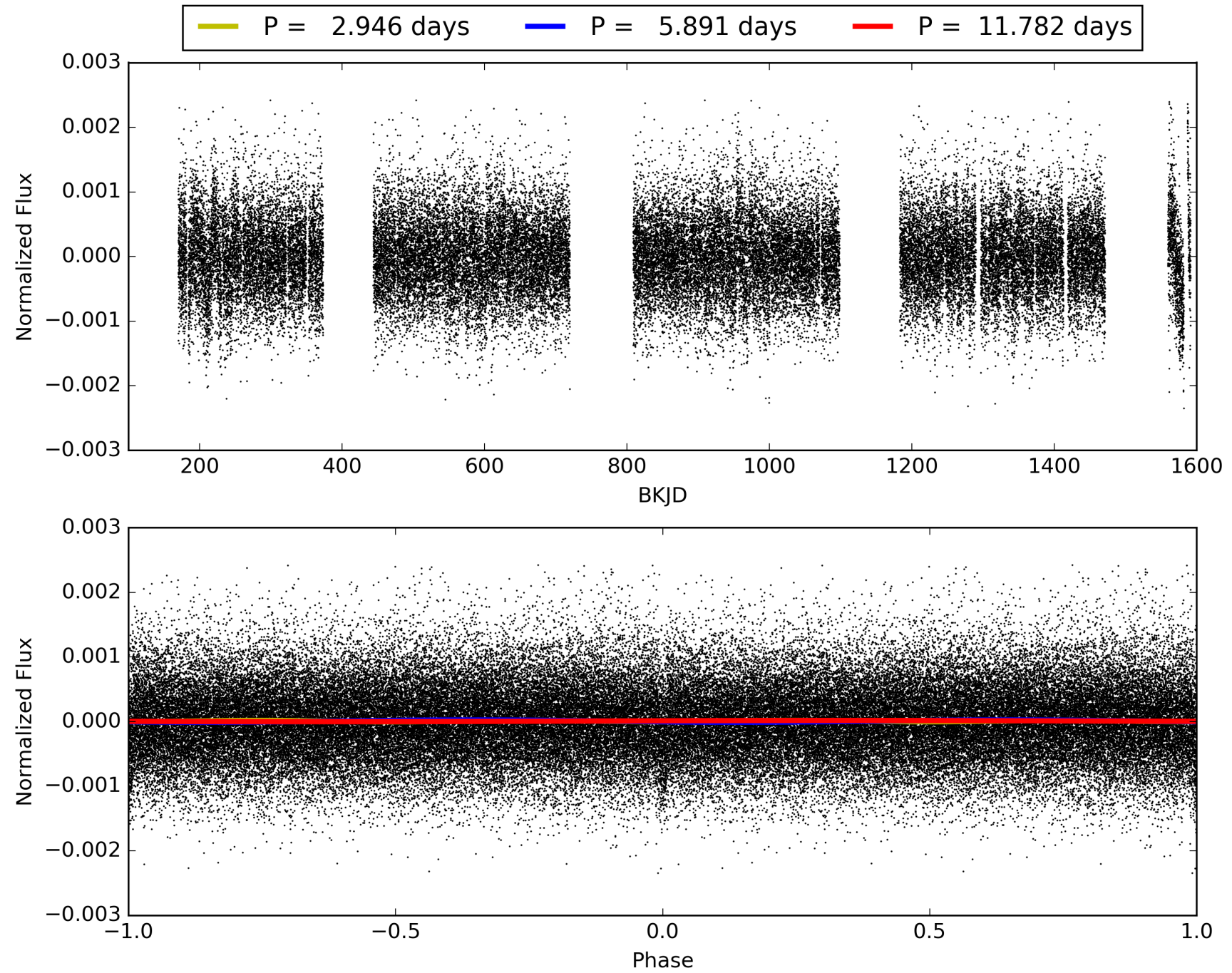
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 98.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.15e-18  
RollingBand-fgt: 0.98 [164/168]  
GhostDiagnostic-chr: 6.447  
Centroid-sig: 59.4%  
Centroid-so: 0.847 arcsec [0.50 $\sigma$ ]  
OotOffset-rm: 0.129 arcsec [0.13 $\sigma$ ]  
OotOffset-st: 3/4/0/3 [10]  
KicOffset-rm: 0.162 arcsec [0.18 $\sigma$ ]  
KicOffset-st: 3/4/0/3 [10]  
DiffImageQuality-fgm: 0.60 [6/10]  
DiffImageOverlap-fno: 1.00 [13/13]

# TCE 010907132-01, PDC Light Curves

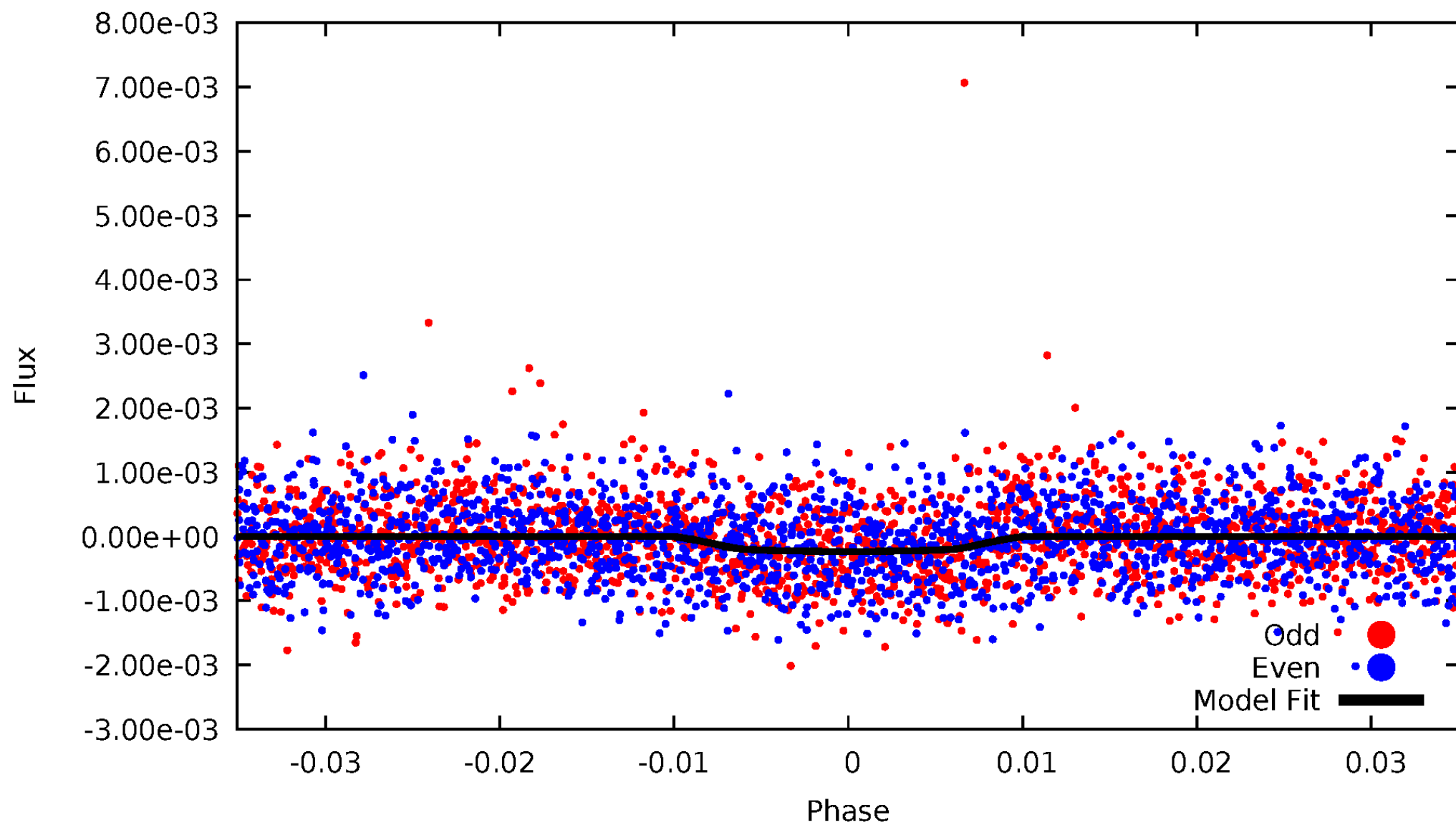


TCE 010907132-01



# DV Odd/Even

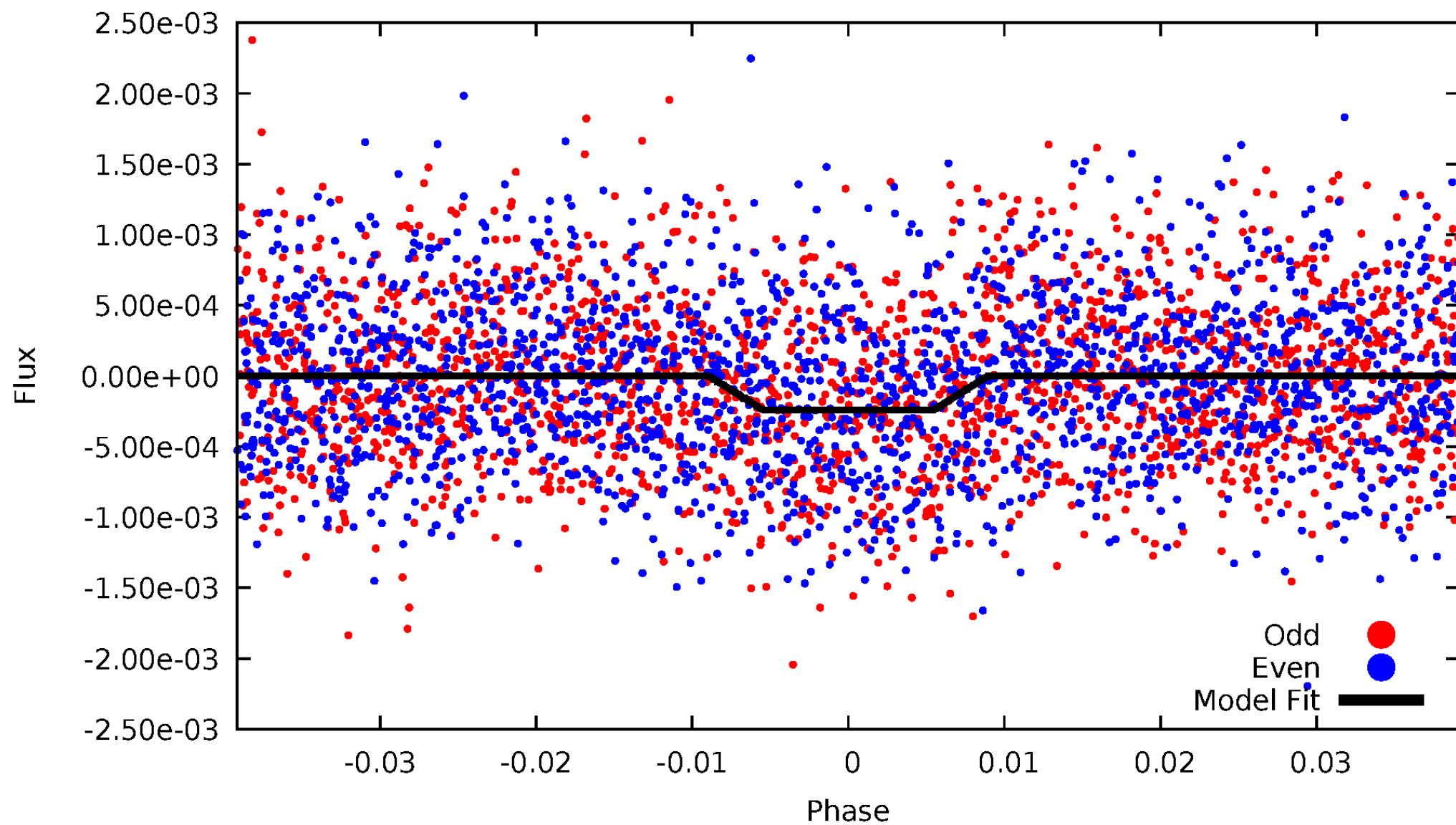
TCE 010907132-01





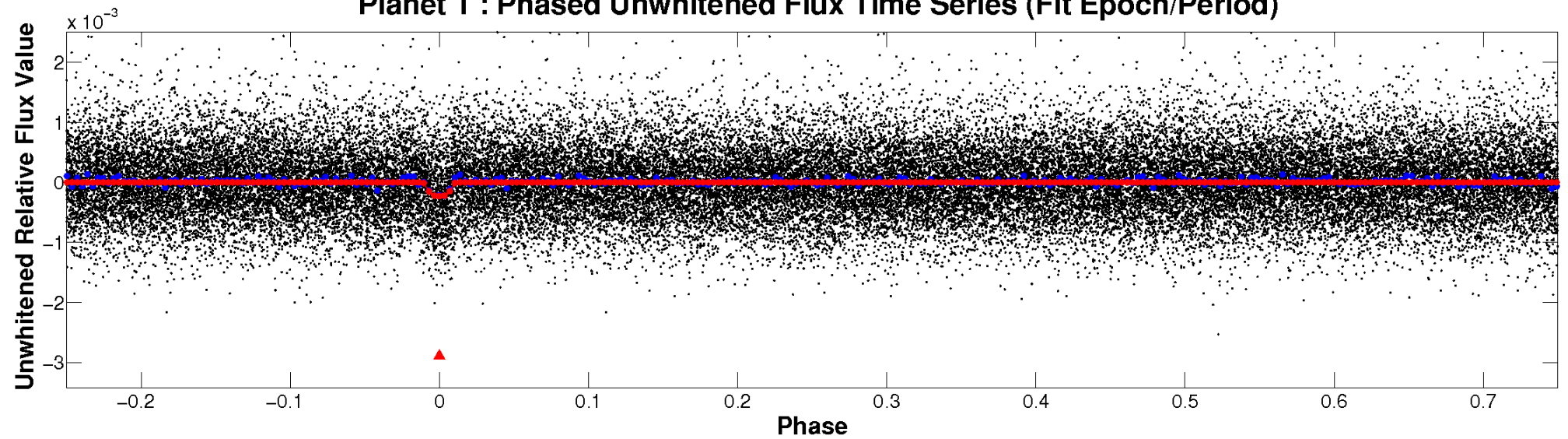
# ALT Odd/Even

TCE 010907132-01

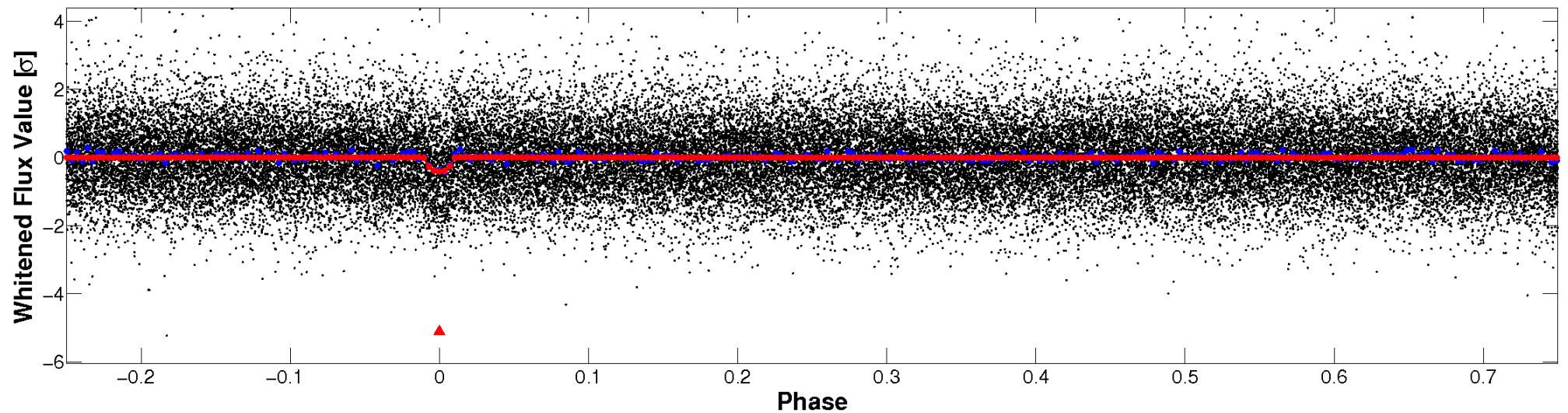


# Non-Whitened Vs. Whitened Light Curve

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

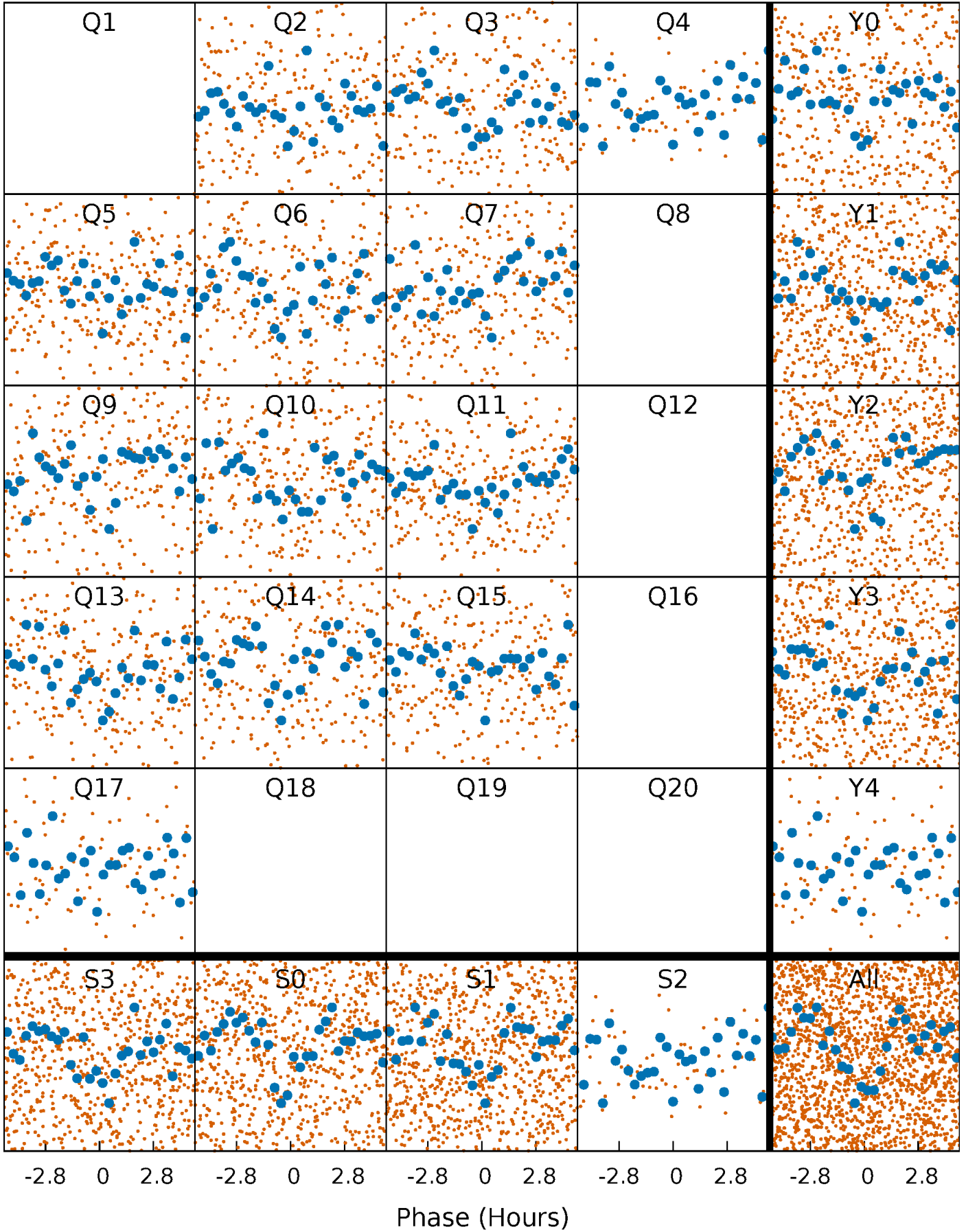


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

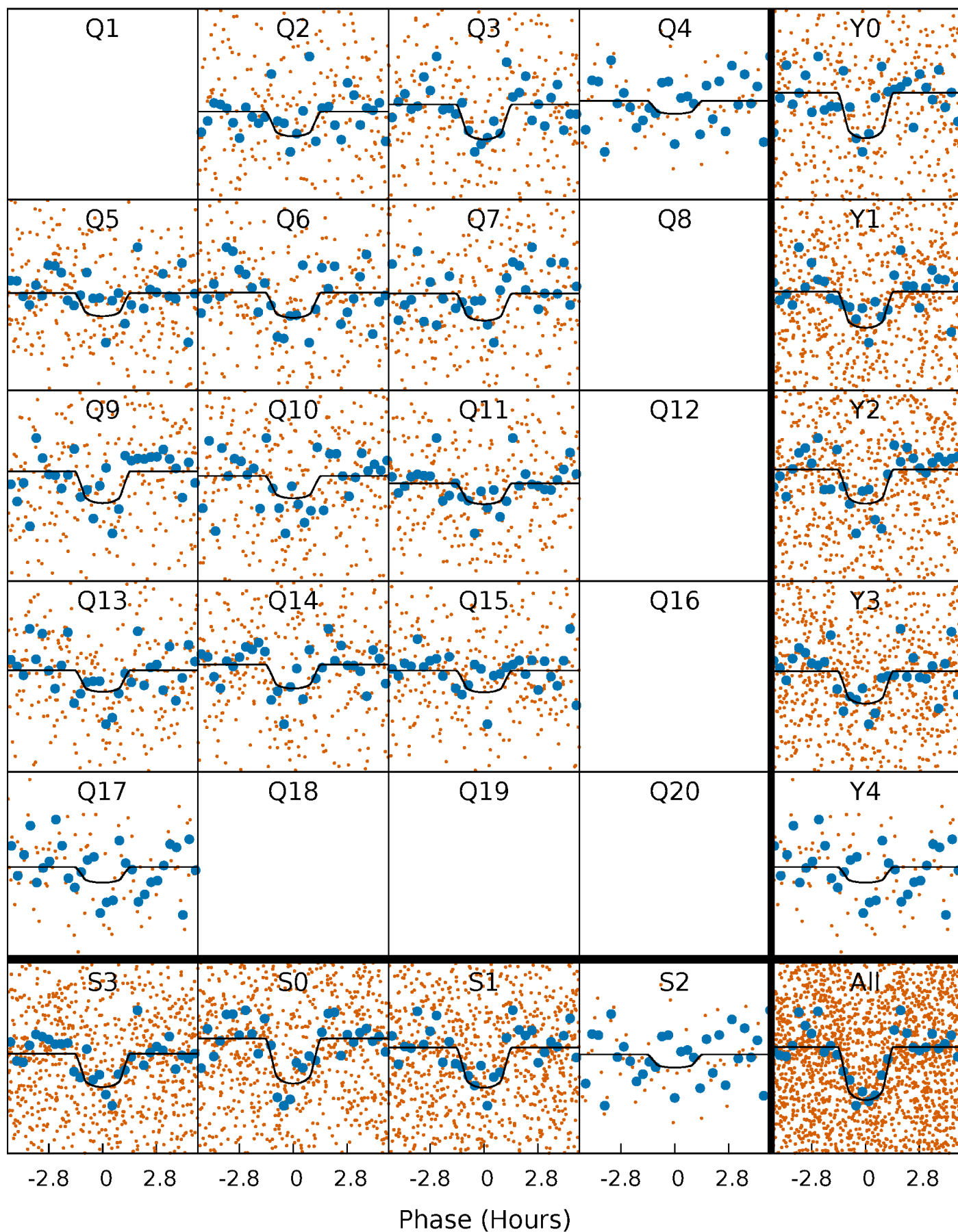
TCE 010907132-01 P= 5.891015 Days  $T_0=132.424528$  (BKJD)





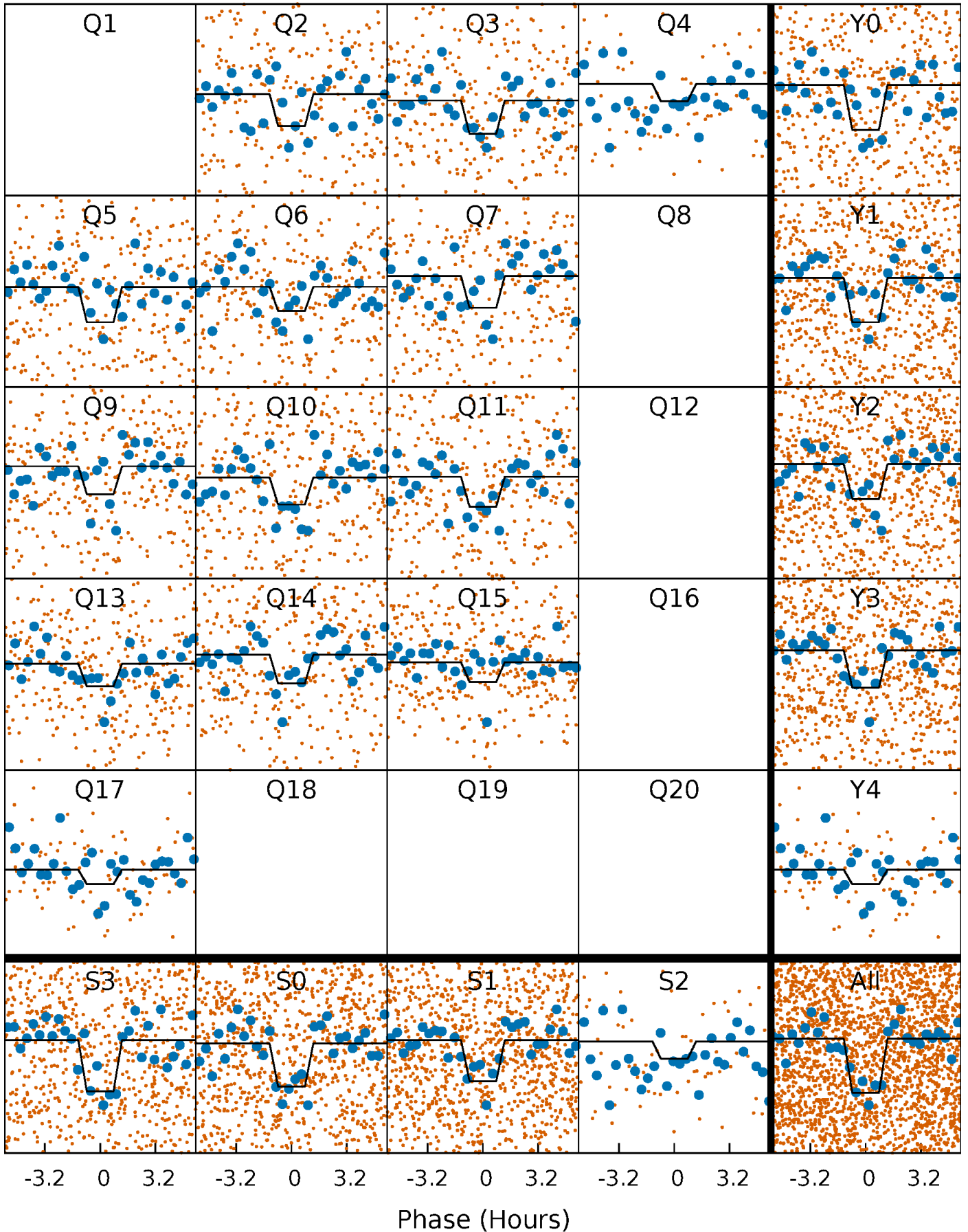
# DV Quarter-Phased Transit Curves

TCE 010907132-01 P= 5.891015 Days  $T_0=132.424528$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

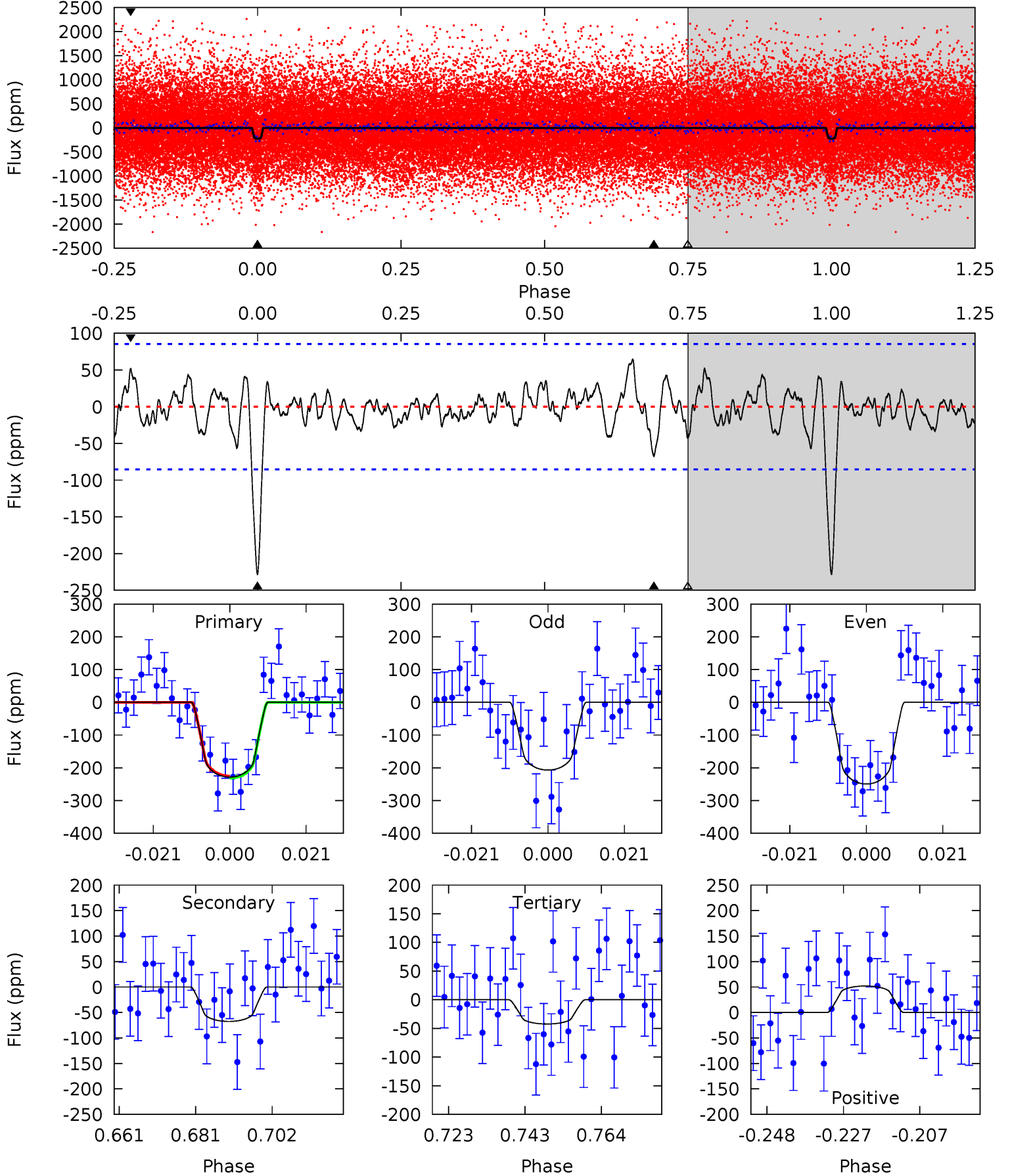
TCE 010907132-01 P= 5.891041 Days  $T_0=132.420641$  (BKJD)



# DV Model-Shift Uniqueness Test

010907132-01, P = 5.891015 Days, E = 132.424528 Days

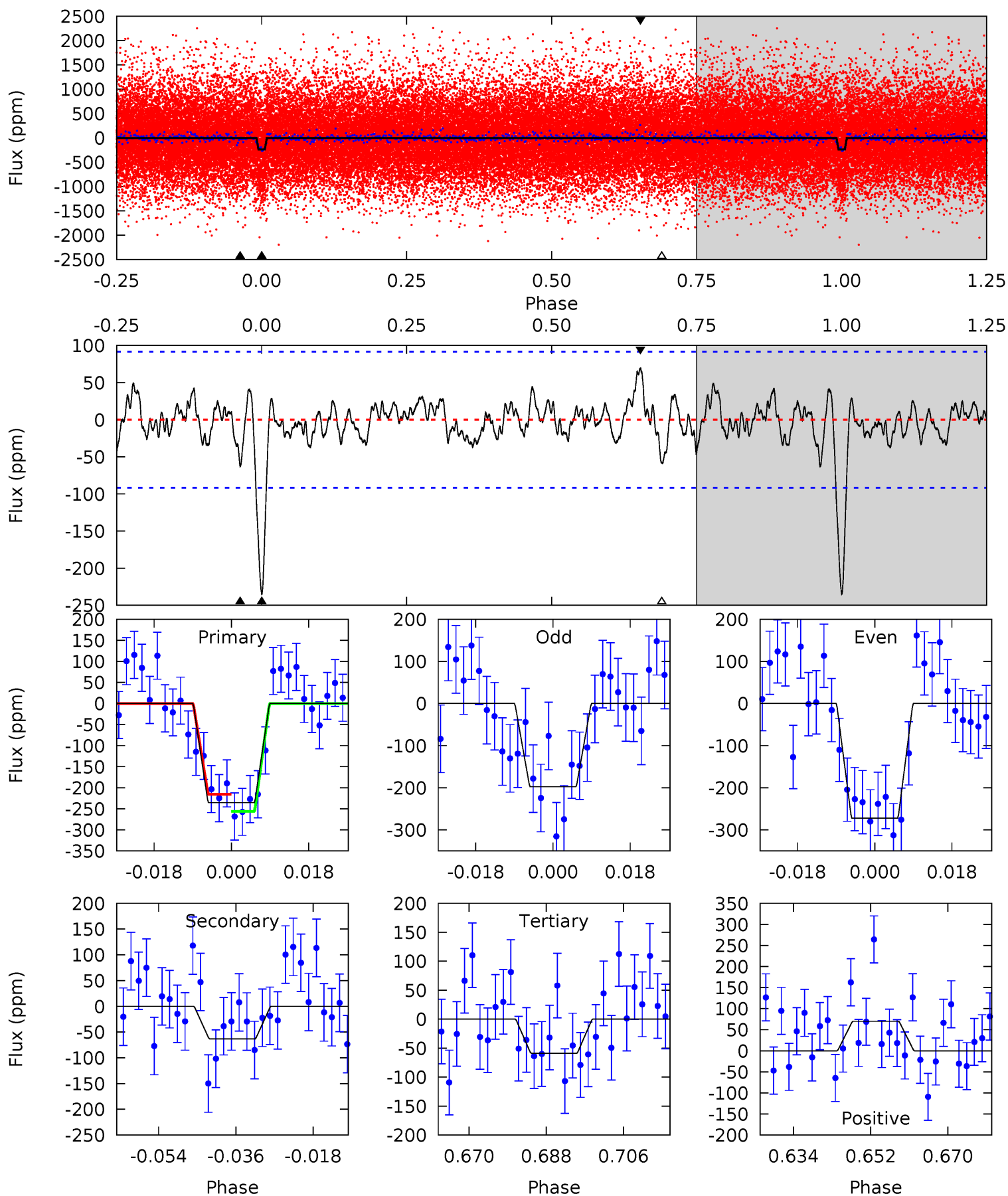
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.1	3.86	2.42	2.97	4.89	2.31	1.12	10.6	10.1	1.45	0.89	1.22	0.94	0.22	0.18



# Alt Model-Shift Uniqueness Test

010907132-01, P = 5.891041 Days, E = 132.420641 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
12.6	3.38	3.14	3.74	4.91	2.36	1.09	9.47	8.87	0.23	-0.37	2.00	0.94	0.23	1.08



### Stellar Parameters For KIC 010907132

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5869^{+158}_{-211}$	$4.513^{+0.037}_{-0.213}$	$0.070^{+0.250}_{-0.300}$	$0.942^{+0.282}_{-0.094}$	$1.054^{+0.117}_{-0.140}$	$1.776^{+0.355}_{-0.916}$
	+3%/-4%	+1%/-5%	+357%/-429%	+30%/-10%	+11%/-13%	+20%/-52%
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 010907132-01 / KOI 4503.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-68 \pm 17$	$2.12^{+1.54}_{-1.25}$	$1410^{+94}_{-69}$	$4048^{+2101}_{-706}$	$32^{+183}_{-21}$
Alt.	$-63 \pm 19$	$2.03^{+1.46}_{-1.26}$	$1406^{+111}_{-68}$	$4065^{+2022}_{-733}$	$33^{+204}_{-23}$

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



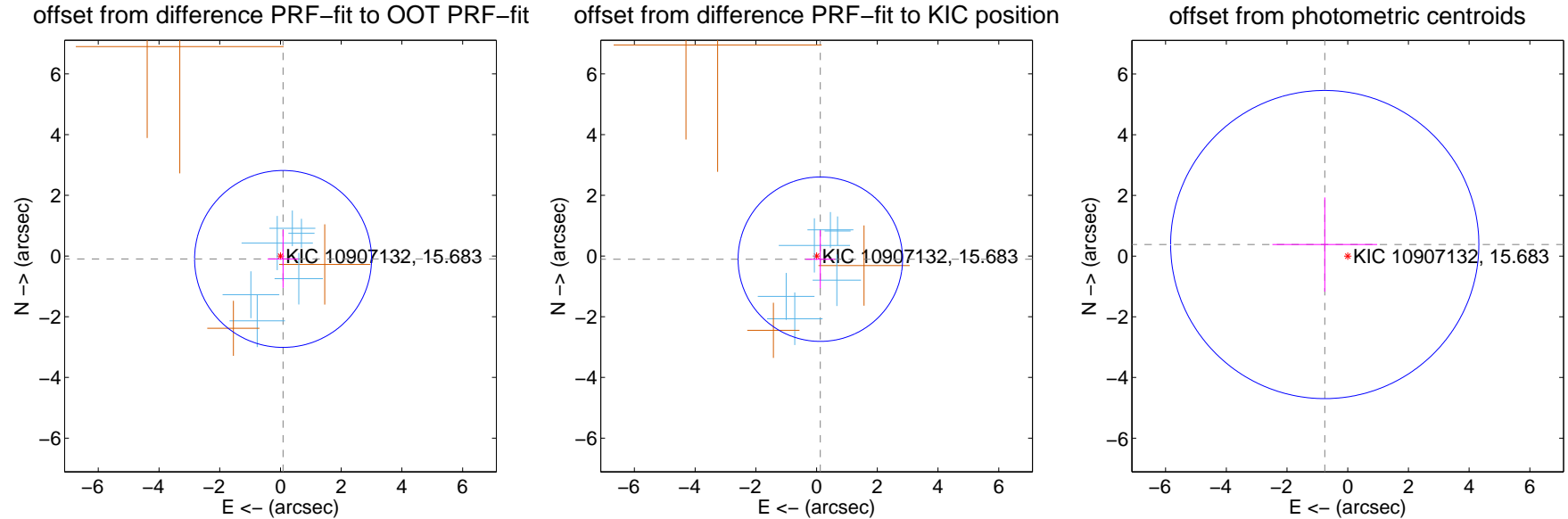
## DV Centroid Data

Supplemental centroid analysis for 010907132-01. Kepler magnitude: 15.68. Transit SNR 10.01

There are 6 quarters with good PRF difference image offsets

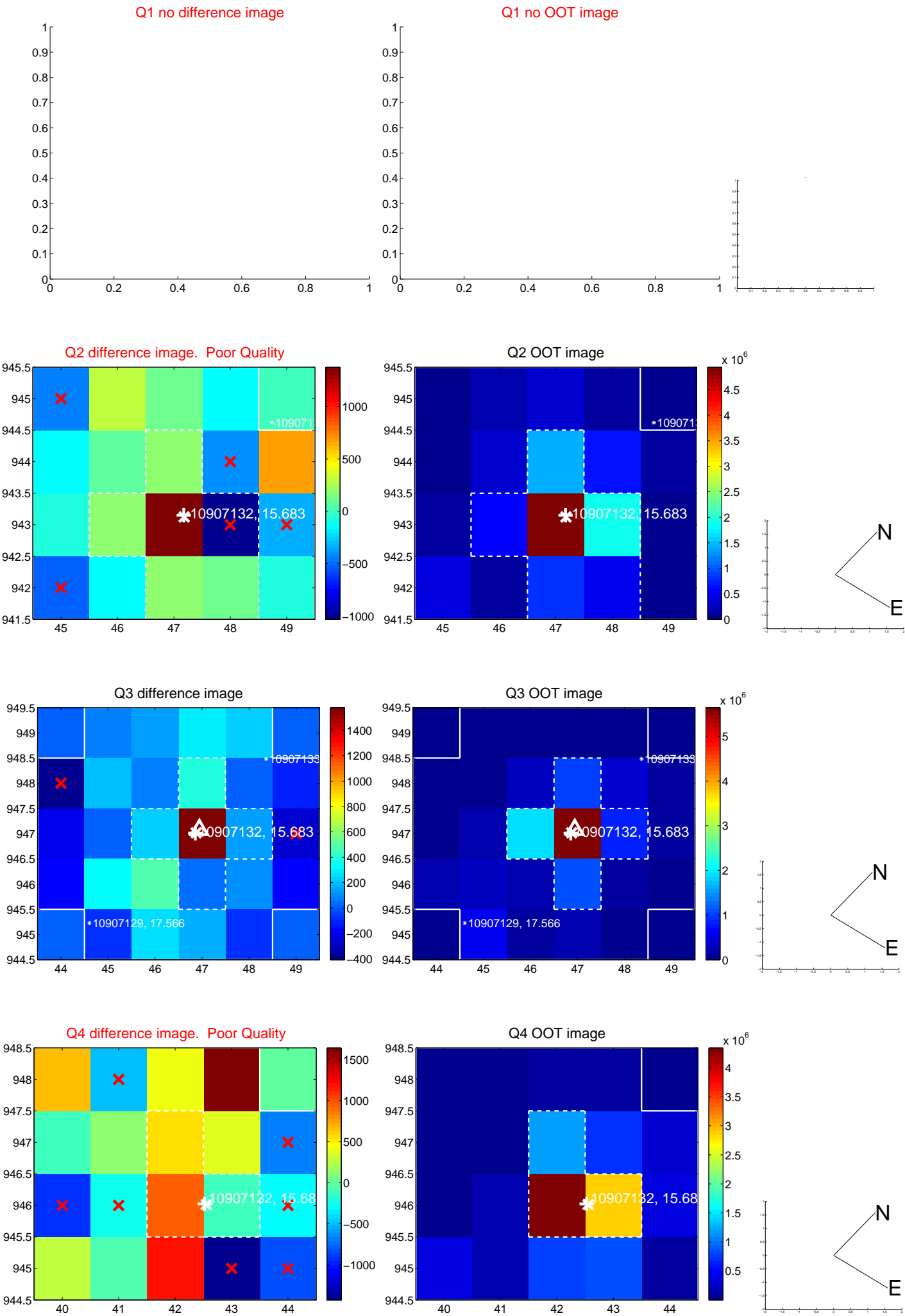
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.129 \pm 0.971$	0.13	$-0.086 \pm 0.503$	$-0.096 \pm 0.955$
PRF-fit source offset from KIC position	$0.162 \pm 0.903$	0.18	$-0.124 \pm 0.482$	$-0.104 \pm 0.953$
photometric centroid source offset	$0.85 \pm 1.69$	0.50	$0.76 \pm 1.73$	$0.38 \pm 1.55$

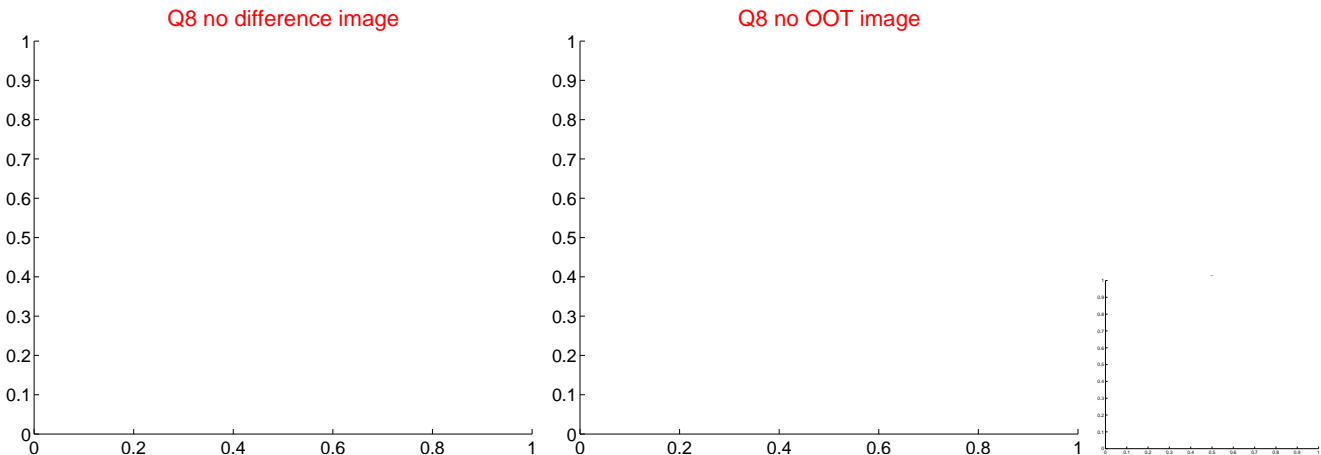
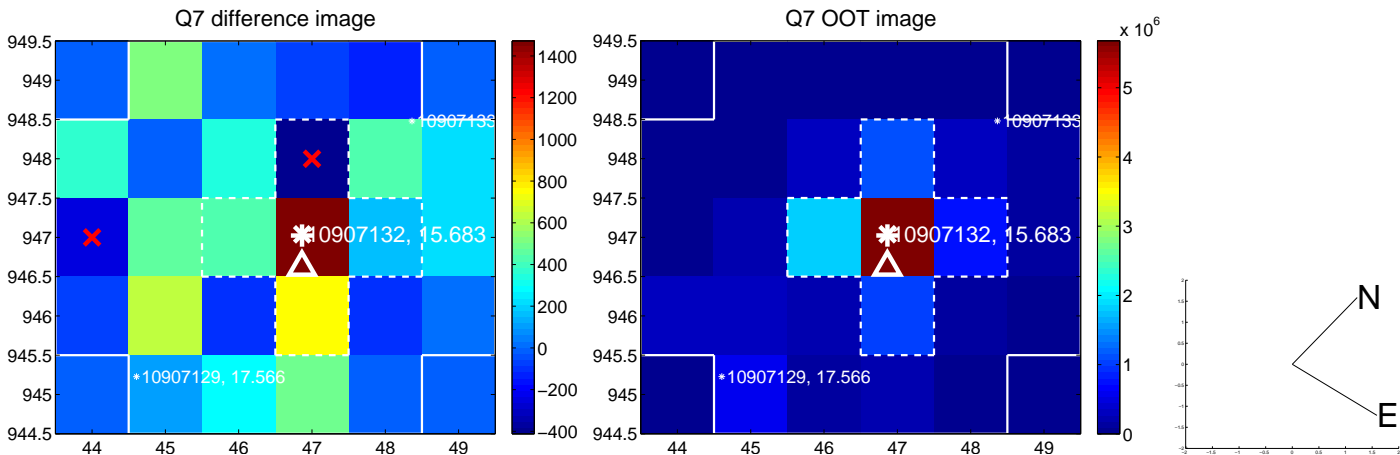
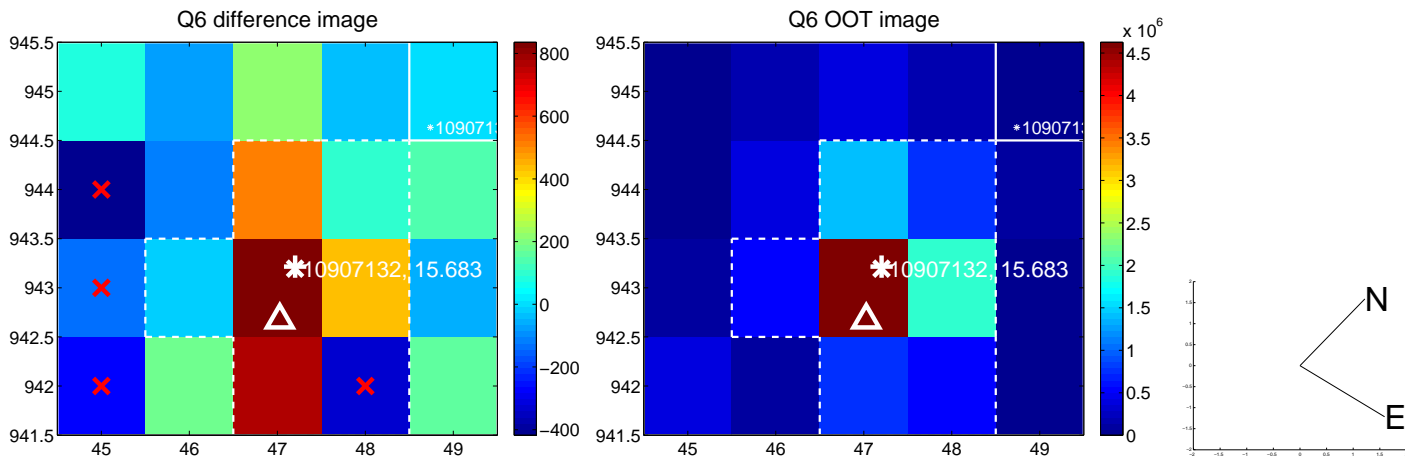
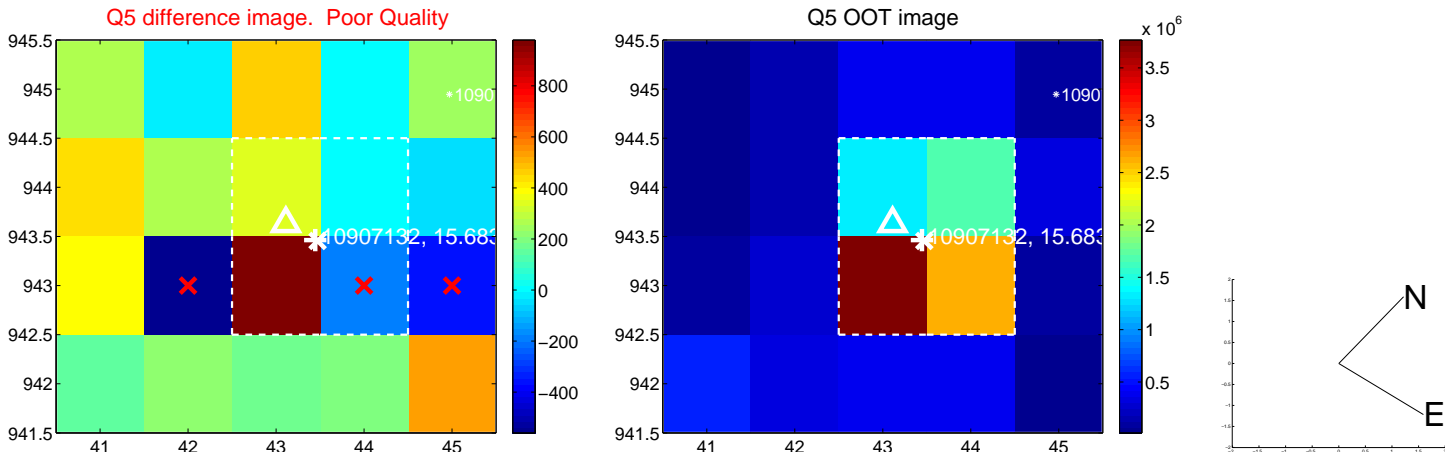


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

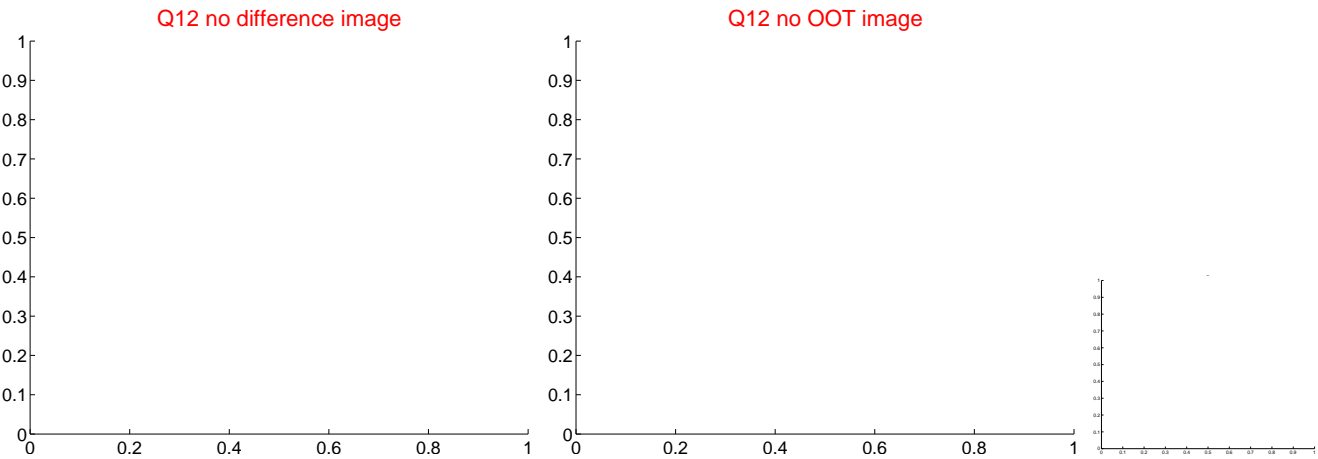
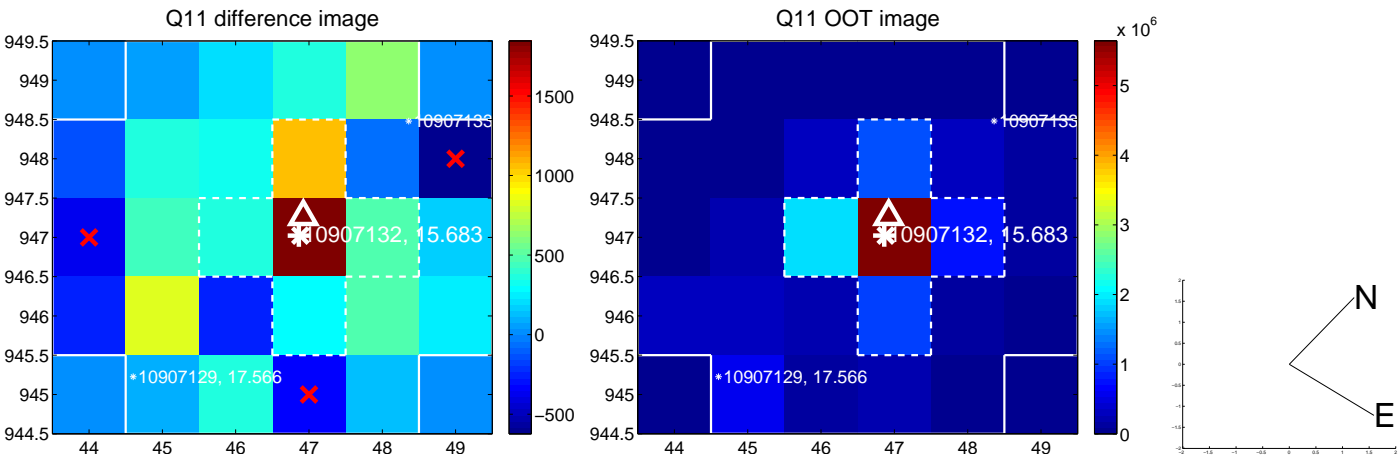
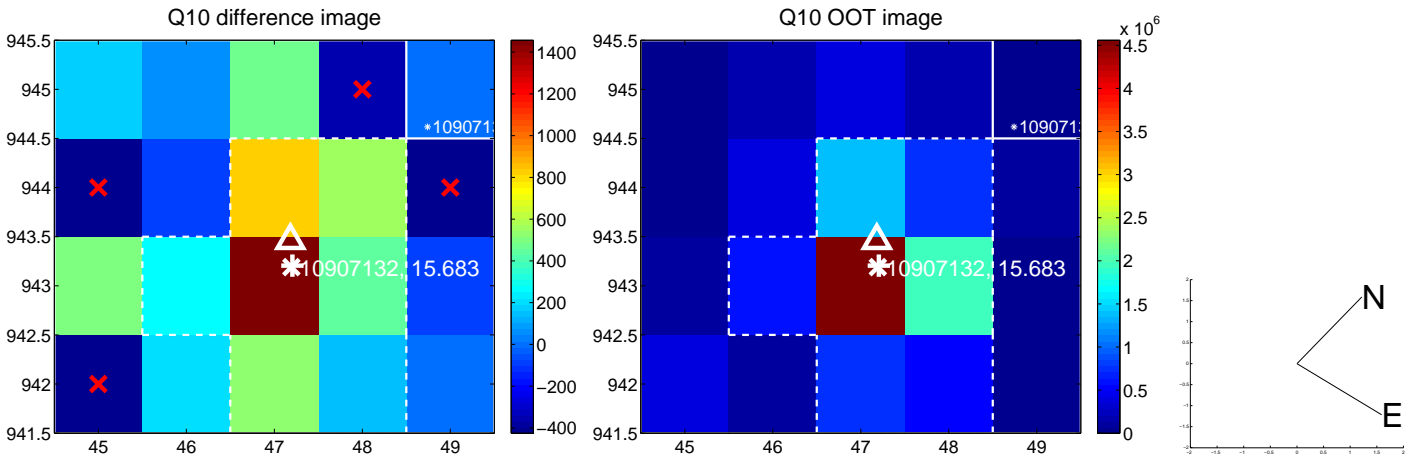
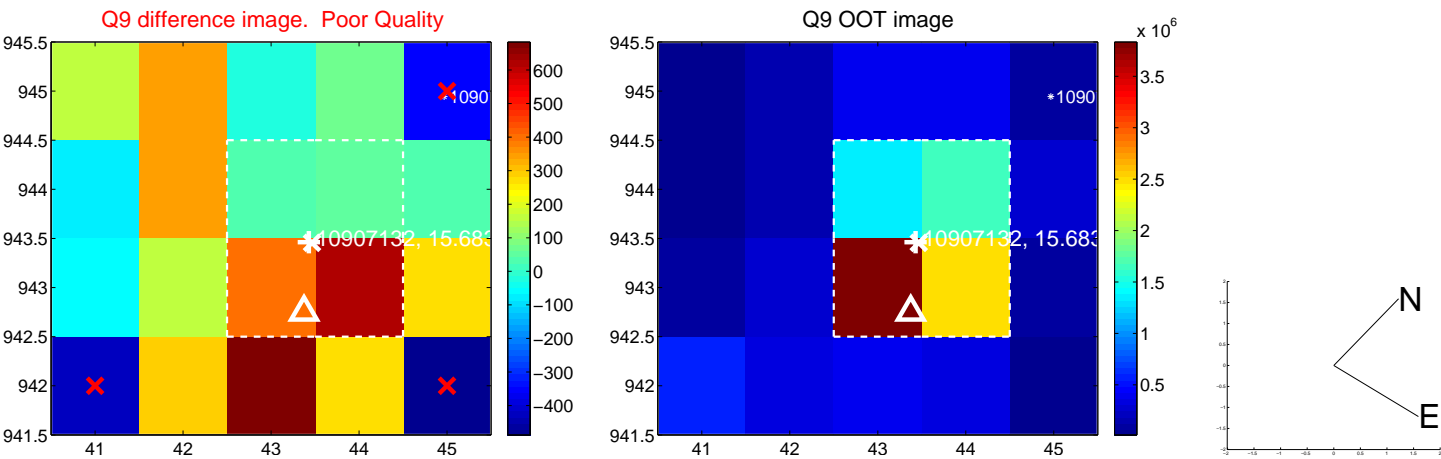
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



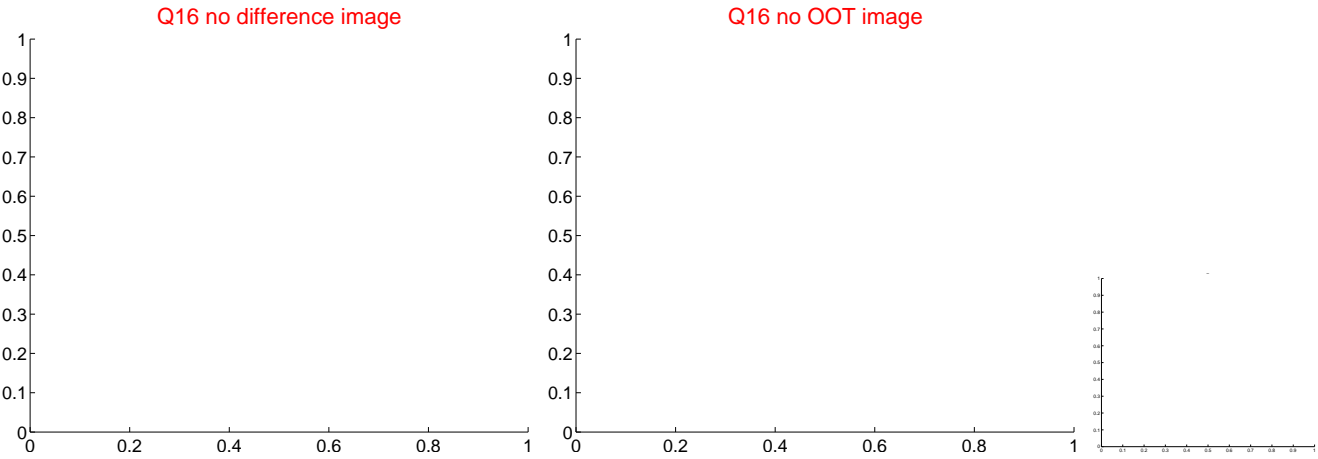
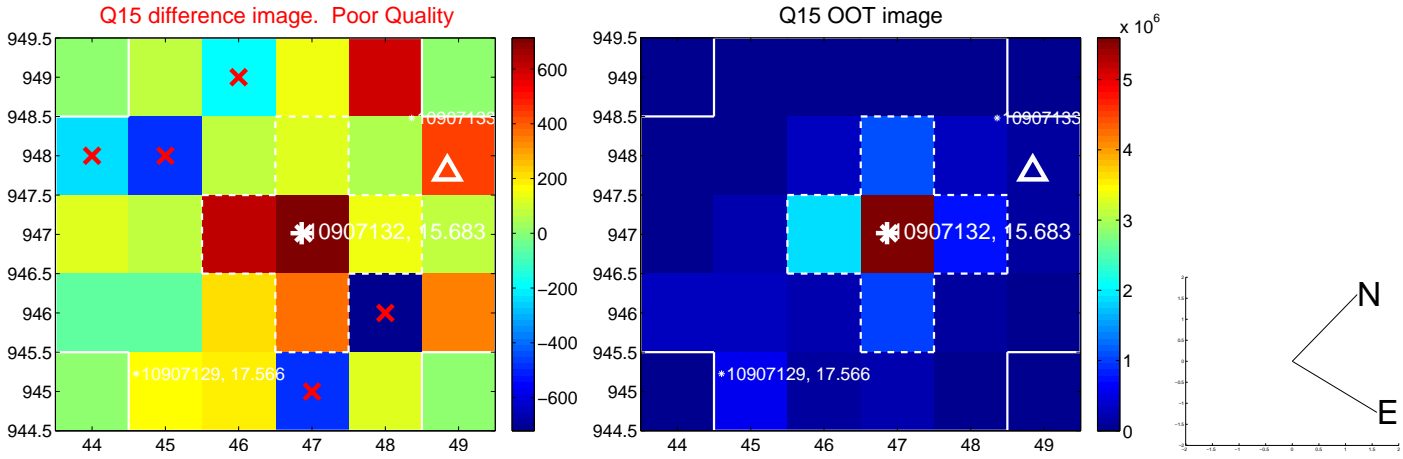
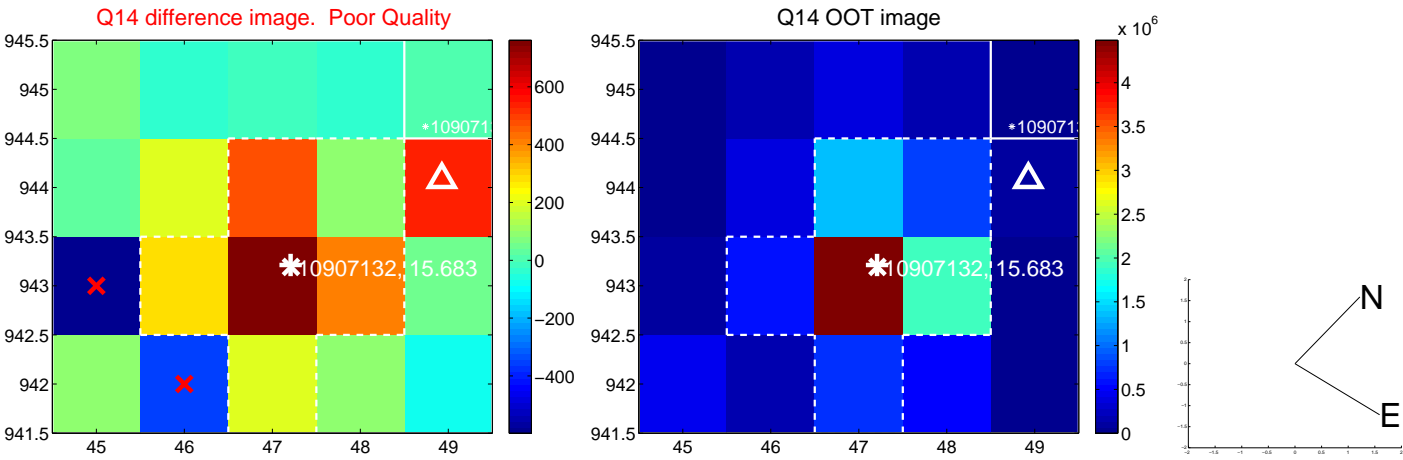
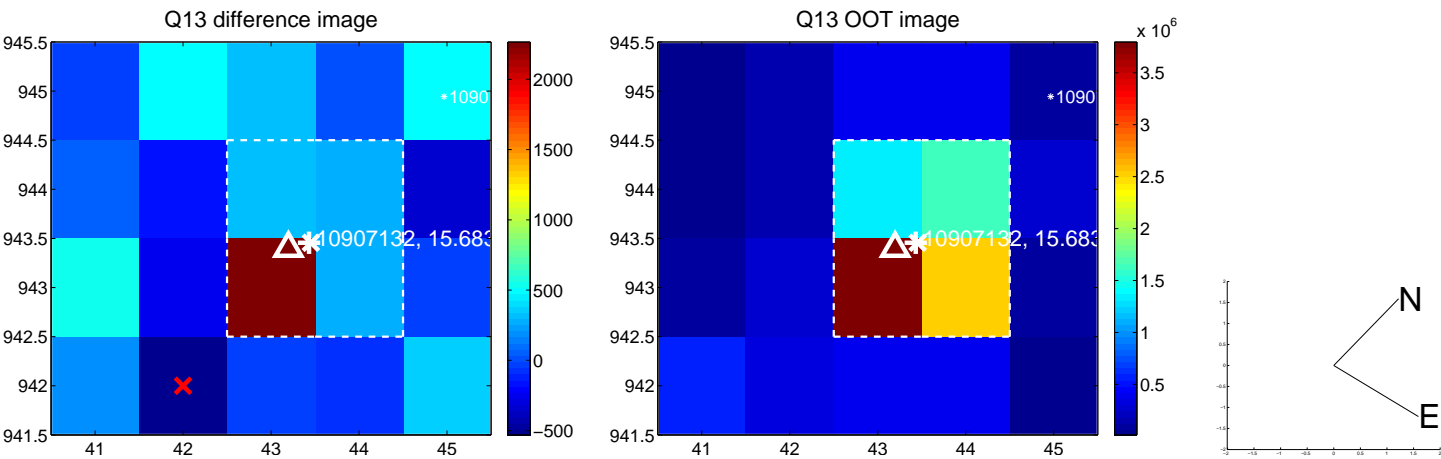
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value



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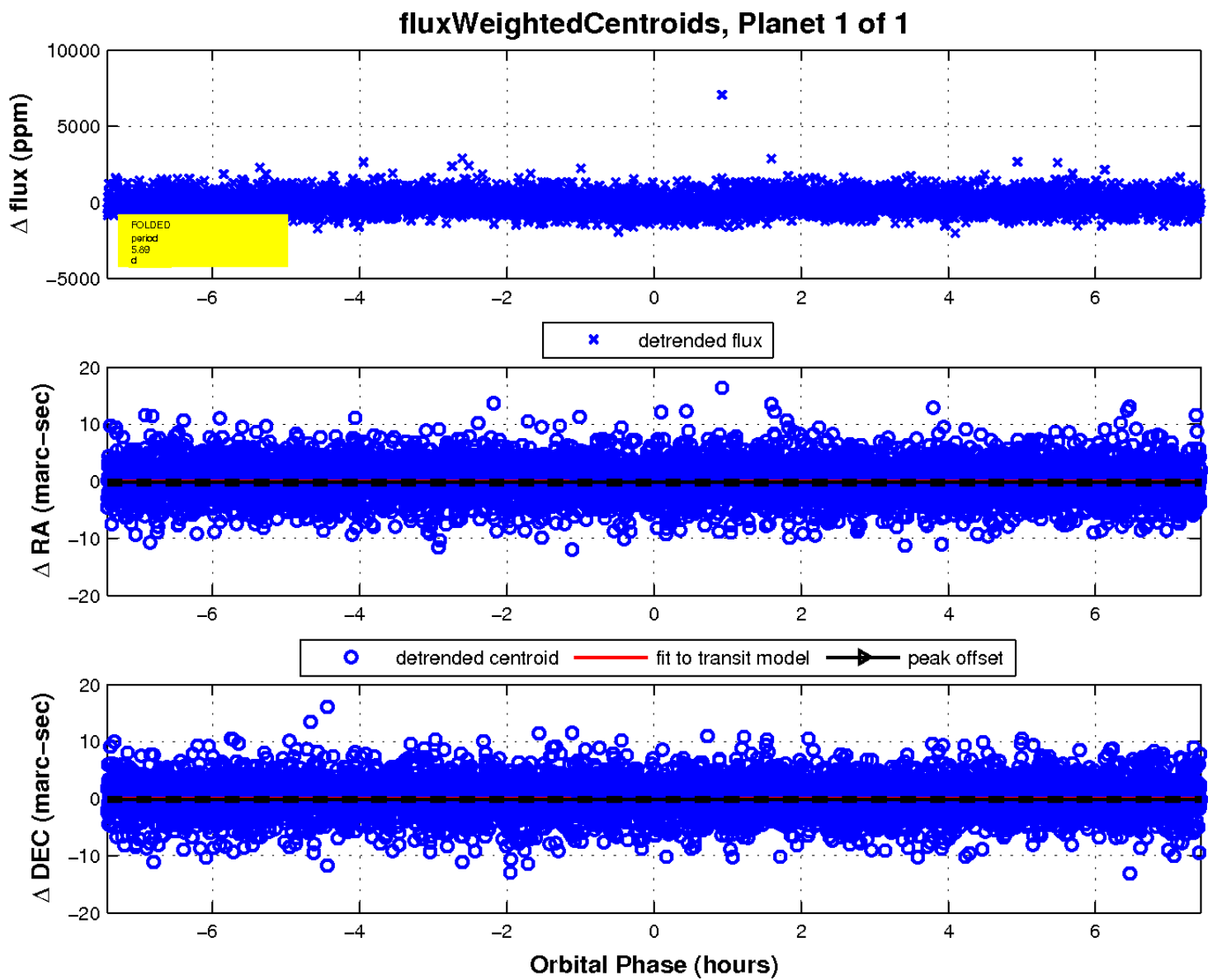
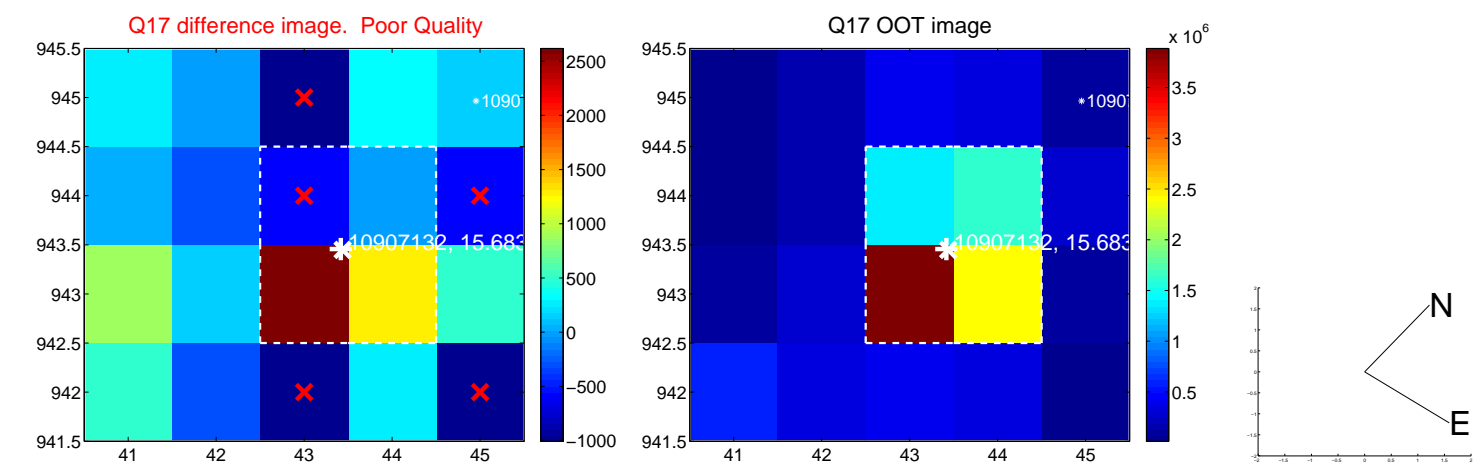


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

