

# KIC 008430964

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008430964-01	OBS	3078.01	2.986227	133.463598	131.2	3.326	11.4	12.8	1.04	6173	1.43	799.86

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008430964-01	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.

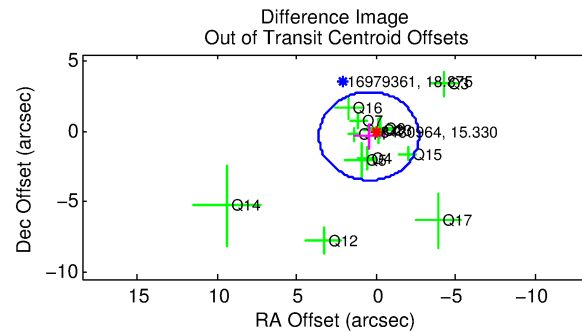
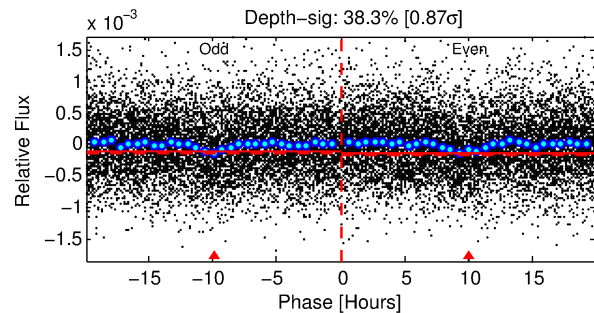
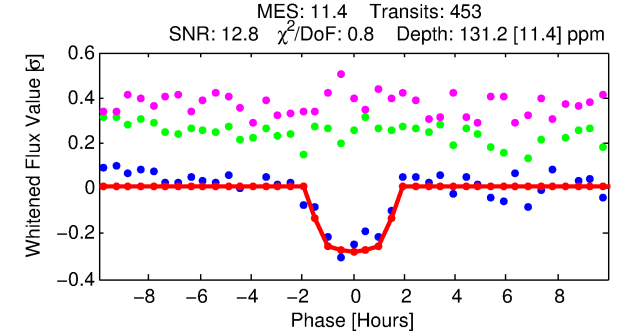
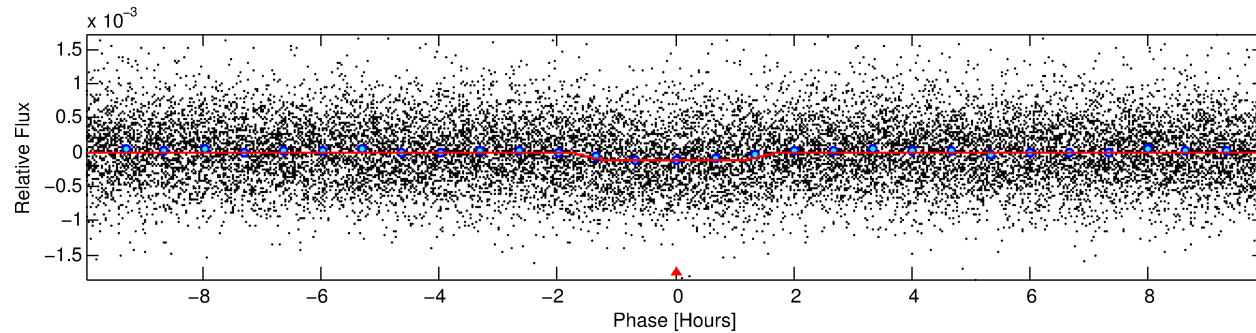
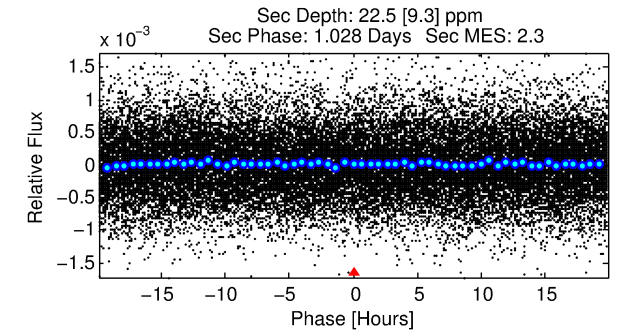
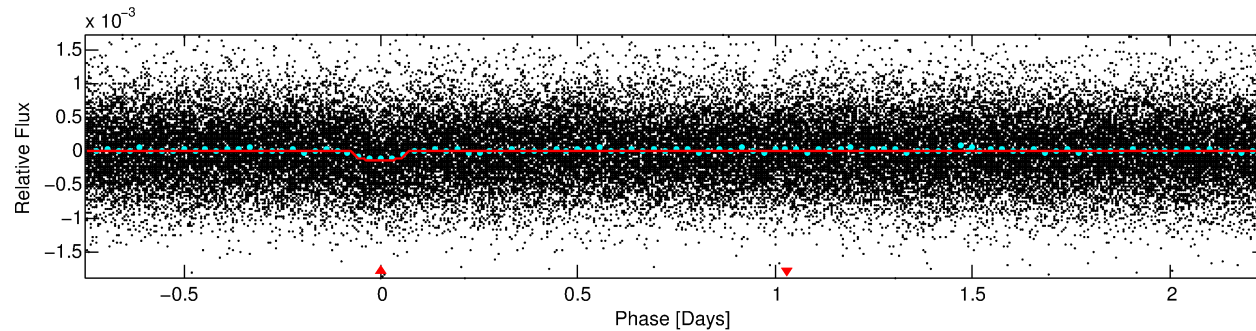
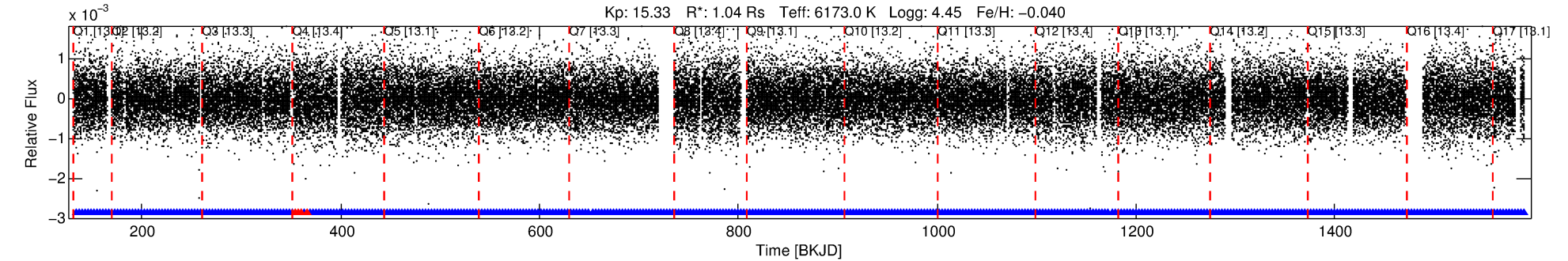
## Ephemeris Match Information For 008430964-01

No Significant Match Found

# DV One-Page Summary

KIC: 8430964 Candidate: 1 of 1 Period: 2.986 d

KOI: K03078.01 Corr: 0.939



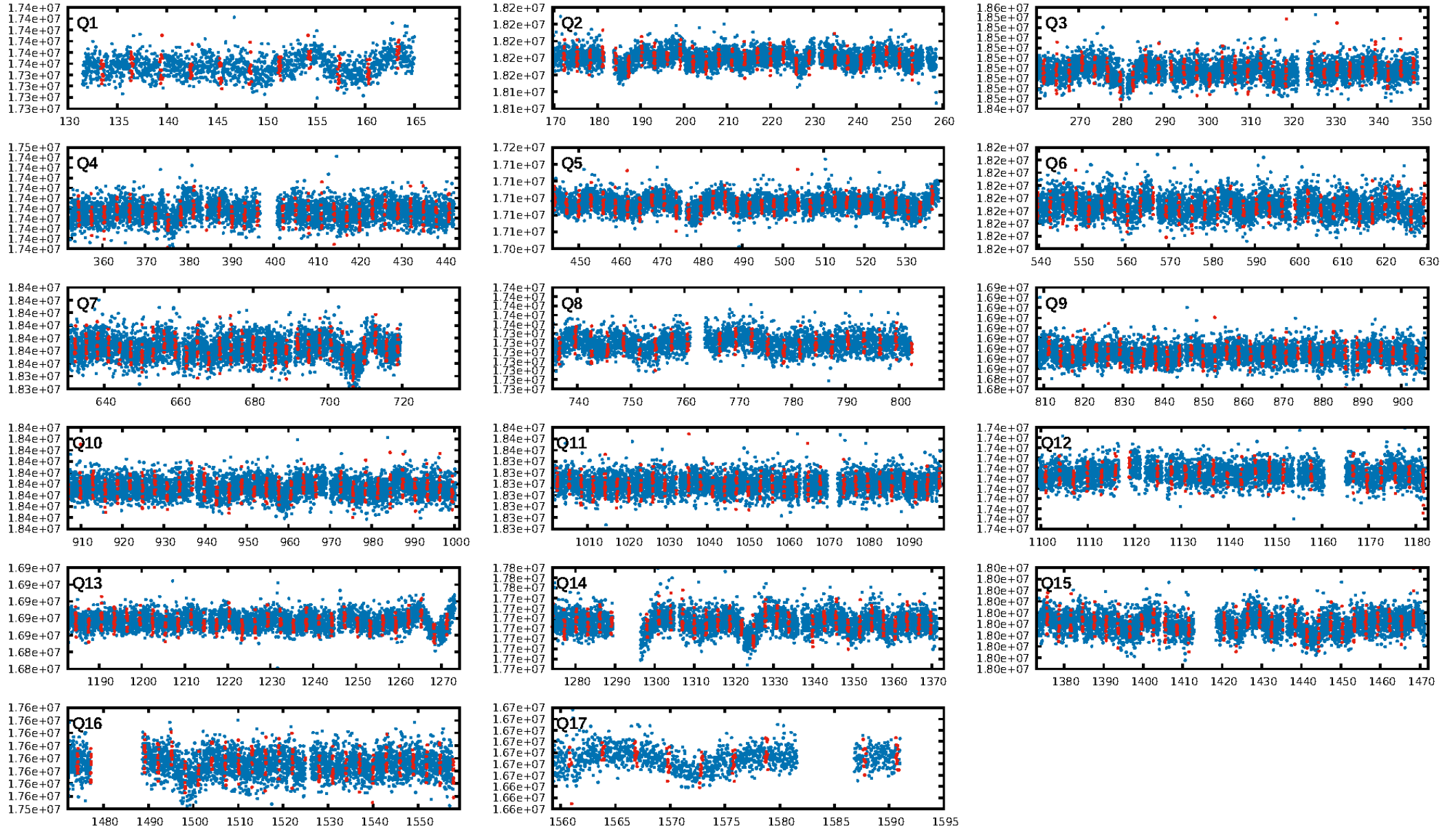
## DV Fit Results:

Period = 2.98623 [0.00002] d  
Epoch = 133.4636 [0.0039] BKJD  
Rp/R\* = 0.0125 [0.0044]  
a/R\* = 3.10 [5.24]  
b = 0.92 [0.33]  
Seff = 799.86 [348.02]  
Teq = 1356 [148] K  
Rp = 1.43 [0.68] Re  
a = 0.0420 [0.0117] AU  
Ag = 10.73 [9.76] [1.00σ]  
Teffp = 3794 [786] K [3.05σ]

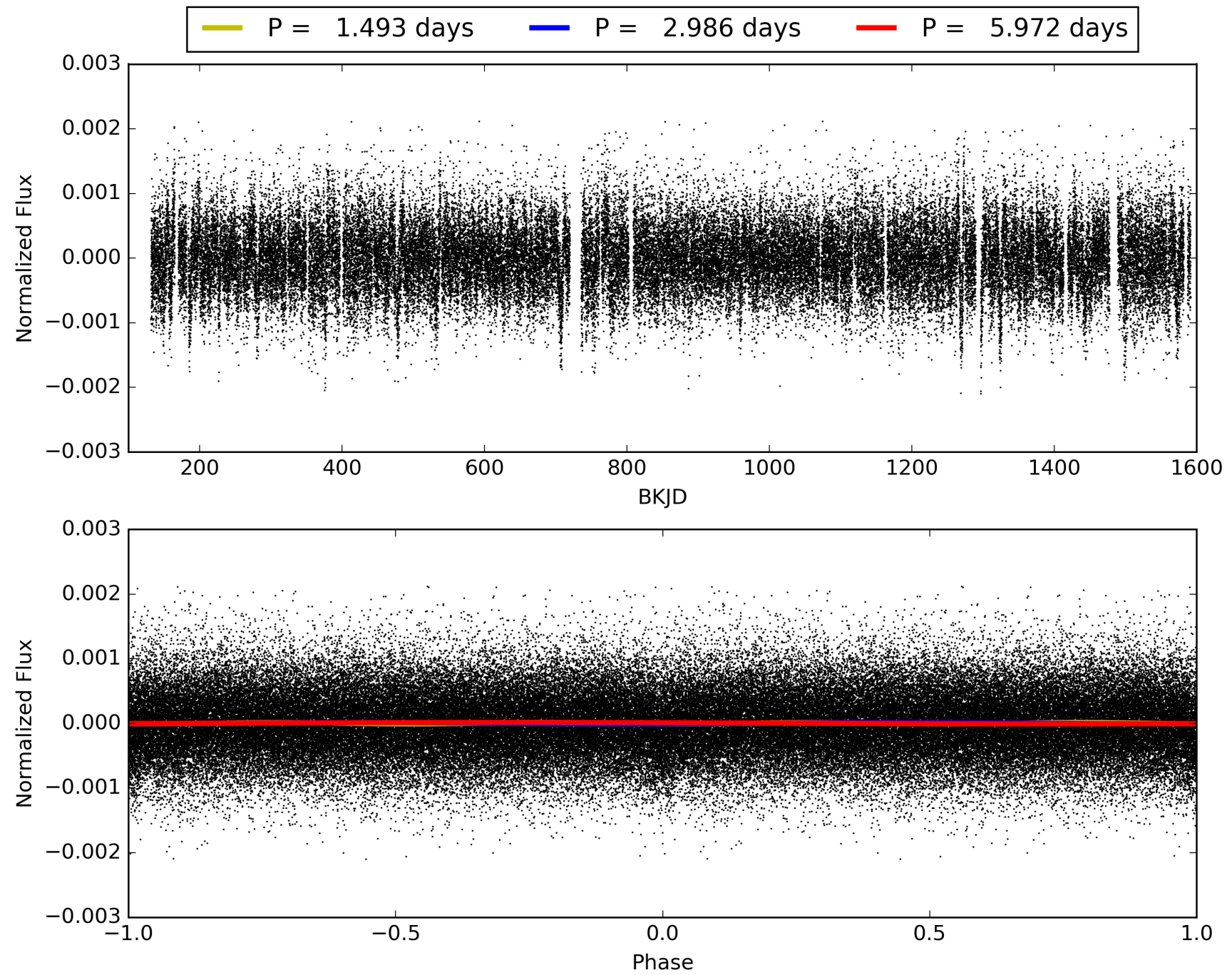
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 6.34e-30  
RollingBand-fgt: 0.99 [429/433]  
GhostDiagnostic-chr: 6.365  
Centroid-sig: 14.4%  
Centroid-so: 1.495 arcsec [1.29σ]  
OotOffset-rm: 0.558 arcsec [0.53σ]  
KicOffset-rm: 0.444 arcsec [0.44σ]  
OotOffset-st: 2/4/3/4 [13]  
KicOffset-st: 2/4/3/4 [13]  
DiffImageQuality-fgm: 0.62 [8/13]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 008430964-01, PDC Light Curves



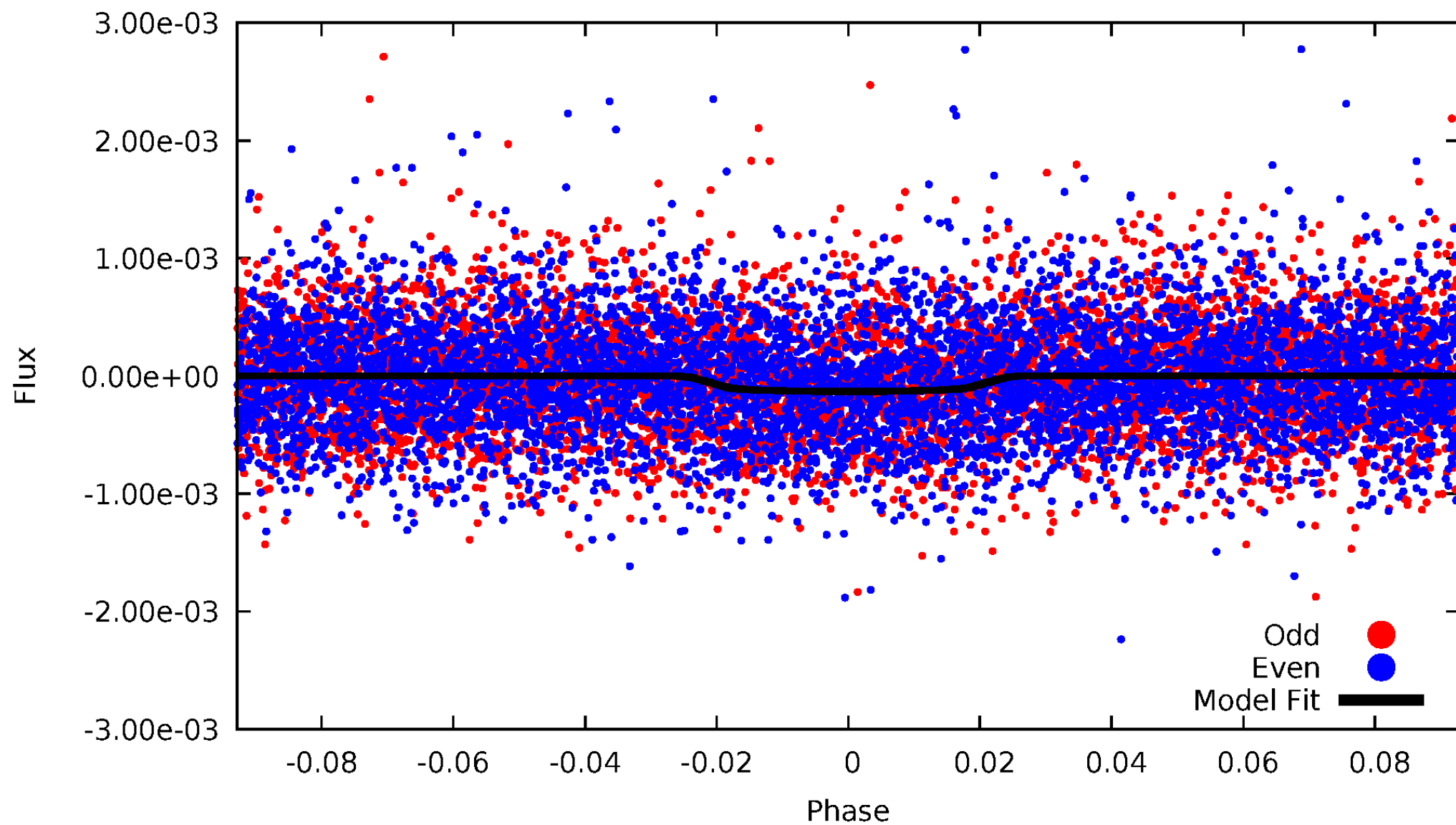
TCE 008430964-01





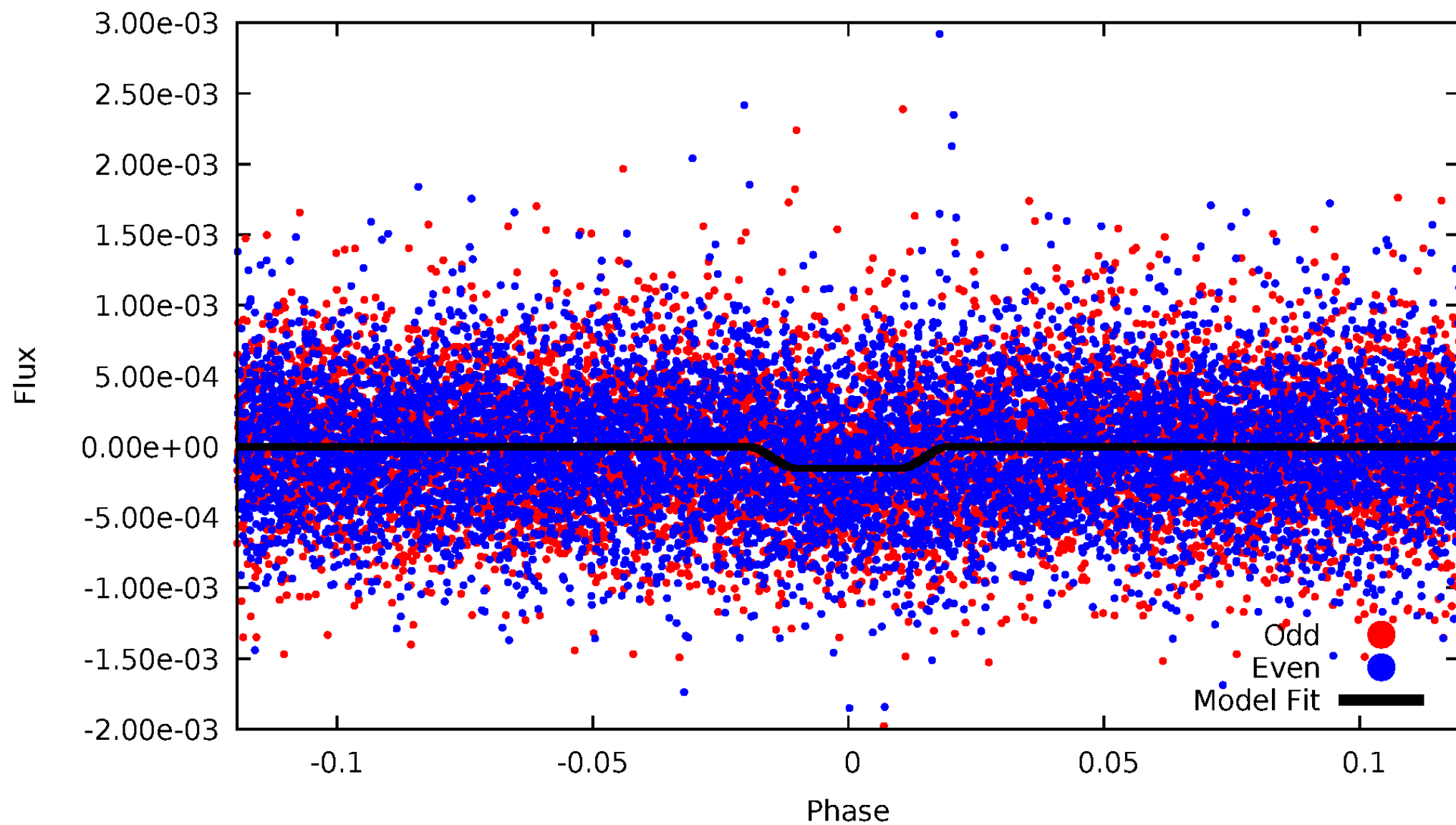
# DV Odd/Even

TCE 008430964-01

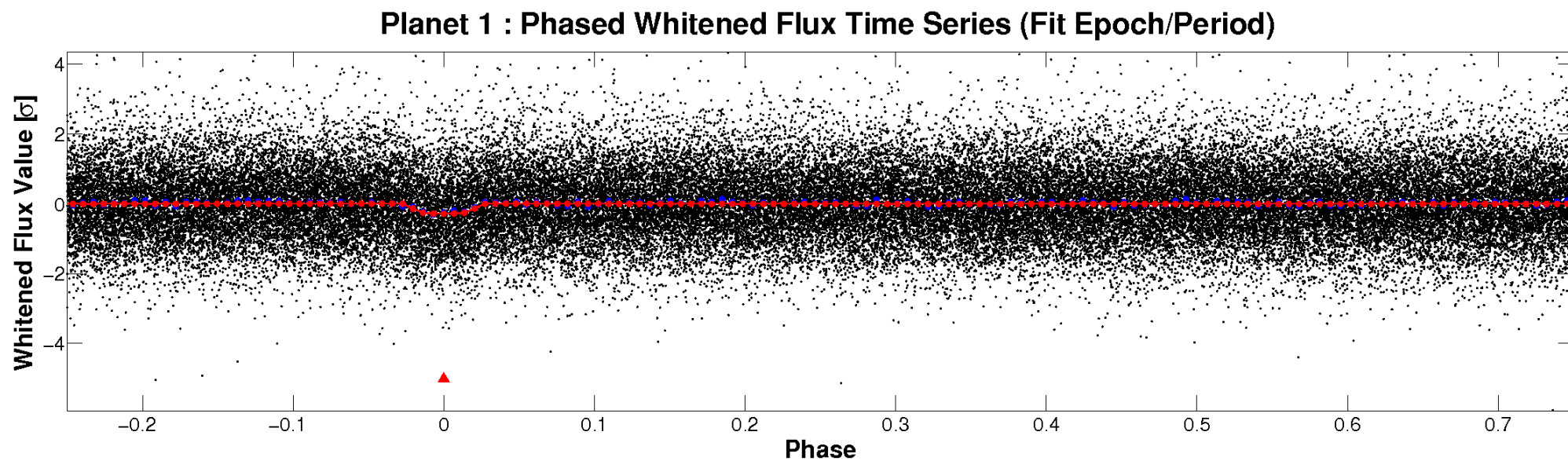
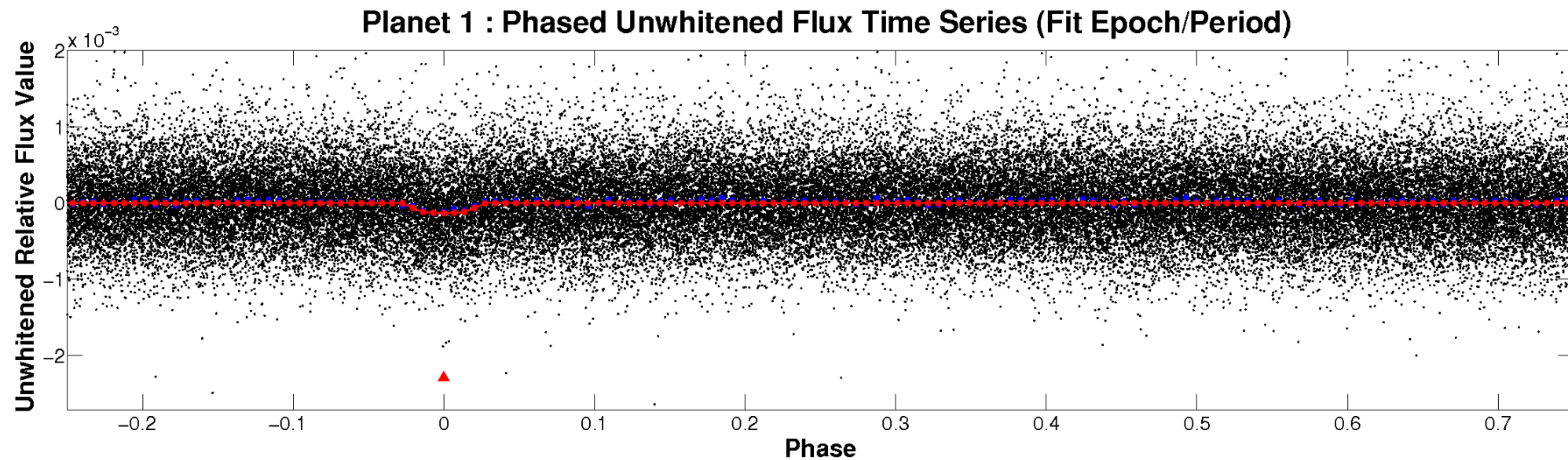


# ALT Odd/Even

TCE 008430964-01

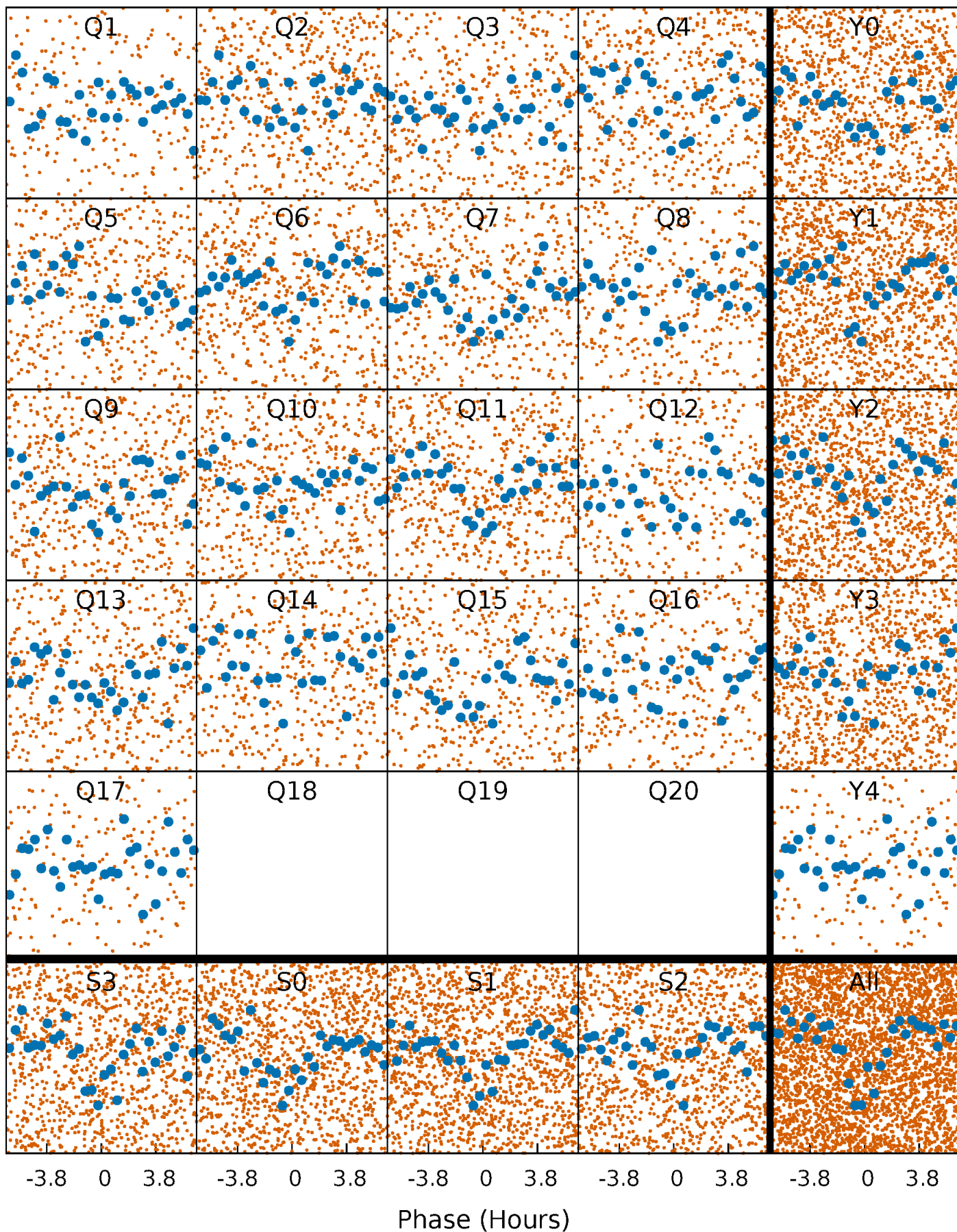


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

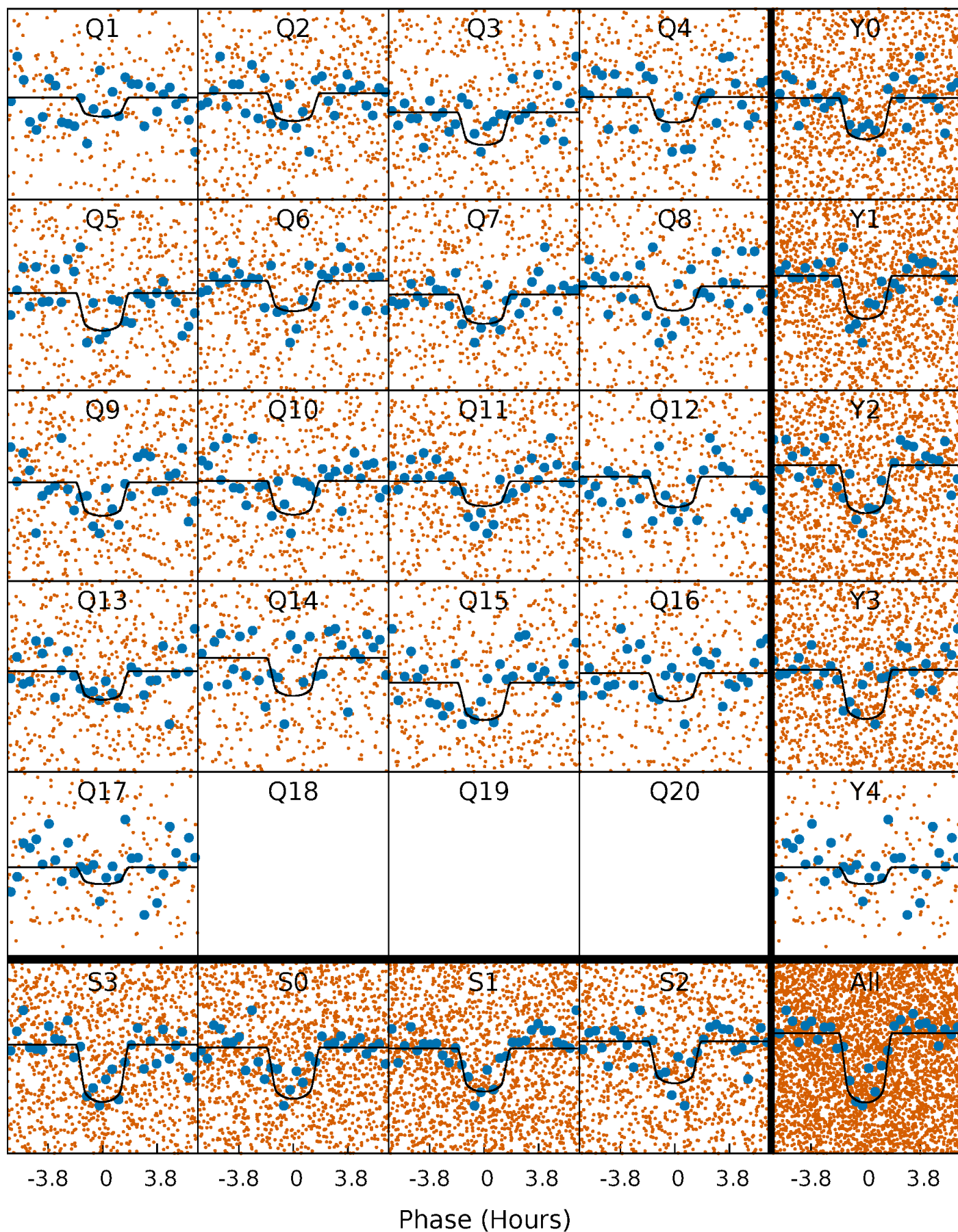
TCE 008430964-01 P= 2.986227 Days  $T_0=133.463598$  (BKJD)





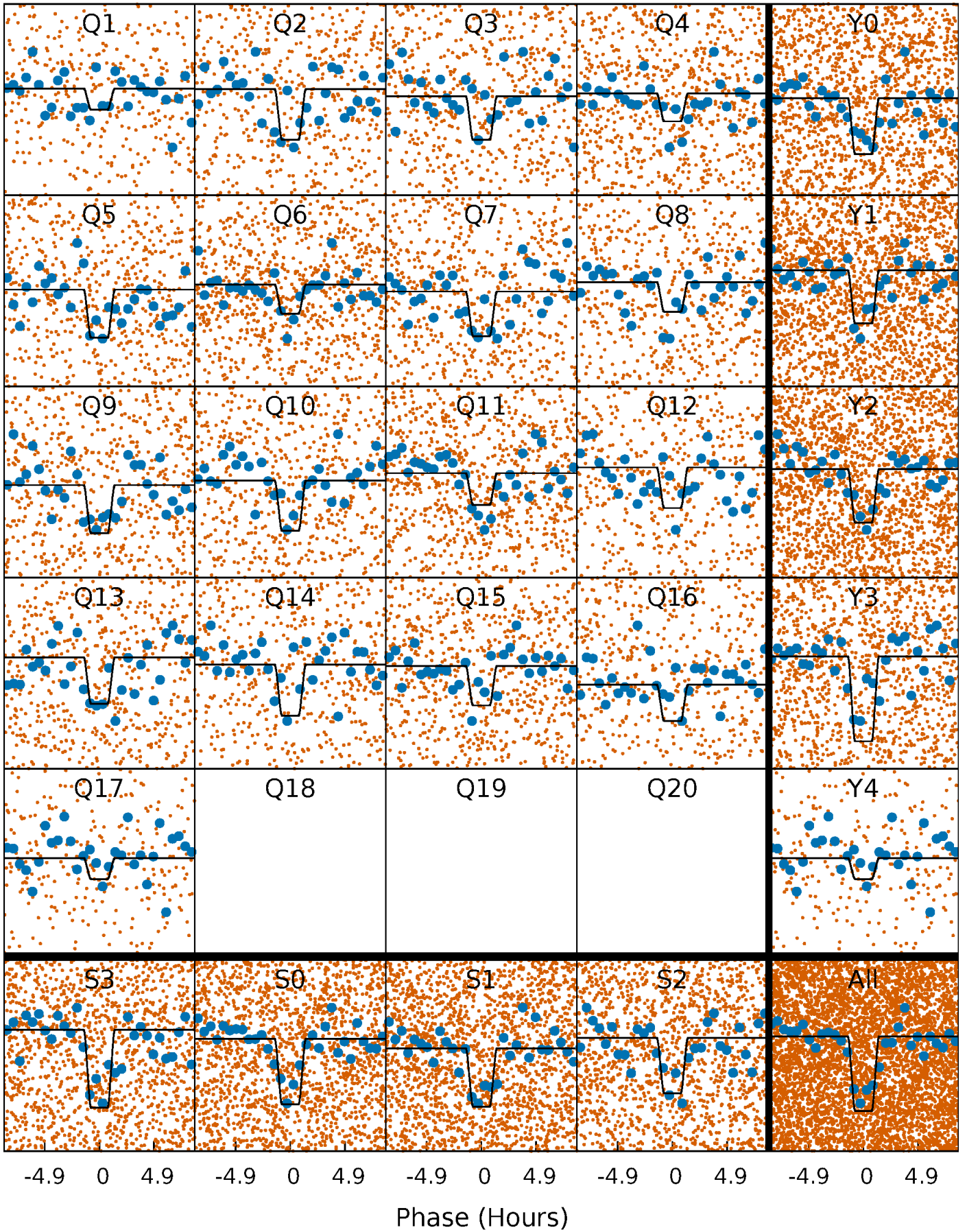
# DV Quarter-Phased Transit Curves

TCE 008430964-01 P= 2.986227 Days  $T_0=133.463598$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

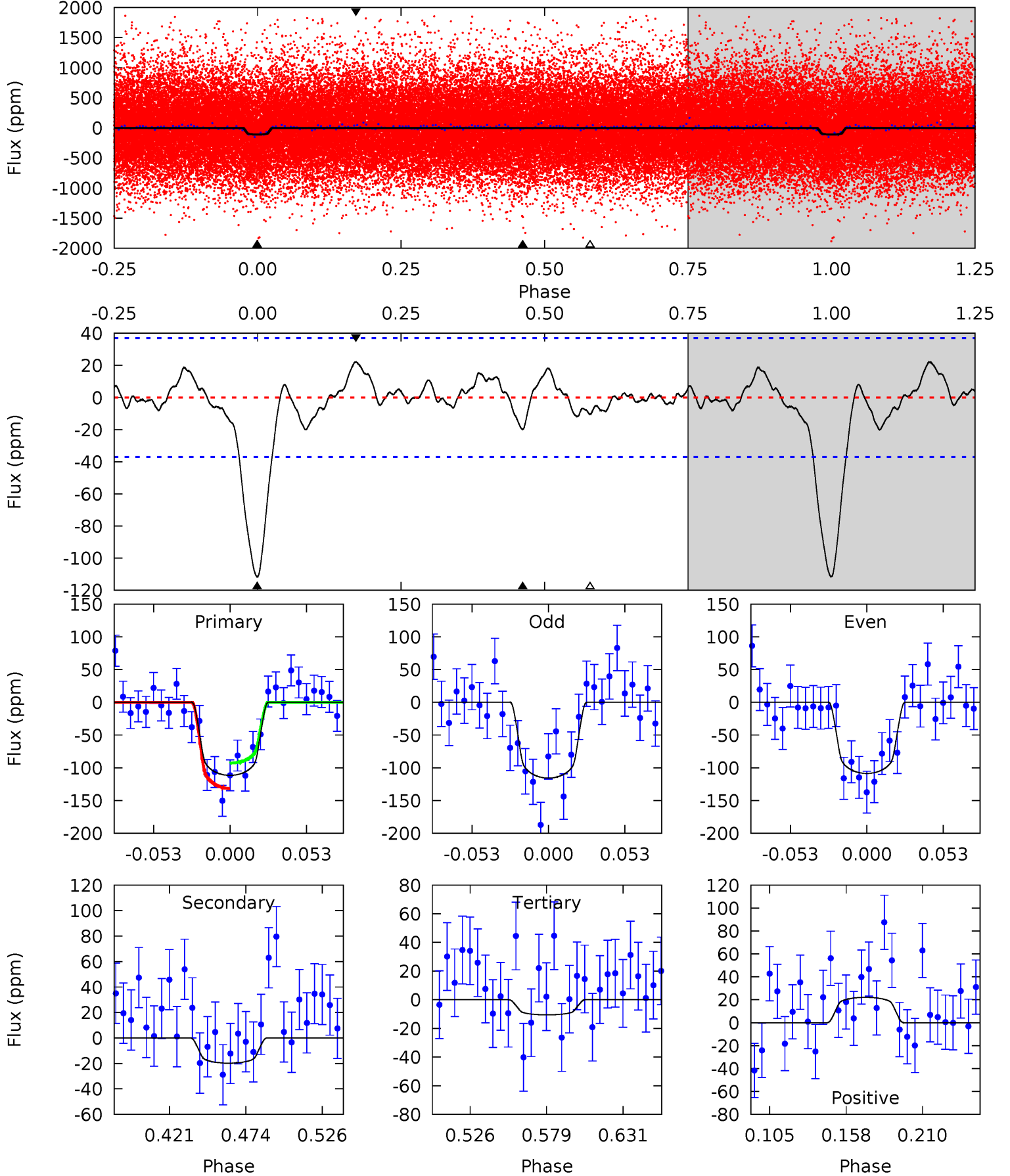
TCE 008430964-01   P= 2.986171 Days    $T_0=133.466762$  (BKJD)



# DV Model-Shift Uniqueness Test

008430964-01, P = 2.986227 Days, E = 130.477371 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
14.2	2.52	1.34	2.81	4.70	1.94	0.99	12.8	11.4	1.18	-0.30	0.45	0.94	0.17	2.47

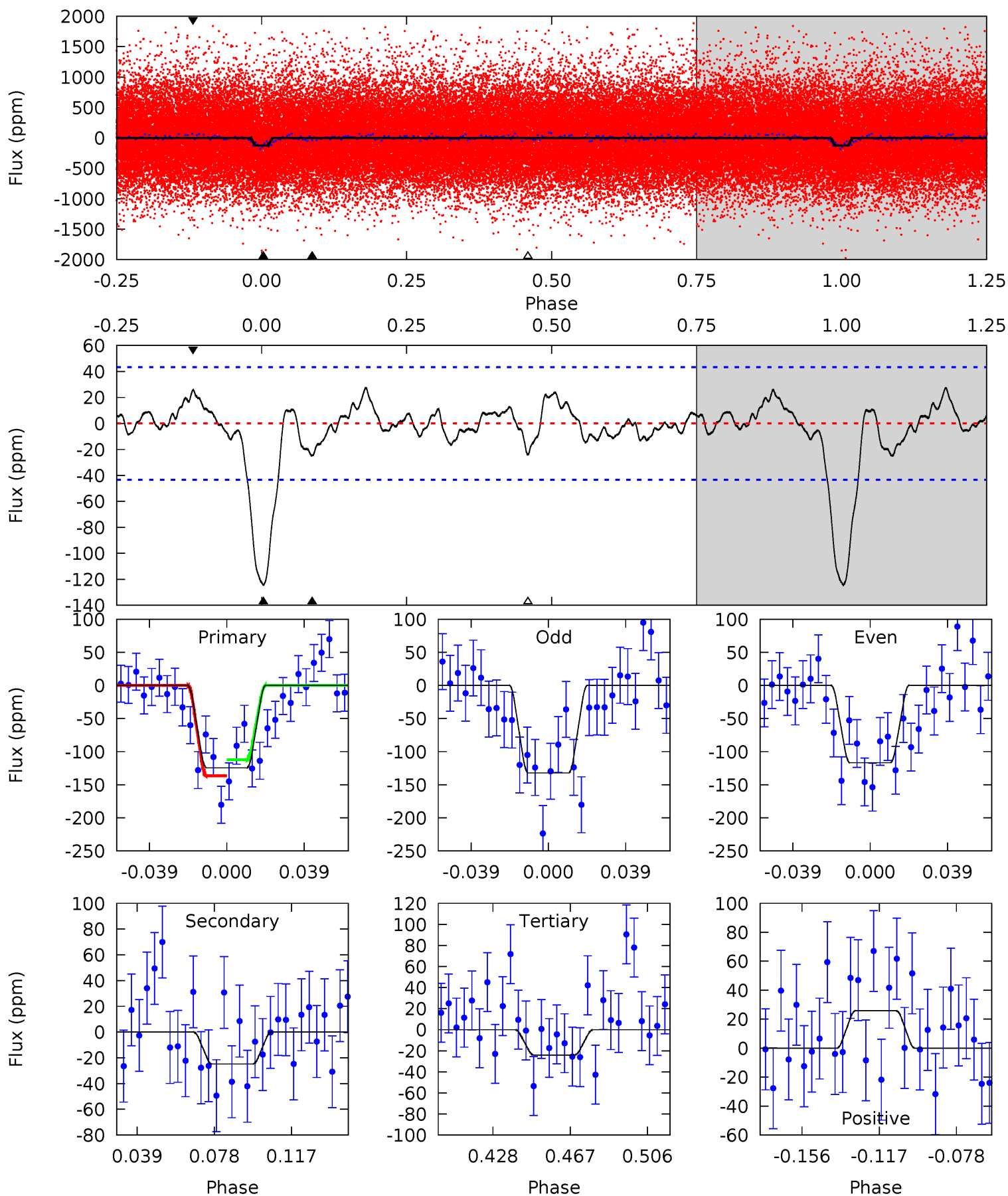




# Alt Model-Shift Uniqueness Test

008430964-01, P = 2.986171 Days, E = 130.480591 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
13.7	2.72	2.64	2.83	4.76	2.06	1.09	11.0	10.8	0.08	-0.11	0.84	0.97	0.18	1.33





### Stellar Parameters For KIC 008430964

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6173^{+193}_{-236}$	$4.447^{+0.056}_{-0.224}$	$-0.040^{+0.250}_{-0.300}$	$1.041^{+0.341}_{-0.114}$	$1.104^{+0.146}_{-0.146}$	$1.379^{+0.403}_{-0.737}$
	+3%/-4%	+1%/-5%	+625%/-750%	+33%/-11%	+13%/-13%	+29%/-53%
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 008430964-01 / KOI 3078.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-20 \pm 8$	$1.49^{+0.57}_{-0.53}$	$1934^{+163}_{-101}$	$3934^{+751}_{-511}$	$8.145^{+12.578}_{-4.764}$
Alt.	$-25 \pm 9$	$1.45^{+0.59}_{-0.50}$	$1928^{+151}_{-96}$	$4122^{+806}_{-531}$	$10^{+15}_{-6}$

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

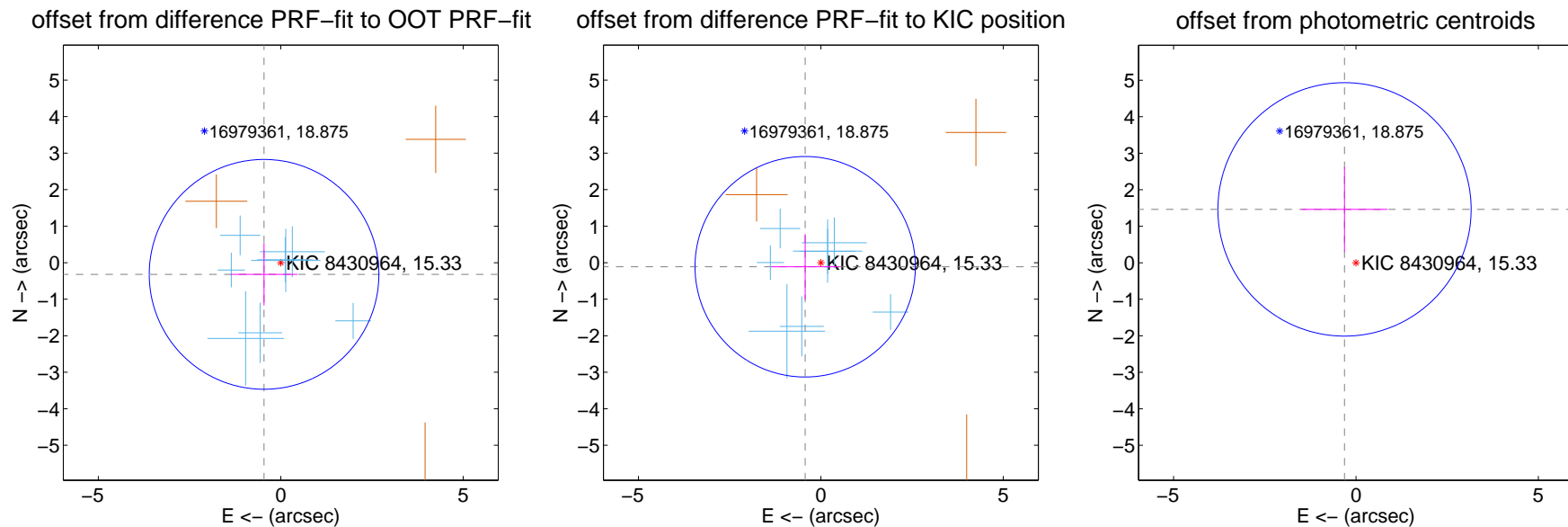
## DV Centroid Data

Supplemental centroid analysis for 008430964-01. Kepler magnitude: 15.33. Transit SNR 12.85

There are 8 quarters with good PRF difference image offsets

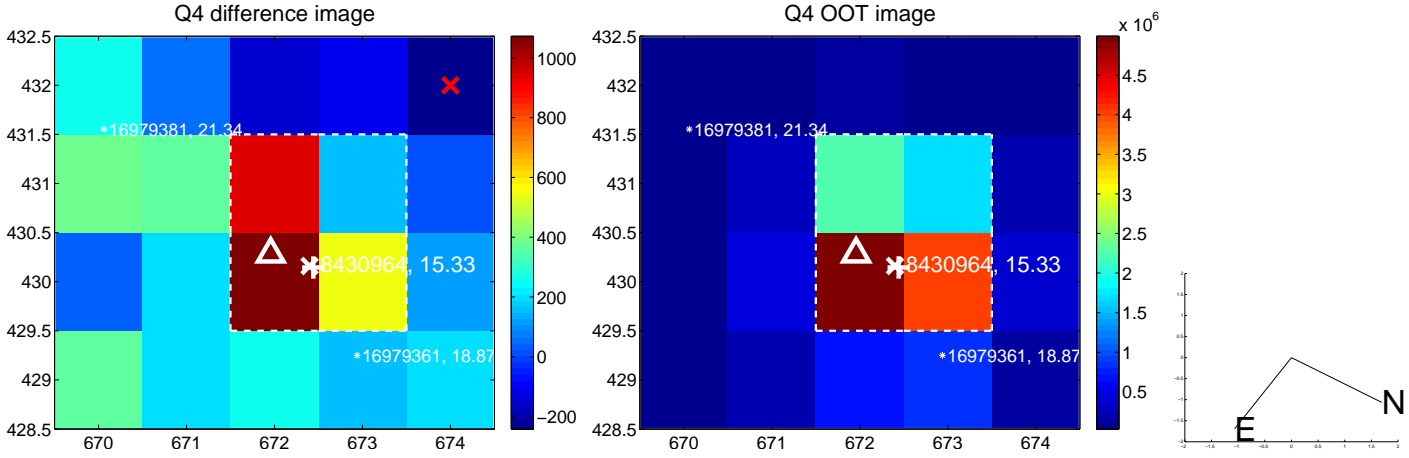
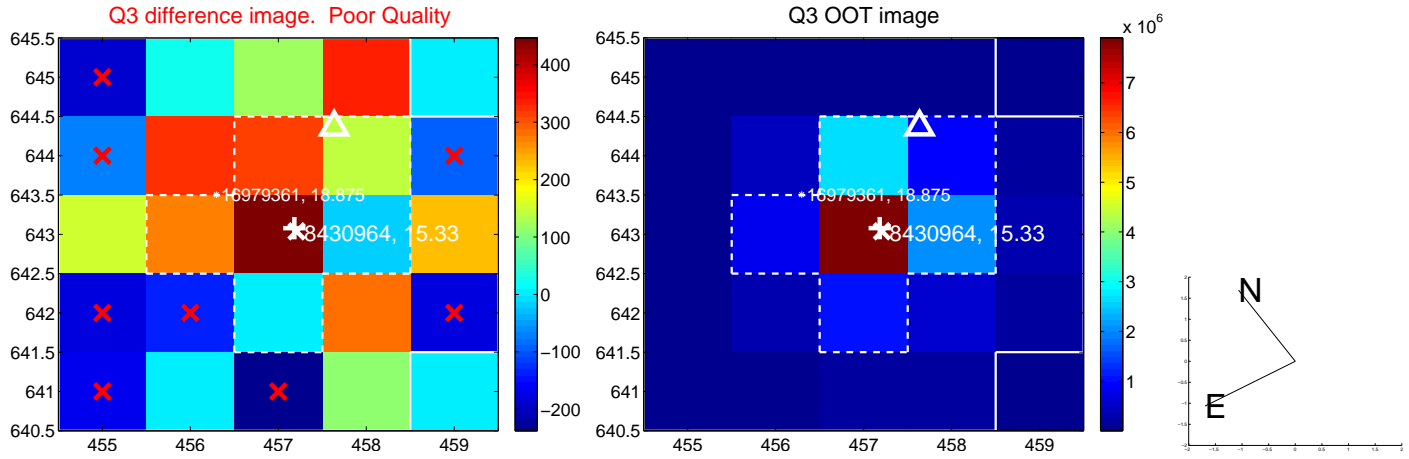
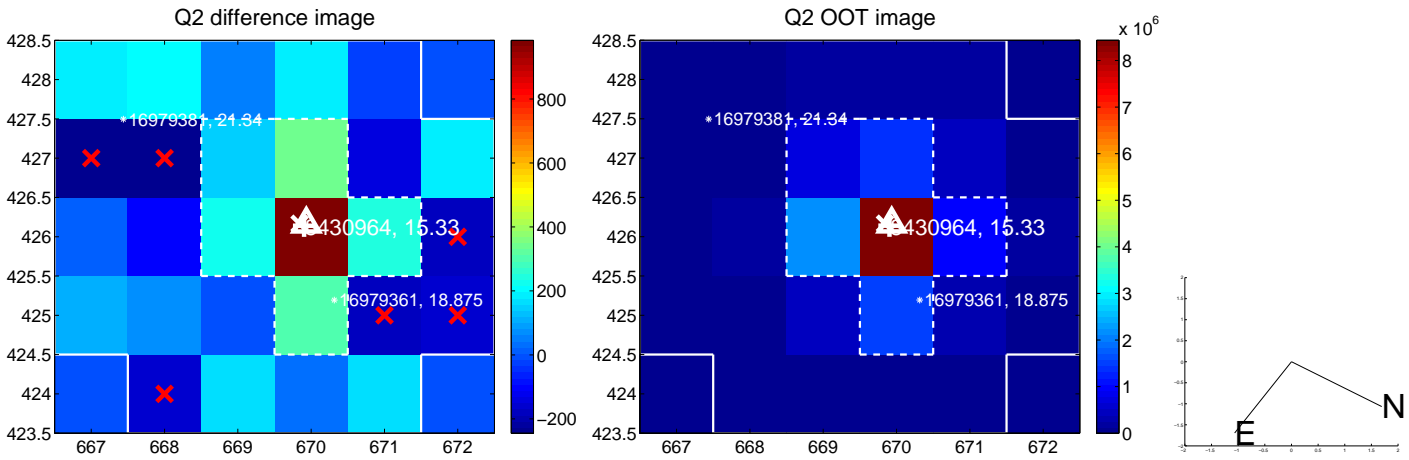
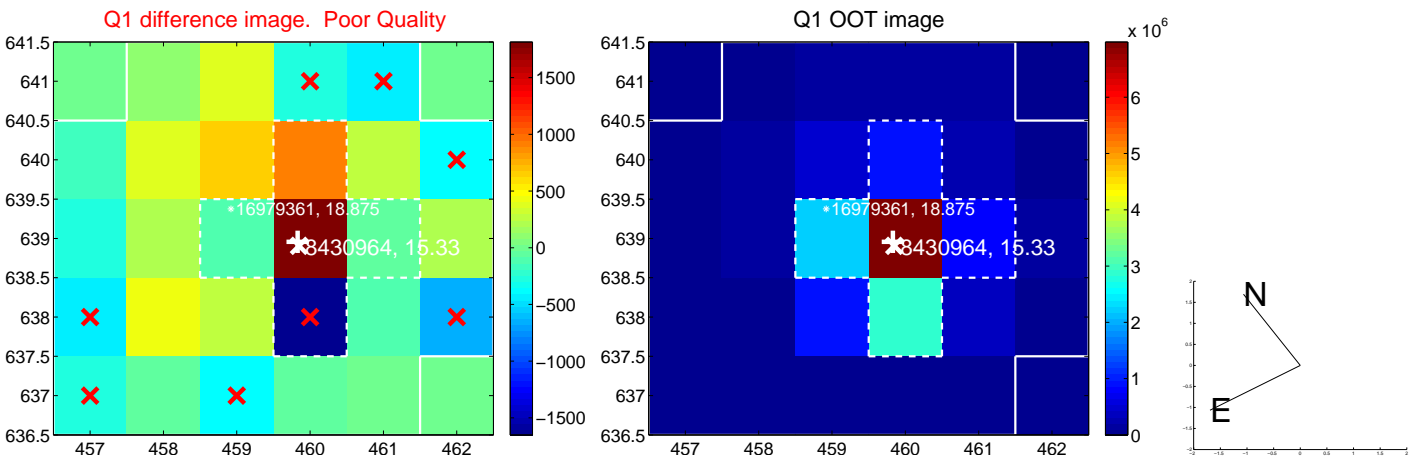
The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.558 \pm 1.049$	0.53	$0.458 \pm 0.916$	$-0.319 \pm 0.850$
PRF-fit source offset from KIC position	$0.444 \pm 1.006$	0.44	$0.430 \pm 0.932$	$-0.111 \pm 0.896$
photometric centroid source offset	$1.50 \pm 1.16$	1.29	$0.31 \pm 1.18$	$1.46 \pm 1.16$

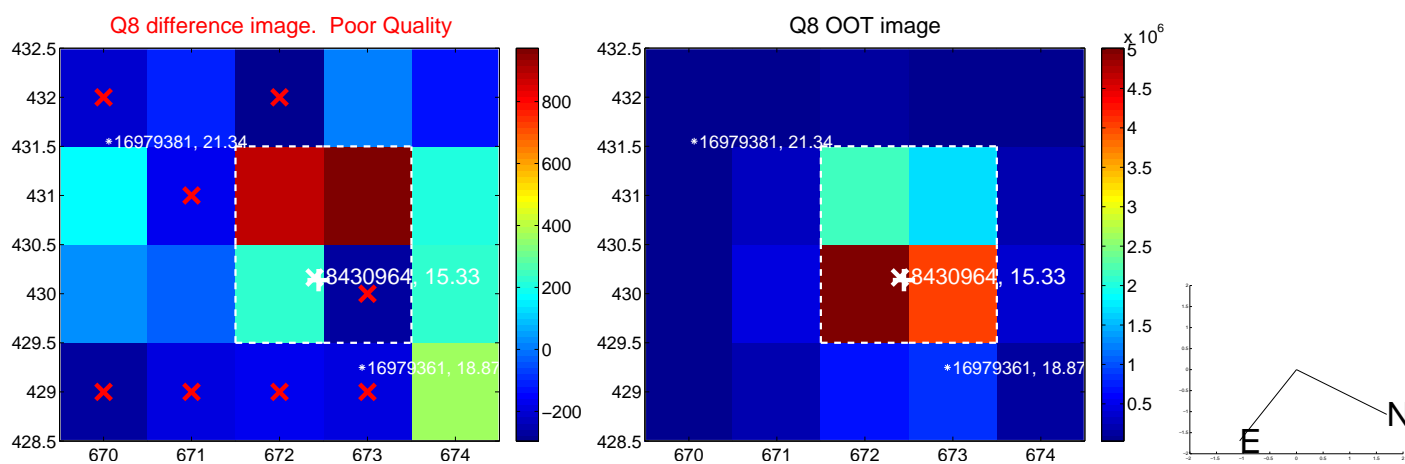
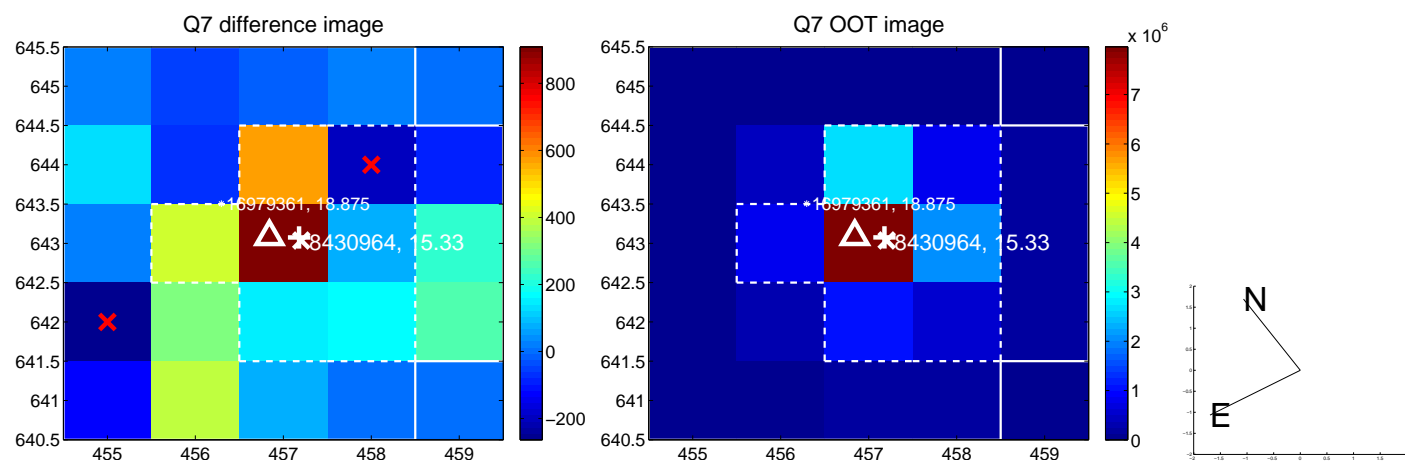
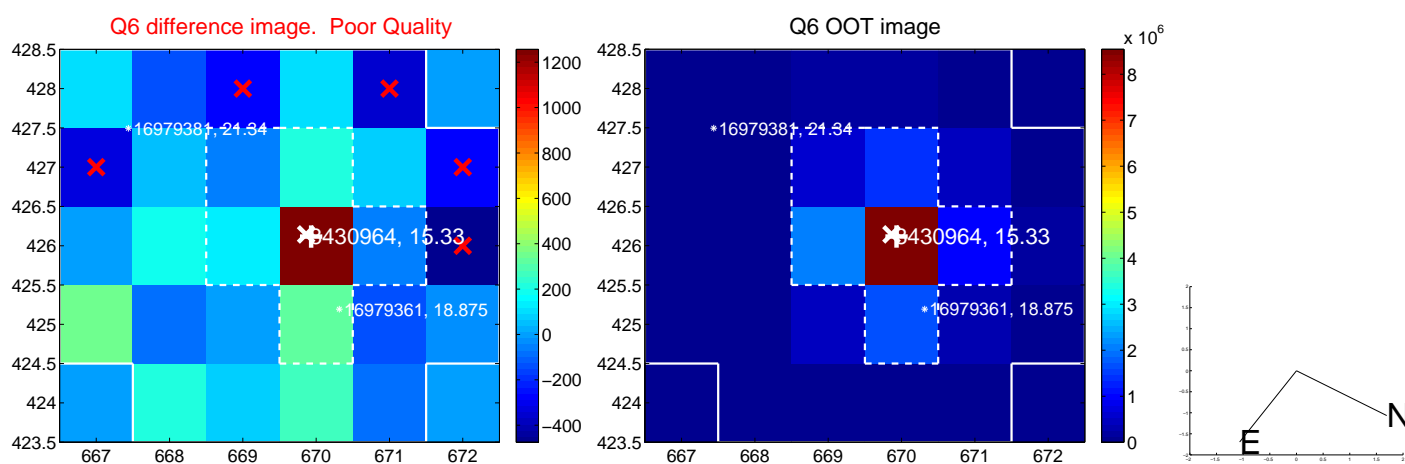
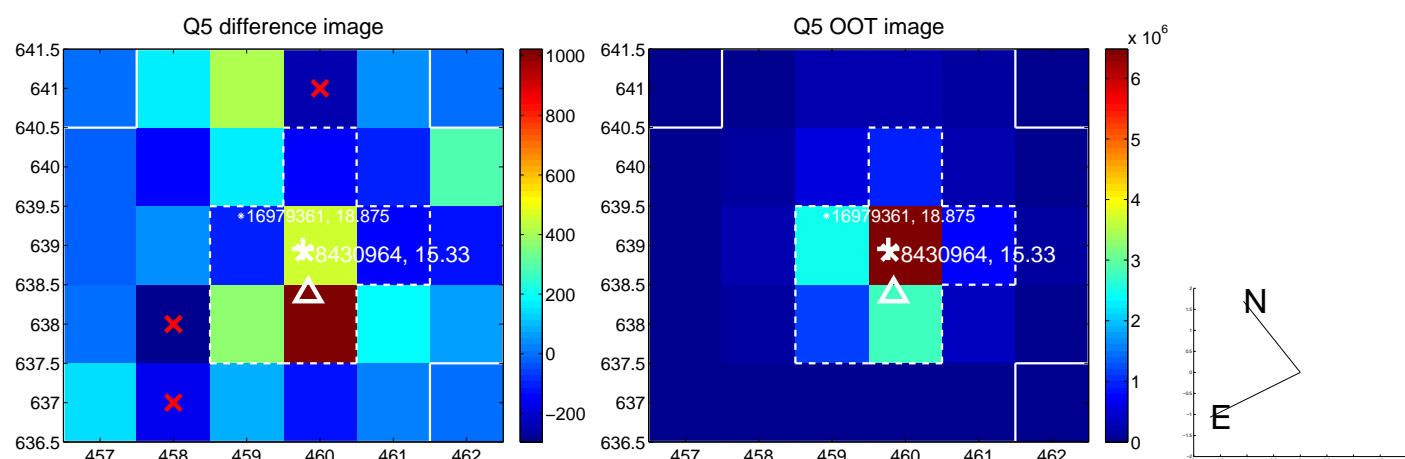


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

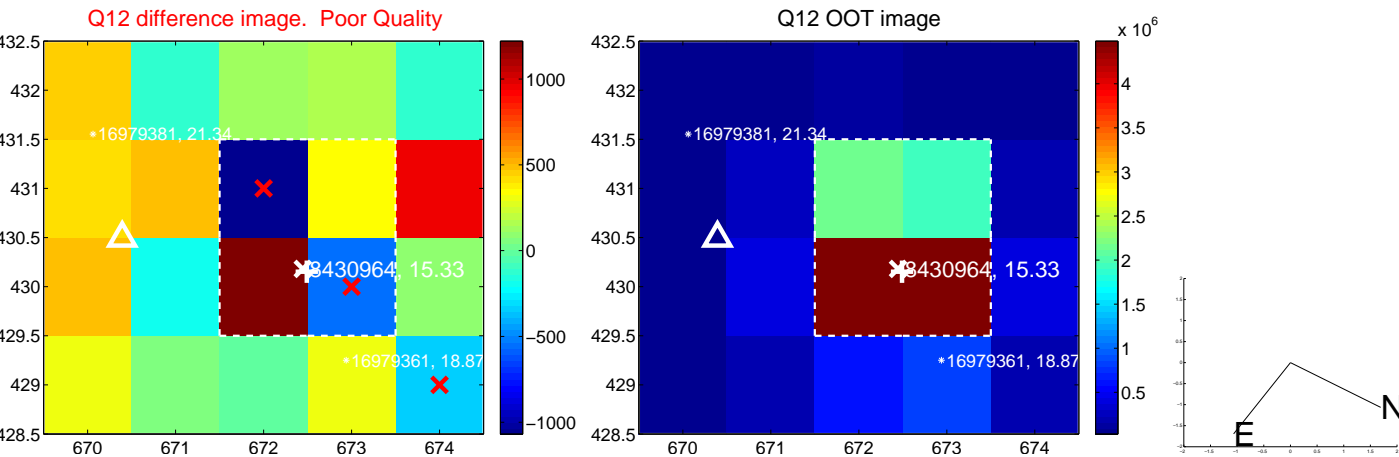
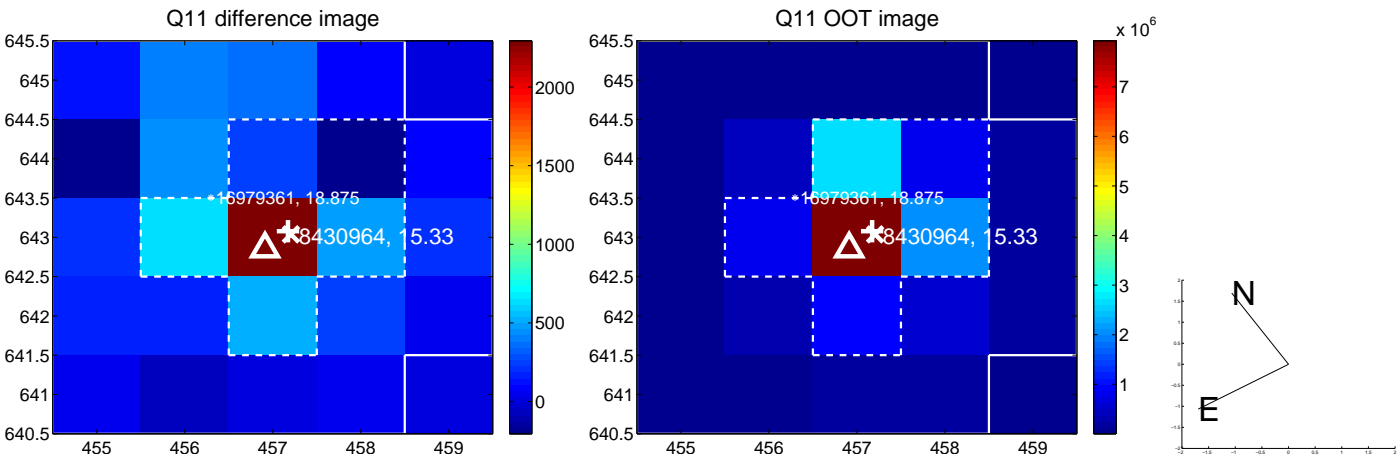
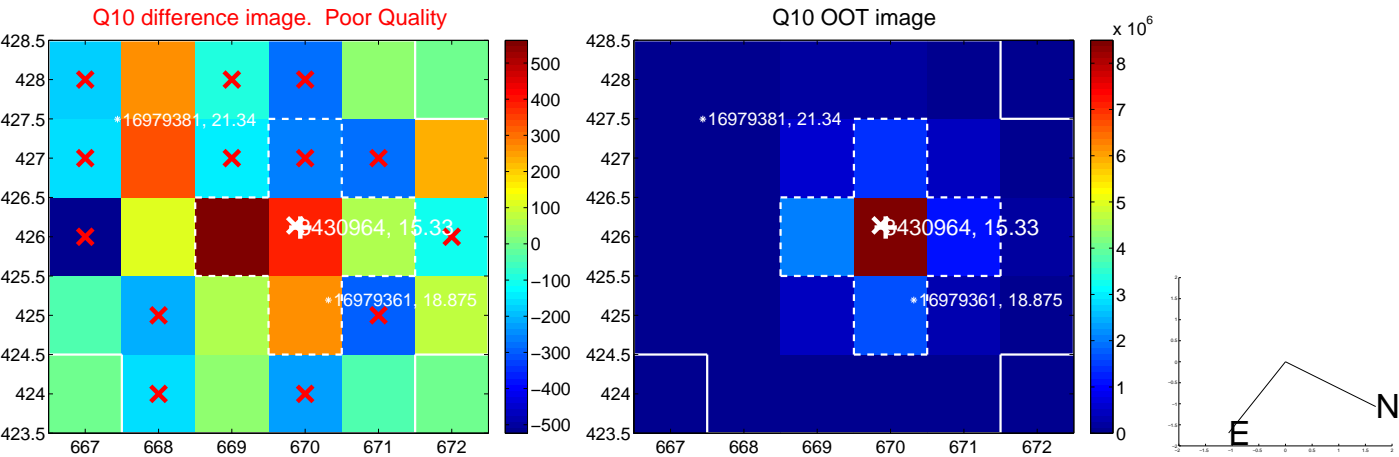
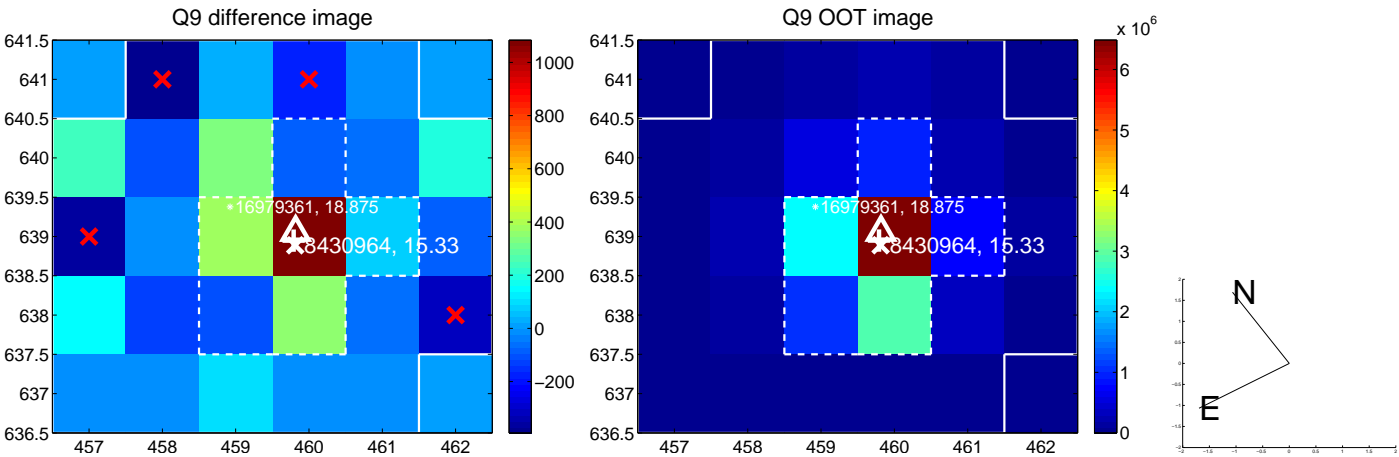


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

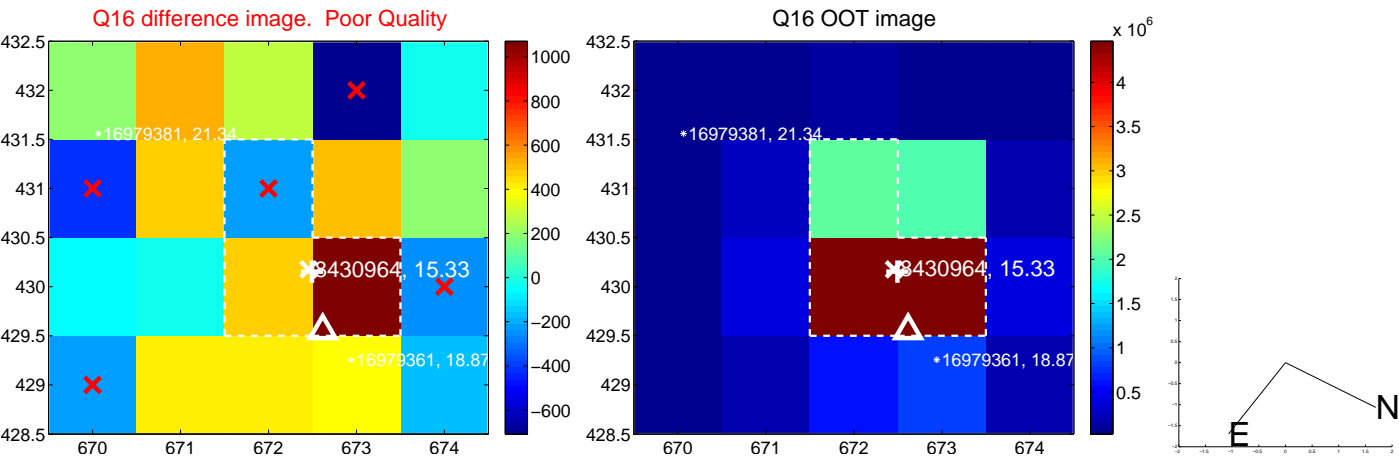
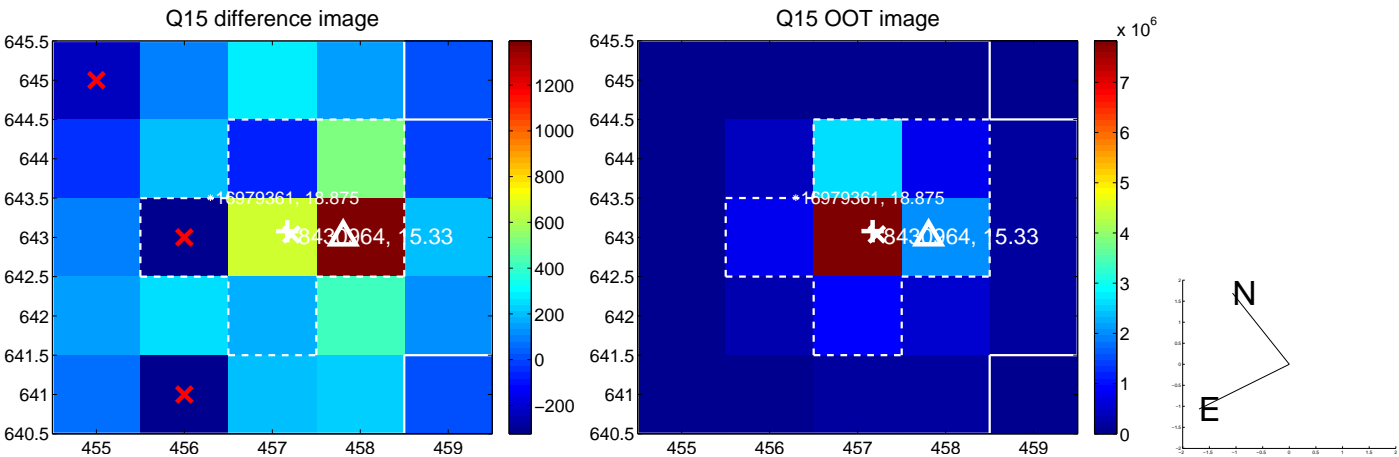
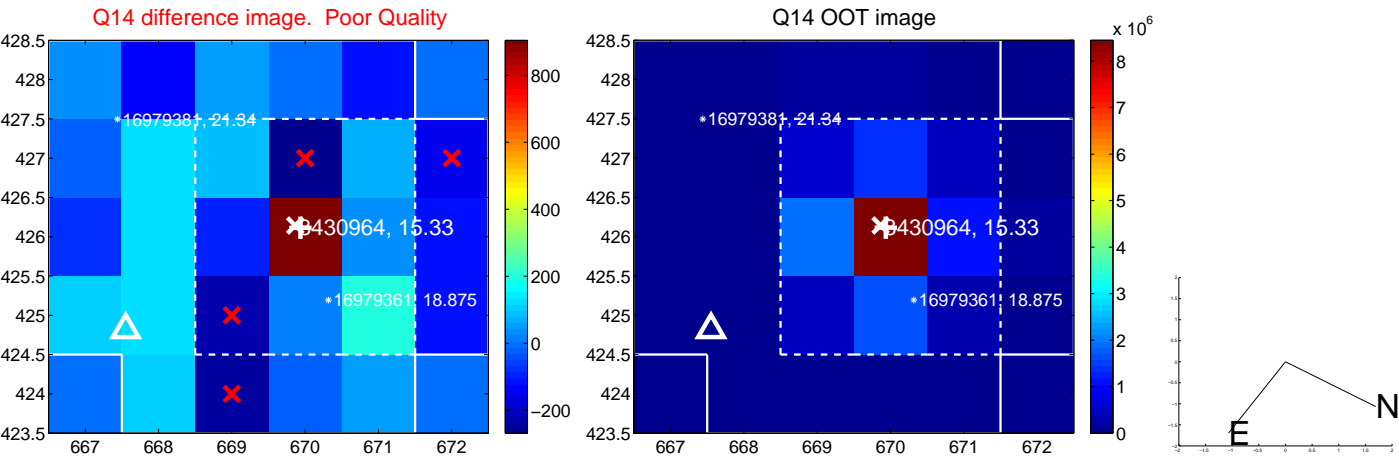
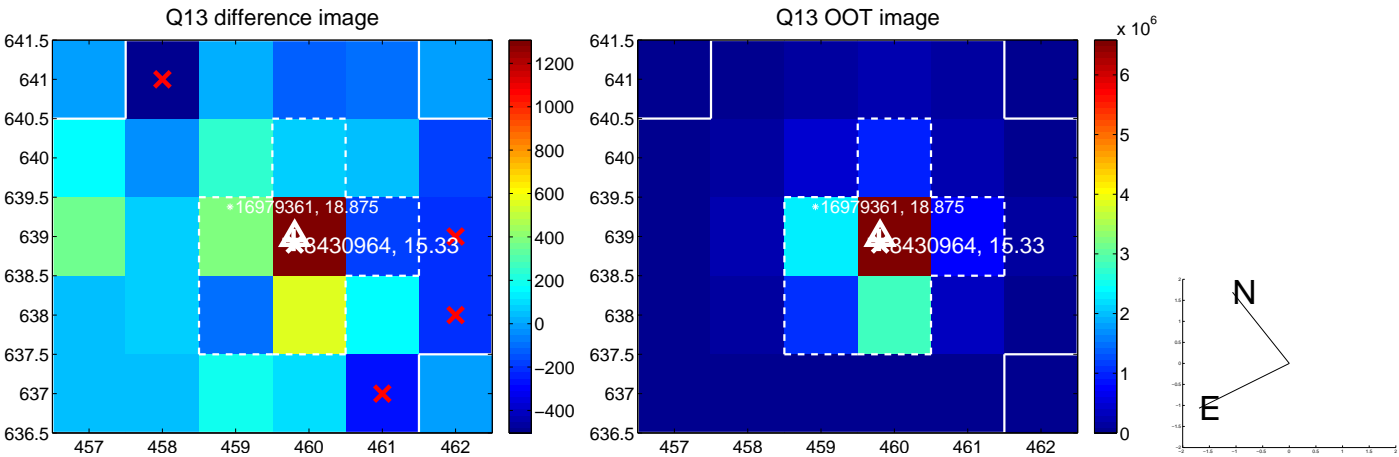




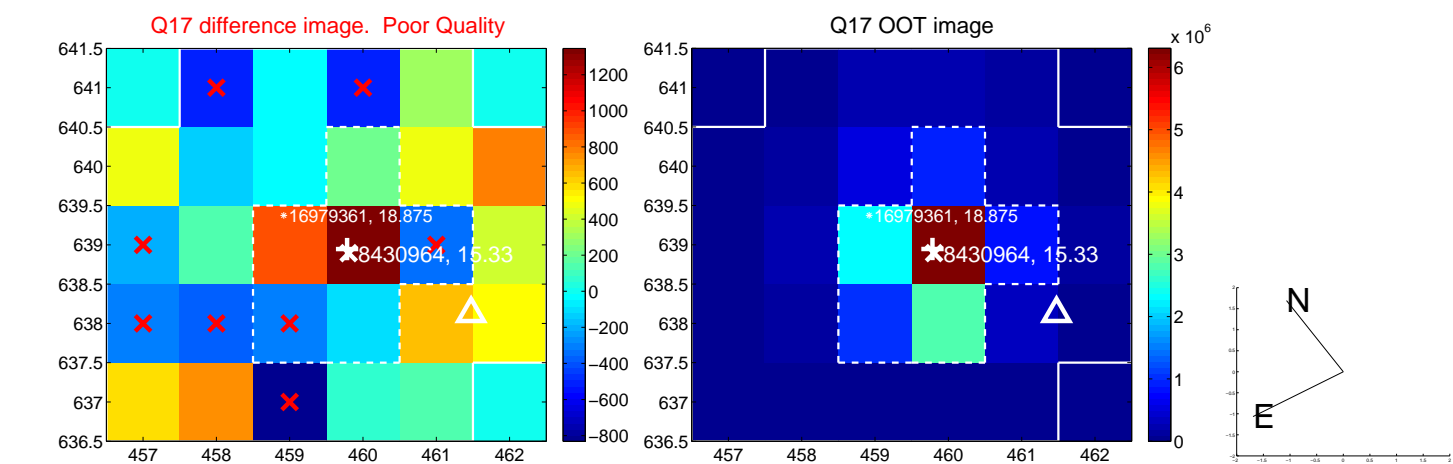
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



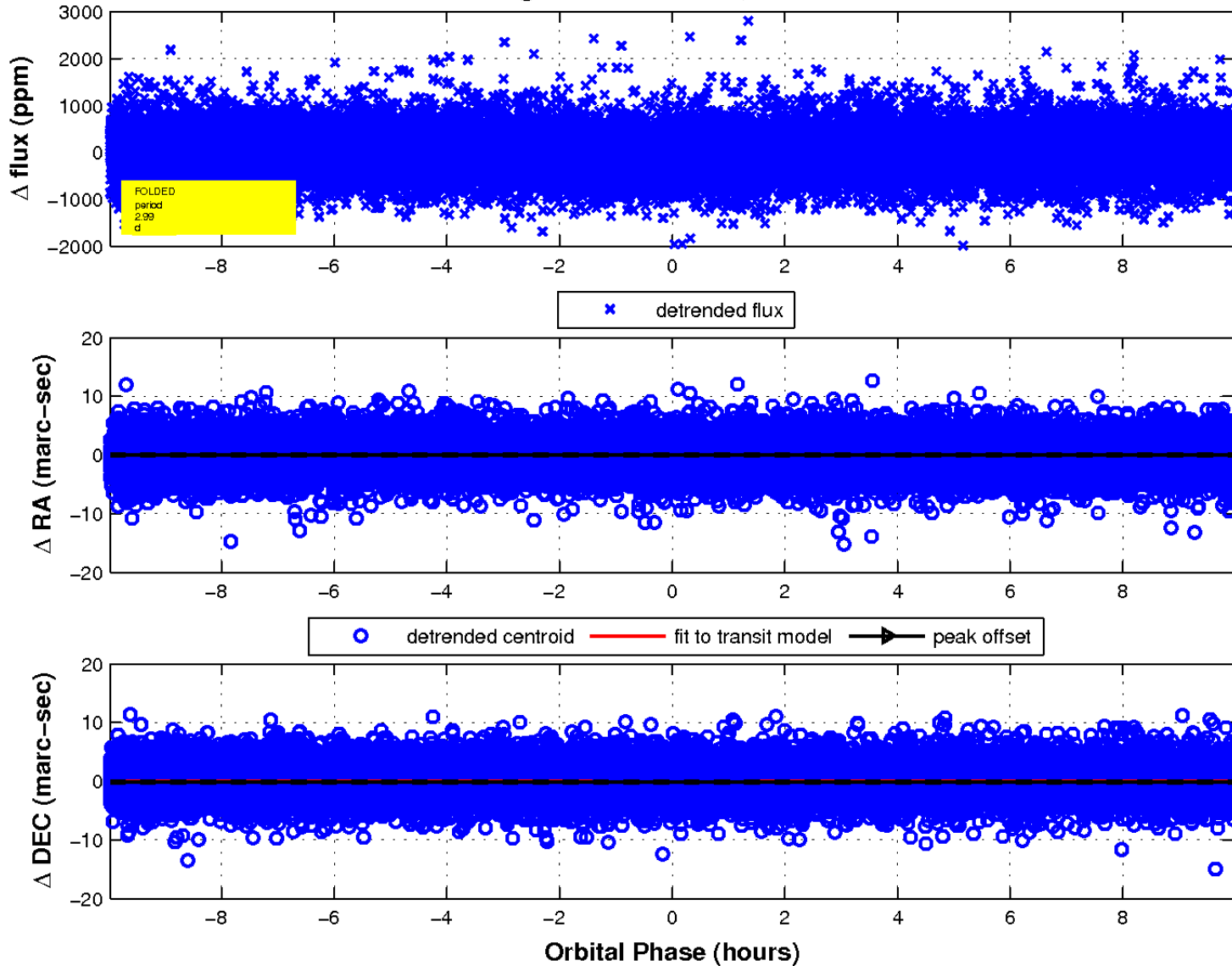
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



### fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

