

# KIC 003852655

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003852655-01	OBS	3002.01	11.629019	132.820678	84.6	2.859	11.5	11.8	1.13	5721	1.24	126.19

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003852655-01	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.

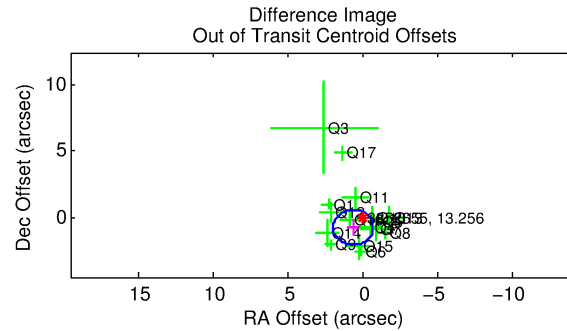
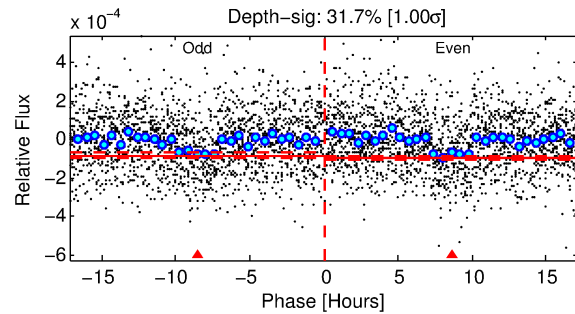
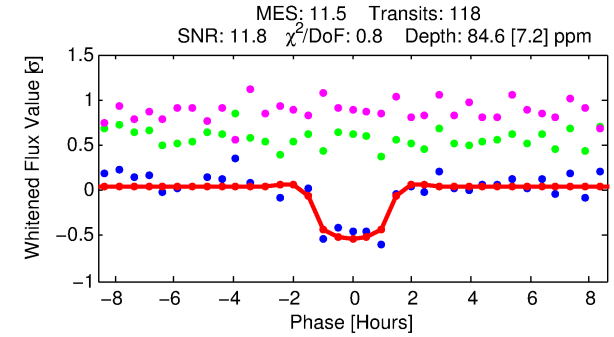
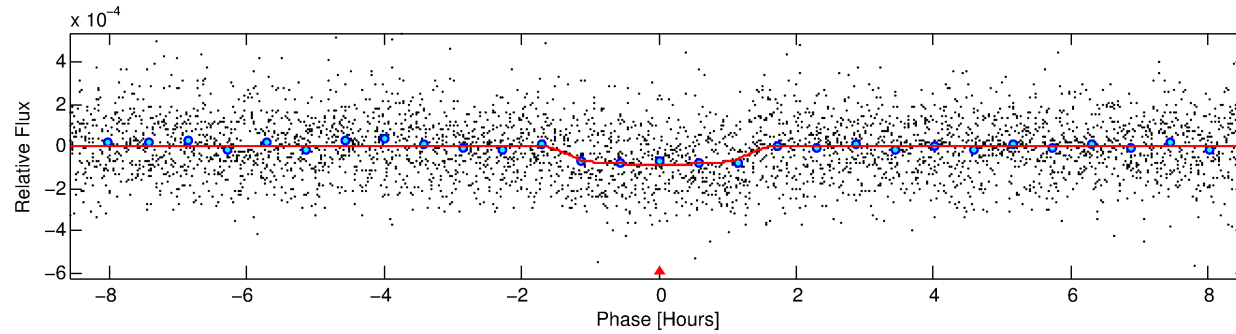
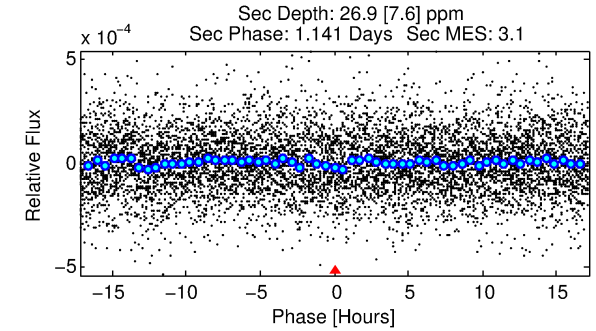
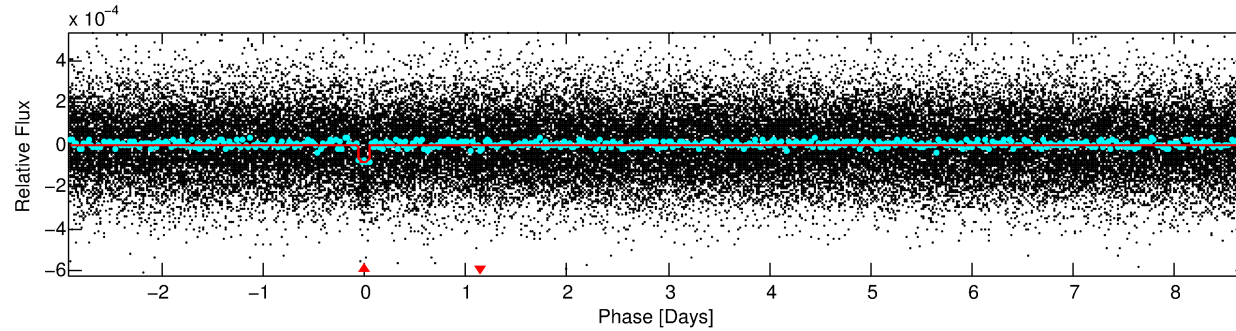
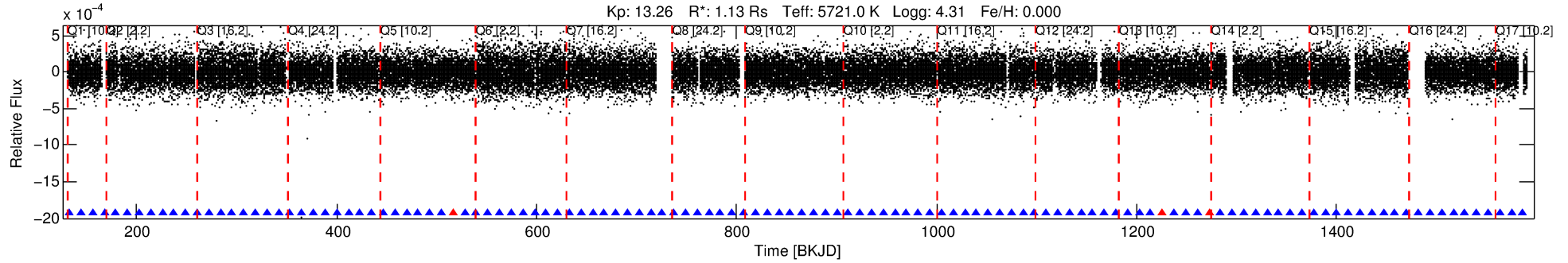
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003852655-01

No Significant Match Found

# DV One-Page Summary

KIC: 3852655 Candidate: 1 of 1 Period: 11.629 d  
KOI: K03002.01 Corr: 0.981



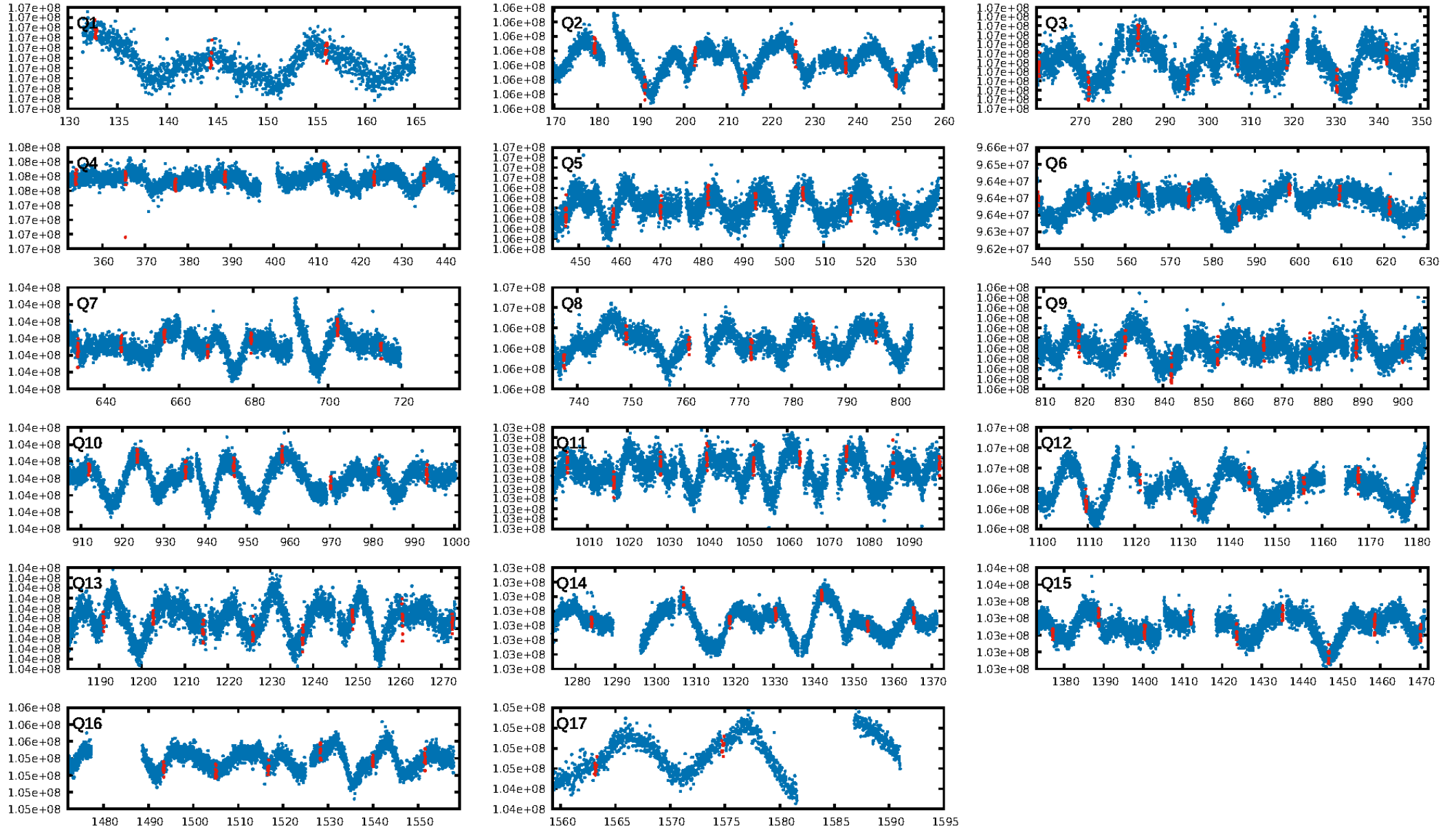
## DV Fit Results:

Period = 11.62902 [0.00007] d  
Epoch = 132.8207 [0.0051] BKJD  
Rp/R\* = 0.0100 [0.0056]  
a/R\* = 14.50 [38.24]  
b = 0.90 [0.59]  
Seff = 126.19 [32.16]  
Teq = 855 [54] K  
Rp = 1.23 [0.71] Re  
a = 0.0986 [0.0148] AU  
Ag = 94.53 [110.99] [0.84σ]  
Teffp = 4120 [1186] K [2.75σ]

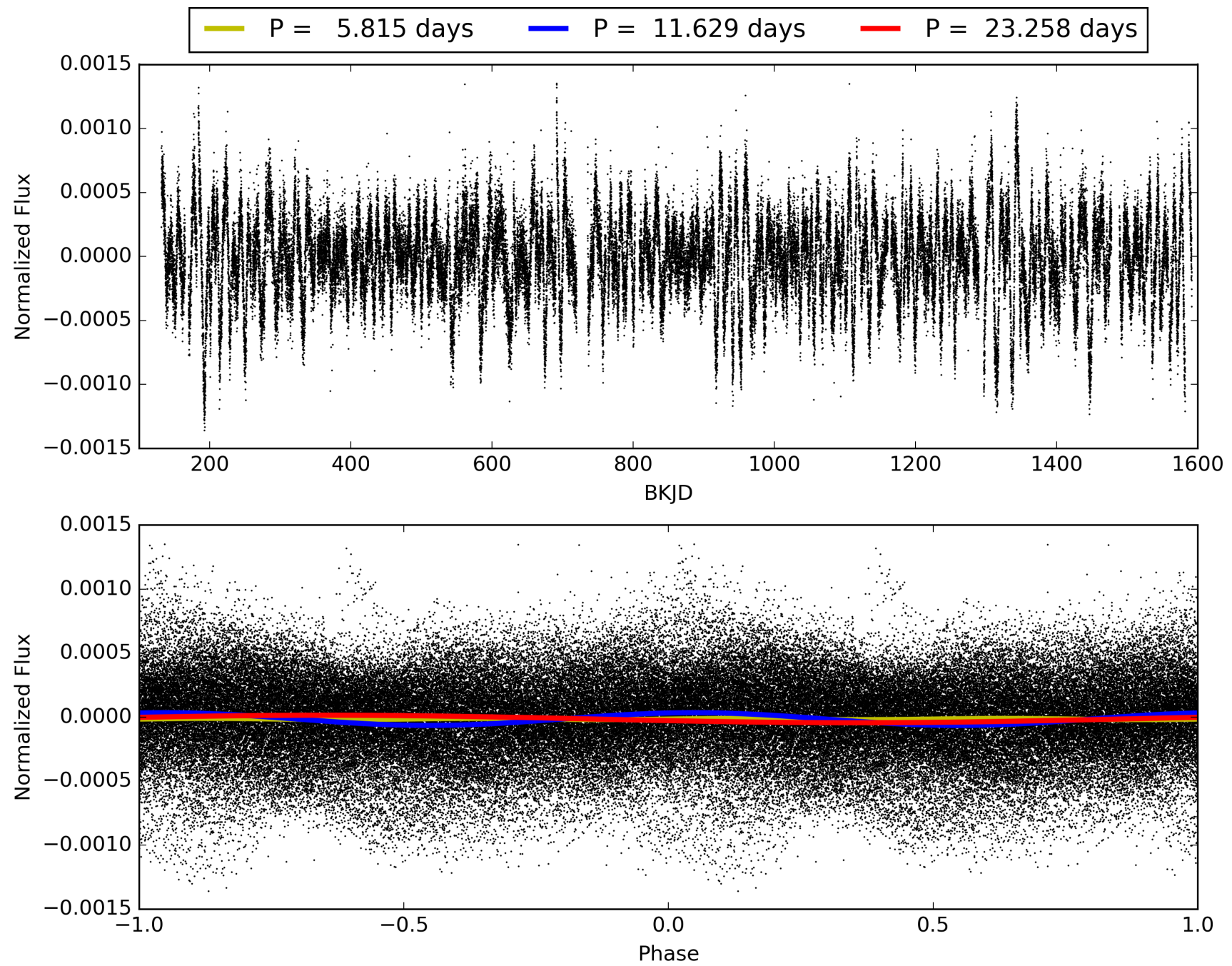
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 97.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.38e-30  
RollingBand-fgt: 0.97 [110/113]  
GhostDiagnostic-chr: 1.638  
Centroid-sig: 88.1%  
Centroid-so: 0.517 arcsec [0.51σ]  
OotOffset-rm: 0.955 arcsec [2.15σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-rm: 1.058 arcsec [2.17σ]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.69 [11/16]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 003852655-01, PDC Light Curves

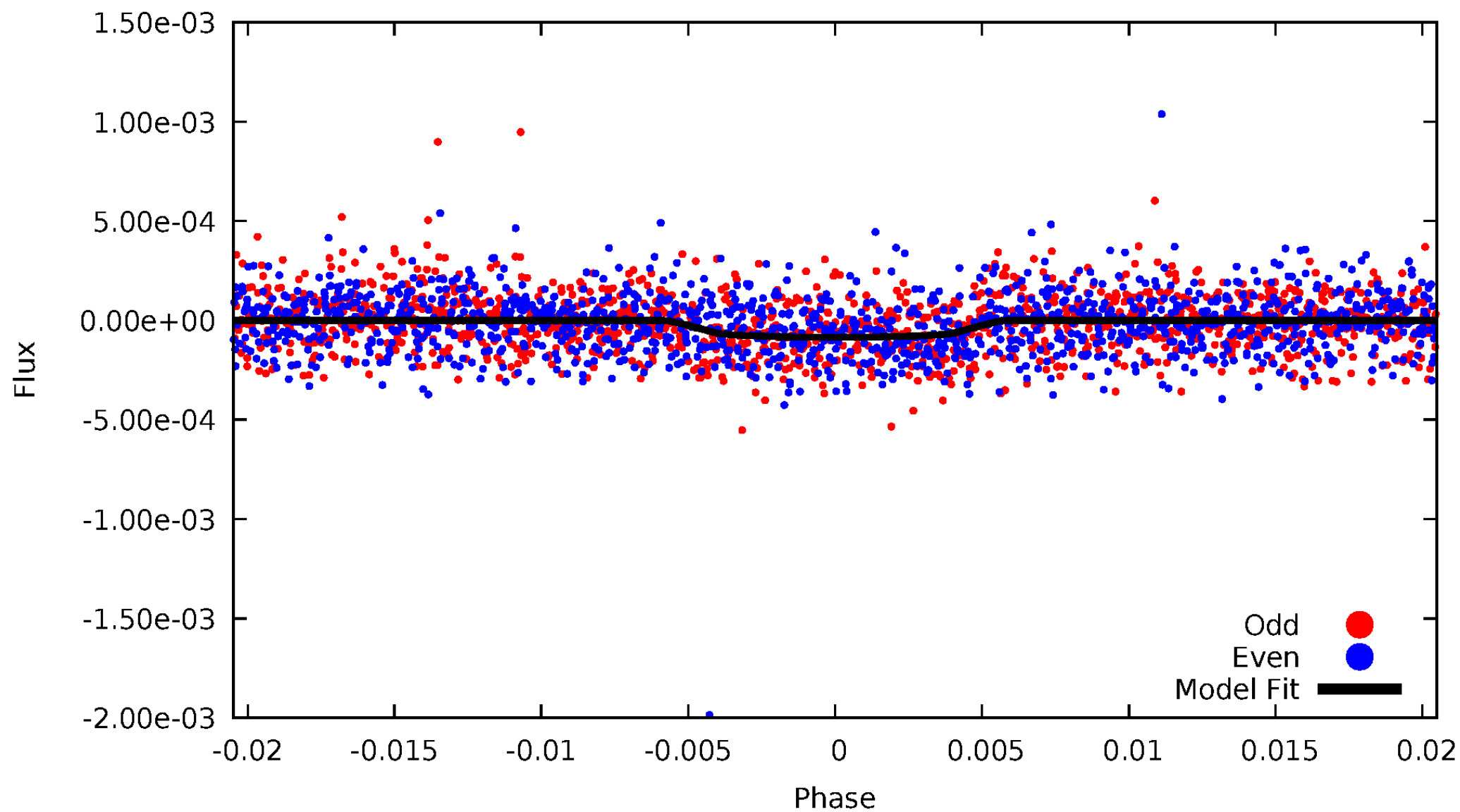


TCE 003852655-01



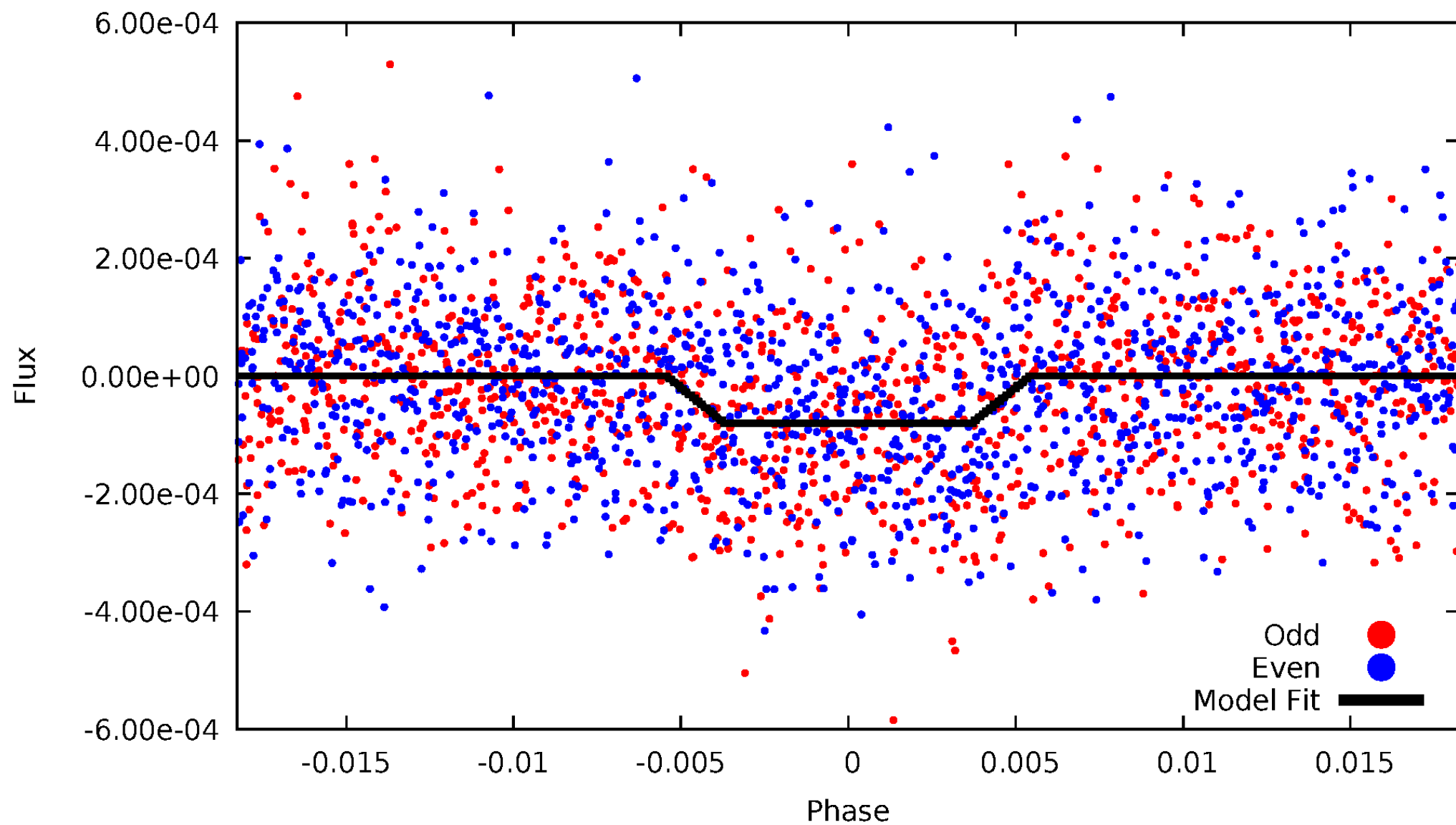
DV Odd/Even

TCE 003852655-01



# ALT Odd/Even

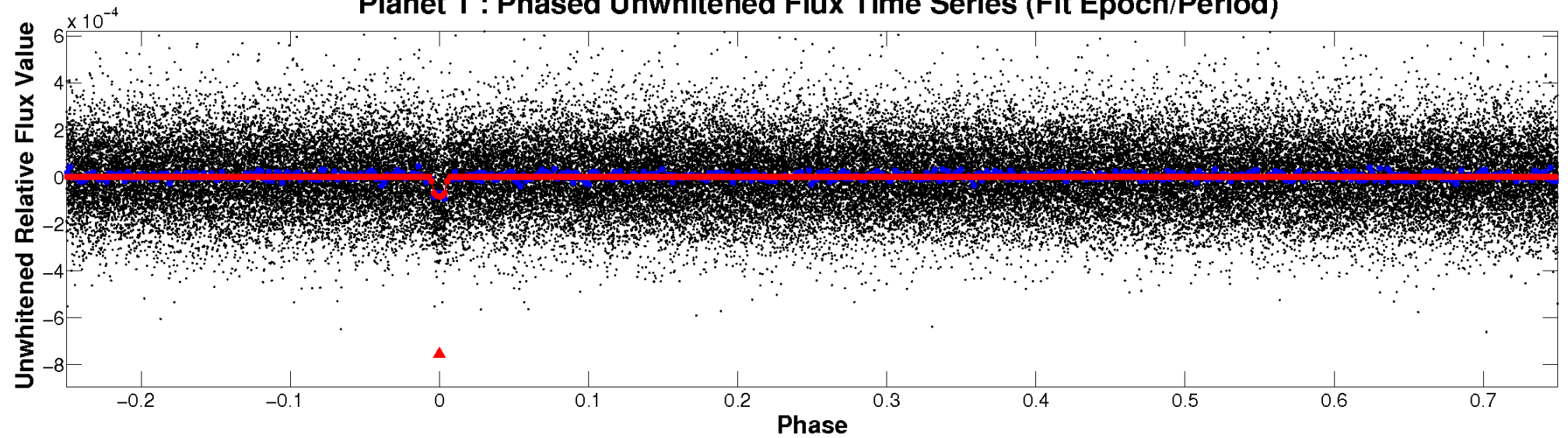
TCE 003852655-01



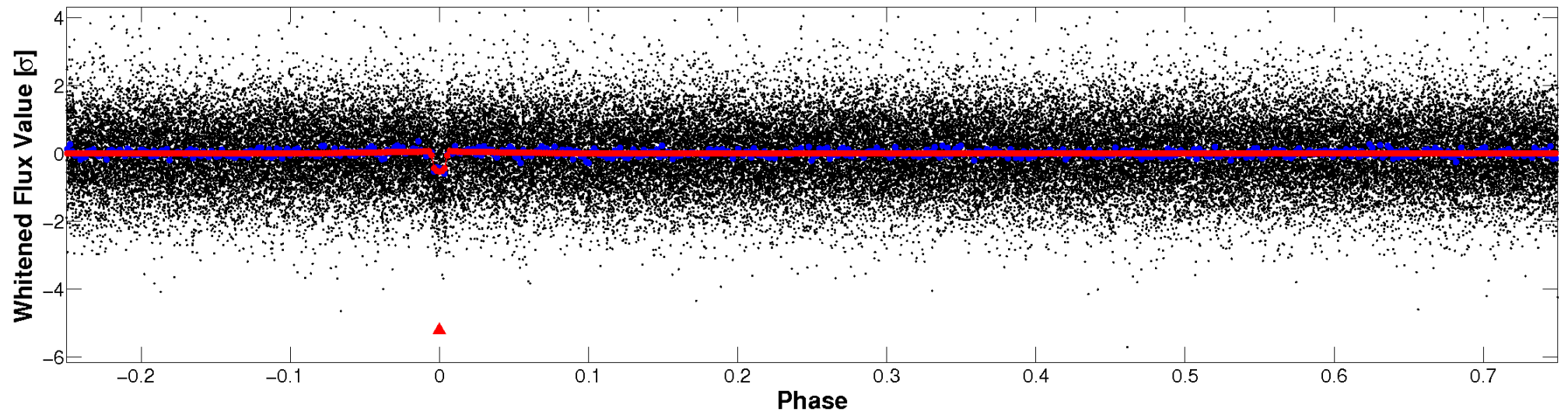


# Non-Whitened Vs. Whitened Light Curve

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

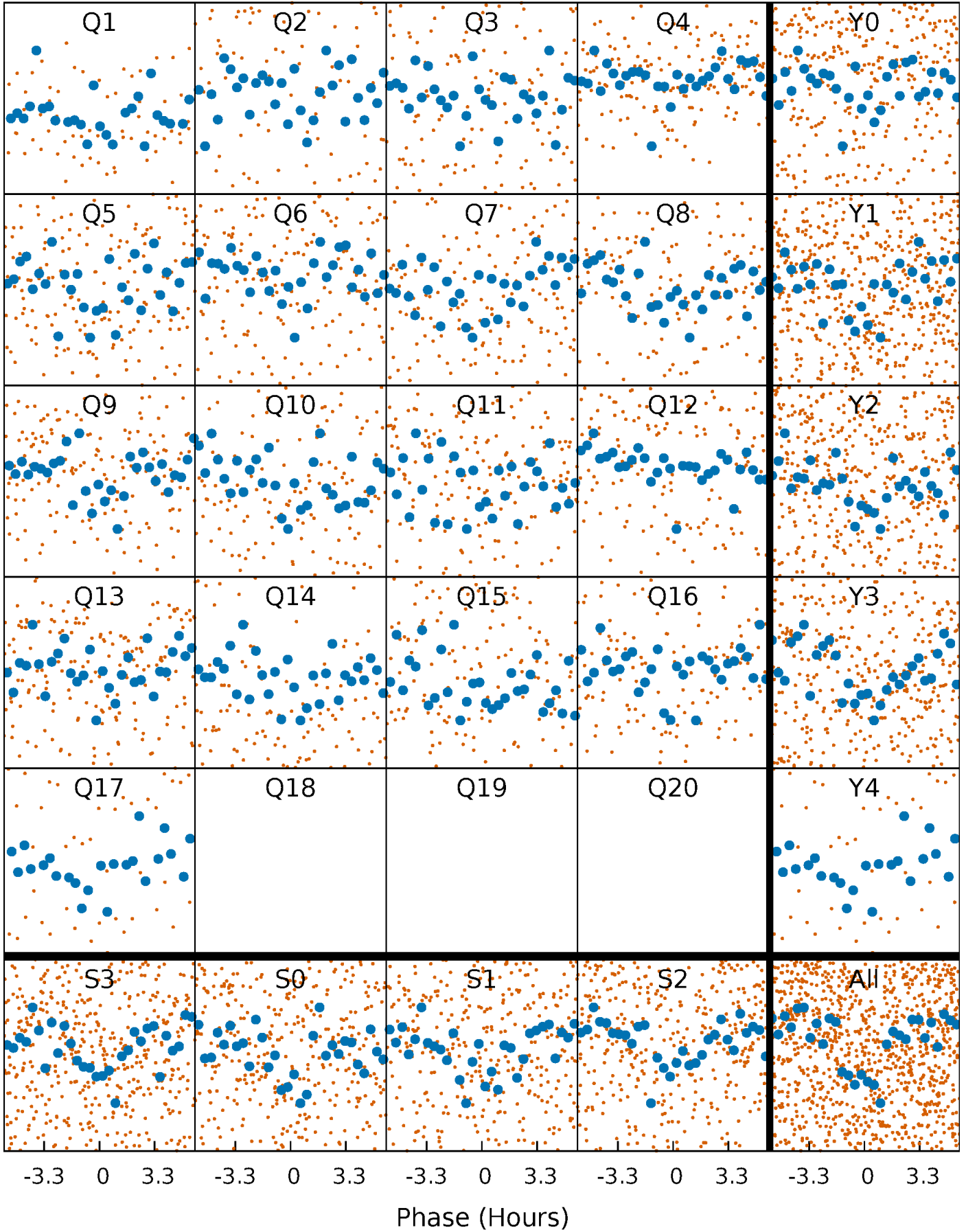


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

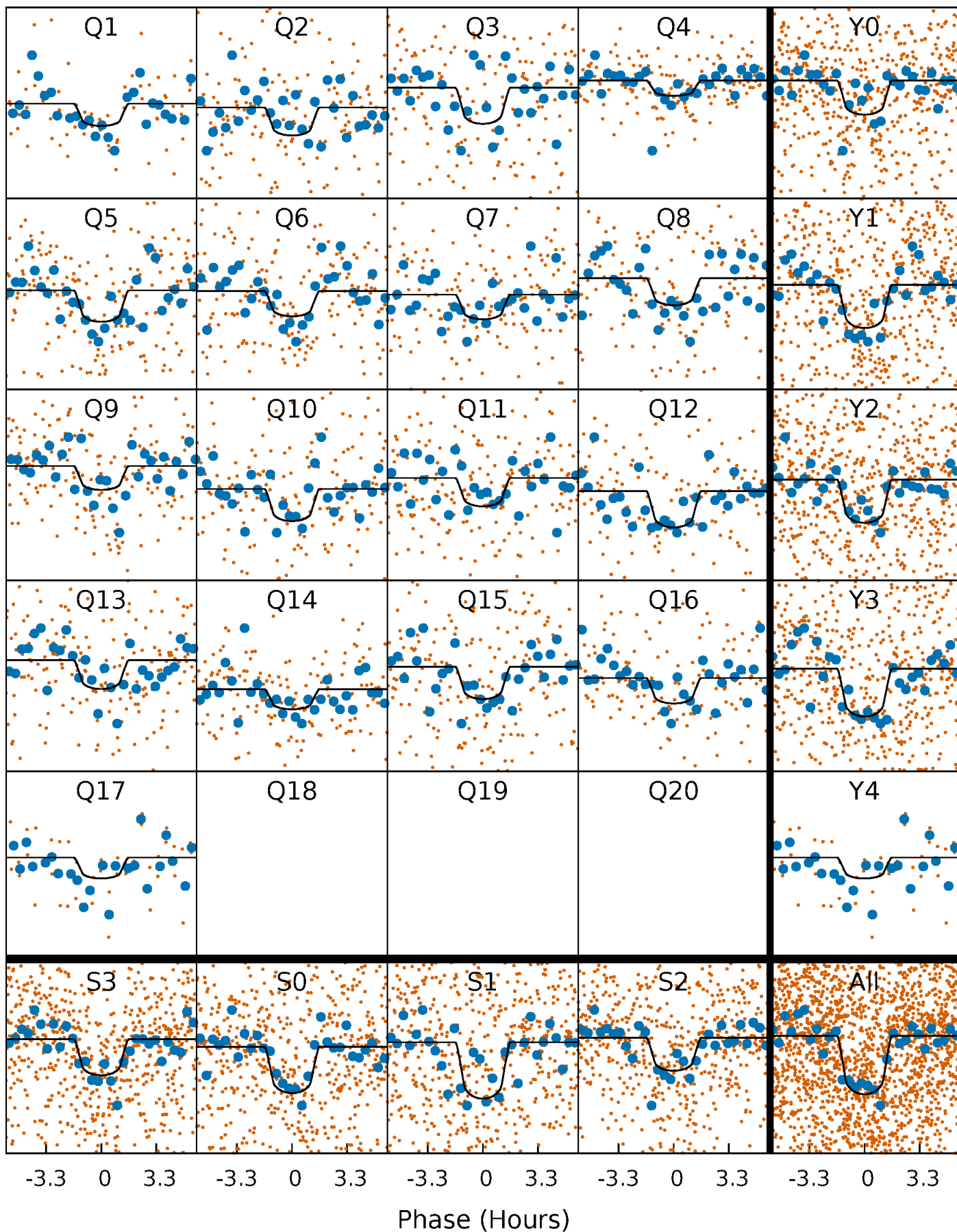
TCE 003852655-01 P= 11.629019 Days  $T_0=132.820678$  (BKJD)





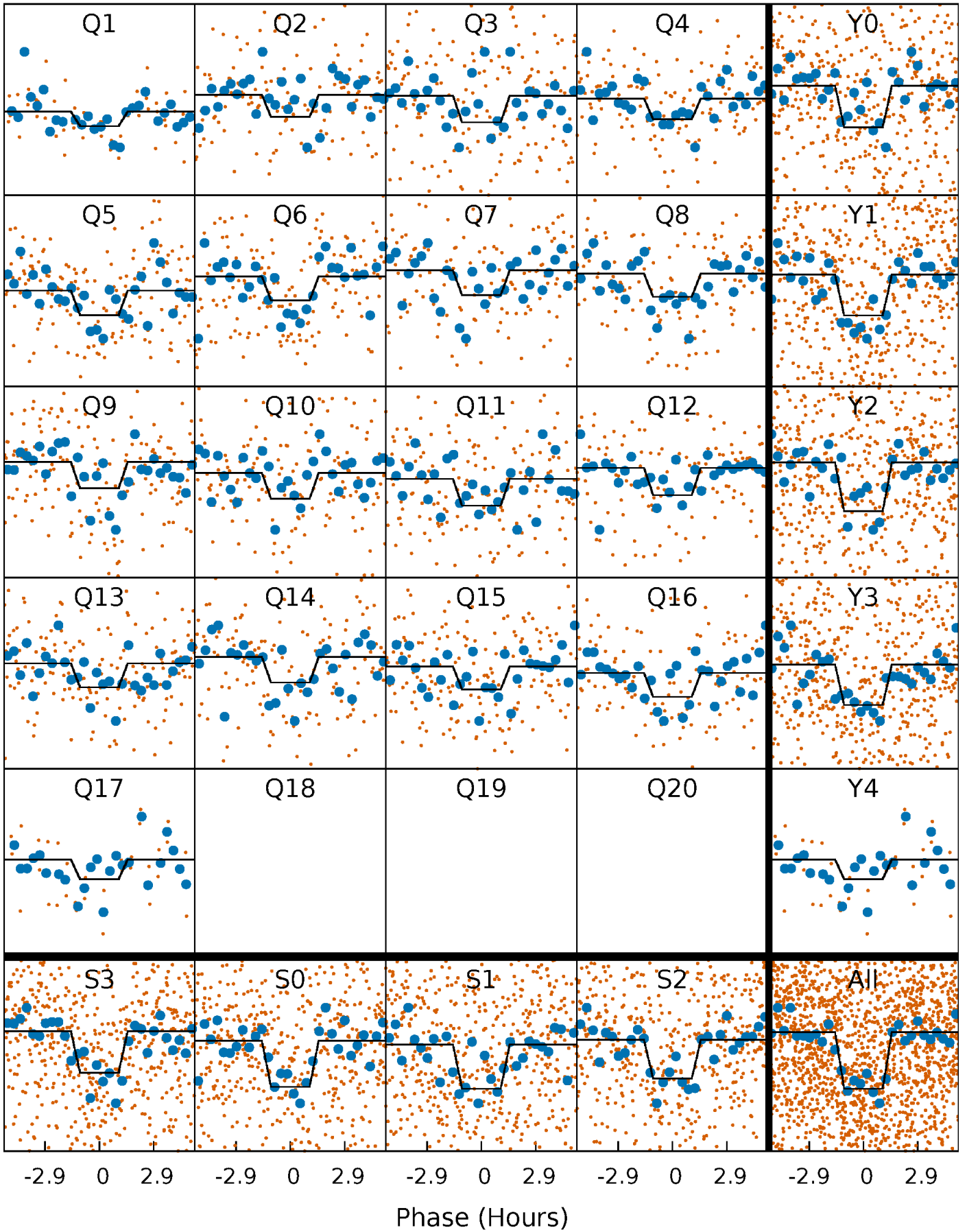
# DV Quarter-Phased Transit Curves

TCE 003852655-01 P= 11.629019 Days  $T_0=132.820678$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

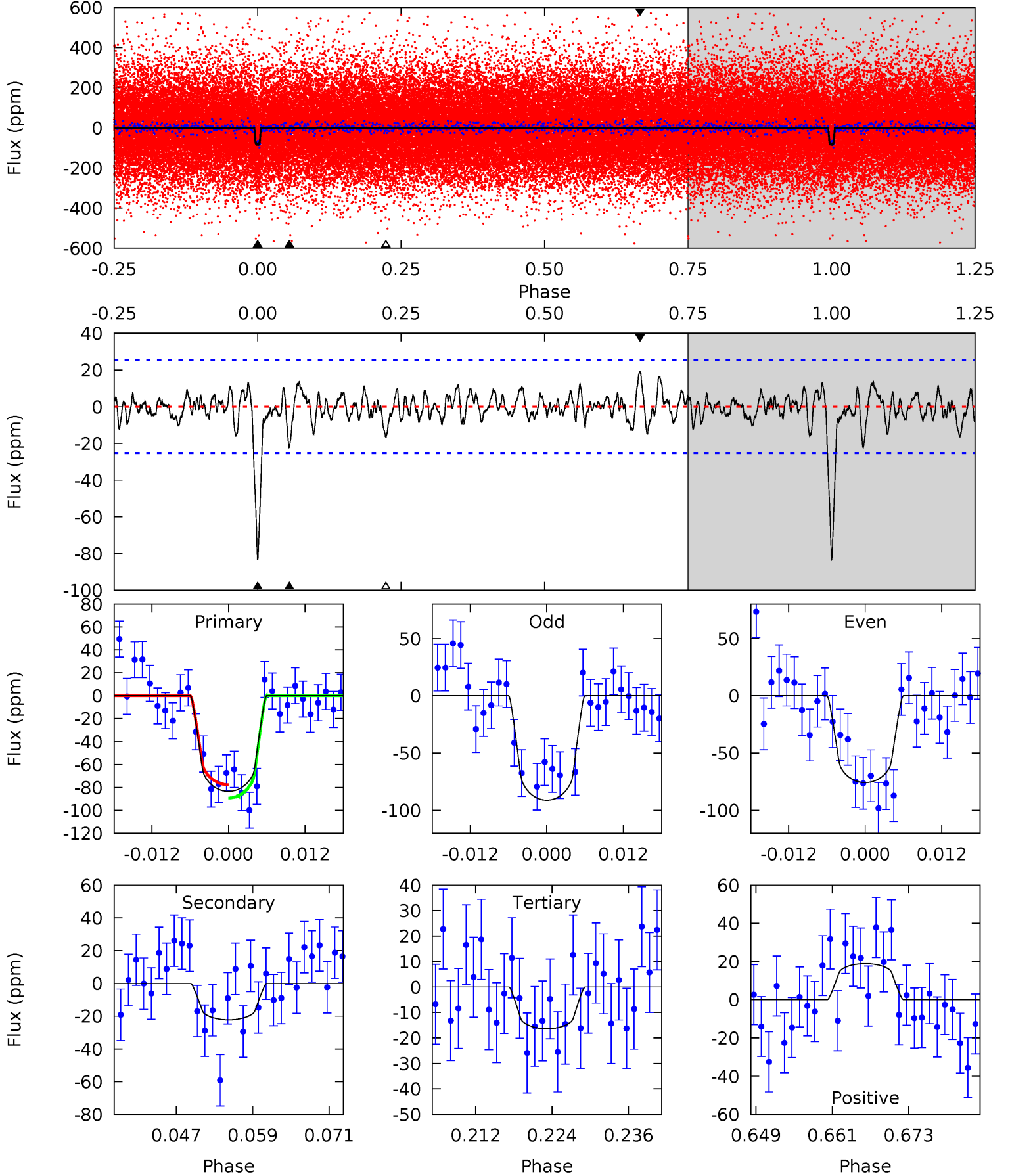
TCE 003852655-01 P= 11.629157 Days  $T_0=132.813874$  (BKJD)



# DV Model-Shift Uniqueness Test

003852655-01, P = 11.629019 Days, E = 121.191659 Days

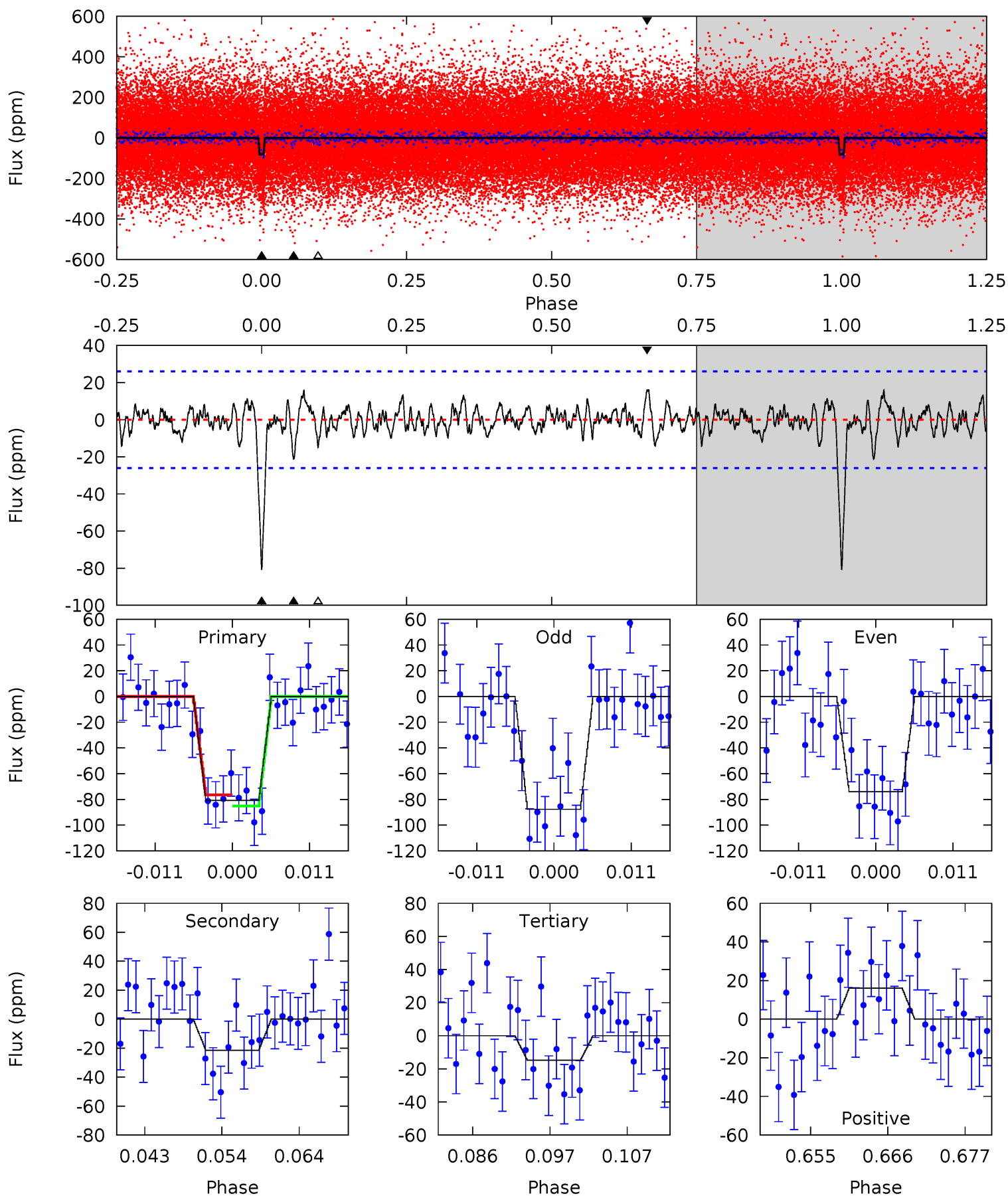
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	4.39	3.24	3.74	4.99	2.52	1.16	13.2	12.7	1.16	0.65	1.53	0.94	0.18	1.15



# Alt Model-Shift Uniqueness Test

003852655-01, P = 11.629157 Days, E = 121.184717 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
15.6	4.12	2.86	3.08	5.01	2.55	1.03	12.7	12.5	1.26	1.04	1.31	0.93	0.17	0.84



### Stellar Parameters For KIC 003852655

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5721^{+103}_{-114}$	$4.307^{+0.143}_{-0.104}$	$0.000^{+0.150}_{-0.150}$	$1.131^{+0.173}_{-0.173}$	$0.945^{+0.078}_{-0.057}$	$0.921^{+0.565}_{-0.298}$
	+2%/-2%	+3%/-2%	+inf%/-inf%	+15%/-15%	+8%/-6%	+61%/-32%
Source	SPE57	SPE57	SPE57	DSEP		

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

### Secondary Eclipse Parameters for KIC 003852655-01 / KOI 3002.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-22 \pm 5$	$1.19^{+0.67}_{-0.60}$	$1192^{+57}_{-57}$	$4202^{+1384}_{-619}$	$80^{+243}_{-48}$
Alt.	$-21 \pm 5$	$1.15^{+0.63}_{-0.63}$	$1188^{+55}_{-53}$	$4232^{+1624}_{-604}$	$84^{+314}_{-50}$

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



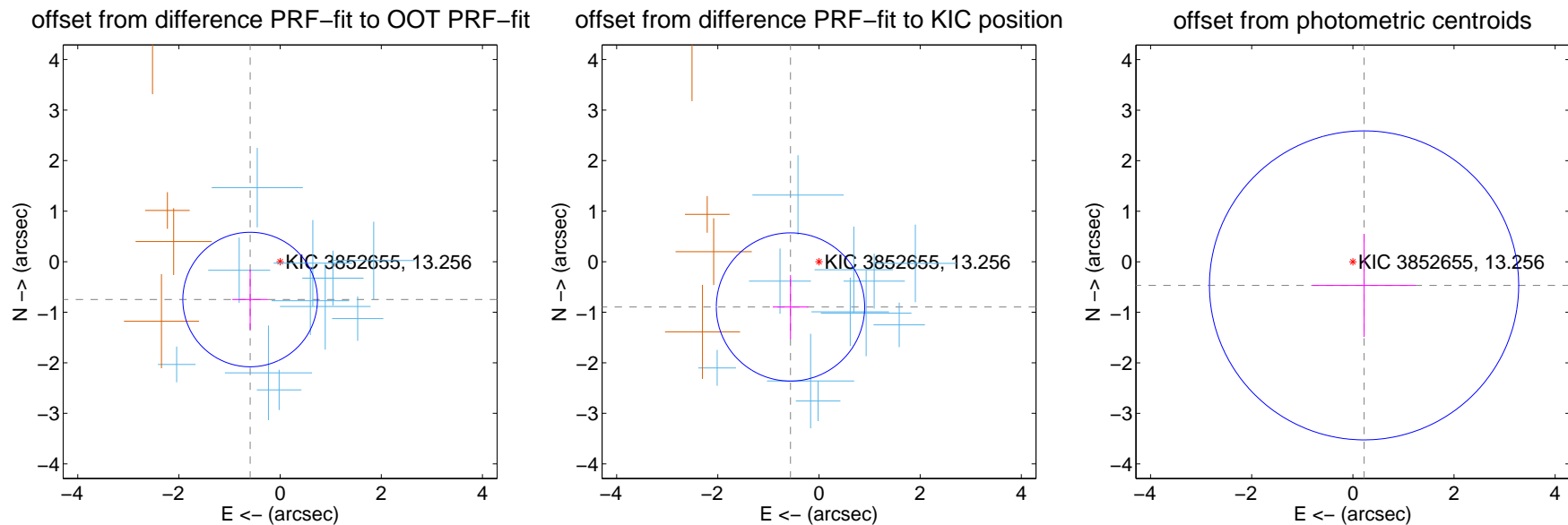
## DV Centroid Data

Supplemental centroid analysis for 003852655-01. Kepler magnitude: 13.26. Transit SNR 11.81

There are 11 quarters with good PRF difference image offsets

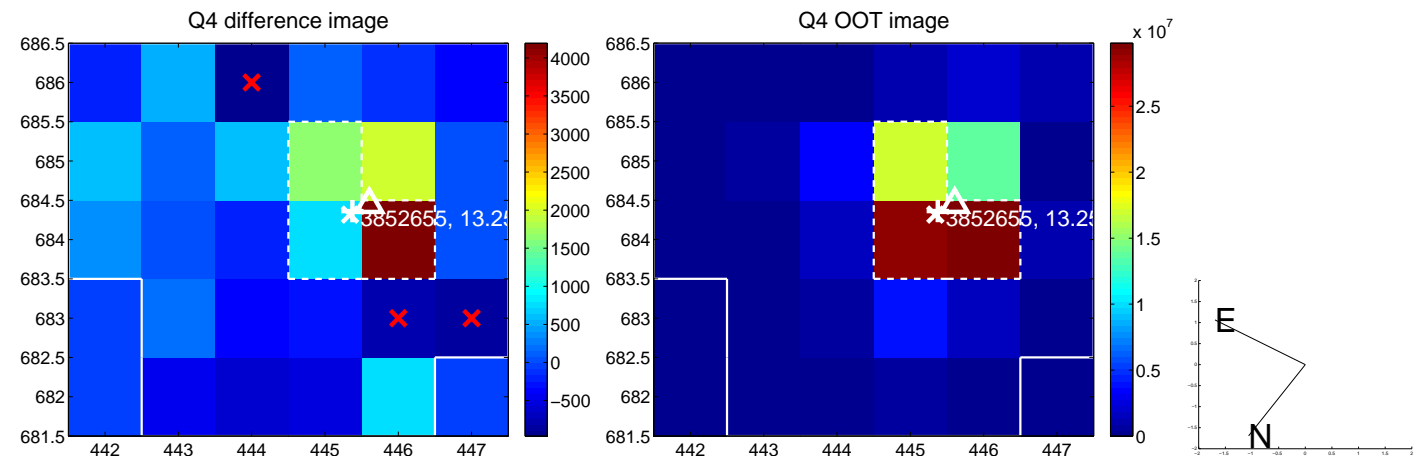
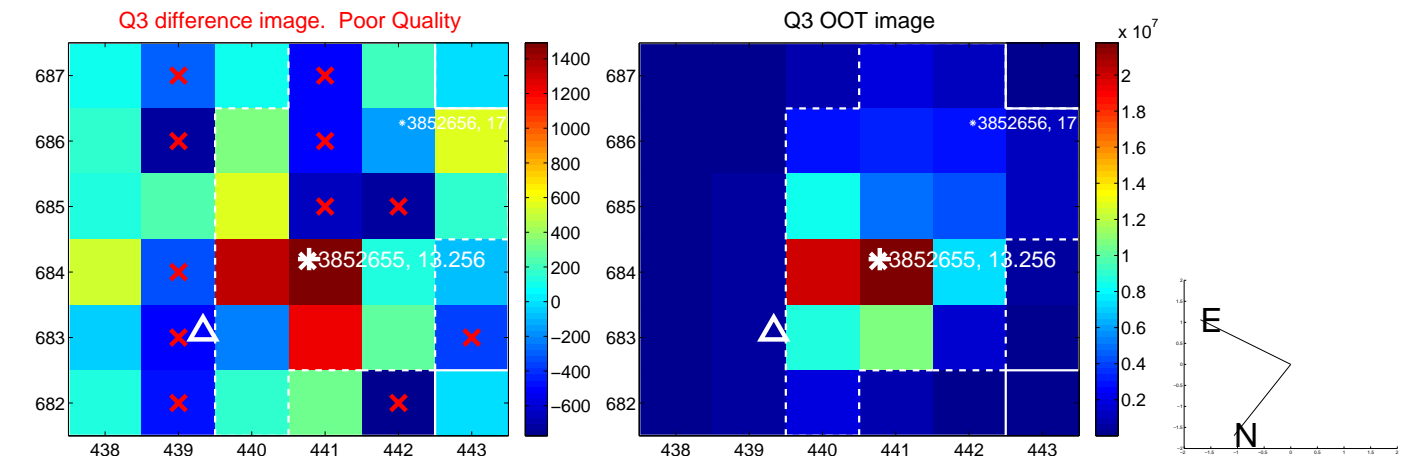
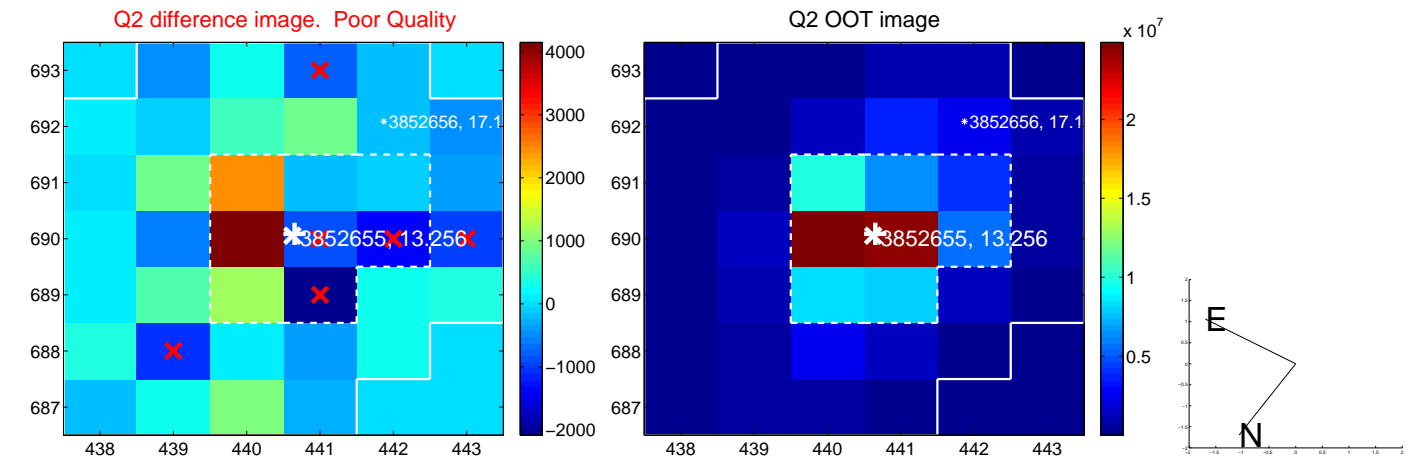
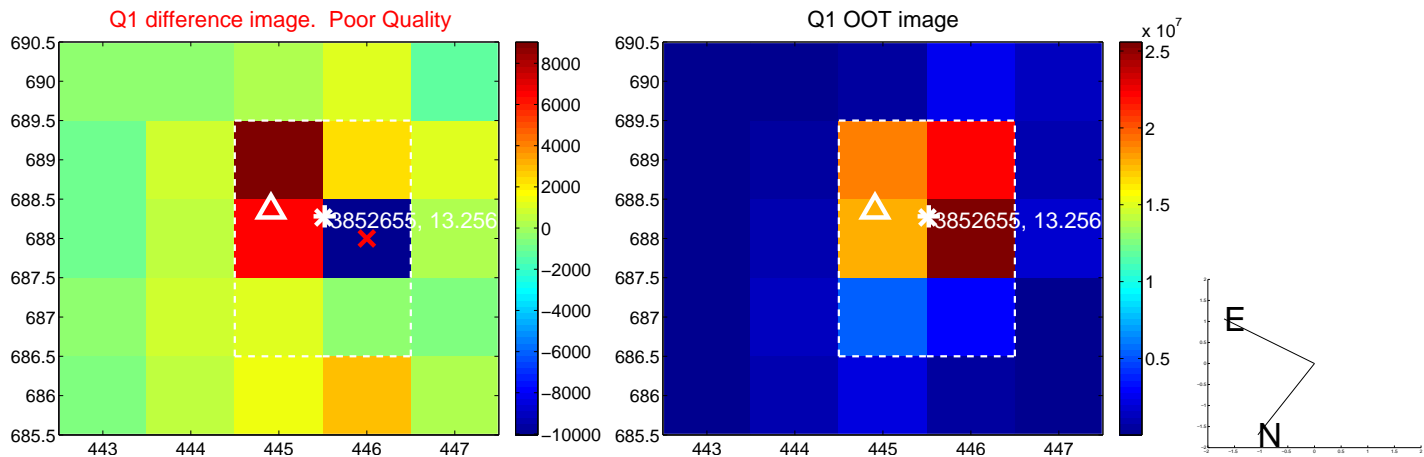
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.955 \pm 0.444$	2.15	$0.592 \pm 0.352$	$-0.749 \pm 0.594$
PRF-fit source offset from KIC position	$1.058 \pm 0.489$	2.17	$0.564 \pm 0.350$	$-0.896 \pm 0.631$
photometric centroid source offset	$0.52 \pm 1.02$	0.51	$-0.22 \pm 1.02$	$-0.47 \pm 1.02$

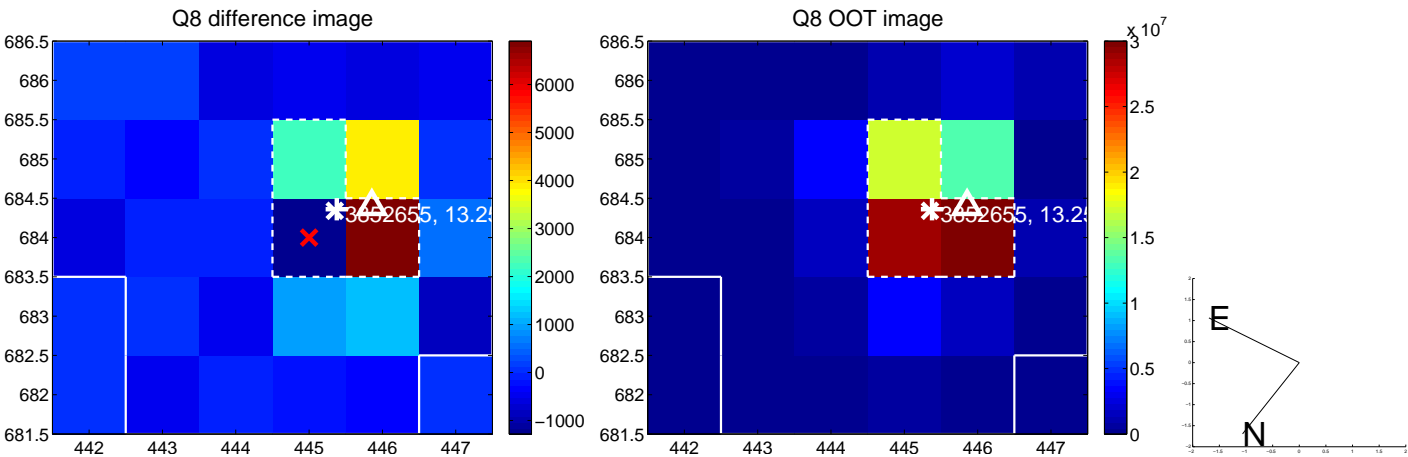
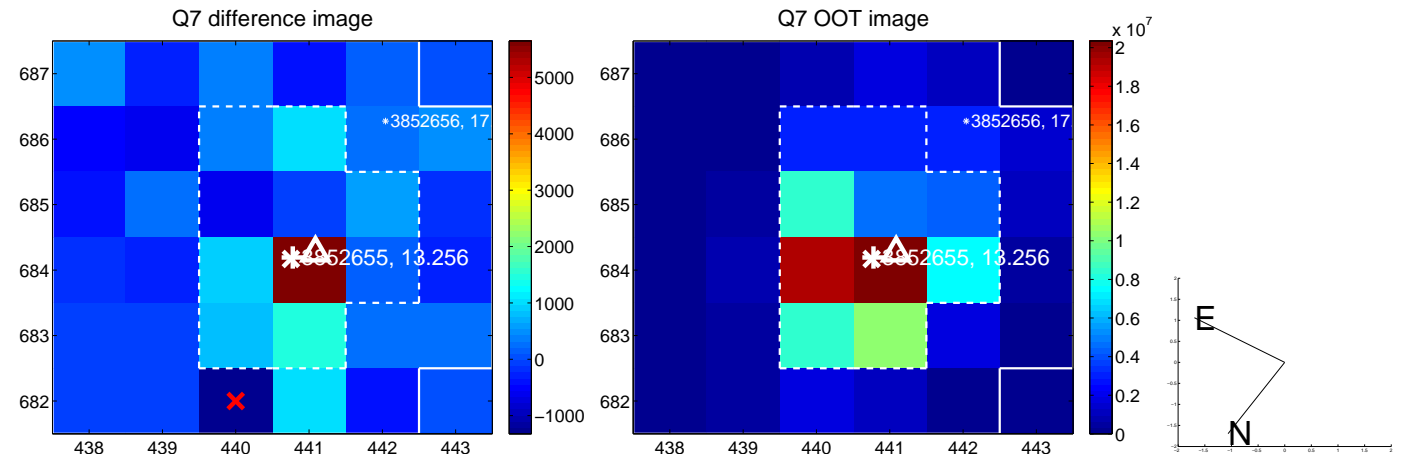
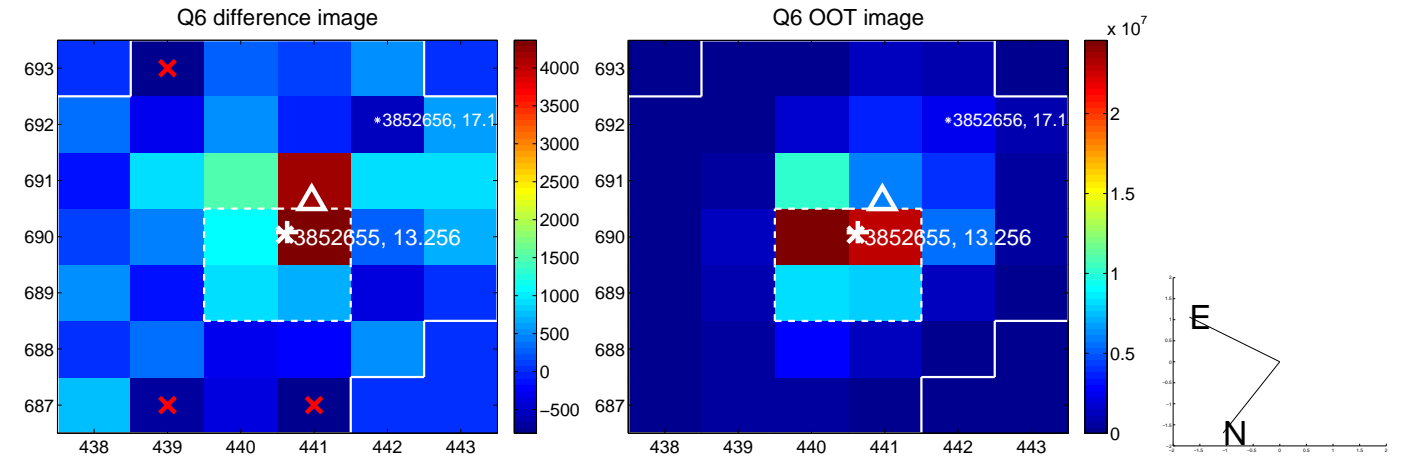
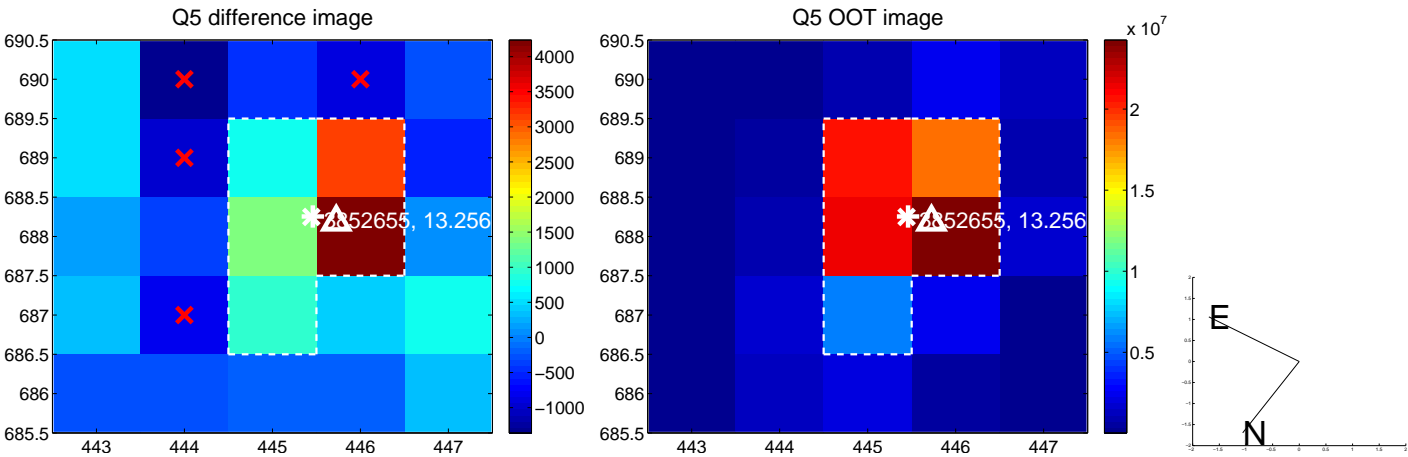


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

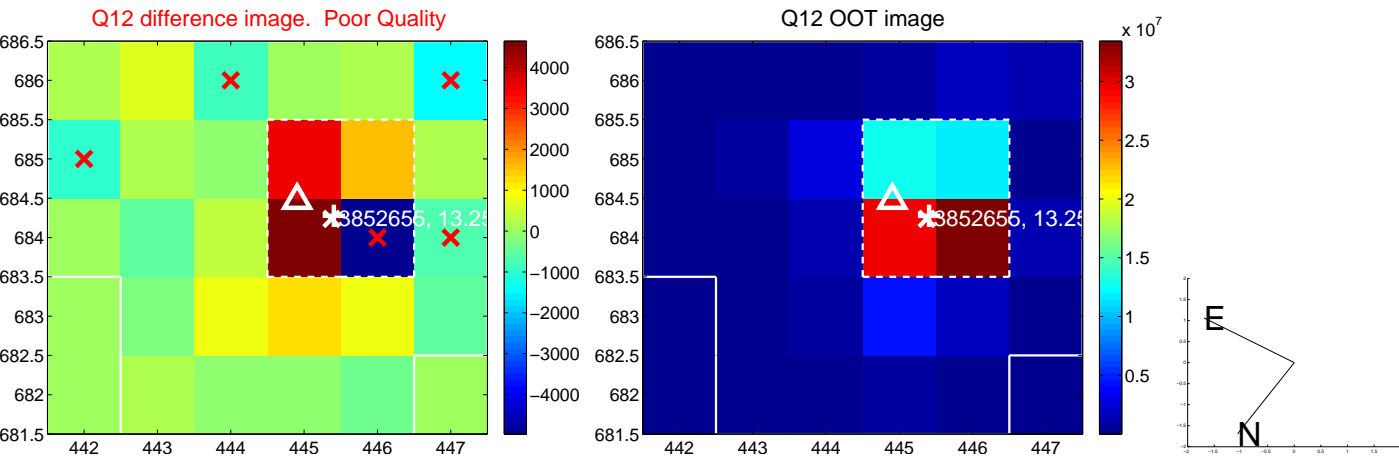
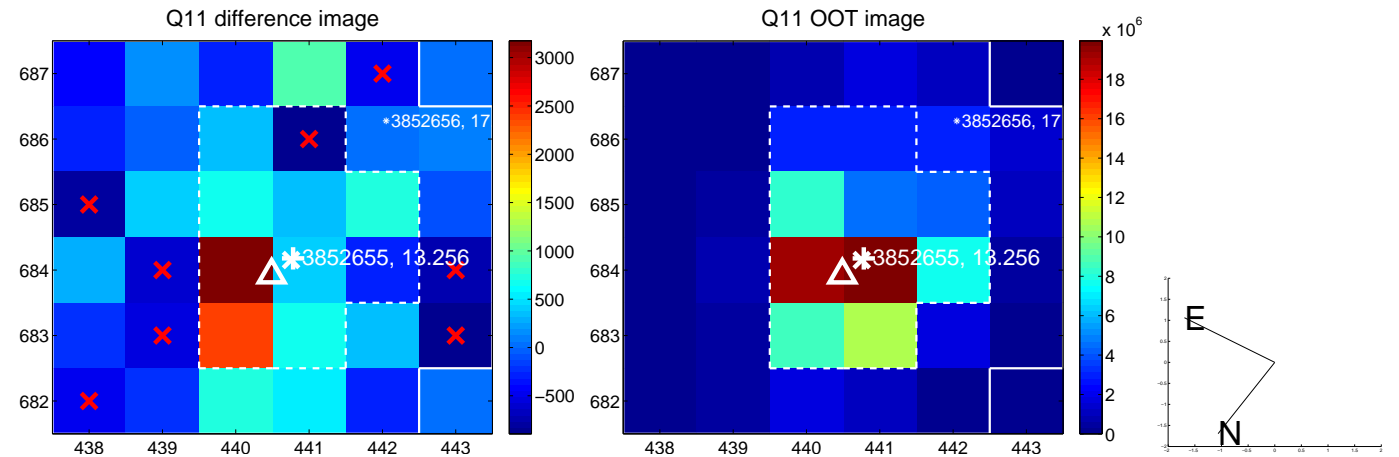
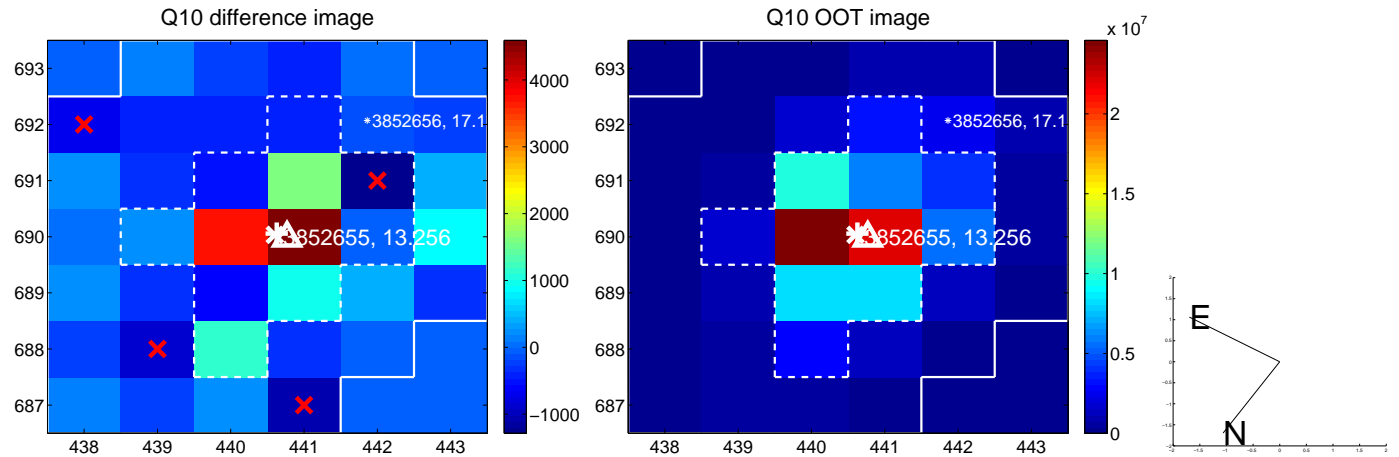
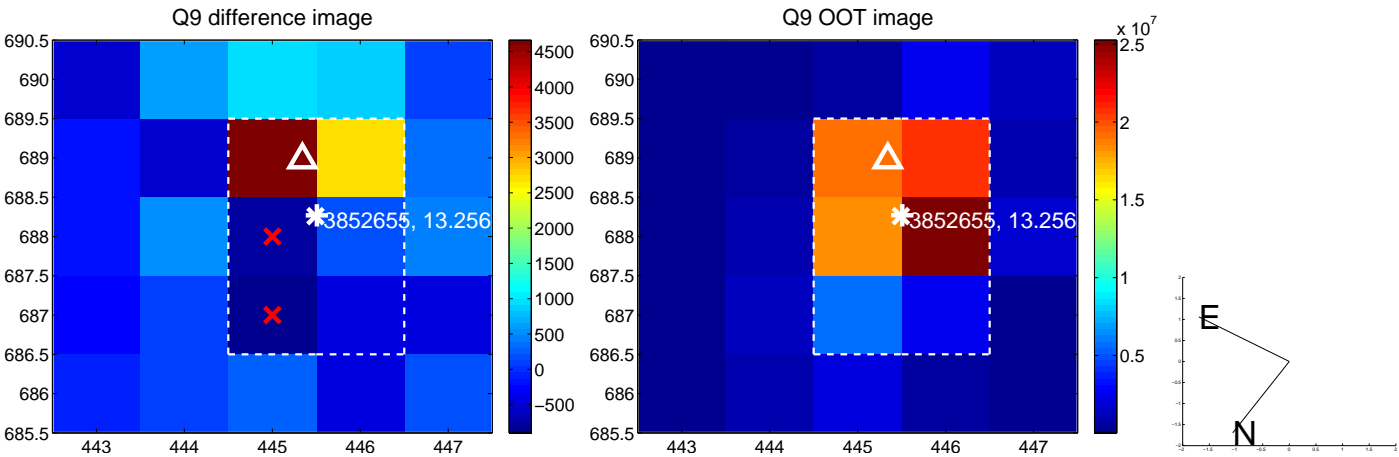
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



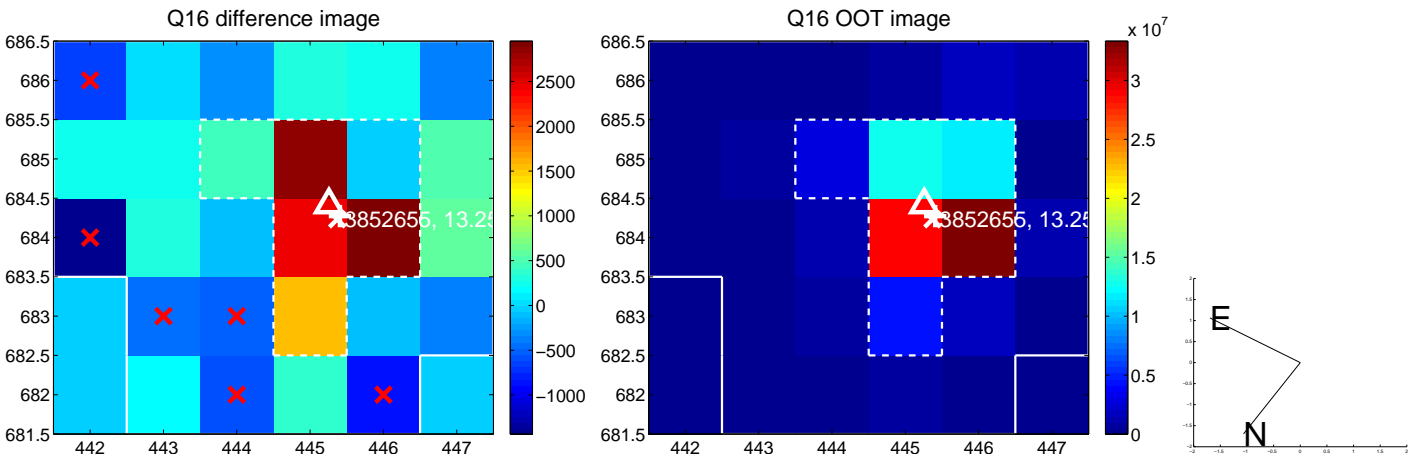
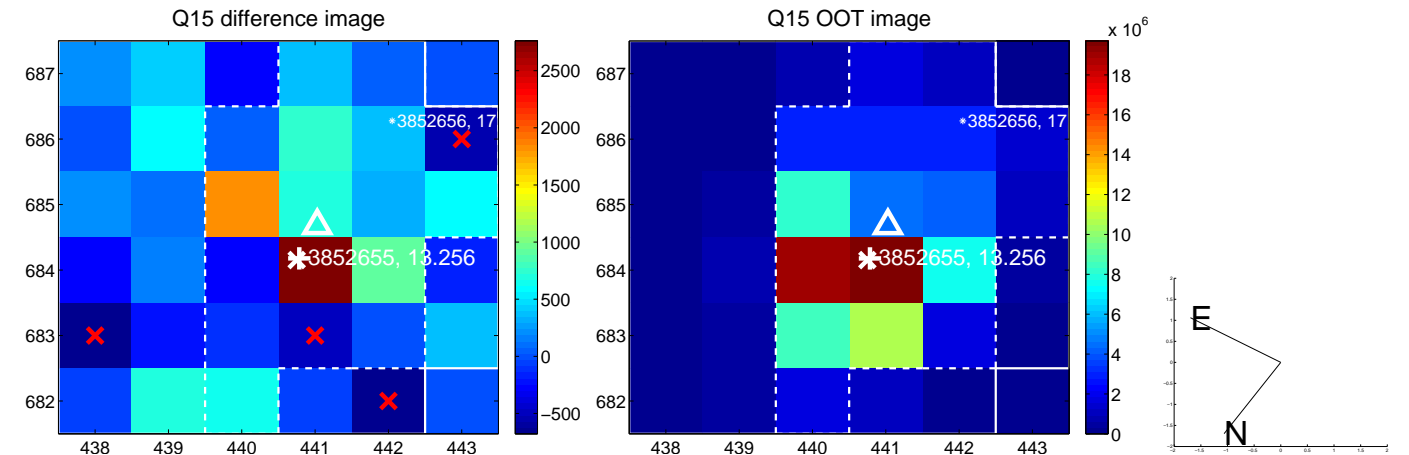
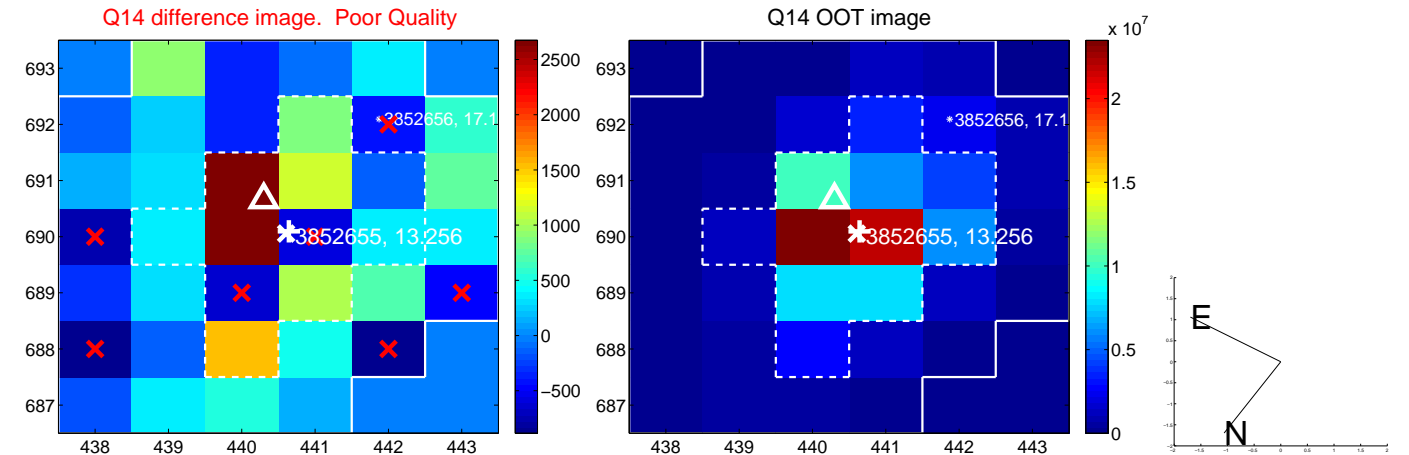
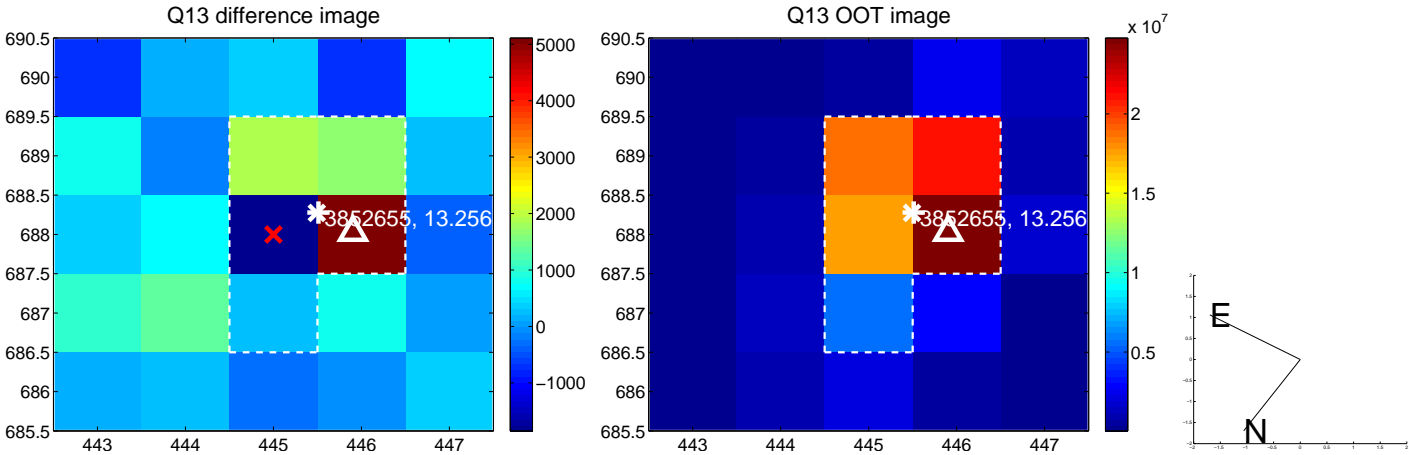
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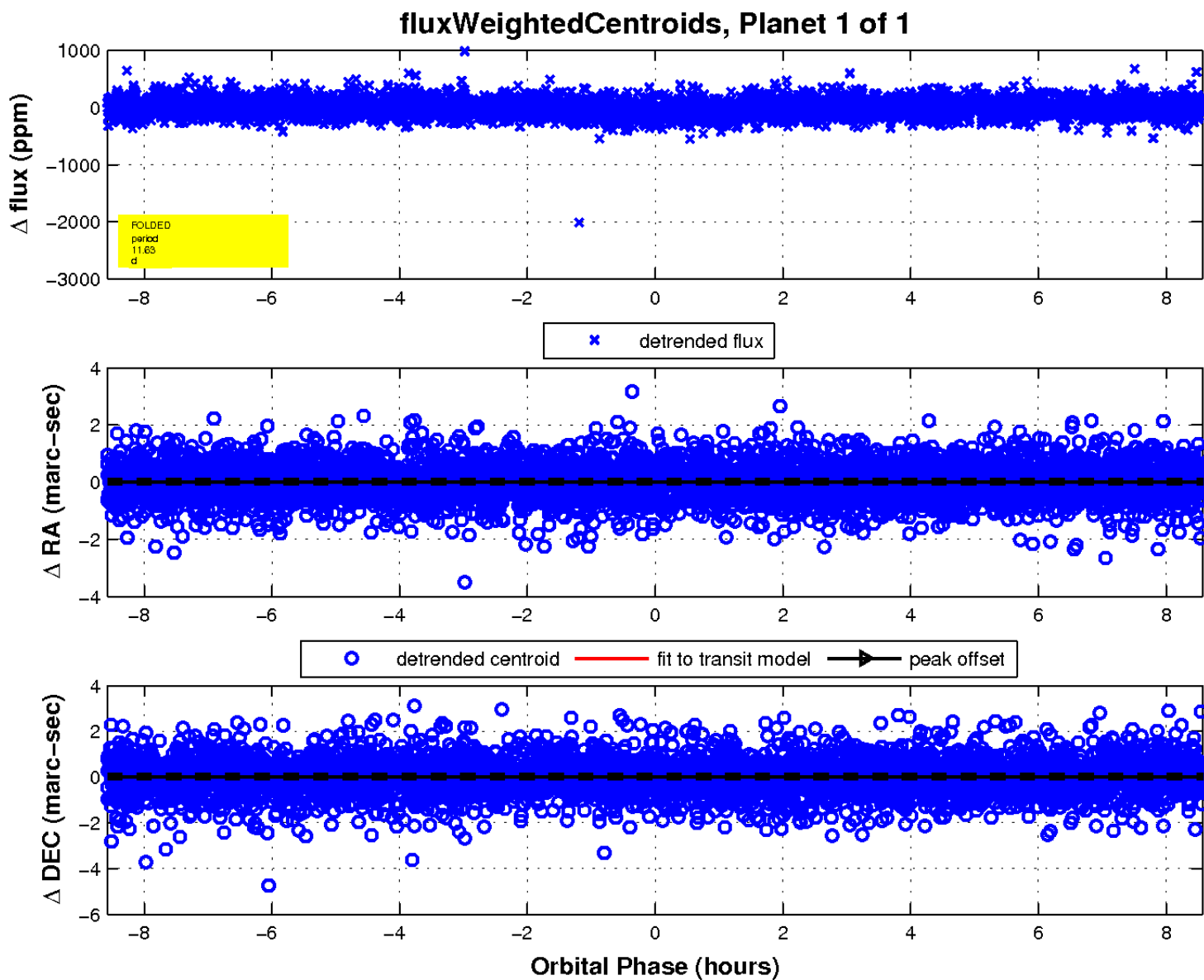
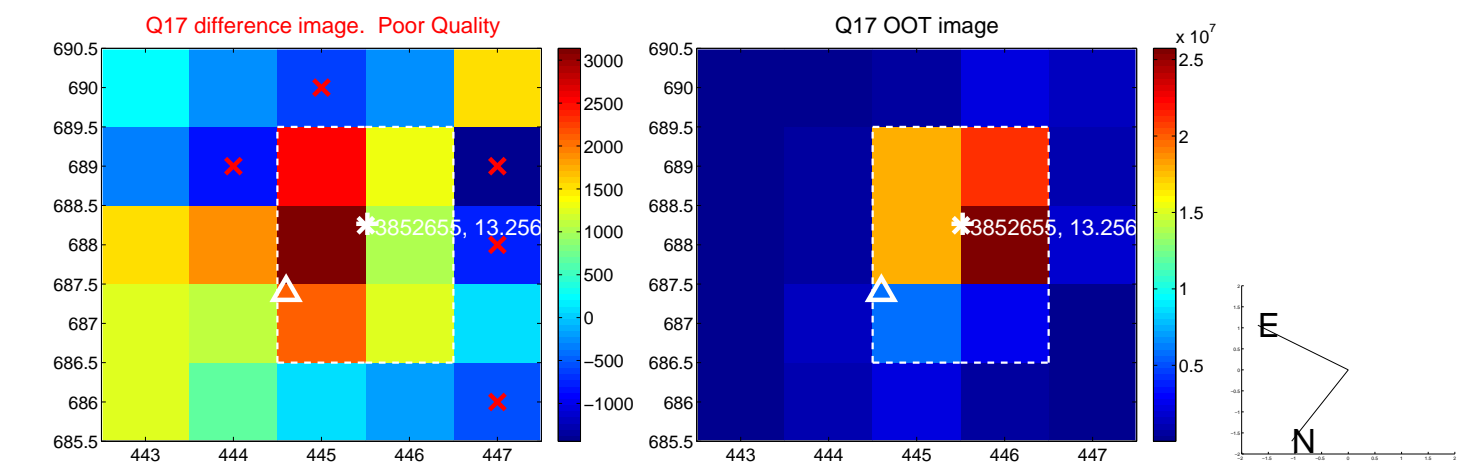


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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



UKIRT Image

Declination

