

# KIC 003241662

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003241662-01	OBS	6313.01	1.703341	132.471010	105.1	1.788	8.8	10.1	0.86	5749	0.92	963.54

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003241662-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH

**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 003241662-01

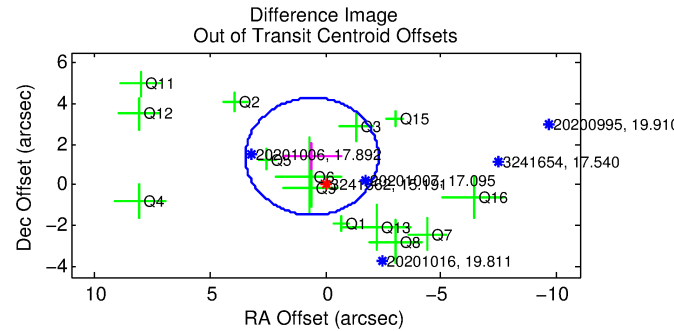
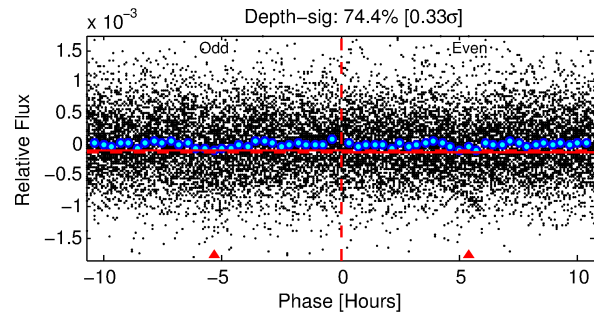
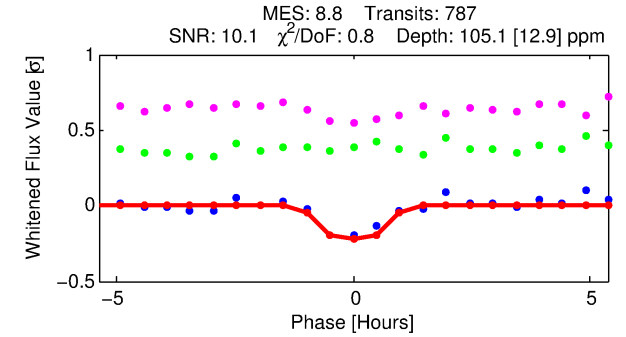
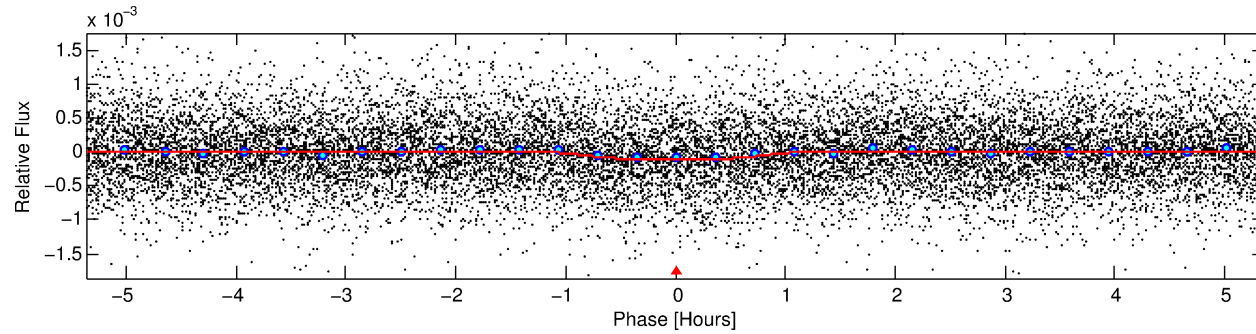
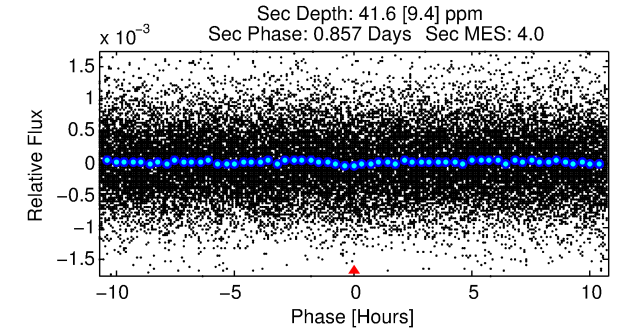
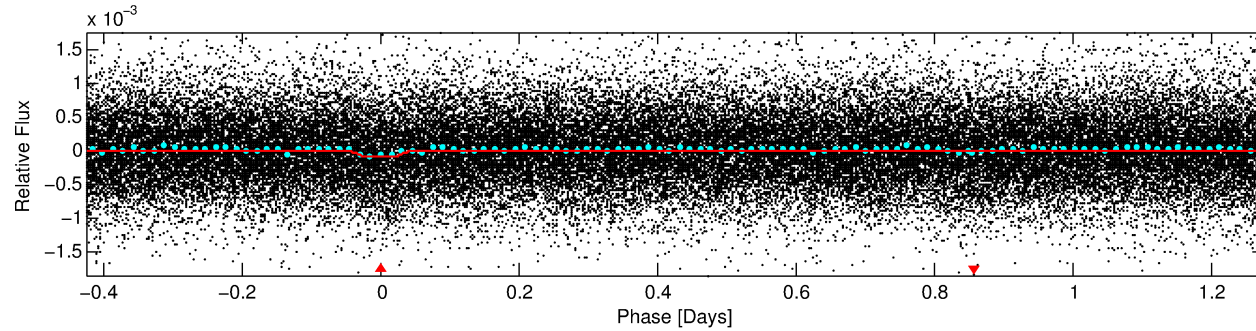
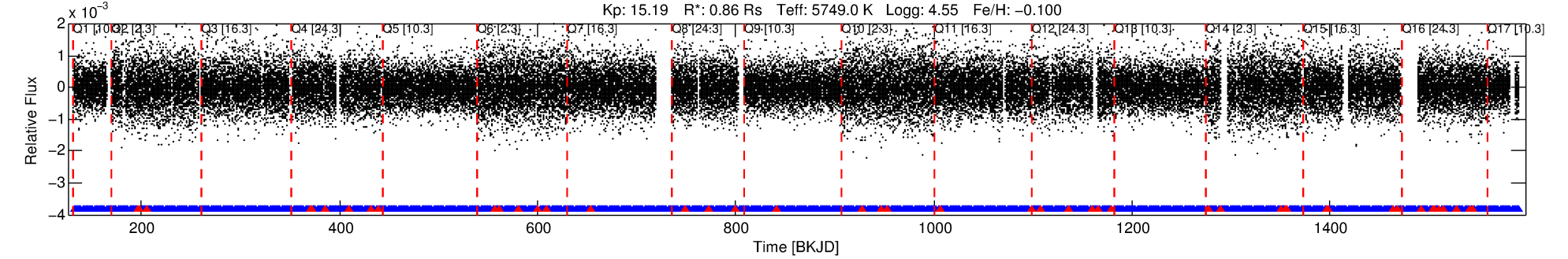
TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ( $''$ )	$\Delta$ Row	$\Delta$ Col	$m_2$	$m_1$	$D_2/D_1$	Mechanism	Flag	$\sigma_P$	$\sigma_T$
003241662-01	3241662	6312.01	3241619	1:1	56.0	7	-13	12.52	15.19	4858.20	Direct-PRF	0	0.29	0.18

**Notes:**  $P_1:P_2$  is the period ratio. Dist is the distance in arcseconds.  $\Delta$ Row and  $\Delta$ Col are the number of pixels apart in row and column.  $m_2$  and  $m_1$  are the magnitudes of the parent and child.  $D_2/D_1$  is the parent's transit depth divided by the child's.  $\sigma_P$  and  $\sigma_T$  are the significance of the match in period and epoch. For a match to be considered significant  $\sigma_P < 5.0$  and  $\sigma_T < 5.0$ . Matches which have  $\sigma_P$  and  $\sigma_T$  very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

# DV One-Page Summary

KIC: 3241662 Candidate: 1 of 1 Period: 1.703 d

KOI: K06313.01 Corr: 0.977



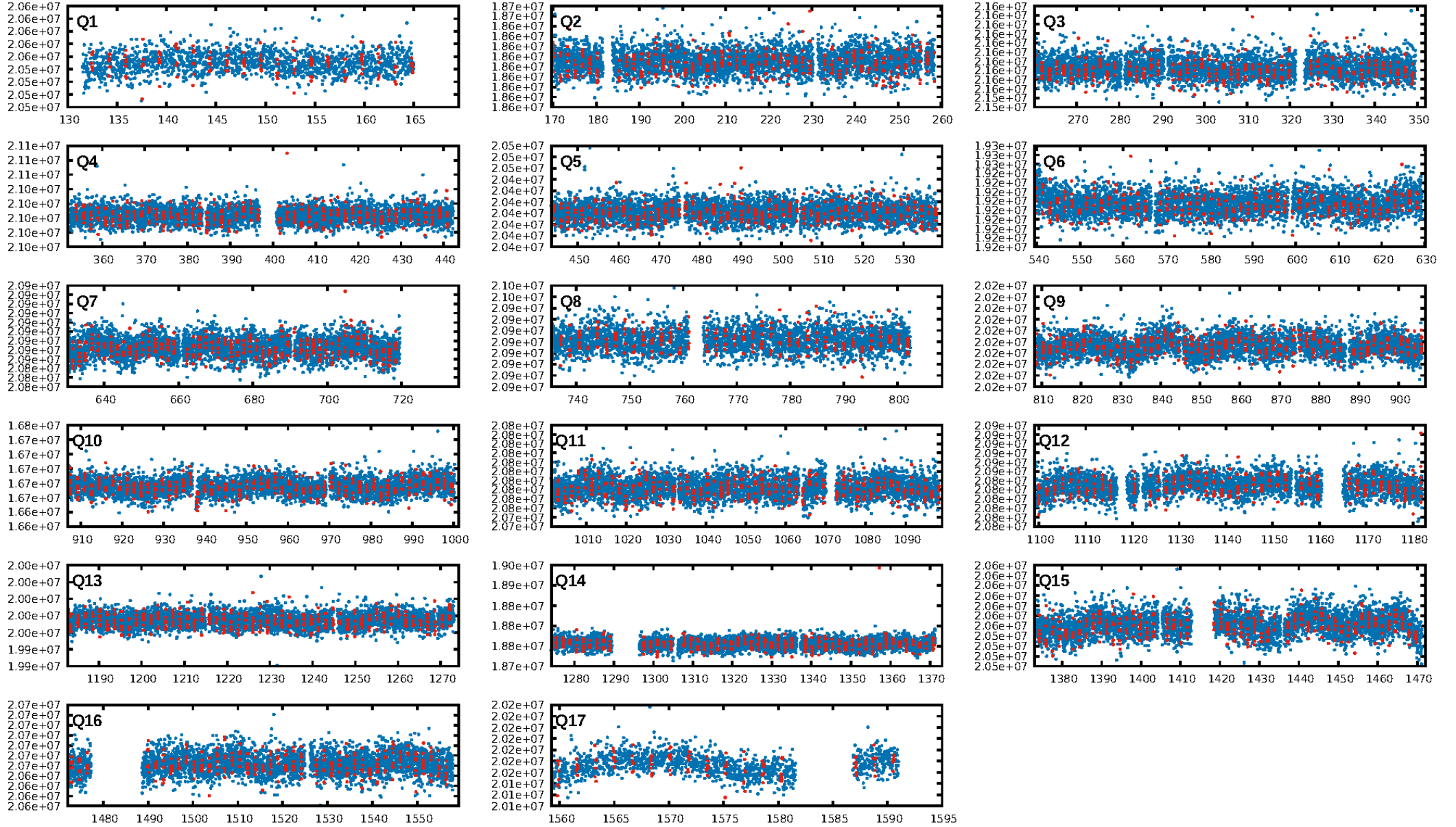
## DV Fit Results:

Period = 1.70334 [0.00001] d  
Epoch = 132.4710 [0.0029] BKJD  
Rp/R\* = 0.0097 [0.0057]  
a/R\* = 6.21 [15.69]  
b = 0.55 [3.34]  
Seff = 963.54 [377.18]  
Teq = 1421 [139] K  
Rp = 0.92 [0.61] Re  
a = 0.0275 [0.0071] AU  
Ag = 20.74 [26.16] [0.75σ]  
Teffp = 4688 [1418] K [2.29σ]

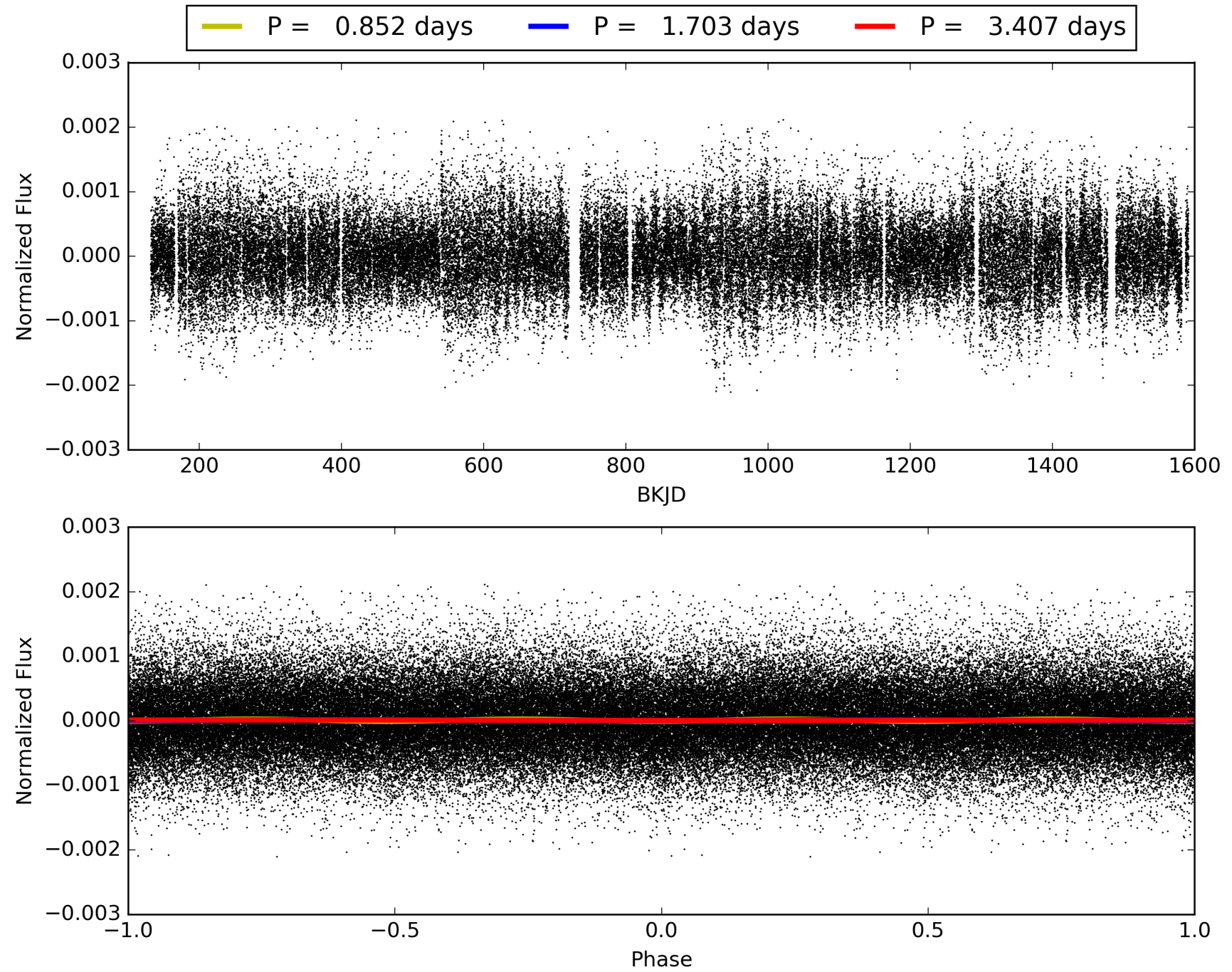
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 5.98e-19  
RollingBand-fgt: 0.94 [705/751]  
**GhostDiagnostic-chr: -0.1457**  
Centroid-sig: 53.8%  
Centroid-so: 1.382 arcsec [1.02σ]  
OotOffset-rm: 1.519 arcsec [1.59σ]  
KicOffset-rm: 1.626 arcsec [1.50σ]  
OotOffset-st: 2/4/4/4 [14]  
KicOffset-st: 2/4/4/4 [14]  
DiffImageQuality-fgm: 0.00 [0/14]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 003241662-01, PDC Light Curves



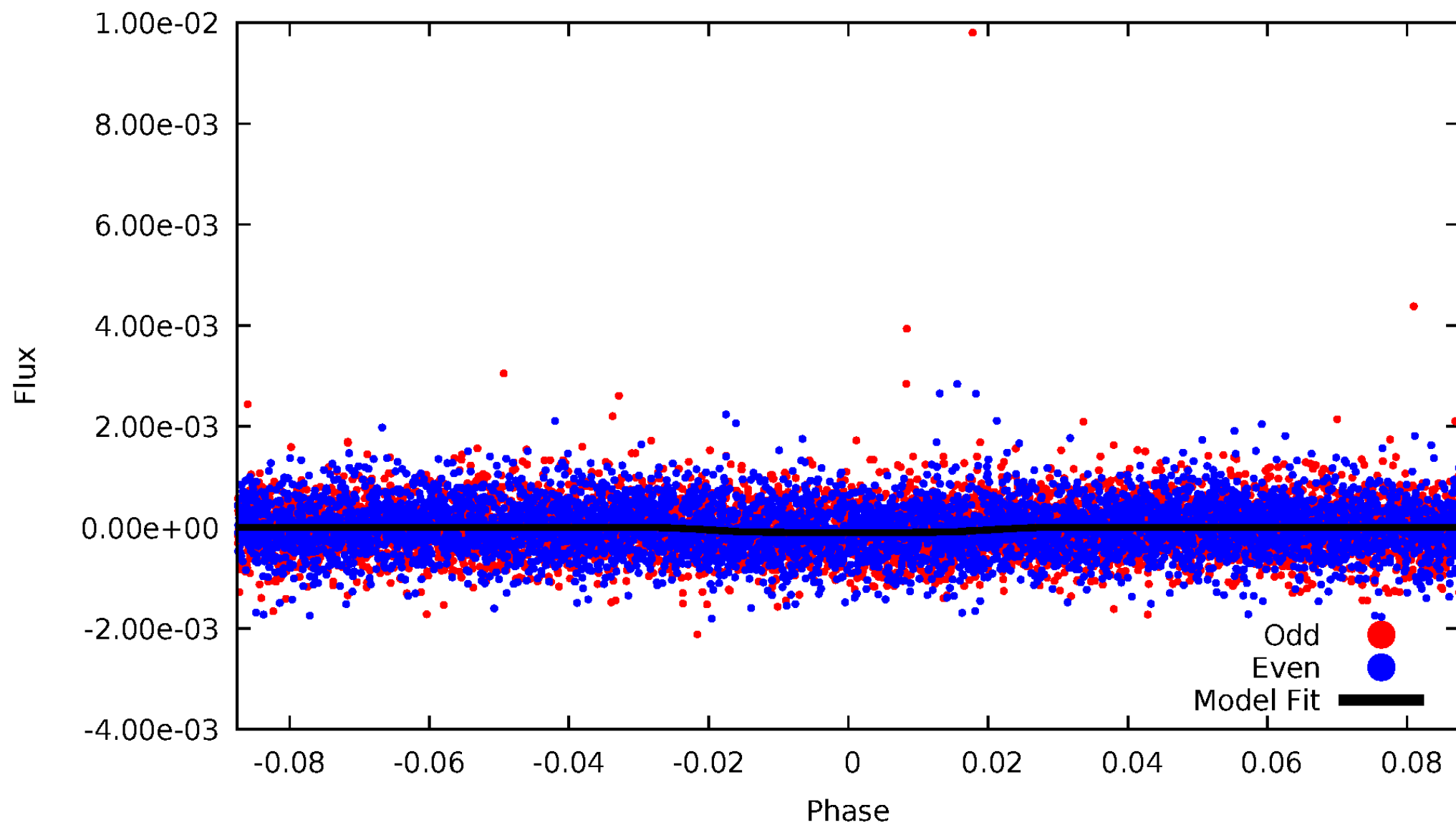
# TCE 003241662-01





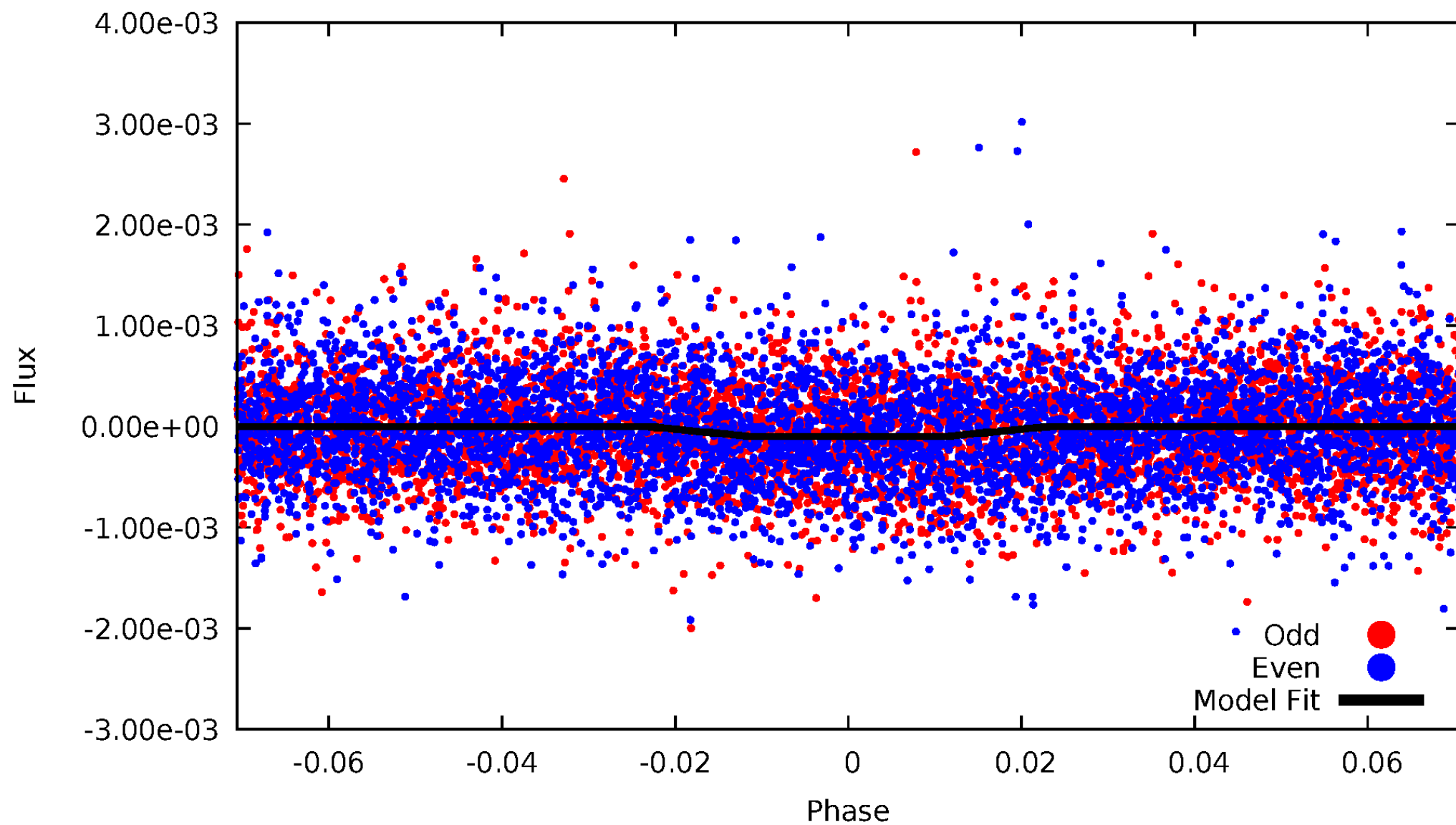
# DV Odd/Even

TCE 003241662-01



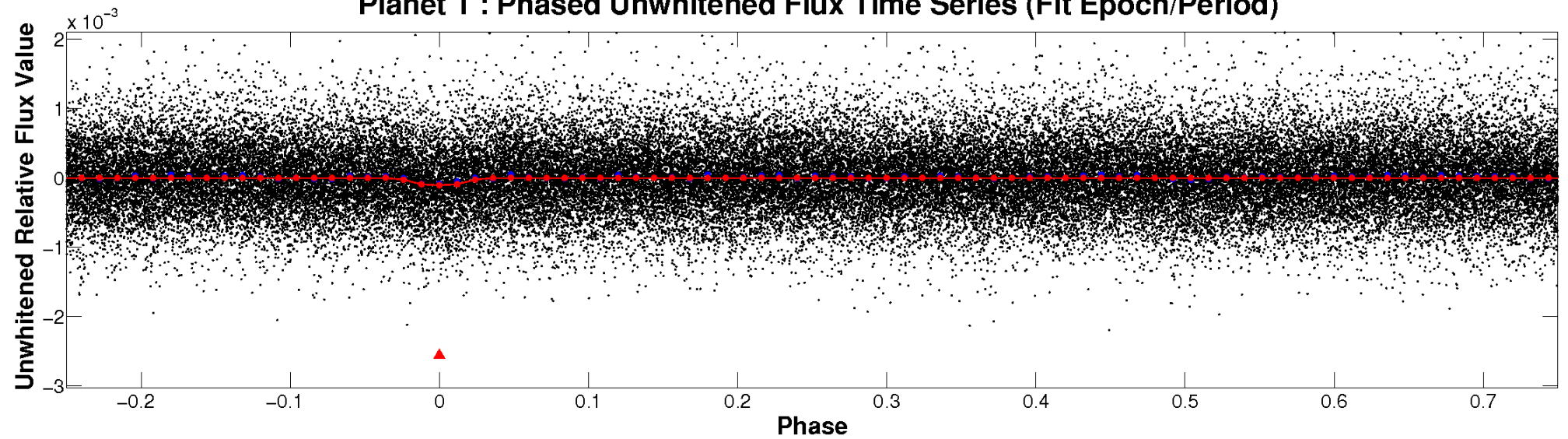
# ALT Odd/Even

TCE 003241662-01

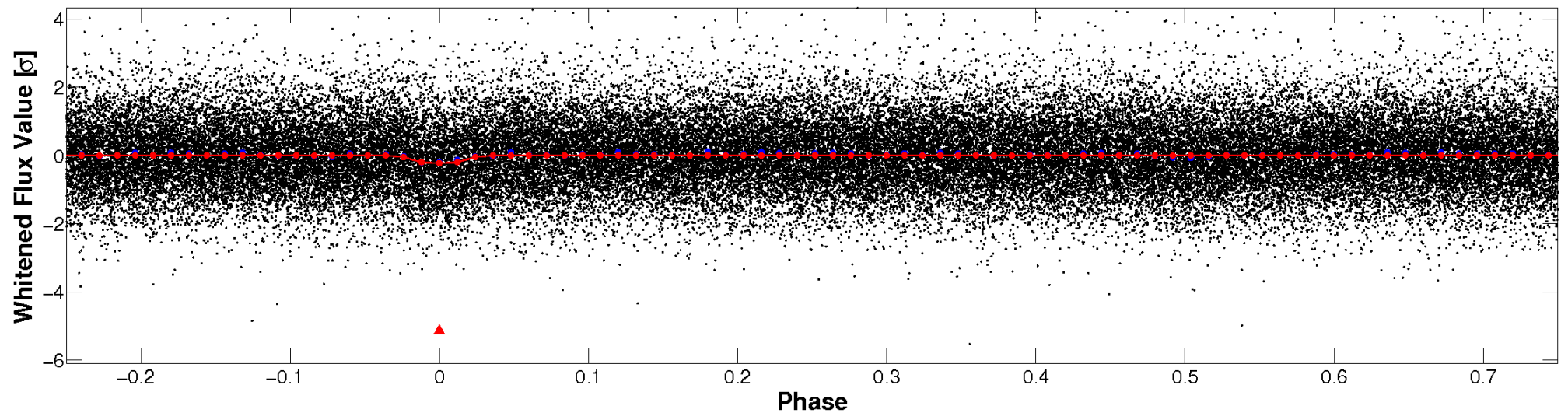


# Non-Whitened Vs. Whitened Light Curve

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

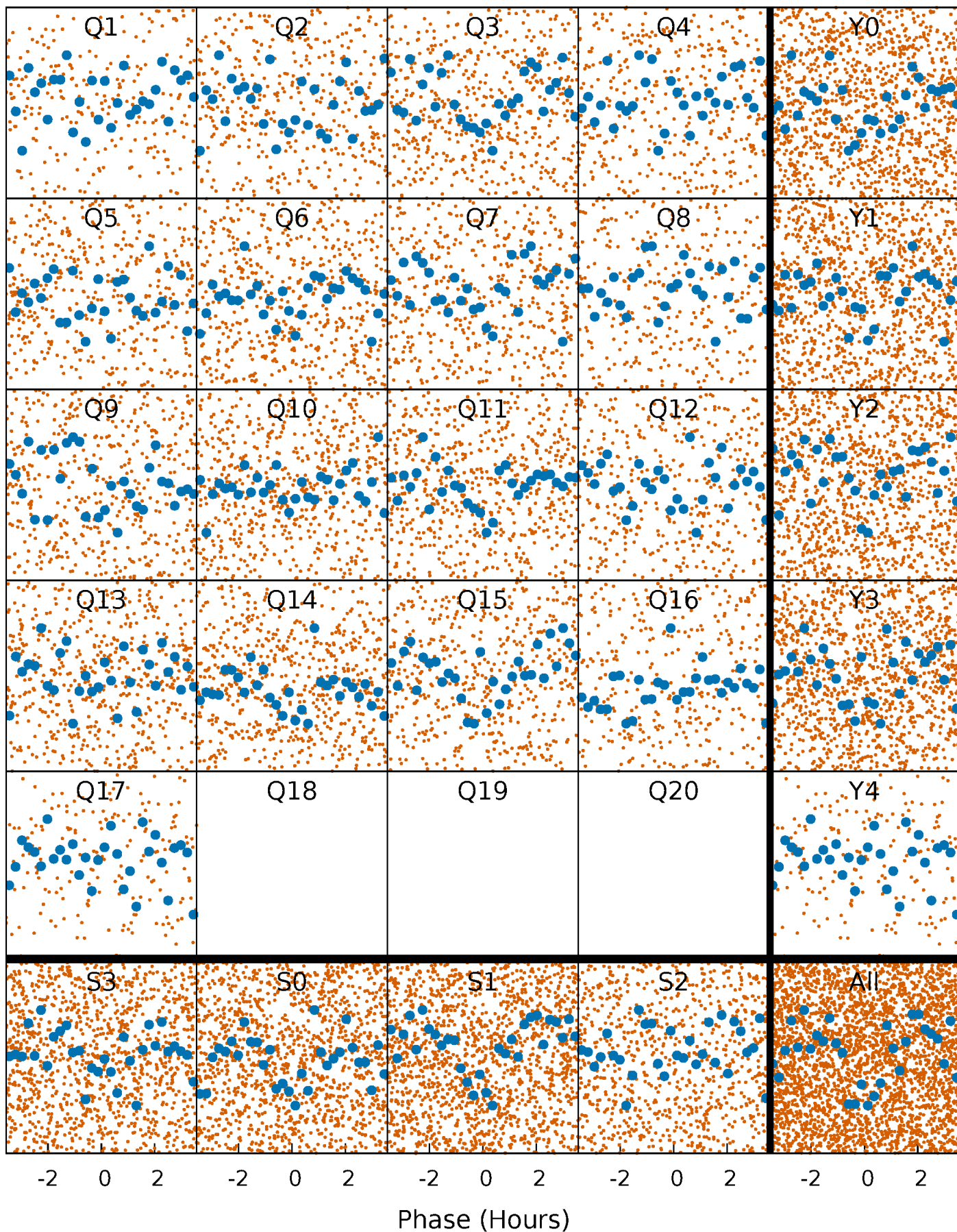


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

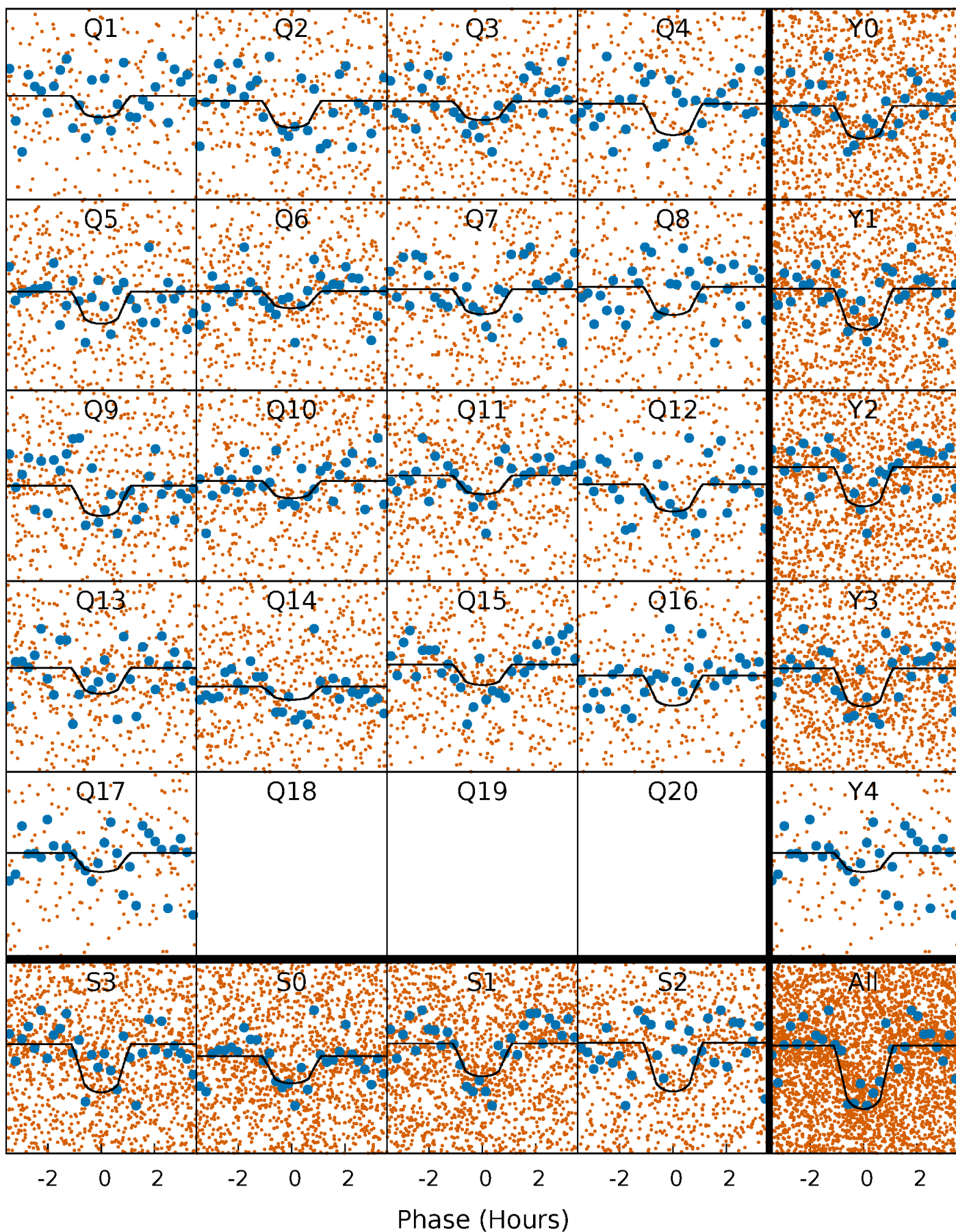
TCE 003241662-01 P= 1.703341 Days  $T_0=132.471010$  (BKJD)





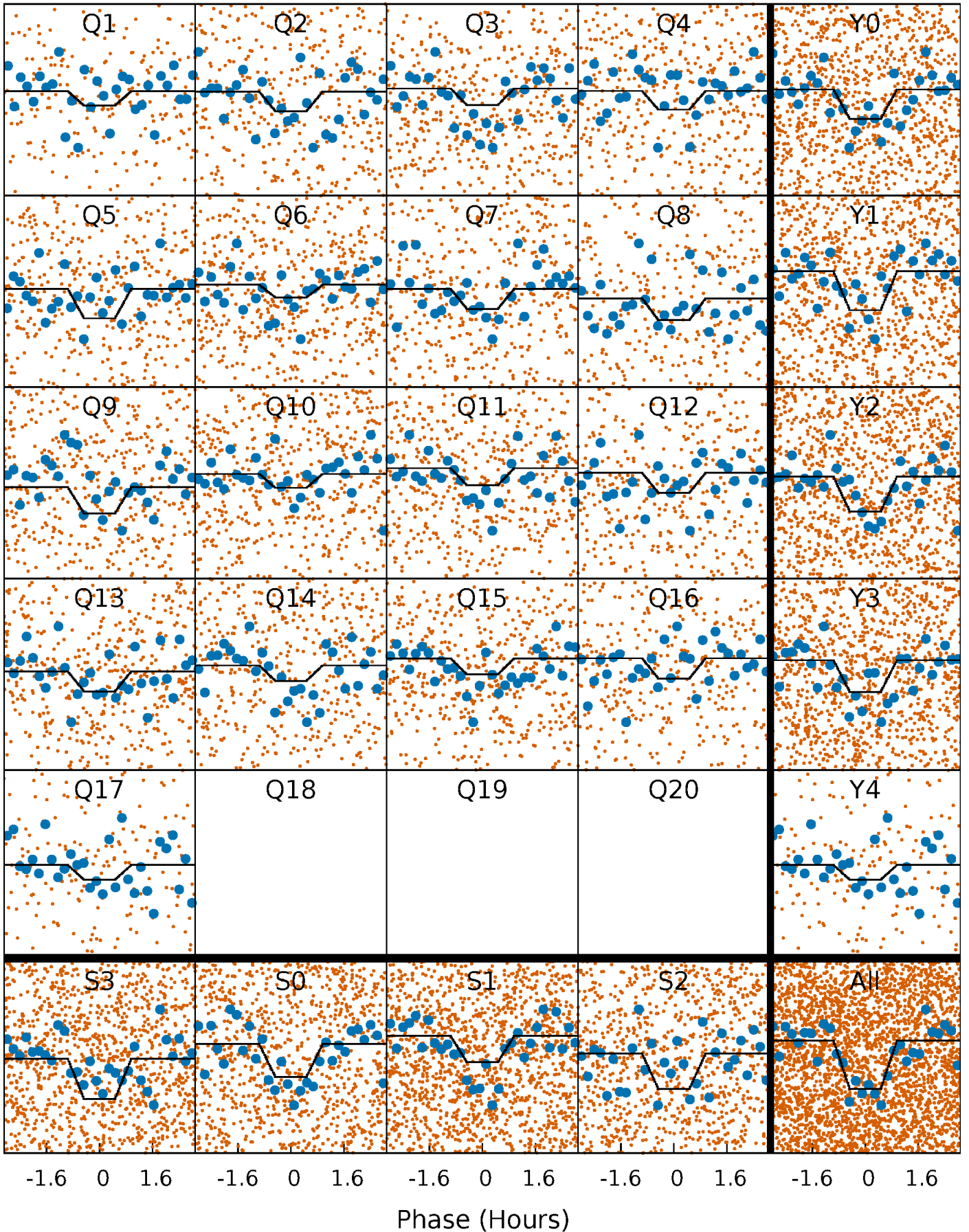
# DV Quarter-Phased Transit Curves

TCE 003241662-01 P= 1.703341 Days  $T_0=132.471010$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

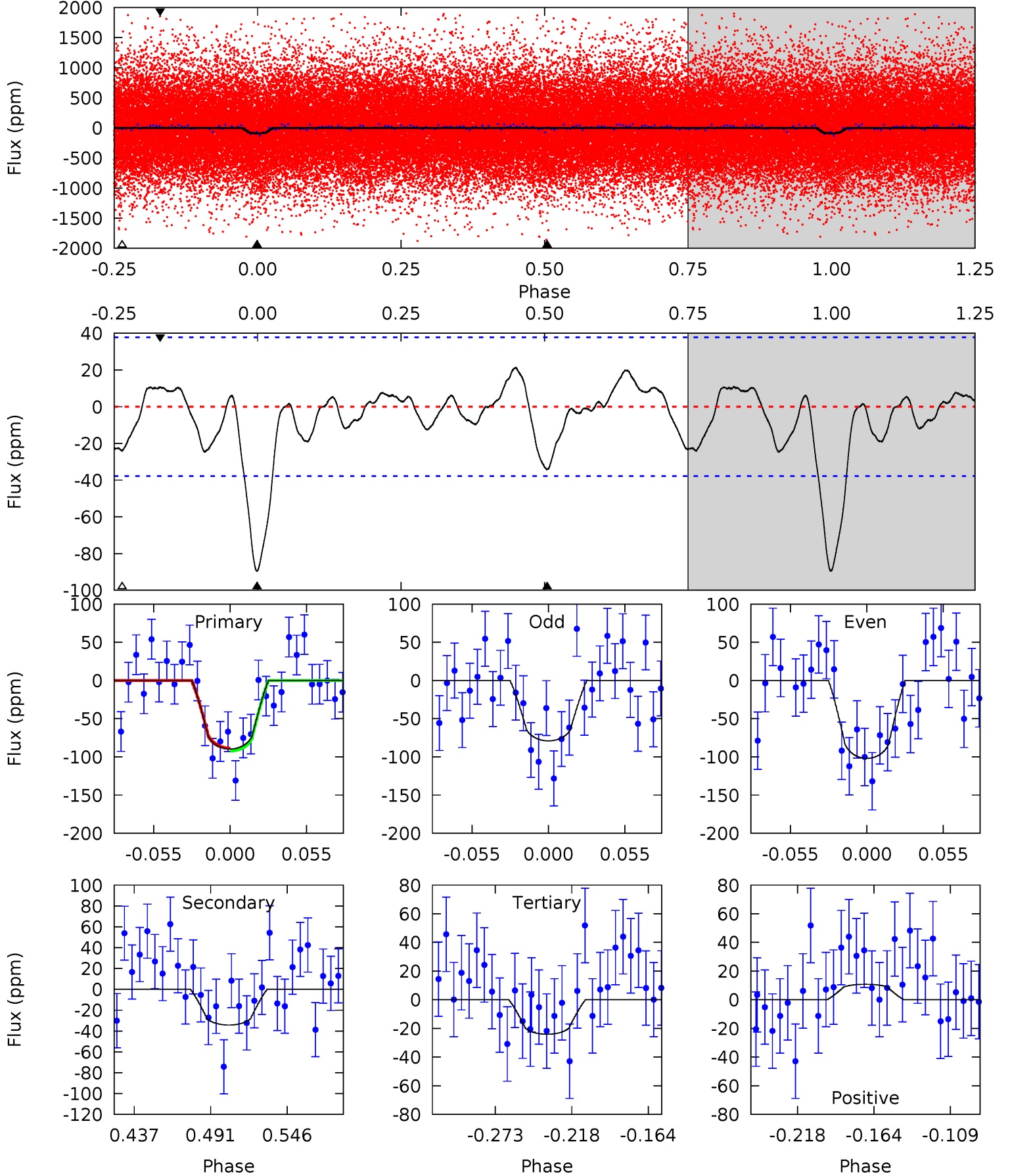
TCE 003241662-01 P= 1.703326 Days  $T_0=132.472623$  (BKJD)



# DV Model-Shift Uniqueness Test

003241662-01, P = 1.703341 Days, E = 130.767669 Days

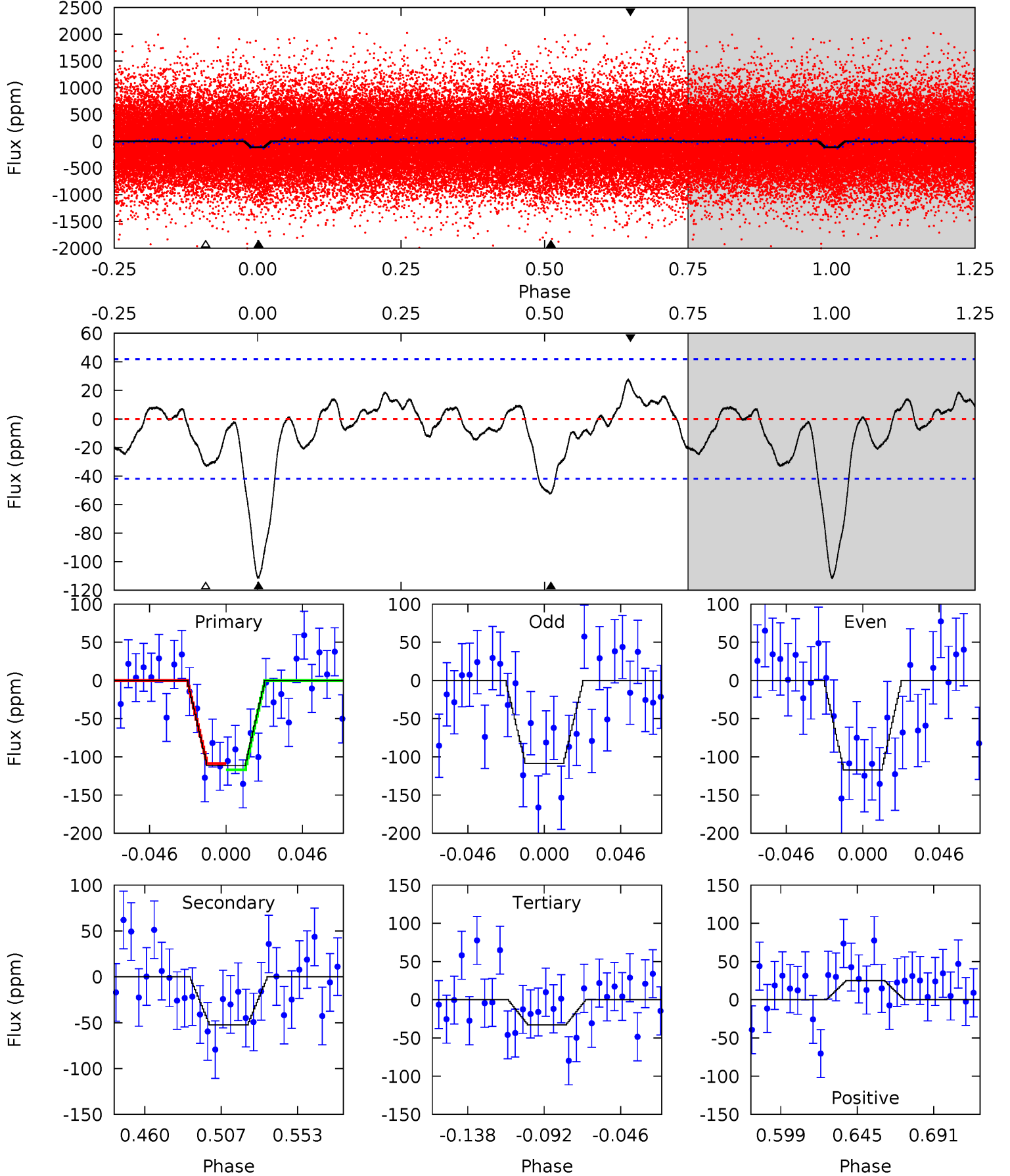
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	4.25	2.99	1.34	4.69	1.92	1.31	8.13	9.78	1.26	2.91	1.42	1.06	0.19	0.22



# Alt Model-Shift Uniqueness Test

003241662-01, P = 1.703326 Days, E = 130.769297 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	5.91	3.72	2.84	4.72	1.99	1.38	8.87	9.75	2.20	3.08	0.49	1.02	0.20	0.48





### Stellar Parameters For KIC 003241662

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5749^{+153}_{-170}$	$4.547^{+0.036}_{-0.204}$	$-0.100^{+0.300}_{-0.300}$	$0.864^{+0.263}_{-0.082}$	$0.961^{+0.106}_{-0.116}$	$2.097^{+0.420}_{-1.094}$
	+3%/-3%	+1%/-4%	+300%/-300%	+30%/-9%	+11%/-12%	+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 003241662-01 / KOI 6313.01

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-34 \pm 8$	$1.00^{+0.62}_{-0.52}$	$2038^{+143}_{-95}$	$4524^{+1840}_{-743}$	$14^{+48}_{-9}$
Alt.	$-52 \pm 9$	$0.99^{+0.57}_{-0.54}$	$2036^{+150}_{-96}$	$4952^{+2313}_{-829}$	$21^{+83}_{-12}$

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

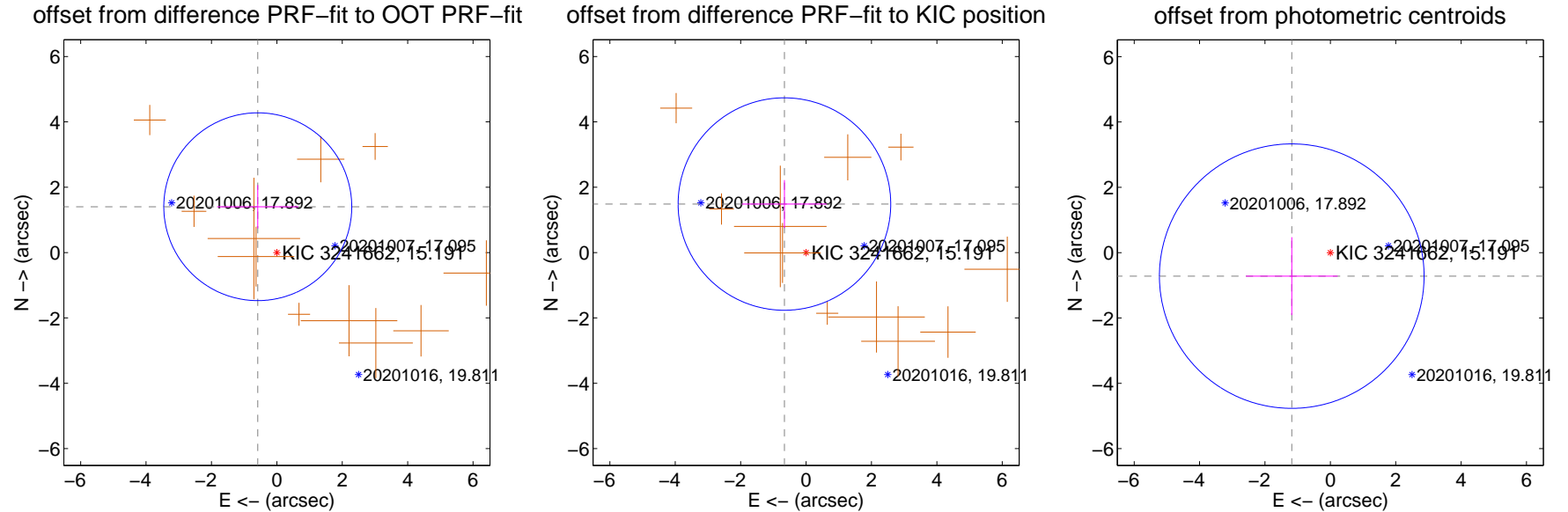
## DV Centroid Data

Supplemental centroid analysis for 003241662-01. Kepler magnitude: 15.19. Transit SNR 10.12

There are 0 quarters with good PRF difference image offsets

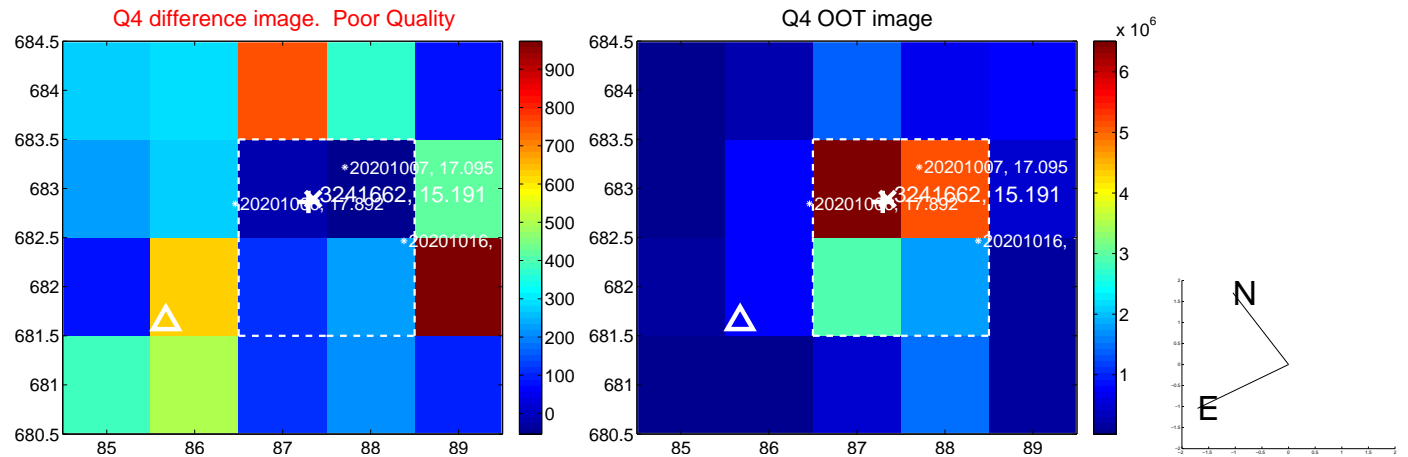
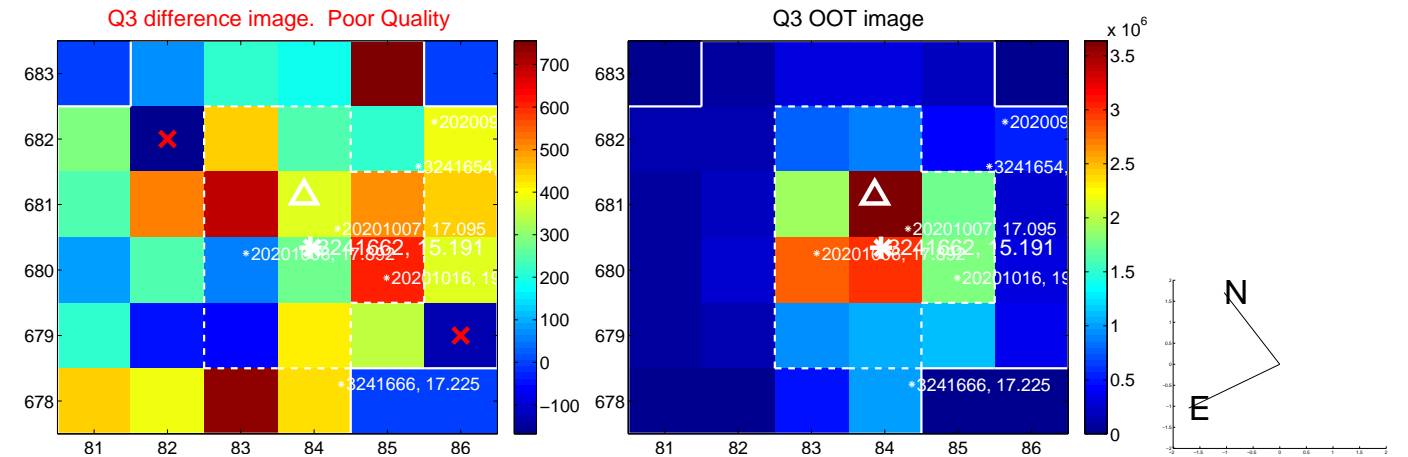
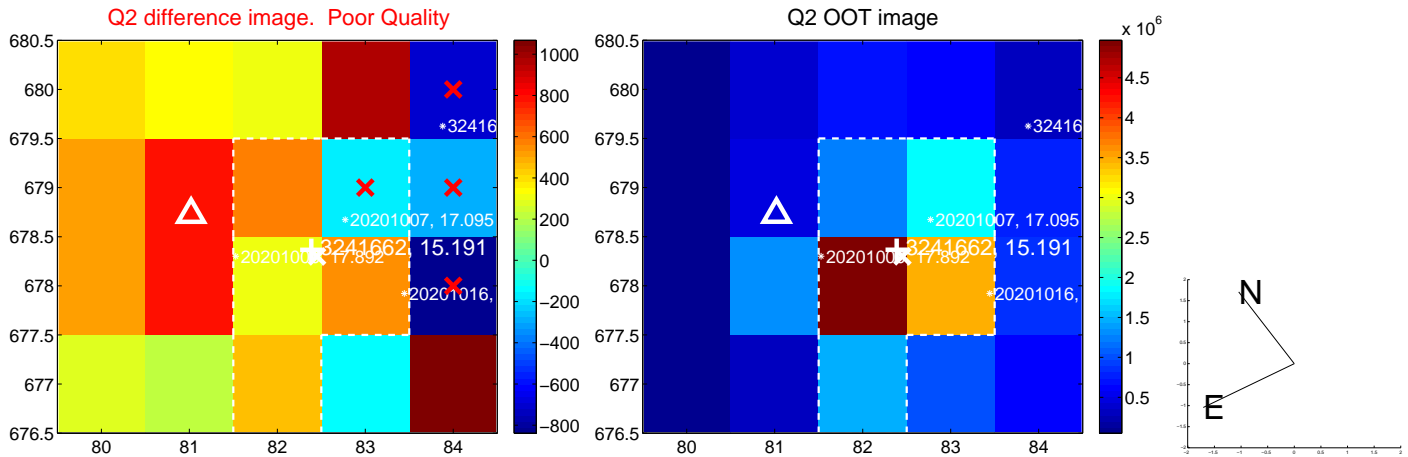
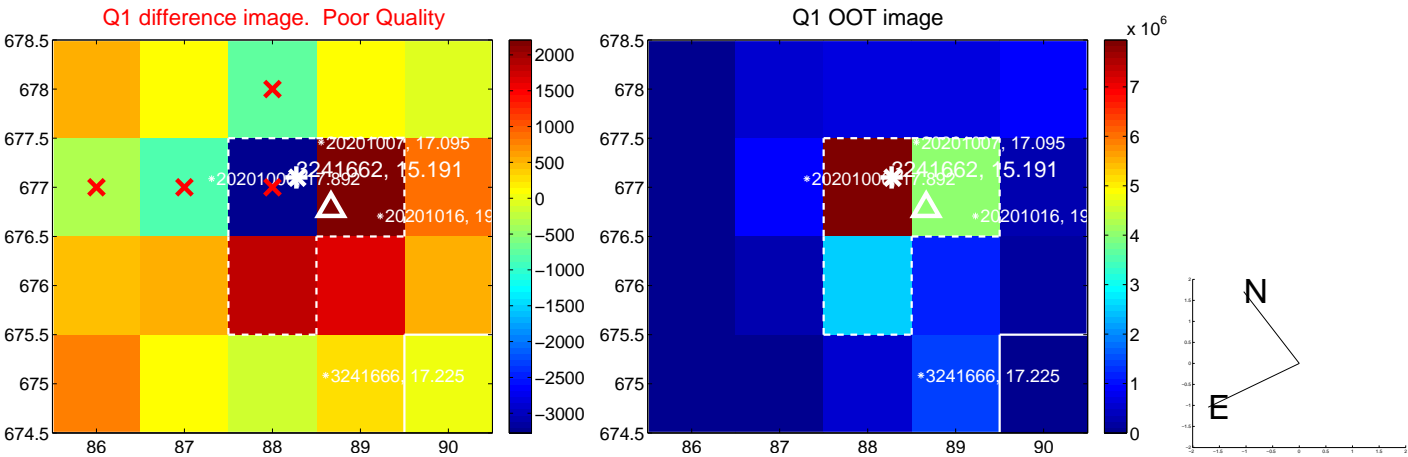
The direct PRF centroid is offset from the target star catalog position by about 0.28 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.519 \pm 0.958$	1.59	$0.584 \pm 1.244$	$1.403 \pm 0.665$
PRF-fit source offset from KIC position	$1.626 \pm 1.083$	1.50	$0.662 \pm 1.293$	$1.485 \pm 0.733$
photometric centroid source offset	$1.38 \pm 1.35$	1.02	$1.18 \pm 1.40$	$-0.72 \pm 1.19$

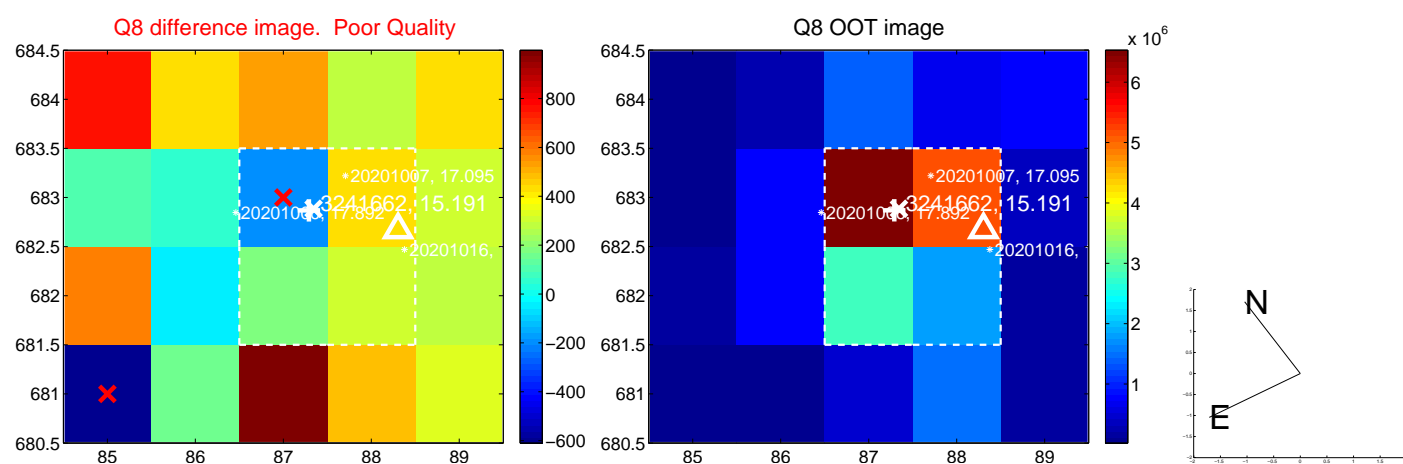
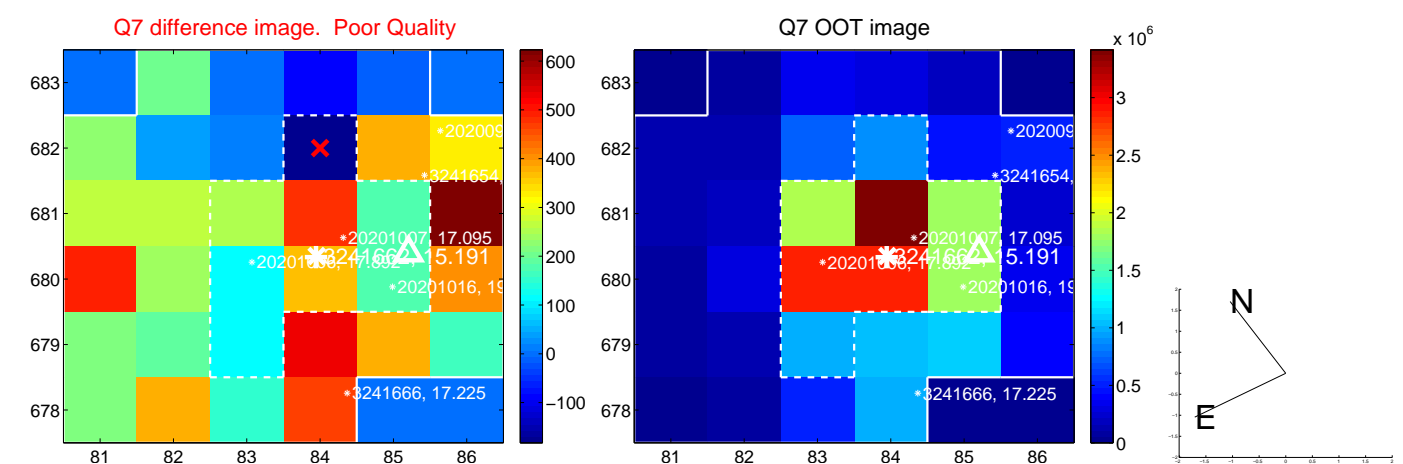
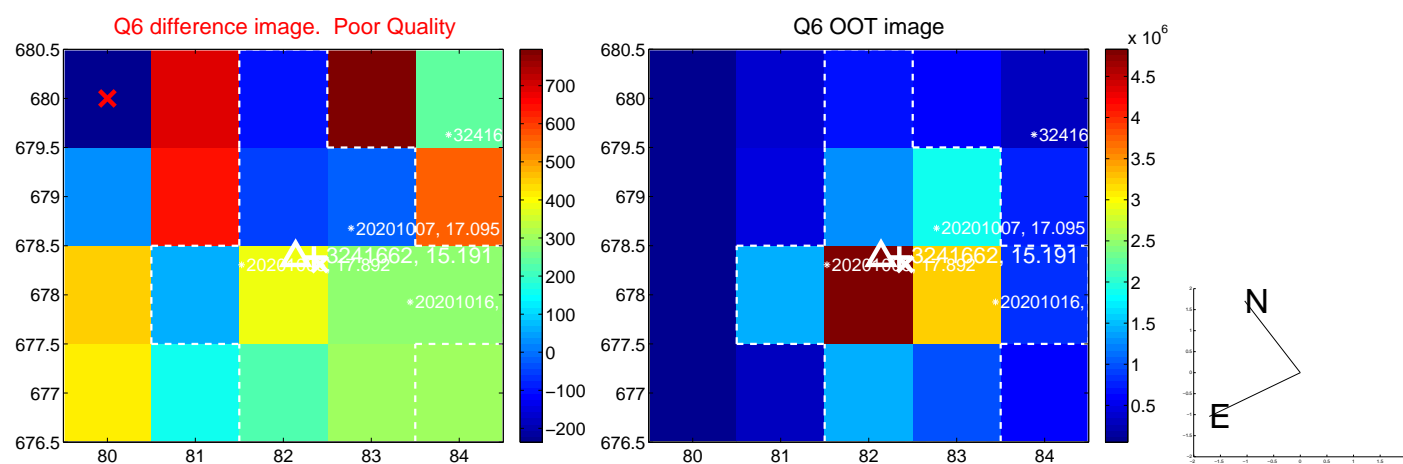
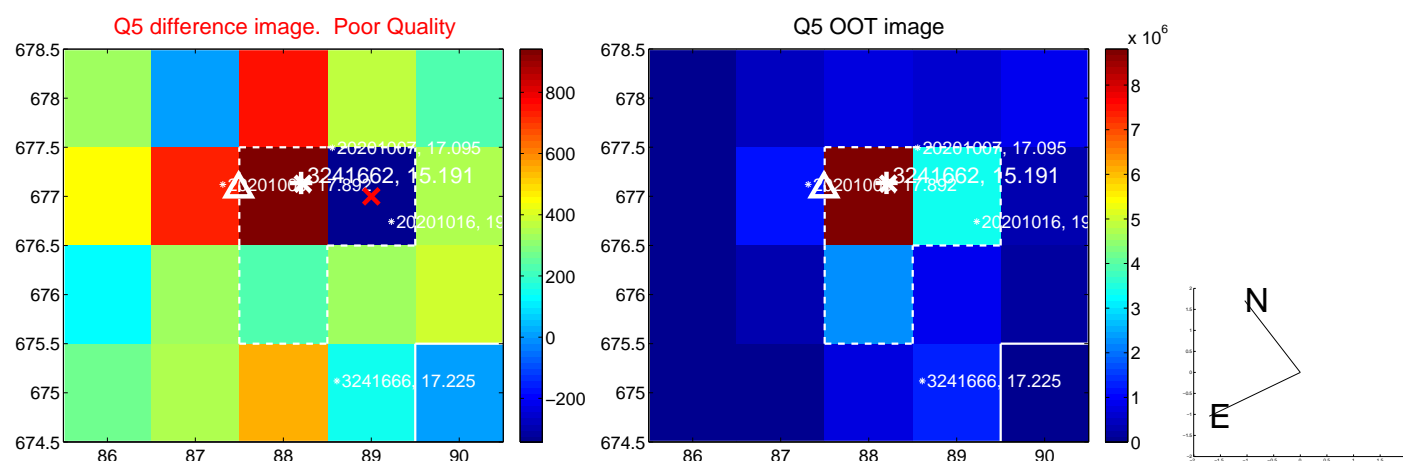


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

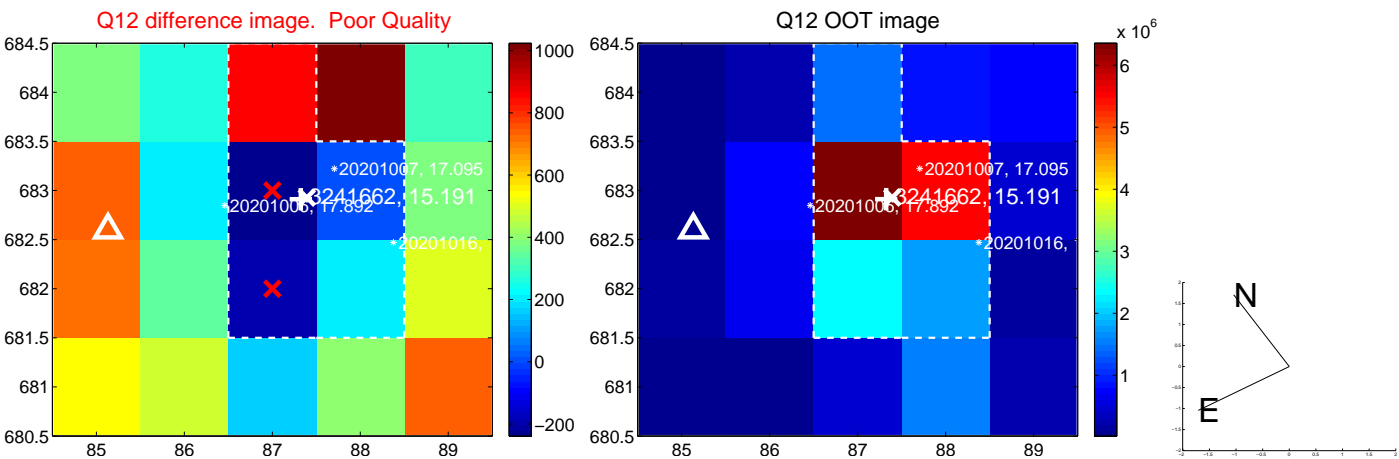
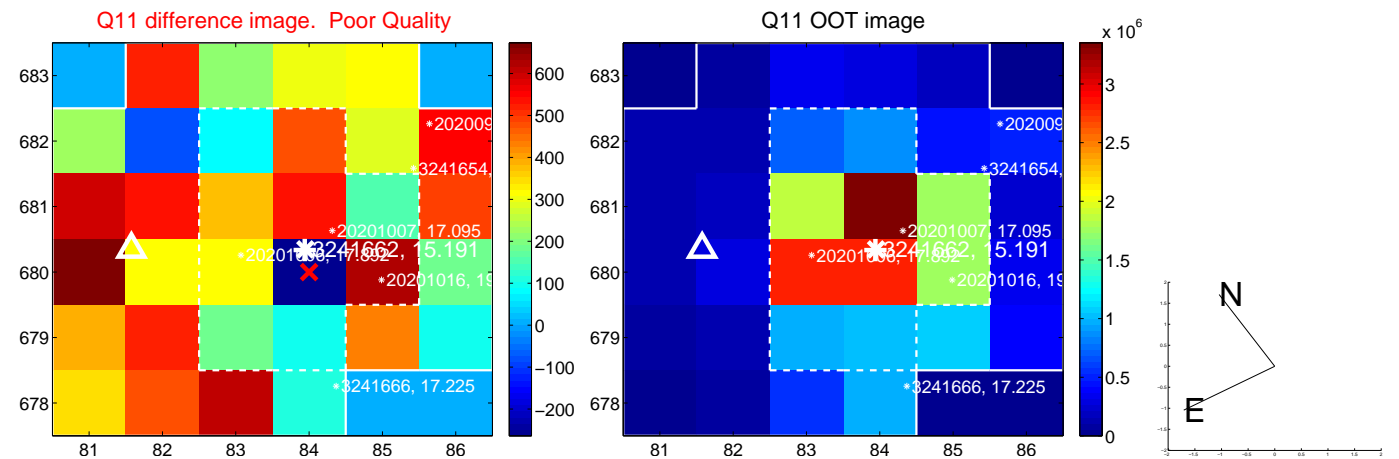
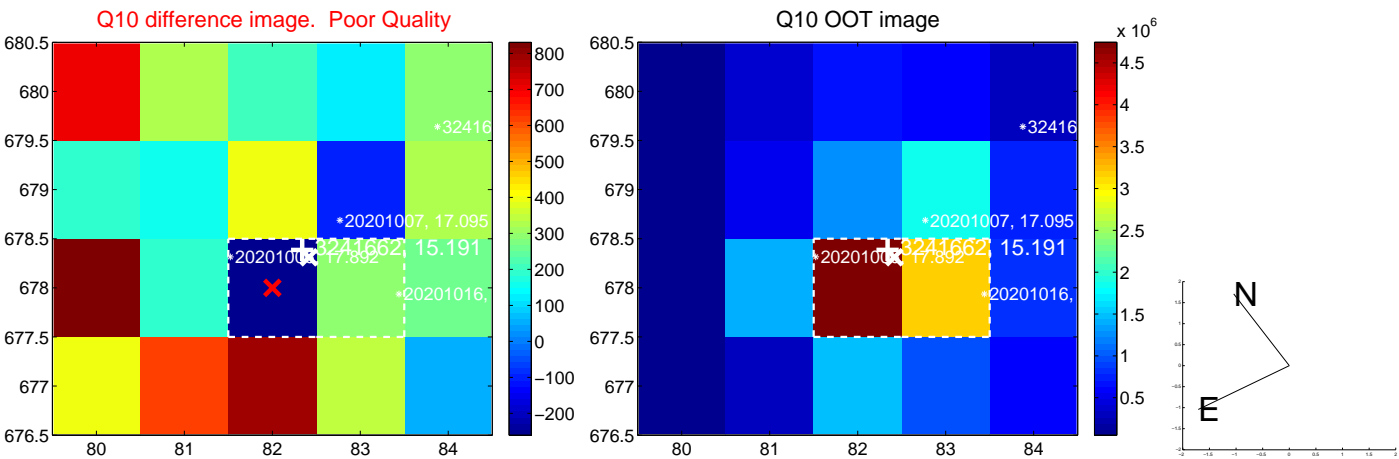
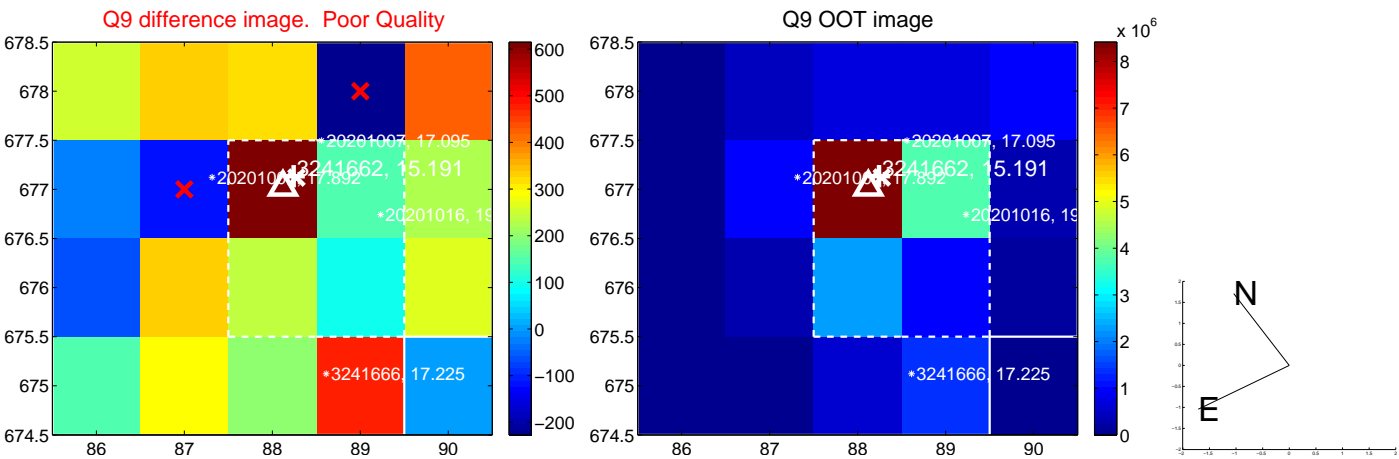


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

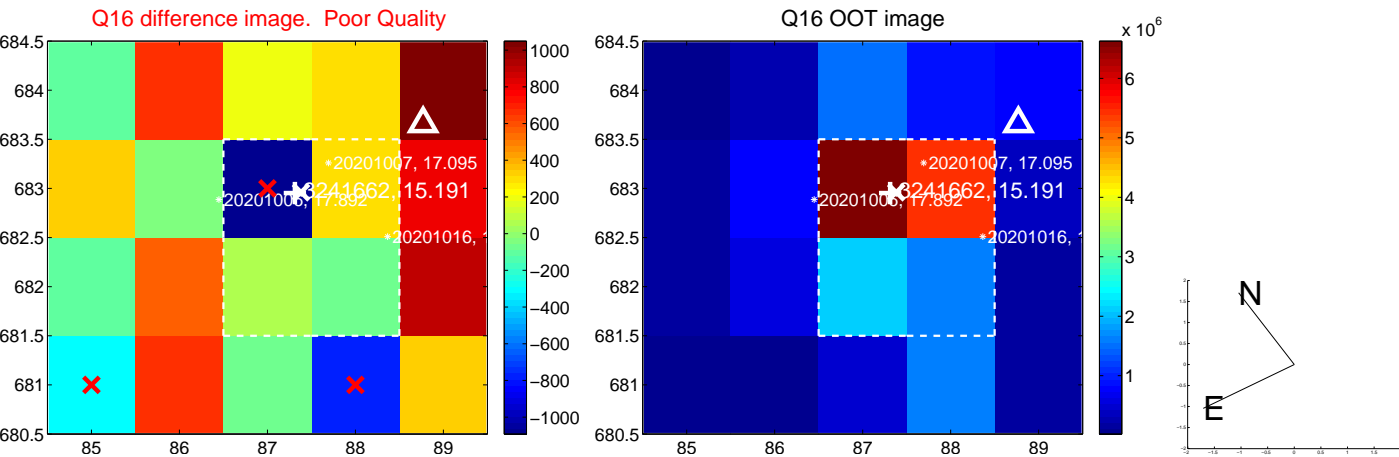
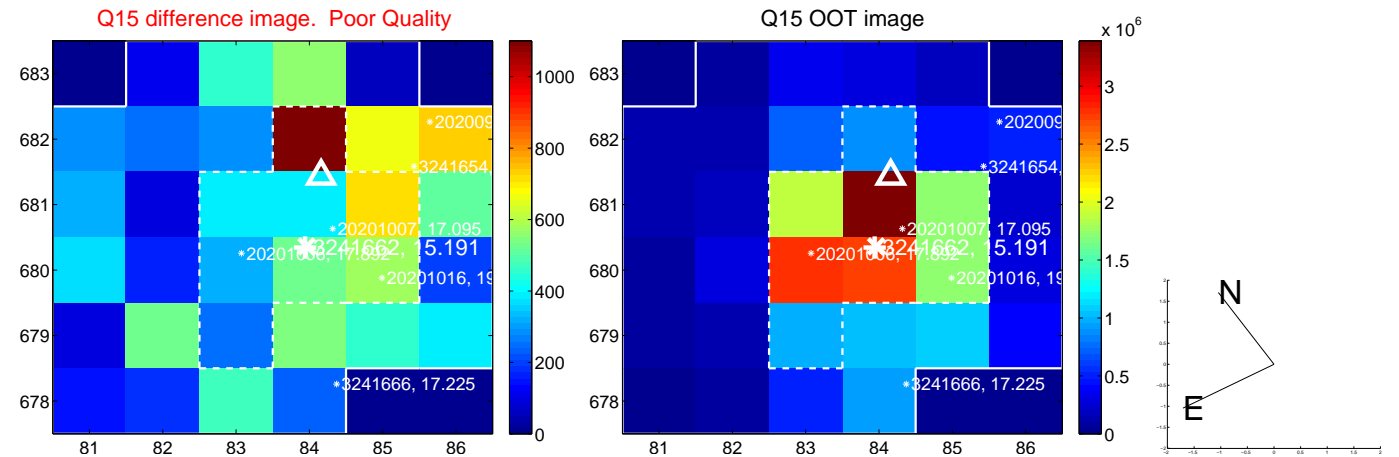
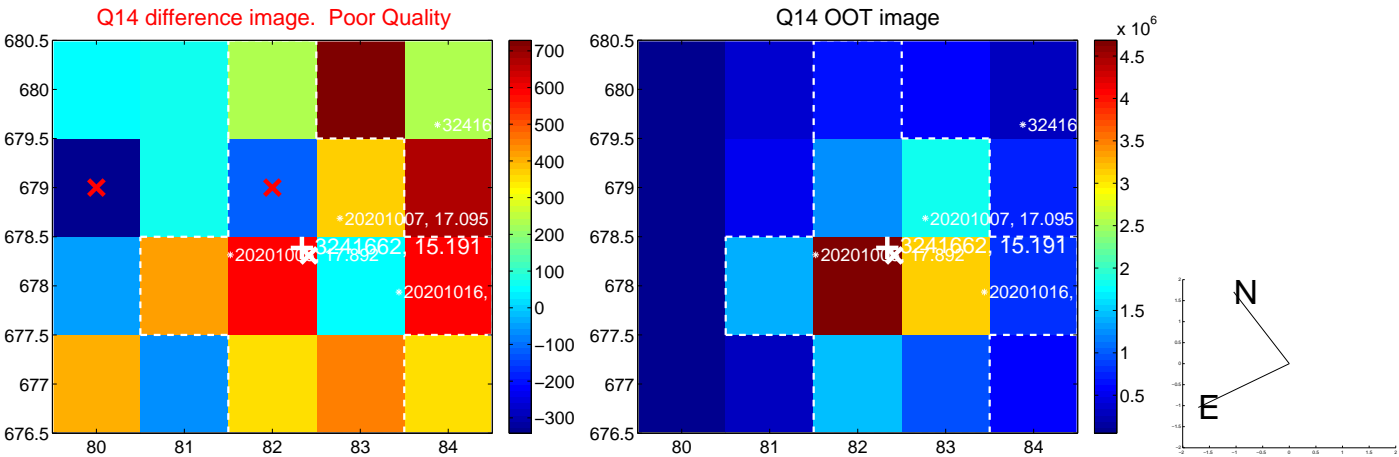
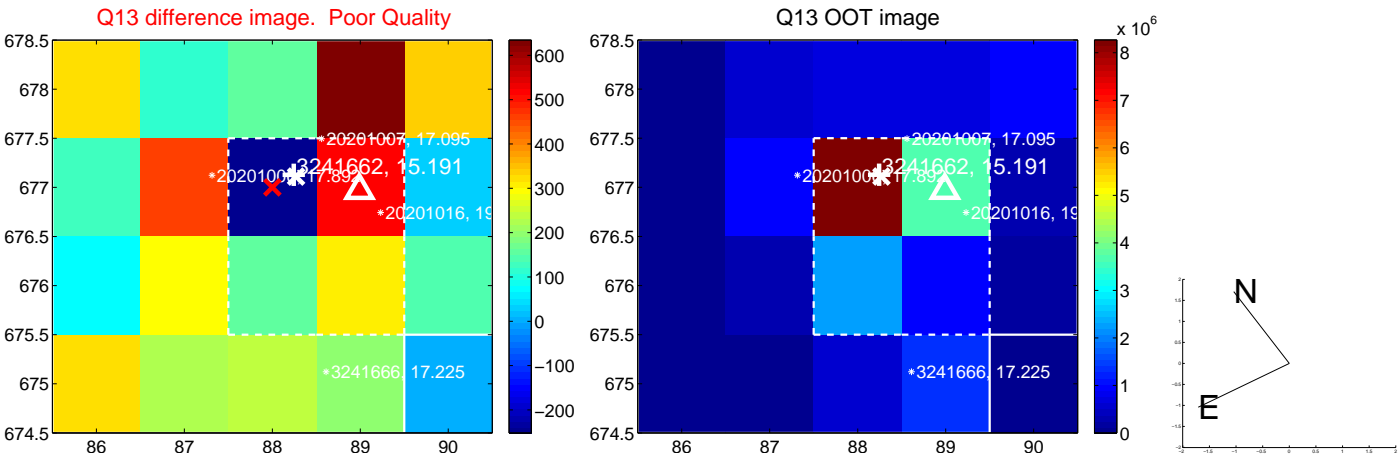




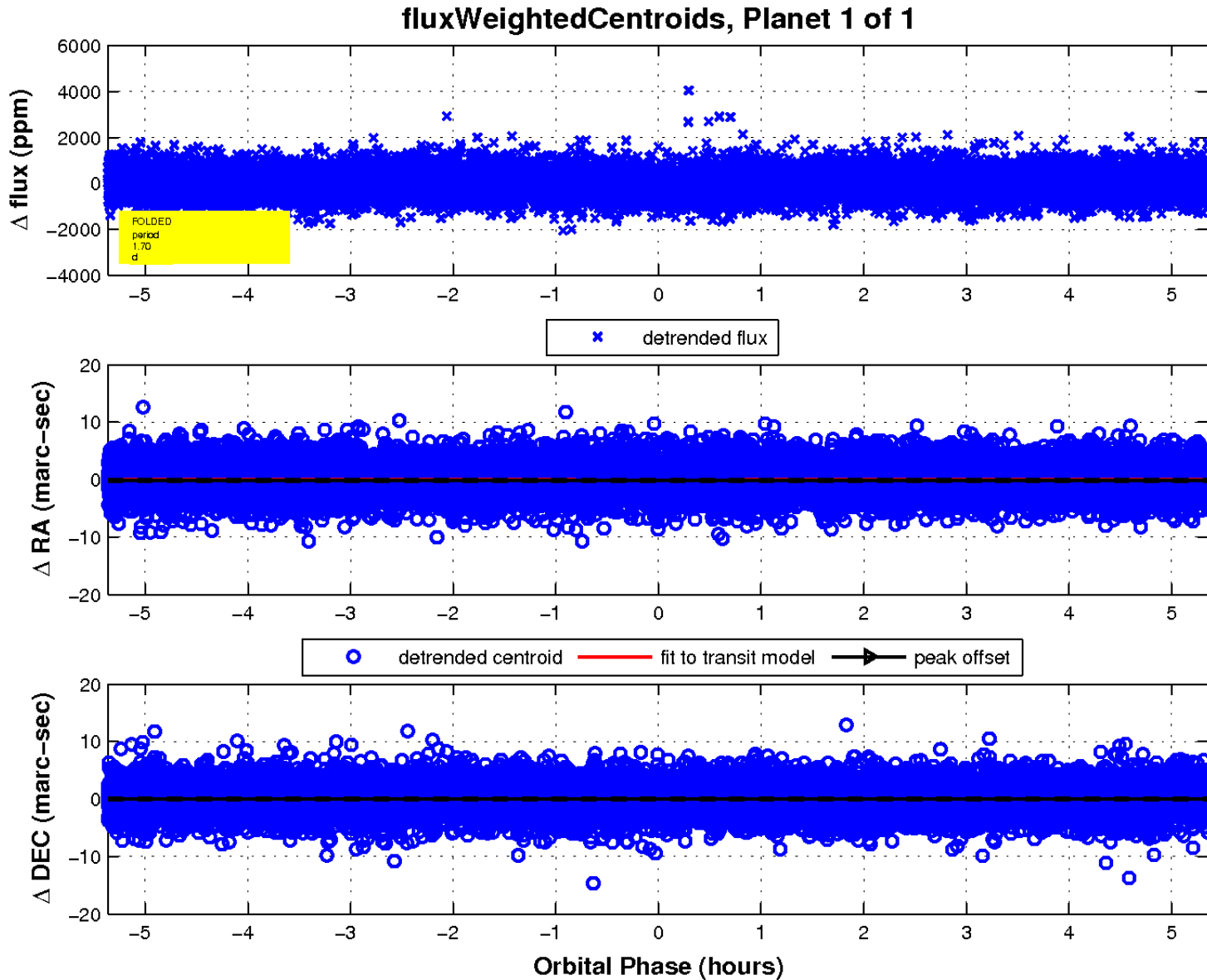
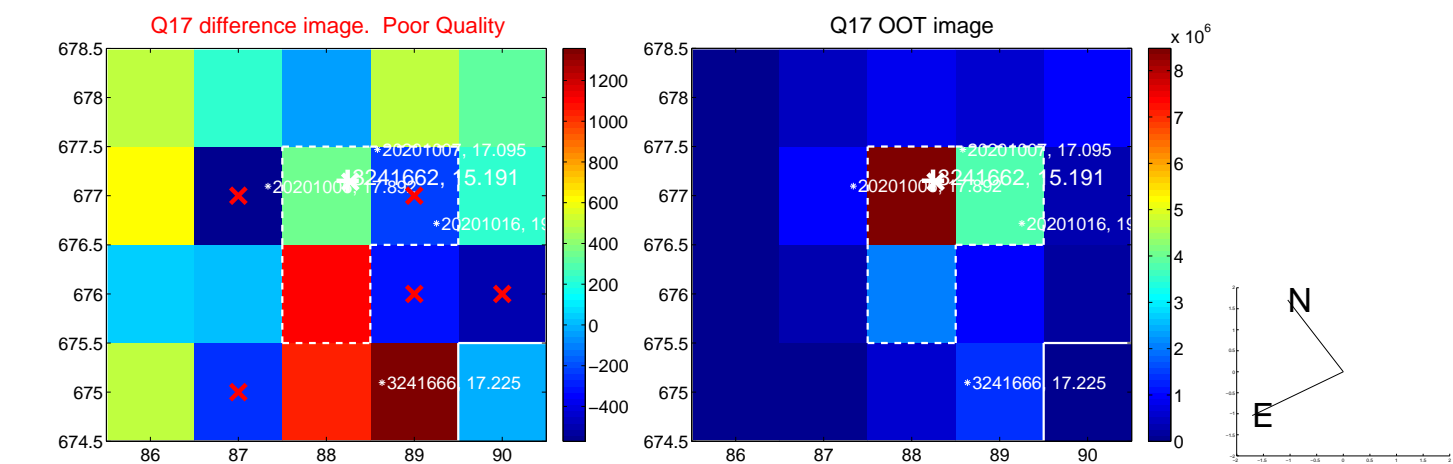
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

