

# KIC 002017803

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002017803-01	OBS	No	0.610604	132.068494	29.7	4.438	7.3	1.8	0.63	5211	0.34	1822.68

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002017803-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—HALO_GHOST

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

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

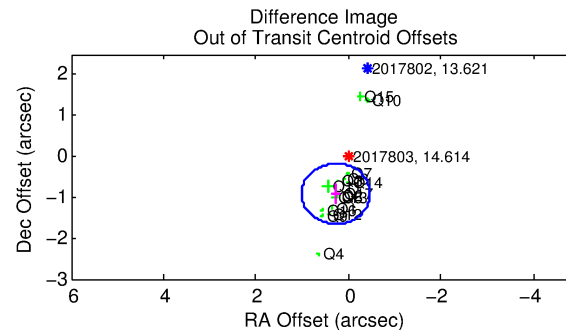
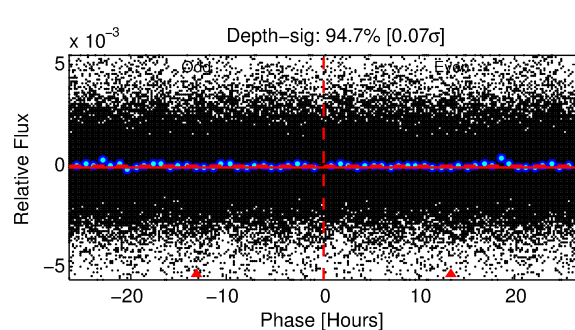
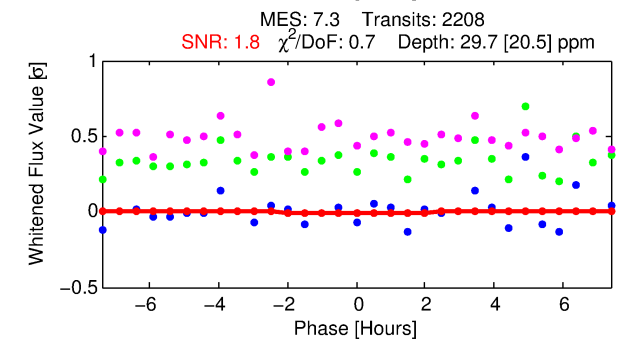
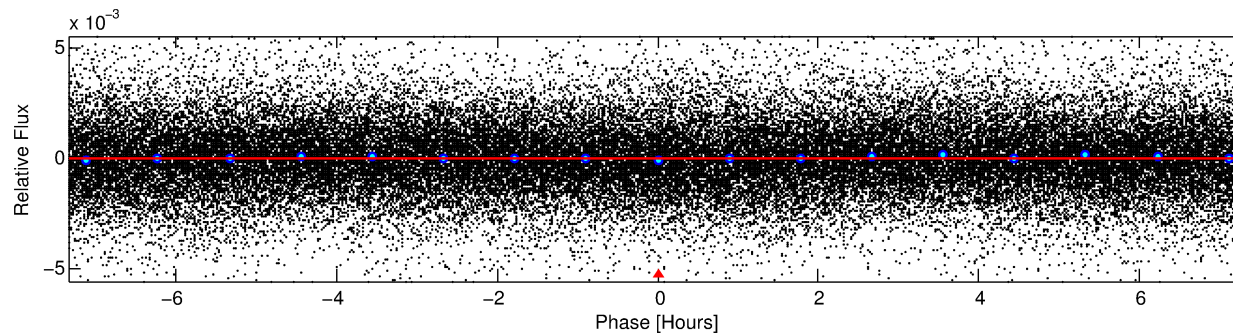
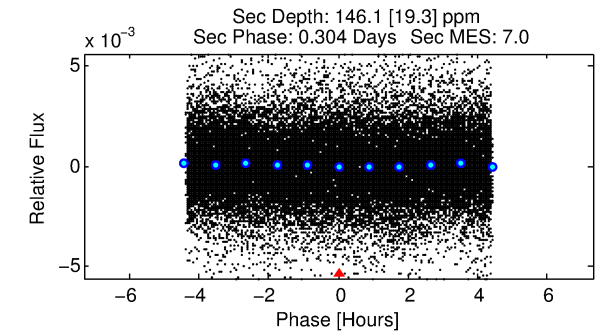
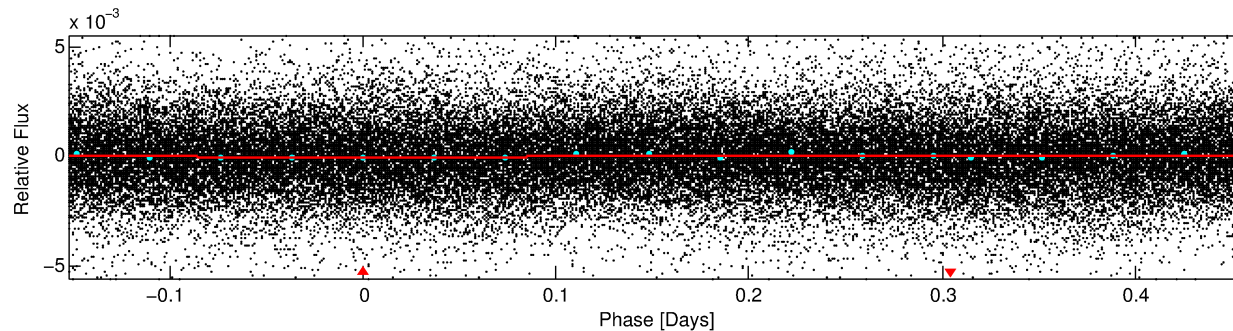
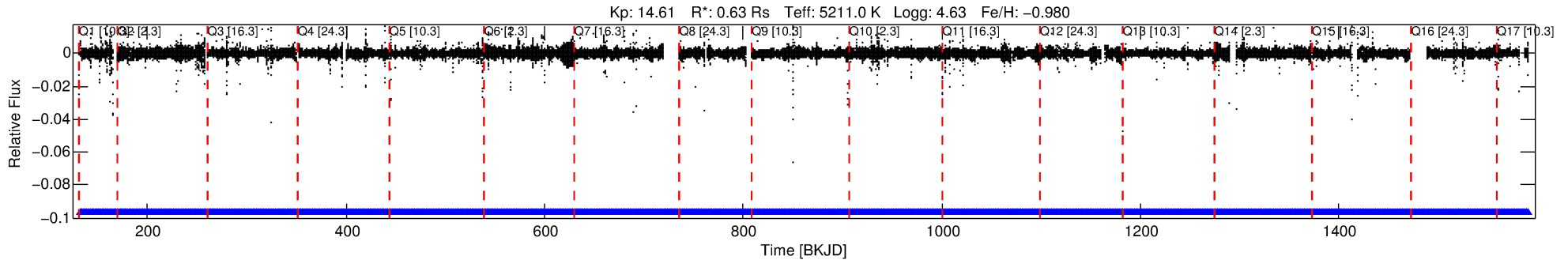
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002017803-01

No Significant Match Found

# DV One-Page Summary

KIC: 2017803 Candidate: 1 of 1 Period: 0.611 d



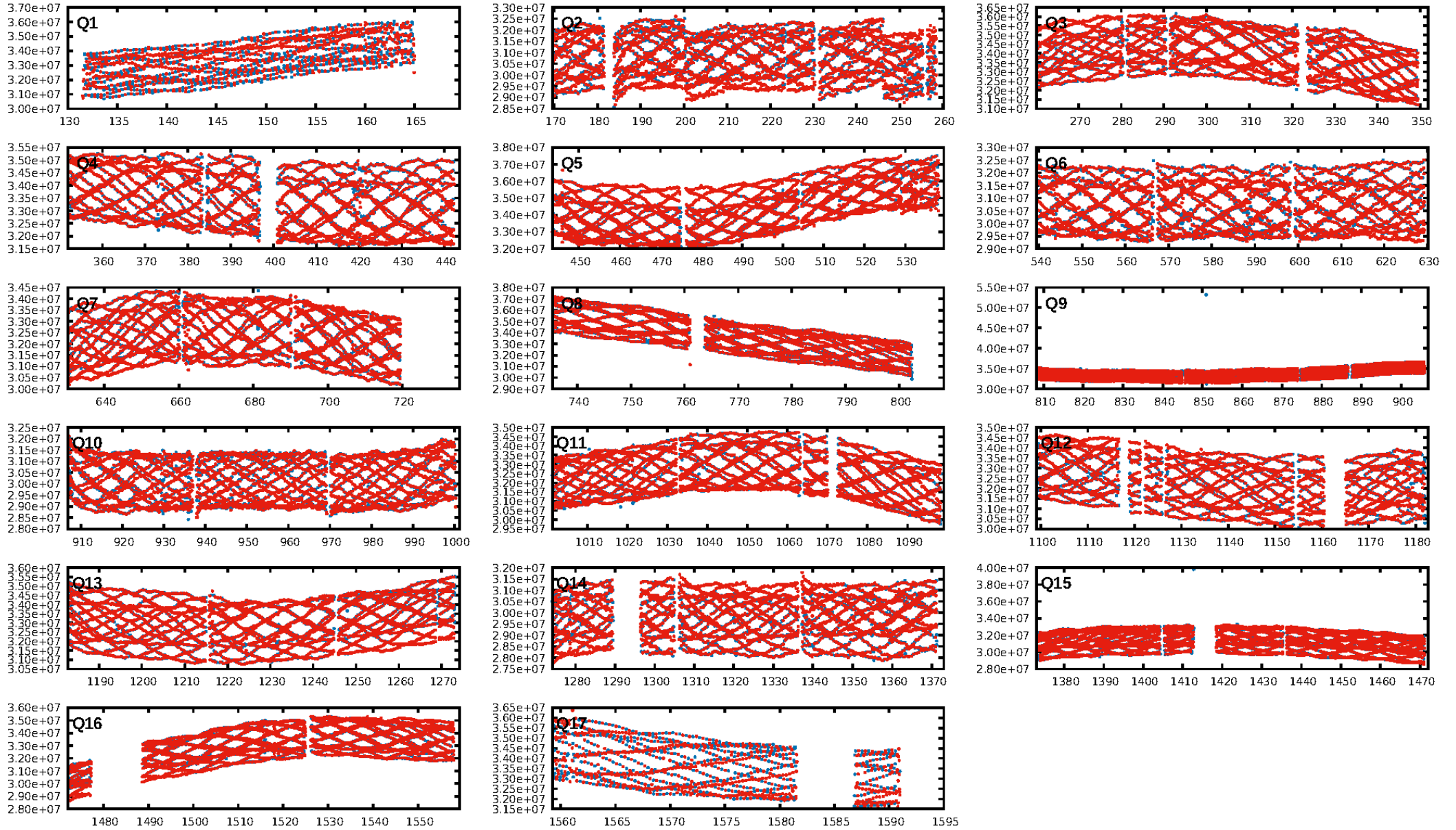
## DV Fit Results:

Period = 0.61060 [0.00005] d  
Epoch = 132.0685 [0.0109] BKJD  
Rp/R\* = 0.0050 [0.0168]  
a/R\* = 1.23 [6.16]  
b = 0.17 [88.02]  
Seff = 1822.68 [305.83]  
Teff = 1666 [70] K  
Rp = 0.34 [1.16] Re  
a = 0.0120 [0.0009] AU  
Ag = 99.68 [674.98] [0.15σ]  
Teffp = 8140 [13779] K [0.47σ]

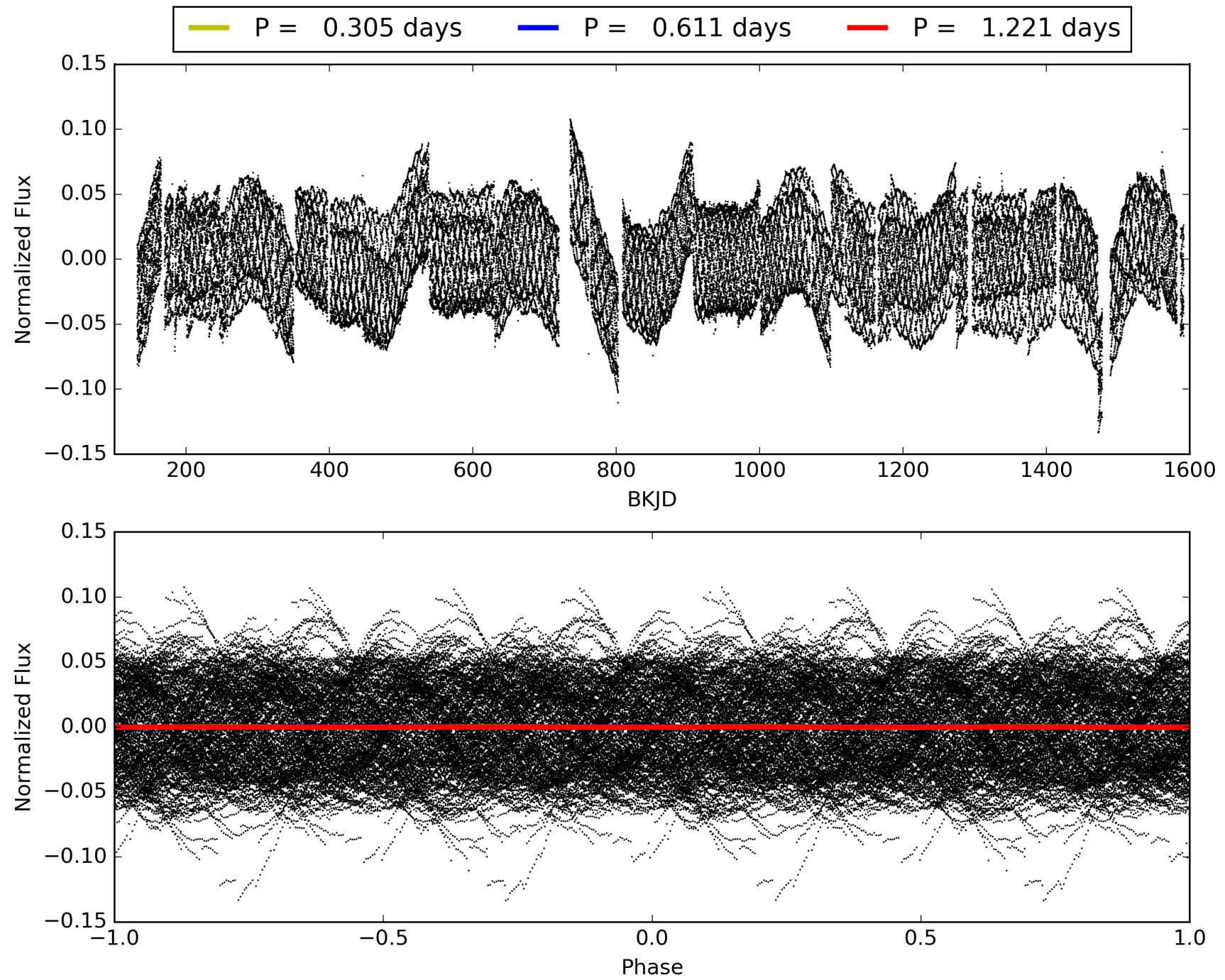
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 1.85e-09  
RollingBand-fgt: 1.00 [2108/2108]  
GhostDiagnostic-chr: -0.1894  
Centroid-sig: 1.2%  
Centroid-so: 3.869 arcsec [1.36σ]  
OotOffset-rm: 0.956 arcsec [3.87σ]  
KicOffset-rm: 0.333 arcsec [1.90σ]  
OotOffset-st: 4/4/3/5 [16]  
KicOffset-st: 4/4/3/5 [16]  
DiffImageQuality-fgm: 0.44 [7/16]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 002017803-01, PDC Light Curves



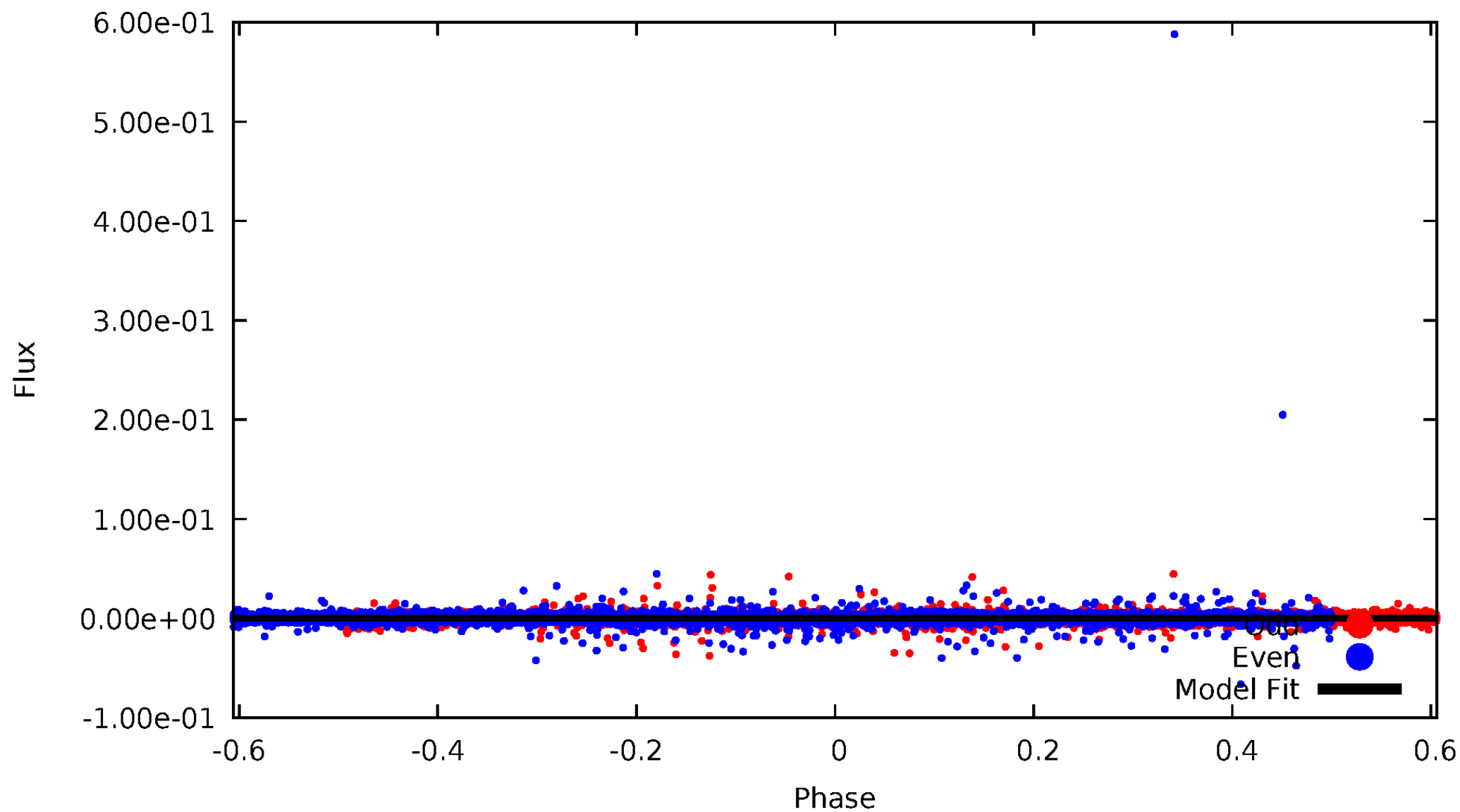
TCE 002017803-01





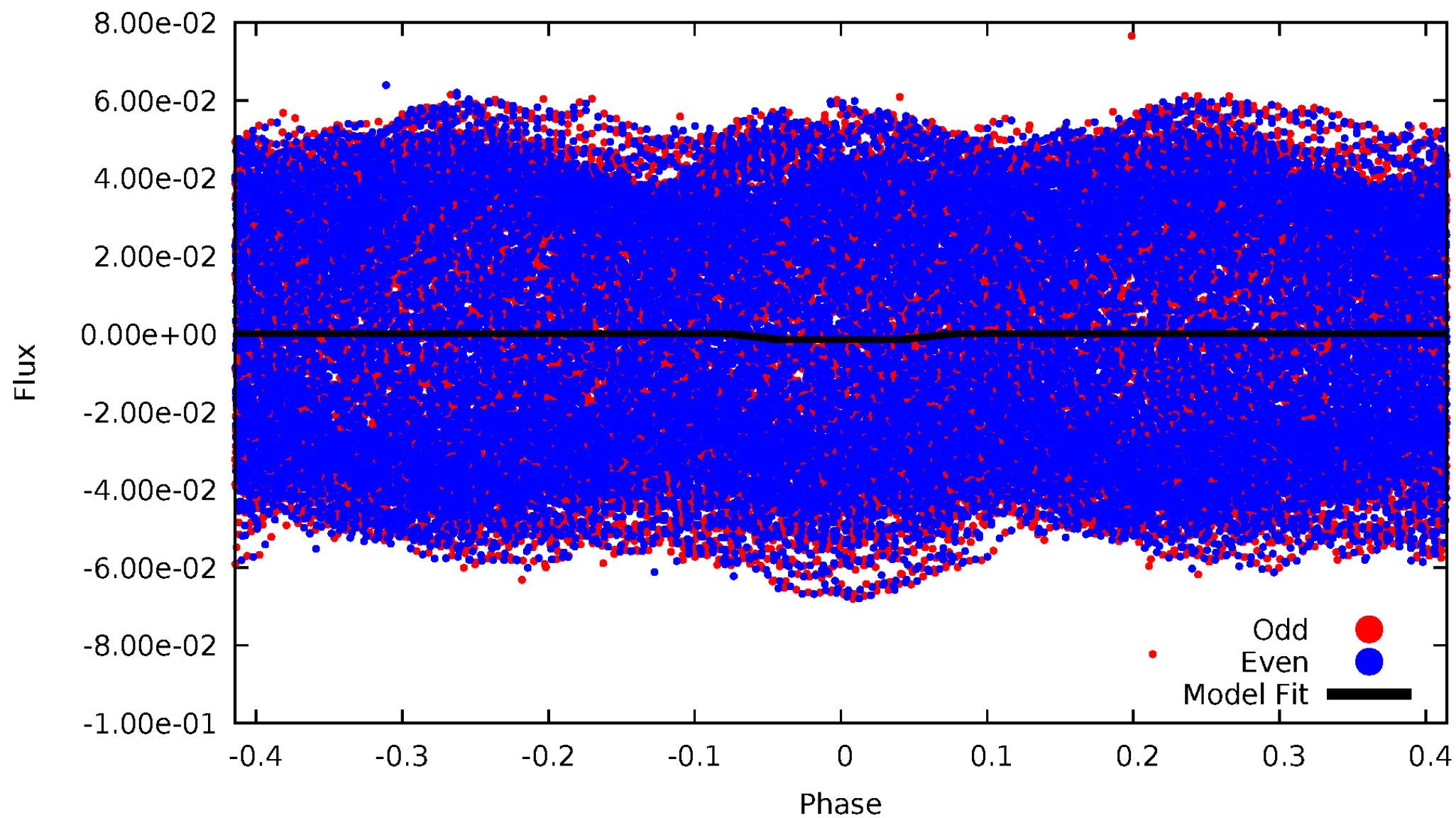
# DV Odd/Even

TCE 002017803-01



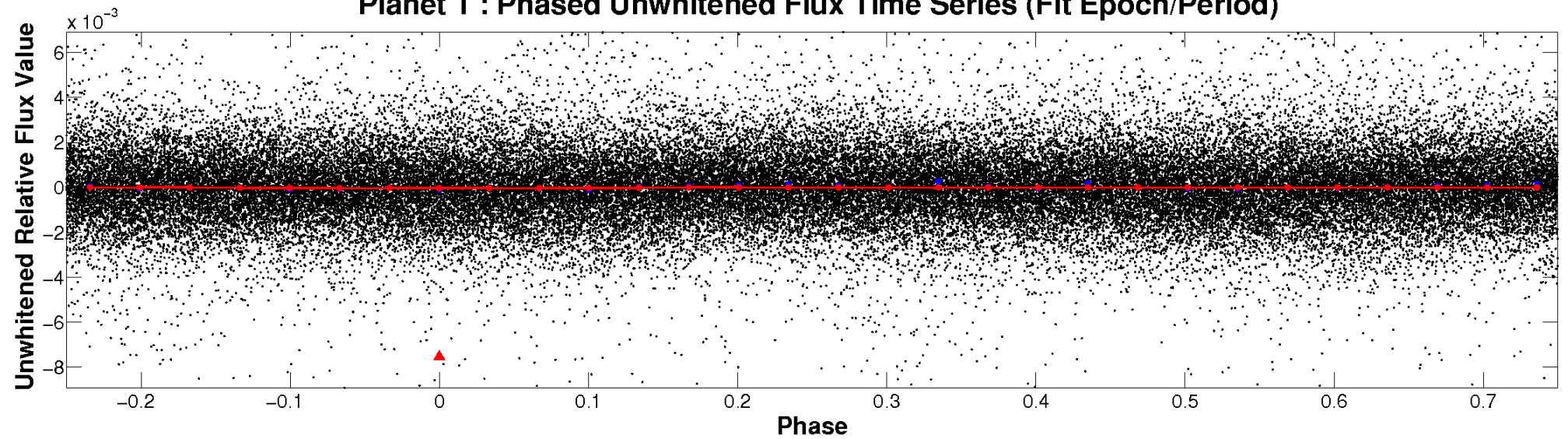
# ALT Odd/Even

TCE 002017803-01

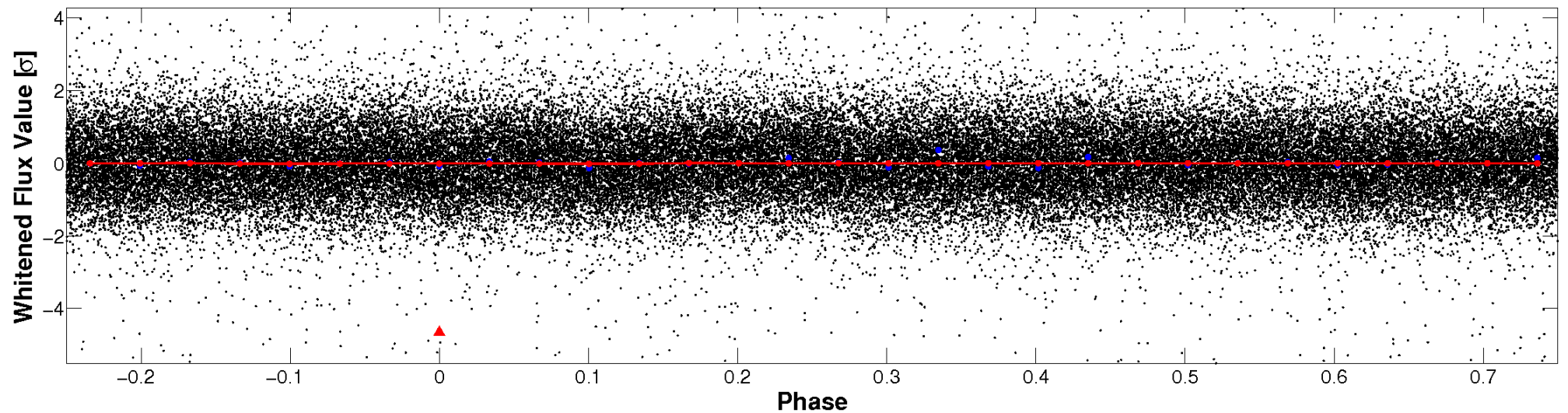


# Non-Whitened Vs. Whitened Light Curve

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

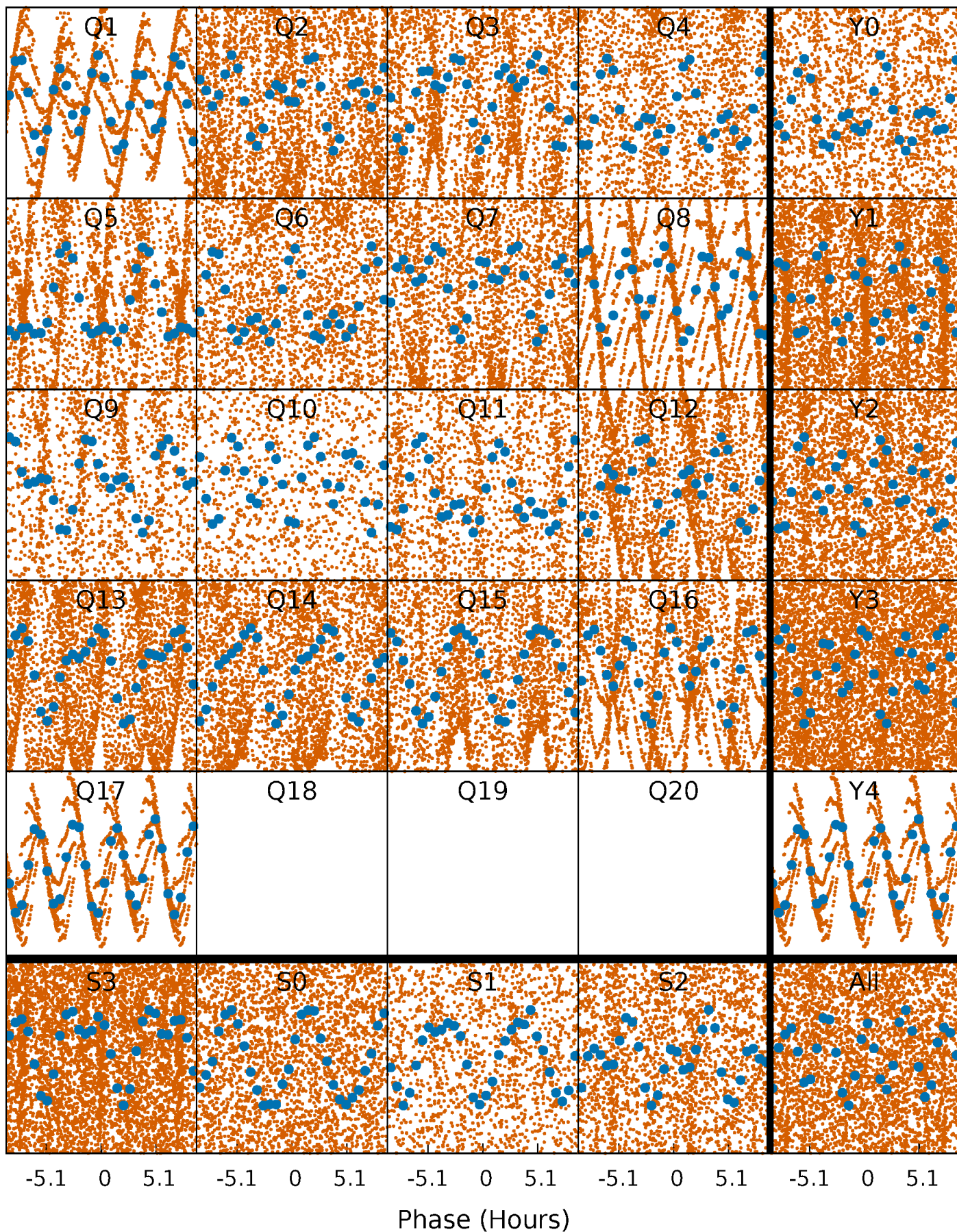


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

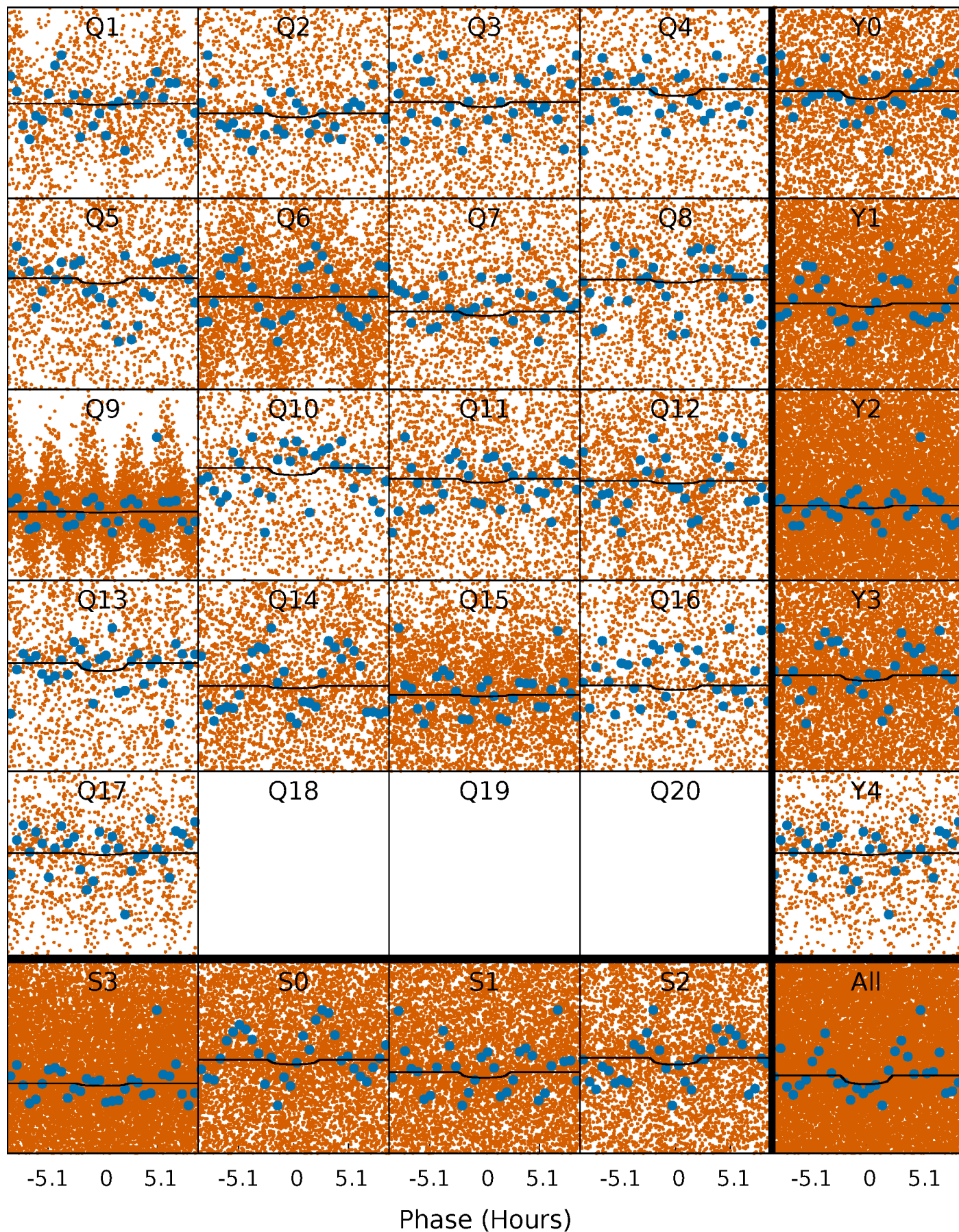
TCE 002017803-01 P= 0.610604 Days  $T_0=132.068494$  (BKJD)





# DV Quarter-Phased Transit Curves

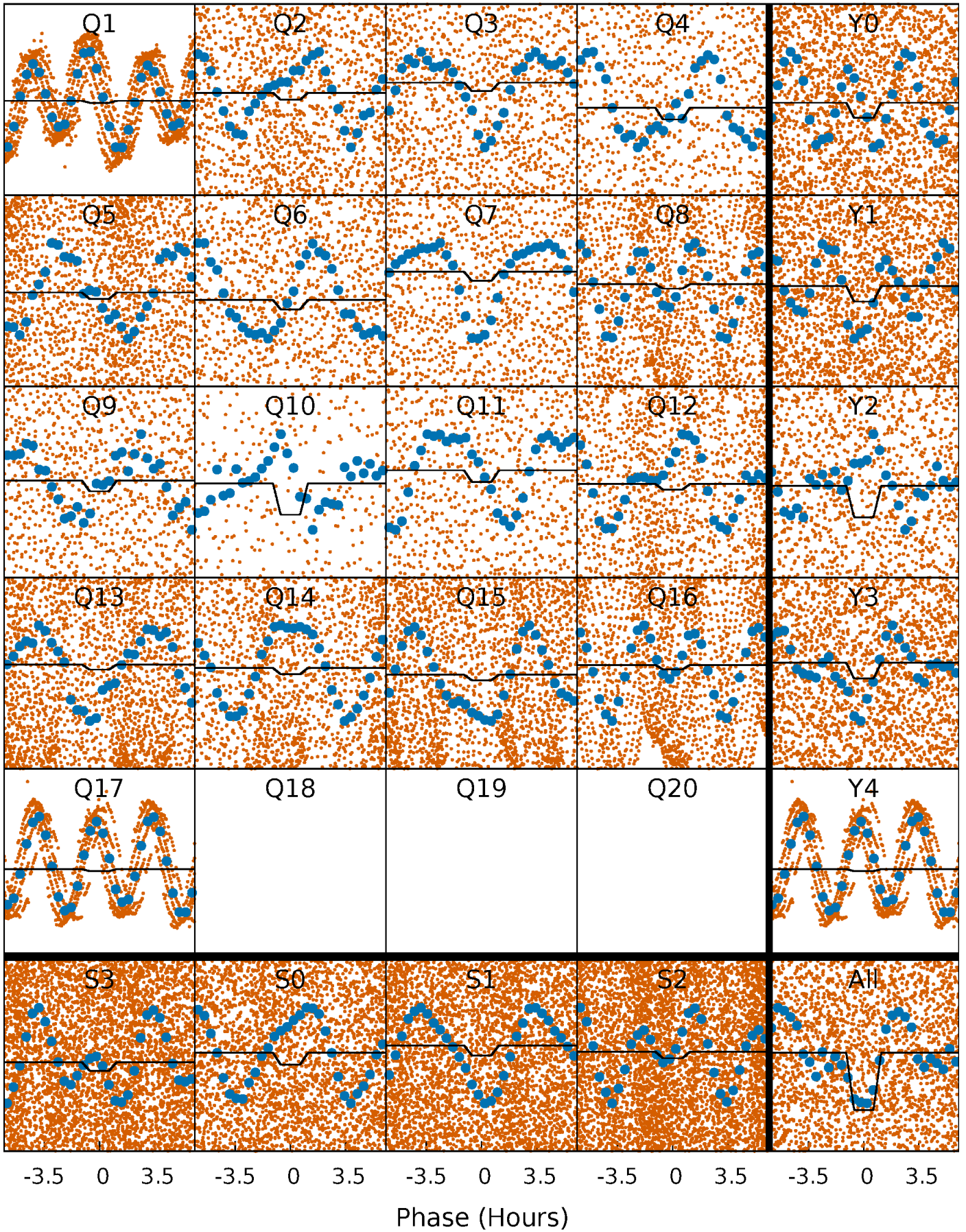
TCE 002017803-01 P= 0.610604 Days  $T_0=132.068494$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

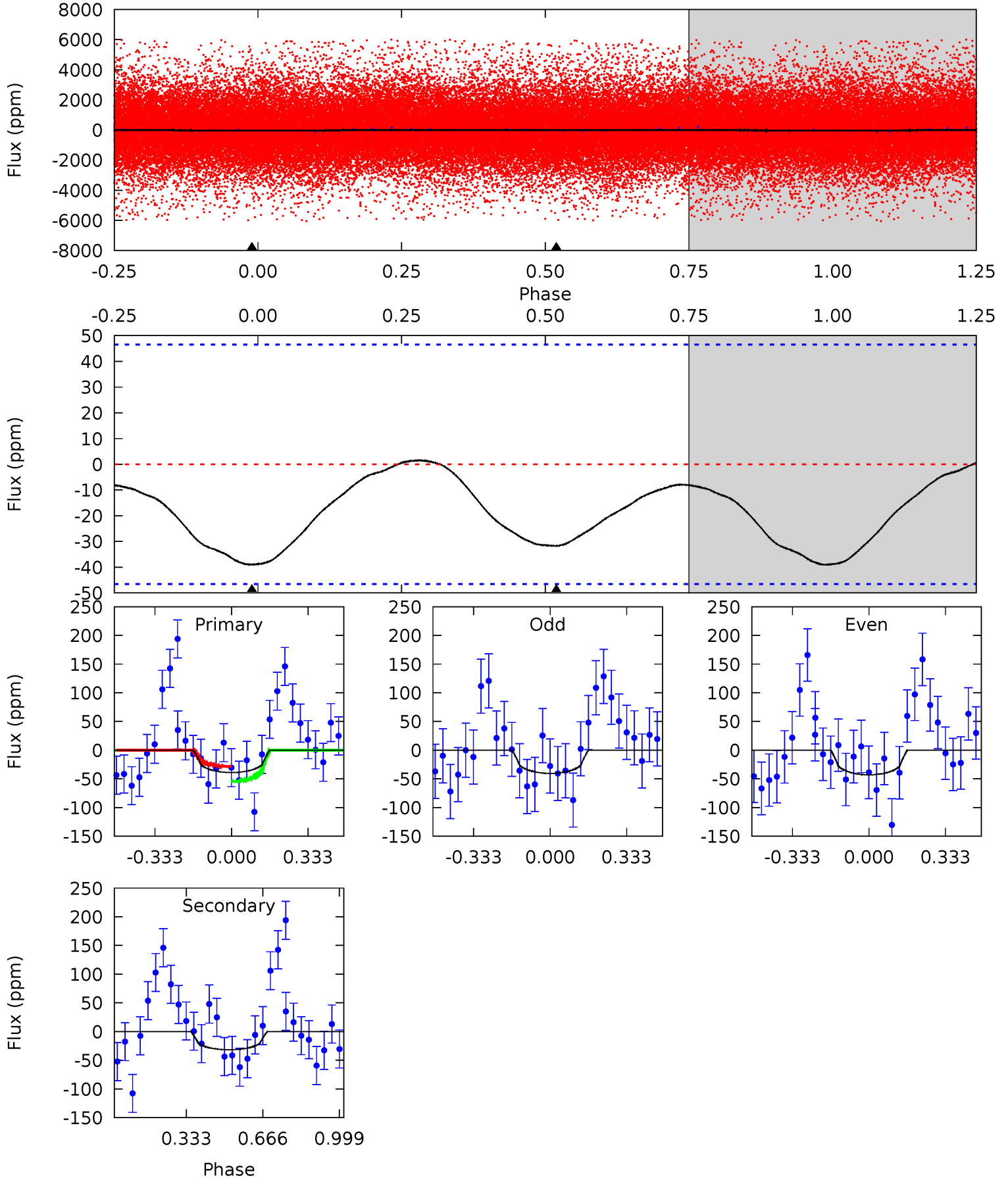
TCE 002017803-01 P= 0.610494 Days  $T_0=132.087923$  (BKJD)



# DV Model-Shift Uniqueness Test

002017803-01, P = 0.610604 Days, E = 131.457890 Days

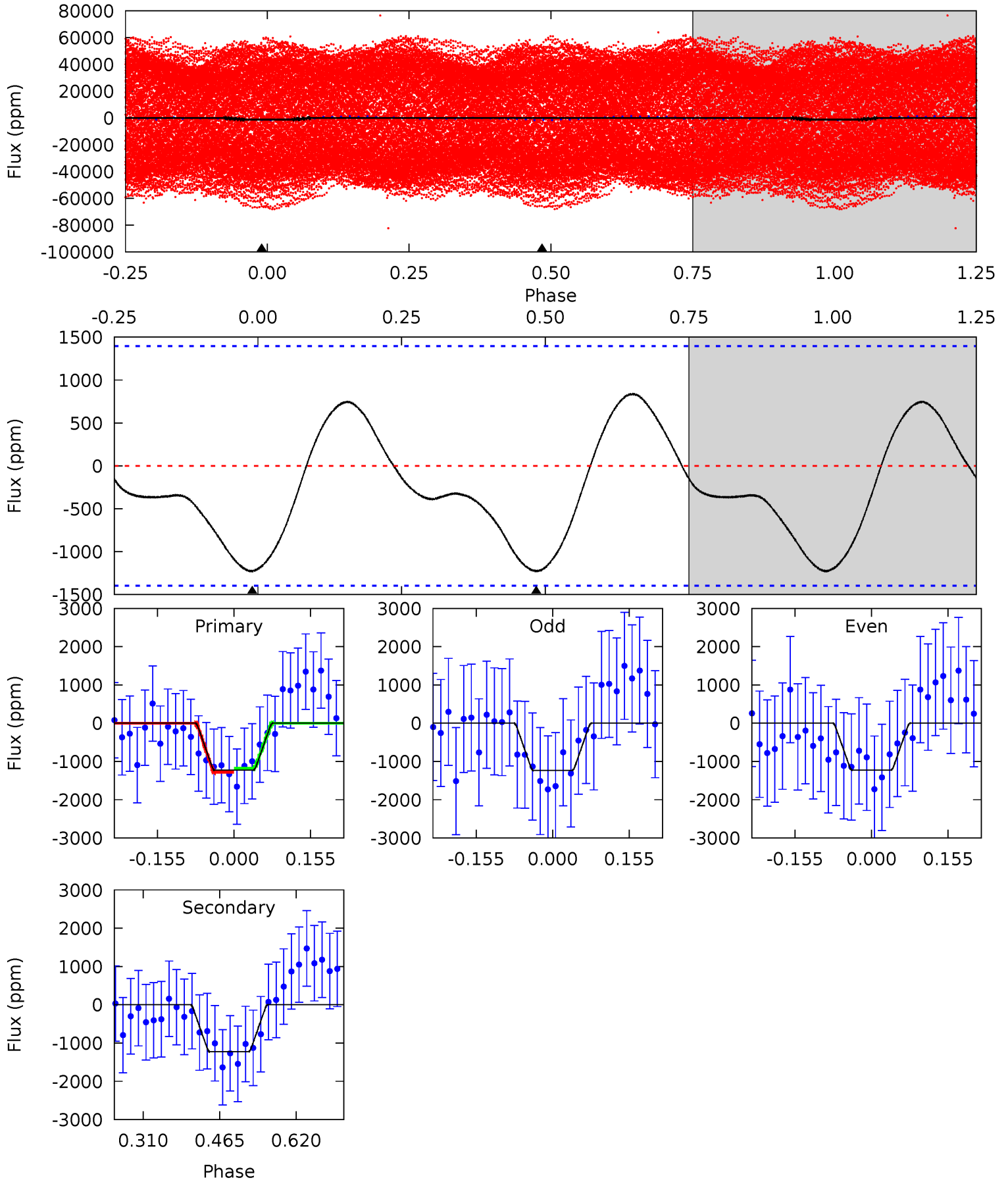
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.62	2.94	0	0	4.31	0.97	0.34	3.62	3.62	2.94	2.94	0.12	5.04	0.04	1.23



# Alt Model-Shift Uniqueness Test

002017803-01, P = 0.610494 Days, E = 131.477429 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
3.94	3.93	0	0	4.47	1.42	1.43	3.94	3.94	3.93	3.93	0.01	1.57	0.41	0.16





### Stellar Parameters For KIC 002017803

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5211^{+157}_{-157}$	$4.631^{+0.066}_{-0.044}$	$-0.980^{+0.300}_{-0.300}$	$0.632^{+0.055}_{-0.050}$	$0.622^{+0.060}_{-0.023}$	$3.480^{+0.885}_{-0.528}$
	+3%/-3%	+1%/-1%	+31%/-31%	+9%/-8%	+10%/-4%	+25%/-15%
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 002017803-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-32 \pm 11$	$0.91^{+0.94}_{-0.61}$	$2321^{+87}_{-88}$	$3652^{+2468}_{-903}$	$2.948^{+30.700}_{-2.277}$
Alt.	$-1228 \pm 312$	$2.71^{+1.13}_{-1.20}$	$2318^{+85}_{-87}$	$4947^{+1539}_{-743}$	$14^{+29}_{-7}$

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

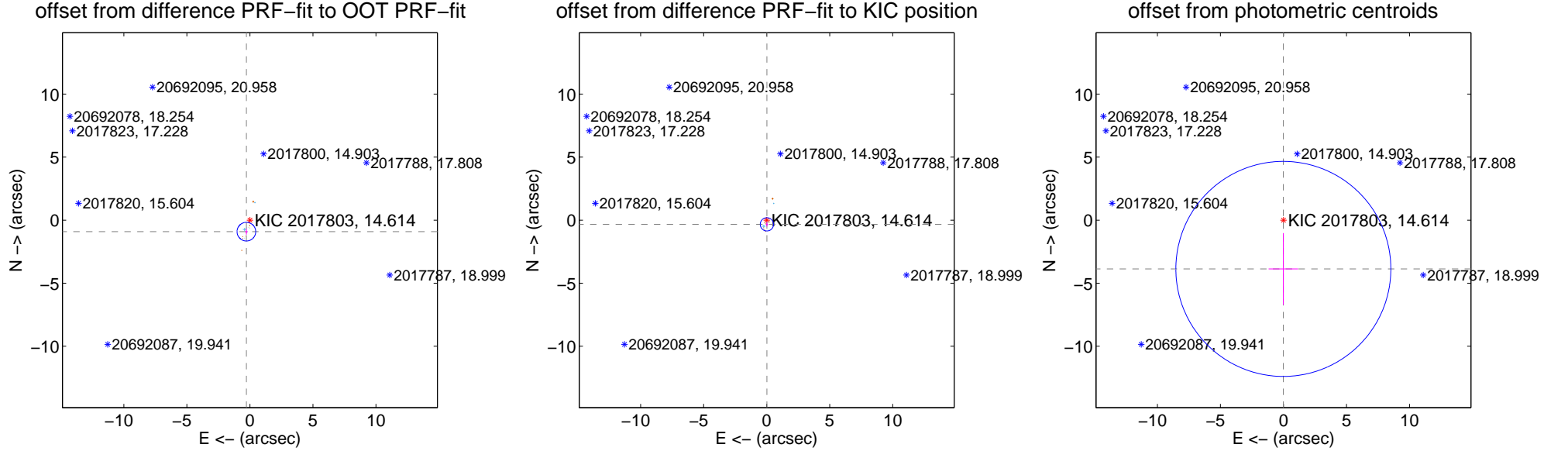
## DV Centroid Data

Supplemental centroid analysis for 002017803-01. Kepler magnitude: 14.61. Transit SNR 1.80

There are 7 quarters with good PRF difference image offsets

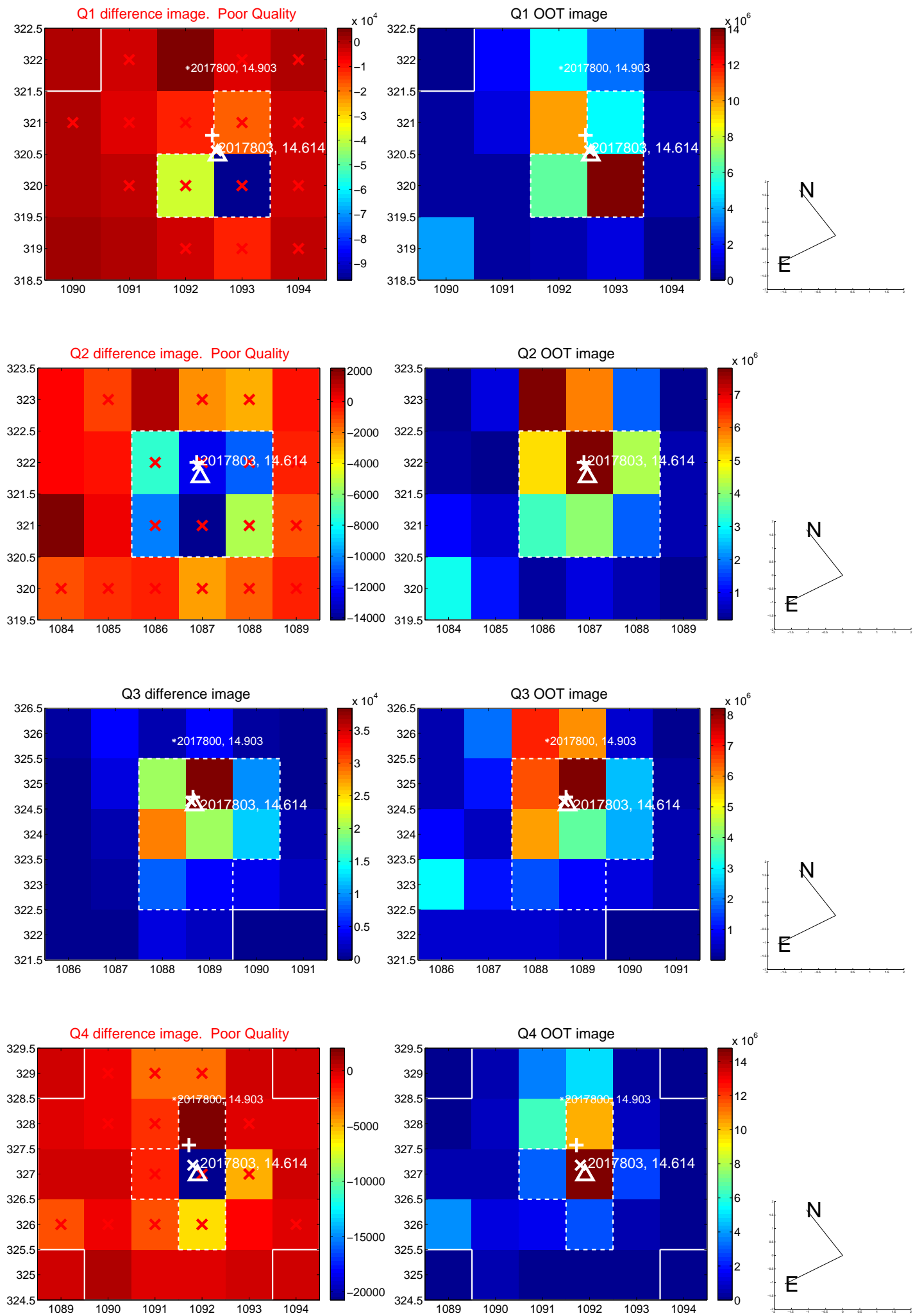
The direct PRF centroid is offset from the target star catalog position by about 0.76 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.956 \pm 0.247$	<b>3.87</b>	$0.280 \pm 0.097$	$-0.914 \pm 0.238$
PRF-fit source offset from KIC position	$0.333 \pm 0.175$	1.90	$-0.016 \pm 0.087$	$-0.333 \pm 0.178$
photometric centroid source offset	$3.87 \pm 2.84$	1.36	$0.01 \pm 1.17$	$-3.87 \pm 2.84$

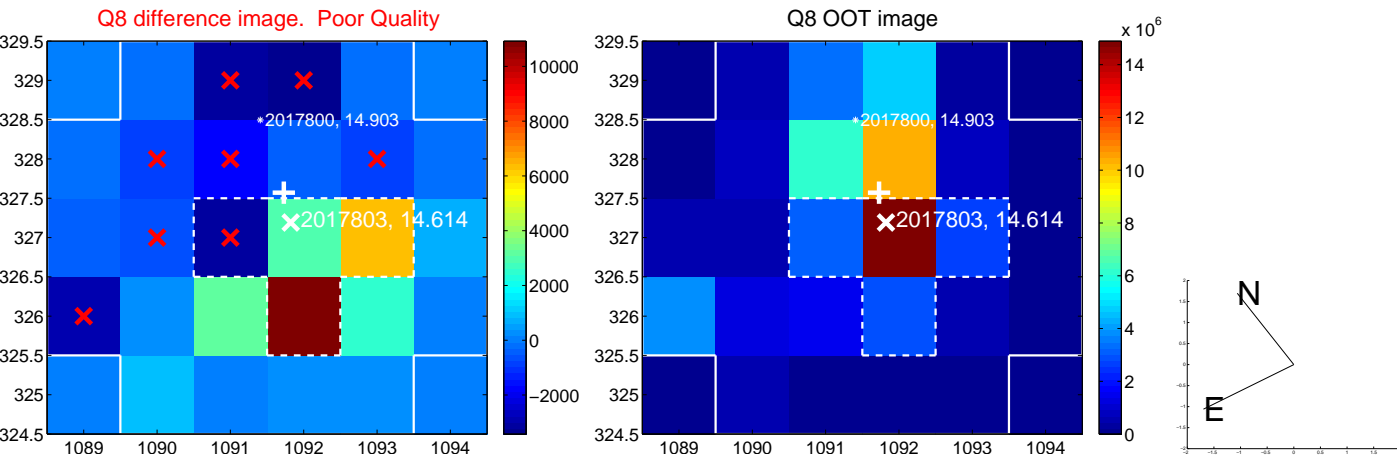
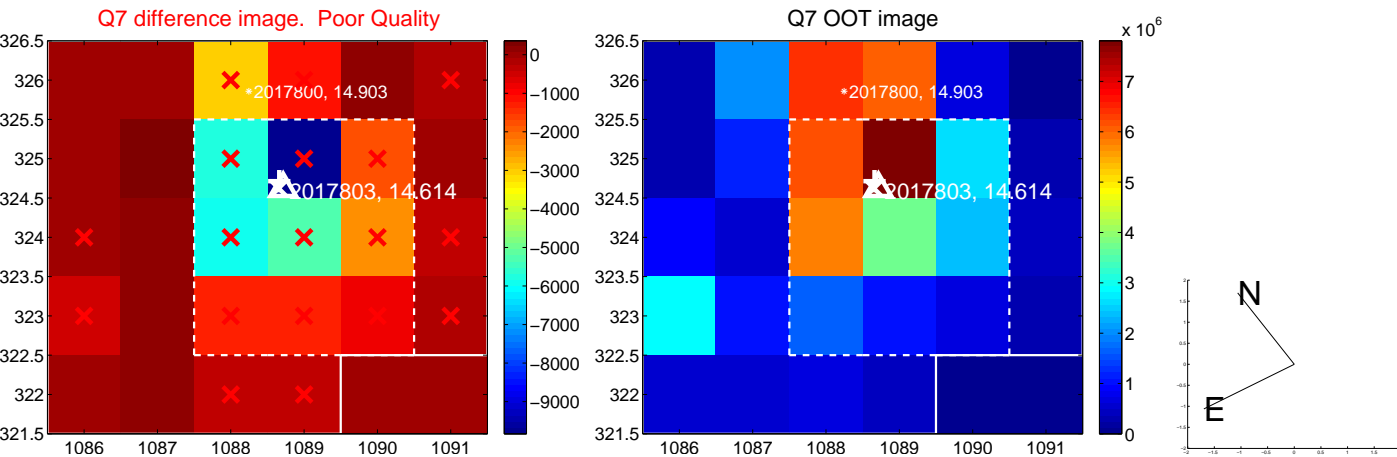
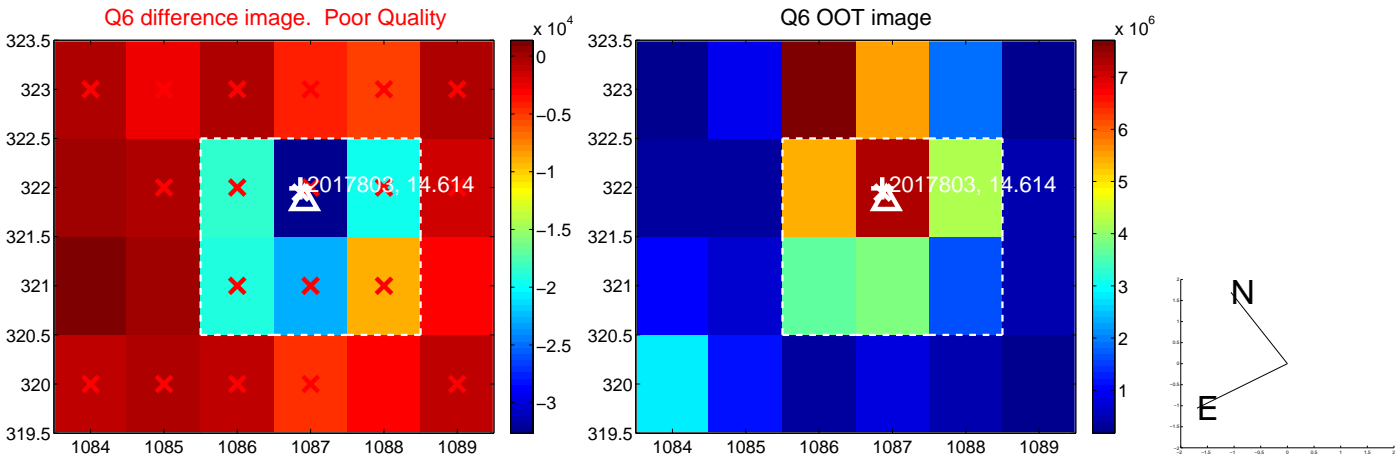
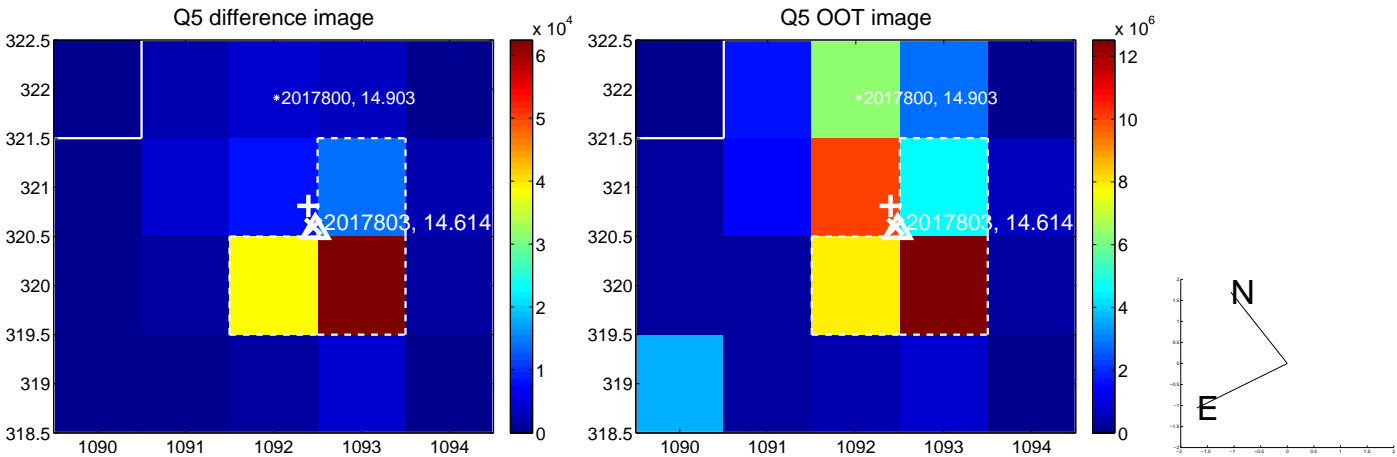


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

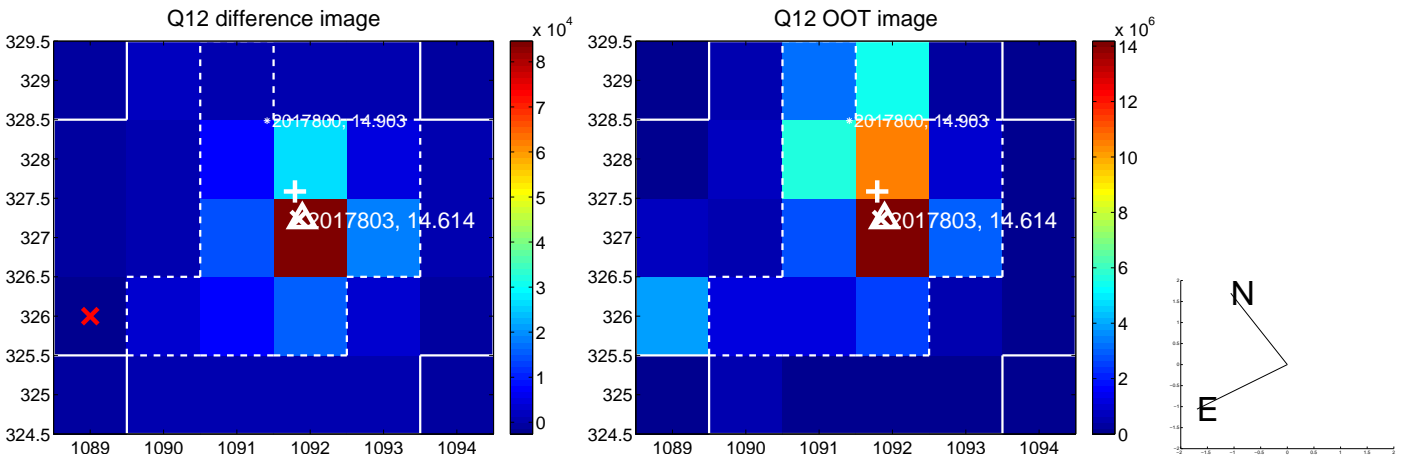
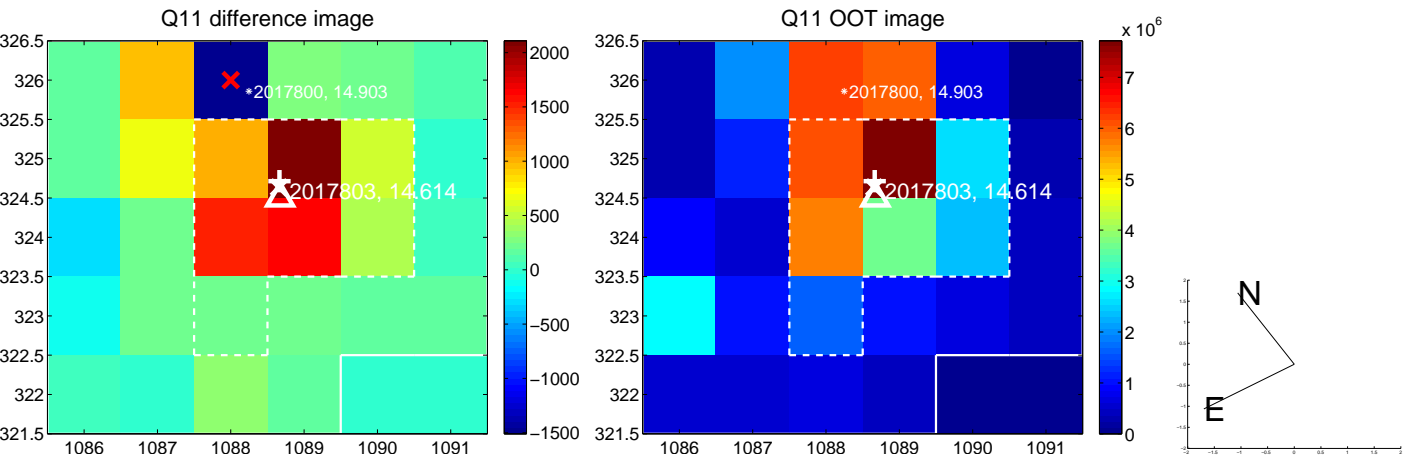
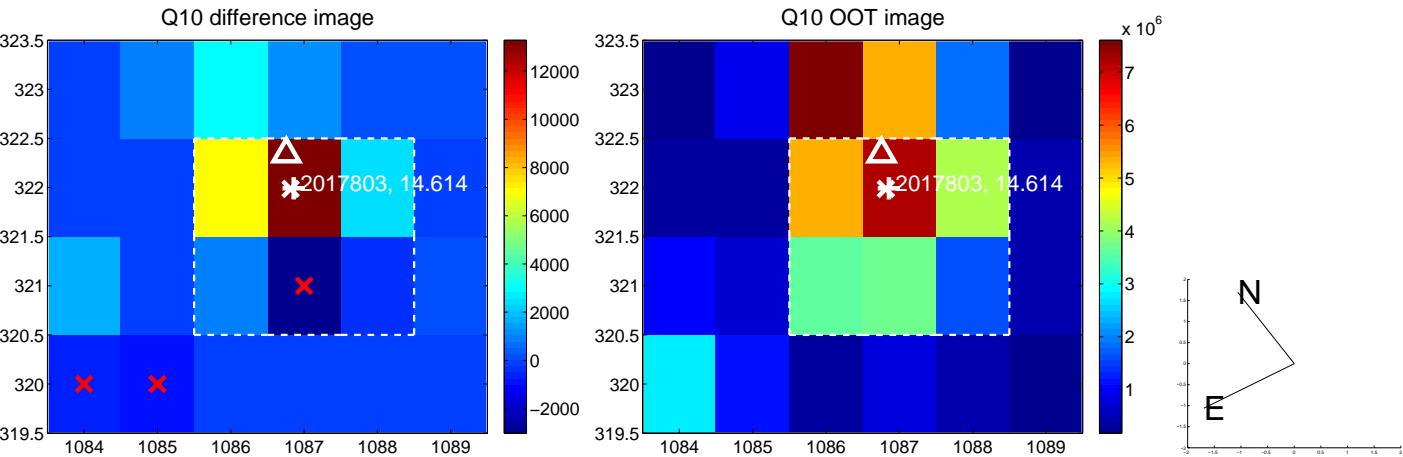
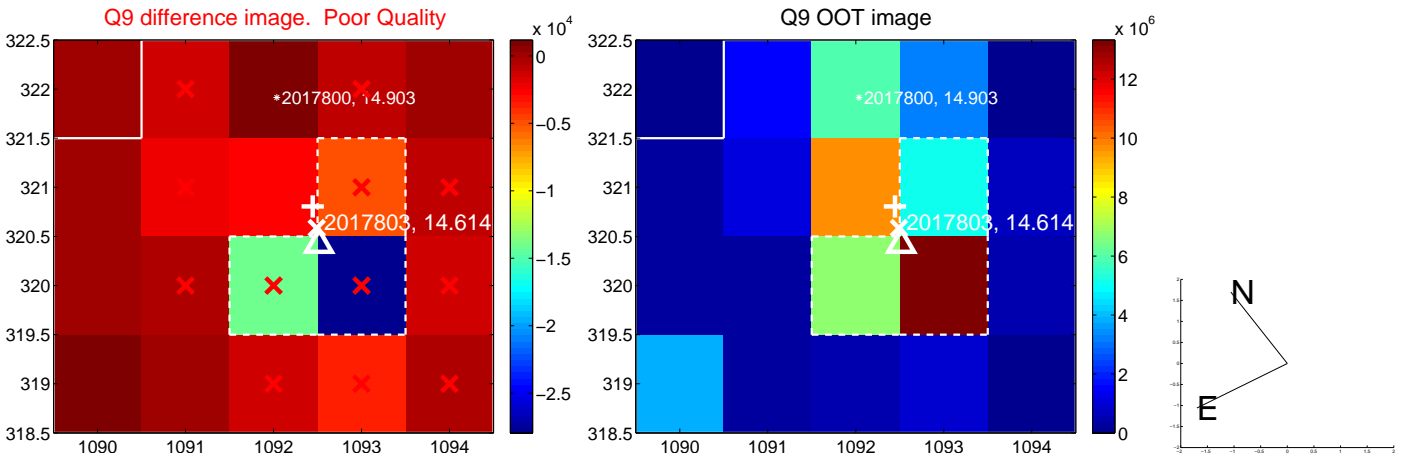


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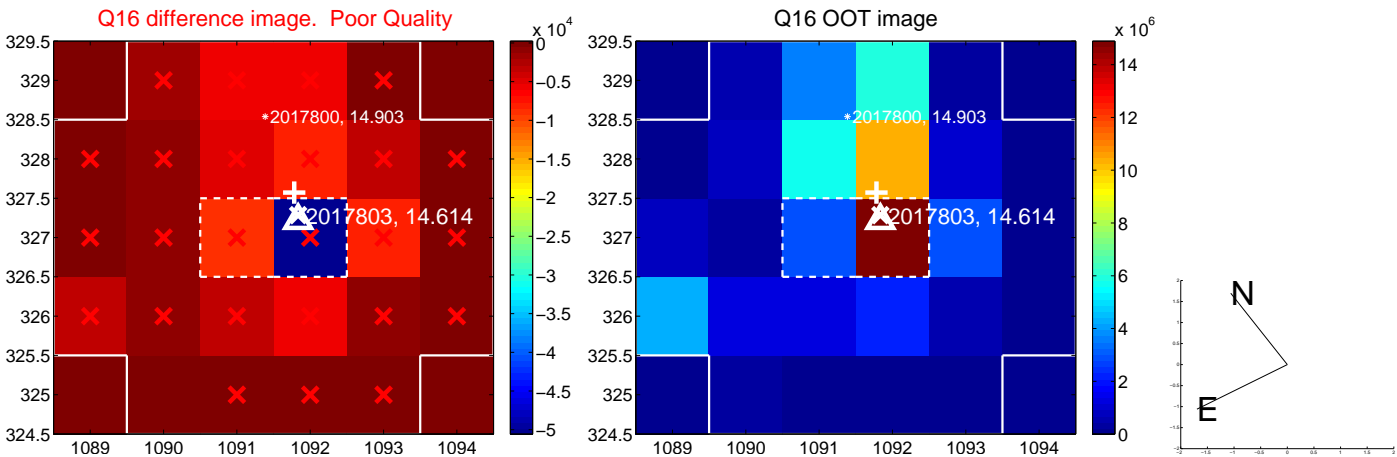
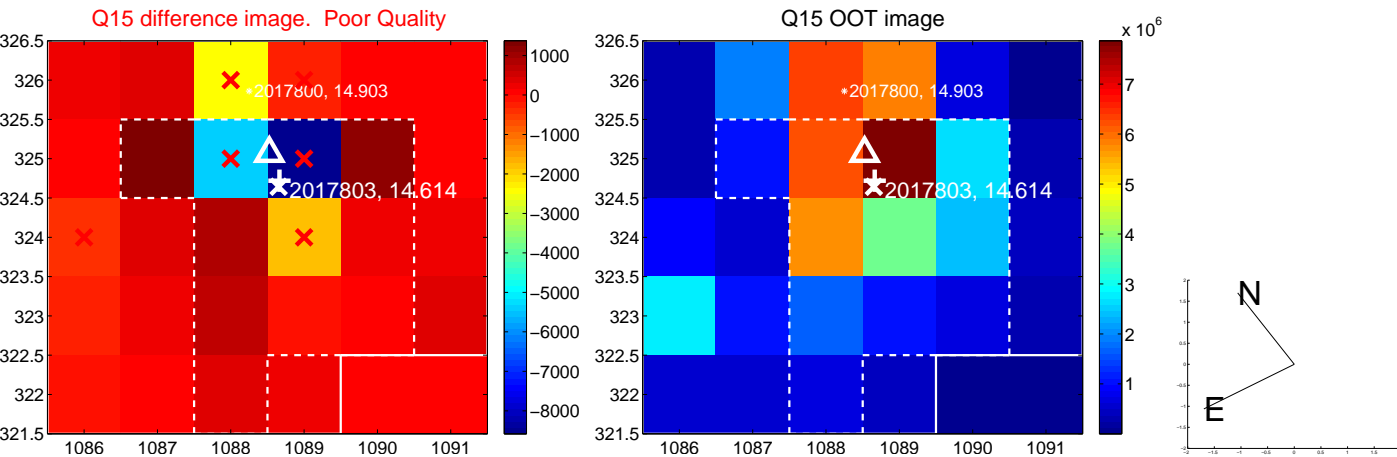
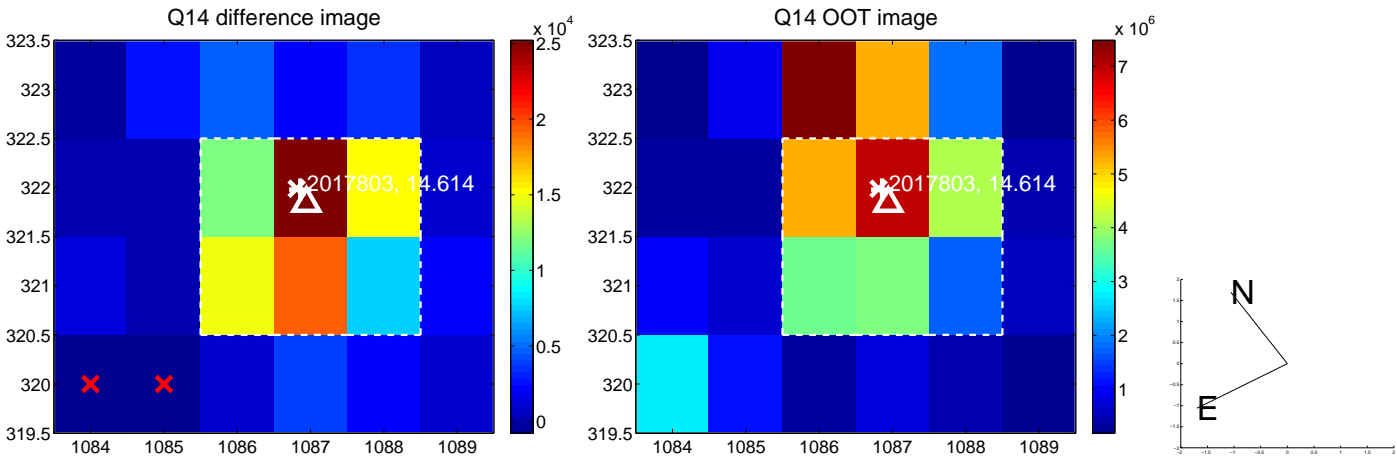
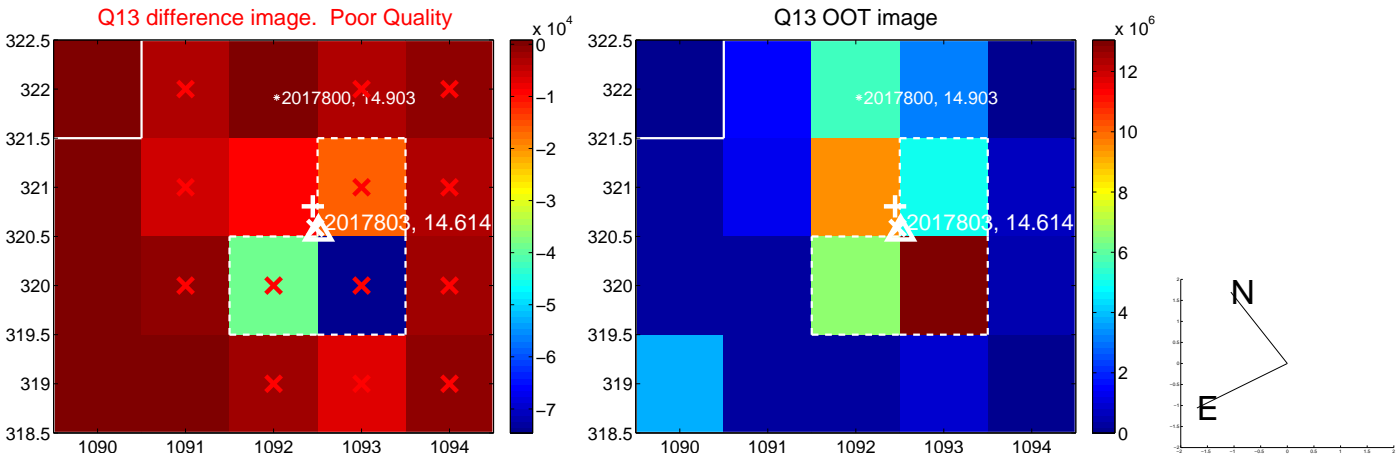




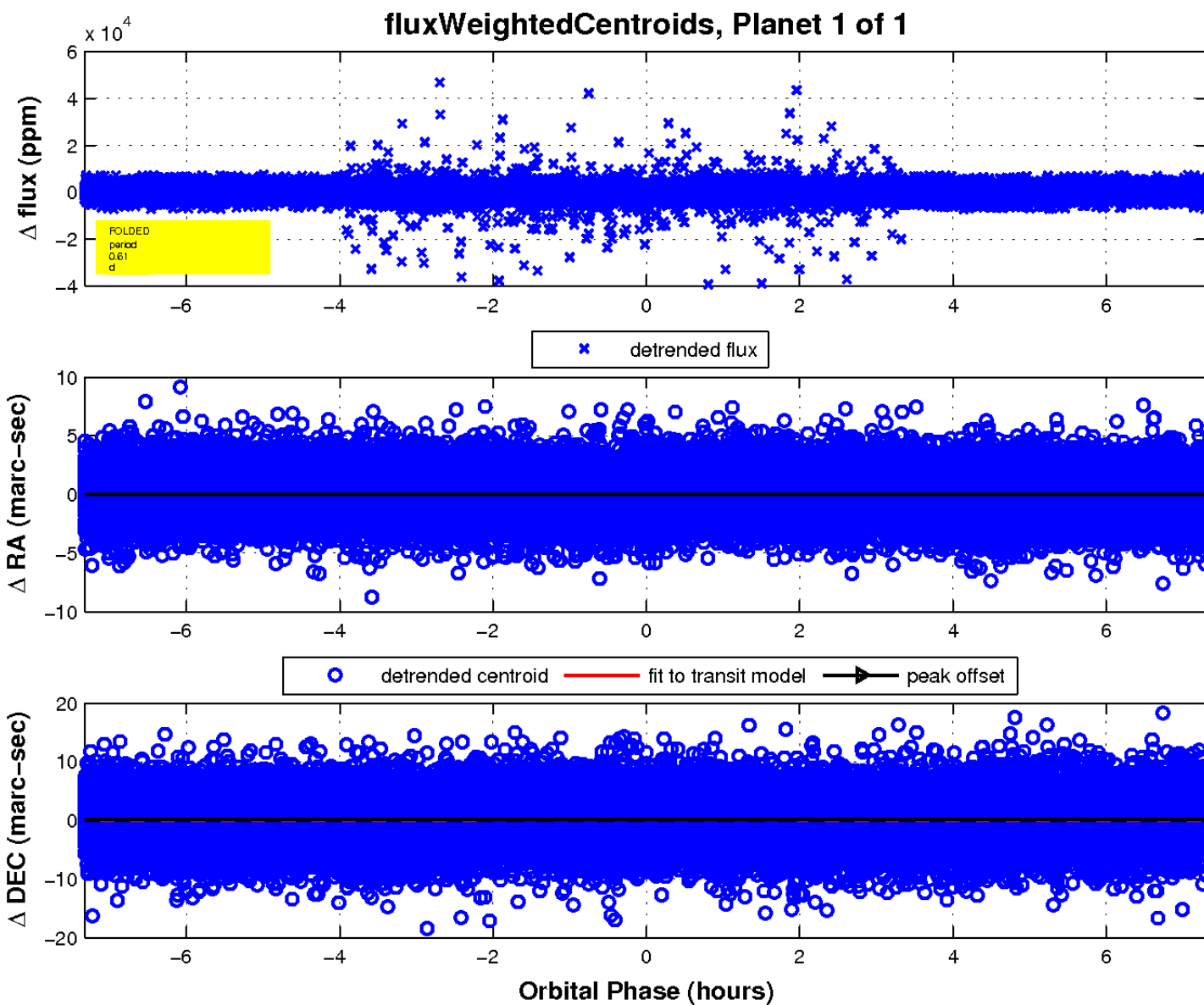
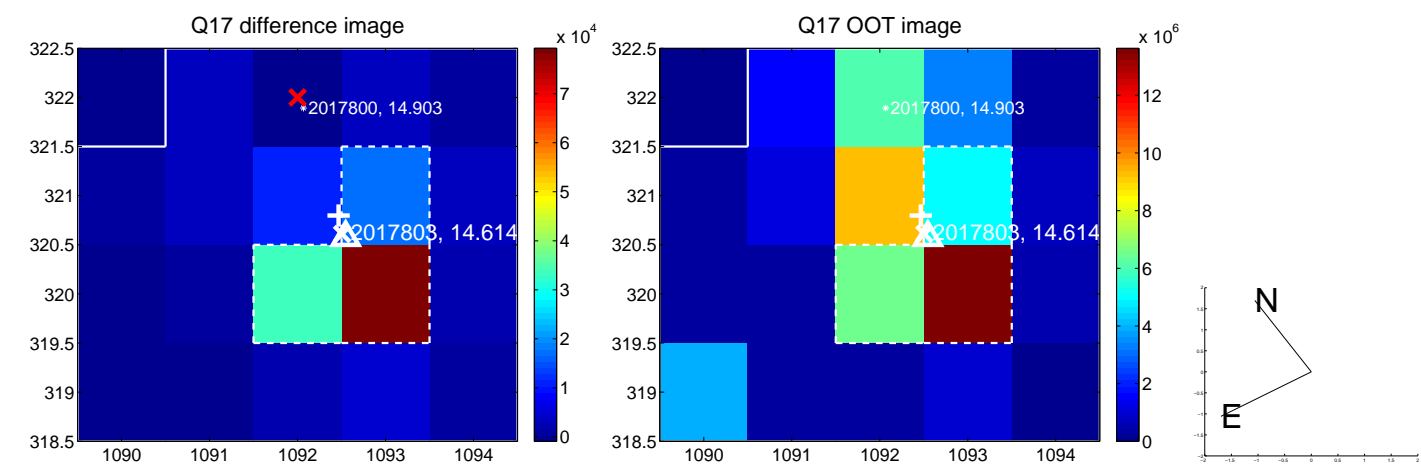
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

