

# KIC 008278323

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008278323-01	OBS	No	0.946935	131.605098	596.4	9.321	85.3	14.2	0.48	4653	2.32	431.95

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008278323-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT

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

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

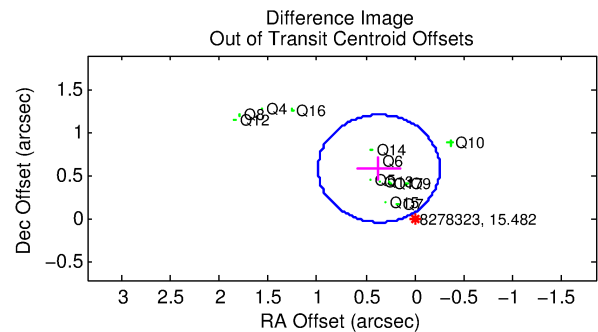
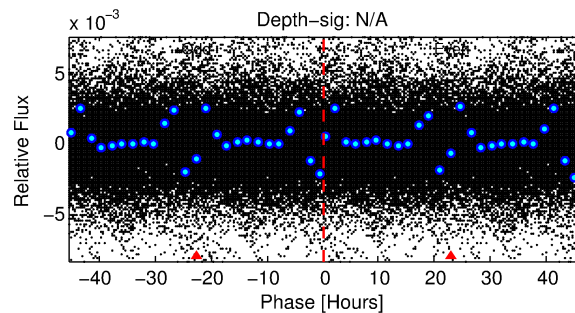
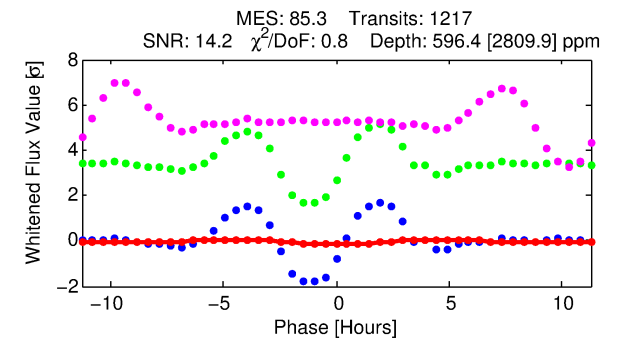
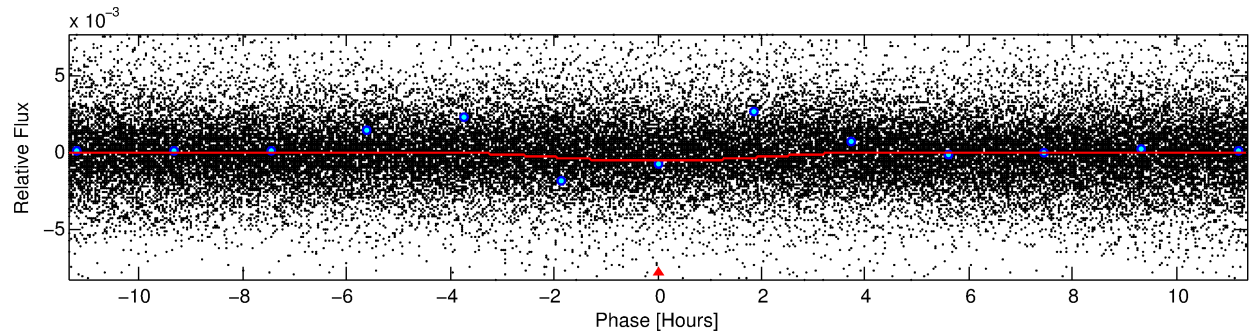
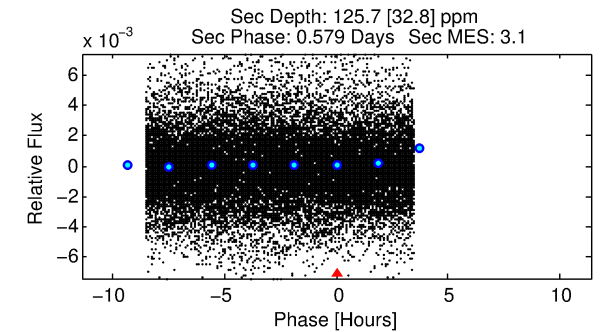
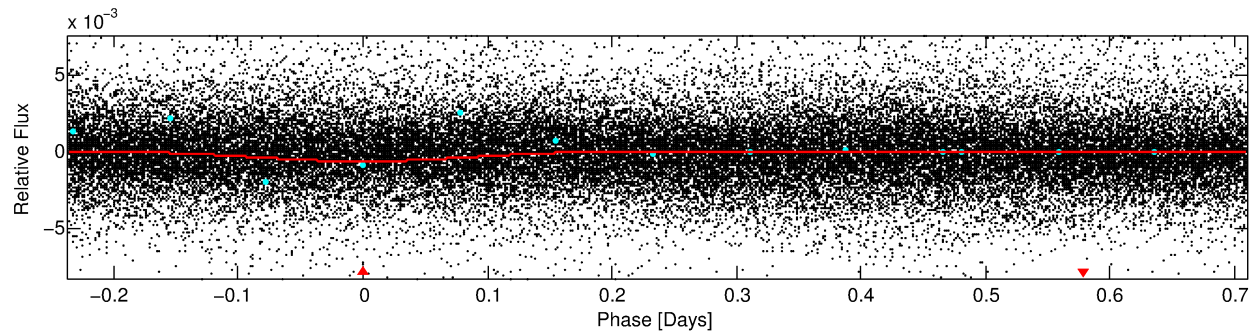
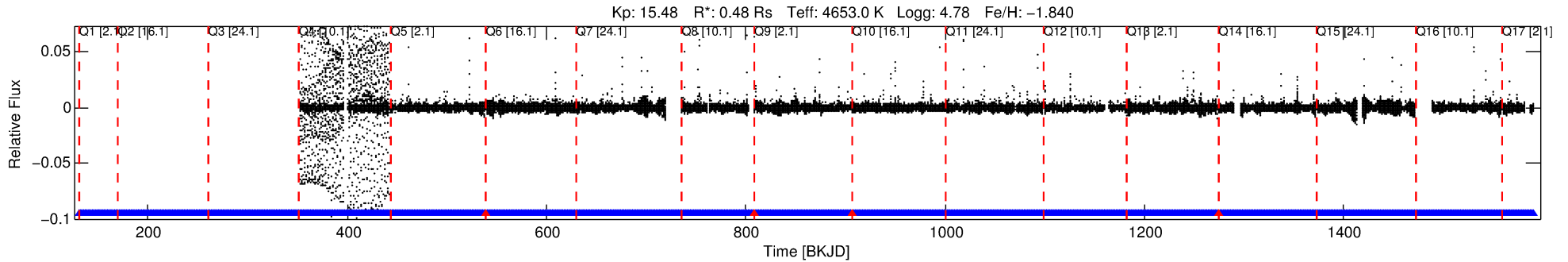
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008278323-01

No Significant Match Found

# DV One-Page Summary

KIC: 8278323 Candidate: 1 of 1 Period: 0.947 d



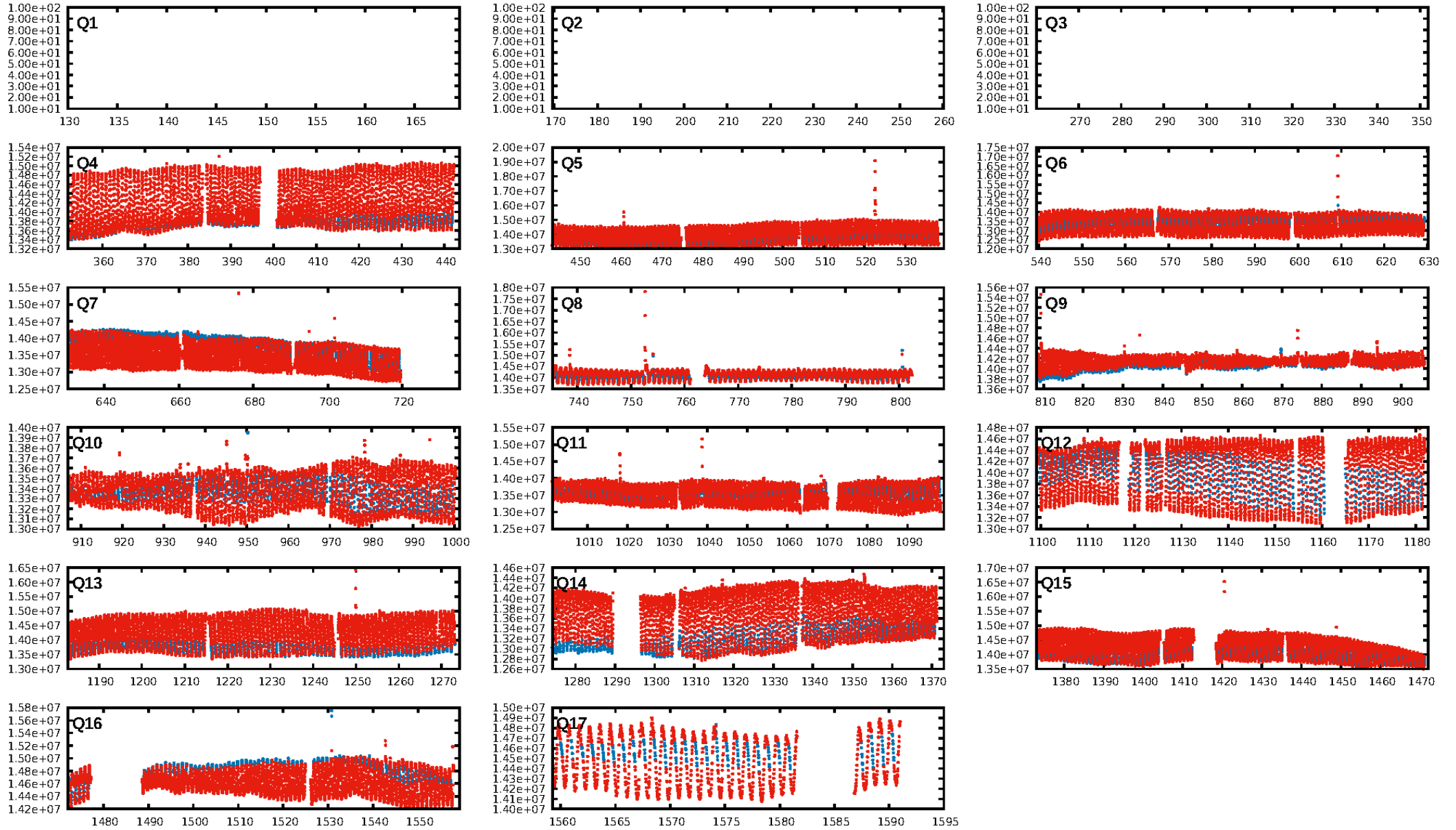
## DV Fit Results:

Period = 0.94694 [0.00001] d  
Epoch = 131.6051 [0.0062] BKJD  
Rp/R\* = 0.0441 [0.0332]  
a/R\* = 1.05 [0.03]  
b = 1.00 [0.09]  
Seff = 431.95 [80.05]  
Teff = 1162 [54] K  
Rp = 2.32 [1.75] Re  
a = 0.0150 [0.0008] AU  
Ag = 2.91 [4.45] [0.43σ]  
Teffp = 2347 [902] K [1.31σ]

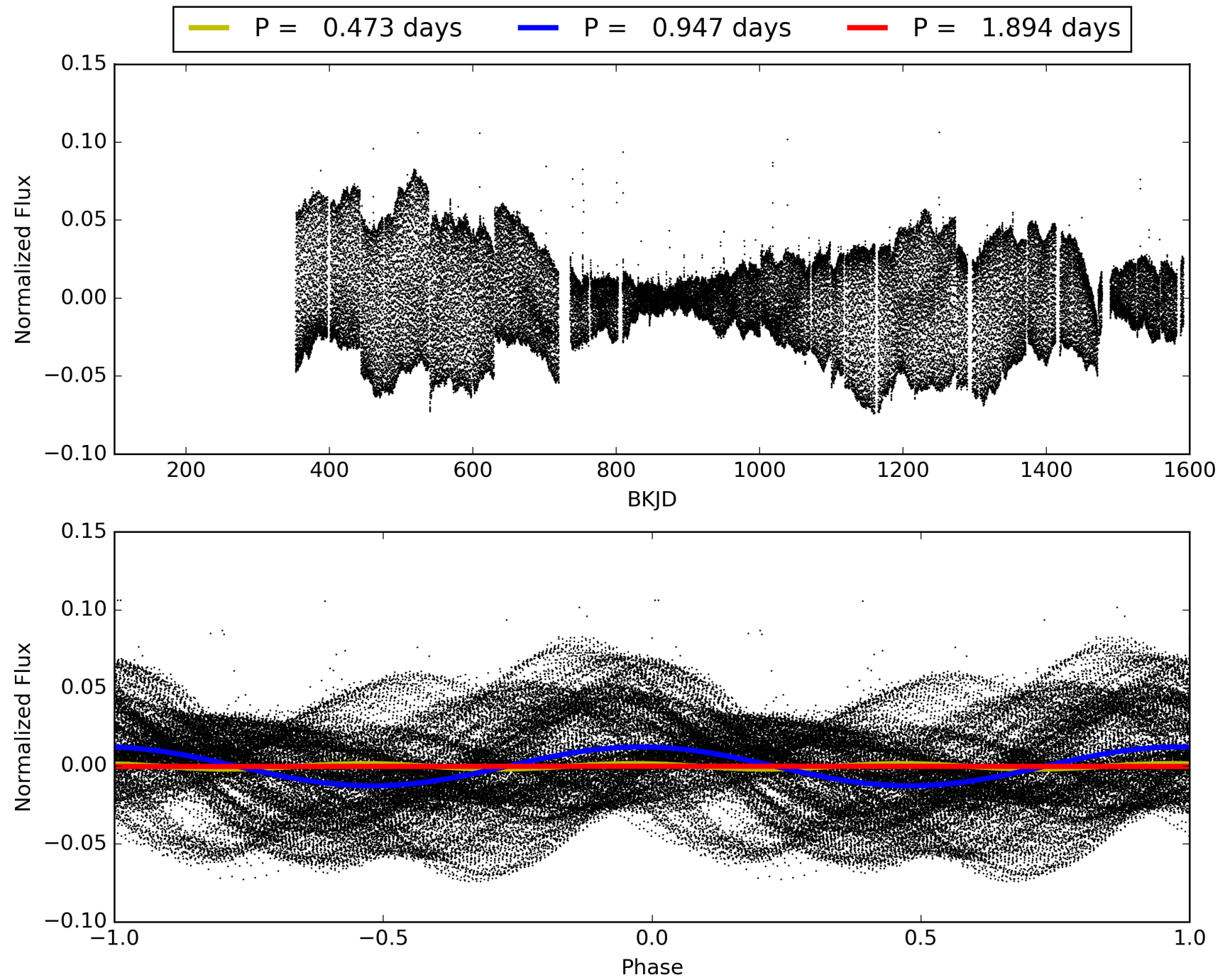
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: N/A  
RollingBand-fgt: 1.00 [1184/1188]  
**GhostDiagnostic-chr: 1.806**  
Centroid-sig: 0.0%  
Centroid-so: 2.750 arcsec [9.57σ]  
OotOffset-rm: 0.695 arcsec [3.36σ]  
KicOffset-rm: 0.133 arcsec [1.52σ]  
OotOffset-st: 3/2/4/4 [13]  
KicOffset-st: 3/2/4/4 [13]  
DiffImageQuality-fgm: 0.31 [4/13]  
DiffImageOverlap-fno: 1.00 [14/14]

# TCE 008278323-01, PDC Light Curves

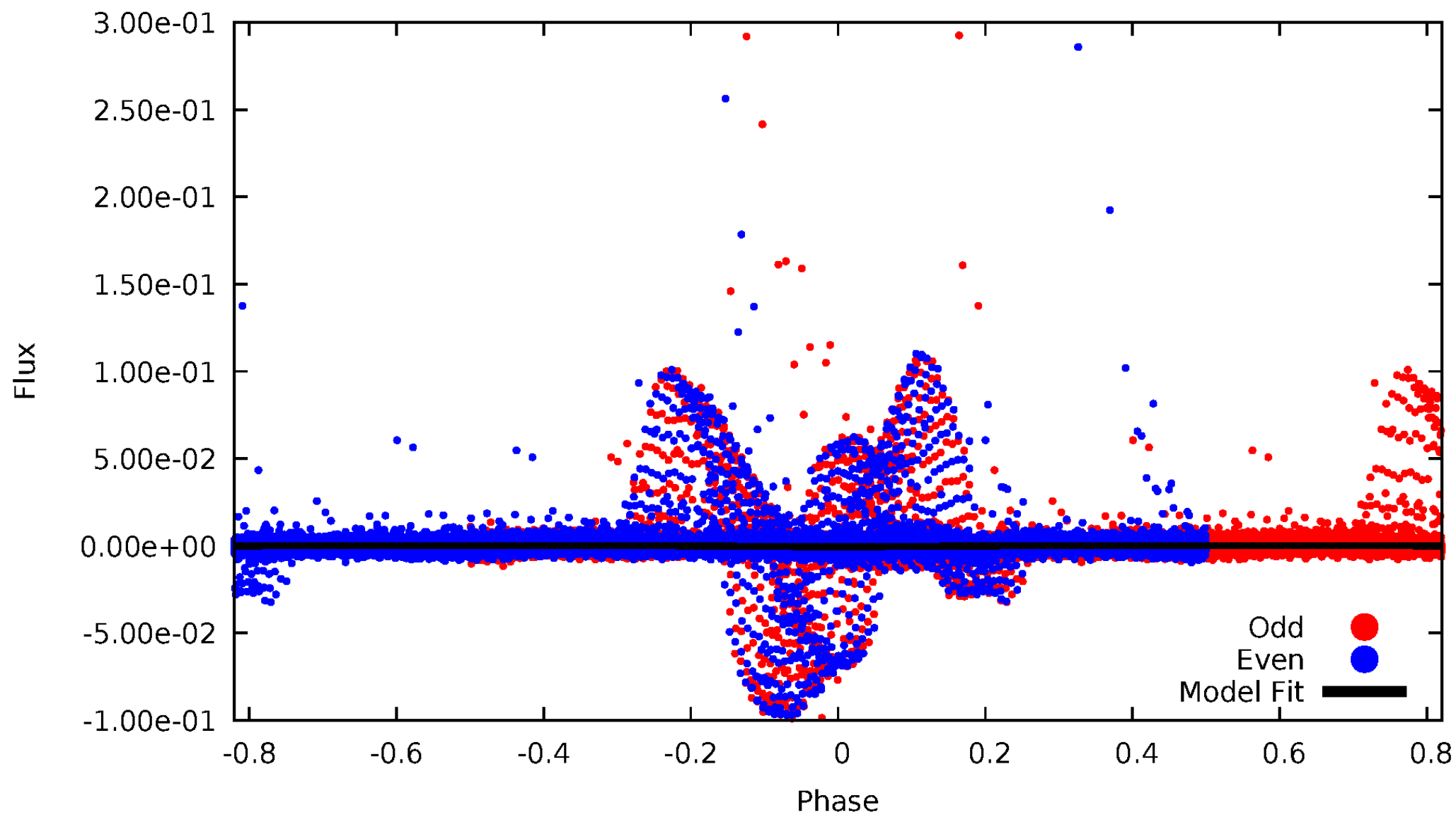


TCE 008278323-01



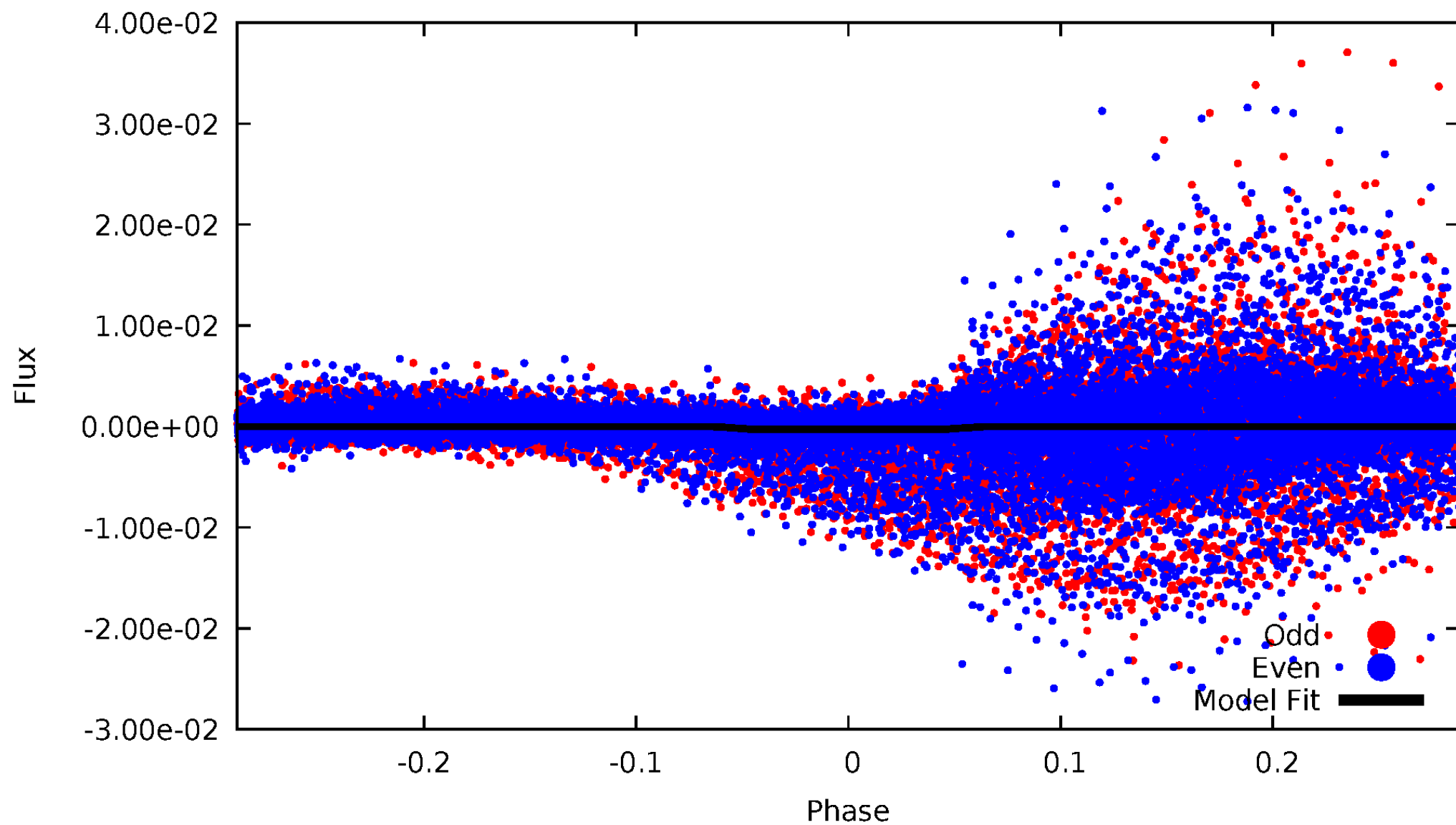
# DV Odd/Even

TCE 008278323-01



# ALT Odd/Even

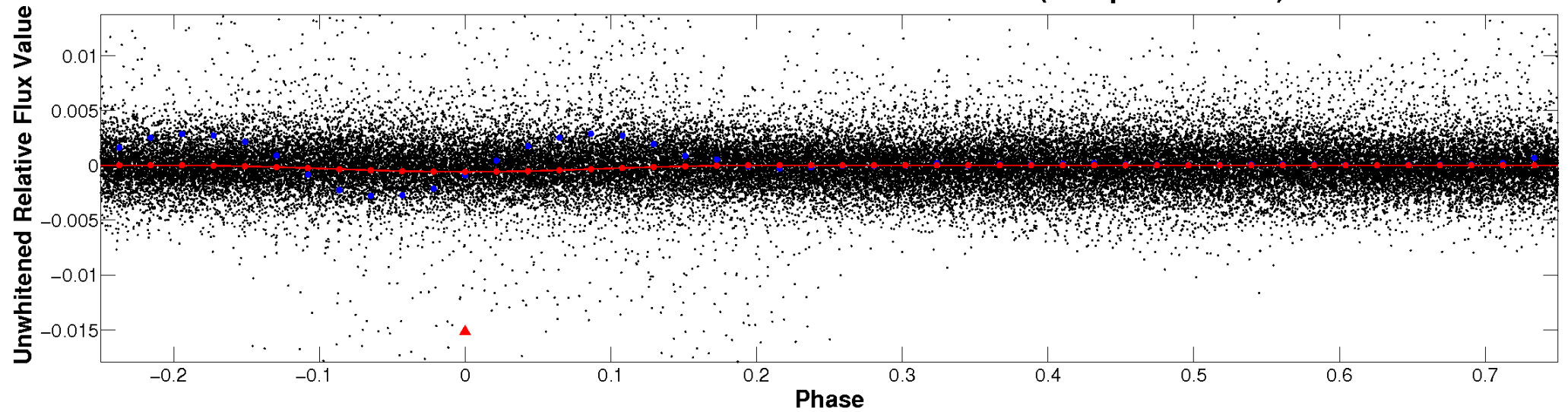
TCE 008278323-01



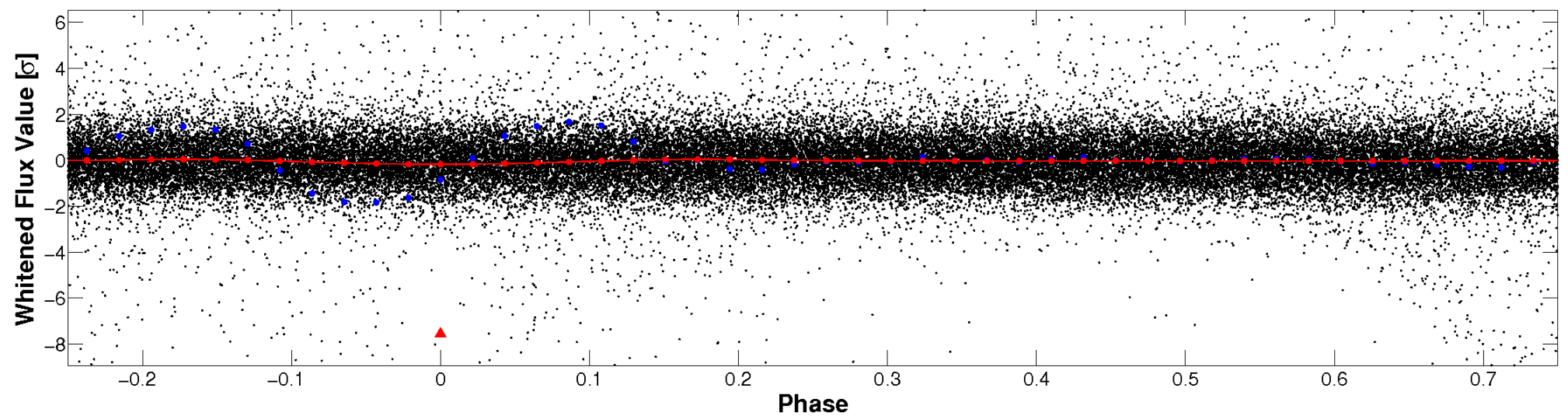


# Non-Whitened Vs. Whitened Light Curve

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

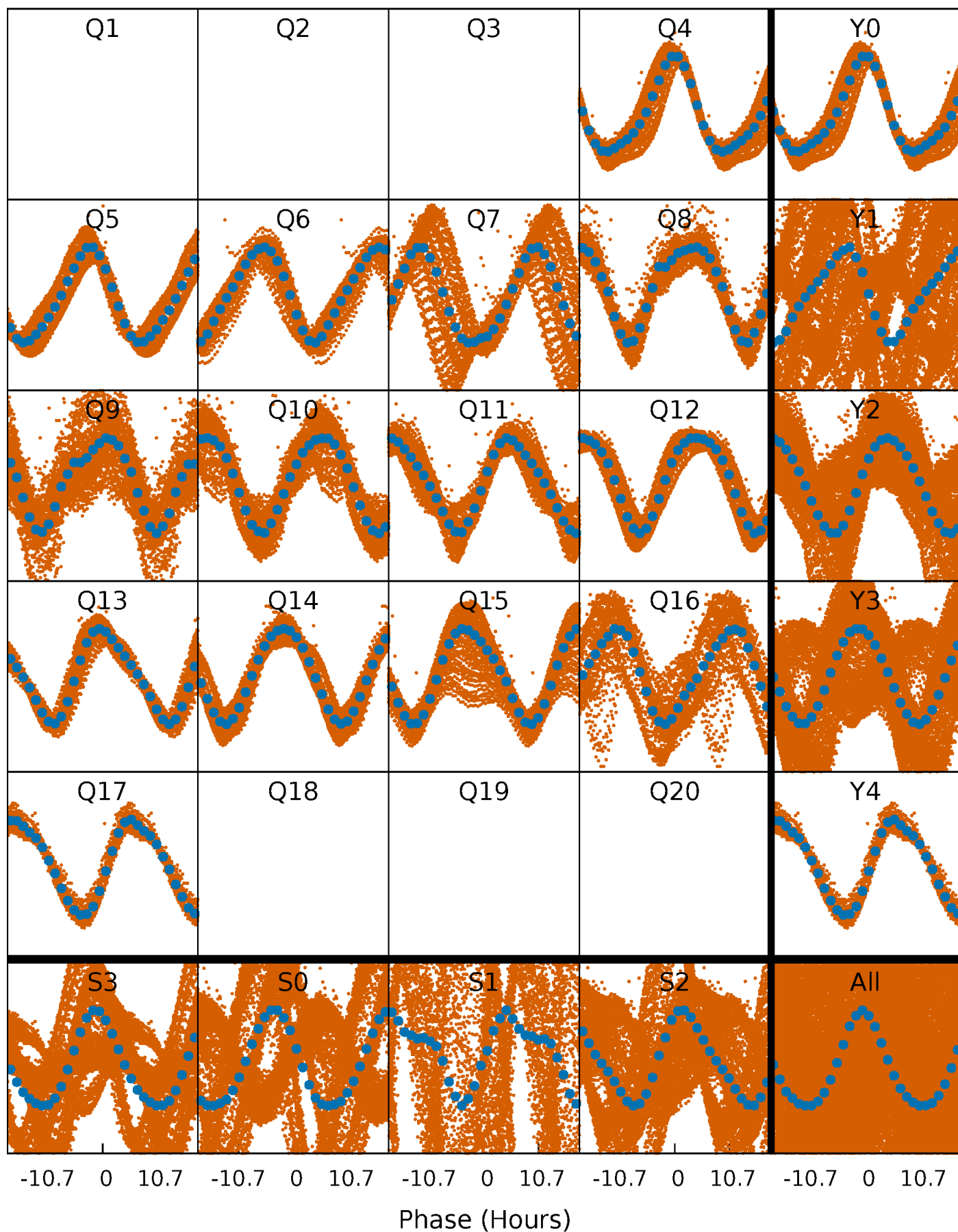


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

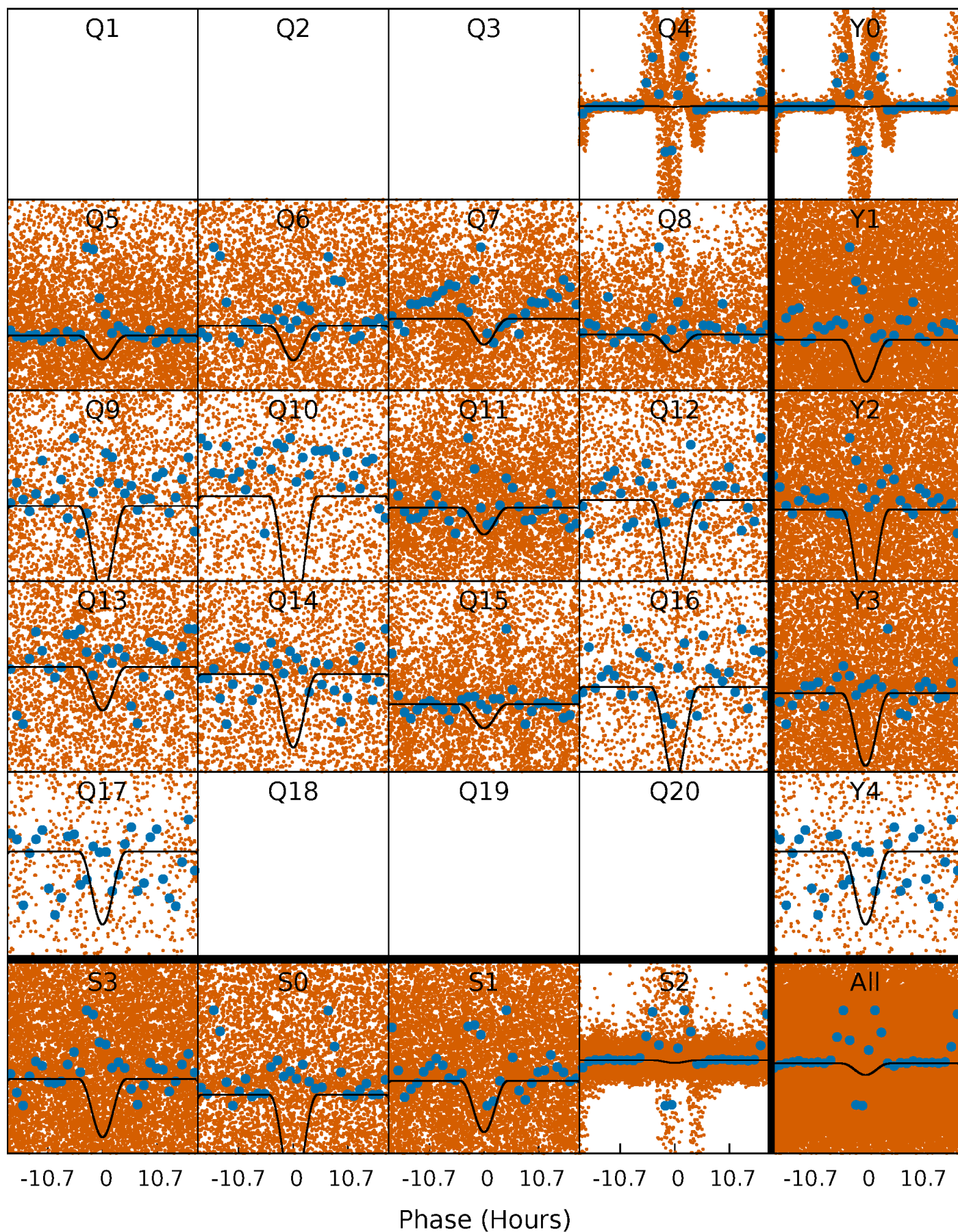
TCE 008278323-01   P= 0.946935 Days    $T_0=131.605098$  (BKJD)





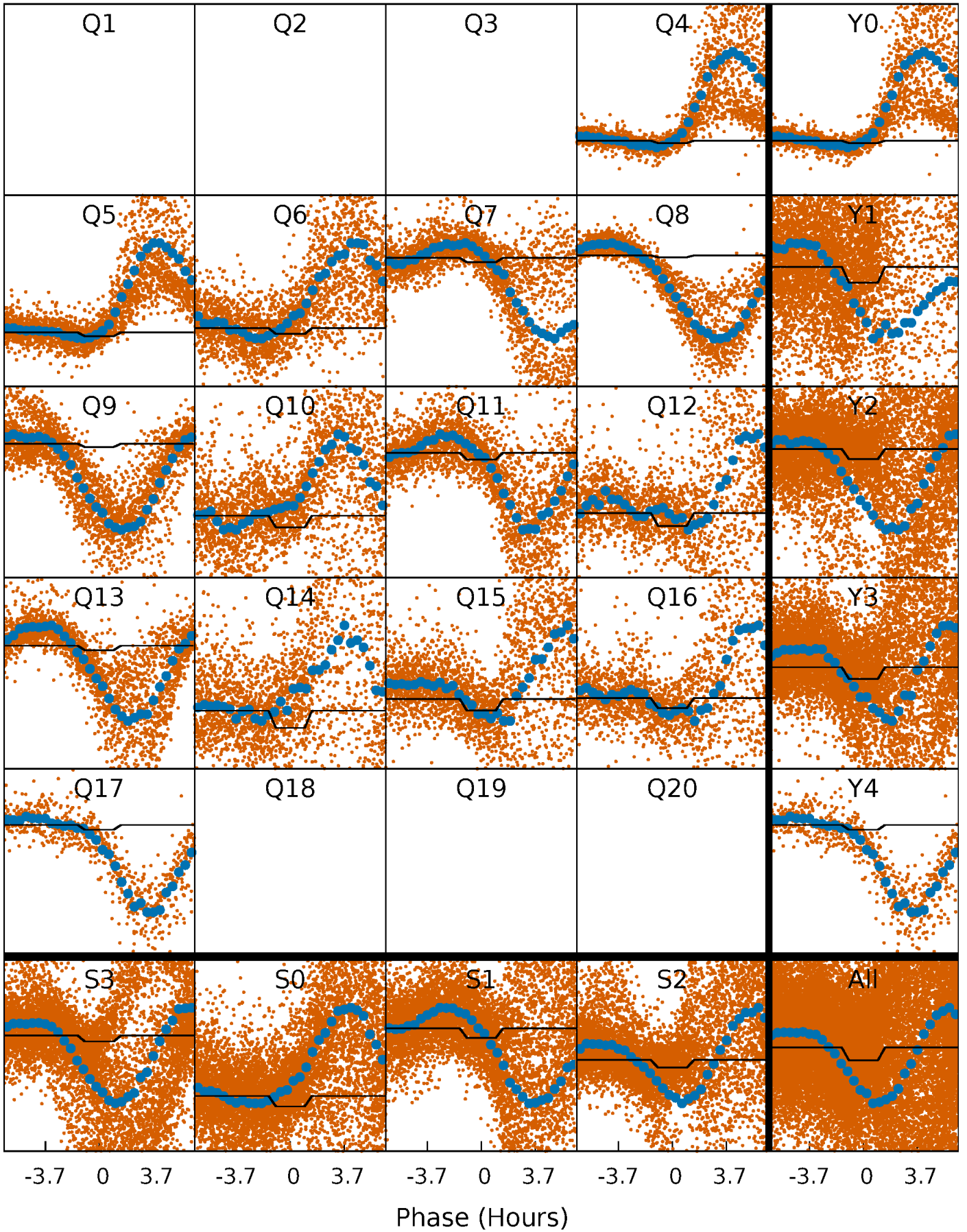
# DV Quarter-Phased Transit Curves

TCE 008278323-01 P= 0.946935 Days  $T_0=131.605098$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

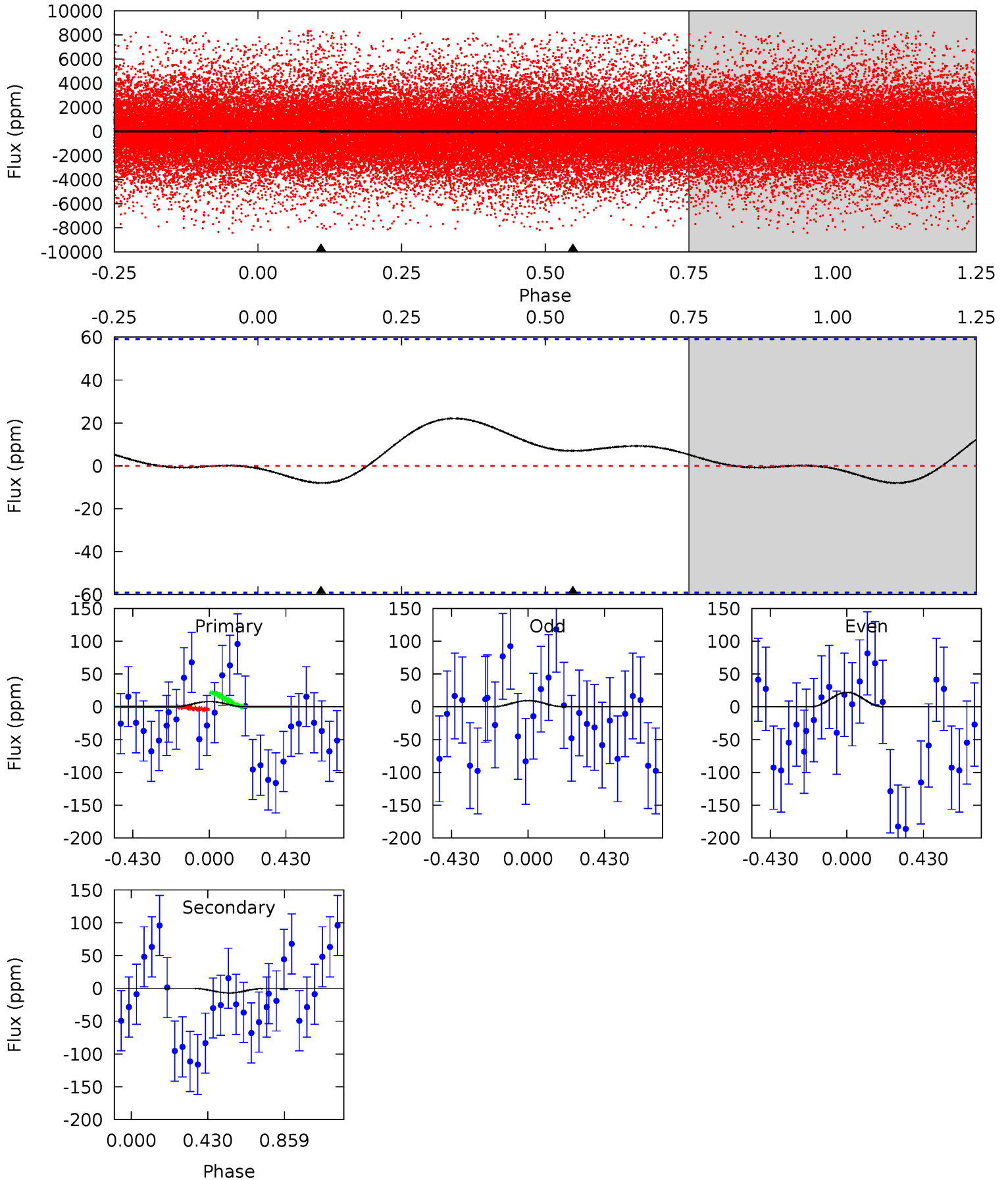
TCE 008278323-01 P= 0.946171 Days  $T_0=131.620141$  (BKJD)



# DV Model-Shift Uniqueness Test

008278323-01, P = 0.946935 Days, E = 131.605098 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
0.58	-0.50	0	0	4.25	0.79	0.09	0.58	0.58	-0.50	-0.50	0.44	-39.0	0.73	0.59

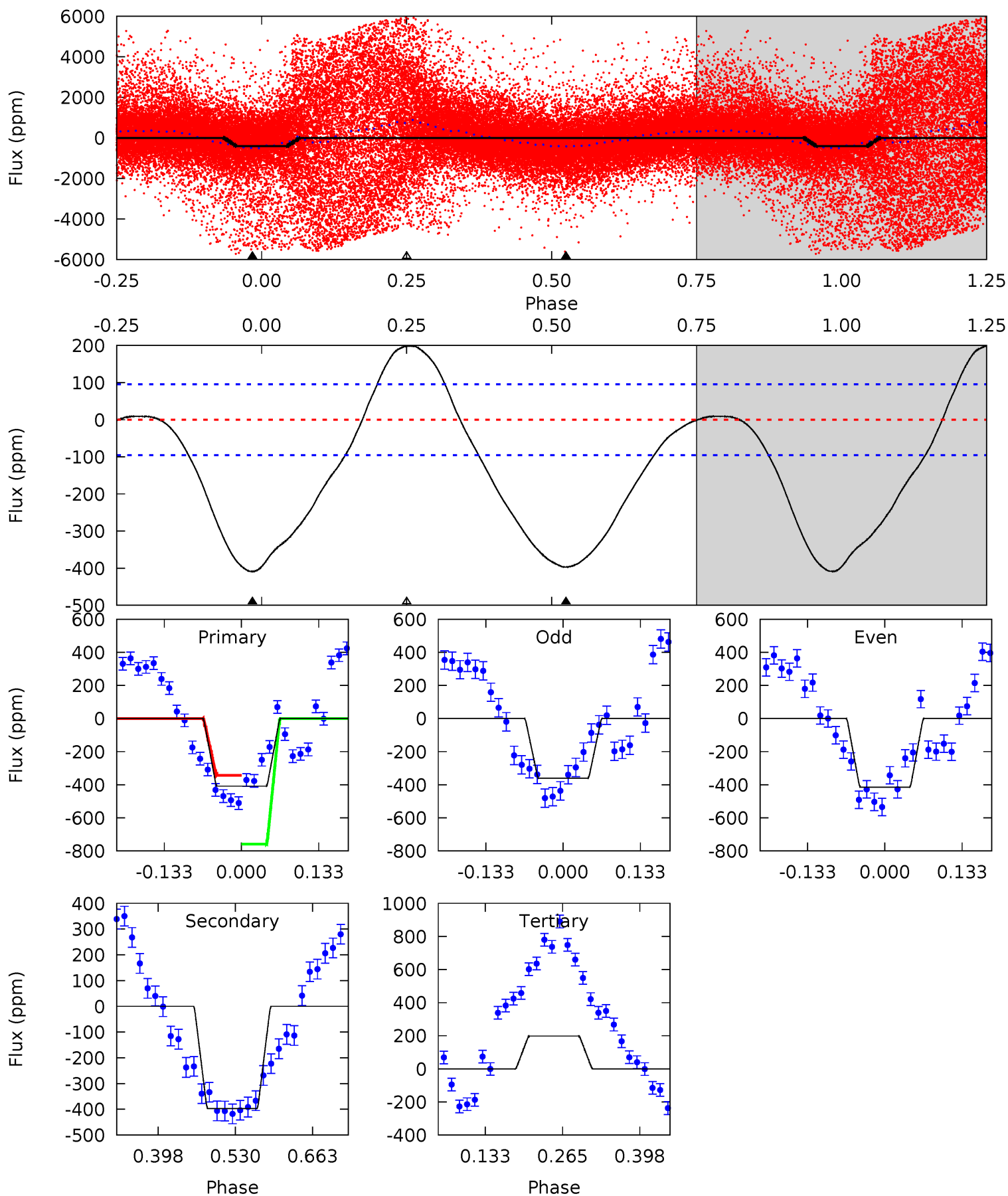




# Alt Model-Shift Uniqueness Test

008278323-01, P = 0.946171 Days, E = 131.620141 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
19.3	18.7	-9.37	0	4.51	1.50	4.60	28.7	19.3	28.1	18.7	1.28	8.08	0.33	8.07



### Stellar Parameters For KIC 008278323

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4653^{+146}_{-195}$	$4.775^{+0.042}_{-0.024}$	$-1.840^{+0.300}_{-0.100}$	$0.482^{+0.027}_{-0.033}$	$0.505^{+0.036}_{-0.029}$	$6.345^{+1.138}_{-0.660}$
	+3%/-4%	+1%/-1%	+16%/-5%	+6%/-7%	+7%/-6%	+18%/-10%
Source	KIC0	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 008278323-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$7 \pm 14$	$2.51^{+1.55}_{-1.53}$	$1620^{+56}_{-73}$	$-2301^{+238}_{-315}$	$-0.108^{+0.241}_{-0.752}$
Alt.	$-397 \pm 21$	$1.57^{+1.52}_{-1.02}$	$1616^{+57}_{-63}$	$3997^{+2232}_{-798}$	$21^{+155}_{-15}$

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



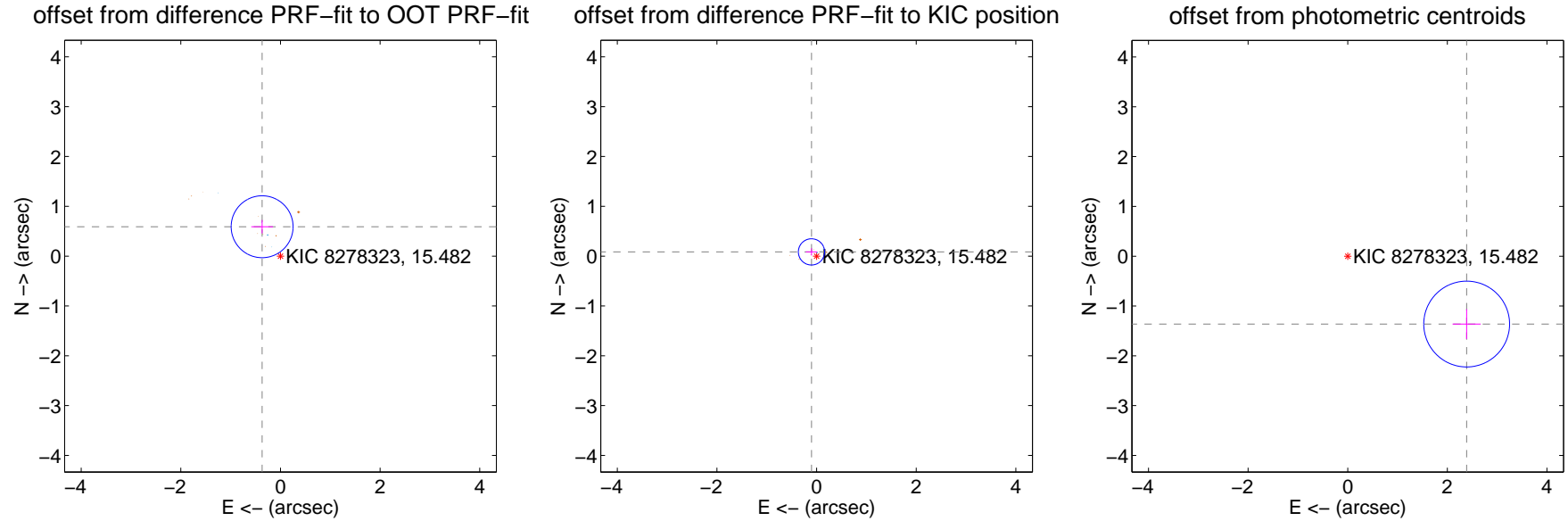
## DV Centroid Data

Supplemental centroid analysis for 008278323-01. Kepler magnitude: 15.48. Transit SNR 14.17

There are 4 quarters with good PRF difference image offsets

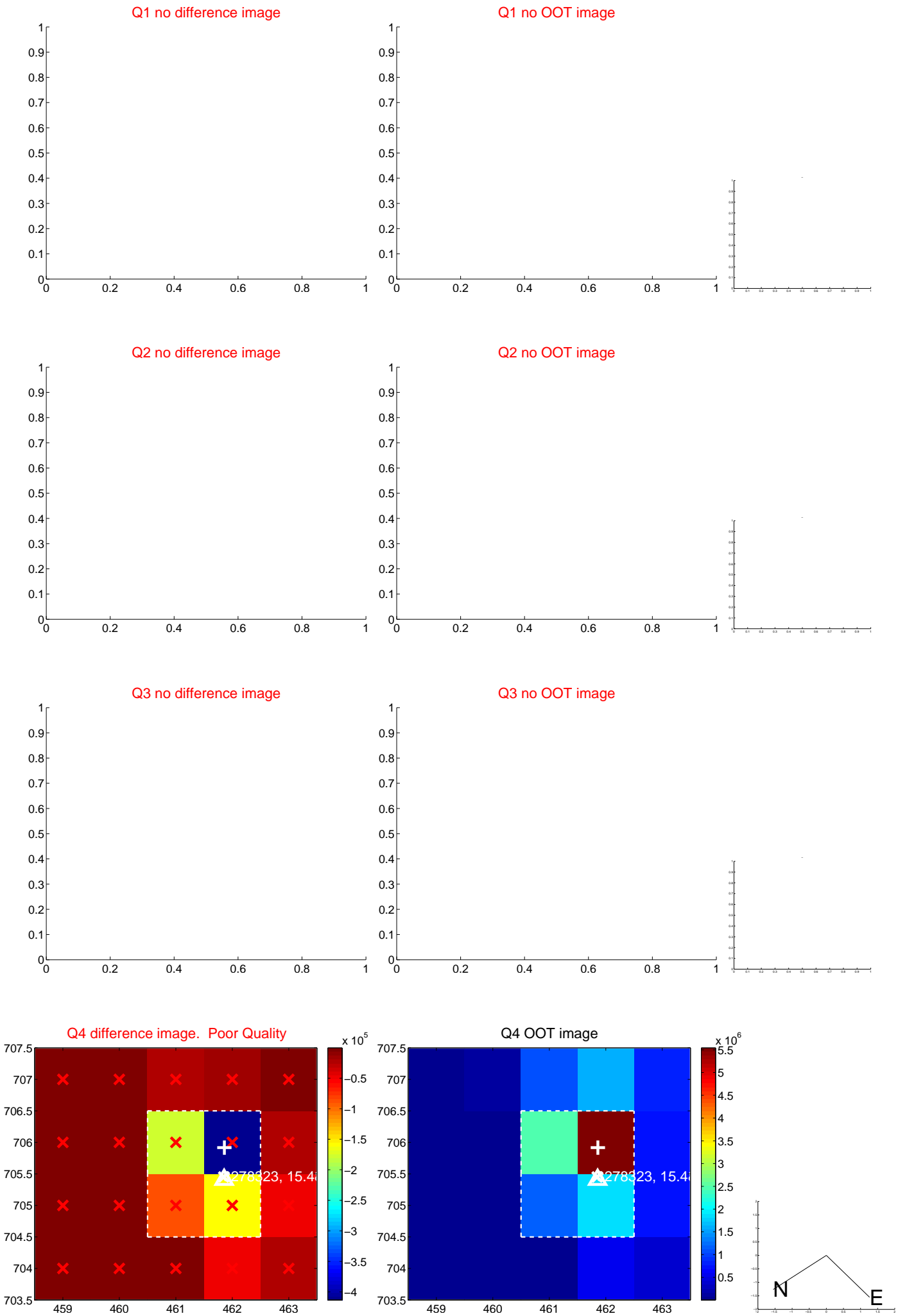
The direct PRF centroid is offset from the target star catalog position by about 0.44 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b>0.695 <math>\pm</math> 0.207</b>	<b>3.36</b>	0.368 $\pm$ 0.217	0.590 $\pm$ 0.134
PRF-fit source offset from KIC position	0.133 $\pm$ 0.088	1.52	0.102 $\pm$ 0.113	0.085 $\pm$ 0.072
photometric centroid source offset	<b>2.75 <math>\pm</math> 0.29</b>	<b>9.57</b>	-2.39 $\pm$ 0.28	-1.36 $\pm$ 0.30

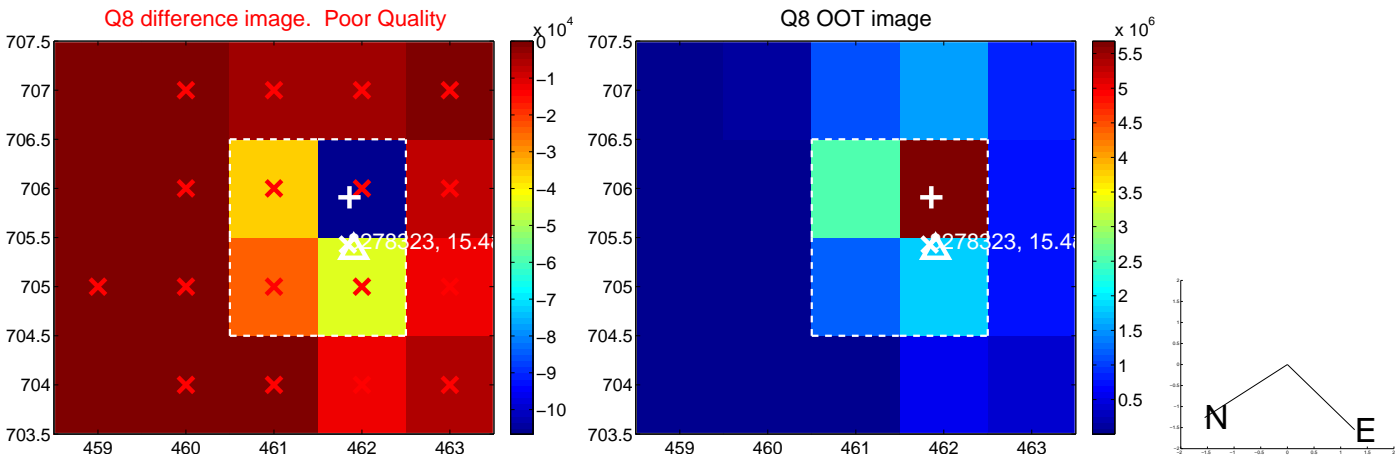
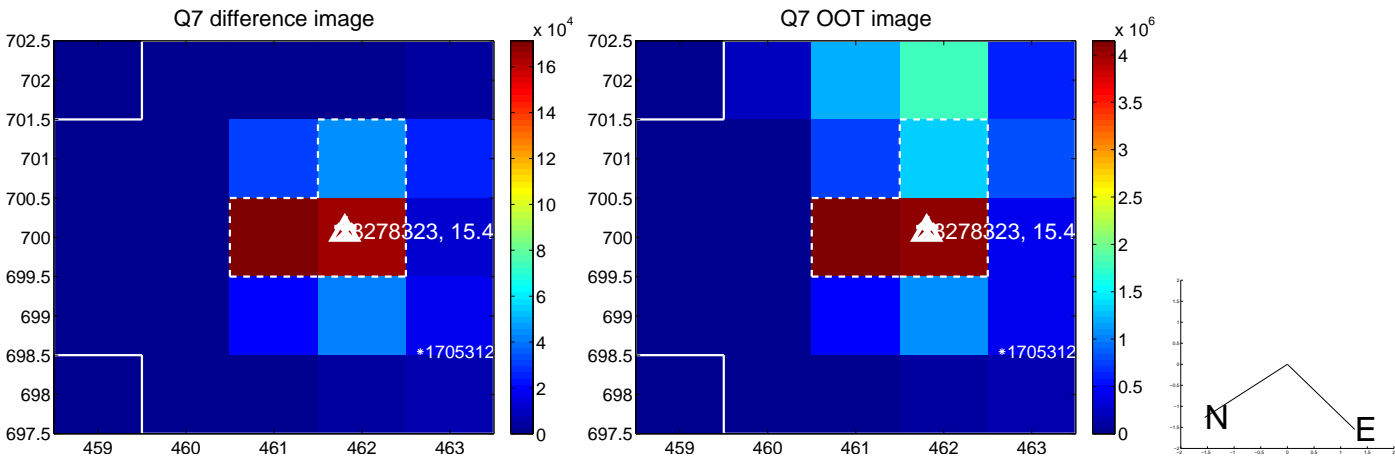
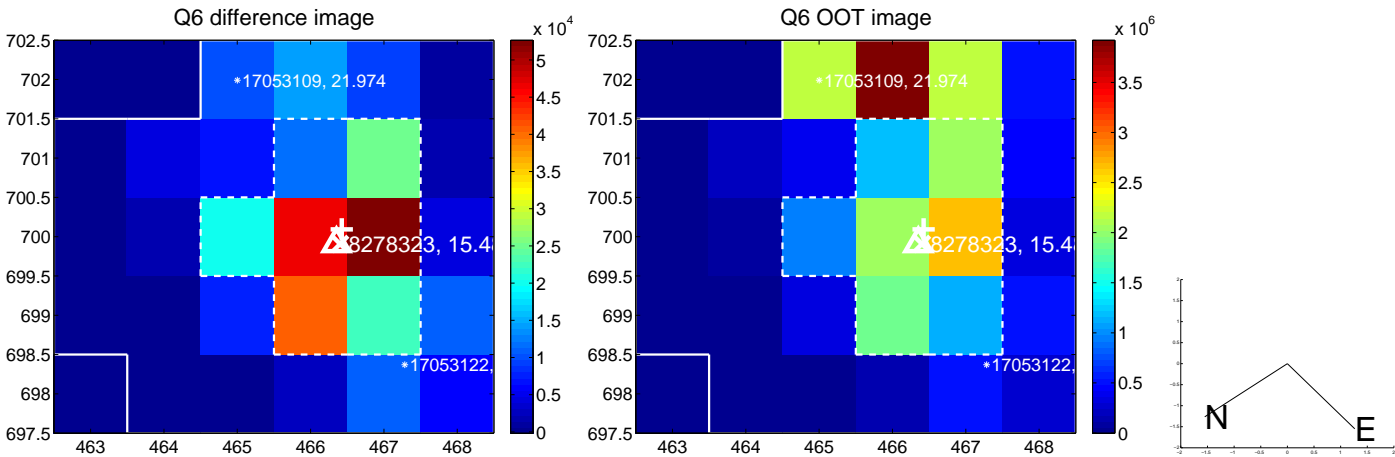
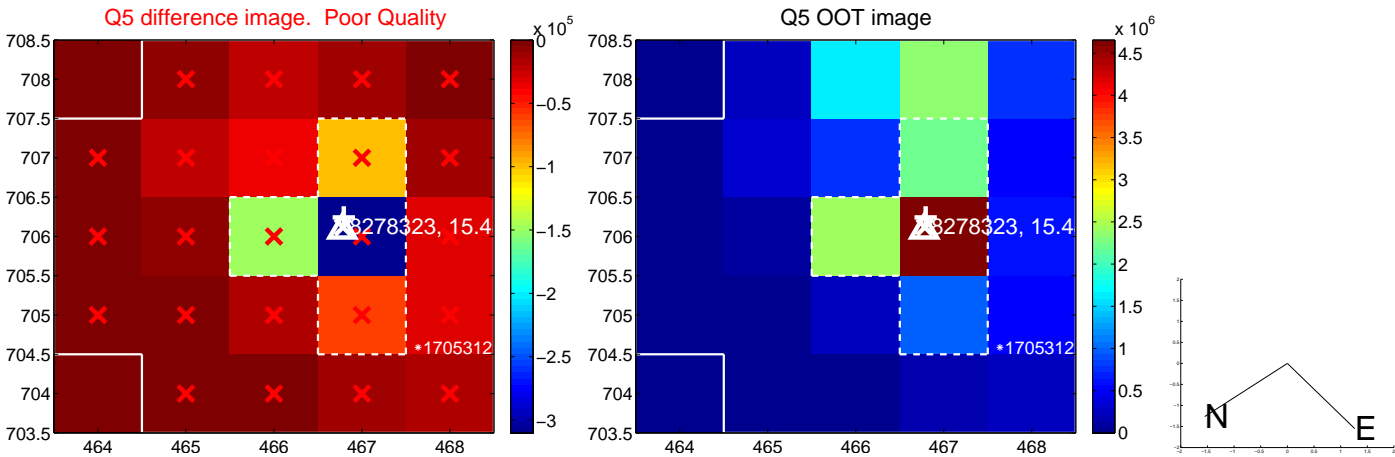


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

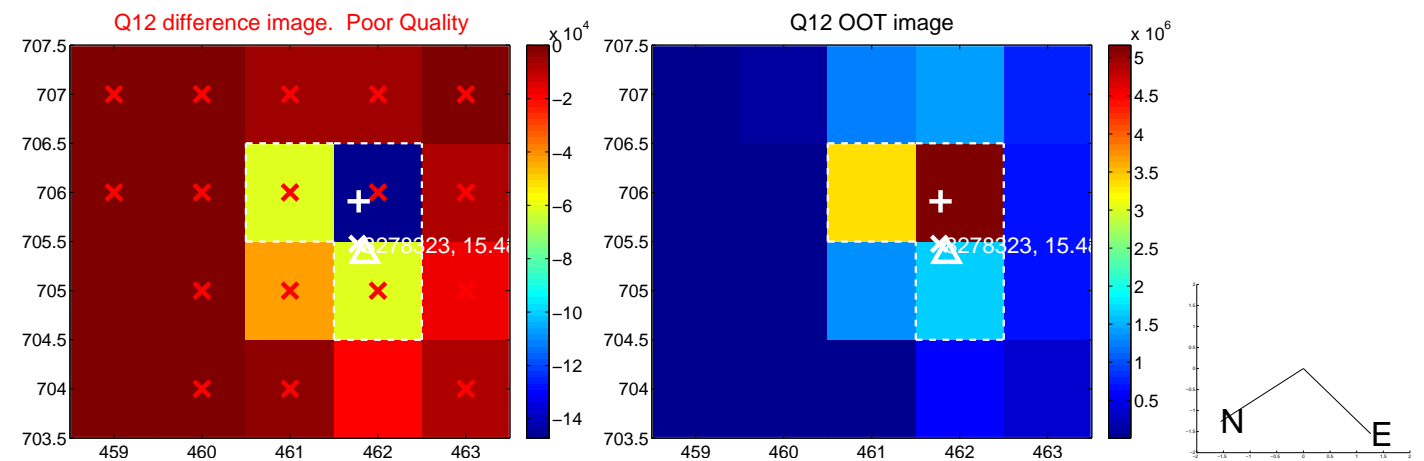
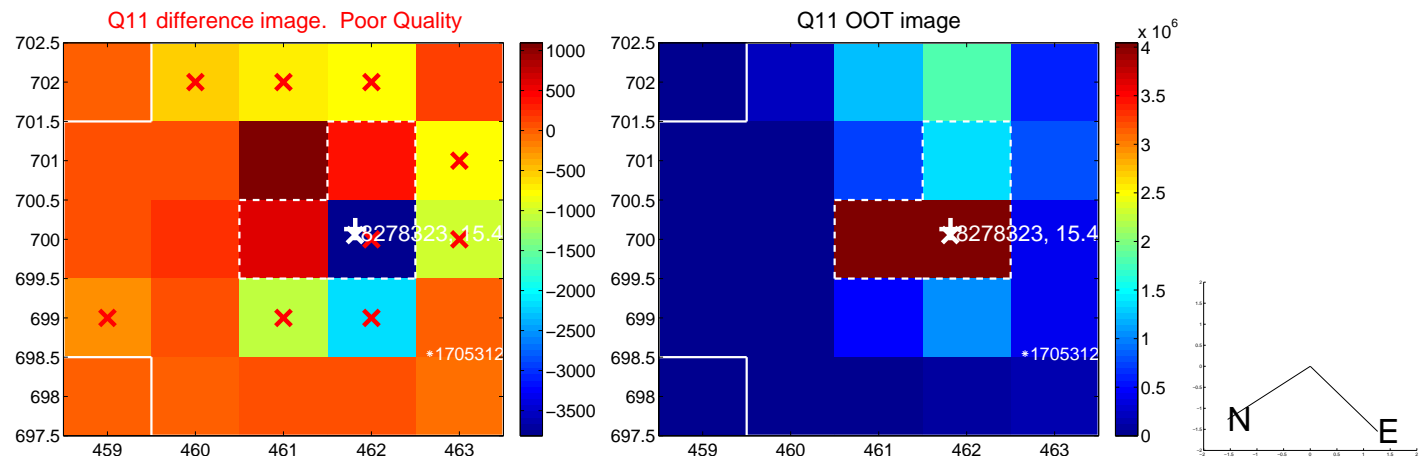
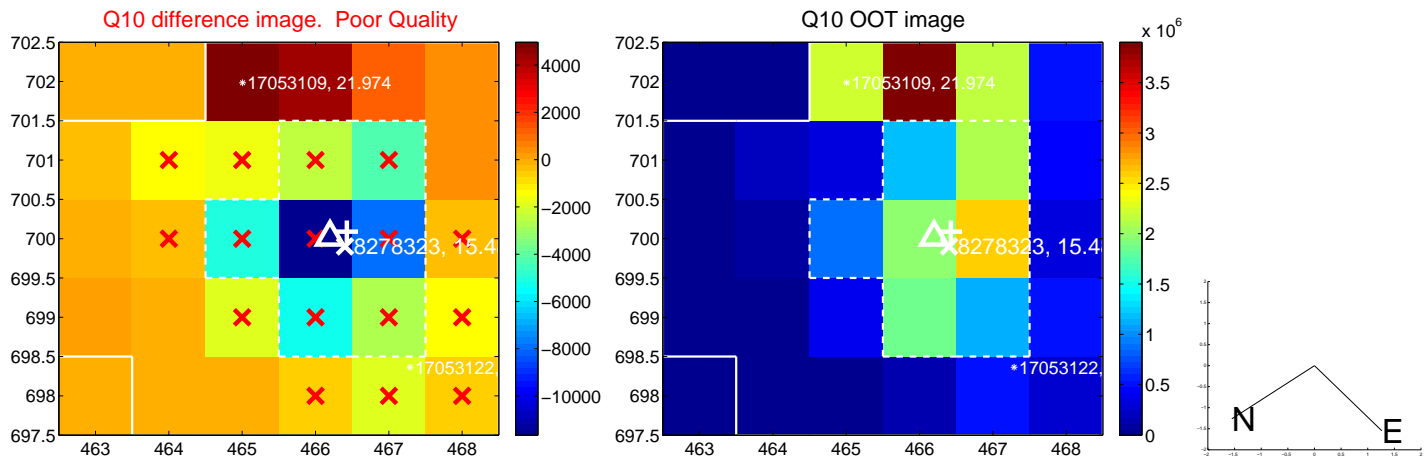
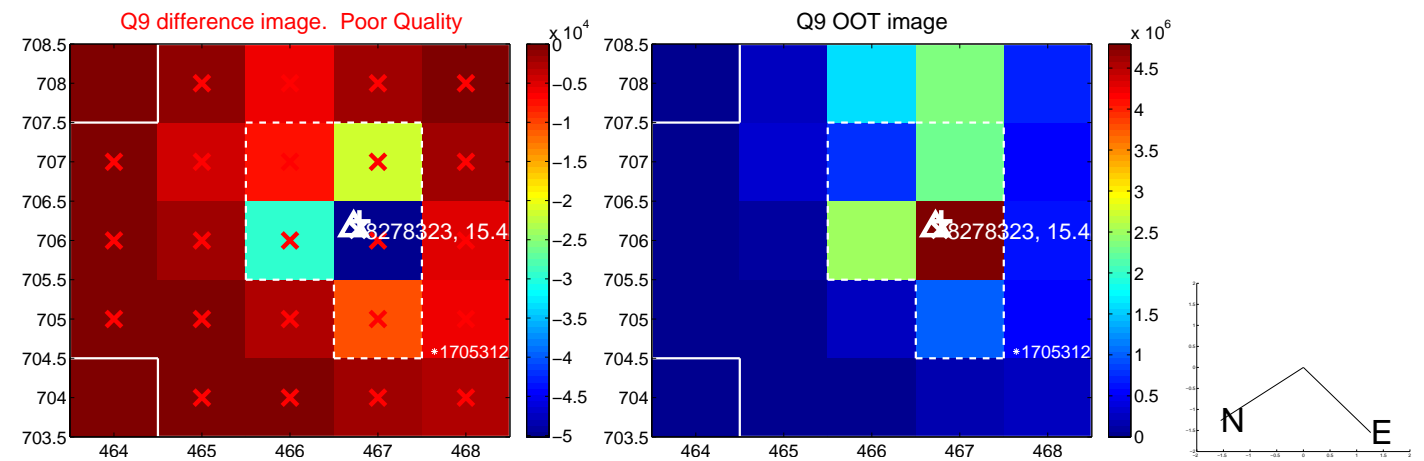
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



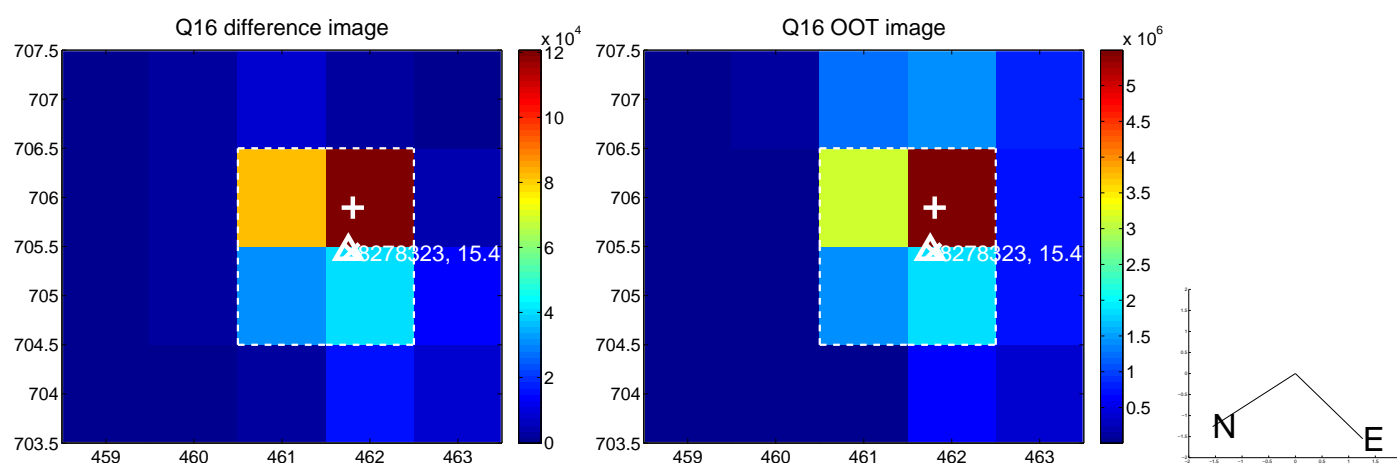
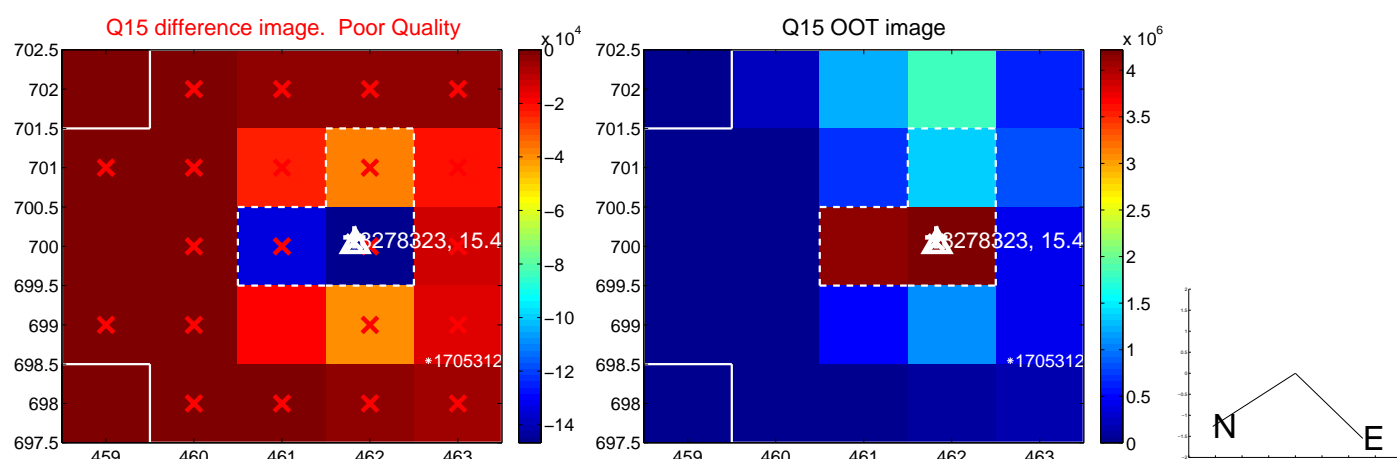
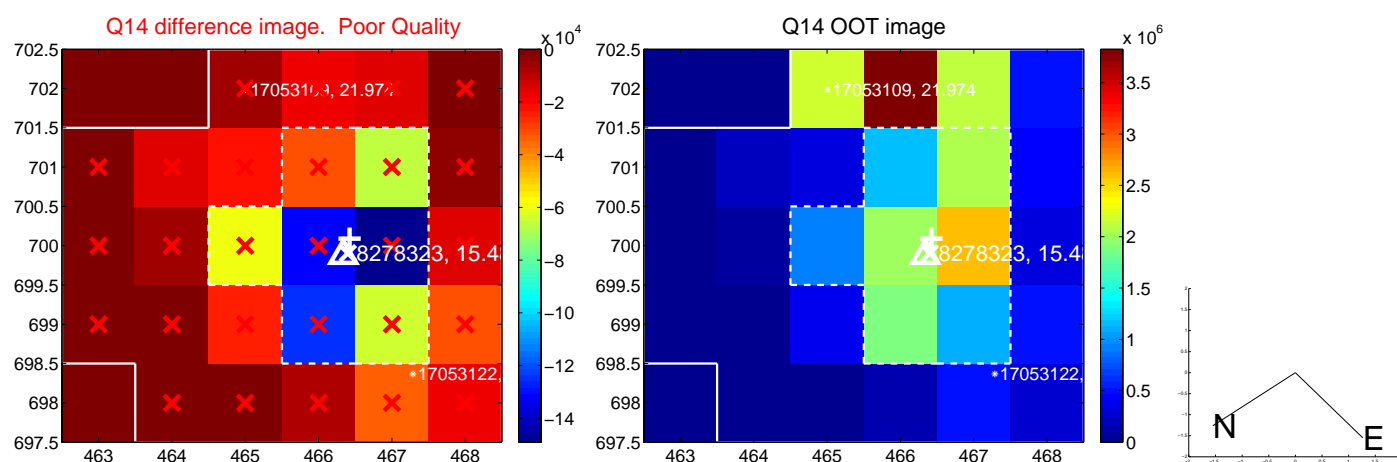
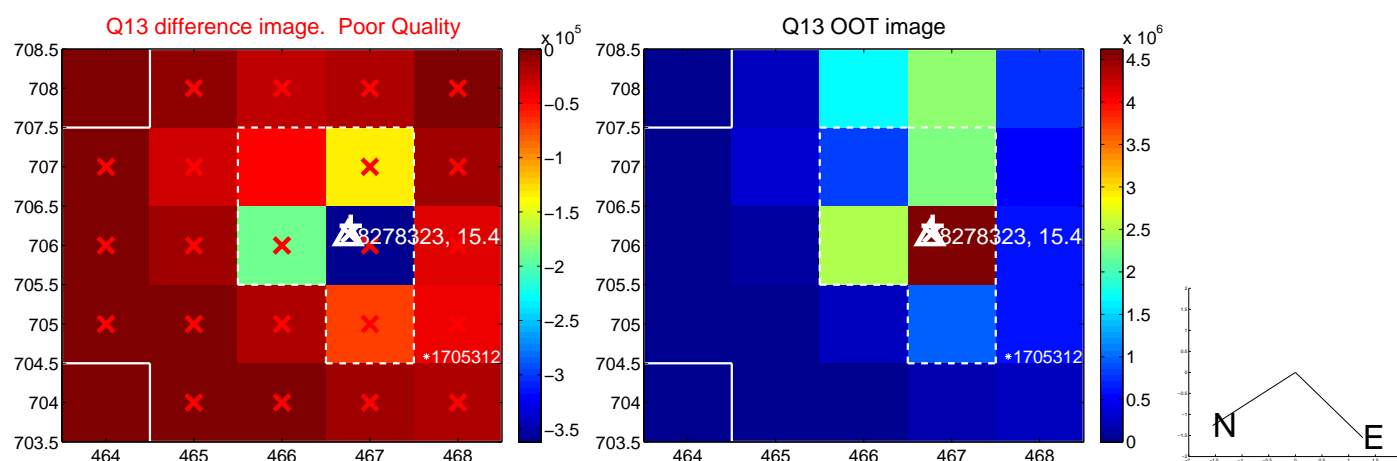
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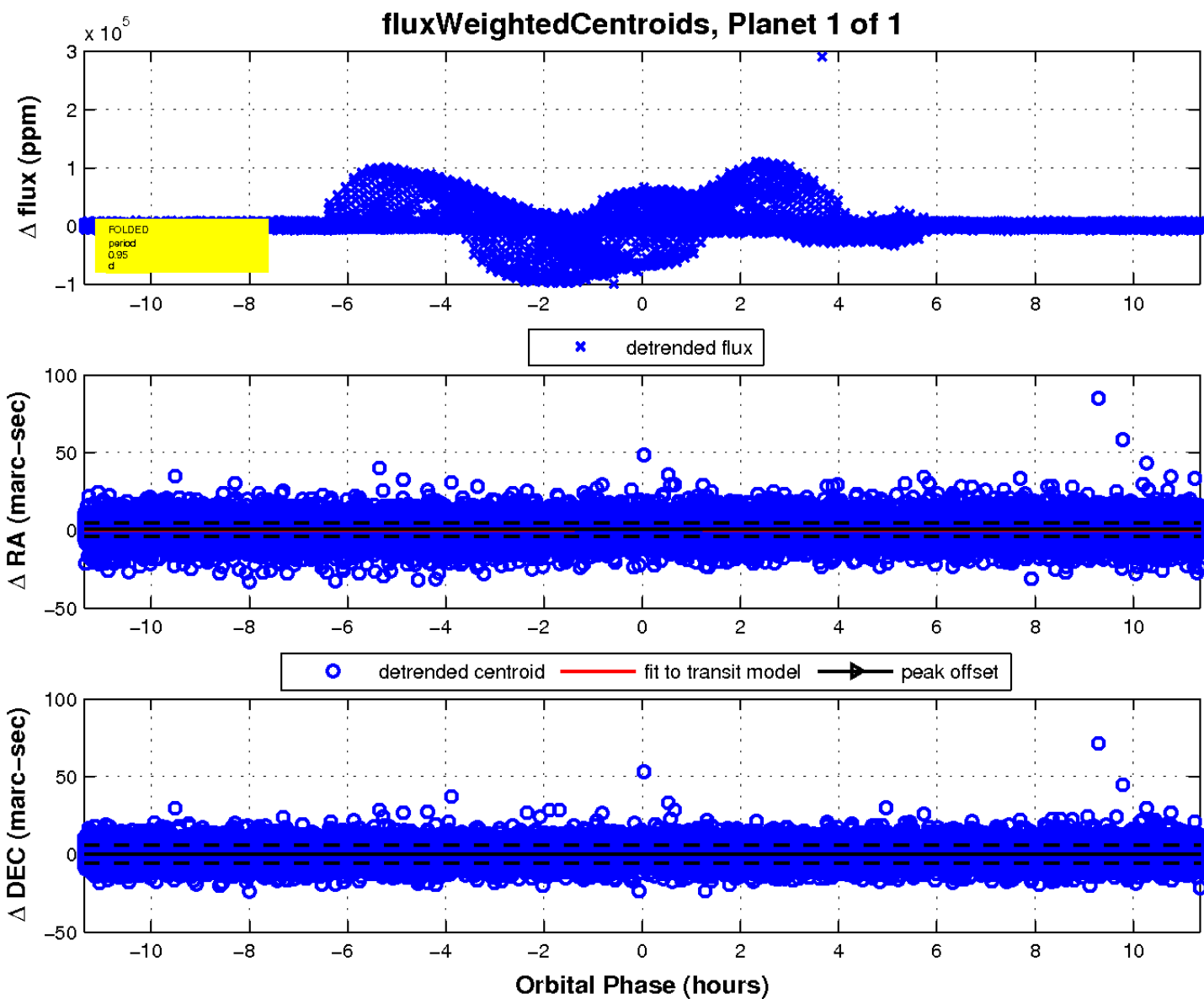
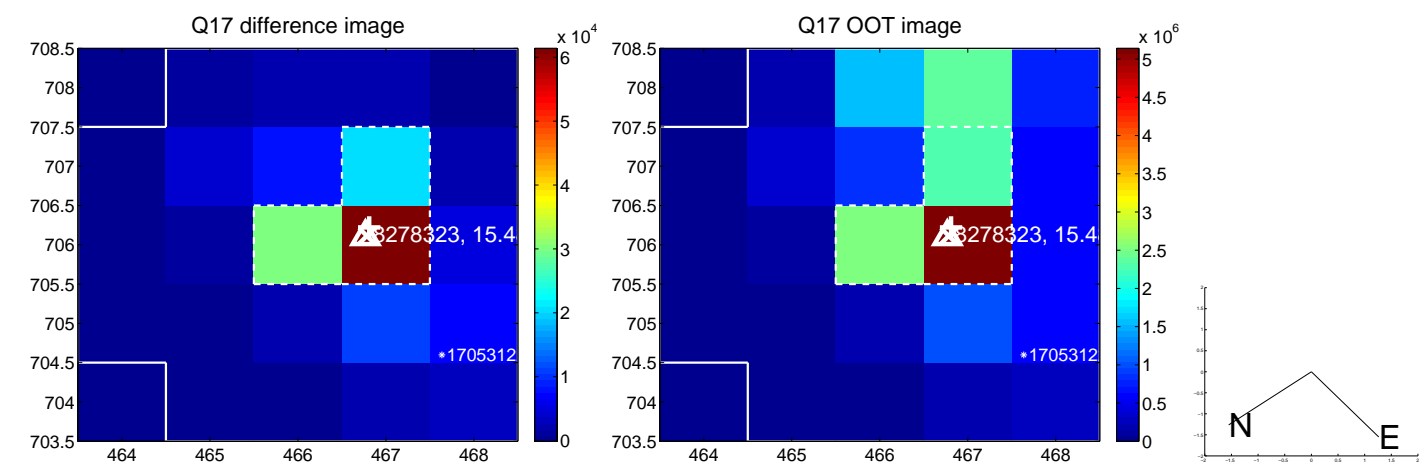


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





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# UKIRT Image

Declination

