

# KIC 008582291

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008582291-01	OBS	2330.01	2.468182	132.056389	140.5	3.544	17.4	18.5	0.87	5516	1.26	567.41

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008582291-01	OBS	FP	0.00	0	0	1	0	CENT_RESOLVED_OFFSET

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

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

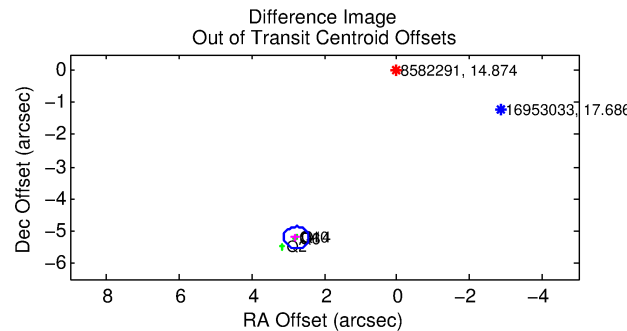
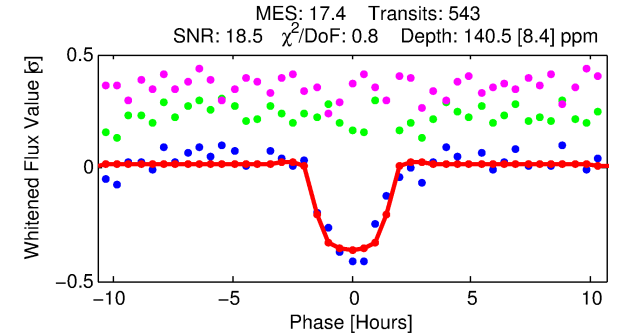
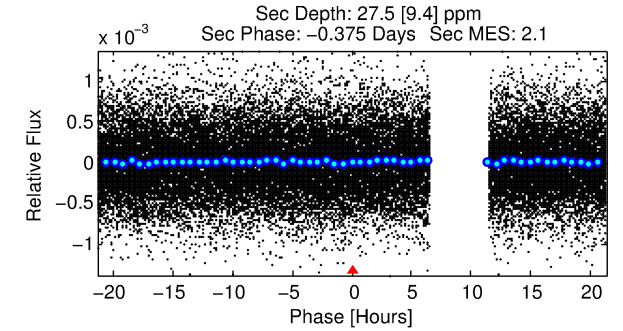
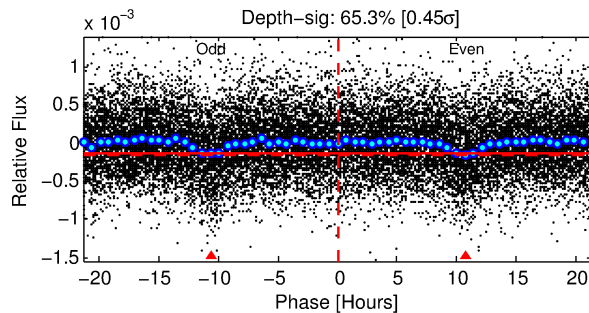
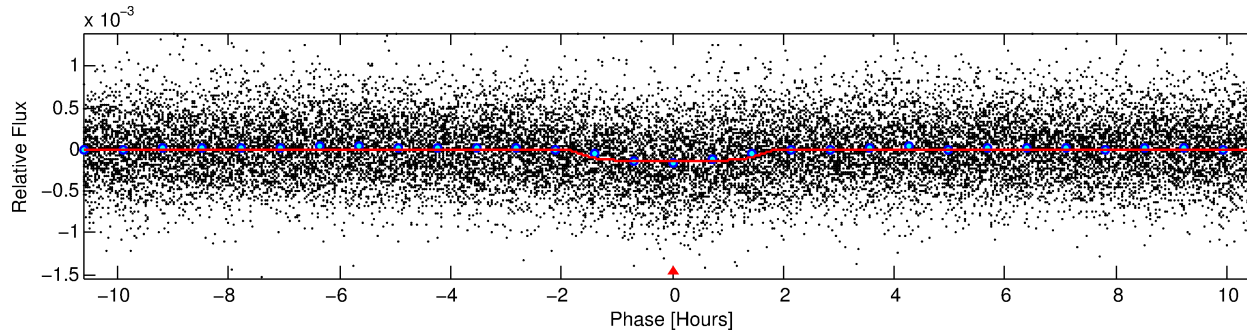
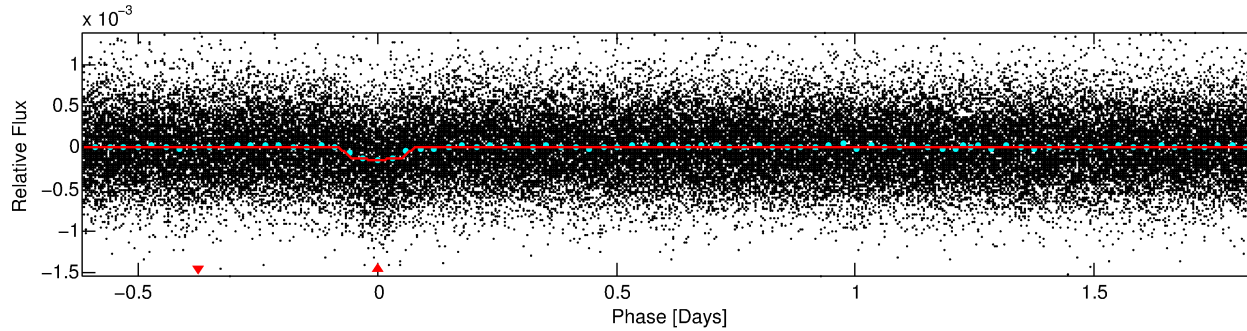
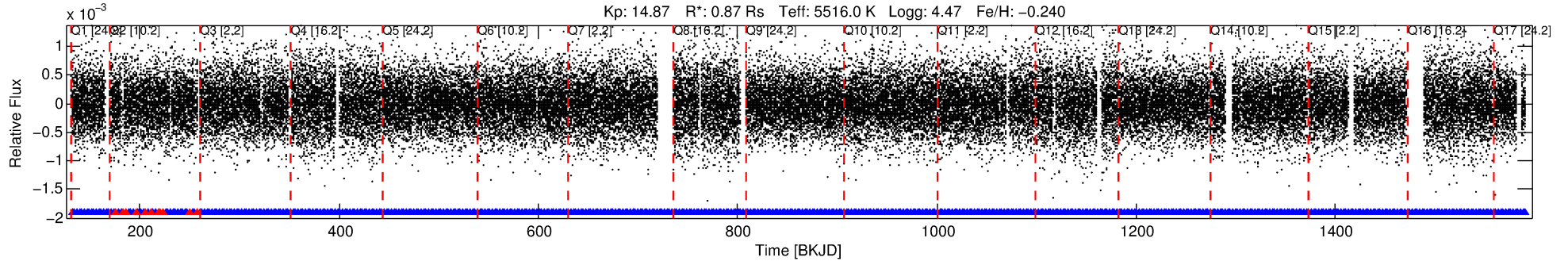
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008582291-01

No Significant Match Found

# DV One-Page Summary

KIC: 8582291 Candidate: 1 of 1 Period: 2.468 d  
KOI: K02330.01 Corr: 0.947



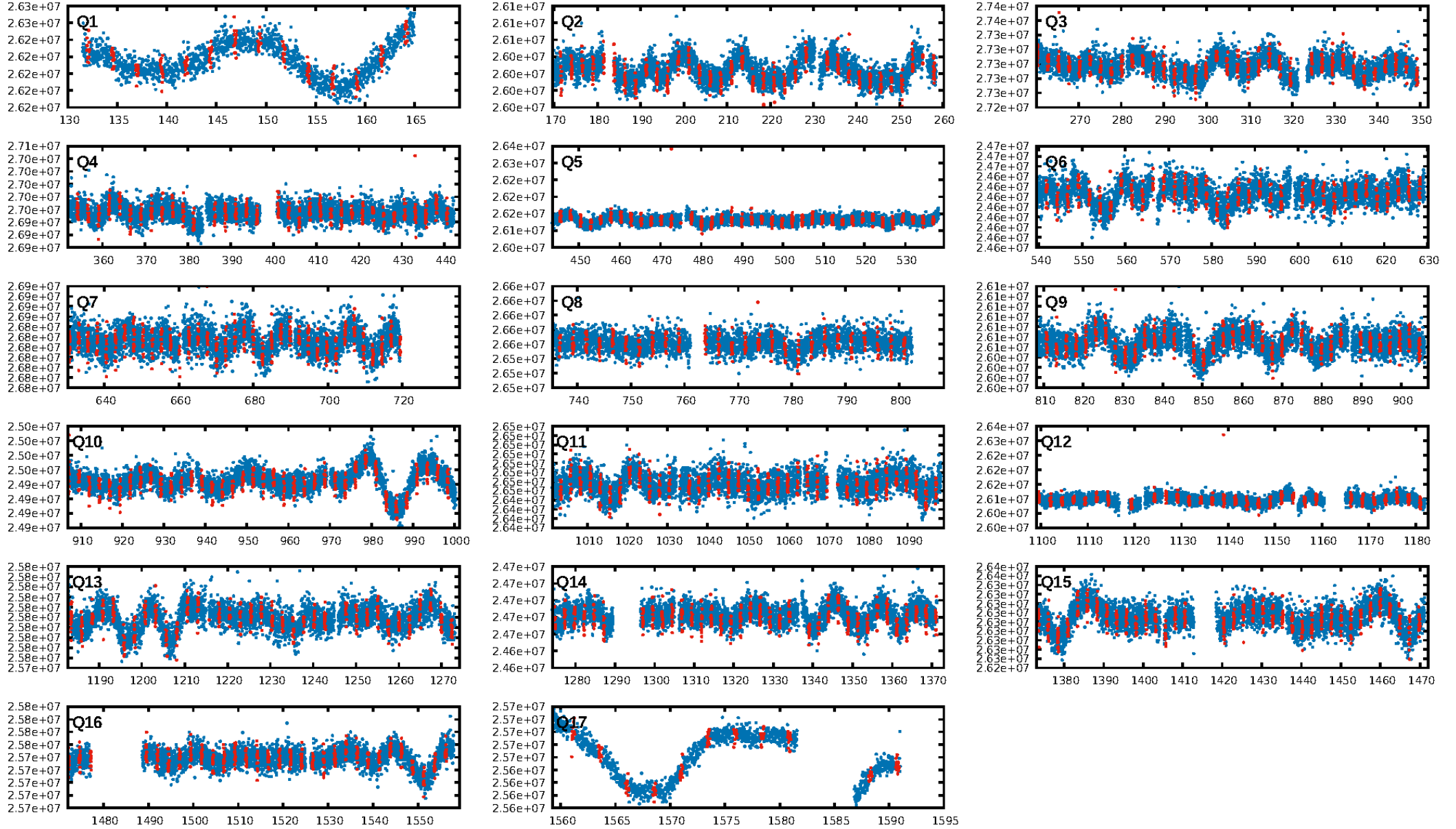
## DV Fit Results:

Period = 2.46818 [0.00001] d  
Epoch = 132.0564 [0.0027] BKJD  
Rp/R\* = 0.0132 [0.0032]  
a/R\* = 2.47 [2.32]  
b = 0.92 [0.20]  
Seff = 567.41 [170.19]  
Teq = 1245 [93] K  
Rp = 1.26 [0.41] Re  
a = 0.0333 [0.0063] AU  
Ag = 10.60 [6.88] [1.40 $\sigma$ ]  
Teffp = 3472 [521] K [4.21 $\sigma$ ]

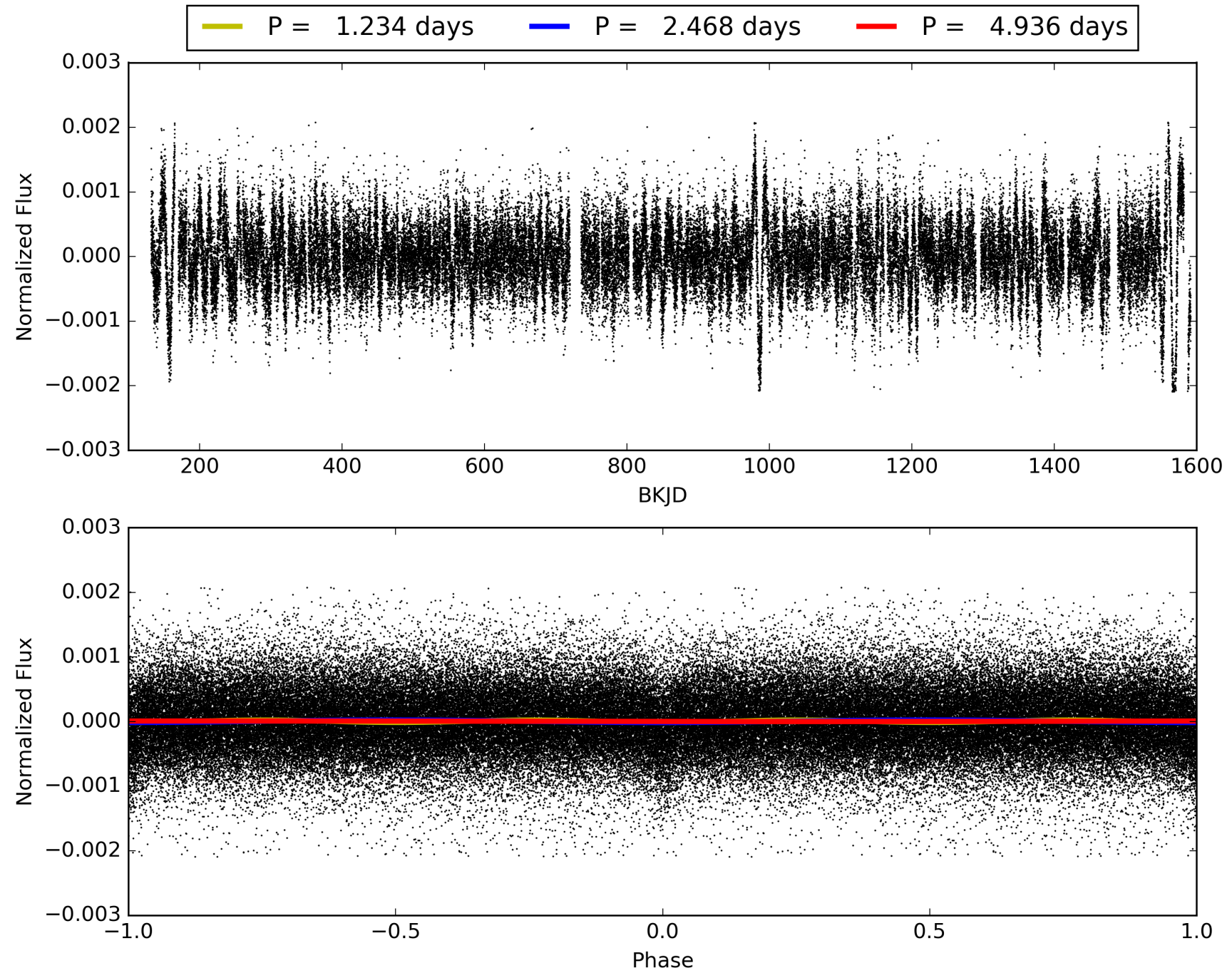
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 3.38e-66  
RollingBand-fgt: 0.98 [507/518]  
GhostDiagnostic-chr: -0.4421  
Centroid-sig: 0.0%  
Centroid-so: 17.893 arcsec [21.83 $\sigma$ ]  
OotOffset-rm: 5.904 arcsec [51.48 $\sigma$ ]  
KicOffset-rm: 6.246 arcsec [67.12 $\sigma$ ]  
OotOffset-st: 4/0/0/0 [4]  
KicOffset-st: 4/0/0/0 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [17/17]

# TCE 00582291-01, PDC Light Curves

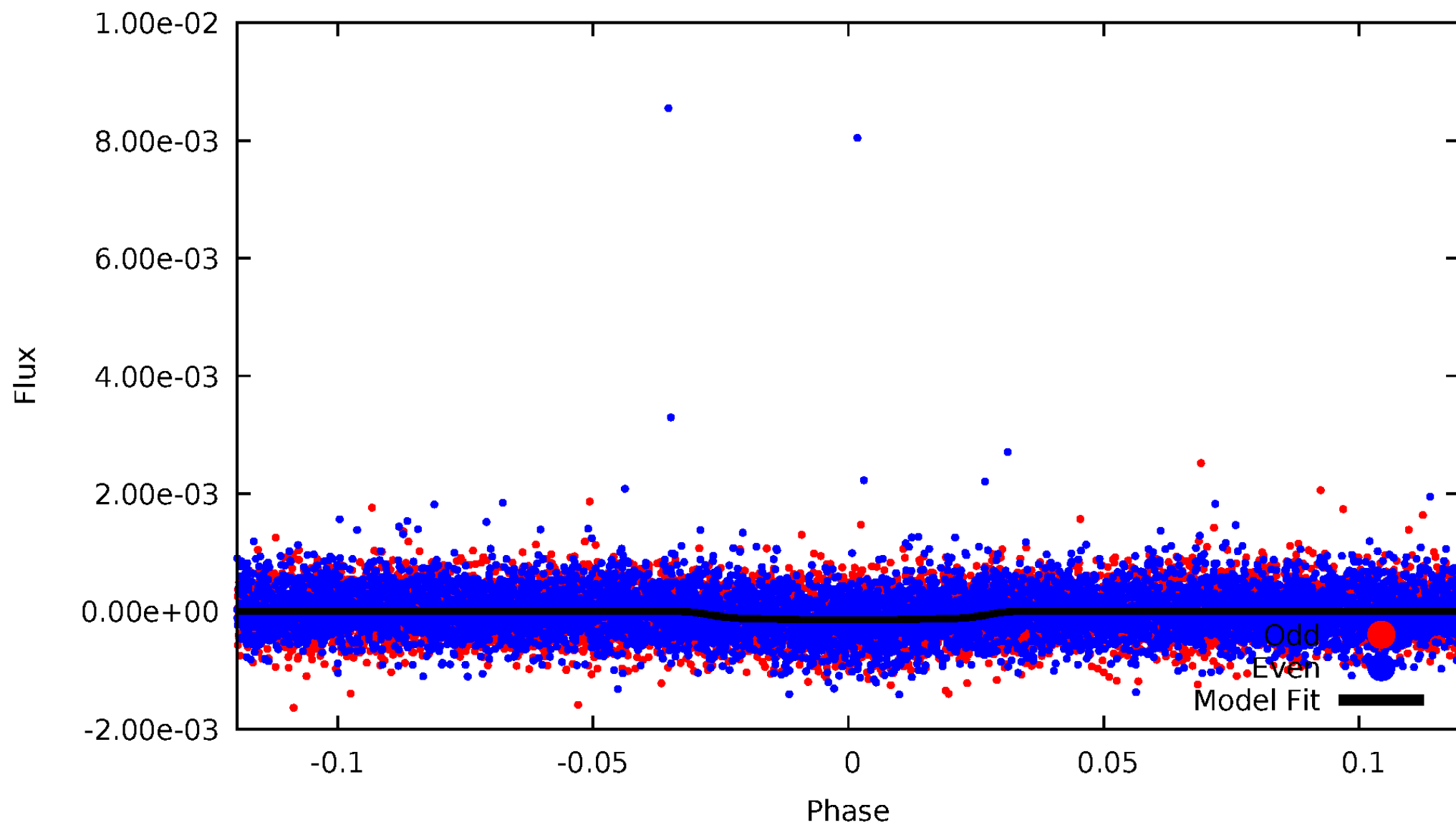


TCE 008582291-01



# DV Odd/Even

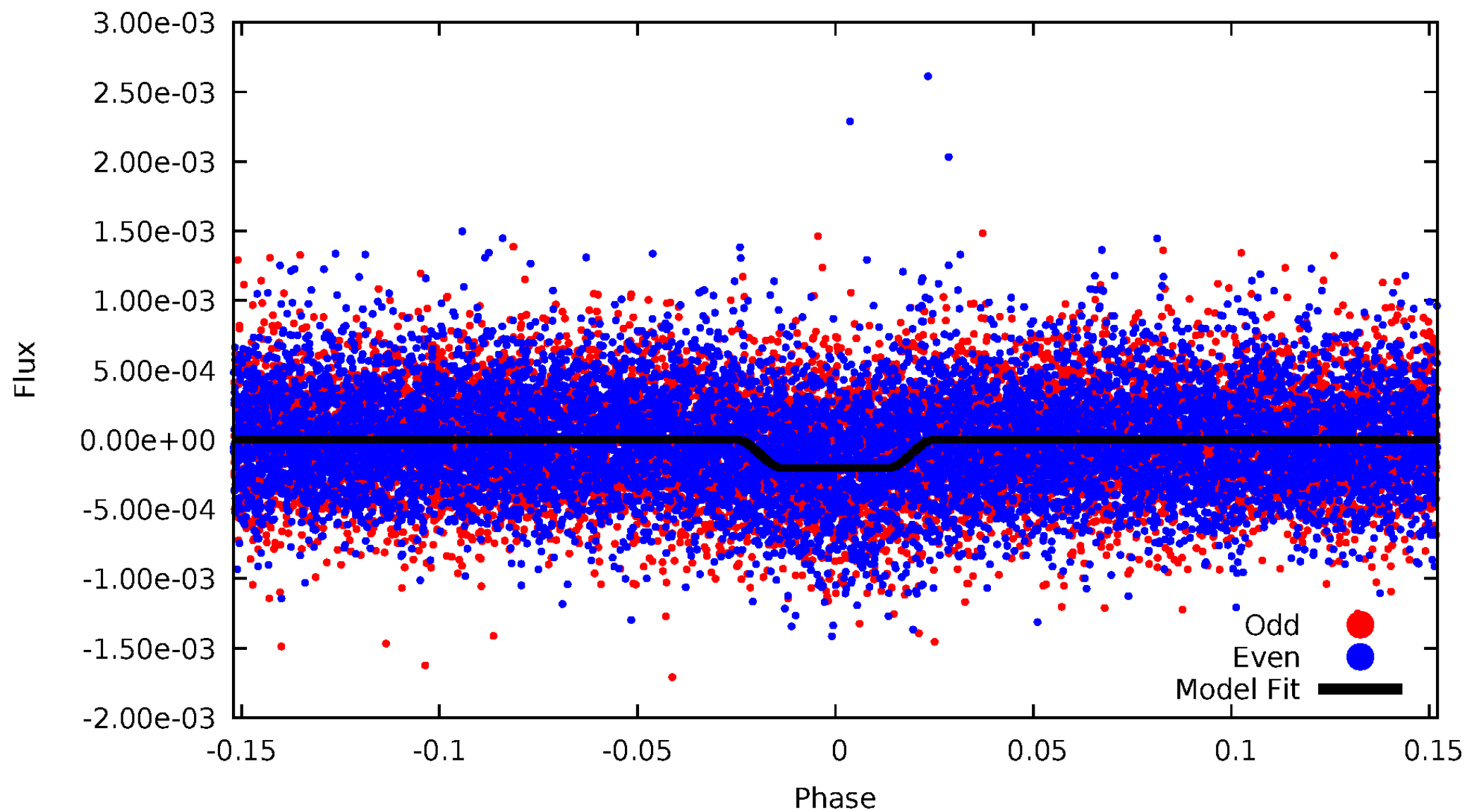
TCE 008582291-01





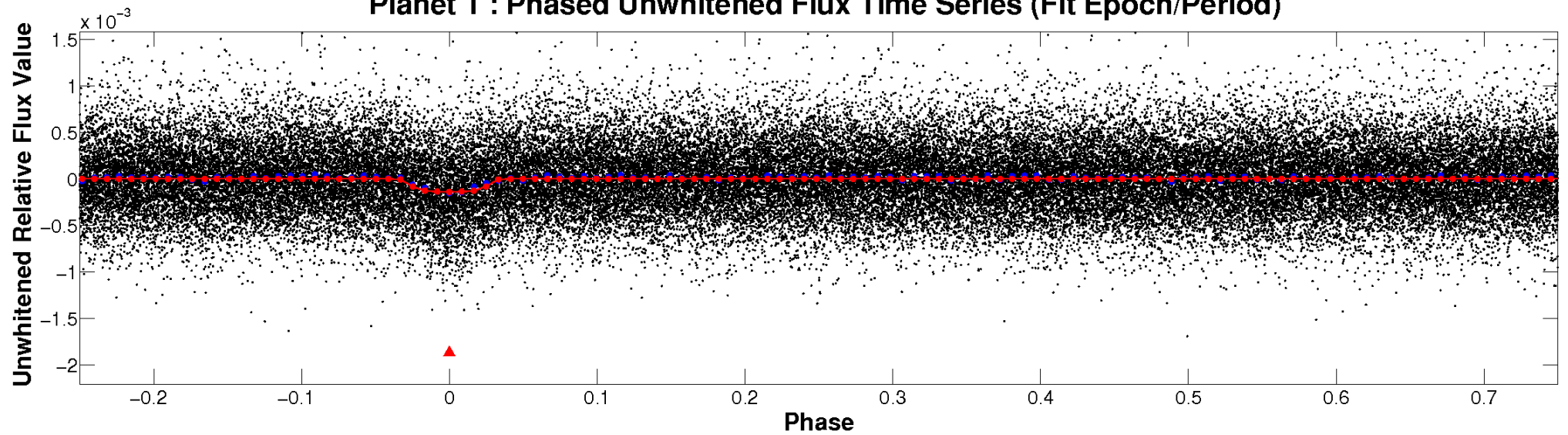
# ALT Odd/Even

TCE 008582291-01

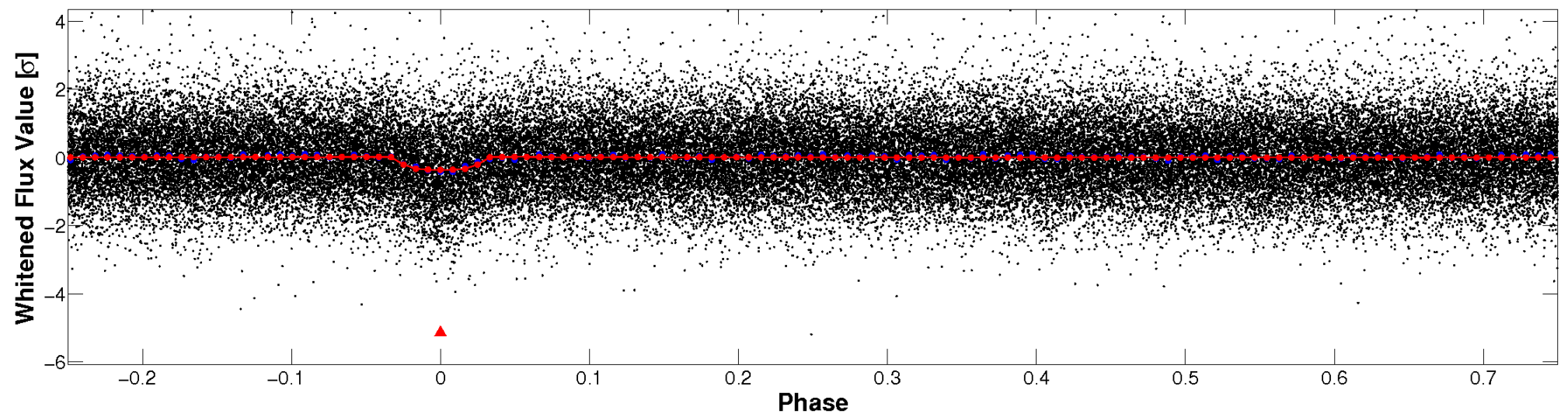


# Non-Whitened Vs. Whitened Light Curve

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

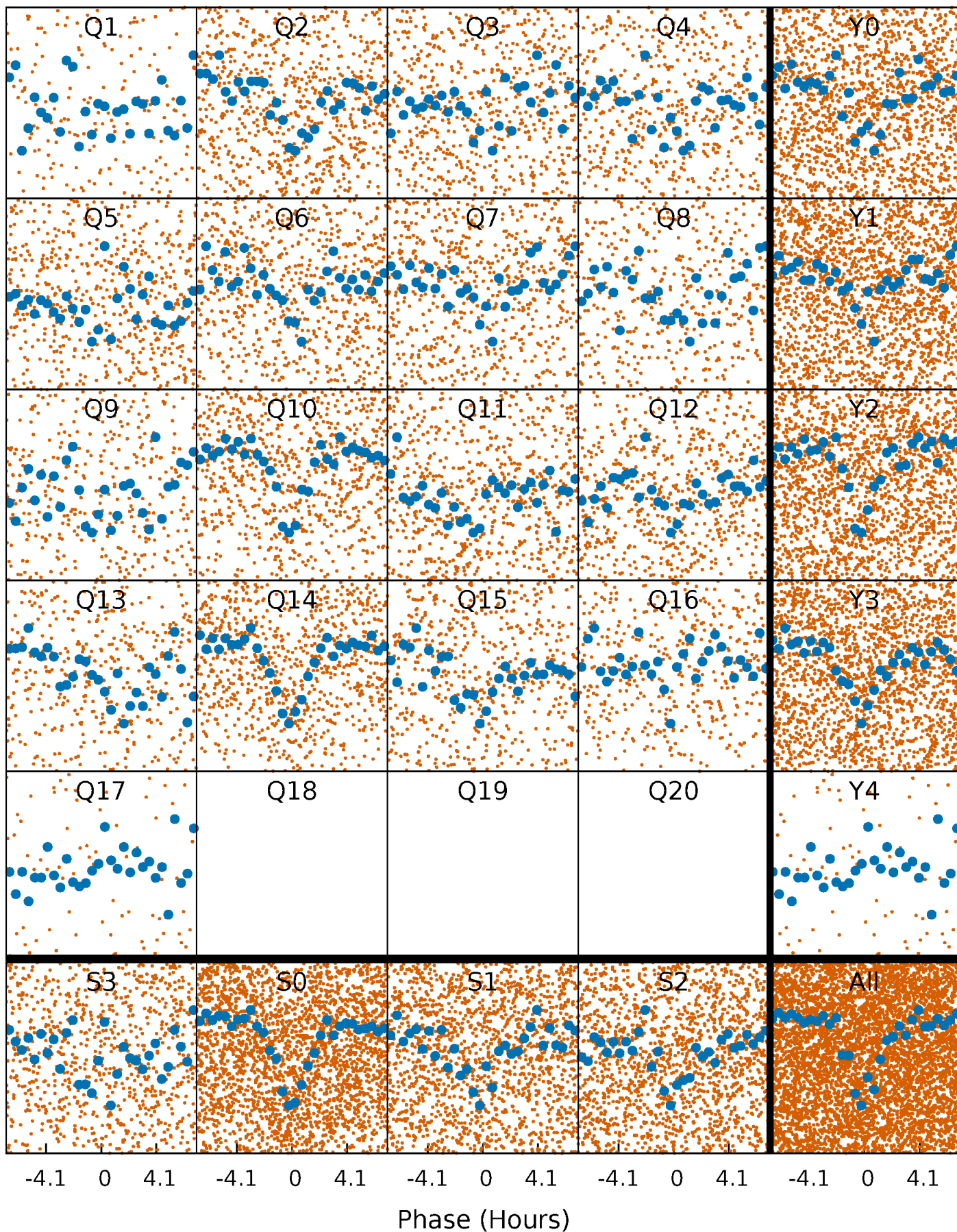


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

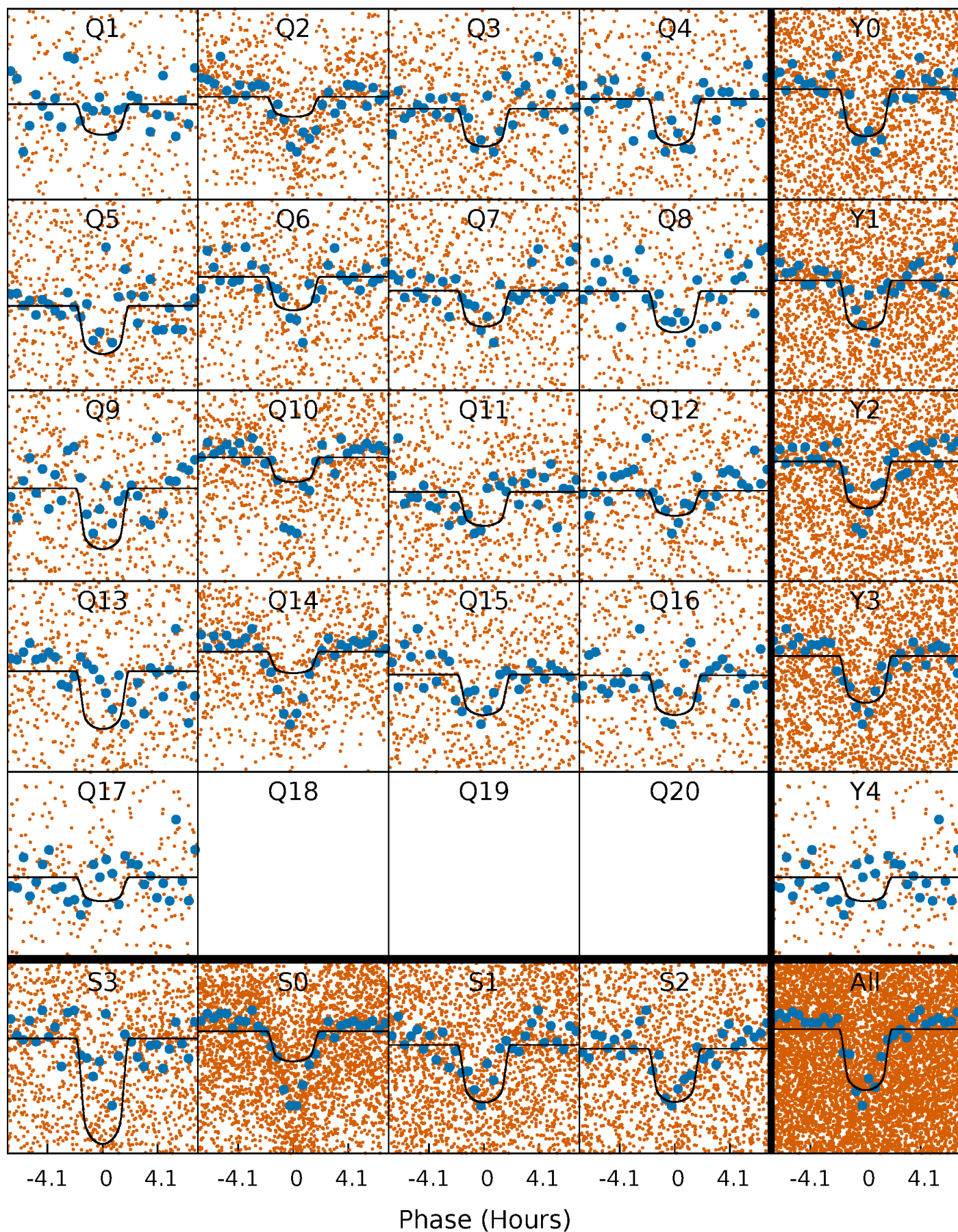
TCE 008582291-01 P= 2.468182 Days  $T_0=132.056389$  (BKJD)





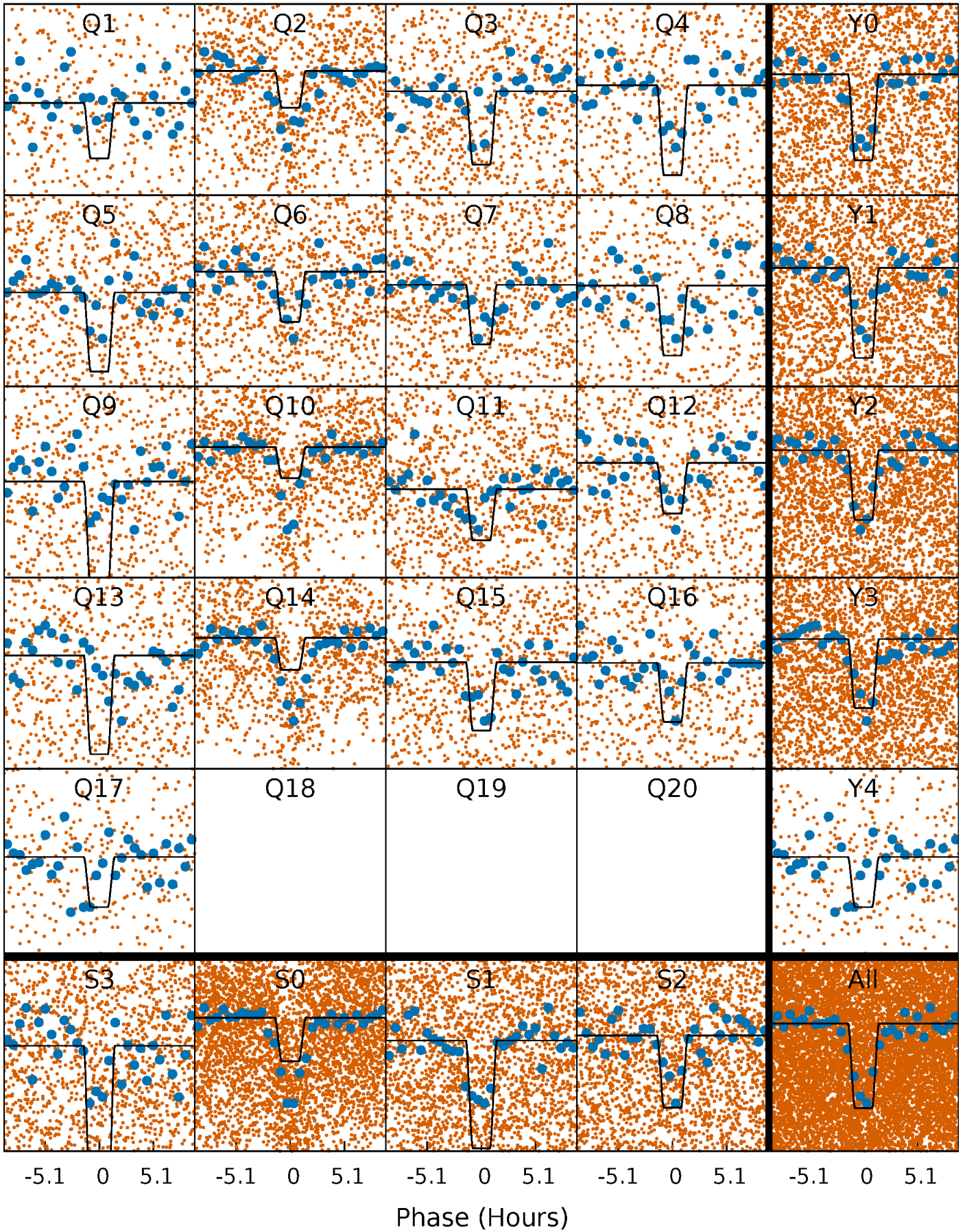
# DV Quarter-Phased Transit Curves

TCE 008582291-01 P= 2.468182 Days  $T_0=132.056389$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

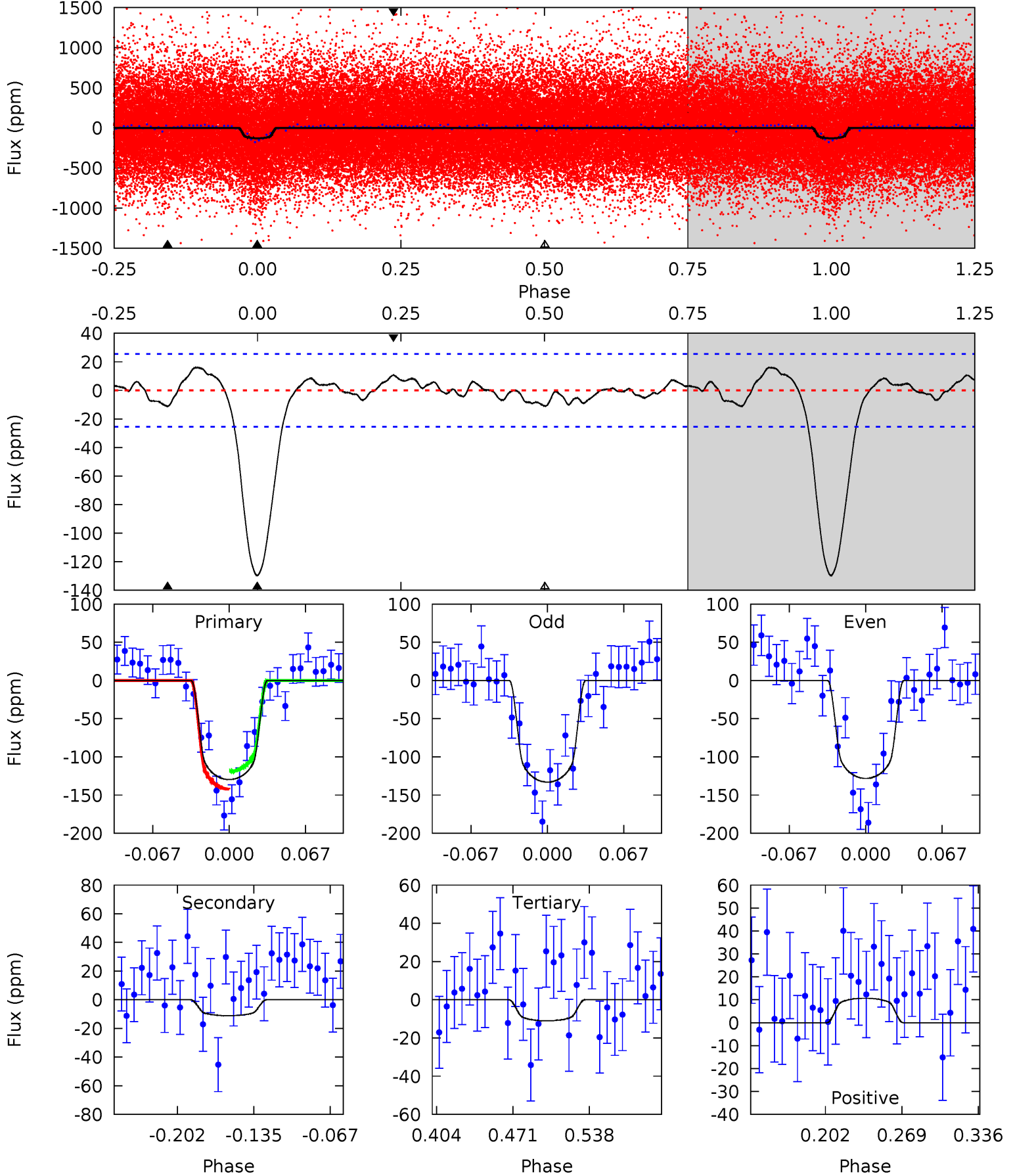
TCE 008582291-01 P= 2.468090 Days  $T_0=132.080664$  (BKJD)



# DV Model-Shift Uniqueness Test

008582291-01, P = 2.468182 Days, E = 129.588207 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
23.7	2.03	2.01	1.95	4.65	1.83	0.95	21.6	21.7	0.01	0.08	0.44	1.17	0.11	2.12

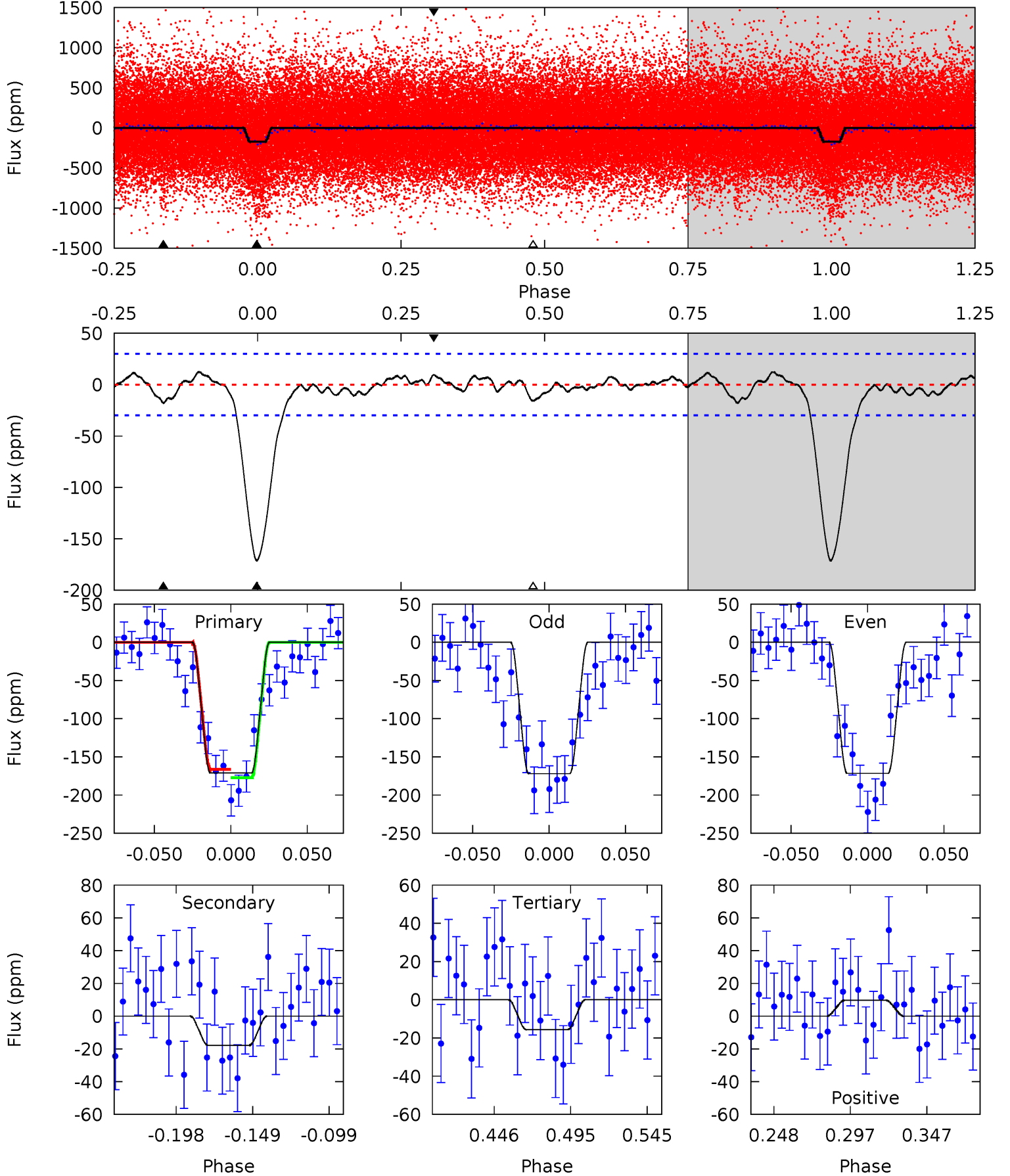




# Alt Model-Shift Uniqueness Test

008582291-01, P = 2.468090 Days, E = 129.612574 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
26.9	2.81	2.46	1.52	4.71	1.96	0.92	24.5	25.4	0.34	1.29	0.03	1.12	0.07	0.85





### Stellar Parameters For KIC 008582291

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5516^{+166}_{-166}$	$4.466^{+0.100}_{-0.150}$	$-0.240^{+0.300}_{-0.300}$	$0.872^{+0.196}_{-0.105}$	$0.811^{+0.111}_{-0.065}$	$1.724^{+0.783}_{-0.747}$
	+3%/-3%	+2%/-3%	+125%/-125%	+22%/-12%	+14%/-8%	+45%/-43%
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 008582291-01 / KOI 2330.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-11 \pm 5$	$1.28^{+0.35}_{-0.28}$	$1750^{+104}_{-88}$	$3260^{+379}_{-402}$	$4.015^{+3.936}_{-2.266}$
Alt.	$-18 \pm 6$	$1.37^{+0.33}_{-0.31}$	$1743^{+108}_{-85}$	$3434^{+350}_{-329}$	$5.597^{+4.486}_{-2.588}$

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

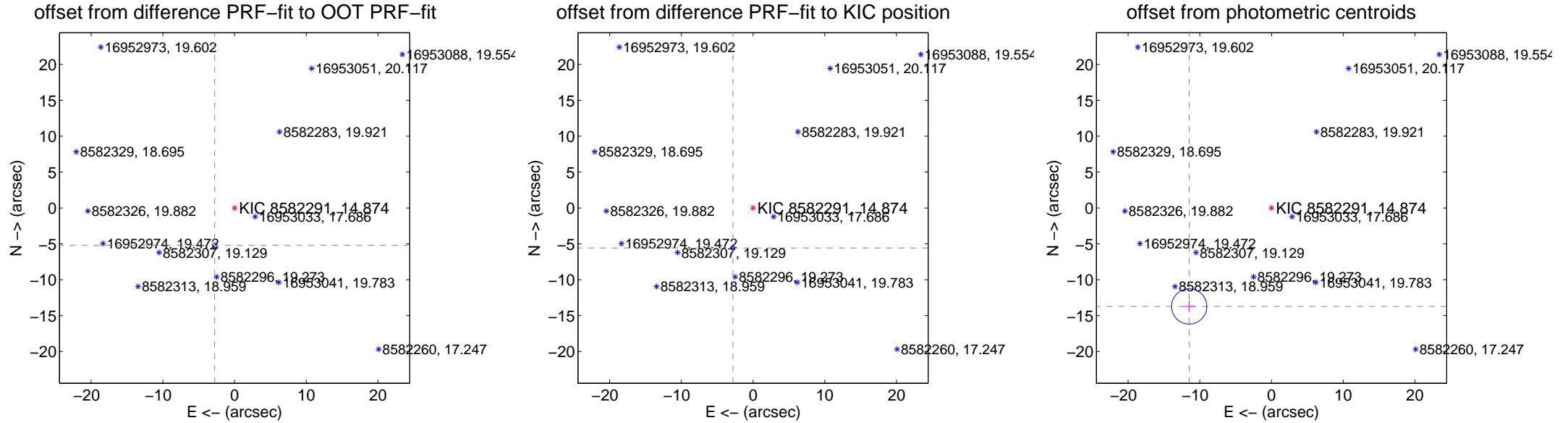
## DV Centroid Data

Supplemental centroid analysis for 008582291-01. Kepler magnitude: 14.87. Transit SNR 18.53

There are 4 quarters with good PRF difference image offsets

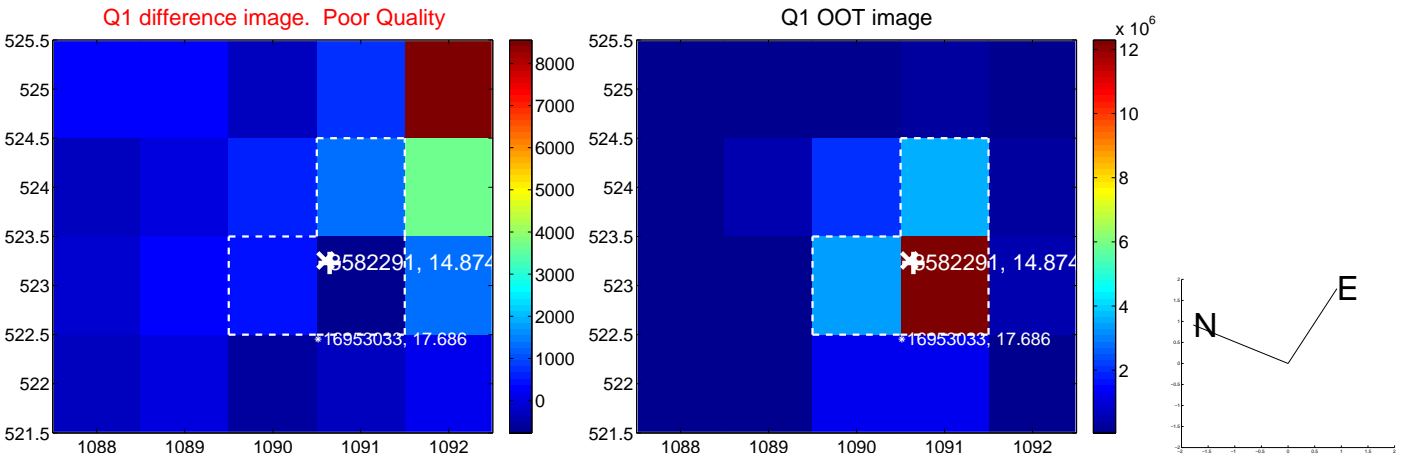
The direct PRF centroid is offset from the target star catalog position by about 0.41 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$5.904 \pm 0.115$	51.48	$2.781 \pm 0.101$	$-5.208 \pm 0.093$
PRF-fit source offset from KIC position	$6.246 \pm 0.093$	67.12	$2.807 \pm 0.104$	$-5.580 \pm 0.074$
photometric centroid source offset	$17.89 \pm 0.82$	21.83	$11.49 \pm 0.82$	$-13.72 \pm 0.82$

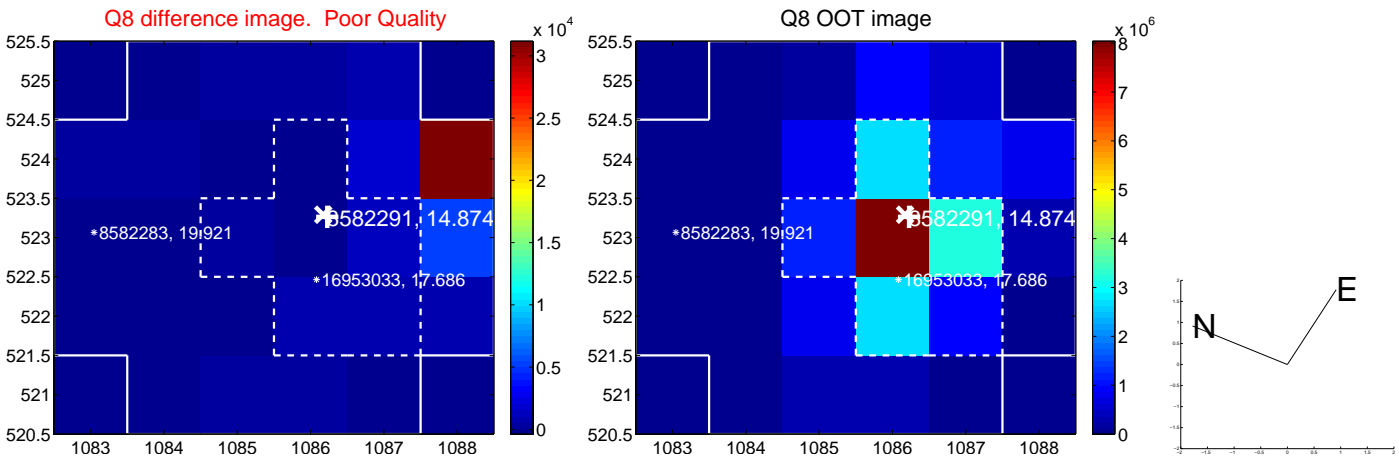
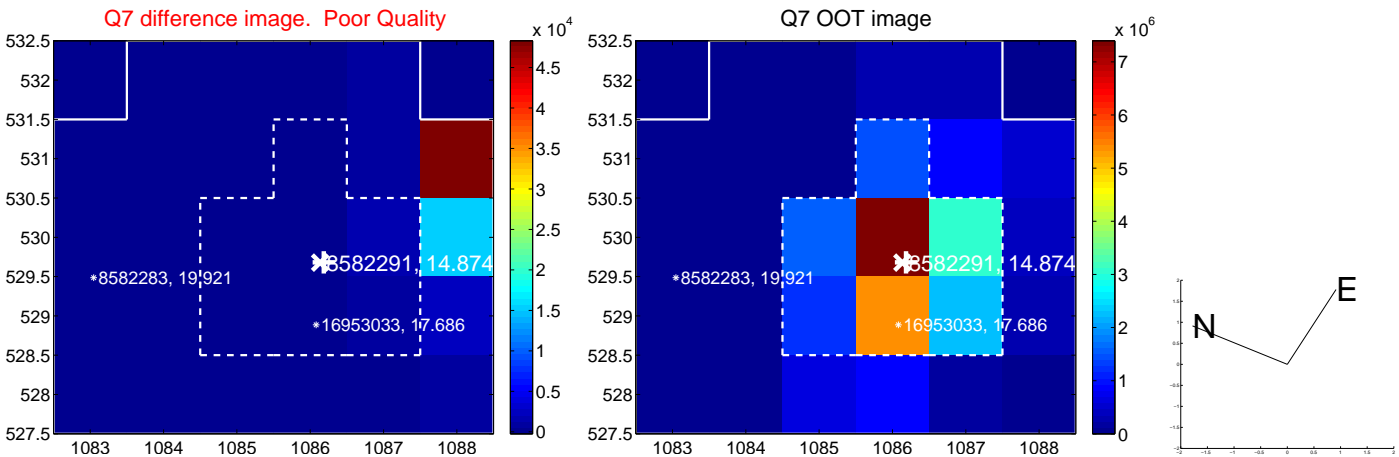
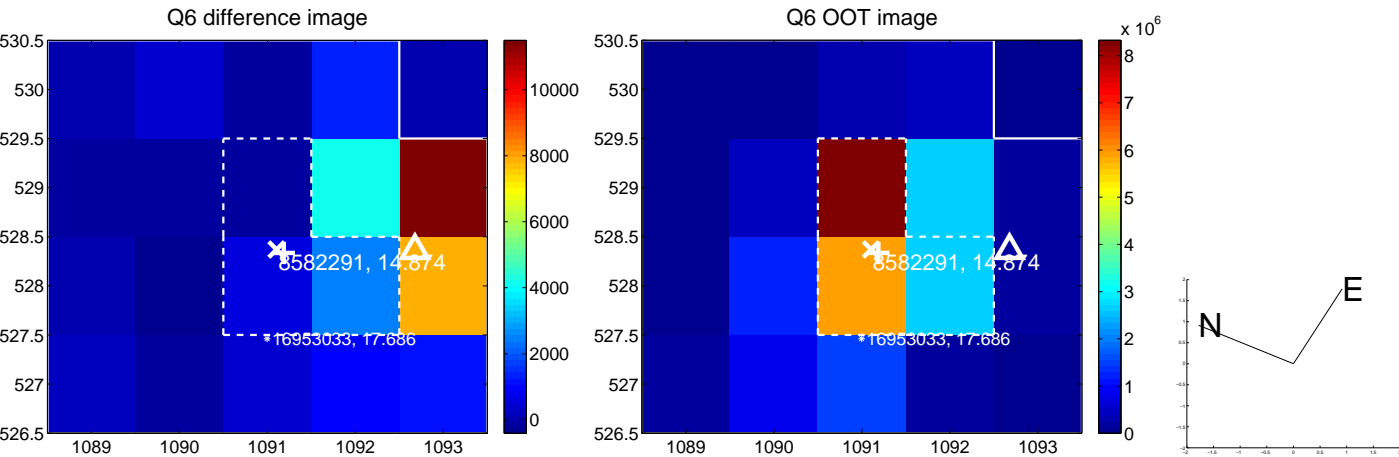
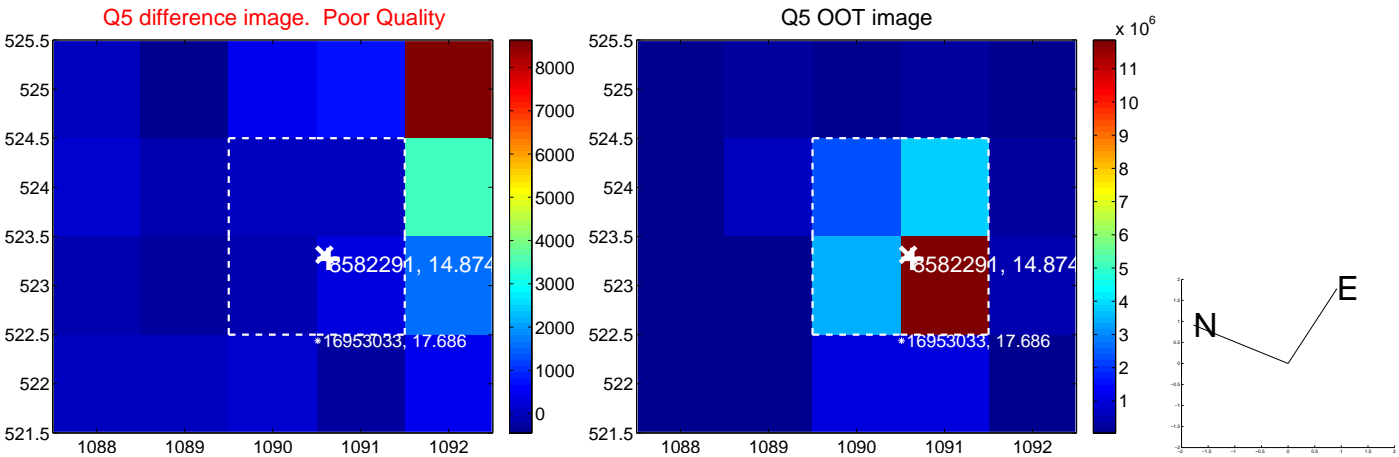


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

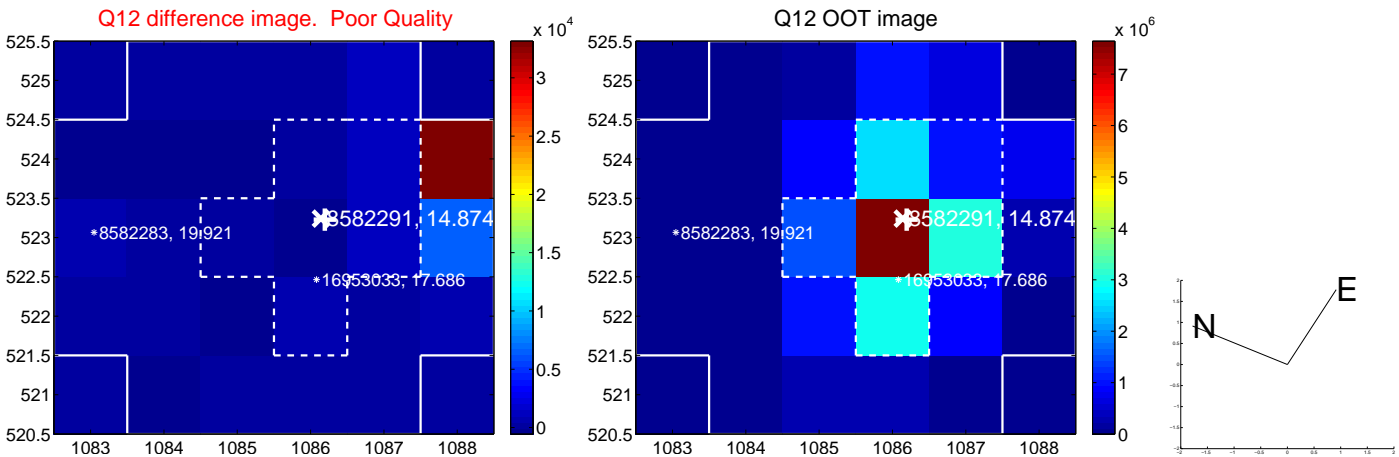
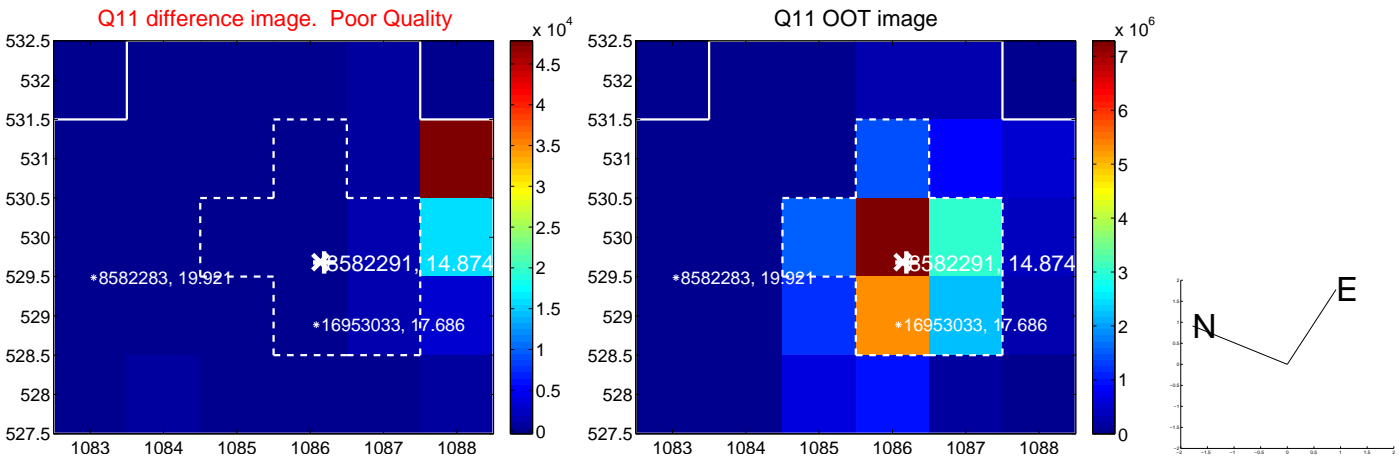
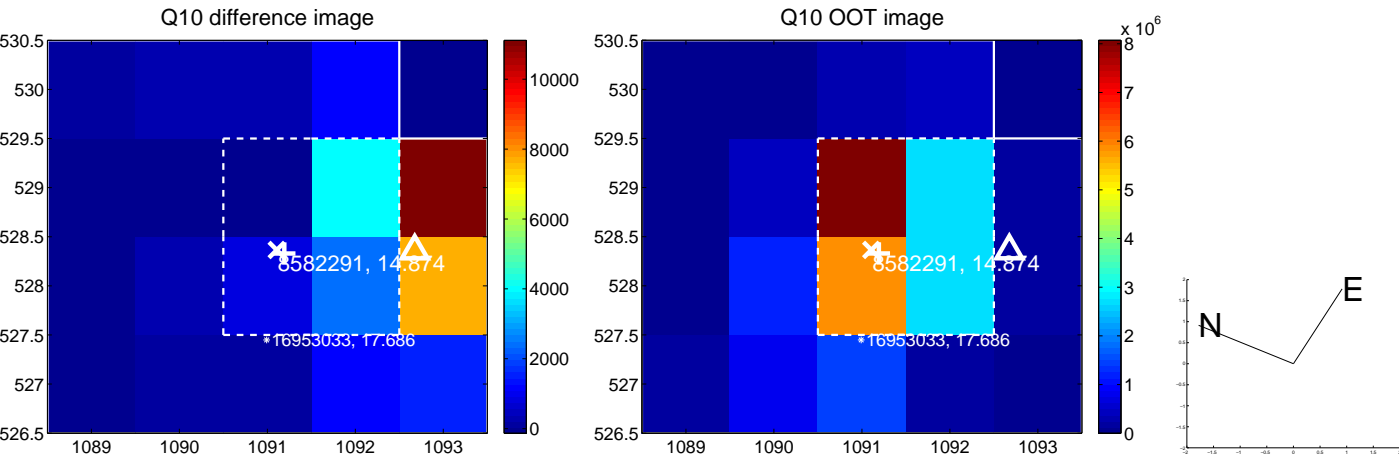
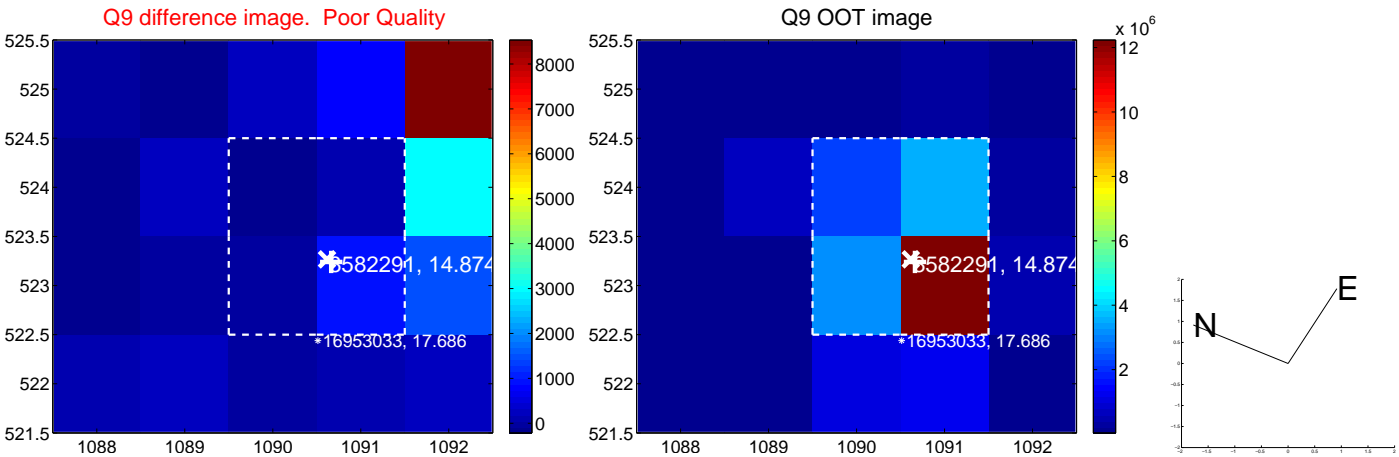


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

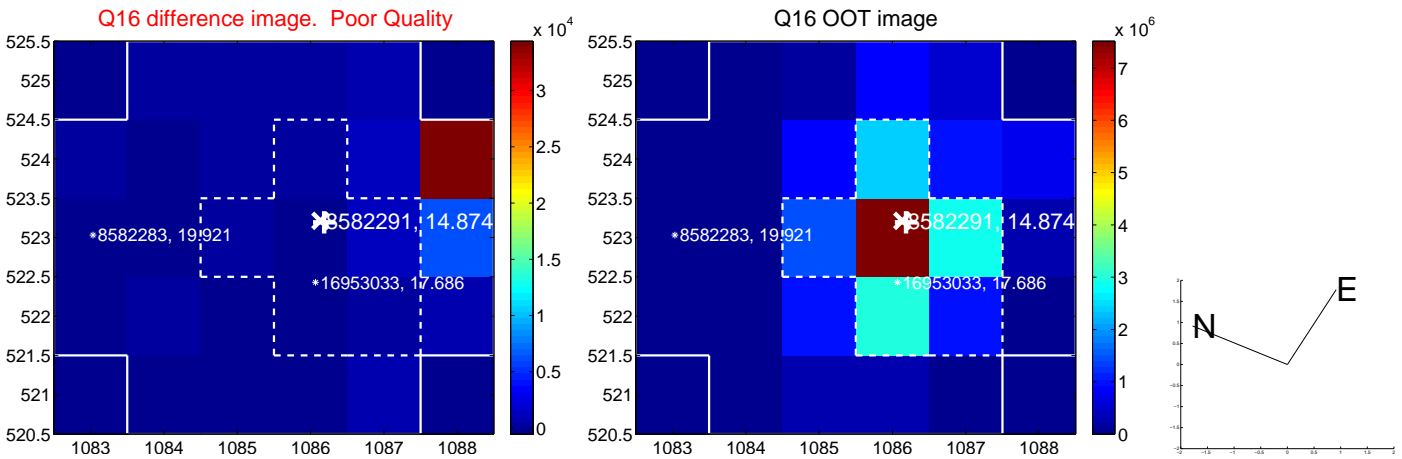
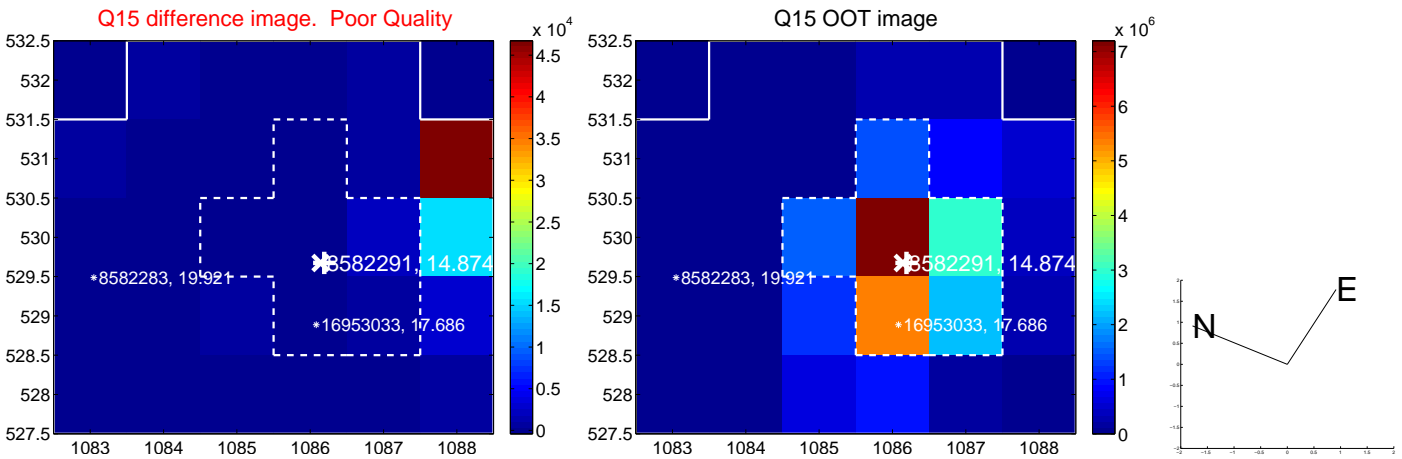
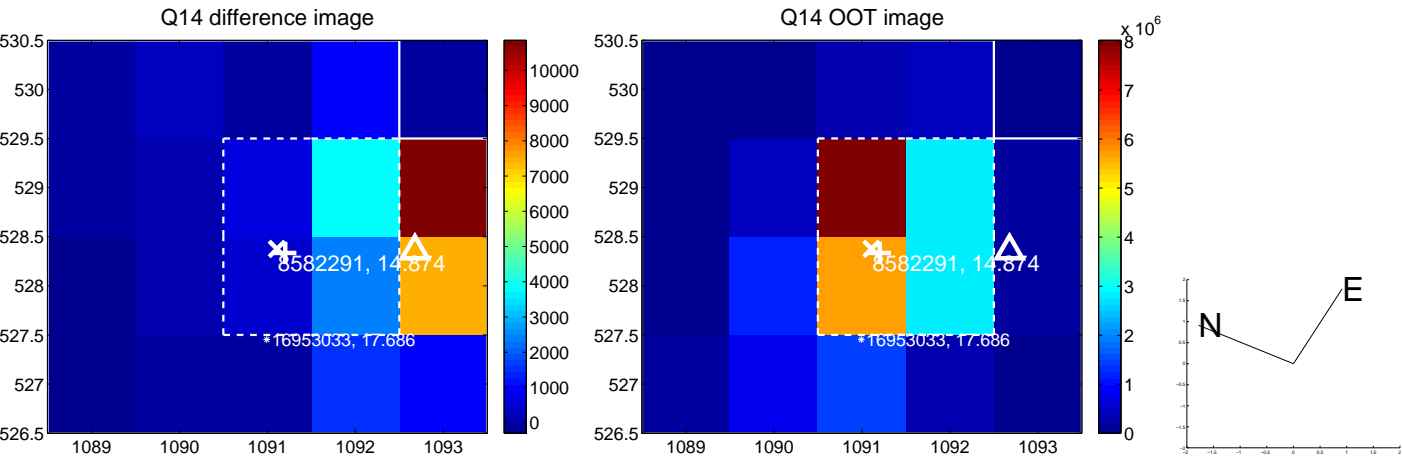
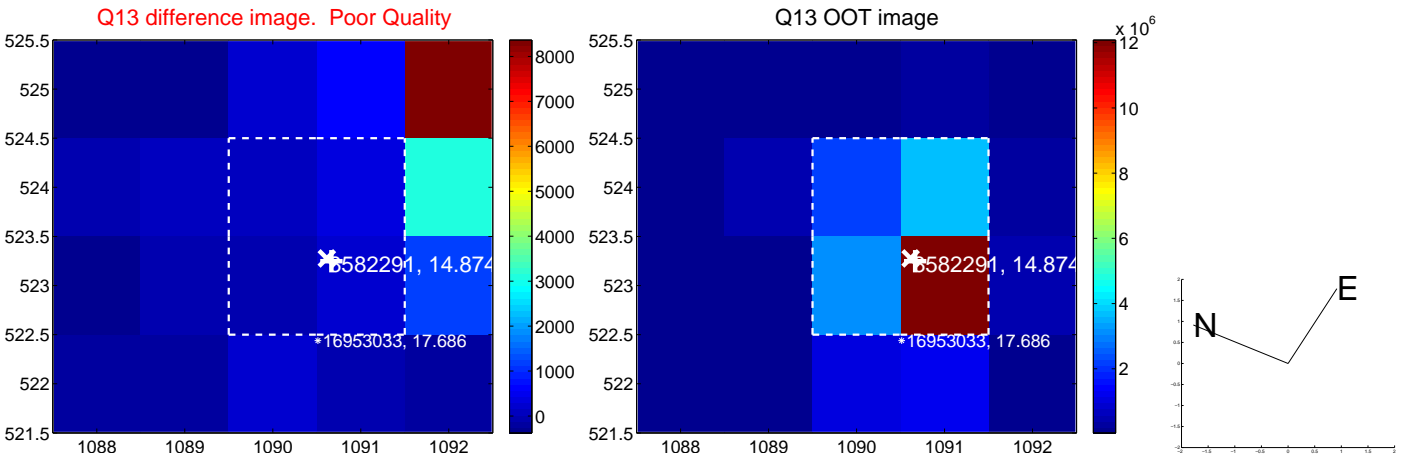




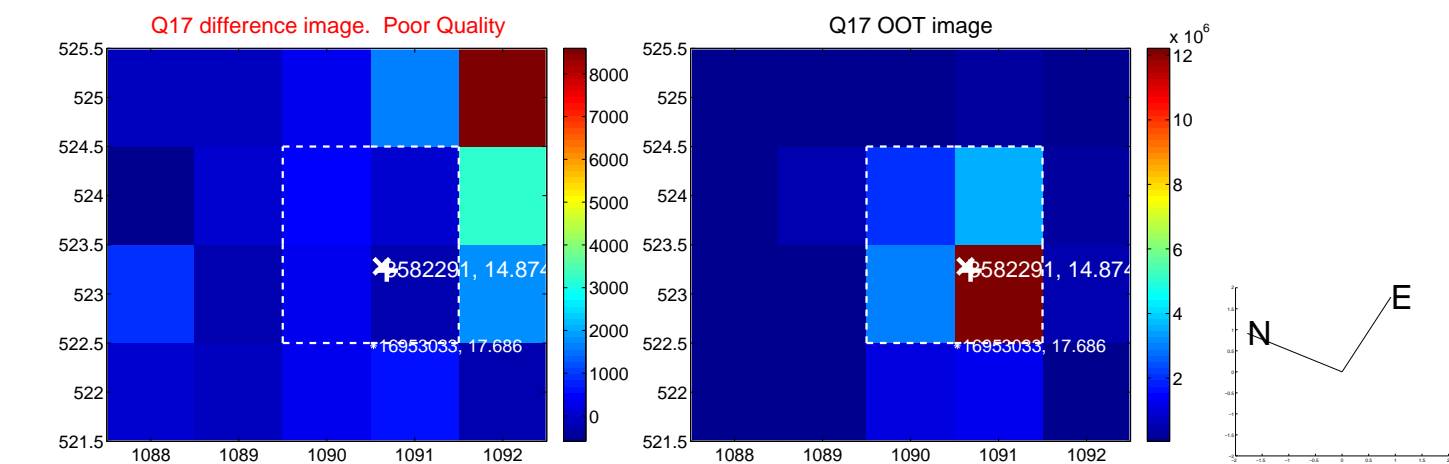
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



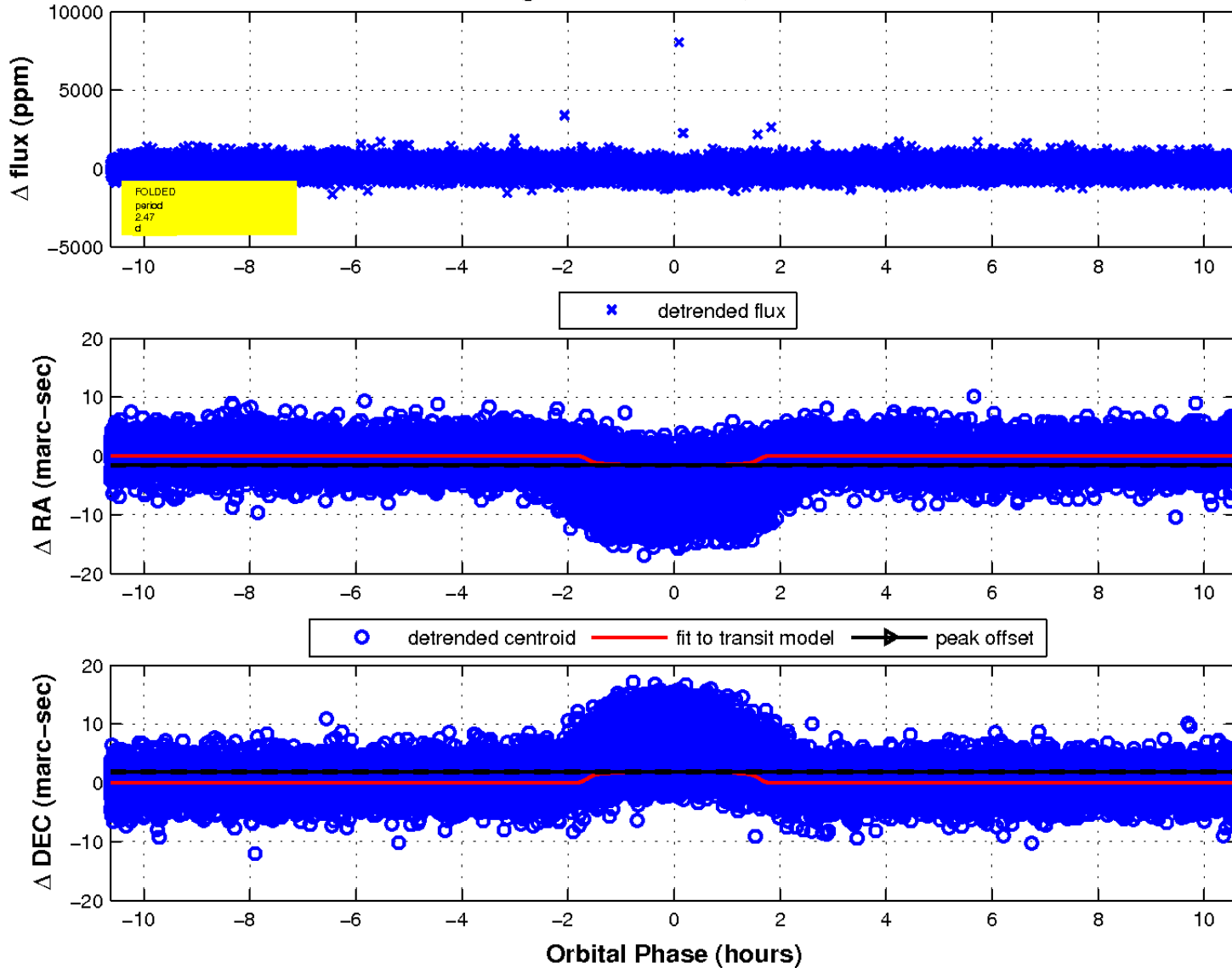
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

