

# KIC 011923068

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
011923068-01	OBS	No	383.954620	409.395135	423.7	3.503	7.3	7.4	1.05	6386	2.43	1.46

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011923068-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_ALT—CENT_FEW_DIFFS

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

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

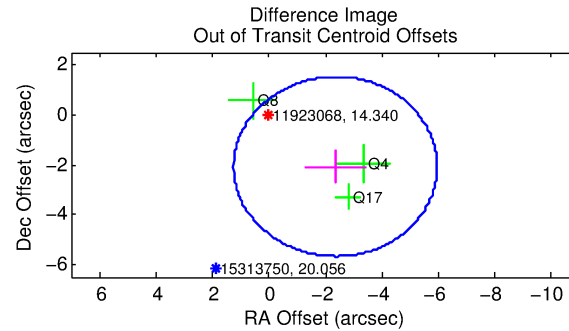
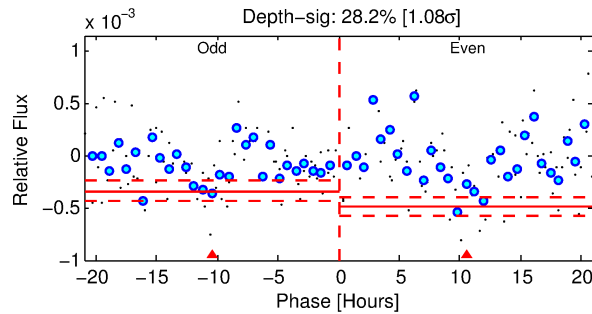
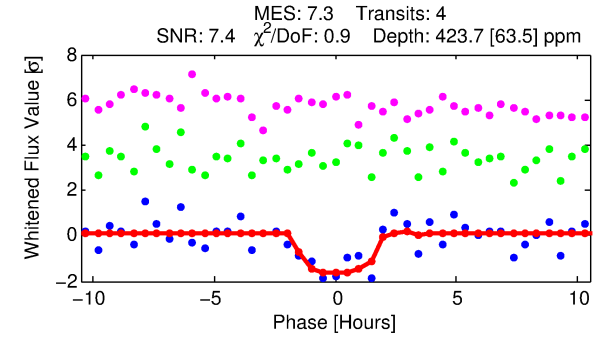
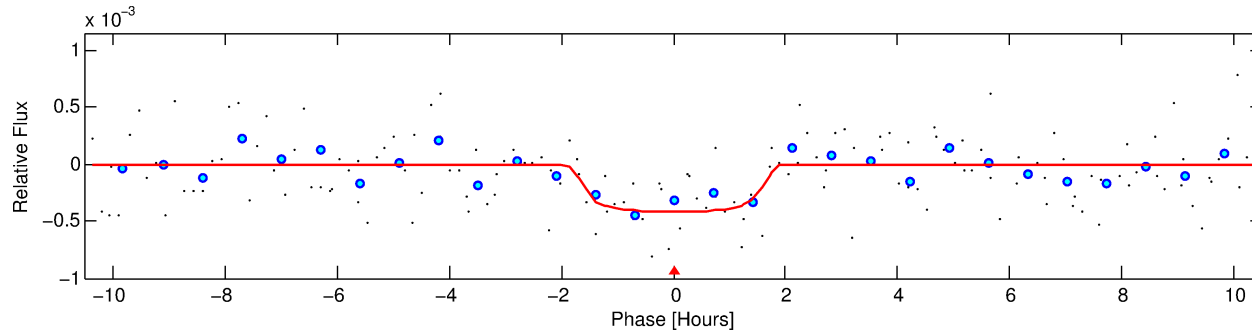
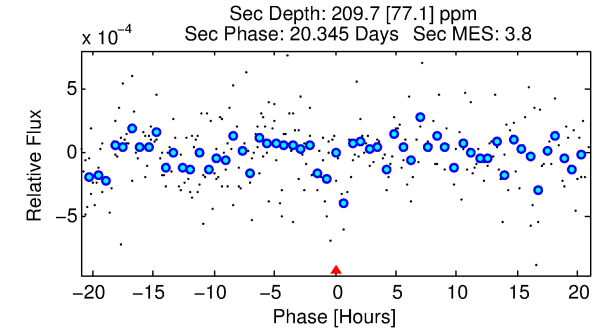
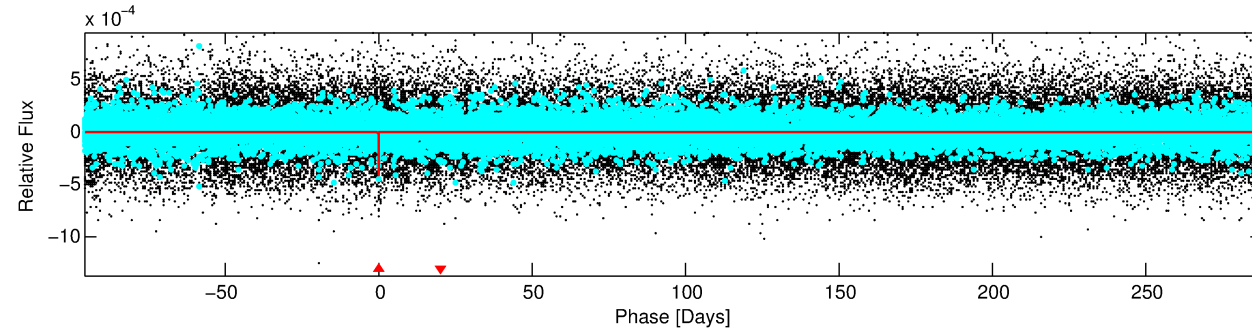
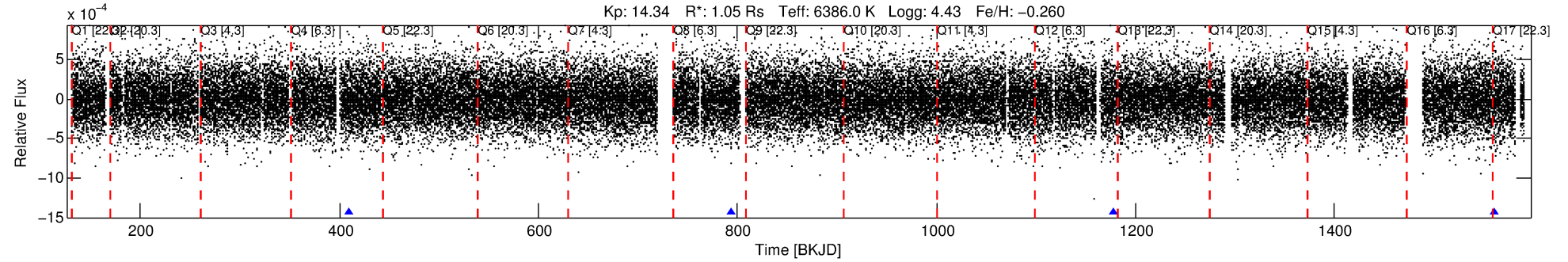
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 011923068-01

No Significant Match Found

# DV One-Page Summary

KIC: 11923068 Candidate: 1 of 1 Period: 383.955 d



## DV Fit Results:

Period = 383.95462 [0.00562] d  
Epoch = 409.3951 [0.0100] BKJD  
Rp/R\* = 0.0212 [0.0171]  
a/R\* = 494.08 [2180.06]  
b = 0.83 [1.63]  
Seff = 1.46 [0.61]  
Teff = 280 [29] K  
Rp = 2.43 [2.12] Re  
a = 1.0639 [0.2935] AU  
Ag = 22121.07 [37717.74] [0.59σ]  
Teffp = 5282 [2196] K [2.28σ]

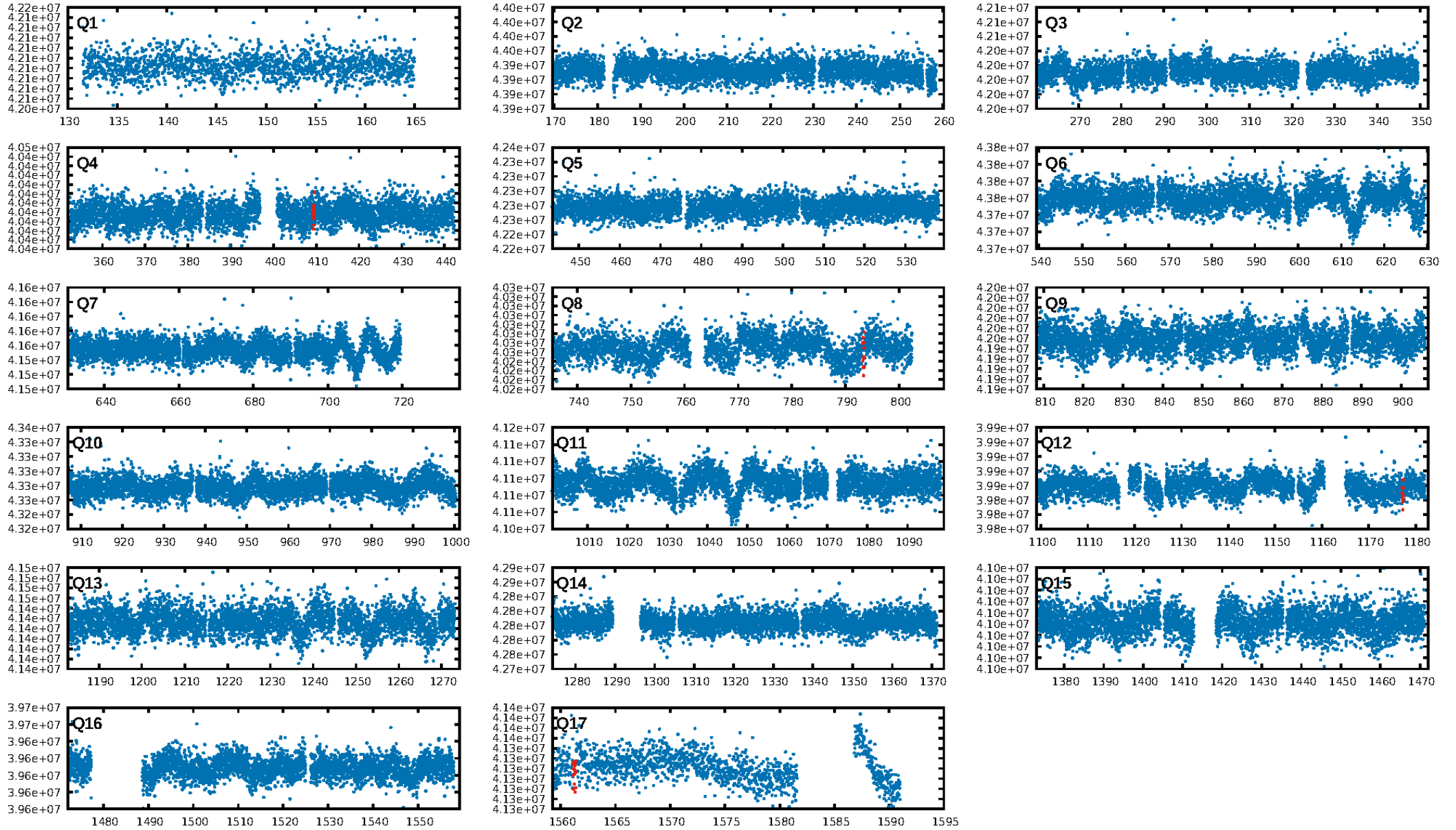
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 21.9%  
ModelChiSquareGof-sig: 99.0%  
Bootstrap-pfa: 1.61e-14  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 4.285  
Centroid-sig: 54.0%  
Centroid-so: 1.105 arcsec [0.53σ]  
OotOffset-rm: 3.140 arcsec [2.62σ]  
KicOffset-rm: 3.052 arcsec [2.20σ]  
OotOffset-st: 0/0/2/1 [3]  
KicOffset-st: 0/0/2/1 [3]  
DiffImageQuality-fgm: 0.33 [1/3]  
DiffImageOverlap-fno: 1.00 [3/3]

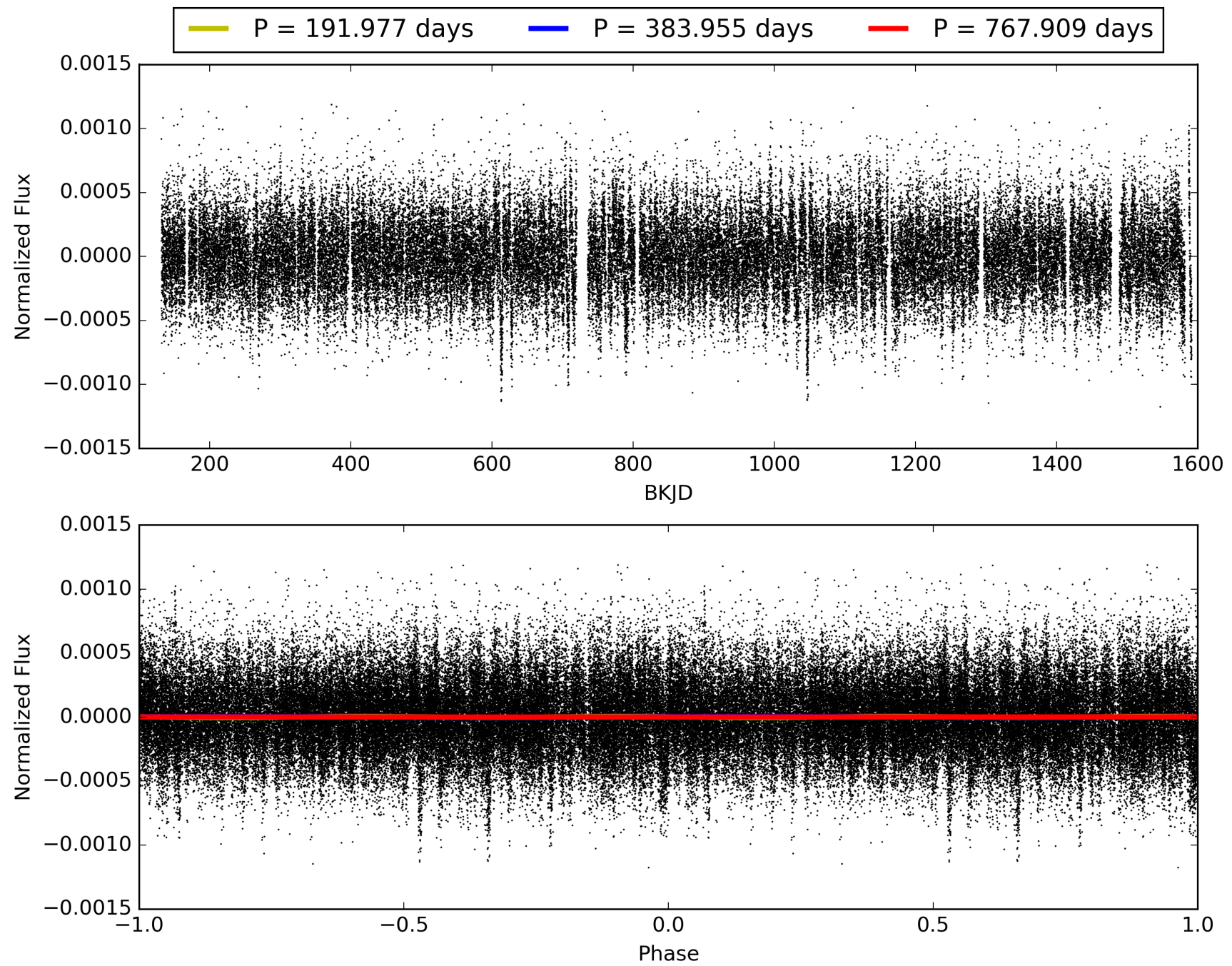
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 18:57:23 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 011923068-01, PDC Light Curves

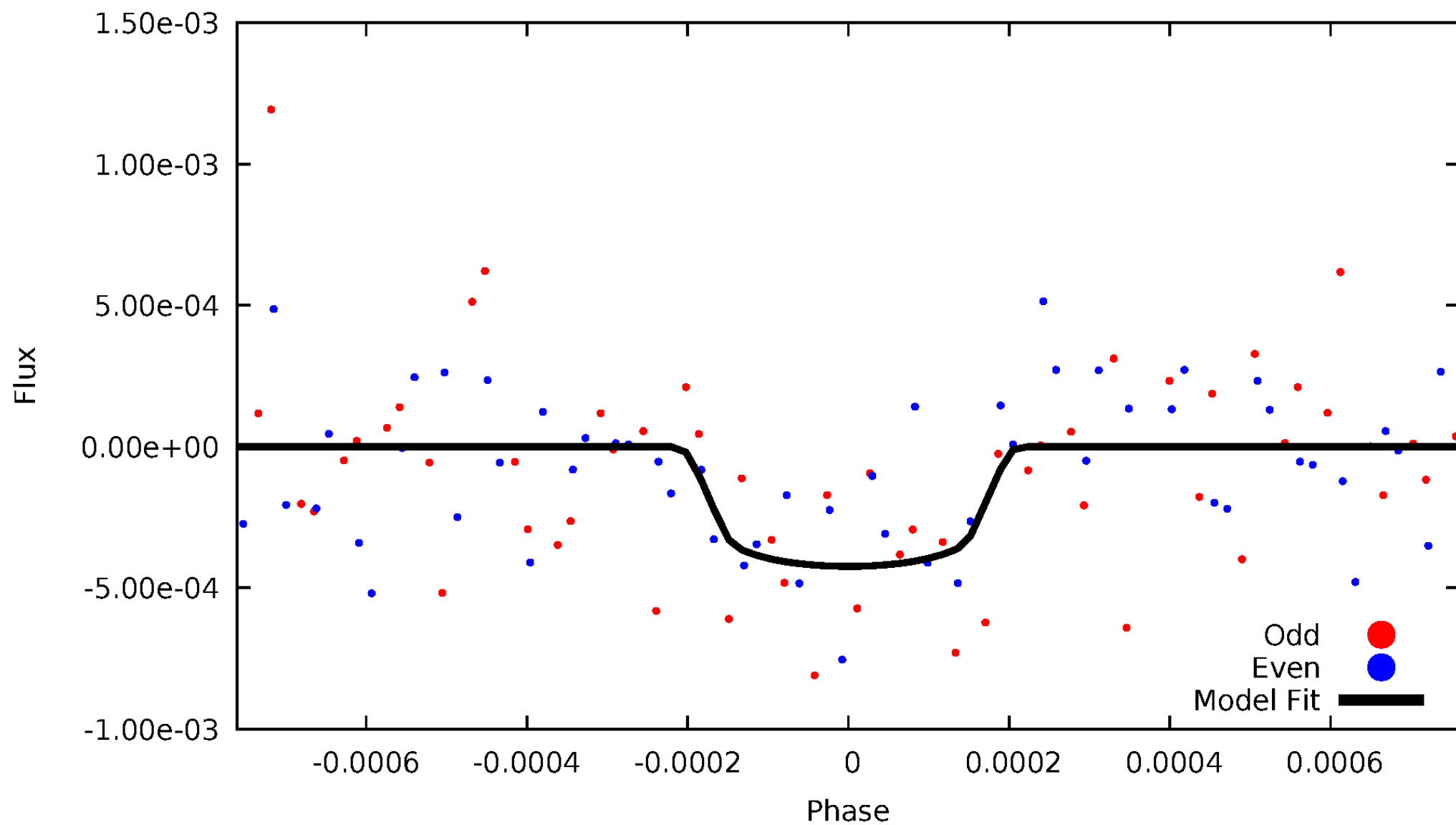


# TCE 011923068-01



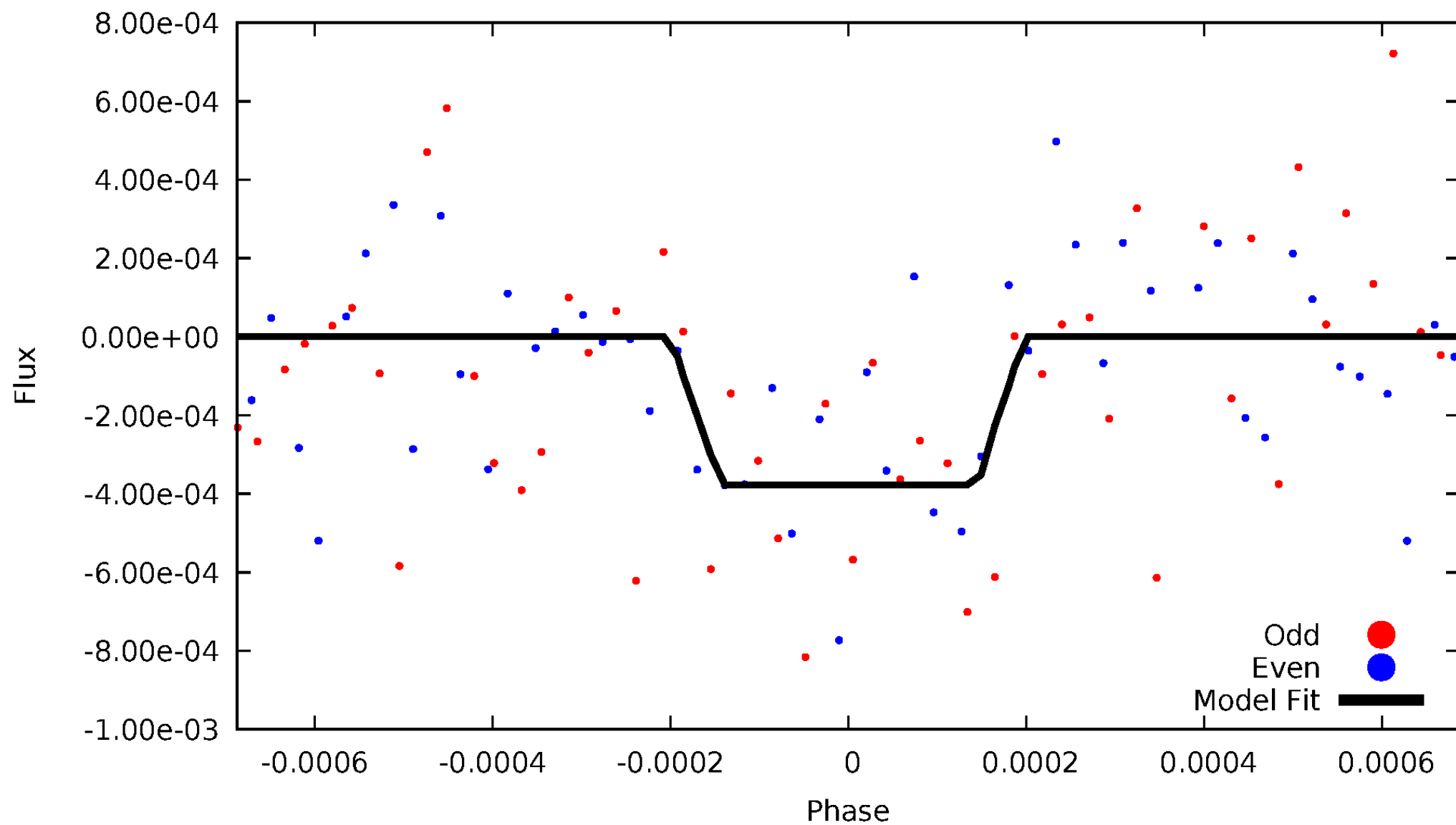
# DV Odd/Even

TCE 011923068-01



# ALT Odd/Even

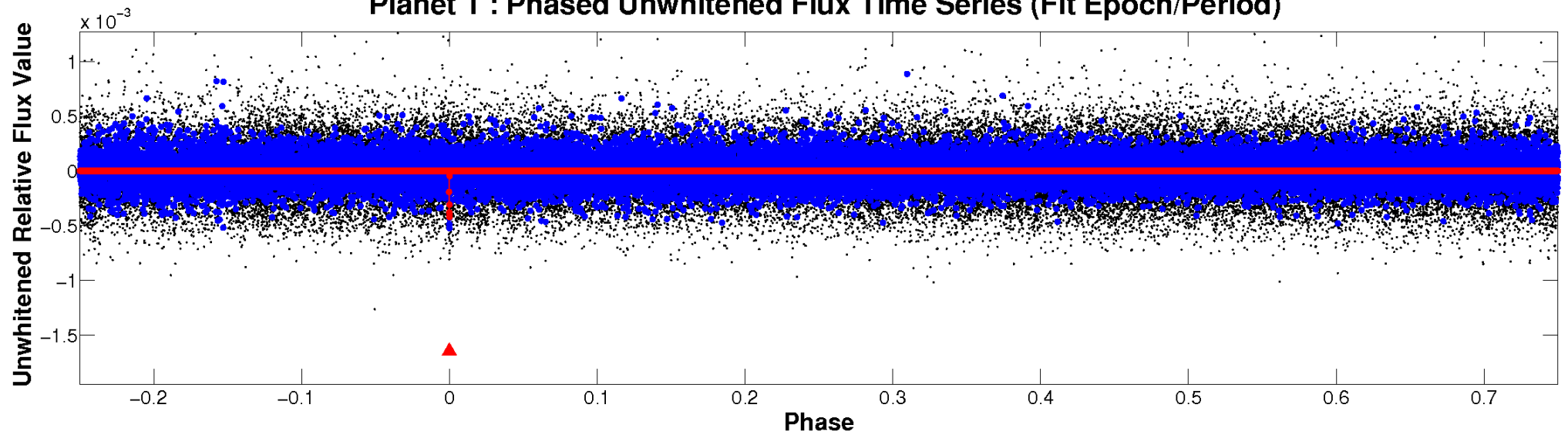
TCE 011923068-01



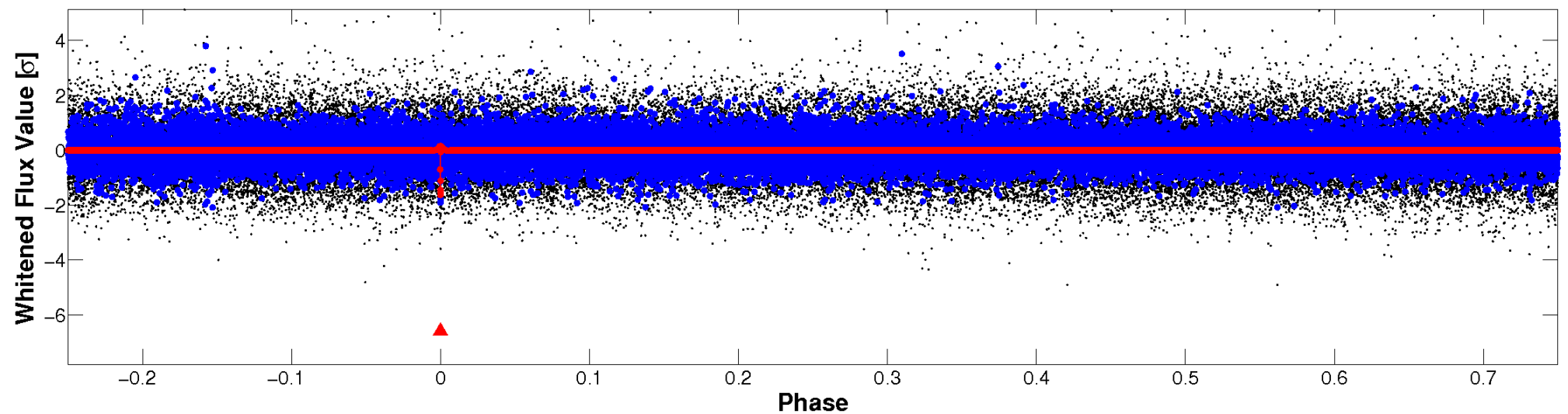


# Non-Whitened Vs. Whitened Light Curve

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

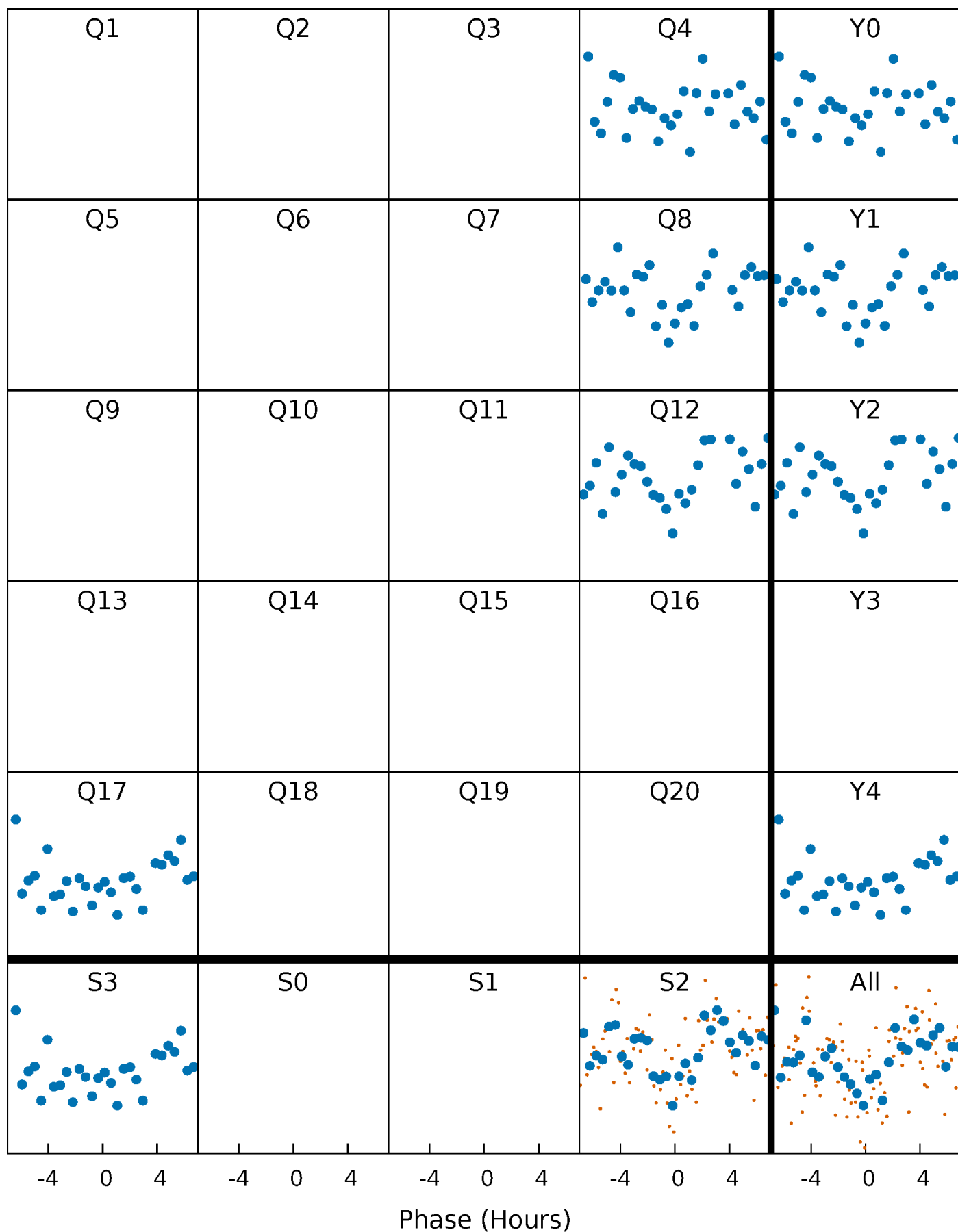


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

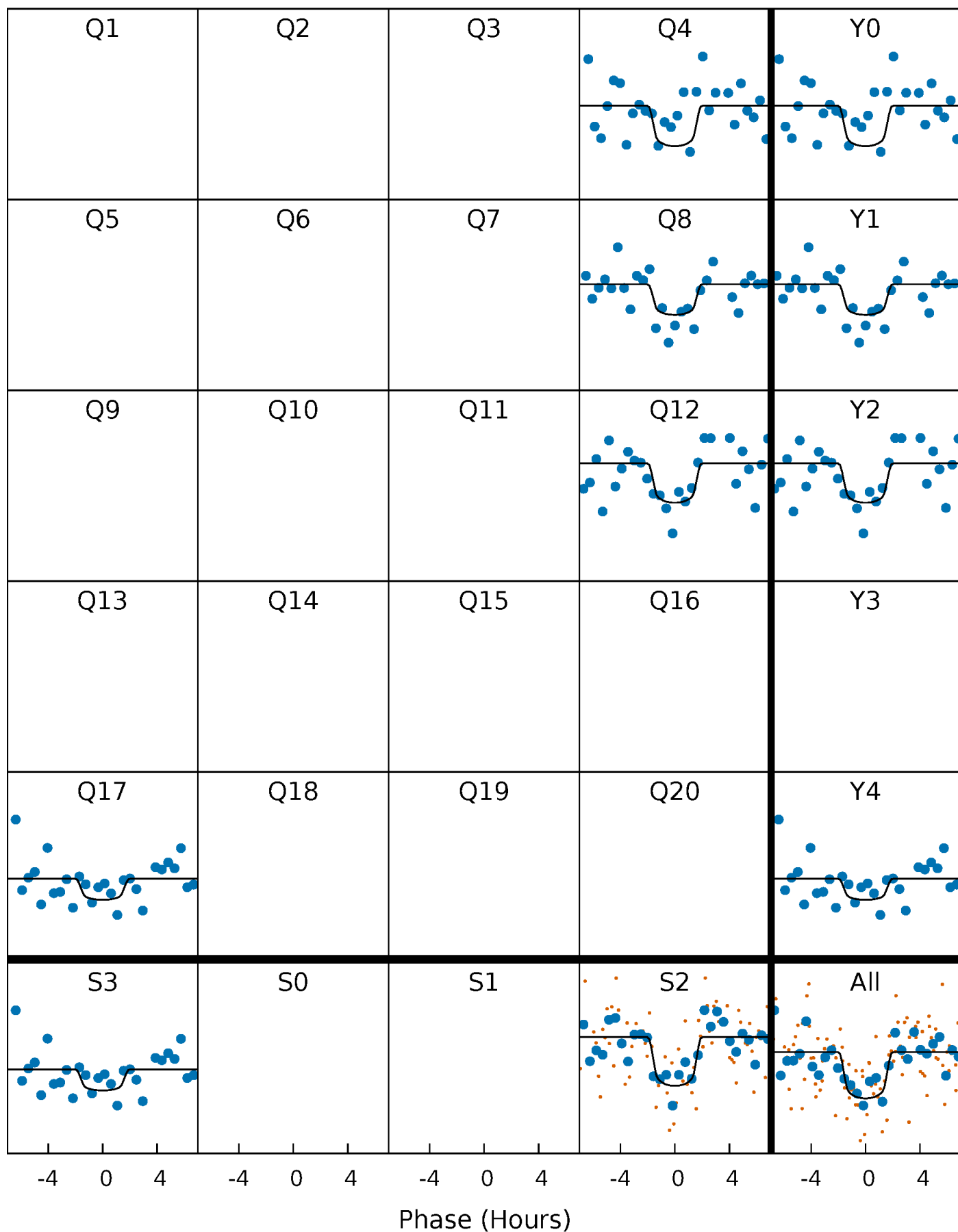
TCE 011923068-01 P=383.954620 Days  $T_0=409.395135$  (BKJD)





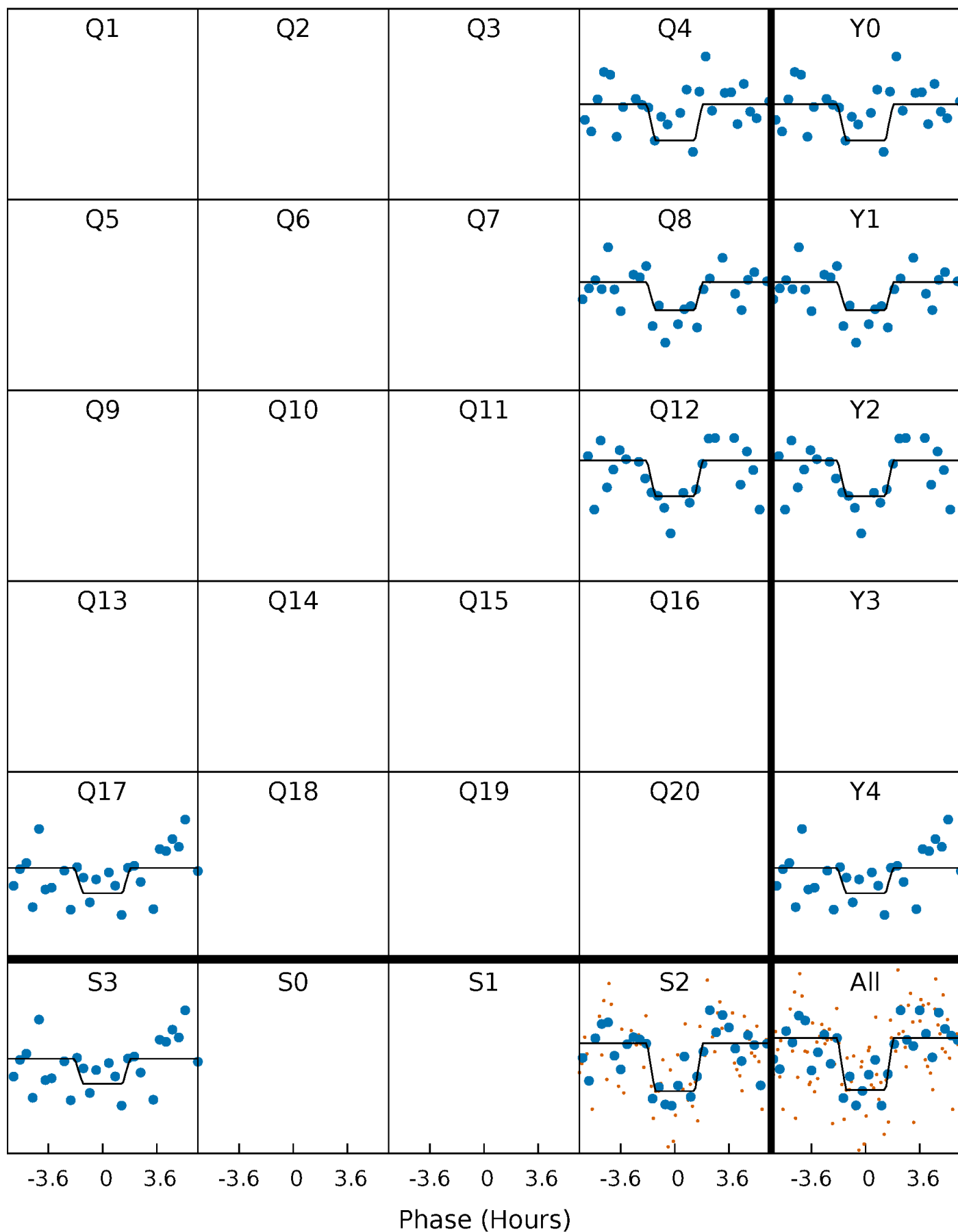
# DV Quarter-Phased Transit Curves

TCE 011923068-01   P=383.954620 Days    $T_0=409.395135$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

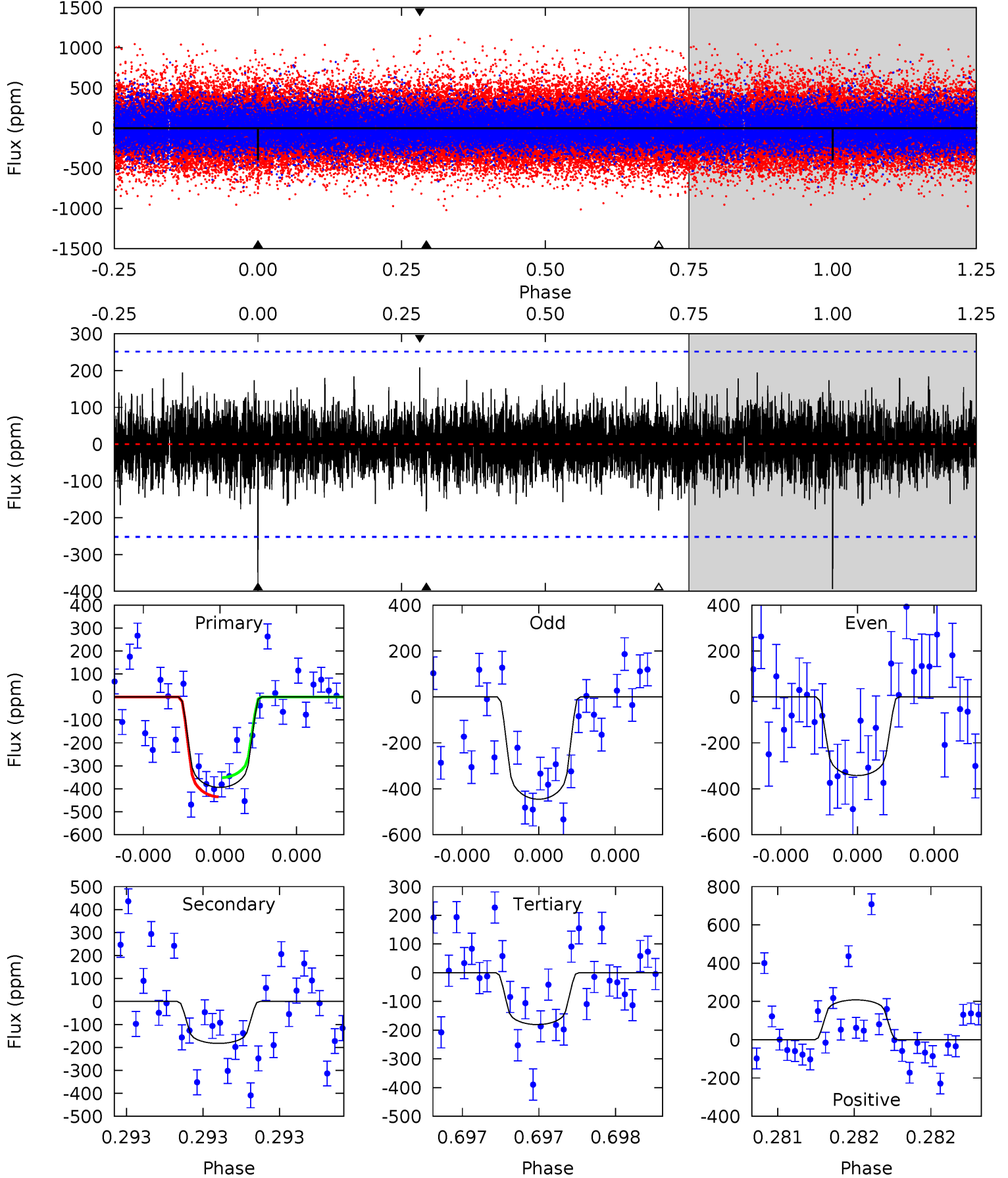
TCE 011923068-01 P=383.953404 Days  $T_0=409.398606$  (BKJD)



# DV Model-Shift Uniqueness Test

011923068-01, P = 383.954620 Days, E = 25.440515 Days

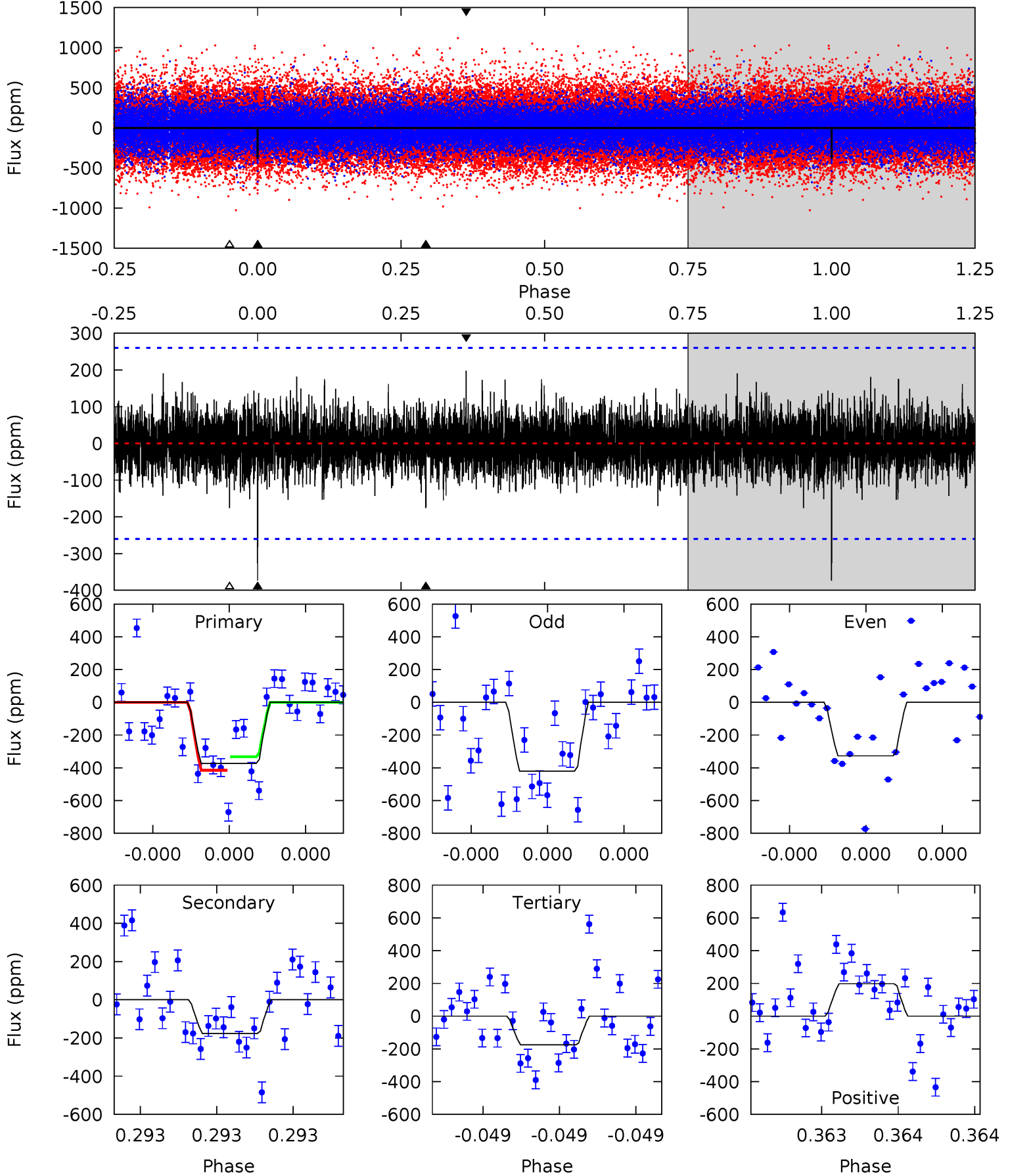
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.78	4.07	4.02	4.64	5.61	3.53	1.10	4.76	4.14	0.05	-0.57	1.15	0.99	0.35	0.93



# Alt Model-Shift Uniqueness Test

011923068-01, P = 383.953404 Days, E = 25.445202 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
8.06	3.80	3.80	4.27	5.62	3.55	1.01	4.26	3.79	0.01	-0.47	1.00	0.96	0.35	0.89



### Stellar Parameters For KIC 011923068

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6386^{+170}_{-207}$	$4.431^{+0.067}_{-0.216}$	$-0.260^{+0.250}_{-0.300}$	$1.052^{+0.348}_{-0.116}$	$1.087^{+0.153}_{-0.138}$	$1.315^{+0.374}_{-0.691}$
	+3%/-3%	+2%/-5%	+96%/-115%	+33%/-11%	+14%/-13%	+28%/-53%
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 011923068-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-183 \pm 45$	$2.79^{+1.93}_{-1.56}$	$399^{+30}_{-20}$	$4959^{+2520}_{-951}$	$14498^{+60675}_{-9962}$
Alt.	$-176 \pm 46$	$2.69^{+1.95}_{-1.66}$	$399^{+31}_{-20}$	$5025^{+3162}_{-1032}$	$15100^{+90311}_{-10495}$

$T_{\text{max}}$  = 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

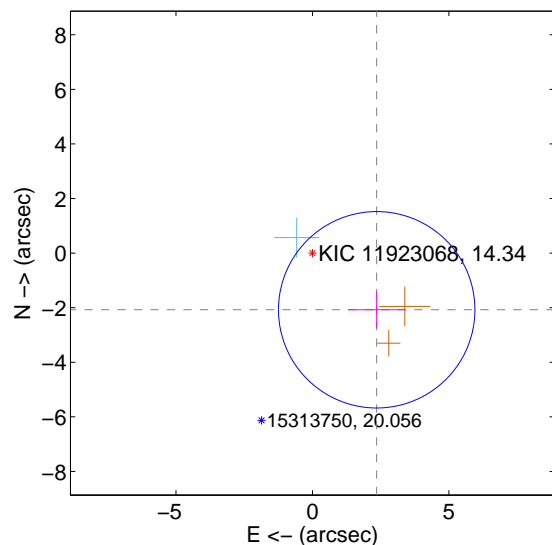
Supplemental centroid analysis for 011923068-01. Kepler magnitude: 14.34. Transit SNR 7.43

There are 1 quarters with good PRF difference image offsets

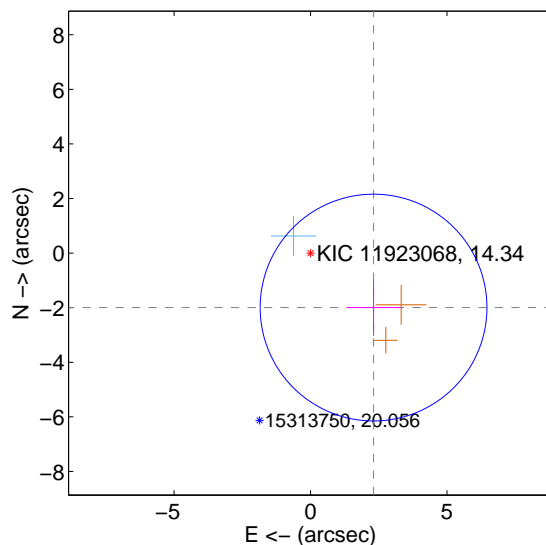
The direct PRF centroid is offset from the target star catalog position by about 0.11 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.140 \pm 1.199$	2.62	$-2.354 \pm 1.056$	$-2.077 \pm 0.663$
PRF-fit source offset from KIC position	$3.052 \pm 1.385$	2.20	$-2.309 \pm 0.987$	$-1.996 \pm 1.038$
photometric centroid source offset	$1.11 \pm 2.09$	0.53	$-1.06 \pm 2.10$	$-0.32 \pm 2.08$

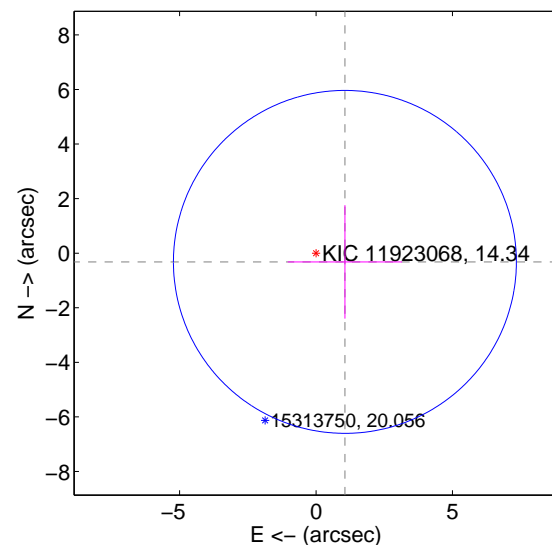
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



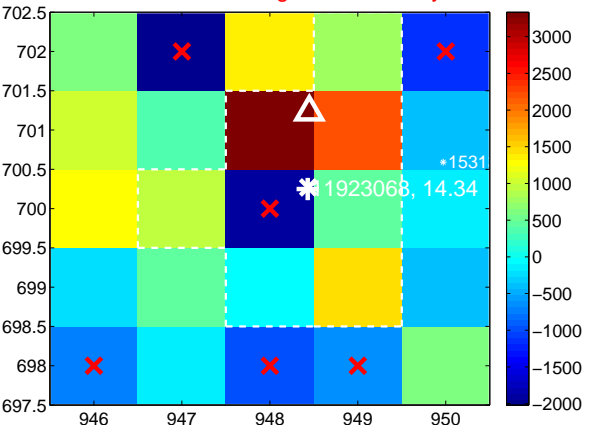
Q3 no difference image



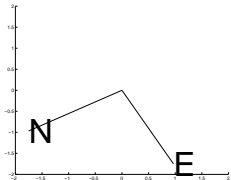
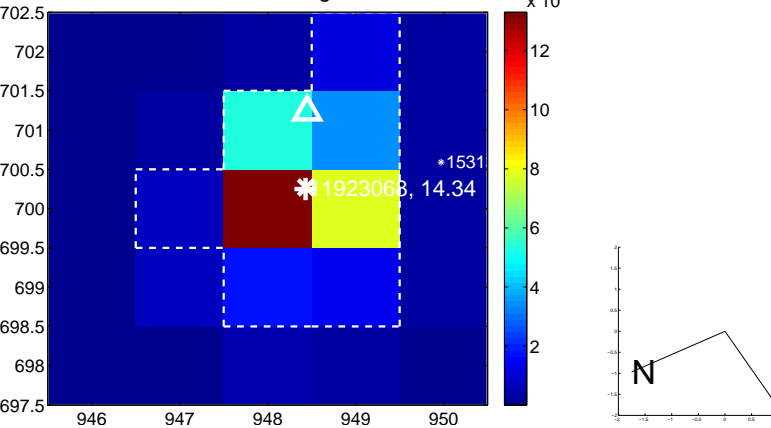
Q3 no OOT image



Q4 difference image. Poor Quality



Q4 OOT image



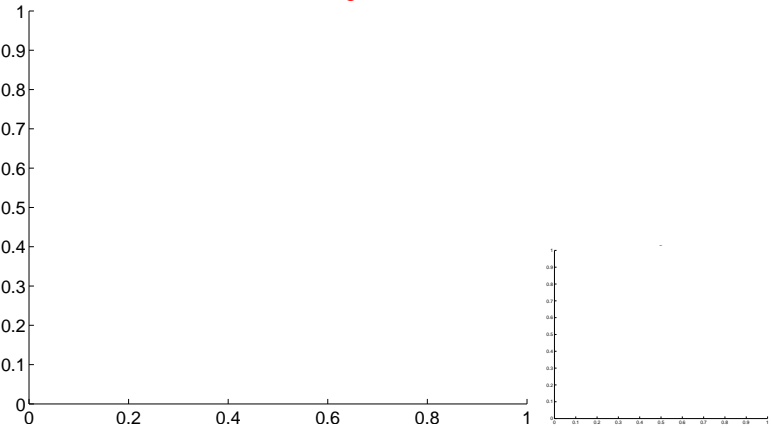


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

Q5 no difference image



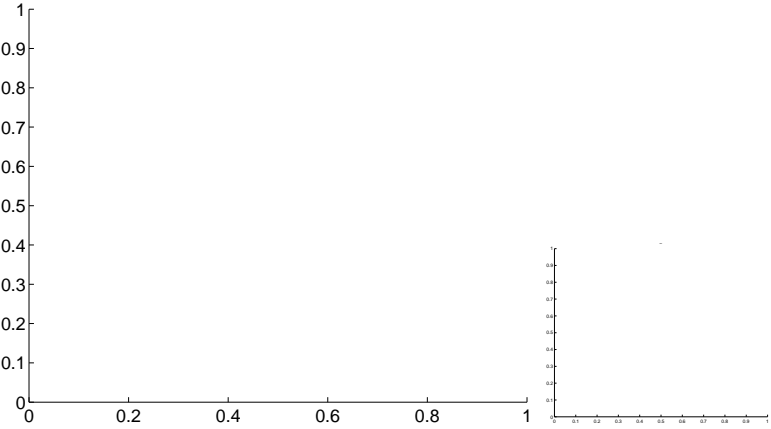
Q5 no OOT image



Q6 no difference image



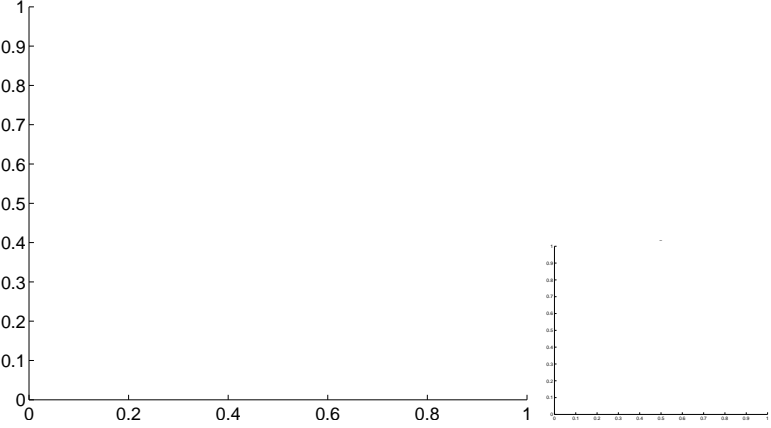
Q6 no OOT image



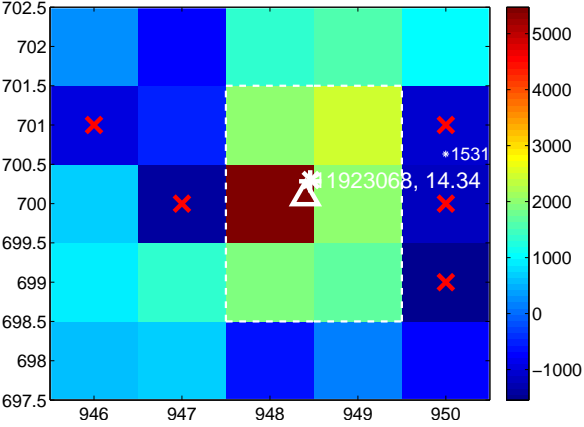
Q7 no difference image



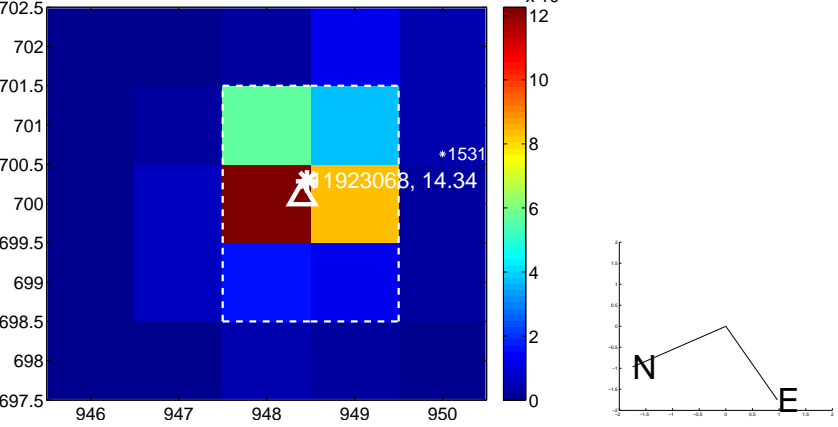
Q7 no OOT image



Q8 difference image



Q8 OOT image



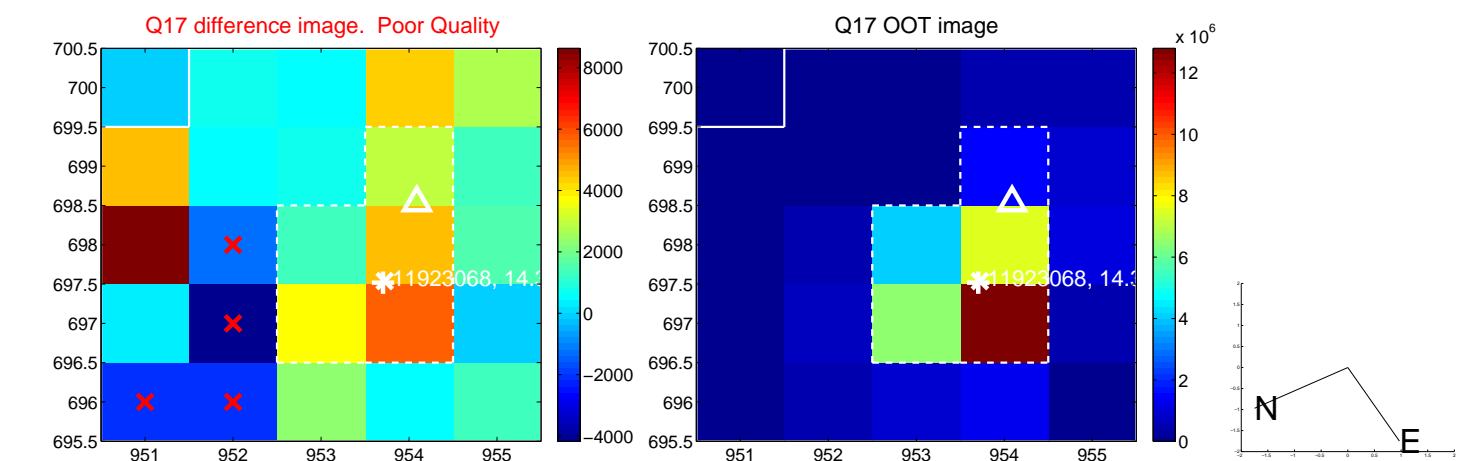
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



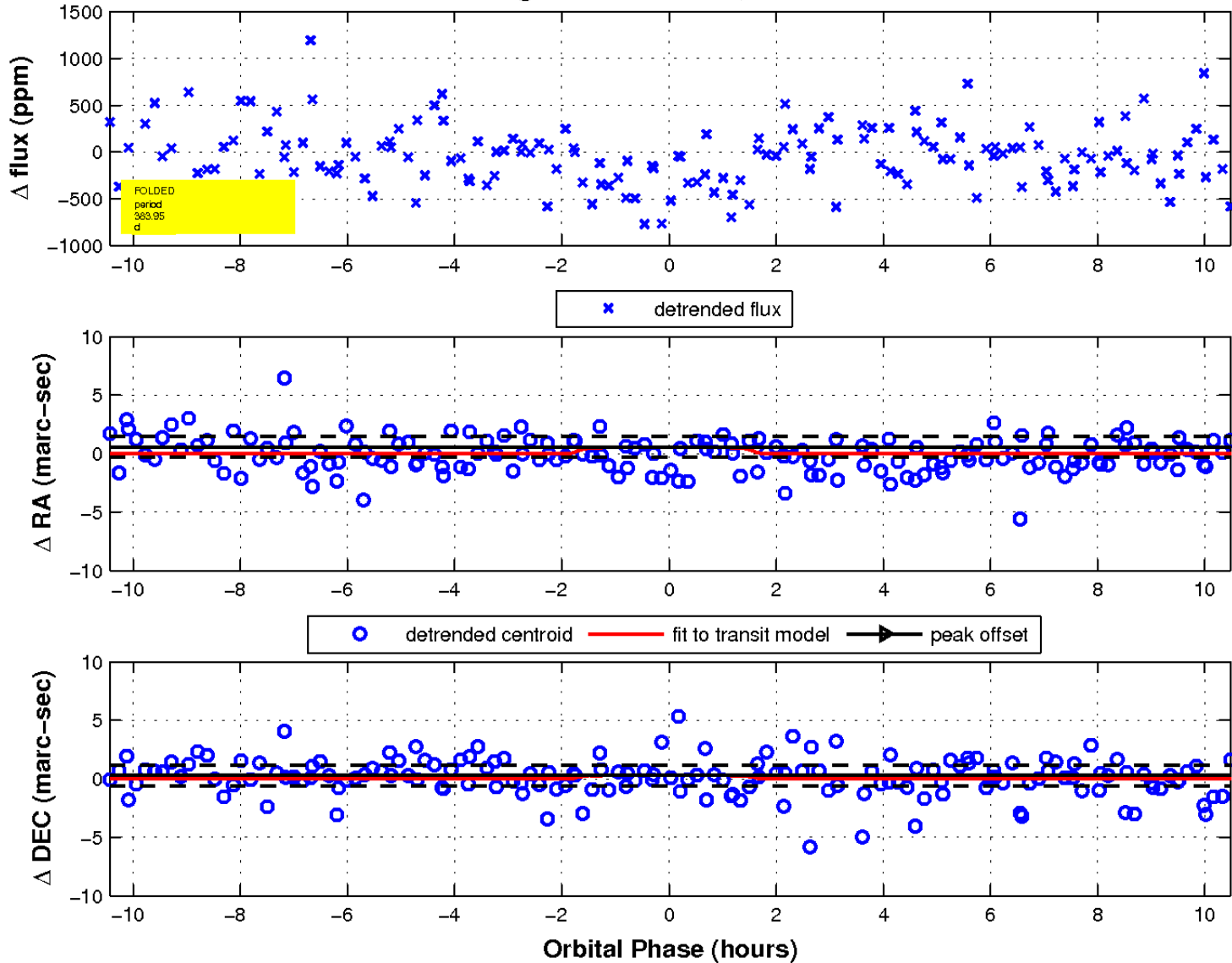
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

