

# KIC 008219681

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008219681-01	OBS	No	396.097048	383.435790	316.7	15.049	10.4	9.7	1.05	6156	2.00	1.18

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008219681-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_UNRESOLVED_OFFSET

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

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

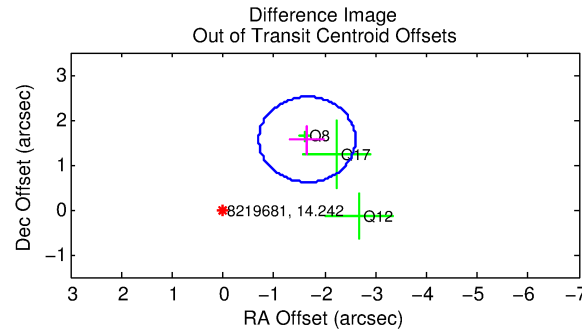
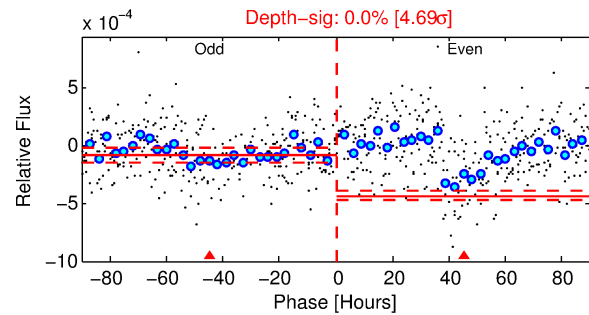
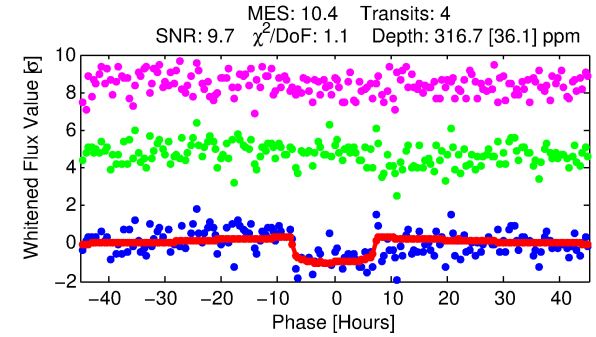
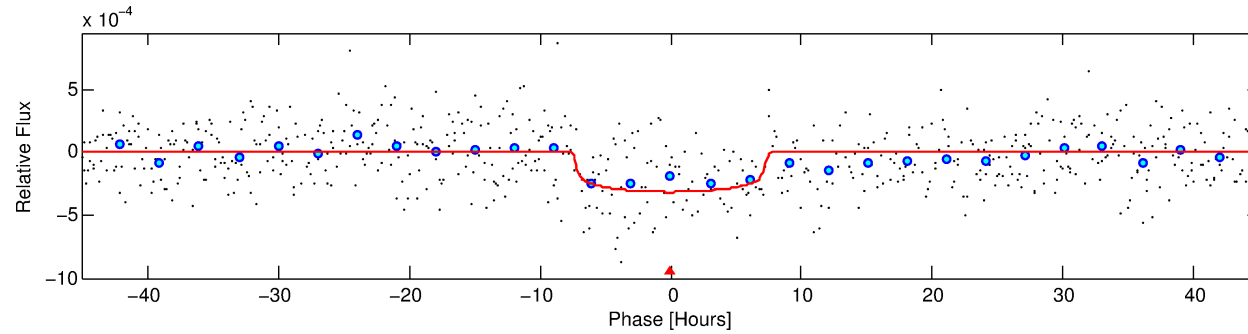
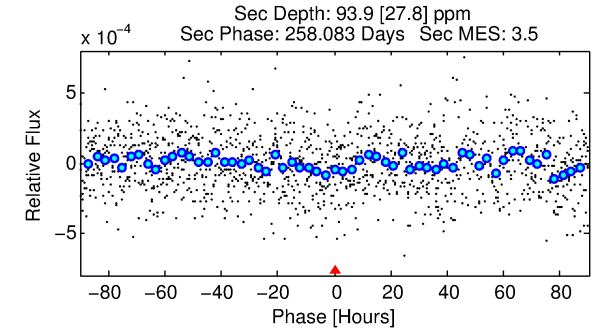
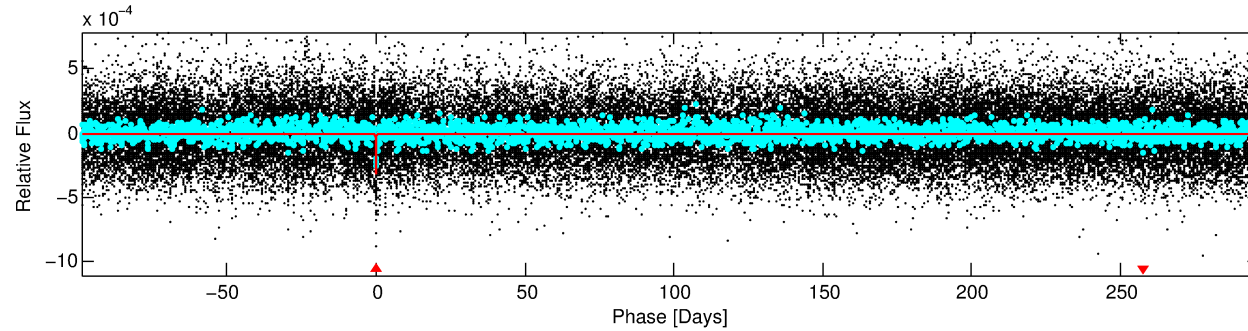
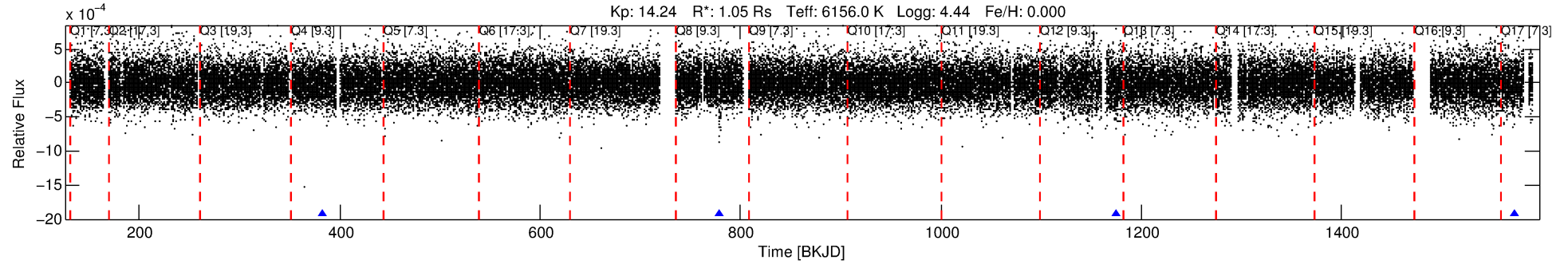
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008219681-01

No Significant Match Found

# DV One-Page Summary

KIC: 8219681 Candidate: 1 of 1 Period: 396.097 d



## DV Fit Results:

Period = 396.09705 [0.01006] d  
Epoch = 383.4358 [0.0205] BKJD  
Rp/R\* = 0.0175 [0.0054]  
a/R\* = 146.44 [220.65]  
b = 0.71 [1.06]  
Seff = 1.18 [0.50]  
Teq = 266 [28] K  
Rp = 2.00 [0.90] Re  
a = 1.0949 [0.2986] AU  
Ag = 15447.07 [12286.37] [1.26σ]  
Teffp = 4584 [810] K [5.33σ]

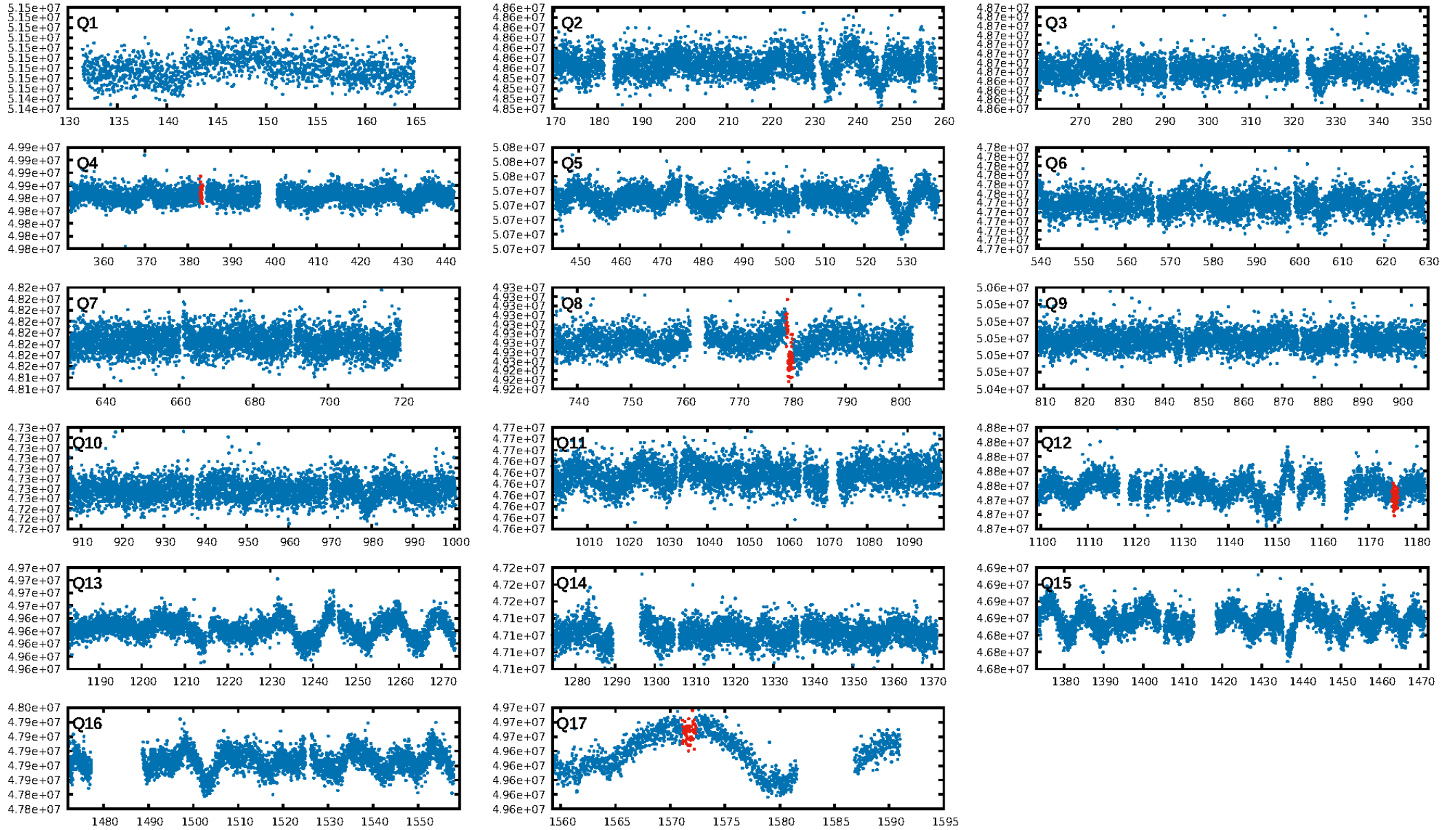
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 98.9%  
Bootstrap-pfa: 8.01e-15  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: -3.553  
Centroid-sig: 0.2%  
Centroid-so: 2.886 arcsec [2.40σ]  
OotOffset-rm: 2.273 arcsec [7.18σ]  
KicOffset-rm: 2.464 arcsec [7.79σ]  
OotOffset-st: 0/0/2/1 [3]  
KicOffset-st: 0/0/2/1 [3]  
DiffImageQuality-fgm: 1.00 [3/3]  
DiffImageOverlap-fno: 1.00 [3/3]

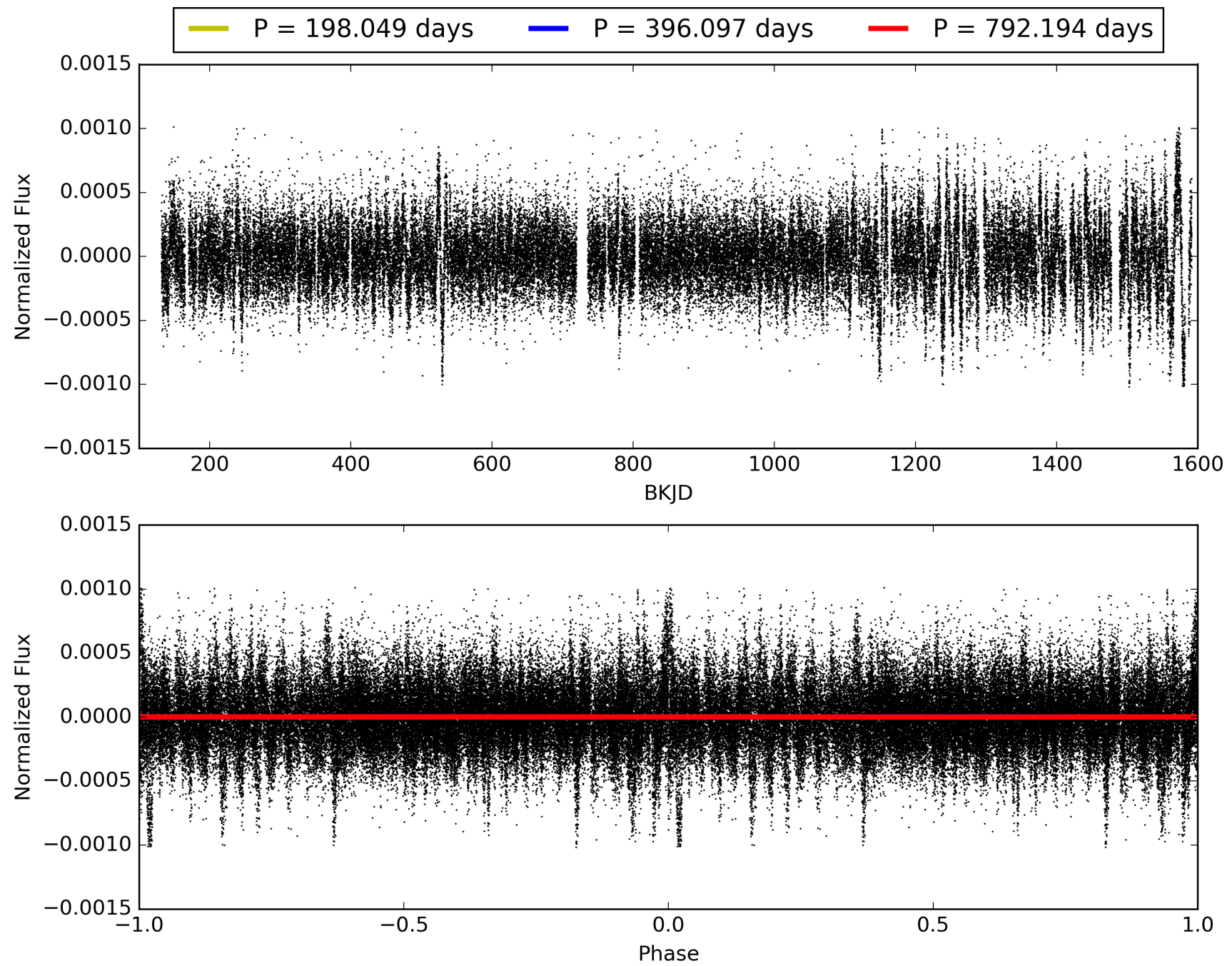
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 23:23:02 Z

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

# TCE 008219681-01, PDC Light Curves

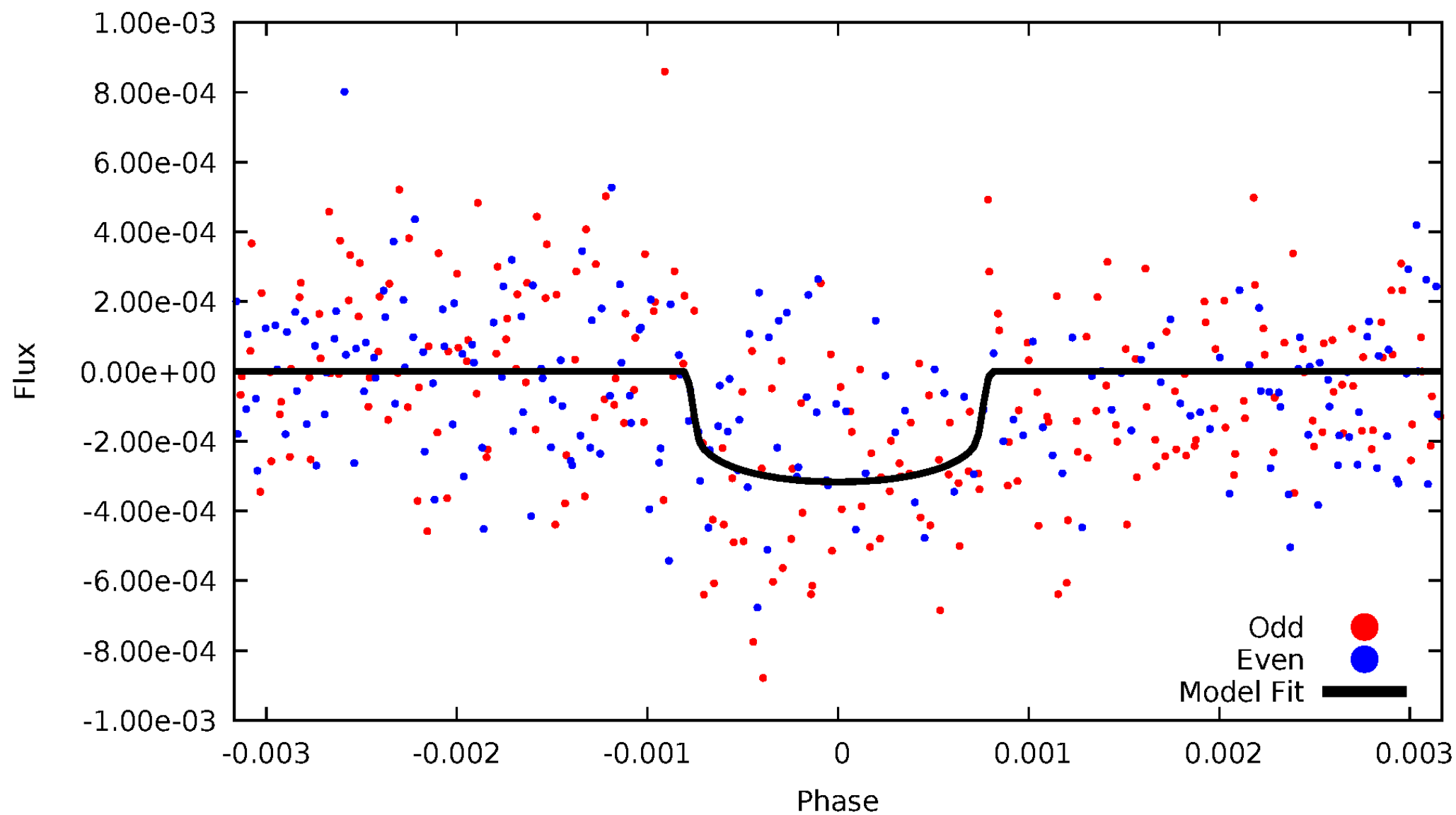


TCE 008219681-01



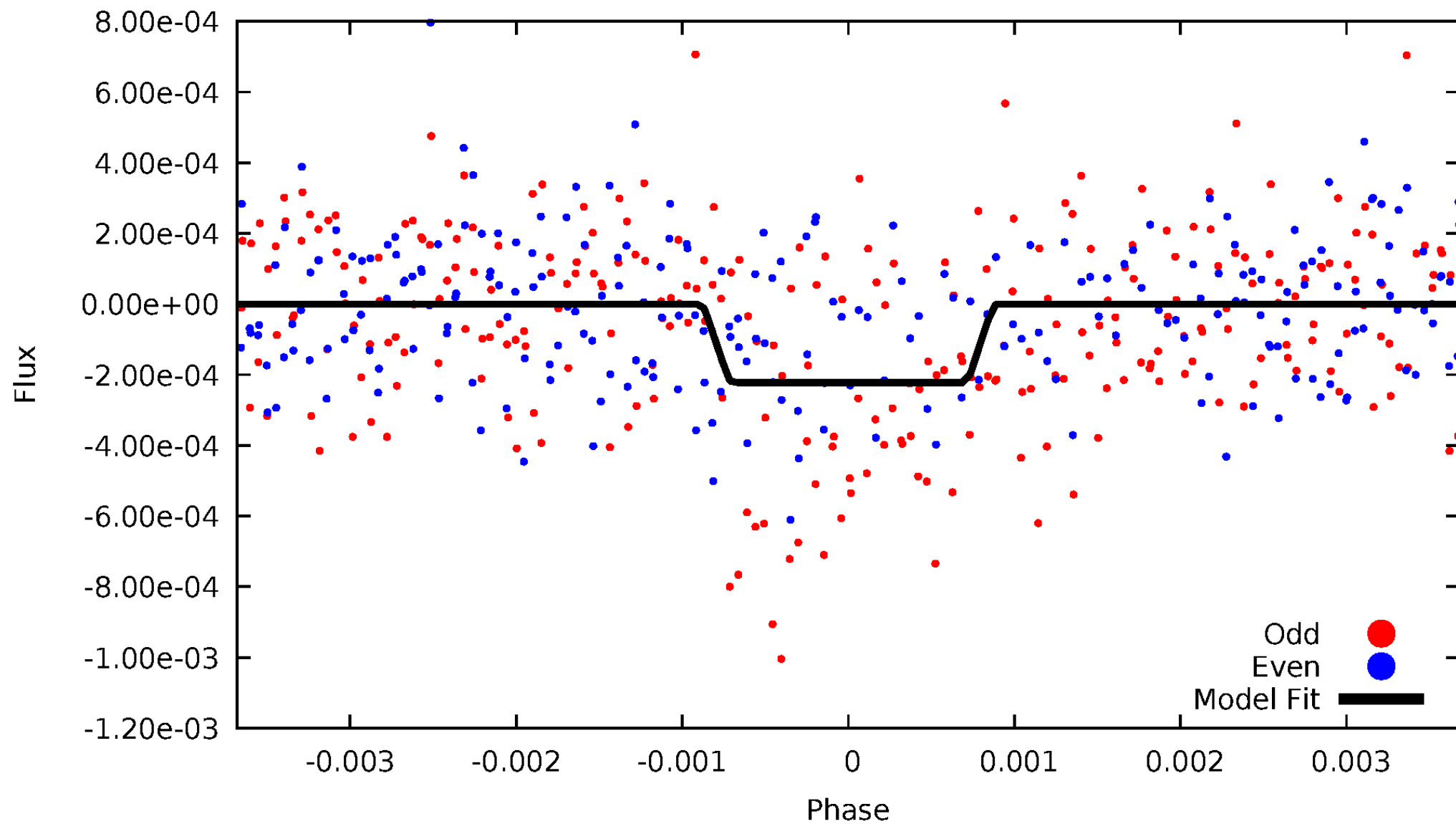
# DV Odd/Even

TCE 008219681-01



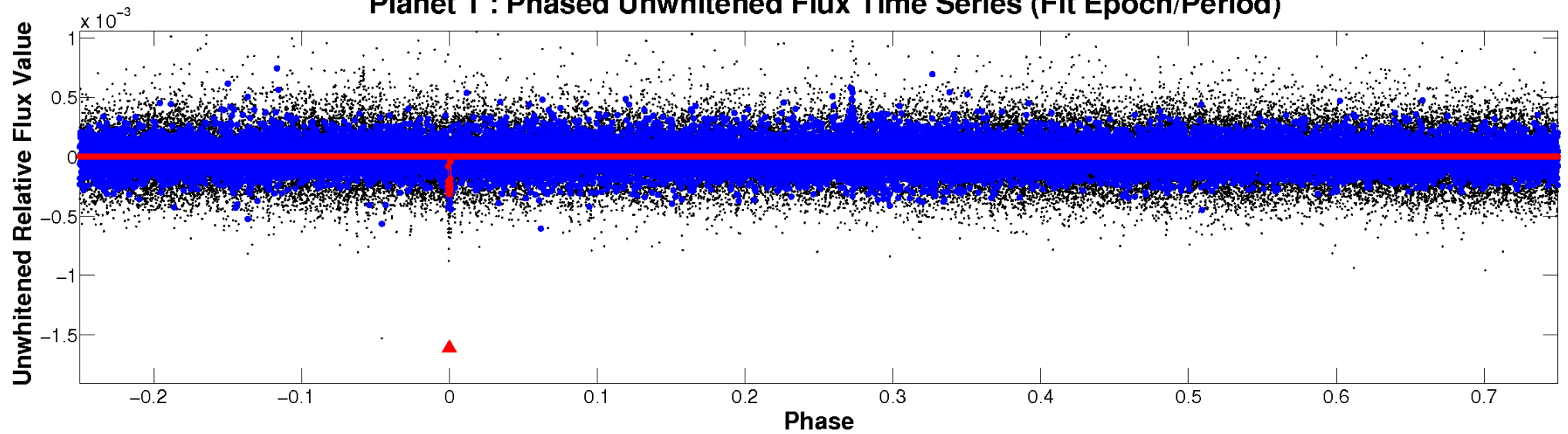
# ALT Odd/Even

TCE 008219681-01

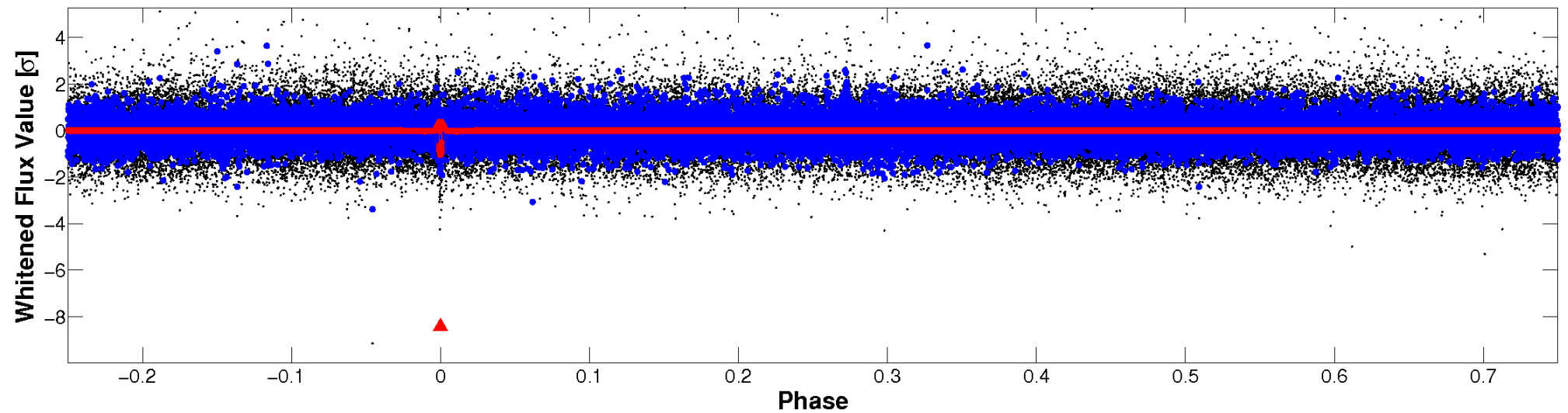


# Non-Whitened Vs. Whitened Light Curve

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



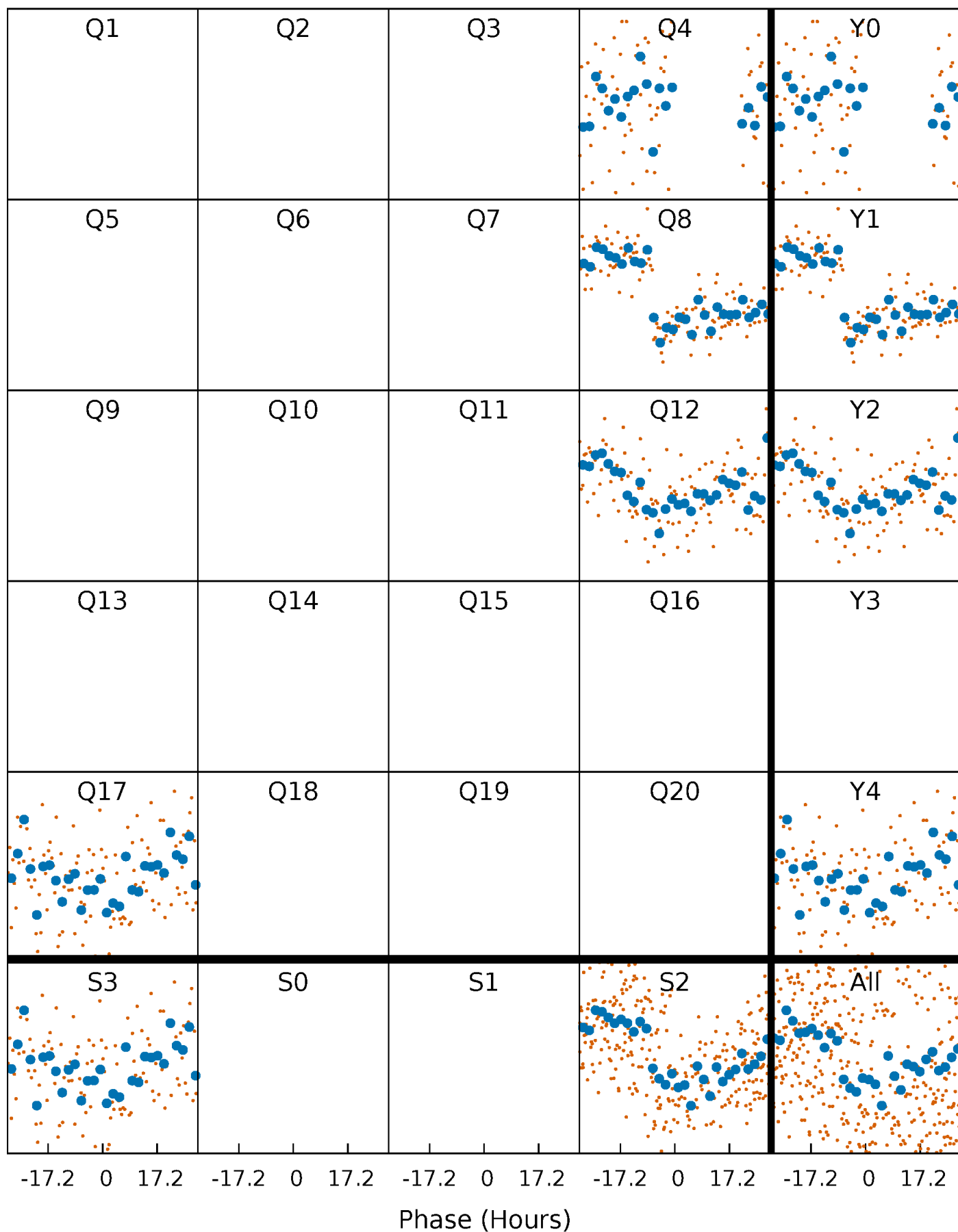
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

TCE 008219681-01 P=396.097048 Days  $T_0=383.435790$  (BKJD)





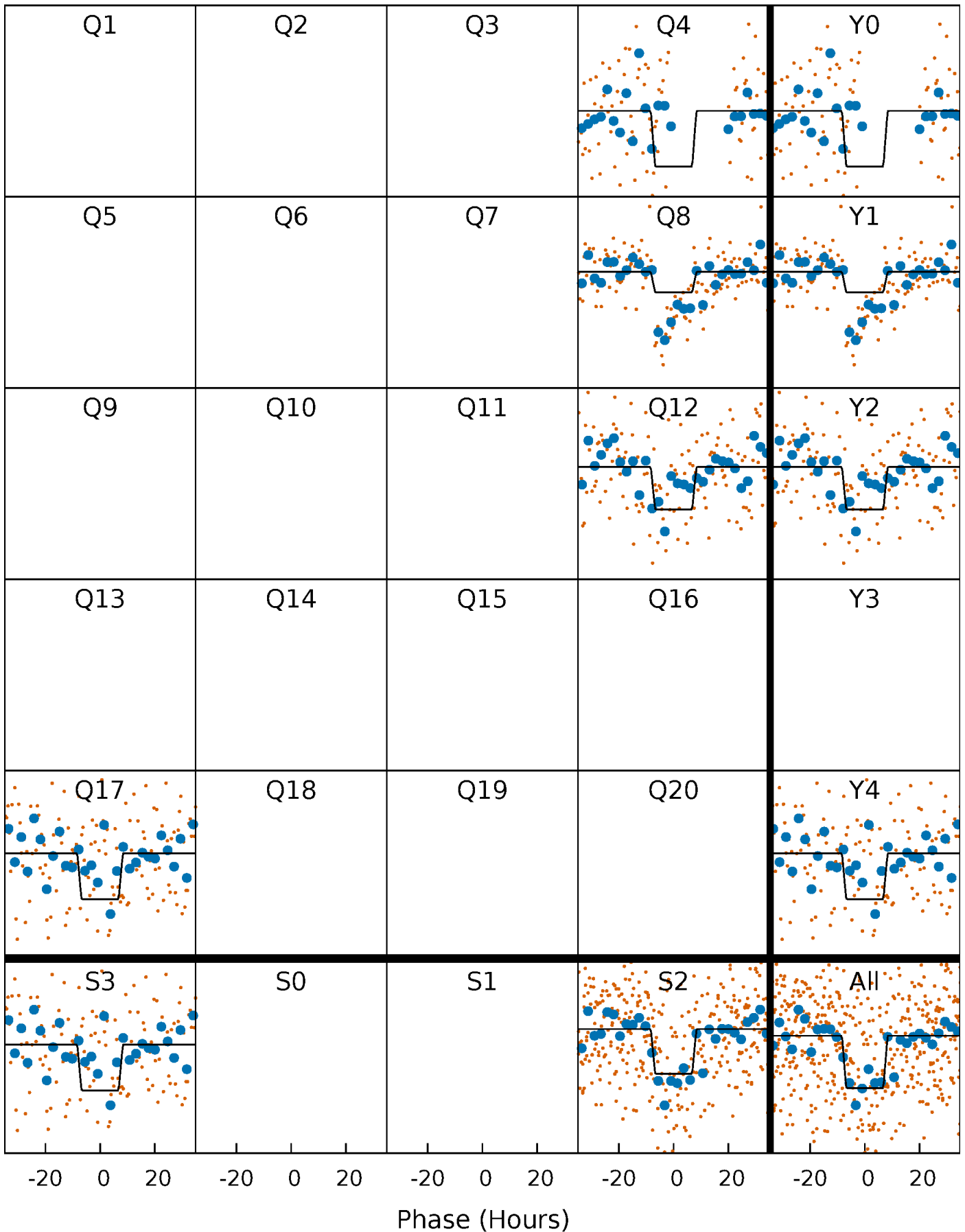
# DV Quarter-Phased Transit Curves

TCE 008219681-01     $P=396.097048$  Days     $T_0=383.435790$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

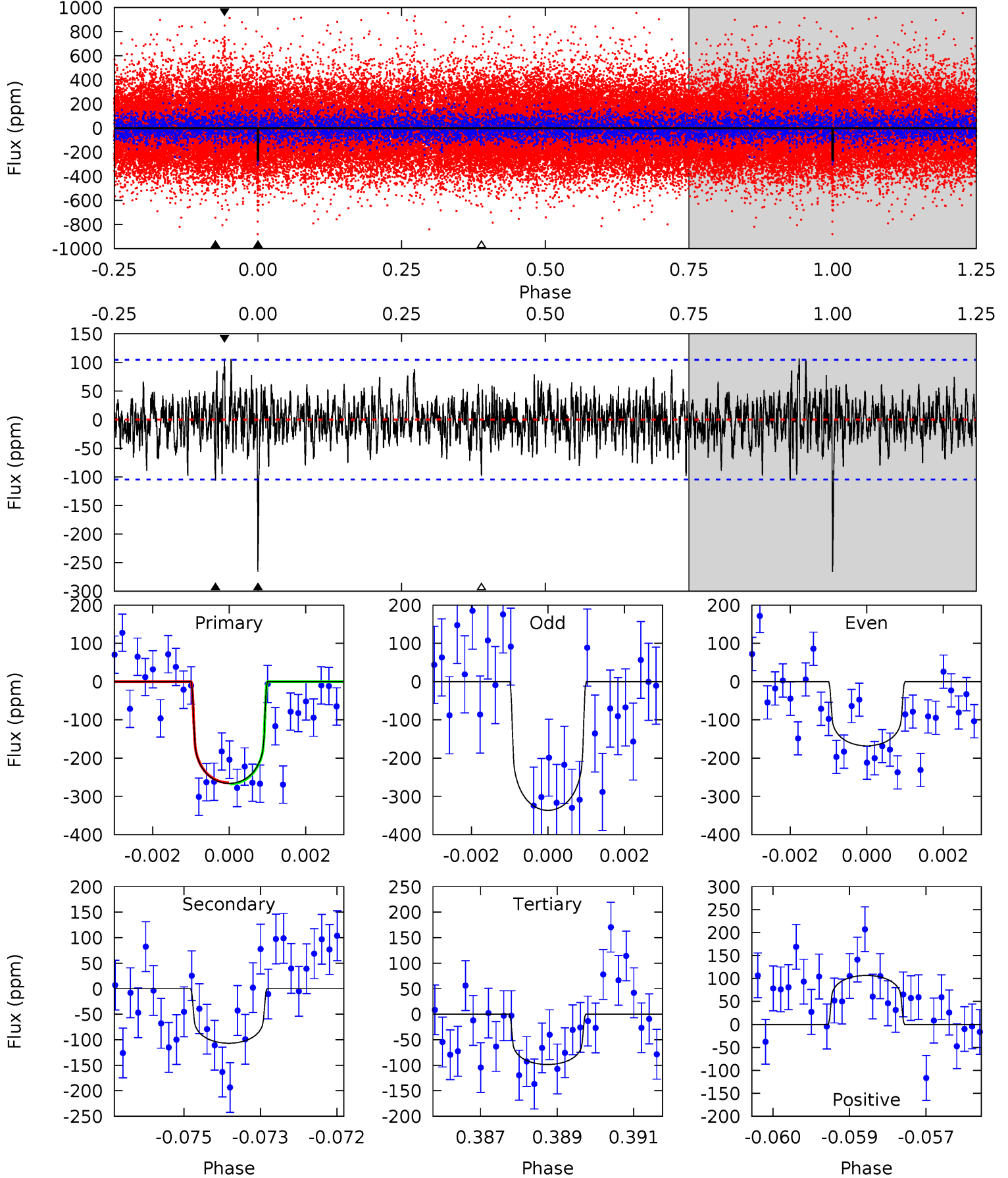
TCE 008219681-01 P=396.063693 Days  $T_0=383.473718$  (BKJD)



# DV Model-Shift Uniqueness Test

008219681-01, P = 396.097048 Days, E = 383.435790 Days

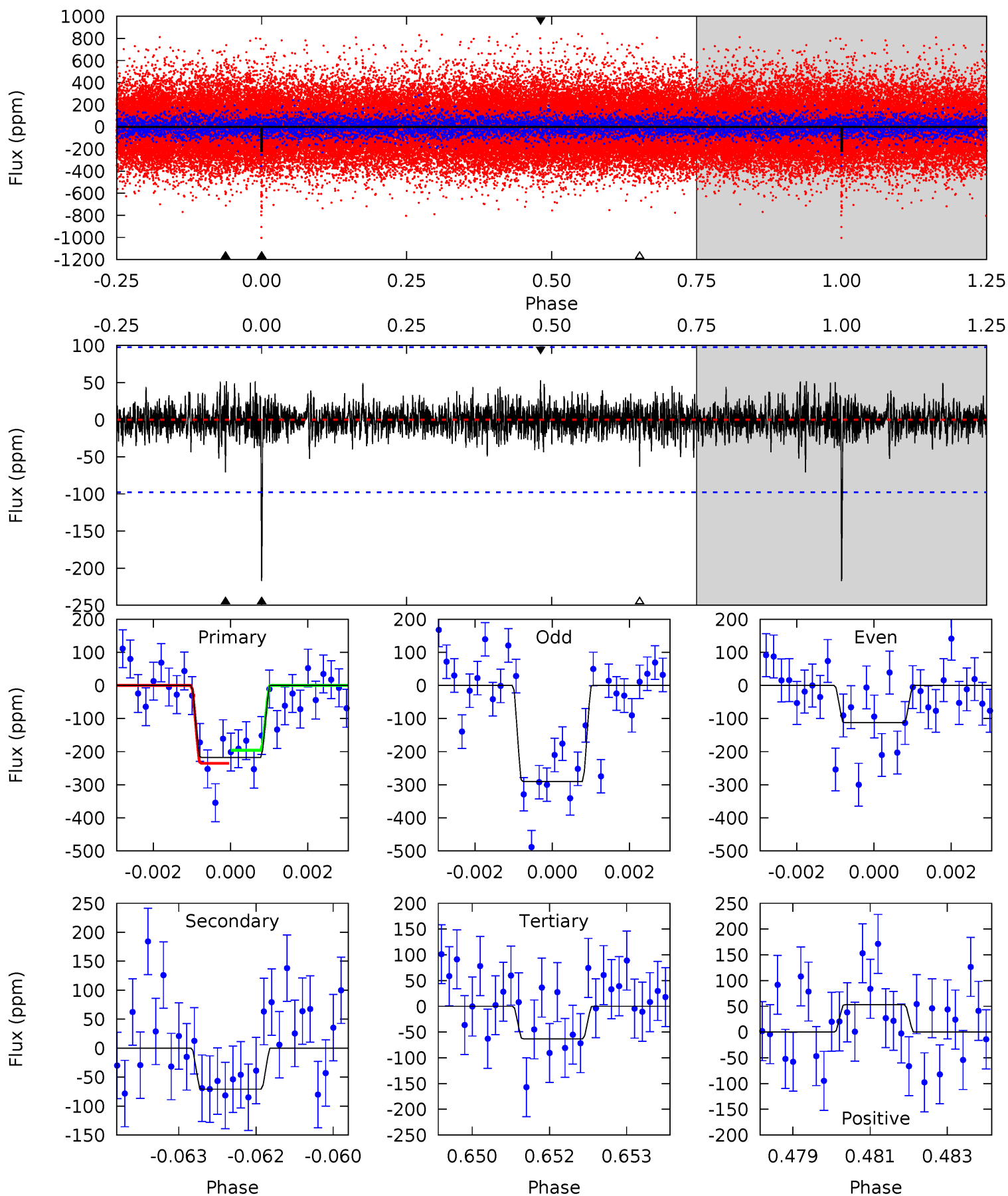
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.6	5.47	5.04	5.46	5.36	3.15	1.48	8.57	8.15	0.43	0.01	4.25	1.02	0.29	0.08



# Alt Model-Shift Uniqueness Test

008219681-01, P = 396.063693 Days, E = 383.473718 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
11.9	3.88	3.45	2.91	5.35	3.13	0.79	8.45	8.99	0.42	0.97	4.79	1.66	0.20	1.07



### Stellar Parameters For KIC 008219681

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6156^{+171}_{-236}$	$4.443^{+0.054}_{-0.216}$	$0.000^{+0.250}_{-0.300}$	$1.050^{+0.341}_{-0.114}$	$1.114^{+0.151}_{-0.151}$	$1.357^{+0.399}_{-0.737}$
	+3%/-4%	+1%/-5%	+inf%/-inf%	+32%/-11%	+14%/-14%	+29%/-54%
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 008219681-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-107 \pm 20$	$2.05^{+0.86}_{-0.67}$	$379^{+30}_{-20}$	$4844^{+954}_{-557}$	$16015^{+19934}_{-7836}$
Alt.	$-71 \pm 18$	$1.80^{+0.70}_{-0.65}$	$379^{+29}_{-20}$	$4697^{+987}_{-590}$	$13815^{+19091}_{-7167}$

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

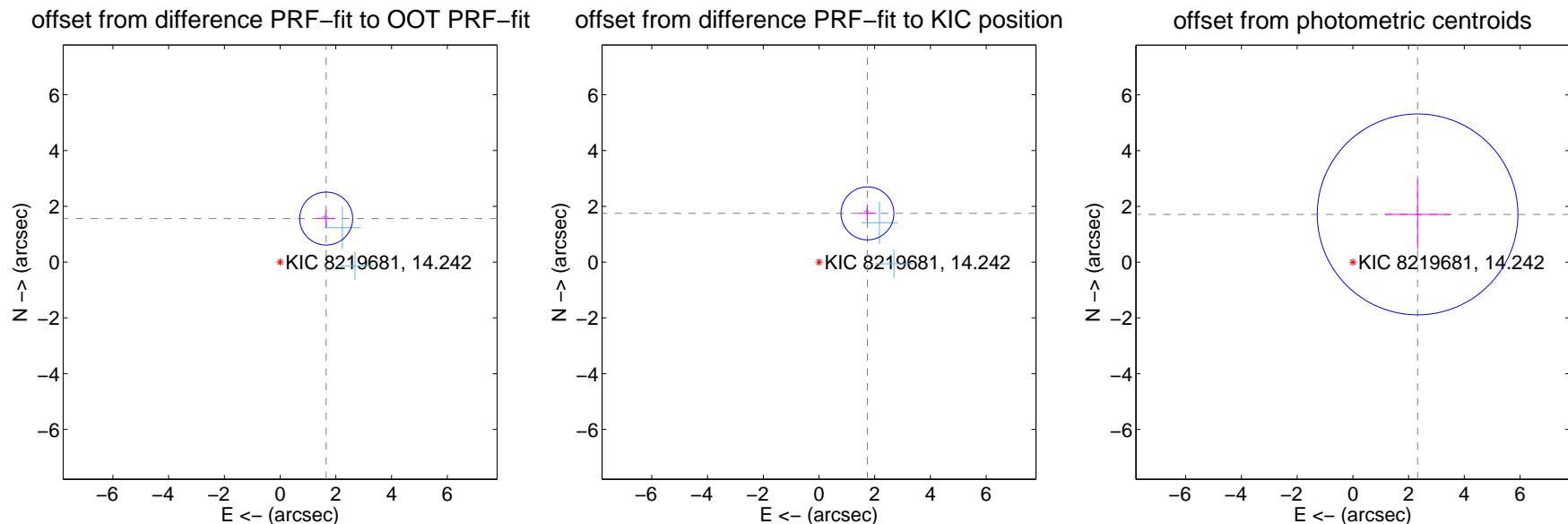
## DV Centroid Data

Supplemental centroid analysis for 008219681-01. Kepler magnitude: 14.24. Transit SNR 9.74

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.19 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.273 \pm 0.317$	7.18	$-1.653 \pm 0.321$	$1.561 \pm 0.311$
PRF-fit source offset from KIC position	$2.464 \pm 0.316$	7.79	$-1.738 \pm 0.321$	$1.746 \pm 0.311$
photometric centroid source offset	$2.89 \pm 1.20$	2.40	$-2.32 \pm 1.18$	$1.71 \pm 1.24$



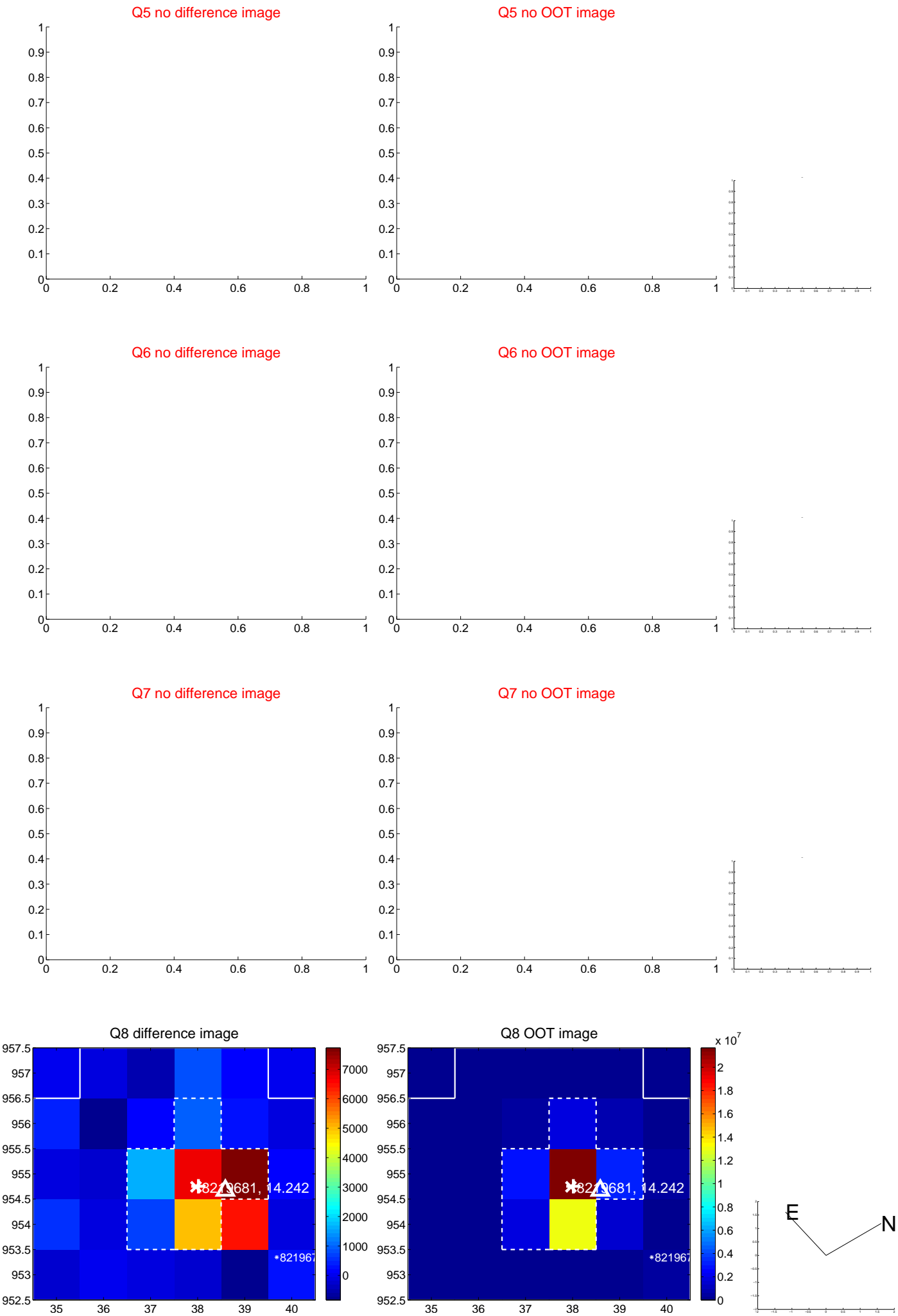
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

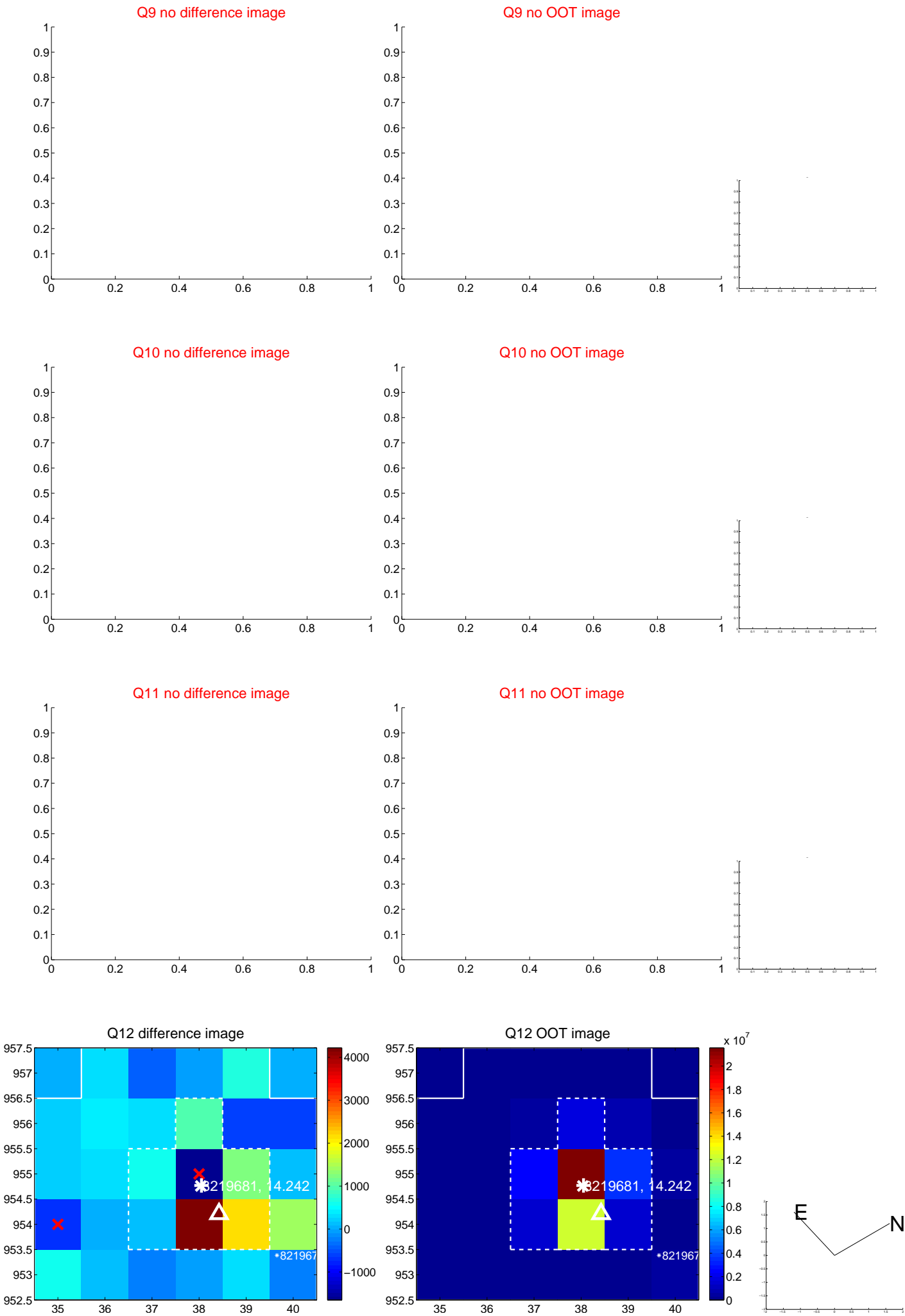




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



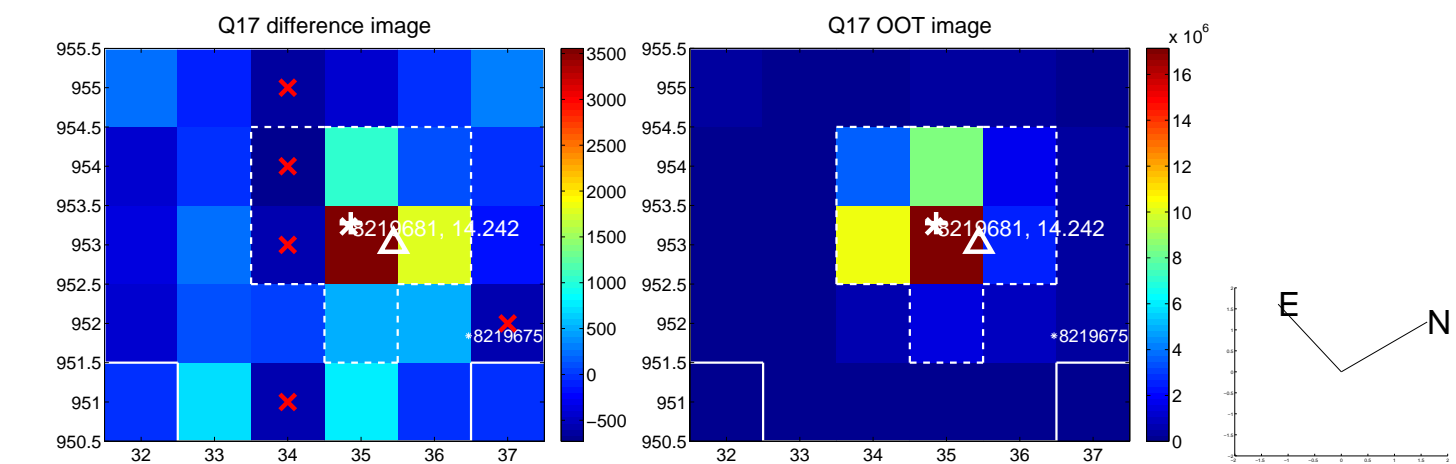
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



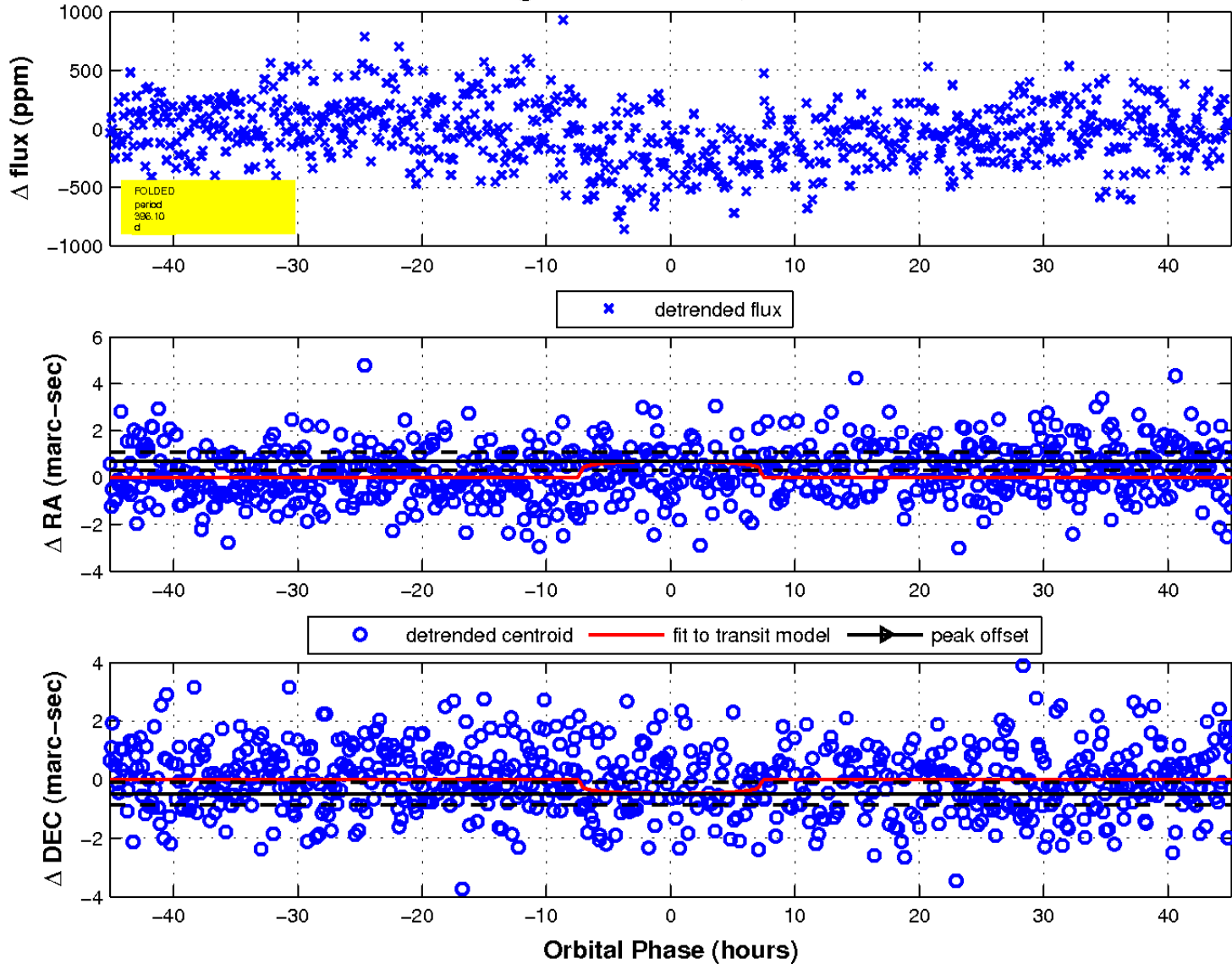
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

