

# KIC 007968683

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007968683-01	OBS	4050.01	367.988521	236.385275	1523.3	22.523	8.8	9.5	0.70	4723	3.44	0.27

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007968683-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—ALL_TRANS_CHASES—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.

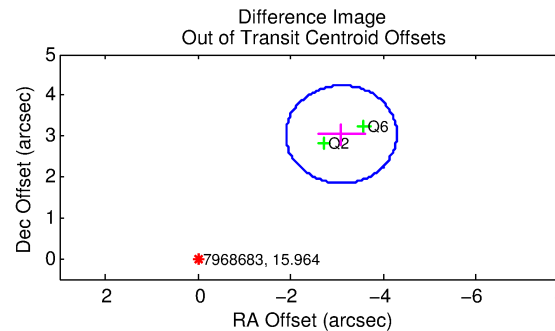
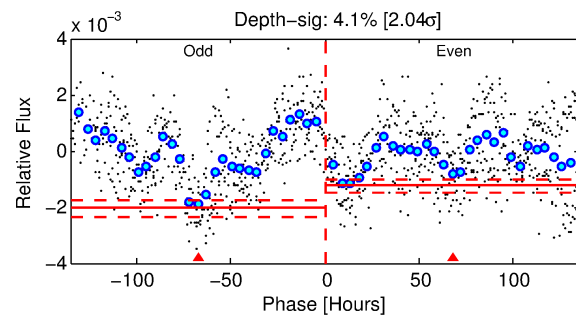
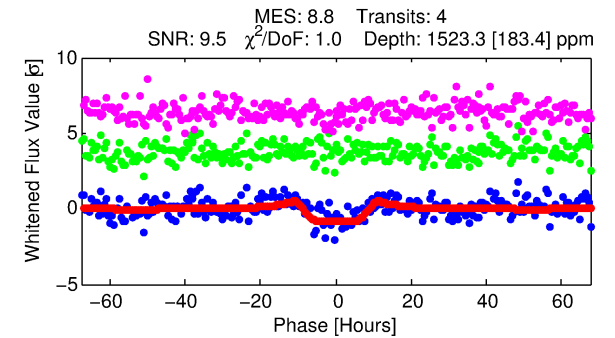
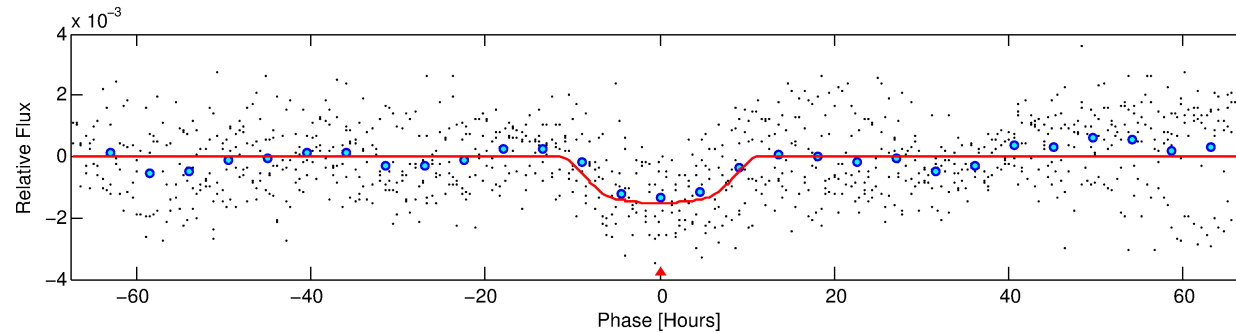
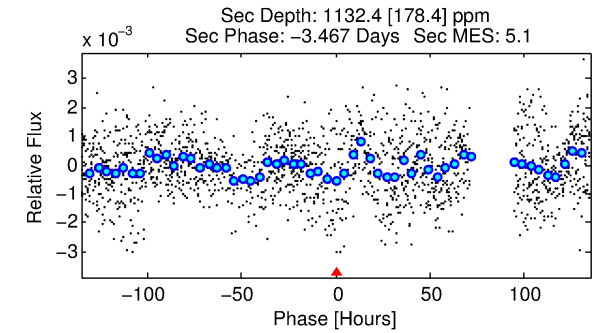
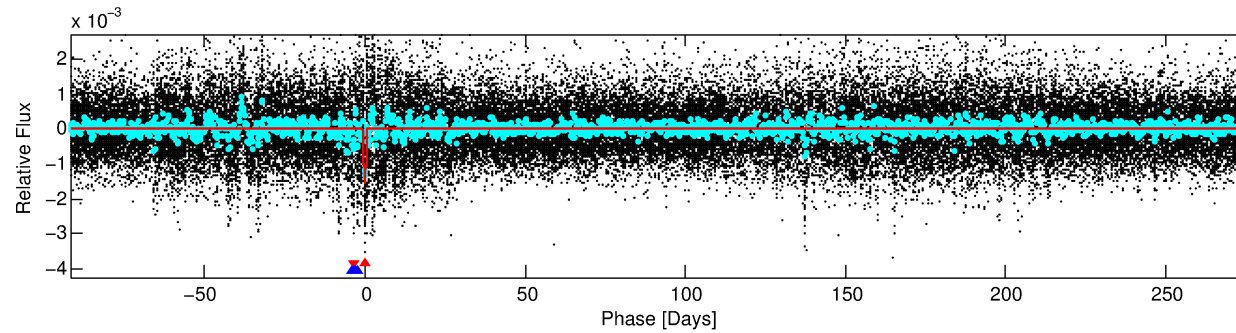
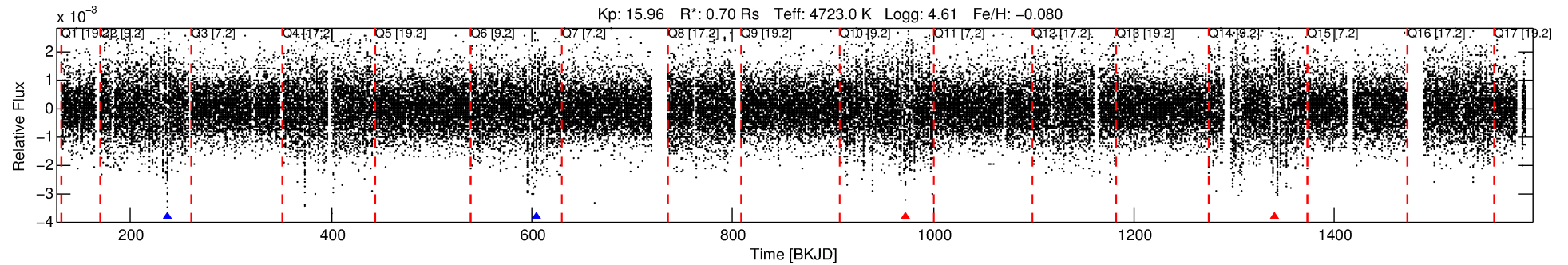
## Ephemeris Match Information For 007968683-01

No Significant Match Found

# DV One-Page Summary

KIC: 7968683 Candidate: 1 of 2 Period: 367.989 d

KOI: K04050.01 Corr: 0.939



## DV Fit Results:

Period = 367.98852 [0.01743] d  
Epoch = 236.3853 [0.0314] BKJD  
Rp/R\* = 0.0452 [0.0038]  
b/R\* = 61.75 [10.76]  
b = 0.92 [0.03]  
Seff = 0.27 [0.04]  
Teq = 183 [7] K  
Rp = 3.43 [0.40] Re  
a = 0.9016 [0.0557] AU  
Ag = 42920.05 [10542.89] [4.07σ]  
Teff = 4074 [266] K [14.65σ]

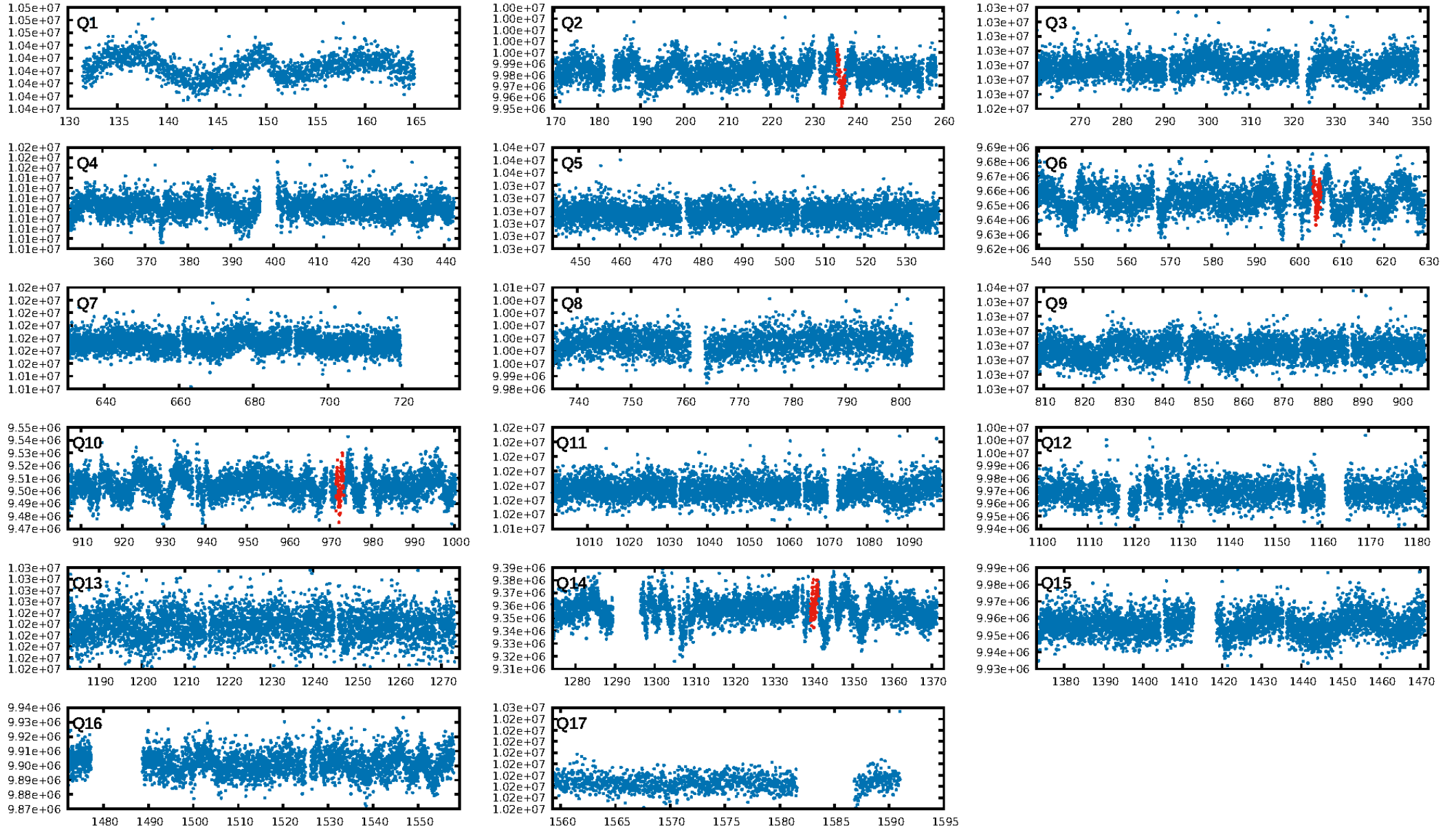
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 30.3% [0.39σ]  
ModelChiSquare2-sig: 25.9%  
ModelChiSquareGoF-sig: 99.9%  
**Bootstrap-pfa: 1.60e-10**  
**RollingBand-fgt: 0.50 [2/4]**  
**GhostDiagnostic-chr: 0.9914**  
Centroid-sig: 2.0%  
Centroid-so: 3.529 arcsec [1.78σ]  
**OotOffset-rm: 4.337 arcsec [10.86σ]**  
**KicOffset-rm: 4.350 arcsec [11.27σ]**  
OotOffset-st: 2/0/0/0 [2]  
KicOffset-st: 2/0/0/0 [2]  
DiffImageQuality-fgm: 0.50 [1/2]  
DiffImageOverlap-fno: 1.00 [3/3]

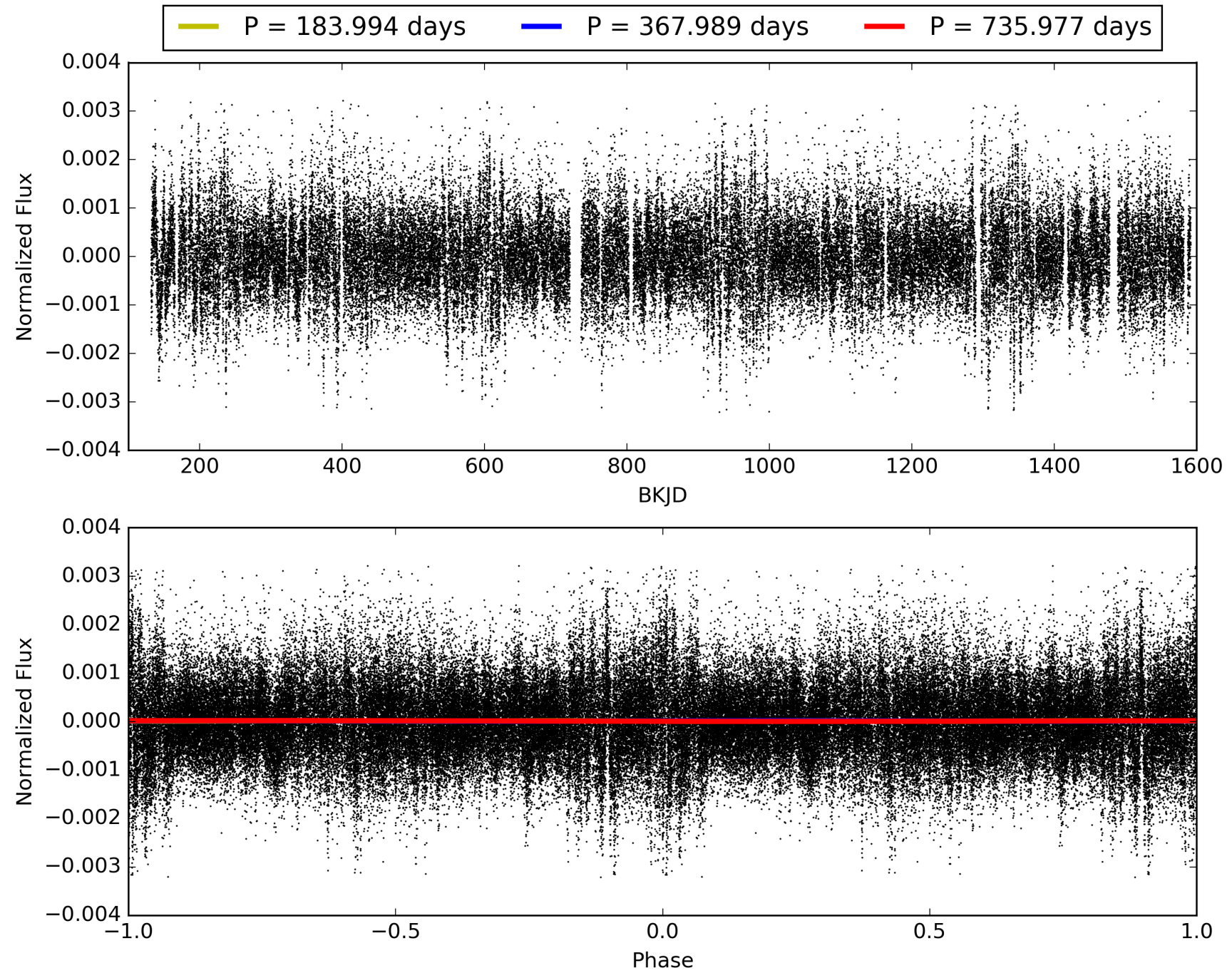
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:26:05 Z

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

# TCE 007968683-01, PDC Light Curves

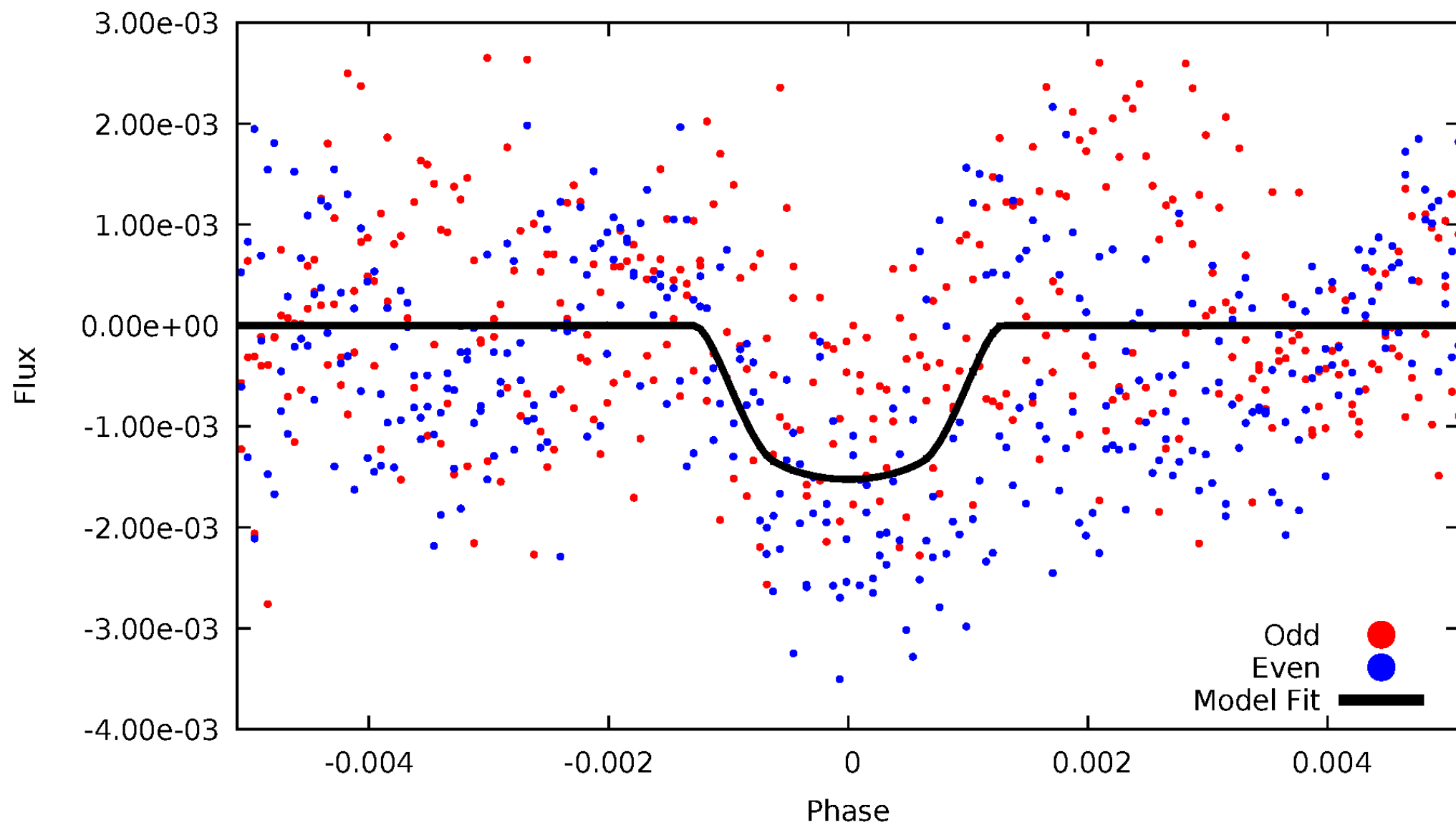


TCE 007968683-01



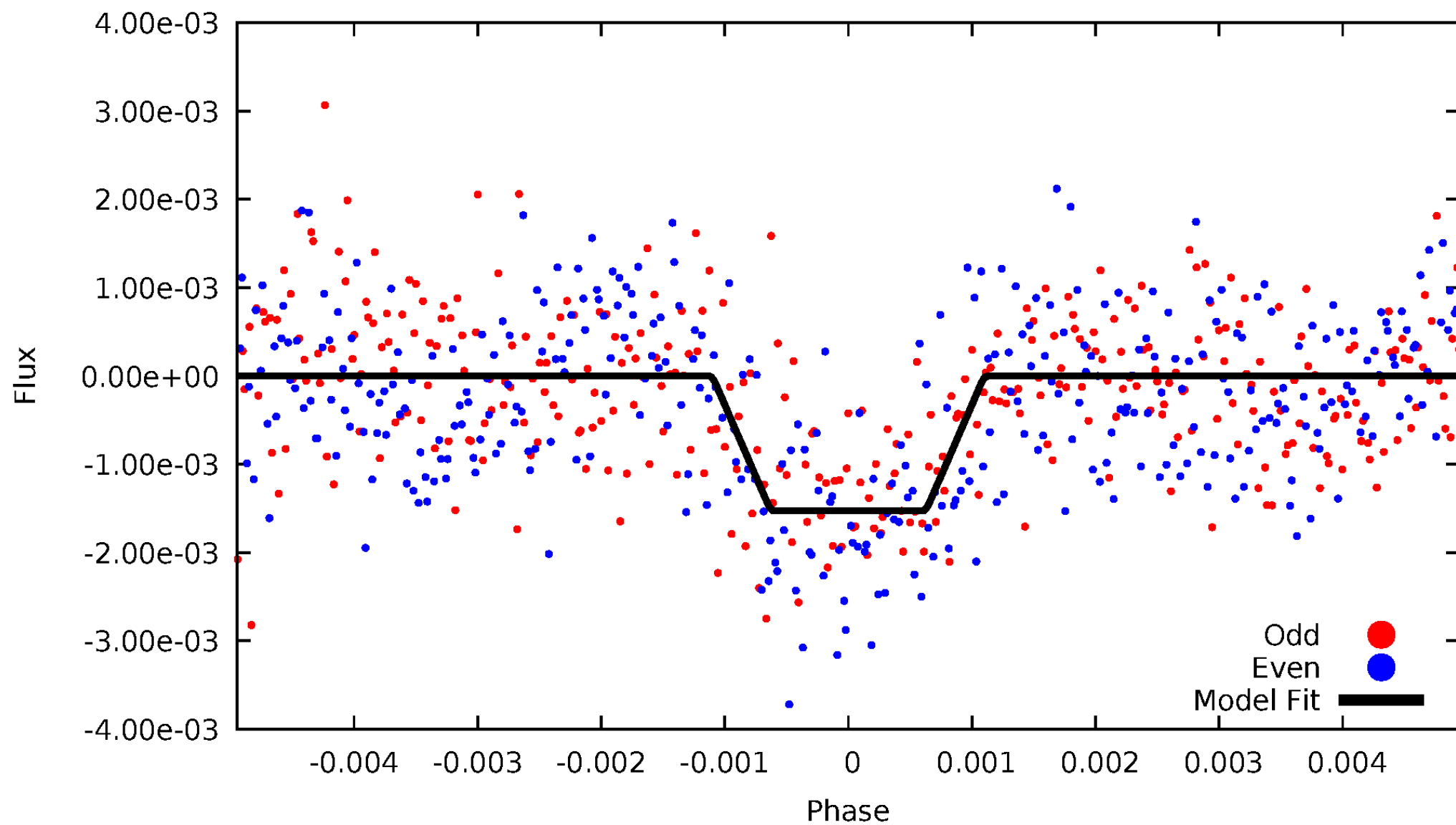
# DV Odd/Even

TCE 007968683-01



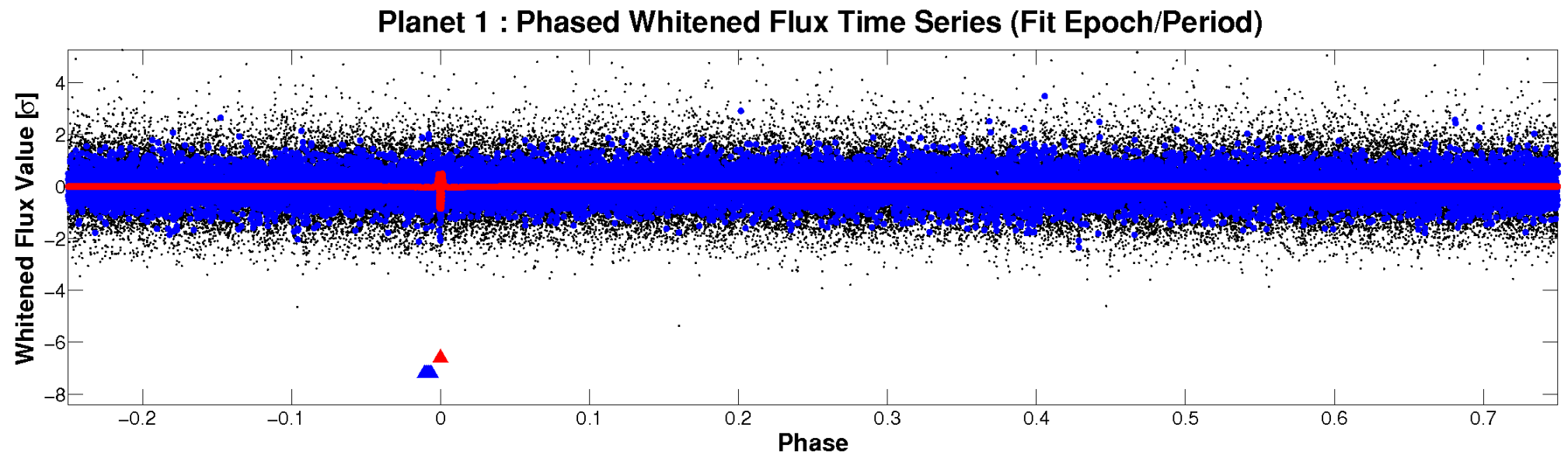
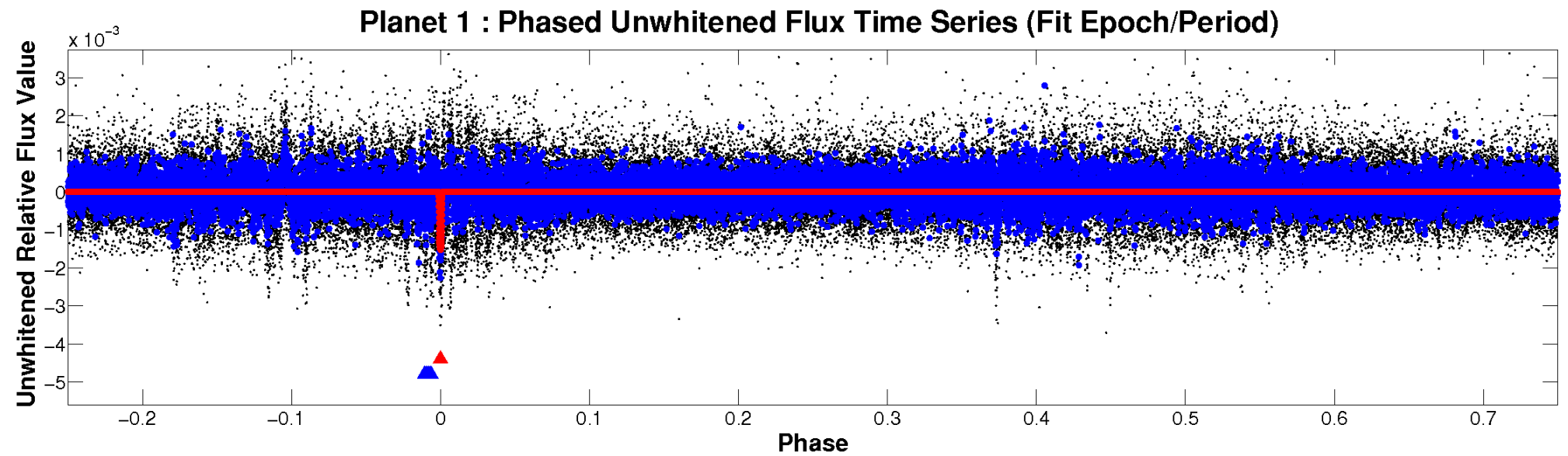
# ALT Odd/Even

TCE 007968683-01



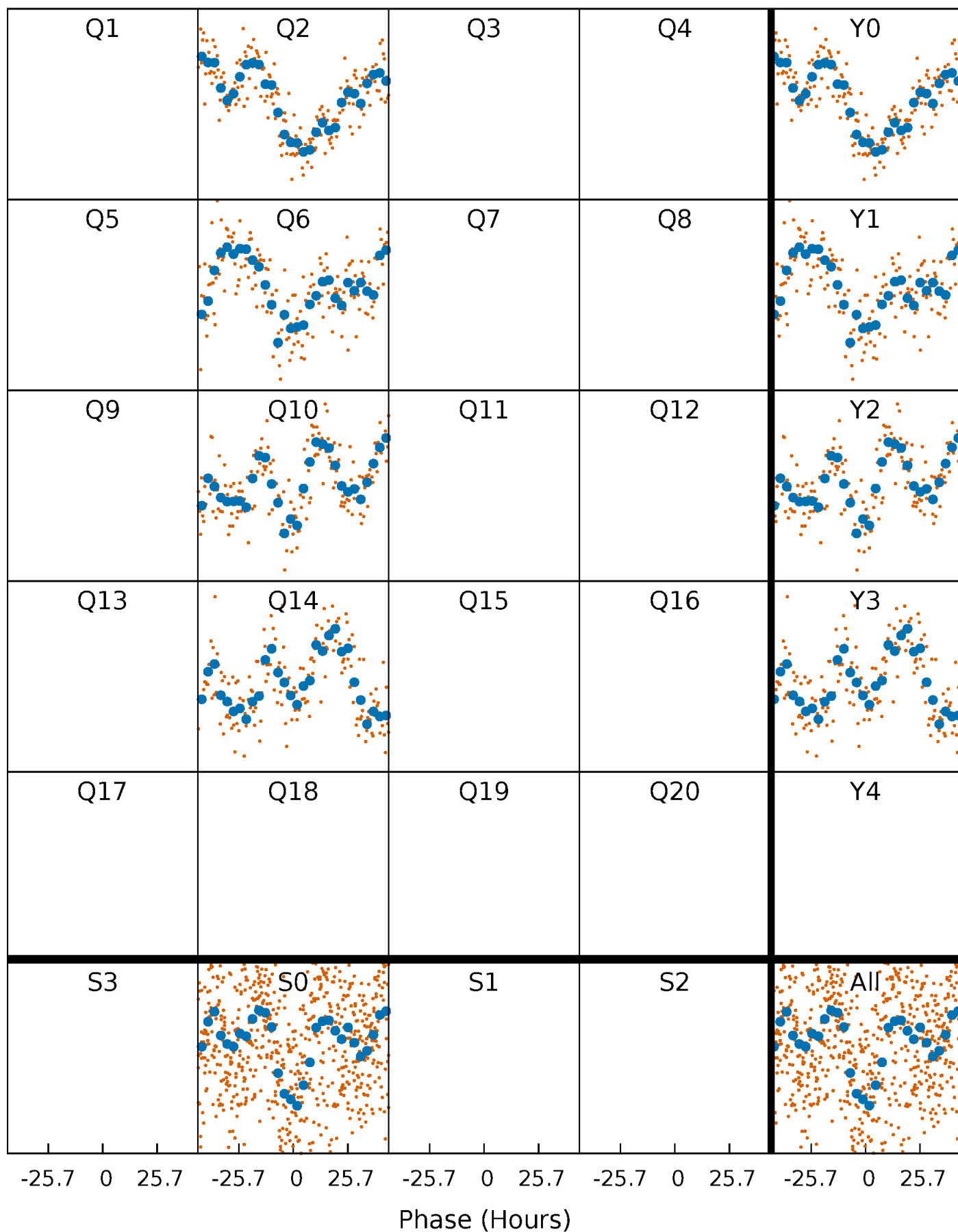


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

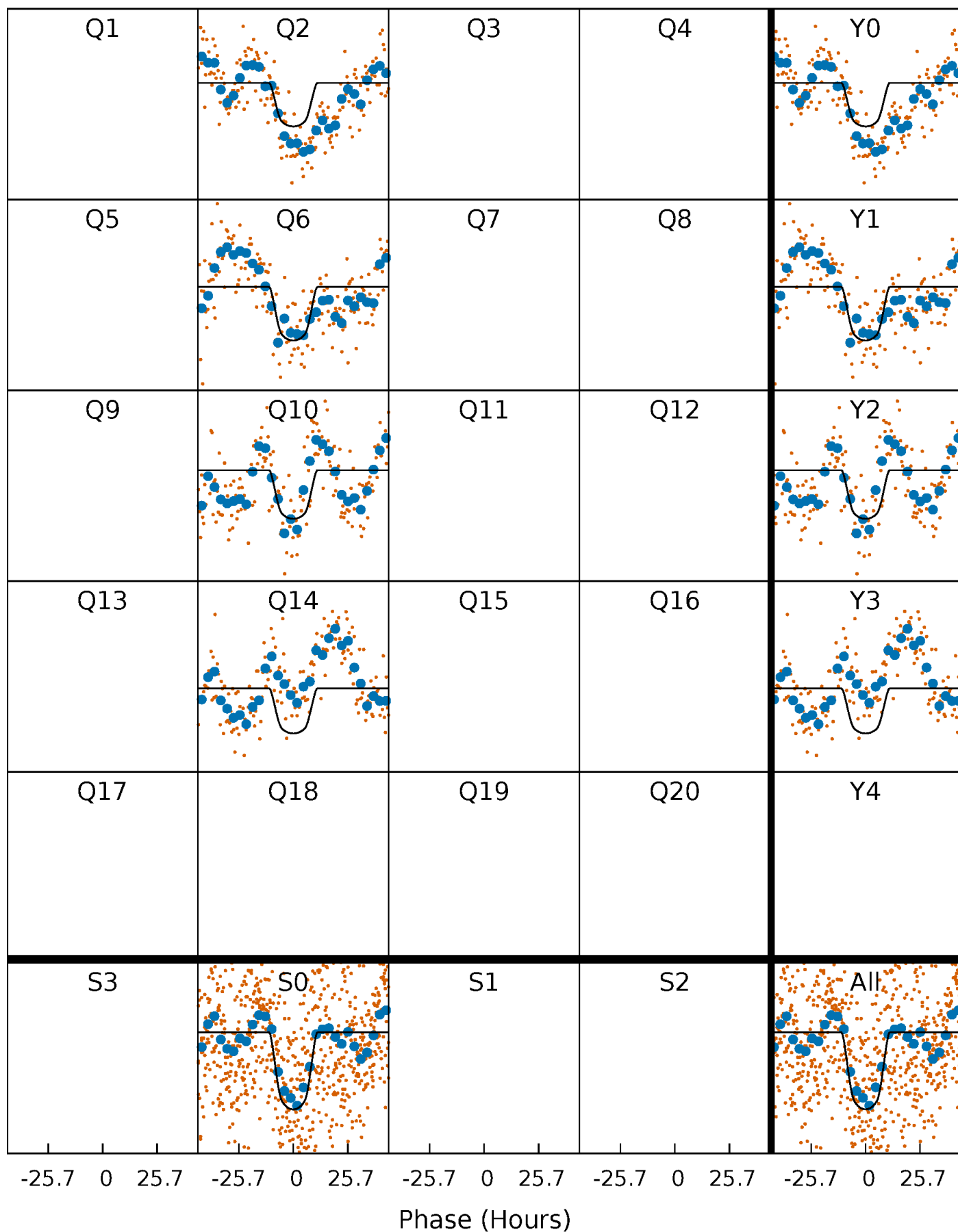
TCE 007968683-01 P=367.988520 Days  $T_0=236.385275$  (BKJD)





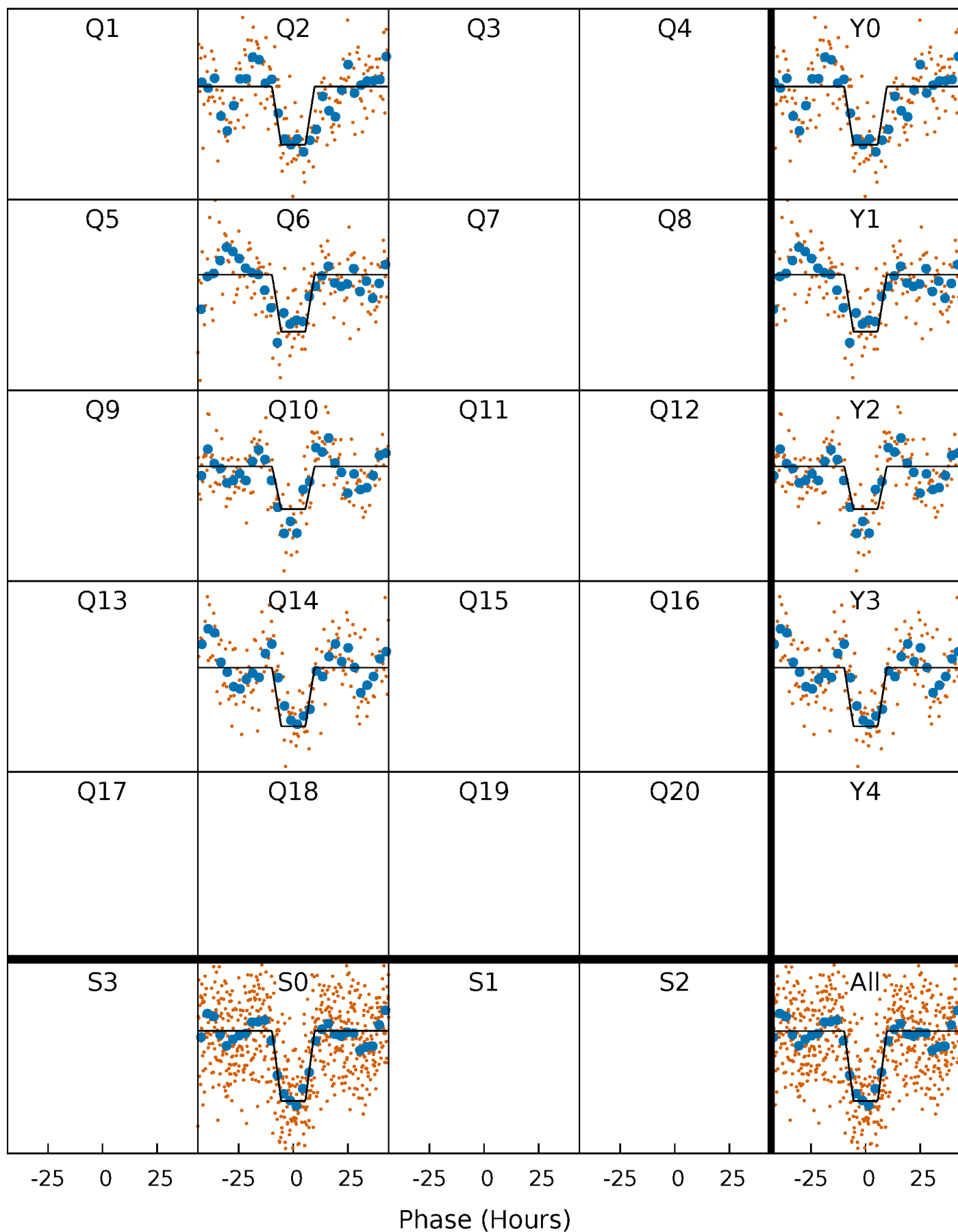
# DV Quarter-Phased Transit Curves

TCE 007968683-01 P=367.988520 Days  $T_0=236.385275$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

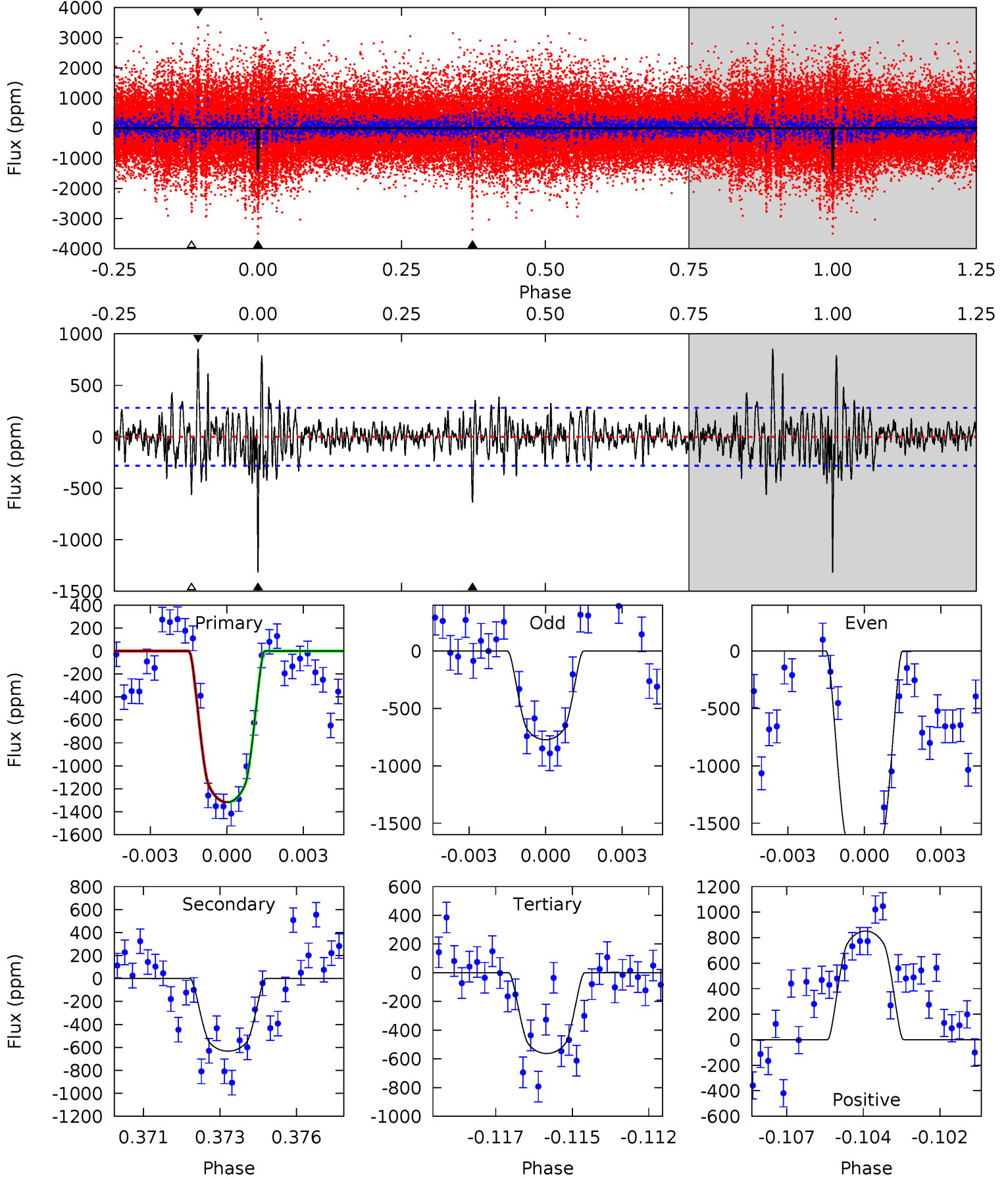
TCE 007968683-01 P=368.001604 Days  $T_0=236.366508$  (BKJD)



# DV Model-Shift Uniqueness Test

007968683-01, P = 367.988520 Days, E = 236.385275 Days

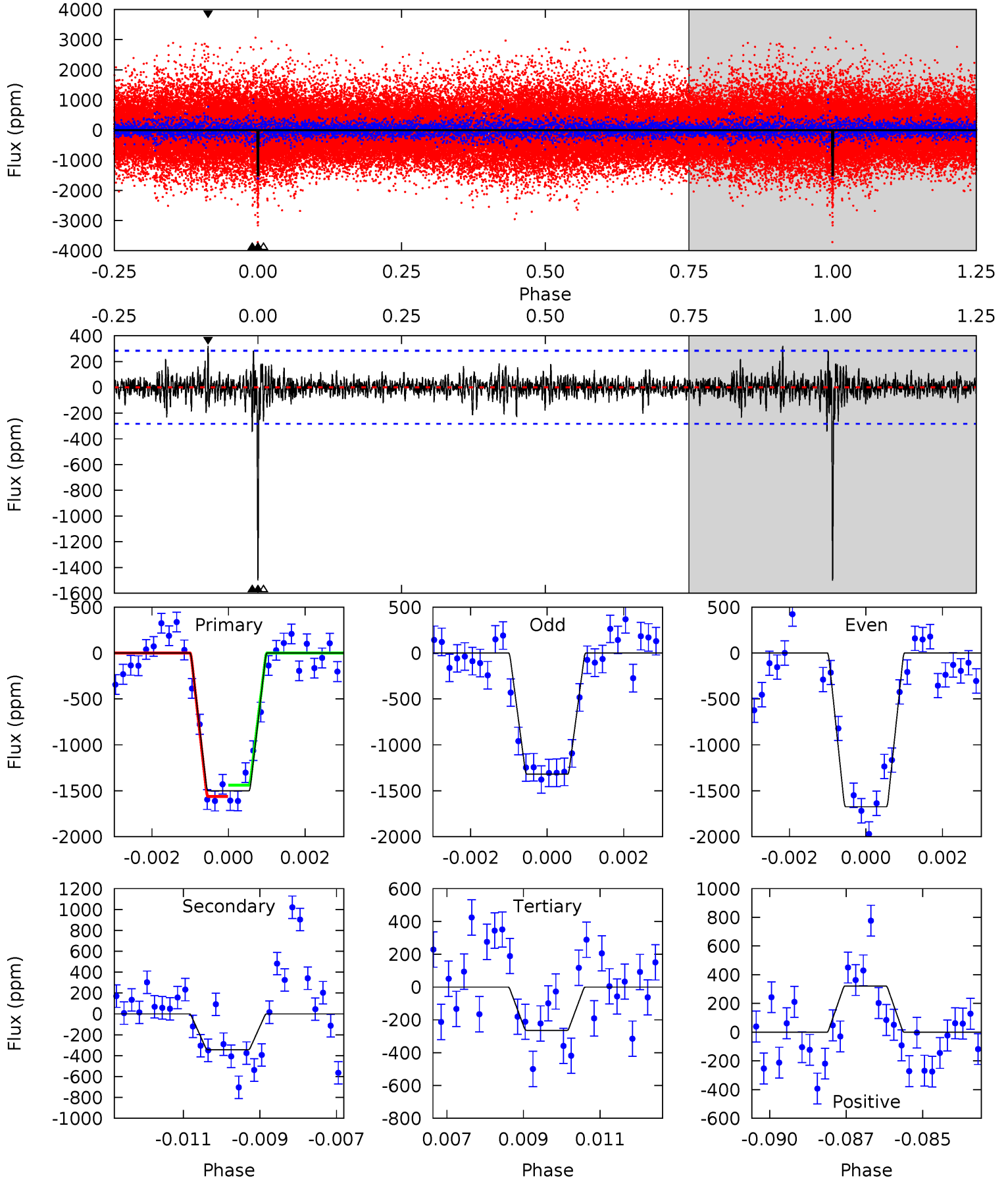
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.8	11.9	10.6	16.0	5.28	3.01	2.68	14.2	8.77	1.33	-4.11	10.1	0.91	0.39	0.02



# Alt Model-Shift Uniqueness Test

007968683-01, P = 368.001604 Days, E = 236.366508 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
28.0	6.40	4.93	6.00	5.31	3.06	1.05	23.1	22.0	1.47	0.40	3.33	1.03	0.18	1.15



### Stellar Parameters For KIC 007968683

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4723^{+141}_{-127}$	$4.611^{+0.036}_{-0.040}$	$-0.080^{+0.300}_{-0.300}$	$0.696^{+0.056}_{-0.056}$	$0.722^{+0.065}_{-0.065}$	$3.013^{+0.524}_{-0.446}$
	+3%/-3%	+1%/-1%	+375%/-375%	+8%/-8%	+9%/-9%	+17%/-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 007968683-01 / KOI 4050.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-633 \pm 53$	$3.43^{+0.33}_{-0.33}$	$256^{+9}_{-8}$	$3801^{+182}_{-139}$	$24163^{+5248}_{-4479}$
Alt.	$-343 \pm 54$	$2.98^{+0.33}_{-0.30}$	$256^{+8}_{-8}$	$3611^{+178}_{-174}$	$17268^{+5225}_{-4080}$

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

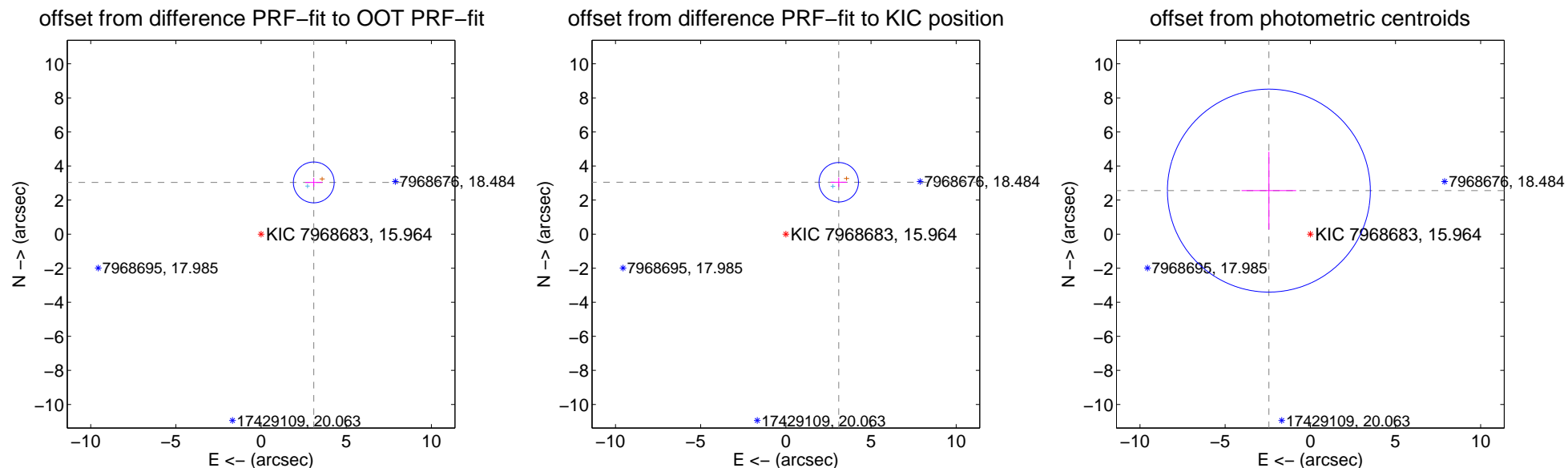
## DV Centroid Data

Supplemental centroid analysis for 007968683-01. Kepler magnitude: 15.96. Transit SNR 9.50

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

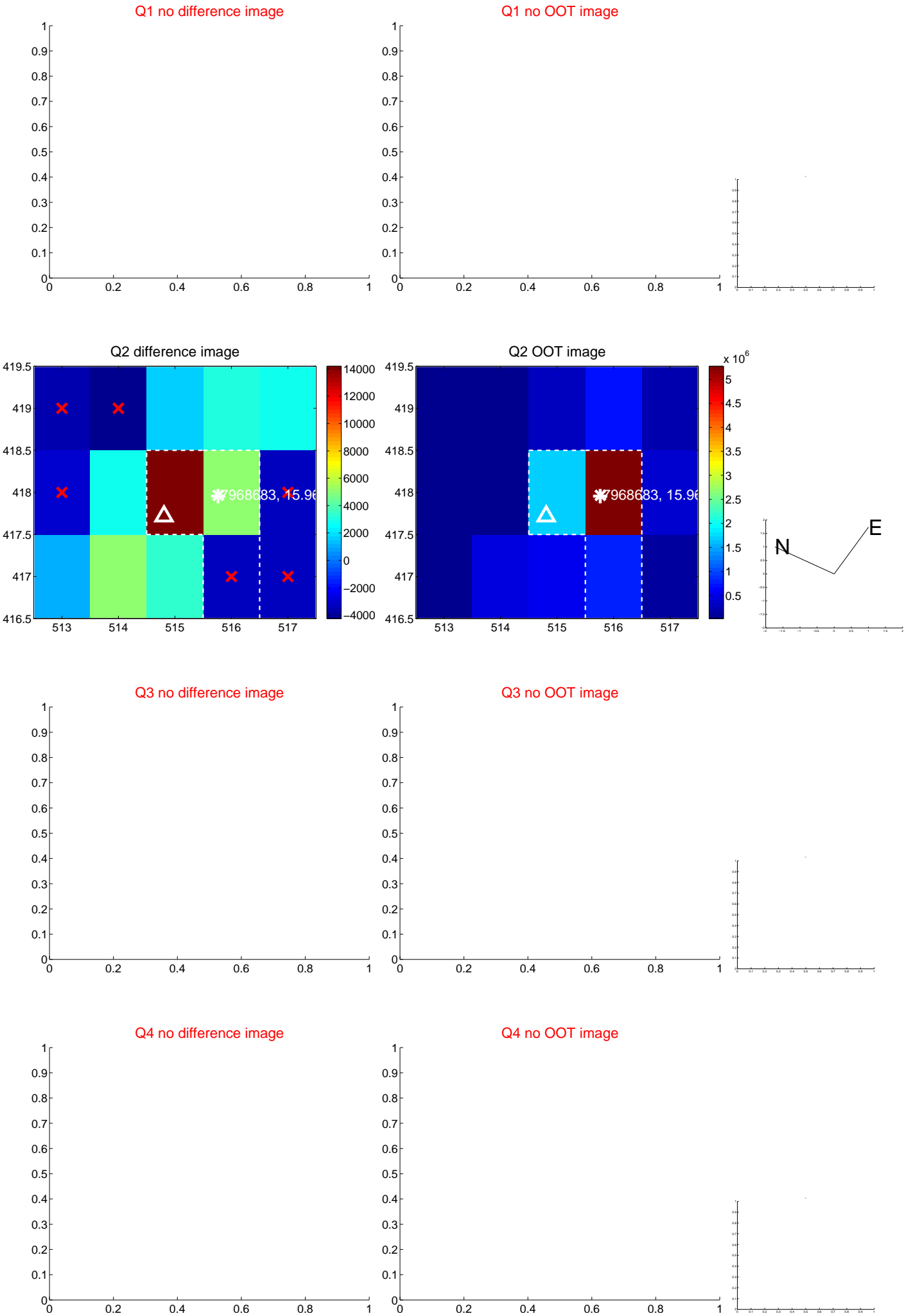
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.337 \pm 0.399$	10.86	$-3.095 \pm 0.500$	$3.038 \pm 0.256$
PRF-fit source offset from KIC position	$4.350 \pm 0.386$	11.27	$-3.105 \pm 0.468$	$3.046 \pm 0.276$
photometric centroid source offset	$3.53 \pm 1.99$	1.78	$2.43 \pm 1.60$	$2.56 \pm 2.28$



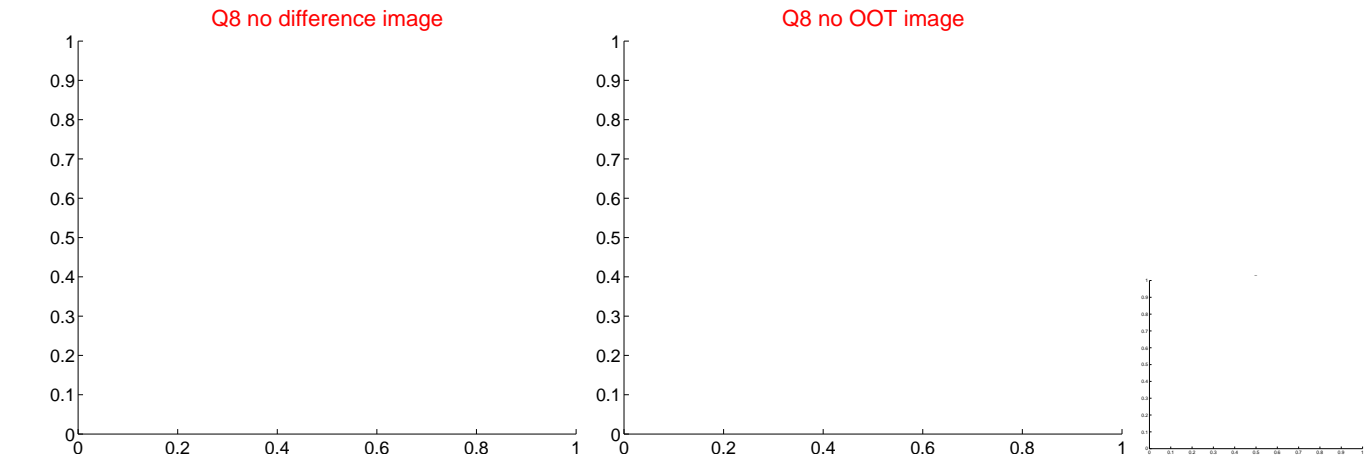
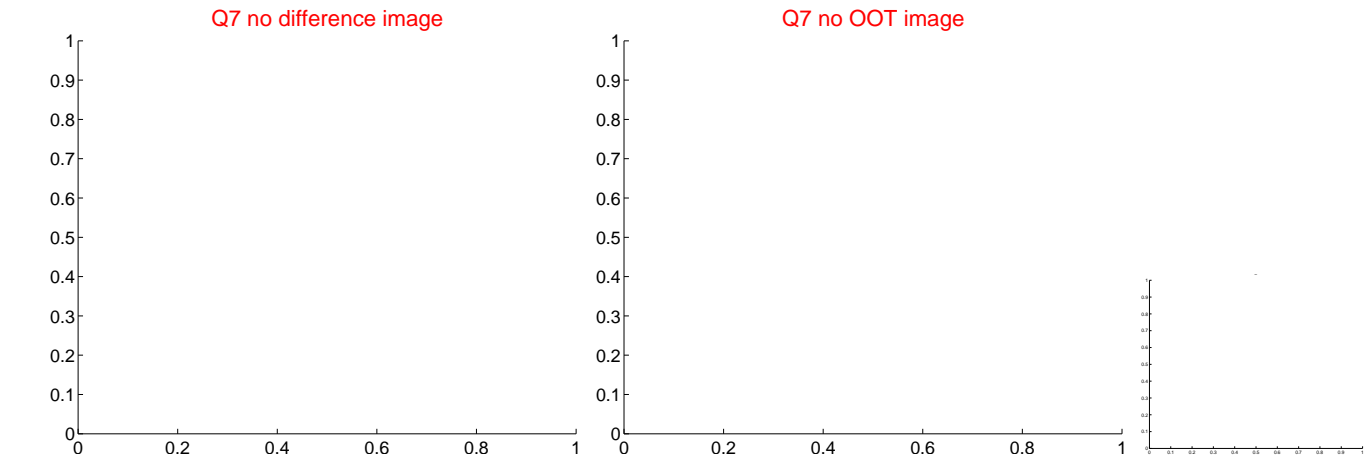
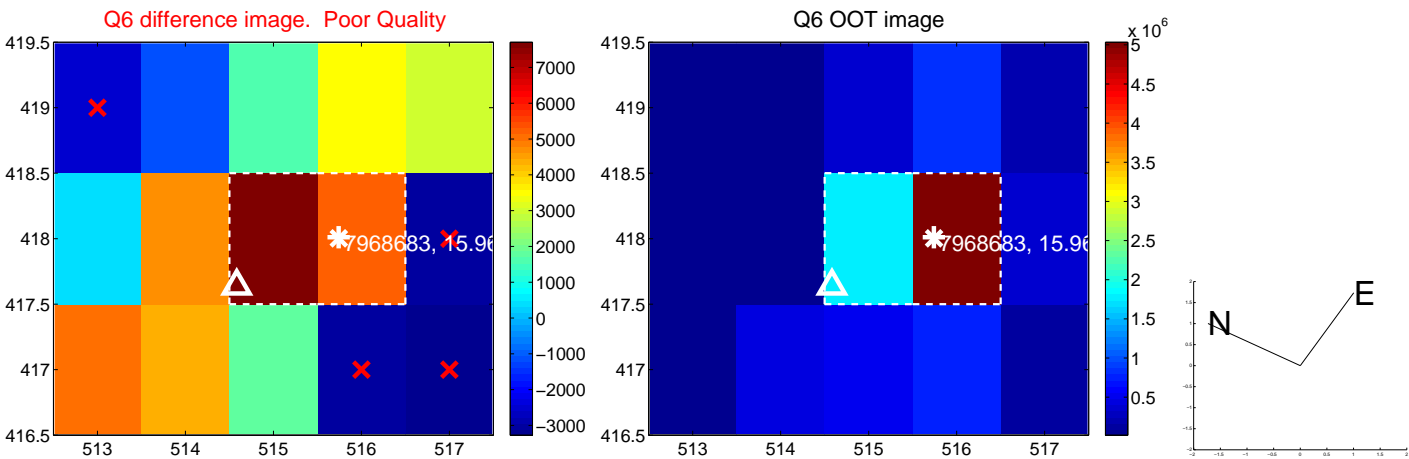
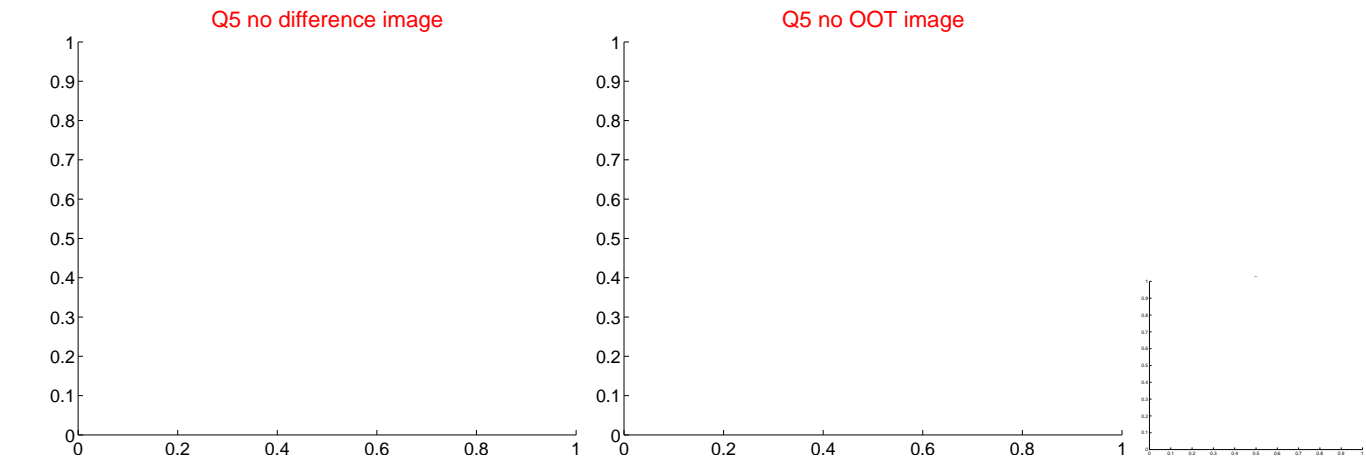
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



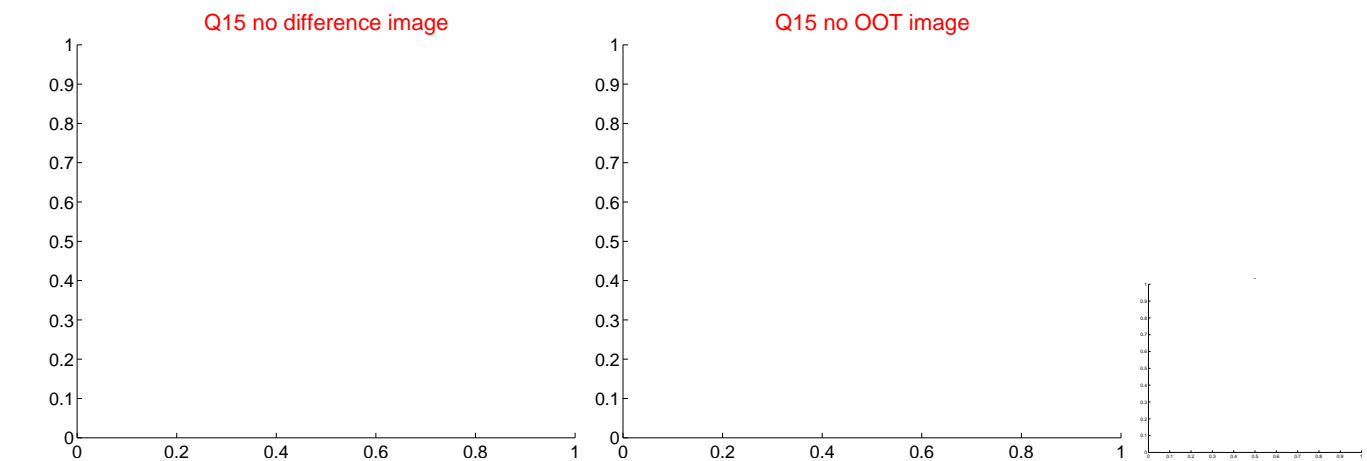
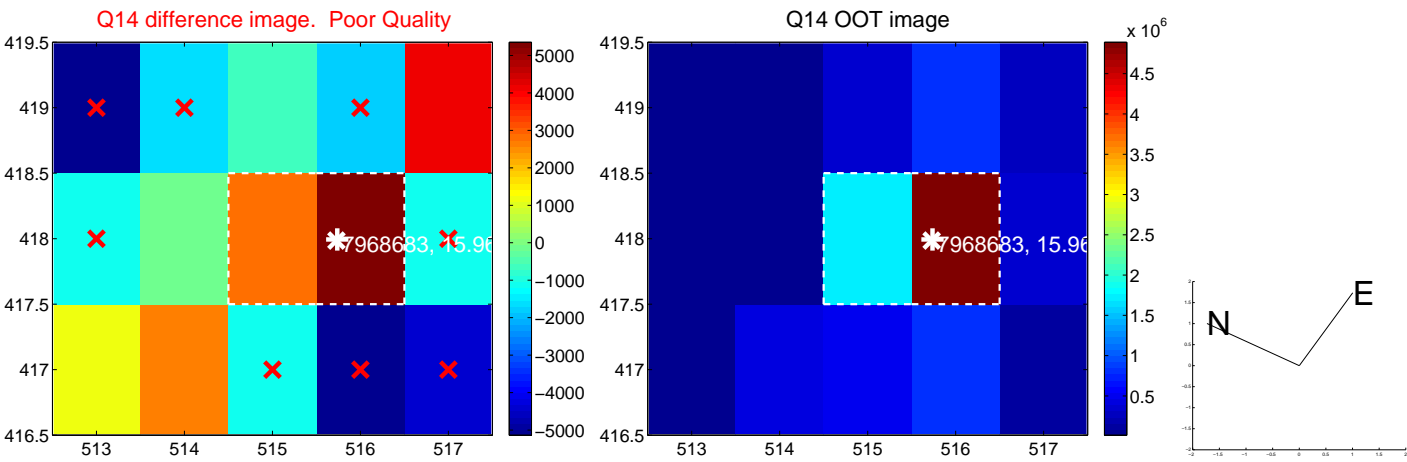
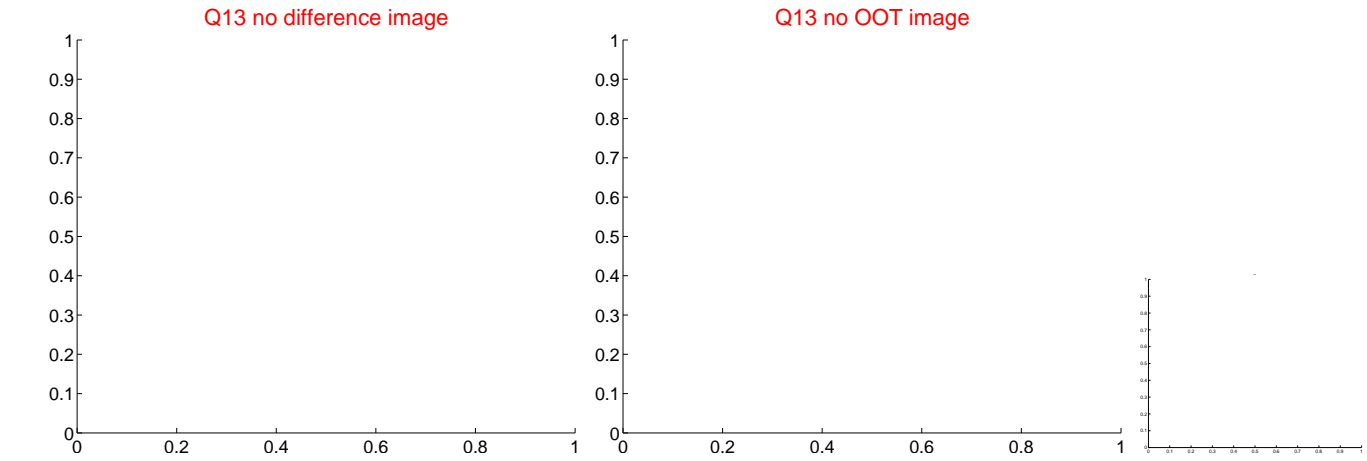
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



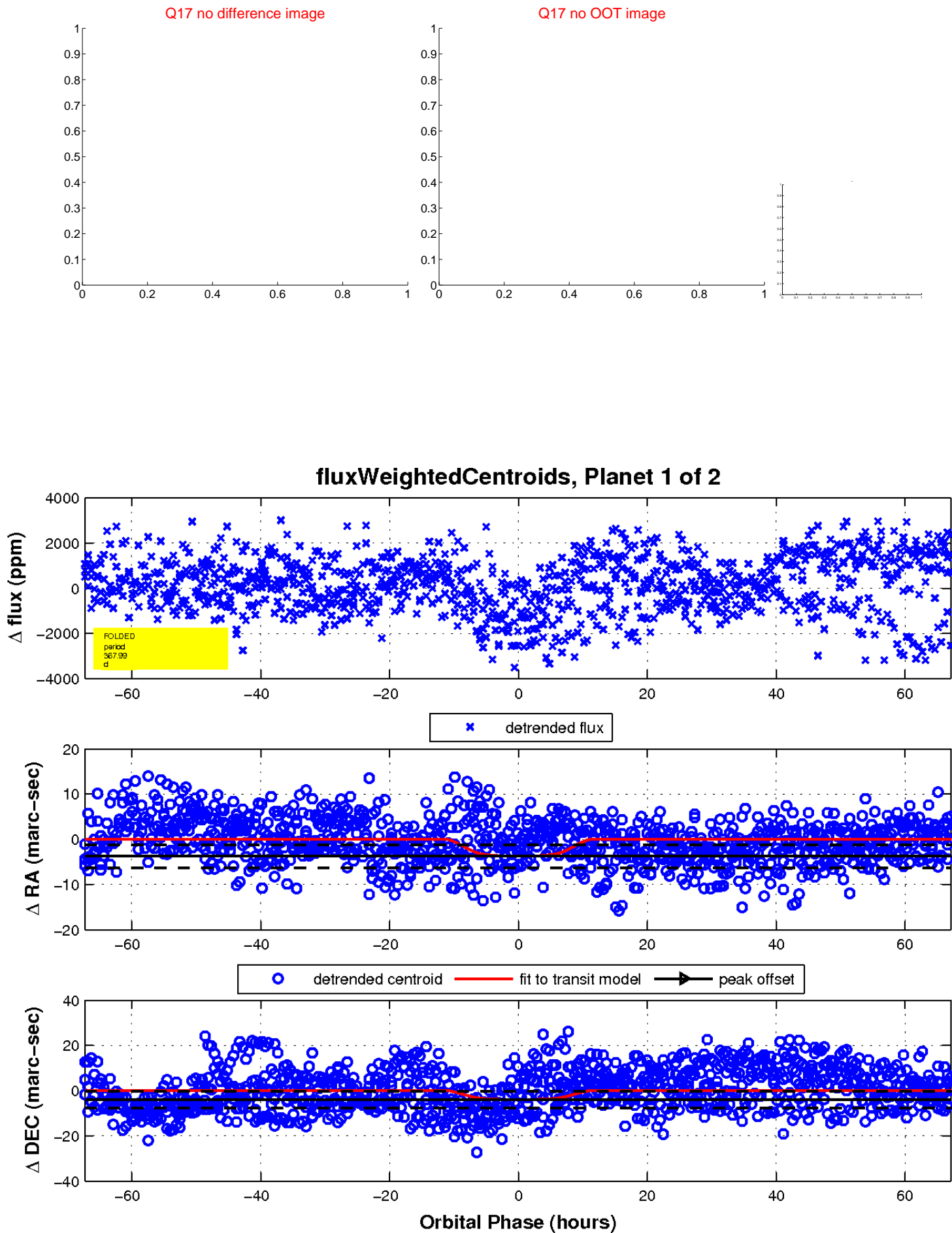
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



# UKIRT Image

Declination

