

# KIC 008210323

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008210323-01	OBS	No	386.165003	376.715432	984.8	6.490	12.6	6.3	0.42	3652	1.37	0.04

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008210323-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE_ZUMA—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—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.

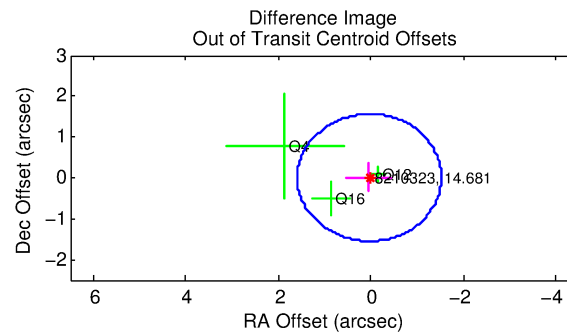
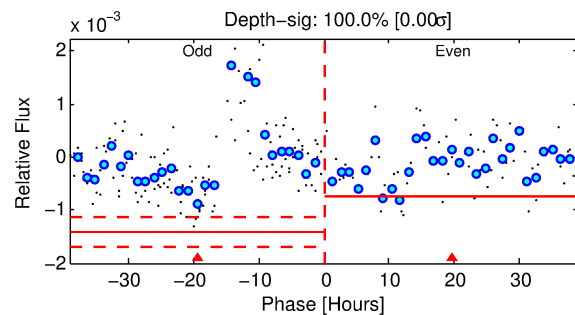
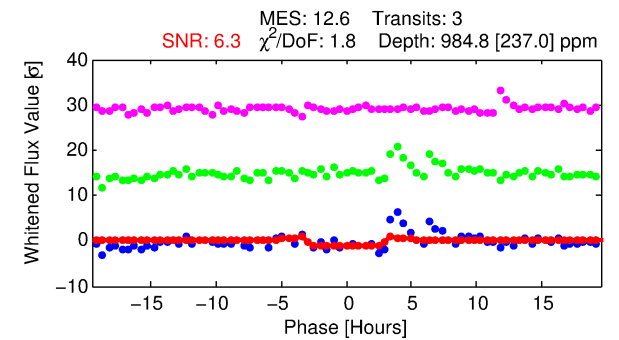
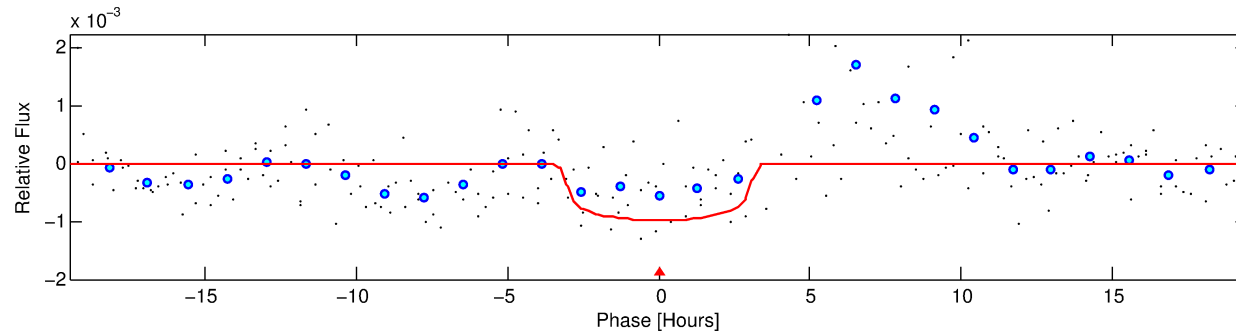
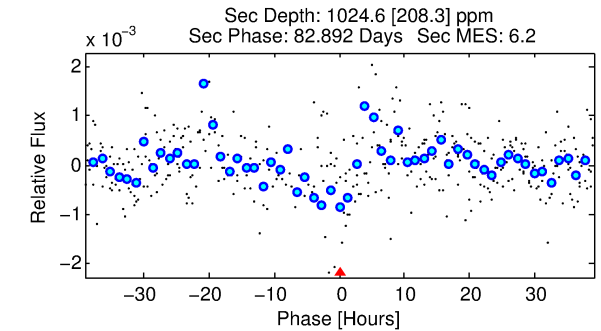
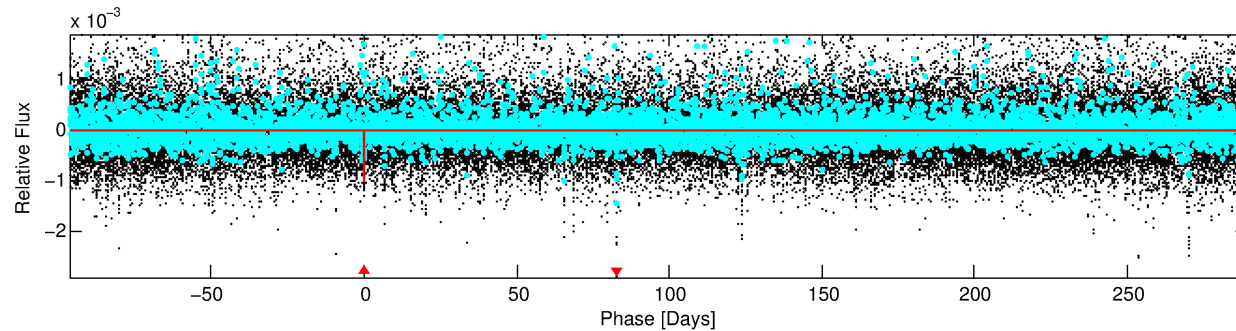
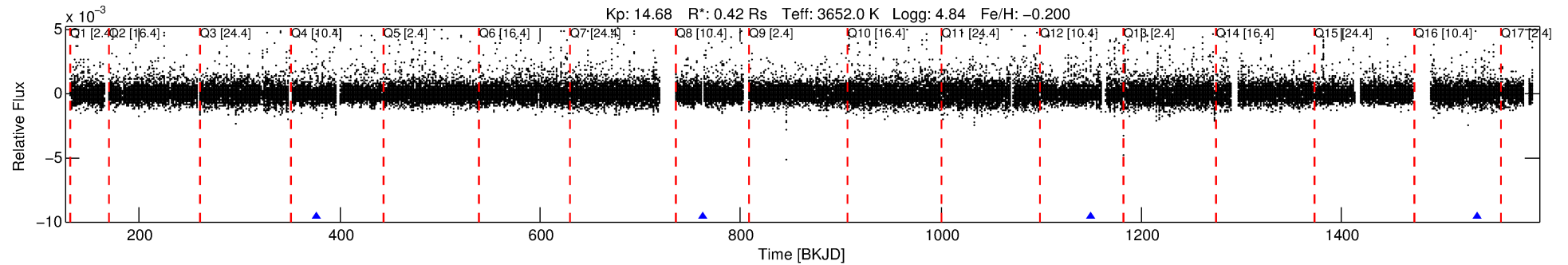
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008210323-01

No Significant Match Found

# DV One-Page Summary

KIC: 8210323 Candidate: 1 of 1 Period: 386.165 d



## DV Fit Results:

Period = 386.16500 [0.00691] d  
Epoch = 376.7154 [0.0126] BKJD  
Rp/R\* = 0.0299 [0.0205]  
a/R\* = 380.13 [1158.13]  
b = 0.60 [3.24]  
Seff = 0.04 [0.00]  
Teq = 117 [3] K  
Rp = 1.37 [0.95] Re  
a = 0.7920 [0.0450] AU  
Ag = 187839.26 [260886.78] [0.72 $\sigma$ ]  
Teffp = 3776 [1311] K [2.79 $\sigma$ ]

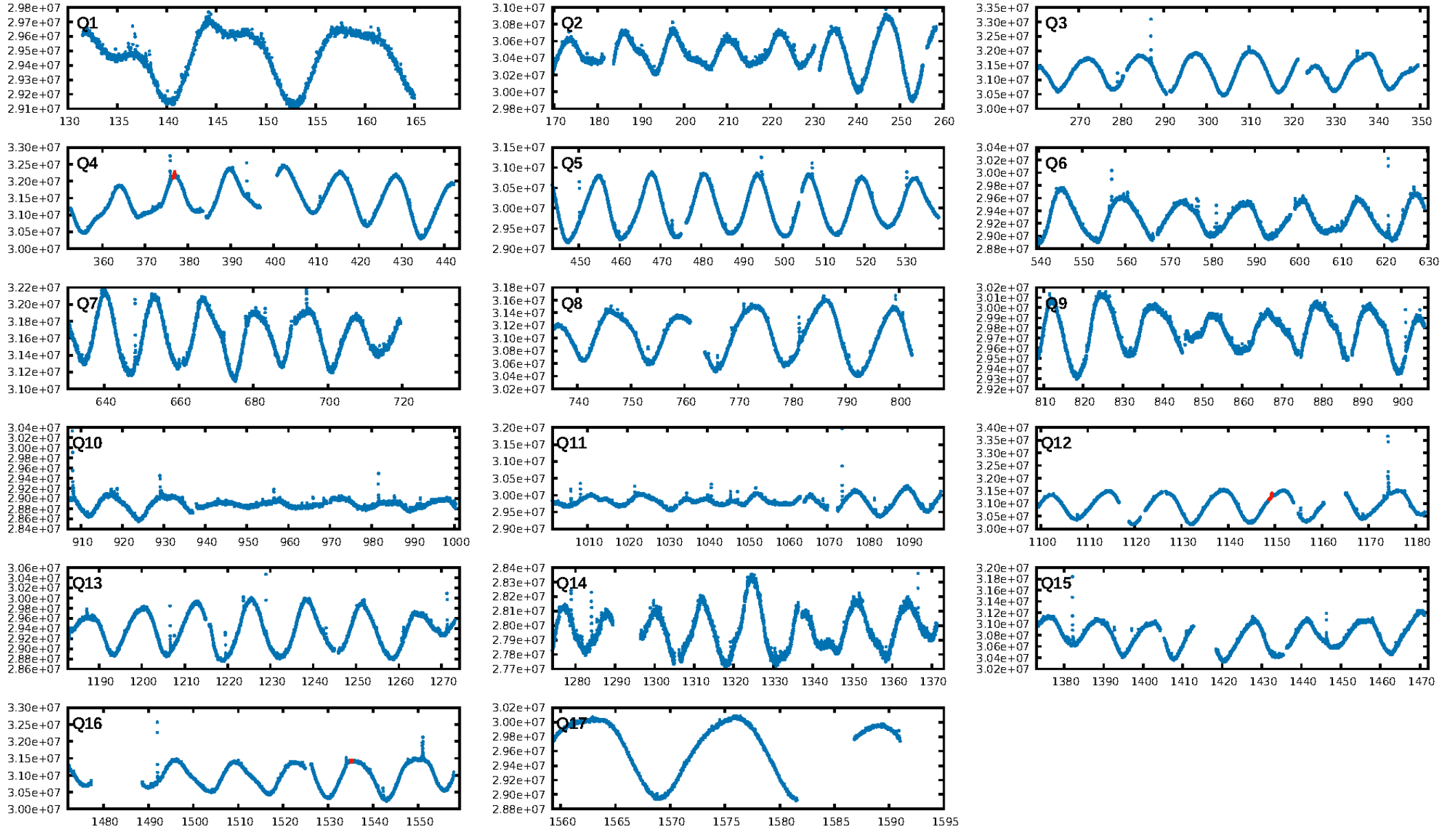
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.1%  
ModelChiSquareGof-sig: 44.0%  
Bootstrap-pfa: 1.64e-13  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 6.931  
Centroid-sig: 3.3%  
Centroid-so: 1.029 arcsec [1.03 $\sigma$ ]  
OotOffset-rm: 0.036 arcsec [0.07 $\sigma$ ]  
OotOffset-st: 0/0/3/0 [3]  
KicOffset-rm: 0.234 arcsec [0.51 $\sigma$ ]  
KicOffset-st: 0/0/3/0 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [3/3]

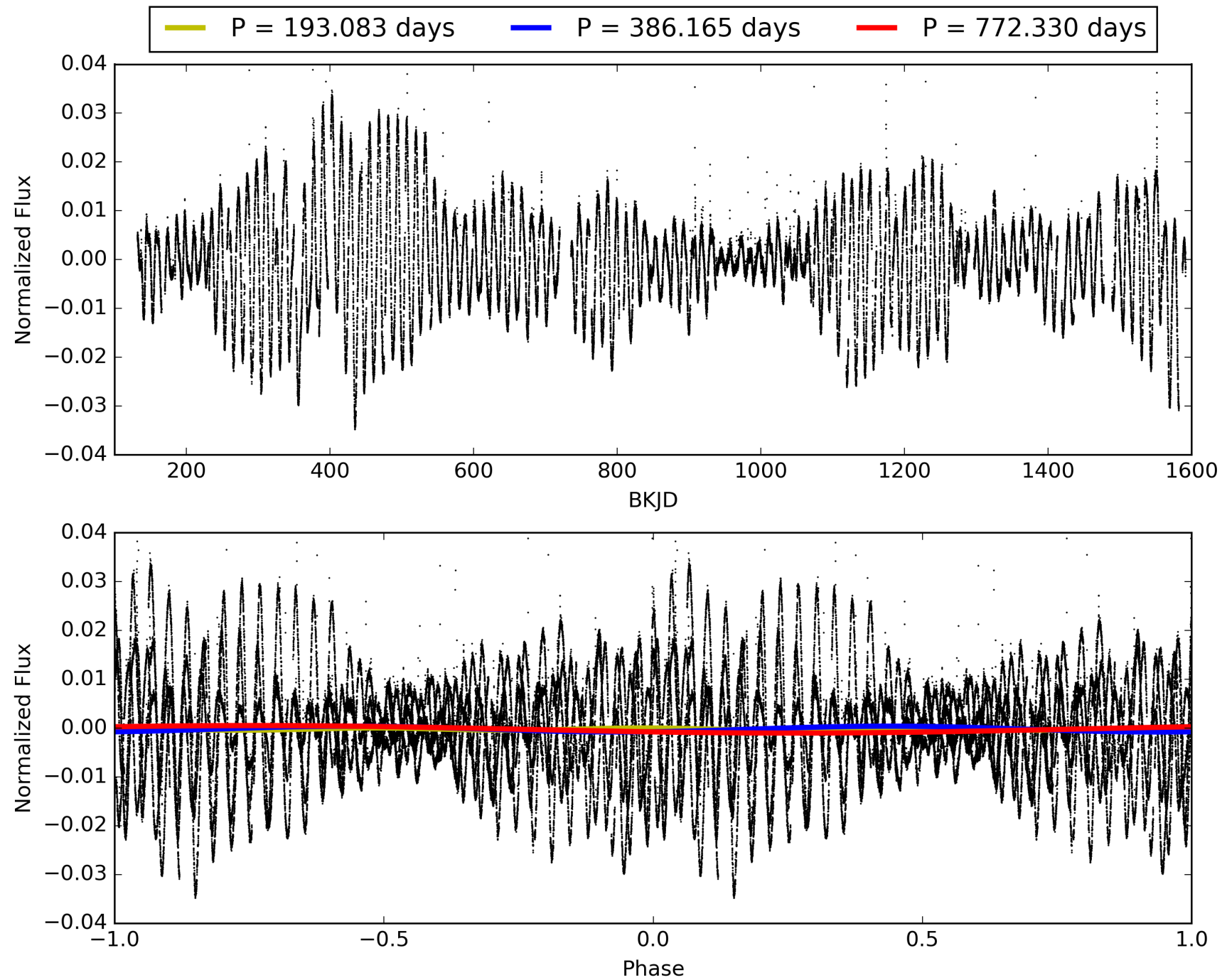
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 08:57:41 Z

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

# TCE 008210323-01, PDC Light Curves

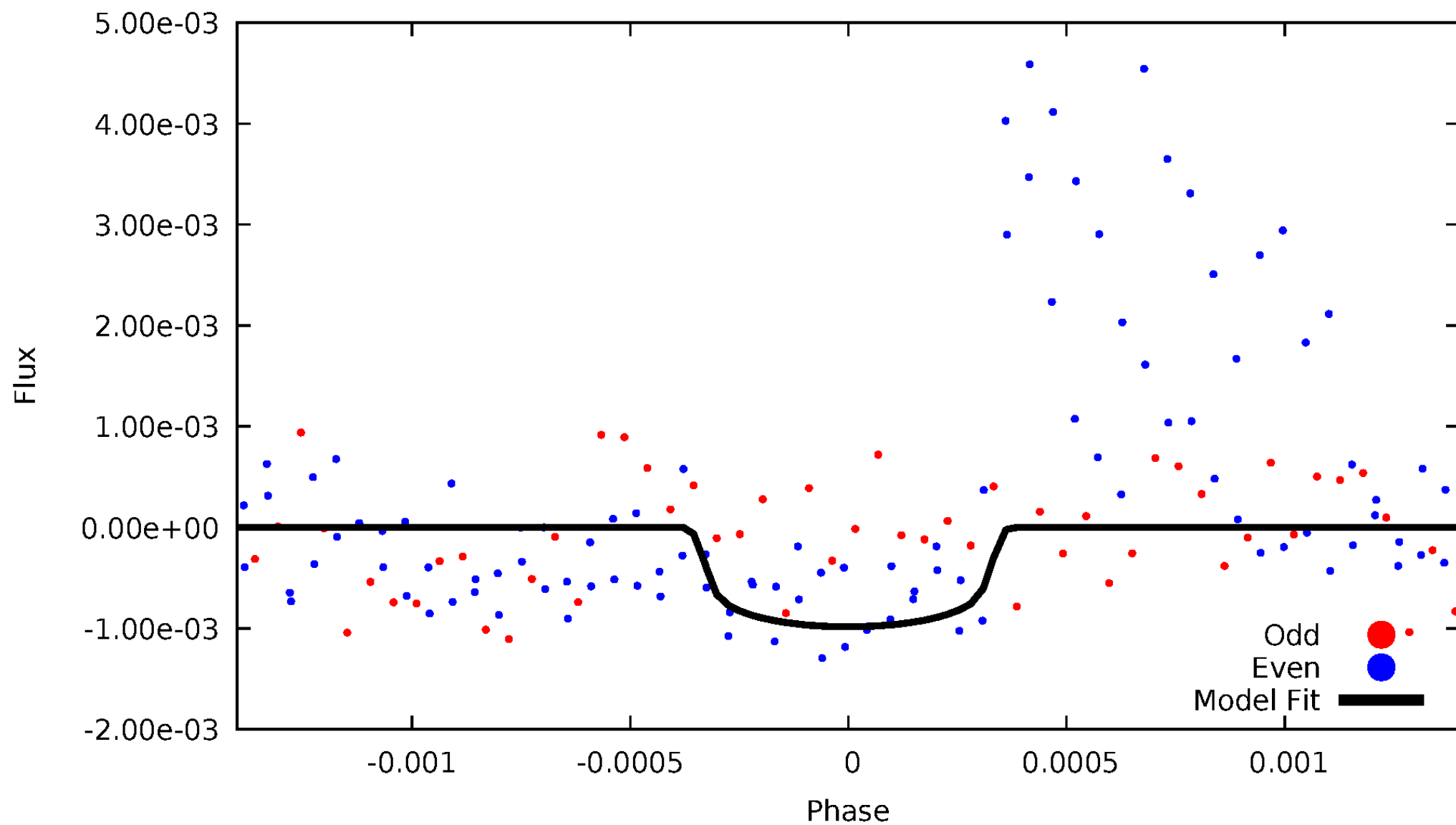


TCE 008210323-01



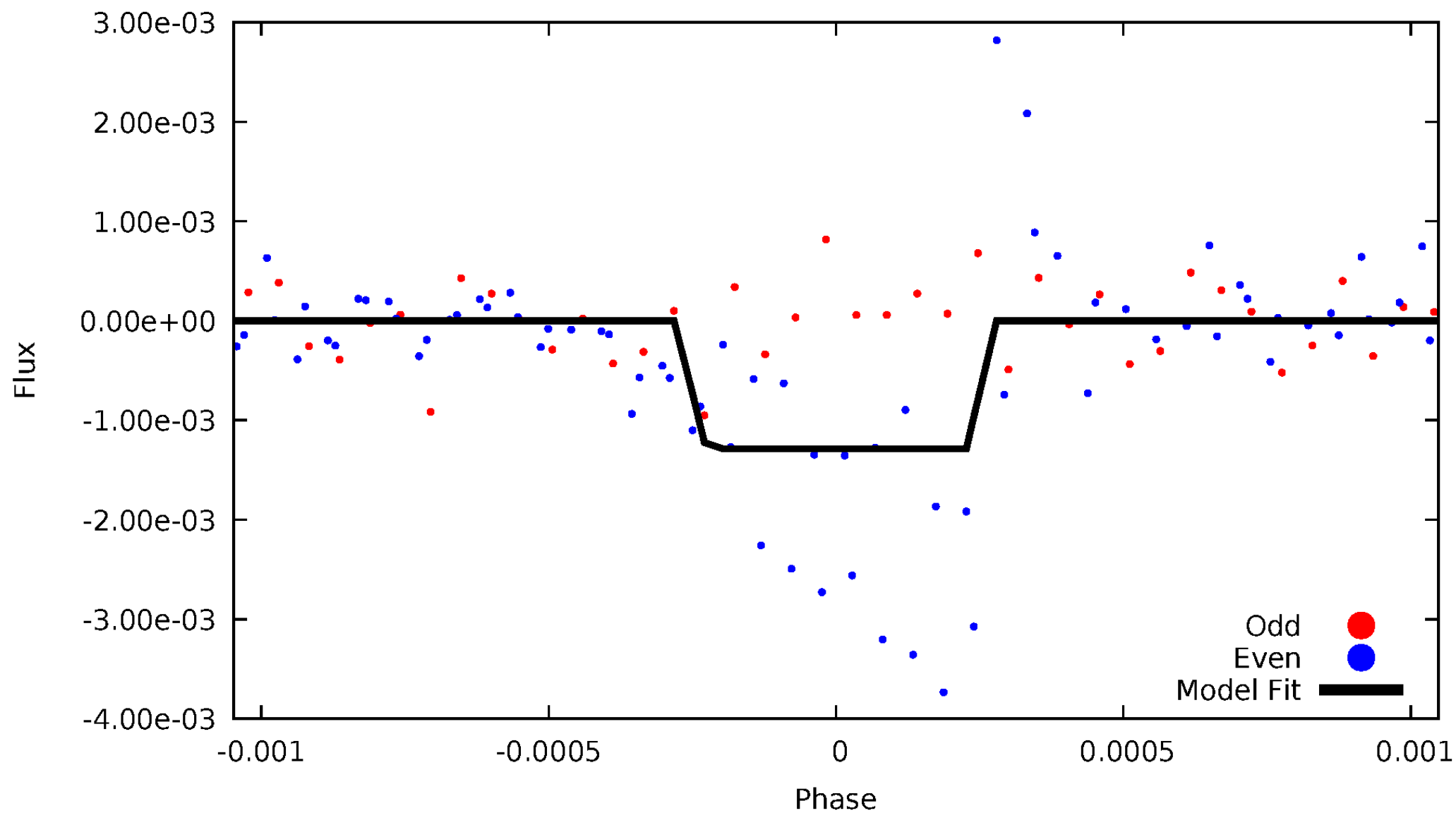
# DV Odd/Even

TCE 008210323-01



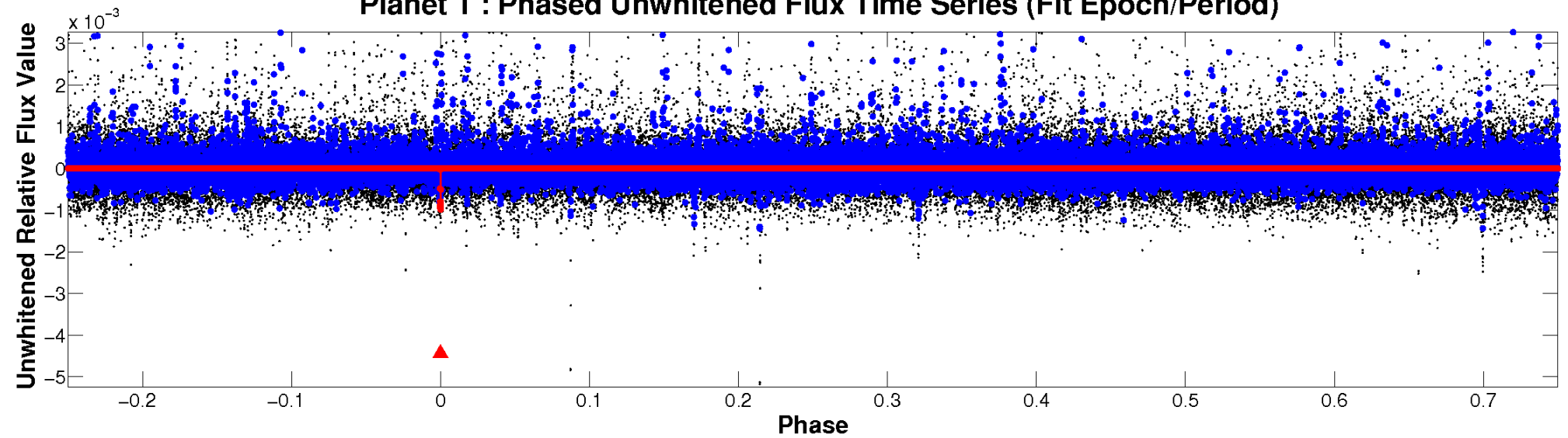
# ALT Odd/Even

TCE 008210323-01

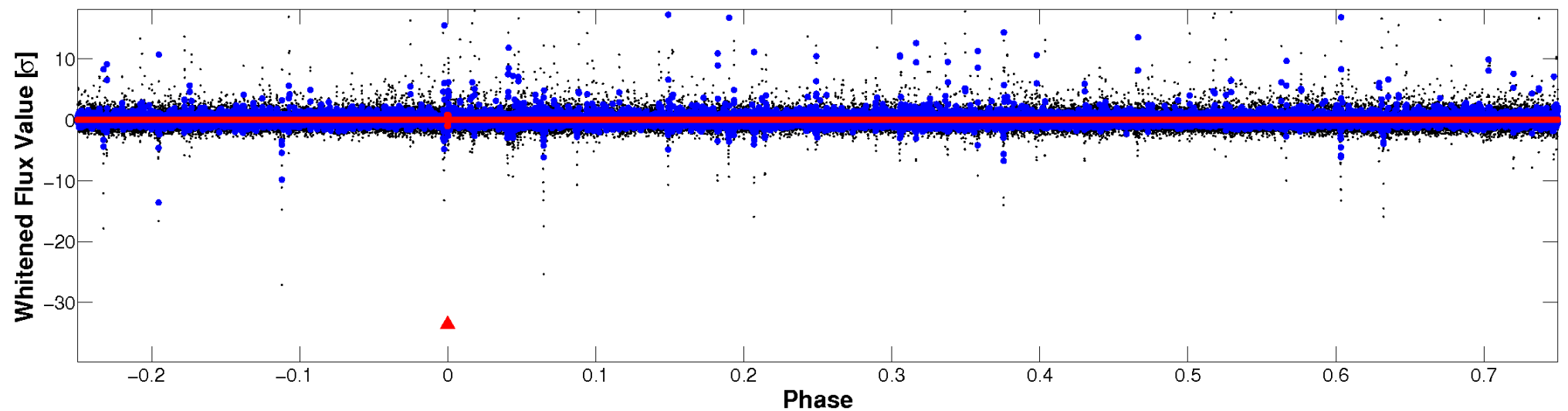


# Non-Whitened Vs. Whitened Light Curve

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

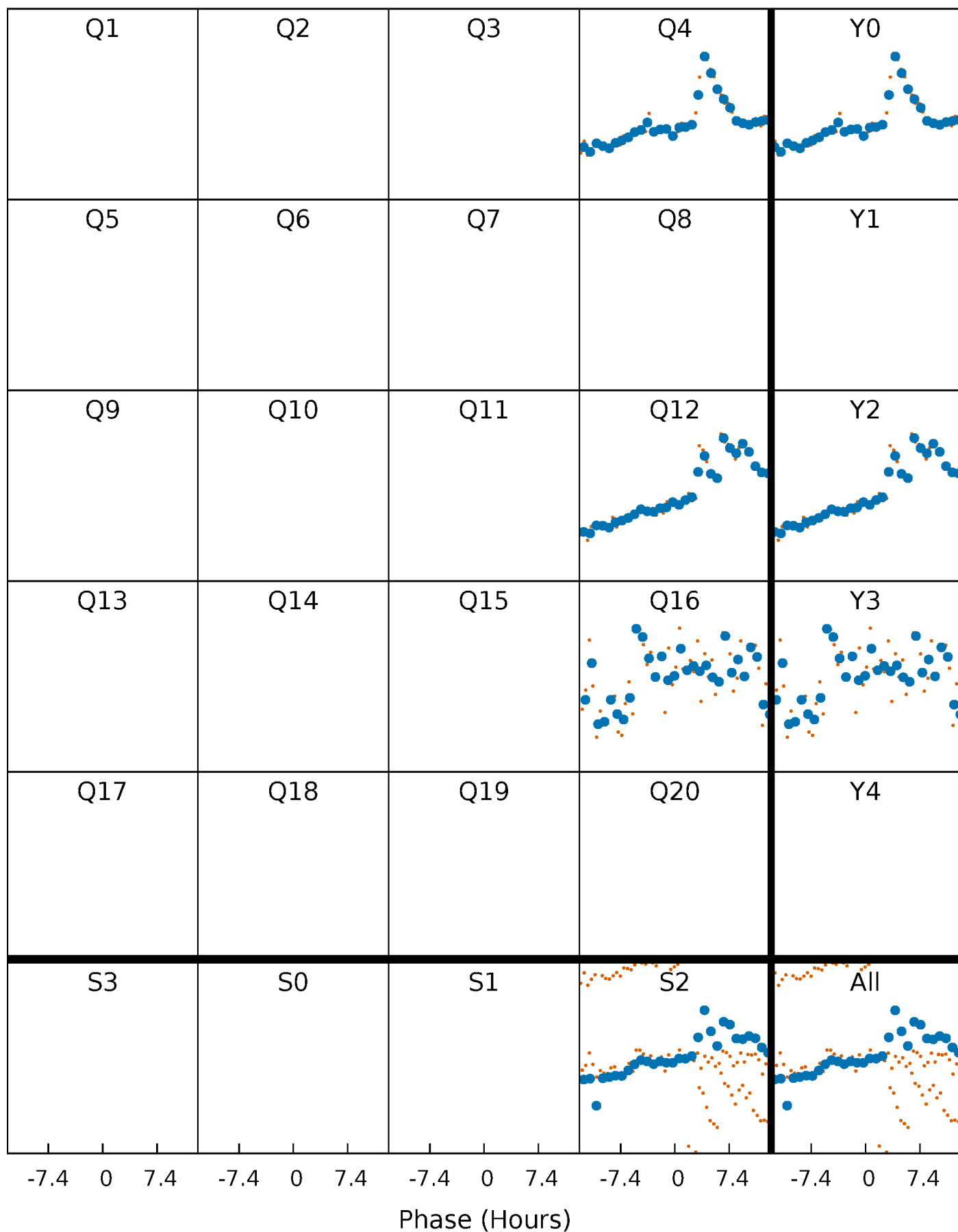


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

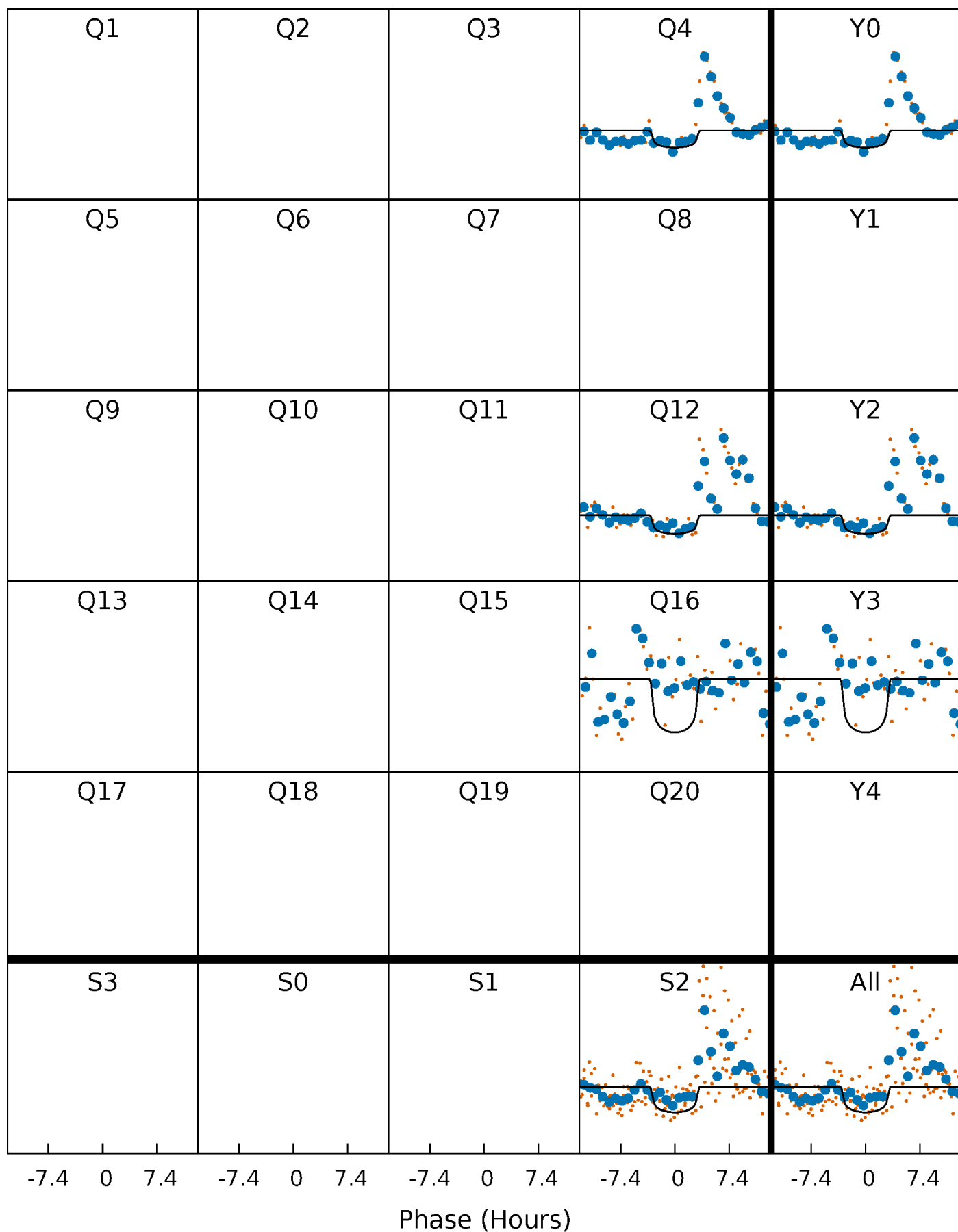
TCE 008210323-01 P=386.165003 Days  $T_0=376.715432$  (BKJD)





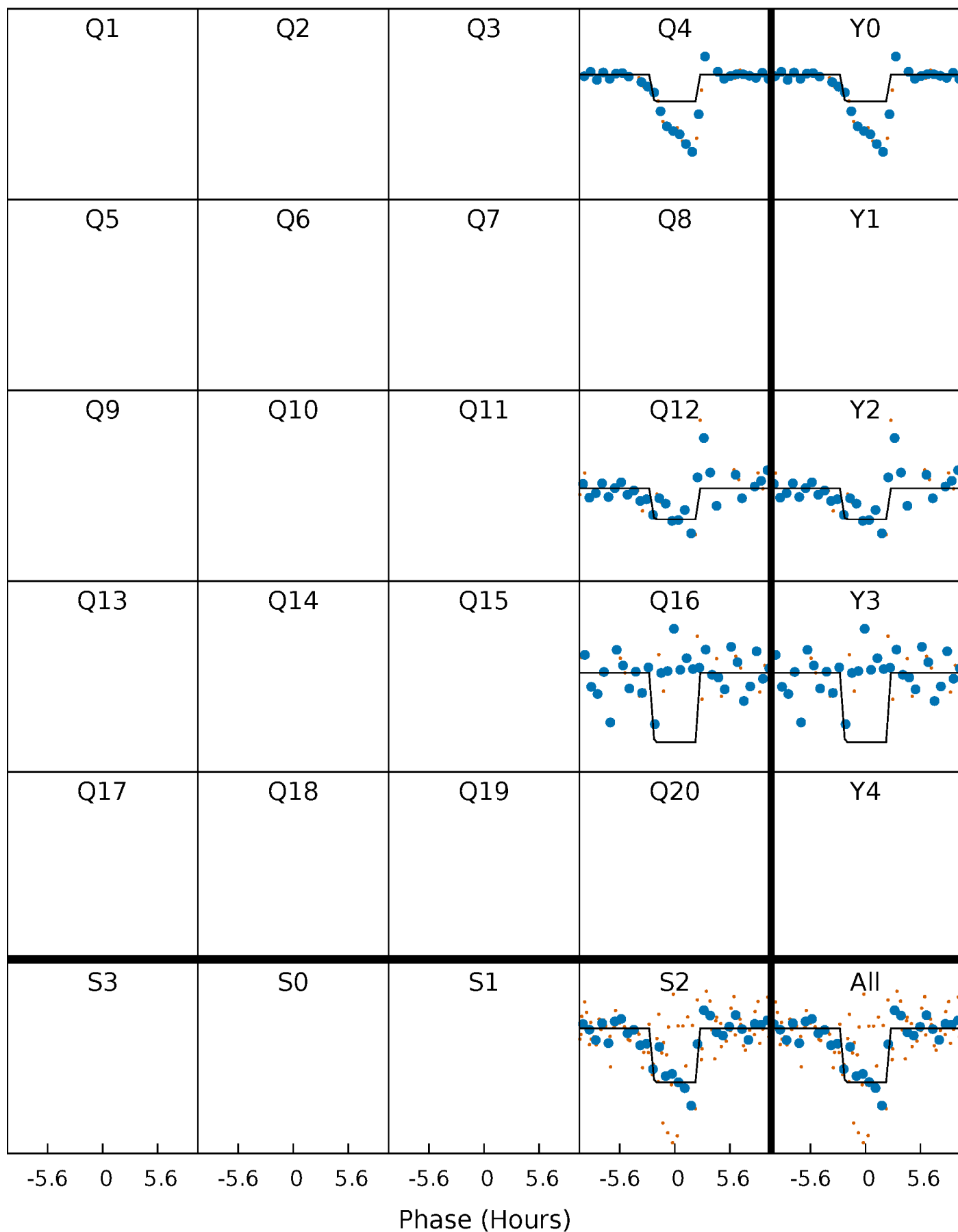
# DV Quarter-Phased Transit Curves

TCE 008210323-01 P=386.165003 Days  $T_0=376.715432$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

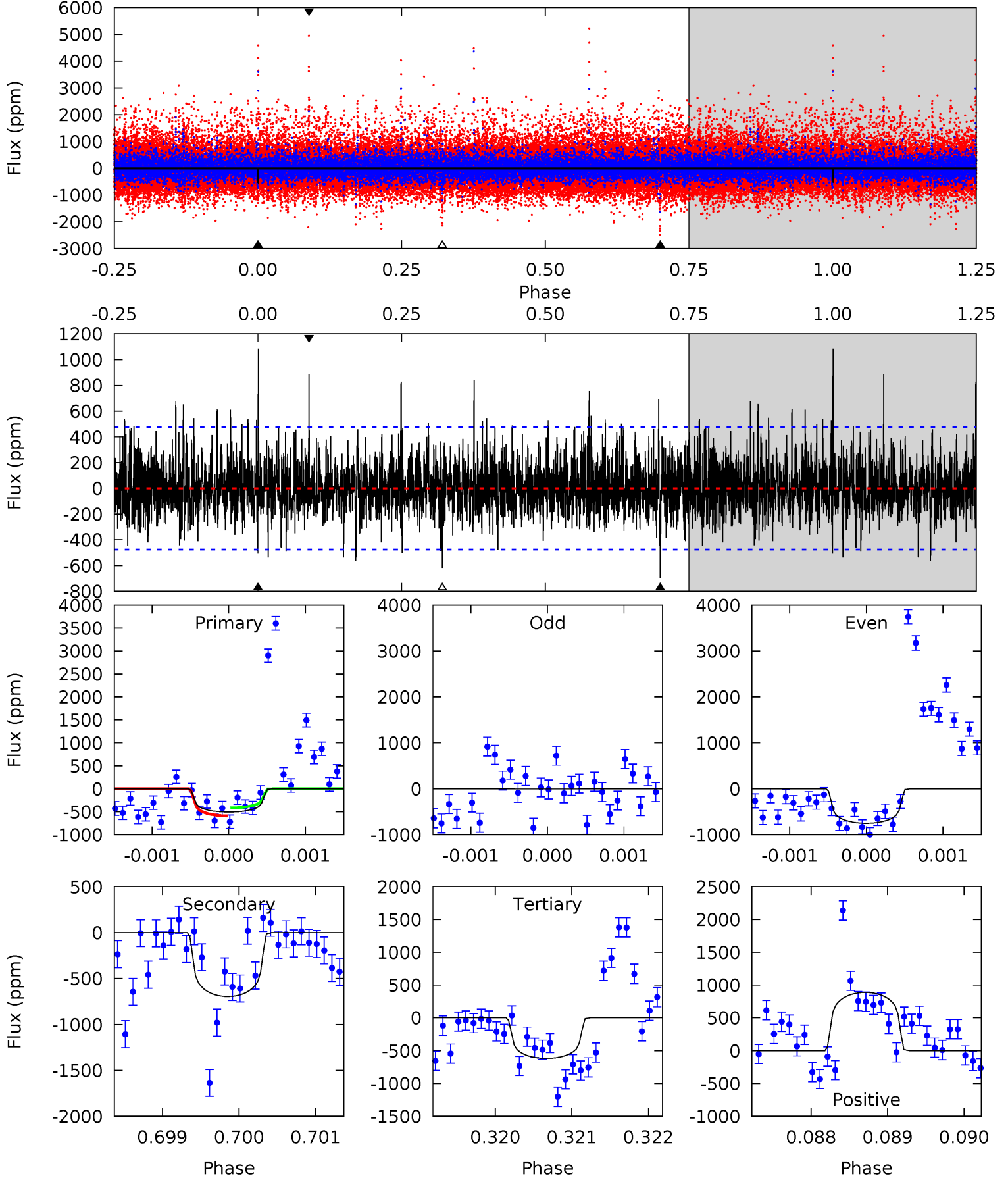
TCE 008210323-01 P=386.167039 Days  $T_0=376.742577$  (BKJD)



# DV Model-Shift Uniqueness Test

008210323-01, P = 386.165003 Days, E = 376.715432 Days

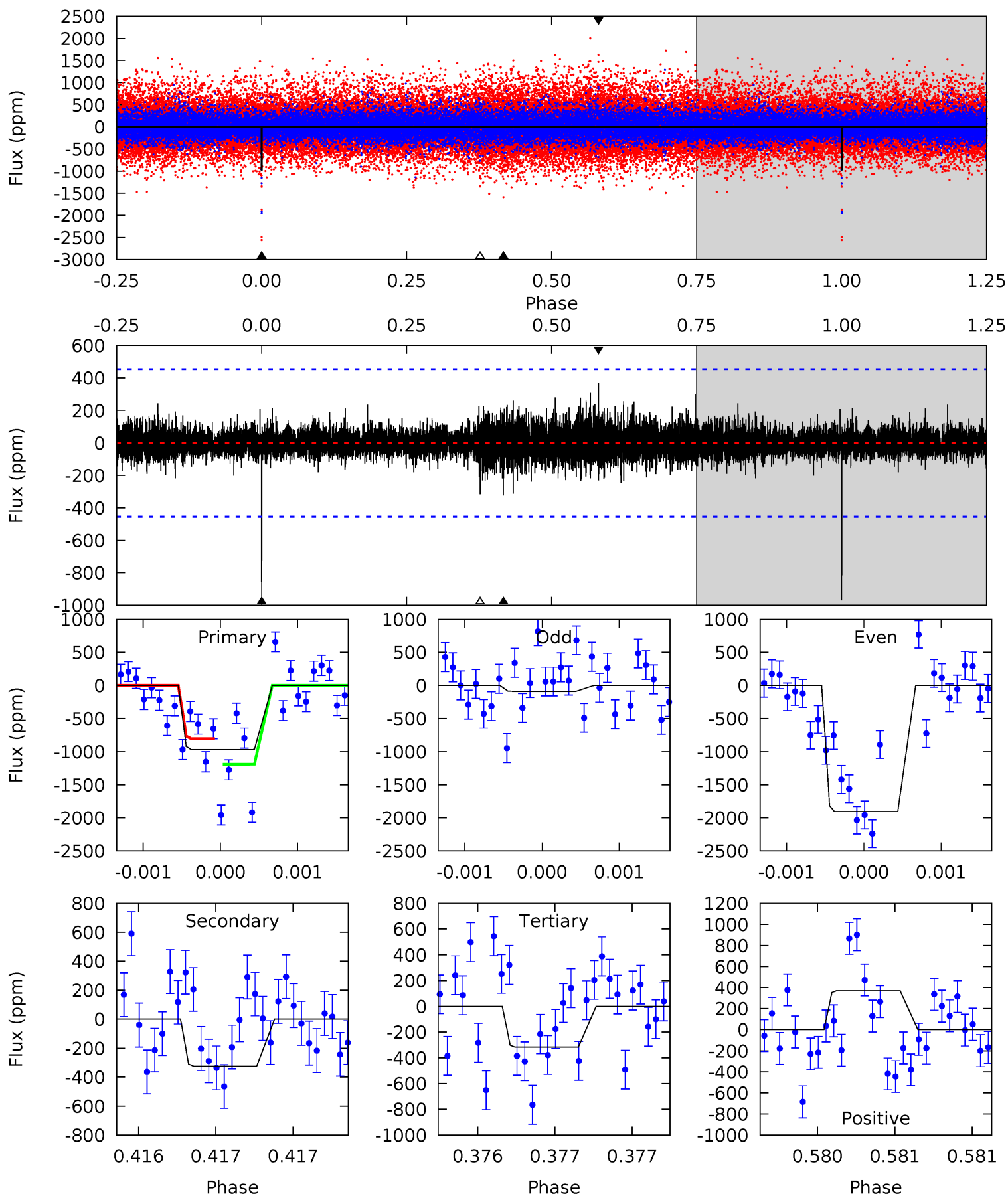
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.87	8.07	7.15	10.3	5.51	3.38	1.86	-1.28	-4.42	0.92	-2.22	3.44	0.67	0.61	1.03



# Alt Model-Shift Uniqueness Test

008210323-01, P = 386.167039 Days, E = 376.742577 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	3.97	3.88	4.53	5.57	3.47	0.72	7.99	7.34	0.09	-0.56	13.3	1.08	0.28	0



### Stellar Parameters For KIC 008210323

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$3652^{+43}_{-51}$	$4.839^{+0.033}_{-0.033}$	$-0.200^{+0.100}_{-0.100}$	$0.420^{+0.029}_{-0.032}$	$0.443^{+0.025}_{-0.034}$	$8.451^{+1.368}_{-1.068}$
	+1%/-1%	+1%/-1%	+50%/-50%	+7%/-8%	+6%/-8%	+16%/-13%
Source	PHO2	PHO2	PHO2	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 008210323-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-697 \pm 86$	$1.40^{+0.92}_{-0.81}$	$164^{+3}_{-3}$	$3475^{+1262}_{-475}$	$121492^{+536418}_{-76321}$
Alt.	$-324 \pm 82$	$1.73^{+0.90}_{-0.79}$	$164^{+3}_{-3}$	$2899^{+625}_{-314}$	$35276^{+99170}_{-20280}$

$T_{\text{max}}$  = 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

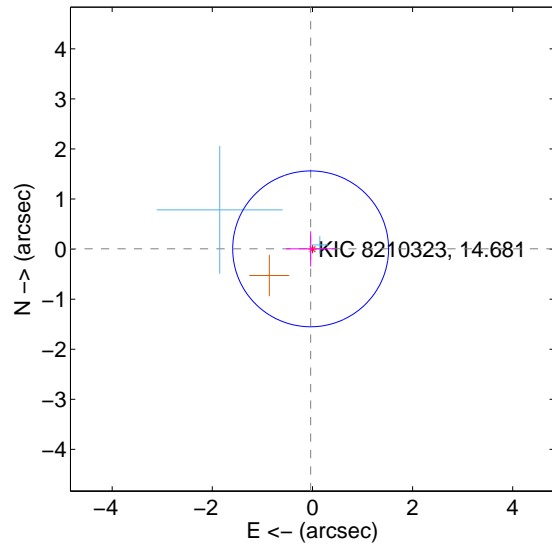
Supplemental centroid analysis for 008210323-01. Kepler magnitude: 14.68. Transit SNR 6.28

There are 2 quarters with good PRF difference image offsets

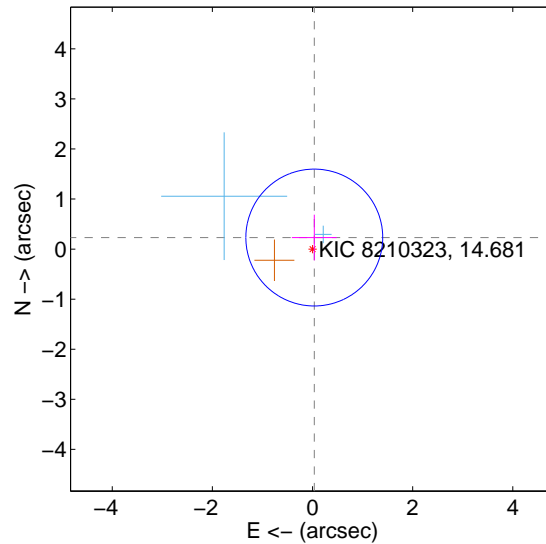
The direct PRF centroid is offset from the target star catalog position by about 0.32 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.036 \pm 0.519$	0.07	$0.036 \pm 0.488$	$0.005 \pm 0.351$
PRF-fit source offset from KIC position	$0.234 \pm 0.456$	0.51	$-0.035 \pm 0.448$	$0.231 \pm 0.456$
photometric centroid source offset	$1.03 \pm 1.00$	1.03	$1.01 \pm 1.00$	$-0.20 \pm 0.97$

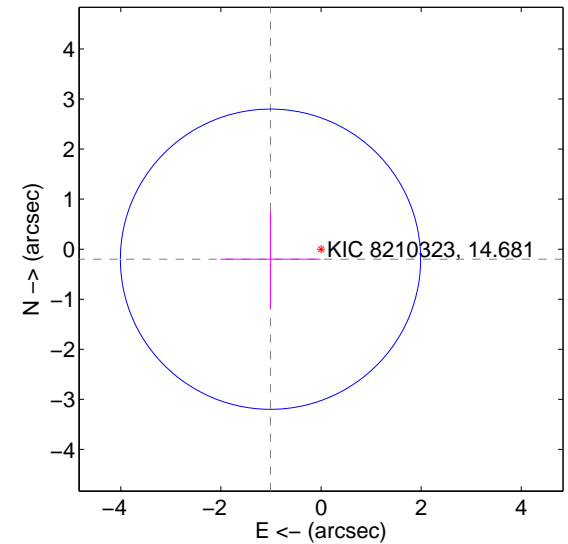
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

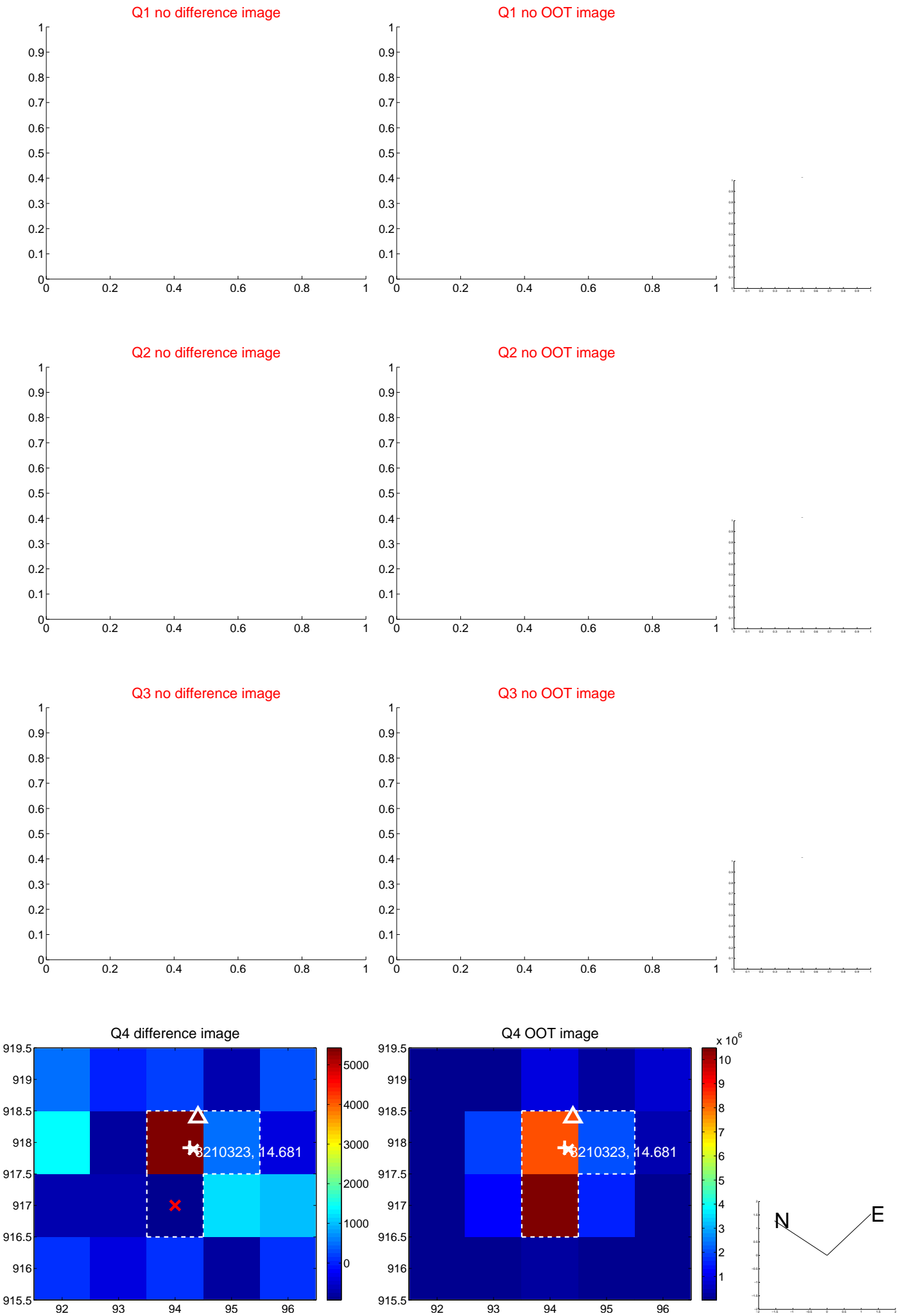


offset from photometric centroids



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.

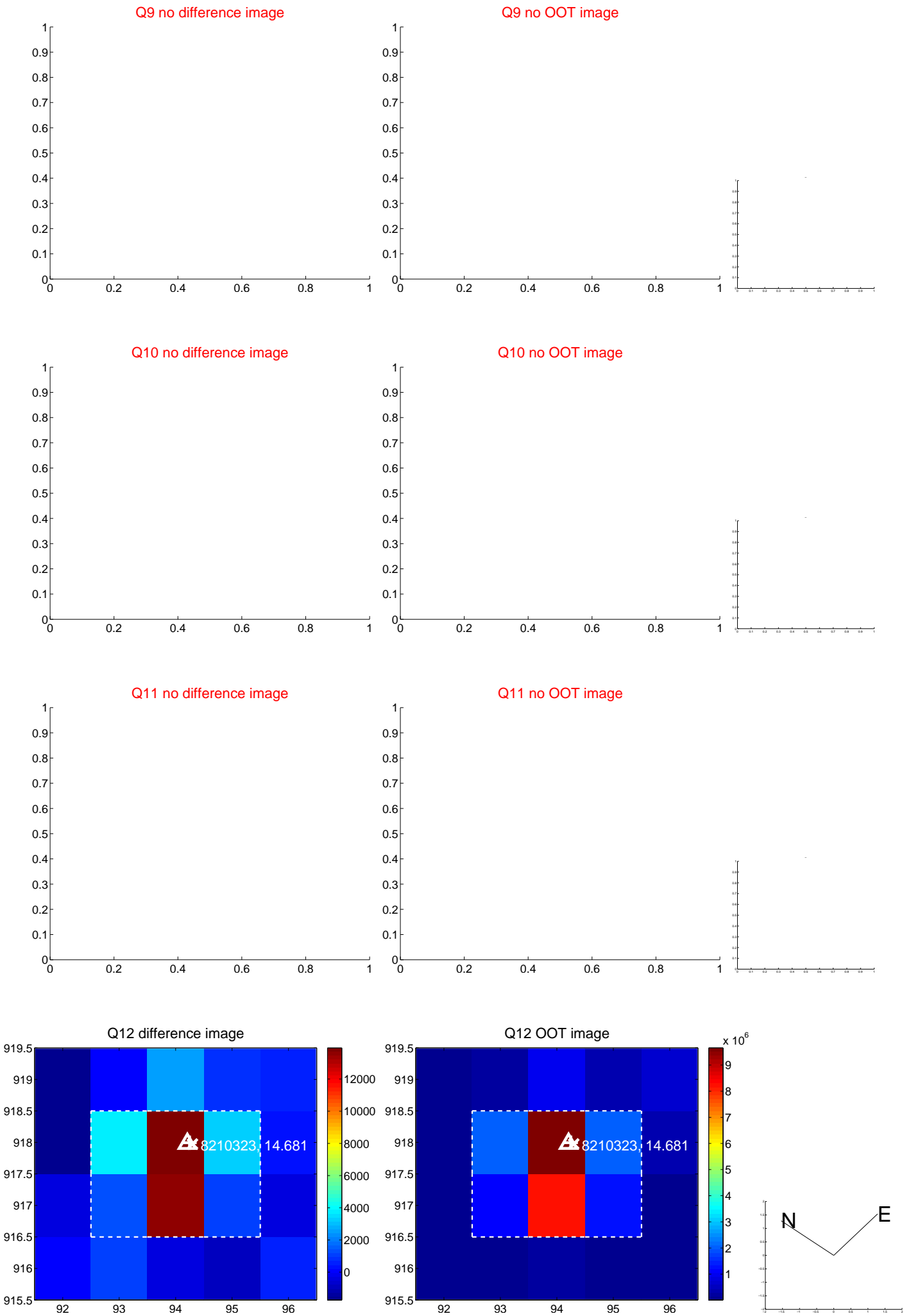


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

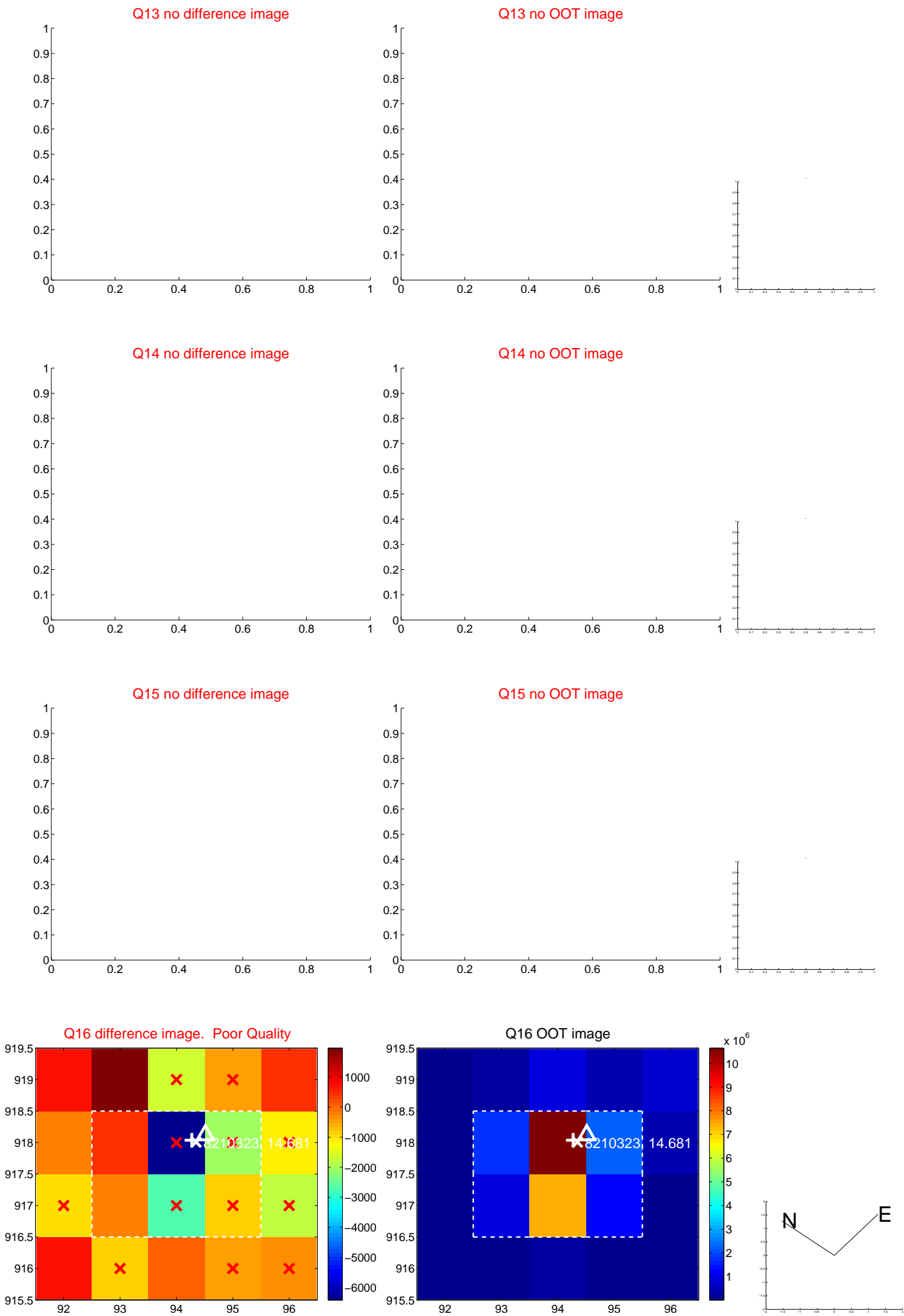




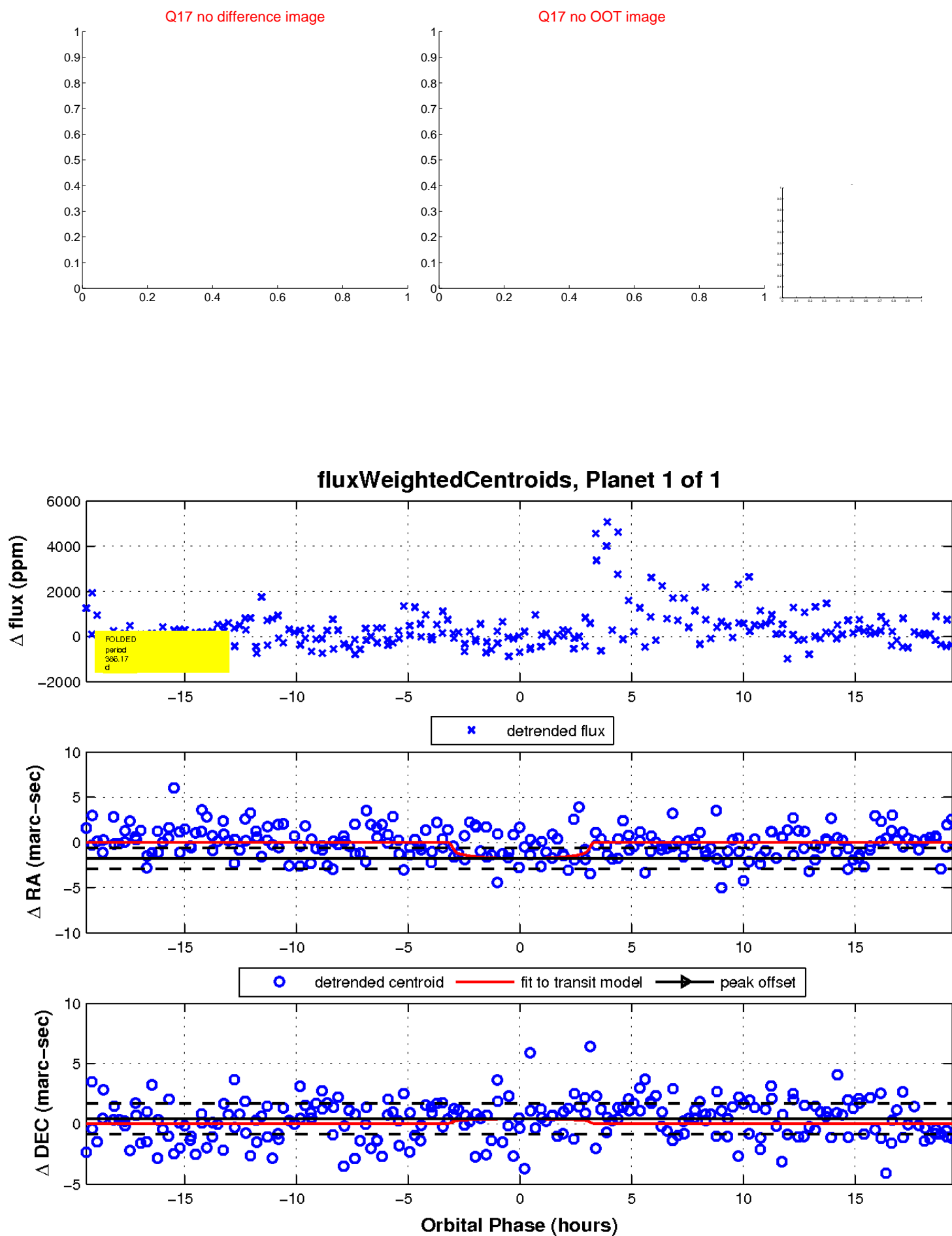
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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.



UKIRT Image

Declination

