

# KIC 008240862

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008240862-01	OBS	No	685.229307	205.979263	638.0	18.615	8.6	9.4	0.98	5907	2.65	0.45

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008240862-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—MOD_TER_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.

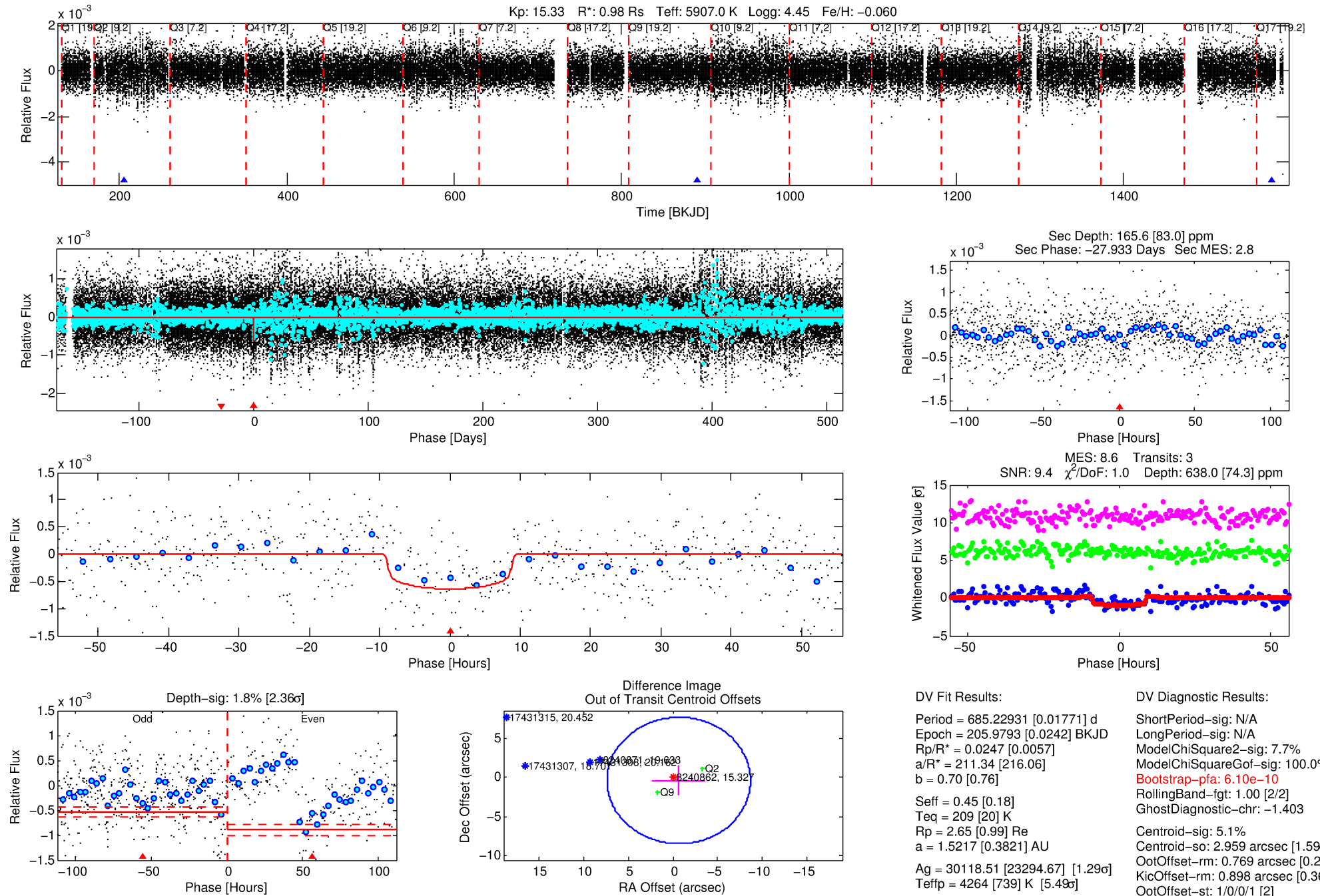
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008240862-01

No Significant Match Found

# DV One-Page Summary

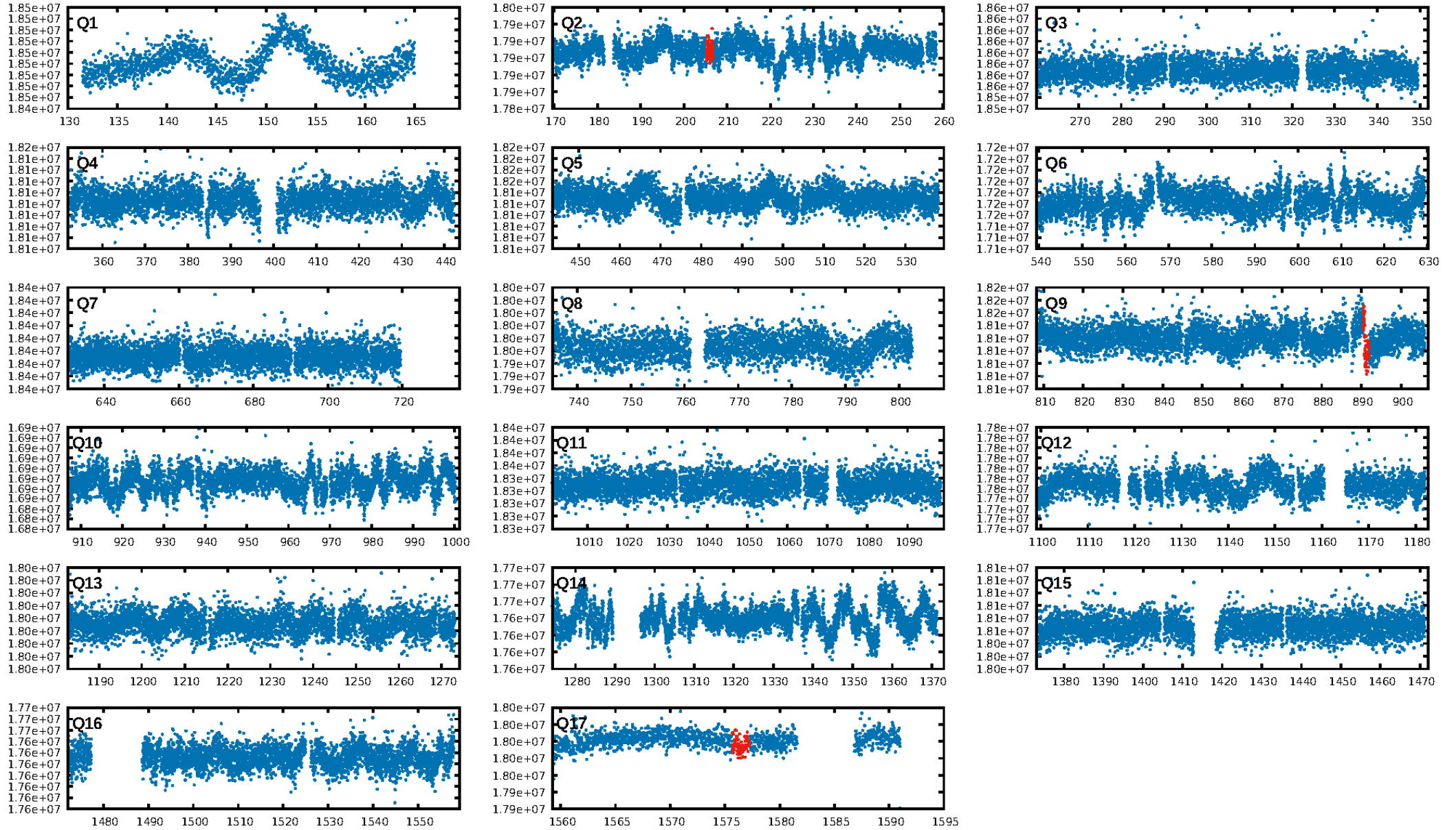
KIC: 8240862 Candidate: 1 of 1 Period: 685.229 d



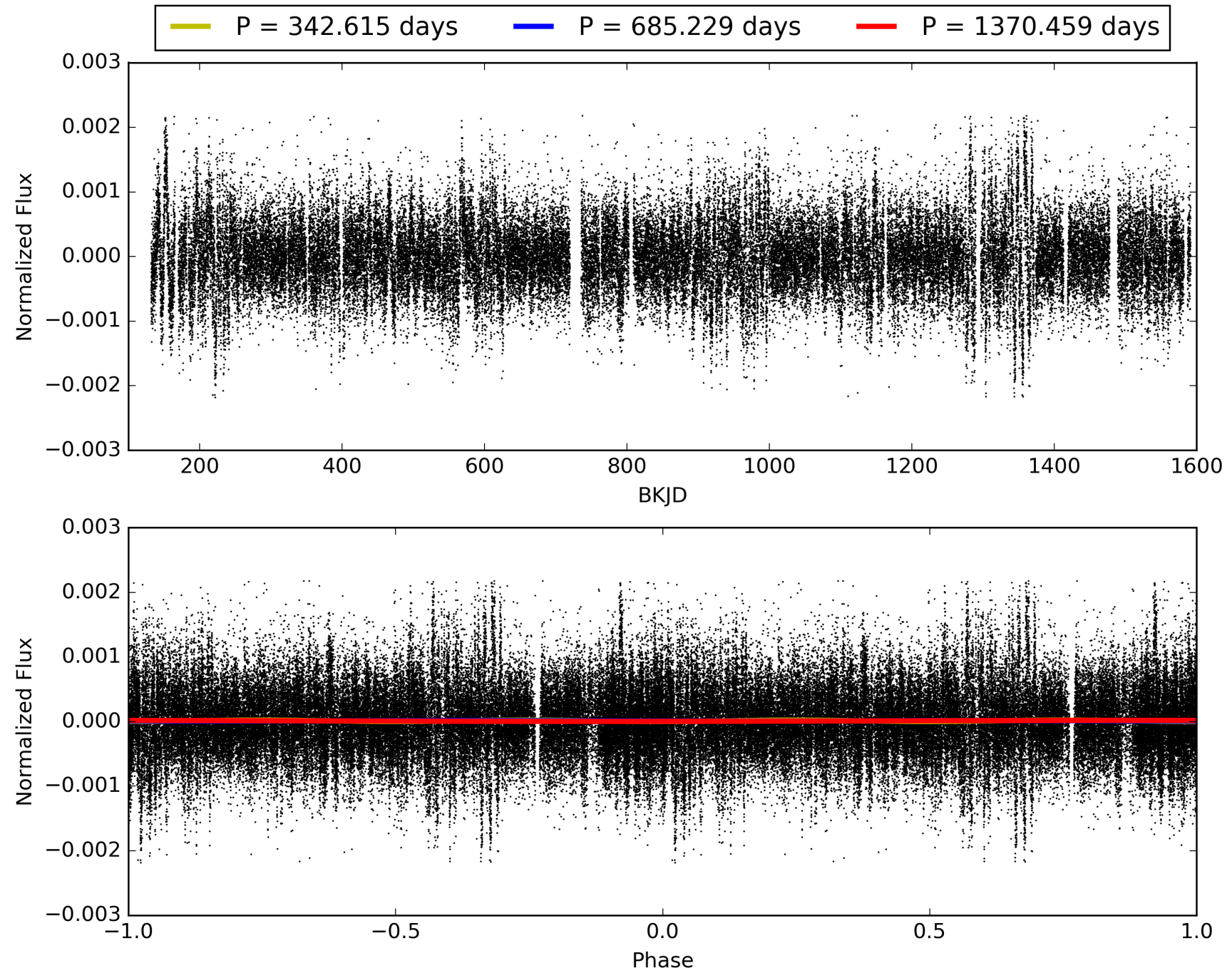
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 00:50:55 Z

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

# TCE 008240862-01, PDC Light Curves

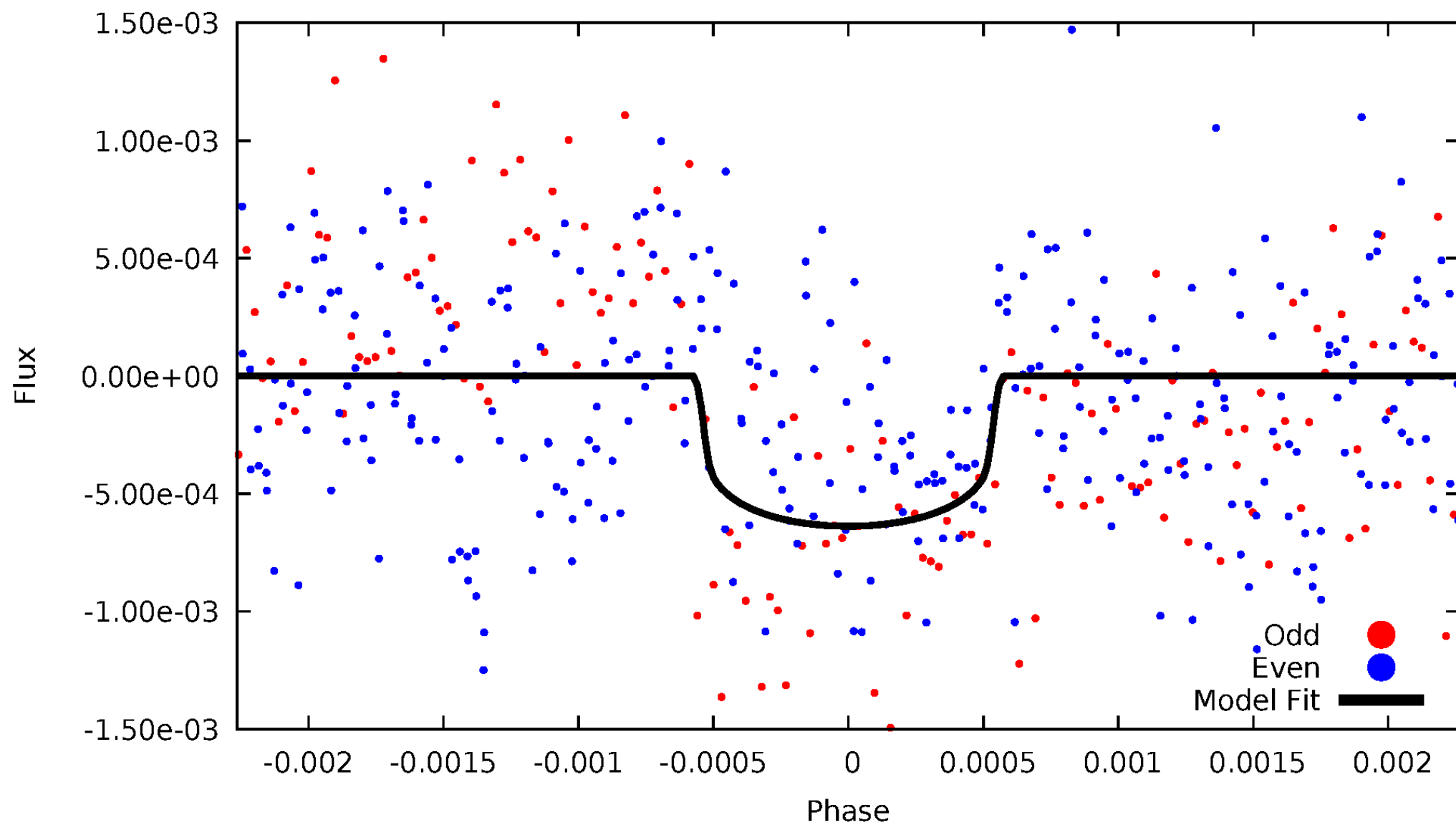


# TCE 008240862-01



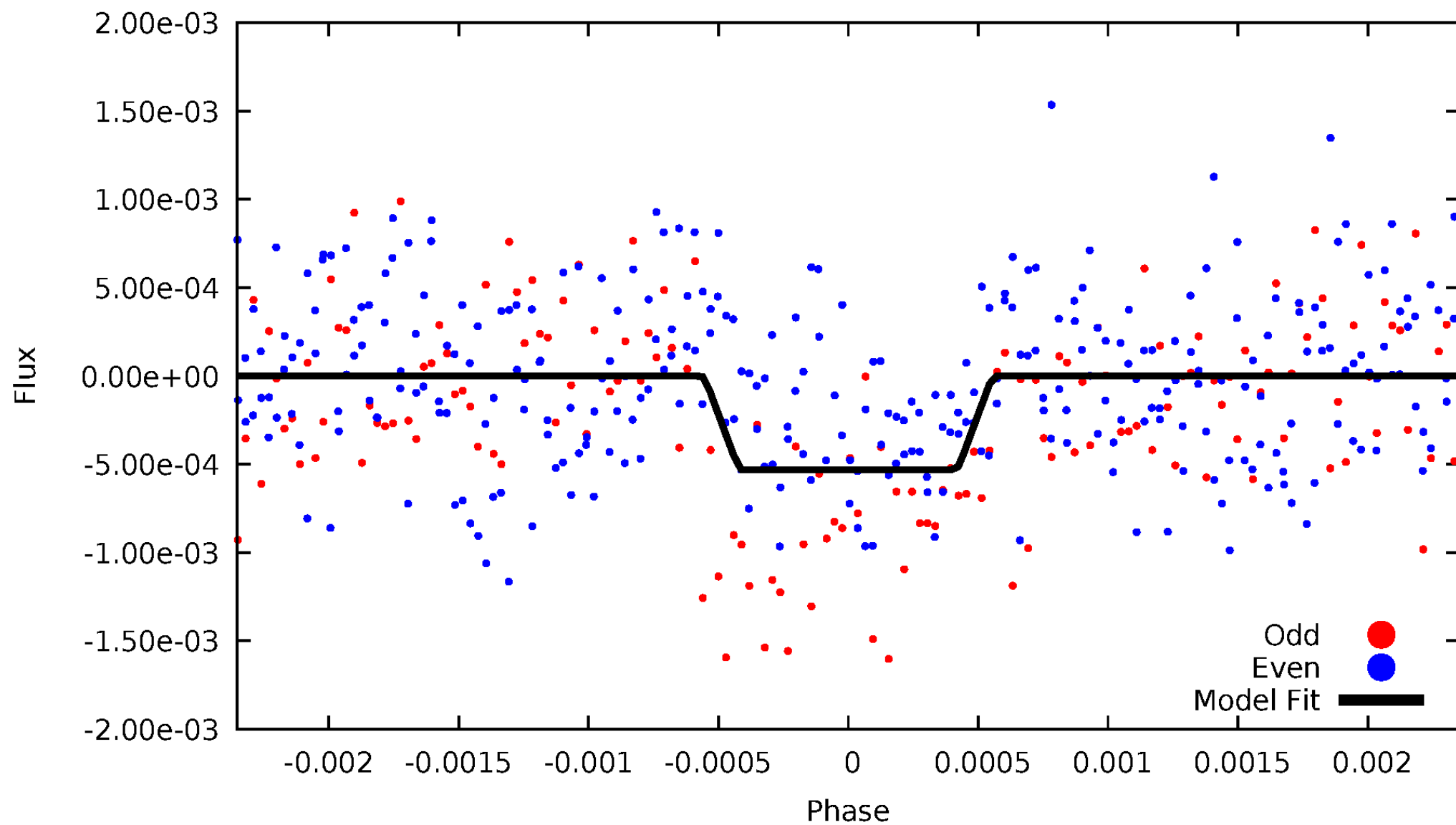
# DV Odd/Even

TCE 008240862-01



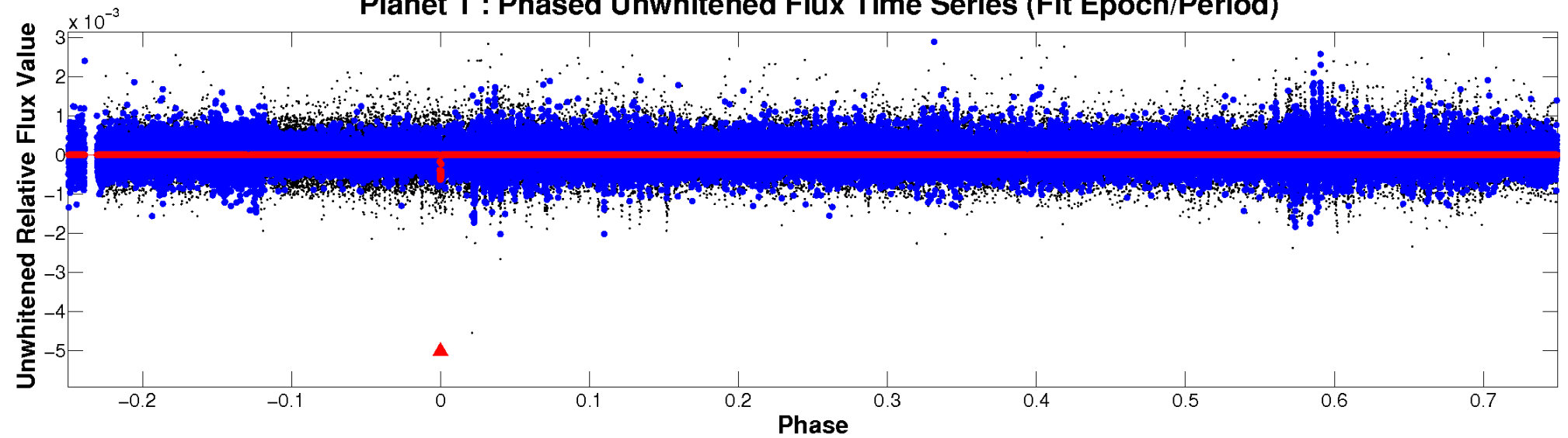
# ALT Odd/Even

TCE 008240862-01

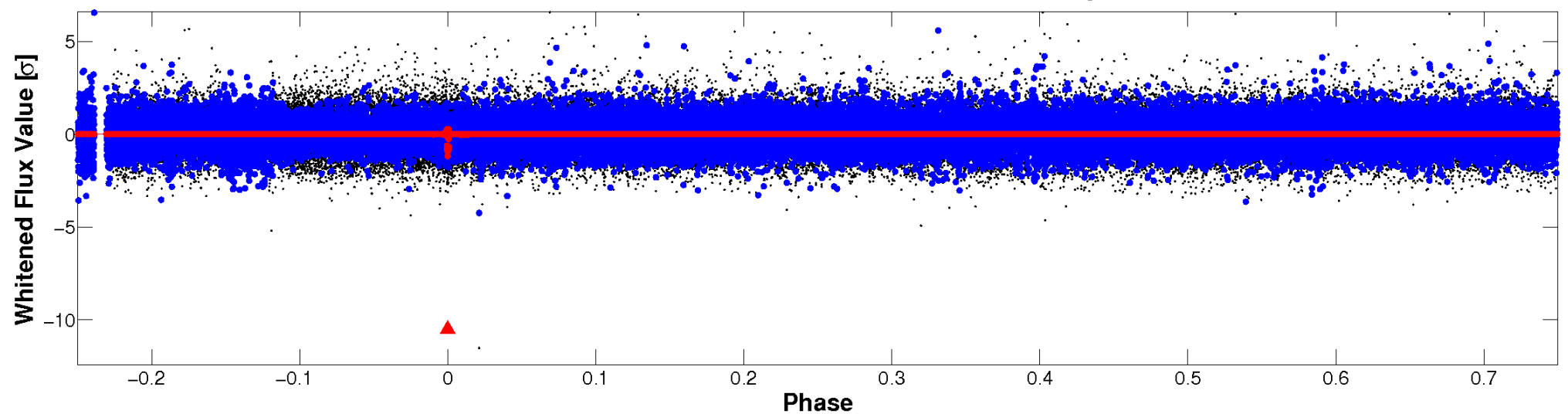


# Non-Whitened Vs. Whitened Light Curve

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



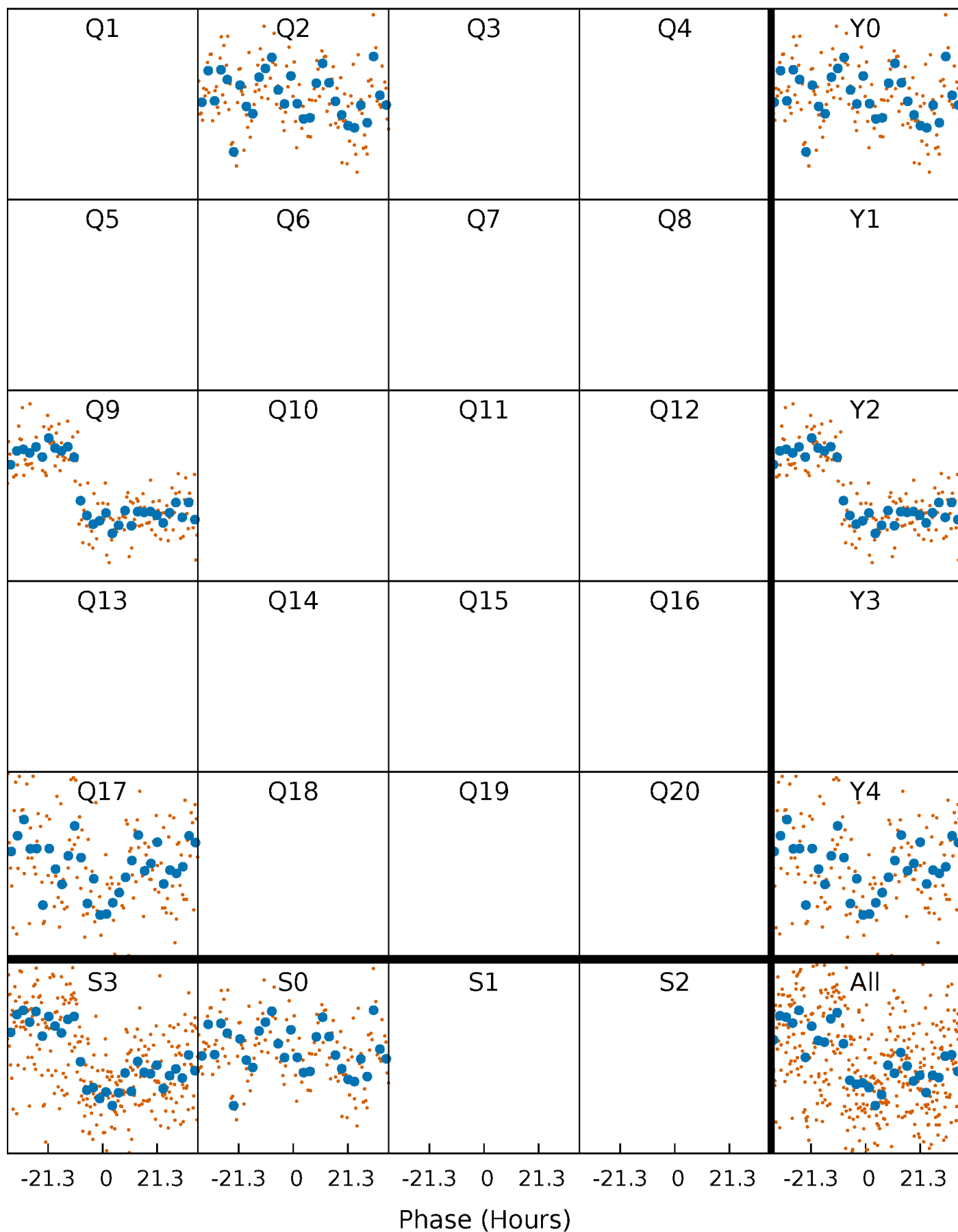
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





# PDC Quarter-Phased Transit Curves

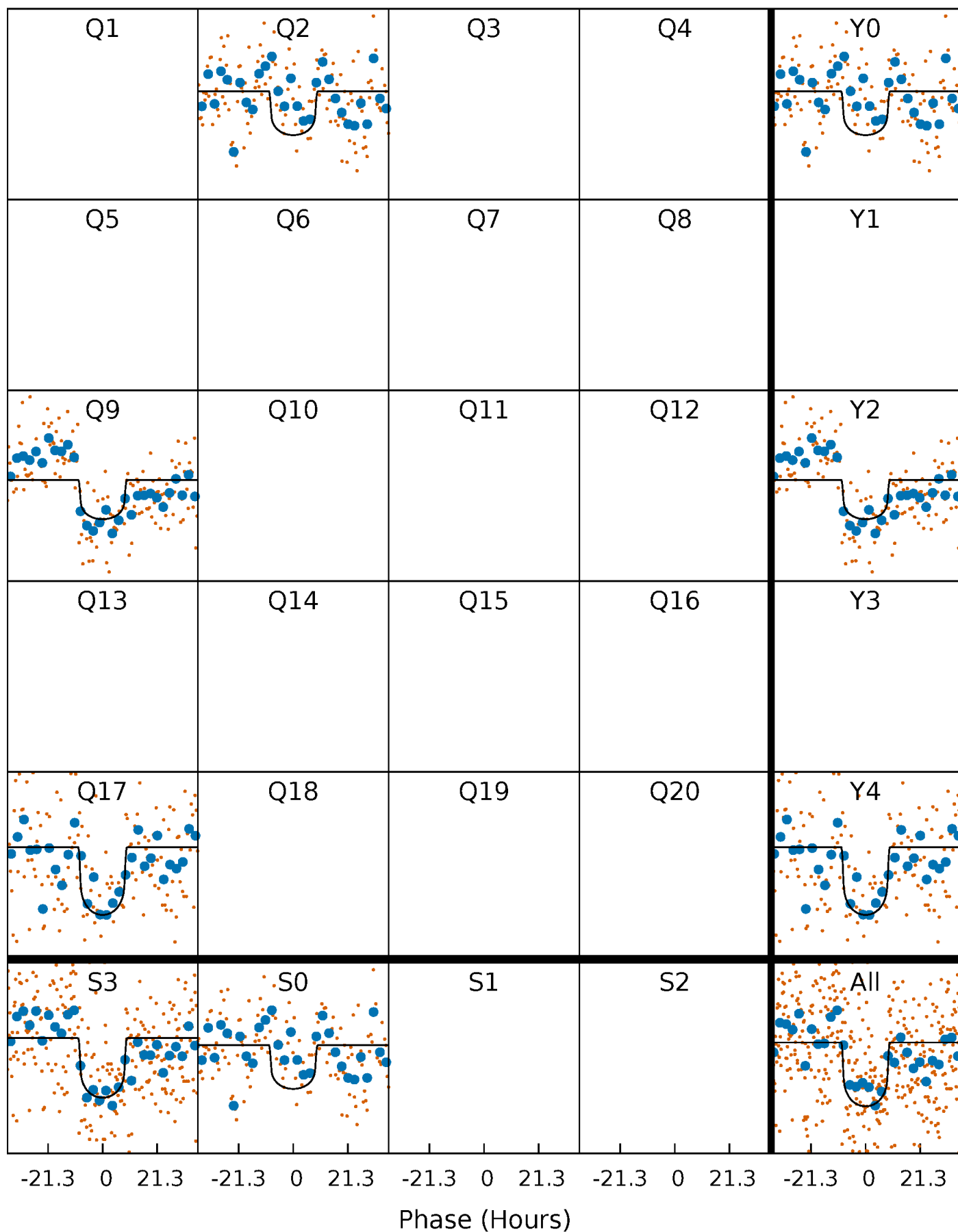
TCE 008240862-01 P=685.229307 Days  $T_0=205.979263$  (BKJD)





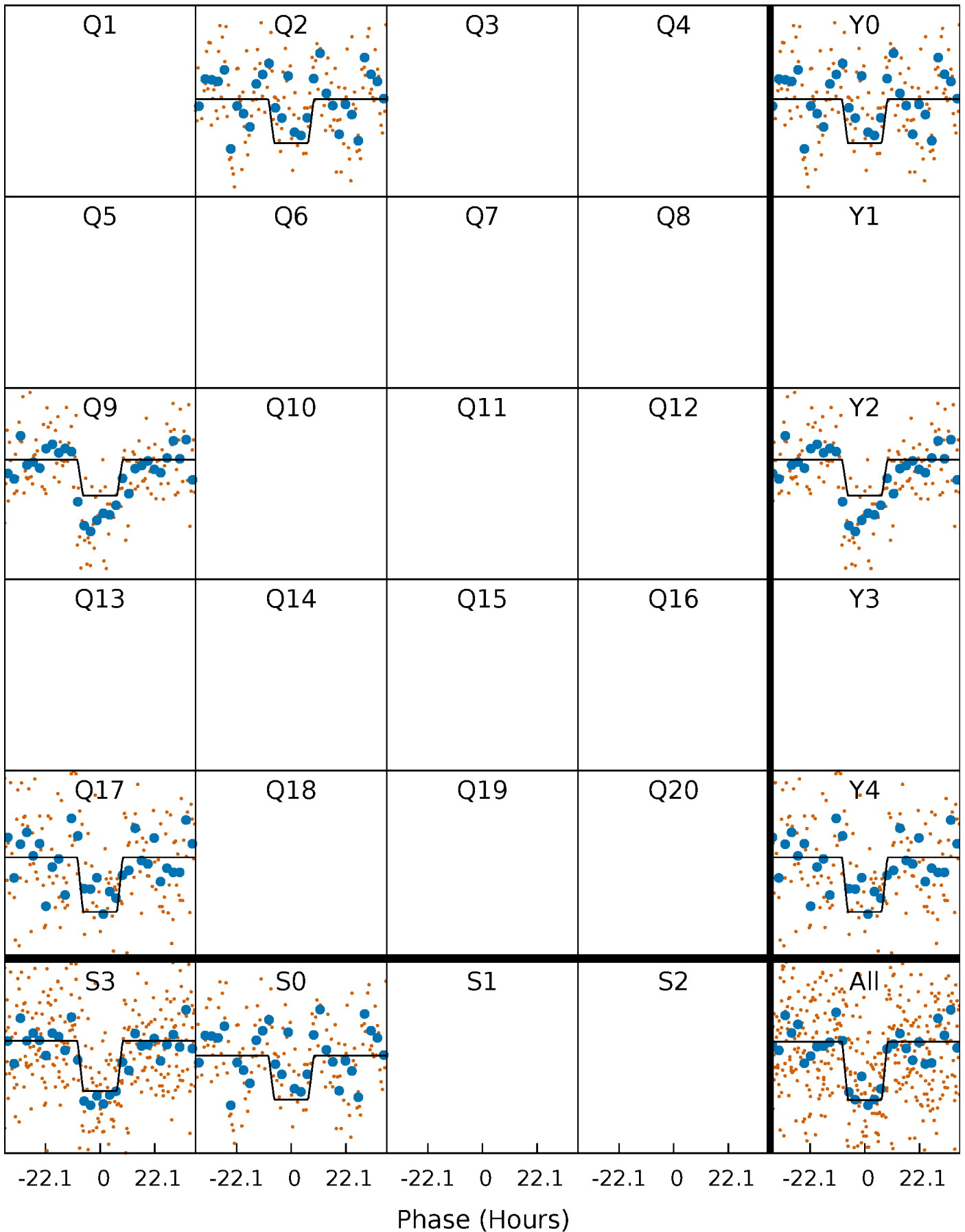
# DV Quarter-Phased Transit Curves

TCE 008240862-01 P=685.229307 Days  $T_0=205.979263$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

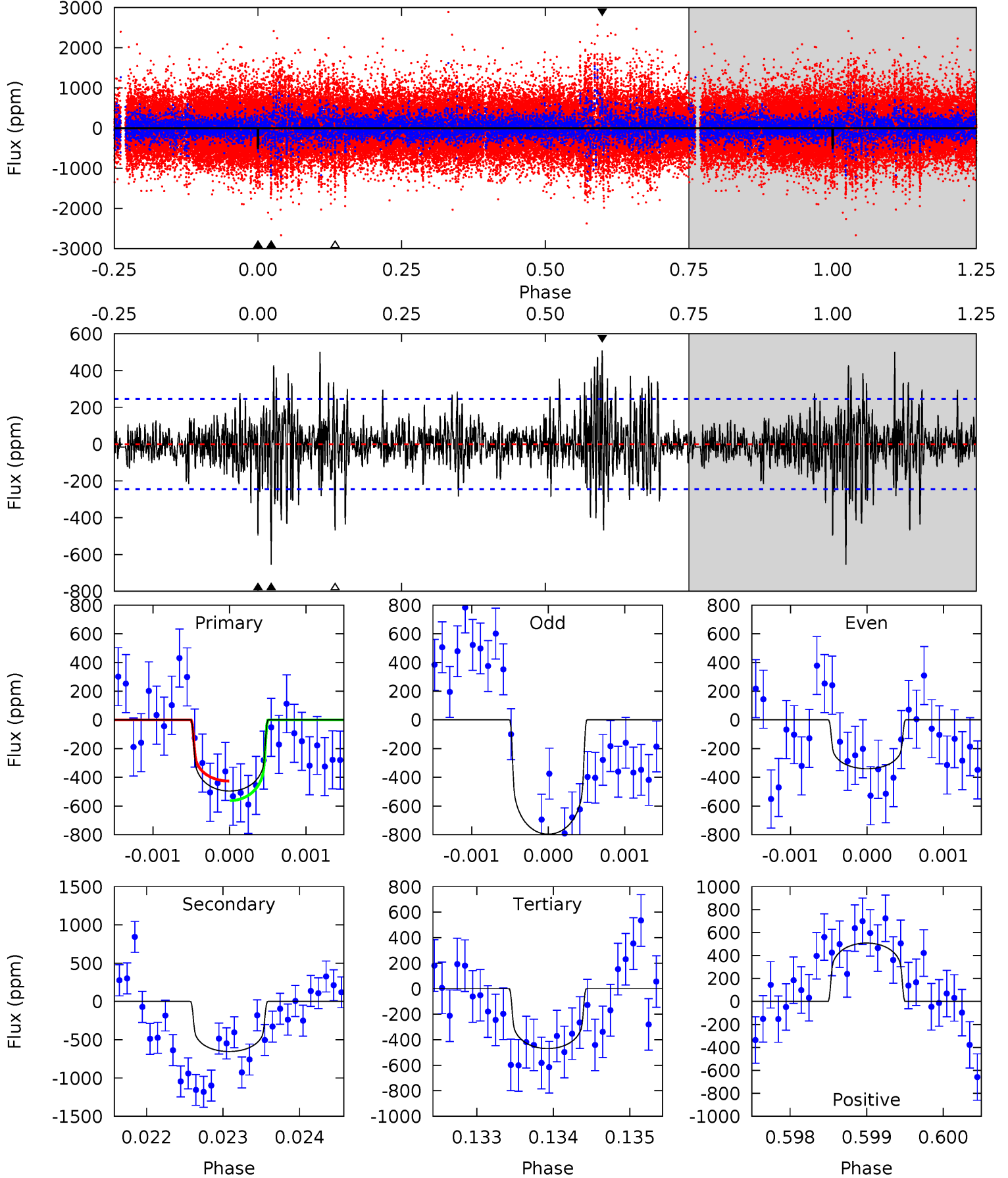
TCE 008240862-01 P=685.198567 Days  $T_0=206.010618$  (BKJD)



# DV Model-Shift Uniqueness Test

008240862-01, P = 685.229307 Days, E = 205.979263 Days

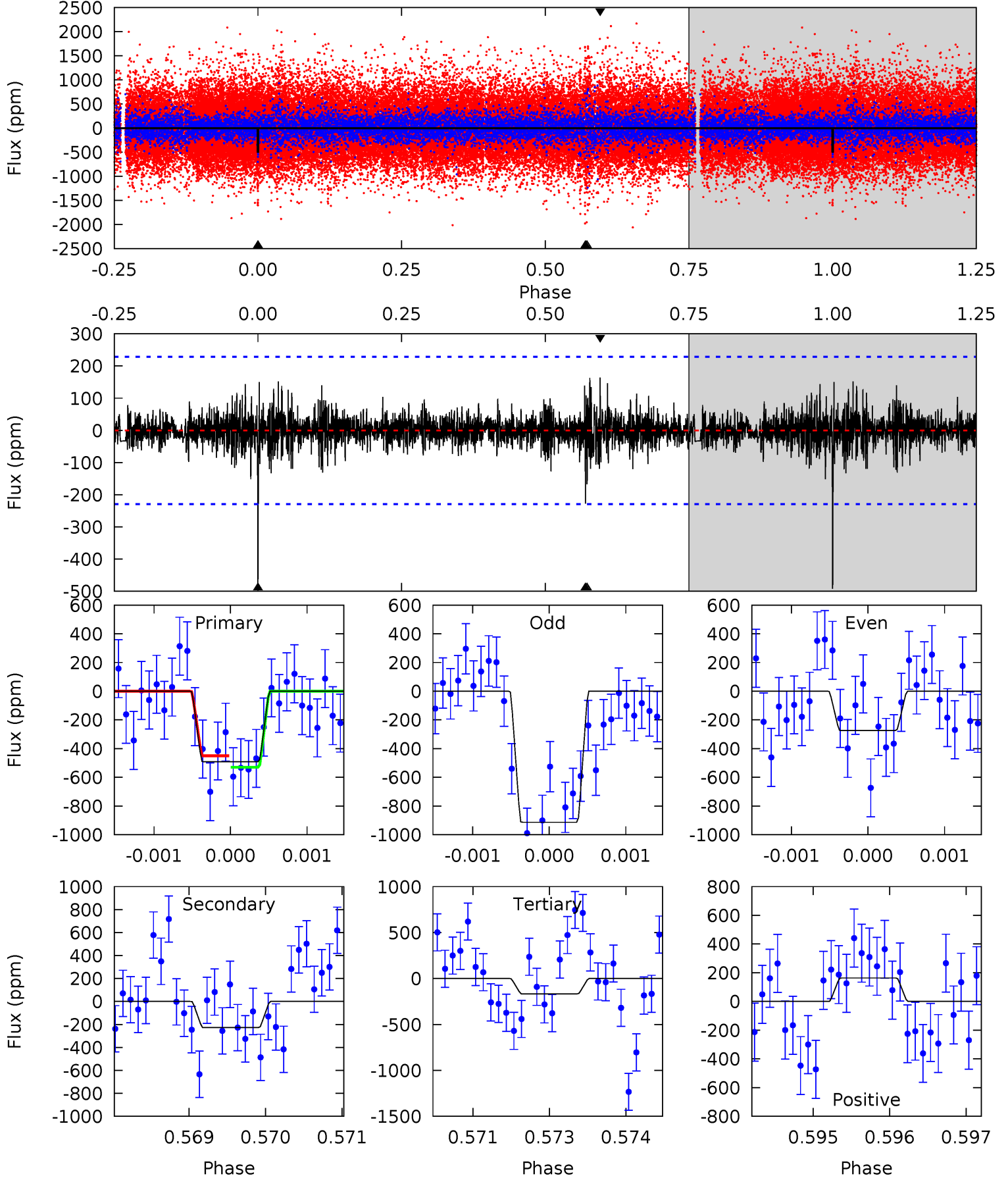
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.0	14.5	10.4	11.3	5.43	3.25	2.41	0.60	-0.28	4.10	3.22	4.83	0.92	0.44	1.51



# Alt Model-Shift Uniqueness Test

008240862-01, P = 685.198567 Days, E = 206.010618 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
11.7	5.40	3.97	3.89	5.43	3.26	0.83	7.70	7.79	1.43	1.52	7.24	1.32	0.25	0.94



### Stellar Parameters For KIC 008240862

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5907^{+158}_{-193}$	$4.454^{+0.081}_{-0.202}$	$-0.060^{+0.300}_{-0.300}$	$0.982^{+0.291}_{-0.125}$	$1.001^{+0.127}_{-0.127}$	$1.488^{+0.522}_{-0.747}$
	+3%/-3%	+2%/-5%	+500%/-500%	+30%/-13%	+13%/-13%	+35%/-50%
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 008240862-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-654 \pm 45$	$2.75^{+0.72}_{-0.67}$	$297^{+22}_{-15}$	$6025^{+838}_{-579}$	$111027^{+77594}_{-42581}$
Alt.	$-228 \pm 42$	$2.54^{+0.77}_{-0.66}$	$297^{+21}_{-16}$	$4893^{+678}_{-484}$	$44715^{+35284}_{-19042}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$

## DV Centroid Data

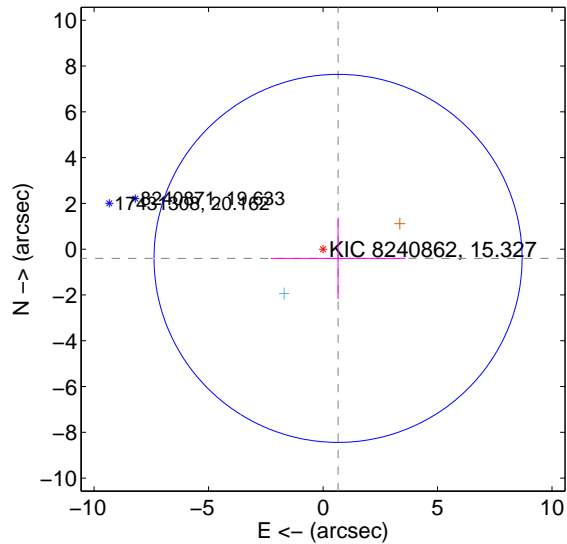
Supplemental centroid analysis for 008240862-01. Kepler magnitude: 15.33. Transit SNR 9.41

There are 1 quarters with good PRF difference image offsets

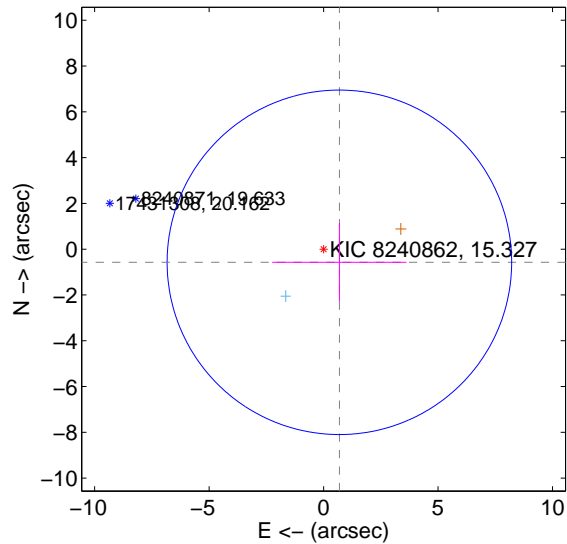
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.769 \pm 2.679$	0.29	$-0.656 \pm 2.946$	$-0.401 \pm 1.782$
PRF-fit source offset from KIC position	$0.898 \pm 2.508$	0.36	$-0.691 \pm 2.933$	$-0.574 \pm 1.715$
photometric centroid source offset	$2.96 \pm 1.86$	1.59	$2.14 \pm 1.63$	$-2.04 \pm 2.09$

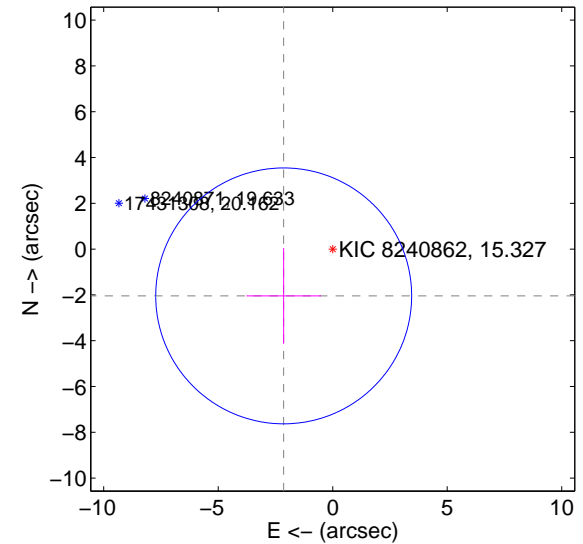
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

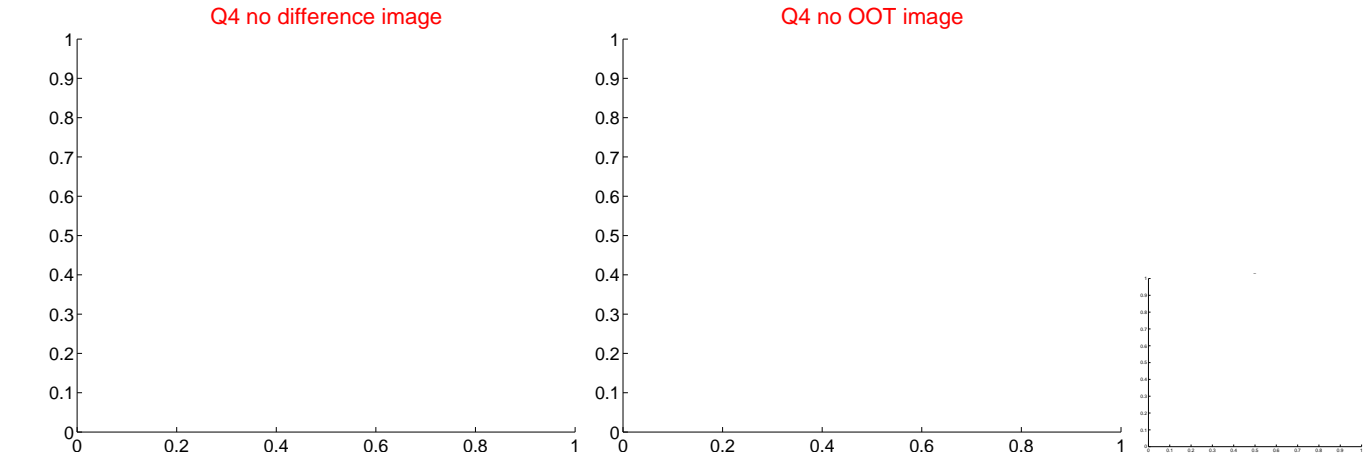
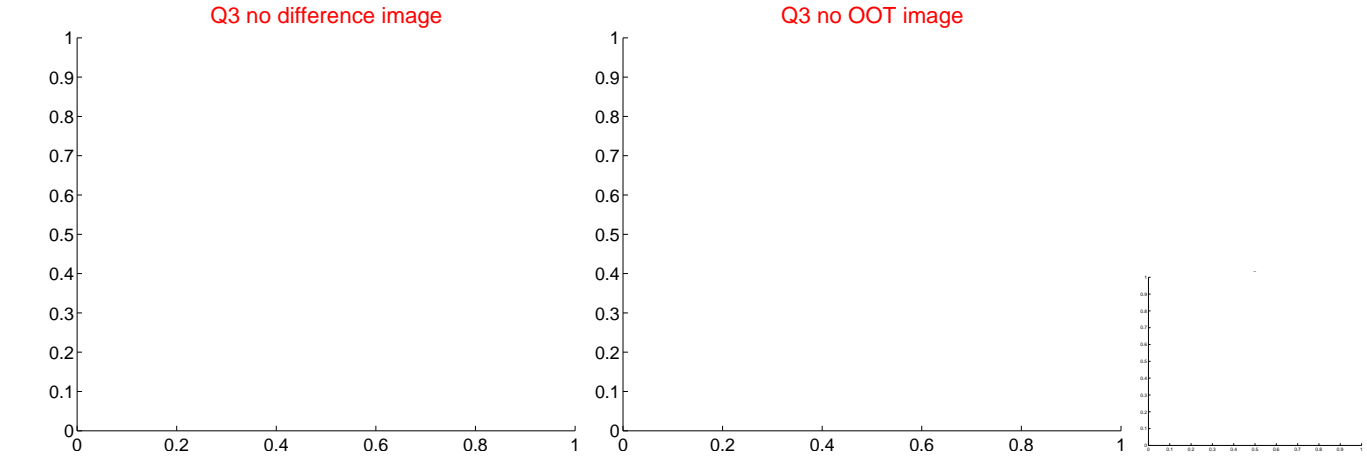
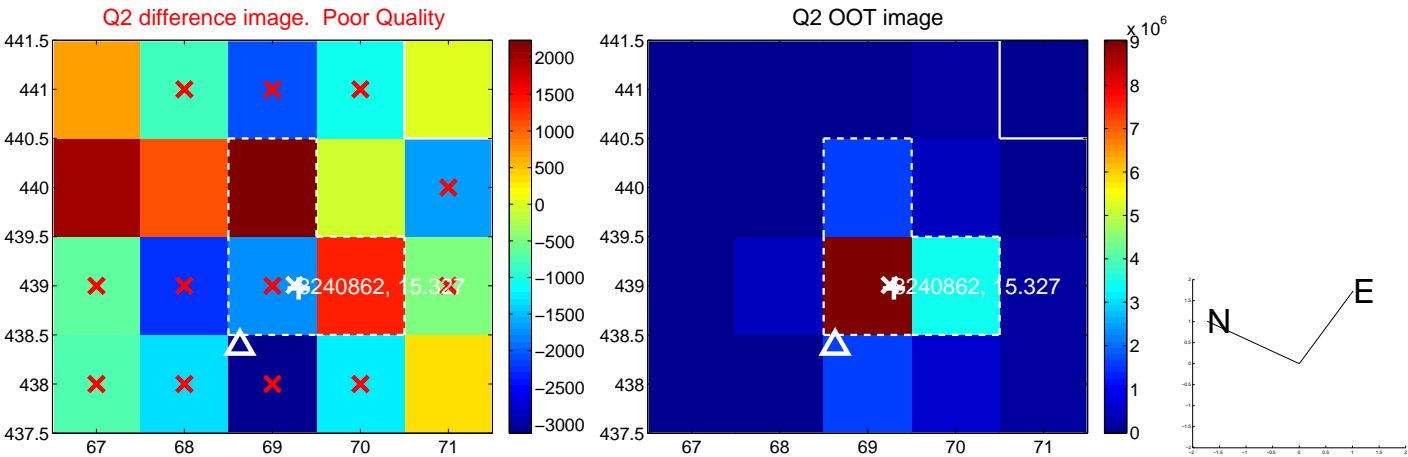
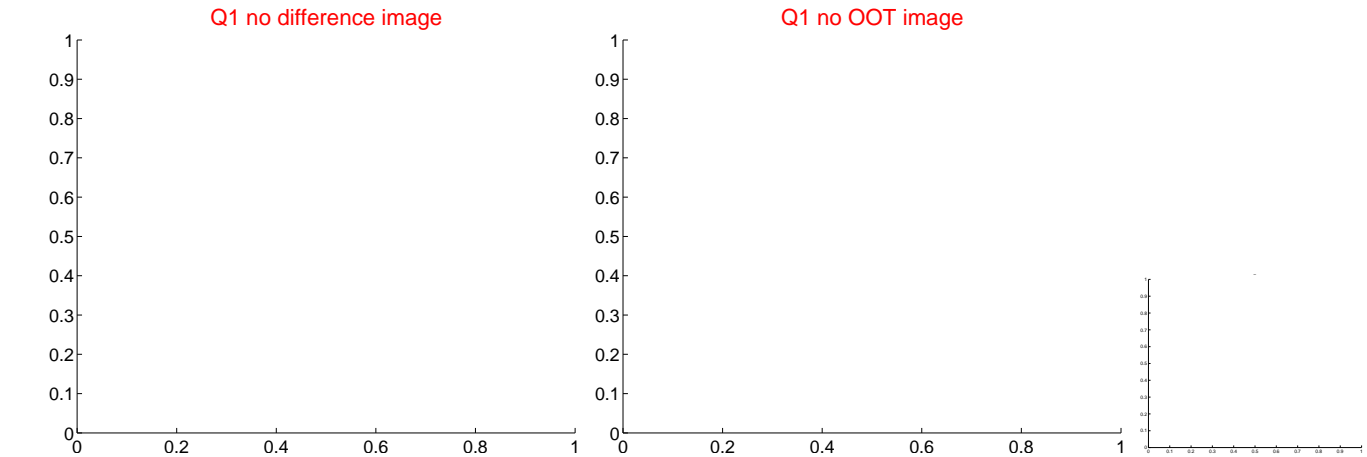


offset from photometric centroids



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.

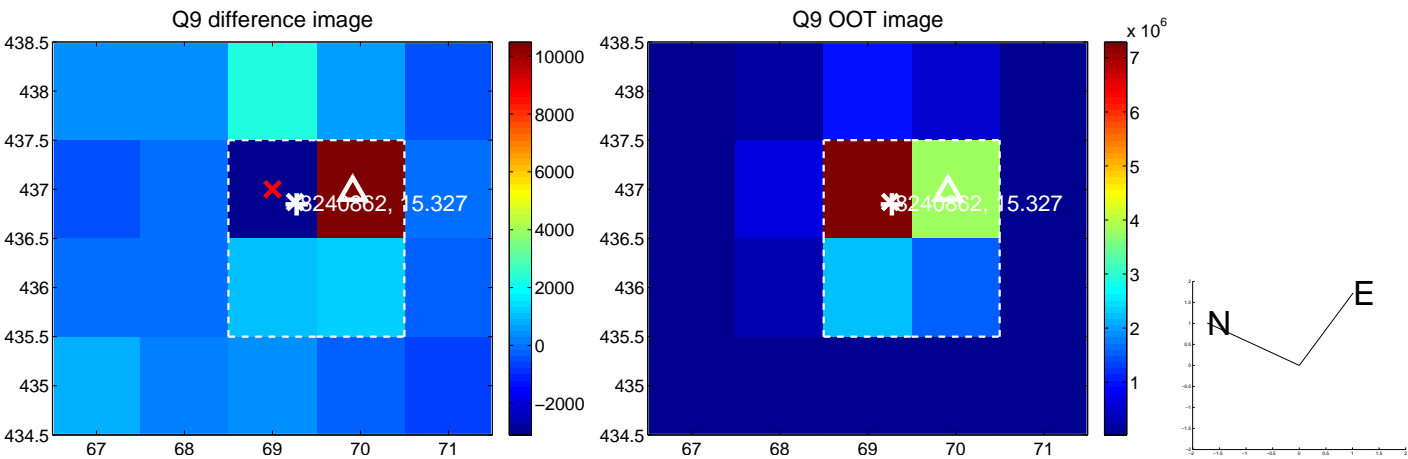




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



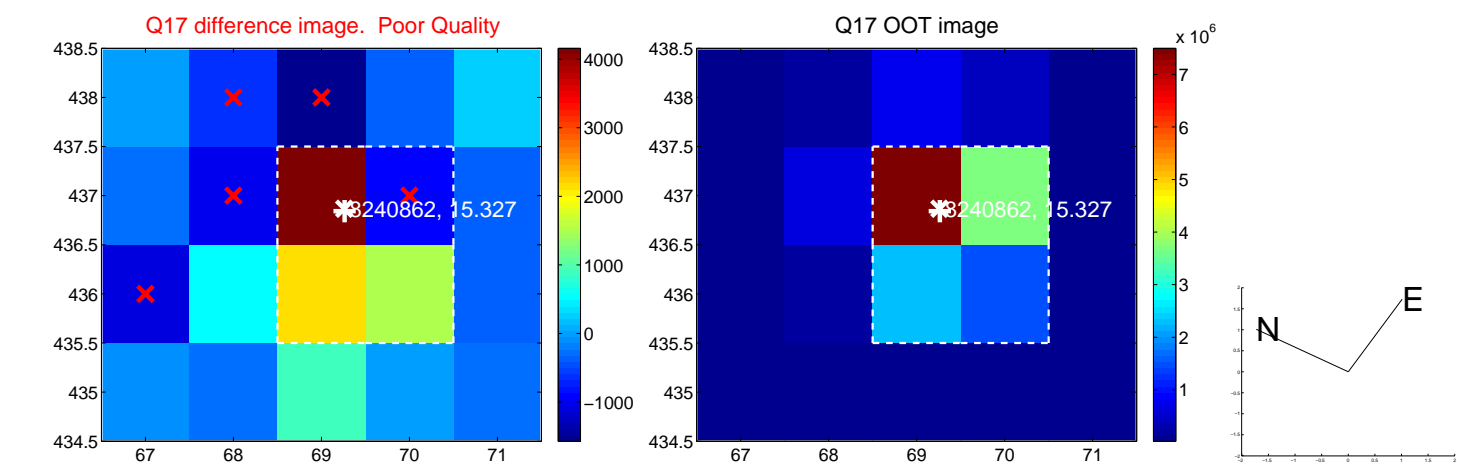
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



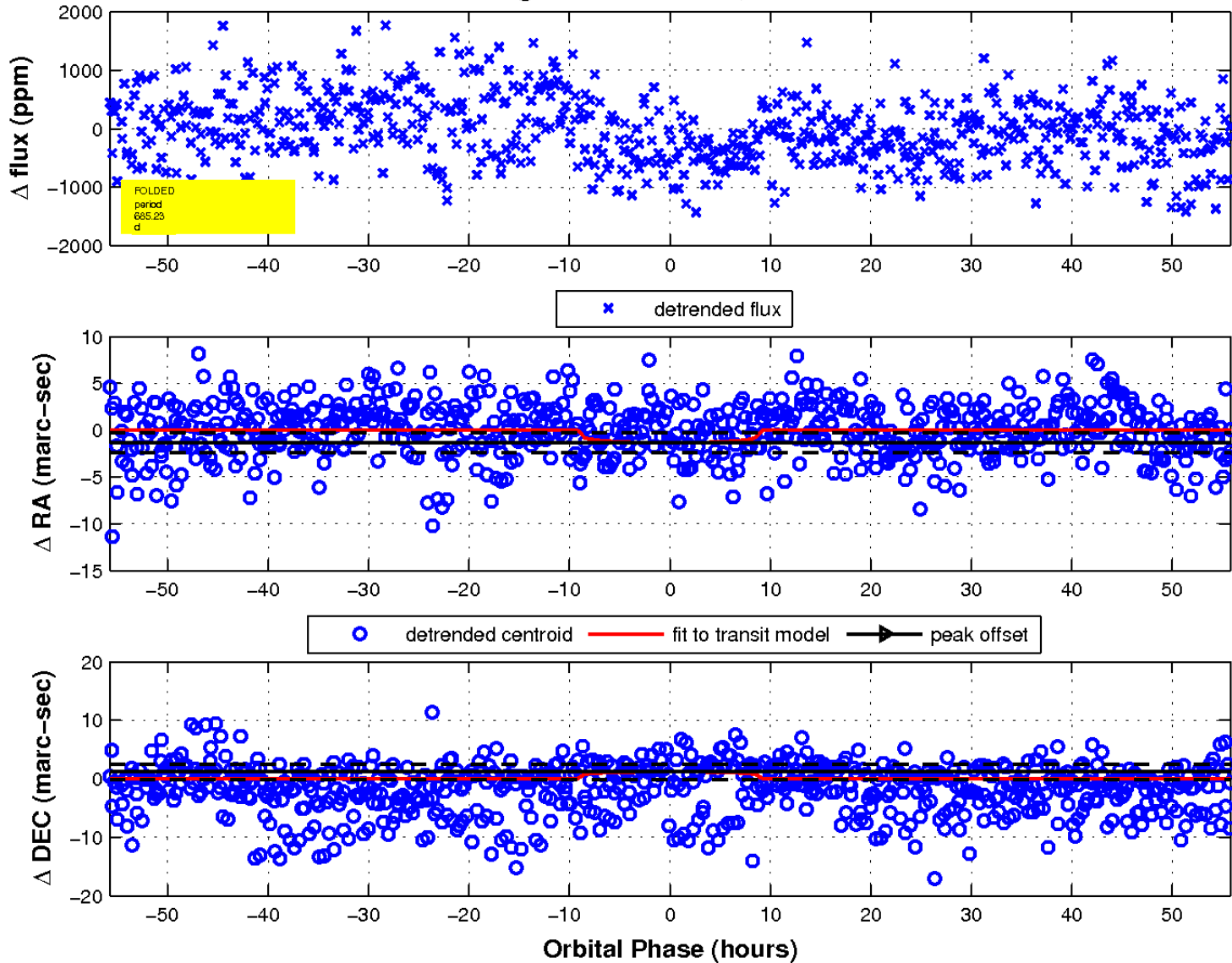
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



# UKIRT Image

Declination

