

# KIC 008939843

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
008939843-01	OBS	No	355.191544	137.378048	231.0	8.296	7.4	7.1	0.75	5611	1.26	0.59

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008939843-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

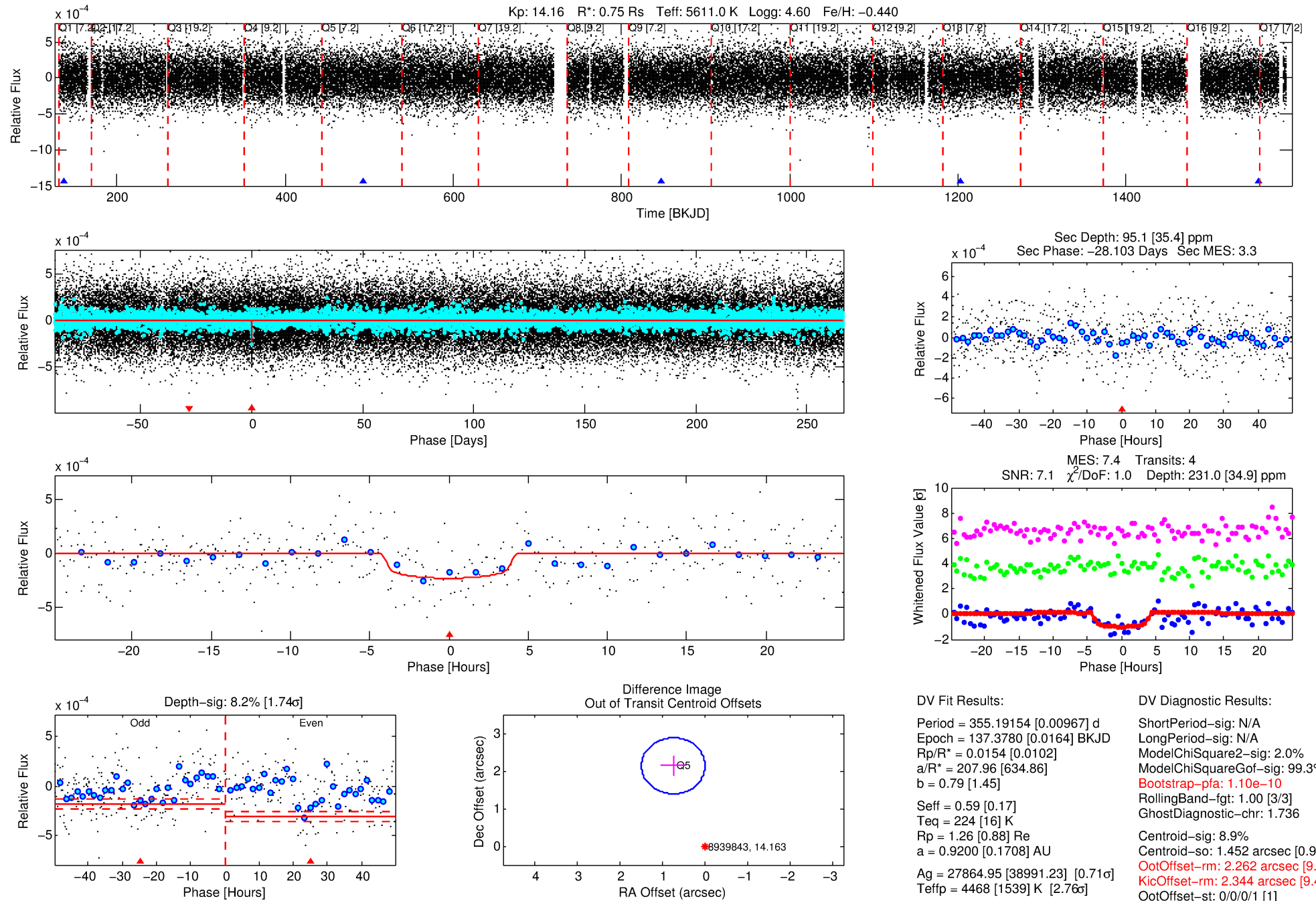
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 008939843-01

No Significant Match Found

# DV One-Page Summary

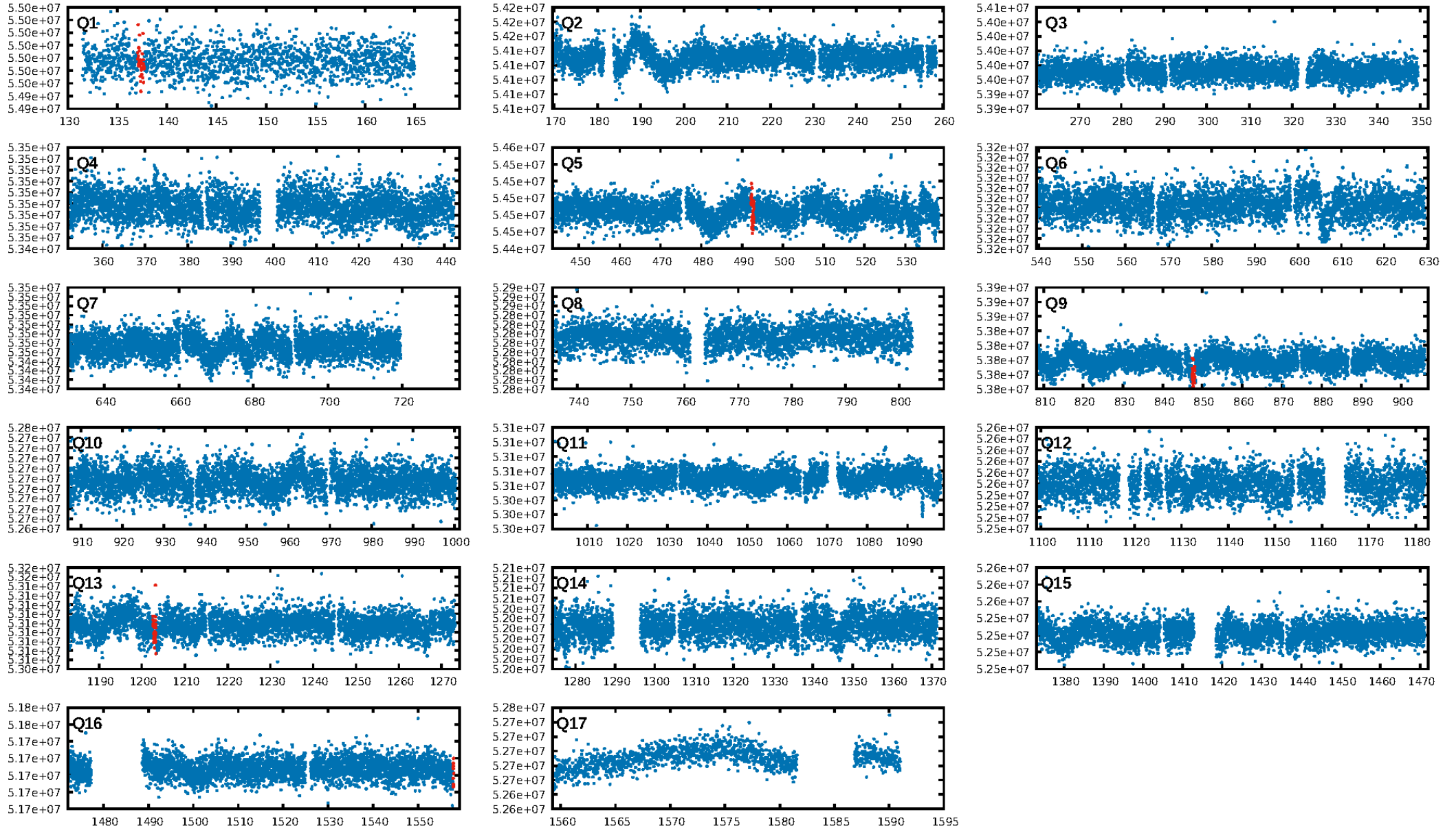
KIC: 8939843 Candidate: 1 of 1 Period: 355.192 d



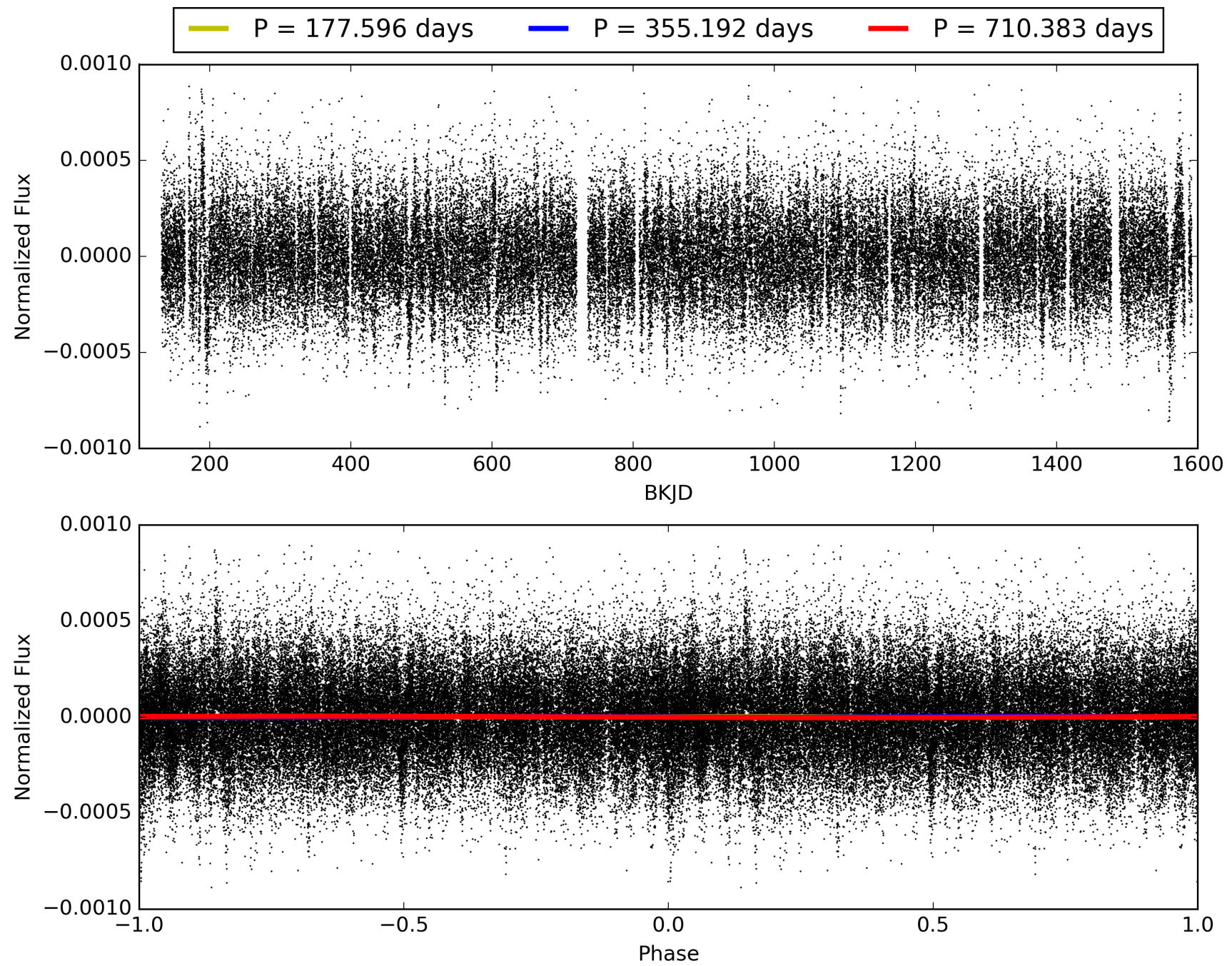
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 19:57:44 Z

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

# TCE 008939843-01, PDC Light Curves

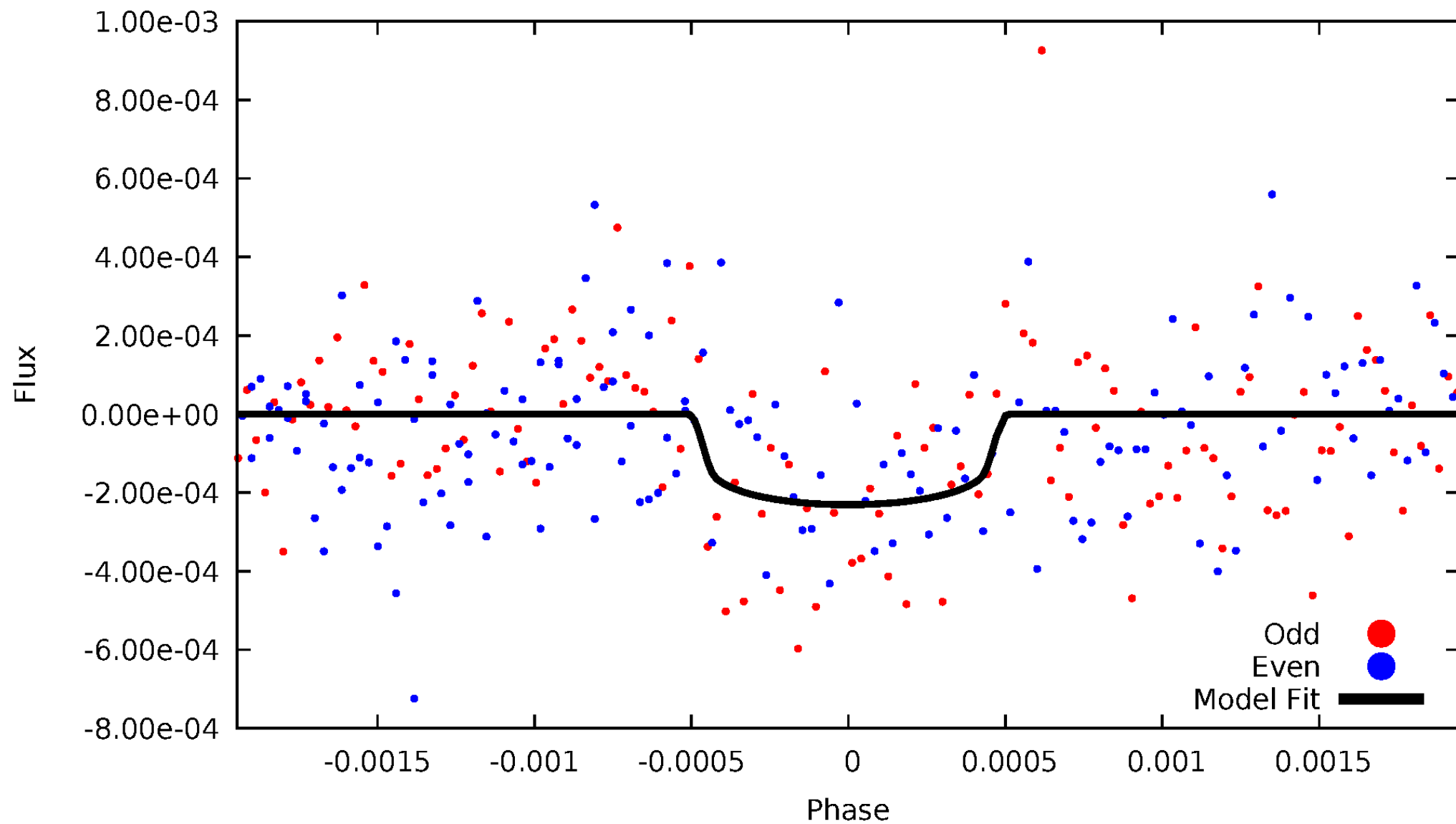


TCE 008939843-01



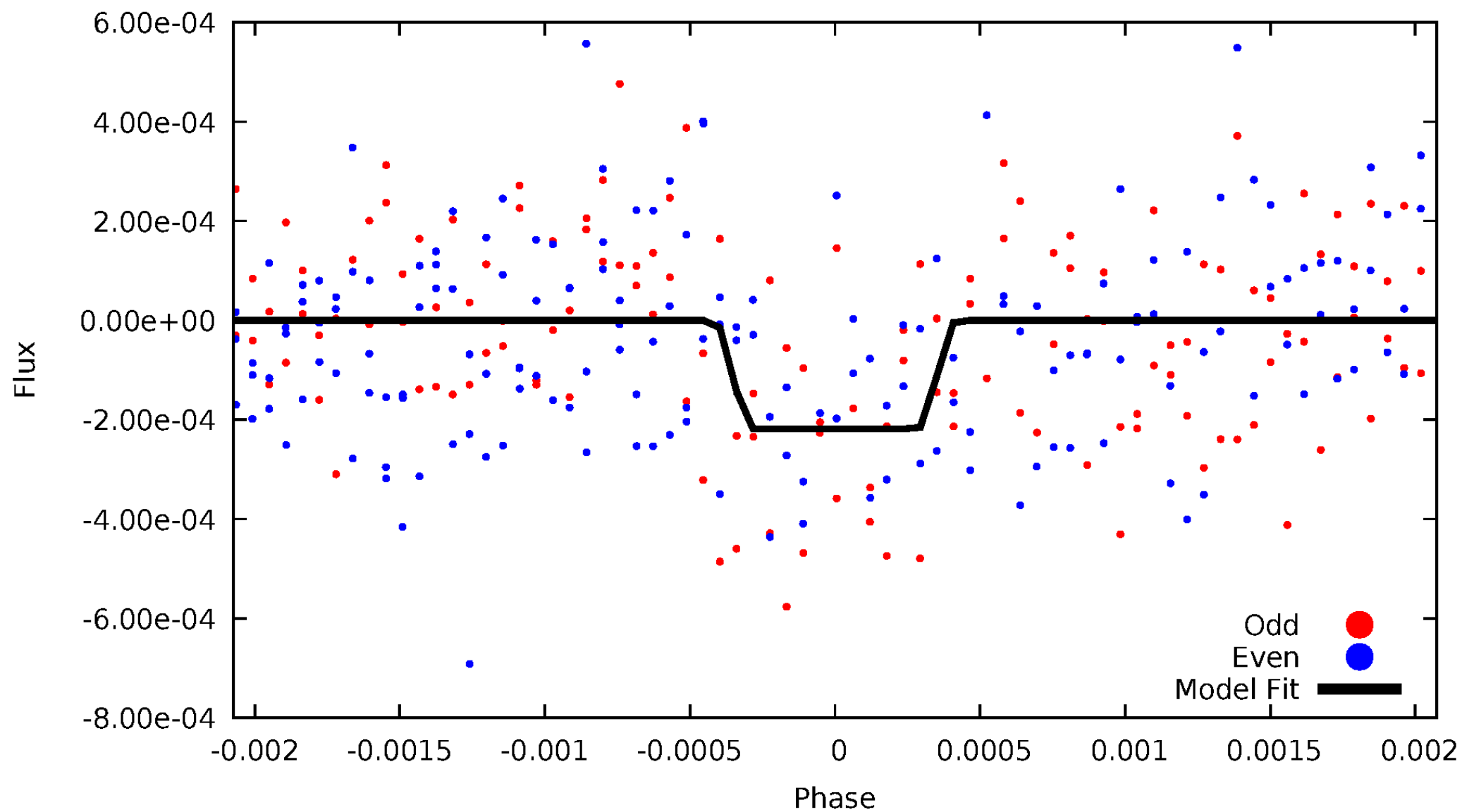
# DV Odd/Even

TCE 008939843-01



# ALT Odd/Even

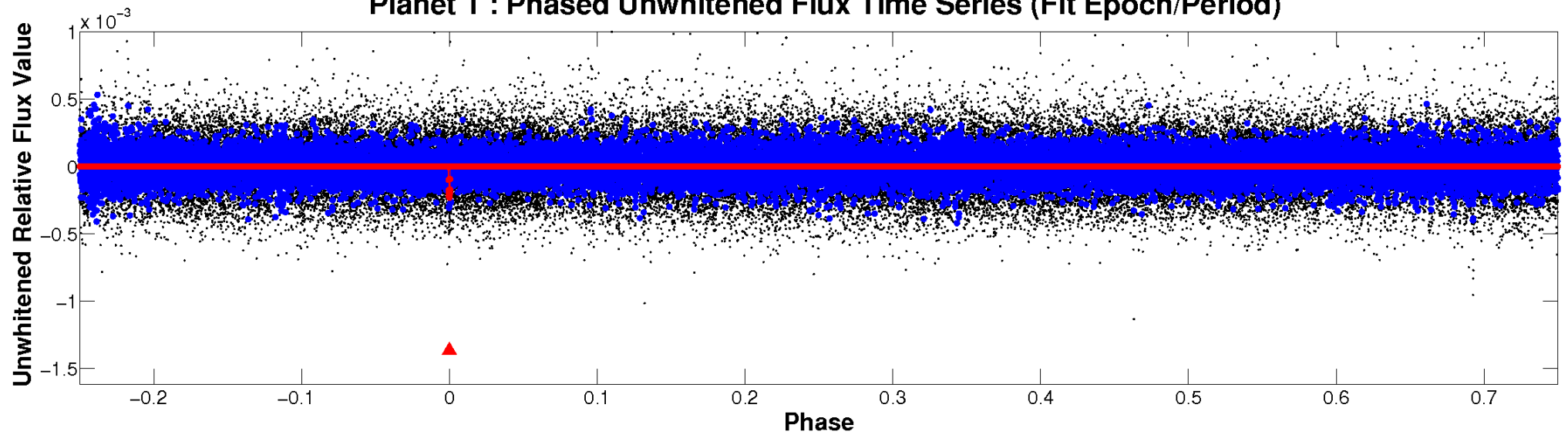
TCE 008939843-01



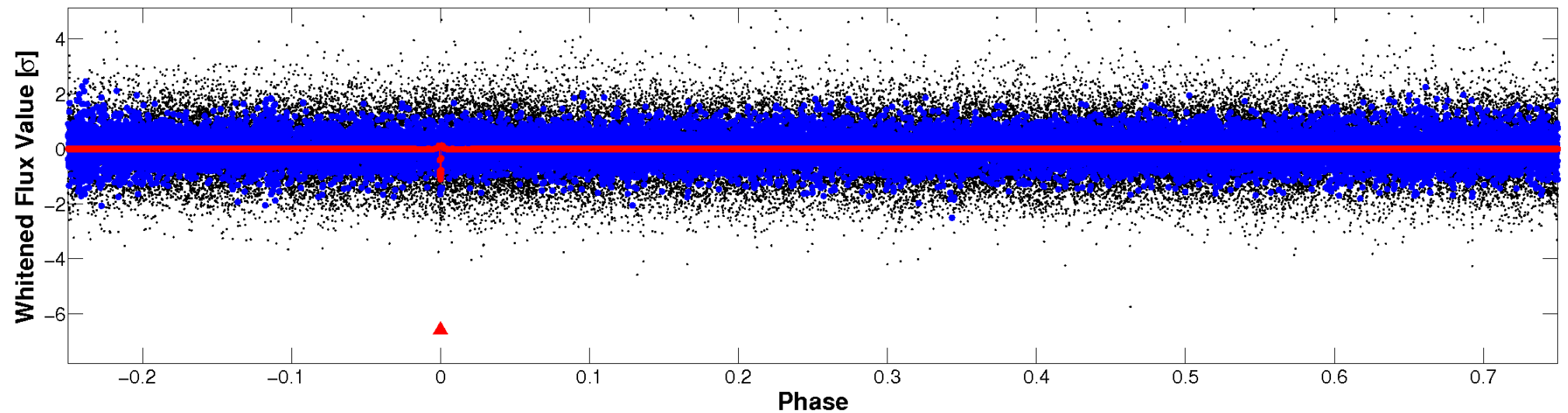


# Non-Whitened Vs. Whitened Light Curve

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

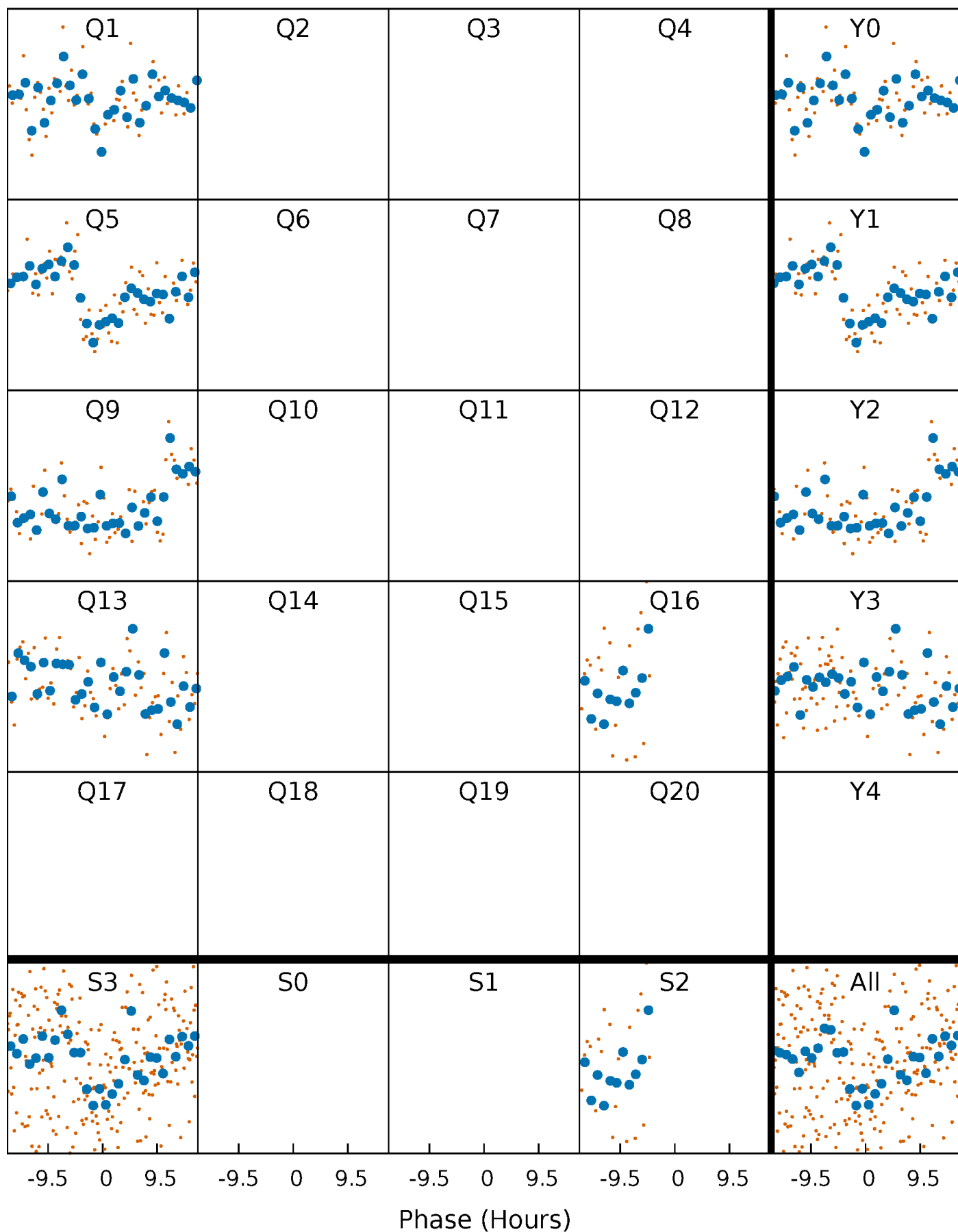


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

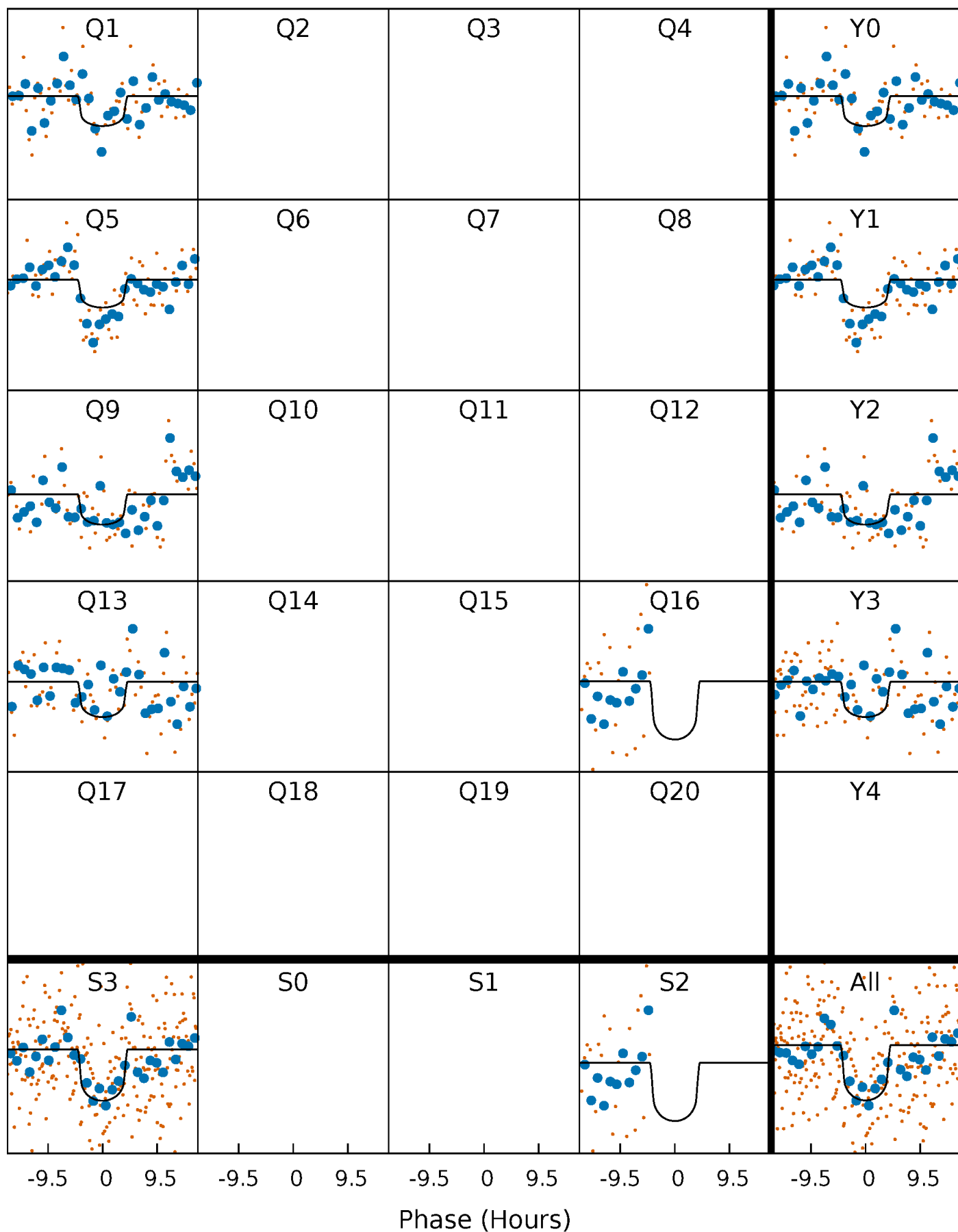
TCE 008939843-01   P=355.191544 Days    $T_0=137.378048$  (BKJD)





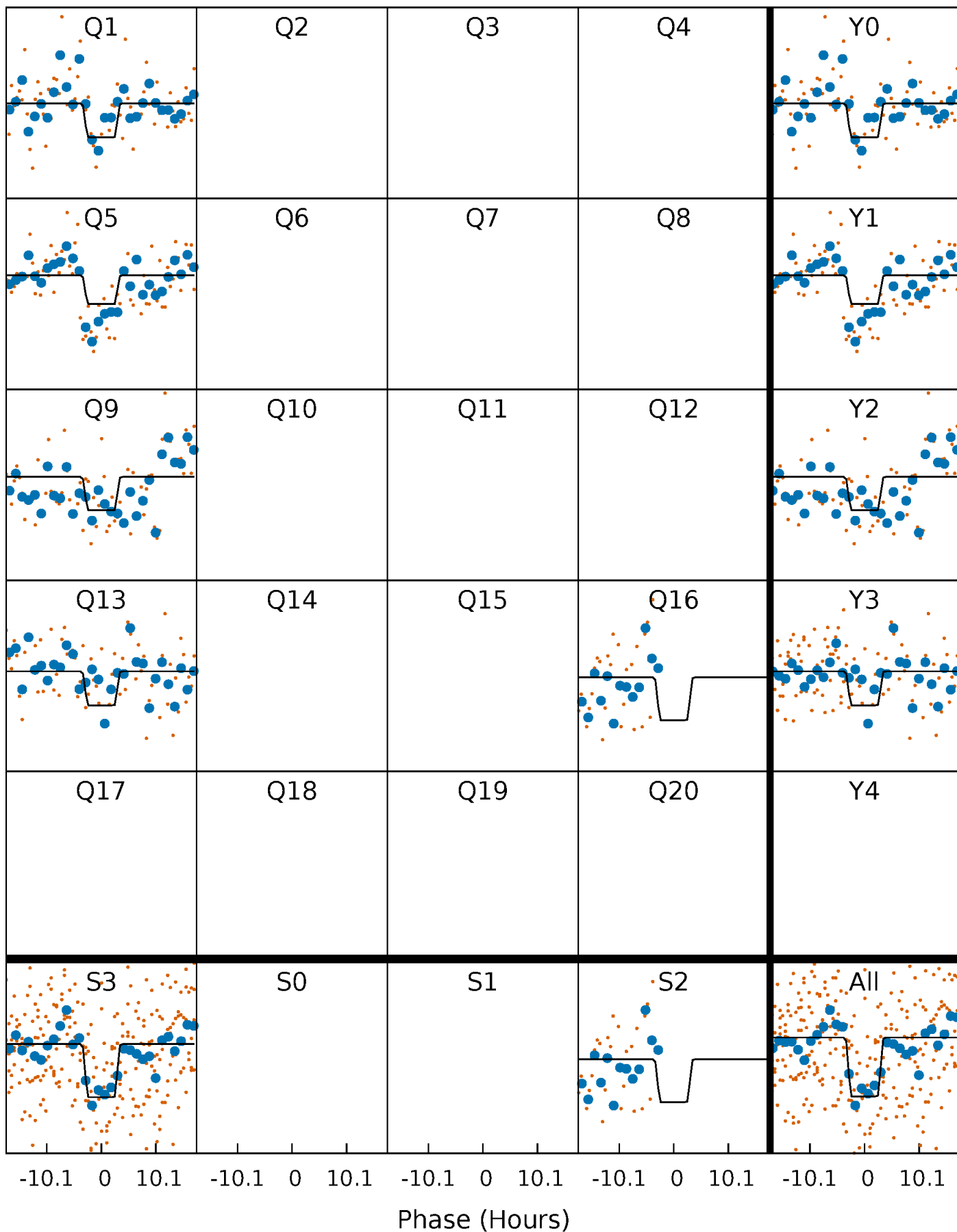
# DV Quarter-Phased Transit Curves

TCE 008939843-01 P=355.191544 Days  $T_0=137.378048$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

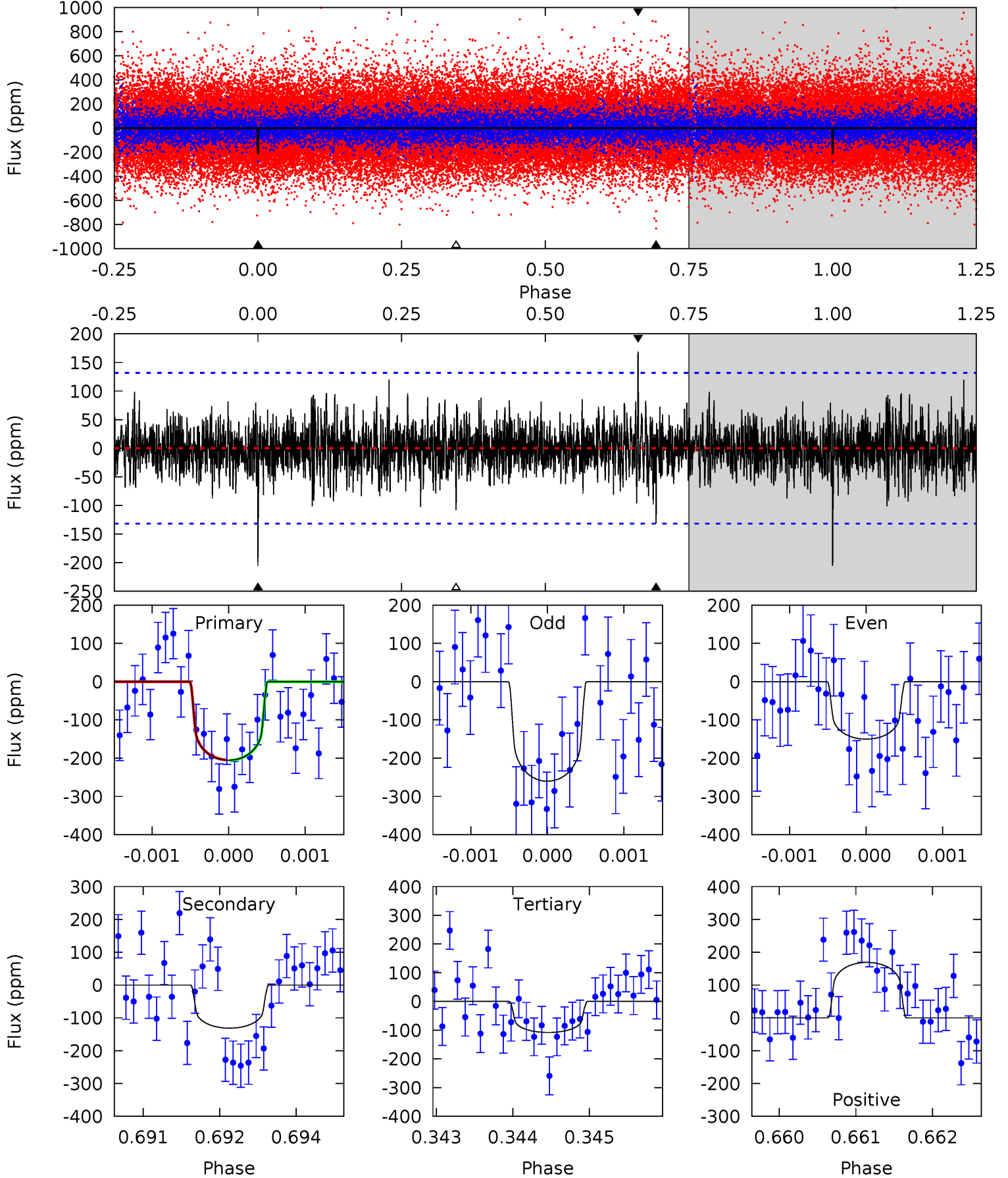
TCE 008939843-01 P=355.176140 Days  $T_0=137.395735$  (BKJD)



# DV Model-Shift Uniqueness Test

008939843-01, P = 355.191544 Days, E = 137.378048 Days

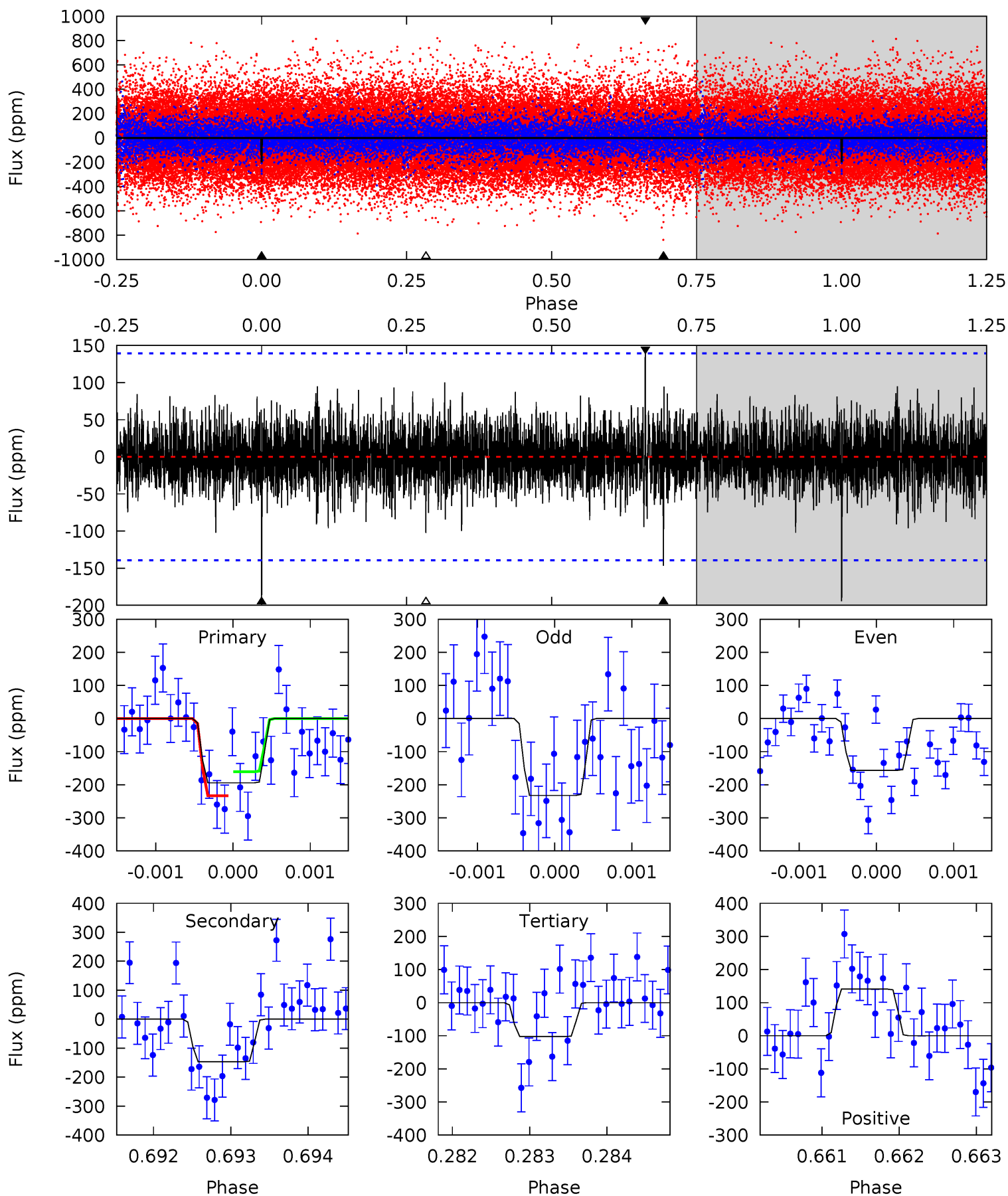
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.50	5.44	4.47	7.00	5.45	3.29	1.23	4.02	1.50	0.96	-1.56	2.28	1.31	0.45	0.03



# Alt Model-Shift Uniqueness Test

008939843-01, P = 355.176140 Days, E = 137.395735 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
7.64	5.77	4.03	5.53	5.48	3.33	1.07	3.62	2.11	1.74	0.24	1.51	1.23	0.42	1.42



### Stellar Parameters For KIC 008939843

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$5611^{+152}_{-152}$	$4.602^{+0.034}_{-0.144}$	$-0.440^{+0.300}_{-0.300}$	$0.751^{+0.168}_{-0.052}$	$0.840^{+0.080}_{-0.097}$	$2.790^{+0.420}_{-1.145}$
	+3%/-3%	+1%/-3%	+68%/-68%	+22%/-7%	+10%/-12%	+15%/-41%
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 008939843-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-131 \pm 24$	$1.31^{+0.83}_{-0.70}$	$318^{+17}_{-12}$	$4924^{+2216}_{-871}$	$34754^{+127203}_{-21838}$
Alt.	$-147 \pm 25$	$1.29^{+0.92}_{-0.75}$	$317^{+18}_{-12}$	$5091^{+2665}_{-987}$	$41294^{+176923}_{-27322}$

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

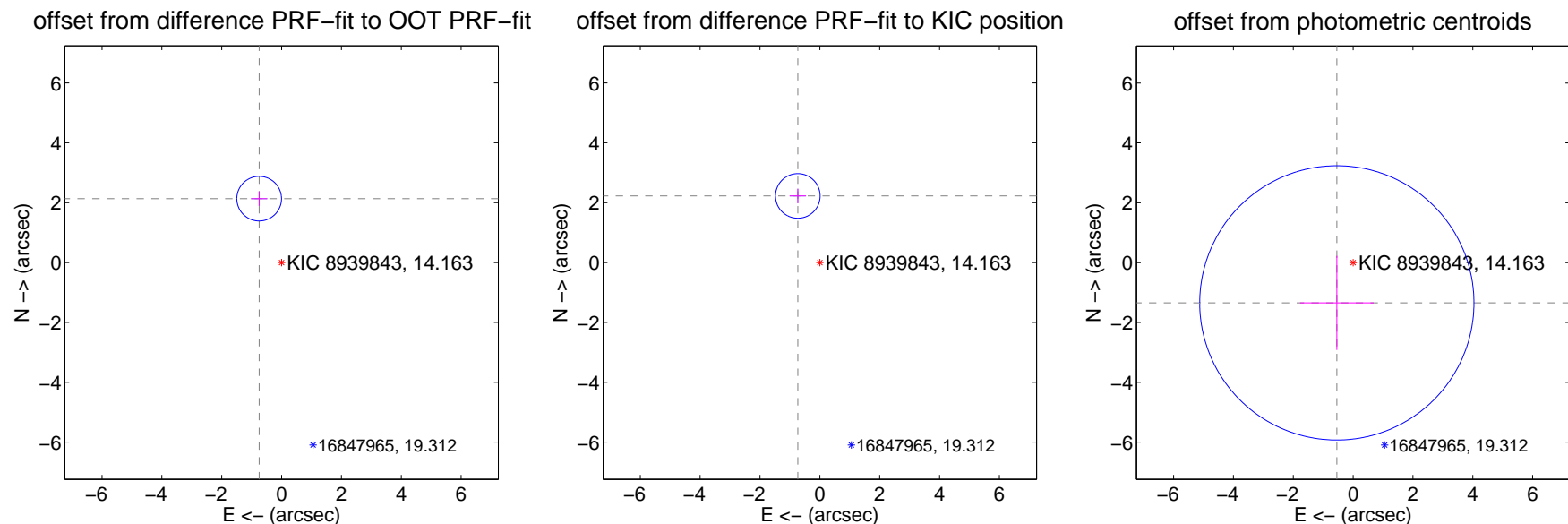
## DV Centroid Data

Supplemental centroid analysis for 008939843-01. Kepler magnitude: 14.16. Transit SNR 7.13

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

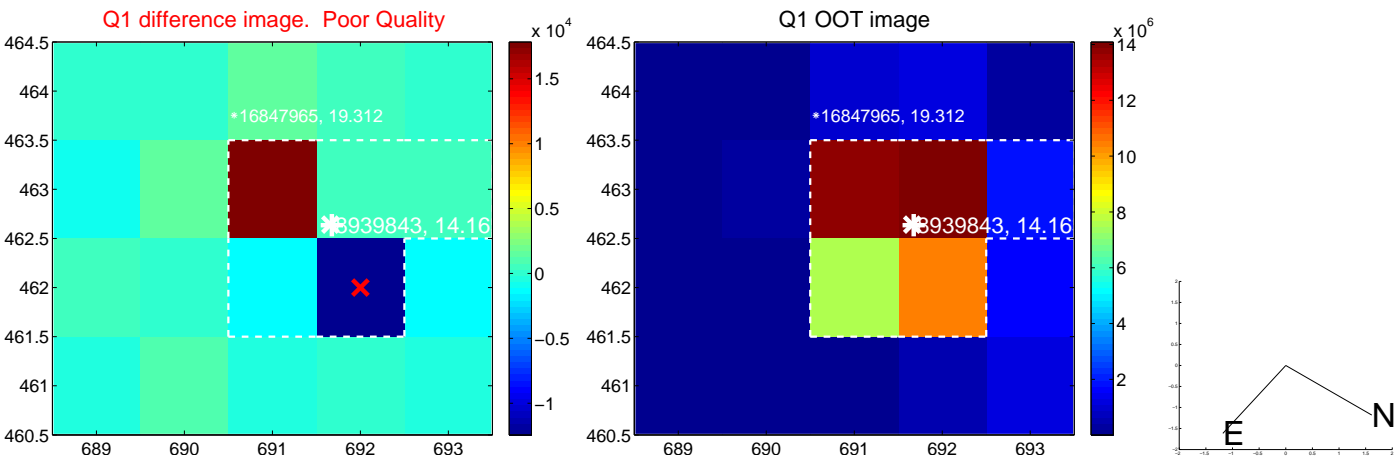
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$2.262 \pm 0.249$	9.09	$0.749 \pm 0.275$	$2.134 \pm 0.245$
PRF-fit source offset from KIC position	$2.344 \pm 0.248$	9.43	$0.736 \pm 0.275$	$2.225 \pm 0.245$
photometric centroid source offset	$1.45 \pm 1.53$	0.95	$0.54 \pm 1.23$	$-1.35 \pm 1.57$



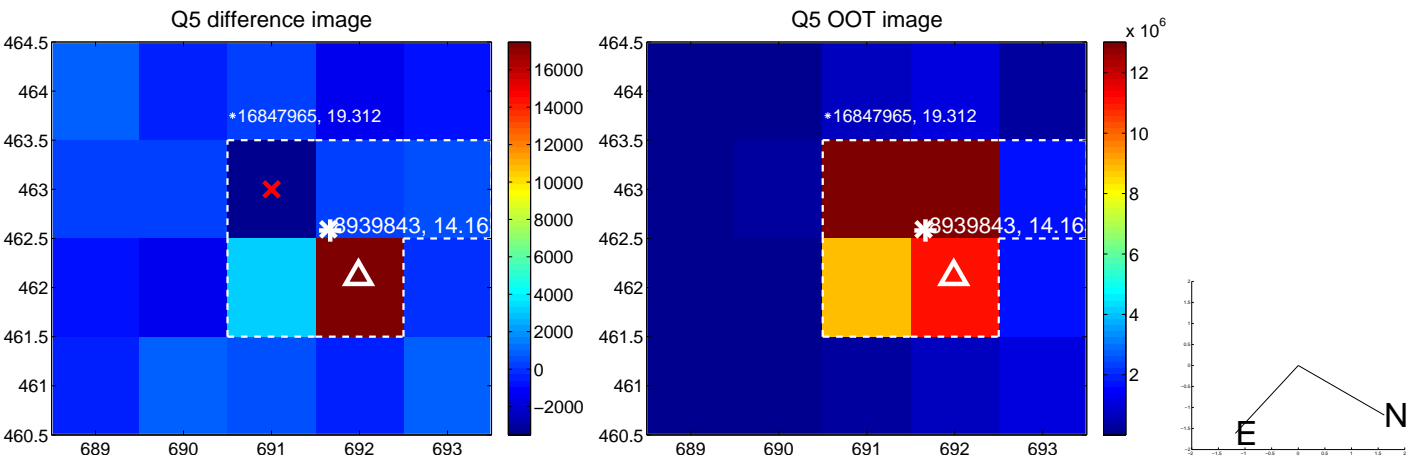
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



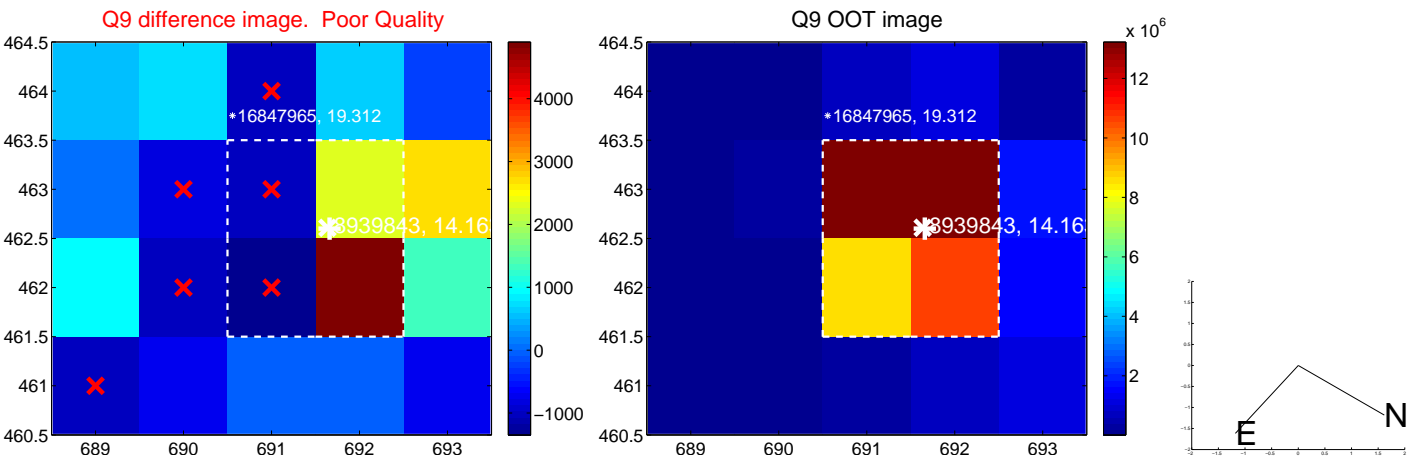
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



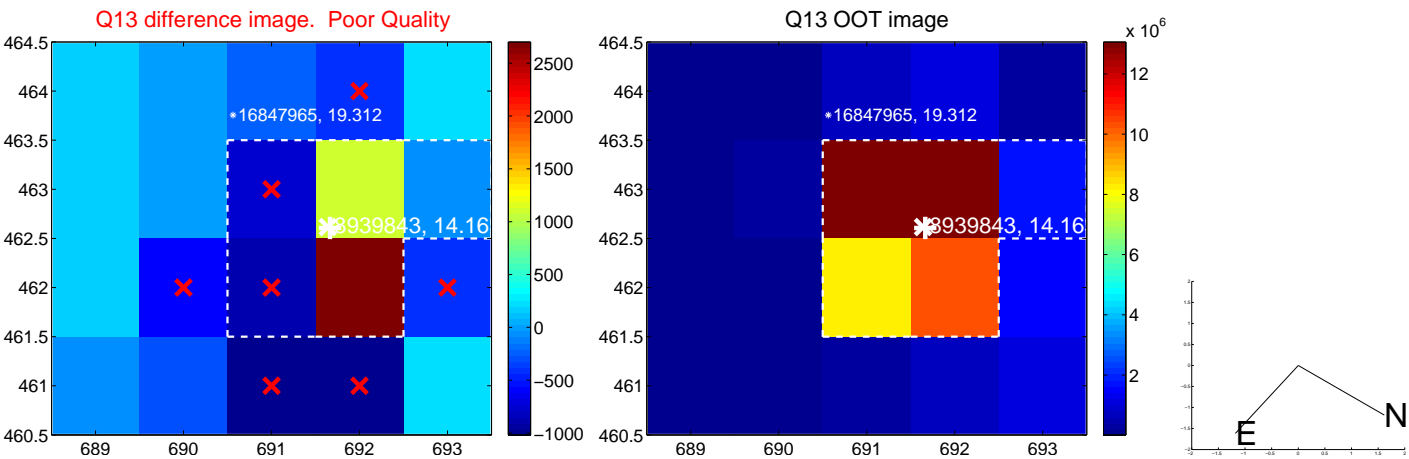
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



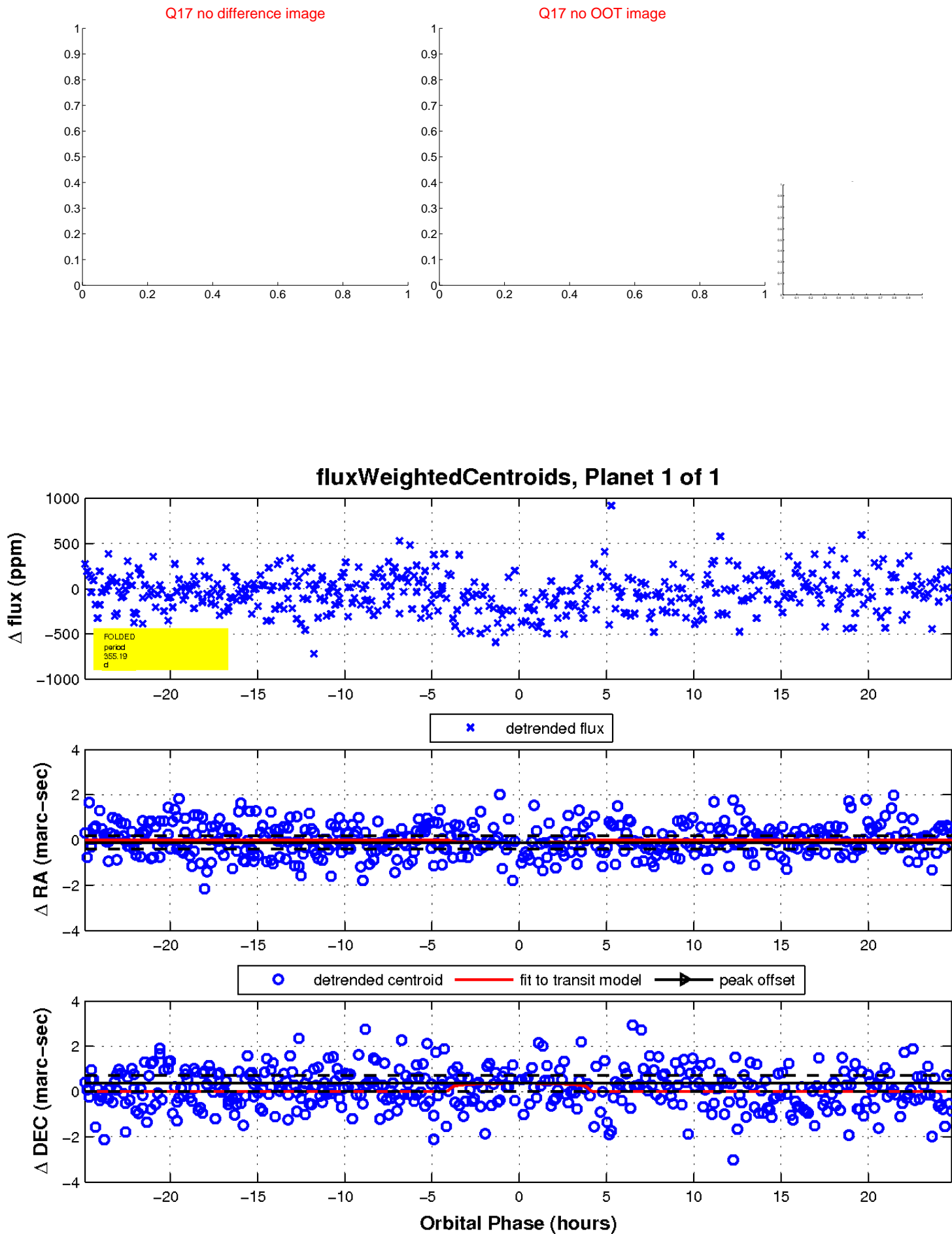
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

