

# KIC 009210639

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009210639-01	OBS	No	340.028940	169.731300	302.9	6.332	7.6	7.2	1.06	6304	1.97	1.62

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009210639-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_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.

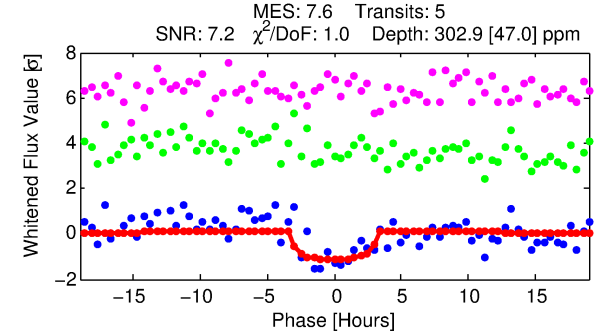
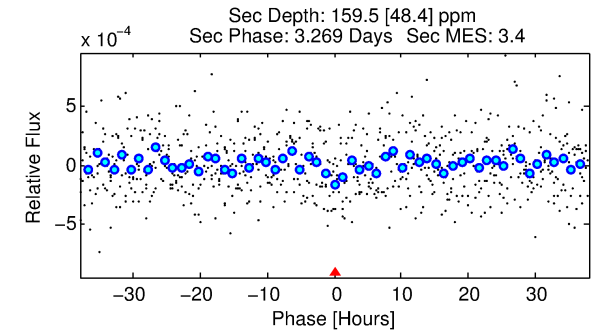
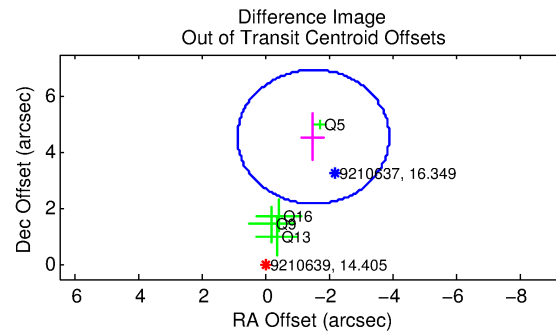
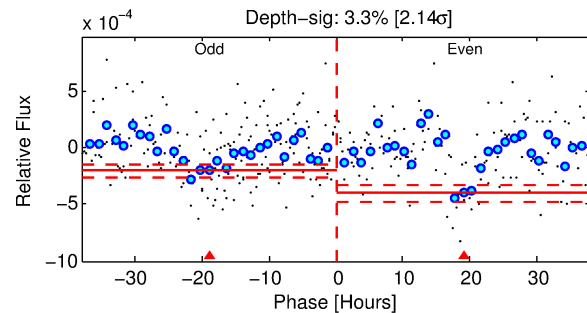
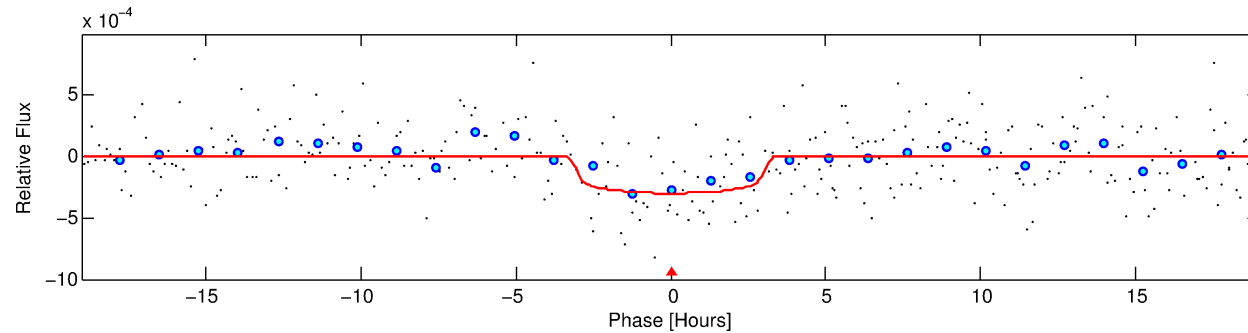
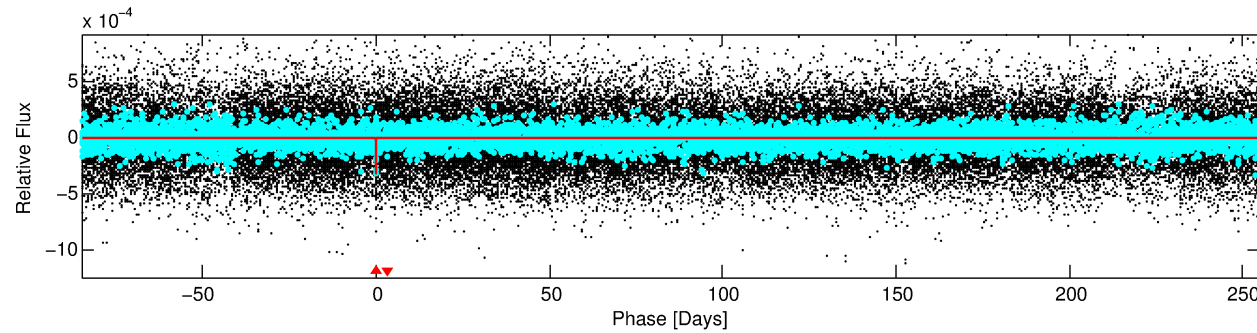
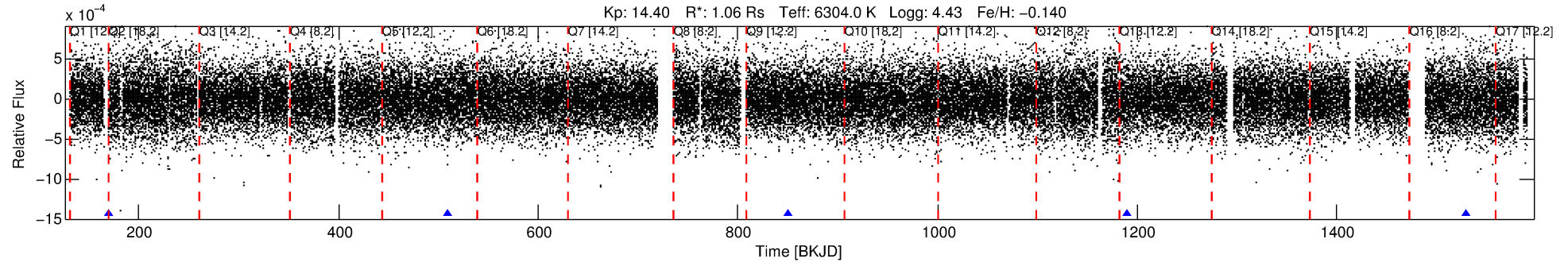
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009210639-01

No Significant Match Found

# DV One-Page Summary

KIC: 9210639 Candidate: 1 of 1 Period: 340.029 d



## DV Fit Results:

Period = 340.02894 [0.00759] d  
Epoch = 169.7313 [0.0188] BKJD  
Rp/R\* = 0.0171 [0.0163]  
a/R\* = 300.11 [1491.18]  
b = 0.71 [3.54]  
Seff = 1.62 [0.70]  
Teq = 288 [31] K  
Rp = 1.97 [1.99] Re  
a = 0.9879 [0.2758] AU  
Ag = 22010.29 [43345.58] [0.51 $\sigma$ ]  
Teffp = 5420 [2617] K [1.96 $\sigma$ ]

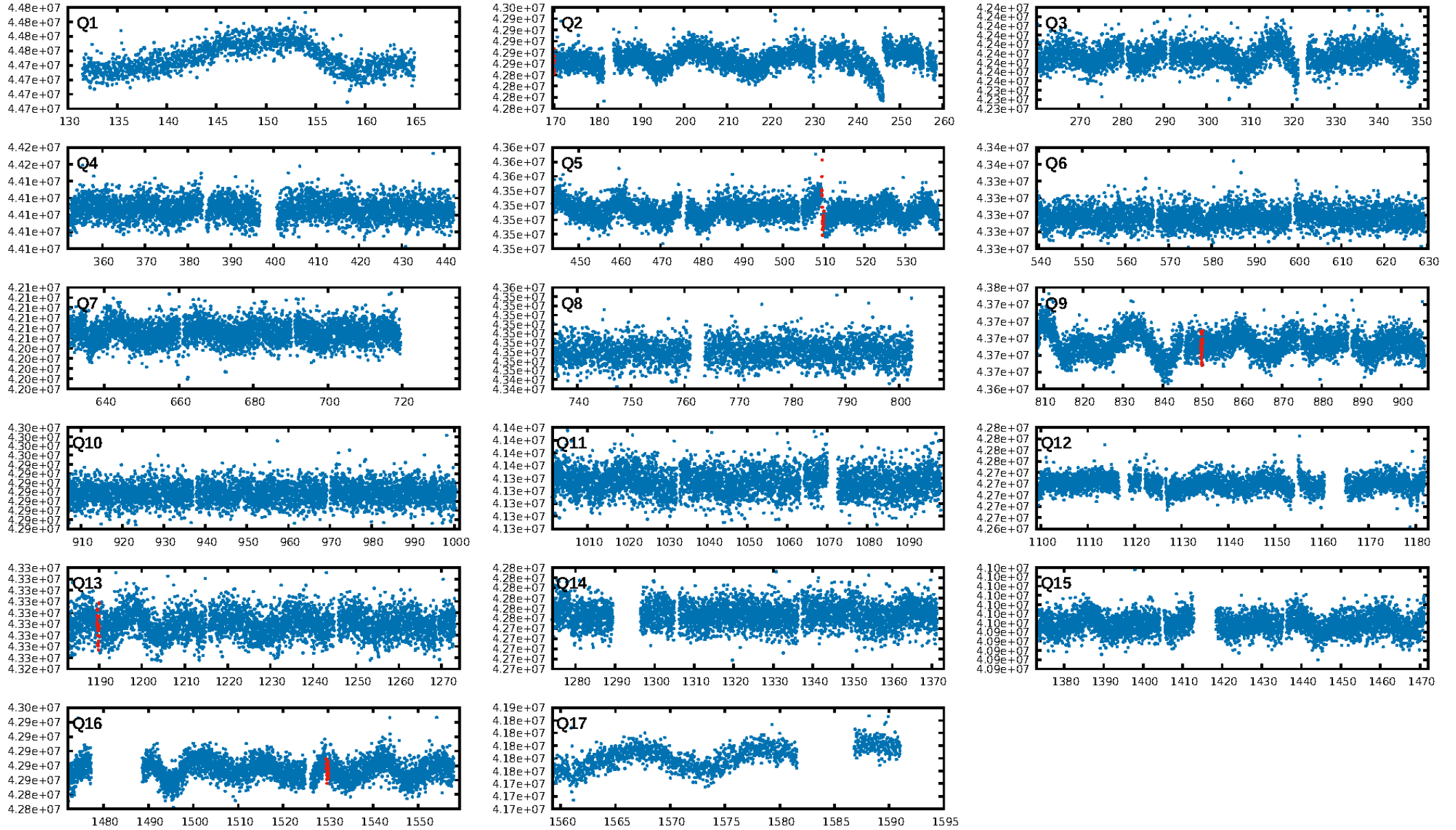
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 14.4%  
a/R\* = 300.11 [1491.18]  
Bootstrap-pfa: 4.51e-15  
RollingBand-fgt: 1.00 [5/5]  
GhostDiagnostic-chr: 0.7997  
Centroid-sig: 0.3%  
Centroid-so: 3.738 arcsec [2.35 $\sigma$ ]  
OotOffset-rm: 4.799 arcsec [6.03 $\sigma$ ]  
KicOffset-rm: 5.517 arcsec [5.23 $\sigma$ ]  
OotOffset-st: 0/0/1/3 [4]  
KicOffset-st: 0/0/1/3 [4]  
DiffImageQuality-fgm: 1.00 [4/4]  
DiffImageOverlap-fno: 1.00 [4/4]

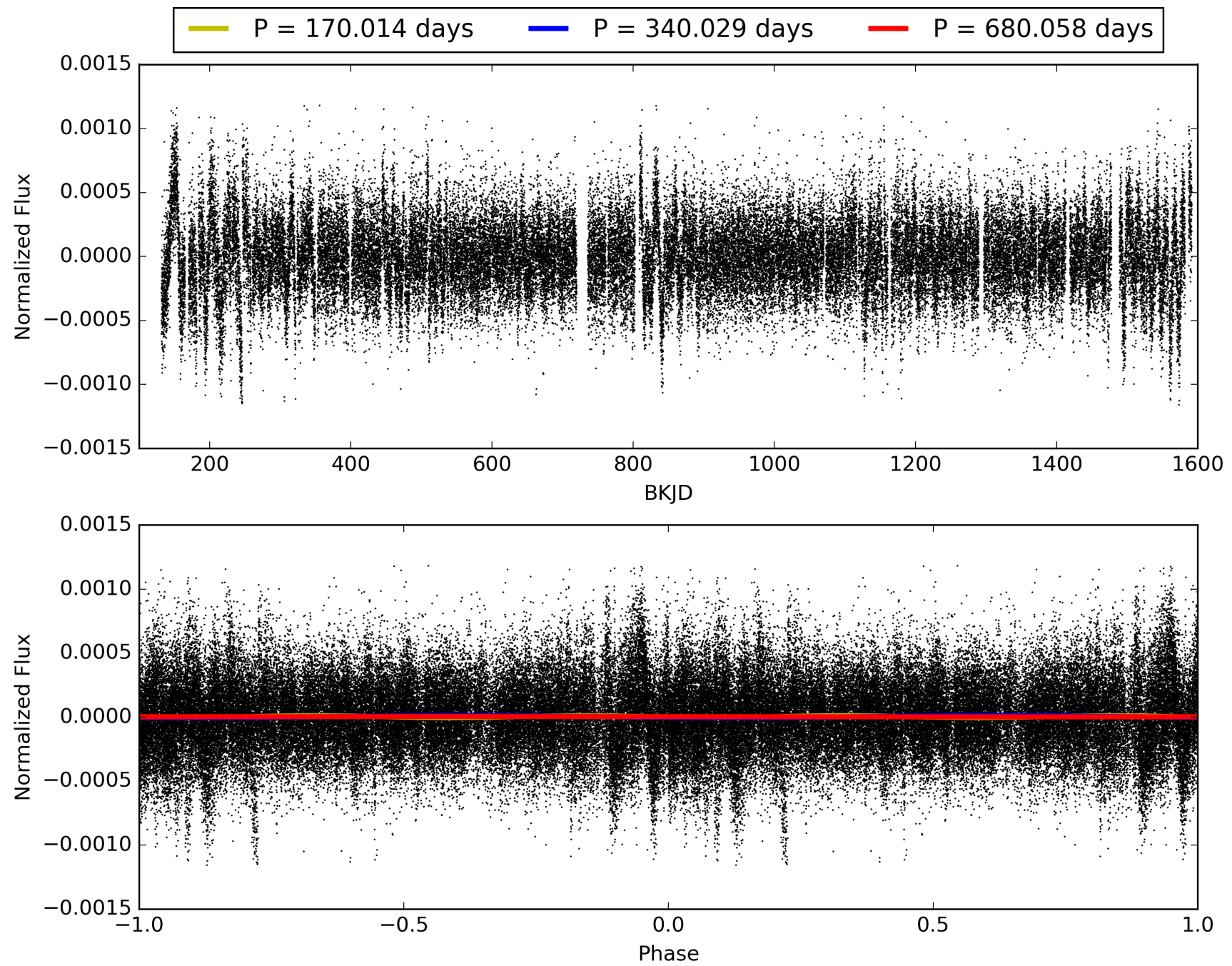
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:08:36 Z

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

# TCE 009210639-01, PDC Light Curves

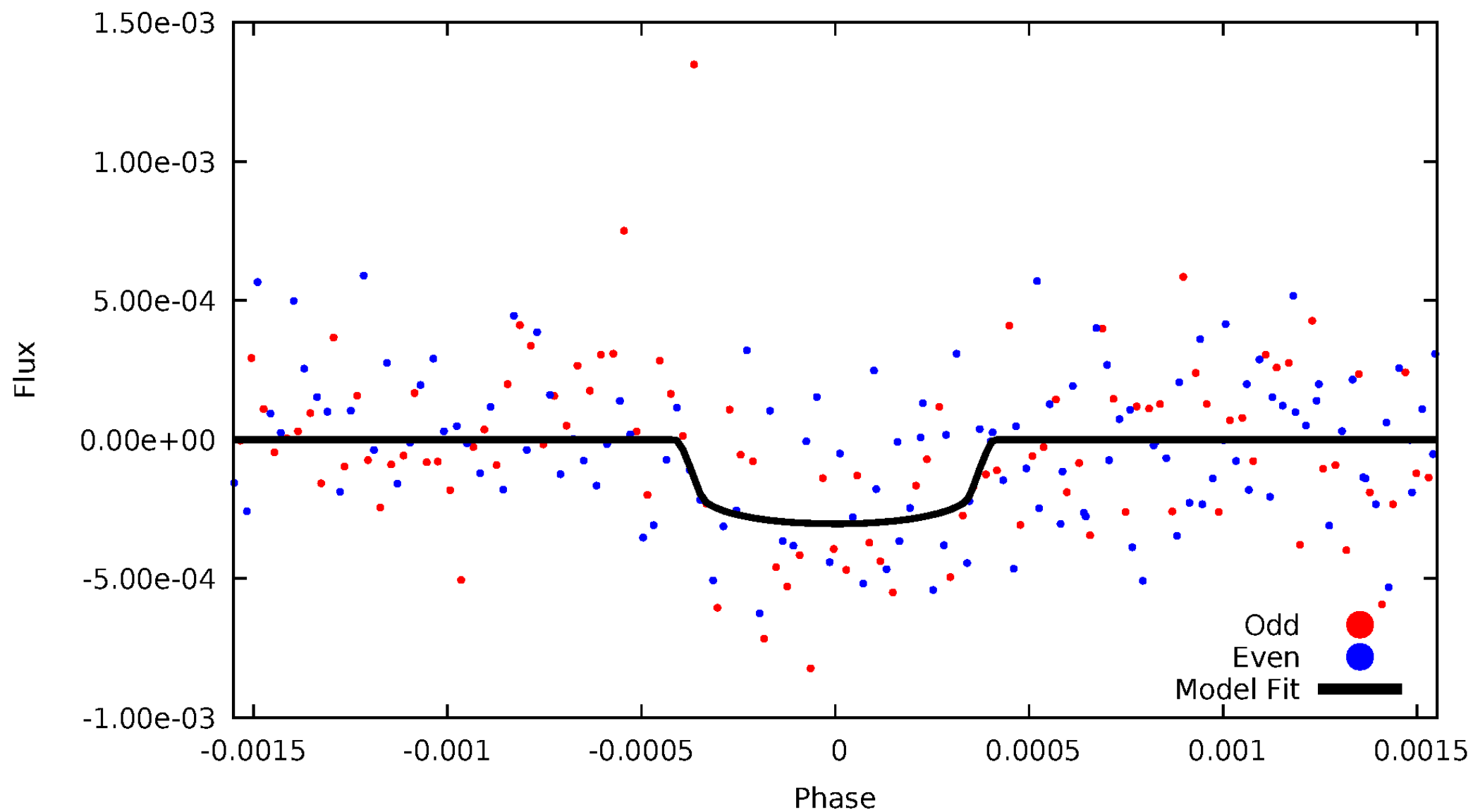


TCE 009210639-01



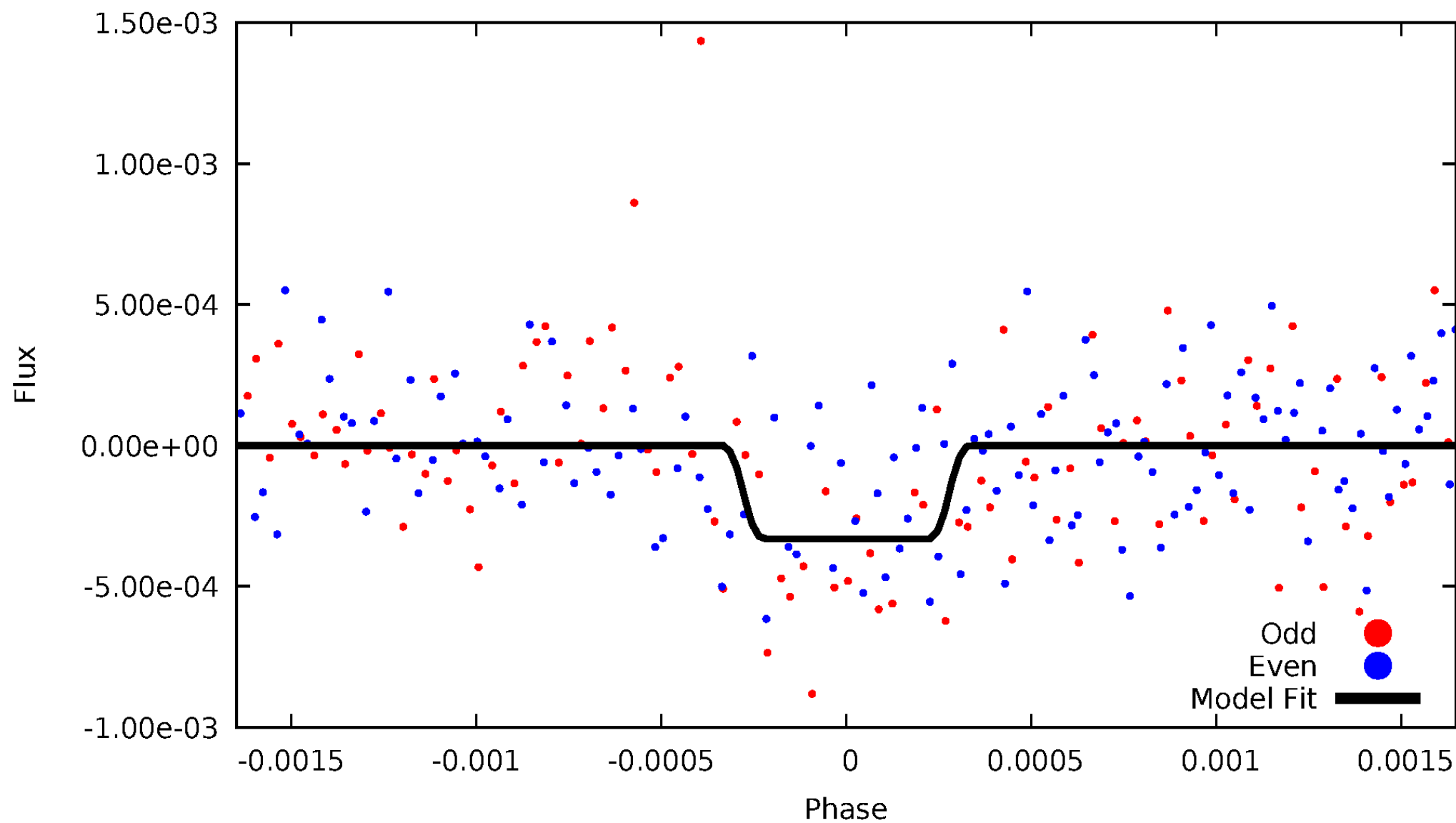
# DV Odd/Even

TCE 009210639-01



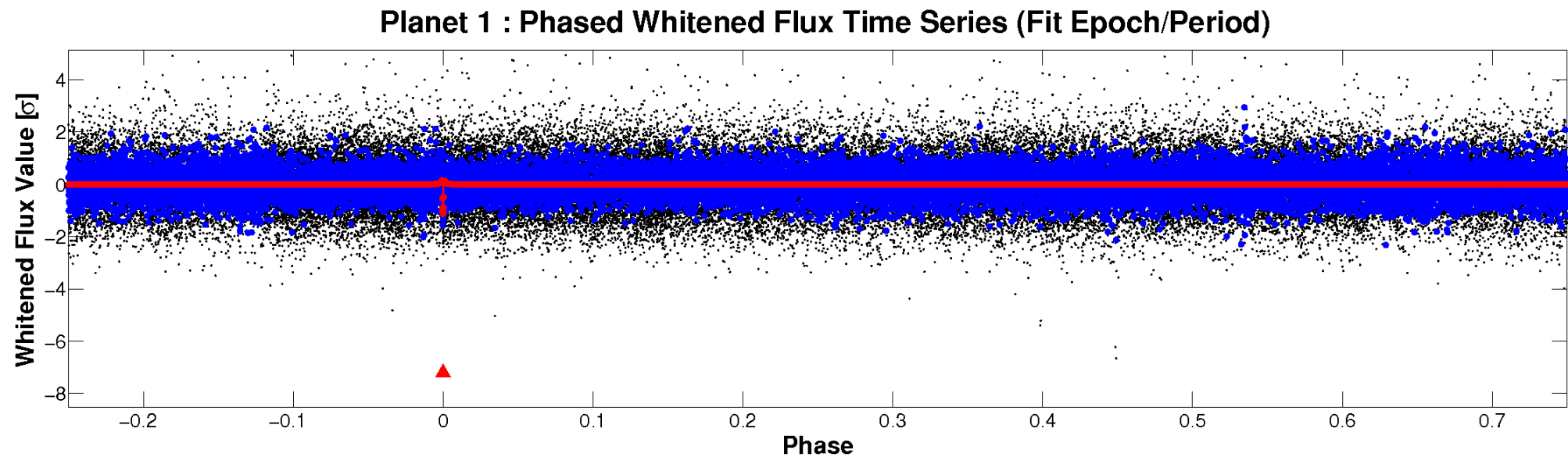
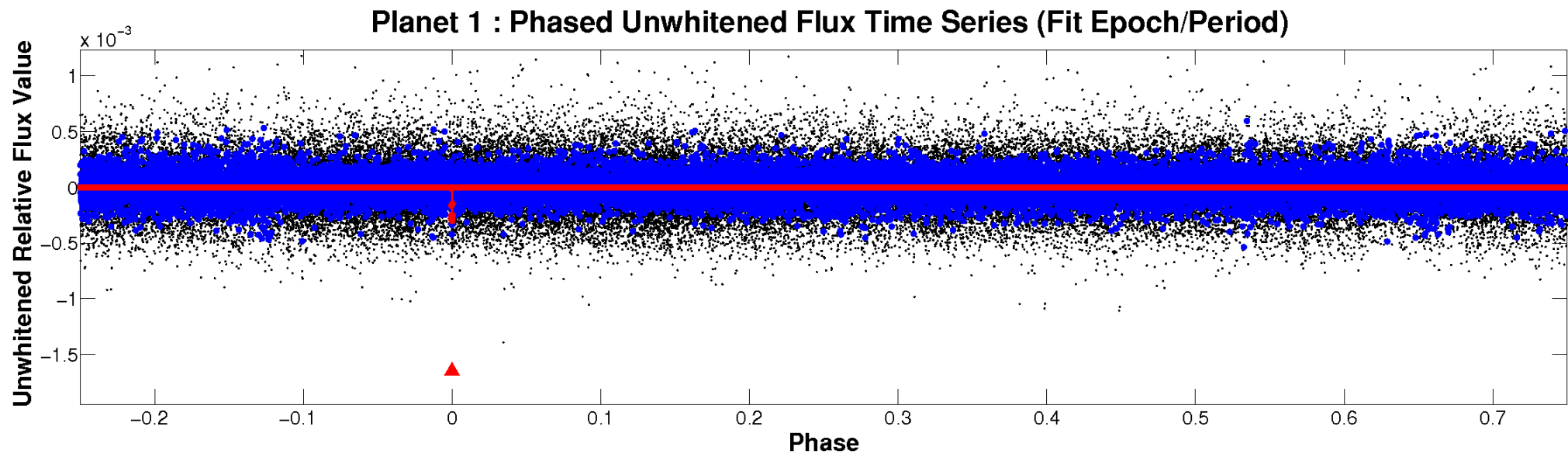
# ALT Odd/Even

TCE 009210639-01



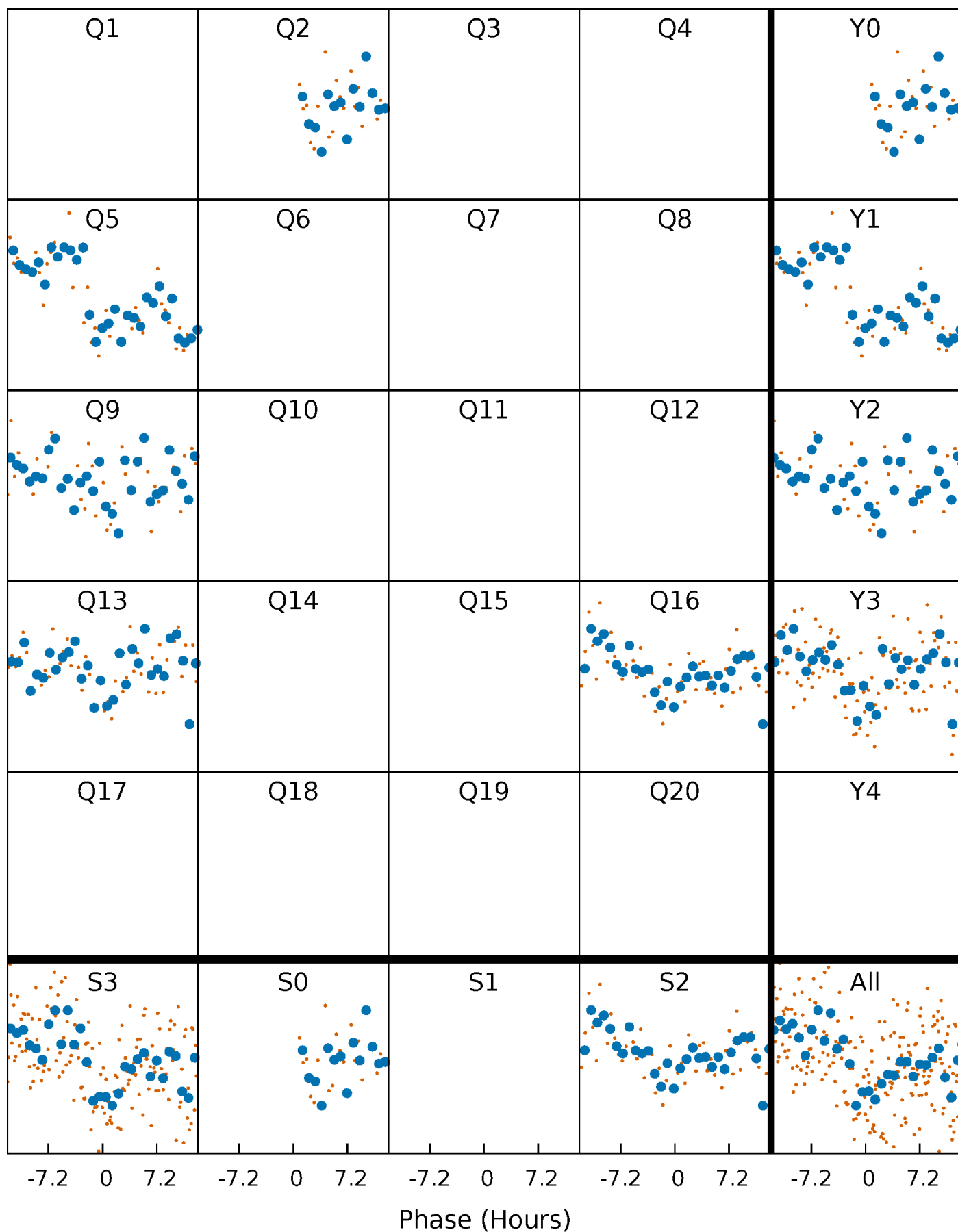


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

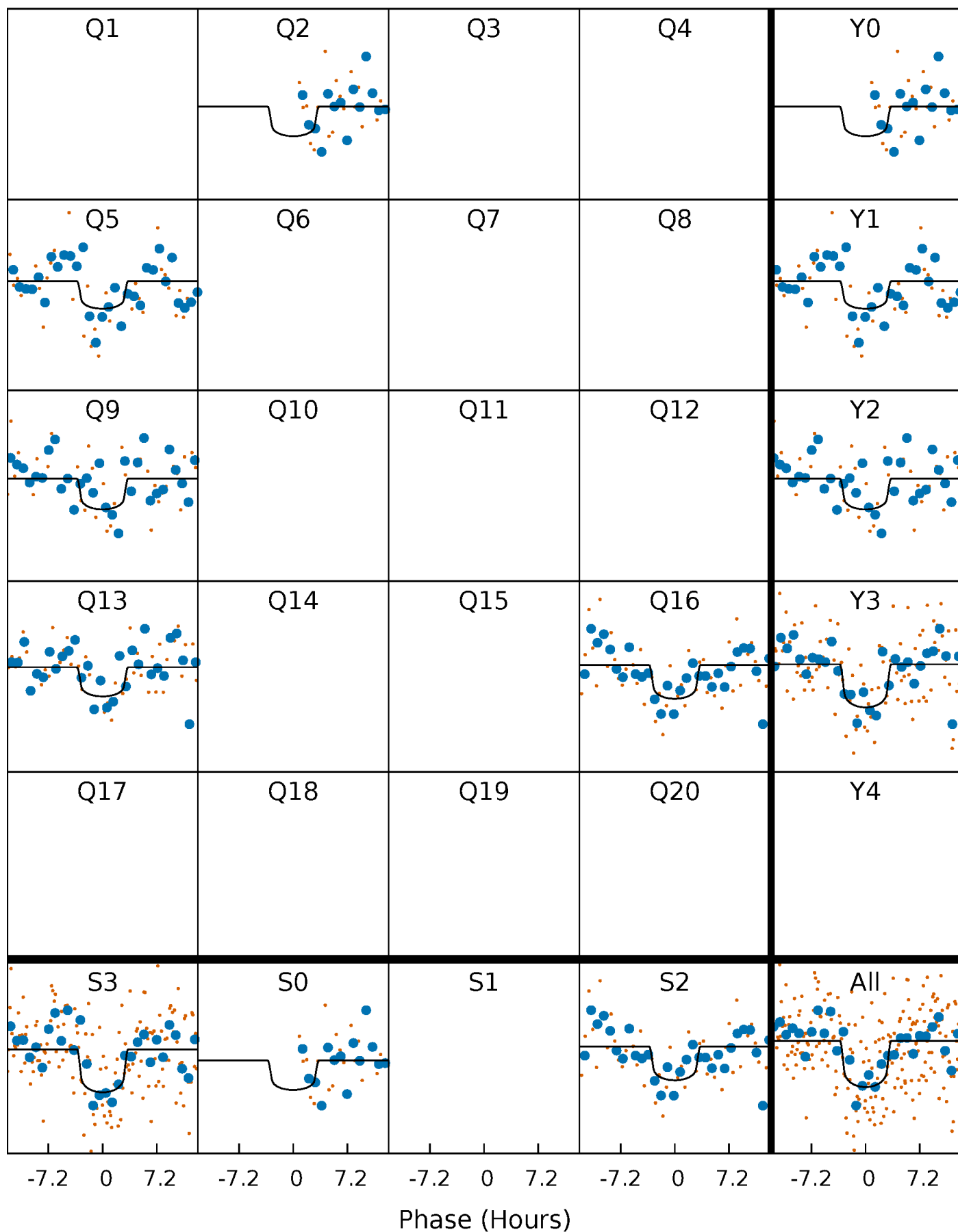
TCE 009210639-01 P=340.028940 Days  $T_0=169.731300$  (BKJD)





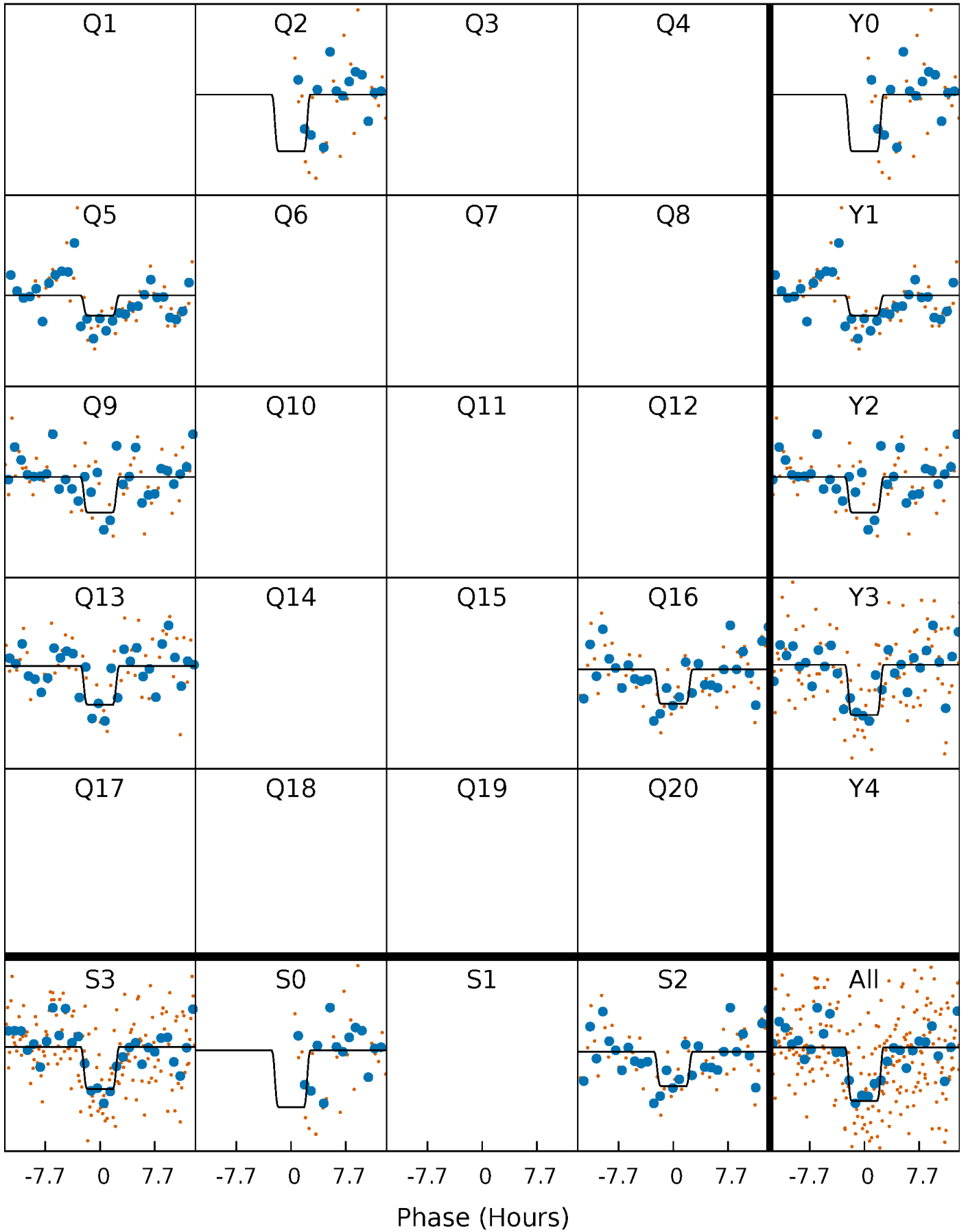
# DV Quarter-Phased Transit Curves

TCE 009210639-01 P=340.028940 Days  $T_0=169.731300$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

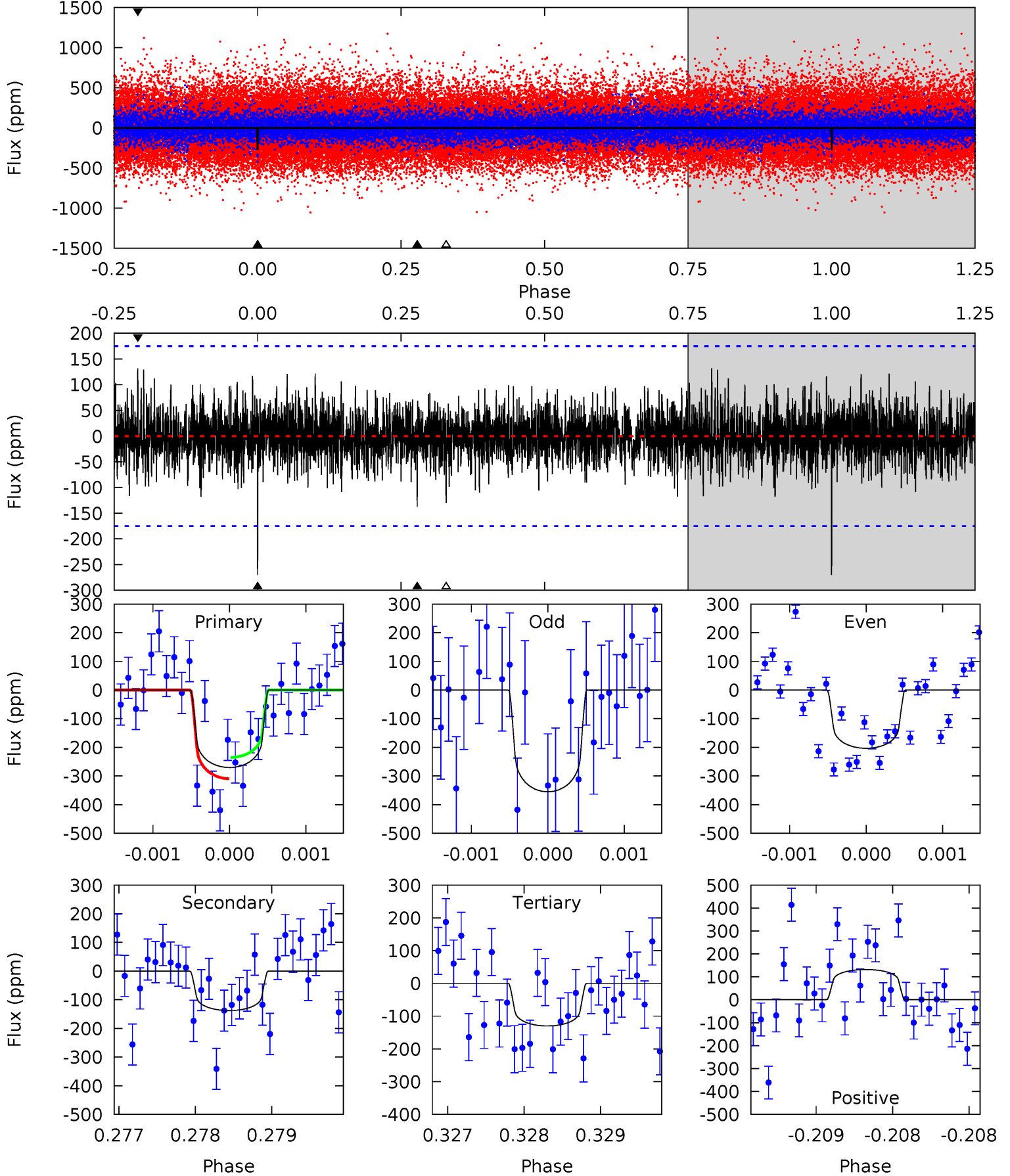
TCE 009210639-01 P=340.028061 Days  $T_0=169.742046$  (BKJD)



# DV Model-Shift Uniqueness Test

009210639-01, P = 340.028940 Days, E = 169.731300 Days

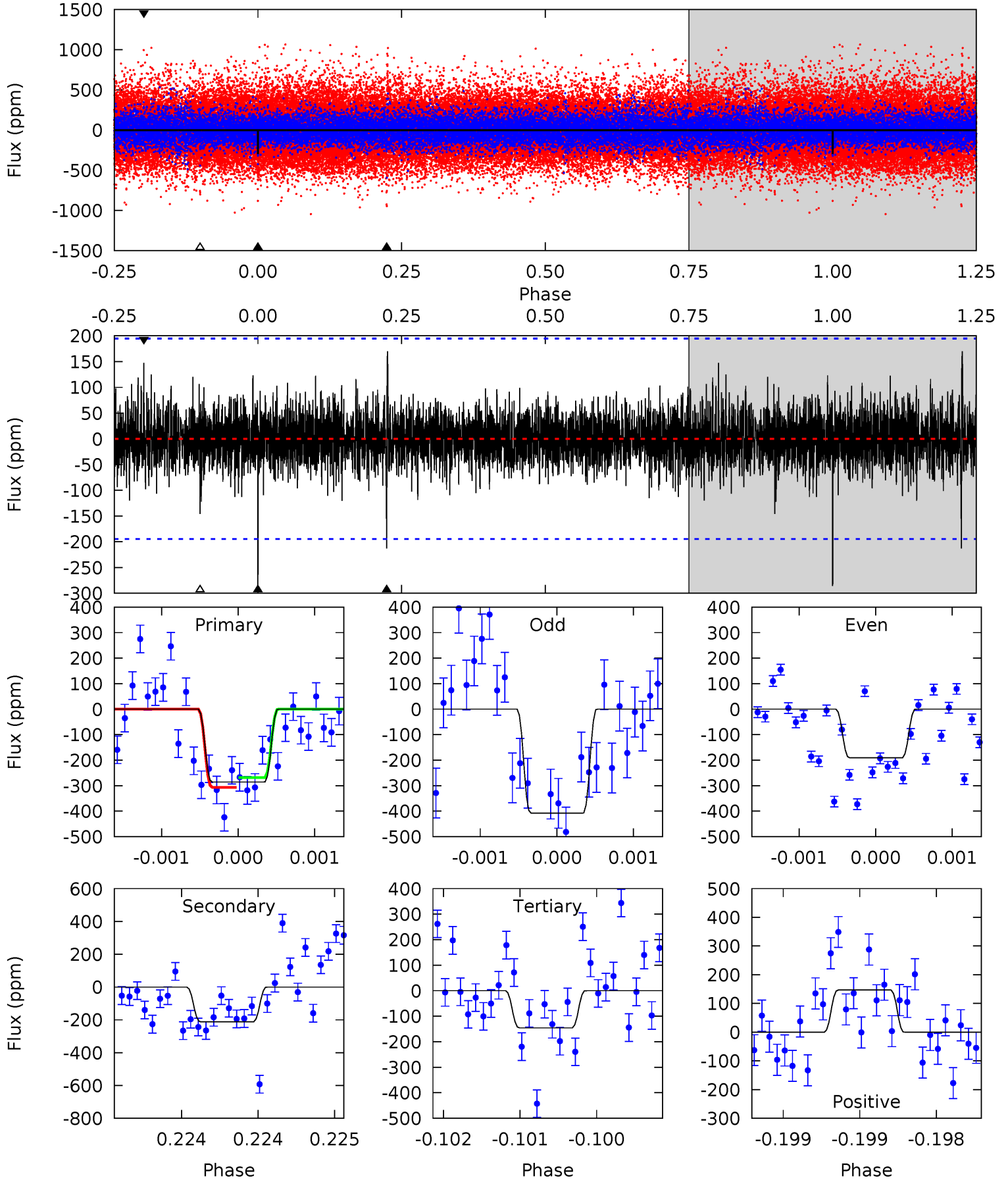
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.48	4.32	4.08	4.14	5.49	3.35	1.09	4.40	4.34	0.24	0.18	2.38	0.88	0.33	1.16



# Alt Model-Shift Uniqueness Test

009210639-01, P = 340.028061 Days, E = 169.742046 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
8.12	6.04	4.15	4.17	5.53	3.41	0.99	3.97	3.94	1.89	1.87	3.05	1.06	0.37	0.54



### Stellar Parameters For KIC 009210639

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6304^{+150}_{-206}$	$4.435^{+0.056}_{-0.224}$	$-0.140^{+0.250}_{-0.300}$	$1.058^{+0.349}_{-0.116}$	$1.110^{+0.154}_{-0.139}$	$1.319^{+0.384}_{-0.701}$
	+2%/-3%	+1%/-5%	+179%/-214%	+33%/-11%	+14%/-13%	+29%/-53%
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 009210639-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-138 \pm 32$	$2.60^{+1.88}_{-1.59}$	$412^{+30}_{-21}$	$4806^{+2768}_{-911}$	$10711^{+58961}_{-7211}$
Alt.	$-213 \pm 35$	$2.57^{+1.94}_{-1.57}$	$411^{+30}_{-20}$	$5311^{+3333}_{-1066}$	$17492^{+88531}_{-12007}$

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

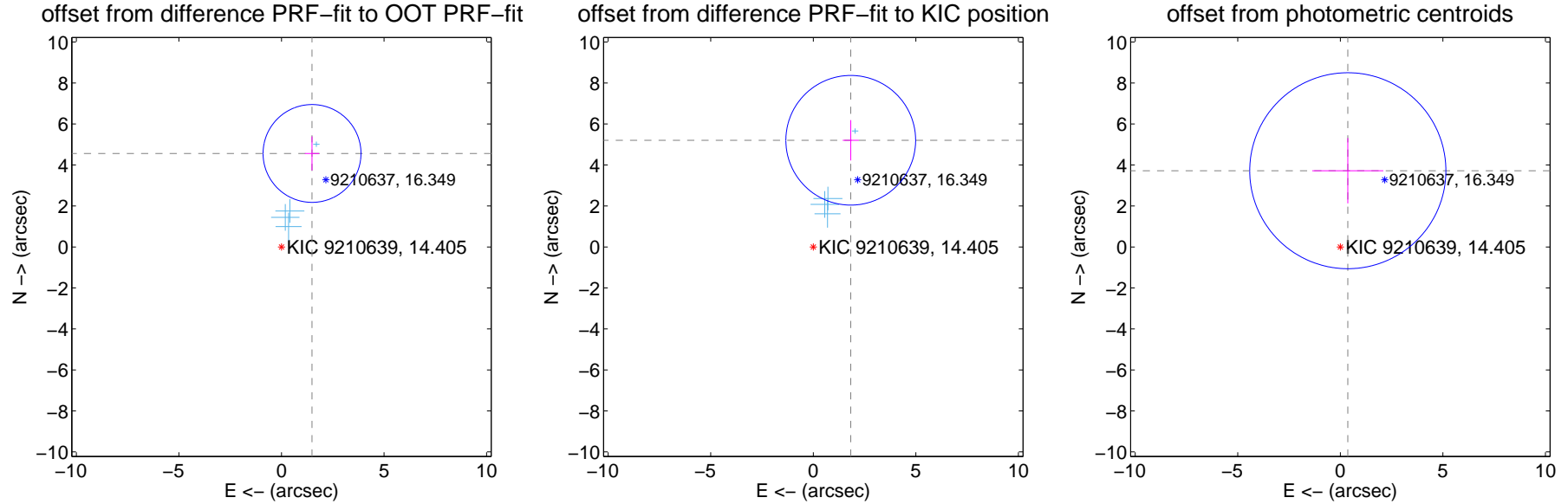
## DV Centroid Data

Supplemental centroid analysis for 009210639-01. Kepler magnitude: 14.40. Transit SNR 7.18

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.68 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.799 \pm 0.796$	<b>6.03</b>	$-1.489 \pm 0.348$	$4.562 \pm 0.829$
PRF-fit source offset from KIC position	$5.517 \pm 1.054$	<b>5.23</b>	$-1.826 \pm 0.392$	$5.206 \pm 0.983$
photometric centroid source offset	$3.74 \pm 1.59$	2.35	$-0.37 \pm 1.73$	$3.72 \pm 1.59$



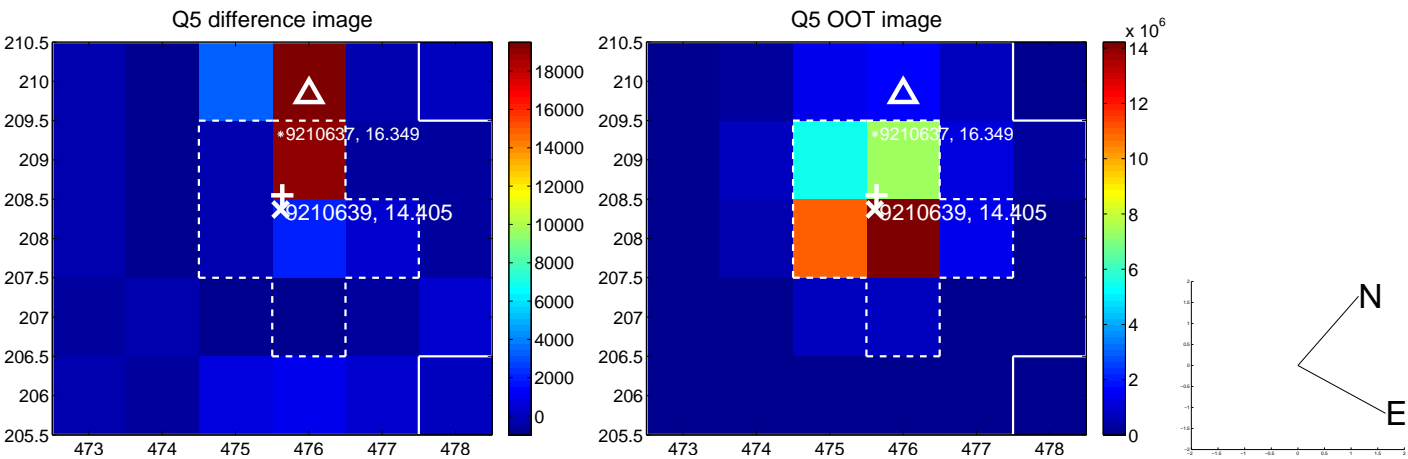
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

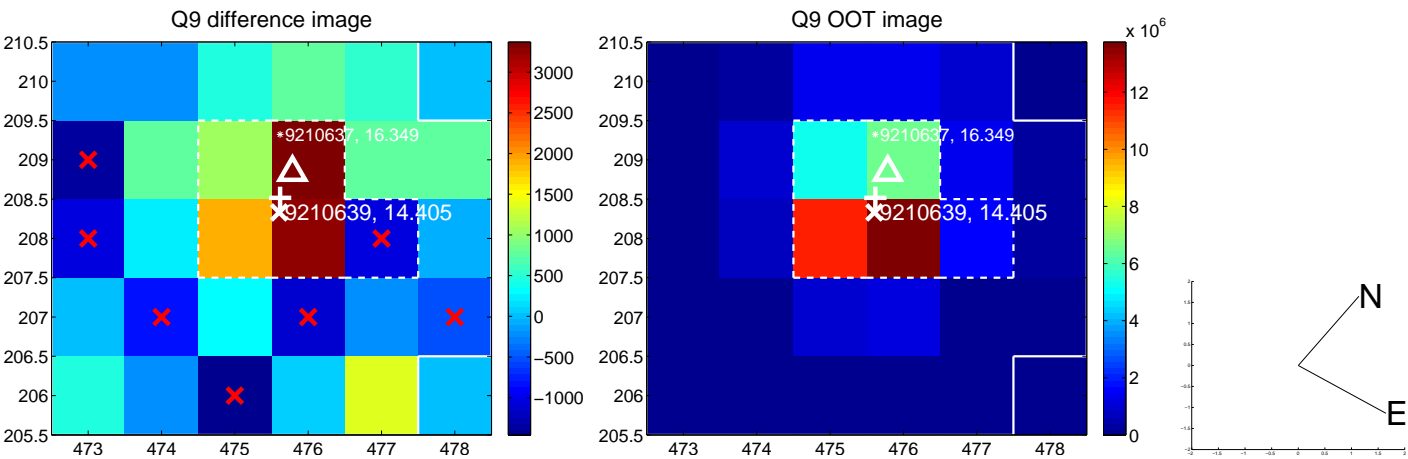




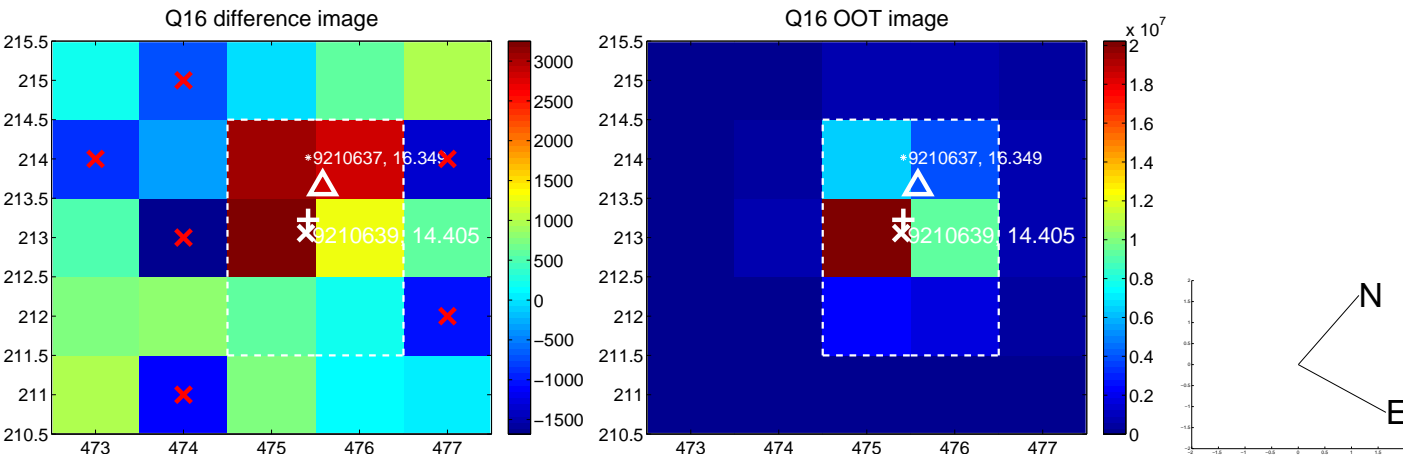
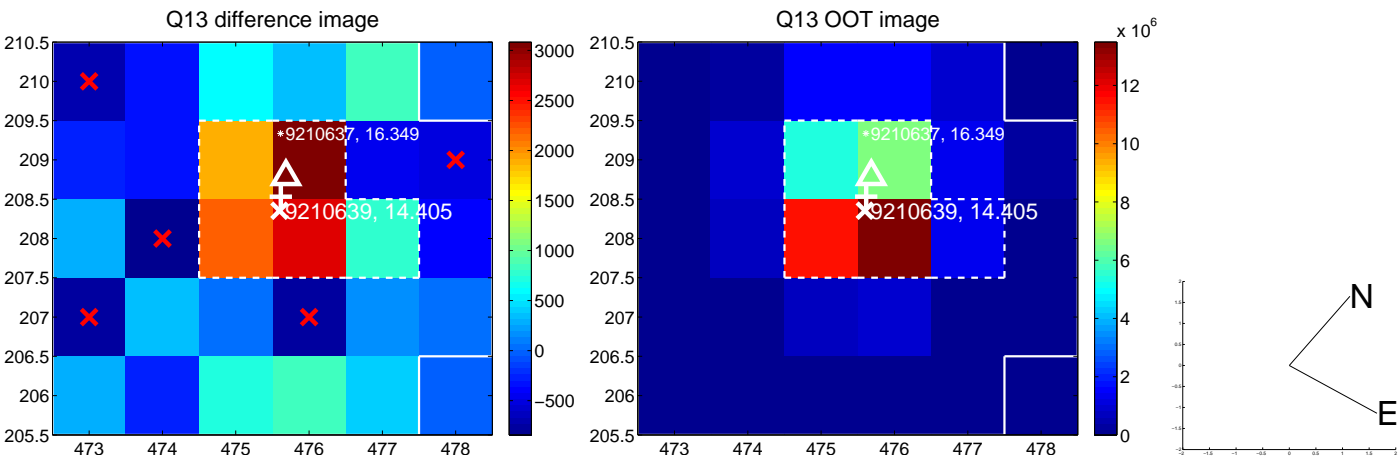
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



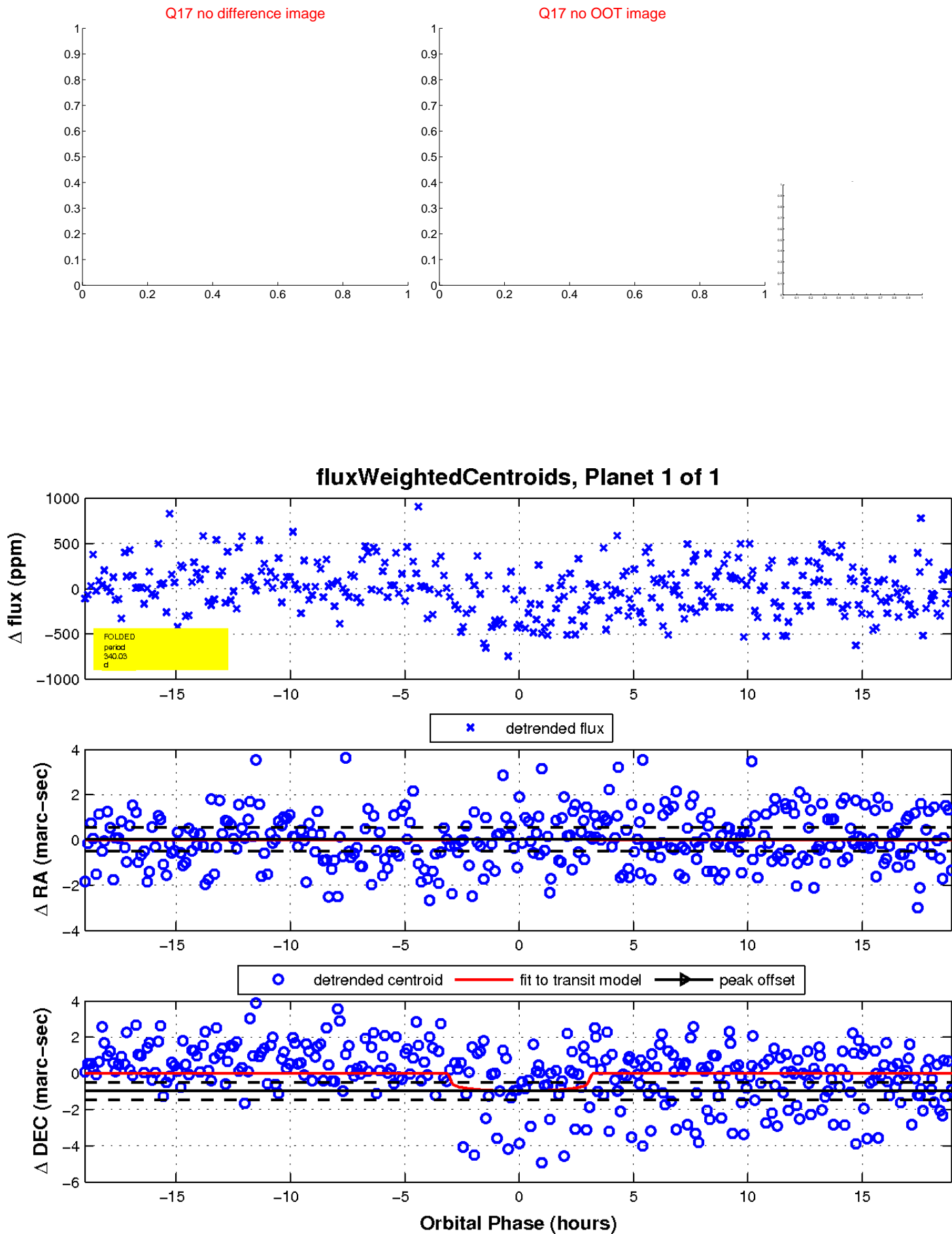
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



UKIRT Image

Declination

