

# KIC 009910677

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
009910677-01	OBS	No	367.846359	172.070280	1816.5	16.716	8.4	11.4	1.05	5843	6.75	1.07

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009910677-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_SKYE—LPP_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.

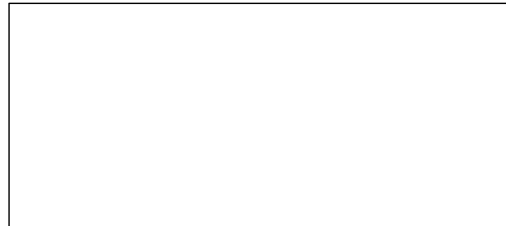
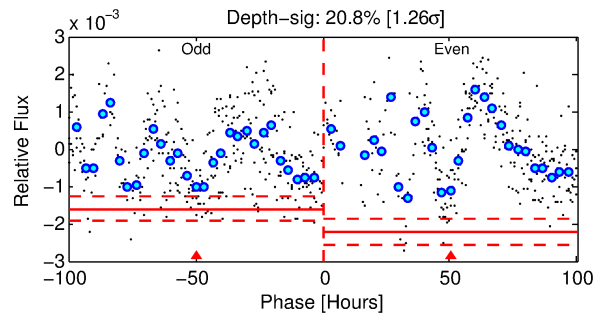
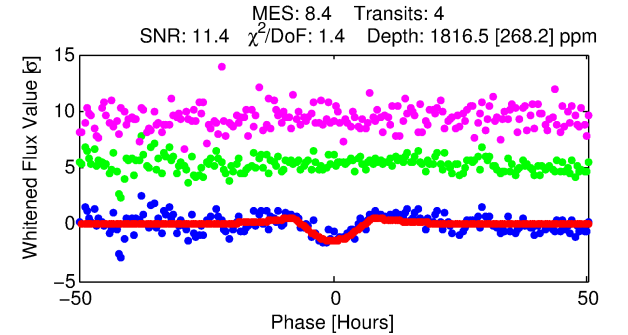
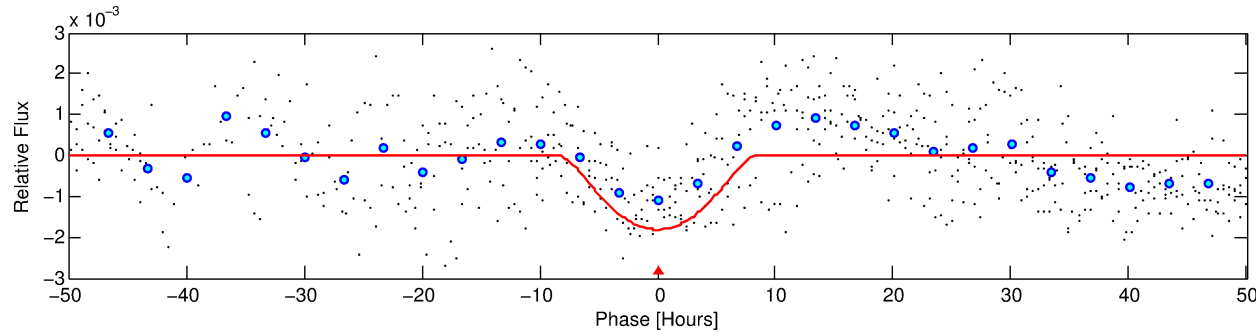
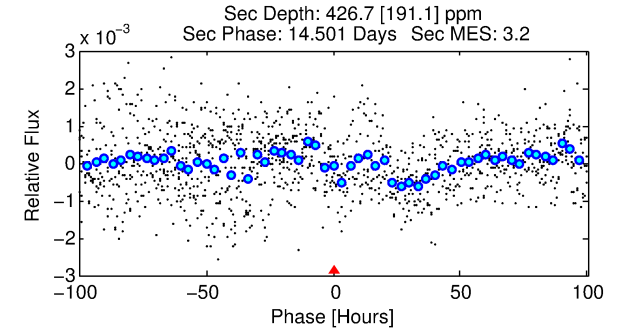
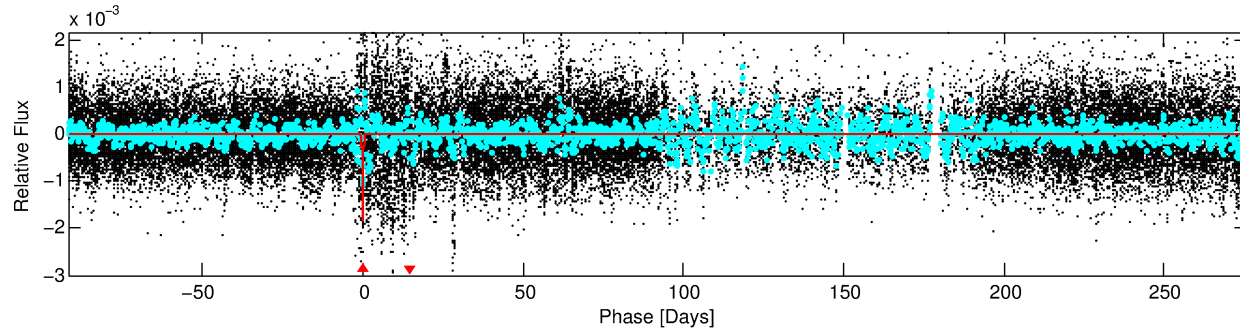
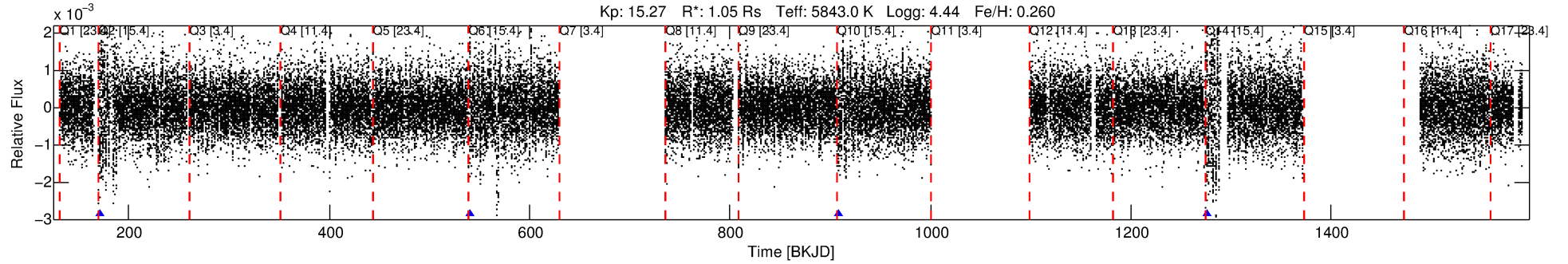
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 009910677-01

No Significant Match Found

# DV One-Page Summary

KIC: 9910677 Candidate: 1 of 1 Period: 367.846 d



## DV Fit Results:

Period = 367.84636 [0.01650] d  
Epoch = 172.0703 [0.0302] BKJD  
Rp/R\* = 0.0589 [0.0589]  
a/R\* = 70.01 [25.67]  
b = 0.97 [0.11]  
Seff = 1.07 [0.43]  
Teq = 259 [26] K  
Rp = 6.75 [7.04] Re  
a = 1.0359 [0.2623] AU  
Ag = 5536.50 [11530.99] [0.48σ]  
Teffp = 3459 [1778] K [1.80σ]

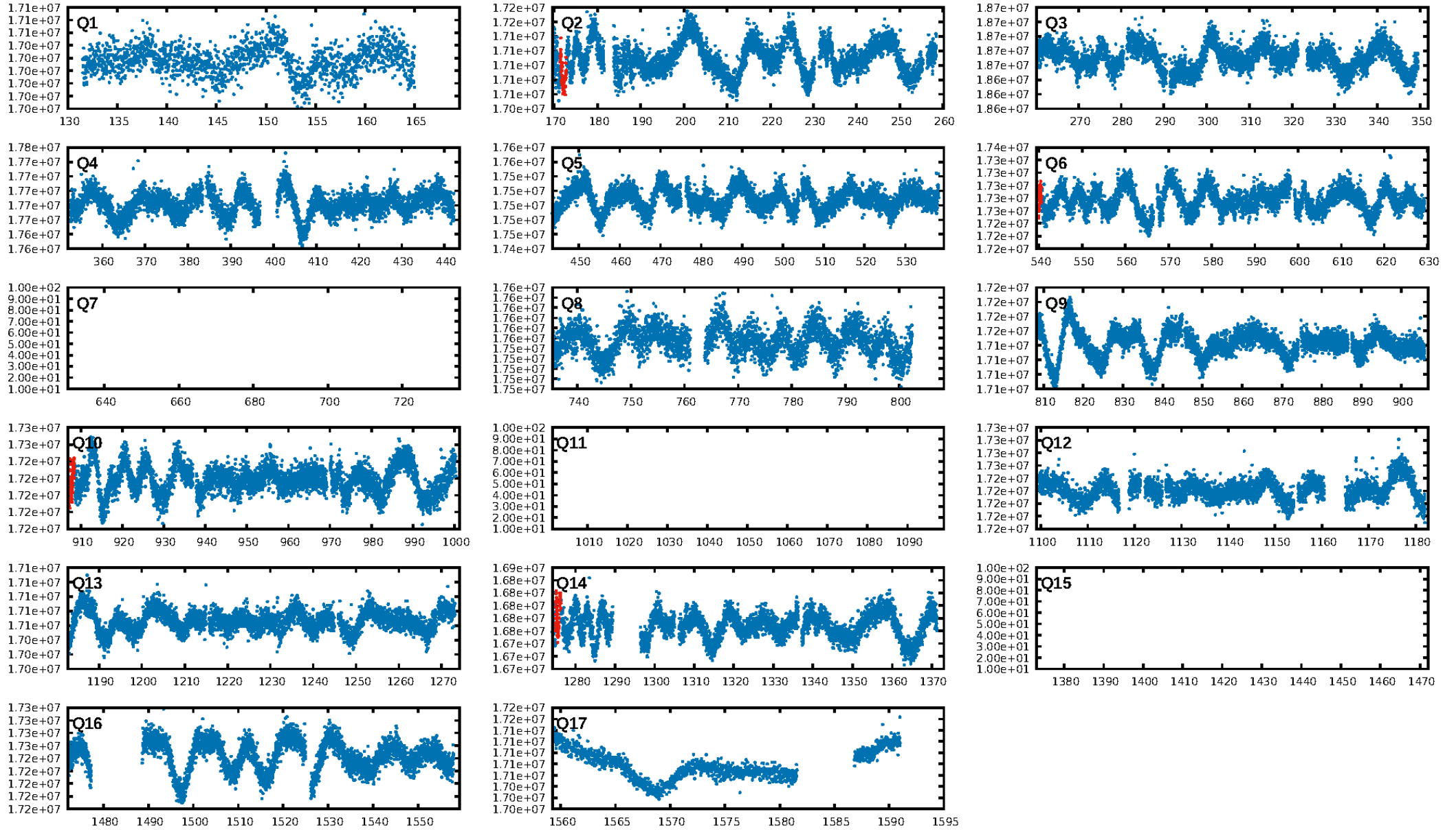
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 39.0%  
ModelChiSquareGof-sig: 98.8%  
Bootstrap-pfa: 1.67e-14  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -61.34  
Centroid-sig: 36.3%  
Centroid-so: 1.494 arcsec [1.12σ]  
OotOffset-rm: N/A  
KicOffset-rm: N/A  
OotOffset-st: 0/0/0/0 [0]  
KicOffset-st: 0/0/0/0 [0]  
DiffImageQuality-fgm: N/A  
DiffImageOverlap-fno: 1.00 [1/1]

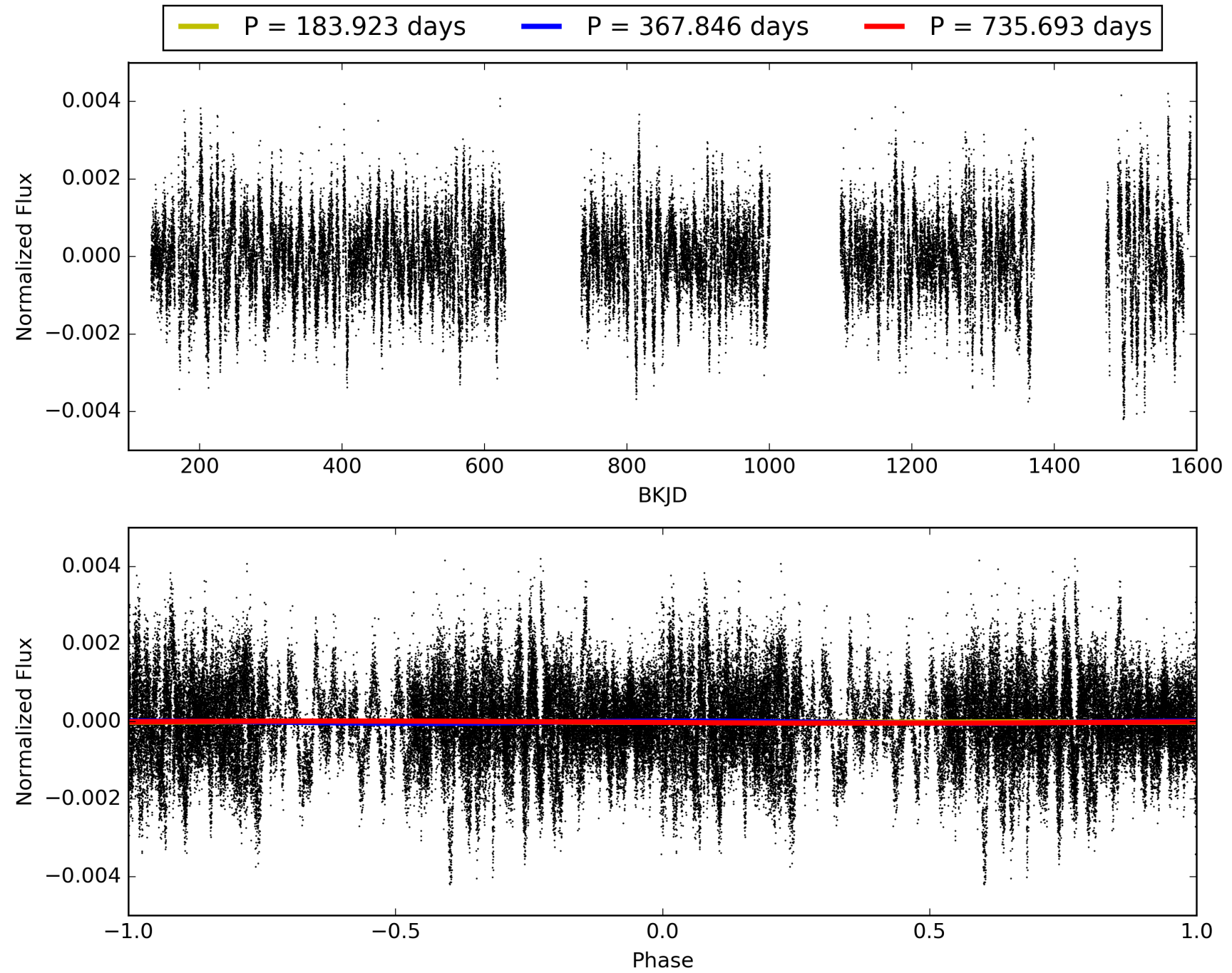
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 09:20:59 Z

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

# TCE 009910677-01, PDC Light Curves

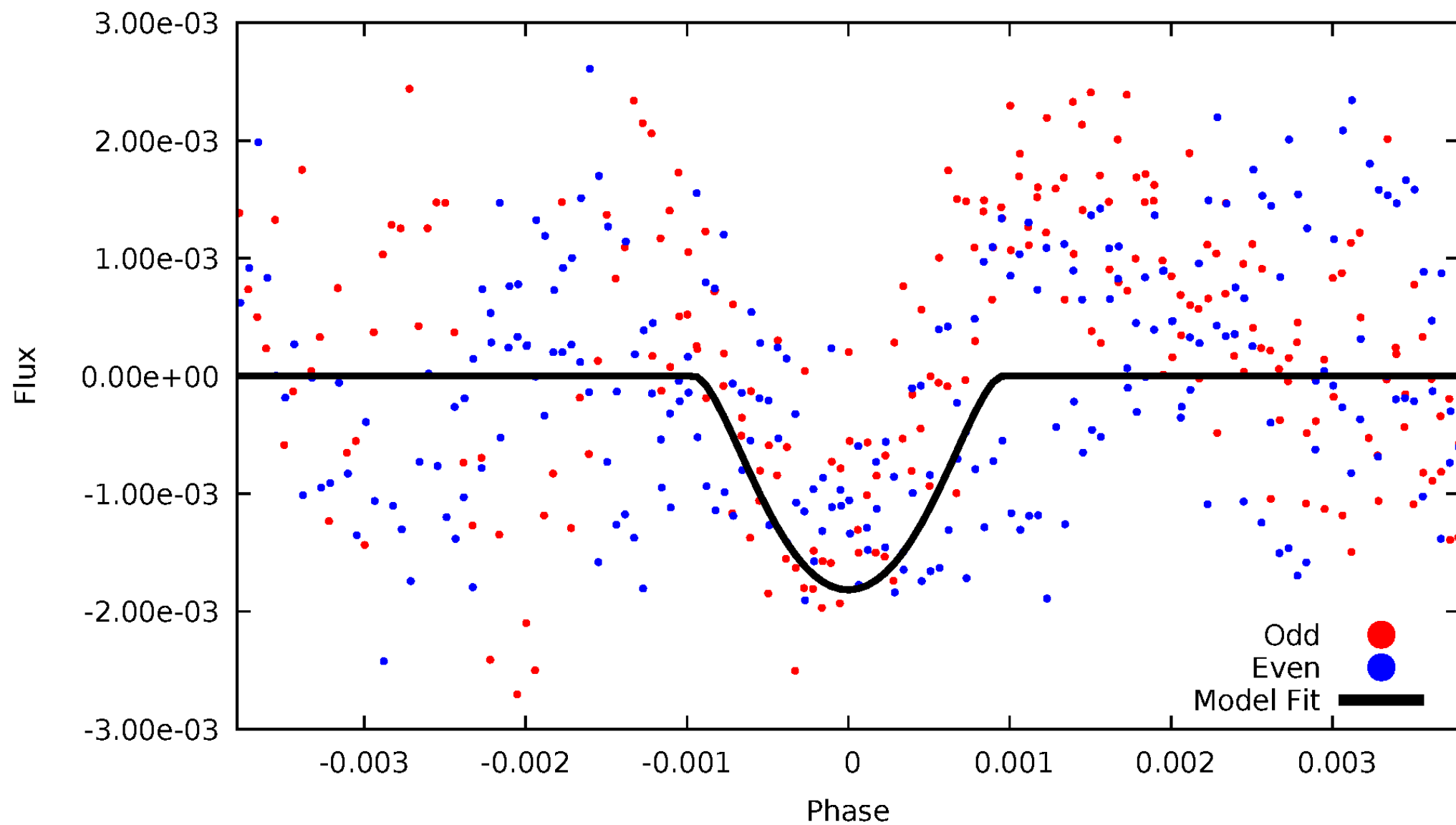


TCE 009910677-01



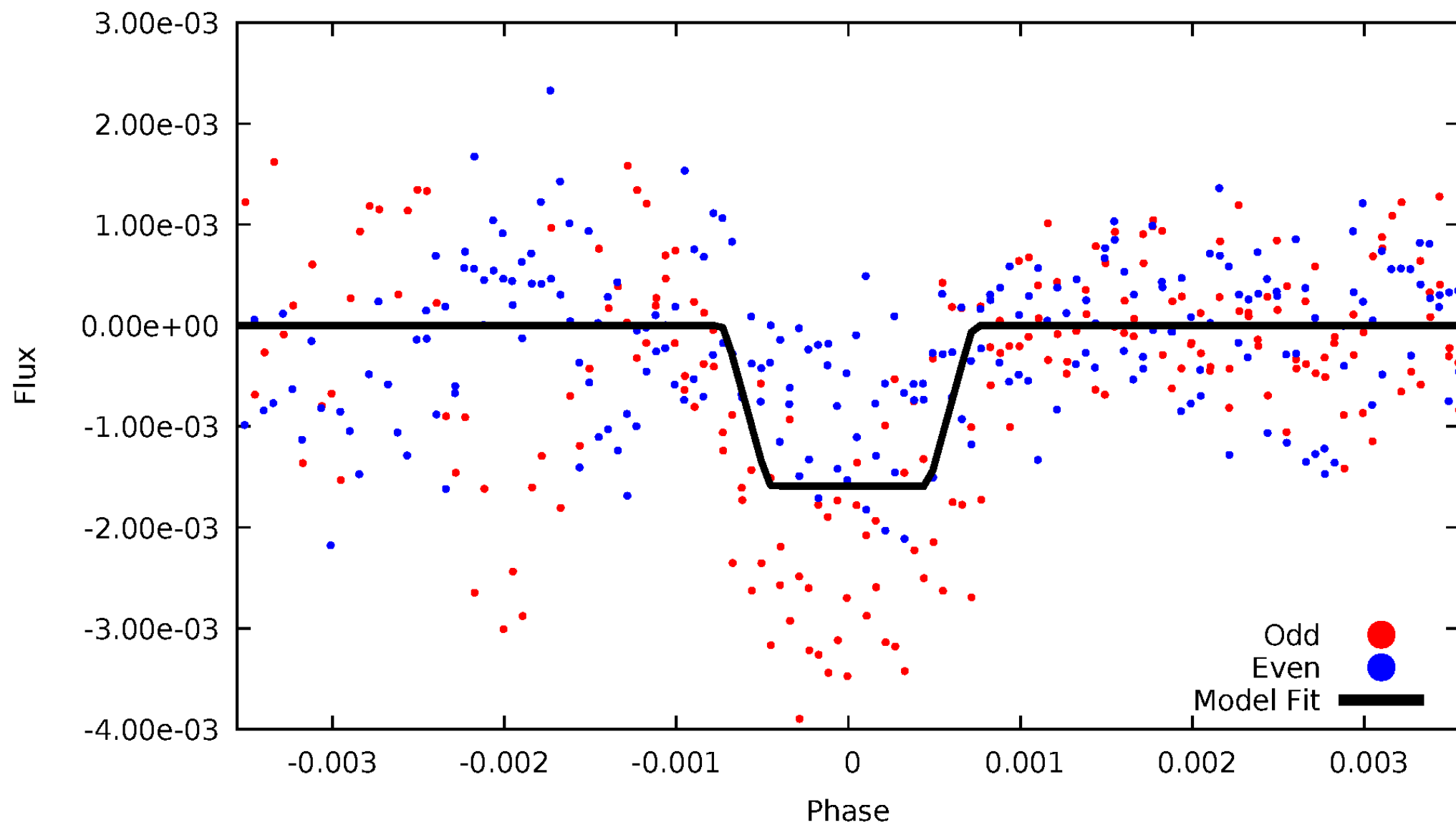
# DV Odd/Even

TCE 009910677-01

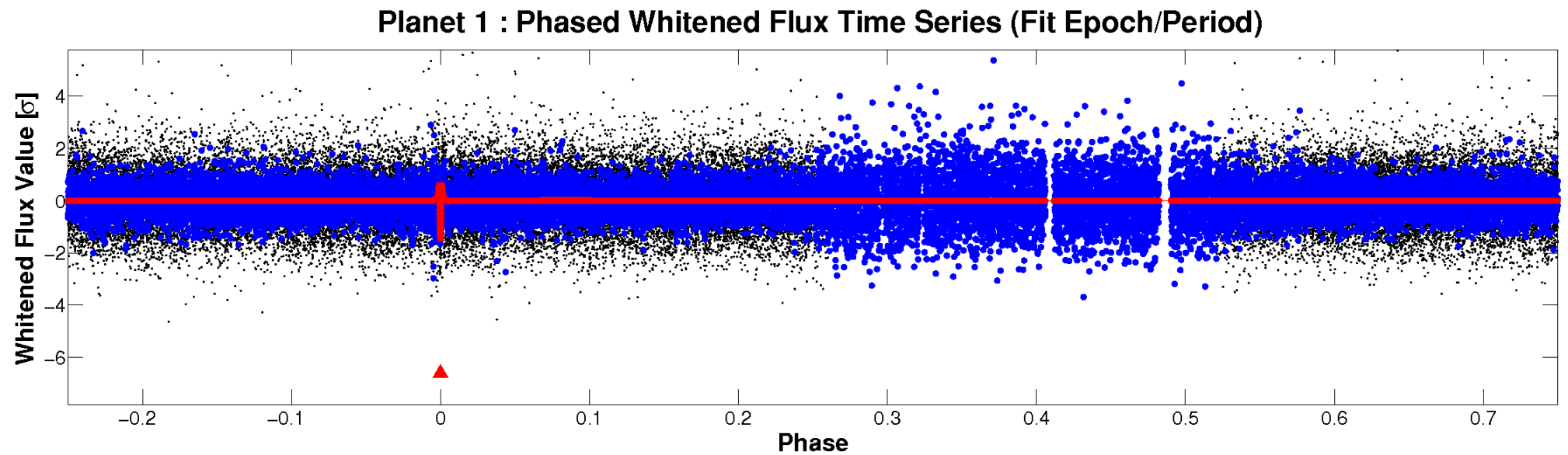
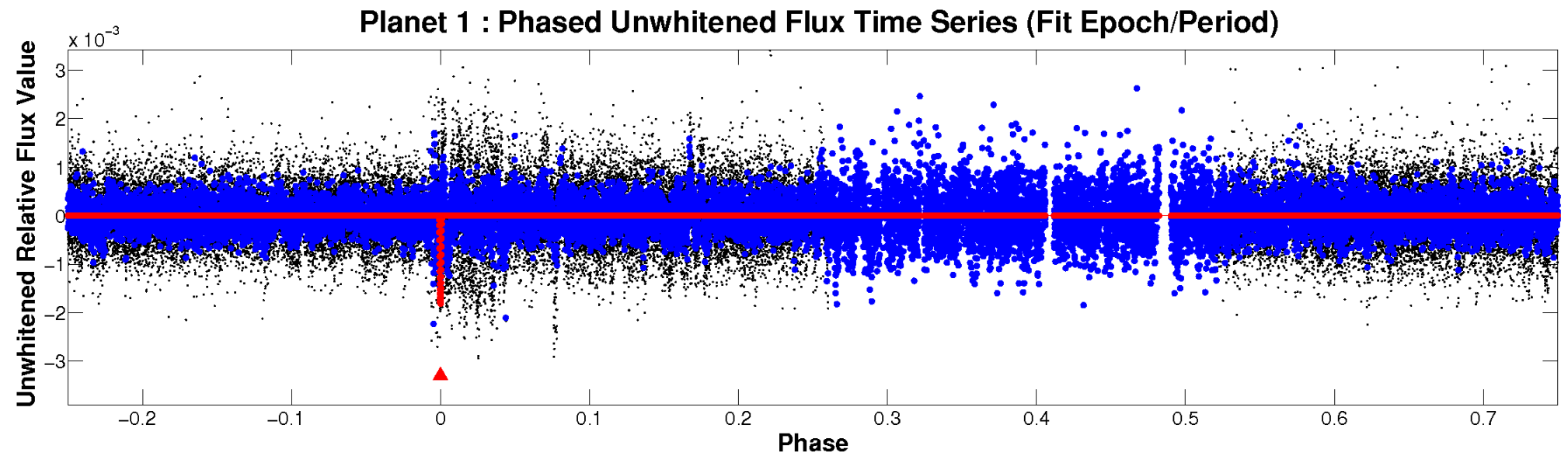


# ALT Odd/Even

TCE 009910677-01



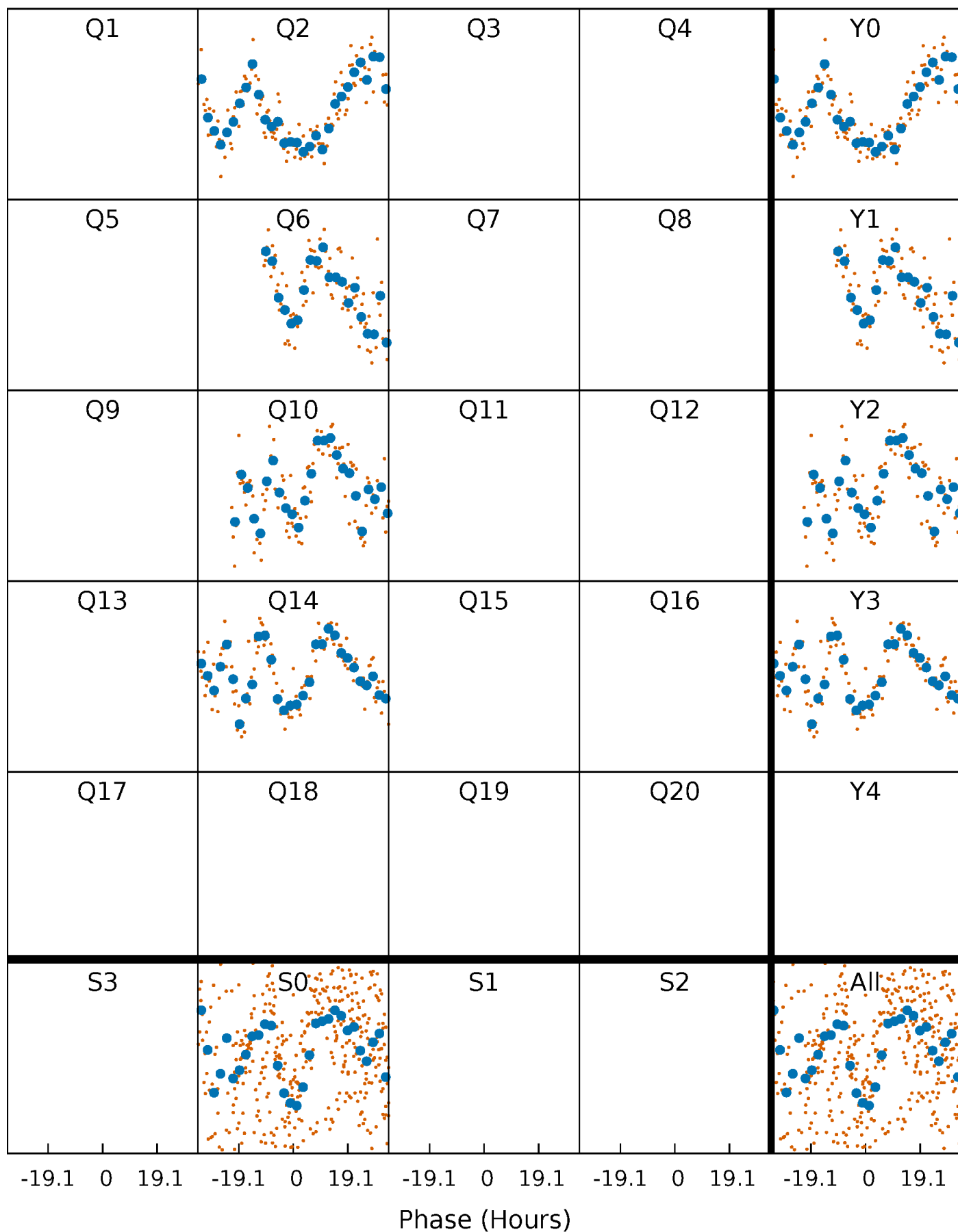
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

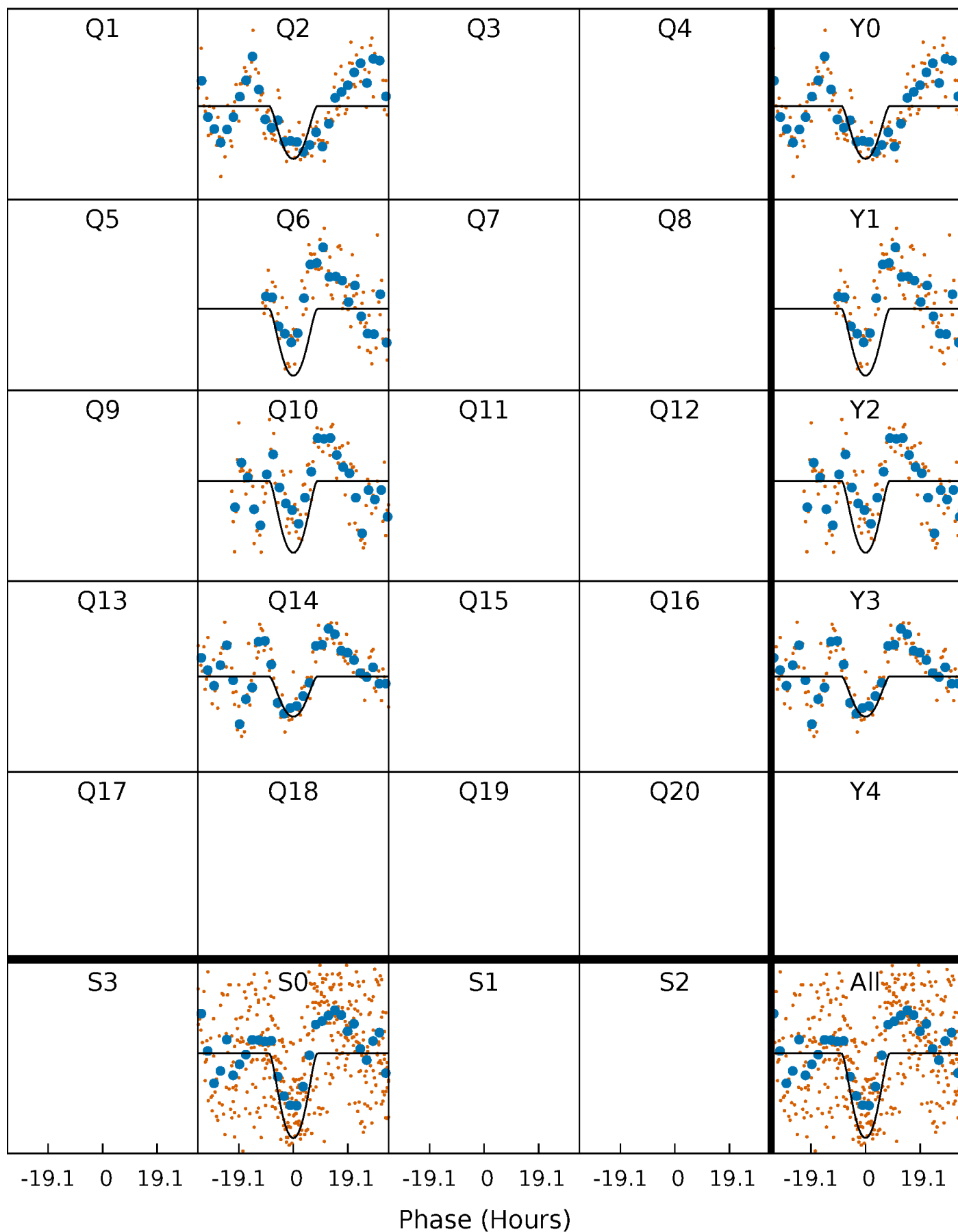
TCE 009910677-01 P=367.846359 Days  $T_0=172.070280$  (BKJD)





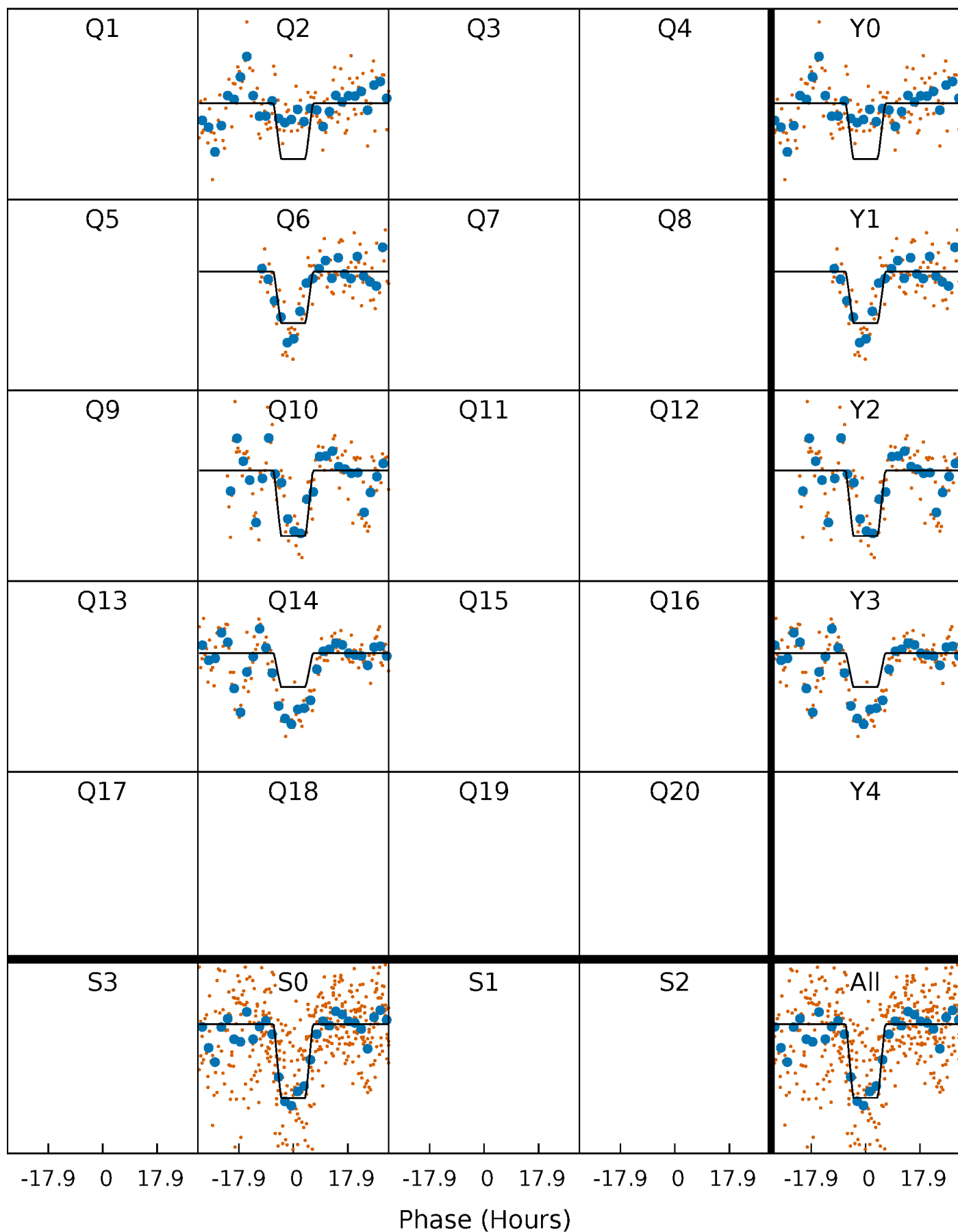
# DV Quarter-Phased Transit Curves

TCE 009910677-01 P=367.846359 Days  $T_0=172.070280$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

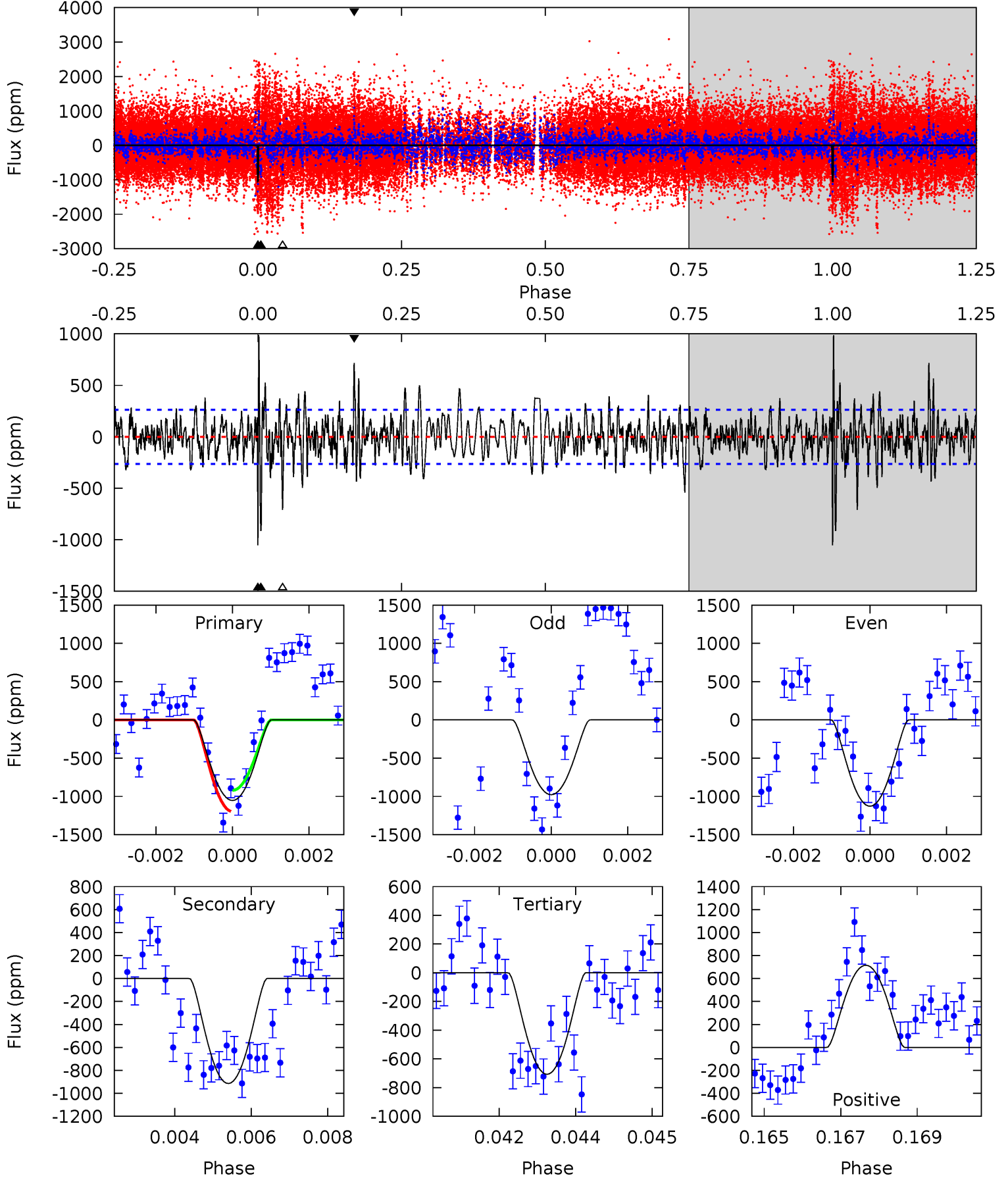
TCE 009910677-01 P=367.824514 Days  $T_0=172.118424$  (BKJD)



# DV Model-Shift Uniqueness Test

009910677-01, P = 367.846359 Days, E = 172.070280 Days

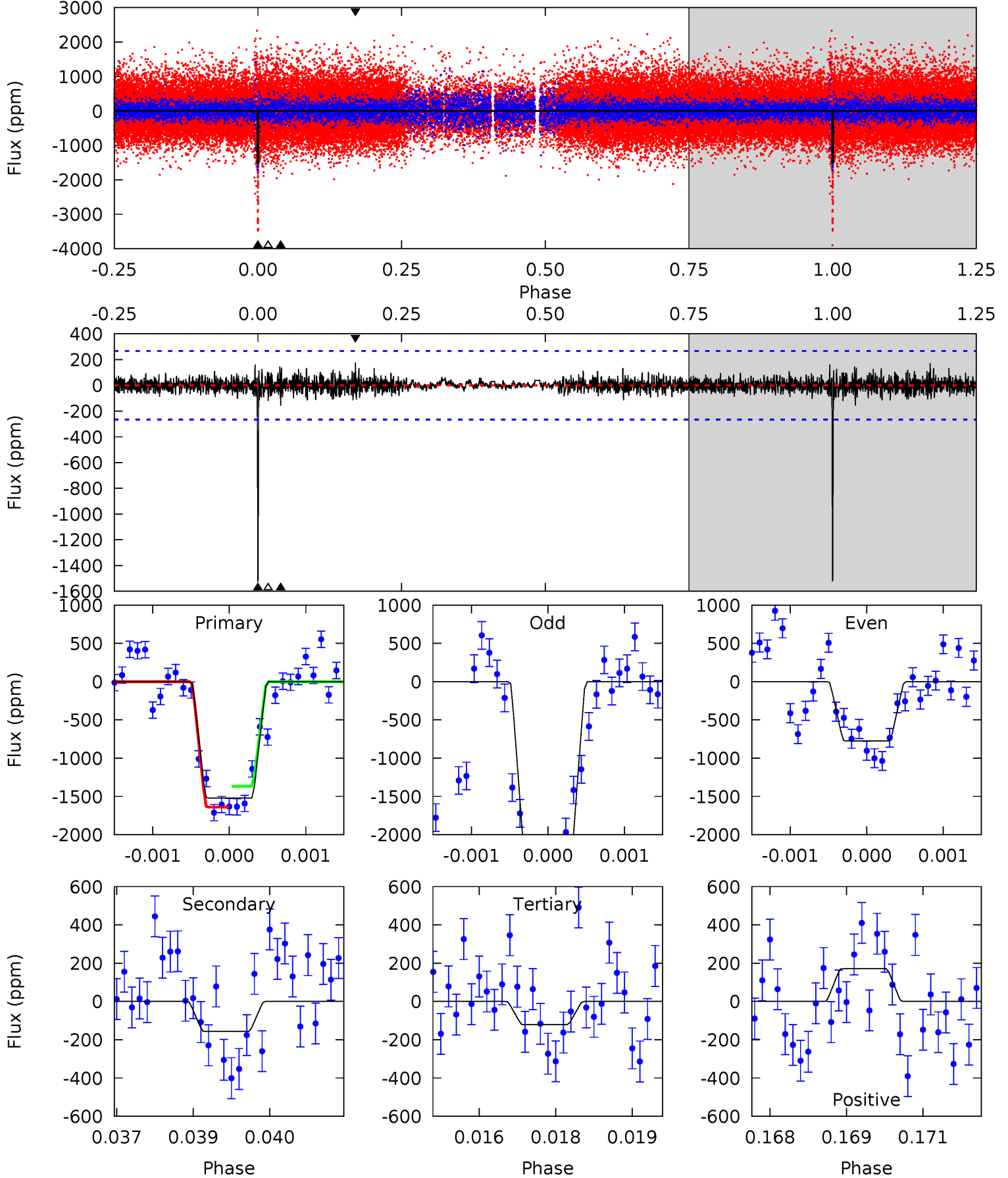
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.4	18.6	14.4	14.5	5.34	3.11	3.24	7.02	6.86	4.21	4.05	1.52	0.95	0.48	2.75



# Alt Model-Shift Uniqueness Test

009910677-01, P = 367.824514 Days, E = 172.118424 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
30.7	3.17	2.43	3.46	5.38	3.18	0.73	28.3	27.3	0.73	-0.29	15.5	1.13	0.10	2.72



### Stellar Parameters For KIC 009910677

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5843^{+162}_{-223}$	$4.436^{+0.067}_{-0.202}$	$0.260^{+0.150}_{-0.300}$	$1.049^{+0.315}_{-0.113}$	$1.094^{+0.122}_{-0.136}$	$1.337^{+0.381}_{-0.671}$
	+3%/-4%	+2%/-5%	+58%/-115%	+30%/-11%	+11%/-12%	+28%/-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 009910677-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-915 \pm 49$	$8.66^{+7.11}_{-5.32}$	$368^{+26}_{-19}$	$4054^{+1844}_{-710}$	$7334^{+40409}_{-5145}$
Alt.	$-157 \pm 50$	$6.56^{+6.26}_{-4.48}$	$366^{+28}_{-17}$	$3323^{+1663}_{-611}$	$2007^{+19385}_{-1509}$

$T_{max}$  = 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

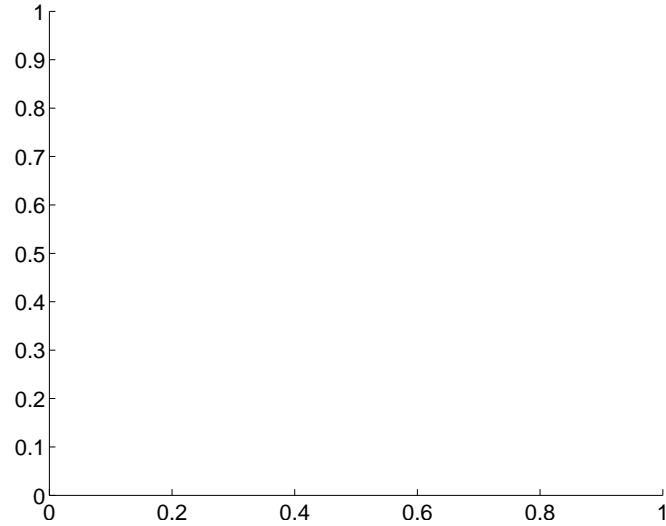
Supplemental centroid analysis for 009910677-01. Kepler magnitude: 15.27. Transit SNR 11.38

There are 0 quarters with good PRF difference image offsets

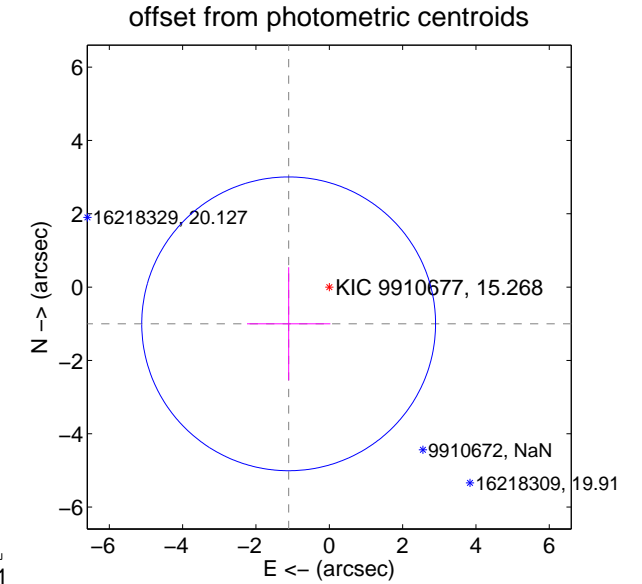
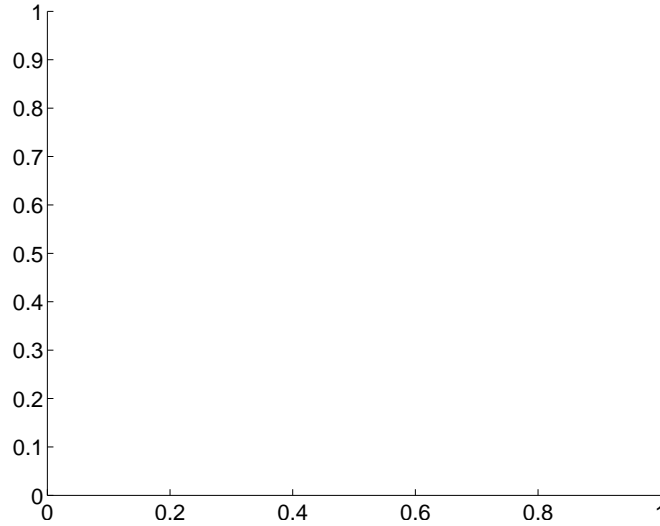
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	$1.49 \pm 1.34$	1.12	$1.11 \pm 1.14$	$-1.00 \pm 1.54$

There is no PRF-fit offset from OOT-fit



There is no PRF-fit offset from KIC



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.

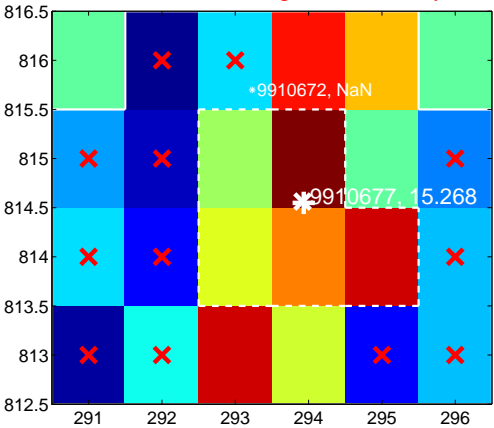
Q1 no difference image



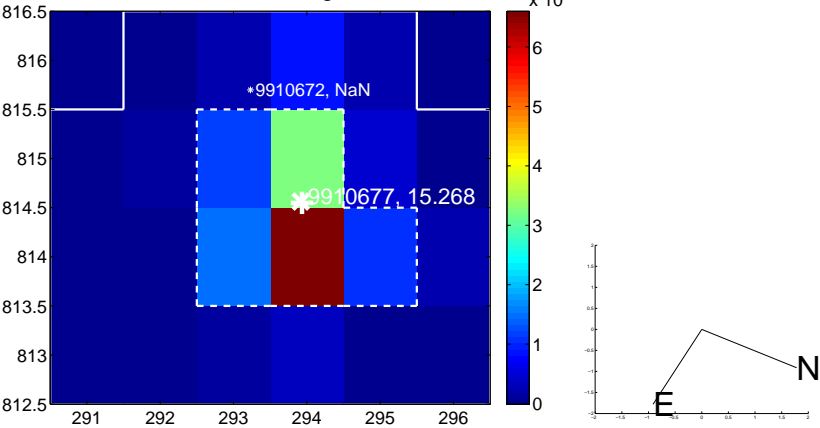
Q1 no OOT image



Q2 difference image. Poor Quality



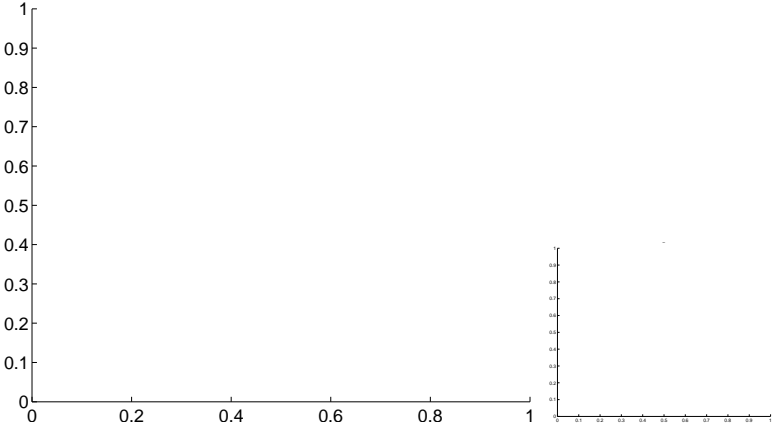
Q2 OOT image



Q3 no difference image



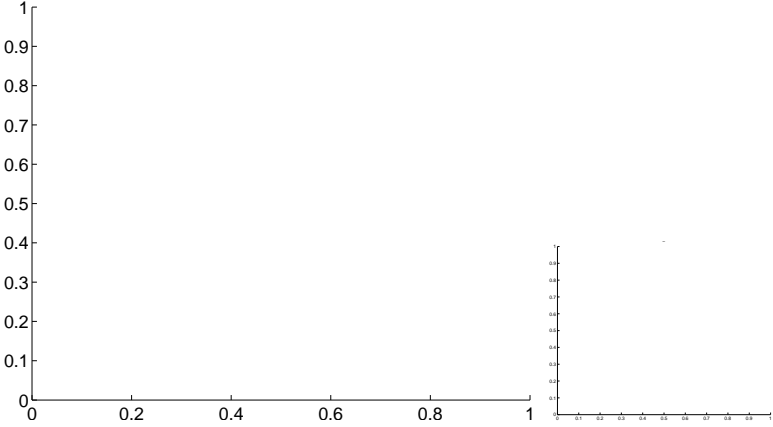
Q3 no OOT image



Q4 no difference image



Q4 no OOT image





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



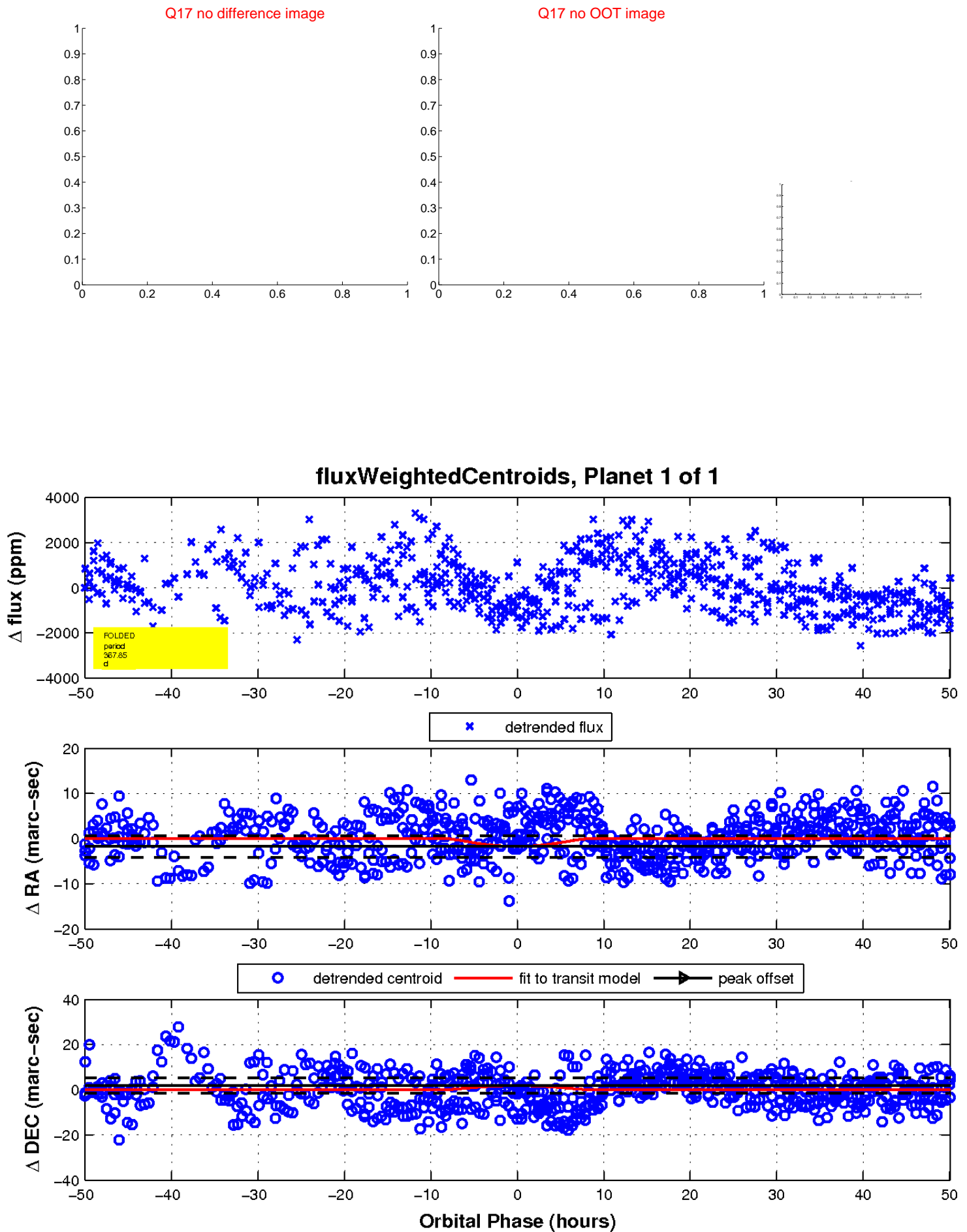
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

