

# KIC 002297349

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
002297349-01	OBS	No	319.874666	313.914485	124.2	11.933	7.2	6.6	1.65	6451	2.04	4.16

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002297349-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—INCONSISTENT_TRANS—CENT_SATURATED

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

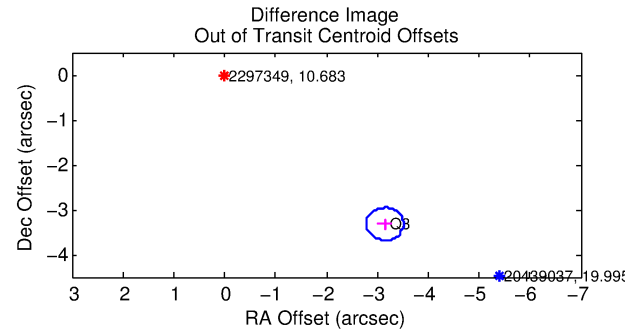
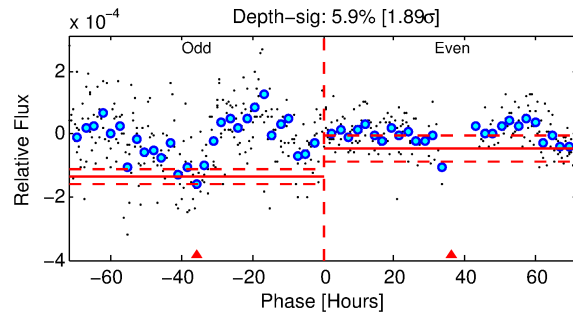
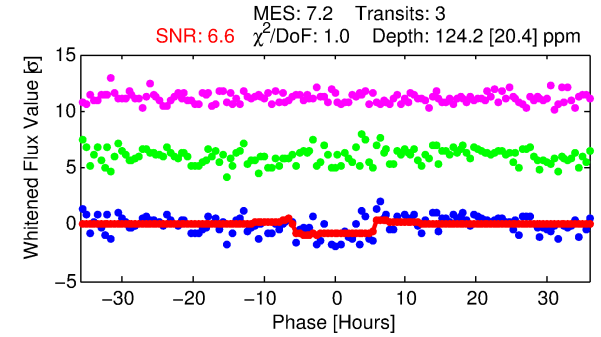
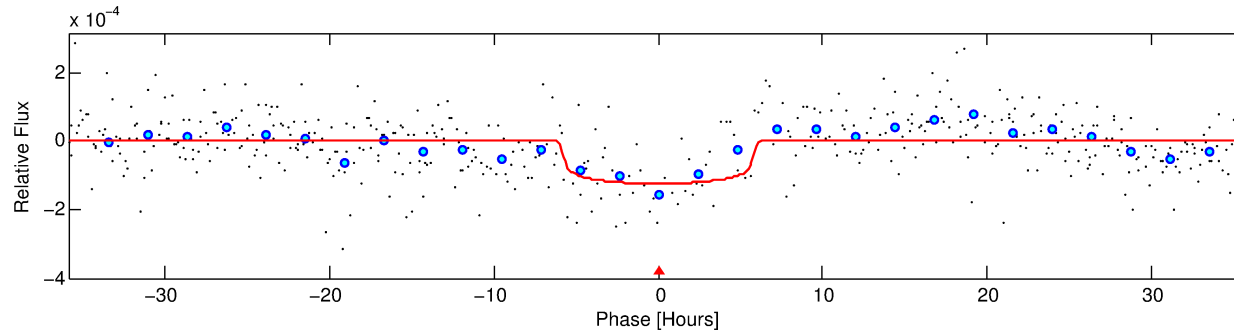
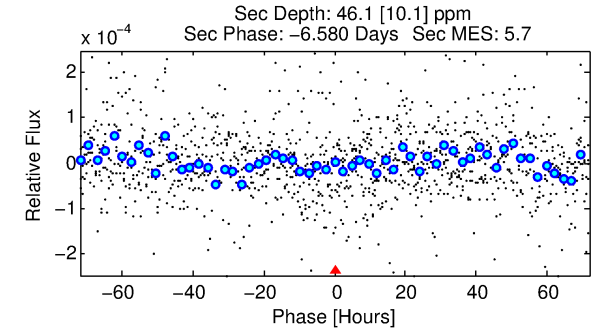
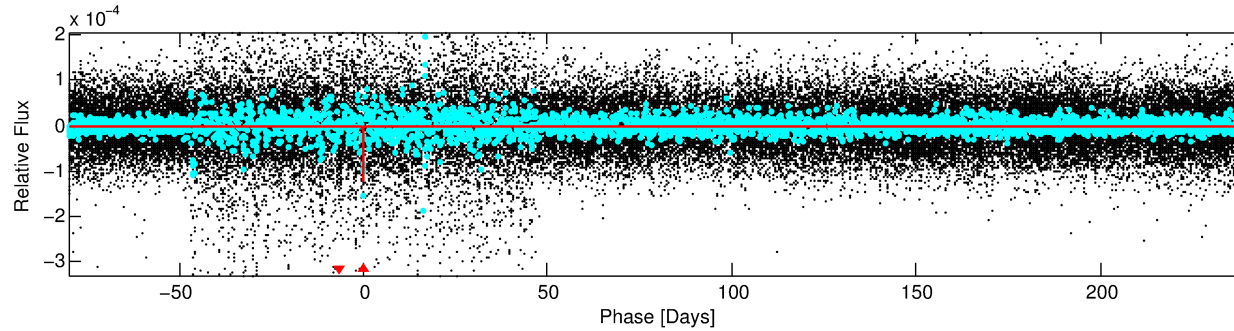
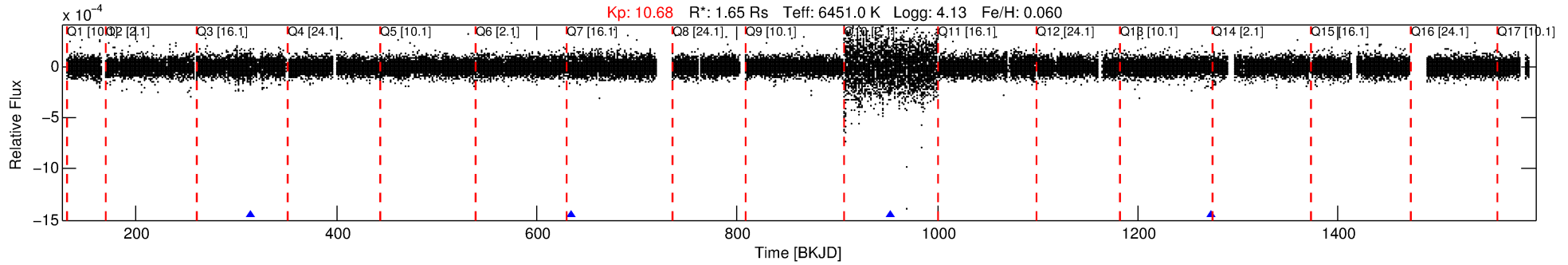
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 002297349-01

No Significant Match Found

# DV One-Page Summary

KIC: 2297349 Candidate: 1 of 1 Period: 319.875 d



## DV Fit Results:

Period = 319.87467 [0.01201] d  
Epoch = 313.9145 [0.0125] BKJD  
Rp/R\* = 0.0113 [0.0041]  
a/R\* = 124.51 [239.22]  
b = 0.81 [0.83]  
Seff = 4.16 [1.35]  
Teq = 364 [30] K  
Rp = 2.04 [0.87] Re  
a = 1.0077 [0.1999] AU  
Ag = 6203.66 [5057.42] [1.23σ]  
Teffp = 4997 [958] K [4.83σ]

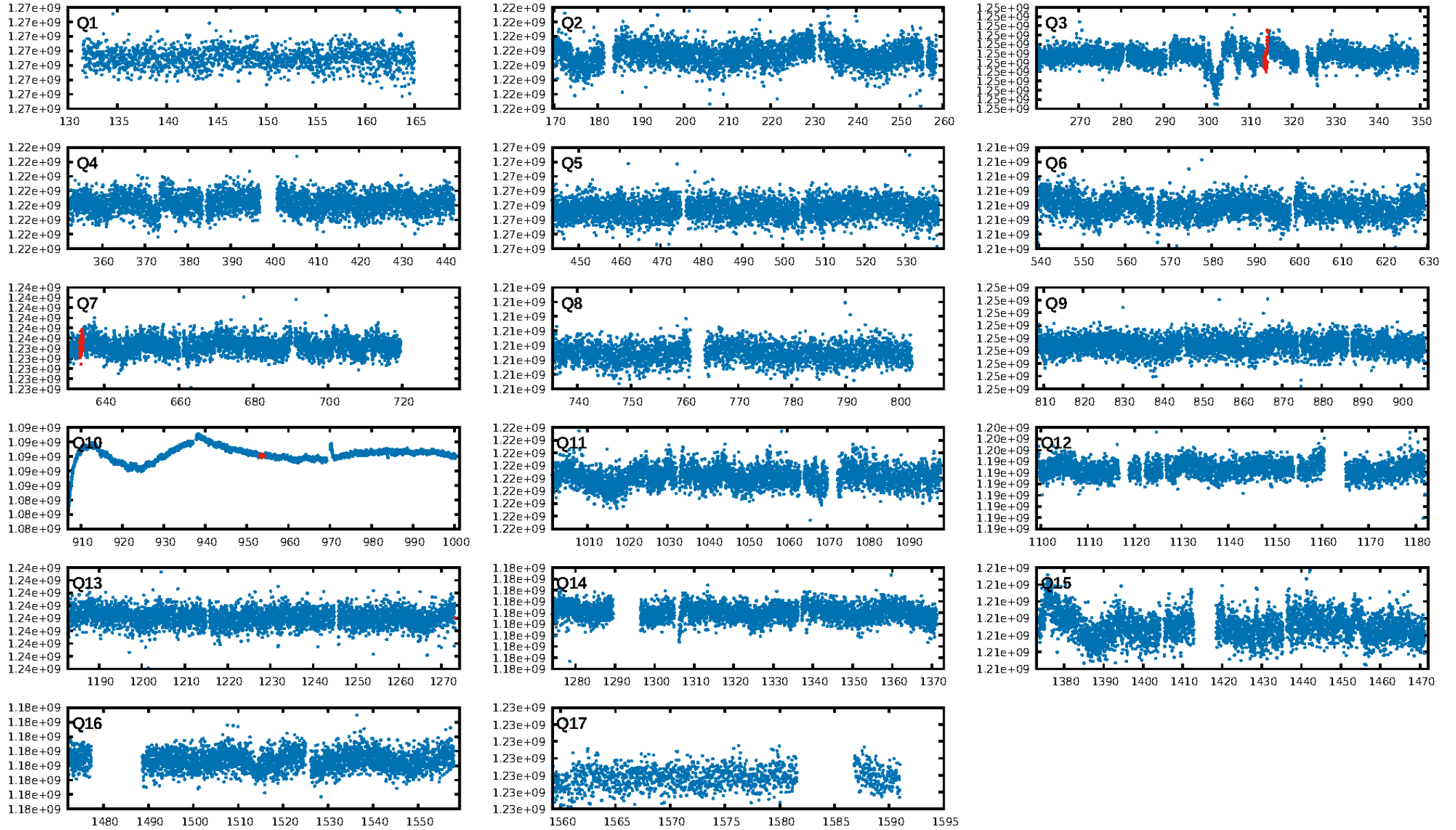
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 59.6%  
ModelChiSquareGof-sig: 99.8%  
Bootstrap-pfa: 2.47e-09  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: N/A  
Centroid-sig: 9.1%  
Centroid-so: 2.471 arcsec [1.62σ]  
OotOffset-rm: 4.577 arcsec [37.80σ]  
KicOffset-rm: 5.424 arcsec [45.55σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [2/2]

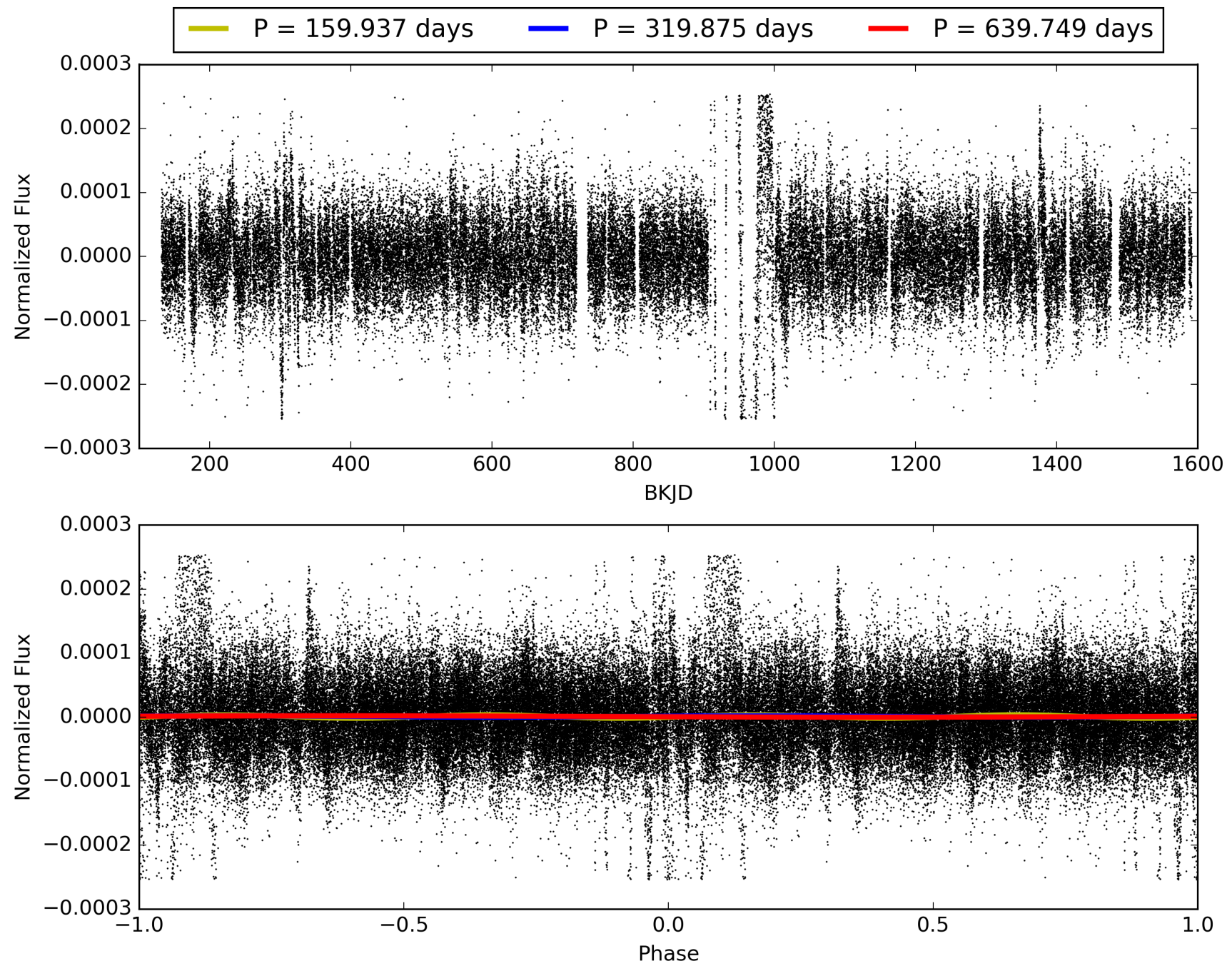
Software Revision: svn-ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:45:37 Z

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

# TCE 002297349-01, PDC Light Curves

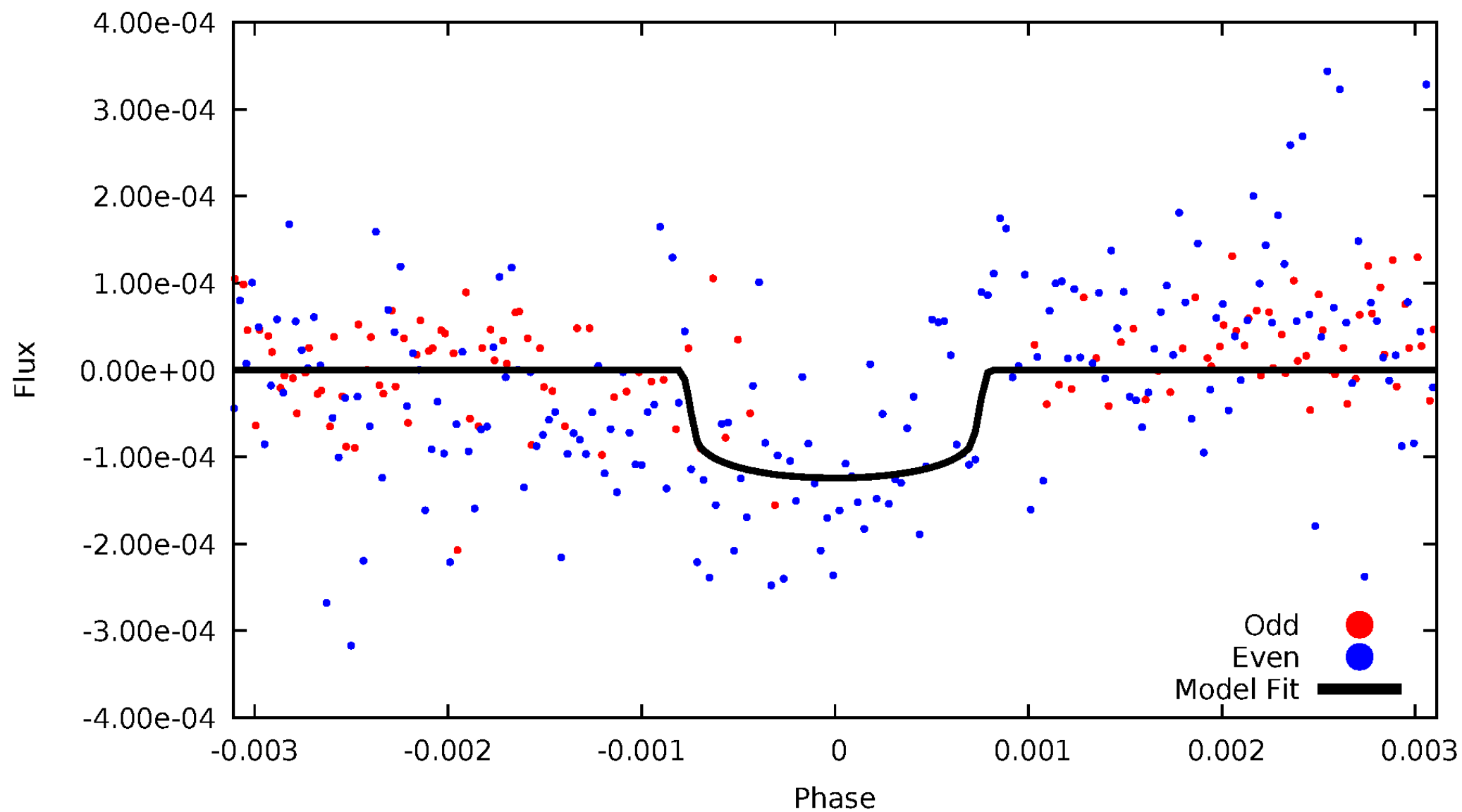


TCE 002297349-01



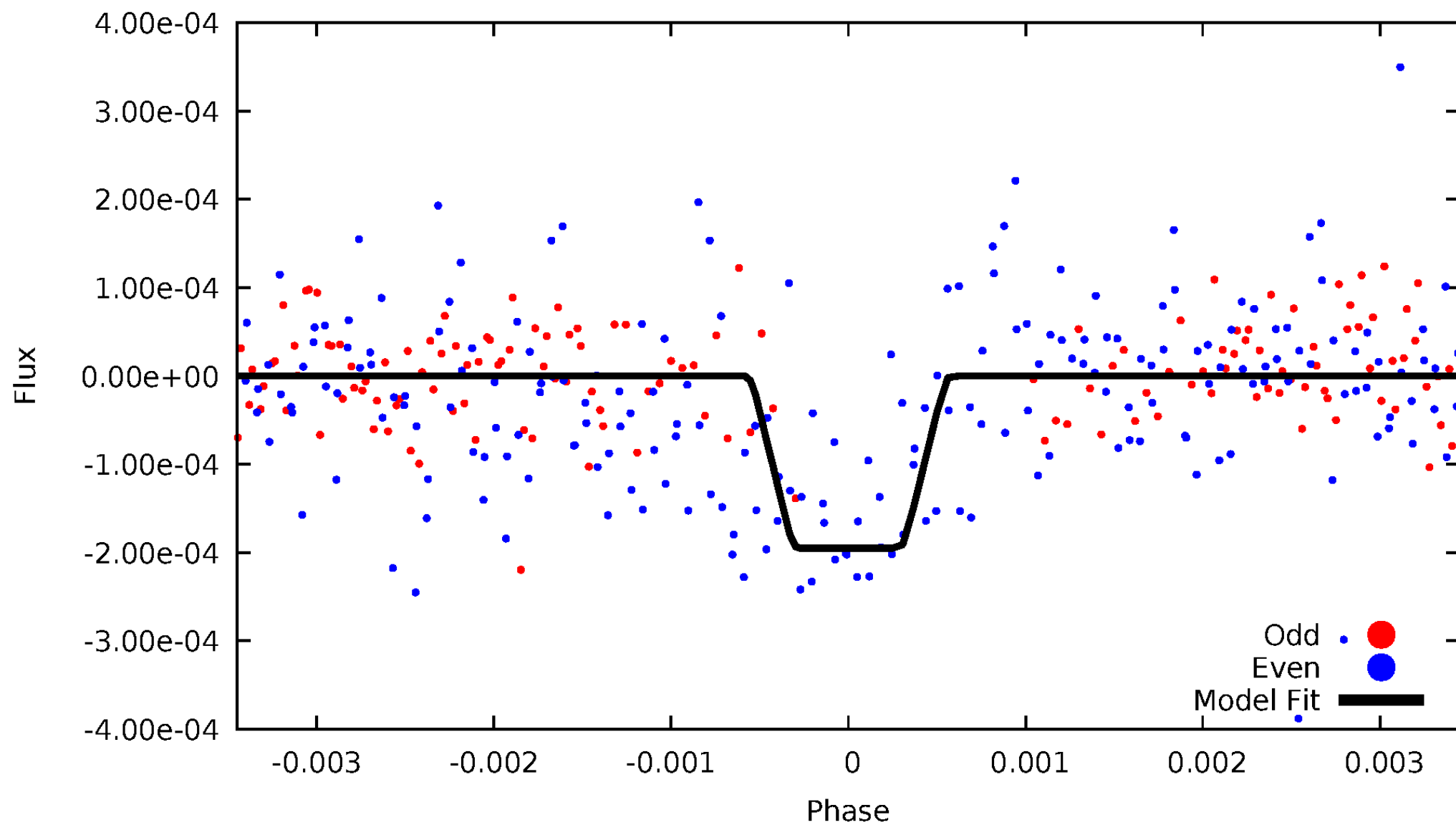
# DV Odd/Even

TCE 002297349-01

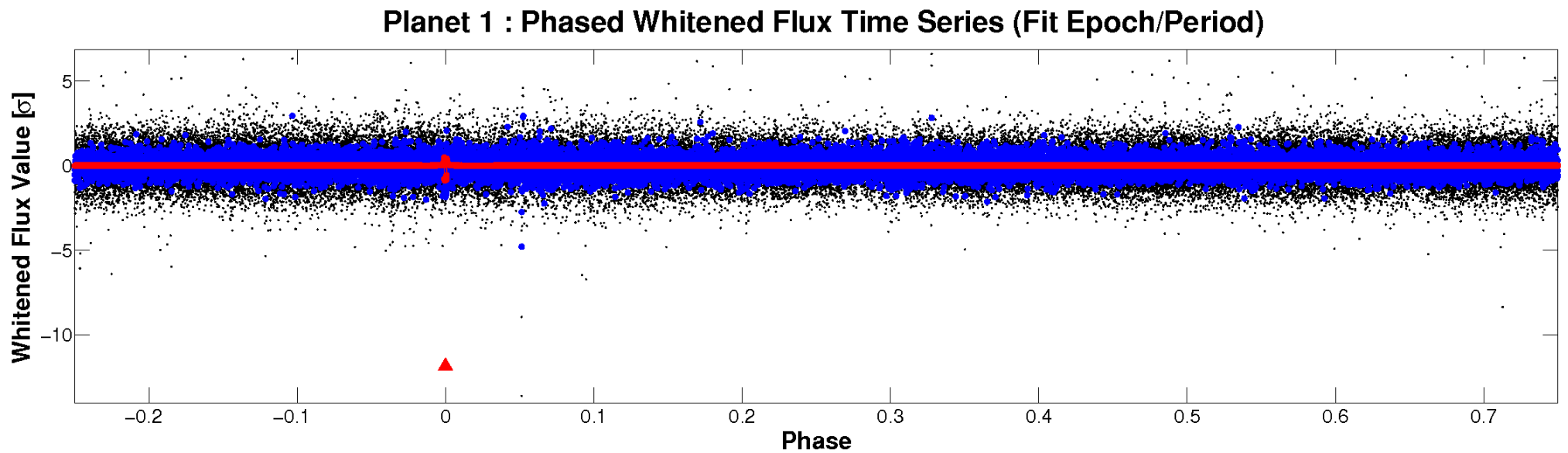
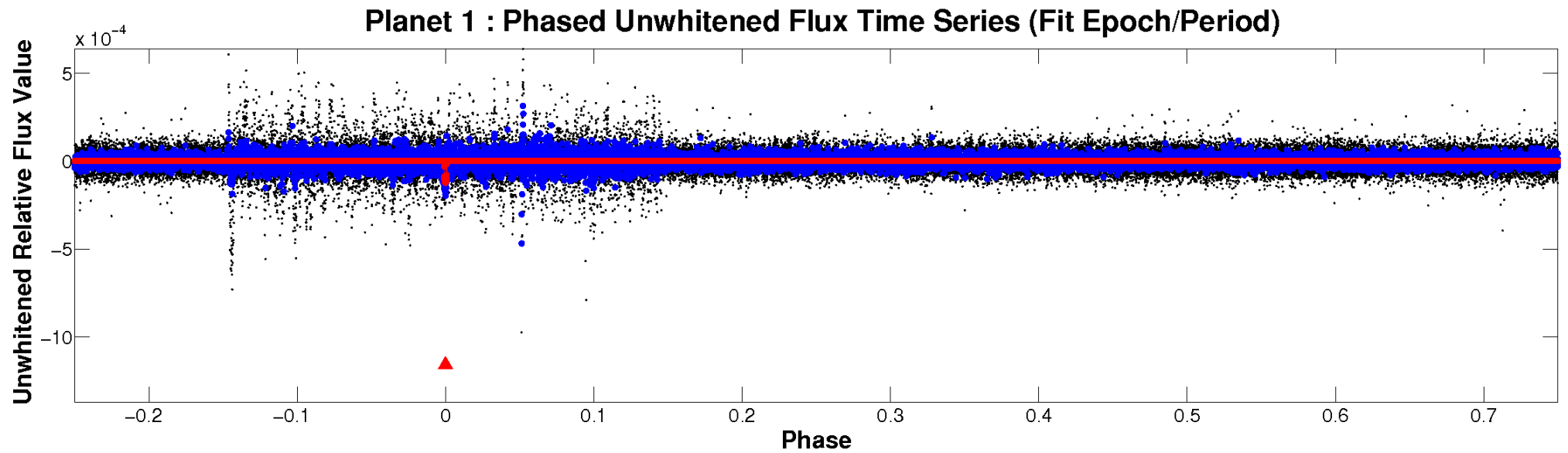


# ALT Odd/Even

TCE 002297349-01



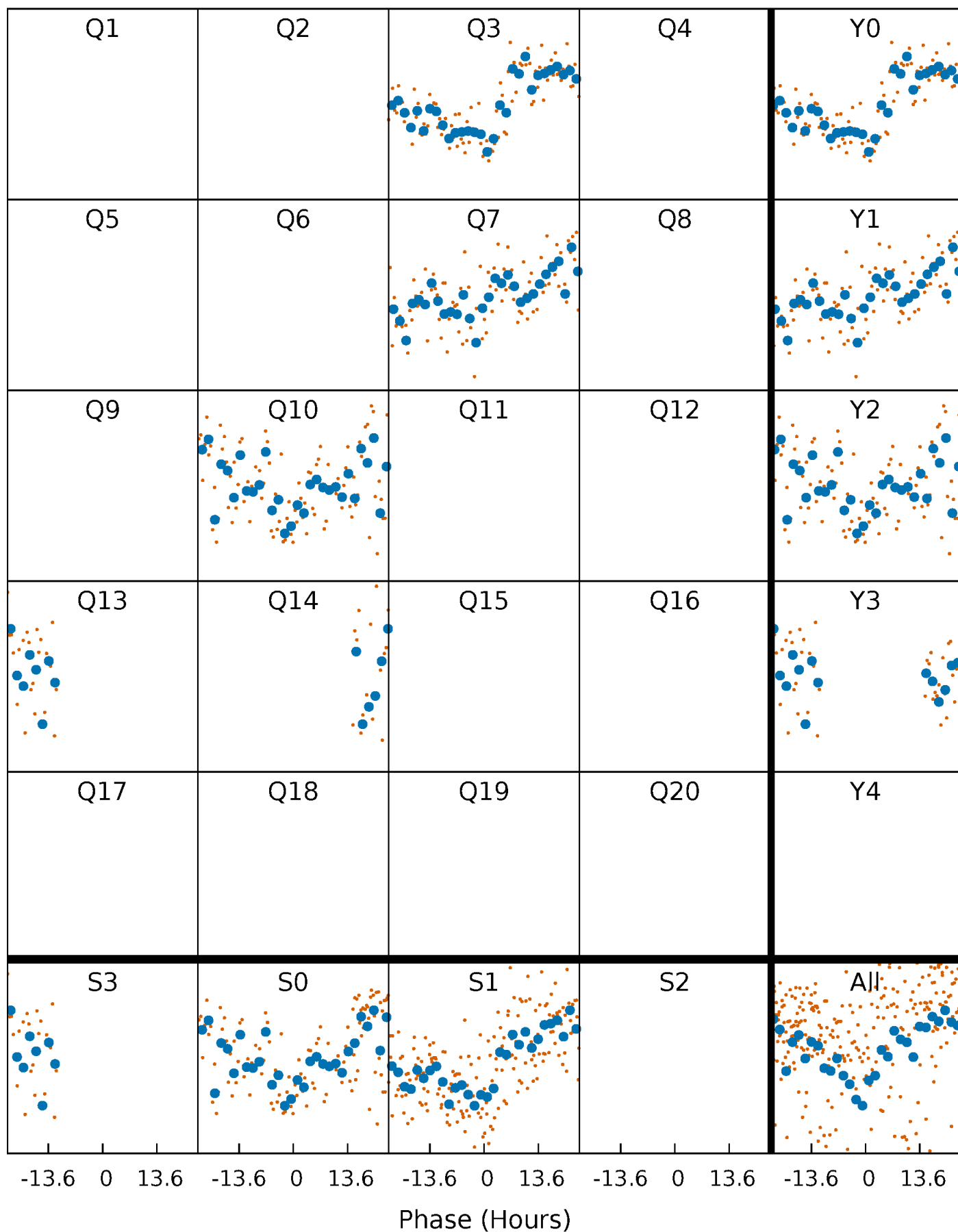
# Non-Whitened Vs. Whitened Light Curve





# PDC Quarter-Phased Transit Curves

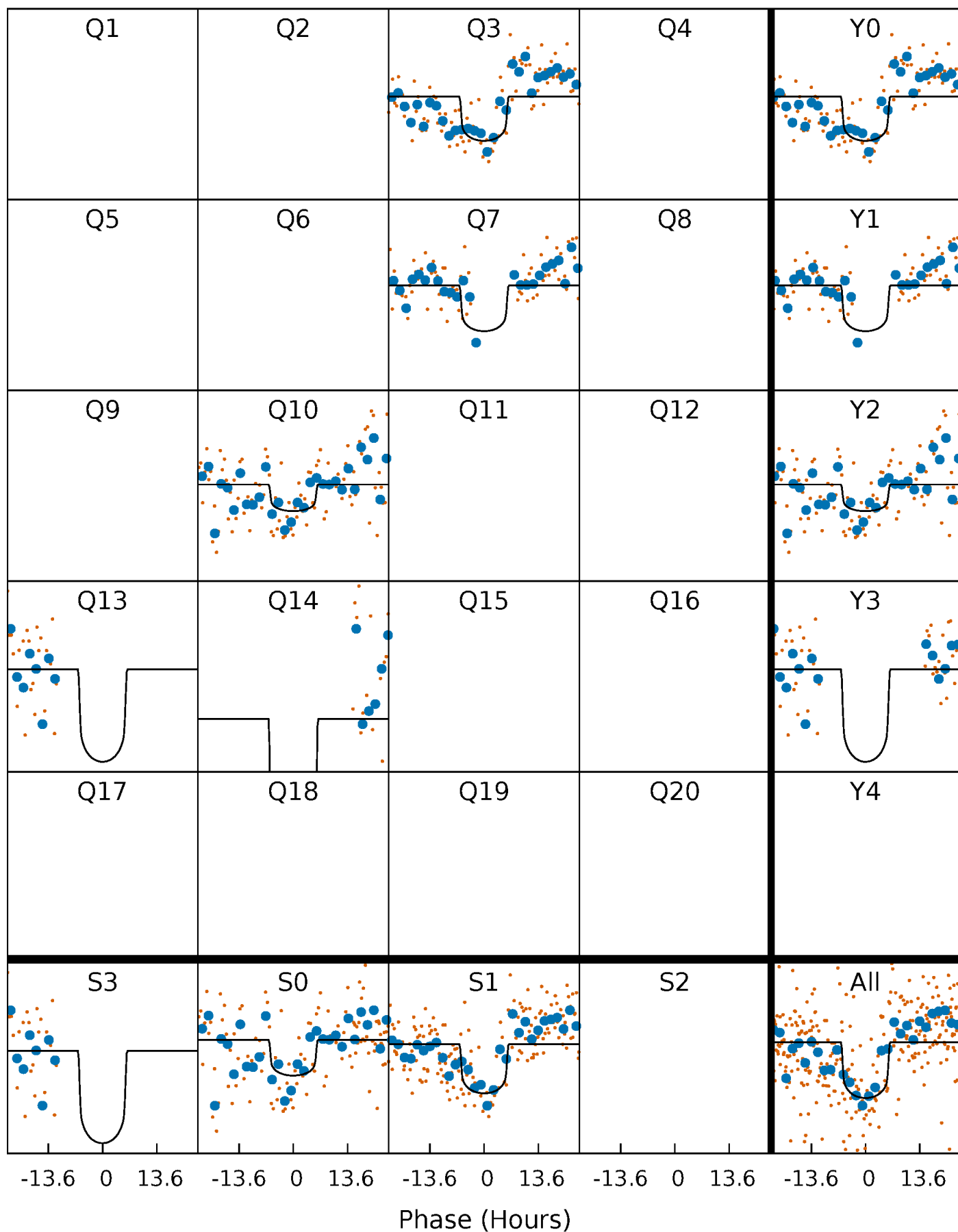
TCE 002297349-01   P=319.874666 Days    $T_0=313.914485$  (BKJD)





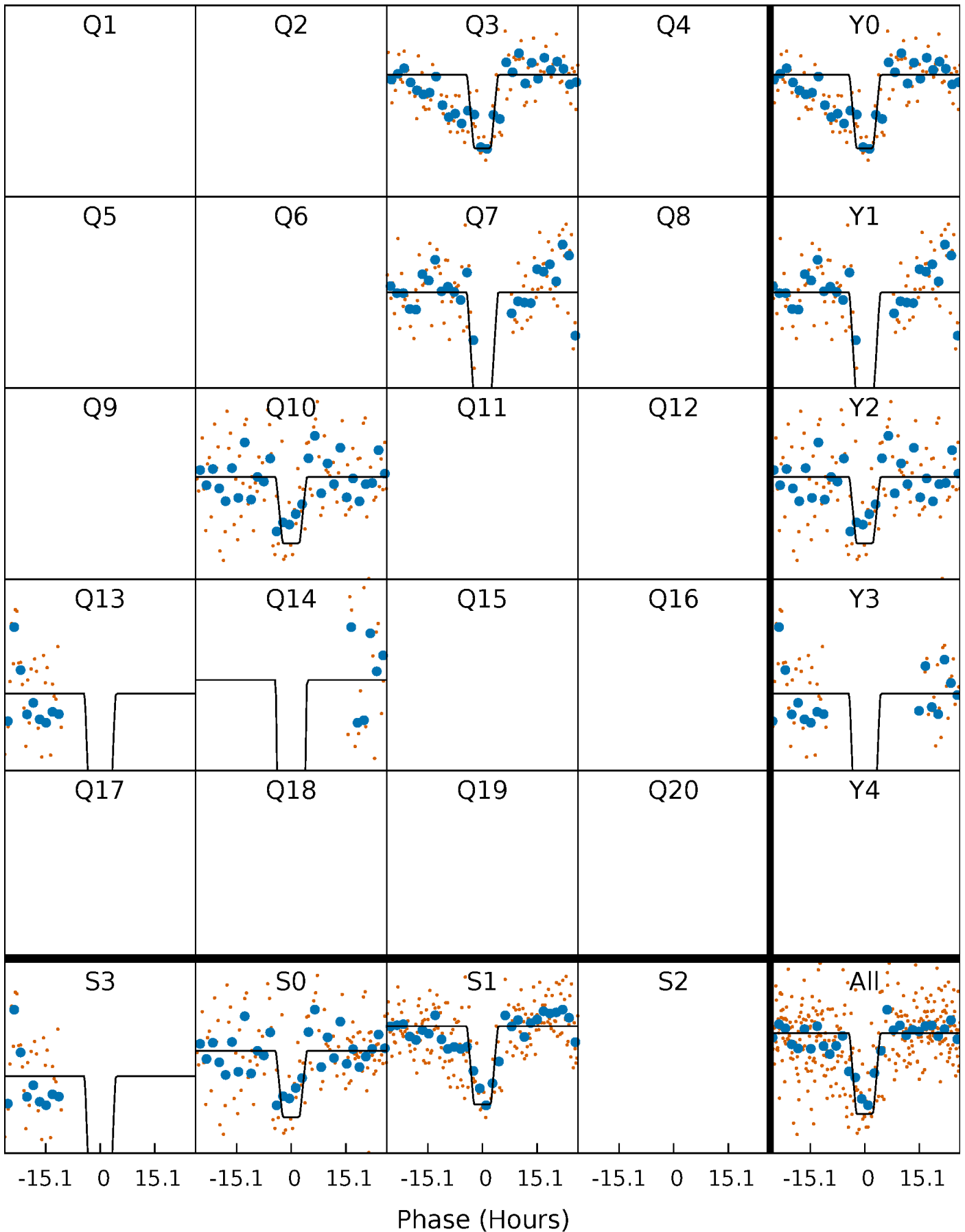
# DV Quarter-Phased Transit Curves

TCE 002297349-01   P=319.874666 Days    $T_0=313.914485$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

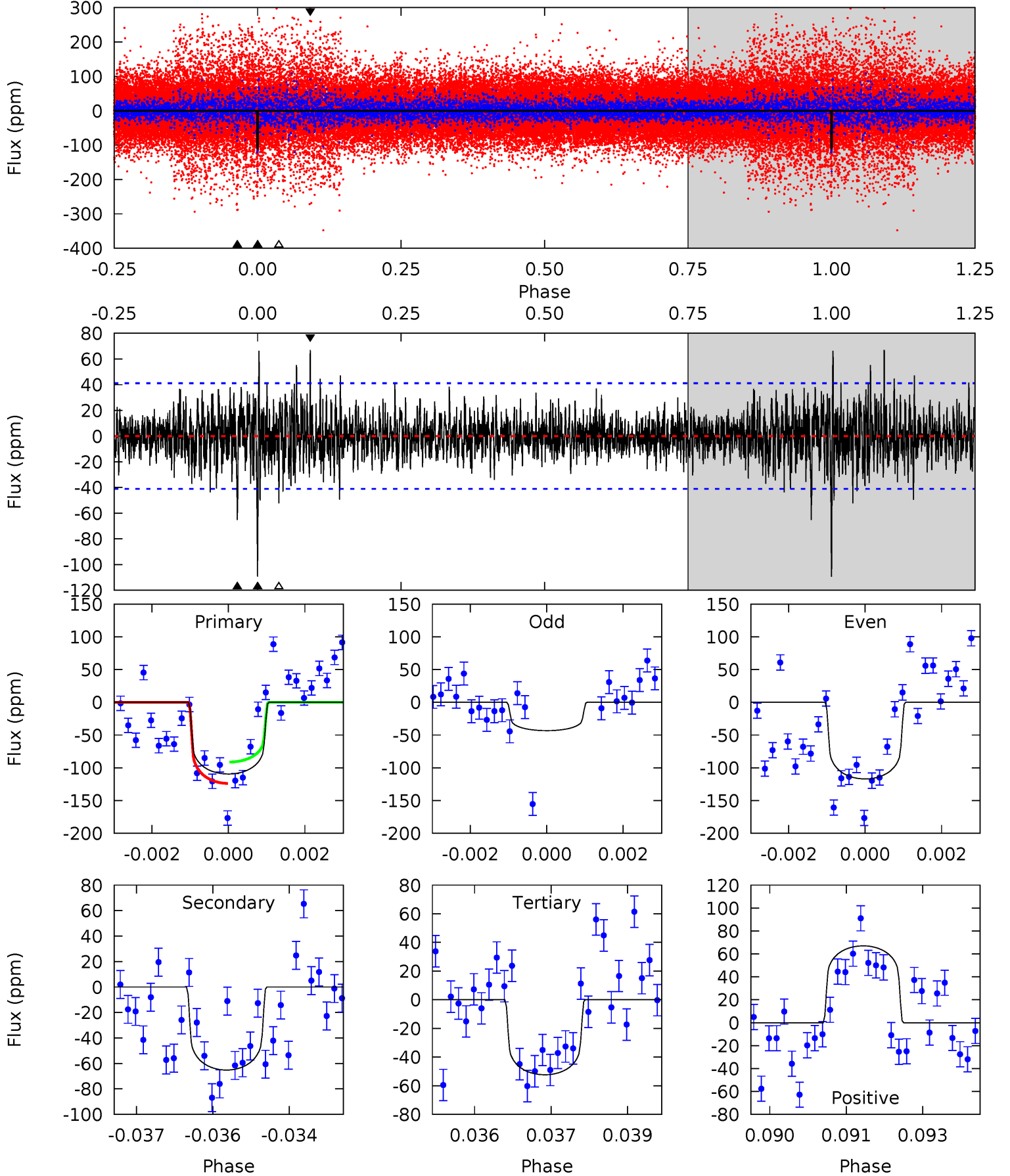
TCE 002297349-01 P=319.860137 Days  $T_0=313.924816$  (BKJD)



# DV Model-Shift Uniqueness Test

002297349-01, P = 319.874666 Days, E = 313.914485 Days

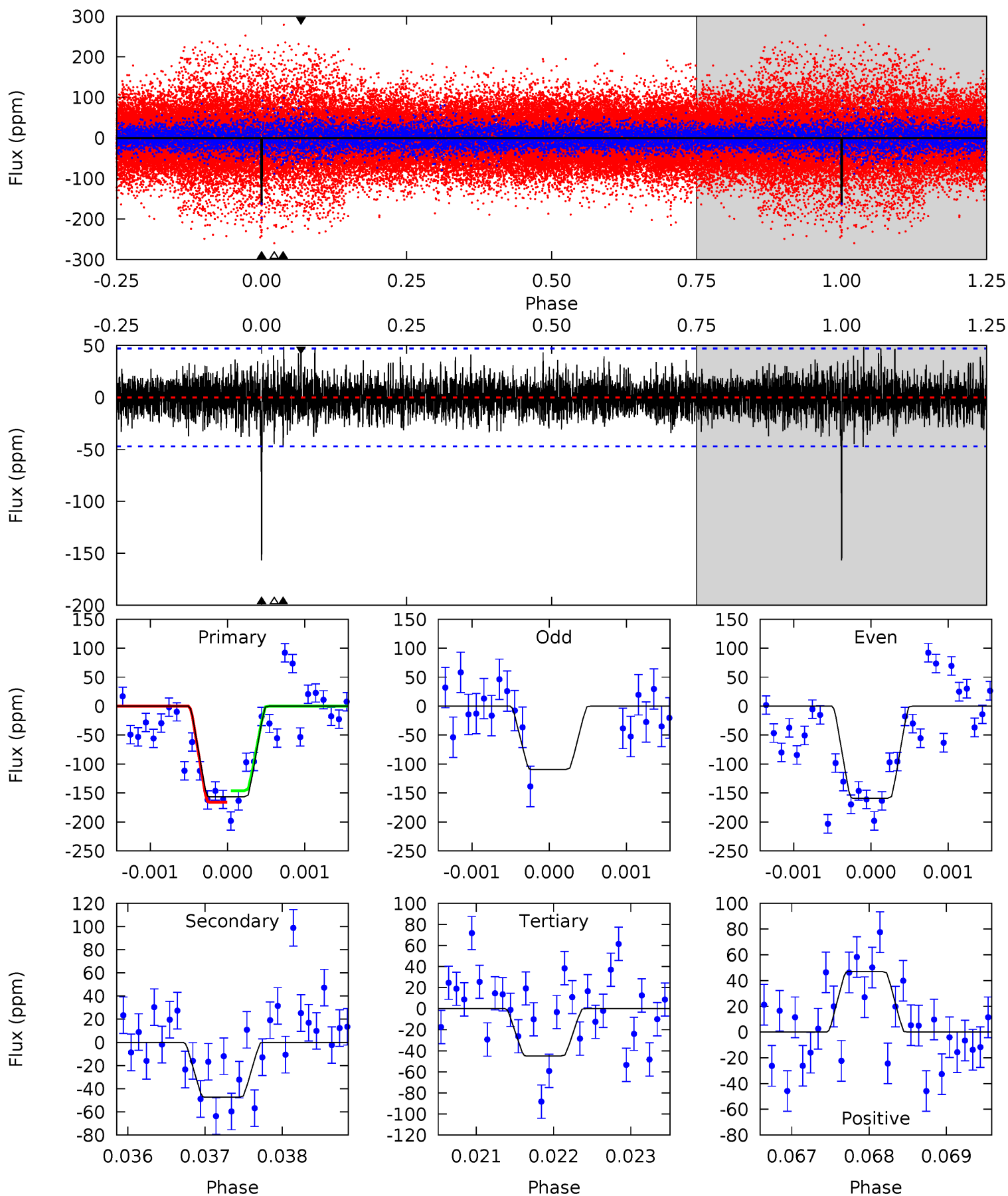
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.3	8.53	6.85	8.76	5.37	3.17	1.63	7.47	5.56	1.68	-0.24	3.31	0.86	0.38	2.12



# Alt Model-Shift Uniqueness Test

002297349-01,  $P = 319.860137$  Days,  $E = 313.924816$  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
18.1	5.46	5.18	5.41	5.43	3.25	1.32	12.9	12.7	0.27	0.04	1.69	1.06	0.24	1.14



### Stellar Parameters For KIC 002297349

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6451^{+160}_{-192}$	$4.128^{+0.171}_{-0.140}$	$0.060^{+0.250}_{-0.300}$	$1.650^{+0.368}_{-0.368}$	$1.332^{+0.154}_{-0.211}$	$0.418^{+0.384}_{-0.173}$
	+2%/-3%	+4%/-3%	+417%/-500%	+22%/-22%	+12%/-16%	+92%/-42%
Source	PHO1	FLK73	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 002297349-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-65 \pm 8$	$2.02^{+0.82}_{-0.74}$	$506^{+33}_{-31}$	$5463^{+1317}_{-725}$	$8547^{+13639}_{-4091}$
Alt.	$-47 \pm 9$	$2.53^{+0.76}_{-0.83}$	$506^{+31}_{-32}$	$4622^{+821}_{-458}$	$4091^{+4934}_{-1782}$

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

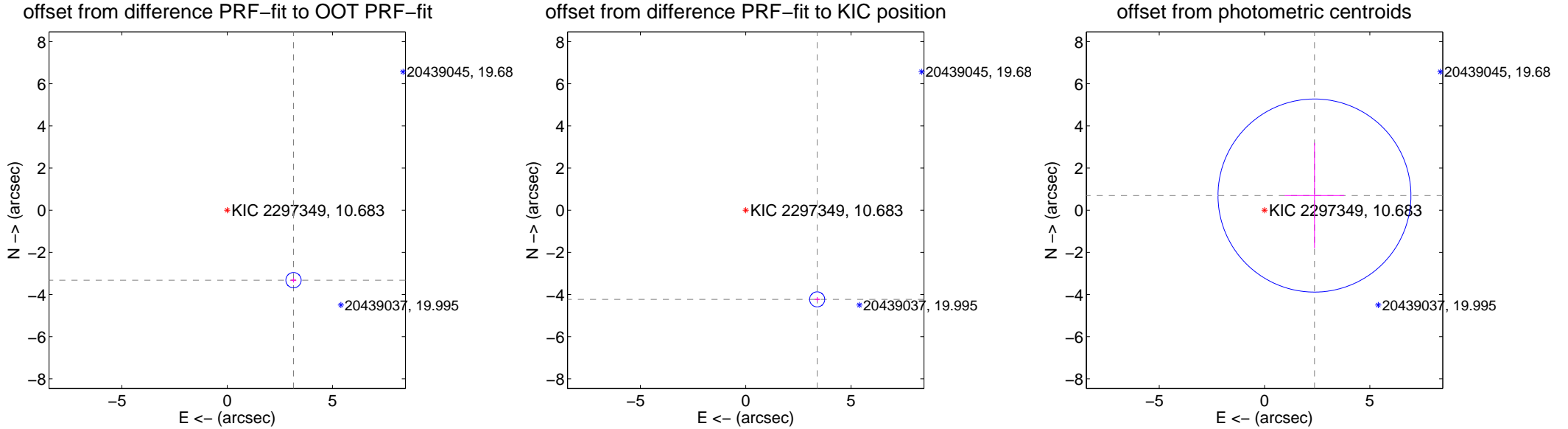
## DV Centroid Data

Supplemental centroid analysis for 002297349-01. **Kepler magnitude: 10.68.** Transit SNR 6.59

**There are 0 quarters with good PRF difference image offsets**

The direct PRF centroid is offset from the target star catalog position by about 0.94 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>4.577 \pm 0.121</math></b>	<b>37.80</b>	$-3.151 \pm 0.133$	$-3.320 \pm 0.109$
PRF-fit source offset from KIC position	<b><math>5.424 \pm 0.119</math></b>	<b>45.55</b>	$-3.394 \pm 0.133$	$-4.231 \pm 0.109$
photometric centroid source offset	$2.47 \pm 1.53$	1.62	$-2.37 \pm 1.41$	$0.70 \pm 2.50$



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 are from the UKIRT catalog.

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

Q1 no difference image



Q1 no OOT image



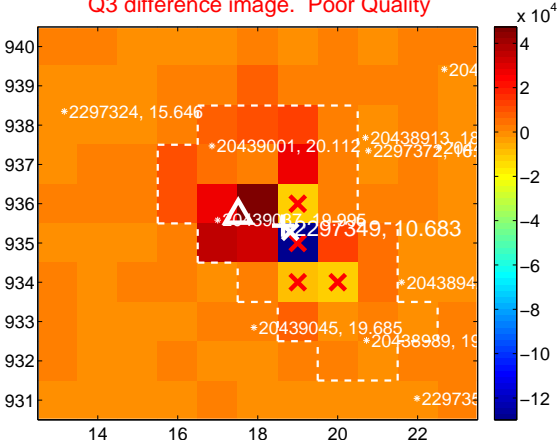
Q2 no difference image



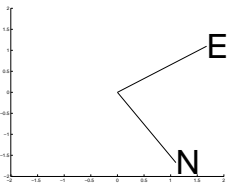
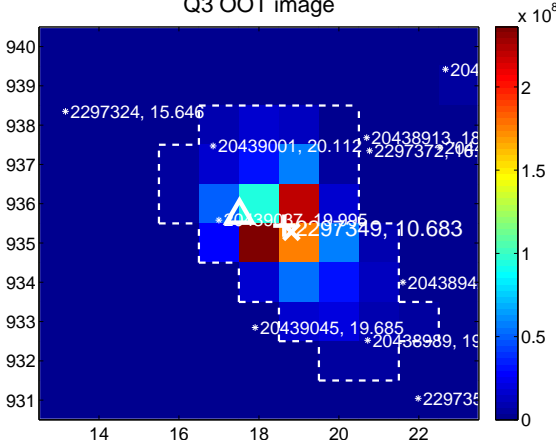
Q2 no OOT image



Q3 difference image. Poor Quality



Q3 OOT image



Q4 no difference image



Q4 no OOT image

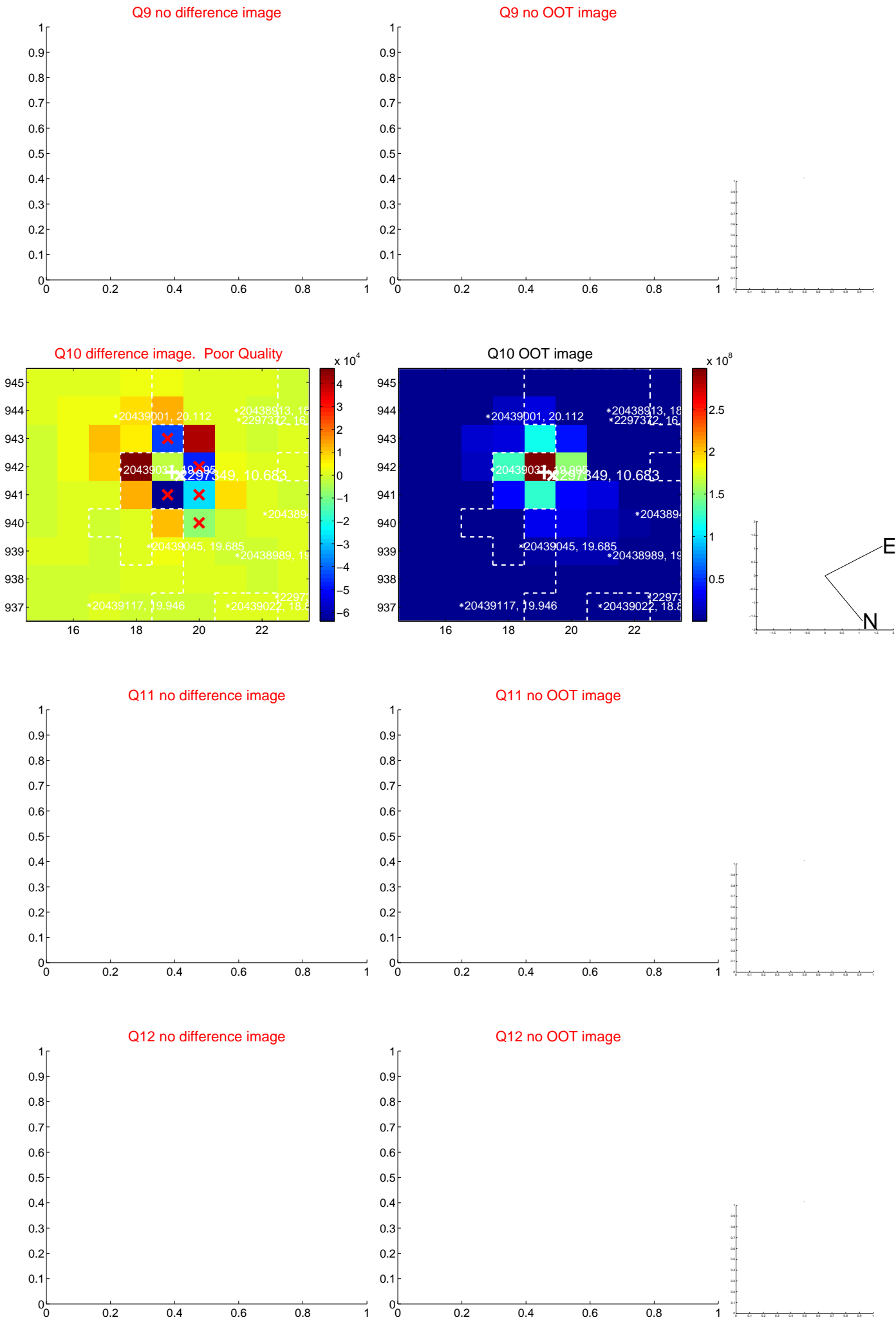




white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



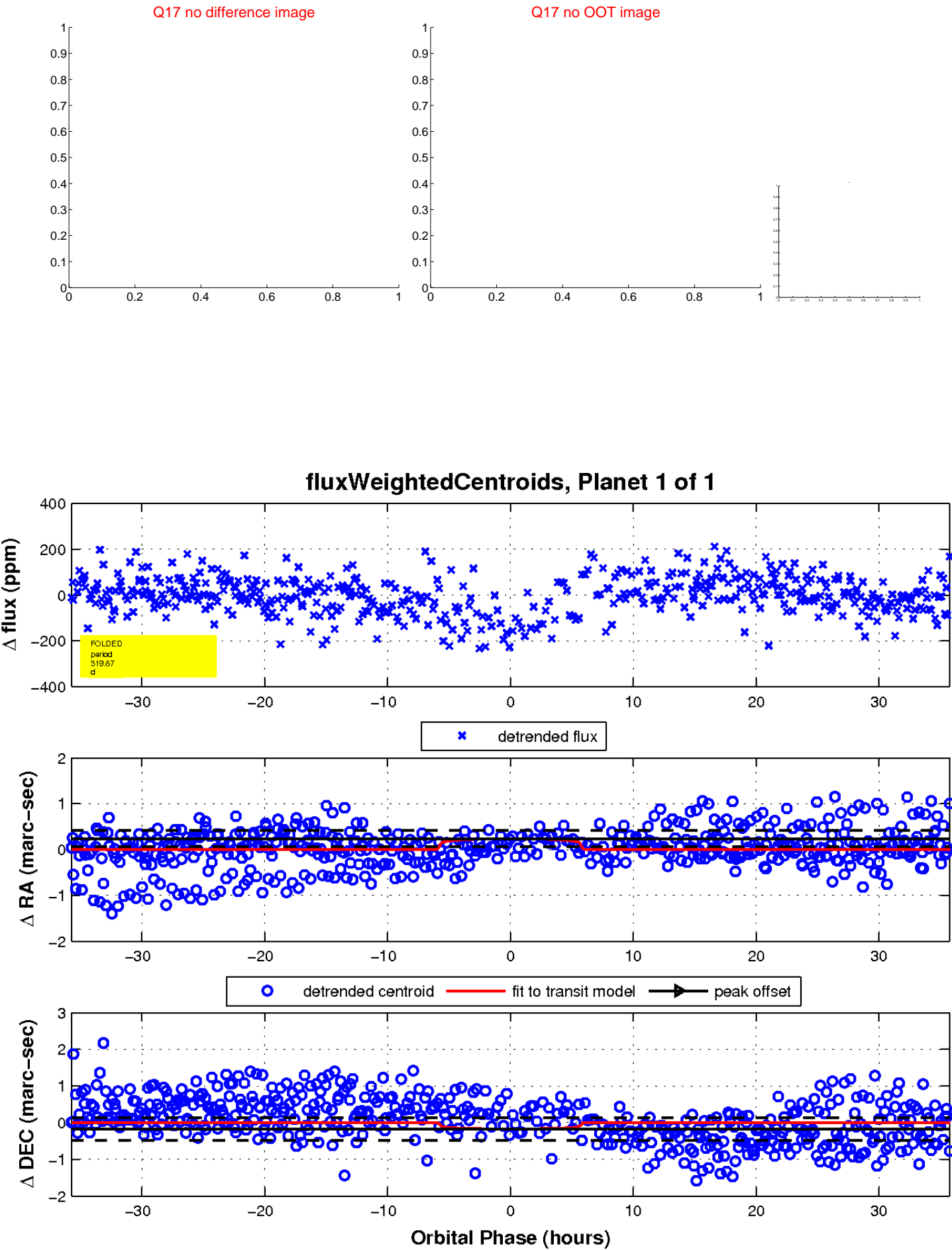
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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

