

# KIC 005351324

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
005351324-01	OBS	No	306.905821	331.123105	139.0	17.208	8.0	8.0	1.48	6190	1.94	3.58

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005351324-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—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.

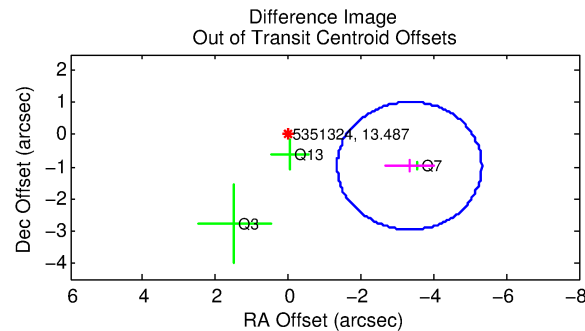
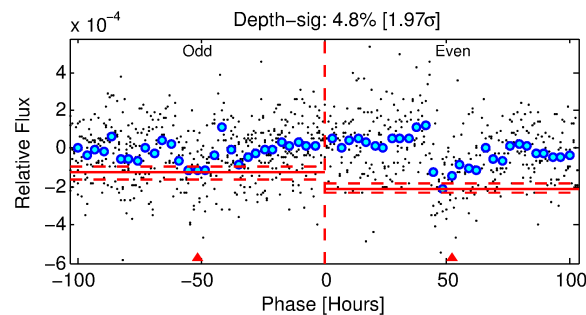
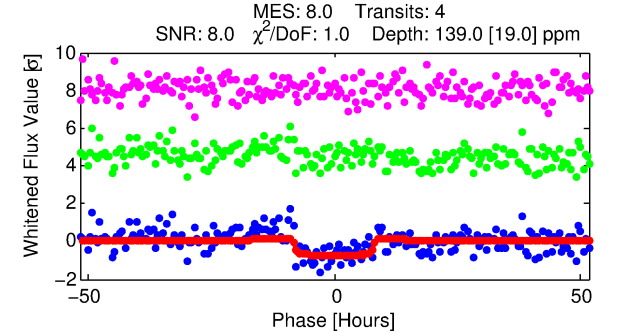
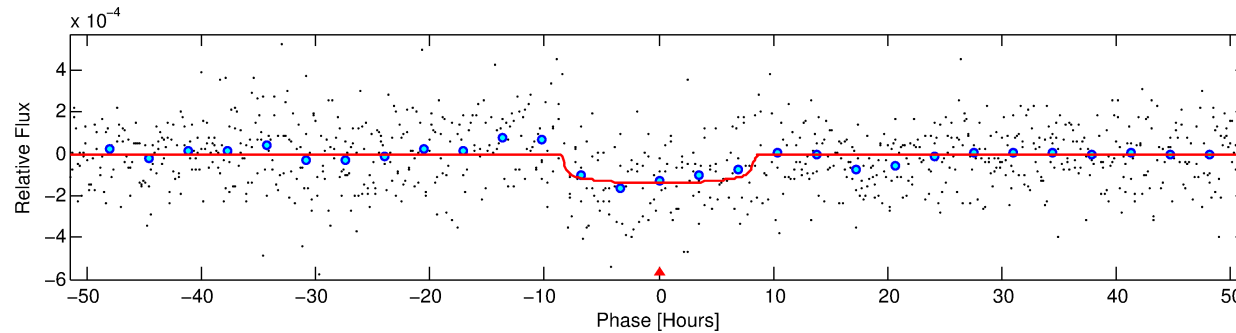
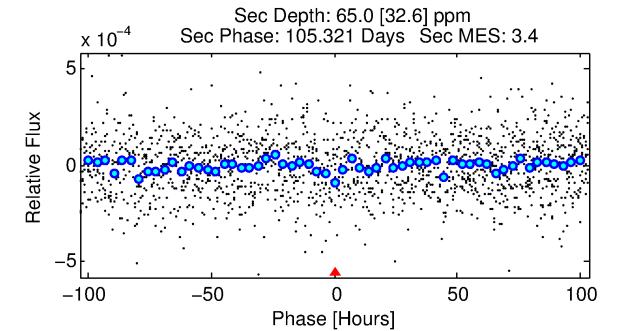
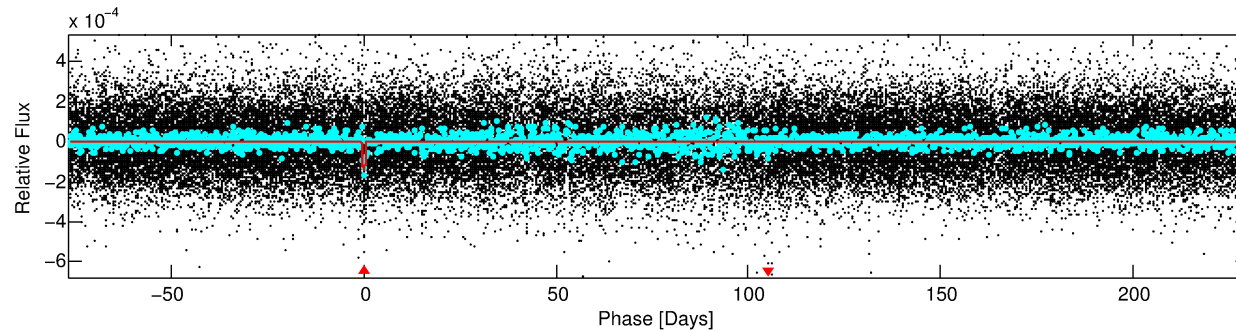
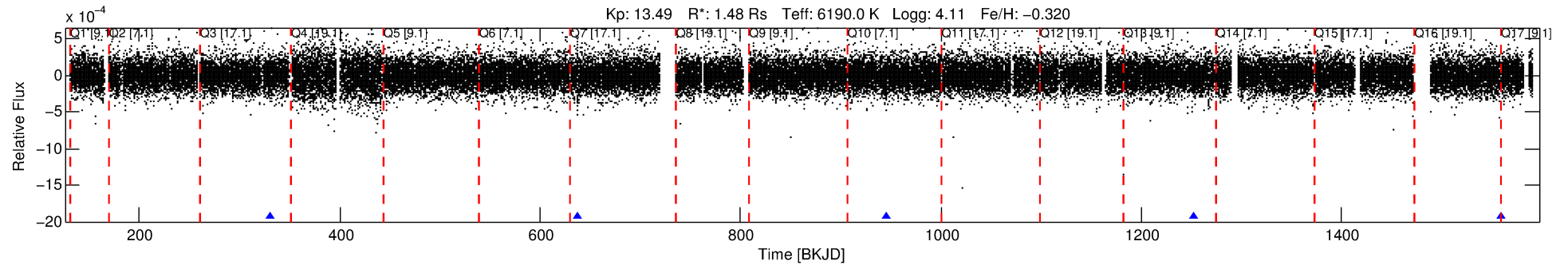
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 005351324-01

No Significant Match Found

# DV One-Page Summary

KIC: 5351324 Candidate: 1 of 1 Period: 306.906 d



## DV Fit Results:

Period = 306.90582 [0.01303] d  
Epoch = 331.1231 [0.0253] BKJD  
Rp/R\* = 0.0120 [0.0034]  
a/R\* = 81.48 [119.33]  
b = 0.82 [0.60]  
Seff = 3.58 [1.58]  
Teq = 351 [39] K  
Rp = 1.94 [0.75] Re  
a = 0.8968 [0.2344] AU  
Ag = 7631.77 [6645.23] [1.15σ]  
Teffp = 5068 [975] K [4.83σ]

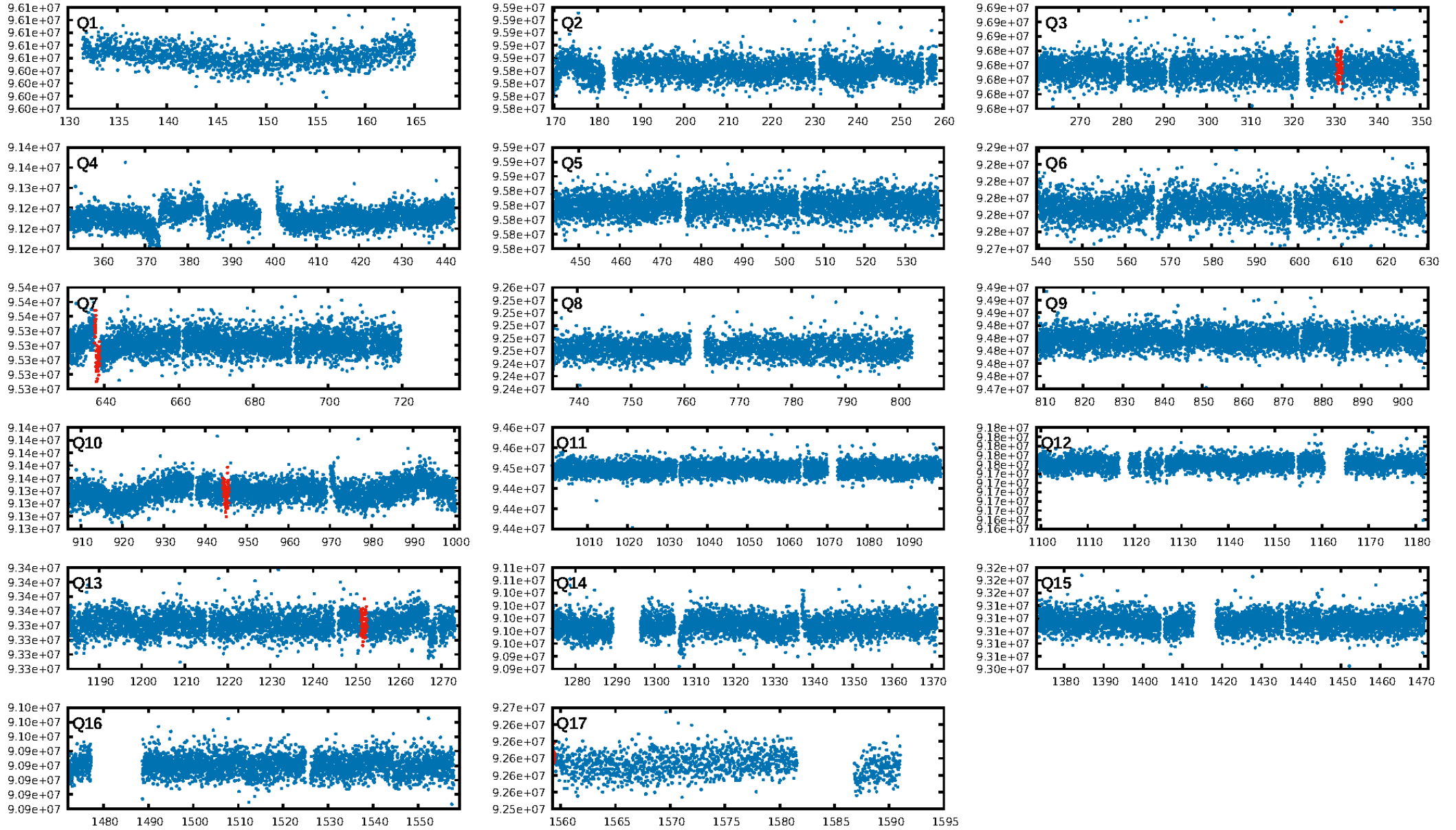
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 0.0%  
ModelChiSquareGof-sig: 99.0%  
Bootstrap-pfa: 1.17e-13  
RollingBand-fgt: 1.00 [4/4]  
GhostDiagnostic-chr: -2.09  
Centroid-sig: 96.6%  
Centroid-so: 0.437 arcsec [0.32σ]  
OotOffset-rm: 3.476 arcsec [5.24σ]  
KicOffset-rm: 3.390 arcsec [4.25σ]  
OotOffset-st: 0/2/0/1 [3]  
KicOffset-st: 0/2/0/1 [3]  
DiffImageQuality-fgm: 0.67 [2/3]  
DiffImageOverlap-fno: 1.00 [4/4]

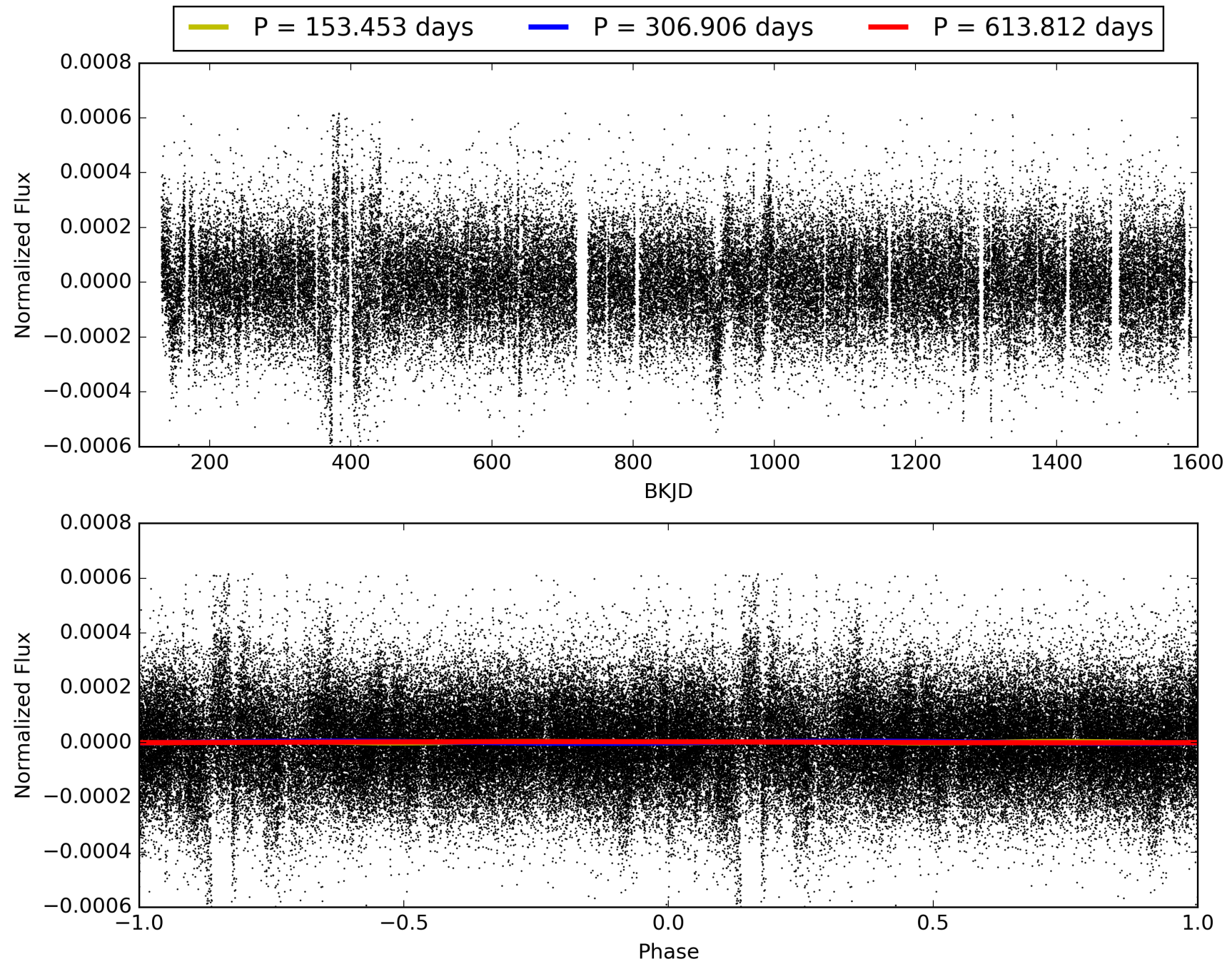
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 16:24:29 Z

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

# TCE 005351324-01, PDC Light Curves

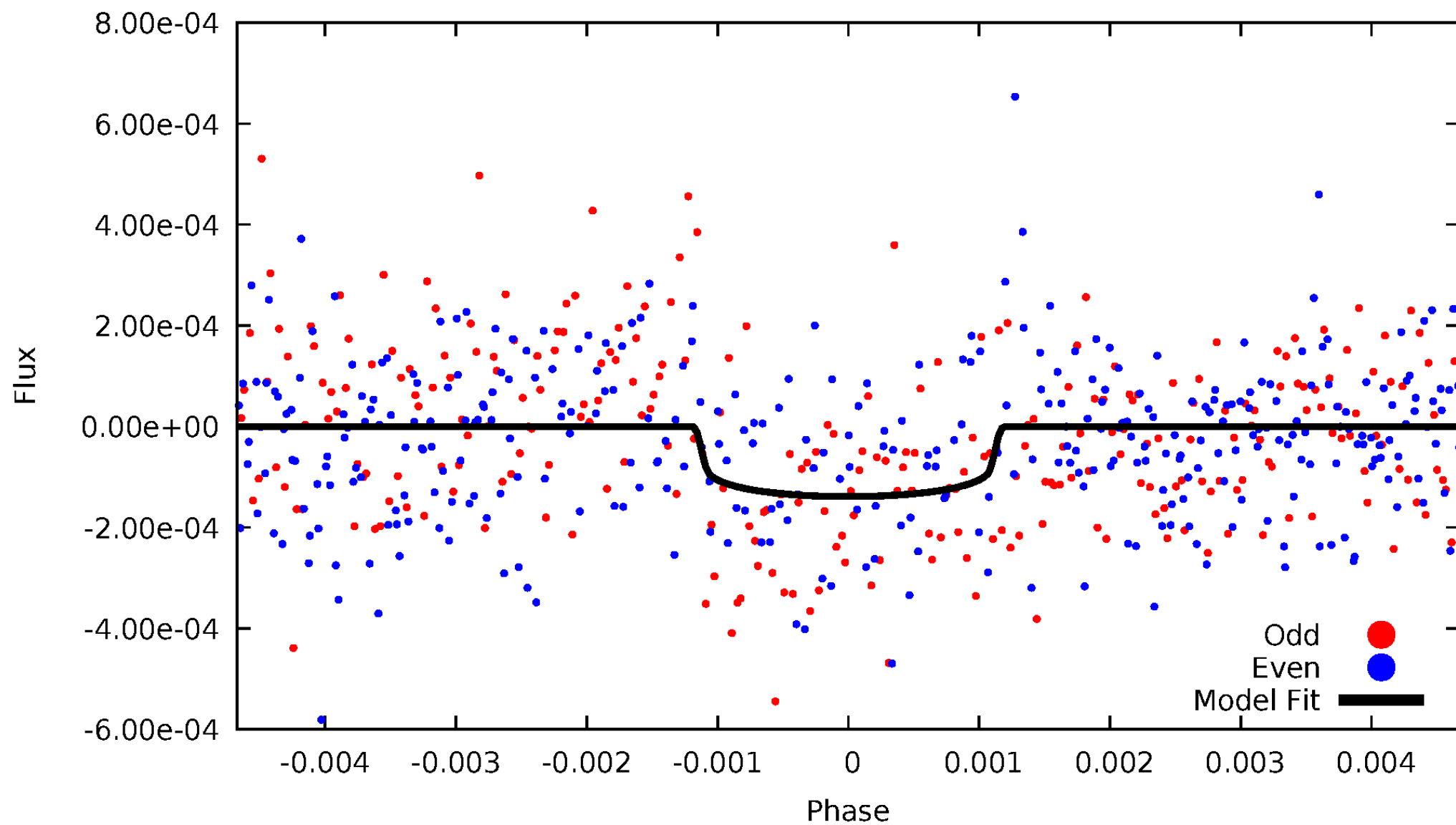


TCE 005351324-01



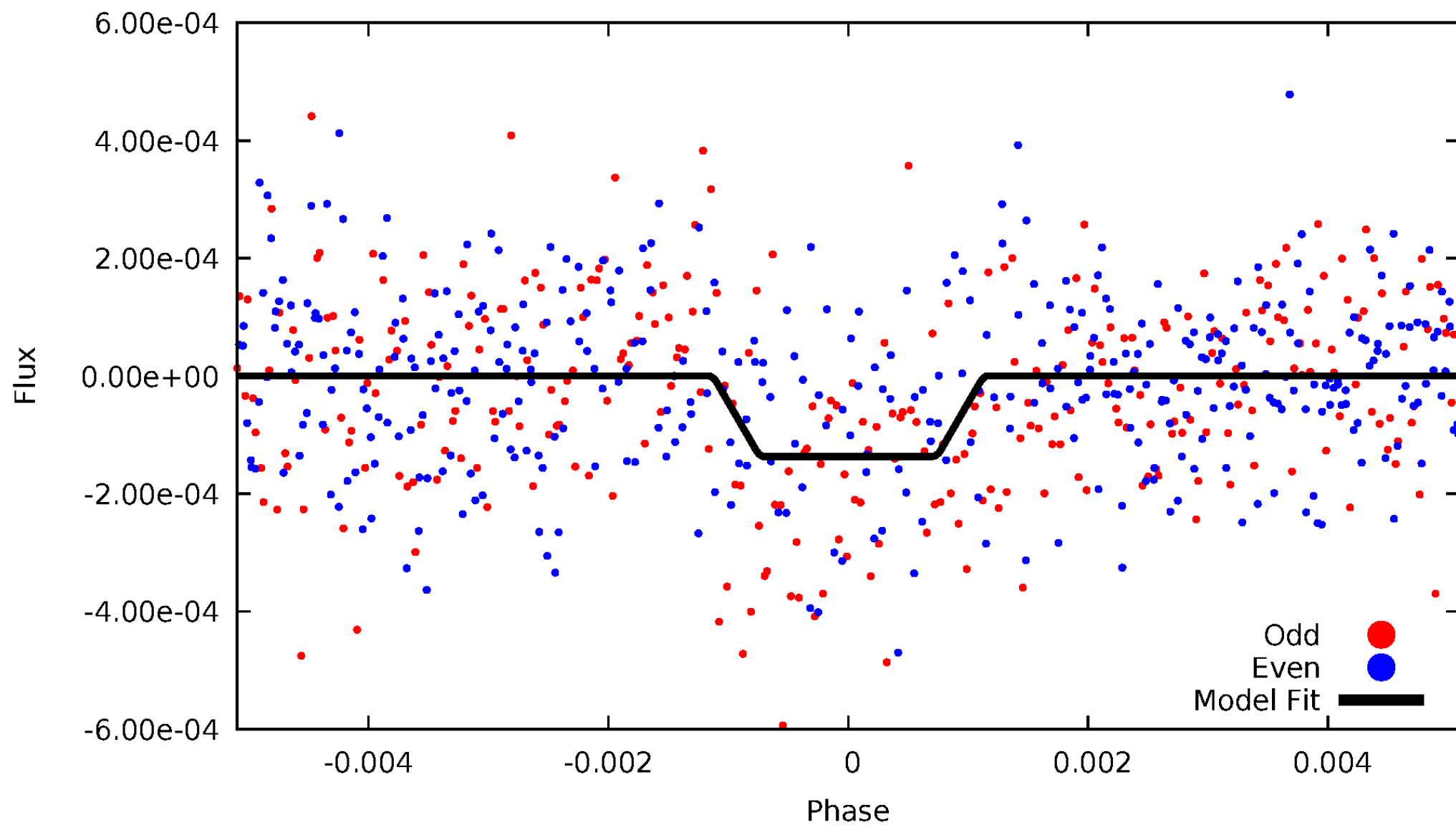
# DV Odd/Even

TCE 005351324-01



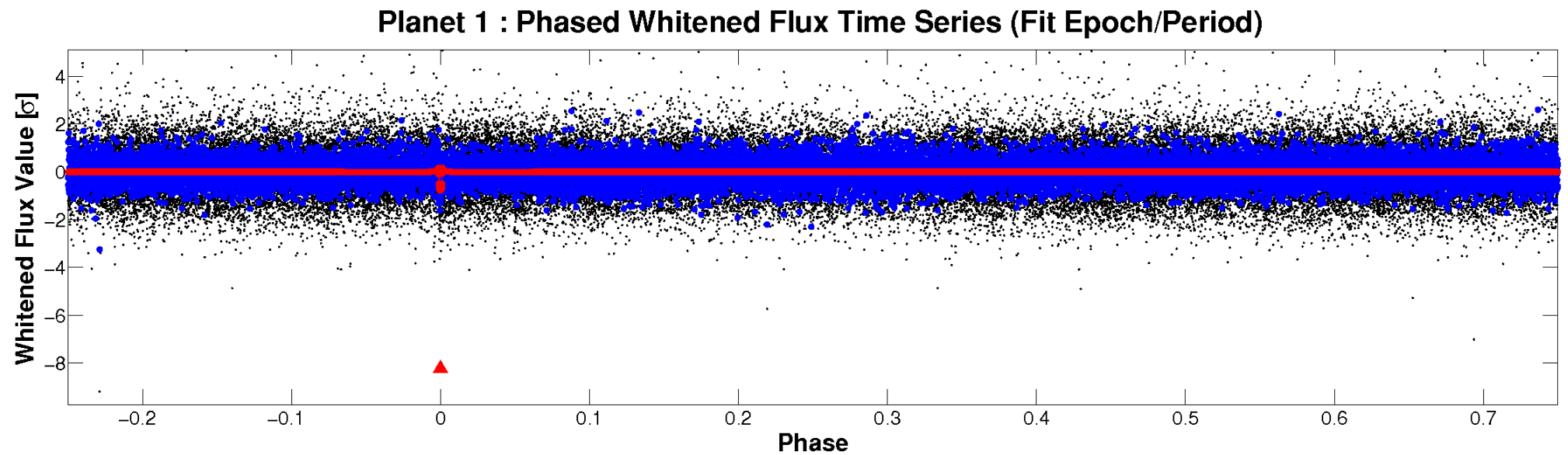
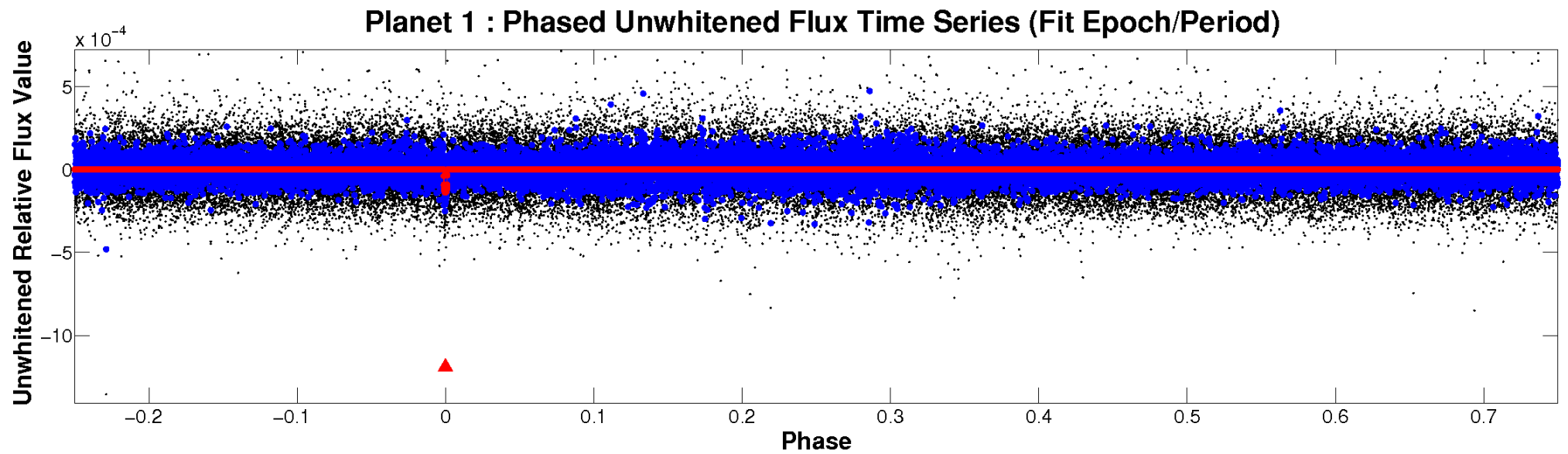
# ALT Odd/Even

TCE 005351324-01



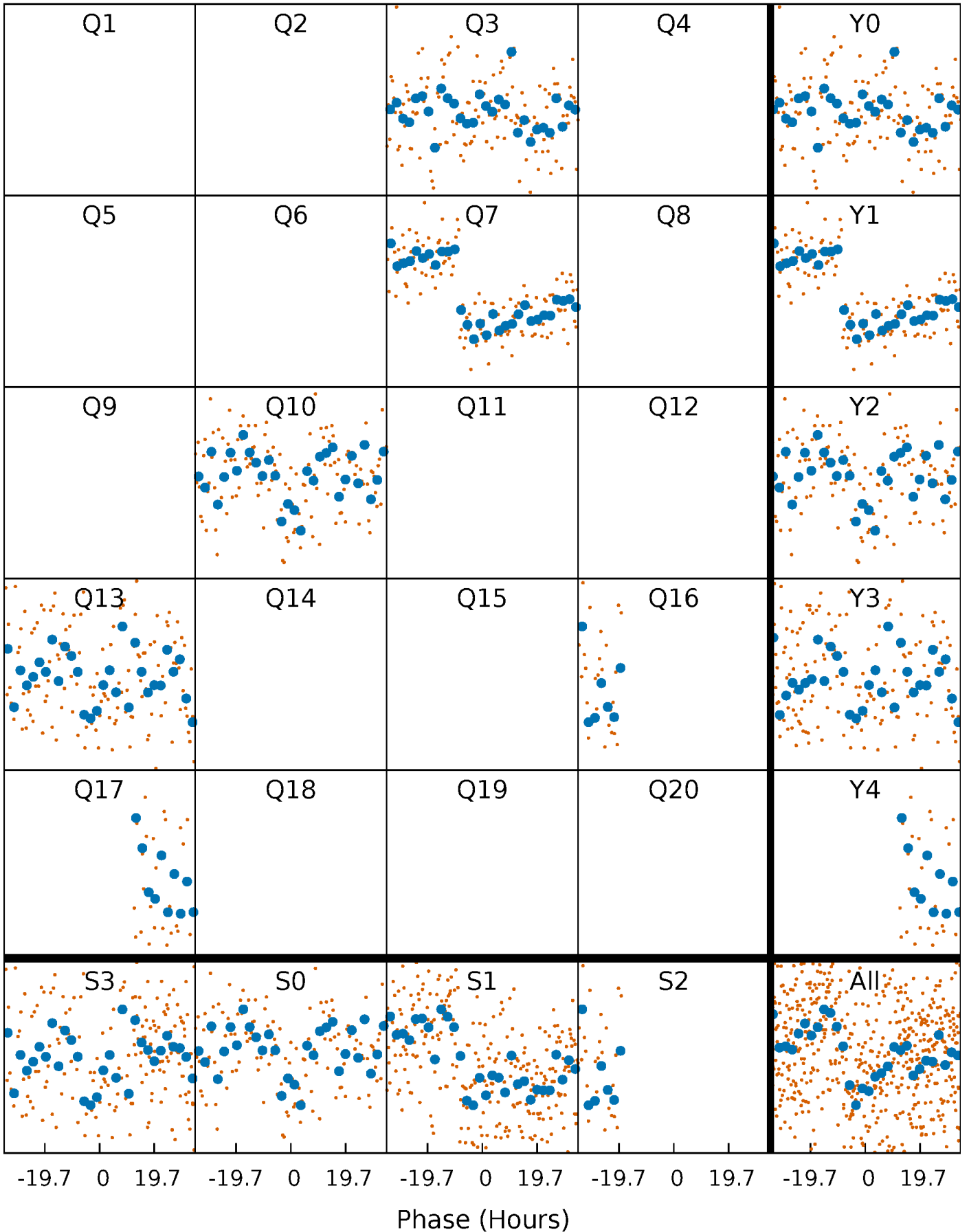


# Non-Whitened Vs. Whitened Light Curve



# PDC Quarter-Phased Transit Curves

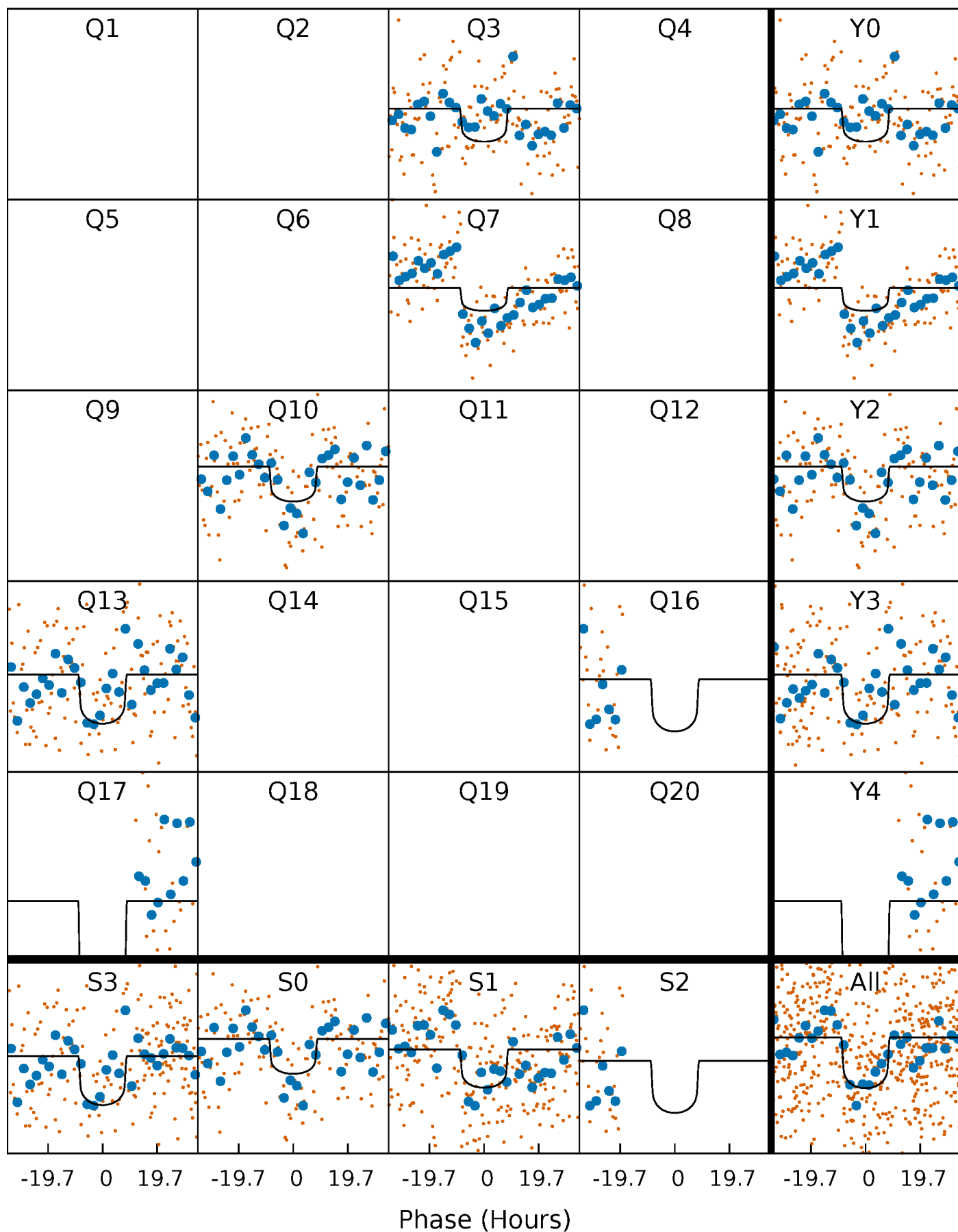
TCE 005351324-01 P=306.905822 Days  $T_0=331.123105$  (BKJD)





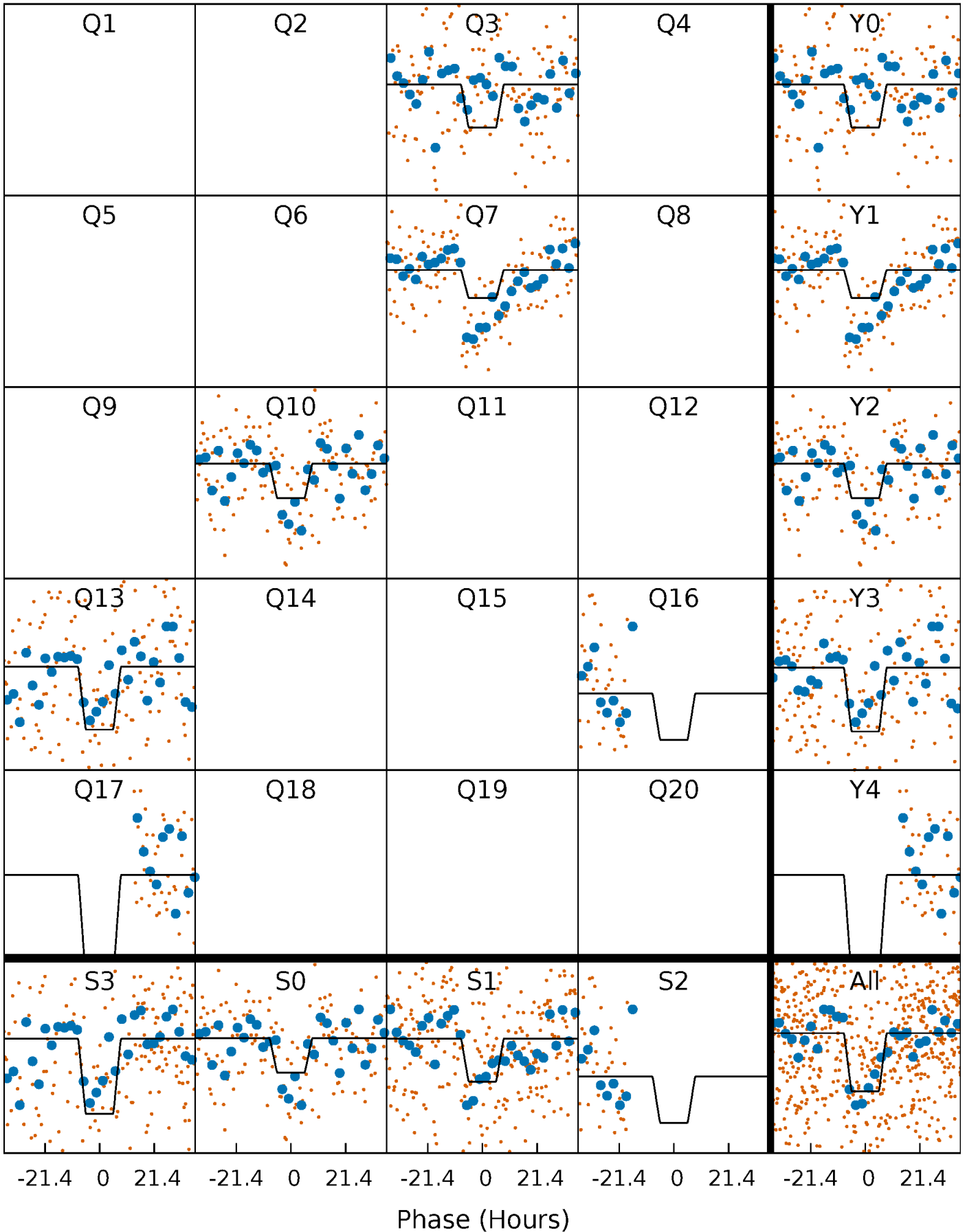
# DV Quarter-Phased Transit Curves

TCE 005351324-01 P=306.905822 Days  $T_0=331.123105$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

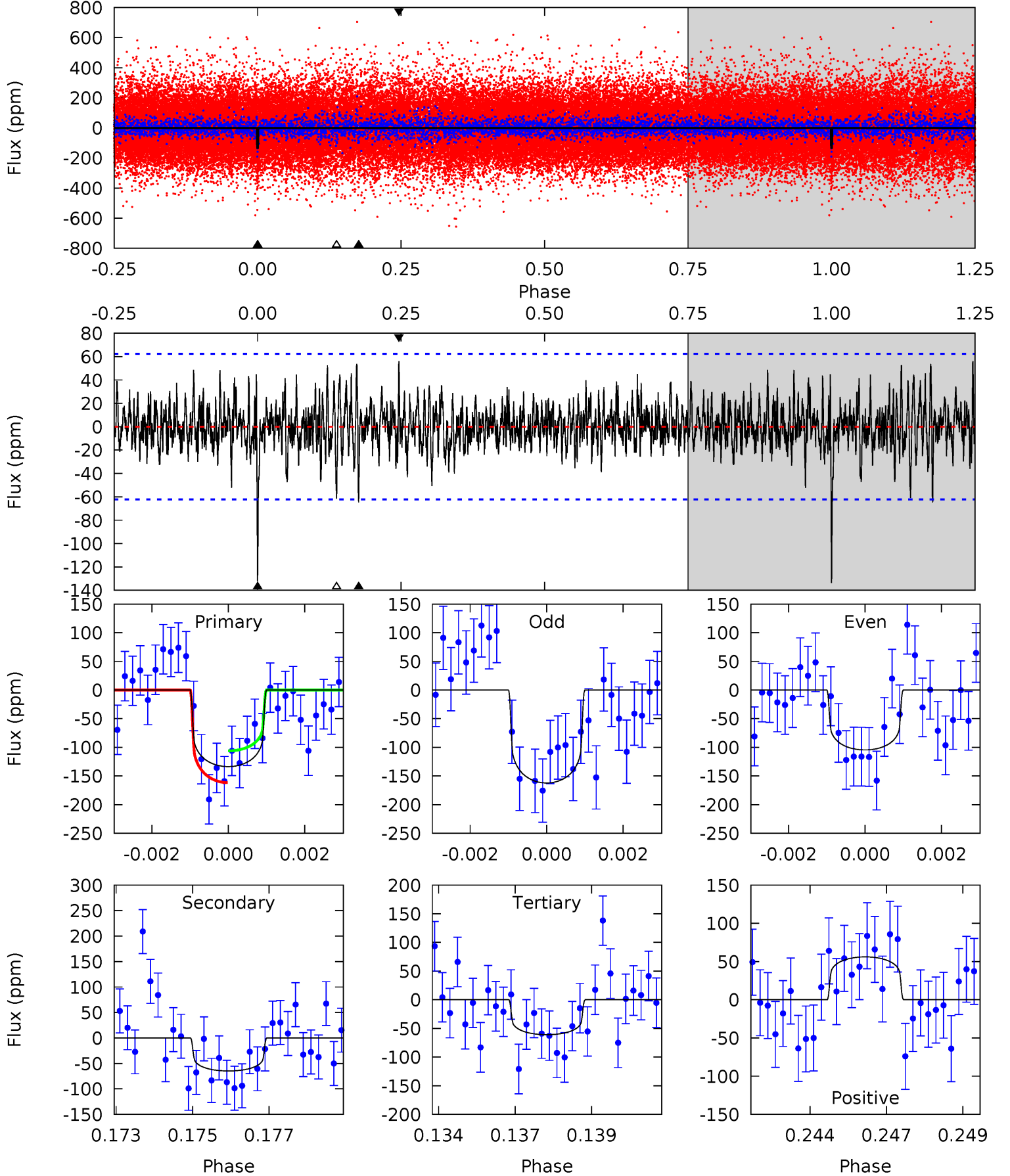
TCE 005351324-01     $P=306.884826$  Days     $T_0=331.140336$  (BKJD)



# DV Model-Shift Uniqueness Test

005351324-01, P = 306.905822 Days, E = 24.217283 Days

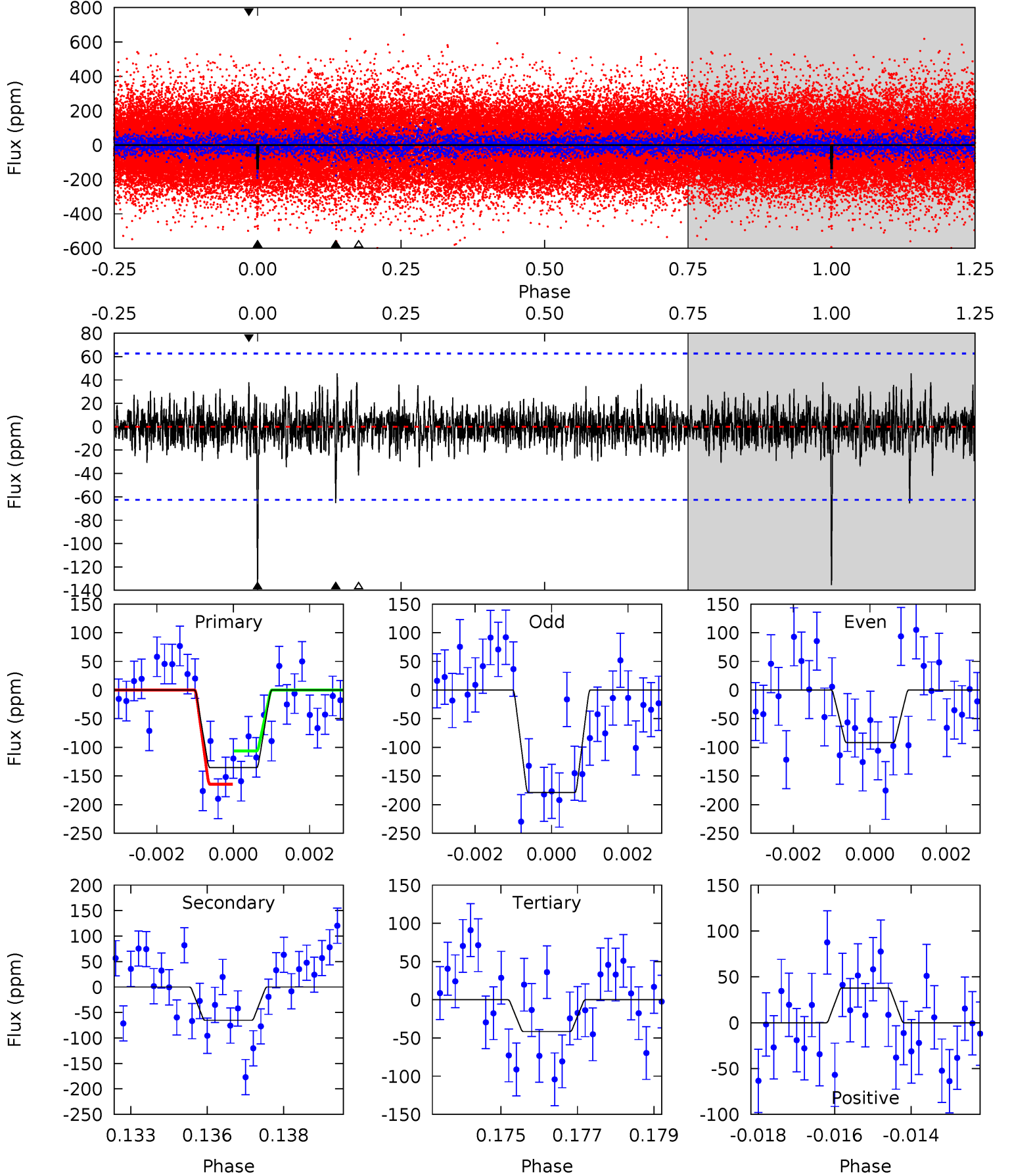
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	5.51	5.18	4.77	5.29	3.04	1.28	6.18	6.59	0.33	0.74	2.46	1.10	0.30	2.35



# Alt Model-Shift Uniqueness Test

005351324-01,  $P = 306.884826$  Days,  $E = 24.255510$  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
11.5	5.52	3.53	3.21	5.30	3.05	0.92	7.93	8.25	1.99	2.32	3.69	1.08	0.25	2.46



### Stellar Parameters For KIC 005351324

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6190^{+170}_{-189}$	$4.107^{+0.252}_{-0.126}$	$-0.320^{+0.300}_{-0.300}$	$1.479^{+0.319}_{-0.390}$	$1.021^{+0.165}_{-0.135}$	$0.444^{+0.626}_{-0.169}$
	+3%/-3%	+6%/-3%	+94%/-94%	+22%/-26%	+16%/-13%	+141%/-38%
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 005351324-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-65 \pm 12$	$1.89^{+0.62}_{-0.55}$	$484^{+31}_{-40}$	$5126^{+875}_{-563}$	$8025^{+9230}_{-3493}$
Alt.	$-65 \pm 12$	$1.78^{+0.66}_{-0.58}$	$482^{+33}_{-38}$	$5230^{+1016}_{-609}$	$9051^{+11425}_{-4541}$

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

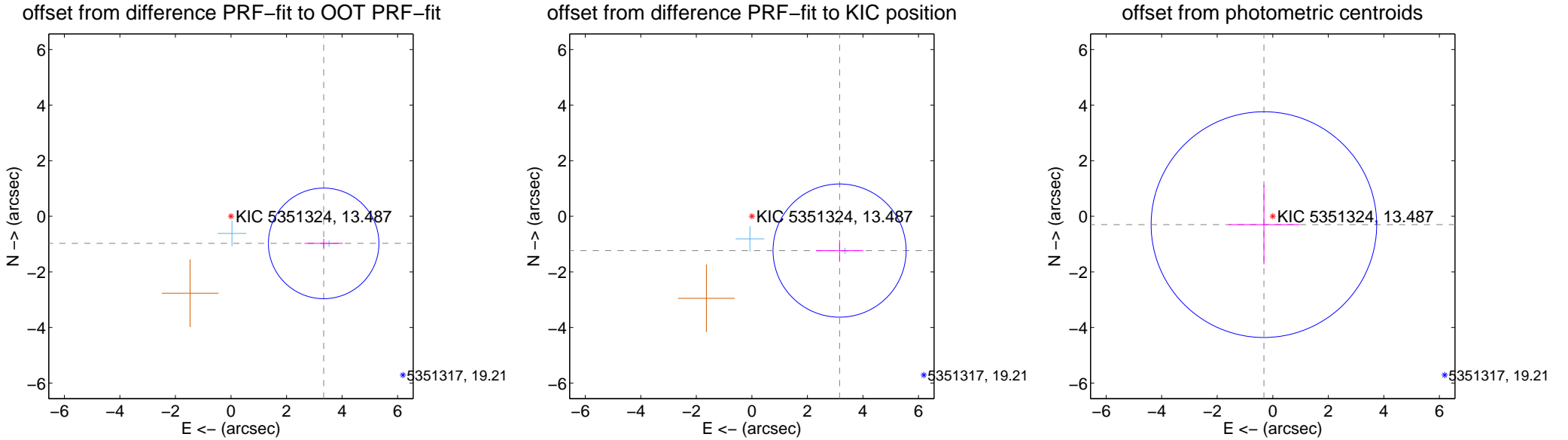
## DV Centroid Data

Supplemental centroid analysis for 005351324-01. Kepler magnitude: 13.49. Transit SNR 7.95

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.22 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.476 \pm 0.663$	5.24	$-3.337 \pm 0.689$	$-0.974 \pm 0.162$
PRF-fit source offset from KIC position	$3.390 \pm 0.799$	4.25	$-3.158 \pm 0.850$	$-1.233 \pm 0.377$
photometric centroid source offset	$0.44 \pm 1.35$	0.32	$0.32 \pm 1.28$	$-0.30 \pm 1.43$



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.

Q1 no difference image



Q1 no OOT image



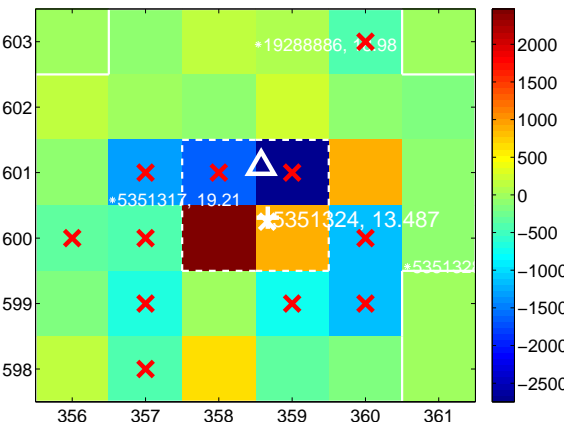
Q2 no difference image



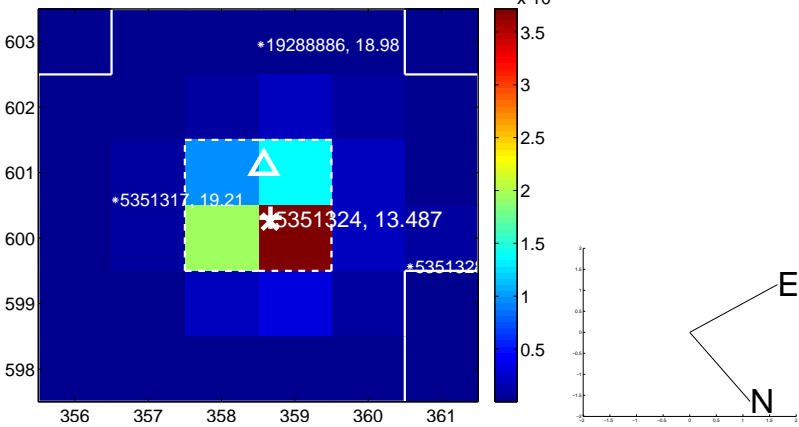
Q2 no OOT image



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.

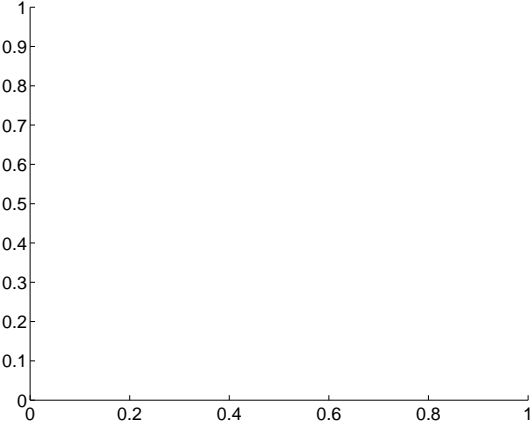
Q5 no difference image



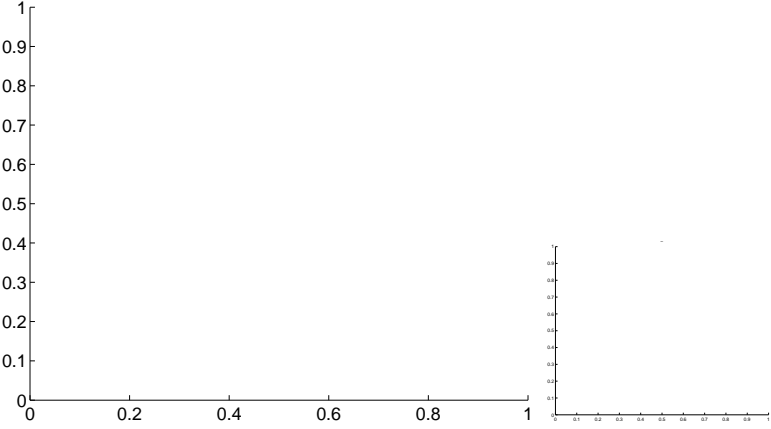
Q5 no OOT image



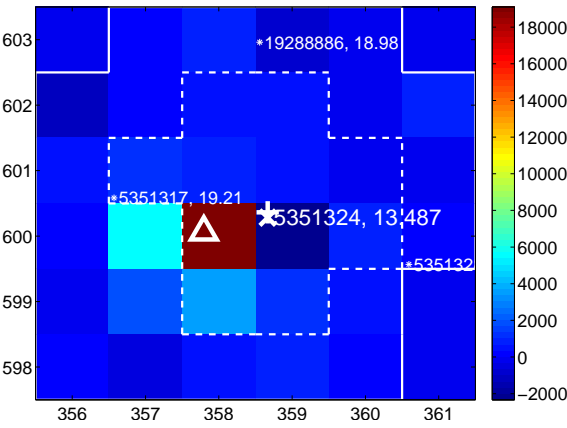
Q6 no difference image



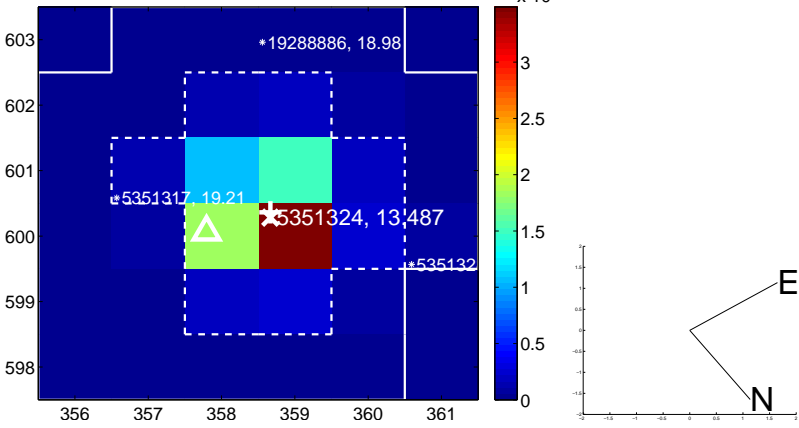
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



Q8 no OOT image



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

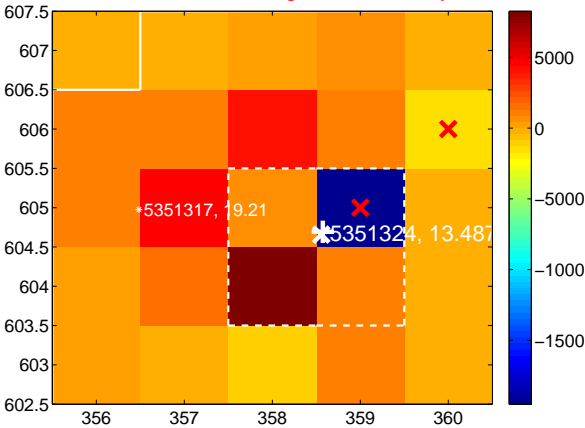
Q9 no difference image



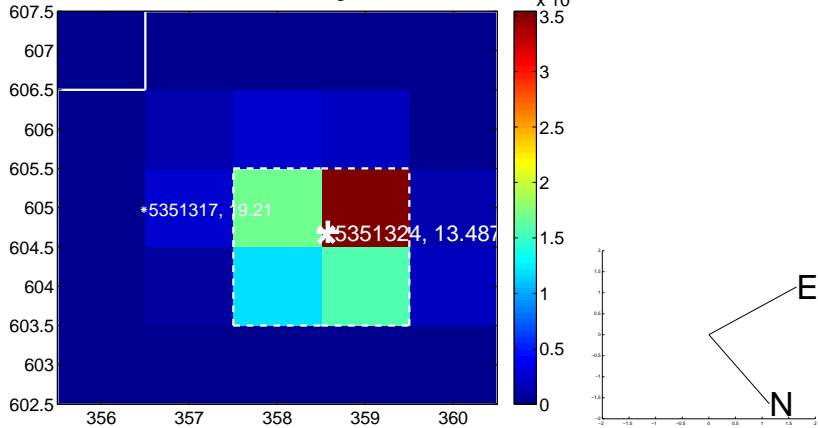
Q9 no OOT image



Q10 difference image. Poor Quality



Q10 OOT image



Q11 no difference image



Q11 no OOT image



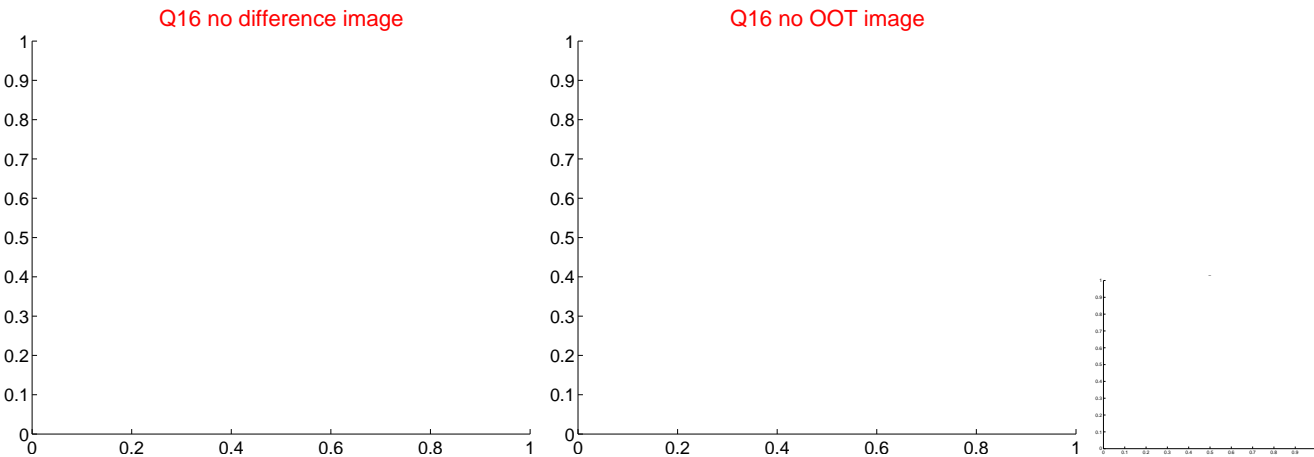
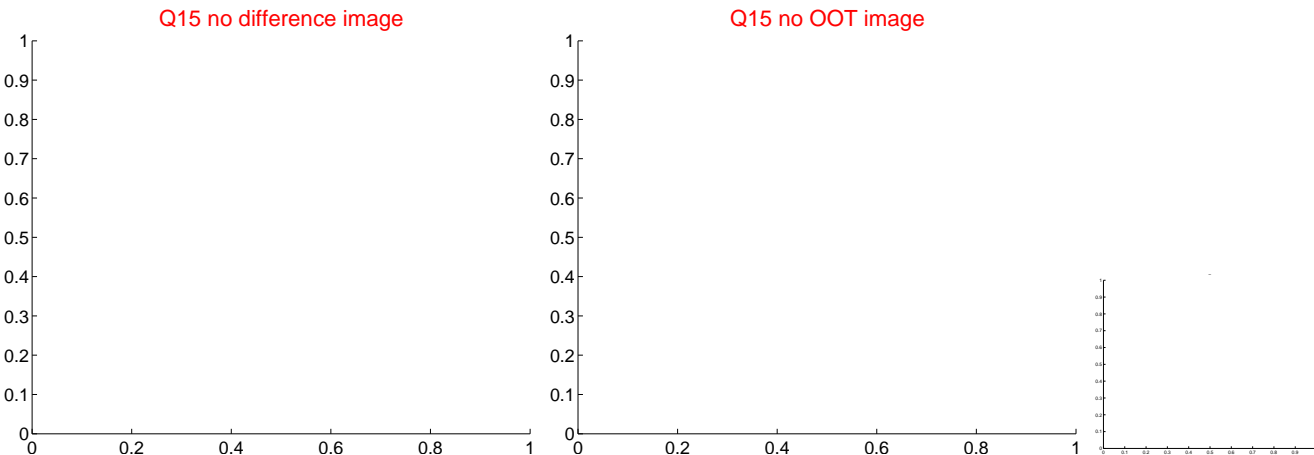
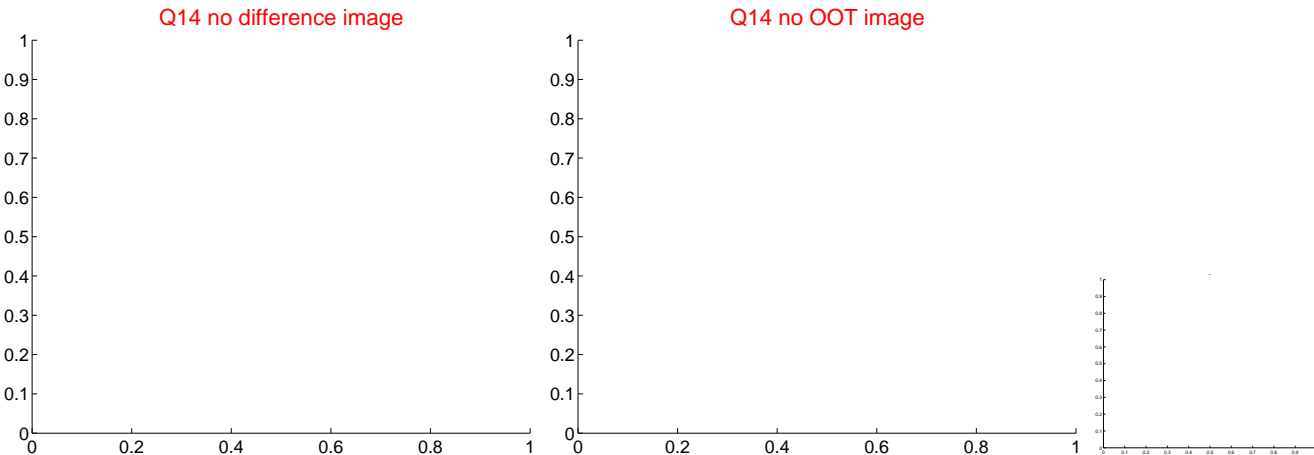
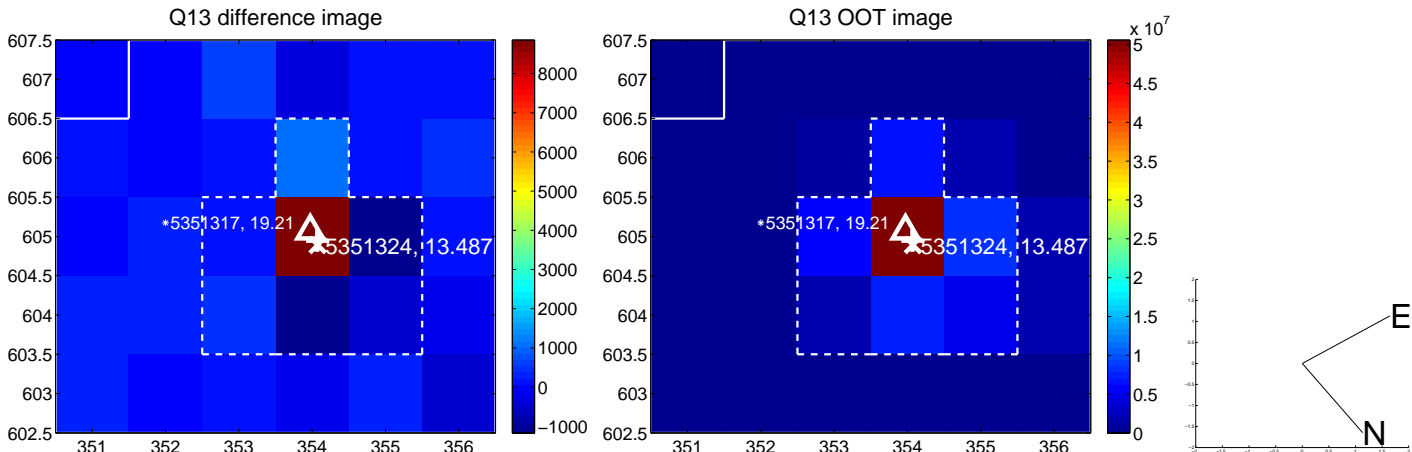
Q12 no difference image



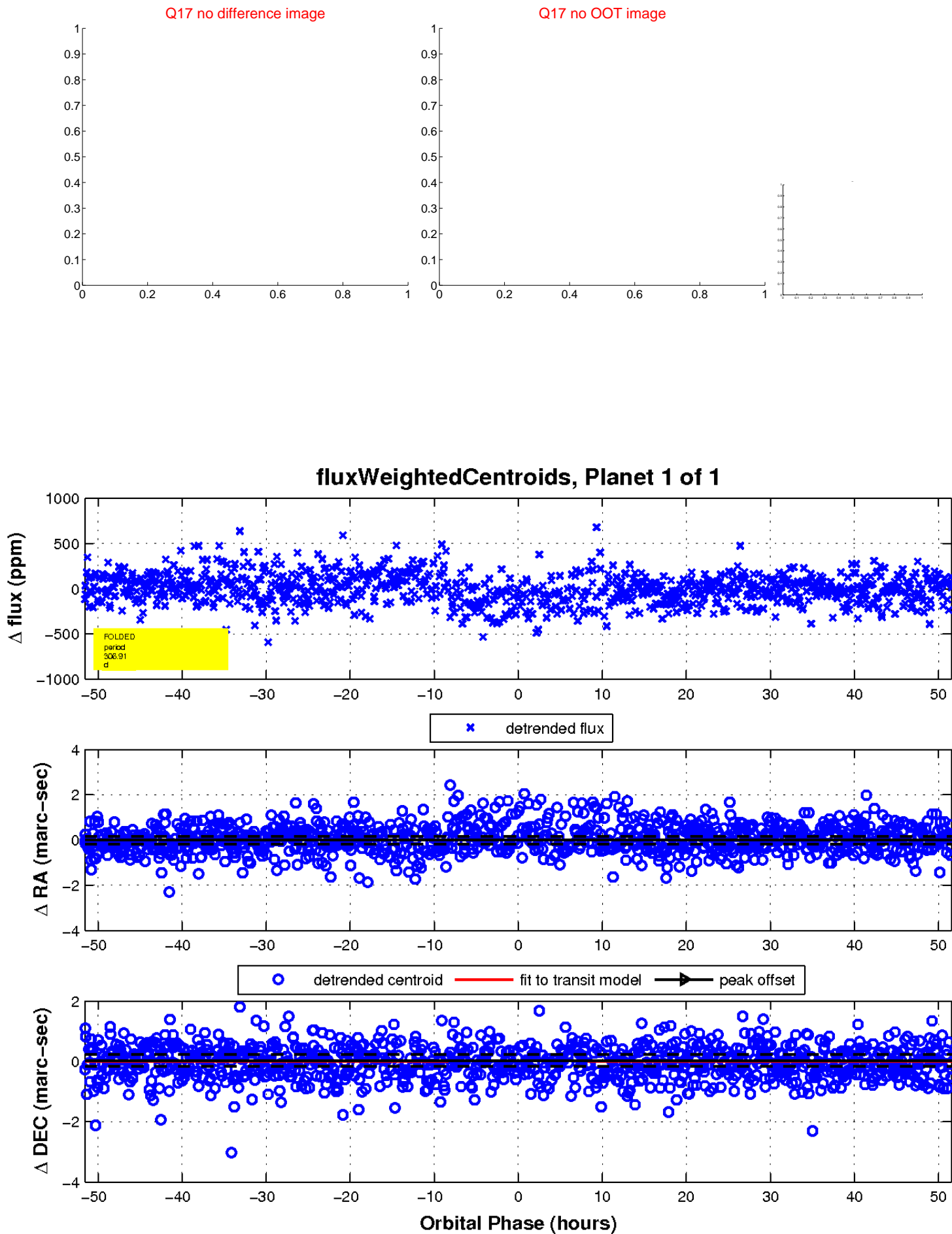
Q12 no OOT image



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.



UKIRT Image

Declination

