

# KIC 010011213

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
010011213-01	OBS	7982.01	376.433899	486.538064	1272.7	14.050	7.3	7.8	0.95	6231	4.19	1.17

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010011213-01	OBS	PC	0.19	0	0	0	0	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.

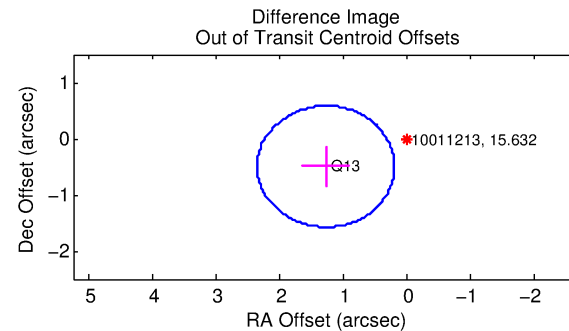
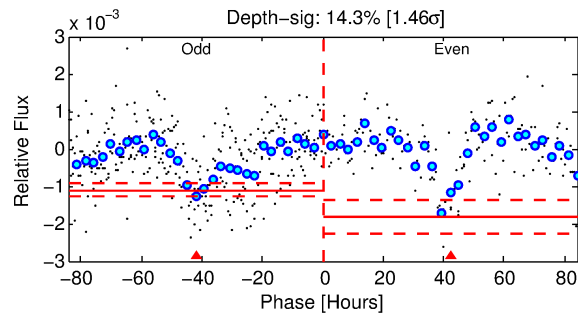
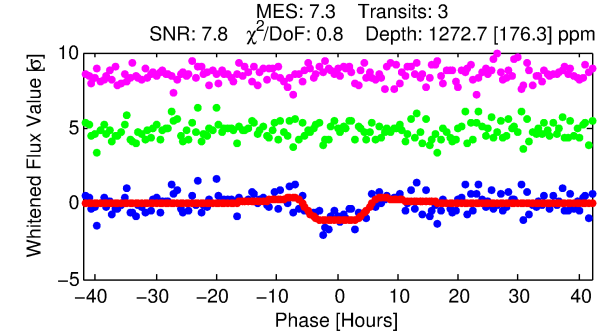
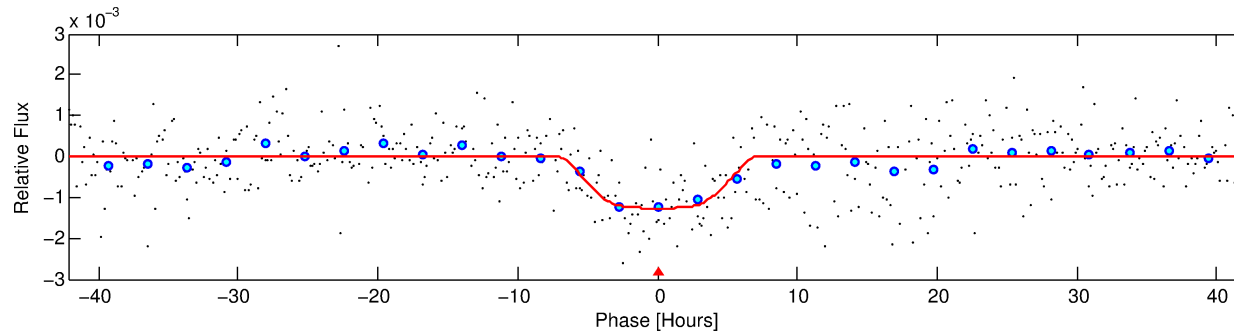
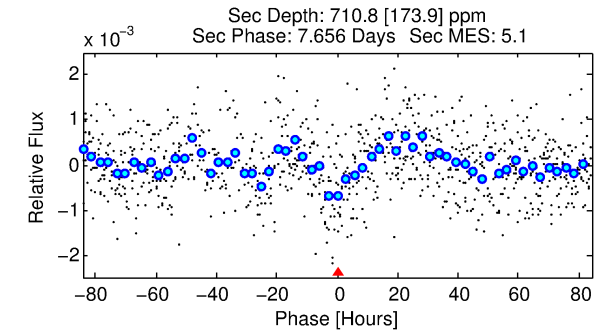
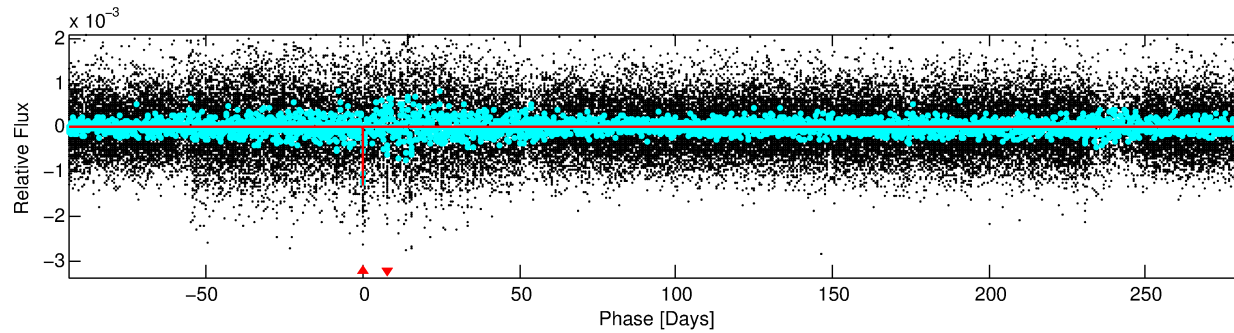
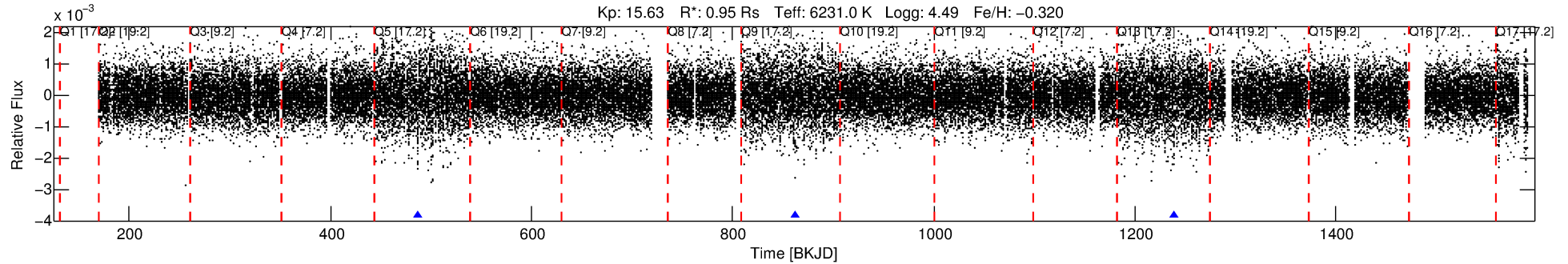
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 010011213-01

No Significant Match Found

# DV One-Page Summary

KIC: 10011213 Candidate: 1 of 1 Period: 376.434 d



## DV Fit Results:

Period = 376.43390 [0.01913] d  
Epoch = 486.5381 [0.0257] BKJD  
Rp/R\* = 0.0402 [0.0037]  
a/R\* = 90.16 [18.42]  
b = 0.94 [0.03]  
Seff = 1.16 [0.48]  
Teq = 265 [27] K  
Rp = 4.19 [1.33] Re  
a = 1.0284 [0.2696] AU  
Ag = 23509.93 [11612.85] [2.02σ]  
Teffp = 5071 [427] K [11.22σ]

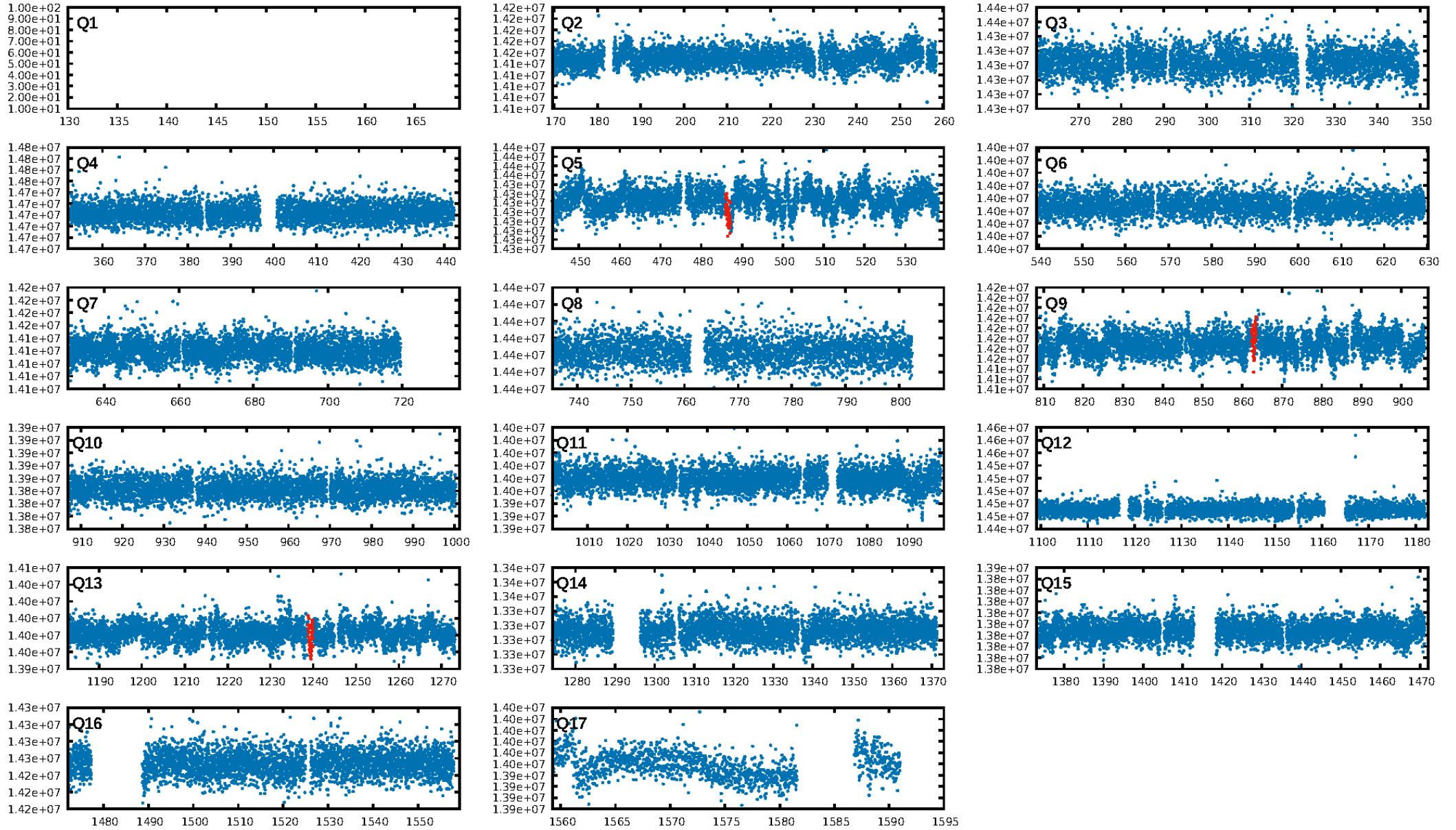
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 33.6%  
ModelChiSquareGof-sig: 100.0%  
**Bootstrap-pfa: 8.98e-10**  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 27.86  
Centroid-sig: 95.2%  
Centroid-so: 0.602 arcsec [0.31σ]  
**OotOffset-rm: 1.372 arcsec [3.81σ]**  
**KicOffset-rm: 1.362 arcsec [3.79σ]**  
OotOffset-st: 0/0/0/1 [1]  
KicOffset-st: 0/0/0/1 [1]  
DiffImageQuality-fgm: 0.00 [0/1]  
DiffImageOverlap-fno: 1.00 [3/3]

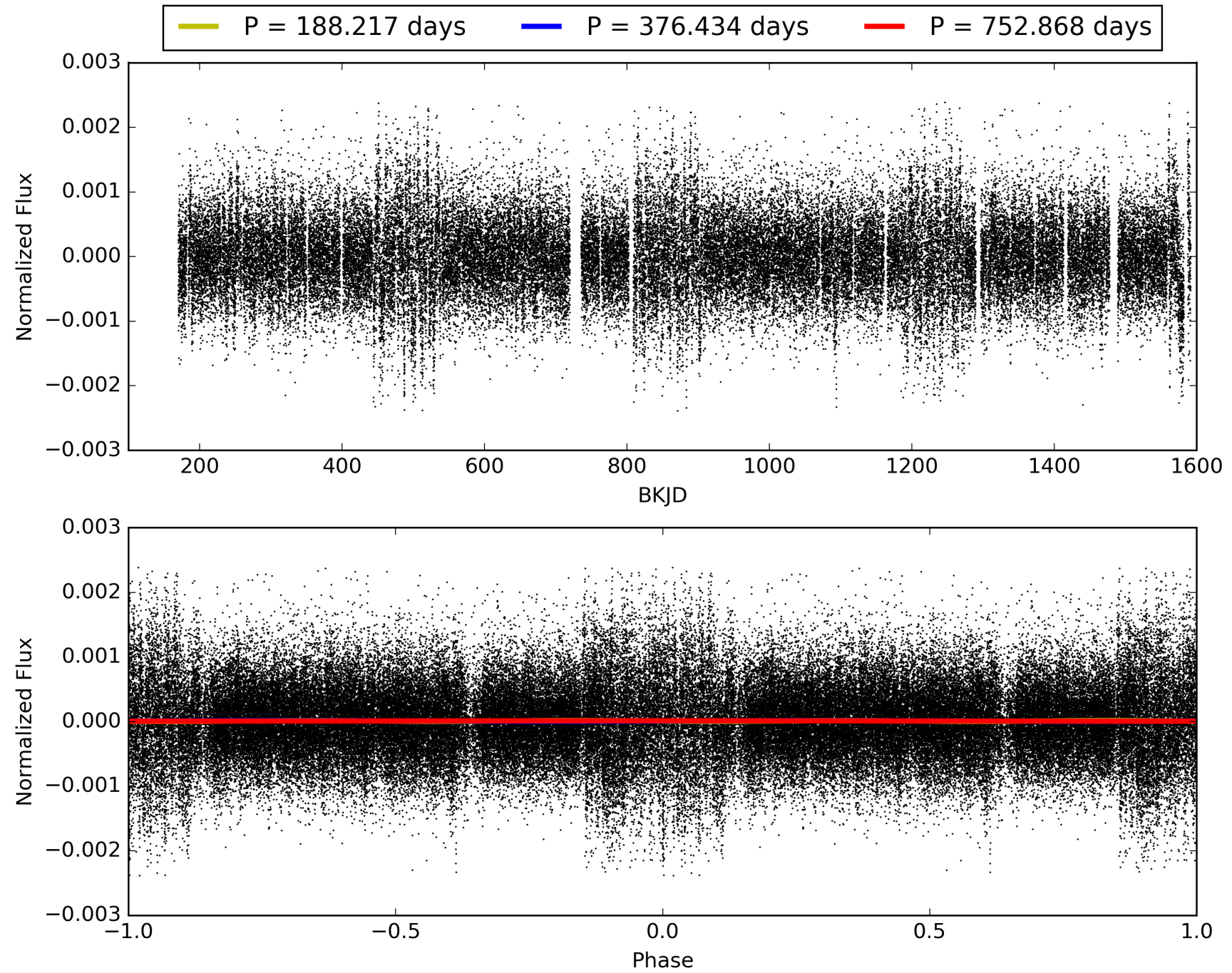
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 28-Jan-2016 20:37:02 Z

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

# TCE 010011213-01, PDC Light Curves

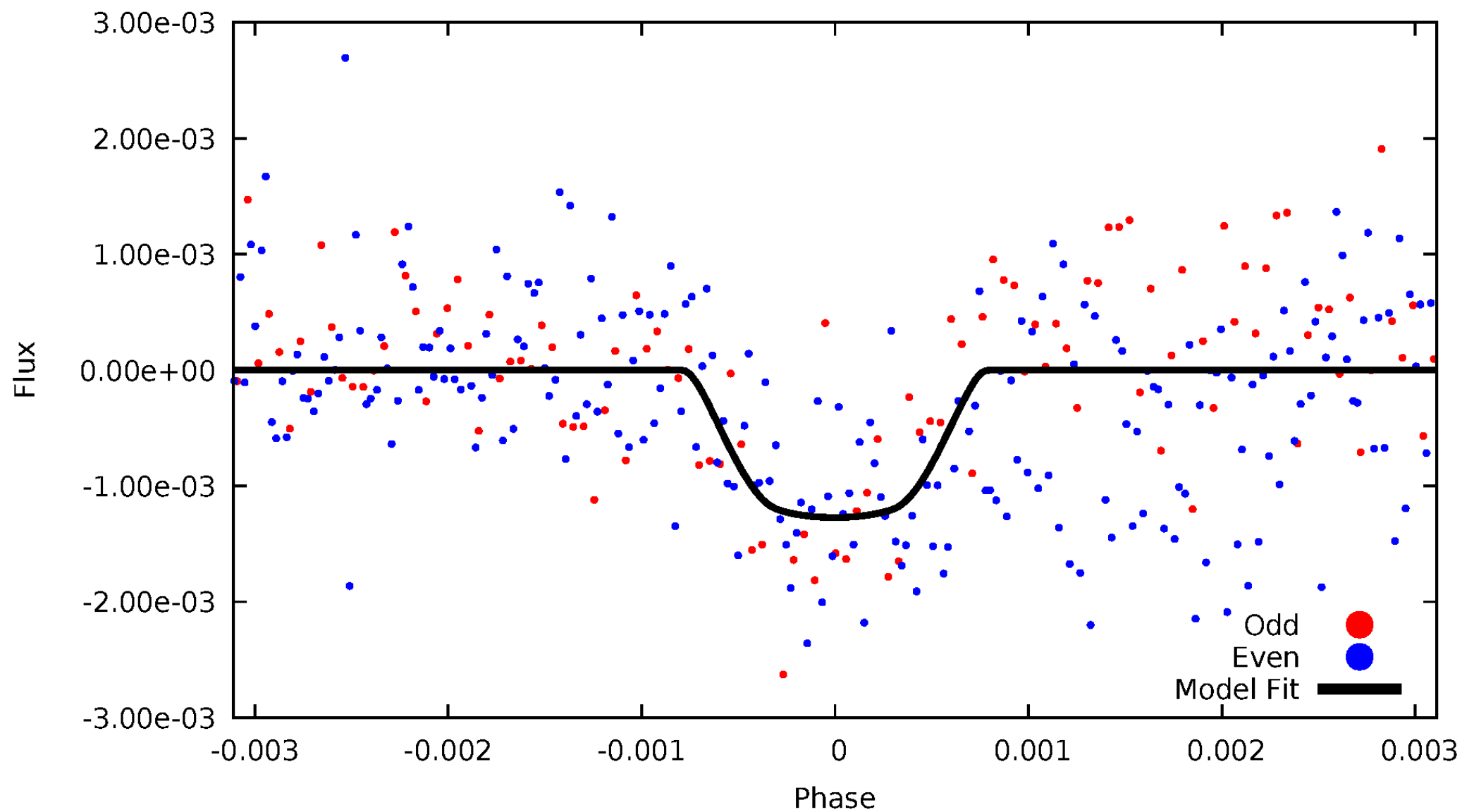


TCE 010011213-01



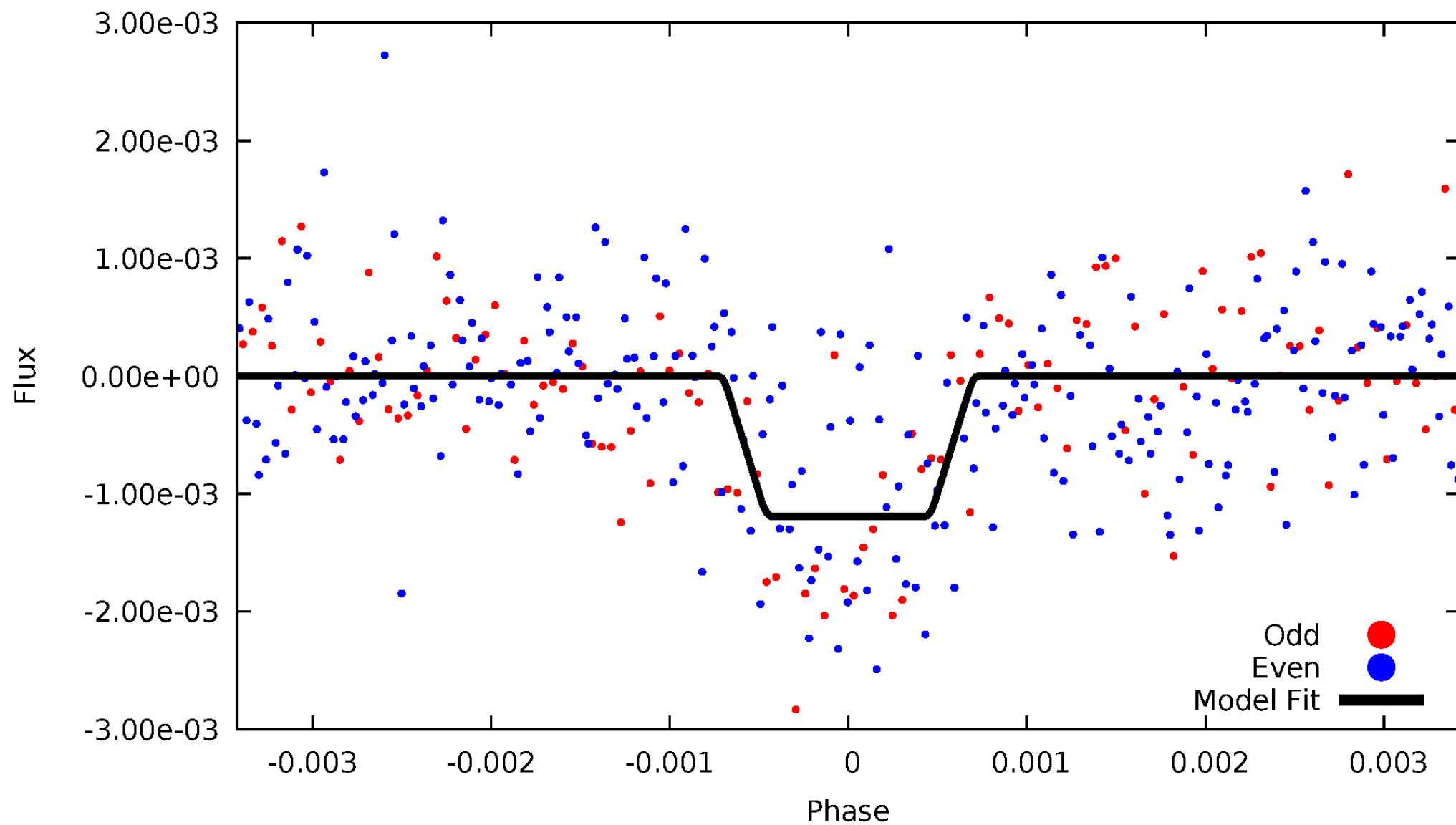
# DV Odd/Even

TCE 010011213-01



# ALT Odd/Even

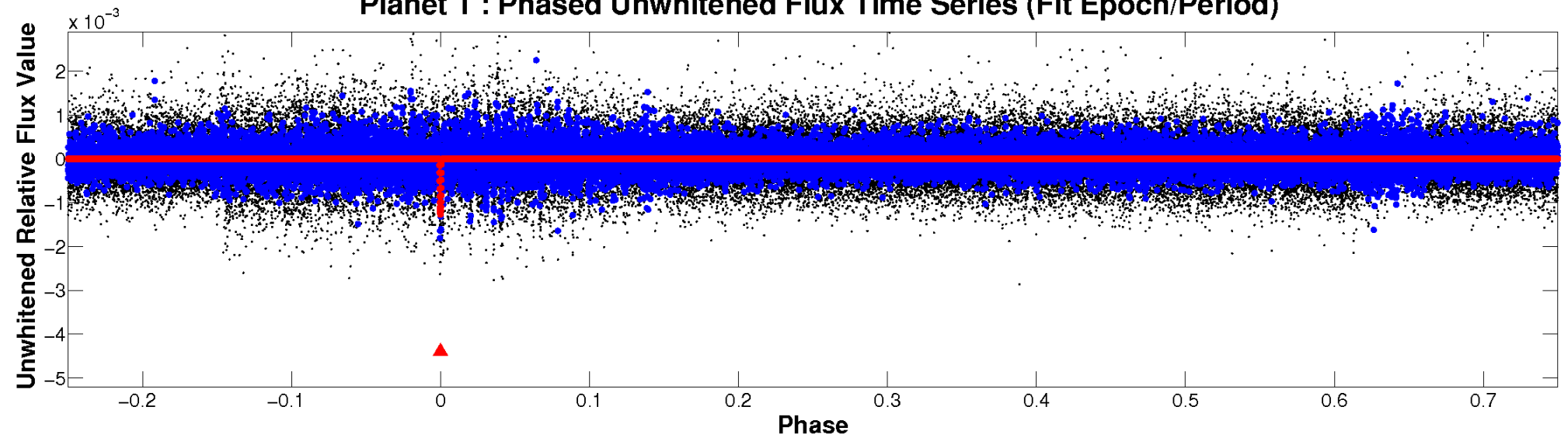
TCE 010011213-01



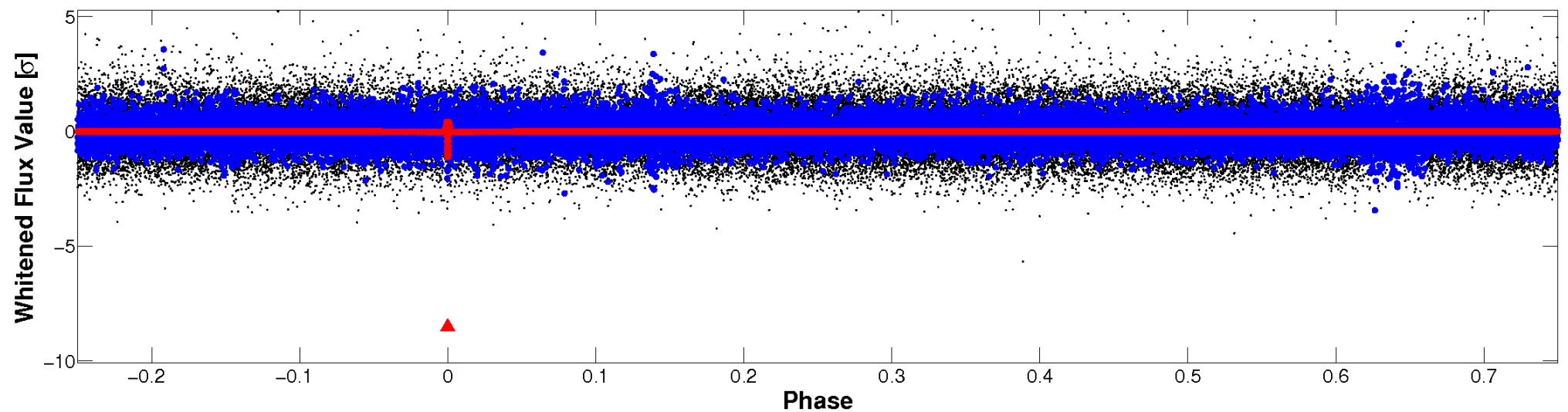


# Non-Whitened Vs. Whitened Light Curve

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

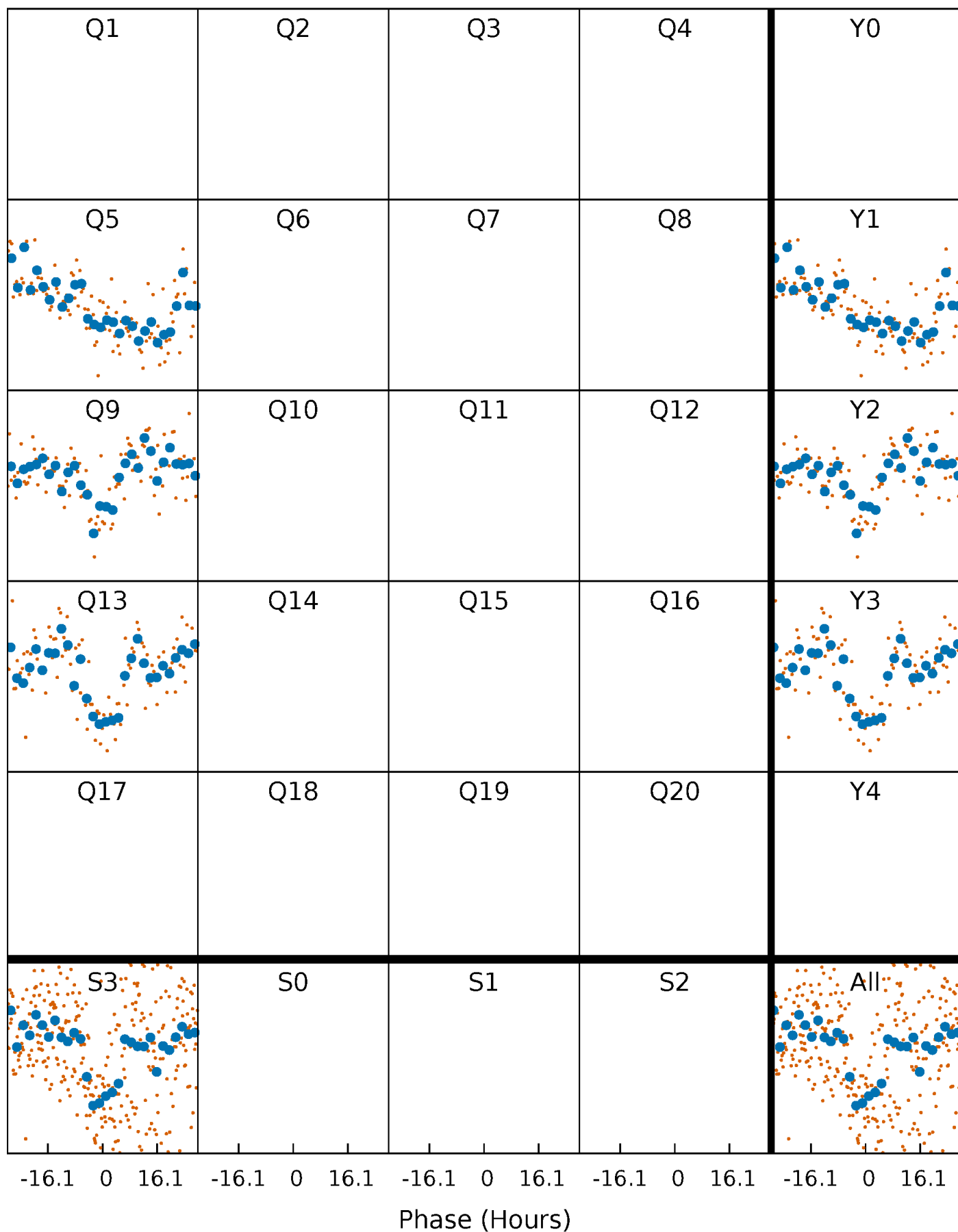


**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**



# PDC Quarter-Phased Transit Curves

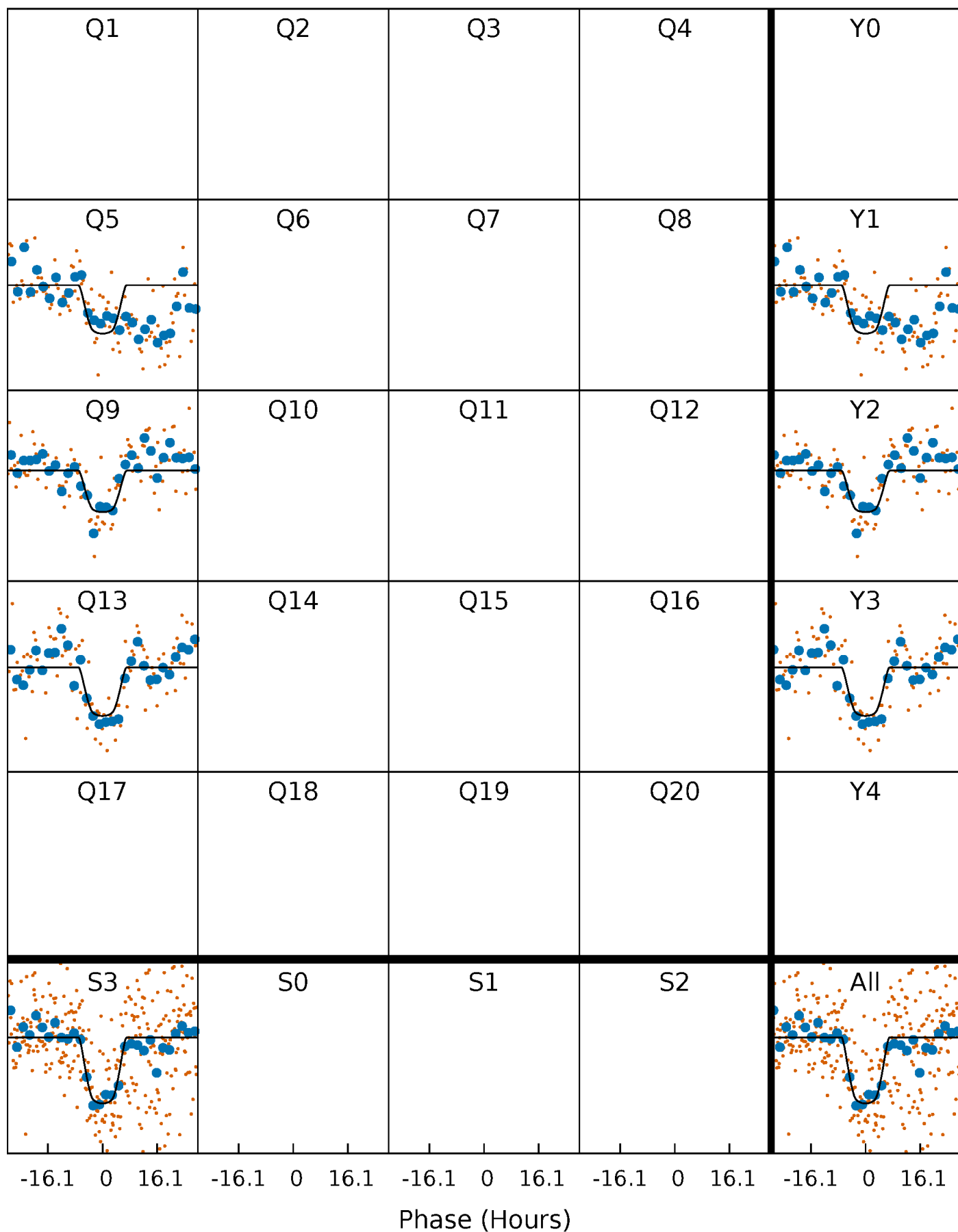
TCE 010011213-01 P=376.433899 Days  $T_0=486.538064$  (BKJD)





# DV Quarter-Phased Transit Curves

TCE 010011213-01 P=376.433899 Days  $T_0=486.538064$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

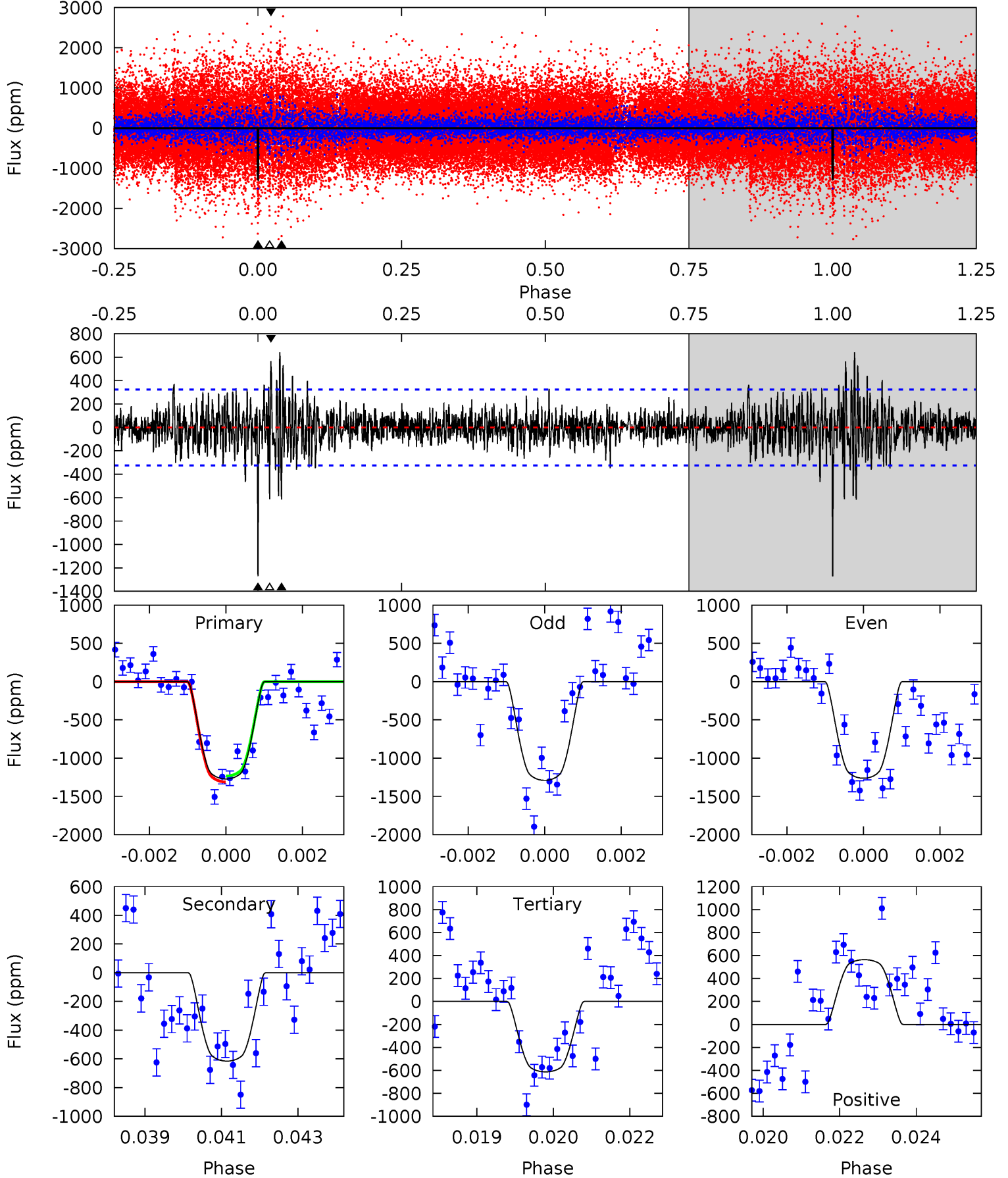
TCE 010011213-01 P=376.420231 Days  $T_0=486.562086$  (BKJD)



# DV Model-Shift Uniqueness Test

010011213-01, P = 376.433899 Days, E = 110.104165 Days

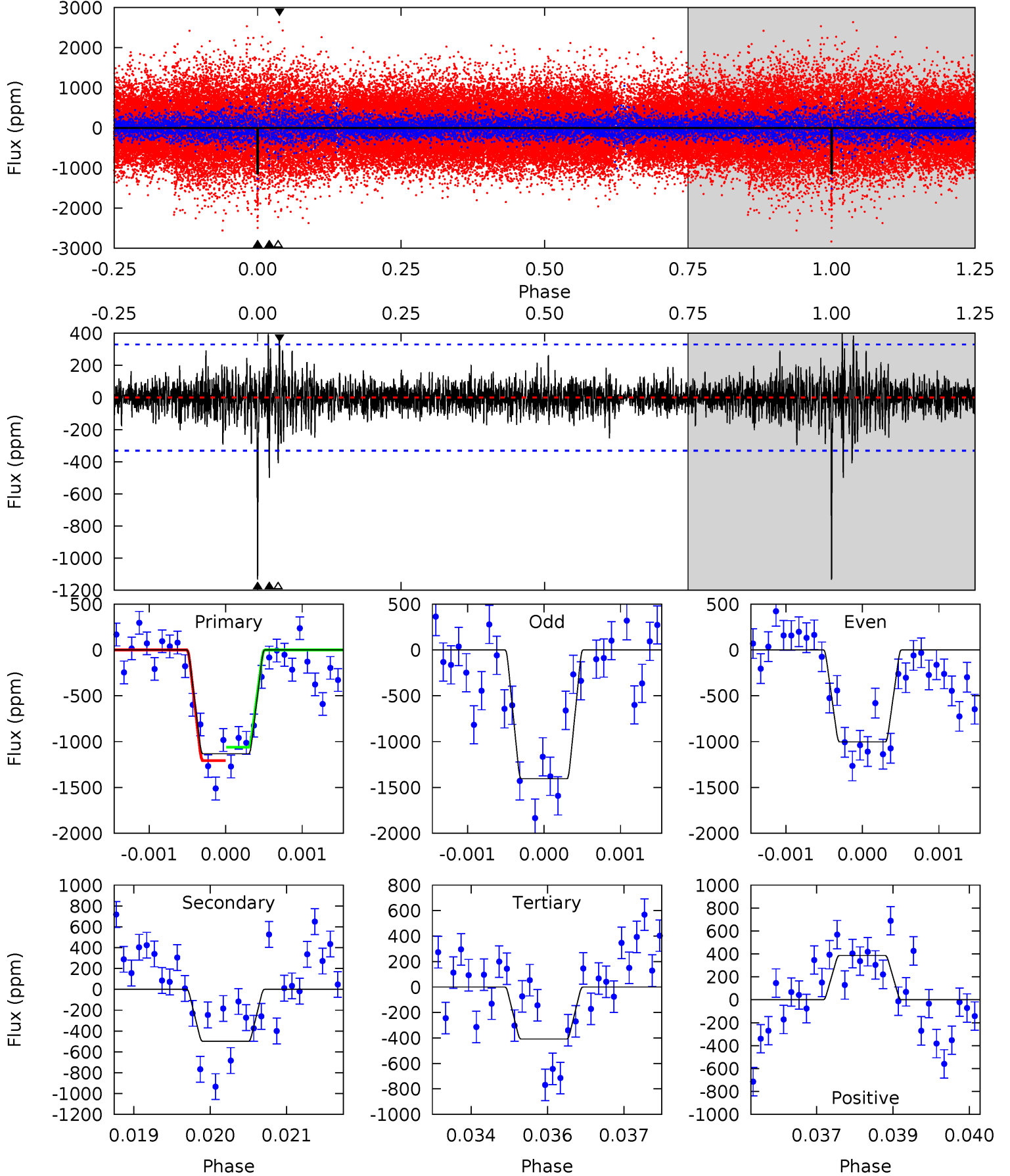
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.0	10.2	10.1	9.32	5.37	3.16	1.80	10.9	11.7	0.04	0.86	0.22	0.99	0.34	0.64



# Alt Model-Shift Uniqueness Test

010011213-01, P = 376.420231 Days, E = 110.141855 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
18.5	8.13	6.65	6.28	5.39	3.19	1.17	11.8	12.2	1.48	1.85	3.10	0.81	0.26	1.20



### Stellar Parameters For KIC 010011213

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$6231^{+188}_{-225}$	$4.488^{+0.054}_{-0.216}$	$-0.320^{+0.300}_{-0.300}$	$0.955^{+0.291}_{-0.097}$	$1.025^{+0.134}_{-0.134}$	$1.655^{+0.468}_{-0.873}$
	+3%/-4%	+1%/-5%	+94%/-94%	+30%/-10%	+13%/-13%	+28%/-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 010011213-01 / KOI 7982.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	$A_{\text{obs}}$
DV	$-616 \pm 60$	$4.30^{+0.84}_{-0.49}$	$378^{+27}_{-19}$	$4966^{+274}_{-241}$	$18531^{+5598}_{-5418}$
Alt.	$-499 \pm 61$	$3.75^{+0.69}_{-0.53}$	$377^{+26}_{-18}$	$5071^{+321}_{-302}$	$20000^{+7468}_{-5663}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

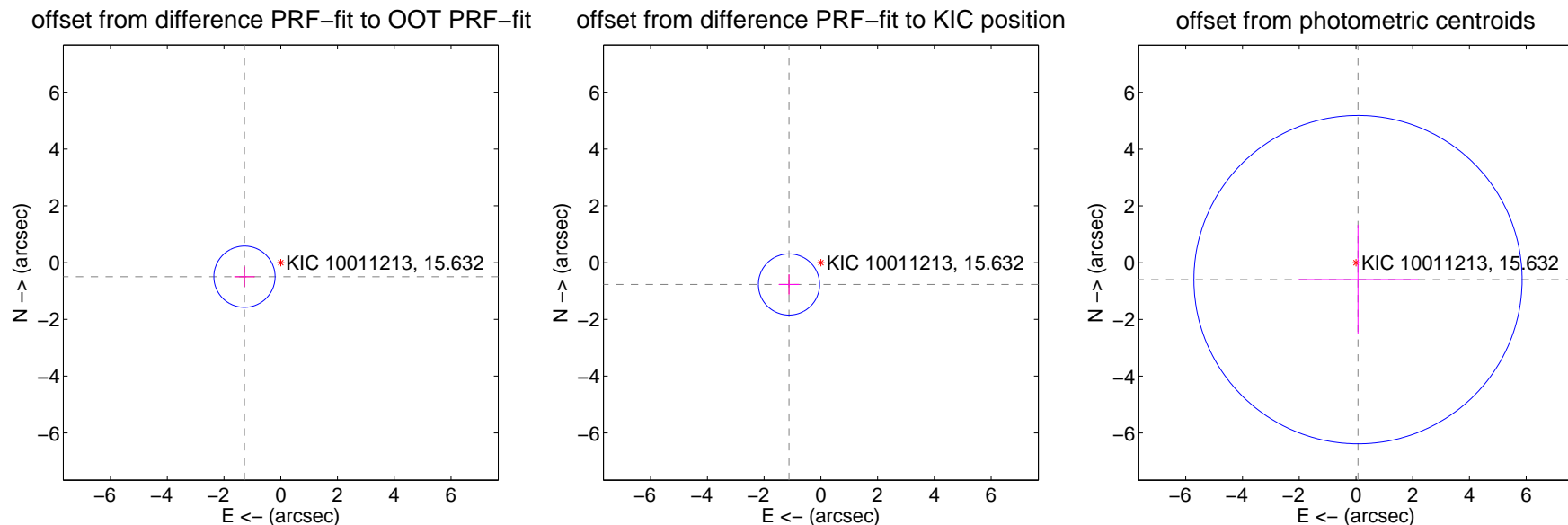
## DV Centroid Data

Supplemental centroid analysis for 010011213-01. Kepler magnitude: 15.63. Transit SNR 7.82

There are 0 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.31 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$1.372 \pm 0.360$	3.81	$1.278 \pm 0.360$	$-0.497 \pm 0.359$
PRF-fit source offset from KIC position	$1.362 \pm 0.360$	3.79	$1.123 \pm 0.360$	$-0.770 \pm 0.359$
photometric centroid source offset	$0.60 \pm 1.93$	0.31	$-0.07 \pm 2.12$	$-0.60 \pm 1.93$



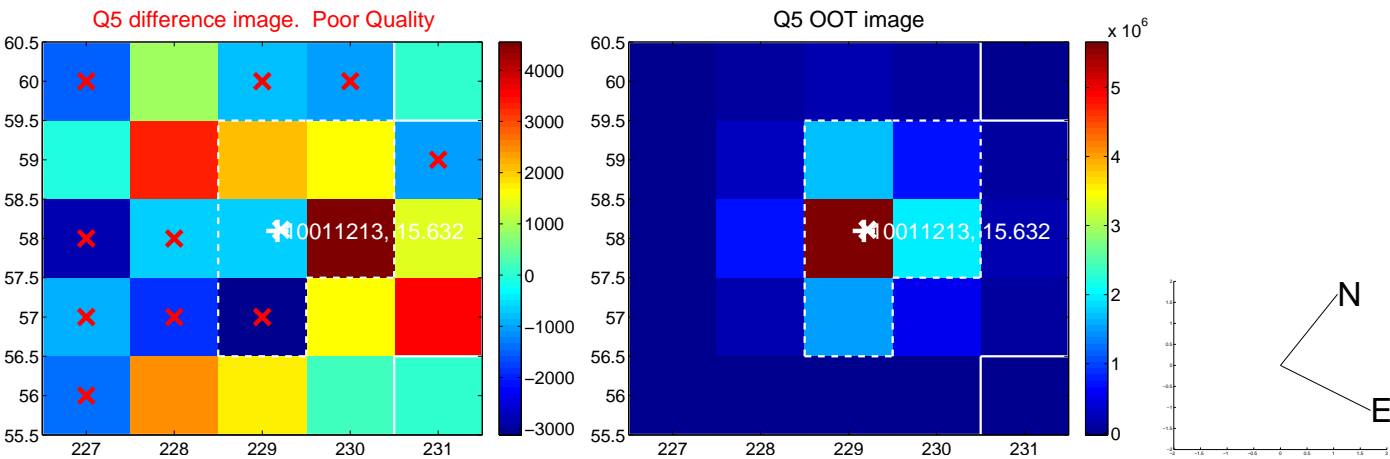
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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

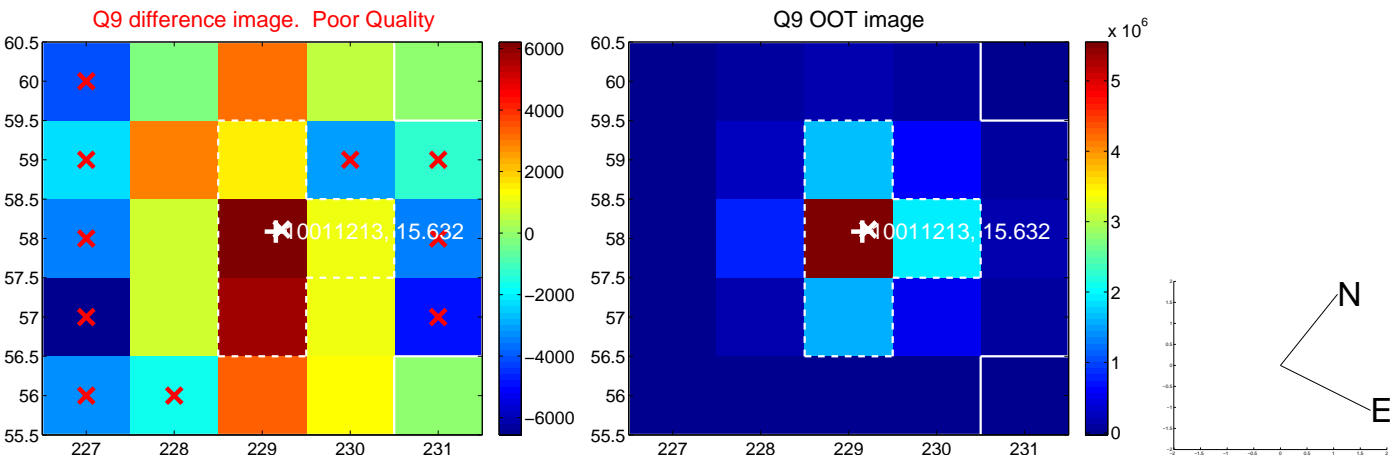




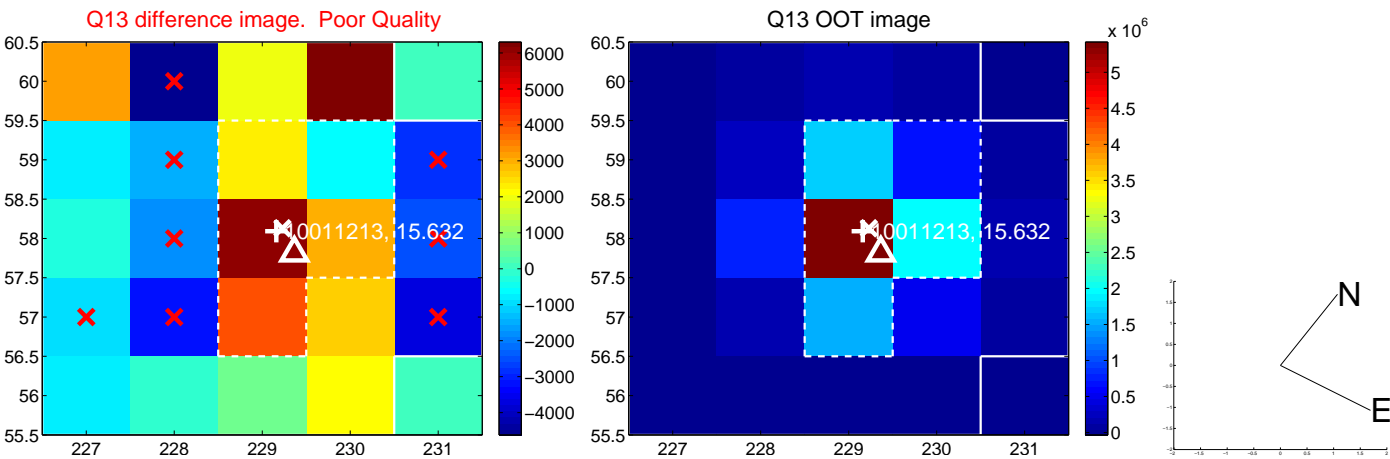
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



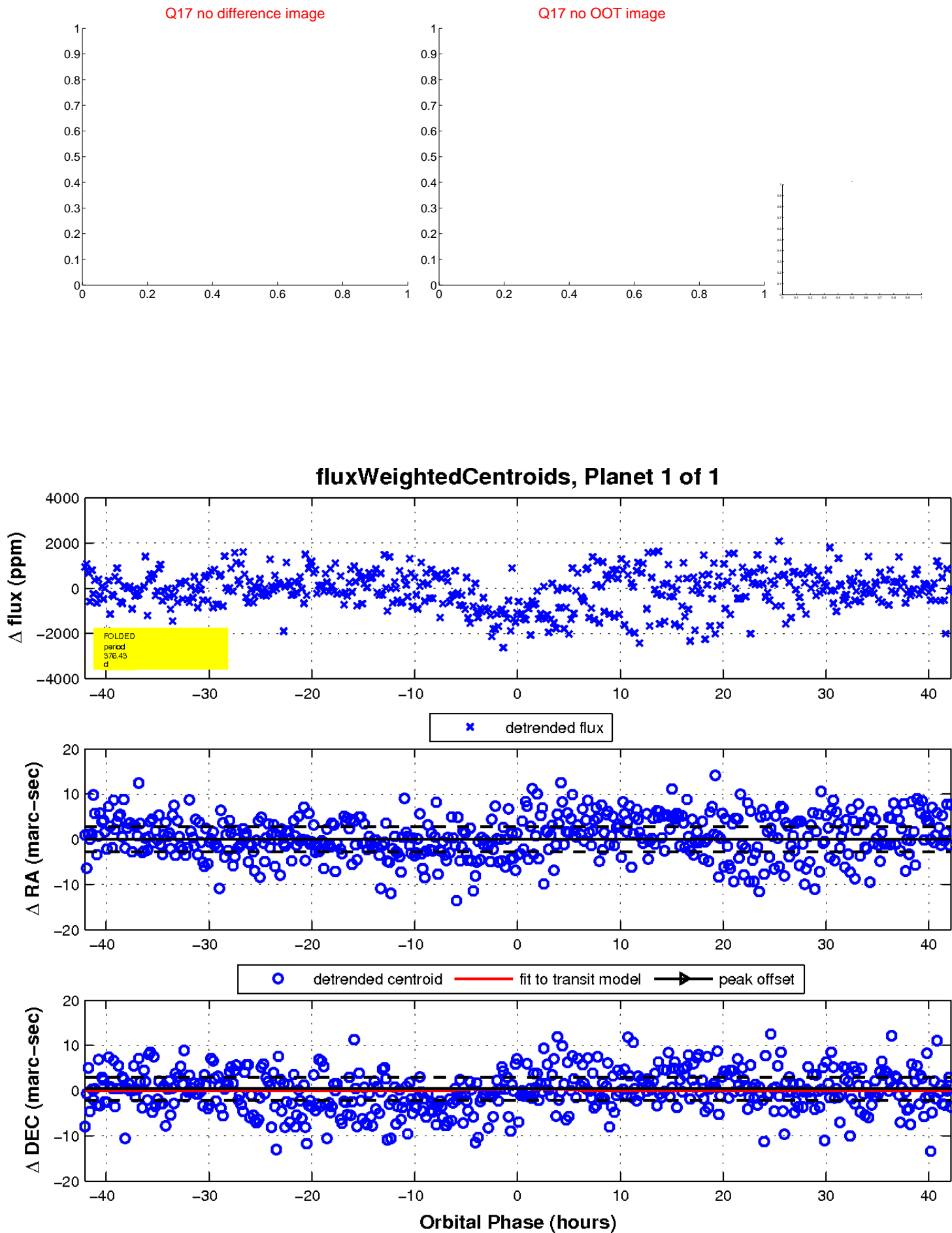
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



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



UKIRT Image

Declination

