

# KIC 003733205

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003733205-01	OBS	No	360.052778	373.738149	4594.2	30.686	17.0	18.4	18.59	5402	187.17	130.88

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003733205-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL_SKYE—LPP_DV—MOD_NONUNIQ_DV—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.

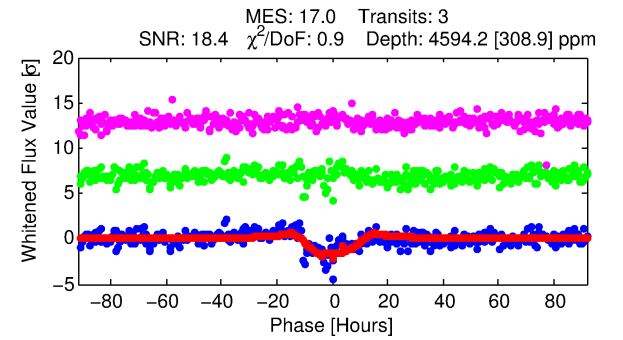
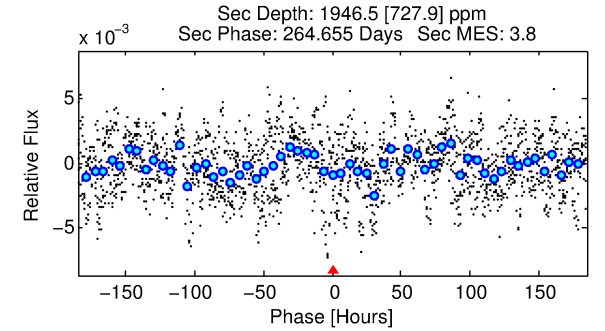
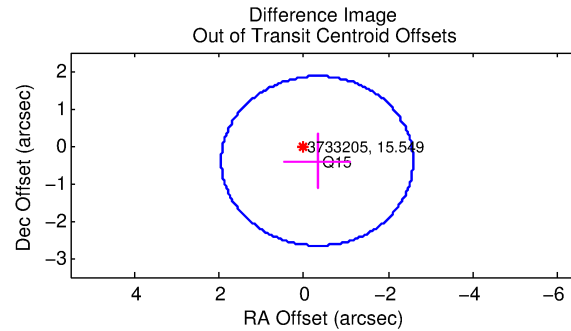
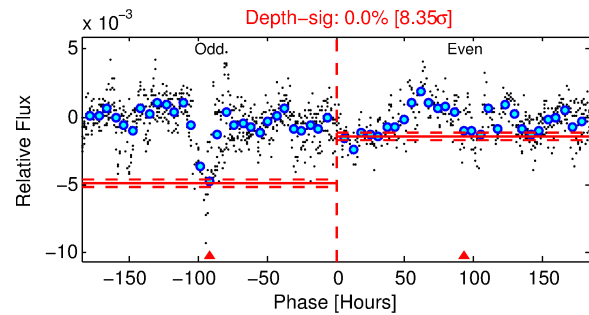
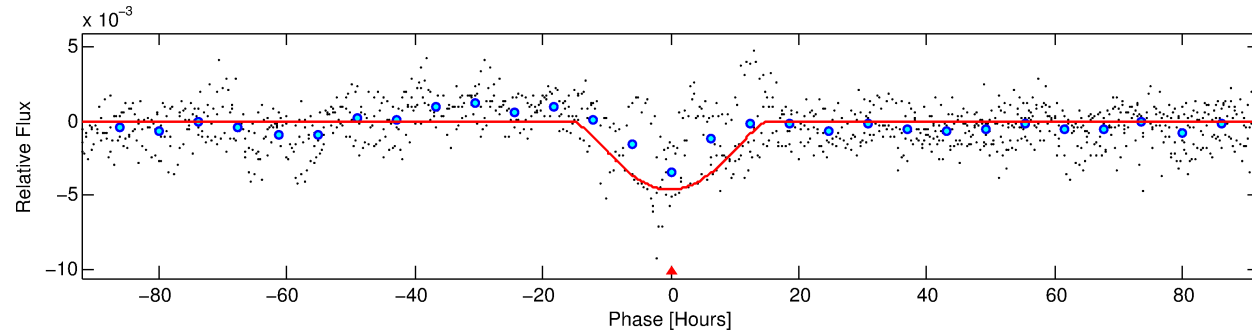
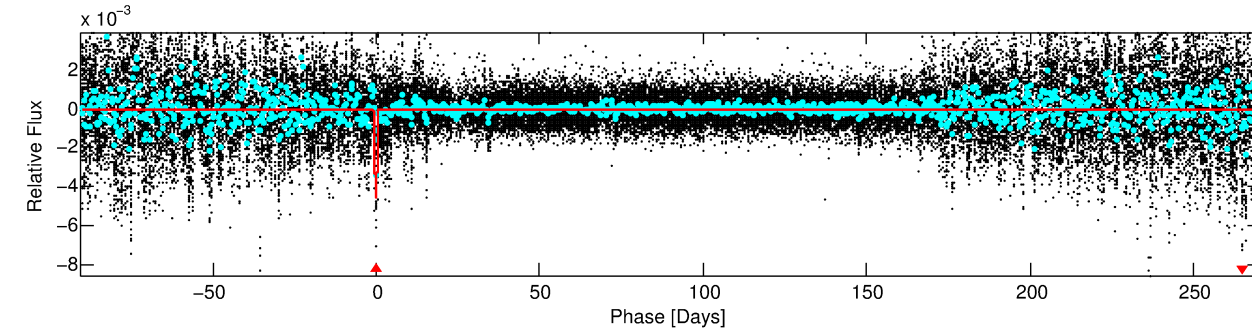
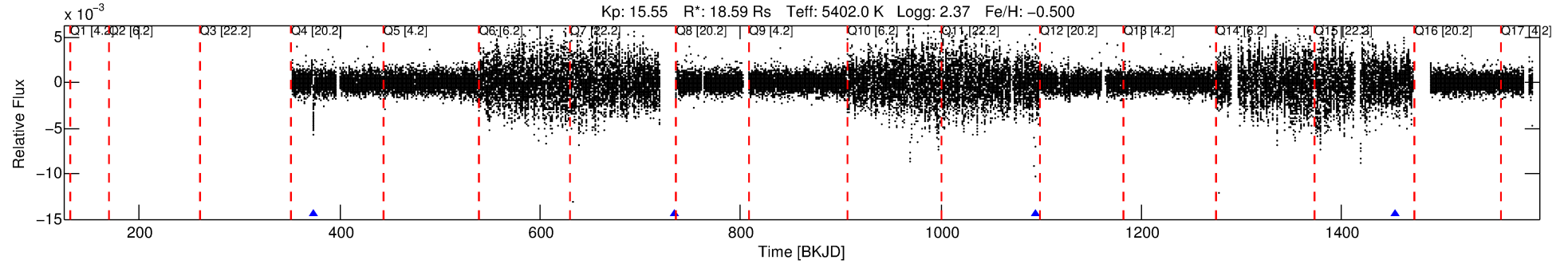
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003733205-01

No Significant Match Found

# DV One-Page Summary

KIC: 3733205 Candidate: 1 of 1 Period: 360.053 d



## DV Fit Results:

Period = 360.05278 [0.02243] d  
Epoch = 373.7381 [0.0169] BKJD  
Rp/R\* = 0.0923 [0.0570]  
a/R\* = 46.10 [8.77]  
b = 0.96 [0.10]  
Seff = 130.88 [49.15]  
Teq = 862 [81] K  
Rp = 187.17 [125.95] Re  
a = 1.4196 [0.2540] AU  
Ag = 61.60 [80.38] [0.75 $\sigma$ ]  
Teffp = 3736 [1245] K [2.30 $\sigma$ ]

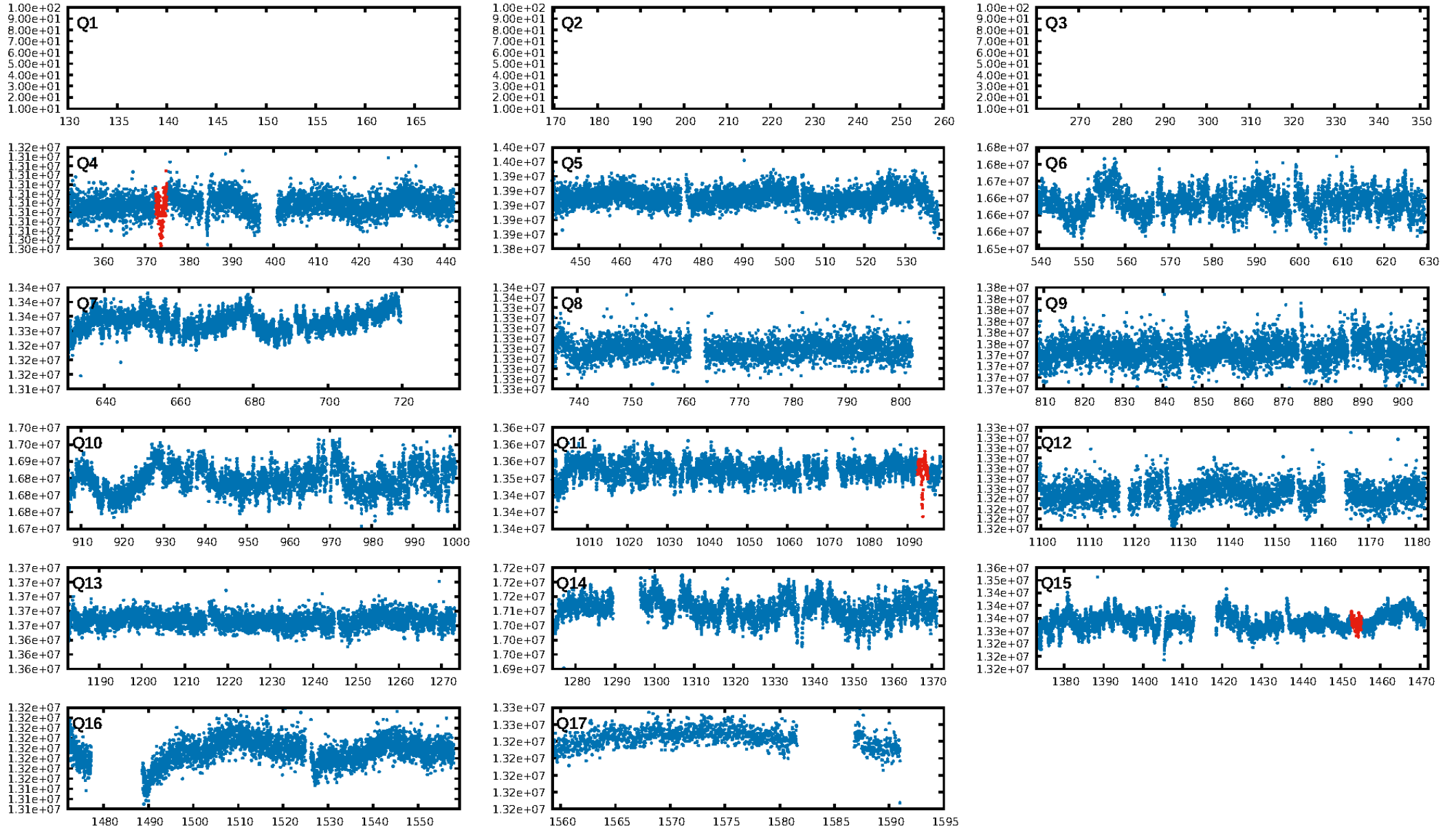
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 5.9%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 6.21e-40  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 16.76  
Centroid-sig: 6.4%  
Centroid-so: 2.279 arcsec [19.27 $\sigma$ ]  
OotOffset-rm: 0.518 arcsec [0.69 $\sigma$ ]  
KicOffset-rm: 3.399 arcsec [4.45 $\sigma$ ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [1/1]

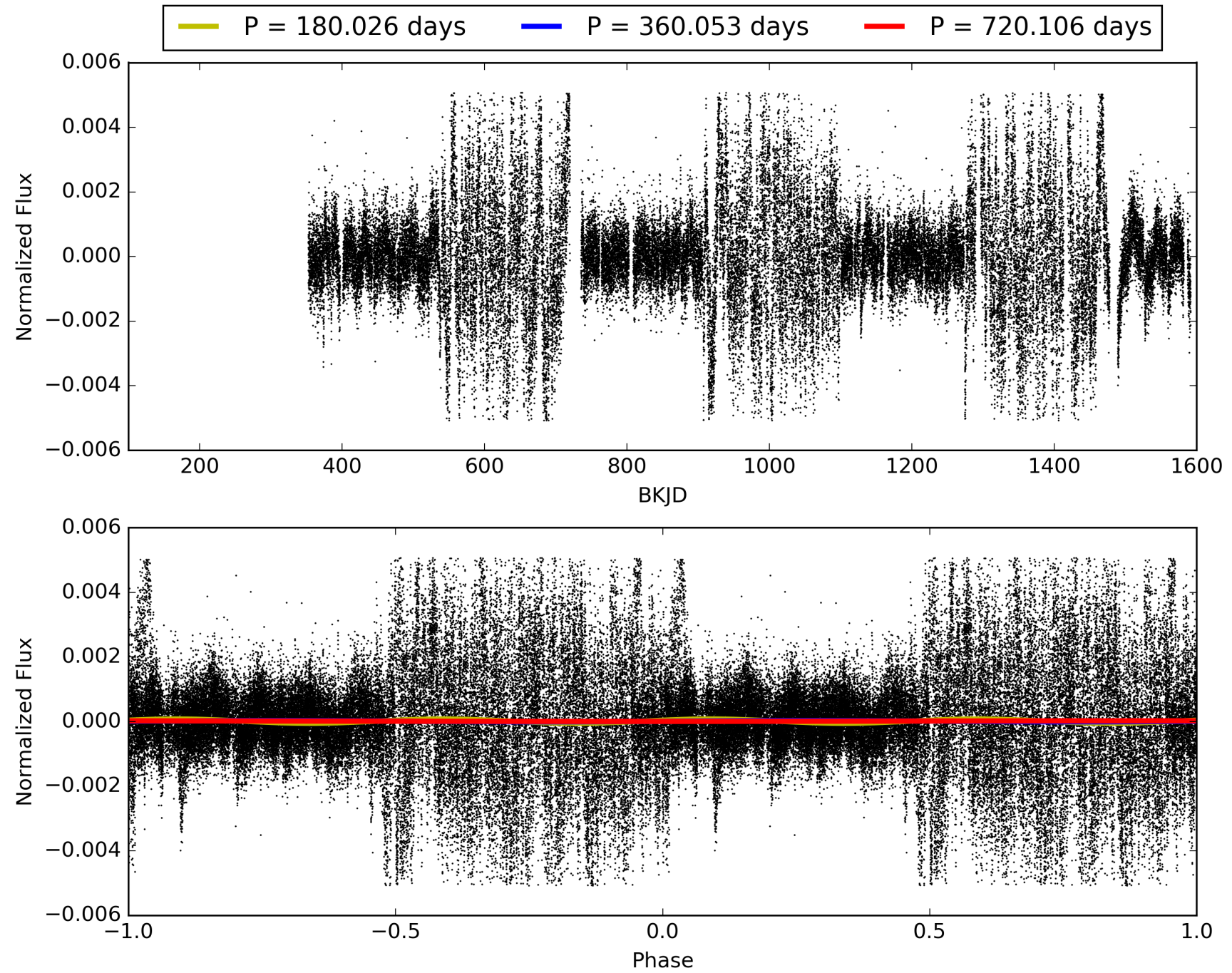
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:37:00 Z

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

# TCE 003733205-01, PDC Light Curves

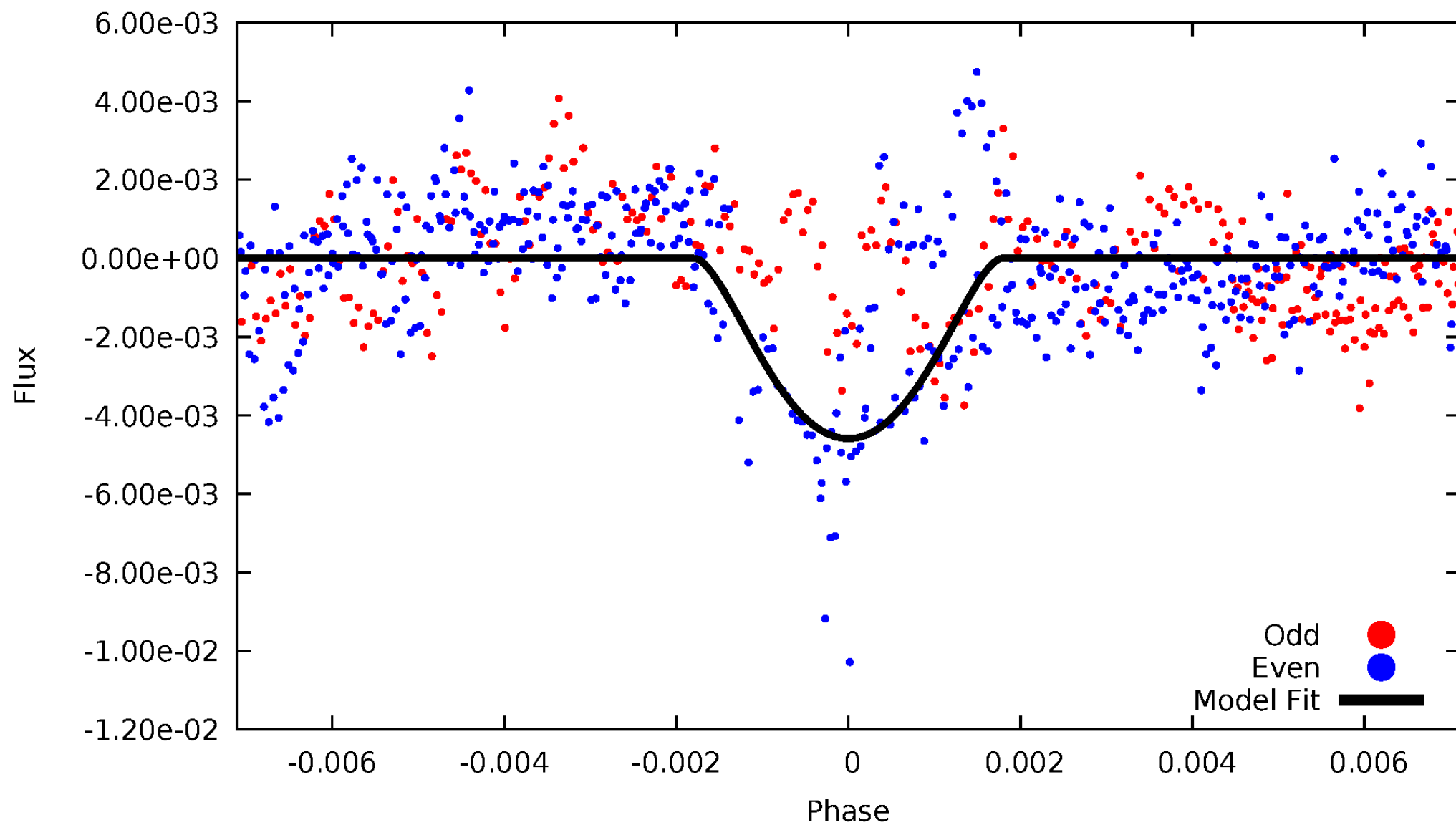


TCE 003733205-01



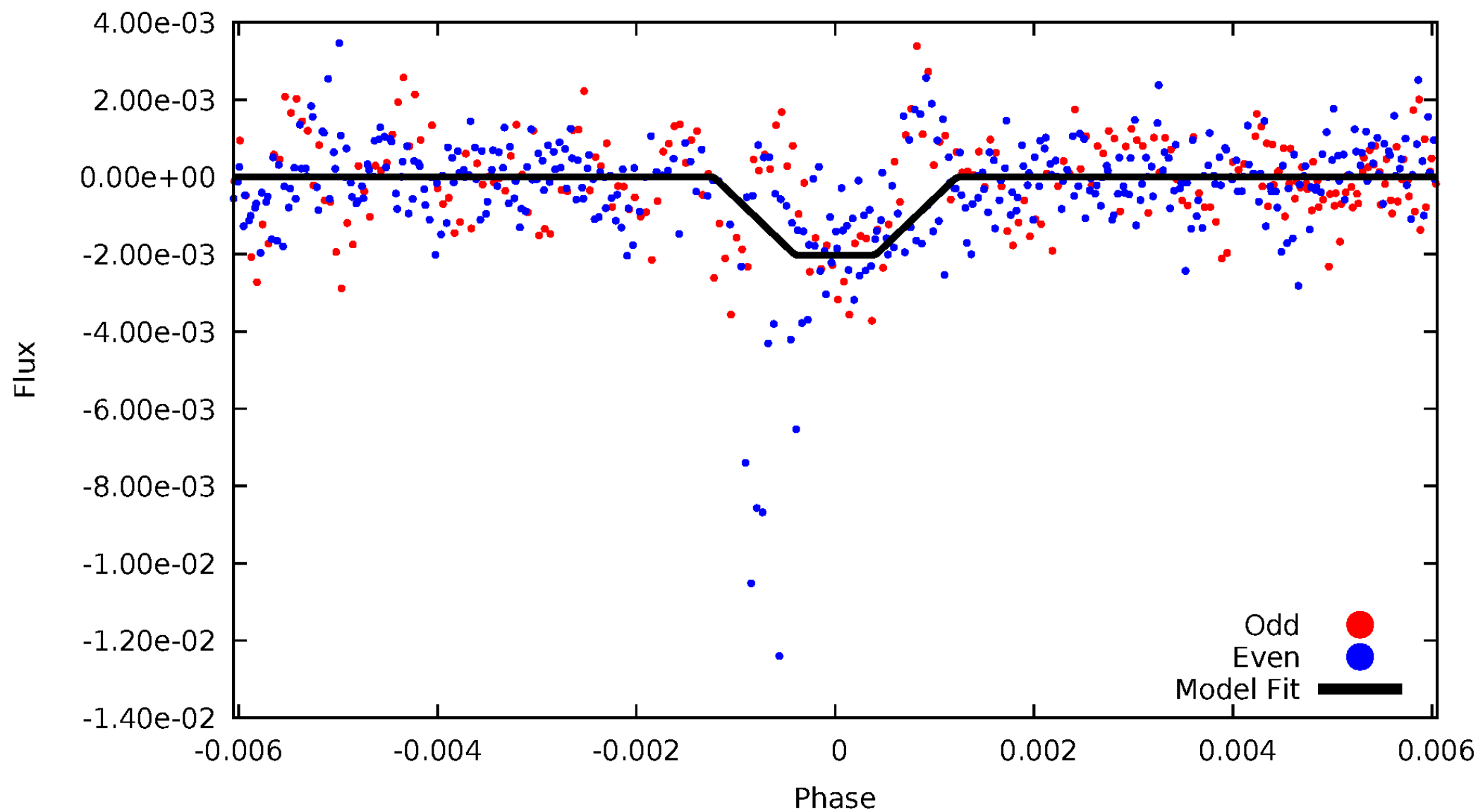
# DV Odd/Even

TCE 003733205-01



# ALT Odd/Even

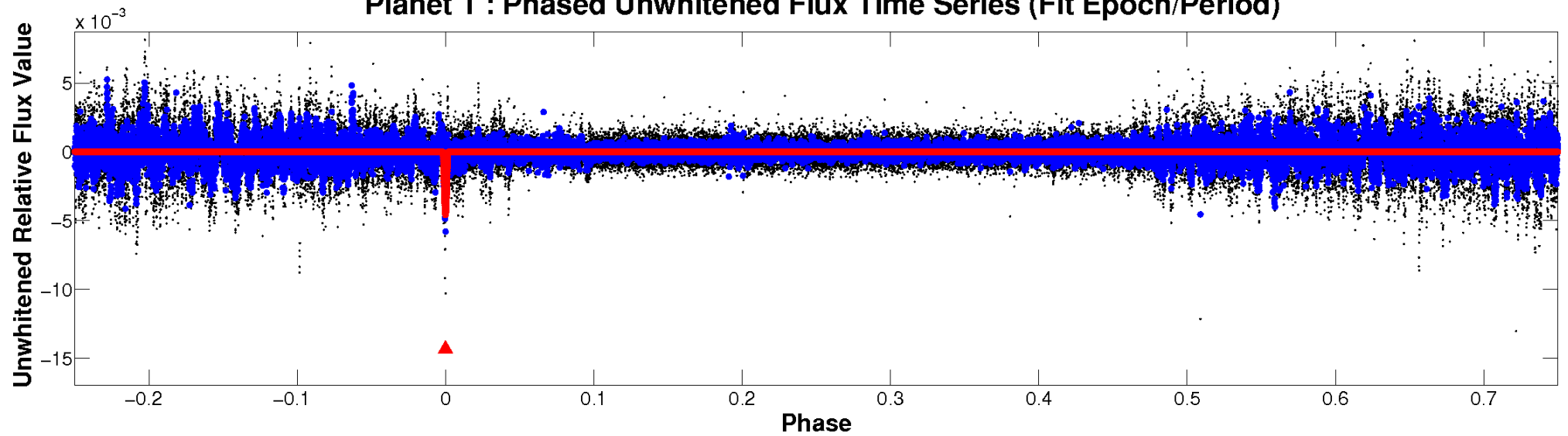
TCE 003733205-01



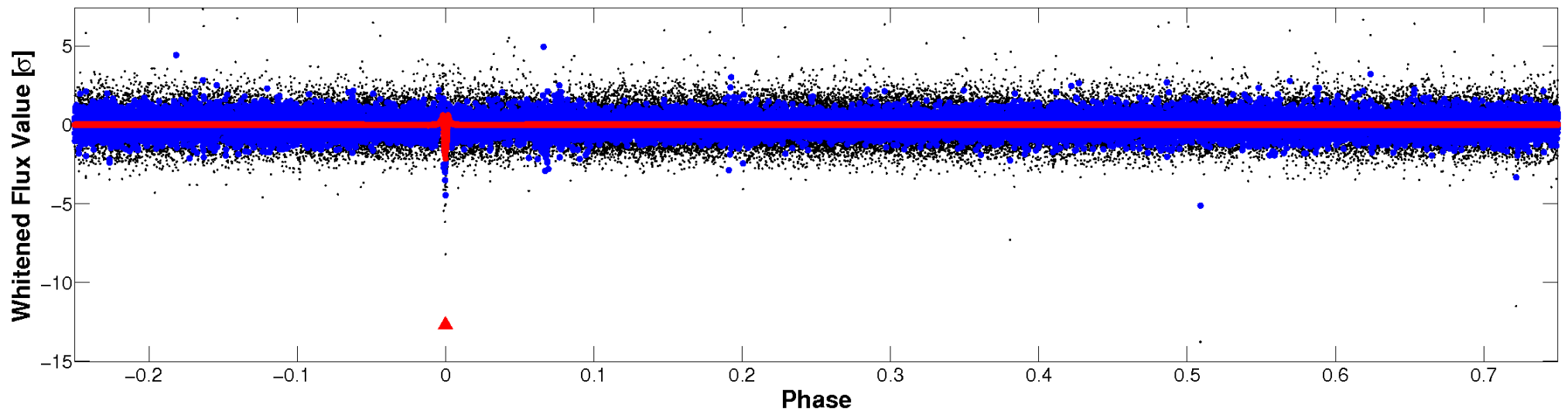


# Non-Whitened Vs. Whitened Light Curve

**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

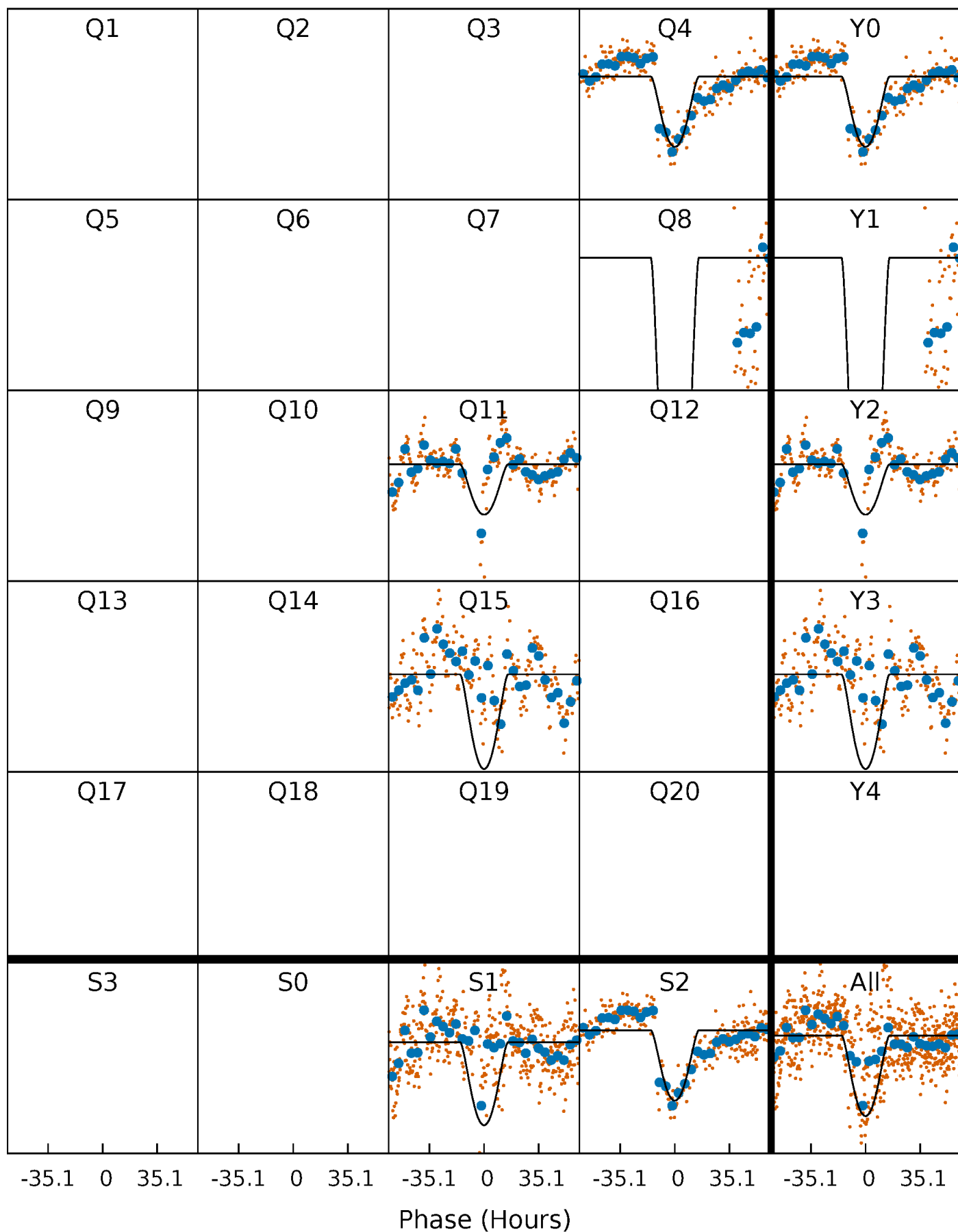
TCE 003733205-01 P=360.052778 Days  $T_0=373.738149$  (BKJD)





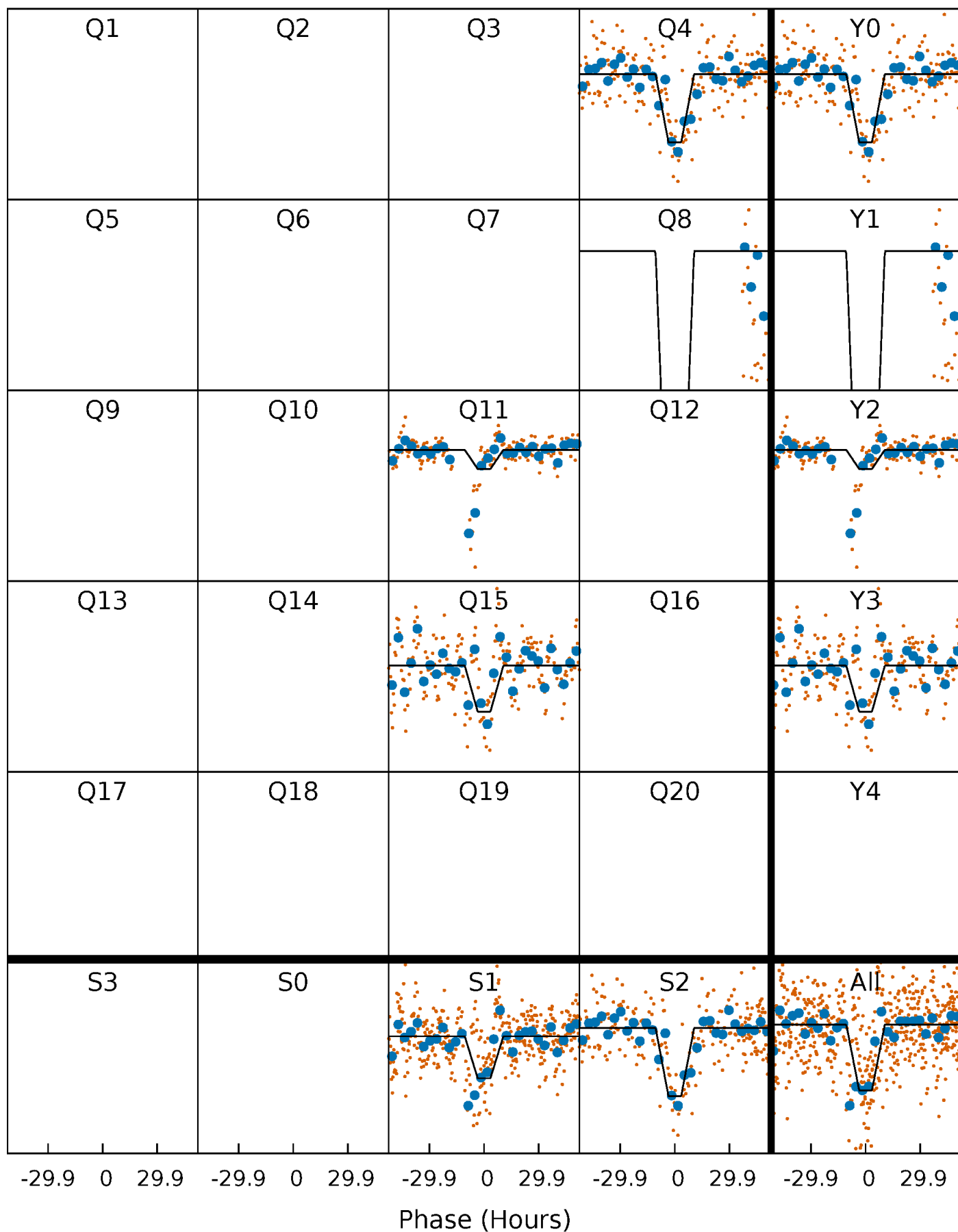
# DV Quarter-Phased Transit Curves

TCE 003733205-01 P=360.052778 Days  $T_0=373.738149$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

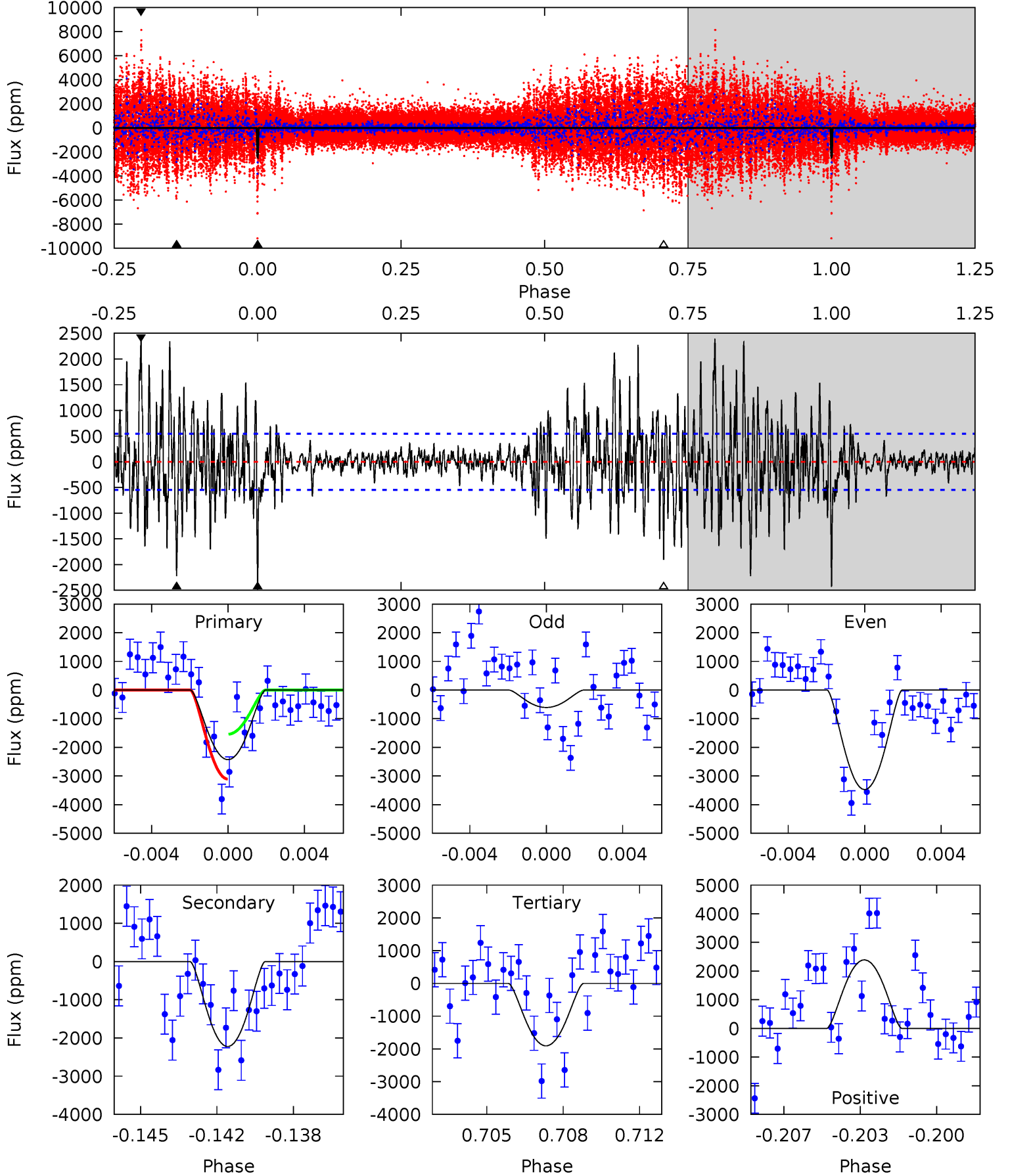
TCE 003733205-01 P=360.195985 Days  $T_0=373.660549$  (BKJD)



# DV Model-Shift Uniqueness Test

003733205-01,  $P = 360.052778$  Days,  $E = 13.685371$  Days

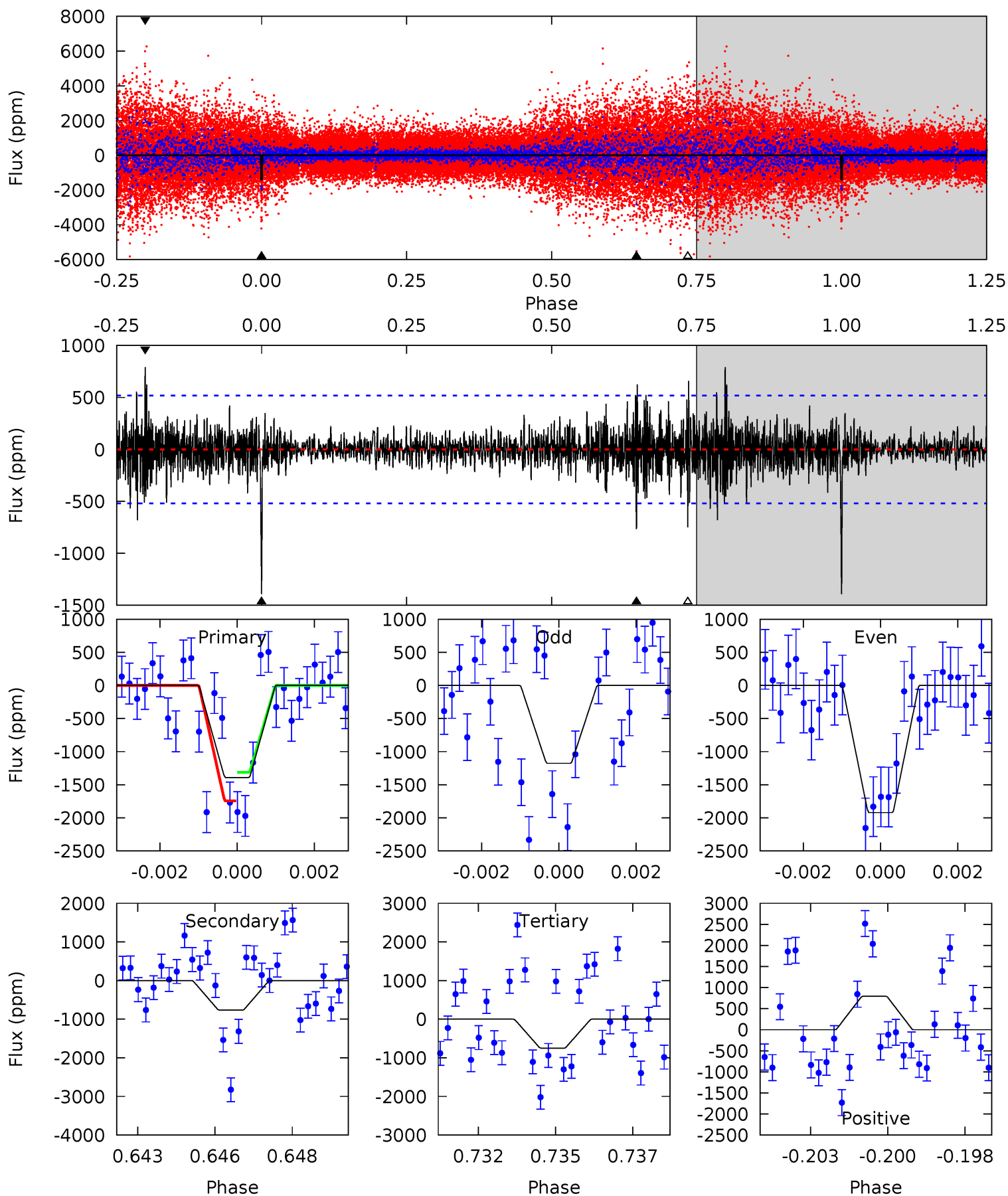
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.2	21.3	18.2	22.9	5.22	2.91	4.86	5.00	0.37	3.03	-1.60	13.0	1.28	0.50	6.80



# Alt Model-Shift Uniqueness Test

003733205-01, P = 360.195985 Days, E = 13.464564 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
14.2	7.81	7.65	8.08	5.29	3.03	1.31	6.54	6.11	0.16	-0.27	3.63	1.02	0.36	2.02



### Stellar Parameters For KIC 003733205

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$5402^{+104}_{-442}$	$2.368^{+0.033}_{-0.027}$	$-0.500^{+0.050}_{-0.400}$	$18.593^{+1.162}_{-4.940}$	$2.942^{+0.148}_{-1.408}$	$0.001^{+0.000}_{-0.000}$
	+2%/-8%	+1%/-1%	+10%/-80%	+6%/-27%	+5%/-48%	+37%/-10%
Source	KIC0	AST71	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 003733205-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-2223 \pm 105$	$195.75^{+114.79}_{-107.16}$	$1196^{+38}_{-91}$	$3984^{+1429}_{-593}$	$63^{+237}_{-38}$
Alt.	$-766 \pm 98$	$123.62^{+100.79}_{-85.03}$	$1198^{+35}_{-93}$	$3847^{+2293}_{-654}$	$56^{+503}_{-39}$

$T_{\text{max}}$  = 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

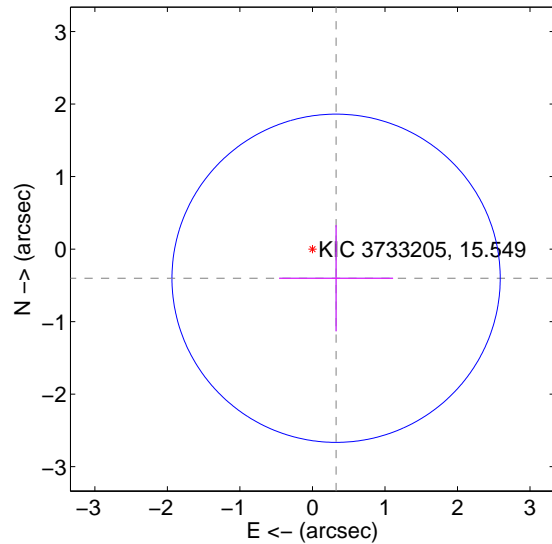
Supplemental centroid analysis for 003733205-01. Kepler magnitude: 15.55. Transit SNR 18.36

There are 1 quarters with good PRF difference image offsets

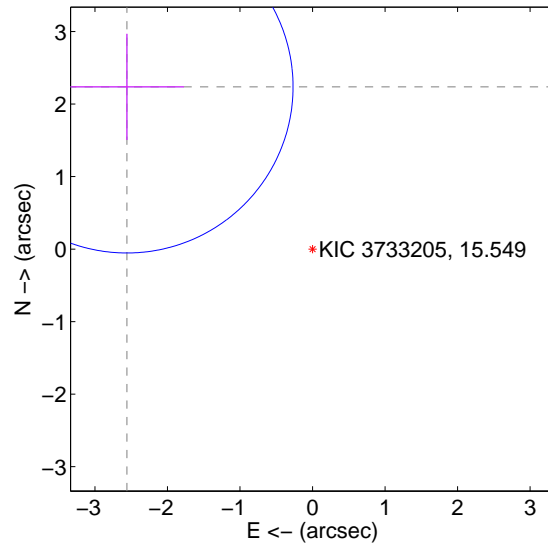
The OOT PRF centroid is offset from the target star catalog position by about 3.91 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.518 \pm 0.754$	0.69	$-0.326 \pm 0.786$	$-0.402 \pm 0.733$
PRF-fit source offset from KIC position	$3.399 \pm 0.763$	4.45	$2.559 \pm 0.786$	$2.237 \pm 0.733$
photometric centroid source offset	$2.28 \pm 0.12$	19.27	$1.32 \pm 0.12$	$1.86 \pm 0.12$

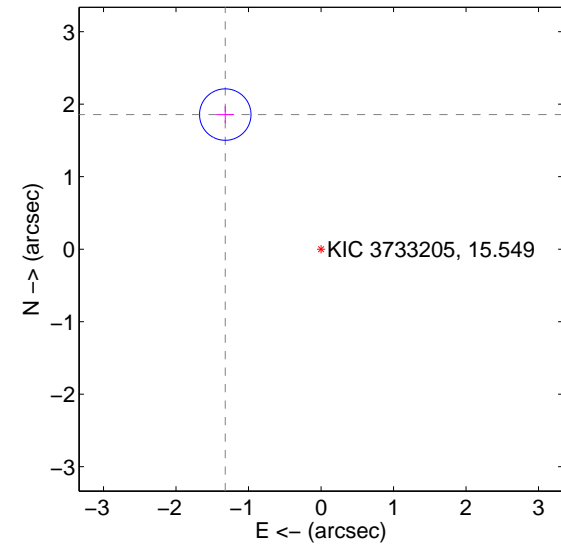
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



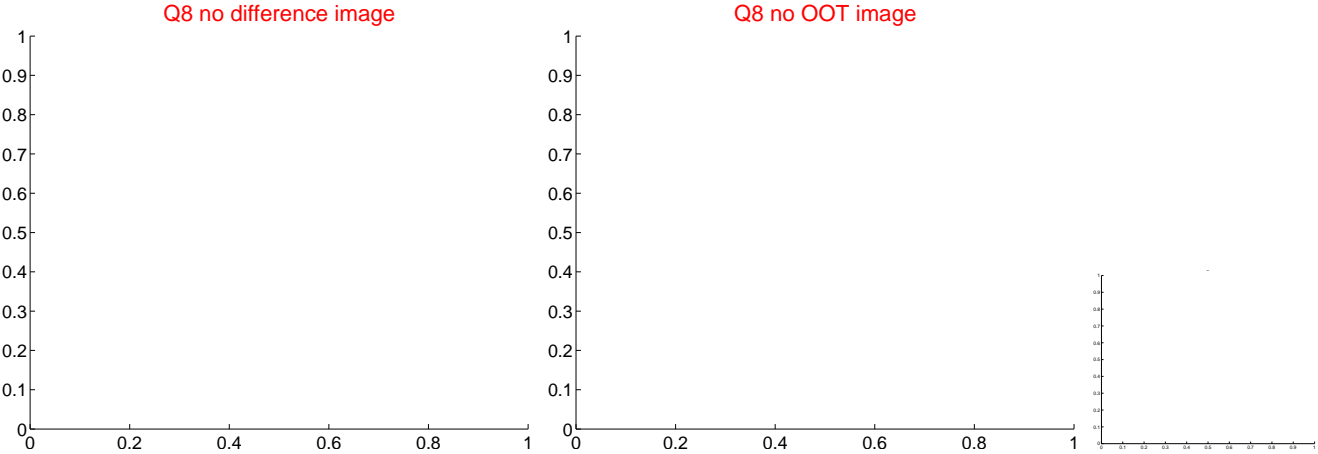
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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





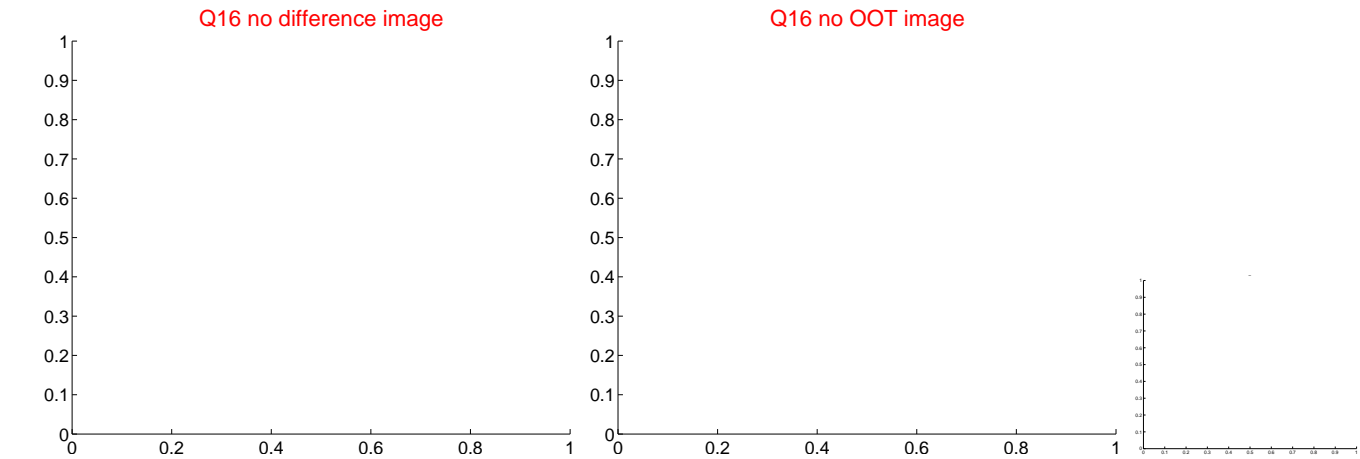
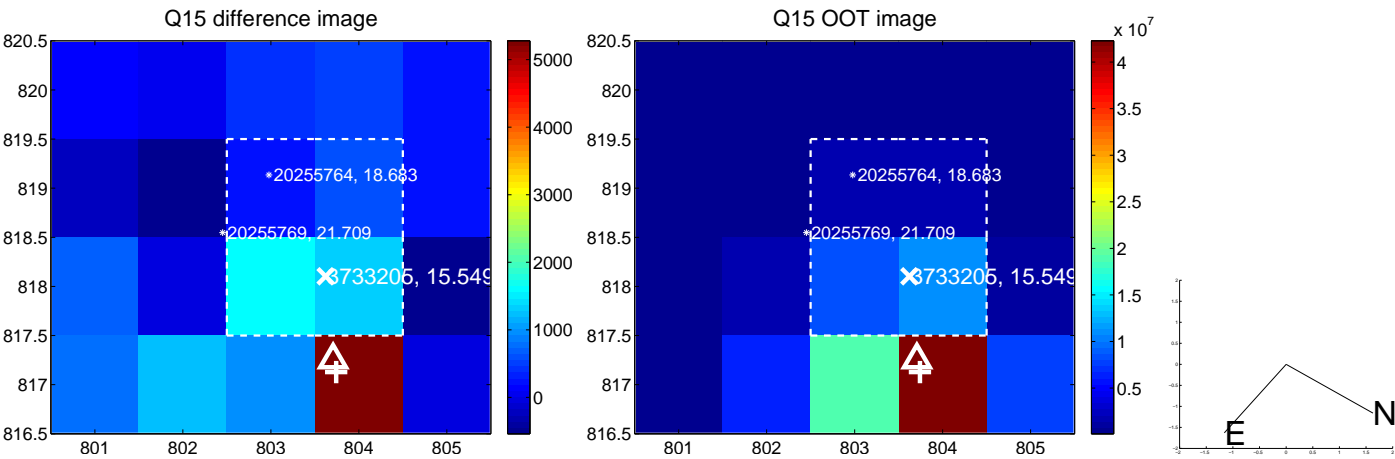
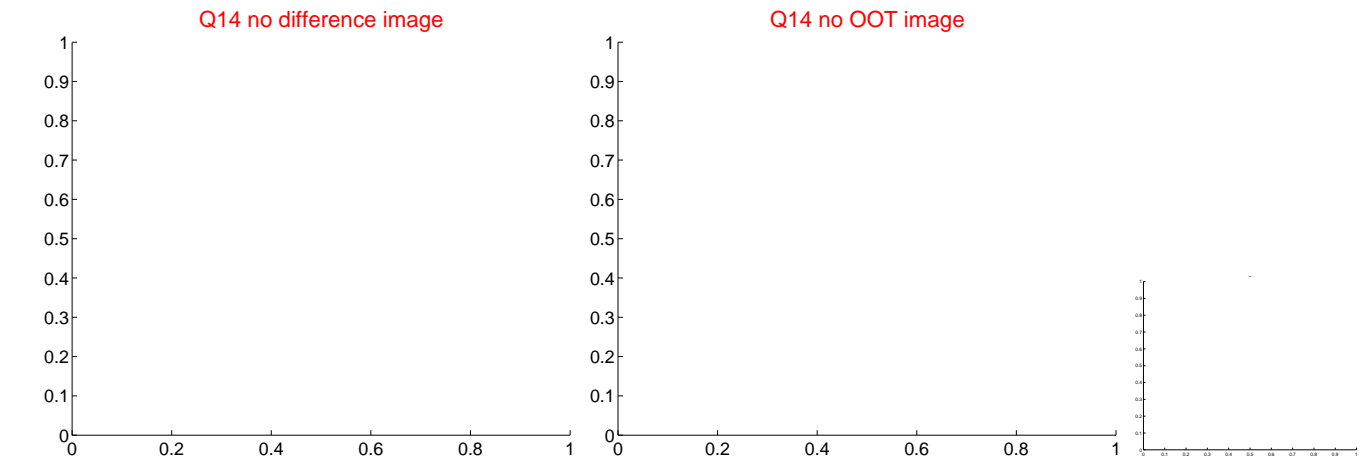
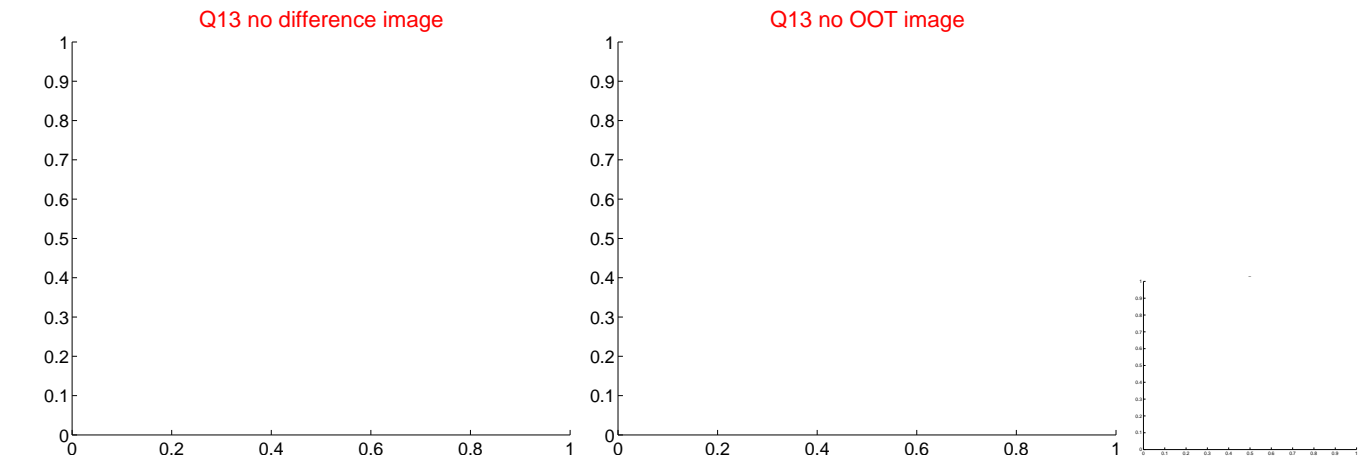
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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



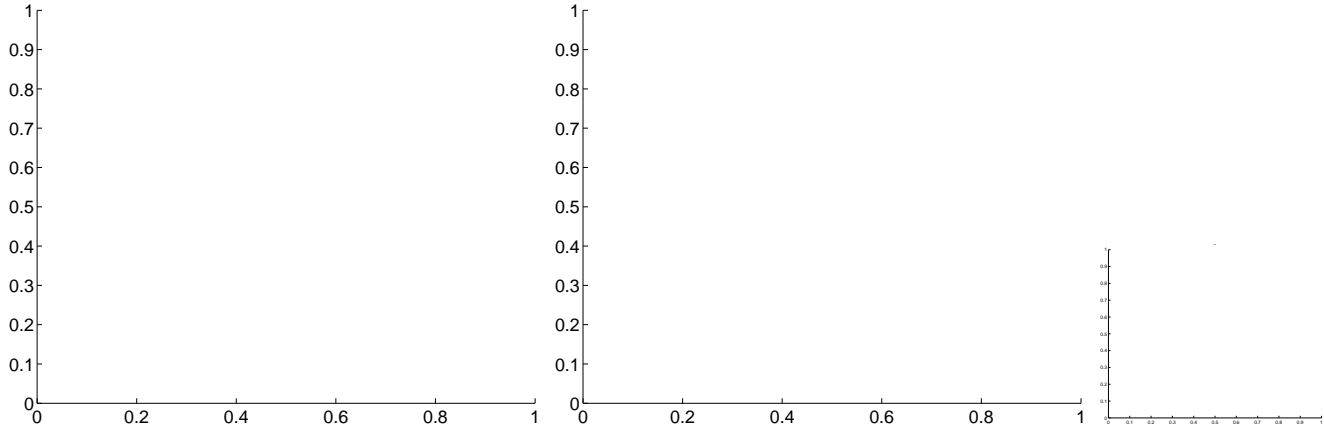
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



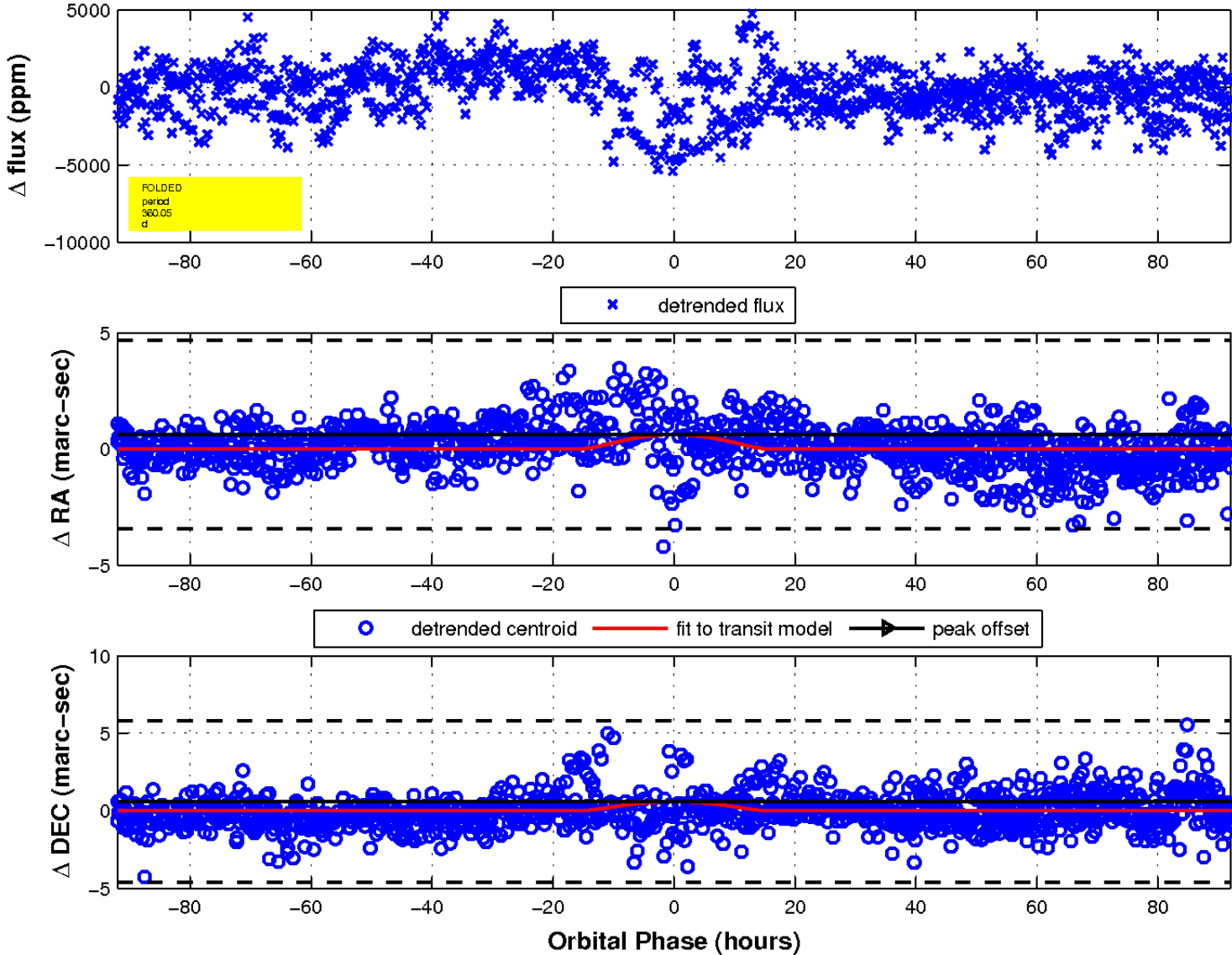
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

Q17 no difference image

Q17 no OOT image



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

