

# KIC 003341327

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
003341327-01	OBS	No	386.530333	507.216536	692.5	18.738	12.2	10.8	14.31	4662	42.92	45.79

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003341327-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—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.

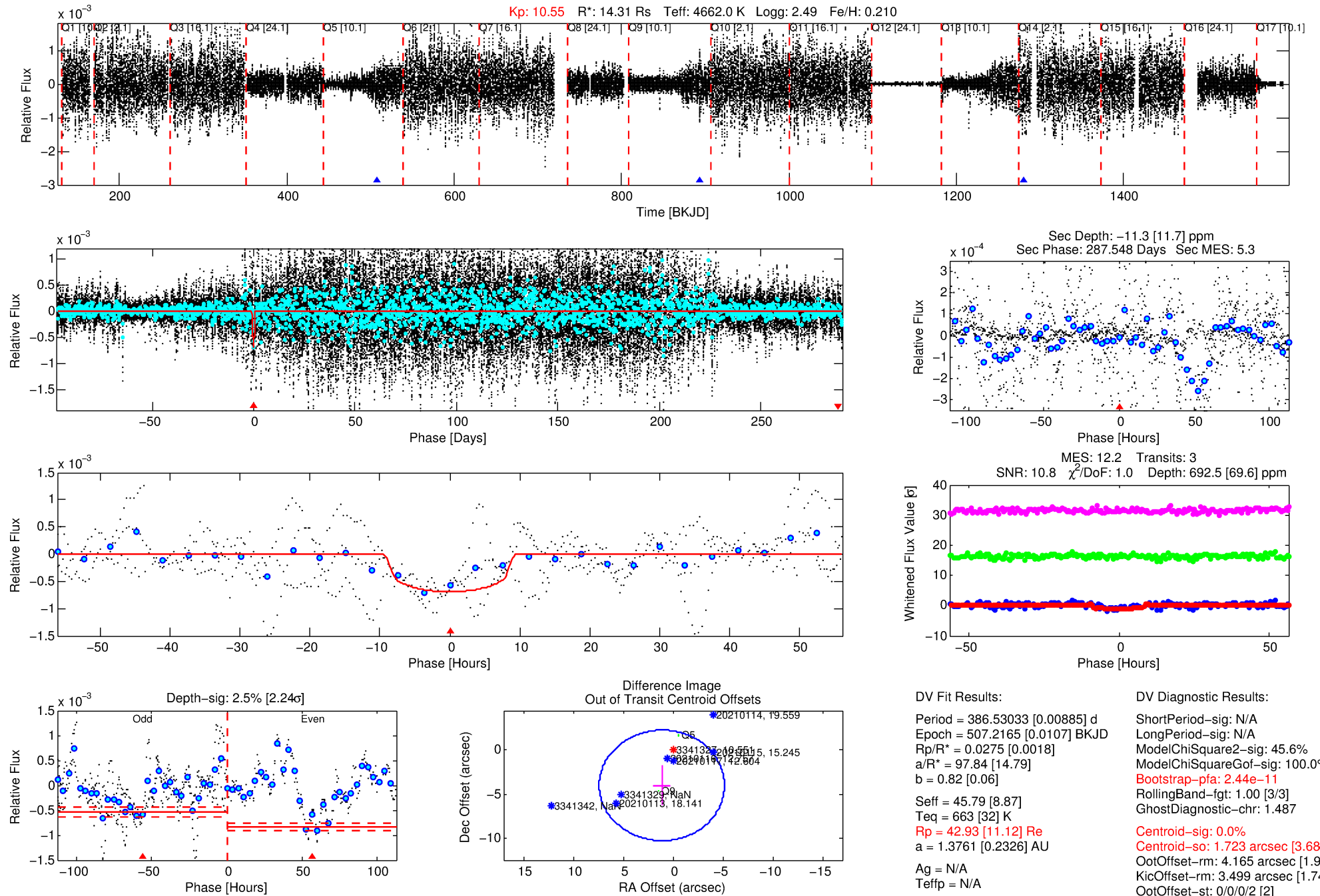
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 003341327-01

No Significant Match Found

# DV One-Page Summary

KIC: 3341327 Candidate: 1 of 1 Period: 386.530 d



## DV Fit Results:

Period = 386.53033 [0.00885] d  
Epoch = 507.2165 [0.0107] BKJD  
Rp/R\* = 0.0275 [0.0018]  
a/R\* = 97.84 [14.79]  
b = 0.82 [0.06]  
Seff = 45.79 [8.87]  
Teq = 663 [32] K  
Rp = 42.93 [11.12] Re  
a = 1.3761 [0.2326] AU  
Ag = N/A  
Teffp = N/A

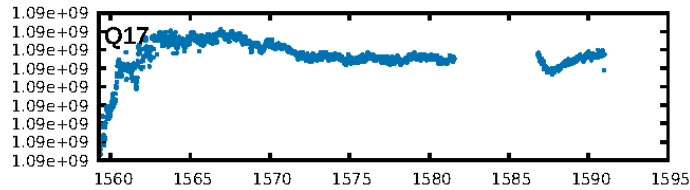
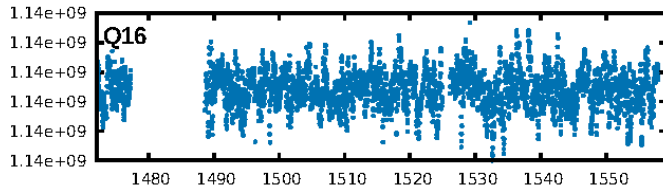
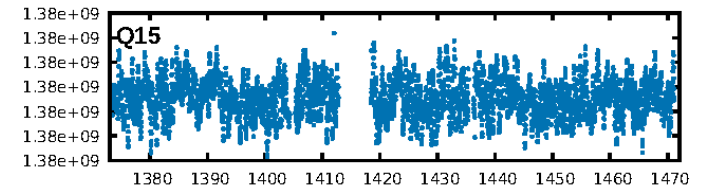
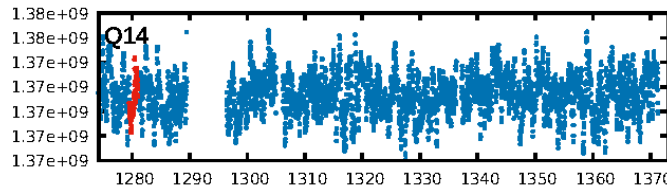
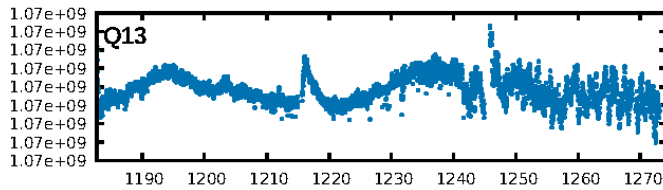
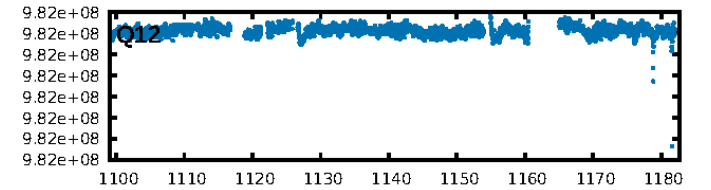
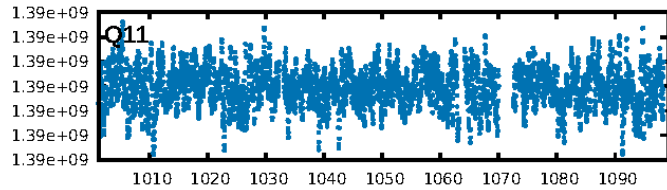
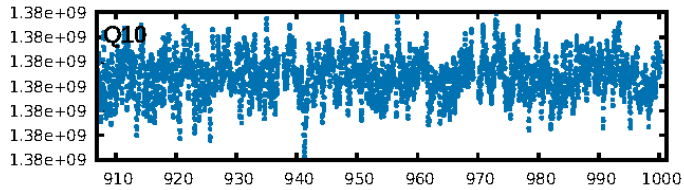
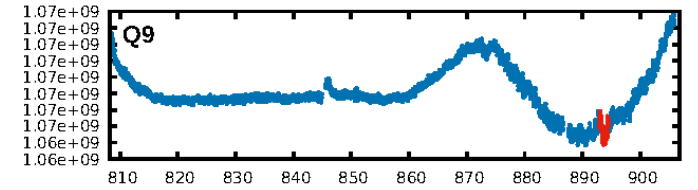
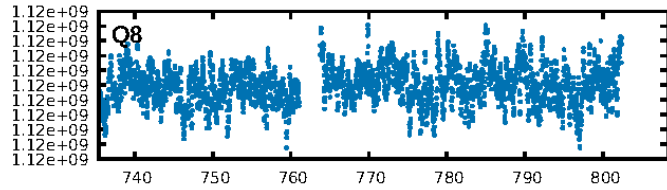
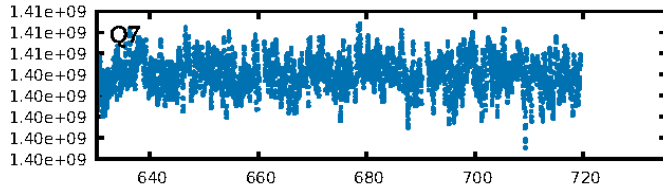
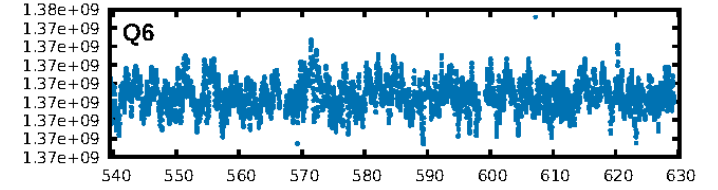
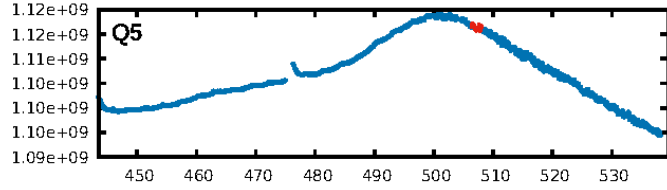
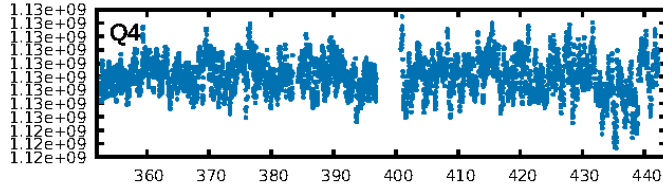
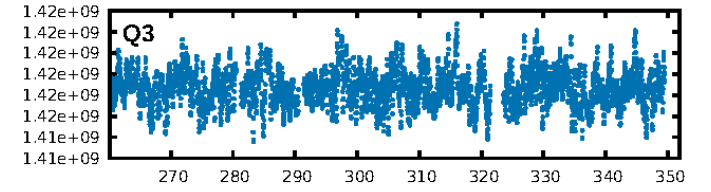
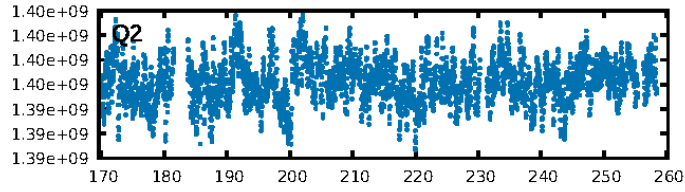
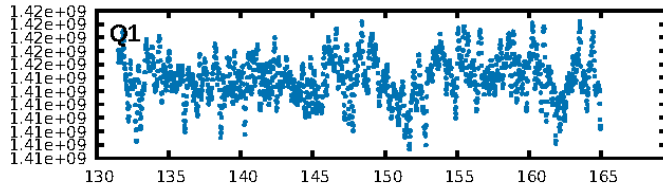
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 45.6%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 2.44e-11  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 1.487  
Centroid-sig: 0.0%  
Centroid-so: 1.723 arcsec [3.68σ]  
OotOffset-rm: 4.165 arcsec [1.99σ]  
KicOffset-rm: 3.499 arcsec [1.74σ]  
OotOffset-st: 0/0/0/2 [2]  
KicOffset-st: 0/0/0/2 [2]  
DiffImageQuality-fgm: 1.00 [2/2]  
DiffImageOverlap-fno: 1.00 [2/2]

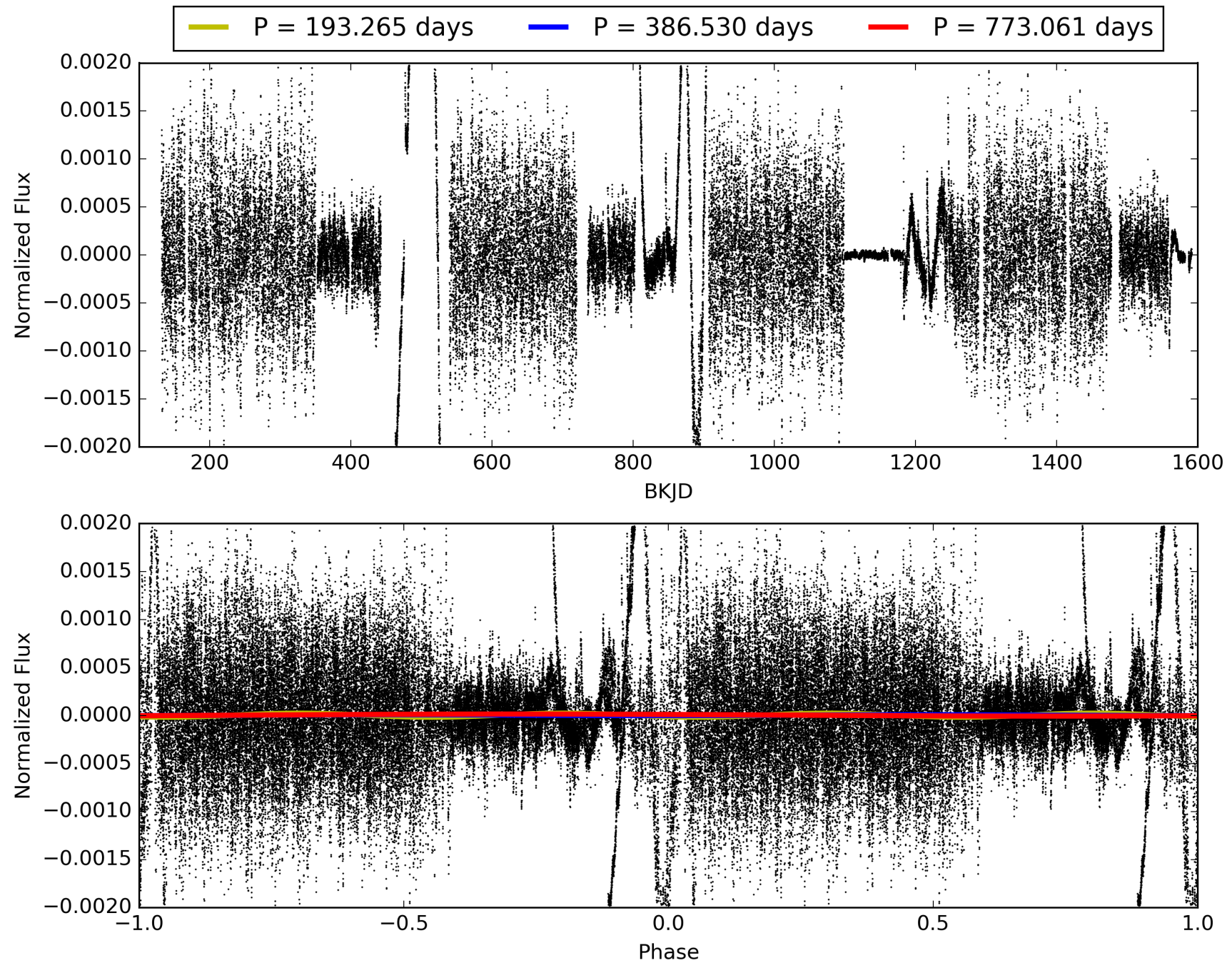
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 16:16:19 Z

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

# TCE 003341327-01, PDC Light Curves

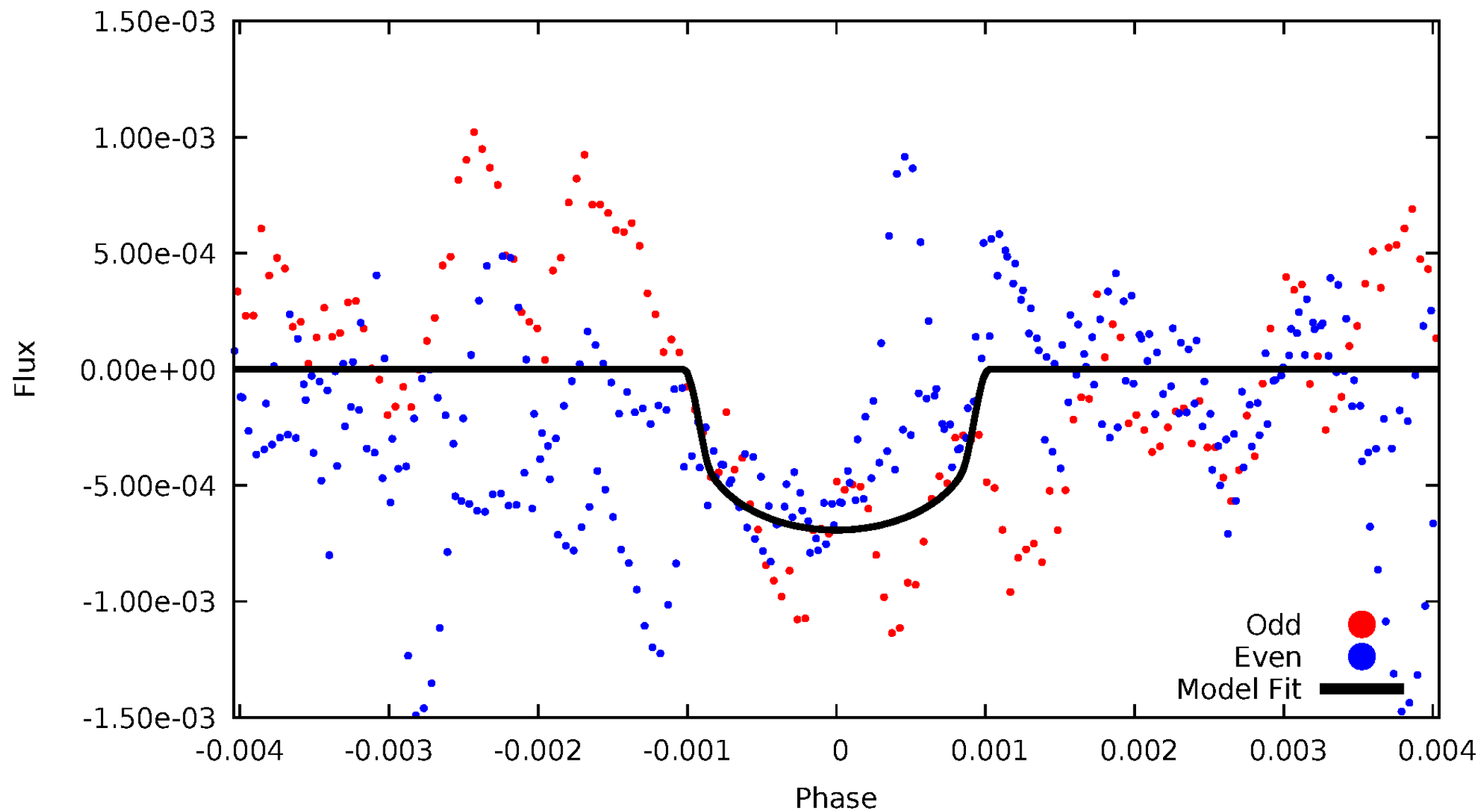


# TCE 003341327-01



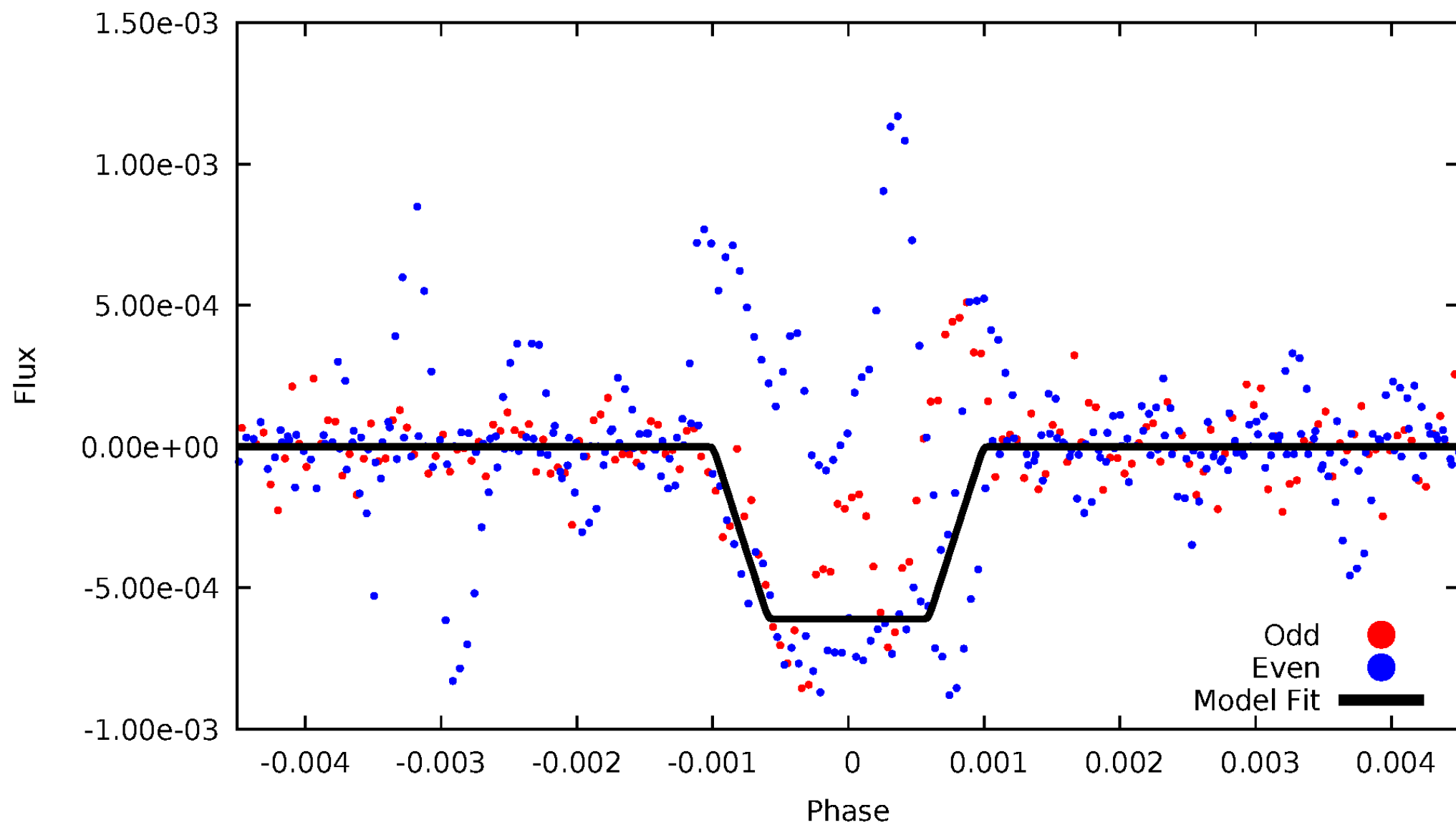
# DV Odd/Even

TCE 003341327-01



# ALT Odd/Even

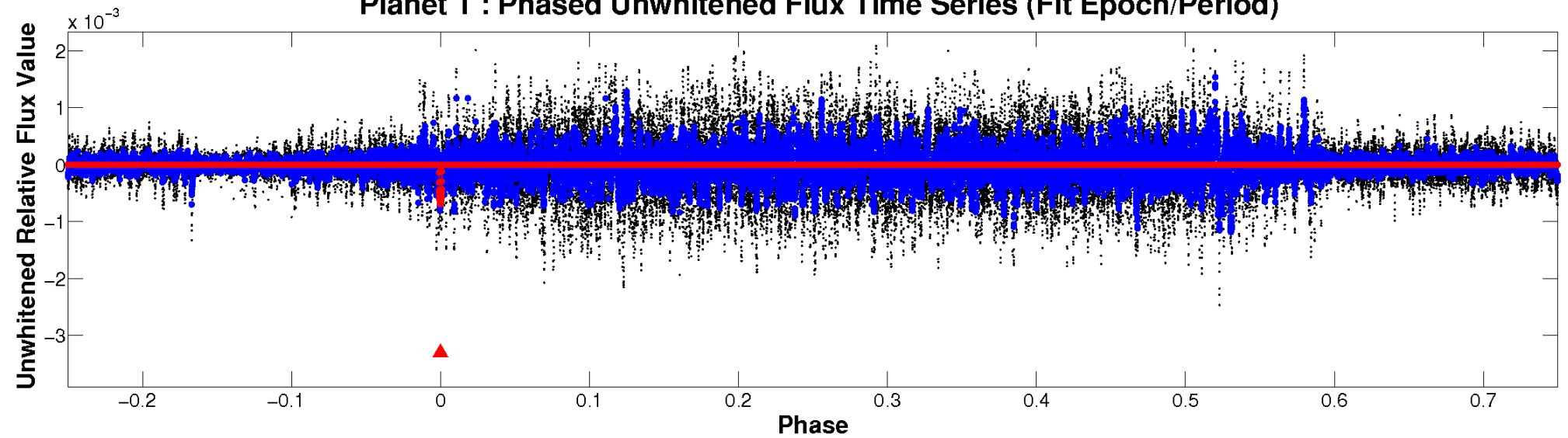
TCE 003341327-01



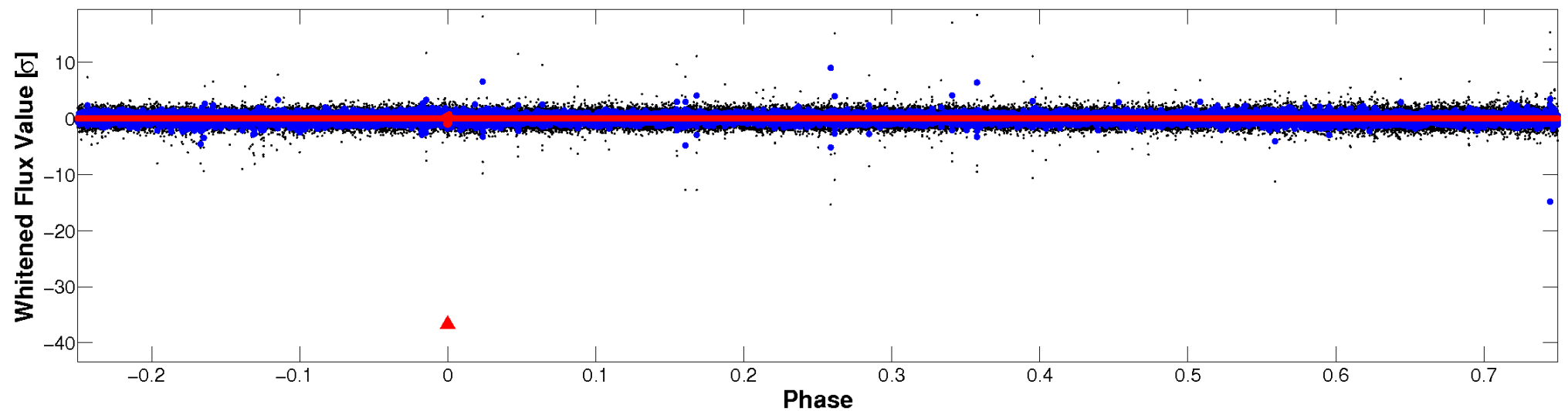


# Non-Whitened Vs. Whitened Light Curve

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

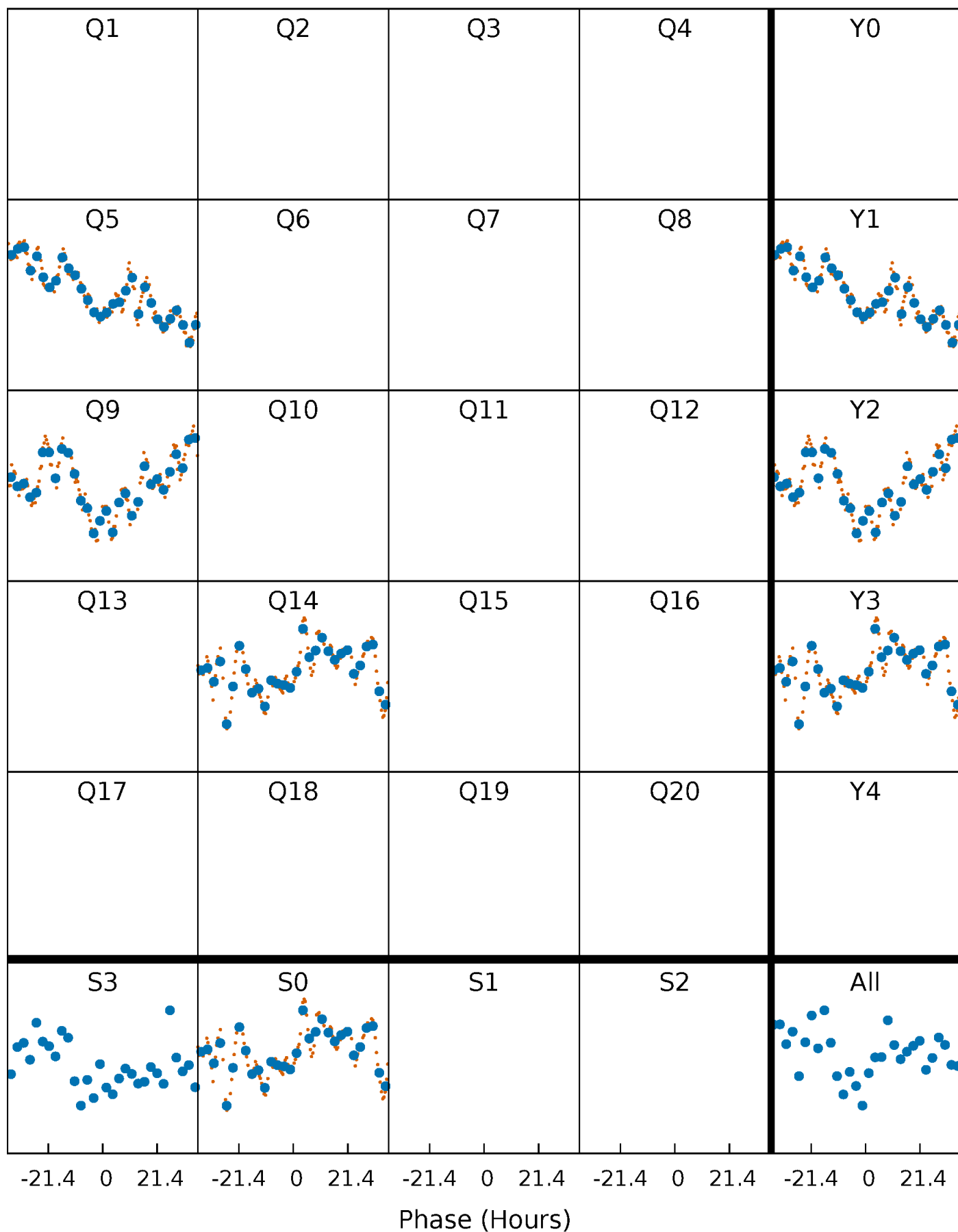


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

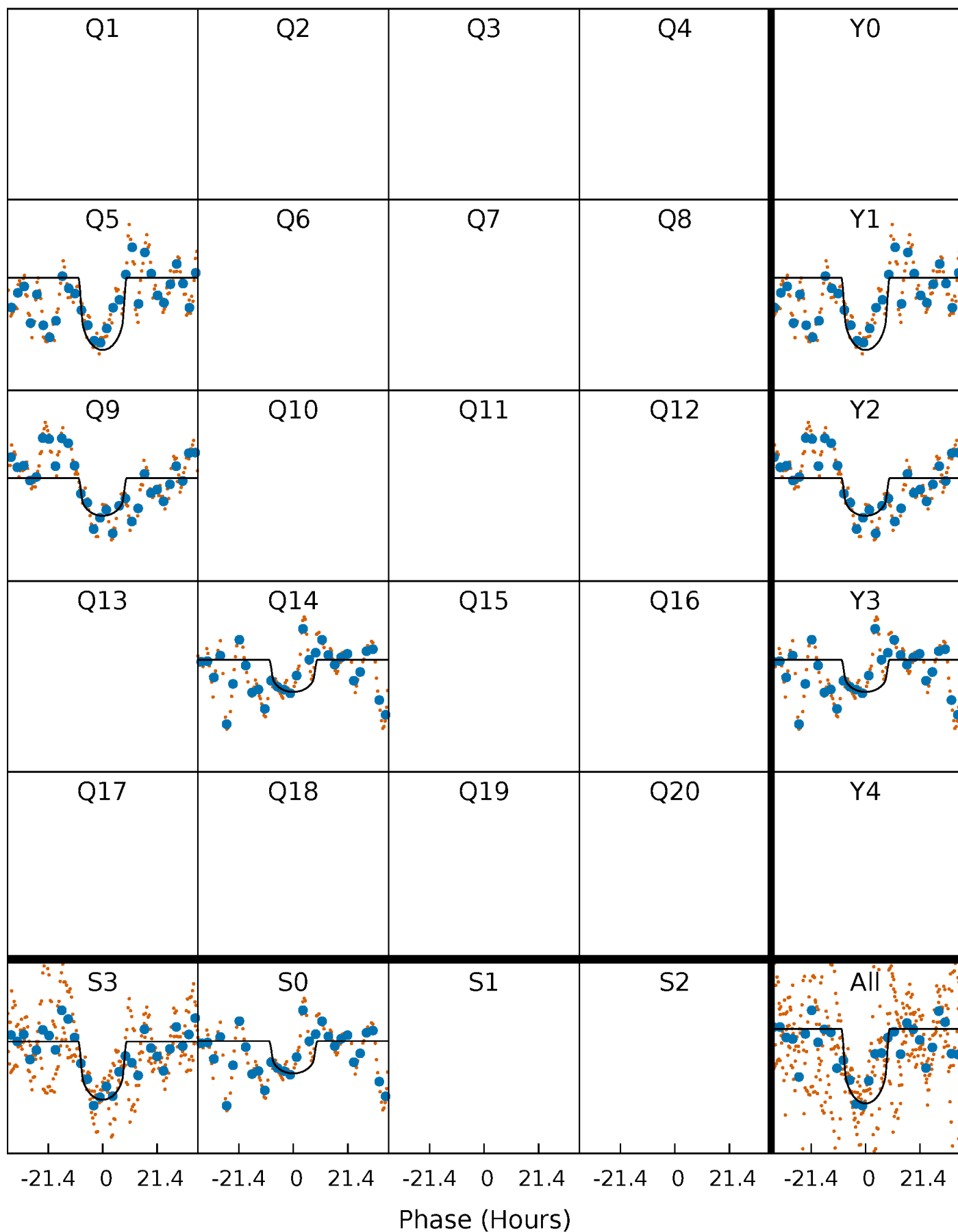
TCE 003341327-01     $P=386.530333$  Days     $T_0=507.216536$  (BKJD)





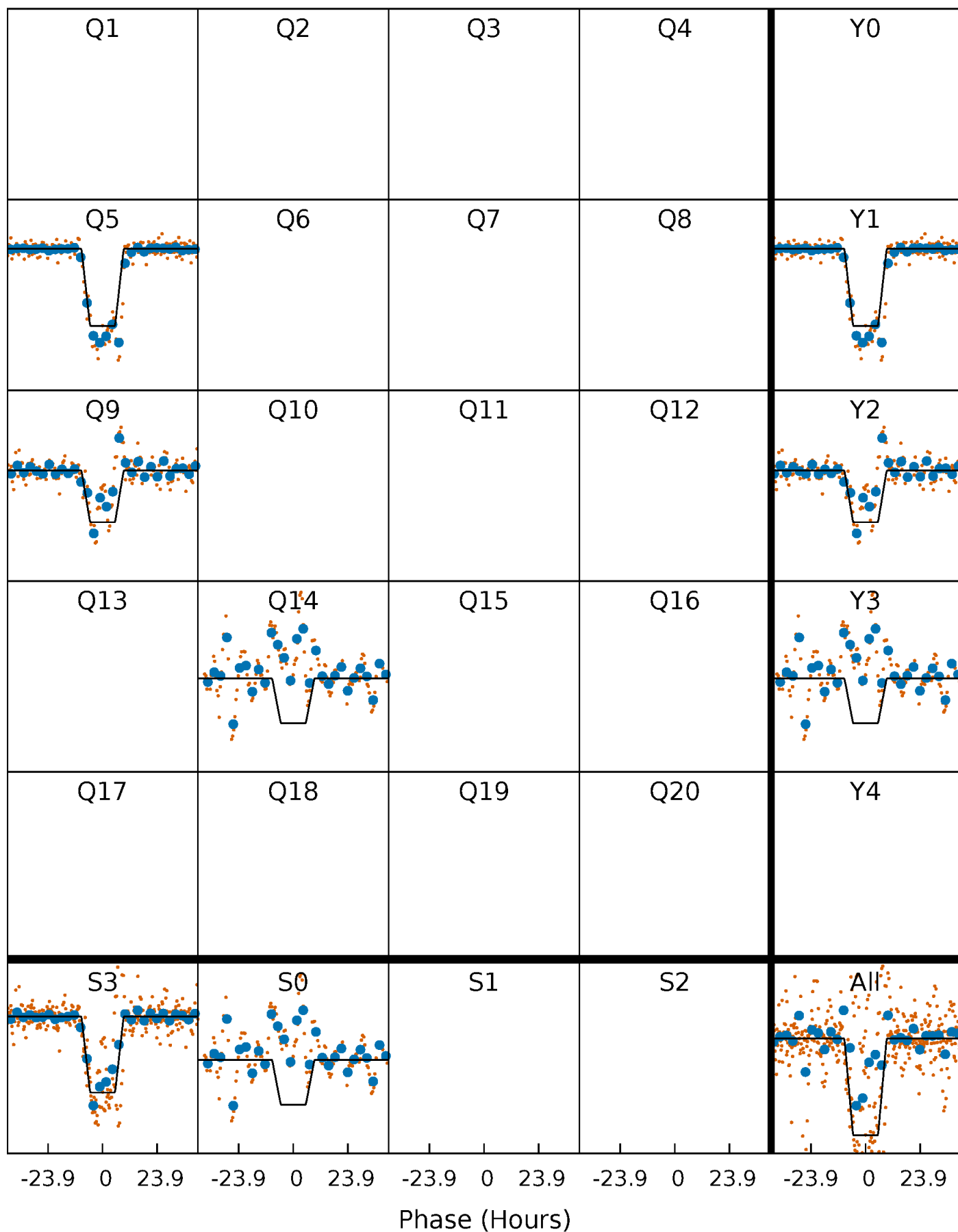
# DV Quarter-Phased Transit Curves

TCE 003341327-01     $P=386.530333$  Days     $T_0=507.216536$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

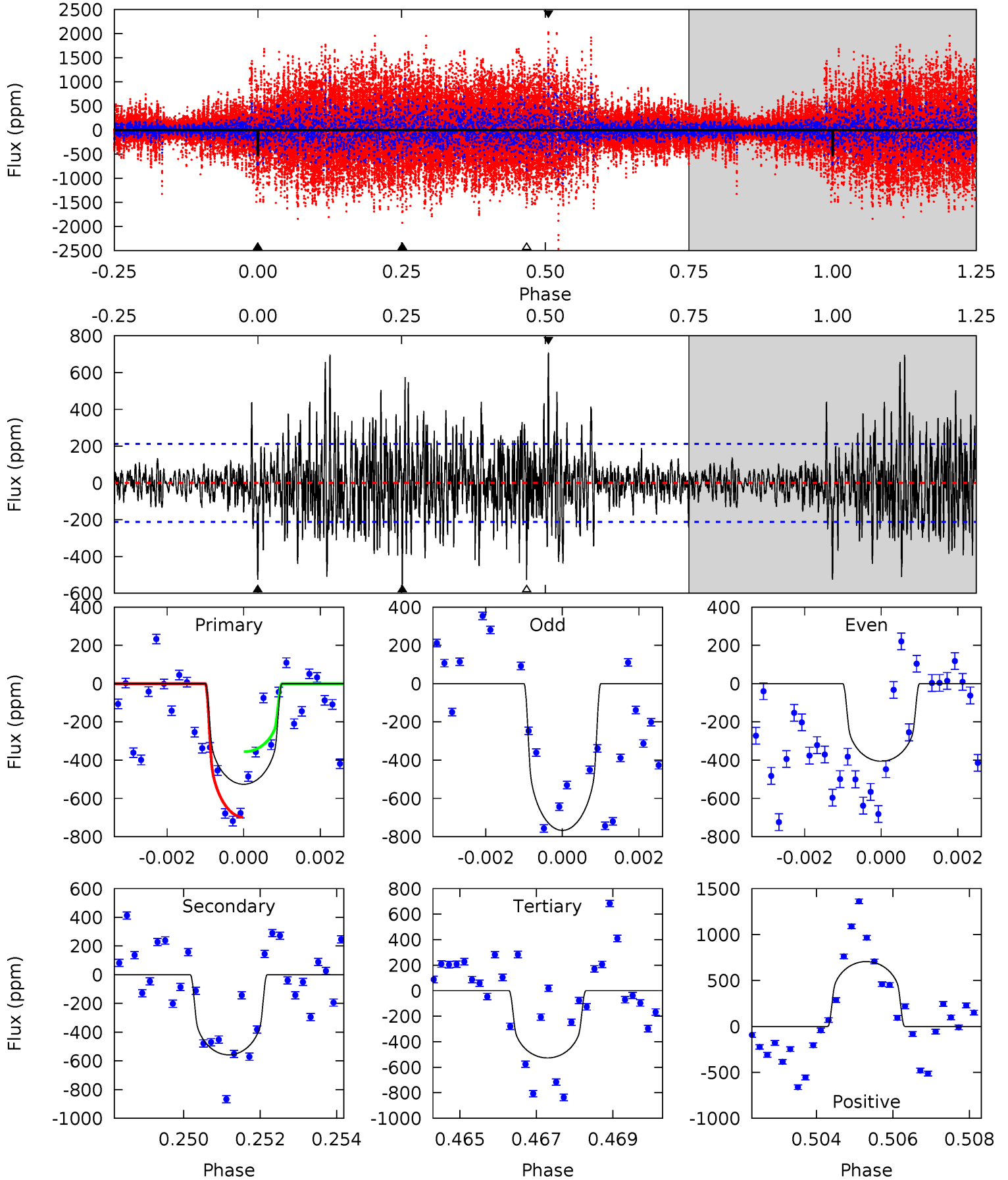
TCE 003341327-01 P=386.534843 Days  $T_0=507.243942$  (BKJD)



# DV Model-Shift Uniqueness Test

003341327-01, P = 386.530333 Days, E = 120.686203 Days

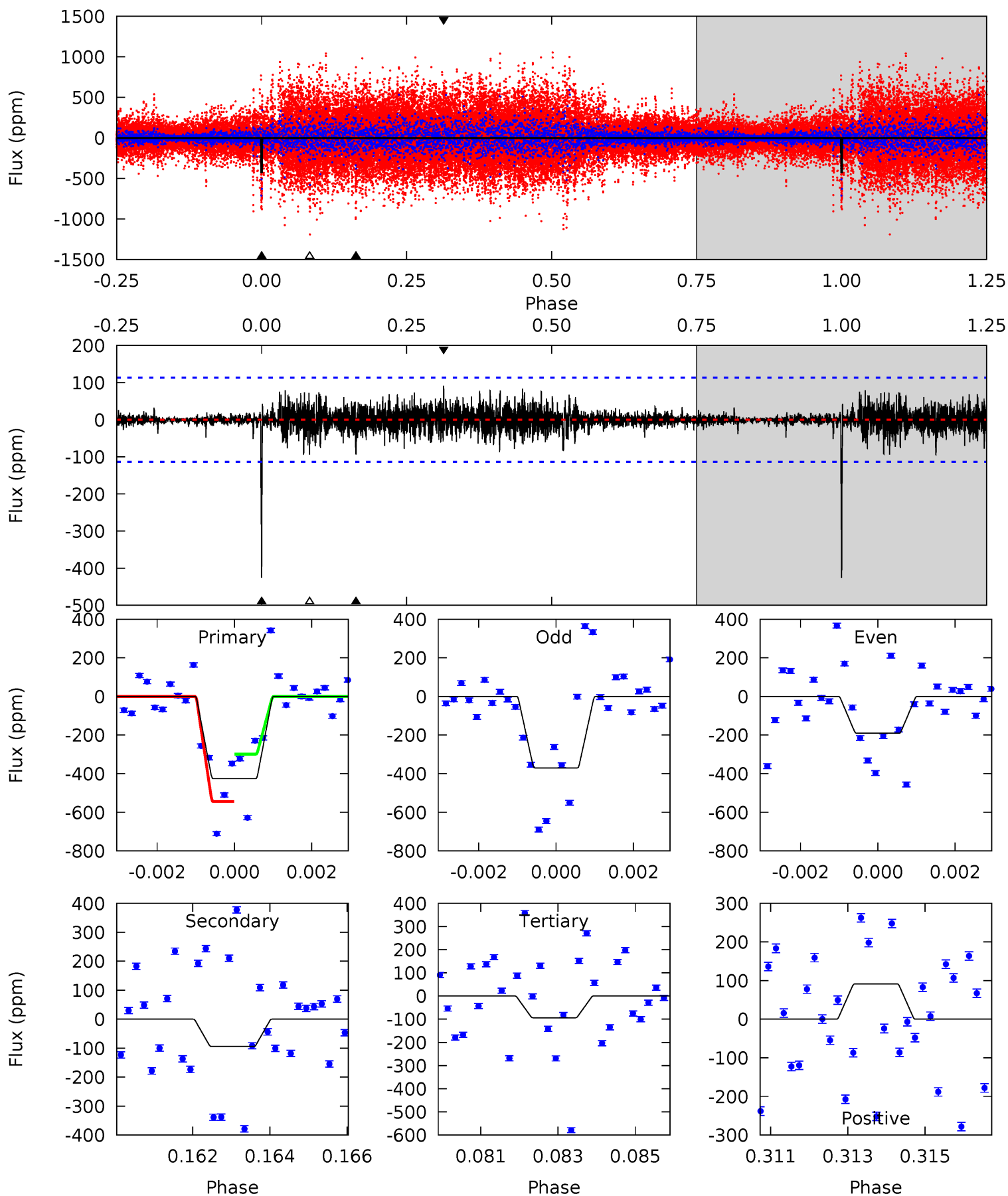
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.2	14.0	13.2	17.7	5.32	3.08	3.63	-0.02	-4.51	0.78	-3.71	4.12	1.07	0.56	4.39



# Alt Model-Shift Uniqueness Test

003341327-01, P = 386.534843 Days, E = 120.709099 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
20.0	4.42	4.40	4.28	5.32	3.09	0.92	15.6	15.7	0.02	0.14	4.07	0.68	0.18	6.02



### Stellar Parameters For KIC 003341327

	$T_{\text{eff}} (K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	$4662^{+41}_{-96}$	$2.493^{+0.035}_{-0.023}$	$0.210^{+0.150}_{-0.200}$	$14.314^{+2.090}_{-3.583}$	$2.327^{+0.584}_{-1.001}$	$0.001^{+0.000}_{-0.000}$
	+1%/-2%	+1%/-1%	+71%/-95%	+15%/-25%	+25%/-43%	+42%/-15%
Source	SPE68	AST9	SPE68	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 003341327-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	$A_{obs}$
DV	$-558 \pm 40$	$44.17^{+4.85}_{-6.08}$	$925^{+21}_{-27}$	$4375^{+152}_{-137}$	$314^{+69}_{-47}$
Alt.	$-94 \pm 21$	$39.38^{+4.80}_{-5.39}$	$923^{+22}_{-27}$	$3343^{+147}_{-137}$	$66^{+22}_{-16}$

$T_{max}$  = 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

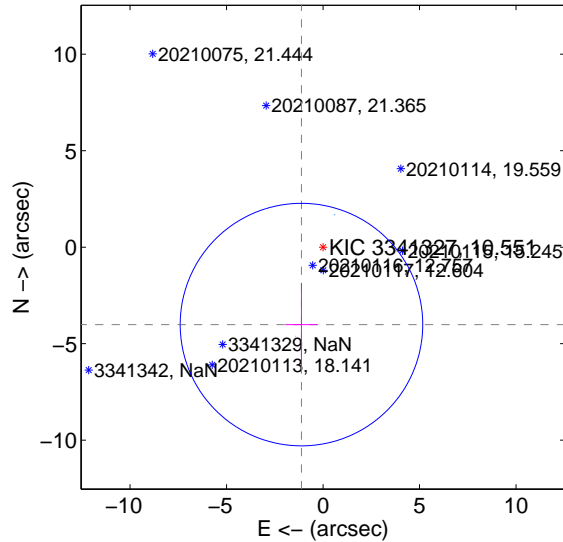
Supplemental centroid analysis for 003341327-01. **Kepler magnitude: 10.55.** Transit SNR 10.76

**There are 2 quarters with good PRF difference image offsets**

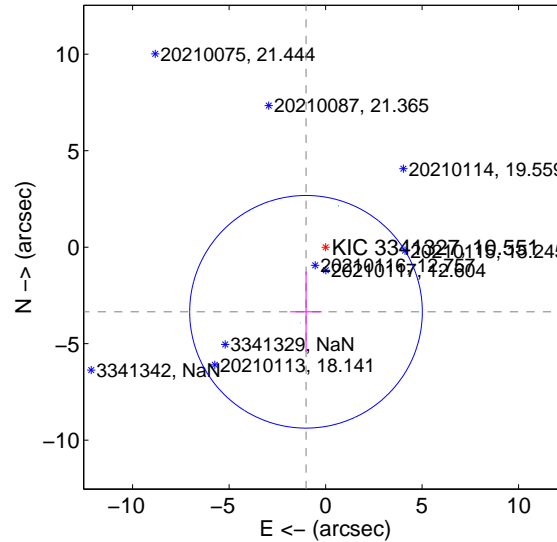
The direct PRF centroid is offset from the target star catalog position by about 0.69 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$4.165 \pm 2.095$	1.99	$1.118 \pm 0.837$	$-4.012 \pm 2.162$
PRF-fit source offset from KIC position	$3.499 \pm 2.009$	1.74	$1.014 \pm 0.823$	$-3.349 \pm 2.085$
photometric centroid source offset	<b><math>1.72 \pm 0.47</math></b>	<b>3.68</b>	$0.64 \pm 0.36$	$-1.60 \pm 0.48$

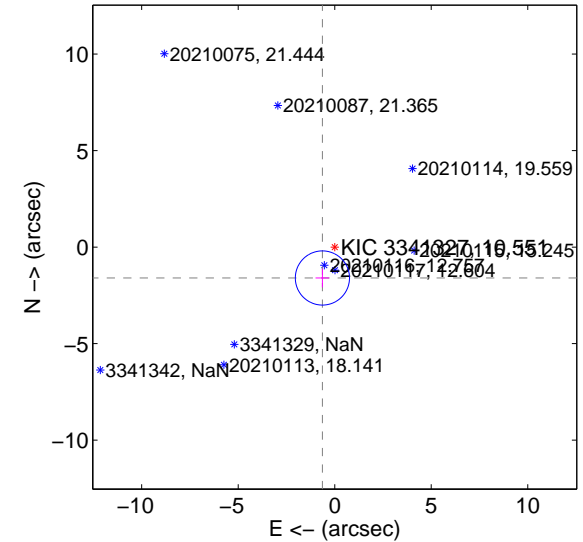
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



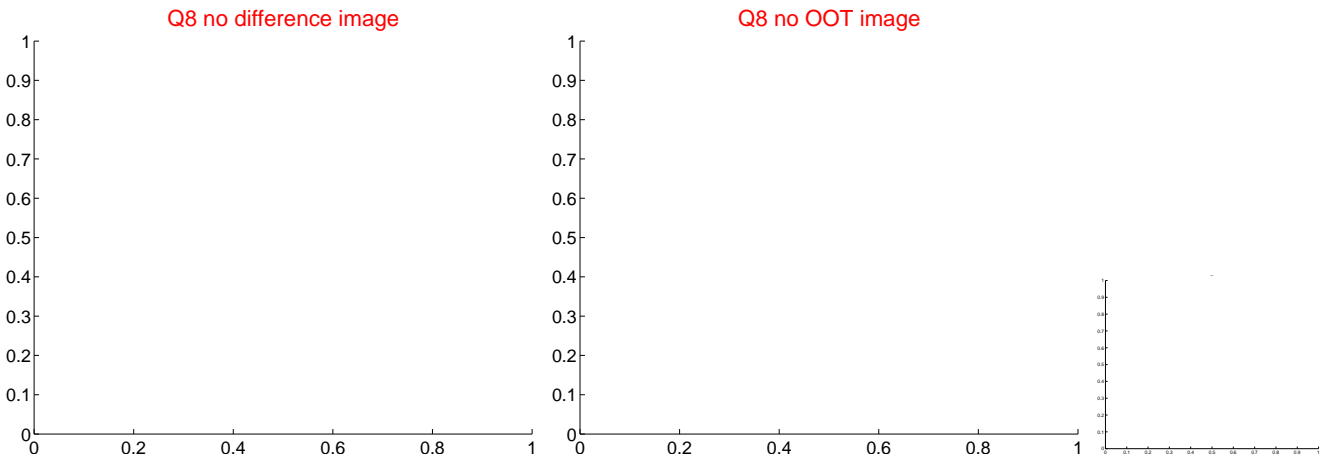
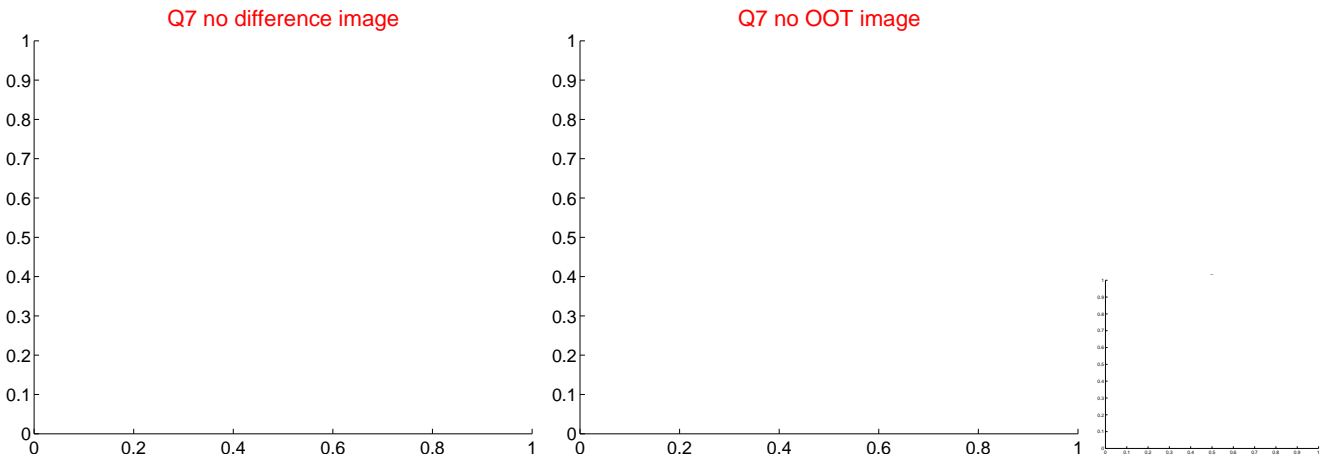
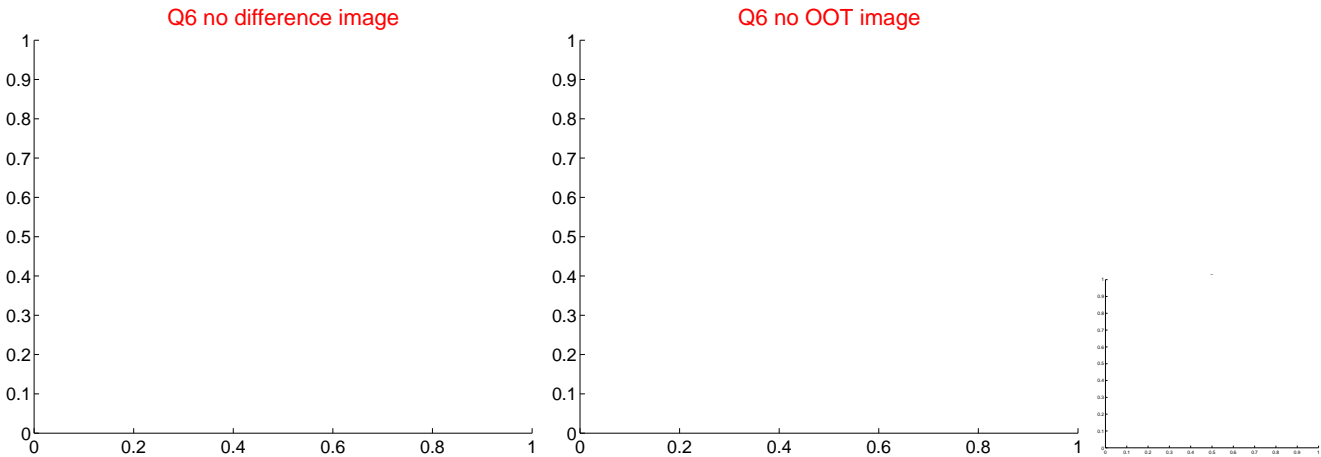
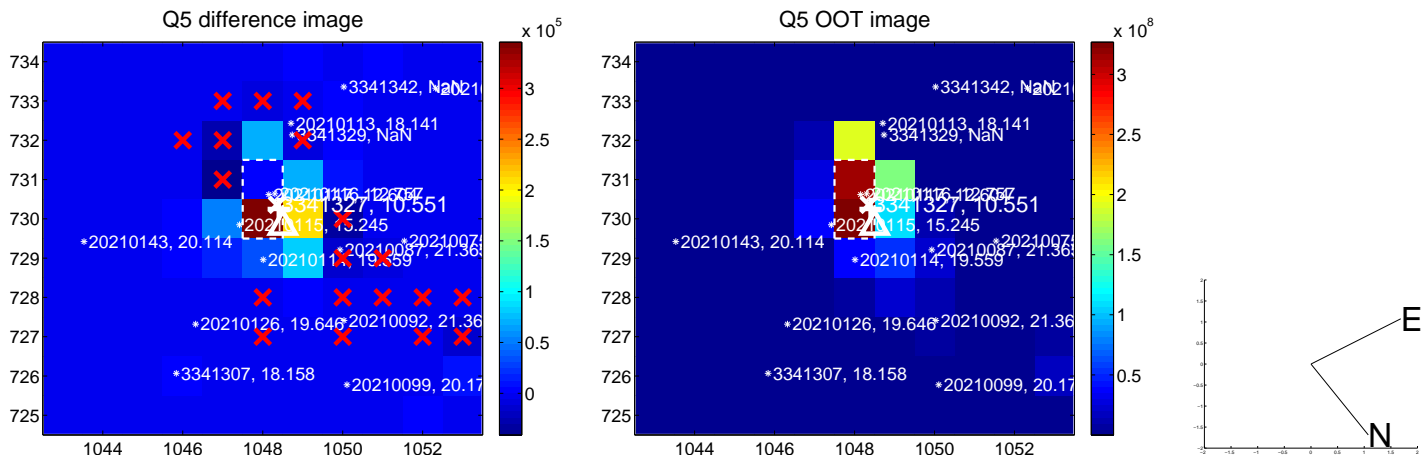
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: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

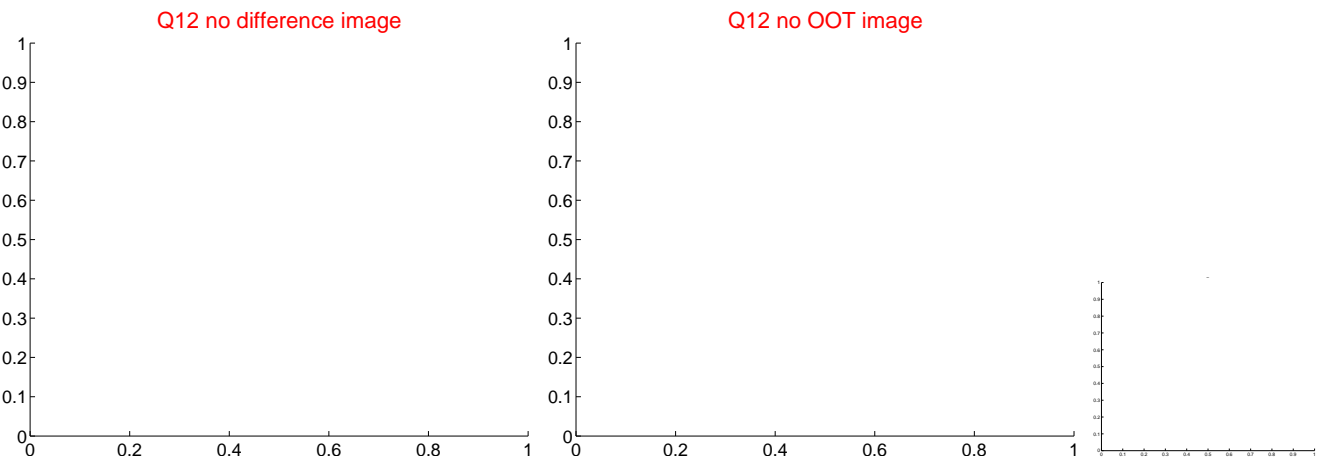
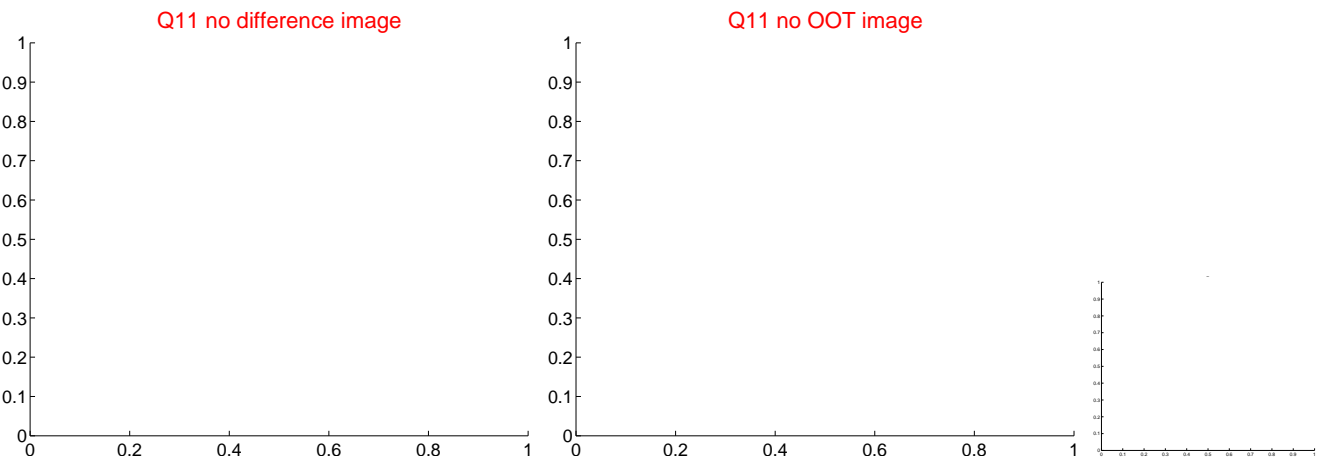
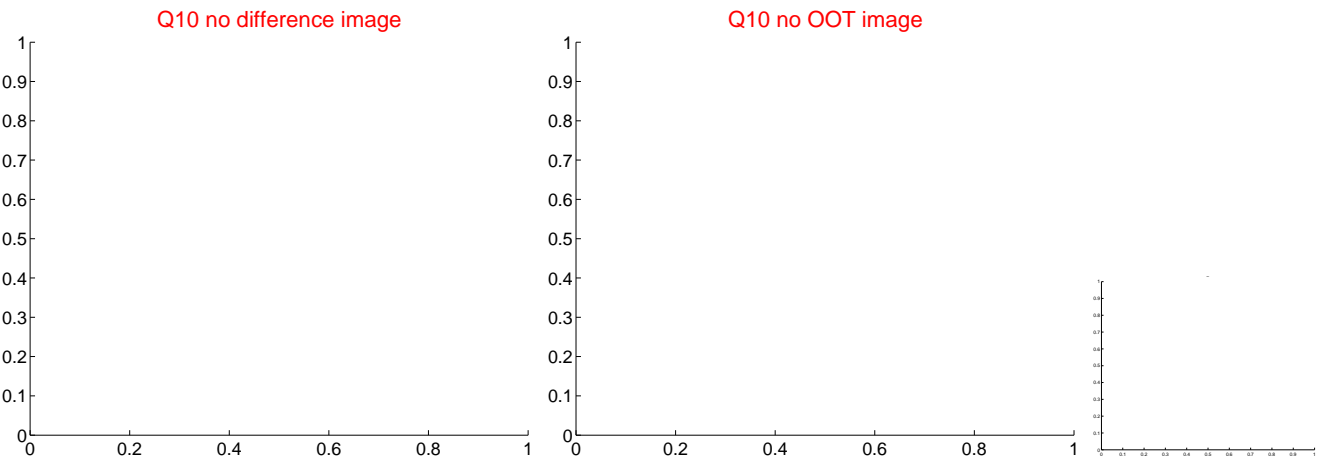
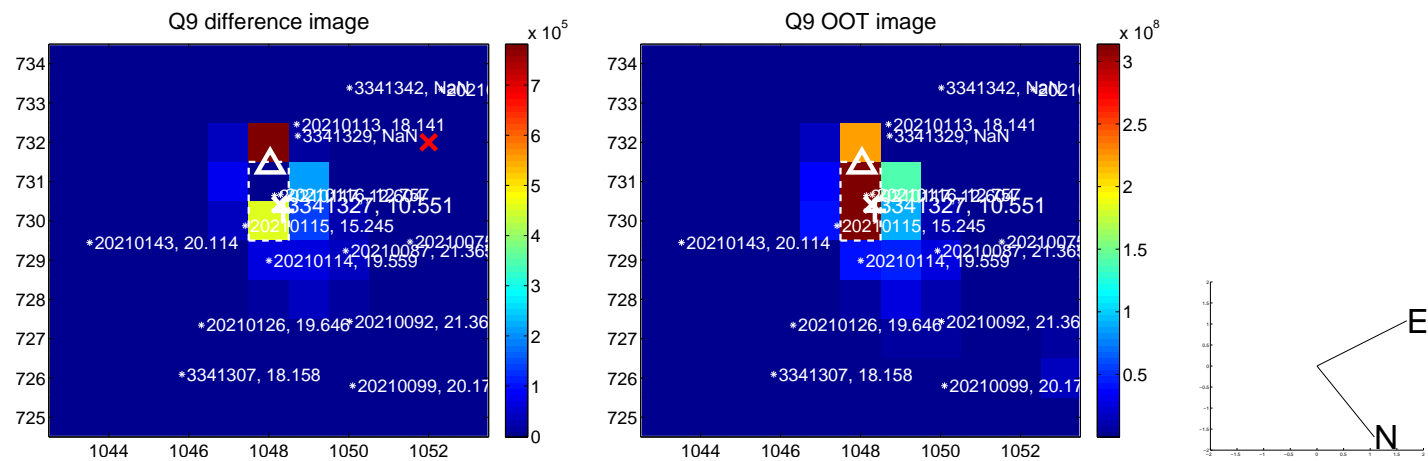




white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



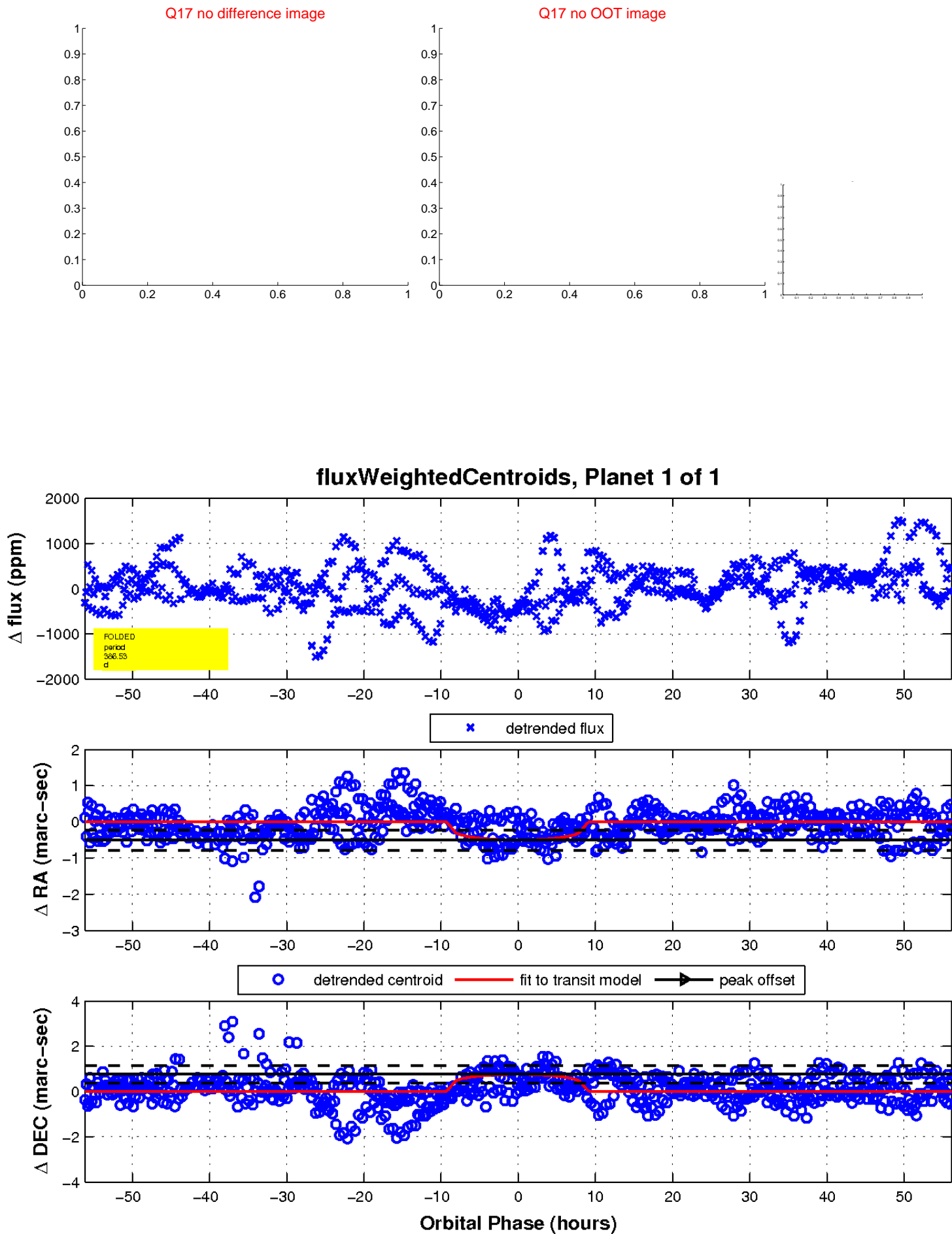
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



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UKIRT Image

