

# KIC 007677306

## 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)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007677306-01	OBS	No	342.639217	322.294144	319.5	26.511	7.4	6.8	0.66	4945	1.17	0.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007677306-01	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_MARSHALL_SKYE—CENT_FEW_DIFFS—HALO_GHOST

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

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

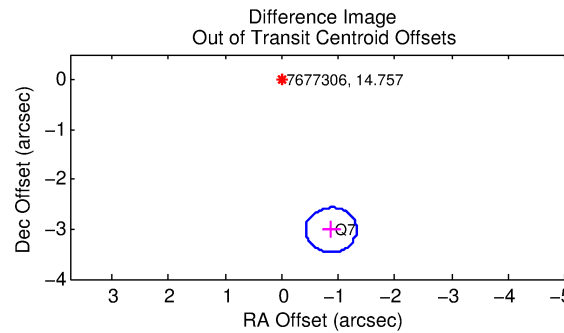
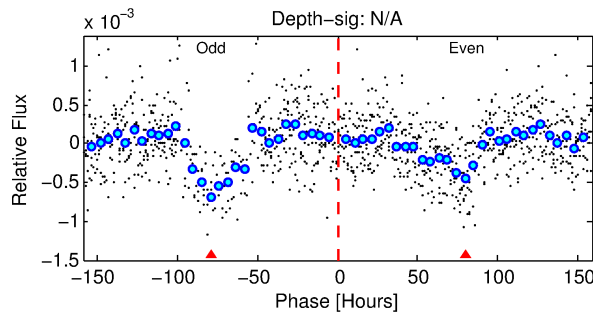
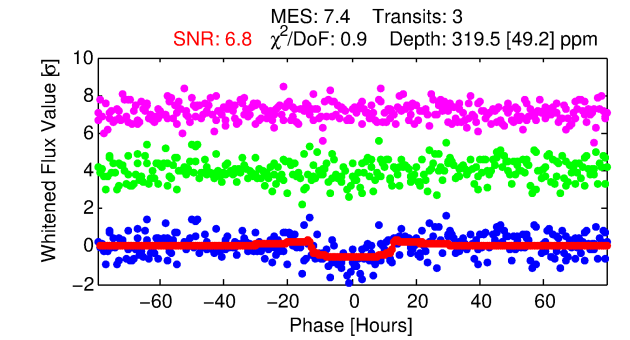
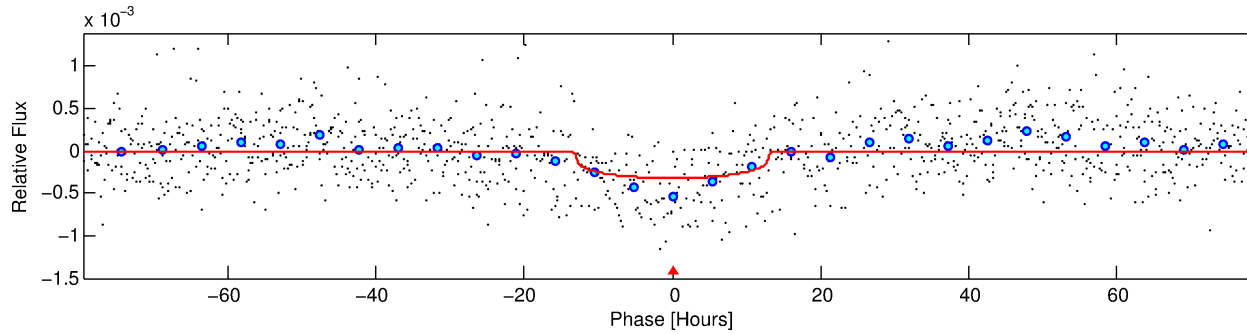
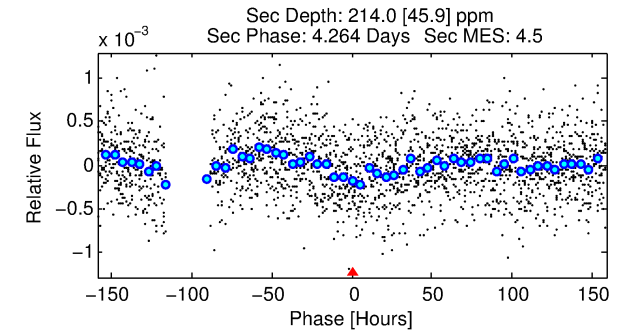
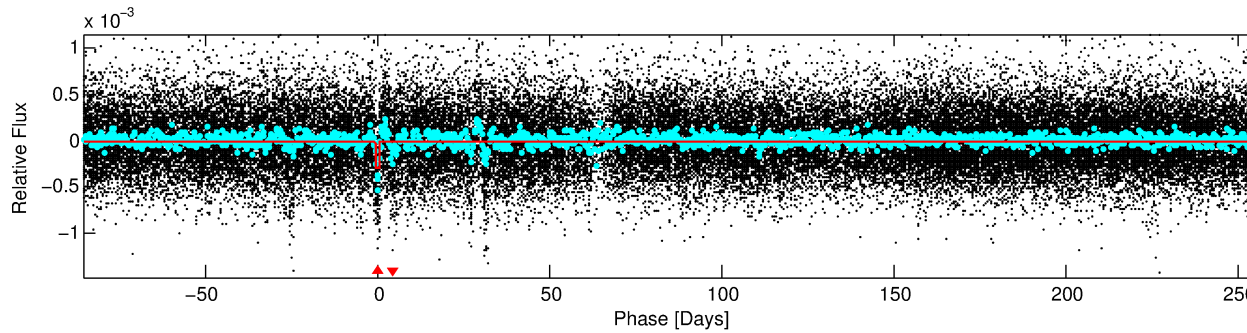
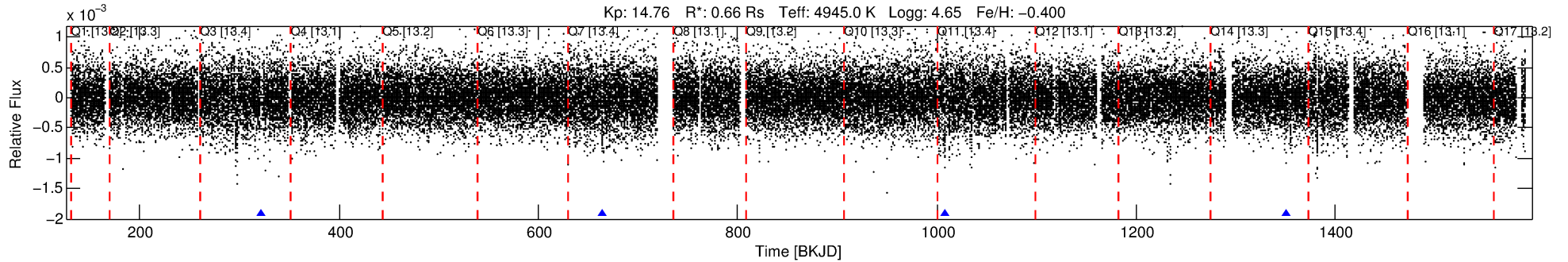
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007677306-01

No Significant Match Found

# DV One-Page Summary

KIC: 7677306 Candidate: 1 of 1 Period: 342.639 d



## DV Fit Results:

Period = 342.63922 [0.02551] d  
Epoch = 322.2941 [0.0546] BKJD  
Rp/R\* = 0.0163 [0.0140]  
a/R\* = 90.98 [275.00]  
b = 0.43 [5.80]  
Seff = 0.32 [0.06]  
Teq = 191 [8] K  
Rp = 1.17 [1.01] Re  
a = 0.8530 [0.0806] AU  
Ag = 62402.80 [107738.34] [0.58σ]  
Teffp = 4678 [2019] K [2.22σ]

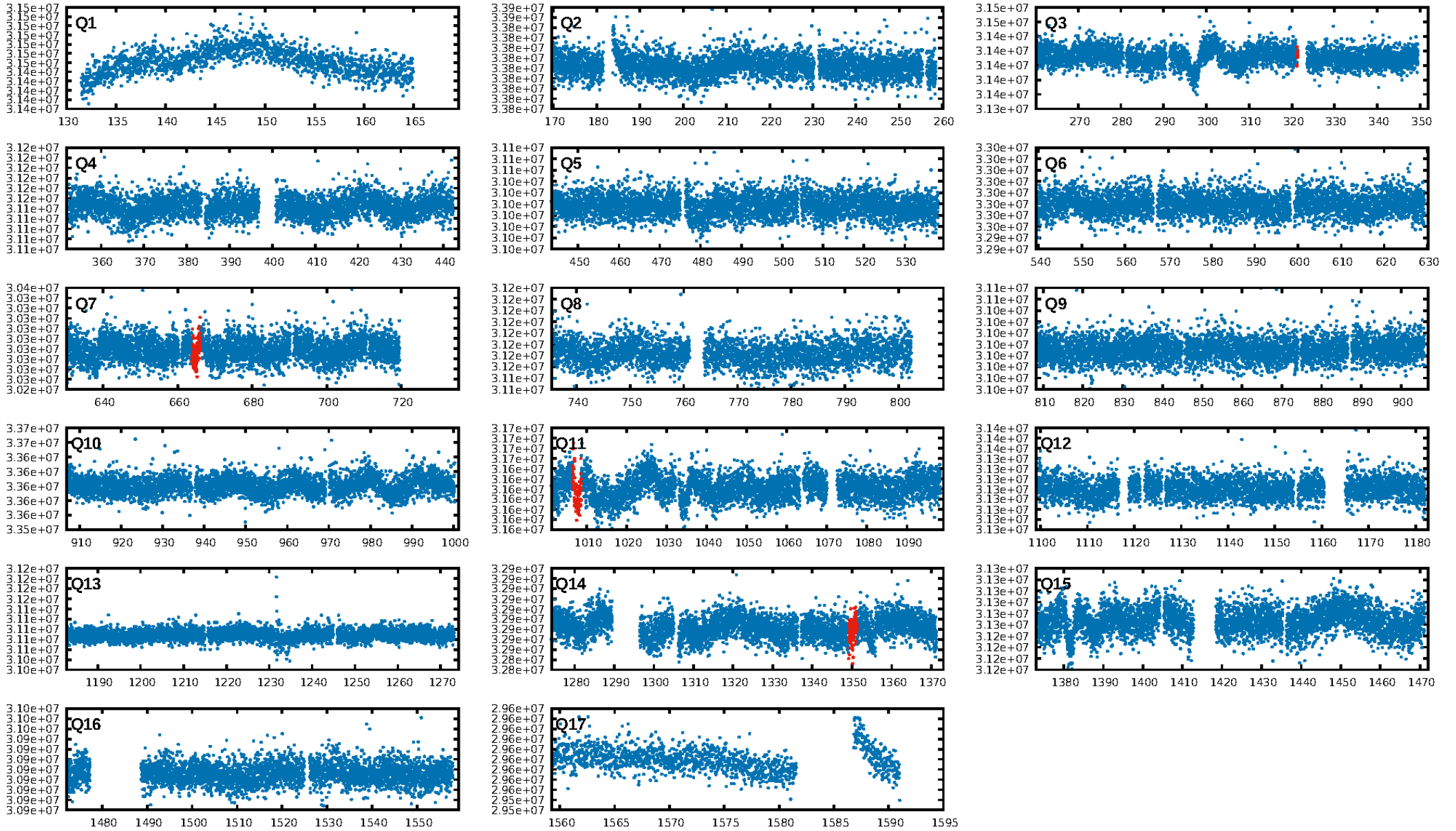
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: 2.4%  
ModelChiSquareGof-sig: 100.0%  
Bootstrap-pfa: 1.79e-11  
RollingBand-fgt: 1.00 [3/3]  
GhostDiagnostic-chr: 0.105  
Centroid-sig: 87.9%  
Centroid-so: 1.079 arcsec [0.66σ]  
OotOffset-rm: 3.143 arcsec [21.04σ]  
KicOffset-rm: 2.959 arcsec [19.81σ]  
OotOffset-st: 0/1/0/0 [1]  
KicOffset-st: 0/1/0/0 [1]  
DiffImageQuality-fgm: 1.00 [1/1]  
DiffImageOverlap-fno: 1.00 [2/2]

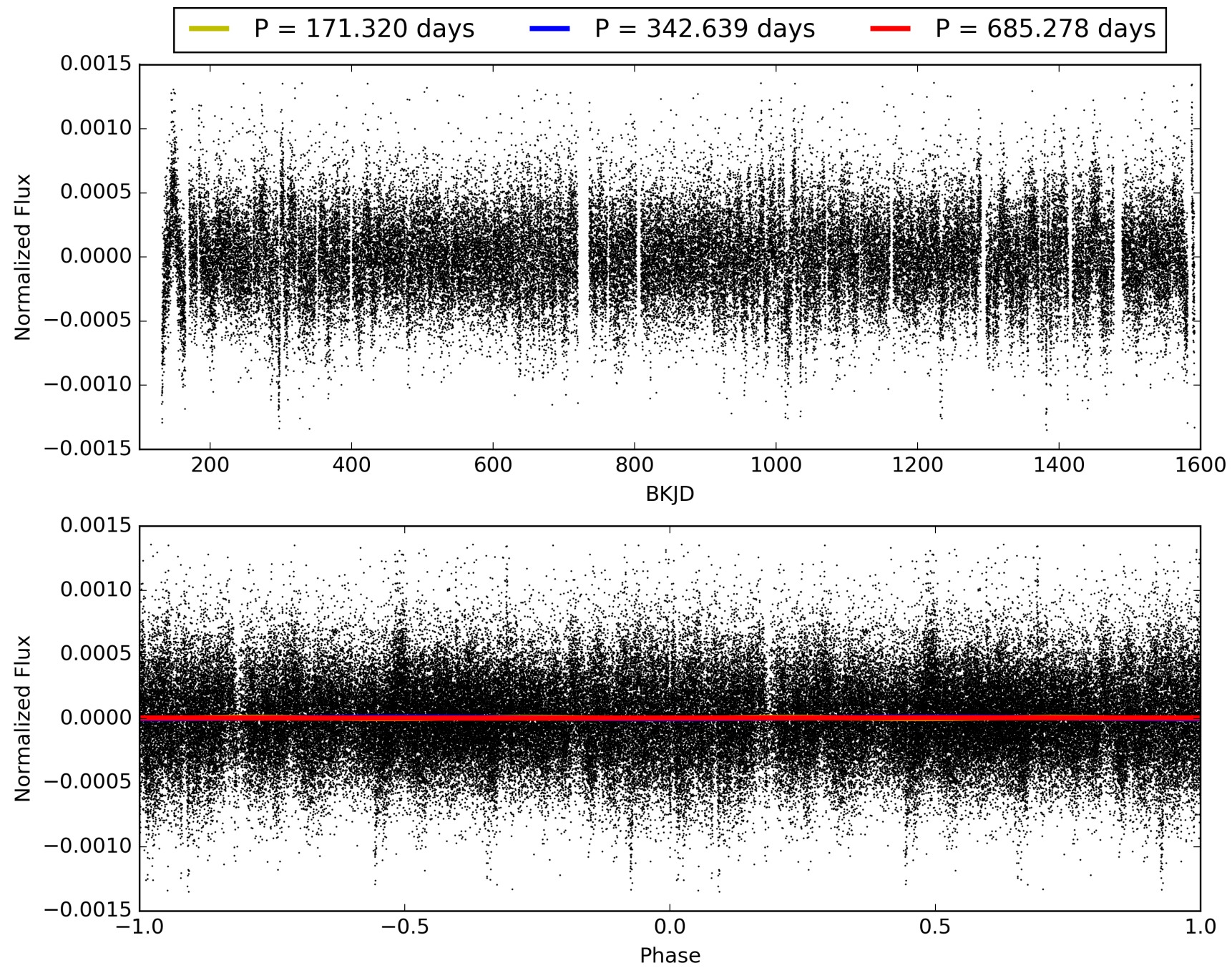
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 12:01:17 Z

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

# TCE 007677306-01, PDC Light Curves

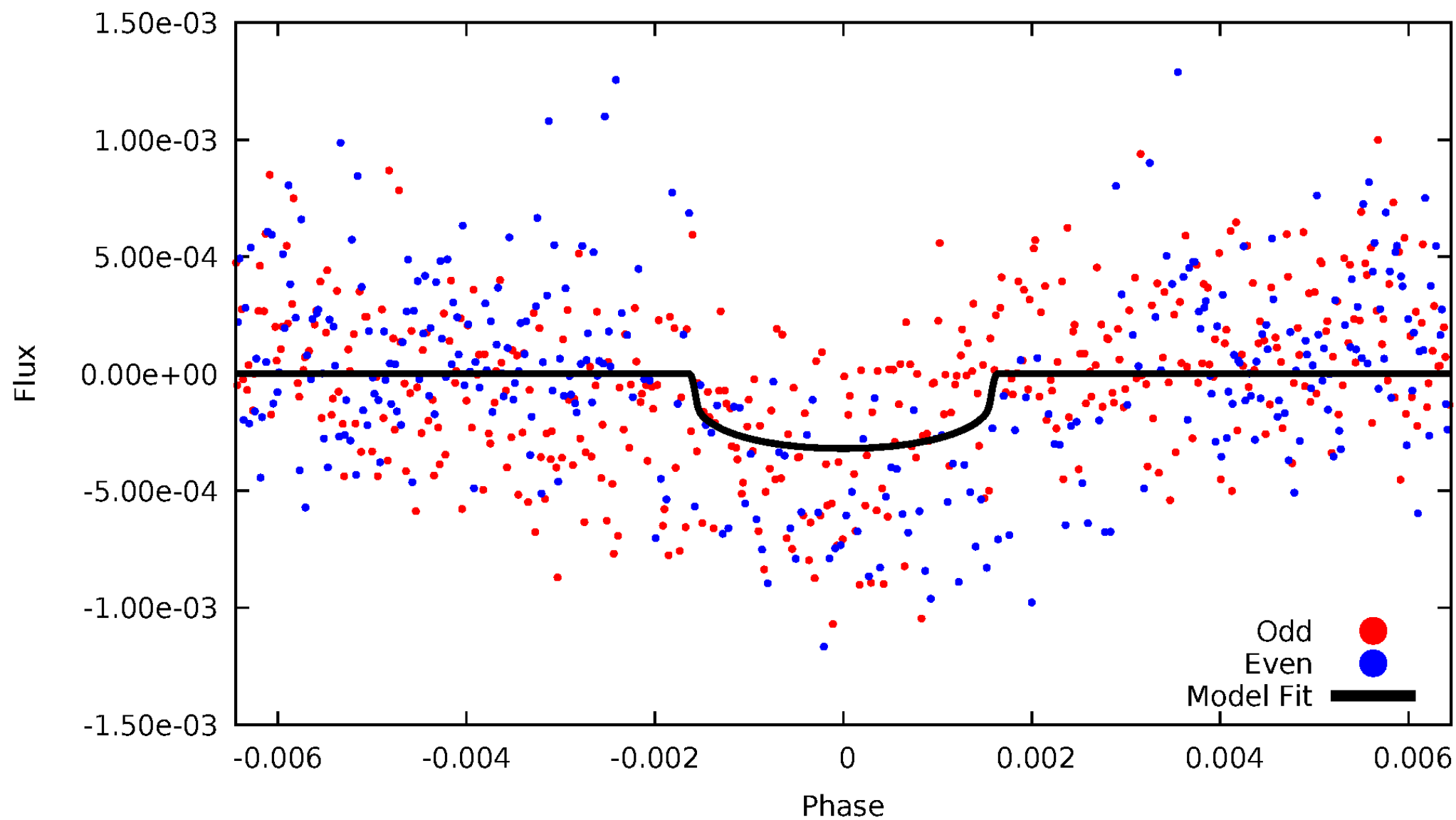


TCE 007677306-01



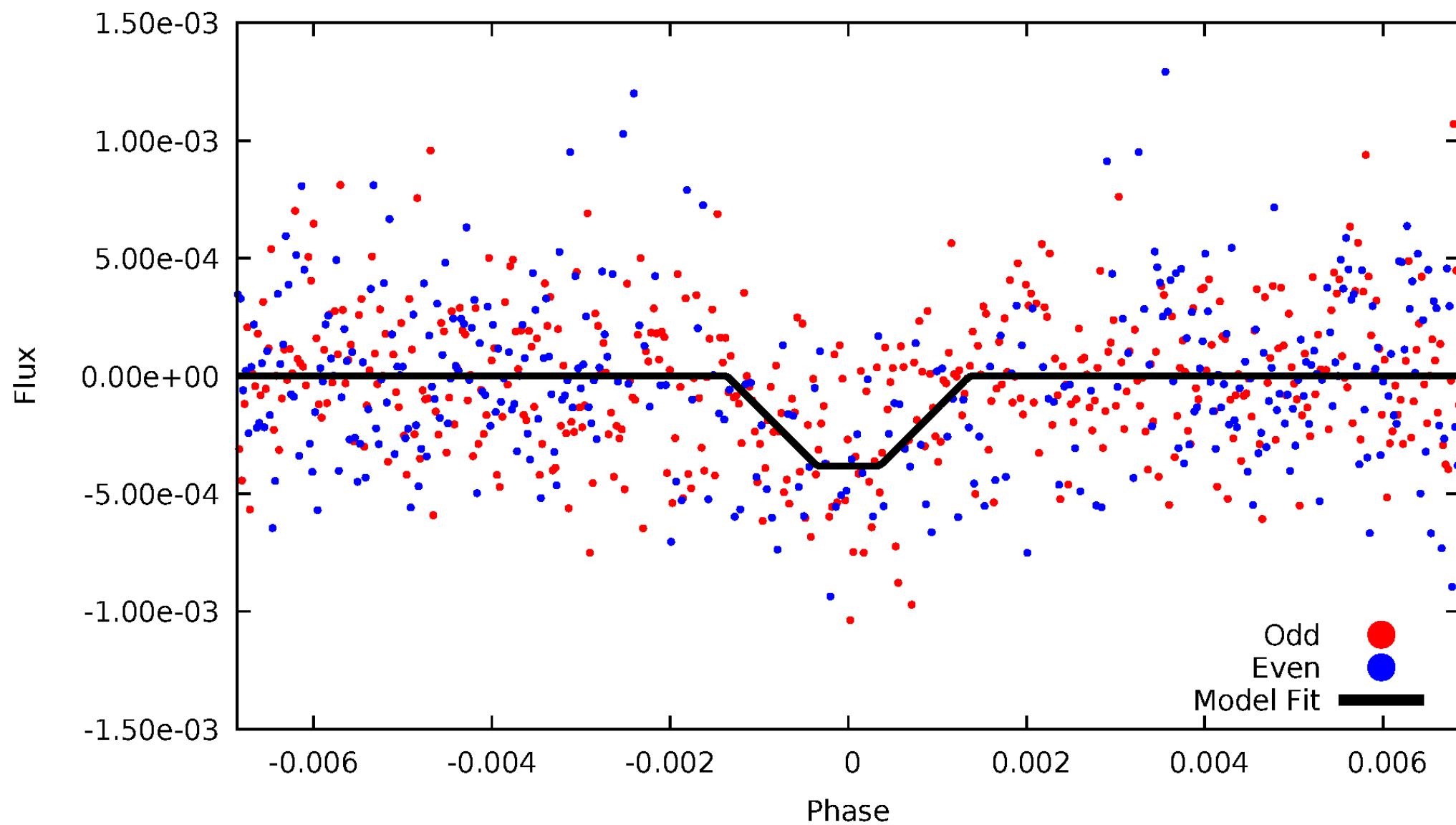
# DV Odd/Even

TCE 007677306-01



# ALT Odd/Even

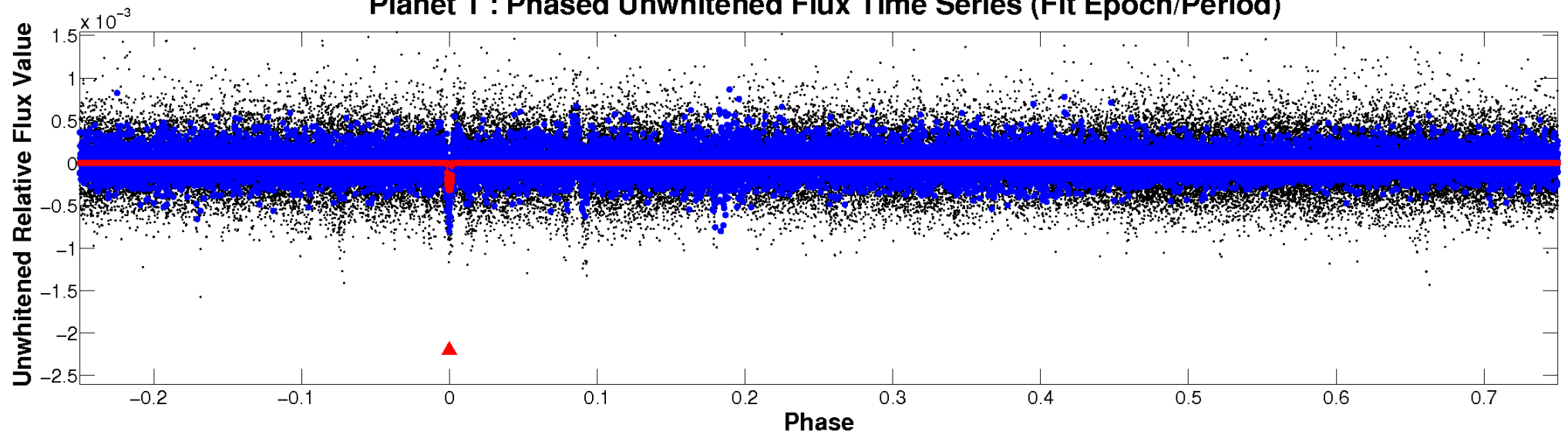
TCE 007677306-01



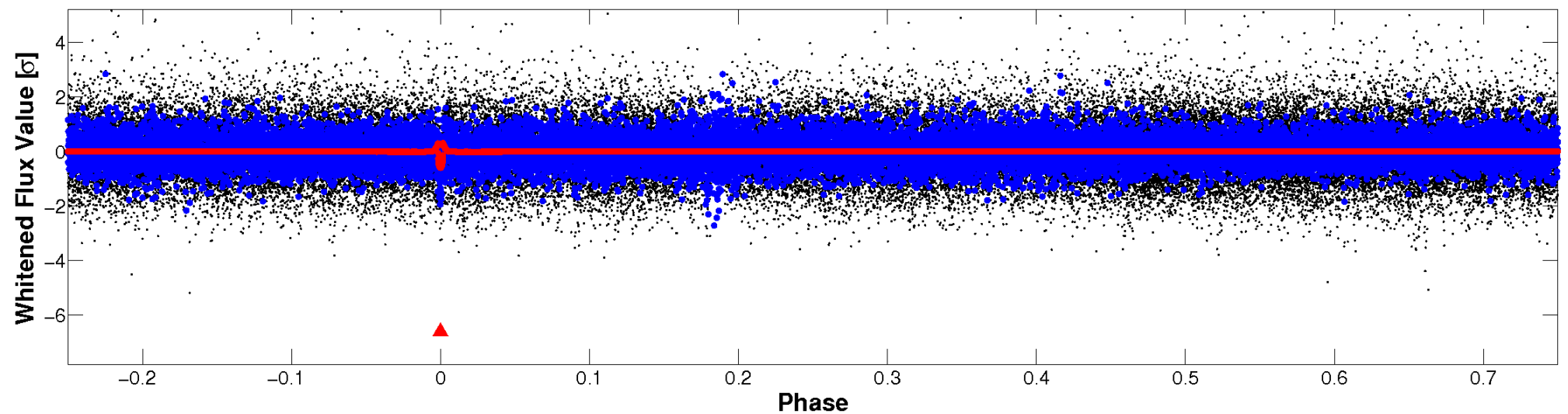


# Non-Whitened Vs. Whitened Light Curve

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

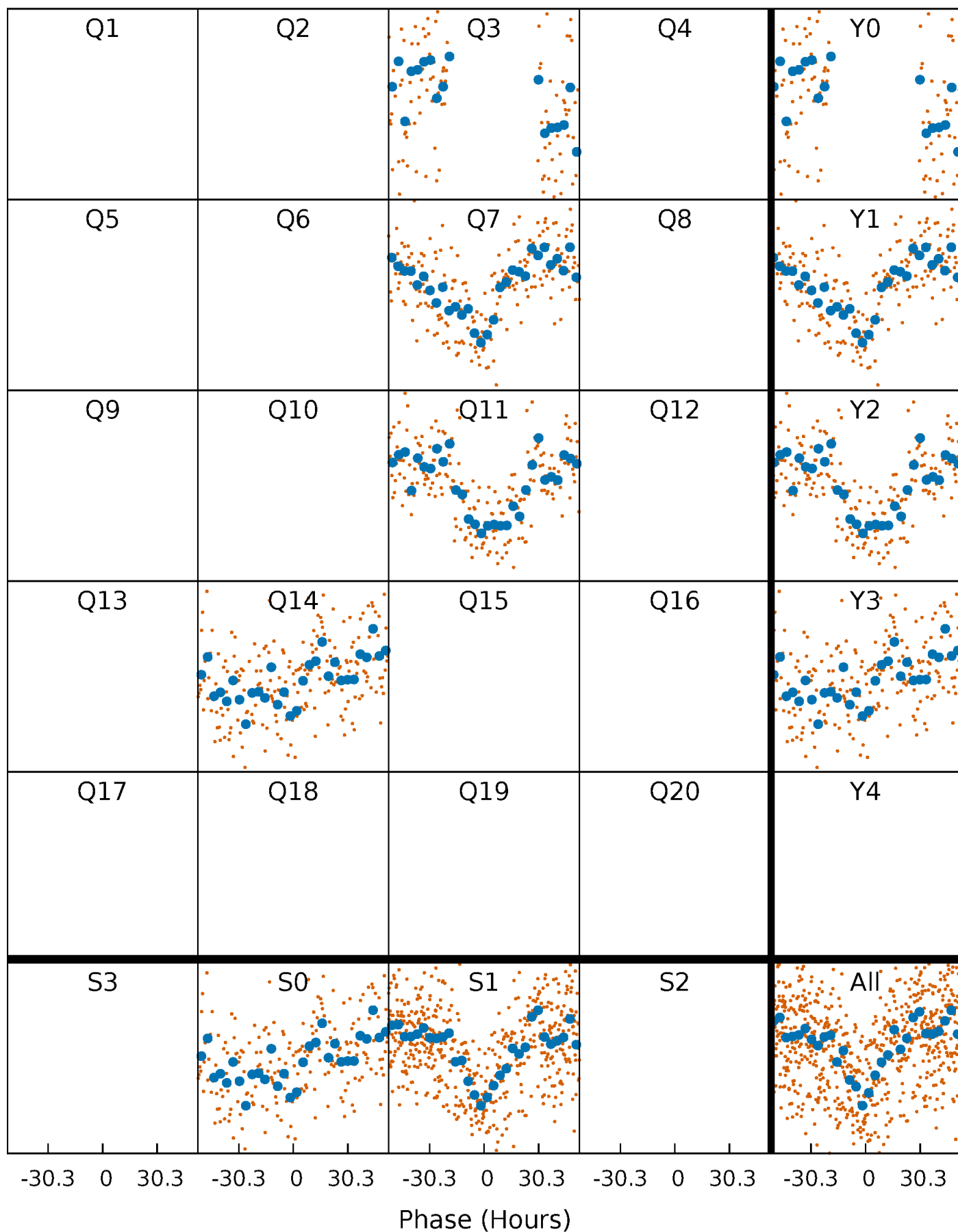


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

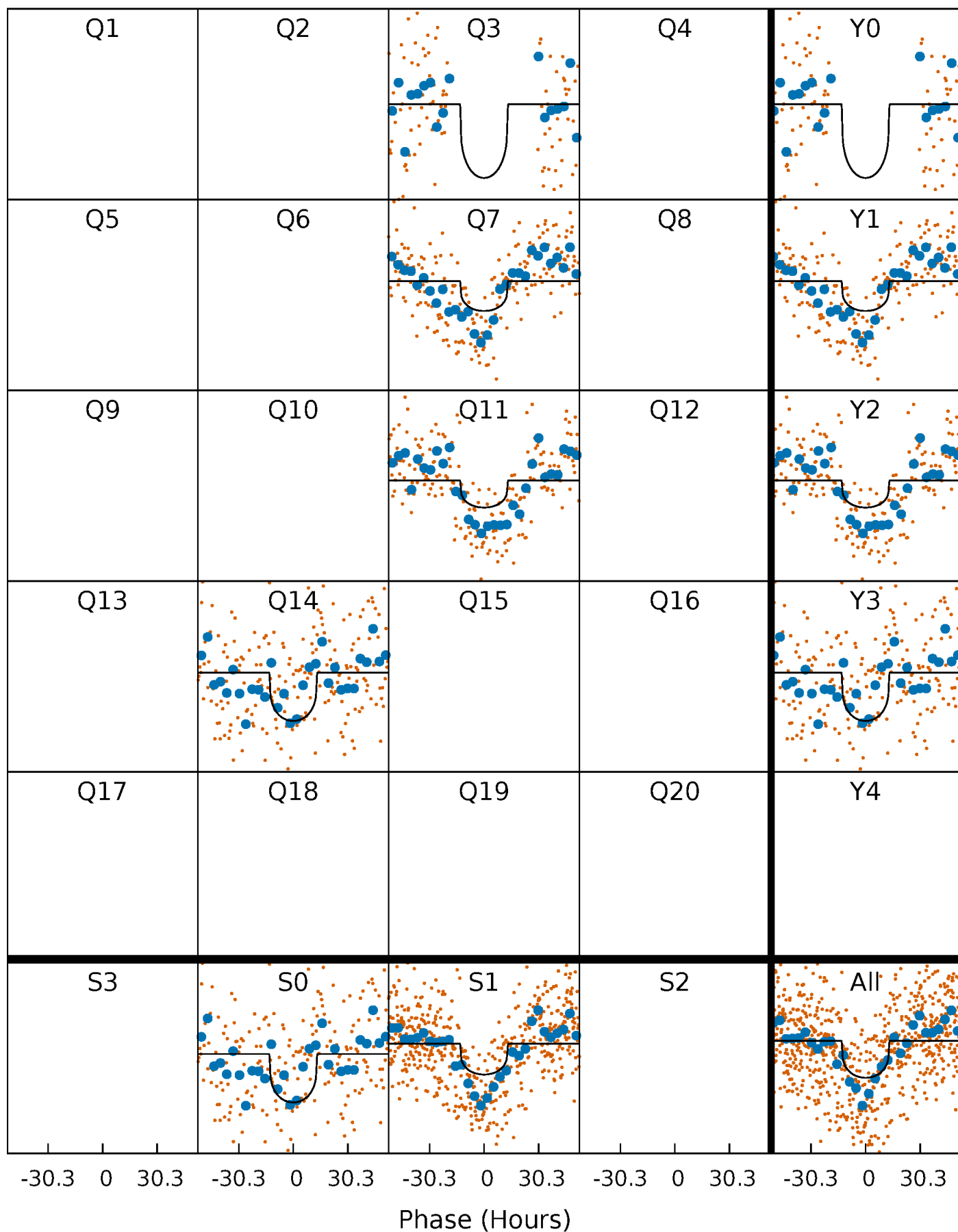
TCE 007677306-01 P=342.639217 Days  $T_0=322.294144$  (BKJD)





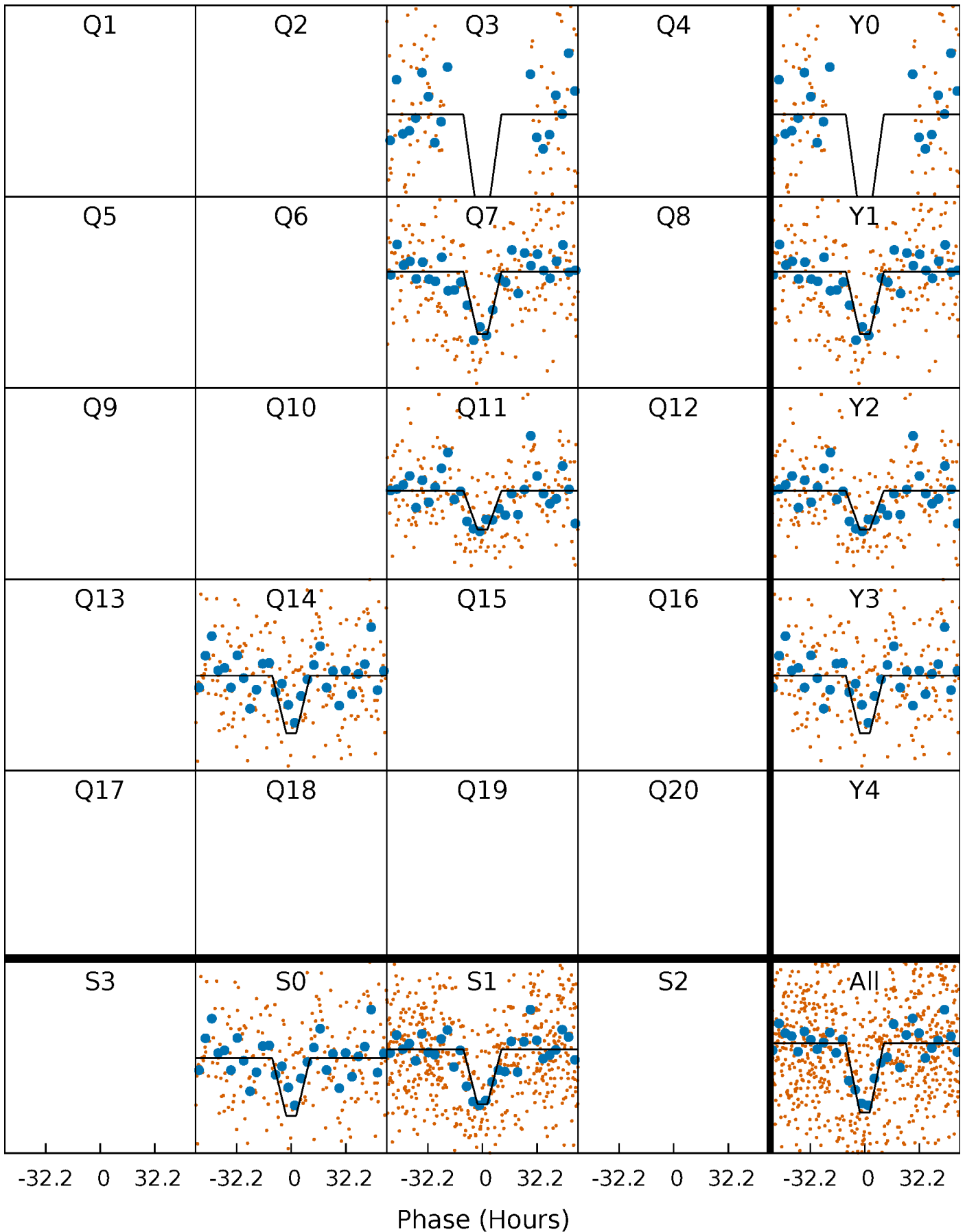
# DV Quarter-Phased Transit Curves

TCE 007677306-01 P=342.639217 Days  $T_0=322.294144$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

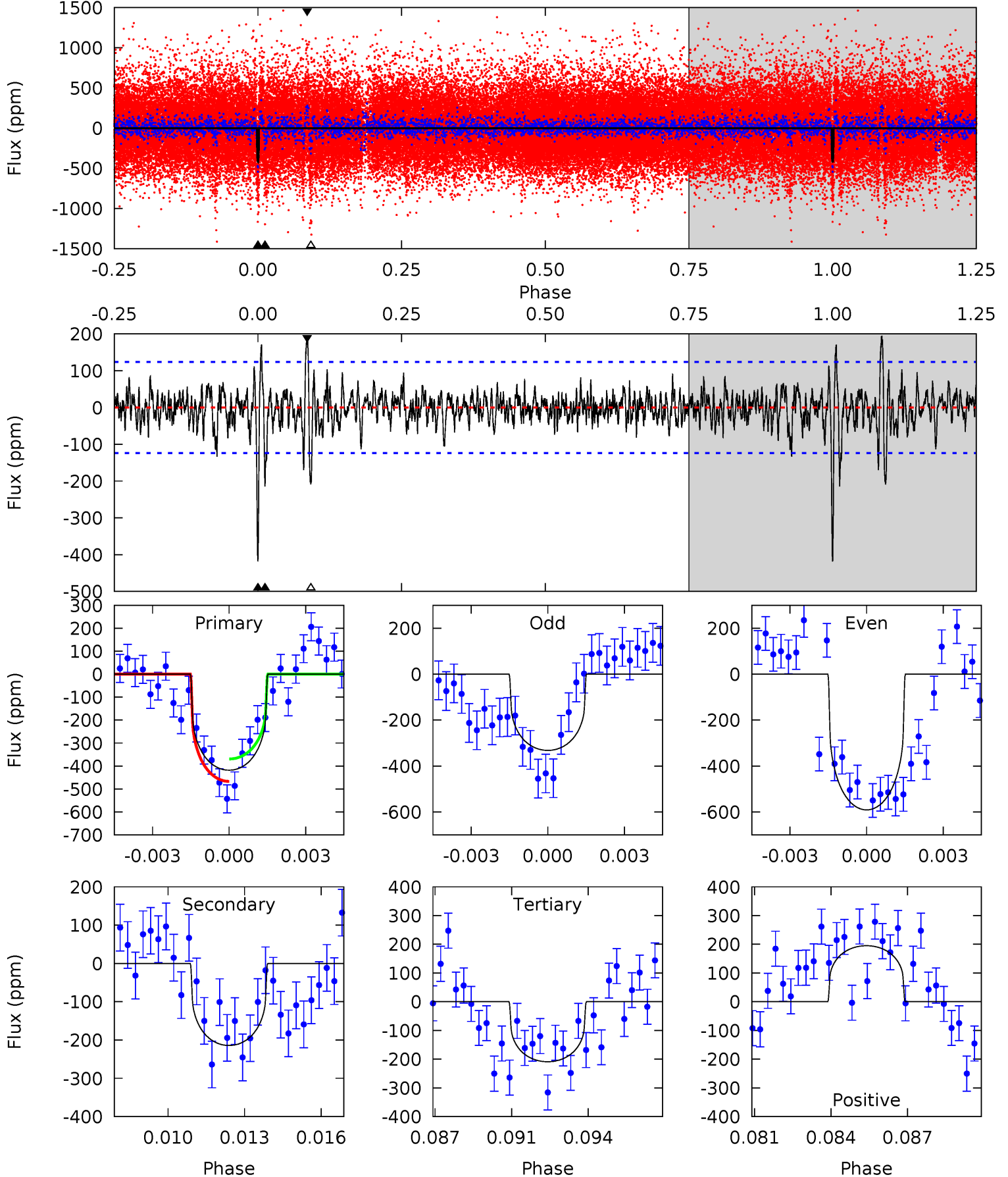
TCE 007677306-01 P=342.595878 Days  $T_0=322.378414$  (BKJD)



# DV Model-Shift Uniqueness Test

007677306-01, P = 342.639217 Days, E = 322.294144 Days

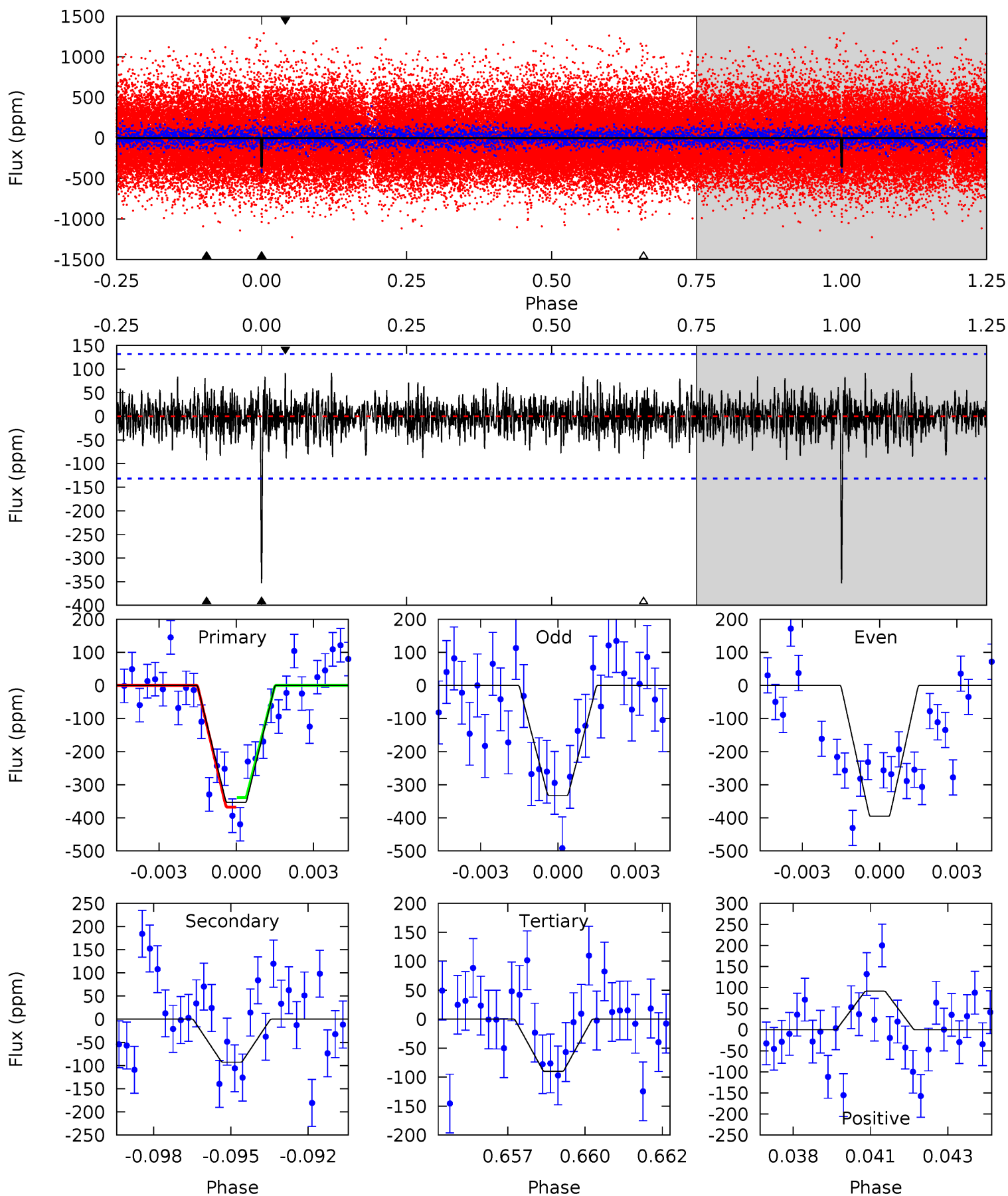
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
17.7	9.08	8.85	8.26	5.24	2.94	1.61	8.87	9.46	0.22	0.82	5.18	0.88	0.32	2.07



# Alt Model-Shift Uniqueness Test

007677306-01, P = 342.595878 Days, E = 322.378414 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
14.1	3.71	3.60	3.65	5.27	3.00	1.07	10.5	10.5	0.11	0.05	1.19	0.89	0.21	0.57



### Stellar Parameters For KIC 007677306

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$4945^{+133}_{-148}$	$4.651^{+0.032}_{-0.063}$	$-0.400^{+0.300}_{-0.300}$	$0.657^{+0.080}_{-0.049}$	$0.710^{+0.068}_{-0.068}$	$3.519^{+0.592}_{-0.785}$
	+3%/-3%	+1%/-1%	+75%/-75%	+12%/-7%	+10%/-10%	+17%/-22%
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 007677306-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-214 \pm 24$	$1.28^{+1.04}_{-0.76}$	$269^{+10}_{-9}$	$4535^{+2303}_{-853}$	$50507^{+250083}_{-34656}$
Alt.	$-93 \pm 25$	$1.53^{+1.02}_{-0.84}$	$269^{+9}_{-9}$	$3698^{+1295}_{-571}$	$16161^{+60650}_{-10689}$

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

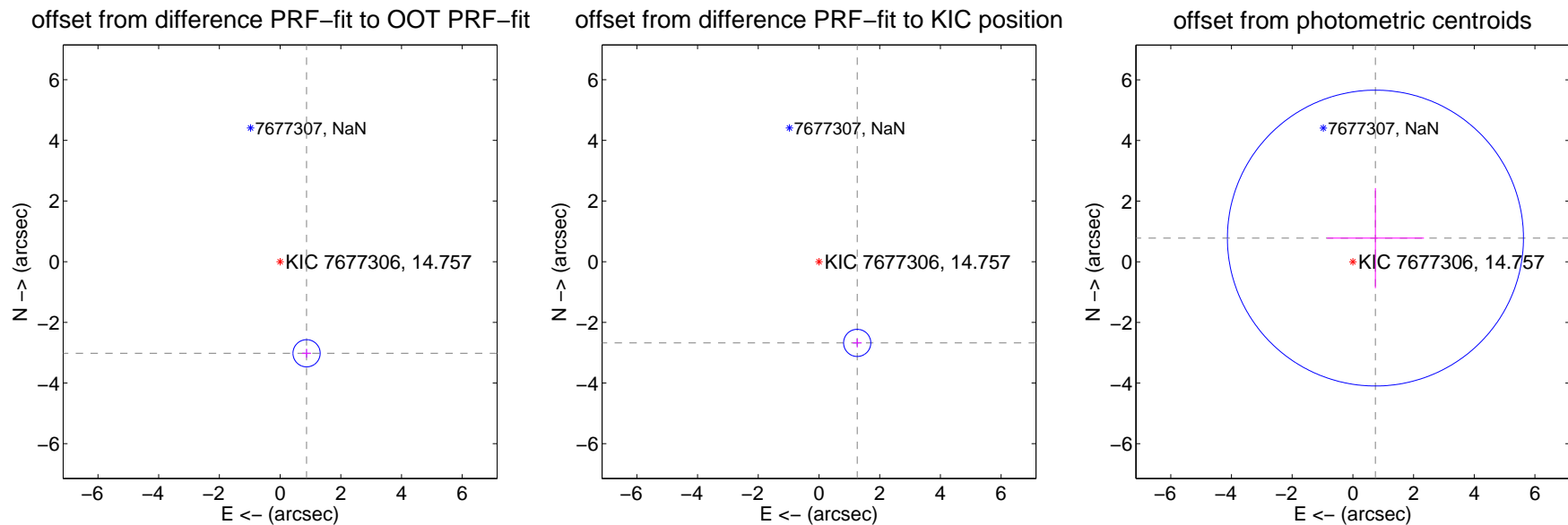
## DV Centroid Data

Supplemental centroid analysis for 007677306-01. Kepler magnitude: 14.76. Transit SNR 6.80

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.52 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$3.143 \pm 0.149$	21.04	$-0.872 \pm 0.149$	$-3.020 \pm 0.150$
PRF-fit source offset from KIC position	$2.959 \pm 0.149$	19.81	$-1.259 \pm 0.149$	$-2.678 \pm 0.150$
photometric centroid source offset	$1.08 \pm 1.63$	0.66	$-0.74 \pm 1.60$	$0.78 \pm 1.65$



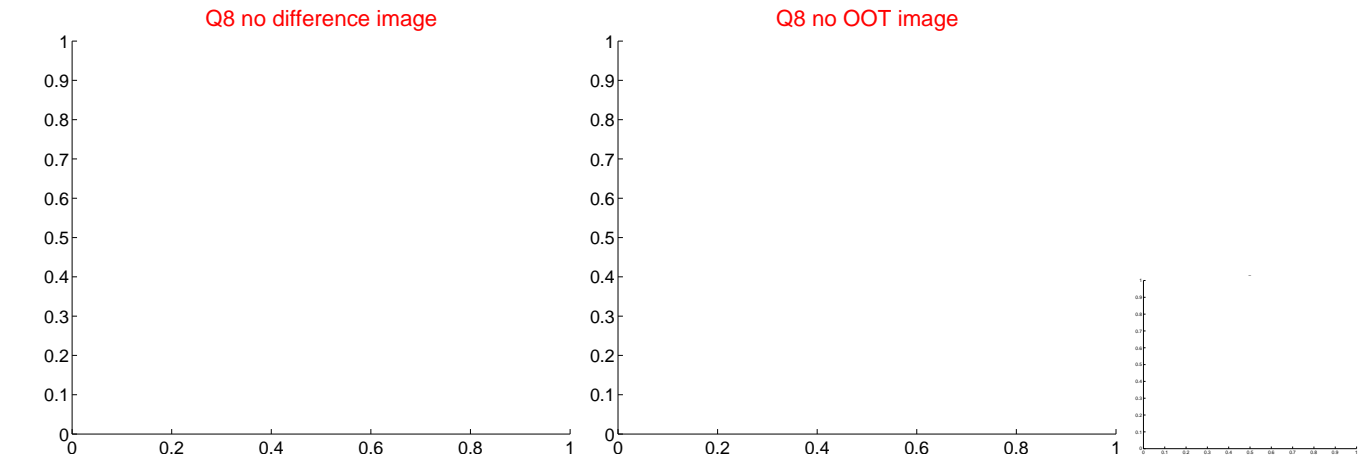
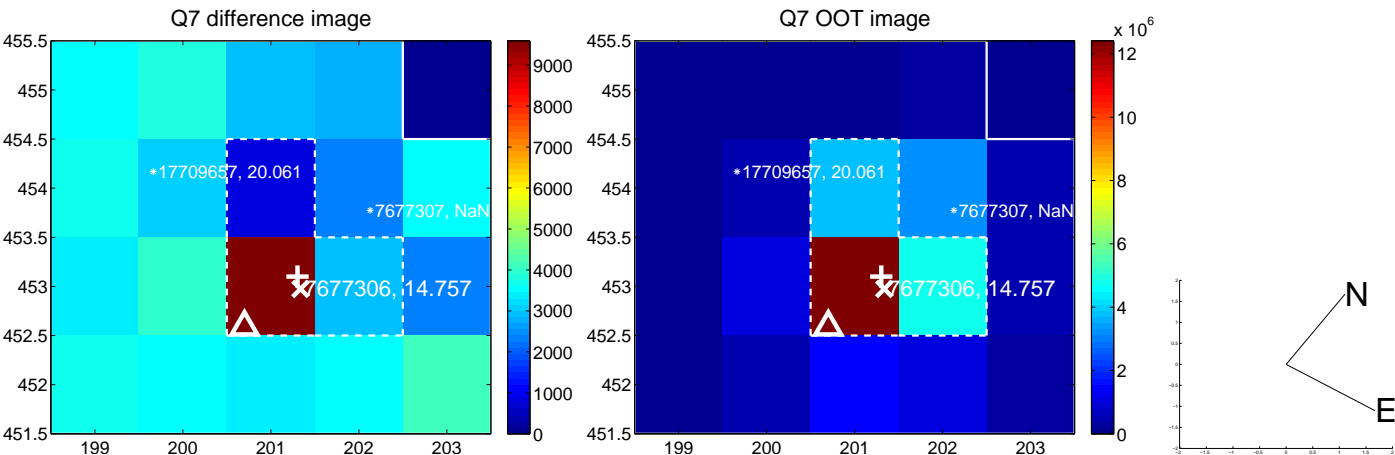
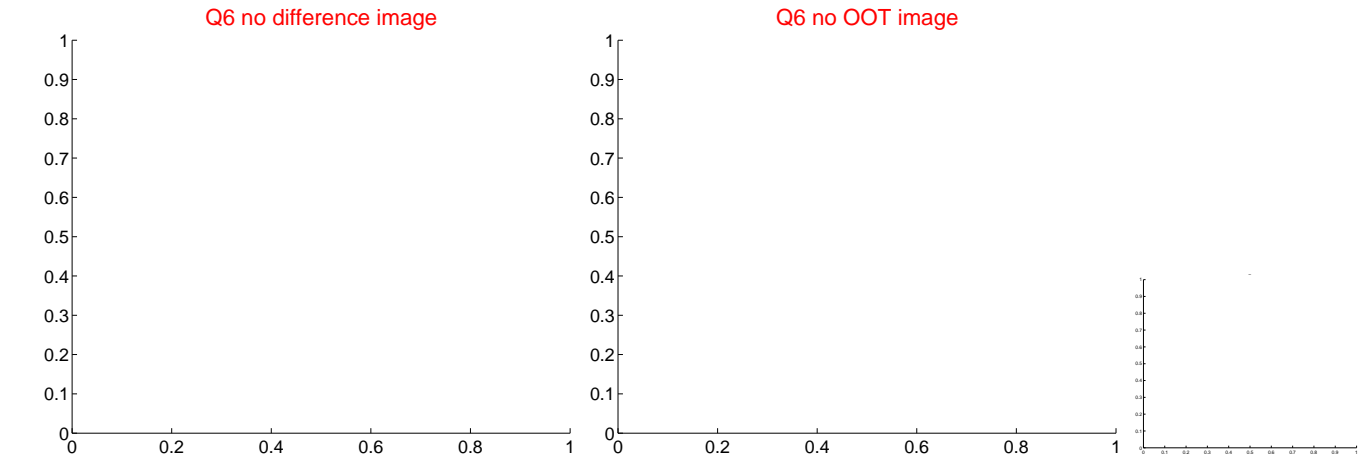
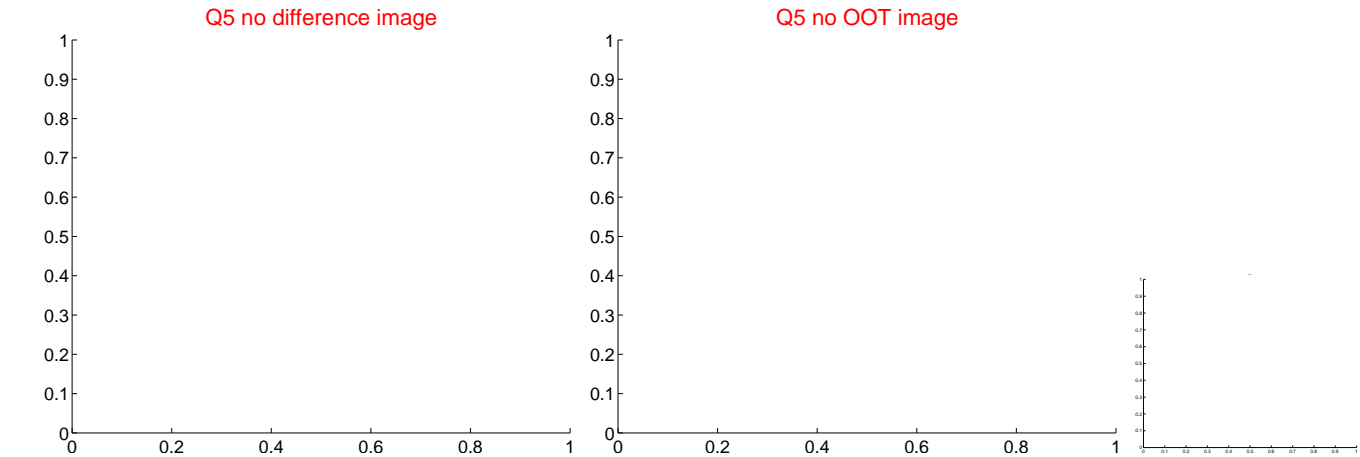
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three-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



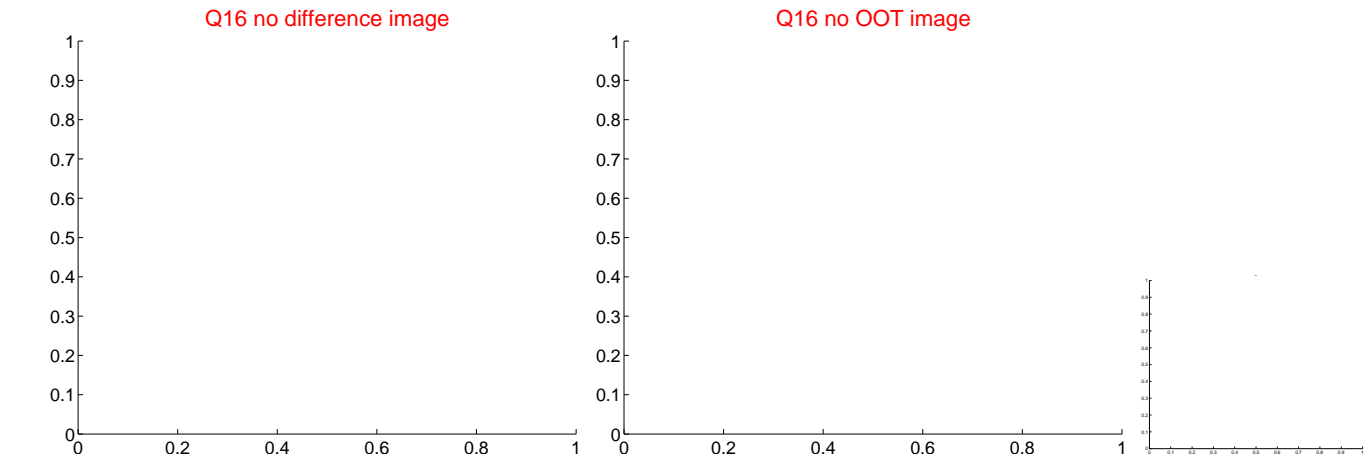
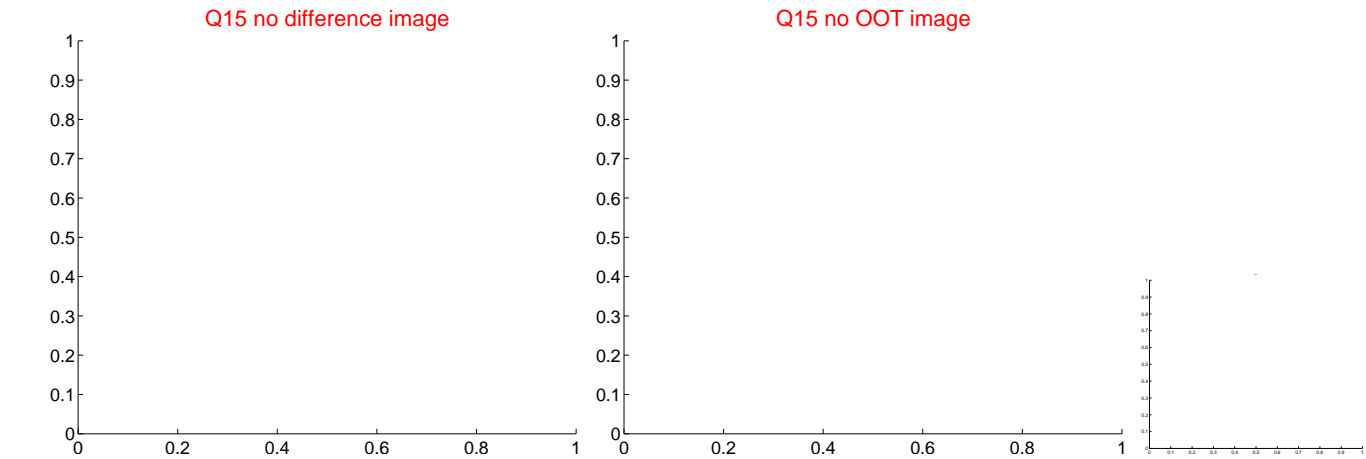
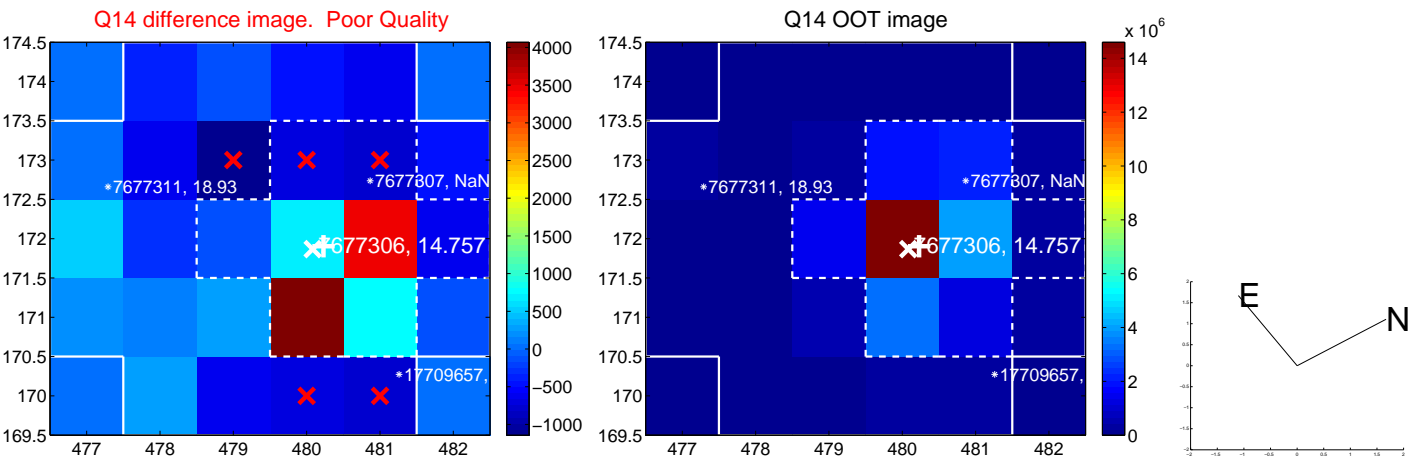
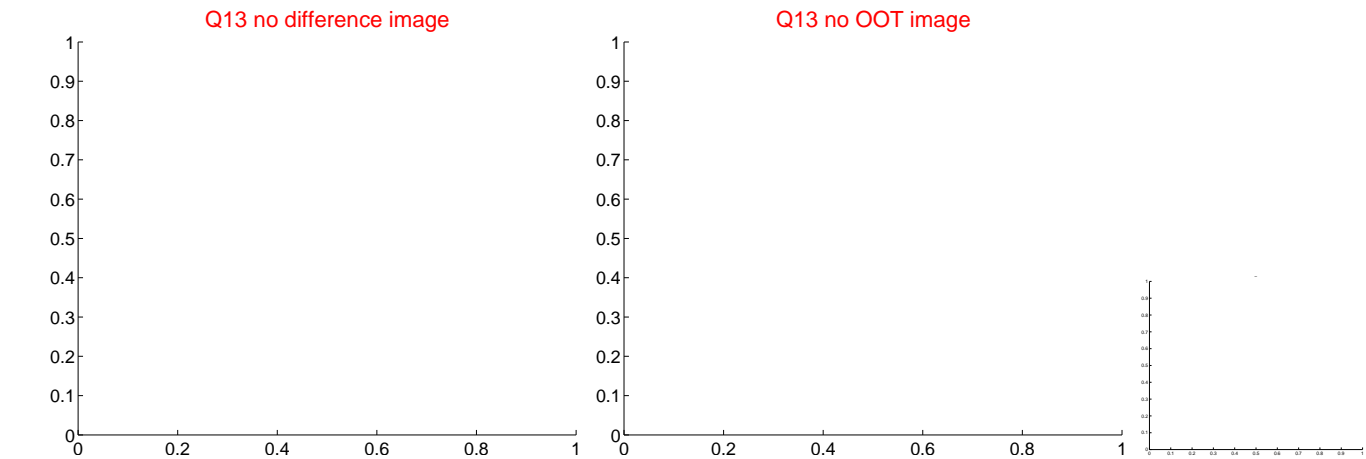
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



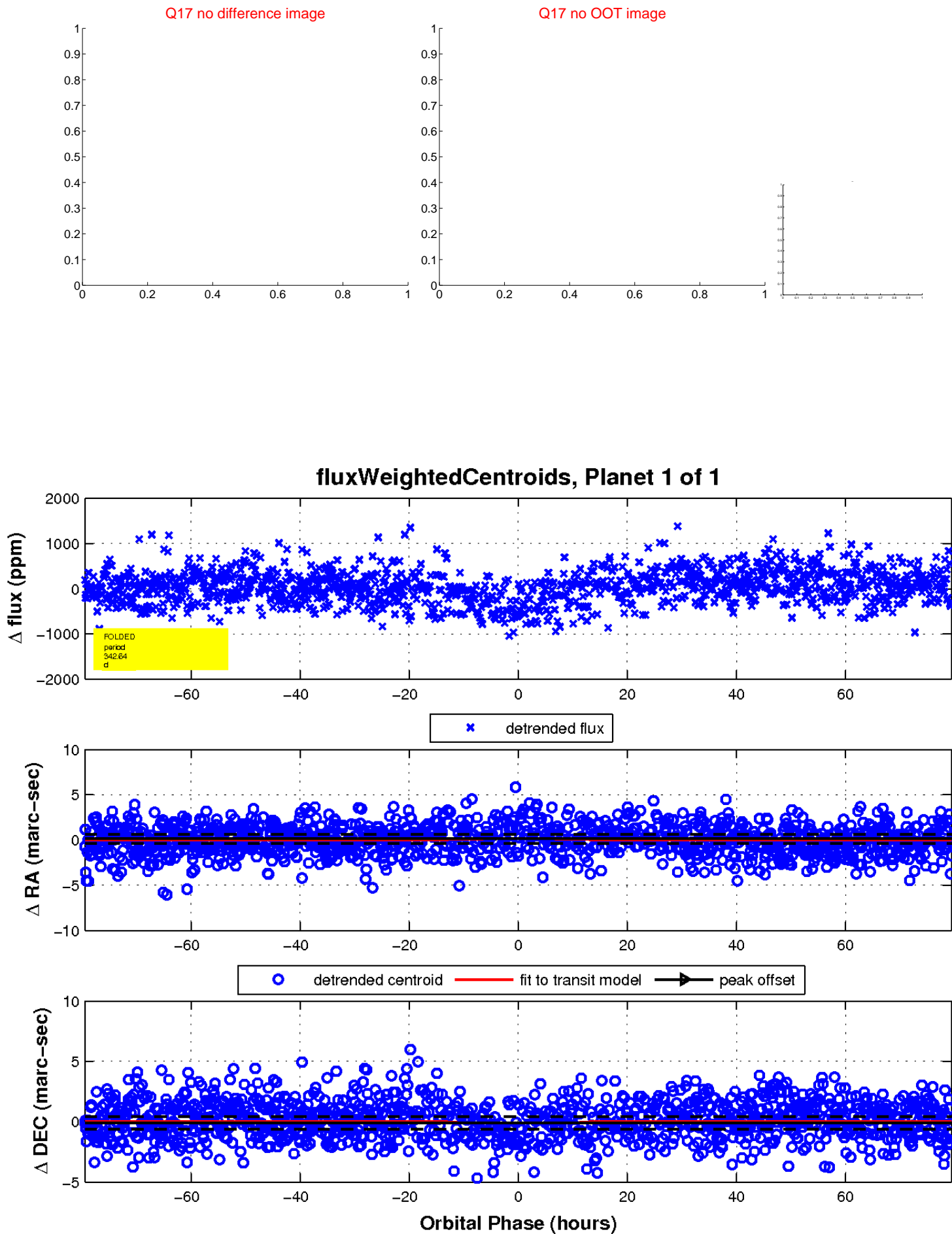
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : 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

