

KIC 003112677

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})
003112677-01	OBS	No	406.497287	166.435177	251.1	7.670	7.5	7.1	2.91	5112	5.02	3.74

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003112677-01	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.

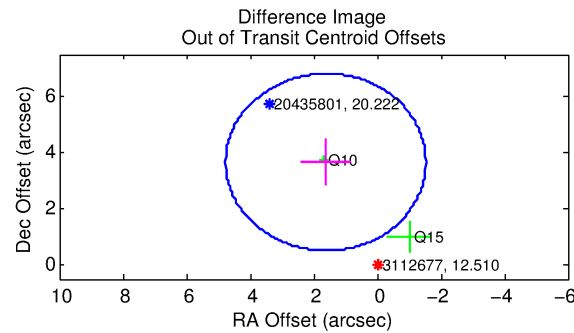
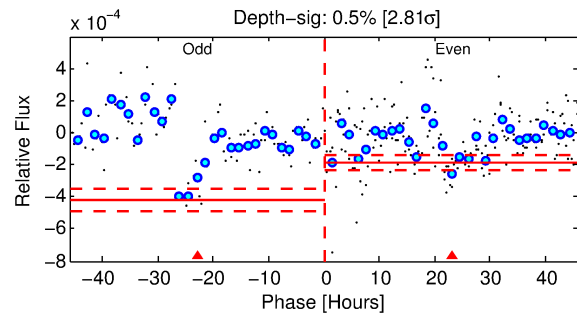
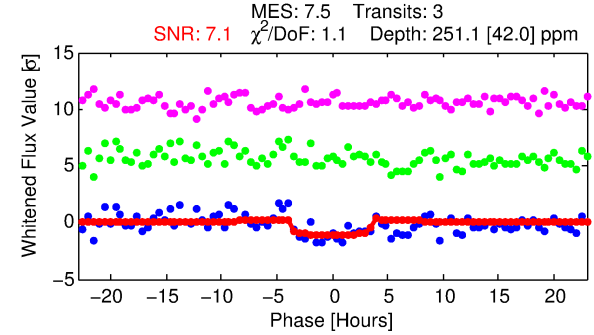
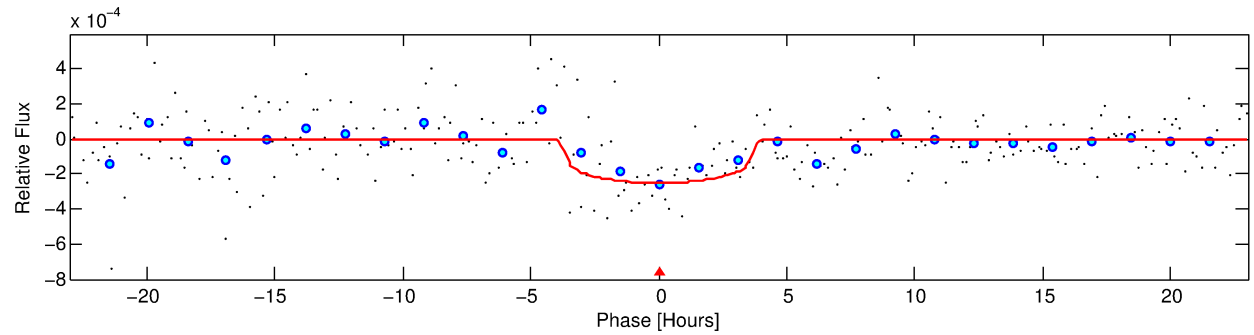
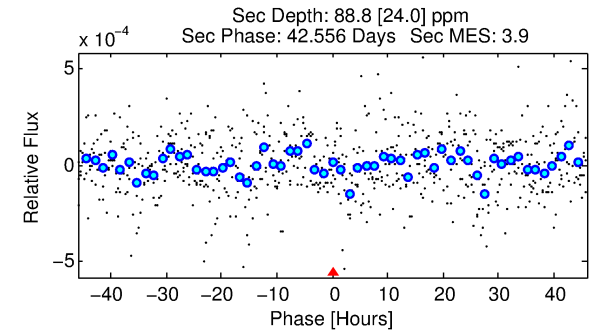
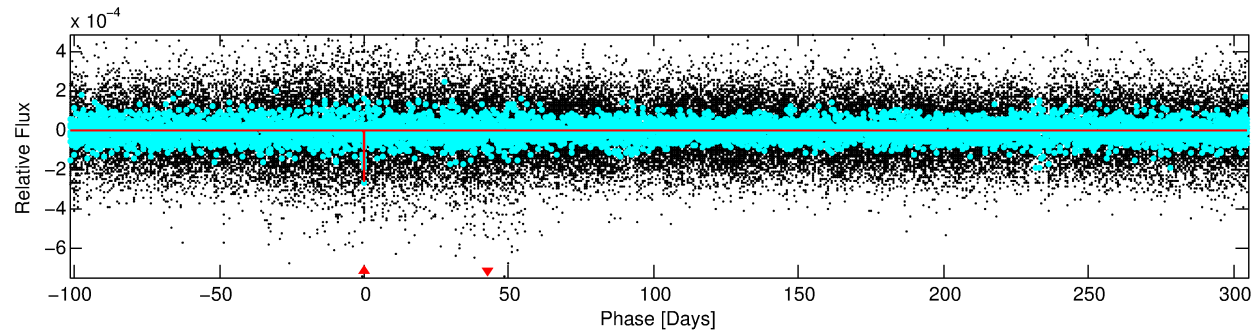
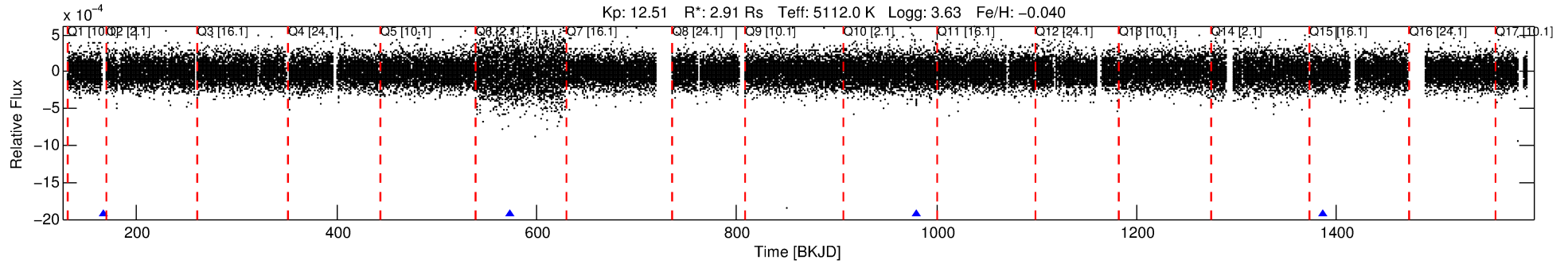
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003112677-01

No Significant Match Found

DV One-Page Summary

KIC: 3112677 Candidate: 1 of 1 Period: 406.497 d



DV Fit Results:

Period = 406.49729 [0.00774] d
Epoch = 166.4352 [0.0195] BKJD
Rp/R* = 0.0158 [0.0152]
a/R* = 277.09 [1004.04]
b = 0.75 [2.13]
Seff = 3.74 [0.92]
Teq = 355 [22] K
Rp = 5.02 [4.92] Re
a = 1.1762 [0.1946] AU
Ag = 2685.75 [5247.71] [0.51σ]
Teffp = 3947 [1915] K [1.88σ]

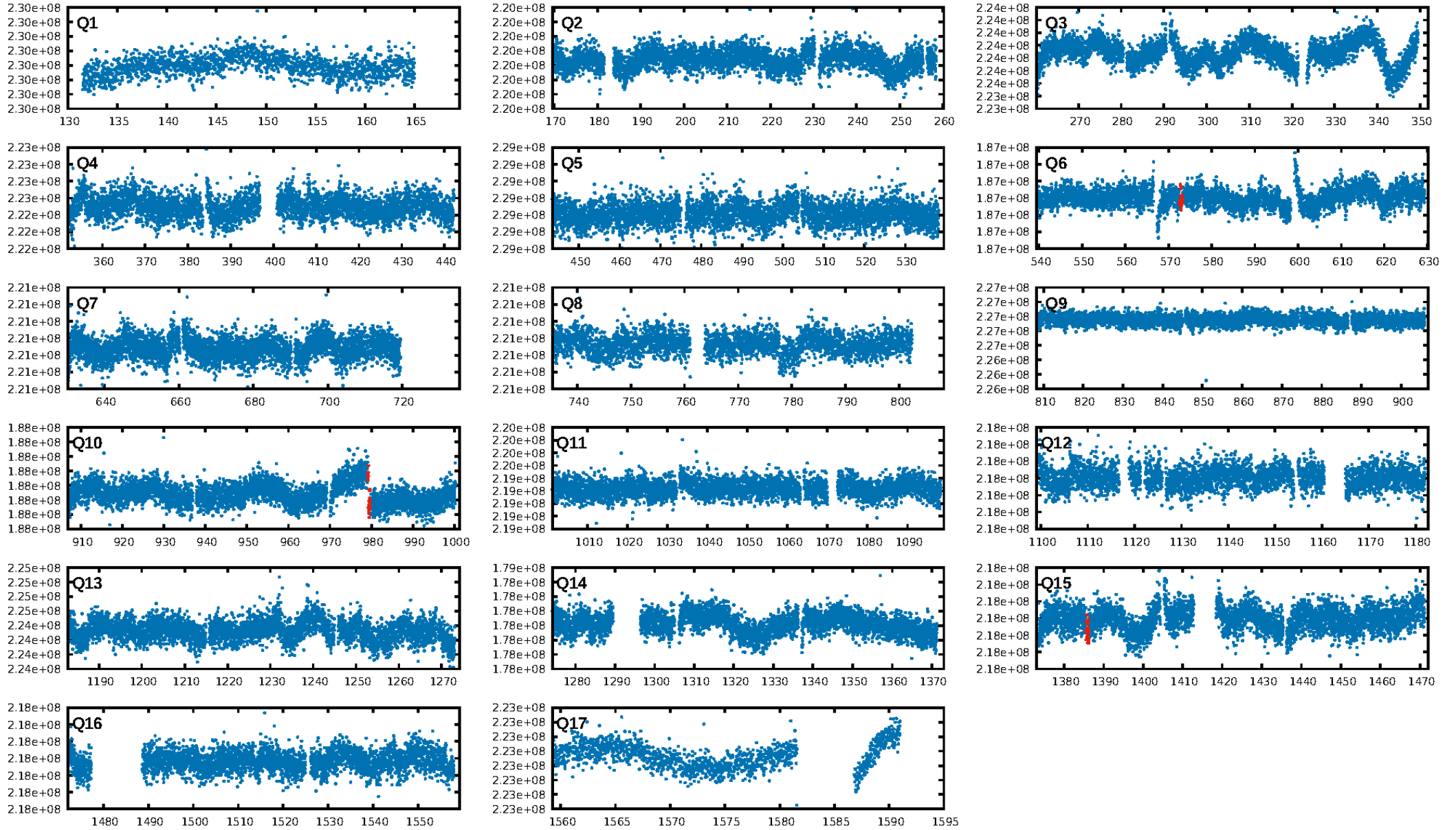
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 5.6%
ModelChiSquareGof-sig: 98.5%
Bootstrap-pfa: 8.96e-11
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.432
Centroid-sig: 2.7%
Centroid-so: 2.076 arcsec [1.77σ]
OotOffset-rm: 3.999 arcsec [3.81σ]
KicOffset-rm: 4.372 arcsec [4.60σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

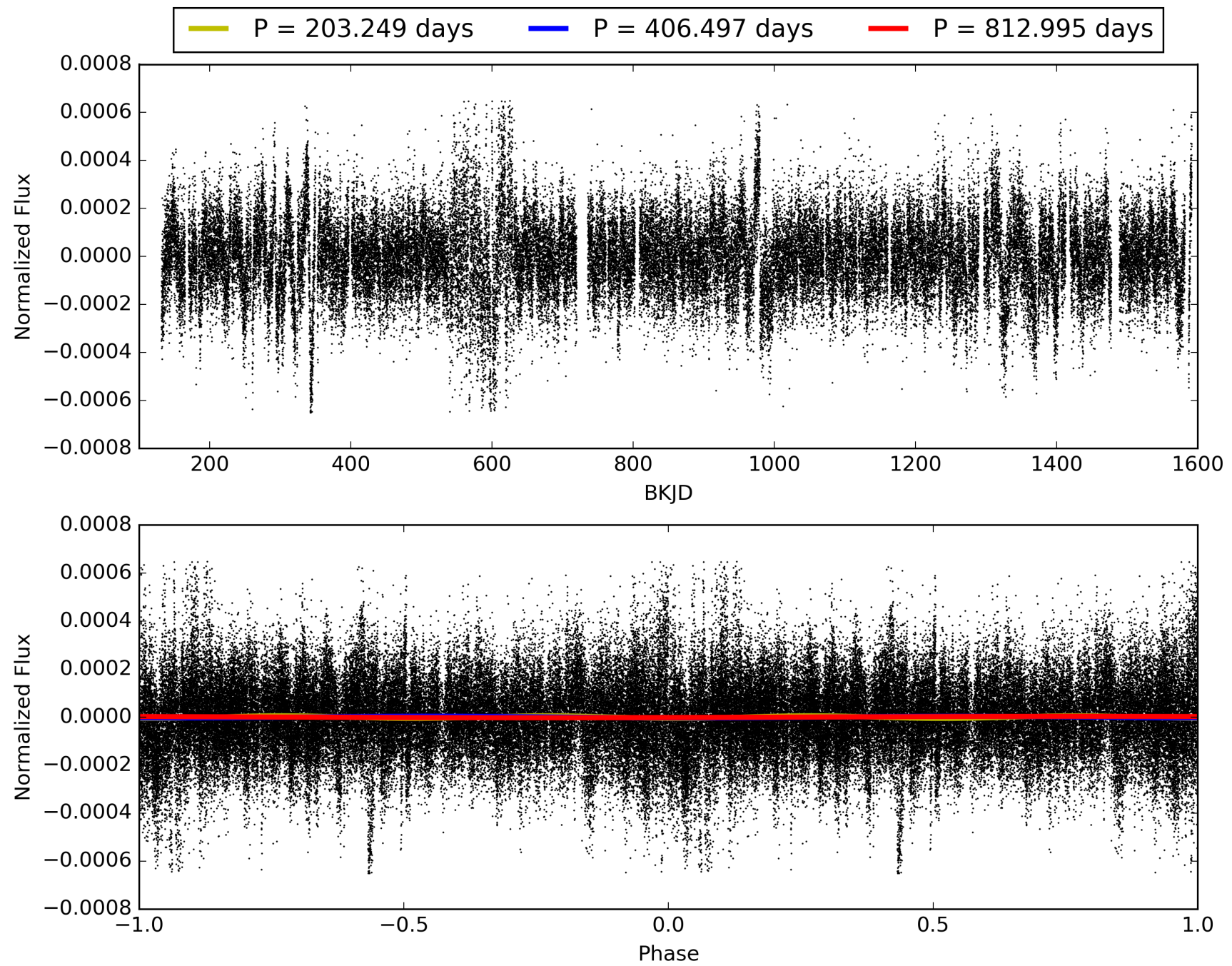
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 13:59:31 Z

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

TCE 003112677-01, PDC Light Curves

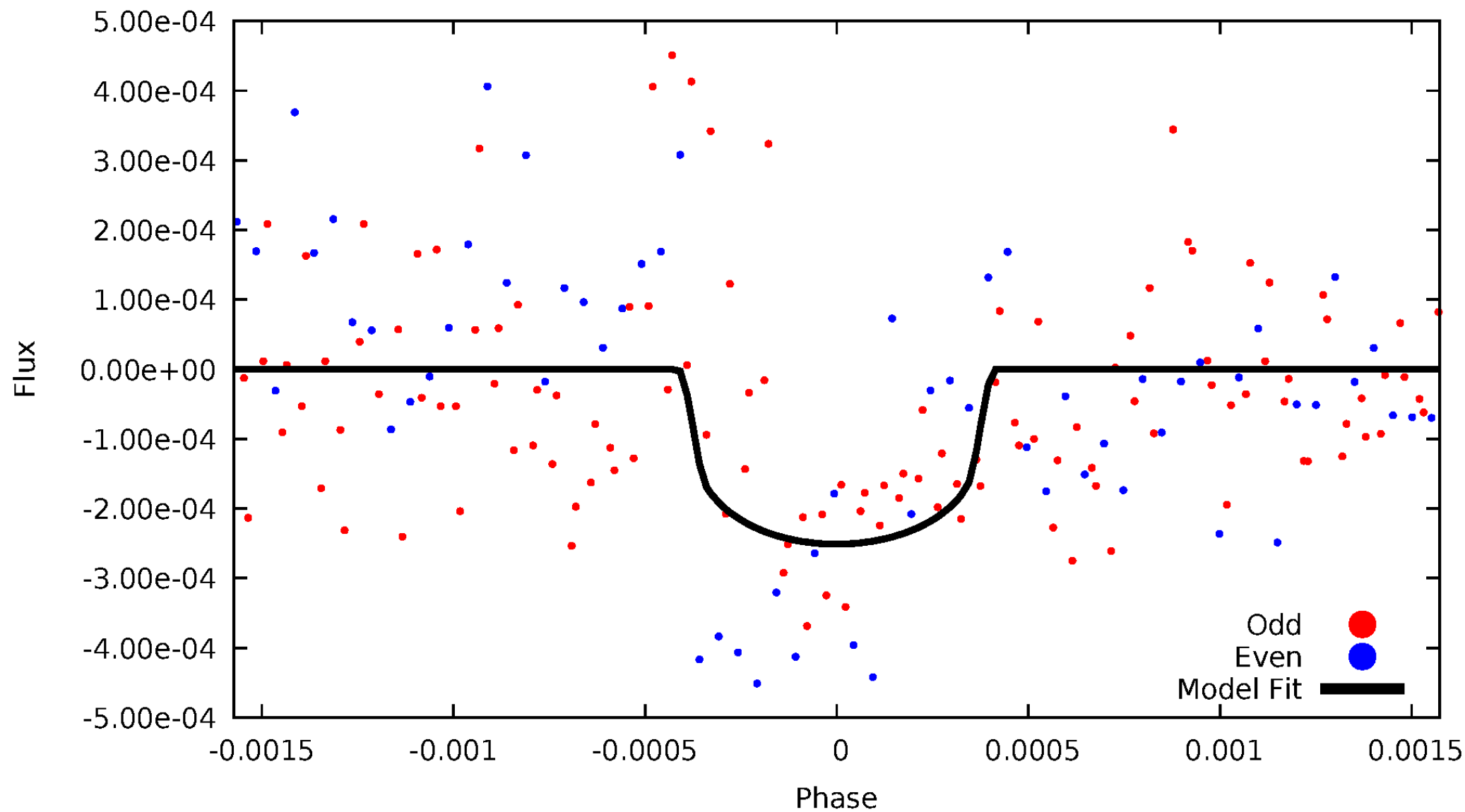


TCE 003112677-01



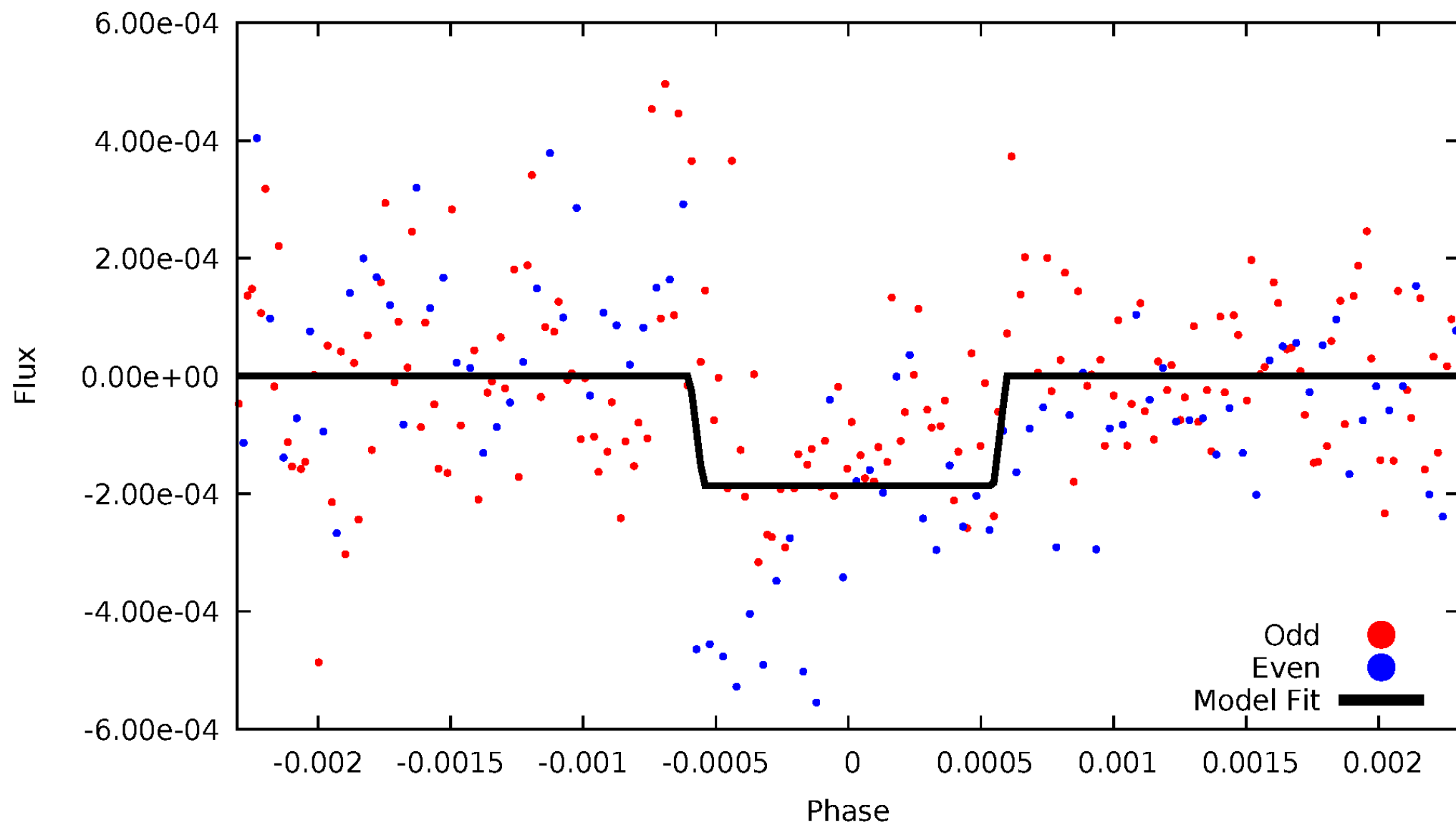
DV Odd/Even

TCE 003112677-01



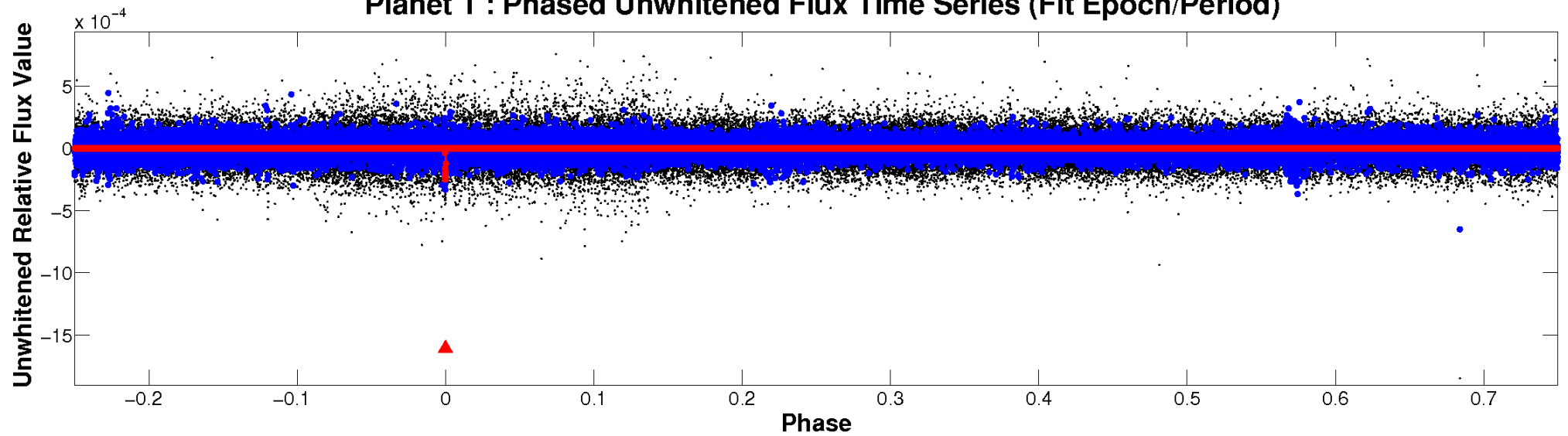
ALT Odd/Even

TCE 003112677-01

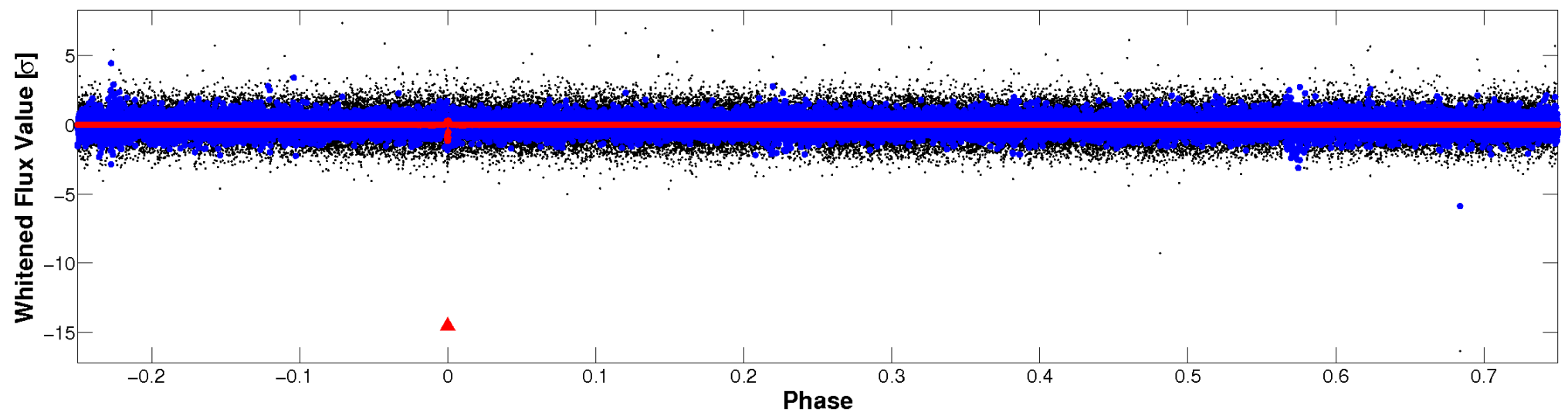


Non-Whitened Vs. Whitened Light Curve

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

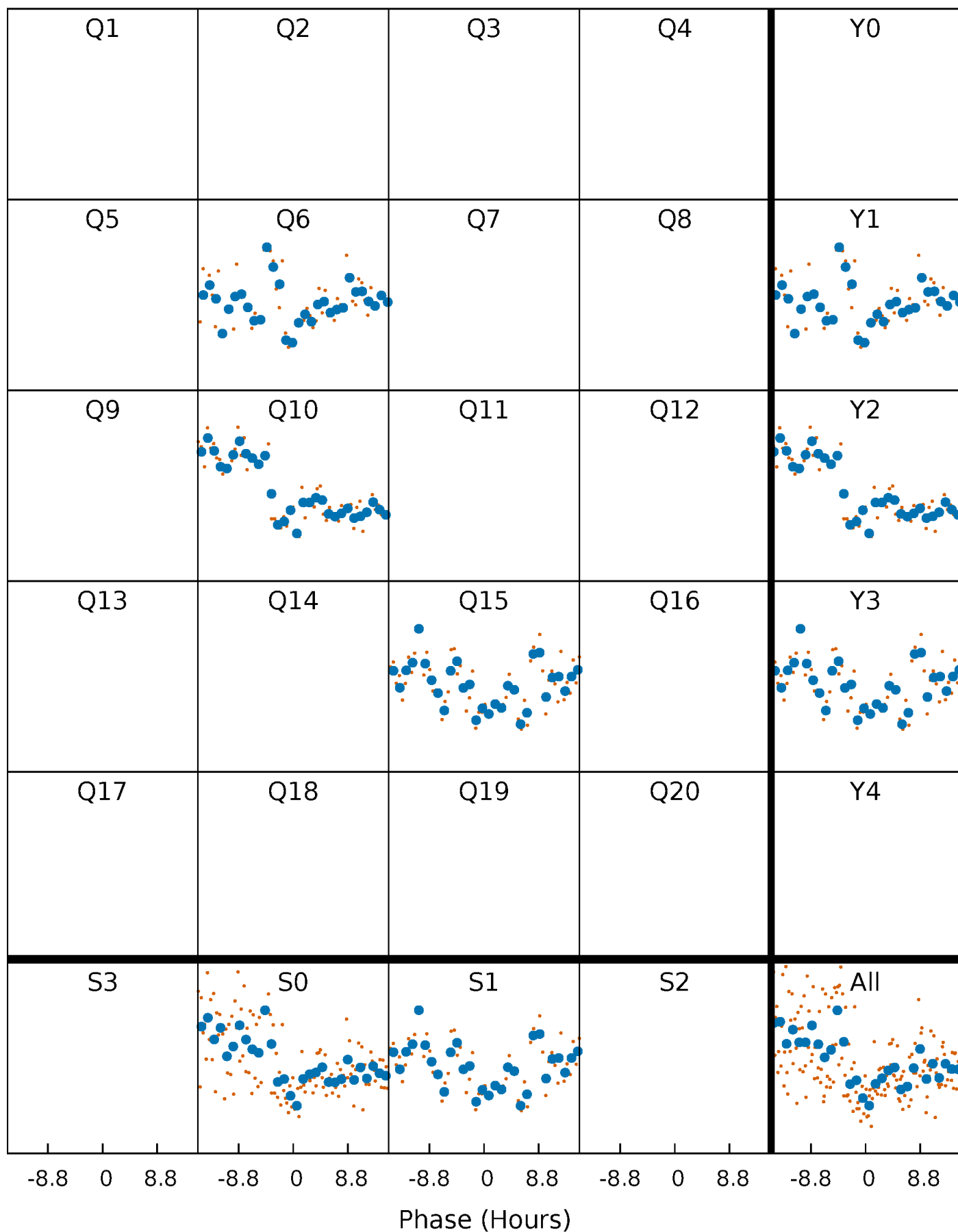


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



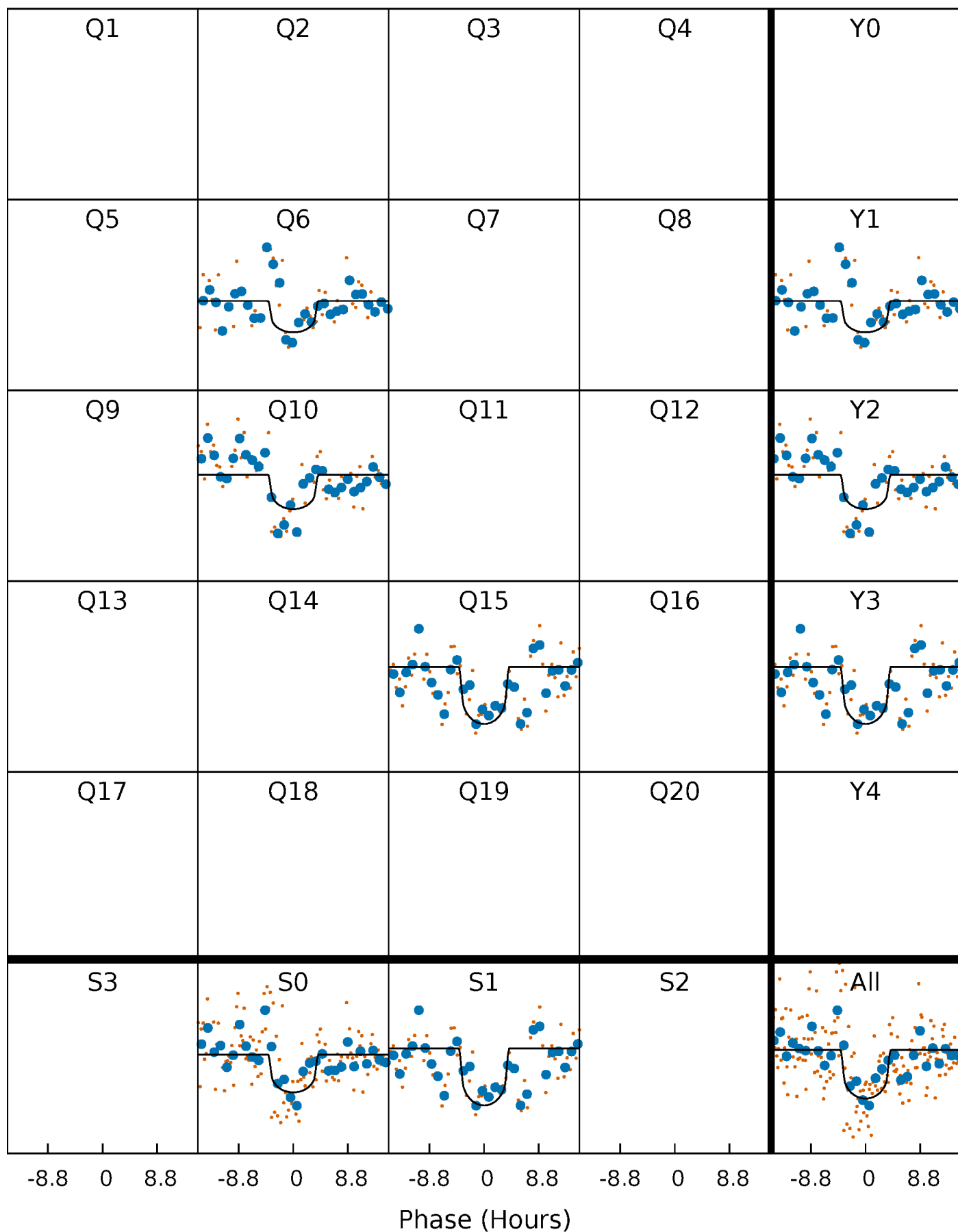
PDC Quarter-Phased Transit Curves

TCE 003112677-01 P=406.497287 Days $T_0=166.435177$ (BKJD)



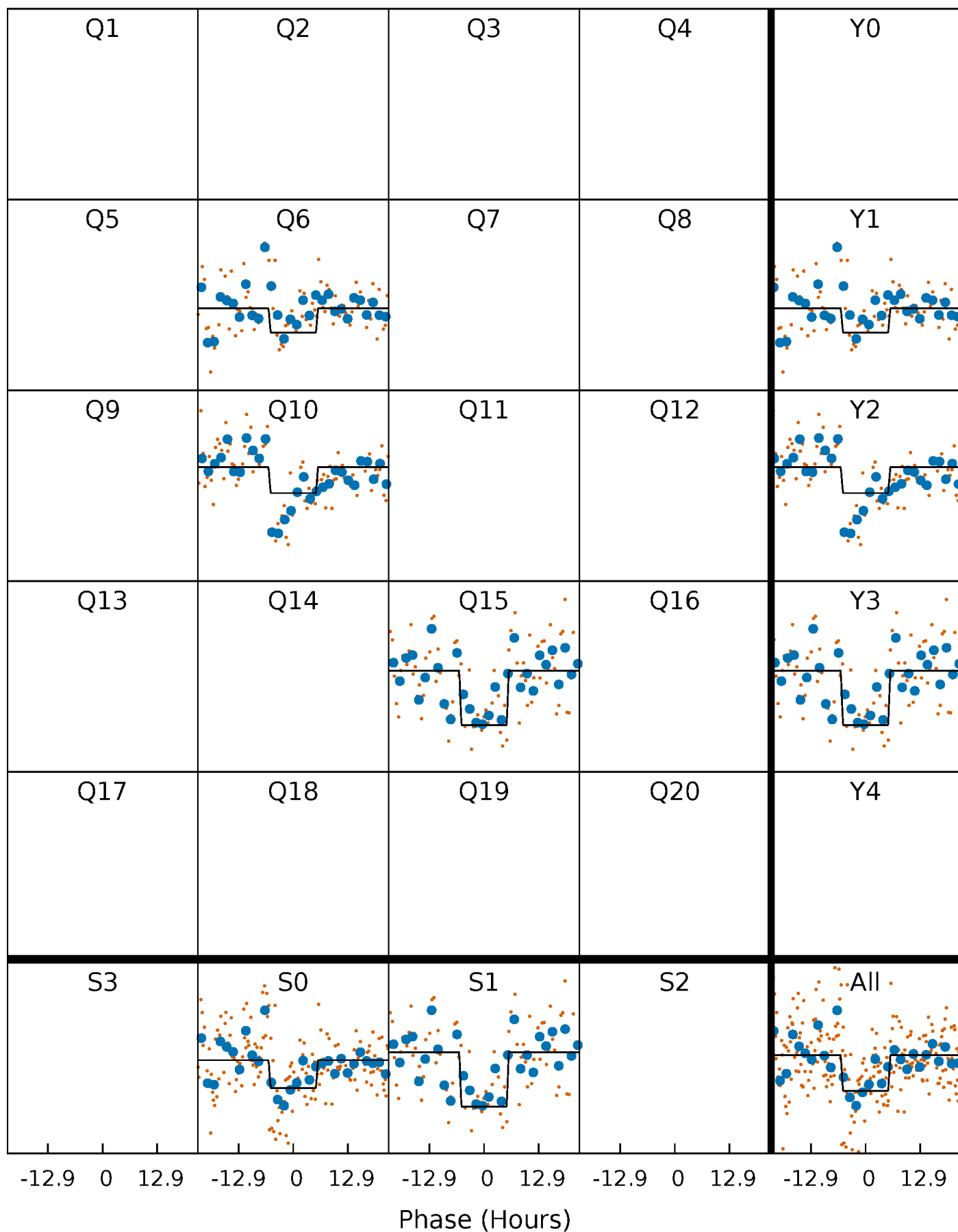
DV Quarter-Phased Transit Curves

TCE 003112677-01 P=406.497287 Days $T_0=166.435177$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

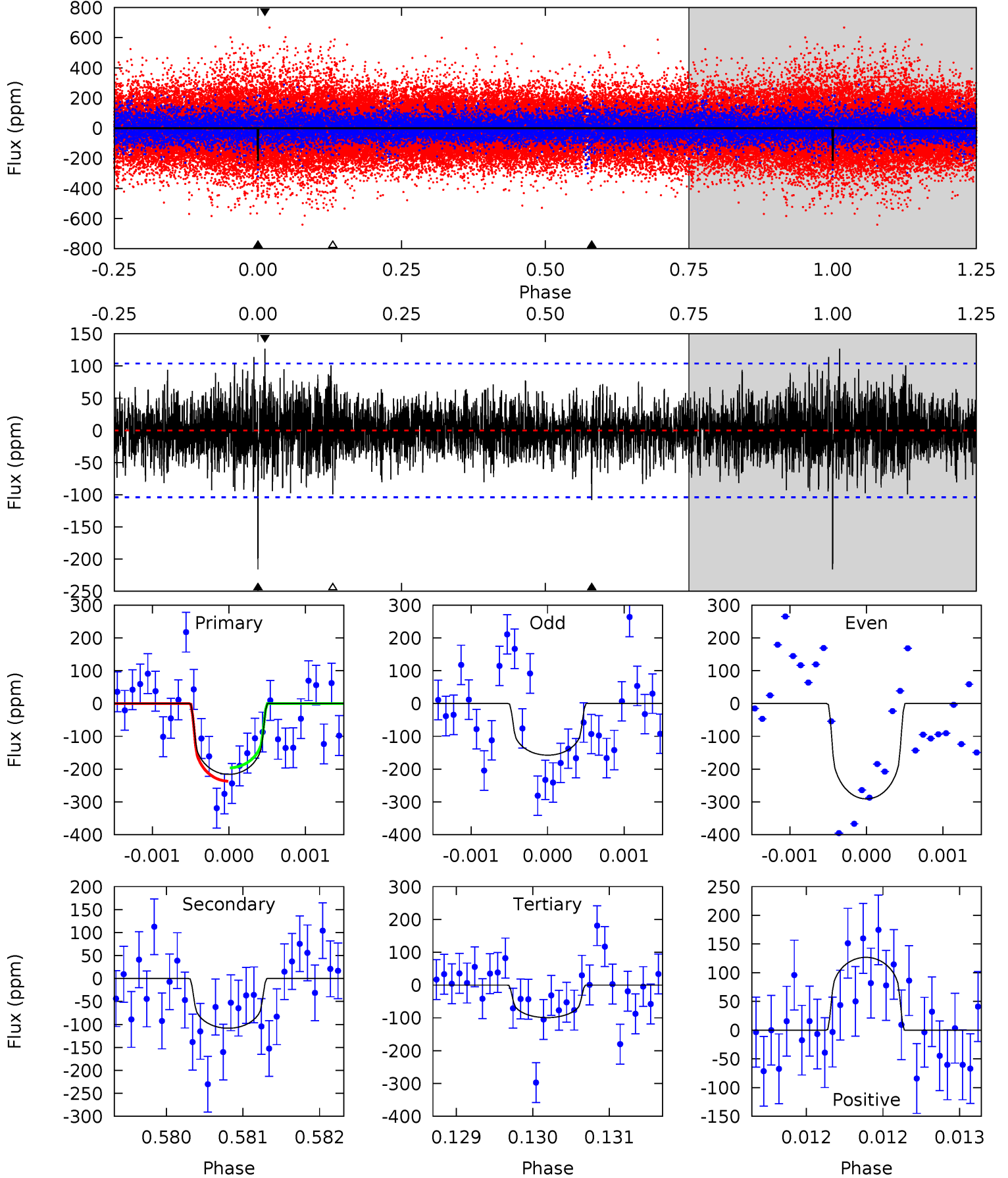
TCE 003112677-01 P=406.477998 Days $T_0=166.560871$ (BKJD)



DV Model-Shift Uniqueness Test

003112677-01, P = 406.497287 Days, E = 166.435177 Days

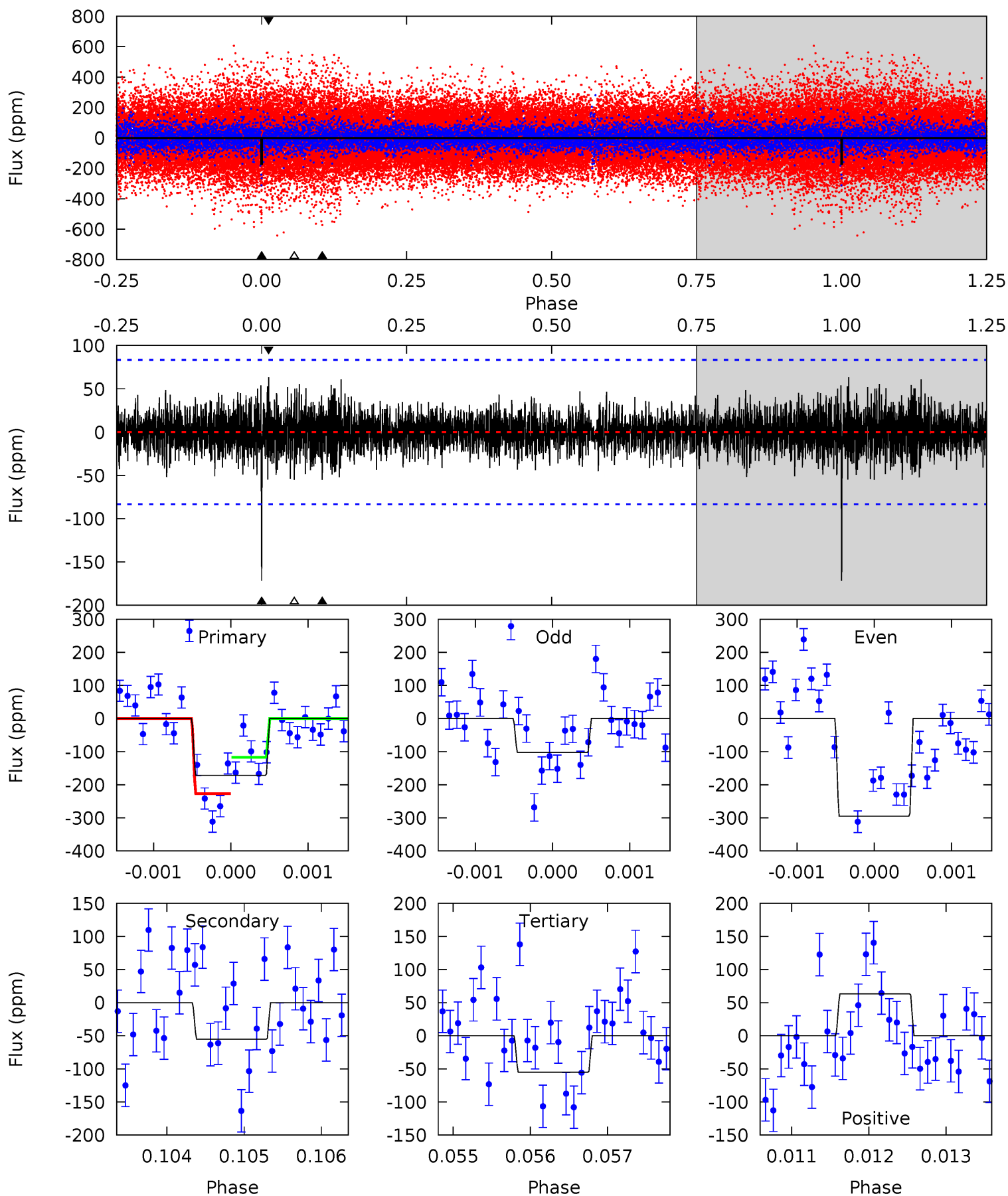
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.4	5.72	5.24	6.69	5.49	3.34	1.48	6.16	4.71	0.47	-0.97	3.42	1.02	0.37	1.08



Alt Model-Shift Uniqueness Test

003112677-01, P = 406.477998 Days, E = 166.560871 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	3.59	3.58	4.11	5.42	3.24	1.01	7.57	7.04	0.01	-0.52	6.14	1.16	0.27	3.56



Stellar Parameters For KIC 003112677

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5112^{+61}_{-92}	$3.629^{+0.125}_{-0.125}$	$-0.040^{+0.150}_{-0.150}$	$2.908^{+0.481}_{-0.588}$	$1.312^{+0.114}_{-0.267}$	$0.075^{+0.052}_{-0.027}$
	+1%/-2%	+3%/-3%	+375%/-375%	+17%/-20%	+9%/-20%	+70%/-35%
Source	SPE74	SPE74	SPE74	DSEP		

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

Secondary Eclipse Parameters for KIC 003112677-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-108 ± 19	$5.75^{+4.35}_{-3.66}$	495^{+25}_{-23}	4108^{+2167}_{-724}	2507^{+15345}_{-1732}
Alt.	-55 ± 15	$5.22^{+4.47}_{-3.34}$	496^{+26}_{-24}	3738^{+1824}_{-670}	1450^{+9859}_{-1047}

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 $A_{obs} \gg 1.0$

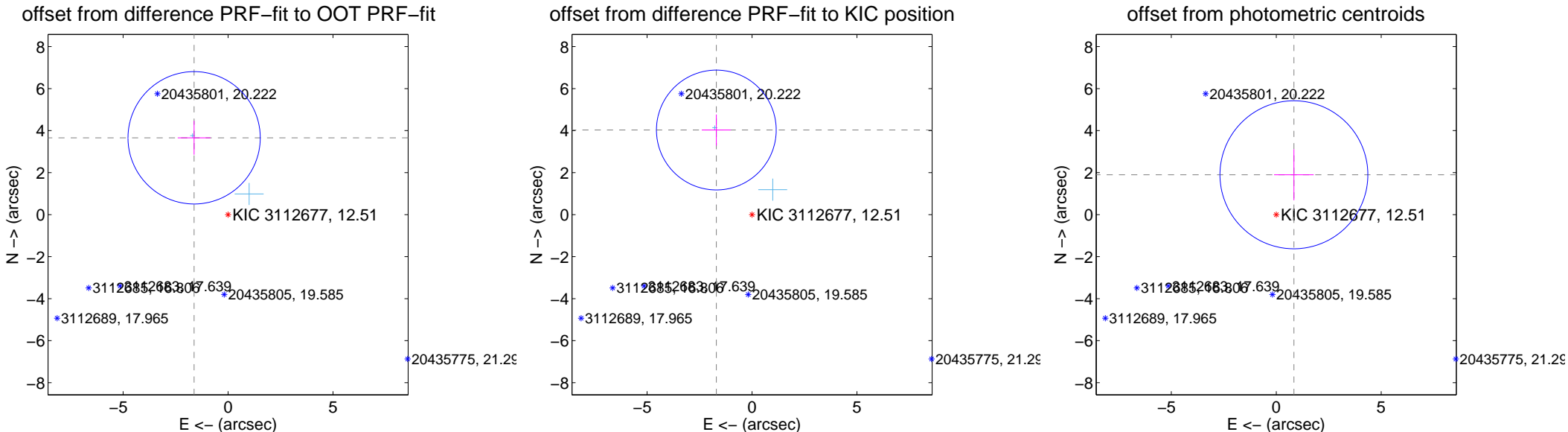
DV Centroid Data

Supplemental centroid analysis for 003112677-01. Kepler magnitude: 12.51. Transit SNR 7.07

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.999 ± 1.050	3.81	1.616 ± 0.781	3.657 ± 0.805
PRF-fit source offset from KIC position	4.372 ± 0.951	4.60	1.700 ± 0.694	4.028 ± 0.741
photometric centroid source offset	2.08 ± 1.17	1.77	-0.84 ± 0.94	1.90 ± 1.21



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- σ uncertainty. Blue circle: three- σ . 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.

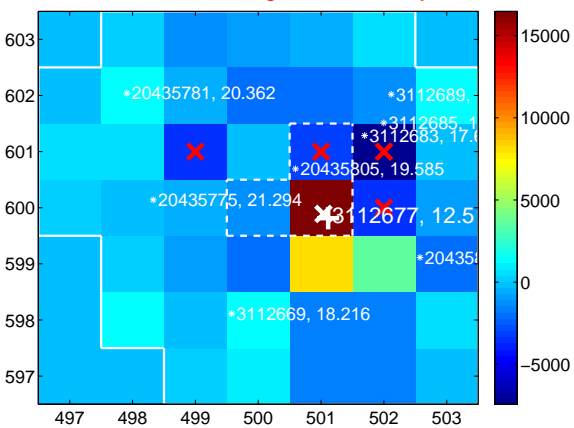
Q5 no difference image



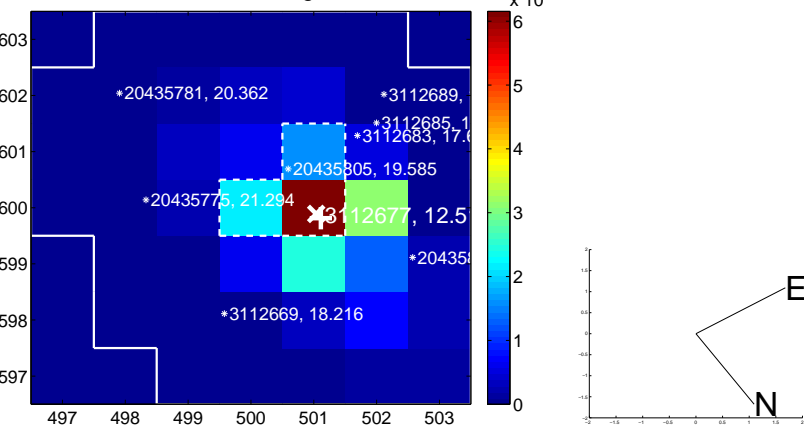
Q5 no OOT image



Q6 difference image. Poor Quality



Q6 OOT image



Q7 no difference image



Q7 no 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.

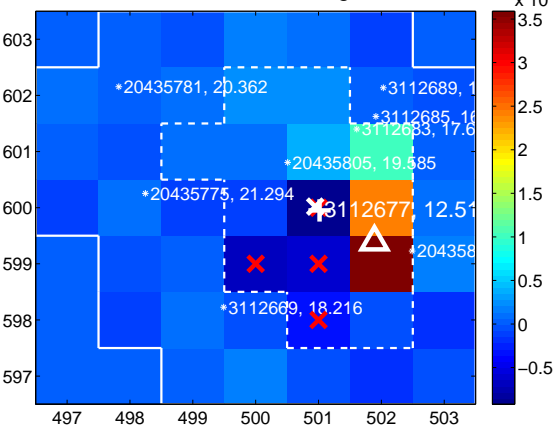
Q9 no difference image



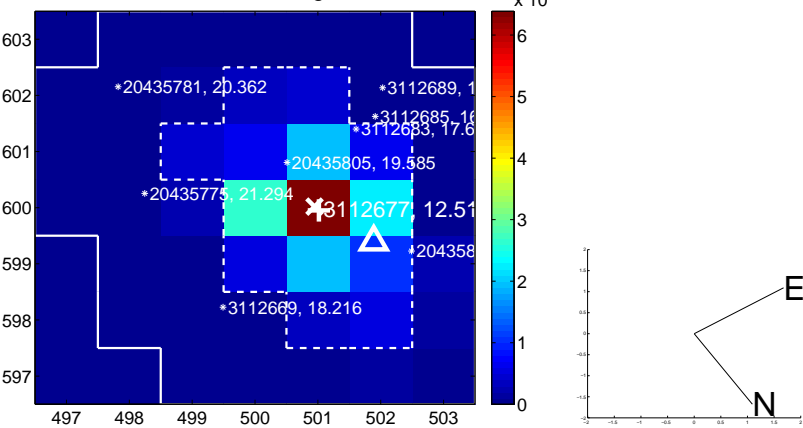
Q9 no OOT image



Q10 difference image



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.

Q13 no difference image



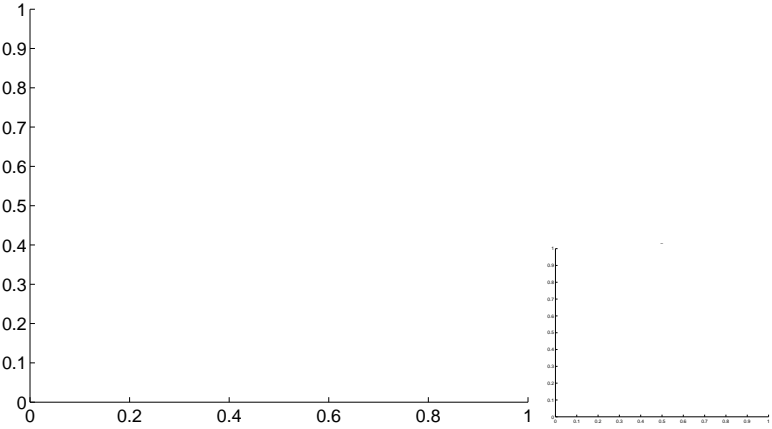
Q13 no OOT image



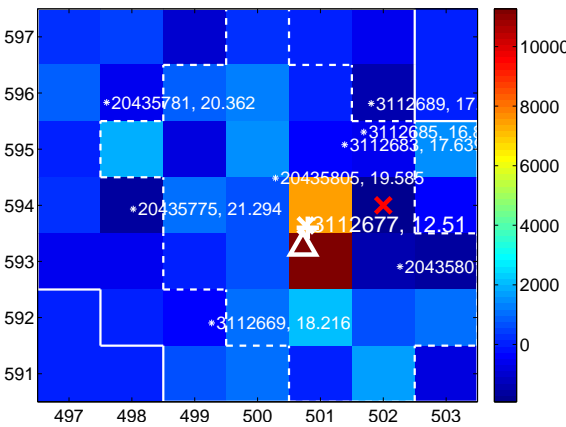
Q14 no difference image



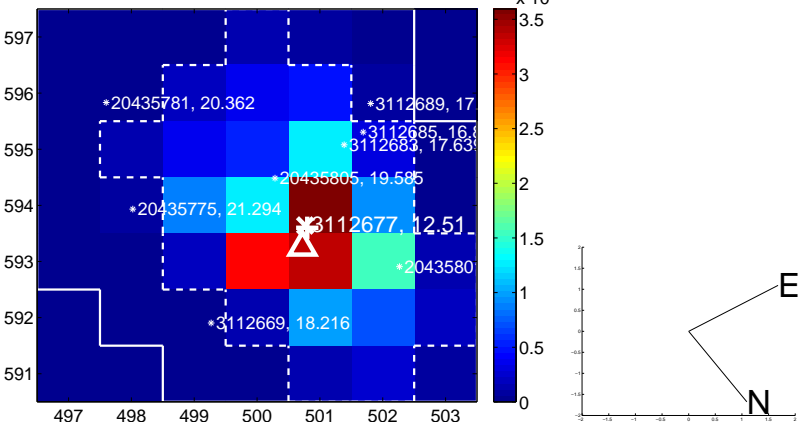
Q14 no OOT image



Q15 difference image



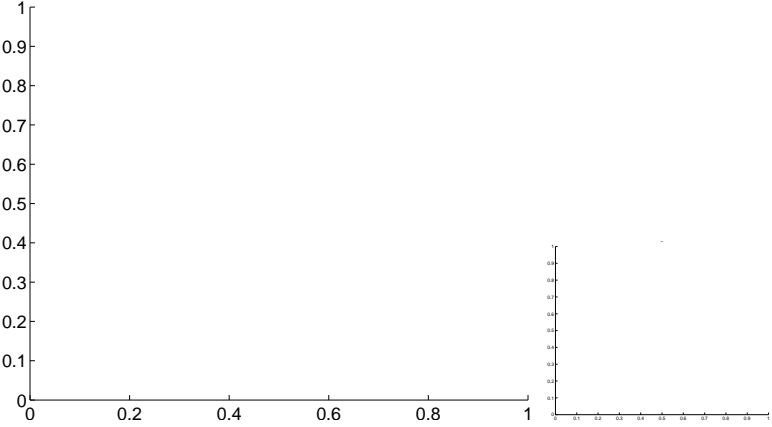
Q15 OOT image



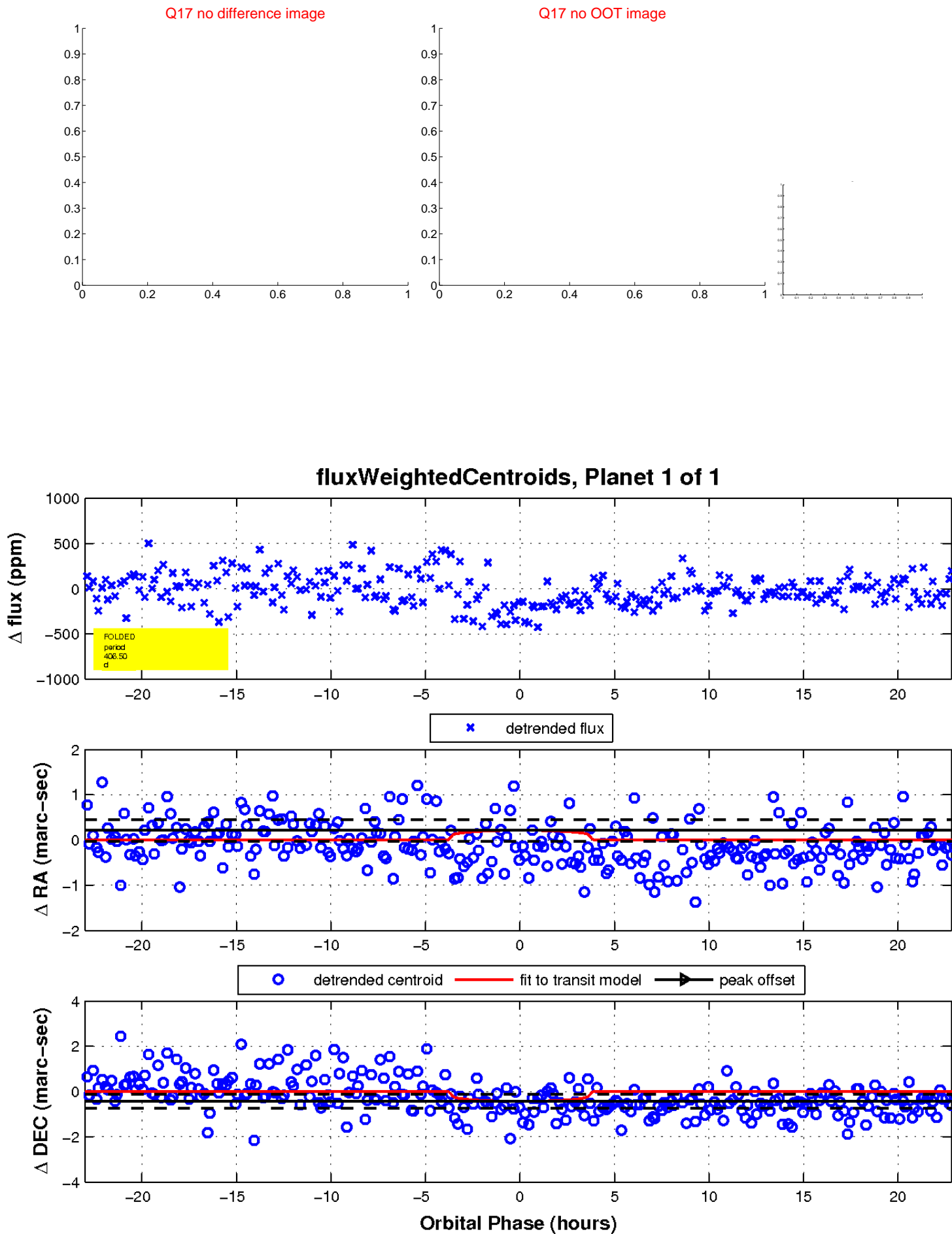
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

