

KIC 007831363

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})
007831363-01	OBS	3804.01	2.817440	132.921920	3887.9	2.119	116.5	114.7	1.10	6313	10.37	1181.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007831363-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—DEEP_V_SHAPED—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.

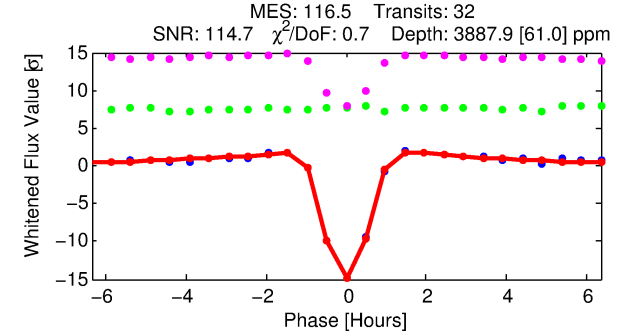
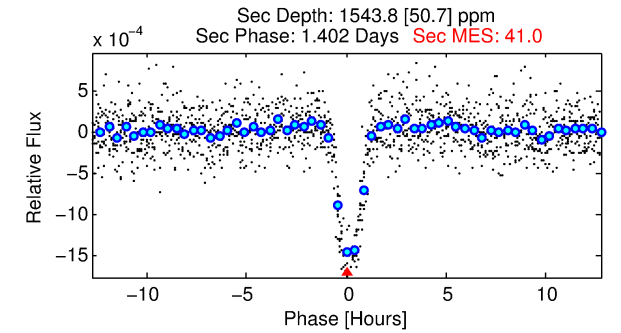
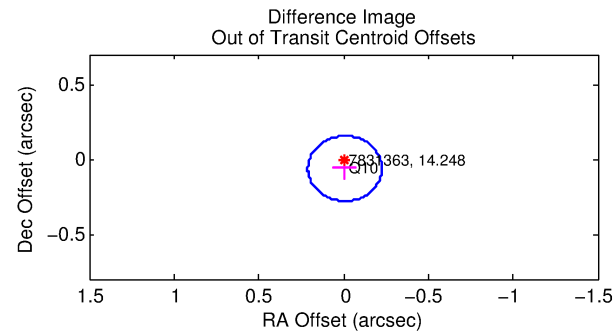
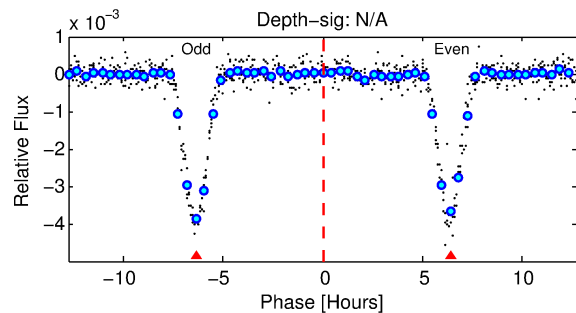
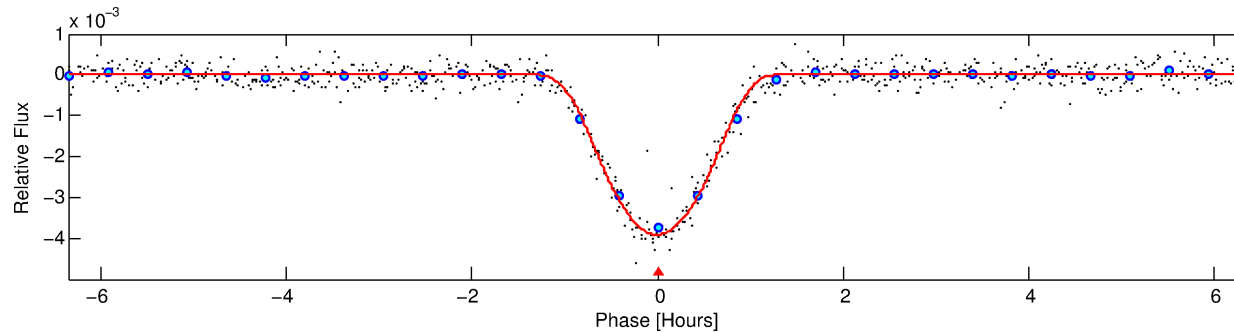
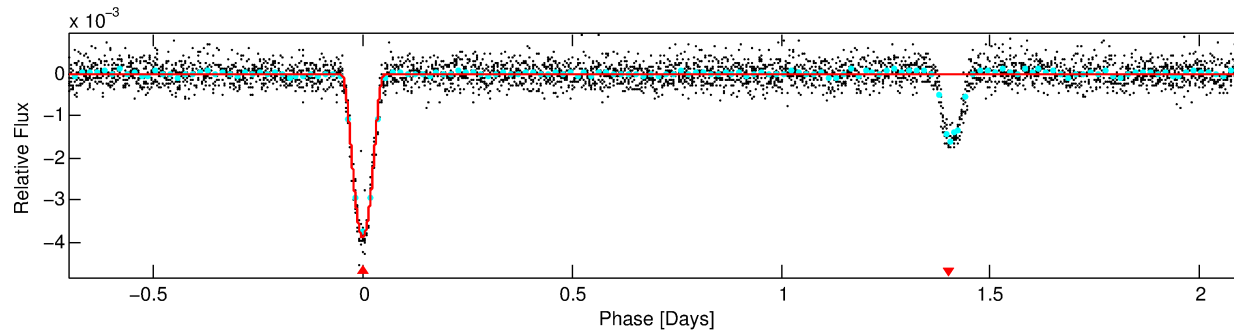
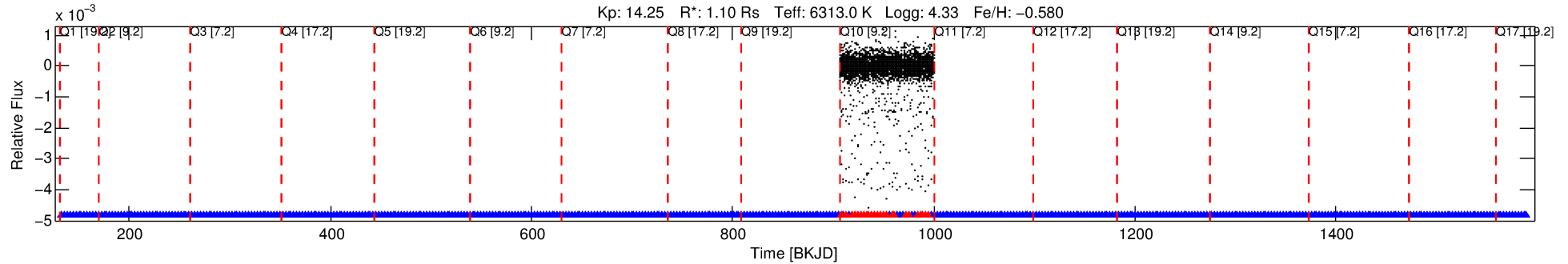
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007831363-01

No Significant Match Found

DV One-Page Summary

KIC: 7831363 Candidate: 1 of 1 Period: 2.817 d
KOI: K03804.01 Corr: 0.957



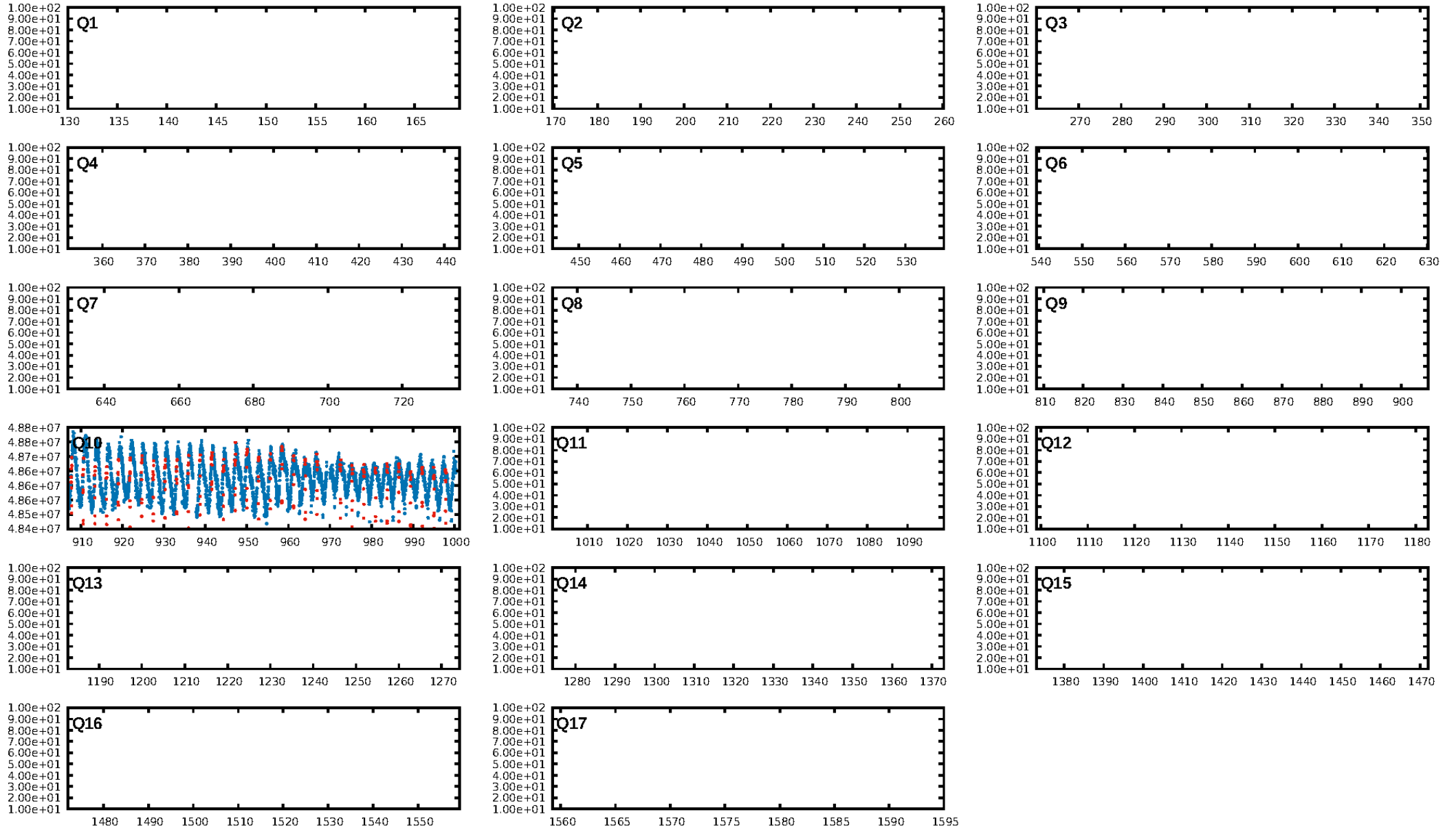
DV Fit Results:

Period = 2.81744 [0.00000] d
Epoch = 132.9219 [0.0005] BKJD
Rp/R* = 0.0866 [0.0198]
a/R* = 5.06 [0.36]
b = 0.97 [0.04]
Seff = 1181.50 [441.61]
Teq = 1495 [140] K
Rp = 10.37 [3.70] Re
a = 0.0381 [0.0089] AU
Ag = 11.47 [6.54] [1.60σ]
Teff = 4253 [514] K [5.18σ]

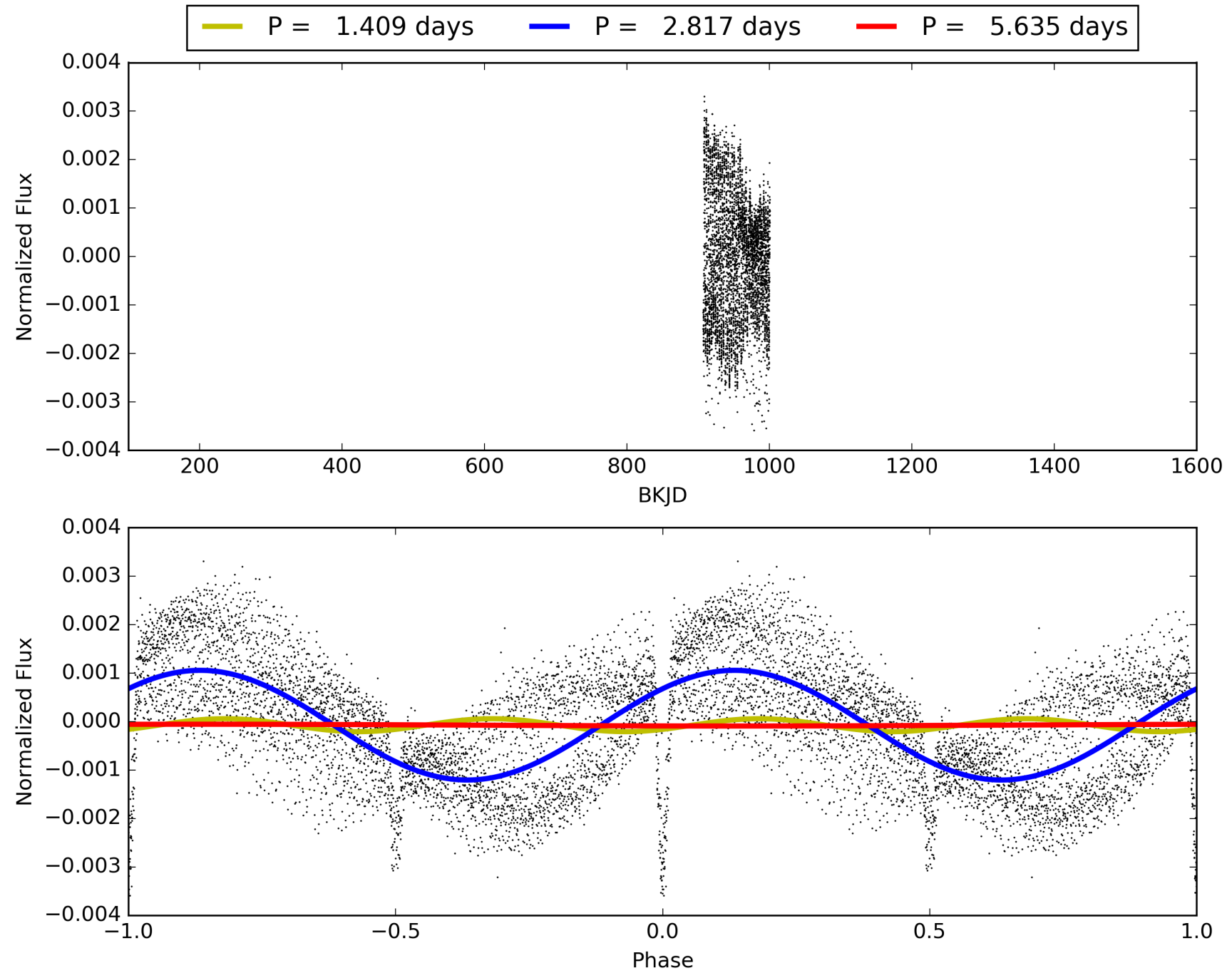
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 95.7%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 0.25 [8/32]
GhostDiagnostic-chr: 7.276
Centroid-sig: 14.9%
Centroid-so: 0.348 arcsec [2.83σ]
OotOffset-rm: 0.063 arcsec [0.86σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-rm: 0.130 arcsec [1.80σ]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

TCE 007831363-01, PDC Light Curves

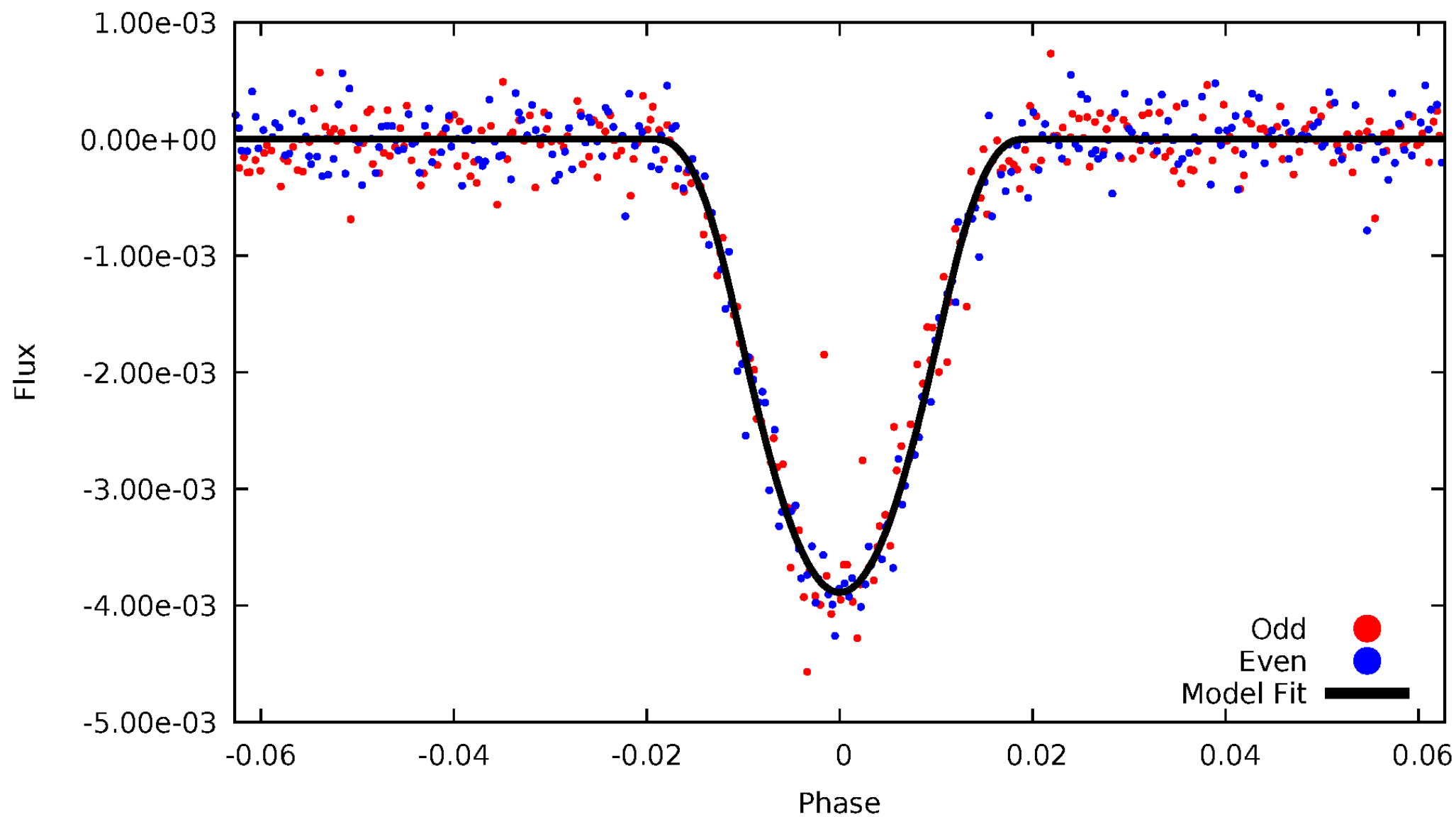


TCE 007831363-01



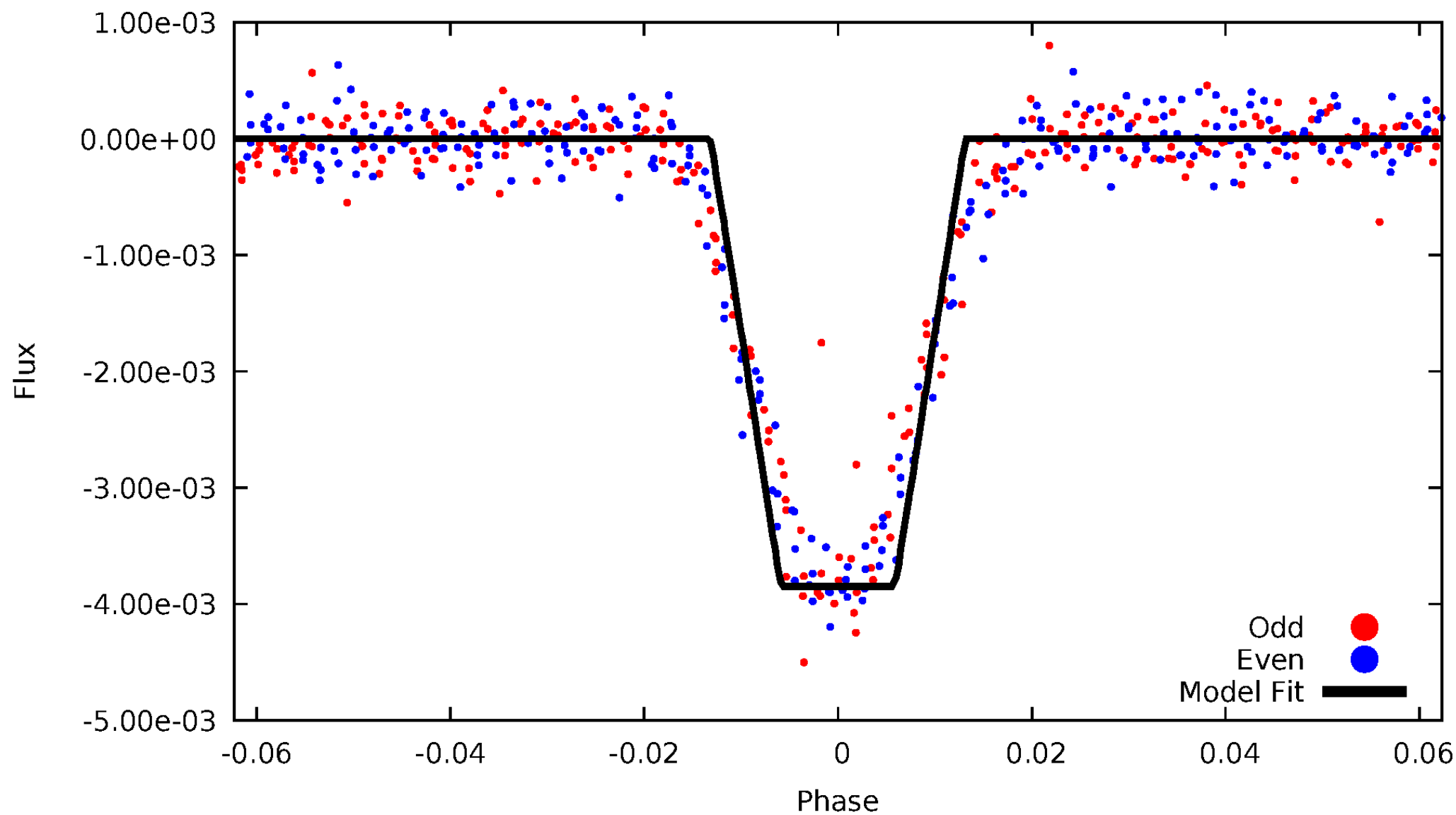
DV Odd/Even

TCE 007831363-01



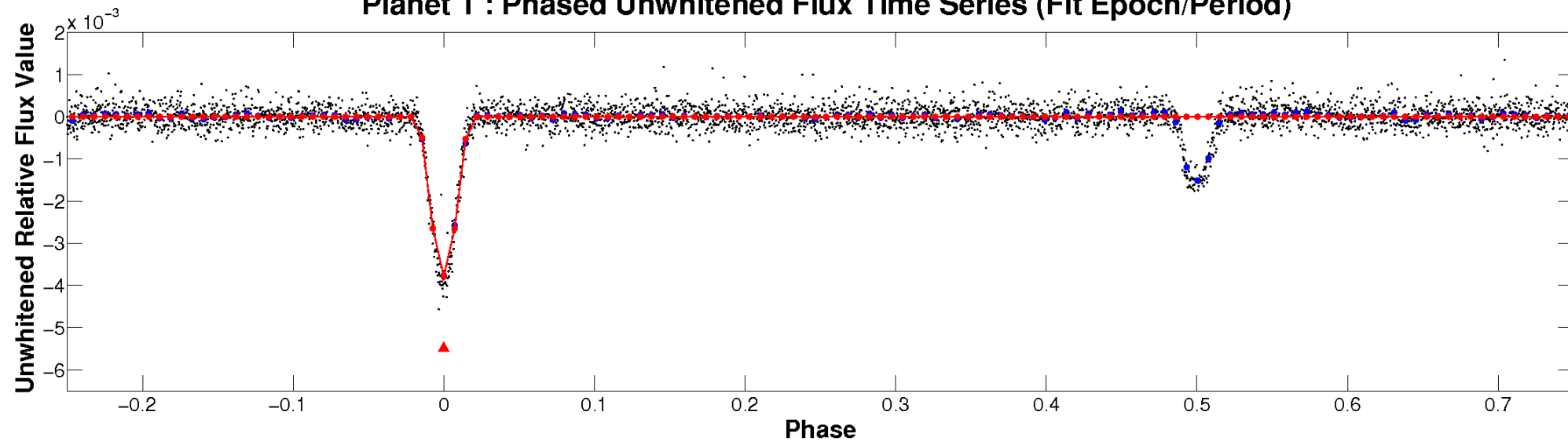
ALT Odd/Even

TCE 007831363-01

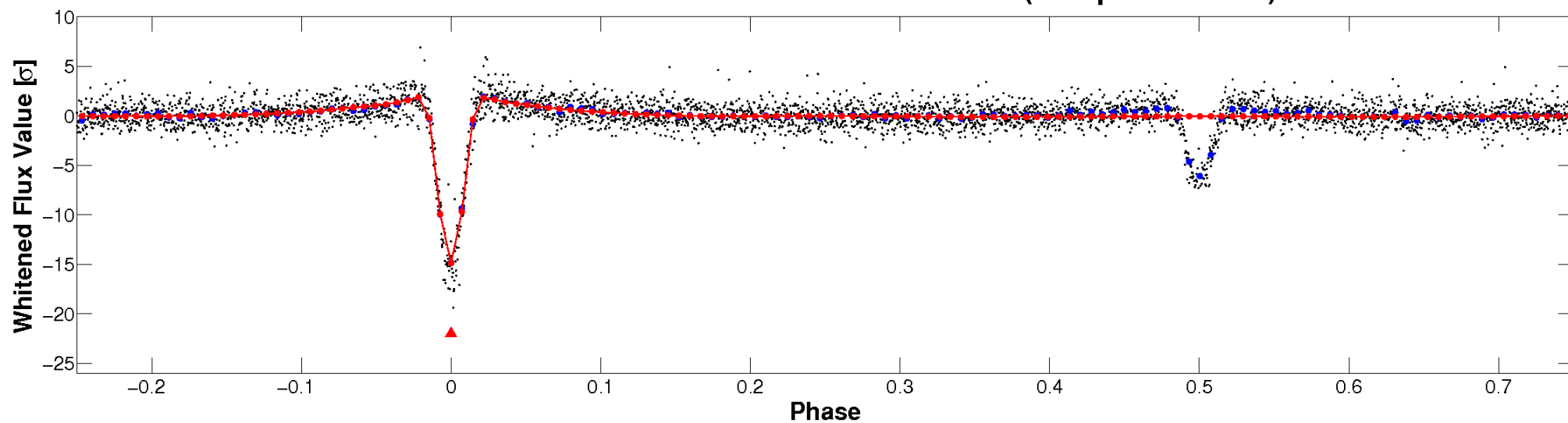


Non-Whitened Vs. Whitened Light Curve

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

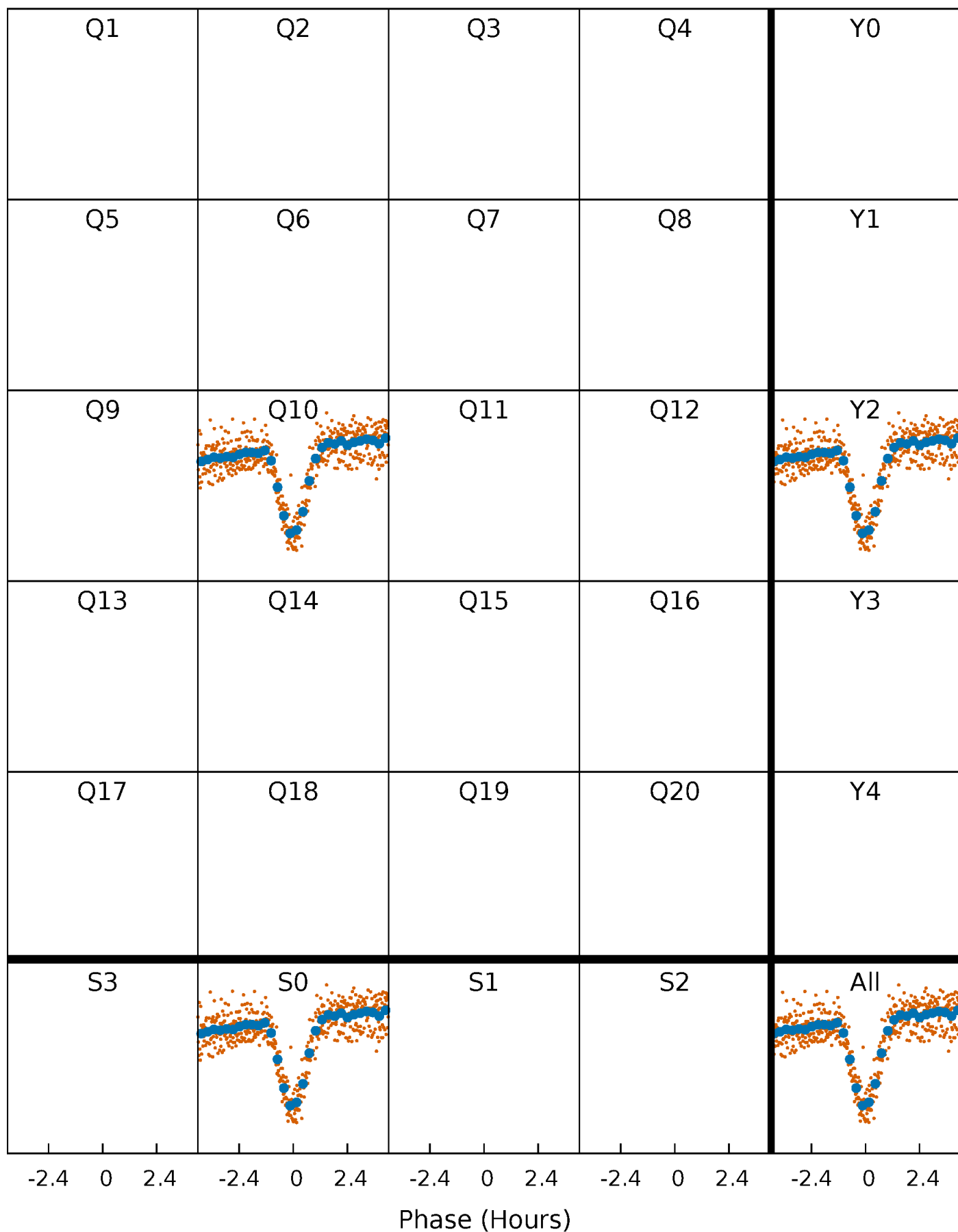


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



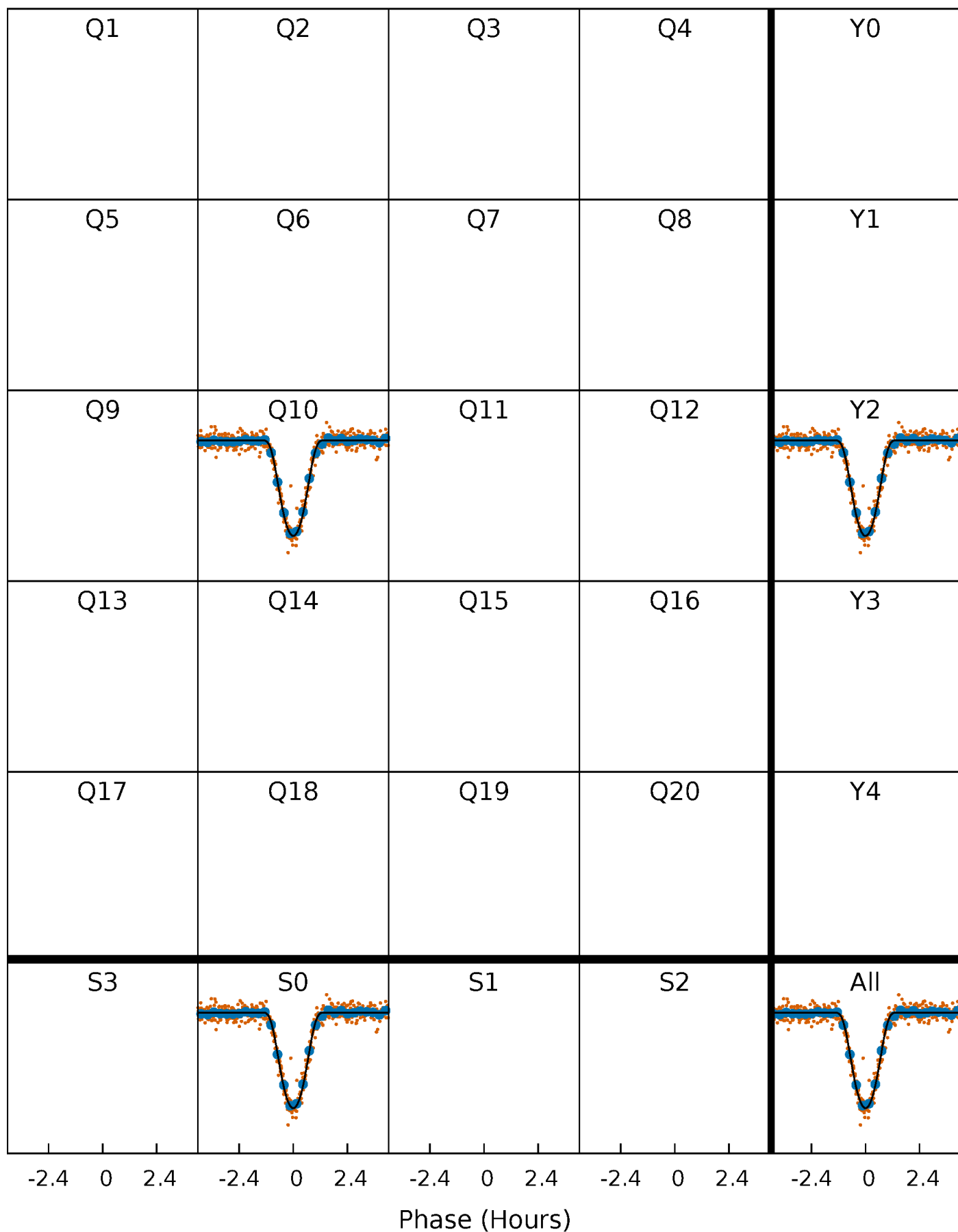
PDC Quarter-Phased Transit Curves

TCE 007831363-01 P= 2.817440 Days $T_0=132.921920$ (BKJD)



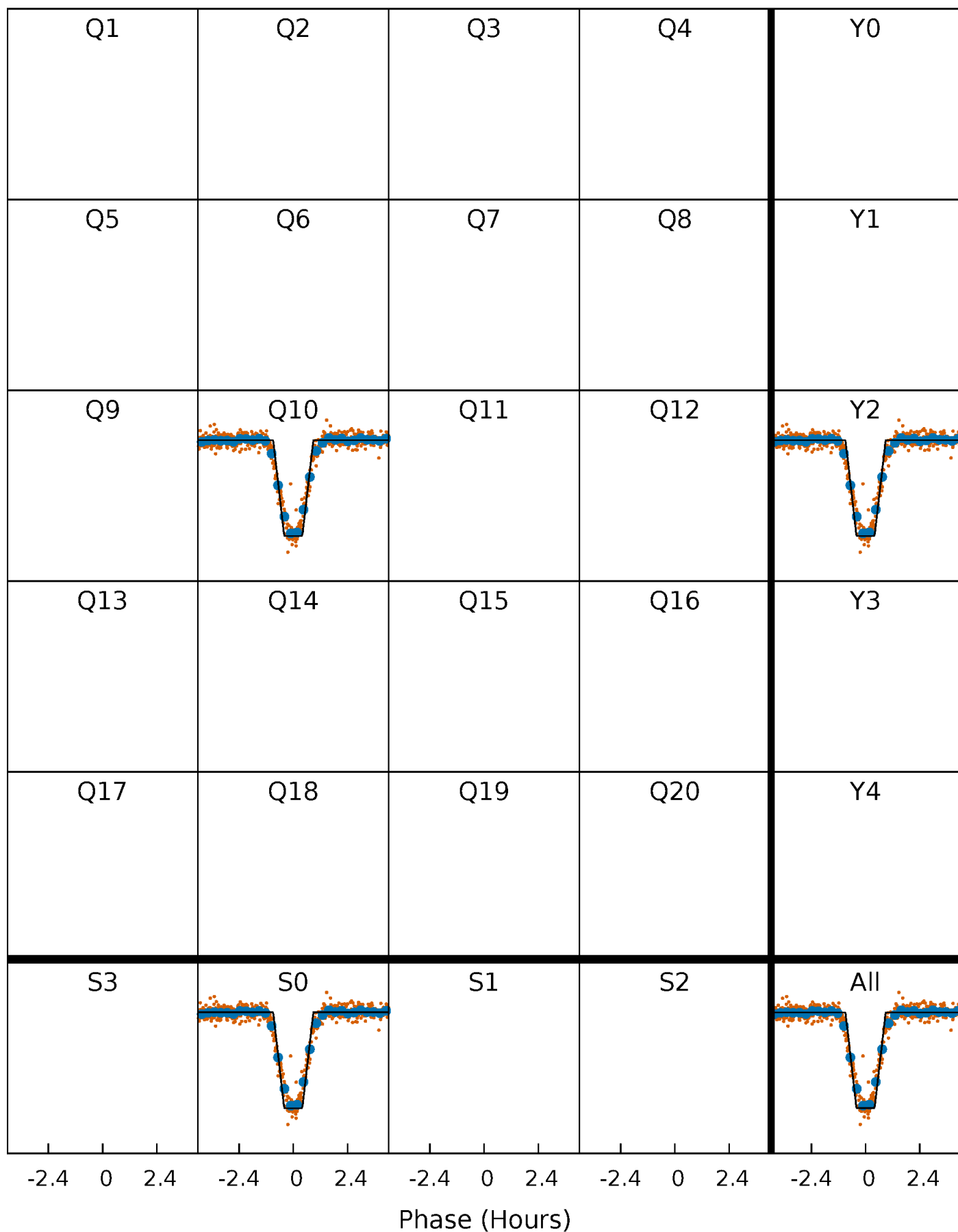
DV Quarter-Phased Transit Curves

TCE 007831363-01 P= 2.817440 Days $T_0=132.921920$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

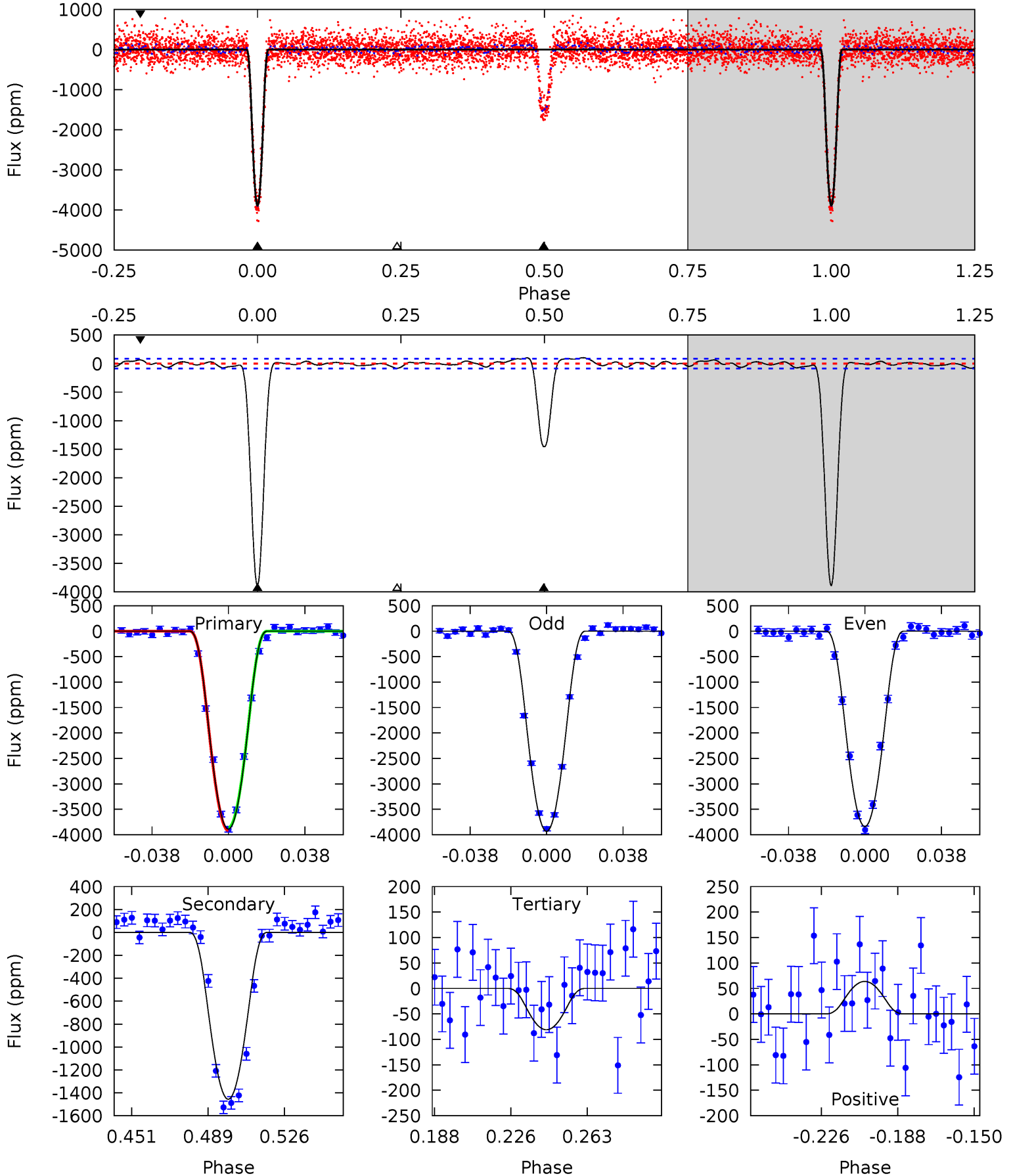
TCE 007831363-01 P= 2.817347 Days $T_0=132.948804$ (BKJD)



DV Model-Shift Uniqueness Test

007831363-01, P = 2.817440 Days, E = 132.921920 Days

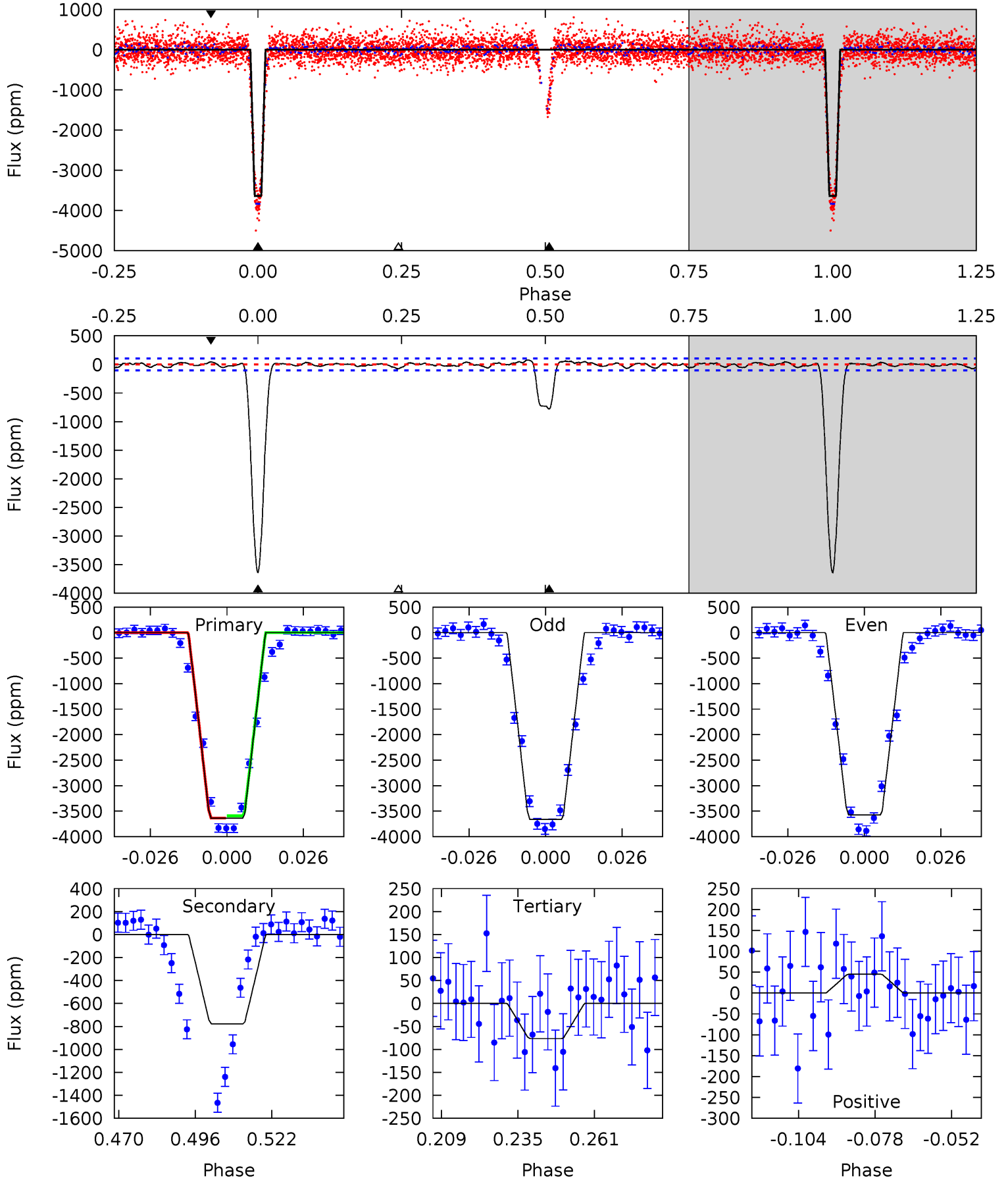
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
212.8	79.7	4.44	3.49	4.77	2.08	2.04	208.4	209.3	75.2	76.2	2.61	0.99	0.03	1.52



Alt Model-Shift Uniqueness Test

007831363-01, P = 2.817347 Days, E = 132.948804 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
169.8	36.3	3.57	2.10	4.84	2.22	1.31	166.2	167.7	32.7	34.2	1.98	0.99	0.02	1.03



Stellar Parameters For KIC 007831363

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6313^{+200}_{-244}	$4.325^{+0.153}_{-0.187}$	$-0.580^{+0.300}_{-0.300}$	$1.098^{+0.301}_{-0.201}$	$0.929^{+0.130}_{-0.095}$	$0.988^{+0.721}_{-0.482}$
	+3%/-4%	+4%/-4%	+52%/-52%	+27%/-18%	+14%/-10%	+73%/-49%
Source	KIC0	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 007831363-01 / KOI 3804.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-1456 ± 18	$10.47^{+2.87}_{-2.70}$	2093^{+156}_{-145}	4372^{+530}_{-324}	11^{+8}_{-4}
Alt.	-777 ± 21	$7.49^{+2.68}_{-2.42}$	2089^{+173}_{-135}	4413^{+707}_{-448}	11^{+12}_{-5}

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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

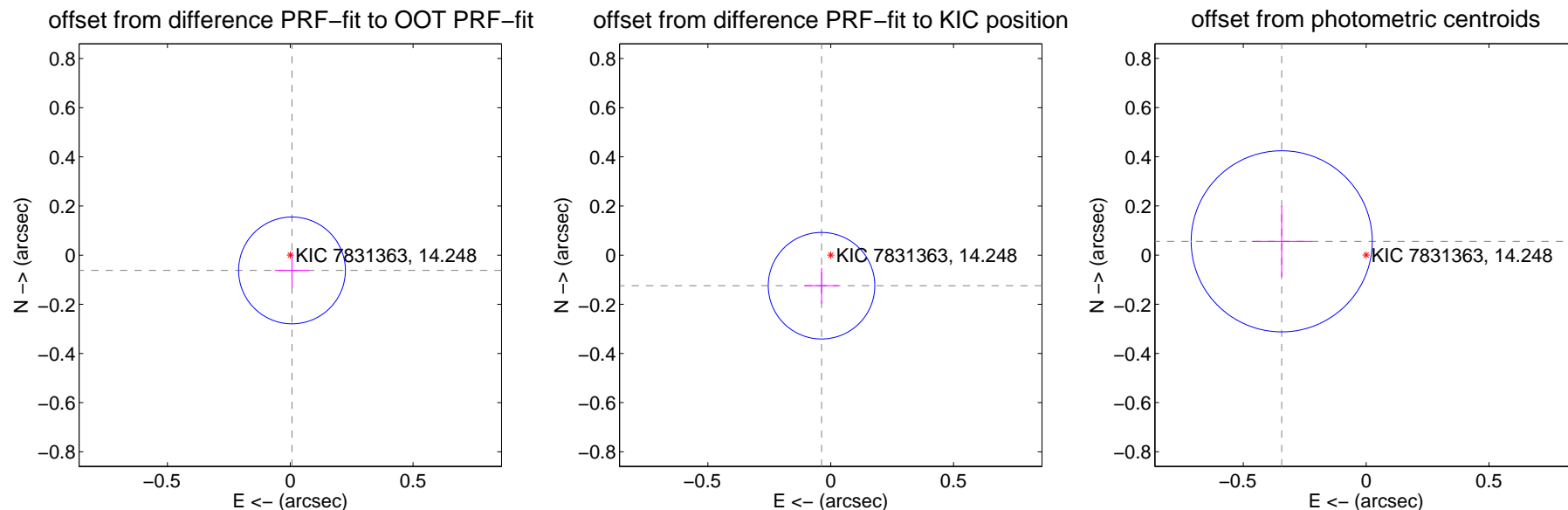
DV Centroid Data

Supplemental centroid analysis for 007831363-01. Kepler magnitude: 14.25. Transit SNR 114.75

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.063 ± 0.072	0.86	-0.007 ± 0.070	-0.062 ± 0.072
PRF-fit source offset from KIC position	0.130 ± 0.072	1.80	0.037 ± 0.070	-0.124 ± 0.072
photometric centroid source offset	0.35 ± 0.12	2.83	0.34 ± 0.12	0.06 ± 0.14



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.



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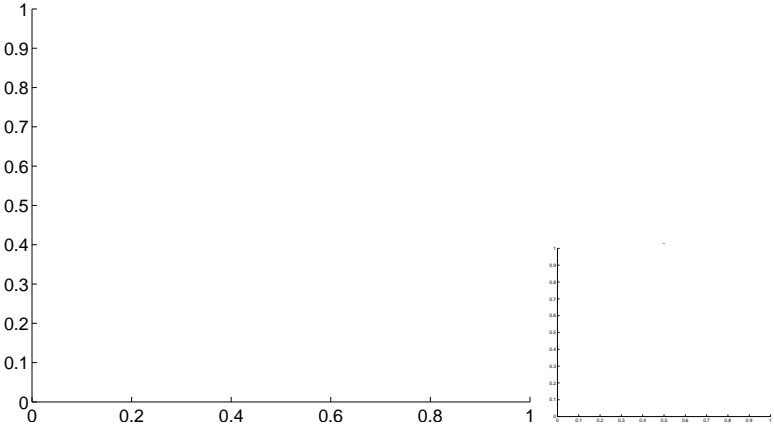


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

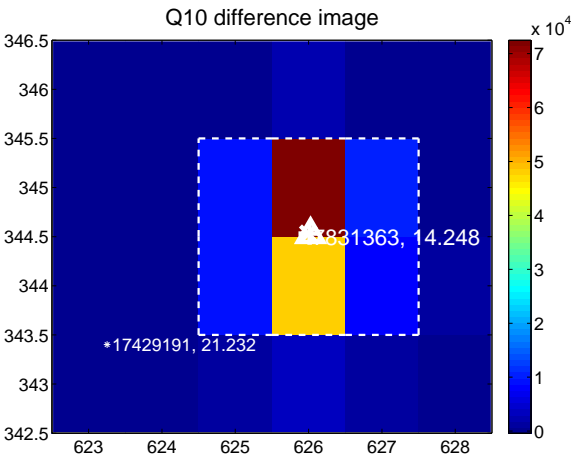
Q9 no difference image



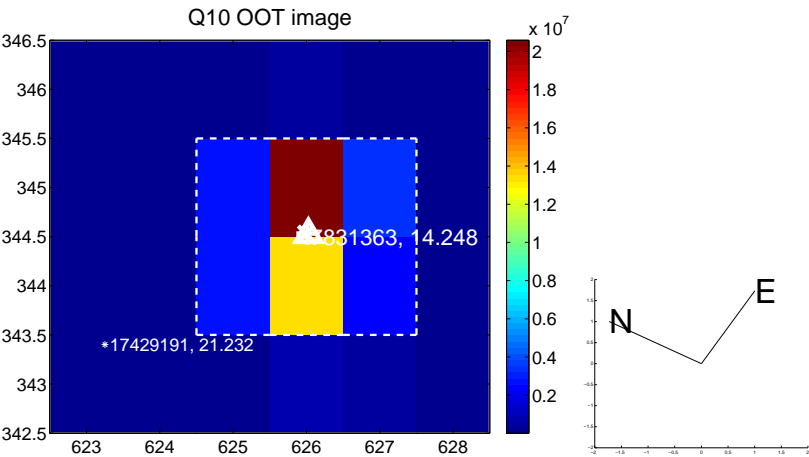
Q9 no OOT image



Q10 difference image



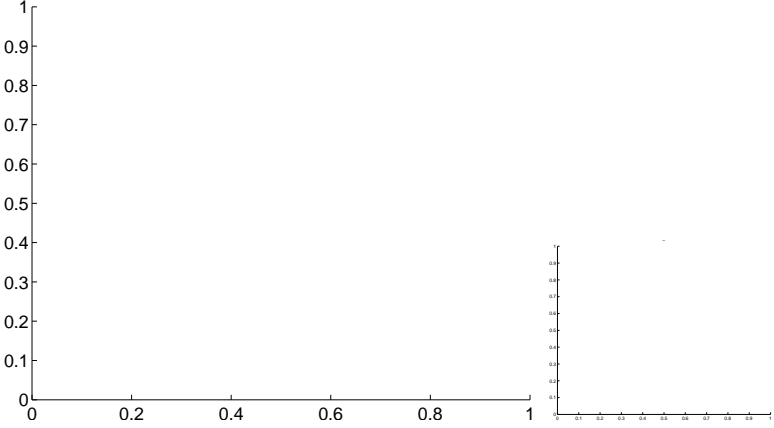
Q10 OOT image



Q11 no difference image



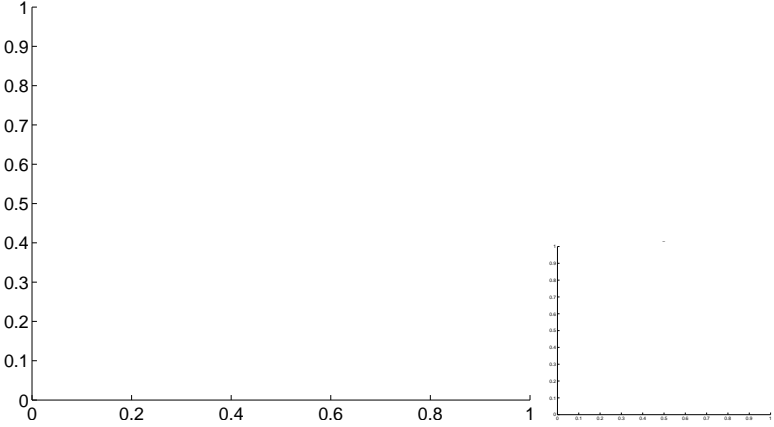
Q11 no OOT image



Q12 no difference image



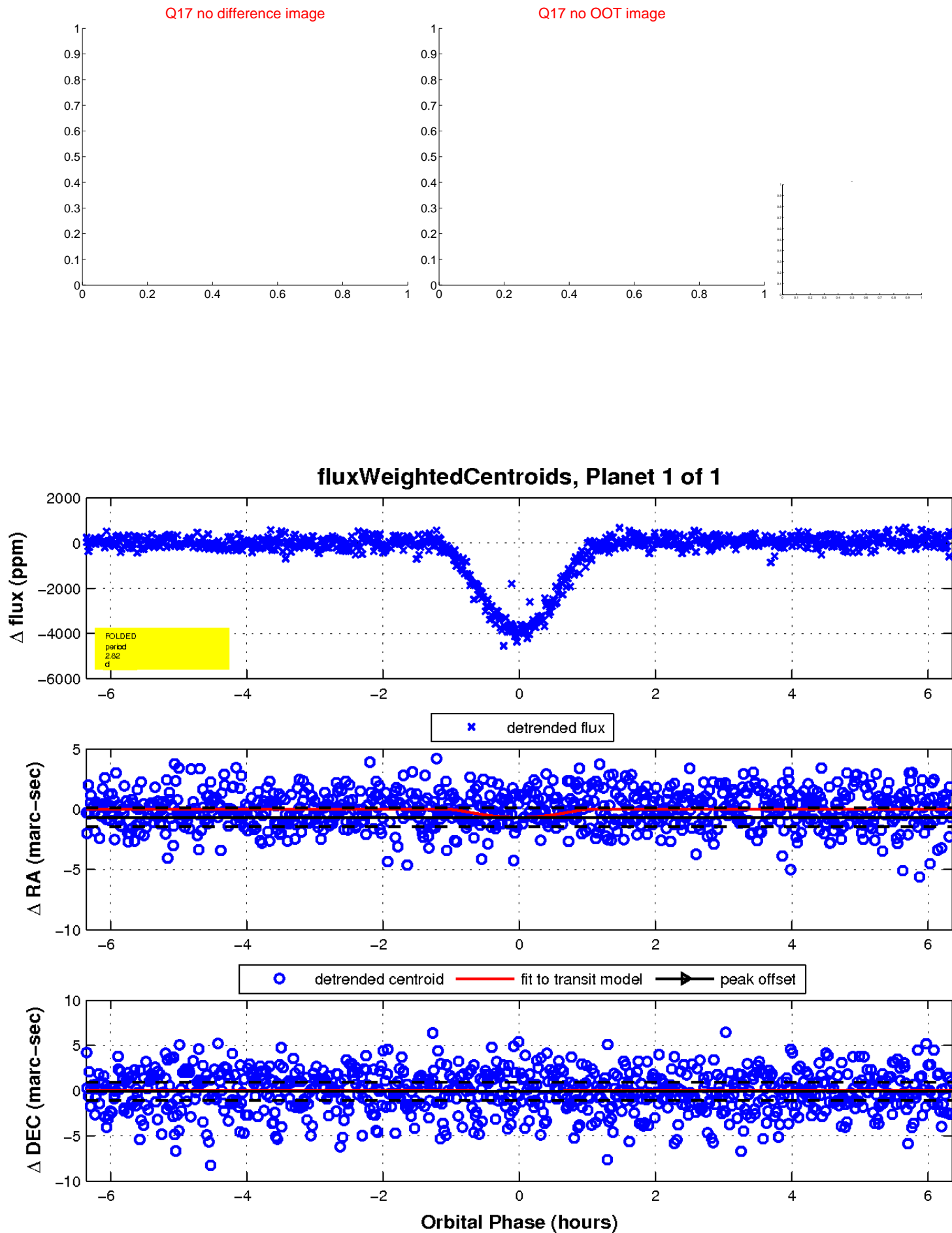
Q12 no OOT image



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



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



UKIRT Image

Declination

