

KIC 009899345

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})
009899345-01	OBS	7973.01	1.331993	132.647522	1063.3	4.332	26.1	37.3	1.69	6832	8.70	7982.70

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009899345-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_ALT—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.

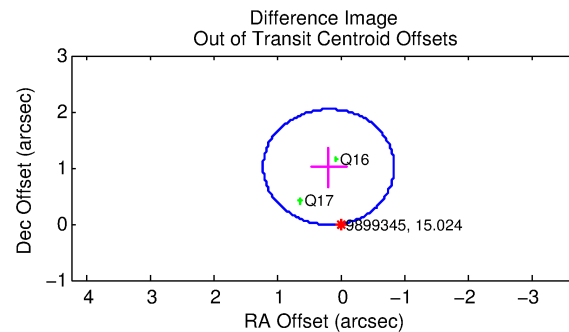
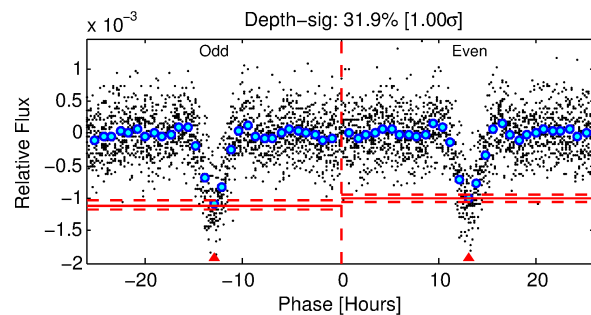
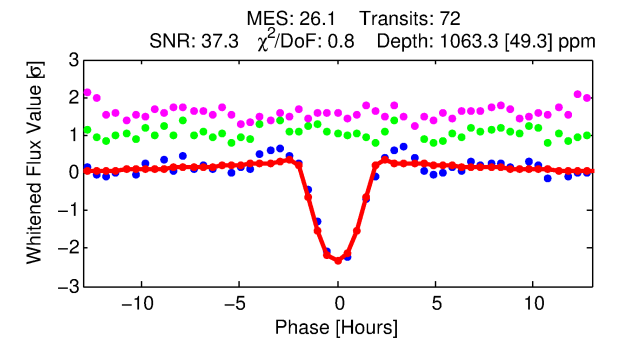
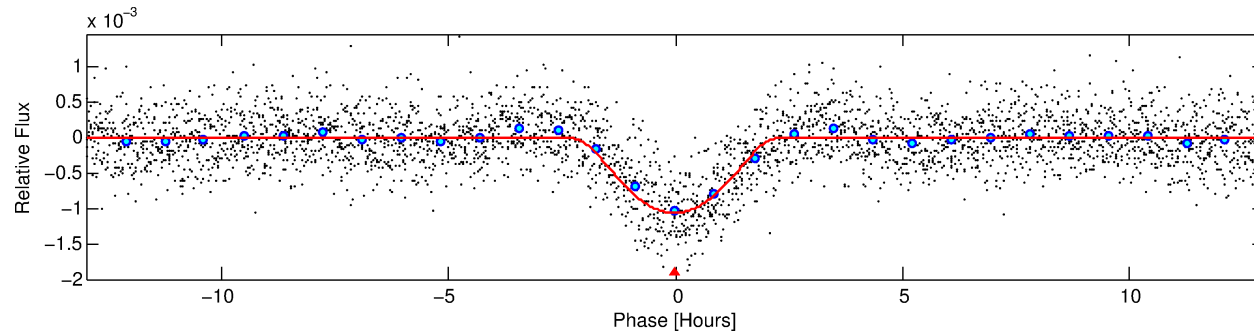
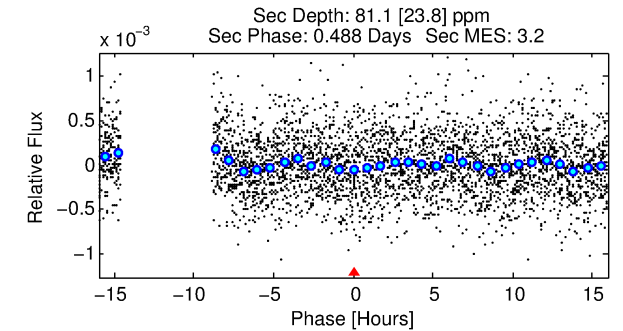
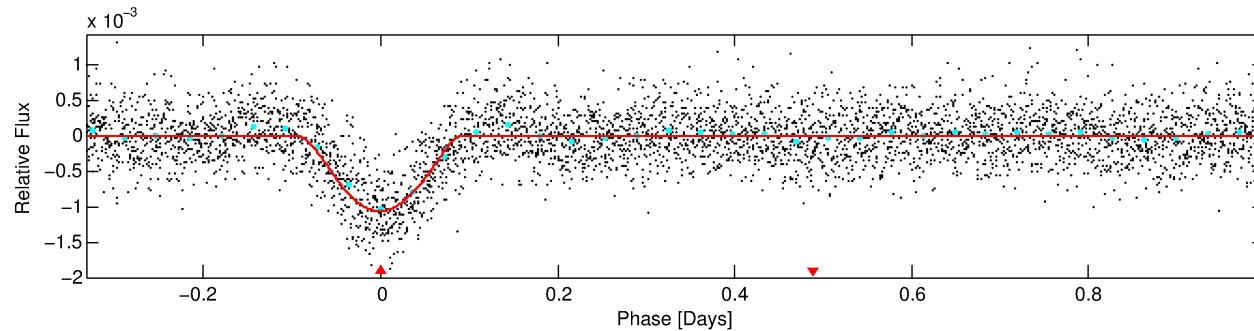
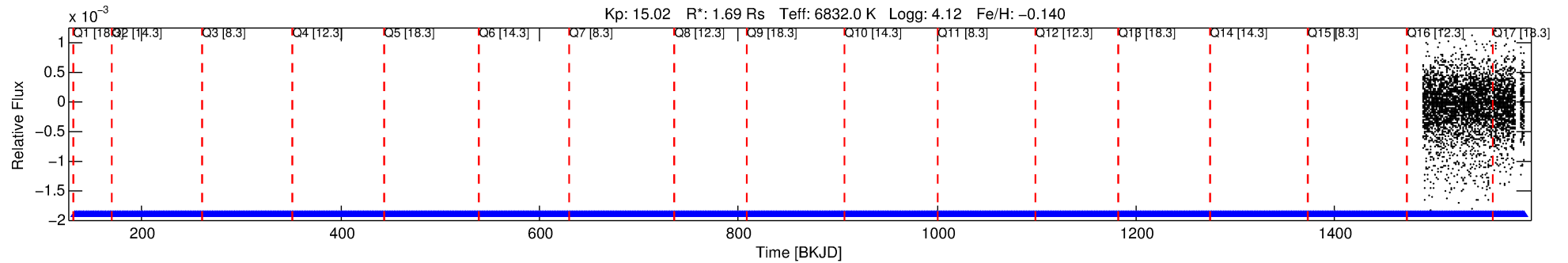
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009899345-01

No Significant Match Found

DV One-Page Summary

KIC: 9899345 Candidate: 1 of 1 Period: 1.332 d



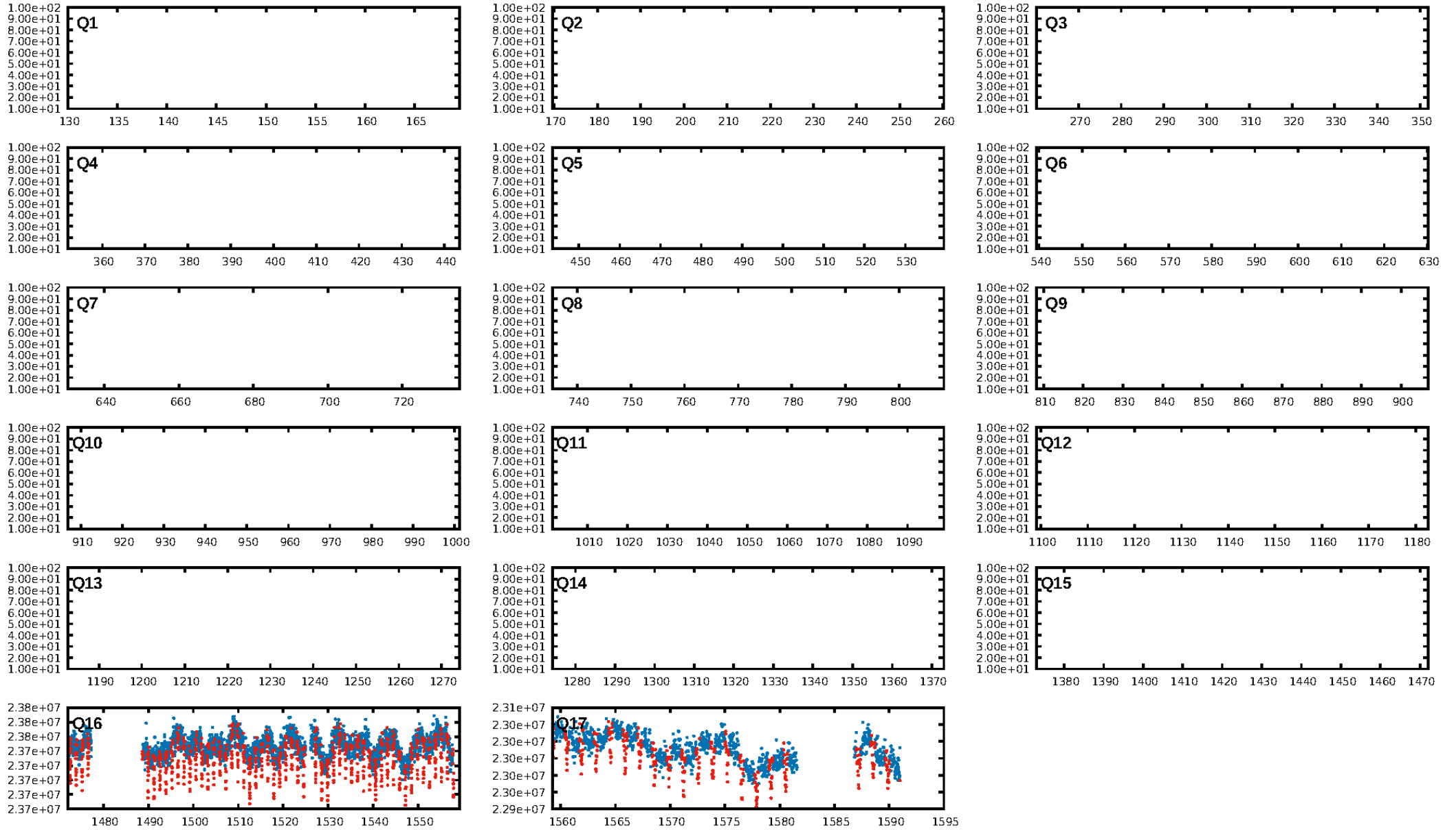
DV Fit Results:

Period = 1.33199 [0.00000] d
Epoch = 132.6475 [0.0013] BKJD
Rp/R* = 0.0473 [0.0191]
a/R* = 1.30 [0.05]
b = 0.99 [0.03]
Seff = 7982.70 [3059.44]
Teq = 2410 [231] K
Rp = 8.70 [4.35] Re
a = 0.0263 [0.0064] AU
Ag = 0.41 [0.38] [-1.56 σ]
Teffp = 2980 [653] K [0.82 σ]

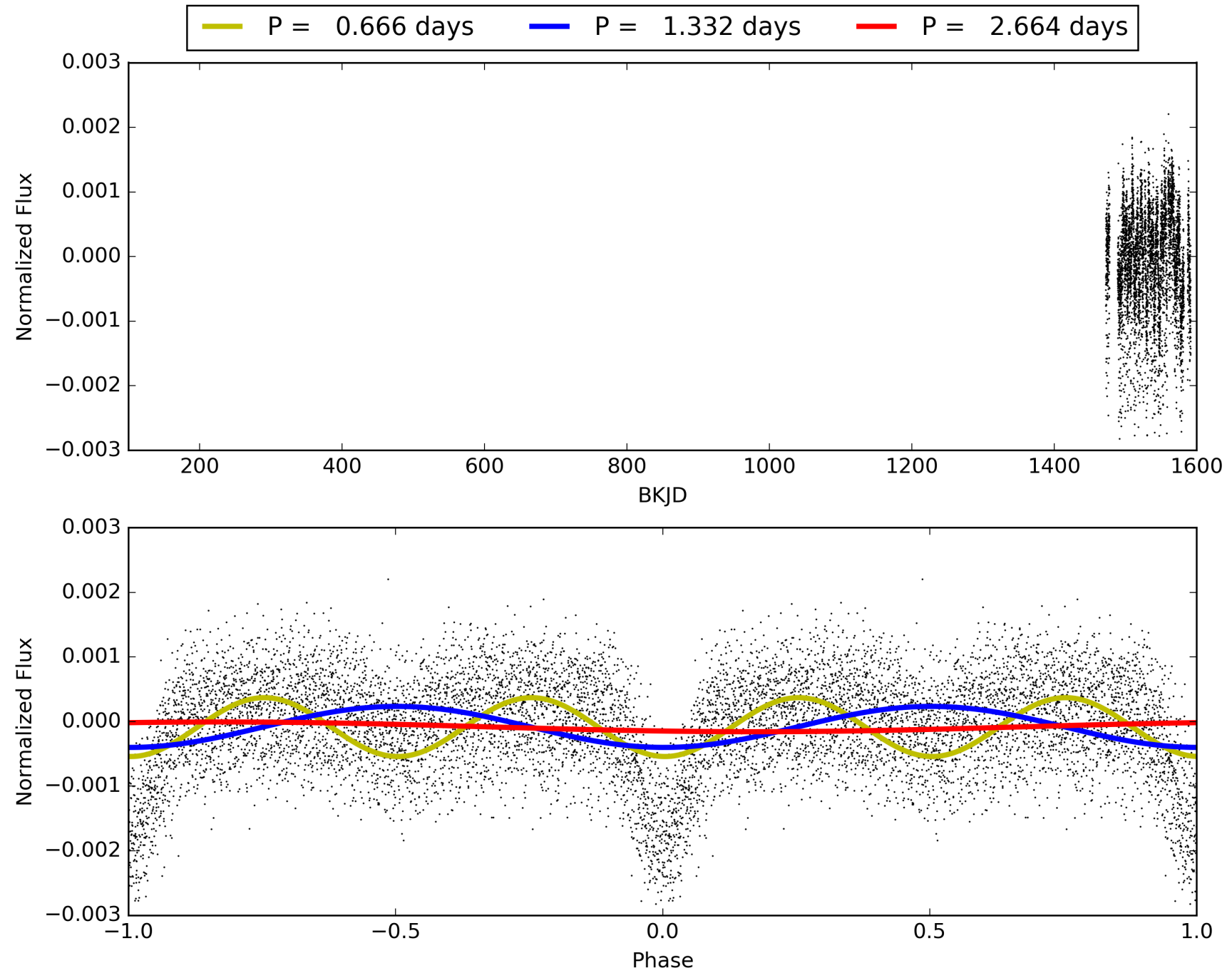
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 79.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.92e-147
RollingBand-fgt: 1.00 [52/52]
GhostDiagnostic-chr: -0.05317
Centroid-sig: 0.0%
Centroid-so: 1.369 arcsec [5.01 σ]
OotOffset-rm: 1.030 arcsec [3.00 σ]
KicOffset-rm: 0.928 arcsec [2.60 σ]
OotOffset-st: 0/0/1/1 [2]
KicOffset-st: 0/0/1/1 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [2/2]

TCE 009899345-01, PDC Light Curves

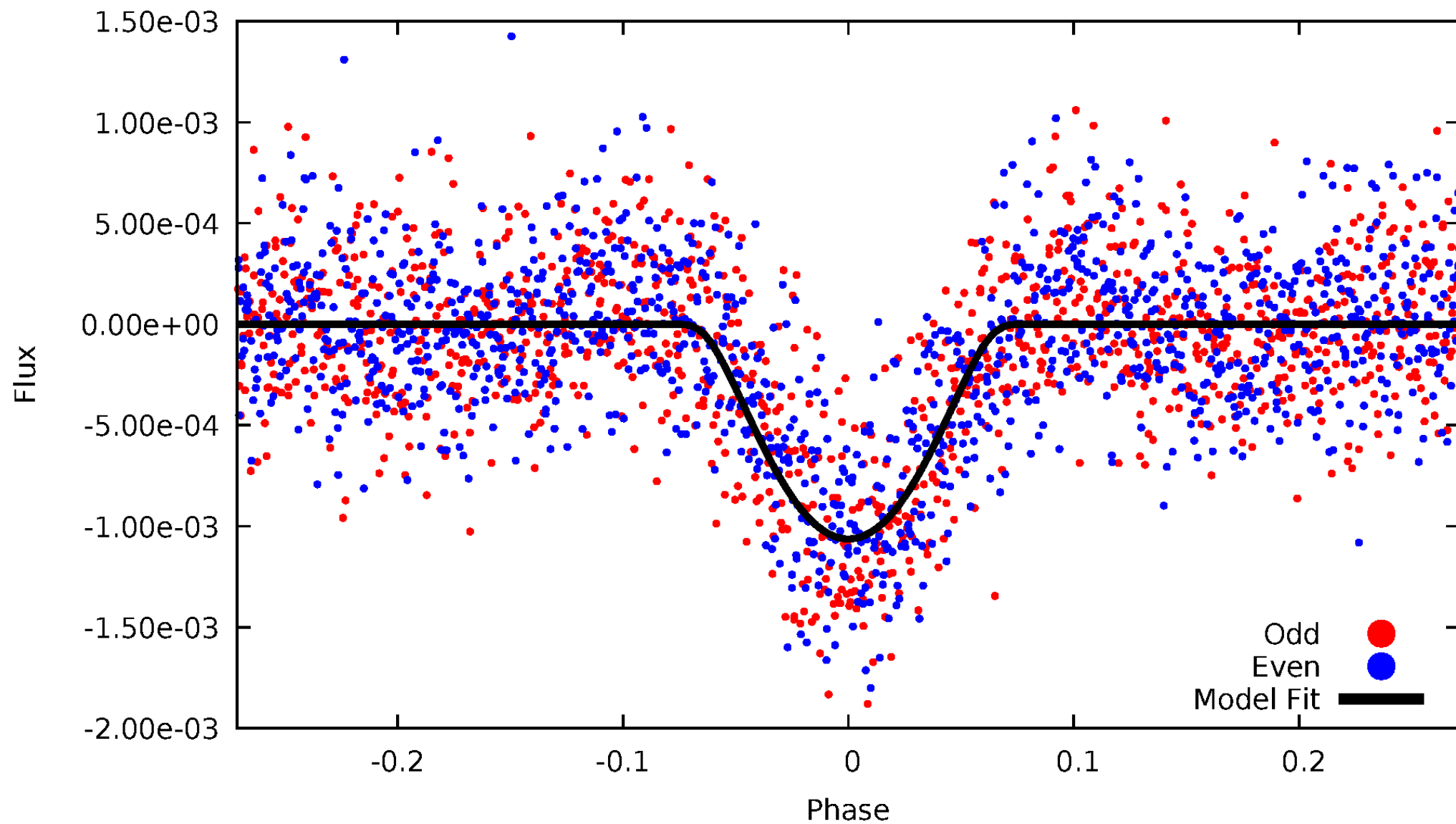


TCE 009899345-01



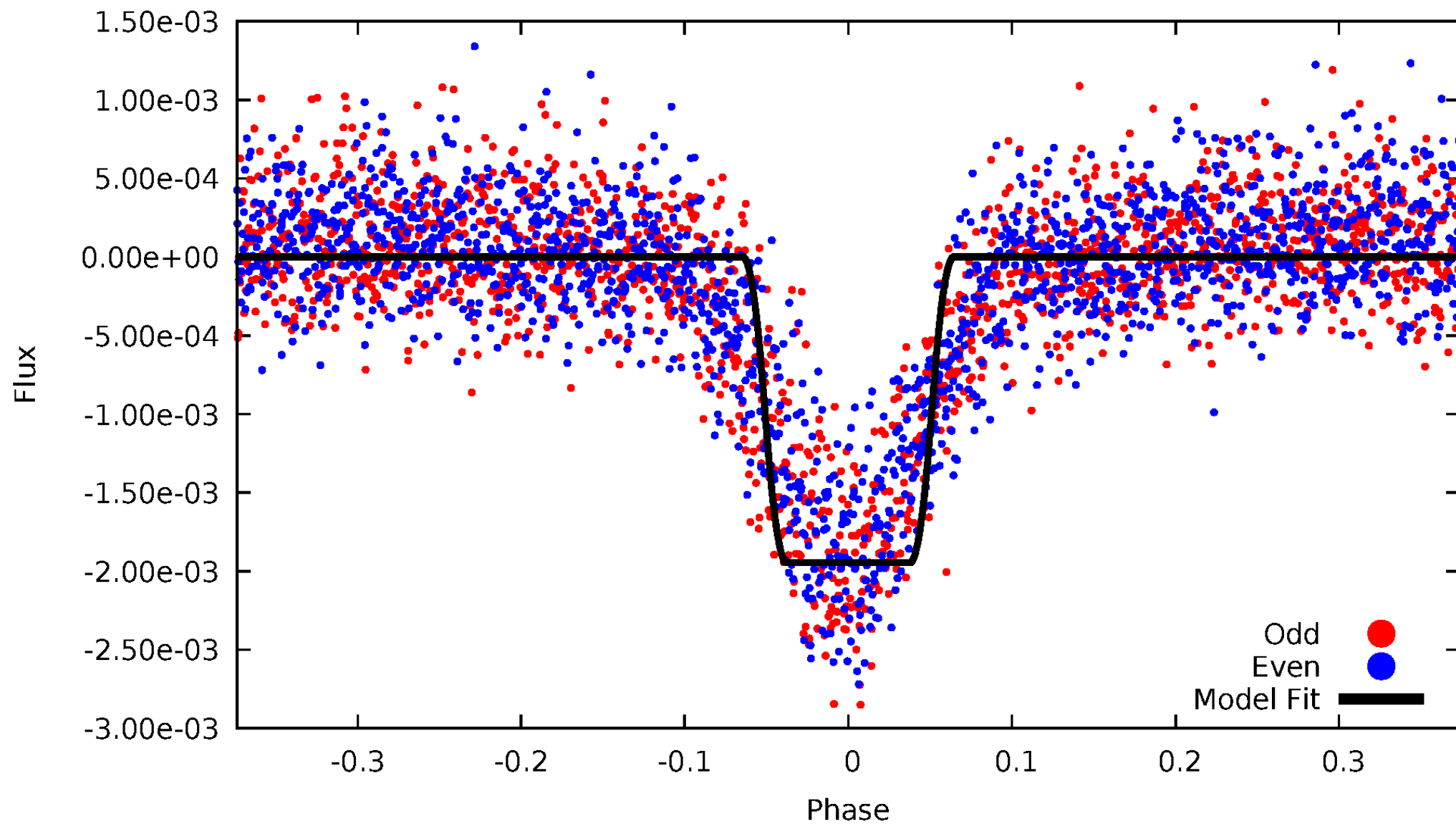
DV Odd/Even

TCE 009899345-01



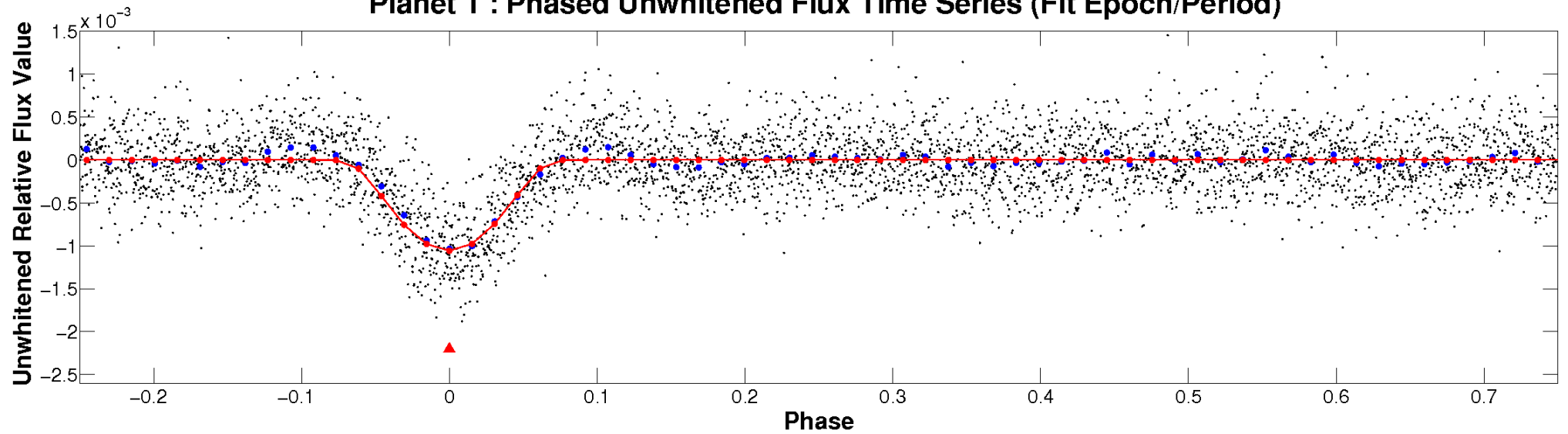
ALT Odd/Even

TCE 009899345-01

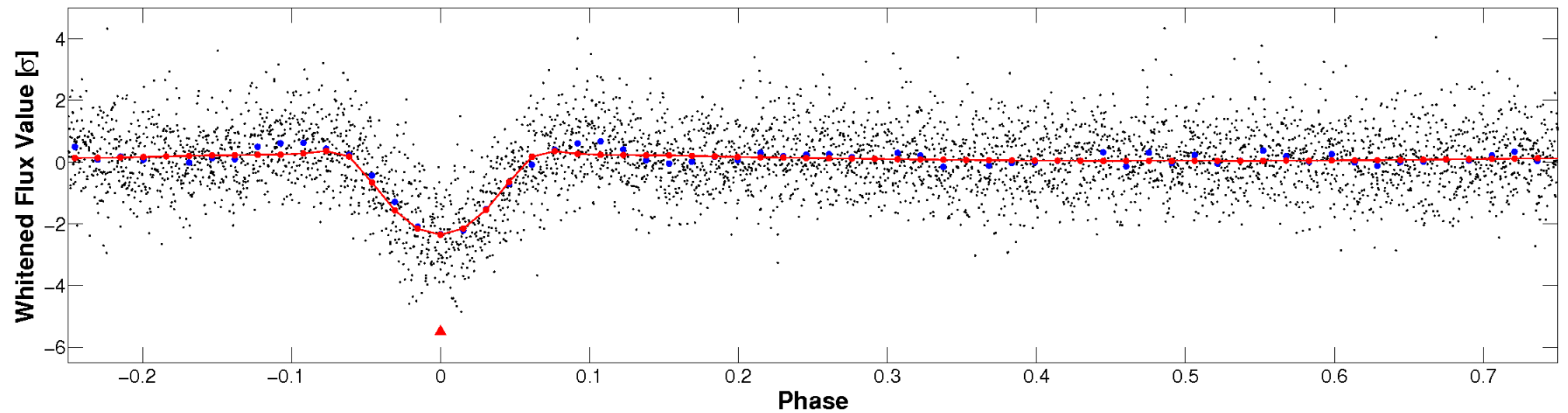


Non-Whitened Vs. Whitened Light Curve

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

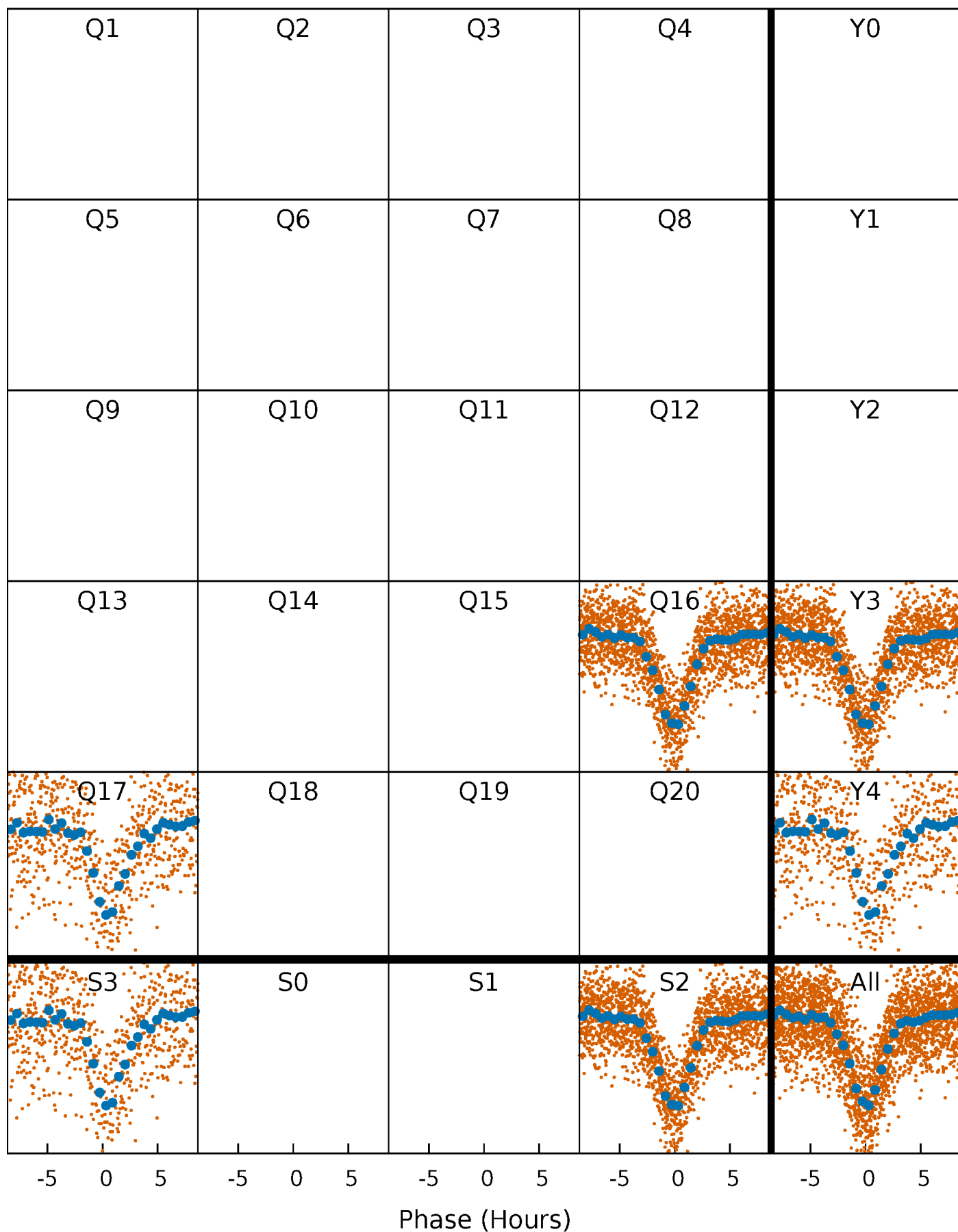


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



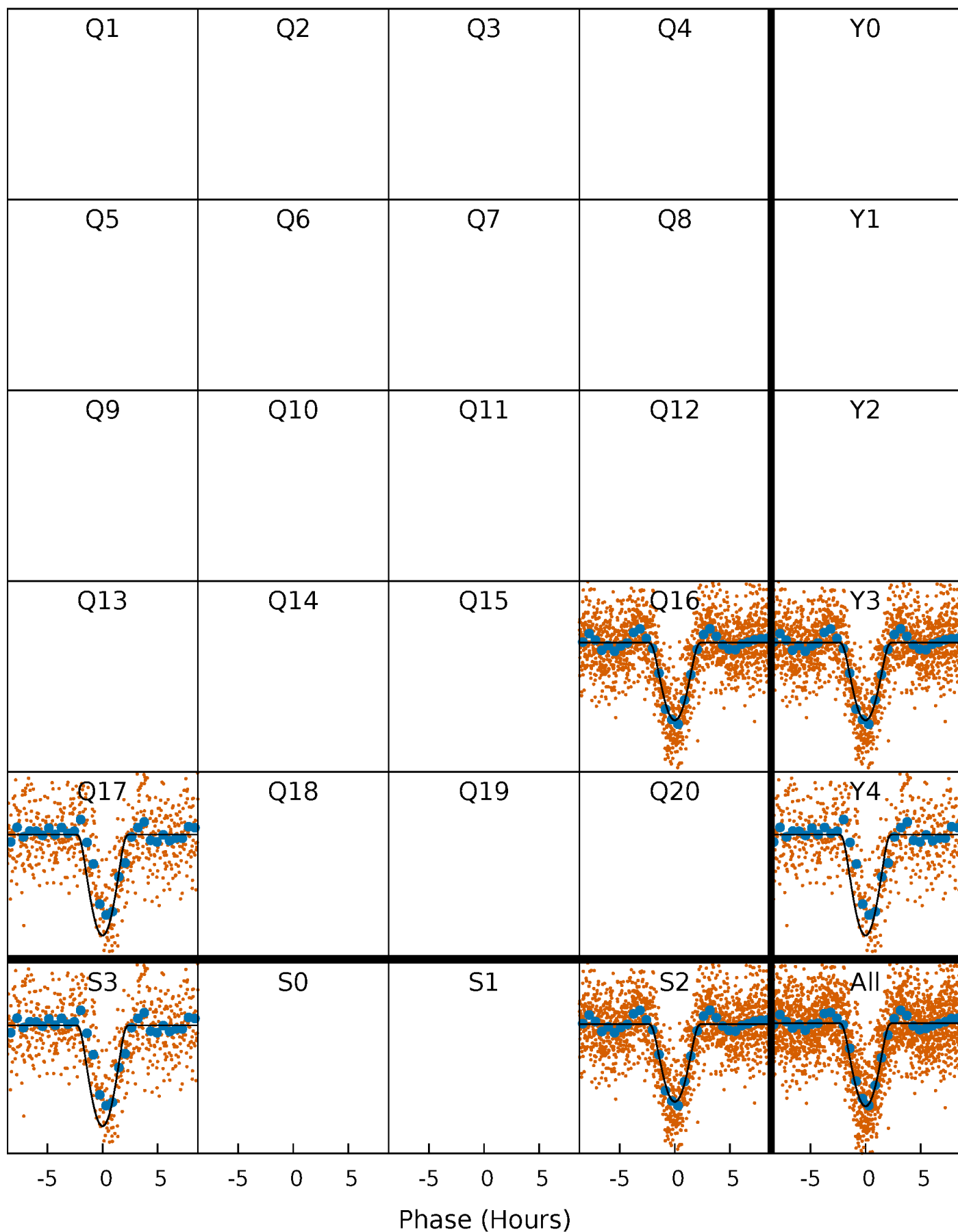
PDC Quarter-Phased Transit Curves

TCE 009899345-01 $P = 1.331993$ Days $T_0 = 132.647522$ (BKJD)



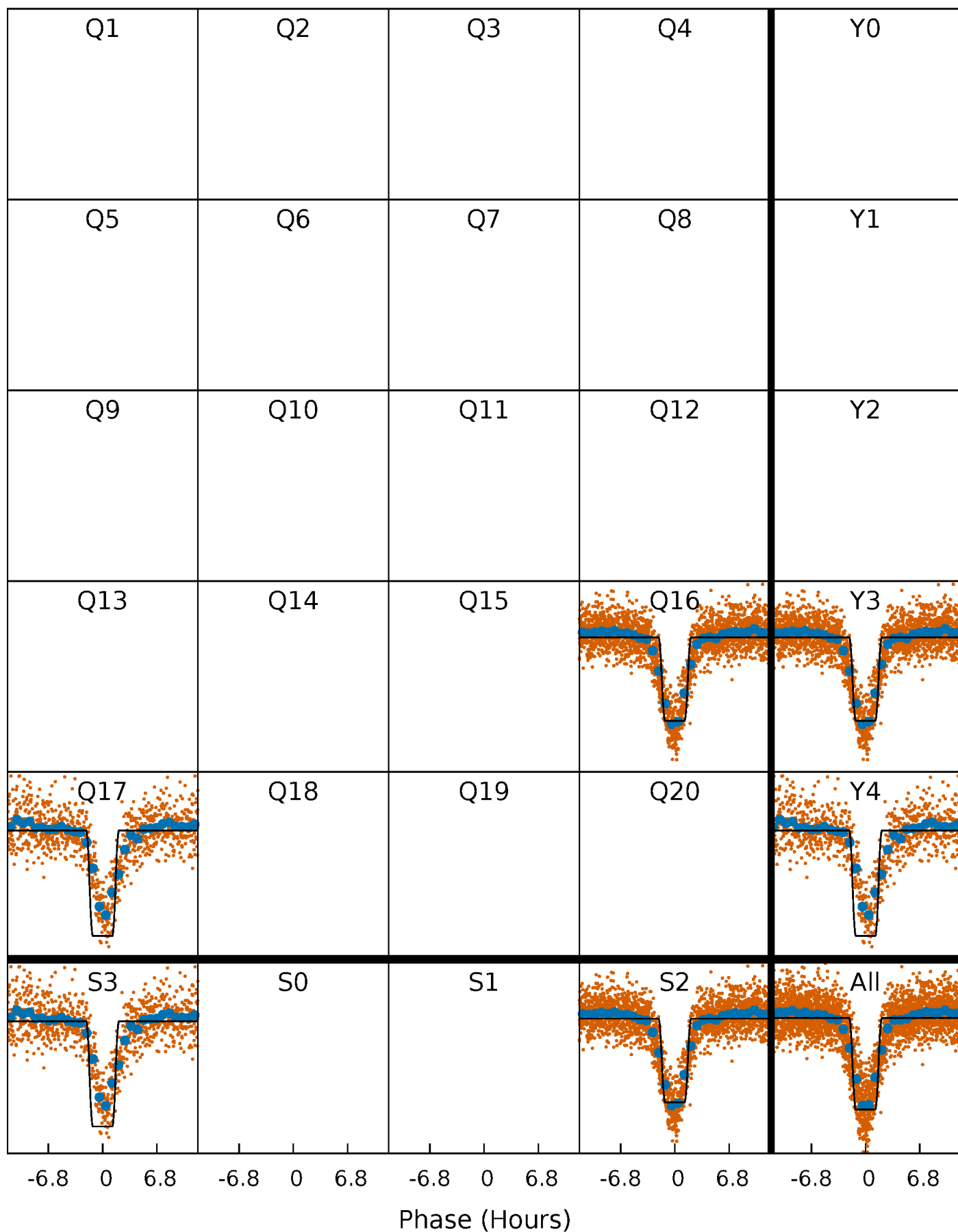
DV Quarter-Phased Transit Curves

TCE 009899345-01 P= 1.331993 Days $T_0=132.647522$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

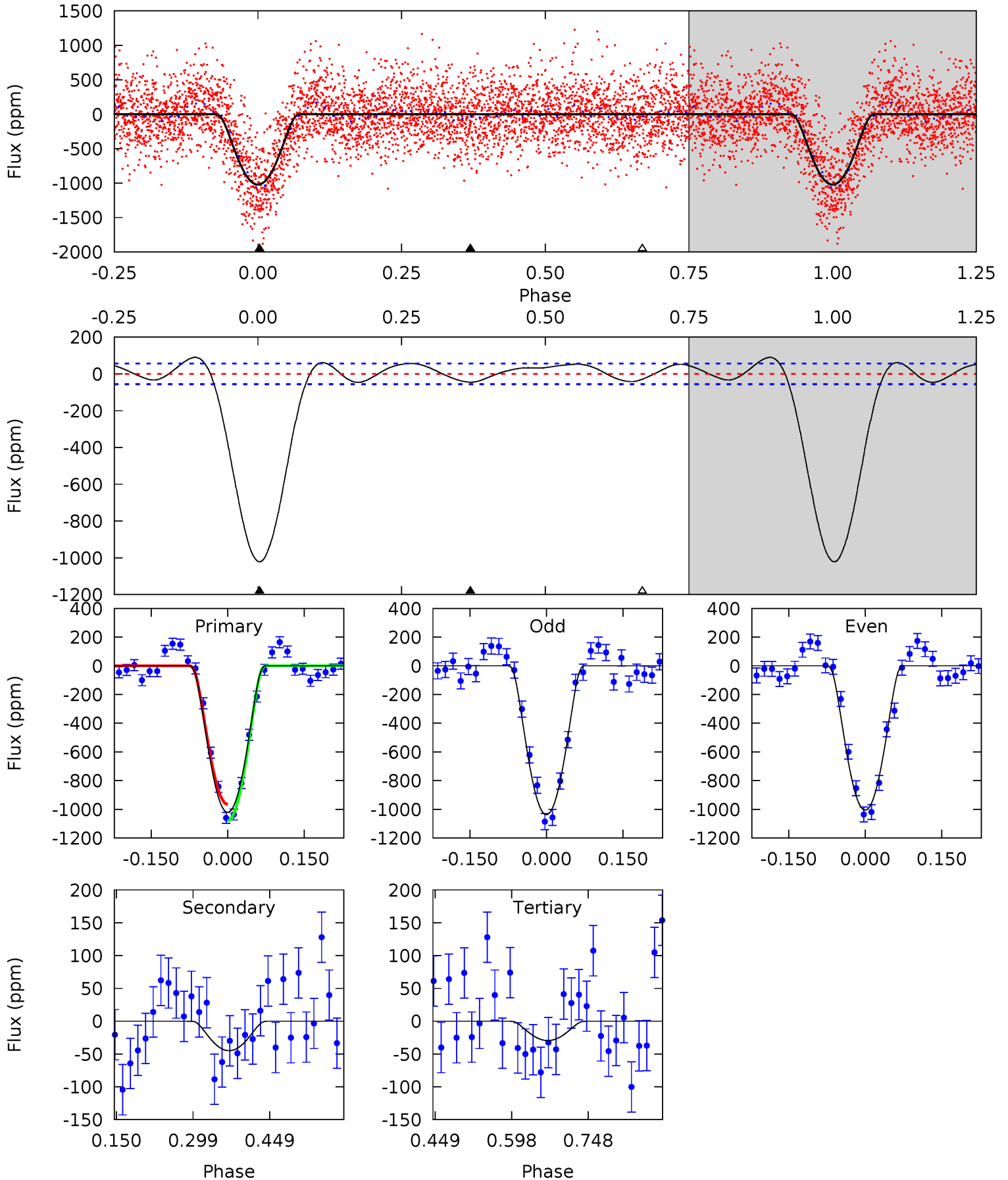
TCE 009899345-01 P= 1.332146 Days $T_0=132.490822$ (BKJD)



DV Model-Shift Uniqueness Test

009899345-01, P = 1.331993 Days, E = 132.647522 Days

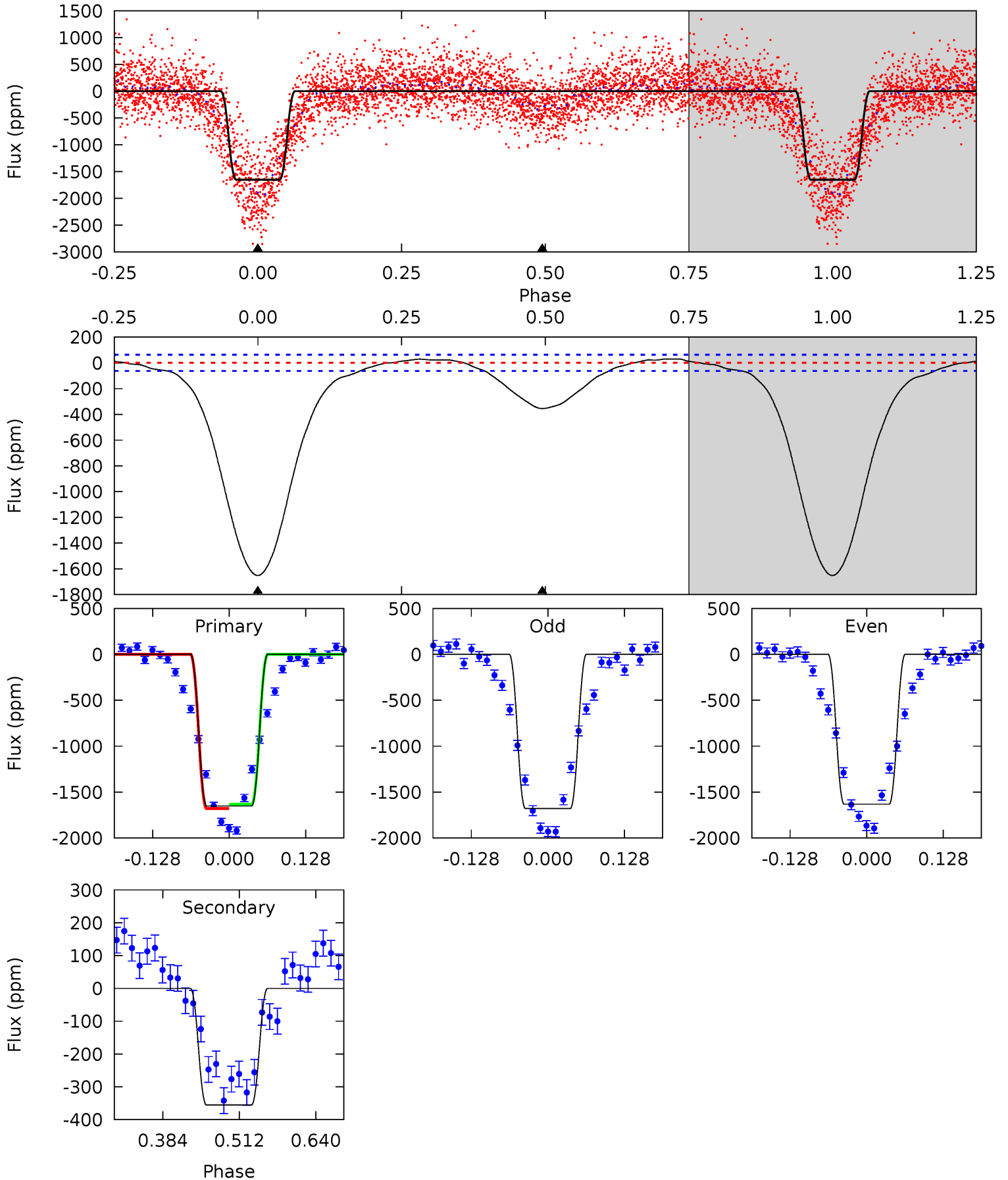
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
81.3	3.58	2.35	0	4.48	1.44	2.67	78.9	81.3	1.23	3.58	1.28	0.93	0.08	4.53



Alt Model-Shift Uniqueness Test

009899345-01, P = 1.332146 Days, E = 132.490822 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
118.7	25.5	0	0	4.51	1.52	3.26	118.7	118.7	25.5	25.5	1.68	0.96	0.02	1.67



Stellar Parameters For KIC 009899345

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6832^{+190}_{-286}	$4.123^{+0.185}_{-0.185}$	$-0.140^{+0.250}_{-0.350}$	$1.685^{+0.494}_{-0.449}$	$1.384^{+0.202}_{-0.247}$	$0.407^{+0.458}_{-0.201}$
	+3%/-4%	+4%/-4%	+179%/-250%	+29%/-27%	+15%/-18%	+112%/-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 009899345-01 / KOI 7973.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-45 ± 13	$8.73^{+3.62}_{-3.70}$	3372^{+280}_{-256}	-2687^{+6010}_{-470}	$0.227^{+0.437}_{-0.122}$
Alt.	-355 ± 14	$8.10^{+4.05}_{-3.39}$	3368^{+287}_{-246}	4444^{+1344}_{-704}	$2.053^{+4.008}_{-1.149}$

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

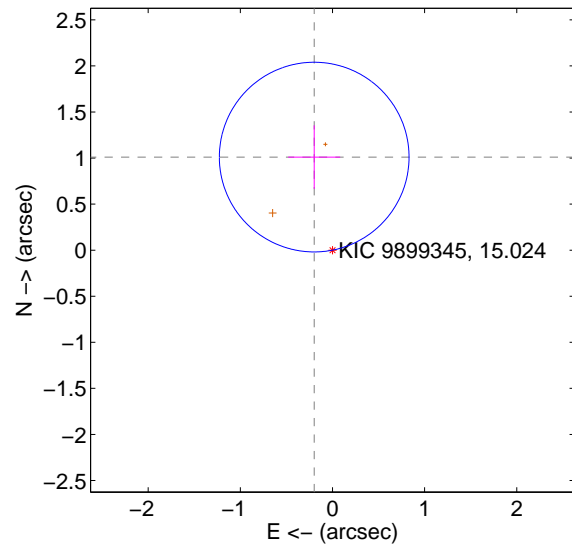
Supplemental centroid analysis for 009899345-01. Kepler magnitude: 15.02. Transit SNR 37.30

There are 0 quarters with good PRF difference image offsets

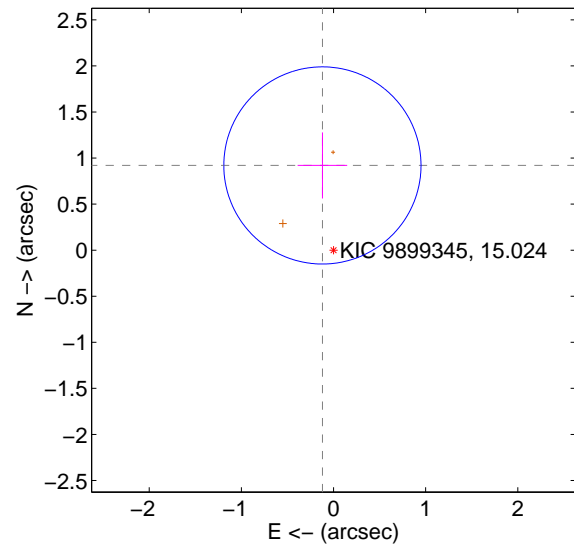
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.030 ± 0.343	3.00	0.198 ± 0.282	1.010 ± 0.345
PRF-fit source offset from KIC position	0.928 ± 0.357	2.60	0.120 ± 0.269	0.920 ± 0.358
photometric centroid source offset	1.37 ± 0.27	5.01	1.36 ± 0.27	0.12 ± 0.31

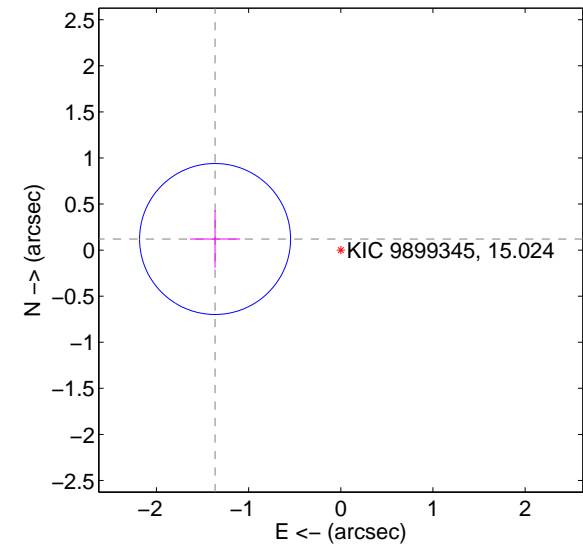
offset from difference PRF-fit to OOT PRF-fit



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- 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.



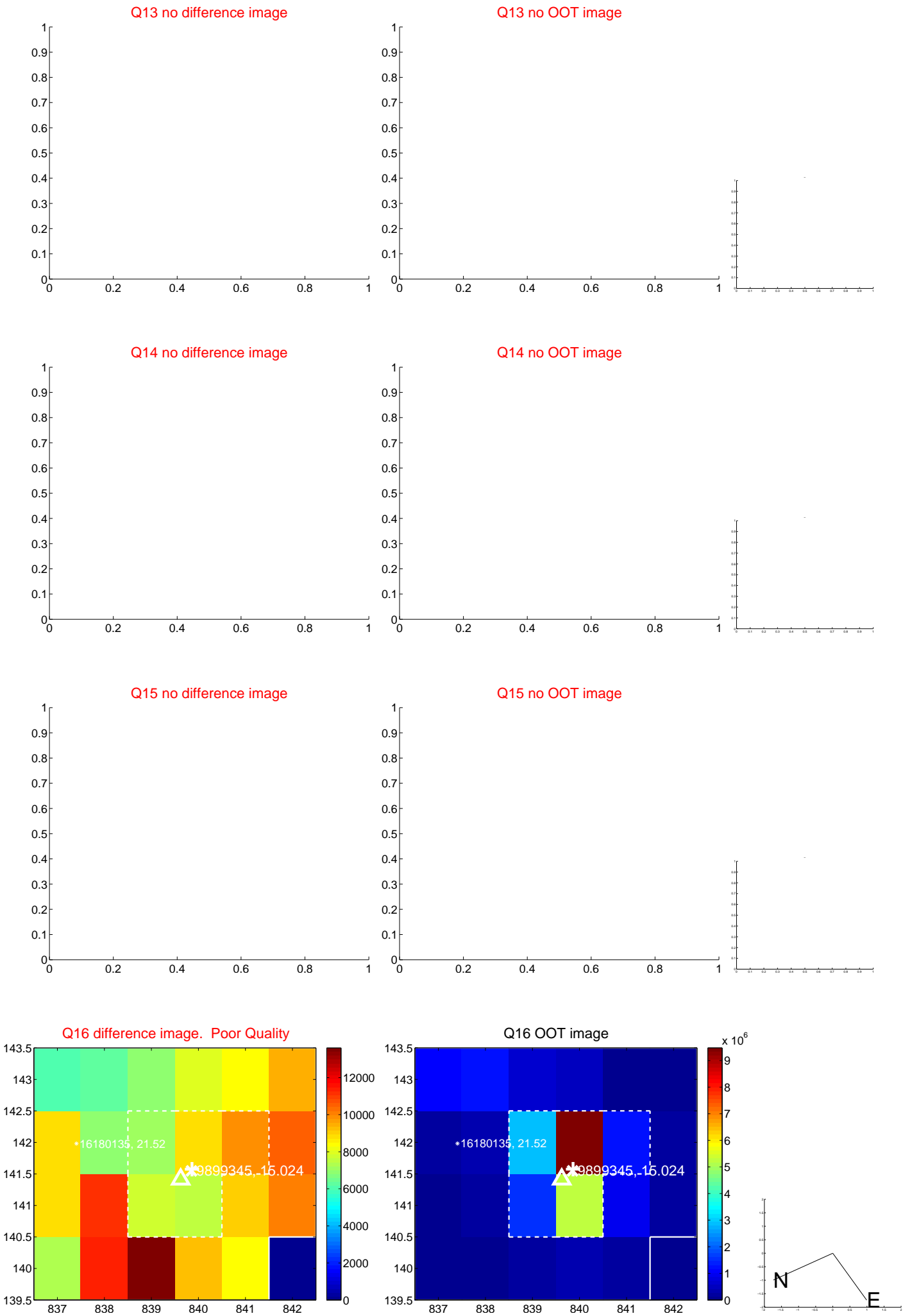
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



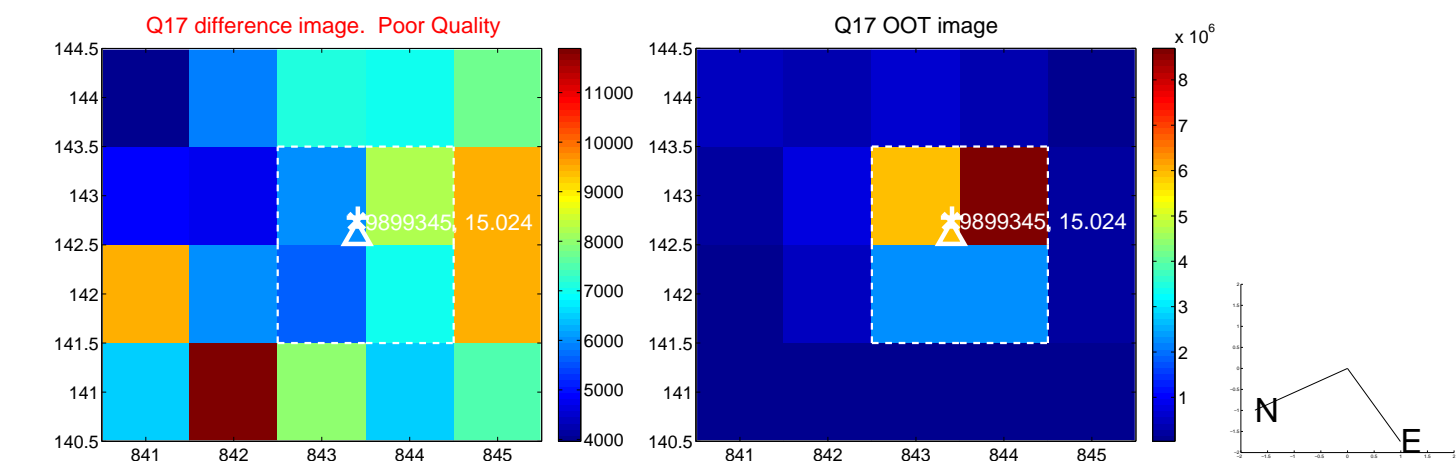
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



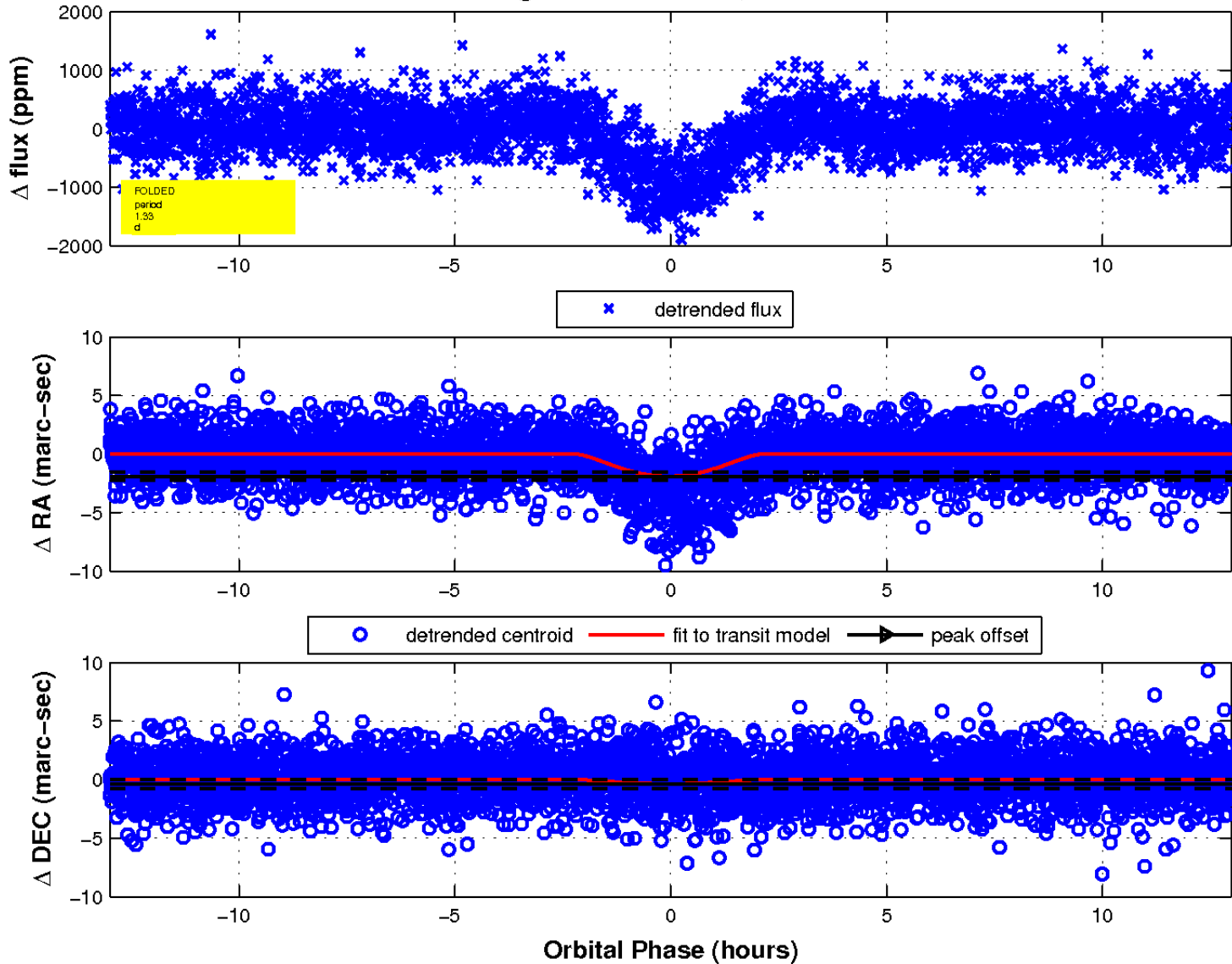
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

