

KIC 004457352

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})
004457352-01	OBS	No	342.621497	407.701406	54.7	13.105	8.5	5.5	3.73	8534	3.06	40.23

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004457352-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_NONUNIQ_ALT—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.

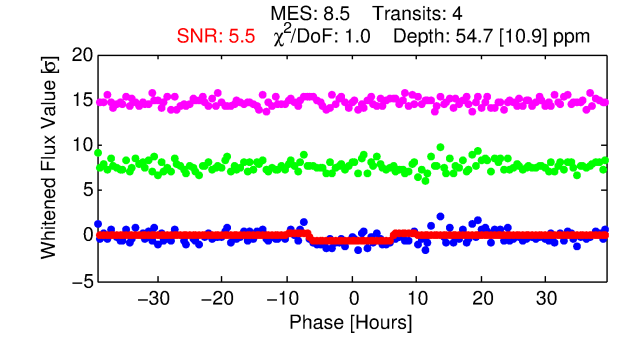
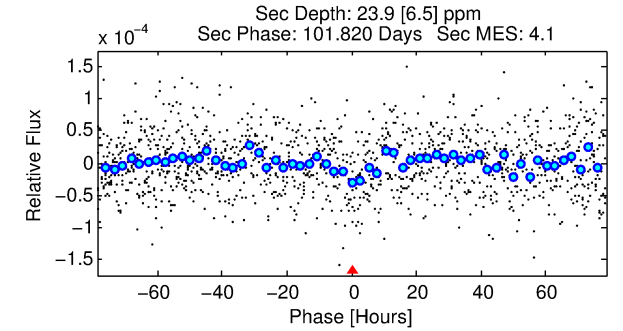
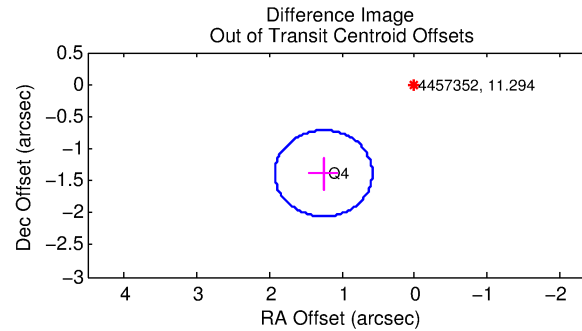
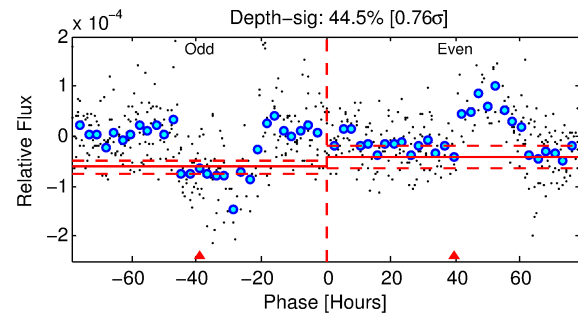
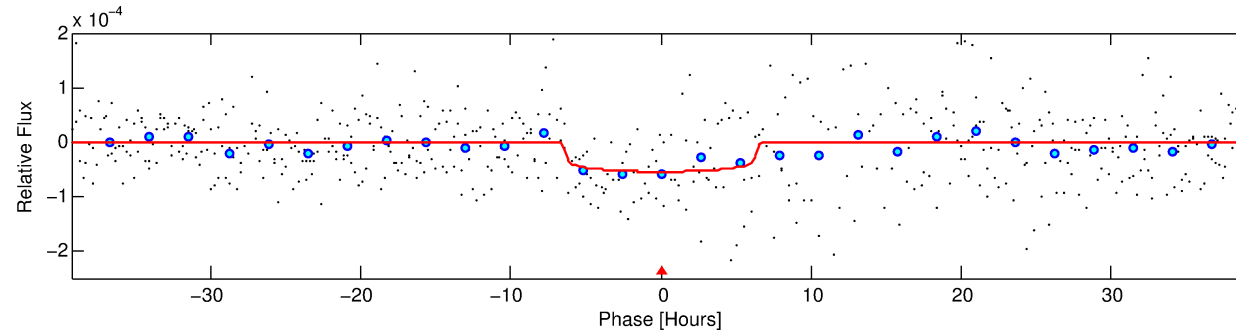
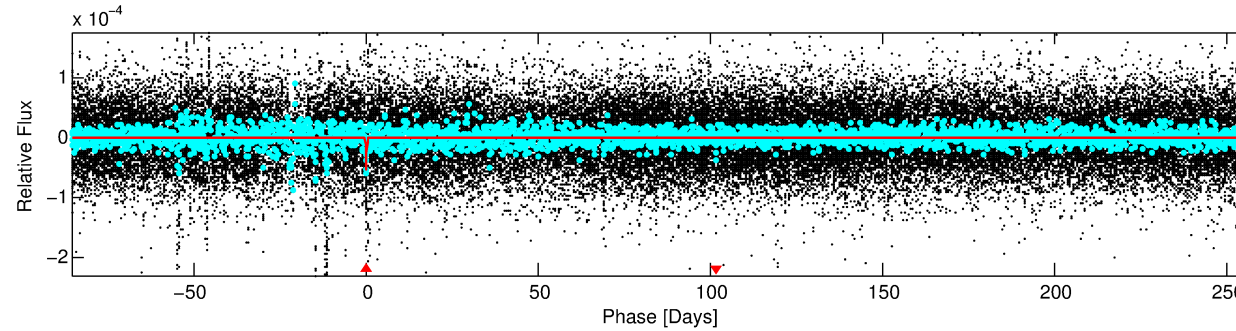
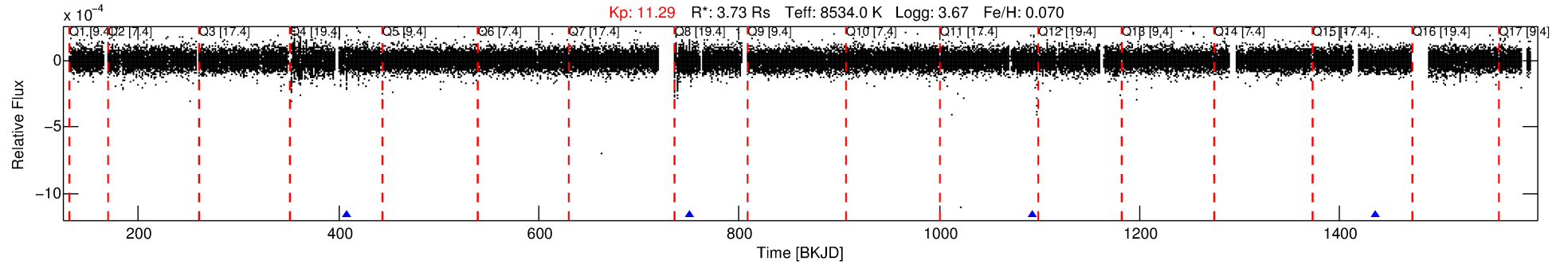
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004457352-01

No Significant Match Found

DV One-Page Summary

KIC: 4457352 Candidate: 1 of 1 Period: 342.621 d



DV Fit Results:

Period = 342.62150 [0.01120] d
Epoch = 407.7014 [0.0209] BKJD
Rp/R* = 0.0075 [0.0023]
a/R* = 118.39 [218.07]
b = 0.81 [0.77]
Seff = 40.23 [32.18]
Teq = 642 [128] K
Rp = 3.06 [1.89] Re
a = 1.2806 [0.6356] AU
Ag = 2313.58 [2388.39] [0.97 σ]
Teffp = 6886 [1214] K [5.12 σ]

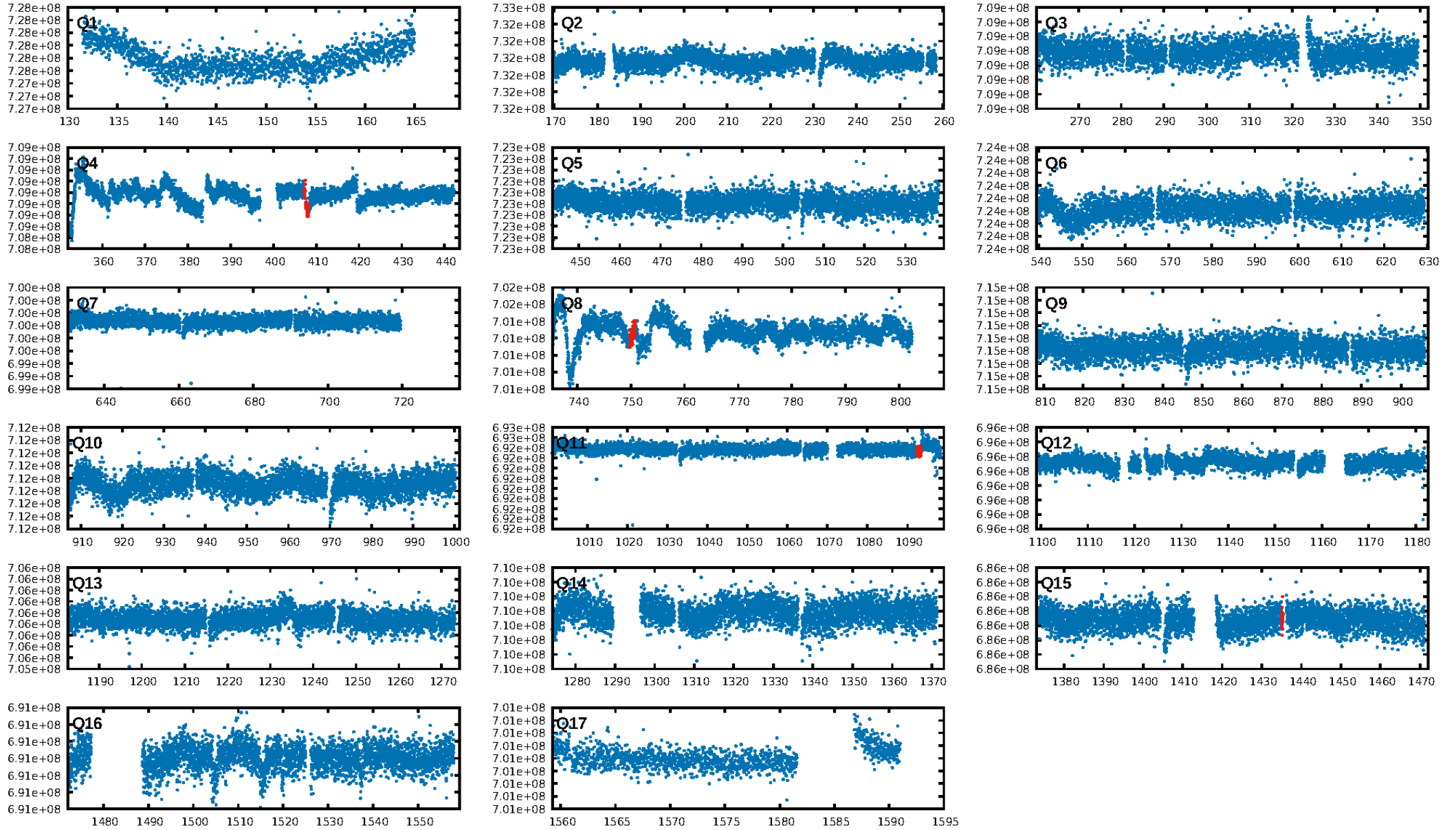
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 7.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.86e-10
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6992
Centroid-sig: 98.3%
Centroid-so: 0.549 arcsec [0.11 σ]
OotOffset-rm: 1.869 arcsec [8.35 σ]
KicOffset-rm: 2.374 arcsec [10.51 σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [2/2]

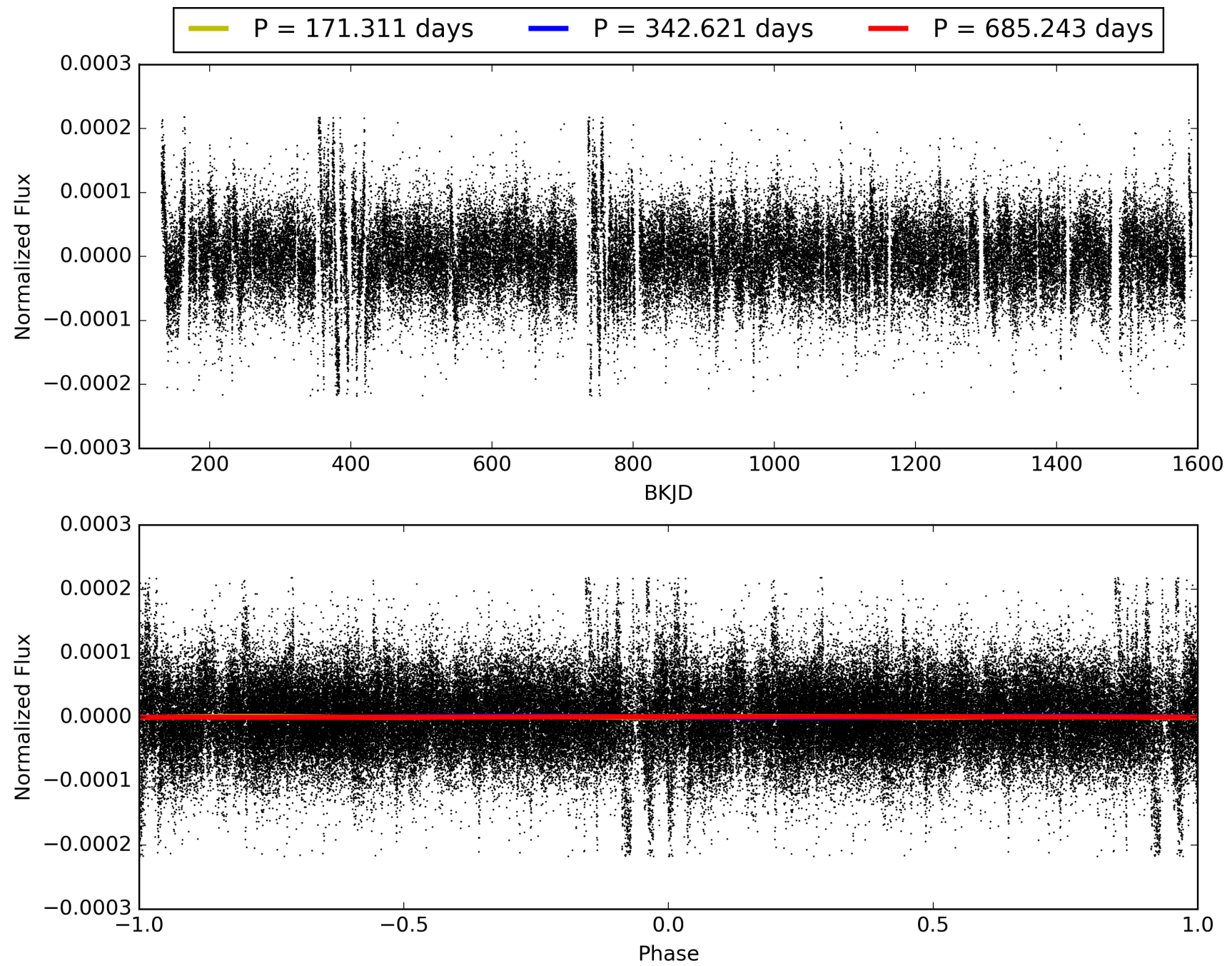
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 14:47:09 Z

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

TCE 004457352-01, PDC Light Curves

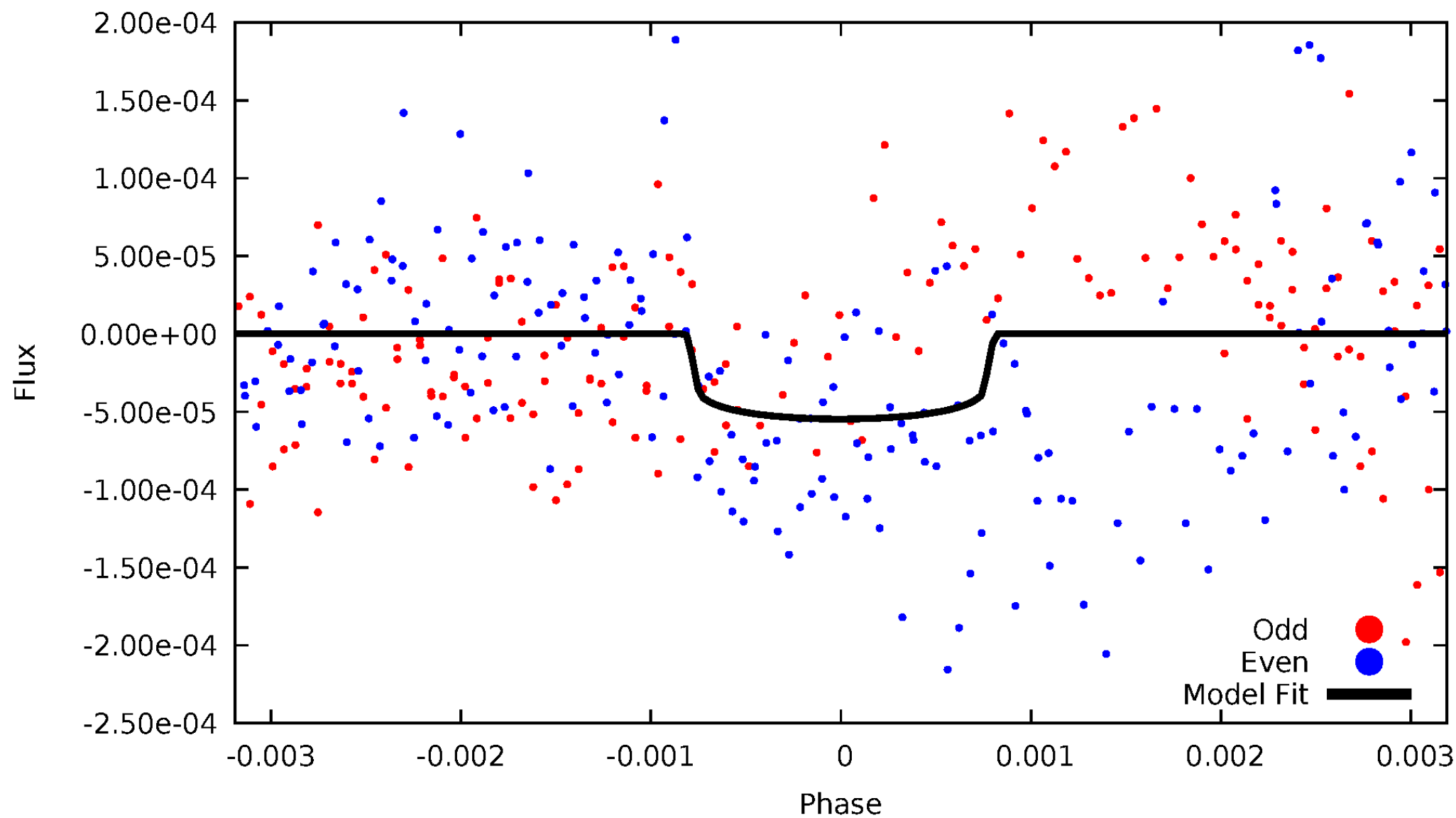


TCE 004457352-01



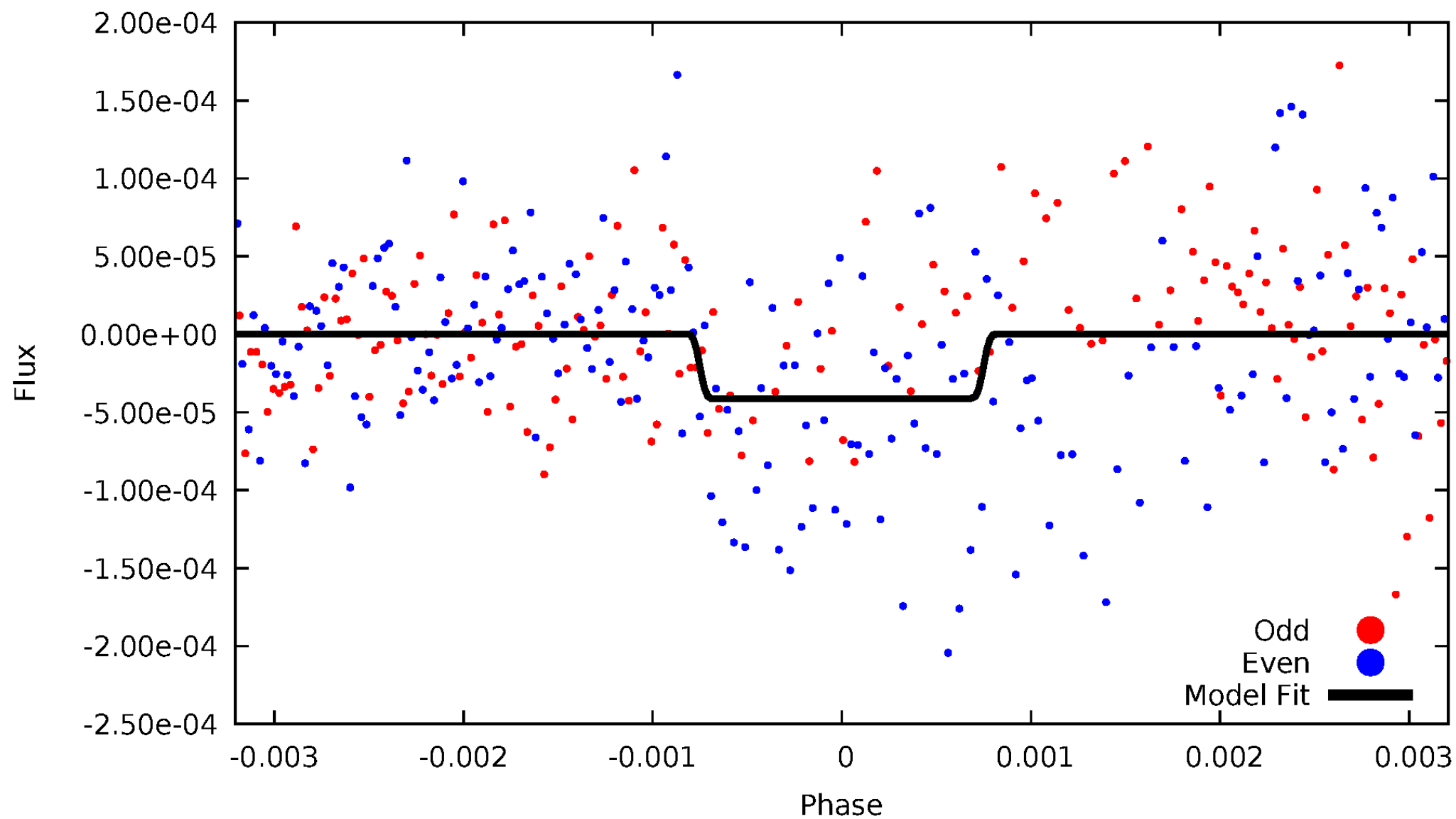
DV Odd/Even

TCE 004457352-01



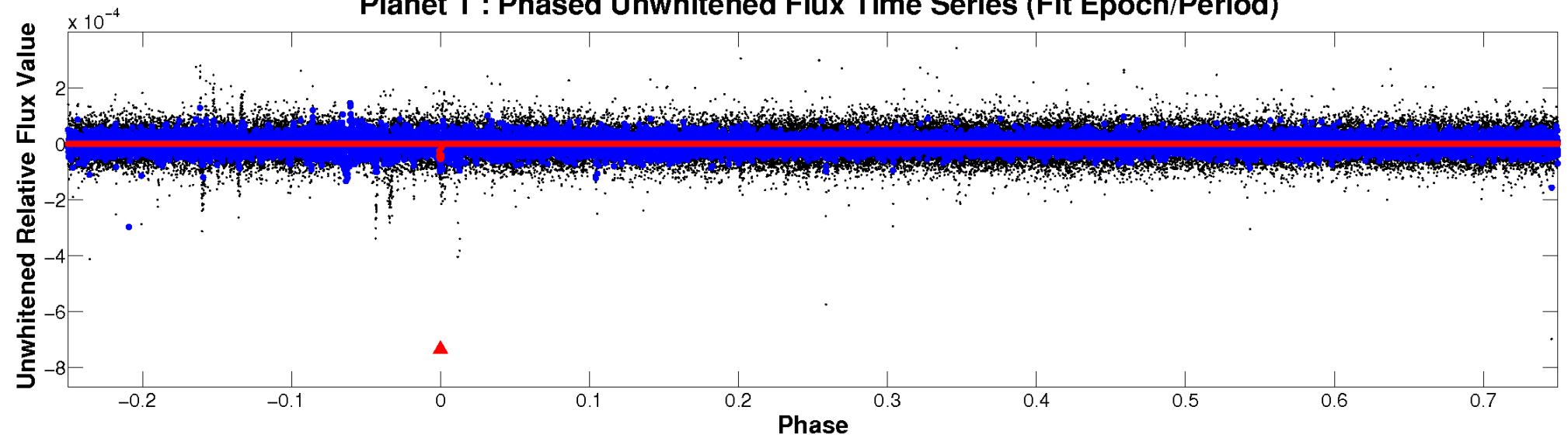
ALT Odd/Even

TCE 004457352-01

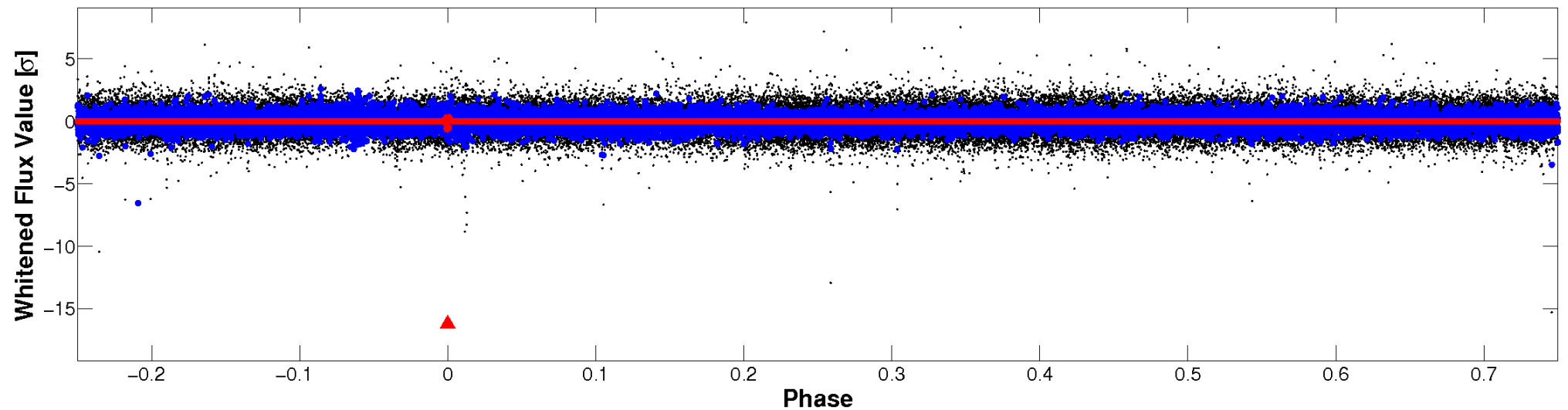


Non-Whitened Vs. Whitened Light Curve

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

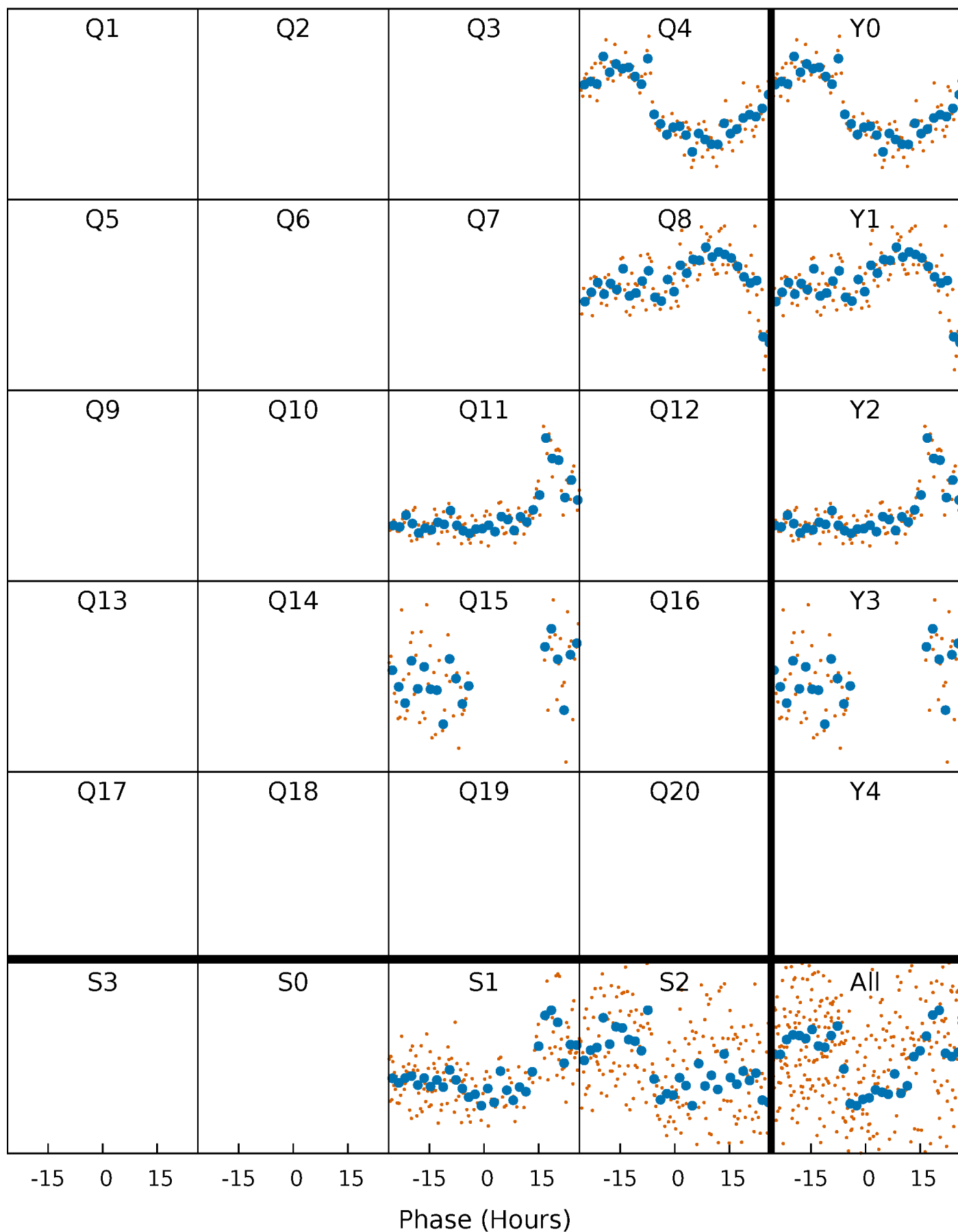


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



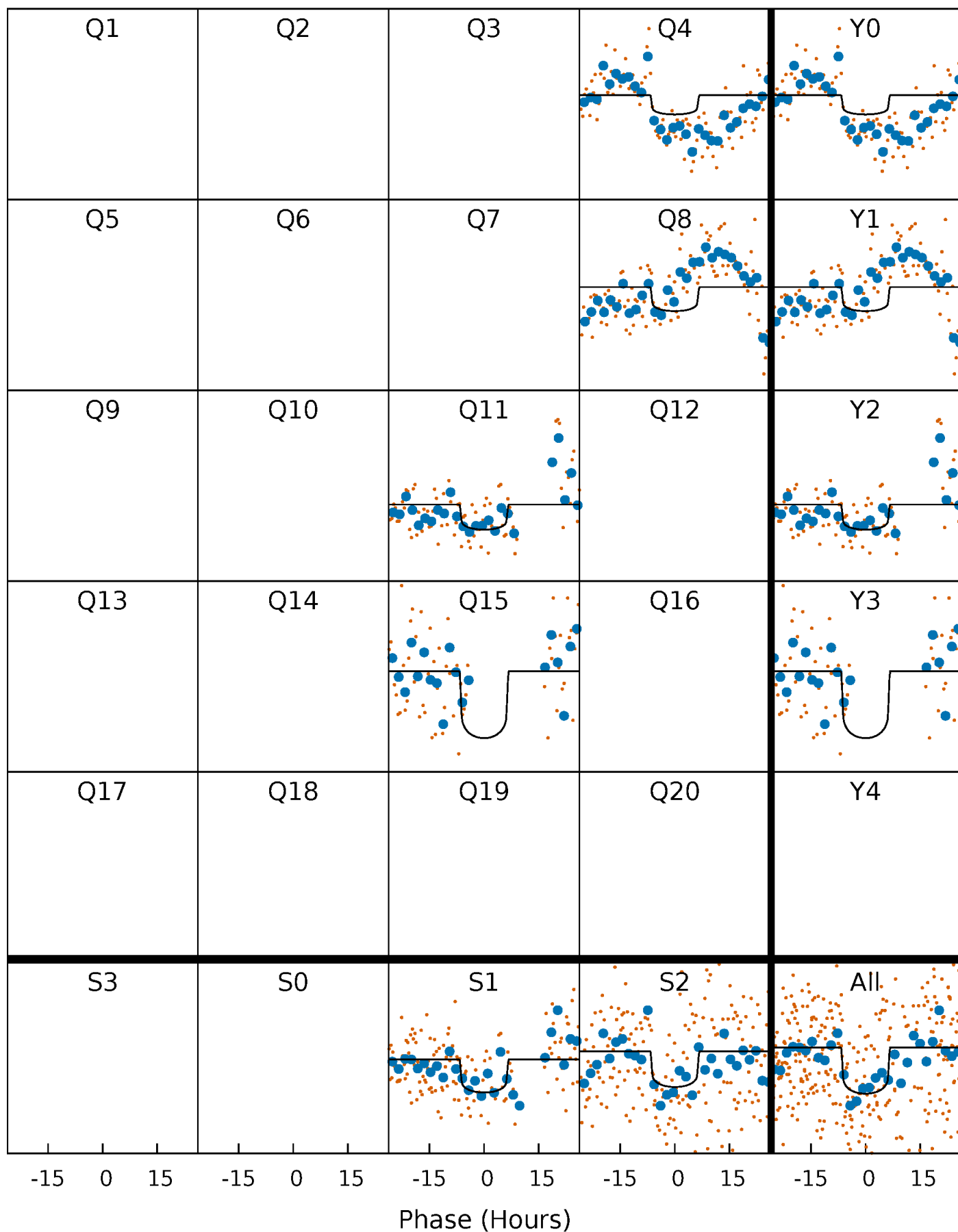
PDC Quarter-Phased Transit Curves

TCE 004457352-01 P=342.621497 Days $T_0=407.701406$ (BKJD)



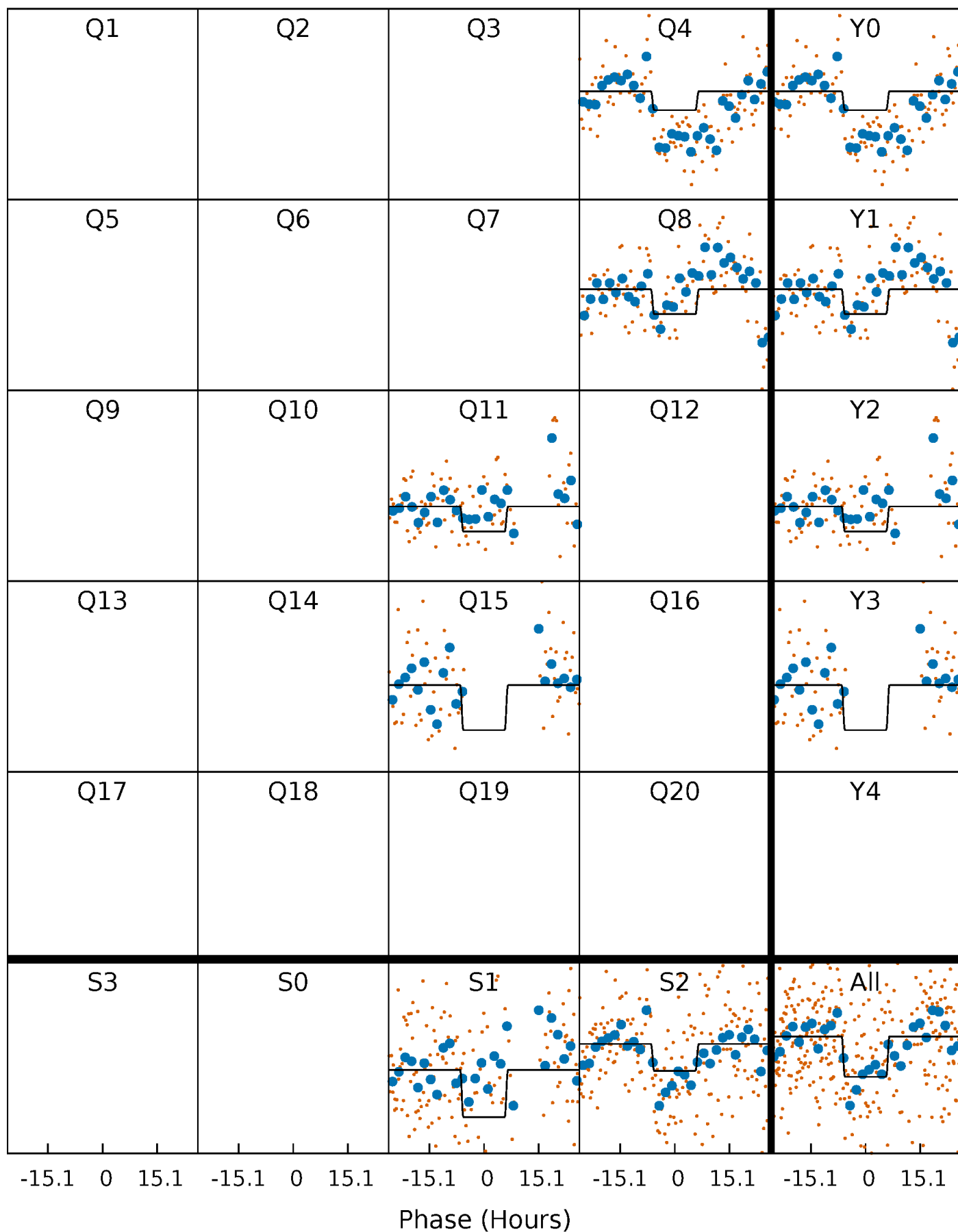
DV Quarter-Phased Transit Curves

TCE 004457352-01 P=342.621497 Days $T_0=407.701406$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

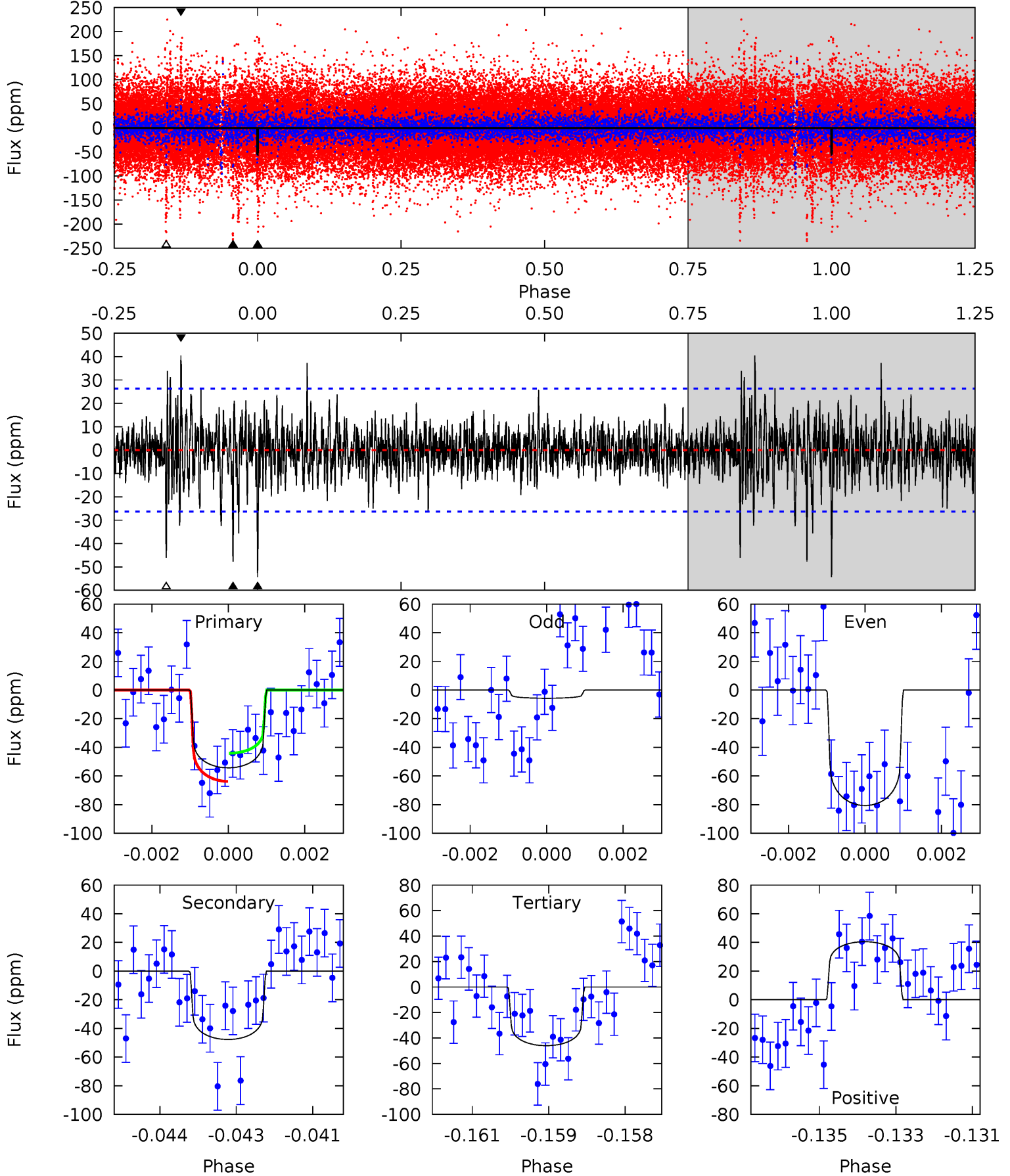
TCE 004457352-01 P=342.636745 Days $T_0=407.701210$ (BKJD)



DV Model-Shift Uniqueness Test

004457352-01, P = 342.621497 Days, E = 65.079909 Days

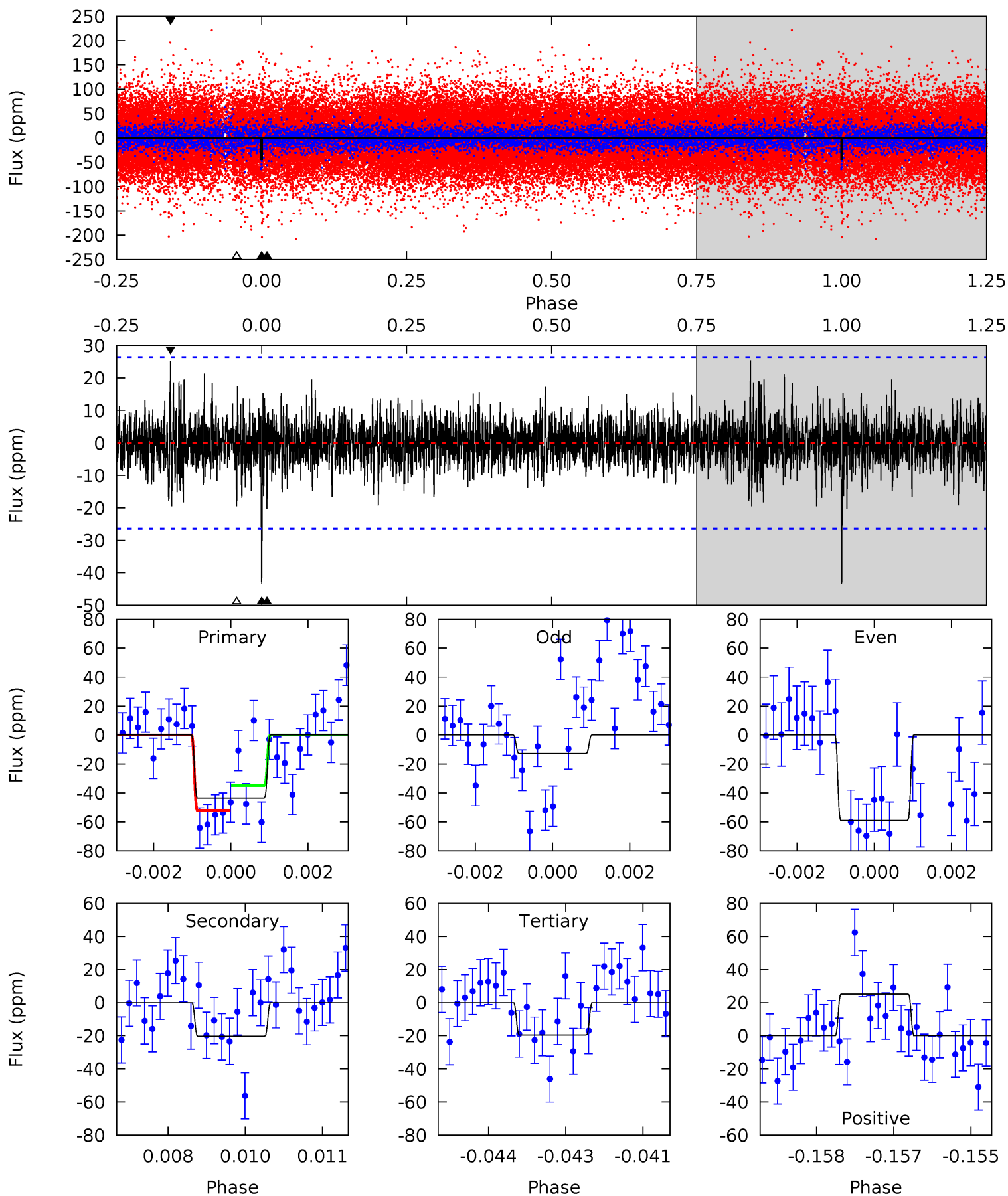
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	9.72	9.37	8.24	5.36	3.15	1.58	1.68	2.81	0.34	1.47	7.34	1.37	0.43	2.00



Alt Model-Shift Uniqueness Test

004457352-01, $P = 342.636745$ Days, $E = 65.064465$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.82	4.13	3.97	5.12	5.37	3.16	1.04	4.85	3.70	0.16	-0.98	4.50	3.64	0.37	1.74



Stellar Parameters For KIC 004457352

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	8534^{+235}_{-403}	$3.673^{+0.450}_{-0.150}$	$0.070^{+0.150}_{-0.550}$	$3.726^{+0.854}_{-1.992}$	$2.386^{+0.328}_{-0.766}$	$0.065^{+0.344}_{-0.023}$
	+3%/-5%	+12%/-4%	+214%/-786%	+23%/-53%	+14%/-32%	+530%/-36%
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 004457352-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-48 ± 5	$2.83^{+1.16}_{-1.04}$	879^{+67}_{-105}	8021^{+2446}_{-1179}	5399^{+7787}_{-2567}
Alt.	-20 ± 5	$2.33^{+1.06}_{-0.93}$	871^{+77}_{-105}	6882^{+2474}_{-1150}	3089^{+5798}_{-1645}

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

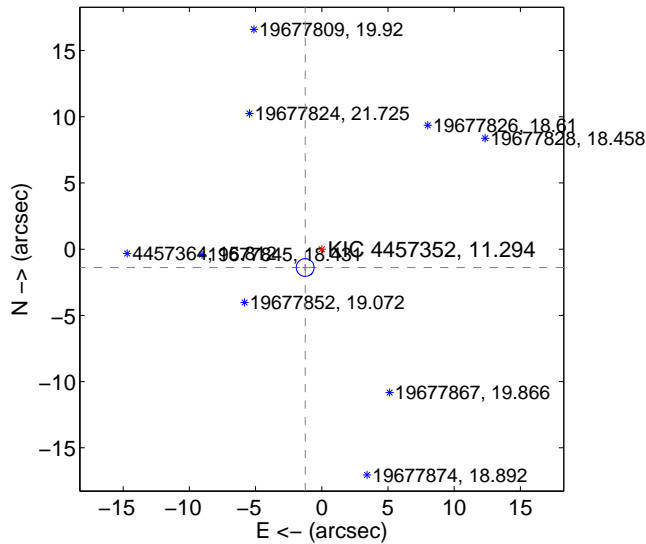
Supplemental centroid analysis for 004457352-01. **Kepler magnitude: 11.29.** Transit SNR 5.49

There are 1 quarters with good PRF difference image offsets

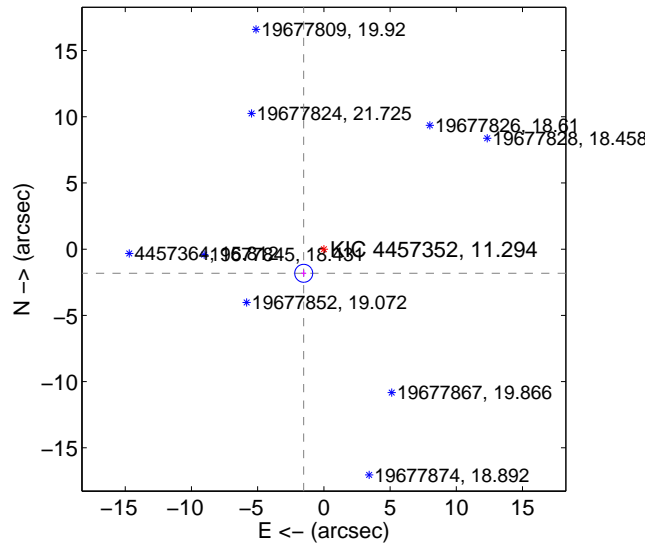
The direct PRF centroid is offset from the target star catalog position by about 0.51 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.869 ± 0.224	8.35	1.253 ± 0.189	-1.386 ± 0.248
PRF-fit source offset from KIC position	2.374 ± 0.226	10.51	1.523 ± 0.189	-1.822 ± 0.248
photometric centroid source offset	0.55 ± 4.89	0.11	-0.54 ± 4.82	-0.08 ± 7.33

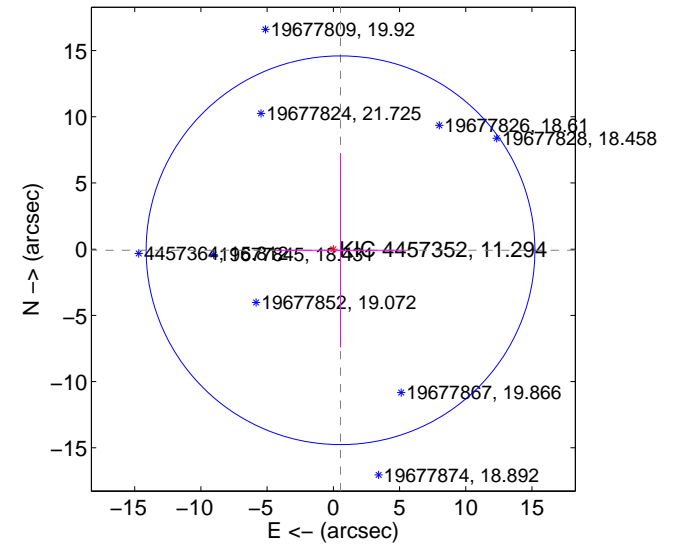
offset from difference PRF-fit to OOT PRF-fit



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.

Q1 no difference image



Q1 no OOT image



Q2 no difference image



Q2 no OOT image



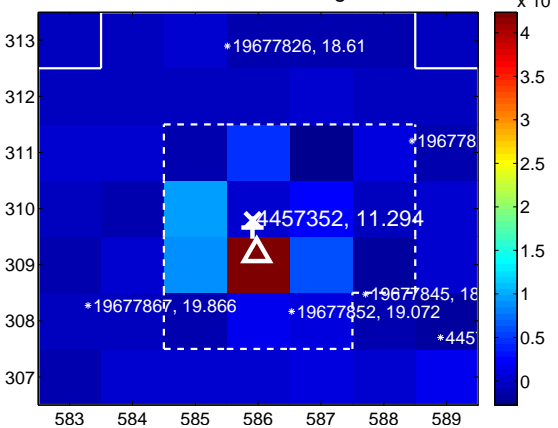
Q3 no difference image



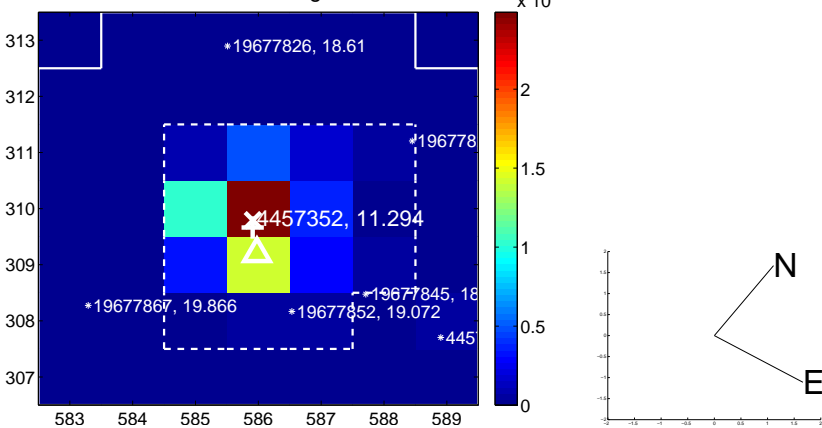
Q3 no OOT image



Q4 difference image



Q4 OOT image



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 no difference image



Q6 no OOT image



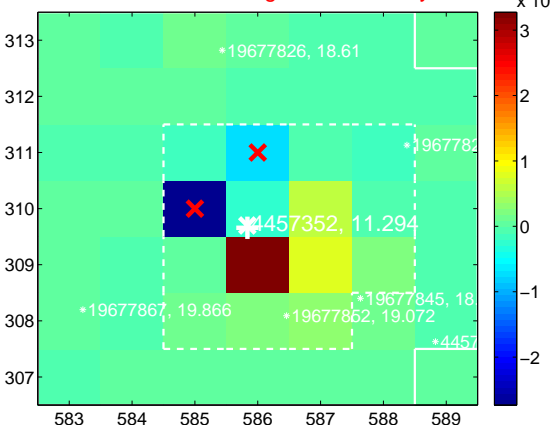
Q7 no difference image



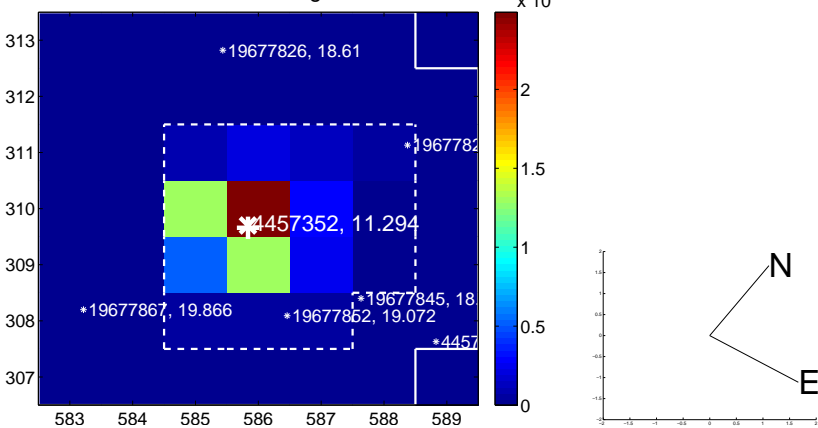
Q7 no OOT image



Q8 difference image. Poor Quality



Q8 OOT image



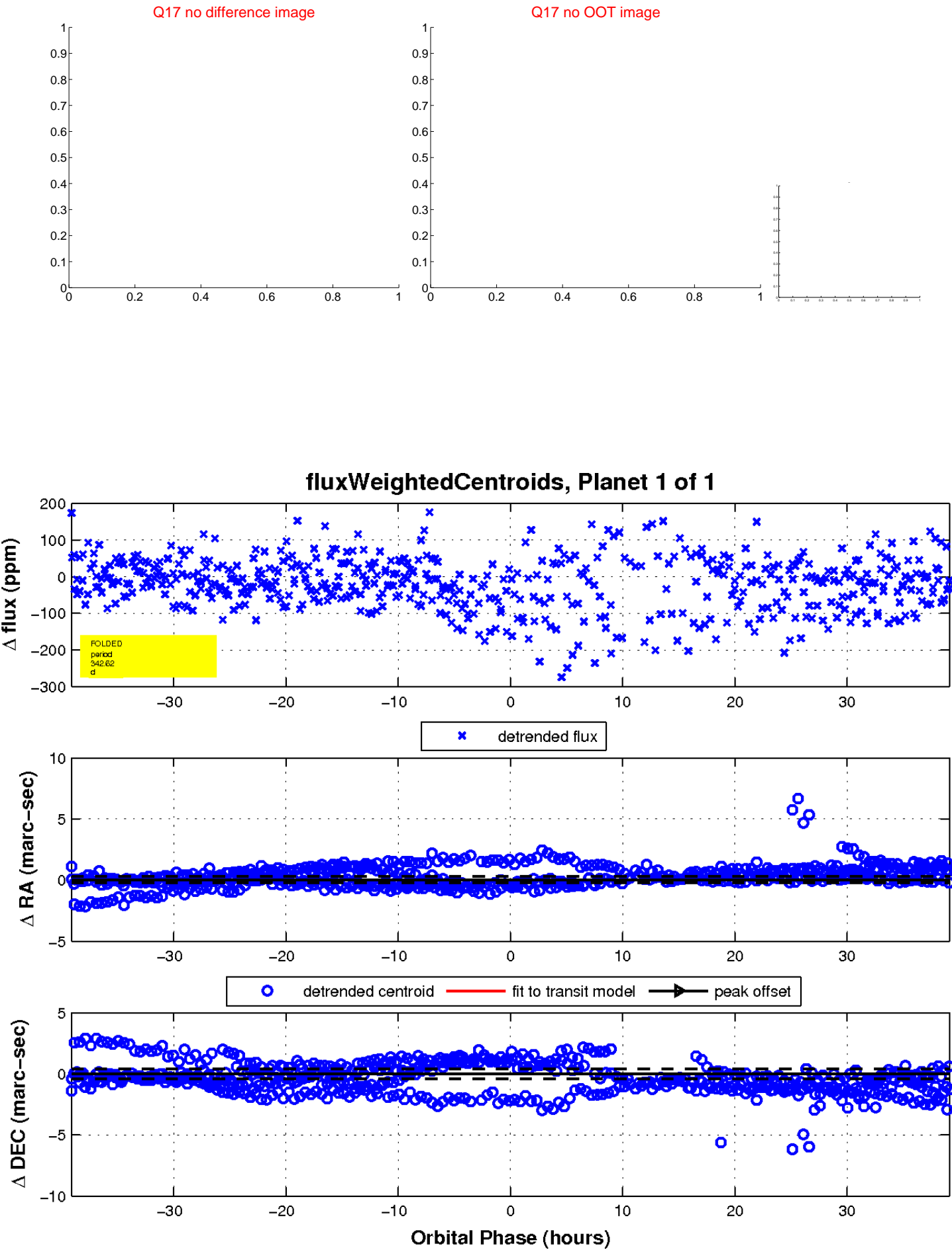
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

