

KIC 008242022

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})
008242022-01	OBS	No	369.083334	232.772994	1774.0	26.816	7.9	14.0	1.08	6210	5.18	1.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008242022-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL_SKYE—LPP_DV—ALL_TRANS_CHASES—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.

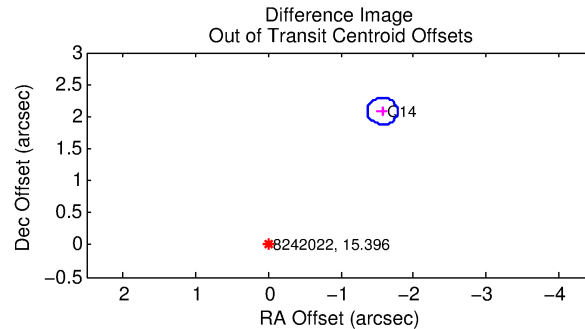
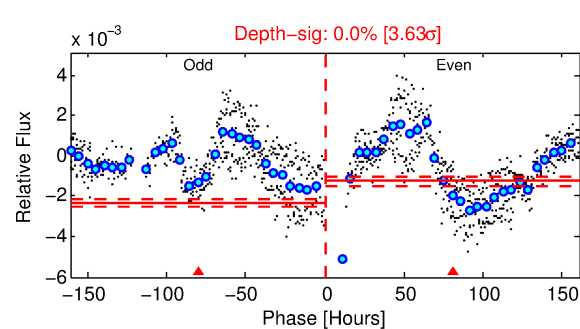
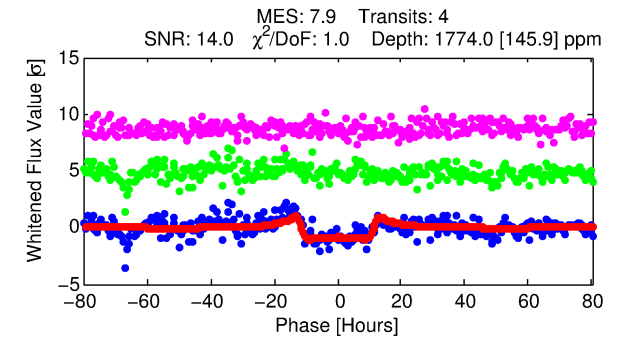
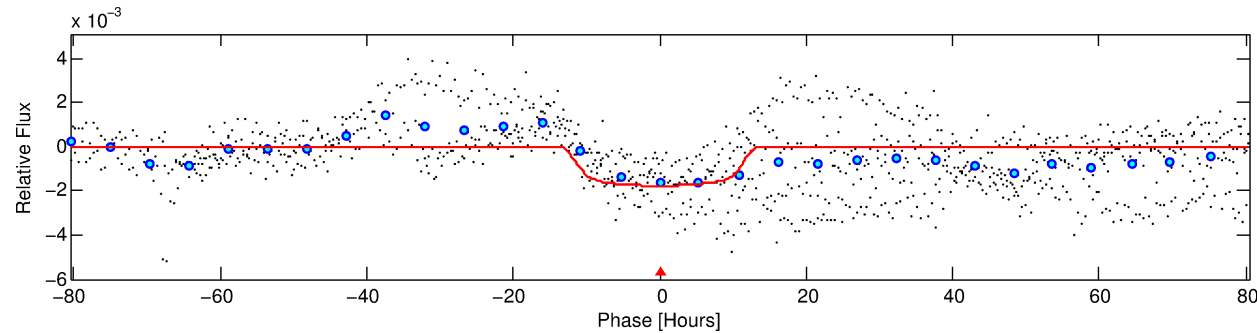
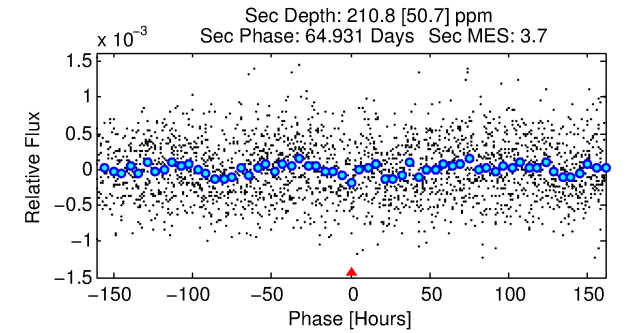
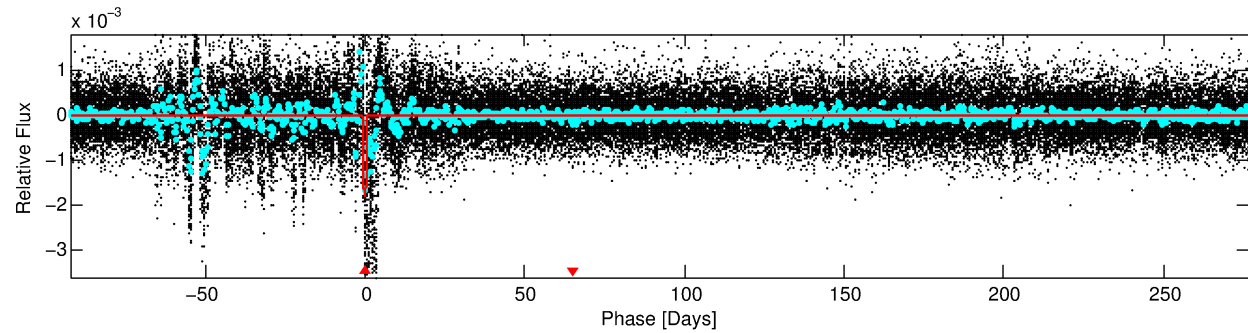
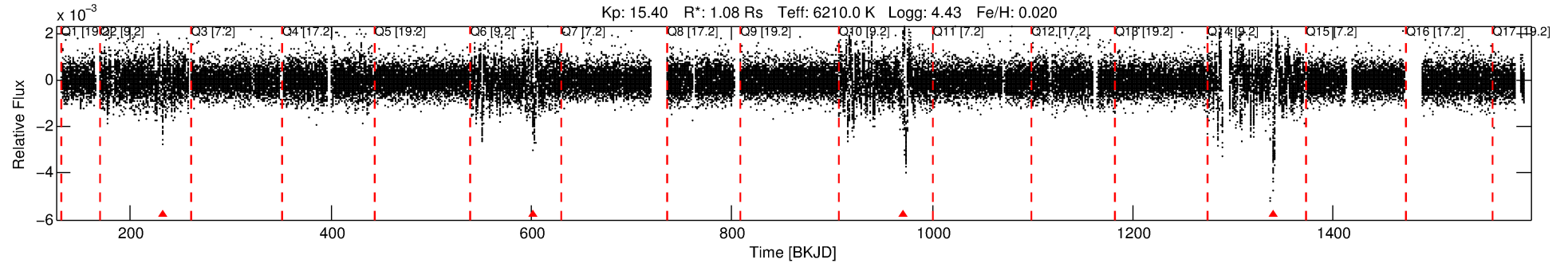
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008242022-01

No Significant Match Found

DV One-Page Summary

KIC: 8242022 Candidate: 1 of 1 Period: 369.083 d



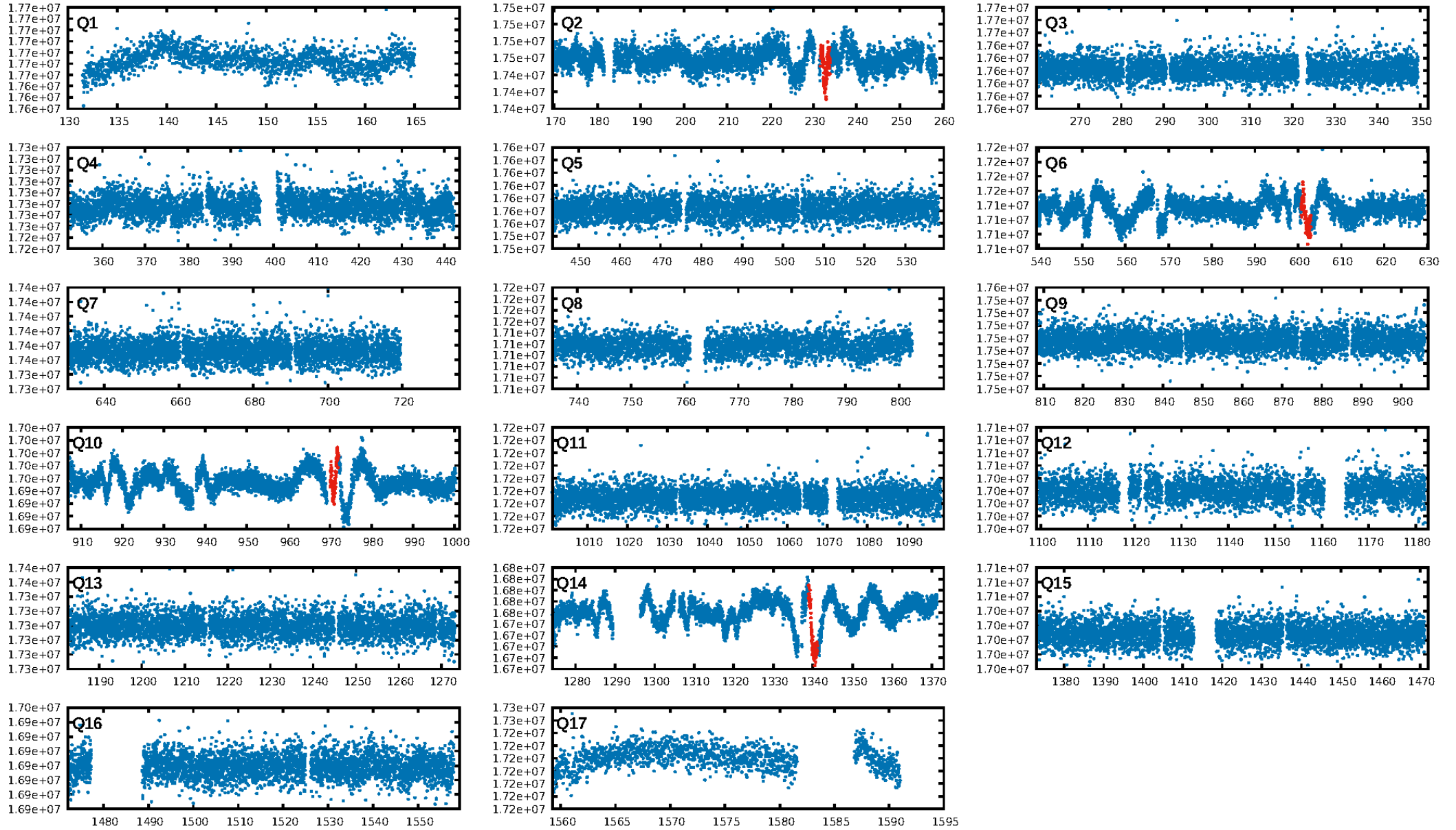
DV Fit Results:

Period = 369.08333 [0.00959] d
Epoch = 232.7730 [0.0178] BKJD
Rp/R* = 0.0439 [0.0023]
a/R* = 63.06 [8.01]
b = 0.85 [0.04]
Seff = 1.41 [0.61]
Teq = 278 [30] K
Rp = 5.18 [1.73] Re
a = 1.0513 [0.2938] AU
Ag = 4778.08 [2317.82] [2.06σ]
Teff = 3569 [271] K [12.08σ]

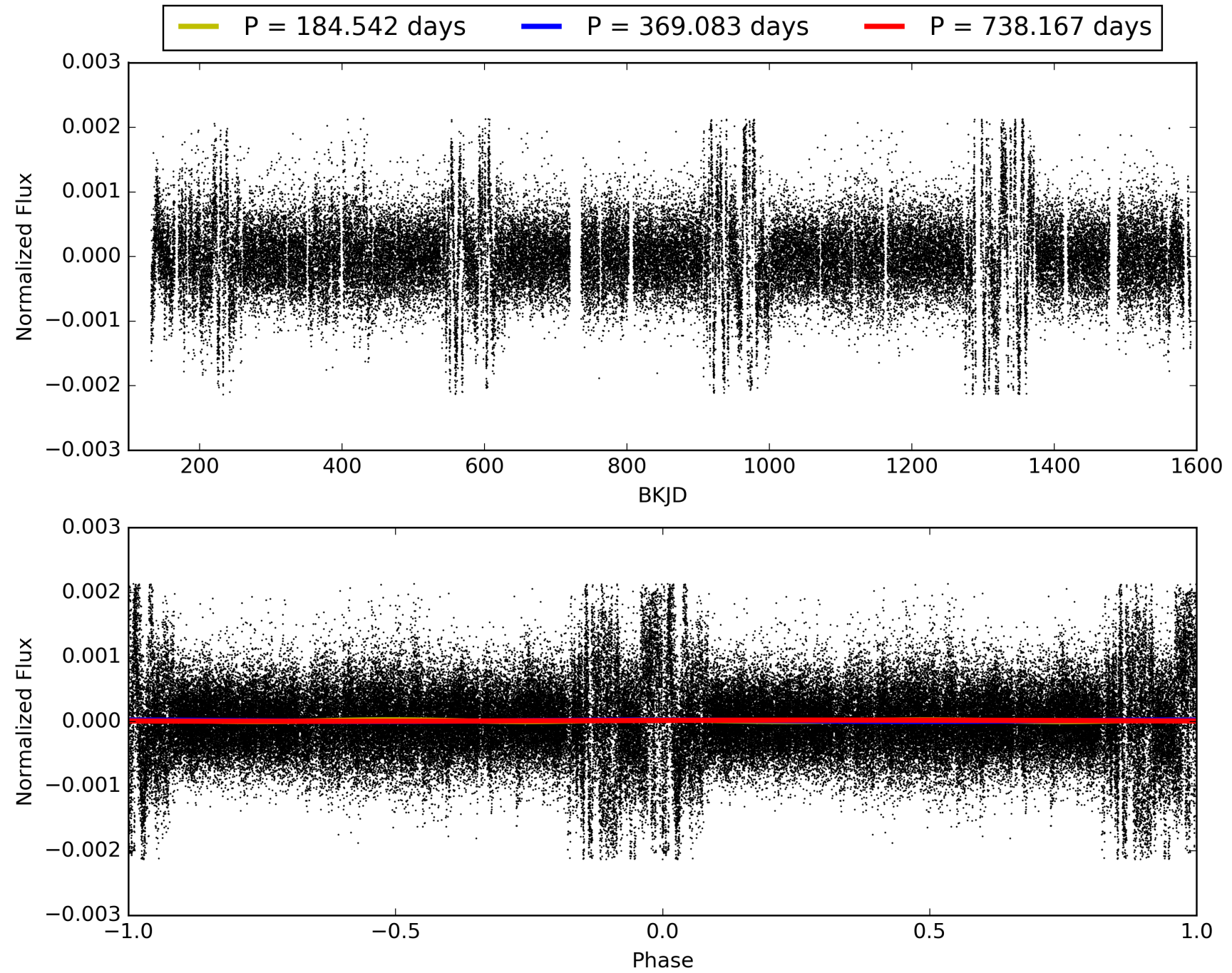
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.7%
ModelChiSquareGoF-sig: 99.9%
Bootstrap-pfa: 2.19e-10
RollingBand-fgt: 0.00 [0/4]
GhostDiagnostic-chr: -41.06
Centroid-sig: 0.0%
Centroid-so: 4.498 arcsec [2.79σ]
OotOffset-rm: 2.611 arcsec [37.36σ]
KicOffset-rm: 2.412 arcsec [34.51σ]
OotOffset-st: 1/0/0/0 [1]
KicOffset-st: 1/0/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [1/1]

TCE 008242022-01, PDC Light Curves

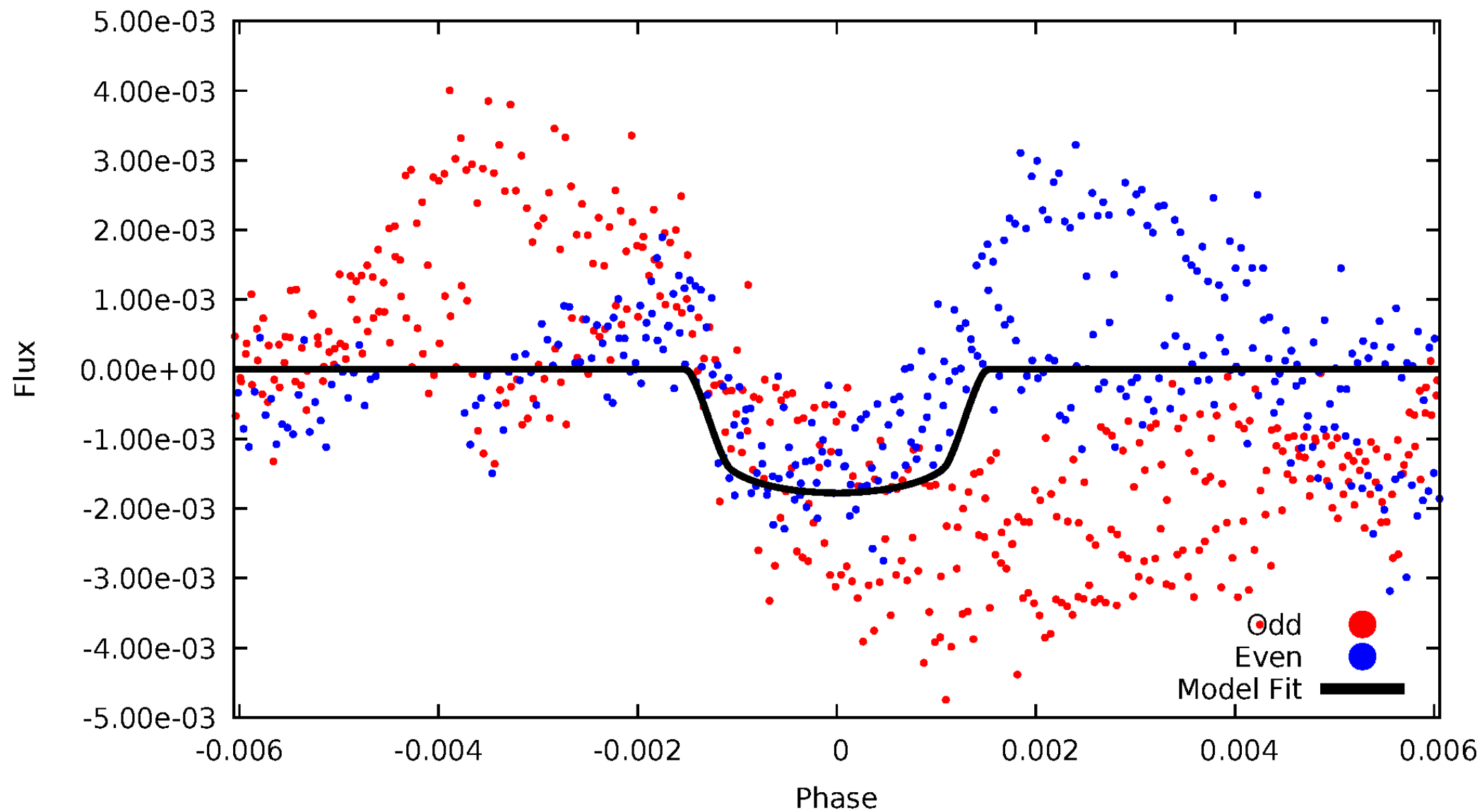


TCE 008242022-01



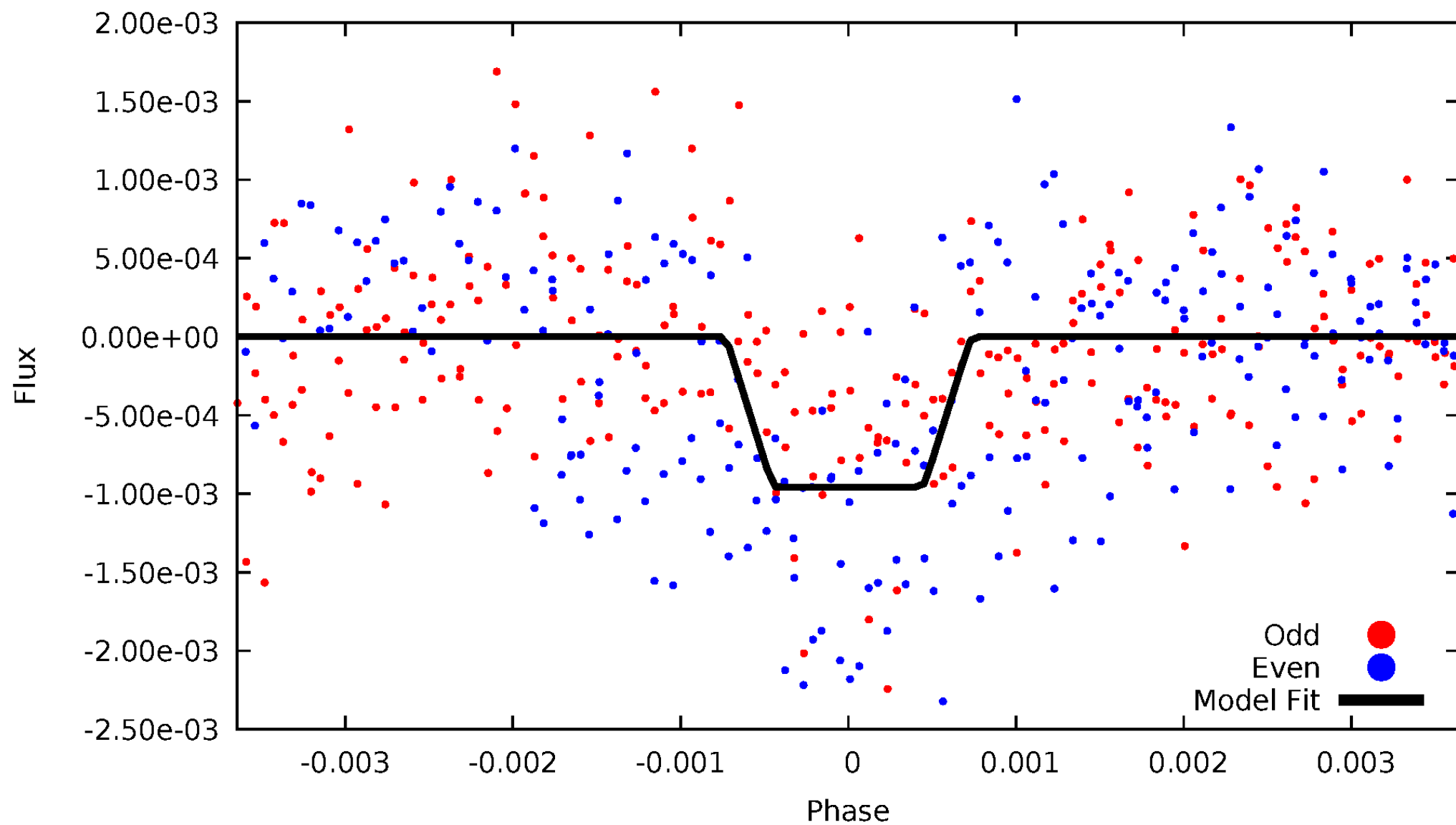
DV Odd/Even

TCE 008242022-01



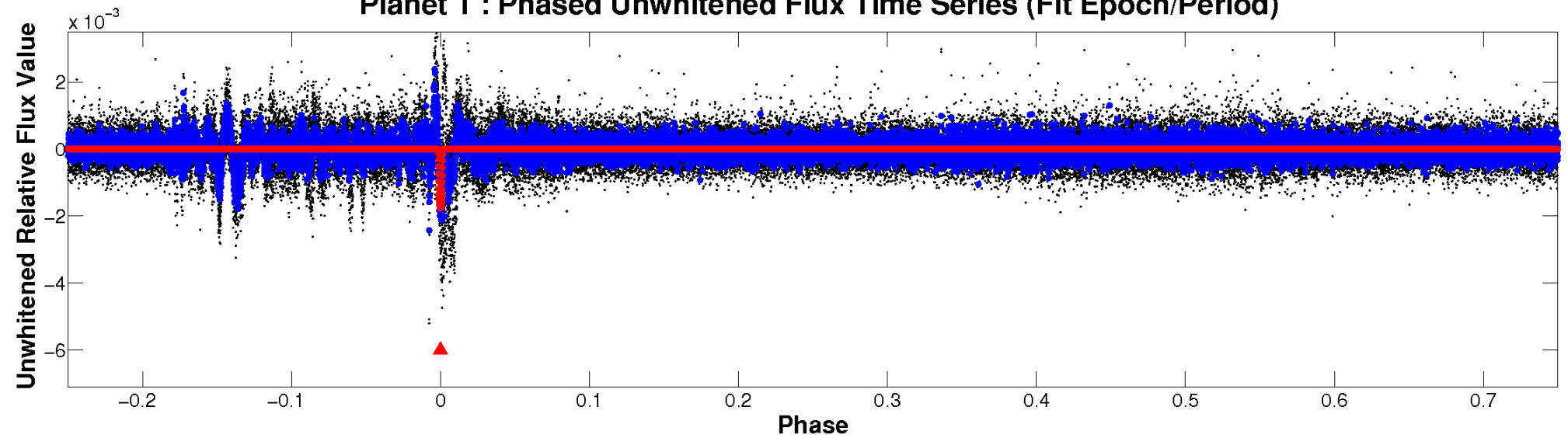
ALT Odd/Even

TCE 008242022-01

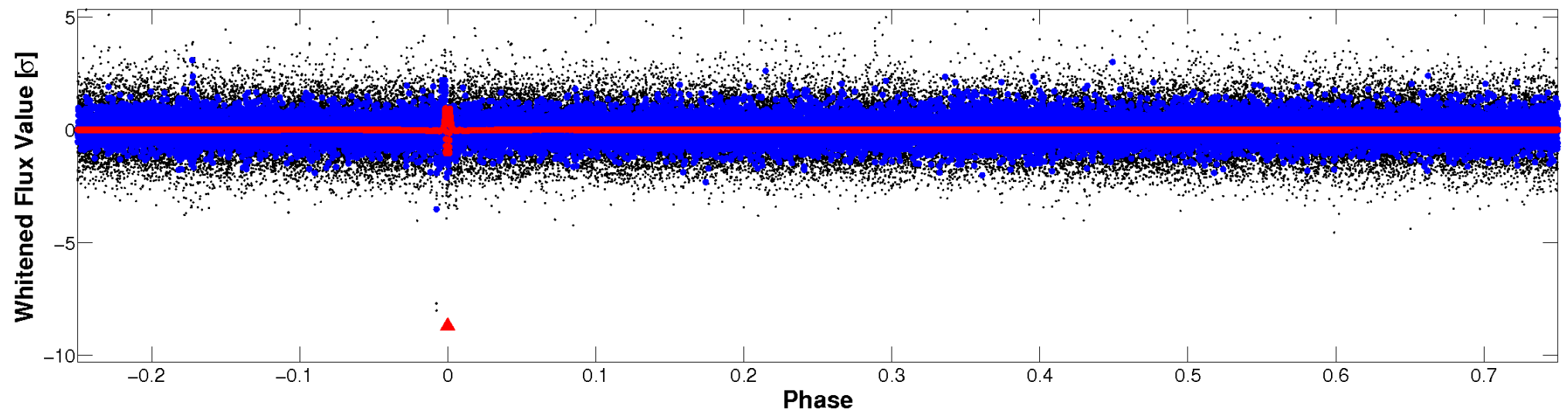


Non-Whitened Vs. Whitened Light Curve

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

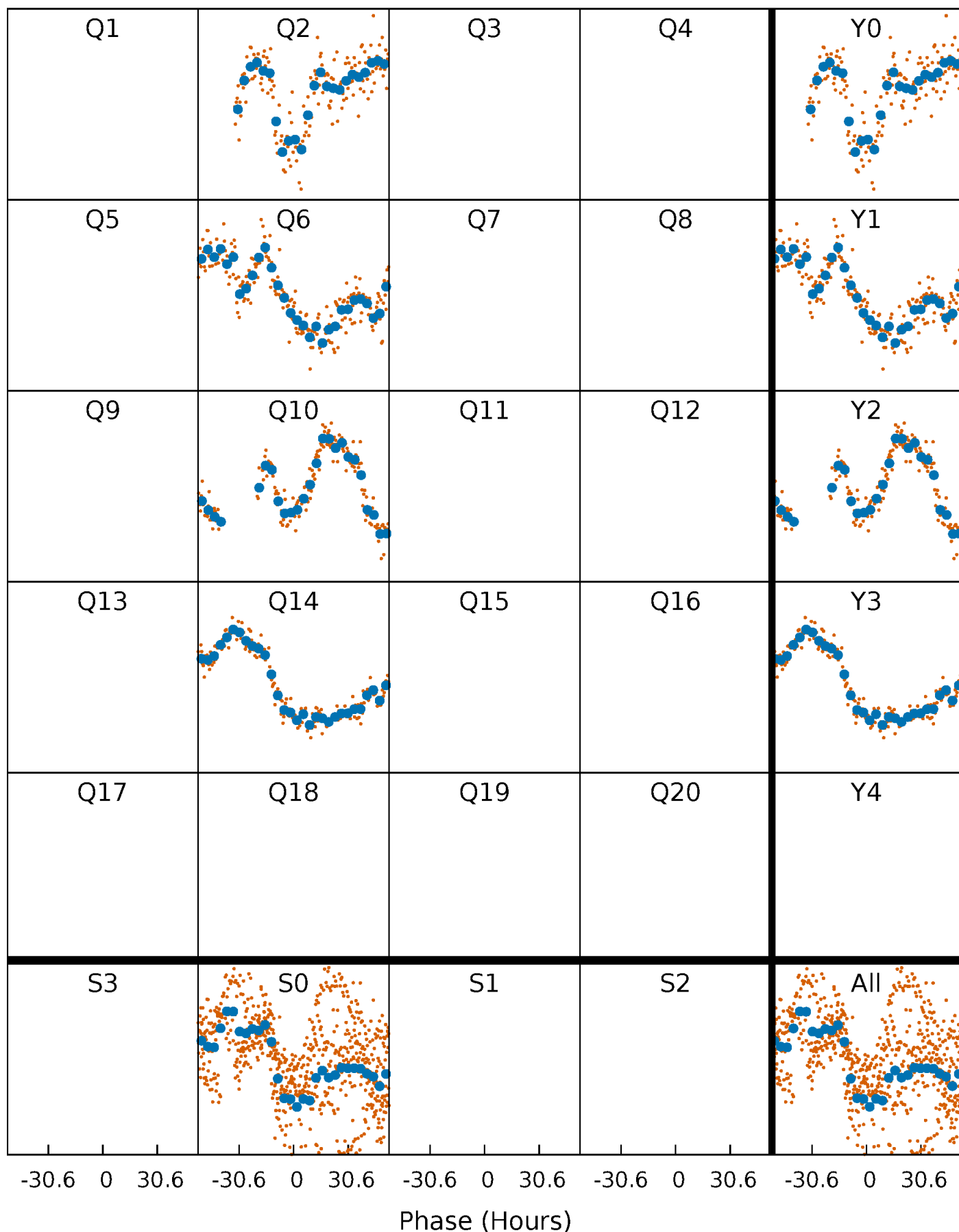


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



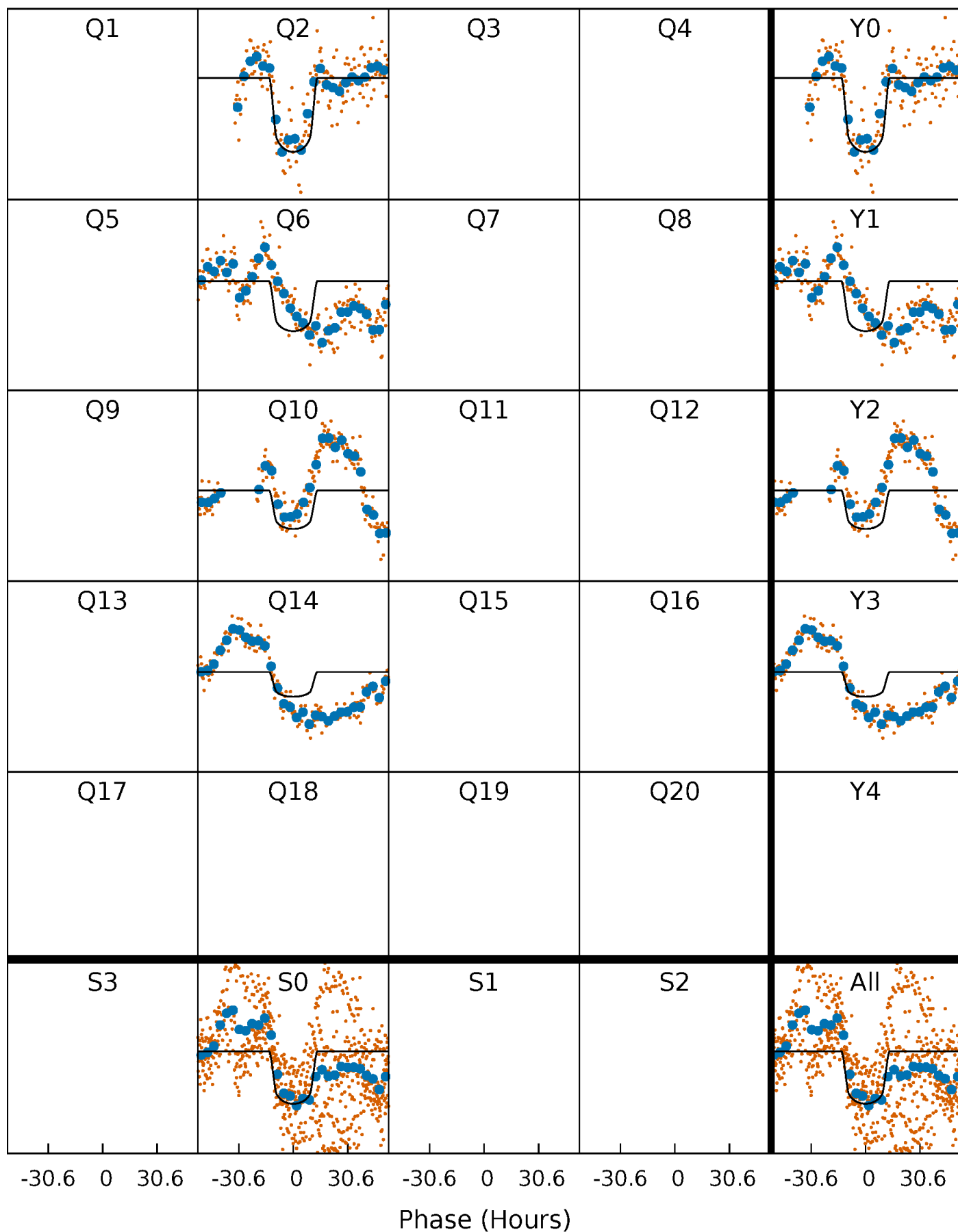
PDC Quarter-Phased Transit Curves

TCE 008242022-01 P=369.083334 Days $T_0=232.772994$ (BKJD)



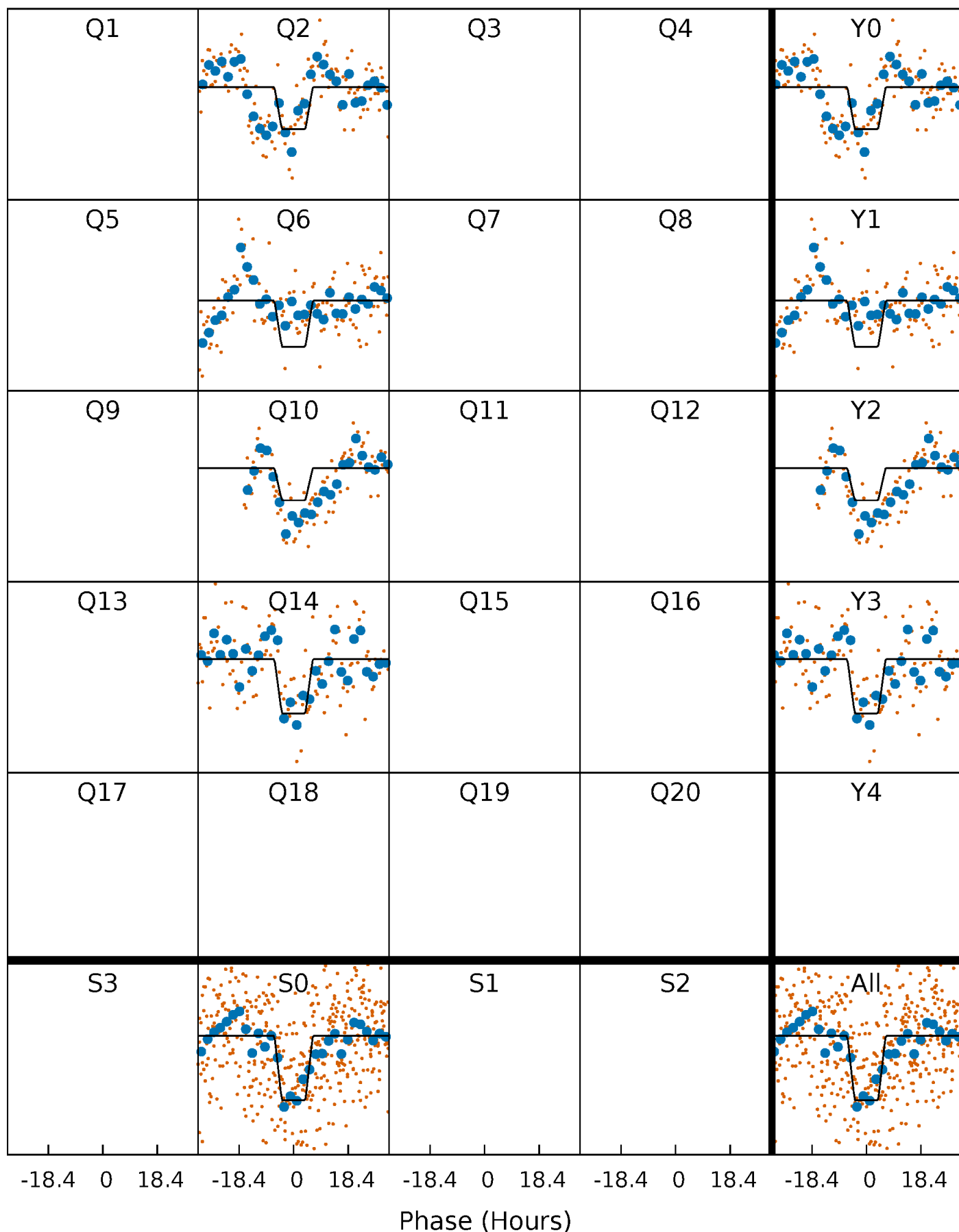
DV Quarter-Phased Transit Curves

TCE 008242022-01 P=369.083334 Days $T_0=232.772994$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

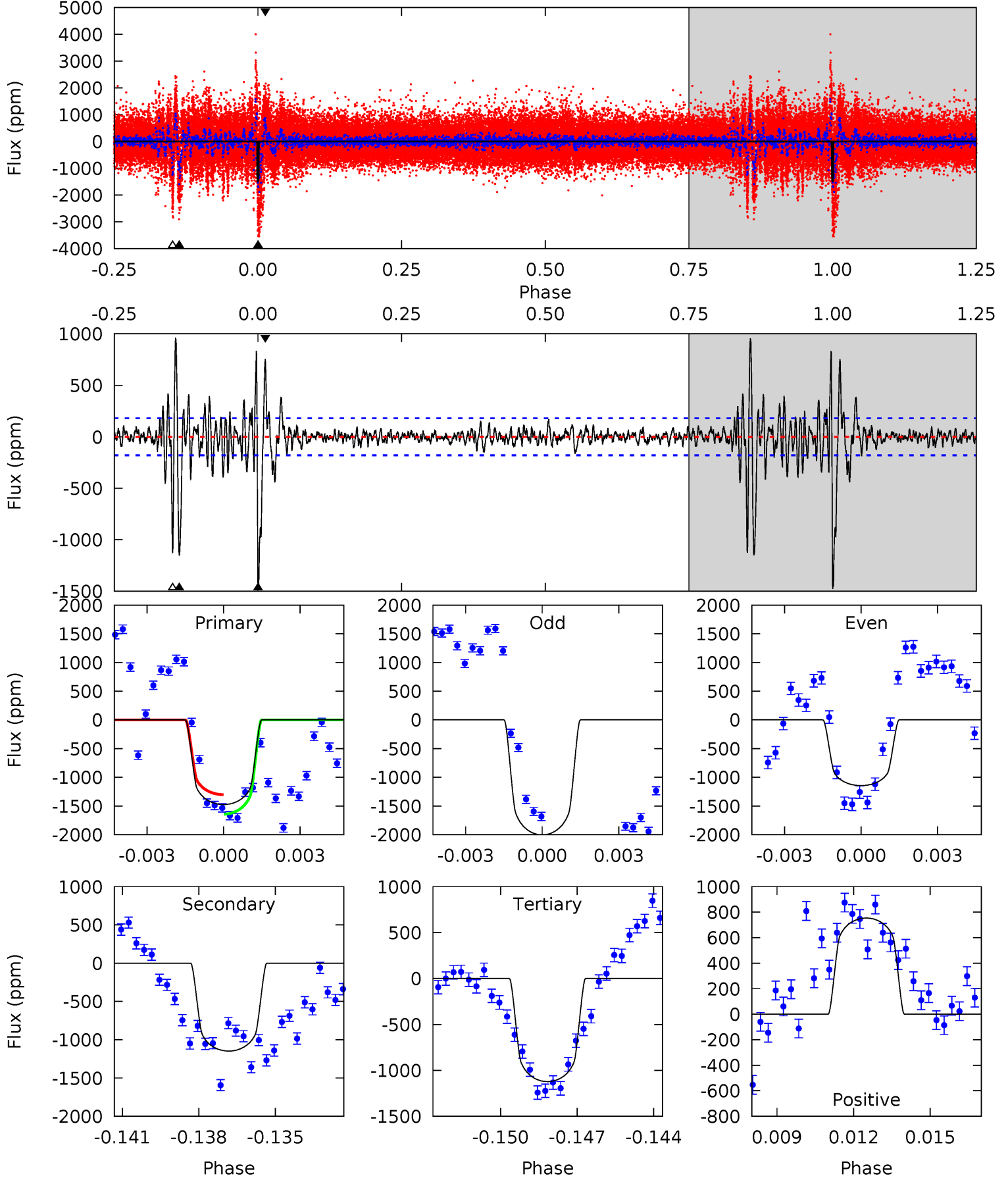
TCE 008242022-01 P=368.907492 Days $T_0=232.964731$ (BKJD)



DV Model-Shift Uniqueness Test

008242022-01, P = 369.083334 Days, E = 232.772994 Days

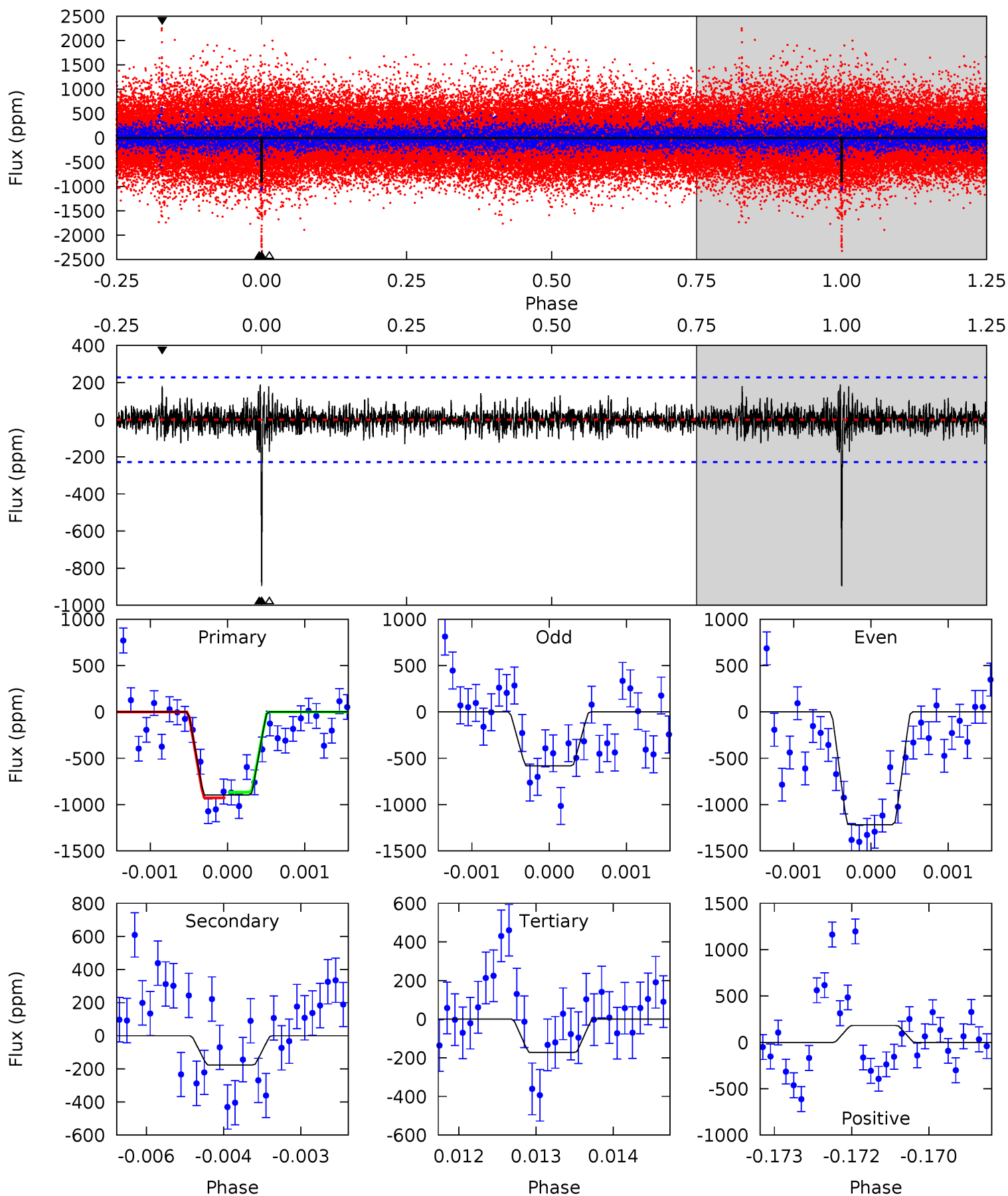
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
43.0	33.5	32.7	22.0	5.25	2.96	4.19	10.3	21.0	0.74	11.5	12.7	1.22	0.39	4.98



Alt Model-Shift Uniqueness Test

008242022-01, P = 368.907492 Days, E = 232.964731 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.2	4.17	4.08	4.28	5.39	3.19	0.92	17.1	16.9	0.10	-0.11	7.49	1.07	0.17	0.71



Stellar Parameters For KIC 008242022

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6210^{+173}_{-238}	$4.427^{+0.056}_{-0.224}$	$0.020^{+0.250}_{-0.300}$	$1.080^{+0.357}_{-0.119}$	$1.137^{+0.151}_{-0.151}$	$1.273^{+0.388}_{-0.701}$
	+3%/-4%	+1%/-5%	+1250%/-1500%	+33%/-11%	+13%/-13%	+30%/-55%
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 008242022-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1148 ± 34	$5.37^{+0.93}_{-0.58}$	395^{+32}_{-22}	5465^{+207}_{-214}	23615^{+5528}_{-6239}
Alt.	-177 ± 42	$3.81^{+0.66}_{-0.44}$	397^{+31}_{-20}	4283^{+247}_{-259}	6976^{+2785}_{-2362}

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 $A_{\text{obs}} \gg 1.0$

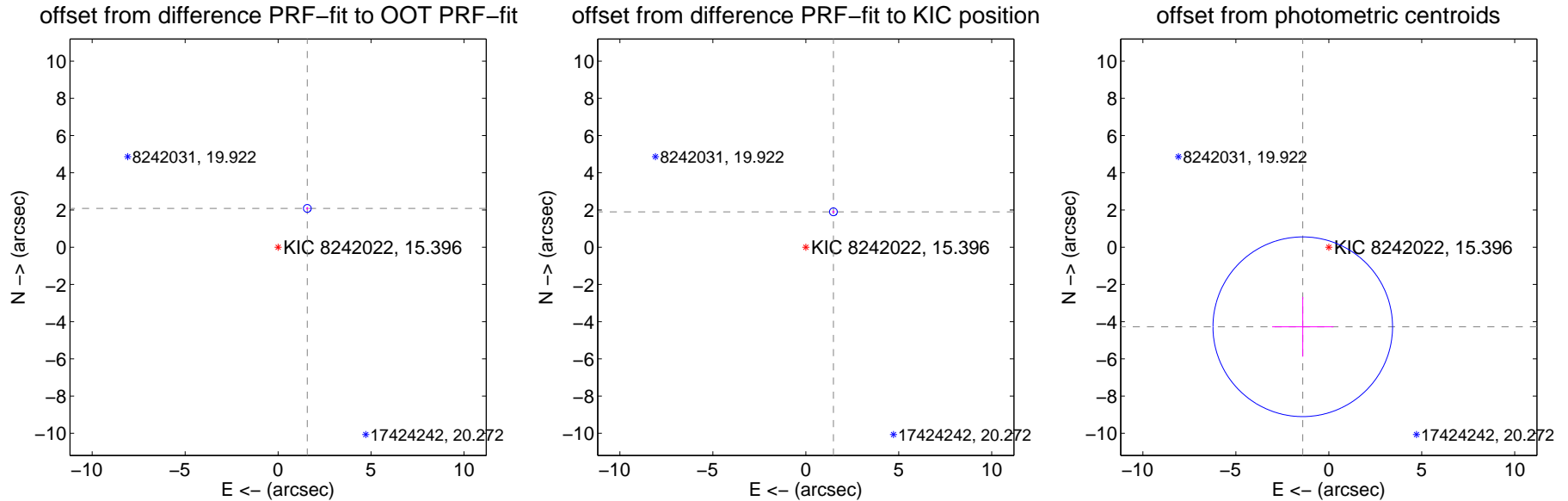
DV Centroid Data

Supplemental centroid analysis for 008242022-01. Kepler magnitude: 15.40. Transit SNR 14.05

There are 1 quarters with good PRF difference image offsets

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

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.611 ± 0.070	37.36	-1.572 ± 0.070	2.084 ± 0.070
PRF-fit source offset from KIC position	2.412 ± 0.070	34.51	-1.484 ± 0.070	1.901 ± 0.070
photometric centroid source offset	4.50 ± 1.61	2.79	1.40 ± 1.65	-4.27 ± 1.61



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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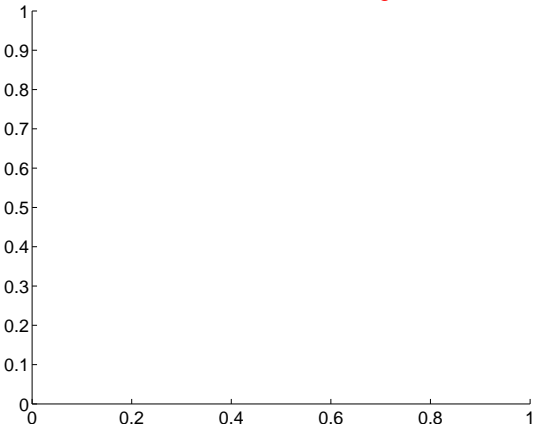


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

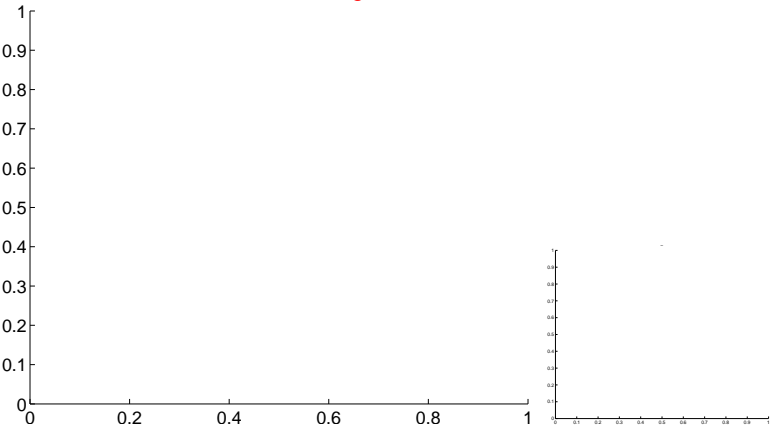


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

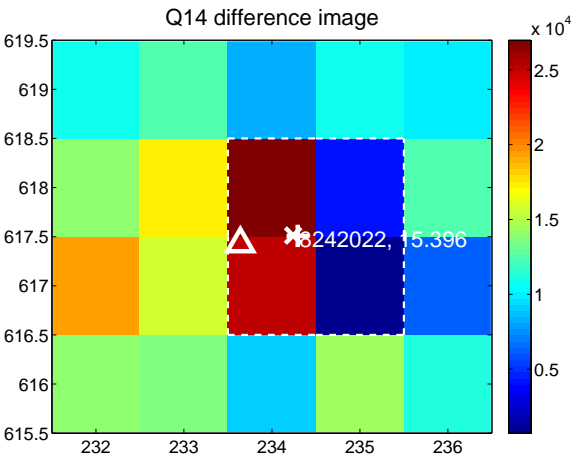
Q13 no difference image



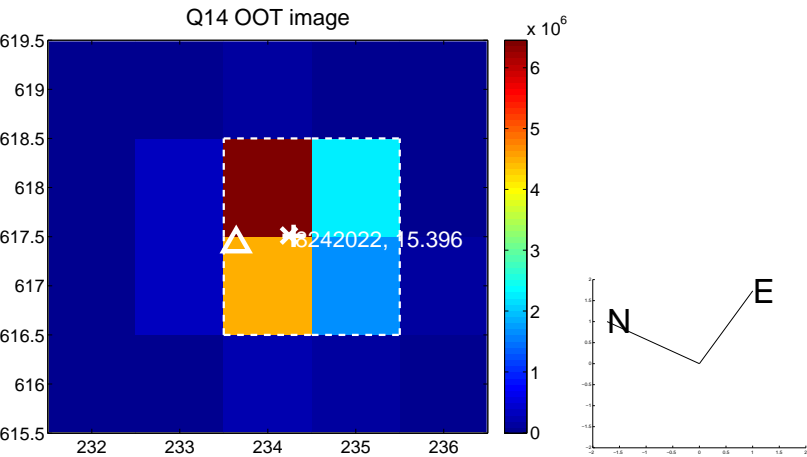
Q13 no OOT image



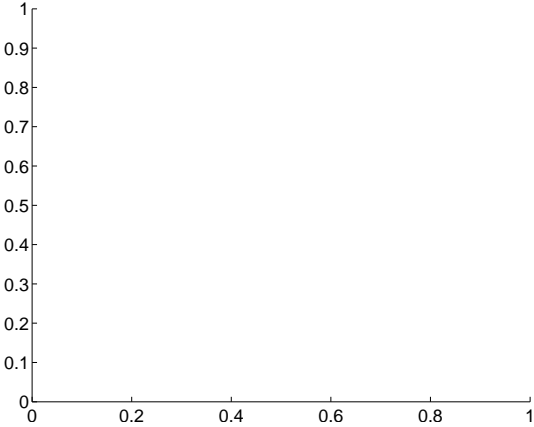
Q14 difference image



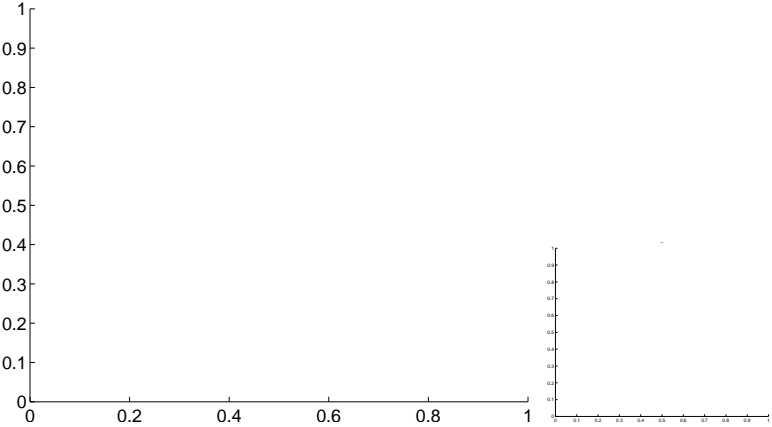
Q14 OOT image



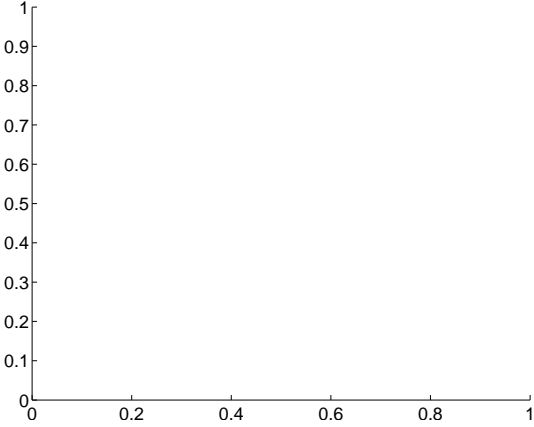
Q15 no difference image



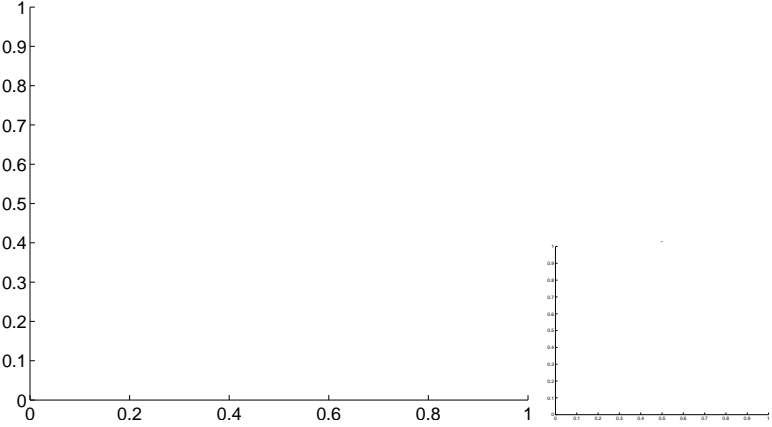
Q15 no OOT image



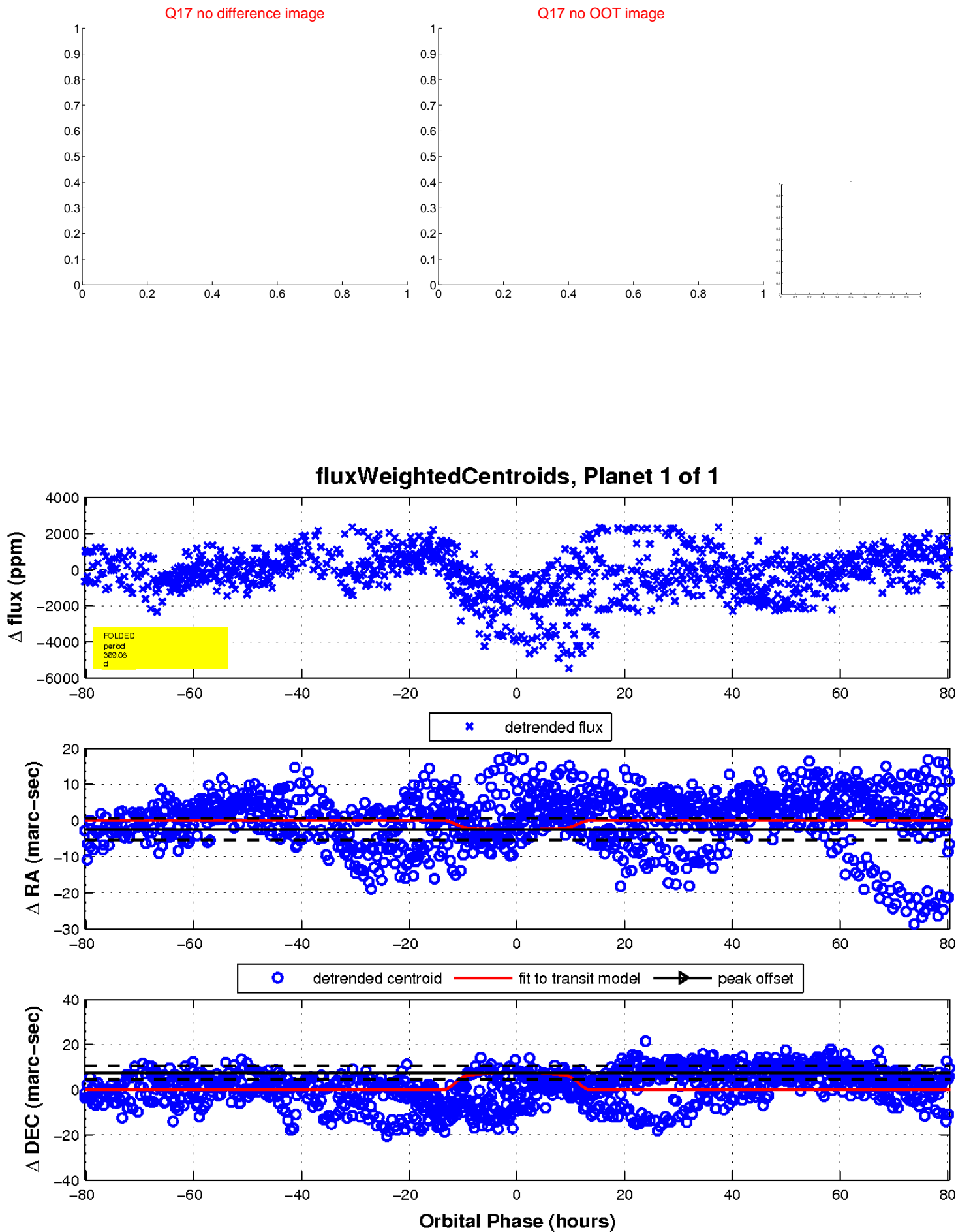
Q16 no difference image



Q16 no OOT image



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



UKIRT Image

Declination

