

KIC 004273076

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})
004273076-01	OBS	No	506.395504	177.131252	465.0	16.159	7.7	8.1	3.05	5667	7.72	4.22

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004273076-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—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.

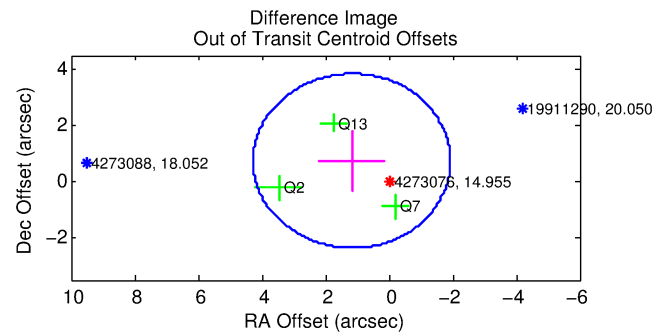
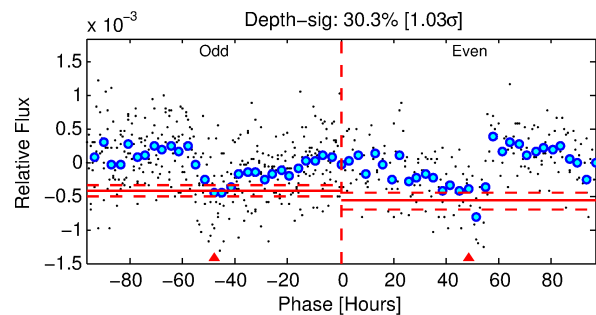
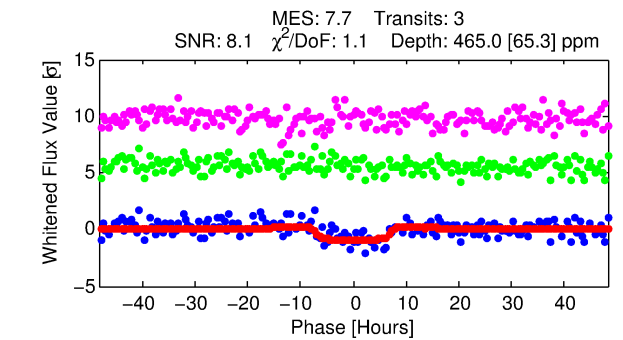
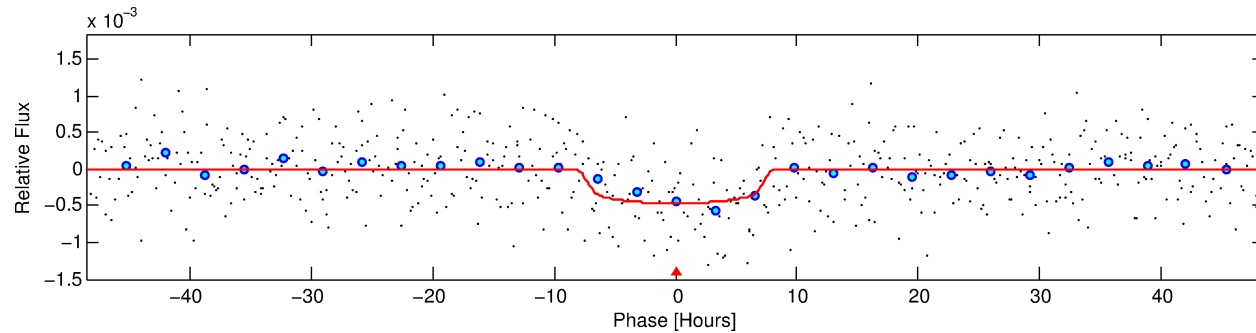
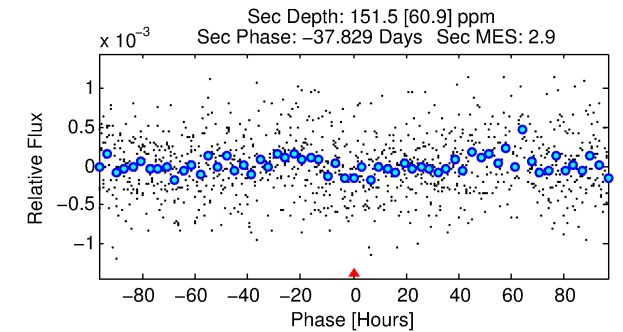
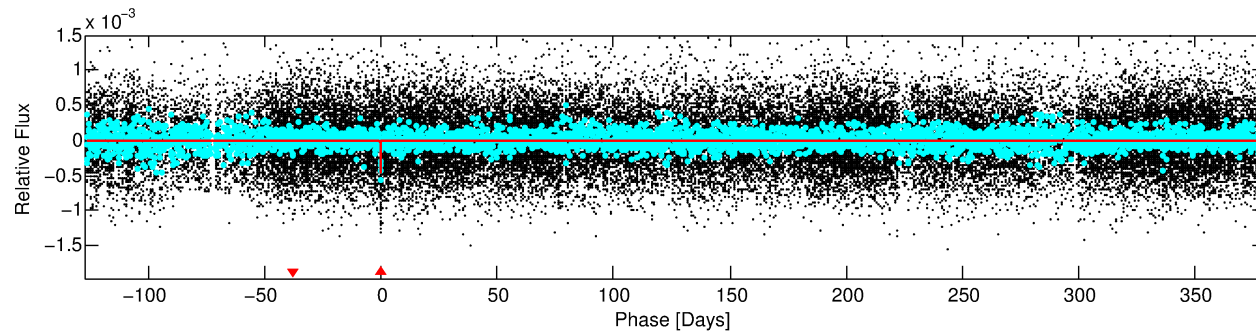
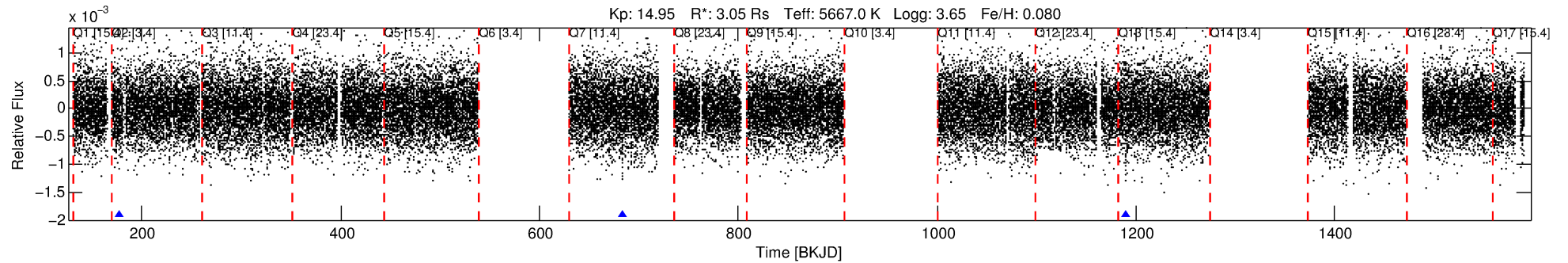
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004273076-01

No Significant Match Found

DV One-Page Summary

KIC: 4273076 Candidate: 1 of 1 Period: 506.396 d



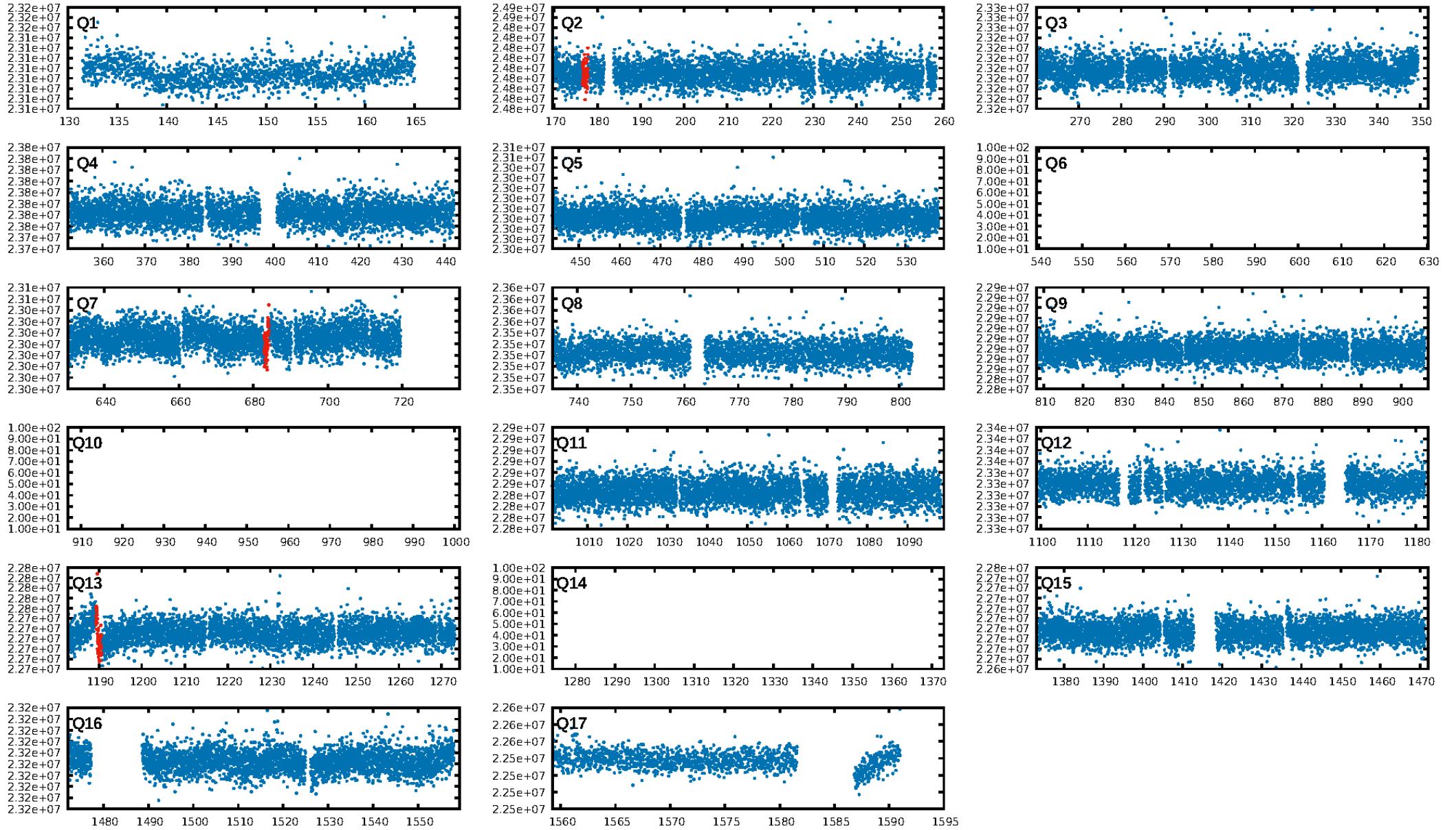
DV Fit Results:

Period = 506.39550 [0.02363] d
Epoch = 177.1313 [0.0299] BKJD
Rp/R* = 0.0232 [0.0044]
a/R* = 123.96 [96.74]
b = 0.88 [0.20]
Seff = 4.22 [1.96]
Teq = 366 [42] K
Rp = 7.72 [3.08] Re
a = 1.4284 [0.4382] AU
Ag = 2854.34 [2055.10] [1.39 σ]
Teffp = 4131 [574] K [6.54 σ]

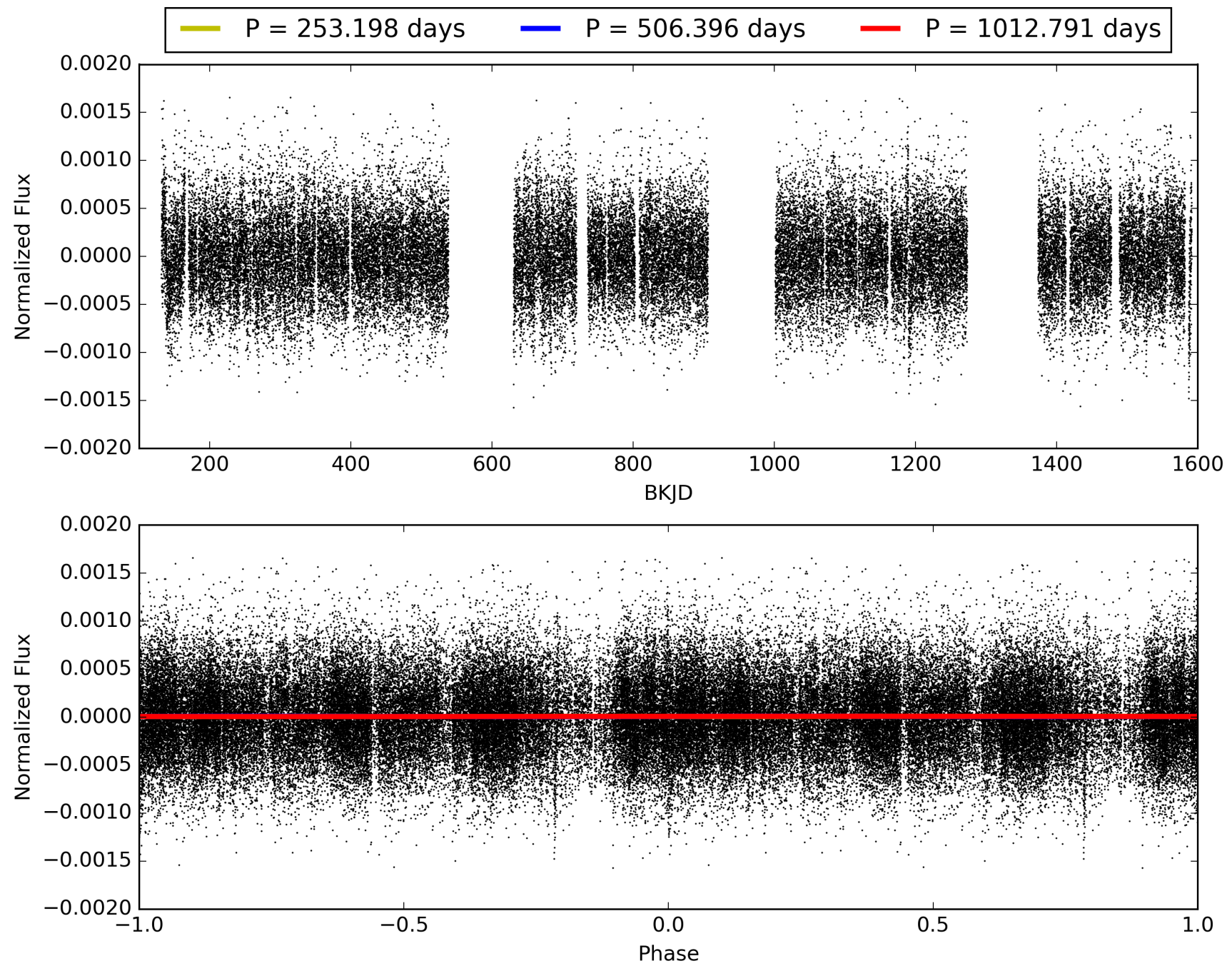
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 2.5%
ModelChiSquareGof-sig: 97.6%
Bootstrap-pfa: 2.48e-15
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -11
Centroid-sig: 7.4%
Centroid-so: 2.749 arcsec [1.63 σ]
OotOffset-rm: 1.386 arcsec [1.34 σ]
KicOffset-rm: 1.376 arcsec [1.34 σ]
OotOffset-st: 1/1/0/1 [3]
KicOffset-st: 1/1/0/1 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 004273076-01, PDC Light Curves

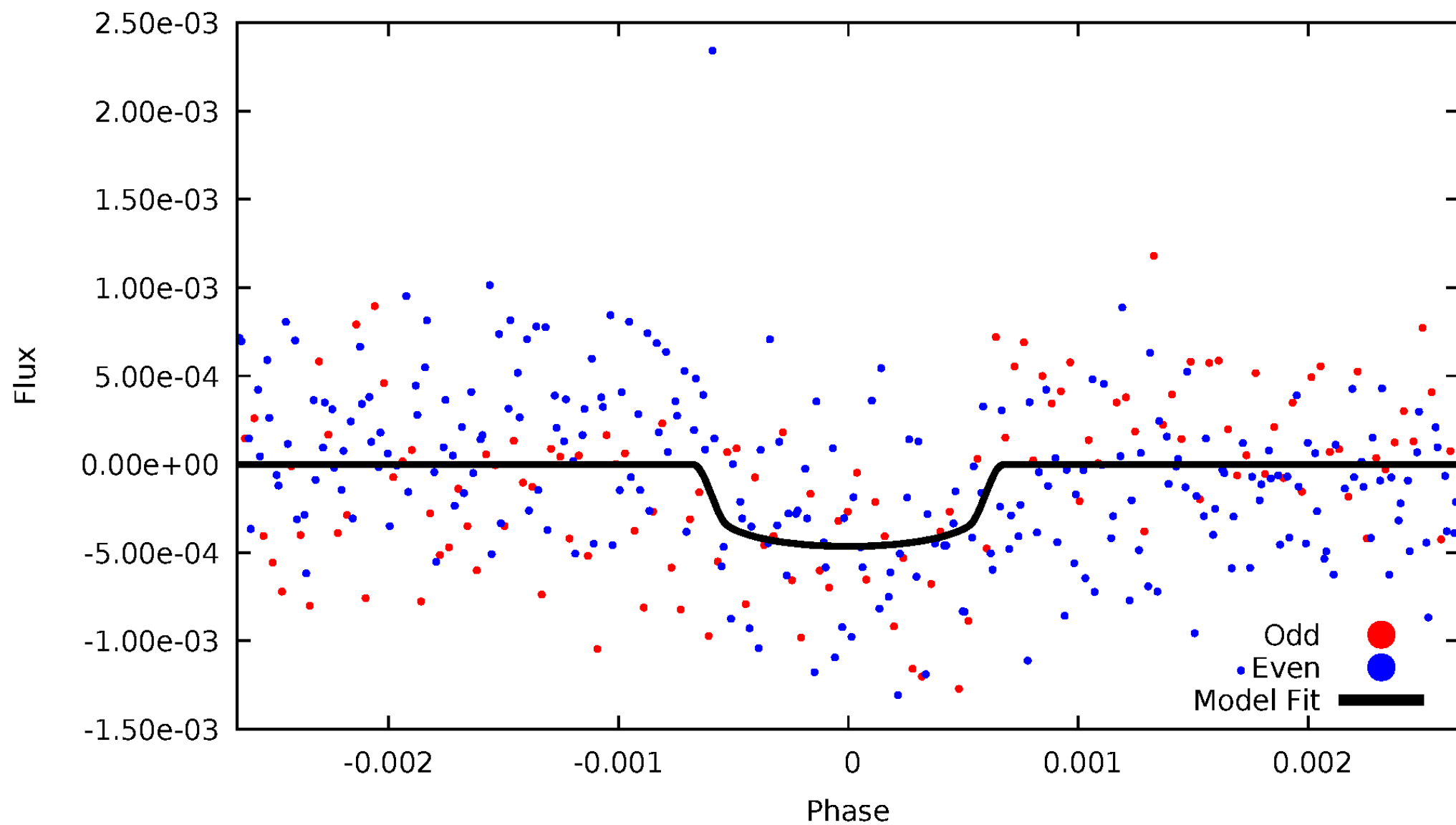


TCE 004273076-01



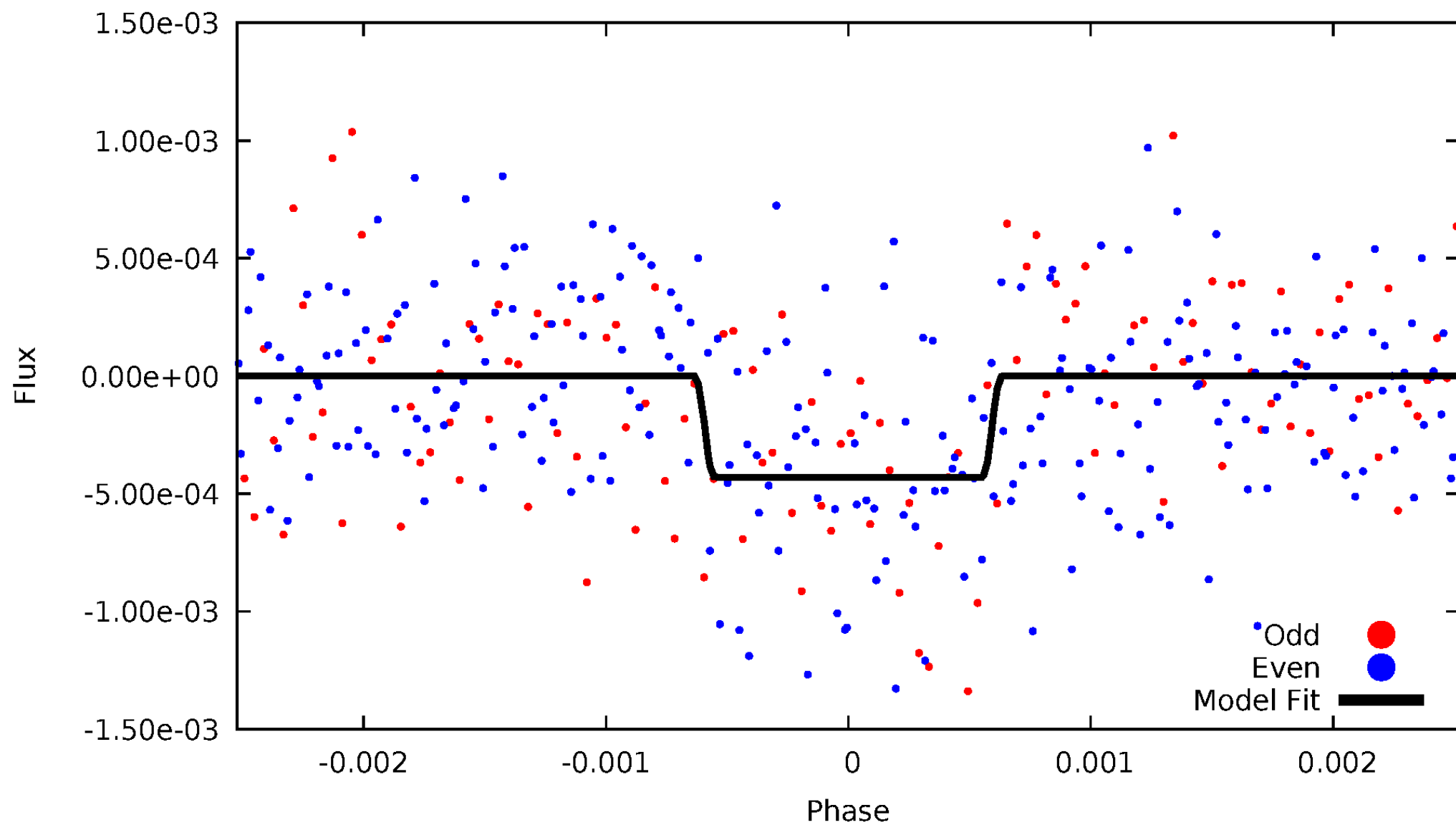
DV Odd/Even

TCE 004273076-01

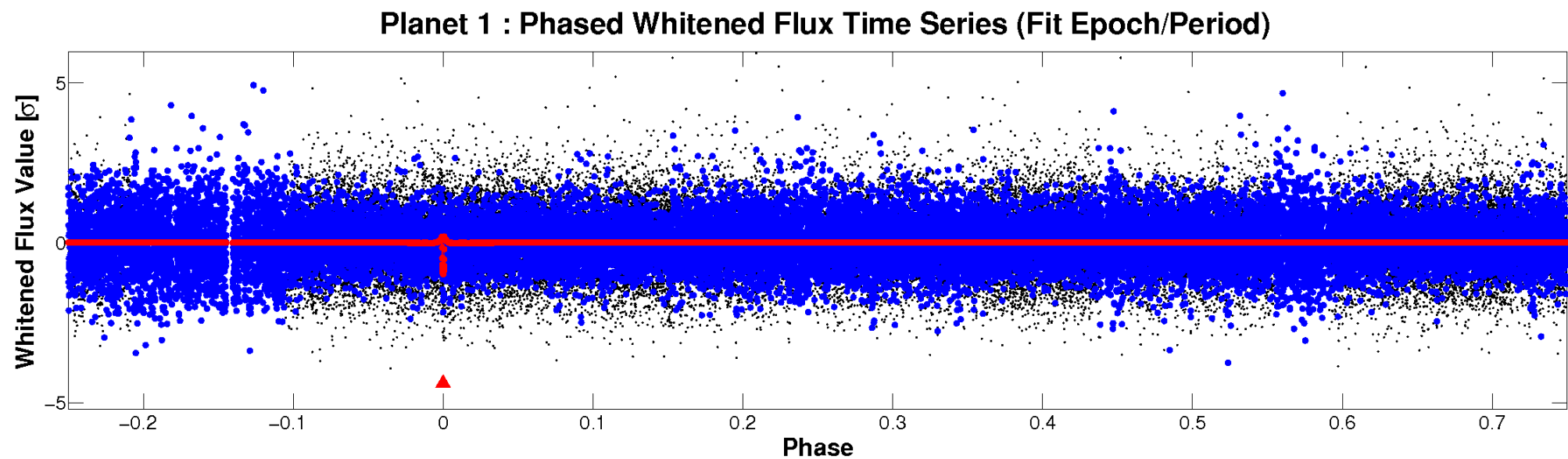
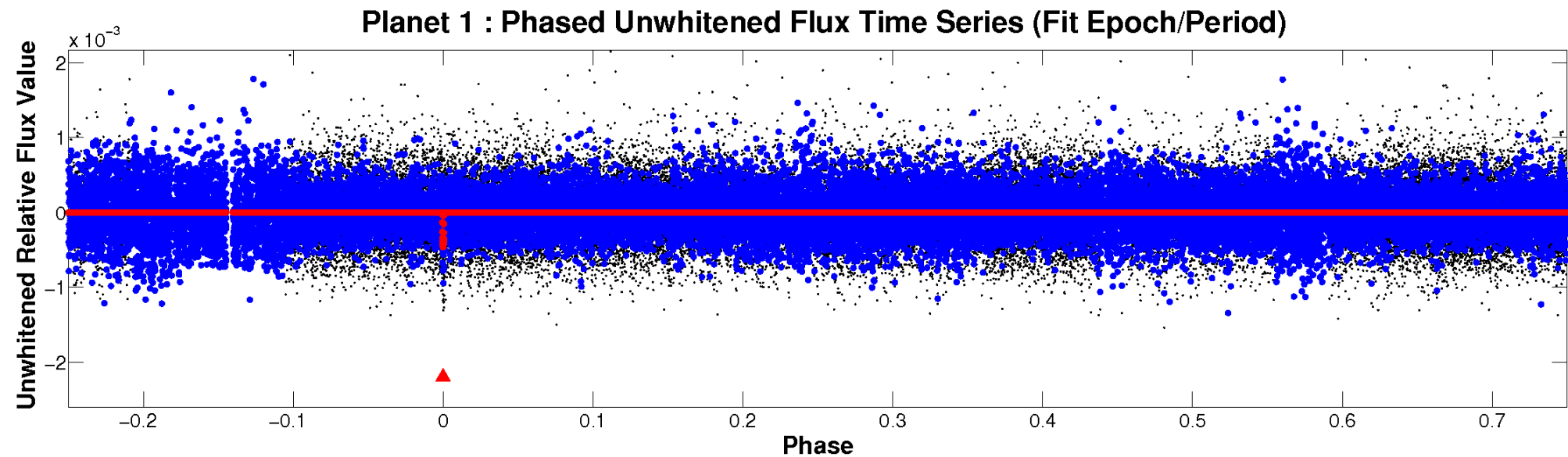


ALT Odd/Even

TCE 004273076-01

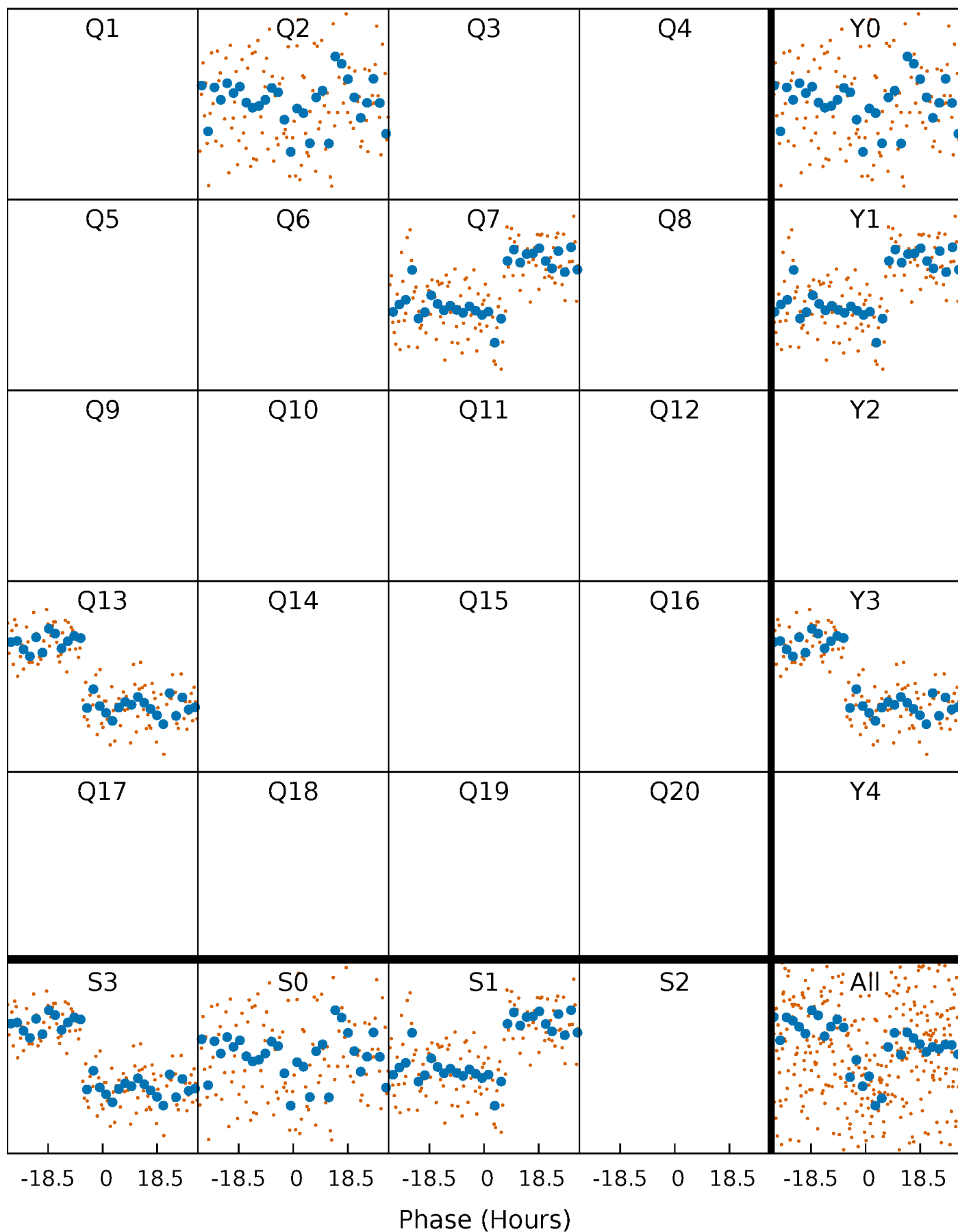


Non-Whitened Vs. Whitened Light Curve



PDC Quarter-Phased Transit Curves

TCE 004273076-01 P=506.395504 Days $T_0=177.131252$ (BKJD)



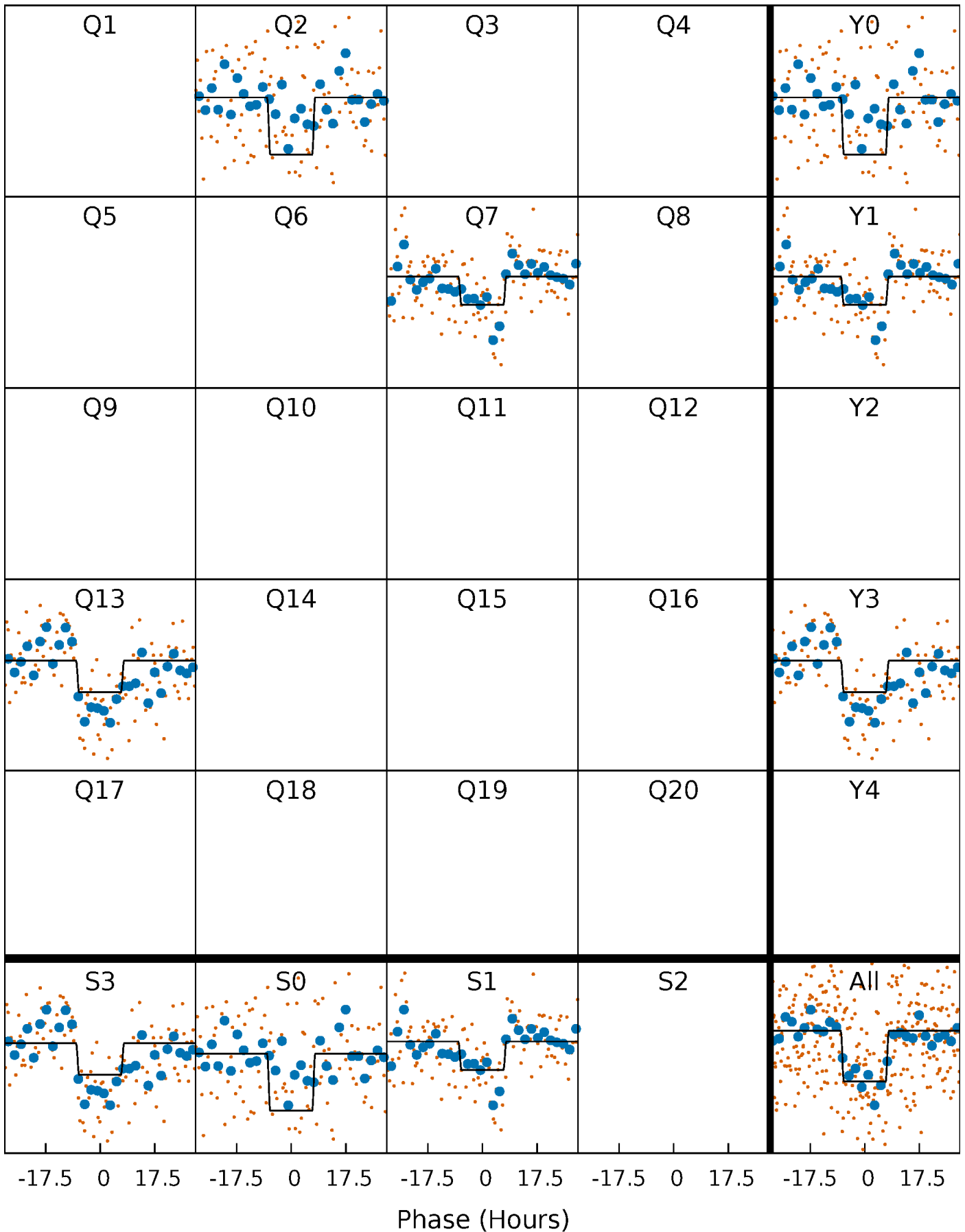
DV Quarter-Phased Transit Curves

TCE 004273076-01 P=506.395504 Days $T_0=177.131252$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

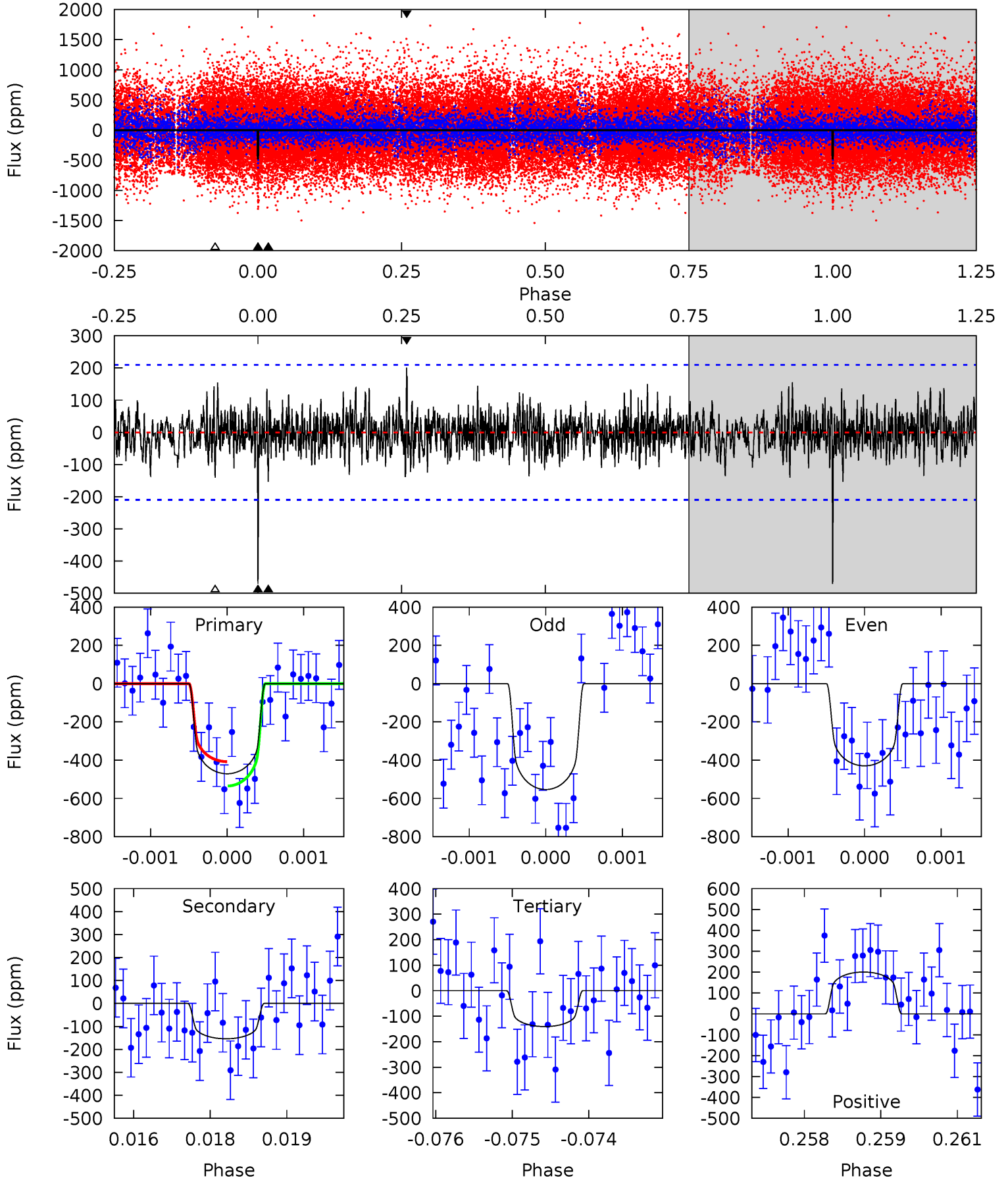
TCE 004273076-01 P=506.411729 Days $T_0=177.108740$ (BKJD)



DV Model-Shift Uniqueness Test

004273076-01, P = 506.395504 Days, E = 177.131252 Days

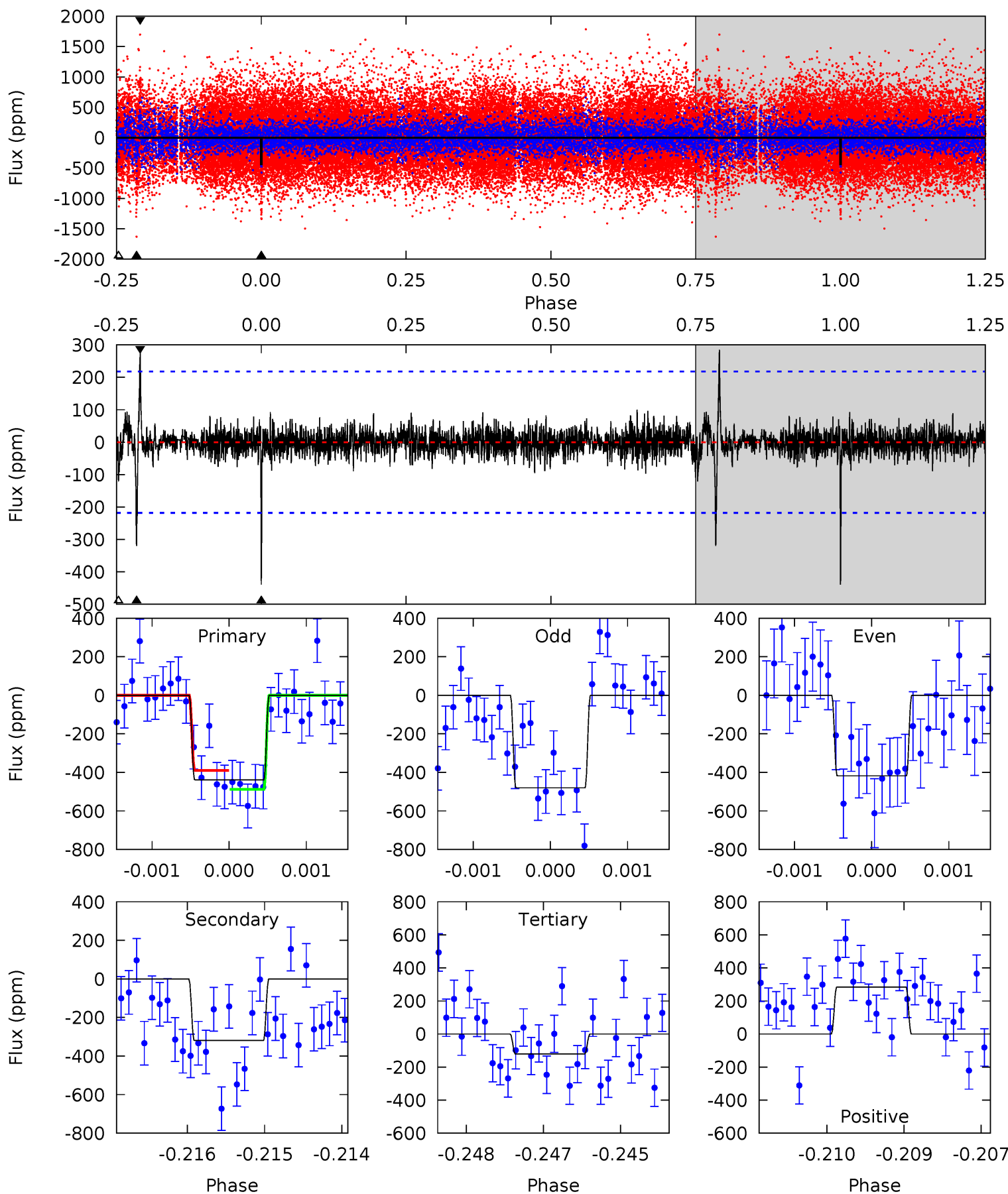
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.1	3.95	3.62	5.16	5.40	3.20	1.15	8.50	6.96	0.34	-1.20	1.52	0.83	0.30	1.64



Alt Model-Shift Uniqueness Test

004273076-01, P = 506.411729 Days, E = 177.108740 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	7.93	3.00	7.06	5.41	3.23	0.75	7.90	3.84	4.93	0.87	0.73	0.91	0.39	1.21



Stellar Parameters For KIC 004273076

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5667^{+76}_{-85}	$3.649^{+0.259}_{-0.111}$	$0.080^{+0.150}_{-0.150}$	$3.053^{+0.576}_{-1.070}$	$1.512^{+0.152}_{-0.354}$	$0.075^{+0.136}_{-0.027}$
	+1%/-1%	+7%/-3%	+188%/-188%	+19%/-35%	+10%/-23%	+182%/-36%
Source	SPE68	SPE68	SPE68	DSEP		

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

Secondary Eclipse Parameters for KIC 004273076-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-154 ± 39	$7.21^{+2.00}_{-1.66}$	505^{+27}_{-41}	4336^{+444}_{-344}	3140^{+2359}_{-1317}
Alt.	-320 ± 40	$6.51^{+1.86}_{-1.64}$	506^{+26}_{-41}	5309^{+664}_{-462}	8329^{+6318}_{-3260}

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

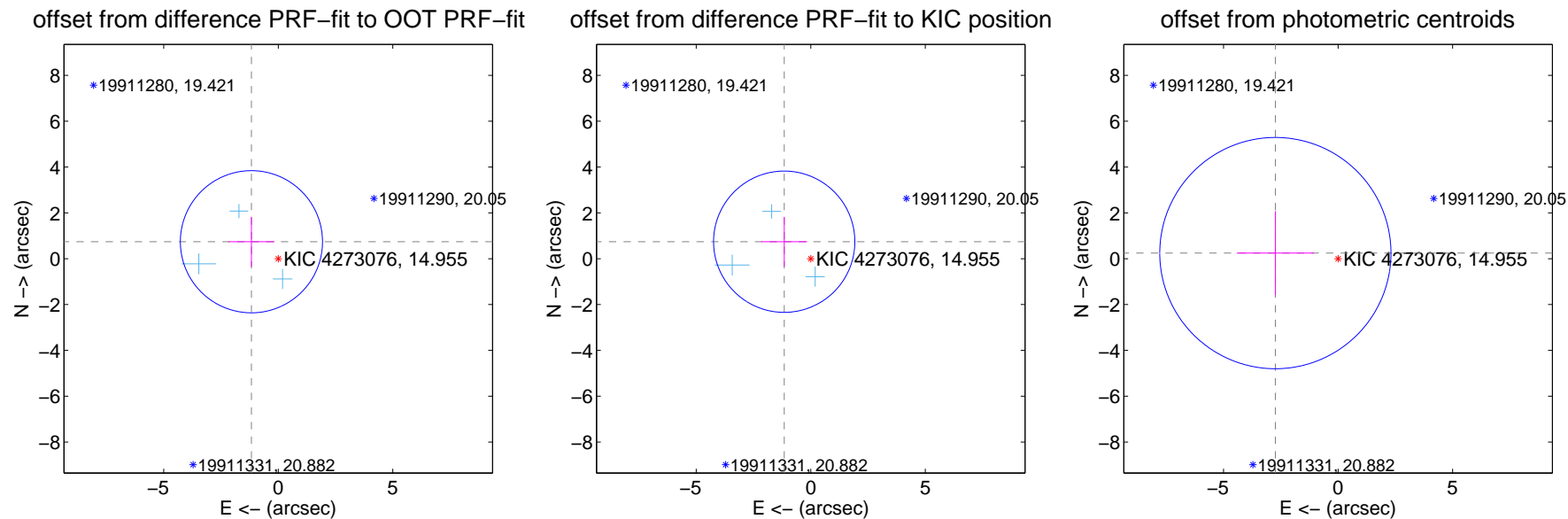
DV Centroid Data

Supplemental centroid analysis for 004273076-01. Kepler magnitude: 14.96. Transit SNR 8.08

There are 3 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.02 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.386 ± 1.034	1.34	1.171 ± 1.011	0.741 ± 1.090
PRF-fit source offset from KIC position	1.376 ± 1.028	1.34	1.159 ± 1.004	0.741 ± 1.083
photometric centroid source offset	2.75 ± 1.68	1.63	2.74 ± 1.68	0.24 ± 1.83



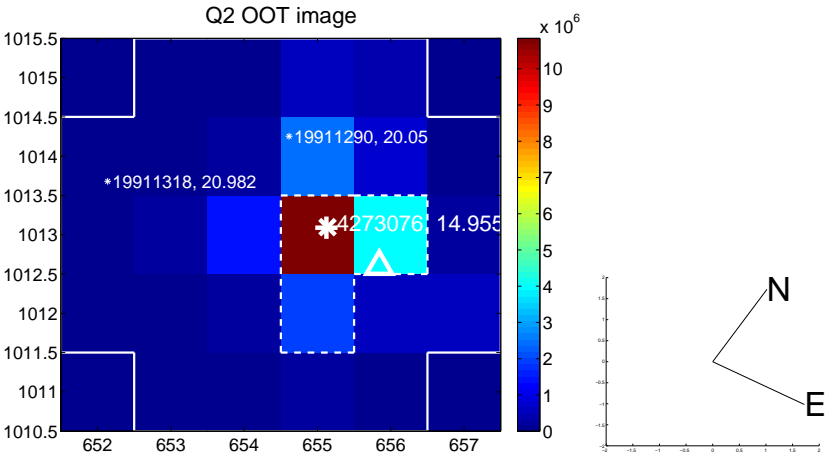
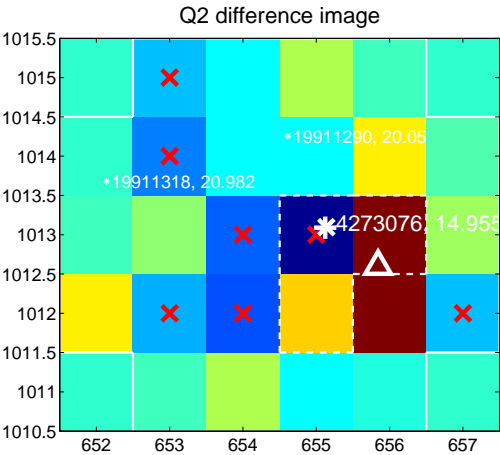
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . 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.

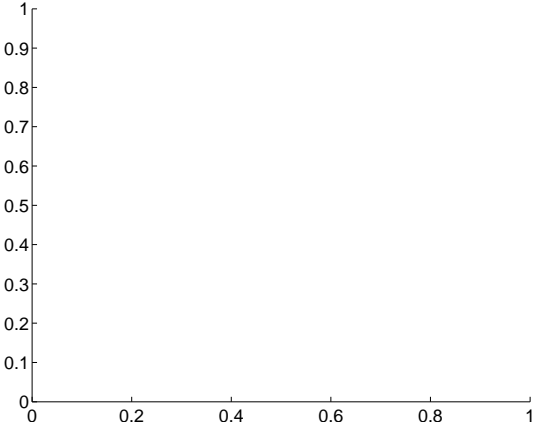
Q1 no difference image



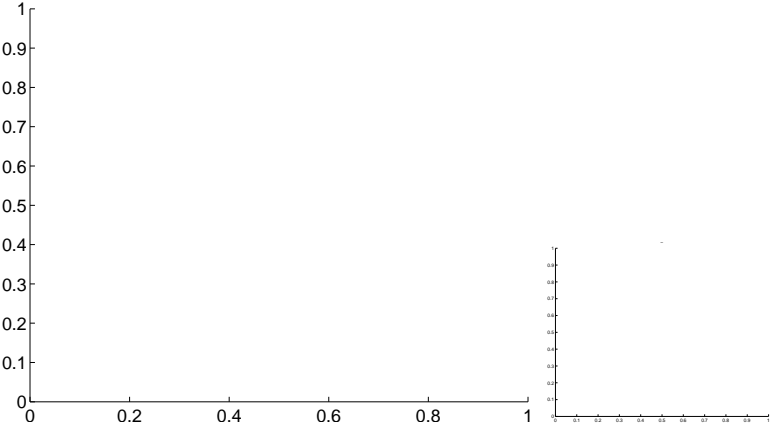
Q1 no OOT image



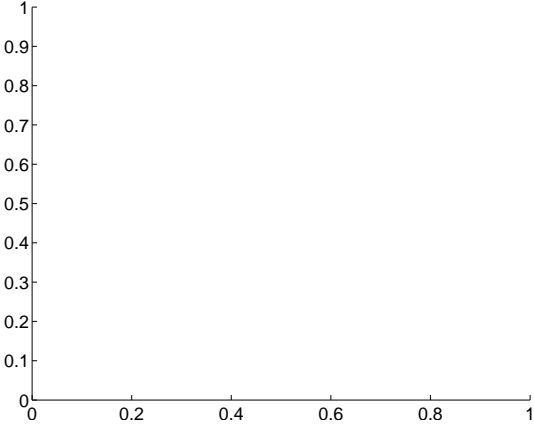
Q3 no difference image



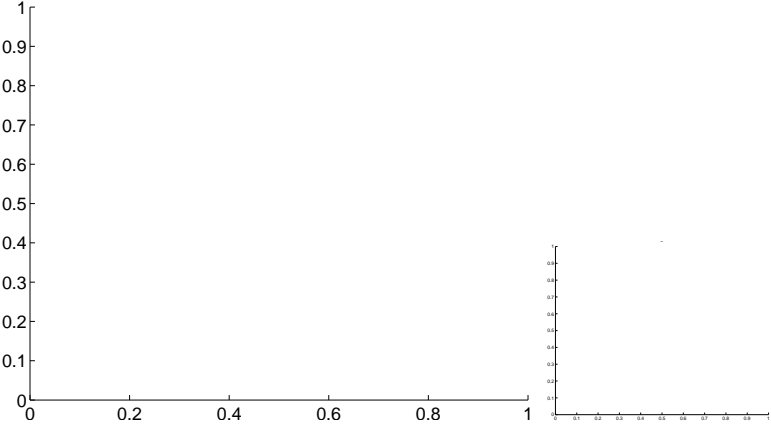
Q3 no OOT image



Q4 no difference image



Q4 no OOT image



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

Q5 no difference image



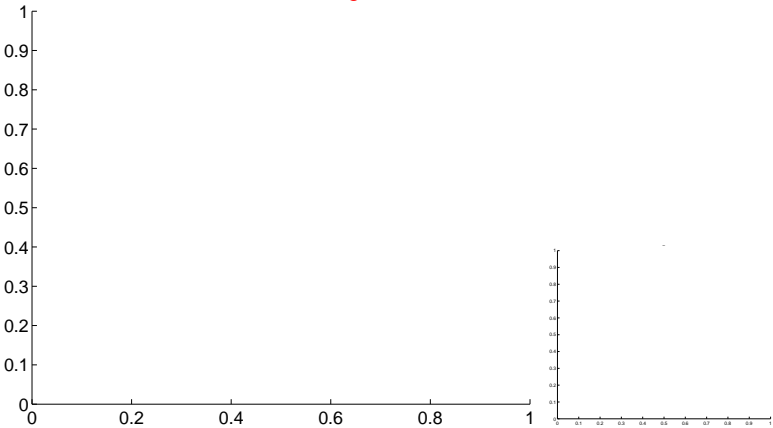
Q5 no OOT image



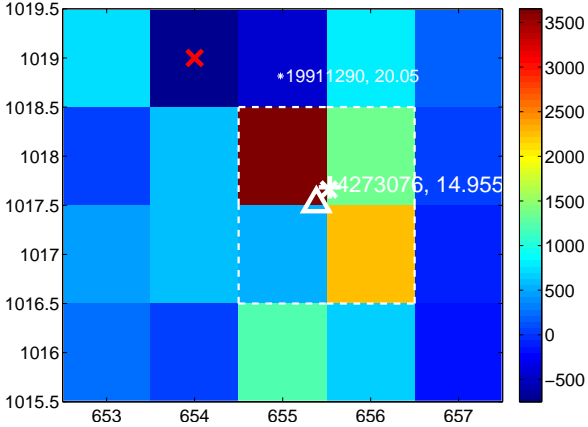
Q6 no difference image



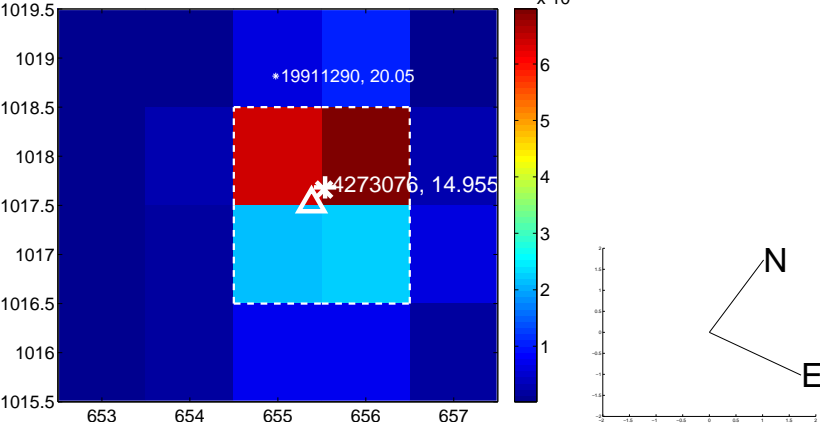
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



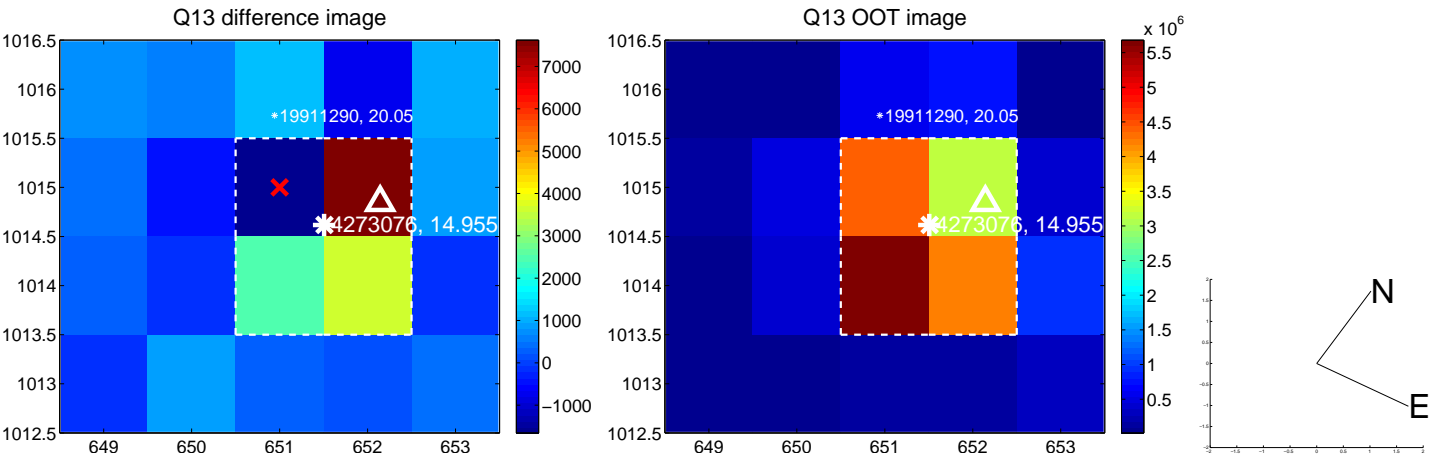
Q8 no OOT image



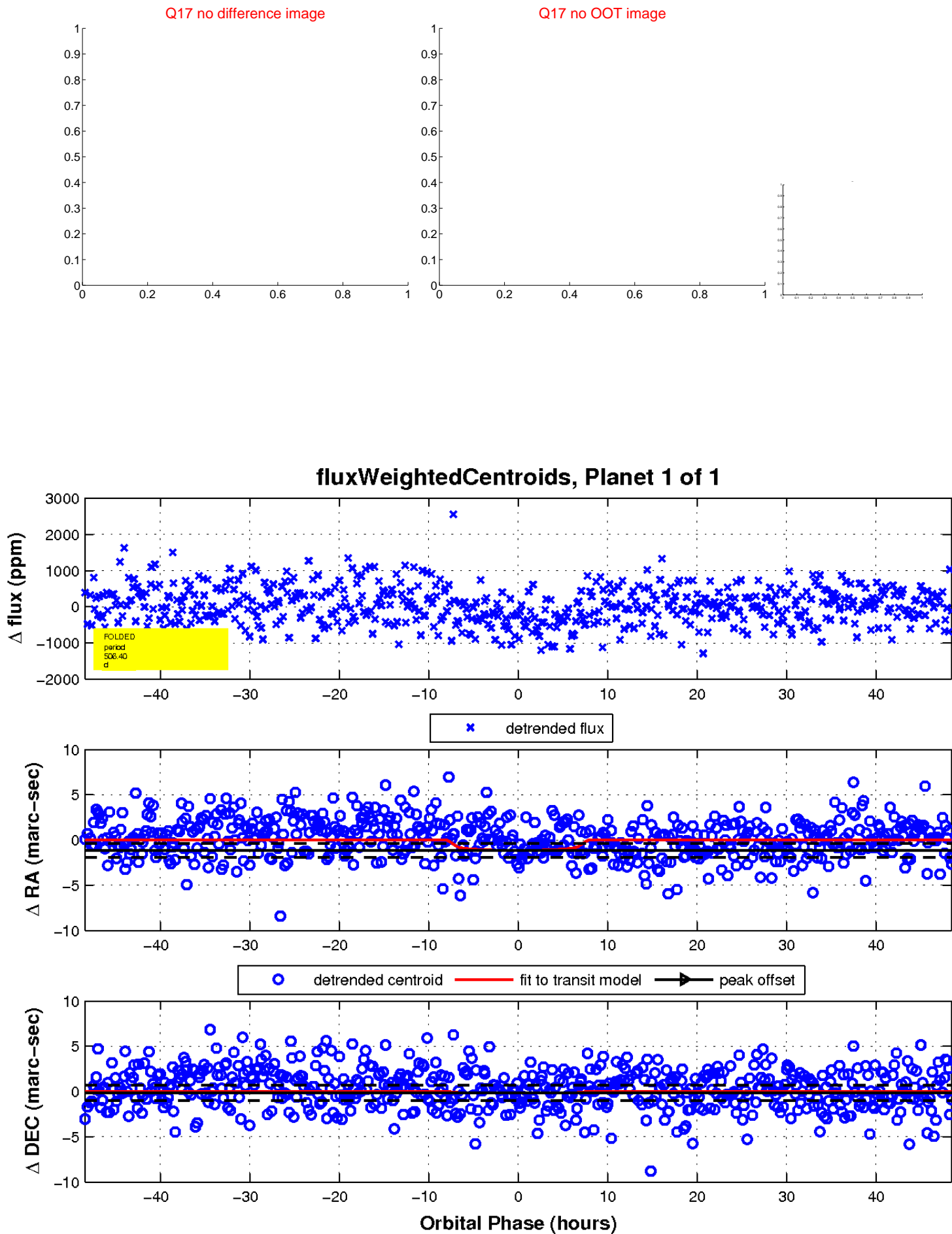
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

