

KIC 010670830

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})
010670830-01	OBS	No	386.860253	393.677610	225.0	9.163	7.5	5.7	0.87	5944	1.51	0.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010670830-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_POS_ALT—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.

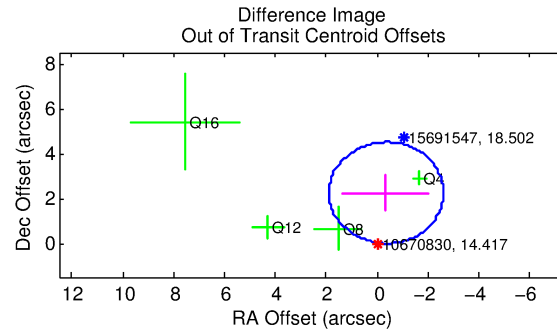
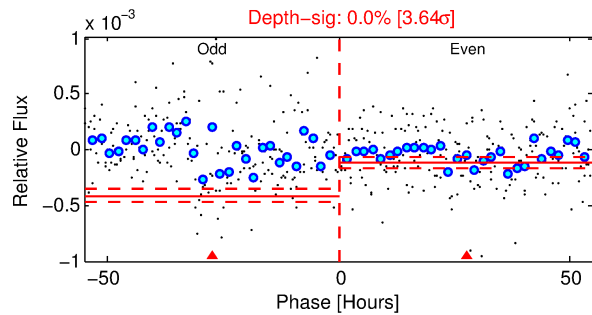
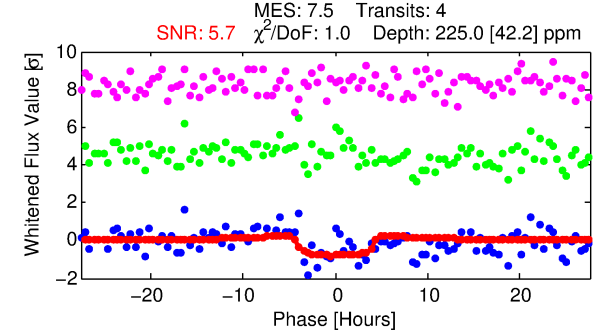
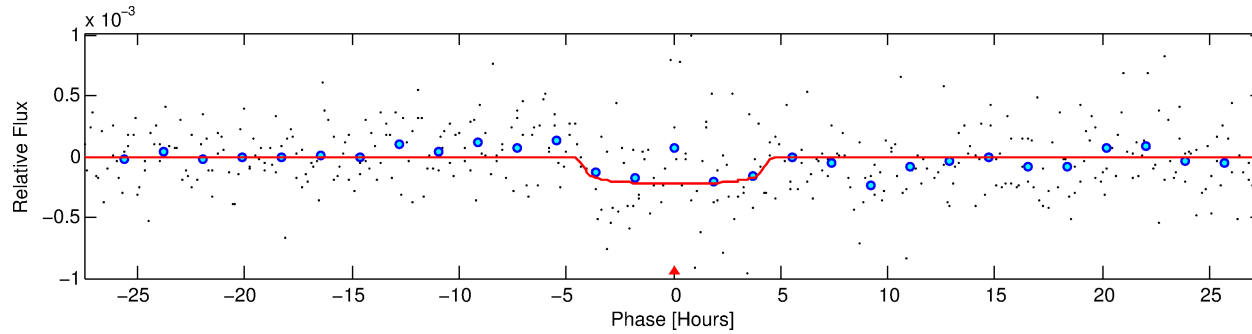
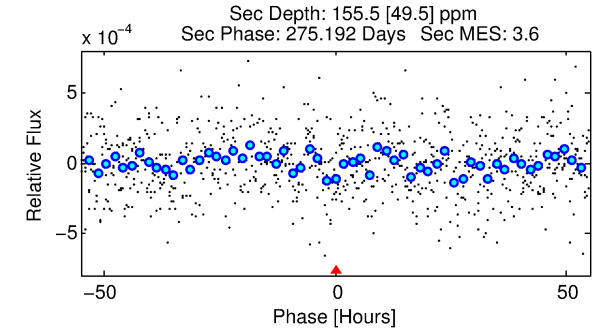
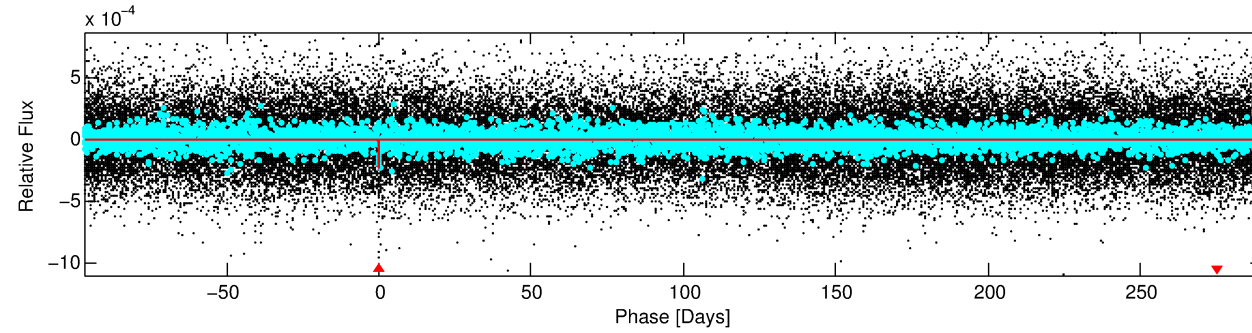
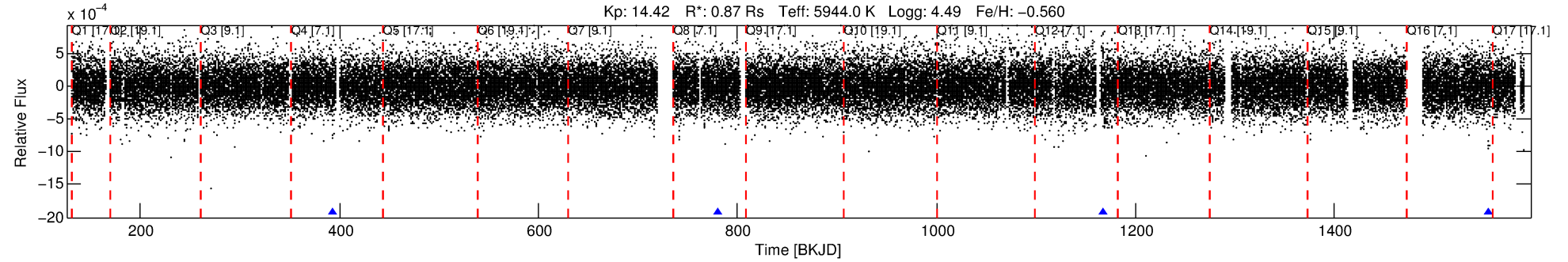
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010670830-01

No Significant Match Found

DV One-Page Summary

KIC: 10670830 Candidate: 1 of 1 Period: 386.860 d



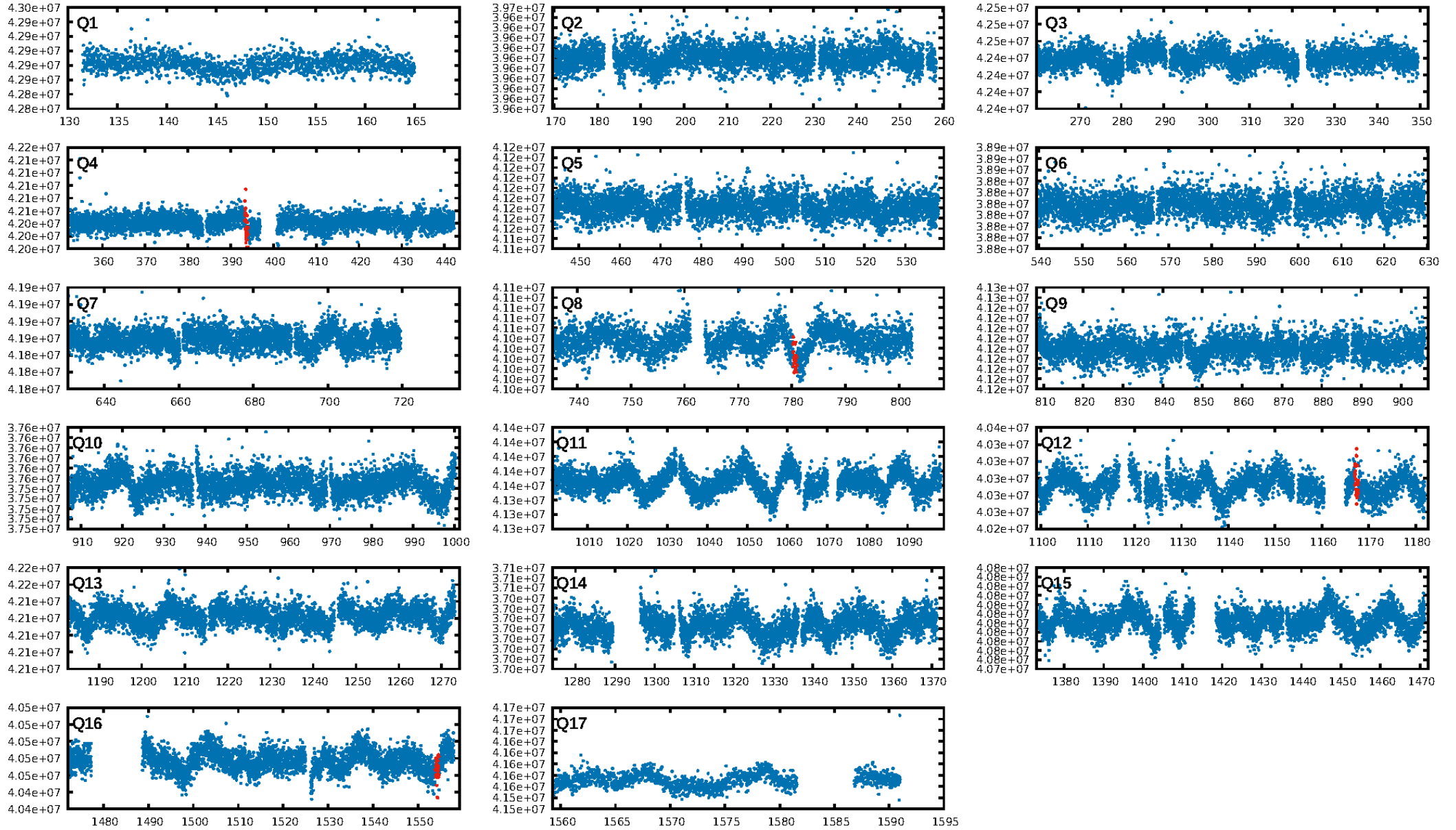
DV Fit Results:

Period = 386.86025 [0.01352] d
Epoch = 393.6776 [0.0225] BKJD
Rp/R* = 0.0160 [0.0060]
a/R* = 159.01 [299.33]
b = 0.89 [0.45]
Seff = 0.87 [0.29]
Teq = 247 [21] K
Rp = 1.51 [0.69] Re
a = 0.9819 [0.2128] AU
Ag = 35945.34 [31299.66] [1.15 σ]
Teffp = 5249 [1078] K [4.64 σ]

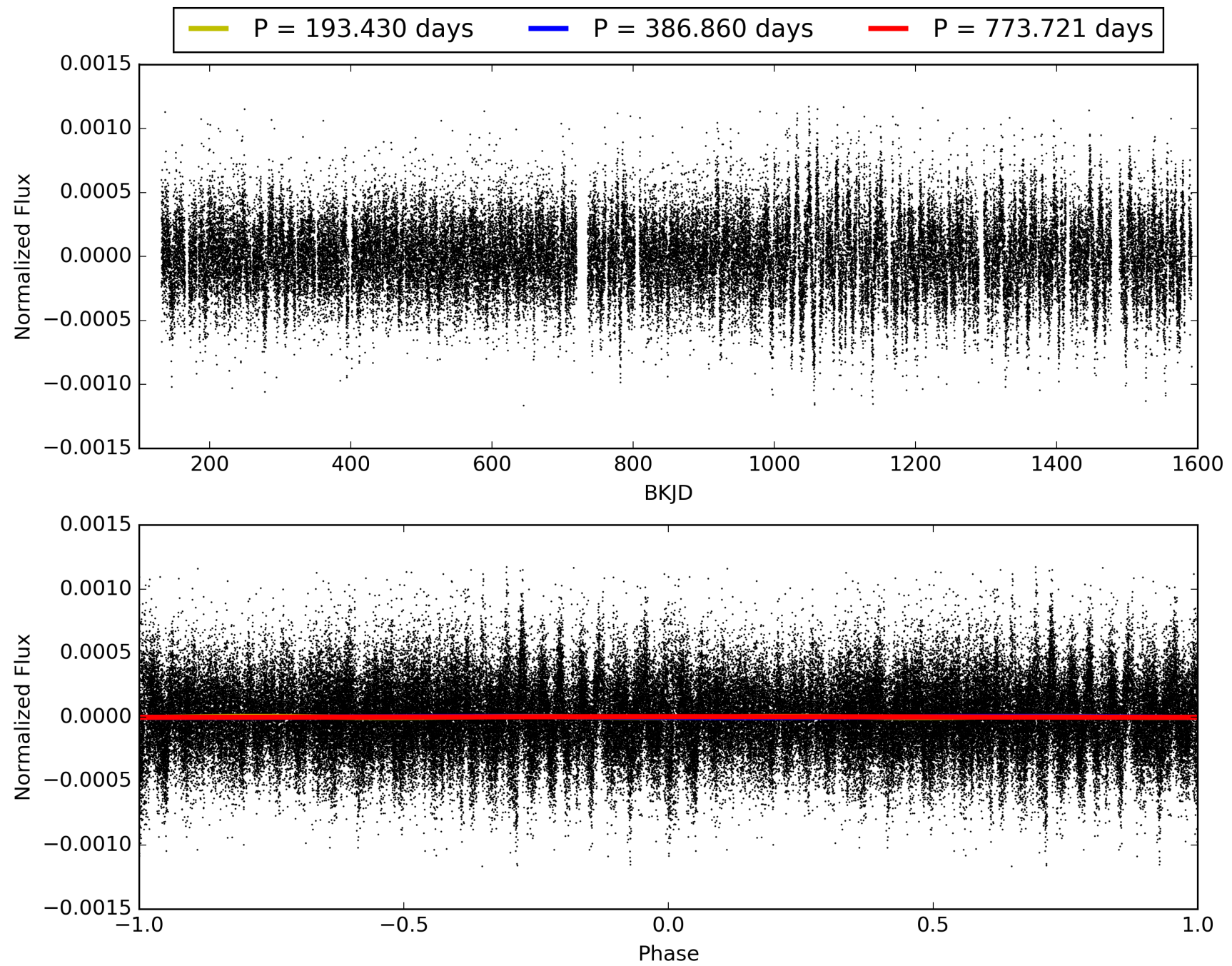
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 88.3%
Bootstrap-pfa: 4.76e-13
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: -1.498
Centroid-sig: 42.7%
Centroid-so: 1.814 arcsec [1.01 σ]
OotOffset-rm: 2.276 arcsec [3.03 σ]
KicOffset-rm: 2.630 arcsec [3.22 σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 0.50 [2/4]
DiffImageOverlap-fno: 1.00 [4/4]

TCE 010670830-01, PDC Light Curves

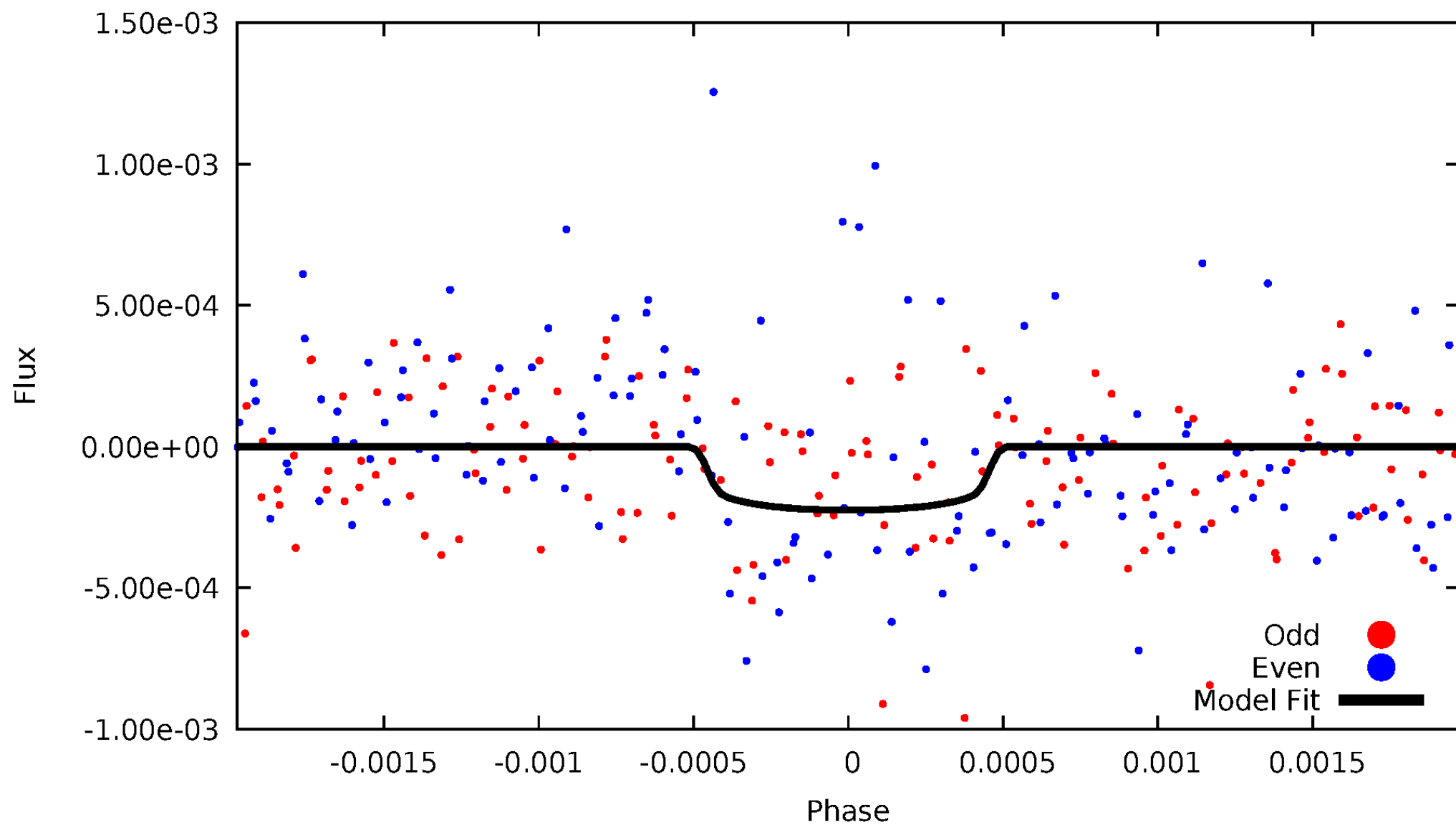


TCE 010670830-01



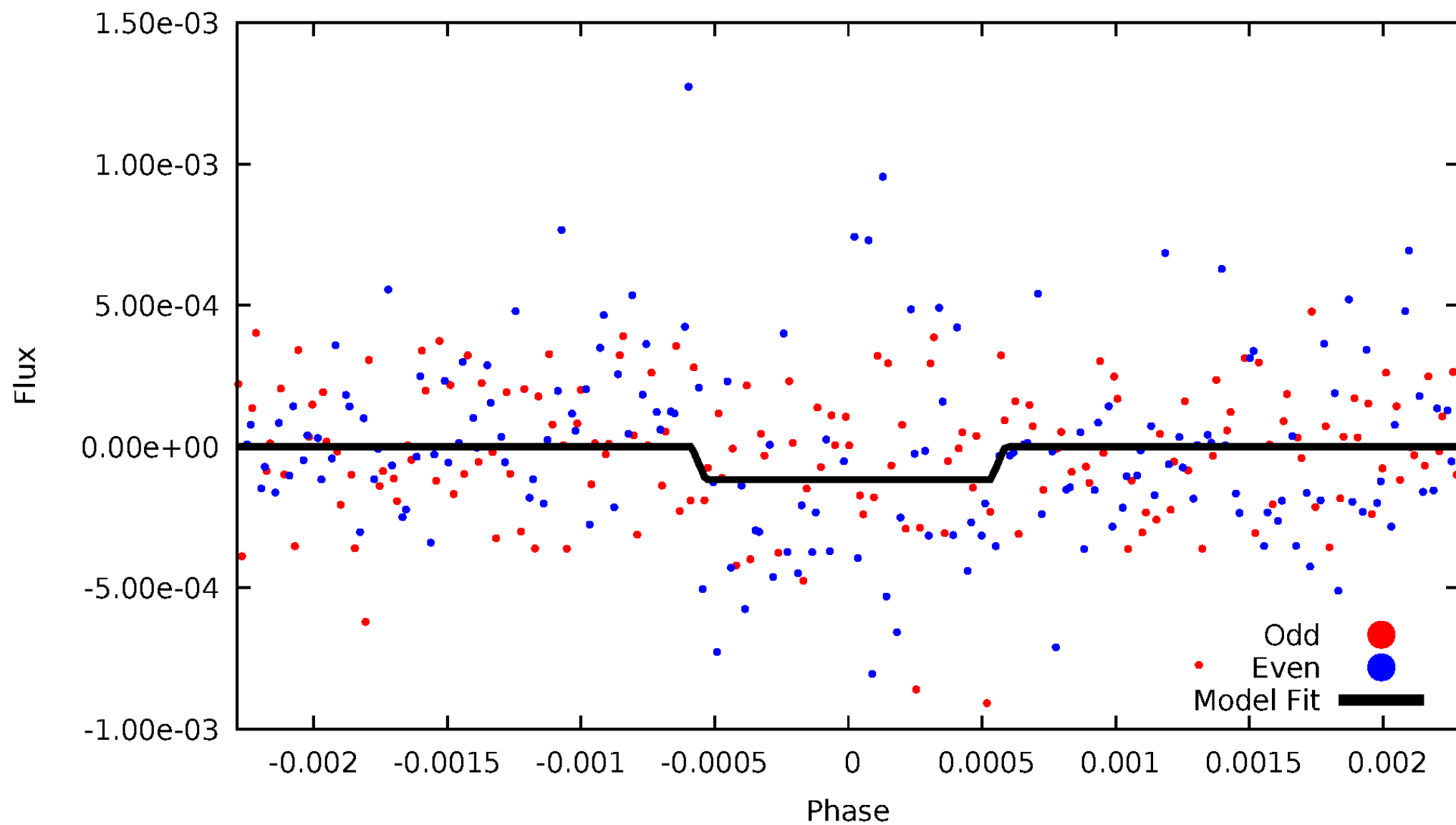
DV Odd/Even

TCE 010670830-01



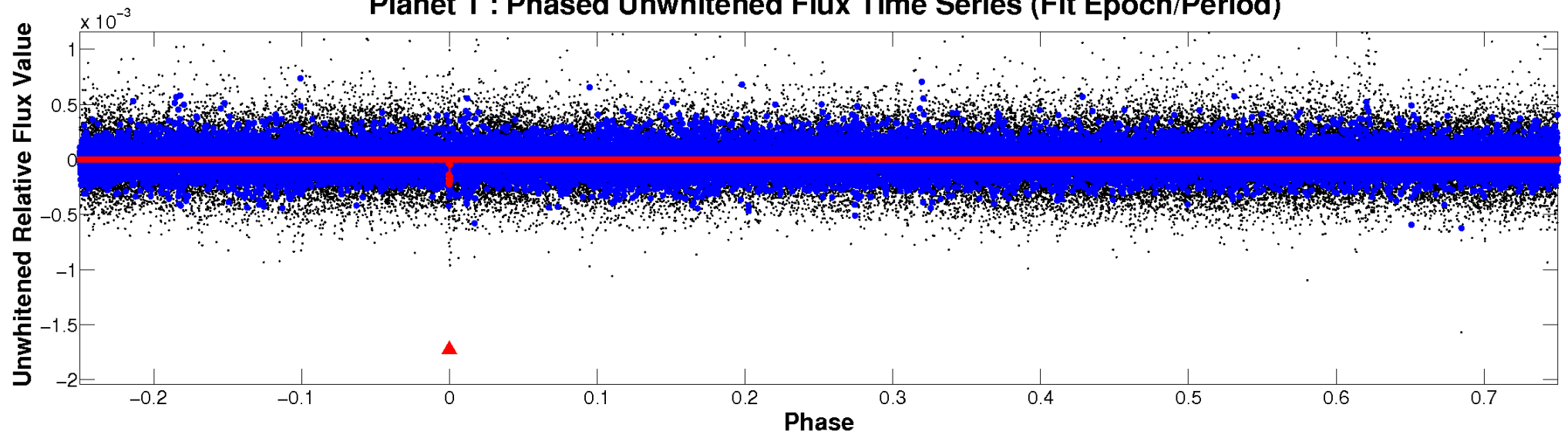
ALT Odd/Even

TCE 010670830-01

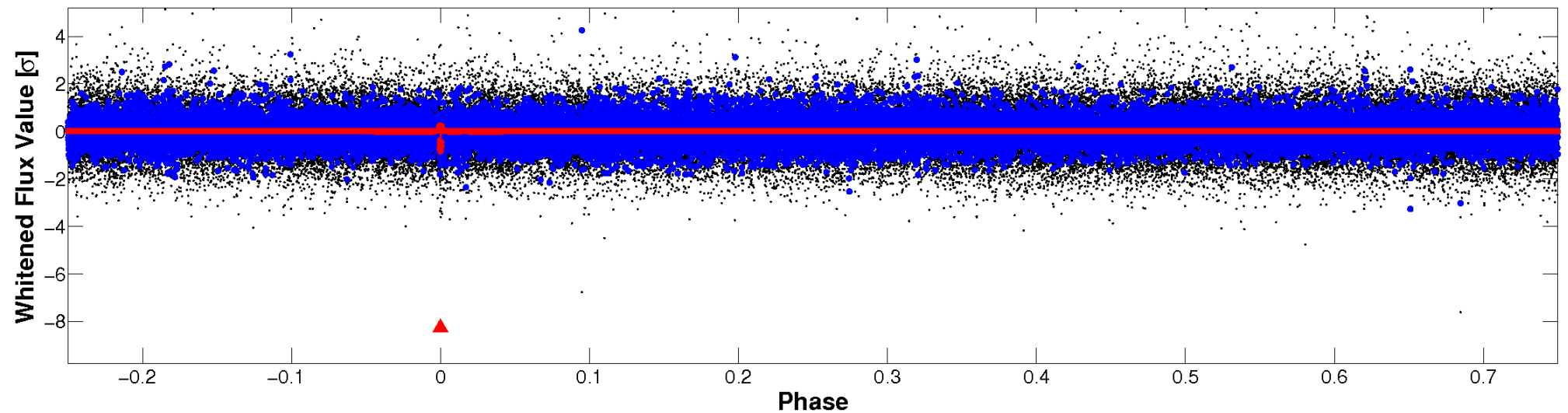


Non-Whitened Vs. Whitened Light Curve

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

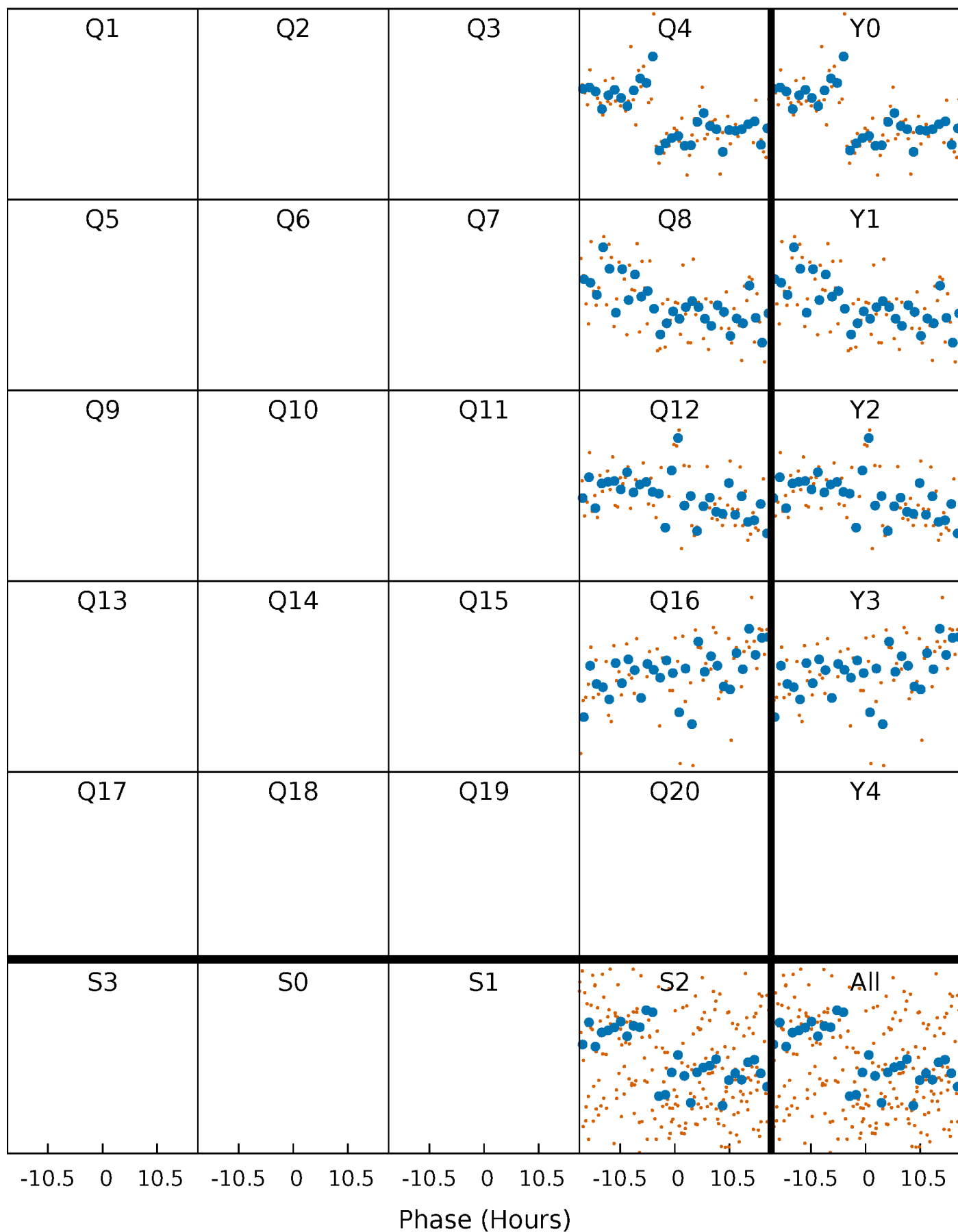


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



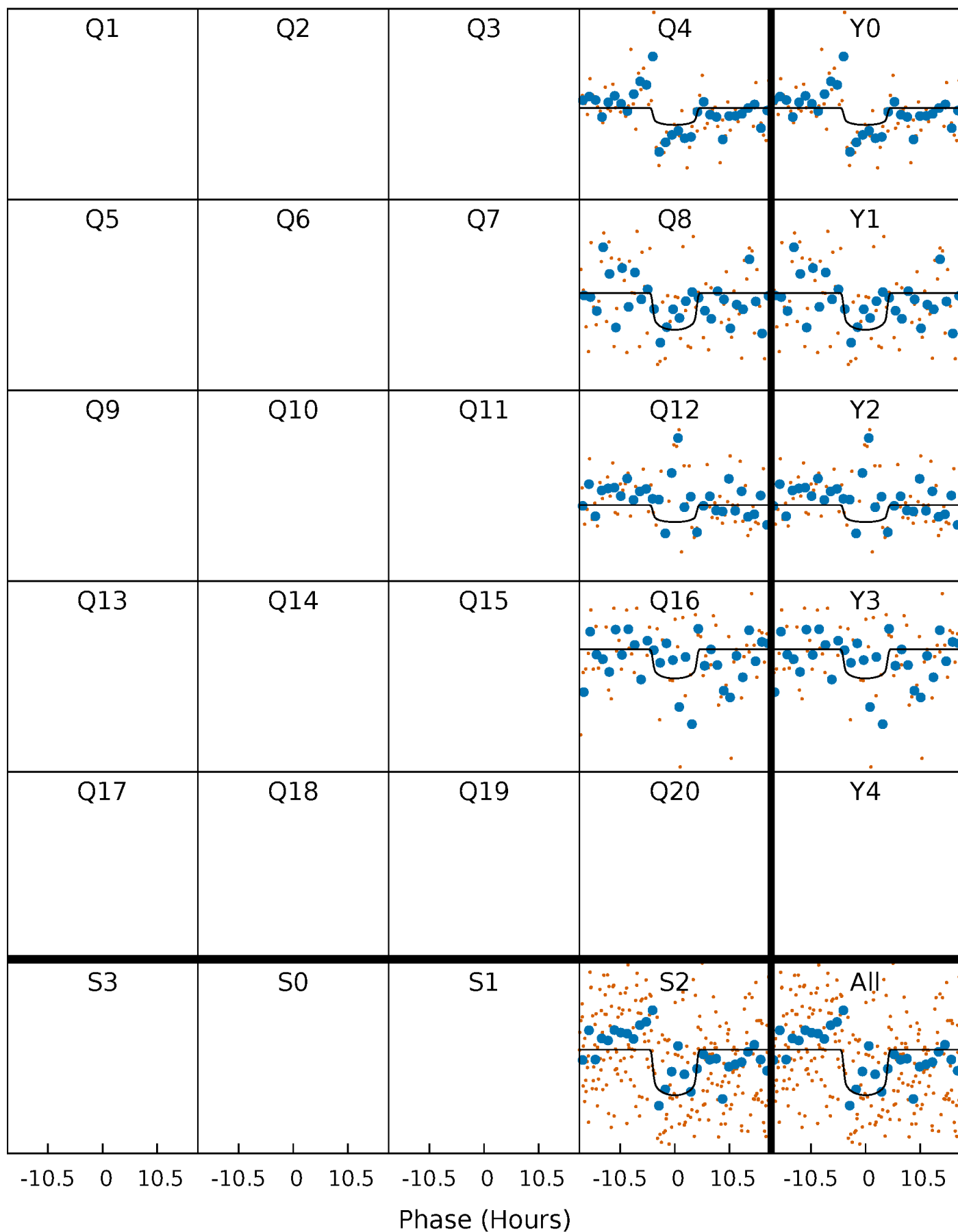
PDC Quarter-Phased Transit Curves

TCE 010670830-01 P=386.860253 Days $T_0=393.677610$ (BKJD)



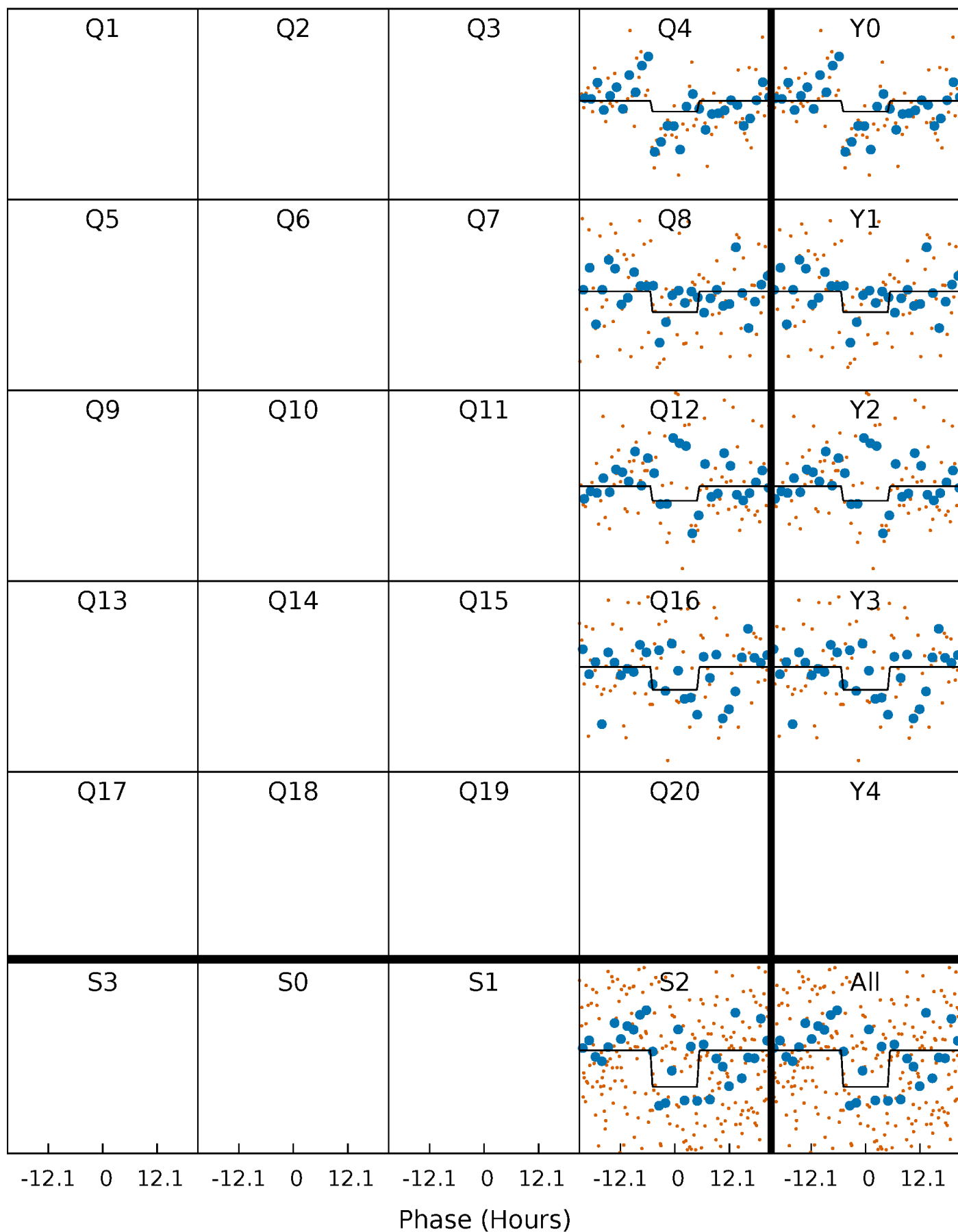
DV Quarter-Phased Transit Curves

TCE 010670830-01 P=386.860253 Days $T_0=393.677610$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

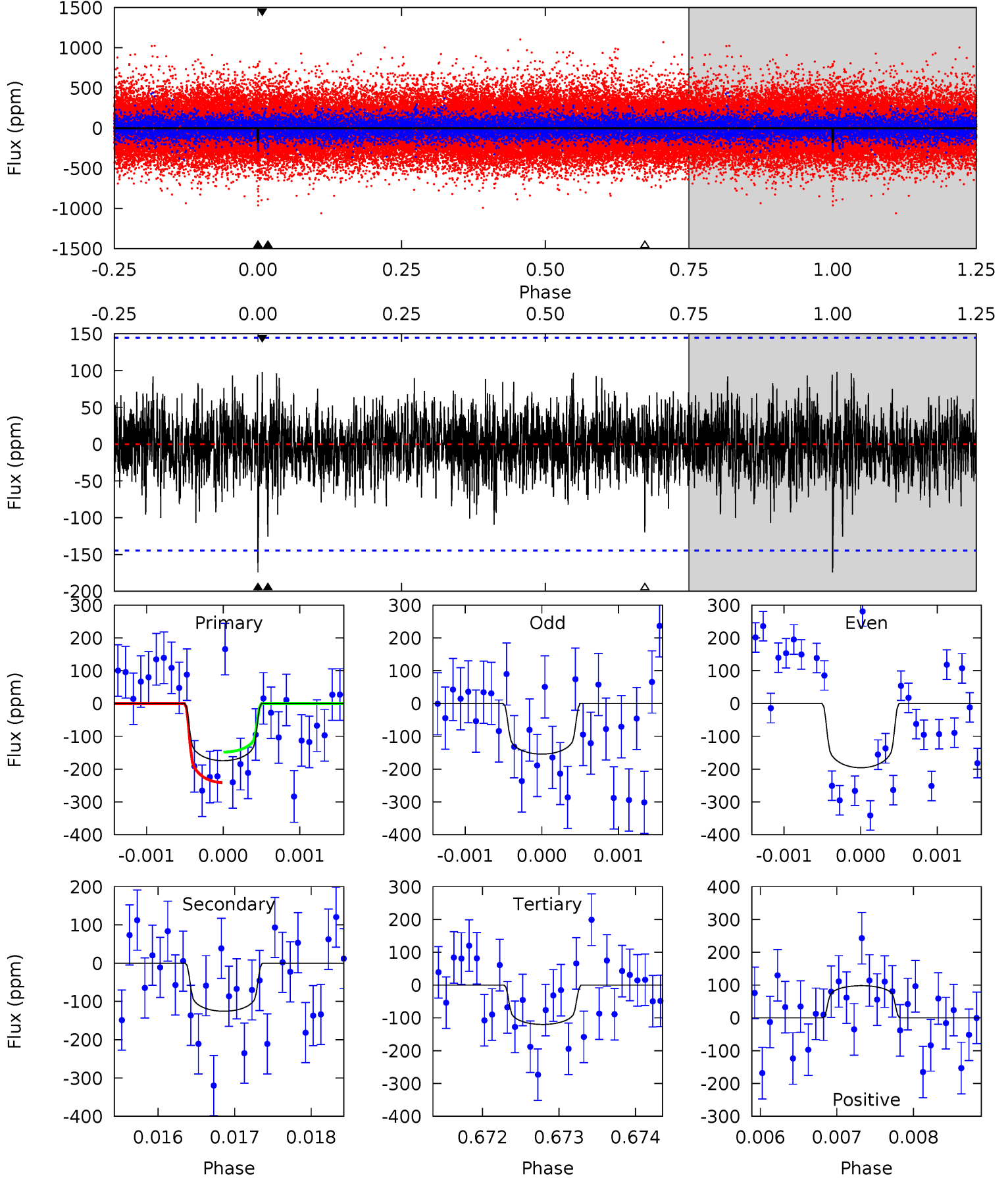
TCE 010670830-01 P=386.820913 Days $T_0=393.740260$ (BKJD)



DV Model-Shift Uniqueness Test

010670830-01, P = 386.860253 Days, E = 6.817357 Days

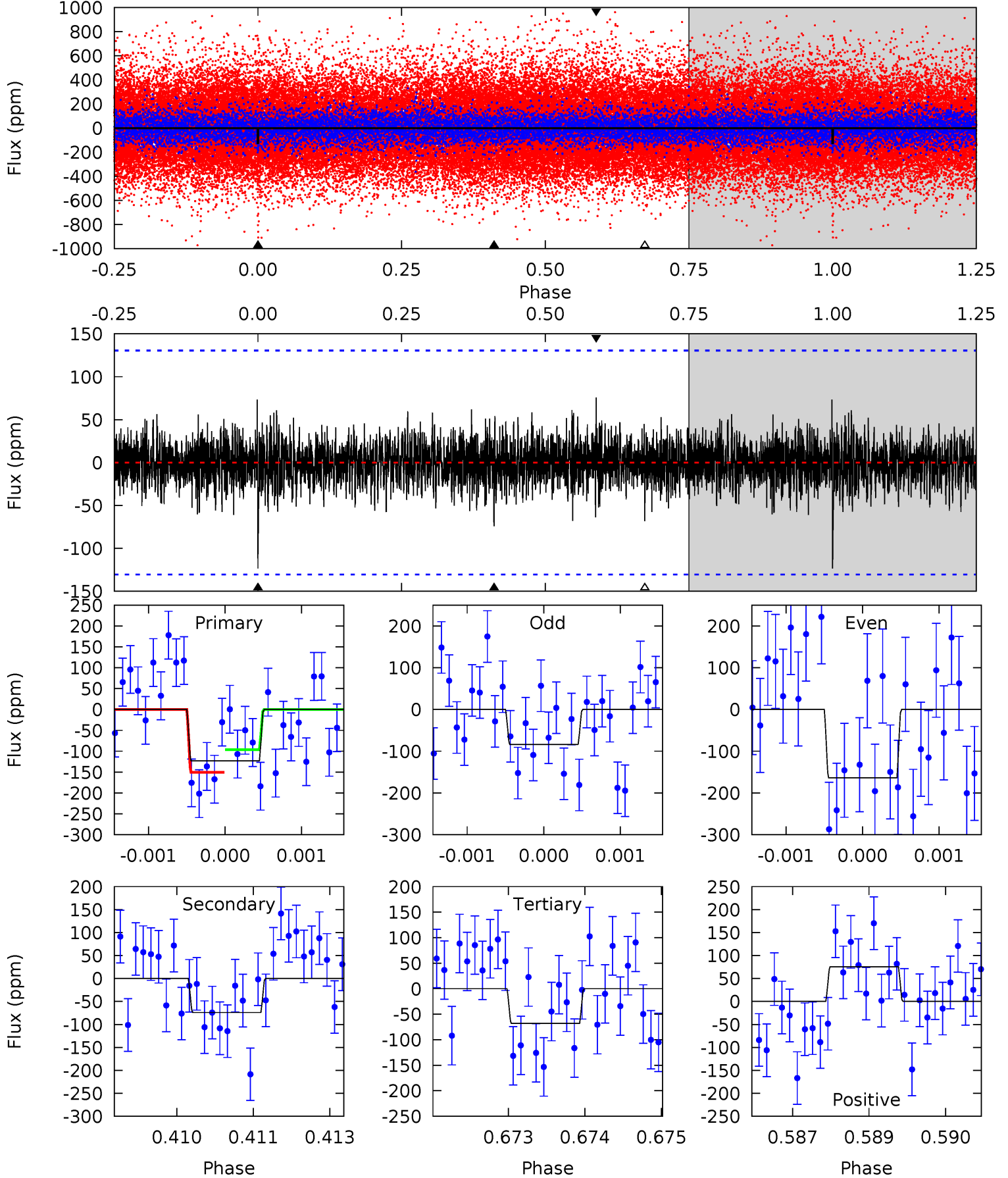
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.57	4.73	4.52	3.69	5.45	3.28	1.14	2.05	2.87	0.21	1.04	0.78	0.87	0.36	1.73



Alt Model-Shift Uniqueness Test

010670830-01, P = 386.820913 Days, E = 6.919347 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.12	3.08	2.83	3.14	5.42	3.24	0.79	2.29	1.98	0.25	-0.06	1.68	1.29	0.38	1.13



Stellar Parameters For KIC 010670830

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5944^{+159}_{-177}	$4.487^{+0.091}_{-0.169}$	$-0.560^{+0.300}_{-0.300}$	$0.868^{+0.226}_{-0.097}$	$0.842^{+0.096}_{-0.070}$	$1.816^{+0.720}_{-0.844}$
	+3%/-3%	+2%/-4%	+54%/-54%	+26%/-11%	+11%/-8%	+40%/-46%
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 010670830-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-126 ± 27	$1.55^{+0.58}_{-0.64}$	347^{+23}_{-17}	5056^{+1437}_{-633}	27725^{+52570}_{-13832}
Alt.	-74 ± 24	$1.09^{+0.55}_{-0.55}$	347^{+23}_{-18}	5169^{+2188}_{-825}	$31319^{+104138}_{-18922}$

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

DV Centroid Data

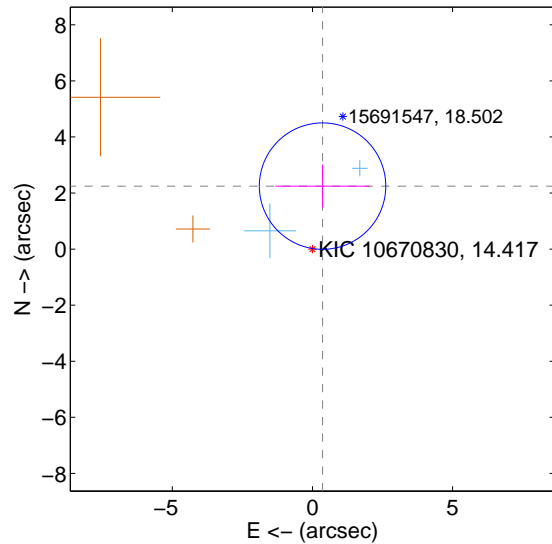
Supplemental centroid analysis for 010670830-01. Kepler magnitude: 14.42. Transit SNR 5.74

There are 2 quarters with good PRF difference image offsets

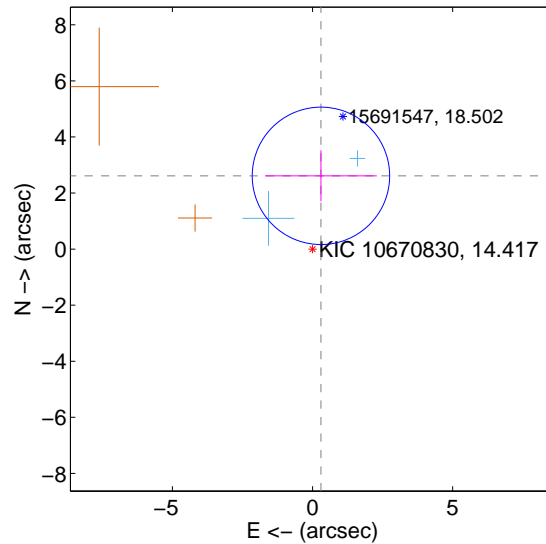
The direct PRF centroid is offset from the target star catalog position by about 0.38 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.276 ± 0.752	3.03	-0.361 ± 1.685	2.247 ± 0.769
PRF-fit source offset from KIC position	2.630 ± 0.817	3.22	-0.301 ± 1.993	2.613 ± 0.909
photometric centroid source offset	1.81 ± 1.79	1.01	-1.19 ± 1.83	1.37 ± 1.76

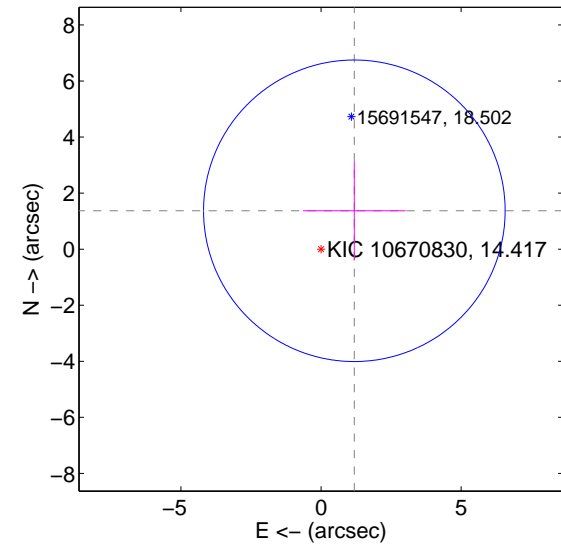
offset from difference PRF-fit to OOT PRF-fit



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



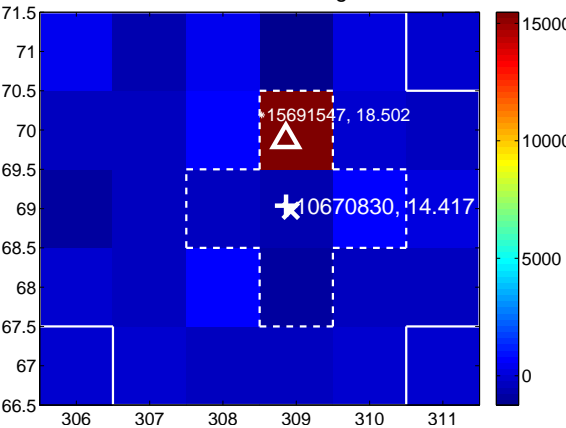
Q3 no difference image



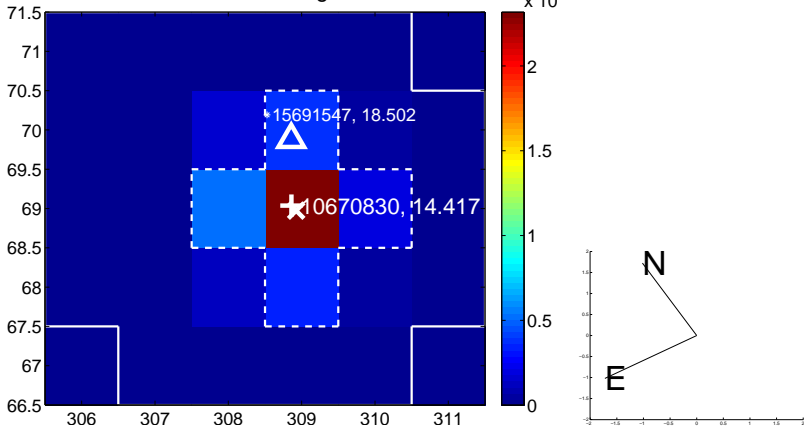
Q3 no OOT image



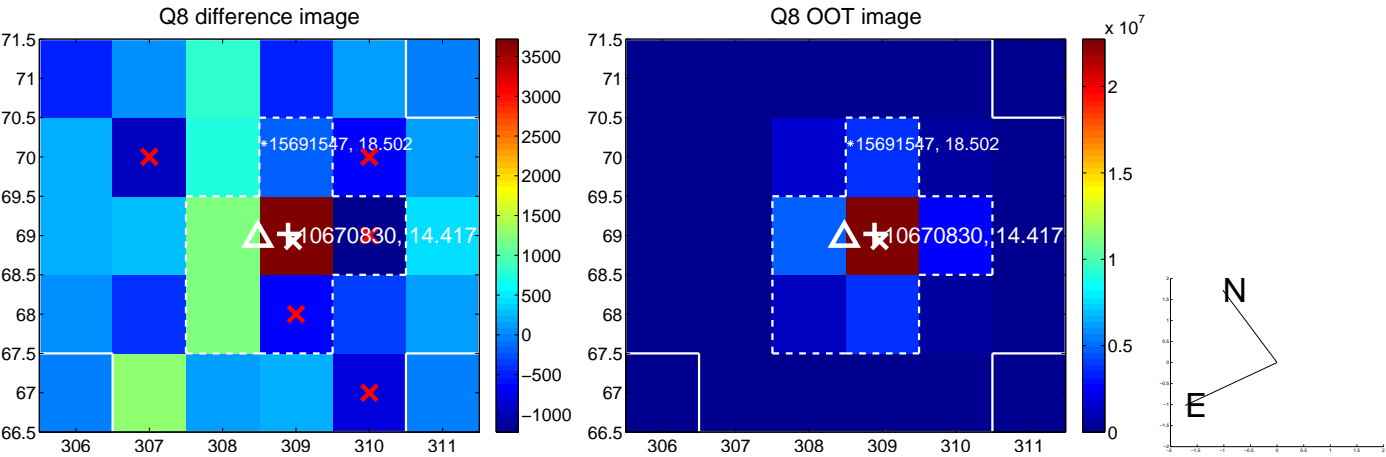
Q4 difference image



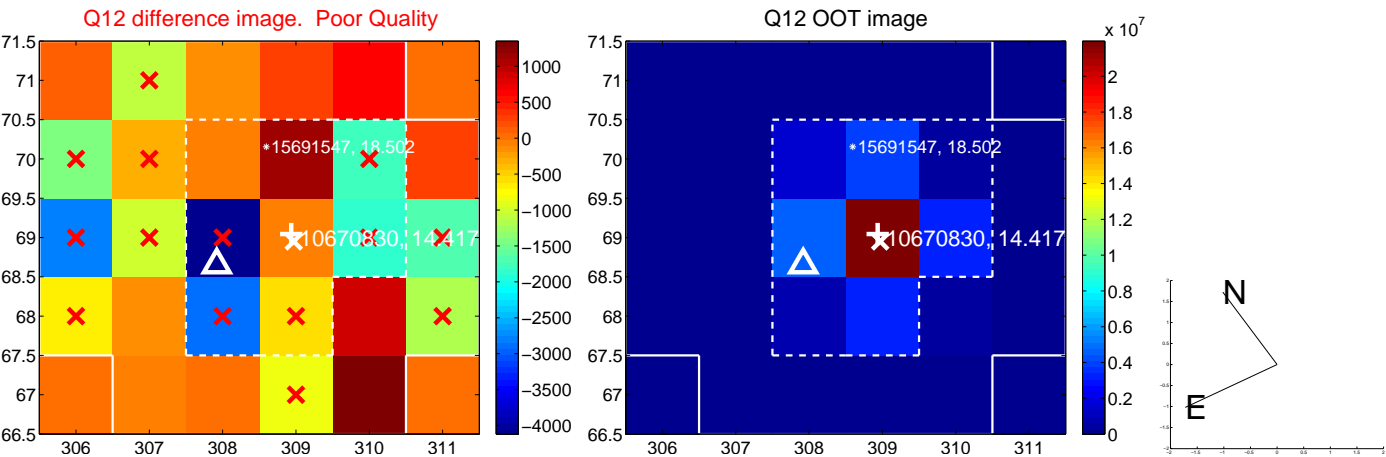
Q4 OOT image



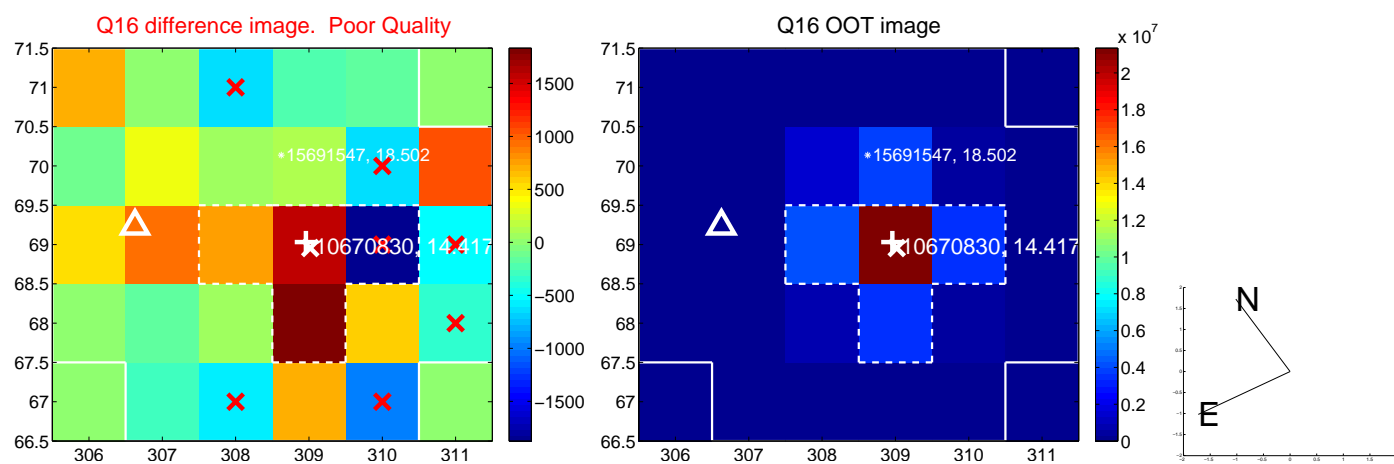
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



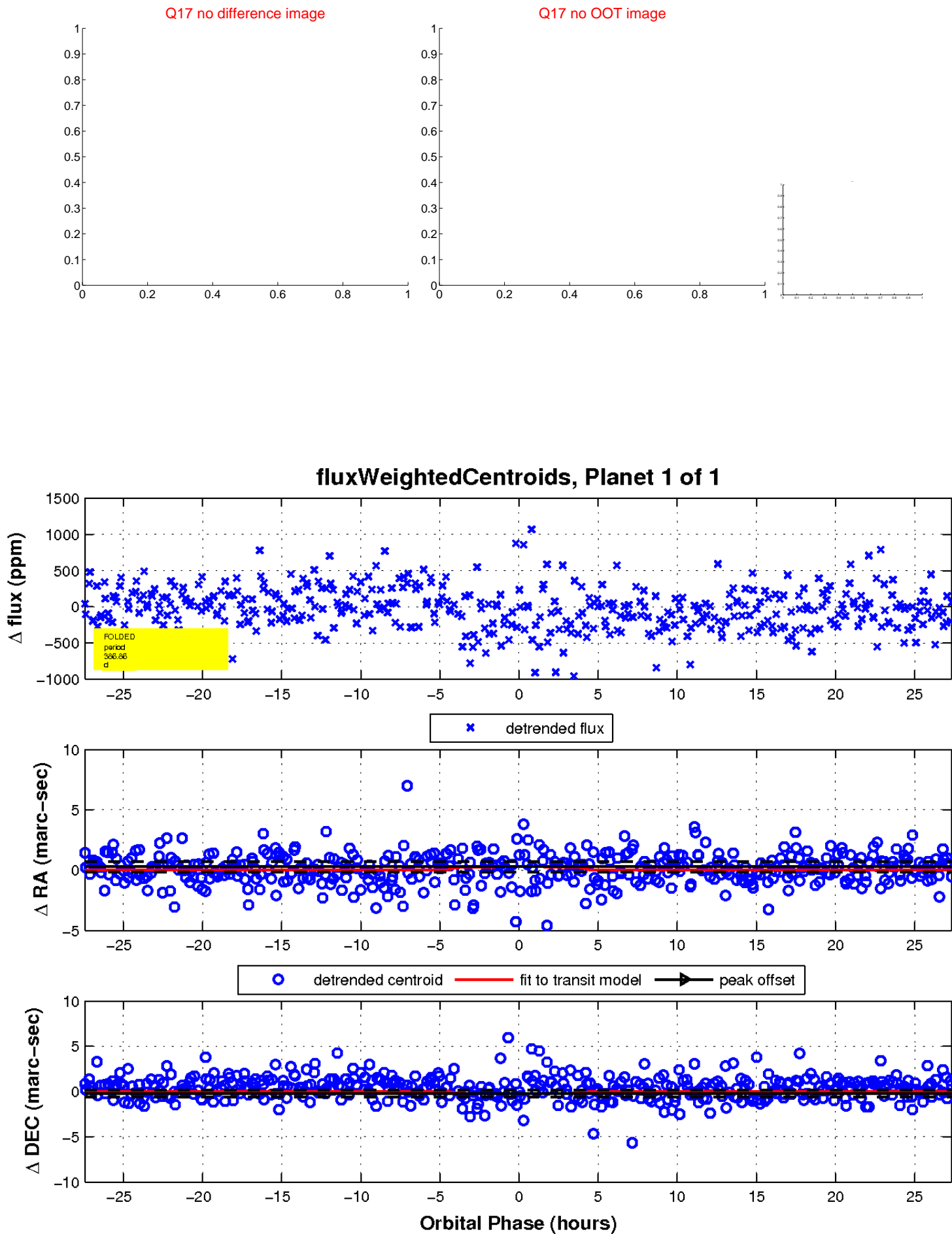
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

