

KIC 010873178

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})
010873178-01	OBS	4597.01	4.820207	134.819448	102.2	2.033	7.9	9.0	0.78	6035	0.89	254.56

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
010873178-01	OBS	PC	0.95	0	0	0	0	NO_COMMENT

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

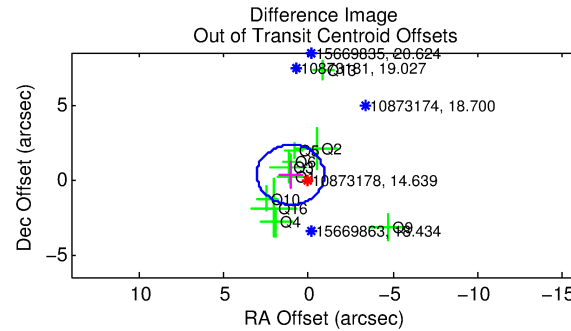
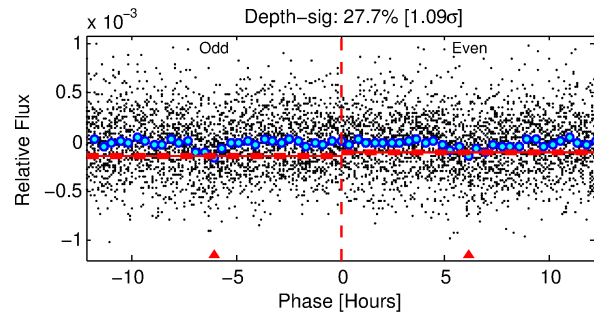
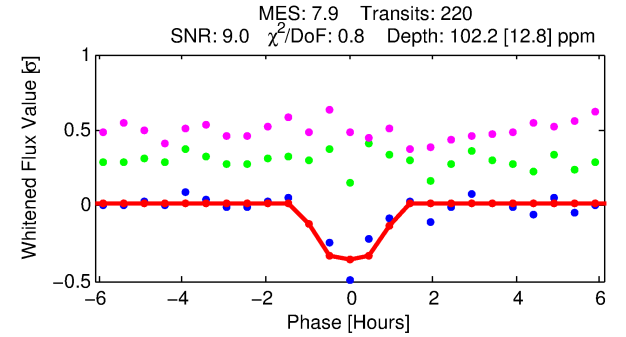
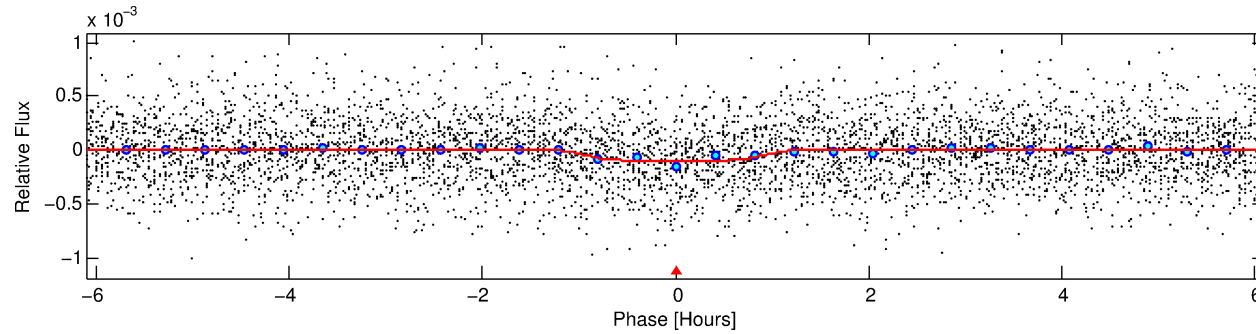
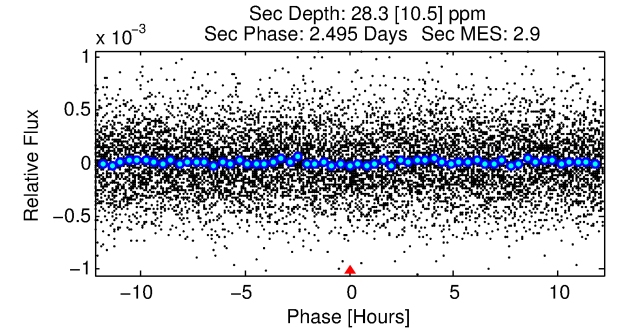
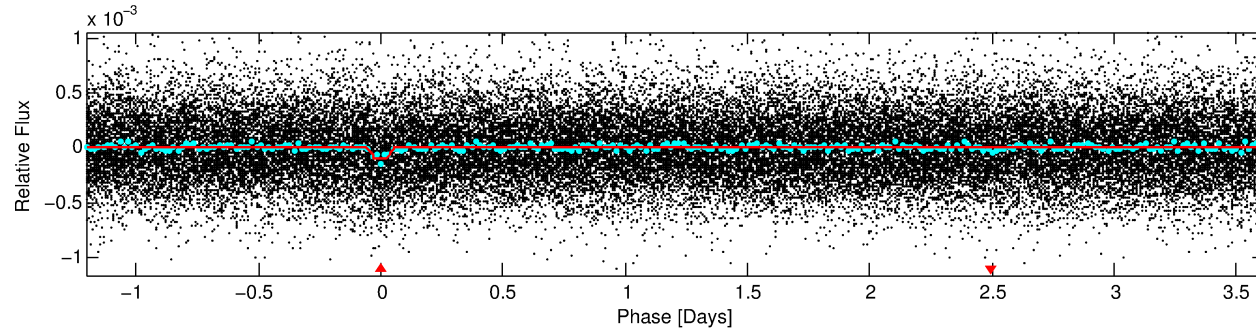
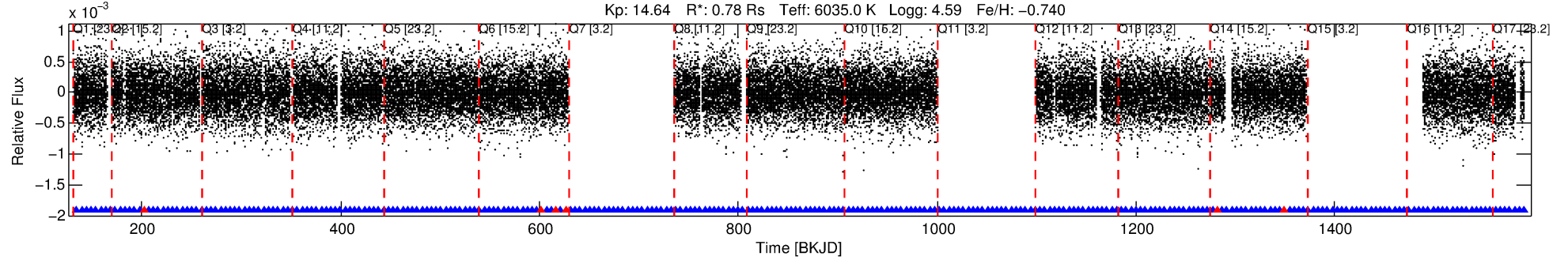
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 010873178-01

No Significant Match Found

DV One-Page Summary

KIC: 10873178 Candidate: 1 of 1 Period: 4.820 d
KOI: K04597.01 Corr: 0.973



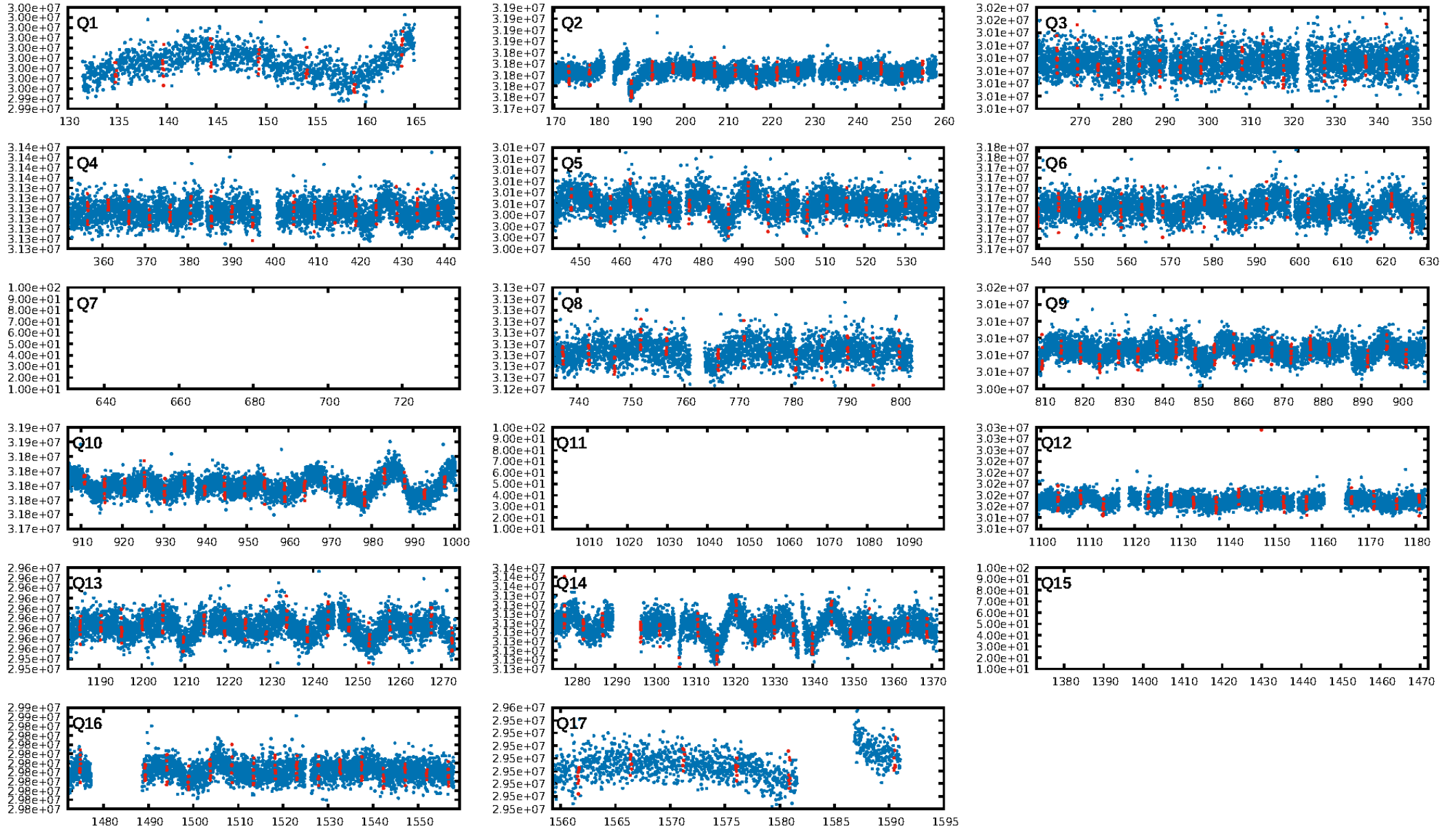
DV Fit Results:

Period = 4.82021 [0.00003] d
Epoch = 134.8194 [0.0045] BKJD
Rp/R* = 0.0105 [0.0072]
a/R* = 9.84 [36.21]
b = 0.85 [1.20]
Seff = 254.56 [82.78]
Teff = 1019 [83] K
Rp = 0.89 [0.64] Re
a = 0.0531 [0.0106] AU
Ag = 55.10 [79.70] [0.68σ]
Teffp = 4291 [1523] K [2.15σ]

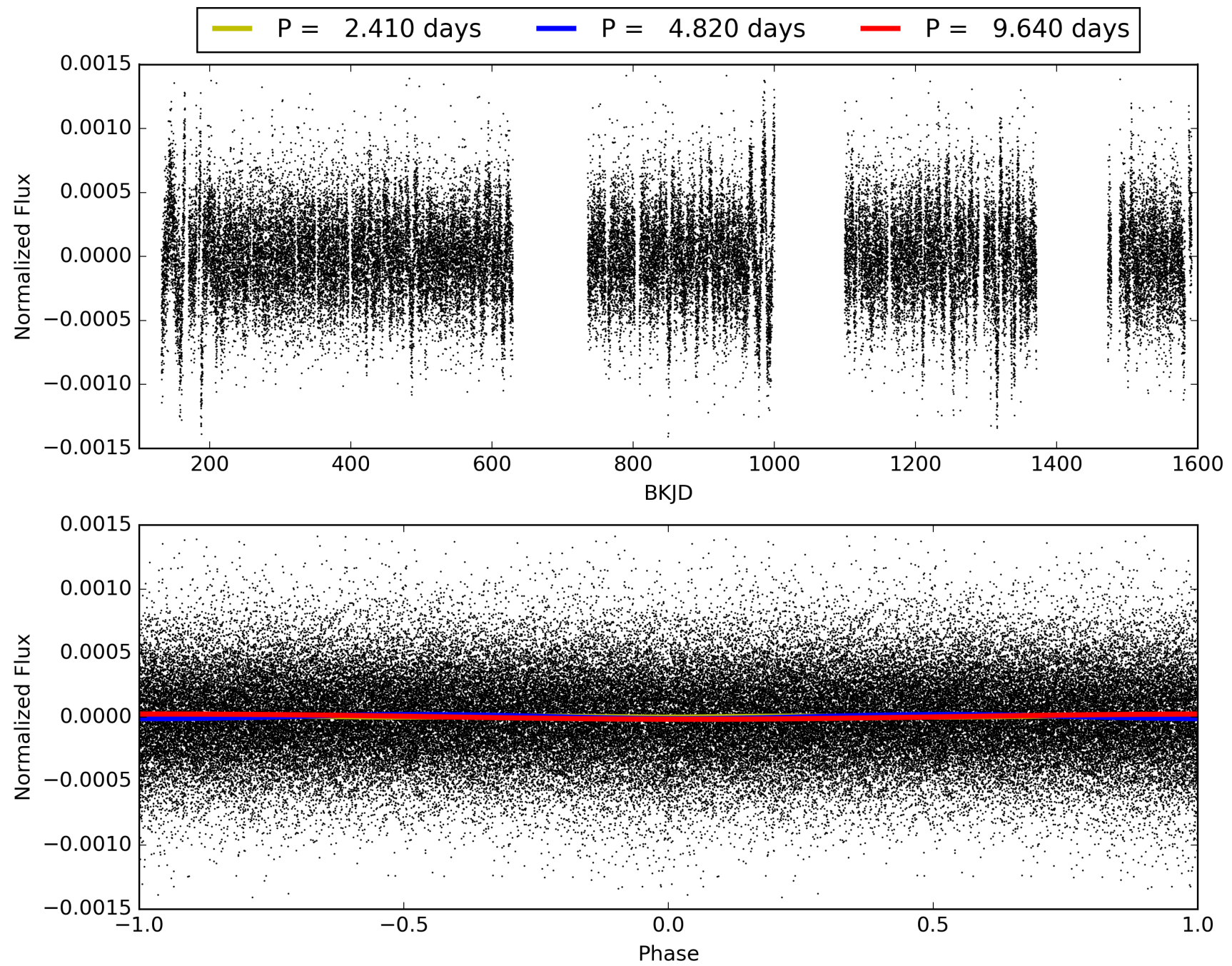
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.97e-15
RollingBand-fgt: 0.97 [201/207]
GhostDiagnostic-chr: 1.865
Centroid-sig: 44.5%
Centroid-so: 1.221 arcsec [0.78σ]
OotOffset-rm: 1.101 arcsec [1.66σ]
KicOffset-rm: 0.893 arcsec [1.28σ]
OotOffset-st: 3/1/2/4 [10]
KicOffset-st: 3/1/2/4 [10]
DiffImageQuality-fgm: 0.30 [3/10]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 010873178-01, PDC Light Curves

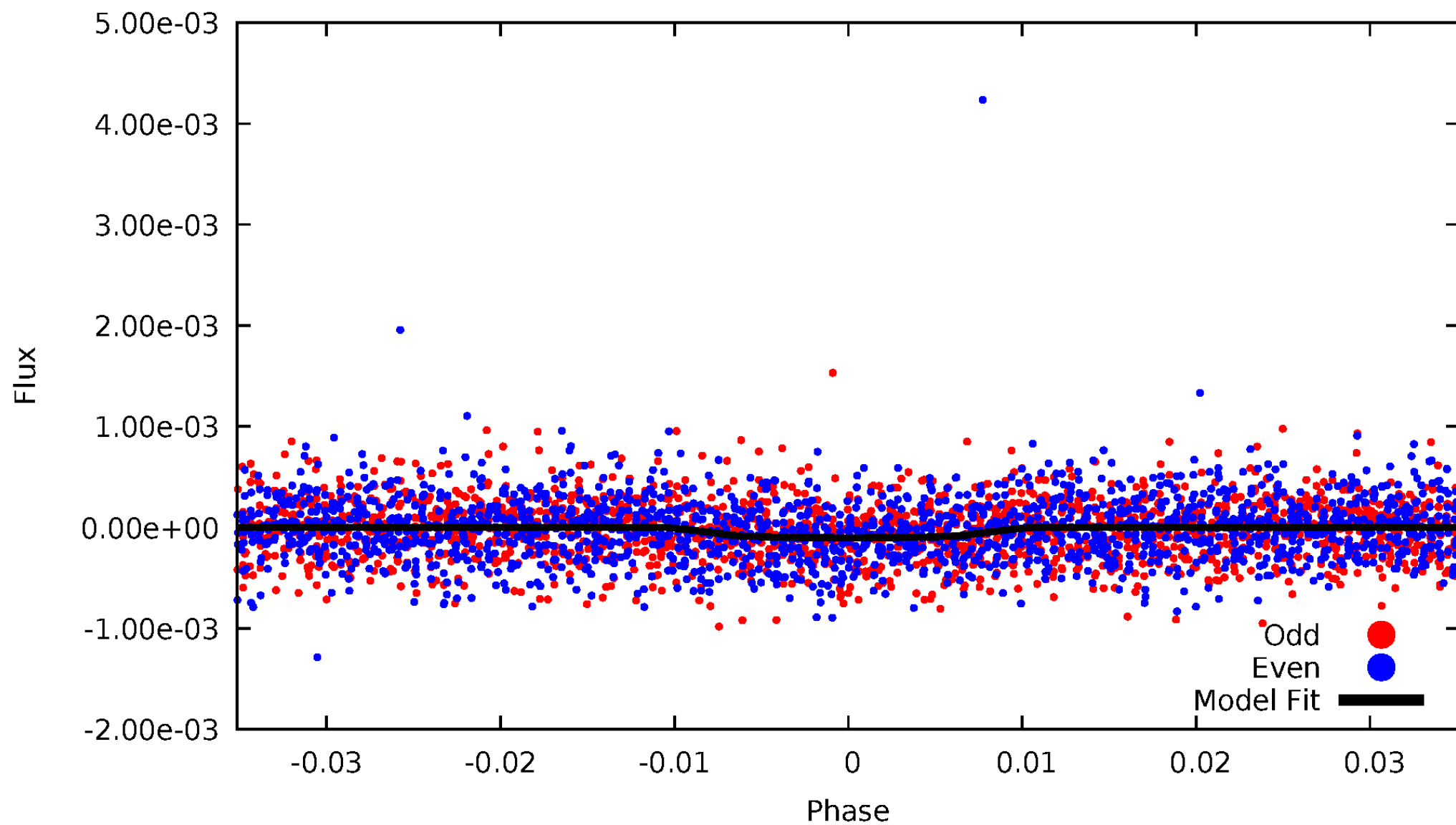


TCE 010873178-01



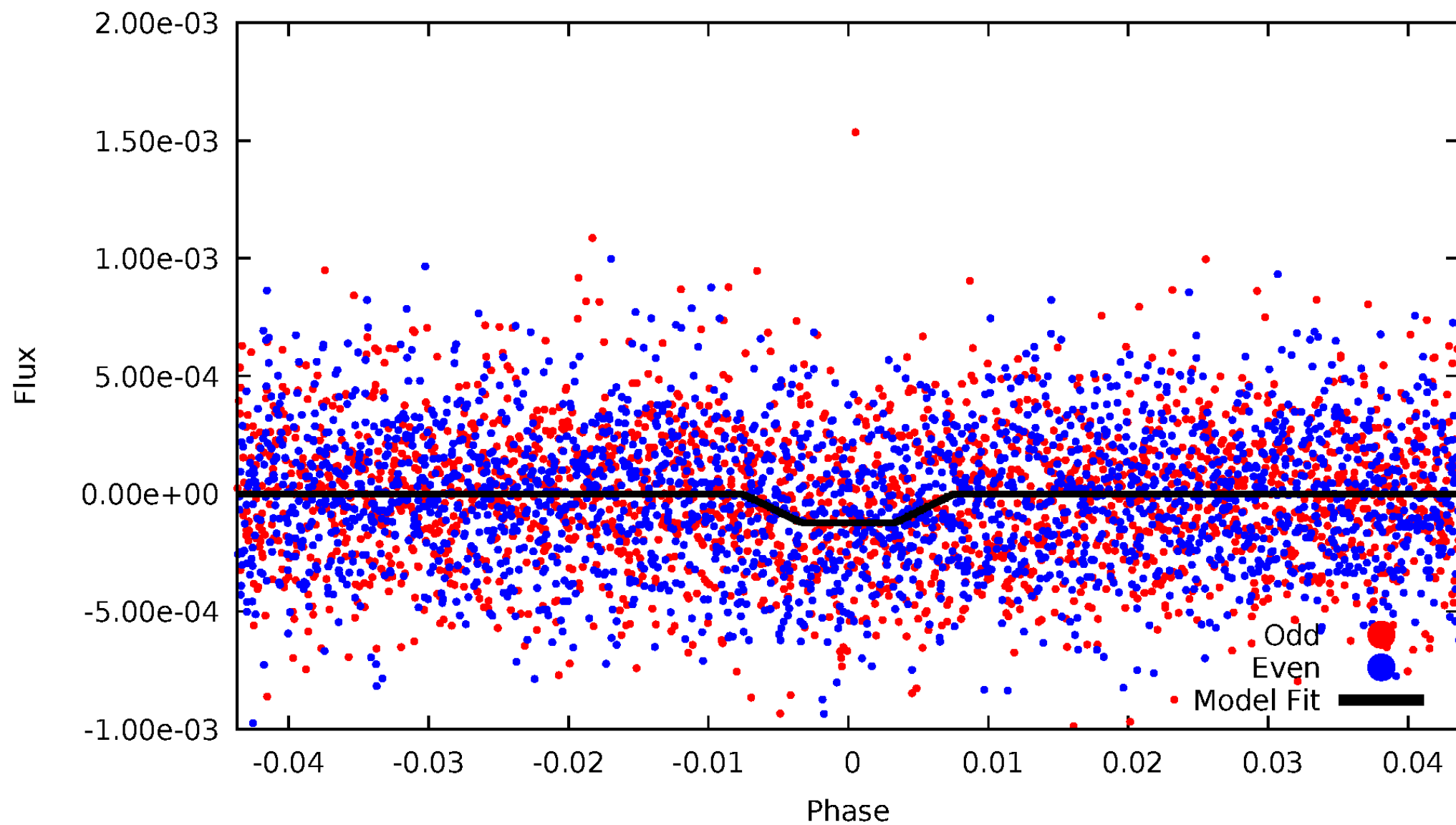
DV Odd/Even

TCE 010873178-01

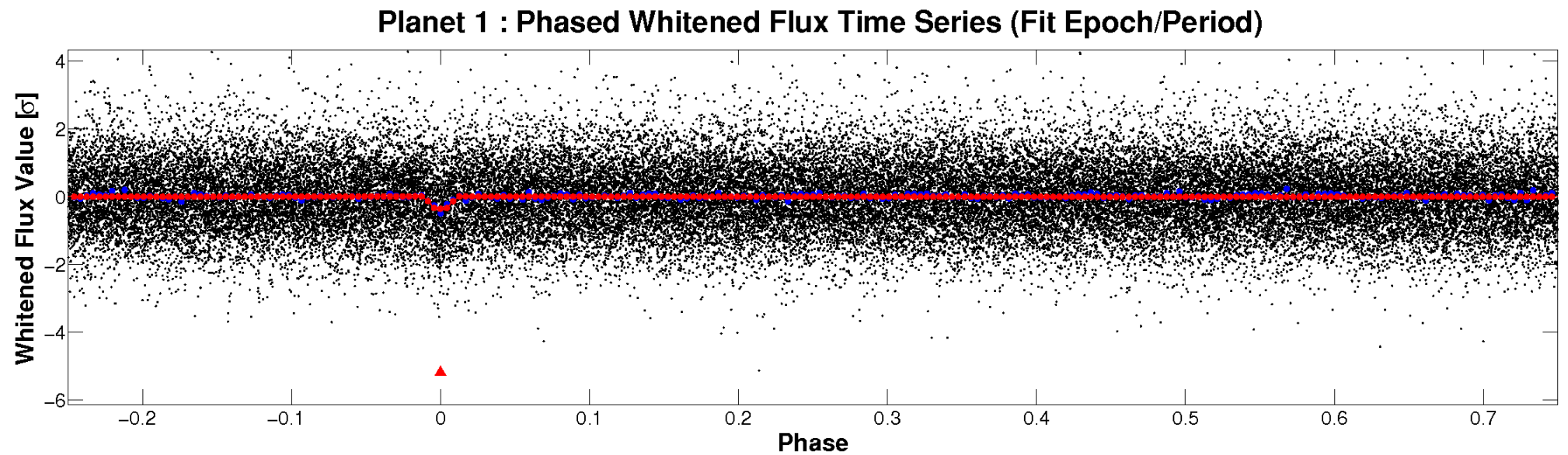
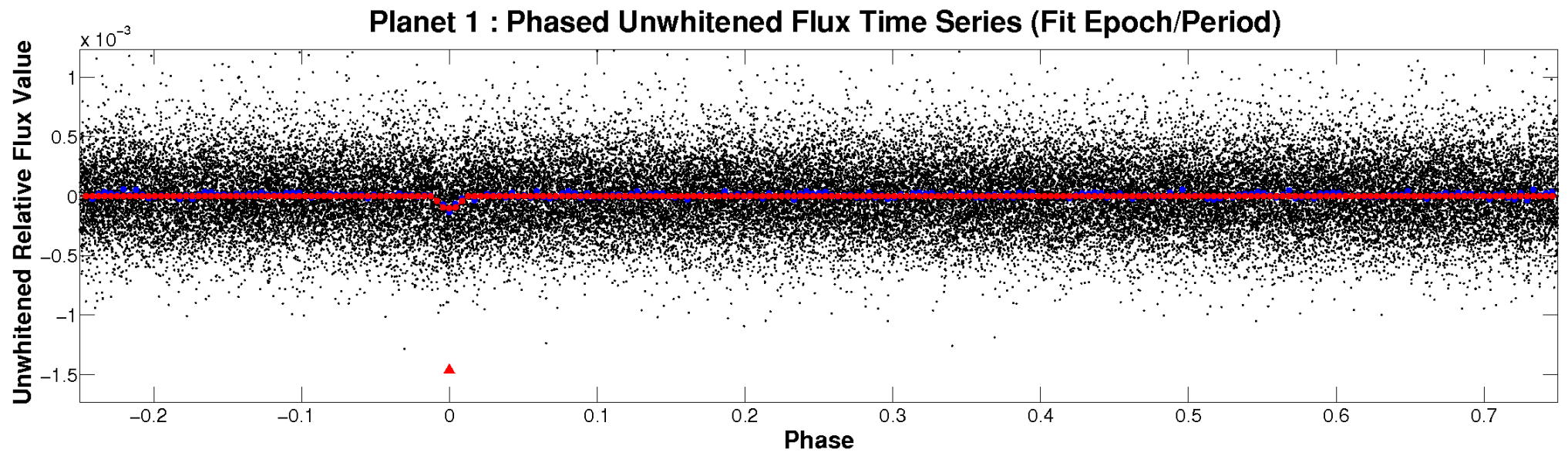


ALT Odd/Even

TCE 010873178-01

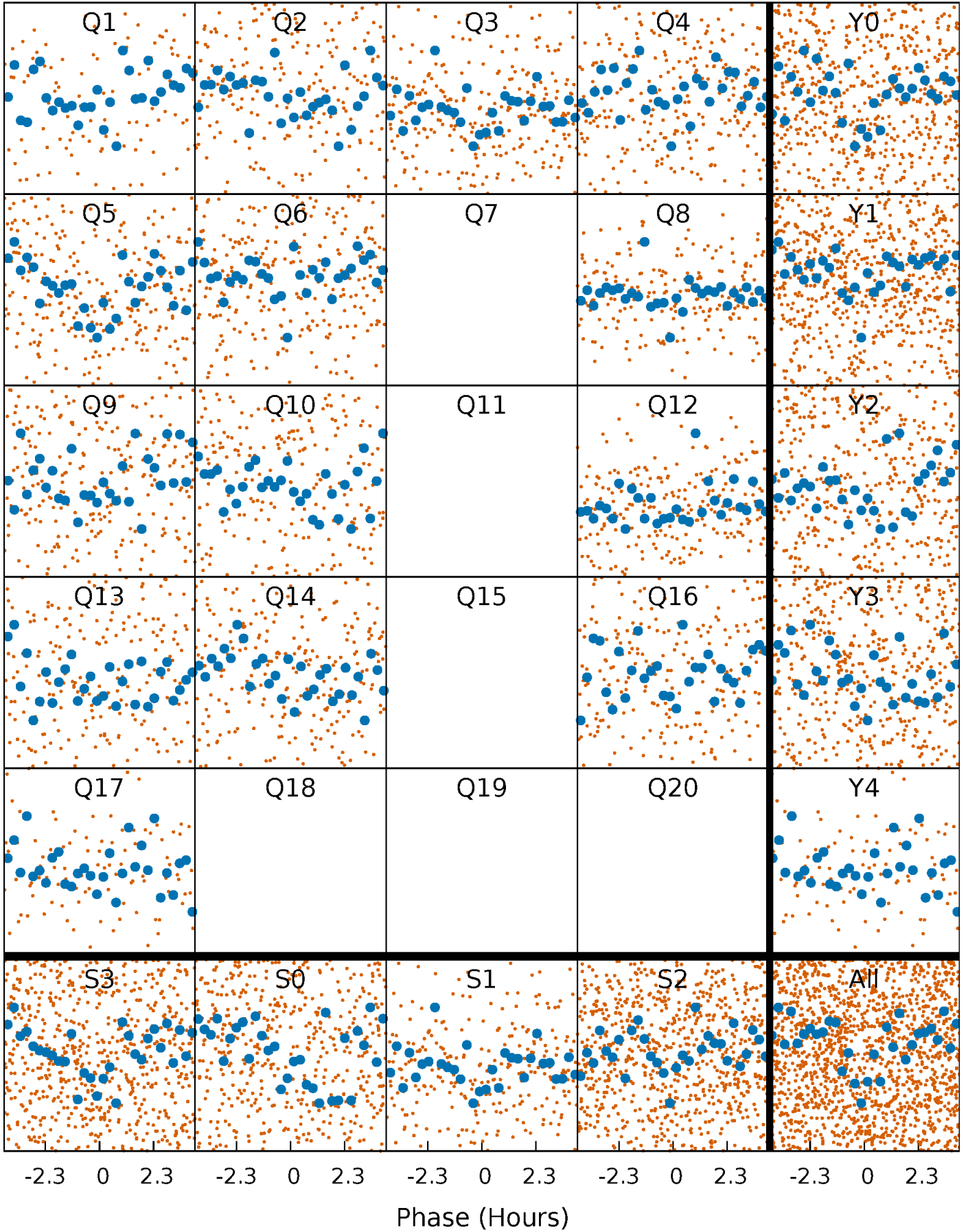


Non-Whitened Vs. Whitened Light Curve



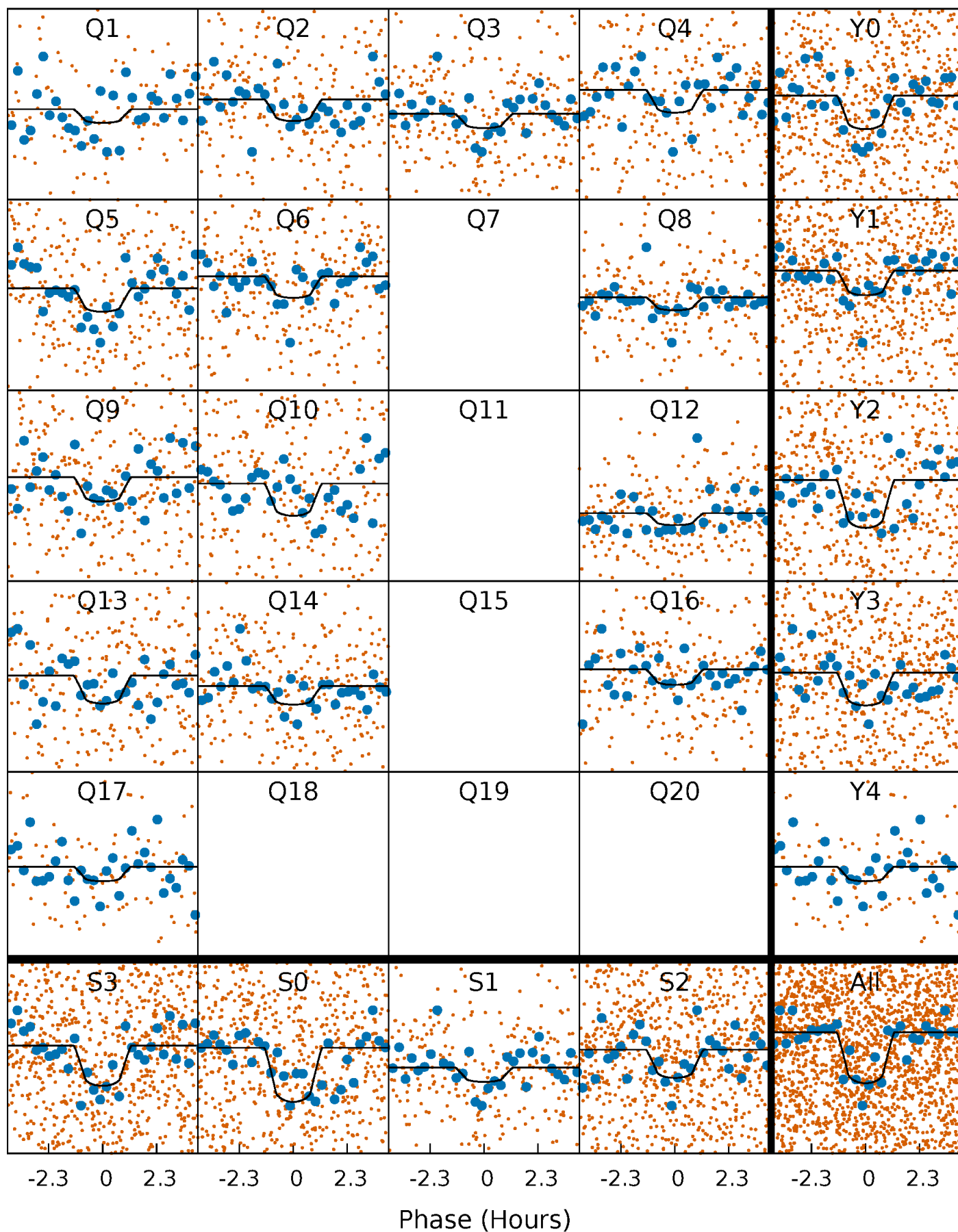
PDC Quarter-Phased Transit Curves

TCE 010873178-01 P= 4.820207 Days $T_0=134.819448$ (BKJD)



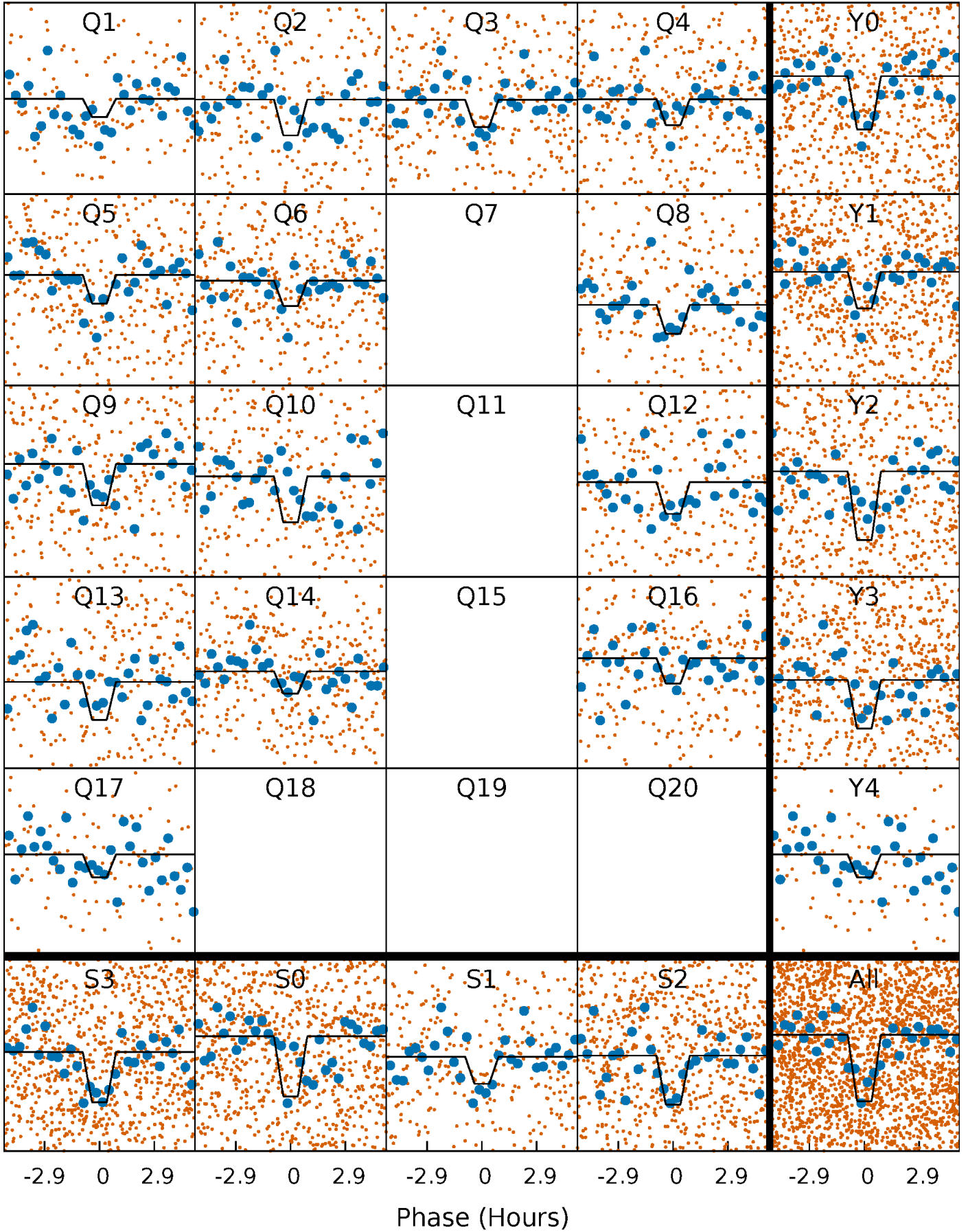
DV Quarter-Phased Transit Curves

TCE 010873178-01 P= 4.820207 Days $T_0=134.819448$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

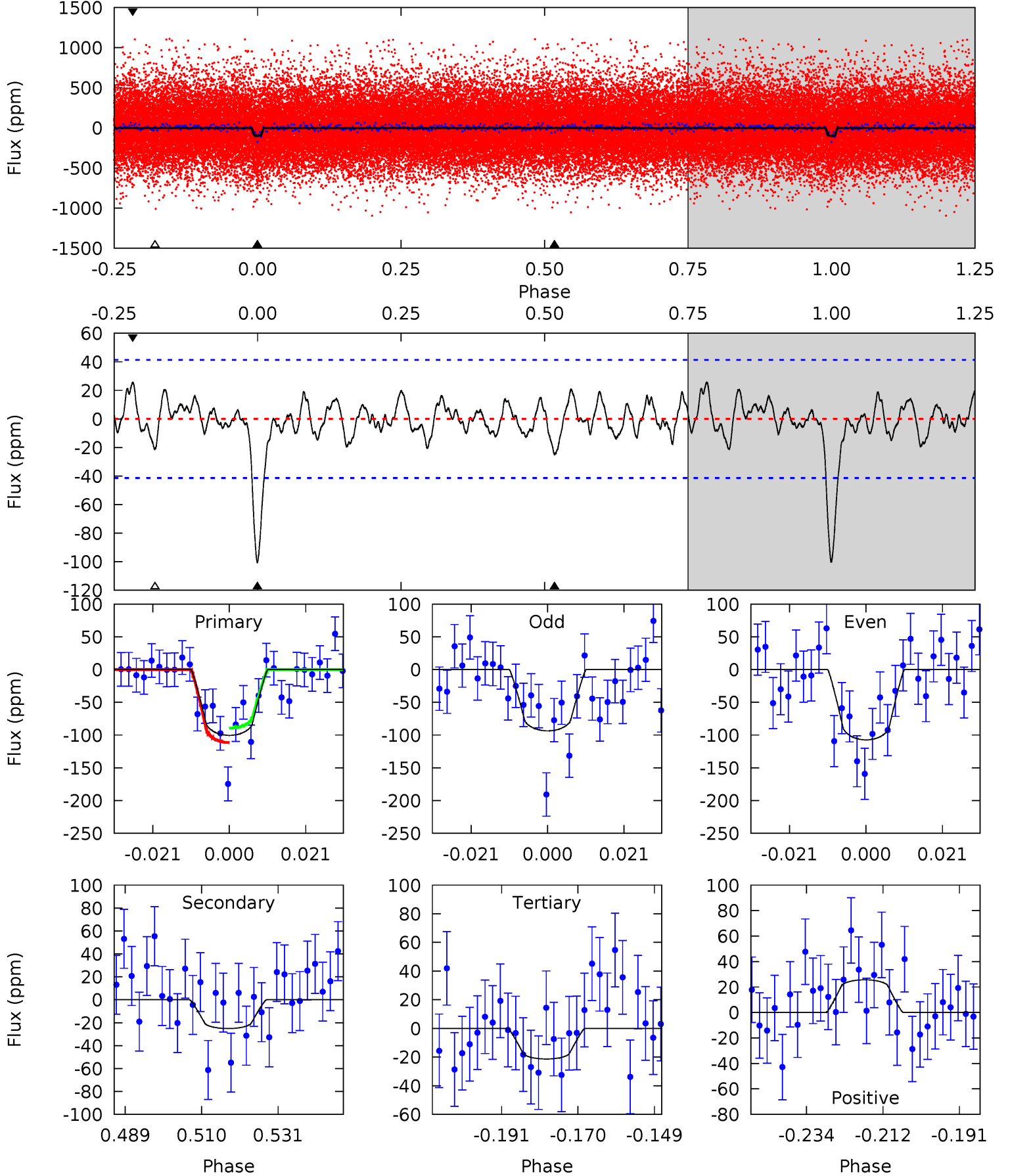
TCE 010873178-01 P= 4.820164 Days $T_0=134.823017$ (BKJD)



DV Model-Shift Uniqueness Test

010873178-01, P = 4.820207 Days, E = 129.999241 Days

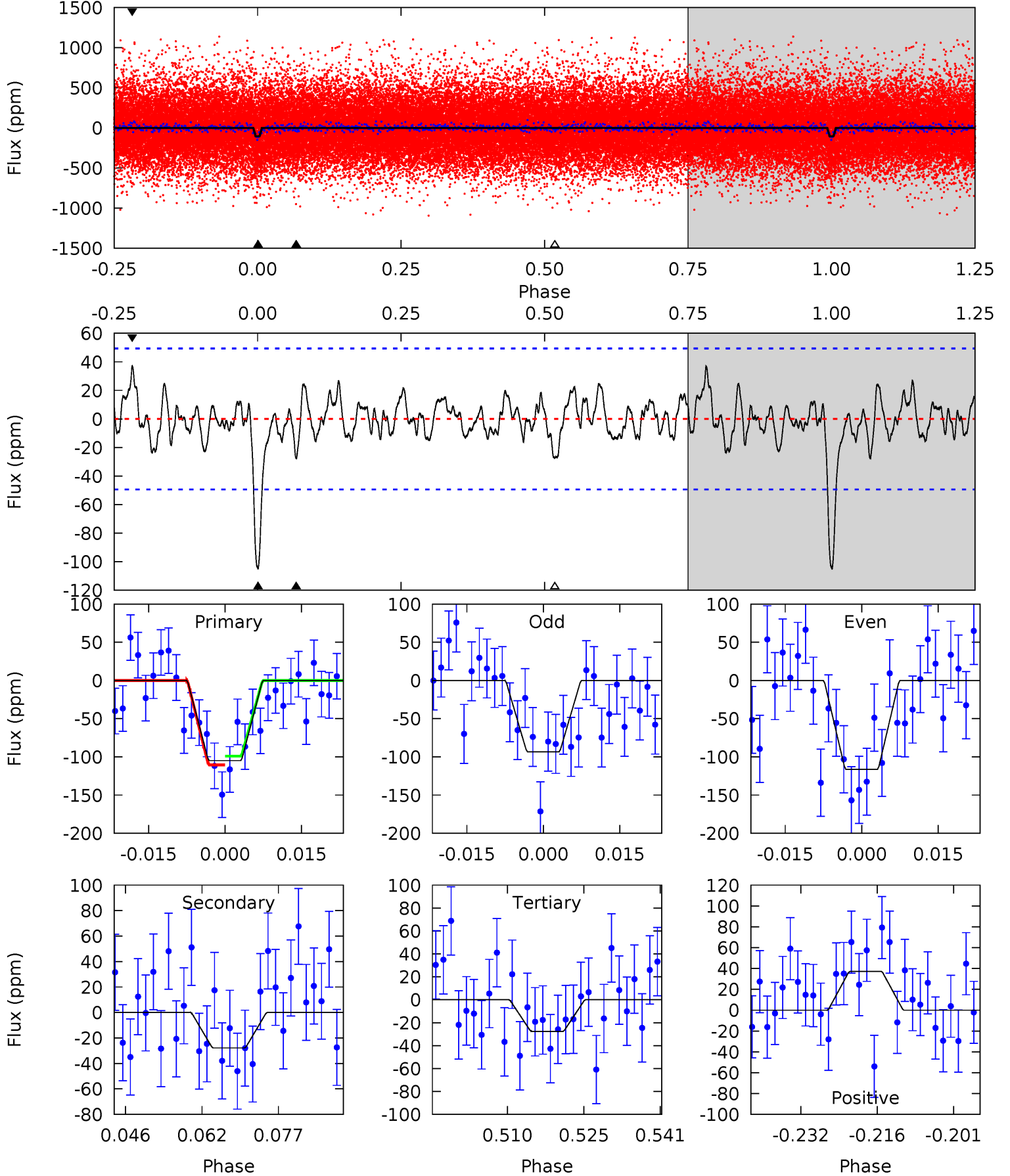
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.9	2.97	2.52	3.03	4.88	2.30	1.09	9.34	8.83	0.45	-0.07	0.81	0.91	0.20	1.30



Alt Model-Shift Uniqueness Test

010873178-01, P = 4.820164 Days, E = 130.002853 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.5	2.79	2.76	3.72	4.94	2.42	1.10	7.74	6.78	0.03	-0.93	1.16	1.08	0.26	0.57



Stellar Parameters For KIC 010873178

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6035^{+164}_{-182}	$4.591^{+0.028}_{-0.171}$	$-0.740^{+0.250}_{-0.300}$	$0.777^{+0.174}_{-0.050}$	$0.864^{+0.073}_{-0.097}$	$2.590^{+0.411}_{-1.154}$
	+3%/-3%	+1%/-4%	+34%/-41%	+22%/-6%	+8%/-11%	+16%/-45%
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 010873178-01 / KOI 4597.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-25 ± 8	$1.02^{+0.66}_{-0.60}$	1451^{+78}_{-60}	4174^{+1915}_{-693}	36^{+169}_{-23}
Alt.	-28 ± 10	$1.04^{+0.71}_{-0.61}$	1453^{+84}_{-61}	4233^{+1849}_{-694}	37^{+171}_{-24}

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

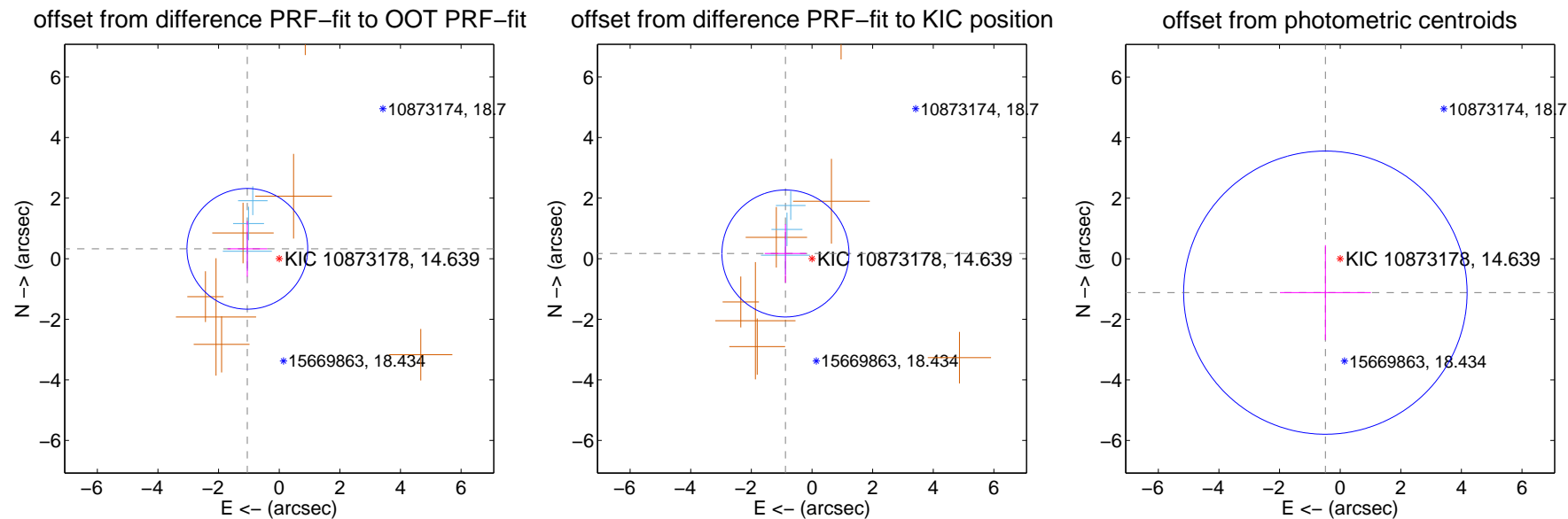
DV Centroid Data

Supplemental centroid analysis for 010873178-01. Kepler magnitude: 14.64. Transit SNR 8.97

There are 3 quarters with good PRF difference image offsets

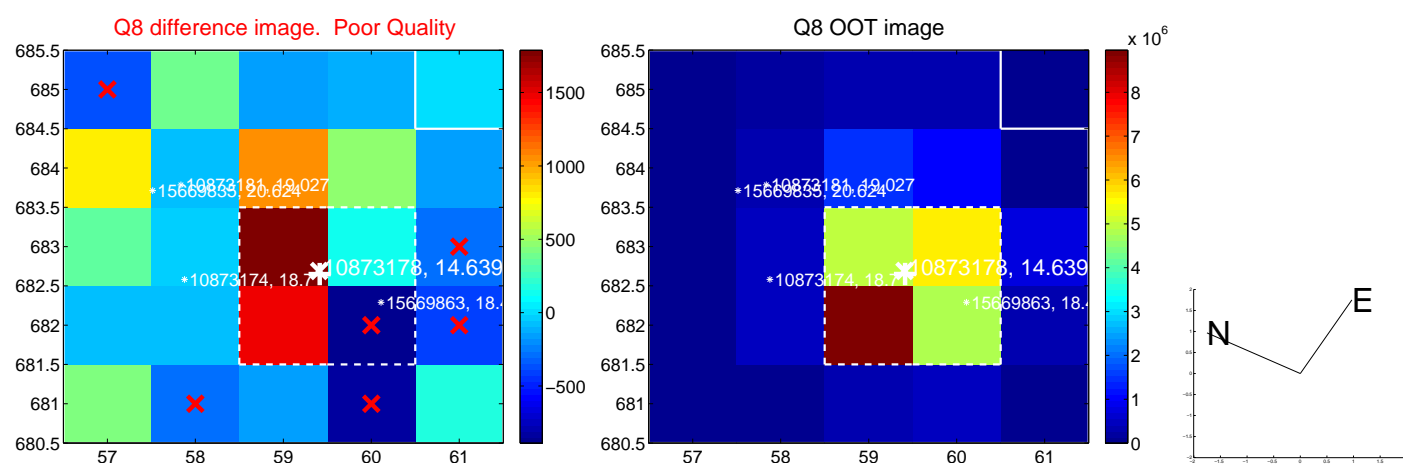
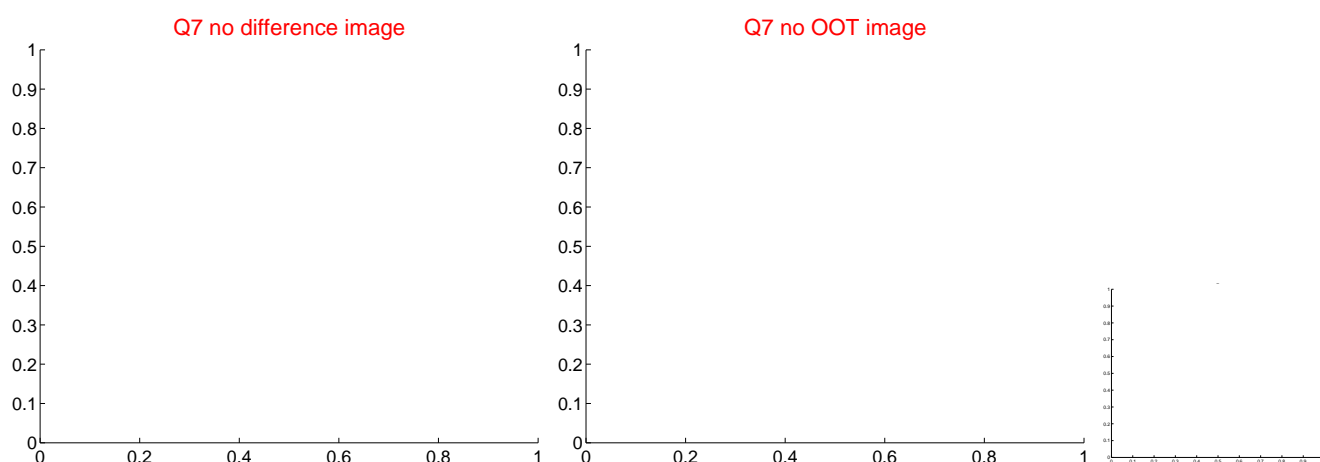
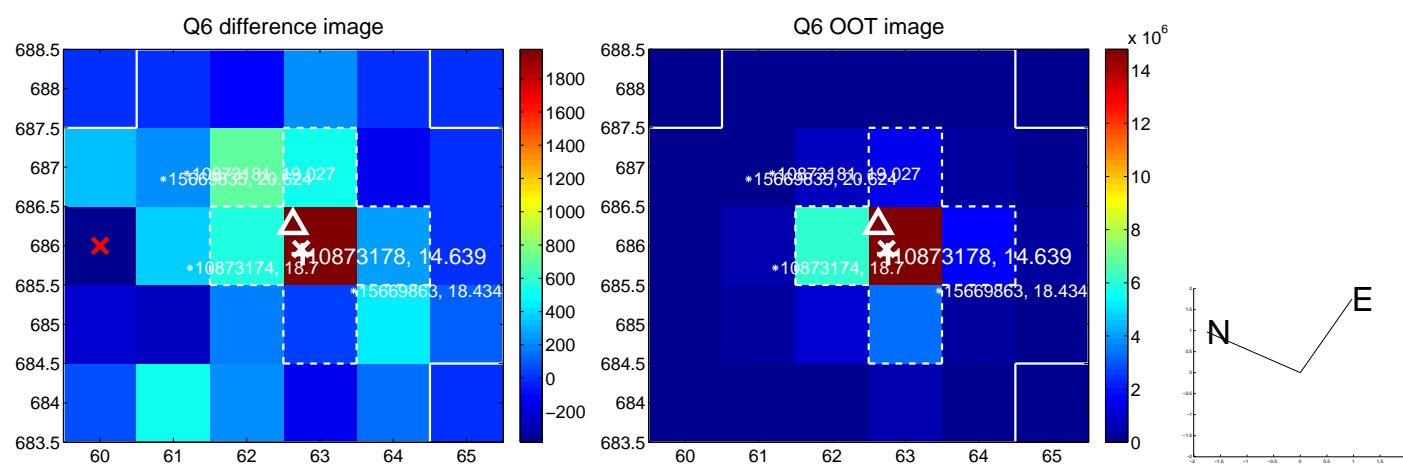
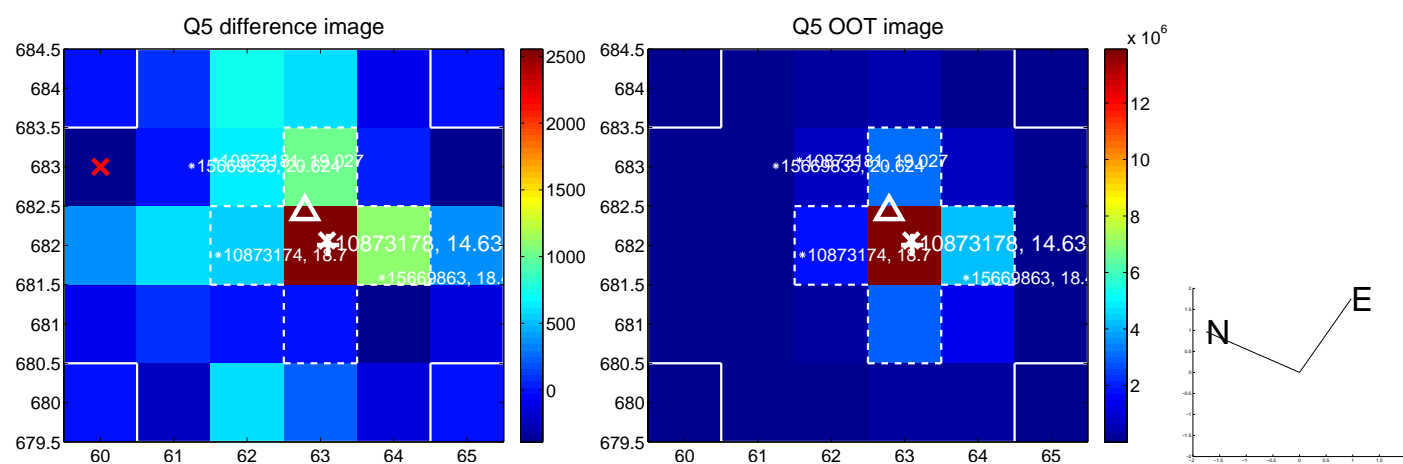
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.101 ± 0.664	1.66	1.052 ± 0.655	0.326 ± 0.918
PRF-fit source offset from KIC position	0.893 ± 0.699	1.28	0.876 ± 0.684	0.173 ± 0.964
photometric centroid source offset	1.22 ± 1.56	0.78	0.49 ± 1.50	-1.12 ± 1.57

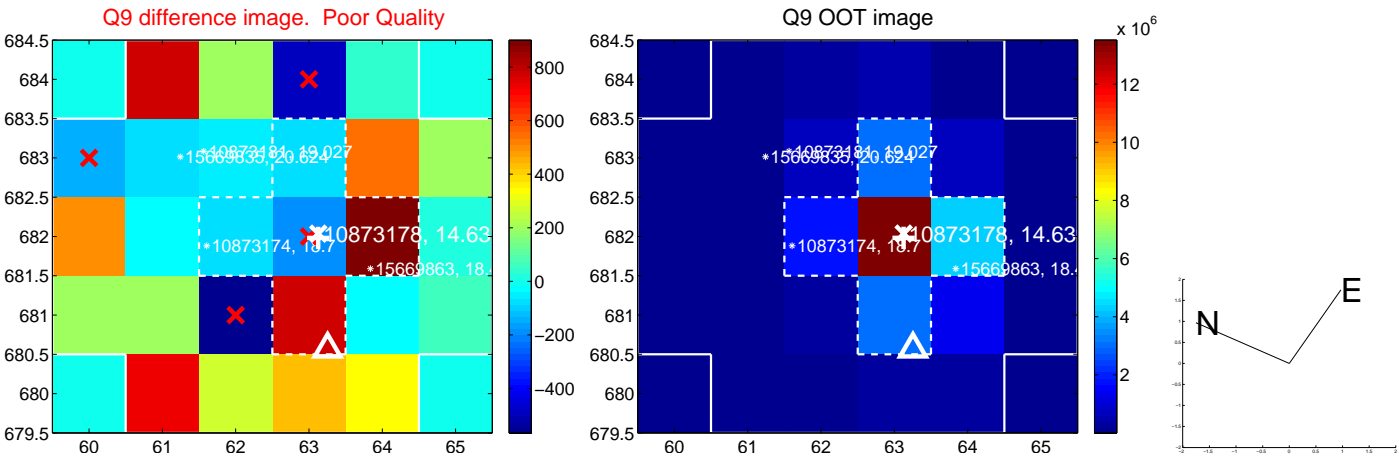


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

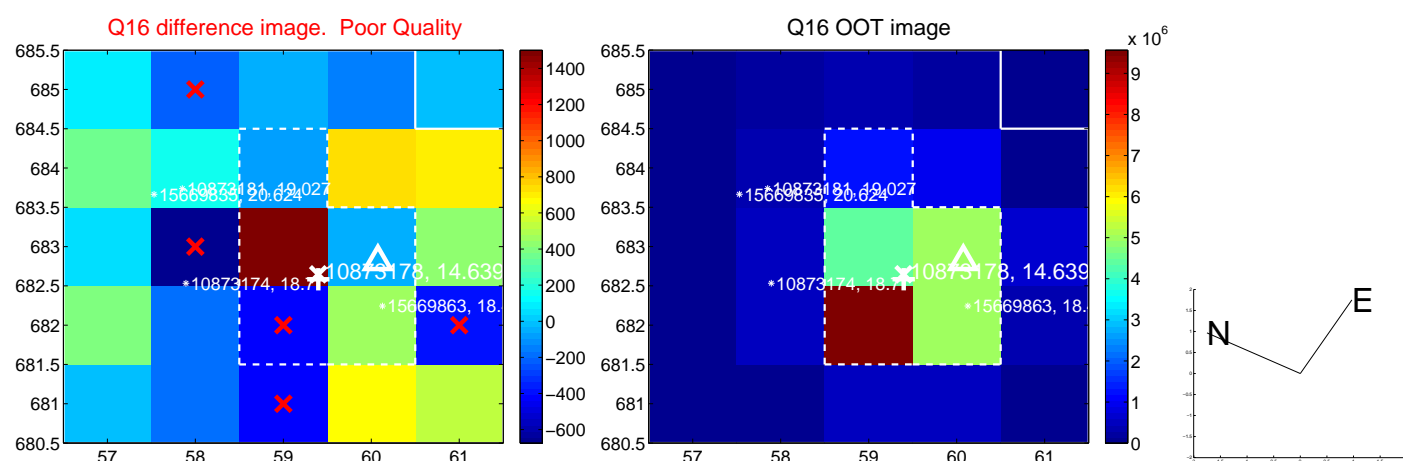
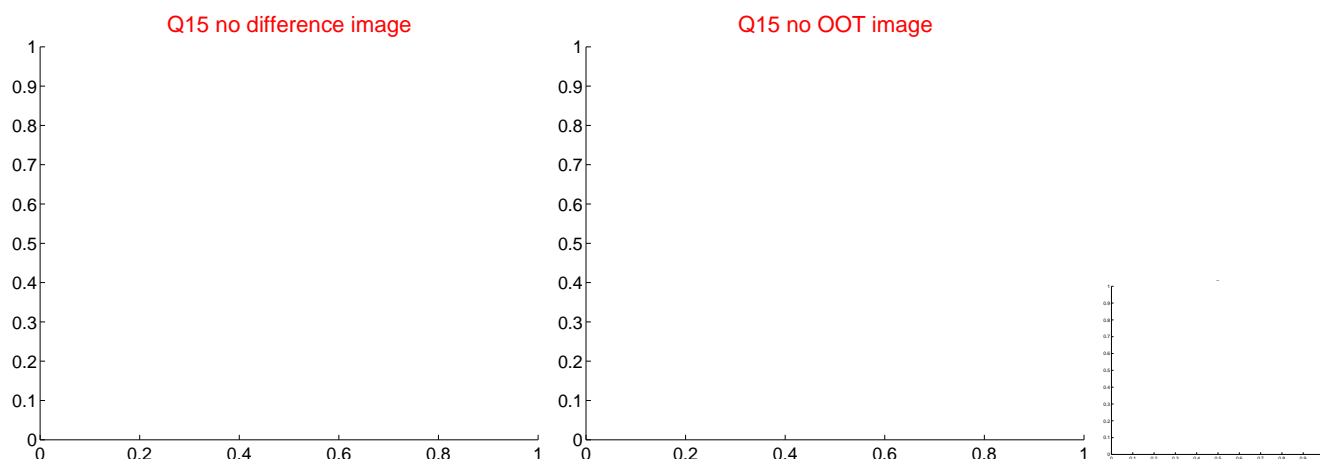
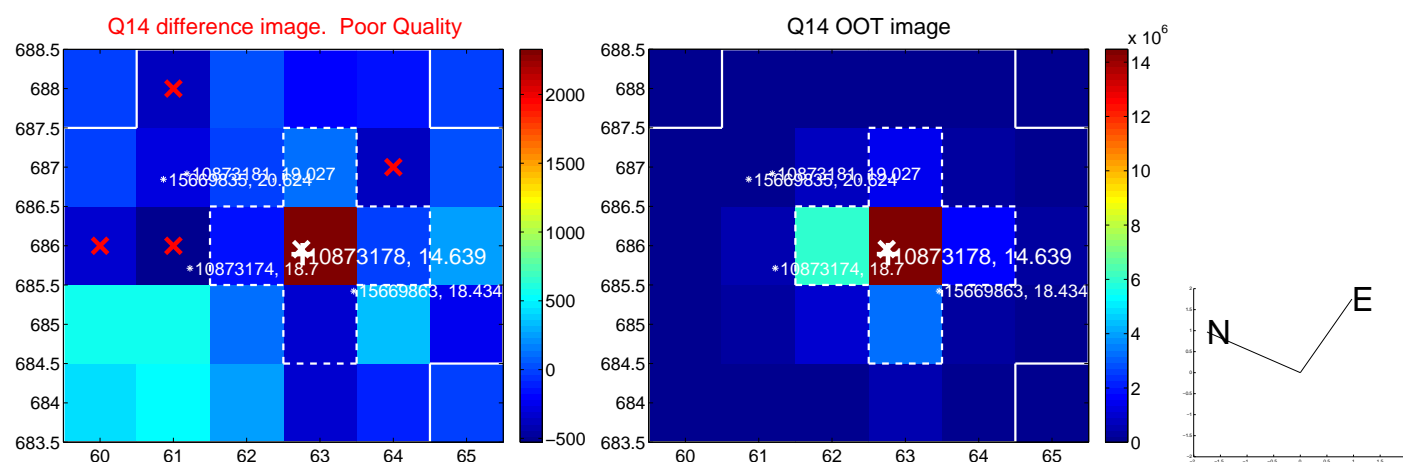
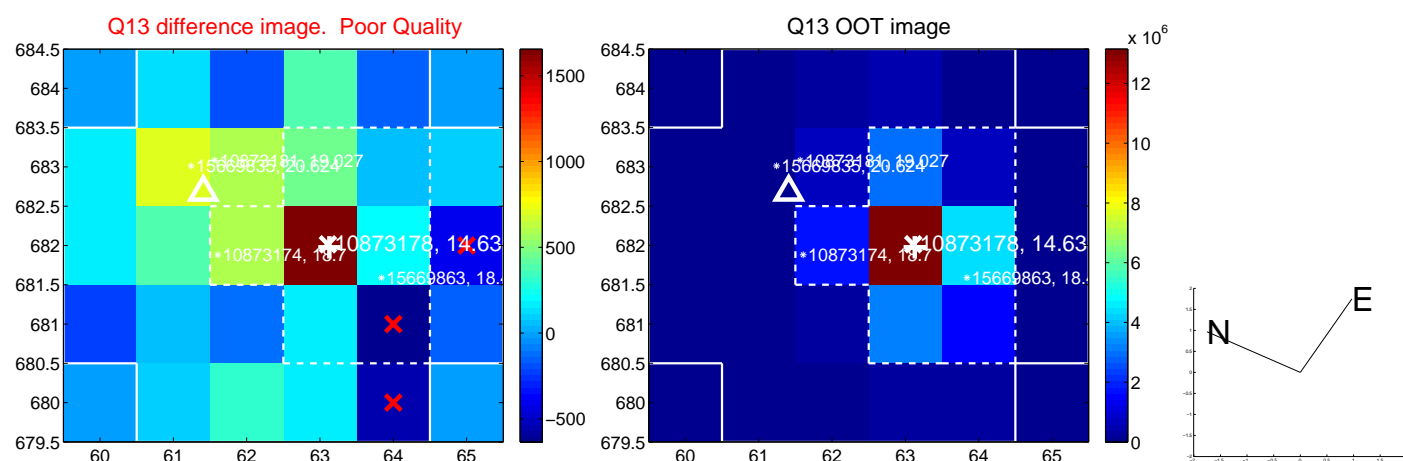
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



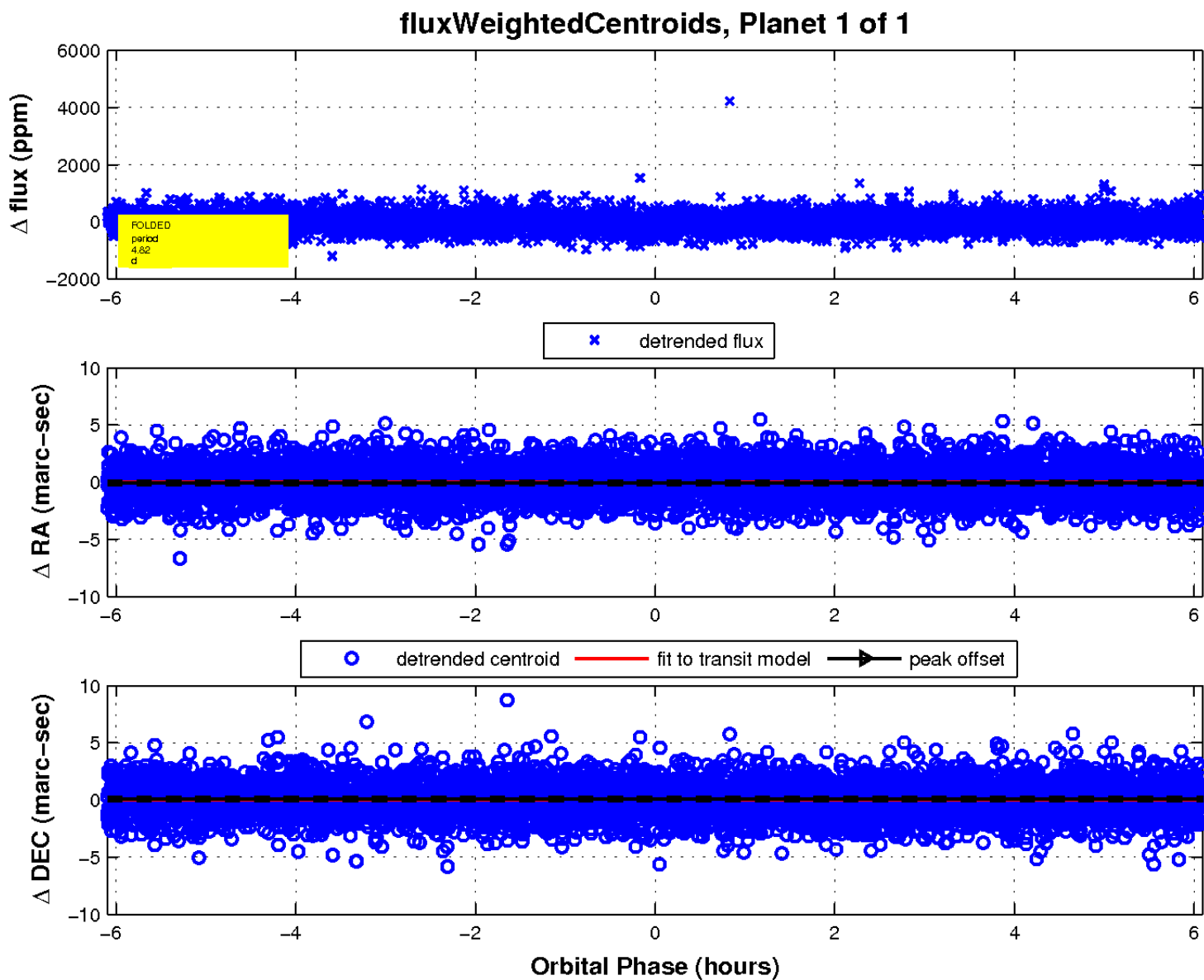
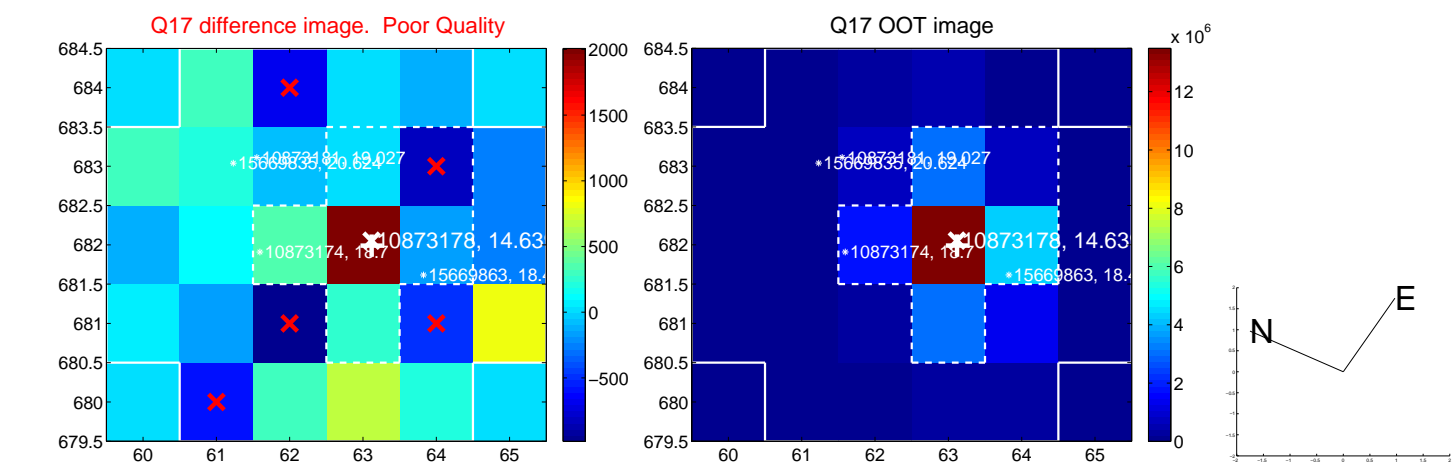
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

