

KIC 004862730

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})
004862730-01	OBS	No	0.558352	131.955335	122.1	0.581	8.0	10.4	0.73	4991	1.02	2115.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004862730-01	OBS	FP	0.00	1	0	1	0	LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—CENT_RESOLVED_OFFSET

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

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

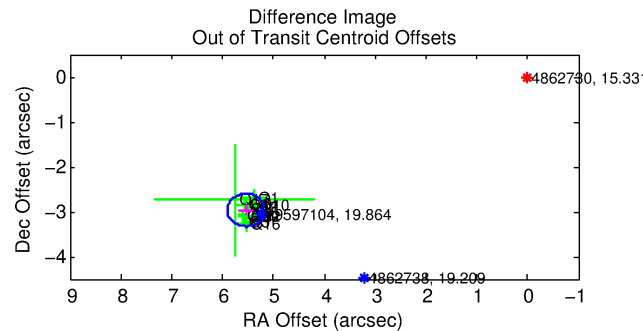
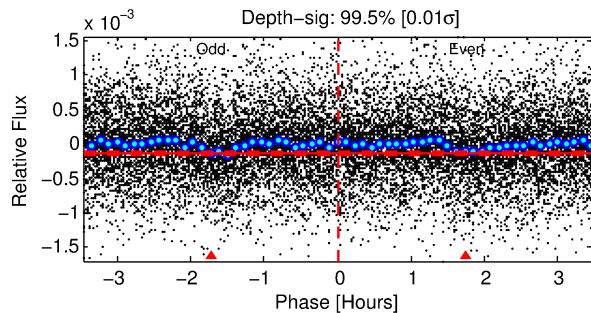
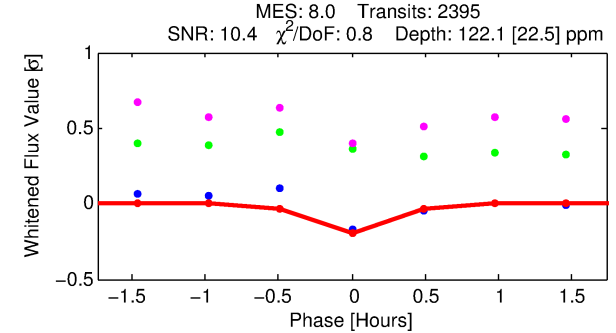
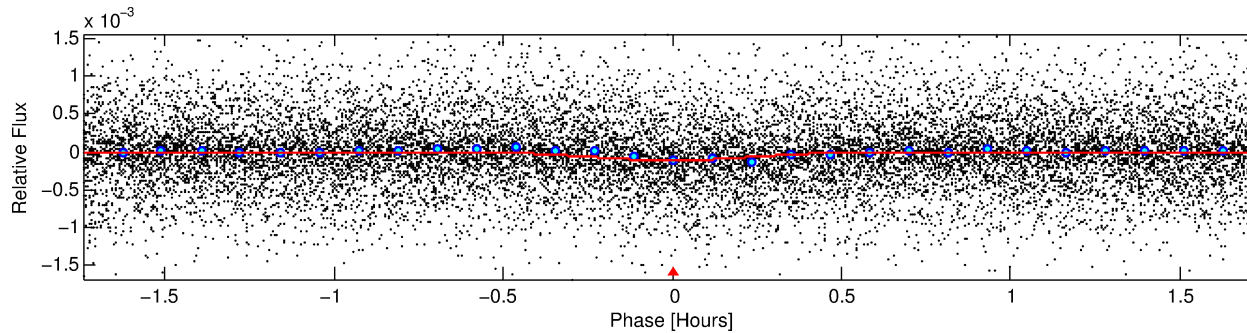
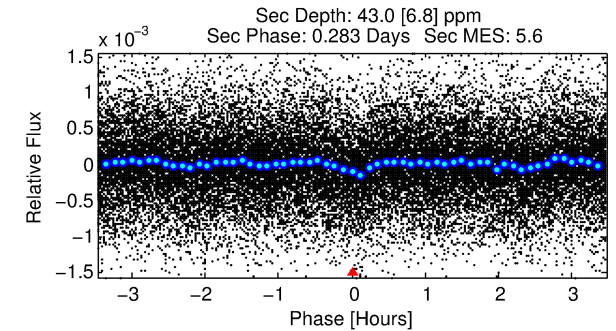
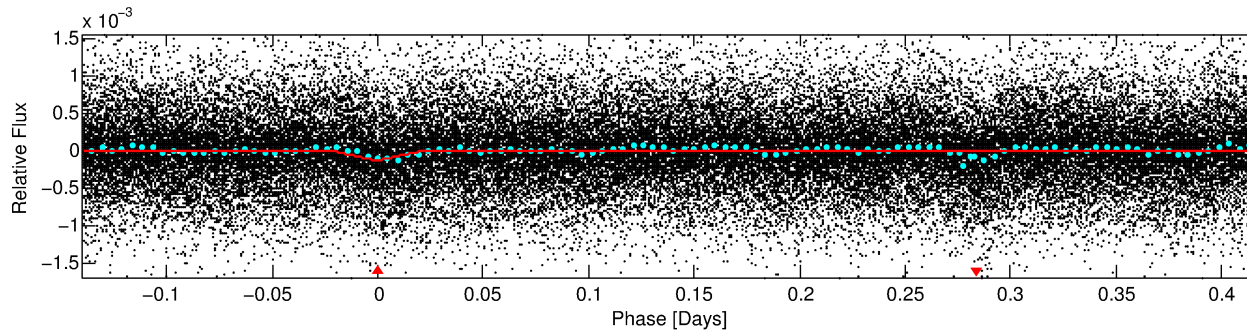
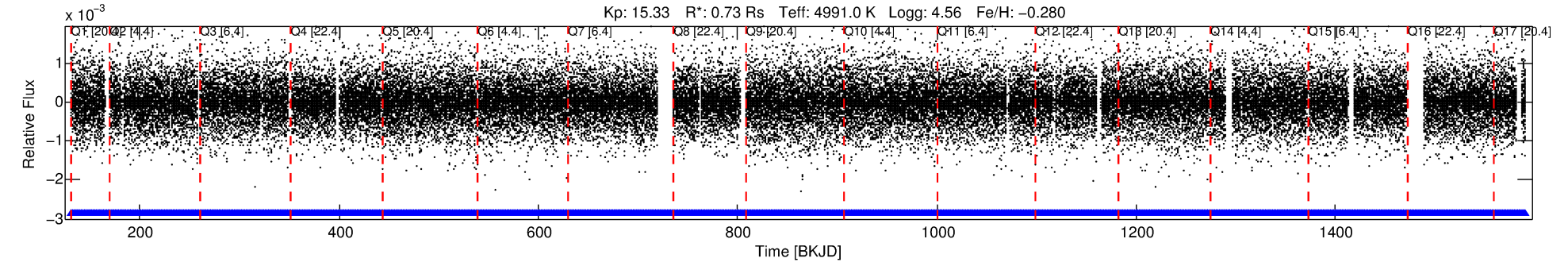
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004862730-01

No Significant Match Found

DV One-Page Summary

KIC: 4862730 Candidate: 1 of 1 Period: 0.558 d



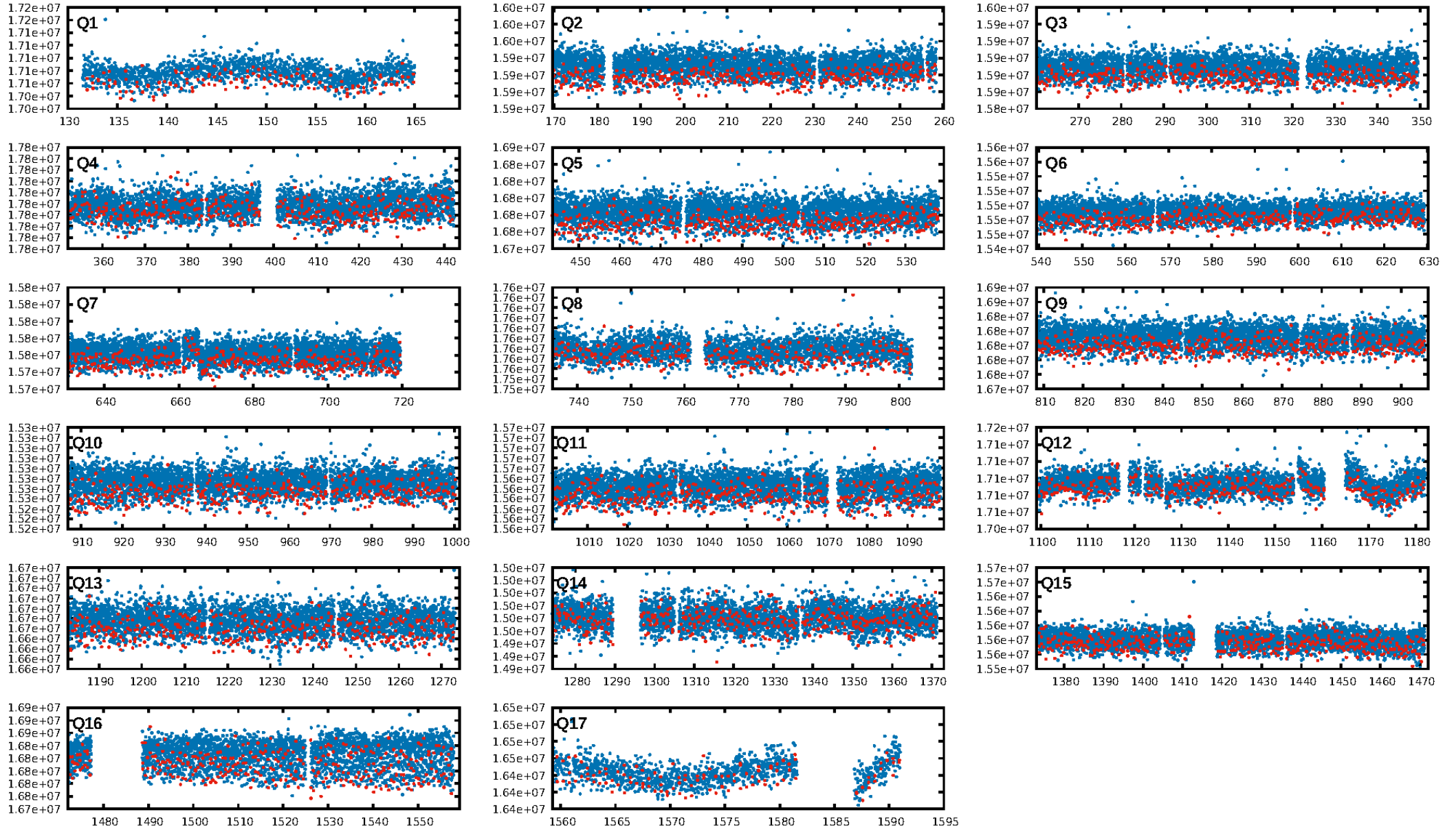
DV Fit Results:

Period = 0.55835 [0.00001] d
Epoch = 131.9553 [0.0012] BKJD
Rp/R* = 0.0128 [0.0053]
a/R* = 3.50 [5.28]
b = 0.90 [0.35]
Seff = 2115.71 [373.83]
Teq = 1729 [76] K
Rp = 1.02 [0.43] Re
a = 0.0118 [0.0010] AU
Ag = 3.17 [2.69] [0.80σ]
Teffp = 3567 [758] K [2.41σ]

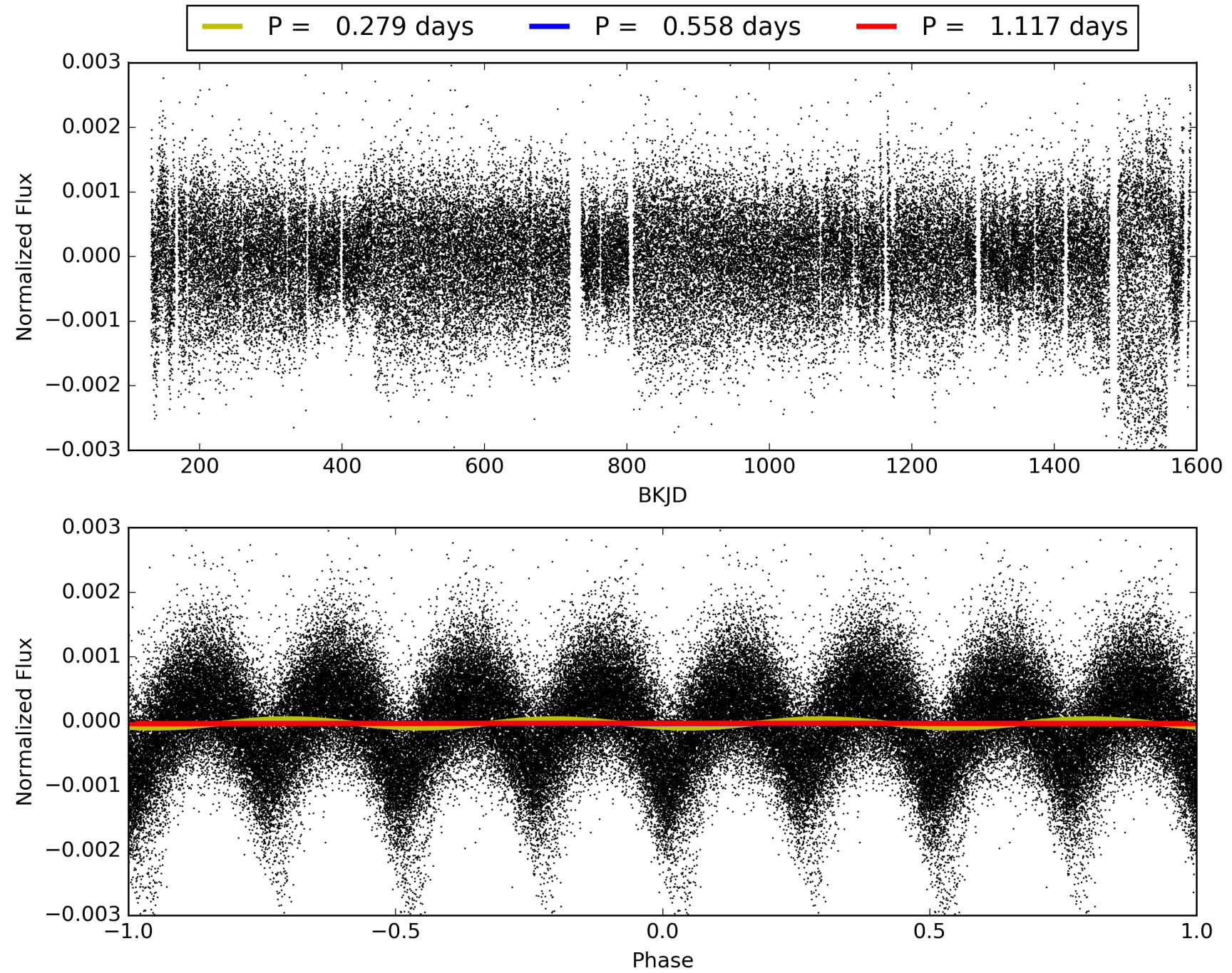
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.66e-15
RollingBand-fgt: 1.00 [2287/2287]
GhostDiagnostic-chr: -1.813
Centroid-sig: 0.0%
Centroid-so: 7.068 arcsec [5.67σ]
OotOffset-rm: 6.285 arcsec [51.35σ]
KicOffset-rm: 6.134 arcsec [50.40σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 1.00 [15/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004862730-01, PDC Light Curves

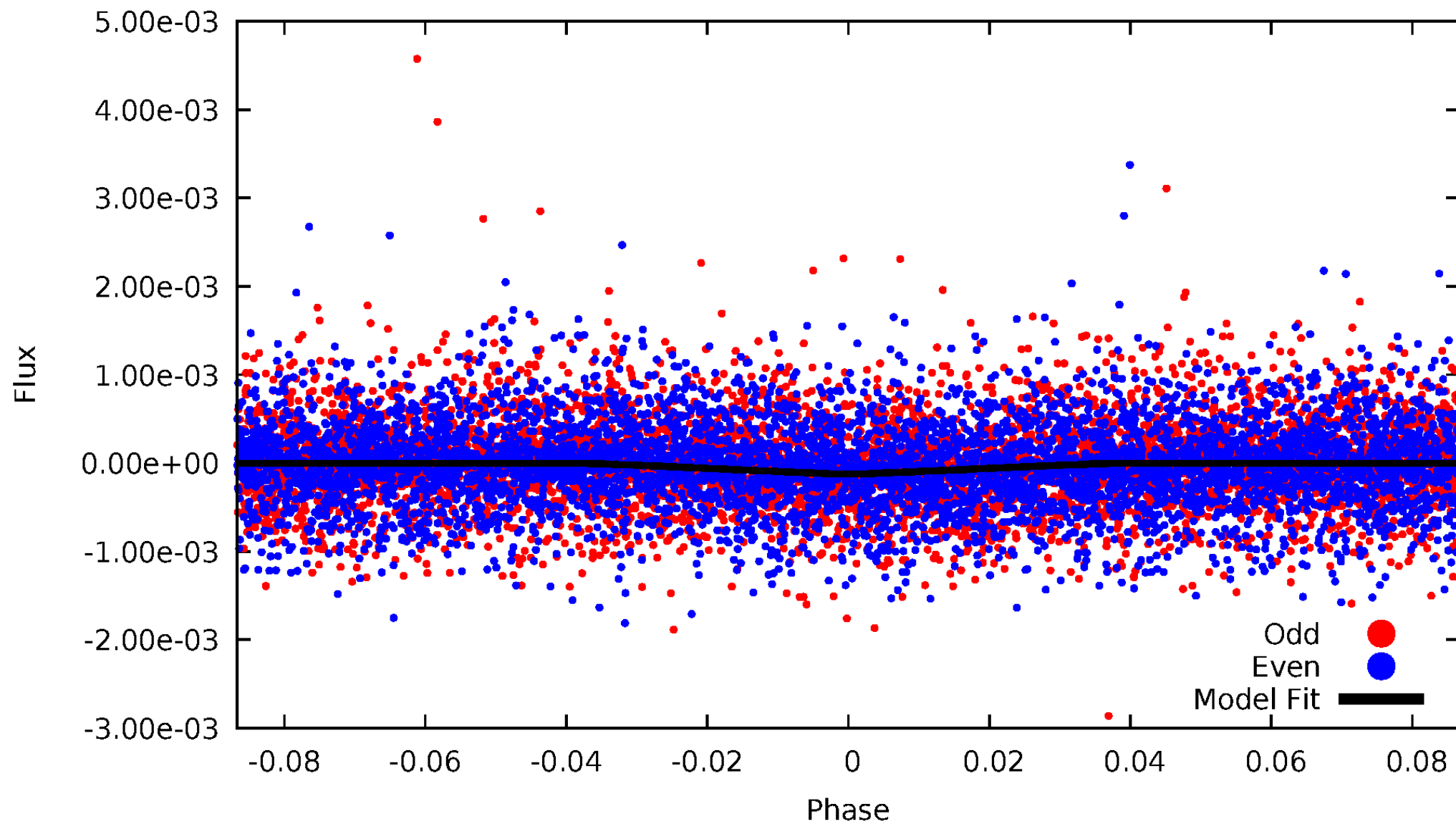


TCE 004862730-01



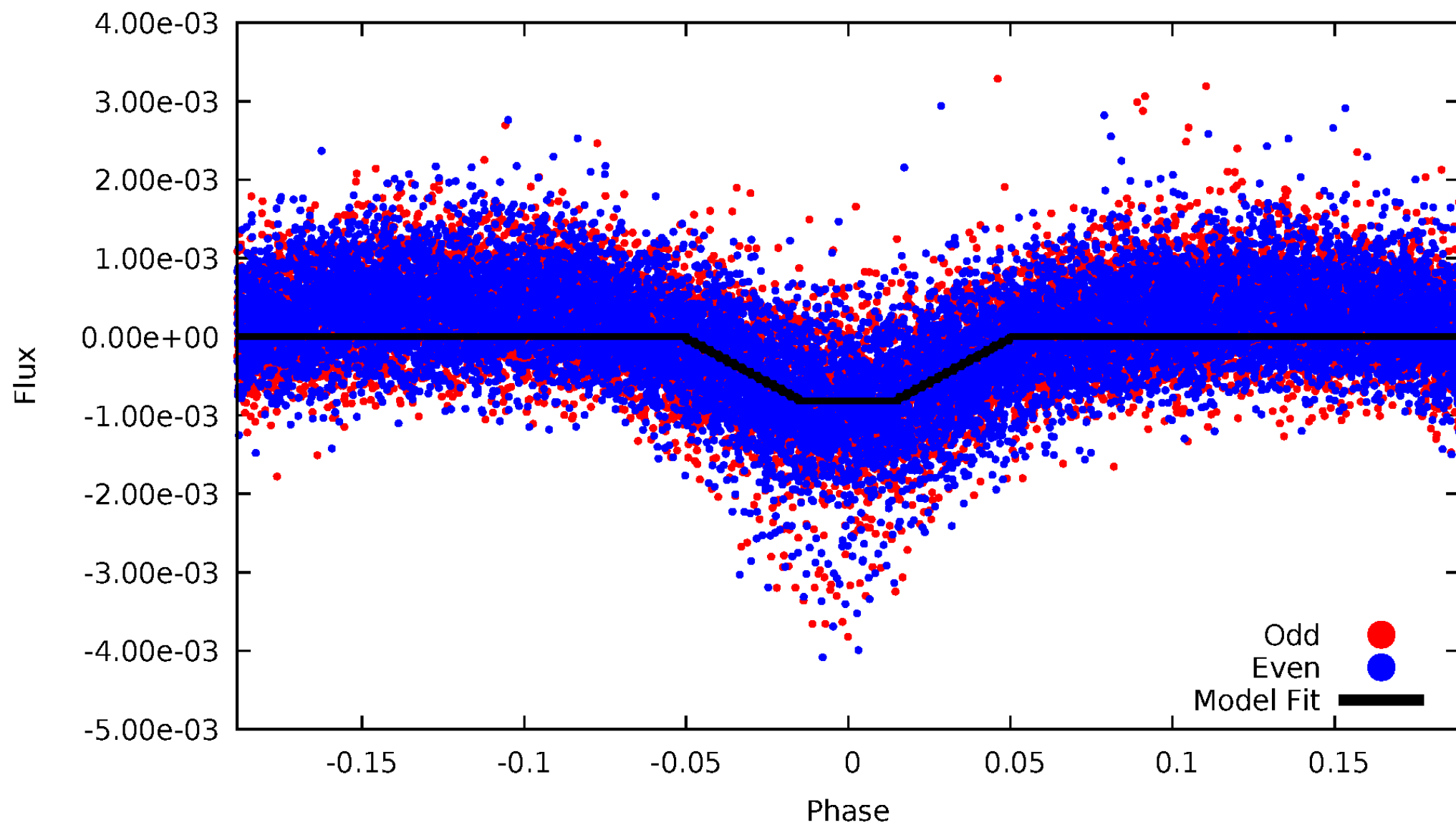
DV Odd/Even

TCE 004862730-01



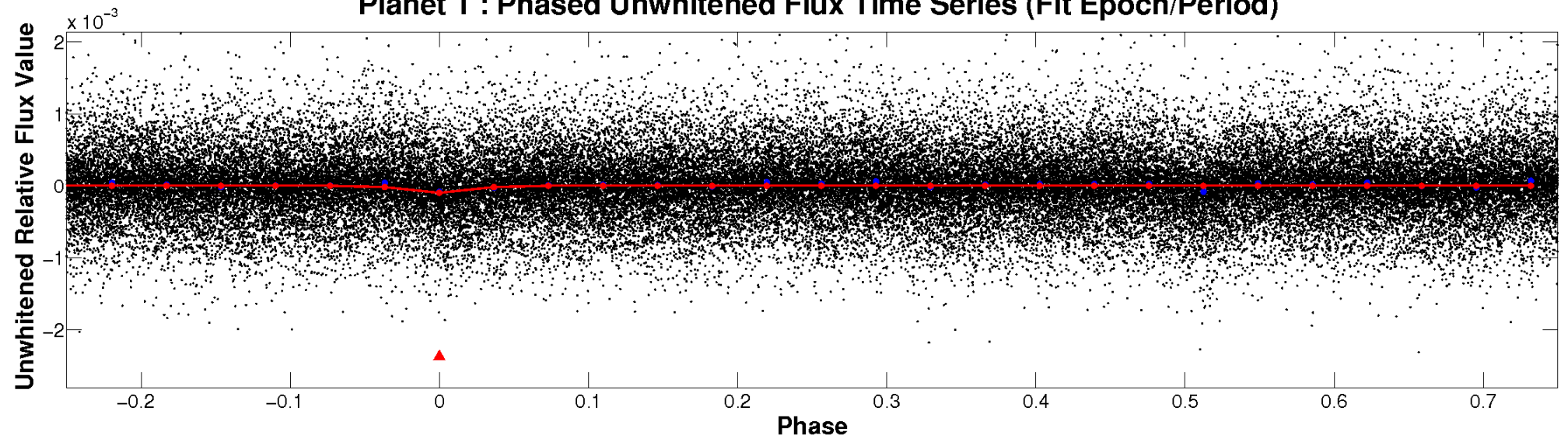
ALT Odd/Even

TCE 004862730-01

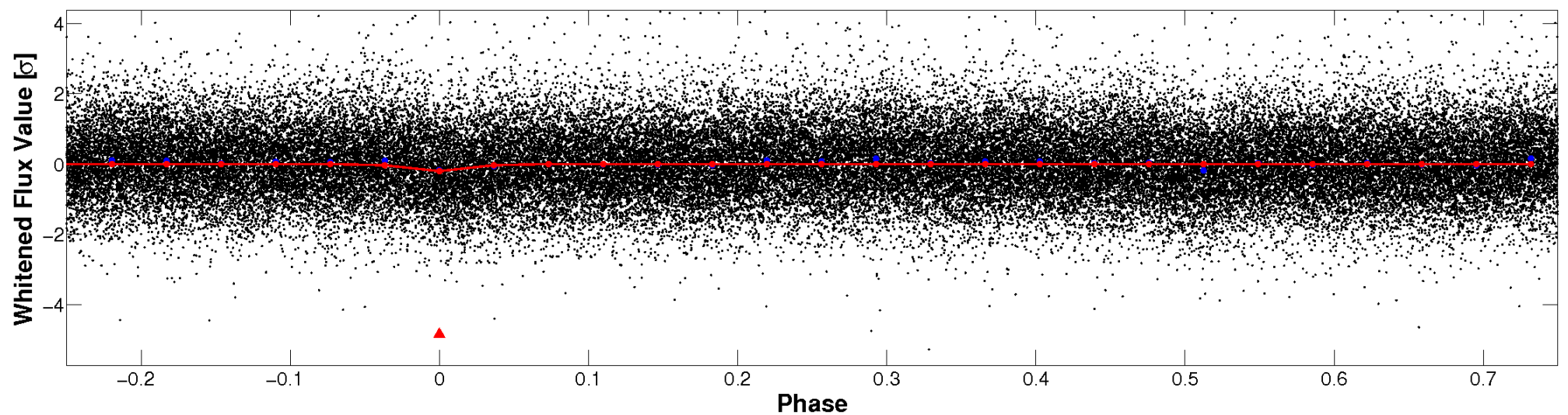


Non-Whitened Vs. Whitened Light Curve

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

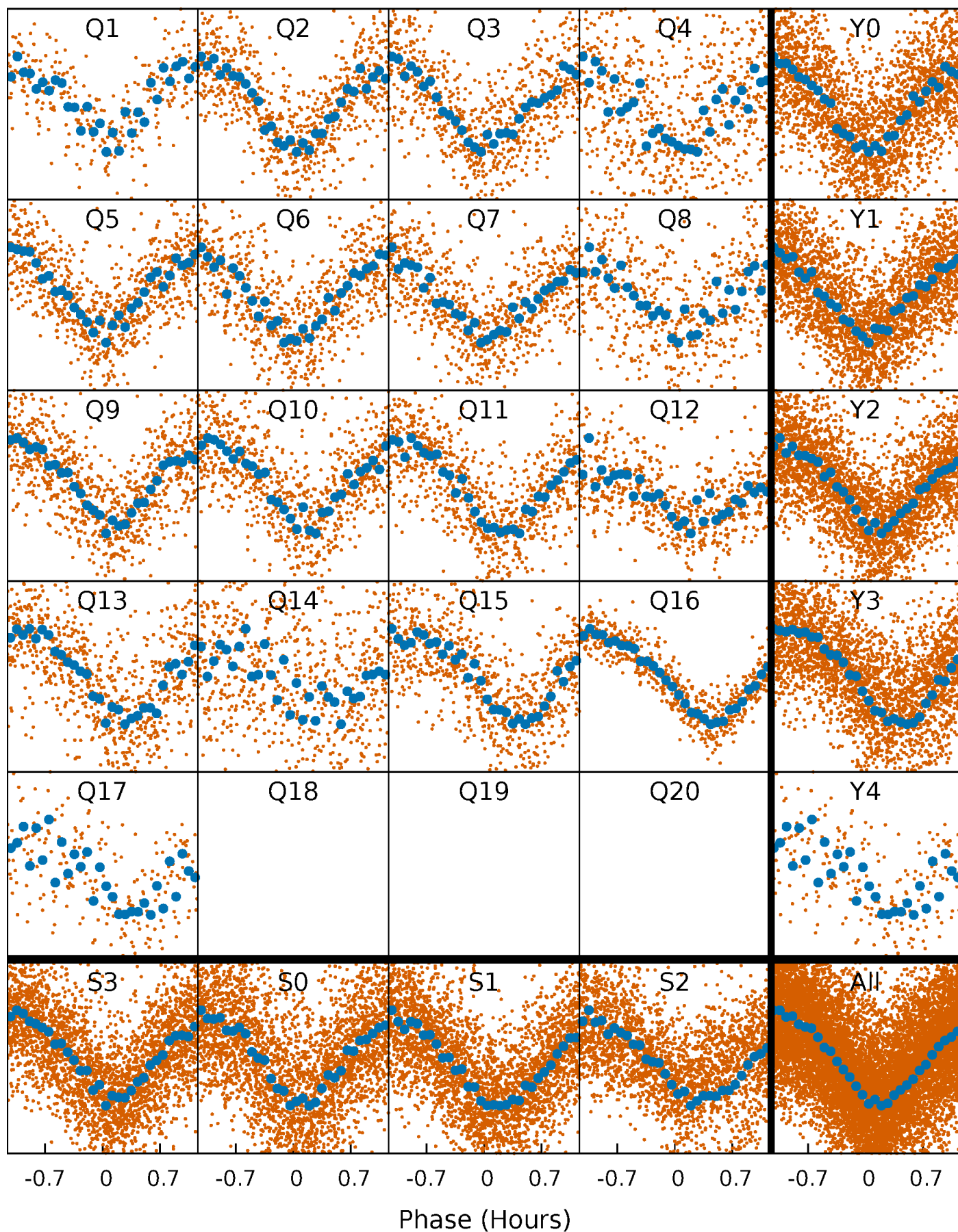


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



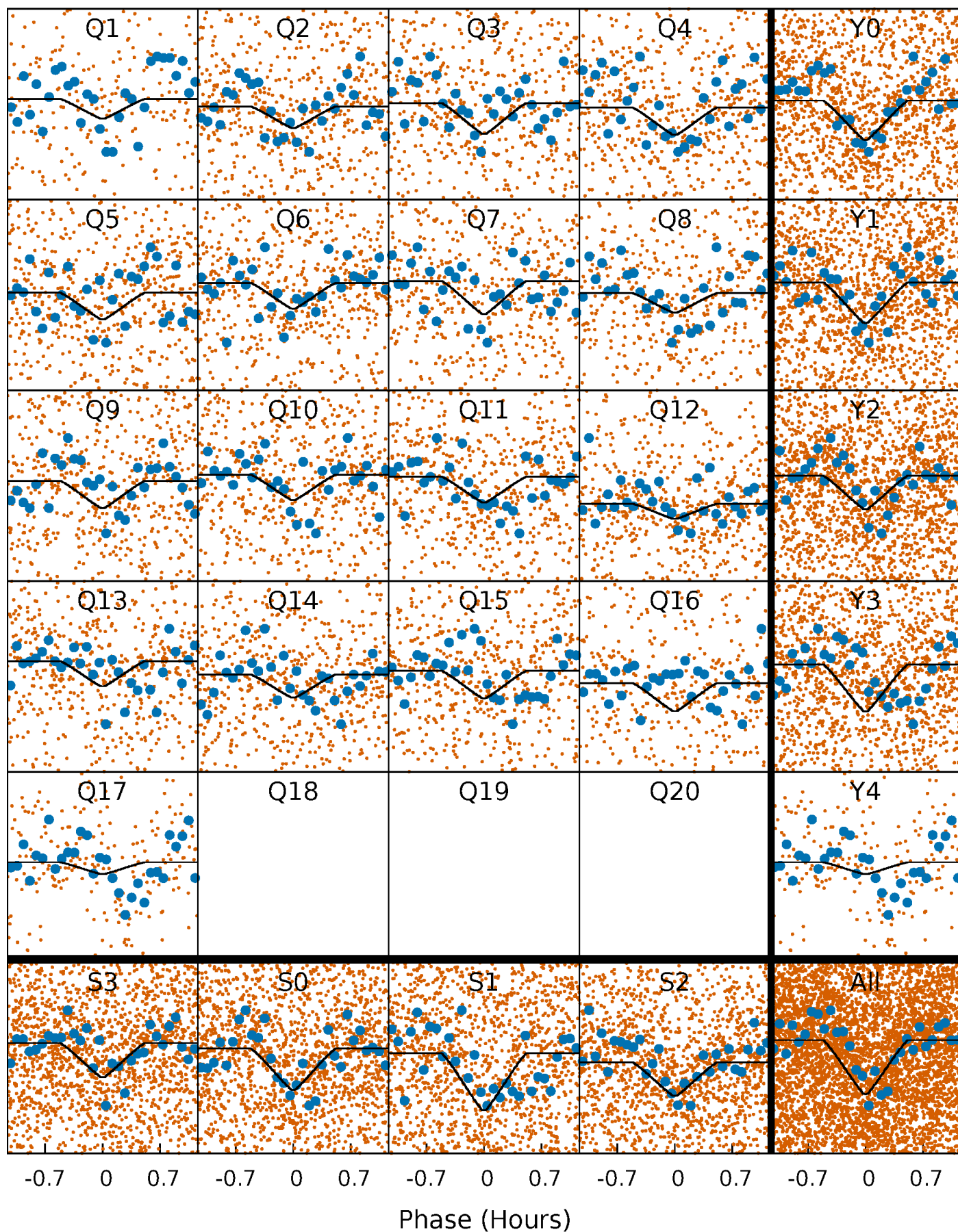
PDC Quarter-Phased Transit Curves

TCE 004862730-01 P= 0.558352 Days $T_0=131.955335$ (BKJD)



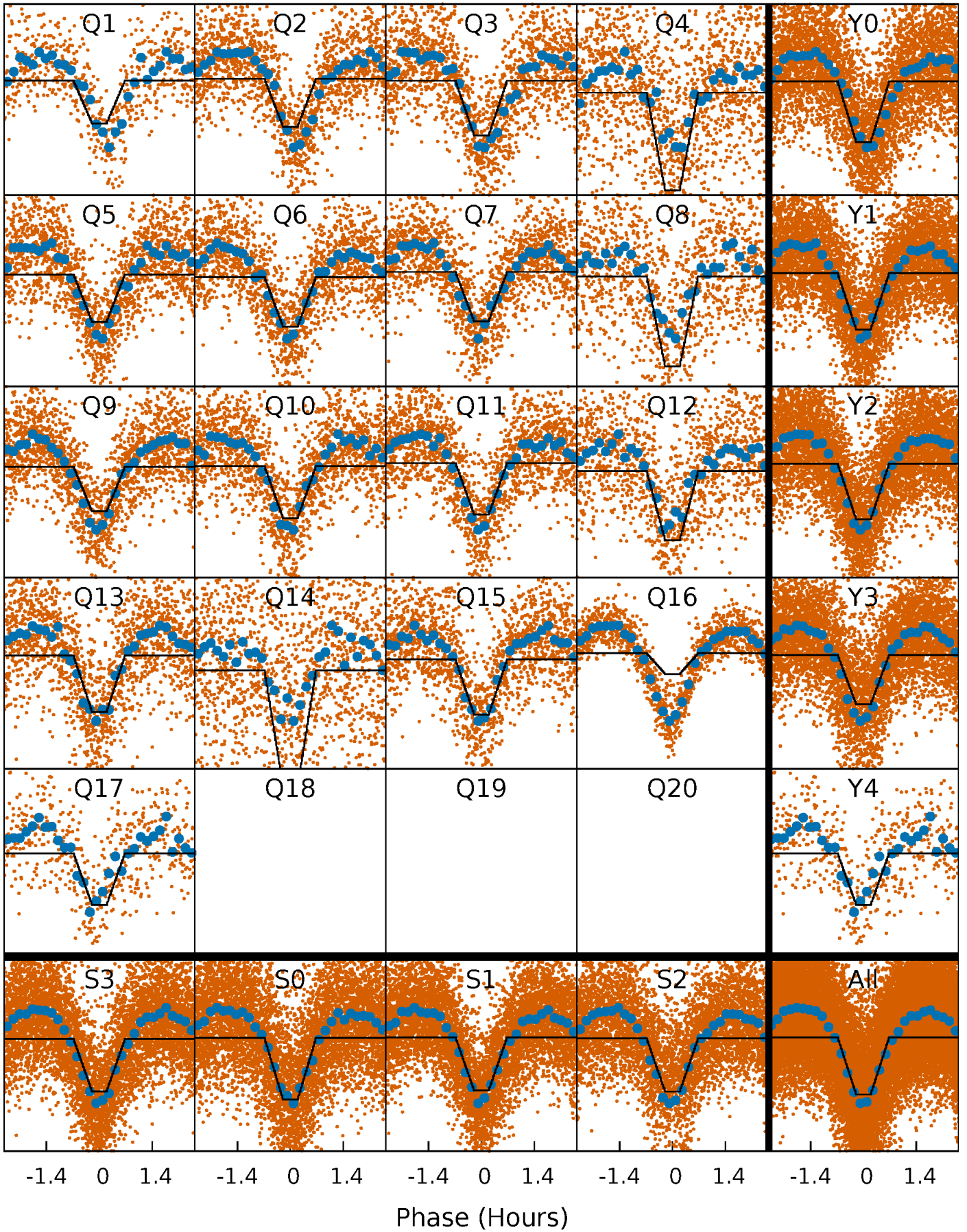
DV Quarter-Phased Transit Curves

TCE 004862730-01 P= 0.558352 Days $T_0=131.955335$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

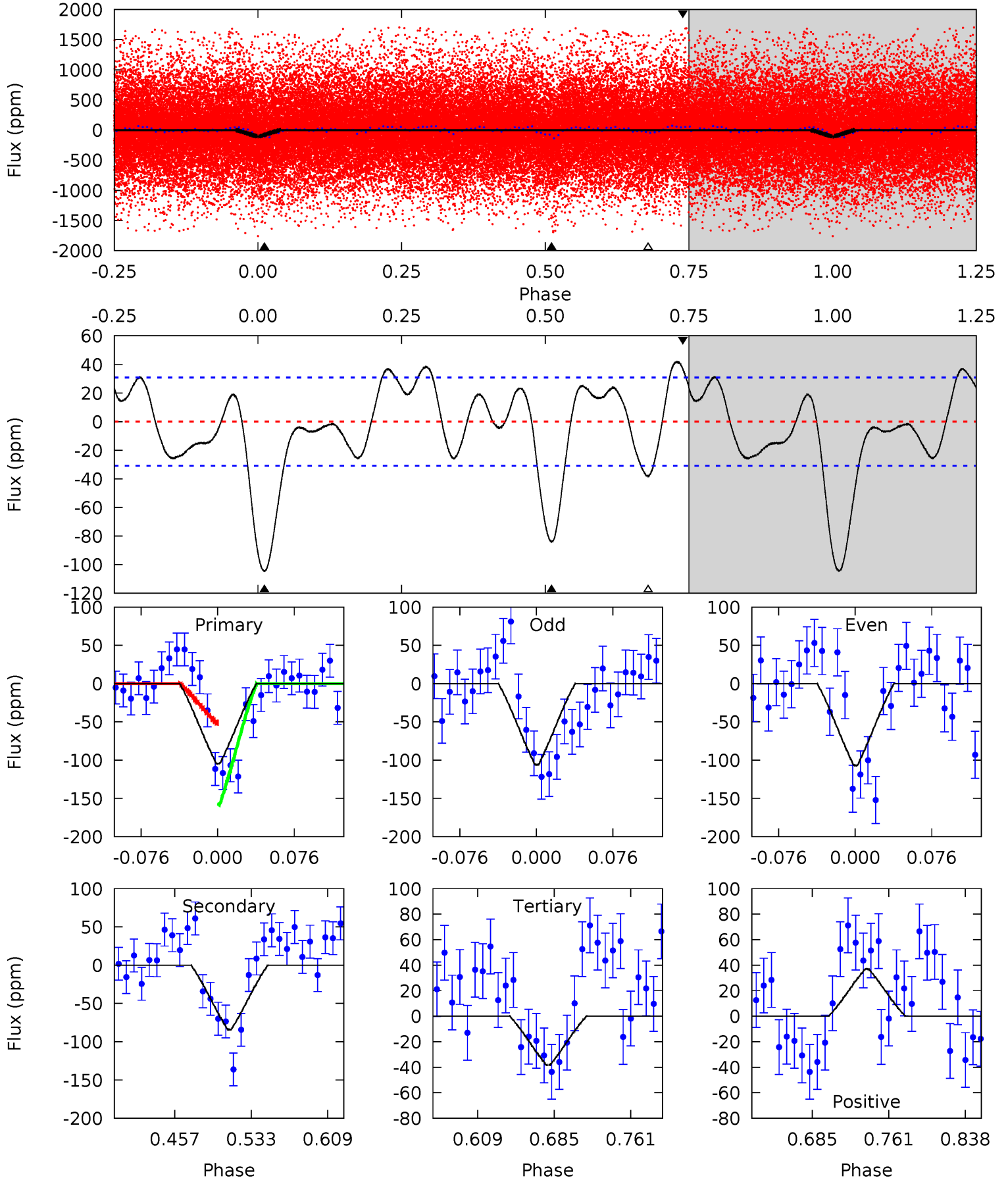
TCE 004862730-01 P= 0.558363 Days $T_0=131.948239$ (BKJD)



DV Model-Shift Uniqueness Test

004862730-01, P = 0.558352 Days, E = 131.396983 Days

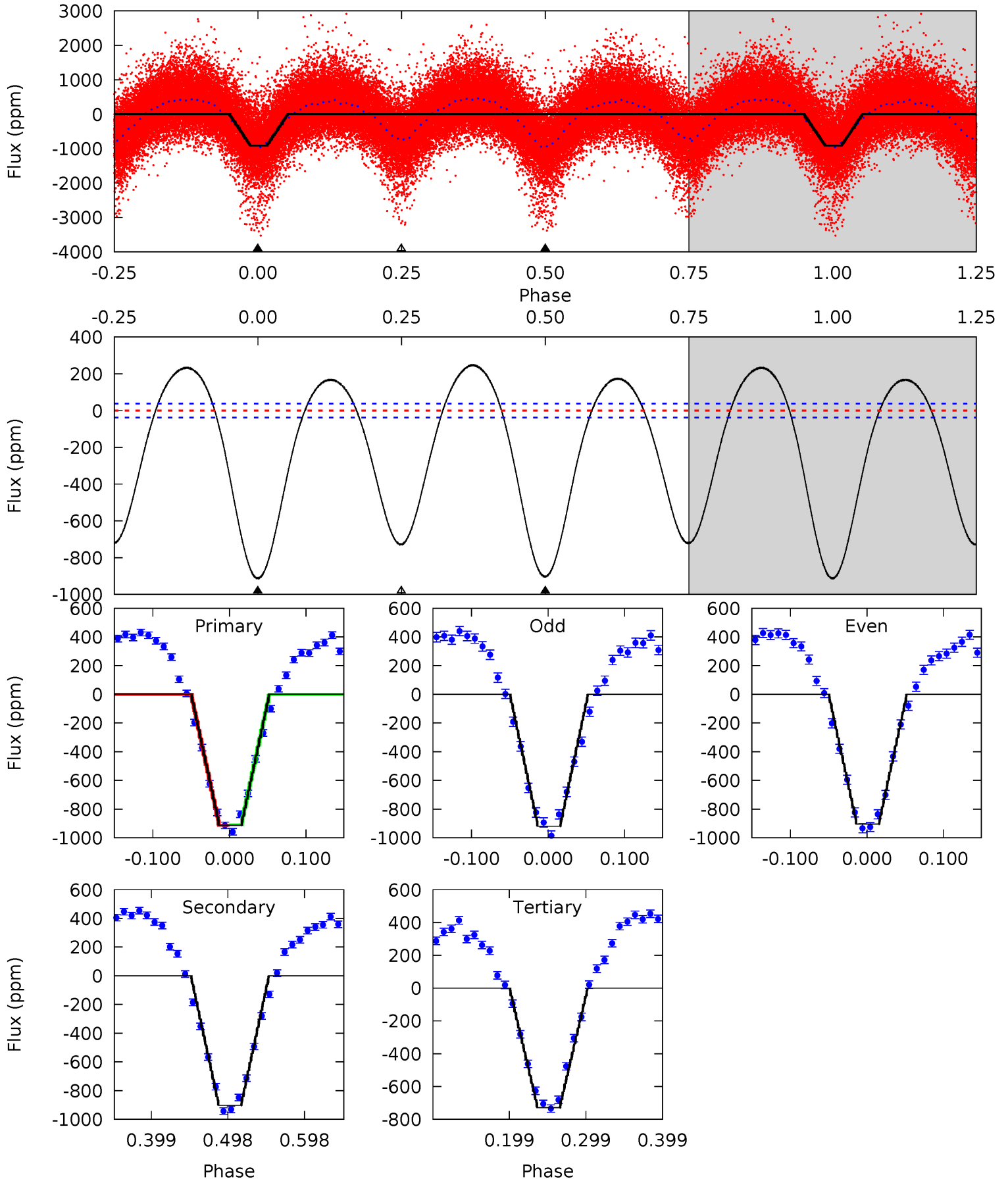
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	12.6	5.75	5.55	4.62	1.77	3.15	9.91	10.1	6.87	7.07	0.08	0.82	0.29	7.99



Alt Model-Shift Uniqueness Test

004862730-01, P = 0.558363 Days, E = 131.389876 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
110.5	109.4	88.2	0	4.57	1.65	40.1	22.3	110.5	21.1	109.4	0.94	1.05	0.21	0.31



Stellar Parameters For KIC 004862730

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4991^{+151}_{-151}	$4.560^{+0.072}_{-0.048}$	$-0.280^{+0.300}_{-0.300}$	$0.727^{+0.072}_{-0.072}$	$0.700^{+0.093}_{-0.050}$	$2.568^{+0.811}_{-0.429}$
	+3%/-3%	+2%/-1%	+107%/-107%	+10%/-10%	+13%/-7%	+32%/-17%
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 004862730-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-84 ± 7	$1.02^{+0.43}_{-0.40}$	2413^{+89}_{-89}	4343^{+976}_{-582}	$6.200^{+11.114}_{-3.077}$
Alt.	-903 ± 8	$2.29^{+0.48}_{-0.47}$	2409^{+97}_{-95}	5057^{+540}_{-392}	13^{+7}_{-4}

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

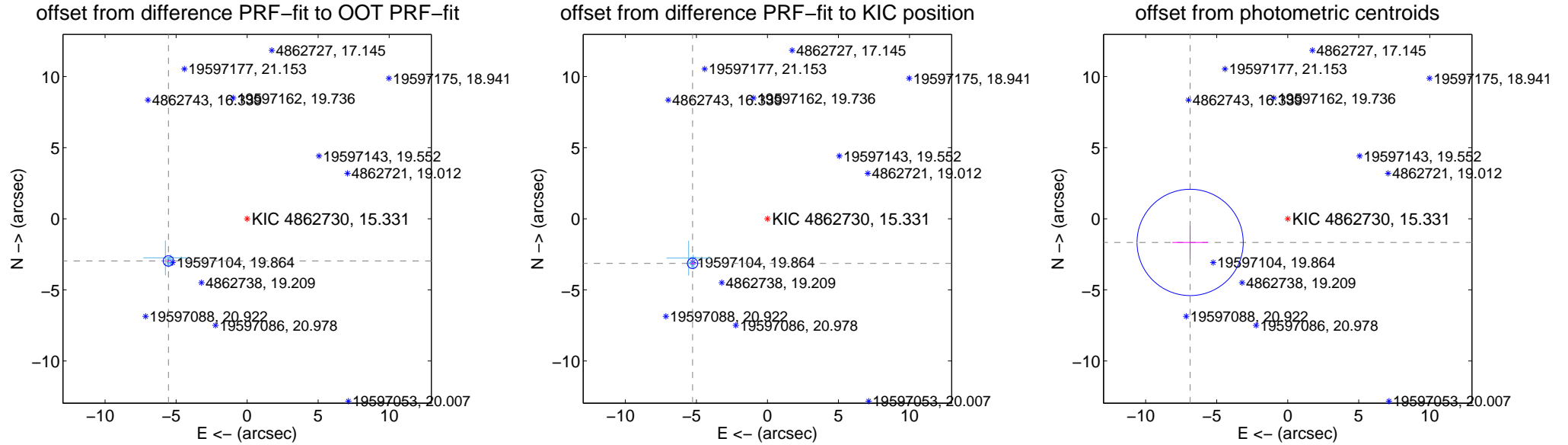
DV Centroid Data

Supplemental centroid analysis for 004862730-01. Kepler magnitude: 15.33. Transit SNR 10.36

There are 15 quarters with good PRF difference image offsets

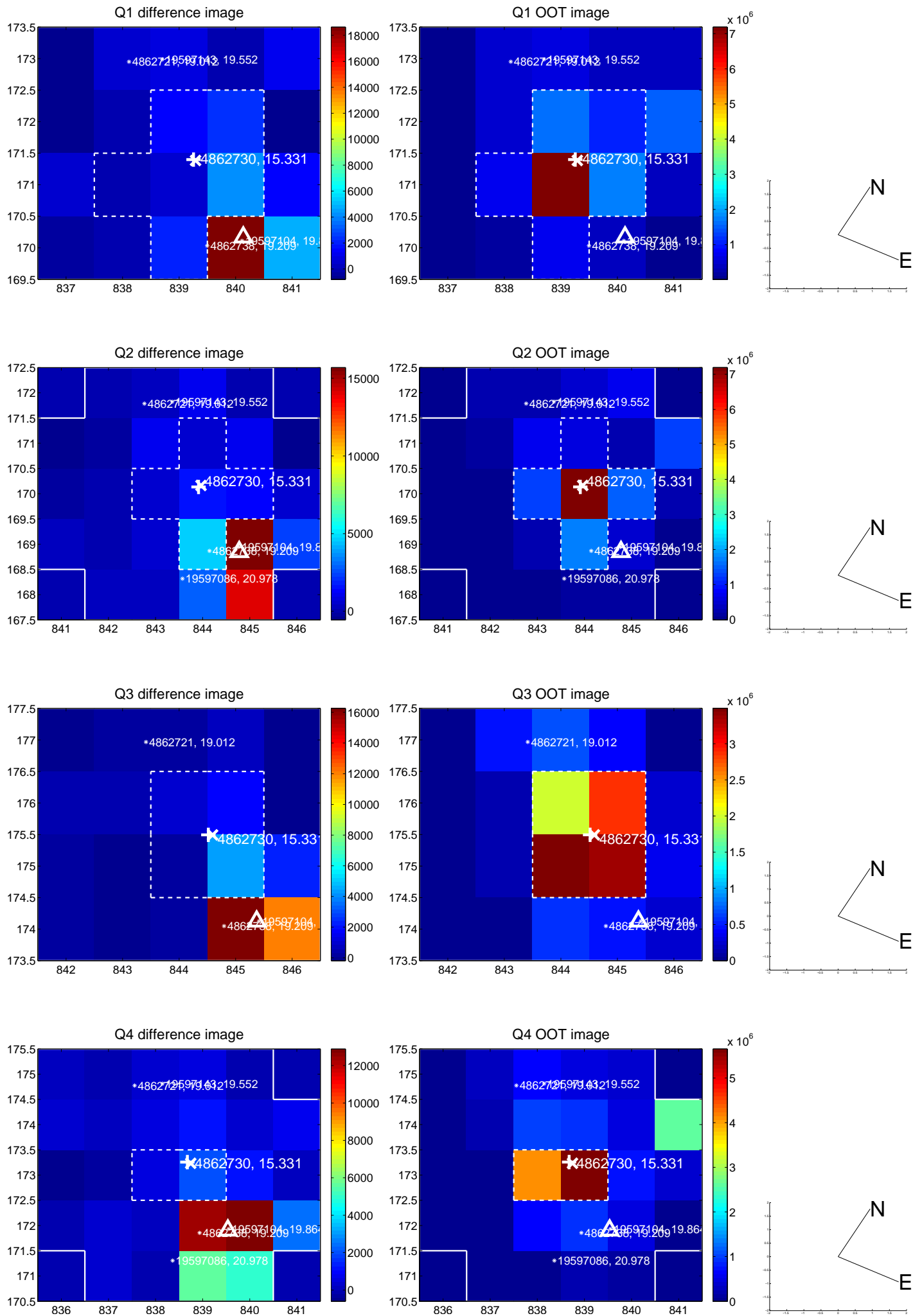
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.285 ± 0.122	51.35	5.541 ± 0.126	-2.967 ± 0.108
PRF-fit source offset from KIC position	6.134 ± 0.122	50.40	5.270 ± 0.126	-3.139 ± 0.108
photometric centroid source offset	7.07 ± 1.25	5.67	6.87 ± 1.25	-1.66 ± 1.17

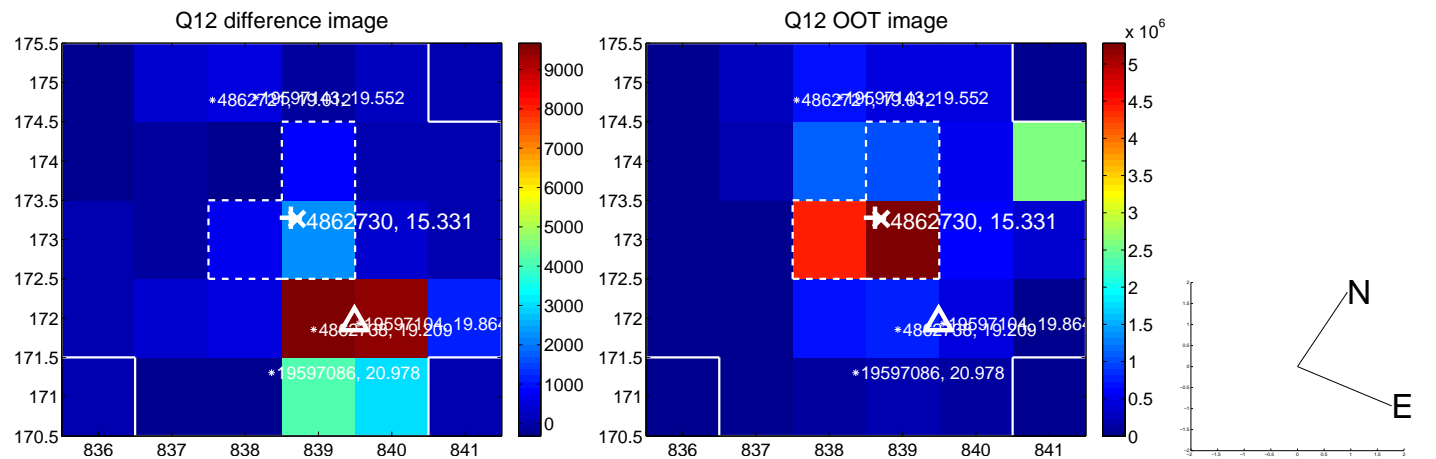
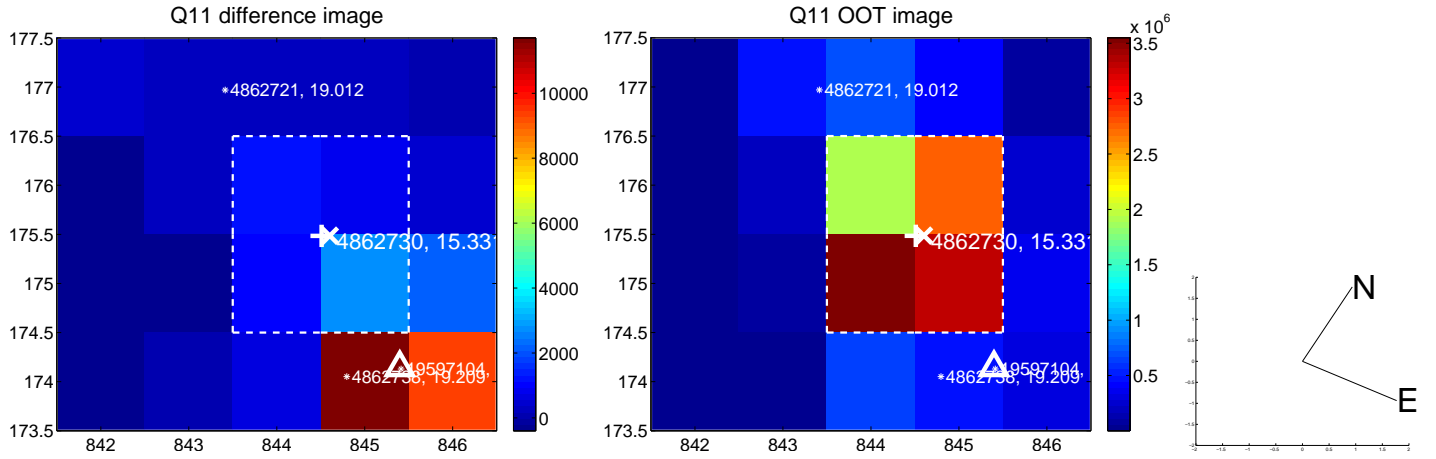
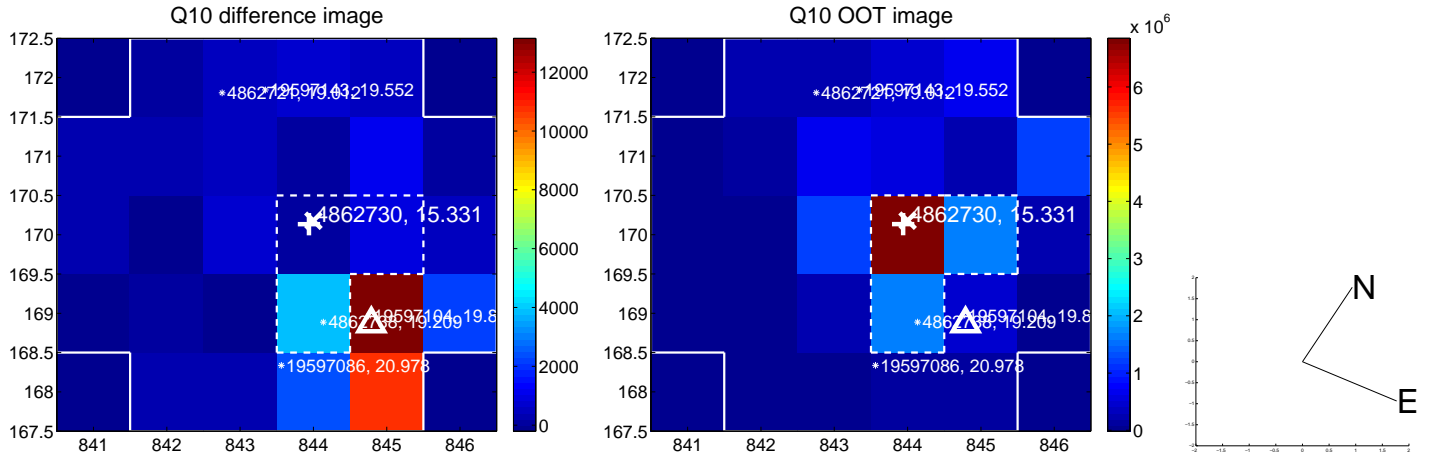
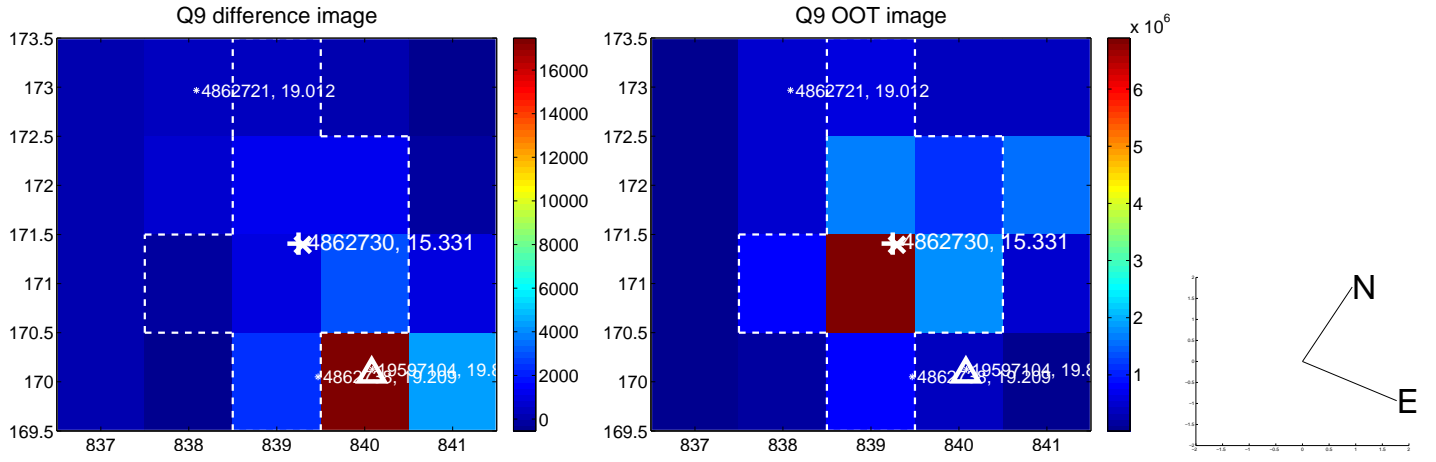


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

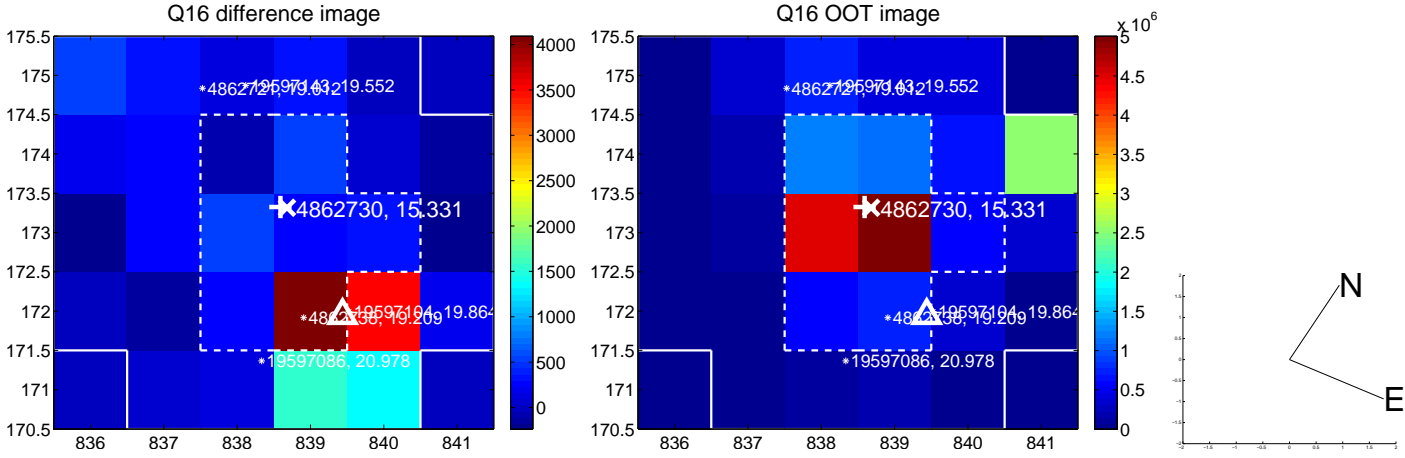
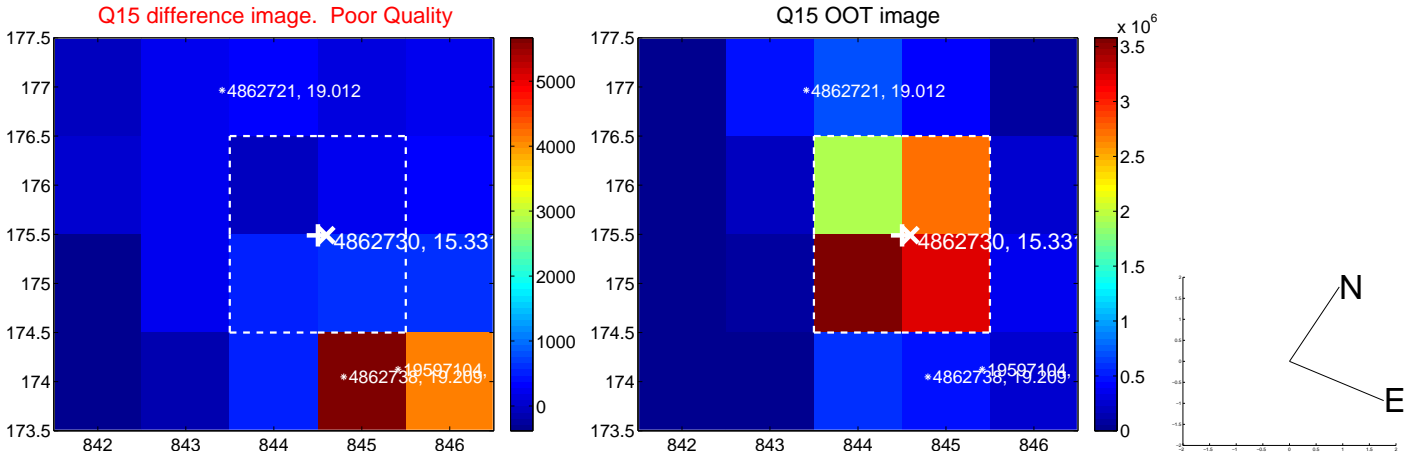
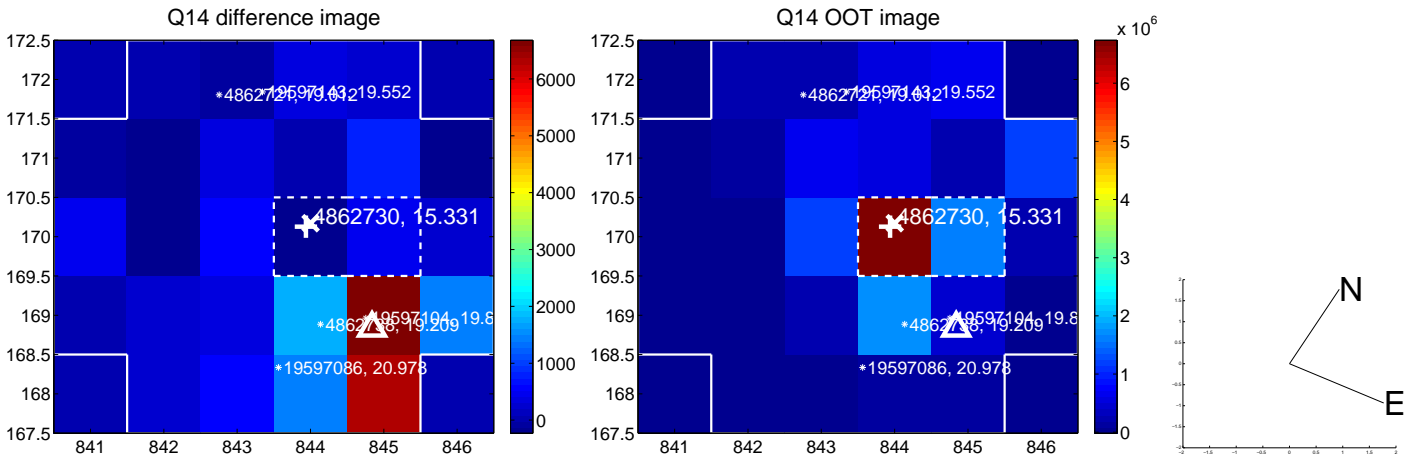
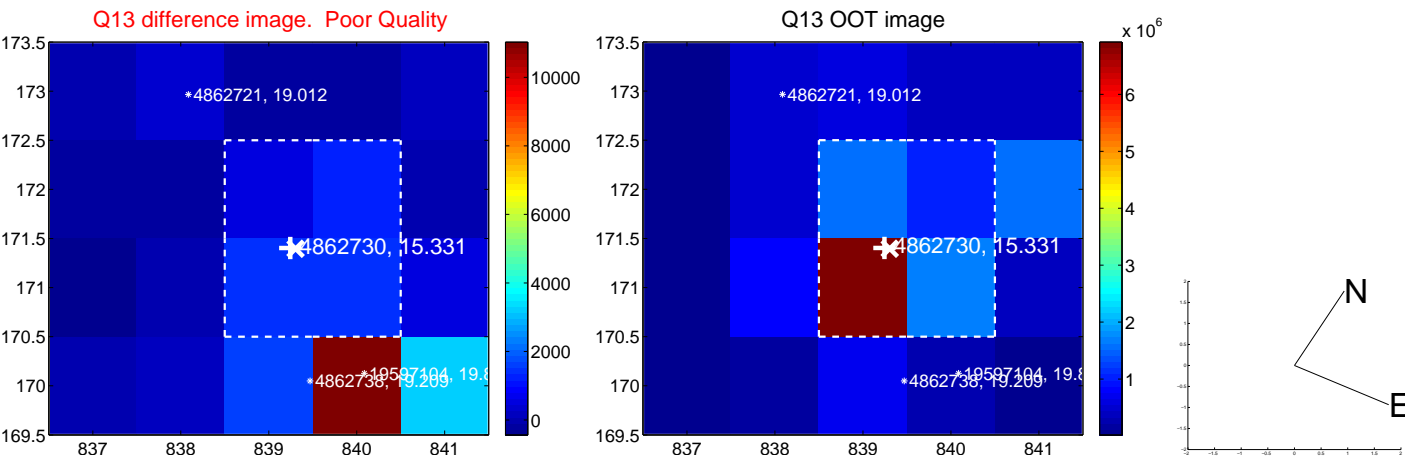
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



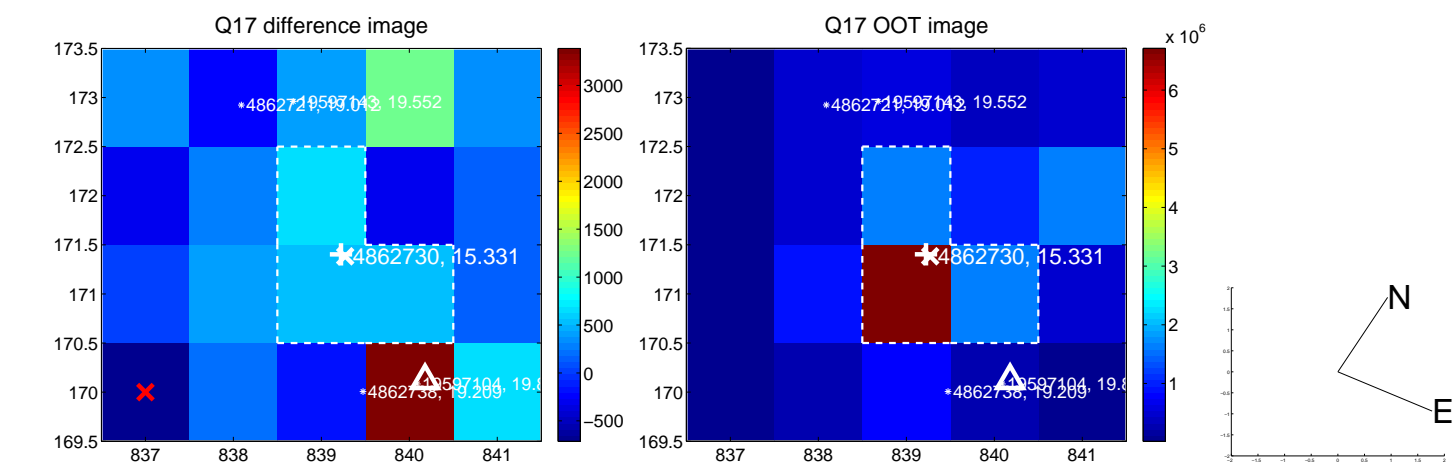
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



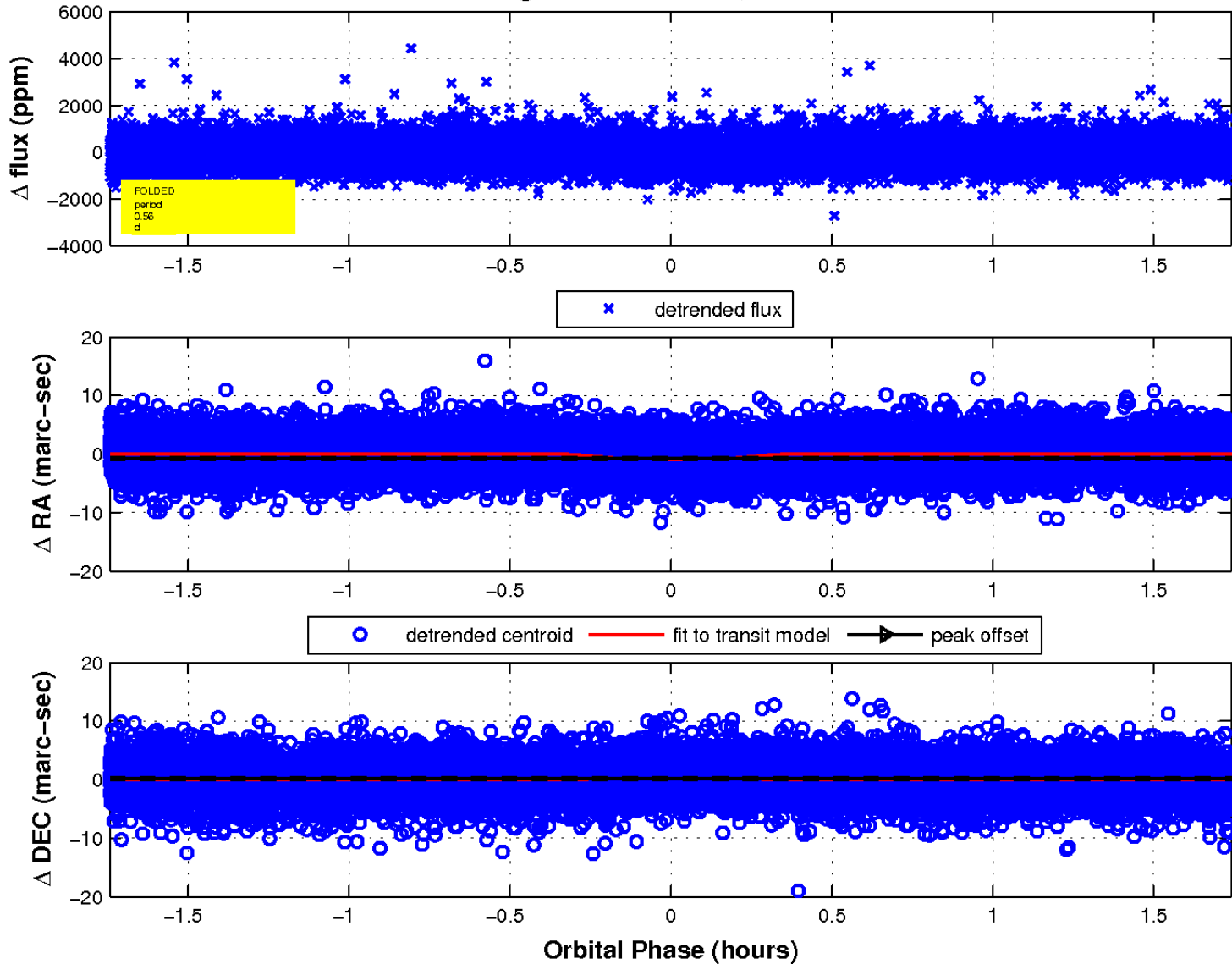
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

