

KIC 004861791

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})
004861791-01	OBS	2870.01	2.814867	134.022984	201.4	4.586	11.7	12.7	0.90	5822	1.51	547.13

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004861791-01	OBS	FP	0.00	0	0	1	1	CENT_RESOLVED_OFFSET—EPHEM_MATCH

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.

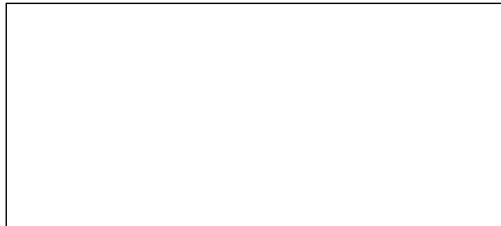
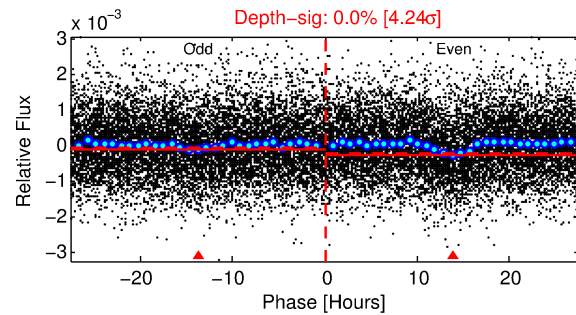
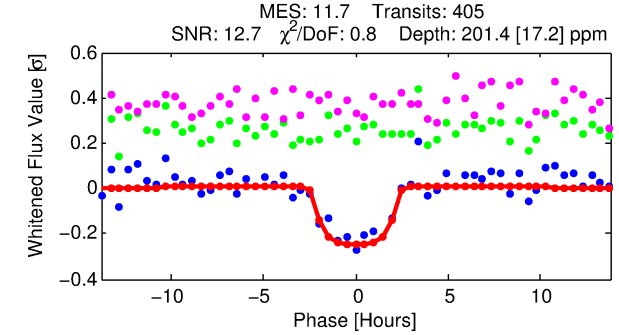
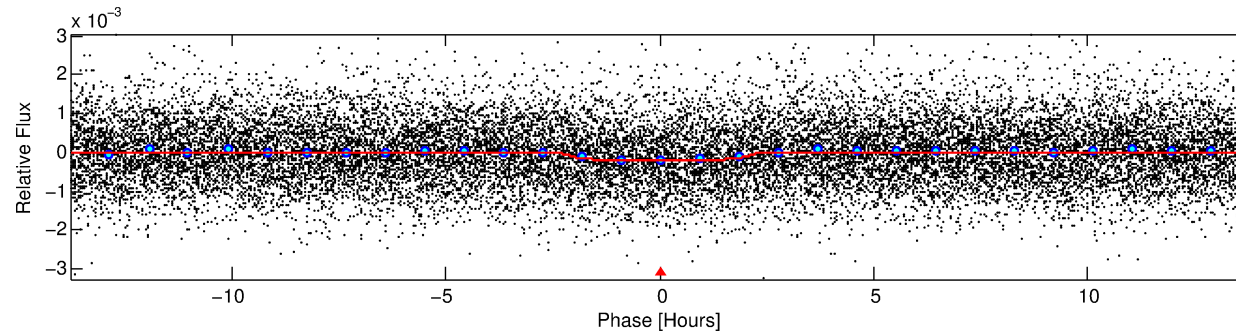
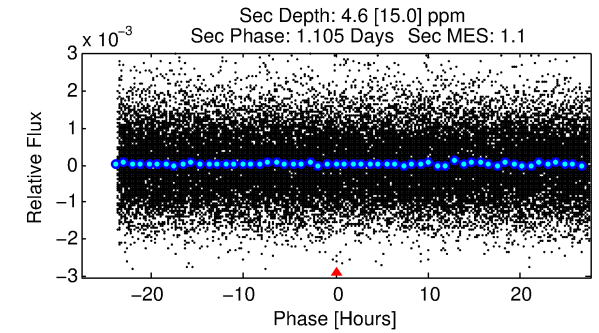
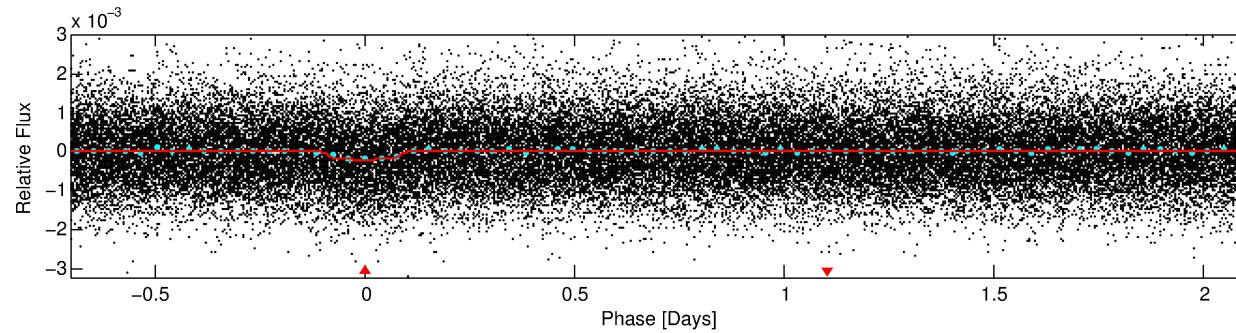
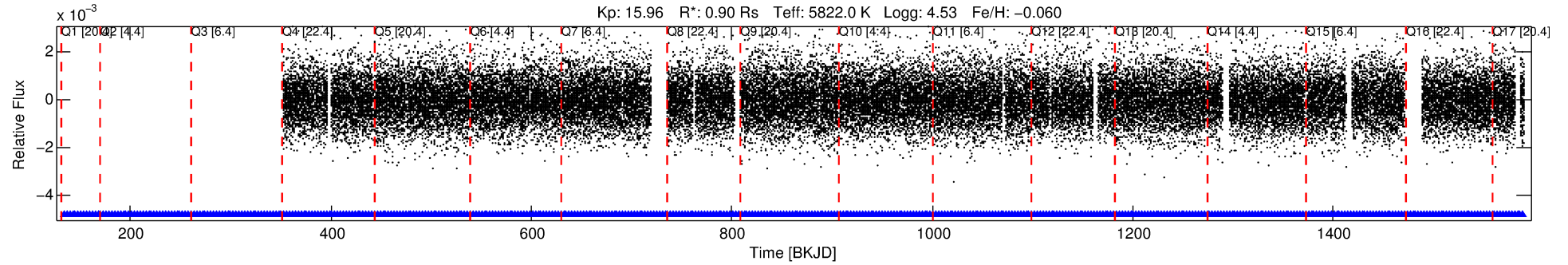
Ephemeris Match Information For 004861791-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
004861791-01	4861791	4278.01	4861784	1:2	16.5	-4	-1	15.99	15.95	2.18	Direct-PRF	0	1.20	0.19

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 4861791 Candidate: 1 of 1 Period: 2.815 d
KOI: K02870 Corr: No Ephemeris Match



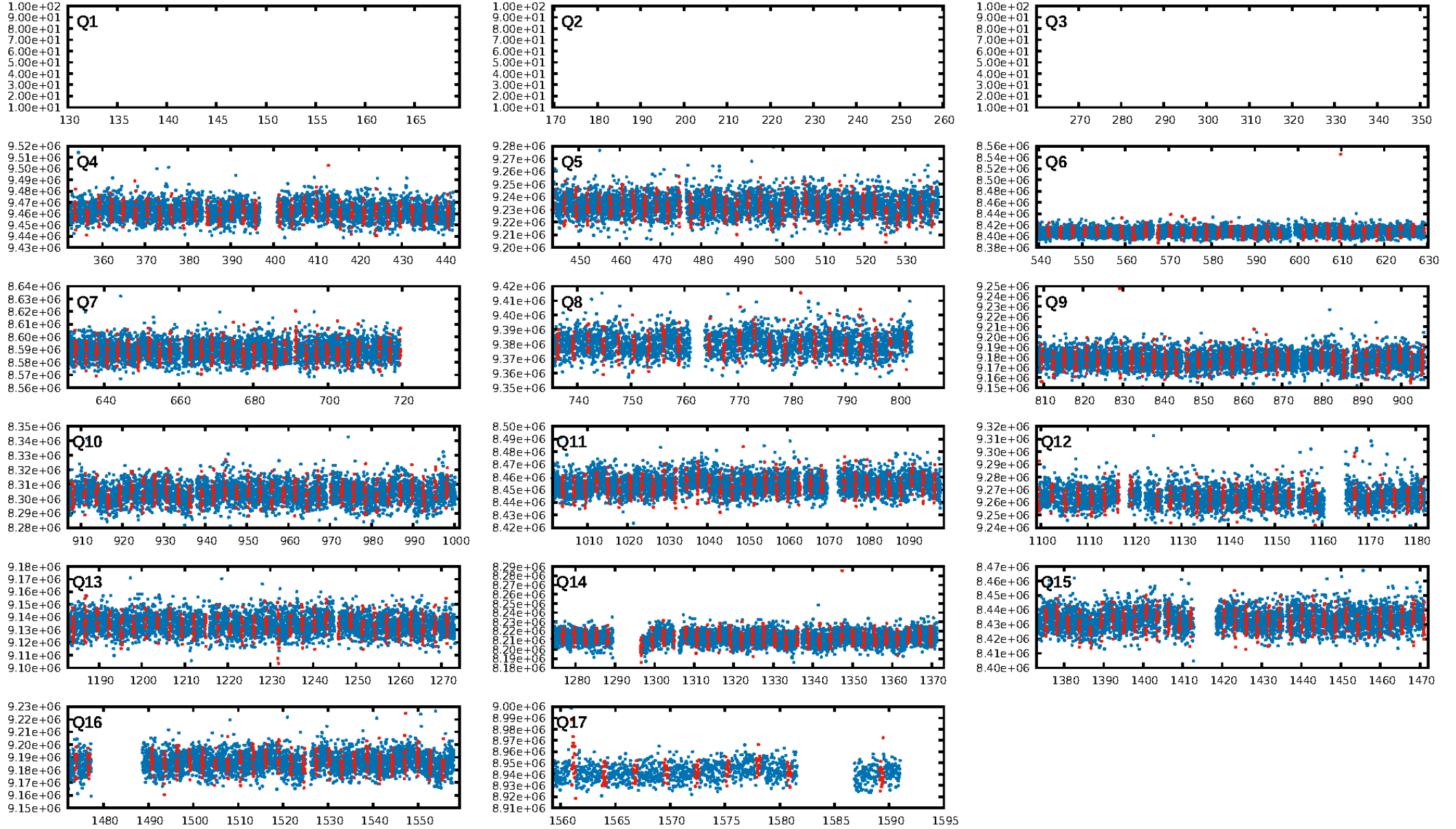
DV Fit Results:

Period = 2.81487 [0.00002] d
Epoch = 134.0230 [0.0054] BKJD
Rp/R* = 0.0154 [0.0047]
a/R* = 2.40 [2.93]
b = 0.90 [0.32]
Seff = 547.13 [192.47]
Teq = 1233 [108] K
Rp = 1.51 [0.62] Re
a = 0.0390 [0.0088] AU
Ag = 1.69 [5.62] [0.12σ]
Teffp = 2173 [1803] K [0.52σ]

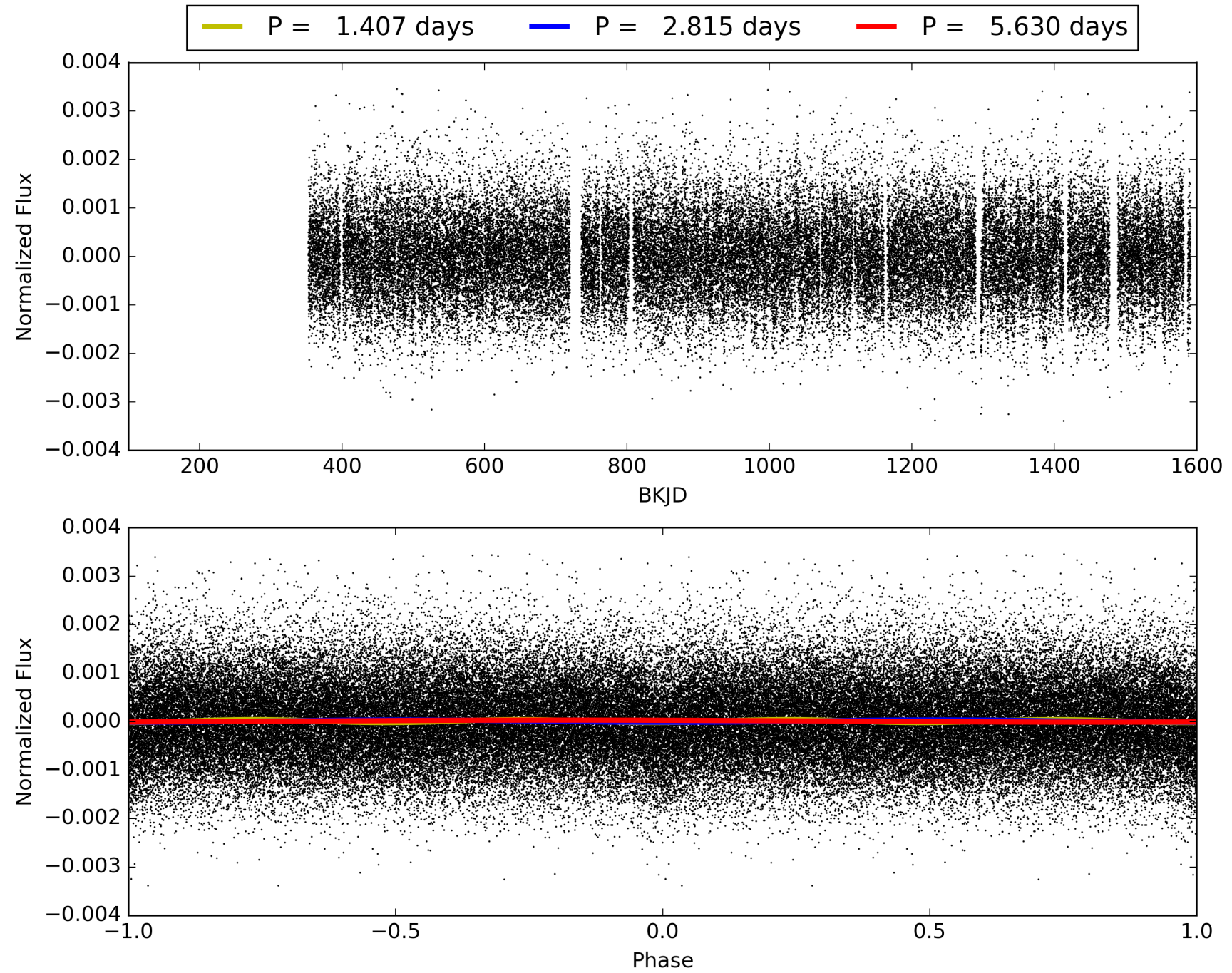
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 3.98e-32
RollingBand-fgt: 1.00 [396/396]
GhostDiagnostic-chr: -0.4868
Centroid-sig: 0.0%
Centroid-so: 20.111 arcsec [15.96σ]
OotOffset-rm: N/A
KicOffset-rm: N/A
OotOffset-st: 0/0/0/0 [0]
KicOffset-st: 0/0/0/0 [0]
DiffImageQuality-fgm: N/A
DiffImageOverlap-fno: 1.00 [14/14]

TCE 004861791-01, PDC Light Curves

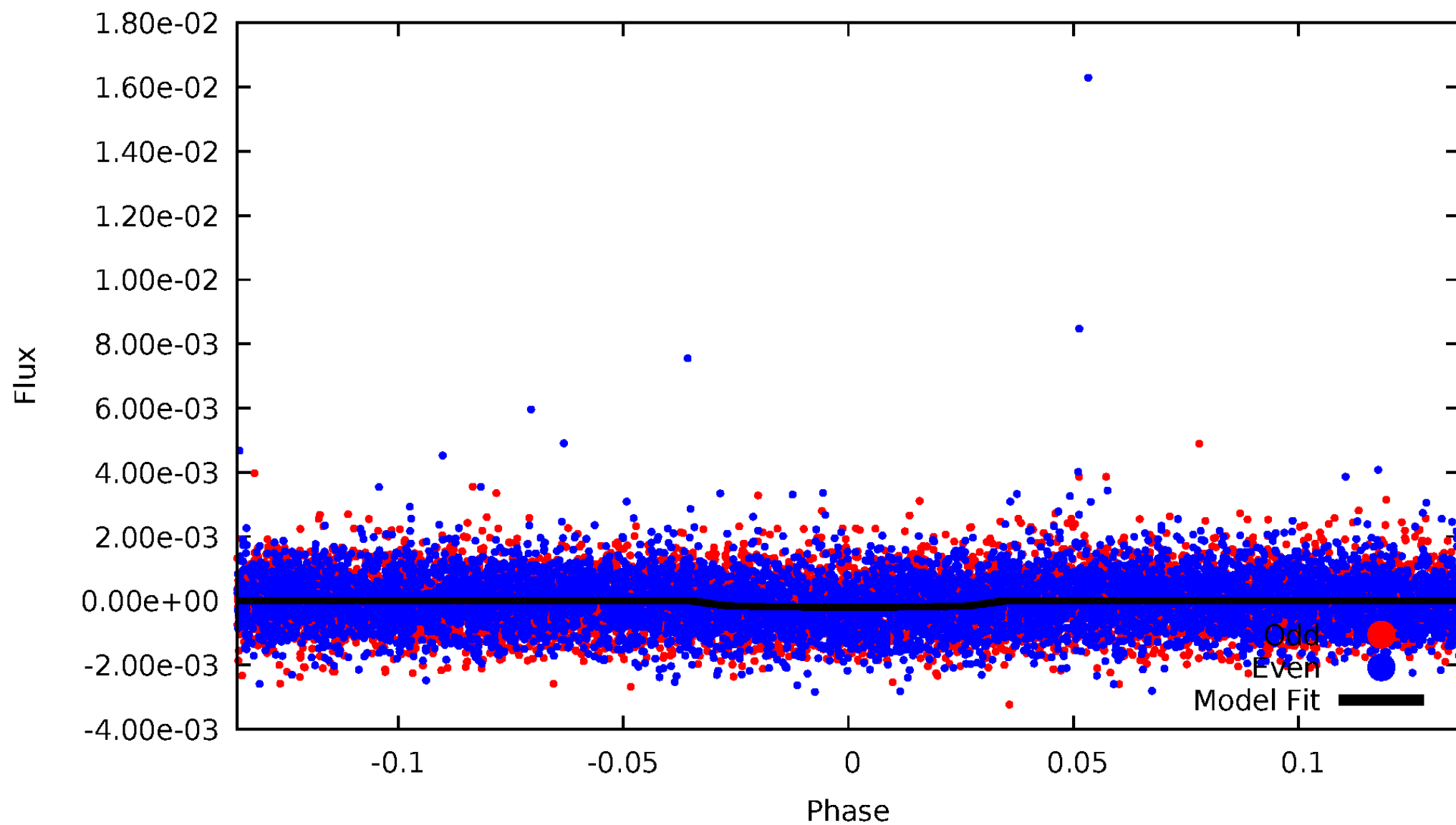


TCE 004861791-01



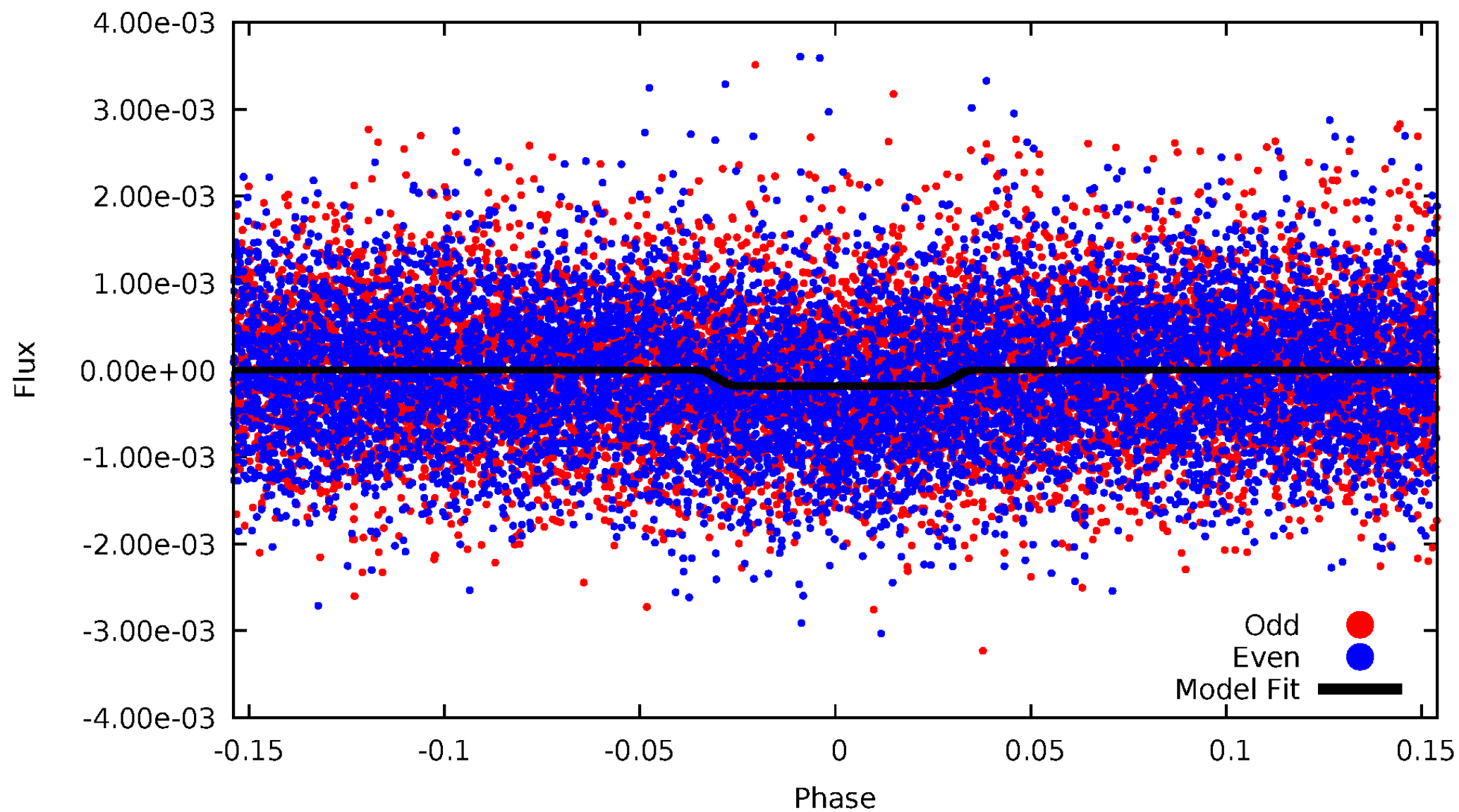
DV Odd/Even

TCE 004861791-01



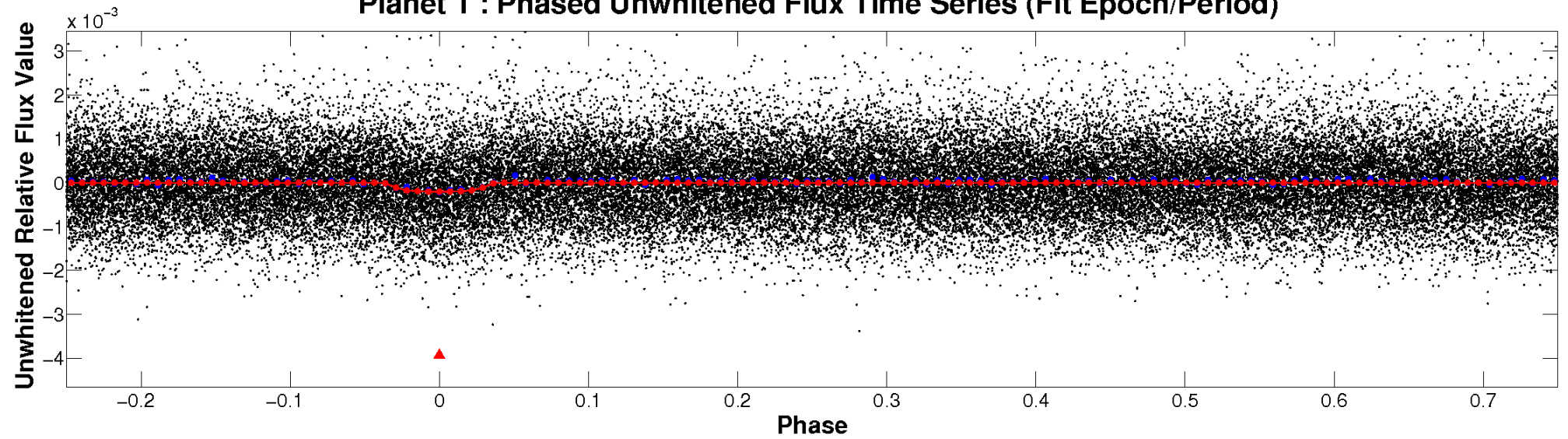
ALT Odd/Even

TCE 004861791-01

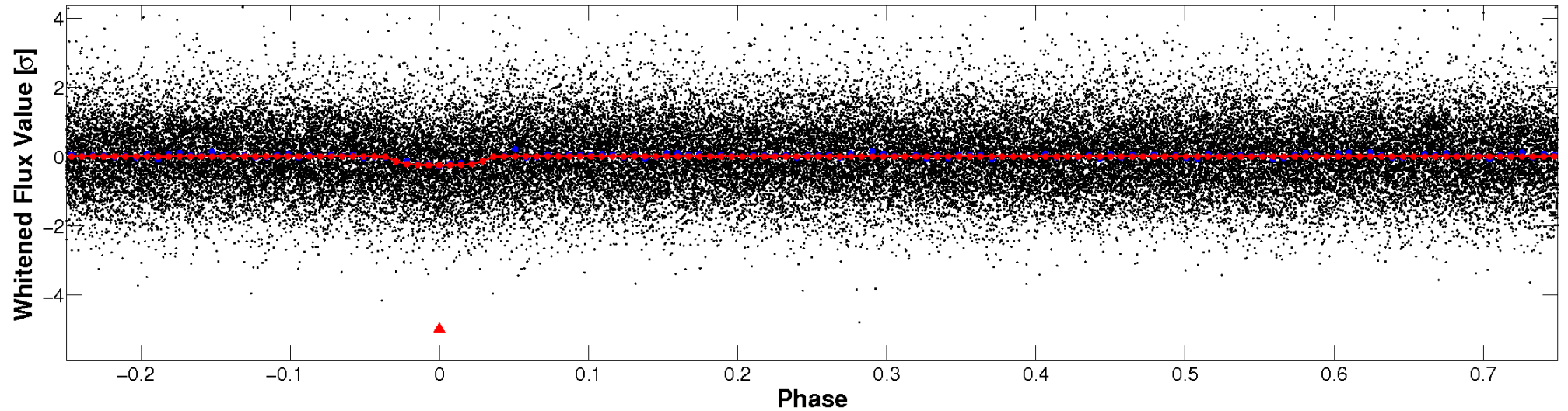


Non-Whitened Vs. Whitened Light Curve

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

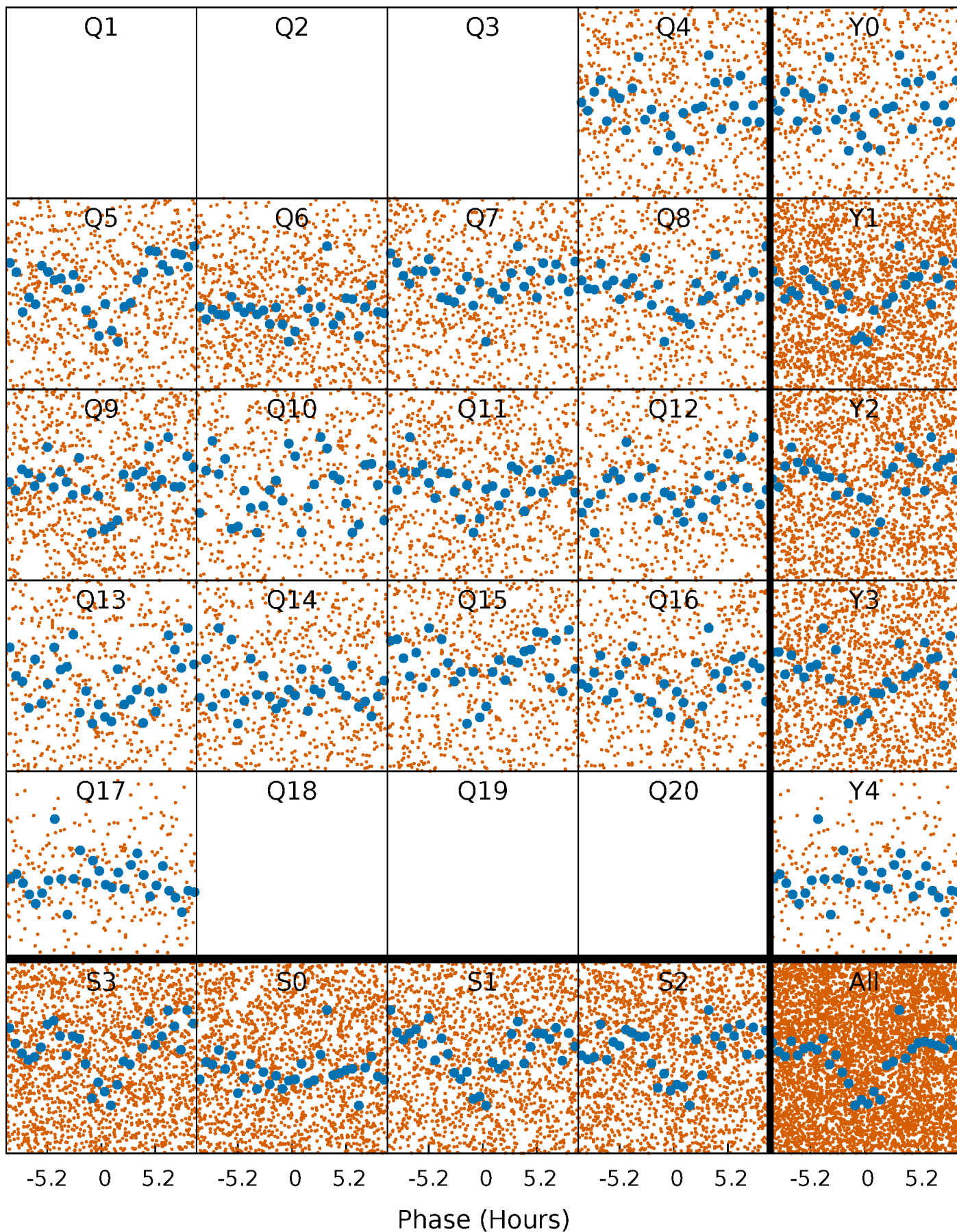


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



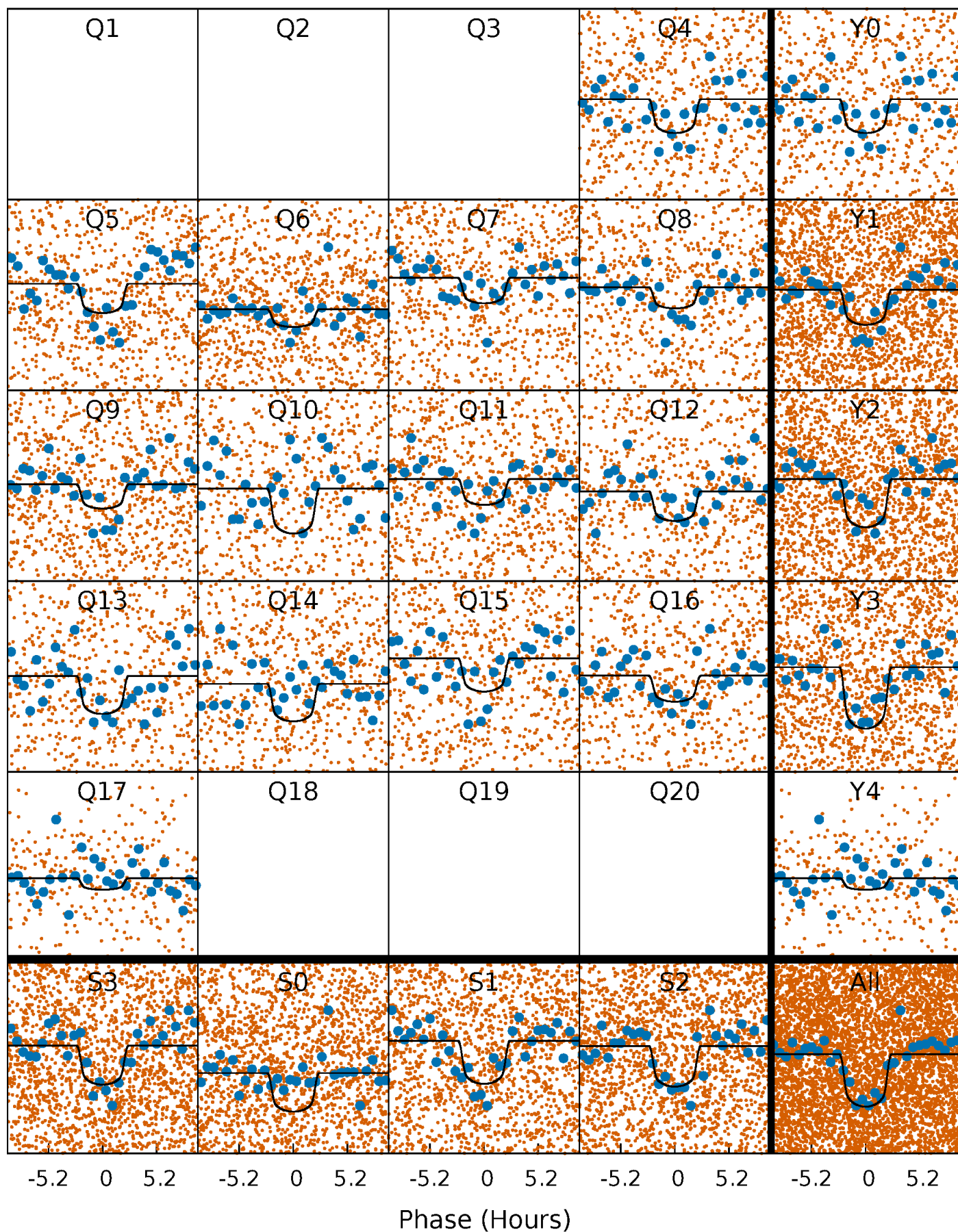
PDC Quarter-Phased Transit Curves

TCE 004861791-01 P= 2.814867 Days $T_0=134.022984$ (BKJD)



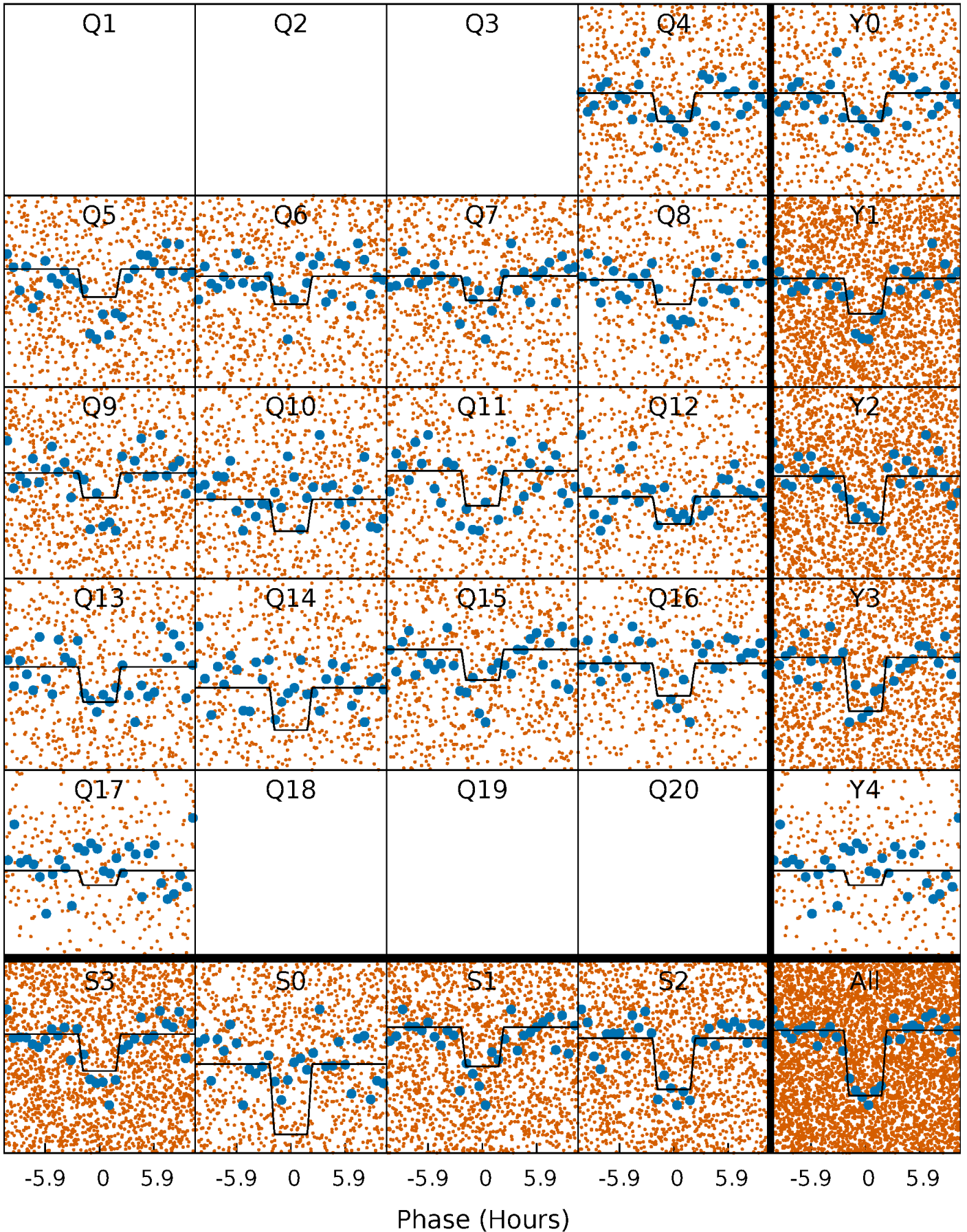
DV Quarter-Phased Transit Curves

TCE 004861791-01 P= 2.814867 Days $T_0=134.022984$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

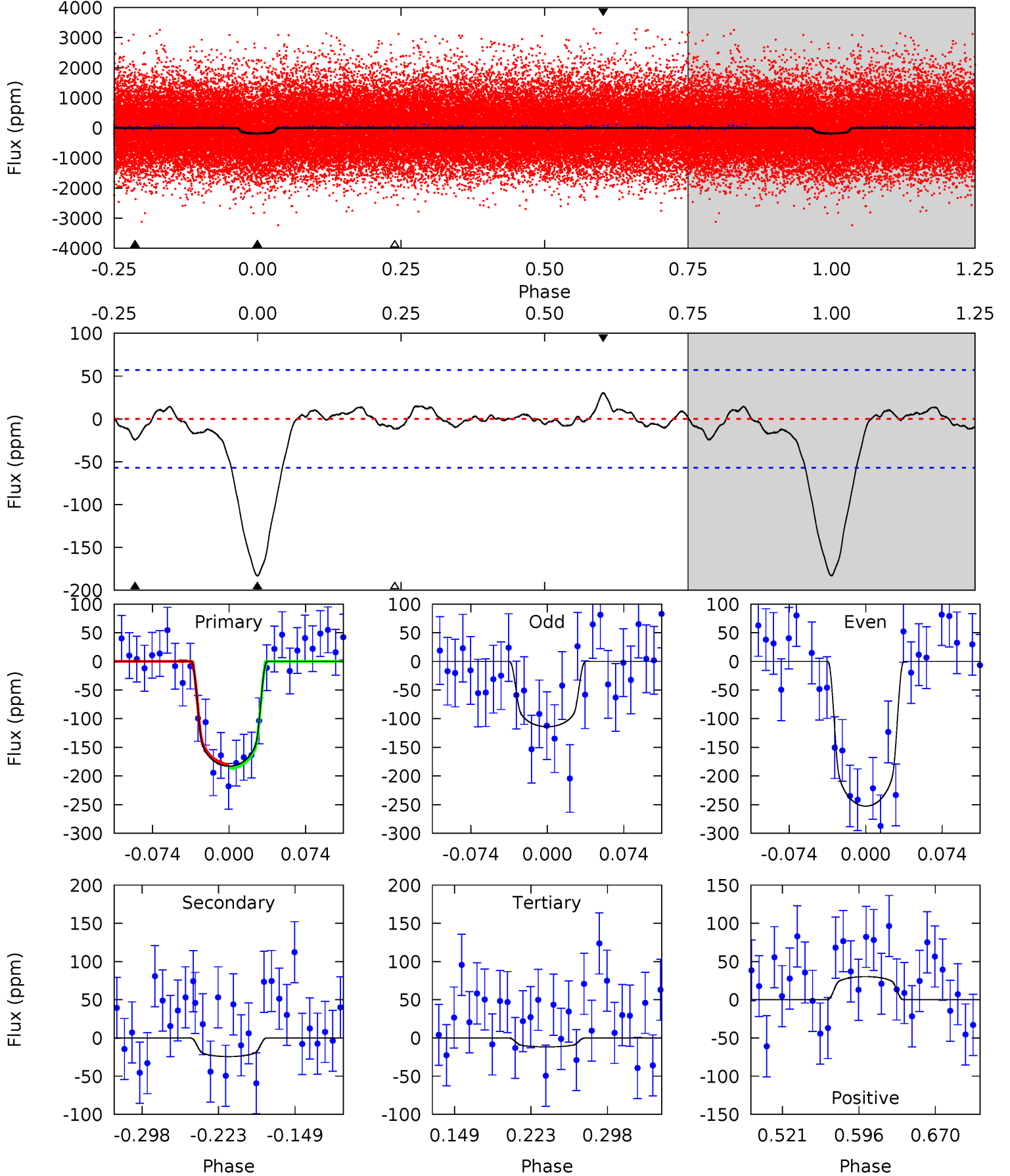
TCE 004861791-01 P= 2.814832 Days $T_0=134.031246$ (BKJD)



DV Model-Shift Uniqueness Test

004861791-01, P = 2.814867 Days, E = 134.022984 Days

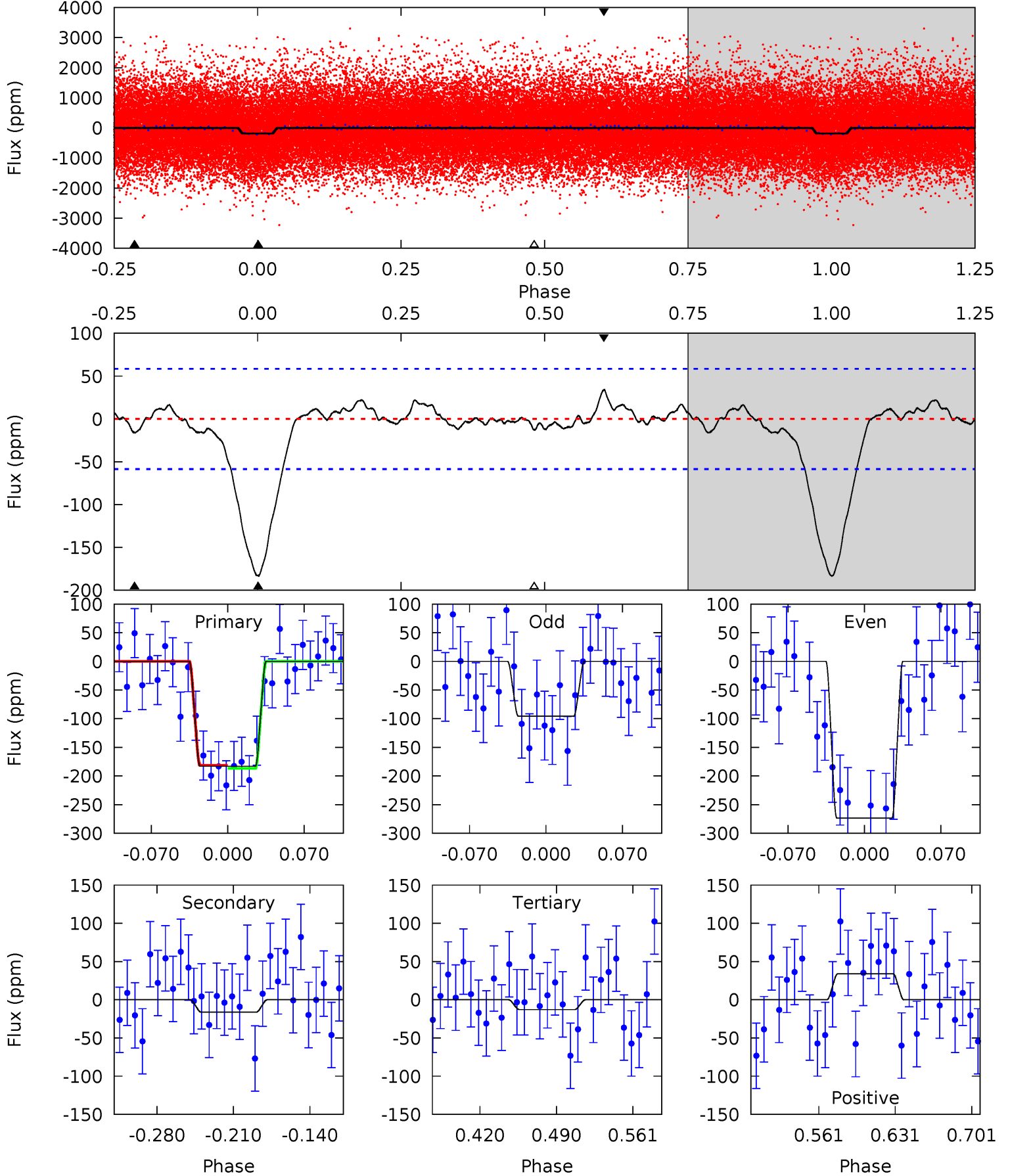
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.8	1.98	0.94	2.45	4.63	1.78	0.69	13.9	12.4	1.03	-0.48	5.64	0.95	0.14	0.26



Alt Model-Shift Uniqueness Test

004861791-01, P = 2.814832 Days, E = 134.031246 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	1.28	1.02	2.69	4.64	1.81	0.79	13.5	11.8	0.26	-1.42	7.04	1.03	0.16	0.20



Stellar Parameters For KIC 004861791

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5822^{+175}_{-192}	$4.529^{+0.044}_{-0.176}$	$-0.060^{+0.300}_{-0.300}$	$0.898^{+0.246}_{-0.082}$	$0.994^{+0.116}_{-0.116}$	$1.933^{+0.443}_{-0.932}$
	+3%/-3%	+1%/-4%	+500%/-500%	+27%/-9%	+12%/-12%	+23%/-48%
Source	KIC0	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 004861791-01 / KOI 2870.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-24 ± 12	$1.60^{+0.55}_{-0.45}$	1759^{+99}_{-86}	3637^{+572}_{-475}	$7.436^{+9.066}_{-4.190}$
Alt.	-16 ± 13	$1.38^{+0.53}_{-0.51}$	1756^{+106}_{-81}	3537^{+754}_{-749}	$6.342^{+13.055}_{-4.896}$

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

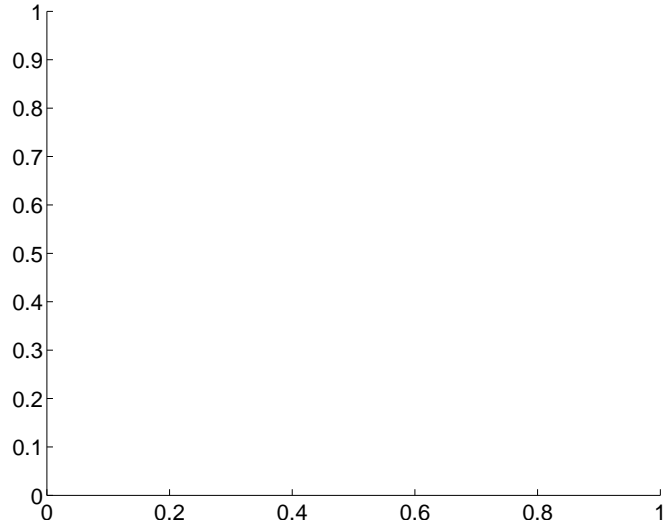
Supplemental centroid analysis for 004861791-01. Kepler magnitude: 15.96. Transit SNR 12.66

There are 0 quarters with good PRF difference image offsets

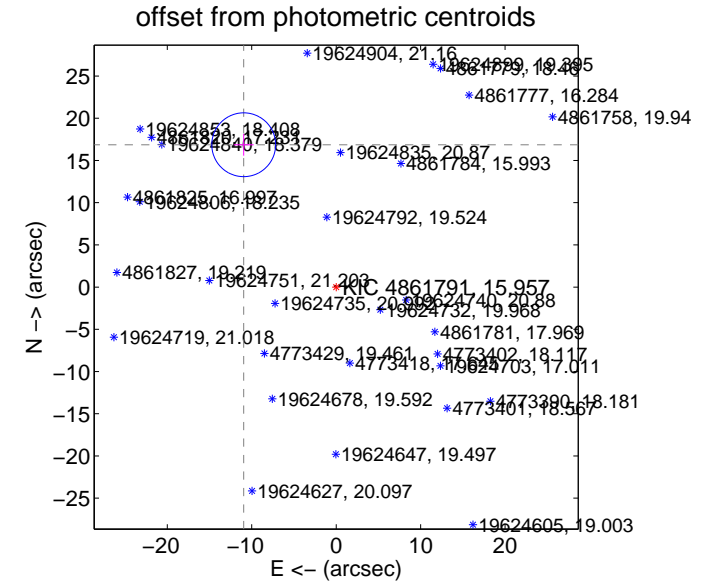
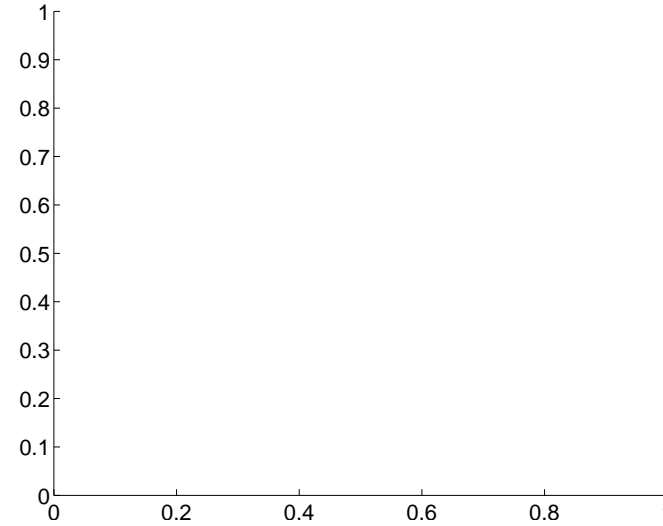
The direct PRF centroid is offset from the target star catalog position by about NaN arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	—	—	—	—
PRF-fit source offset from KIC position	—	—	—	—
photometric centroid source offset	20.11 ± 1.26	15.96	10.96 ± 1.18	16.87 ± 1.29

There is no PRF-fit offset from OOT-fit

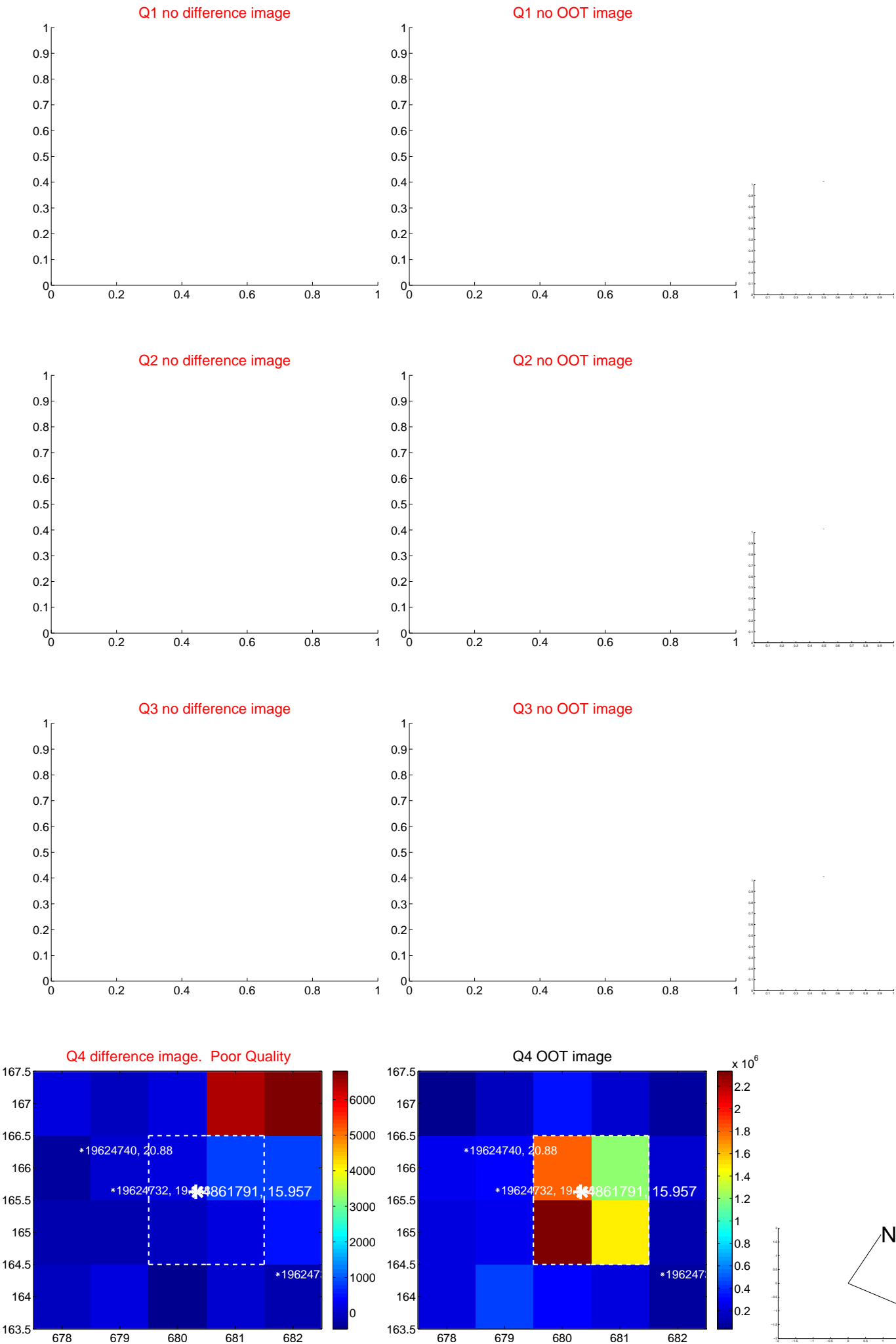


There is no PRF-fit offset from KIC

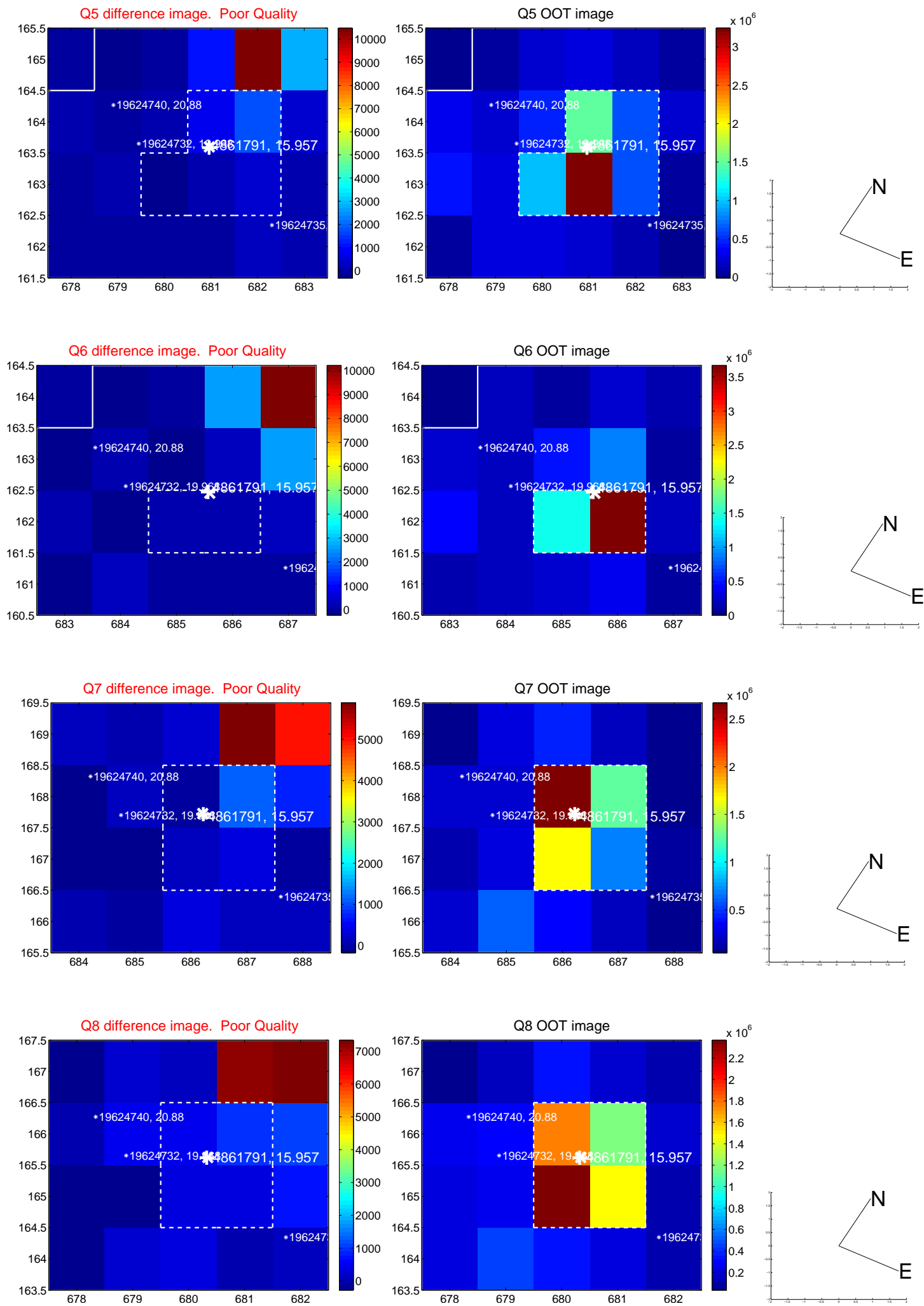


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

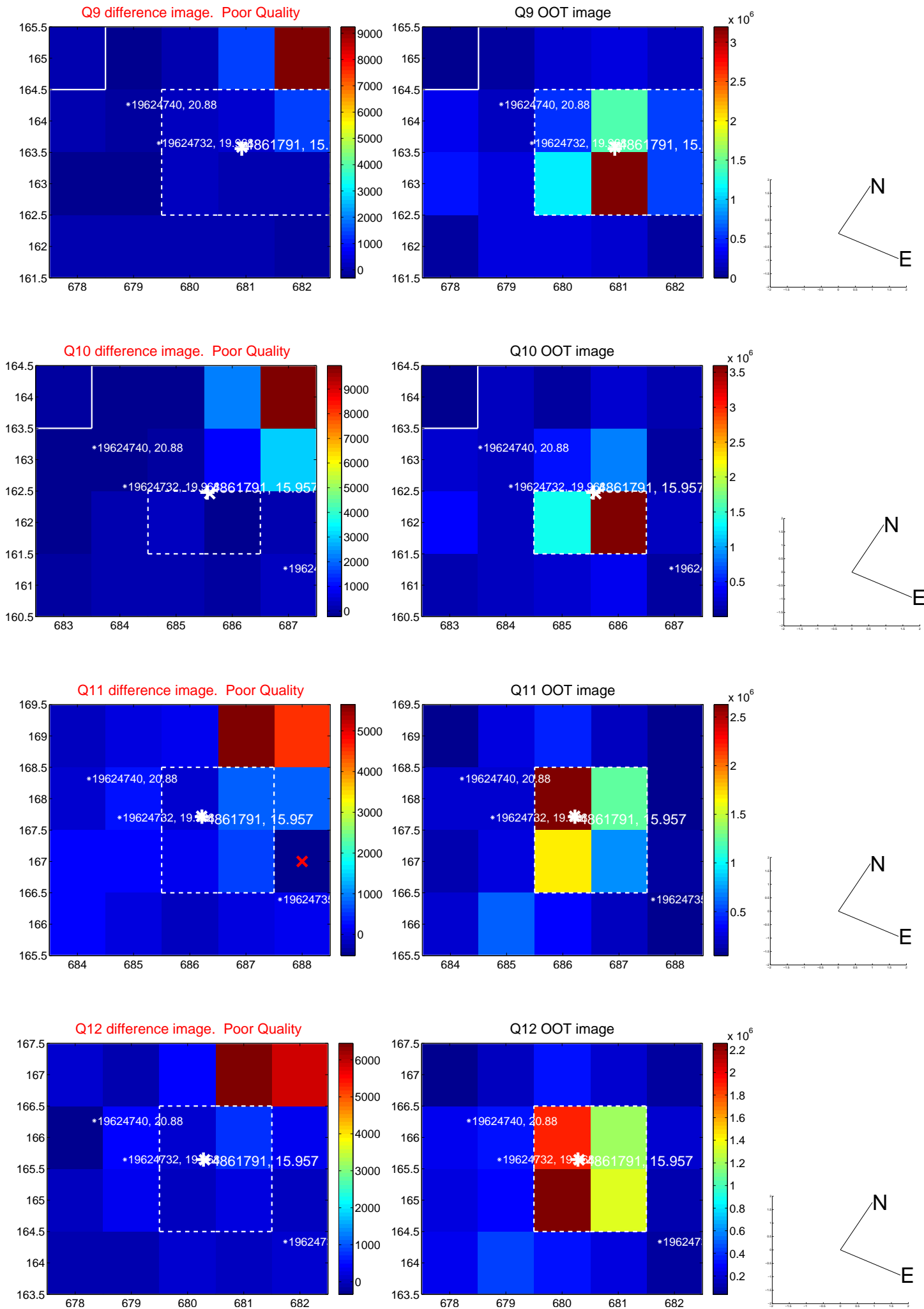
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



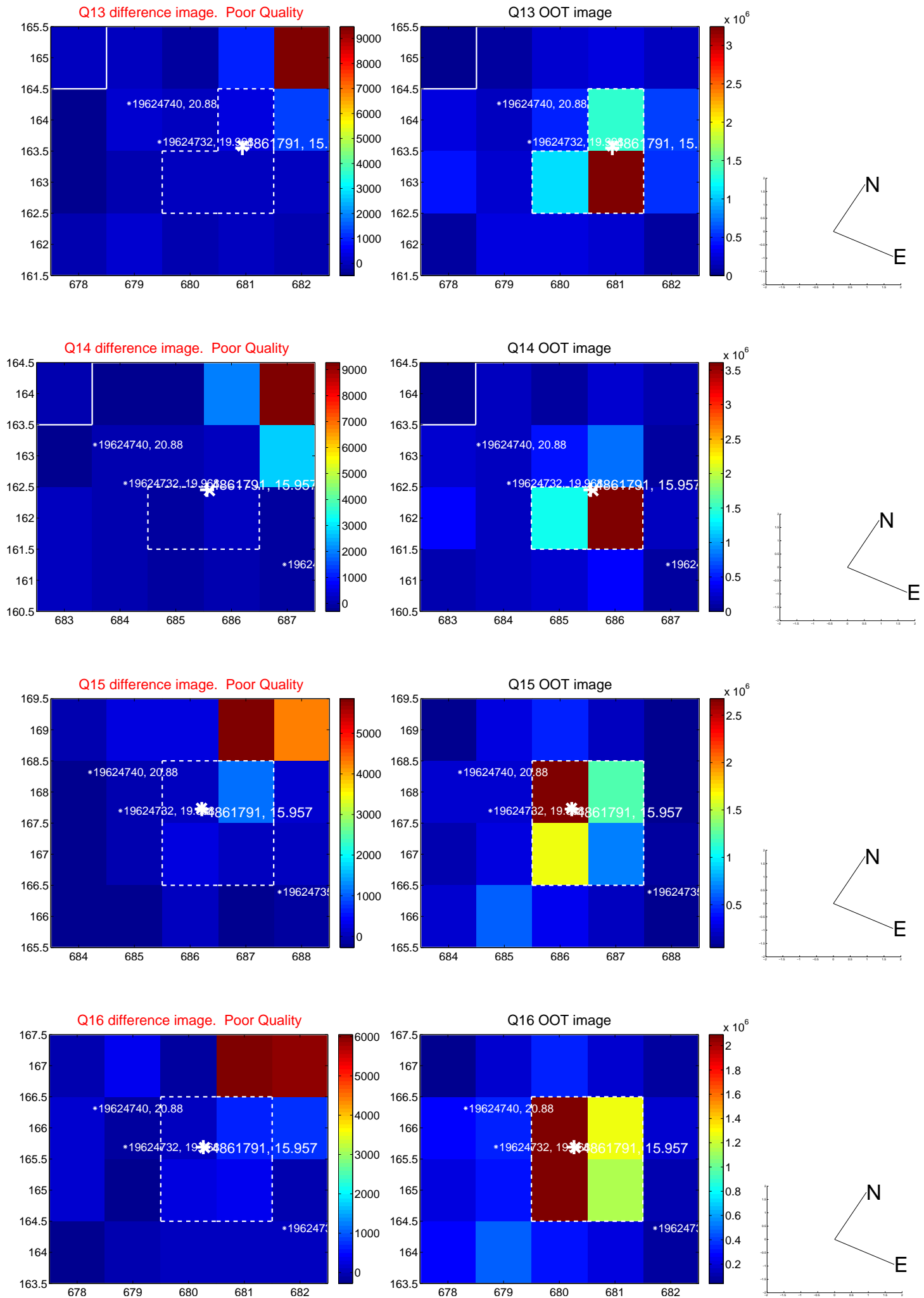
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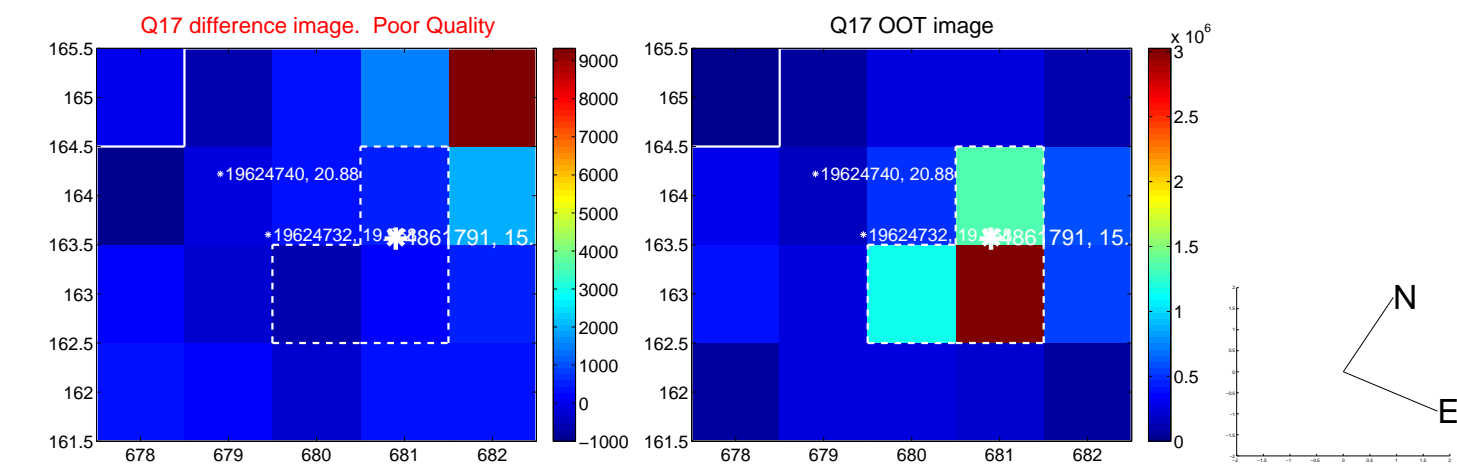
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



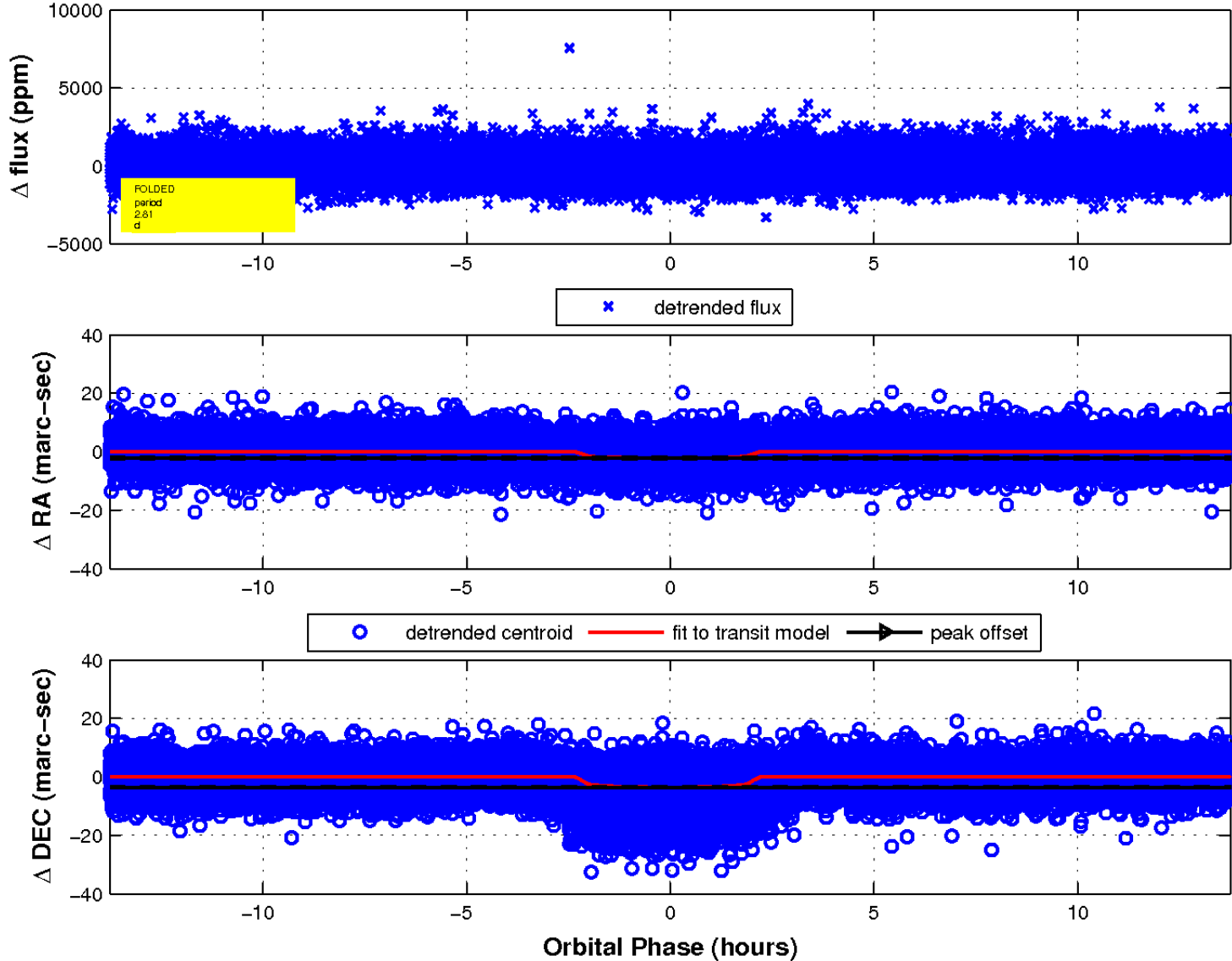
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

