

KIC 009893463

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})
009893463-01	OBS	No	0.691233	131.964166	47.2	6.254	11.9	11.9	0.93	5988	0.64	4227.53

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009893463-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_FEW_DIFFS—HALO_GHOST—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.

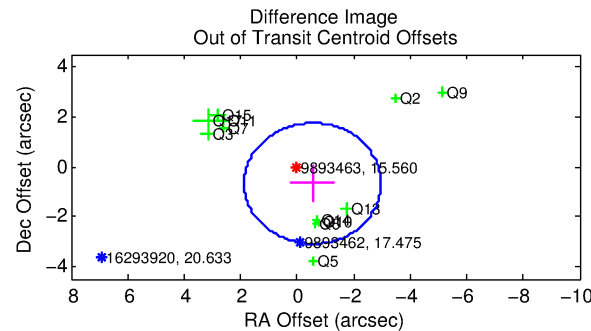
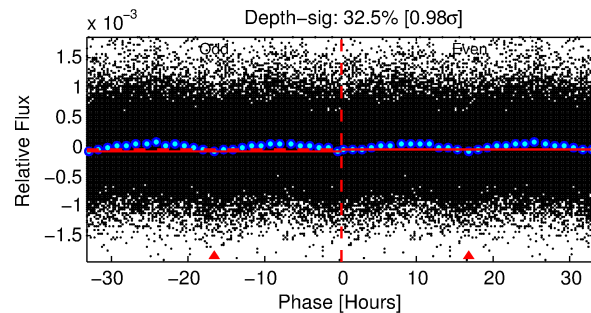
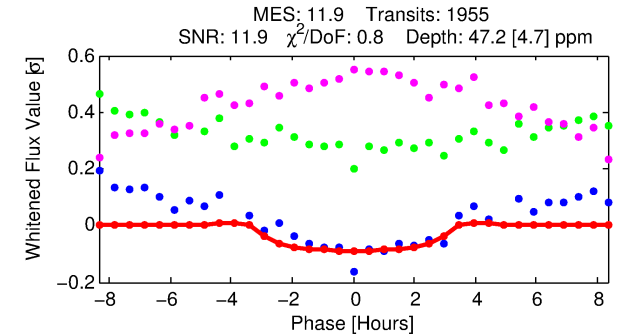
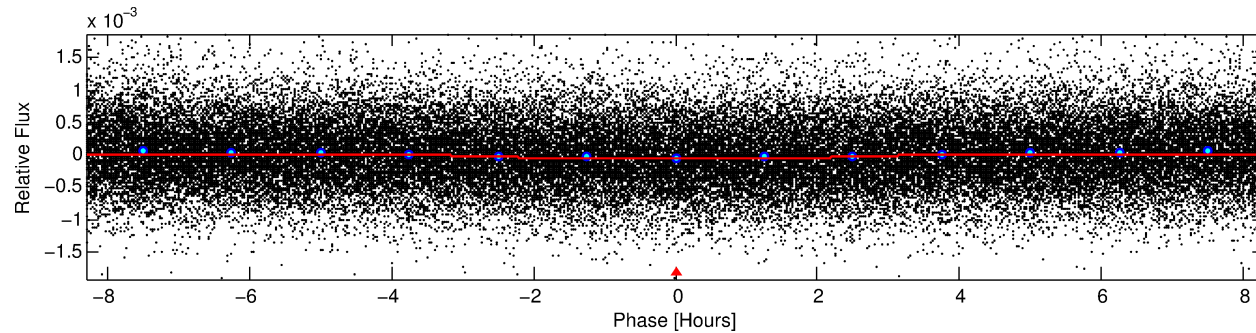
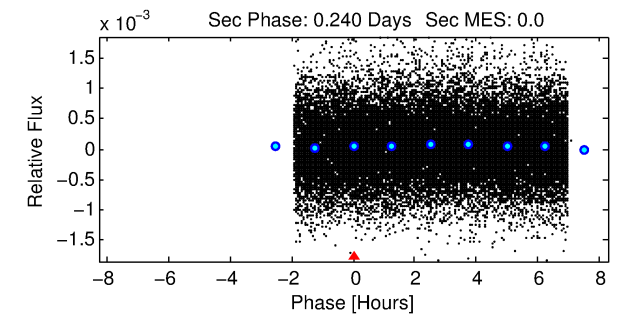
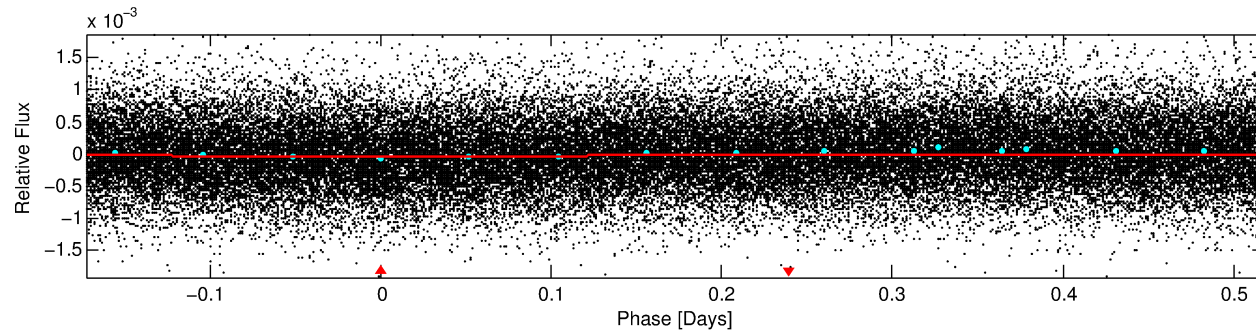
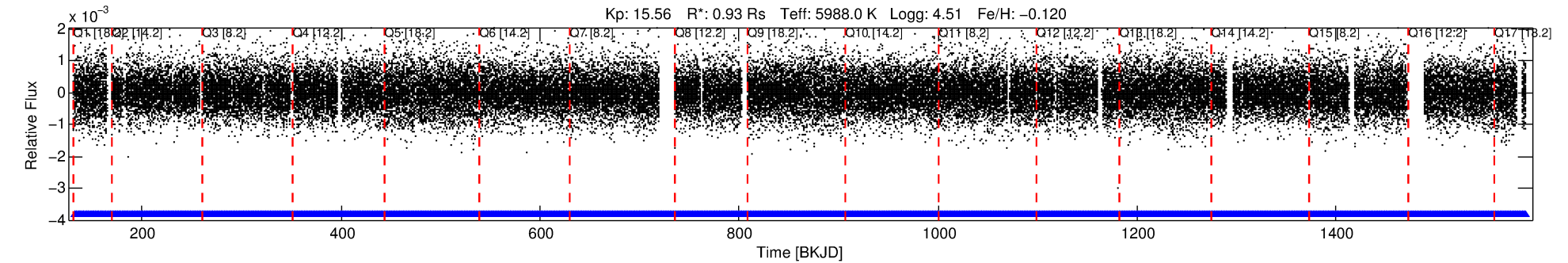
Ephemeris Match Information For 009893463-01

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
009893463-01	9893463	009893419-01	9893419	1:1	54.2	14	2	15.04	15.56	0.49	Direct-PRF	1	4.07	1.50

Notes: P₁:P₂ 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. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ 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: 9893463 Candidate: 1 of 1 Period: 0.691 d



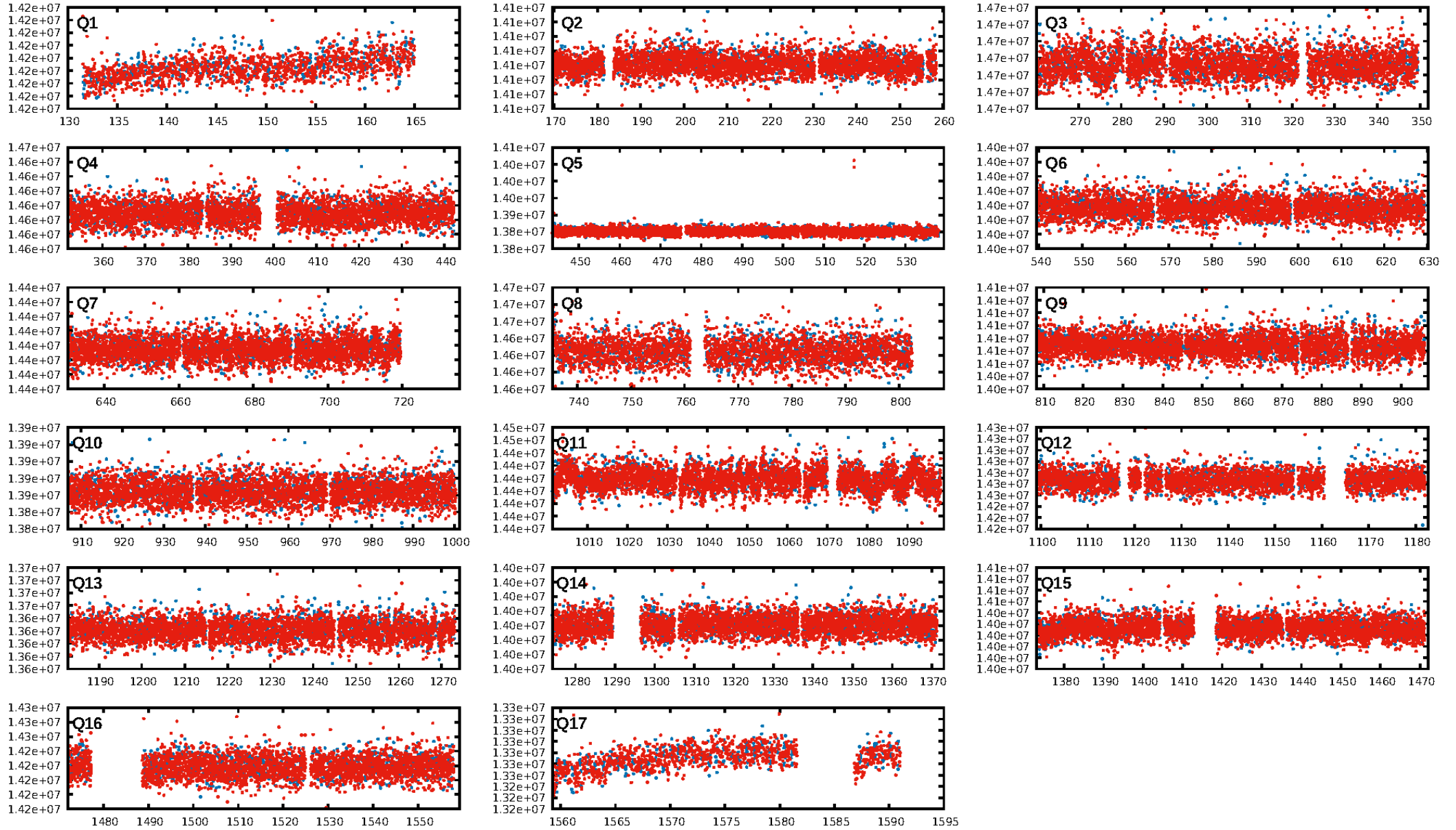
DV Fit Results:

Period = 0.69123 [0.00001] d
Epoch = 131.9642 [0.0058] BKJD
Rp/R* = 0.0063 [0.0089]
a/R* = 1.09 [1.09]
b = 0.02 [446.35]
Seff = 4227.53 [1374.36]
Teq = 2056 [167] K
Rp = 0.64 [0.92] Re
a = 0.0154 [0.0031] AU
Ag = N/A
Teffp = N/A

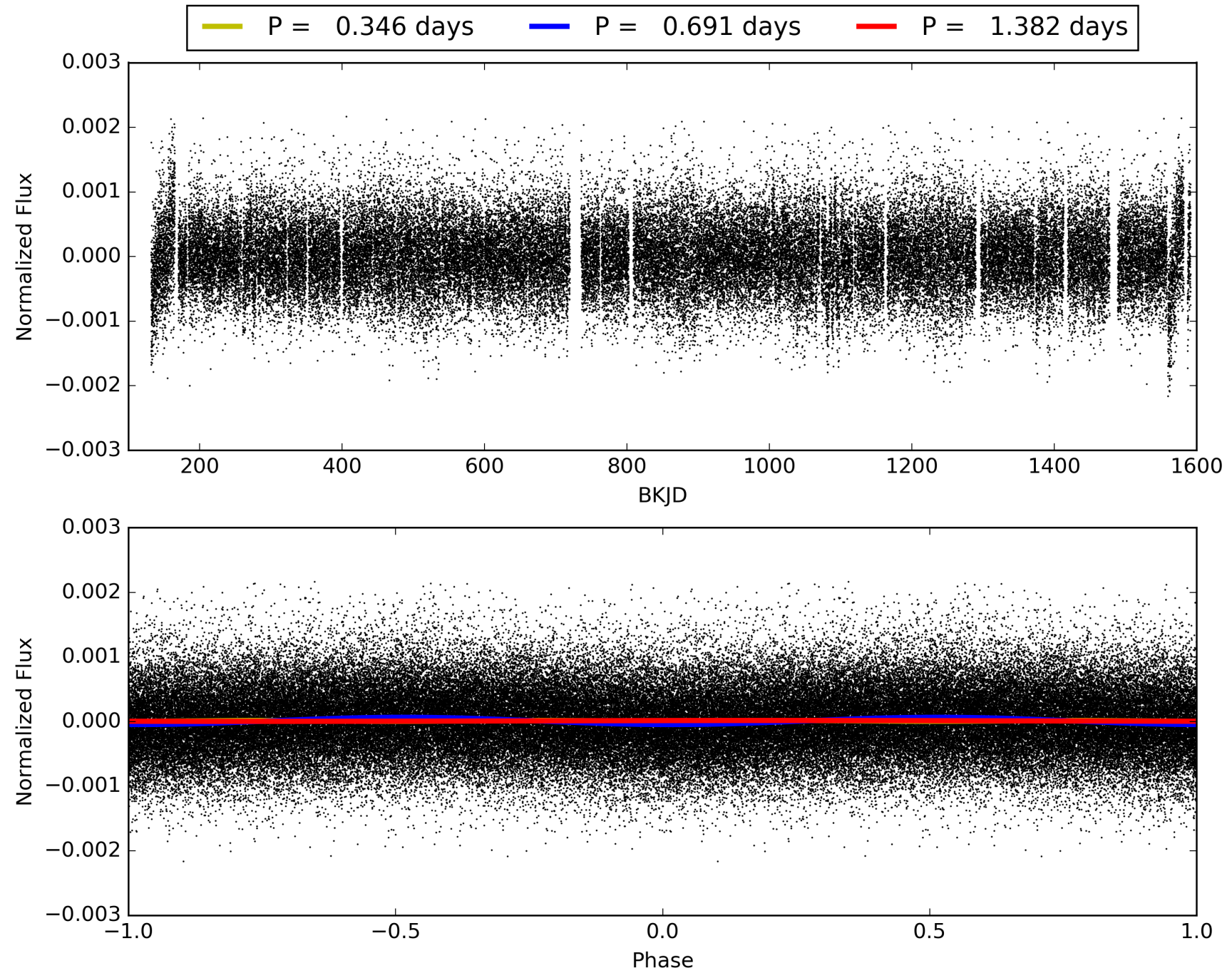
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [1868/1868]
GhostDiagnostic-chr: 0.1409
Centroid-sig: 0.0%
Centroid-so: 9.000 arcsec [6.36σ]
OotOffset-rm: 0.864 arcsec [1.07σ]
KicOffset-rm: 0.936 arcsec [1.12σ]
OotOffset-st: 4/4/0/4 [12]
KicOffset-st: 4/4/0/4 [12]
DiffImageQuality-fgm: 0.25 [3/12]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 009893463-01, PDC Light Curves

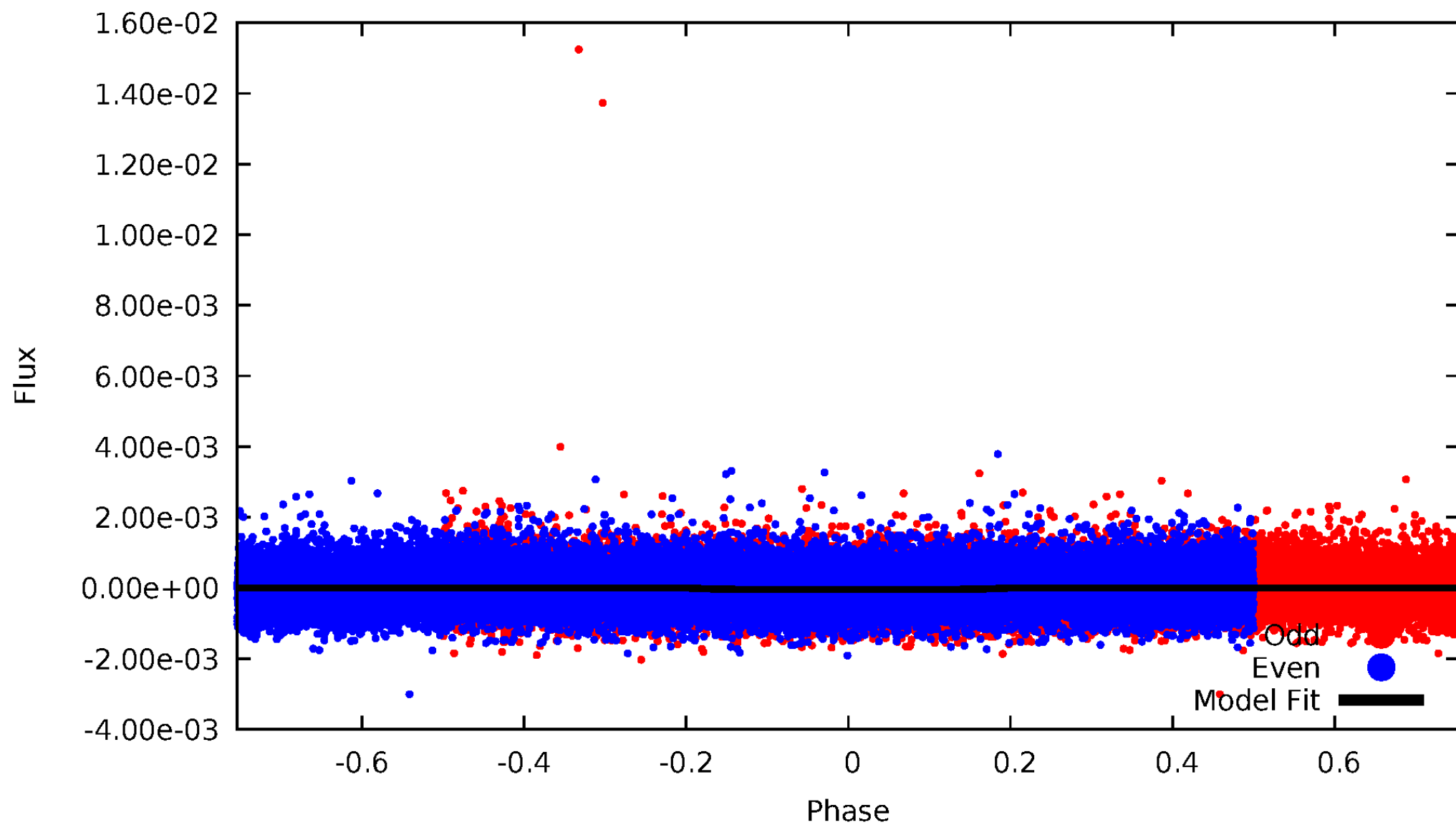


TCE 009893463-01



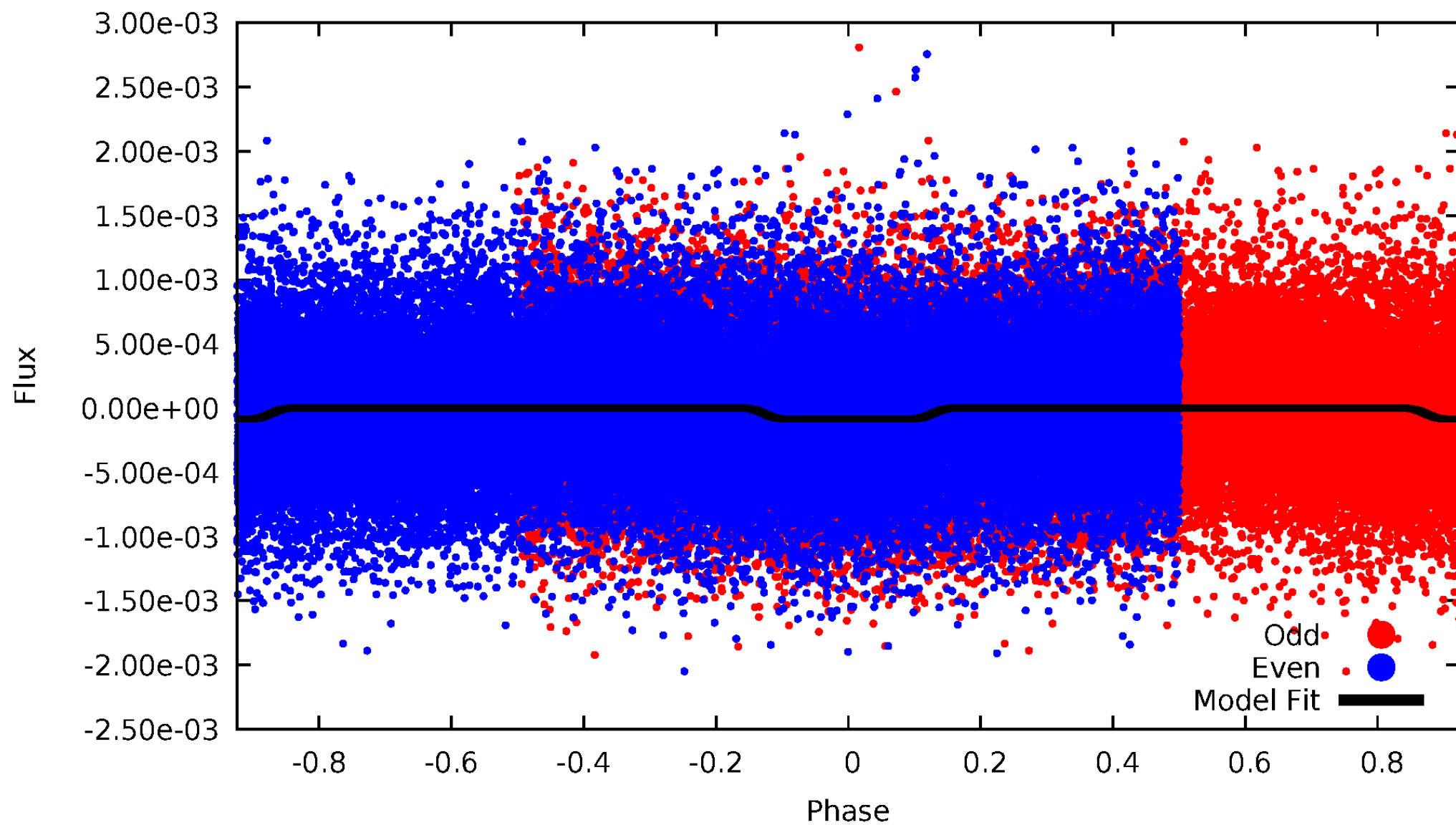
DV Odd/Even

TCE 009893463-01



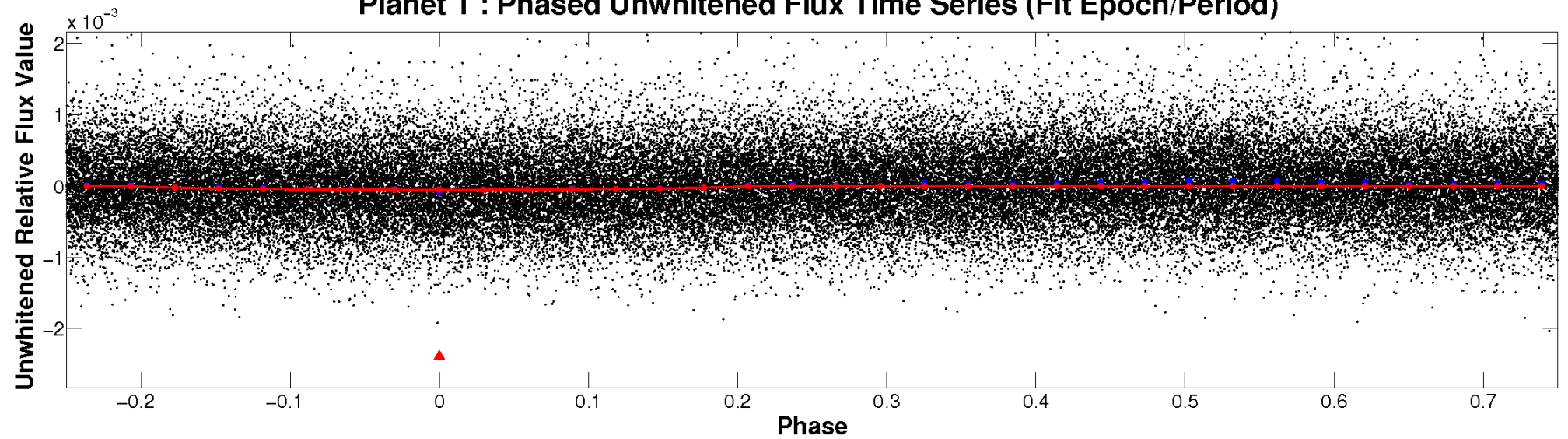
ALT Odd/Even

TCE 009893463-01

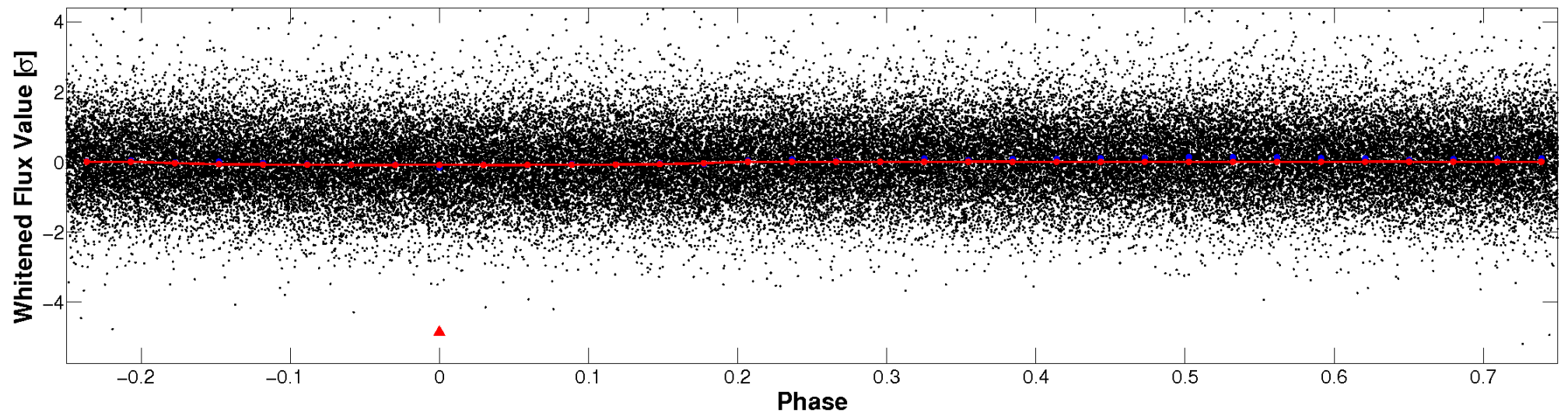


Non-Whitened Vs. Whitened Light Curve

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

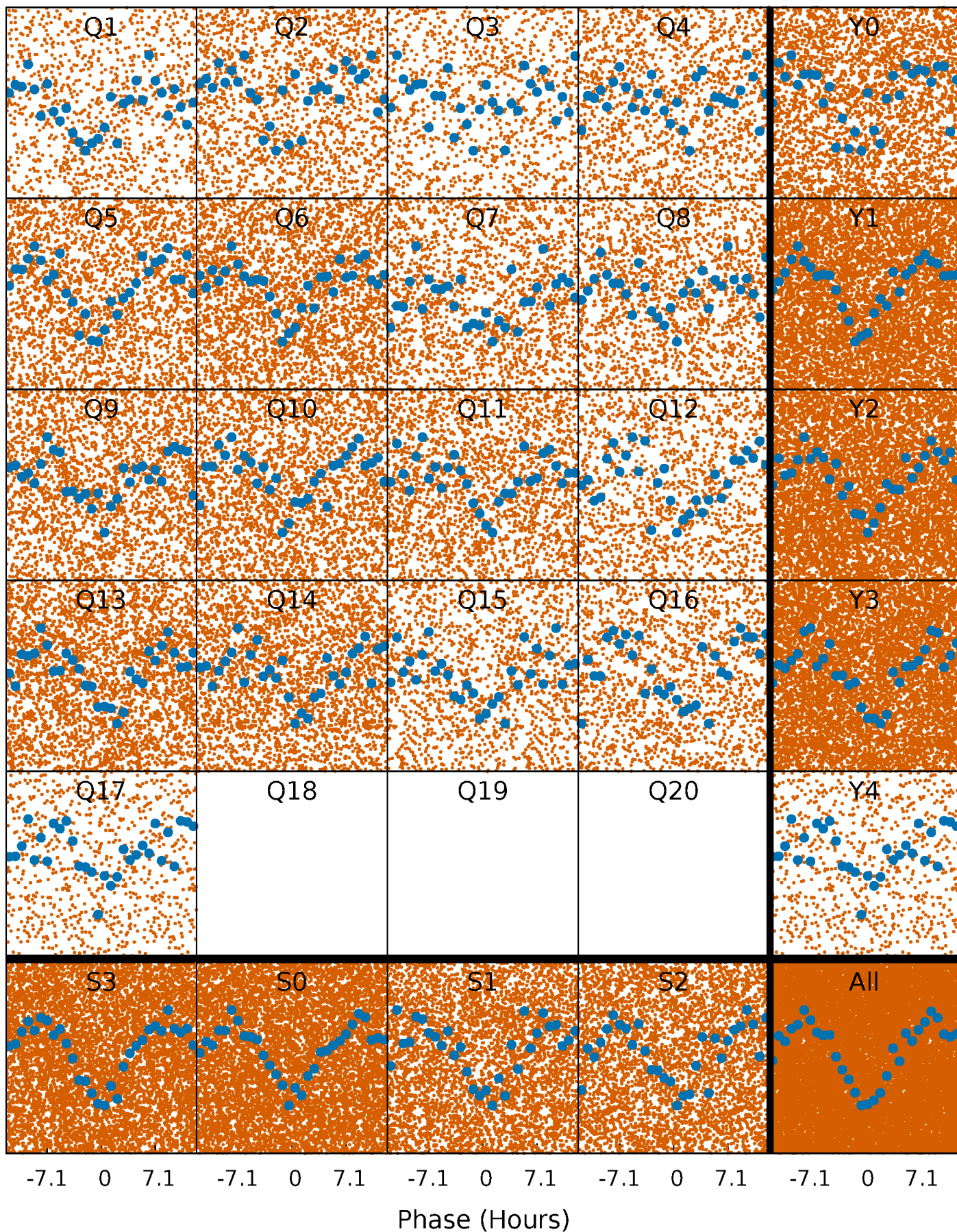


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



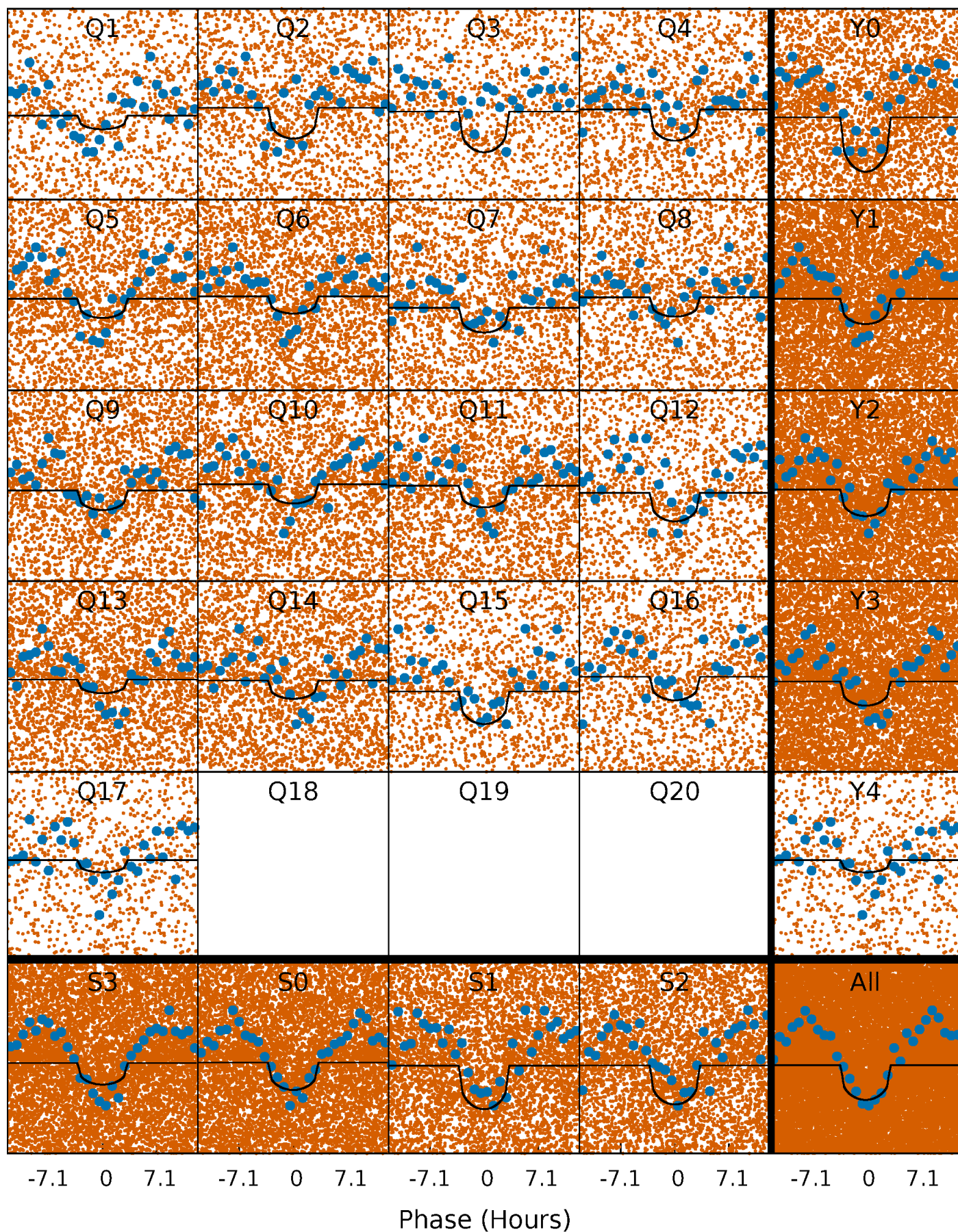
PDC Quarter-Phased Transit Curves

TCE 009893463-01 P= 0.691233 Days $T_0=131.964166$ (BKJD)



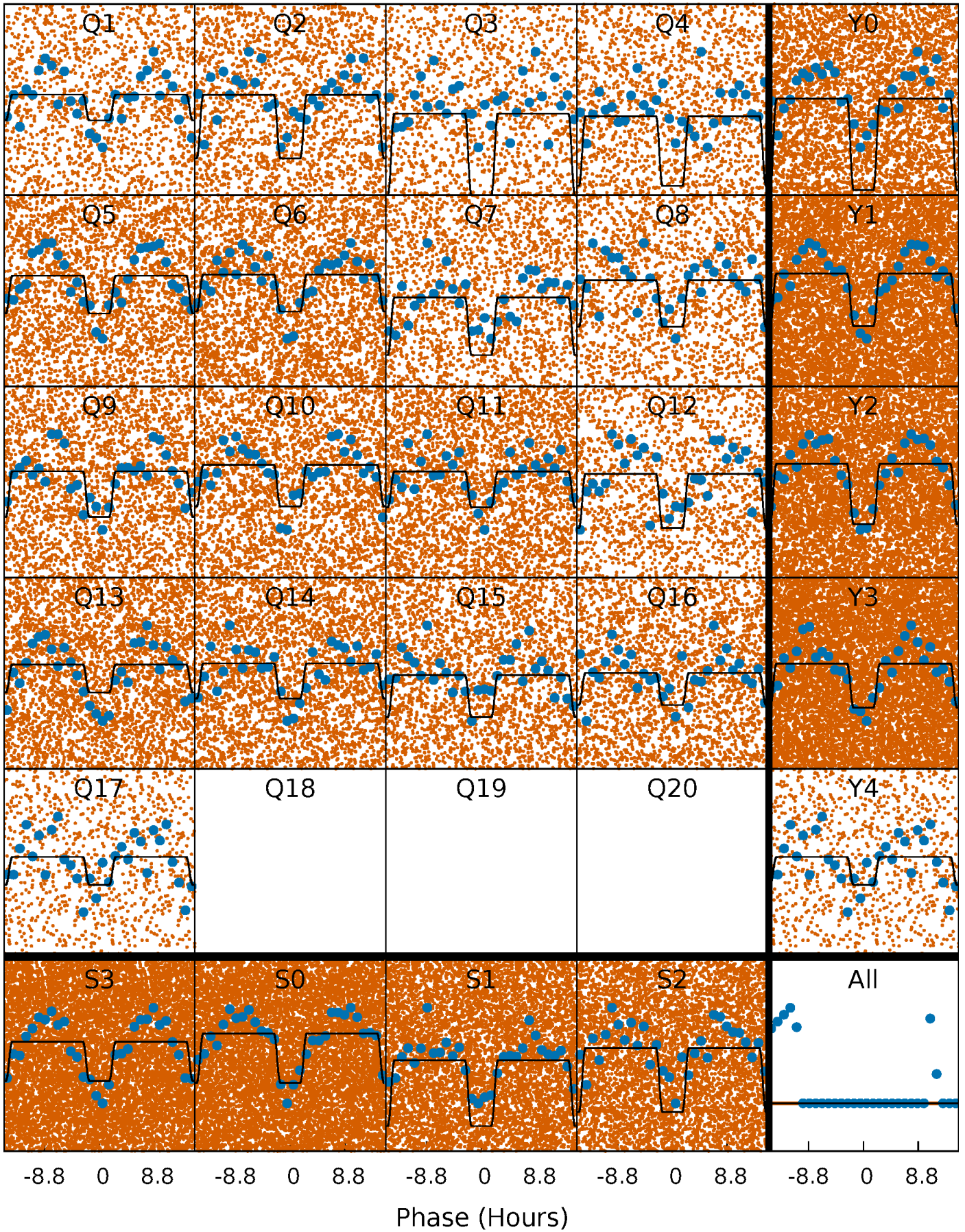
DV Quarter-Phased Transit Curves

TCE 009893463-01 P= 0.691233 Days $T_0=131.964166$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

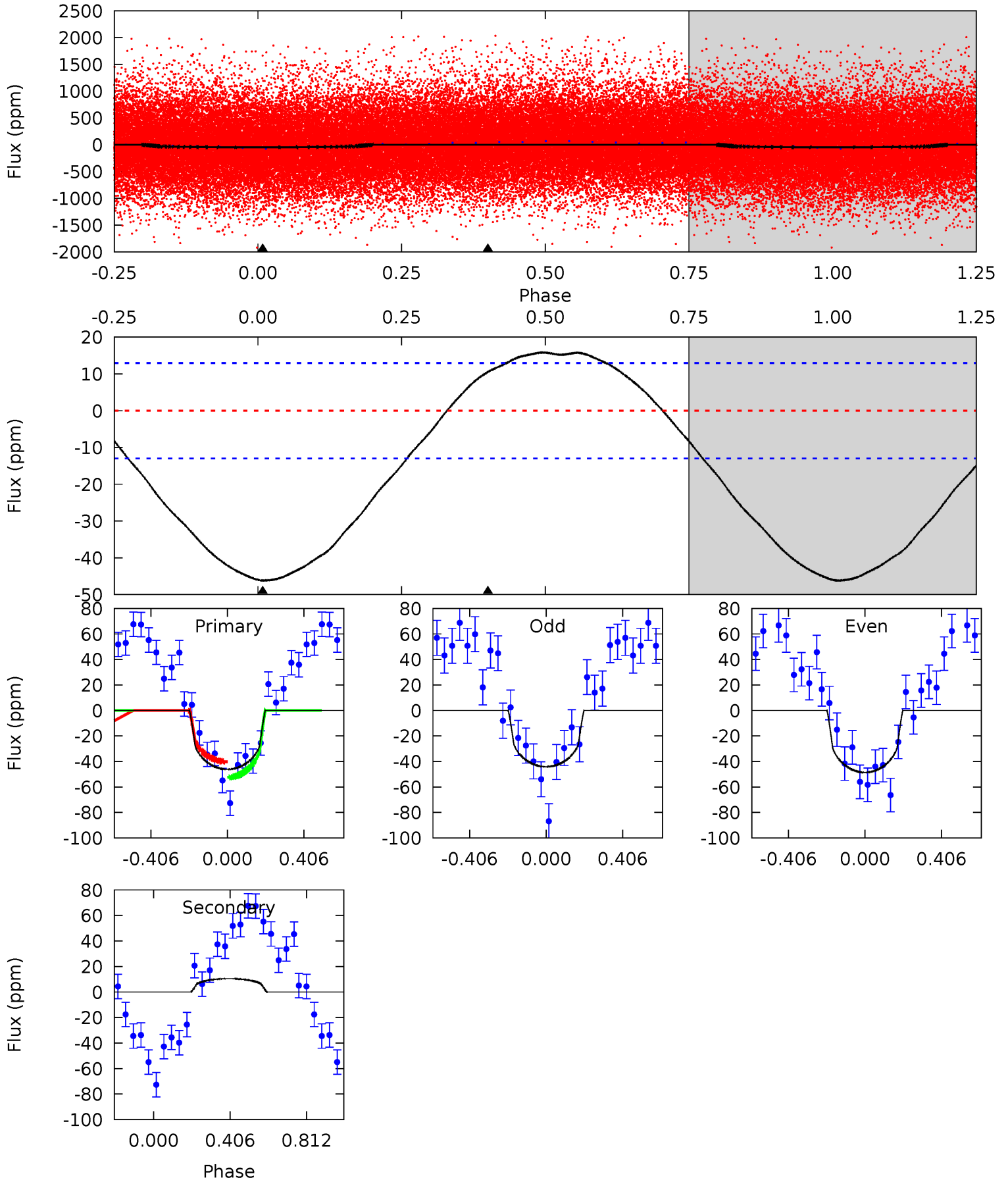
TCE 009893463-01 P= 0.691306 Days $T_0=131.891262$ (BKJD)



DV Model-Shift Uniqueness Test

009893463-01, P = 0.691233 Days, E = 131.272933 Days

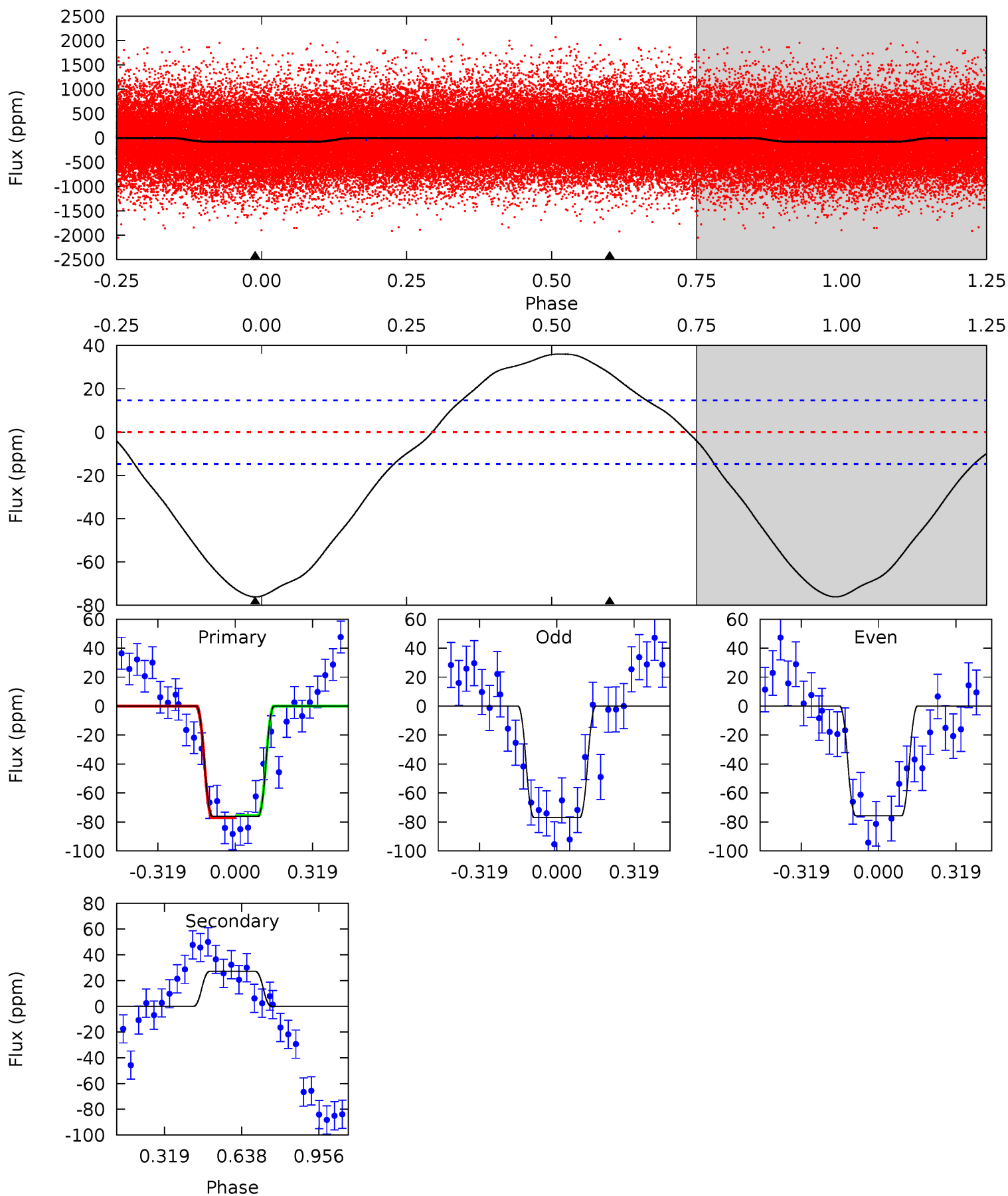
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	-3.45	0	0	4.26	0.83	1.64	15.2	15.2	-3.45	-3.45	0.74	1.02	0.25	2.04



Alt Model-Shift Uniqueness Test

009893463-01, P = 0.691306 Days, E = 131.199956 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.4	-7.97	0	0	4.32	1.00	2.33	22.4	22.4	-7.97	-7.97	0.18	1.01	0.32	0.23



Stellar Parameters For KIC 009893463

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5988^{+161}_{-179}	$4.507^{+0.052}_{-0.168}$	$-0.120^{+0.300}_{-0.300}$	$0.934^{+0.221}_{-0.095}$	$1.021^{+0.109}_{-0.134}$	$1.767^{+0.394}_{-0.801}$
	+3%/-3%	+1%/-4%	+250%/-250%	+24%/-10%	+11%/-13%	+22%/-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 009893463-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	10 ± 3	$1.03^{+0.75}_{-0.67}$	2925^{+157}_{-130}	-3985^{+518}_{-1918}	$-1.253^{+0.863}_{-8.748}$
Alt.	27 ± 3	$1.17^{+0.93}_{-0.72}$	2928^{+162}_{-127}	-4408^{+640}_{-2379}	$-2.604^{+1.782}_{-15.835}$

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

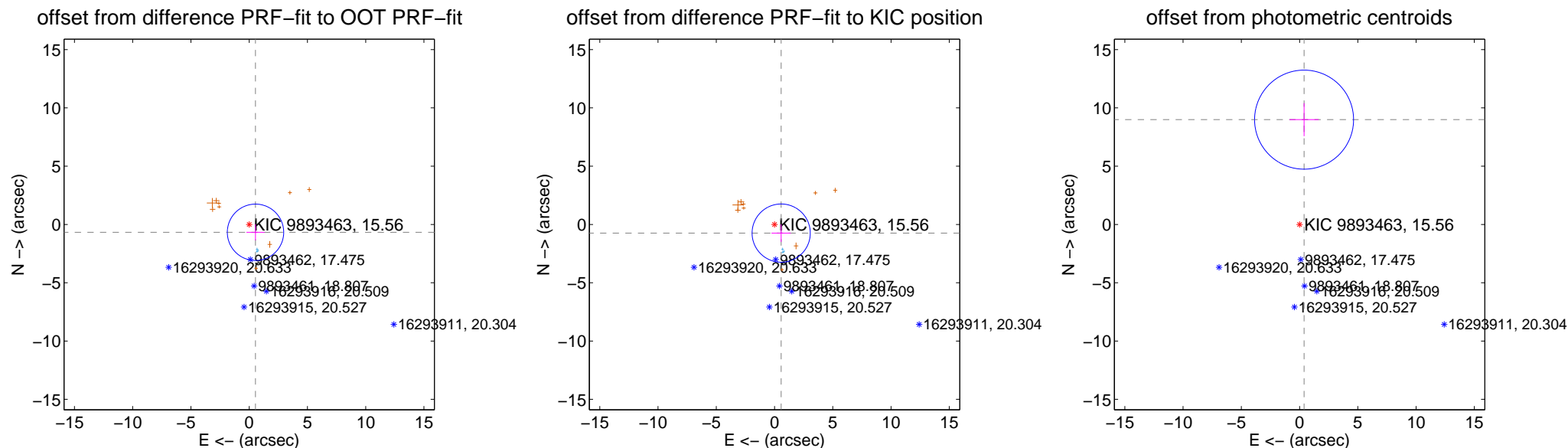
DV Centroid Data

Supplemental centroid analysis for 009893463-01. Kepler magnitude: 15.56. Transit SNR 11.89

There are 3 quarters with good PRF difference image offsets

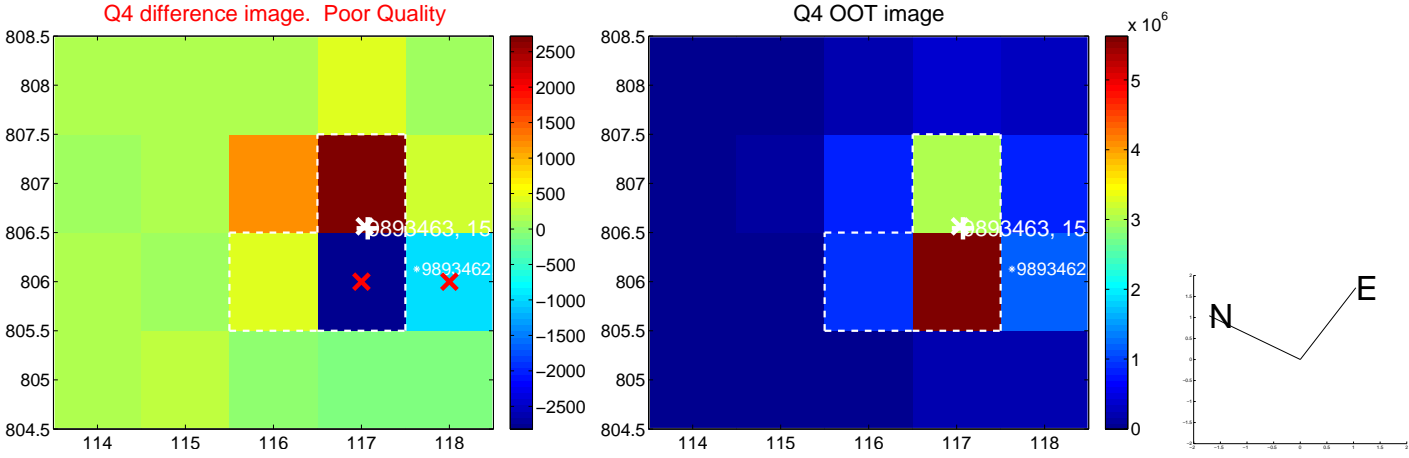
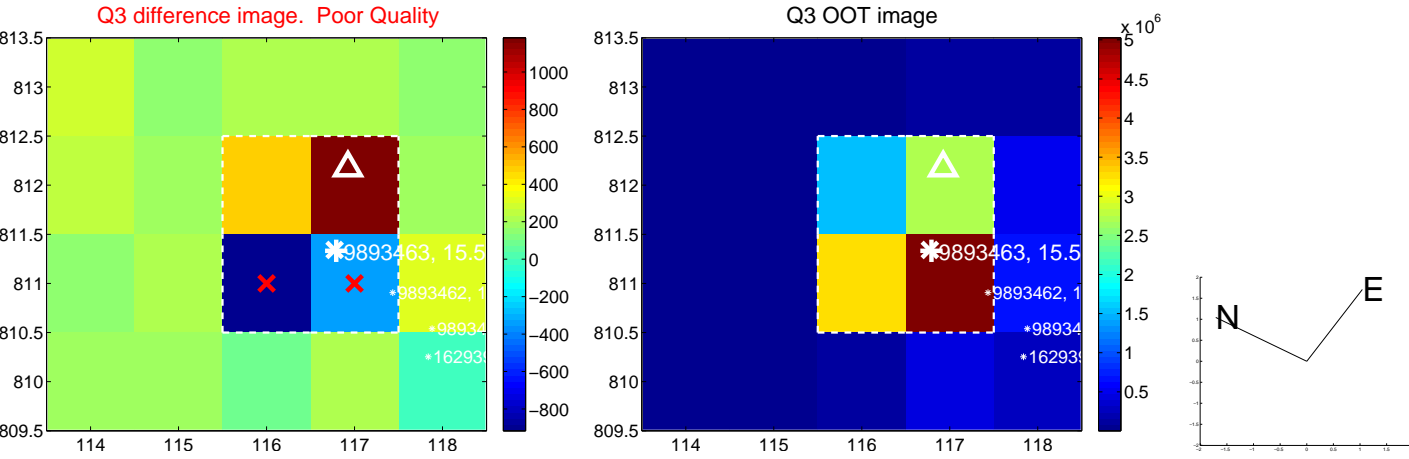
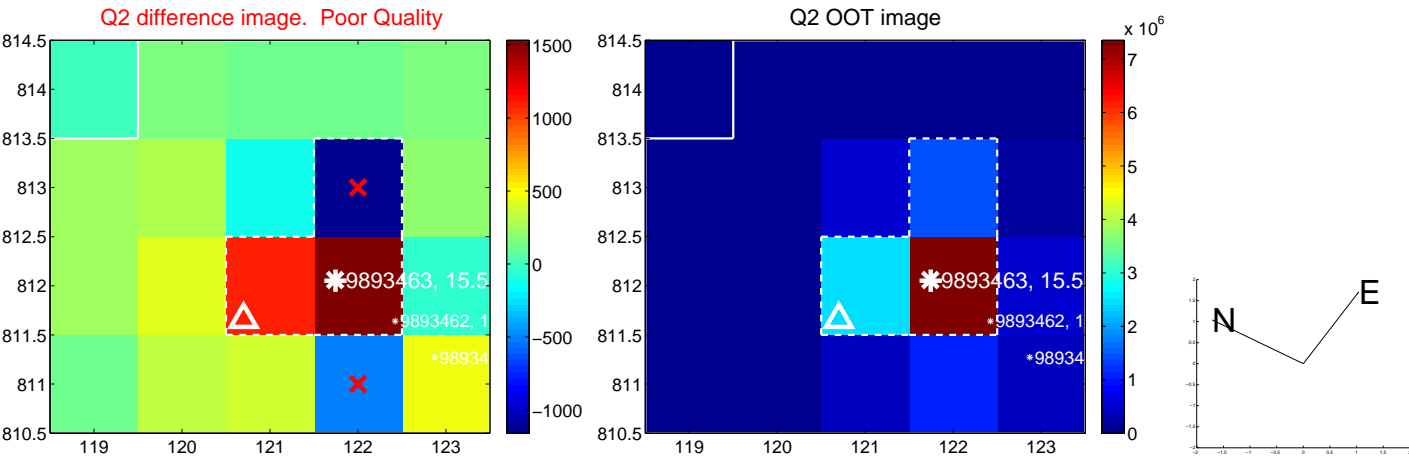
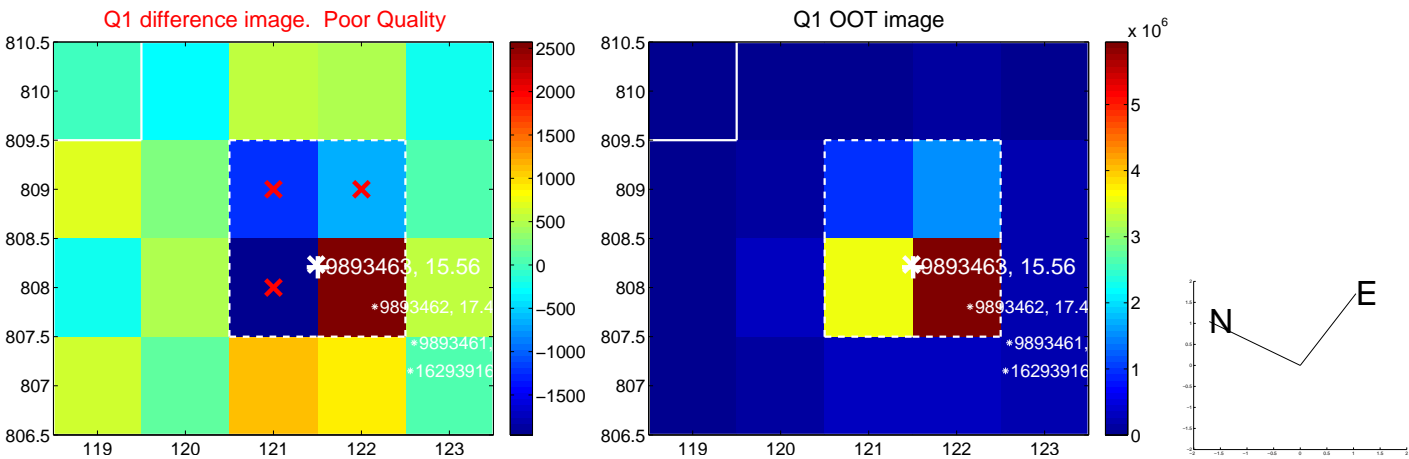
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.864 ± 0.807	1.07	-0.542 ± 0.777	-0.673 ± 0.692
PRF-fit source offset from KIC position	0.936 ± 0.833	1.12	-0.571 ± 0.828	-0.742 ± 0.748
photometric centroid source offset	9.00 ± 1.42	6.36	-0.39 ± 1.25	8.99 ± 1.42

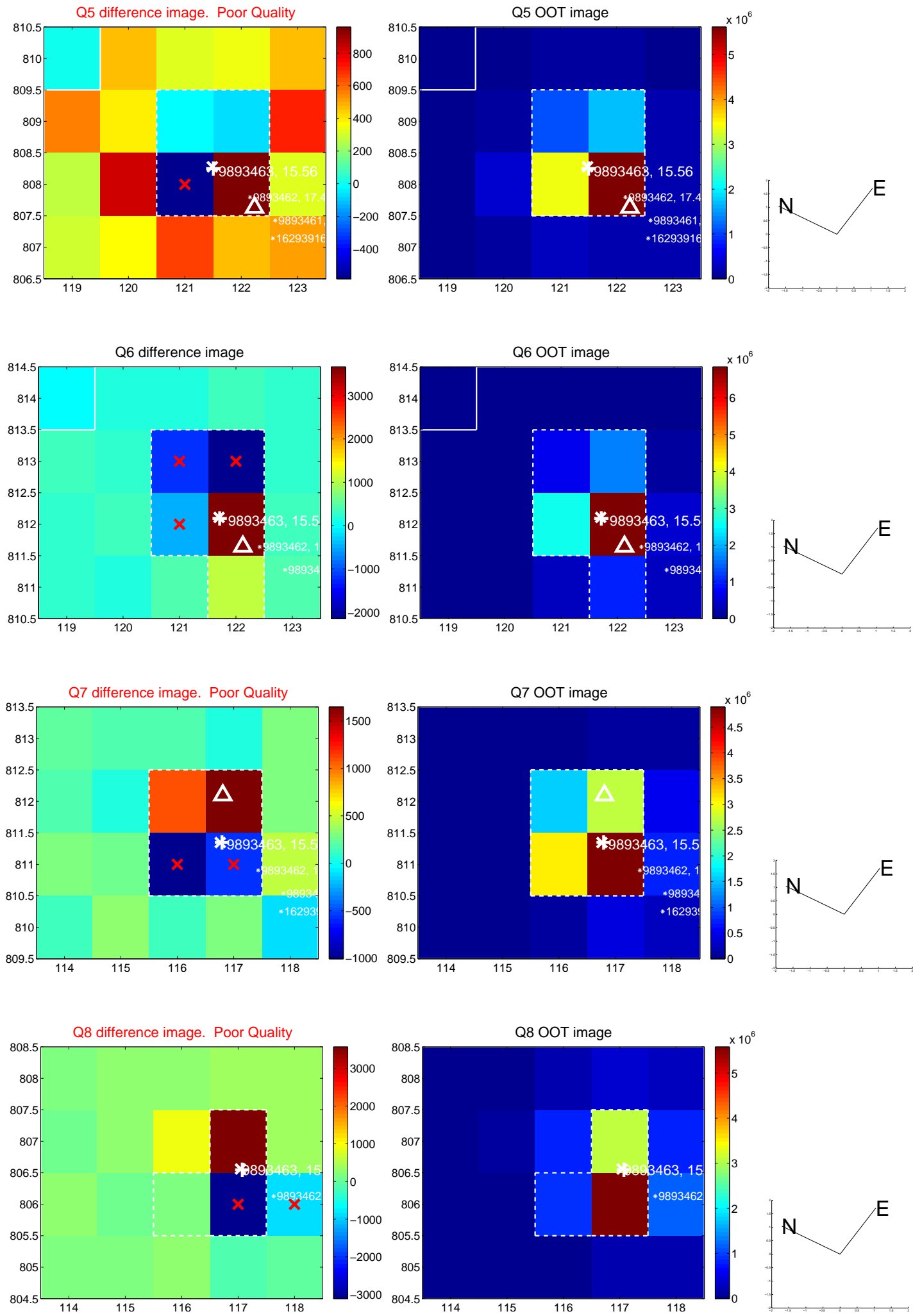


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

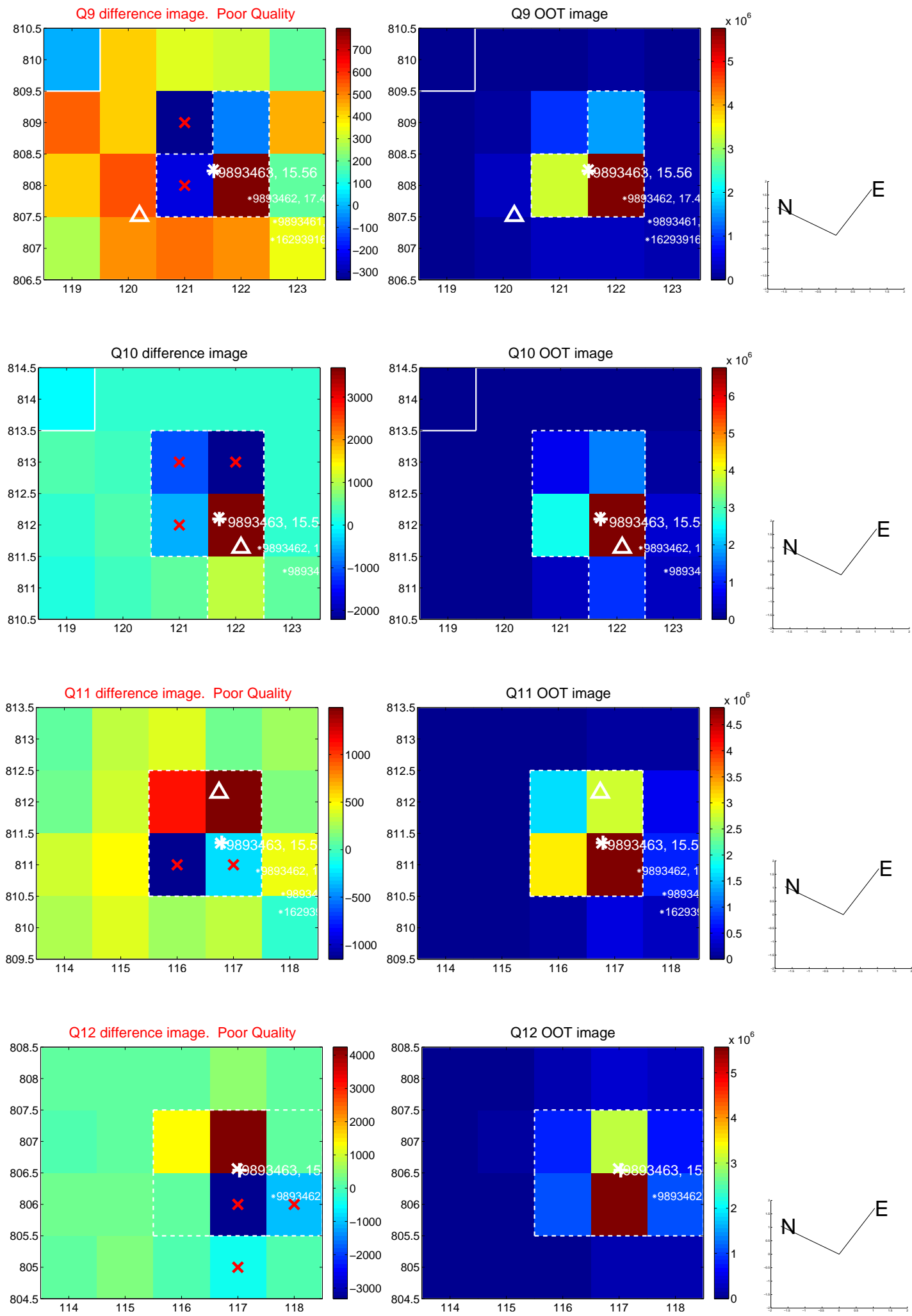
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



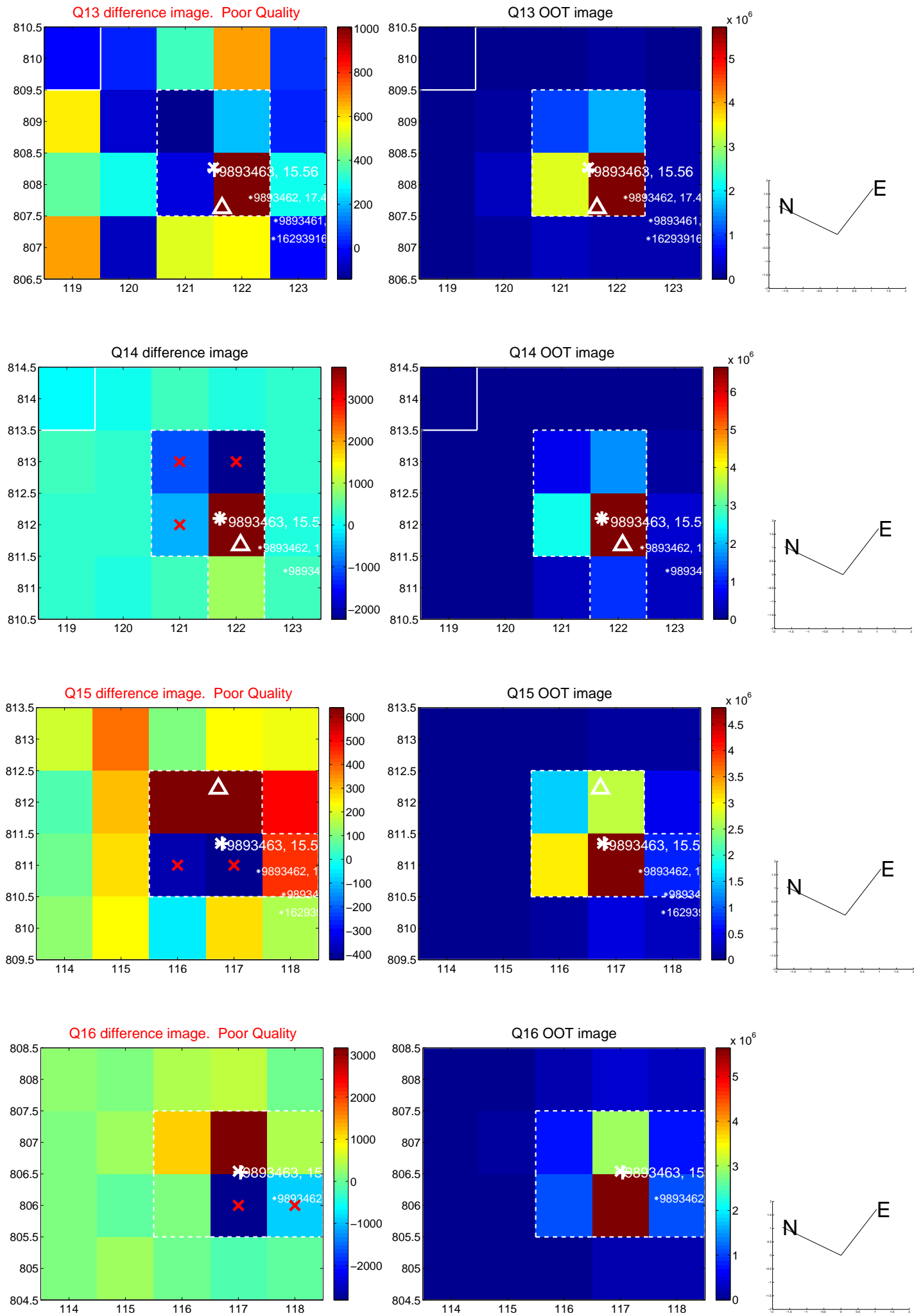
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

