

KIC 002303903

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})
002303903-01	OBS	4709.01	3.708559	134.479734	302.4	2.073	9.9	10.8	0.77	5420	1.79	231.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002303903-01	OBS	PC	0.80	0	0	0	0	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.

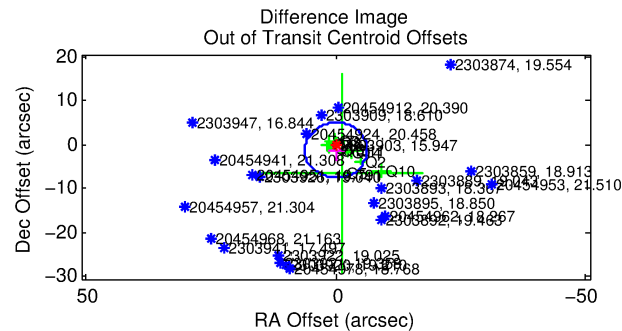
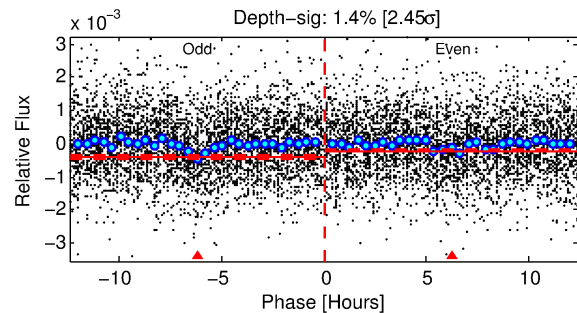
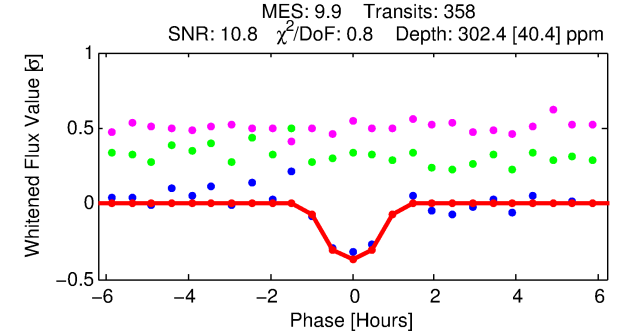
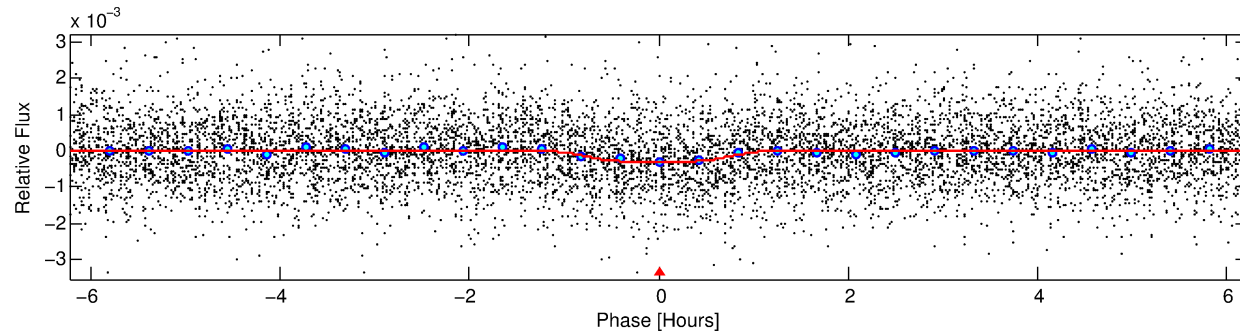
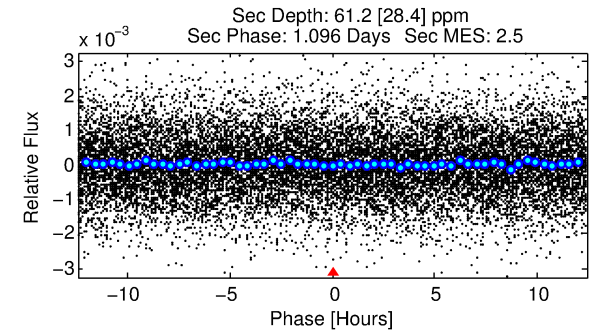
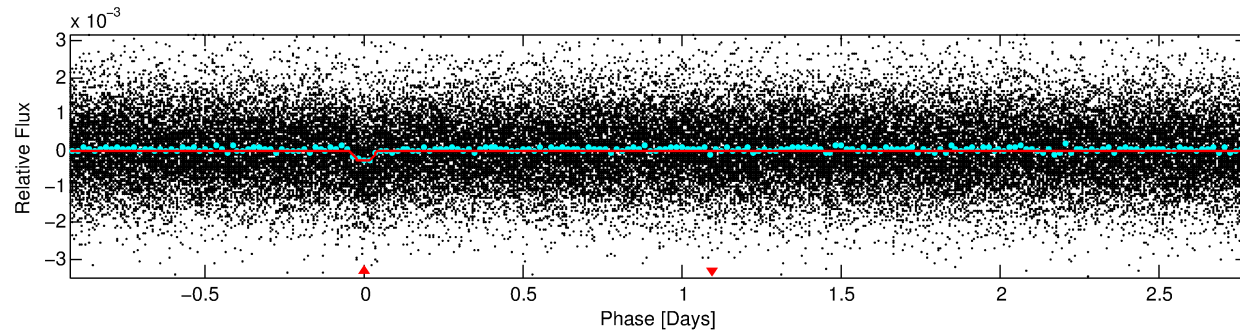
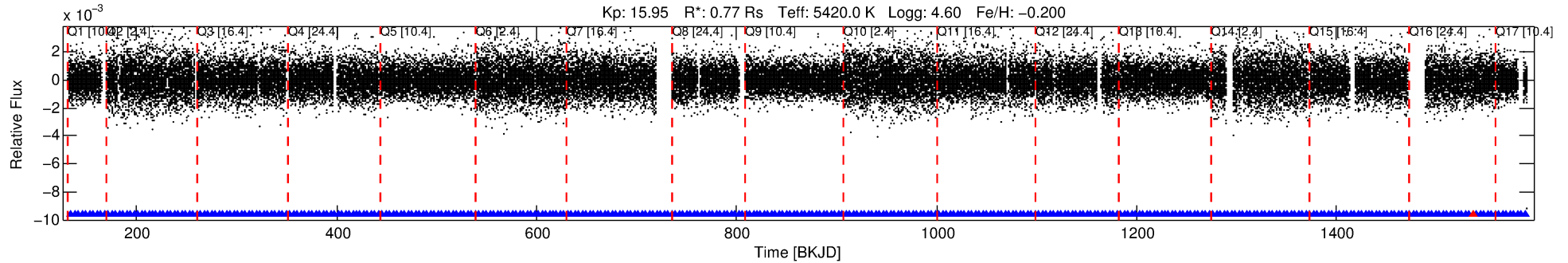
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002303903-01

No Significant Match Found

DV One-Page Summary

KIC: 2303903 Candidate: 1 of 1 Period: 3.709 d
KOI: K04709.01 Corr: 0.944



DV Fit Results:

Period = 3.70856 [0.00002] d
Epoch = 134.4797 [0.0037] BKJD
Rp/R* = 0.0213 [0.0033]
a/R* = 4.68 [2.58]
b = 0.96 [0.04]
Seff = 231.91 [58.84]
Teq = 995 [63] K
Rp = 1.79 [0.44] Re
a = 0.0445 [0.0070] AU
Ag = 20.85 [12.49] [1.59σ]
Teffp = 3288 [467] K [4.86σ]

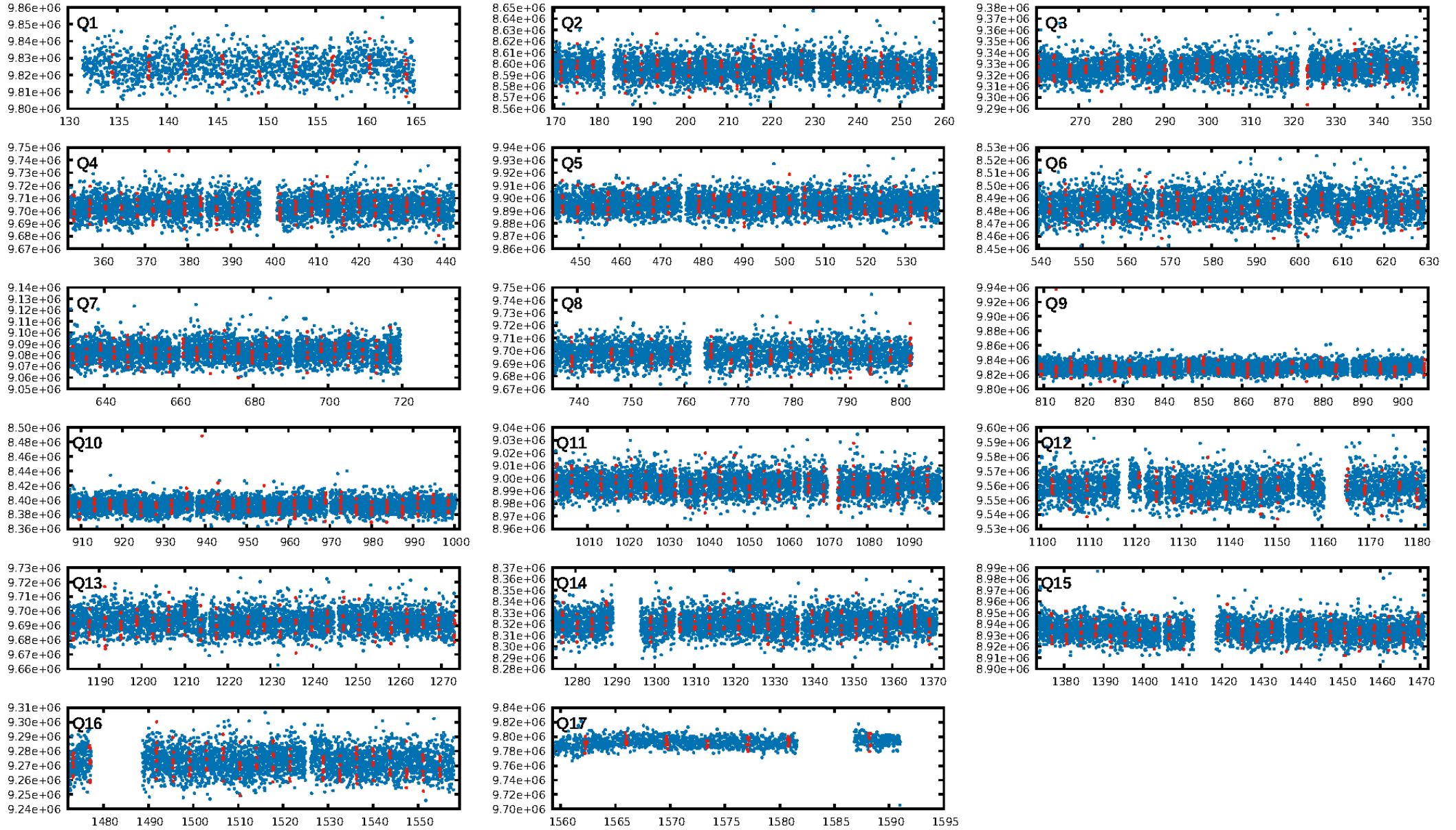
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.25e-23
RollingBand-fgt: 1.00 [341/342]
GhostDiagnostic-chr: 5.833
Centroid-sig: 47.2%
Centroid-so: 0.609 arcsec [0.43σ]
OotOffset-rm: 1.257 arcsec [0.60σ]
KicOffset-rm: 1.263 arcsec [0.61σ]
OotOffset-st: 3/4/2/2 [11]
KicOffset-st: 3/4/2/2 [11]
DiffImageQuality-fgm: 0.09 [1/11]
DiffImageOverlap-fno: 1.00 [17/17]

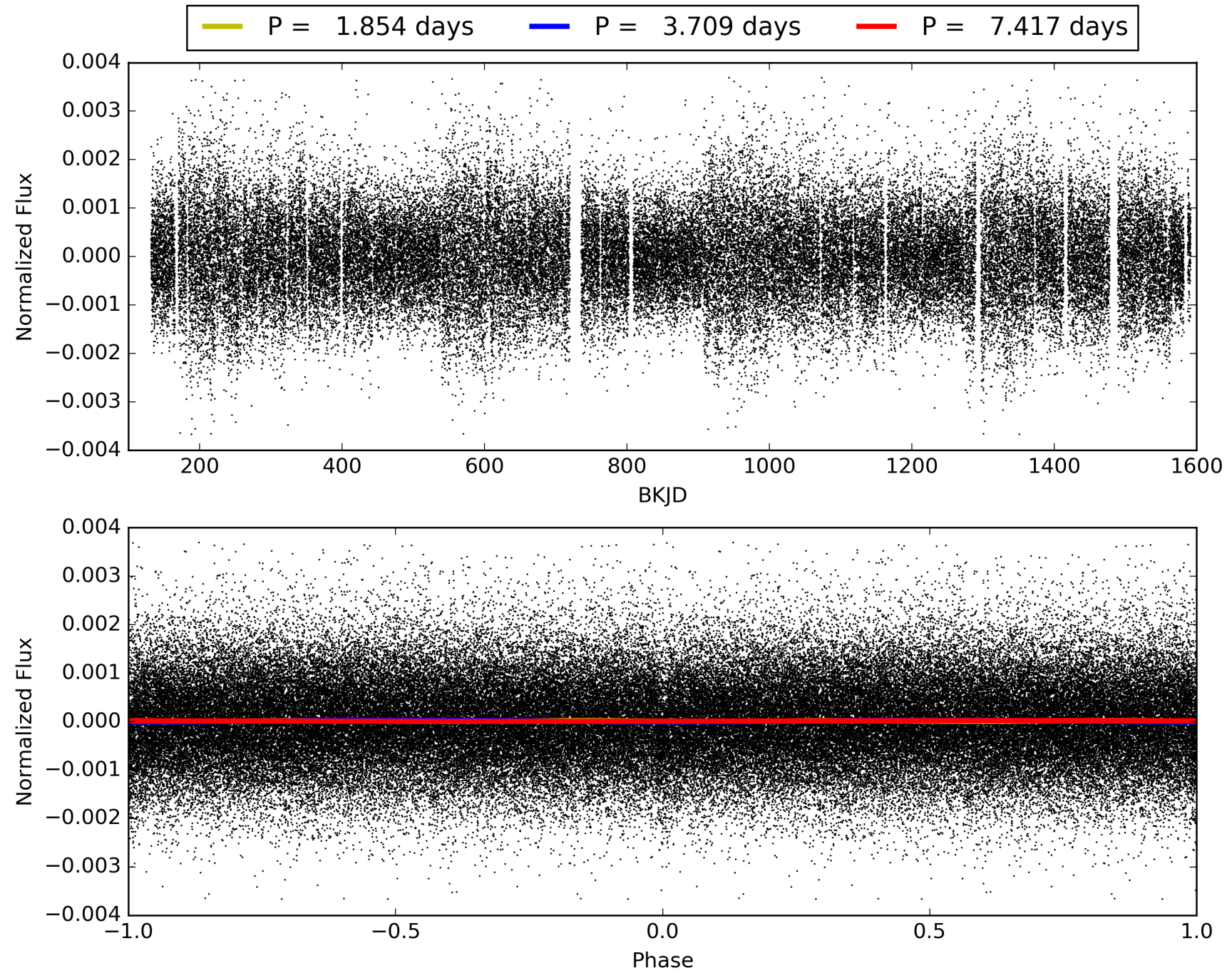
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 17:51:02 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 002303903-01, PDC Light Curves

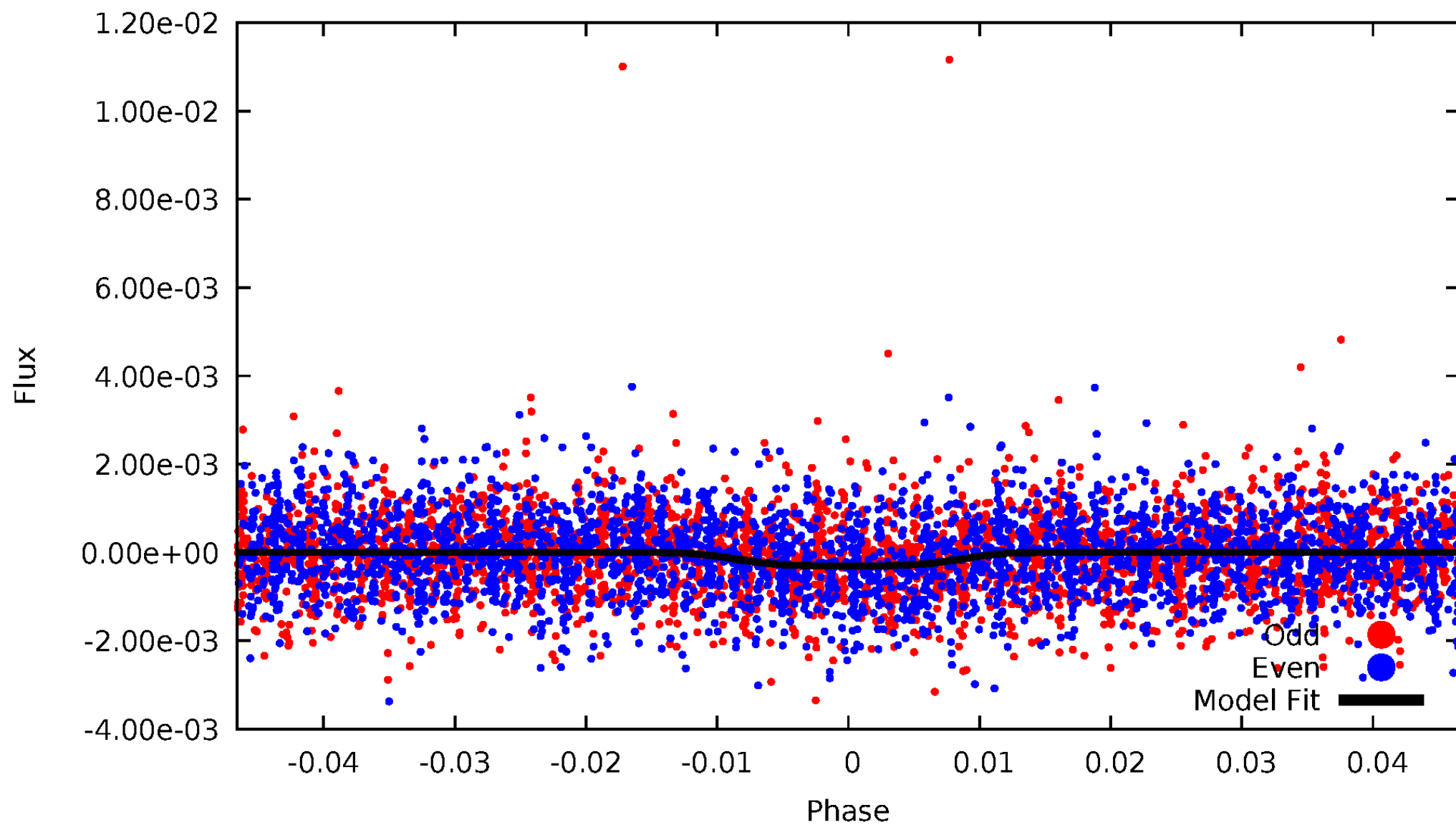


TCE 002303903-01



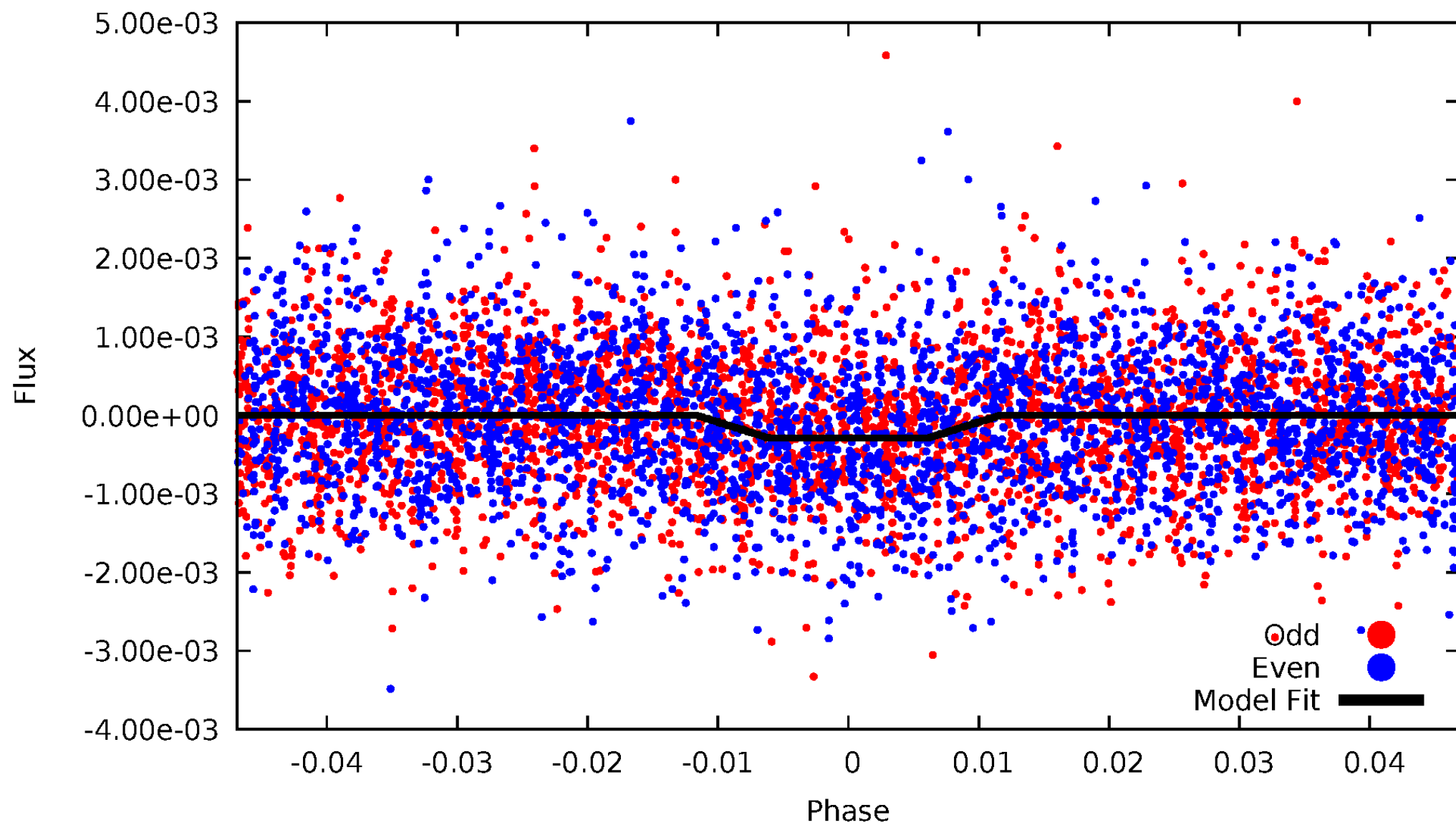
DV Odd/Even

TCE 002303903-01



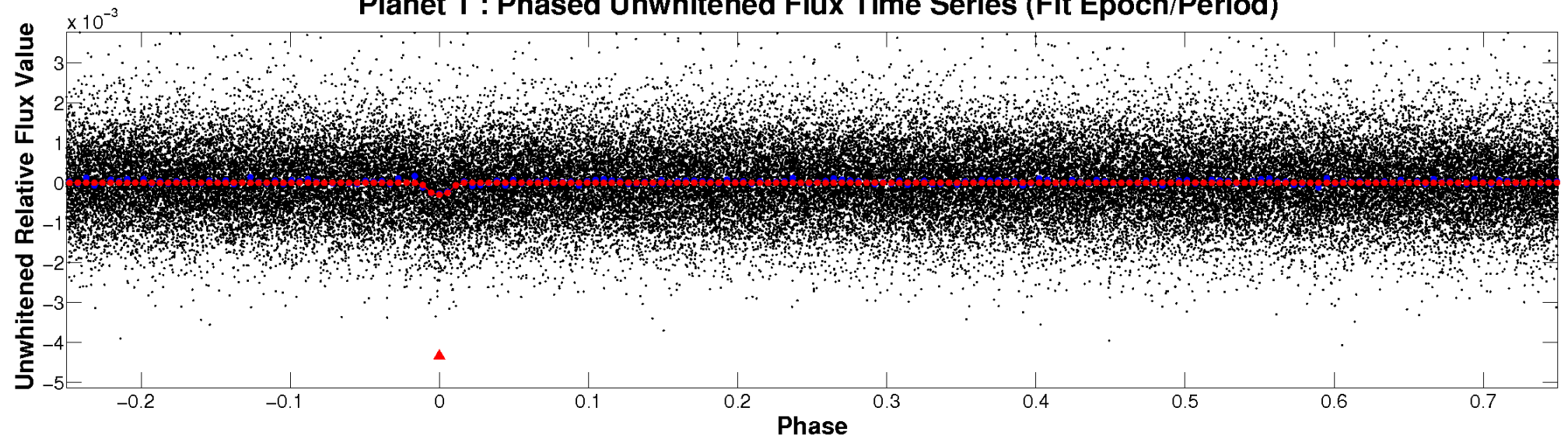
ALT Odd/Even

TCE 002303903-01

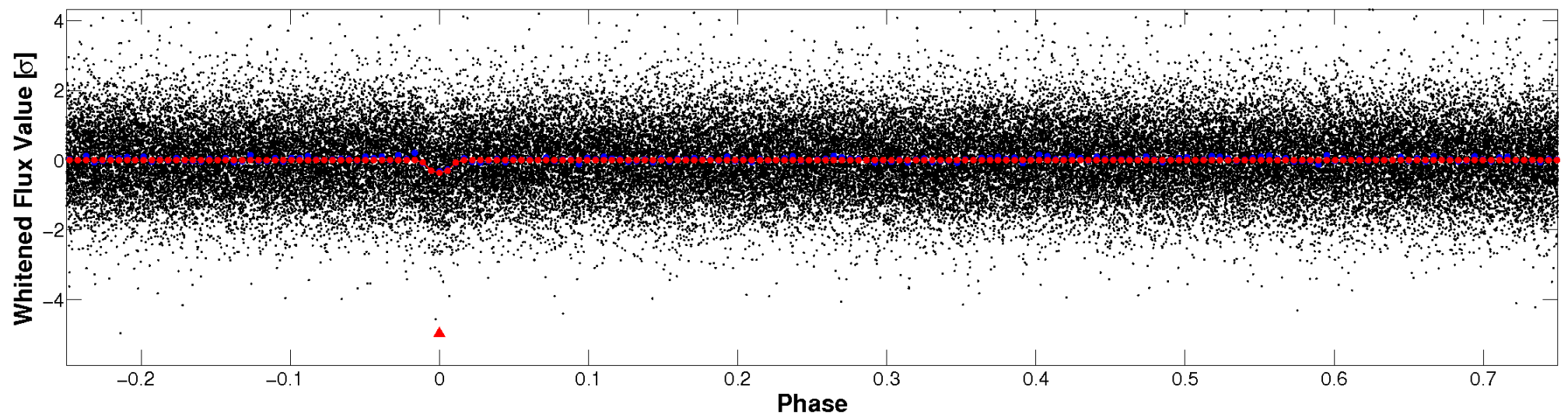


Non-Whitened Vs. Whitened Light Curve

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

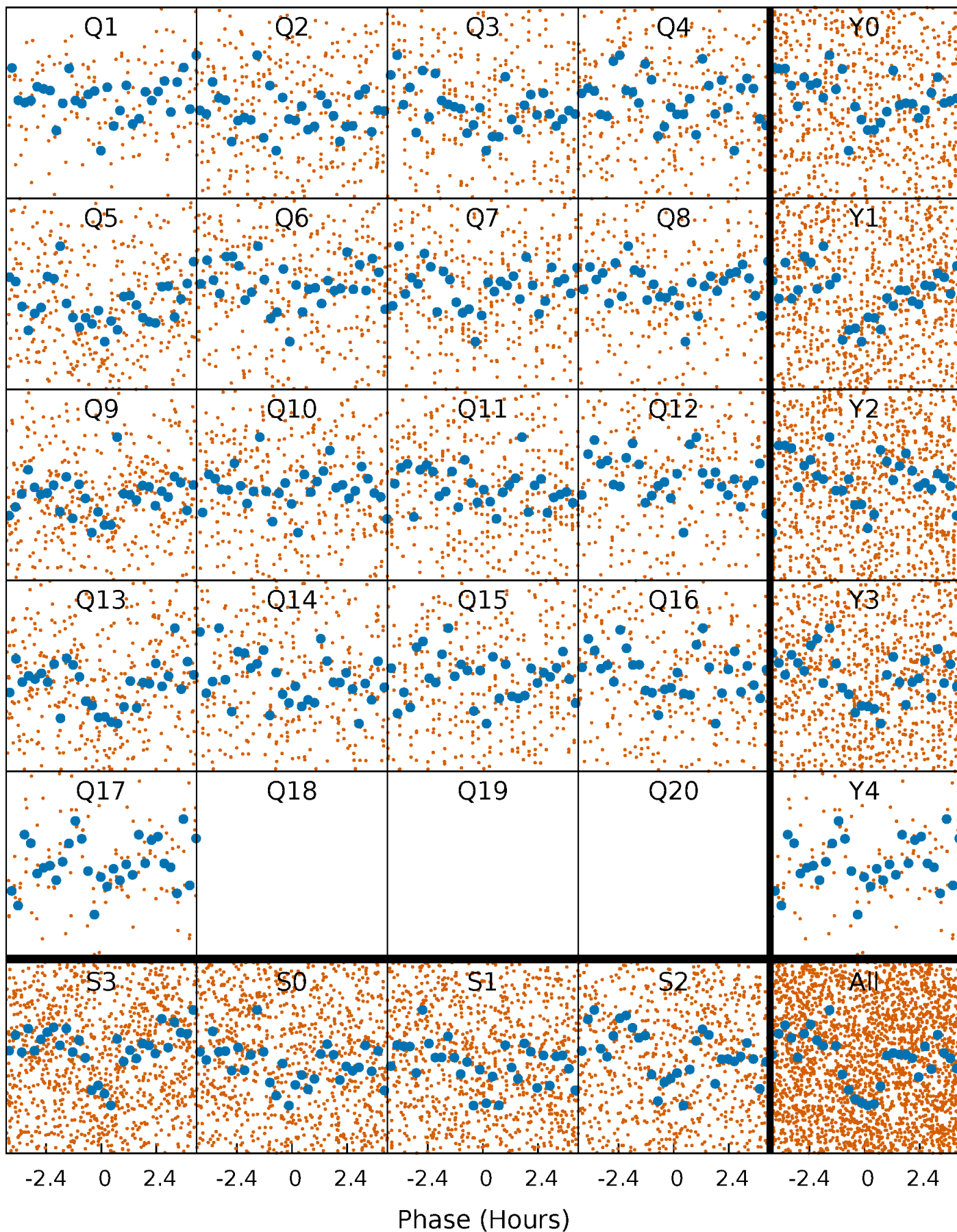


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



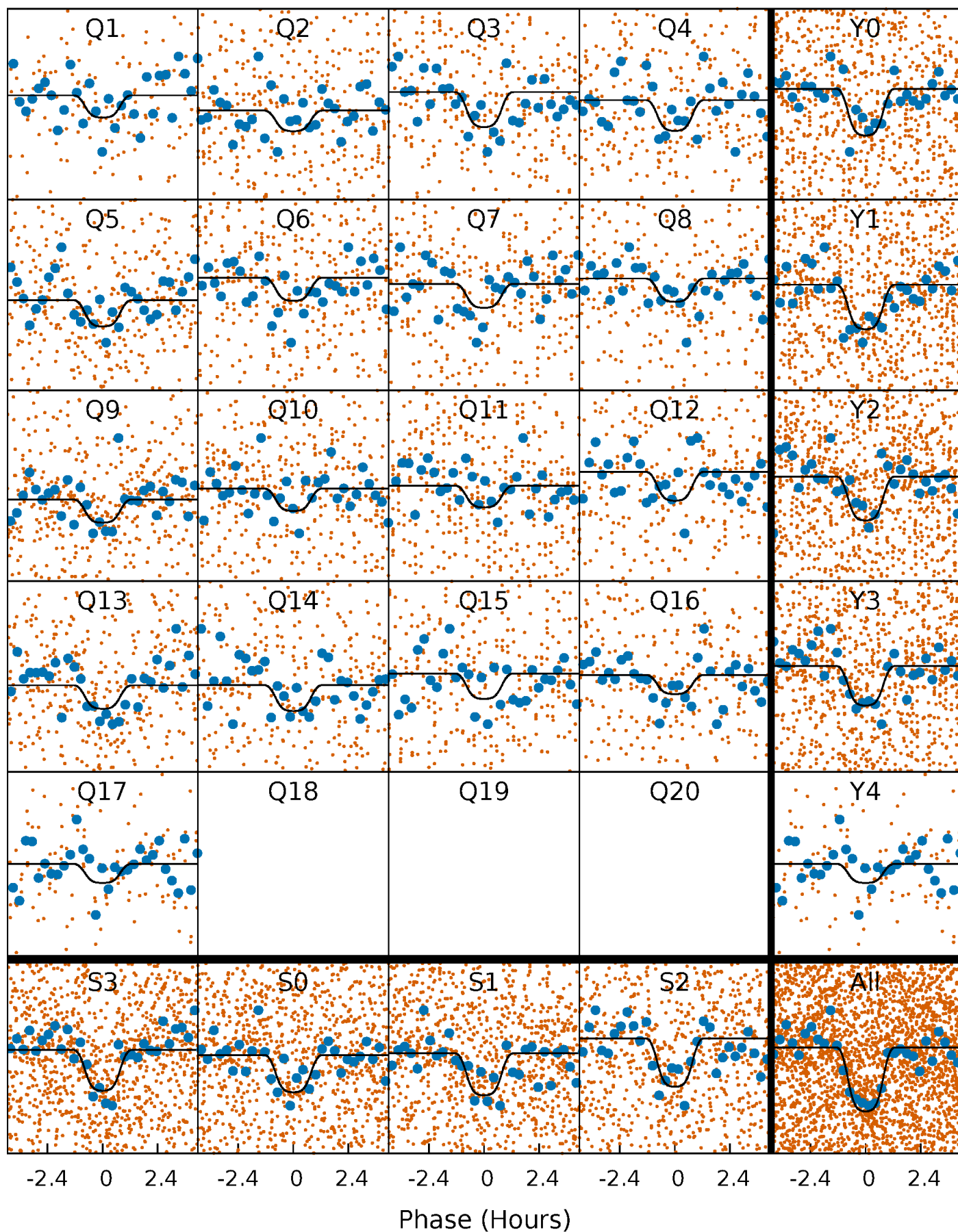
PDC Quarter-Phased Transit Curves

TCE 002303903-01 P= 3.708559 Days $T_0=134.479734$ (BKJD)



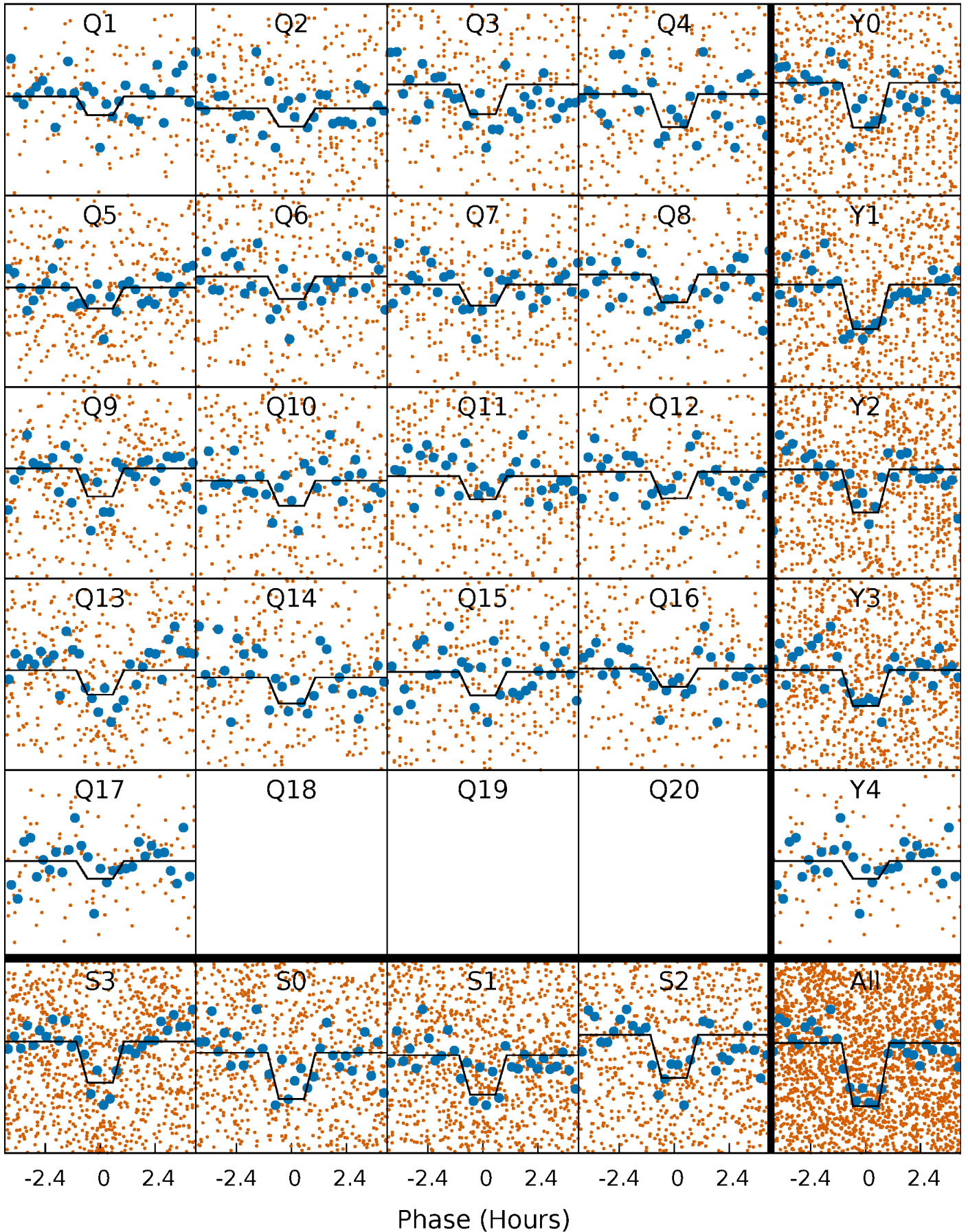
DV Quarter-Phased Transit Curves

TCE 002303903-01 P= 3.708559 Days $T_0=134.479734$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

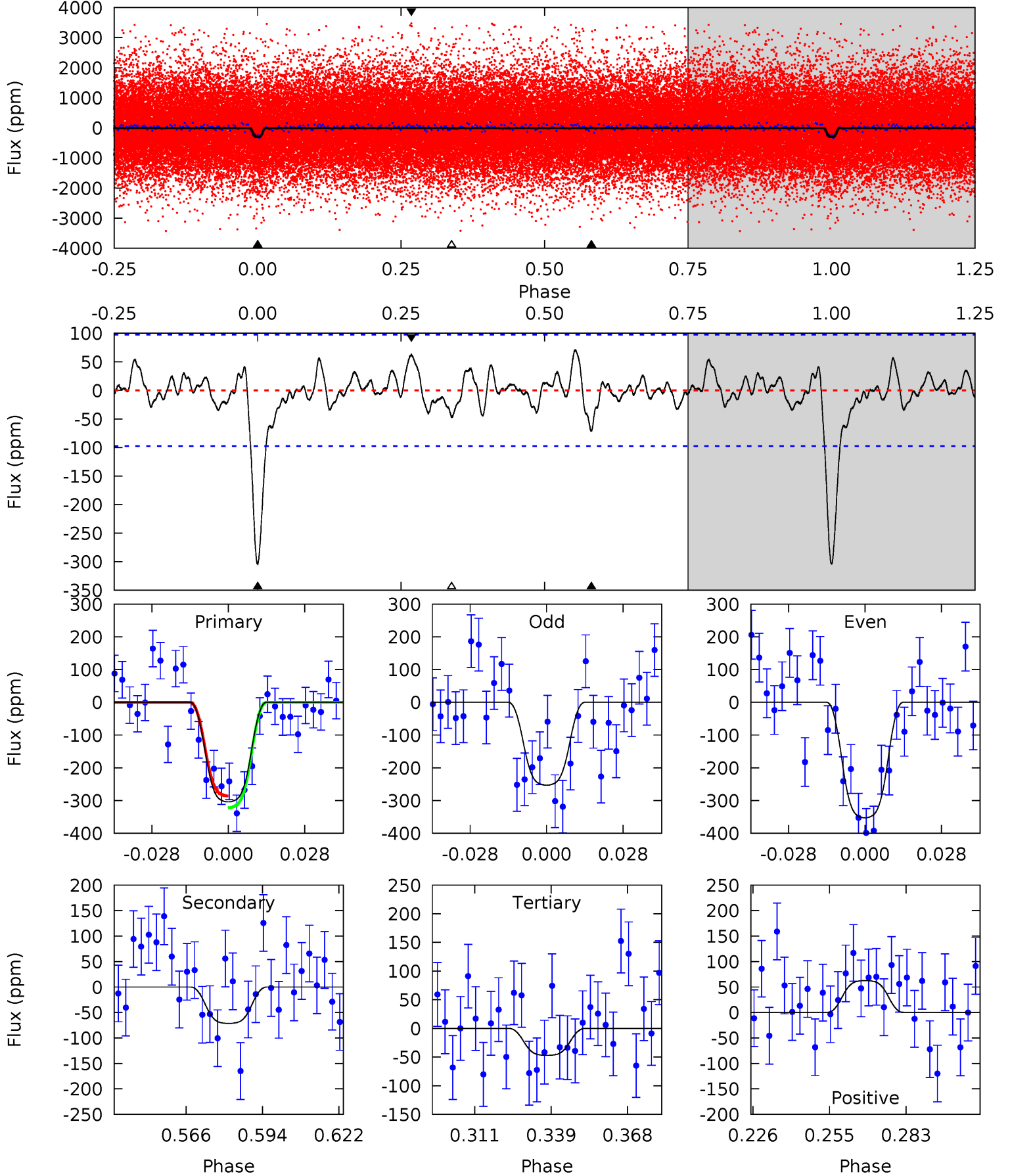
TCE 002303903-01 P= 3.708555 Days $T_0=134.480530$ (BKJD)



DV Model-Shift Uniqueness Test

002303903-01, P = 3.708559 Days, E = 130.771175 Days

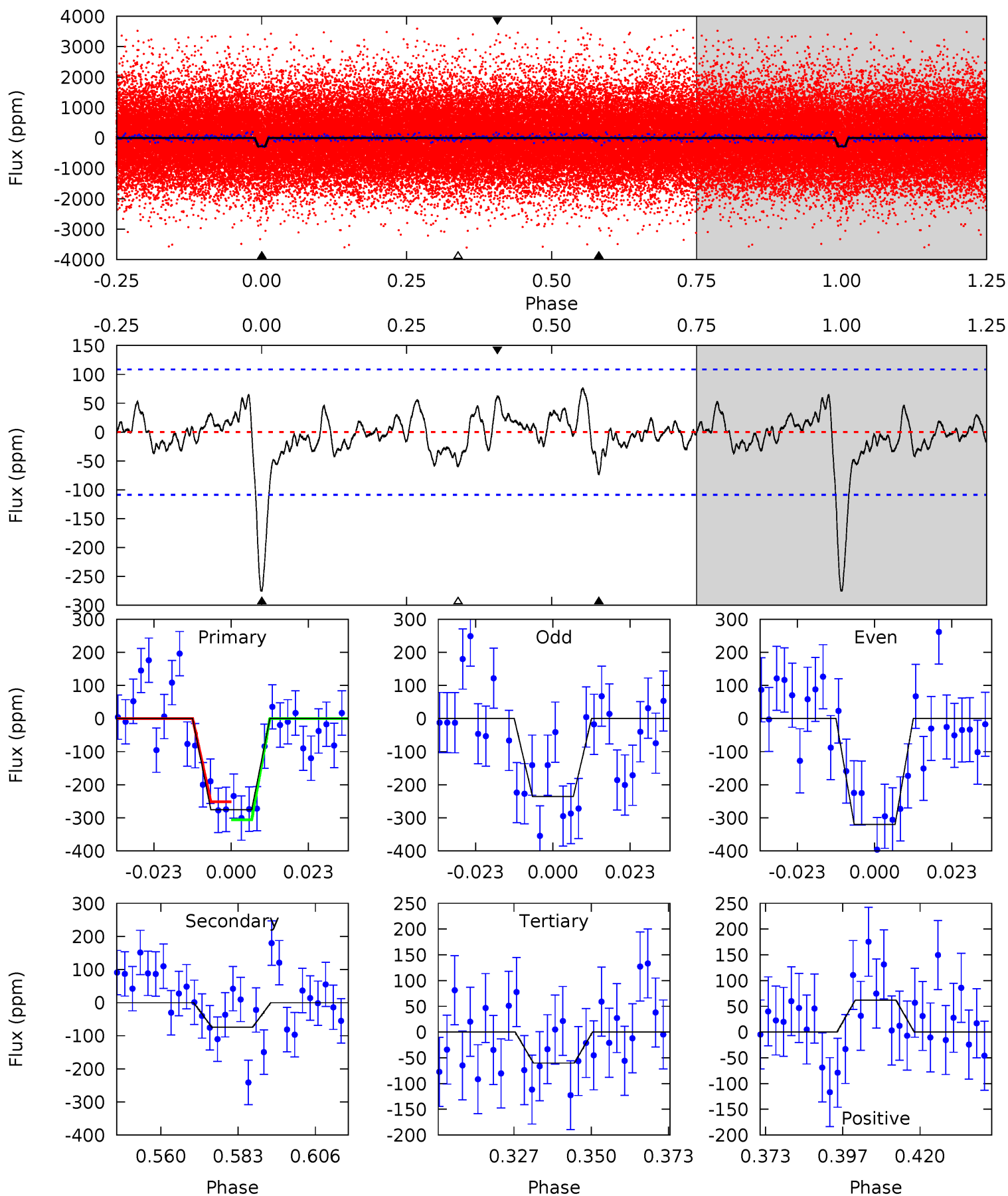
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.0	3.54	2.33	3.09	4.82	2.19	1.07	12.7	11.9	1.21	0.44	2.48	0.84	0.19	0.90



Alt Model-Shift Uniqueness Test

002303903-01, P = 3.708555 Days, E = 130.771975 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.4	3.31	2.70	2.77	4.86	2.27	1.14	9.66	9.59	0.62	0.55	1.90	0.95	0.22	1.23



Stellar Parameters For KIC 002303903

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5420^{+162}_{-146}	$4.596^{+0.038}_{-0.120}$	$-0.200^{+0.300}_{-0.300}$	$0.771^{+0.147}_{-0.063}$	$0.864^{+0.080}_{-0.098}$	$2.658^{+0.449}_{-0.995}$
	+3%/-3%	+1%/-3%	+150%/-150%	+19%/-8%	+9%/-11%	+17%/-37%
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 002303903-01 / KOI 4709.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-72 ± 20	$1.84^{+0.33}_{-0.32}$	1412^{+64}_{-52}	3783^{+288}_{-282}	23^{+13}_{-8}
Alt.	-74 ± 22	$1.47^{+0.32}_{-0.30}$	1414^{+65}_{-56}	4093^{+446}_{-350}	36^{+25}_{-15}

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

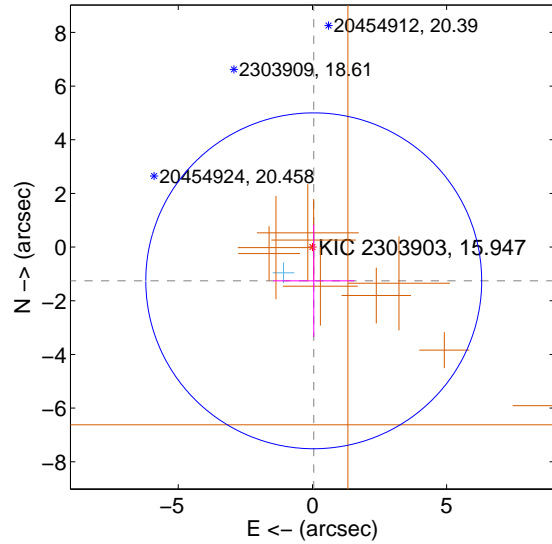
Supplemental centroid analysis for 002303903-01. Kepler magnitude: 15.95. Transit SNR 10.77

There are 1 quarters with good PRF difference image offsets

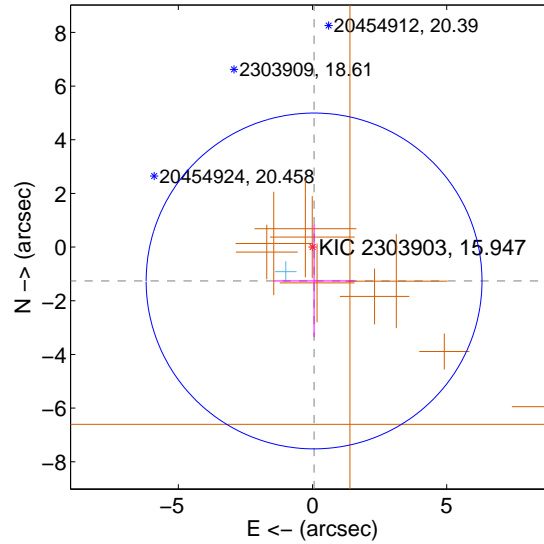
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.257 ± 2.086	0.60	-0.049 ± 1.510	-1.256 ± 2.087
PRF-fit source offset from KIC position	1.263 ± 2.086	0.61	-0.058 ± 1.510	-1.262 ± 2.087
photometric centroid source offset	0.61 ± 1.43	0.43	-0.61 ± 1.43	-0.07 ± 1.21

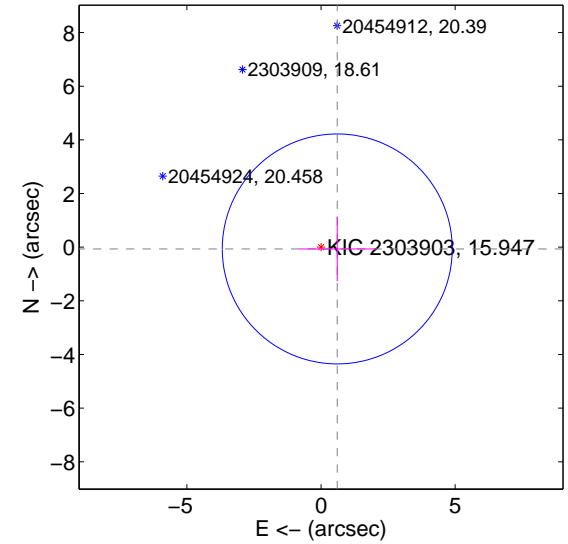
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

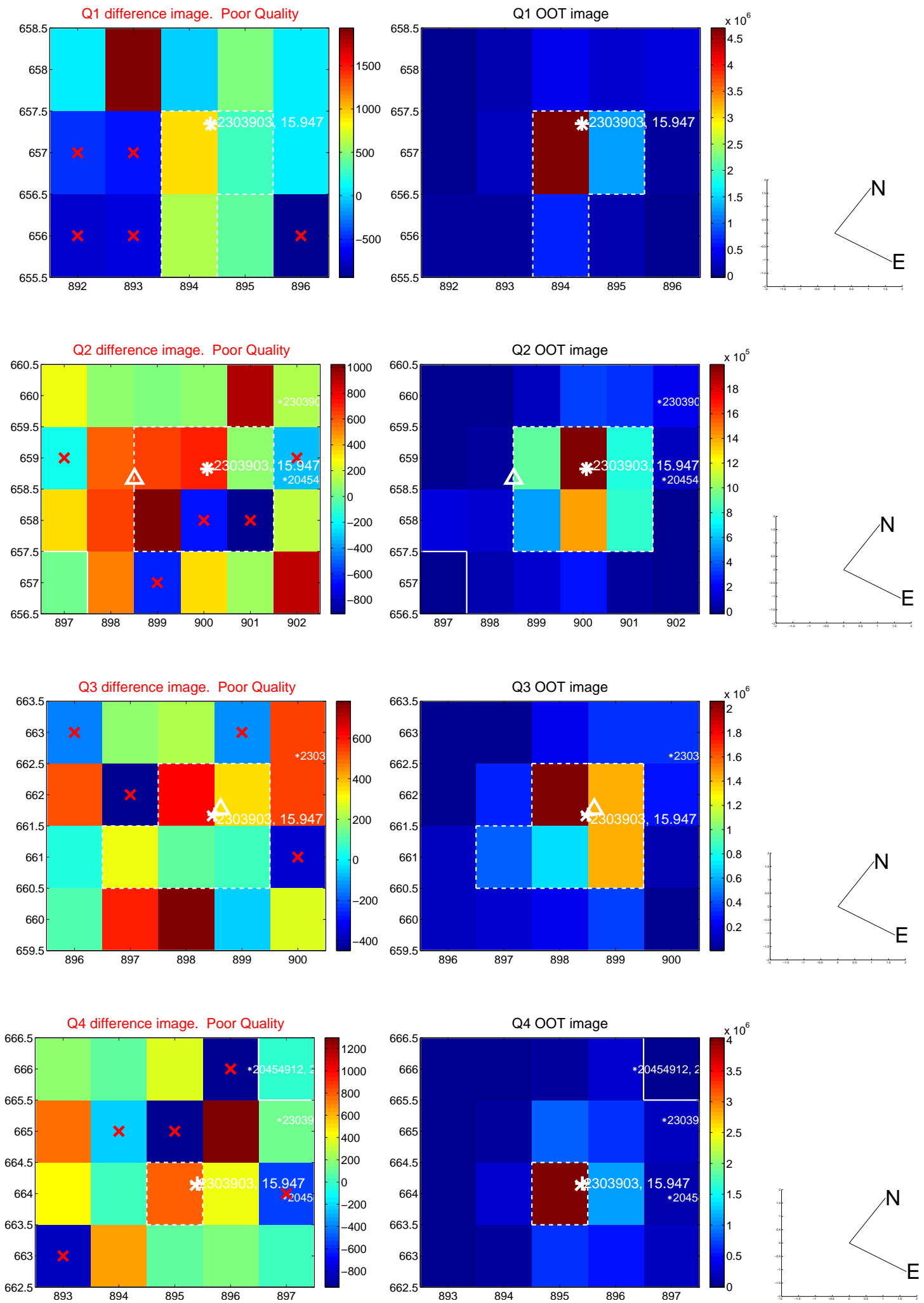


offset from photometric centroids

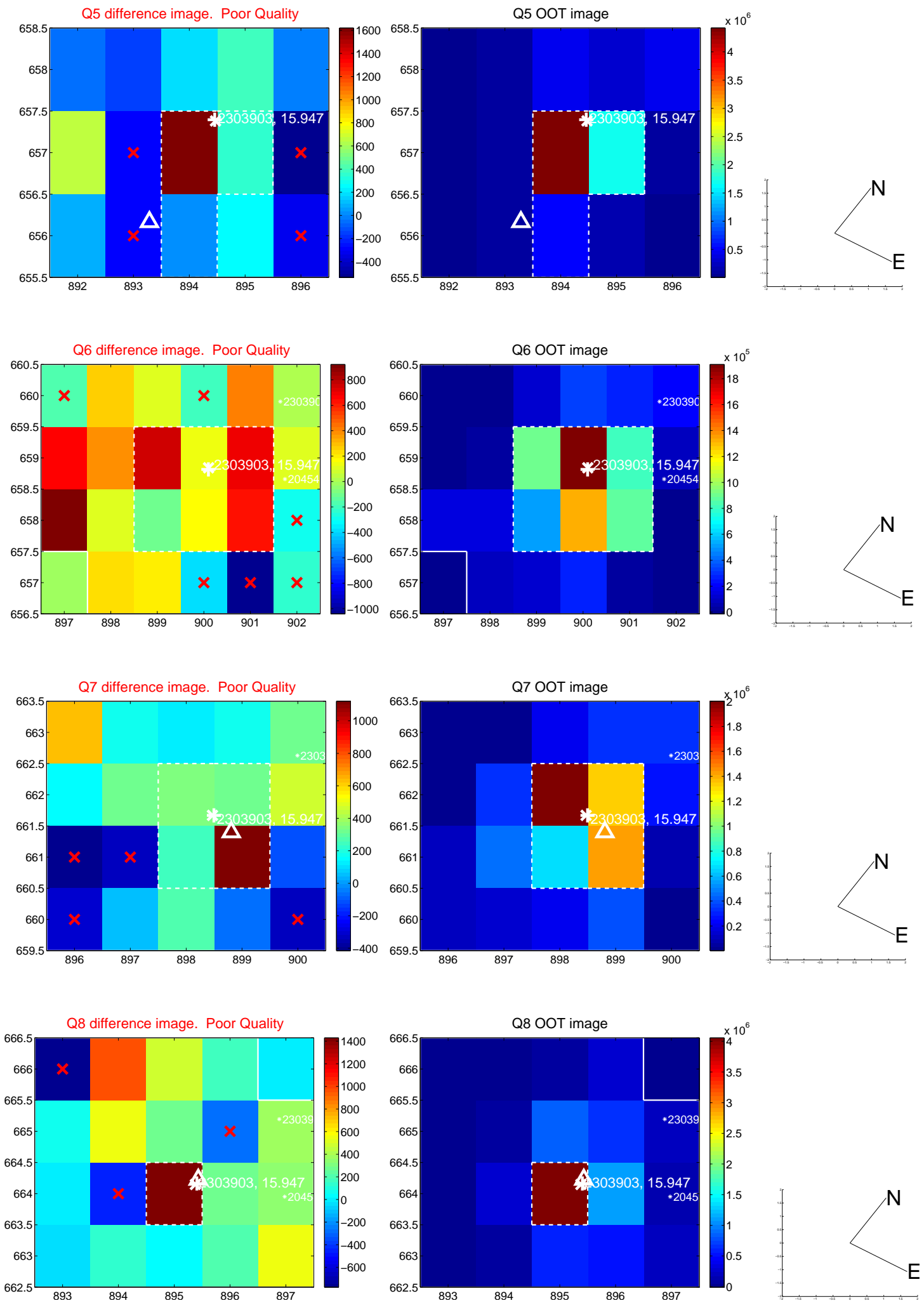


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

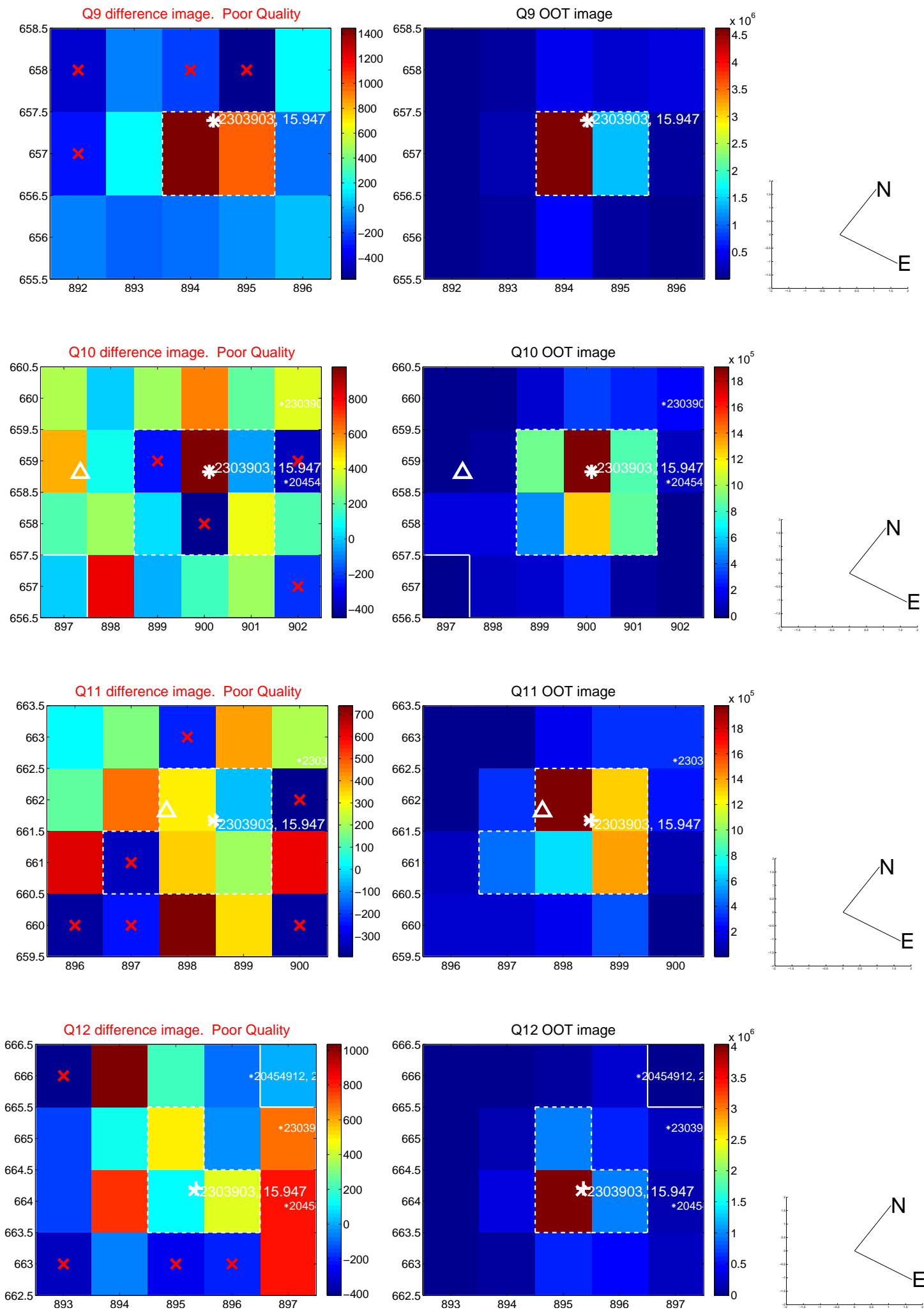
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



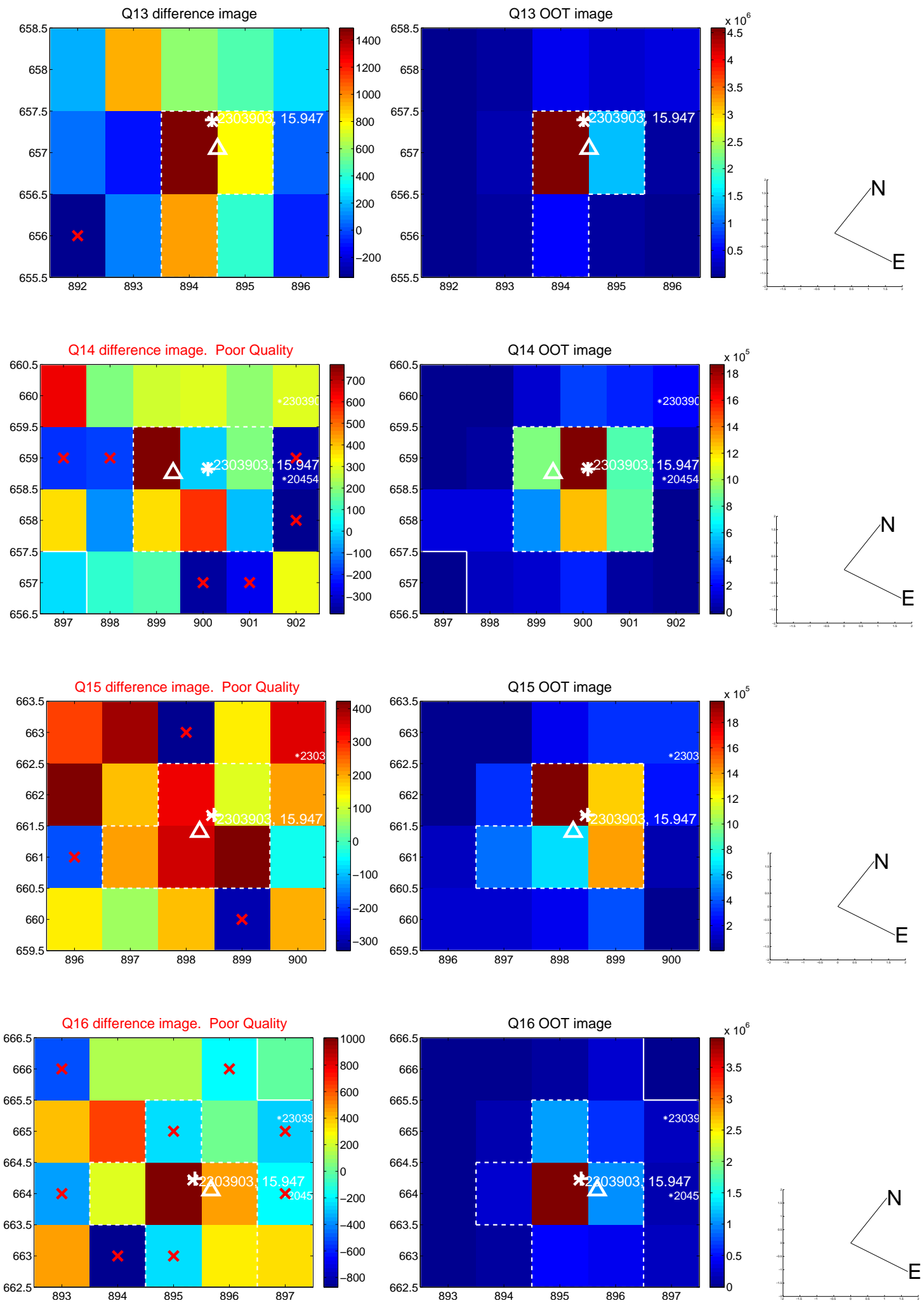
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



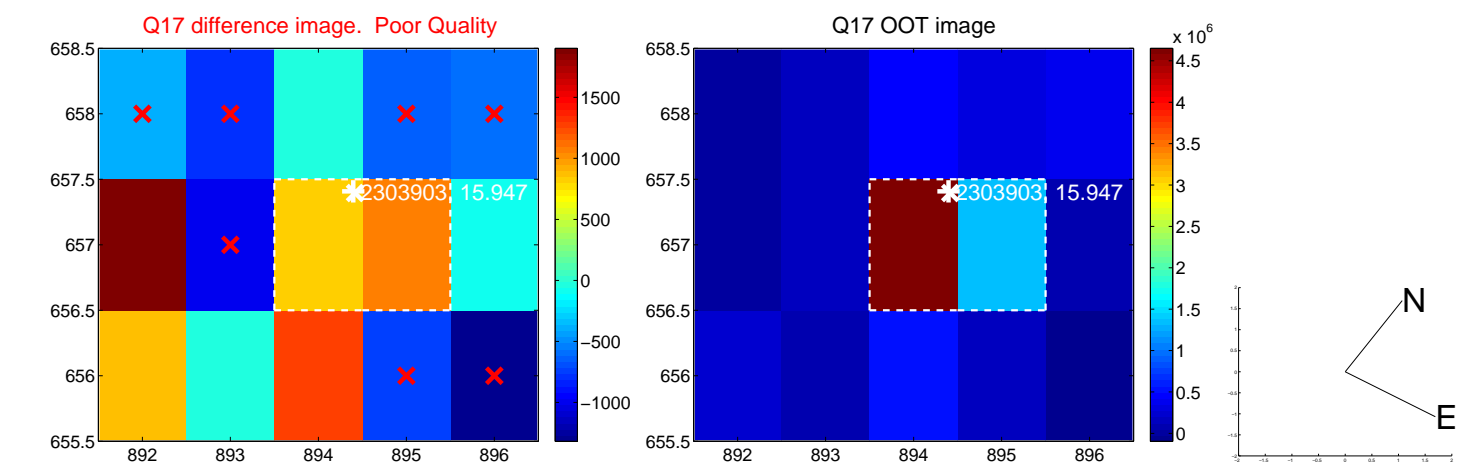
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



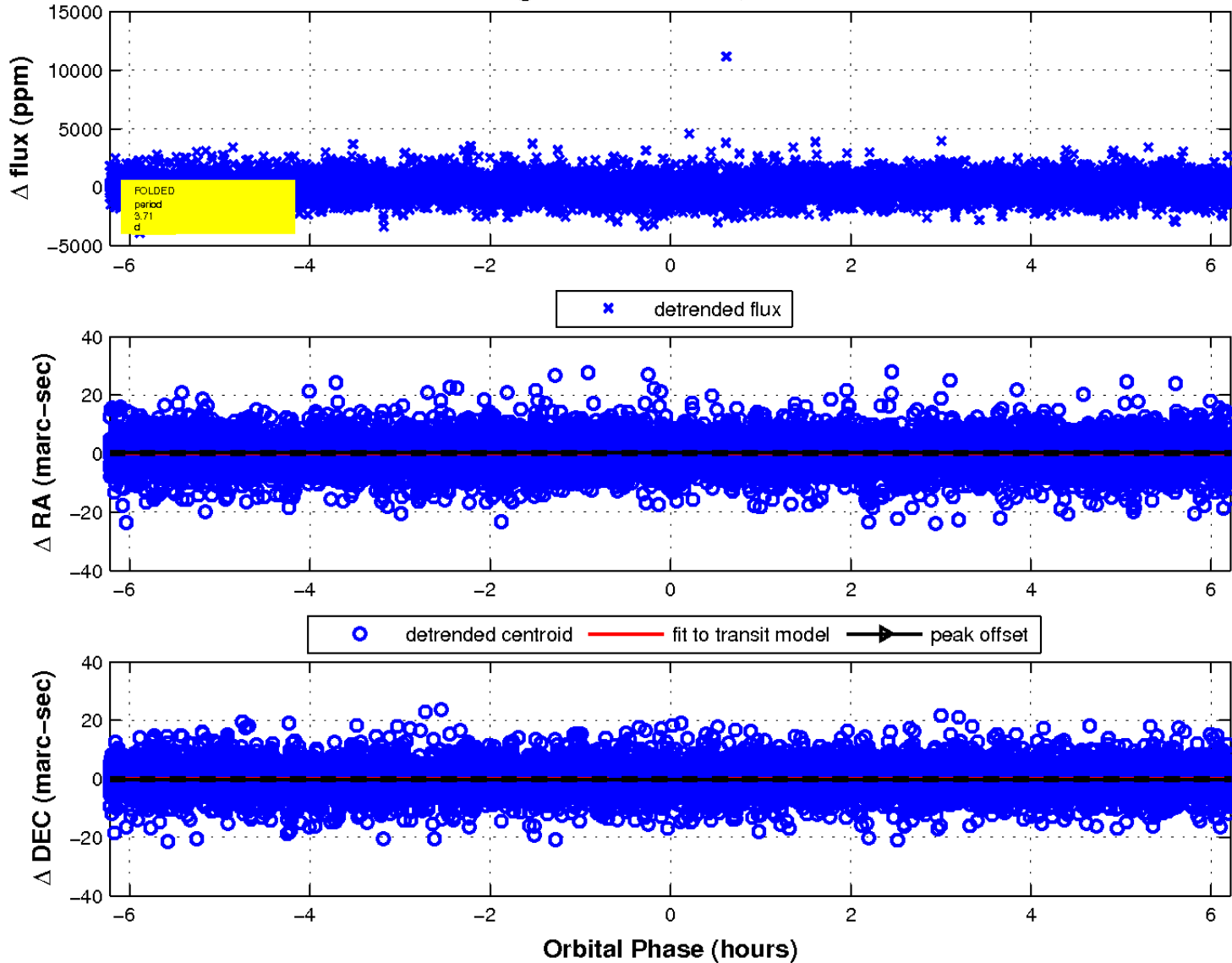
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

