

KIC 009943435

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})
009943435-01	OBS	2788.01	0.777652	131.531438	101.1	1.398	19.1	22.9	0.81	5769	0.97	2574.07

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009943435-01	OBS	FP	0.00	0	1	1	0	MOD_SEC_DV—MOD_SEC_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 009943435-01

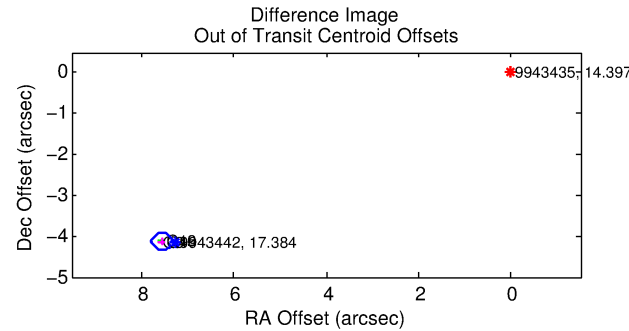
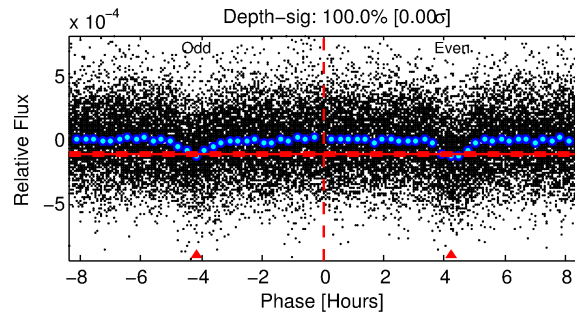
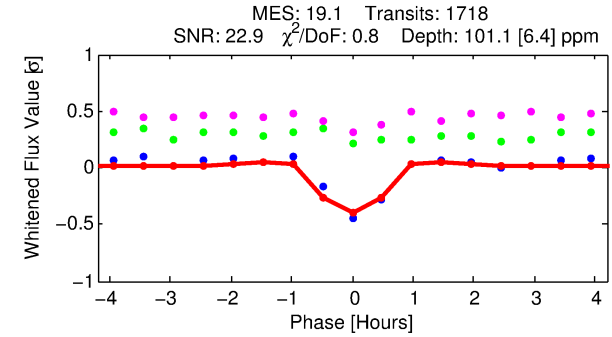
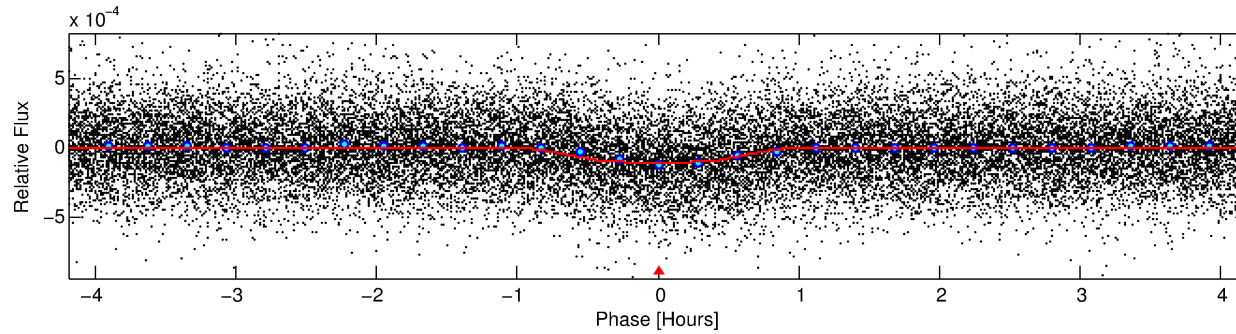
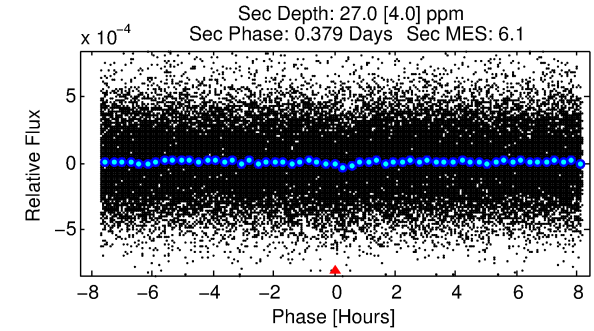
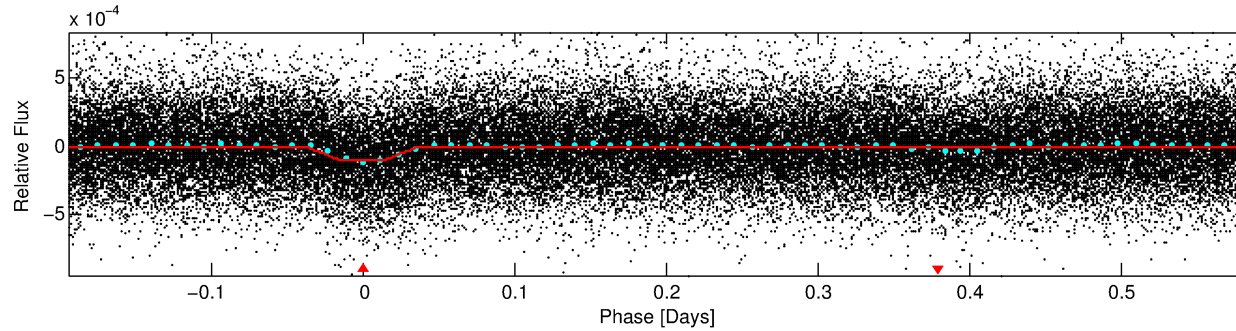
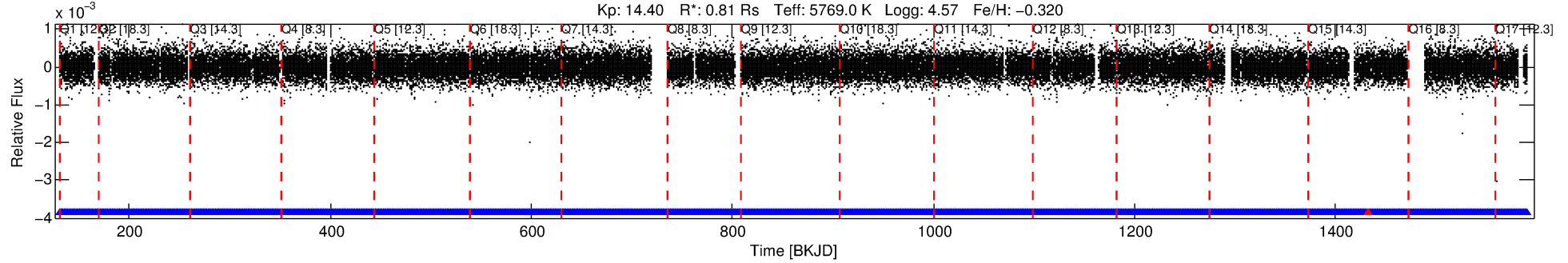
No Significant Match Found

DV One-Page Summary

KIC: 9943435 Candidate: 1 of 1 Period: 0.778 d

KOI: K02788.01 Corr: 0.865

Kp: 14.40 R*: 0.81 Rs Teff: 5769.0 K Logg: 4.57 Fe/H: -0.320



DV Fit Results:

Period = 0.77765 [0.00000] d
Epoch = 131.5314 [0.0009] BKJD
Rp/R* = 0.0109 [0.0033]
a/R* = 2.17 [2.54]
b = 0.90 [0.32]
Seff = 2574.07 [907.32]
Teff = 1816 [160] K
Rp = 0.97 [0.39] Re
a = 0.0159 [0.0036] AU
Ag = 4.02 [2.82] [1.07σ]
Teffp = 3976 [621] K [3.37σ]

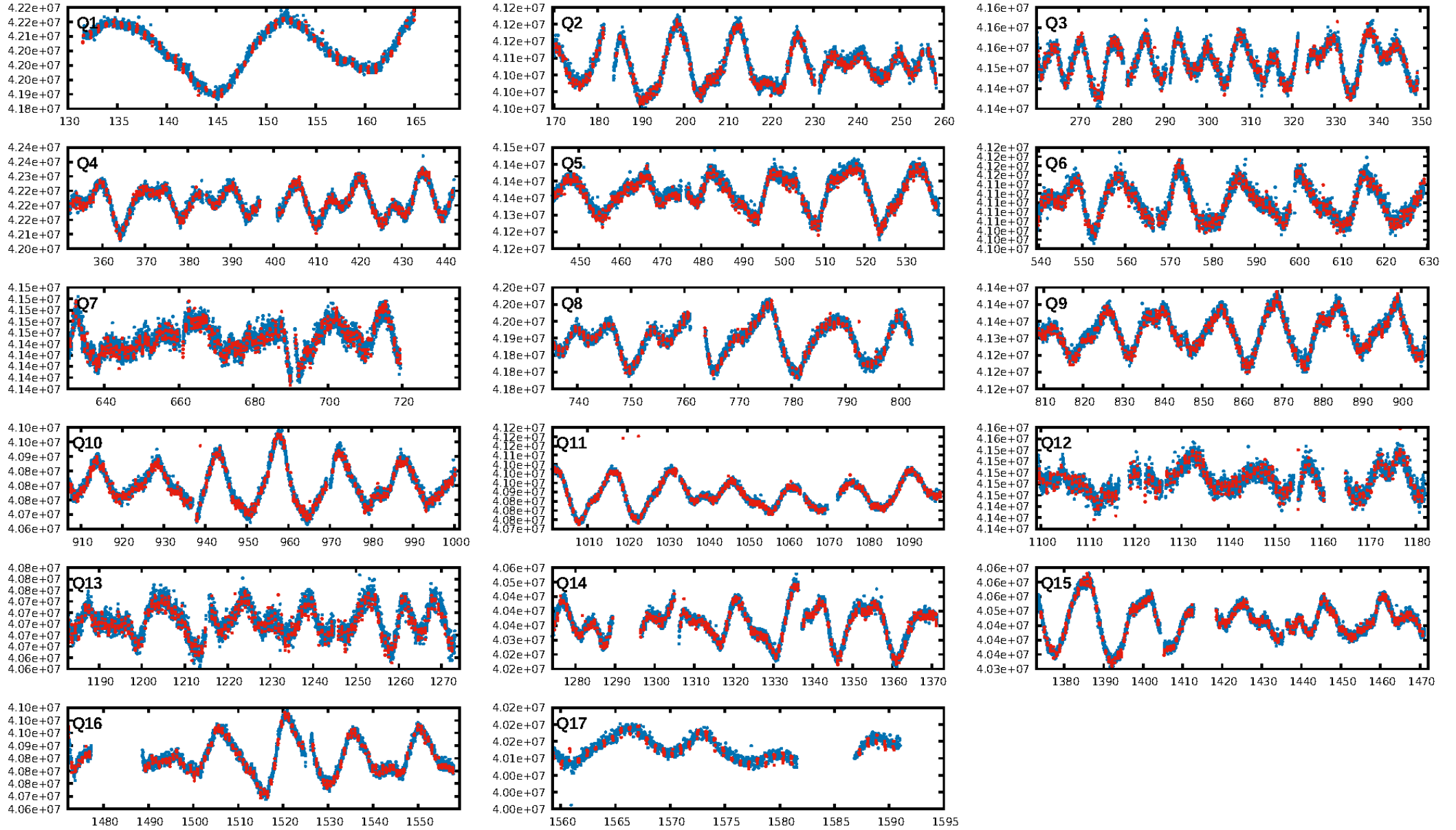
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 8.69e-76
RollingBand-fgt: 1.00 [1639/1640]
GhostDiagnostic-chr: -0.9256
Centroid-sig: 0.0%
Centroid-so: 5.509 arcsec [9.16σ]
OotOffset-rm: 8.612 arcsec [123.91σ]
KicOffset-rm: 8.606 arcsec [127.50σ]
OotOffset-st: 0/0/4/0 [4]
KicOffset-st: 0/0/4/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [17/17]

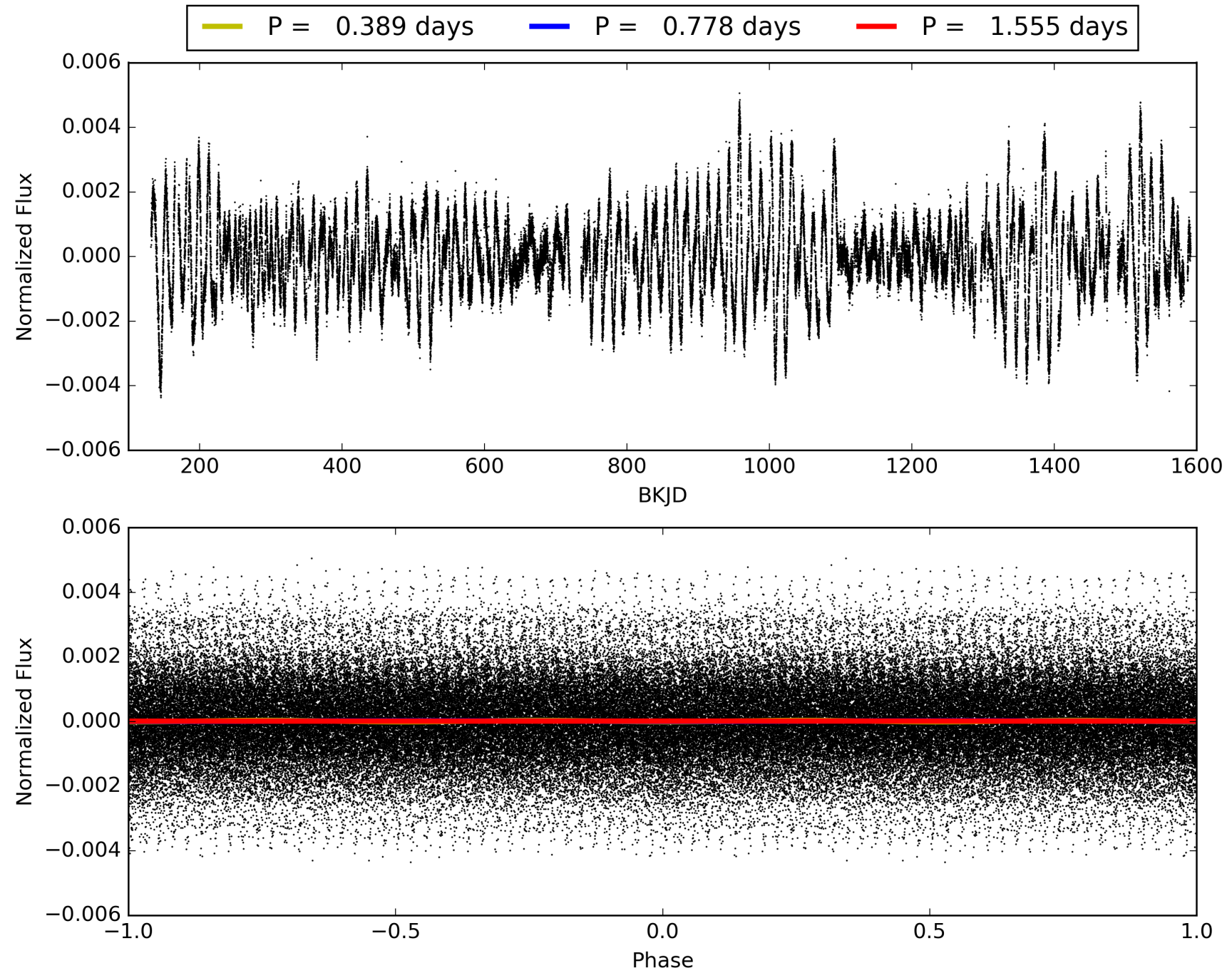
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 04:03:36 Z

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

TCE 009943435-01, PDC Light Curves

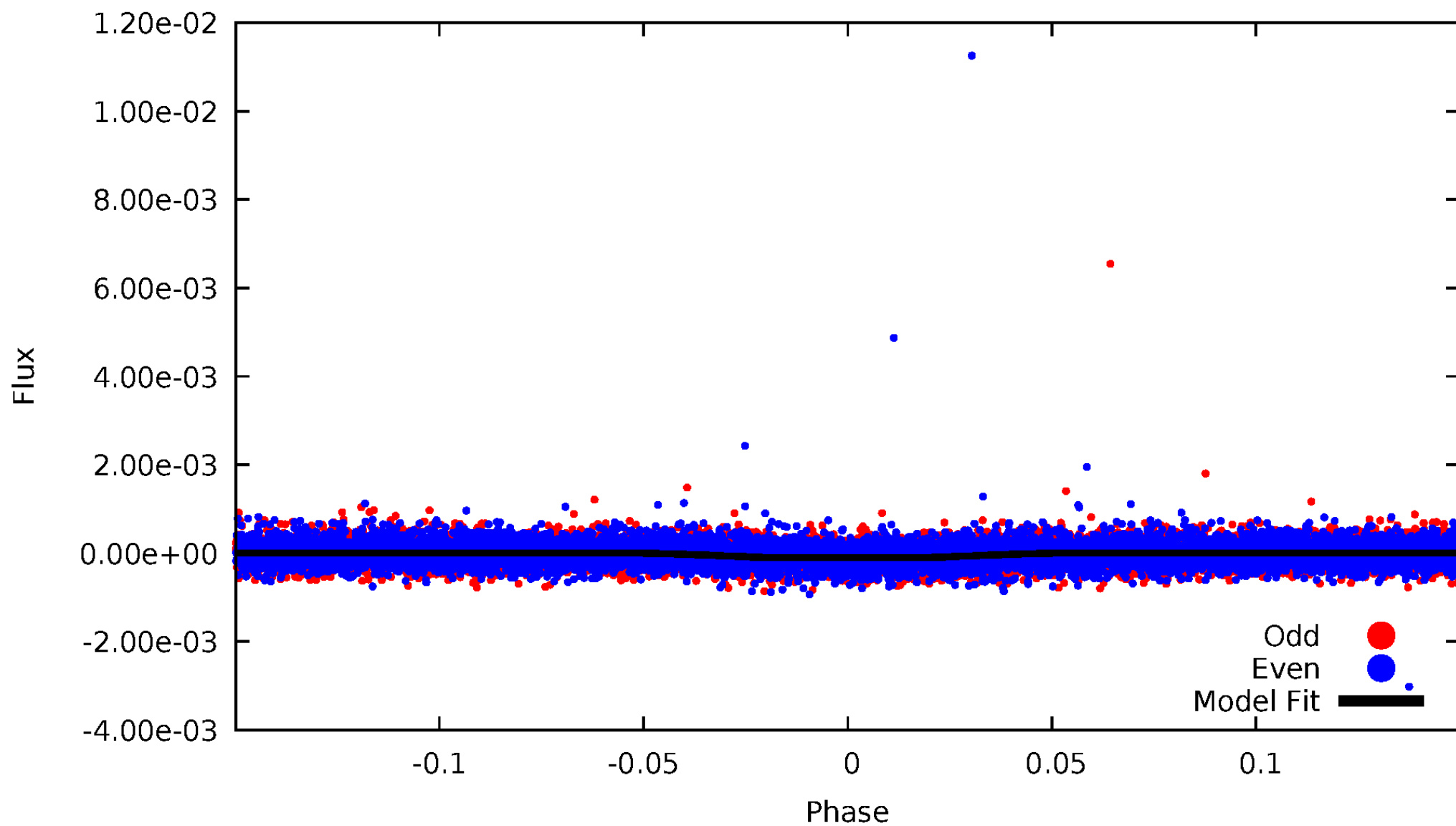


TCE 009943435-01



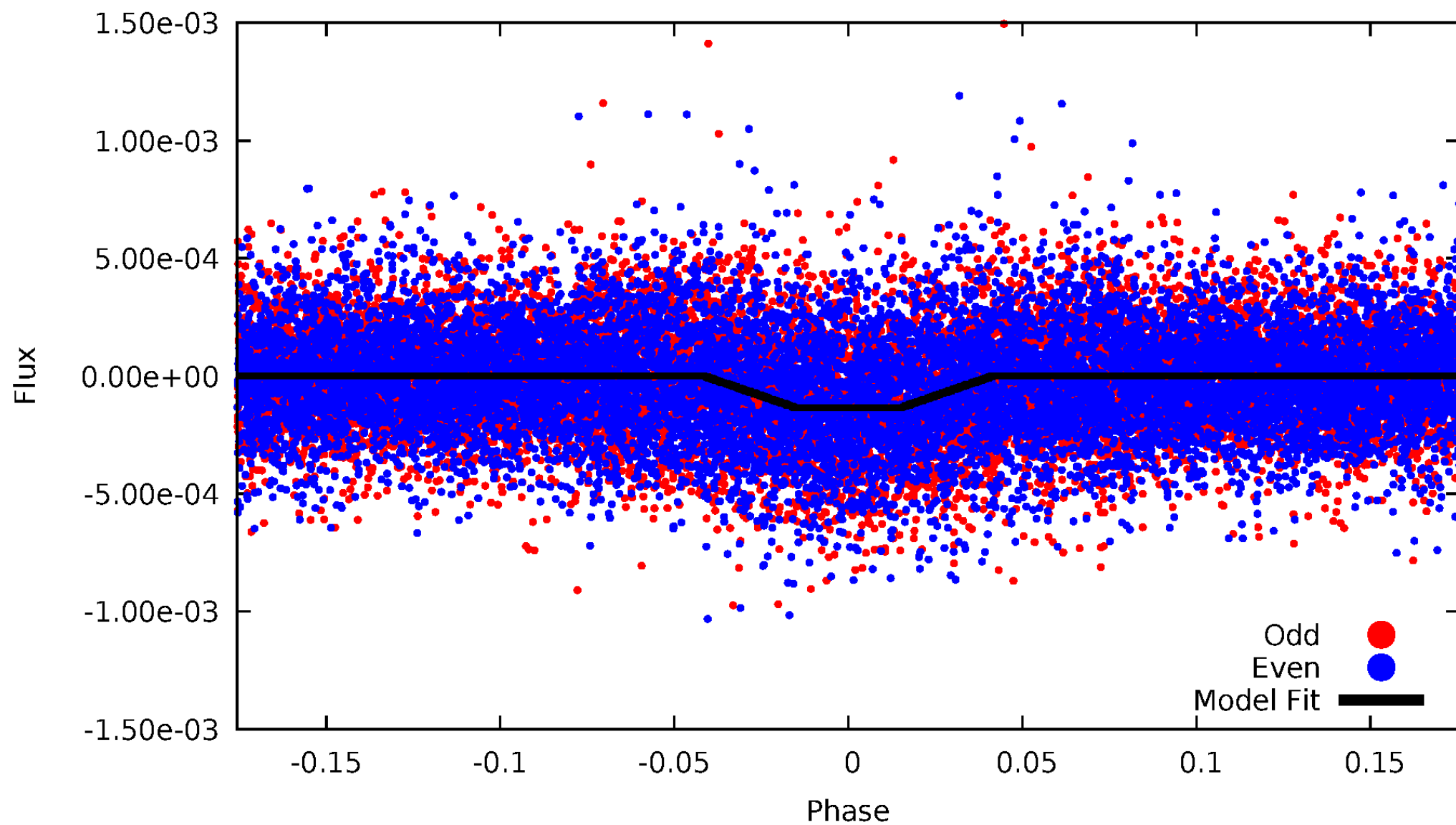
DV Odd/Even

TCE 009943435-01



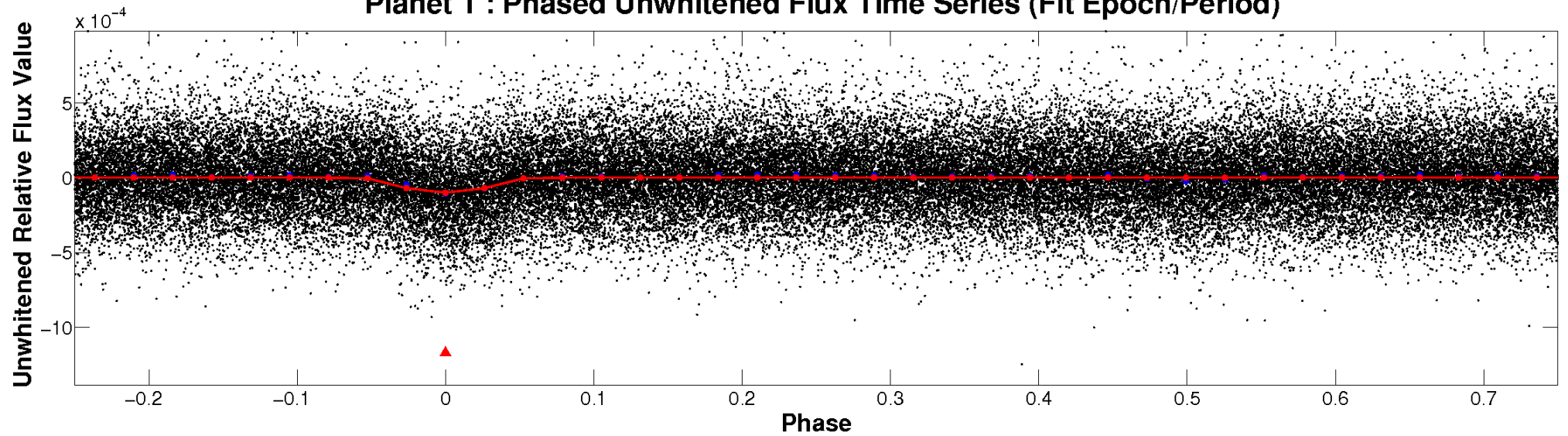
ALT Odd/Even

TCE 009943435-01

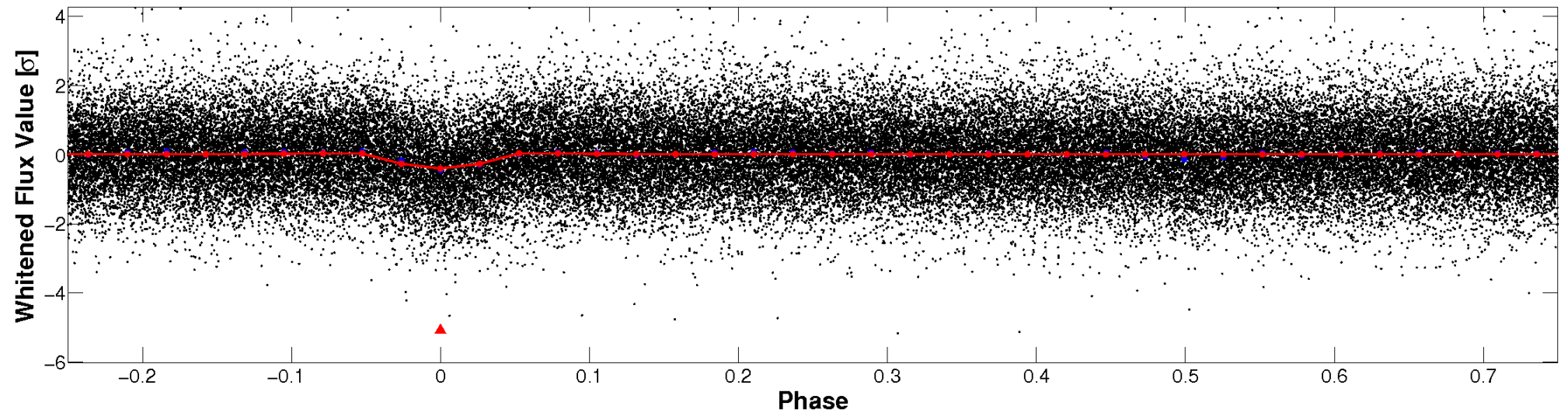


Non-Whitened Vs. Whitened Light Curve

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

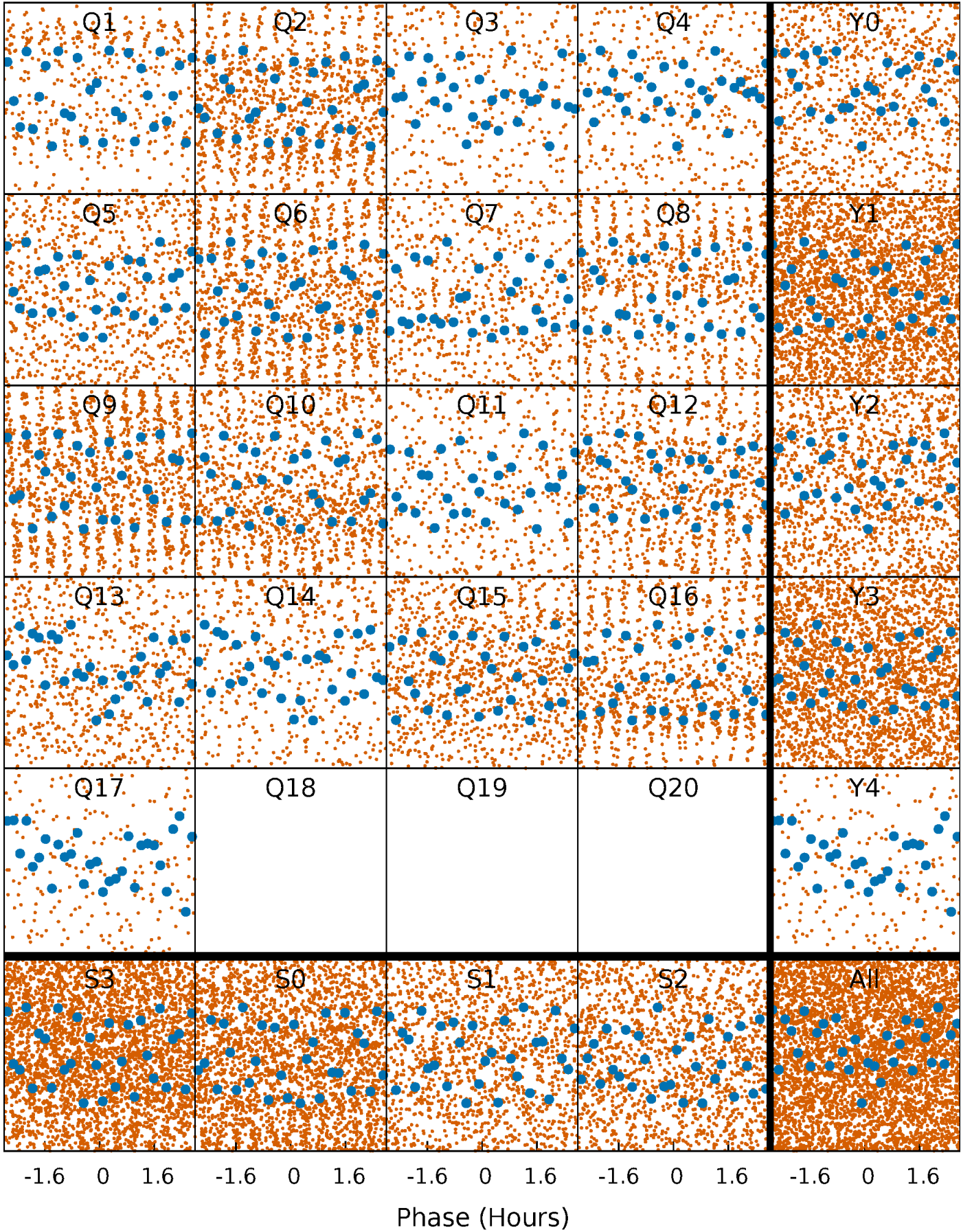


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



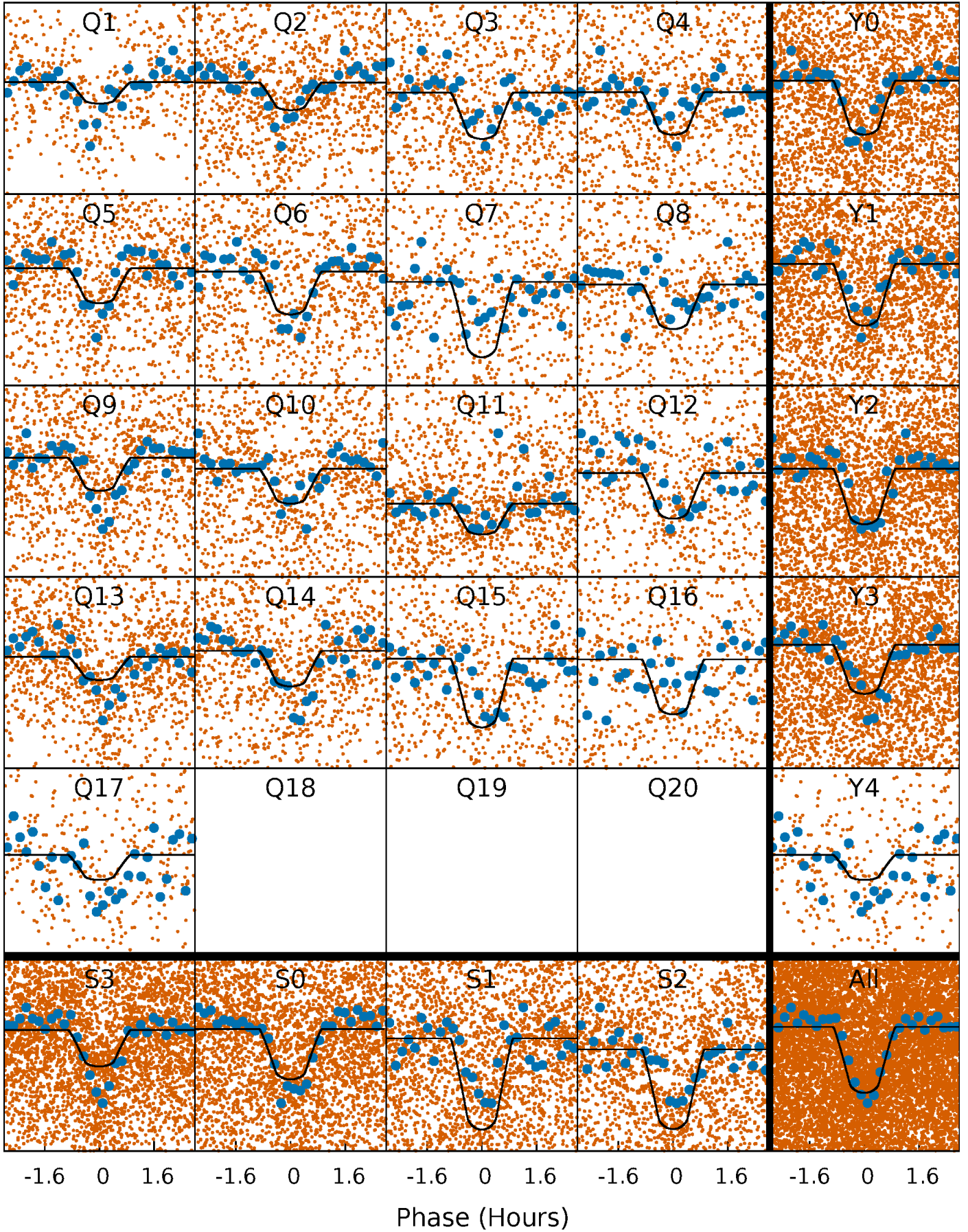
PDC Quarter-Phased Transit Curves

TCE 009943435-01 P= 0.777652 Days $T_0=131.531438$ (BKJD)



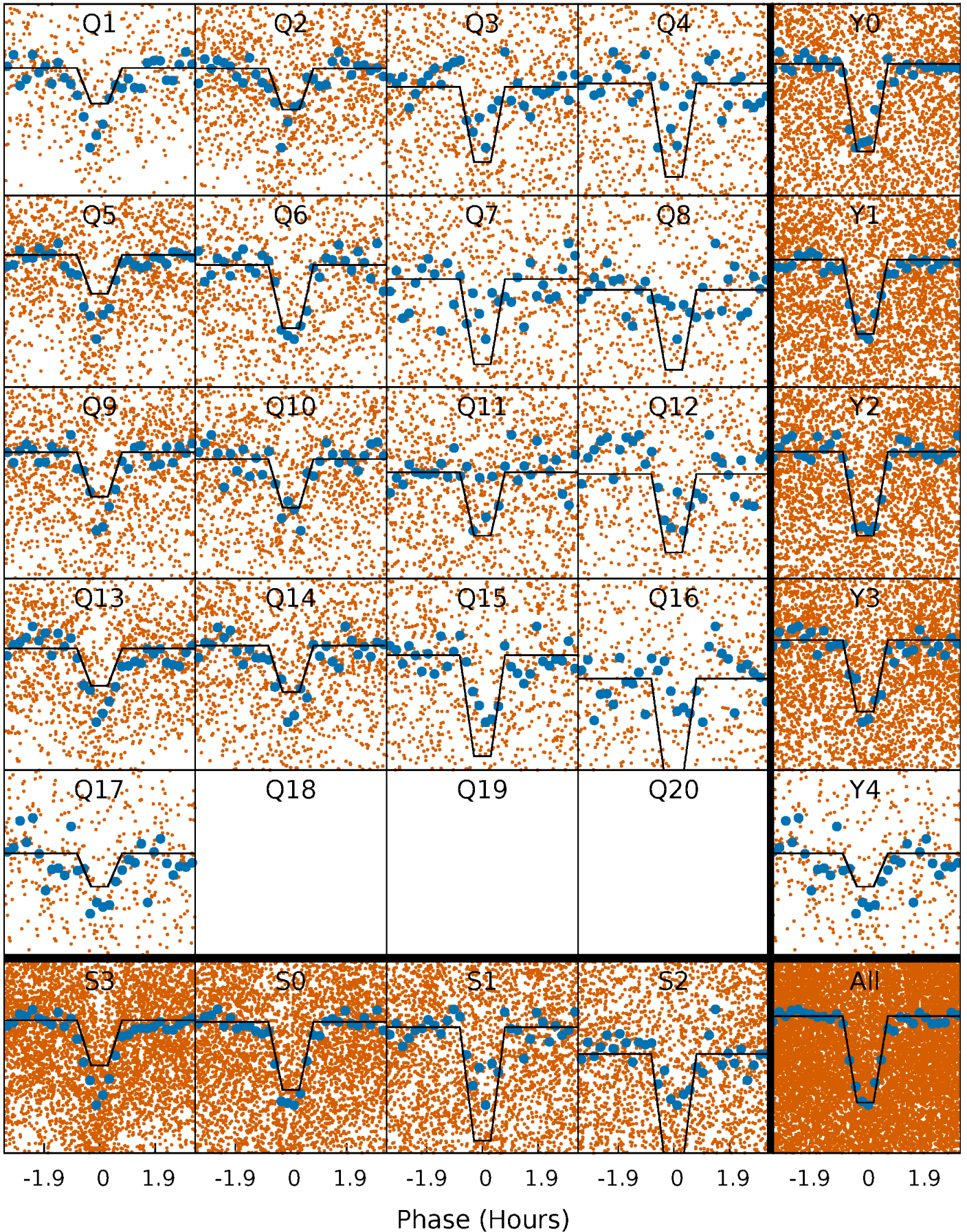
DV Quarter-Phased Transit Curves

TCE 009943435-01 P= 0.777652 Days $T_0=131.531438$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

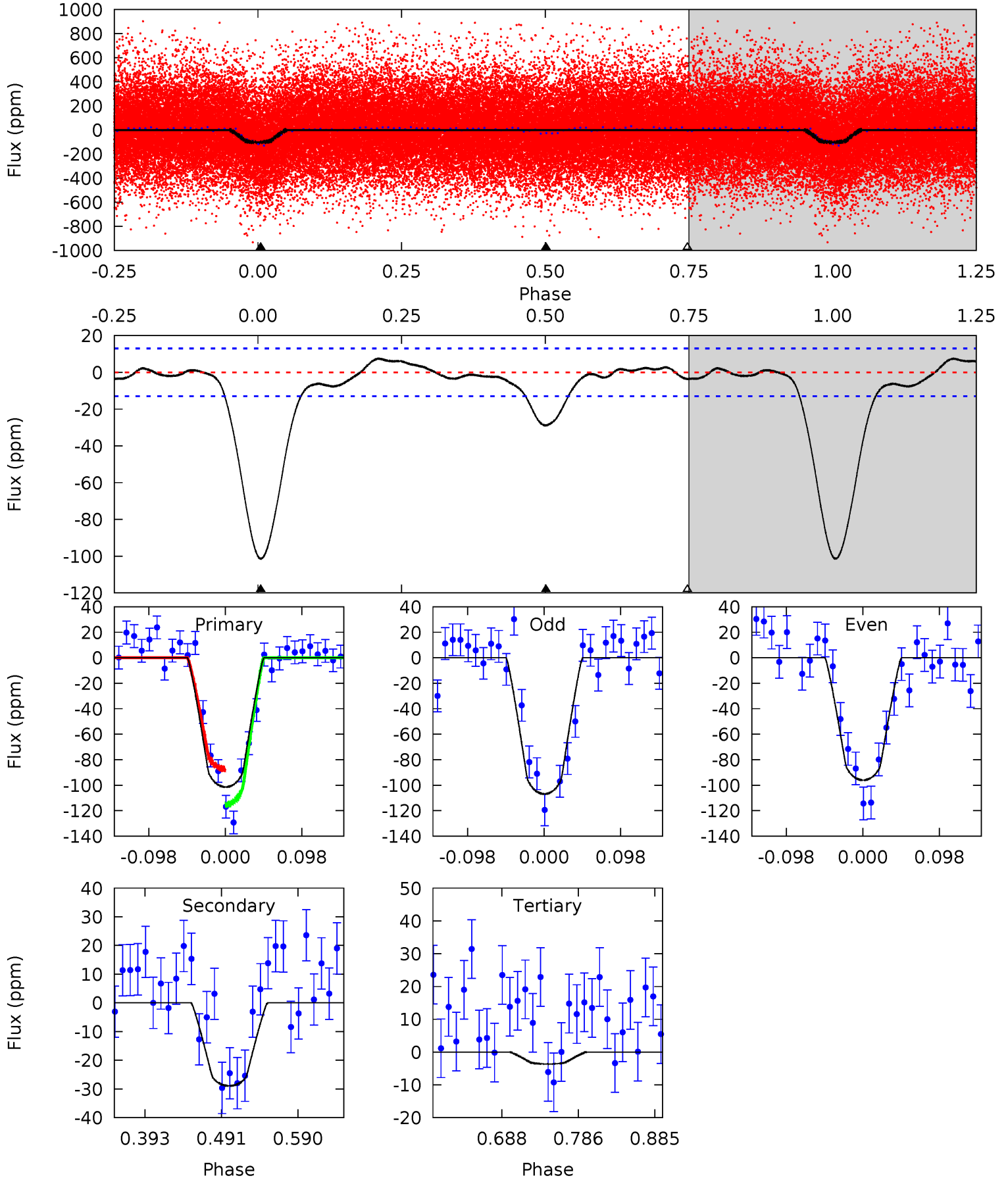
TCE 009943435-01 P= 0.777657 Days $T_0=131.531189$ (BKJD)



DV Model-Shift Uniqueness Test

009943435-01, P = 0.777652 Days, E = 130.753786 Days

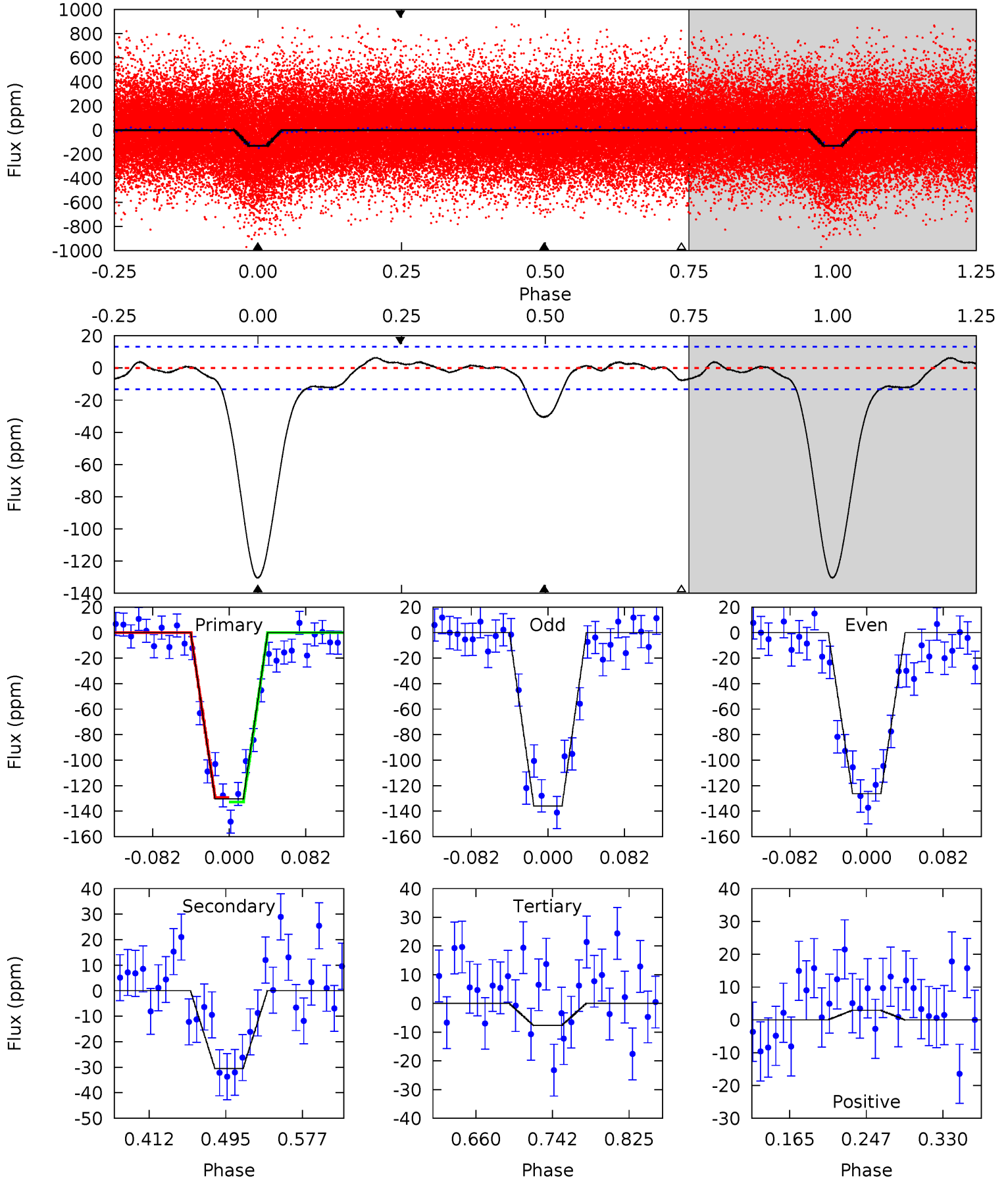
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.7	10.2	1.28	0	4.57	1.65	1.23	34.4	35.7	8.90	10.2	1.92	0.95	0.07	4.92



Alt Model-Shift Uniqueness Test

009943435-01, P = 0.777657 Days, E = 130.753532 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.5	10.6	2.67	1.01	4.61	1.74	1.59	42.8	44.4	7.95	9.61	1.68	0.98	0.05	0.61



Stellar Parameters For KIC 009943435

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5769^{+155}_{-155}	$4.570^{+0.033}_{-0.187}$	$-0.320^{+0.300}_{-0.300}$	$0.812^{+0.212}_{-0.071}$	$0.900^{+0.090}_{-0.100}$	$2.366^{+0.408}_{-1.108}$
	+3%/-3%	+1%/-4%	+94%/-94%	+26%/-9%	+10%/-11%	+17%/-47%
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 009943435-01 / KOI 2788.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-29 ± 3	$1.02^{+0.34}_{-0.32}$	2596^{+172}_{-100}	4204^{+715}_{-424}	$3.794^{+4.195}_{-1.635}$
Alt.	-30 ± 3	$1.11^{+0.35}_{-0.31}$	2603^{+165}_{-106}	4122^{+628}_{-376}	$3.422^{+3.200}_{-1.431}$

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

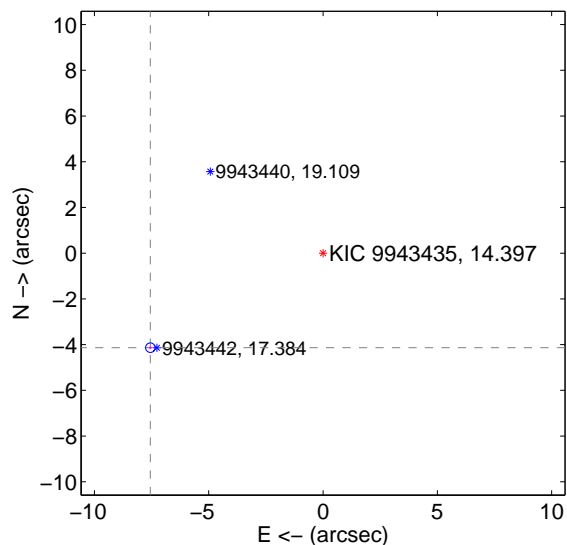
Supplemental centroid analysis for 009943435-01. Kepler magnitude: 14.40. Transit SNR 22.88

There are 4 quarters with good PRF difference image offsets

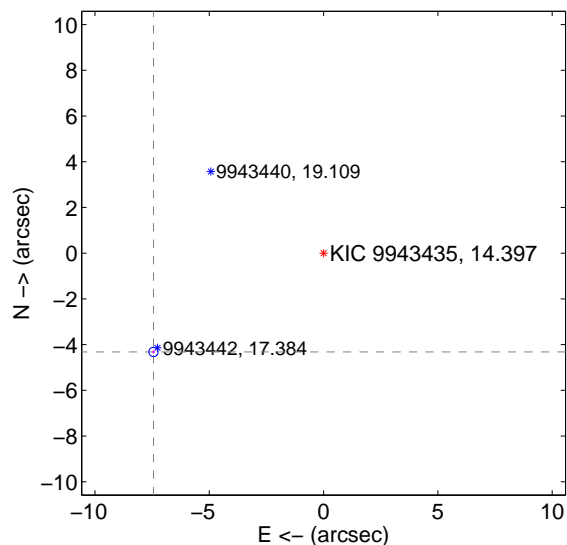
The direct PRF centroid is offset from the target star catalog position by about 0.25 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	8.612 ± 0.069	123.91	7.554 ± 0.070	-4.134 ± 0.067
PRF-fit source offset from KIC position	8.606 ± 0.067	127.50	7.442 ± 0.068	-4.321 ± 0.067
photometric centroid source offset	5.51 ± 0.60	9.16	4.12 ± 0.61	-3.66 ± 0.58

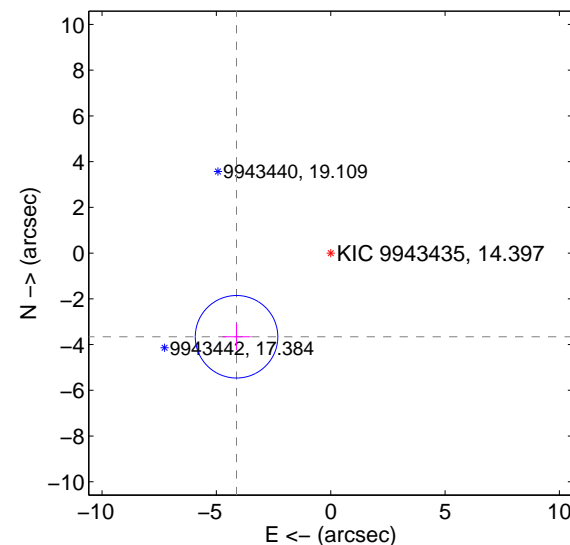
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

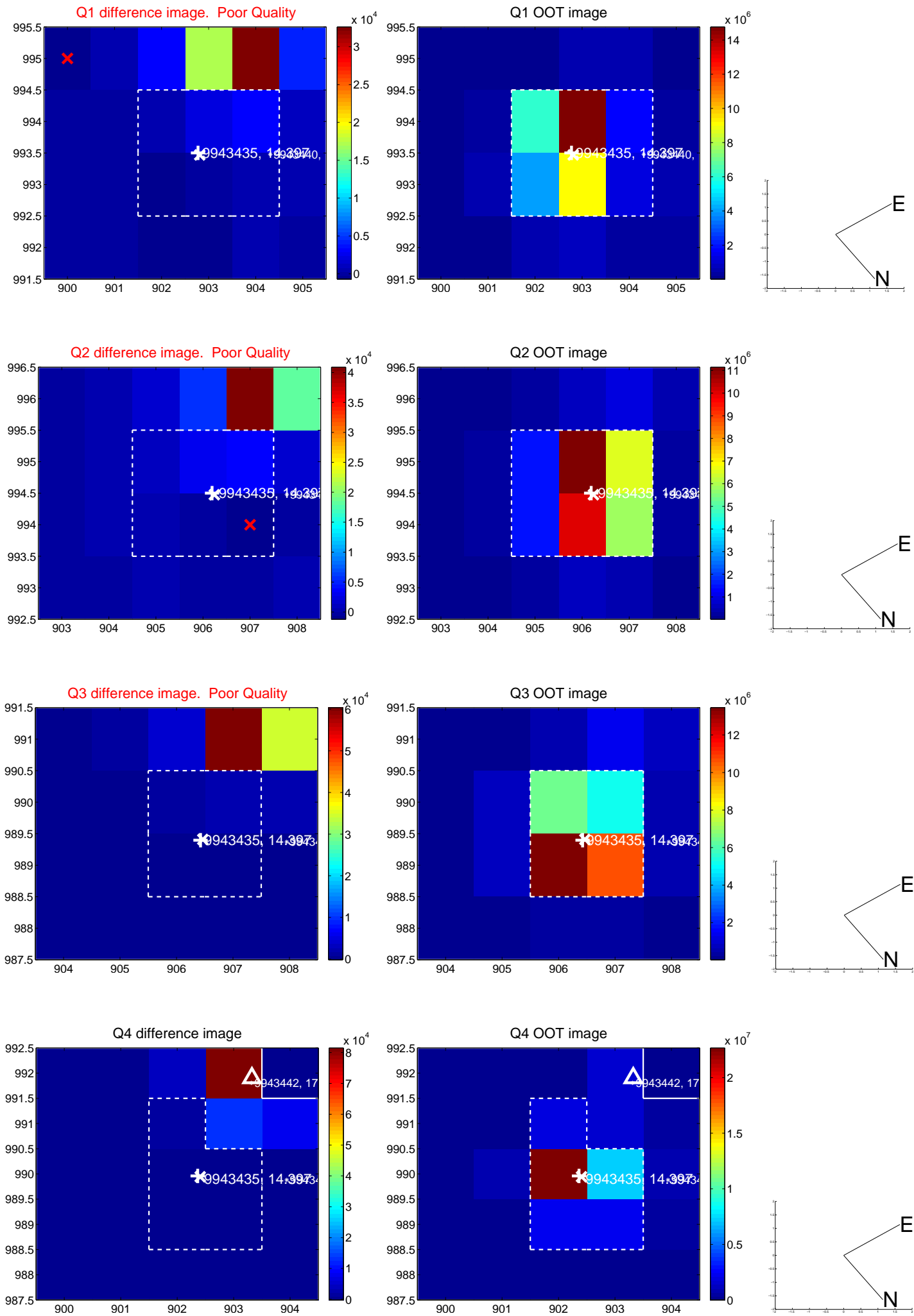


offset from photometric centroids

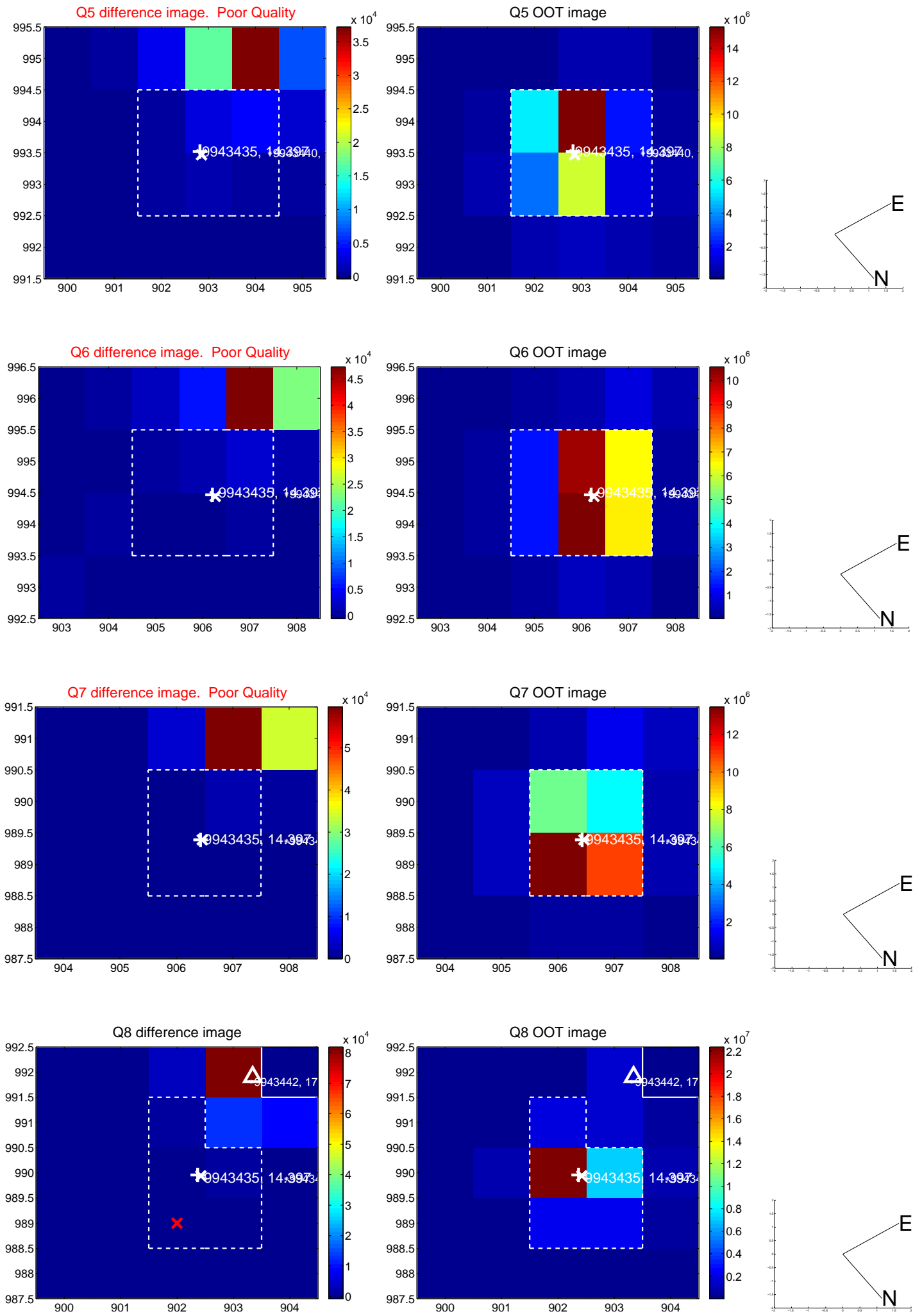


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

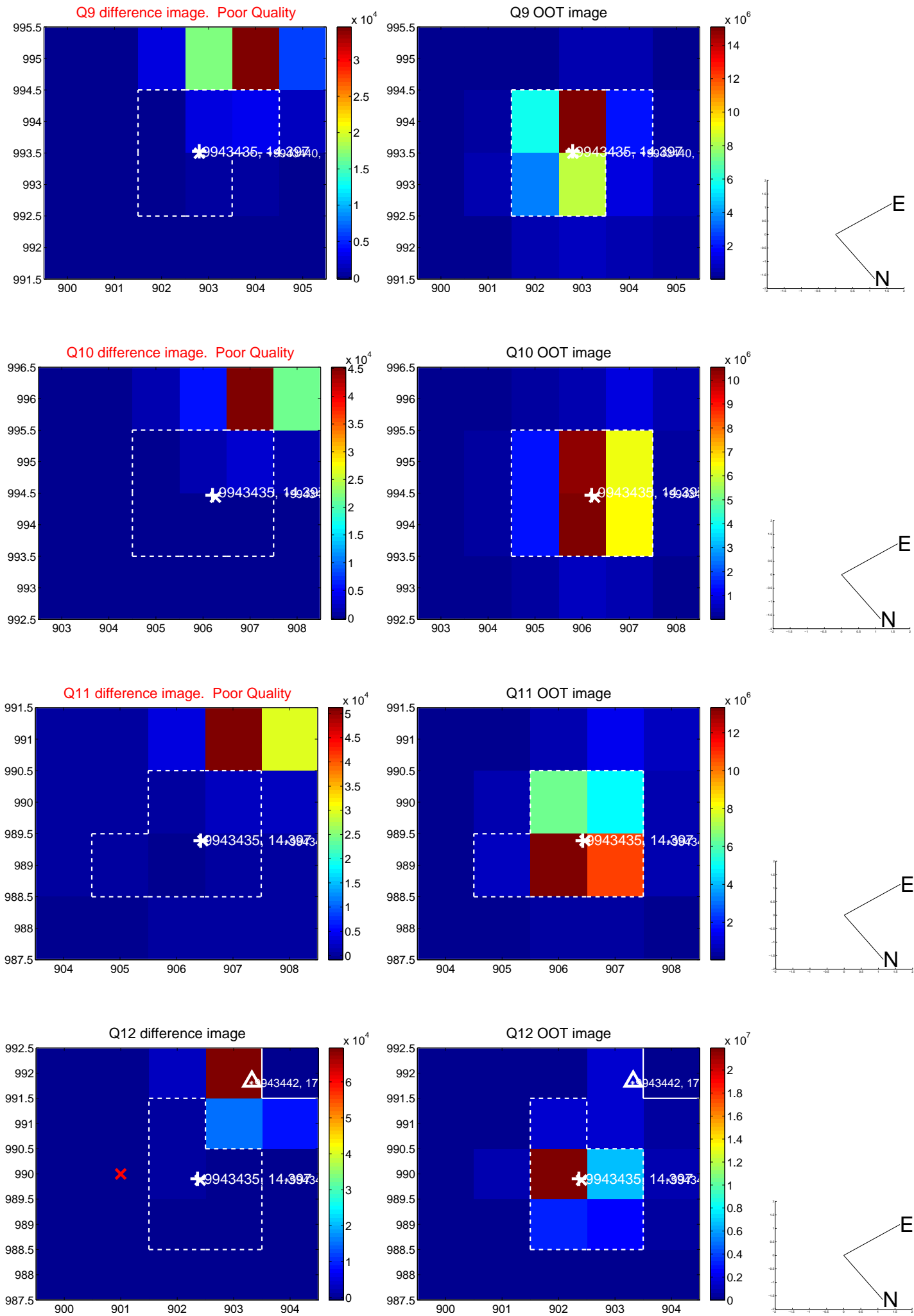
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



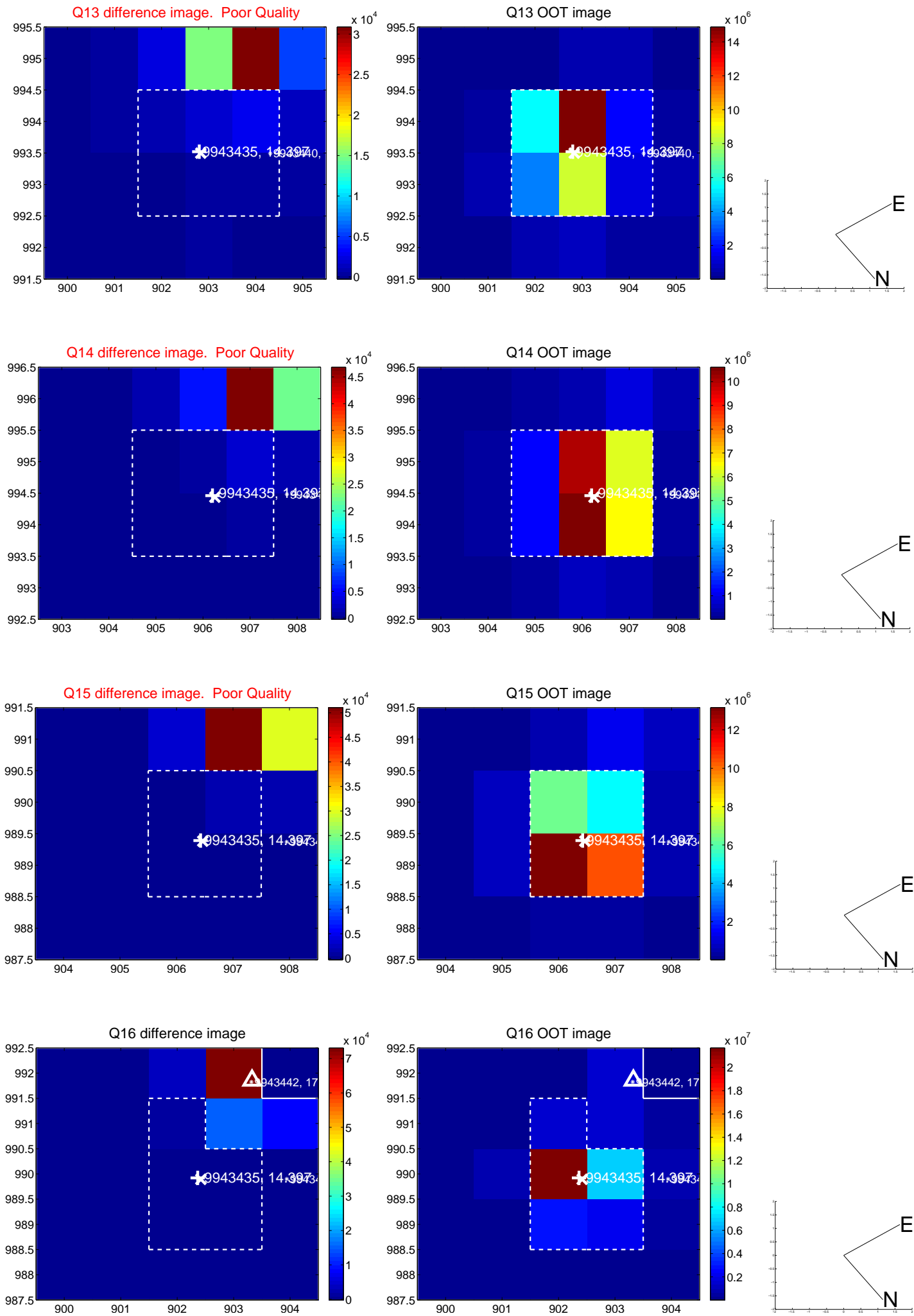
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

Declination

