

KIC 005978170

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})
005978170-01	OBS	3140.01	5.688767	131.669868	212.7	2.750	11.3	11.8	0.64	4234	1.18	40.88

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005978170-01	OBS	PC	0.97	0	0	0	0	CENT_KIC_POS

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 005978170-01

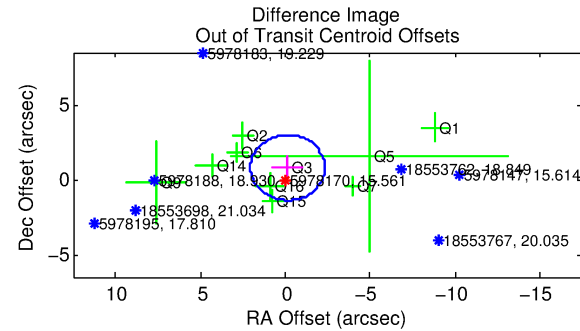
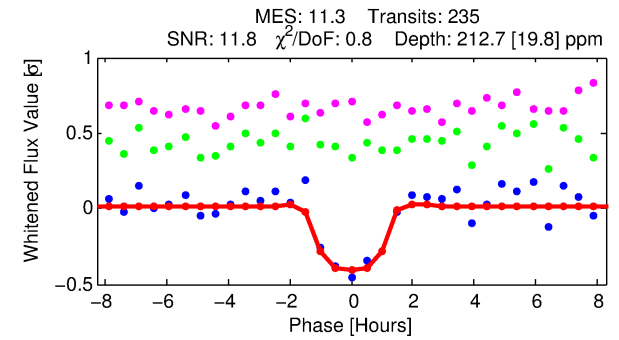
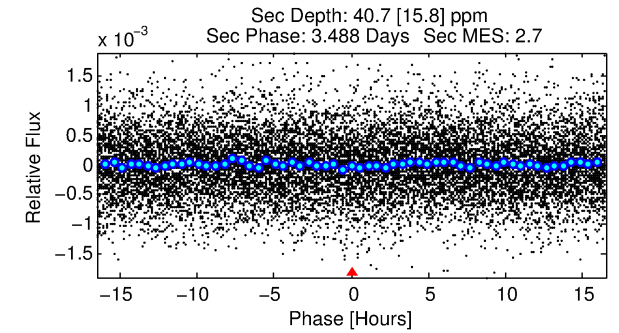
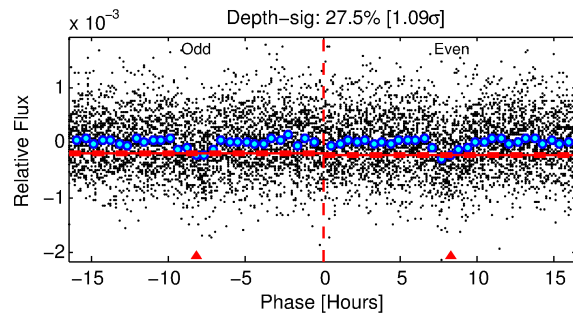
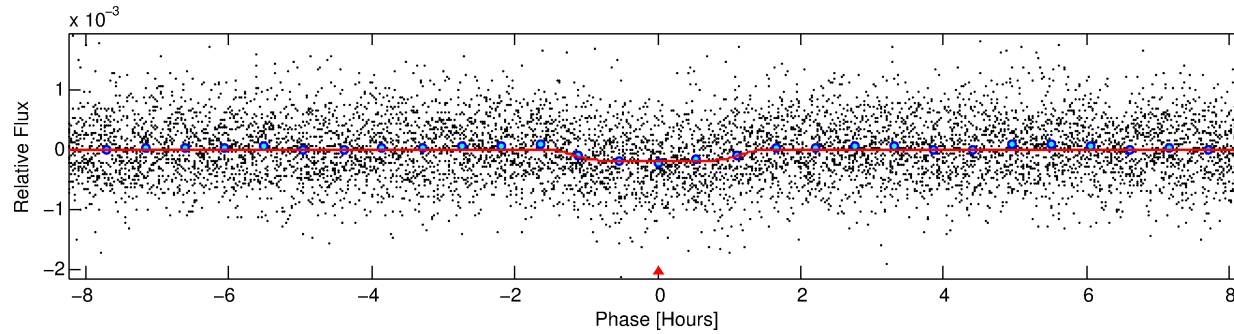
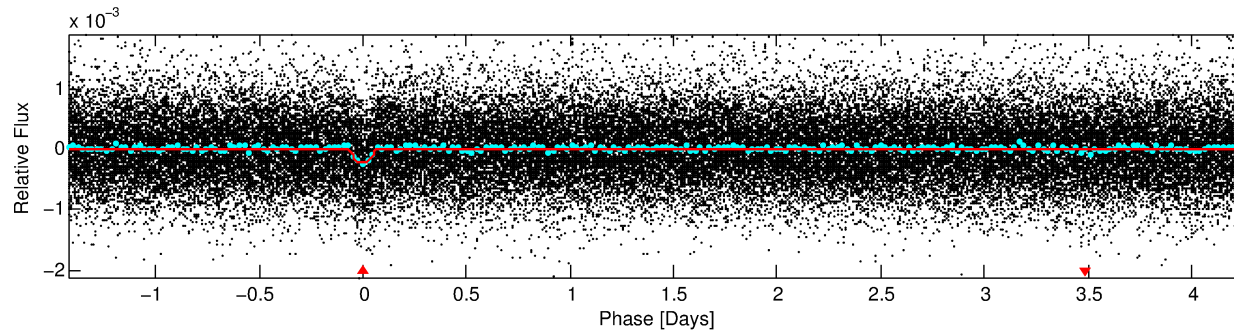
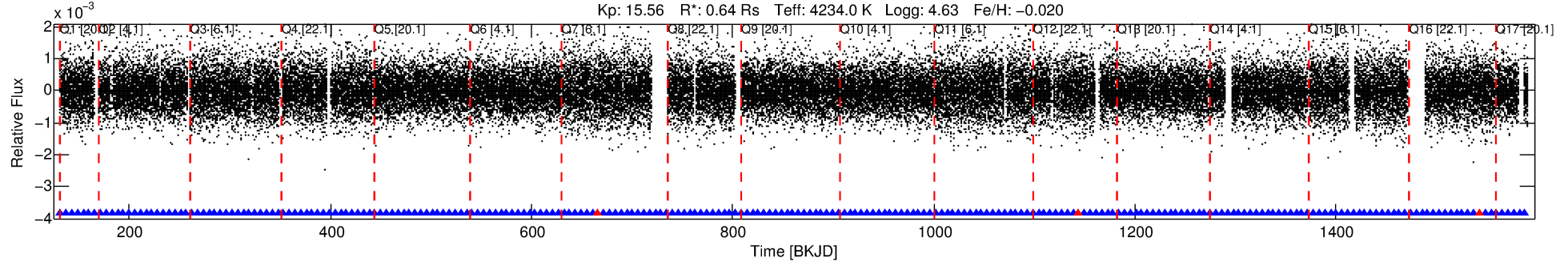
No Significant Match Found

DV One-Page Summary

KIC: 5978170 Candidate: 1 of 1 Period: 5.689 d

KOI: K03140.01 Corr: 0.964

Kp: 15.56 R*: 0.64 Rs Teff: 4234.0 K Logg: 4.63 Fe/H: -0.020



DV Fit Results:

Period = 5.68877 [0.00004] d
Epoch = 131.6699 [0.0046] BKJD
Rp/R* = 0.0170 [0.0073]
a/R* = 6.77 [11.22]
b = 0.92 [0.27]
Seff = 40.88 [6.69]
Teq = 645 [26] K
Rp = 1.18 [0.52] Re
a = 0.0536 [0.0037] AU
Ag = 45.98 [43.39] [1.04σ]
Teffp = 2596 [615] K [3.17σ]

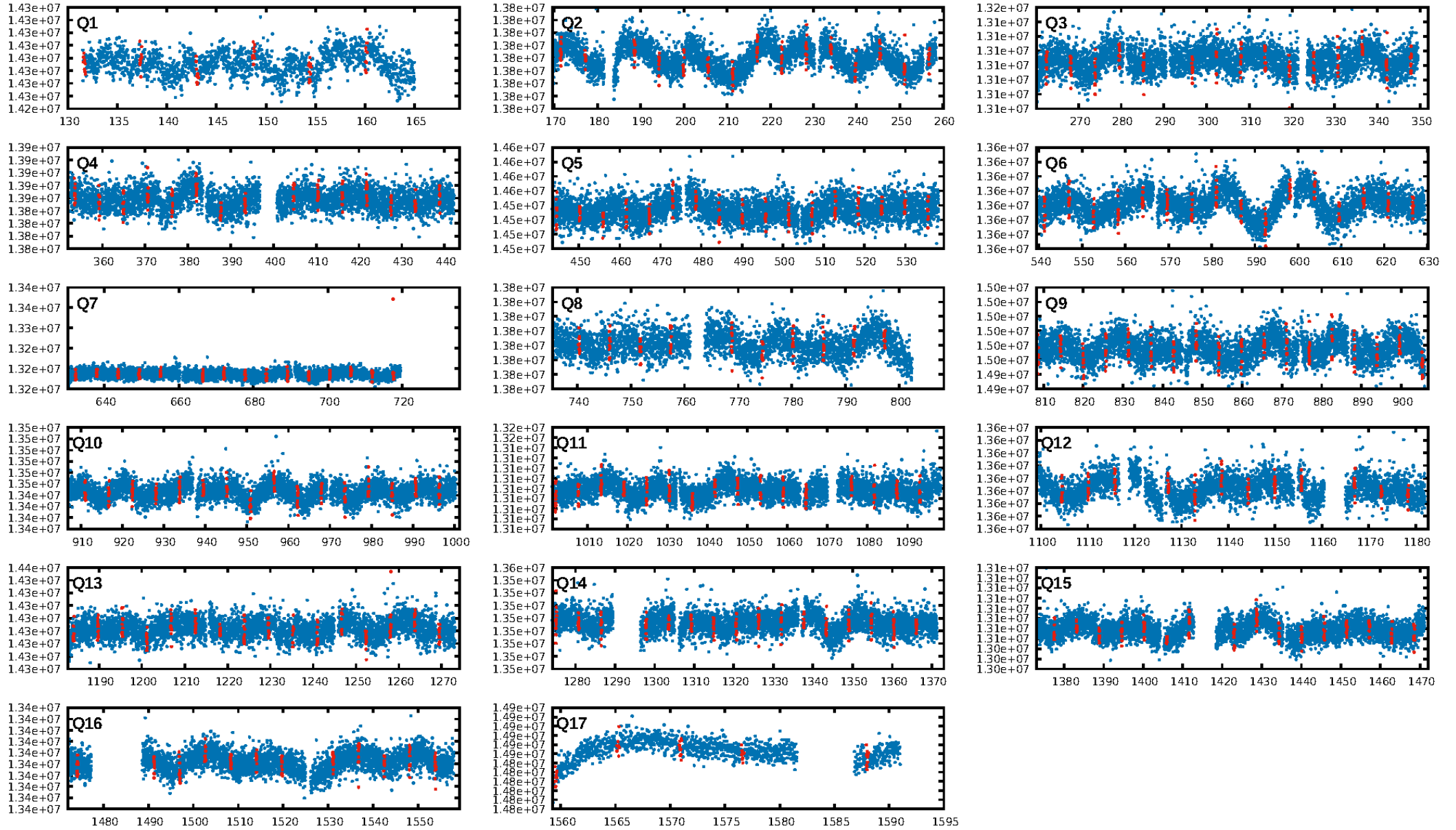
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 2.56e-29
RollingBand-fgt: 0.99 [221/224]
GhostDiagnostic-chr: 8.629
Centroid-sig: 30.8%
Centroid-so: 1.222 arcsec [1.27σ]
OotOffset-rm: 0.812 arcsec [1.11σ]
KicOffset-rm: 0.358 arcsec [0.36σ]
OotOffset-st: 3/3/1/3 [10]
KicOffset-st: 3/3/1/3 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 1.00 [17/17]

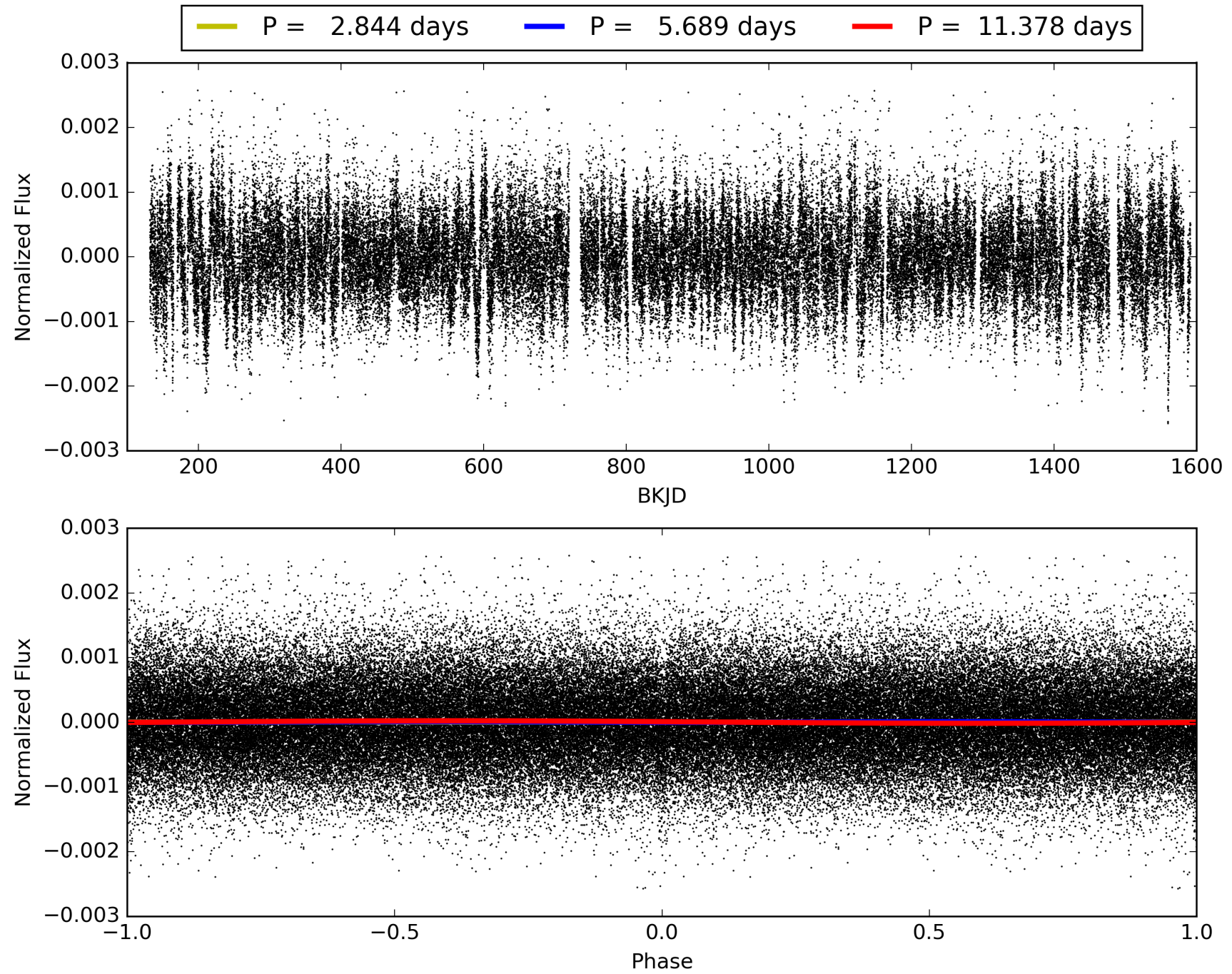
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 11:36:45 Z

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

TCE 005978170-01, PDC Light Curves

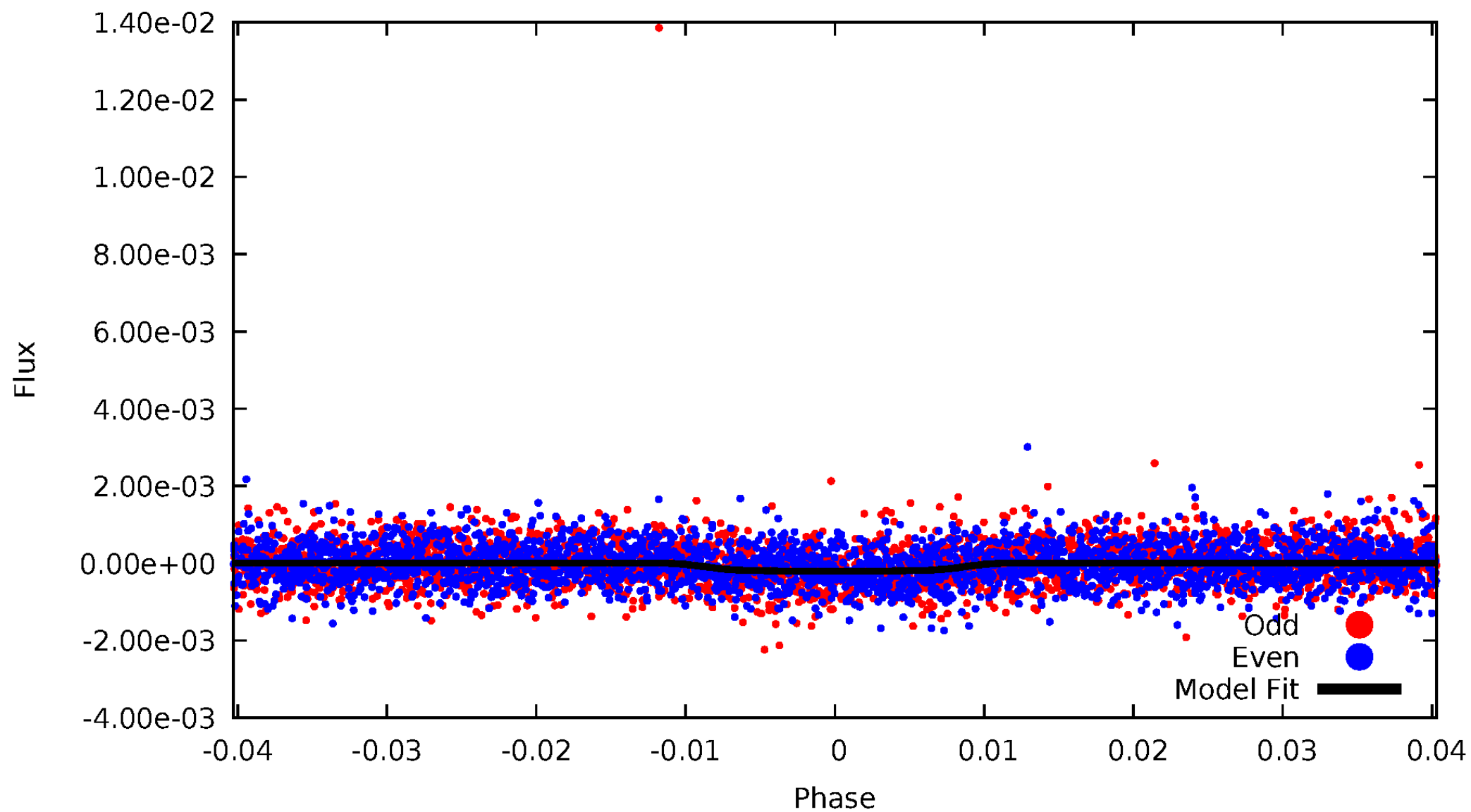


TCE 005978170-01



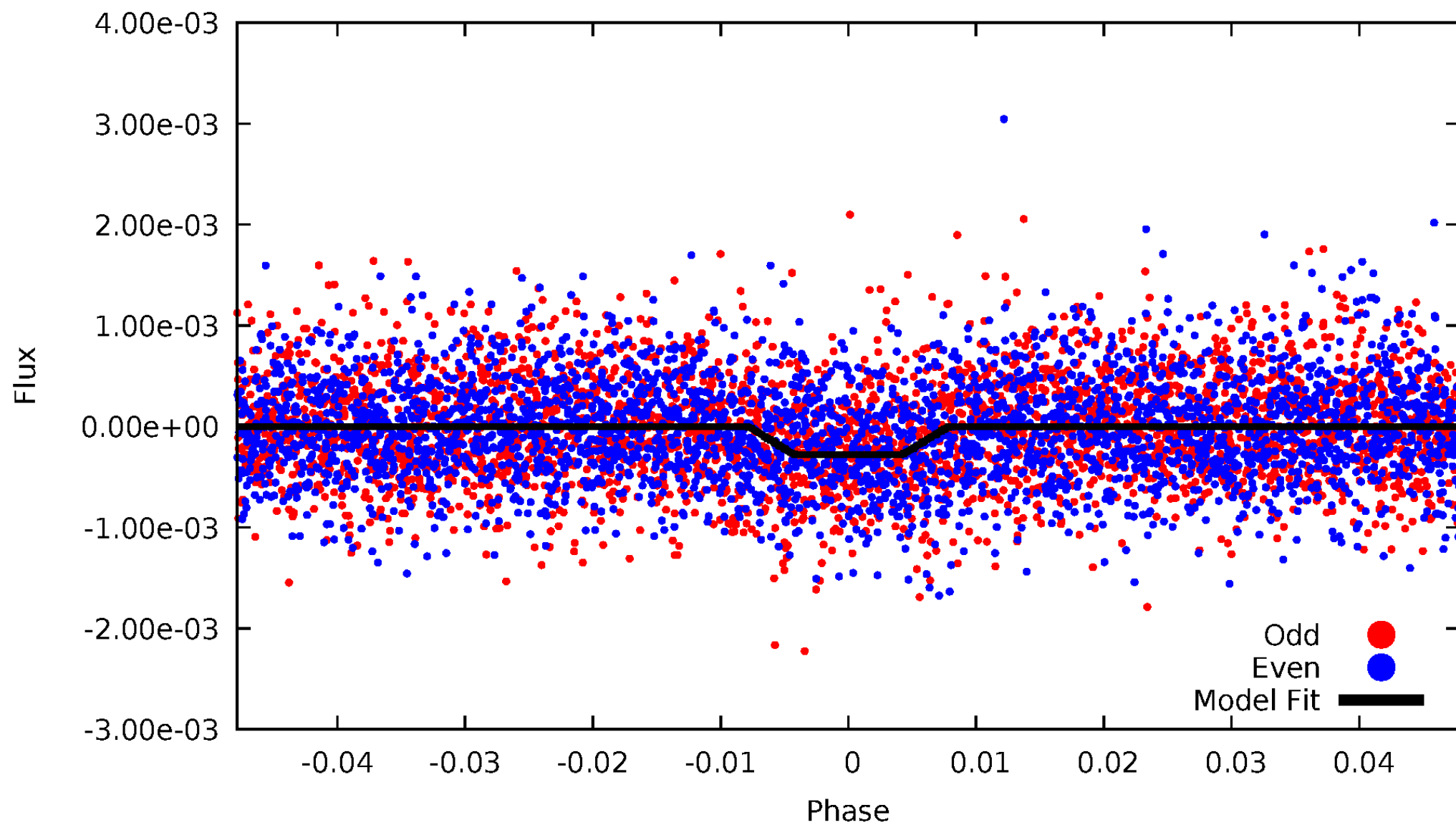
DV Odd/Even

TCE 005978170-01



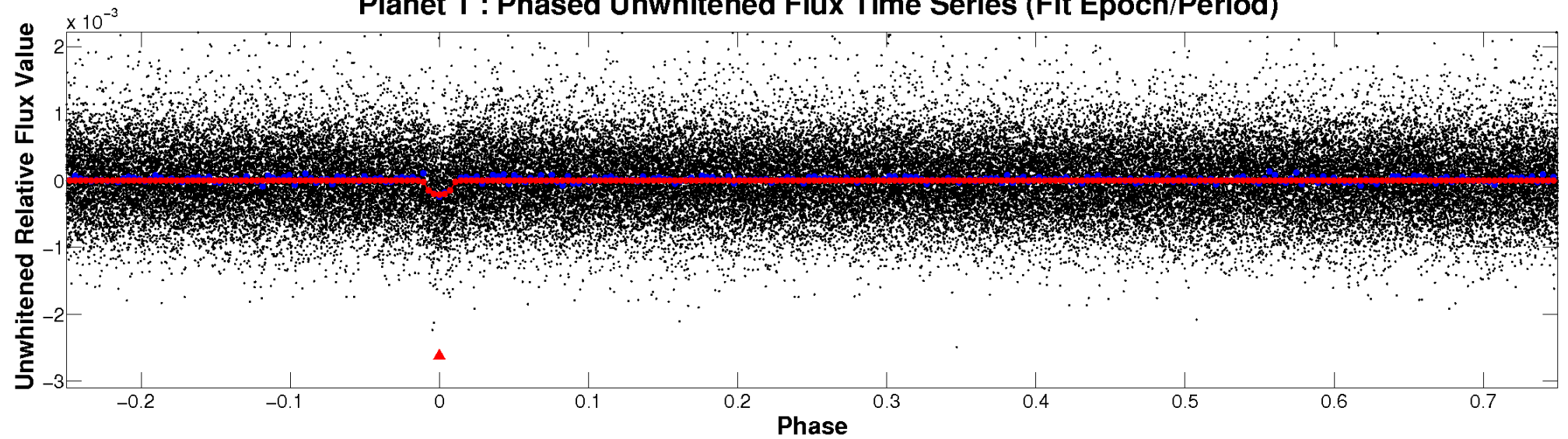
ALT Odd/Even

TCE 005978170-01

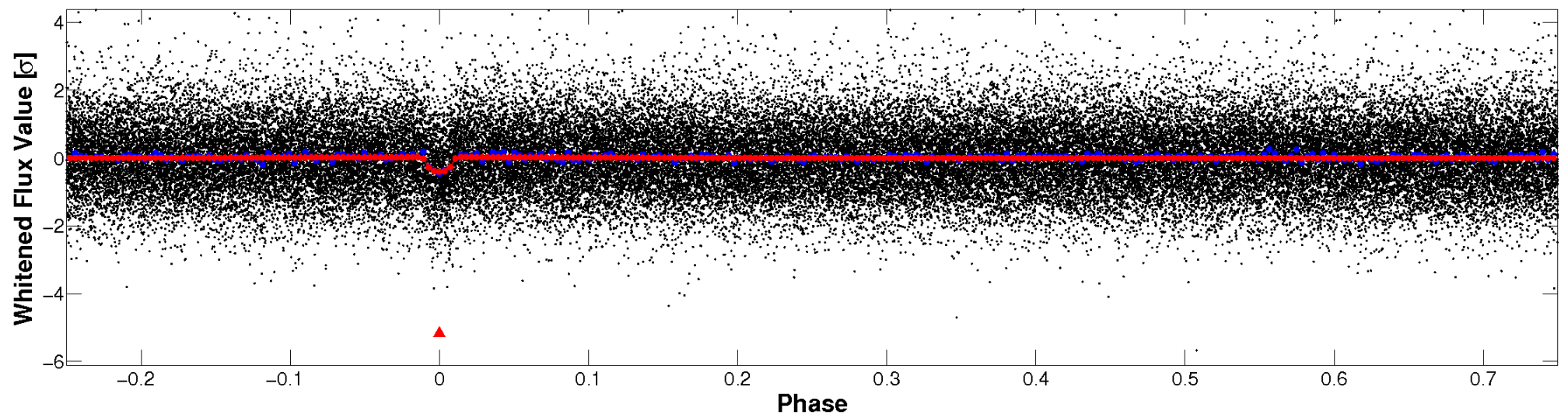


Non-Whitened Vs. Whitened Light Curve

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

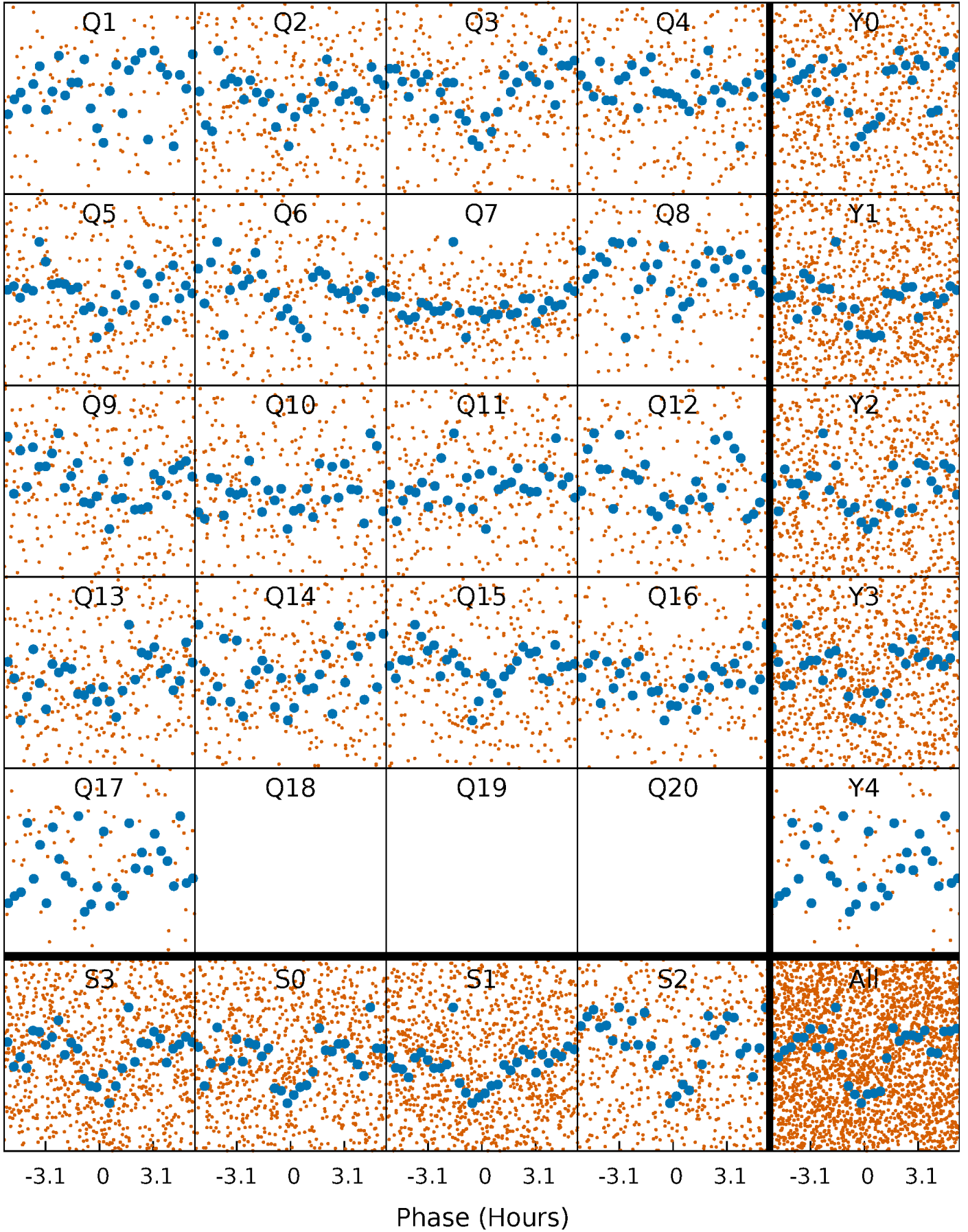


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



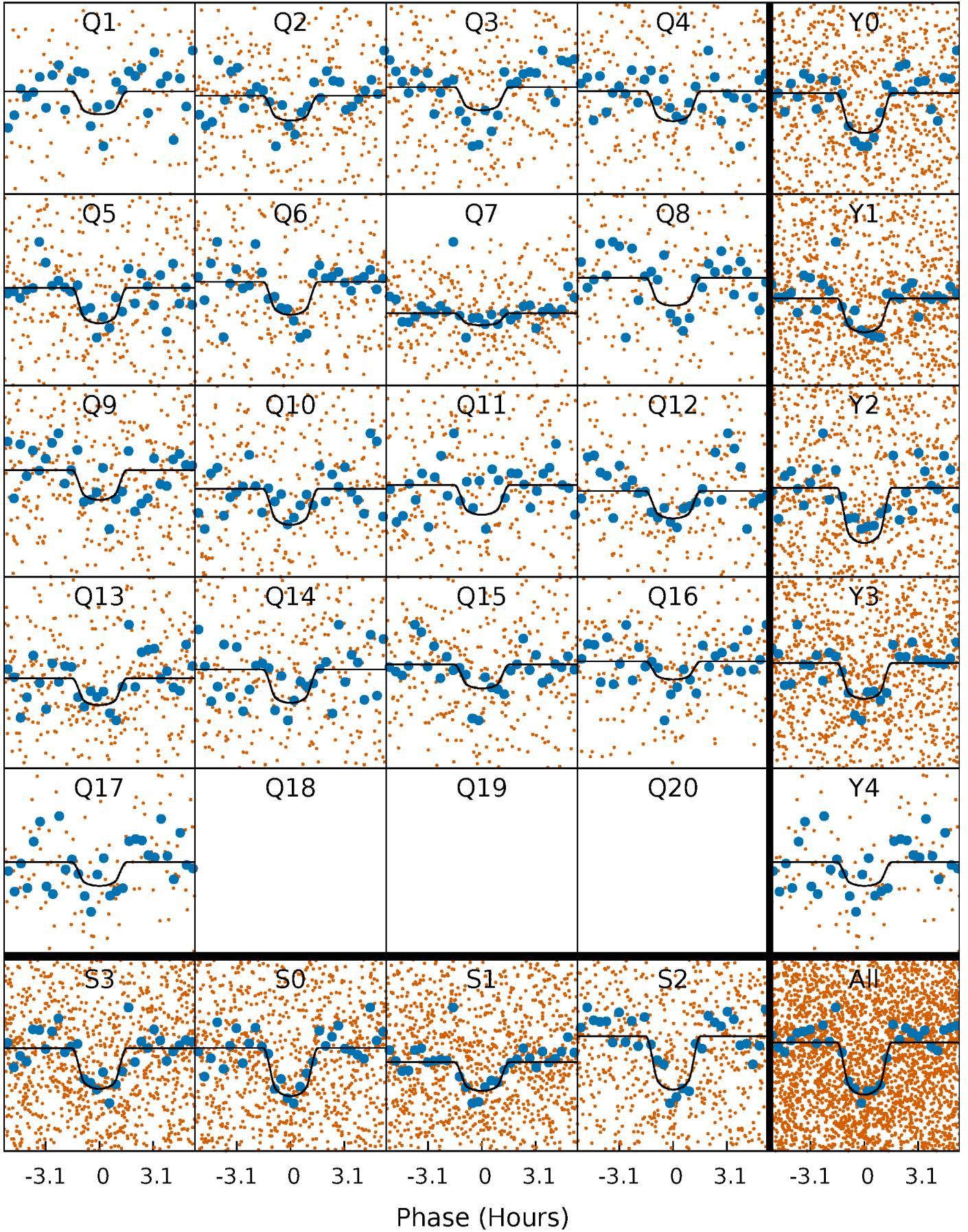
PDC Quarter-Phased Transit Curves

TCE 005978170-01 P= 5.688767 Days $T_0=131.669868$ (BKJD)



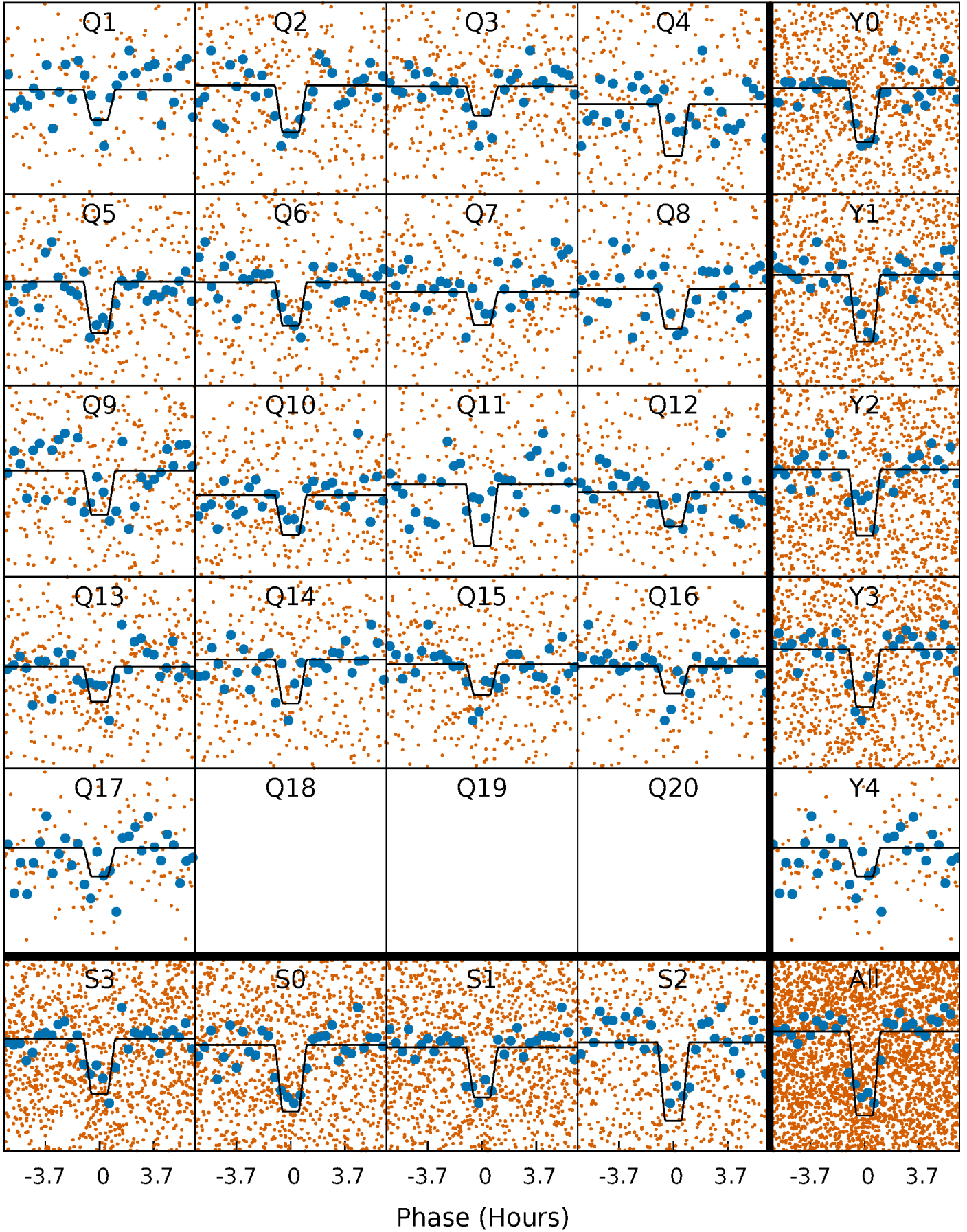
DV Quarter-Phased Transit Curves

TCE 005978170-01 P= 5.688767 Days $T_0=131.669868$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

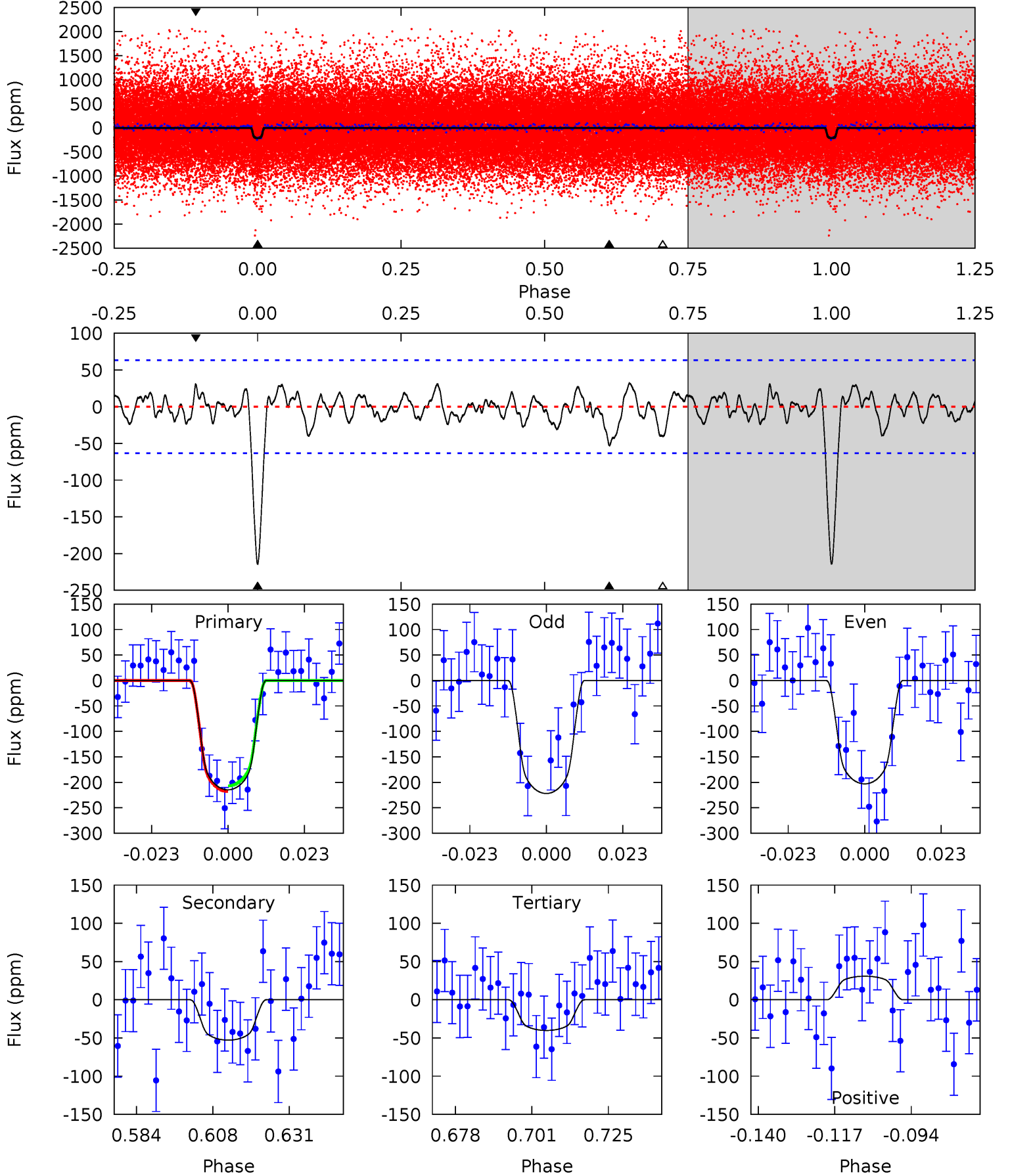
TCE 005978170-01 P= 5.688802 Days $T_0=131.666961$ (BKJD)



DV Model-Shift Uniqueness Test

005978170-01, P = 5.688767 Days, E = 125.981101 Days

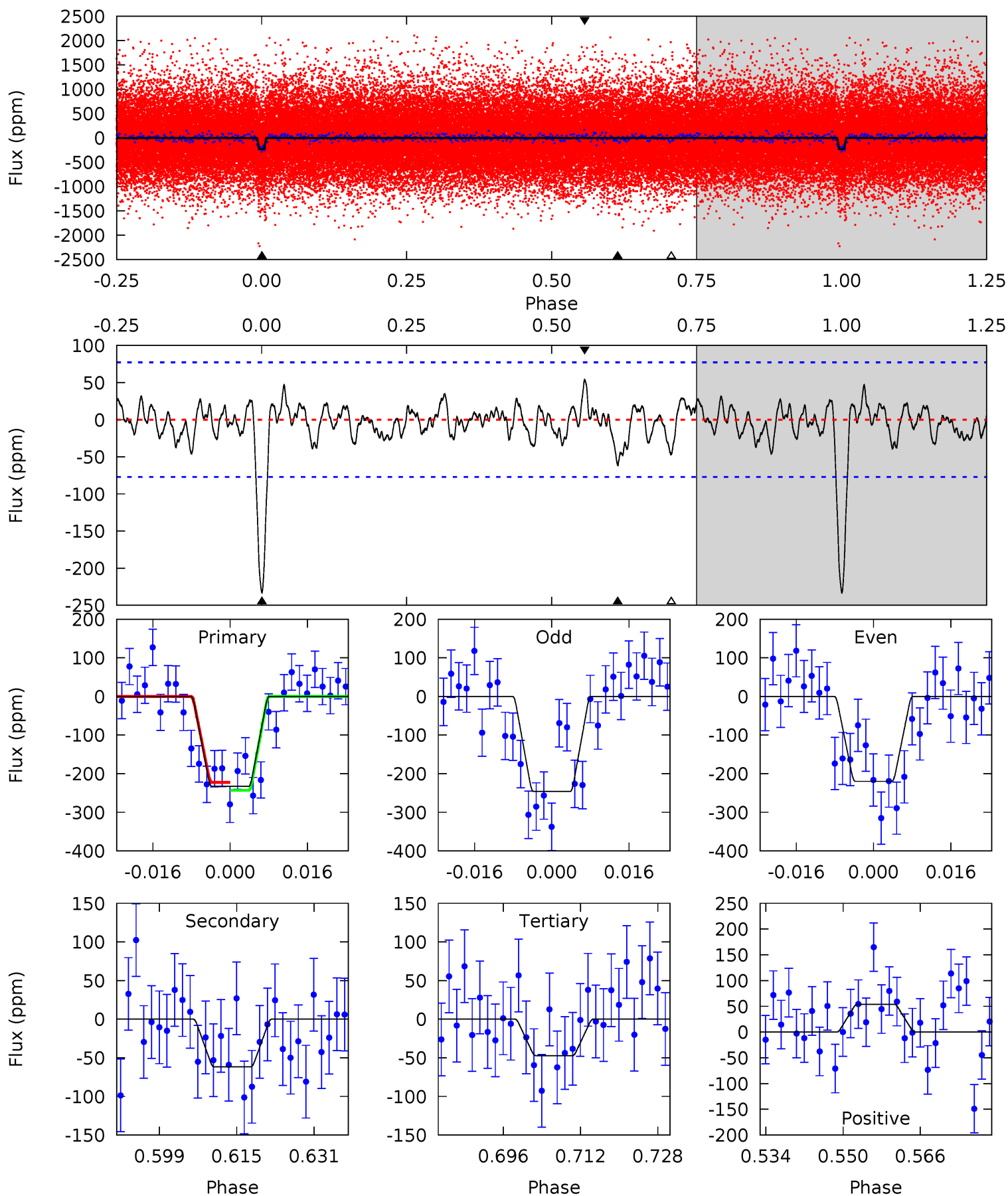
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.5	4.06	3.09	2.36	4.86	2.27	1.11	13.4	14.1	0.97	1.69	0.73	0.91	0.13	0.42



Alt Model-Shift Uniqueness Test

005978170-01, P = 5.688802 Days, E = 125.978159 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.9	3.95	3.01	3.45	4.93	2.40	1.11	11.9	11.4	0.93	0.49	0.85	1.03	0.19	0.66



Stellar Parameters For KIC 005978170

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	4234^{+128}_{-141}	$4.630^{+0.049}_{-0.021}$	$-0.020^{+0.300}_{-0.300}$	$0.639^{+0.036}_{-0.056}$	$0.636^{+0.056}_{-0.056}$	$3.433^{+0.740}_{-0.343}$
	+3%/-3%	+1%/-0%	+1500%/-1500%	+6%/-9%	+9%/-9%	+22%/-10%
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 005978170-01 / KOI 3140.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-53 ± 13	$1.18^{+0.56}_{-0.47}$	897^{+29}_{-34}	3180^{+608}_{-330}	58^{+110}_{-30}
Alt.	-62 ± 16	$1.16^{+0.48}_{-0.49}$	895^{+31}_{-33}	3286^{+691}_{-354}	74^{+160}_{-39}

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

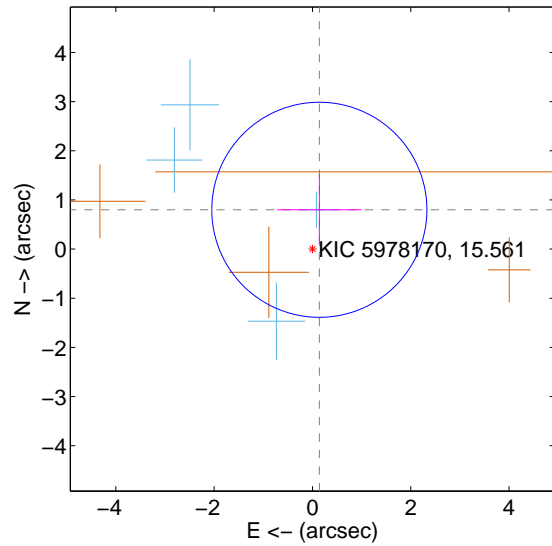
Supplemental centroid analysis for 005978170-01. Kepler magnitude: 15.56. Transit SNR 11.81

There are 4 quarters with good PRF difference image offsets

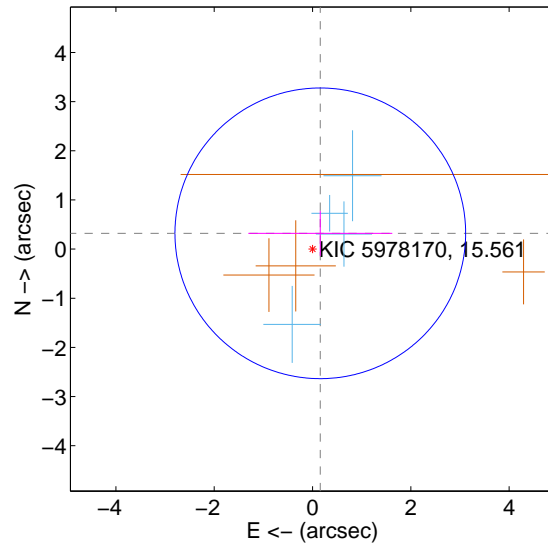
The direct PRF centroid is offset from the target star catalog position by about 0.56 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.812 ± 0.729	1.11	-0.140 ± 0.858	0.800 ± 0.725
PRF-fit source offset from KIC position	0.358 ± 0.986	0.36	-0.158 ± 1.464	0.321 ± 0.458
photometric centroid source offset	1.22 ± 0.96	1.27	-1.17 ± 0.97	-0.34 ± 0.79

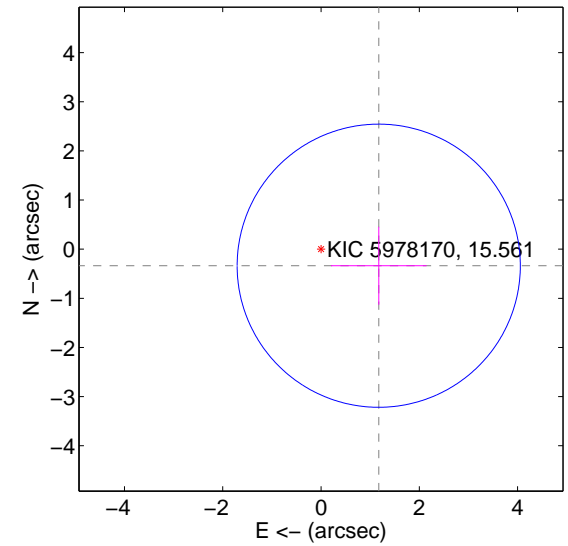
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

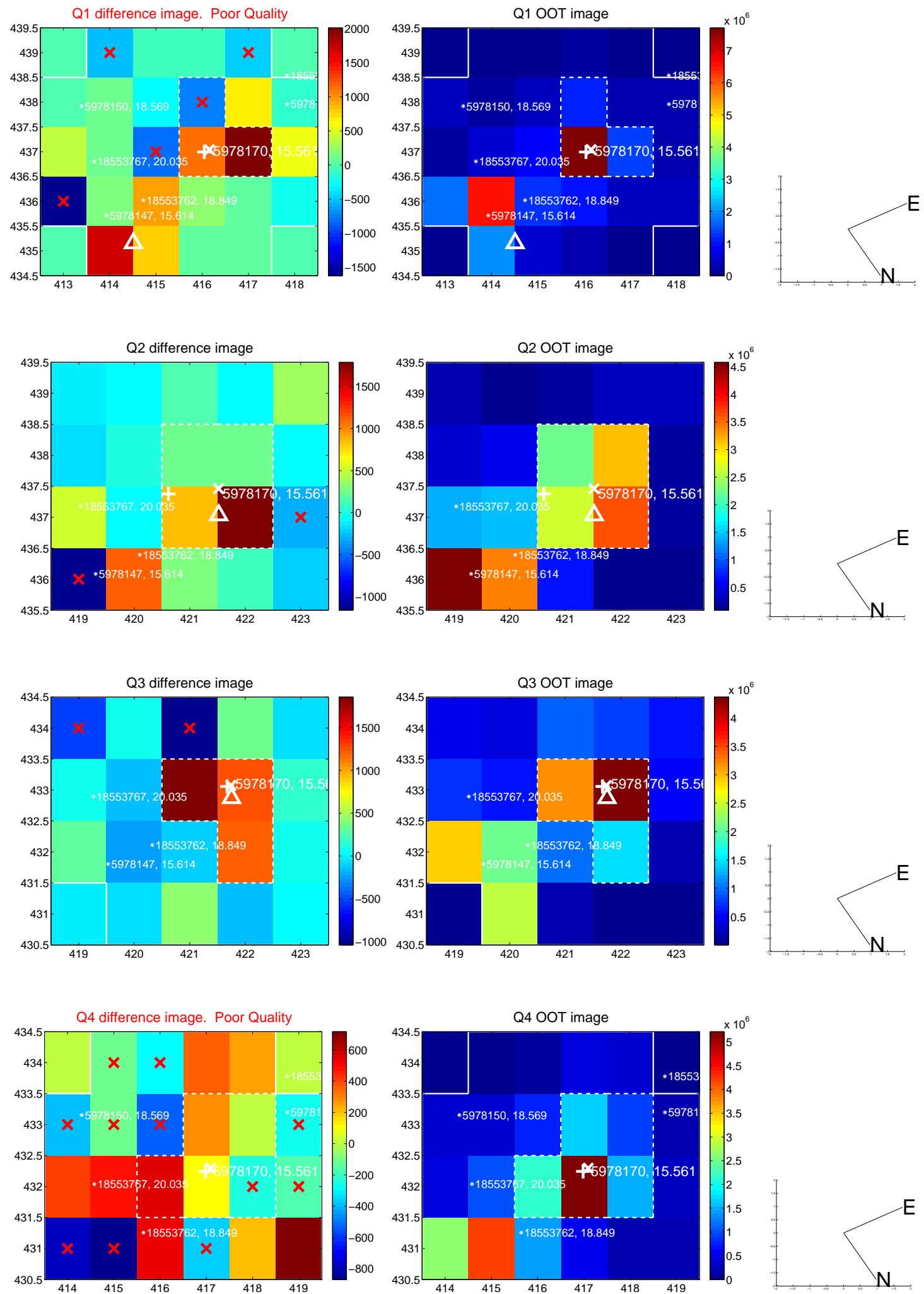


offset from photometric centroids

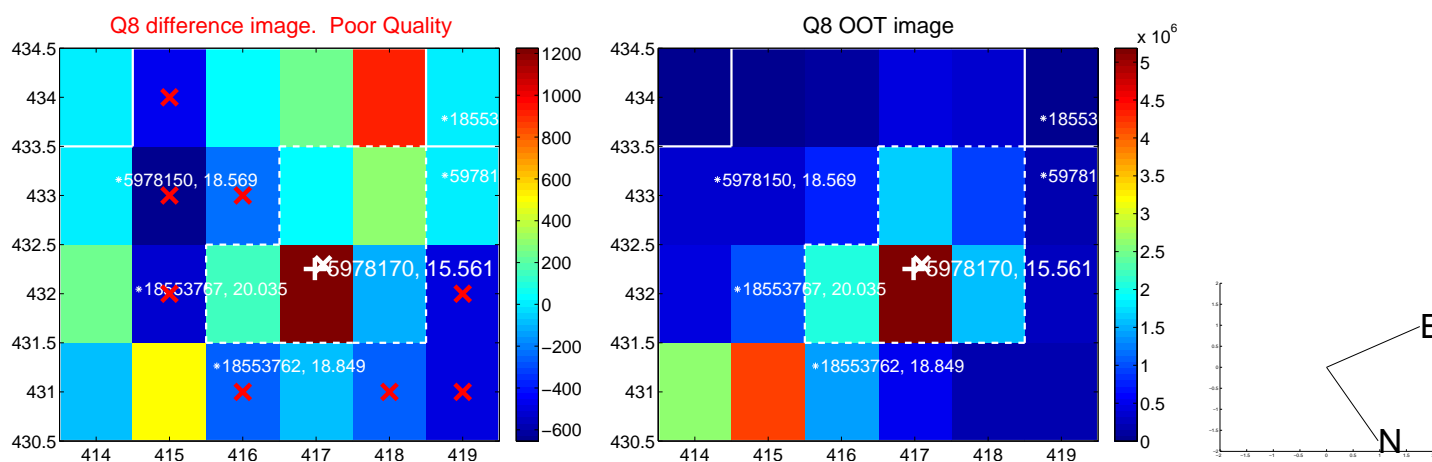
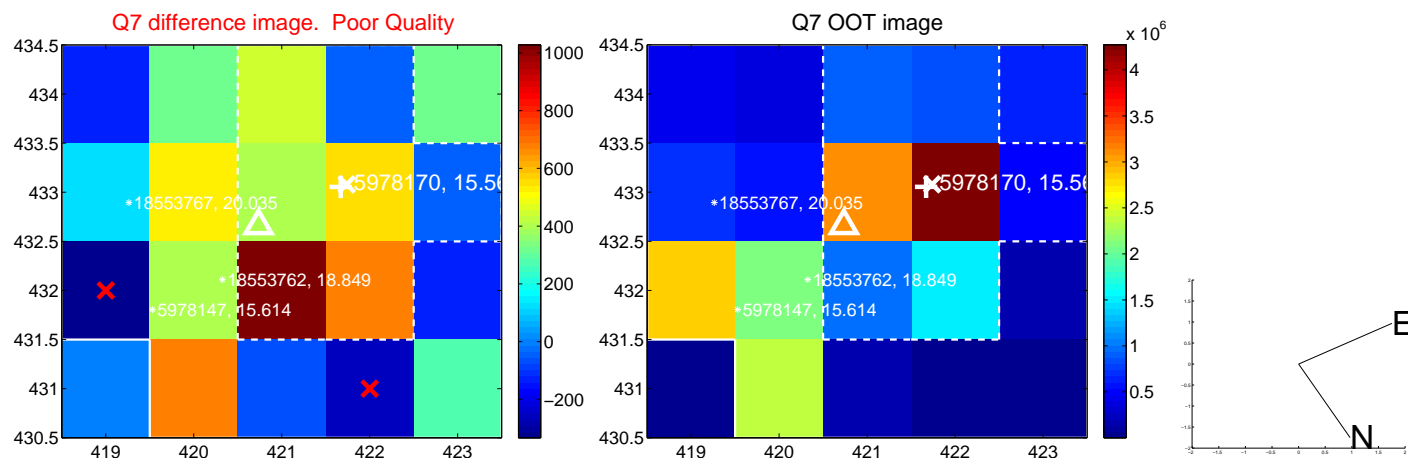
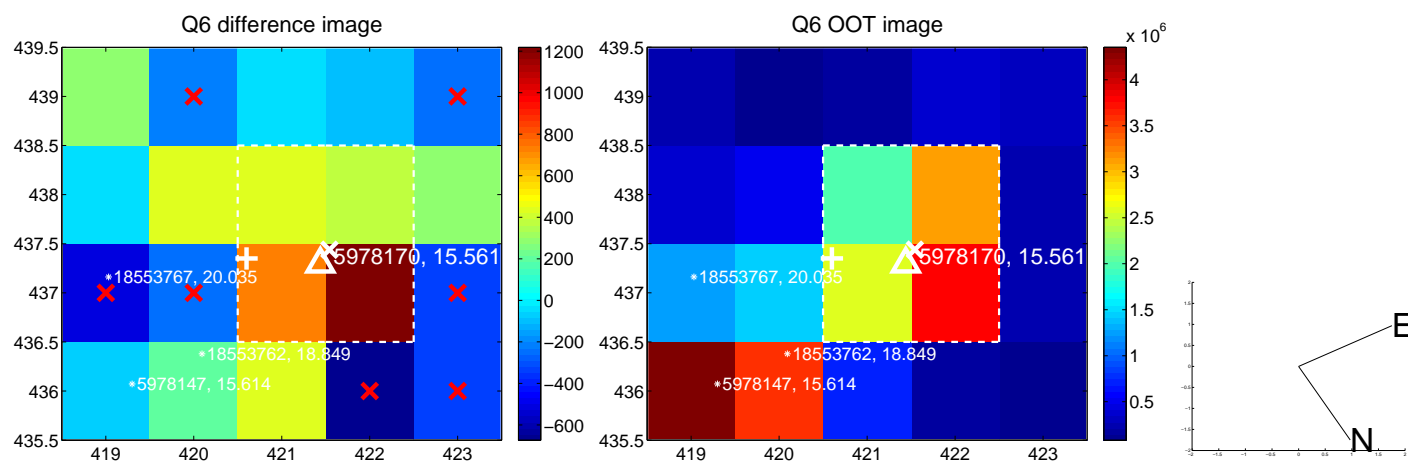
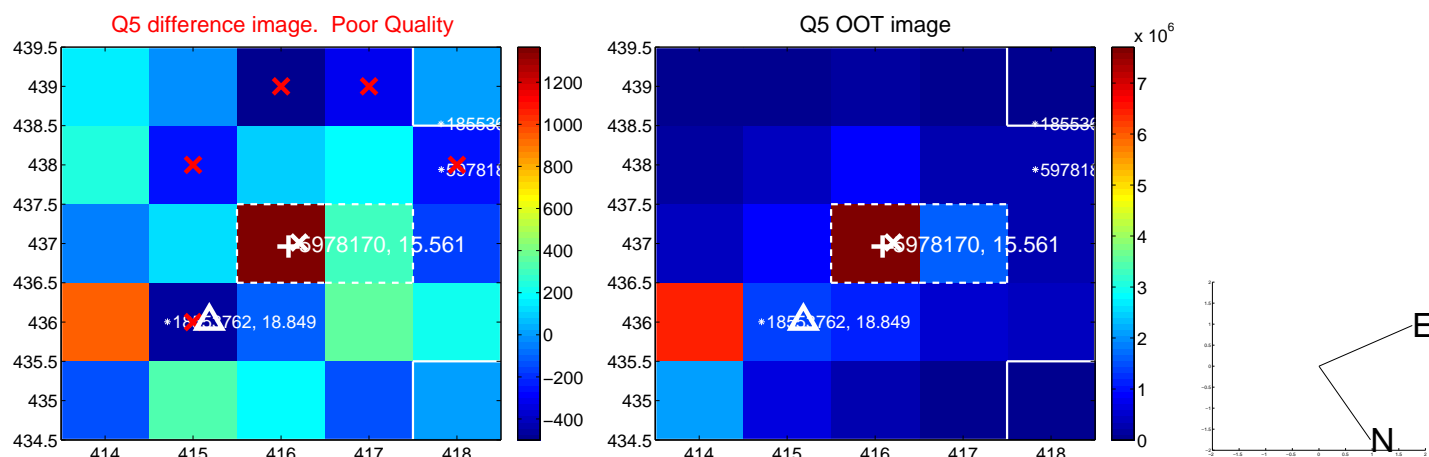


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

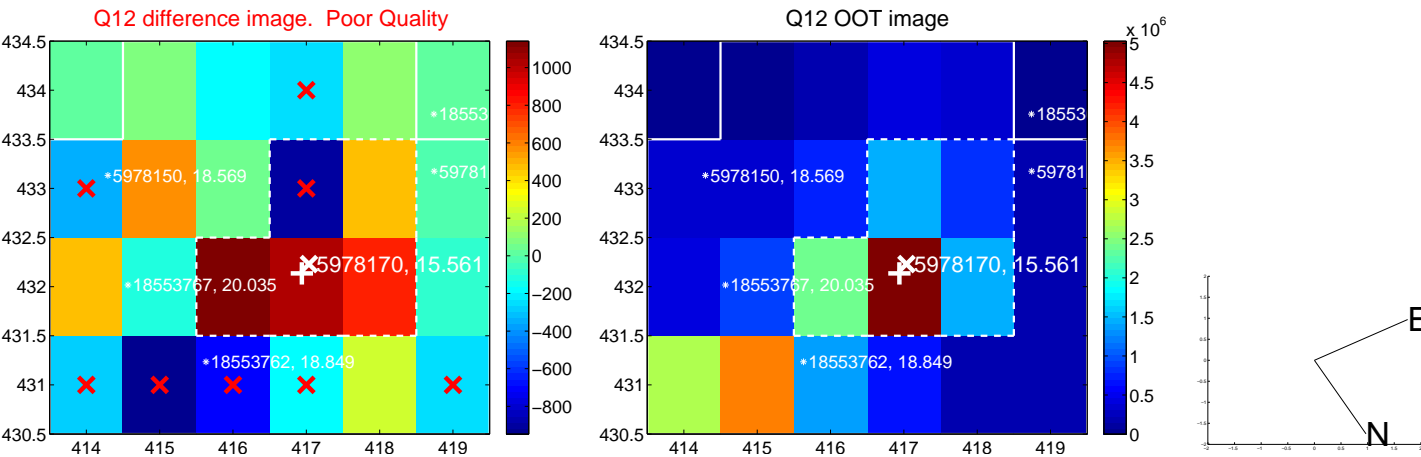
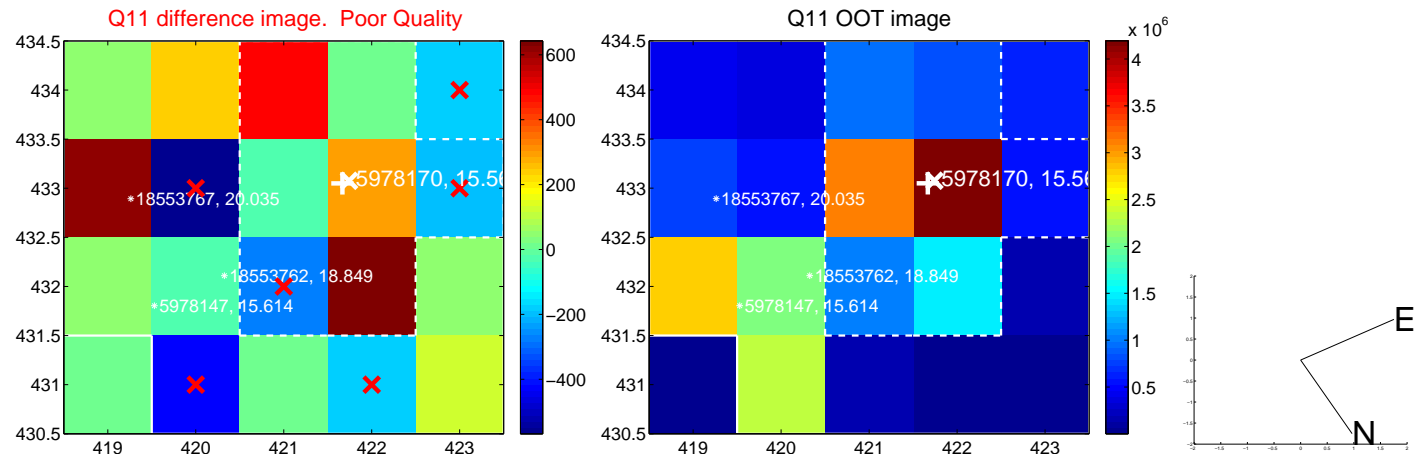
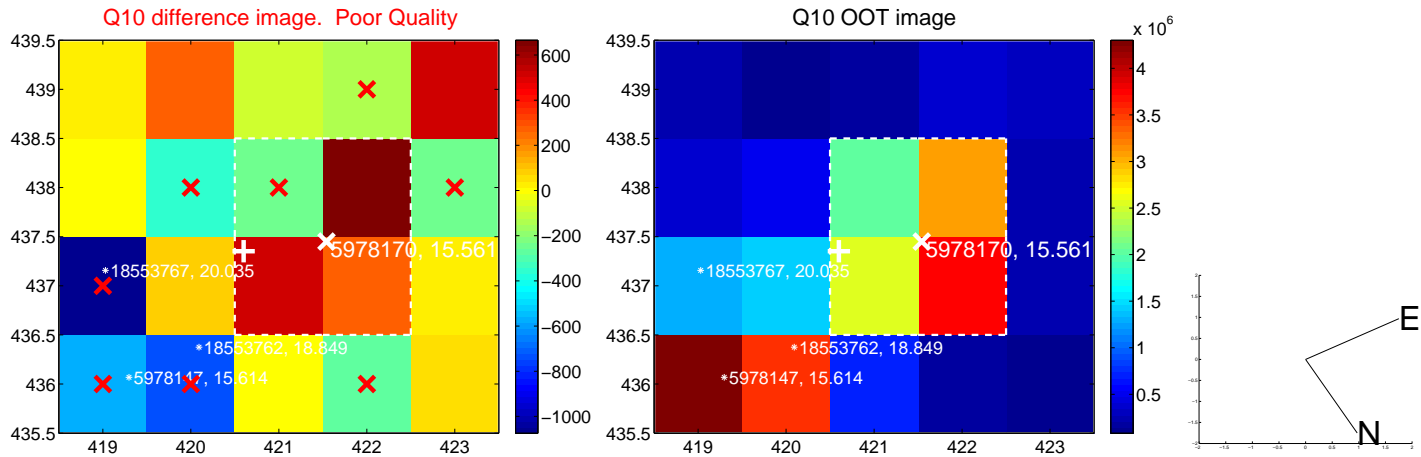
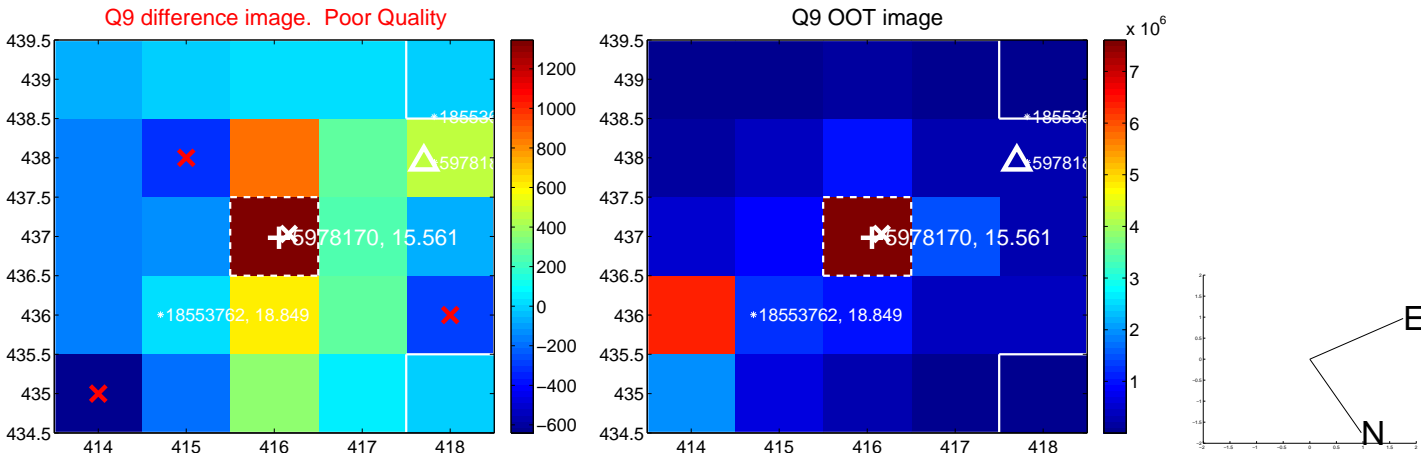
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



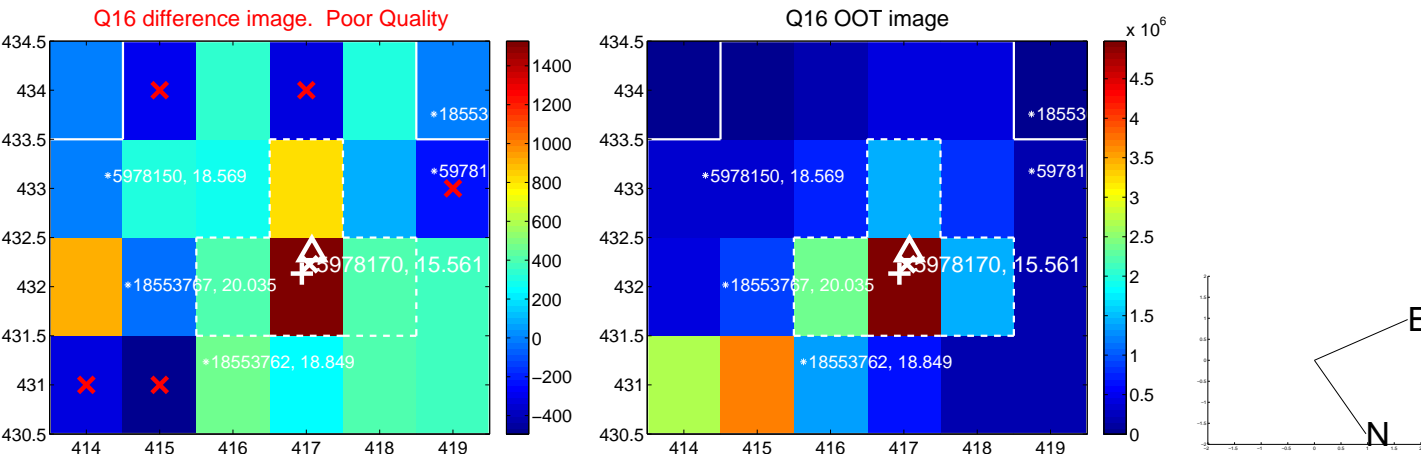
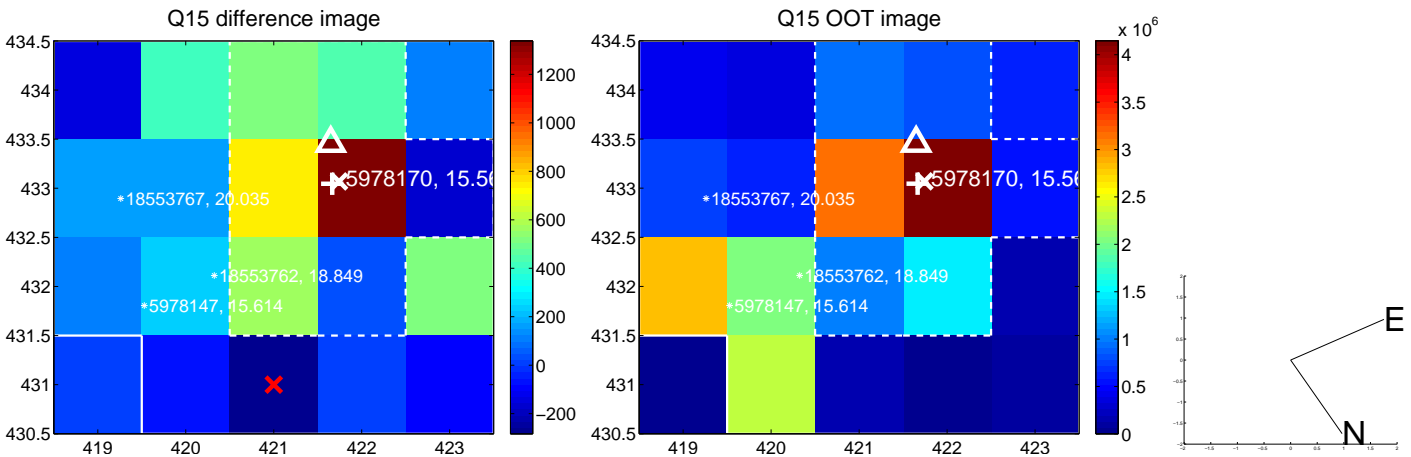
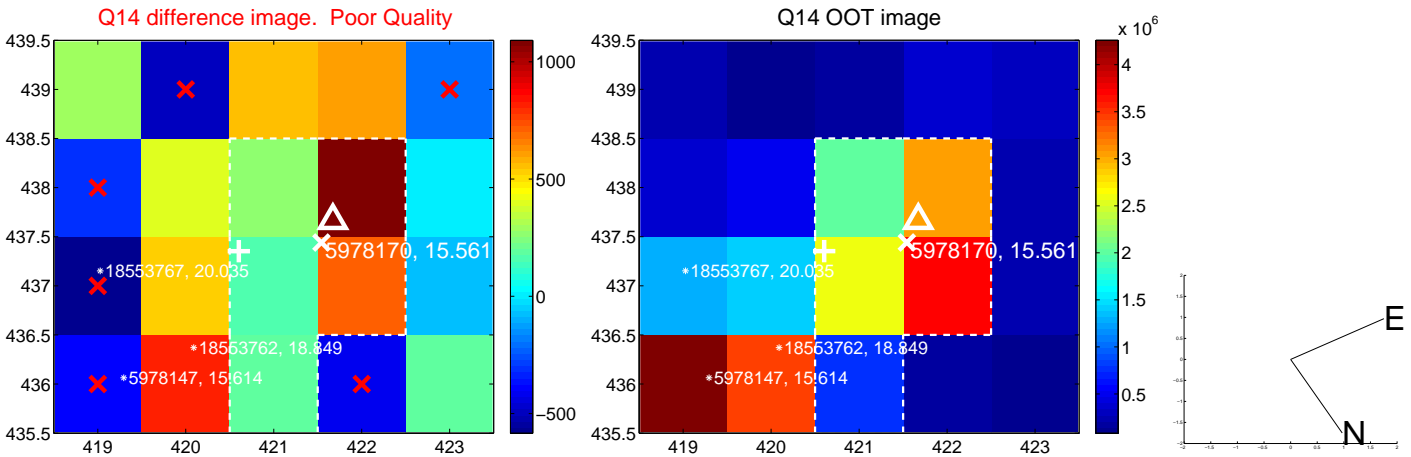
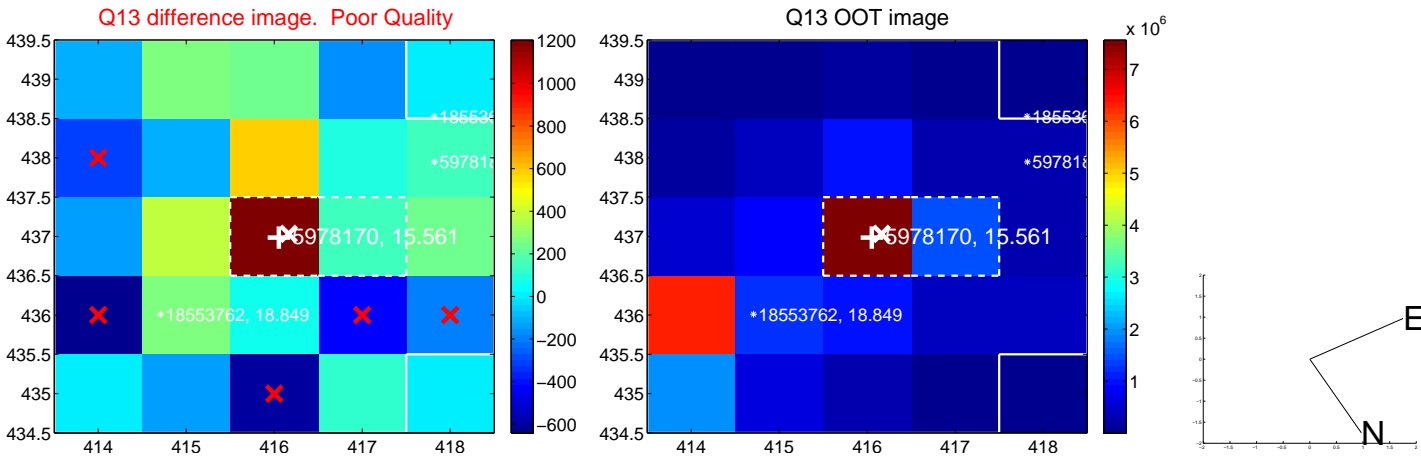
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

