

KIC 006438099

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})
006438099-01	OBS	2976.01	21.613151	137.025902	862.0	1.546	12.1	14.5	0.63	5267	2.05	15.16

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006438099-01	OBS	PC	0.99	0	0	0	0	NO_COMMENT

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 006438099-01

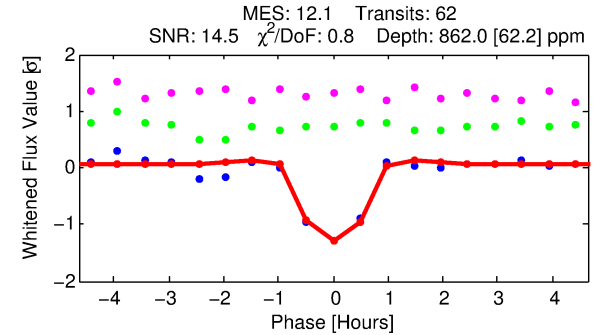
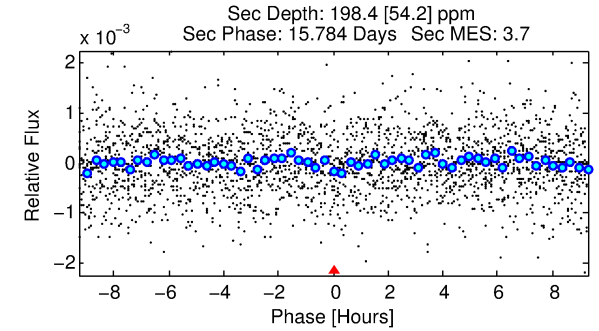
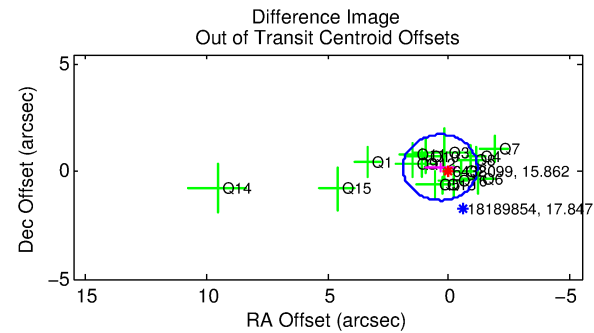
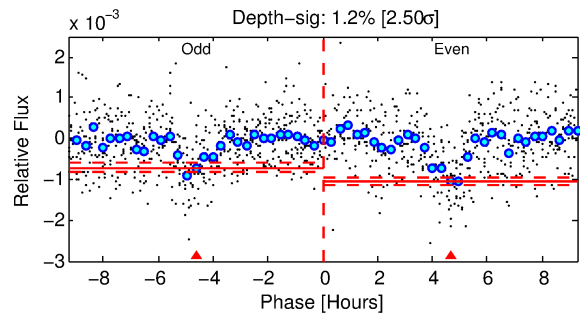
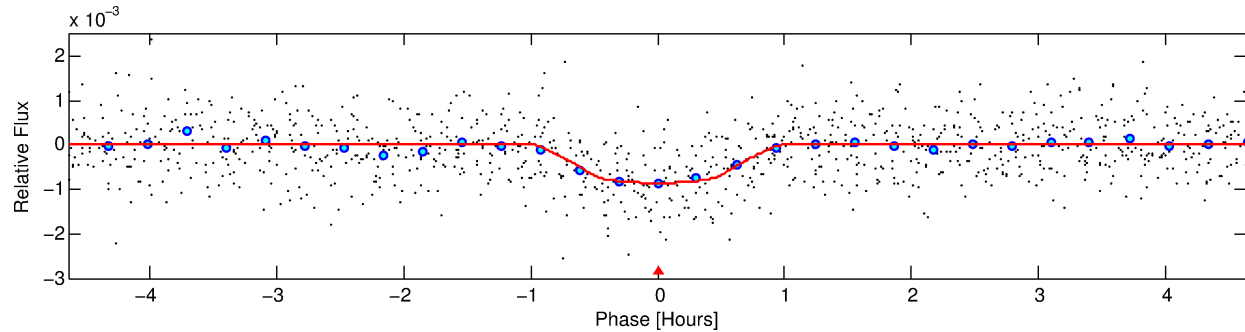
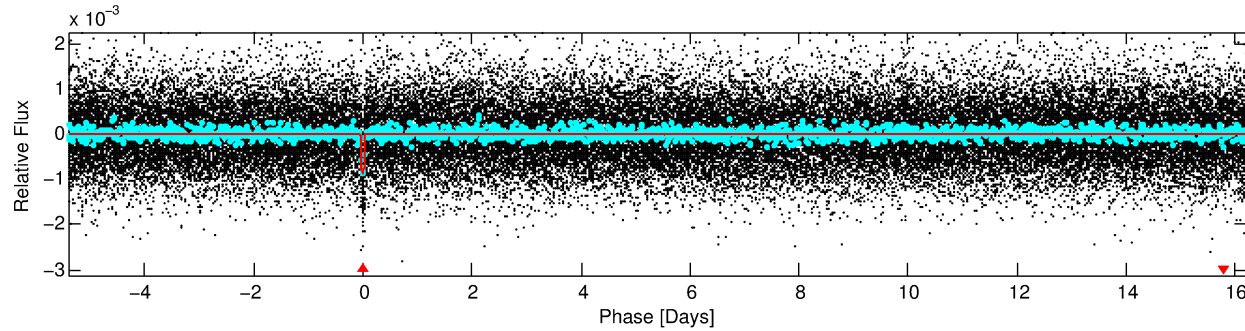
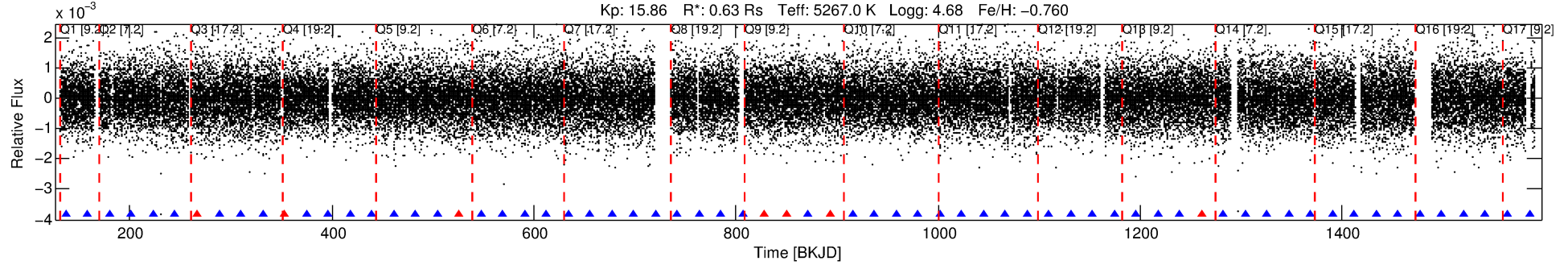
No Significant Match Found

DV One-Page Summary

KIC: 6438099 Candidate: 1 of 1 Period: 21.613 d

KOI: K02976.01 Corr: 0.875

Kp: 15.86 R*: 0.63 Rs Teff: 5267.0 K Logg: 4.68 Fe/H: -0.760



DV Fit Results:

Period = 21.61315 [0.00007] d
Epoch = 137.0259 [0.0029] BKJD
Rp/R* = 0.0298 [0.0290]
a/R* = 71.39 [295.33]
b = 0.78 [2.08]
Seff = 15.16 [2.78]
Teq = 503 [23] K
Rp = 2.05 [2.01] Re
a = 0.1348 [0.0132] AU
Ag = 470.40 [926.79] [0.51σ]
Teffp = 3623 [1783] K [1.75σ]

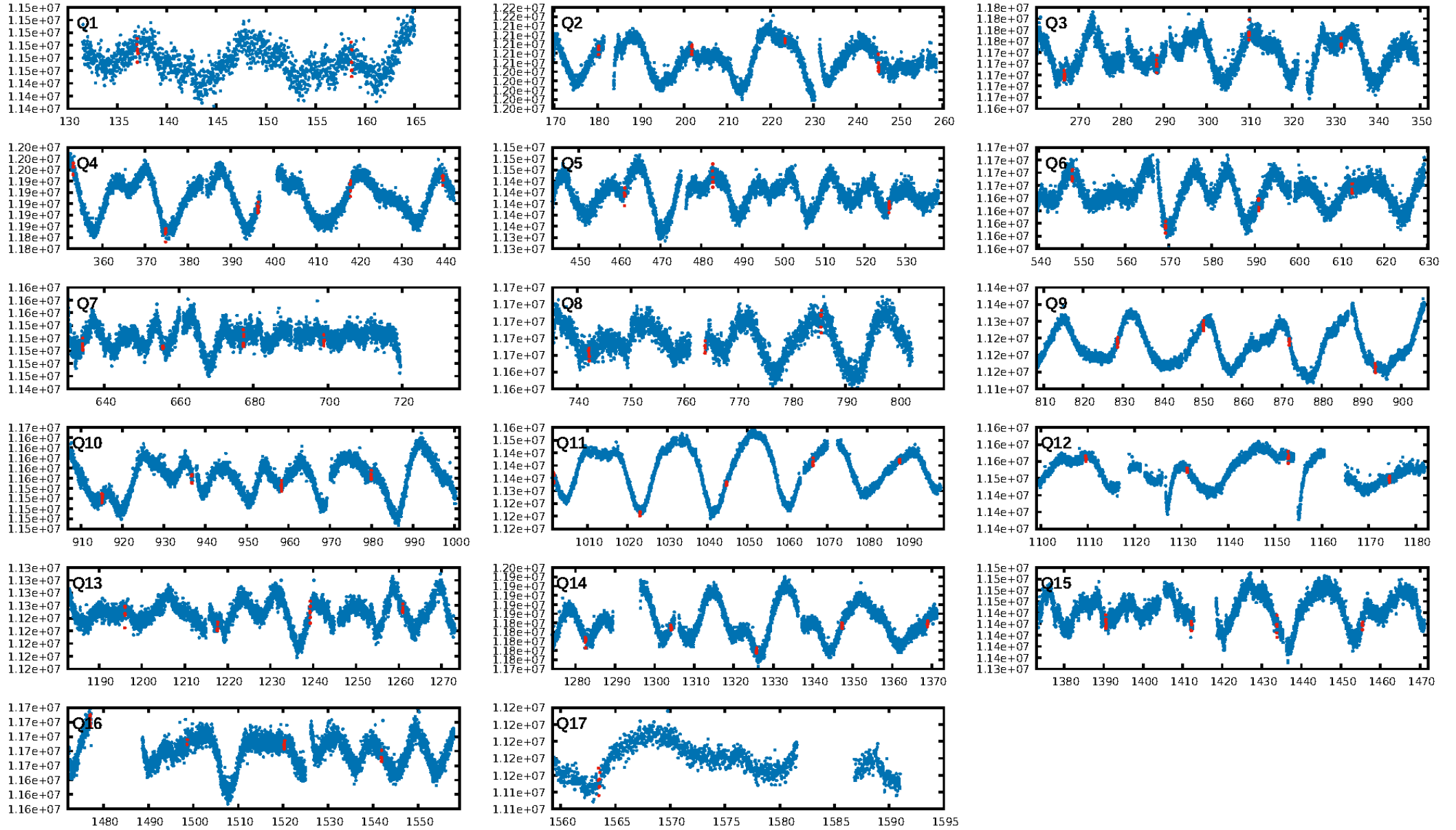
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 97.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.65e-32
RollingBand-fgt: 0.88 [52/59]
GhostDiagnostic-chr: 2.738
Centroid-sig: 12.3%
Centroid-so: 1.357 arcsec [1.25σ]
OotOffset-rm: 0.413 arcsec [0.81σ]
KicOffset-rm: 0.306 arcsec [0.46σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.56 [9/16]
DiffImageOverlap-fno: 1.00 [17/17]

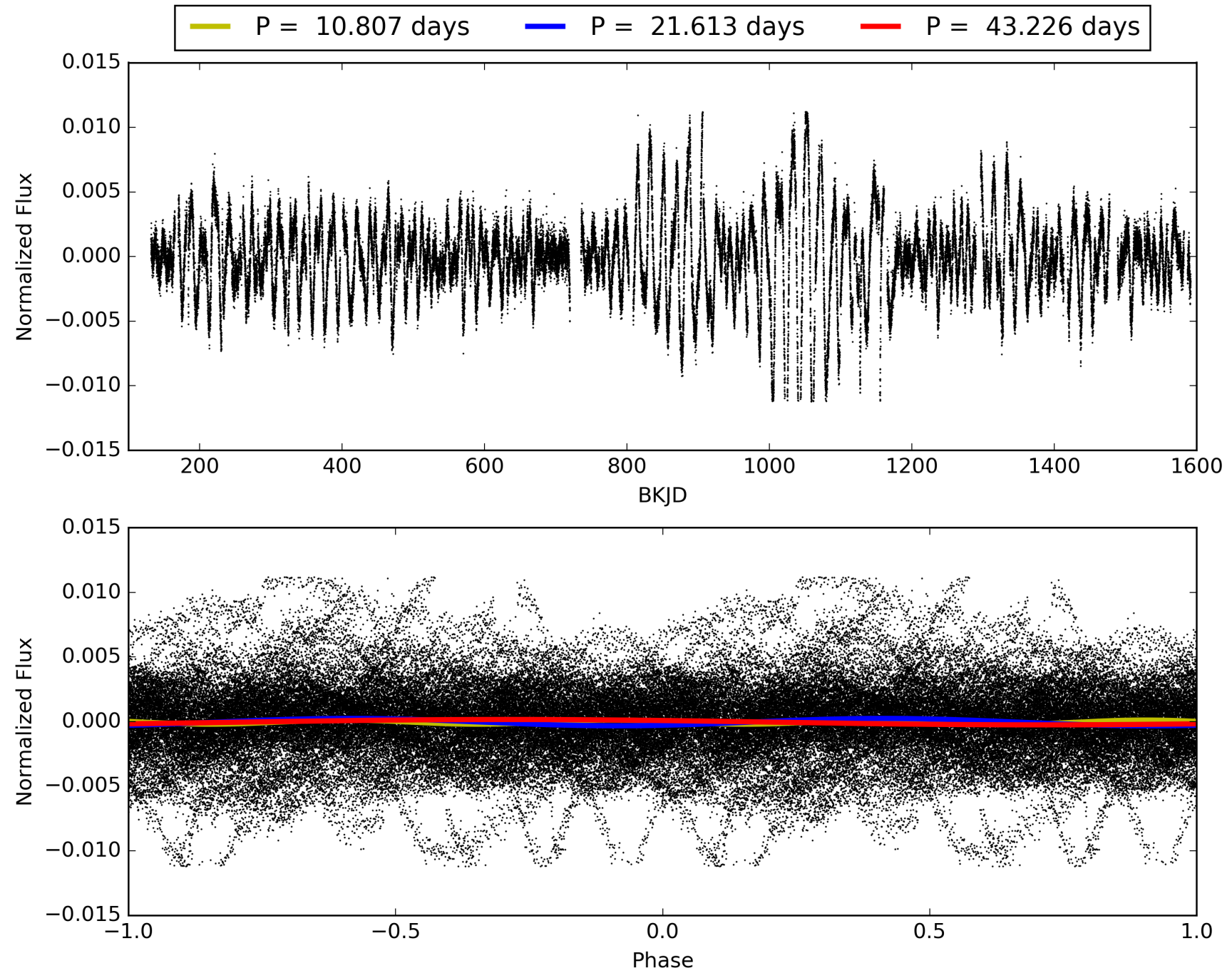
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 15:38:42 Z

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

TCE 006438099-01, PDC Light Curves

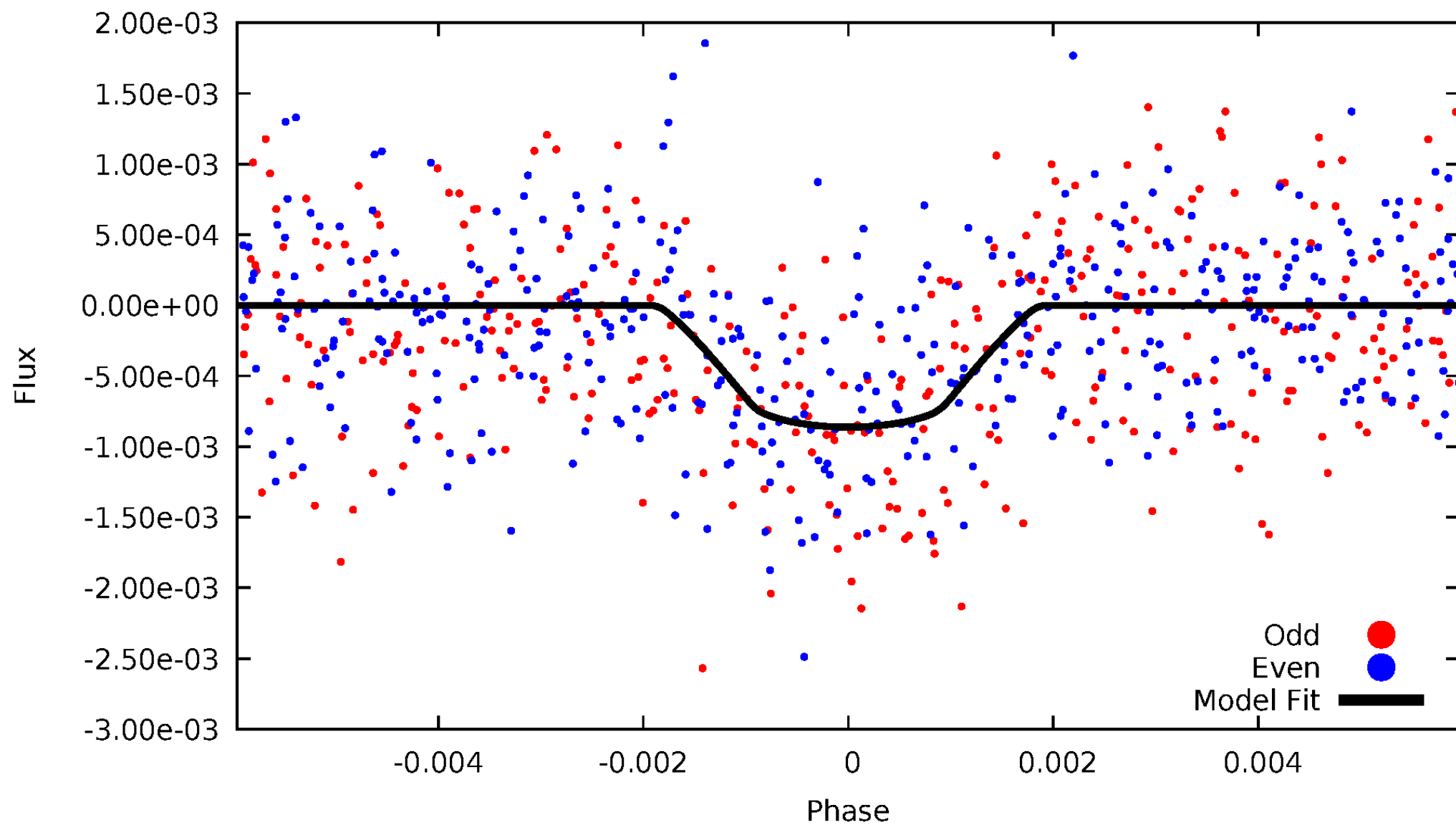


TCE 006438099-01



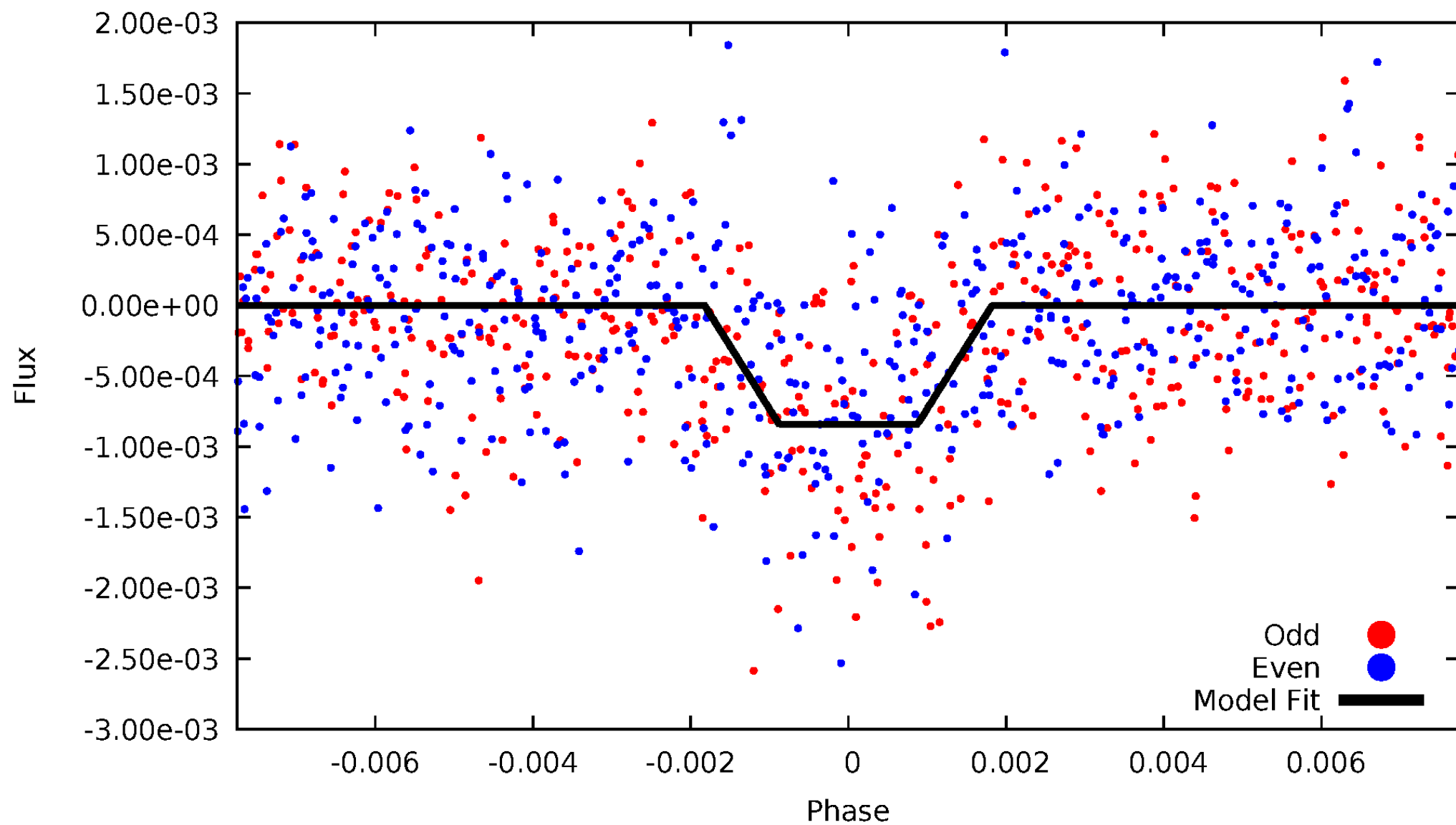
DV Odd/Even

TCE 006438099-01



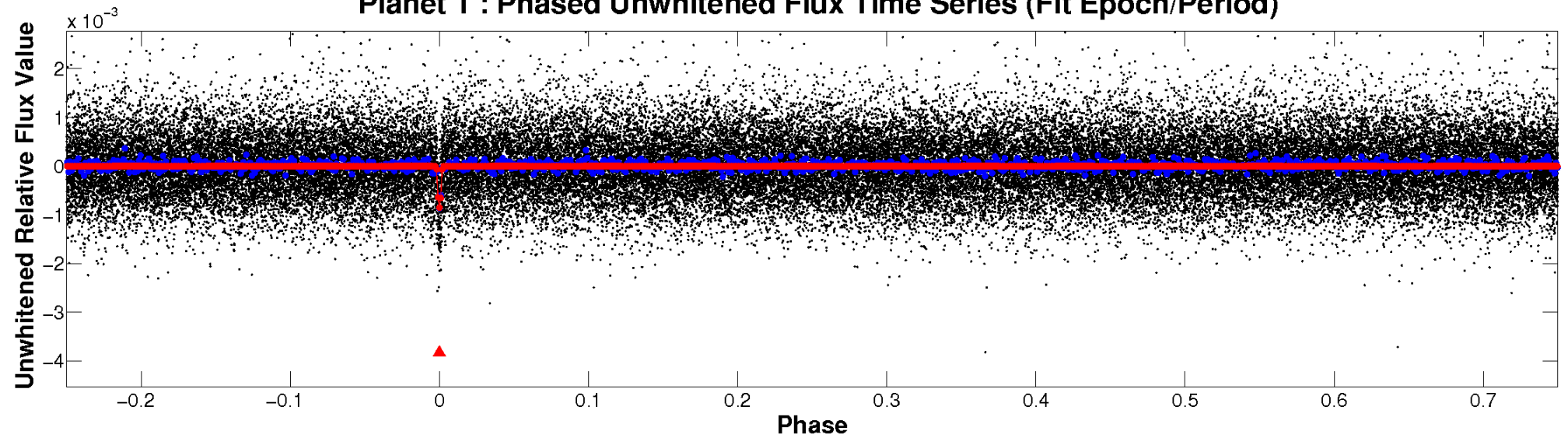
ALT Odd/Even

TCE 006438099-01

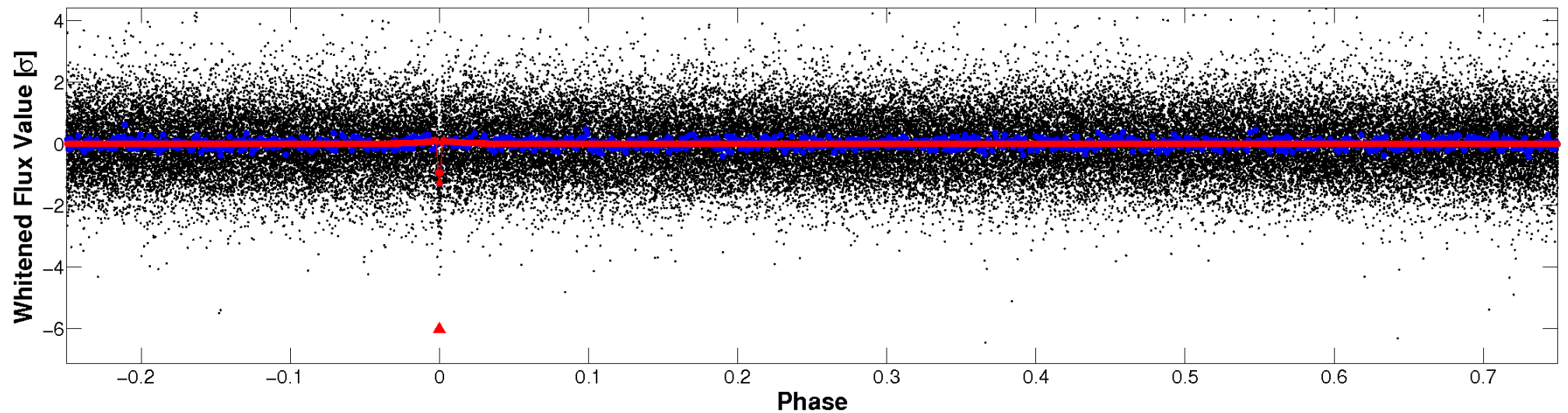


Non-Whitened Vs. Whitened Light Curve

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

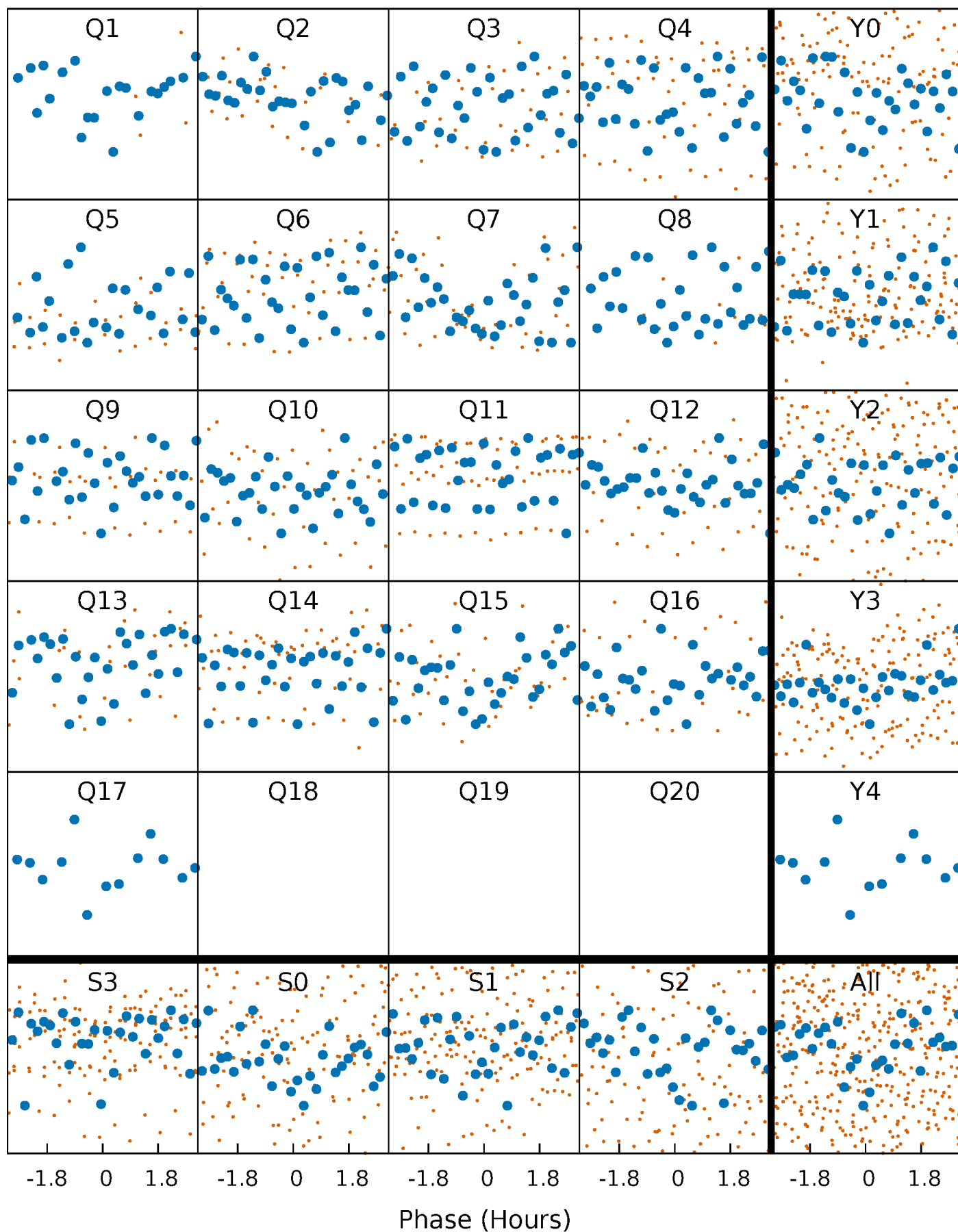


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



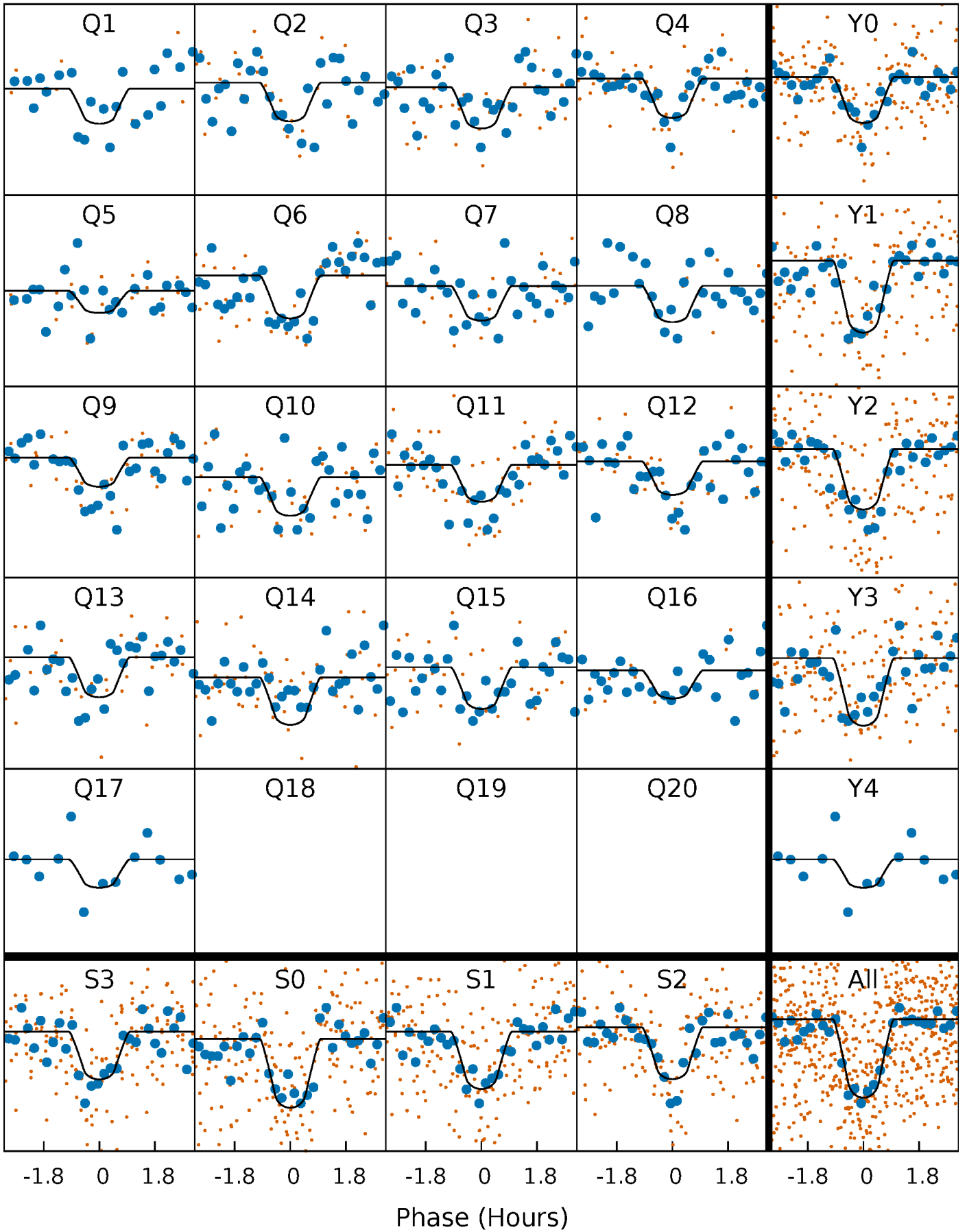
PDC Quarter-Phased Transit Curves

TCE 006438099-01 P= 21.613151 Days $T_0=137.025902$ (BKJD)



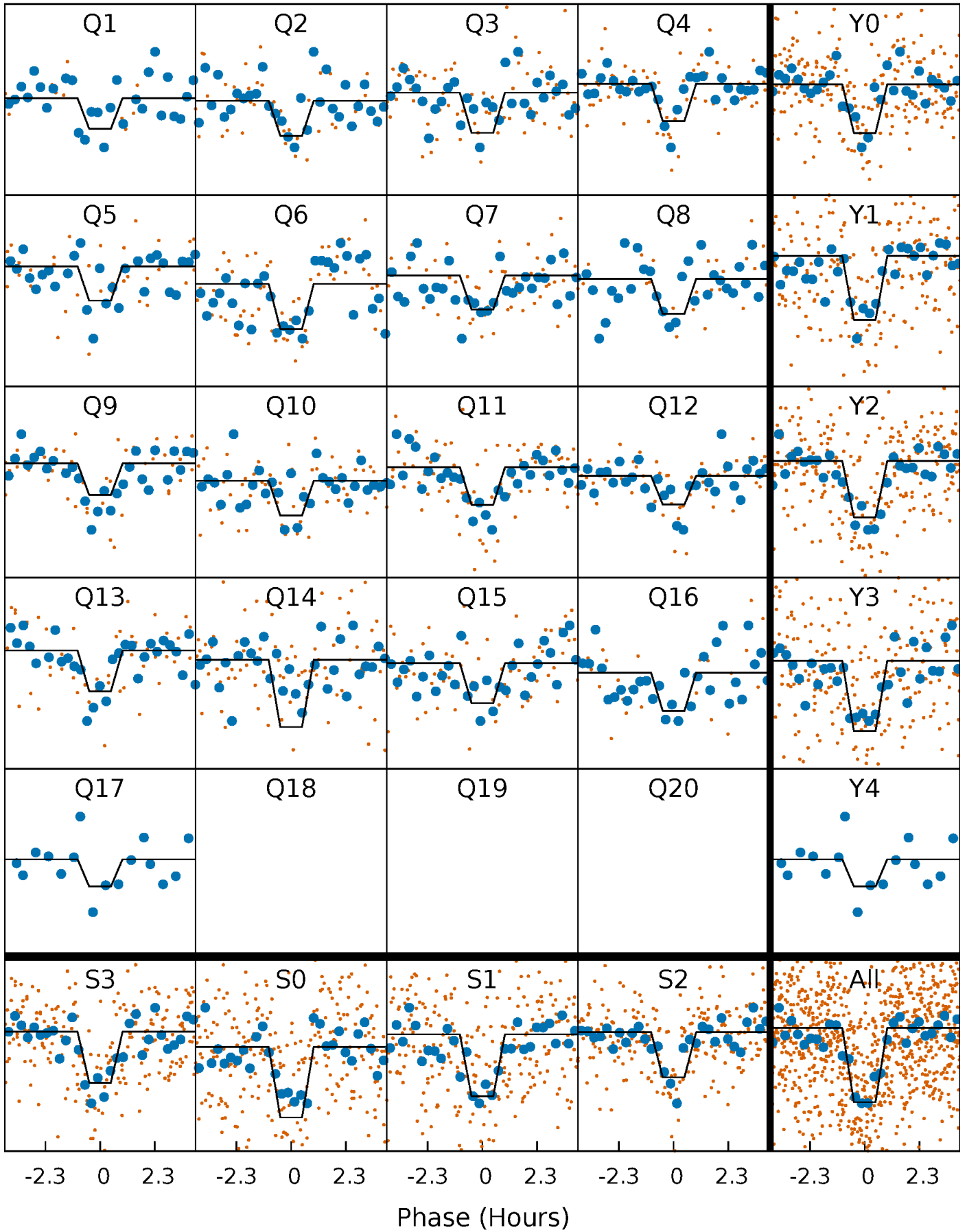
DV Quarter-Phased Transit Curves

TCE 006438099-01 P= 21.613151 Days $T_0=137.025902$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

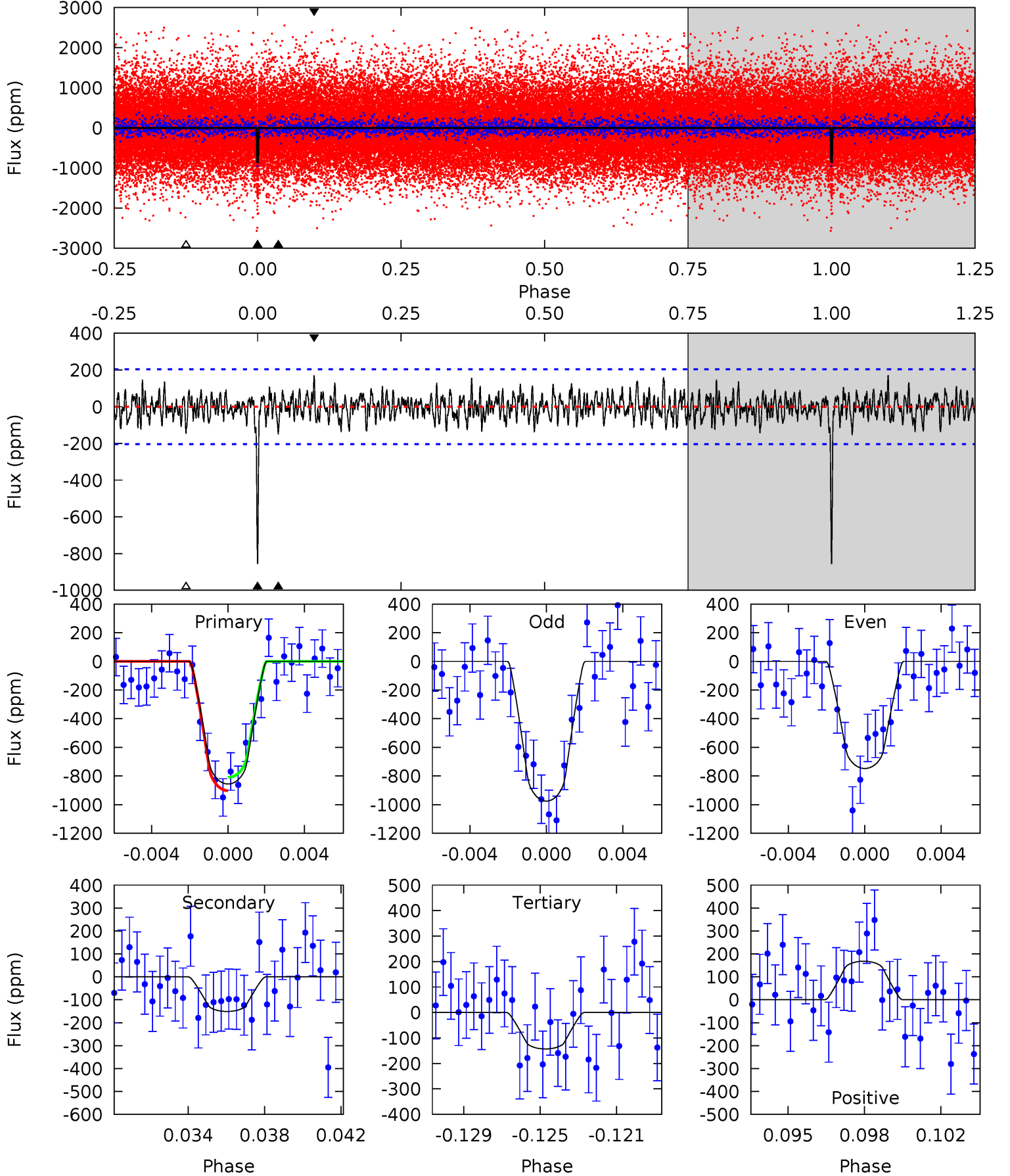
TCE 006438099-01 $P = 21.612924$ Days $T_0 = 137.032260$ (BKJD)



DV Model-Shift Uniqueness Test

006438099-01, $P = 21.613151$ Days, $E = 115.412751$ Days

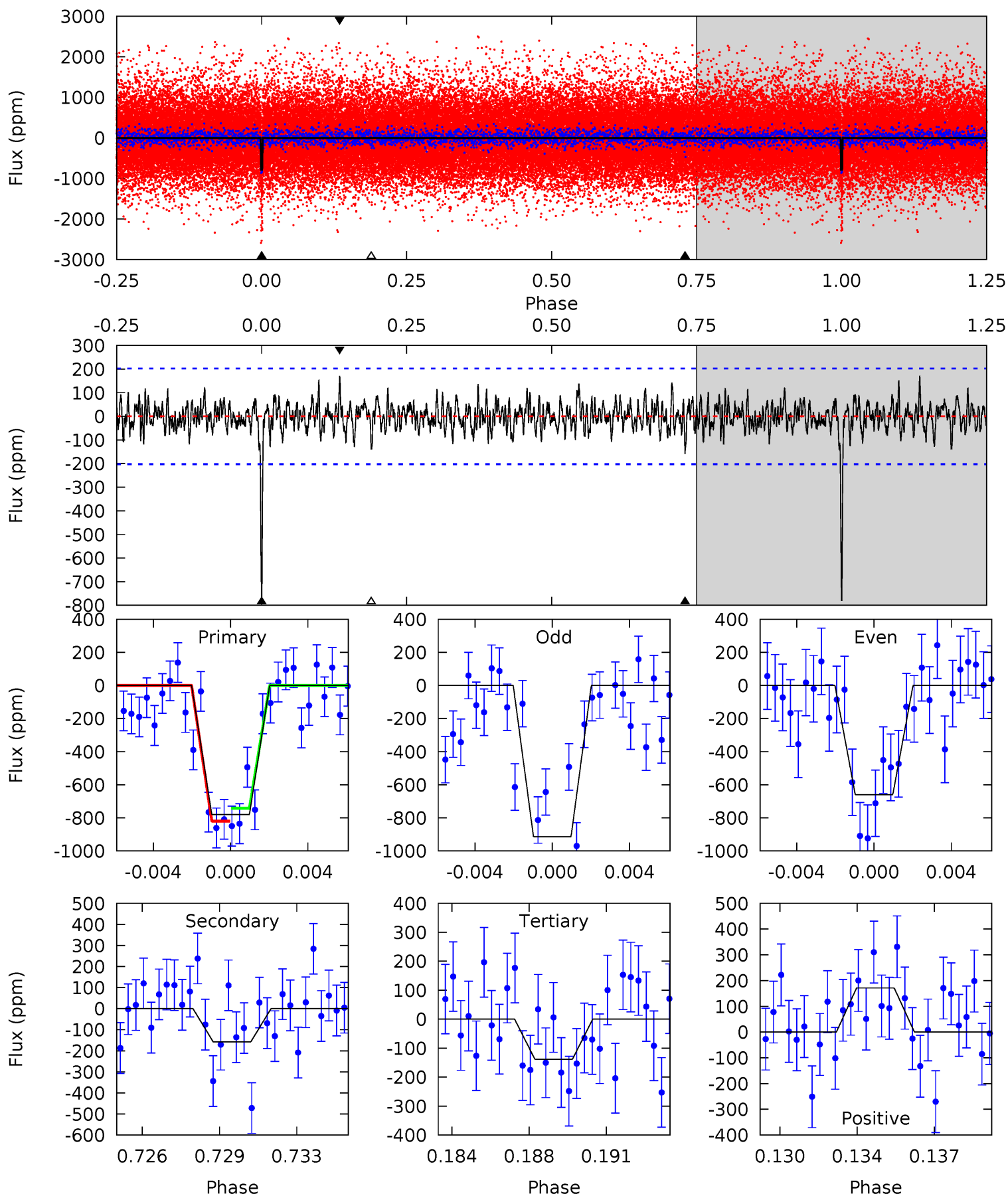
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.9	3.86	3.66	4.30	5.21	2.90	1.35	18.2	17.6	0.21	-0.43	2.91	0.98	0.16	1.19



Alt Model-Shift Uniqueness Test

006438099-01, P = 21.612924 Days, E = 115.419336 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
20.1	4.06	3.56	4.42	5.22	2.91	1.21	16.6	15.7	0.50	-0.35	3.28	1.06	0.18	1.01



Stellar Parameters For KIC 006438099

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5267^{+156}_{-156}	$4.681^{+0.025}_{-0.075}$	$-0.760^{+0.300}_{-0.300}$	$0.632^{+0.075}_{-0.034}$	$0.701^{+0.053}_{-0.059}$	$3.912^{+0.486}_{-0.935}$
	+3%/-3%	+1%/-2%	+39%/-39%	+12%/-5%	+8%/-8%	+12%/-24%
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 006438099-01 / KOI 2976.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-151 ± 39	$2.65^{+1.68}_{-1.60}$	710^{+28}_{-25}	3482^{+1420}_{-529}	213^{+1168}_{-139}
Alt.	-158 ± 39	$2.45^{+1.80}_{-1.55}$	709^{+26}_{-24}	3590^{+1708}_{-593}	262^{+1746}_{-182}

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

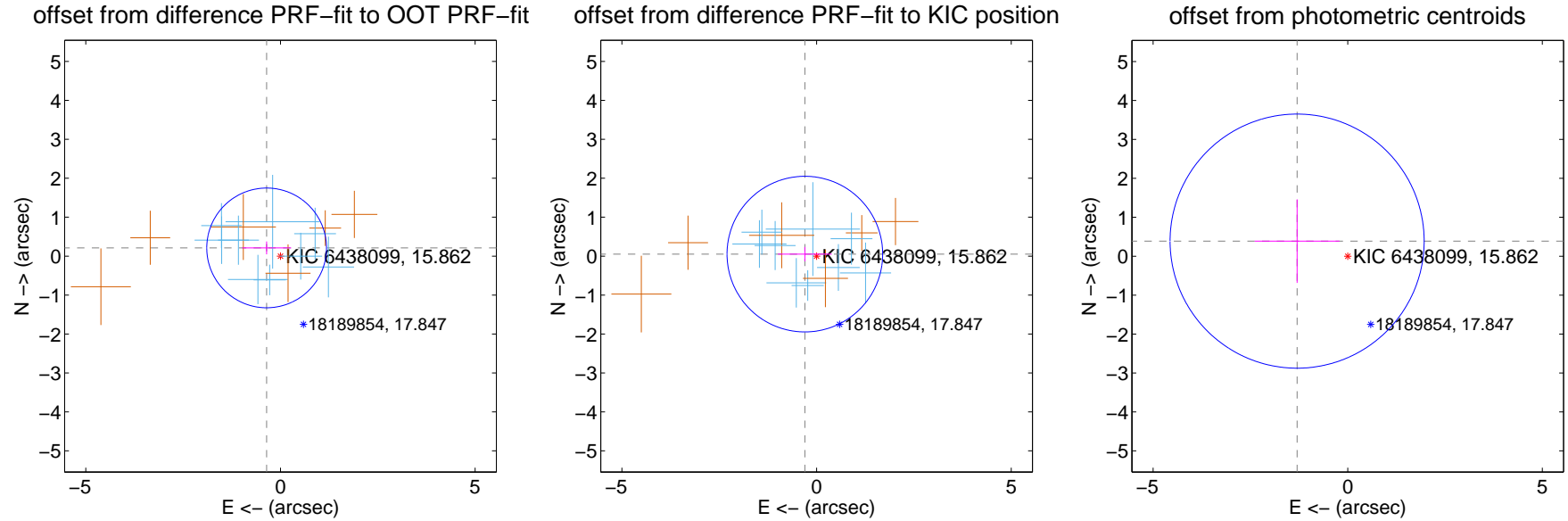
DV Centroid Data

Supplemental centroid analysis for 006438099-01. Kepler magnitude: 15.86. Transit SNR 14.49

There are 9 quarters with good PRF difference image offsets

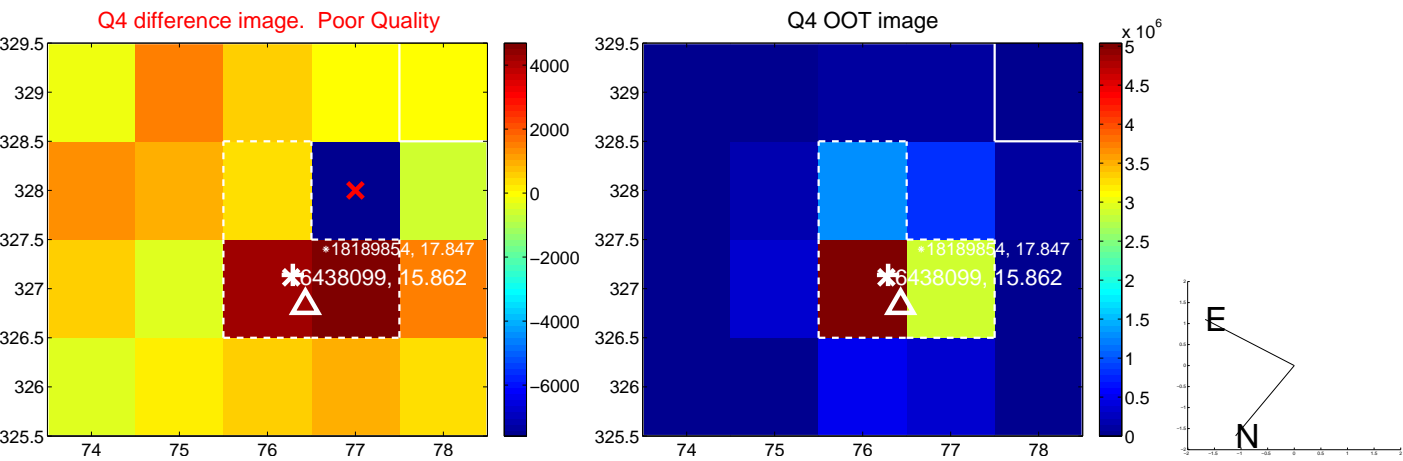
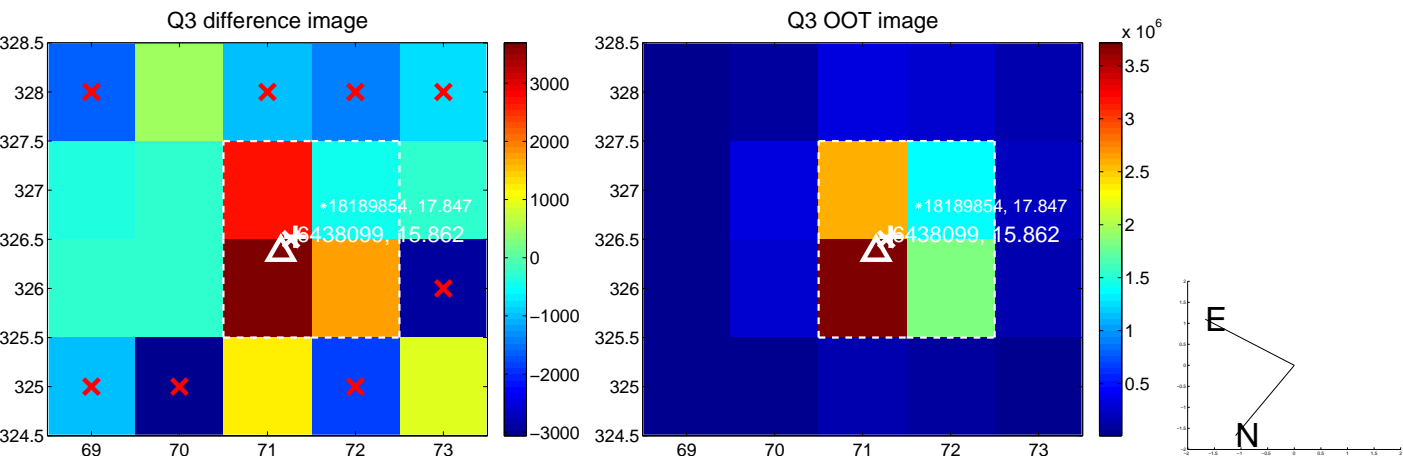
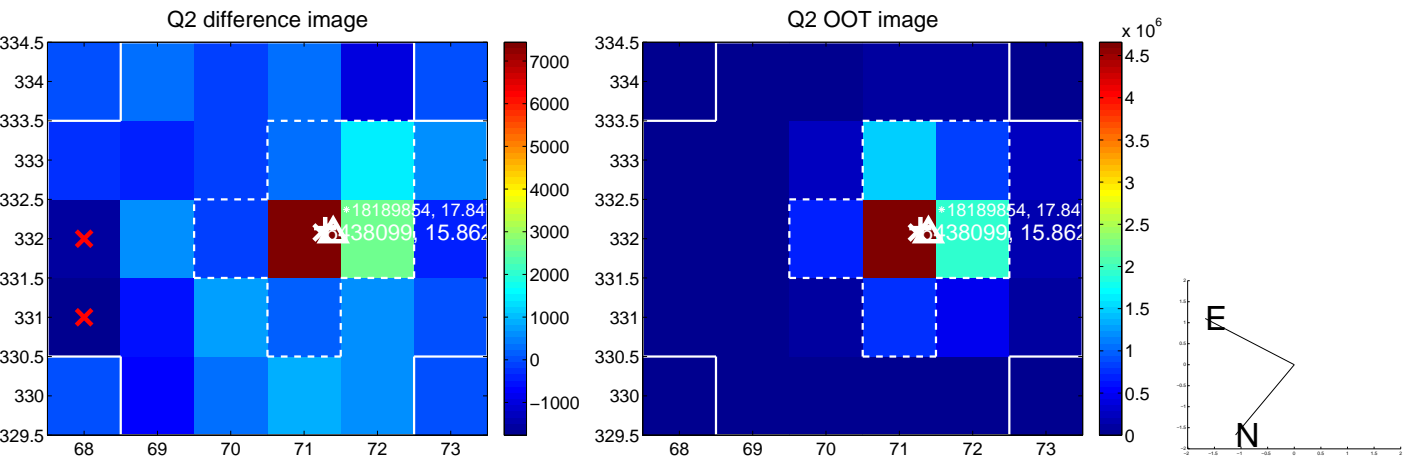
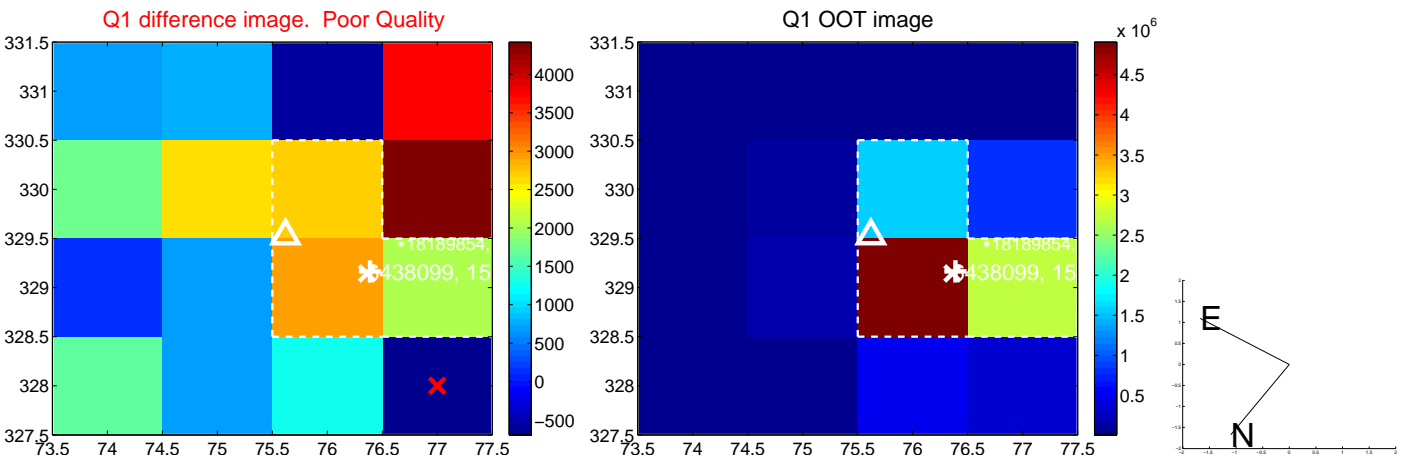
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.413 ± 0.513	0.81	0.355 ± 0.630	0.211 ± 0.164
PRF-fit source offset from KIC position	0.306 ± 0.666	0.46	0.301 ± 0.692	0.052 ± 0.184
photometric centroid source offset	1.36 ± 1.09	1.25	1.30 ± 1.09	0.39 ± 1.07

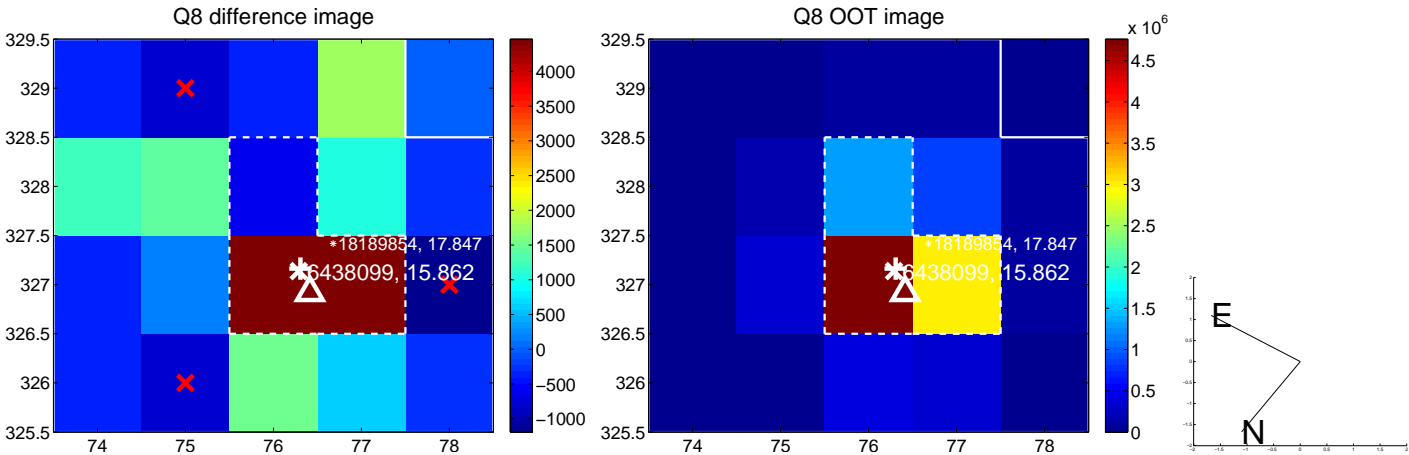
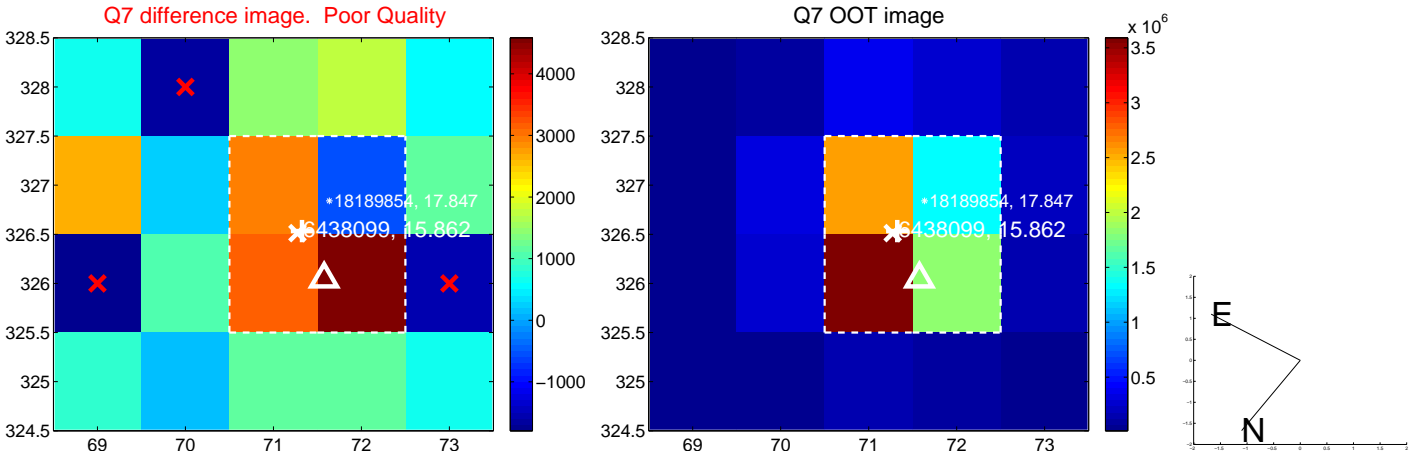
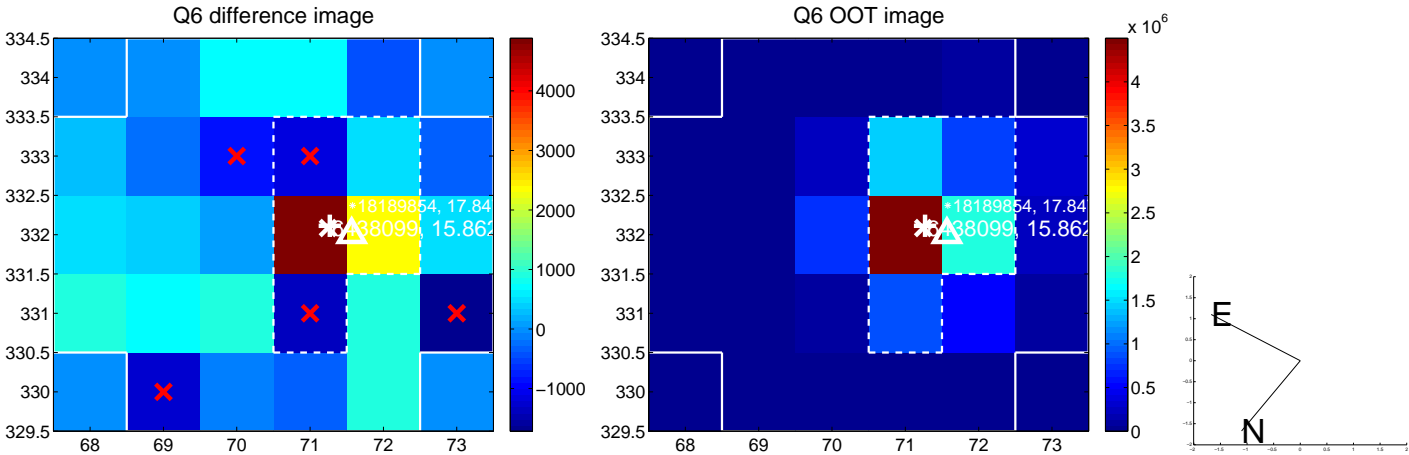
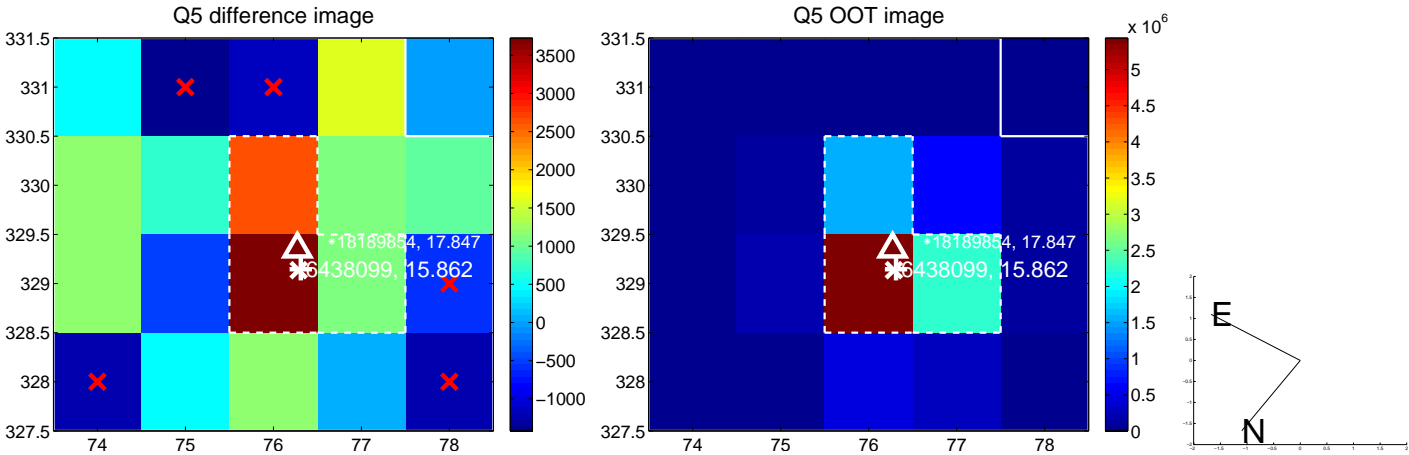


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

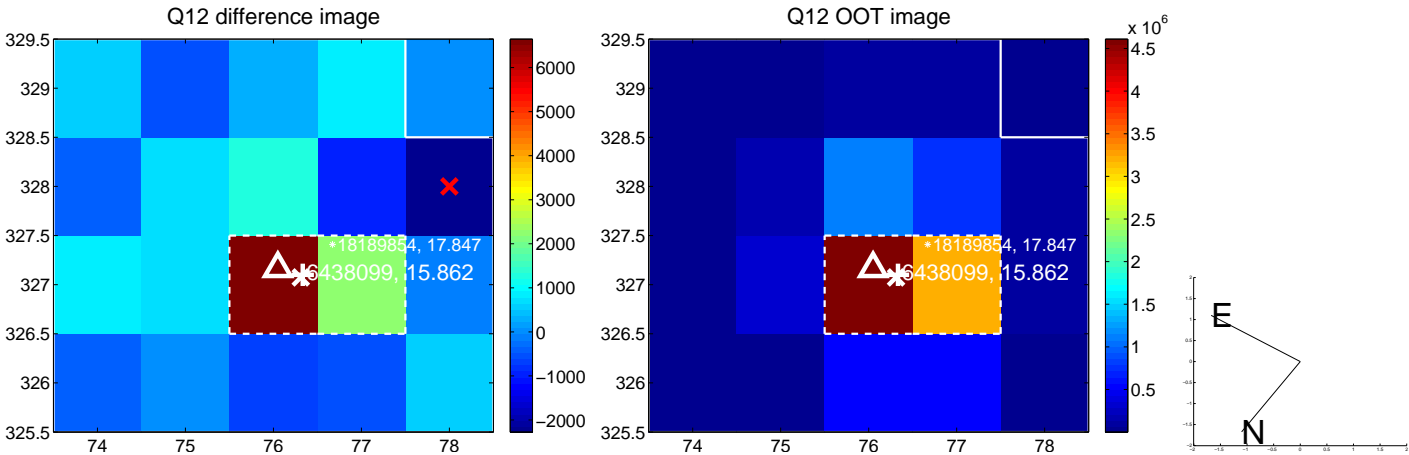
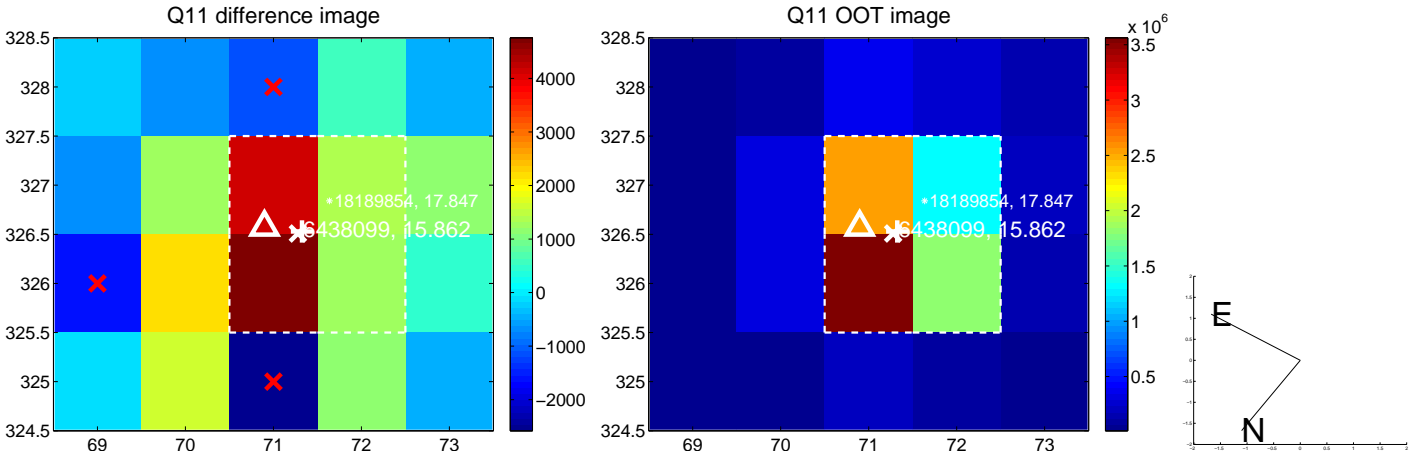
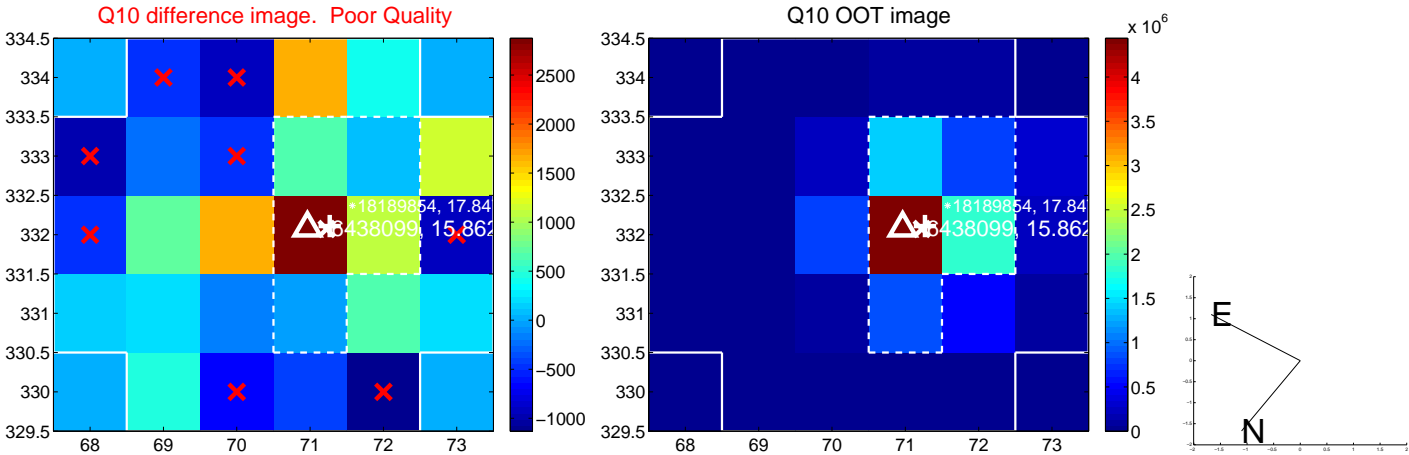
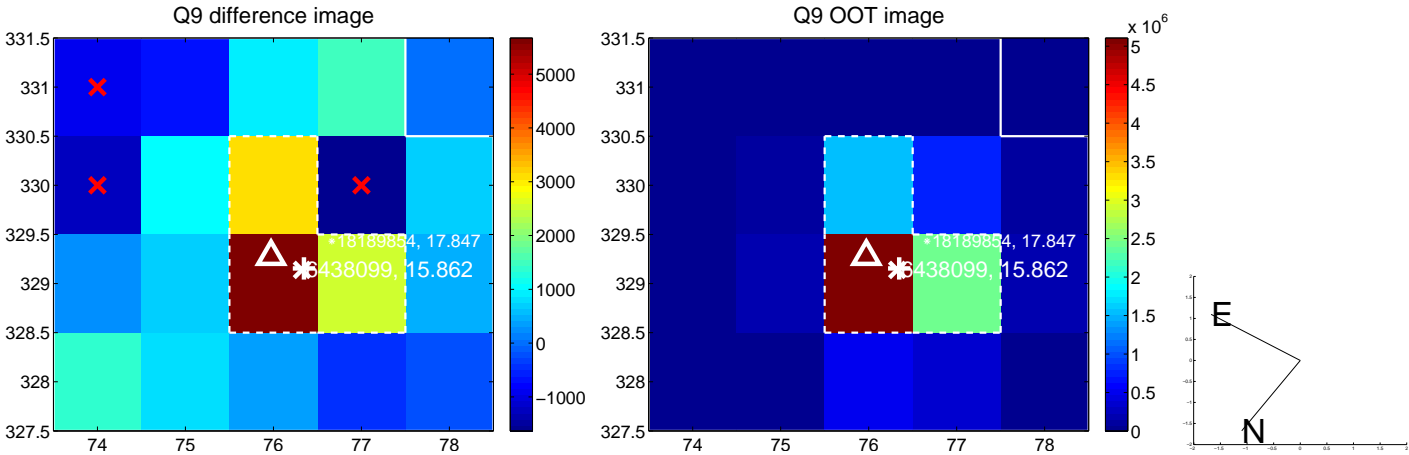
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



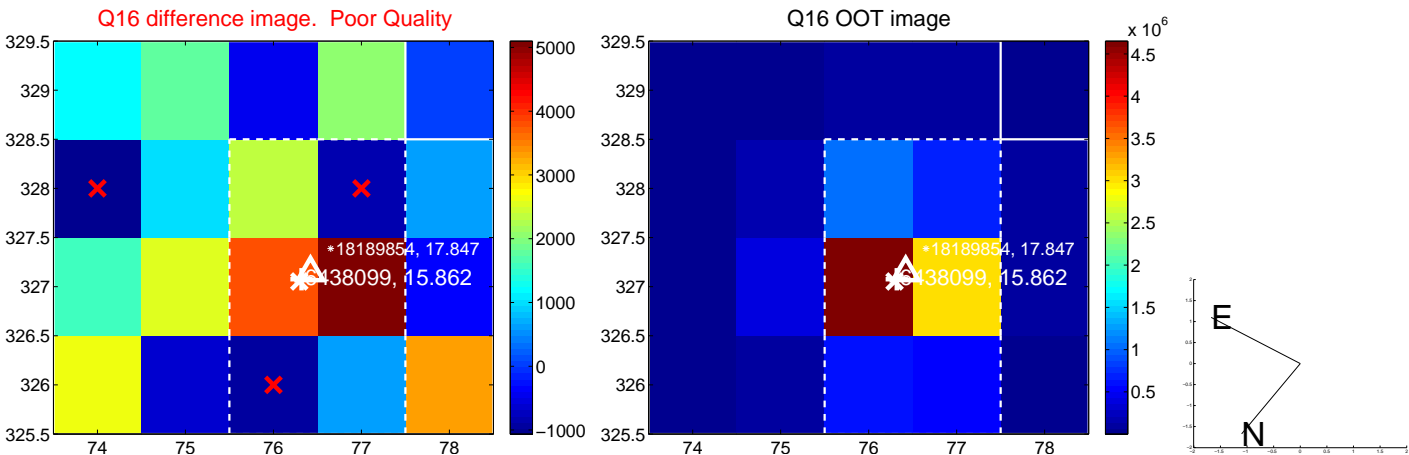
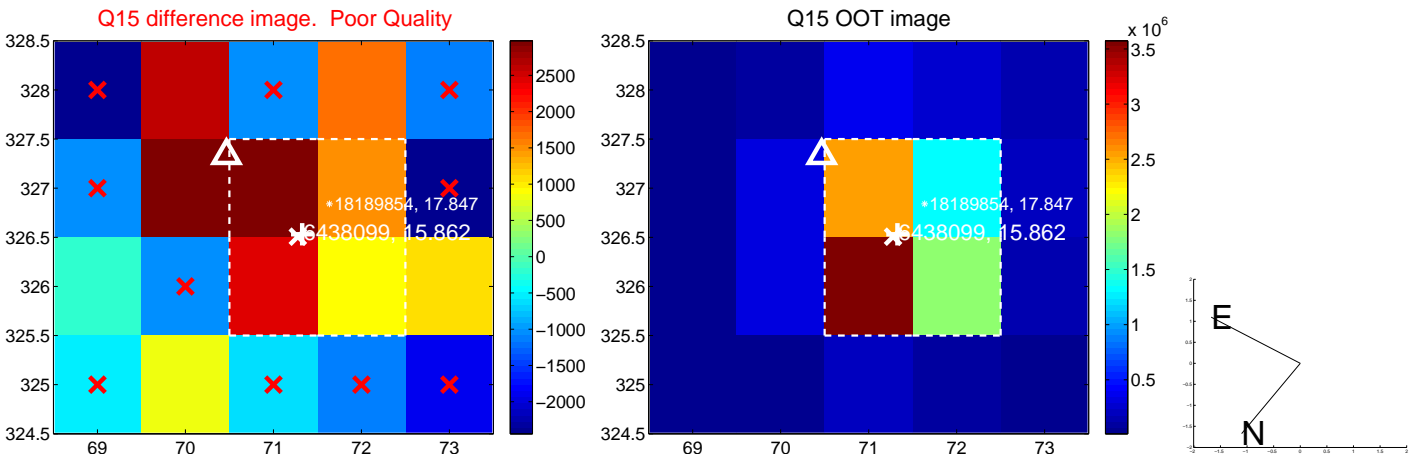
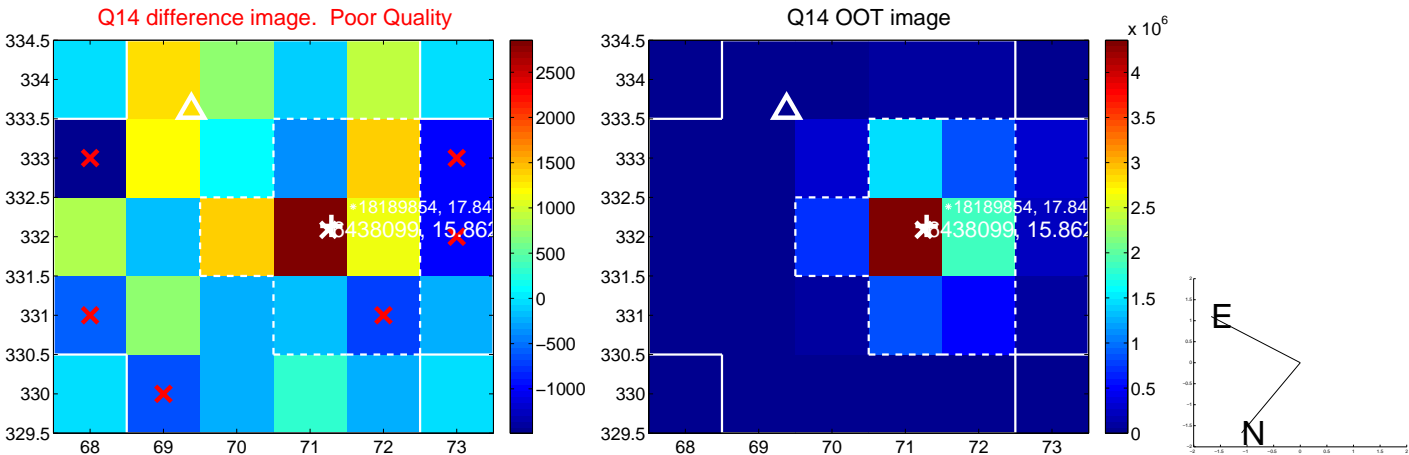
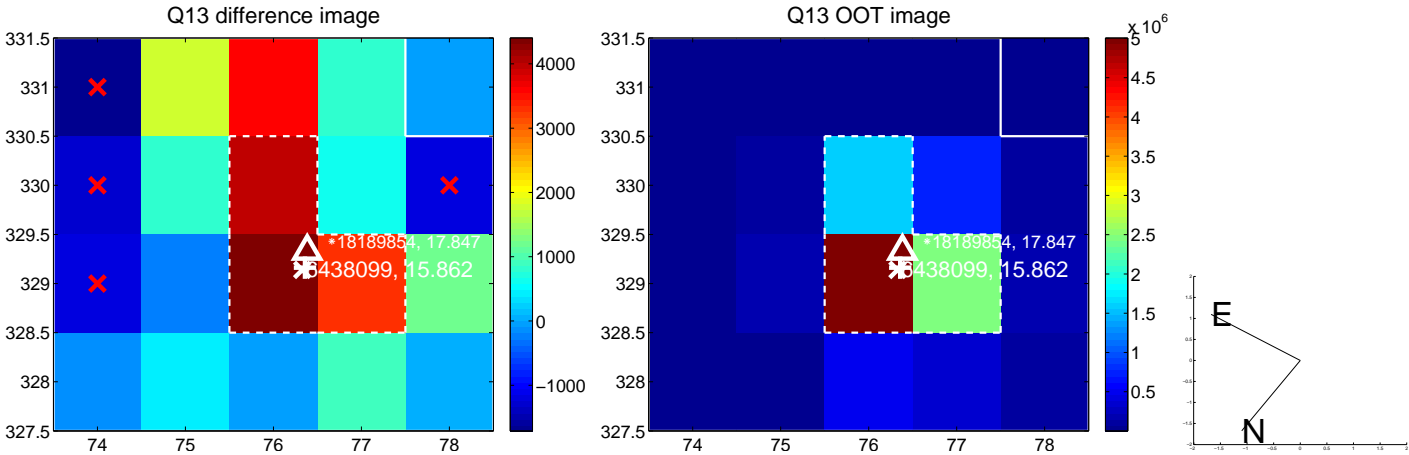
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



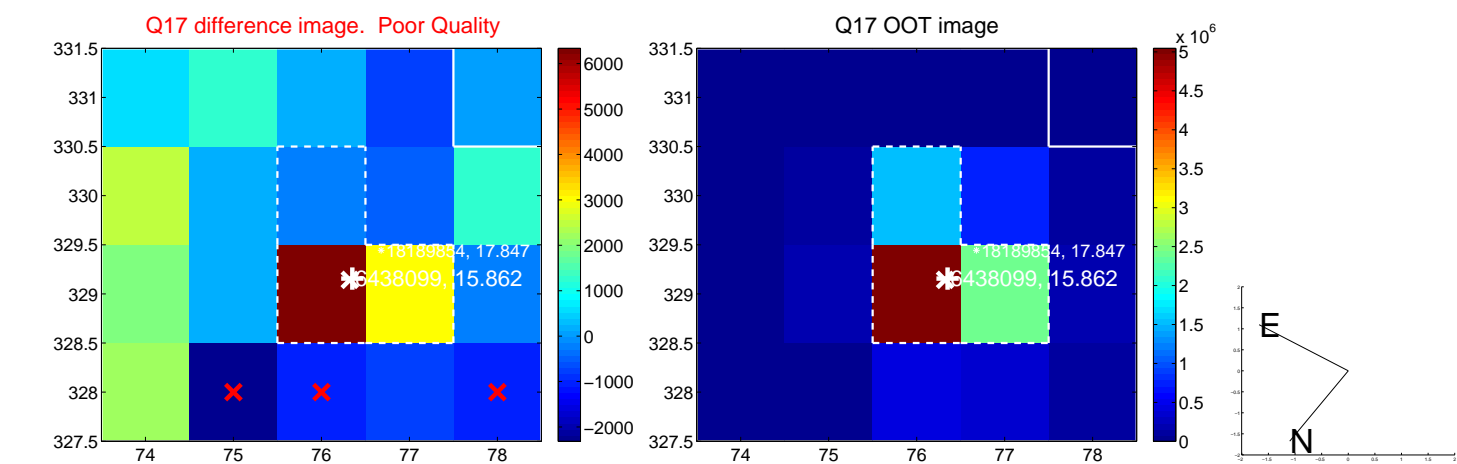
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



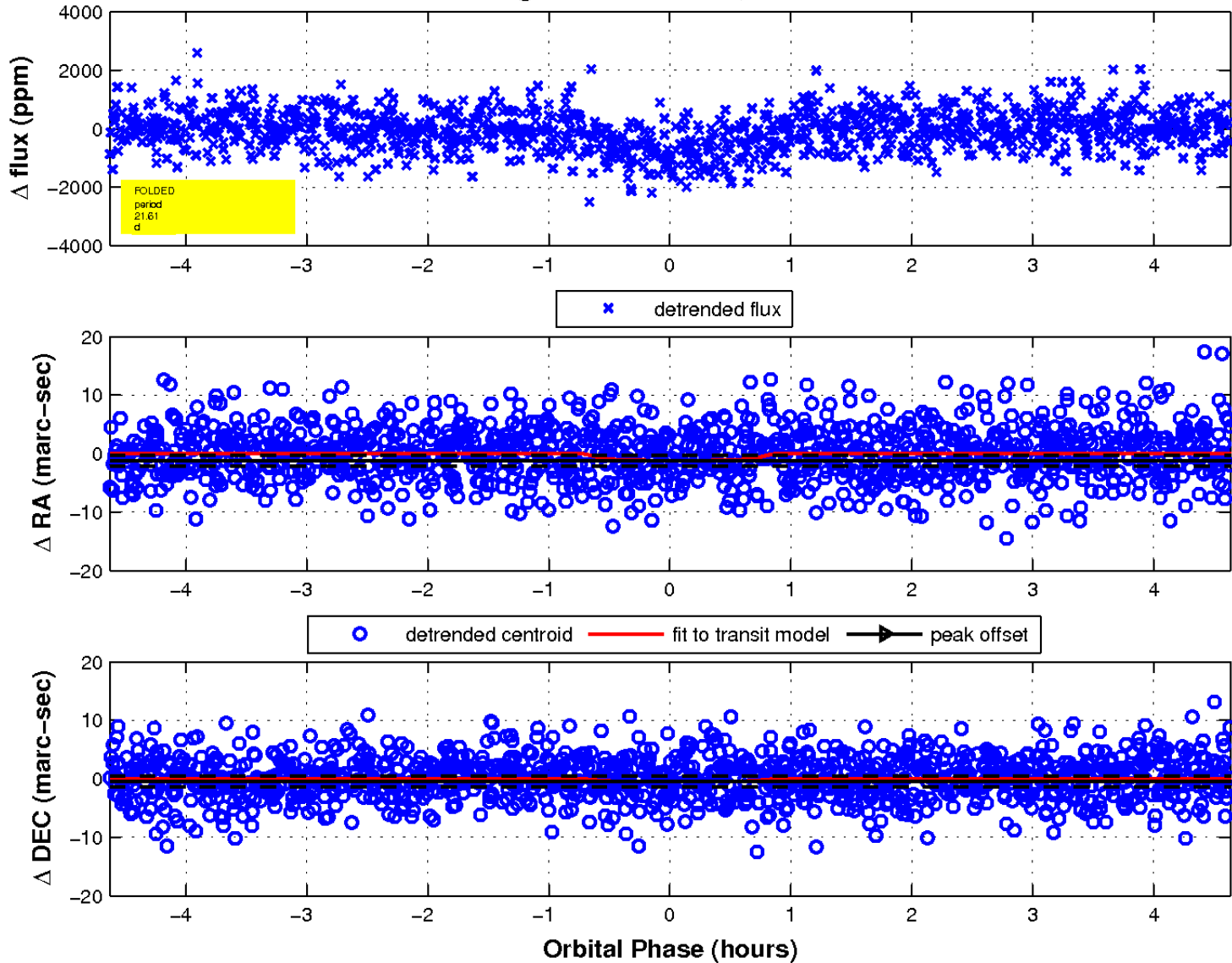
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

