

KIC 009640439

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})
009640439-01	OBS	2912.01	0.873221	132.235656	203.2	0.904	16.8	21.3	1.11	6341	1.88	5079.67

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009640439-01	OBS	FP	0.05	0	0	1	0	CENT_UNRESOLVED_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.

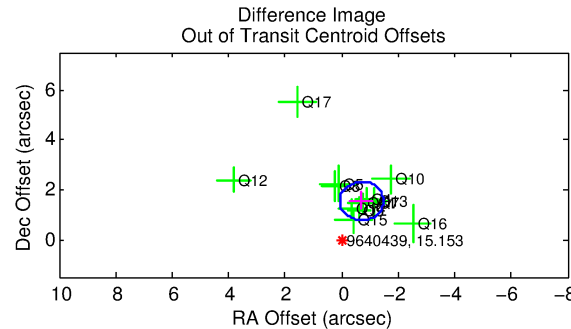
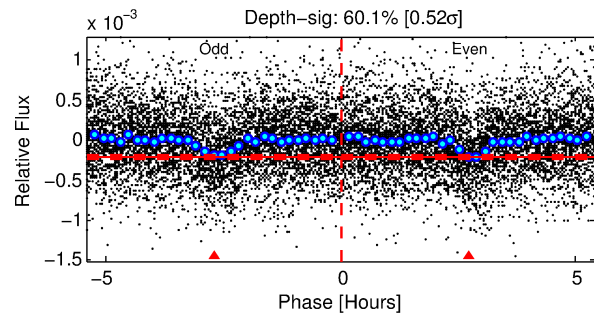
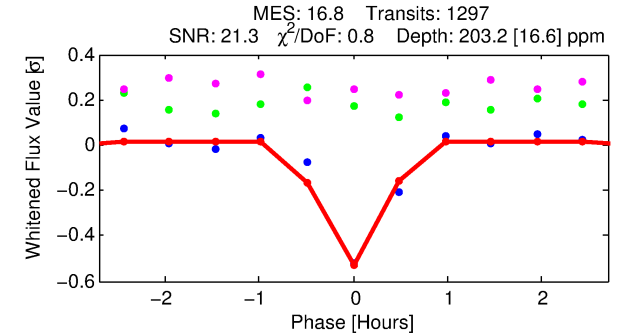
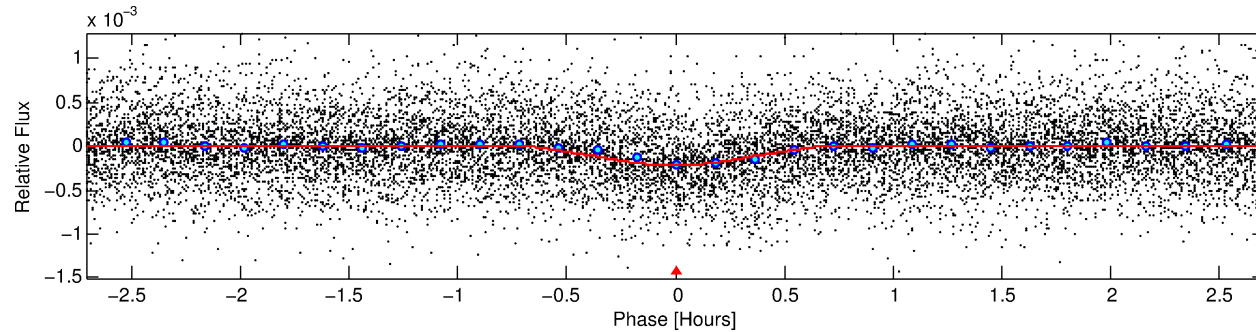
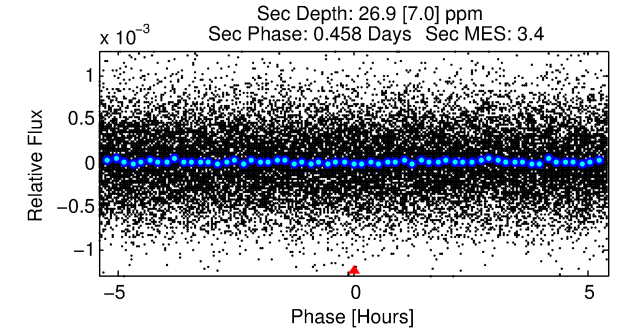
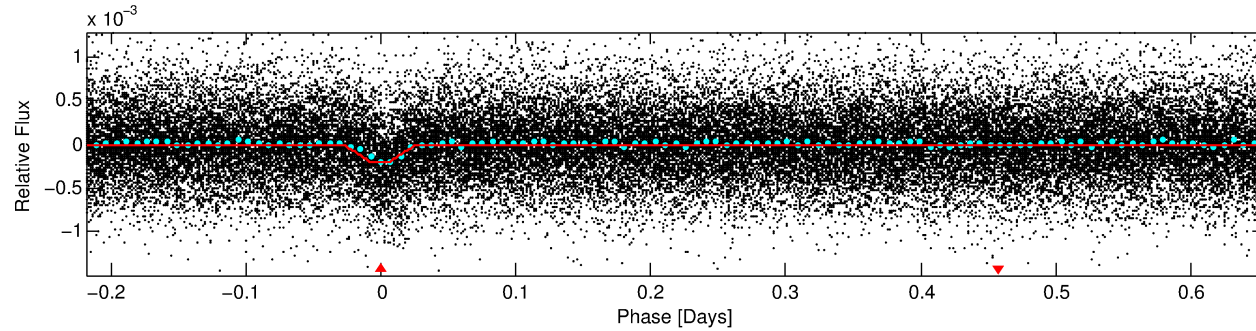
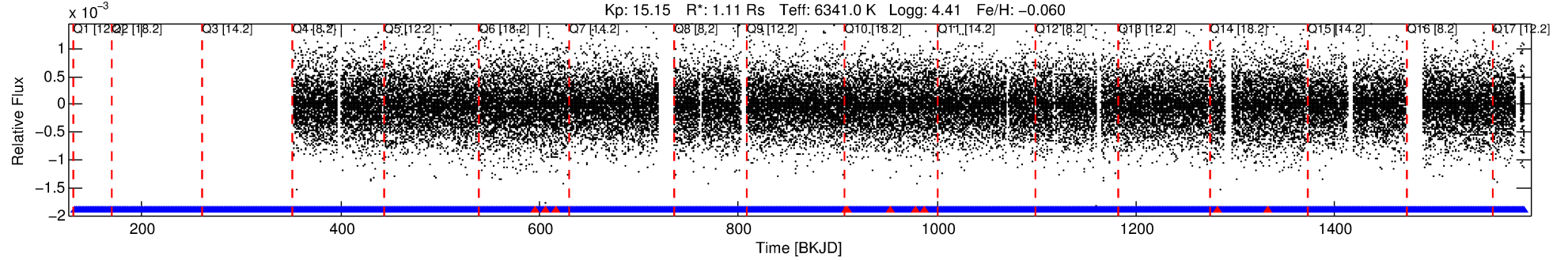
Ephemeris Match Information For 009640439-01

No Significant Match Found

DV One-Page Summary

KIC: 9640439 Candidate: 1 of 1 Period: 0.873 d

KOI: K02912.01 Corr: 0.881



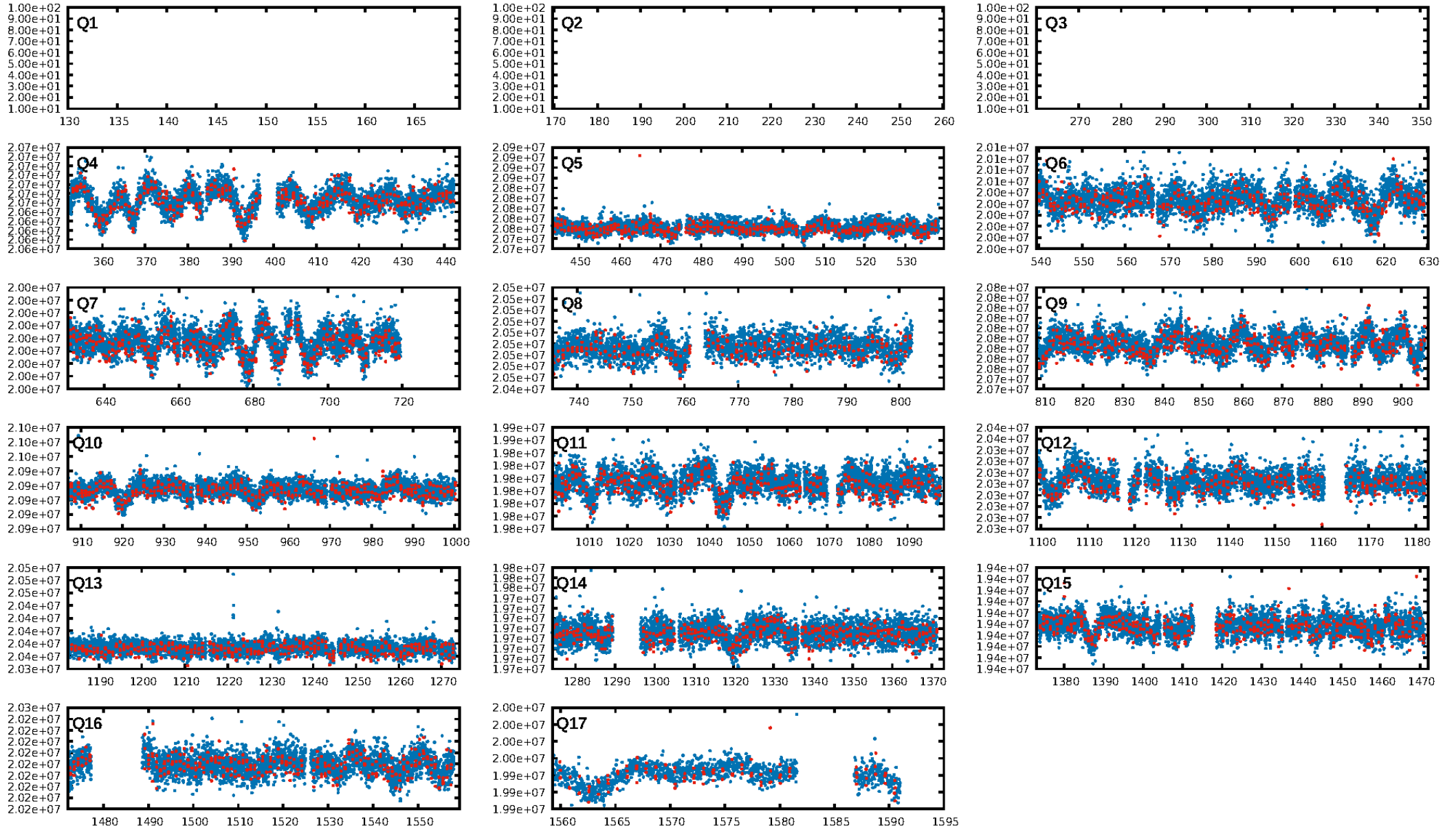
DV Fit Results:

Period = 0.87322 [0.00000] d
Epoch = 132.2357 [0.0007] BKJD
Rp/R* = 0.0155 [0.0058]
a/R* = 3.57 [6.72]
b = 0.90 [0.43]
Seff = 5079.67 [2253.46]
Teq = 2153 [239] K
Rp = 1.88 [0.96] Re
a = 0.0188 [0.0054] AU
Ag = 1.47 [1.32] [0.36σ]
Teffp = 3668 [740] K [1.95σ]

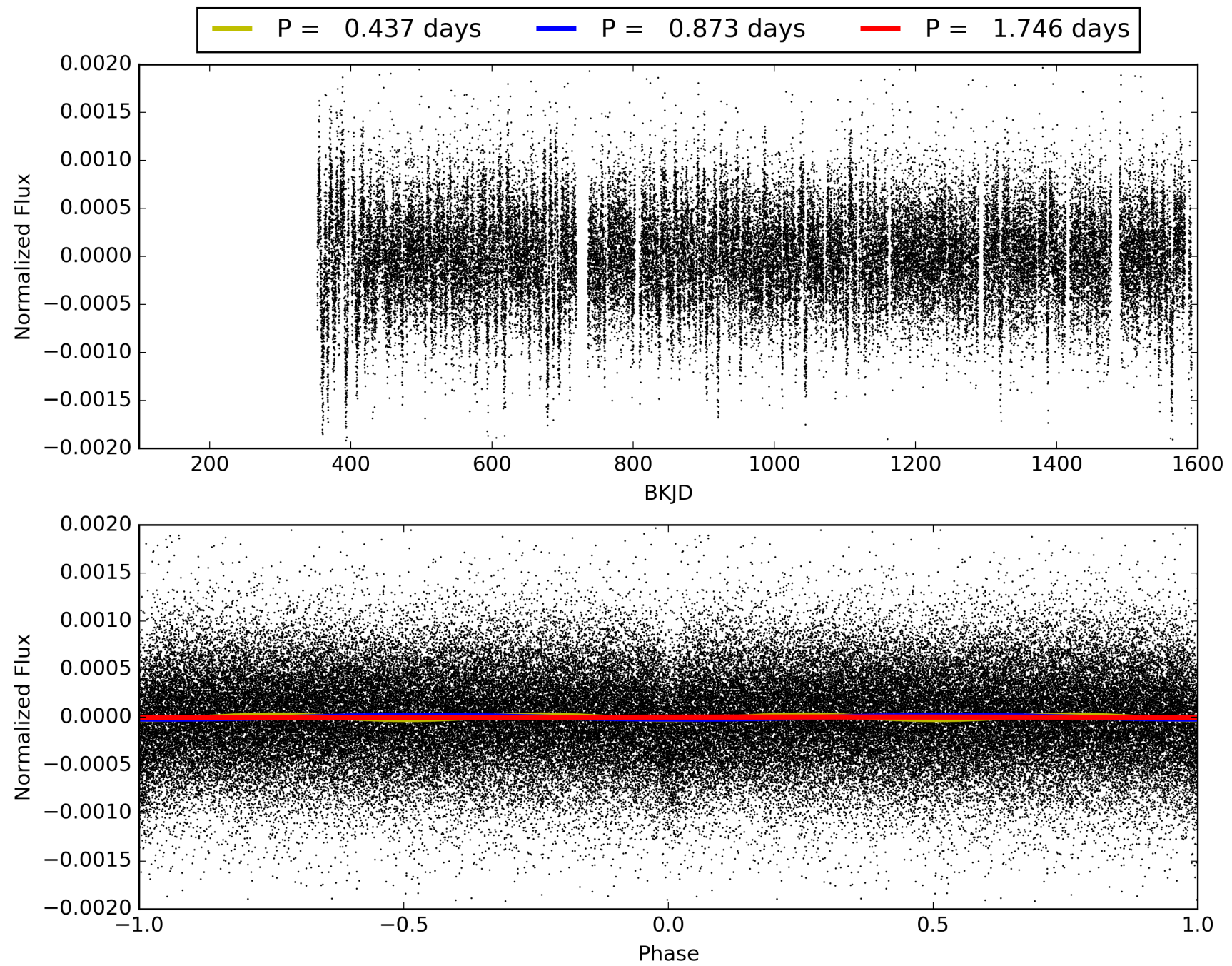
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 3.76e-62
RollingBand-fgt: 0.99 [1257/1267]
GhostDiagnostic-chr: 10.59
Centroid-sig: 0.0%
Centroid-so: 1.546 arcsec [2.34σ]
OotOffset-rm: 1.695 arcsec [6.61σ]
KicOffset-rm: 1.578 arcsec [5.96σ]
OotOffset-st: 2/3/4/4 [13]
KicOffset-st: 2/3/4/4 [13]
DiffImageQuality-fgm: 0.85 [11/13]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009640439-01, PDC Light Curves

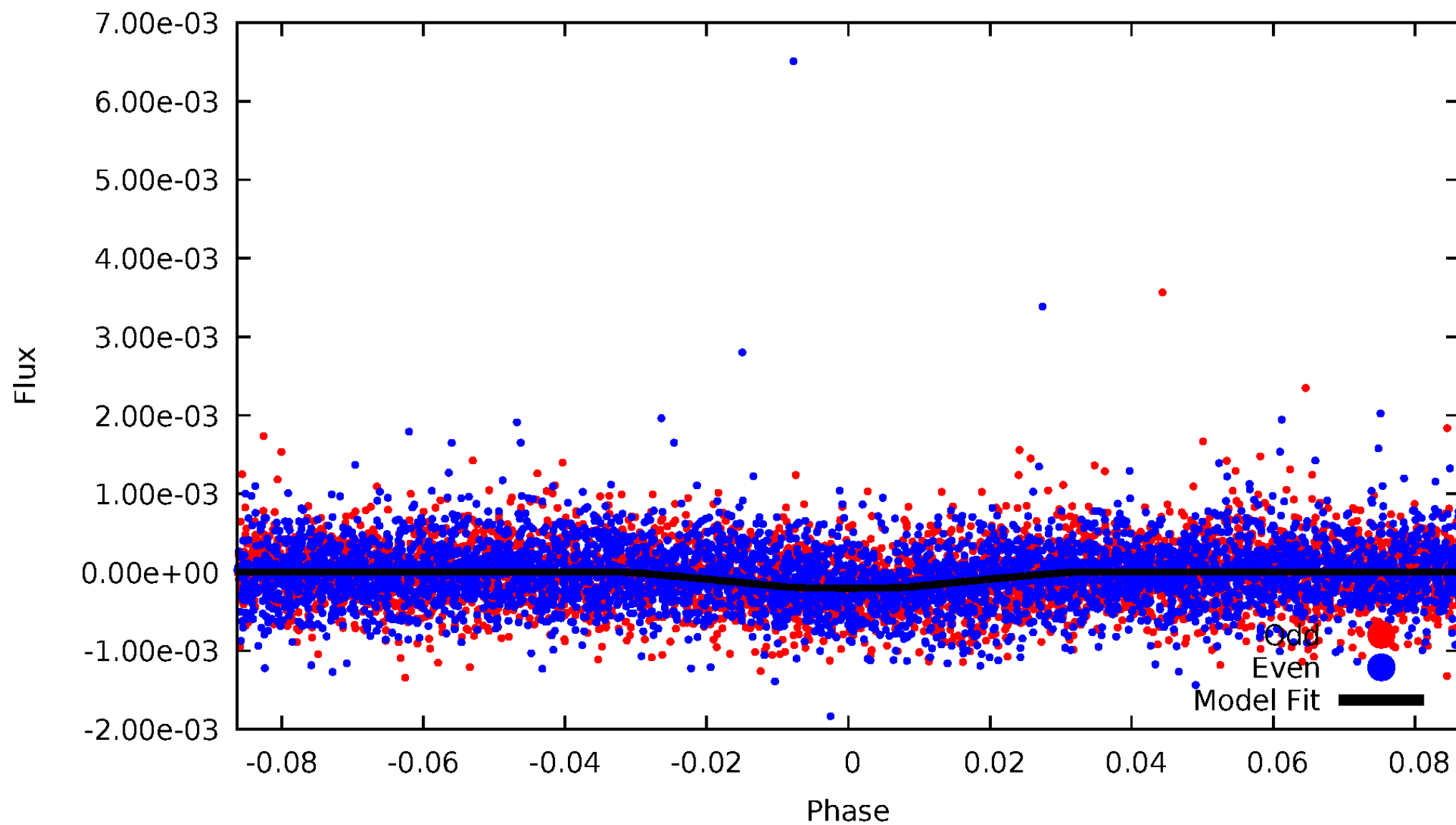


TCE 009640439-01



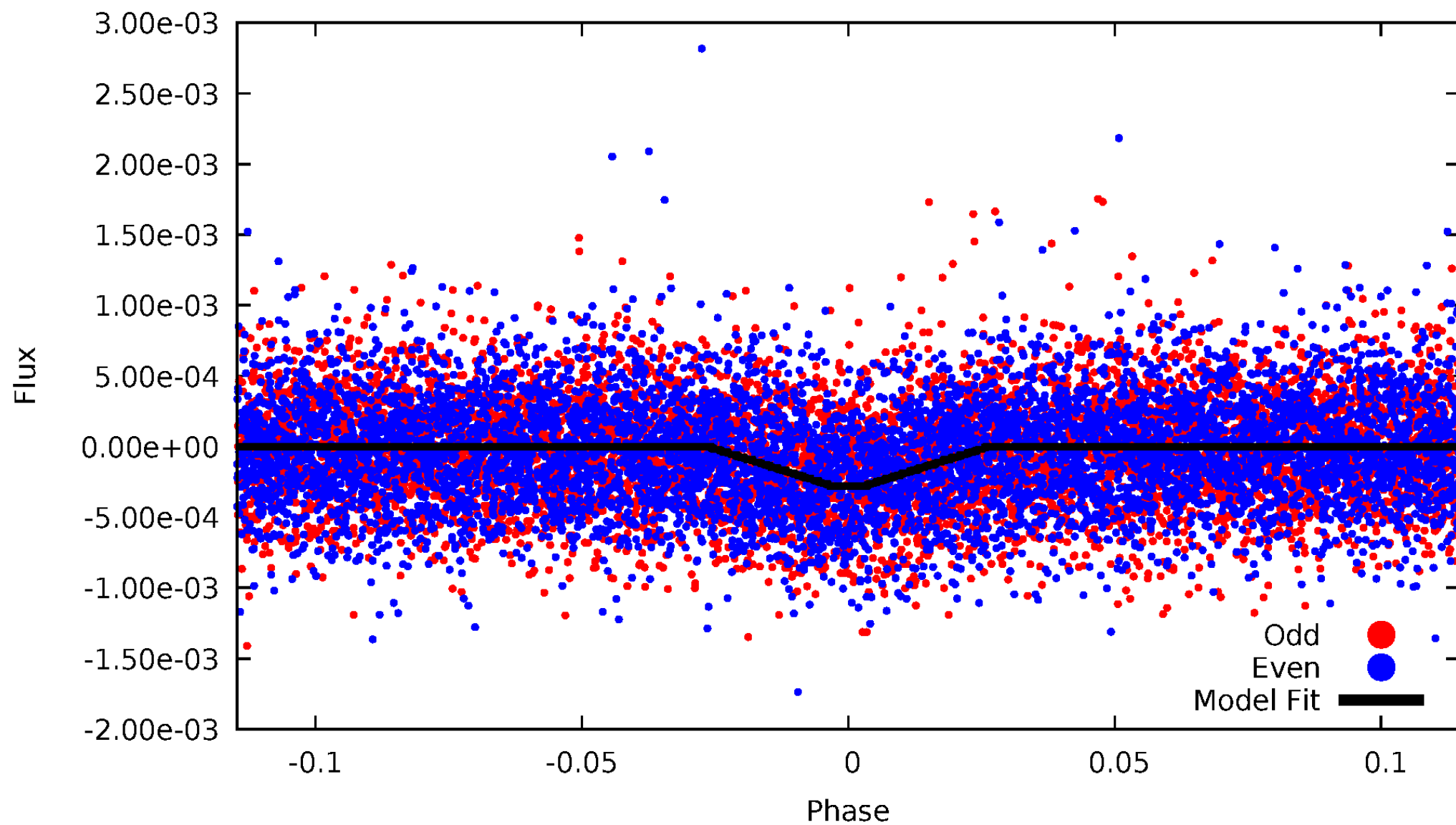
DV Odd/Even

TCE 009640439-01



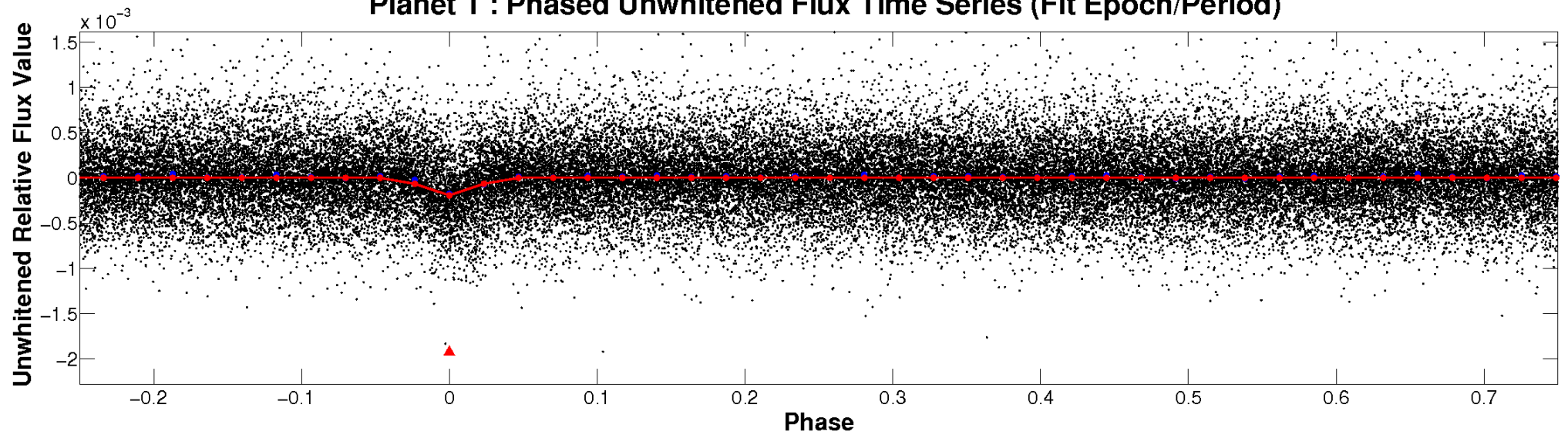
ALT Odd/Even

TCE 009640439-01

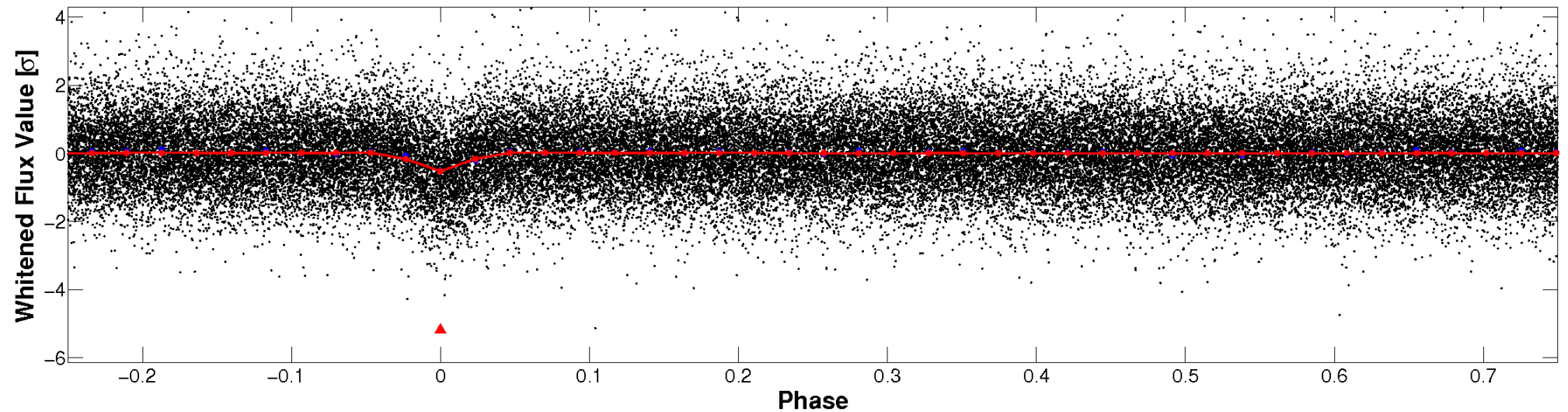


Non-Whitened Vs. Whitened Light Curve

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

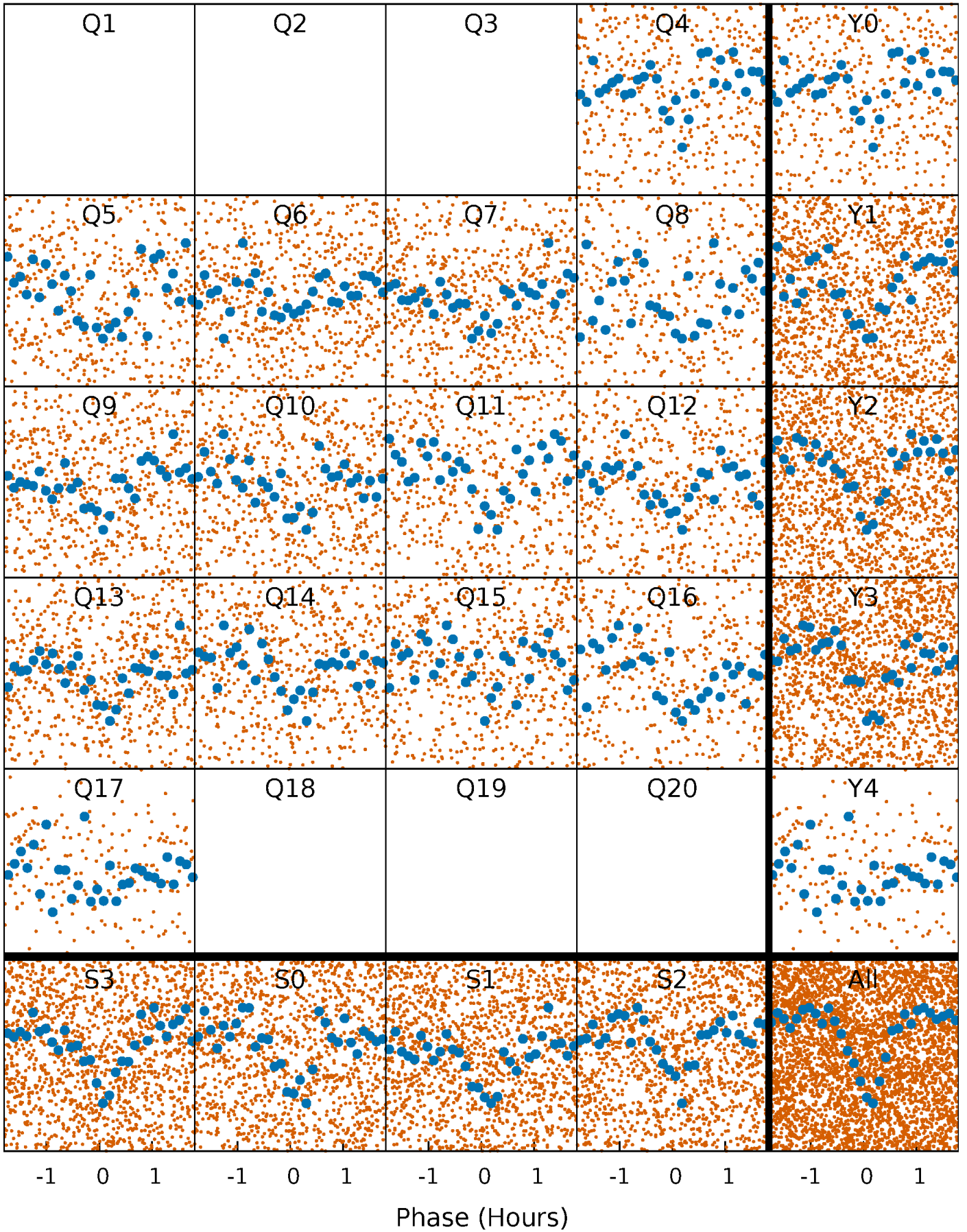


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



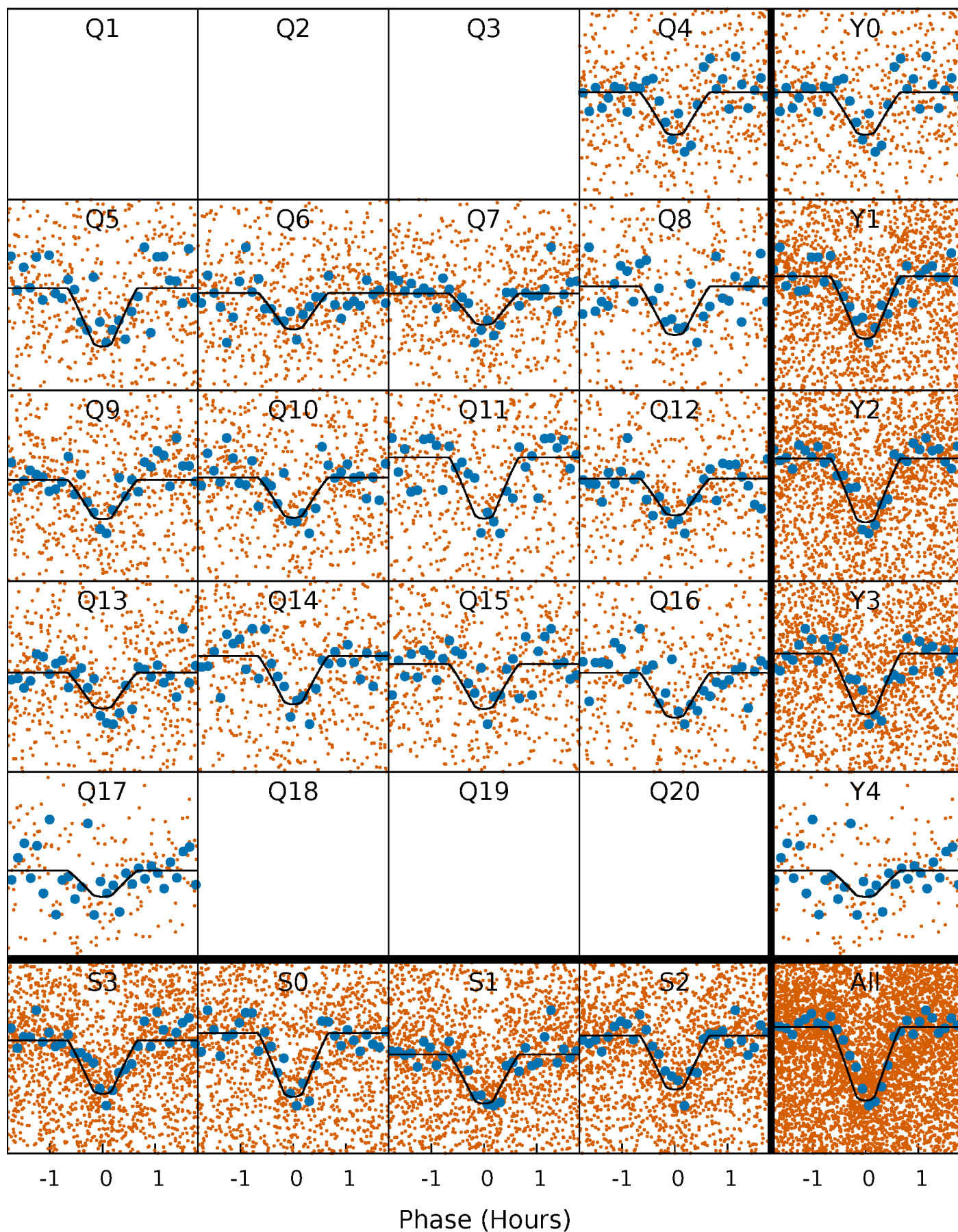
PDC Quarter-Phased Transit Curves

TCE 009640439-01 P= 0.873221 Days $T_0=132.235656$ (BKJD)



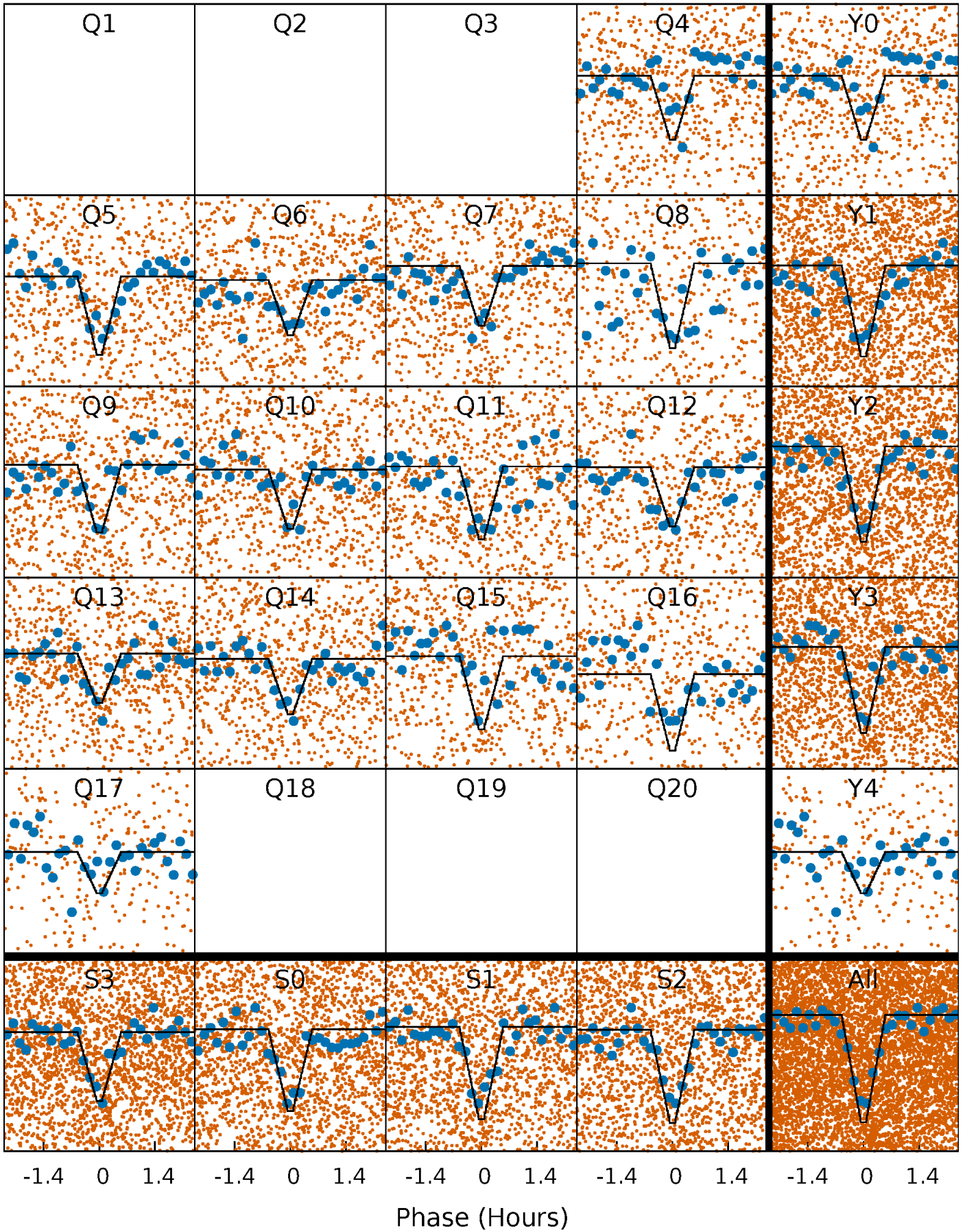
DV Quarter-Phased Transit Curves

TCE 009640439-01 P= 0.873221 Days $T_0=132.235656$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

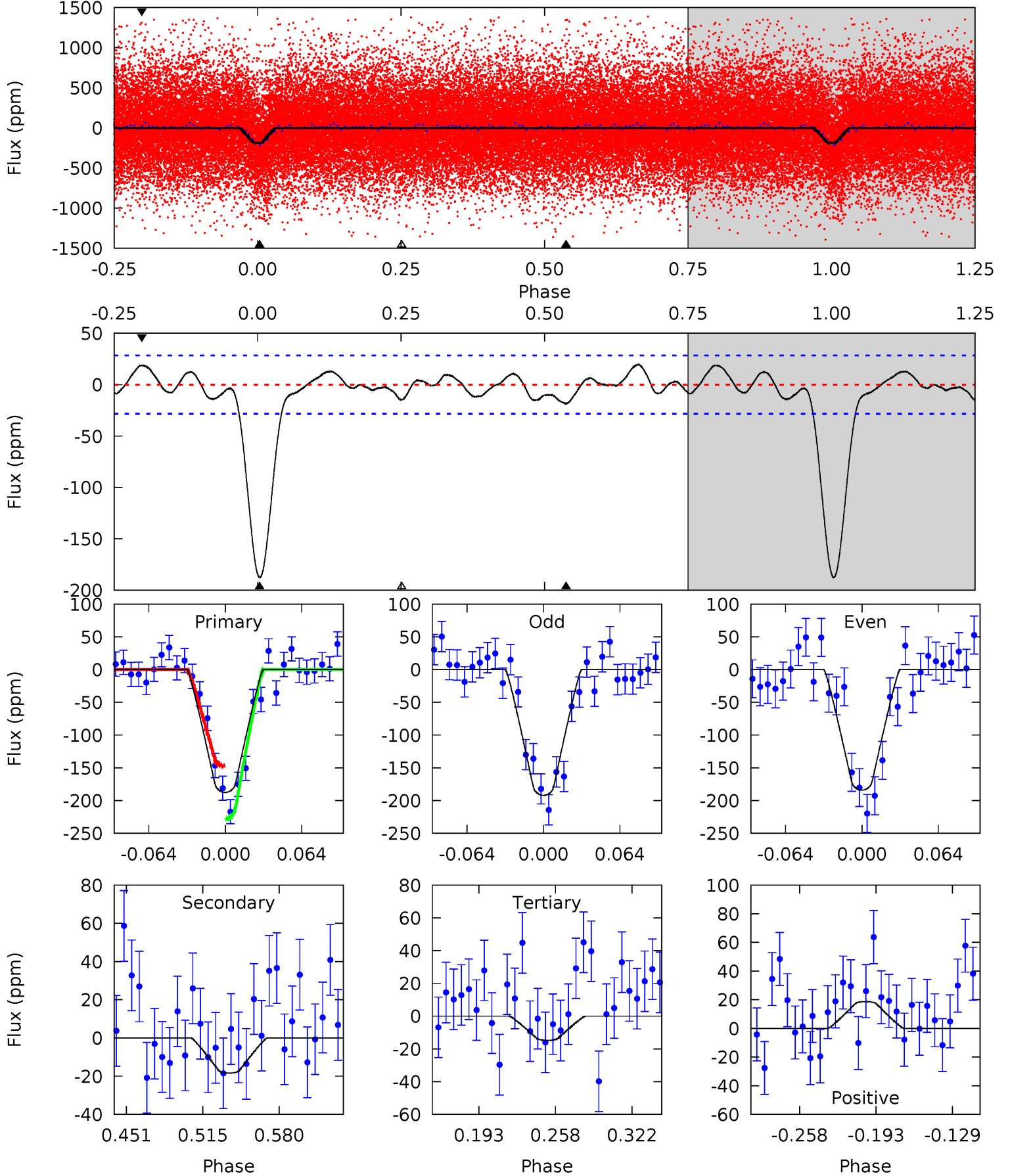
TCE 009640439-01 P= 0.873231 Days $T_0=132.229707$ (BKJD)



DV Model-Shift Uniqueness Test

009640439-01, P = 0.873221 Days, E = 132.235656 Days

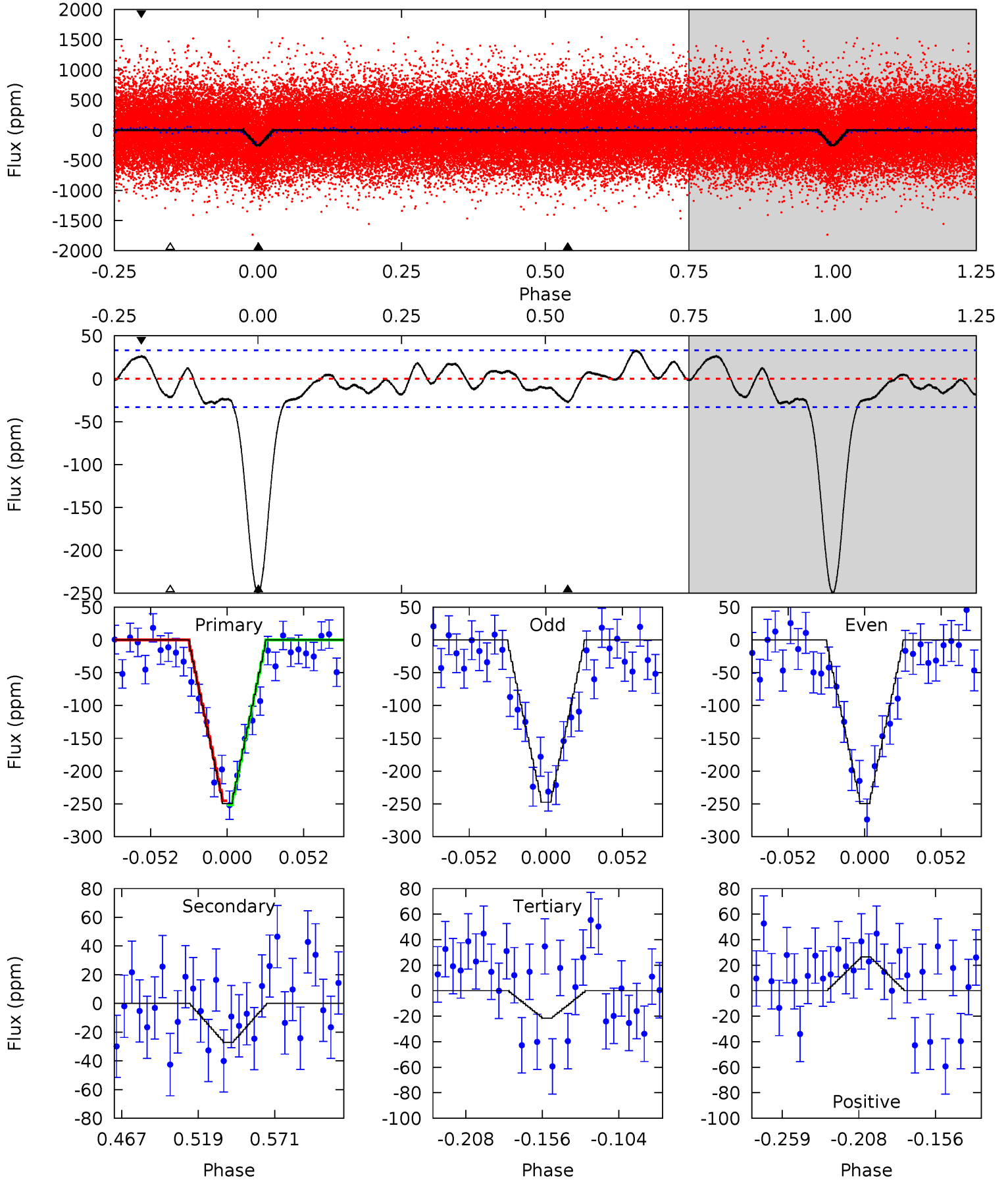
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.8	3.01	2.43	3.06	4.66	1.85	1.32	28.4	27.7	0.59	-0.05	0.66	0.94	0.09	6.62



Alt Model-Shift Uniqueness Test

009640439-01, P = 0.873231 Days, E = 132.229707 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.4	3.85	3.05	3.75	4.70	1.94	2.01	32.3	31.6	0.80	0.10	0.14	0.97	0.12	0.43



Stellar Parameters For KIC 009640439

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6341^{+179}_{-246}	$4.409^{+0.056}_{-0.224}$	$-0.060^{+0.250}_{-0.300}$	$1.111^{+0.389}_{-0.130}$	$1.154^{+0.169}_{-0.169}$	$1.187^{+0.377}_{-0.675}$
	+3%/-4%	+1%/-5%	+417%/-500%	+35%/-12%	+15%/-15%	+32%/-57%
Source	KIC0	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 009640439-01 / KOI 2912.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-18 ± 6	$1.96^{+0.82}_{-0.76}$	3070^{+229}_{-161}	3461^{+814}_{-766}	$0.865^{+1.530}_{-0.474}$
Alt.	-27 ± 7	$2.14^{+0.87}_{-0.68}$	3079^{+248}_{-163}	3630^{+737}_{-627}	$1.067^{+1.358}_{-0.559}$

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

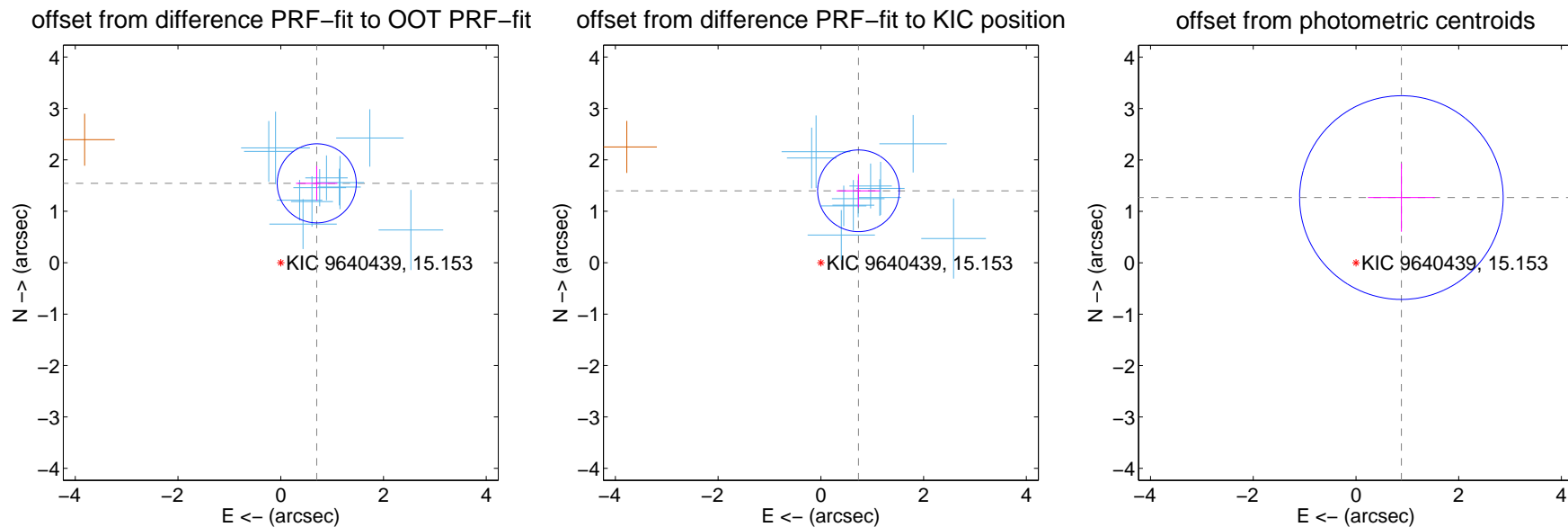
DV Centroid Data

Supplemental centroid analysis for 009640439-01. Kepler magnitude: 15.15. Transit SNR 21.33

There are 11 quarters with good PRF difference image offsets

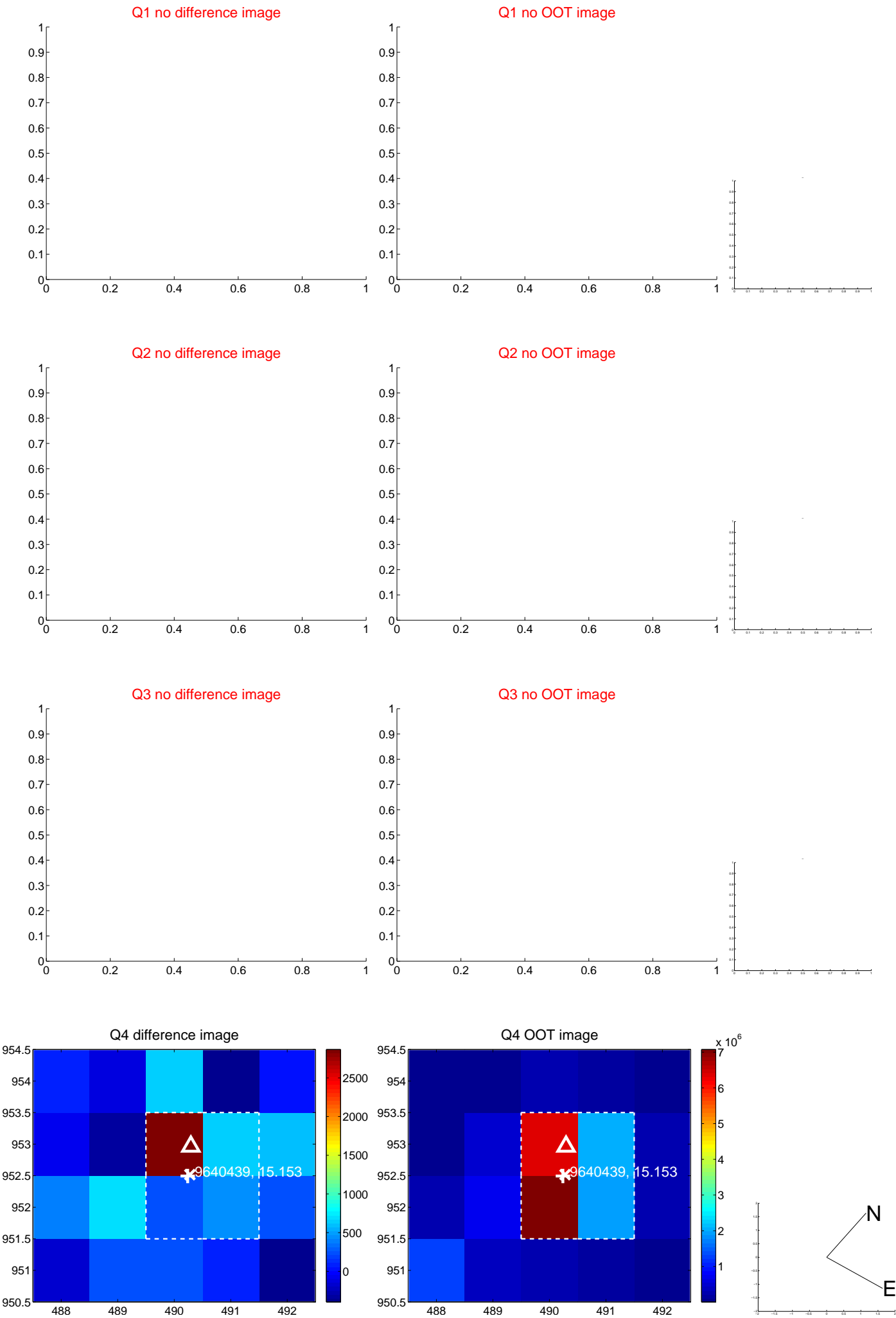
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.695 ± 0.256	6.61	-0.701 ± 0.403	1.544 ± 0.337
PRF-fit source offset from KIC position	1.578 ± 0.265	5.96	-0.732 ± 0.426	1.398 ± 0.325
photometric centroid source offset	1.55 ± 0.66	2.34	-0.88 ± 0.65	1.27 ± 0.66

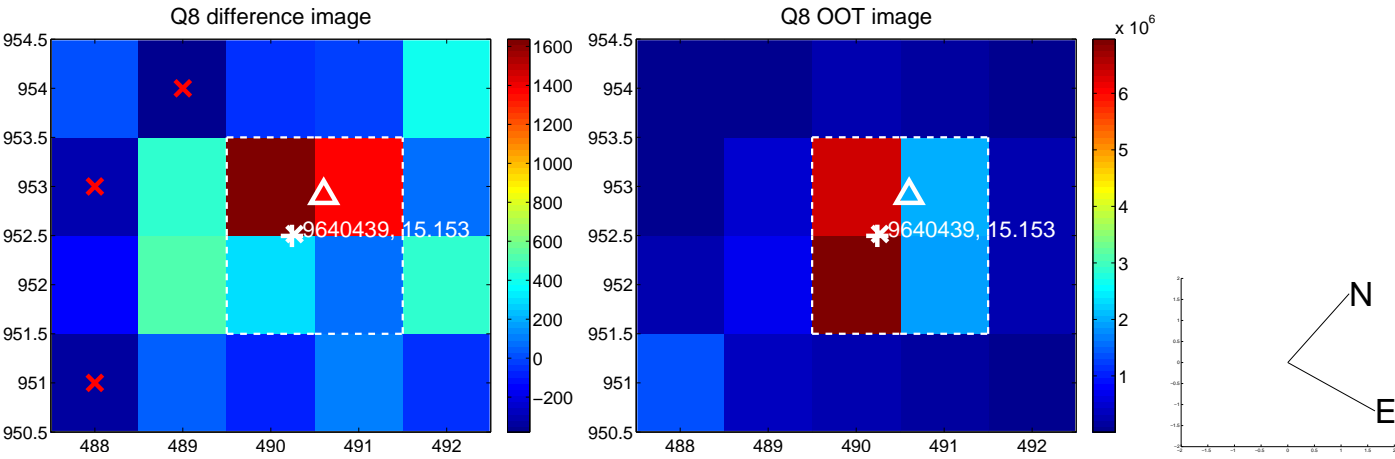
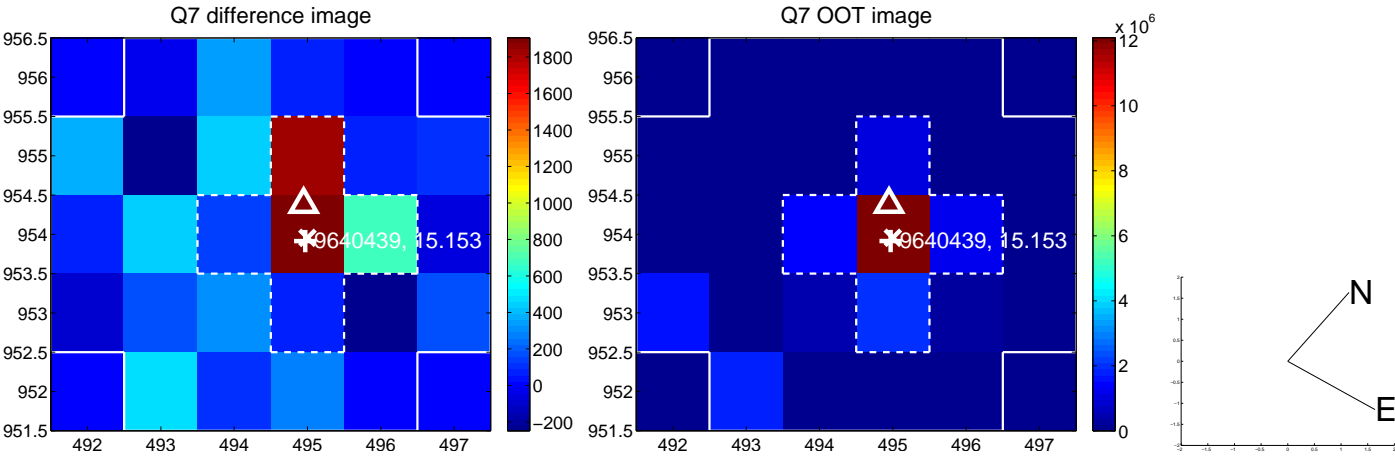
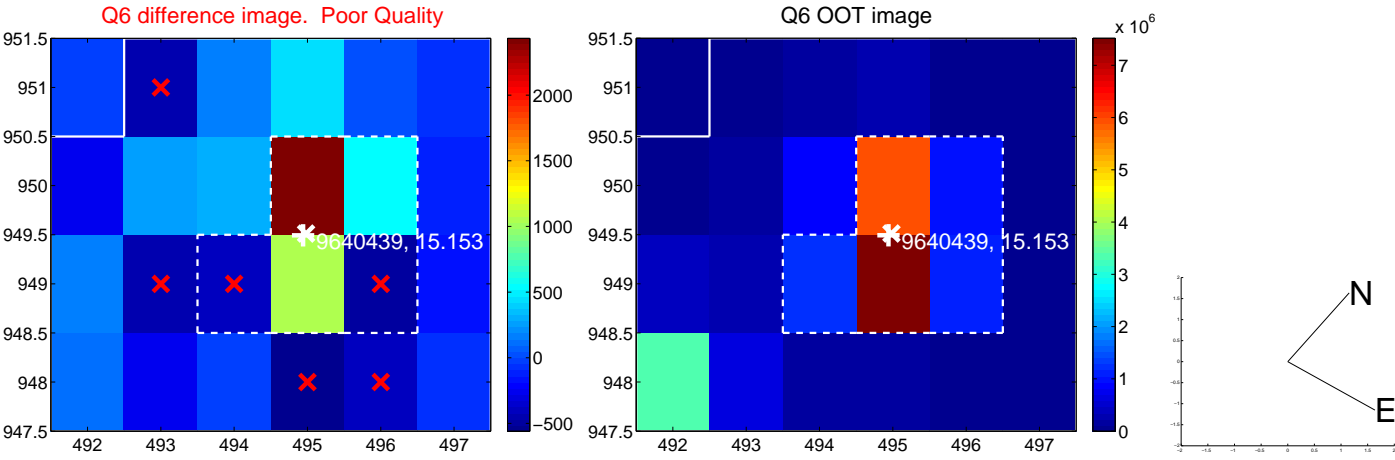
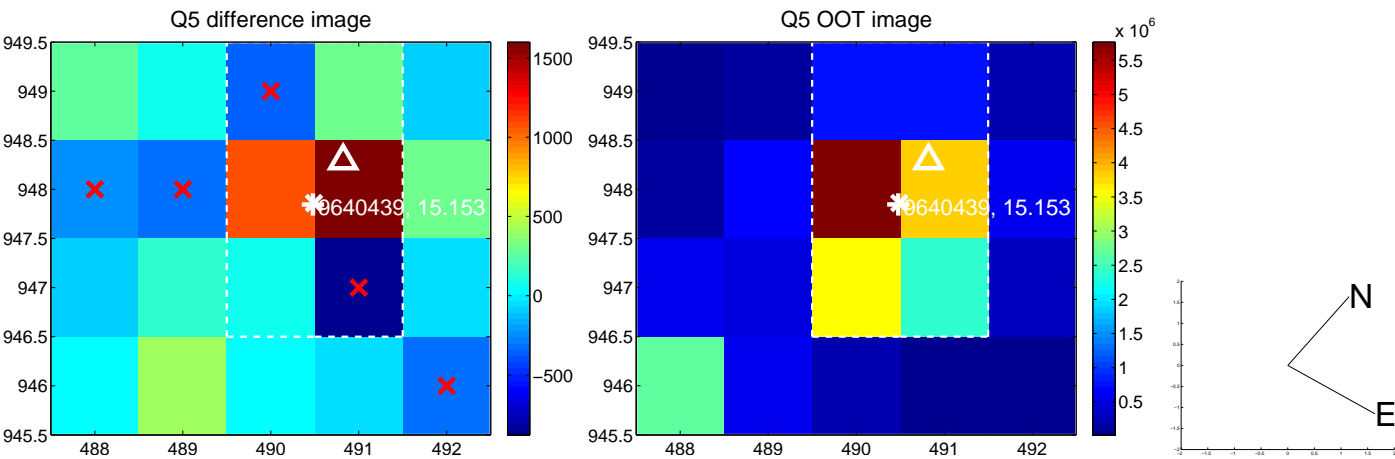


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

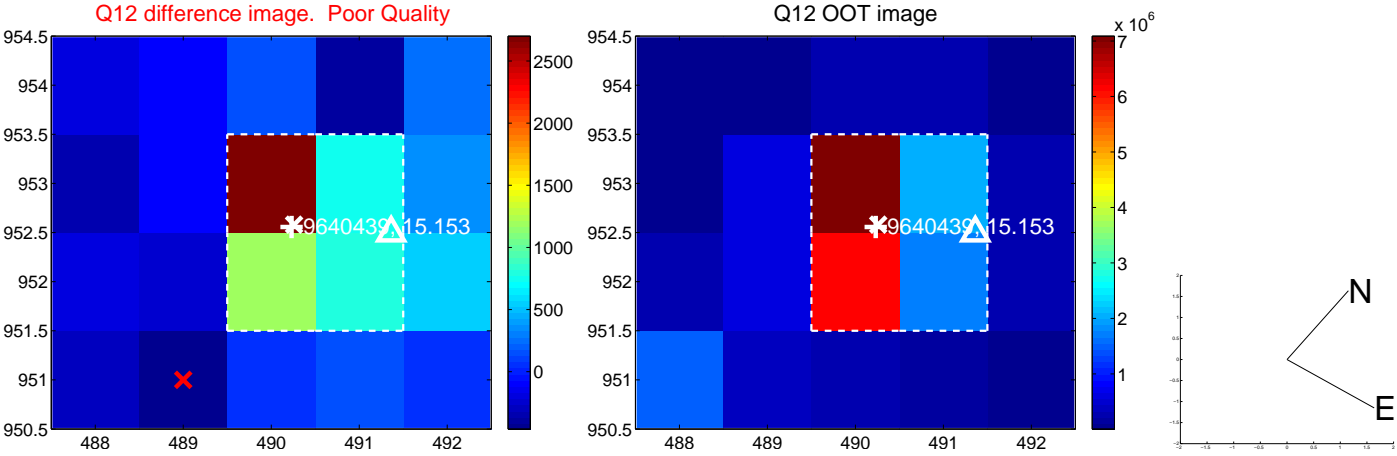
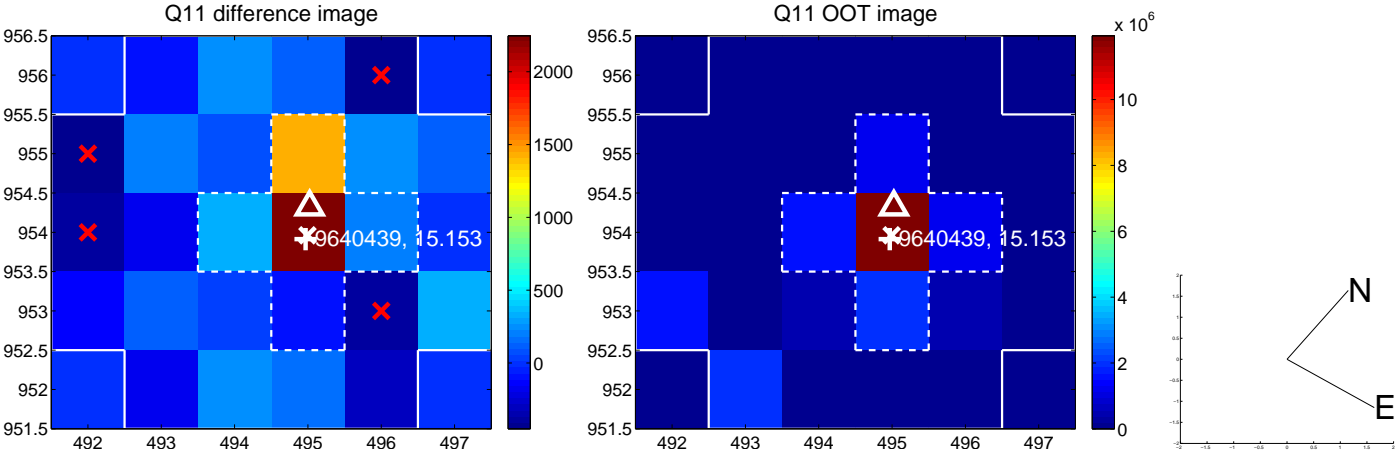
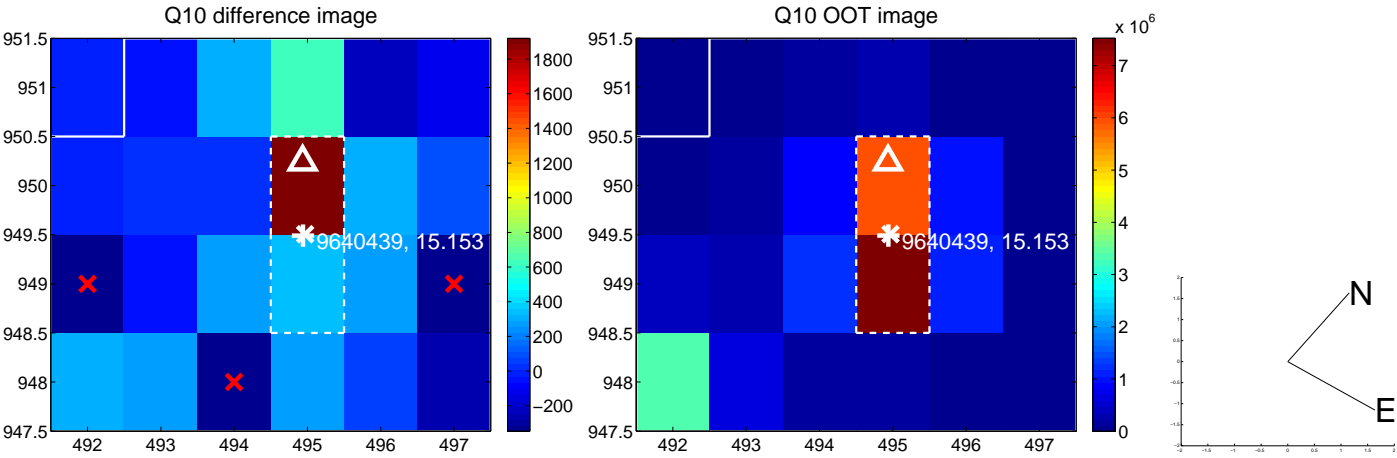
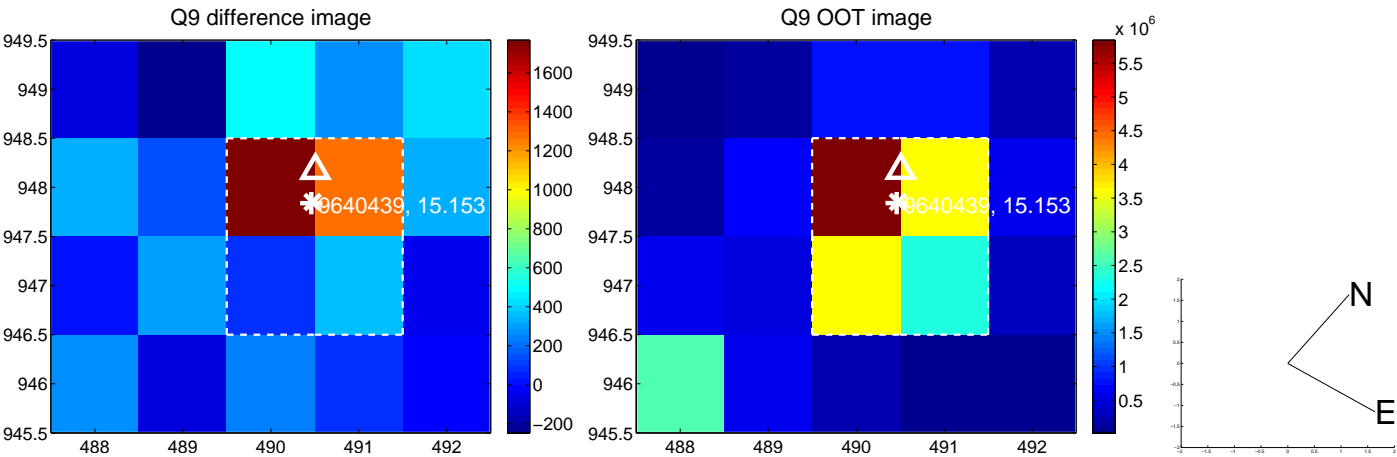
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



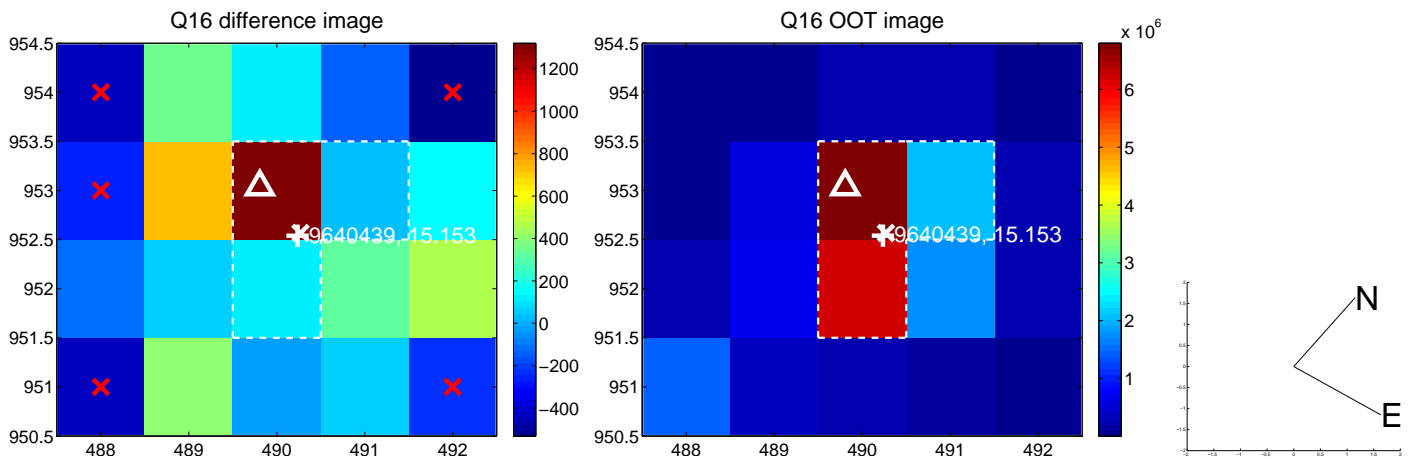
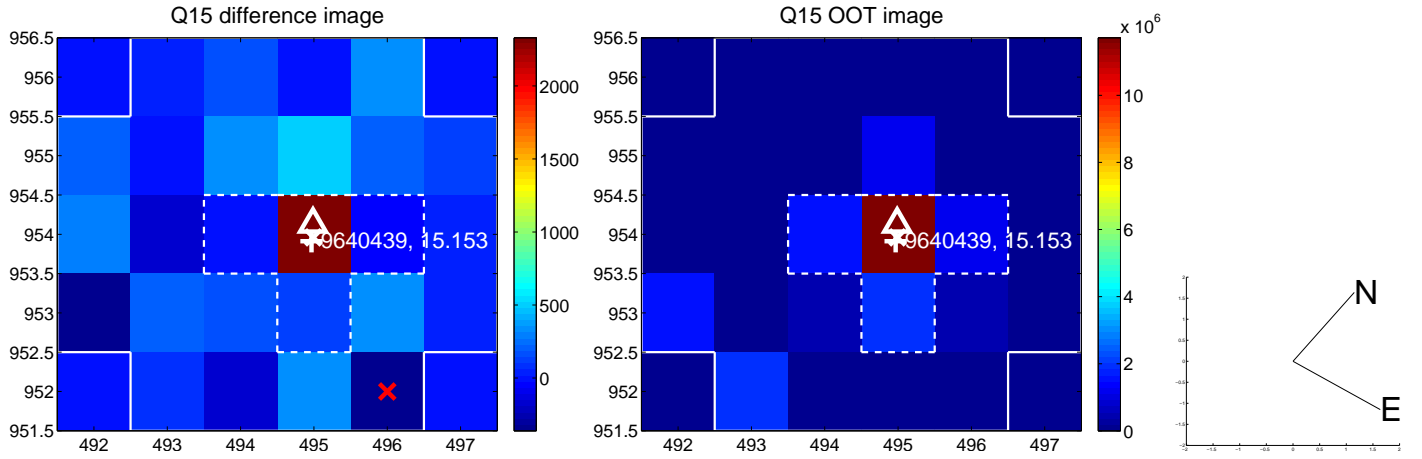
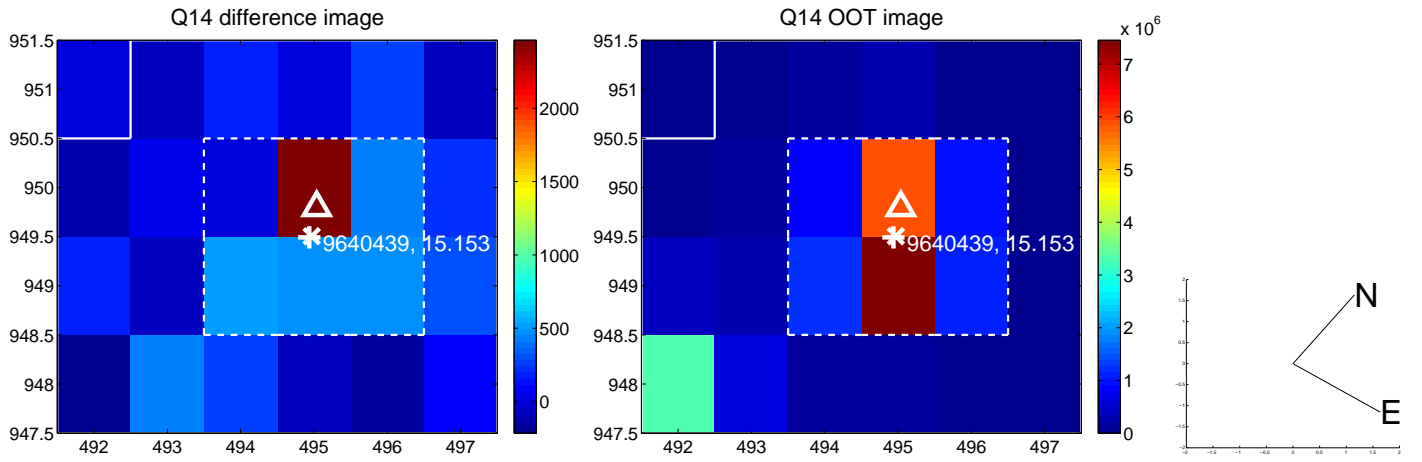
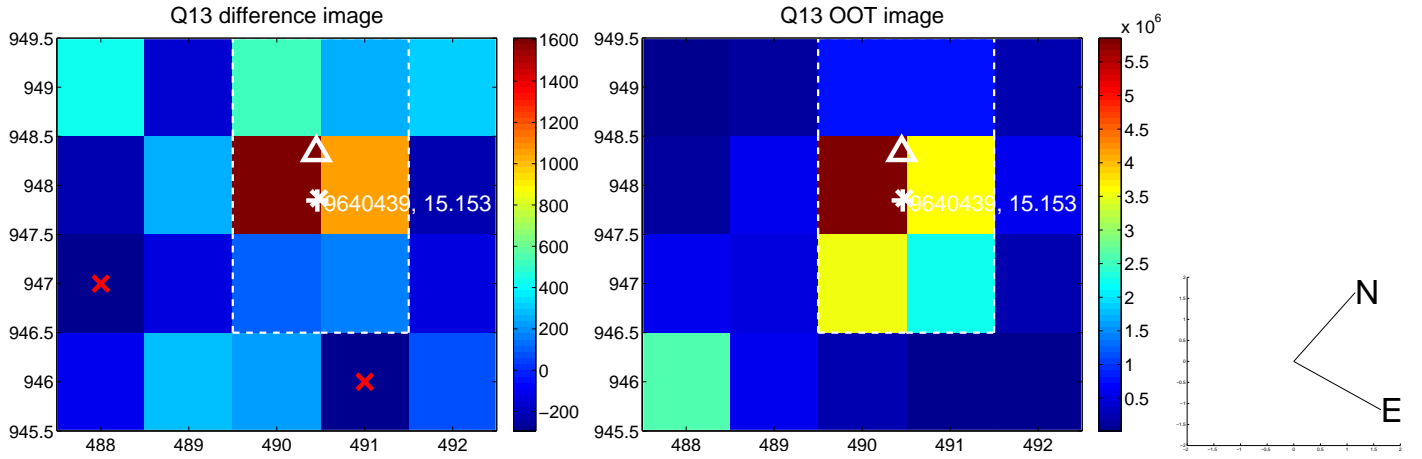
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image

Declination

