

KIC 012403331

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})
012403331-01	OBS	No	0.759428	131.891042	0.6	3.730	8.3	0.0	0.66	5262	0.06	1501.62

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012403331-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA_TRACKER—SWEET_NTL—LPP_DV

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

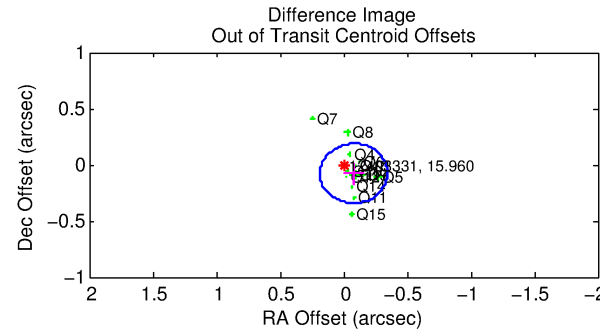
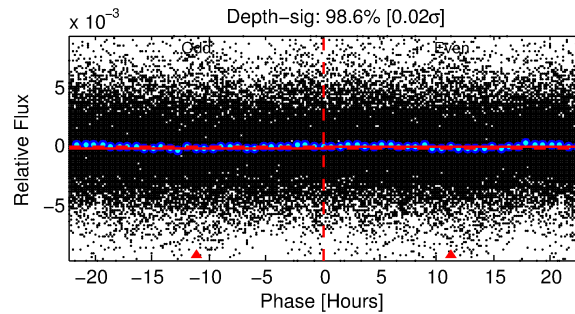
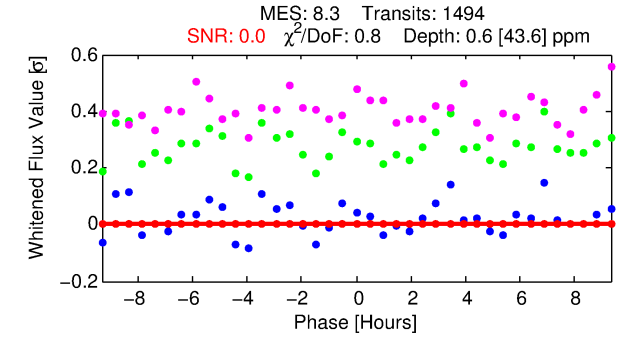
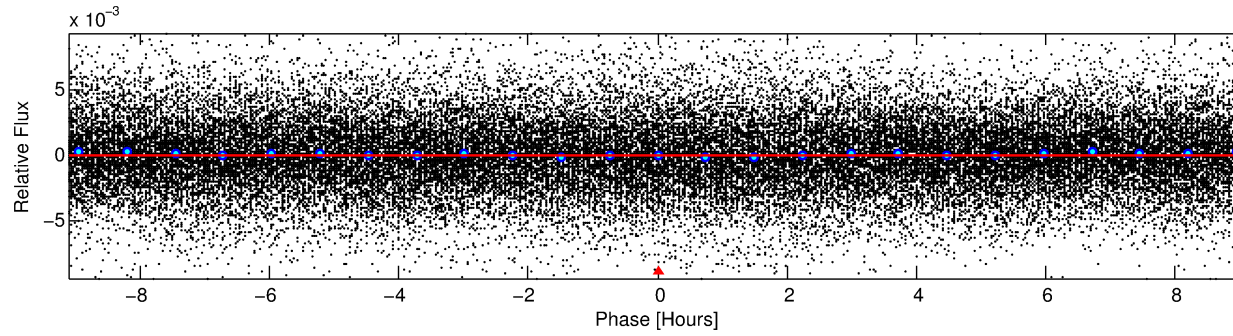
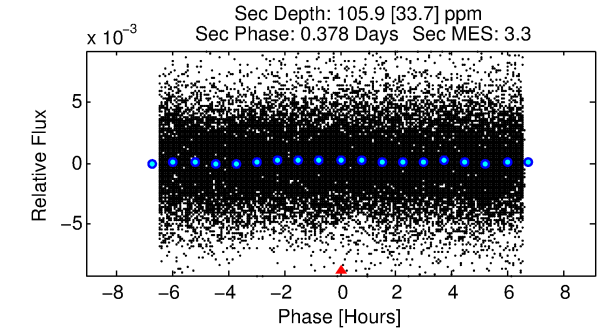
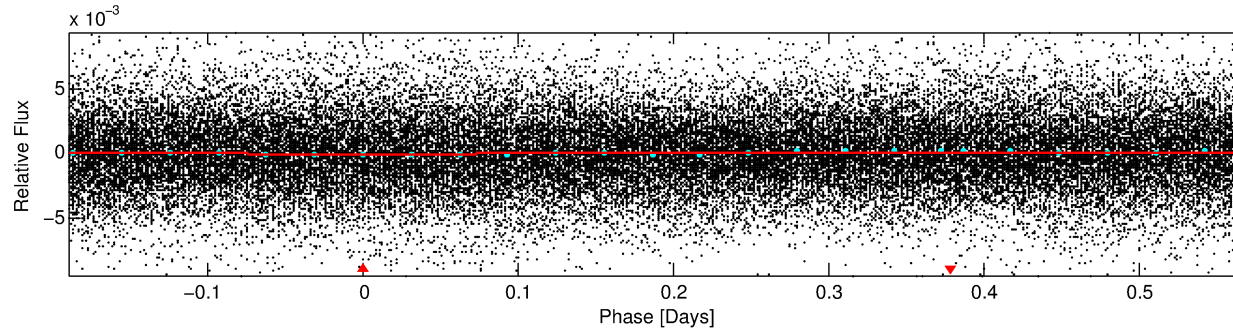
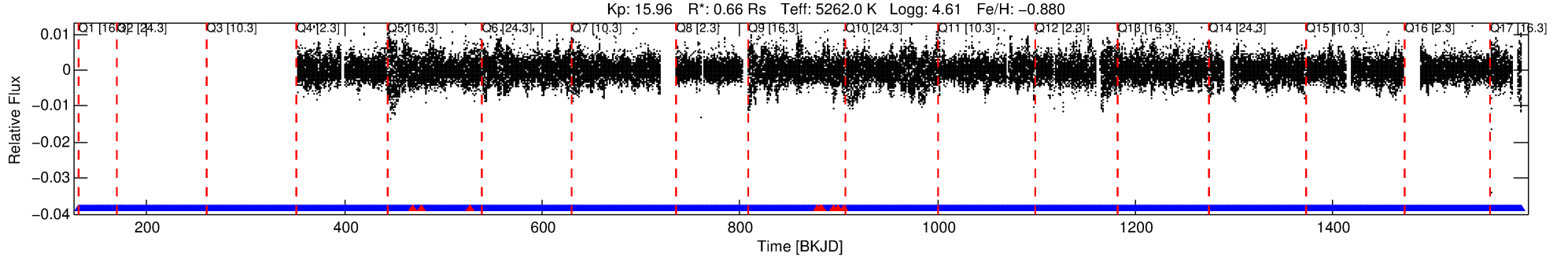
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012403331-01

No Significant Match Found

DV One-Page Summary

KIC: 12403331 Candidate: 1 of 1 Period: 0.759 d



DV Fit Results:

Period = 0.75943 [0.00564] d
Epoch = 131.8910 [1.0405] BKJD
Rp/R* = 0.0009 [0.0436]
a/R* = 1.07 [25.38]
b = 0.96 [15.73]
Seff = 1501.62 [283.42]
Teff = 1587 [75] K
Rp = 0.06 [3.12] Re
a = 0.0141 [0.0012] AU
Ag = 2861.51 [282063.71] [0.01σ]
Teffp = 17950 [442355] K [0.04σ]

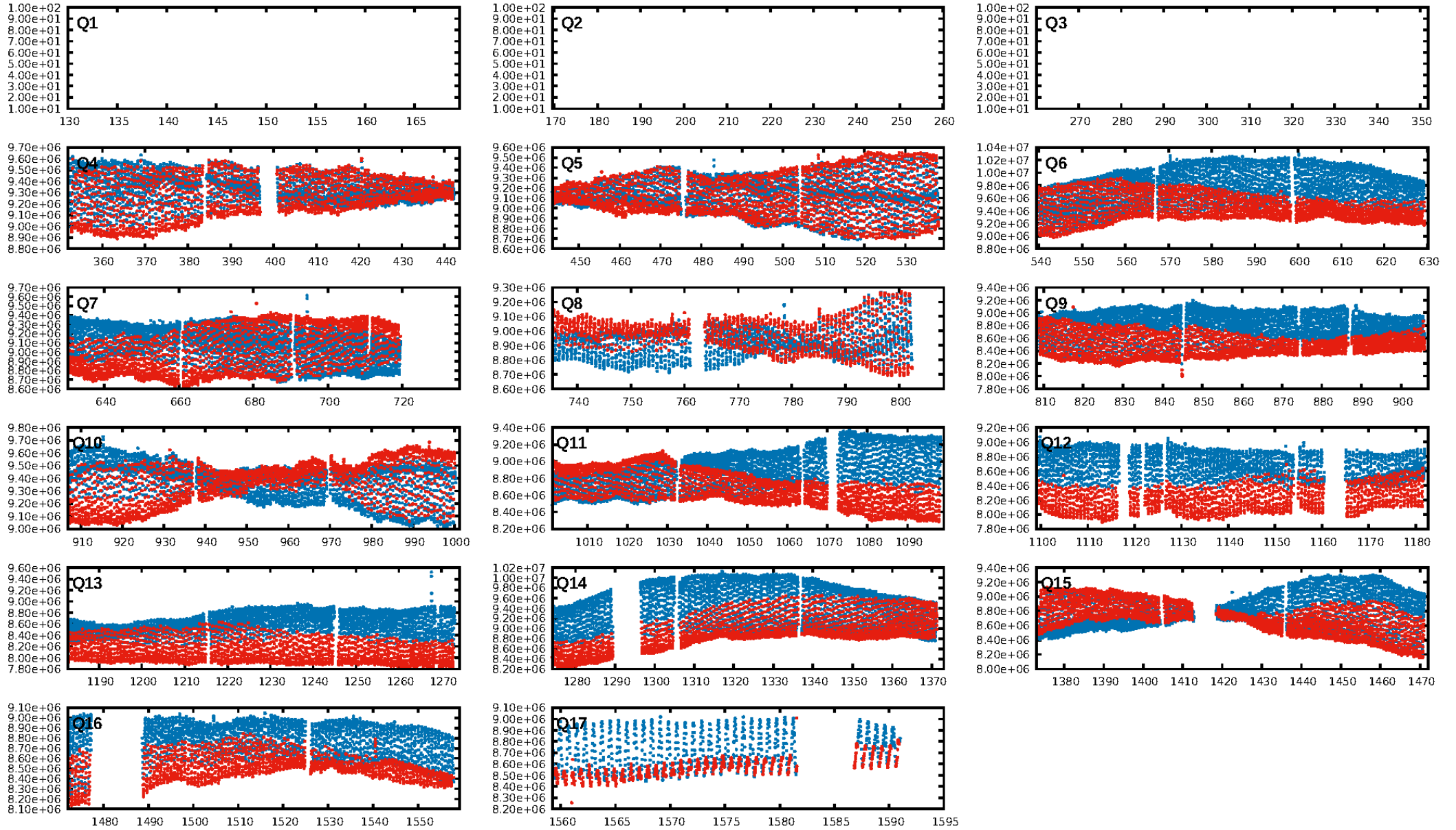
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 1.67e-14
RollingBand-fgt: 0.99 [1449/1458]
GhostDiagnostic-chr: N/A
Centroid-sig: N/A
Centroid-so: N/A
OotOffset-rm: 0.110 arcsec [1.25σ]
KicOffset-rm: 0.097 arcsec [1.25σ]
OotOffset-st: 2/3/4/4 [13]
KicOffset-st: 2/3/4/4 [13]
DiffImageQuality-fgm: 0.92 [12/13]
DiffImageOverlap-fno: 1.00 [14/14]

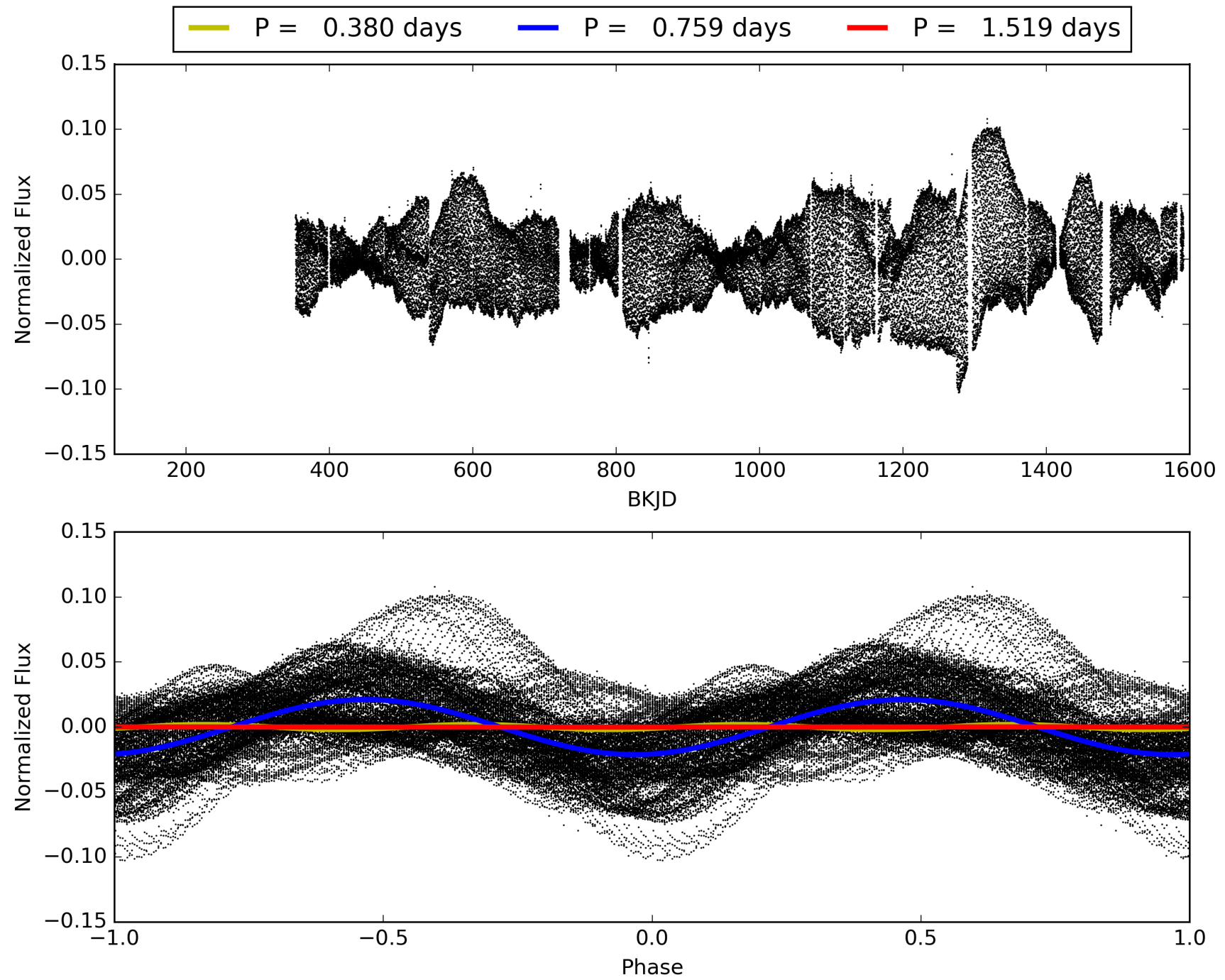
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 01:56:10 Z

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

TCE 012403331-01, PDC Light Curves

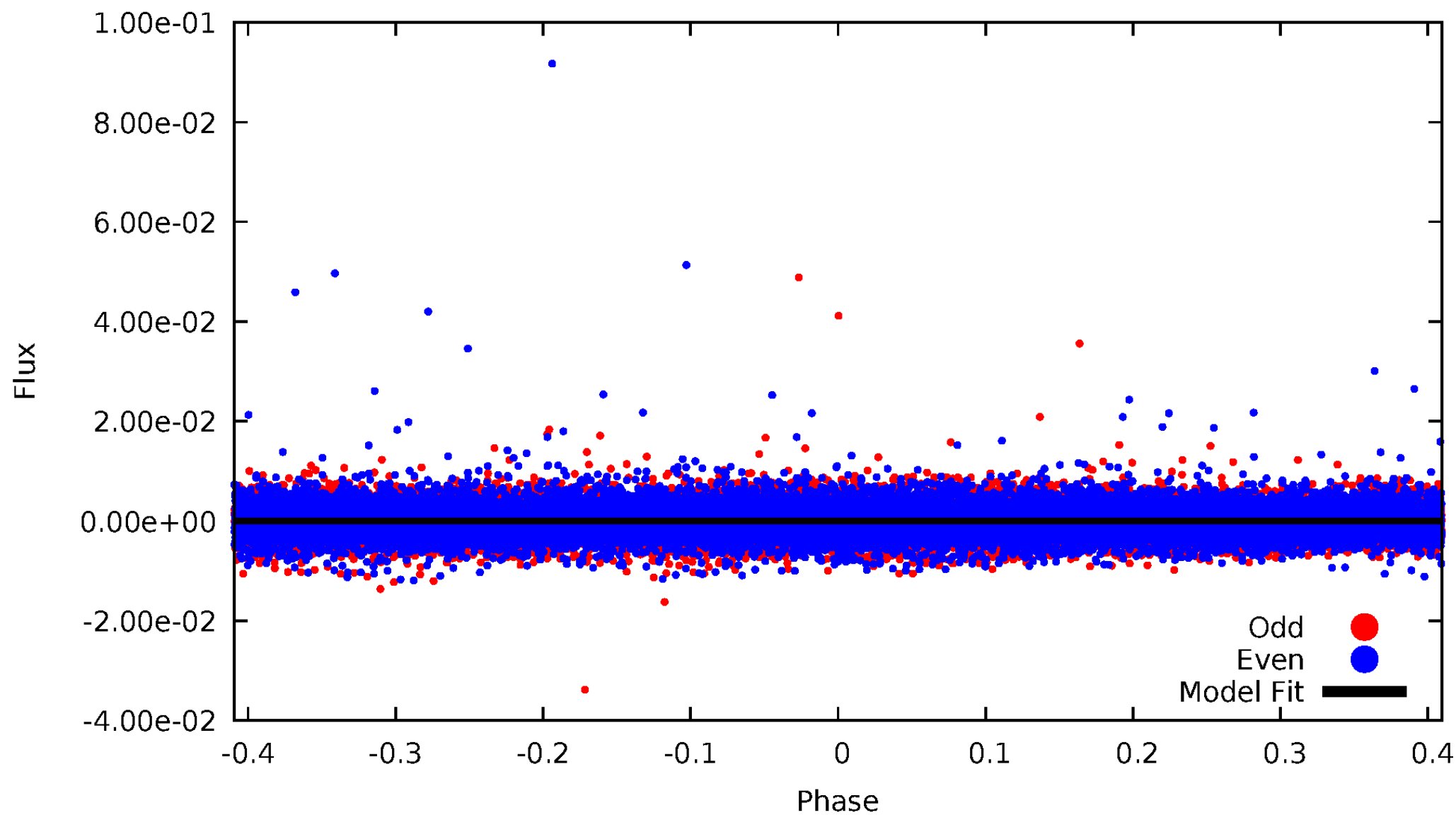


TCE 012403331-01



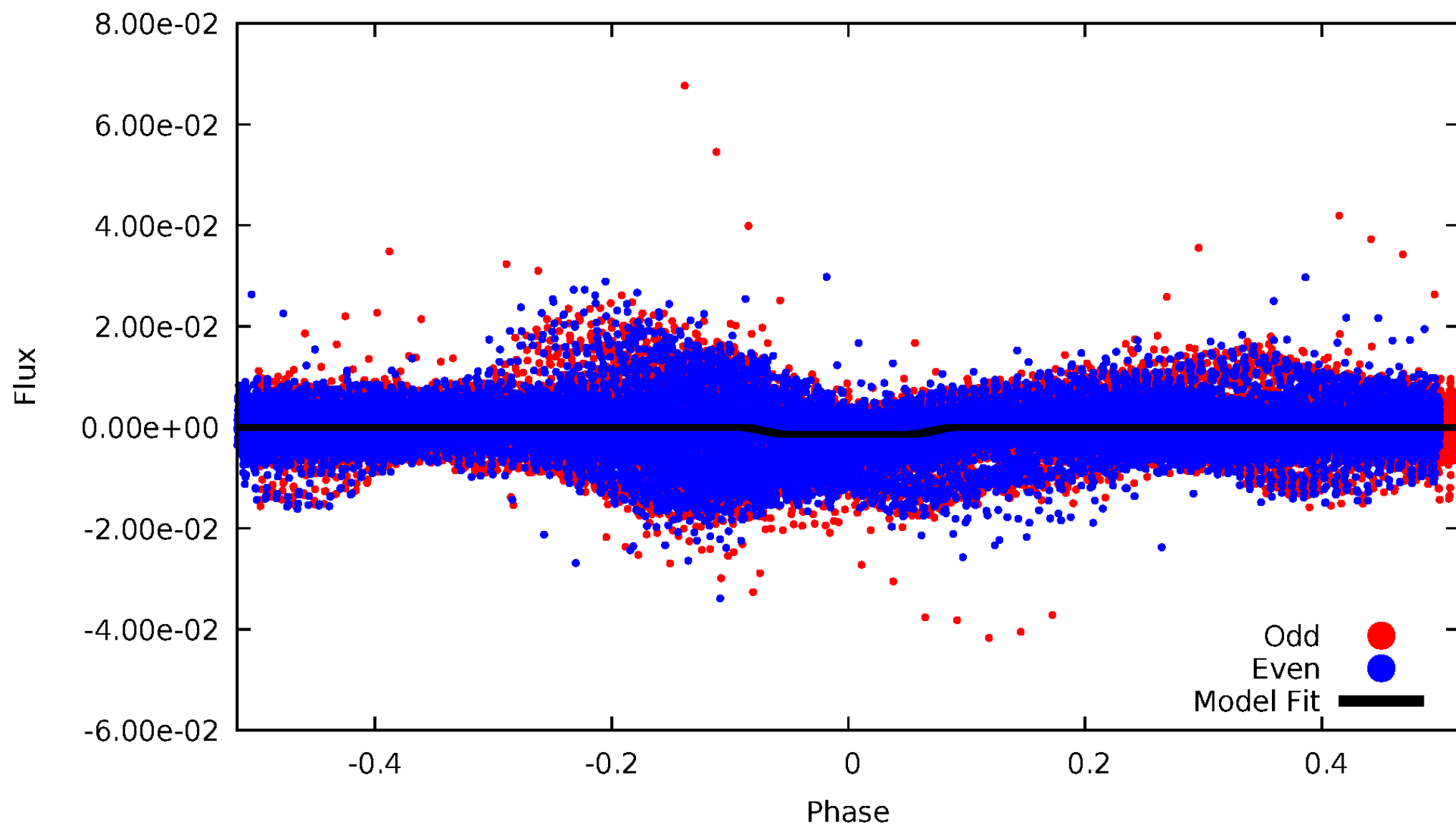
DV Odd/Even

TCE 012403331-01



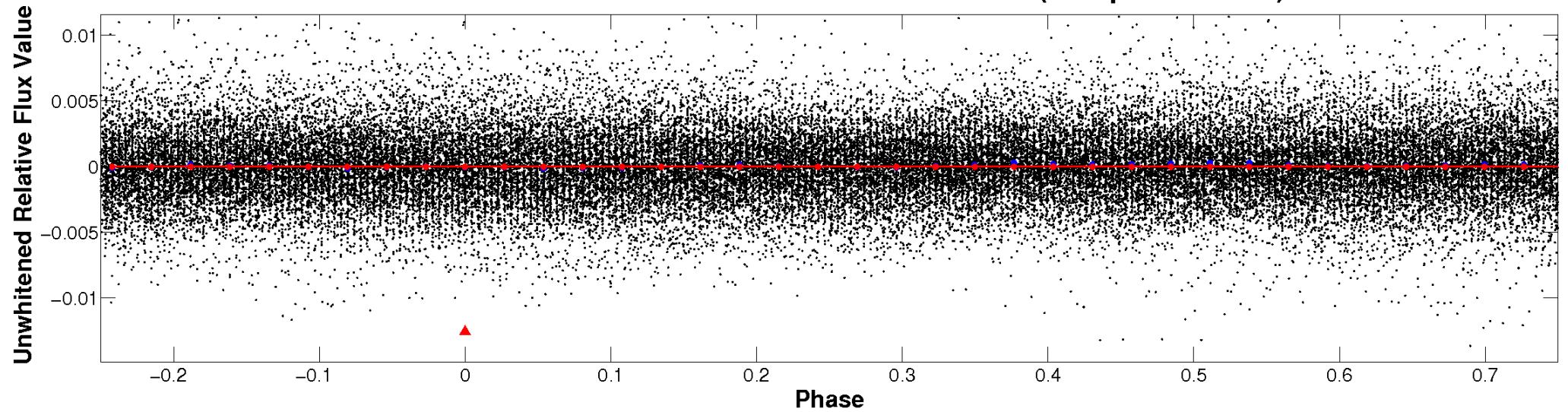
ALT Odd/Even

TCE 012403331-01

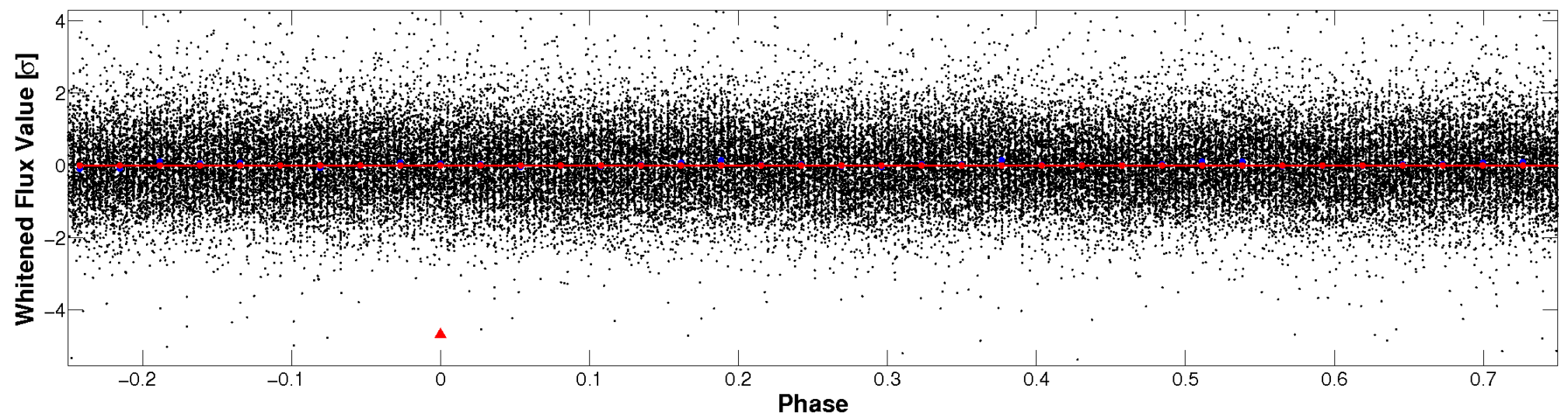


Non-Whitened Vs. Whitened Light Curve

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

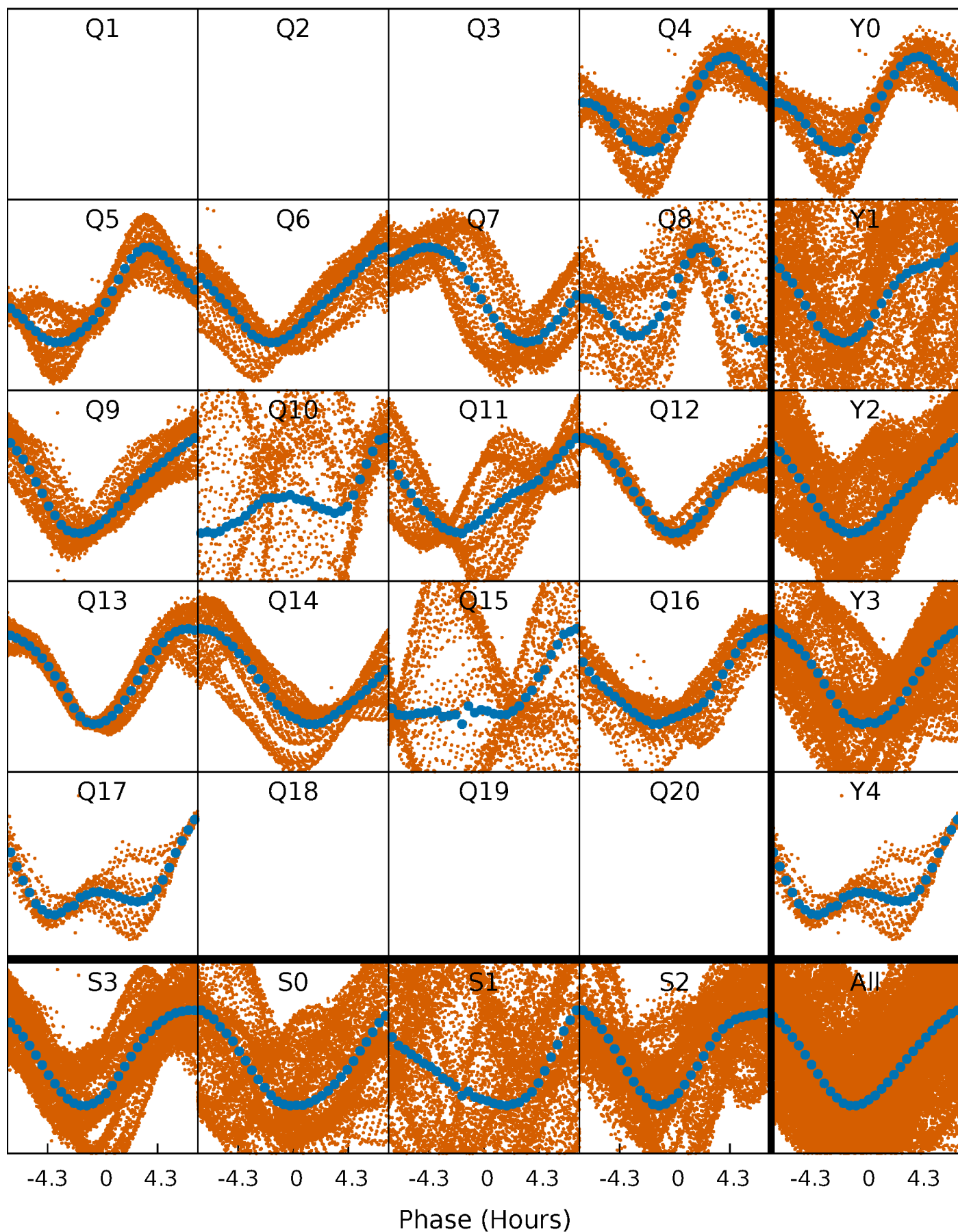


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



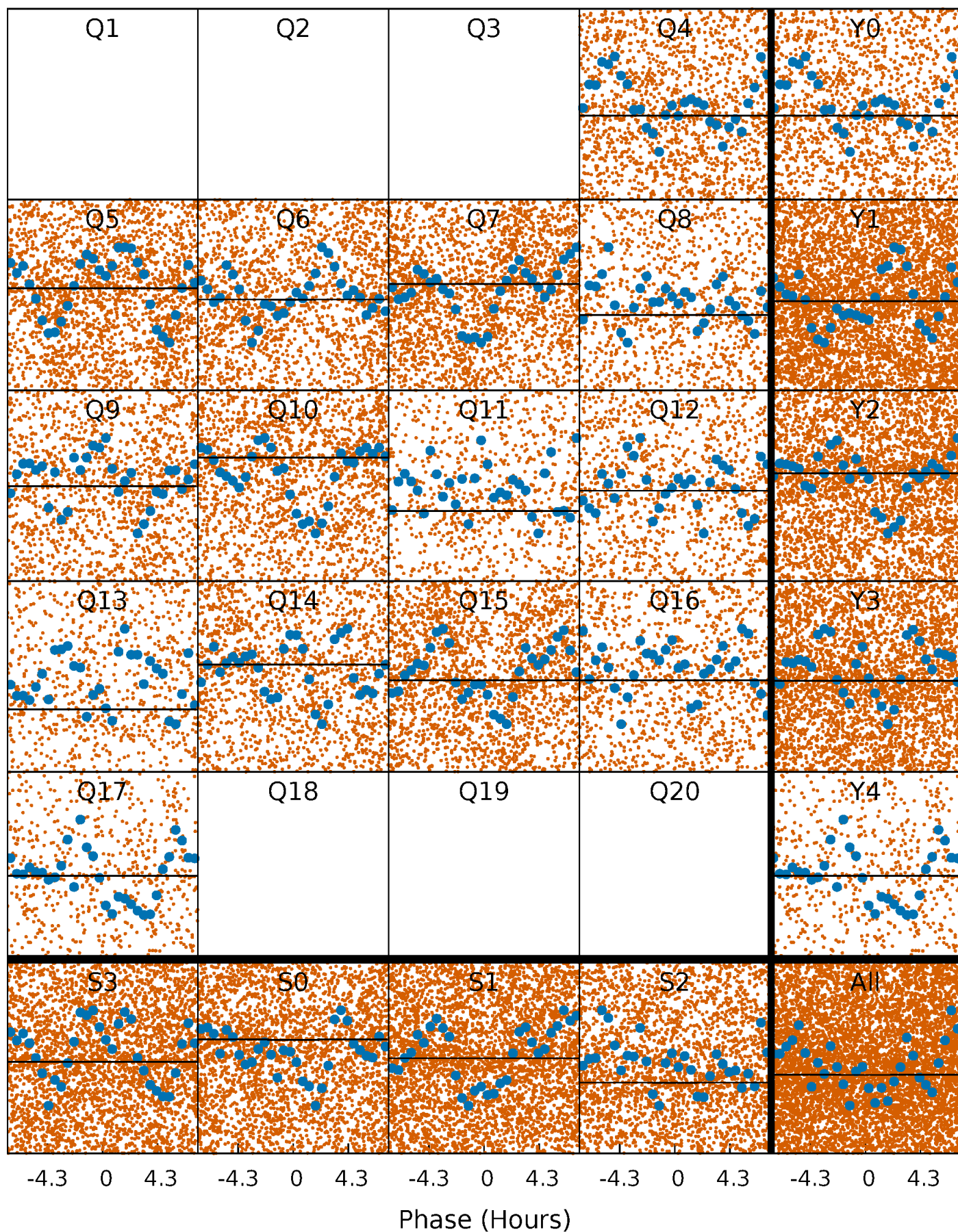
PDC Quarter-Phased Transit Curves

TCE 012403331-01 P= 0.759428 Days $T_0=131.891042$ (BKJD)



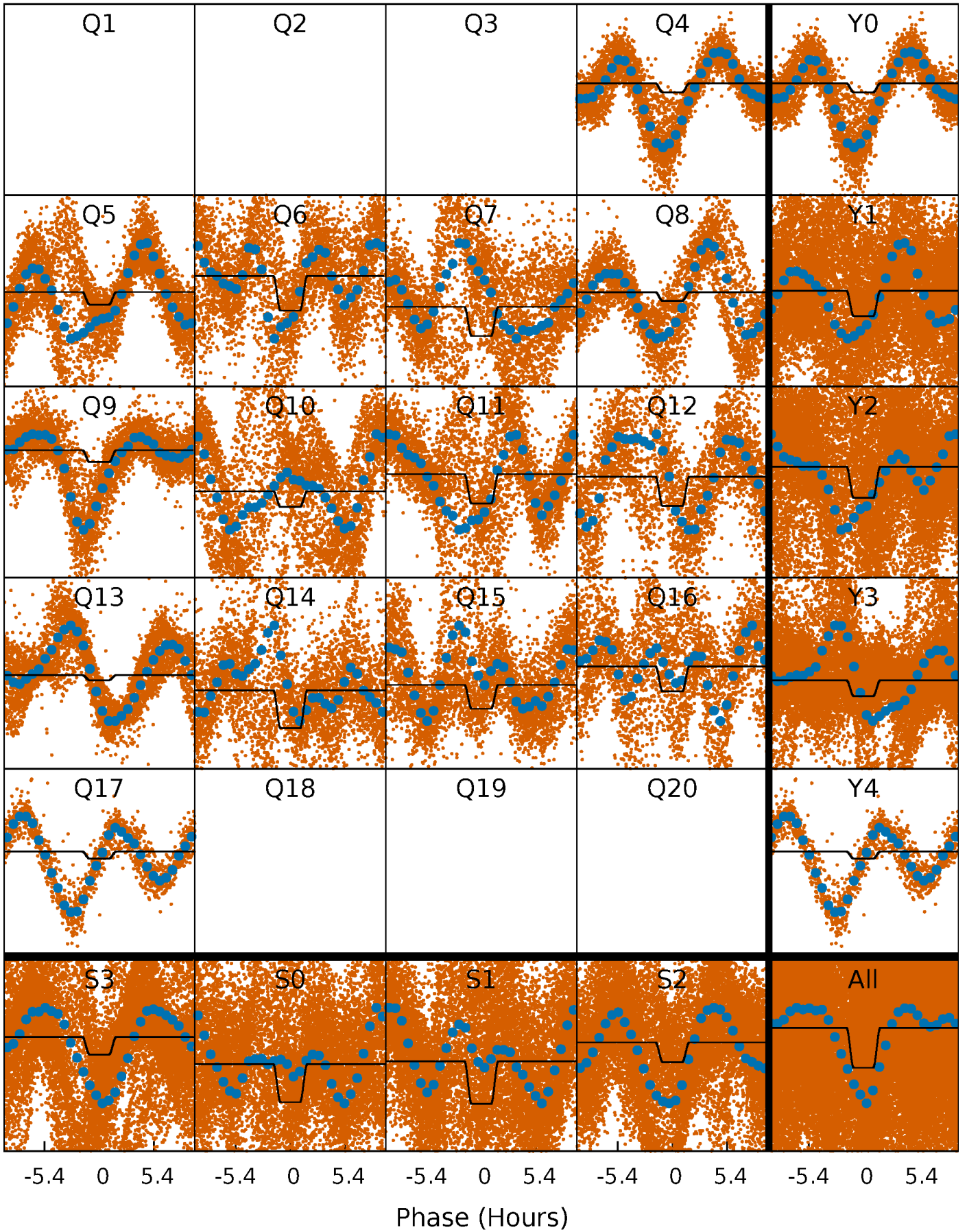
DV Quarter-Phased Transit Curves

TCE 012403331-01 P= 0.759428 Days $T_0=131.891042$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

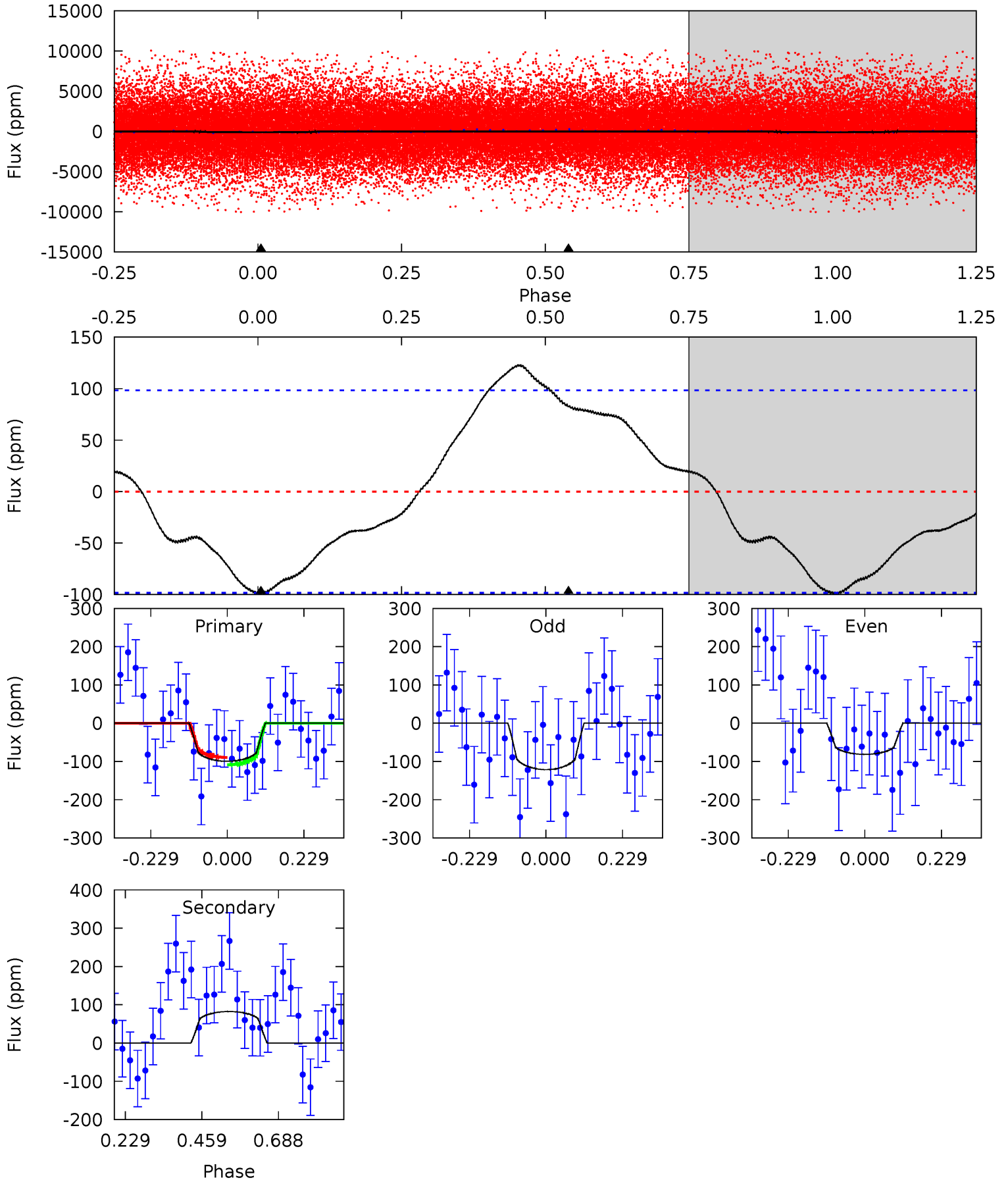
TCE 012403331-01 P= 0.759398 Days $T_0=131.855228$ (BKJD)



DV Model-Shift Uniqueness Test

012403331-01, P = 0.759428 Days, E = 131.891042 Days

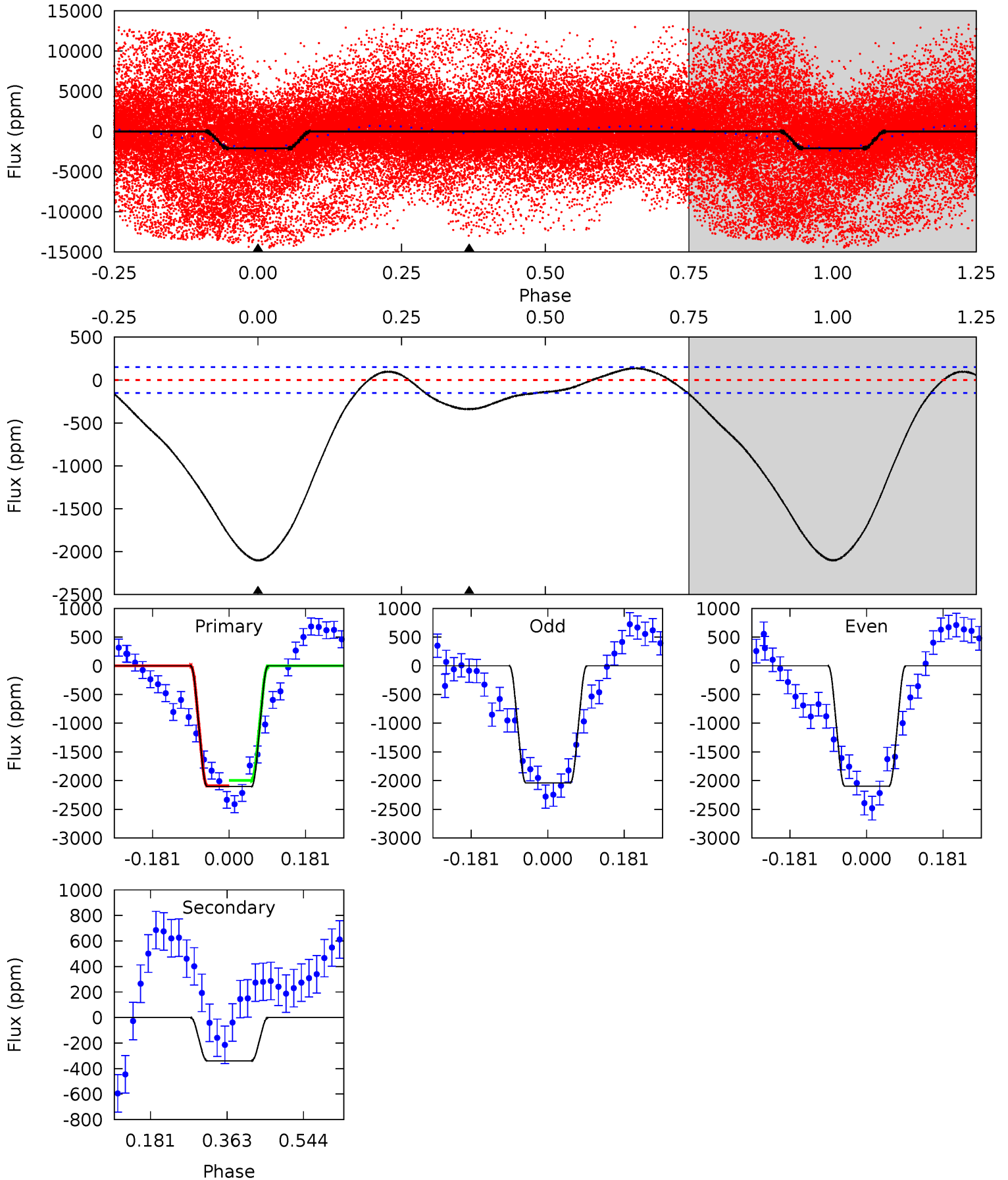
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
4.44	-3.68	0	0	4.39	1.20	0.73	4.44	4.44	-3.68	-3.68	0.88	0.37	0.55	0.42



Alt Model-Shift Uniqueness Test

012403331-01, P = 0.759398 Days, E = 131.855228 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
62.3	10.0	0	0	4.44	1.34	6.00	62.3	62.3	10.0	10.0	0.82	1.50	0.06	1.28



Stellar Parameters For KIC 012403331

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5262^{+183}_{-183}	$4.610^{+0.072}_{-0.048}$	$-0.880^{+0.350}_{-0.300}$	$0.657^{+0.062}_{-0.056}$	$0.639^{+0.069}_{-0.028}$	$3.183^{+0.923}_{-0.599}$
	+3%/-3%	+2%/-1%	+40%/-34%	+9%/-9%	+11%/-4%	+29%/-19%
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 012403331-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	82 ± 22	$2.08^{+2.28}_{-1.46}$	2206^{+98}_{-95}	-3480^{+550}_{-1862}	$-1.928^{+1.490}_{-20.578}$
Alt.	-339 ± 34	$3.47^{+2.64}_{-2.17}$	2212^{+95}_{-90}	3601^{+1774}_{-685}	$3.052^{+19.809}_{-2.043}$

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

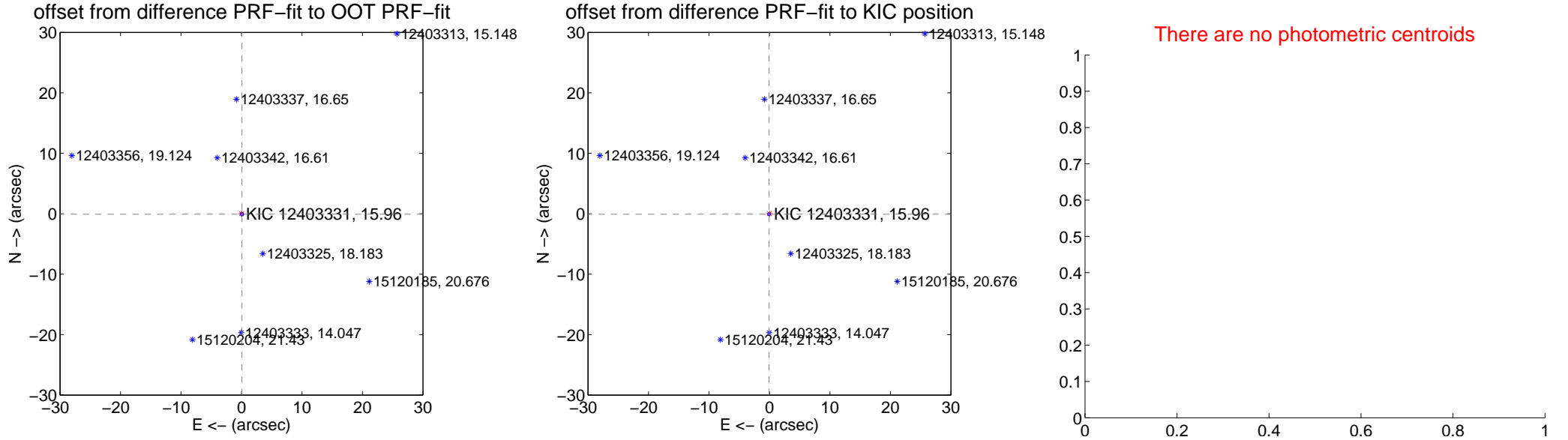
DV Centroid Data

Supplemental centroid analysis for 012403331-01. Kepler magnitude: 15.96. Transit SNR 0.02

There are 12 quarters with good PRF difference image offsets

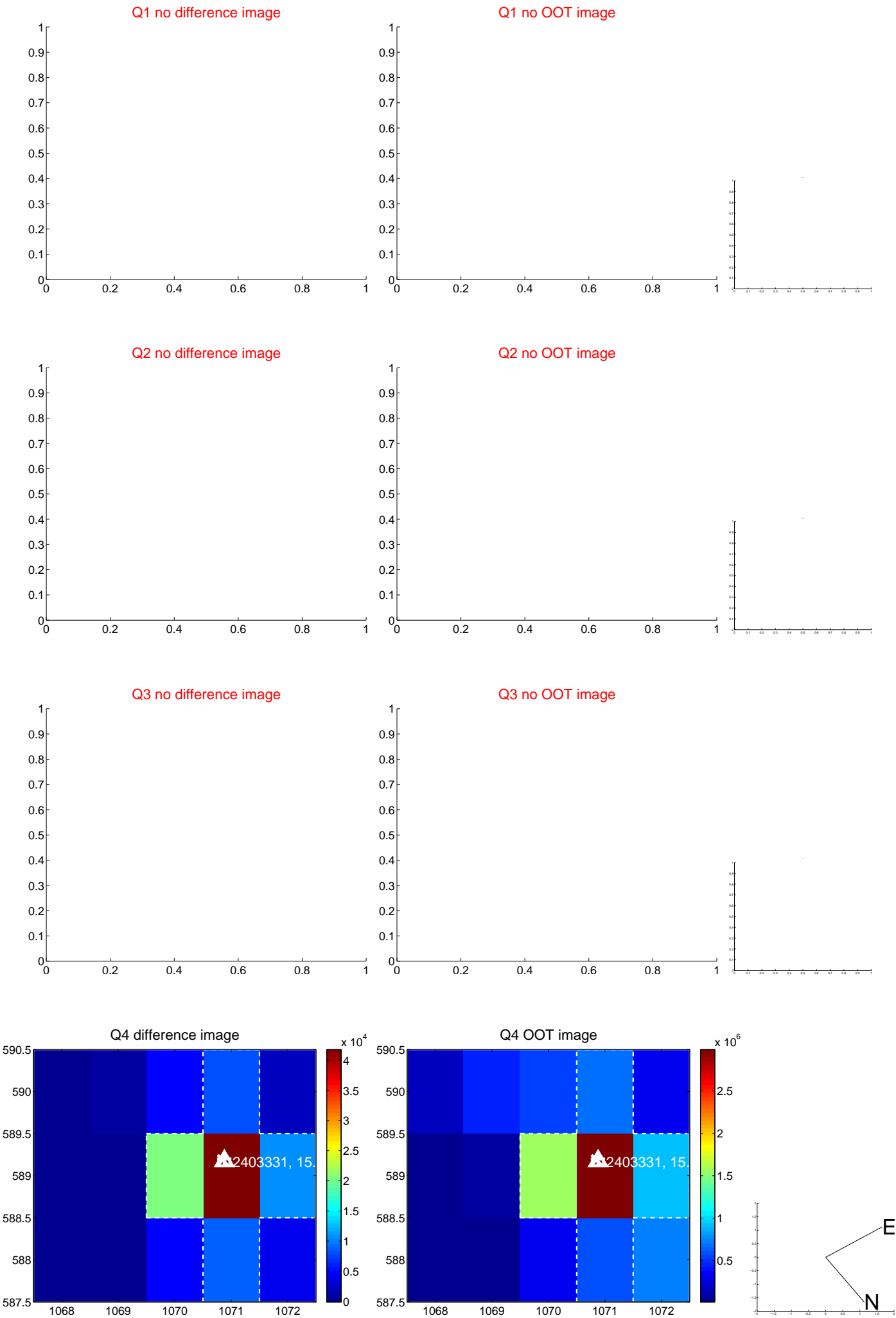
The direct PRF centroid is offset from the target star catalog position by about 0.29 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.110 ± 0.088	1.25	-0.078 ± 0.073	-0.078 ± 0.090
PRF-fit source offset from KIC position	0.097 ± 0.078	1.25	0.065 ± 0.073	-0.072 ± 0.090
photometric centroid source offset	—	—	—	—

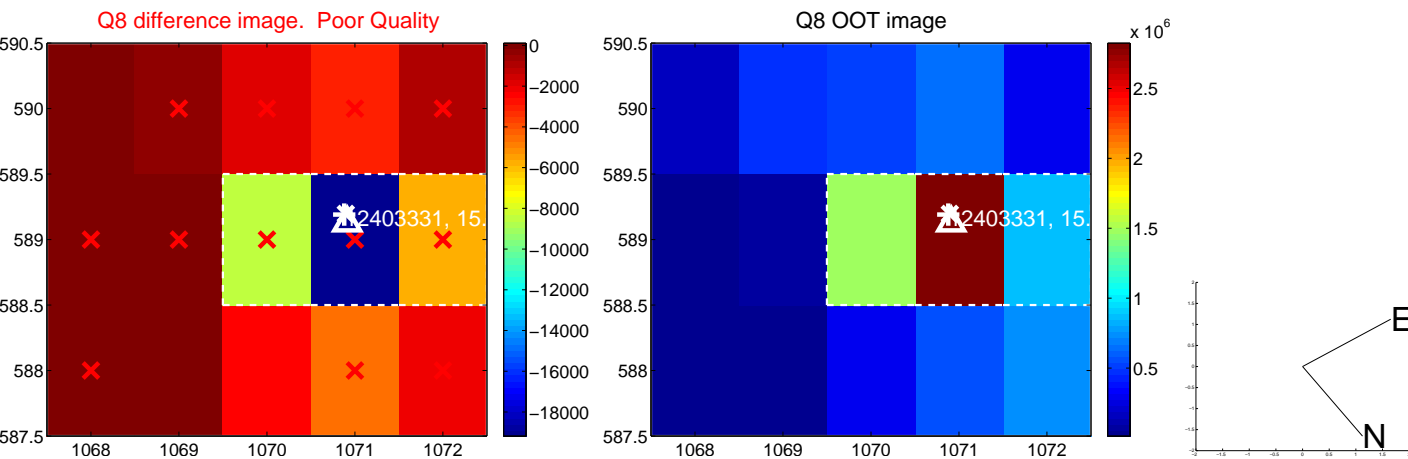
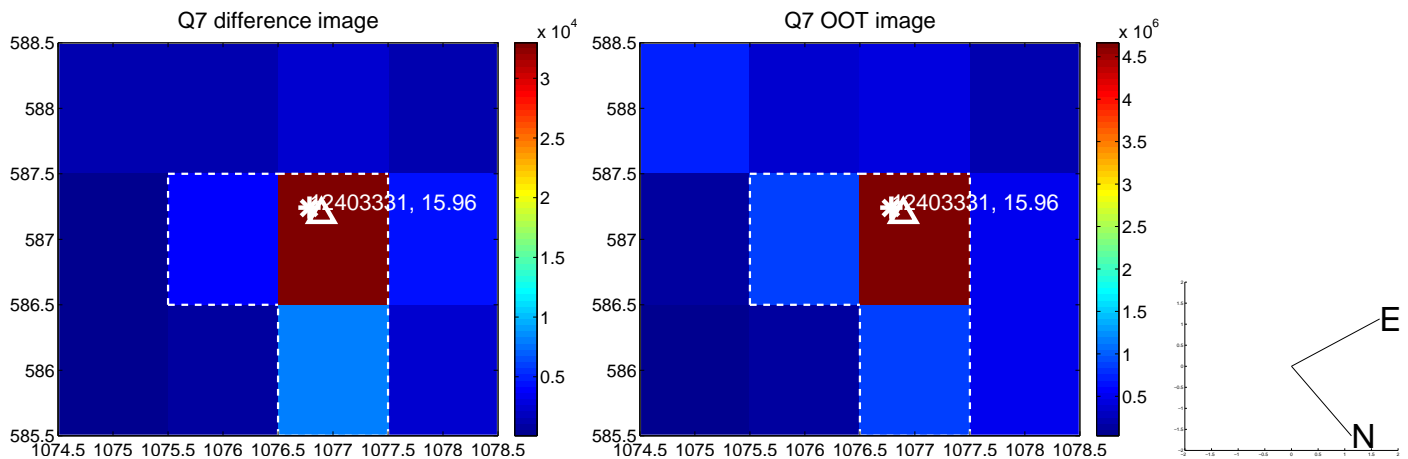
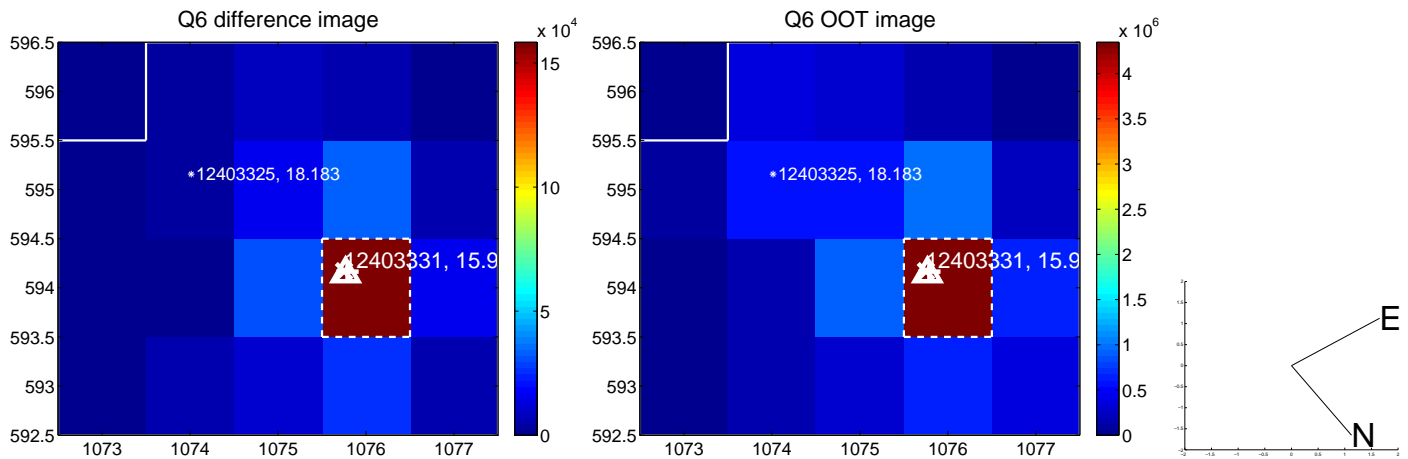
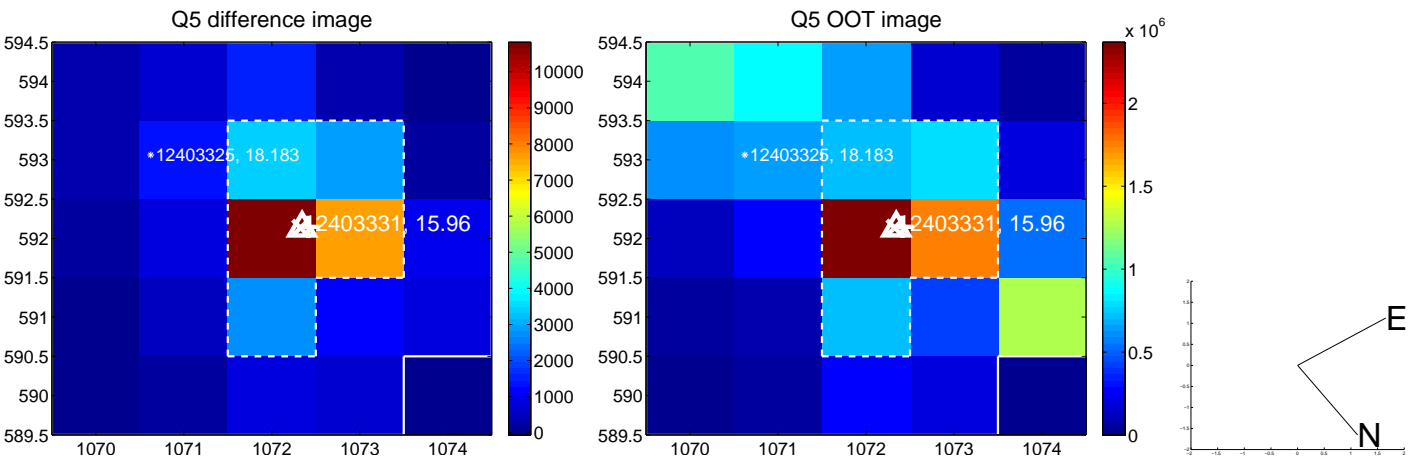


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

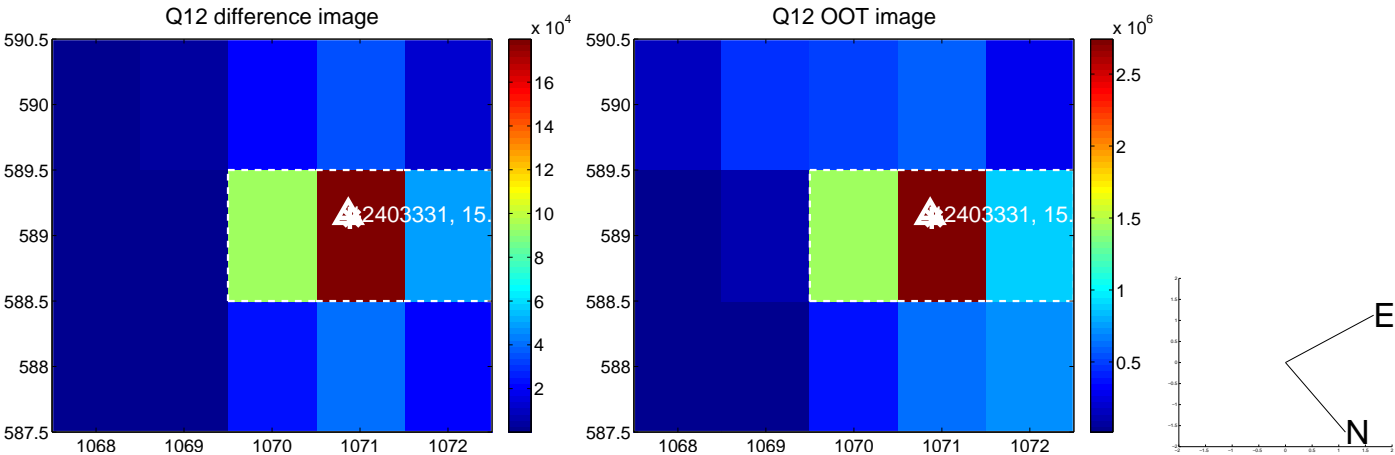
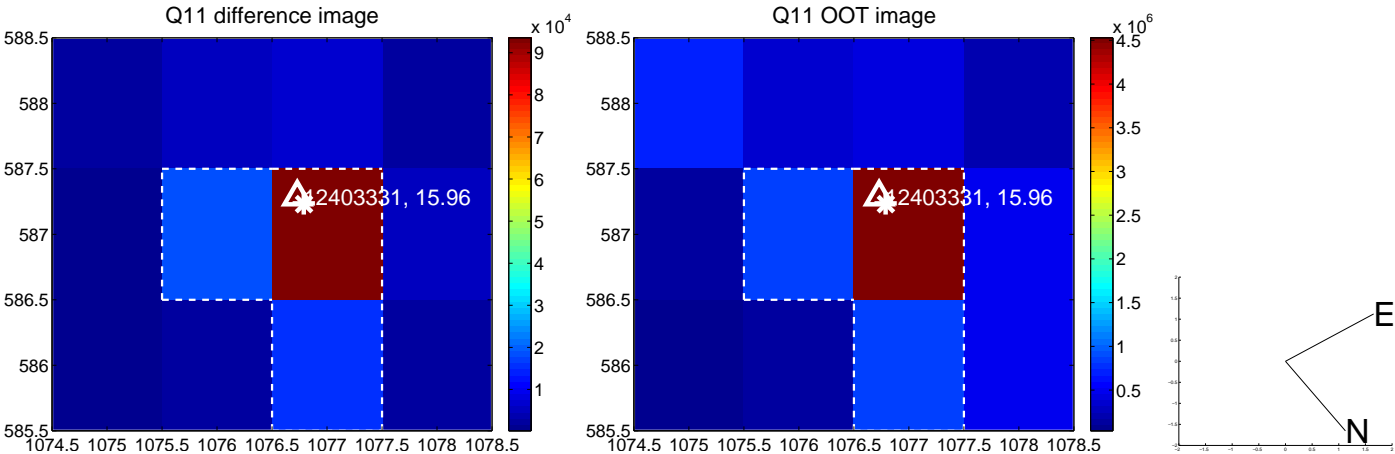
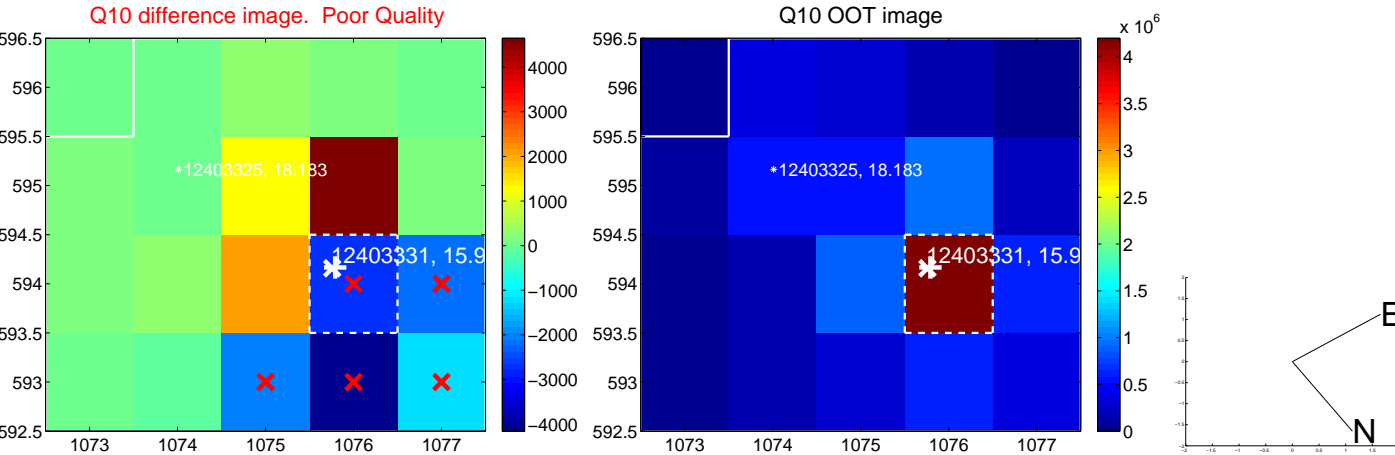
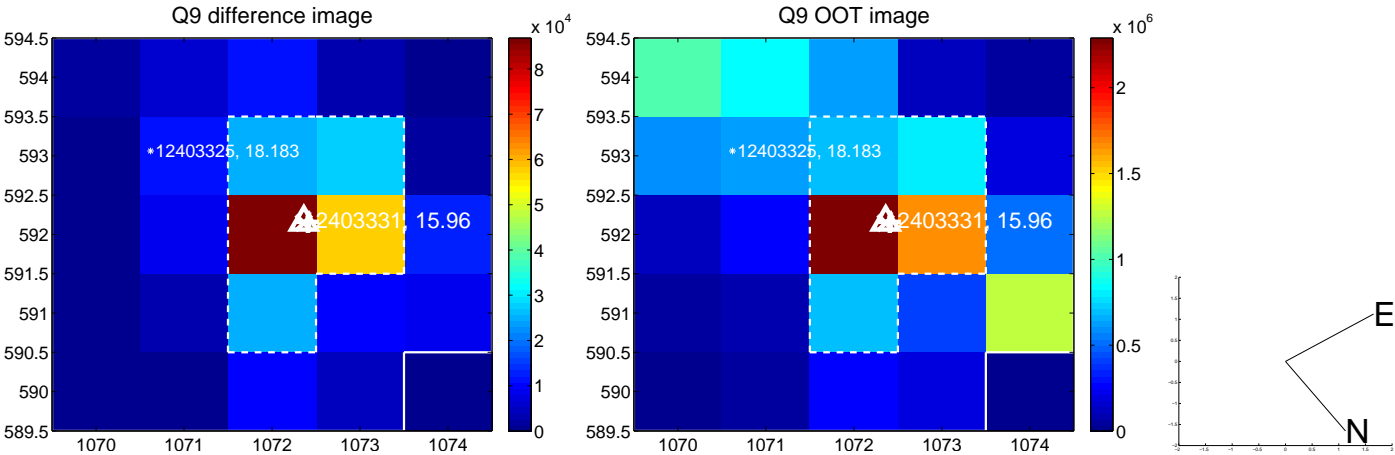
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



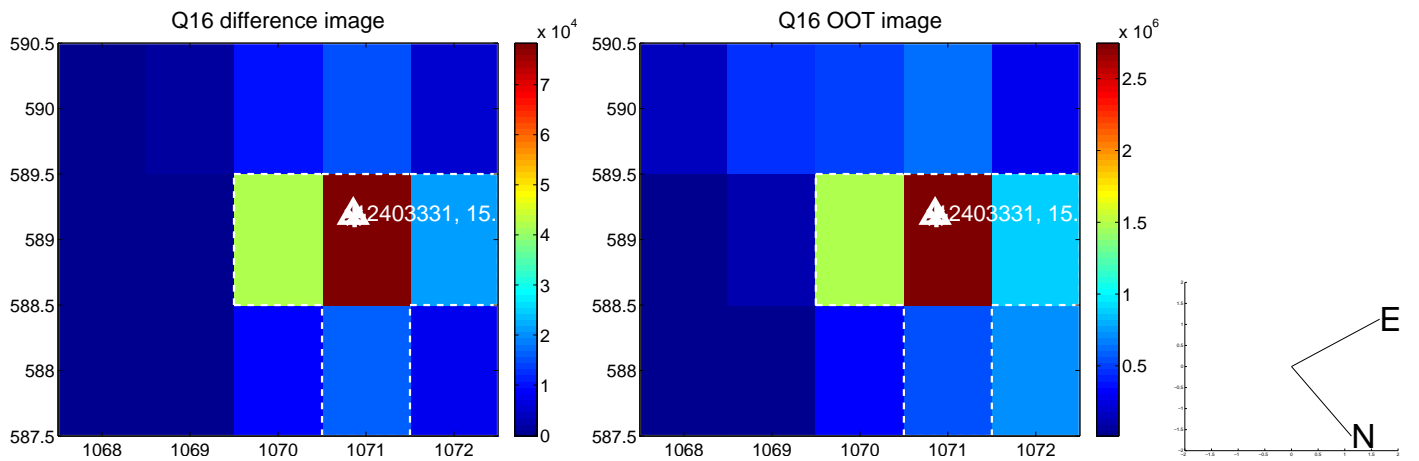
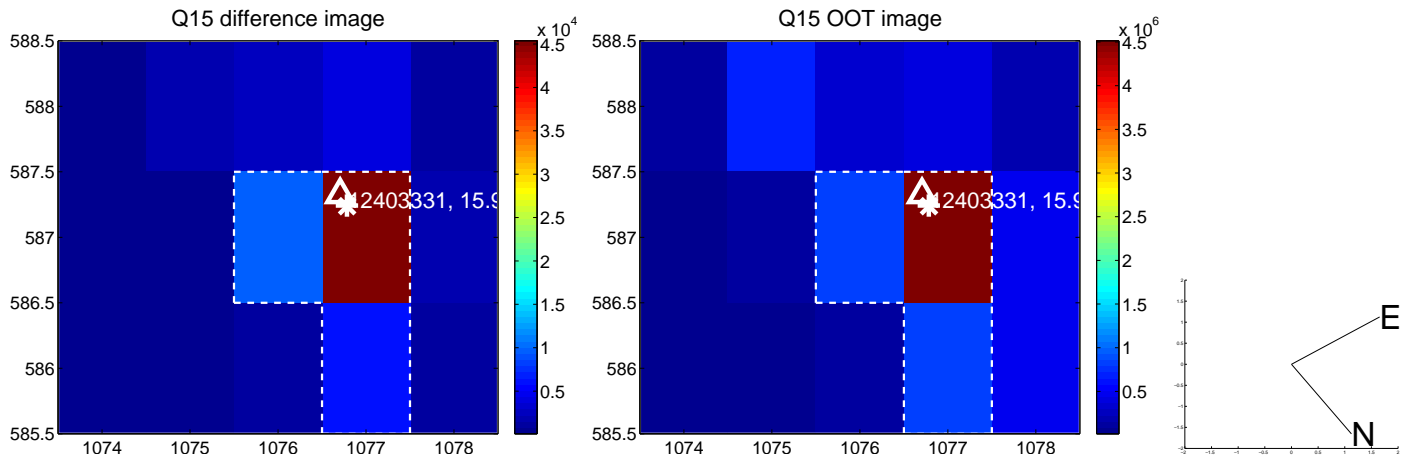
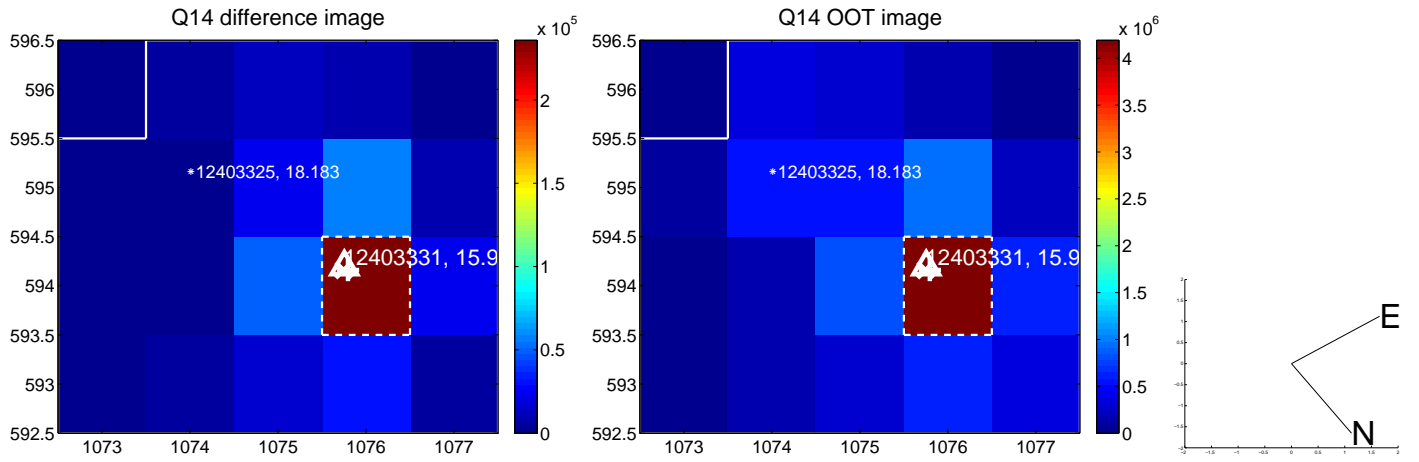
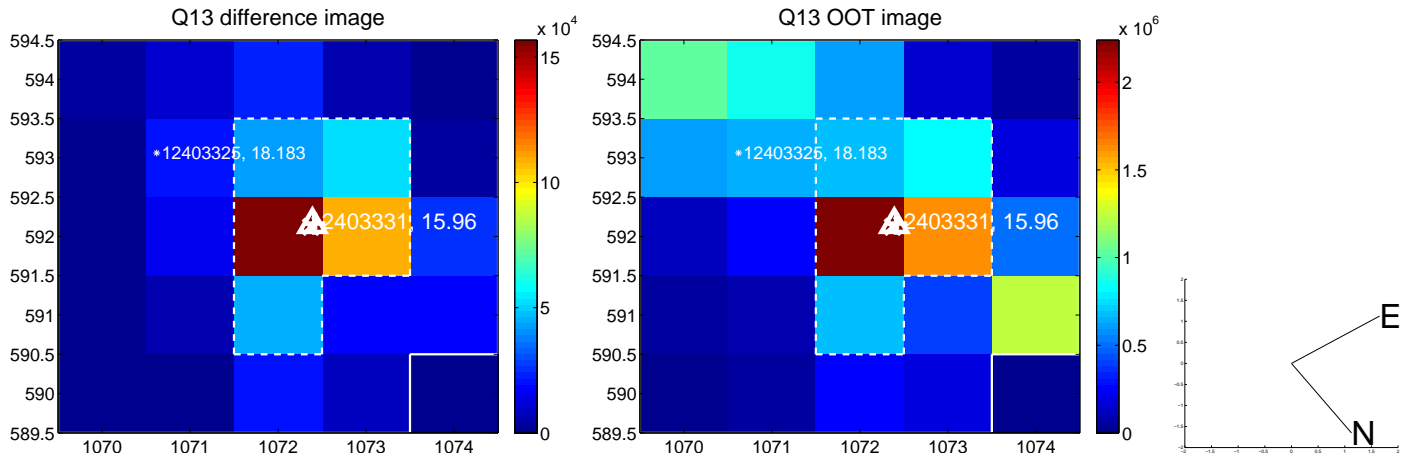
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



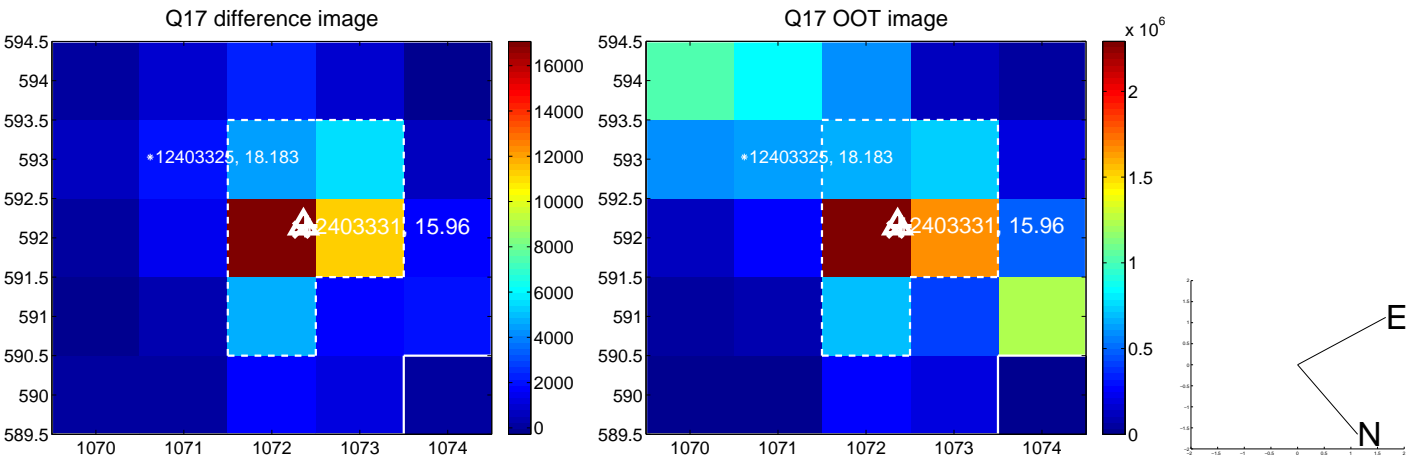
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



folded centroid time series figure for this object.

UKIRT Image

Declination

