

KIC 003946023

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})
003946023-01	OBS	2447.01	1.045488	132.279462	25.8	2.530	15.7	17.0	1.46	6057	0.86	6523.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003946023-01	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.

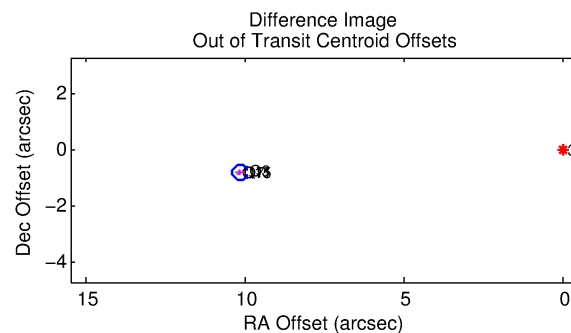
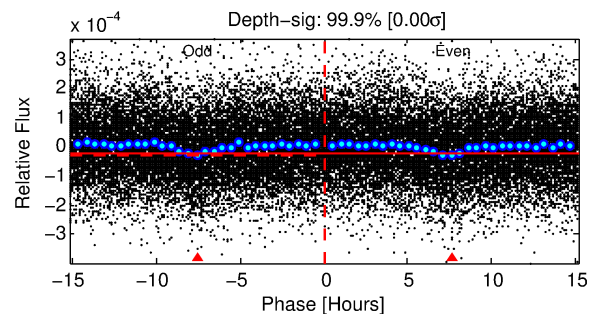
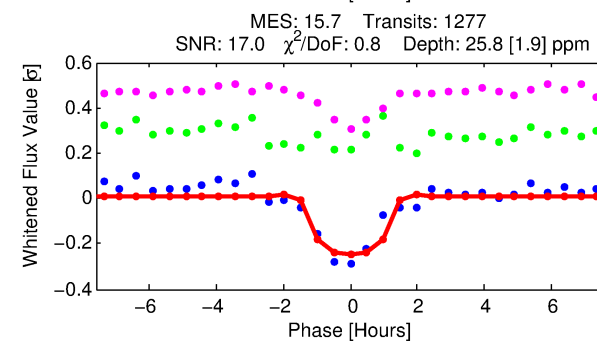
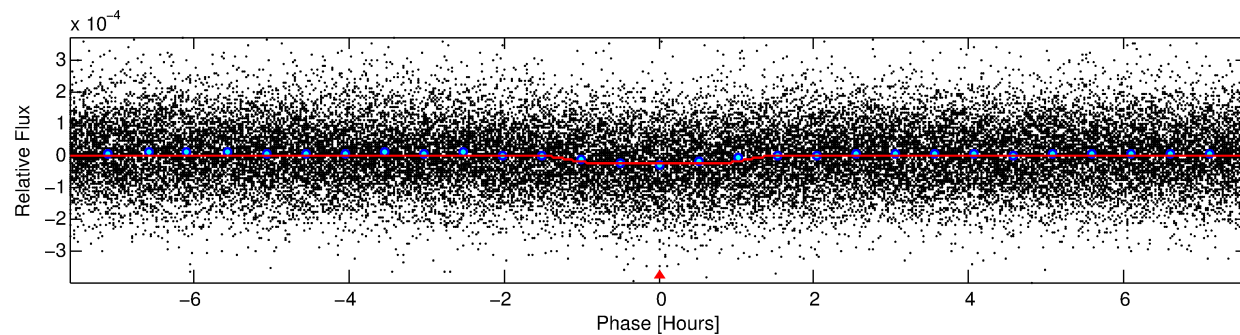
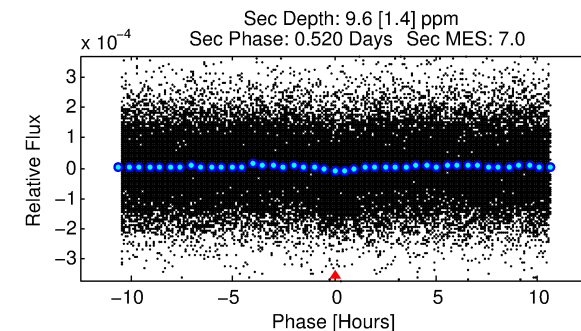
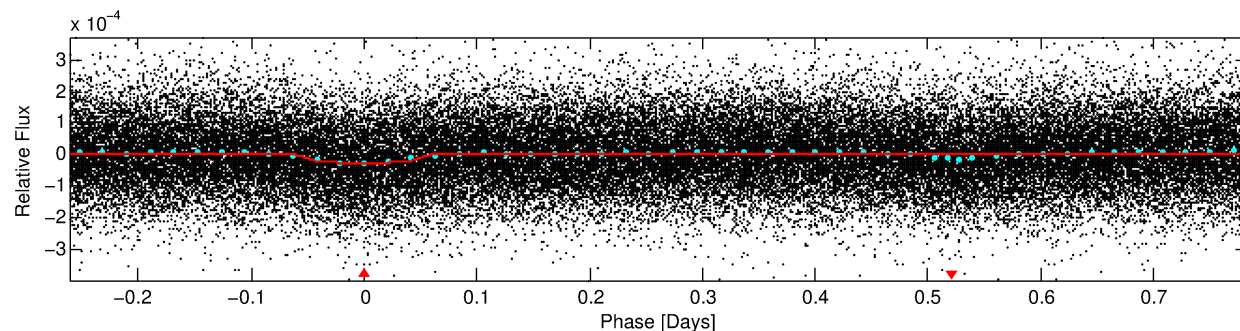
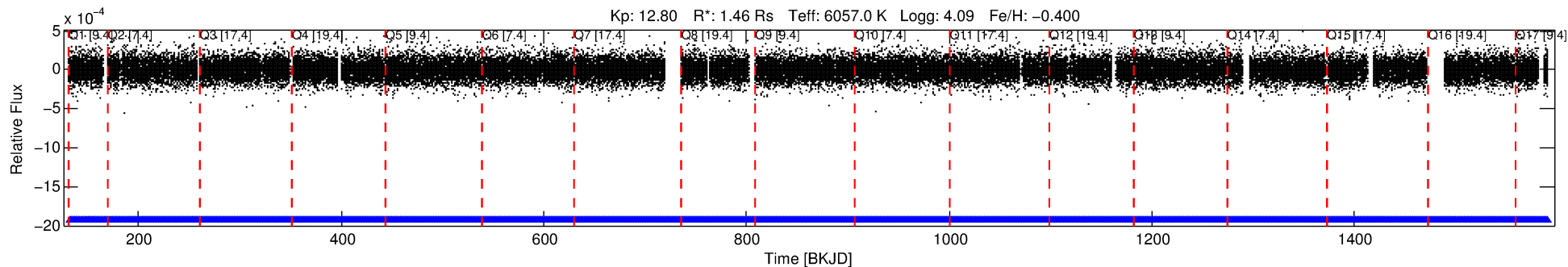
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003946023-01

No Significant Match Found

DV One-Page Summary

KIC: 3946023 Candidate: 1 of 1 Period: 1.045 d
KOI: K02447.01 Corr: 0.913



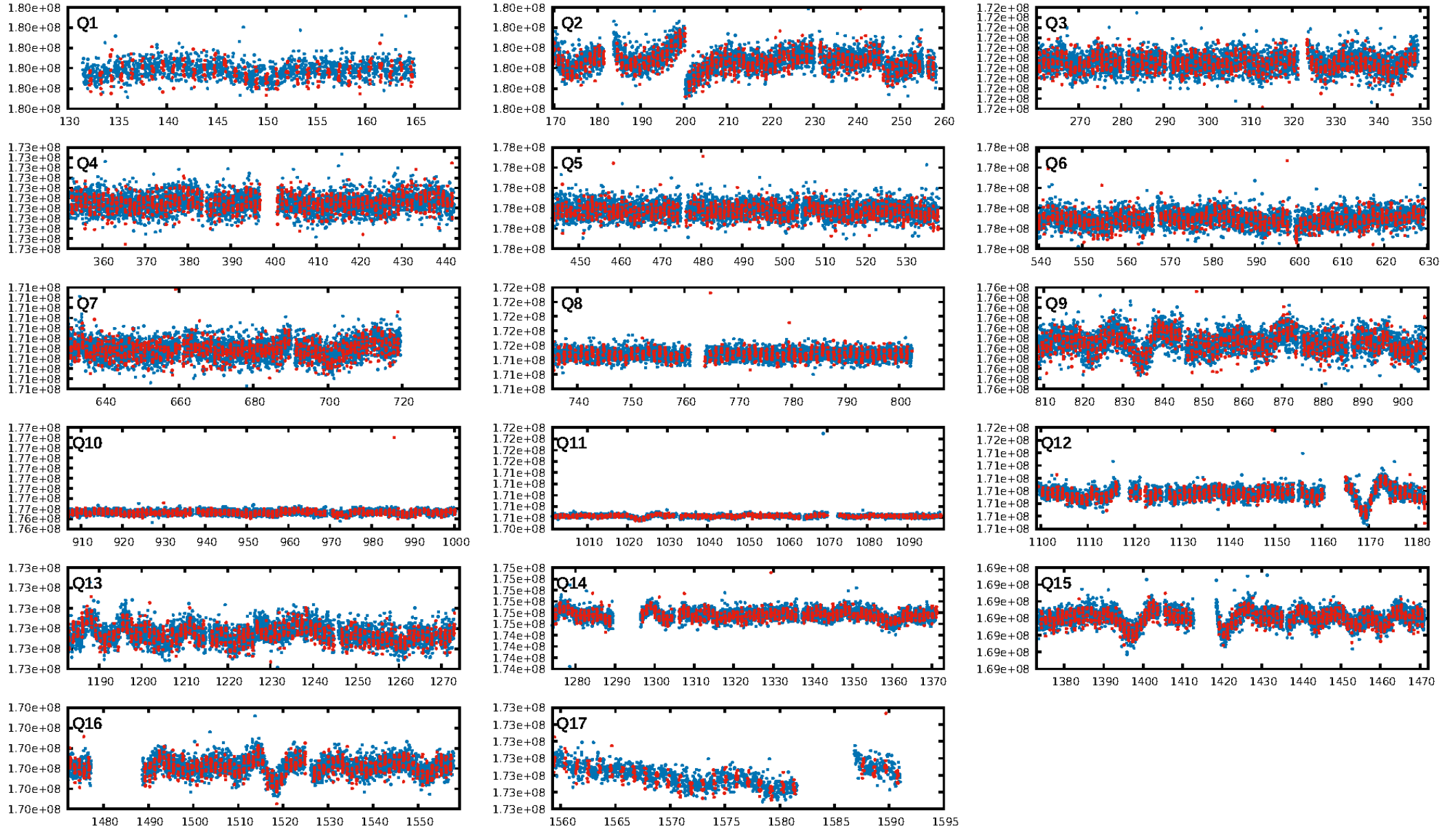
DV Fit Results:

Period = 1.04549 [0.00001] d
Epoch = 132.2795 [0.0020] BKJD
Rp/R* = 0.0054 [0.0014]
a/R* = 1.76 [1.60]
b = 0.89 [0.33]
Seff = 6523.38 [3047.34]
Teq = 2292 [268] K
Rp = 0.86 [0.31] Re
a = 0.0198 [0.0054] AU
Ag = 2.81 [1.94] [0.93σ]
Teff = 4585 [611] K [3.44σ]

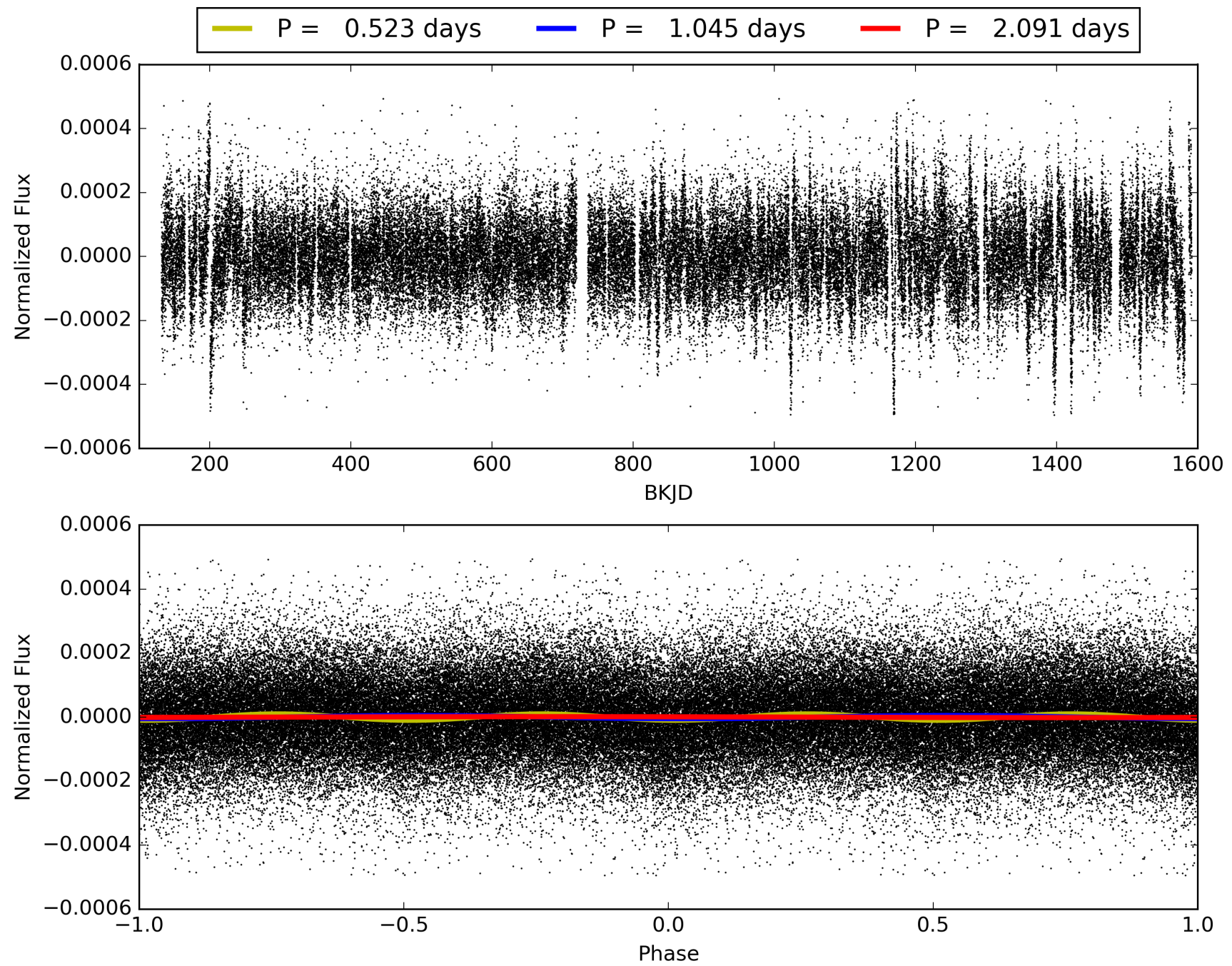
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: 1.54e-51
RollingBand-fgt: 1.00 [1219/1219]
GhostDiagnostic-chr: -0.3209
Centroid-sig: 0.0%
Centroid-so: N/A
OotOffset-rm: 10.196 arcsec [116.47σ]
KicOffset-rm: 10.111 arcsec [135.94σ]
OotOffset-st: 0/4/0/0 [4]
KicOffset-st: 0/4/0/0 [4]
DiffImageQuality-fgm: 1.00 [4/4]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003946023-01, PDC Light Curves

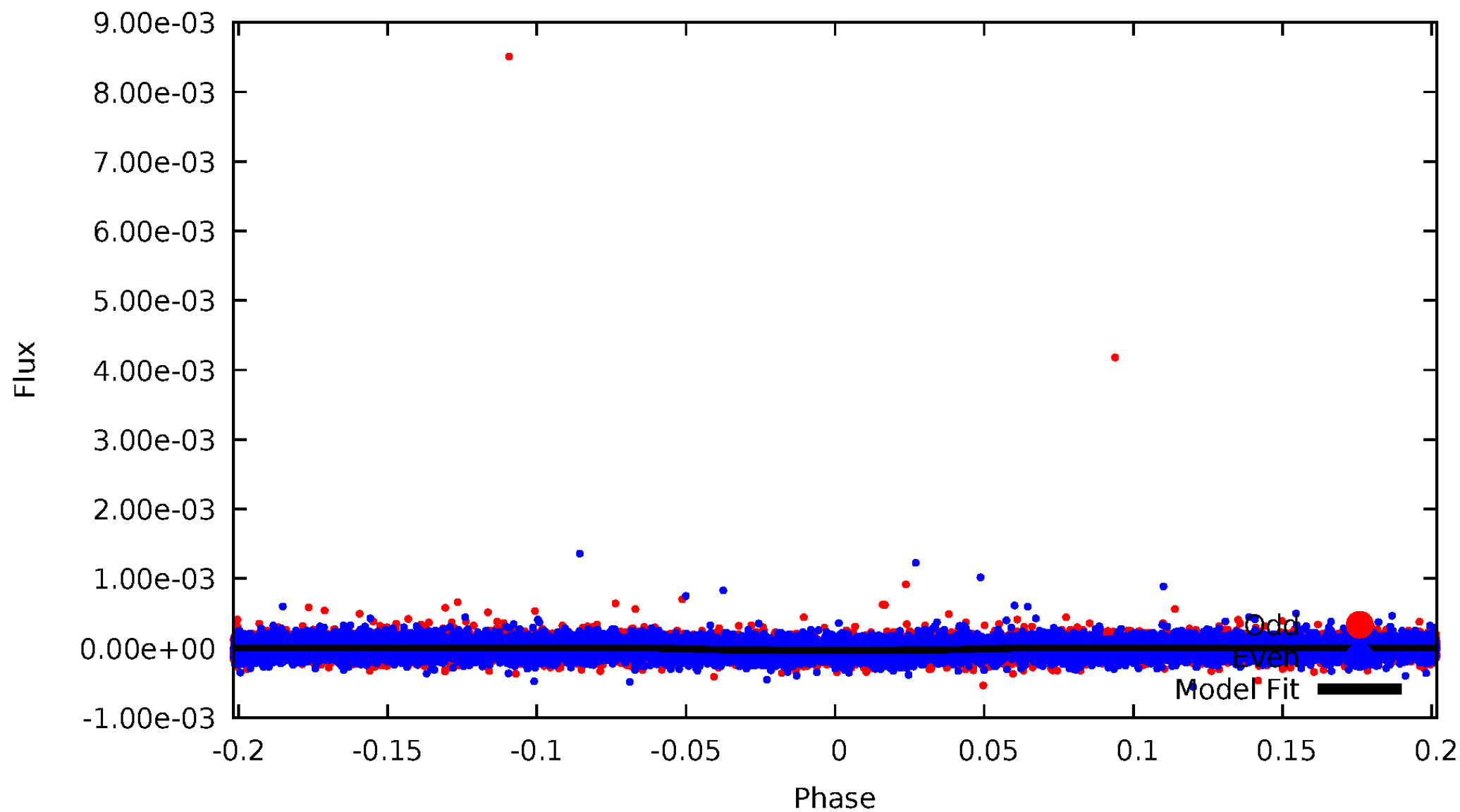


TCE 003946023-01



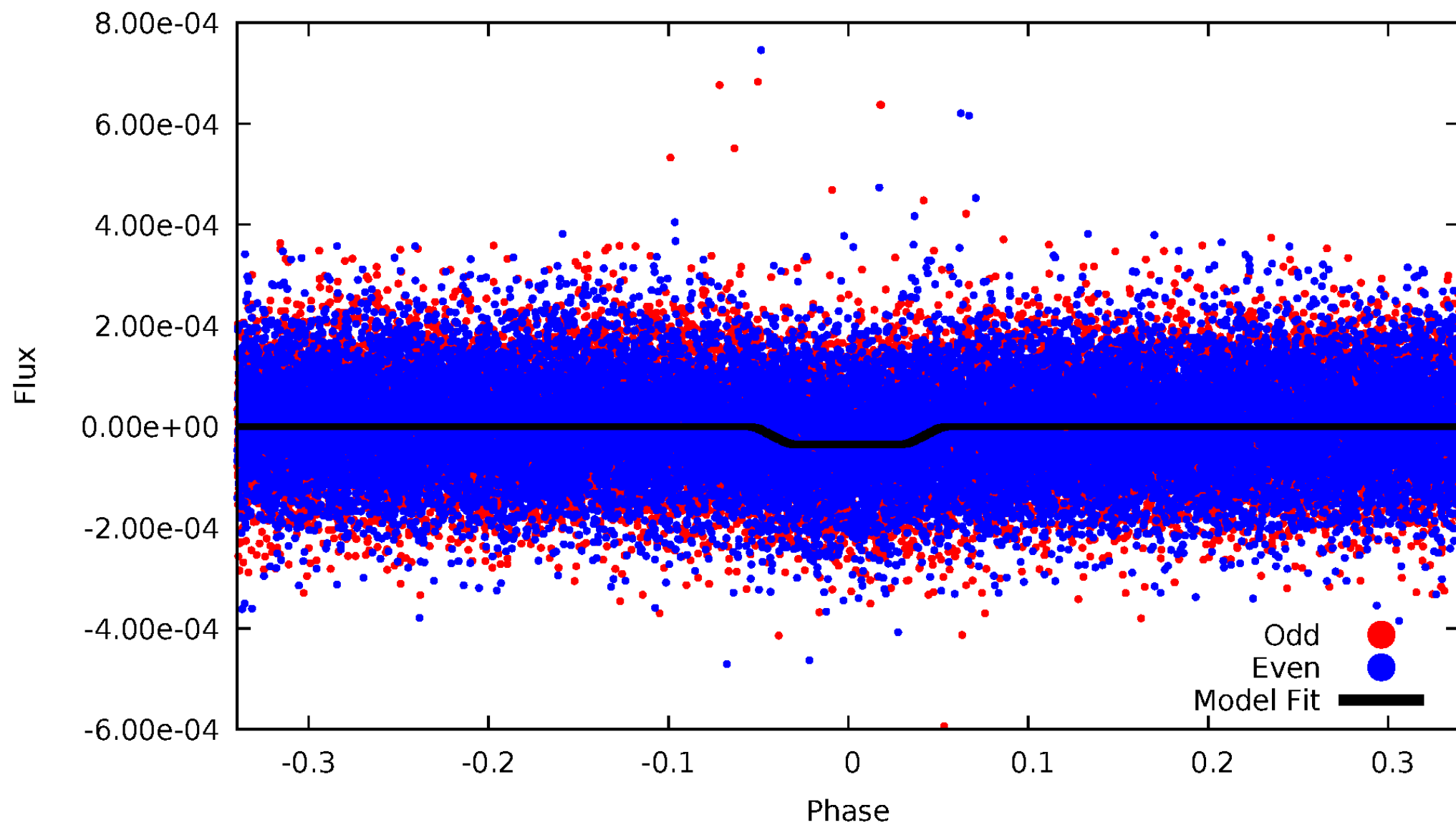
DV Odd/Even

TCE 003946023-01

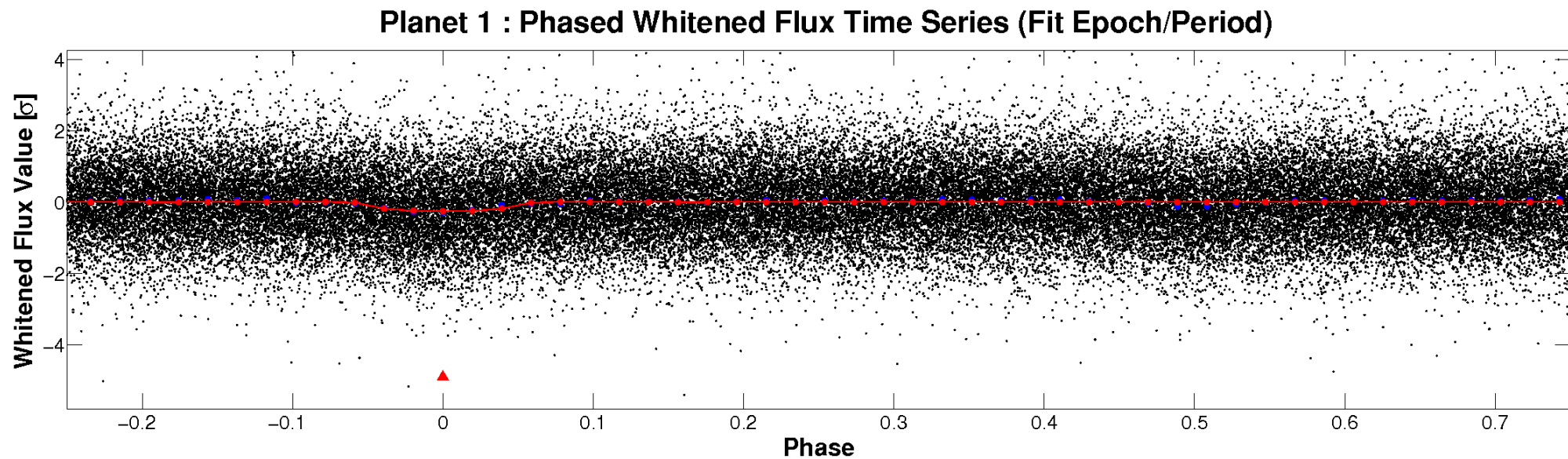
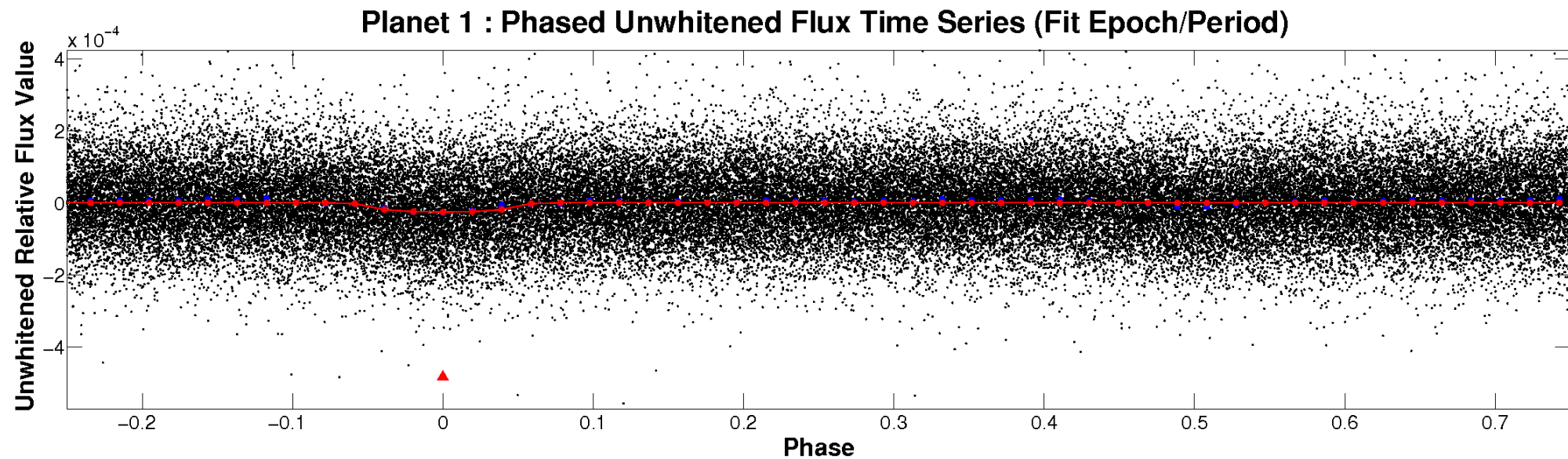


ALT Odd/Even

TCE 003946023-01

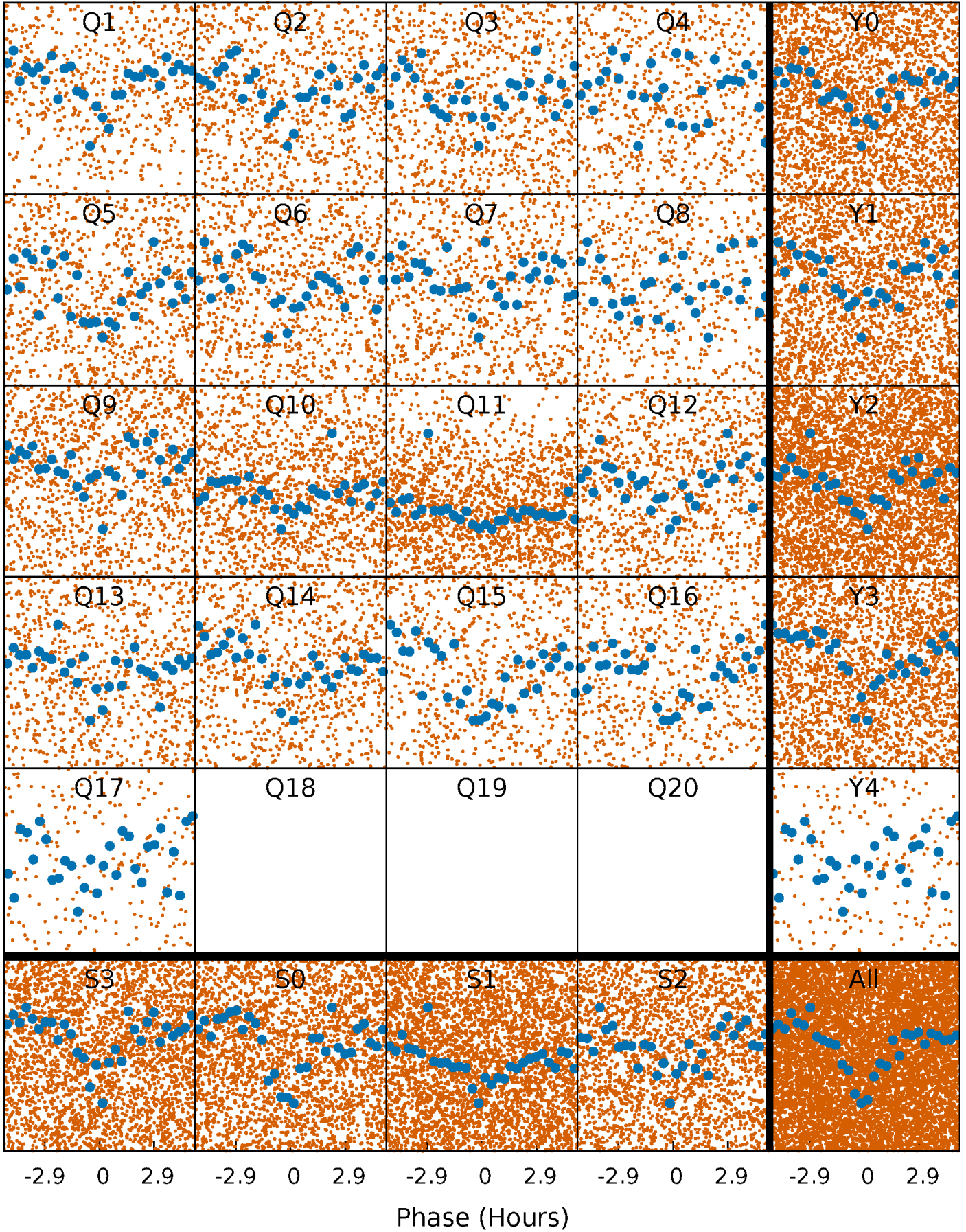


Non-Whitened Vs. Whitened Light Curve



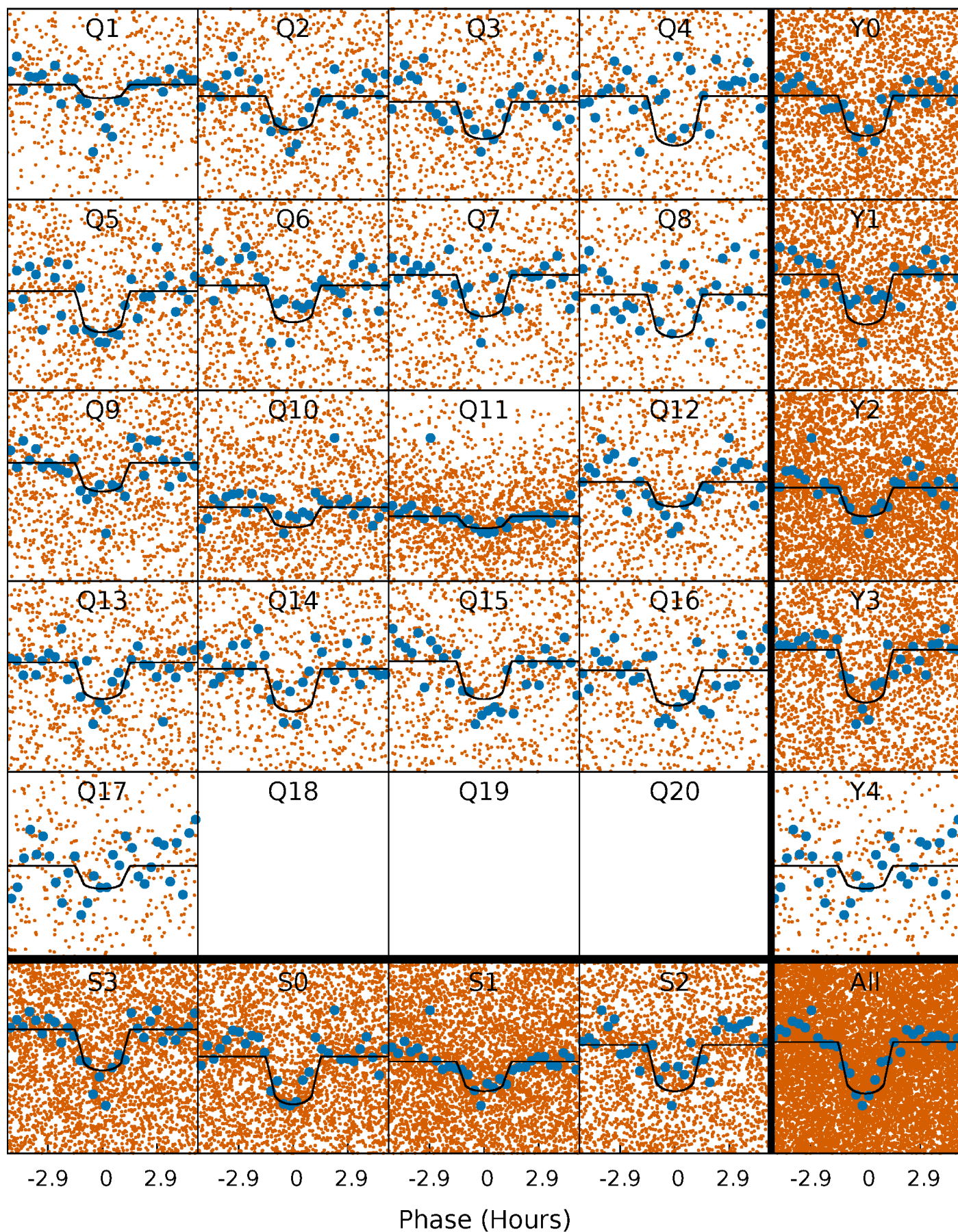
PDC Quarter-Phased Transit Curves

TCE 003946023-01 P= 1.045488 Days $T_0=132.279462$ (BKJD)



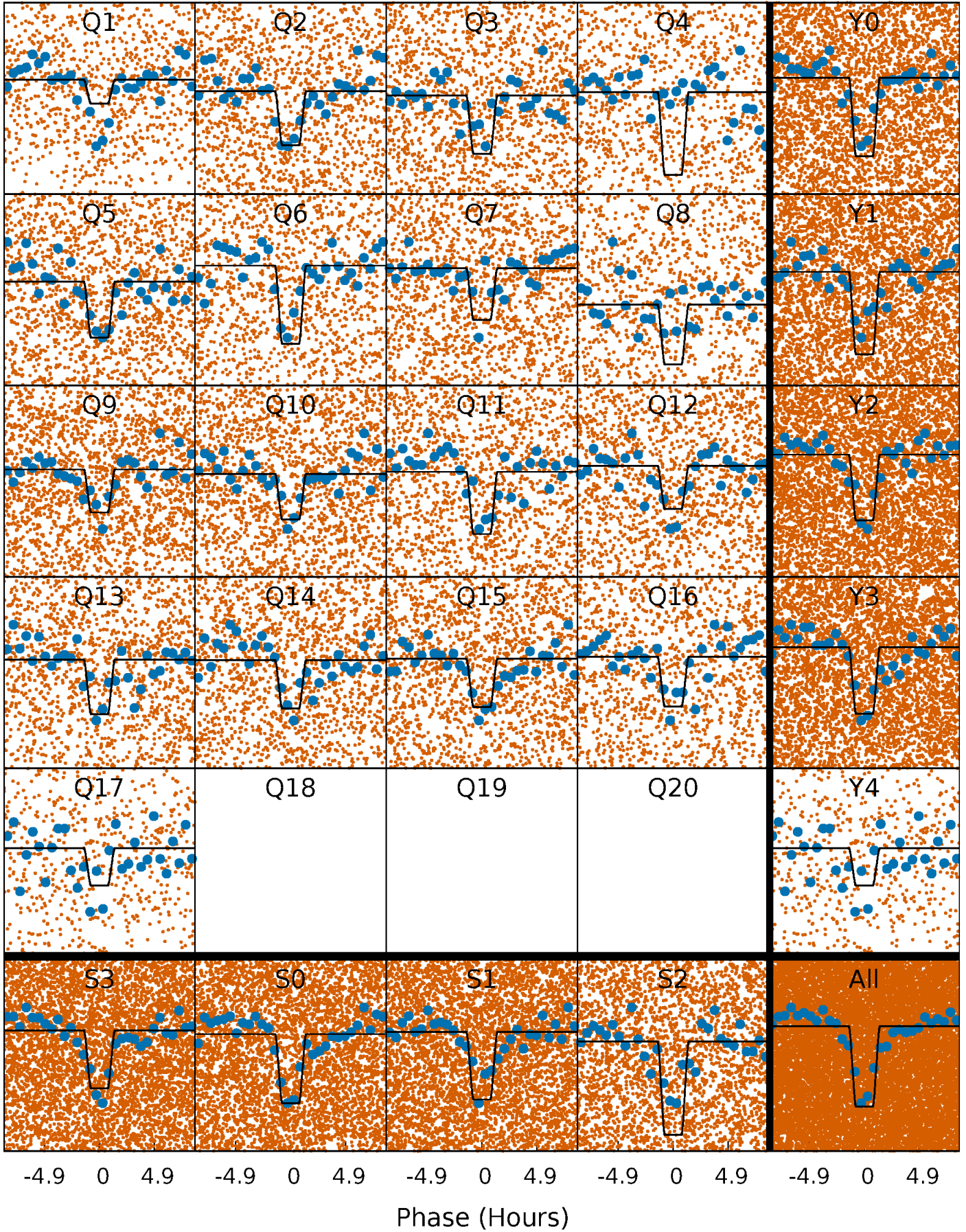
DV Quarter-Phased Transit Curves

TCE 003946023-01 P= 1.045488 Days $T_0=132.279462$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

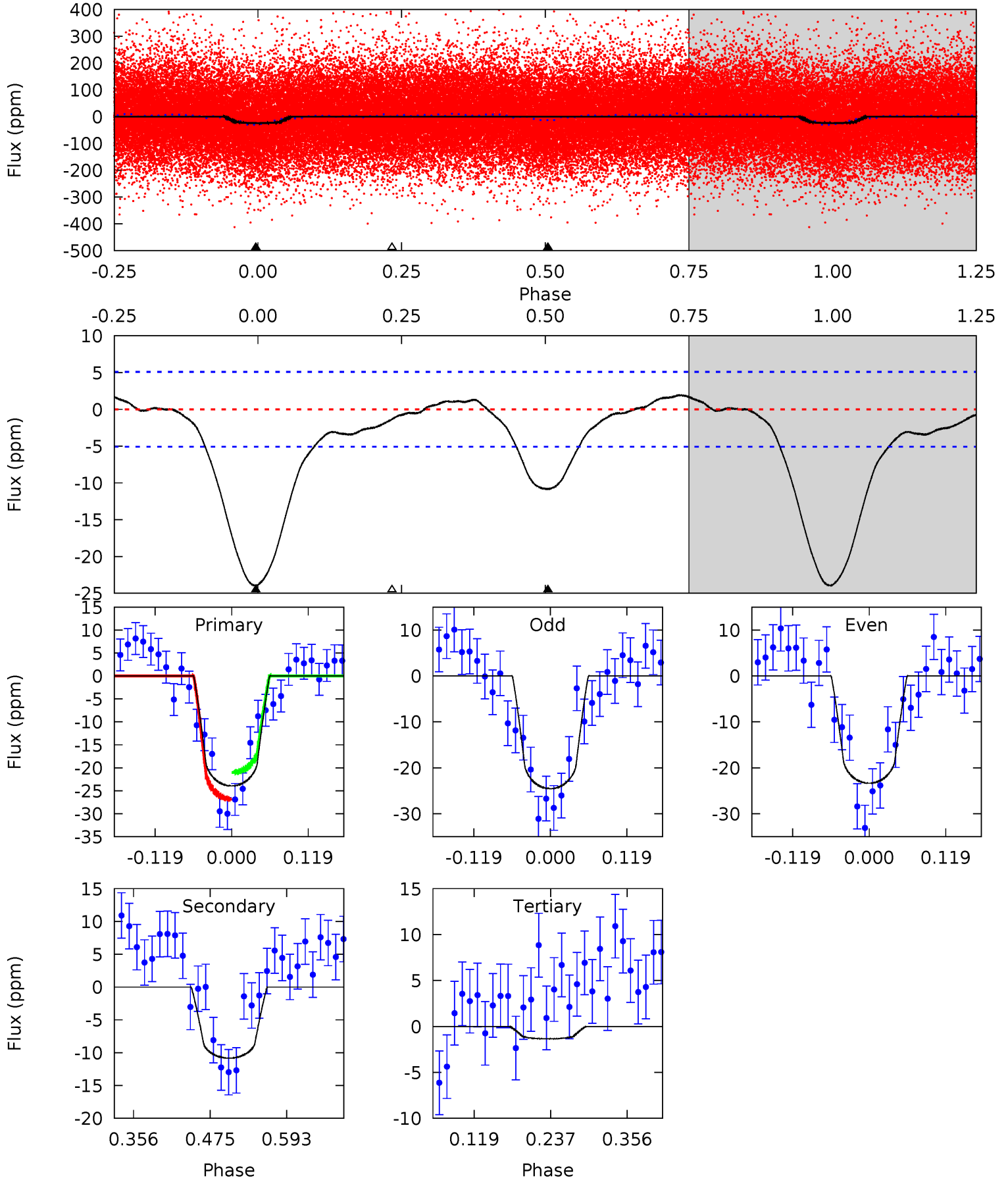
TCE 003946023-01 P= 1.045485 Days $T_0=132.278775$ (BKJD)



DV Model-Shift Uniqueness Test

003946023-01, P = 1.045488 Days, E = 131.233974 Days

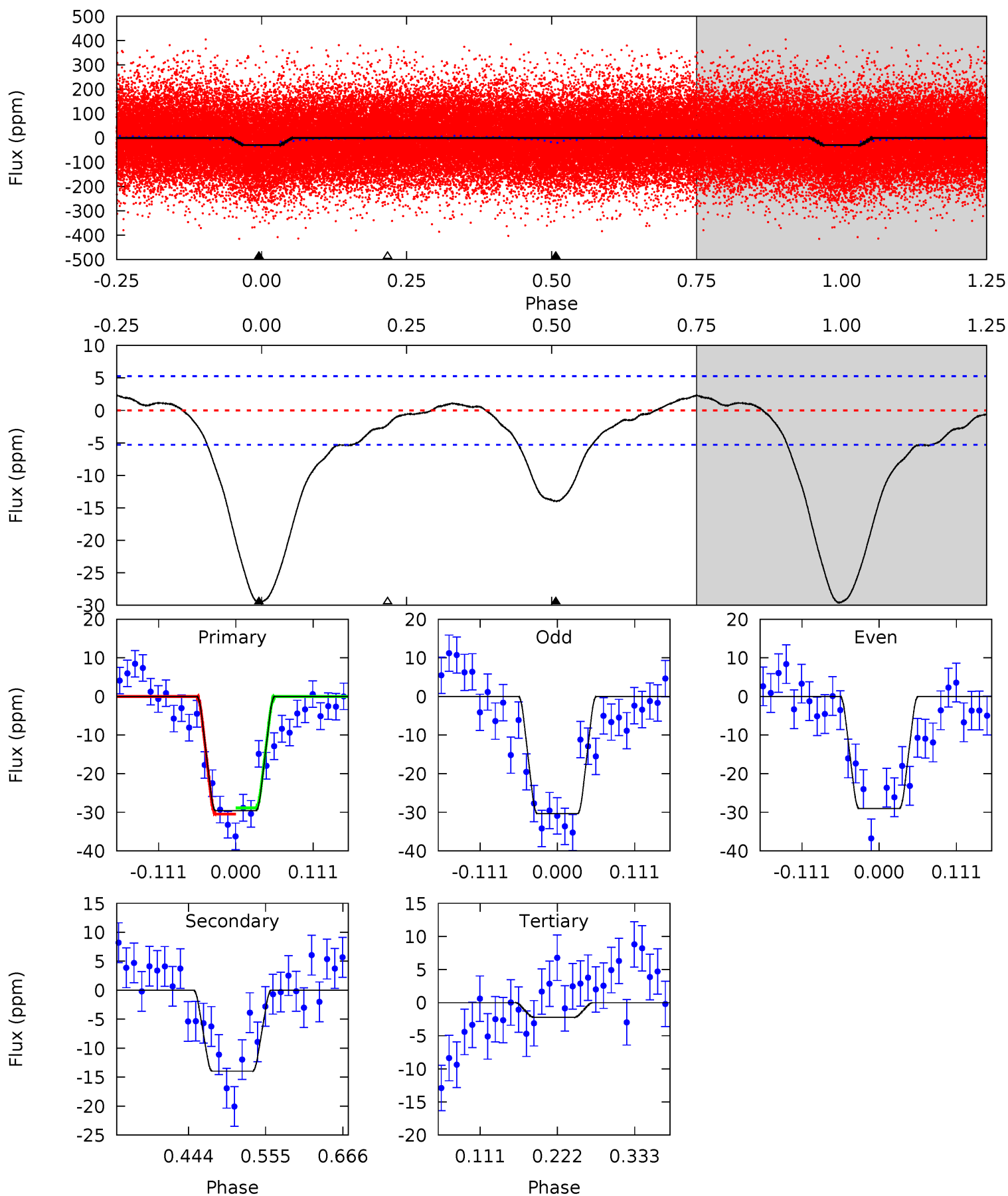
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.3	9.64	1.20	0	4.53	1.56	1.39	20.1	21.3	8.44	9.64	0.53	0.93	0.07	2.60



Alt Model-Shift Uniqueness Test

003946023-01, P = 1.045485 Days, E = 131.233290 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
25.4	12.0	1.90	0	4.54	1.59	1.96	23.6	25.4	10.1	12.0	0.56	0.91	0.07	0.67



Stellar Parameters For KIC 003946023

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	ρ_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	6057^{+164}_{-164}	$4.088^{+0.273}_{-0.117}$	$-0.400^{+0.350}_{-0.250}$	$1.457^{+0.314}_{-0.384}$	$0.950^{+0.158}_{-0.110}$	$0.432^{+0.646}_{-0.170}$
	+3%/-3%	+7%/-3%	+87%/-62%	+22%/-26%	+17%/-12%	+150%/-39%
Source	PHO1	FLK73	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 003946023-01 / KOI 2447.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-11 ± 1	$0.82^{+0.27}_{-0.23}$	3137^{+227}_{-250}	4753^{+680}_{-470}	$3.558^{+3.500}_{-1.570}$
Alt.	-14 ± 1	$0.93^{+0.28}_{-0.24}$	3163^{+201}_{-231}	4784^{+576}_{-446}	$3.587^{+2.890}_{-1.478}$

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

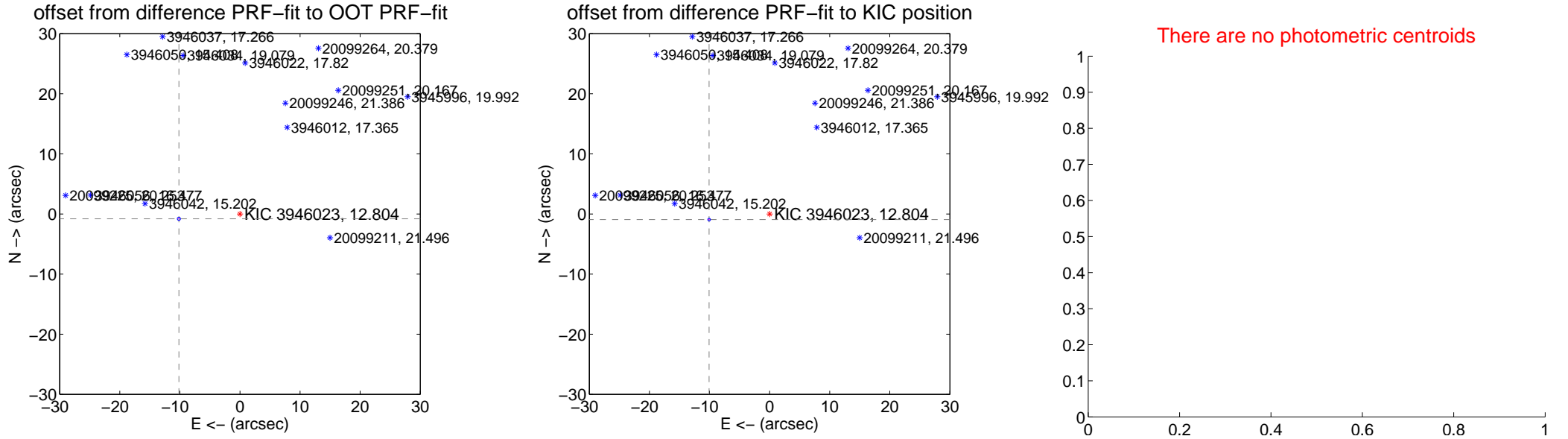
DV Centroid Data

Supplemental centroid analysis for 003946023-01. Kepler magnitude: 12.80. Transit SNR 16.98

There are 4 quarters with good PRF difference image offsets

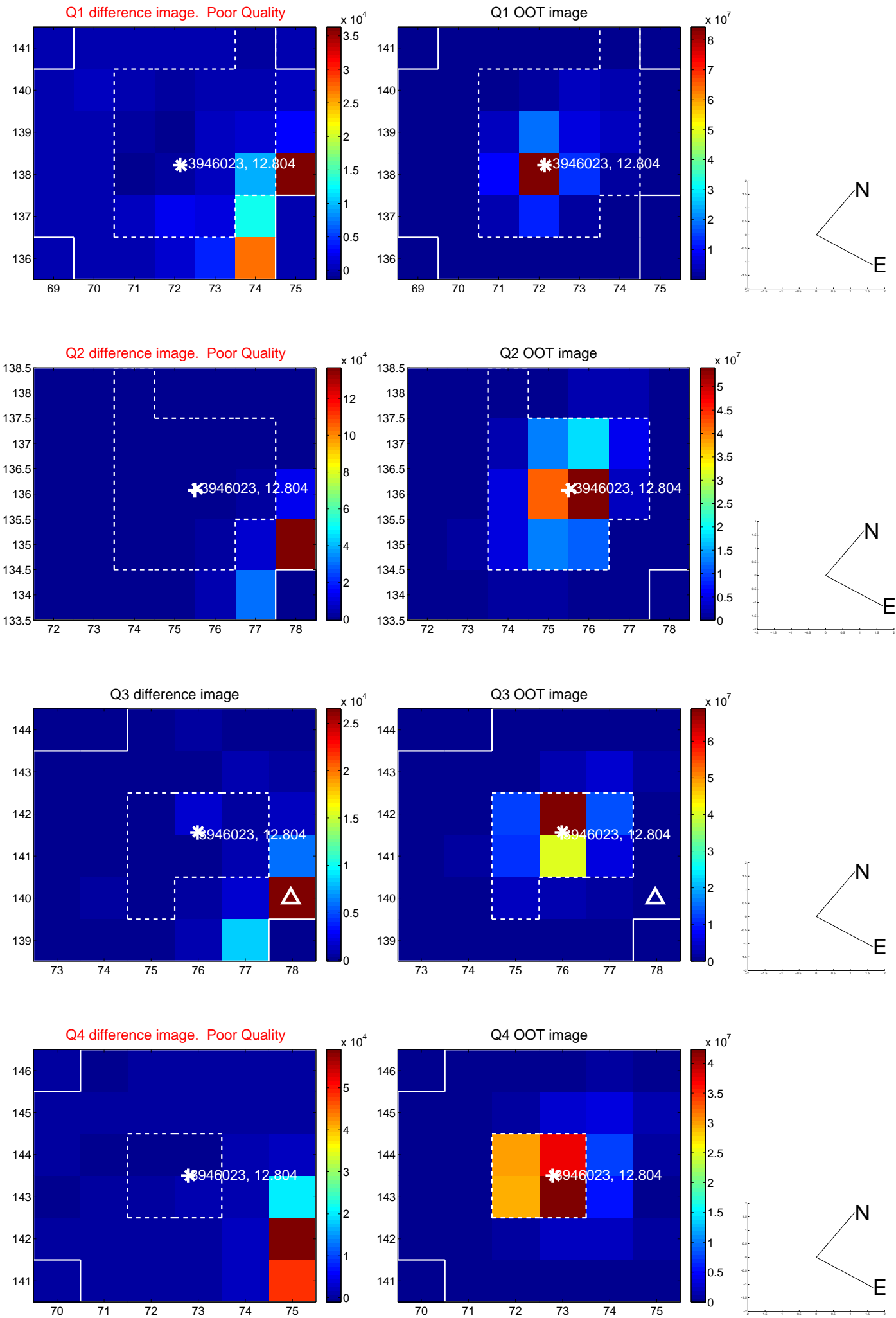
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	10.196 \pm 0.088	116.47	10.165 \pm 0.088	-0.797 \pm 0.072
PRF-fit source offset from KIC position	10.111 \pm 0.074	135.94	10.069 \pm 0.073	-0.929 \pm 0.077
photometric centroid source offset	—	—	—	—

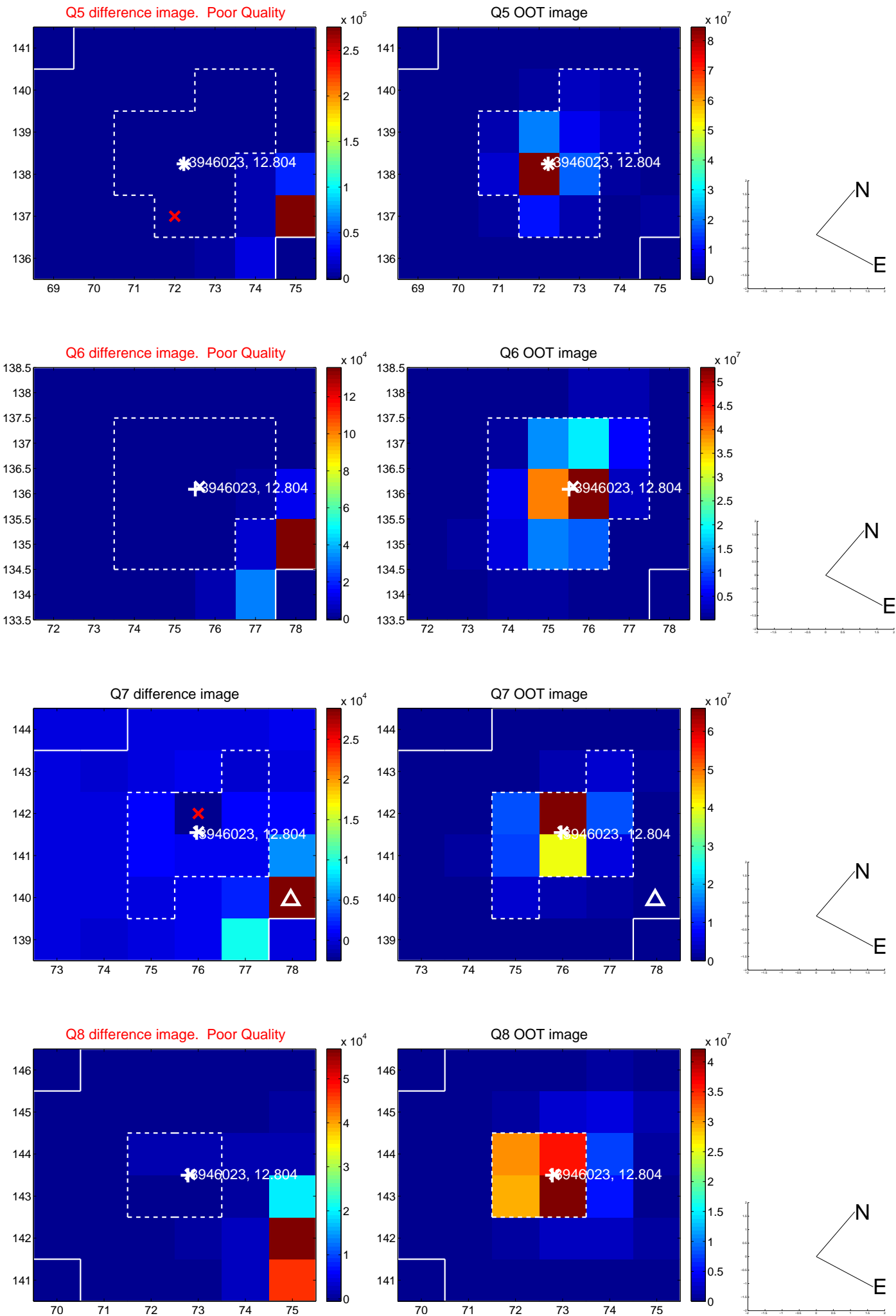


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

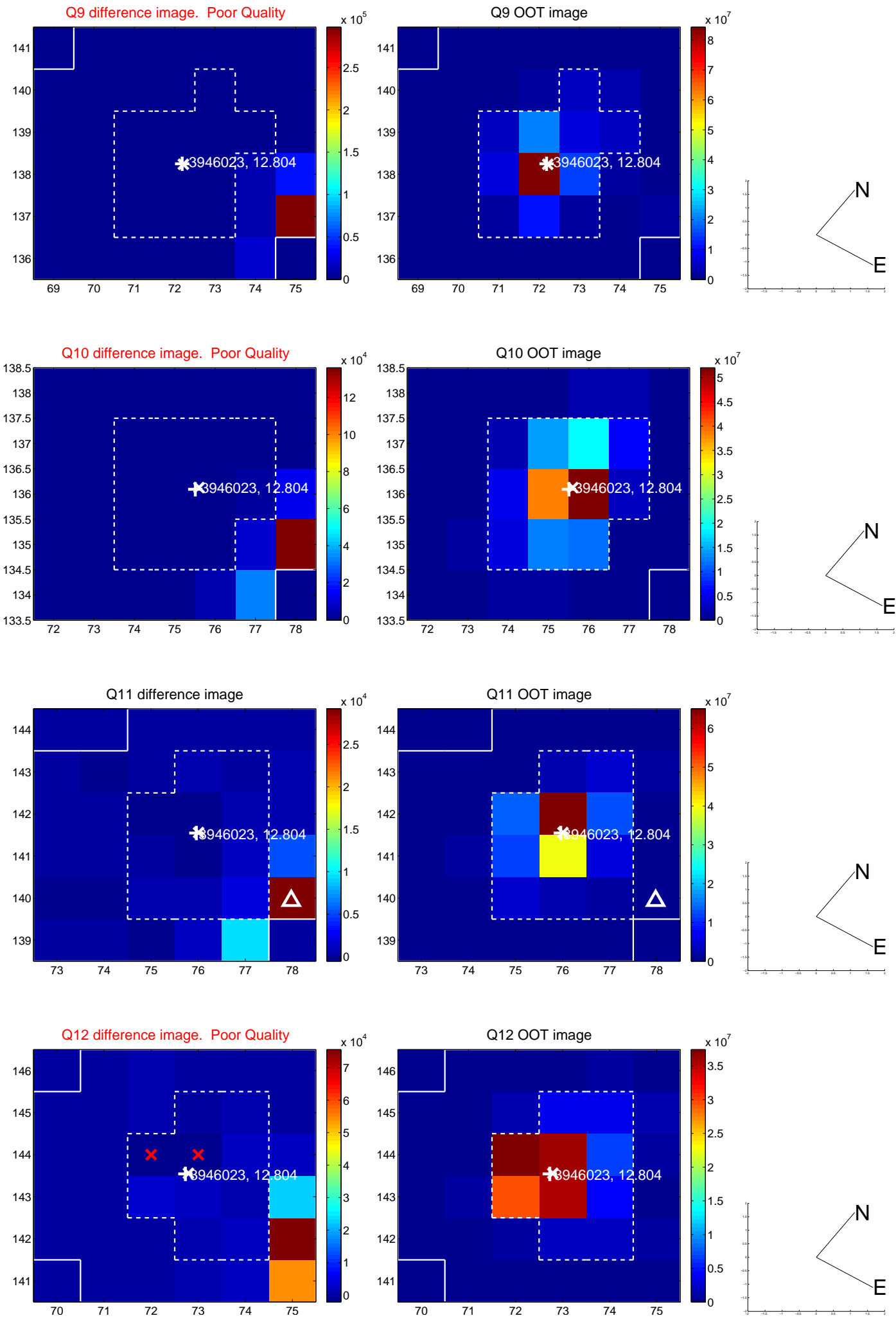
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



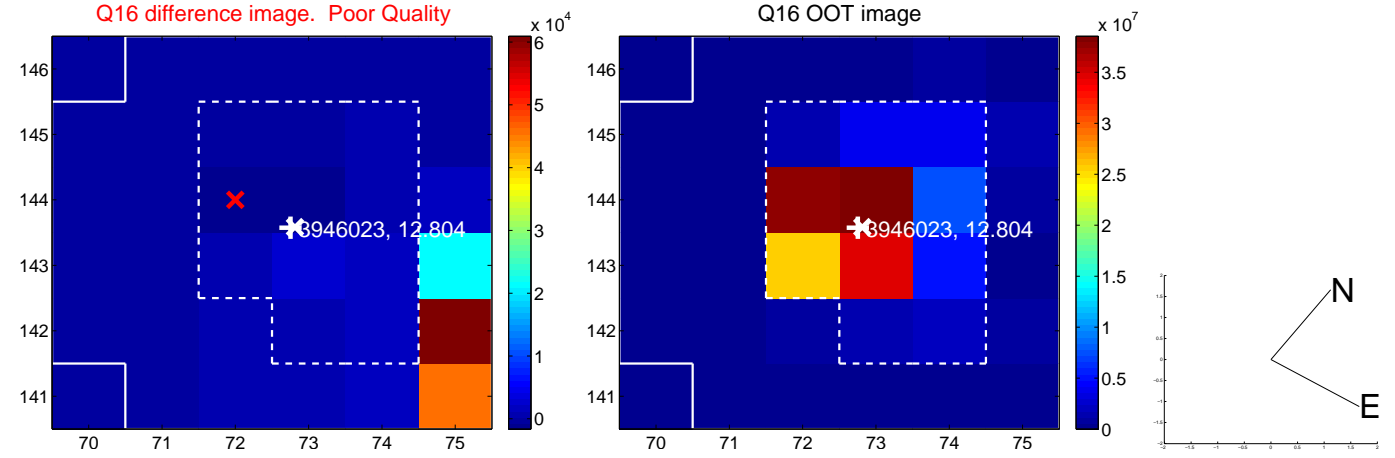
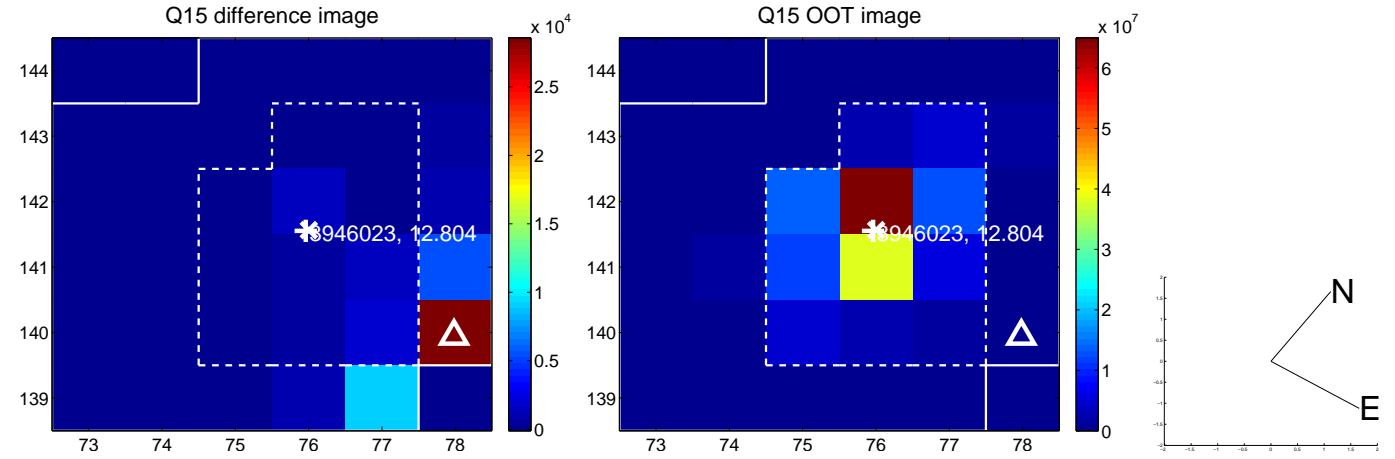
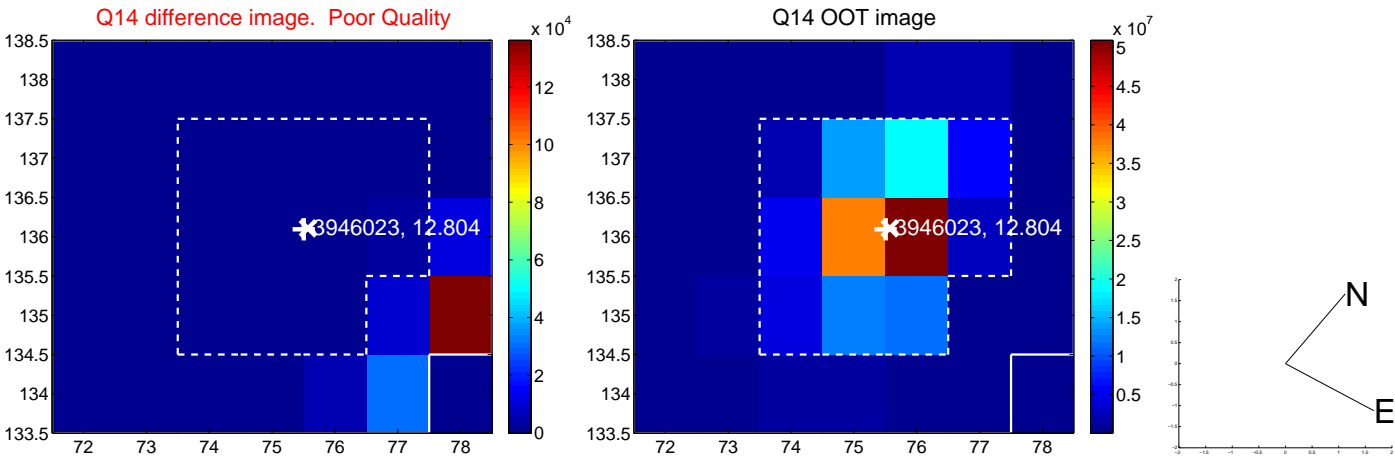
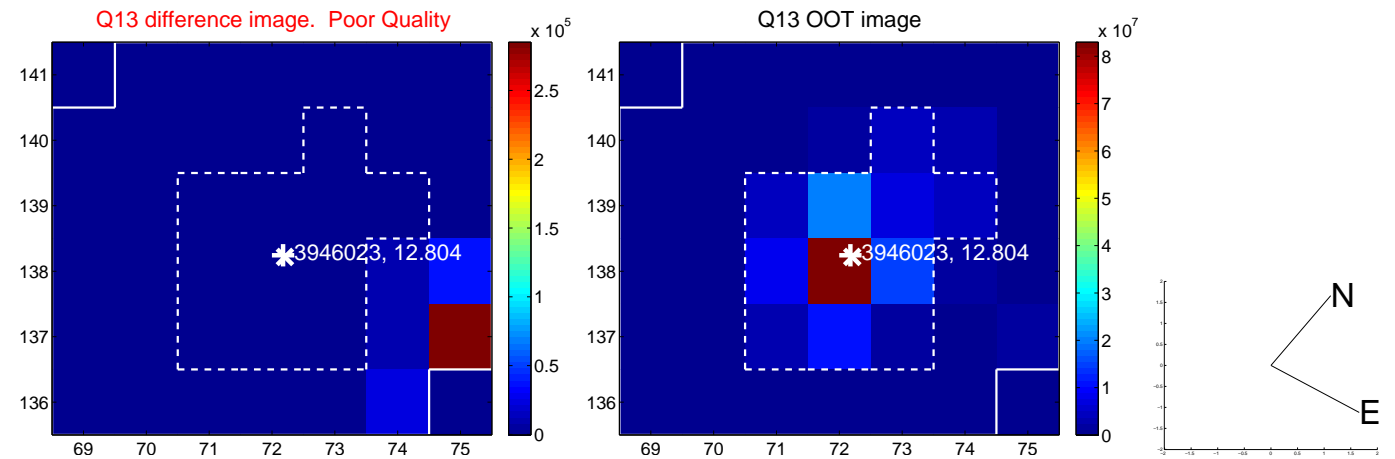
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



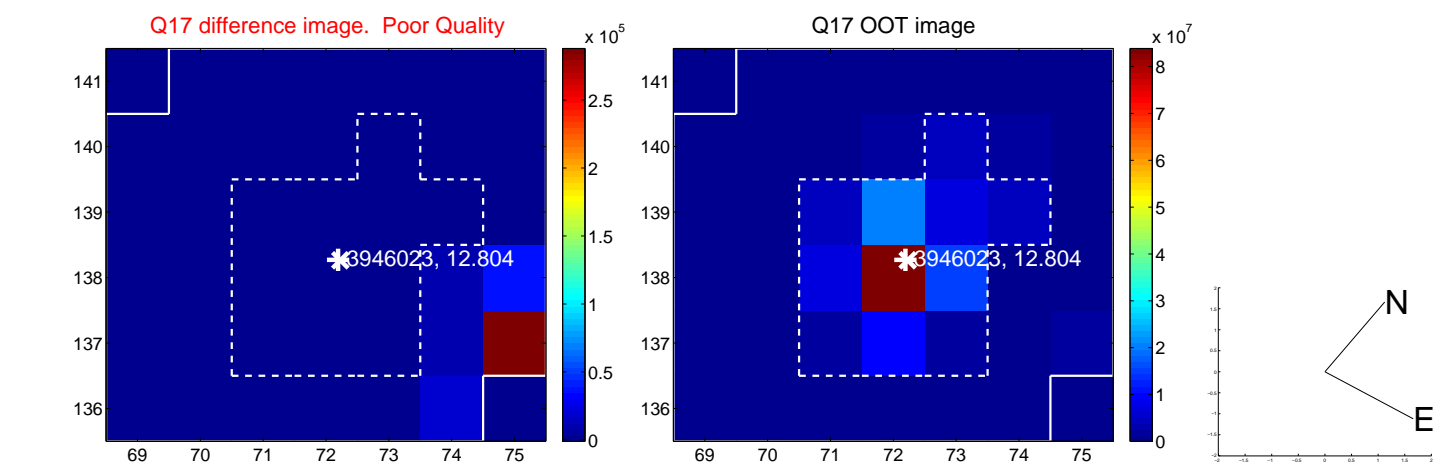
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



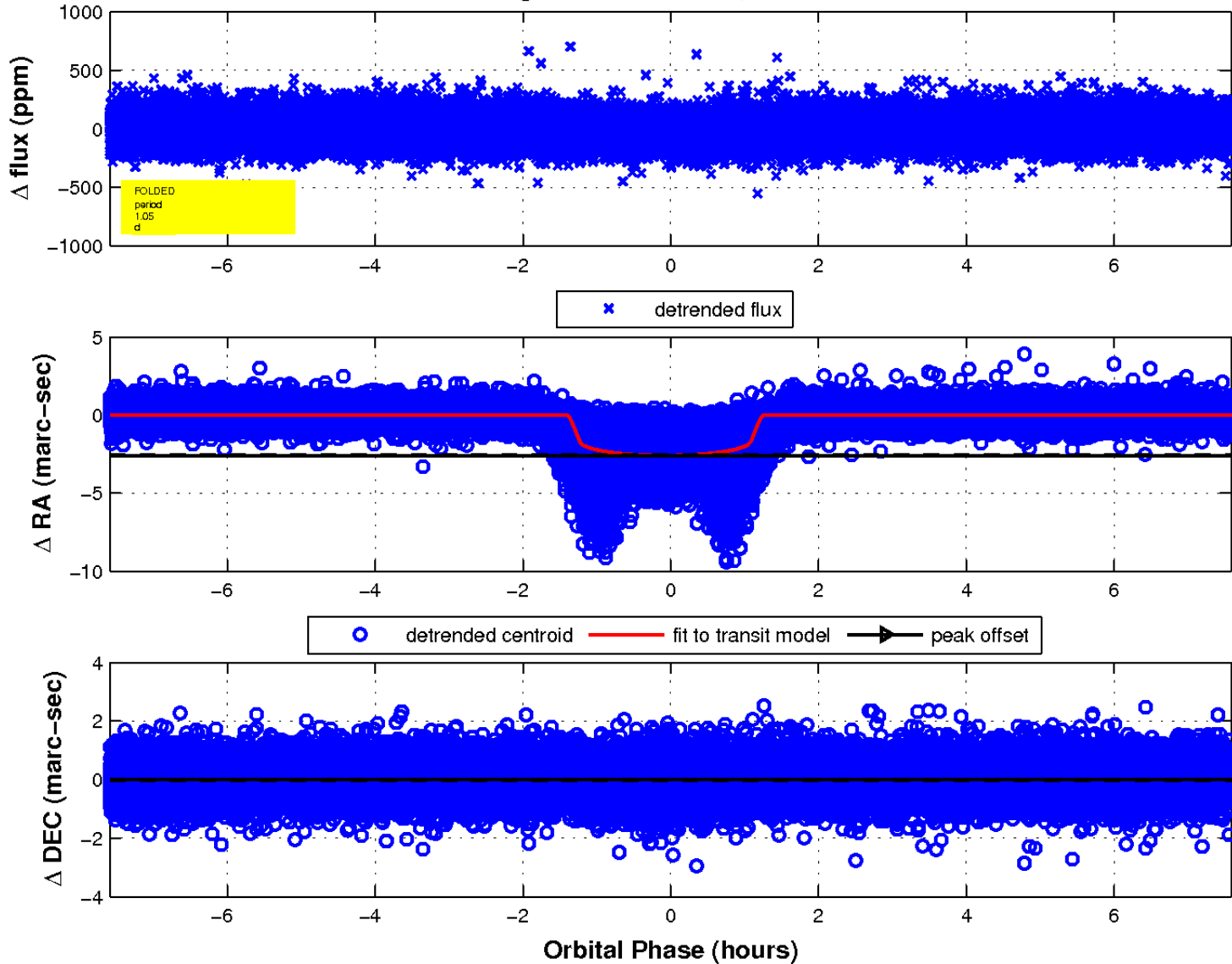
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

