

KIC 003109550

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})
003109550-01	OBS	3225.01	4.875568	133.279554	41.3	1.990	9.5	11.8	1.29	5513	0.89	459.81

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003109550-01	OBS	PC	0.87	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.

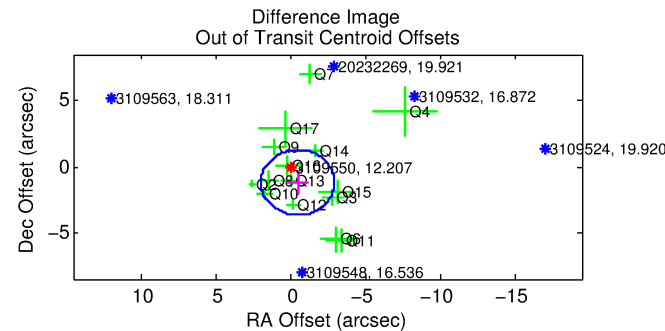
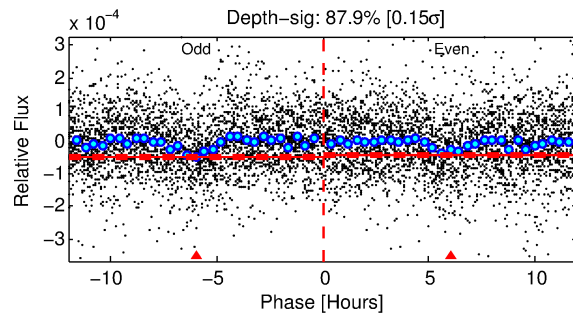
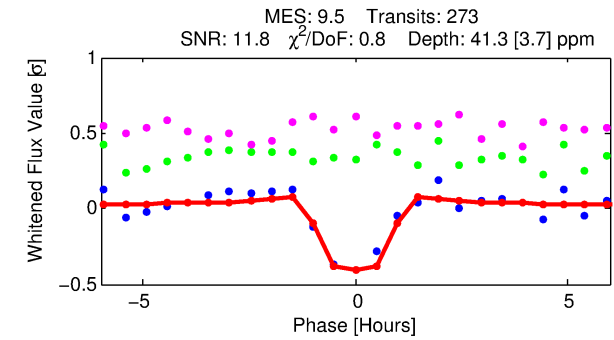
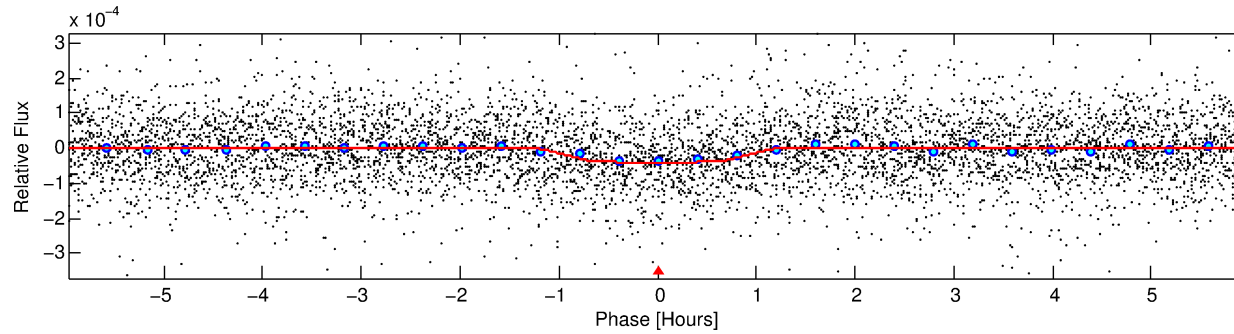
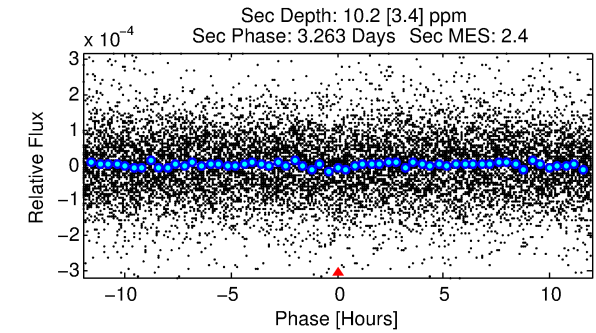
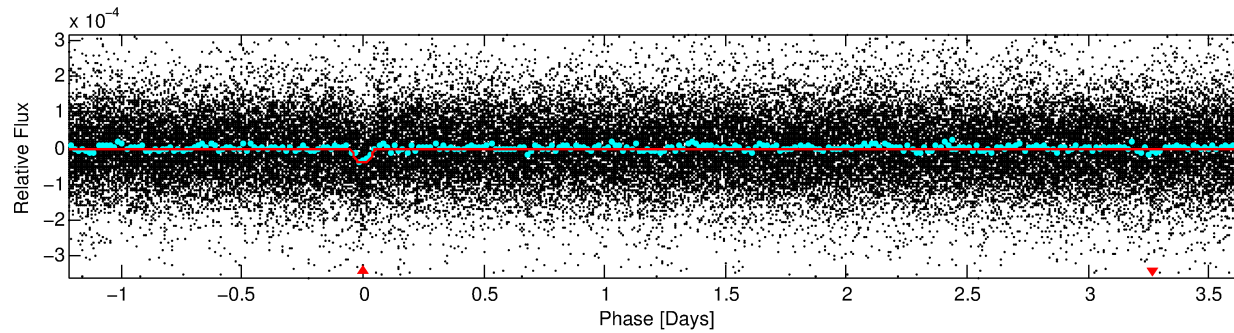
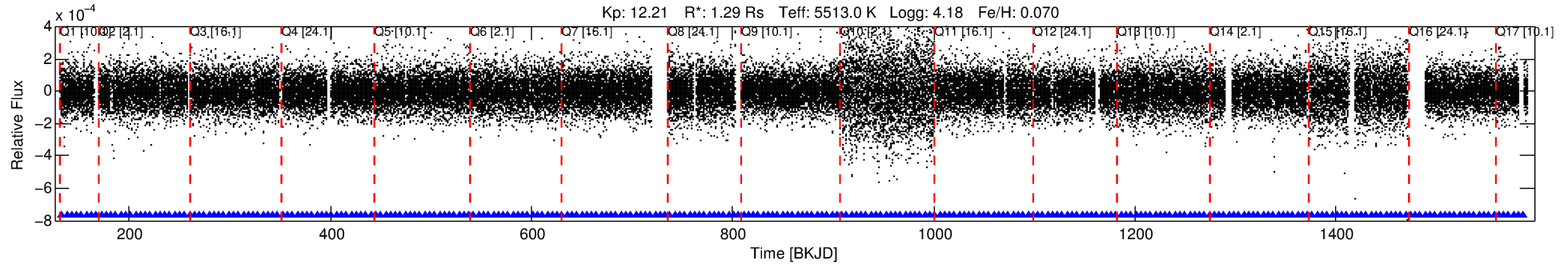
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003109550-01

No Significant Match Found

DV One-Page Summary

KIC: 3109550 Candidate: 1 of 1 Period: 4.876 d
KOI: K03225.01 Corr: 0.876



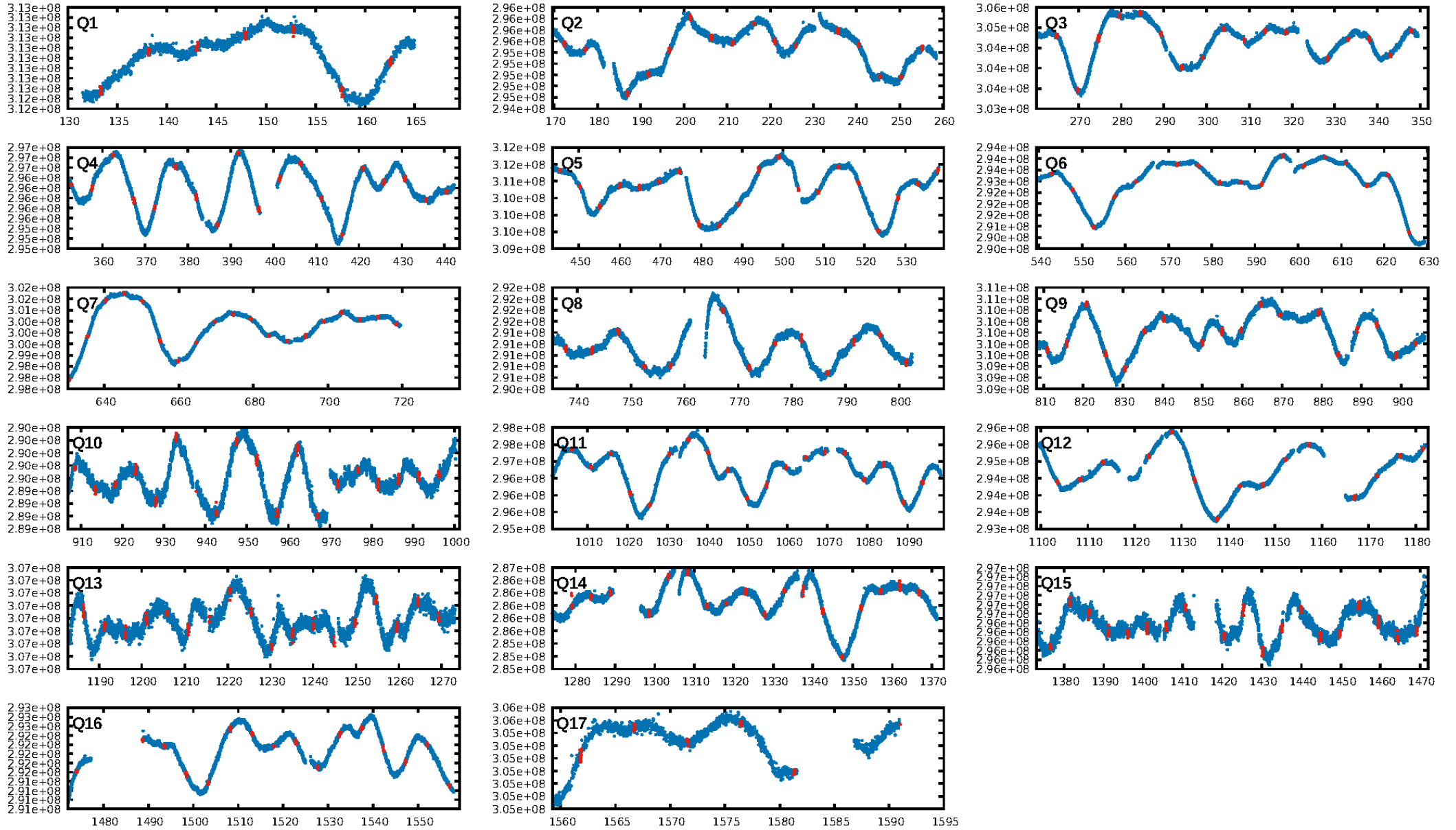
DV Fit Results:

Period = 4.87557 [0.00002] d
Epoch = 133.2796 [0.0030] BKJD
Rp/R* = 0.0064 [0.0017]
a/R* = 12.91 [14.20]
b = 0.73 [0.71]
Seff = 459.80 [210.09]
Teq = 1181 [135] K
Rp = 0.89 [0.35] Re
a = 0.0546 [0.0149] AU
Ag = 20.80 [16.22] [1.22σ]
Teffp = 3899 [639] K [4.16σ]

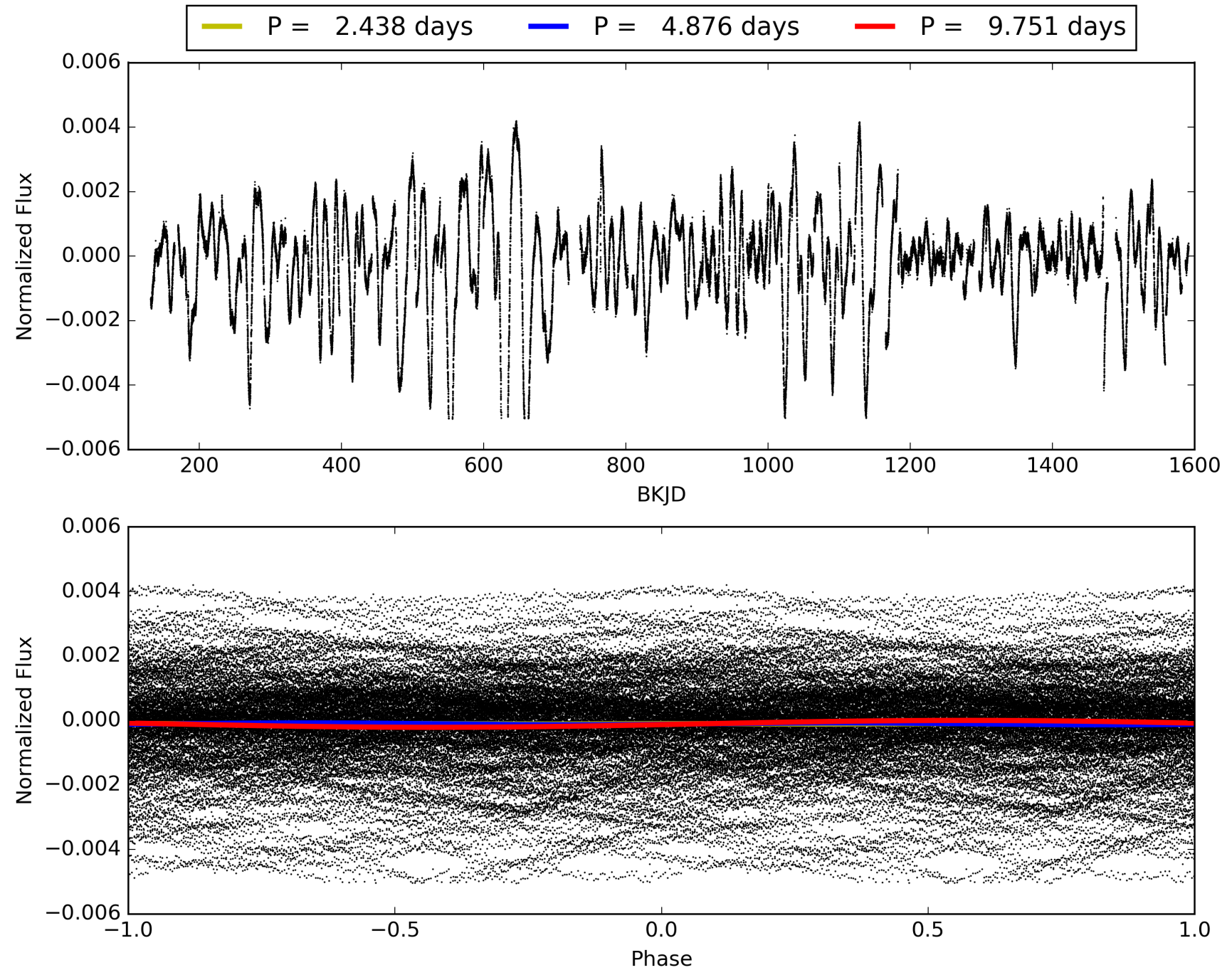
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.09e-21
RollingBand-fgt: 1.00 [261/261]
GhostDiagnostic-chr: -19.43
Centroid-sig: N/A
Centroid-so: 1.300 arcsec [1.47σ]
OotOffset-rm: 1.298 arcsec [1.58σ]
KicOffset-rm: 1.572 arcsec [2.02σ]
OotOffset-st: 4/4/4/3 [15]
KicOffset-st: 4/4/4/3 [15]
DiffImageQuality-fgm: 0.40 [6/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003109550-01, PDC Light Curves

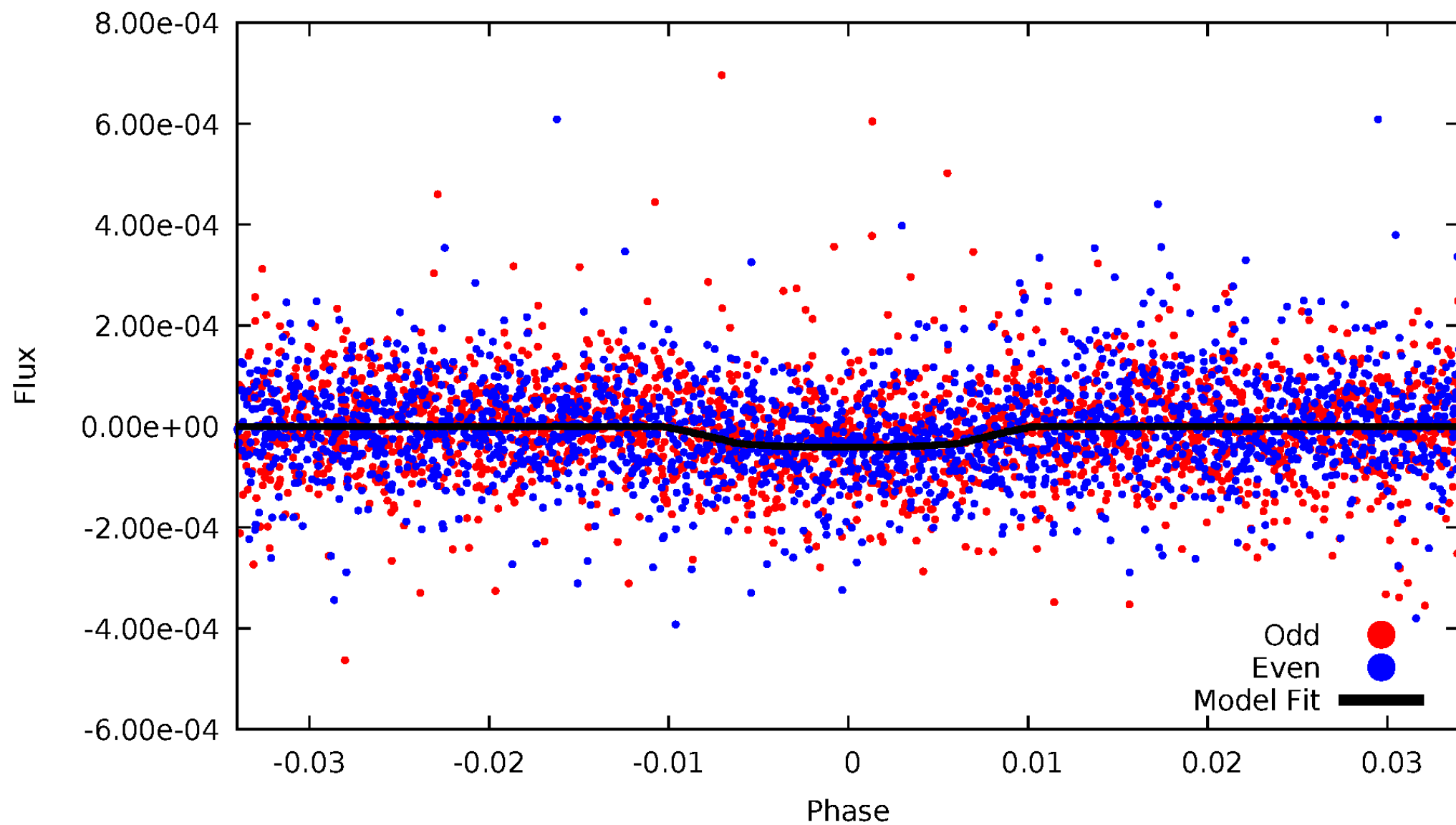


TCE 003109550-01



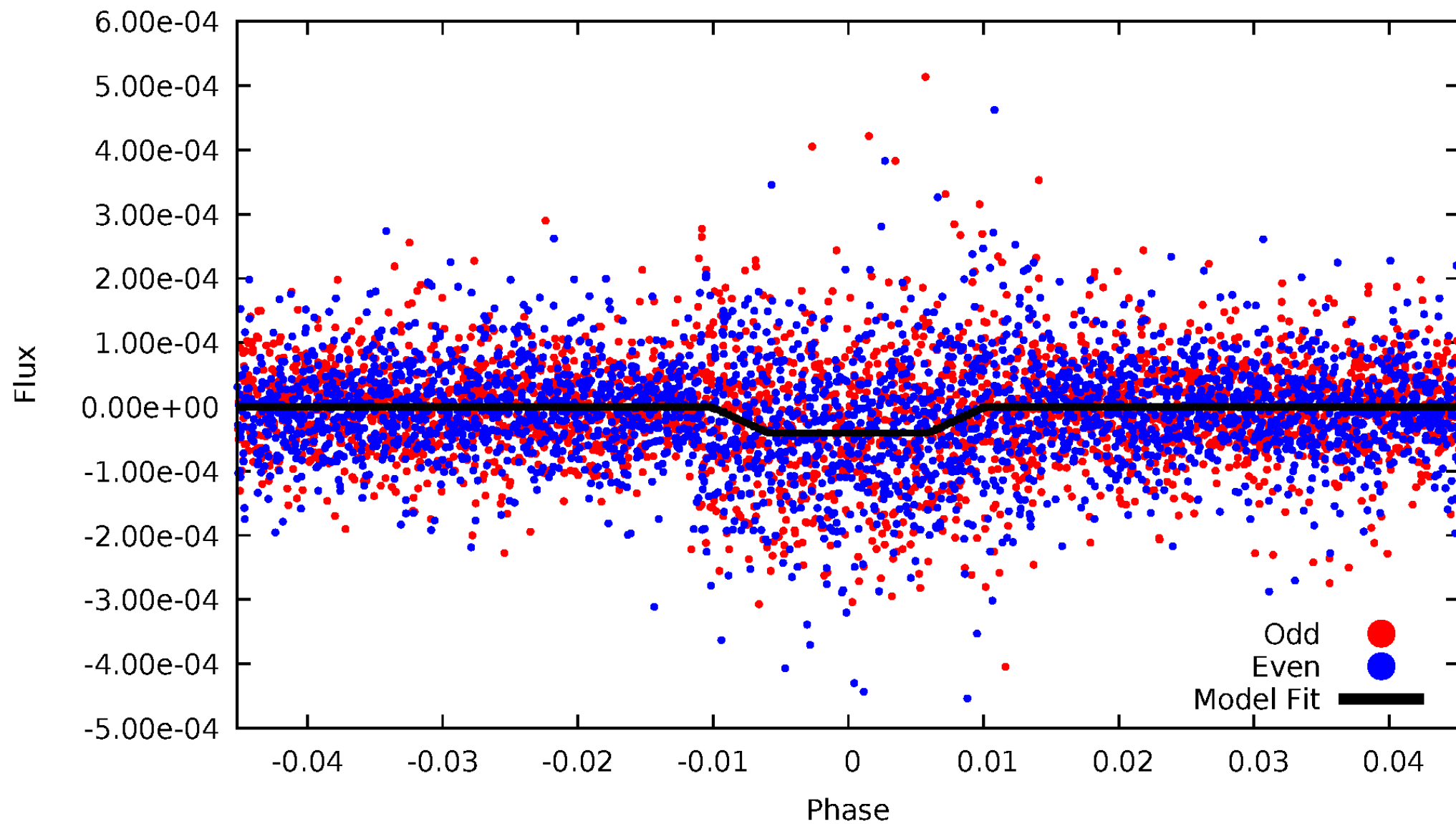
DV Odd/Even

TCE 003109550-01



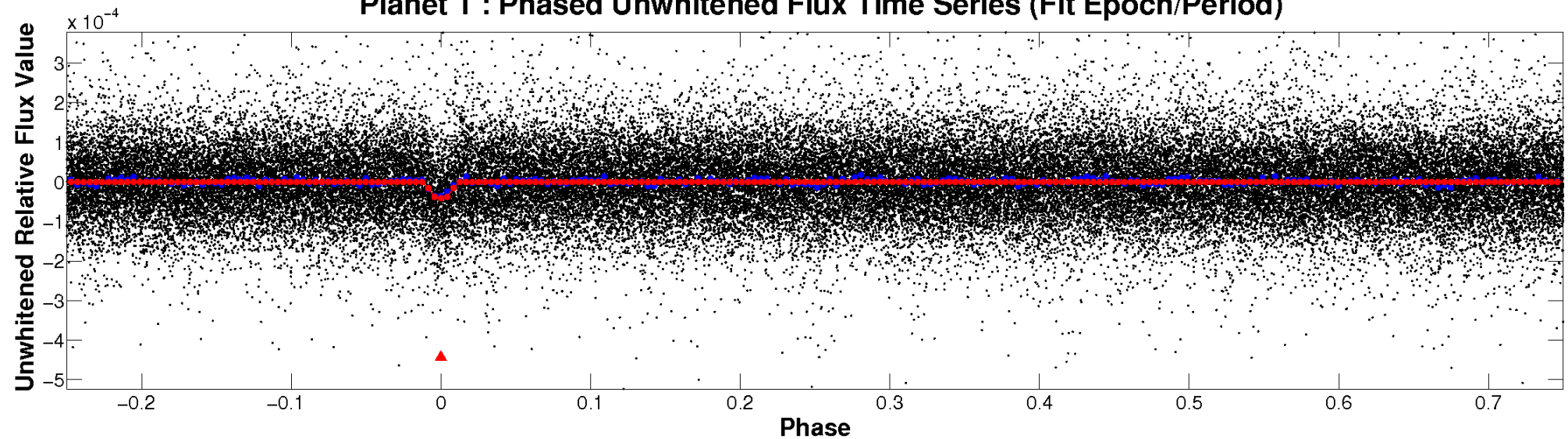
ALT Odd/Even

TCE 003109550-01

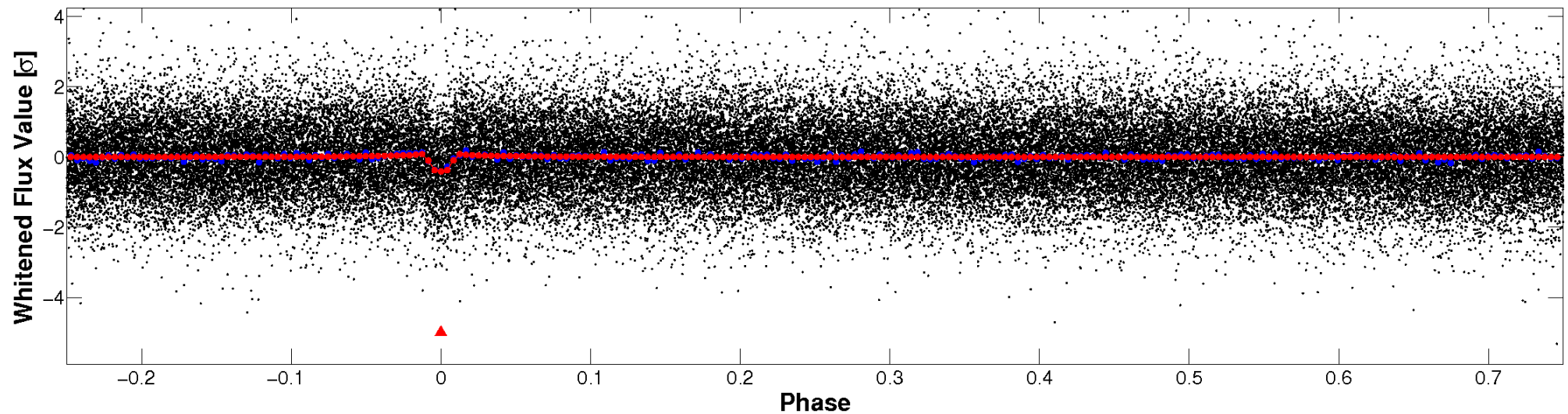


Non-Whitened Vs. Whitened Light Curve

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

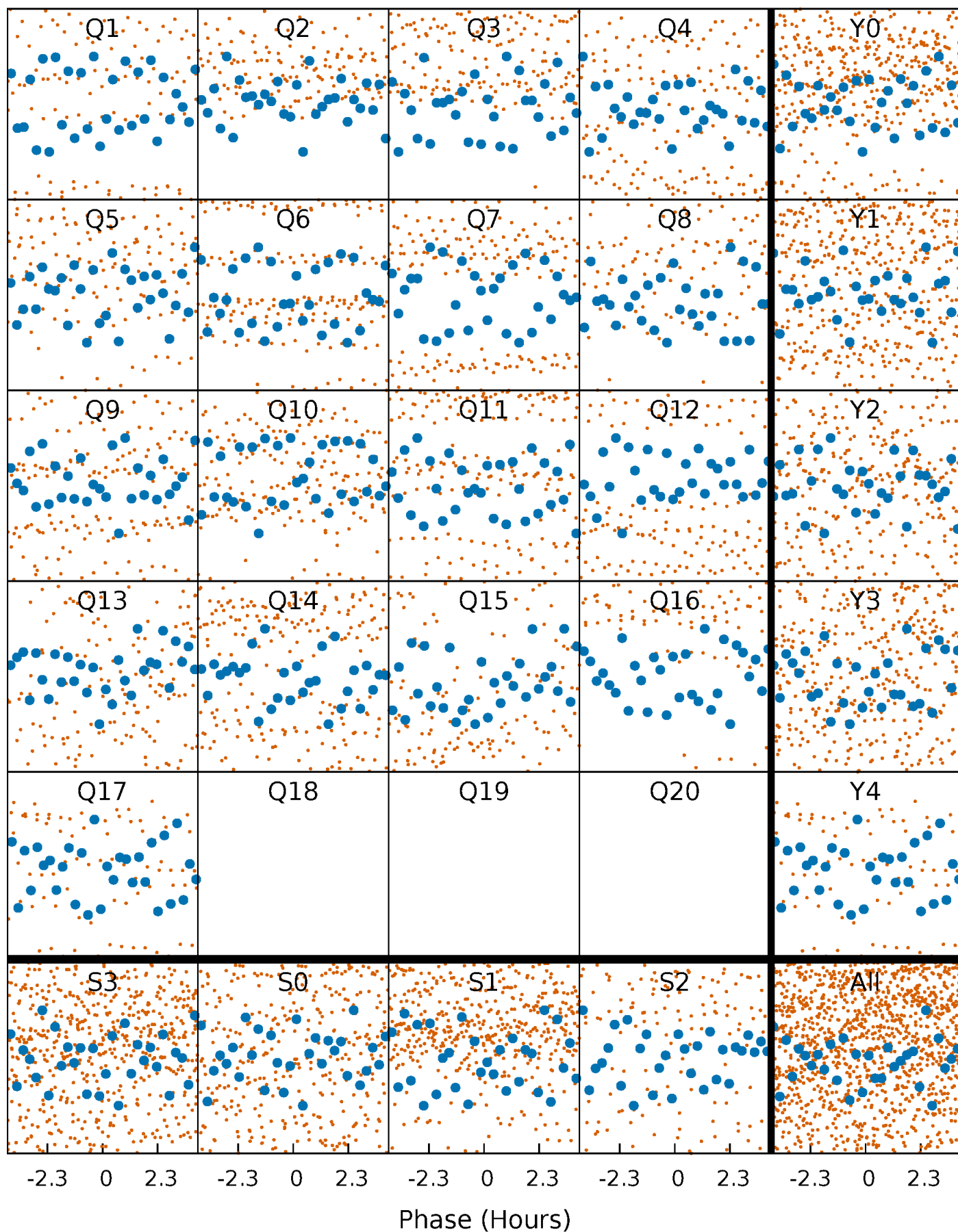


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



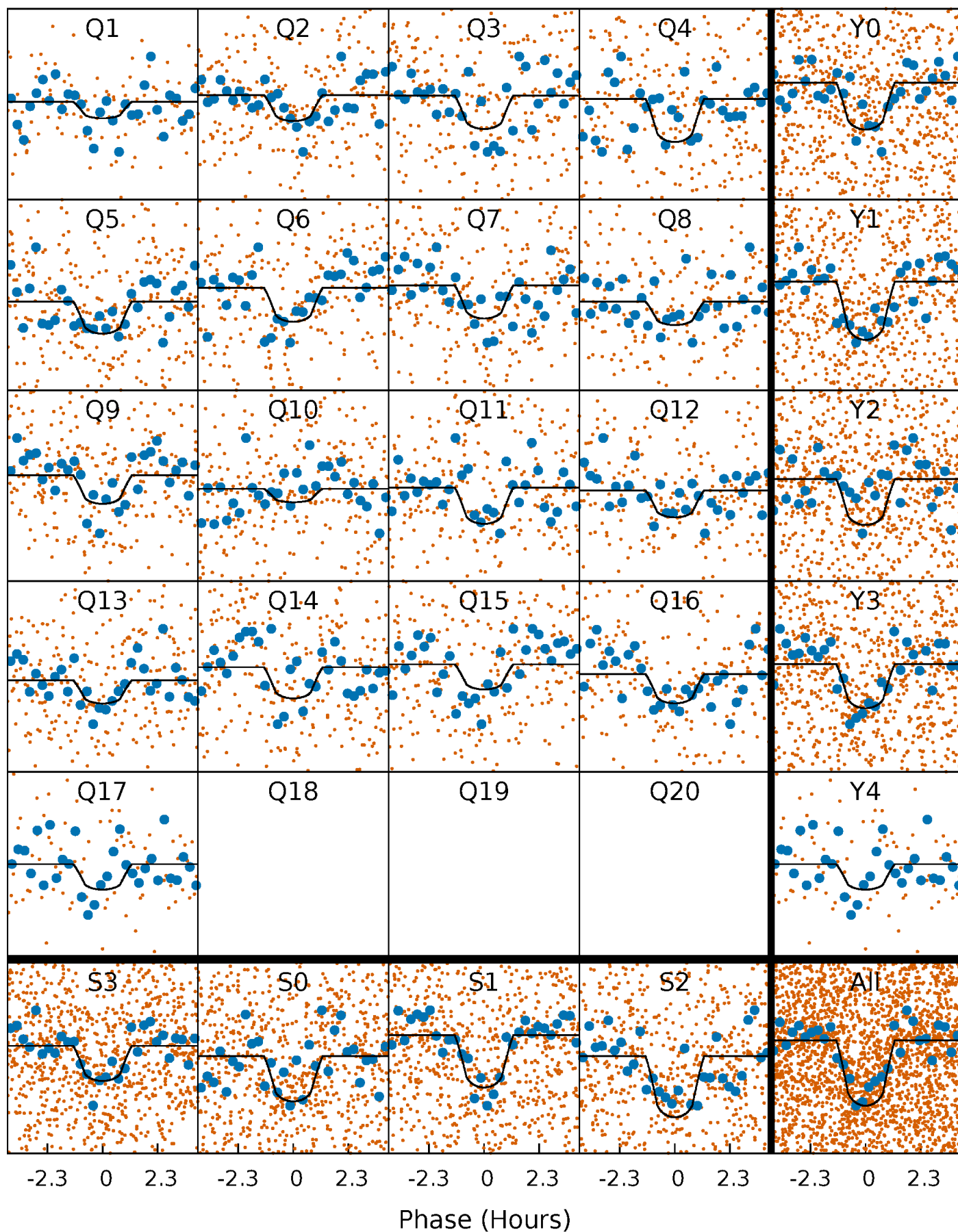
PDC Quarter-Phased Transit Curves

TCE 003109550-01 P= 4.875568 Days $T_0=133.279554$ (BKJD)



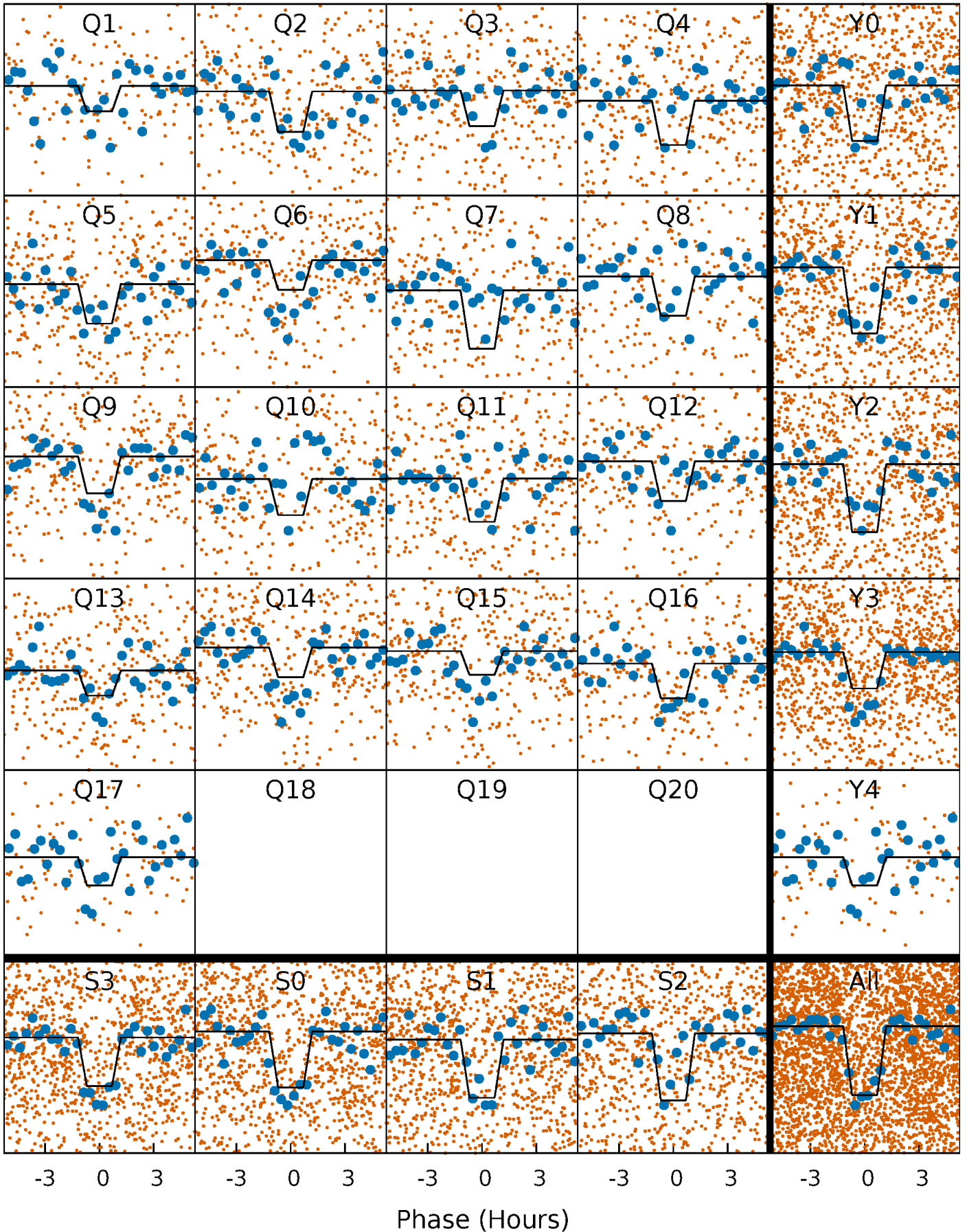
DV Quarter-Phased Transit Curves

TCE 003109550-01 P= 4.875568 Days $T_0=133.279554$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

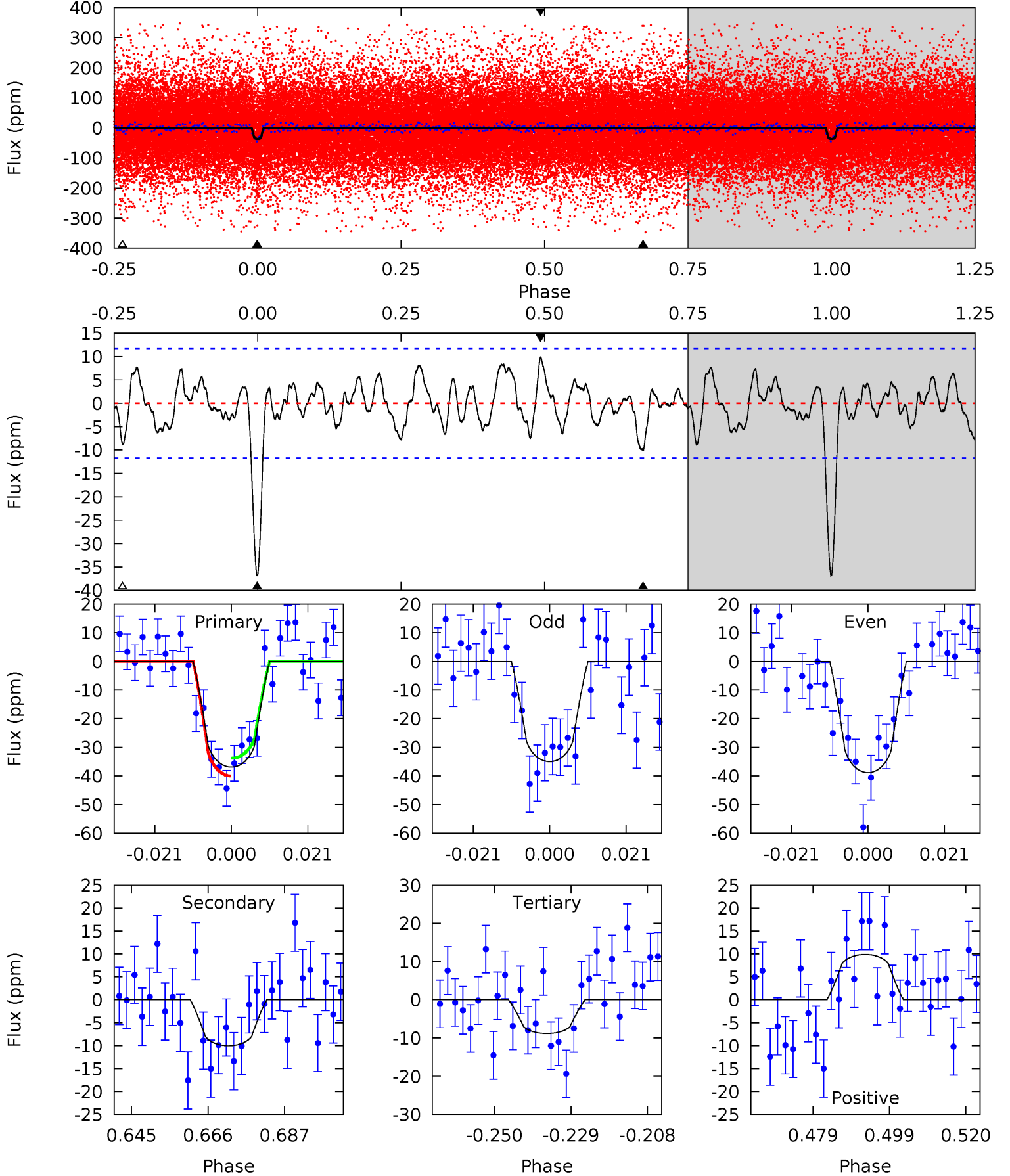
TCE 003109550-01 P= 4.875543 Days $T_0=133.282760$ (BKJD)



DV Model-Shift Uniqueness Test

003109550-01, P = 4.875568 Days, E = 128.403986 Days

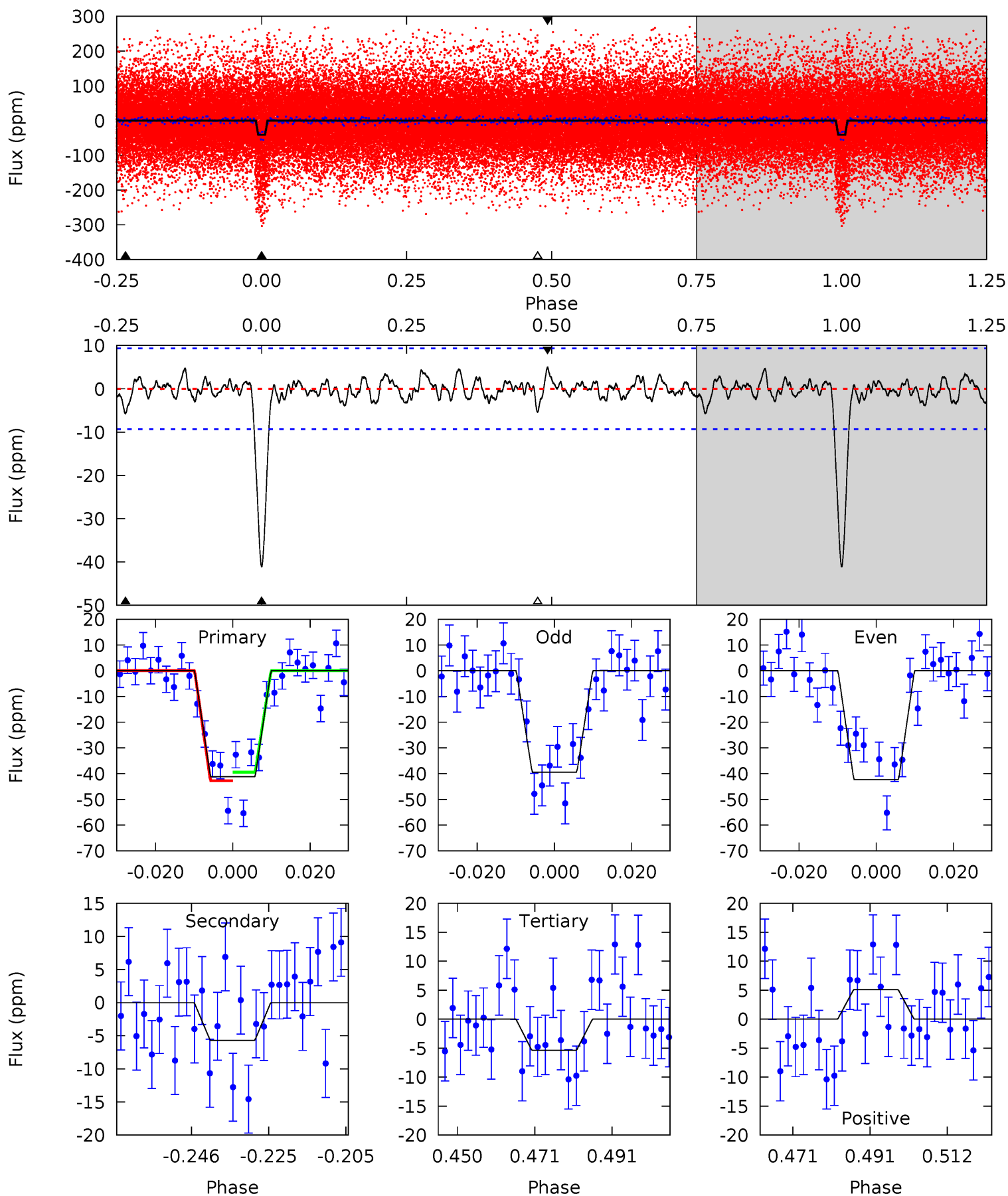
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.3	4.17	3.67	4.11	4.88	2.31	1.55	11.6	11.2	0.50	0.06	0.80	0.89	0.21	1.30



Alt Model-Shift Uniqueness Test

003109550-01, P = 4.875543 Days, E = 128.407217 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.5	2.98	2.81	2.66	4.89	2.32	0.91	18.7	18.9	0.17	0.32	0.77	0.96	0.11	0.86



Stellar Parameters For KIC 003109550

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5513^{+169}_{-127}	$4.179^{+0.260}_{-0.140}$	$0.070^{+0.250}_{-0.200}$	$1.286^{+0.268}_{-0.358}$	$0.911^{+0.110}_{-0.064}$	$0.603^{+0.903}_{-0.232}$
	+3%/-2%	+6%/-3%	+357%/-286%	+21%/-28%	+12%/-7%	+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 003109550-01 / KOI 3225.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-10 ± 2	$0.87^{+0.28}_{-0.26}$	1638^{+115}_{-128}	4136^{+595}_{-395}	22^{+24}_{-10}
Alt.	-6 ± 2	$0.85^{+0.30}_{-0.25}$	1639^{+109}_{-123}	3778^{+508}_{-430}	13^{+14}_{-7}

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 $A_{obs} \gg 1.0$

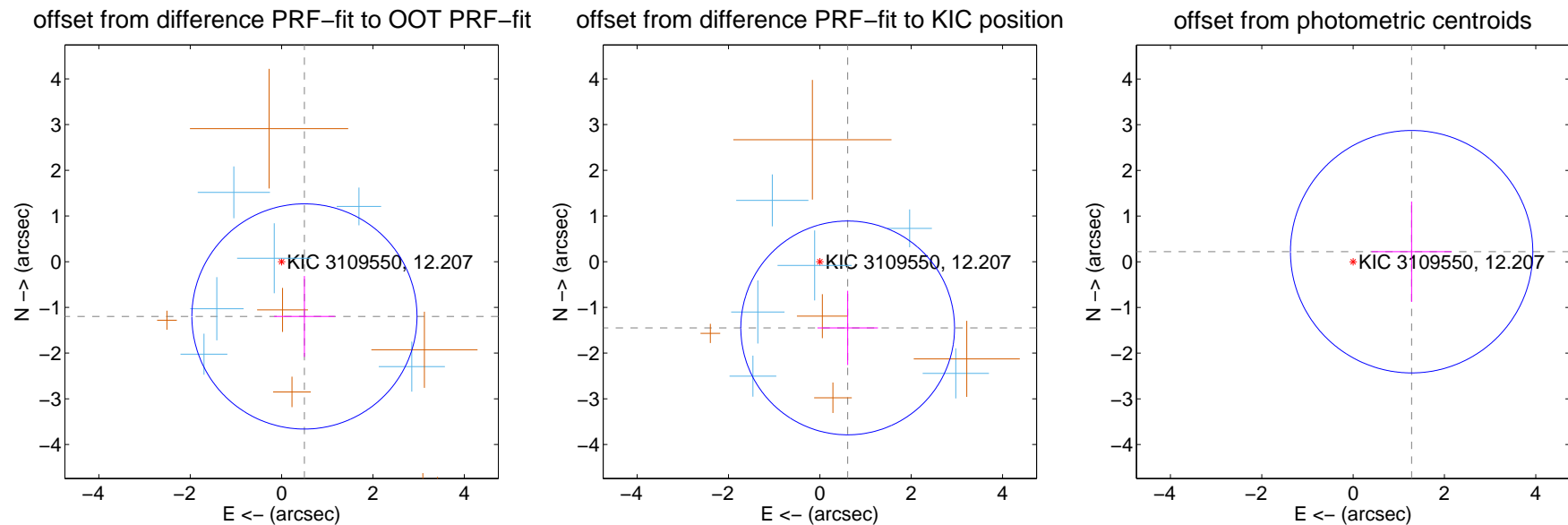
DV Centroid Data

Supplemental centroid analysis for 003109550-01. Kepler magnitude: 12.21. Transit SNR 11.80

There are 6 quarters with good PRF difference image offsets

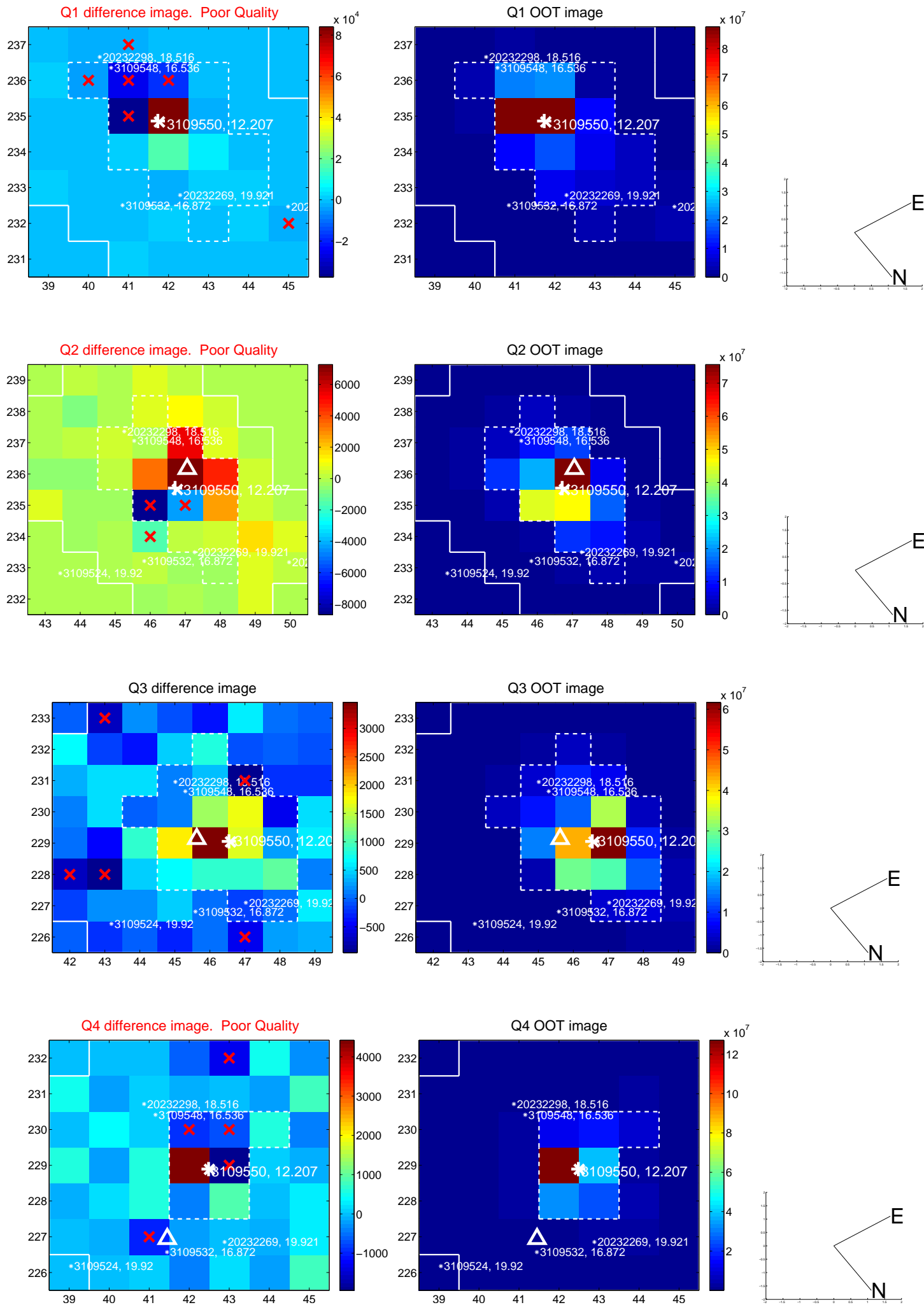
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.298 ± 0.821	1.58	-0.500 ± 0.666	-1.198 ± 0.884
PRF-fit source offset from KIC position	1.572 ± 0.780	2.02	-0.609 ± 0.662	-1.449 ± 0.813
photometric centroid source offset	1.30 ± 0.88	1.47	-1.28 ± 0.88	0.22 ± 1.10

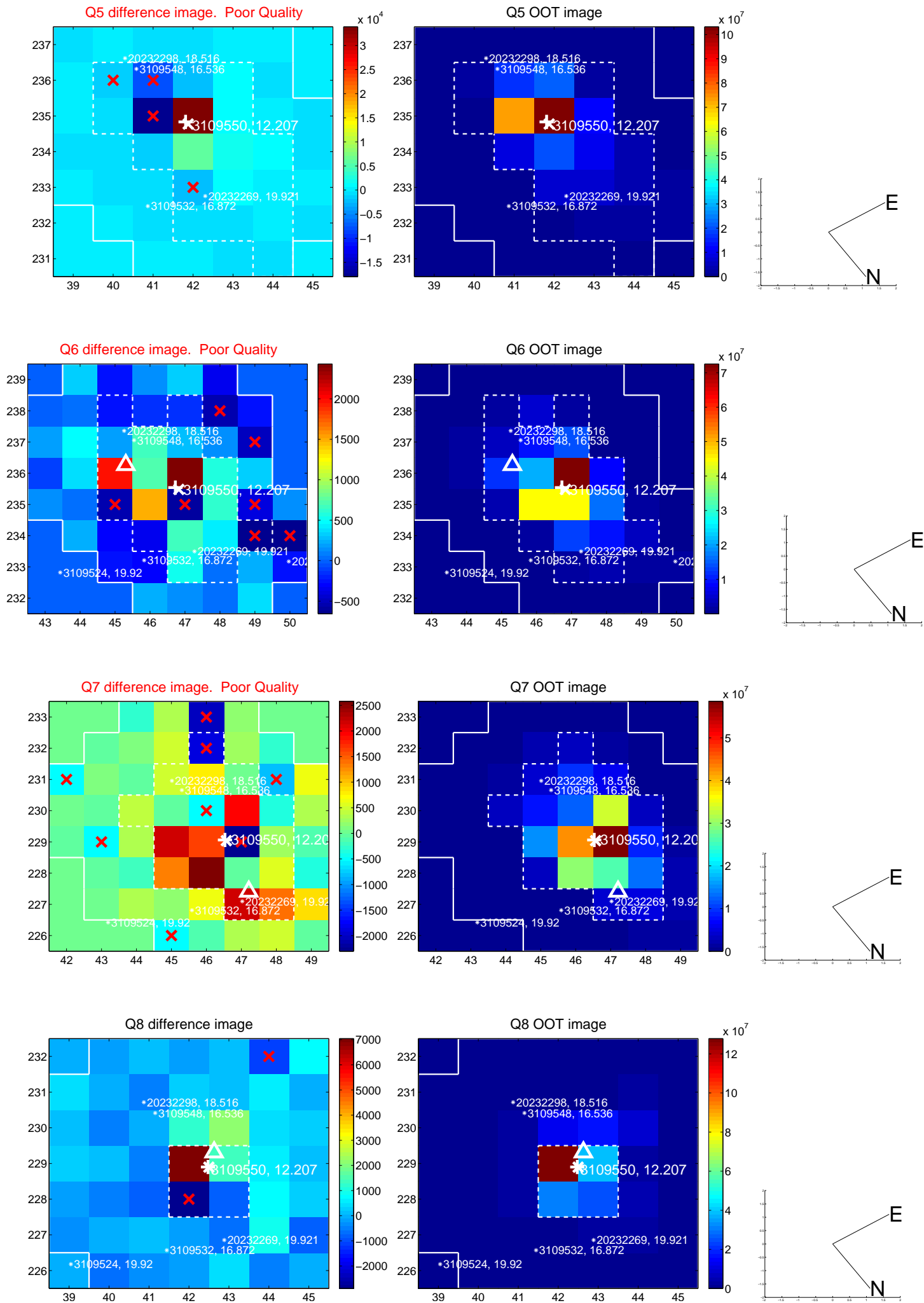


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

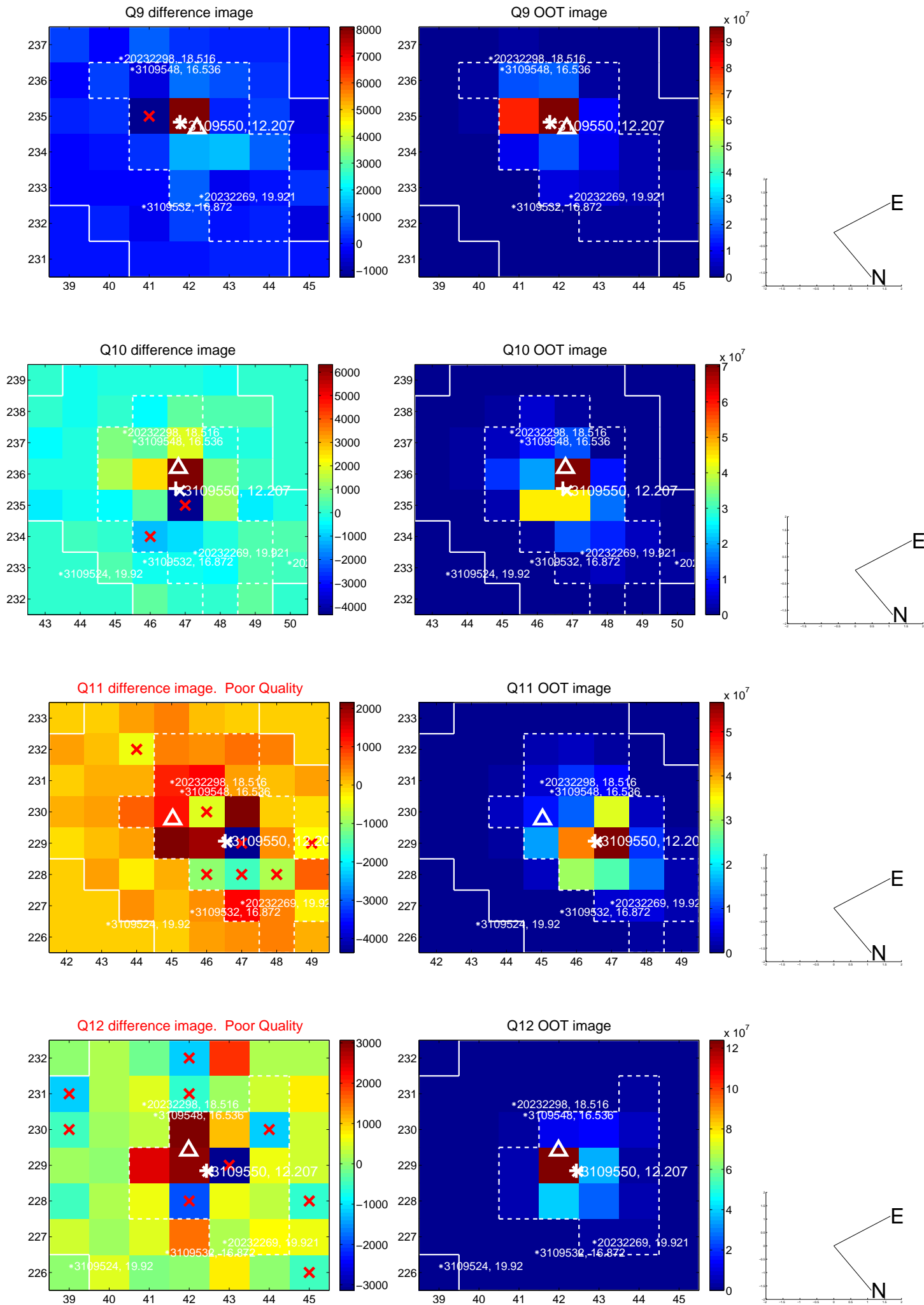
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



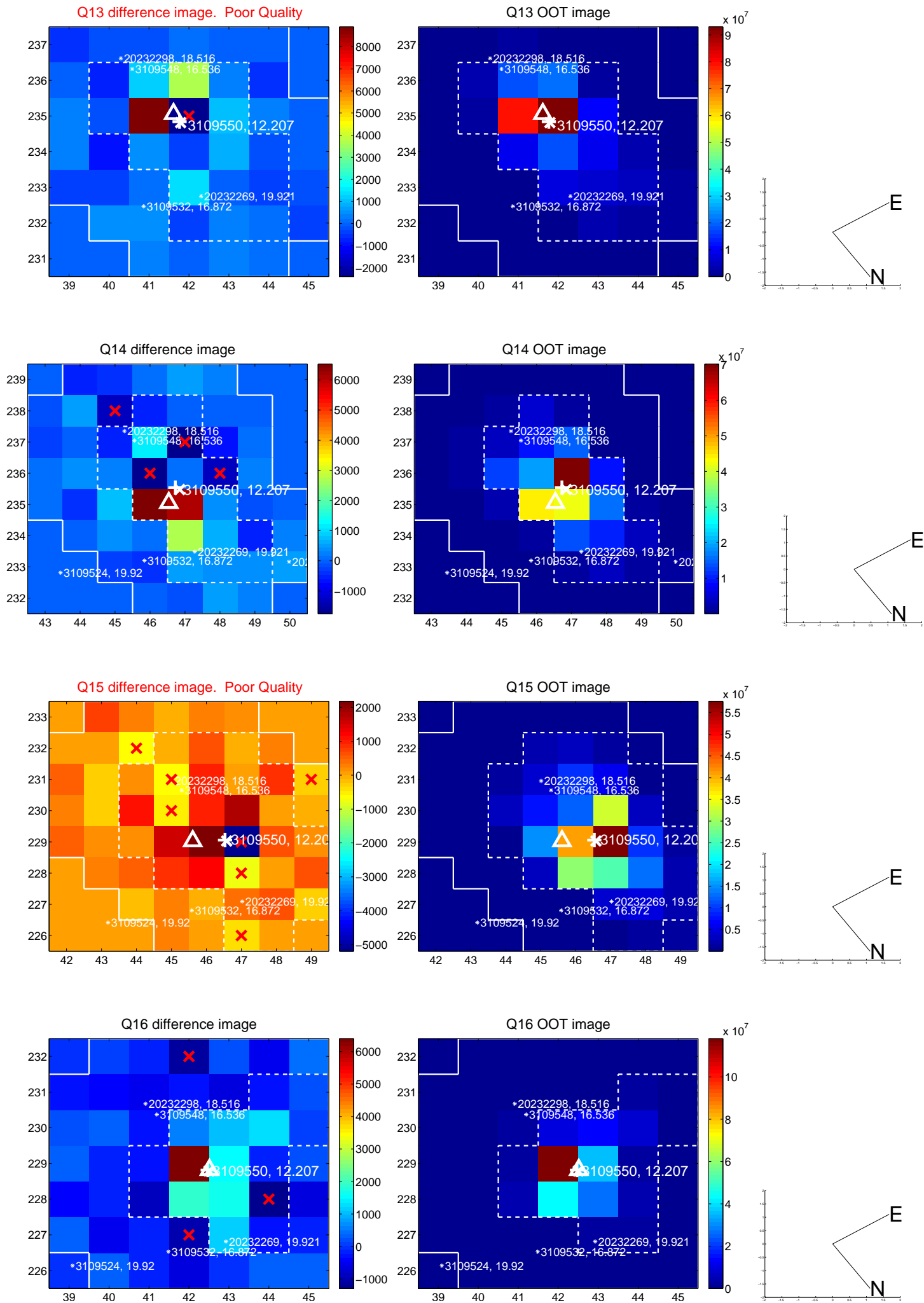
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



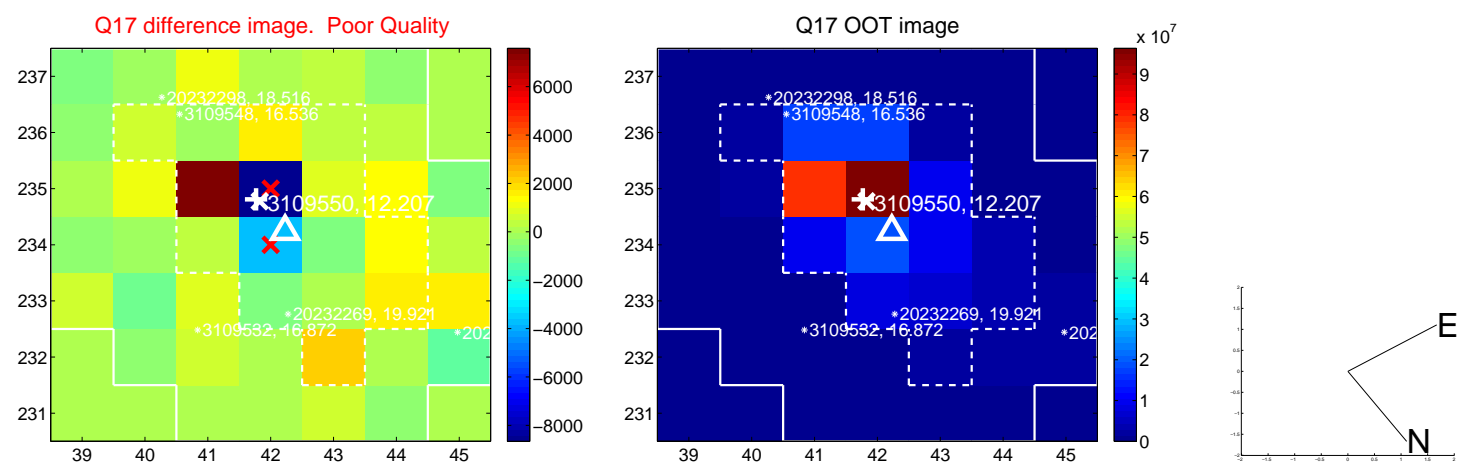
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



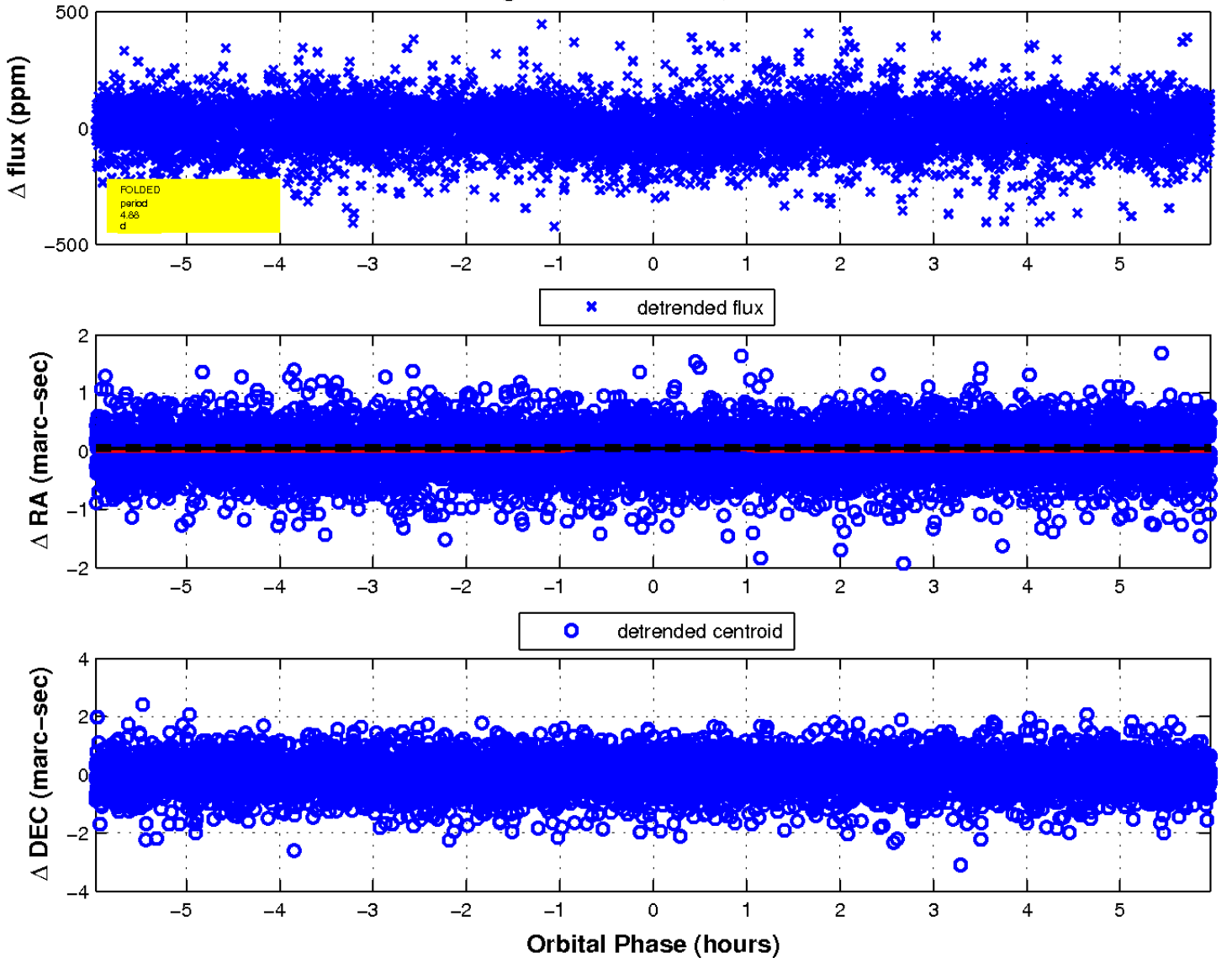
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

