

KIC 012072872

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})
012072872-01	OBS	3017.01	2.462891	132.799990	44.8	1.699	10.6	11.0	0.97	5893	0.76	885.65

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012072872-01	OBS	PC	0.98	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.

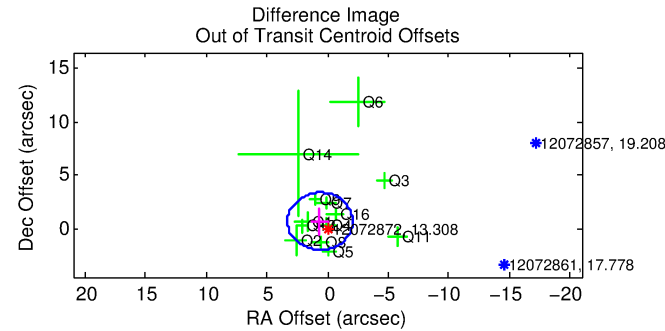
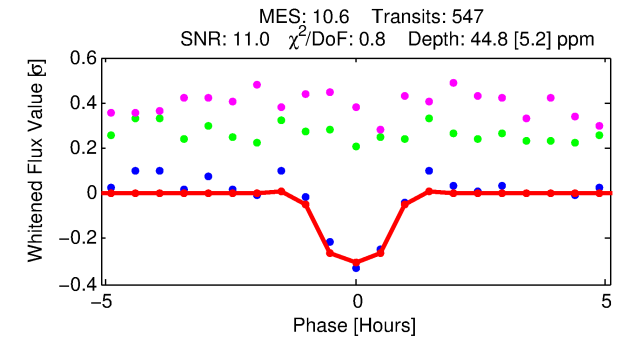
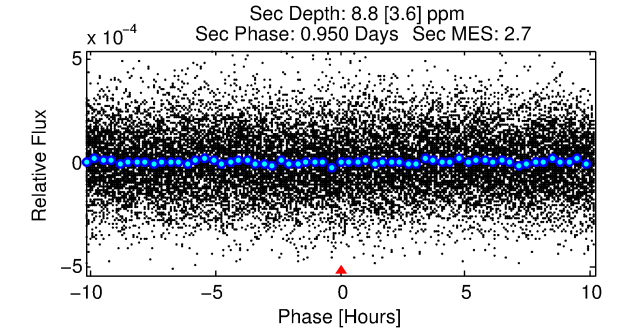
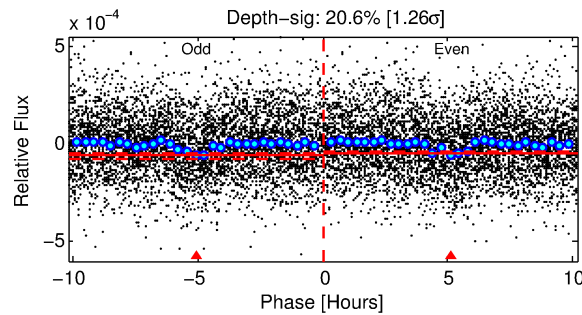
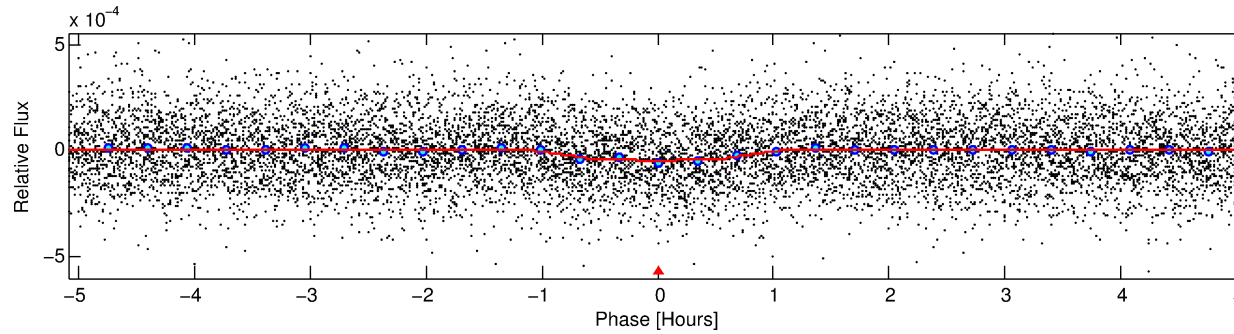
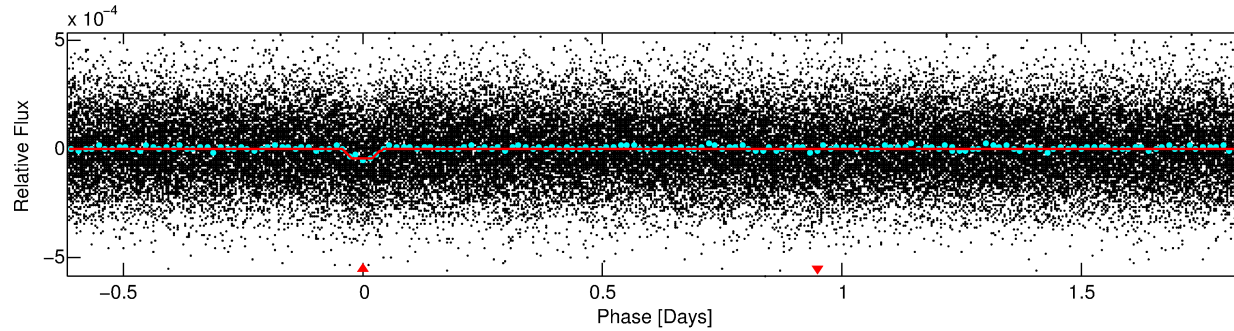
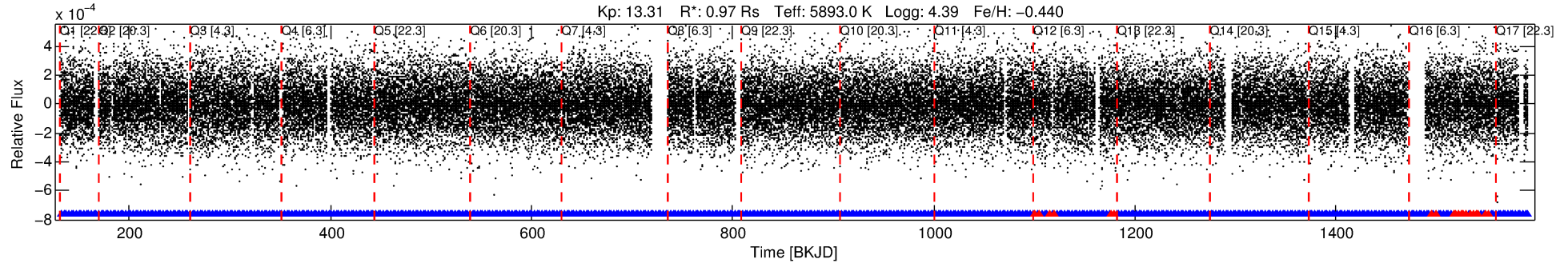
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012072872-01

No Significant Match Found

DV One-Page Summary

KIC: 12072872 Candidate: 1 of 1 Period: 2.463 d
KOI: K03017.01 Corr: 0.910



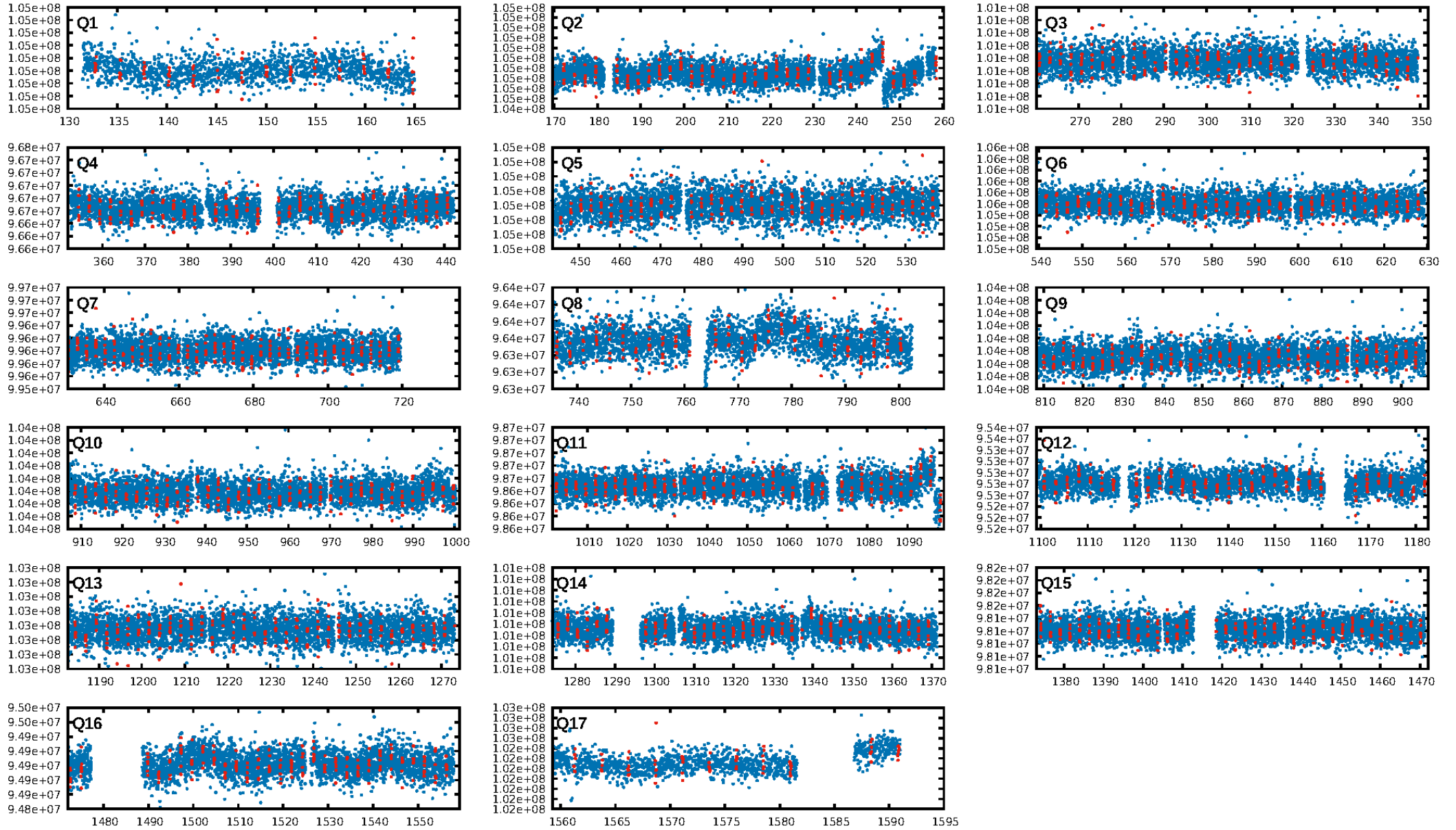
DV Fit Results:

Period = 2.46289 [0.00001] d
Epoch = 132.8000 [0.0027] BKJD
Rp/R* = 0.0072 [0.0035]
a/R* = 5.37 [12.97]
b = 0.89 [0.61]
Seff = 885.65 [306.96]
Teq = 1391 [121] K
Rp = 0.76 [0.41] Re
a = 0.0338 [0.0075] AU
Ag = 9.64 [10.62] [0.81 σ]
Teffp = 3790 [1001] K [2.38 σ]

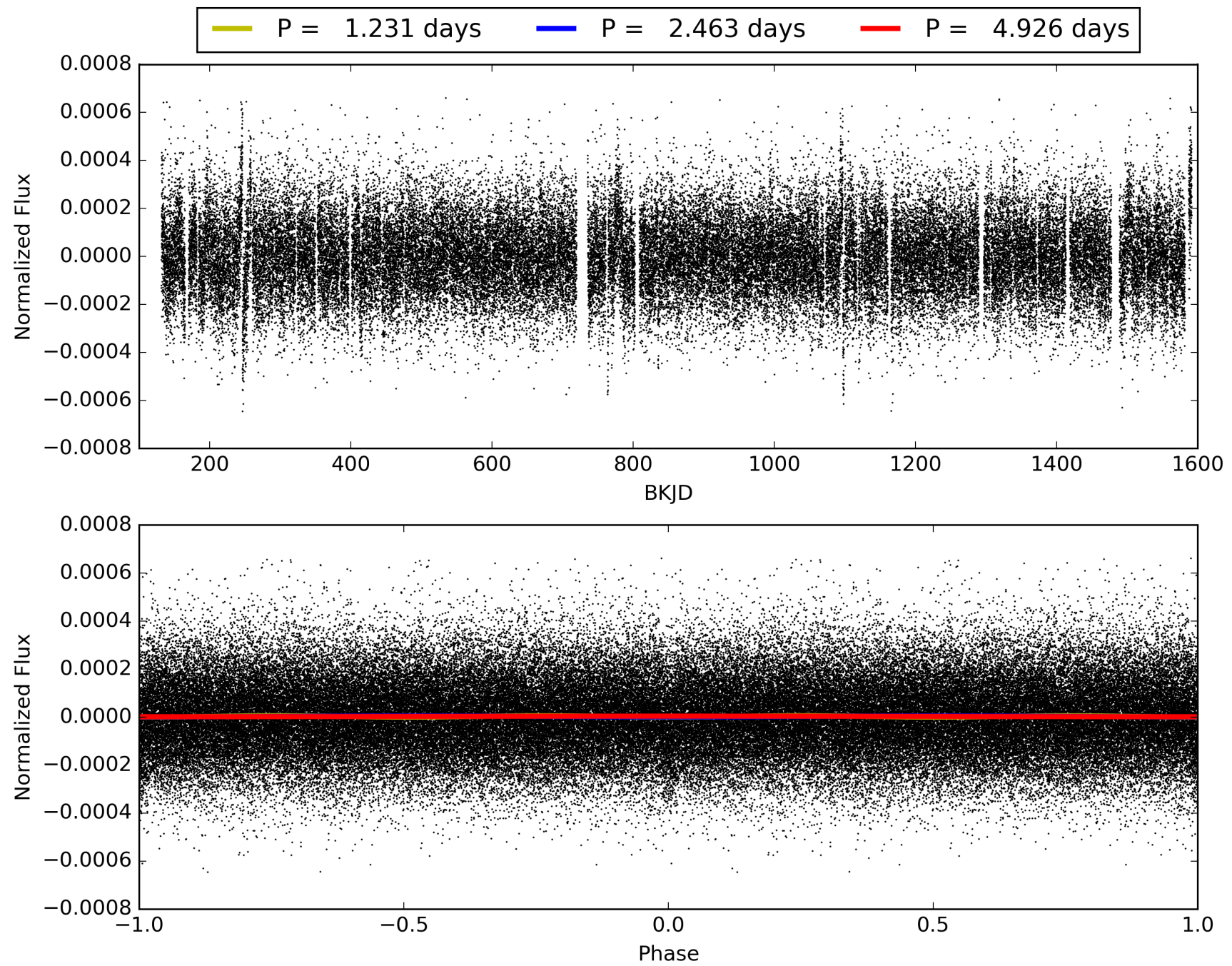
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.46e-26
RollingBand-fgt: 0.96 [502/522]
GhostDiagnostic-chr: 1.262
Centroid-sig: 0.1%
Centroid-so: 3.305 arcsec [2.16 σ]
OotOffset-rm: 0.940 arcsec [1.05 σ]
KicOffset-rm: 0.864 arcsec [1.16 σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 0.46 [6/13]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012072872-01, PDC Light Curves

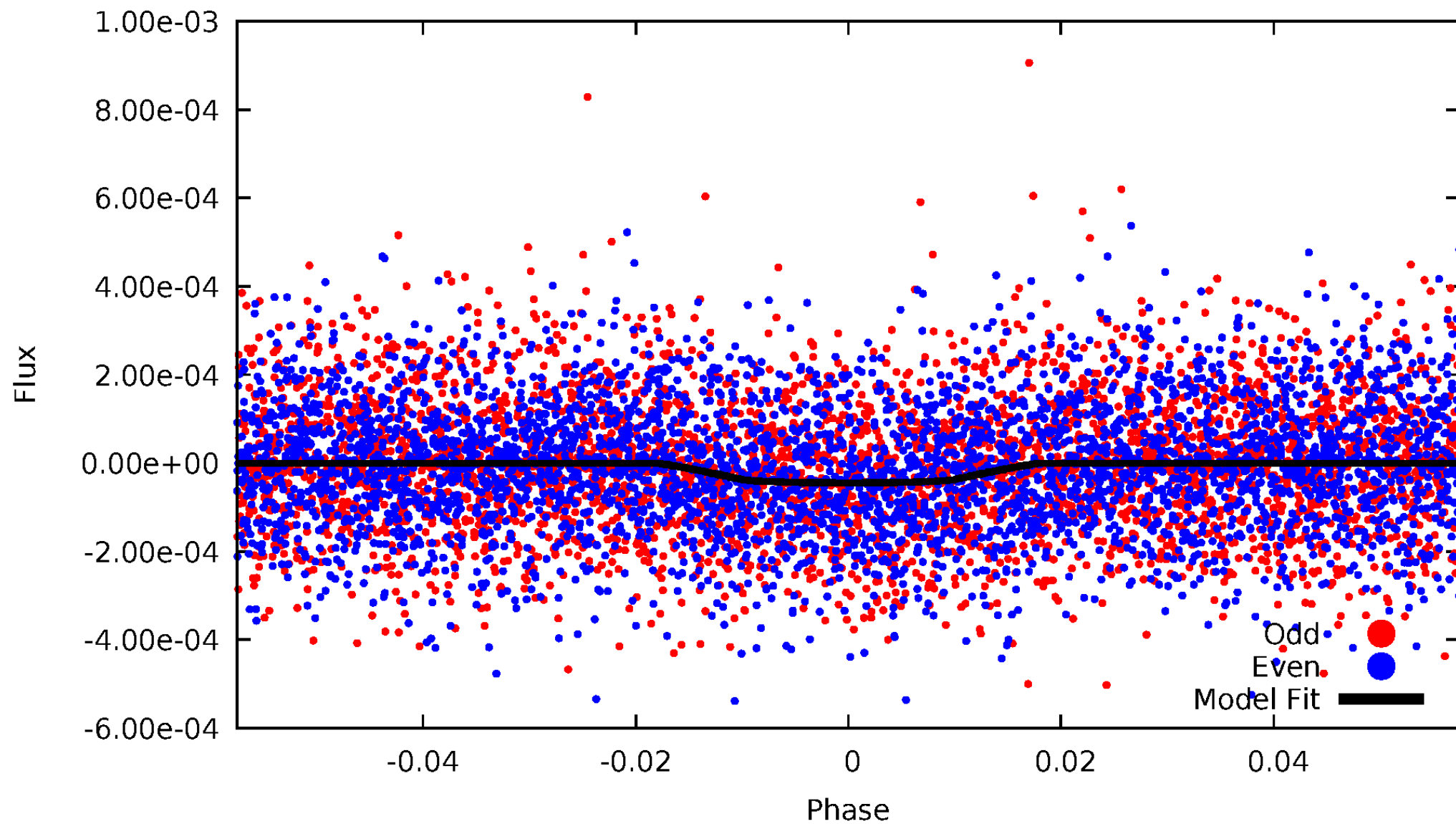


TCE 012072872-01



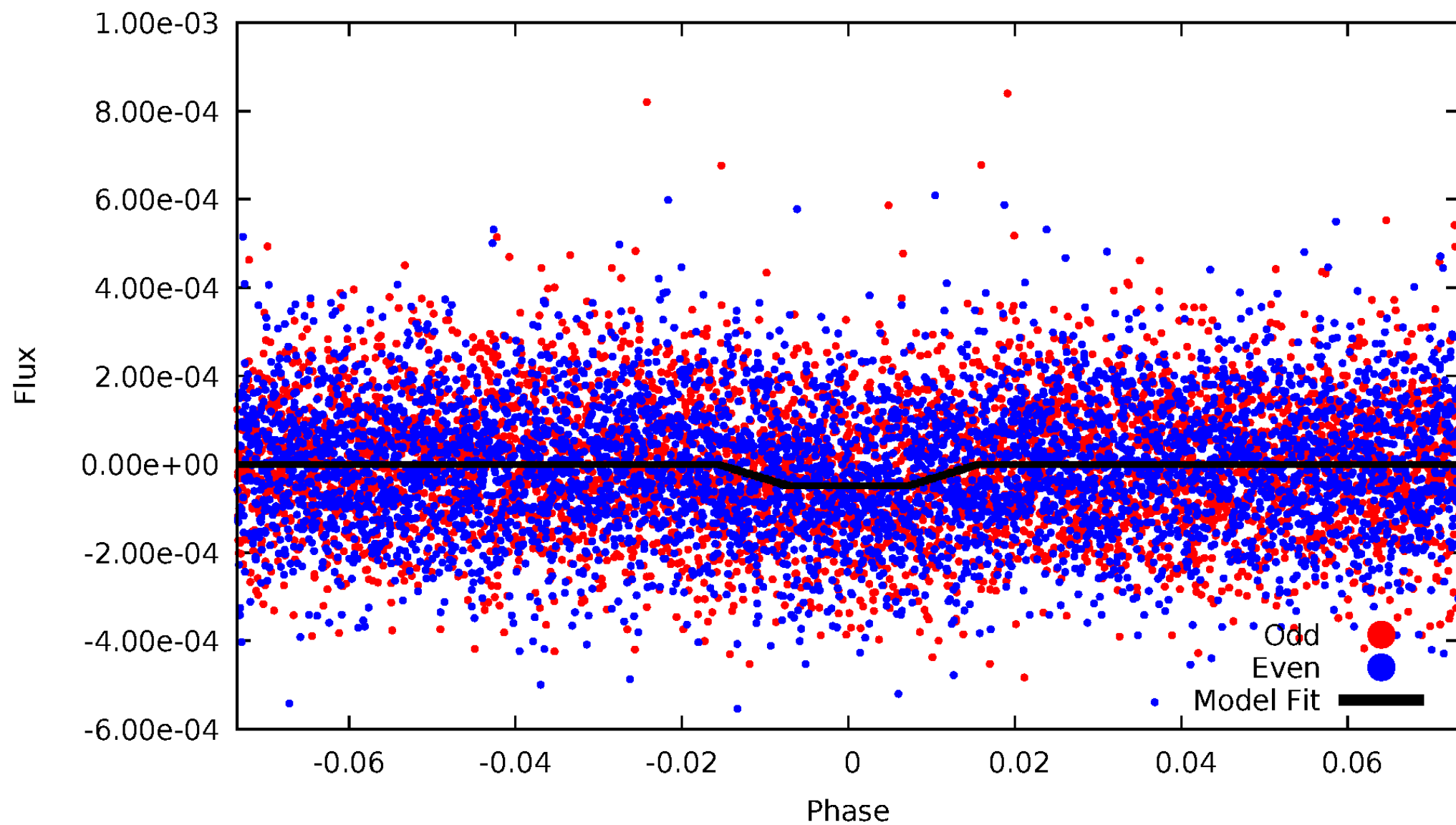
DV Odd/Even

TCE 012072872-01



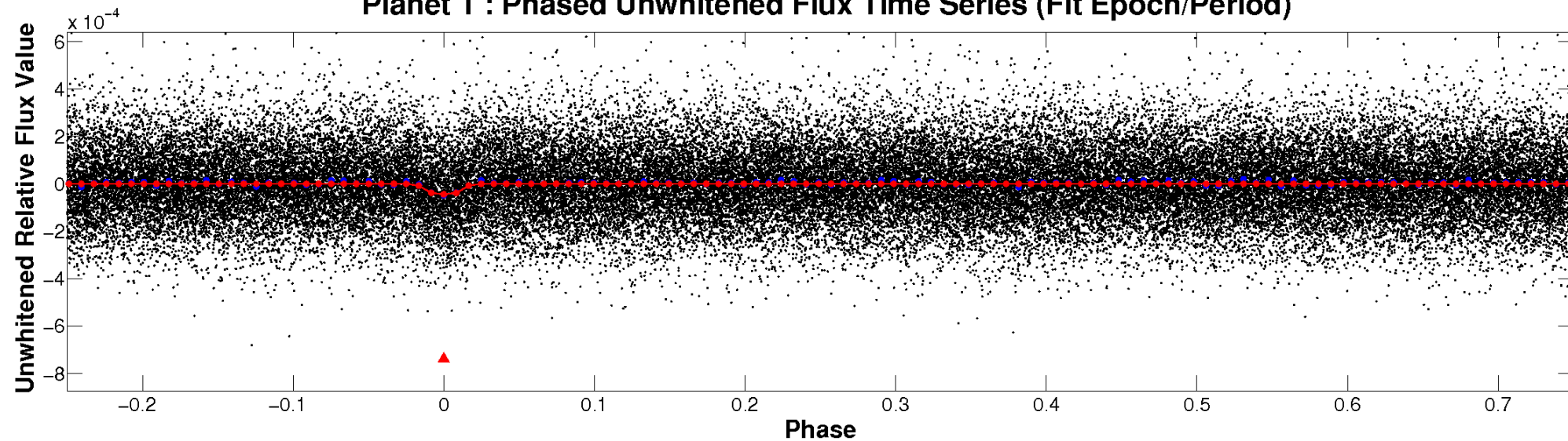
ALT Odd/Even

TCE 012072872-01

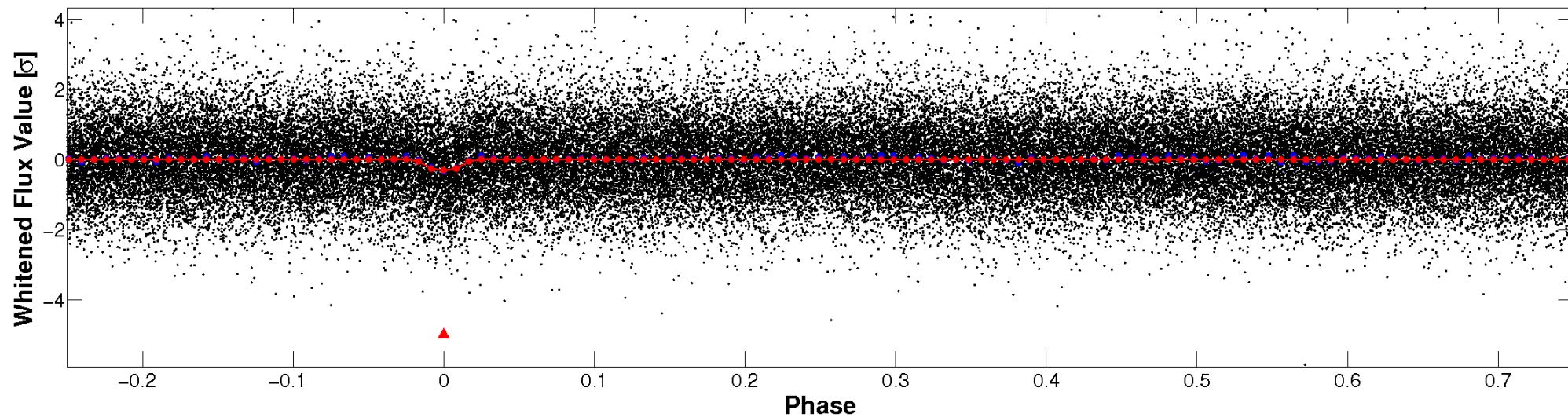


Non-Whitened Vs. Whitened Light Curve

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

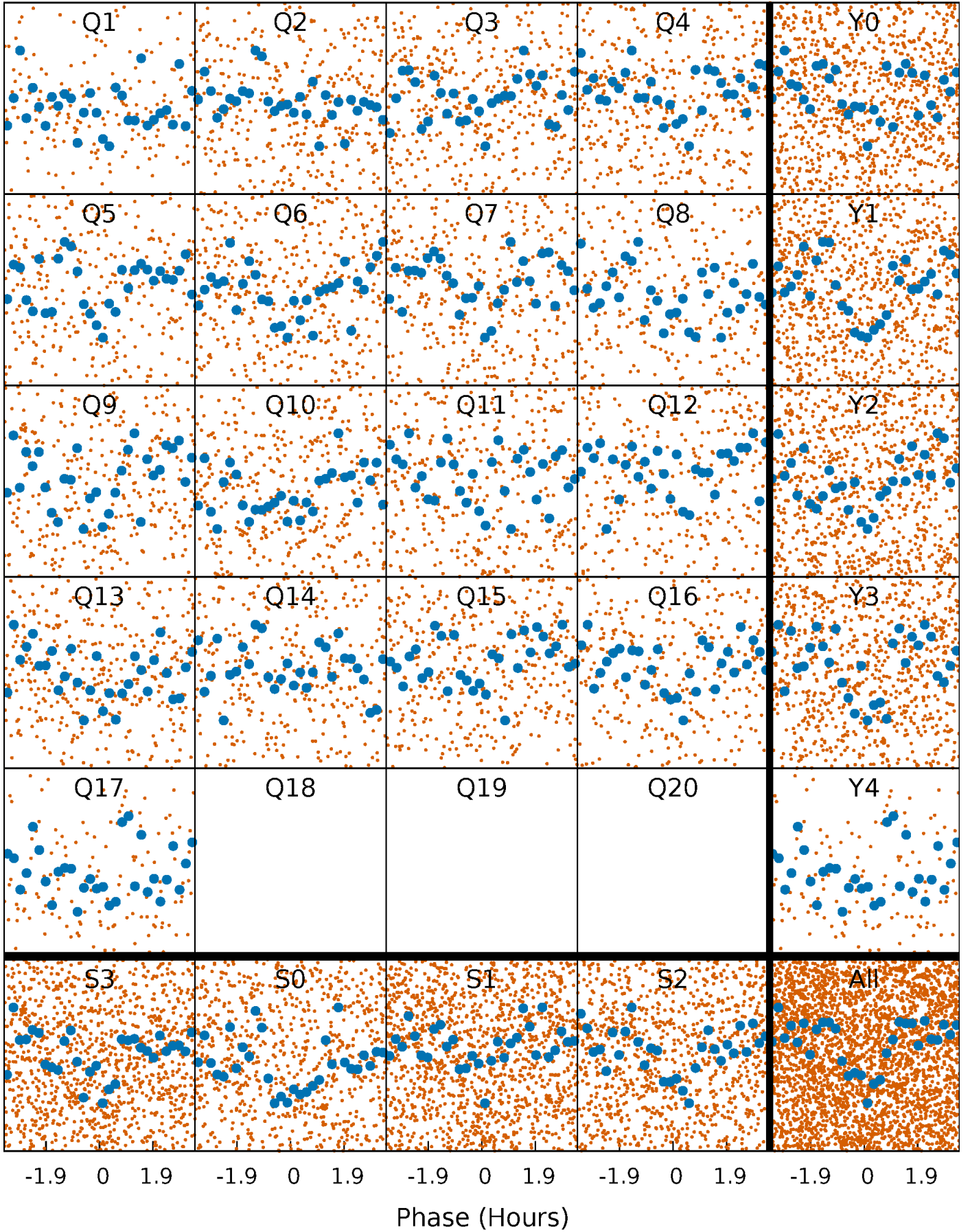


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



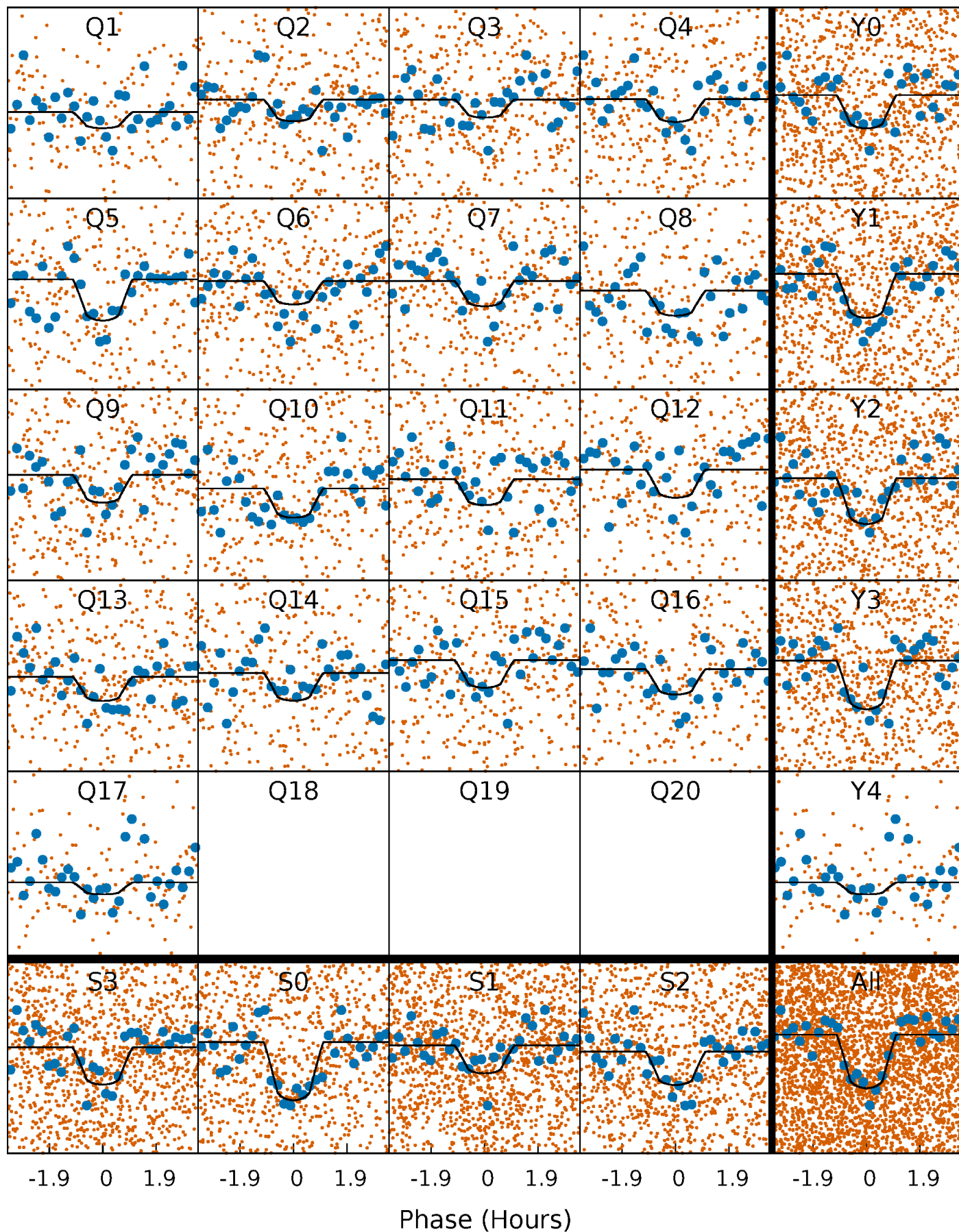
PDC Quarter-Phased Transit Curves

TCE 012072872-01 P= 2.462891 Days $T_0=132.799990$ (BKJD)



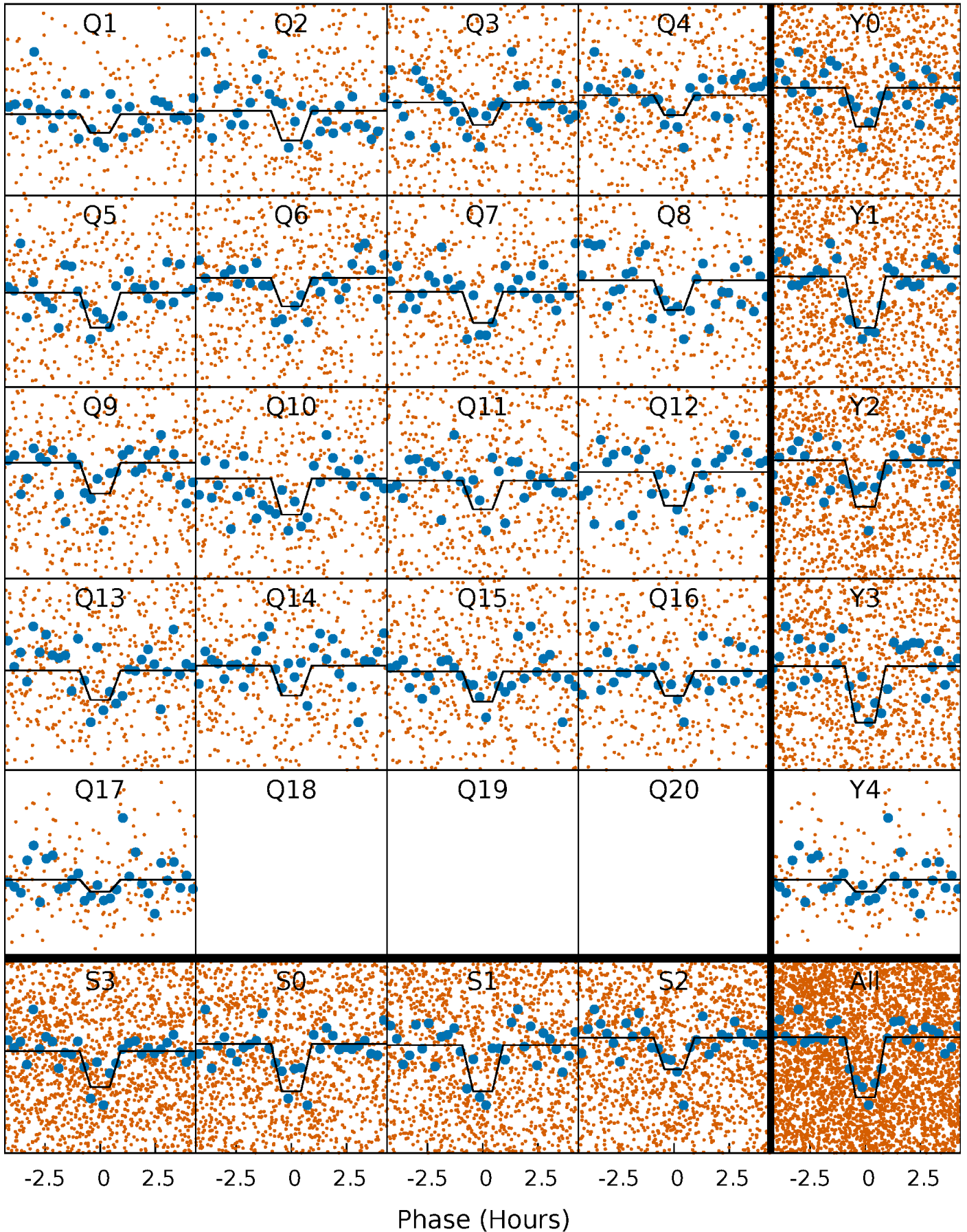
DV Quarter-Phased Transit Curves

TCE 012072872-01 P= 2.462891 Days $T_0=132.799990$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

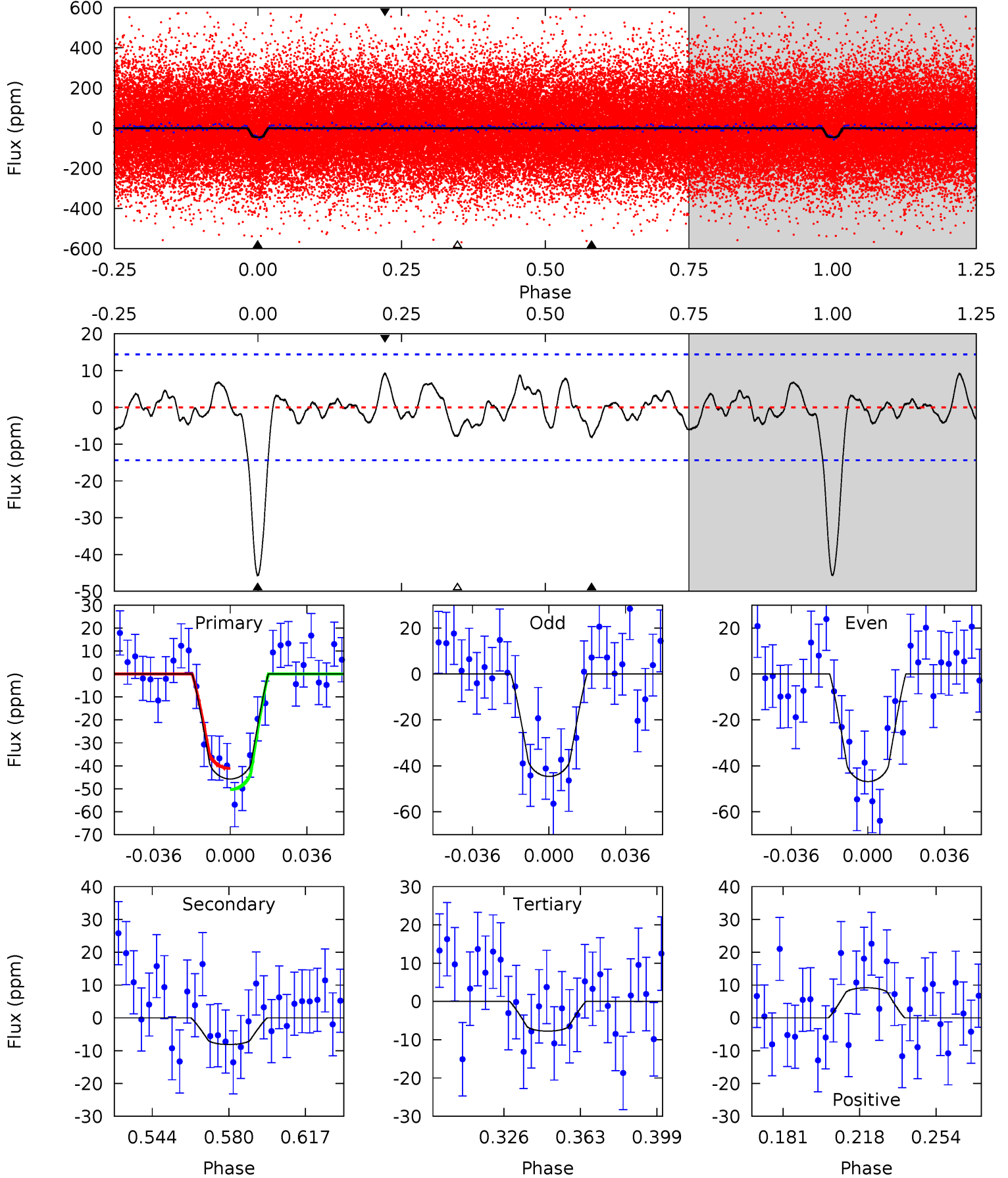
TCE 012072872-01 P= 2.462868 Days $T_0=132.808192$ (BKJD)



DV Model-Shift Uniqueness Test

012072872-01, P = 2.462891 Days, E = 130.337099 Days

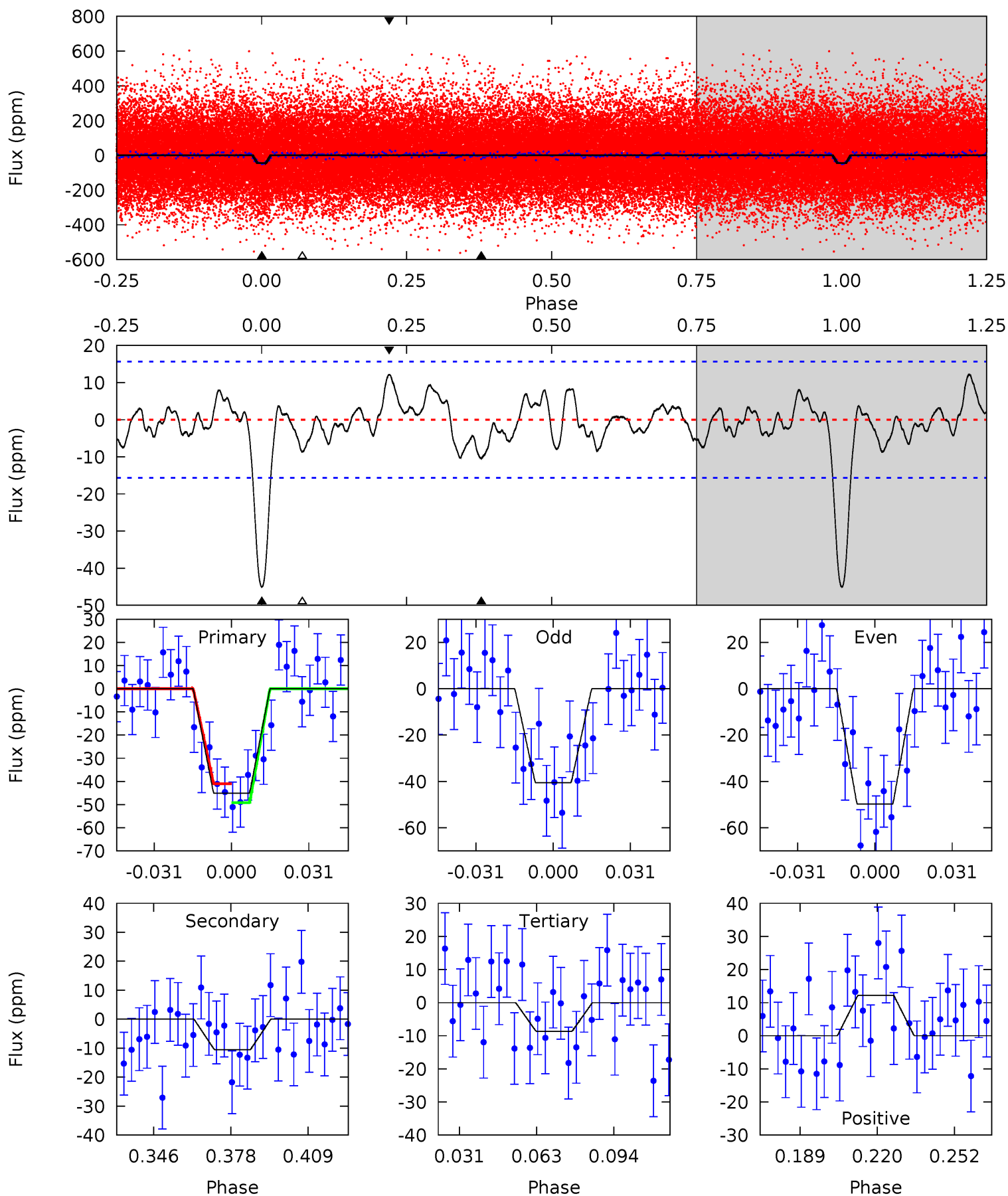
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.2	2.70	2.58	3.05	4.77	2.09	1.19	12.6	12.1	0.12	-0.35	0.37	0.95	0.17	1.53



Alt Model-Shift Uniqueness Test

012072872-01, P = 2.462868 Days, E = 130.345324 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
13.8	3.23	2.66	3.73	4.80	2.15	1.35	11.2	10.1	0.57	-0.50	1.41	1.01	0.21	1.26



Stellar Parameters For KIC 012072872

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5893^{+159}_{-159}	$4.395^{+0.149}_{-0.182}$	$-0.440^{+0.300}_{-0.300}$	$0.967^{+0.253}_{-0.169}$	$0.848^{+0.114}_{-0.070}$	$1.321^{+0.811}_{-0.644}$
	+3%/-3%	+3%/-4%	+68%/-68%	+26%/-17%	+13%/-8%	+61%/-49%
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 012072872-01 / KOI 3017.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-8 ± 3	$0.78^{+0.40}_{-0.36}$	1950^{+136}_{-112}	3947^{+1119}_{-582}	$8.165^{+20.208}_{-5.003}$
Alt.	-11 ± 3	$0.77^{+0.41}_{-0.36}$	1960^{+132}_{-124}	4200^{+1217}_{-626}	11^{+29}_{-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 $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

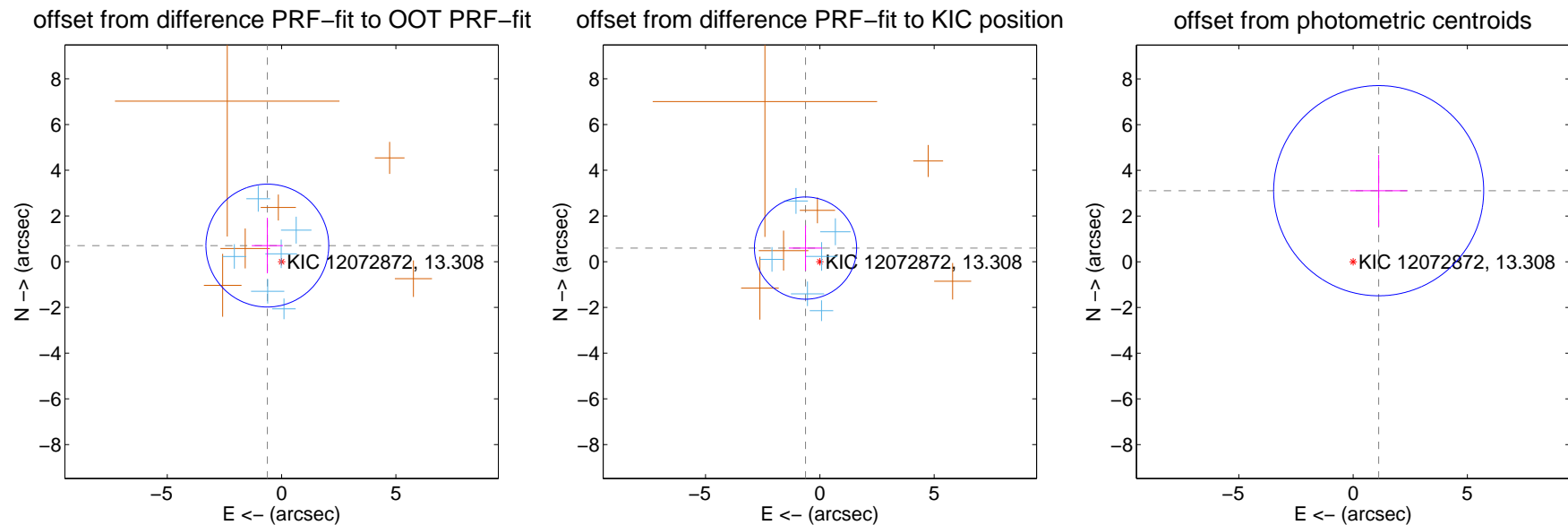
DV Centroid Data

Supplemental centroid analysis for 012072872-01. Kepler magnitude: 13.31. Transit SNR 10.98

There are 6 quarters with good PRF difference image offsets

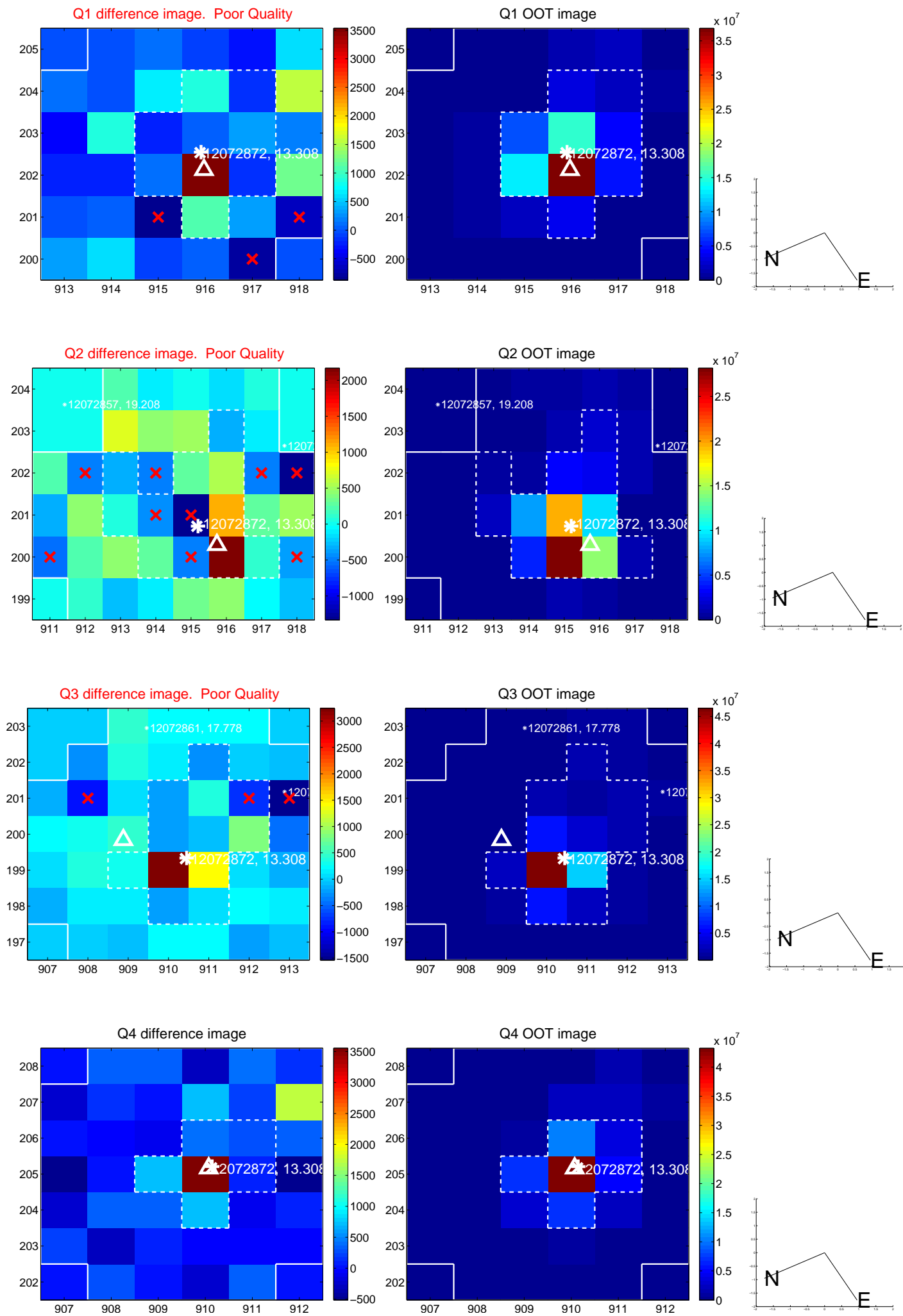
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.940 ± 0.896	1.05	0.623 ± 0.680	0.705 ± 1.215
PRF-fit source offset from KIC position	0.864 ± 0.745	1.16	0.627 ± 0.730	0.595 ± 0.989
photometric centroid source offset	3.31 ± 1.53	2.16	-1.12 ± 1.26	3.11 ± 1.56

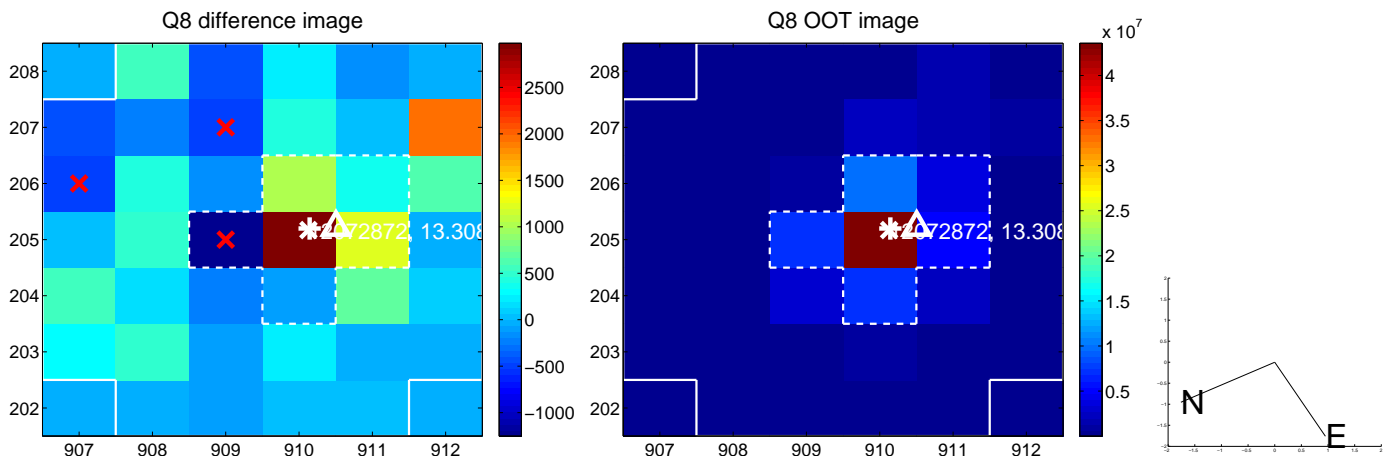
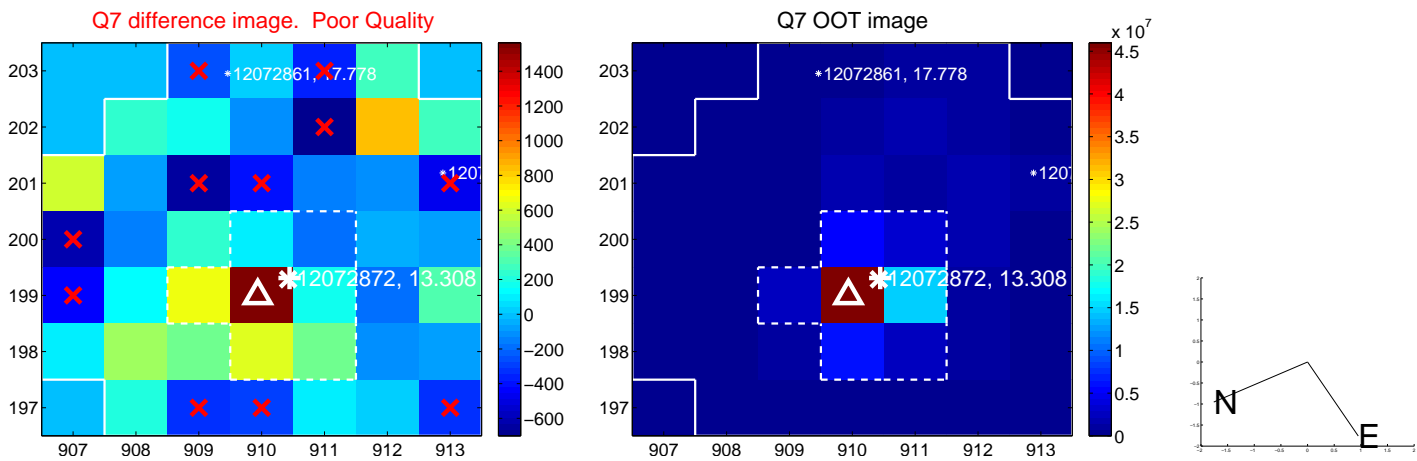
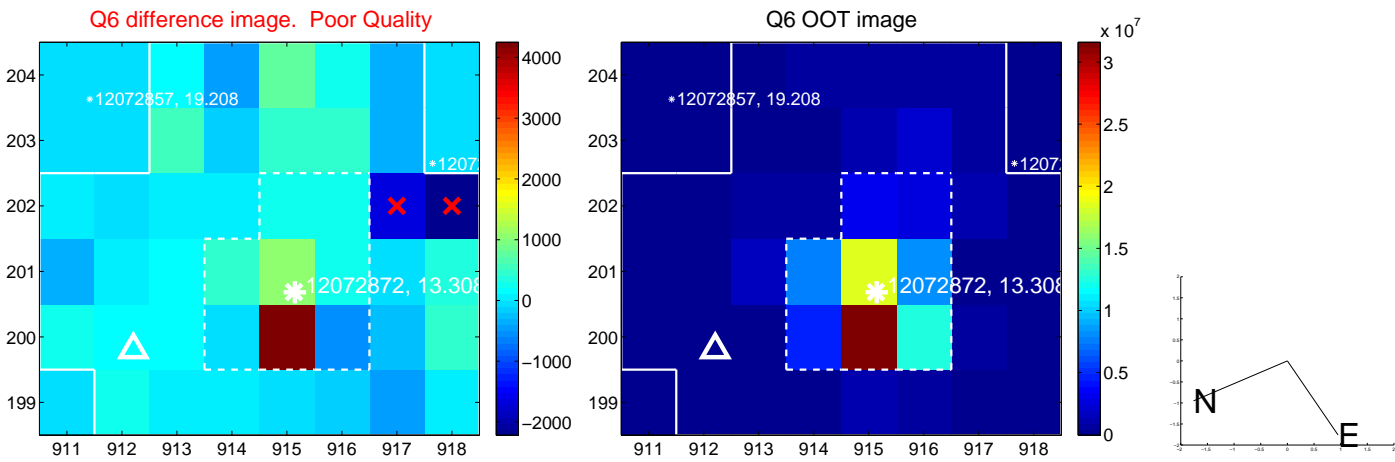
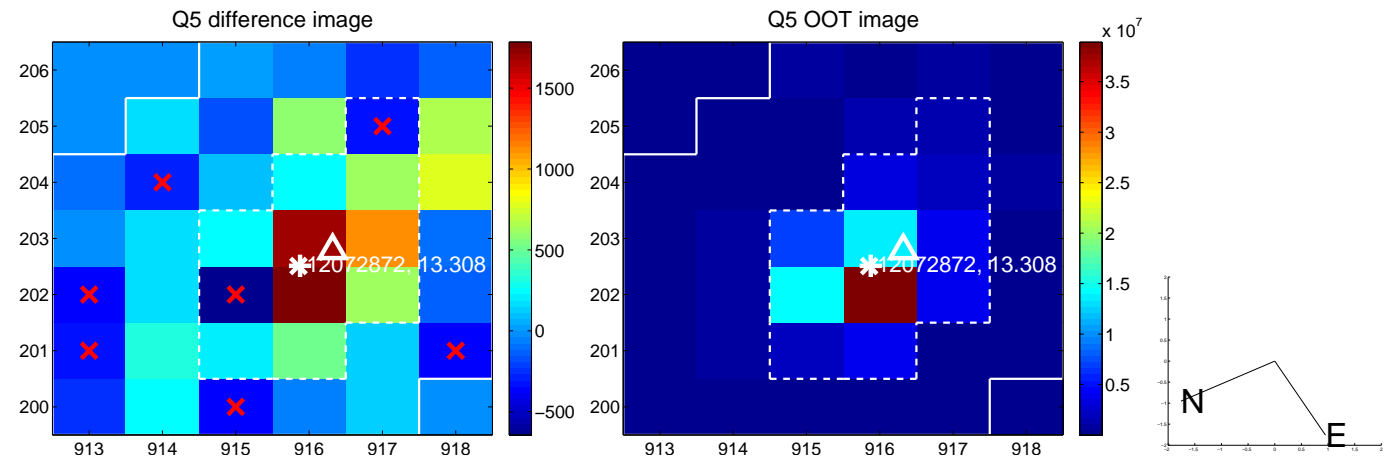


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

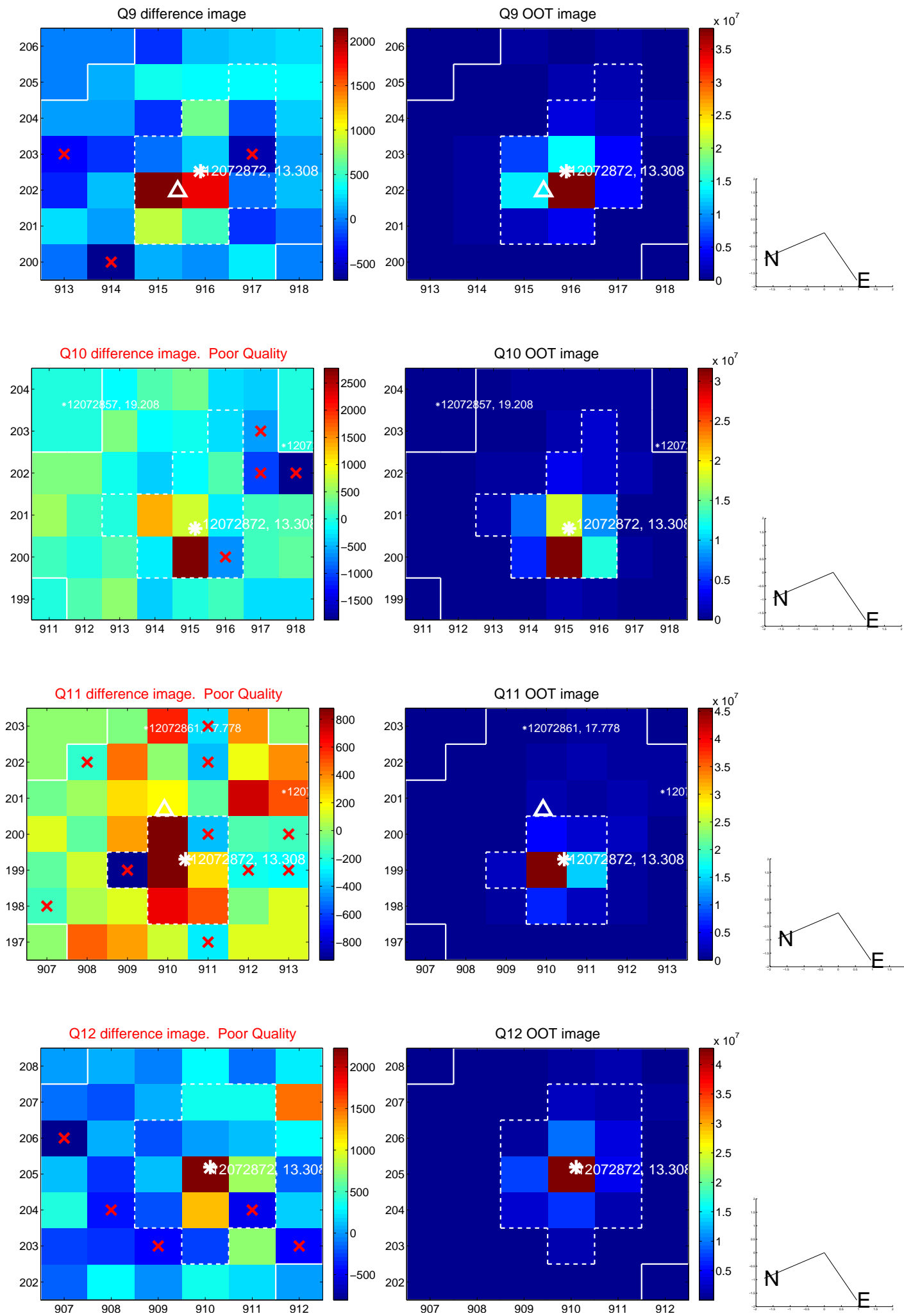
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



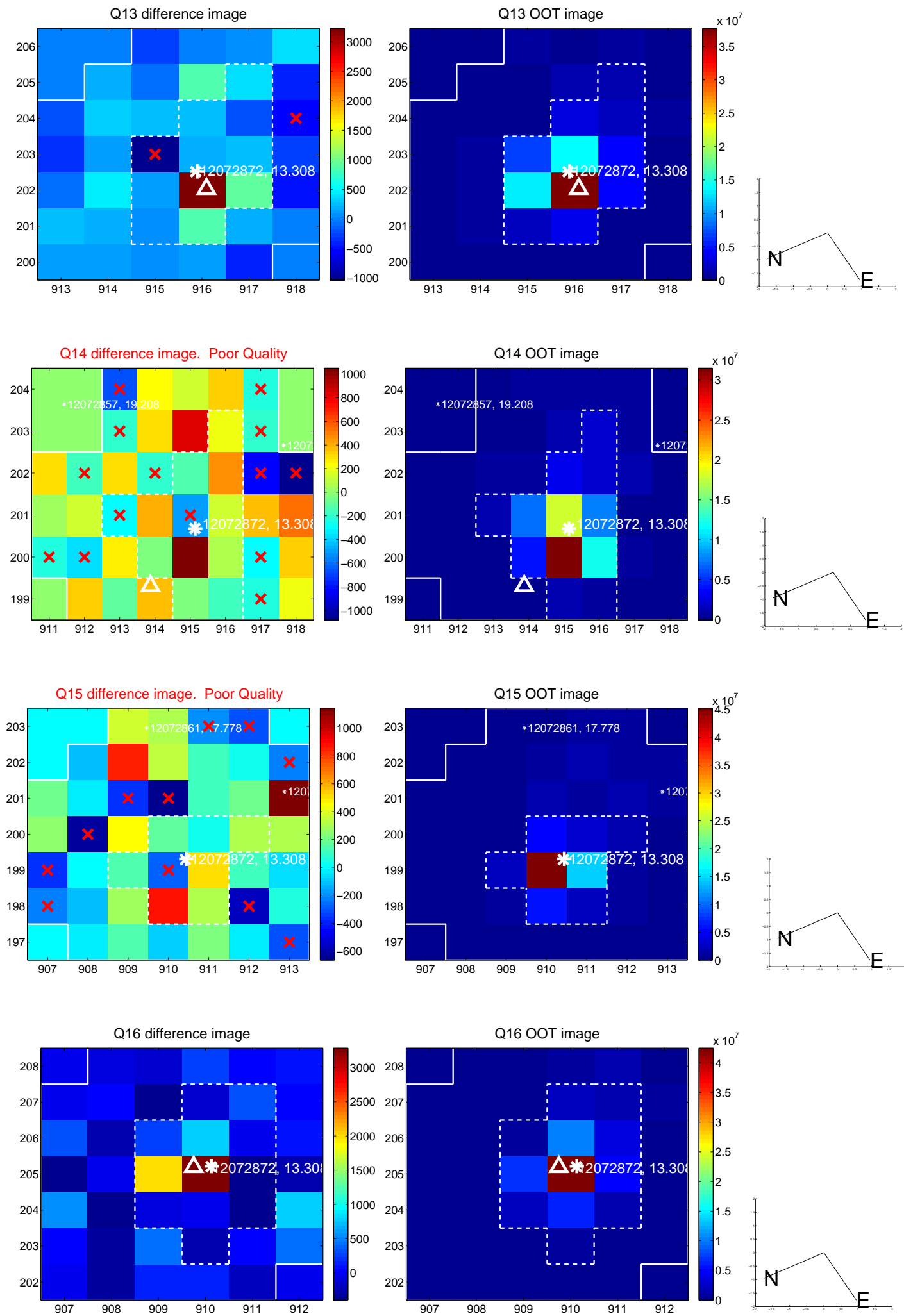
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



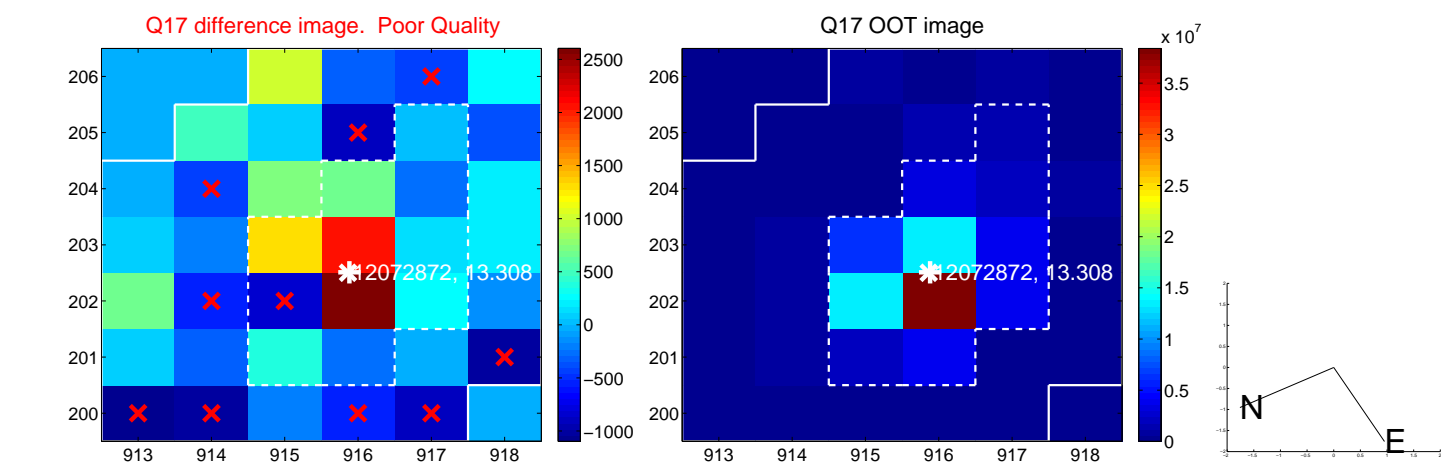
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



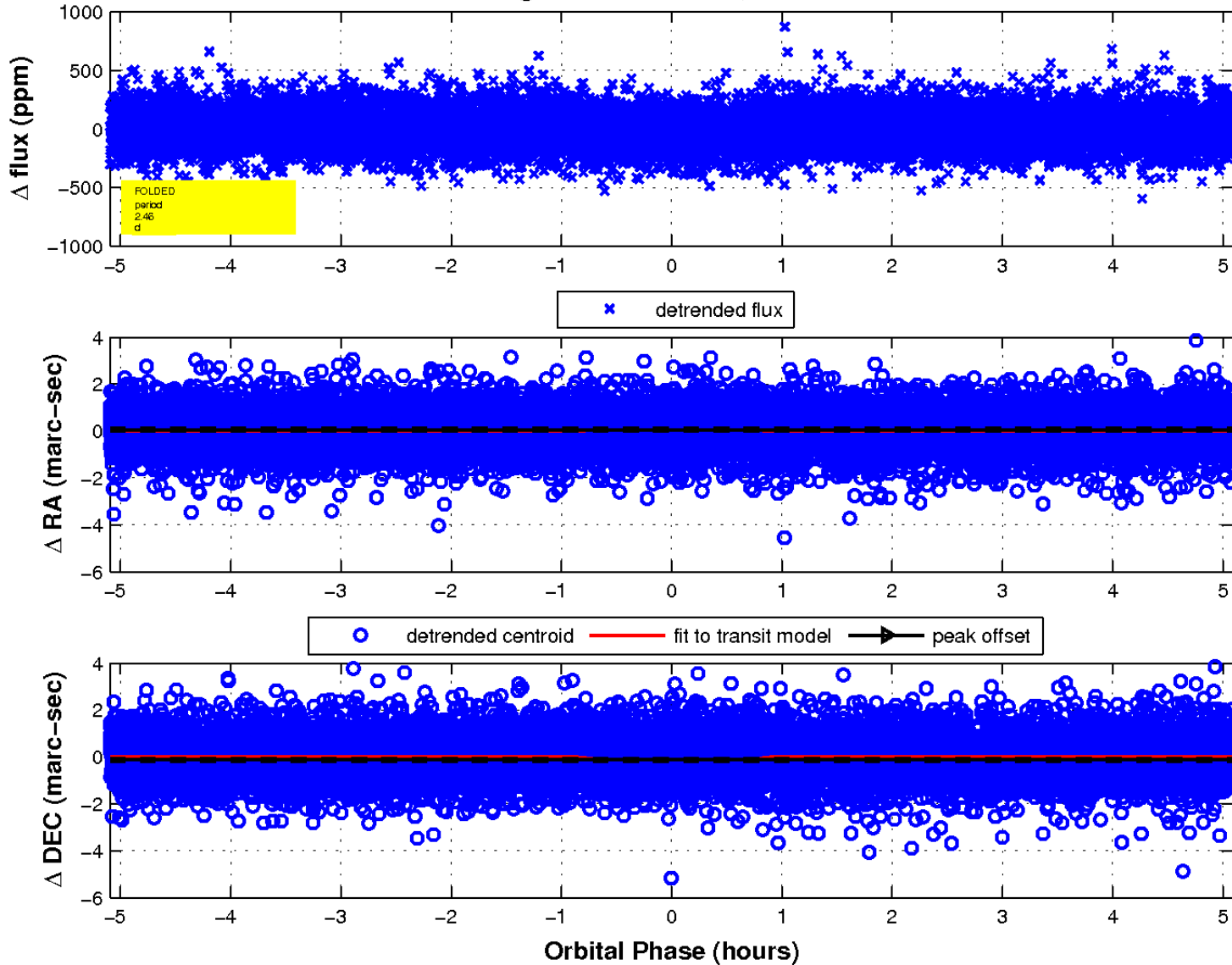
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

