

KIC 002990873

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})
002990873-01	OBS	2335.01	16.223804	136.024227	262.9	2.662	17.9	19.5	0.93	5547	1.72	49.47

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002990873-01	OBS	PC	0.99	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.

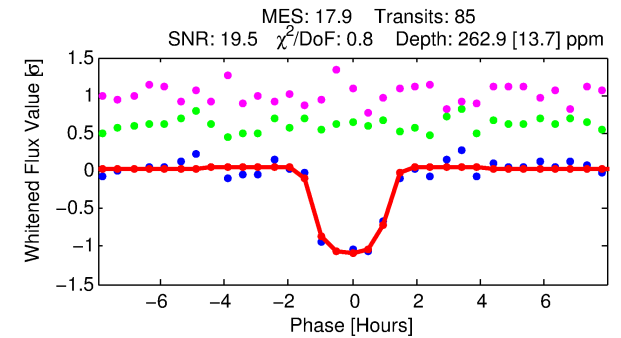
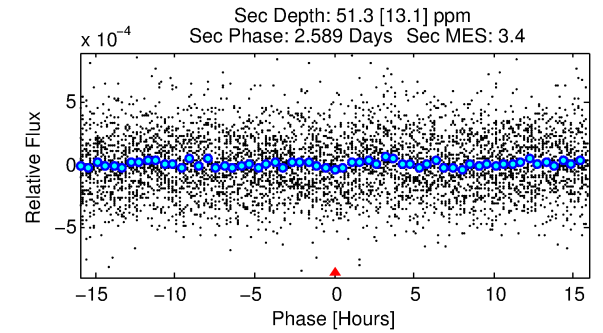
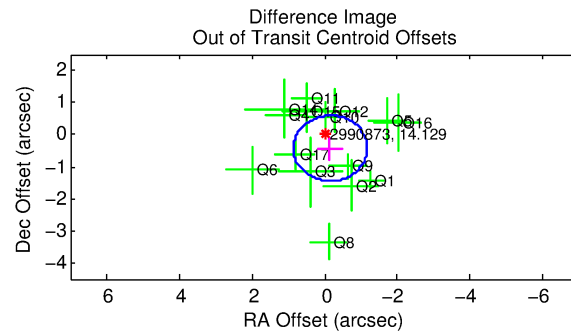
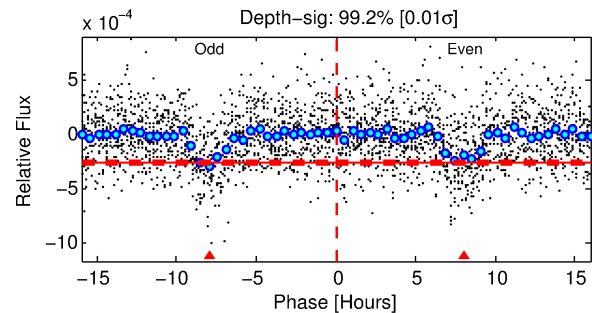
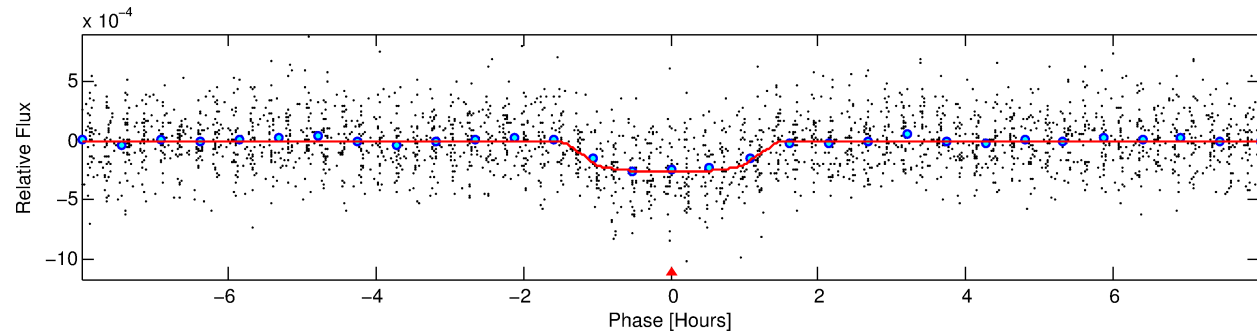
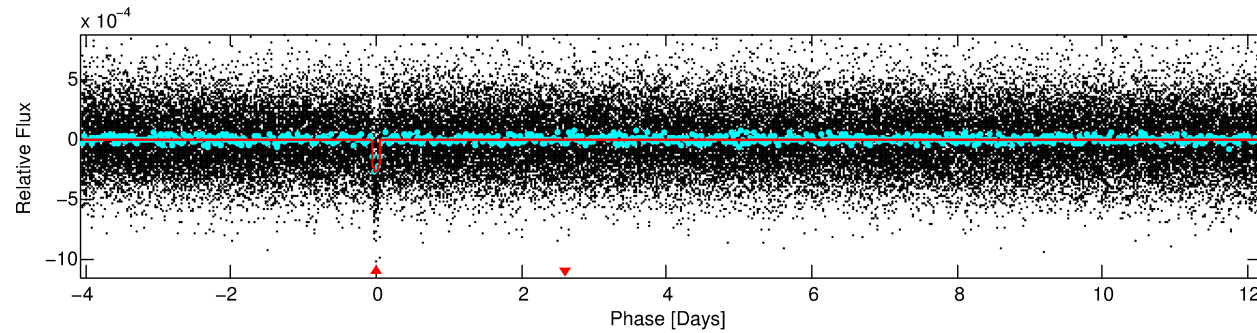
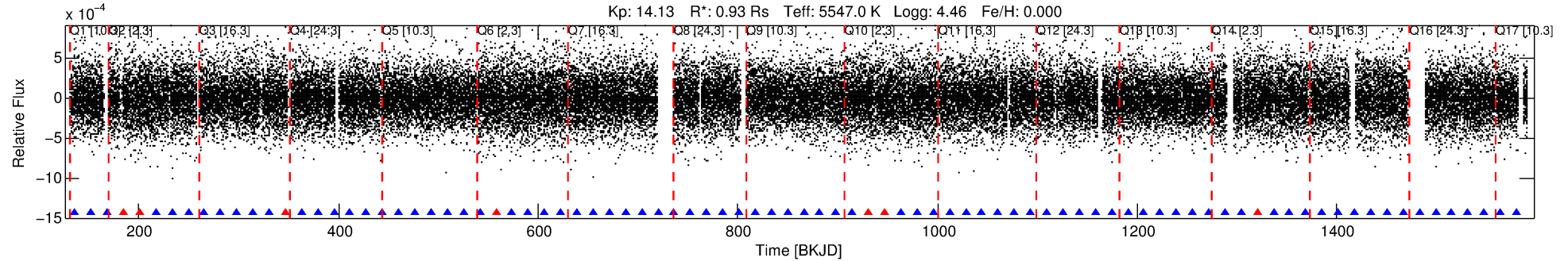
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002990873-01

No Significant Match Found

DV One-Page Summary

KIC: 2990873 Candidate: 1 of 1 Period: 16.224 d
KOI: K02335.01 Corr: 0.967



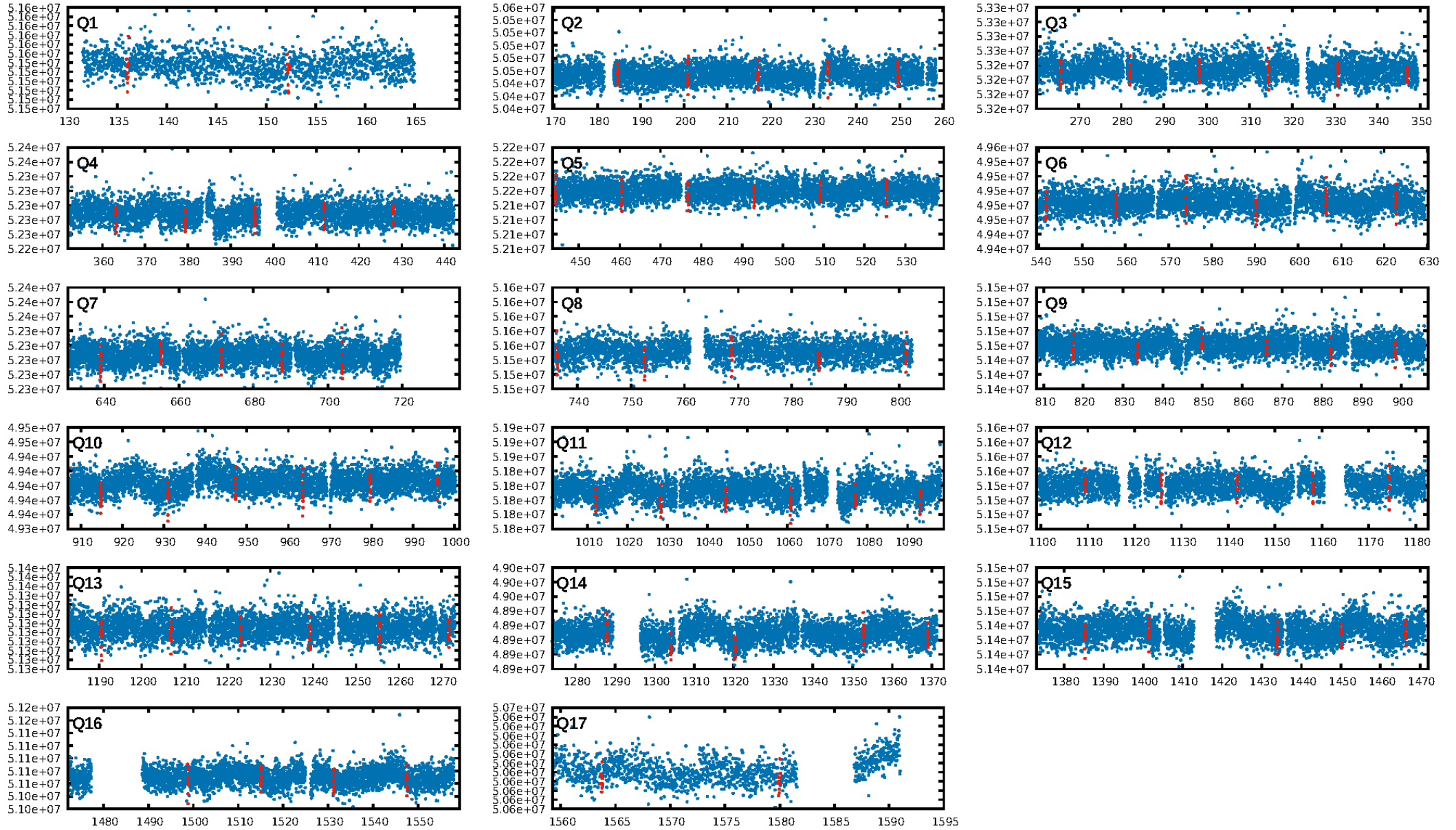
DV Fit Results:

Period = 16.22380 [0.00006] d
Epoch = 136.0242 [0.0032] BKJD
Rp/R* = 0.0171 [0.0075]
a/R* = 25.89 [49.06]
b = 0.85 [0.63]
Seff = 49.47 [9.68]
Teq = 676 [33] K
Rp = 1.72 [0.79] Re
a = 0.1211 [0.0141] AU
Ag = 139.23 [130.45] [1.06 σ]
Teffp = 3592 [829] K [3.51 σ]

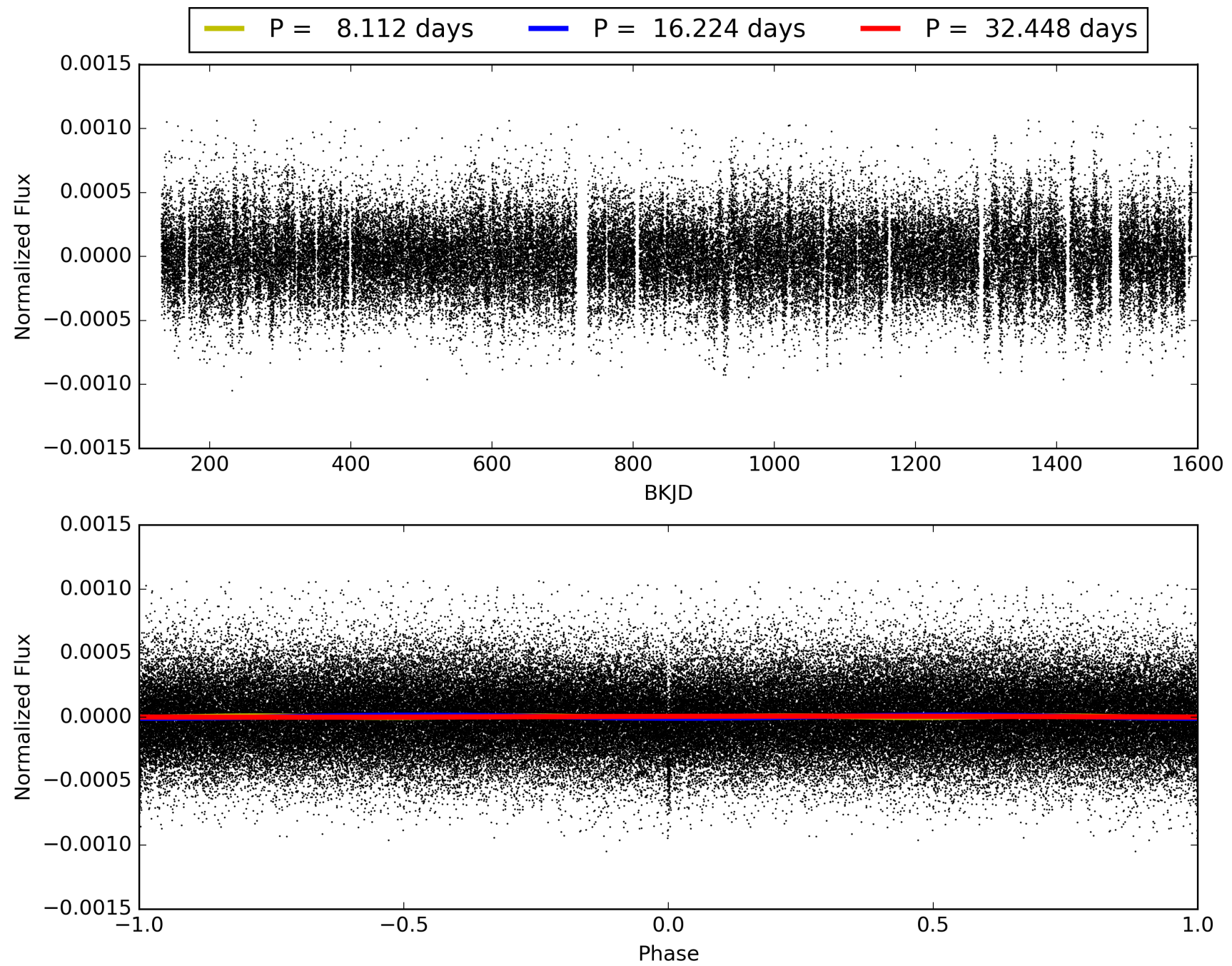
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.73e-71
RollingBand-fgt: 0.91 [74/81]
GhostDiagnostic-chr: 4.471
Centroid-sig: 84.7%
Centroid-so: 0.840 arcsec [1.11 σ]
OotOffset-rm: 0.453 arcsec [1.33 σ]
KicOffset-rm: 0.717 arcsec [2.22 σ]
OotOffset-st: 4/3/4/4 [15]
KicOffset-st: 4/3/4/4 [15]
DiffImageQuality-fgm: 0.80 [12/15]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 002990873-01, PDC Light Curves

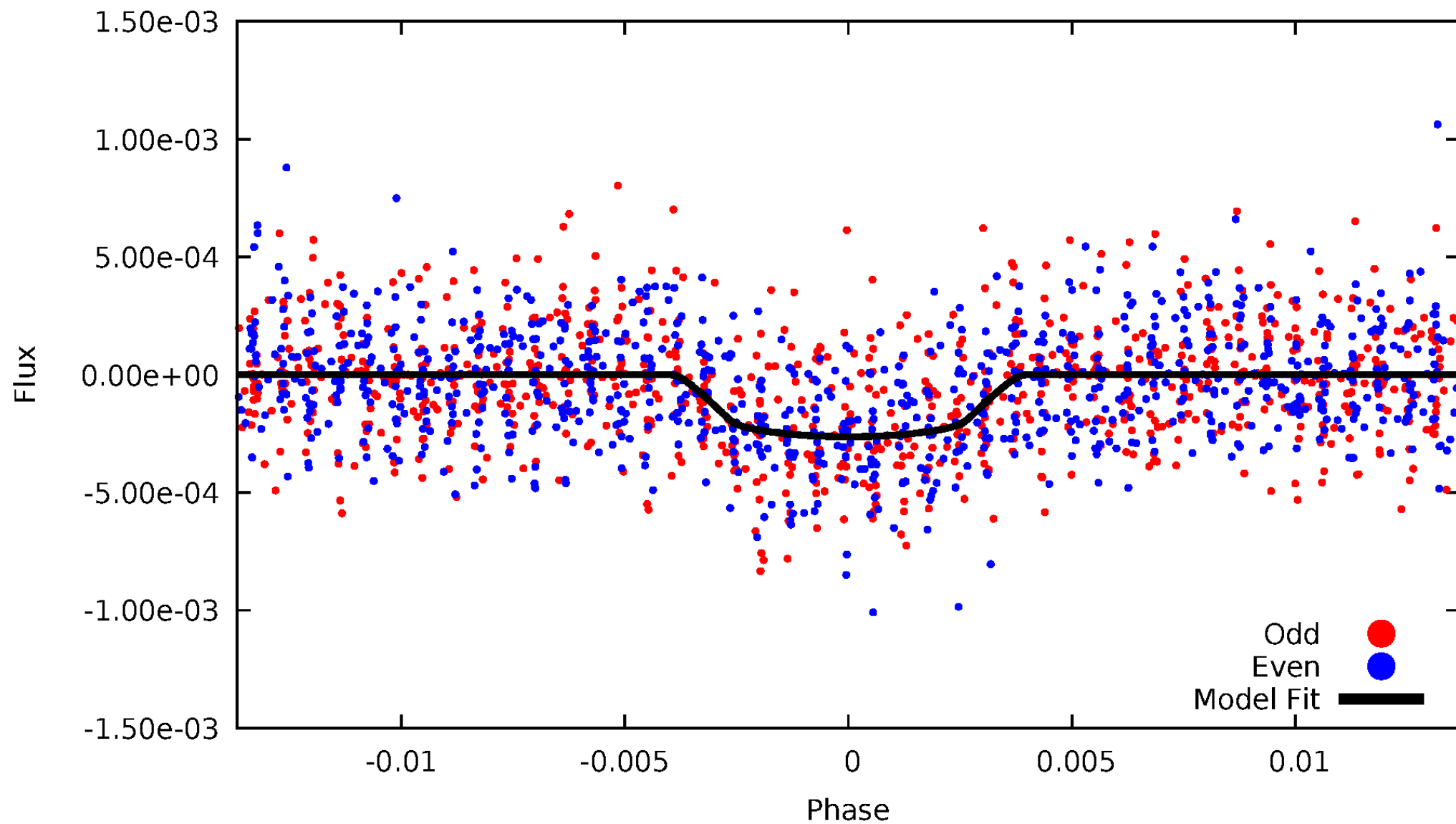


TCE 002990873-01



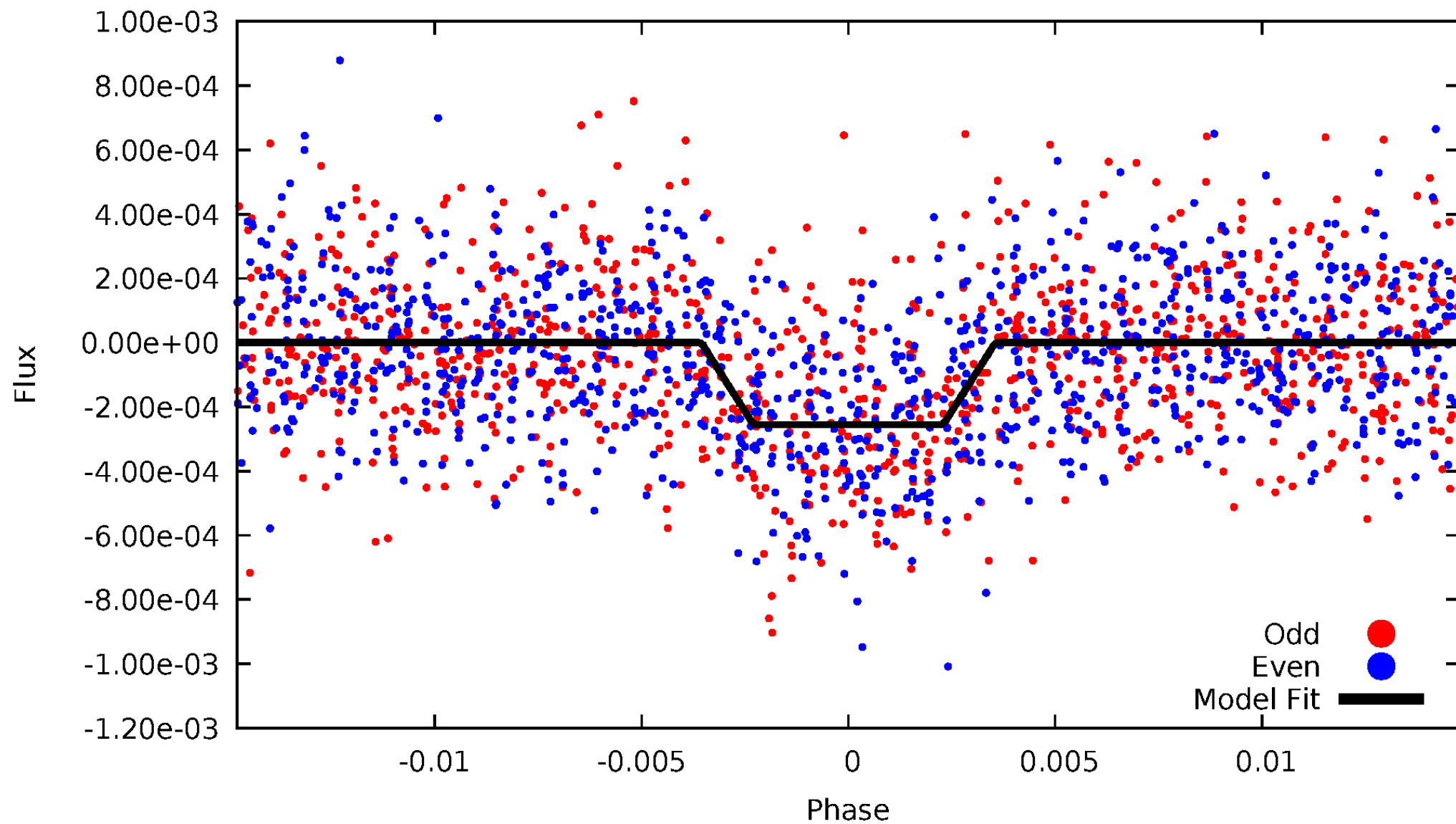
DV Odd/Even

TCE 002990873-01



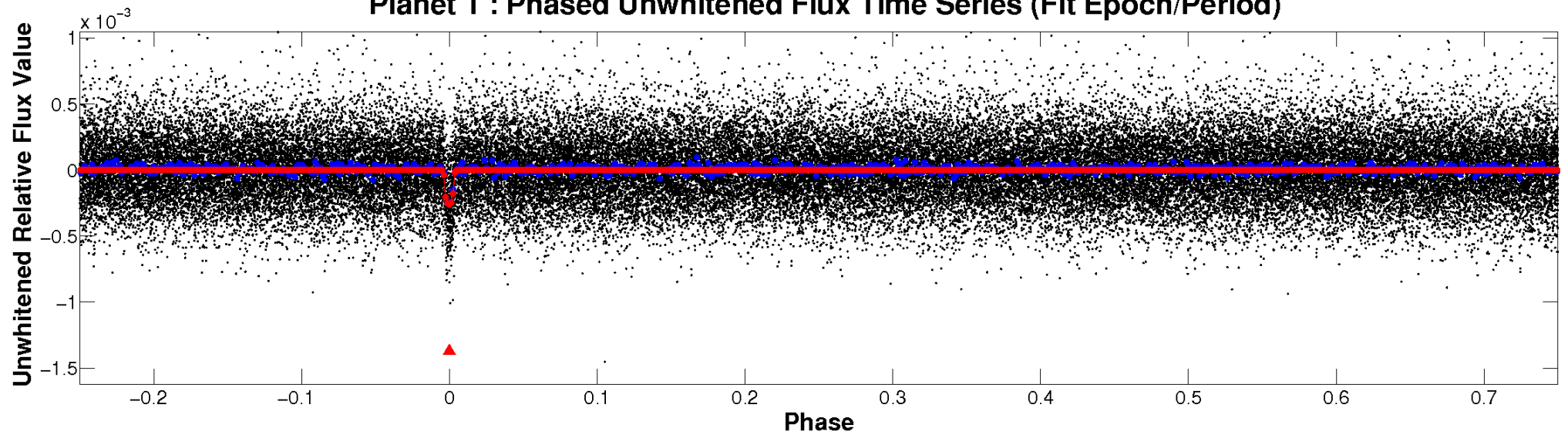
ALT Odd/Even

TCE 002990873-01

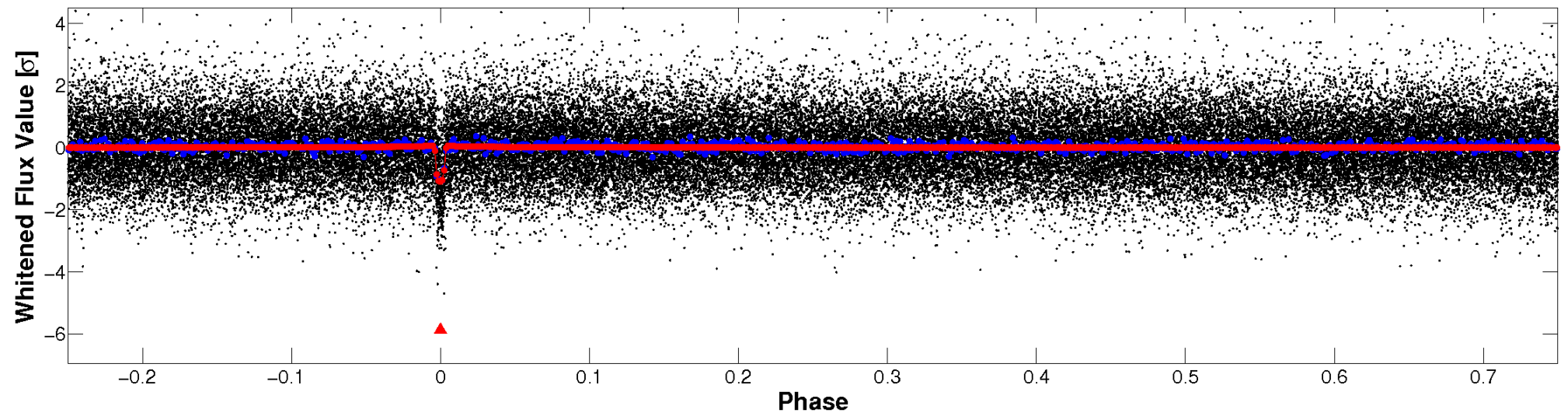


Non-Whitened Vs. Whitened Light Curve

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

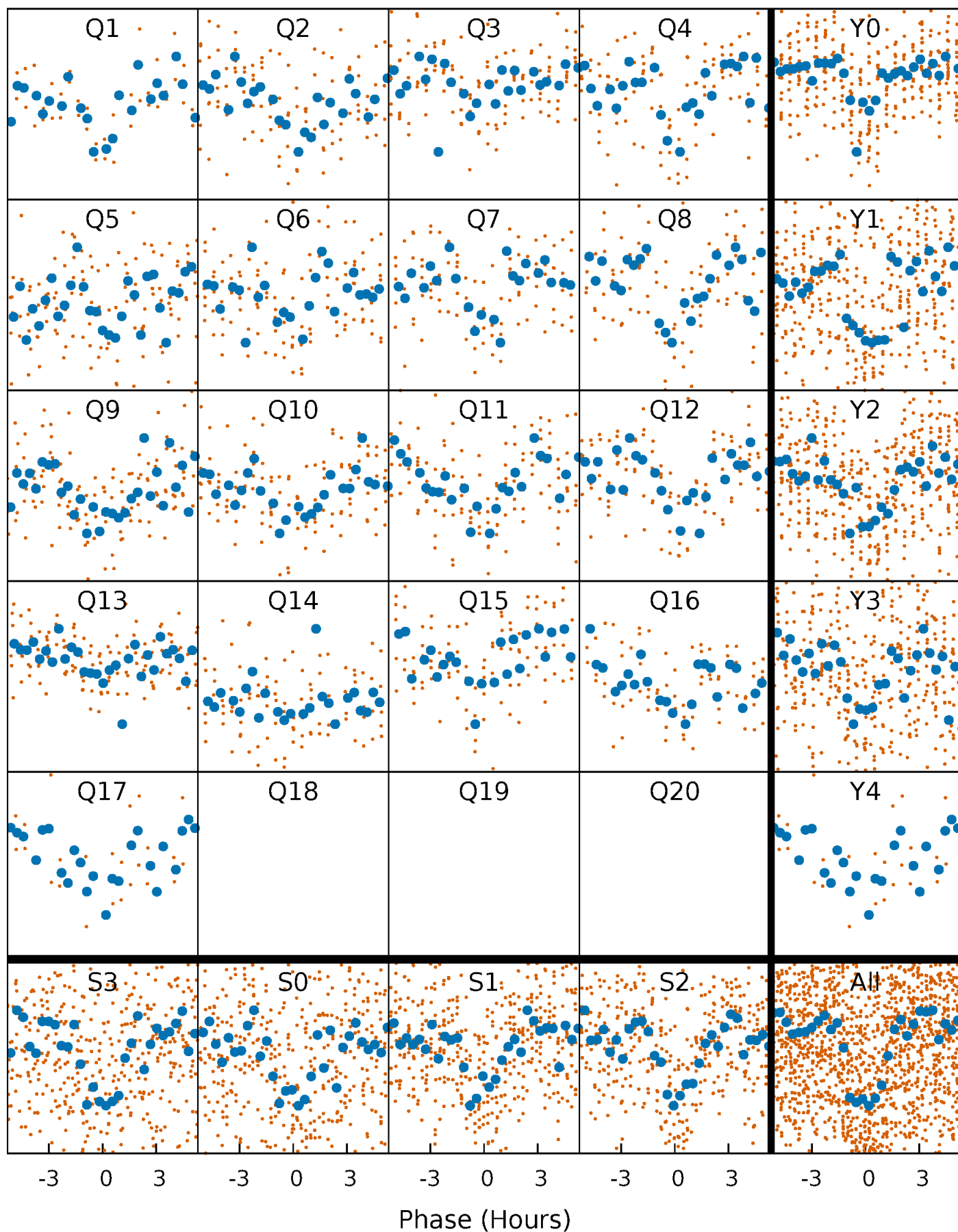


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



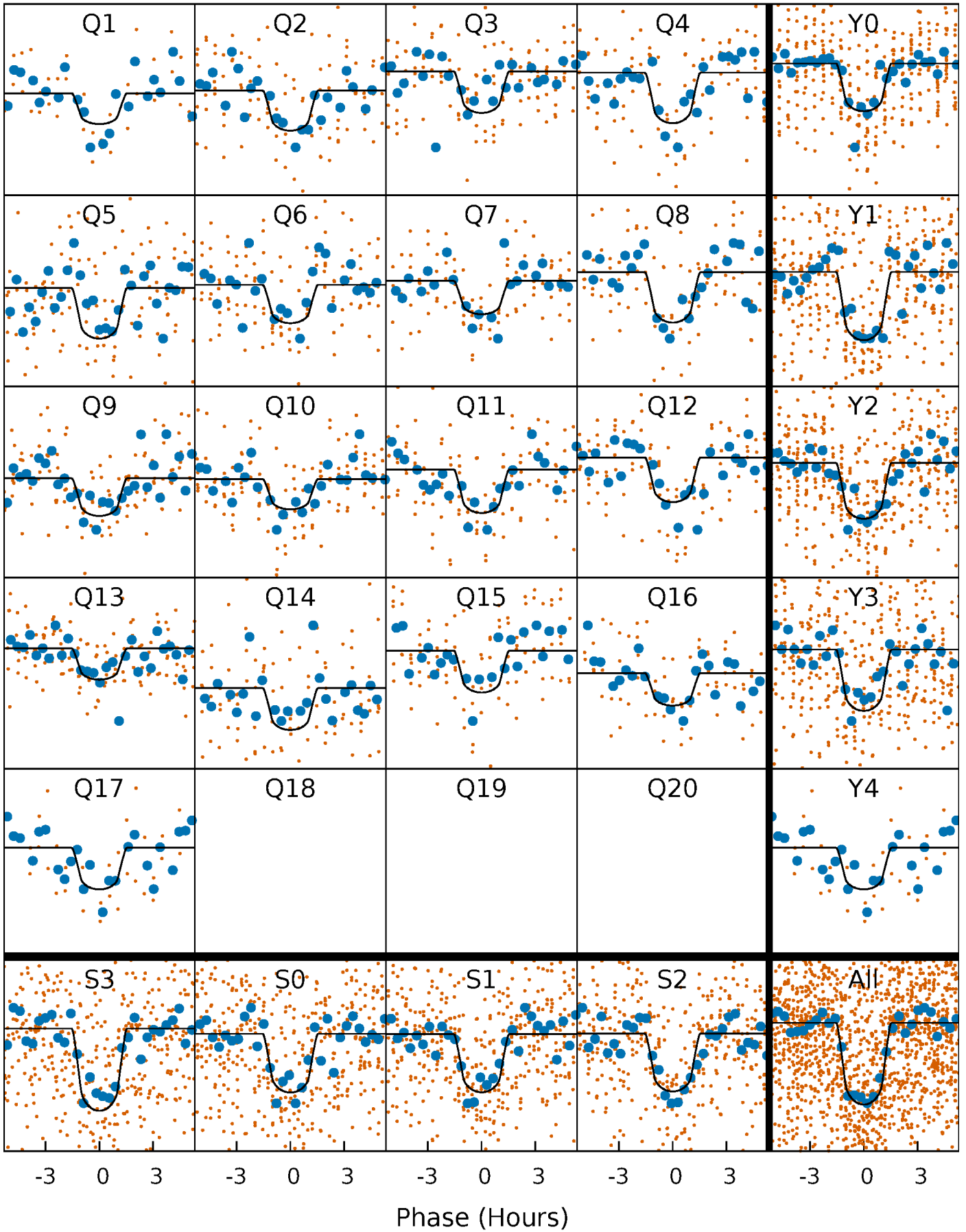
PDC Quarter-Phased Transit Curves

TCE 002990873-01 P= 16.223804 Days $T_0=136.024227$ (BKJD)



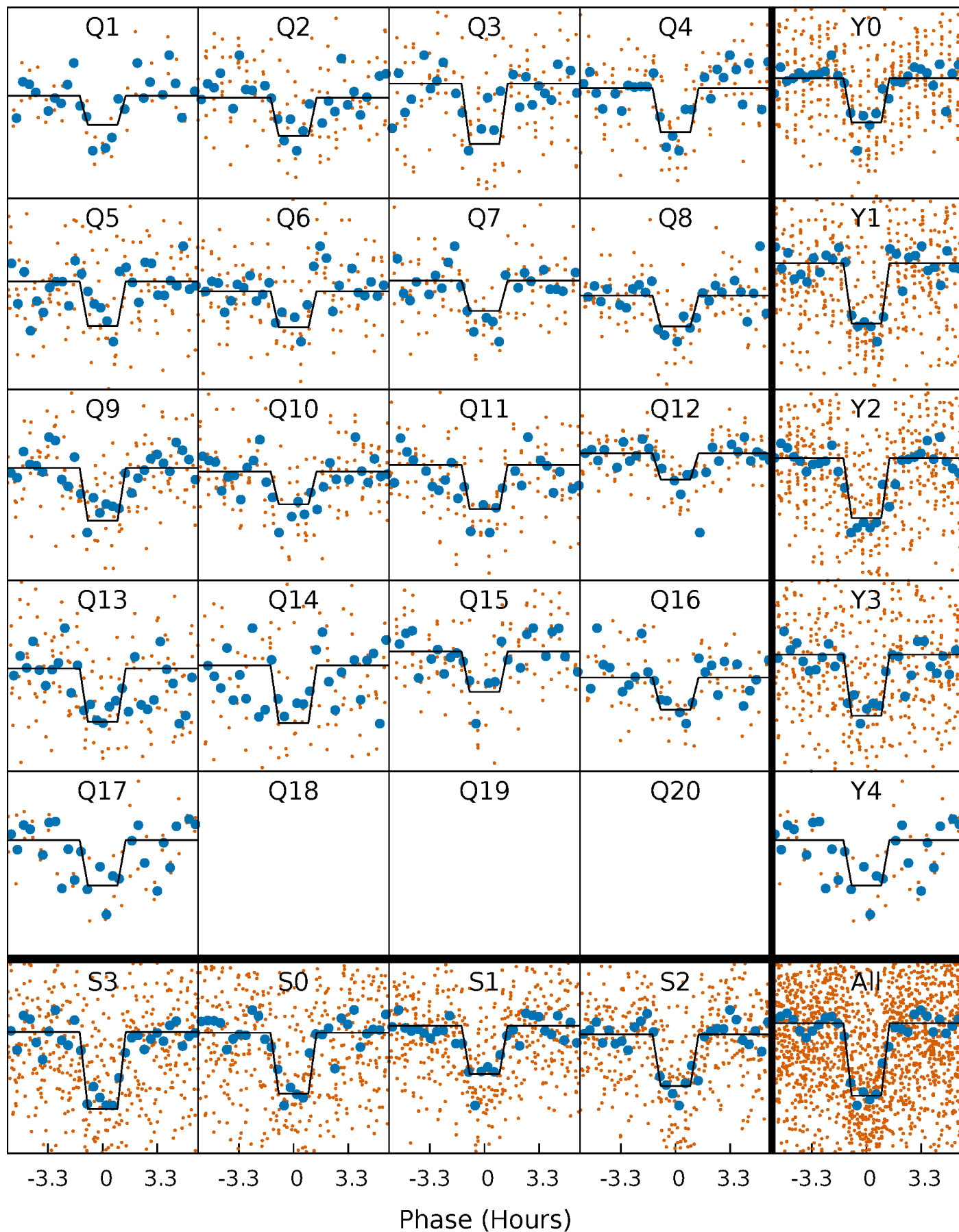
DV Quarter-Phased Transit Curves

TCE 002990873-01 P= 16.223804 Days $T_0=136.024227$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

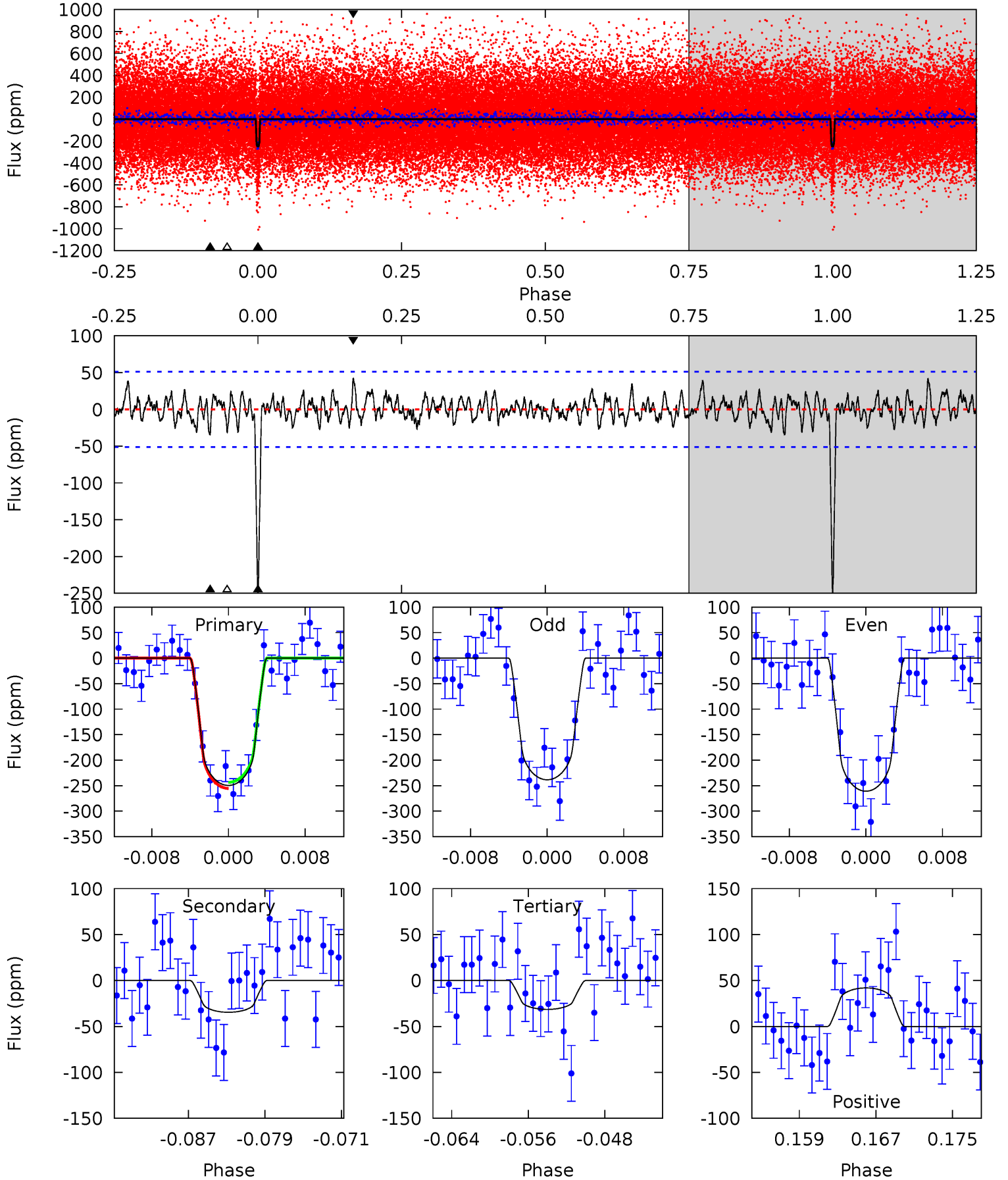
TCE 002990873-01 P= 16.223704 Days $T_0=136.028303$ (BKJD)



DV Model-Shift Uniqueness Test

002990873-01, P = 16.223804 Days, E = 119.800423 Days

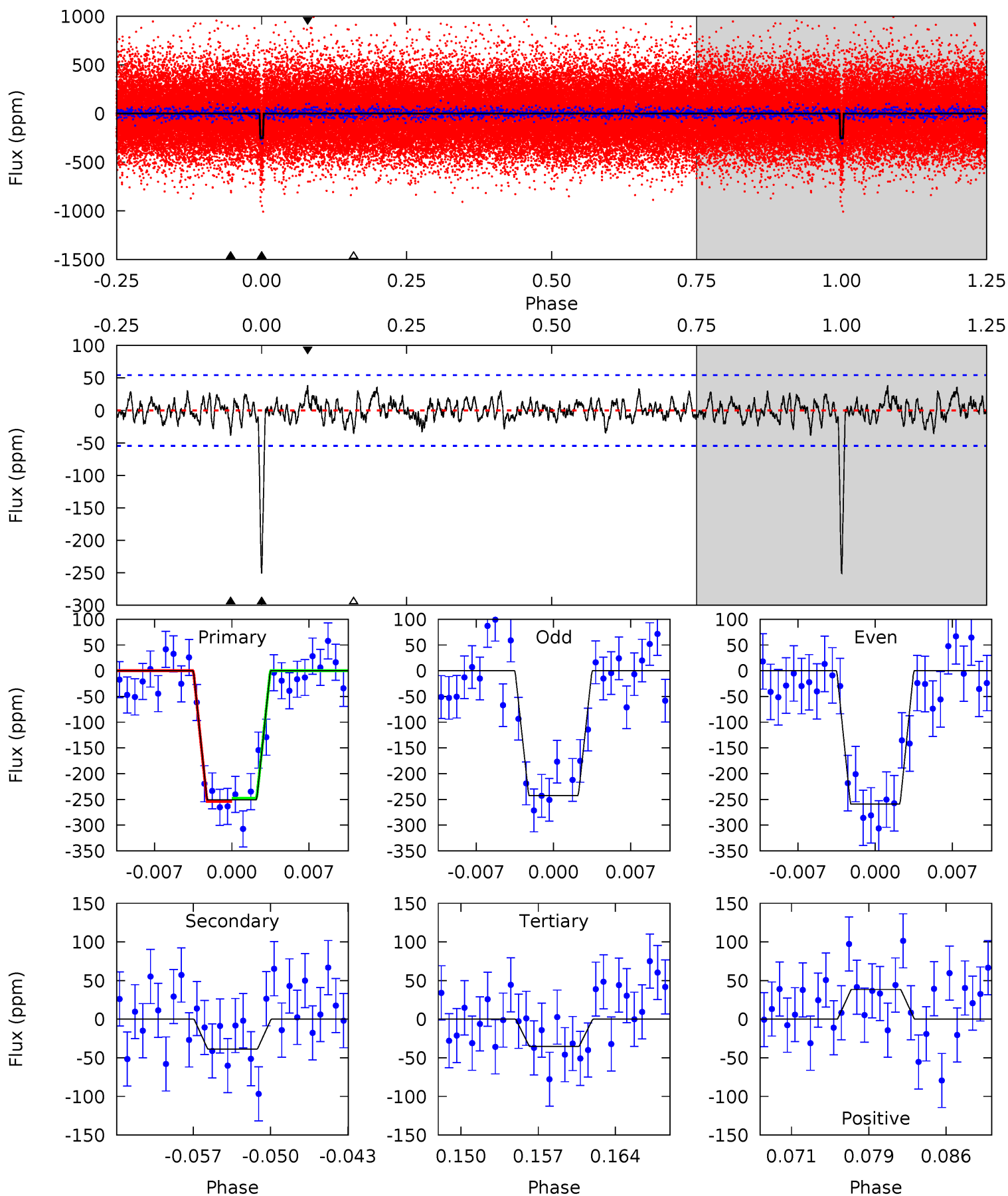
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
24.7	3.43	3.12	4.15	5.07	2.65	1.20	21.6	20.6	0.31	-0.72	1.11	1.01	0.14	0.58



Alt Model-Shift Uniqueness Test

002990873-01, P = 16.223704 Days, E = 119.804599 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.4	3.63	3.31	3.60	5.09	2.69	1.13	20.1	19.8	0.32	0.03	0.78	0.96	0.13	0.28



Stellar Parameters For KIC 002990873

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5547^{+110}_{-1}	$4.460^{+0.068}_{-0.102}$	$0.000^{+0.150}_{-0.150}$	$0.925^{+0.120}_{-0.070}$	$0.900^{+0.061}_{-0.050}$	$1.602^{+0.472}_{-0.467}$
	+2%/-0%	+2%/-2%	+inf%/-inf%	+13%/-8%	+7%/-6%	+29%/-29%
Source	SPE57	SPE57	SPE57	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002990873-01 / KOI 2335.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-35 ± 10	$1.71^{+0.77}_{-0.71}$	946^{+41}_{-39}	3647^{+773}_{-410}	93^{+178}_{-52}
Alt.	-39 ± 11	$1.67^{+0.79}_{-0.72}$	946^{+37}_{-42}	3721^{+902}_{-452}	104^{+230}_{-59}

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

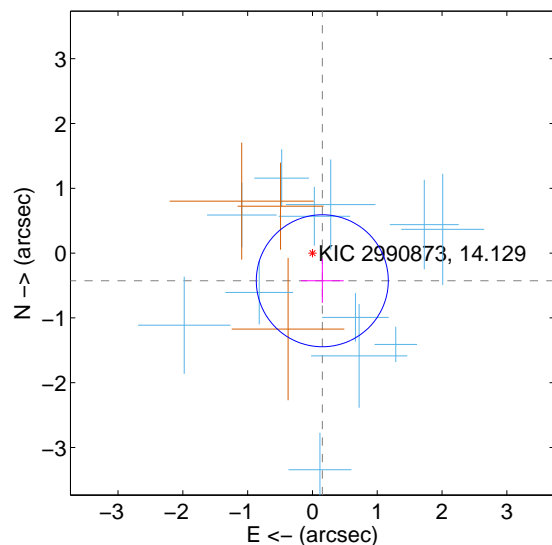
Supplemental centroid analysis for 002990873-01. Kepler magnitude: 14.13. Transit SNR 19.53

There are 12 quarters with good PRF difference image offsets

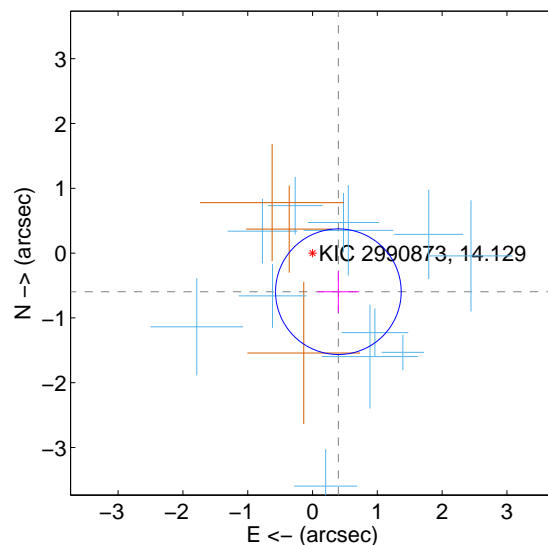
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.453 ± 0.340	1.33	-0.152 ± 0.329	-0.427 ± 0.341
PRF-fit source offset from KIC position	0.717 ± 0.323	2.22	-0.399 ± 0.320	-0.596 ± 0.324
photometric centroid source offset	0.84 ± 0.76	1.11	-0.49 ± 0.73	-0.68 ± 0.77

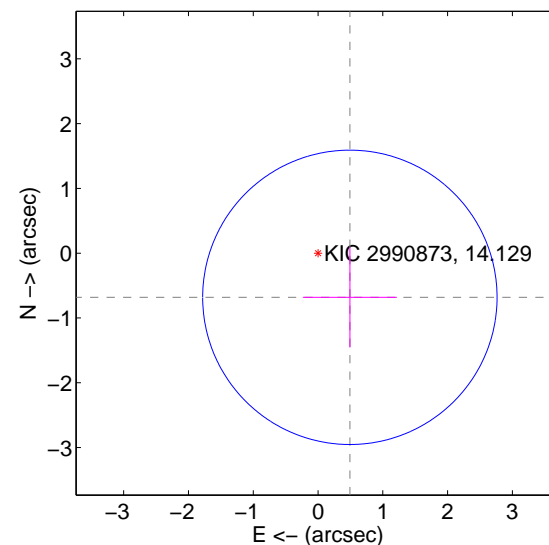
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

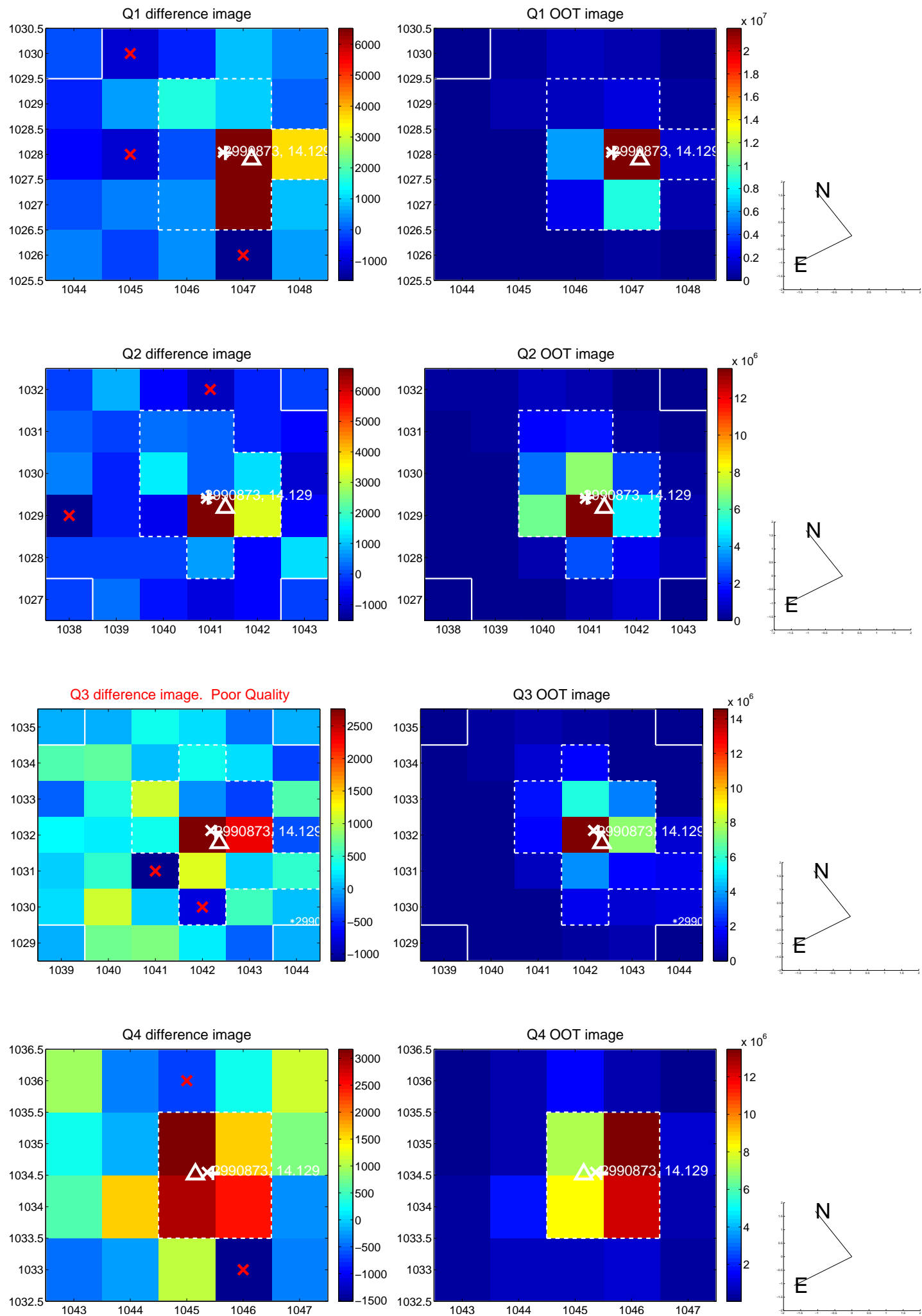


offset from photometric centroids

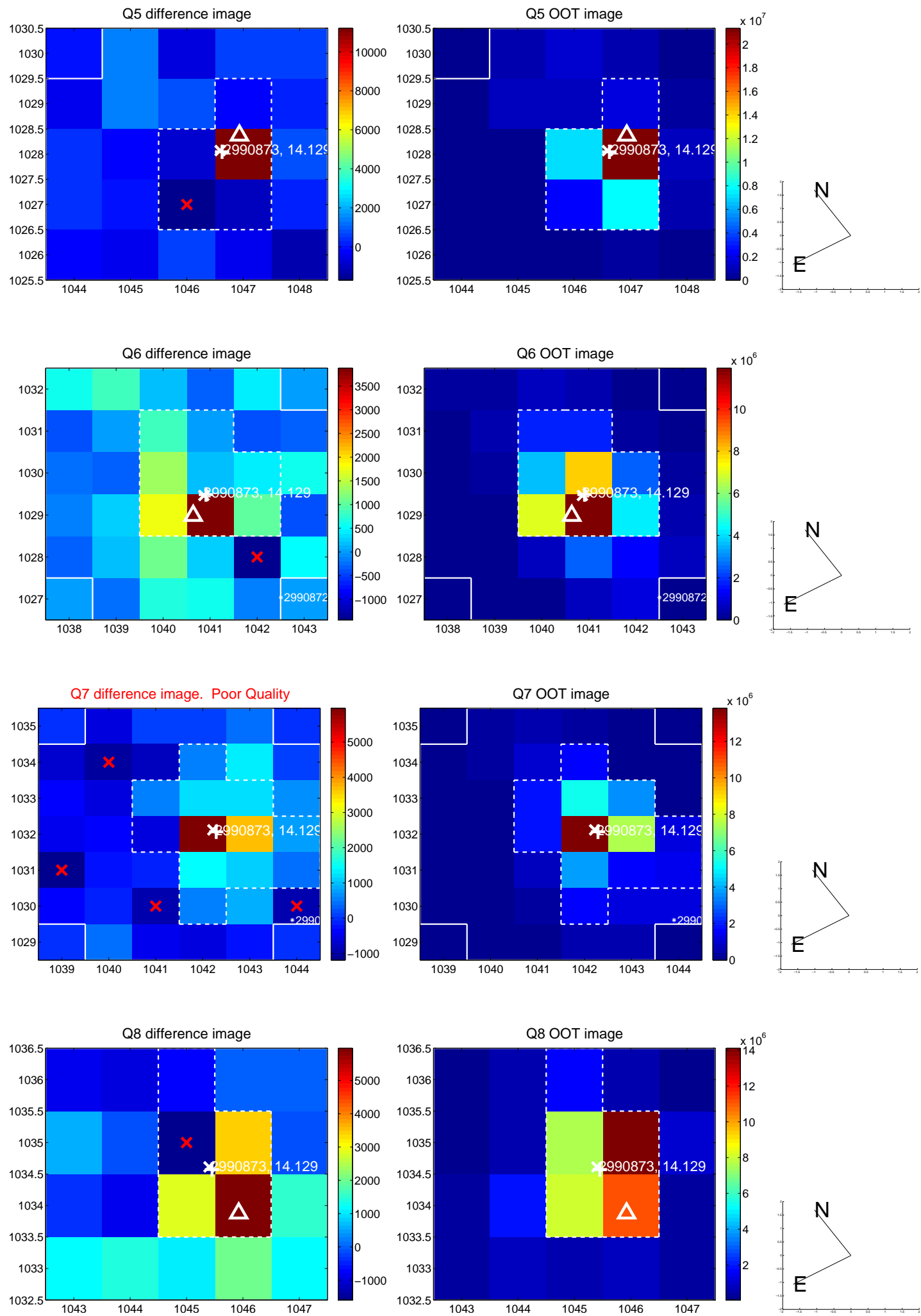


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

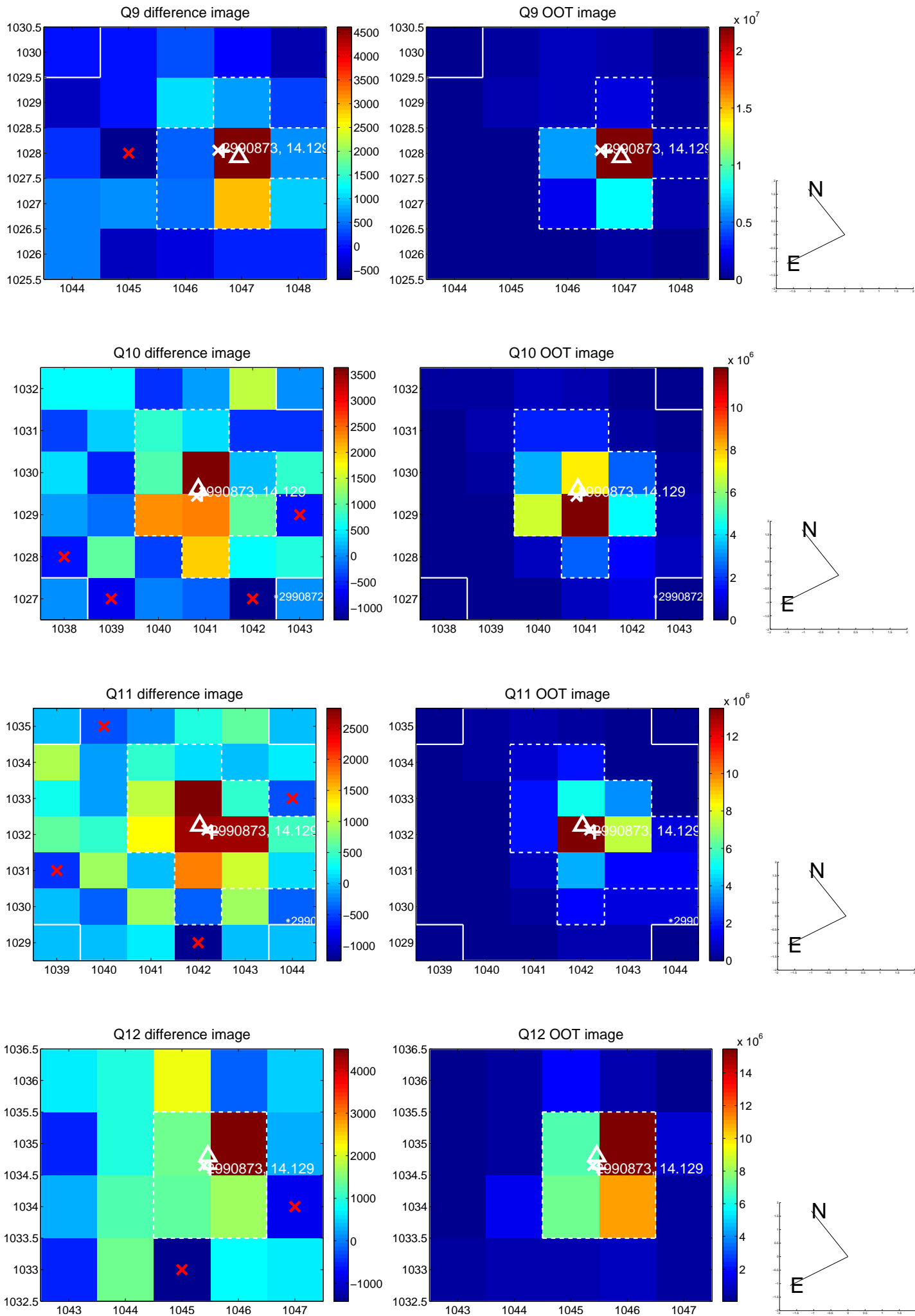
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



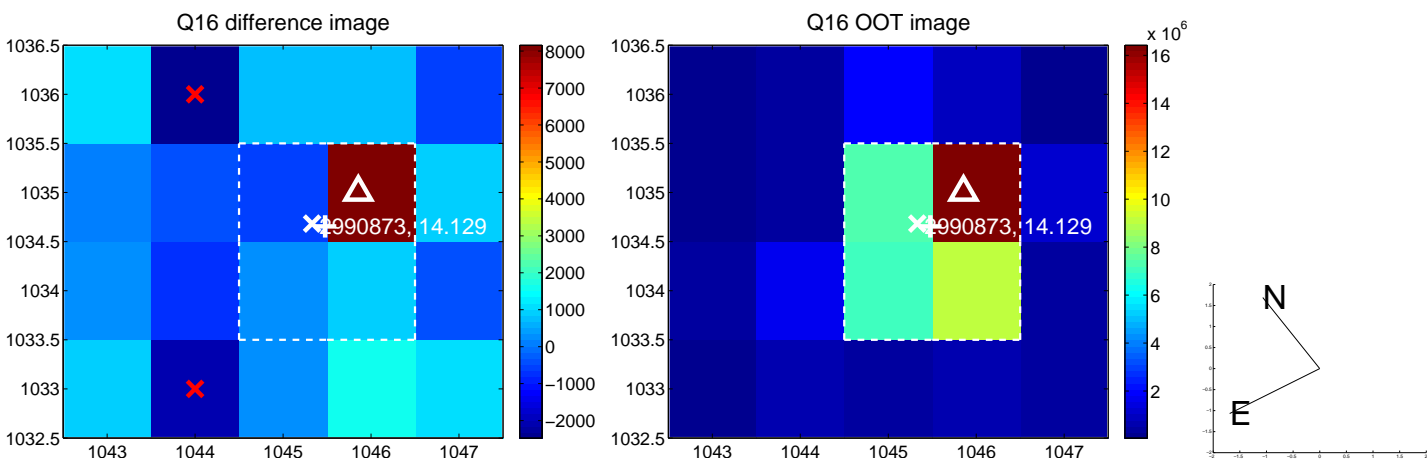
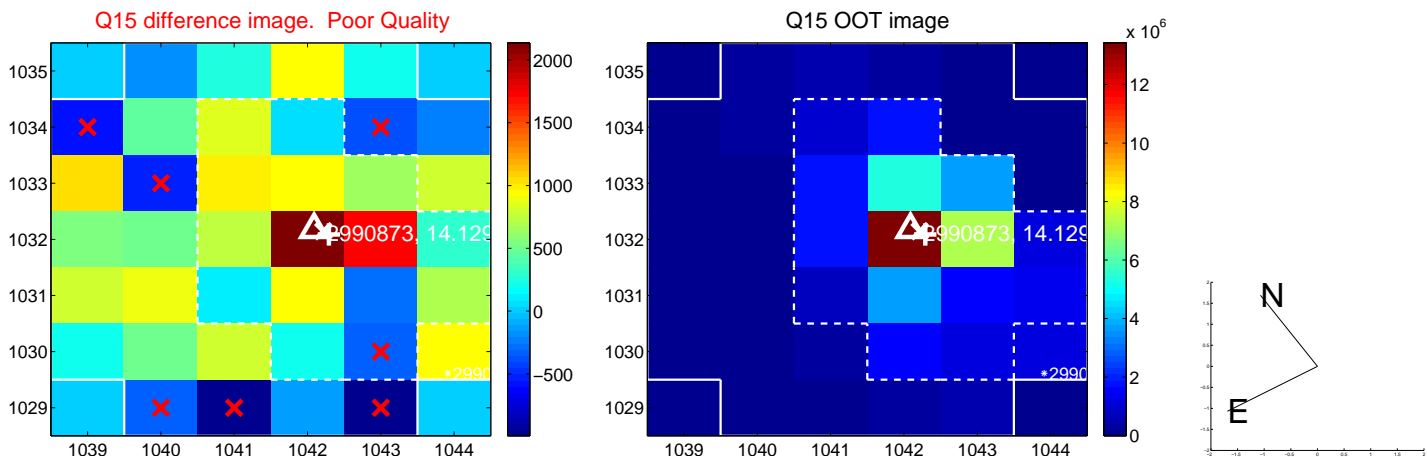
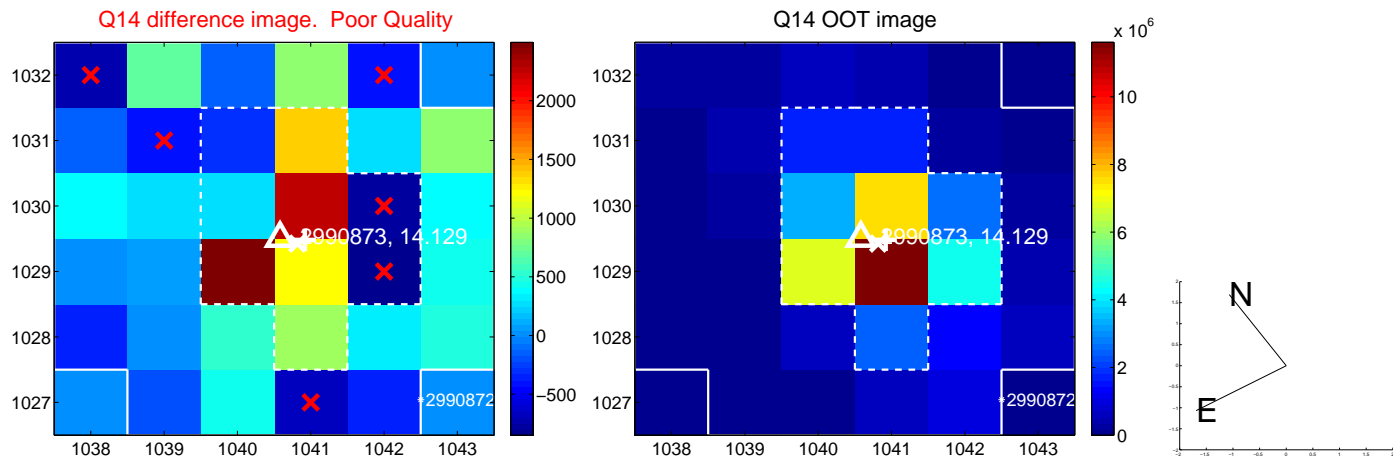
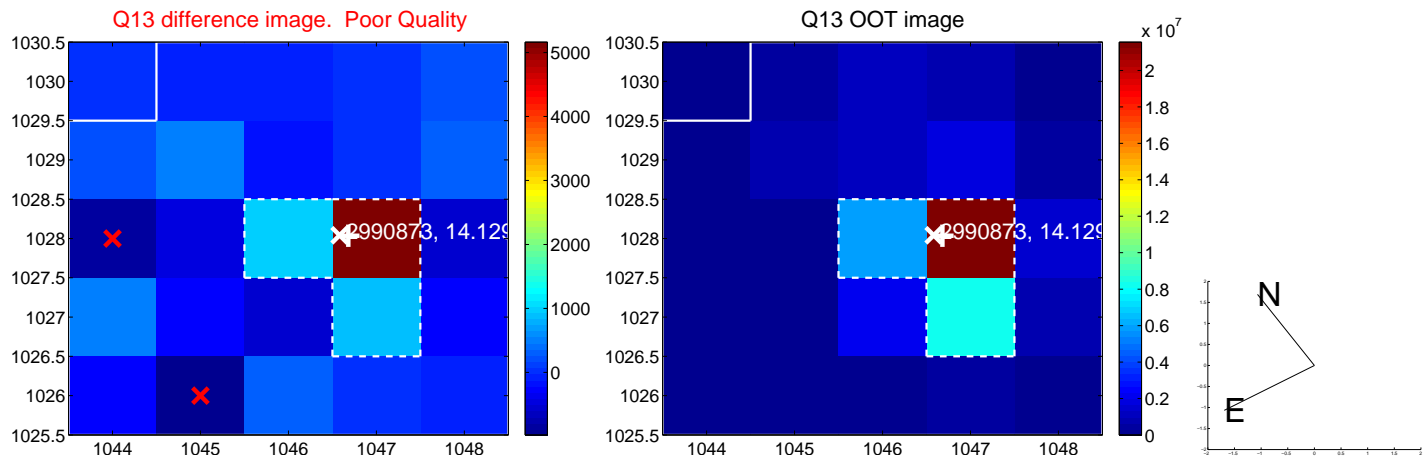
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



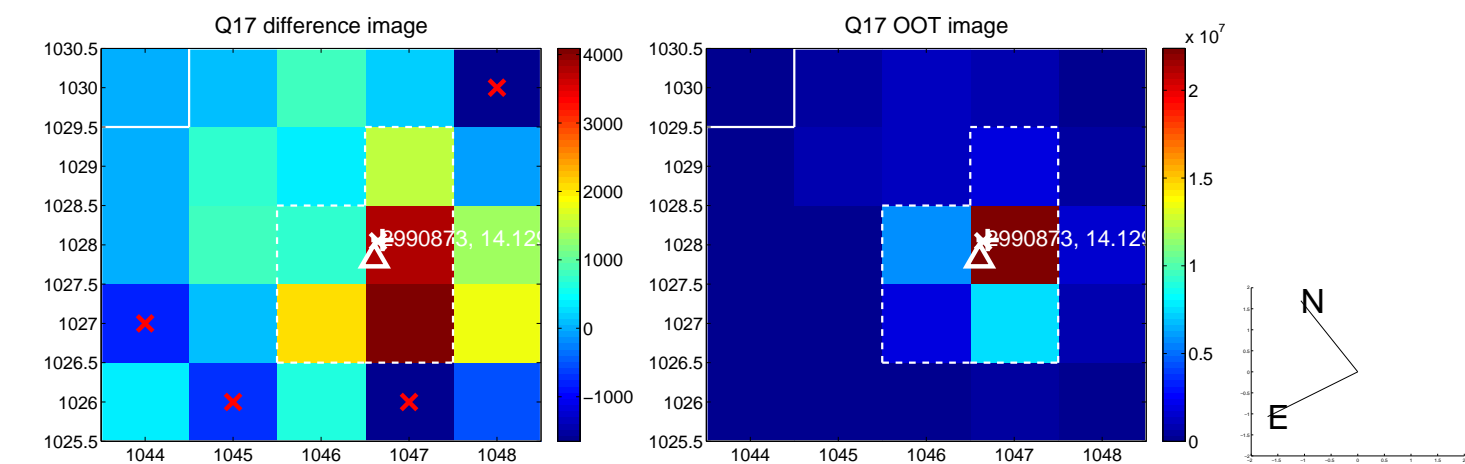
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



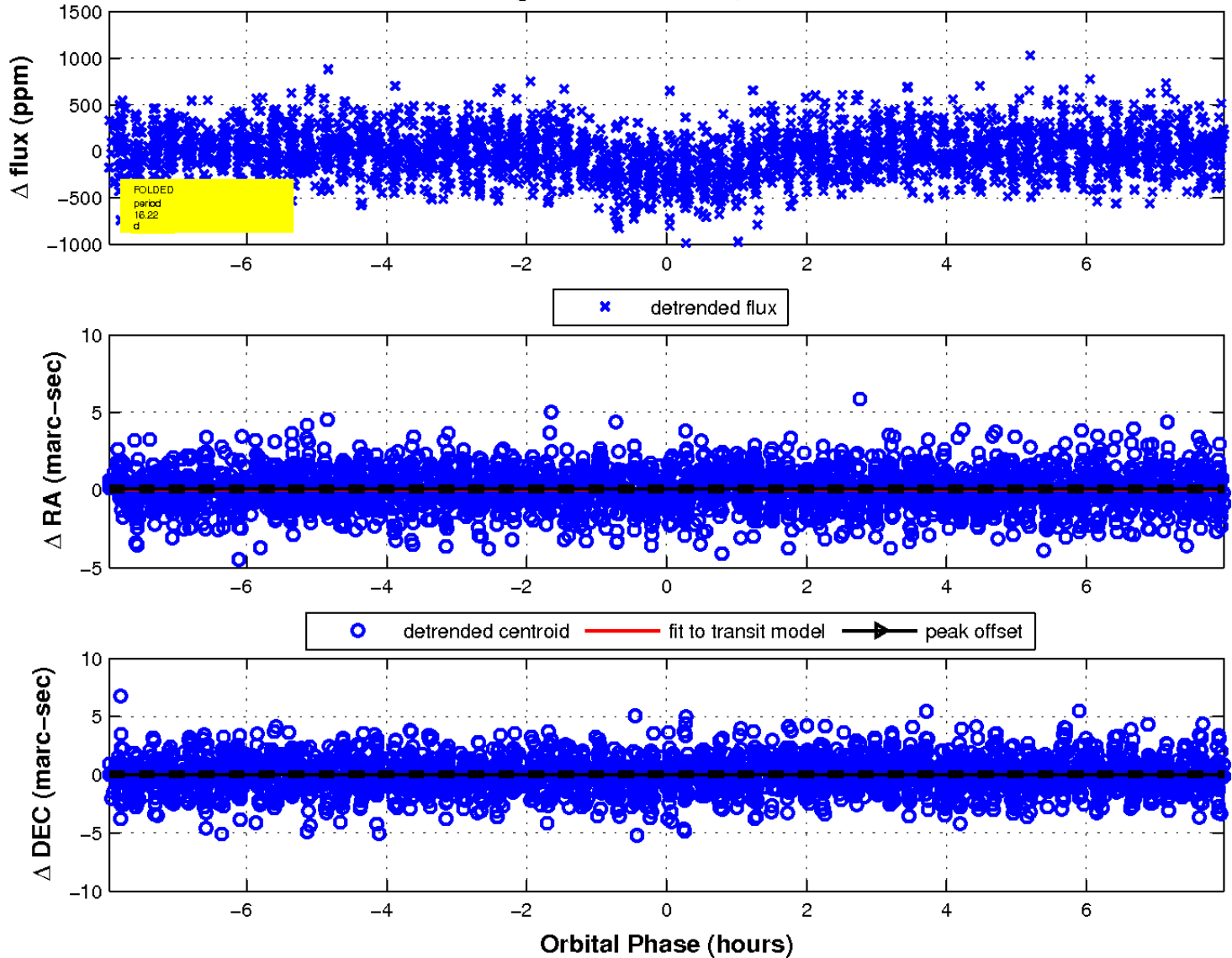
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

