

KIC 009394601

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})
009394601-01	OBS	3684.01	0.876837	132.055956	117056.4	3.031	4196.7	2063.9	0.96	6344	33.56	4116.91

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009394601-01	OBS	FP	0.03	0	1	0	0	SWEET_EB—MOD_SEC_DV—MOD_SEC_ALT

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.

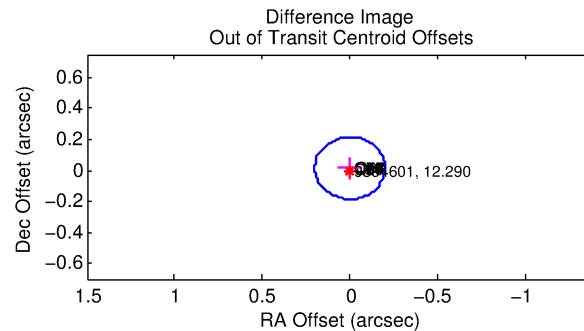
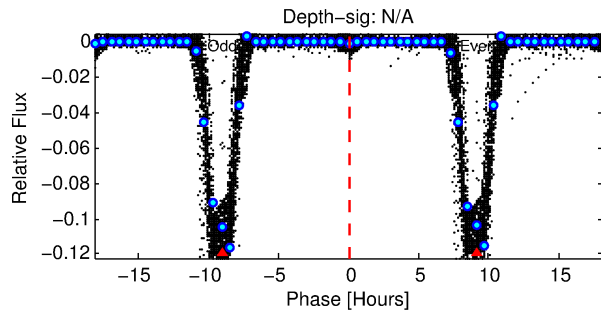
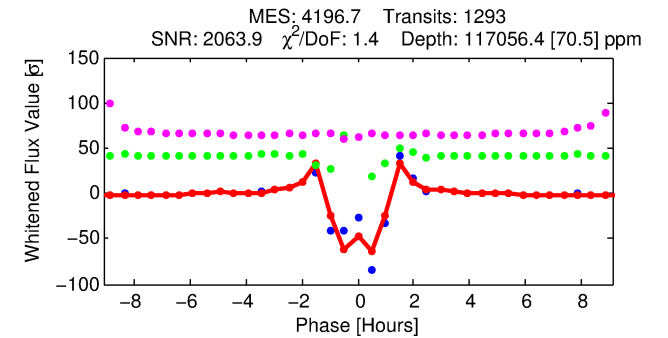
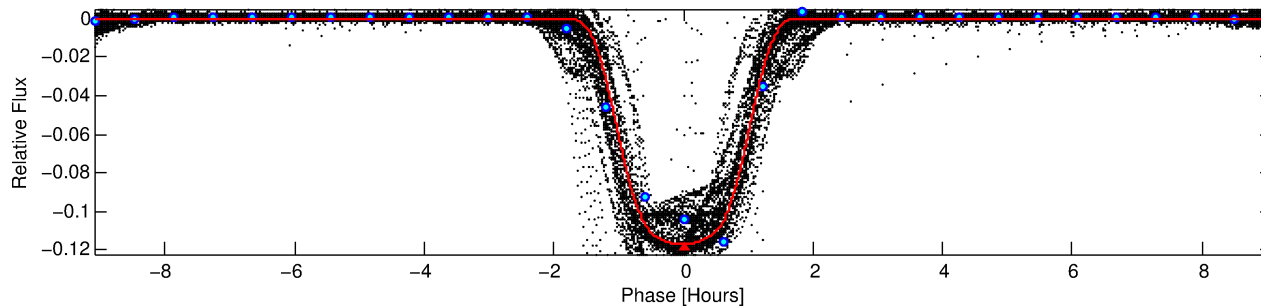
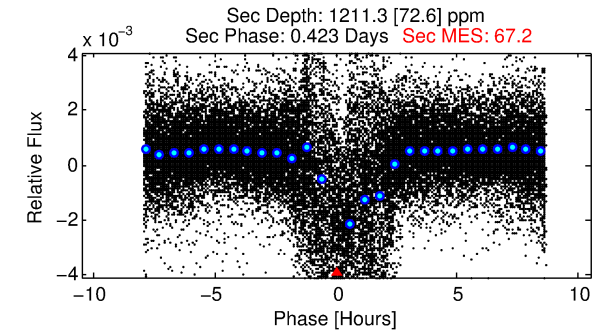
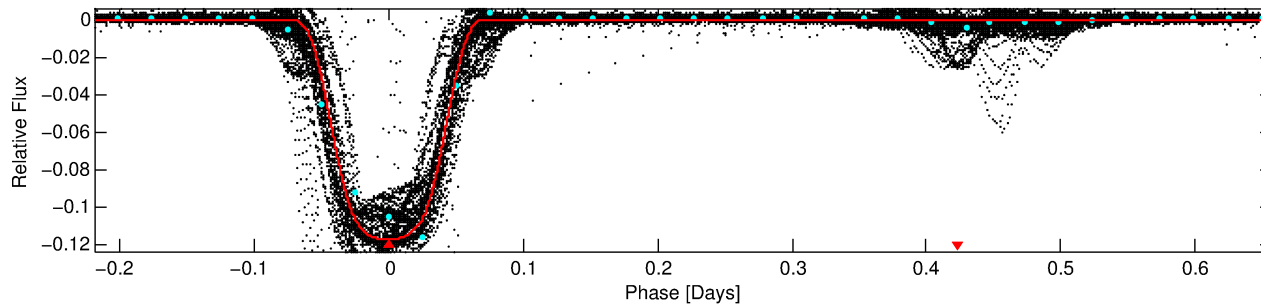
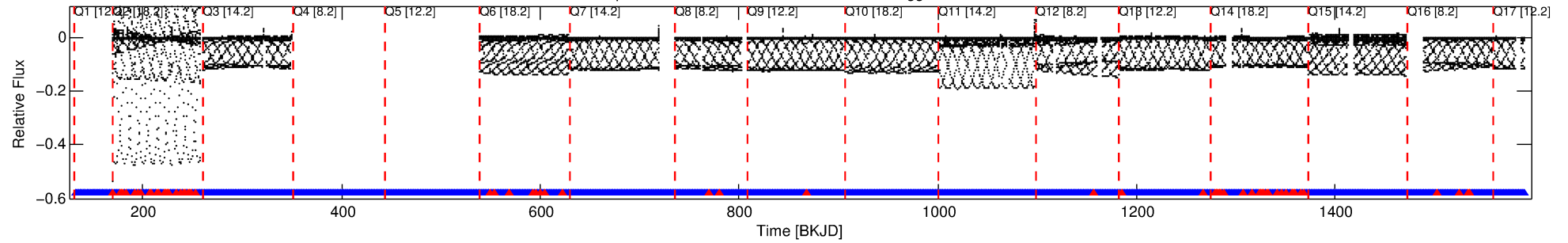
Ephemeris Match Information For 009394601-01

No Significant Match Found

DV One-Page Summary

KIC: 9394601 Candidate: 1 of 1 Period: 0.877 d
KOI: K03684.01 Corr: 0.965

Kp: 12.29 R*: 0.96 Rs Teff: 6344.0 K Logg: 4.48 Fe/H: -0.420



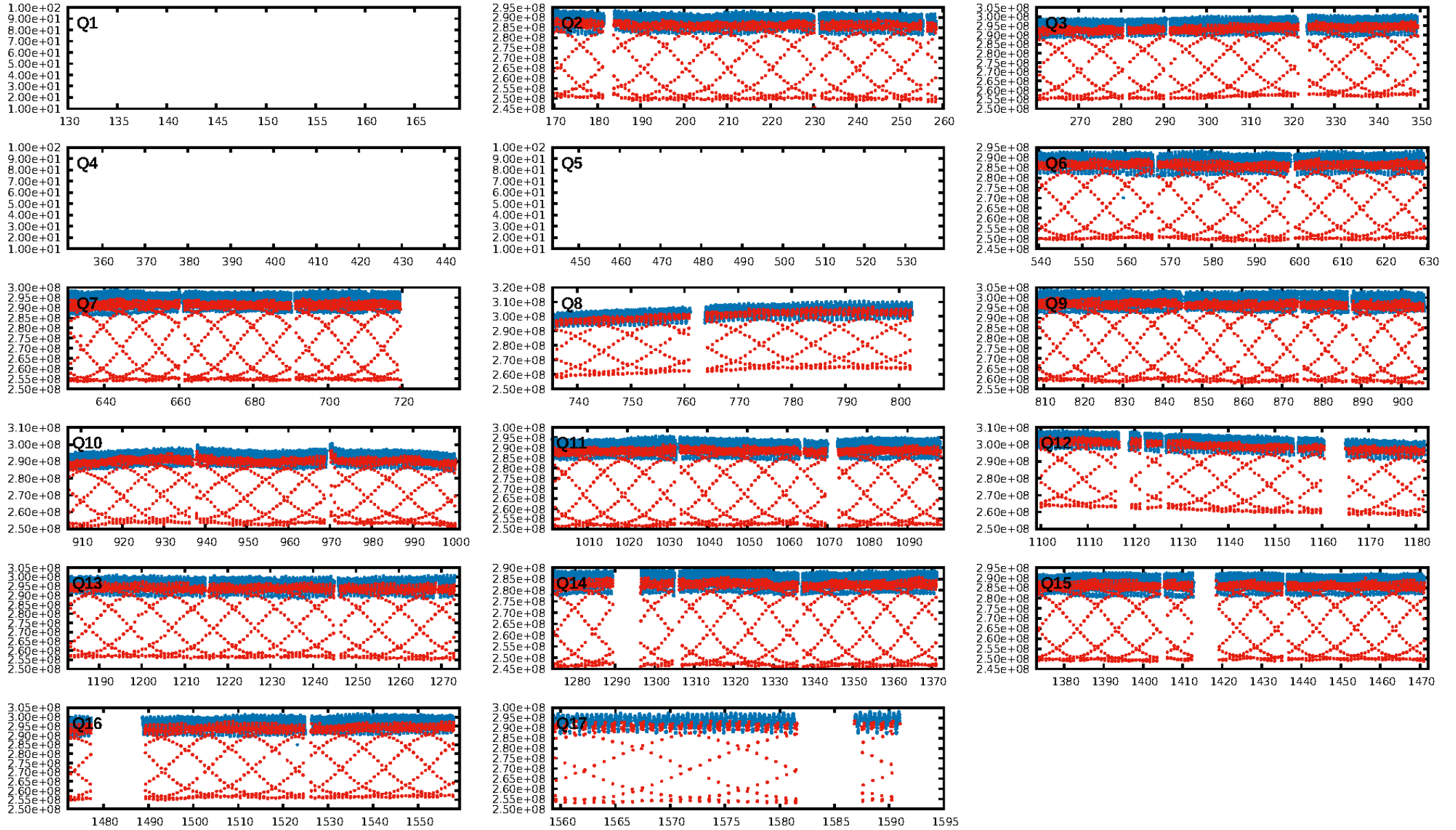
DV Fit Results:

Period = 0.87684 [0.00000] d
Epoch = 132.0560 [0.0000] BKJD
Rp/R* = 0.3197 [0.0001]
a/R* = 2.96 [0.00]
b = 0.28 [0.00]
Seff = 4116.92 [1689.36]
Teff = 2043 [210] K
Rp = 33.56 [10.57] Re
a = 0.0181 [0.0048] AU
Ag = 0.19 [0.08] [-10.53σ]
Teffp = 2093 [70] K [0.23σ]

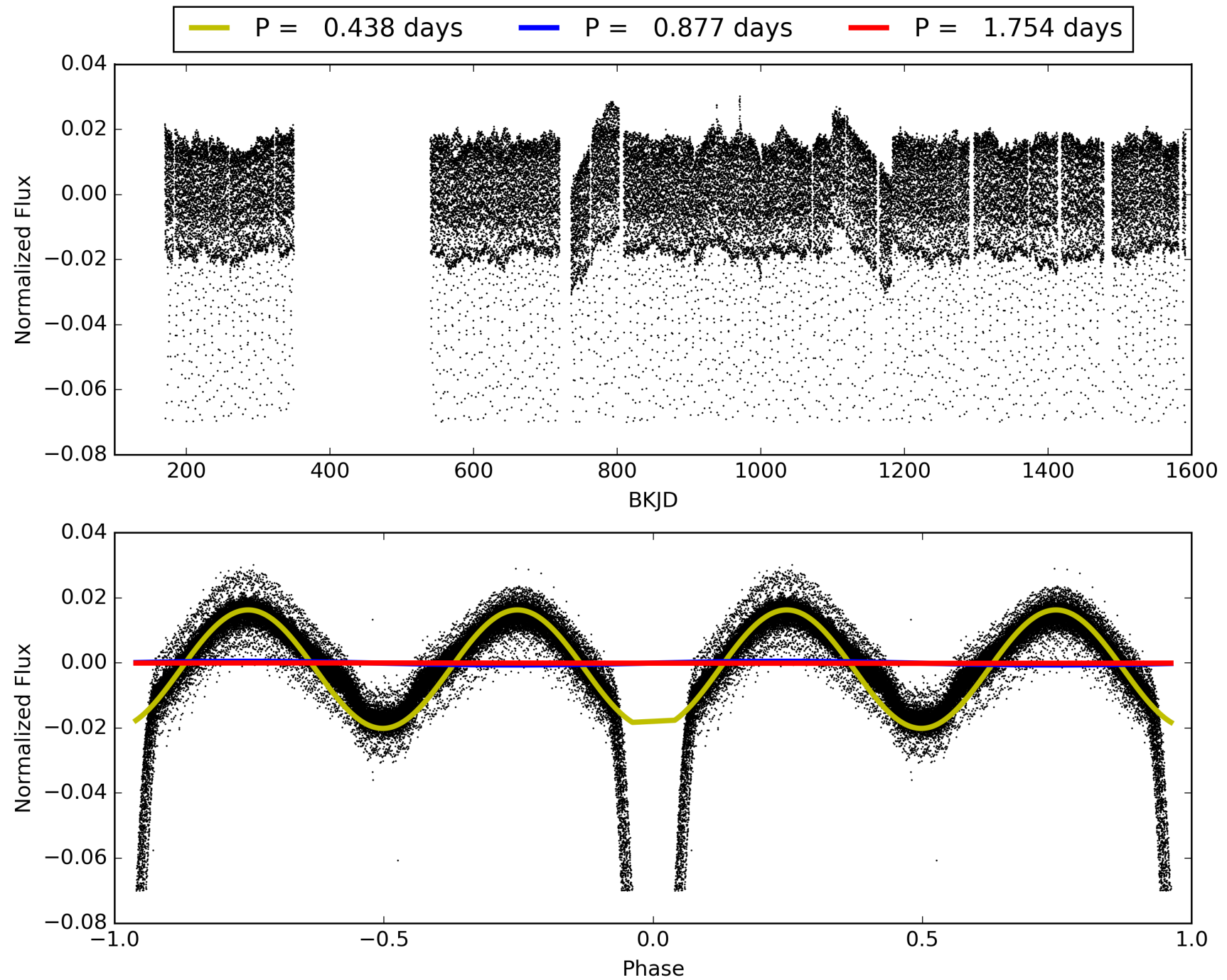
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGoF-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 0.95 [1198/1263]
GhostDiagnostic-chr: 1.431
Centroid-sig: N/A
Centroid-so: 0.155 arcsec [705.83σ]
OotOffset-rm: 0.015 arcsec [0.23σ]
KicOffset-rm: 0.169 arcsec [2.36σ]
OotOffset-st: 4/4/3/3 [14]
KicOffset-st: 4/4/3/3 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

TCE 009394601-01, PDC Light Curves

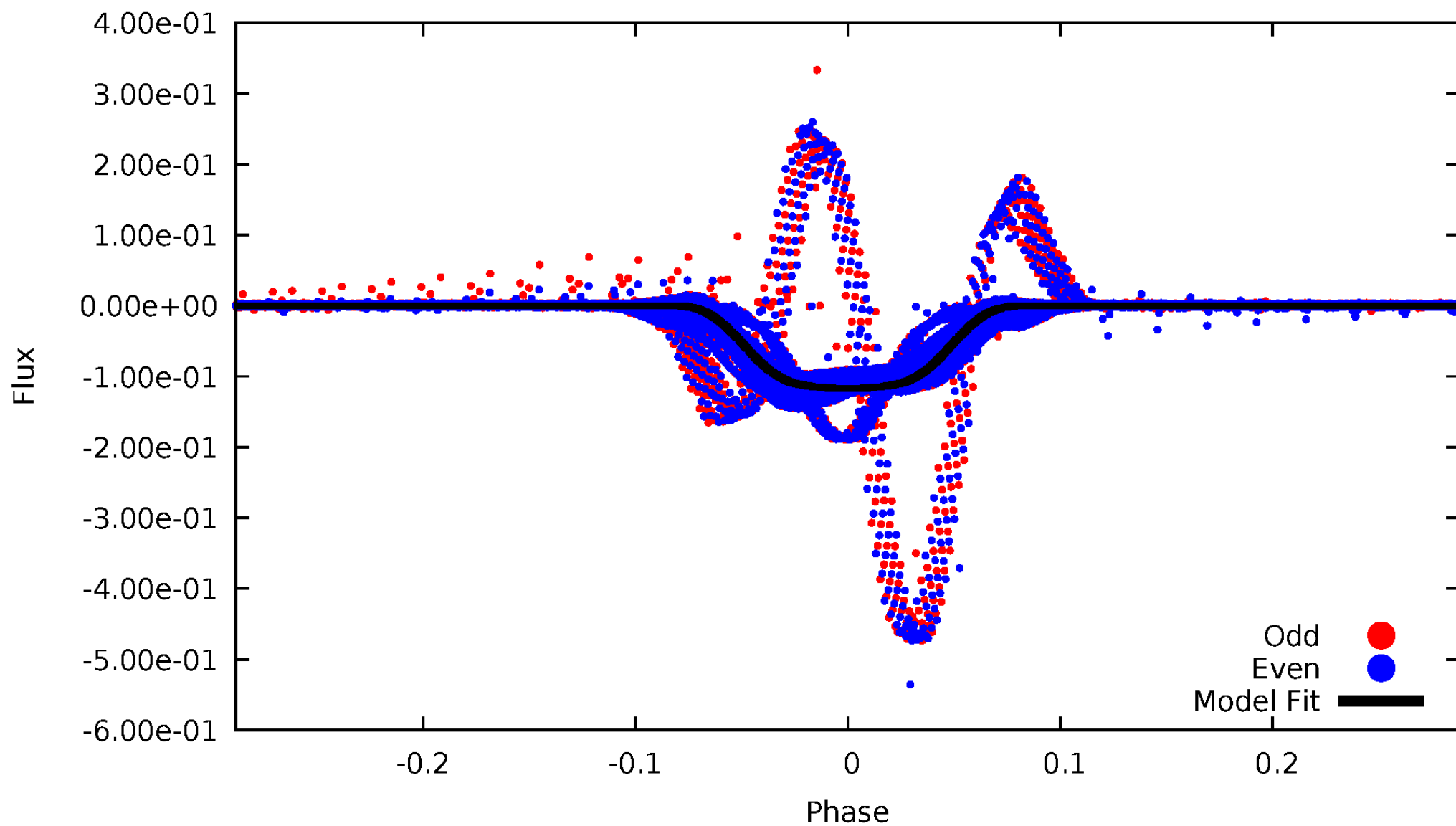


TCE 009394601-01



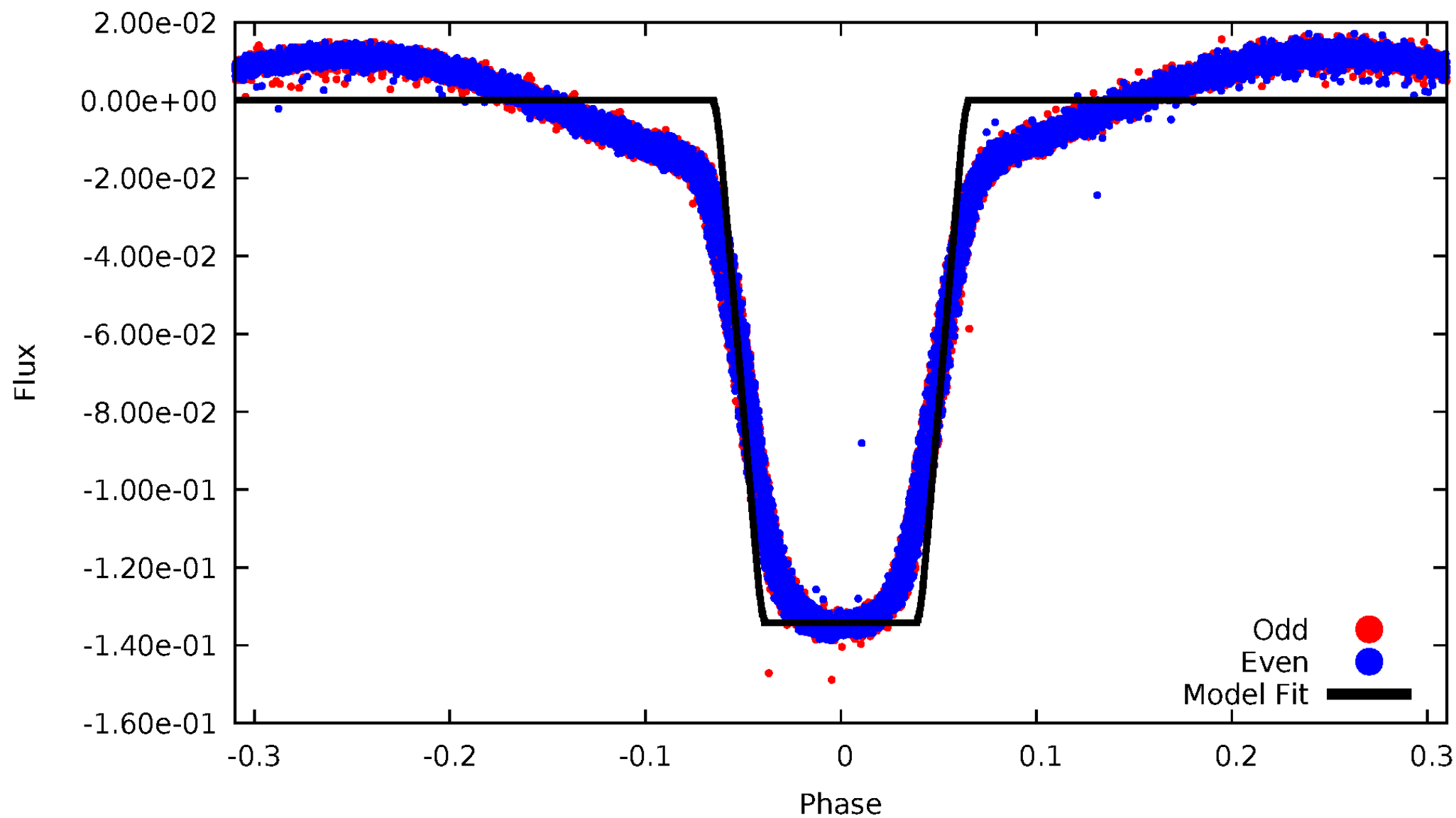
DV Odd/Even

TCE 009394601-01



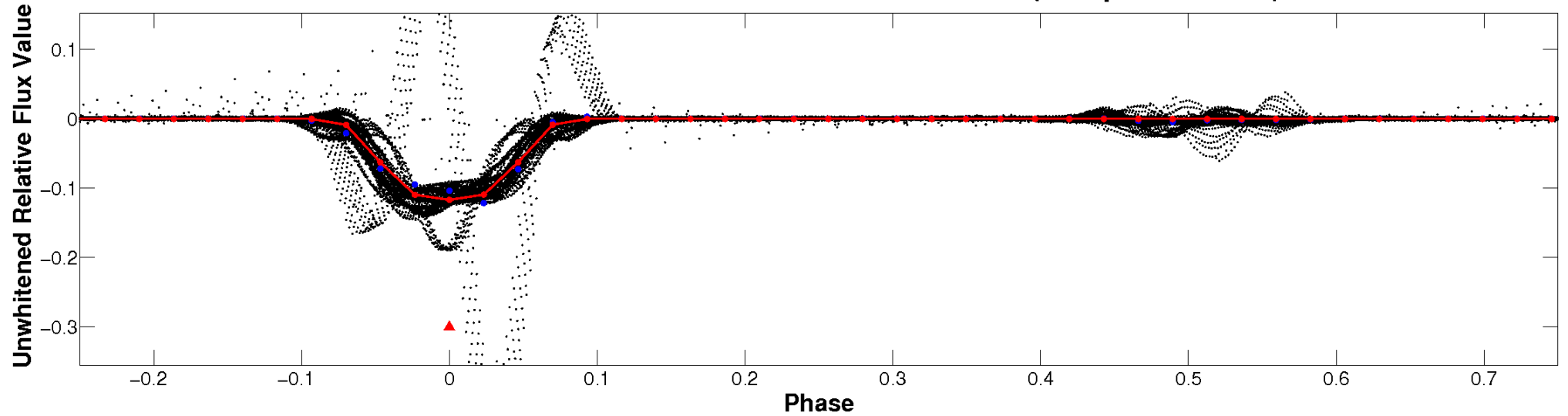
ALT Odd/Even

TCE 009394601-01

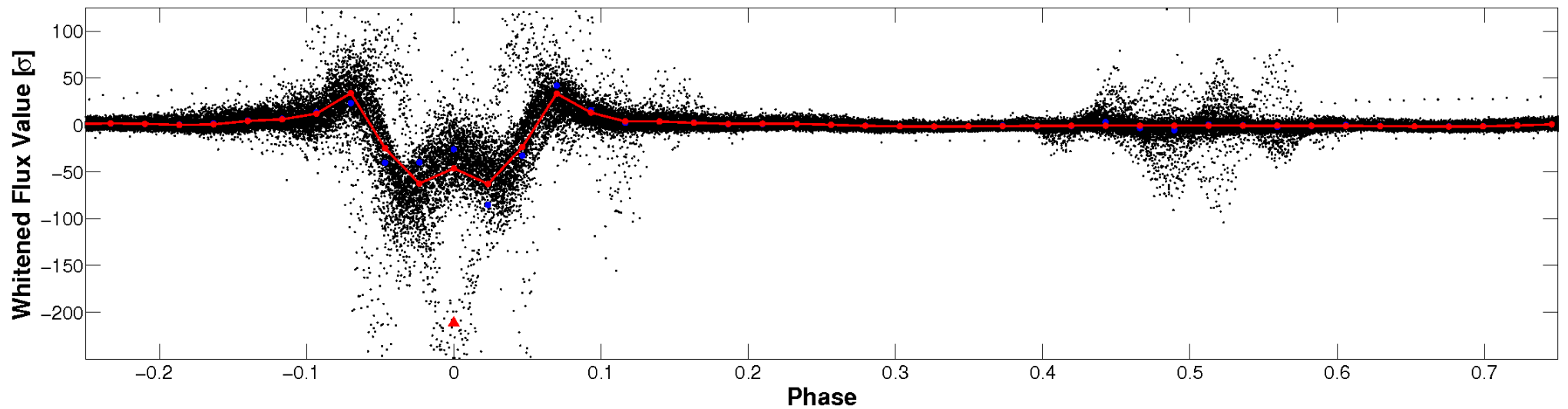


Non-Whitened Vs. Whitened Light Curve

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

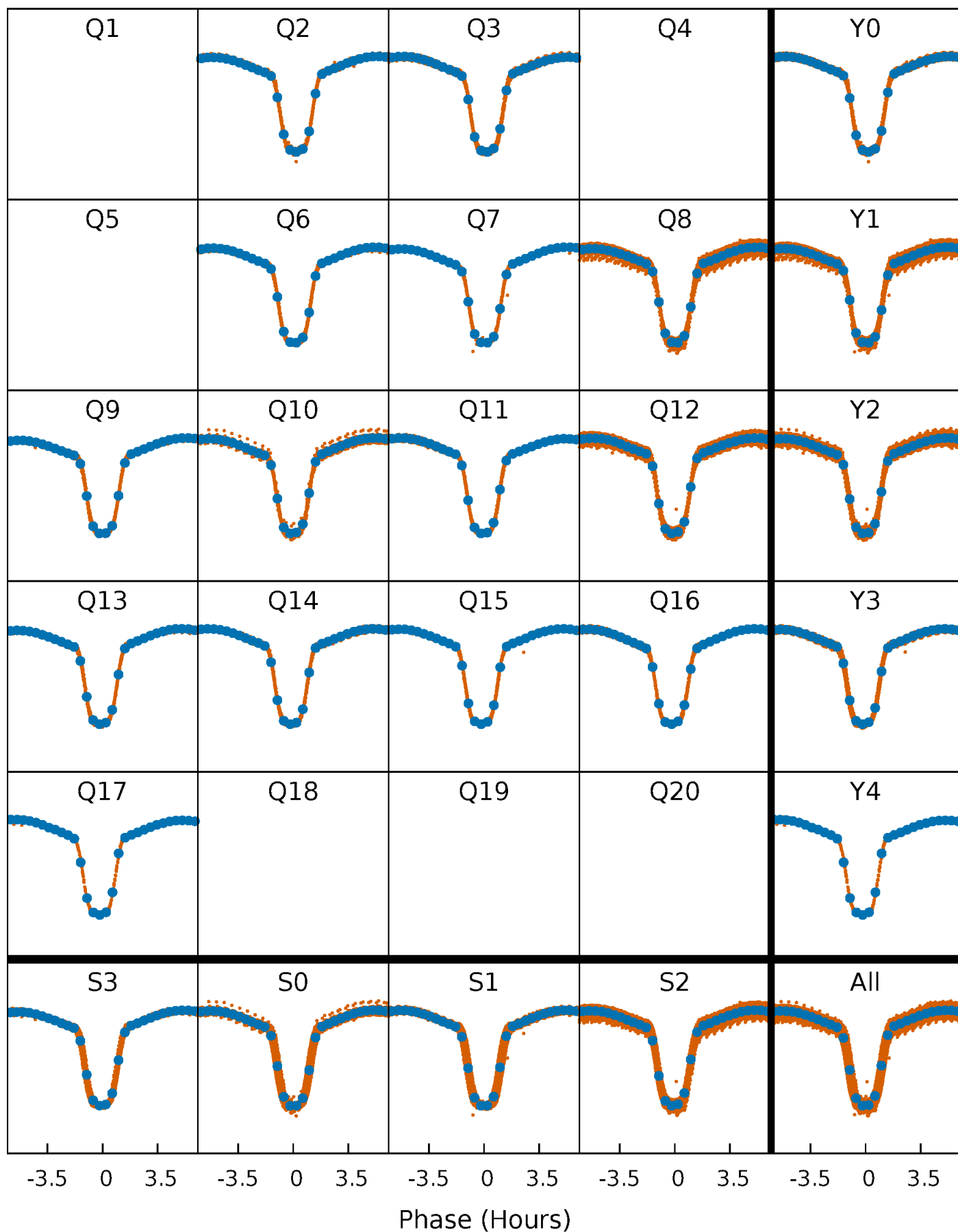


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



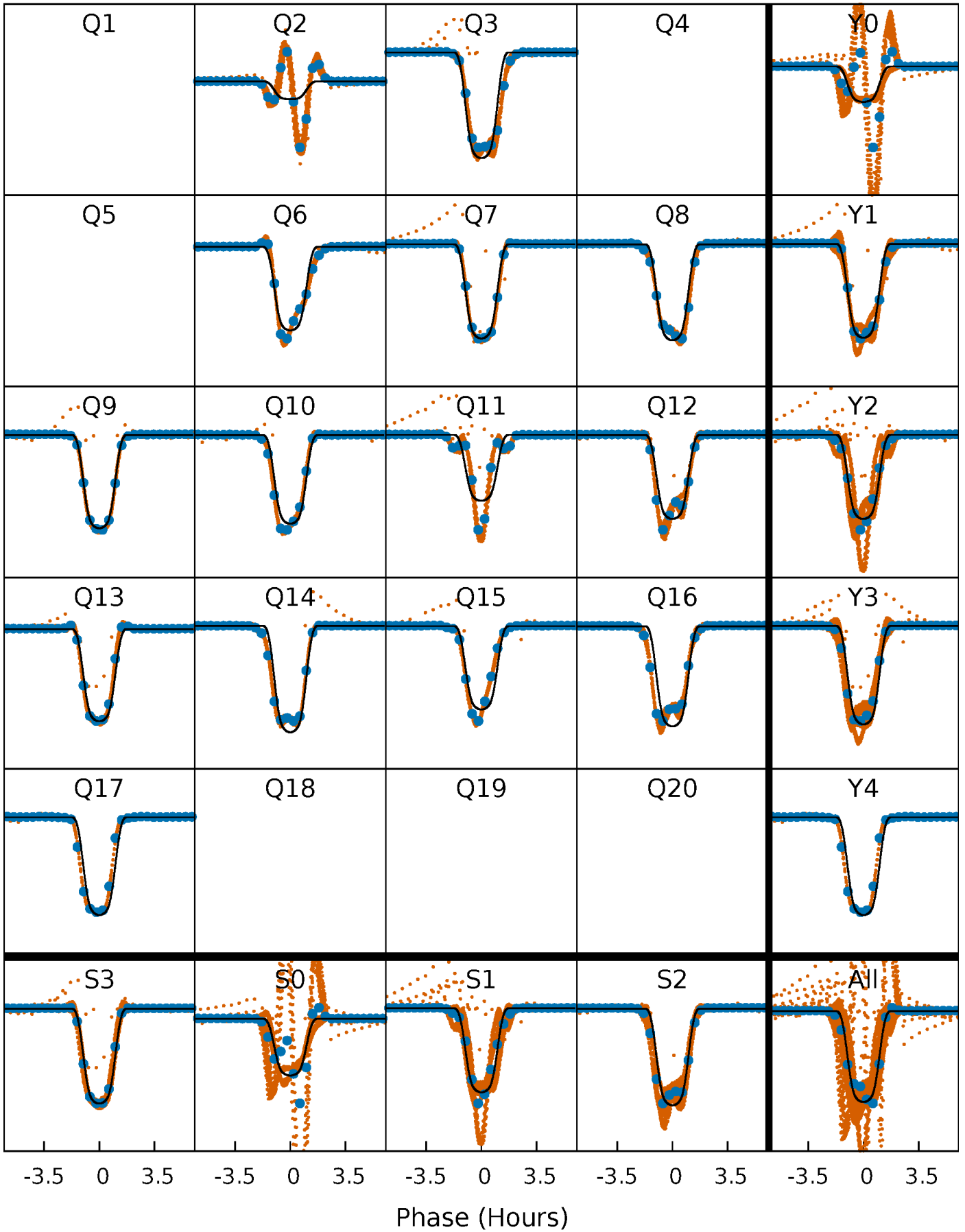
PDC Quarter-Phased Transit Curves

TCE 009394601-01 P= 0.876837 Days $T_0=132.055956$ (BKJD)



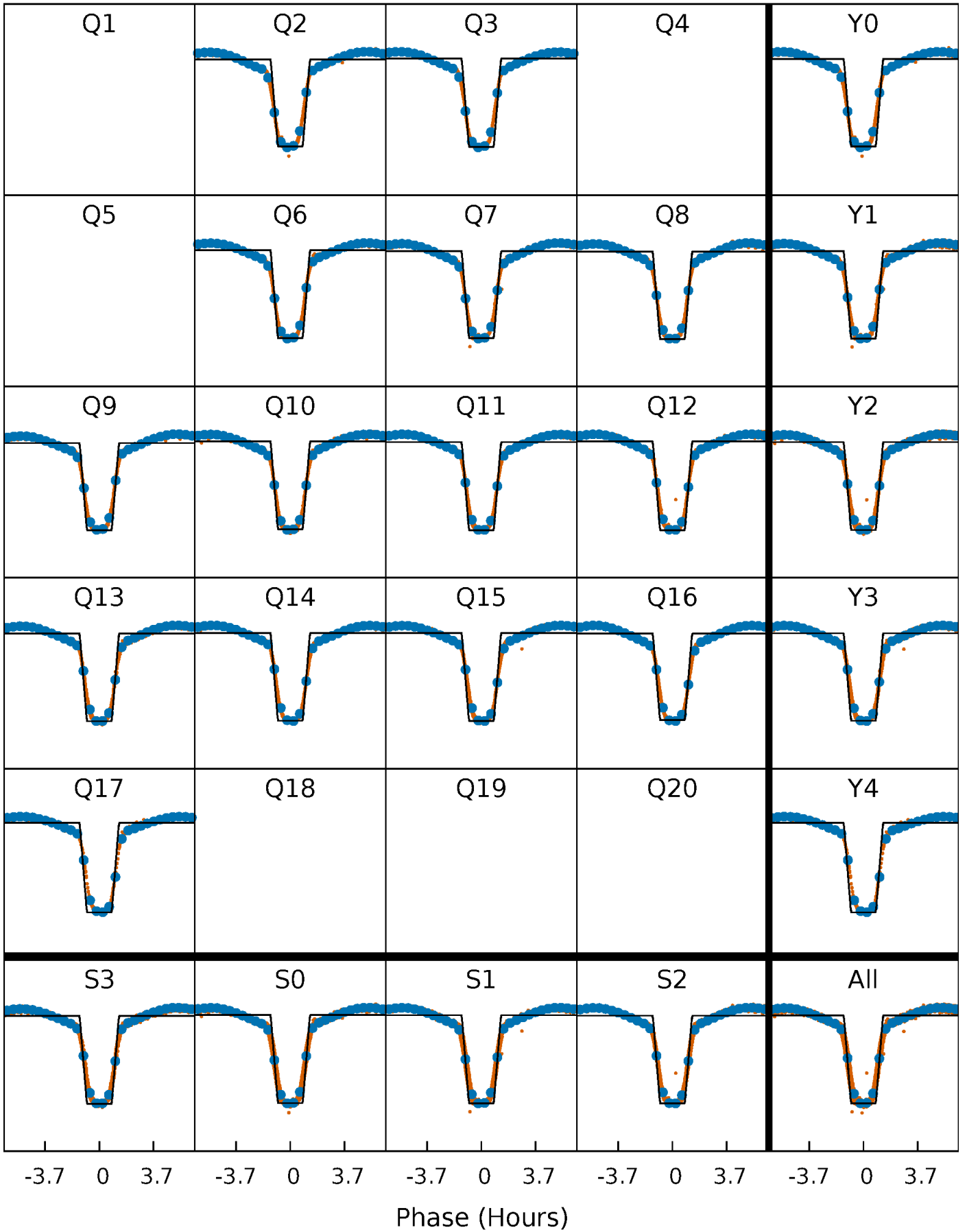
DV Quarter-Phased Transit Curves

TCE 009394601-01 P= 0.876837 Days $T_0=132.055956$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

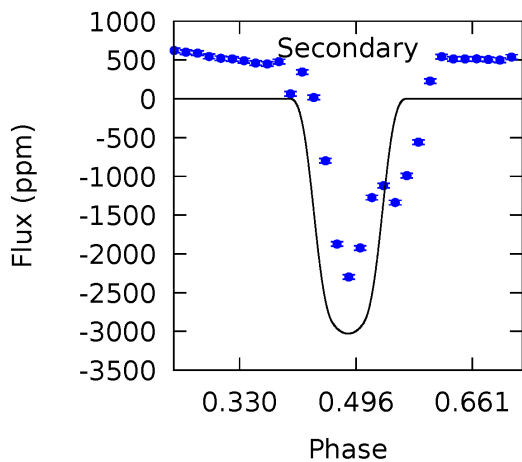
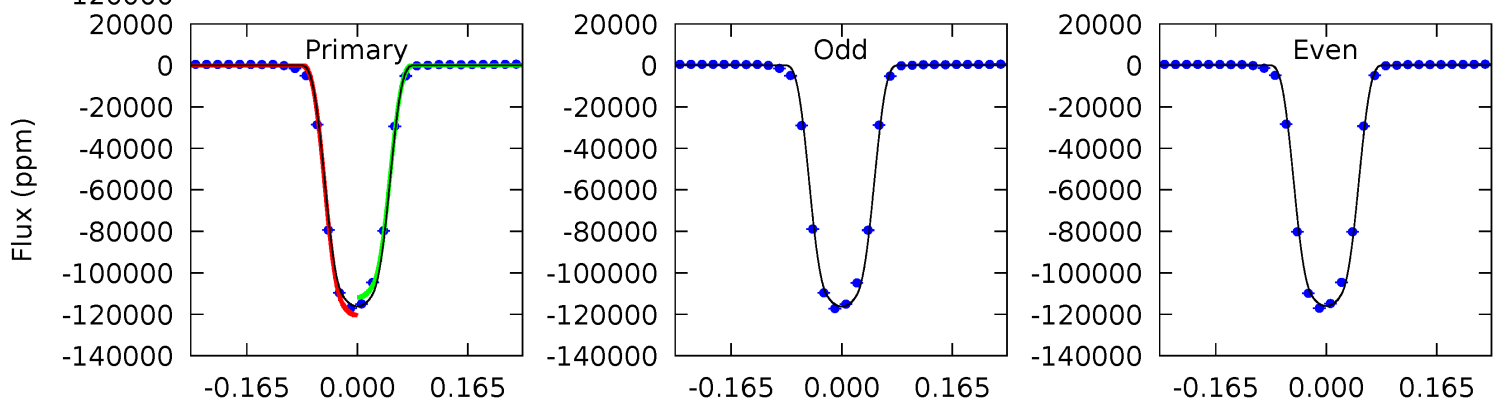
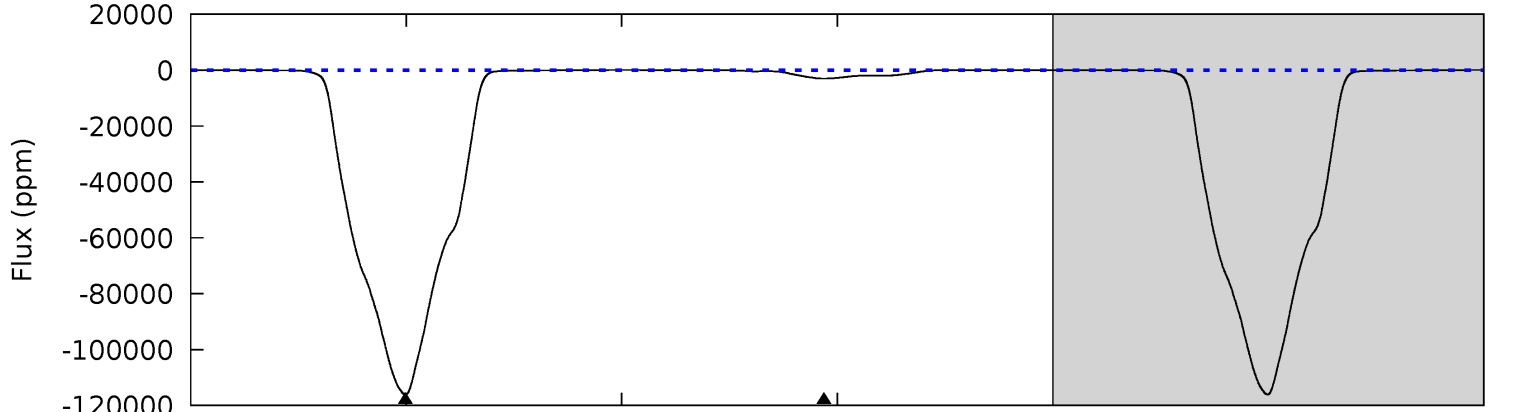
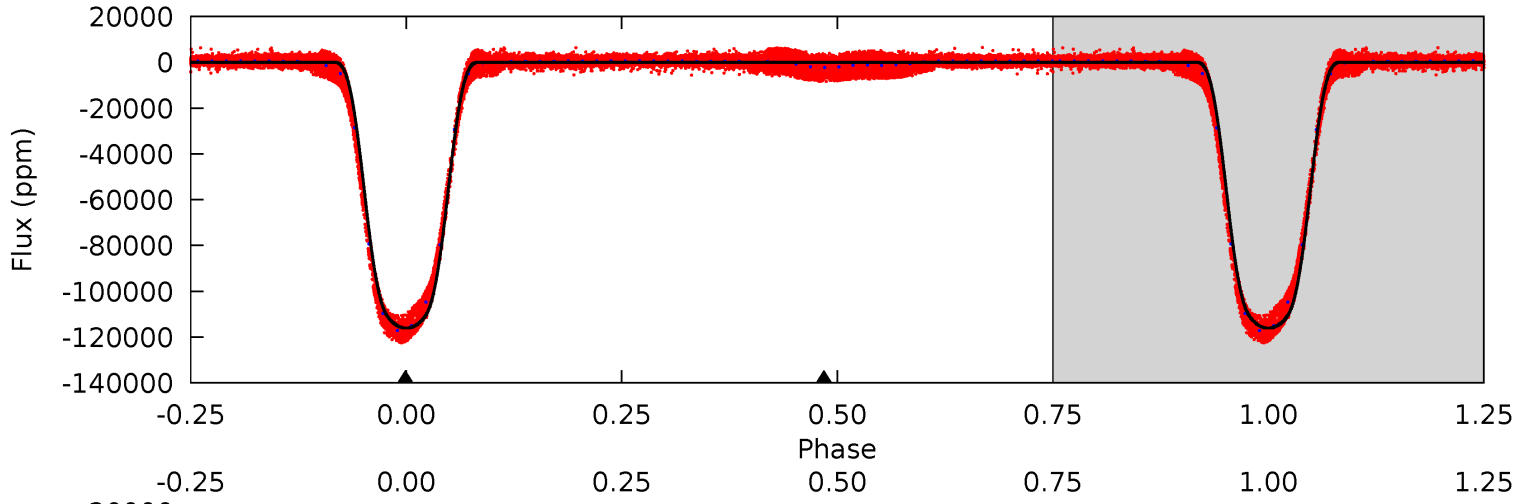
TCE 009394601-01 P= 0.876821 Days $T_0=132.069624$ (BKJD)



DV Model-Shift Uniqueness Test

009394601-01, P = 0.876837 Days, E = 132.055956 Days

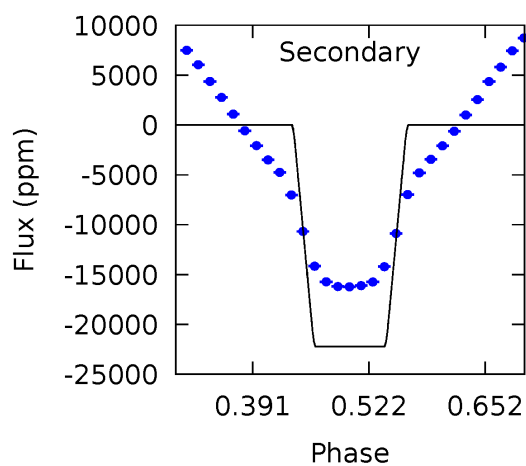
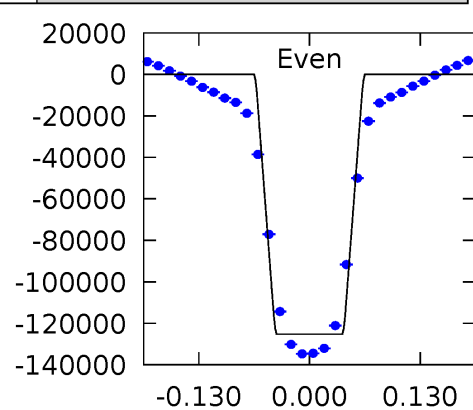
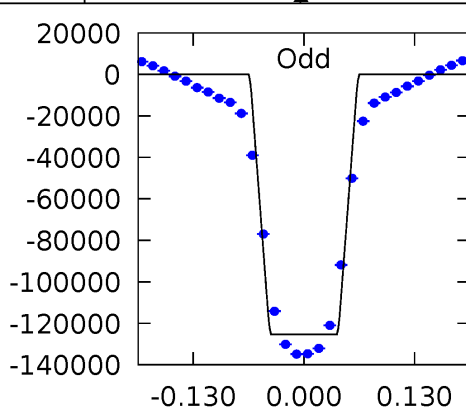
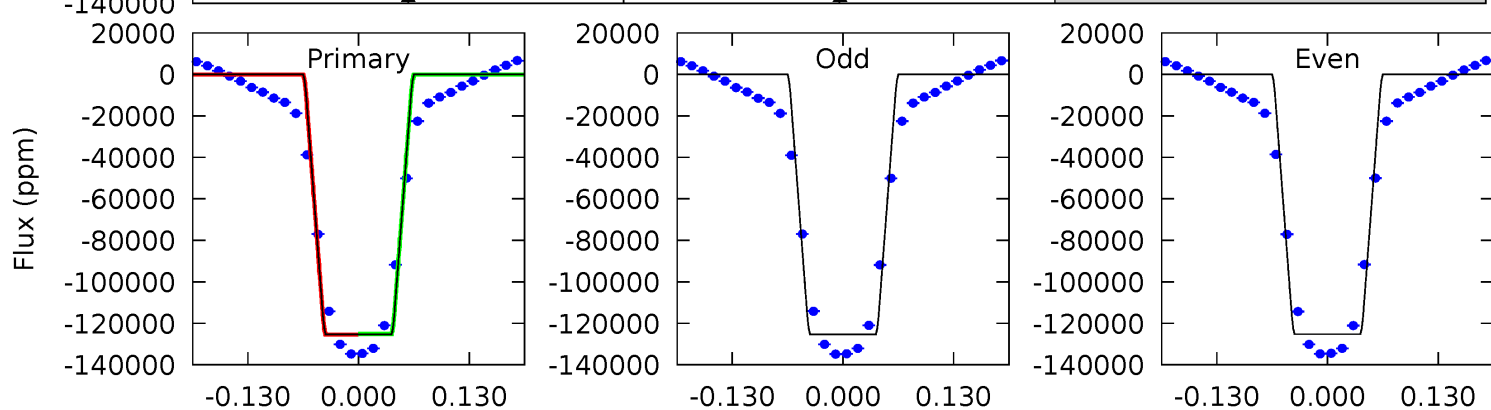
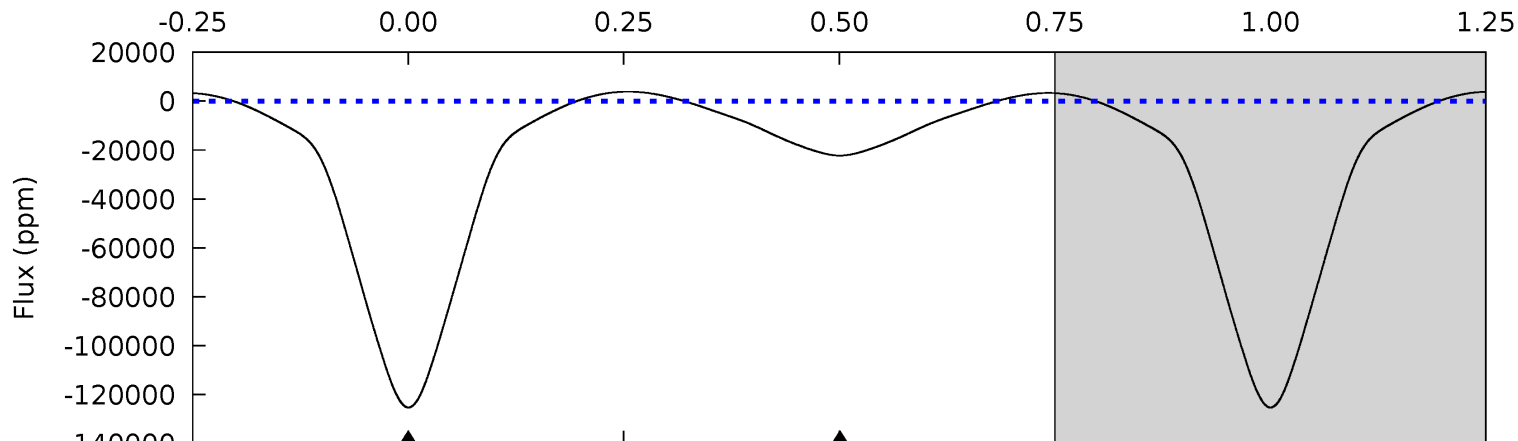
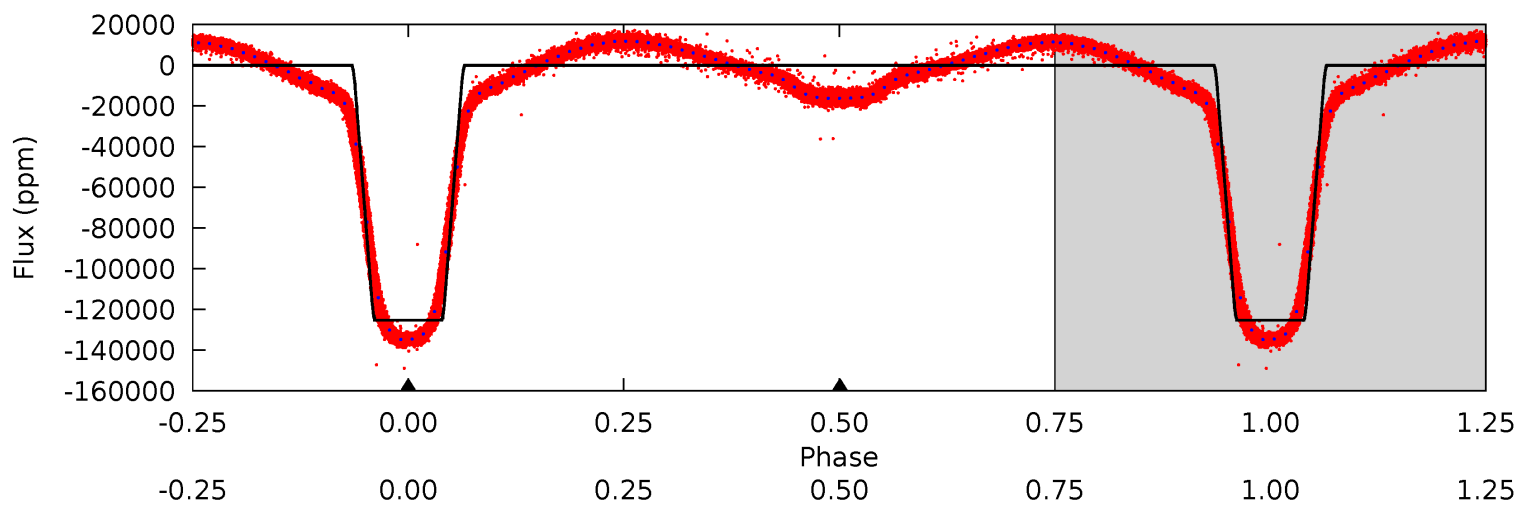
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6025	157.1	0	0	4.46	1.39	2.05	6025	6025	157.1	157.1	5.64	0.99	0.00	220.4



Alt Model-Shift Uniqueness Test

009394601-01, P = 0.876821 Days, E = 132.069624 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1319	234.1	0	0	4.51	1.51	43.2	1319	1319	234.1	234.1	0.53	1.00	0.03	1.50



Stellar Parameters For KIC 009394601

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6344^{+158}_{-190}	$4.481^{+0.054}_{-0.216}$	$-0.420^{+0.300}_{-0.350}$	$0.962^{+0.303}_{-0.101}$	$1.024^{+0.132}_{-0.132}$	$1.618^{+0.347}_{-0.876}$
	+2%/-3%	+1%/-5%	+71%/-83%	+31%/-10%	+13%/-13%	+21%/-54%
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 009394601-01 / KOI 3684.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-3028 ± 19	$34.55^{+5.86}_{-2.64}$	2914^{+213}_{-137}	2748^{+107}_{-348}	$0.450^{+0.066}_{-0.112}$
Alt.	-22237 ± 95	$39.59^{+6.40}_{-3.26}$	2908^{+210}_{-136}	4200^{+77}_{-90}	$2.579^{+0.368}_{-0.589}$

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

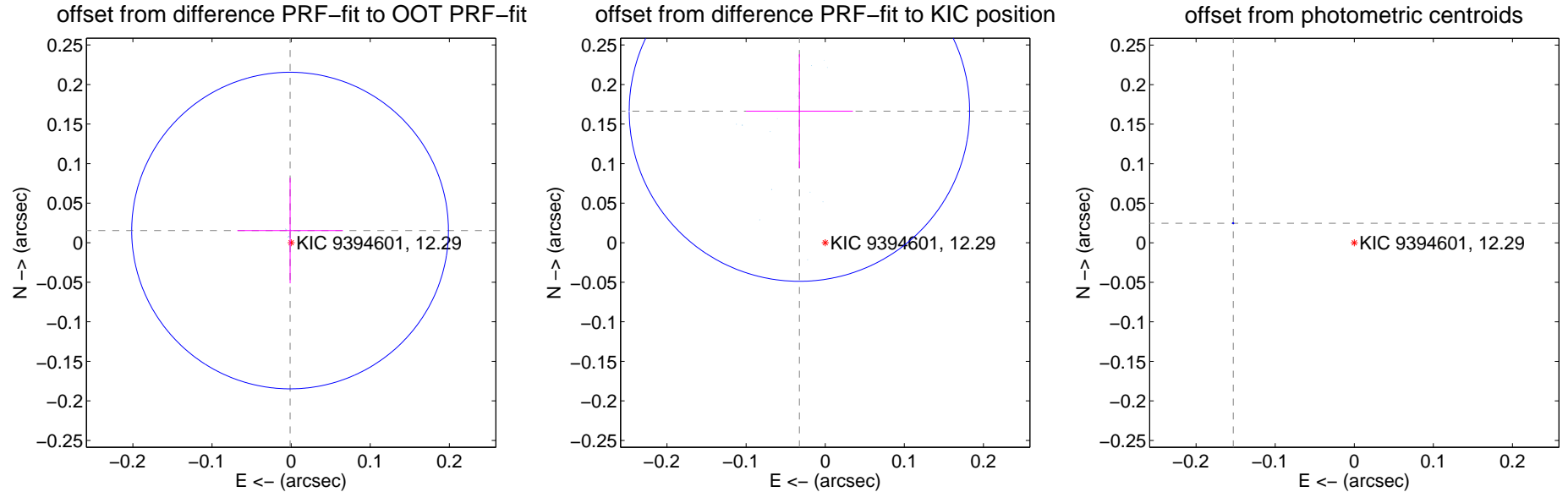
DV Centroid Data

Supplemental centroid analysis for 009394601-01. Kepler magnitude: 12.29. Transit SNR 2063.94

There are 14 quarters with good PRF difference image offsets

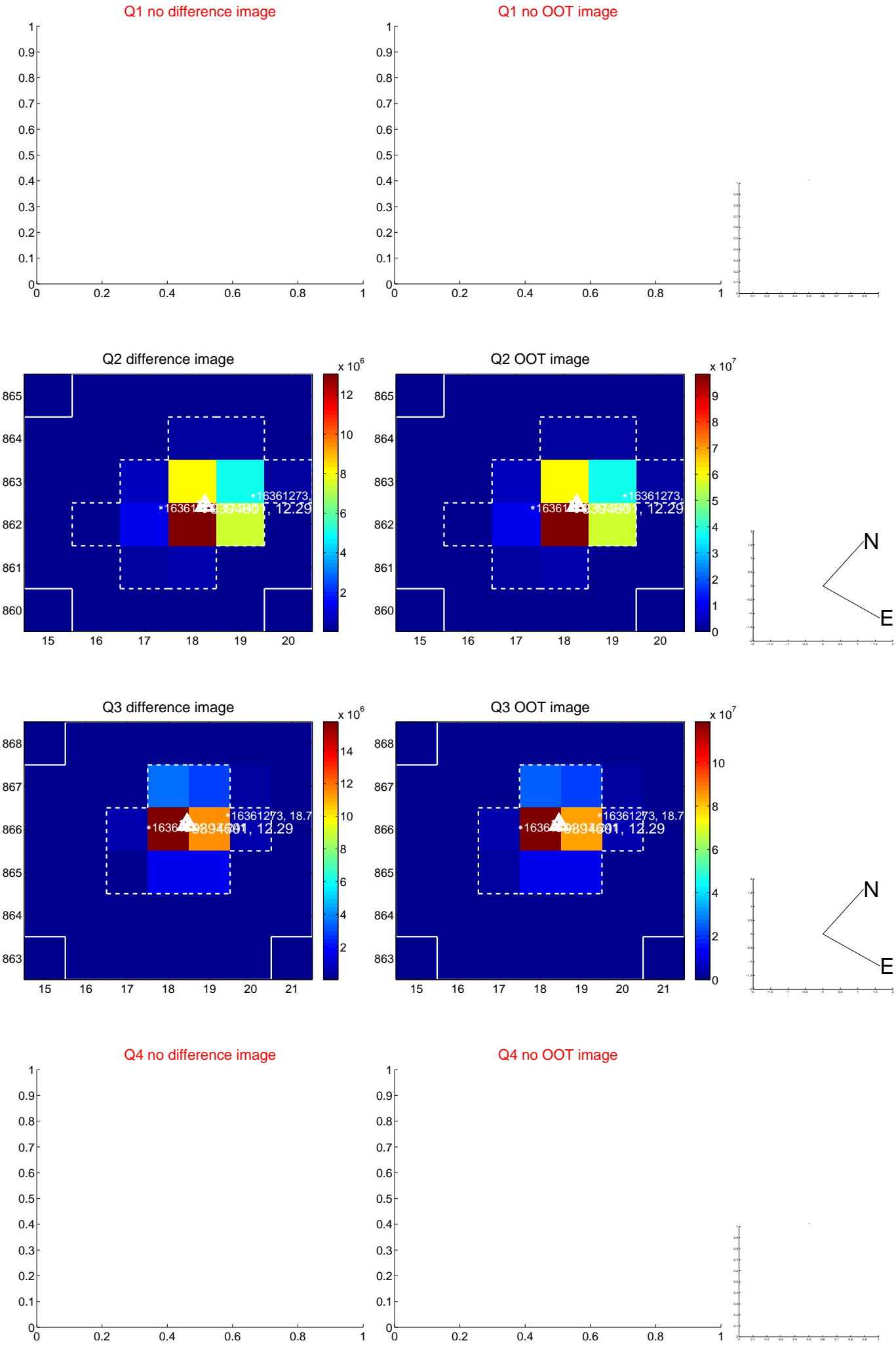
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.015 ± 0.067	0.23	0.001 ± 0.067	0.015 ± 0.067
PRF-fit source offset from KIC position	0.169 ± 0.072	2.36	0.033 ± 0.068	0.166 ± 0.072
photometric centroid source offset	0.15 ± 0.00	705.83	0.15 ± 0.00	0.02 ± 0.00

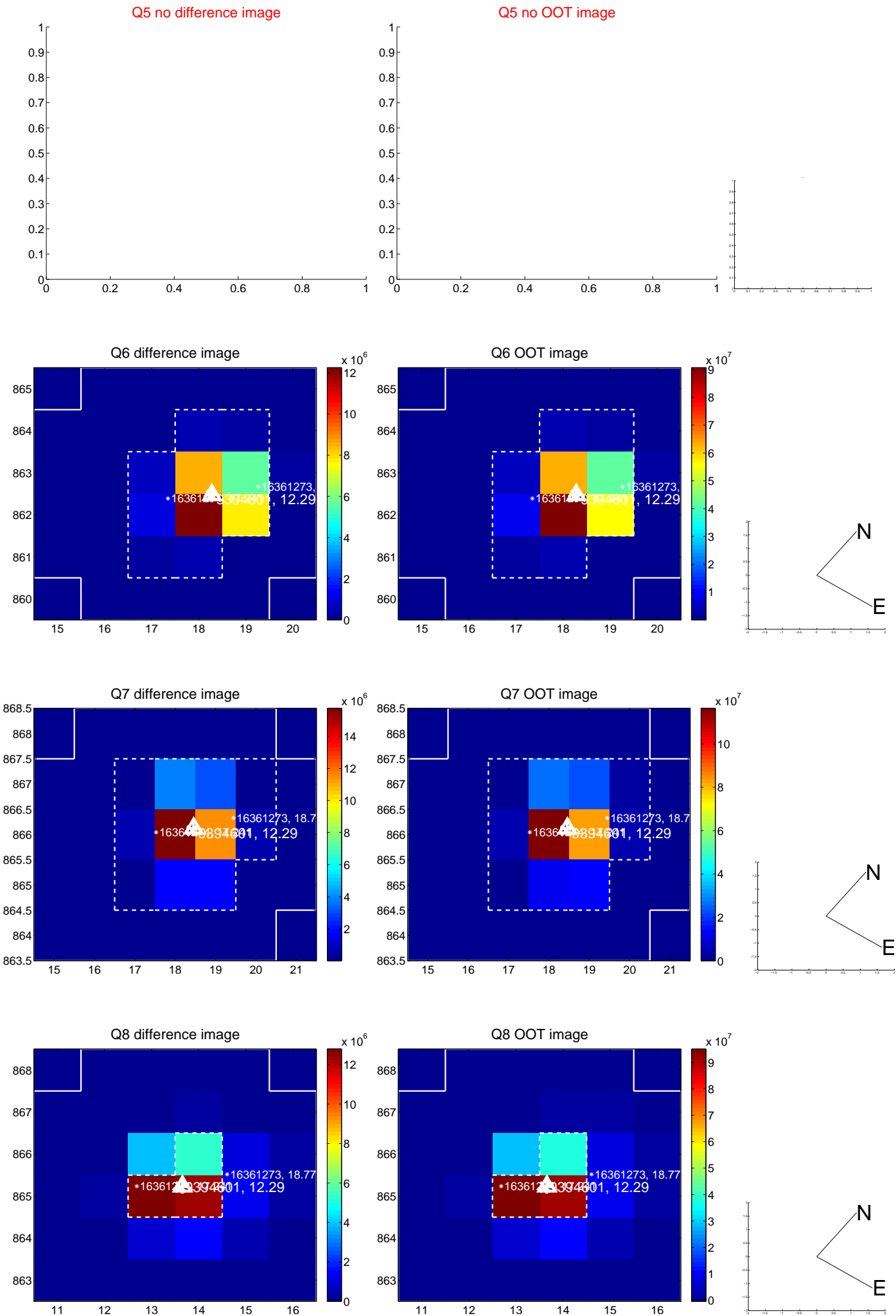


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

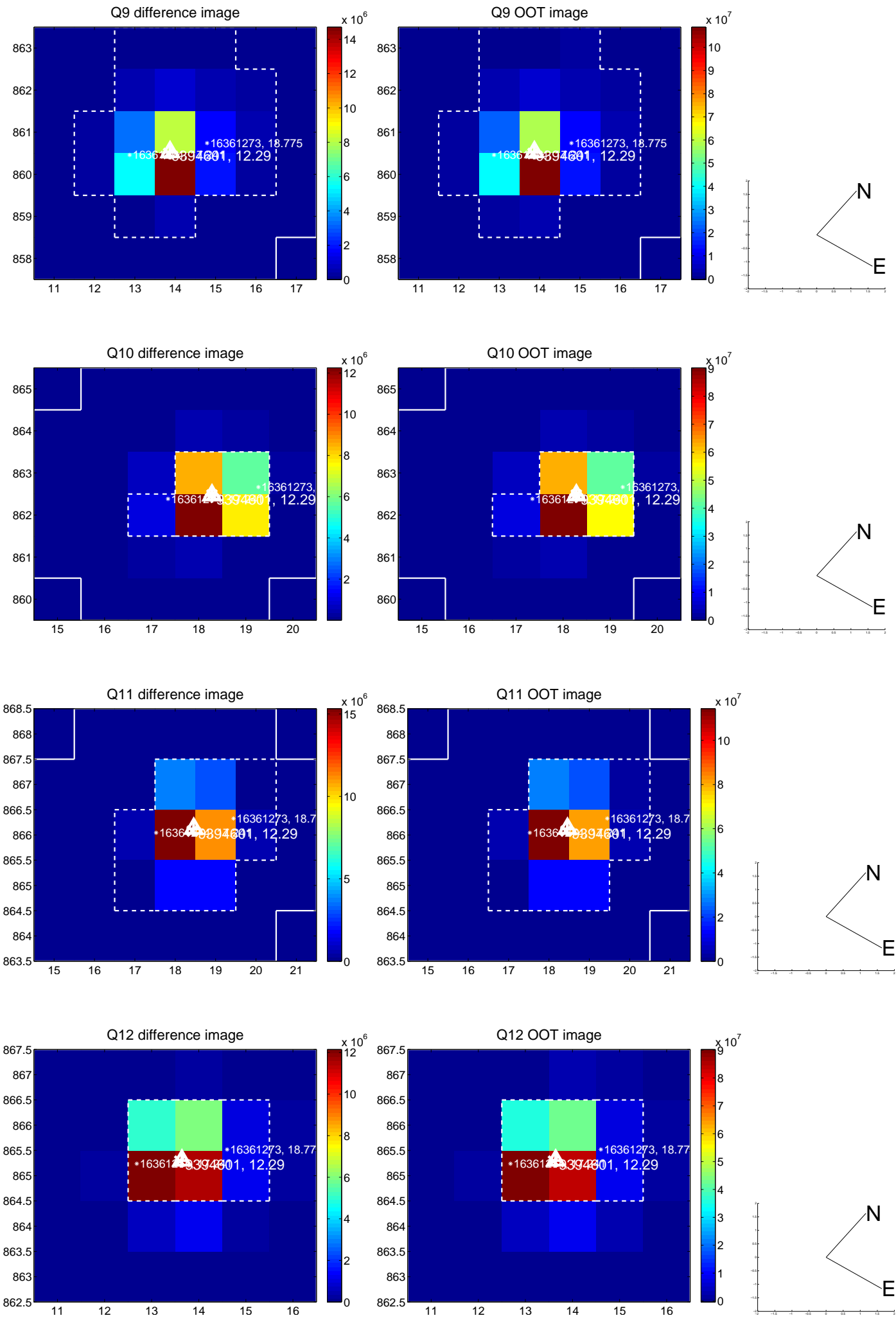
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



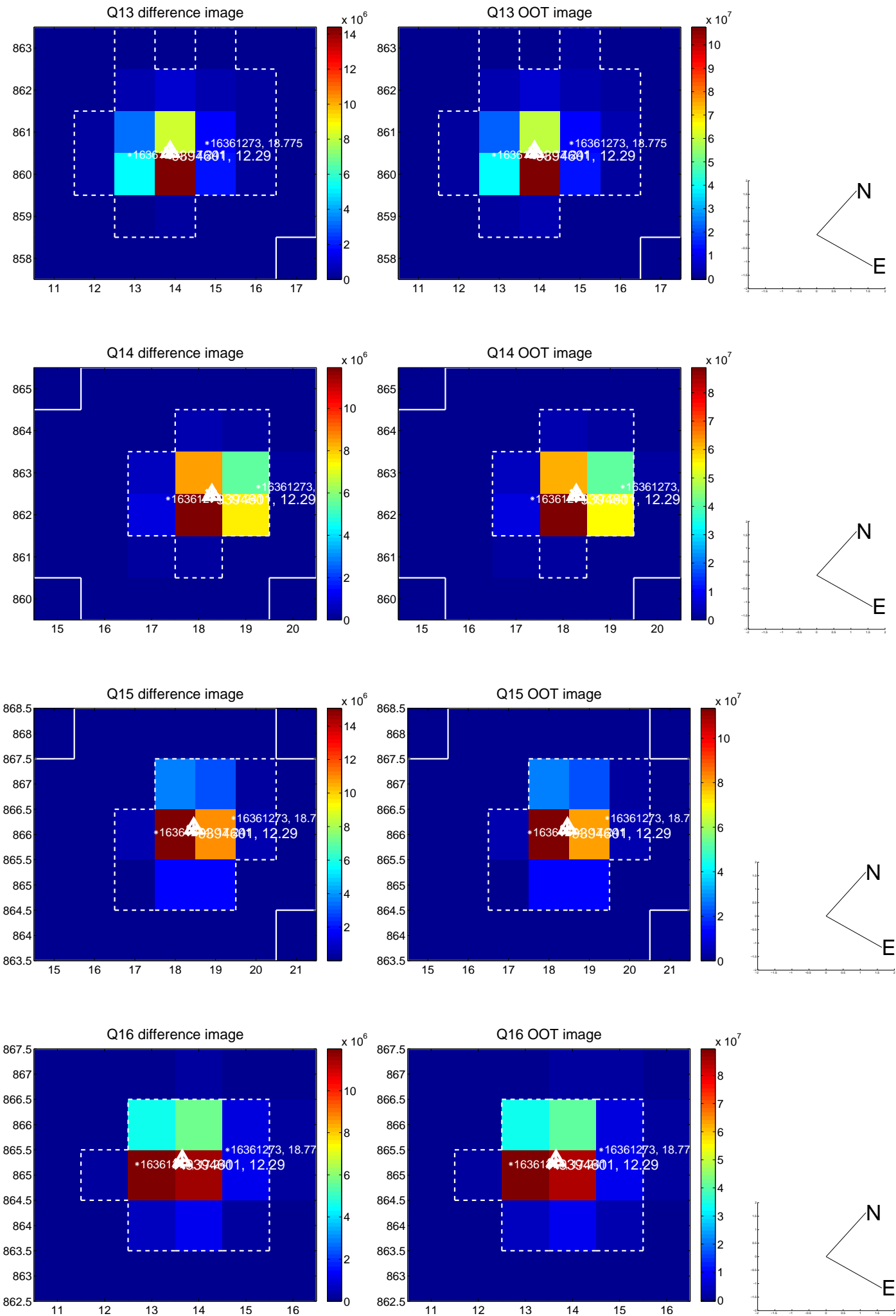
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



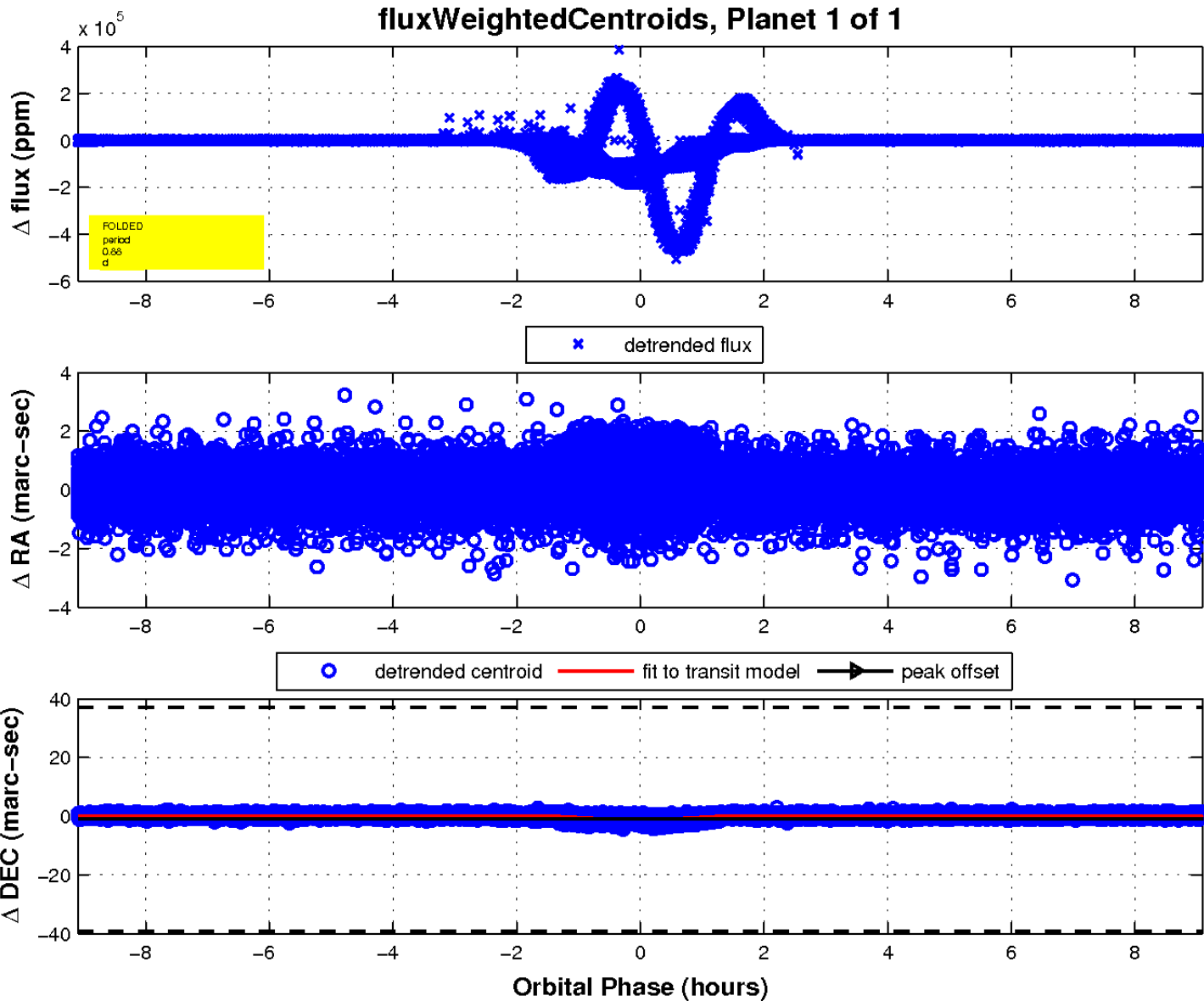
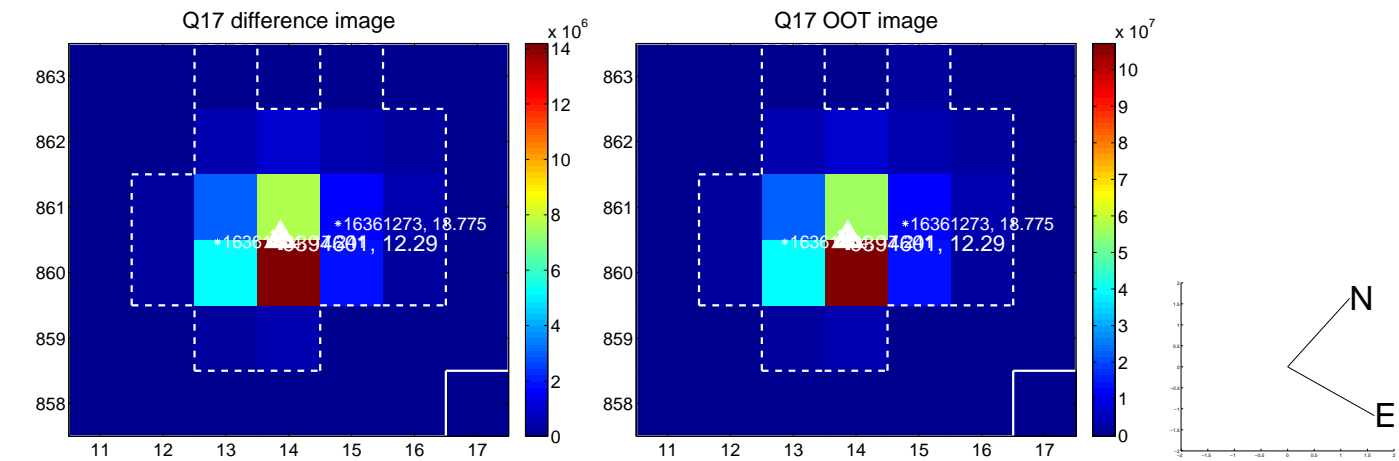
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

