

KIC 003121340

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})
003121340-01	OBS	3945.01	0.723947	132.064628	151.7	1.394	25.5	29.7	2.90	5160	4.48	24576.29

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003121340-01	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.

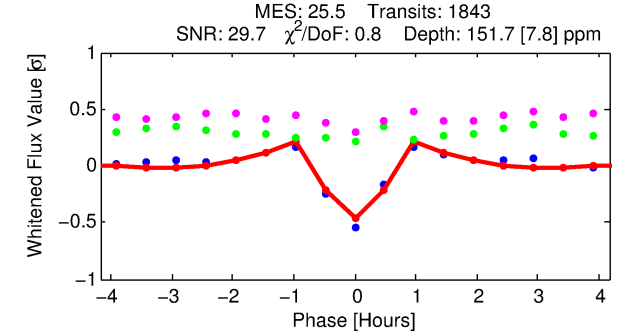
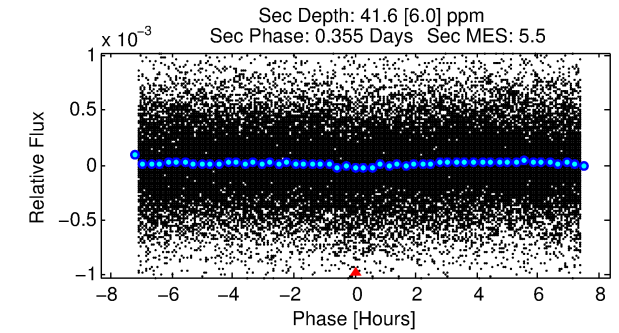
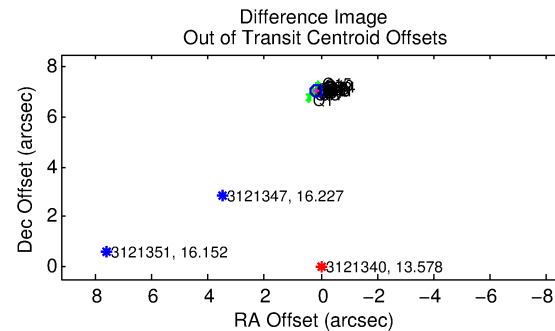
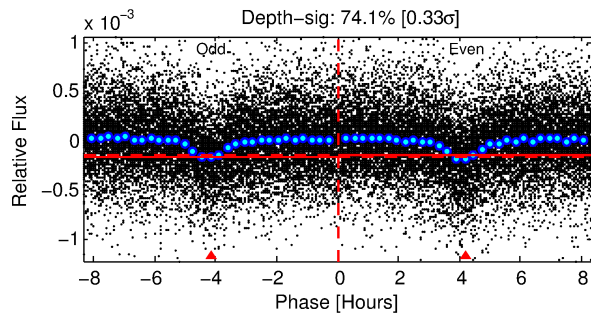
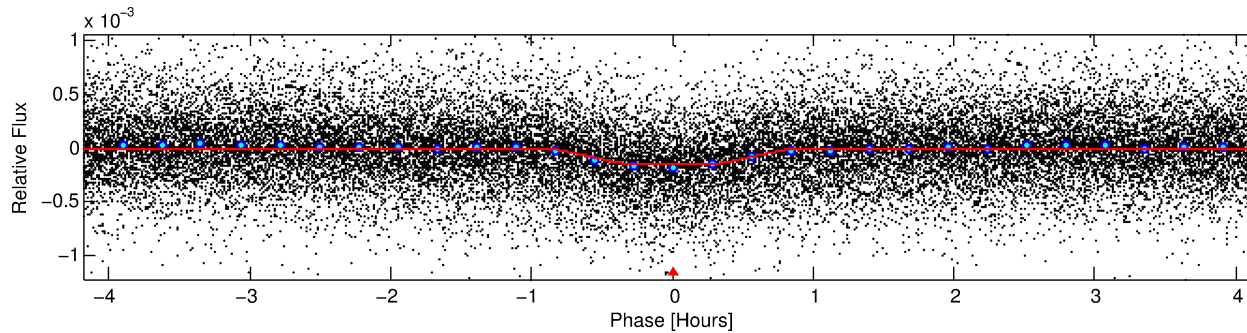
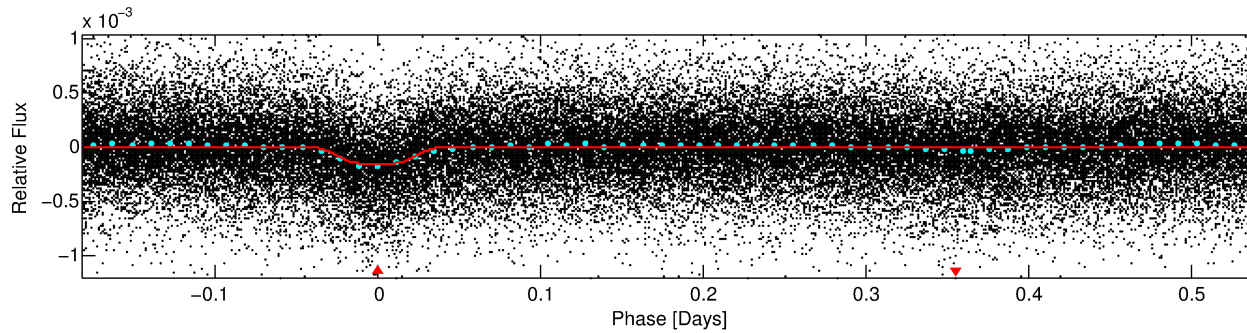
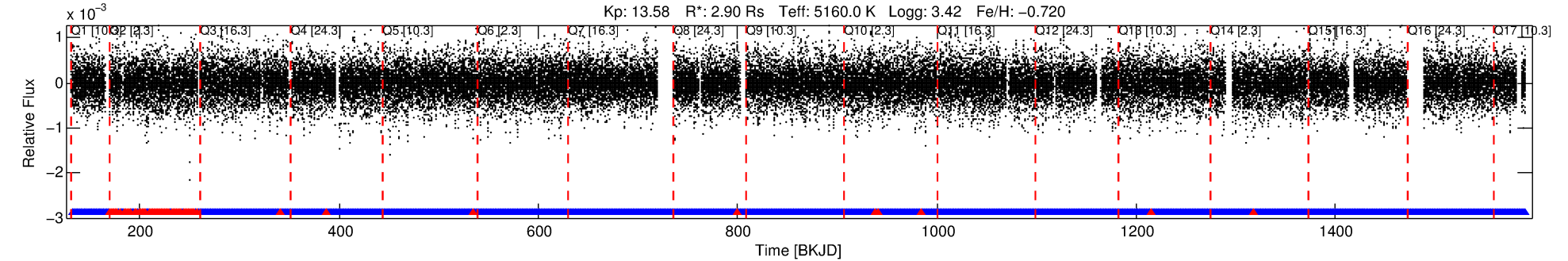
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 003121340-01

No Significant Match Found

DV One-Page Summary

KIC: 3121340 Candidate: 1 of 1 Period: 0.724 d
KOI: K03945.01 Corr: 0.797



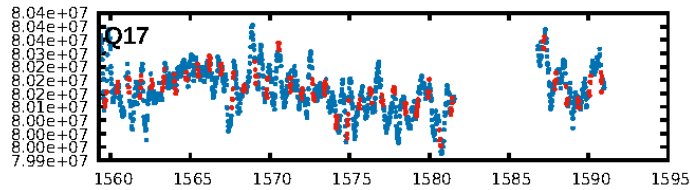
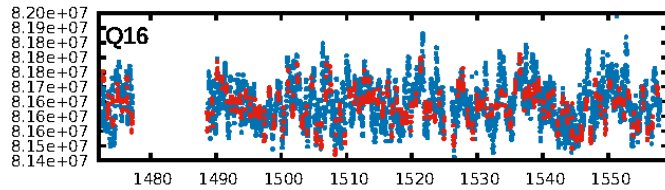
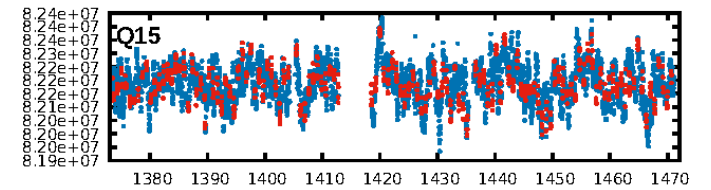
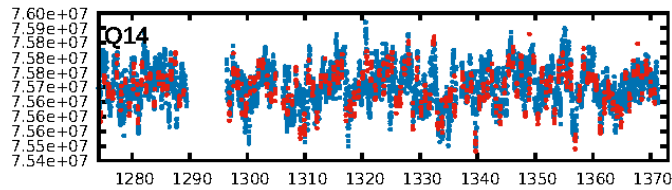
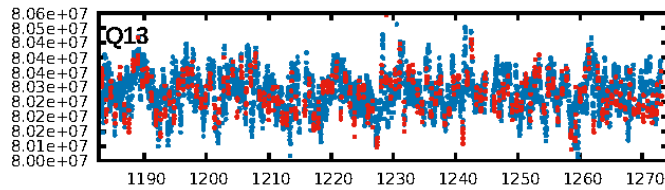
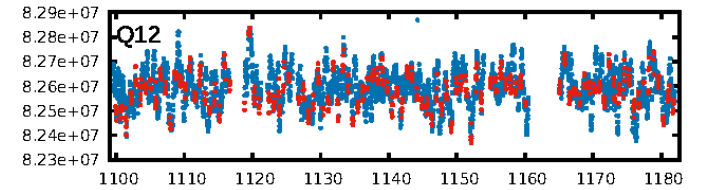
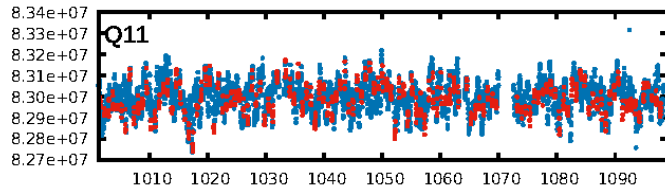
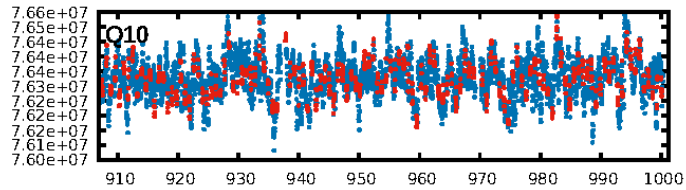
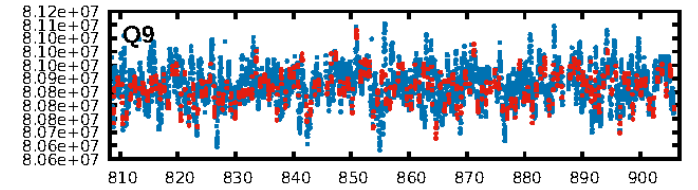
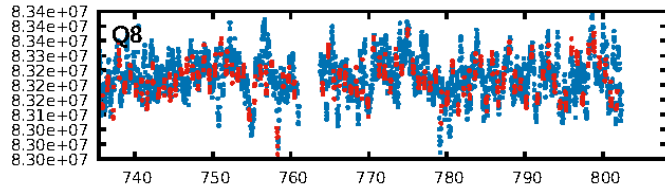
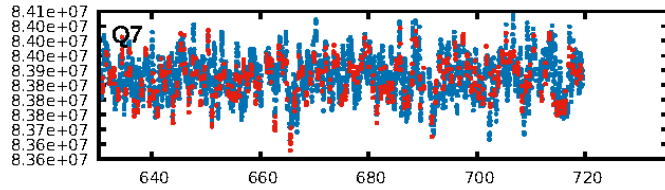
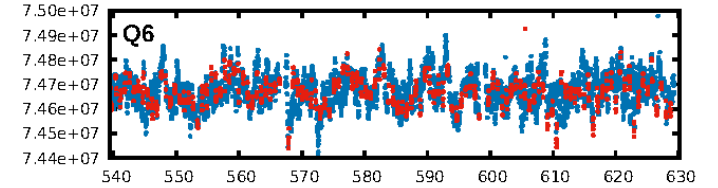
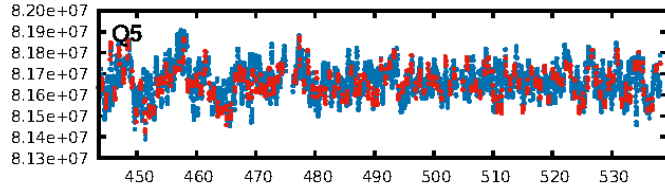
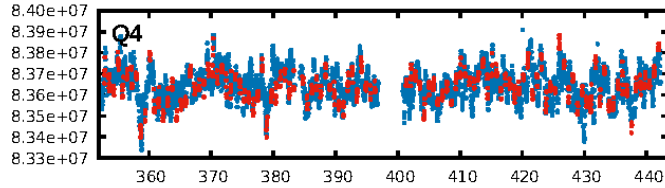
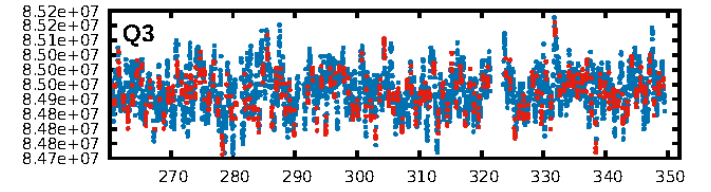
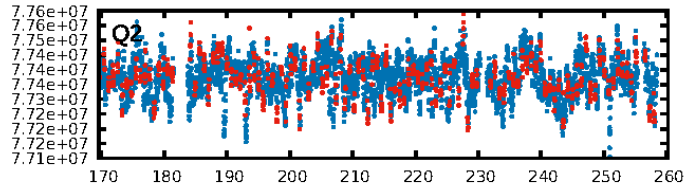
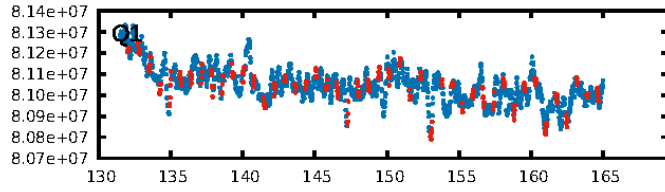
DV Fit Results:

Period = 0.72395 [0.00000] d
Epoch = 132.0646 [0.0005] BKJD
Rp/R* = 0.0142 [0.0022]
a/R* = 1.84 [0.90]
b = 0.93 [0.10]
Seff = 24576.29 [46633.93]
Teff = 3193 [1515] K
Rp = 4.48 [3.38] Re
a = 0.0147 [0.0153] AU
Ag = 0.25 [0.48] [-1.58 σ]
Teffp = 3482 [308] K [0.19 σ]

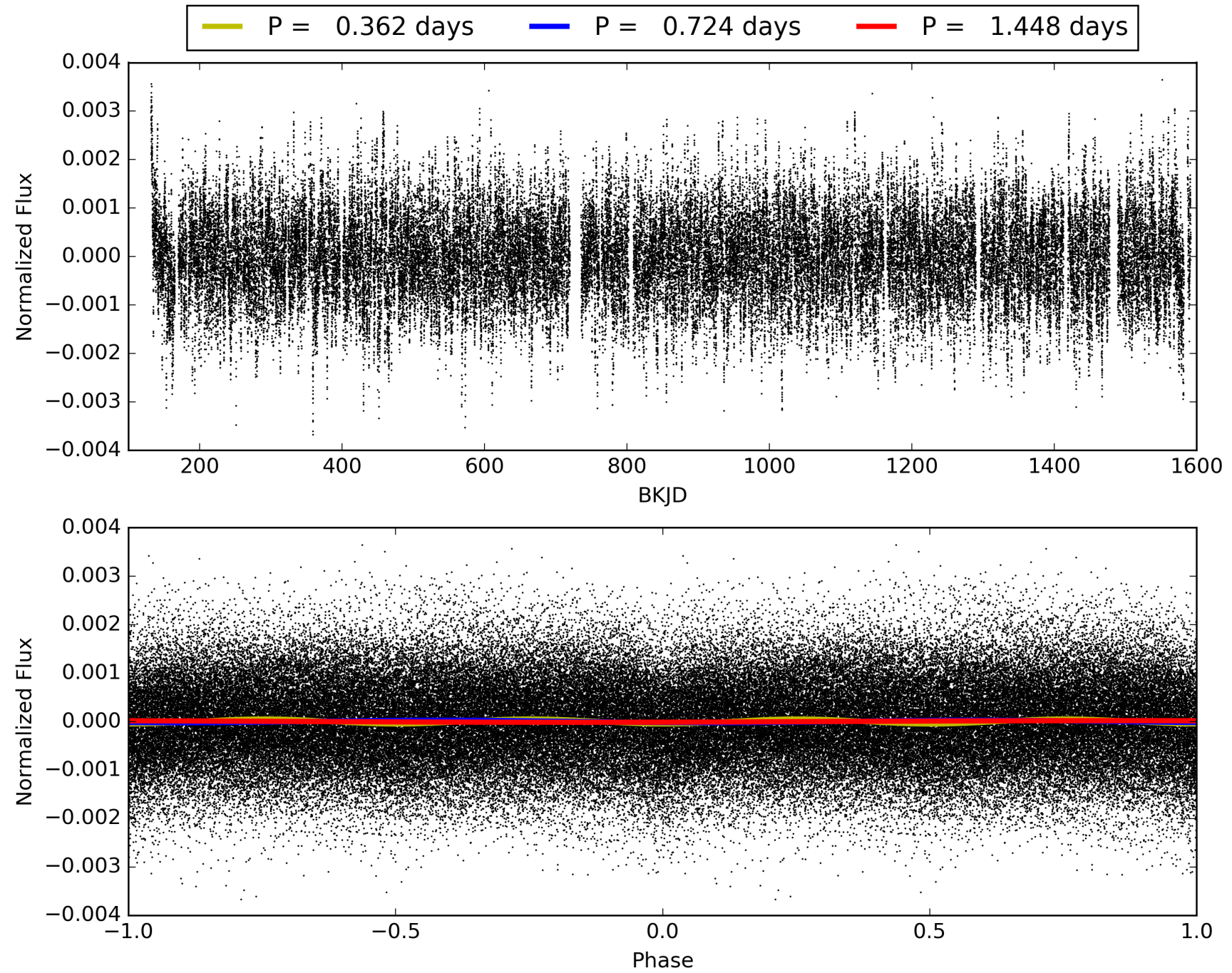
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 6.36e-153
RollingBand-fgt: 0.95 [1677/1760]
GhostDiagnostic-chr: 0.4991
Centroid-sig: 0.0%
Centroid-so: 2.932 arcsec [9.65 σ]
OotOffset-rm: 7.053 arcsec [93.15 σ]
KicOffset-rm: 6.971 arcsec [94.31 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 003121340-01, PDC Light Curves

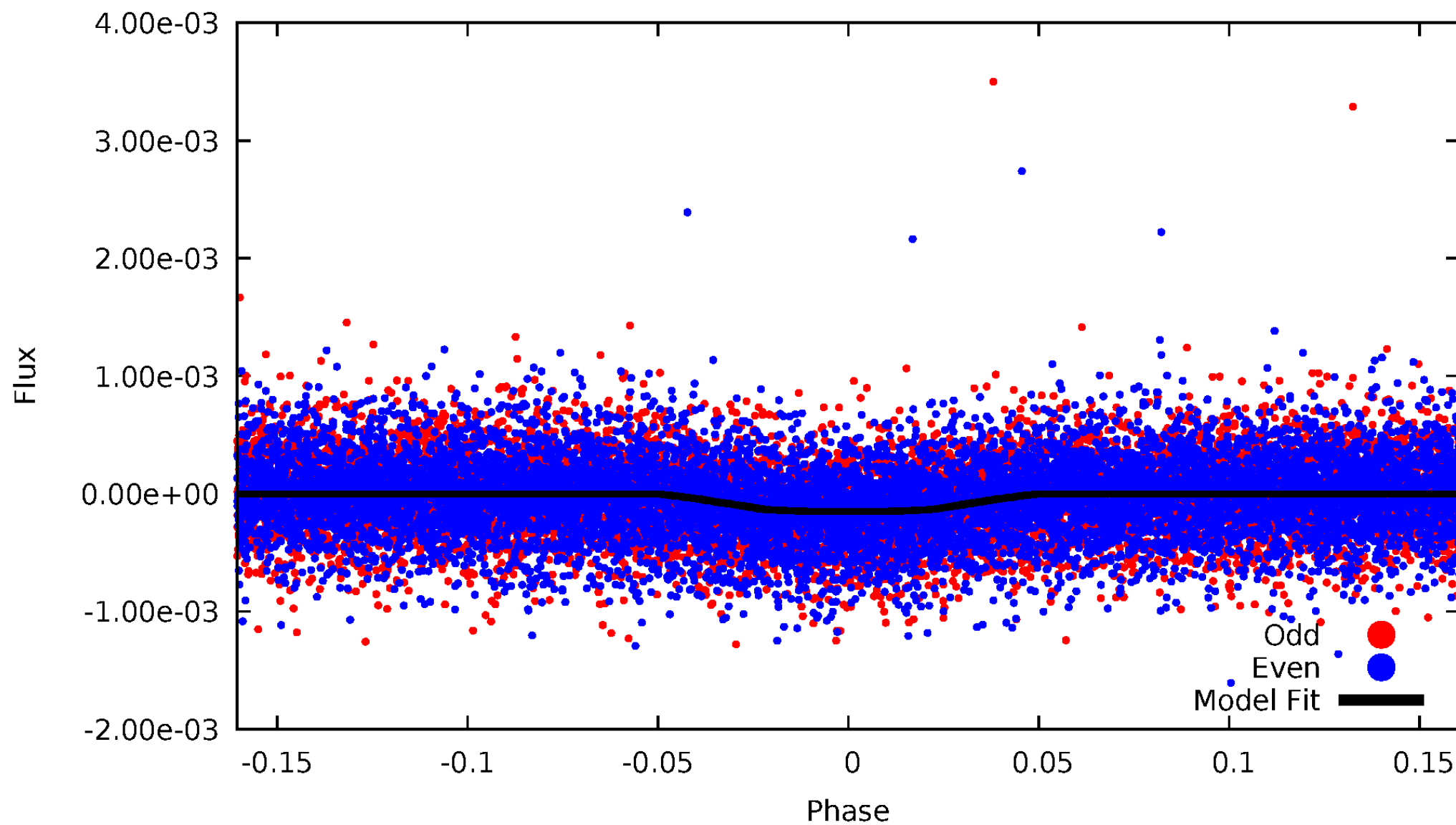


TCE 003121340-01



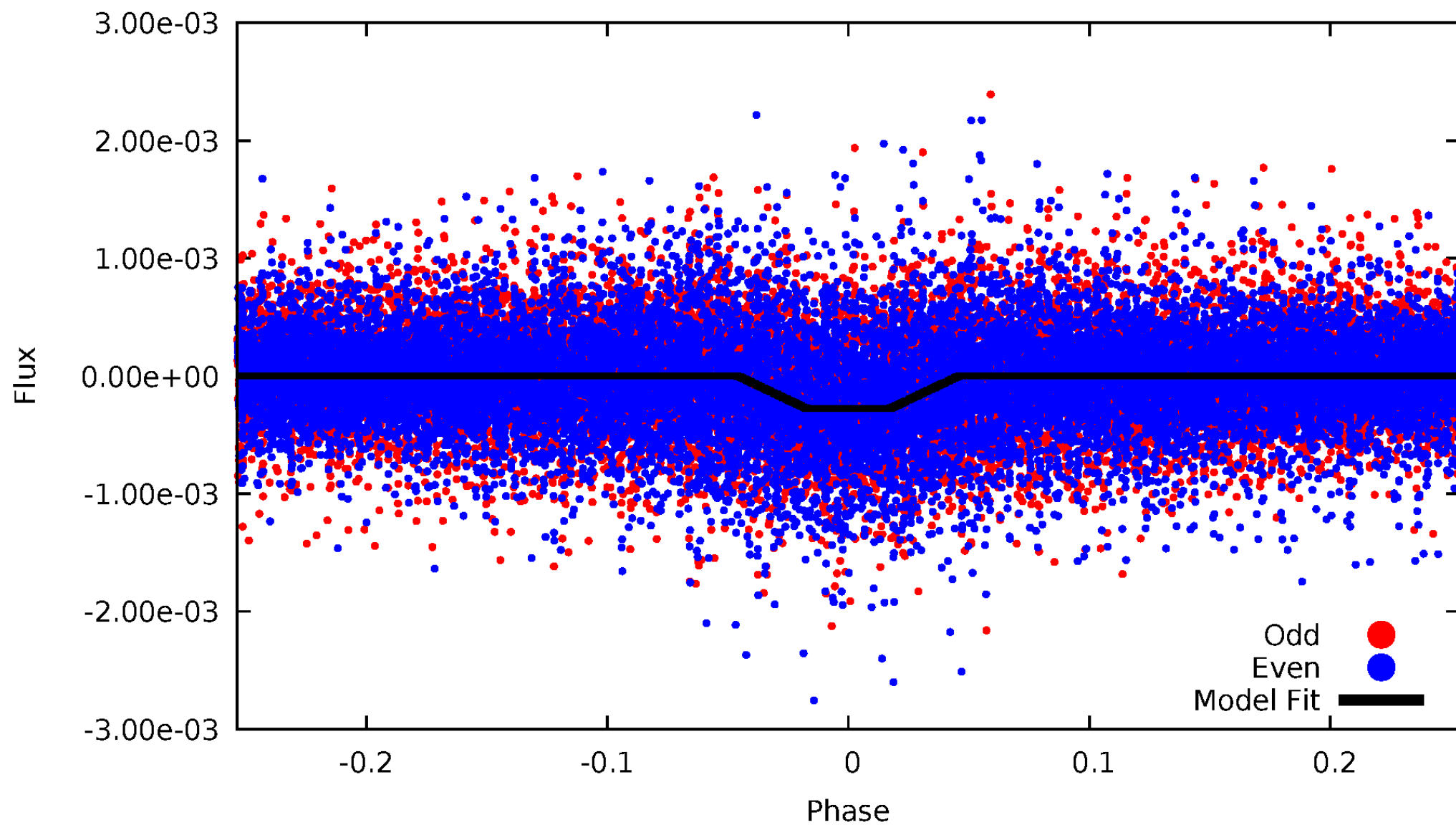
DV Odd/Even

TCE 003121340-01

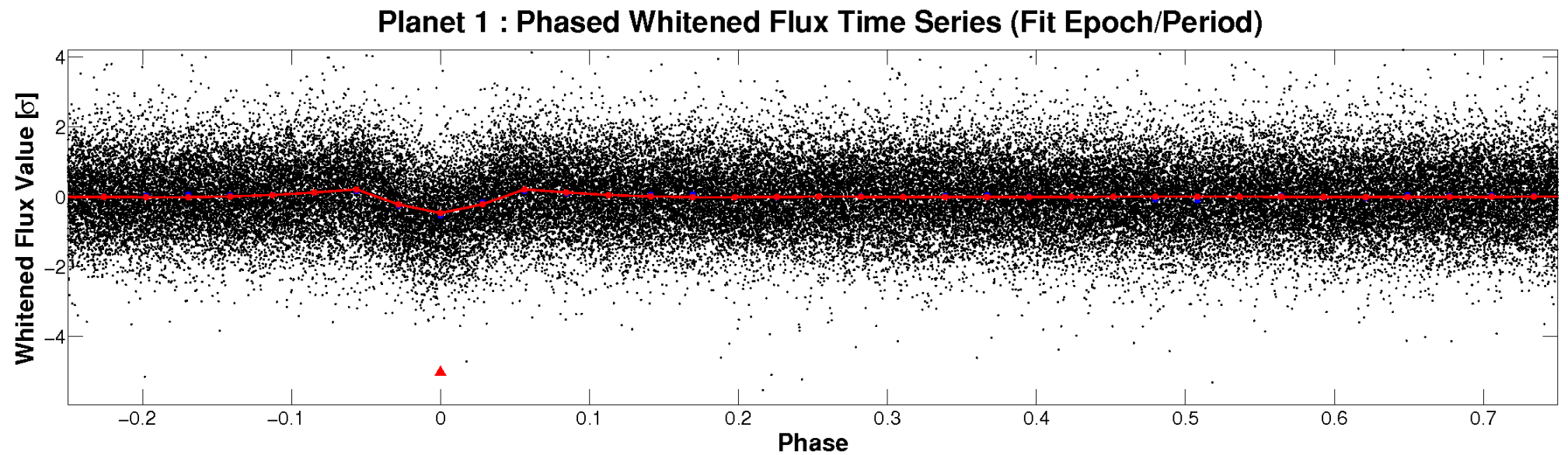
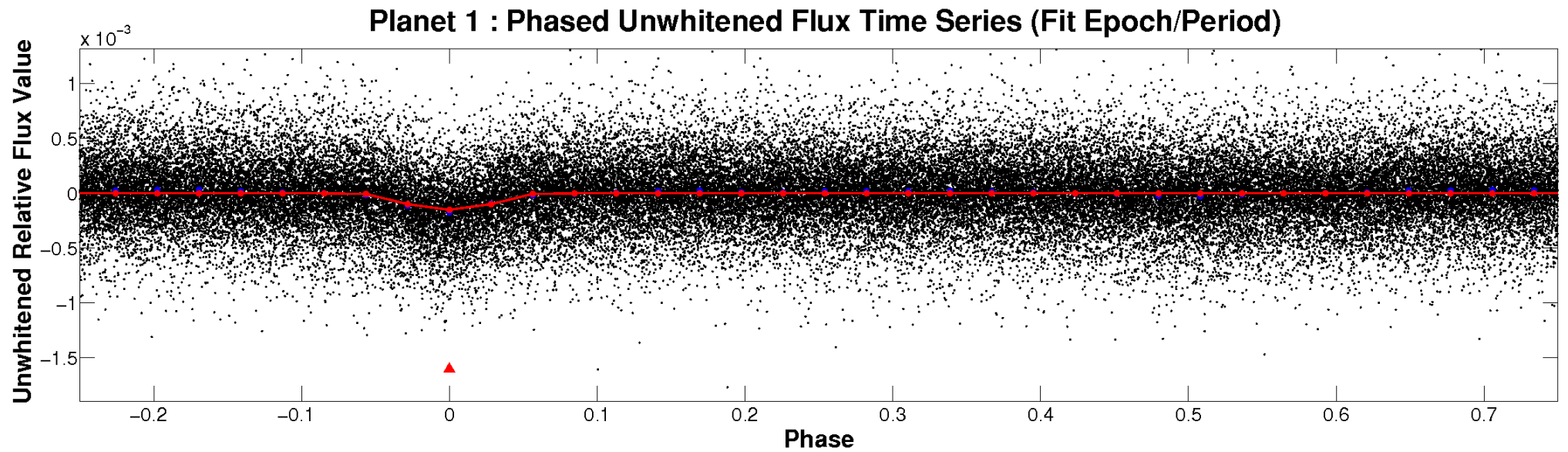


ALT Odd/Even

TCE 003121340-01

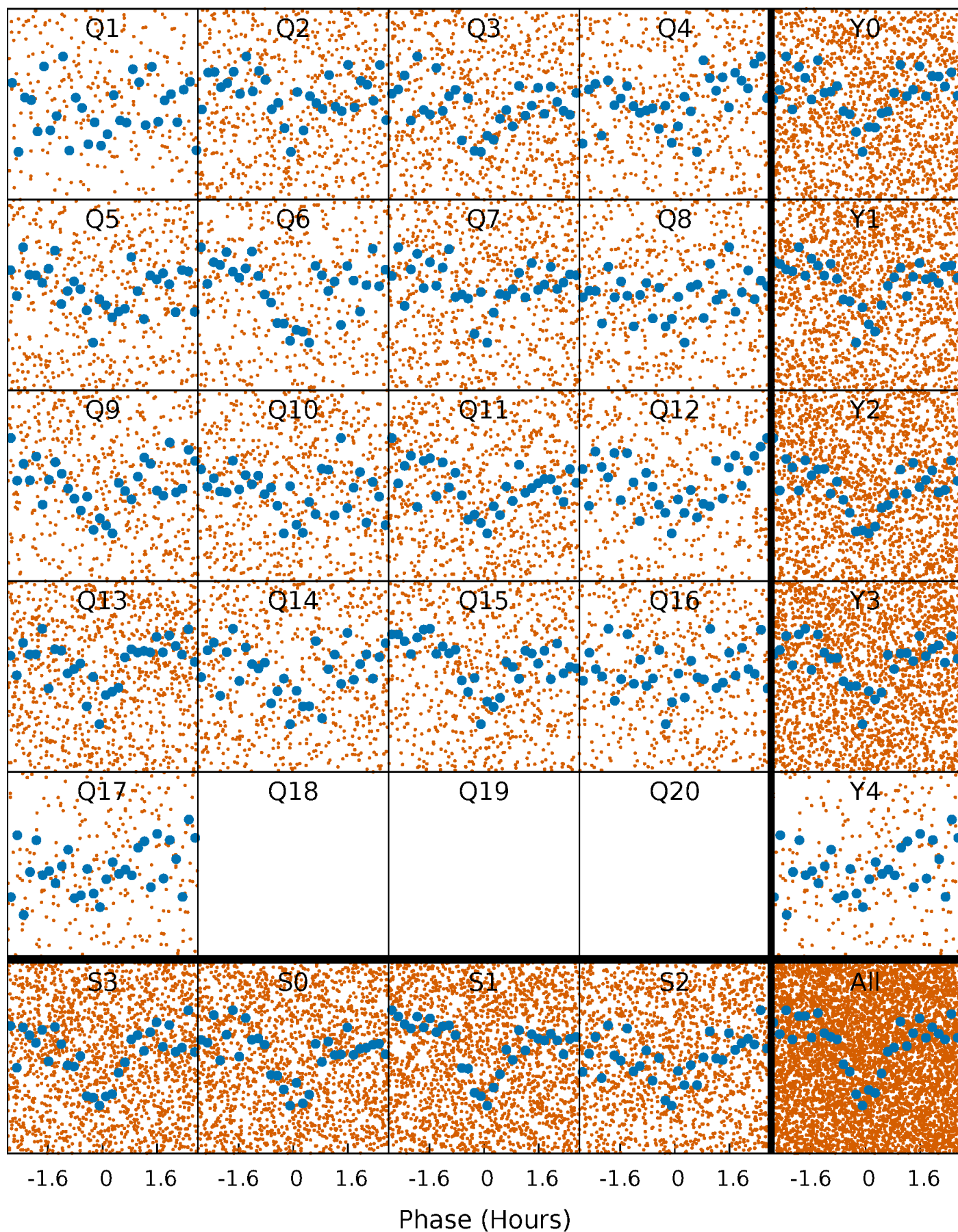


Non-Whitened Vs. Whitened Light Curve



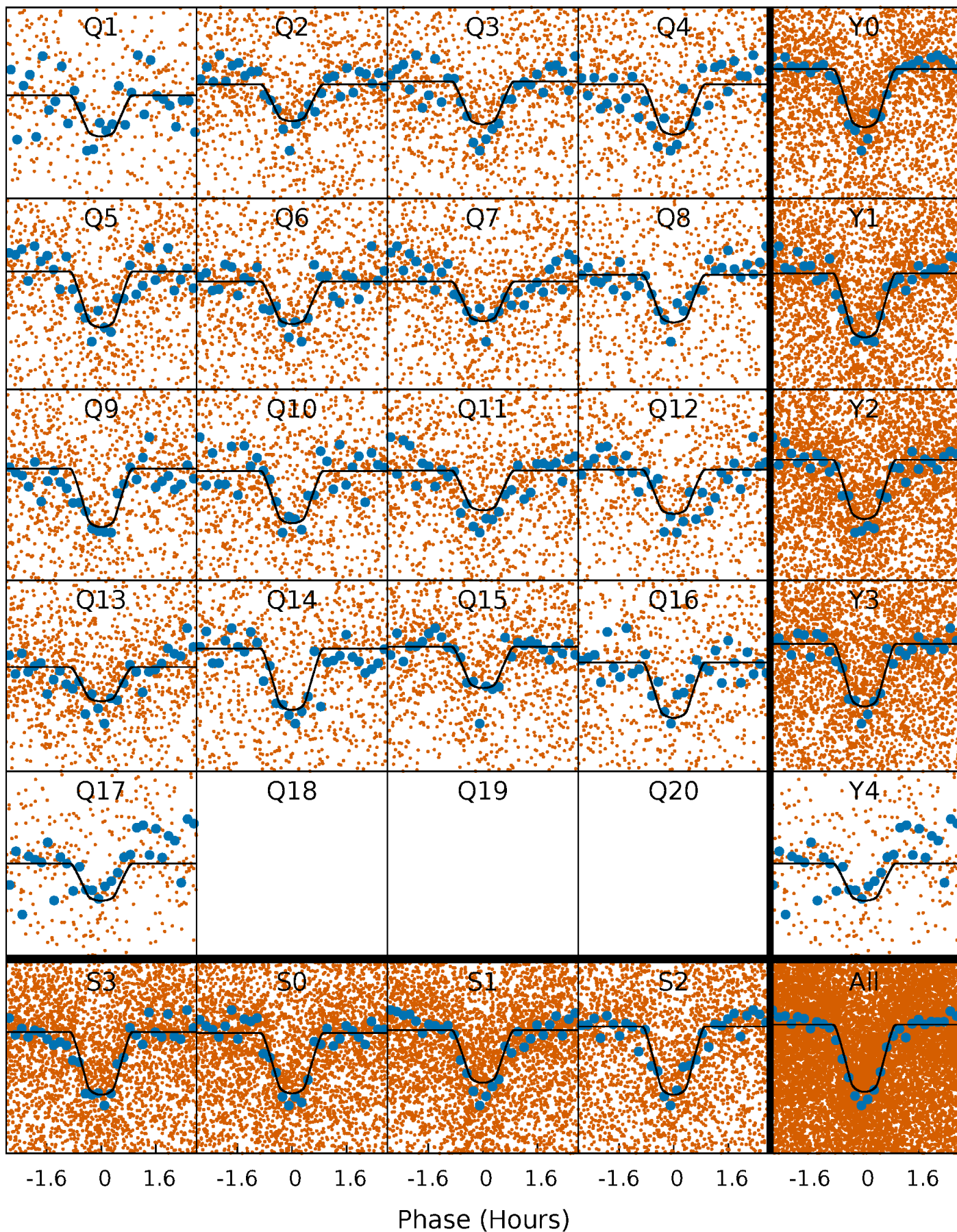
PDC Quarter-Phased Transit Curves

TCE 003121340-01 P= 0.723947 Days $T_0=132.064628$ (BKJD)



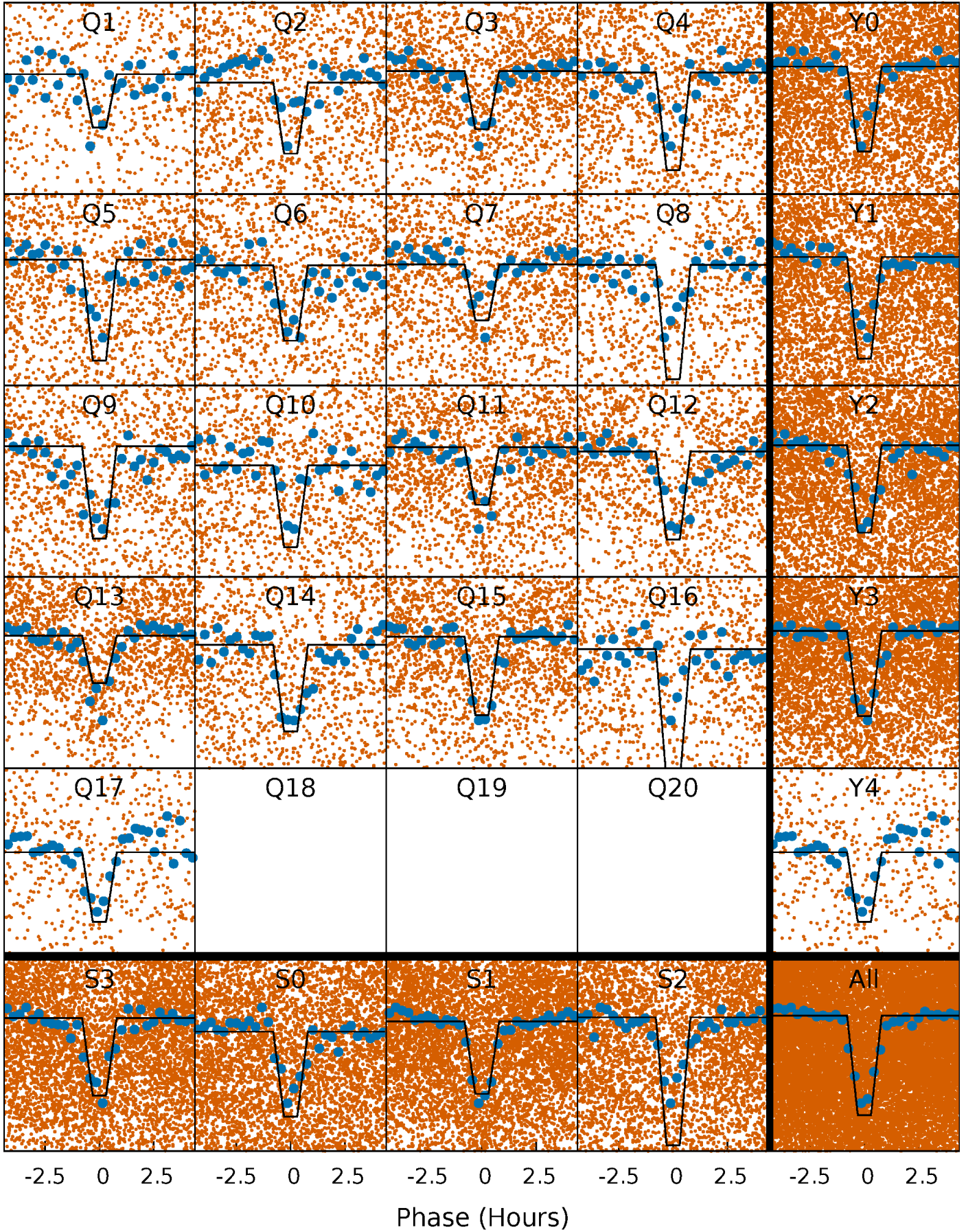
DV Quarter-Phased Transit Curves

TCE 003121340-01 P= 0.723947 Days $T_0=132.064628$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

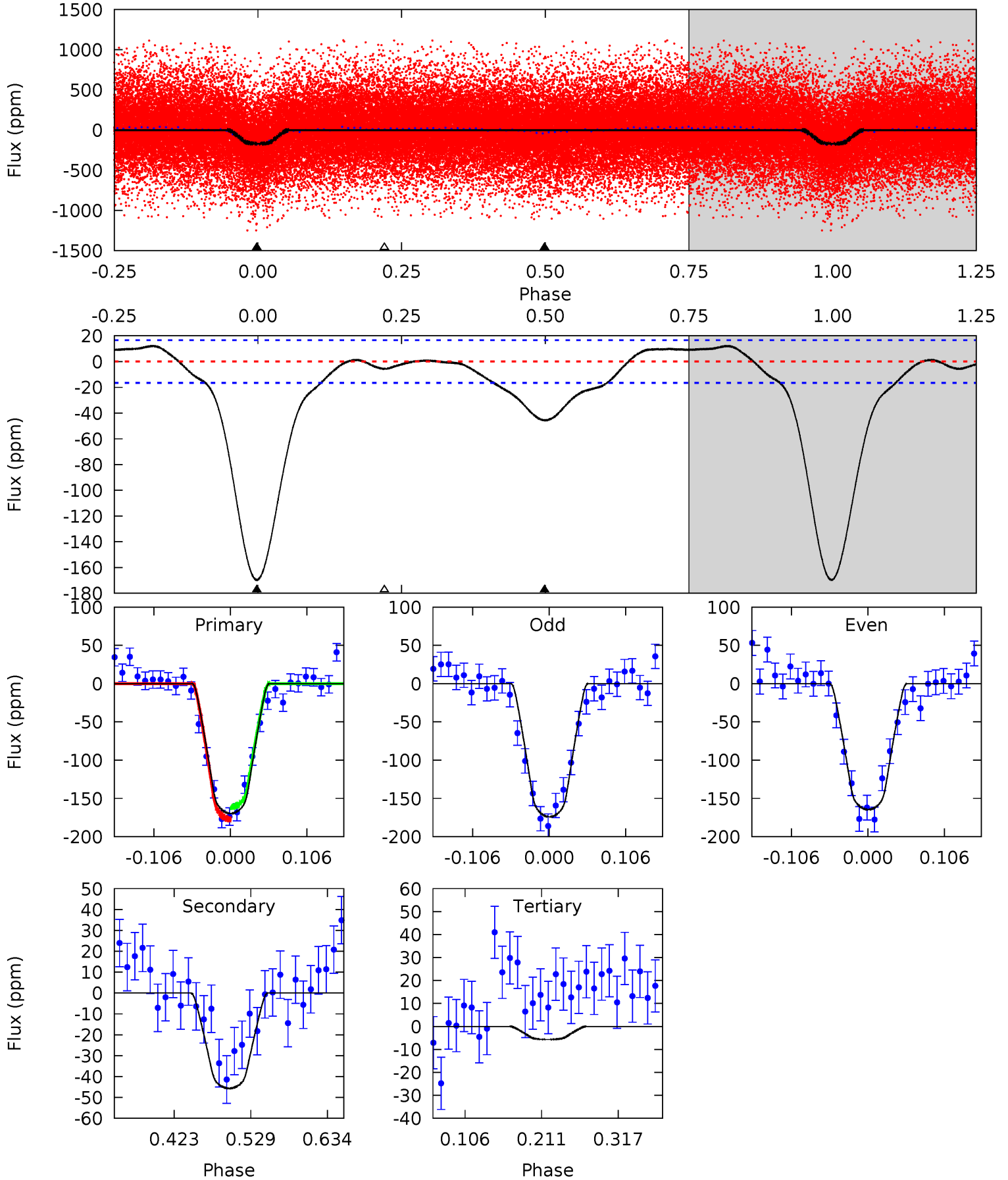
TCE 003121340-01 P= 0.723944 Days $T_0=132.066423$ (BKJD)



DV Model-Shift Uniqueness Test

003121340-01, P = 0.723947 Days, E = 131.340681 Days

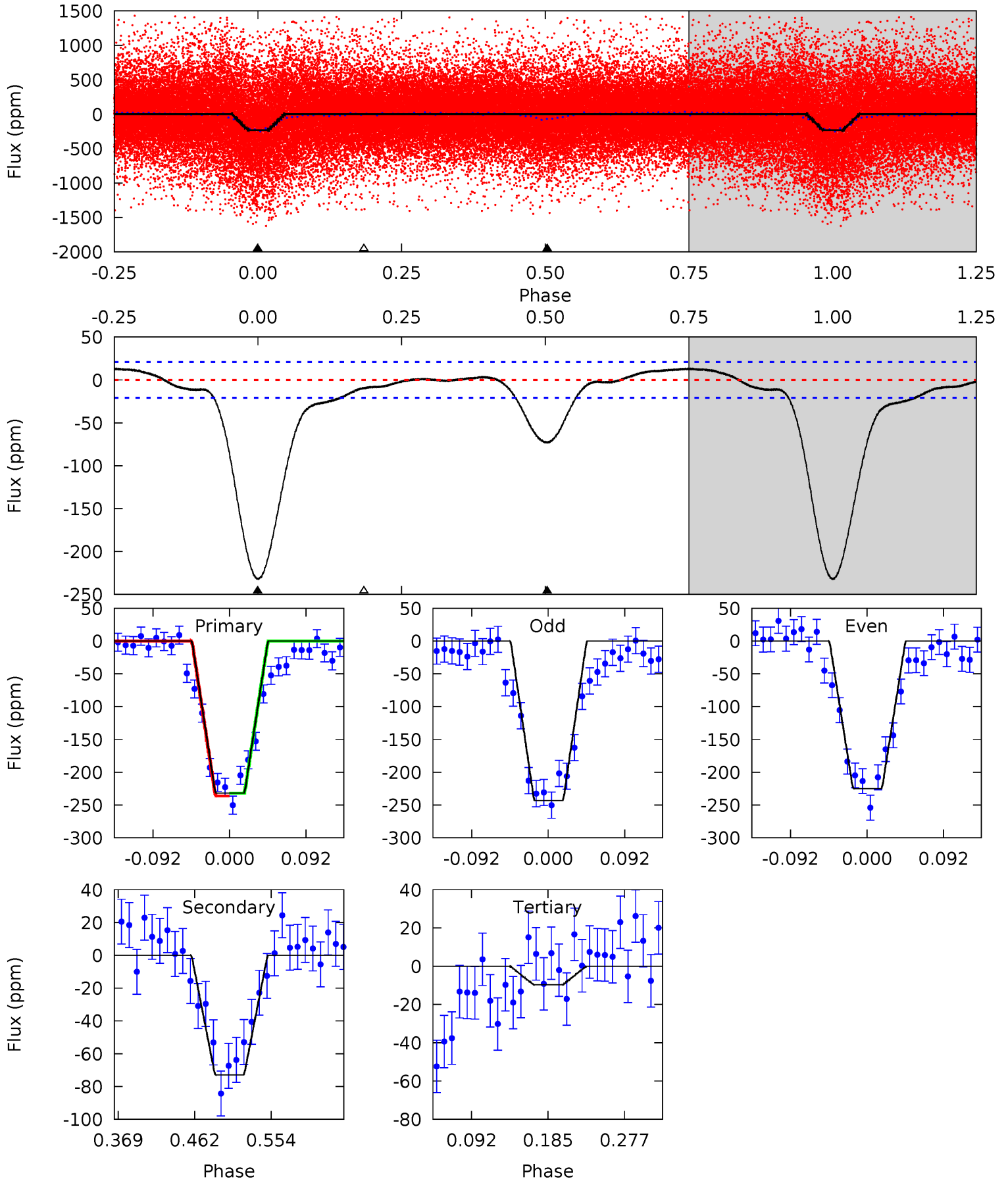
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.6	12.5	1.57	0	4.55	1.62	2.05	45.0	46.6	11.0	12.5	1.30	1.06	0.07	2.22



Alt Model-Shift Uniqueness Test

003121340-01, P = 0.723944 Days, E = 131.342479 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.1	16.1	2.14	0	4.58	1.68	2.33	49.0	51.1	13.9	16.1	2.03	0.97	0.05	0.44



Stellar Parameters For KIC 003121340

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5160^{+130}_{-117}	$3.424^{+1.192}_{-0.298}$	$-0.720^{+0.300}_{-0.250}$	$2.897^{+1.556}_{-2.139}$	$0.812^{+0.262}_{-0.174}$	$0.047^{+2.632}_{-0.032}$
	+3%/-2%	+35%/-9%	+42%/-35%	+54%/-74%	+32%/-21%	+5600%/-68%
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 003121340-01 / KOI 3945.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-46 ± 4	$4.29^{+1.73}_{-1.67}$	4374^{+627}_{-933}	2527^{+1101}_{-6235}	$0.316^{+0.482}_{-0.155}$
Alt.	-73 ± 5	$4.92^{+1.90}_{-2.08}$	4332^{+651}_{-965}	3057^{+760}_{-6565}	$0.368^{+0.673}_{-0.173}$

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 $A_{obs} \gg 1.0$

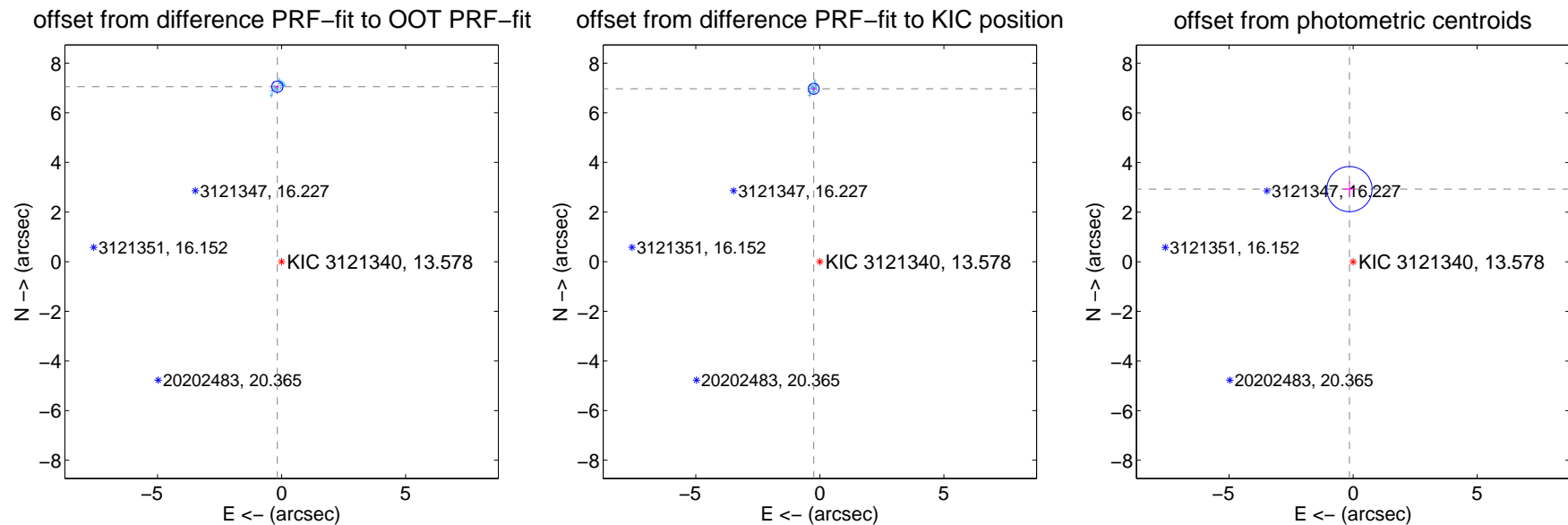
DV Centroid Data

Supplemental centroid analysis for 003121340-01. Kepler magnitude: 13.58. Transit SNR 29.73

There are 17 quarters with good PRF difference image offsets

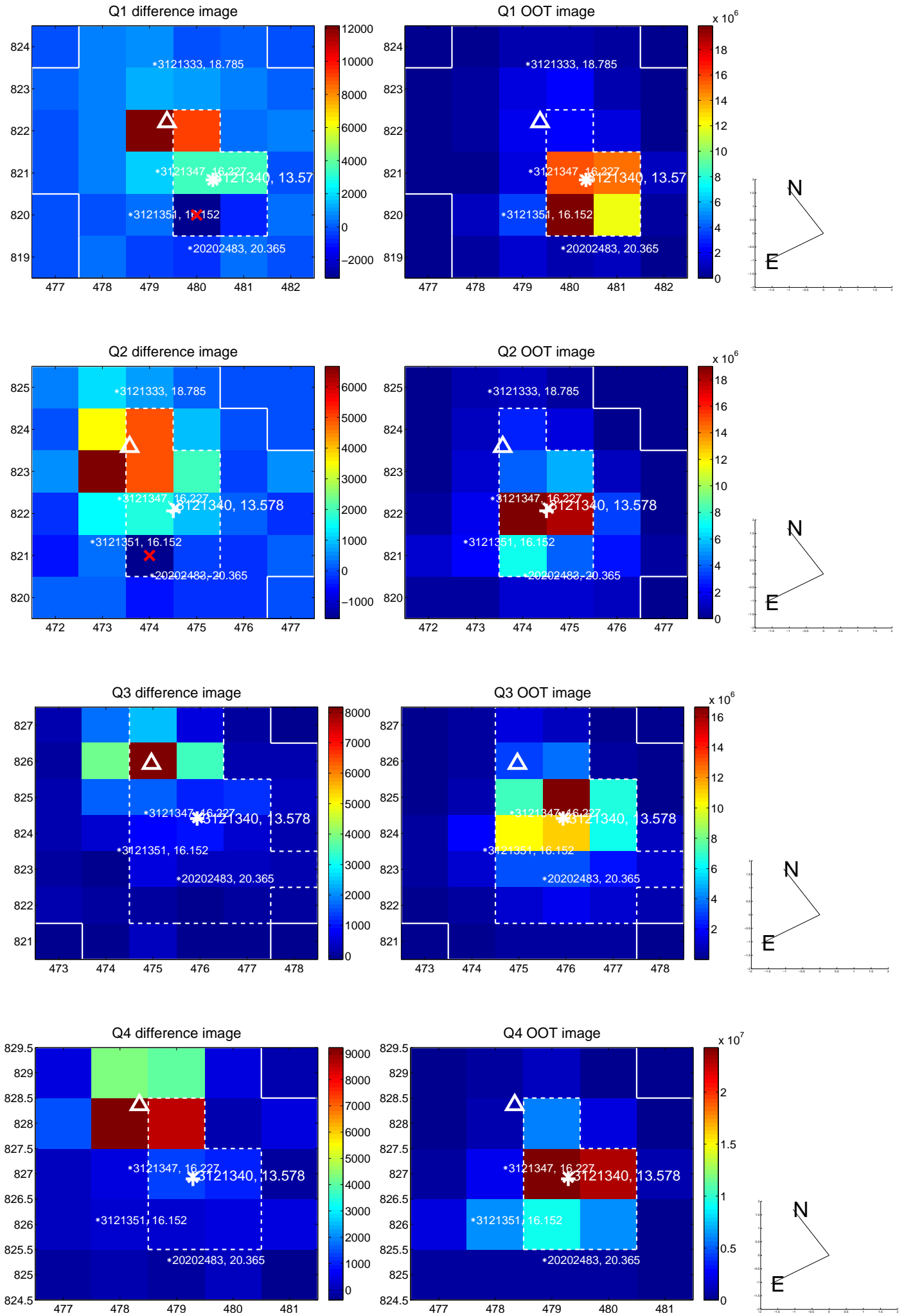
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.053 \pm 0.076	93.15	0.171 \pm 0.076	7.051 \pm 0.076
PRF-fit source offset from KIC position	6.971 \pm 0.074	94.31	0.245 \pm 0.070	6.967 \pm 0.074
photometric centroid source offset	2.93 \pm 0.30	9.65	0.15 \pm 0.26	2.93 \pm 0.30

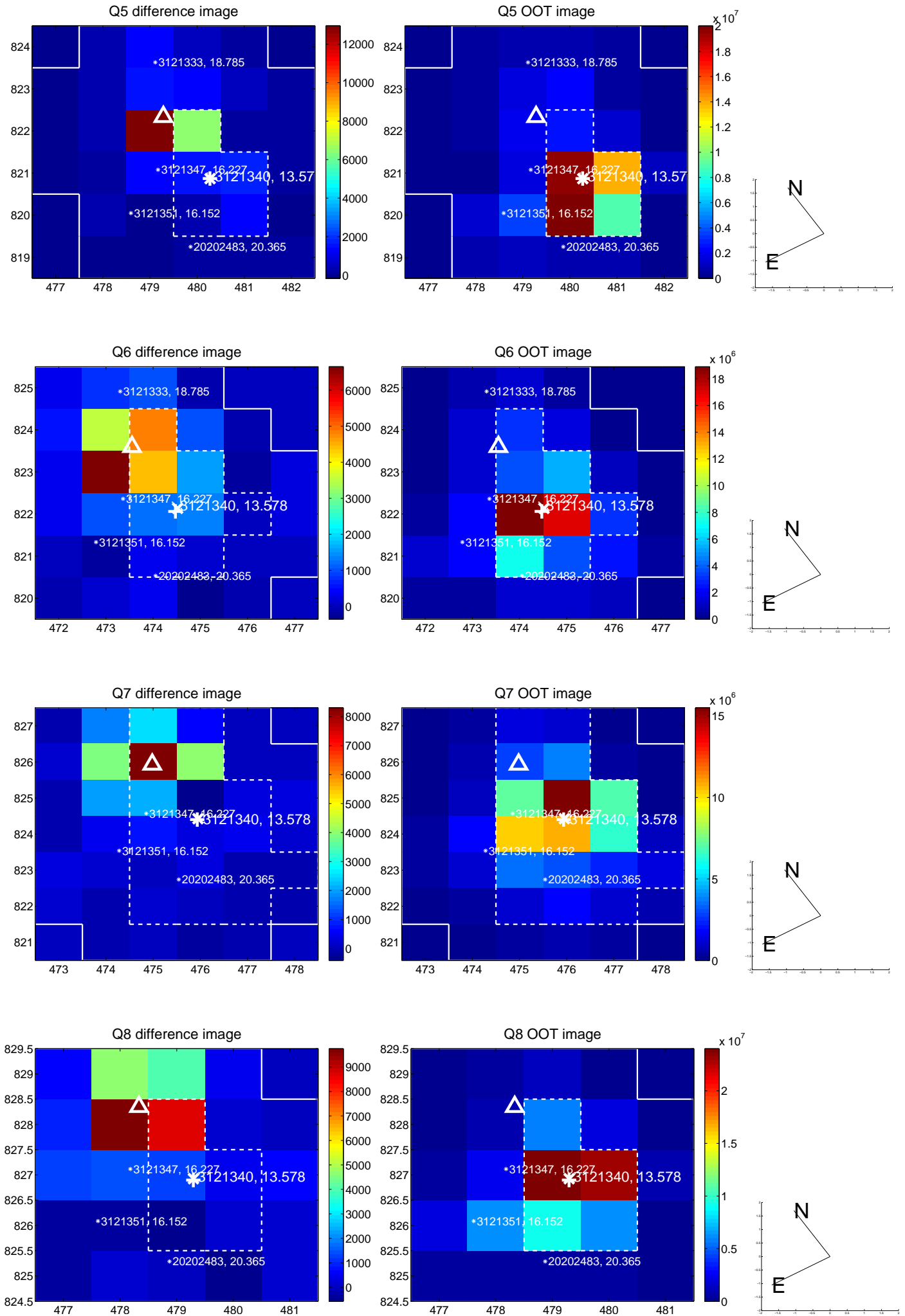


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

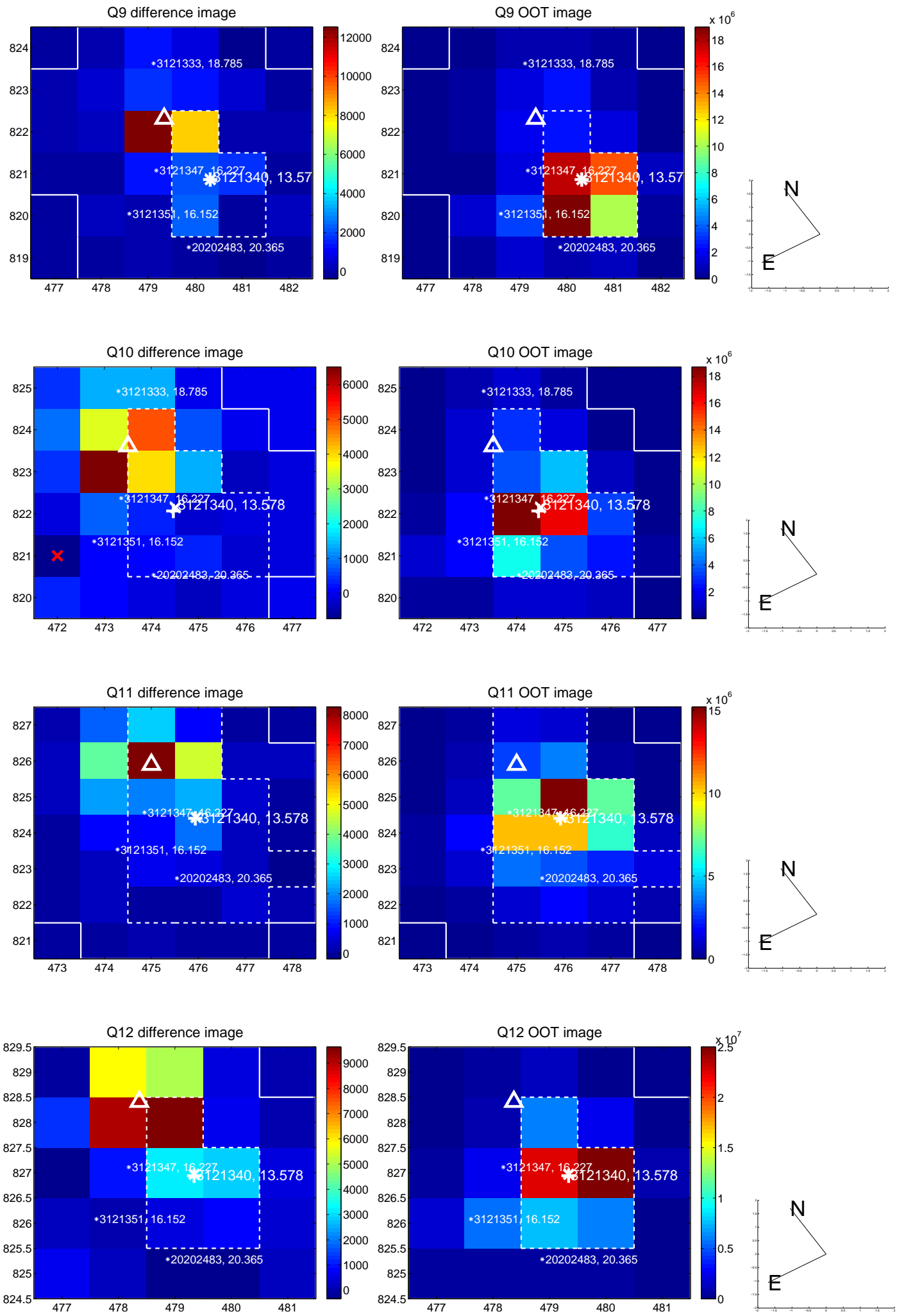
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



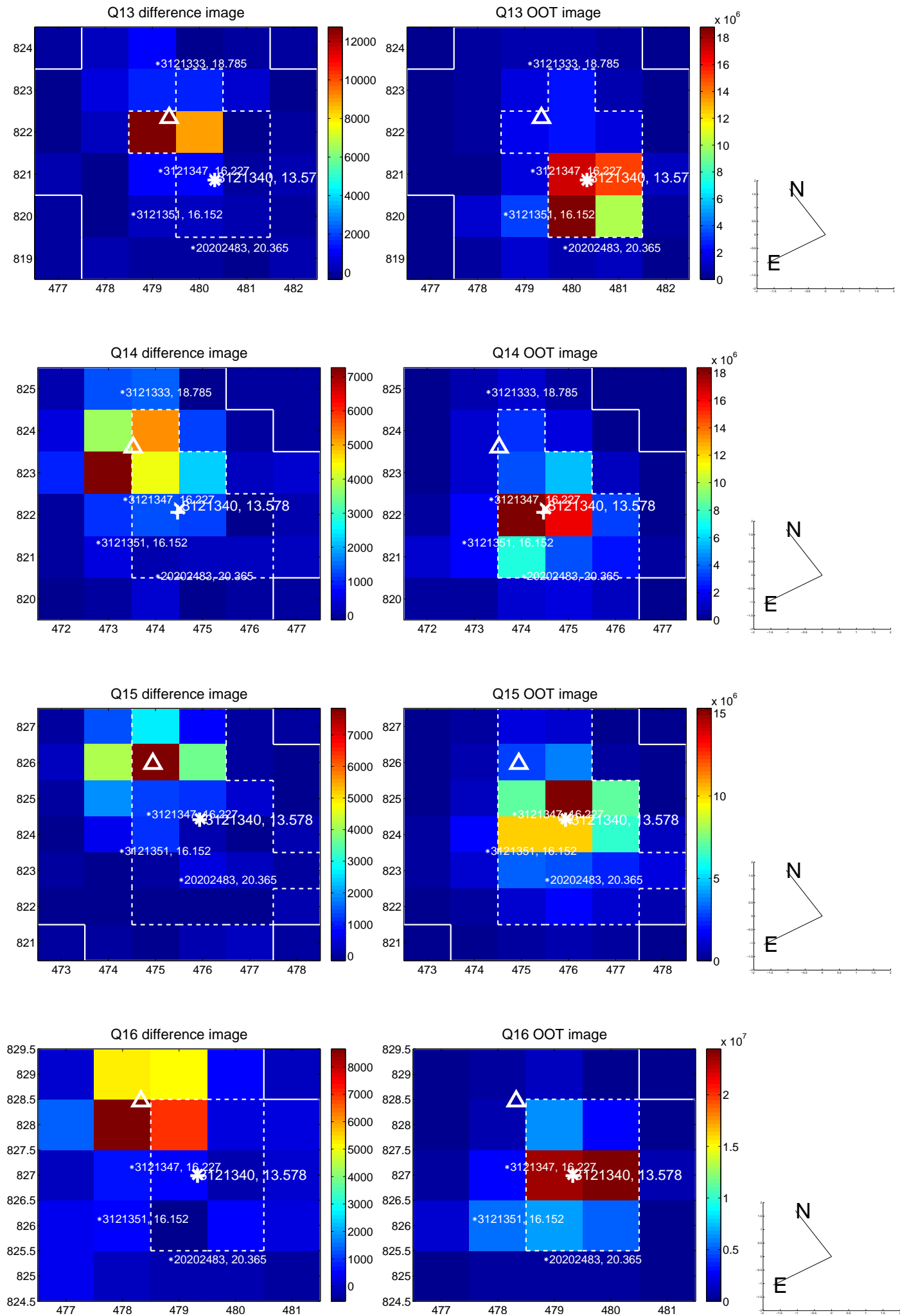
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



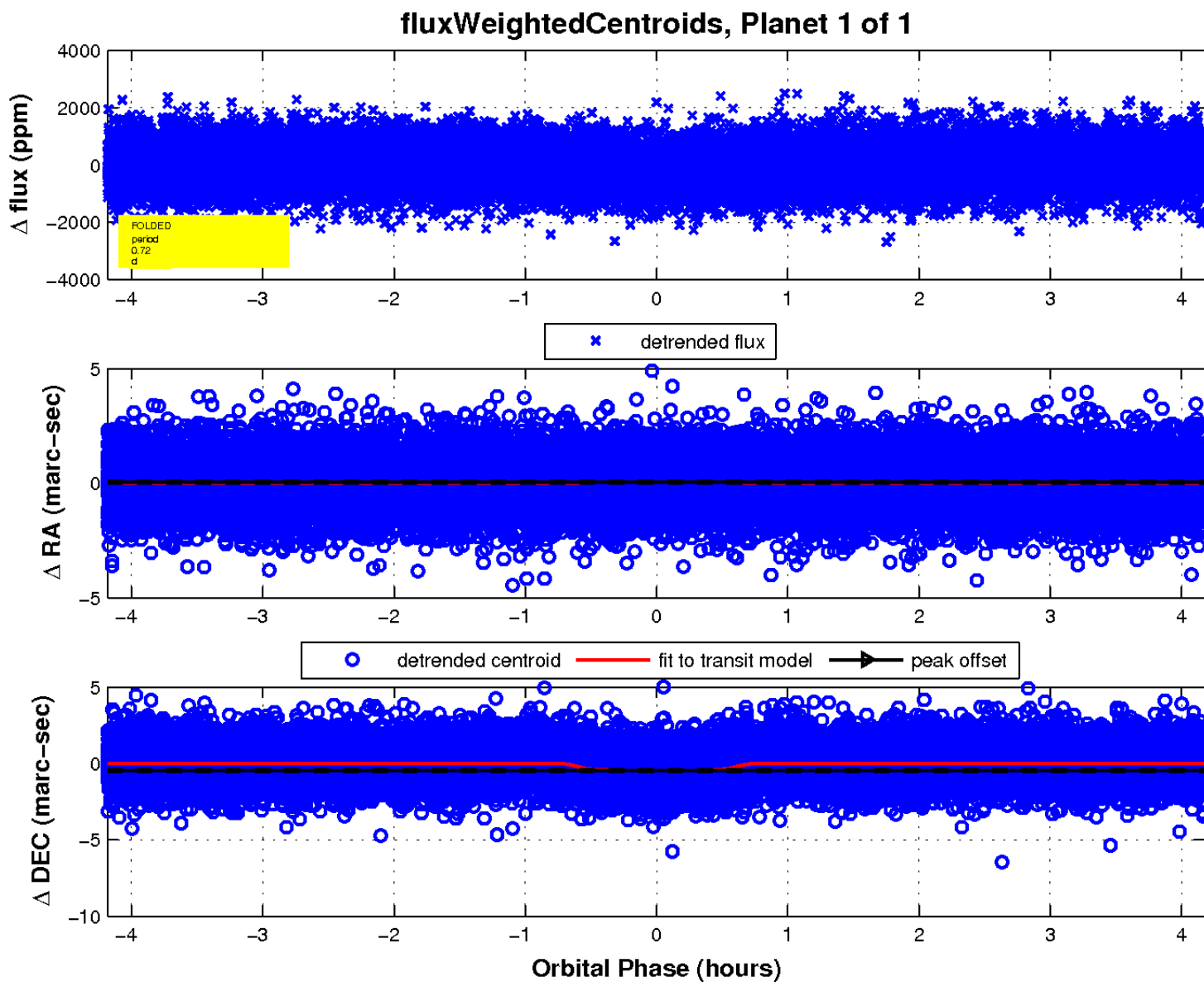
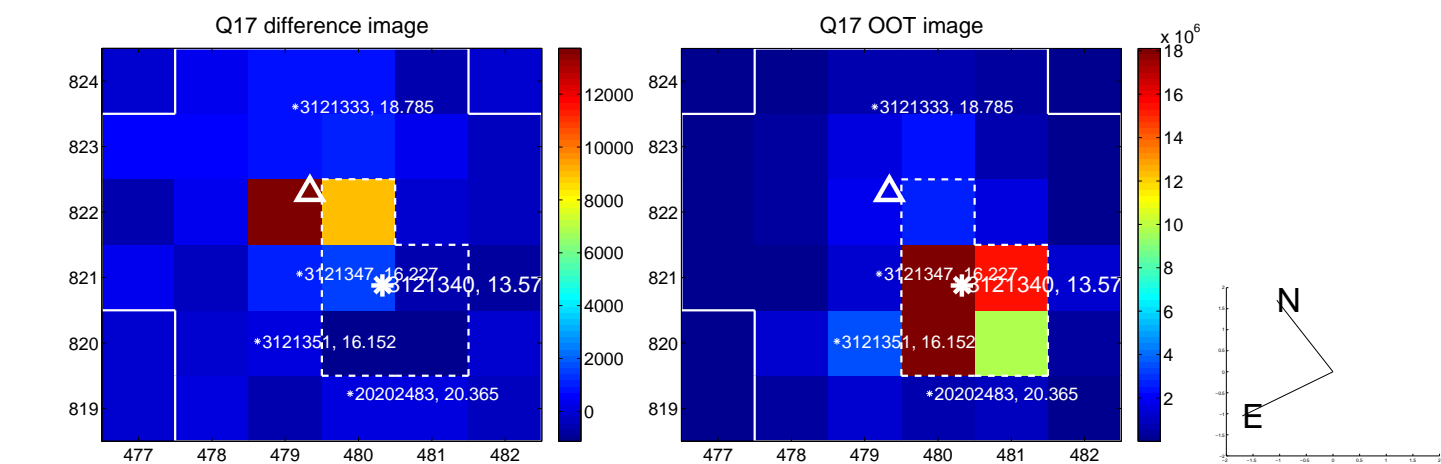
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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UKIRT Image

Declination

