

KIC 012456601

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})
012456601-01	OBS	2745.01	15.645848	146.050223	573.7	4.589	23.5	25.8	0.92	5896	2.73	60.24

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
012456601-01	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.

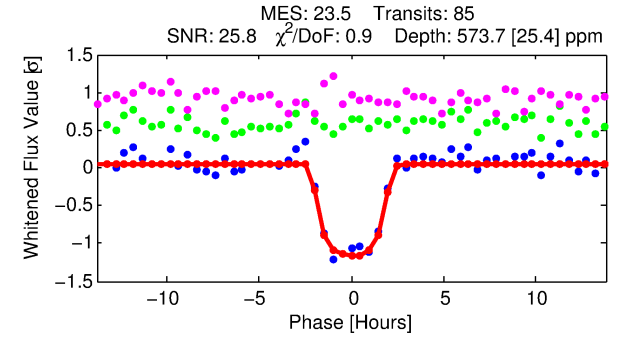
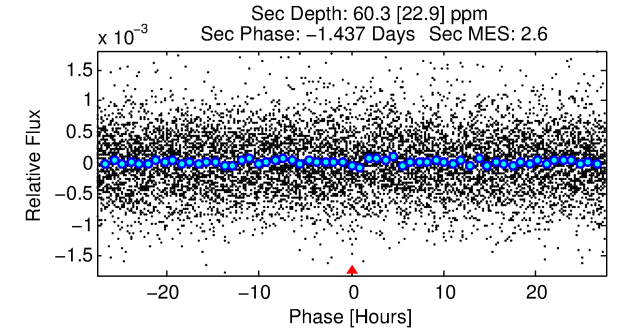
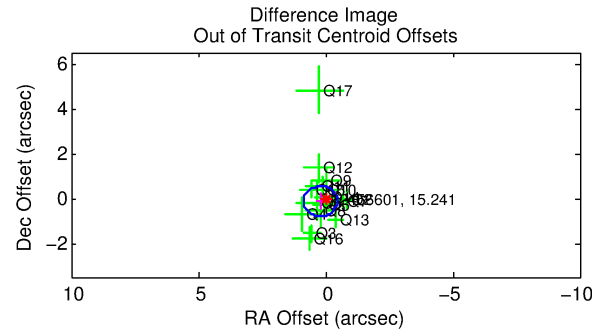
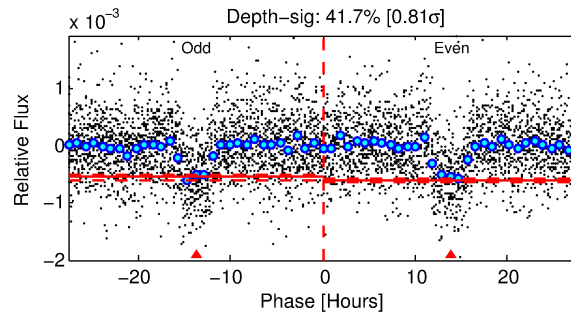
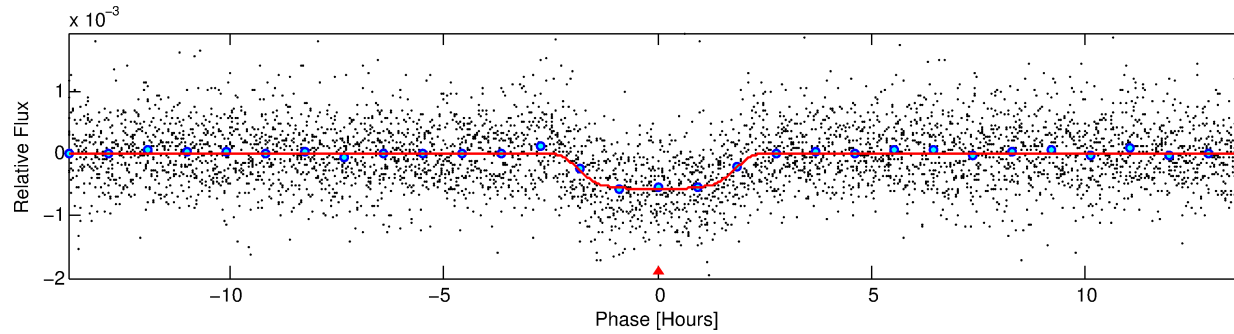
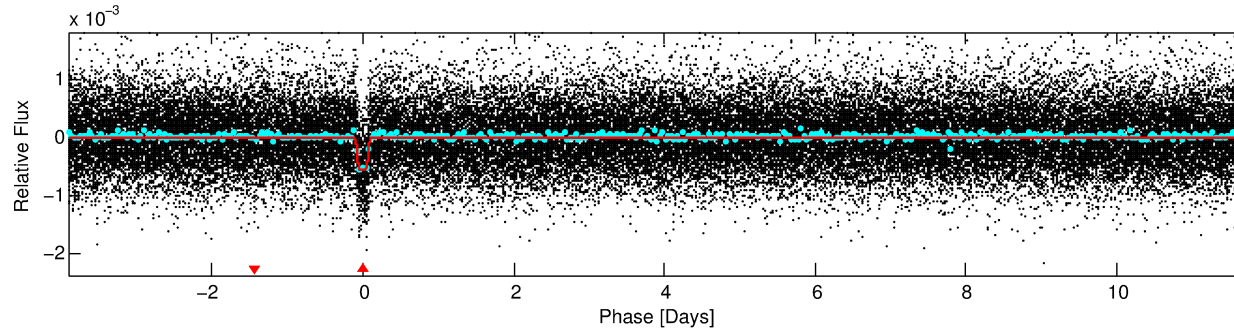
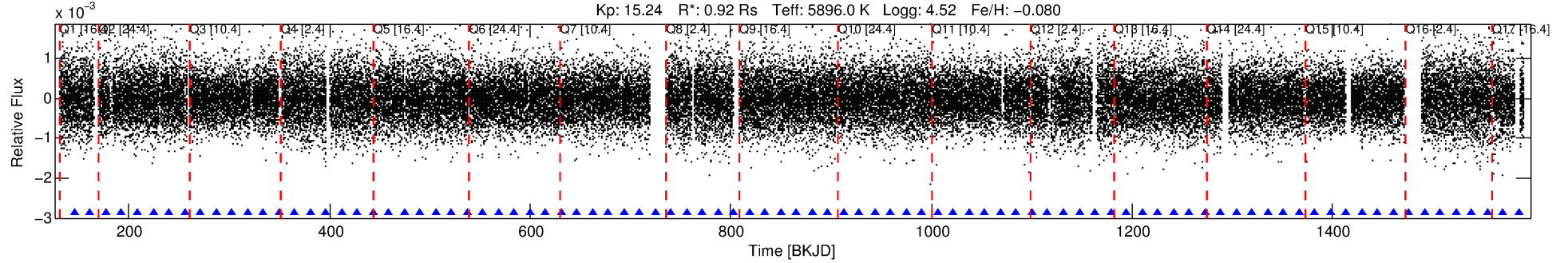
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 012456601-01

No Significant Match Found

DV One-Page Summary

KIC: 12456601 Candidate: 1 of 1 Period: 15.646 d
KOI: K02745.01 Corr: 0.935



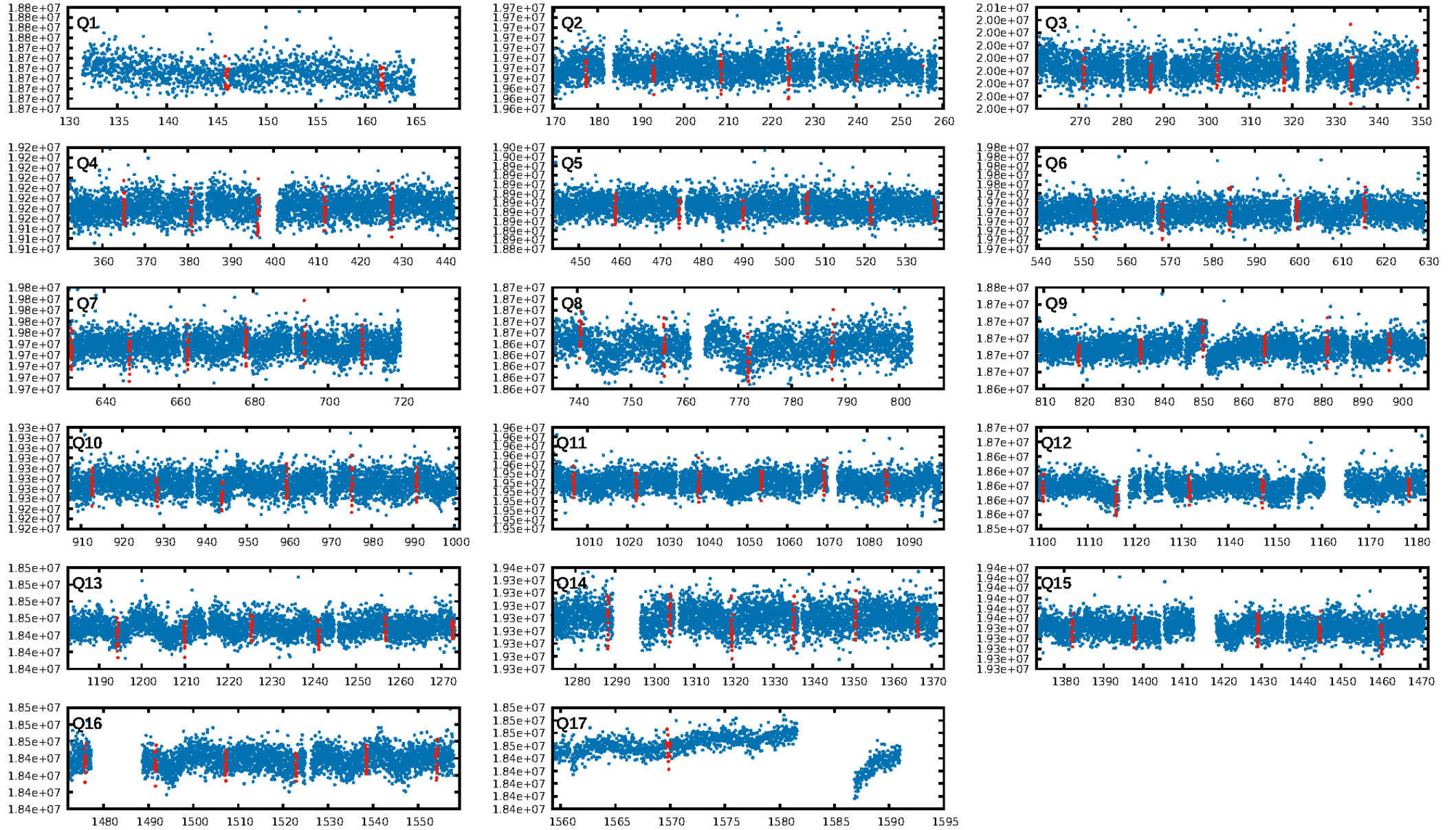
DV Fit Results:

Period = 15.64585 [0.00008] d
Epoch = 146.0502 [0.0041] BKJD
Rp/R* = 0.0273 [0.0013]
a/R* = 10.79 [1.88]
b = 0.94 [0.02]
Seff = 60.24 [24.44]
Teq = 710 [72] K
Rp = 2.73 [0.85] Re
a = 0.1228 [0.0322] AU
Ag = 67.20 [36.86] [1.80 σ]
Teffp = 3145 [322] K [7.38 σ]

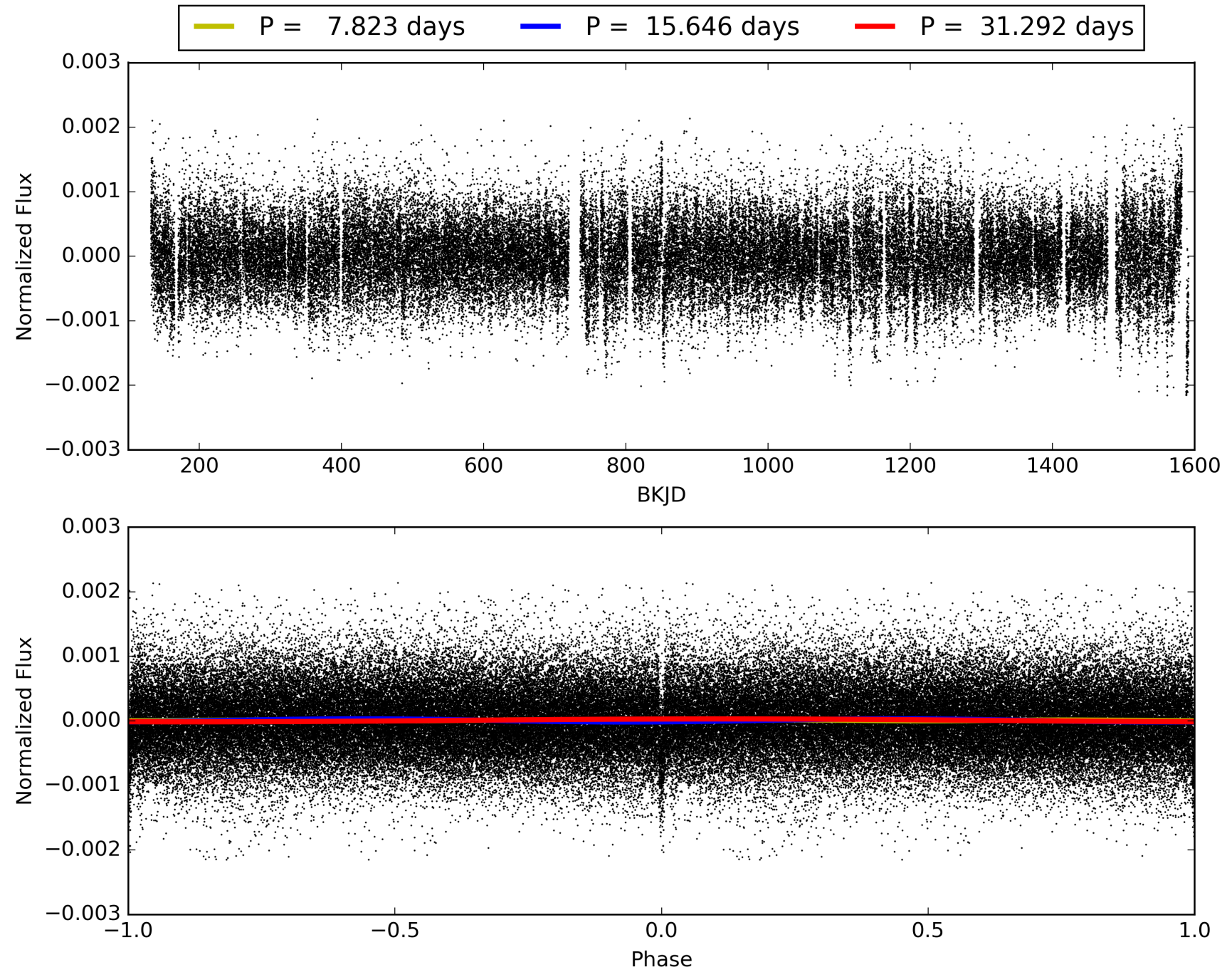
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 96.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.10e-117
RollingBand-fgt: 1.00 [82/82]
GhostDiagnostic-chr: 4.869
Centroid-sig: 89.6%
Centroid-so: 0.655 arcsec [1.17 σ]
OotOffset-rm: 0.236 arcsec [1.06 σ]
KicOffset-rm: 0.205 arcsec [1.32 σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 0.81 [13/16]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 012456601-01, PDC Light Curves

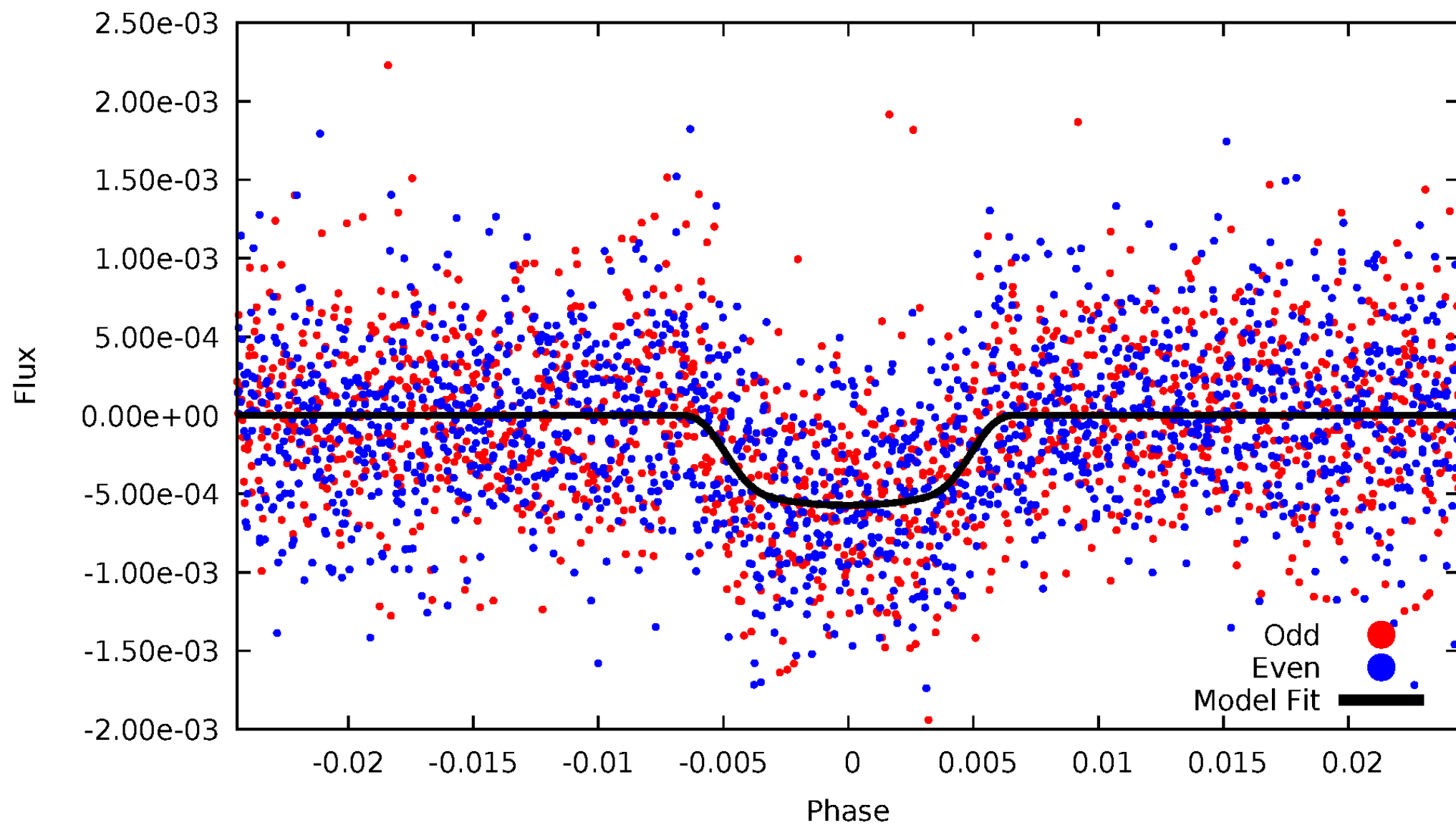


TCE 012456601-01



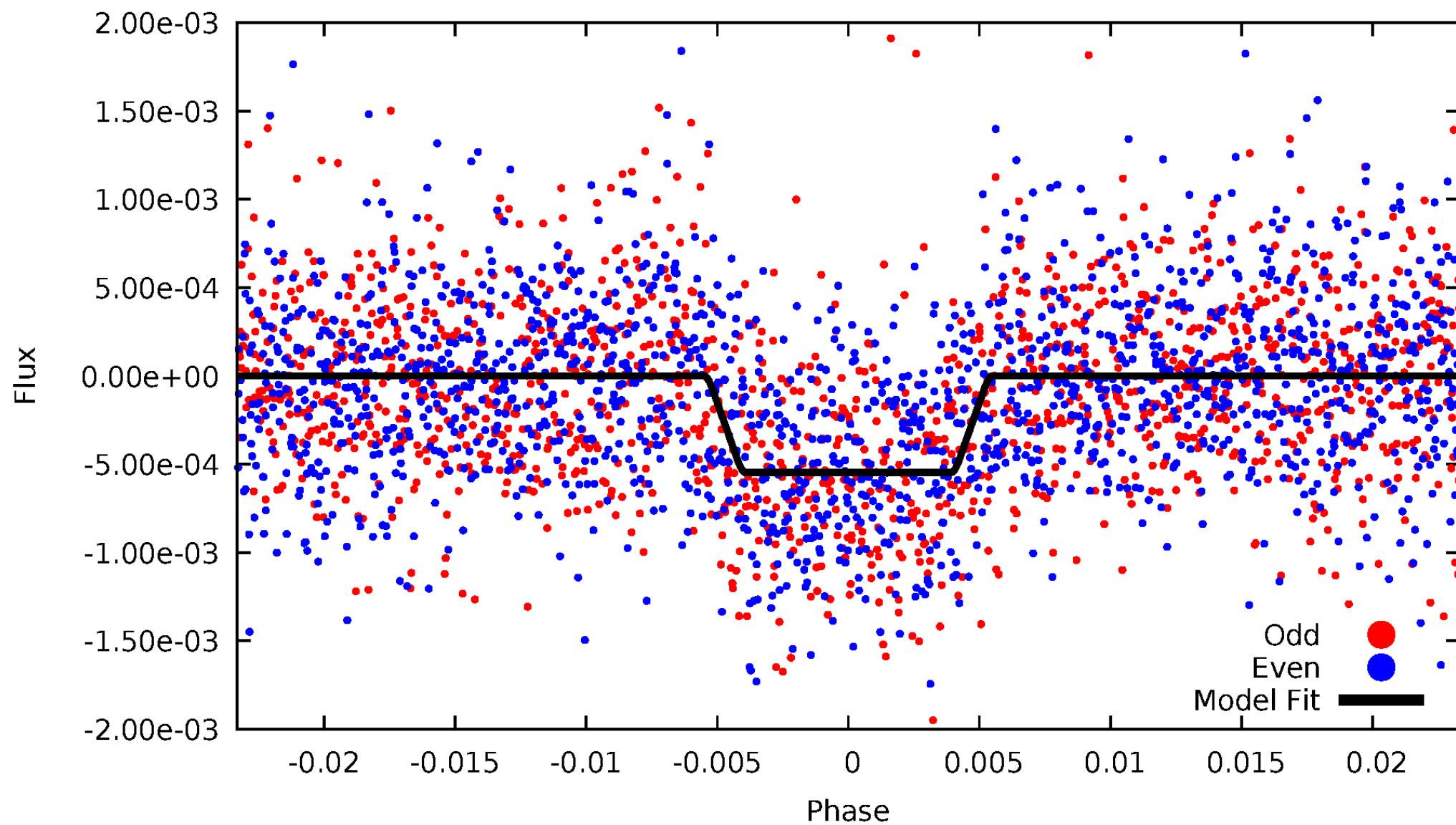
DV Odd/Even

TCE 012456601-01

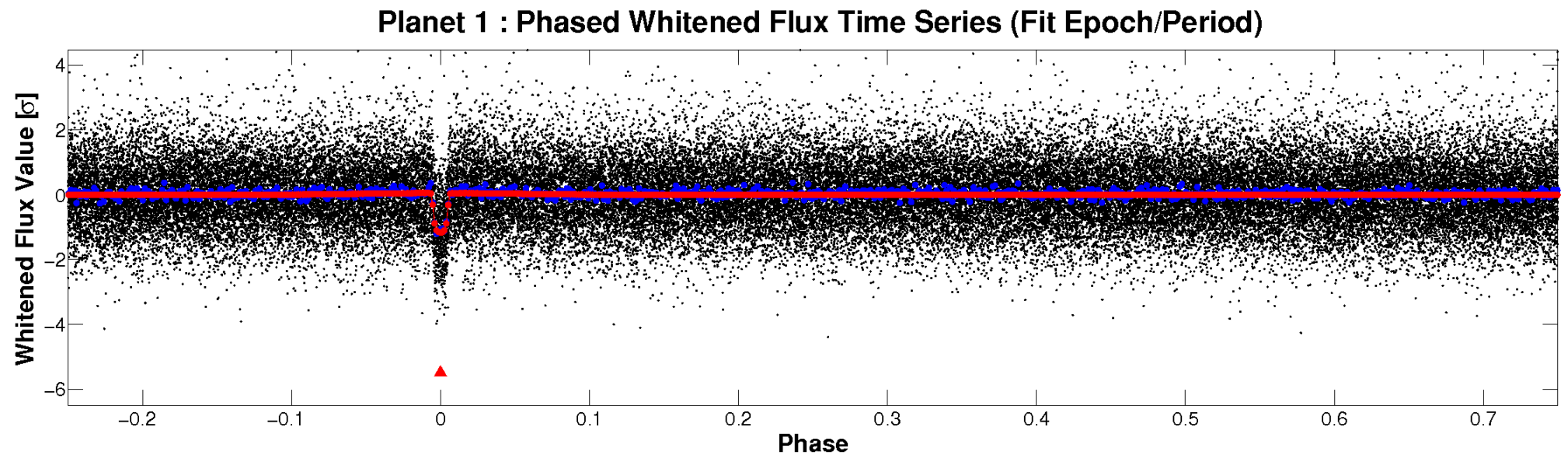
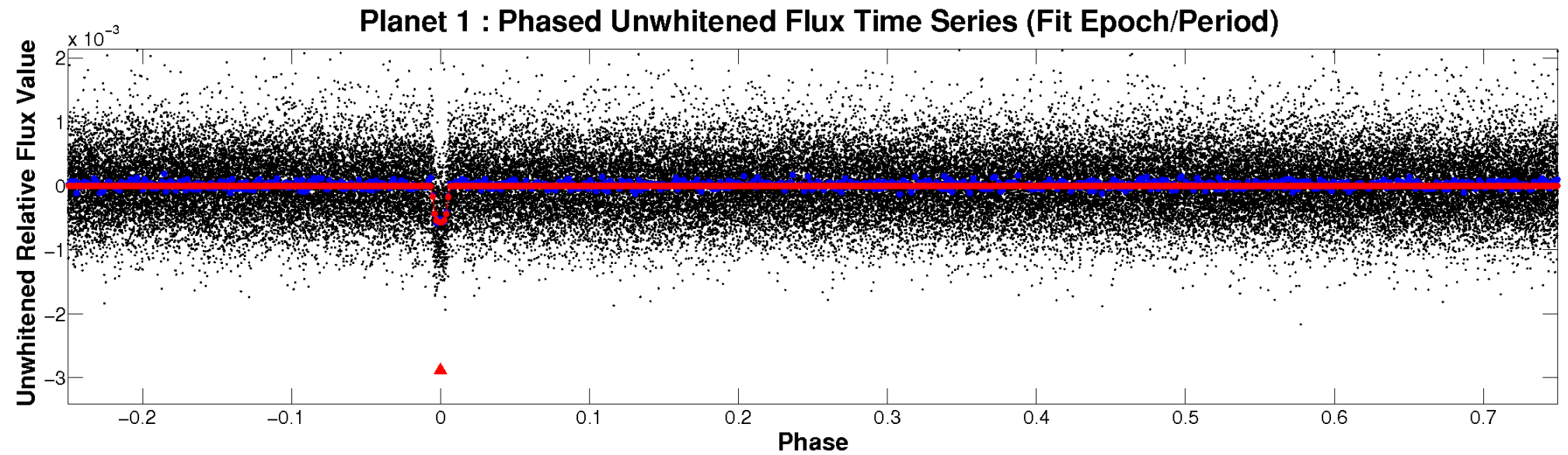


ALT Odd/Even

TCE 012456601-01

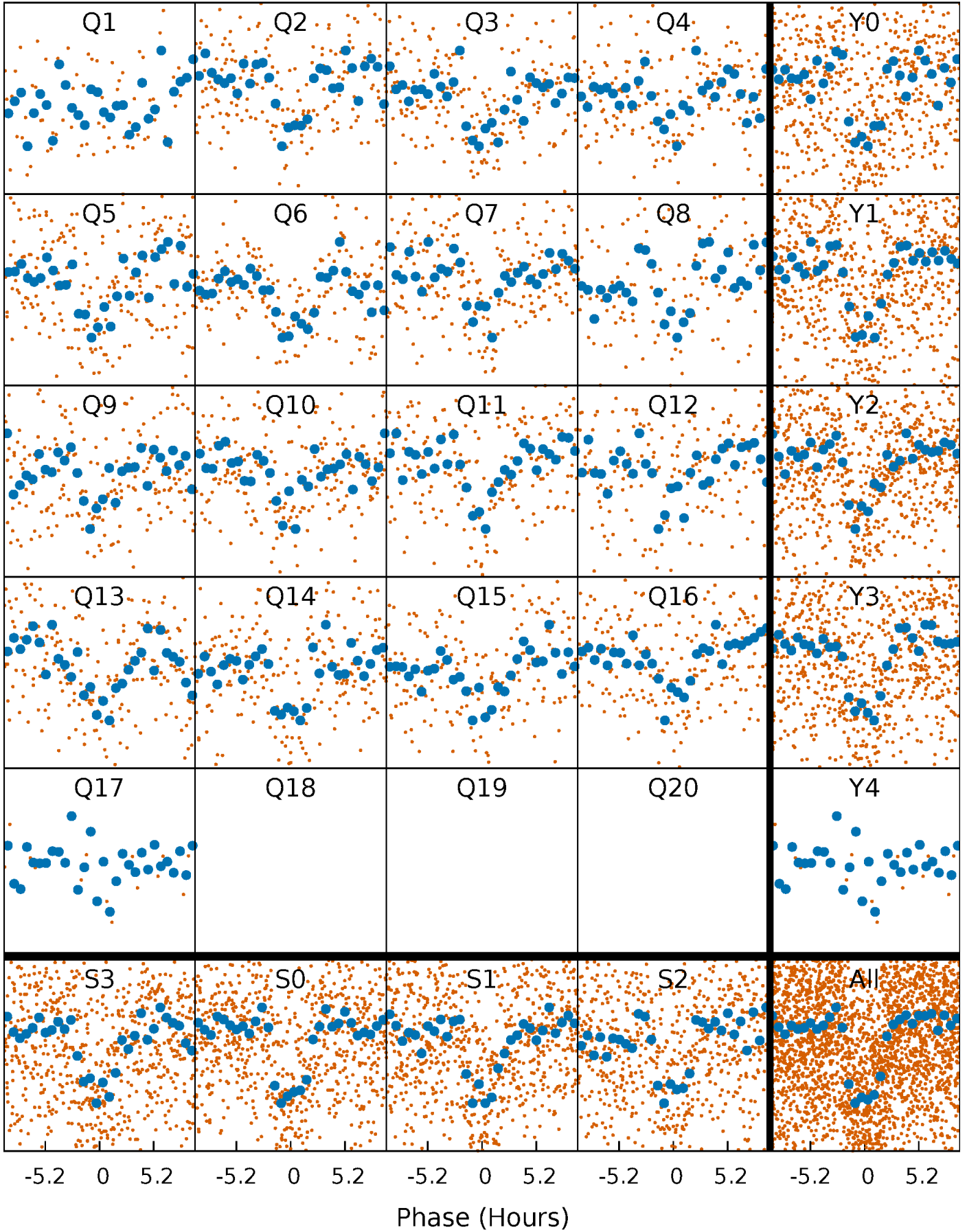


Non-Whitened Vs. Whitened Light Curve



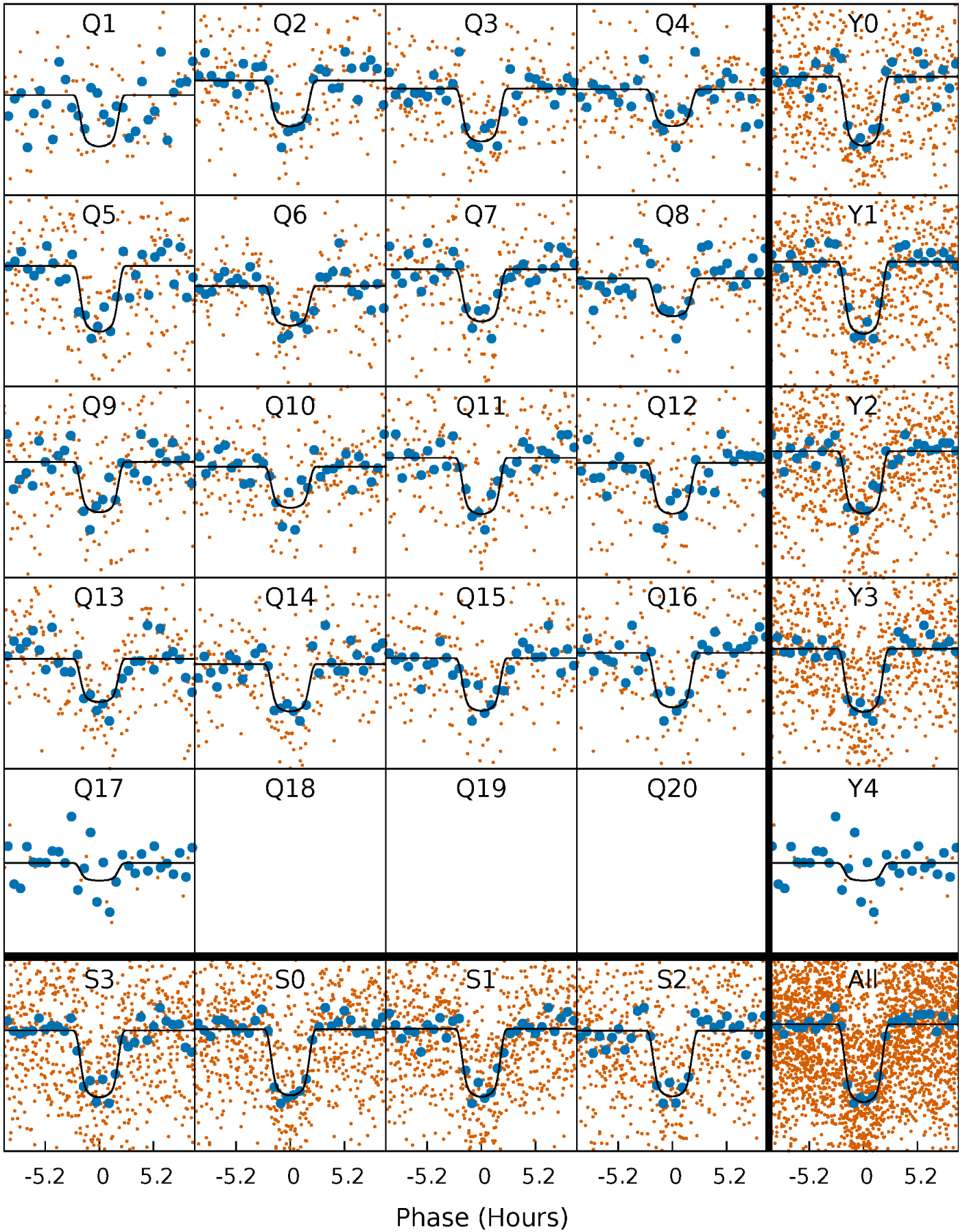
PDC Quarter-Phased Transit Curves

TCE 012456601-01 P= 15.645848 Days $T_0=146.050223$ (BKJD)



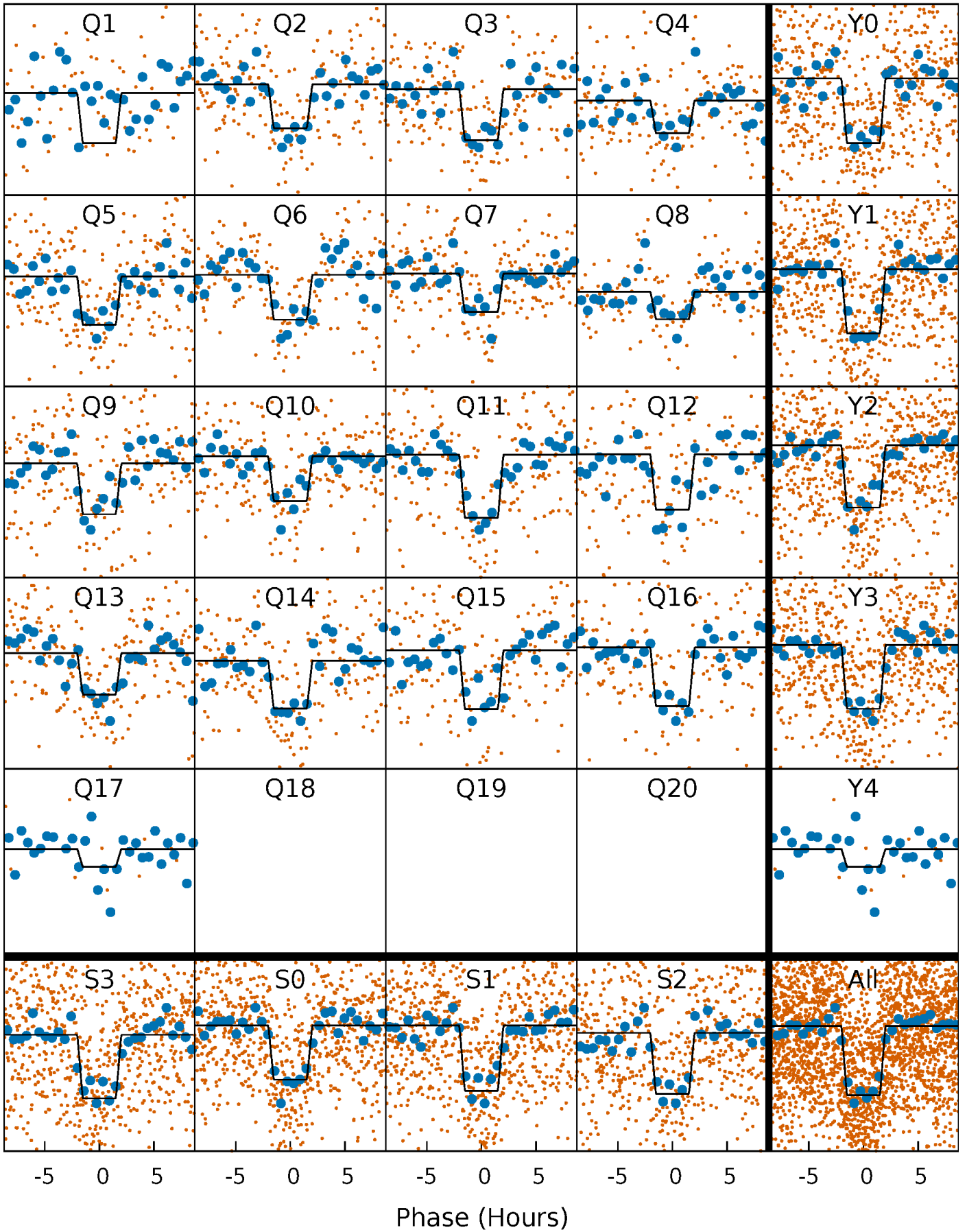
DV Quarter-Phased Transit Curves

TCE 012456601-01 P= 15.645848 Days $T_0=146.050223$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

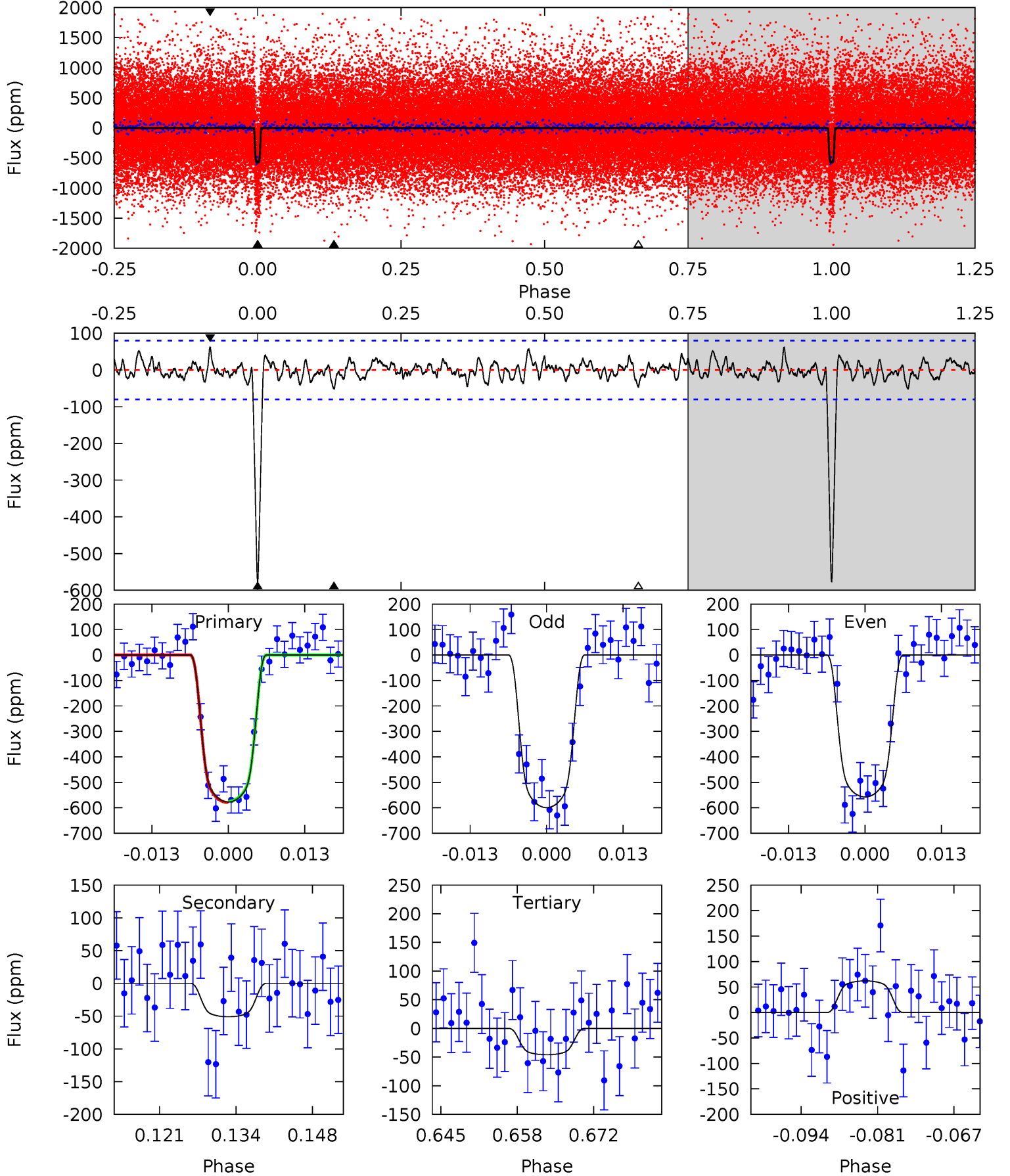
TCE 012456601-01 P= 15.645834 Days $T_0=146.051076$ (BKJD)



DV Model-Shift Uniqueness Test

012456601-01, $P = 15.645848$ Days, $E = 130.404375$ Days

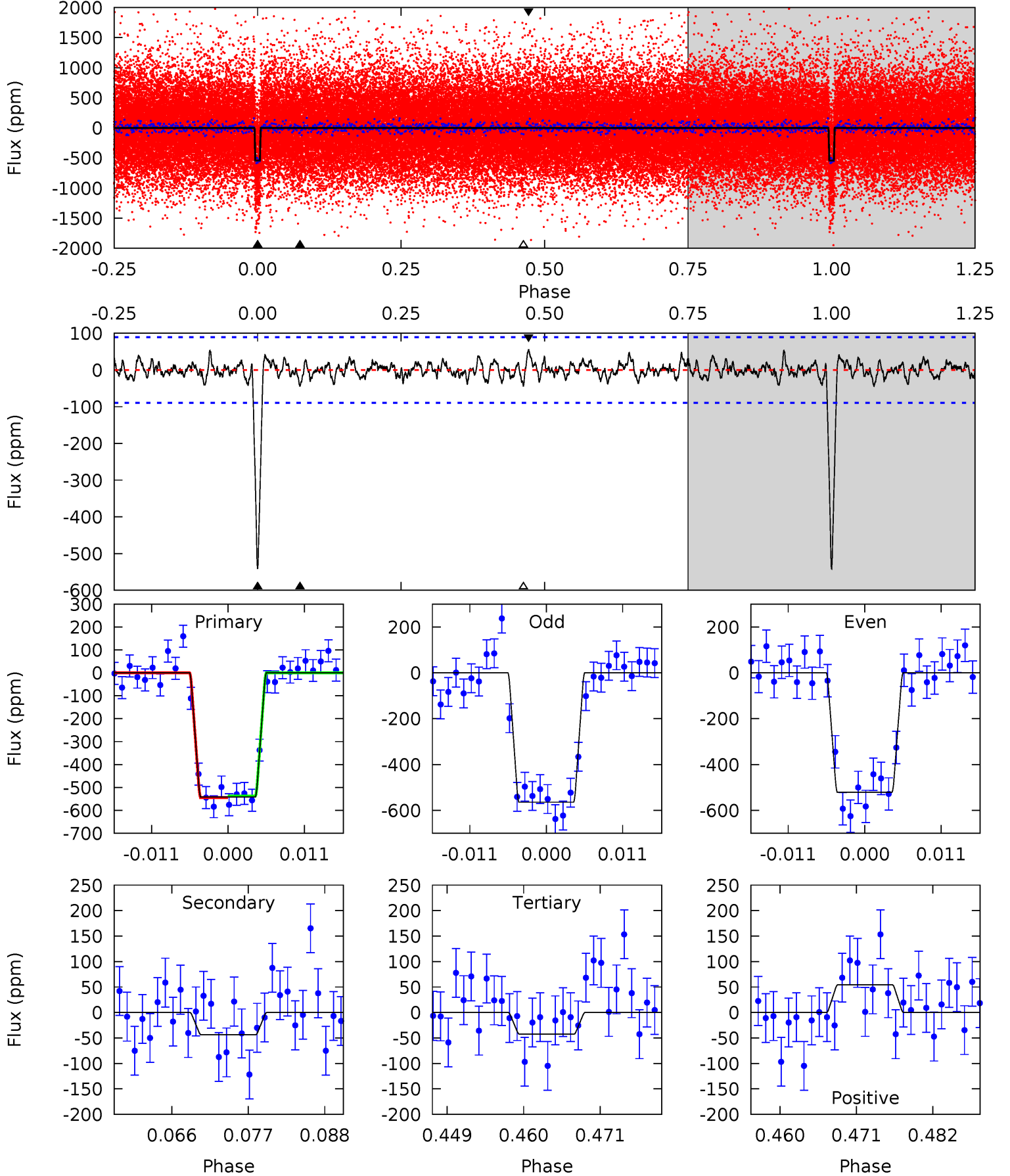
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.7	3.16	2.84	3.84	4.97	2.47	1.12	32.9	31.9	0.32	-0.68	1.29	1.00	0.10	0.15



Alt Model-Shift Uniqueness Test

012456601-01, $P = 15.645834$ Days, $E = 130.405242$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.4	2.45	2.39	3.06	5.01	2.54	0.94	28.0	27.3	0.07	-0.61	1.21	0.96	0.09	0.19



Stellar Parameters For KIC 012456601

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5896^{+164}_{-184}	$4.518^{+0.050}_{-0.213}$	$-0.080^{+0.300}_{-0.300}$	$0.916^{+0.282}_{-0.094}$	$1.008^{+0.115}_{-0.127}$	$1.849^{+0.382}_{-0.975}$
	+3%/-3%	+1%/-5%	+375%/-375%	+31%/-10%	+11%/-13%	+21%/-53%
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 012456601-01 / KOI 2745.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-51 ± 16	$2.80^{+0.43}_{-0.25}$	1010^{+75}_{-46}	3495^{+181}_{-201}	50^{+23}_{-17}
Alt.	-44 ± 18	$2.42^{+0.39}_{-0.23}$	1011^{+77}_{-48}	3576^{+244}_{-289}	58^{+30}_{-27}

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 $A_{obs} \gg 1.0$

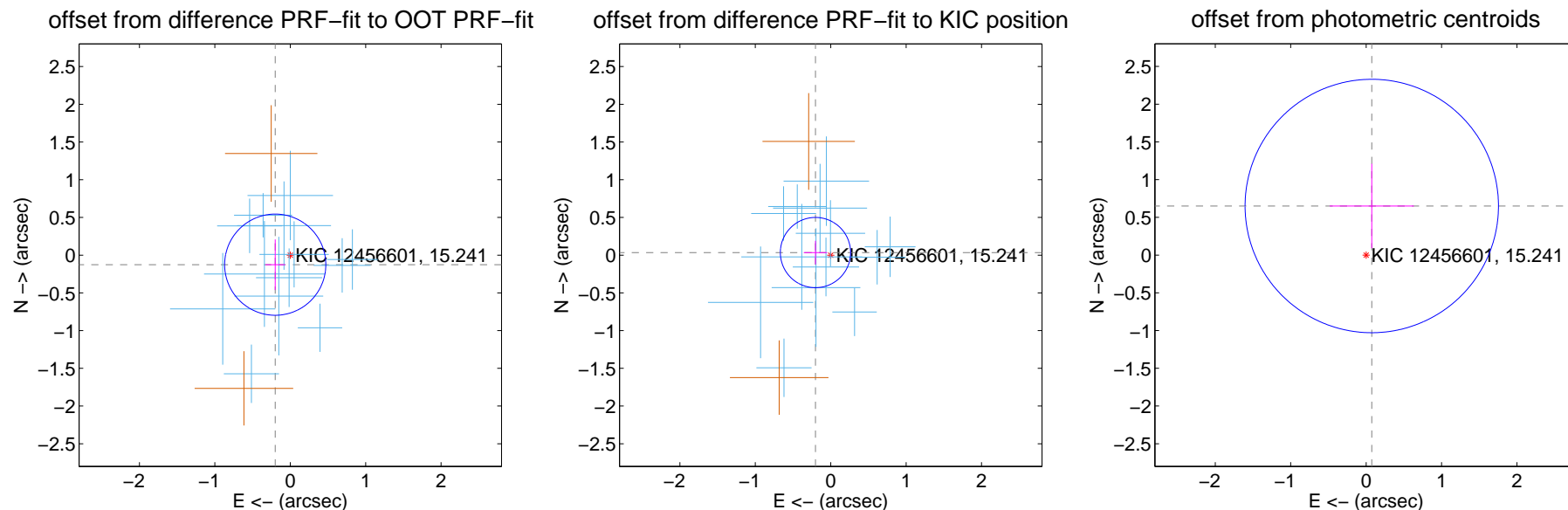
DV Centroid Data

Supplemental centroid analysis for 012456601-01. Kepler magnitude: 15.24. Transit SNR 25.81

There are 13 quarters with good PRF difference image offsets

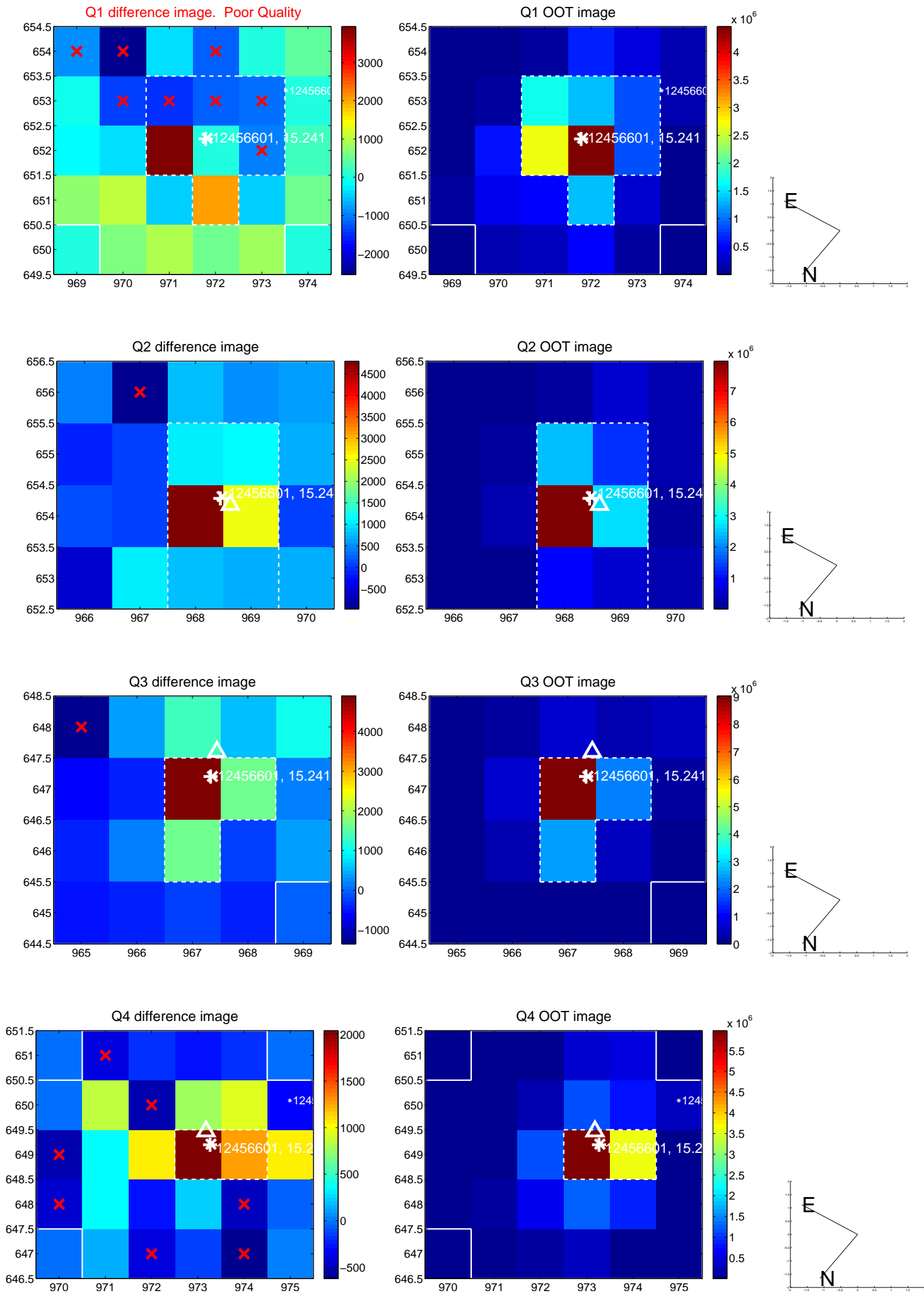
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.236 ± 0.224	1.06	0.199 ± 0.132	-0.126 ± 0.335
PRF-fit source offset from KIC position	0.205 ± 0.155	1.32	0.202 ± 0.155	0.034 ± 0.156
photometric centroid source offset	0.65 ± 0.56	1.17	-0.07 ± 0.56	0.65 ± 0.56

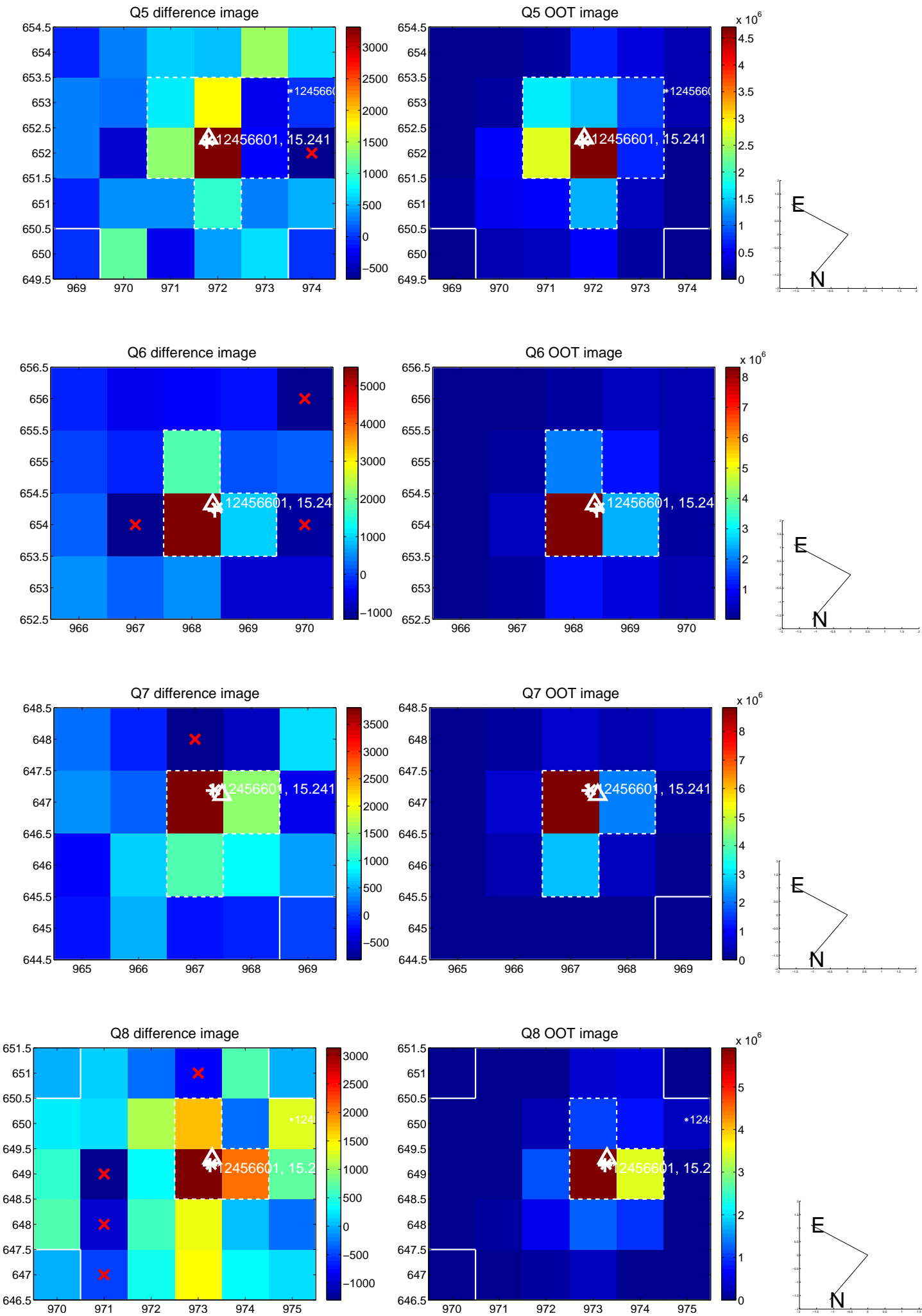


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

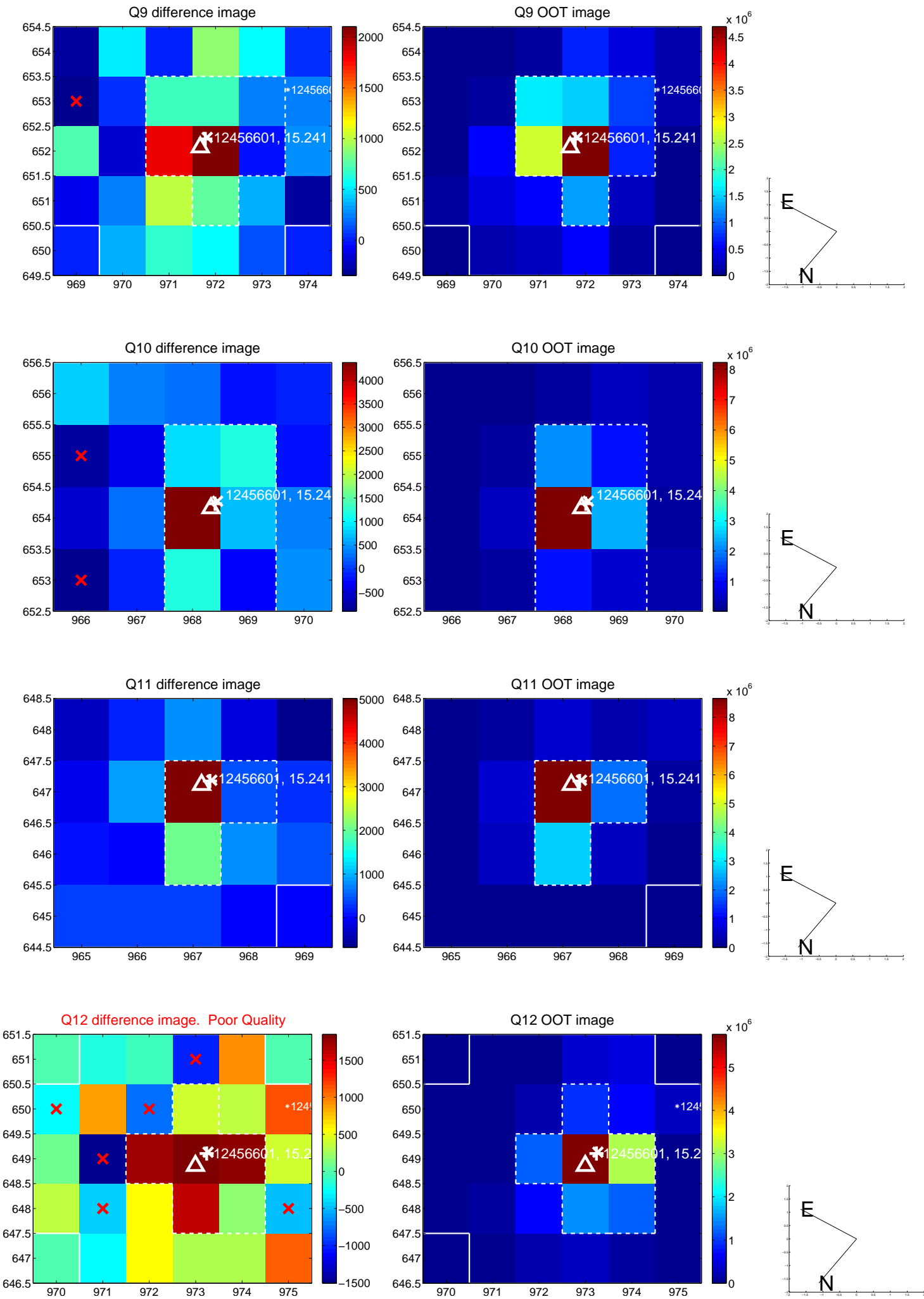
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



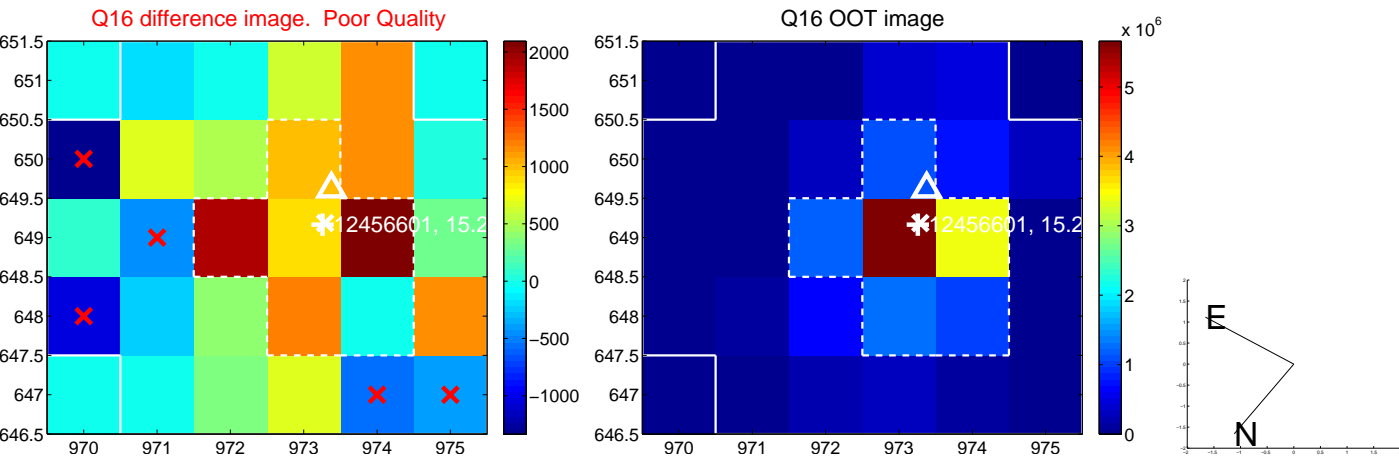
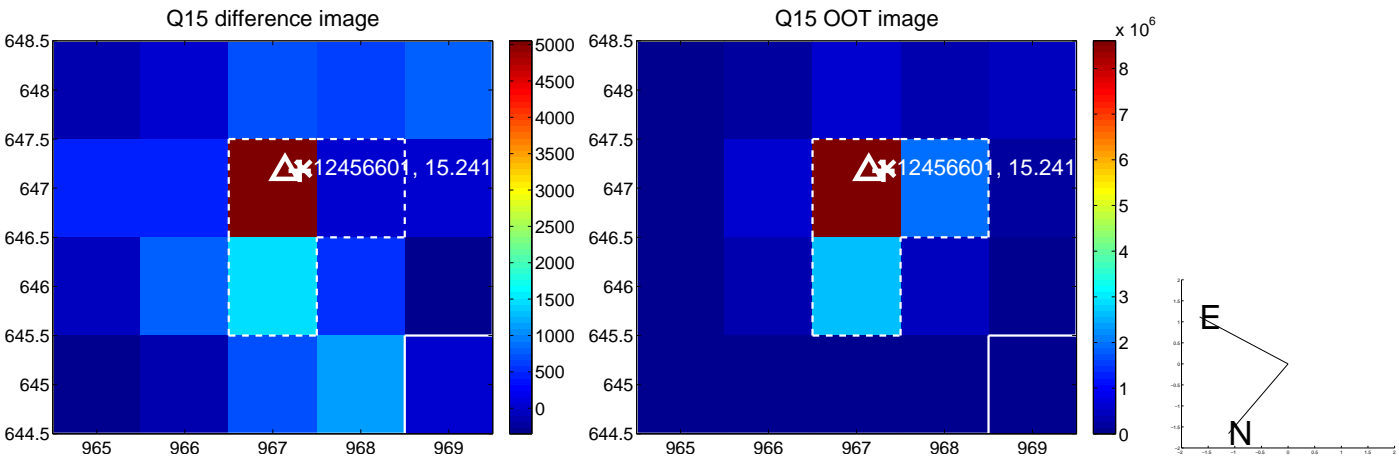
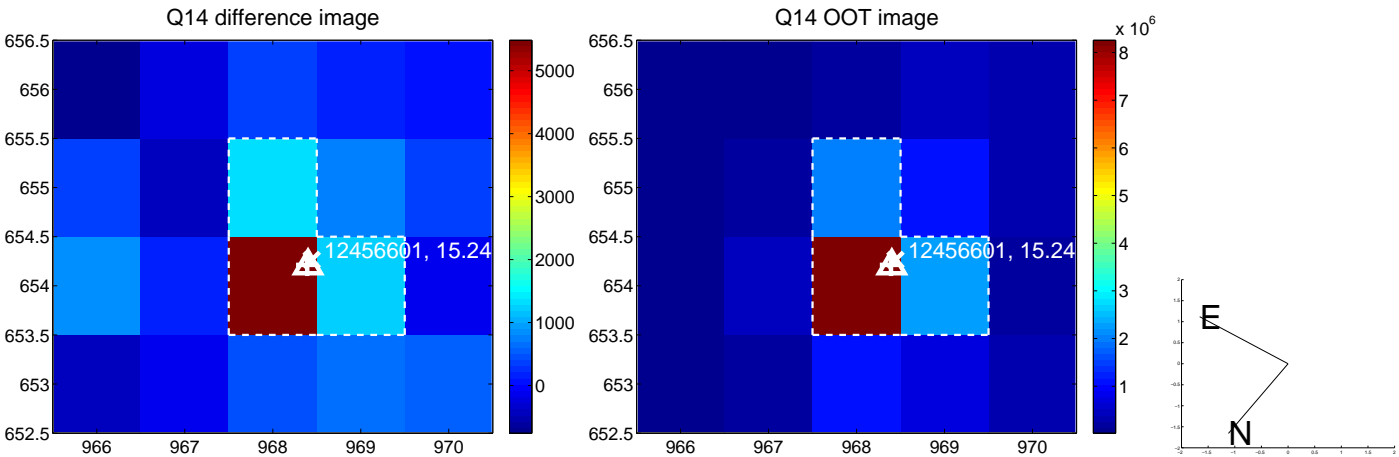
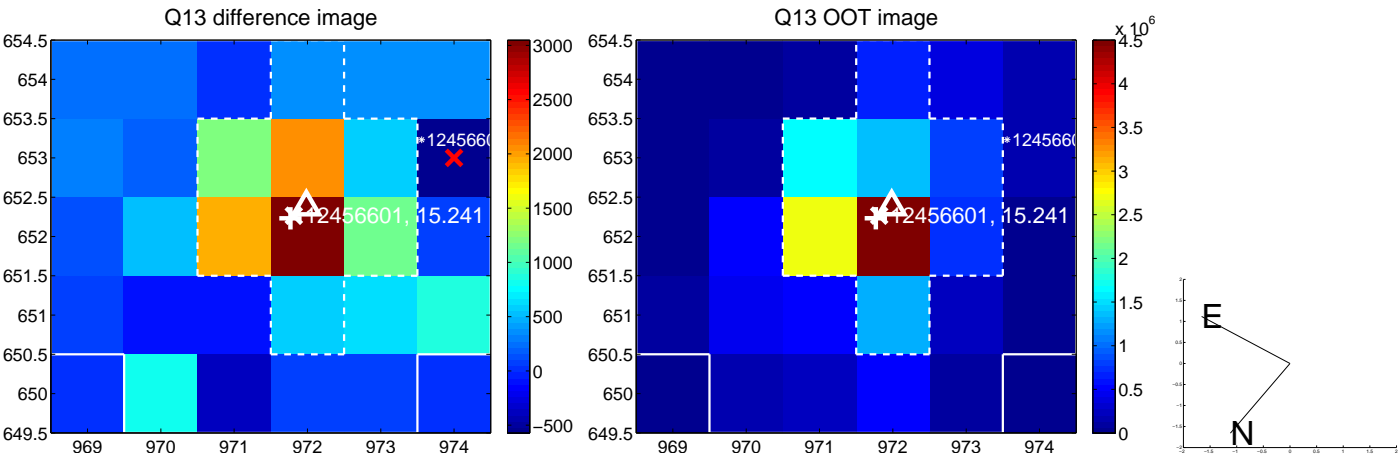
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



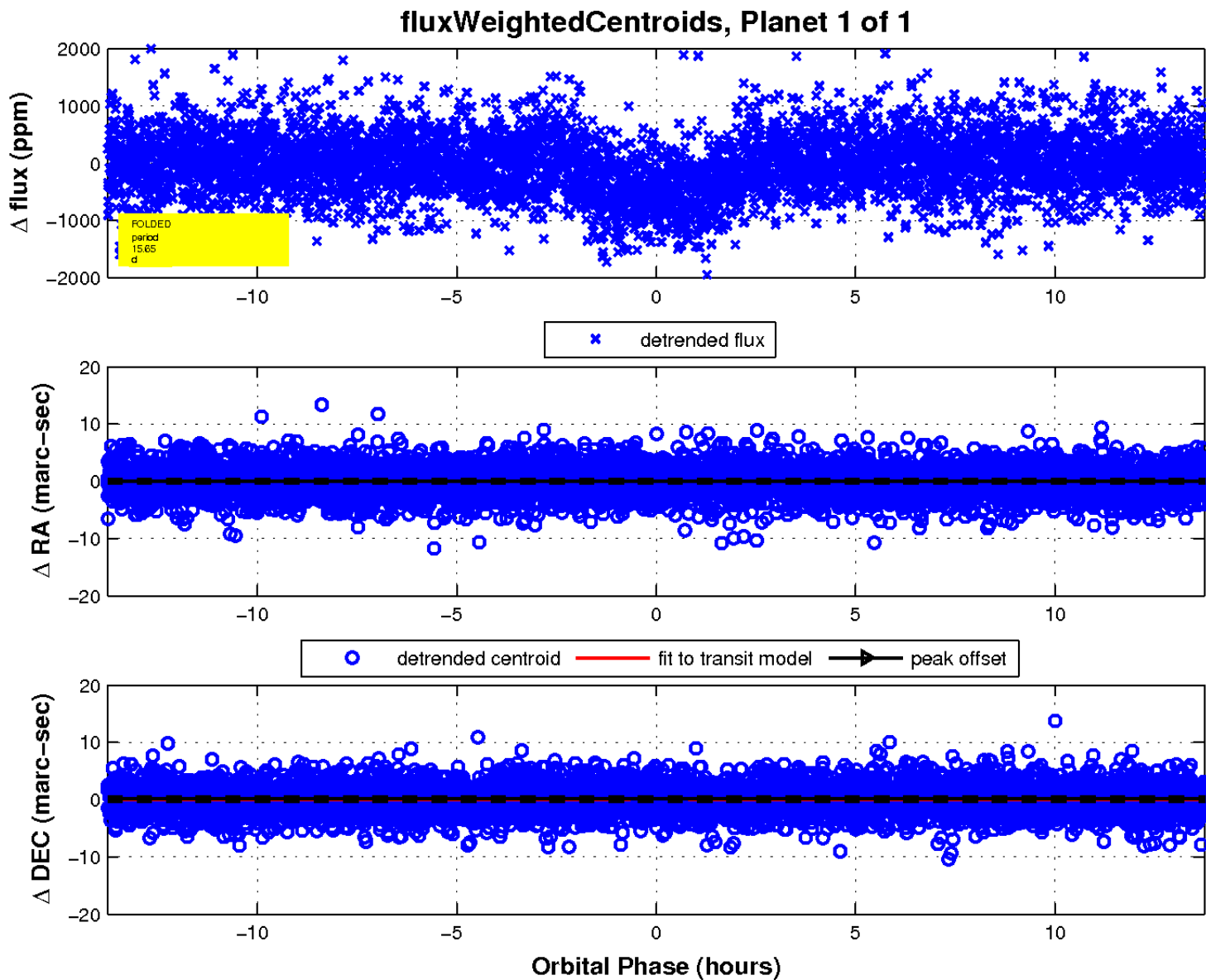
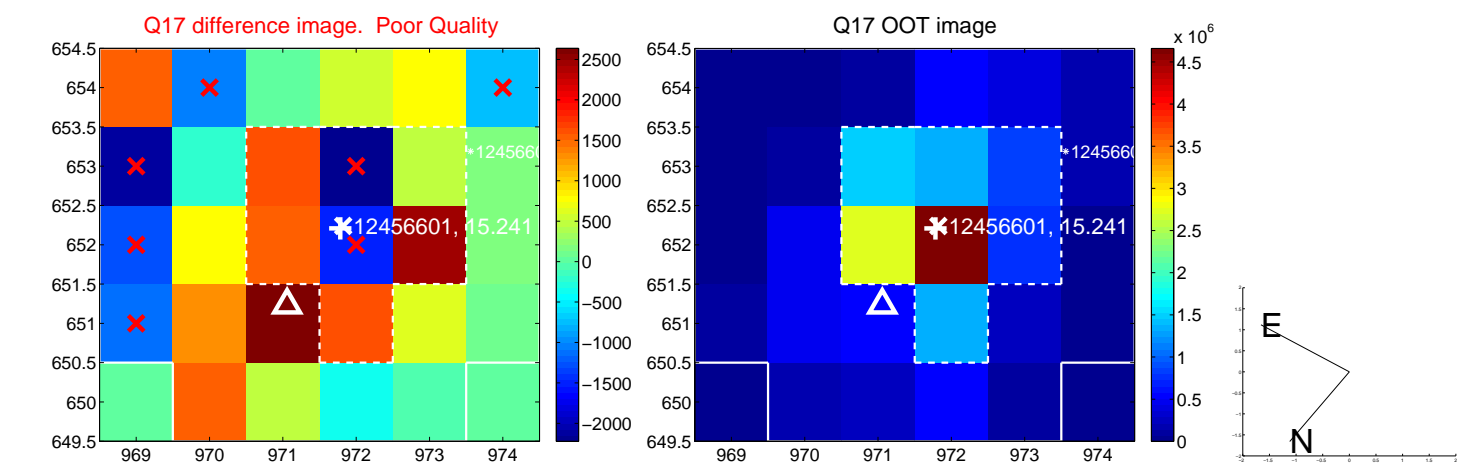
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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

