

KIC 005857540

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})
005857540-01	OBS	2448.01	13.628005	135.451713	919.7	3.339	21.1	22.1	0.85	5052	3.17	39.52

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
005857540-01	OBS	PC	1.00	0	0	0	0	CENT_KIC_POS

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

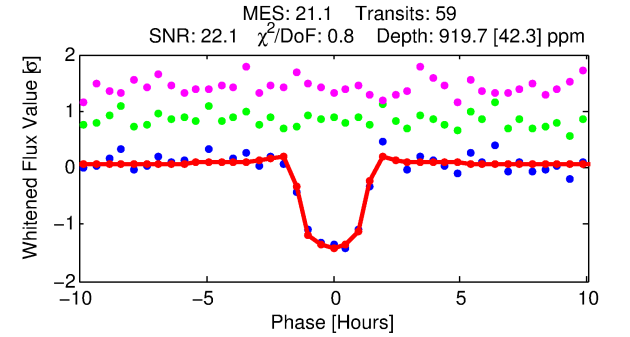
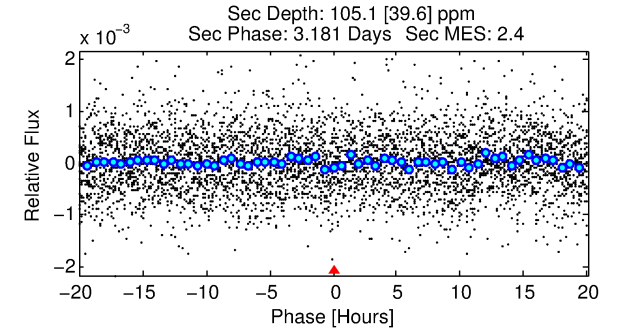
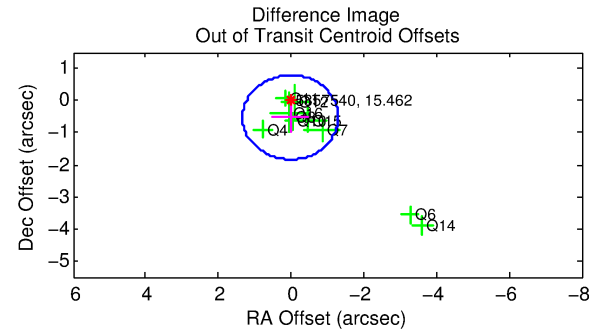
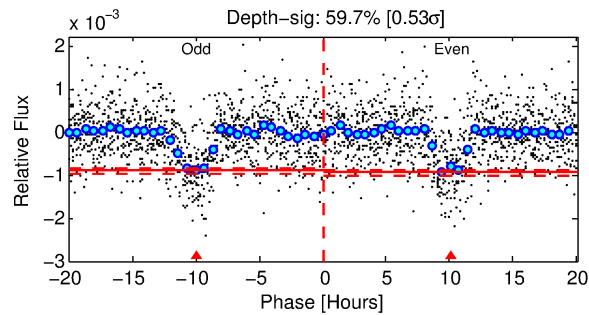
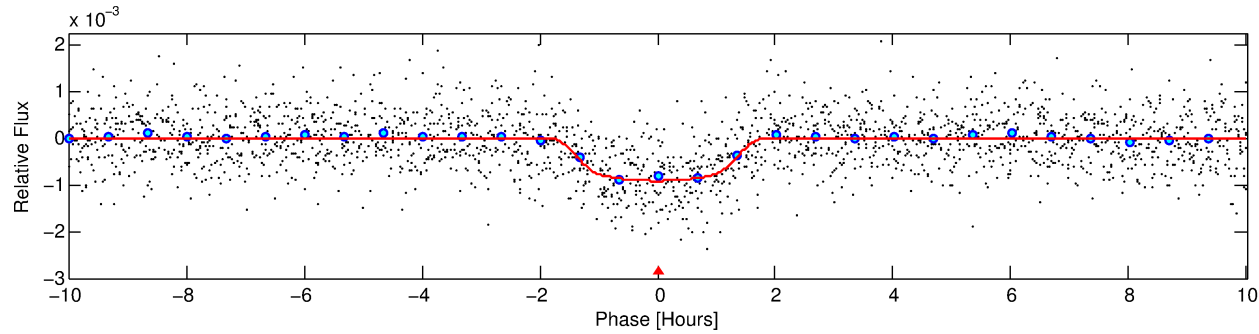
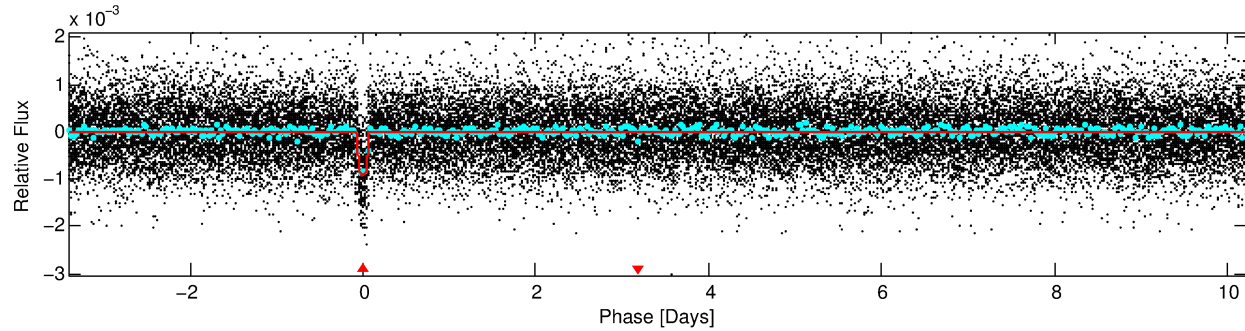
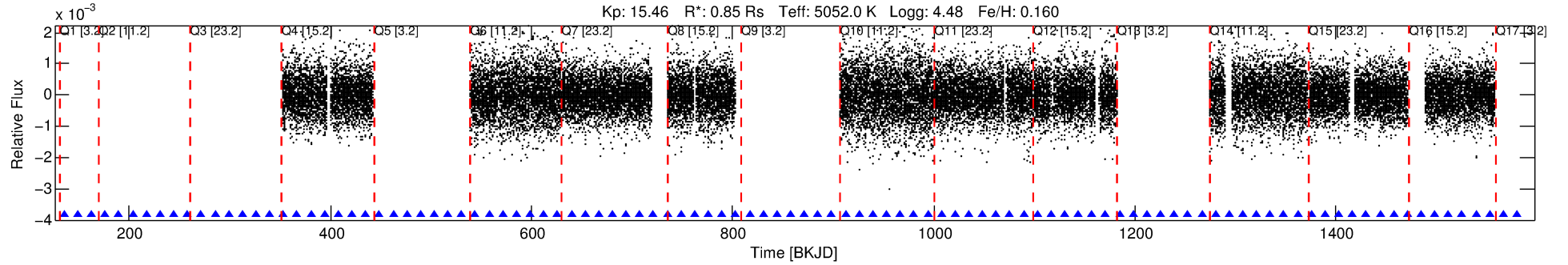
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 005857540-01

No Significant Match Found

DV One-Page Summary

KIC: 5857540 Candidate: 1 of 1 Period: 13.628 d
KOI: K02448.01 Corr: 0.955



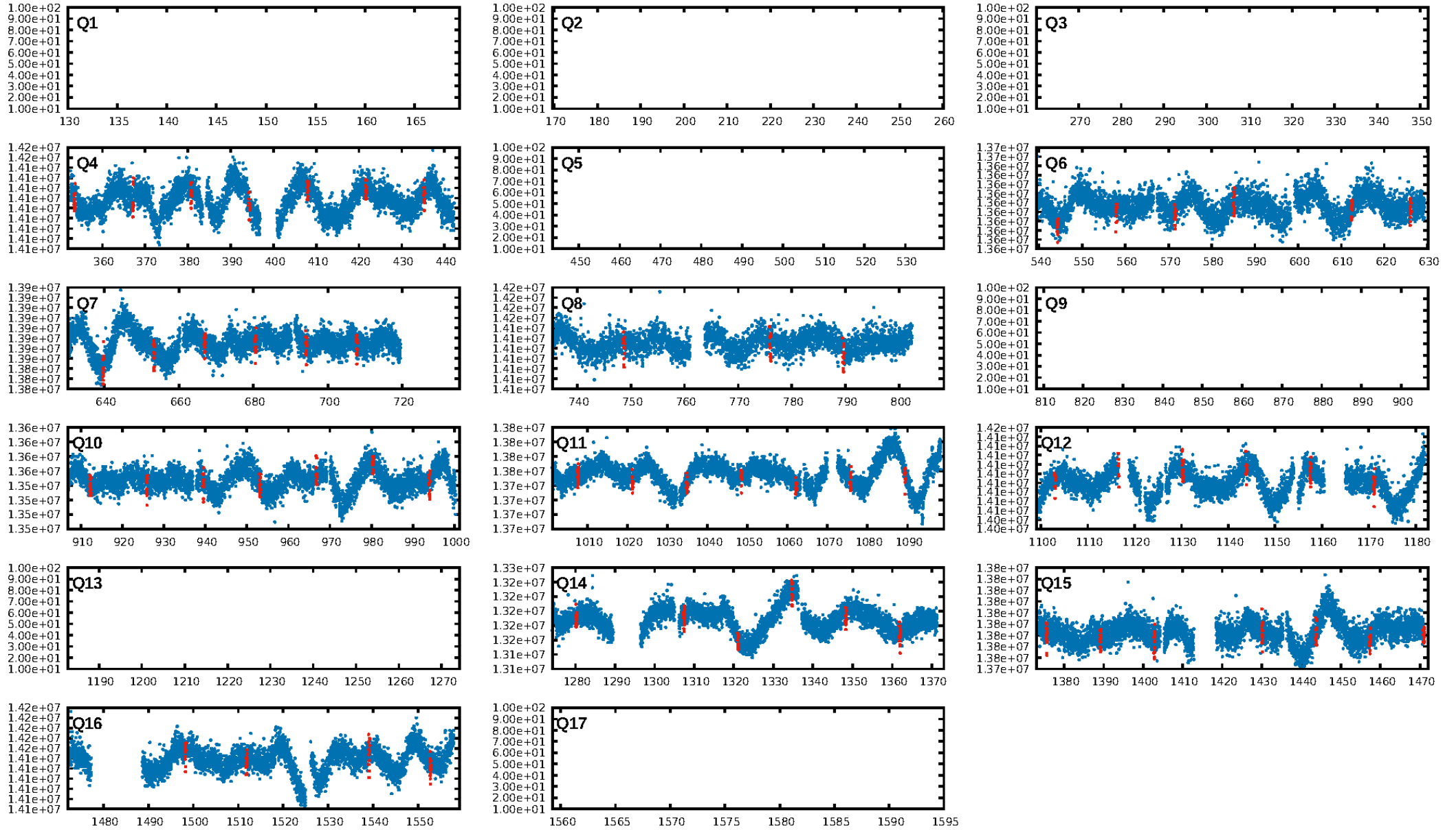
DV Fit Results:

Period = 13.62801 [0.00005] d
Epoch = 135.4517 [0.0037] BKJD
Rp/R* = 0.0340 [0.0032]
a/R* = 15.82 [5.36]
b = 0.90 [0.07]
Seff = 39.52 [9.38]
Teq = 639 [38] K
Rp = 3.17 [0.50] Re
a = 0.1039 [0.0122] AU
Ag = 62.21 [28.57] [2.14σ]
Teffp = 2776 [311] K [6.82σ]

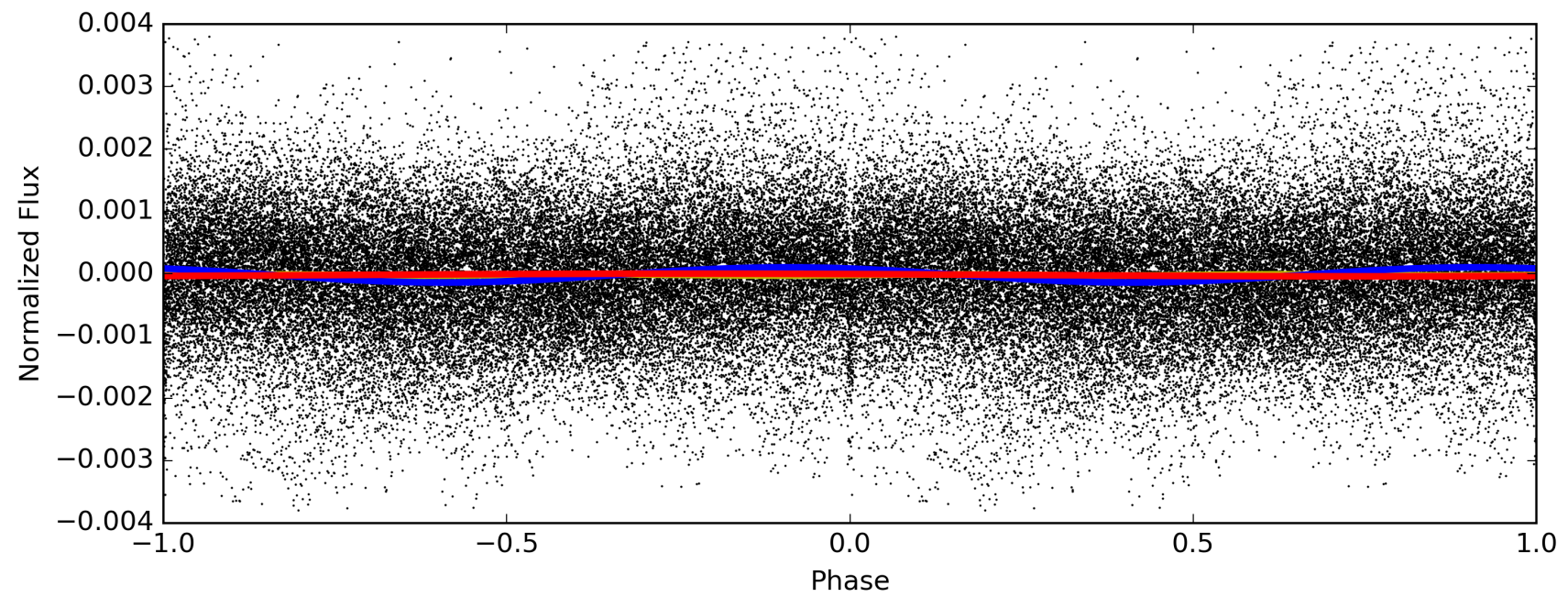
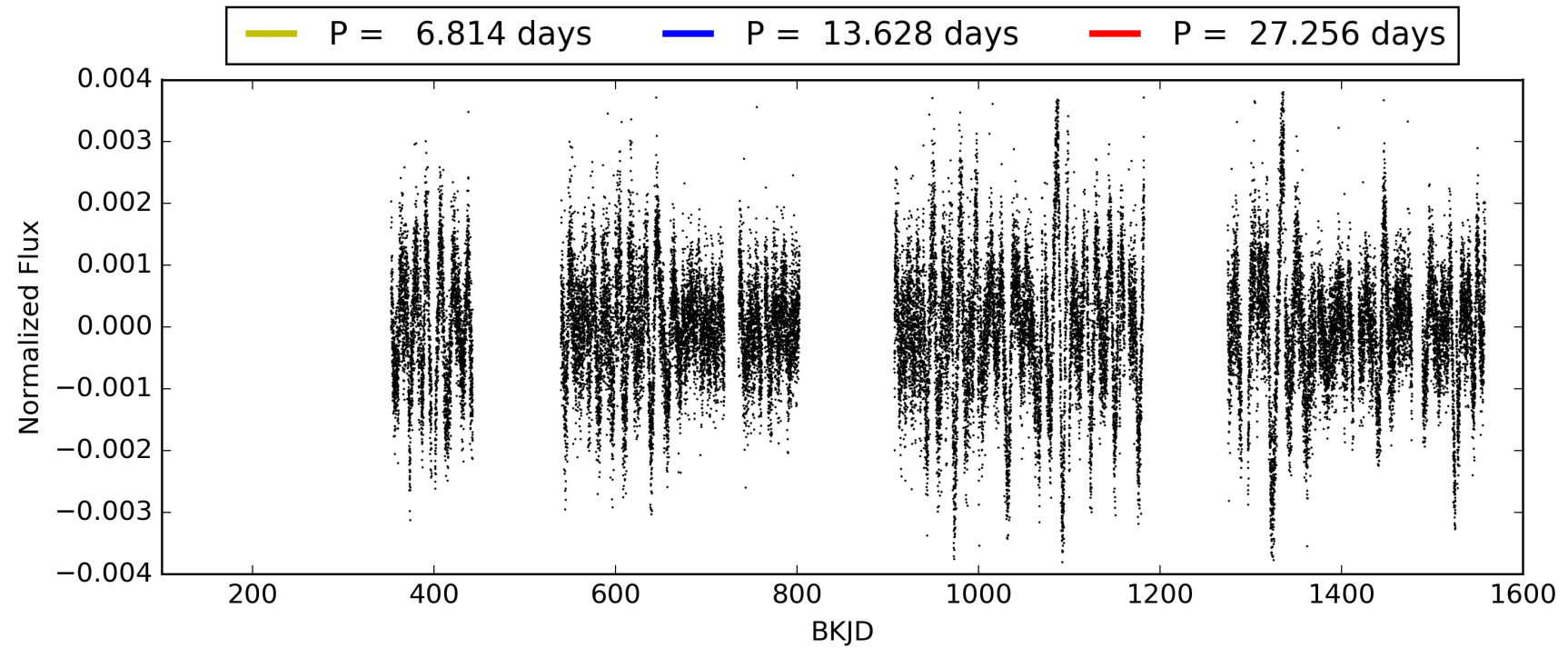
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.4%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 7.76e-96
RollingBand-fgt: 1.00 [59/59]
GhostDiagnostic-chr: 2.162
Centroid-sig: 19.3%
Centroid-so: 0.468 arcsec [1.14σ]
OotOffset-rm: 0.525 arcsec [1.20σ]
OotOffset-st: 3/3/4/0 [10]
KicOffset-rm: 0.184 arcsec [0.42σ]
KicOffset-st: 3/3/4/0 [10]
DiffImageQuality-fgm: 0.90 [9/10]
DiffImageOverlap-fno: 1.00 [10/10]

TCE 005857540-01, PDC Light Curves

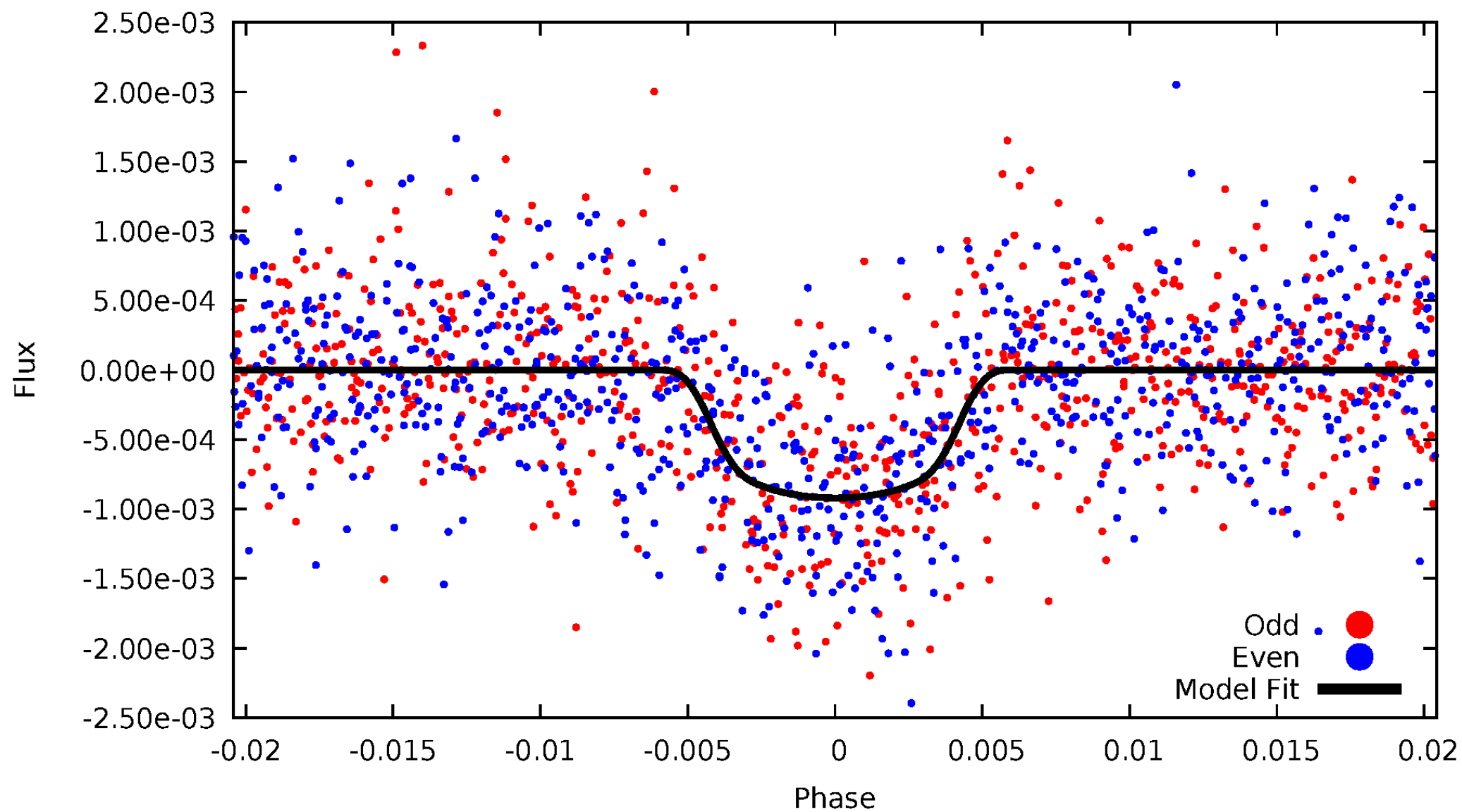


TCE 005857540-01



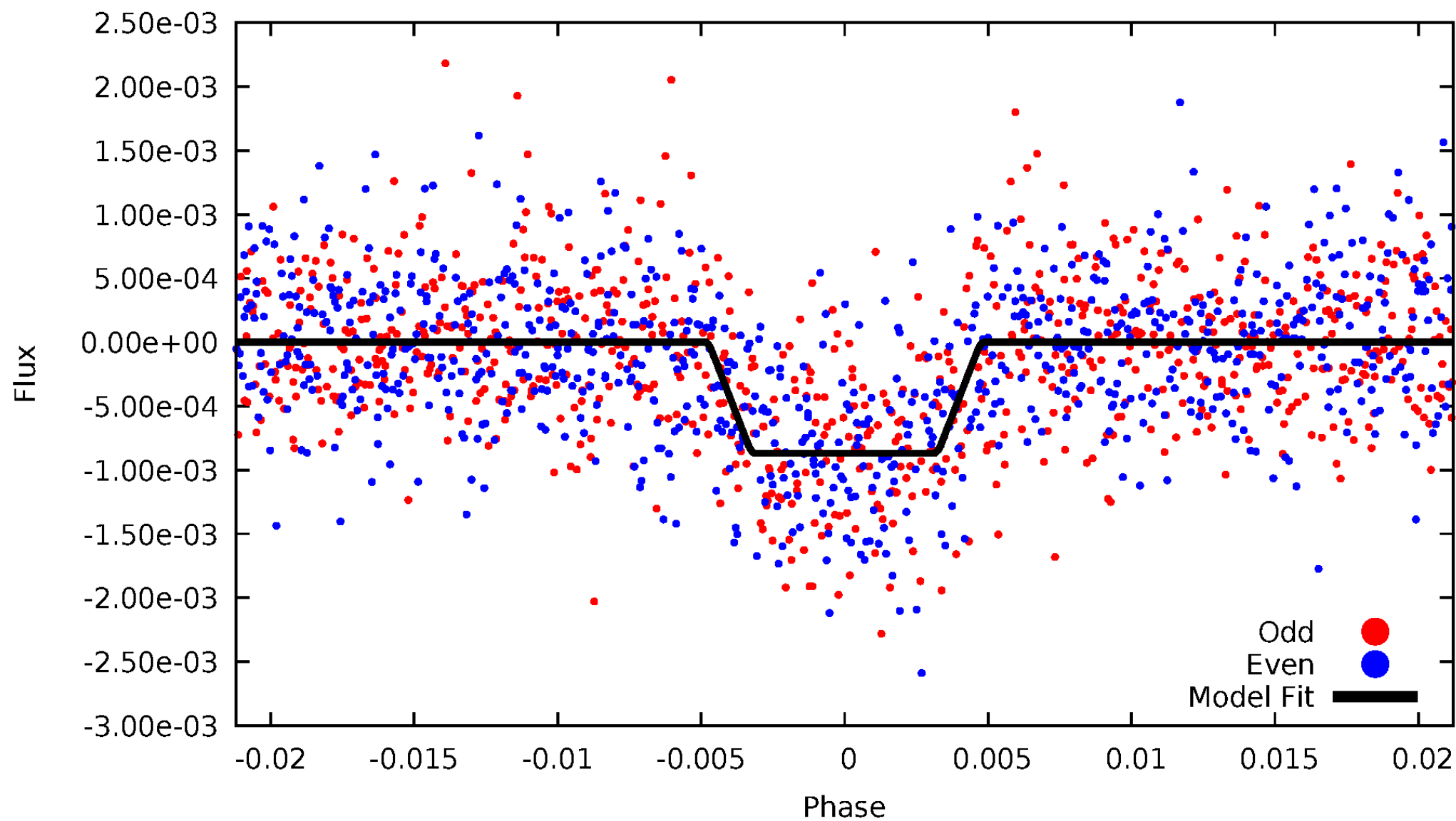
DV Odd/Even

TCE 005857540-01



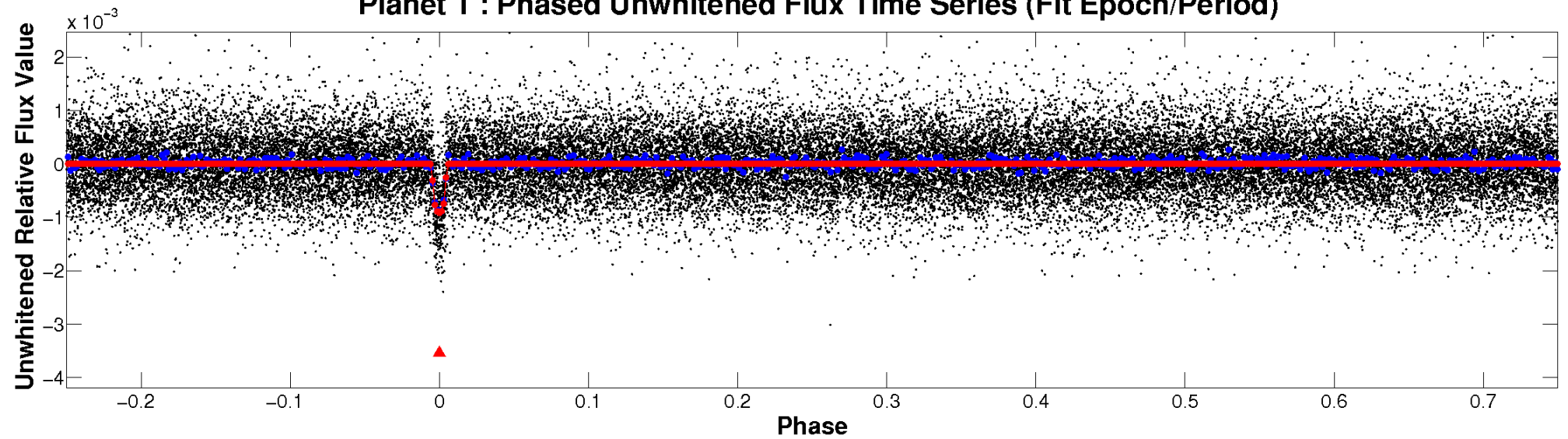
ALT Odd/Even

TCE 005857540-01

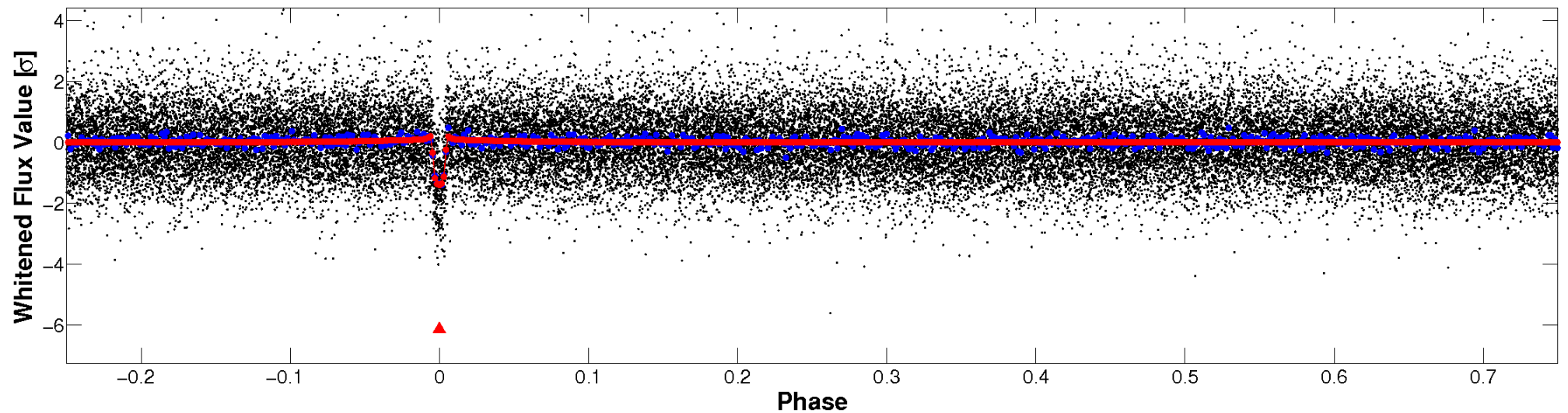


Non-Whitened Vs. Whitened Light Curve

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

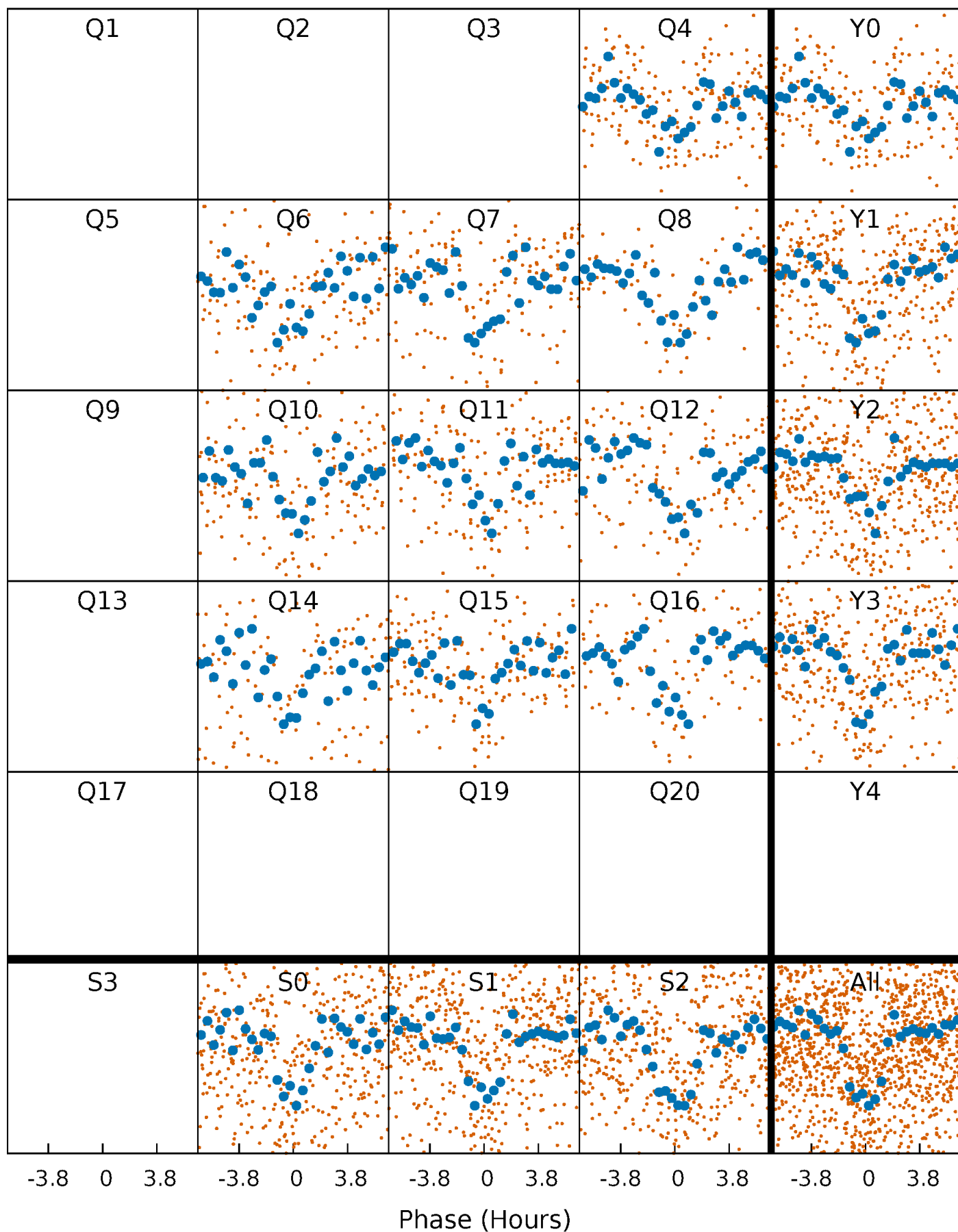


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



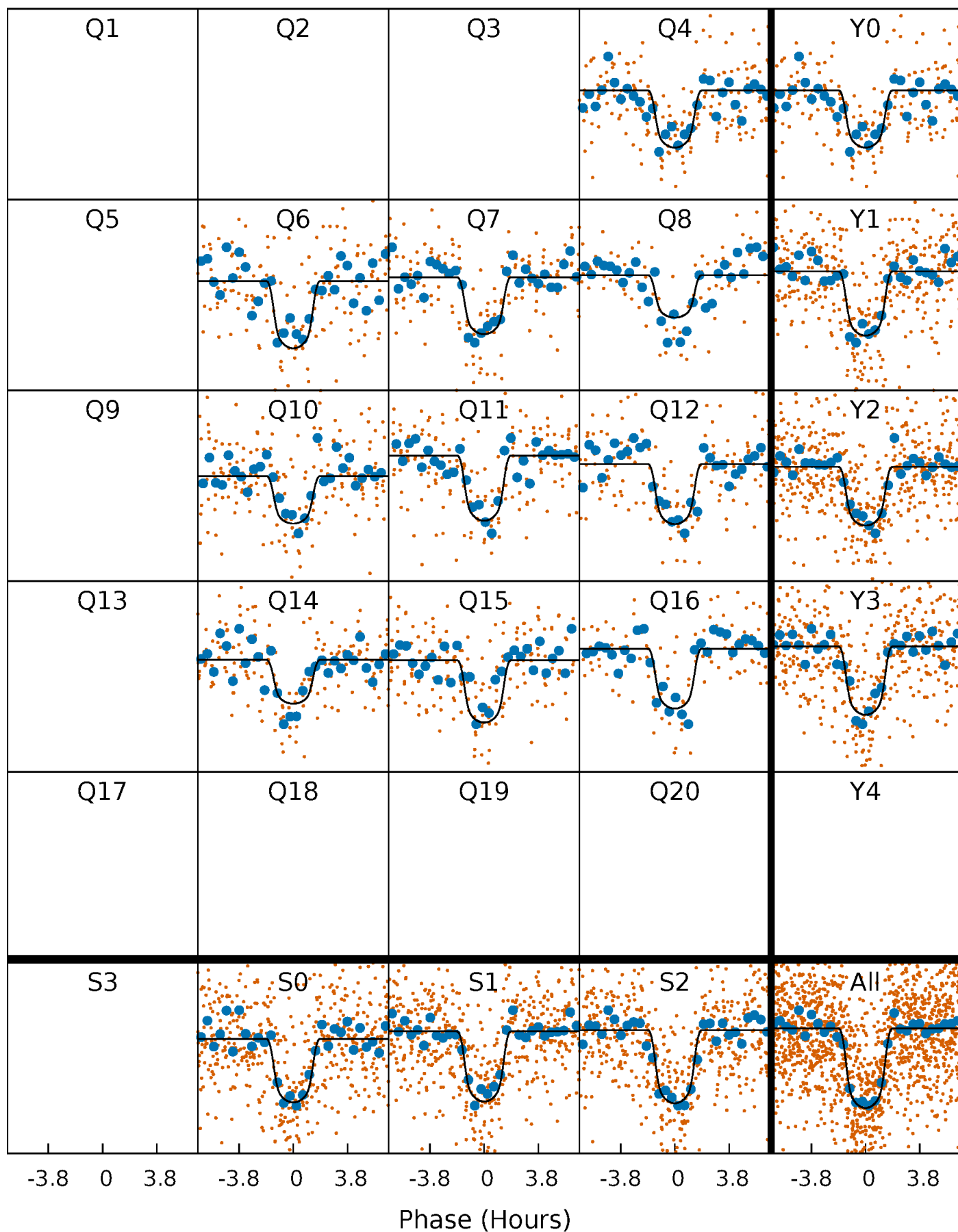
PDC Quarter-Phased Transit Curves

TCE 005857540-01 P= 13.628005 Days $T_0=135.451713$ (BKJD)



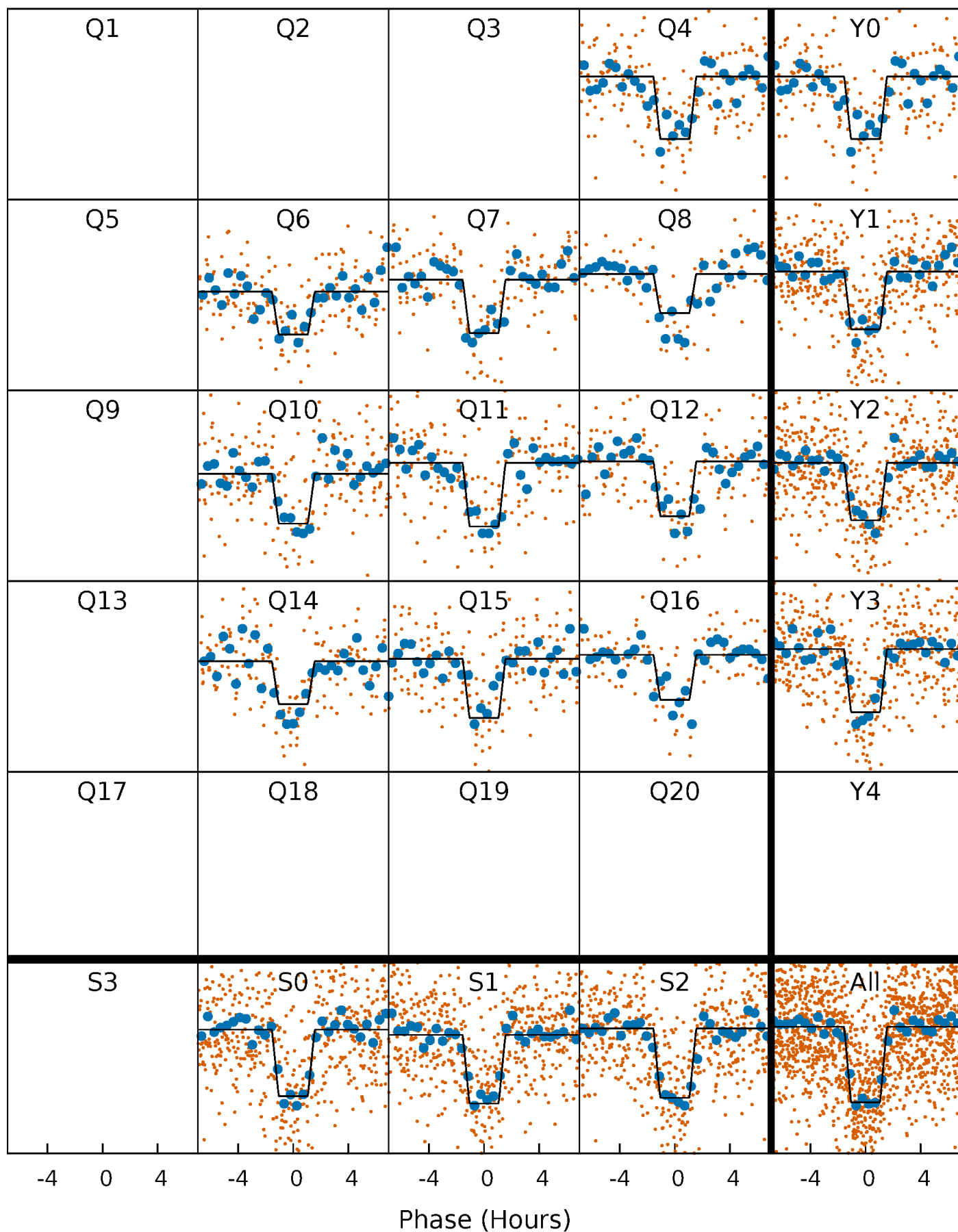
DV Quarter-Phased Transit Curves

TCE 005857540-01 P= 13.628005 Days $T_0=135.451713$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

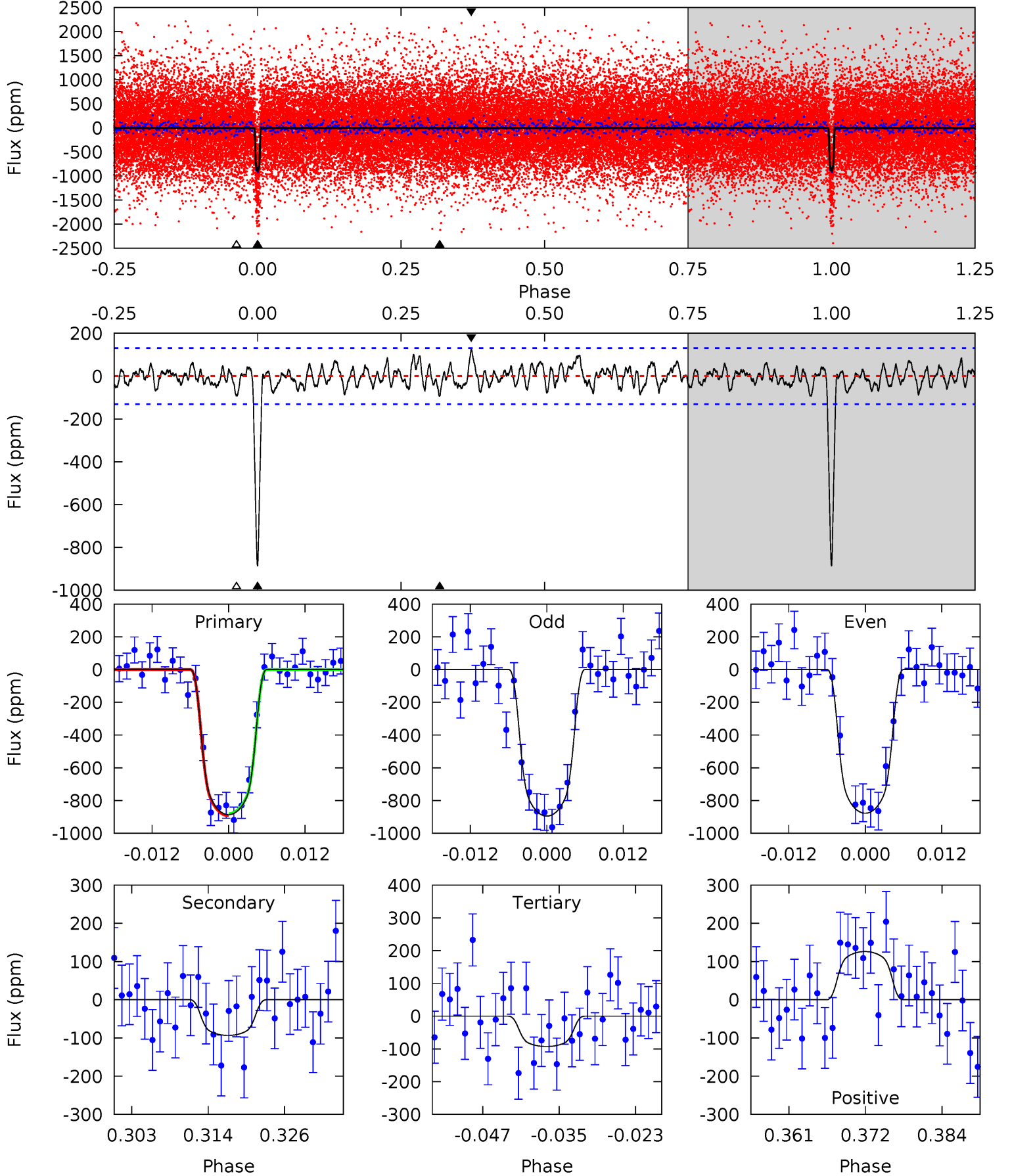
TCE 005857540-01 P= 13.627990 Days $T_0=135.451284$ (BKJD)



DV Model-Shift Uniqueness Test

005857540-01, $P = 13.628005$ Days, $E = 135.451713$ Days

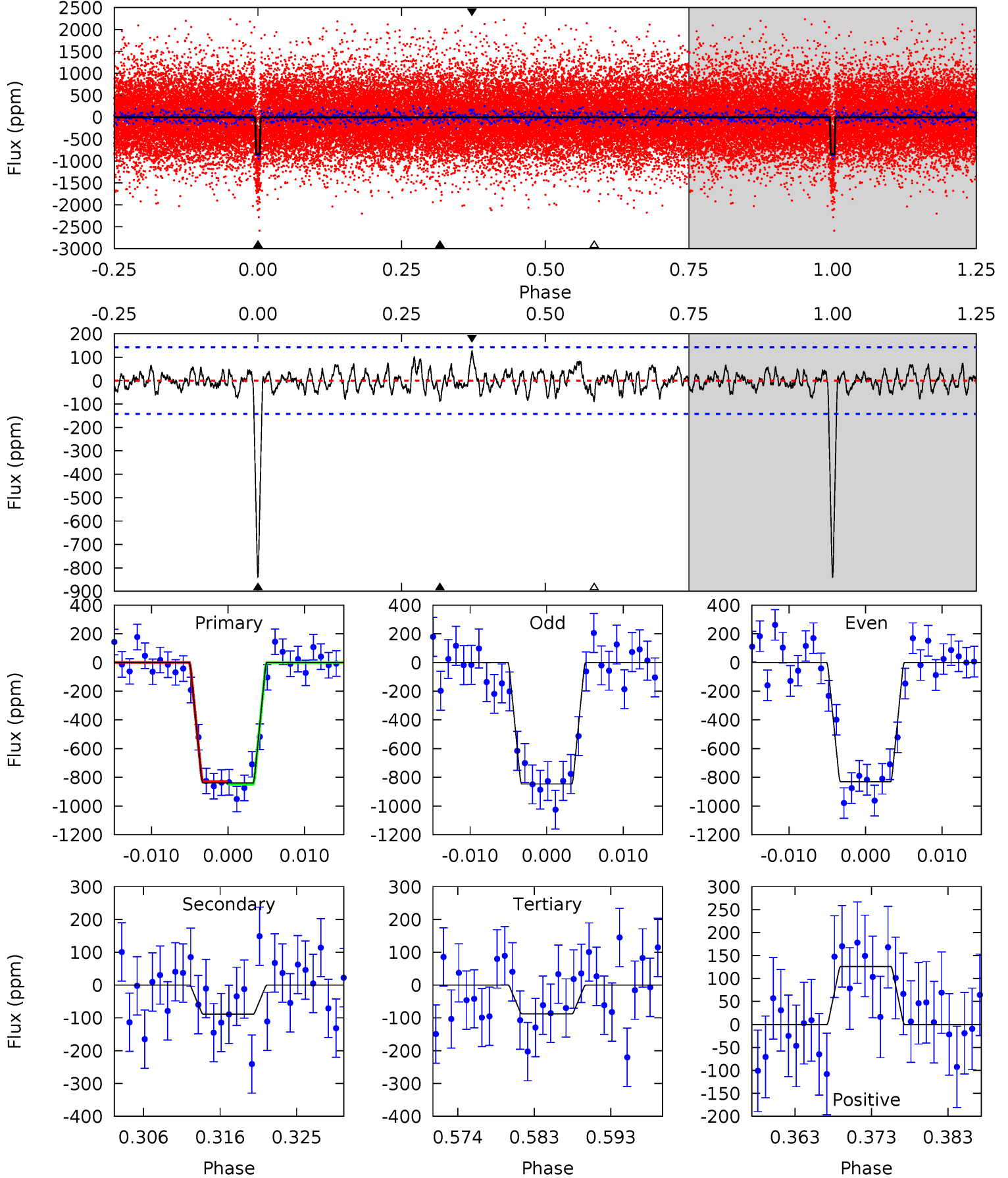
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
33.8	3.56	3.54	4.81	5.00	2.52	1.47	30.3	29.0	0.02	-1.25	0.33	1.03	0.12	0.23



Alt Model-Shift Uniqueness Test

005857540-01, P = 13.627990 Days, E = 135.451284 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.6	3.12	3.09	4.45	5.03	2.59	1.20	26.5	25.1	0.03	-1.33	0.27	1.05	0.13	0.31



Stellar Parameters For KIC 005857540

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5052^{+192}_{-174}	$4.480^{+0.105}_{-0.105}$	$0.160^{+0.250}_{-0.300}$	$0.855^{+0.109}_{-0.109}$	$0.805^{+0.085}_{-0.056}$	$1.811^{+0.783}_{-0.548}$
	+4%/-3%	+2%/-2%	+156%/-188%	+13%/-13%	+11%/-7%	+43%/-30%
Source	KIC0	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 005857540-01 / KOI 2448.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-93 ± 26	$3.21^{+0.40}_{-0.39}$	899^{+45}_{-46}	3220^{+198}_{-201}	53^{+24}_{-18}
Alt.	-88 ± 28	$2.76^{+0.39}_{-0.34}$	895^{+45}_{-42}	3344^{+204}_{-223}	69^{+29}_{-26}

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 $A_{obs} \gg 1.0$

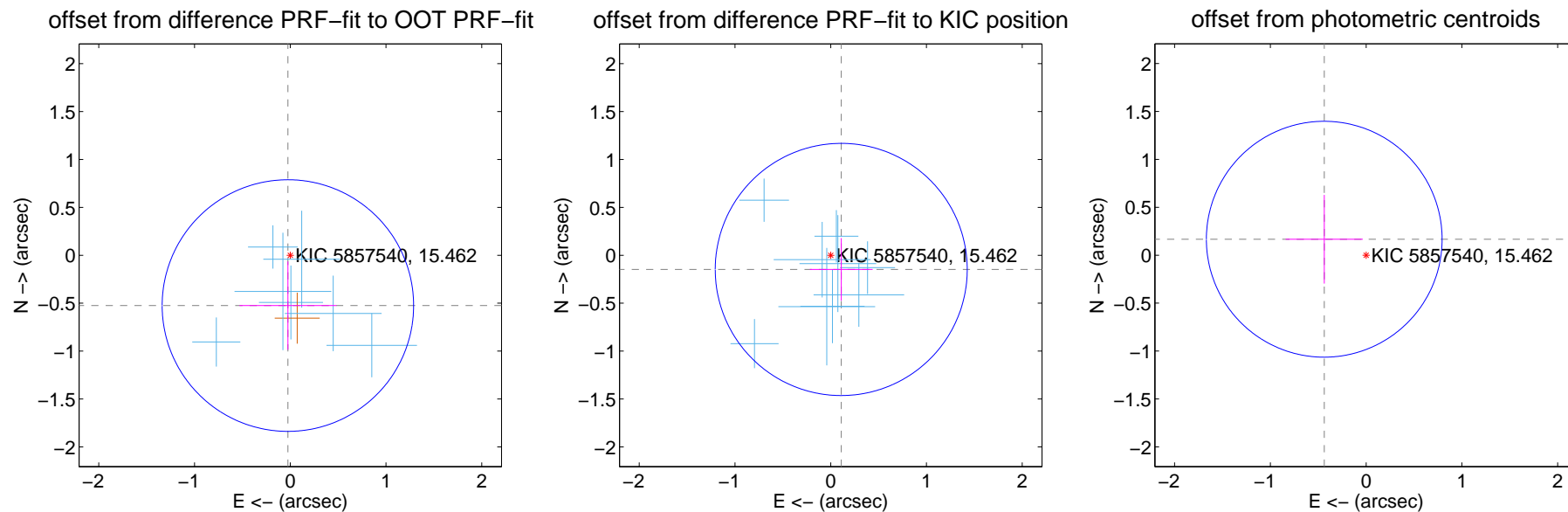
DV Centroid Data

Supplemental centroid analysis for 005857540-01. Kepler magnitude: 15.46. Transit SNR 22.09

There are 9 quarters with good PRF difference image offsets

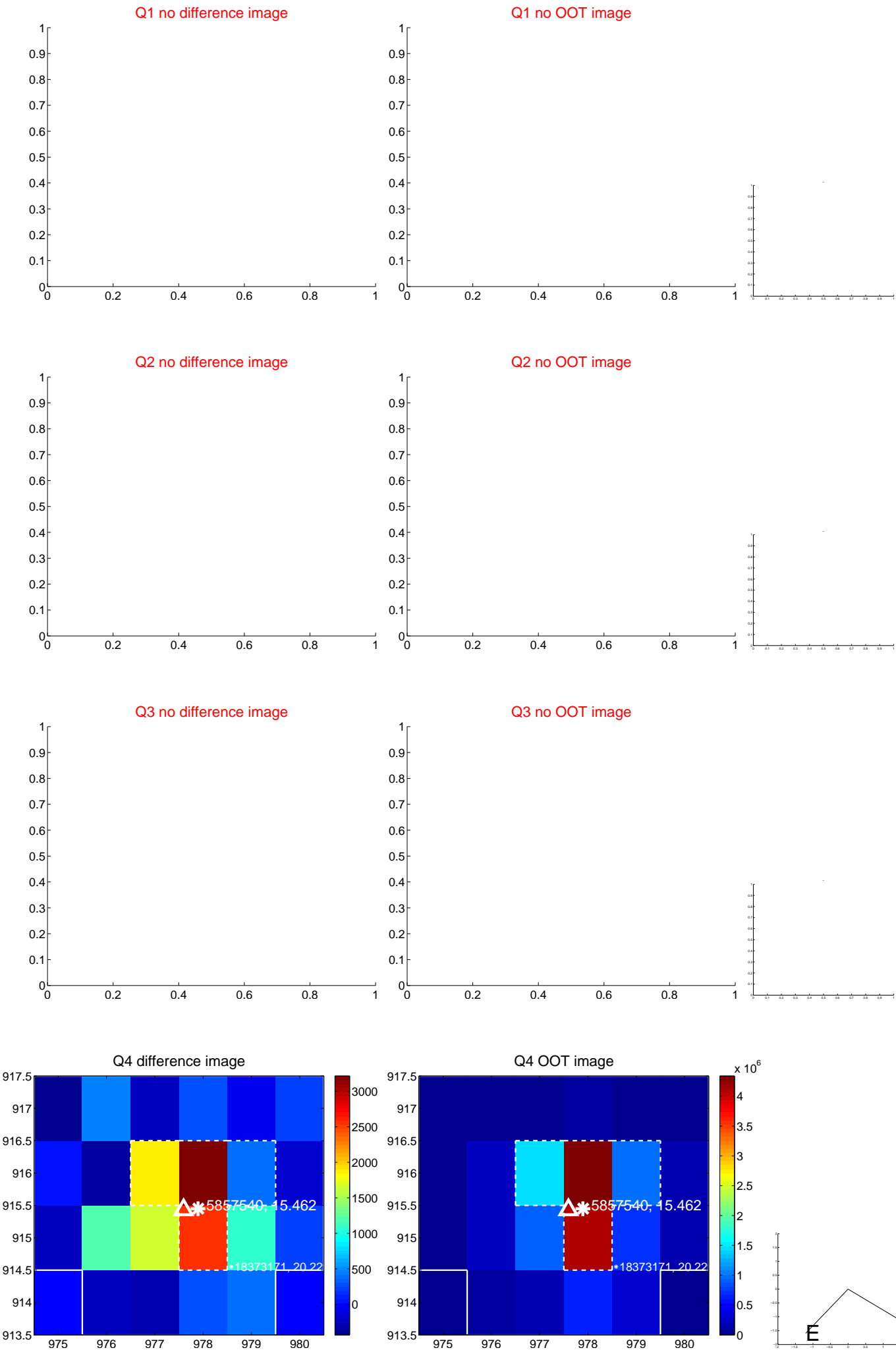
The direct PRF centroid is offset from the target star catalog position by about 0.16 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.525 ± 0.438	1.20	0.025 ± 0.506	-0.525 ± 0.461
PRF-fit source offset from KIC position	0.184 ± 0.439	0.42	-0.110 ± 0.328	-0.148 ± 0.327
photometric centroid source offset	0.47 ± 0.41	1.14	0.44 ± 0.40	0.17 ± 0.46

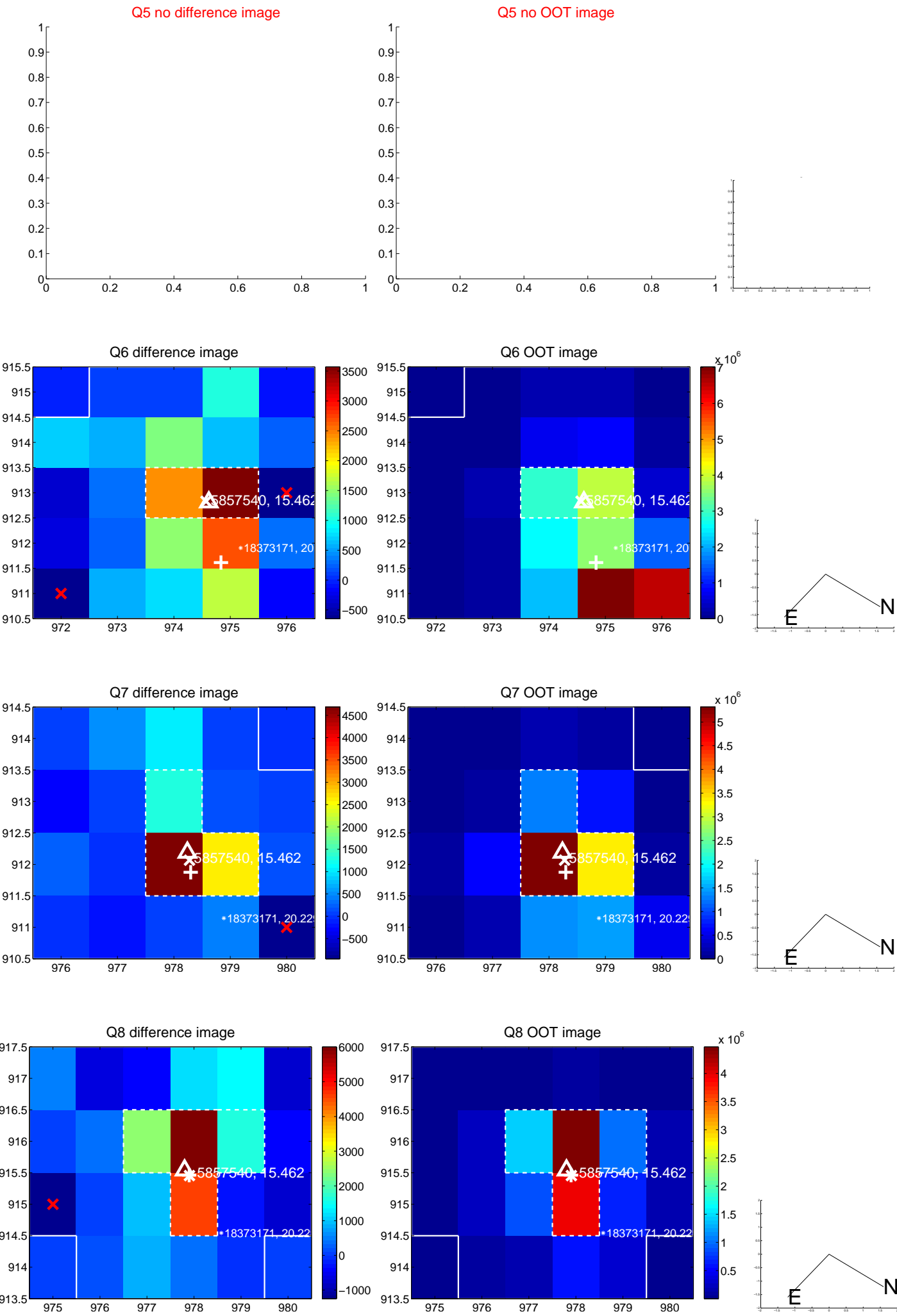


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

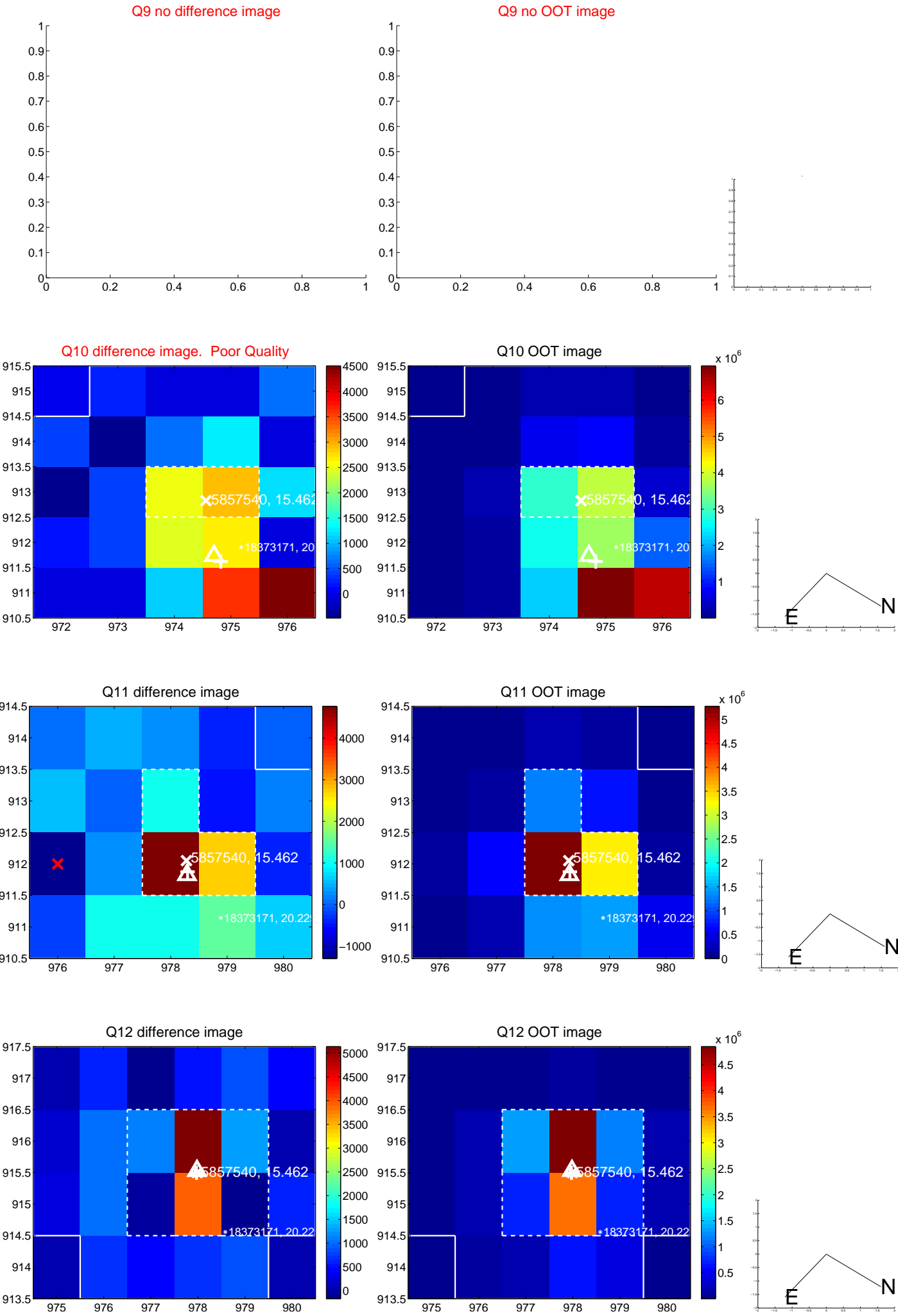
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



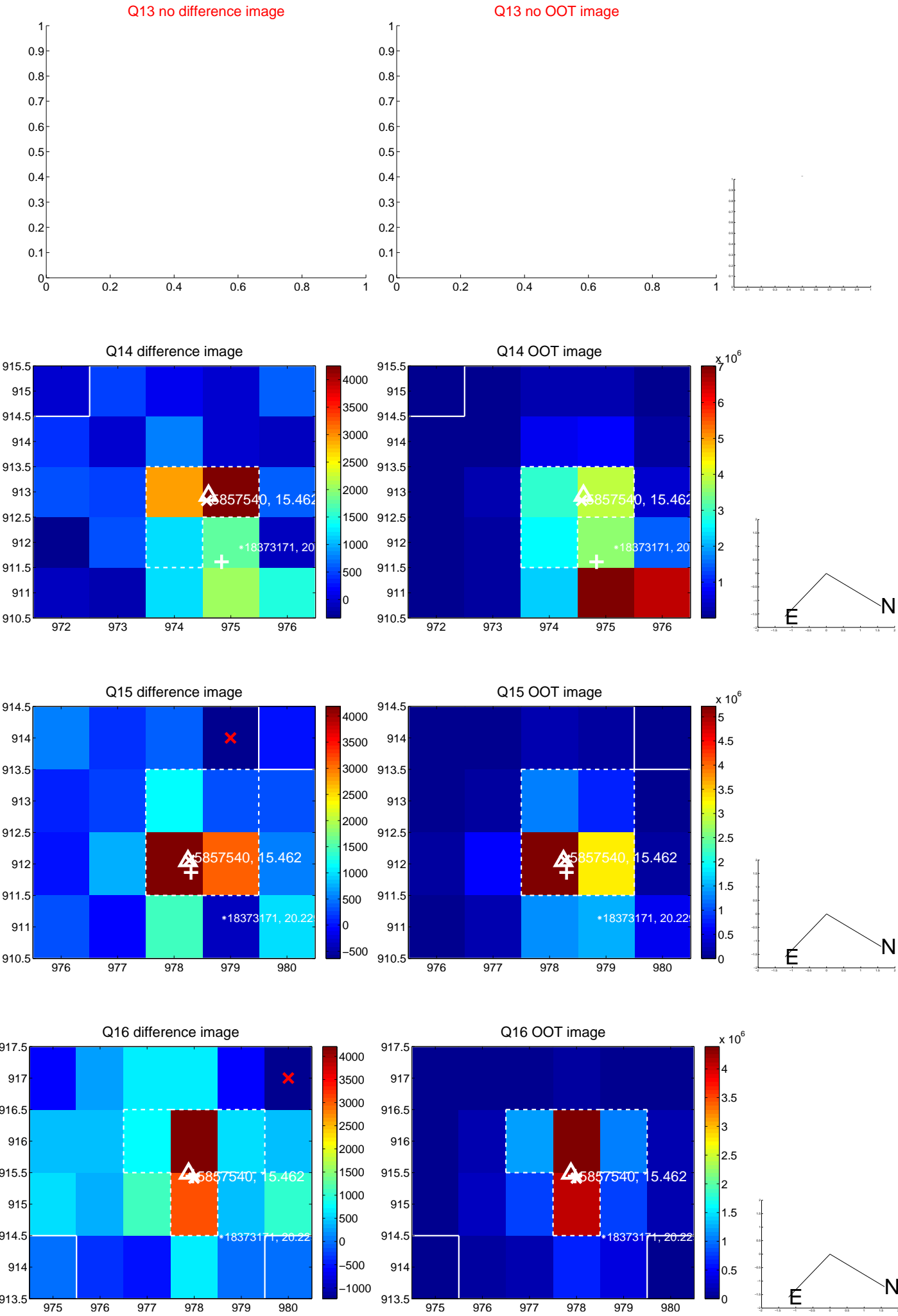
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



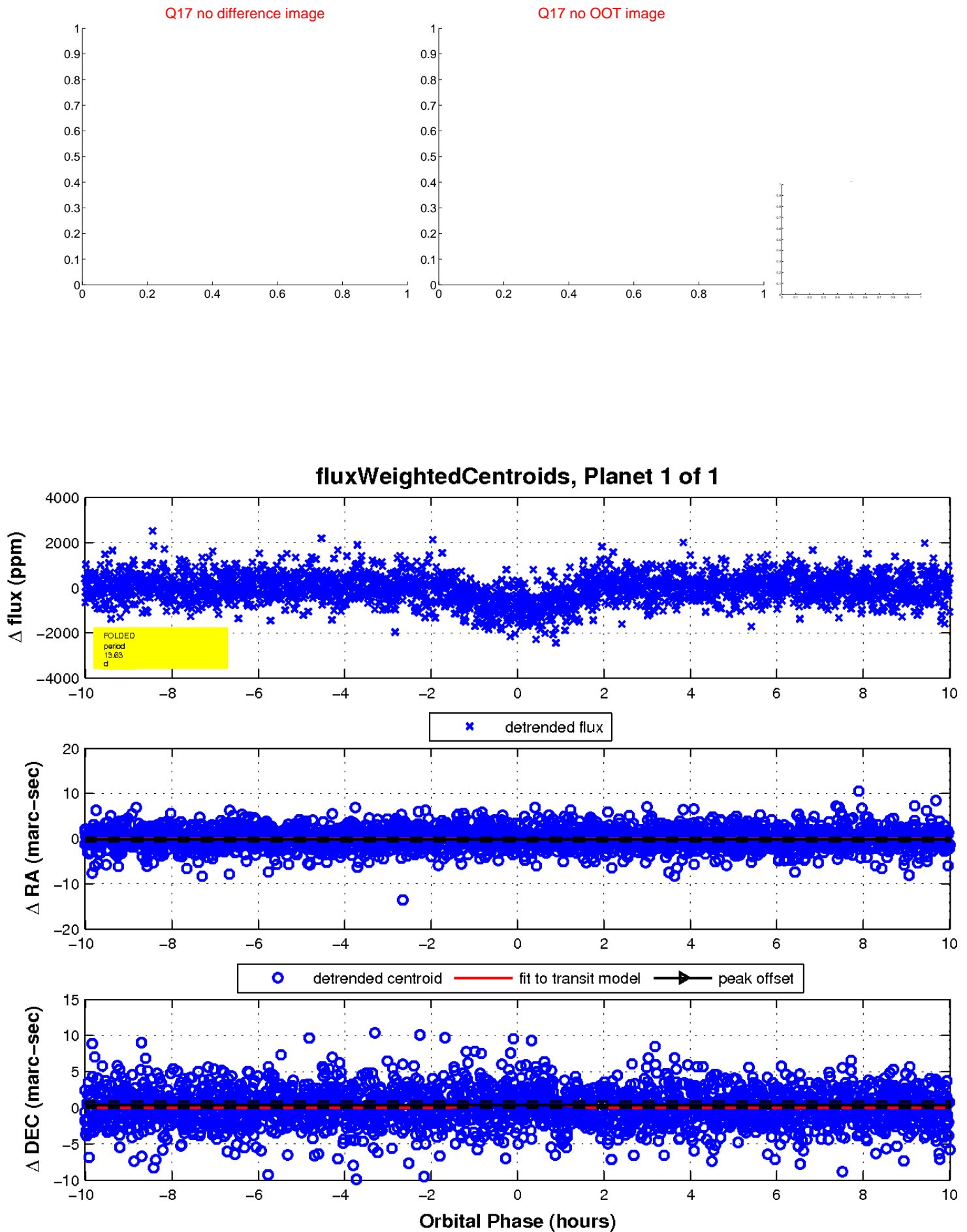
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

