

KIC 004857213

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})
004857213-01	OBS	2120.01	8.774236	132.335685	239.6	2.244	22.7	24.6	0.91	5146	1.73	83.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004857213-01	OBS	PC	1.00	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.

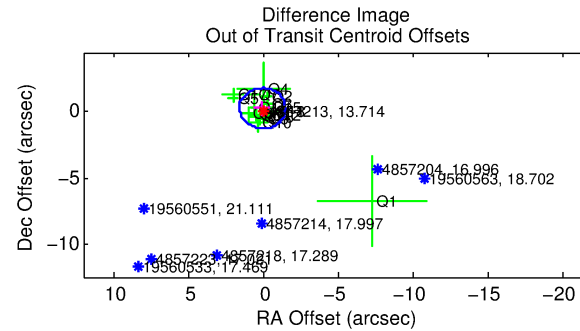
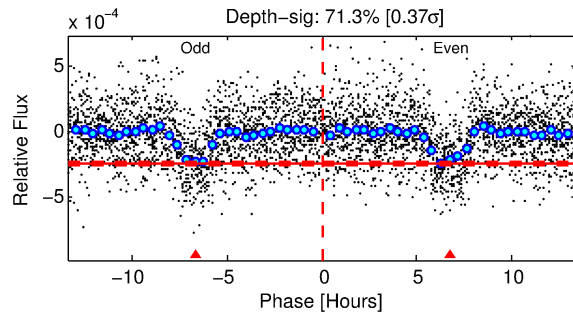
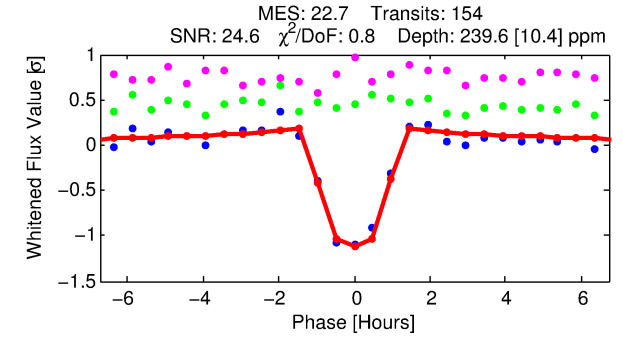
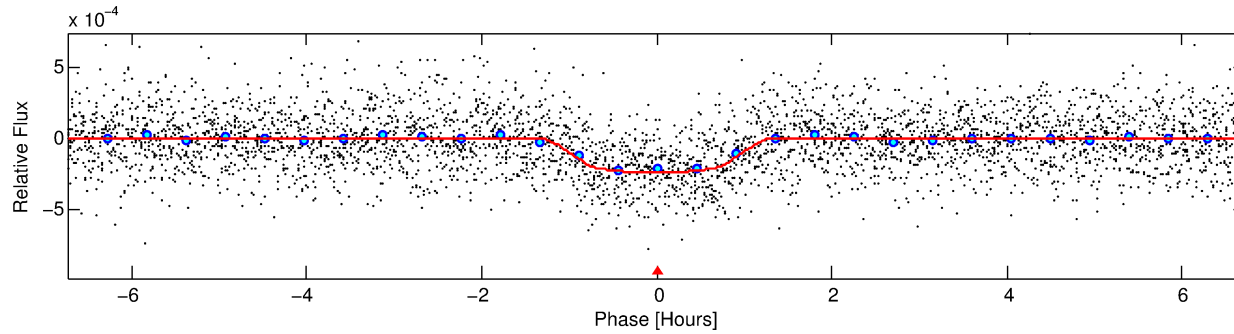
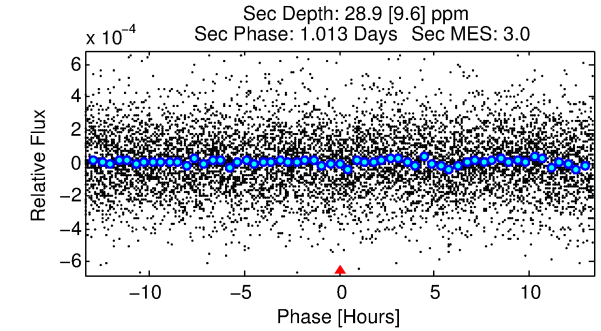
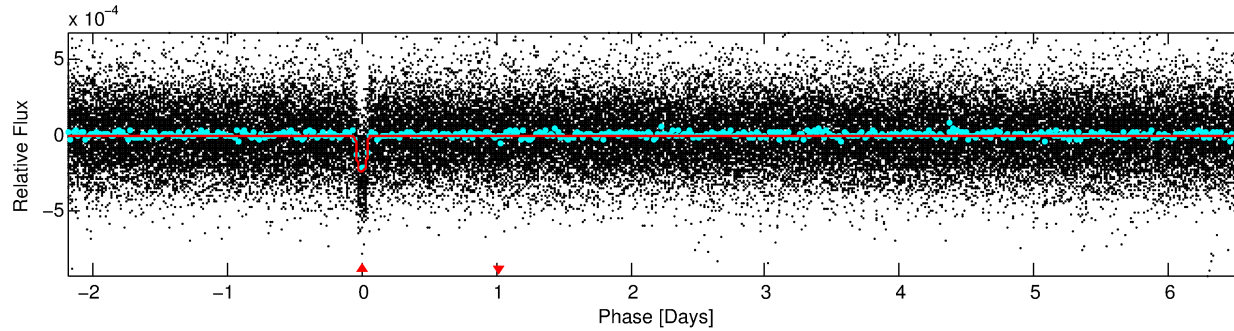
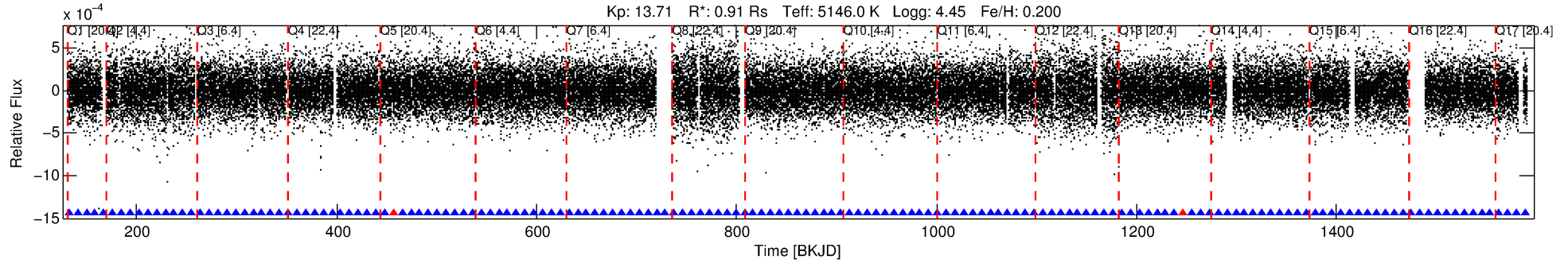
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004857213-01

No Significant Match Found

DV One-Page Summary

KIC: 4857213 Candidate: 1 of 1 Period: 8.774 d
KOI: K02120.01 Corr: 0.974



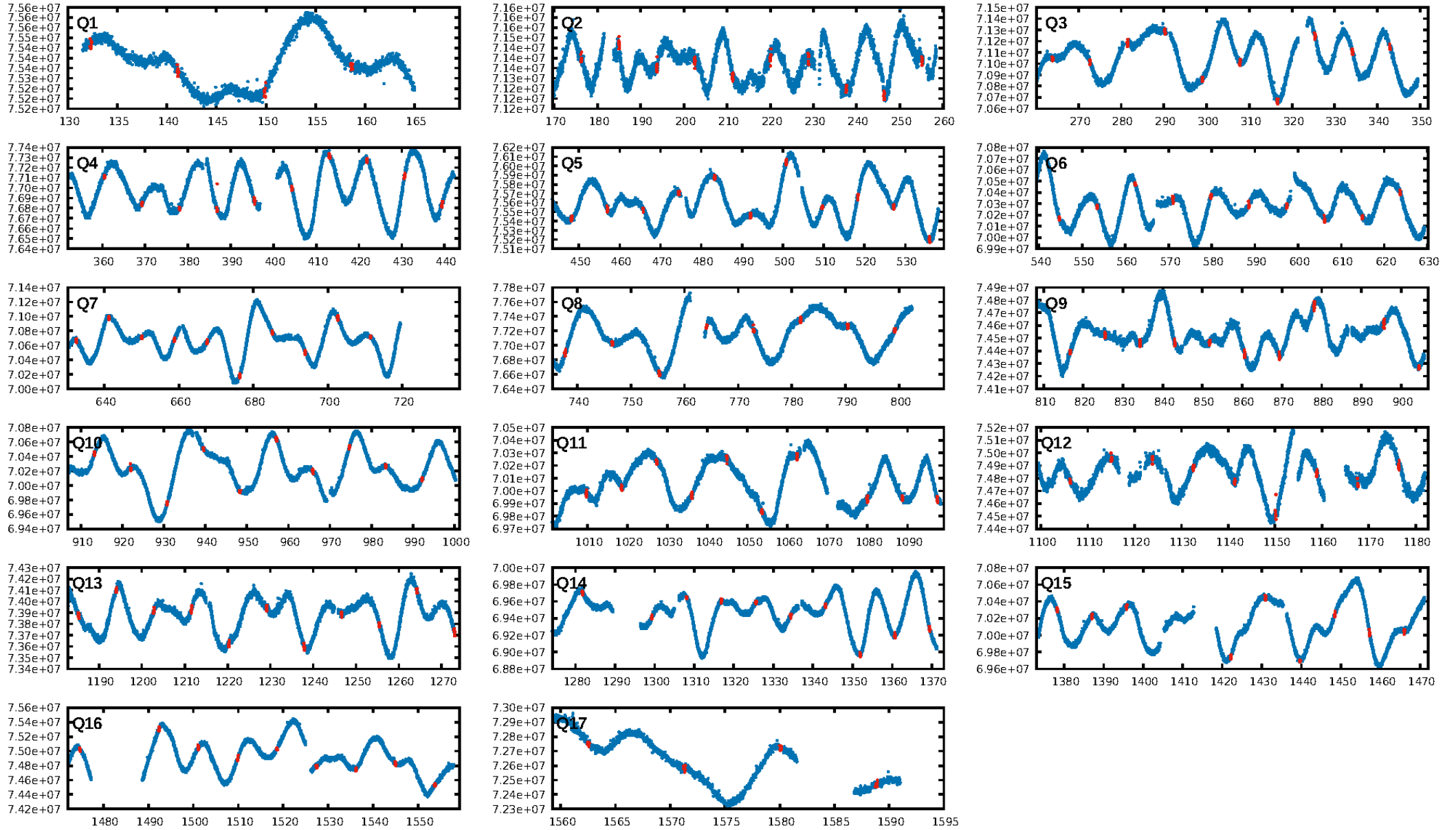
DV Fit Results:

Period = 8.77424 [0.00002] d
Epoch = 132.3357 [0.0019] BKJD
Rp/R* = 0.0175 [0.0047]
a/R* = 13.65 [14.91]
b = 0.91 [0.21]
Seff = 83.87 [43.42]
Teq = 772 [100] K
Rp = 1.72 [0.70] Re
a = 0.0783 [0.0241] AU
Ag = 32.78 [26.51] [1.20σ]
Teffp = 2855 [459] K [4.43σ]

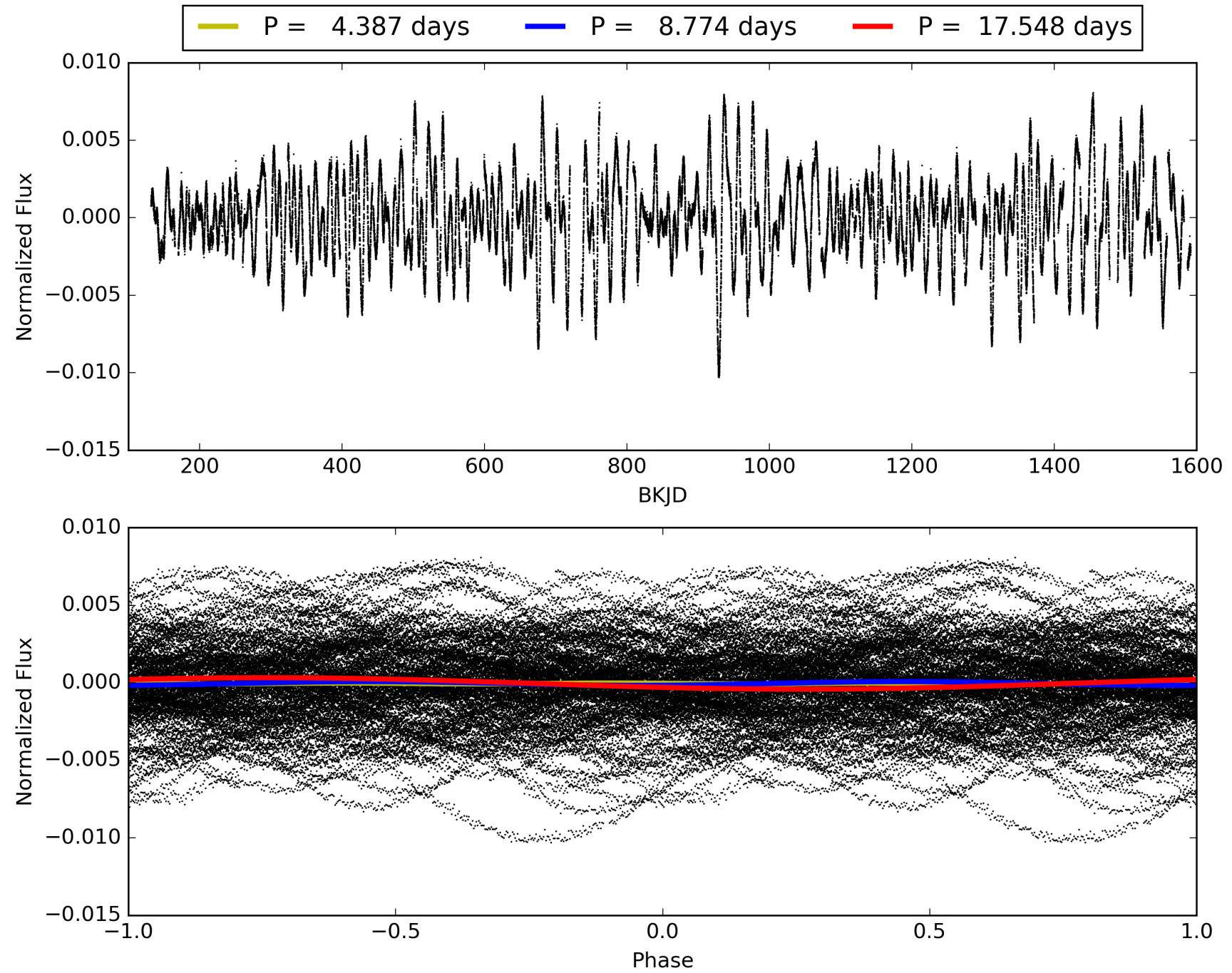
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 3.42e-112
RollingBand-fgt: 0.99 [144/146]
GhostDiagnostic-chr: 1.802
Centroid-sig: 21.4%
Centroid-so: 0.316 arcsec [0.69σ]
OotOffset-rm: 0.275 arcsec [0.54σ]
KicOffset-rm: 0.393 arcsec [1.13σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 004857213-01, PDC Light Curves

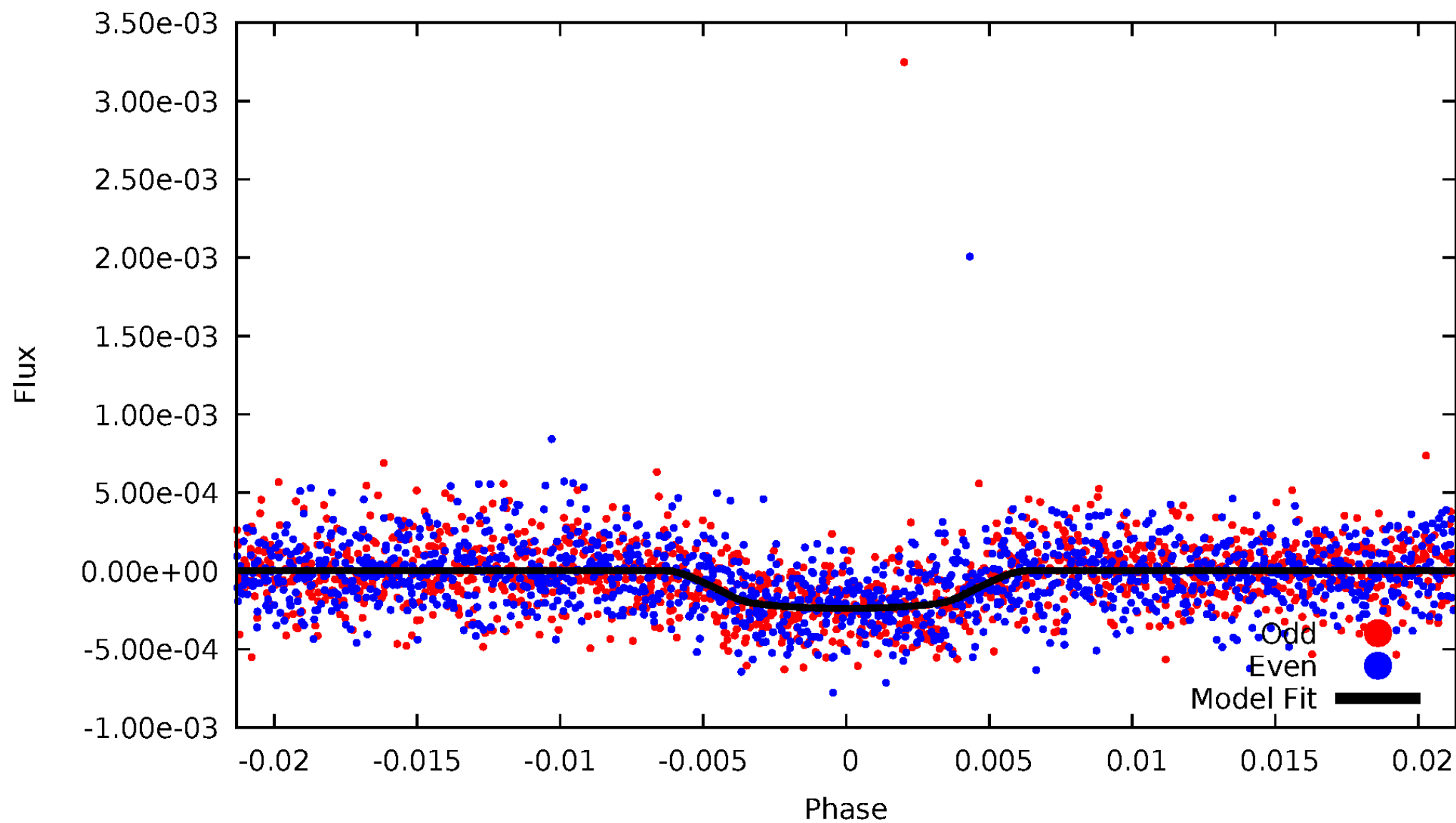


TCE 004857213-01



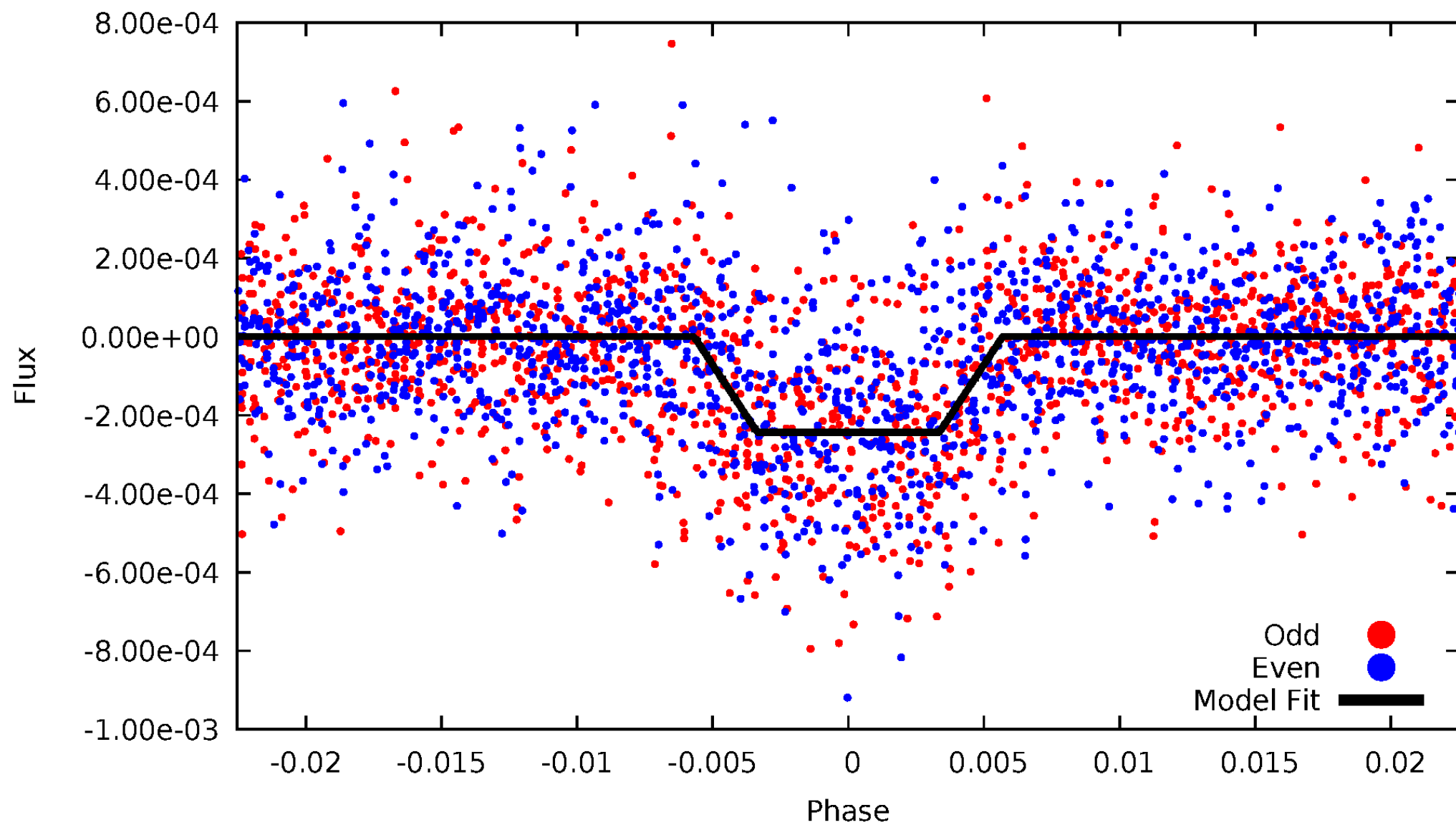
DV Odd/Even

TCE 004857213-01



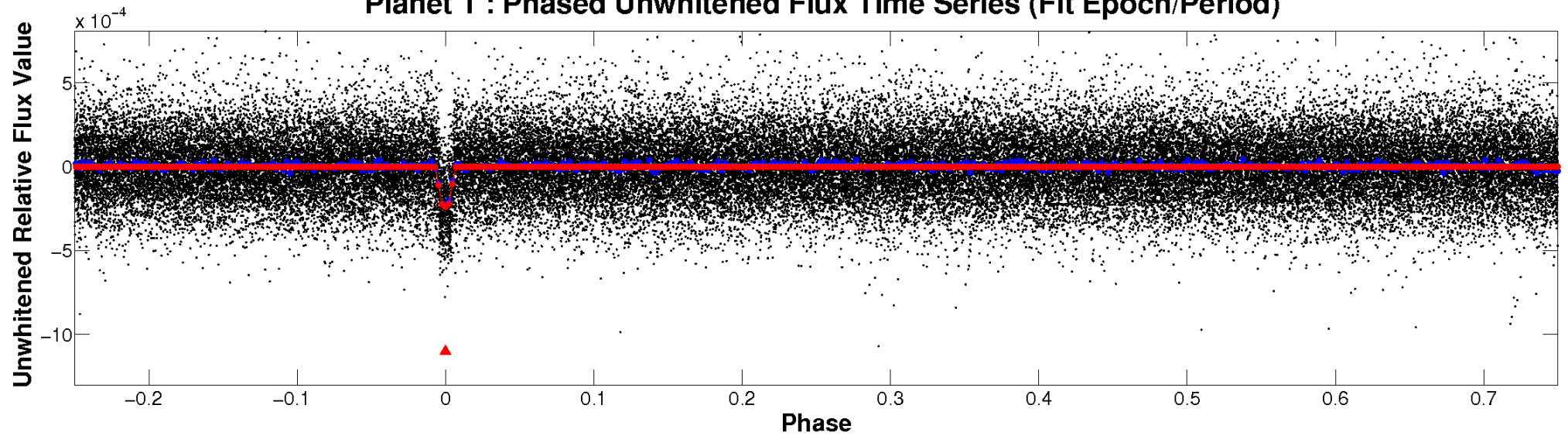
ALT Odd/Even

TCE 004857213-01

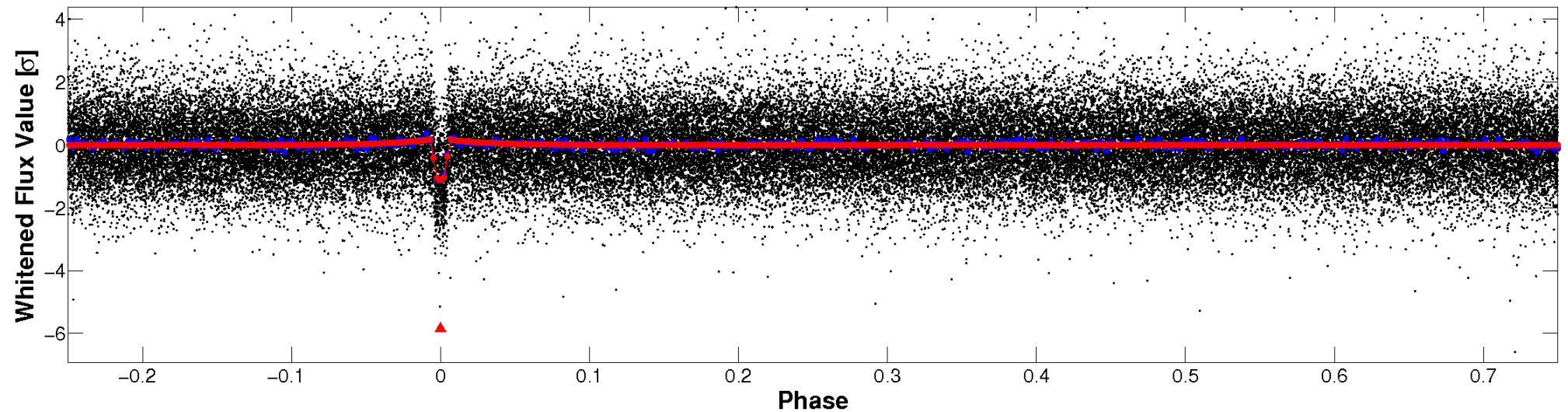


Non-Whitened Vs. Whitened Light Curve

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

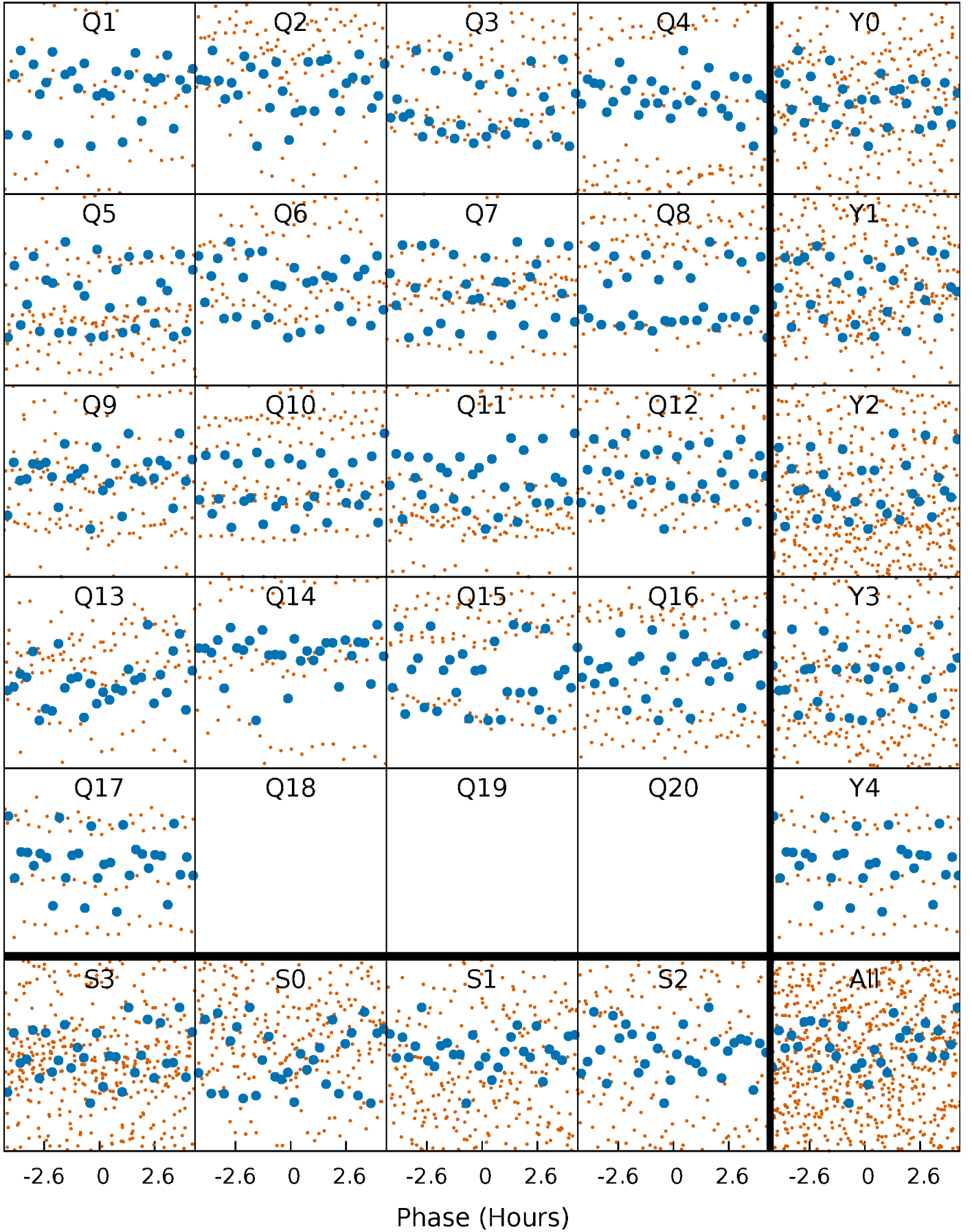


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



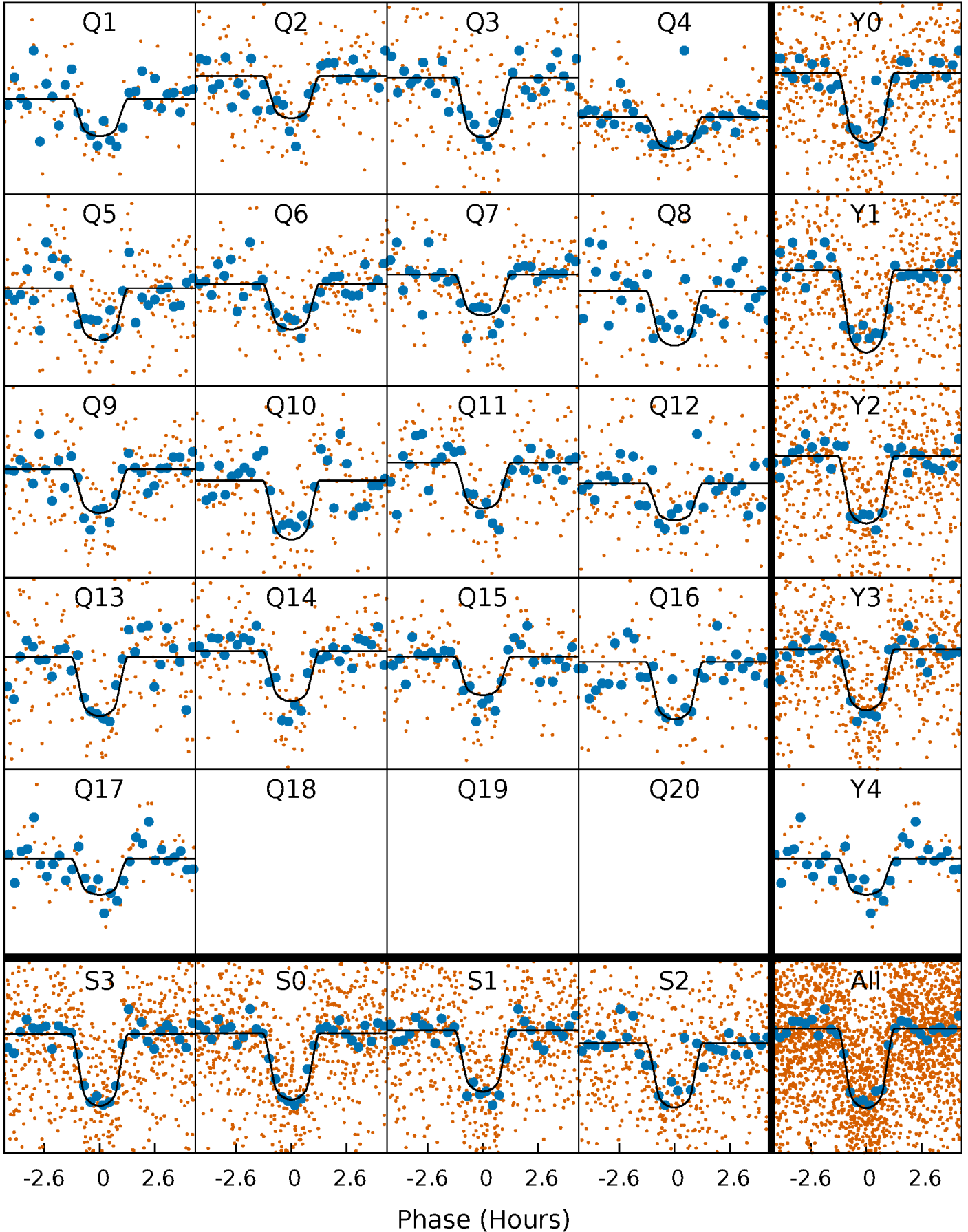
PDC Quarter-Phased Transit Curves

TCE 004857213-01 P= 8.774236 Days $T_0=132.335685$ (BKJD)



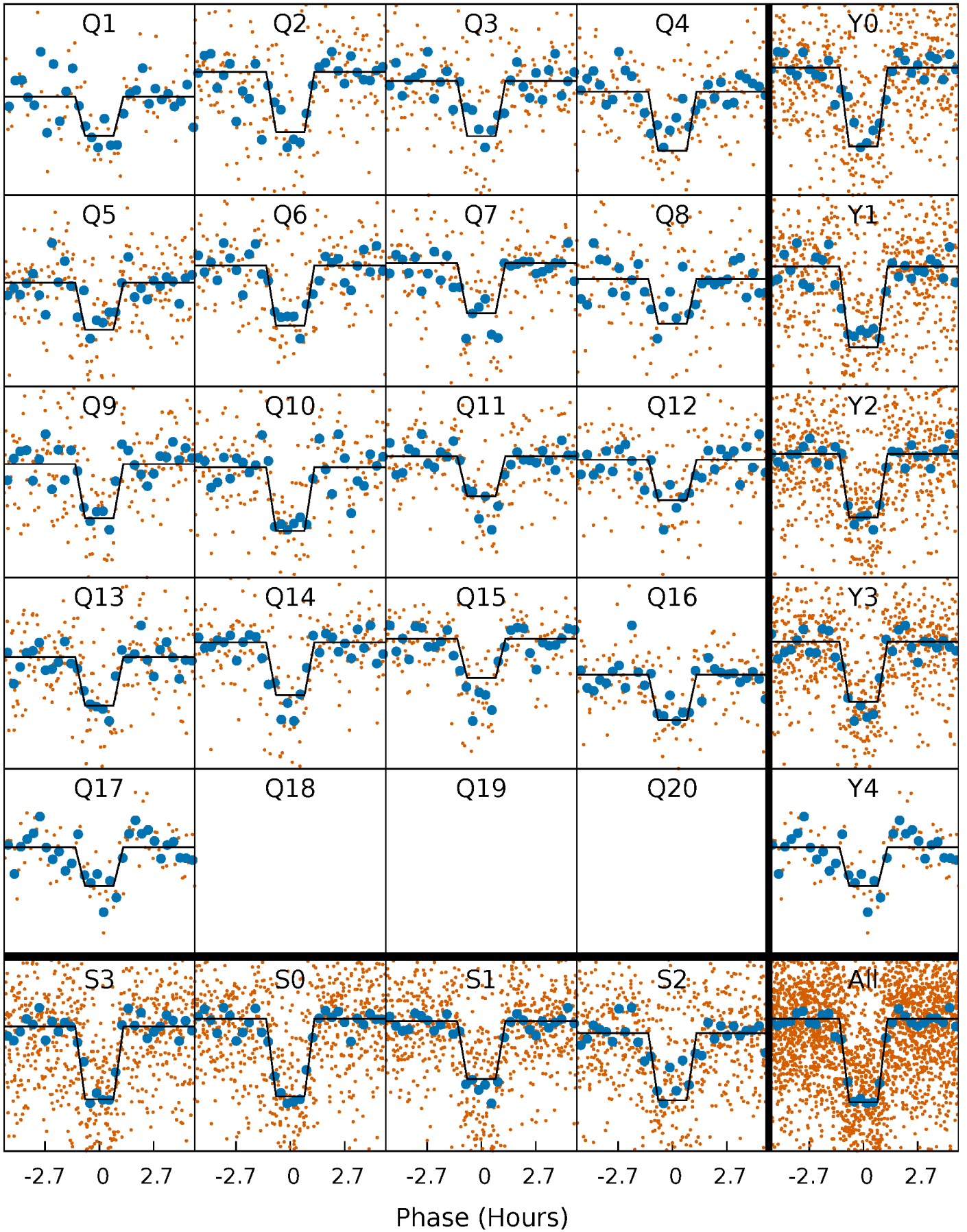
DV Quarter-Phased Transit Curves

TCE 004857213-01 P= 8.774236 Days $T_0=132.335685$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

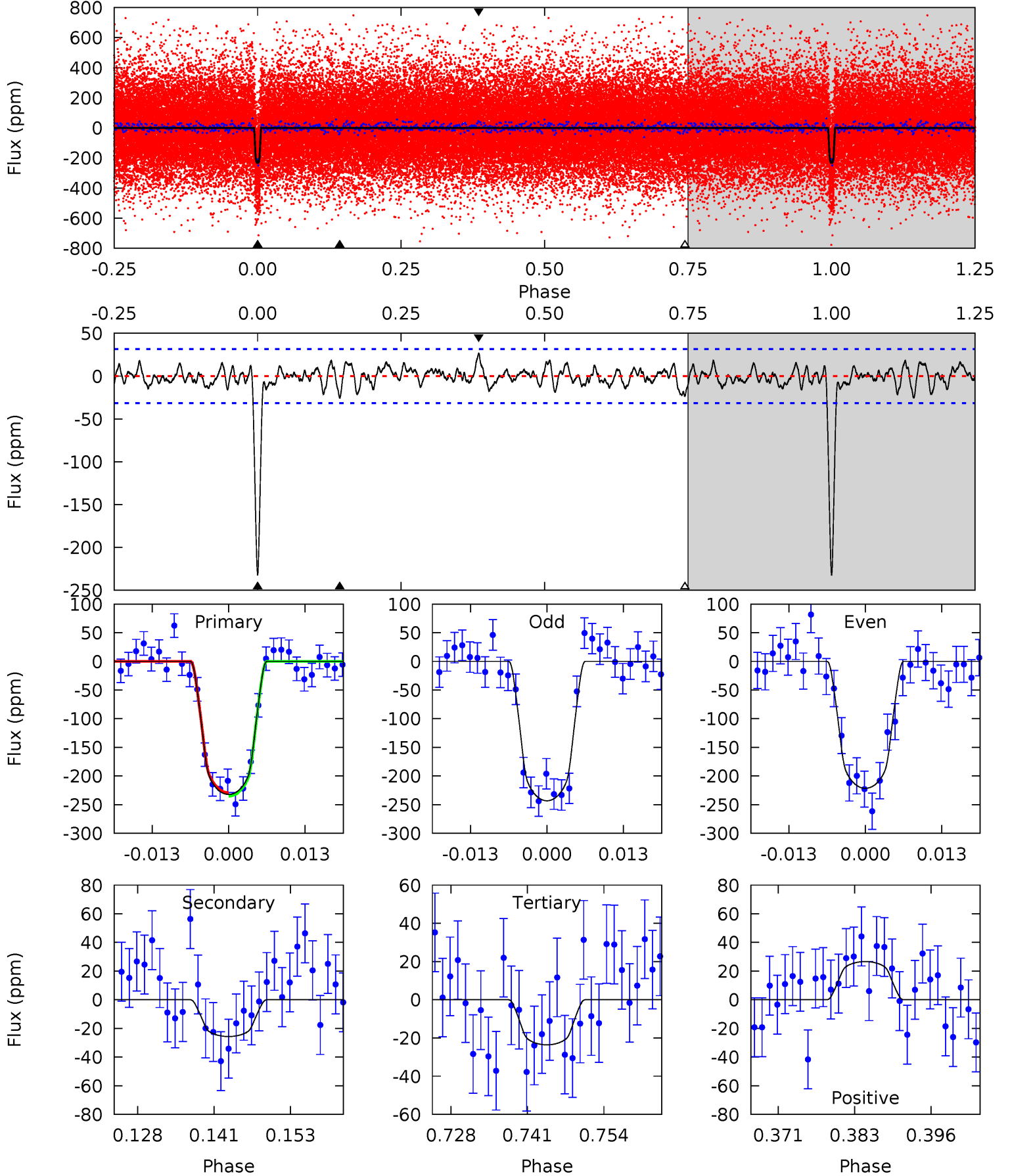
TCE 004857213-01 P= 8.774282 Days $T_0=132.331442$ (BKJD)



DV Model-Shift Uniqueness Test

004857213-01, P = 8.774236 Days, E = 123.561449 Days

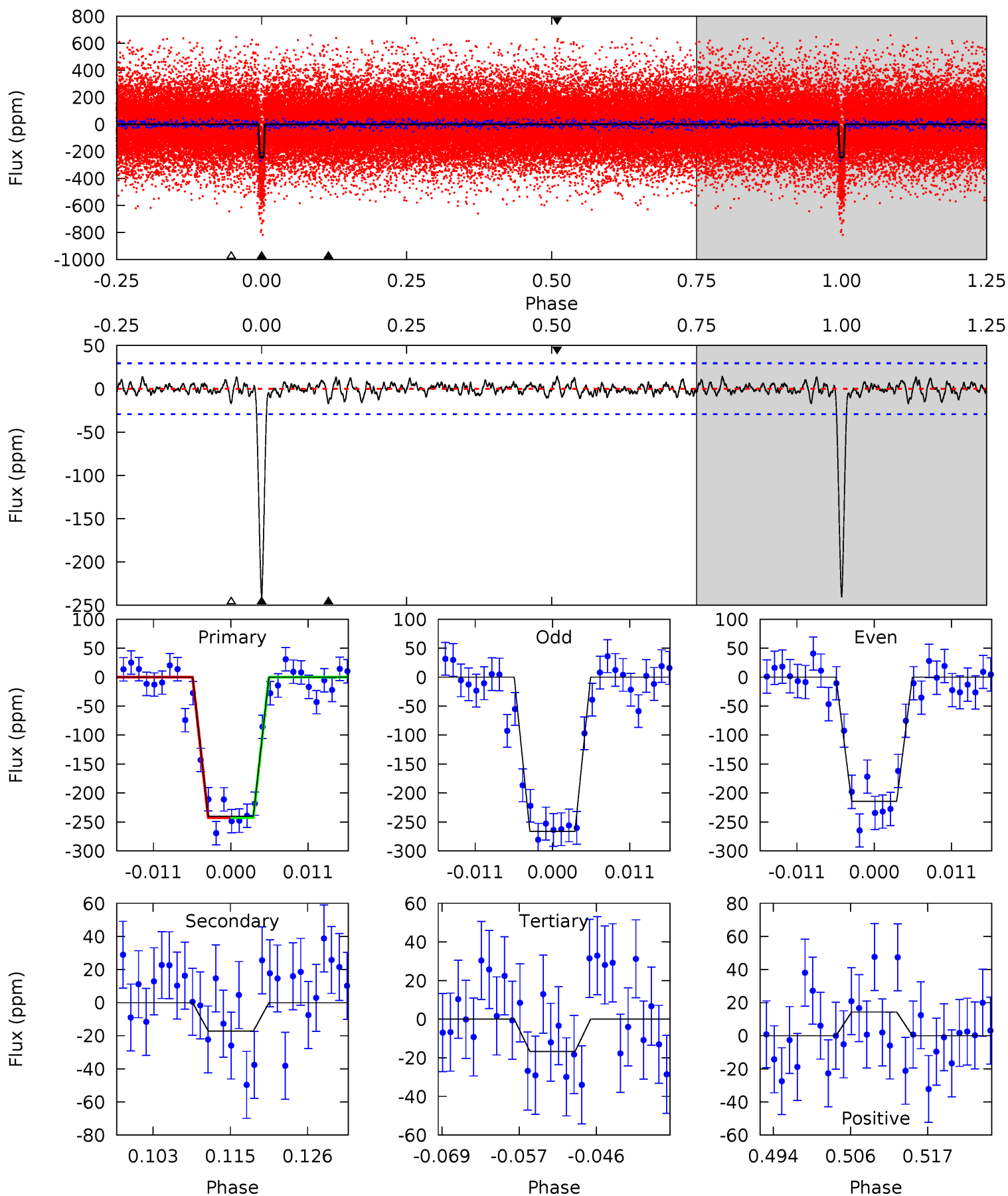
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
36.7	4.06	3.73	4.22	4.98	2.49	1.29	33.0	32.5	0.33	-0.16	1.72	0.93	0.10	0.44



Alt Model-Shift Uniqueness Test

004857213-01, P = 8.774282 Days, E = 123.557160 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.9	2.94	2.86	2.44	5.00	2.53	0.84	38.1	38.5	0.08	0.50	4.43	0.95	0.06	0.02



Stellar Parameters For KIC 004857213

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5146^{+154}_{-138}	$4.445^{+0.100}_{-0.300}$	$0.200^{+0.250}_{-0.250}$	$0.905^{+0.277}_{-0.111}$	$0.832^{+0.085}_{-0.059}$	$1.581^{+0.774}_{-1.066}$
	+3%/-3%	+2%/-7%	+125%/-125%	+31%/-12%	+10%/-7%	+49%/-67%
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 004857213-01 / KOI 2120.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-26 ± 6	$1.80^{+0.56}_{-0.51}$	1098^{+100}_{-60}	3306^{+389}_{-286}	27^{+28}_{-13}
Alt.	-17 ± 6	$1.60^{+0.58}_{-0.50}$	1104^{+101}_{-68}	3206^{+415}_{-320}	22^{+26}_{-12}

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 $A_{obs} \gg 1.0$

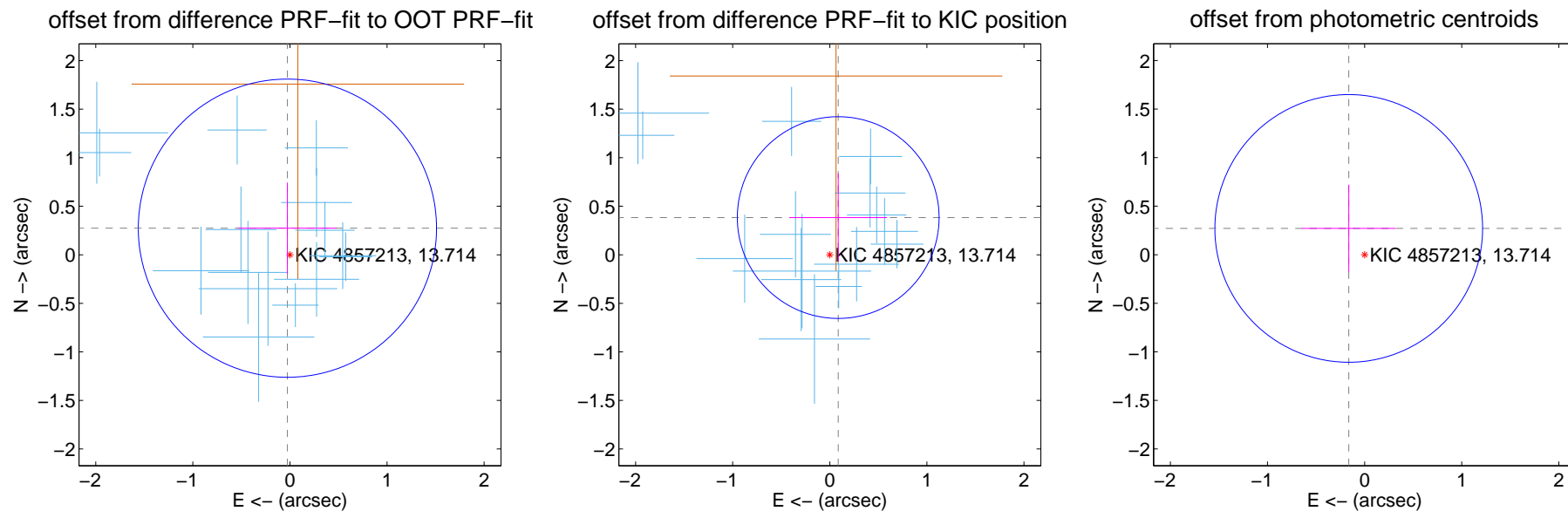
DV Centroid Data

Supplemental centroid analysis for 004857213-01. Kepler magnitude: 13.71. Transit SNR 24.57

There are 15 quarters with good PRF difference image offsets

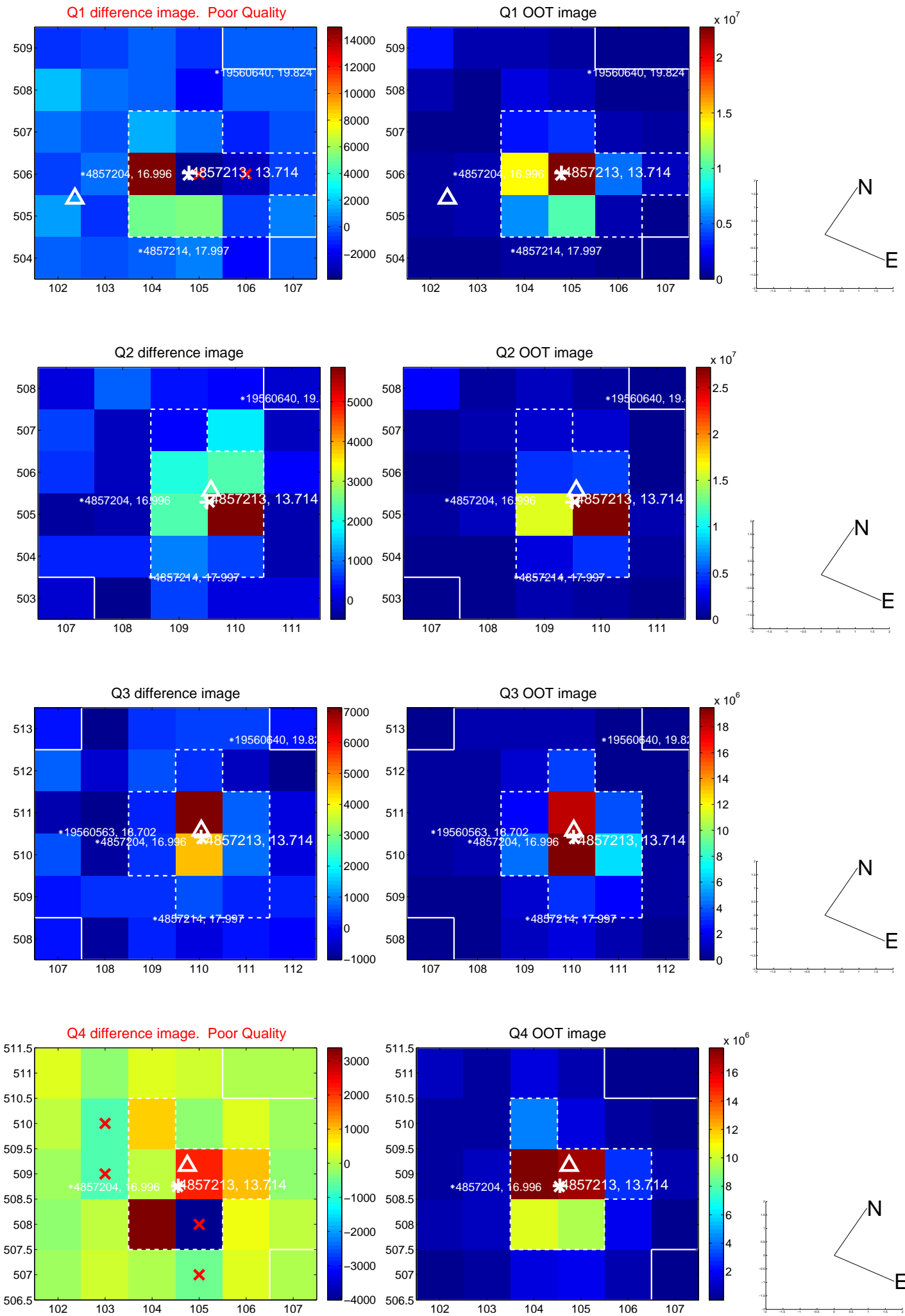
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.275 ± 0.512	0.54	0.026 ± 0.506	0.274 ± 0.470
PRF-fit source offset from KIC position	0.393 ± 0.346	1.13	-0.087 ± 0.503	0.383 ± 0.453
photometric centroid source offset	0.32 ± 0.46	0.69	0.16 ± 0.48	0.27 ± 0.45

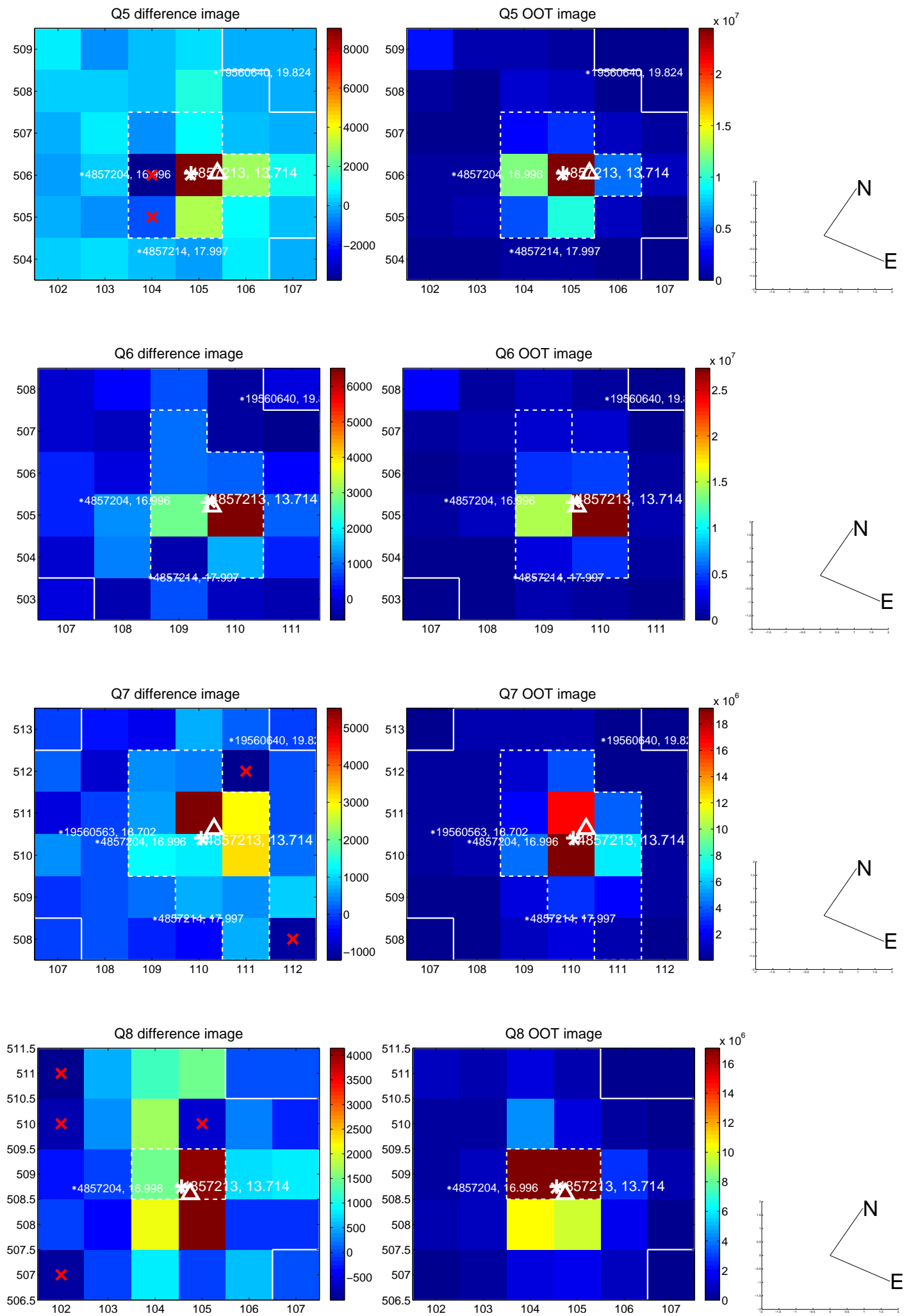


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

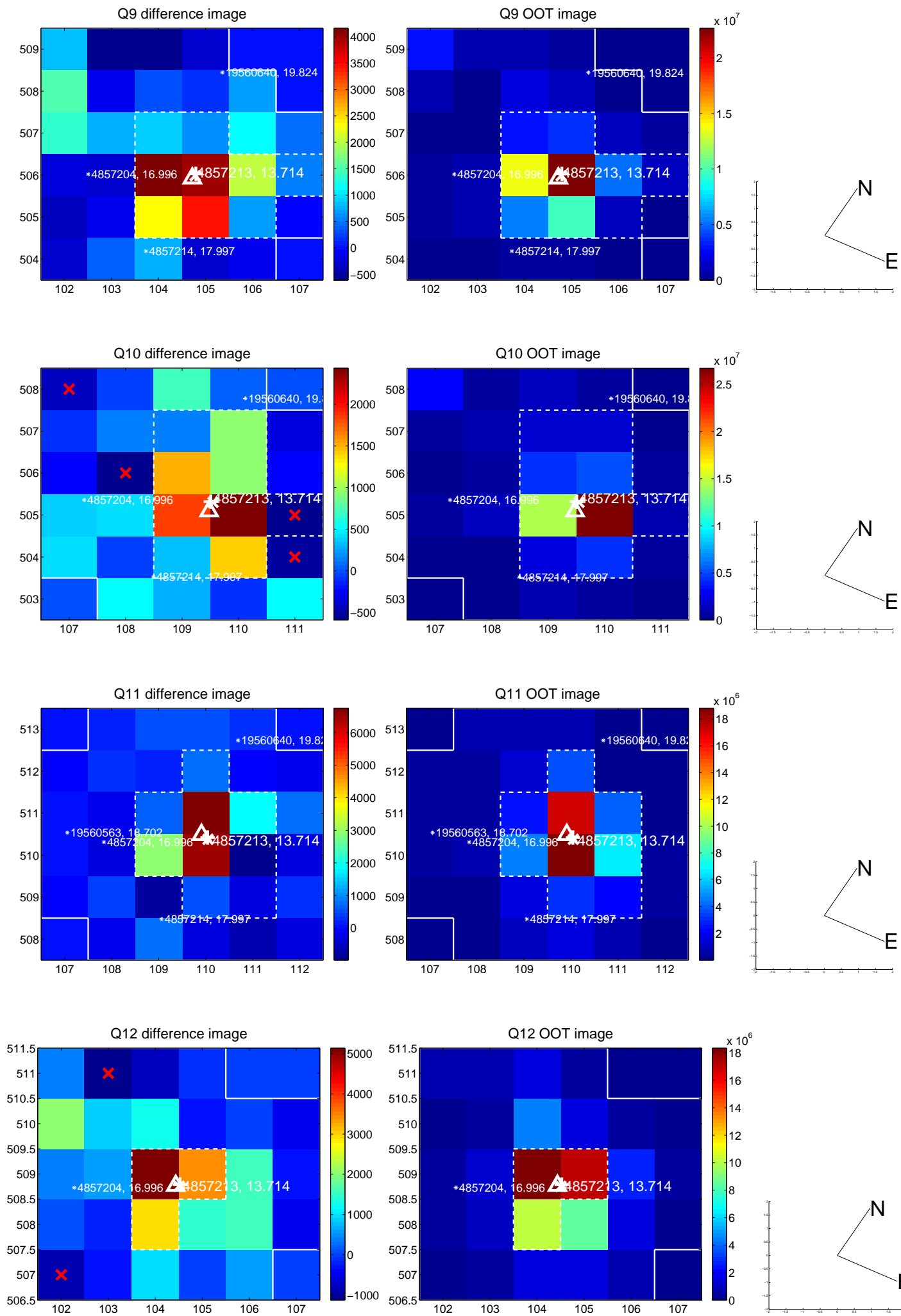
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



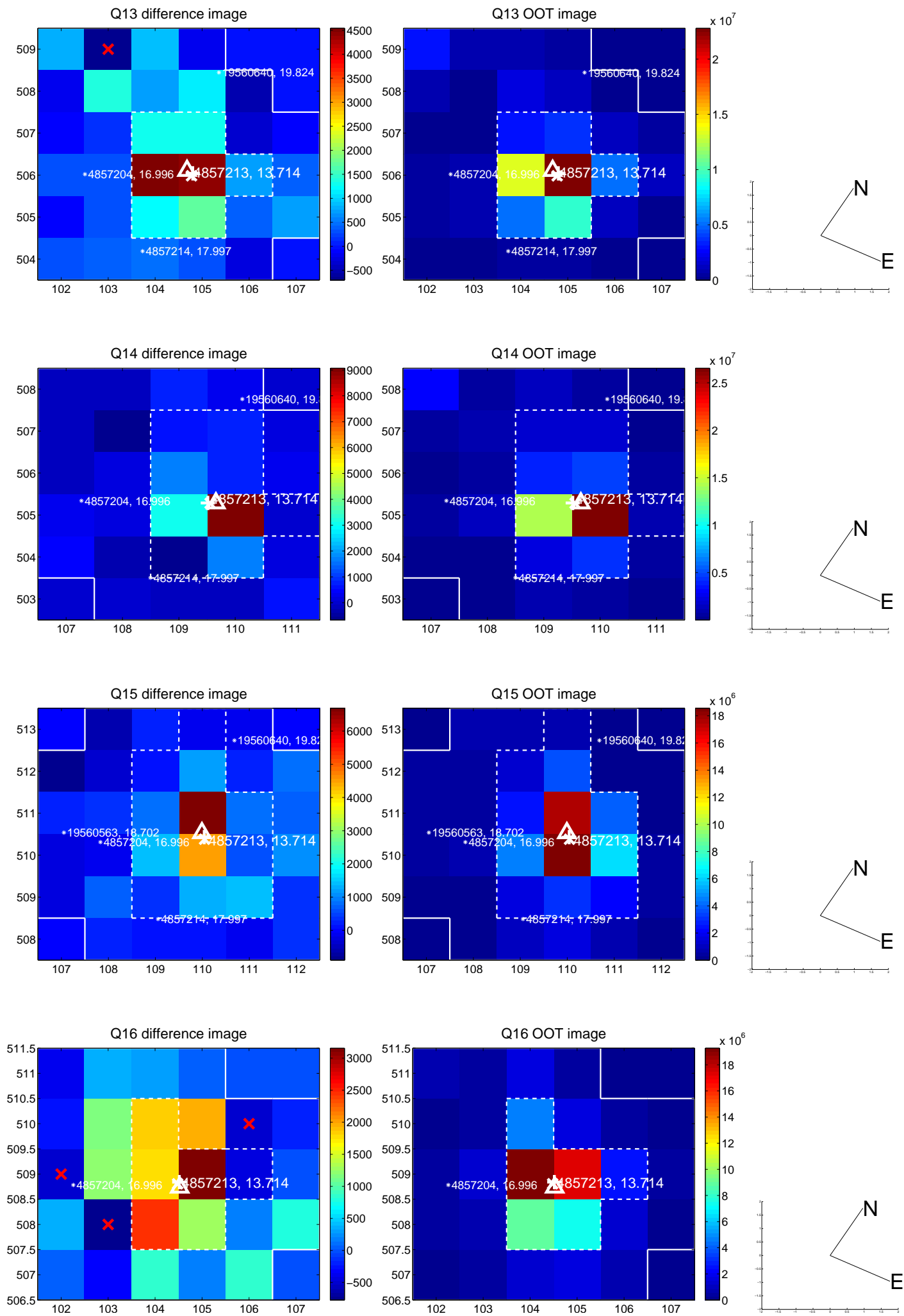
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



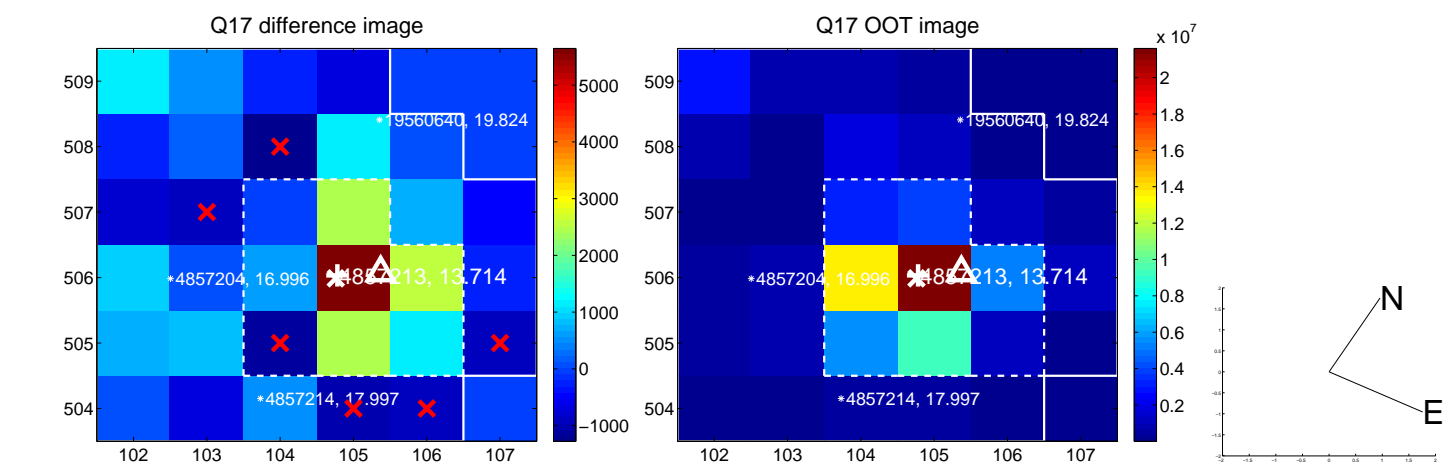
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



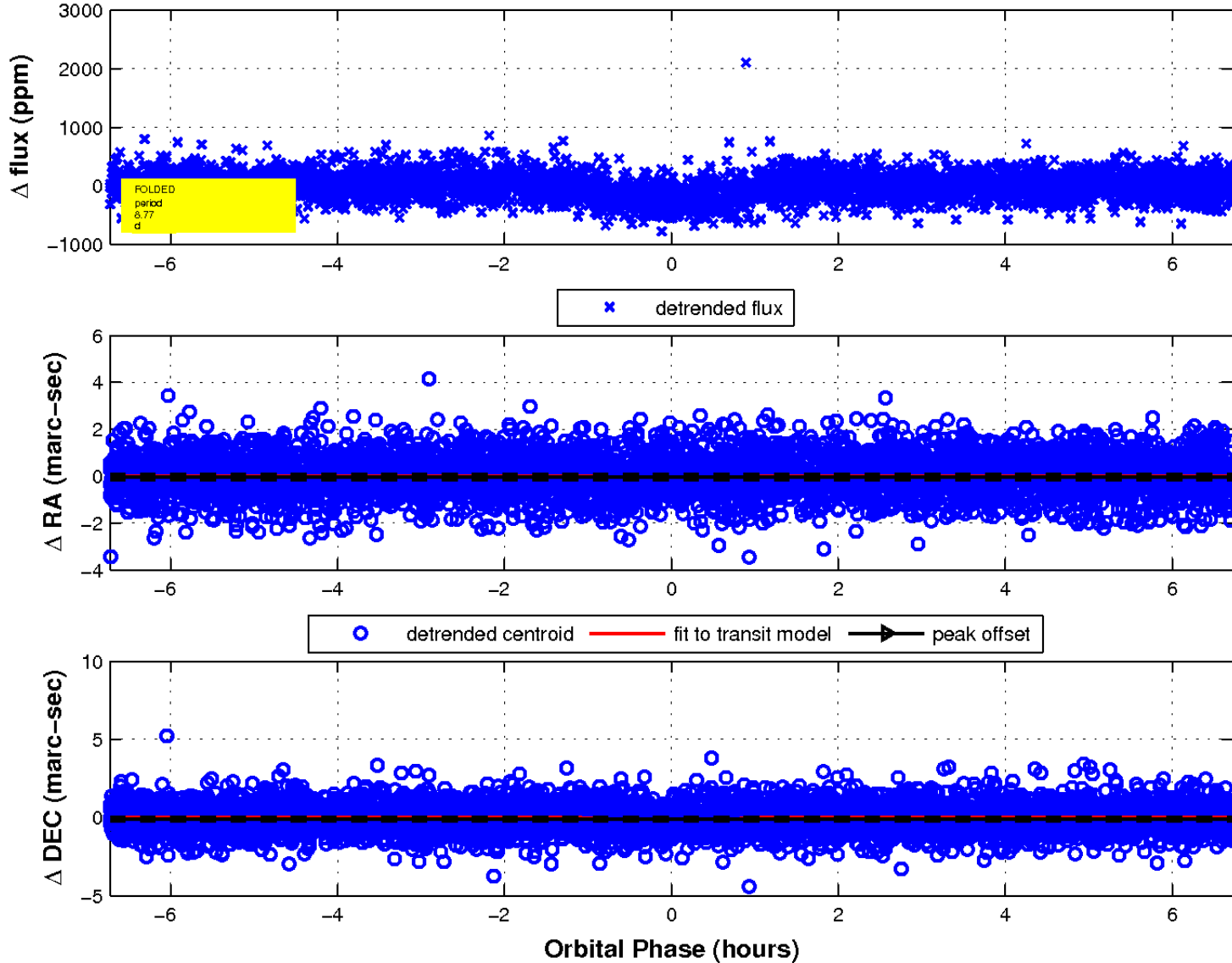
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

