

KIC 004359851

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})
004359851-01	OBS	No	13.543172	133.961053	223.5	46.659	10.7	17.7	1.47	6188	4.37	212.50

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004359851-01	OBS	FP	0.00	1	0	0	0	LPP_DV—MOD_NONUNIQ_DV

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

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

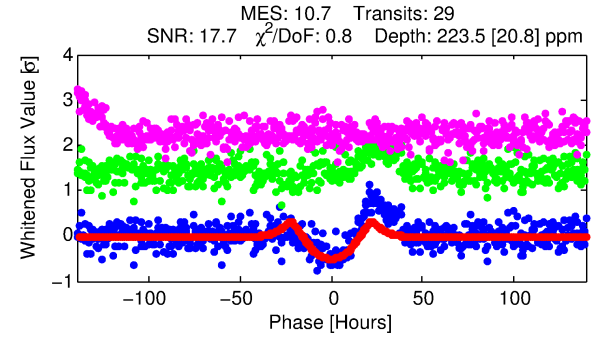
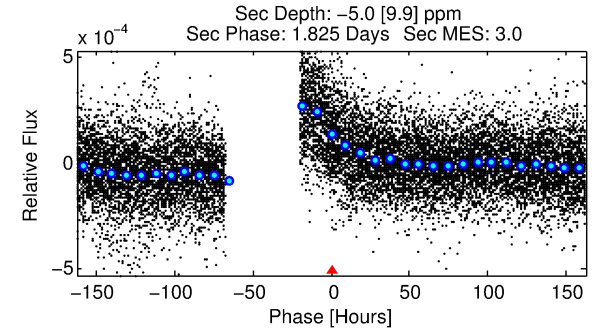
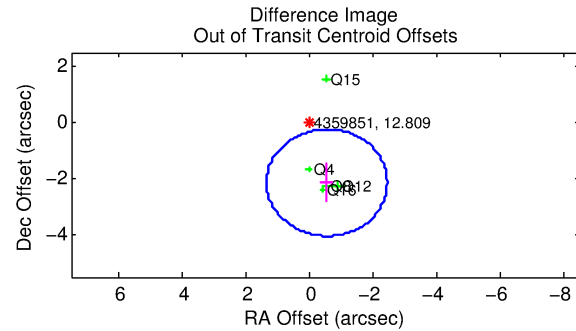
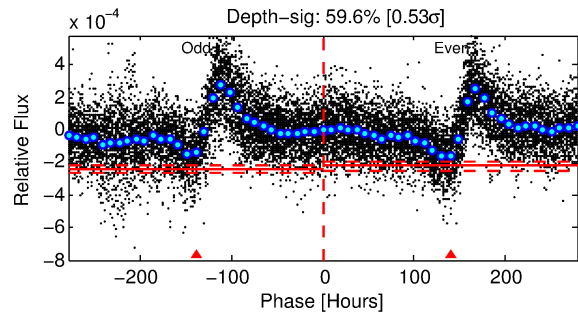
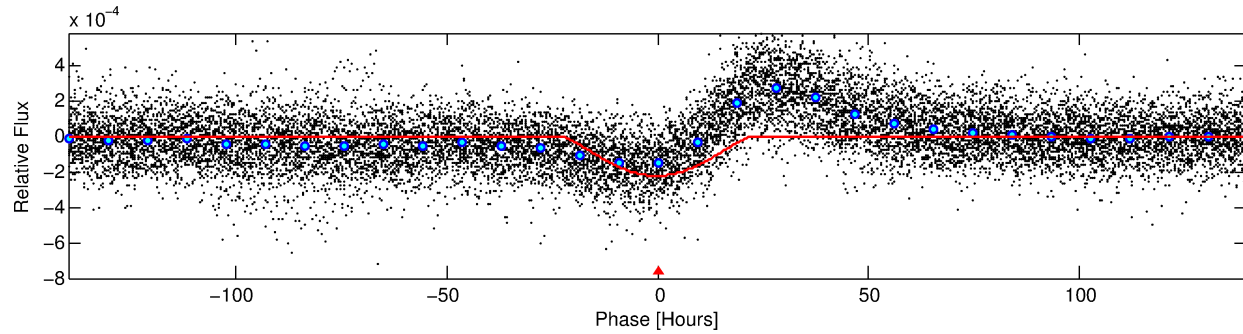
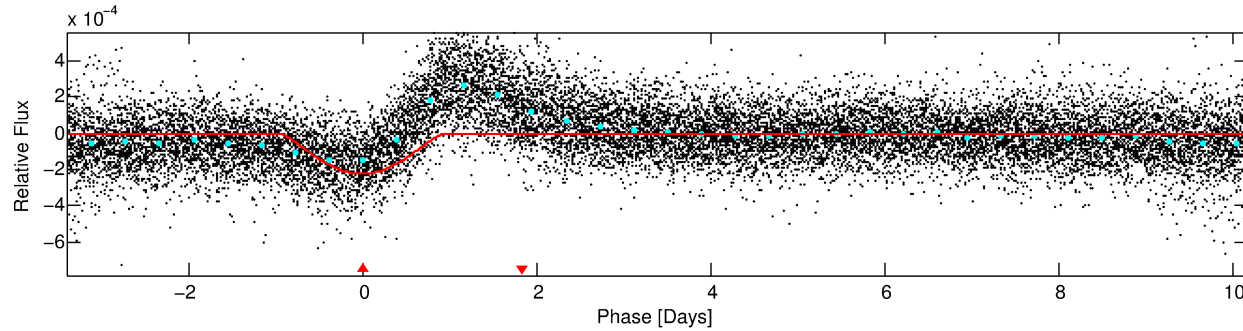
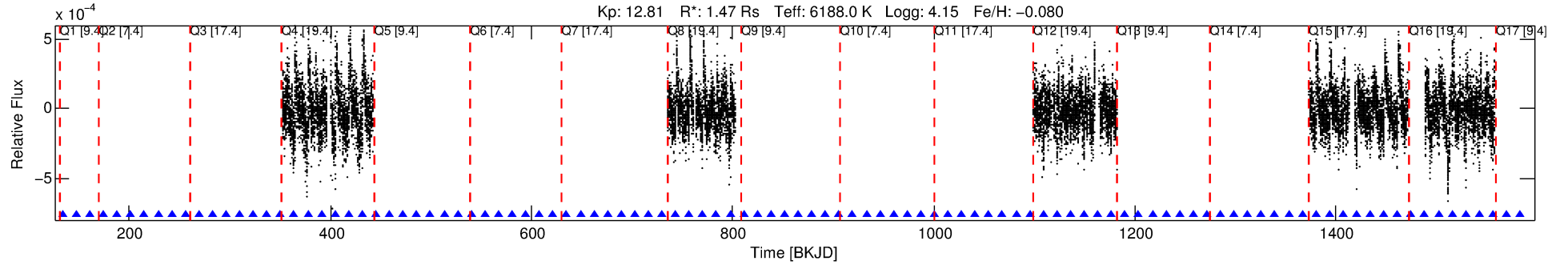
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004359851-01

No Significant Match Found

DV One-Page Summary

KIC: 4359851 Candidate: 1 of 1 Period: 13.543 d



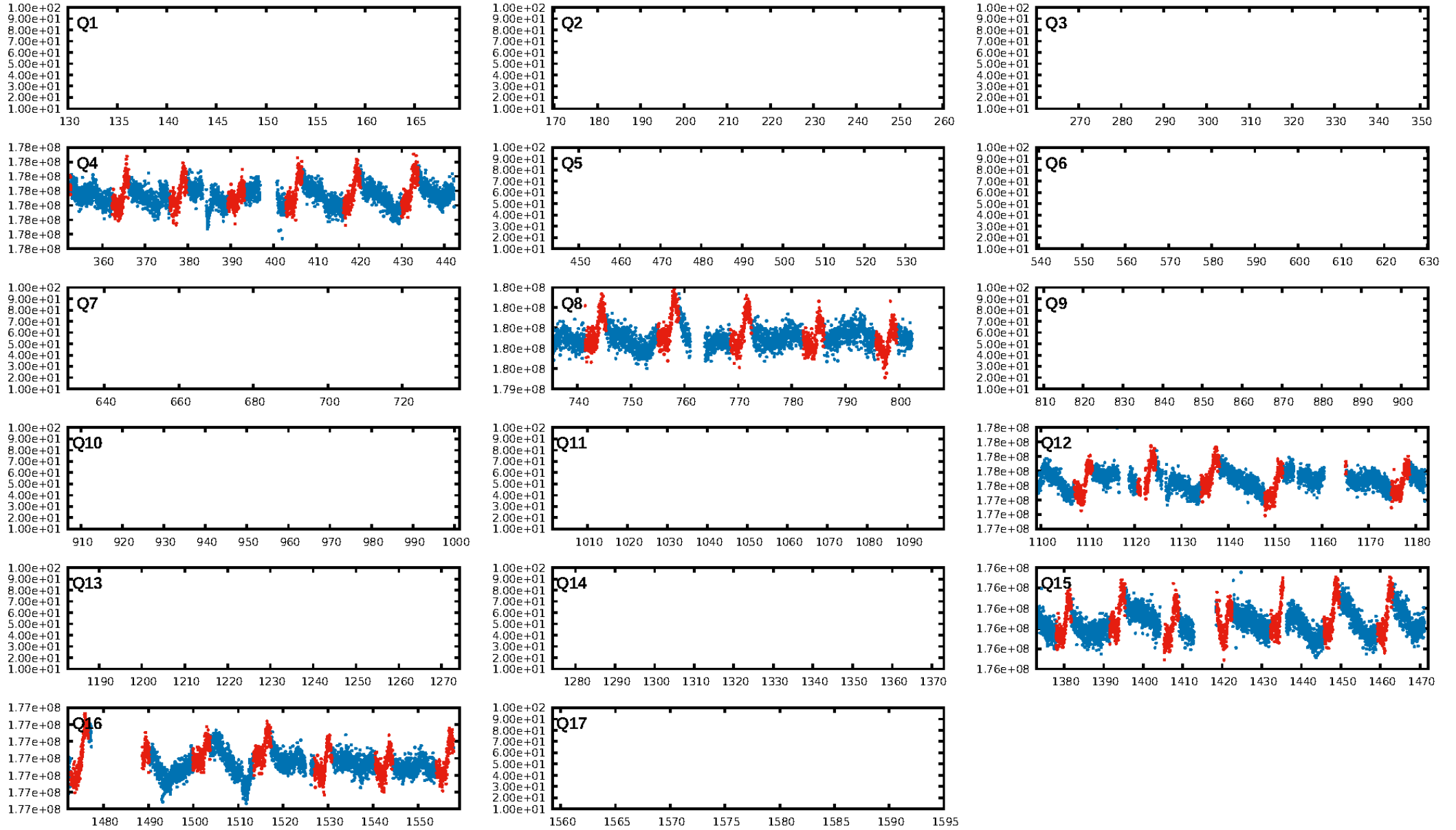
DV Fit Results:

Period = 13.54317 [0.00061] d
Epoch = 133.9611 [0.0463] BKJD
Rp/R* = 0.0273 [0.0174]
a/R* = 1.14 [0.02]
b = 1.00 [0.02]
Seff = 212.50 [79.54]
Teq = 974 [91] K
Rp = 4.36 [2.96] Re
a = 0.1152 [0.0248] AU
Ag = N/A
Teffp = N/A

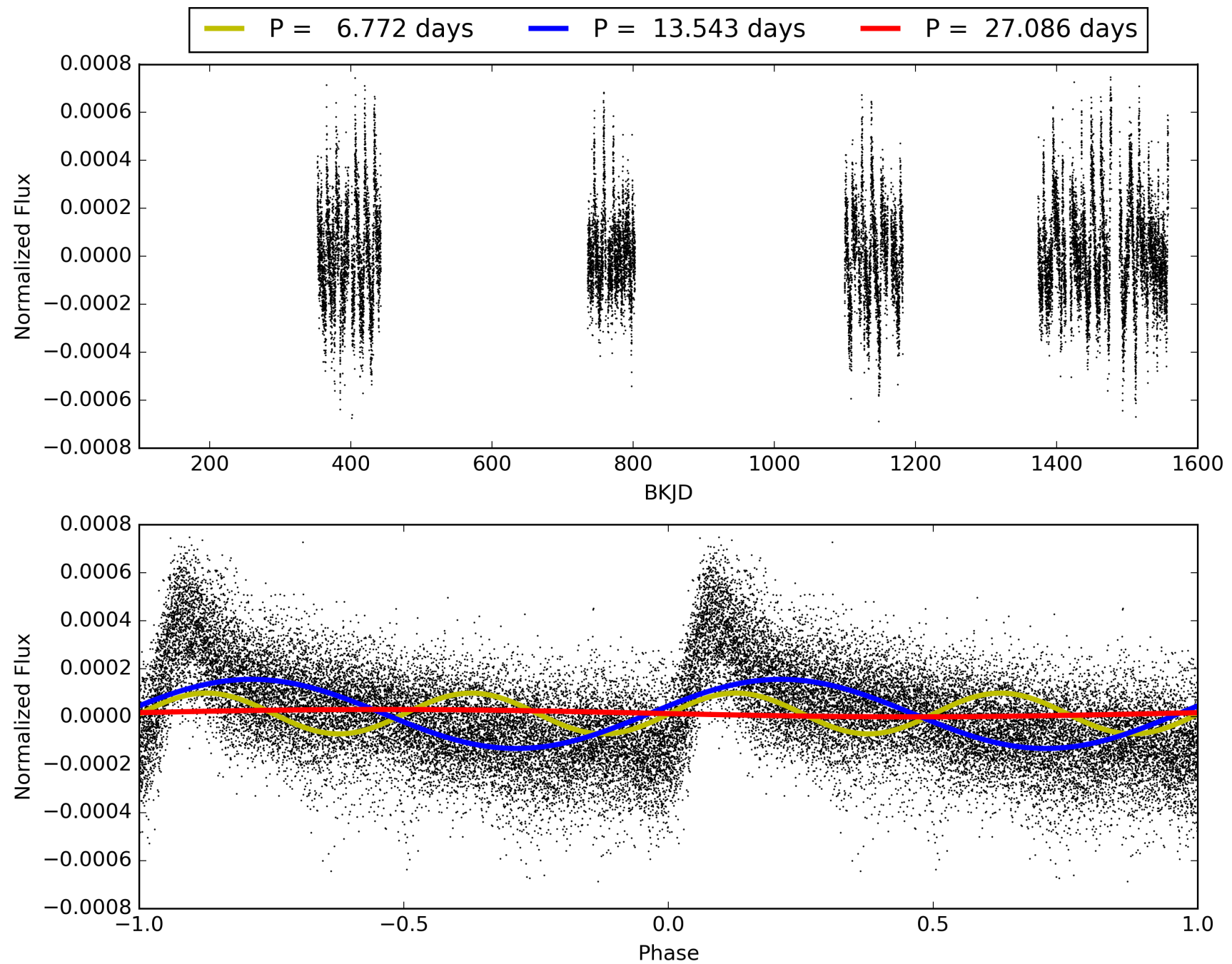
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 100.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.36e-22
RollingBand-fgt: 1.00 [29/29]
GhostDiagnostic-chr: 0.9492
Centroid-sig: 0.2%
Centroid-so: 0.677 arcsec [3.11 σ]
OotOffset-rm: 2.210 arcsec [3.49 σ]
KicOffset-rm: 2.267 arcsec [3.66 σ]
OotOffset-st: 0/1/4/0 [5]
KicOffset-st: 0/1/4/0 [5]
DiffImageQuality-fgm: 1.00 [5/5]
DiffImageOverlap-fno: 1.00 [5/5]

TCE 004359851-01, PDC Light Curves

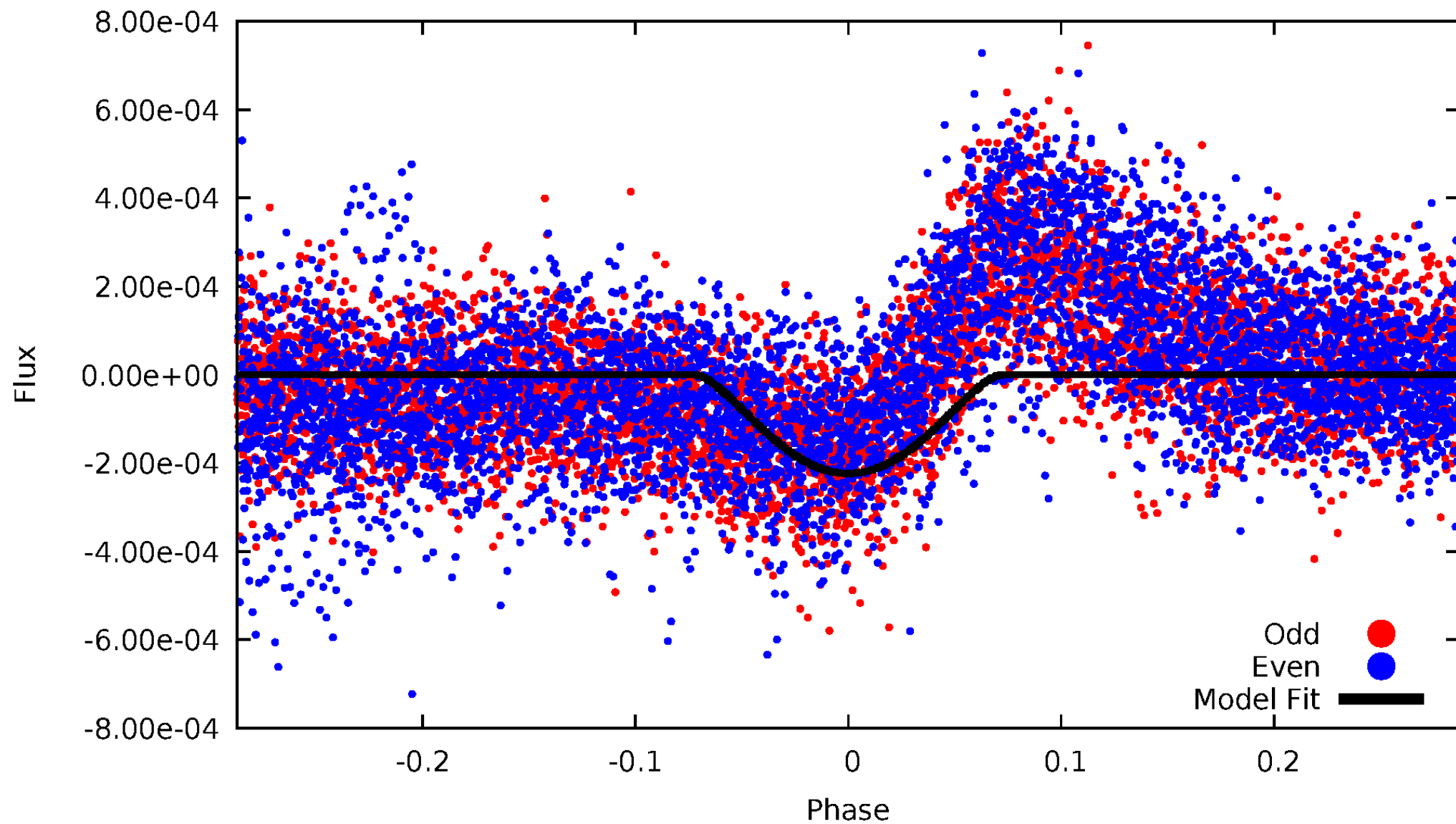


TCE 004359851-01



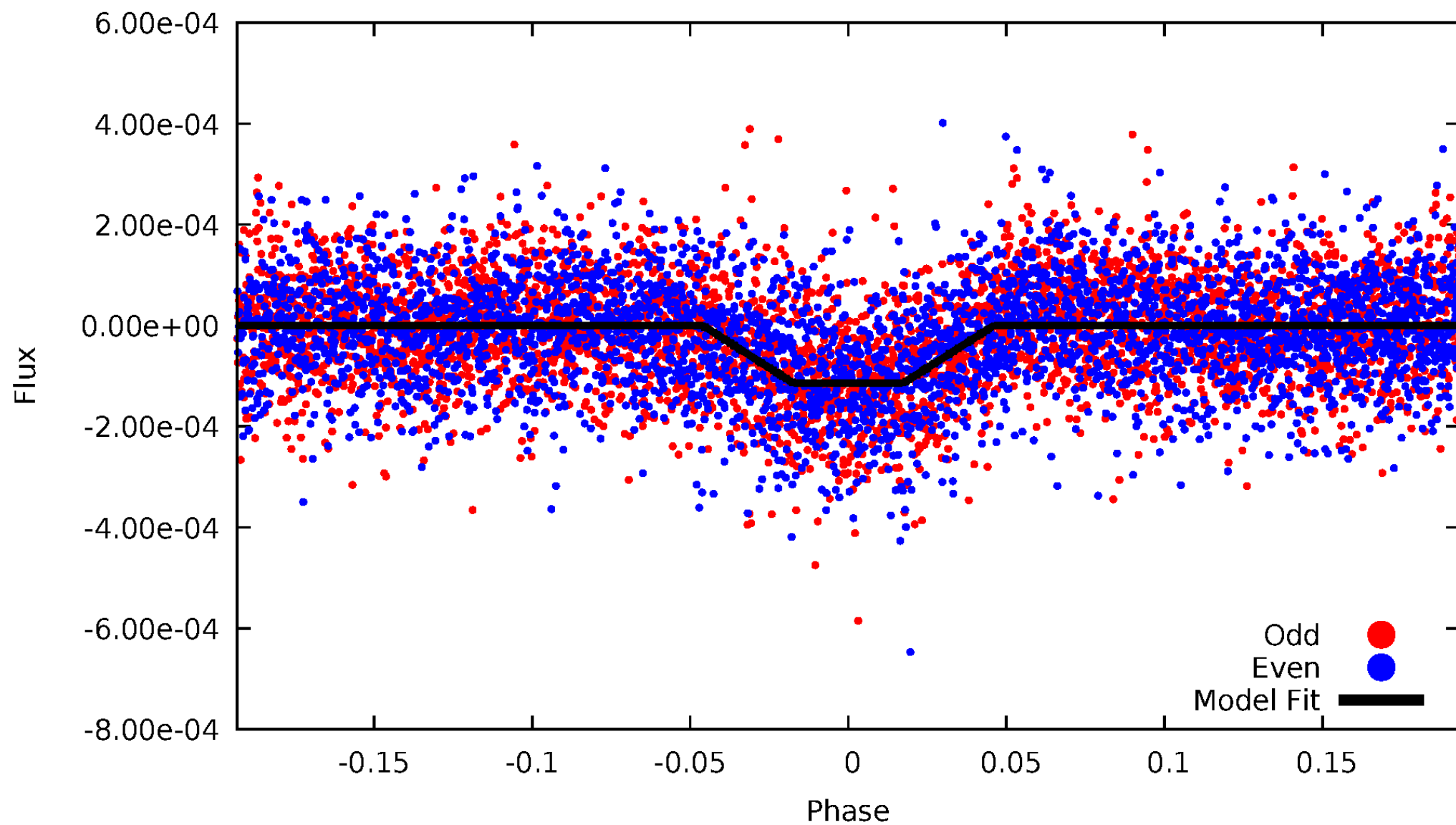
DV Odd/Even

TCE 004359851-01

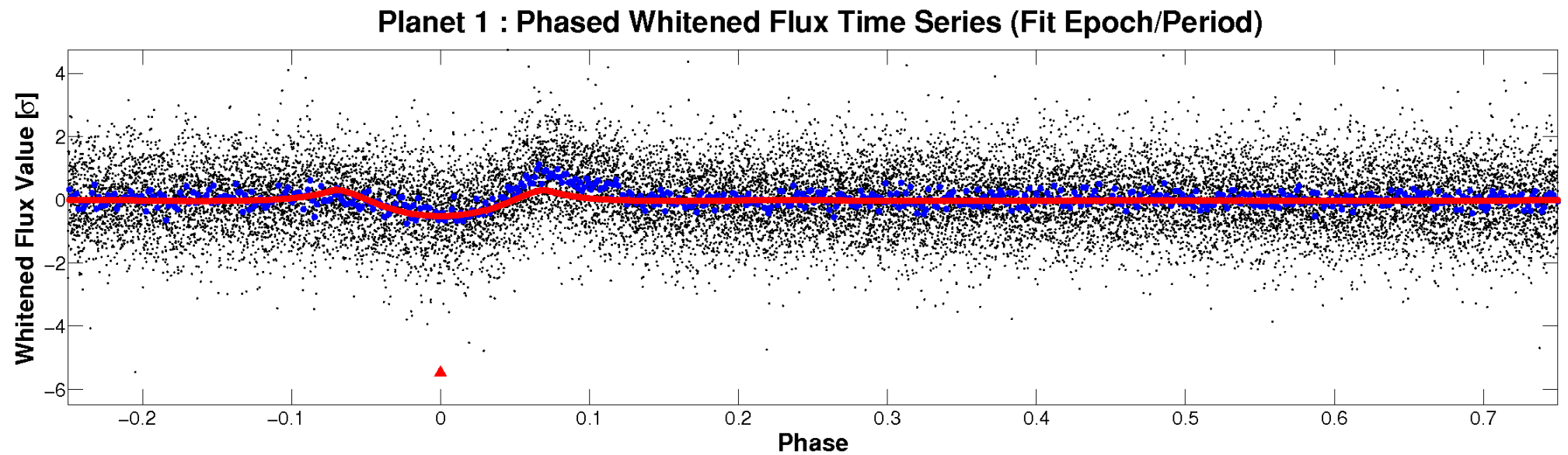
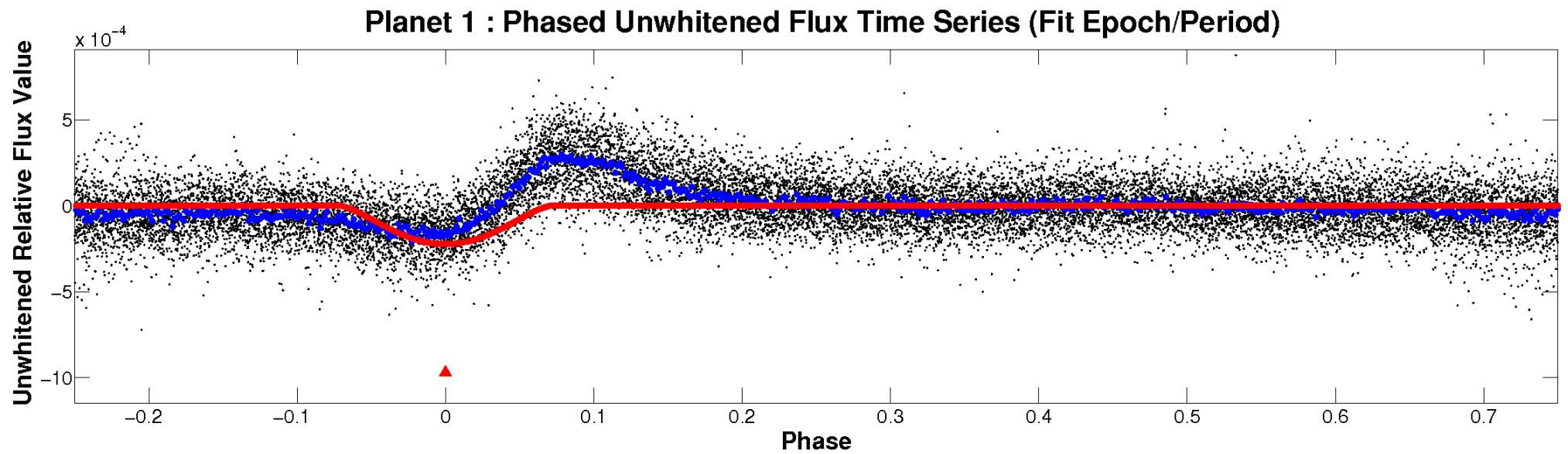


ALT Odd/Even

TCE 004359851-01

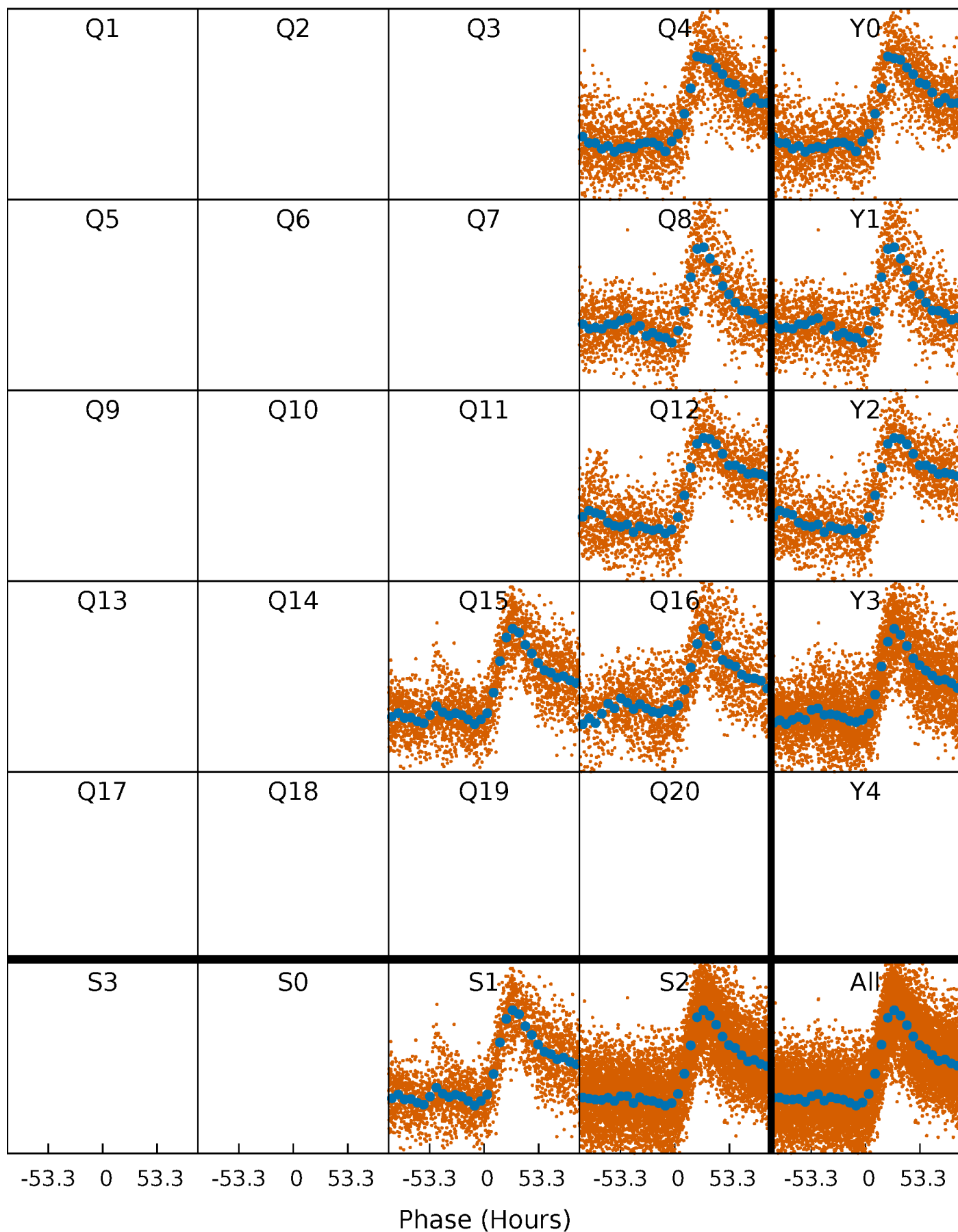


Non-Whitened Vs. Whitened Light Curve



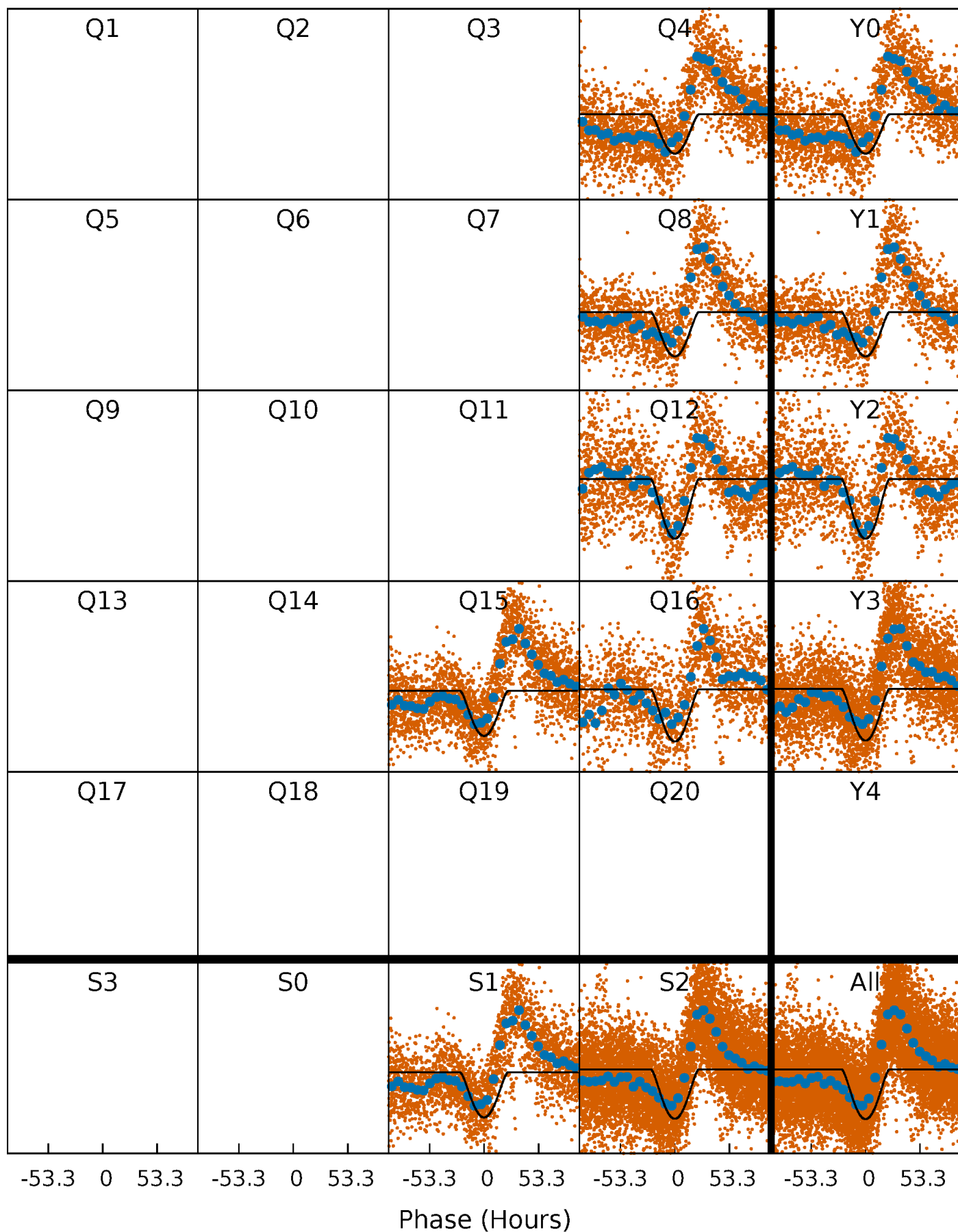
PDC Quarter-Phased Transit Curves

TCE 004359851-01 P= 13.543172 Days $T_0=133.961053$ (BKJD)



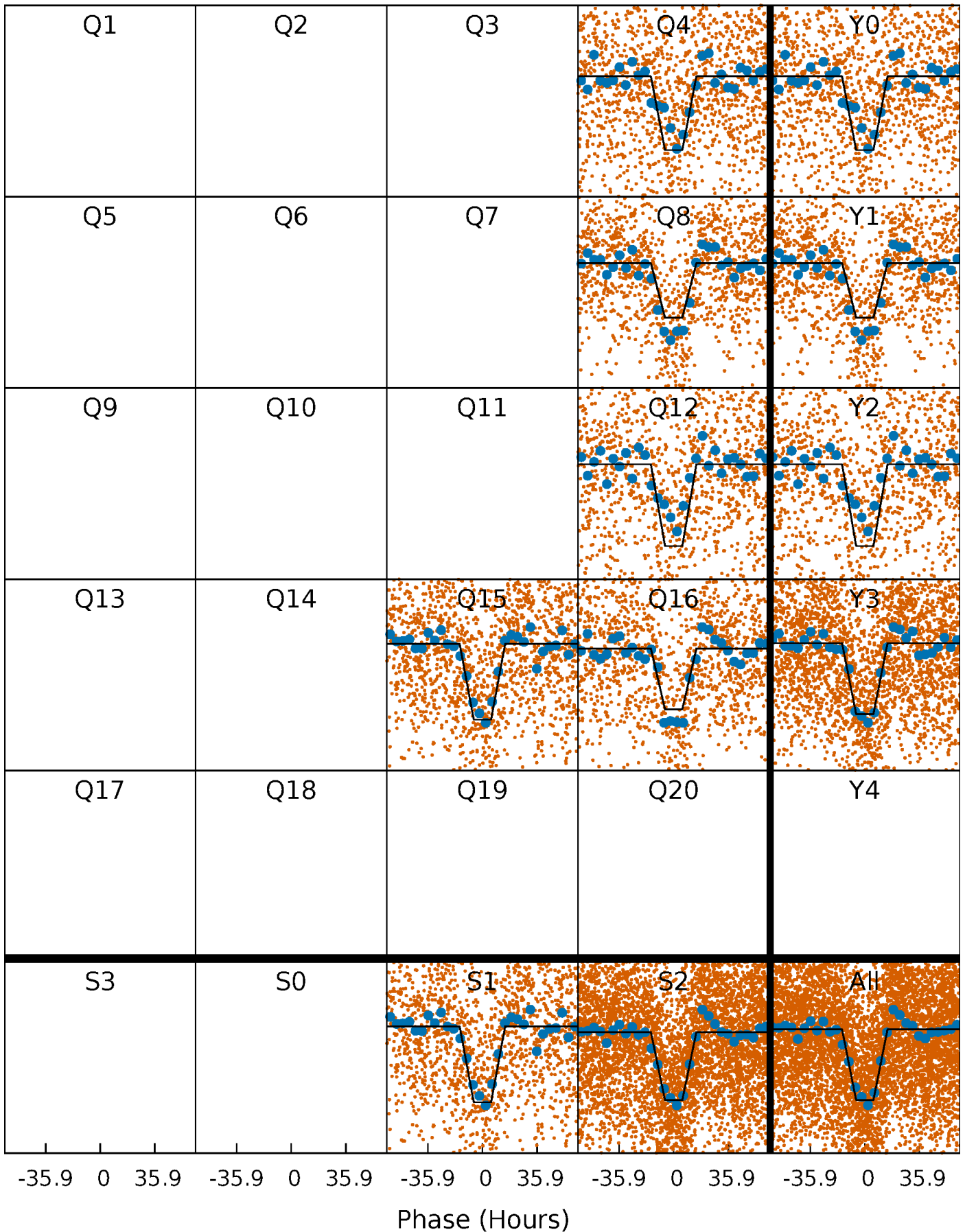
DV Quarter-Phased Transit Curves

TCE 004359851-01 P= 13.543172 Days $T_0=133.961053$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

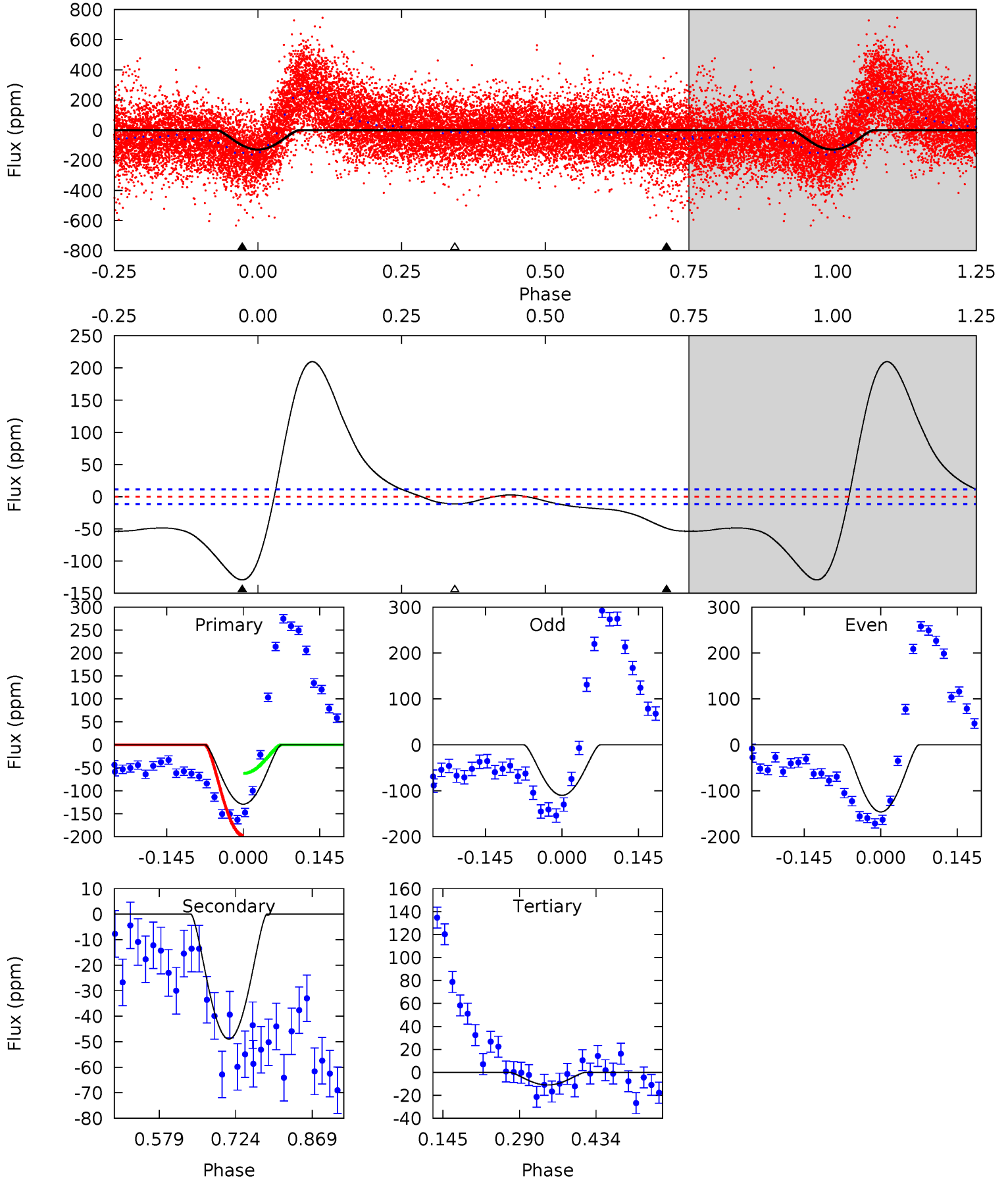
TCE 004359851-01 P= 13.544264 Days $T_0=134.065582$ (BKJD)



DV Model-Shift Uniqueness Test

004359851-01, P = 13.543172 Days, E = 133.961053 Days

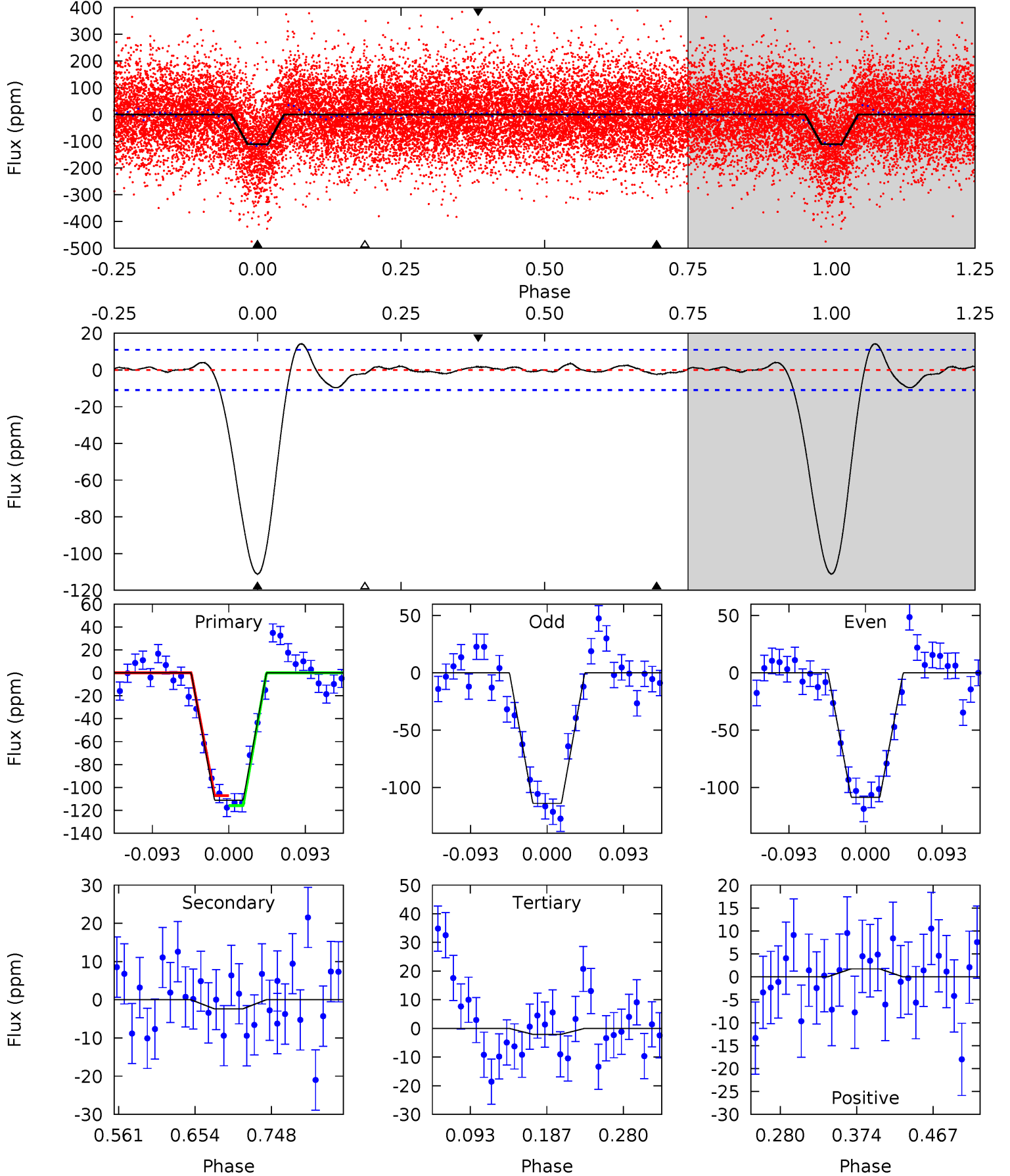
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
51.0	19.3	4.35	0	4.49	1.46	18.3	46.6	51.0	15.0	19.3	7.12	1.01	0.62	25.6



Alt Model-Shift Uniqueness Test

004359851-01, P = 13.544264 Days, E = 134.065582 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
46.4	0.99	0.86	0.73	4.58	1.68	1.08	45.6	45.7	0.13	0.27	1.09	1.10	0.11	1.82



Stellar Parameters For KIC 004359851

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$\rho_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6188^{+198}_{-242}	$4.152^{+0.198}_{-0.132}$	$-0.080^{+0.250}_{-0.300}$	$1.465^{+0.335}_{-0.335}$	$1.111^{+0.187}_{-0.153}$	$0.498^{+0.531}_{-0.190}$
	+3%/-4%	+5%/-3%	+312%/-375%	+23%/-23%	+17%/-14%	+107%/-38%
Source	KIC0	FLK73	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 004359851-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-49 ± 3	$4.45^{+2.88}_{-2.36}$	1351^{+97}_{-105}	3512^{+1029}_{-489}	18^{+65}_{-11}
Alt.	-2 ± 2	$2.63^{+2.52}_{-1.82}$	1353^{+83}_{-95}	2484^{+1138}_{-4595}	$1.714^{+19.480}_{-1.760}$

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

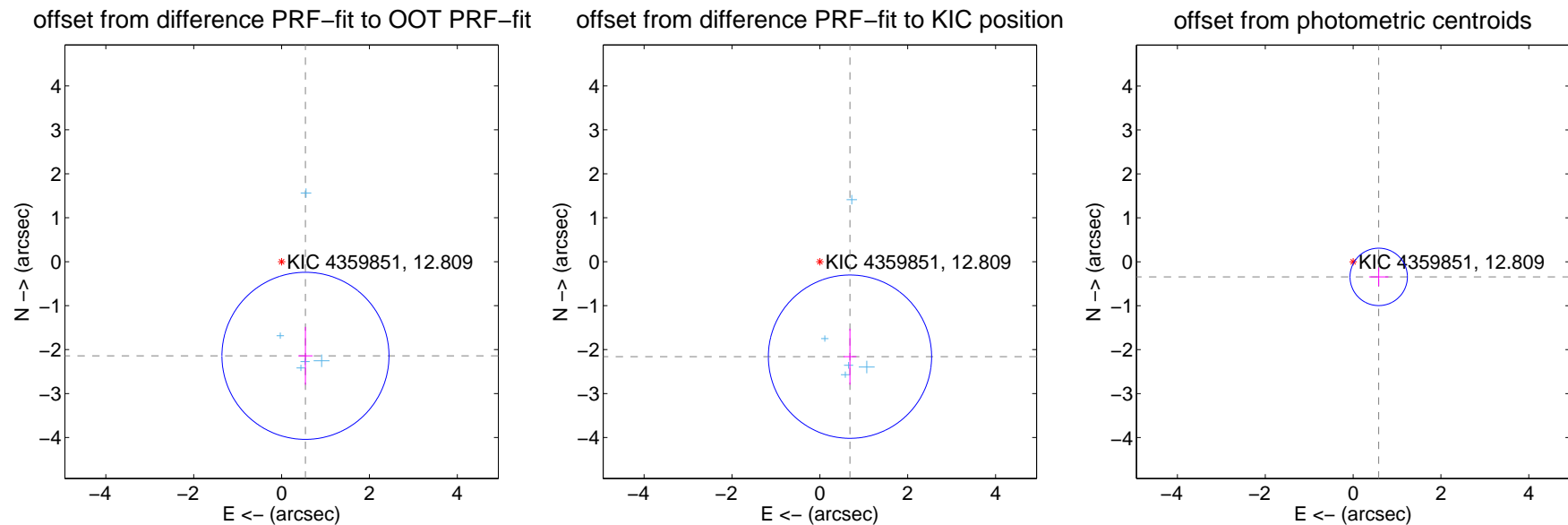
DV Centroid Data

Supplemental centroid analysis for 004359851-01. Kepler magnitude: 12.81. Transit SNR 17.66

There are 5 quarters with good PRF difference image offsets

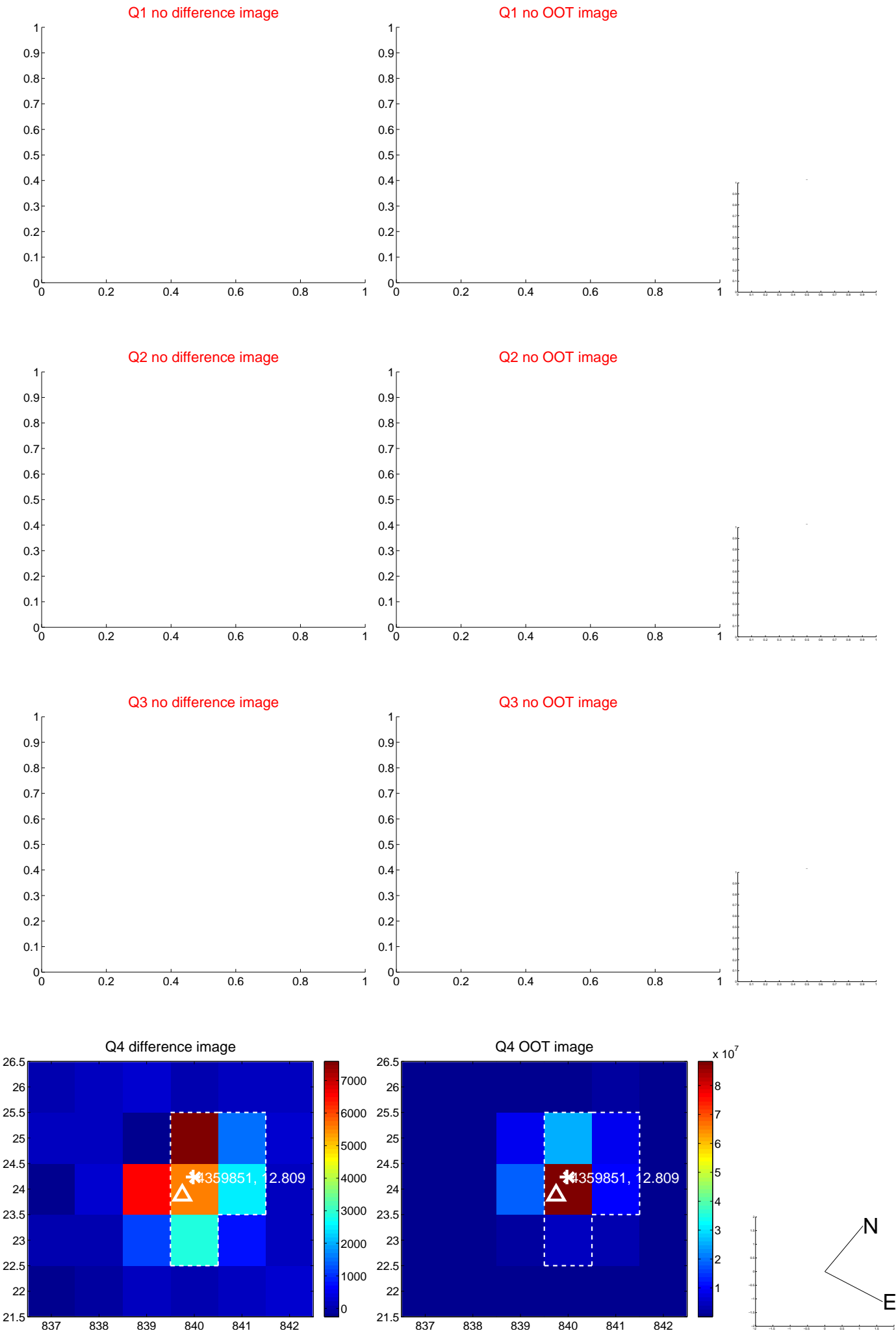
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	2.210 ± 0.634	3.49	-0.544 ± 0.162	-2.142 ± 0.658
PRF-fit source offset from KIC position	2.267 ± 0.619	3.66	-0.686 ± 0.145	-2.161 ± 0.637
photometric centroid source offset	0.68 ± 0.22	3.11	-0.58 ± 0.22	-0.34 ± 0.21

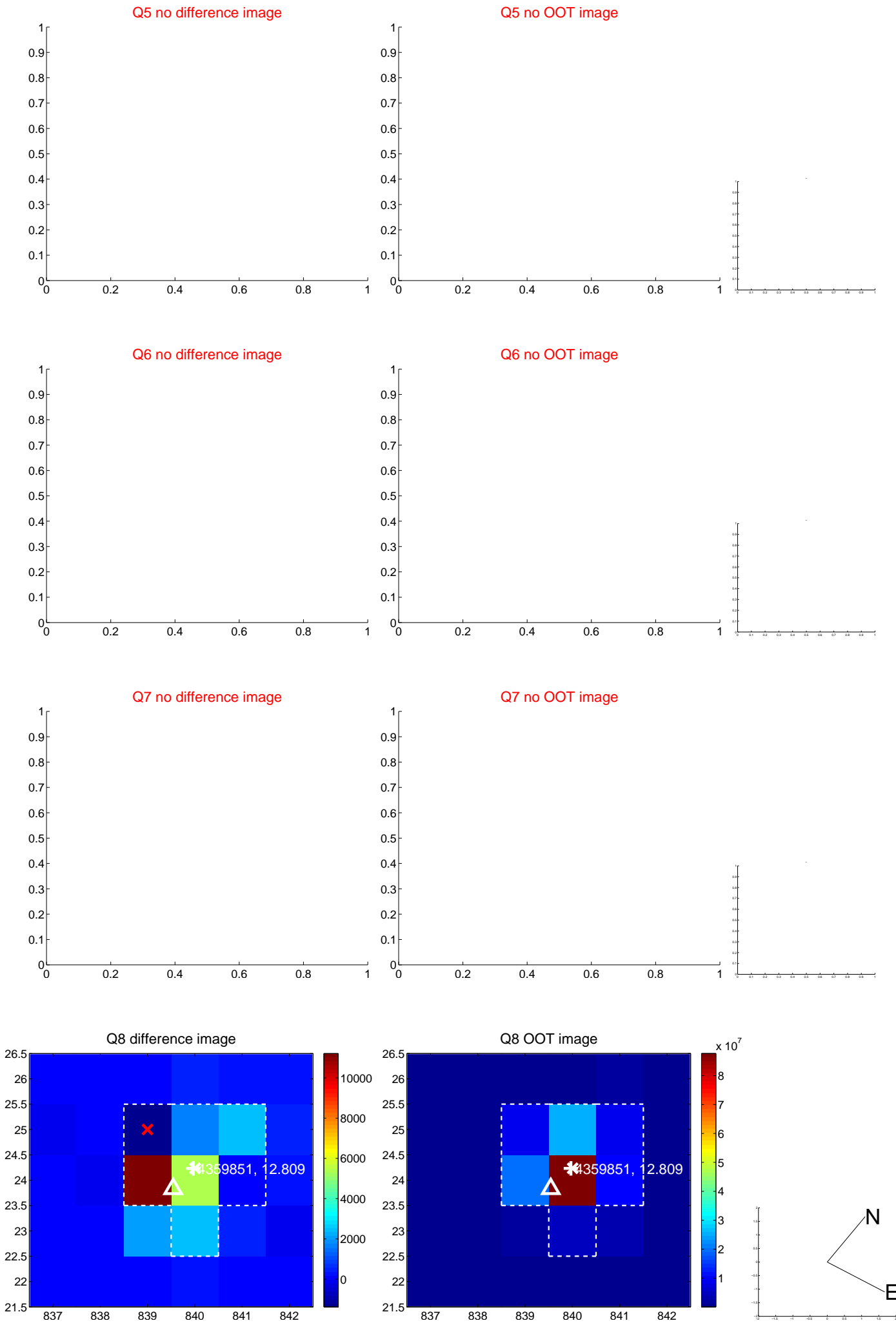


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

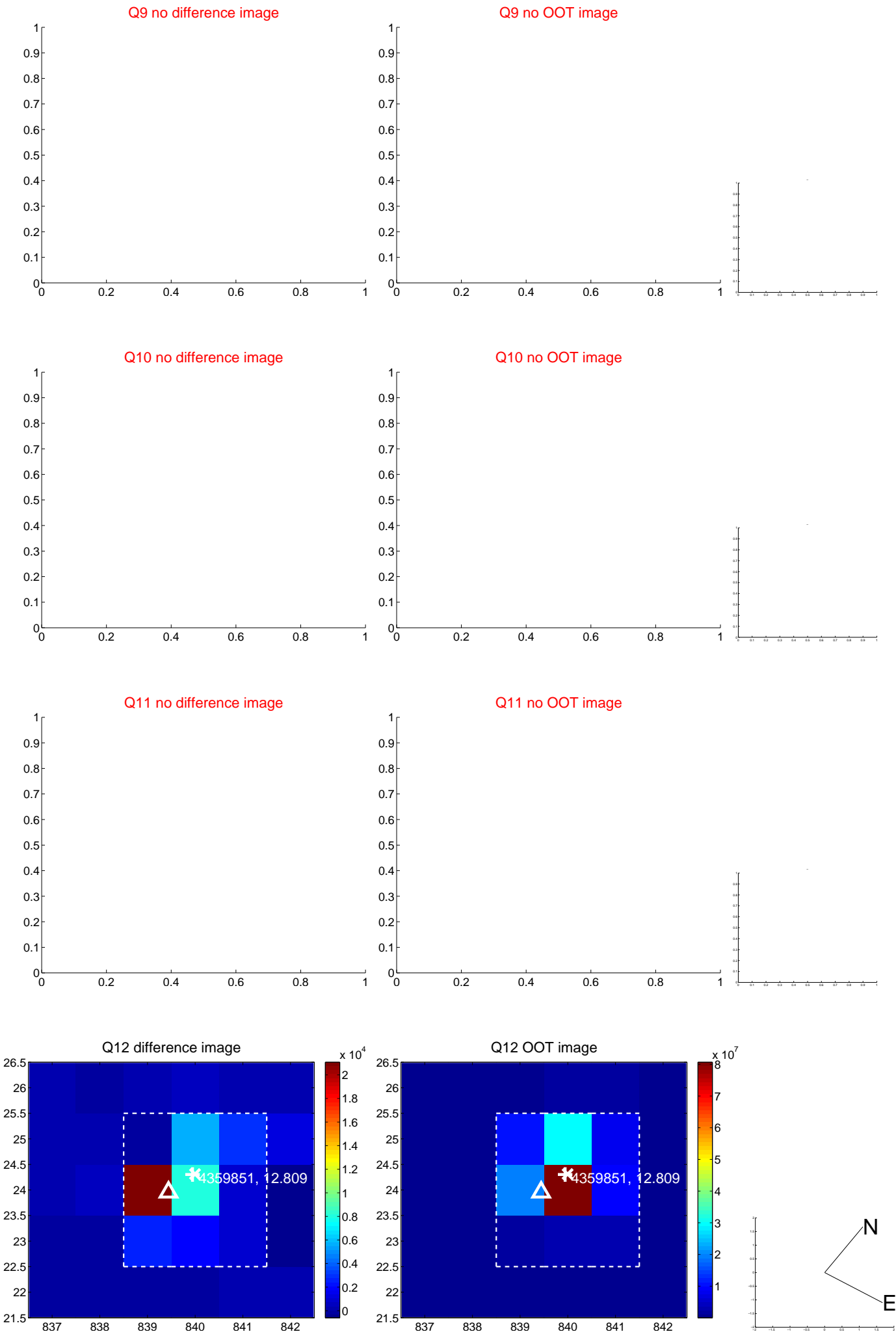
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white ×: 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.

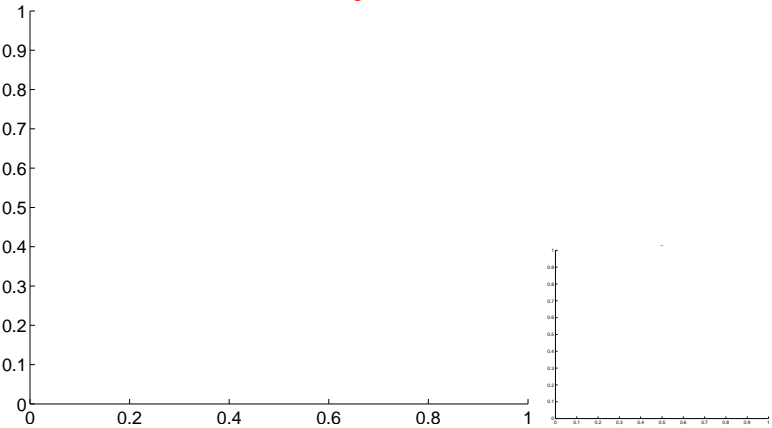


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

Q13 no difference image



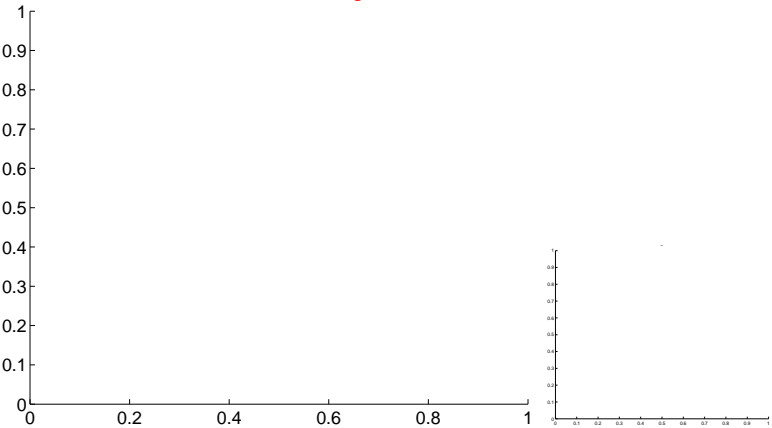
Q13 no OOT image



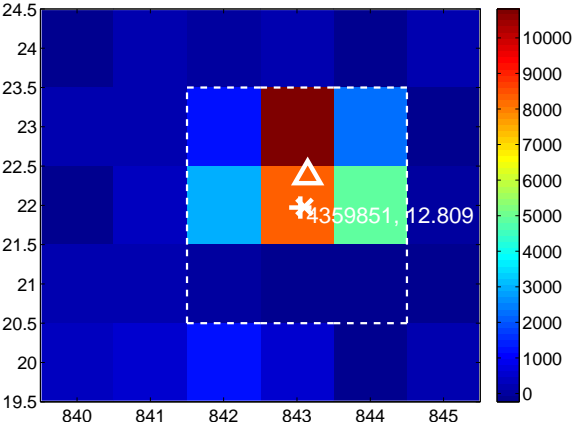
Q14 no difference image



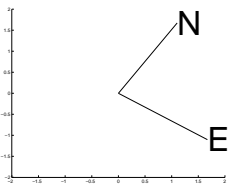
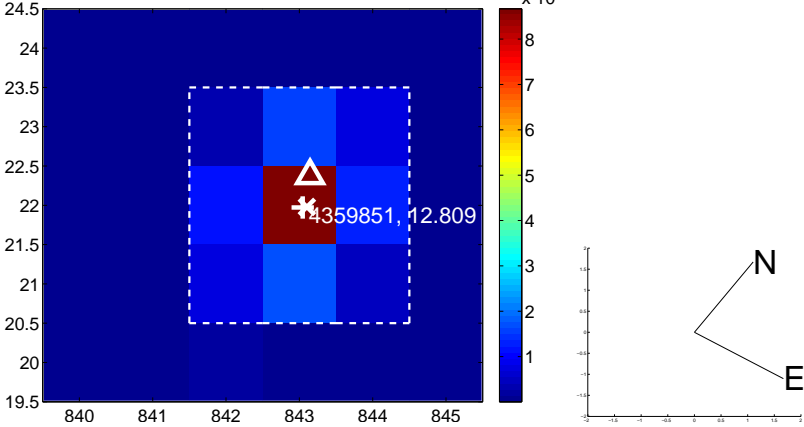
Q14 no OOT image



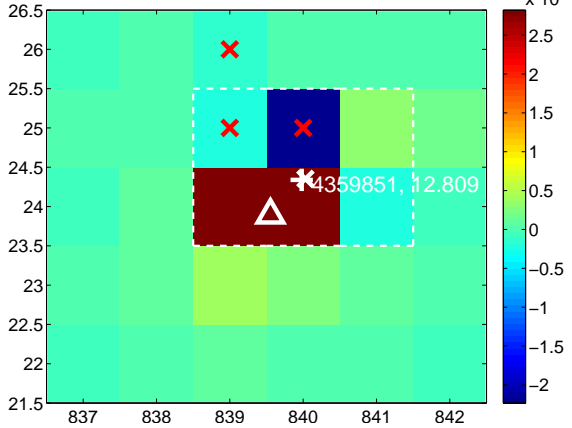
Q15 difference image



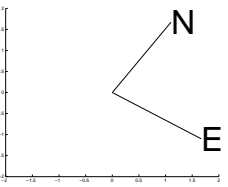
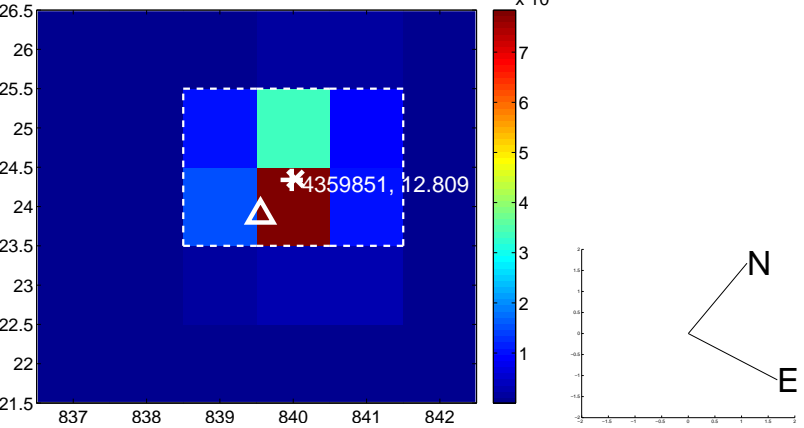
Q15 OOT image



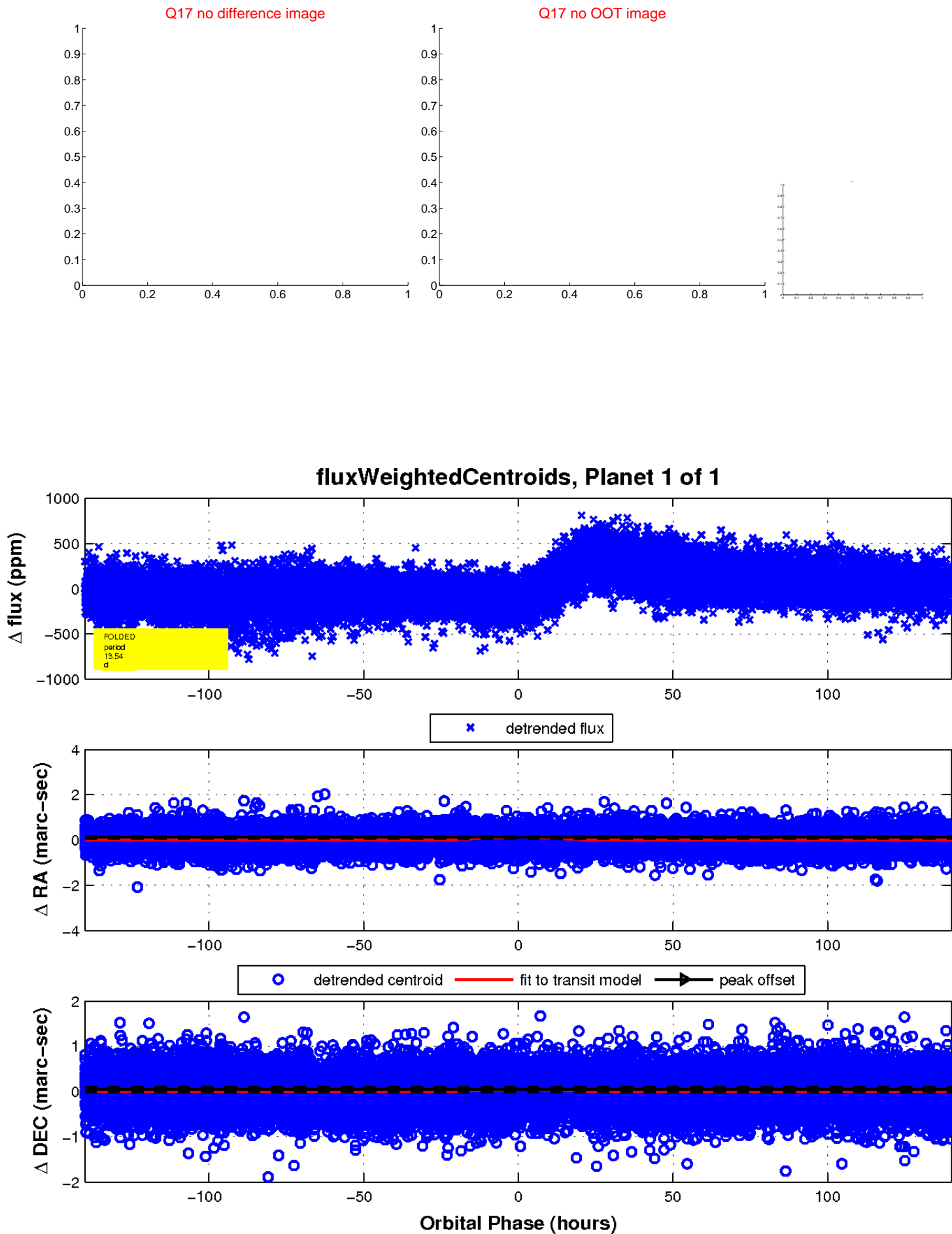
Q16 difference image



Q16 OOT image



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



UKIRT Image

Declination

