

KIC 009836149

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})
009836149-01	OBS	1958.01	17.815933	134.483202	846.4	3.793	29.3	33.8	0.93	5964	3.25	56.57

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009836149-01	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.

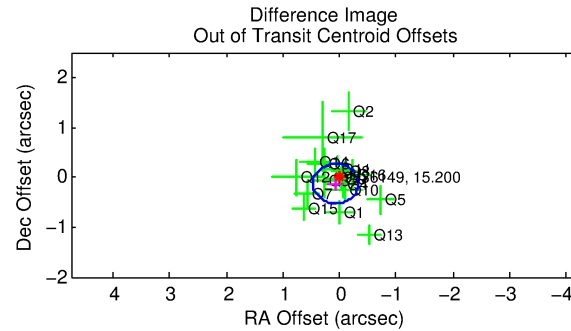
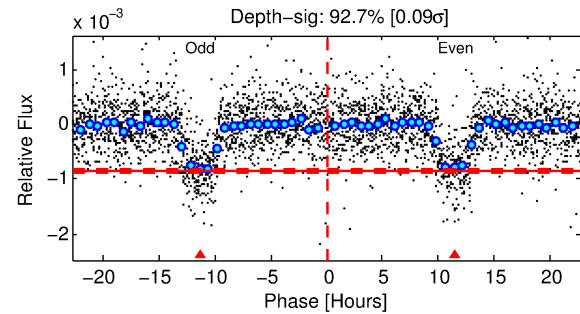
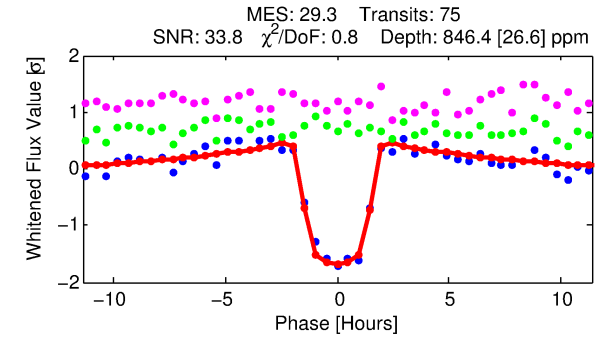
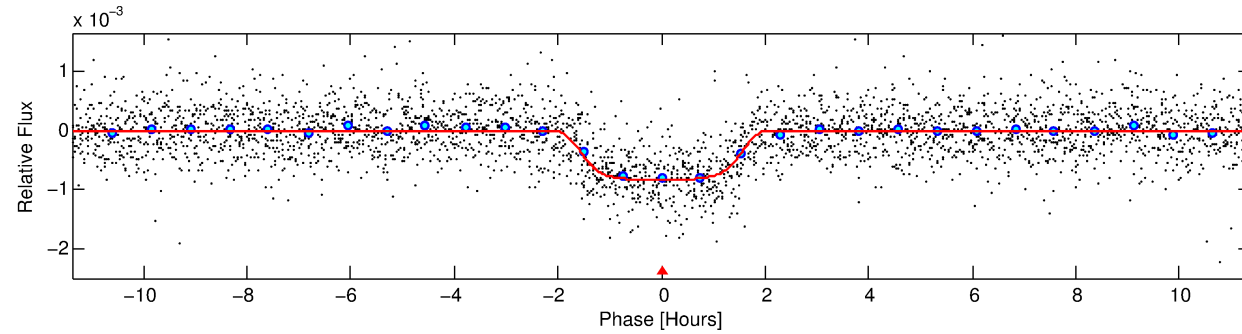
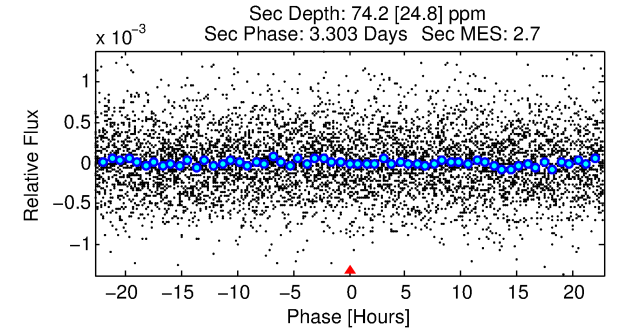
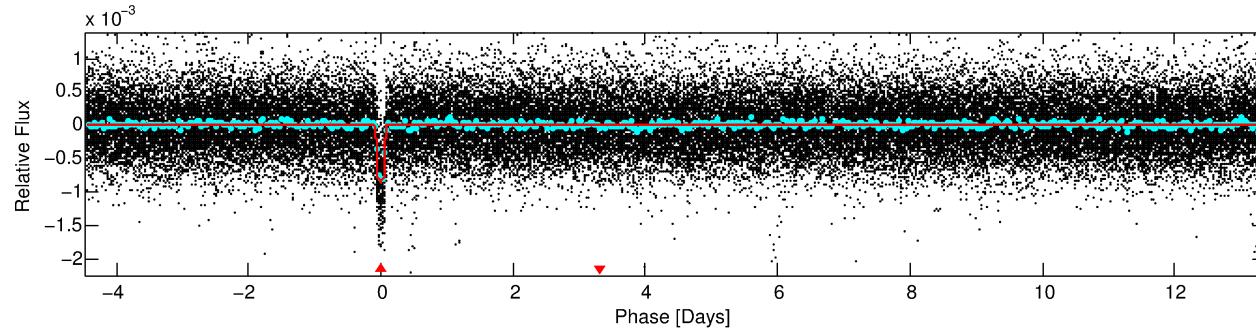
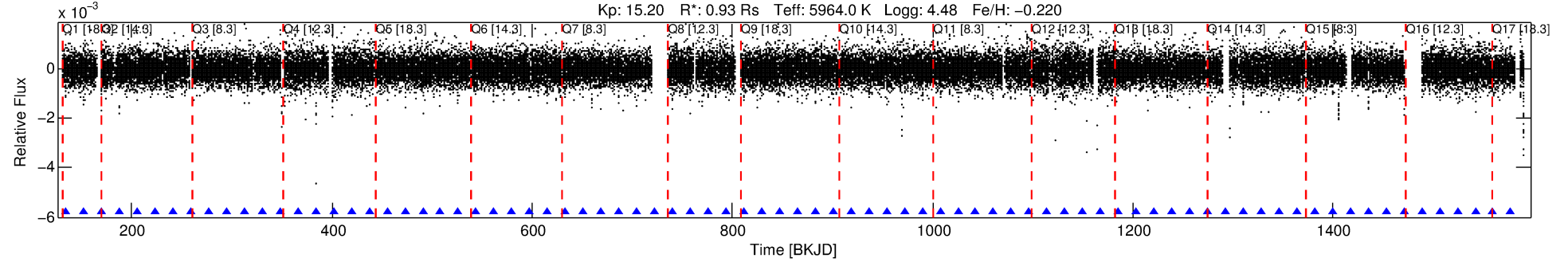
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009836149-01

No Significant Match Found

DV One-Page Summary

KIC: 9836149 Candidate: 1 of 1 Period: 17.816 d
KOI: K01958.01 Name: Kepler-66b Corr: 0.942



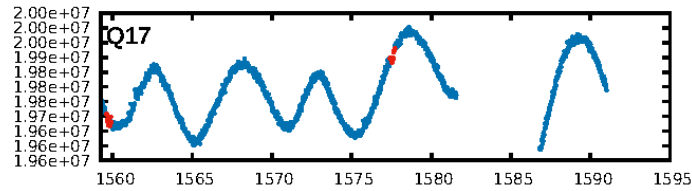
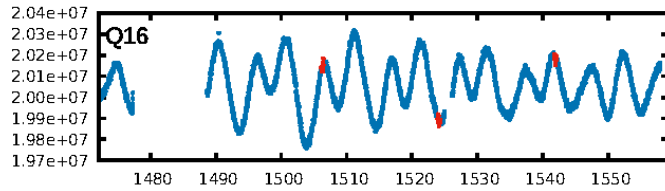
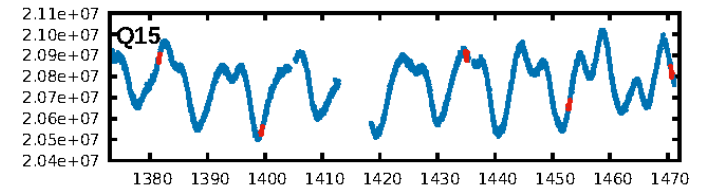
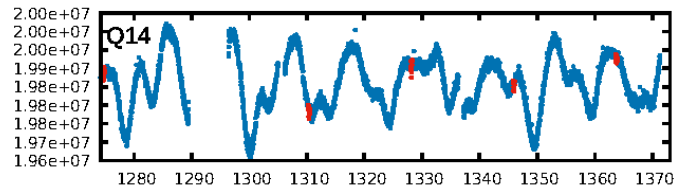
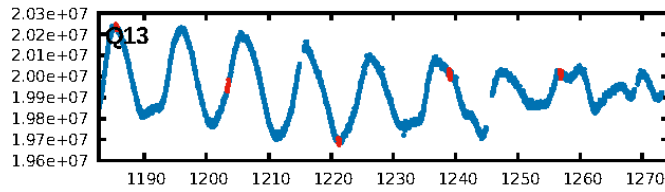
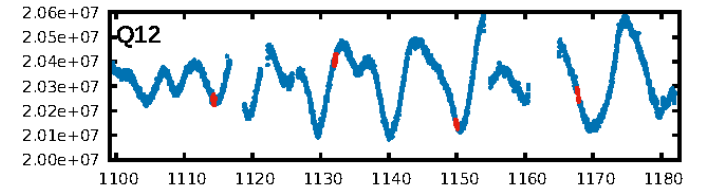
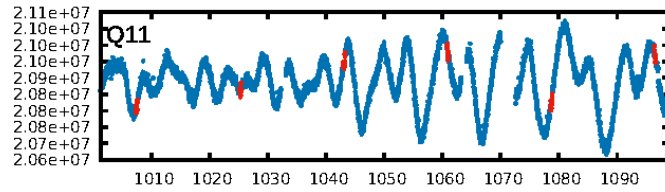
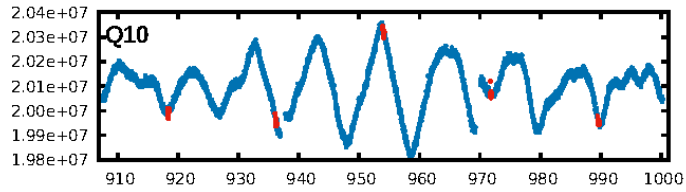
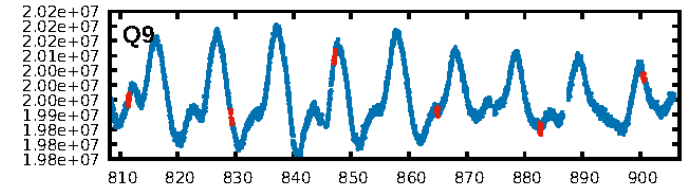
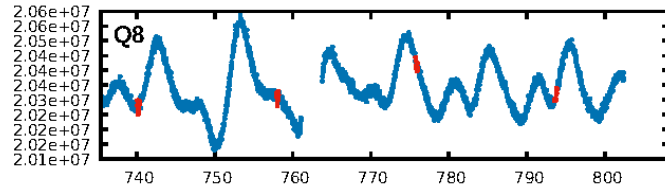
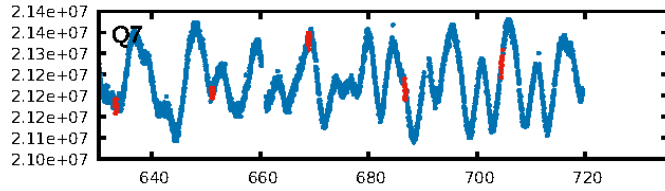
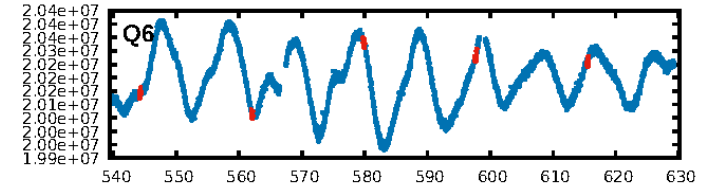
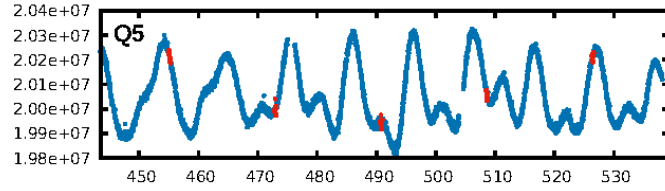
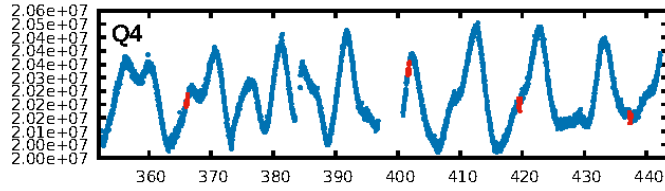
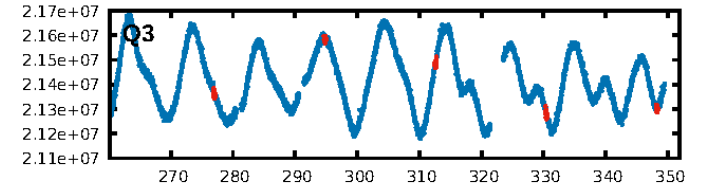
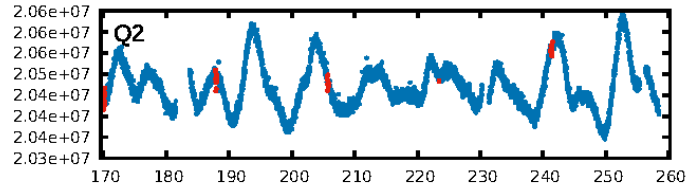
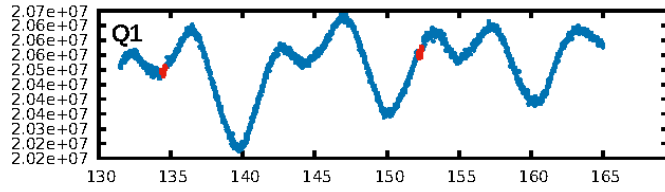
DV Fit Results:

Period = 17.81593 [0.00005] d
Epoch = 134.4832 [0.0021] BKJD
Rp/R* = 0.0320 [0.0012]
a/R* = 17.12 [2.54]
b = 0.92 [0.03]
Seff = 56.57 [12.79]
Teff = 699 [40] K
Rp = 3.26 [0.49] Re
a = 0.1321 [0.0177] AU
Ag = 67.20 [26.94] [2.46σ]
Teffp = 3096 [274] K [8.67σ]

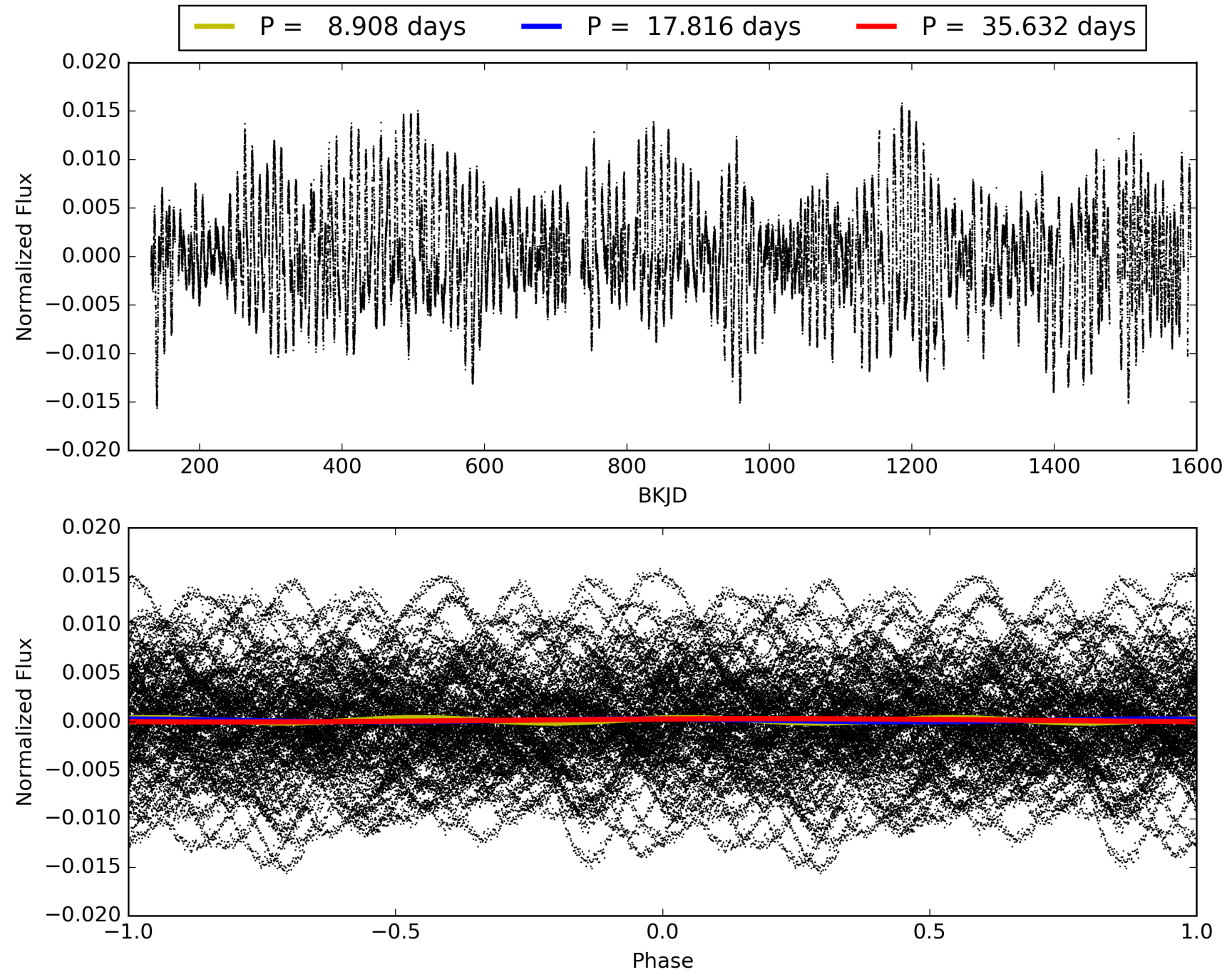
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 91.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.22e-167
RollingBand-fgt: 1.00 [71/71]
GhostDiagnostic-chr: 2.194
Centroid-sig: 0.8%
Centroid-so: 0.483 arcsec [1.51σ]
OotOffset-rm: 0.150 arcsec [1.13σ]
KicOffset-rm: 0.093 arcsec [0.73σ]
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 009836149-01, PDC Light Curves

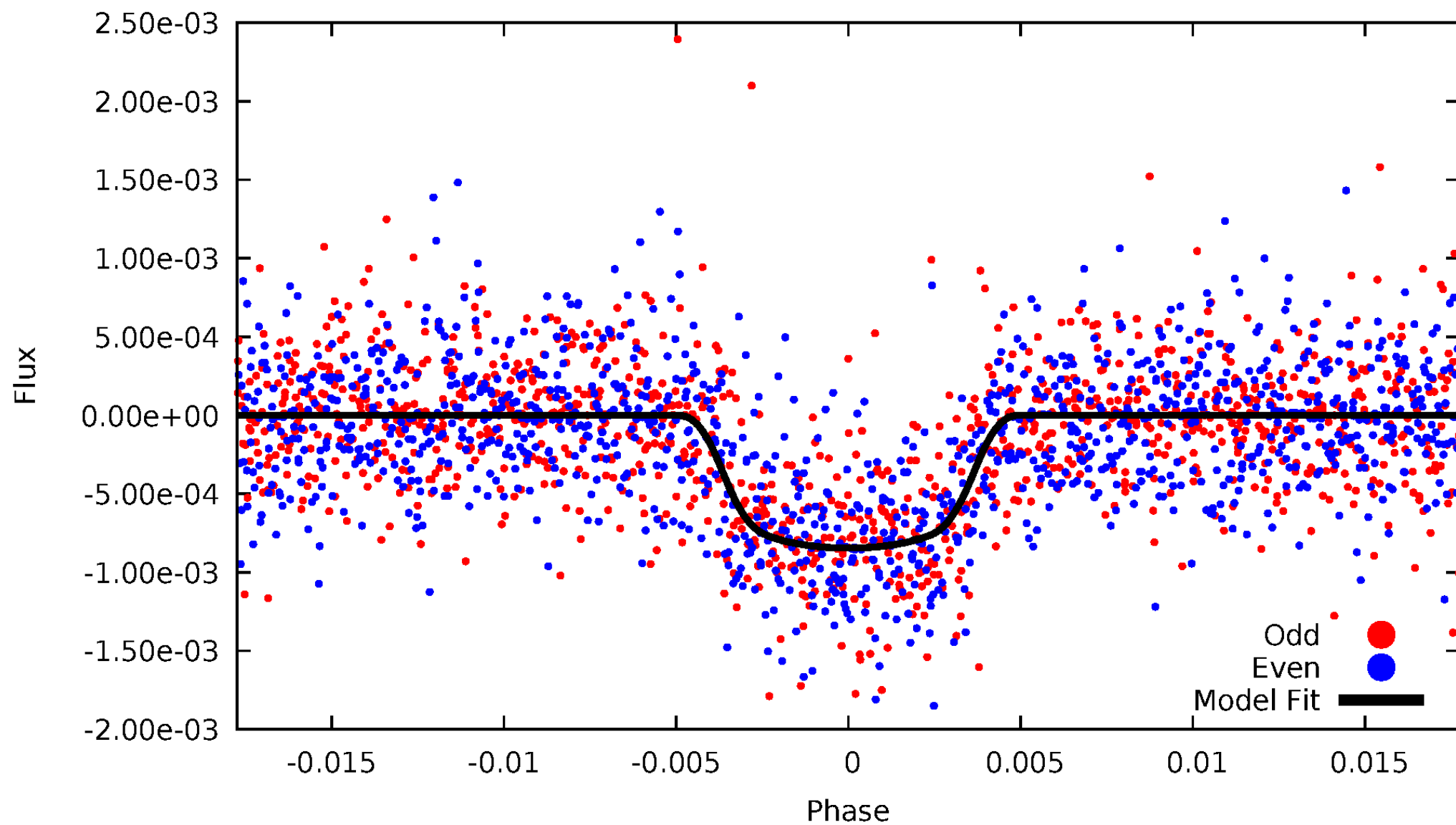


TCE 009836149-01



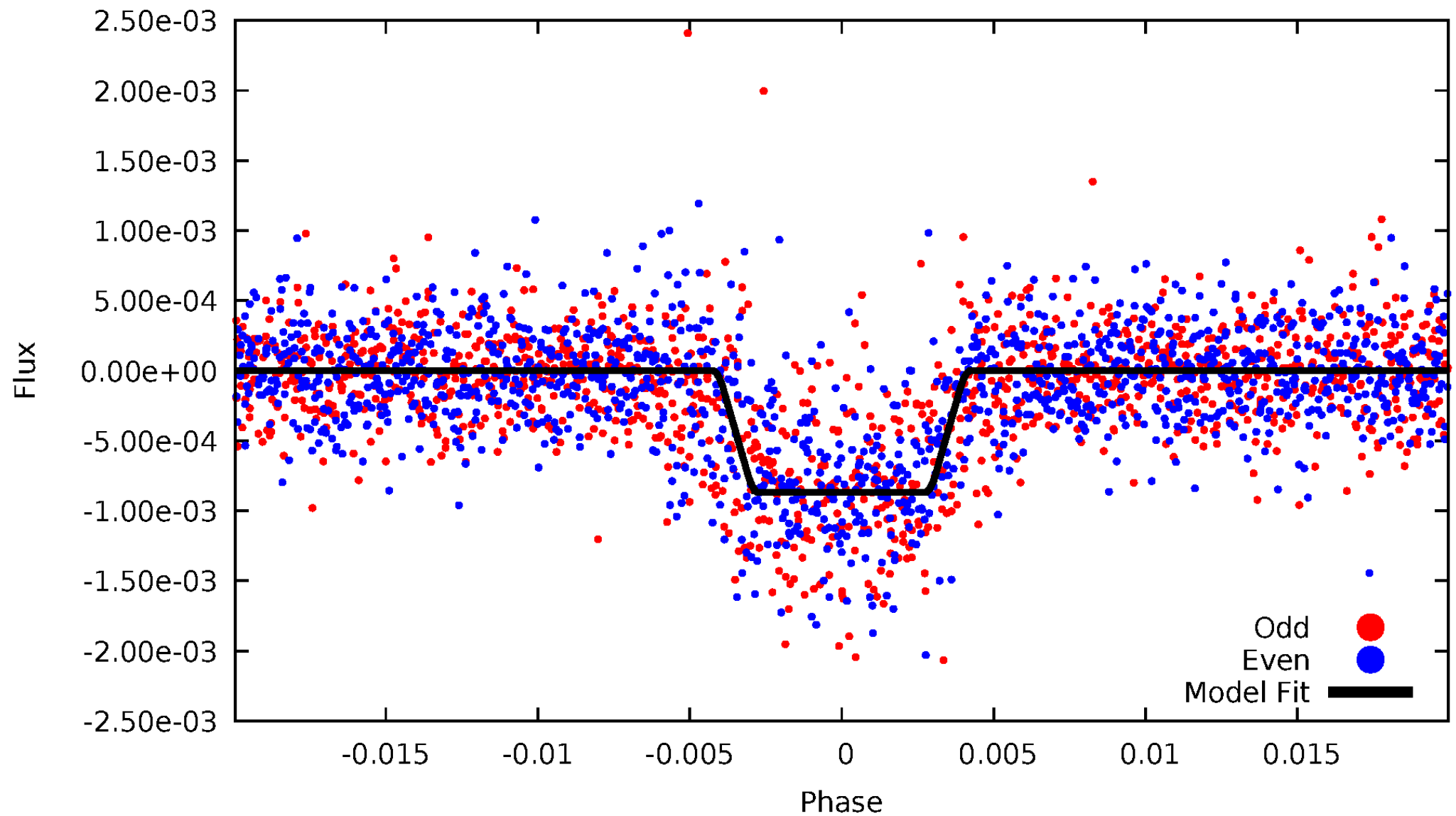
DV Odd/Even

TCE 009836149-01



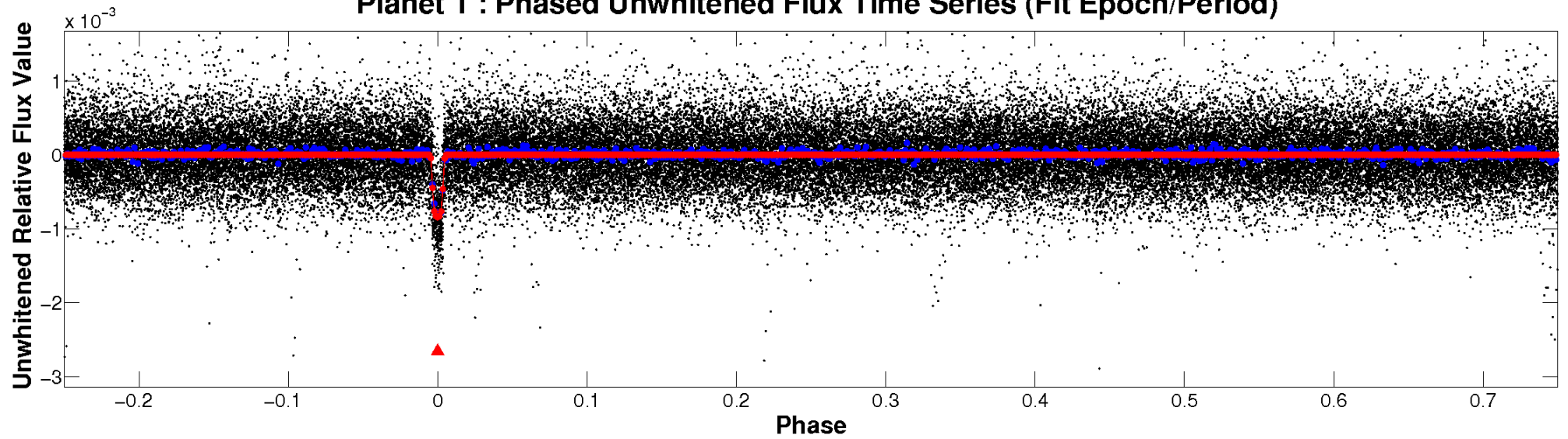
ALT Odd/Even

TCE 009836149-01

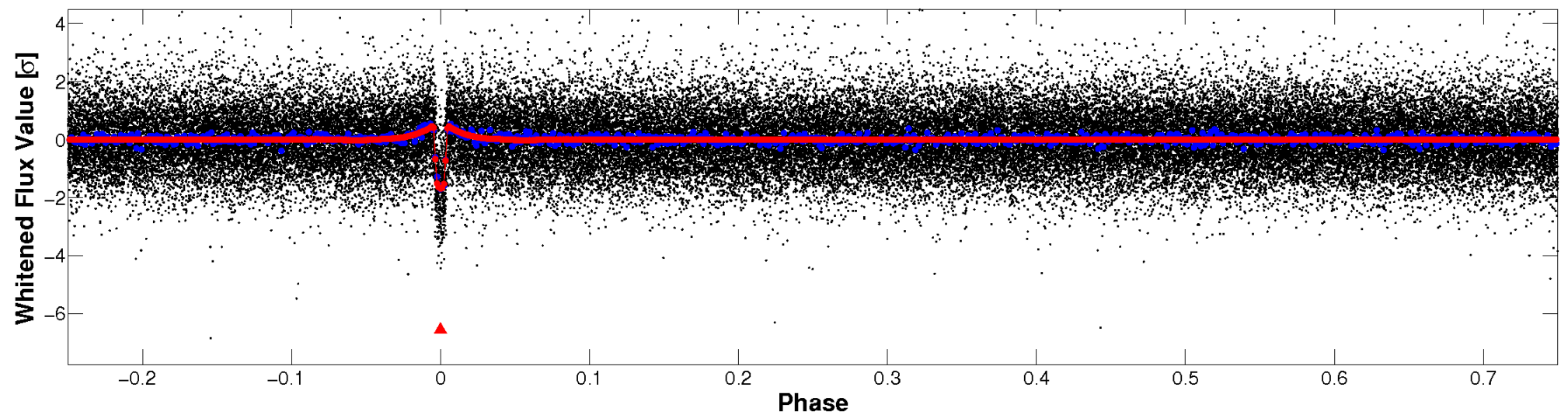


Non-Whitened Vs. Whitened Light Curve

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

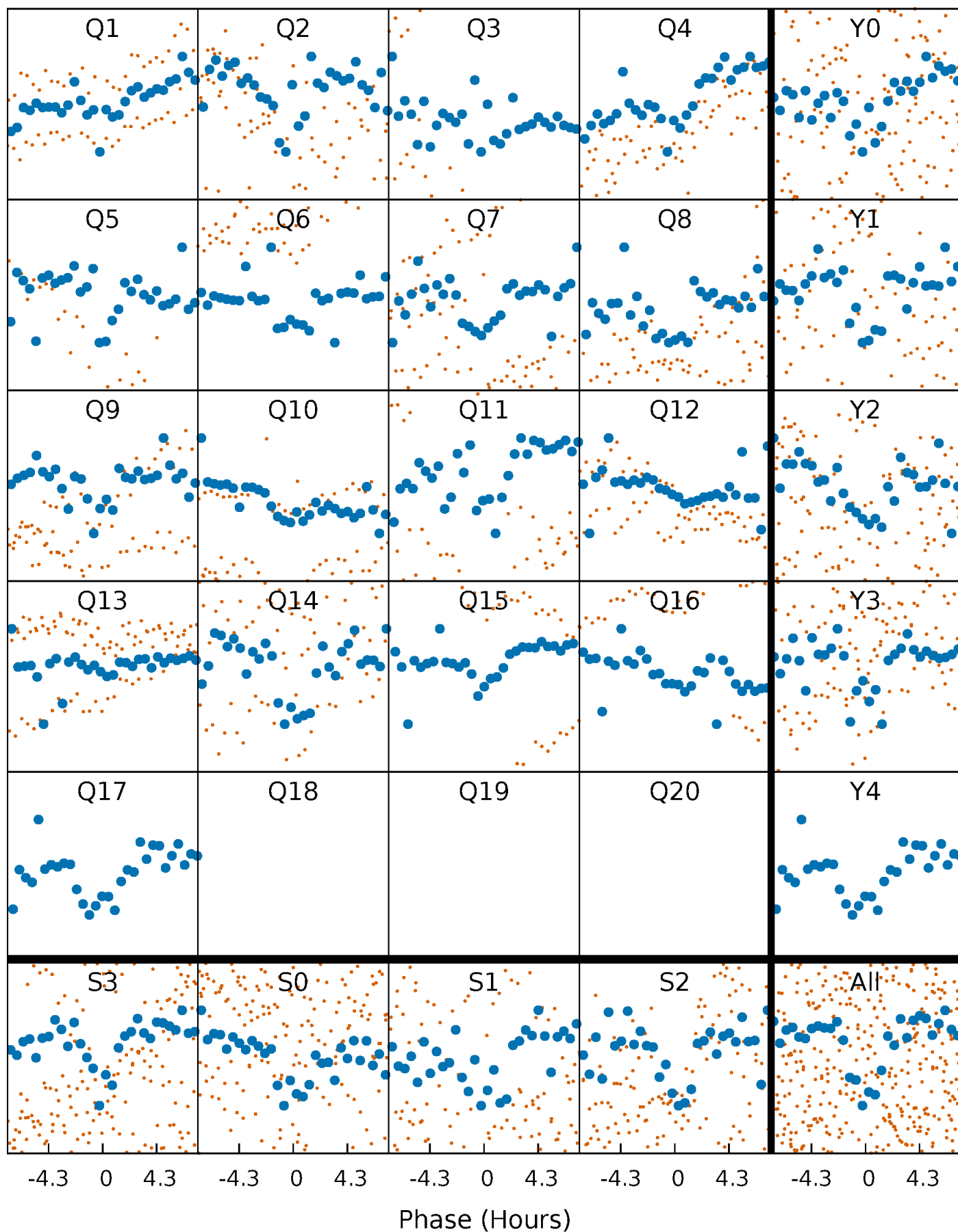


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



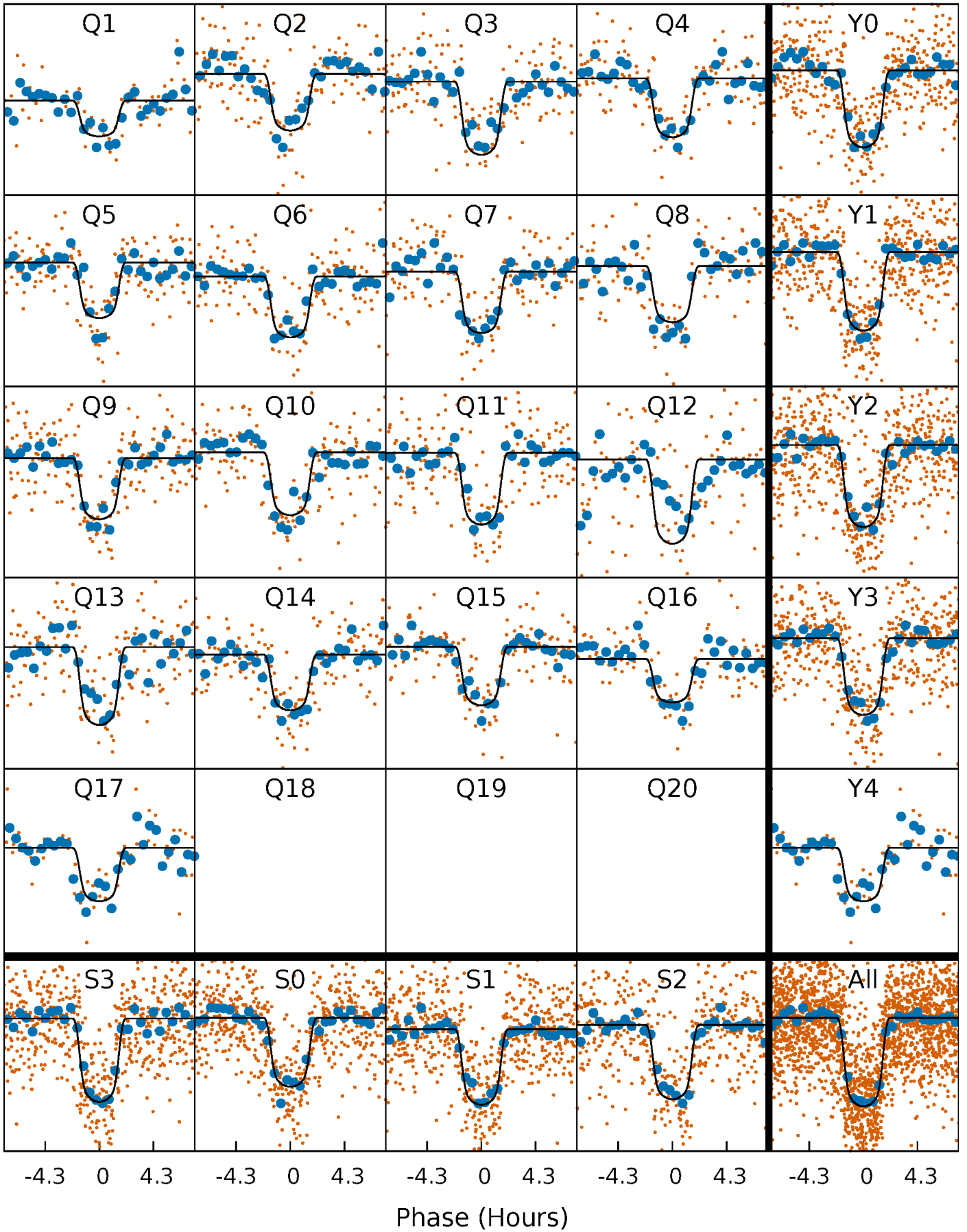
PDC Quarter-Phased Transit Curves

TCE 009836149-01 P= 17.815933 Days $T_0=134.483202$ (BKJD)



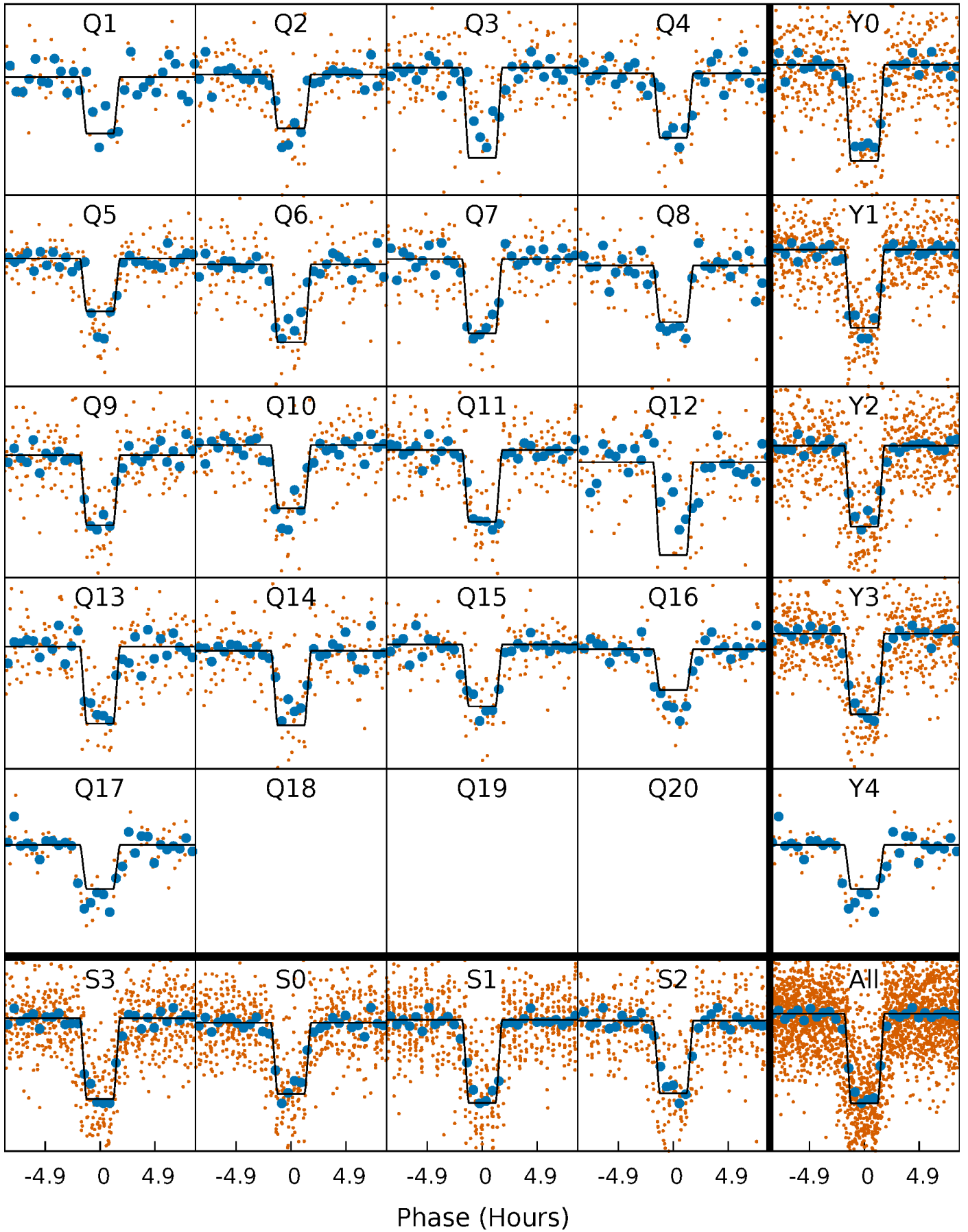
DV Quarter-Phased Transit Curves

TCE 009836149-01 P= 17.815933 Days $T_0=134.483202$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

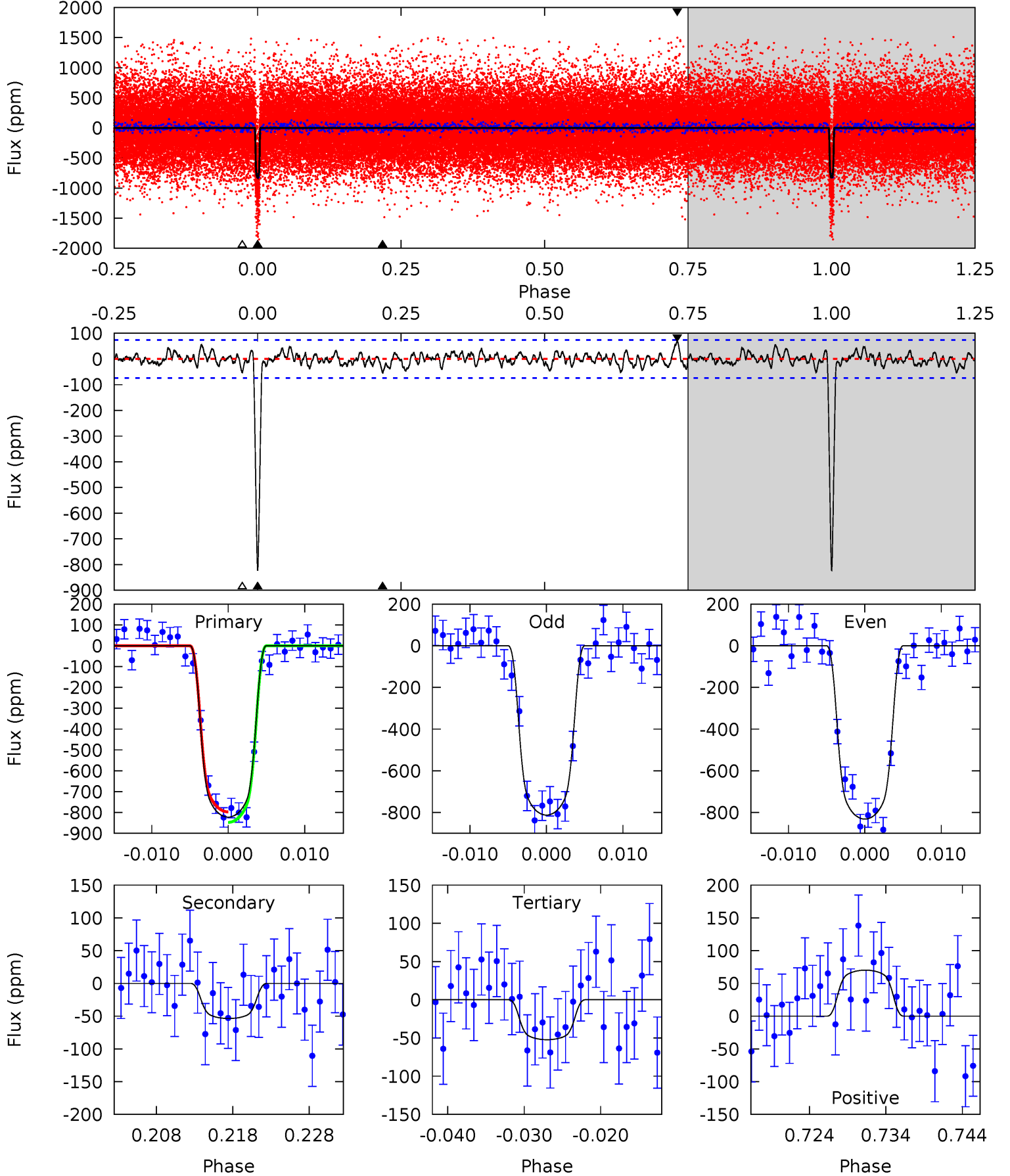
TCE 009836149-01 P= 17.816157 Days $T_0=134.474621$ (BKJD)



DV Model-Shift Uniqueness Test

009836149-01, $P = 17.815933$ Days, $E = 116.667269$ Days

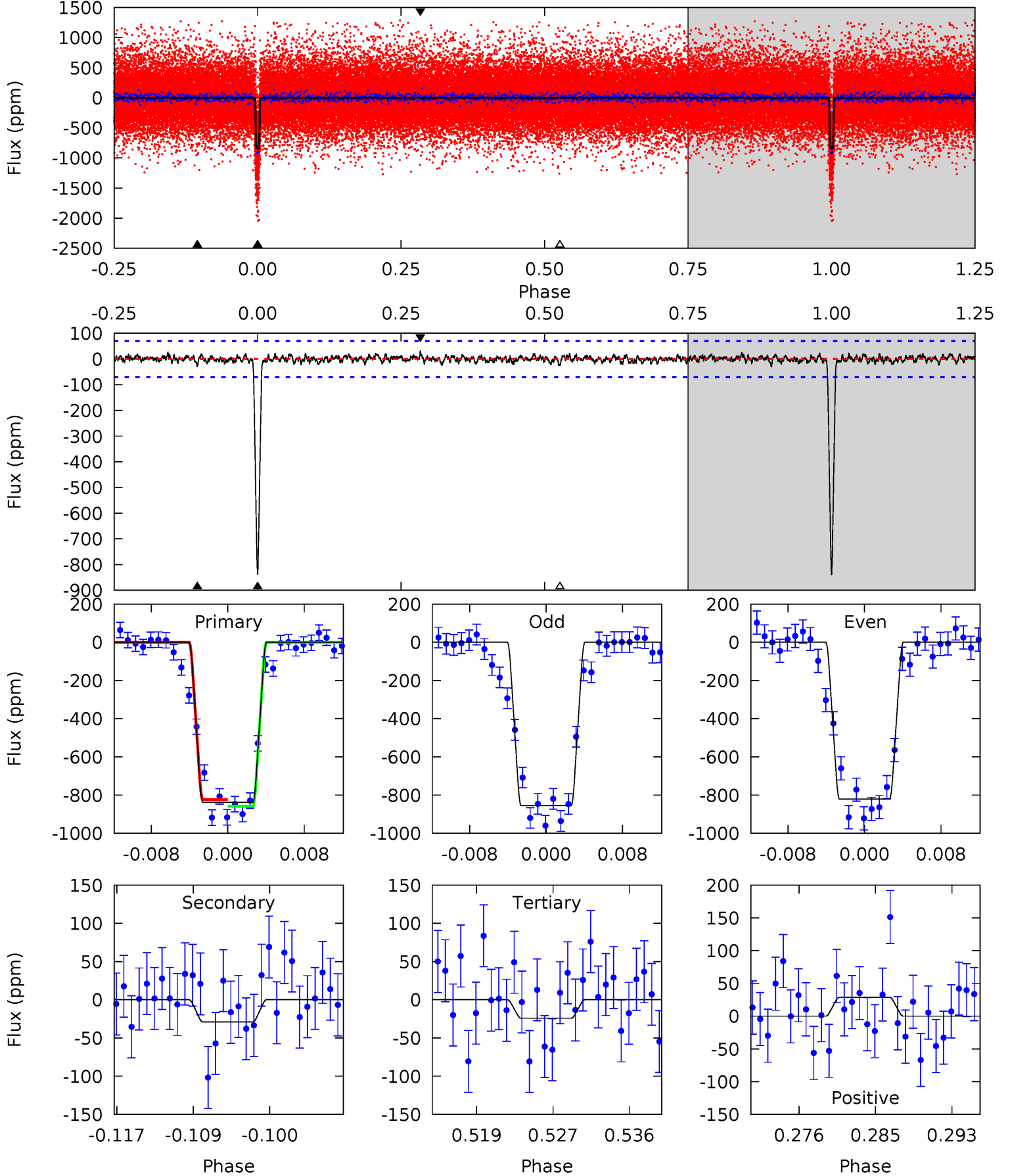
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.9	3.65	3.55	4.77	5.03	2.58	1.30	52.3	51.1	0.09	-1.12	0.65	0.99	0.08	1.71



Alt Model-Shift Uniqueness Test

009836149-01, $P = 17.816157$ Days, $E = 116.658464$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
60.7	2.10	1.76	2.09	5.06	2.64	0.61	59.0	58.6	0.34	0.01	1.21	1.01	0.03	1.27



Stellar Parameters For KIC 009836149

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5964^{+107}_{-131}	$4.484^{+0.040}_{-0.120}$	$-0.220^{+0.150}_{-0.150}$	$0.933^{+0.136}_{-0.063}$	$0.968^{+0.055}_{-0.076}$	$1.681^{+0.301}_{-0.535}$
	+2%/-2%	+1%/-3%	+68%/-68%	+15%/-7%	+6%/-8%	+18%/-32%
Source	SPE47	SPE47	SPE47	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 009836149-01 / KOI 1958.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-54 ± 15	$3.30^{+0.28}_{-0.22}$	988^{+42}_{-32}	3366^{+148}_{-163}	45^{+14}_{-13}
Alt.	-29 ± 14	$3.05^{+0.27}_{-0.21}$	985^{+37}_{-30}	3135^{+218}_{-278}	28^{+17}_{-14}

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

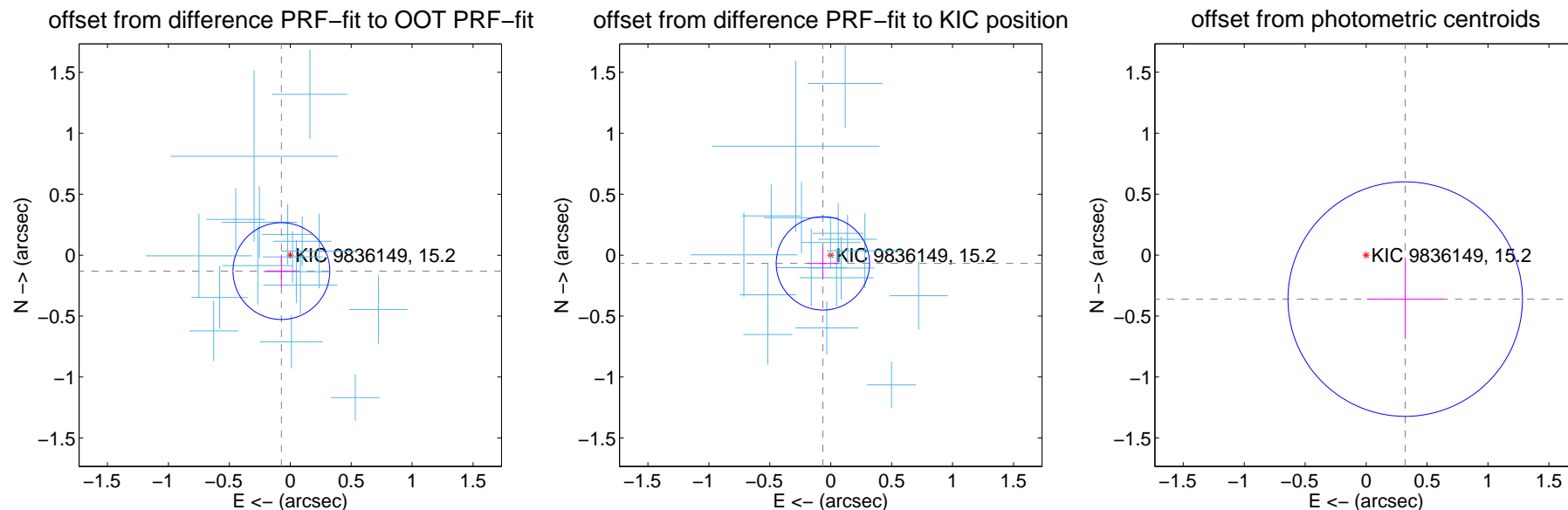
DV Centroid Data

Supplemental centroid analysis for 009836149-01. Kepler magnitude: 15.20. Transit SNR 33.82

There are 17 quarters with good PRF difference image offsets

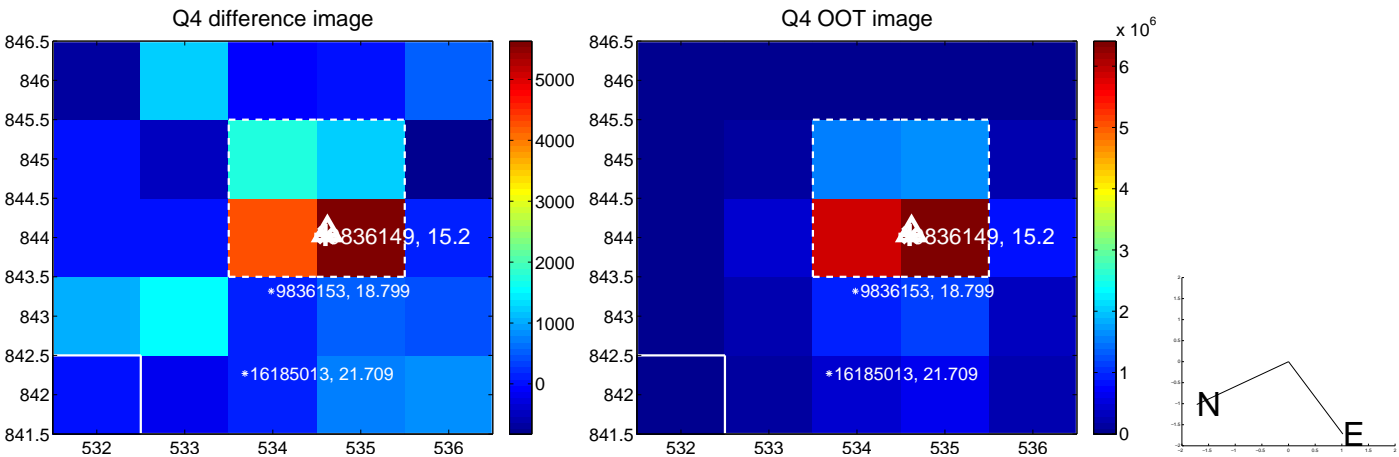
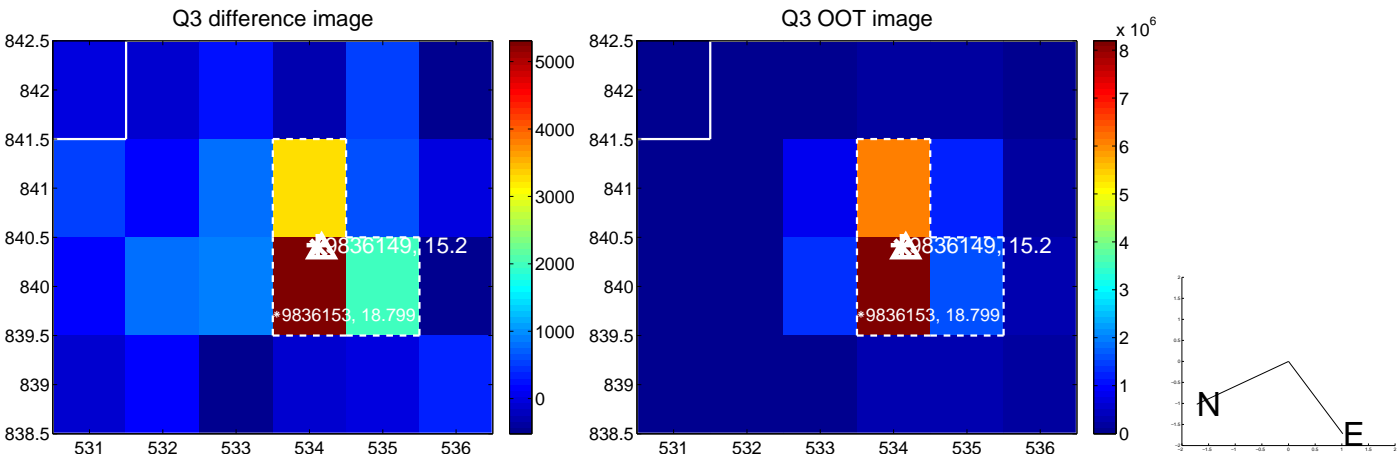
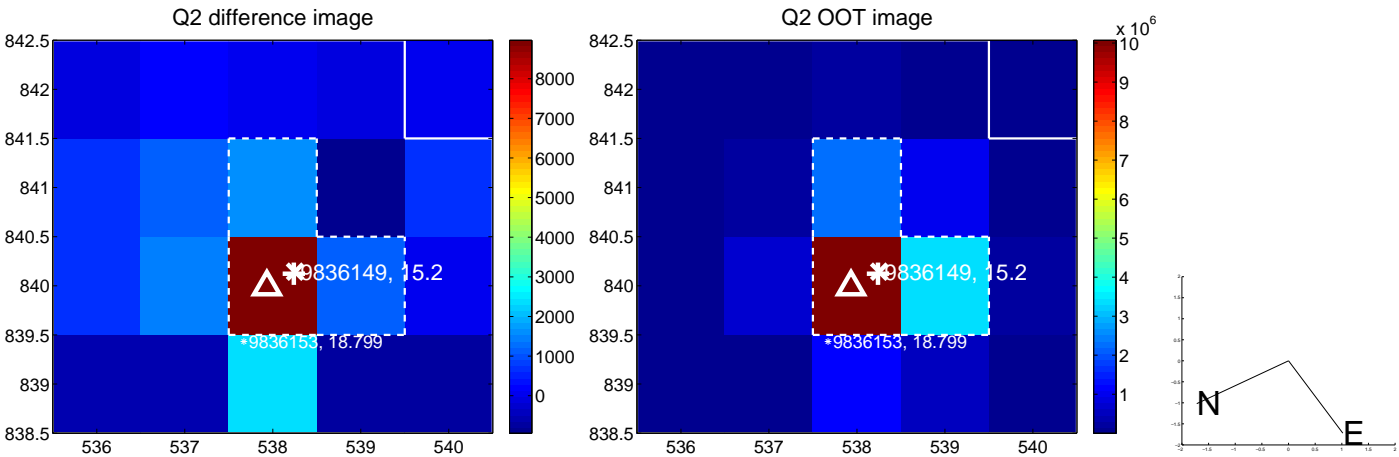
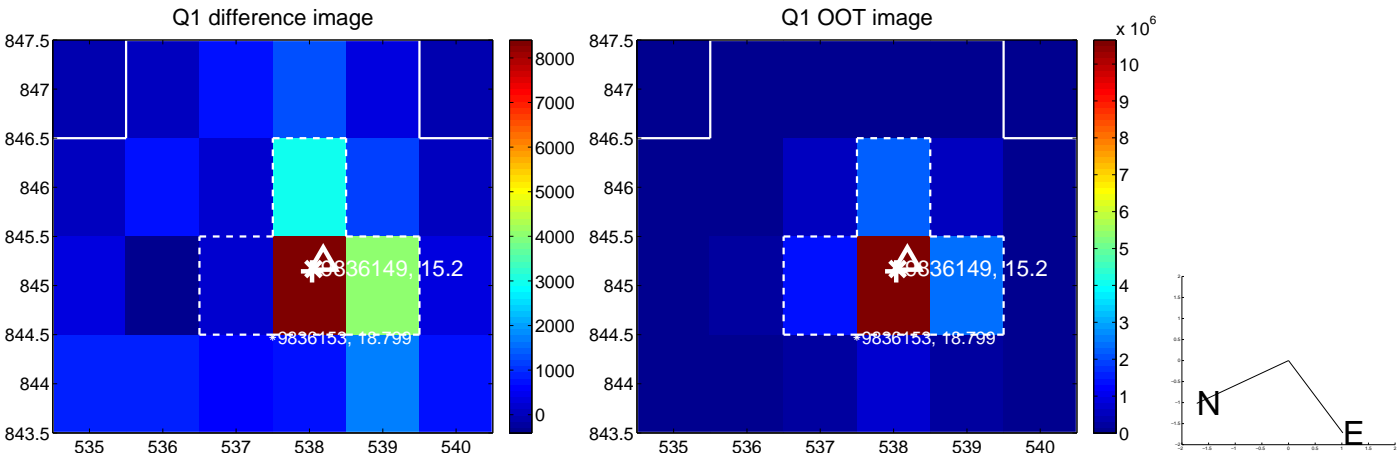
The direct PRF centroid is offset from the target star catalog position by about 0.08 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.150 ± 0.132	1.13	0.073 ± 0.126	-0.131 ± 0.134
PRF-fit source offset from KIC position	0.093 ± 0.128	0.73	0.064 ± 0.125	-0.068 ± 0.130
photometric centroid source offset	0.48 ± 0.32	1.51	-0.32 ± 0.31	-0.36 ± 0.33

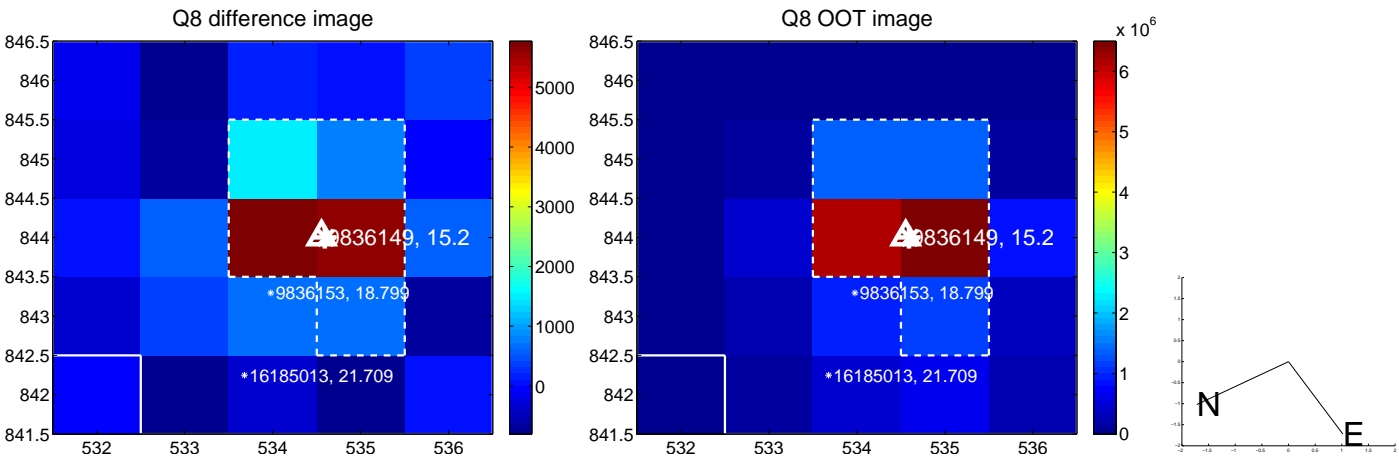
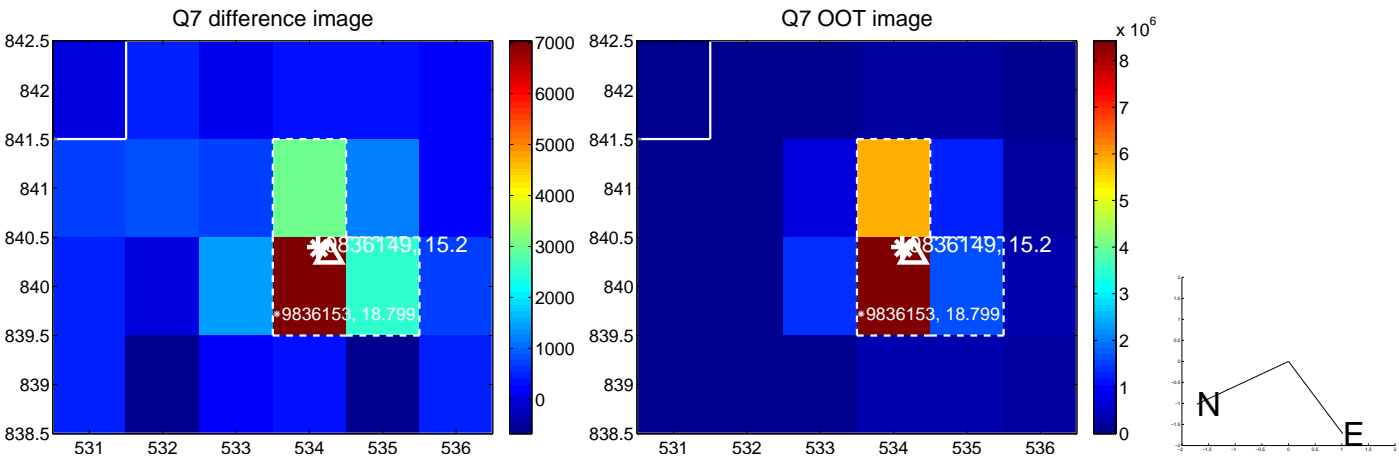
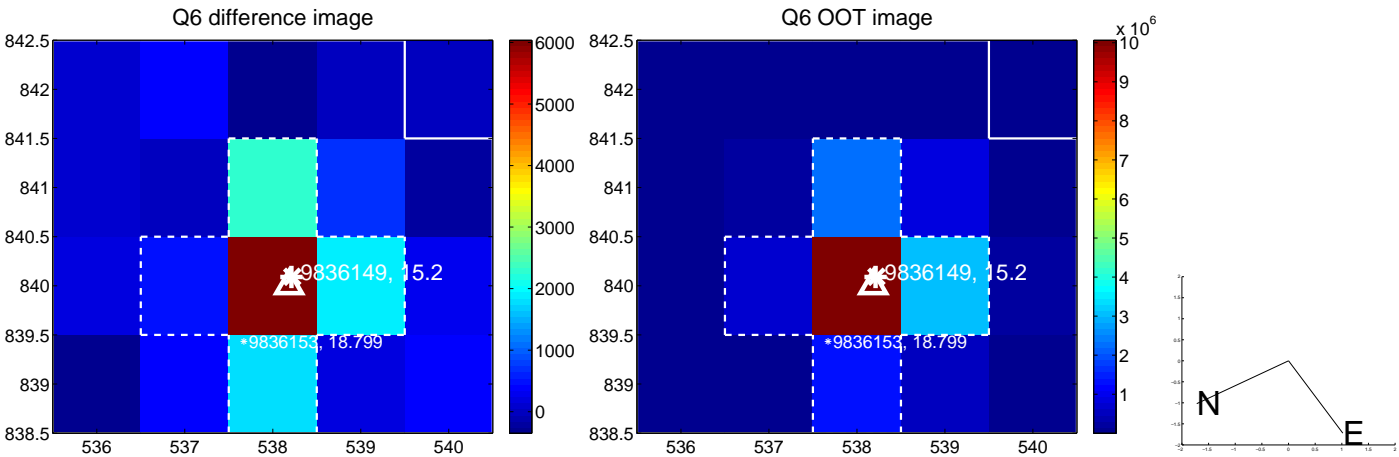
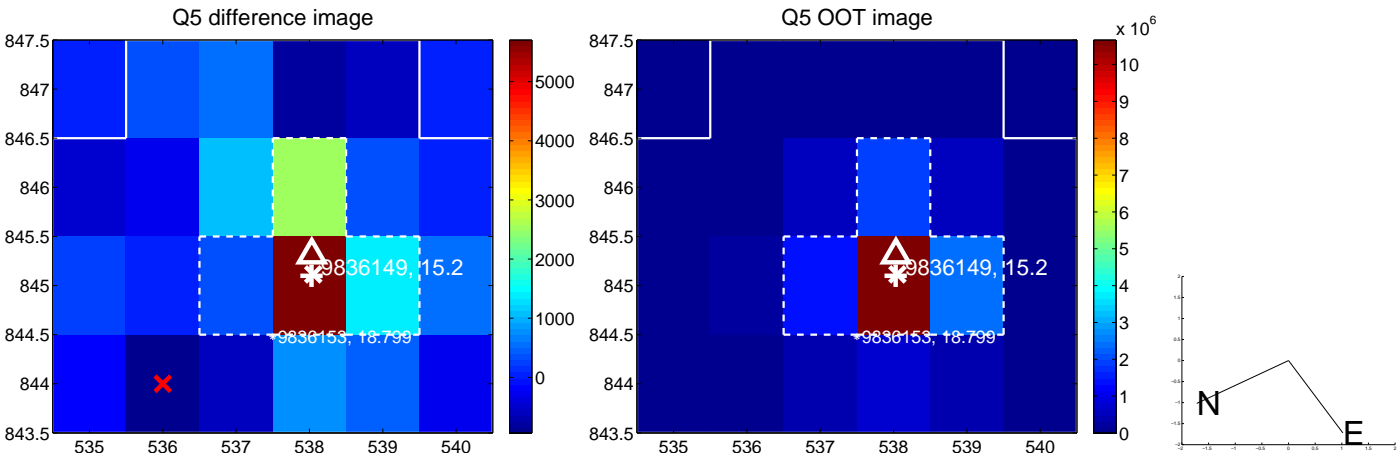


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

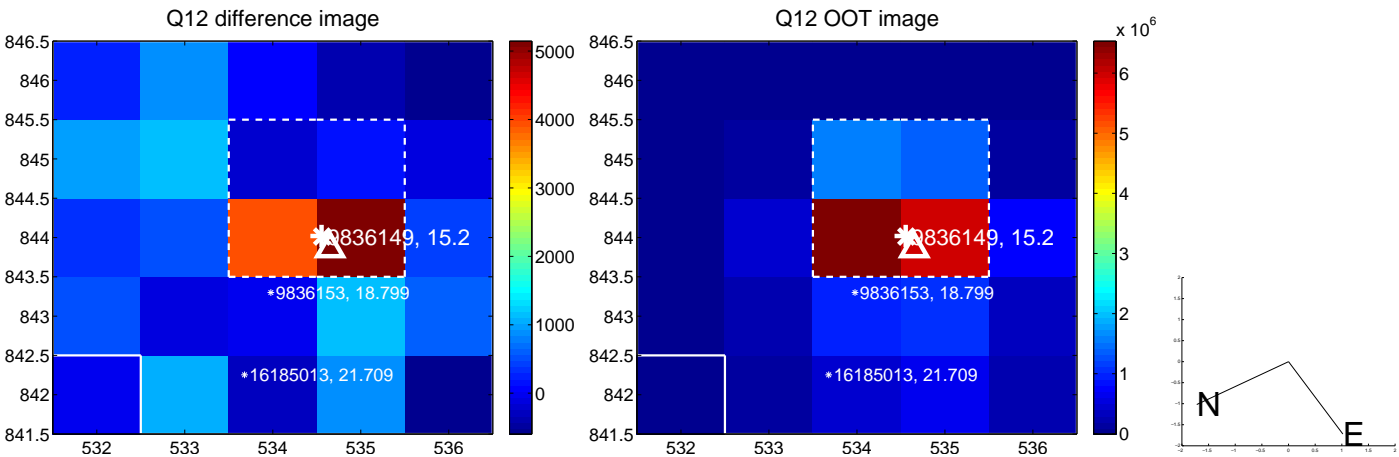
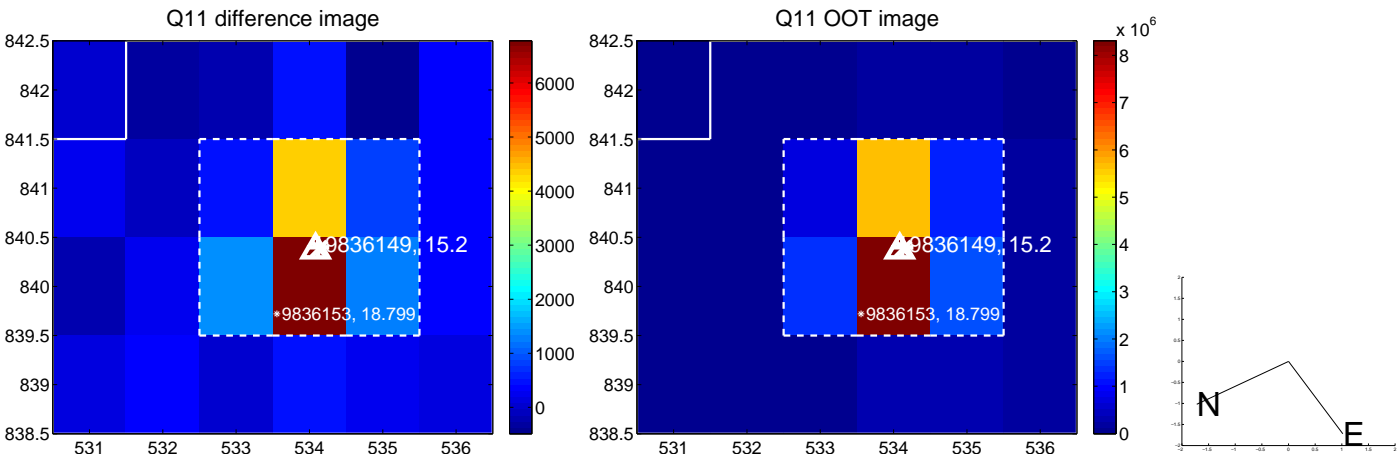
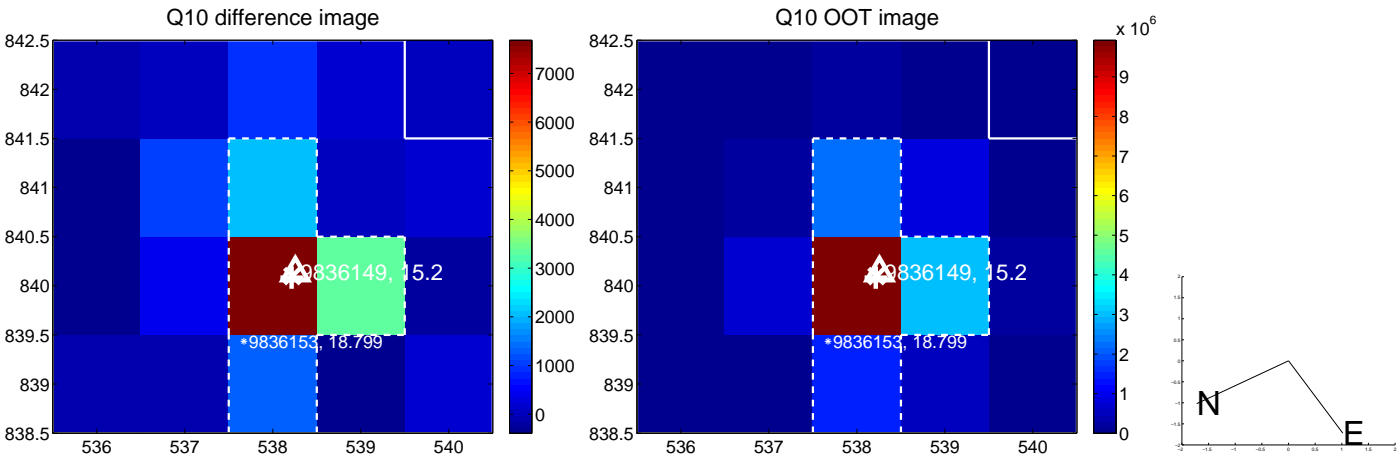
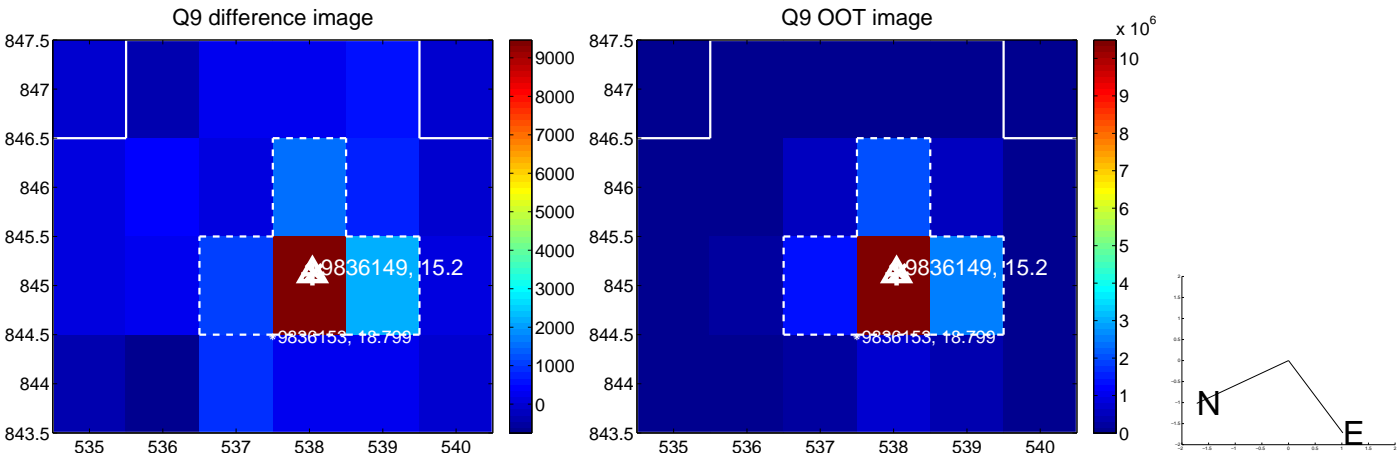
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



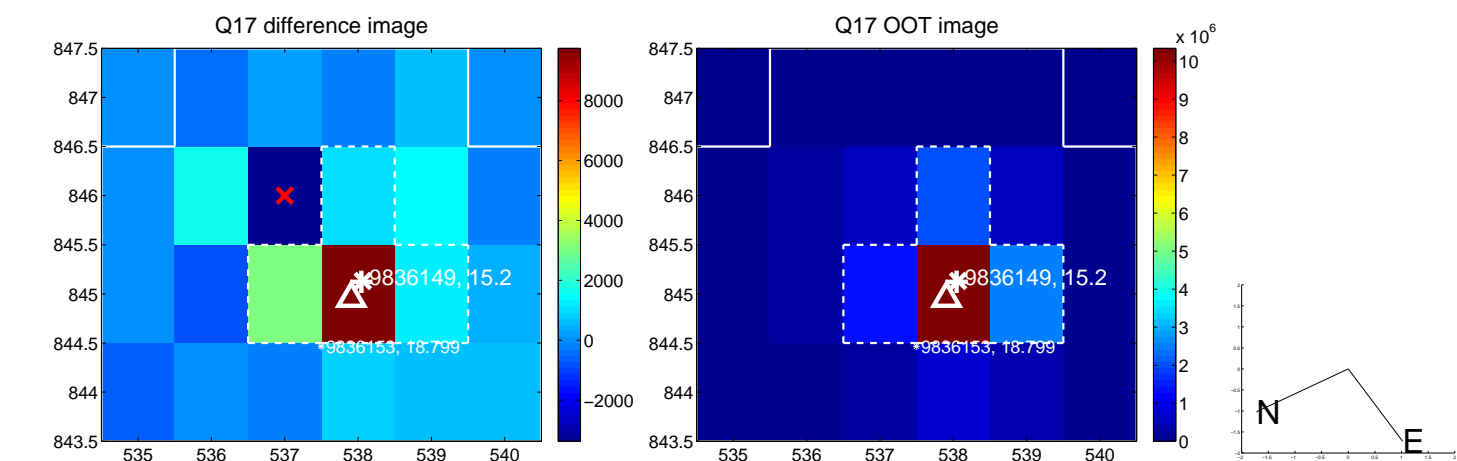
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



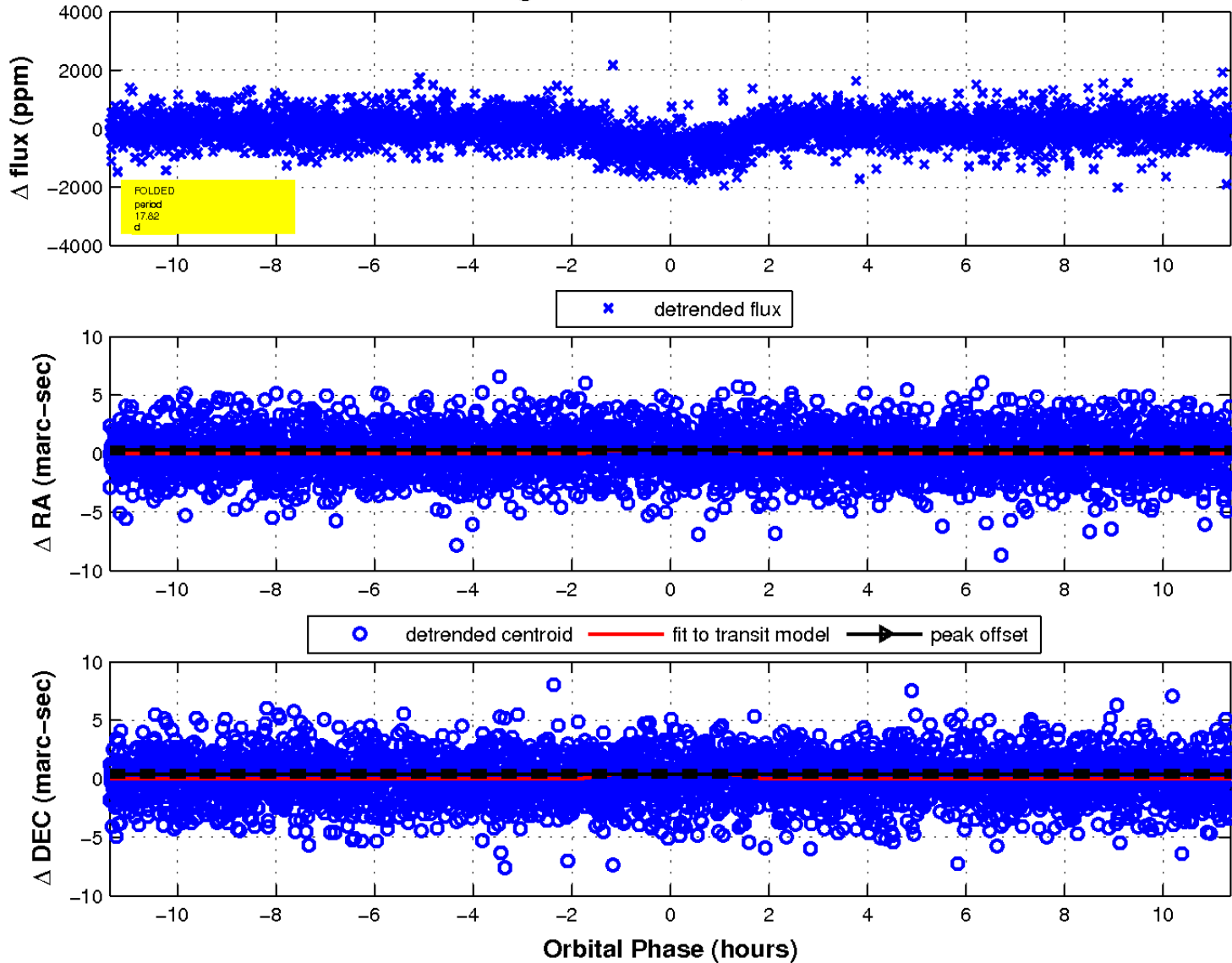
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

Declination

