

KIC 008424002

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})
008424002-01	OBS	3497.01	20.359729	134.290446	334.4	2.371	19.6	22.6	0.34	3419	0.84	1.38

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008424002-01	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.

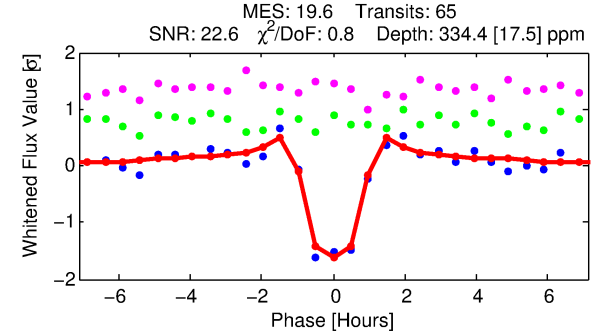
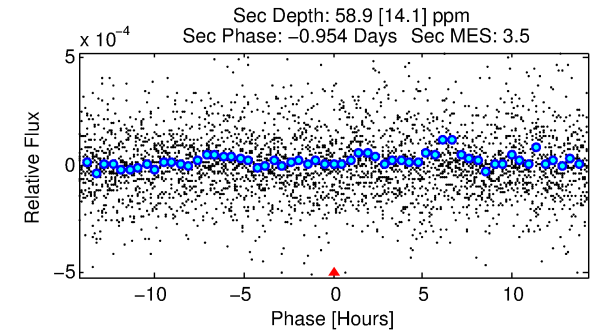
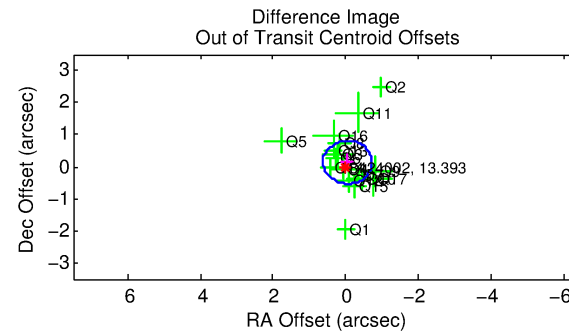
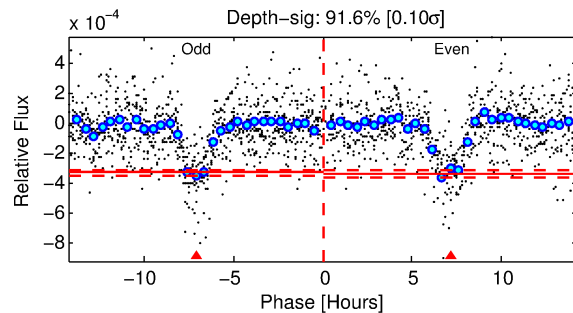
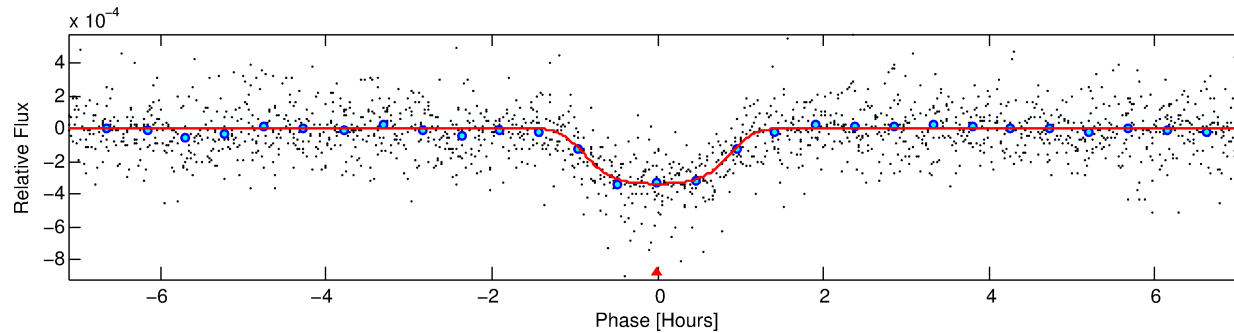
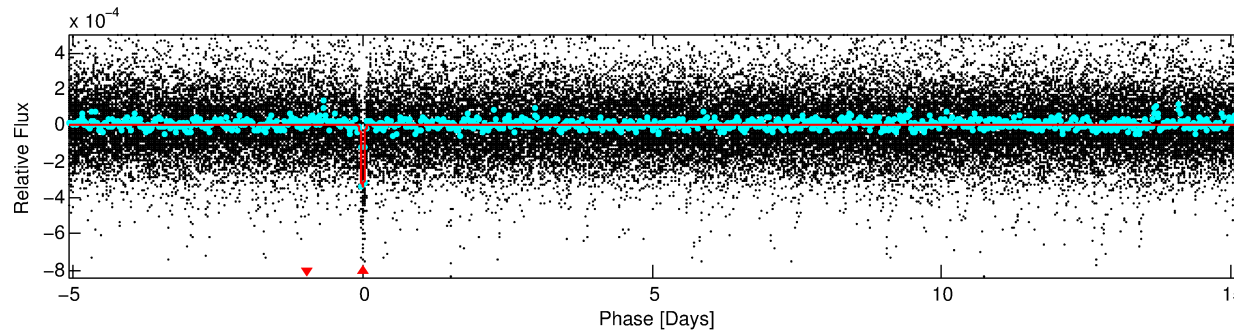
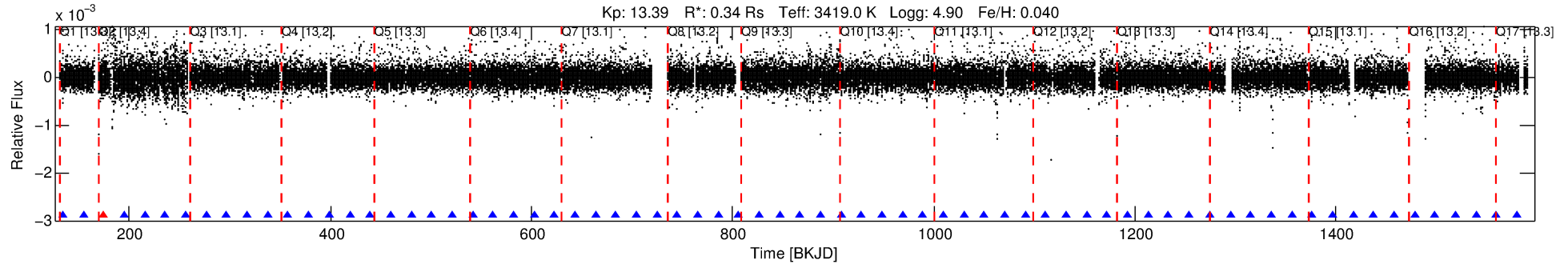
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008424002-01

No Significant Match Found

DV One-Page Summary

KIC: 8424002 Candidate: 1 of 1 Period: 20.360 d
KOI: K03497.01 Corr: 0.899



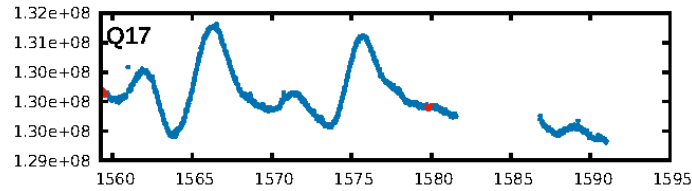
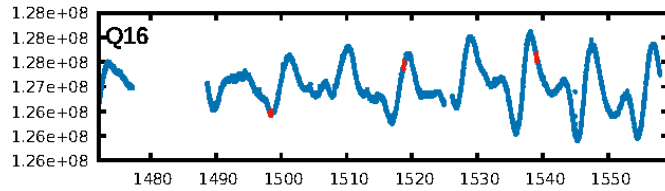
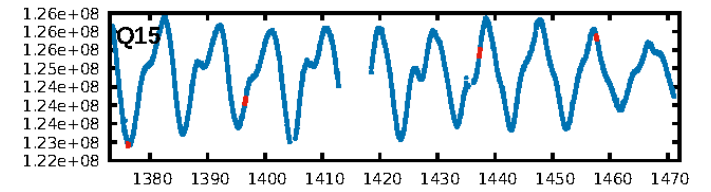
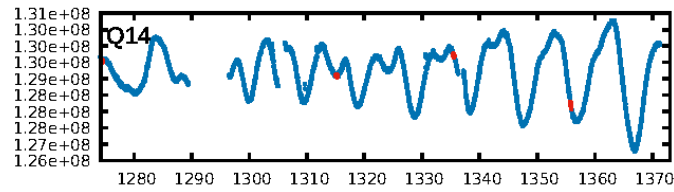
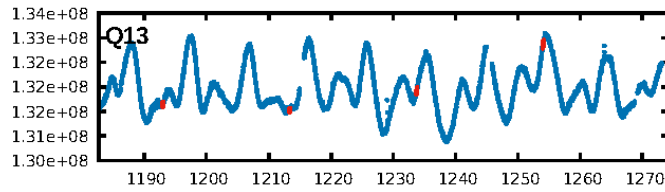
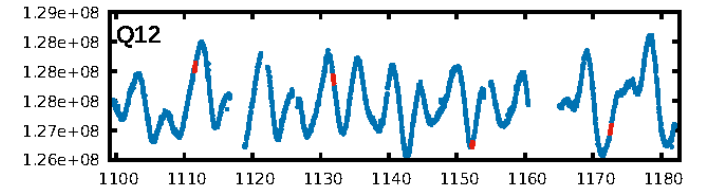
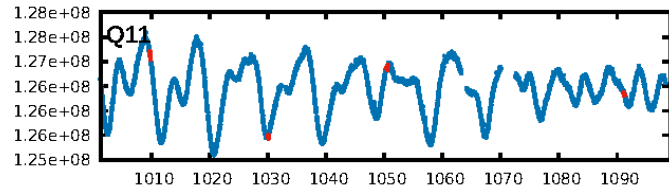
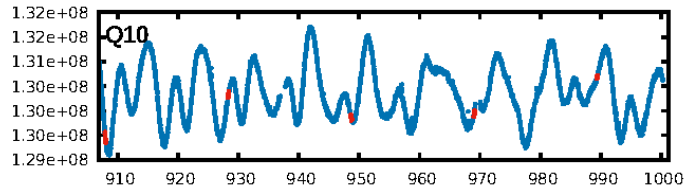
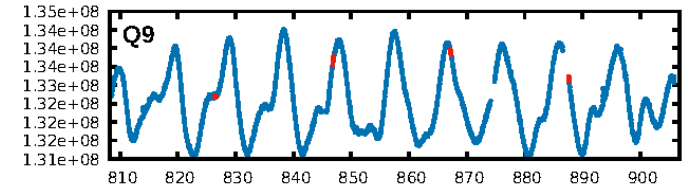
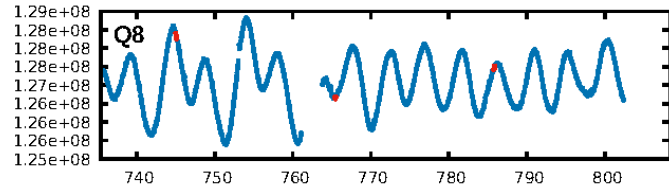
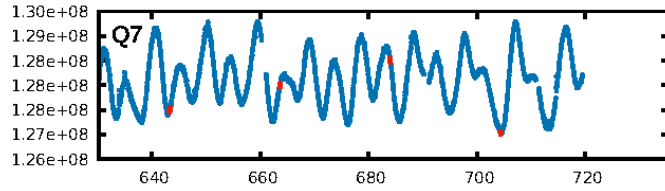
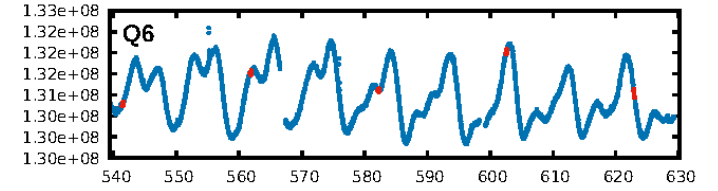
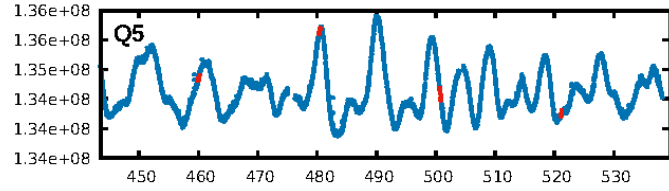
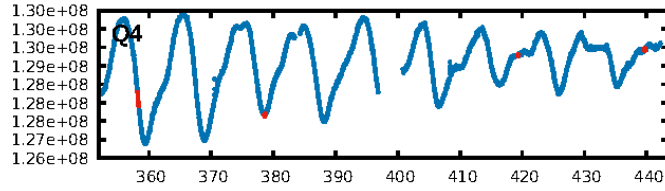
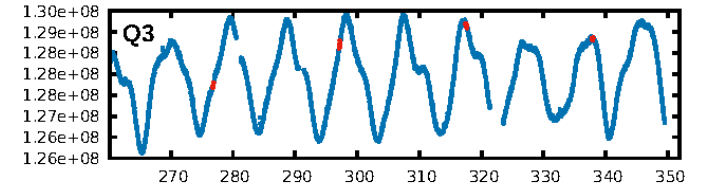
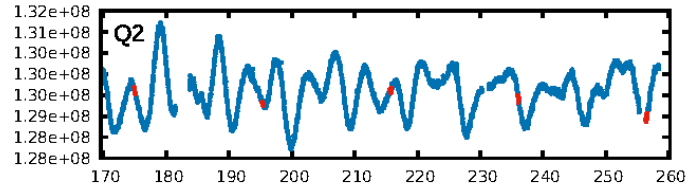
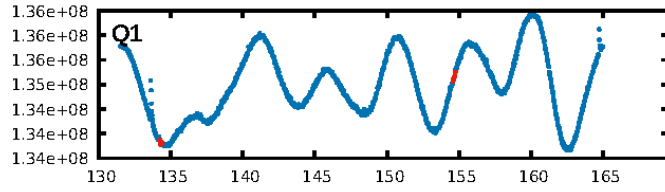
DV Fit Results:

Period = 20.35973 [0.00005] d
Epoch = 134.2904 [0.0019] BKJD
Rp/R* = 0.0224 [0.0012]
a/R* = 22.48 [3.43]
b = 0.96 [0.01]
Seff = 1.38 [0.29]
Teq = 276 [14] K
Rp = 0.84 [0.18] Re
a = 0.1025 [0.0154] AU
Ag = 480.23 [154.54] [3.10 σ]
Teffp = 2000 [138] K [12.40 σ]

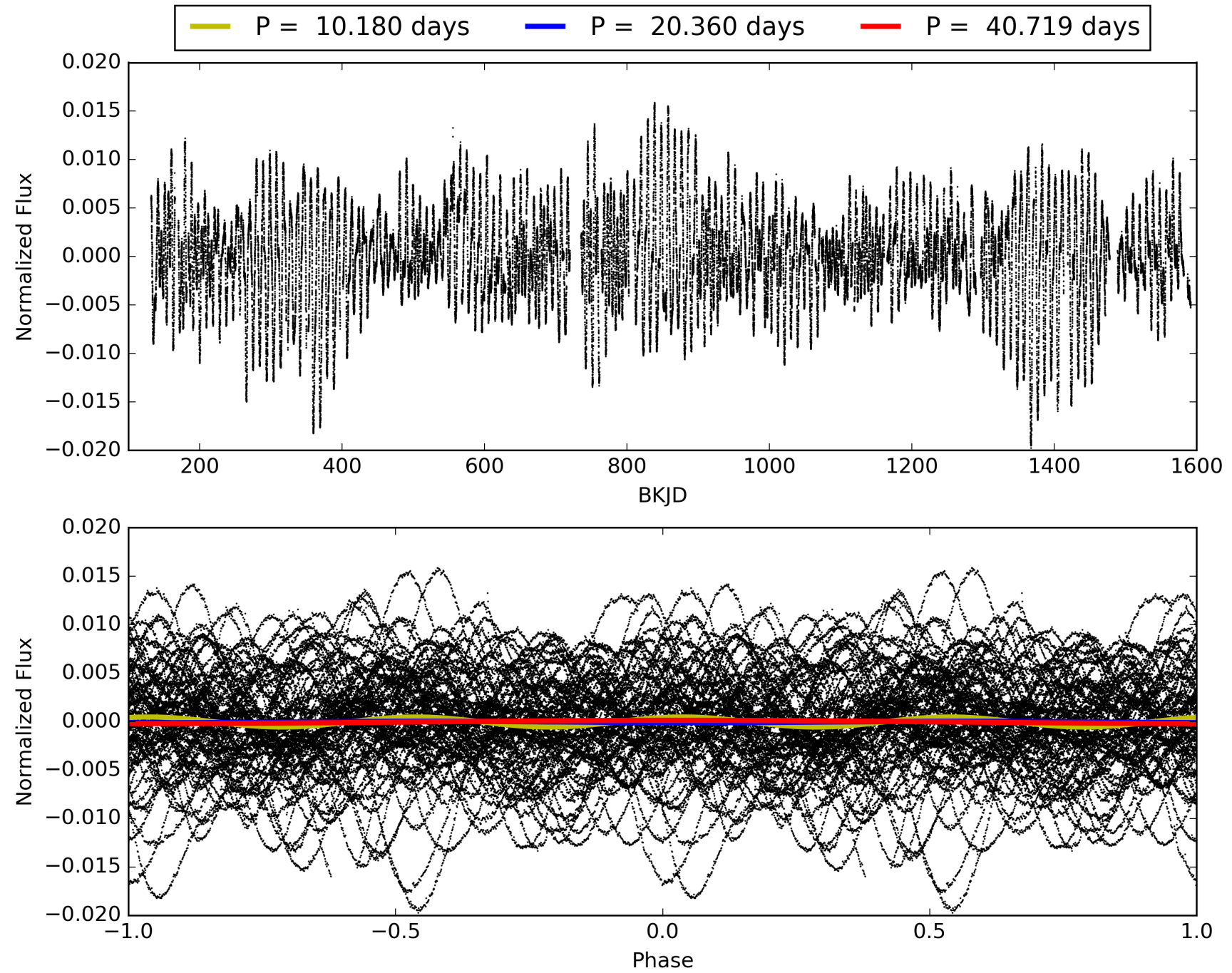
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.74e-59
RollingBand-fgt: 0.98 [60/61]
GhostDiagnostic-chr: 7.331
Centroid-sig: 9.0%
Centroid-so: 0.655 arcsec [1.73 σ]
OotOffset-rm: 0.145 arcsec [0.65 σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-rm: 0.370 arcsec [1.51 σ]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 1.00 [17/17]

TCE 008424002-01, PDC Light Curves

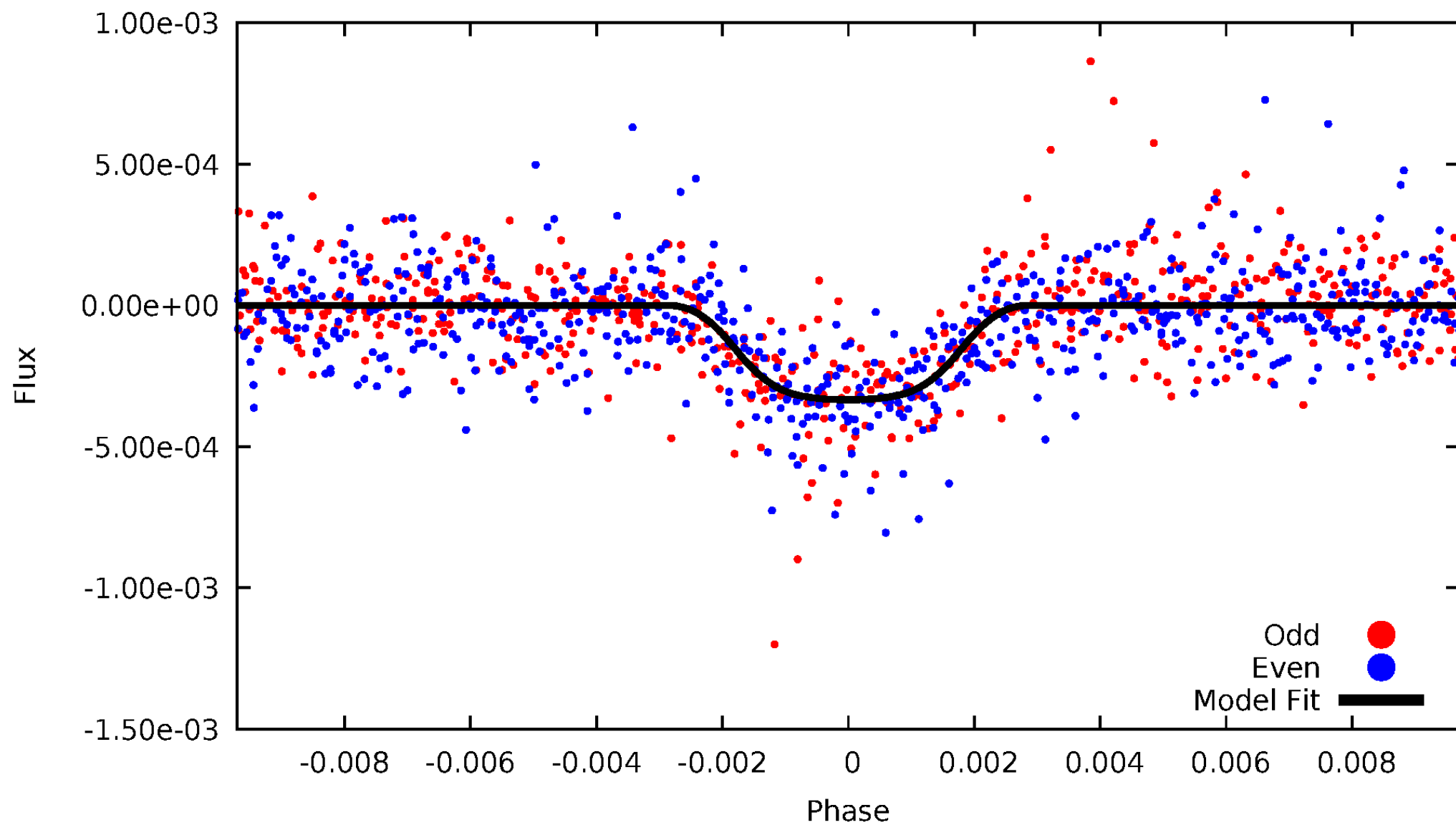


TCE 008424002-01



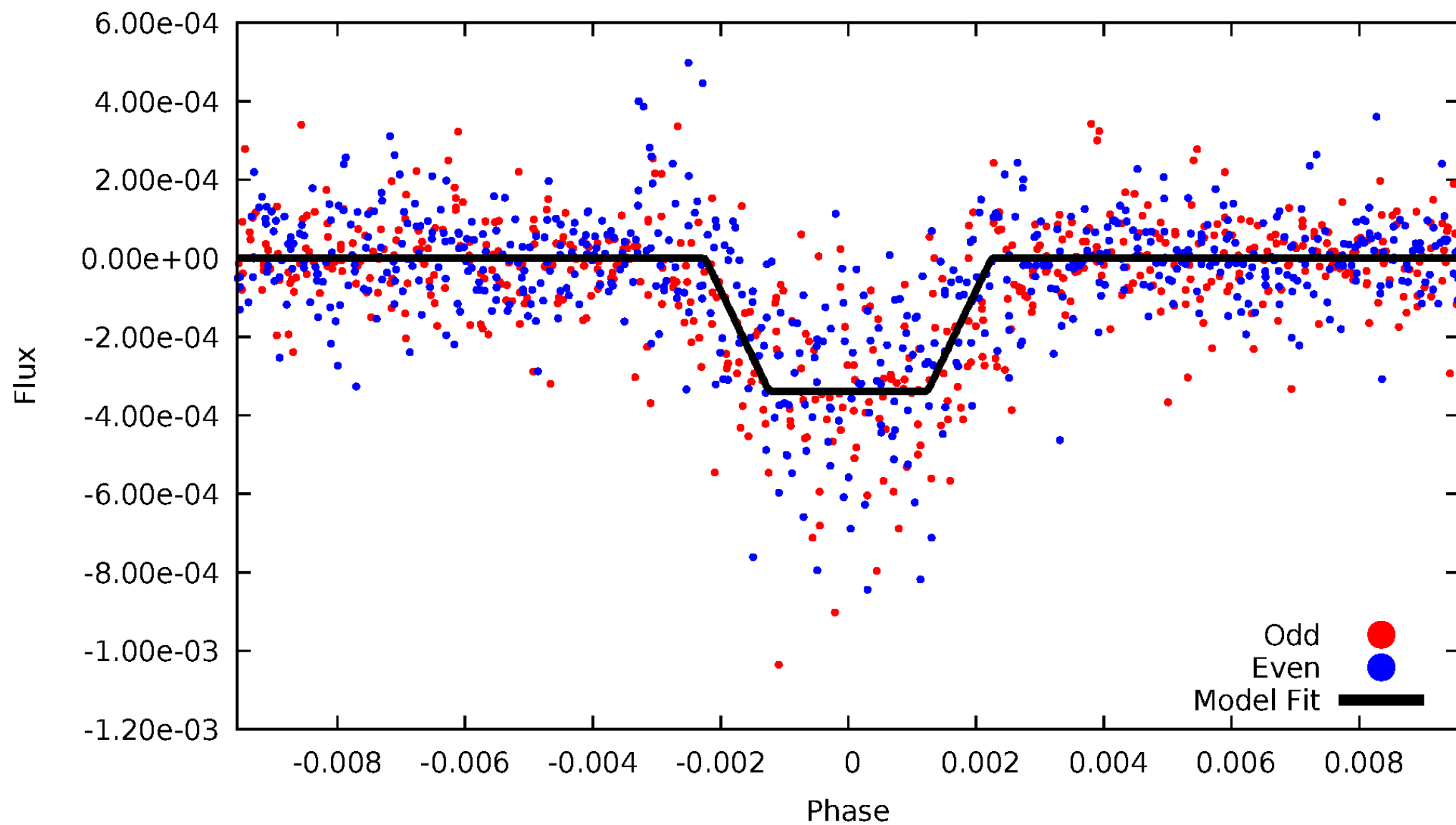
DV Odd/Even

TCE 008424002-01



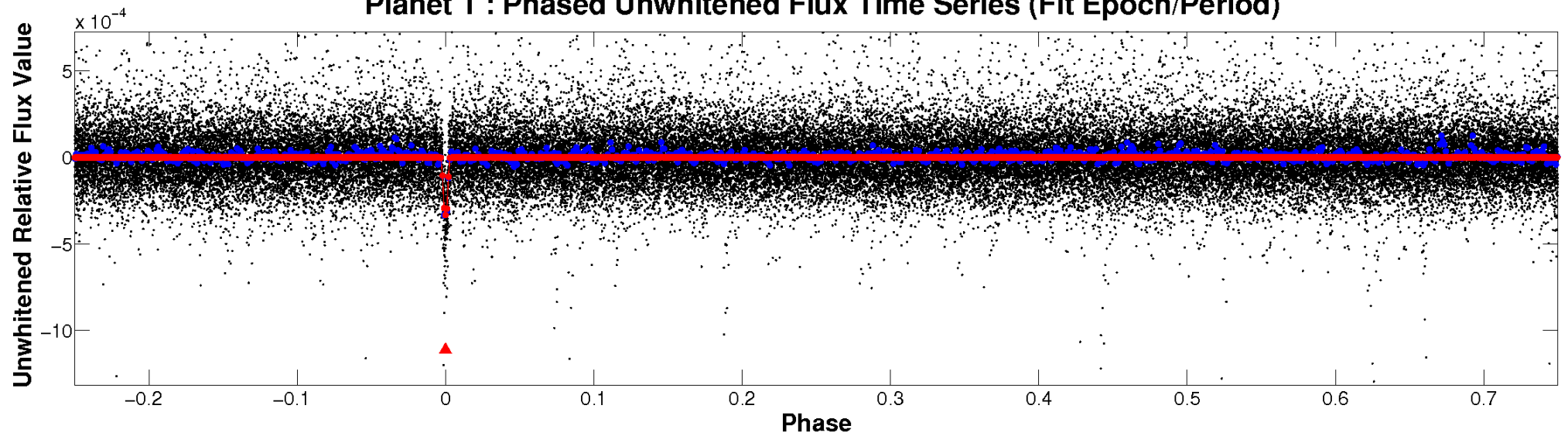
ALT Odd/Even

TCE 008424002-01

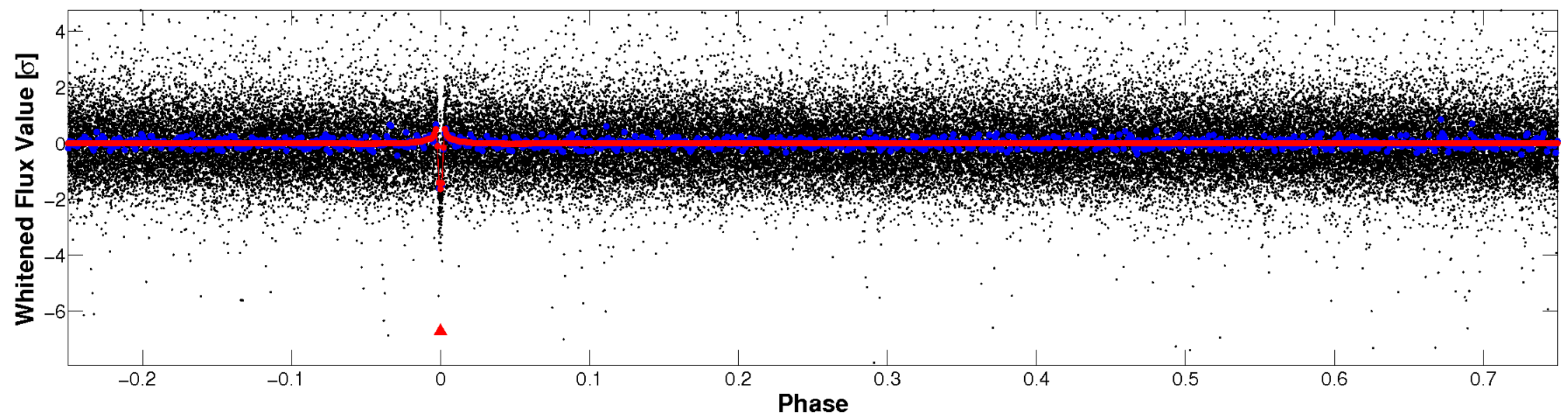


Non-Whitened Vs. Whitened Light Curve

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

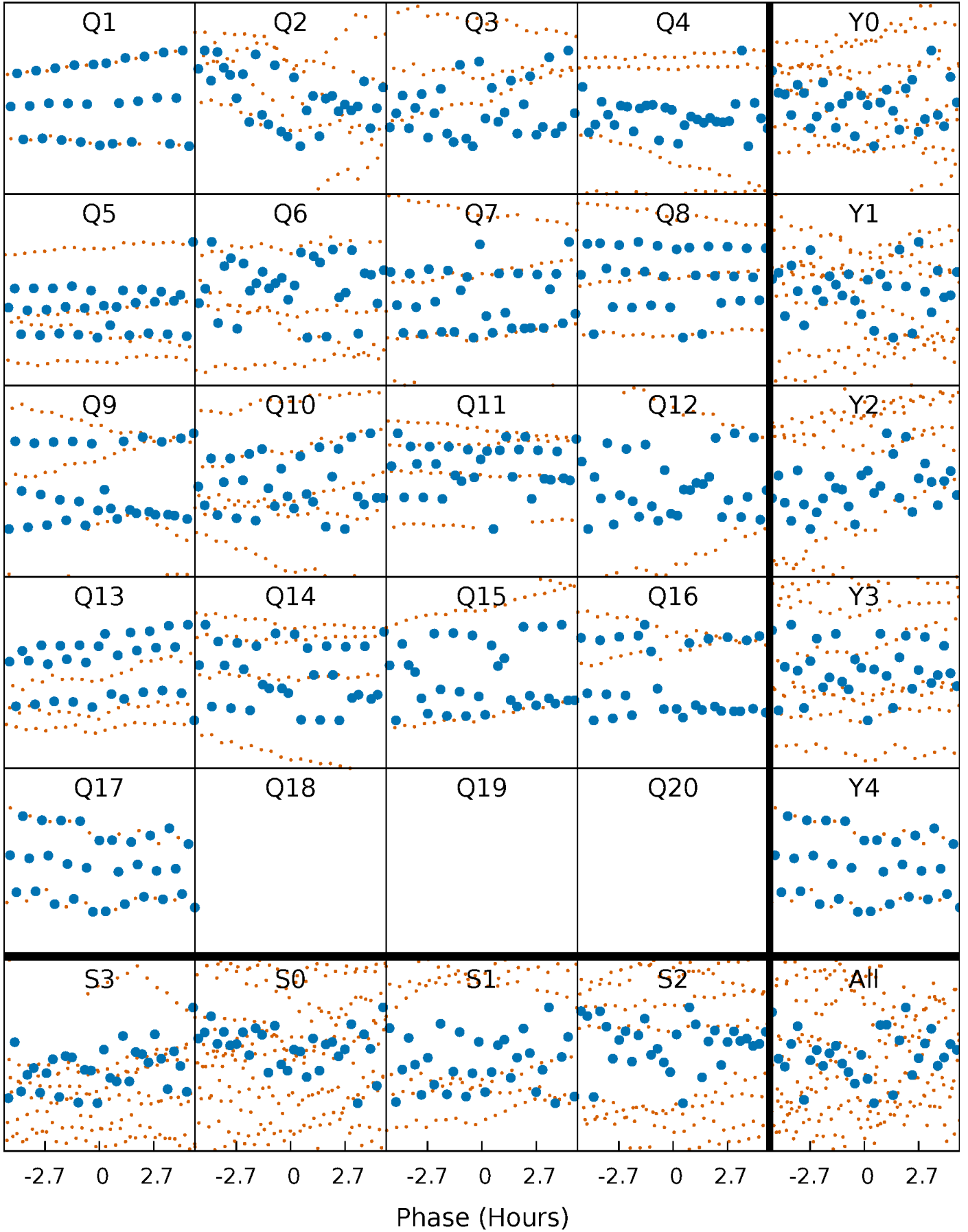


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



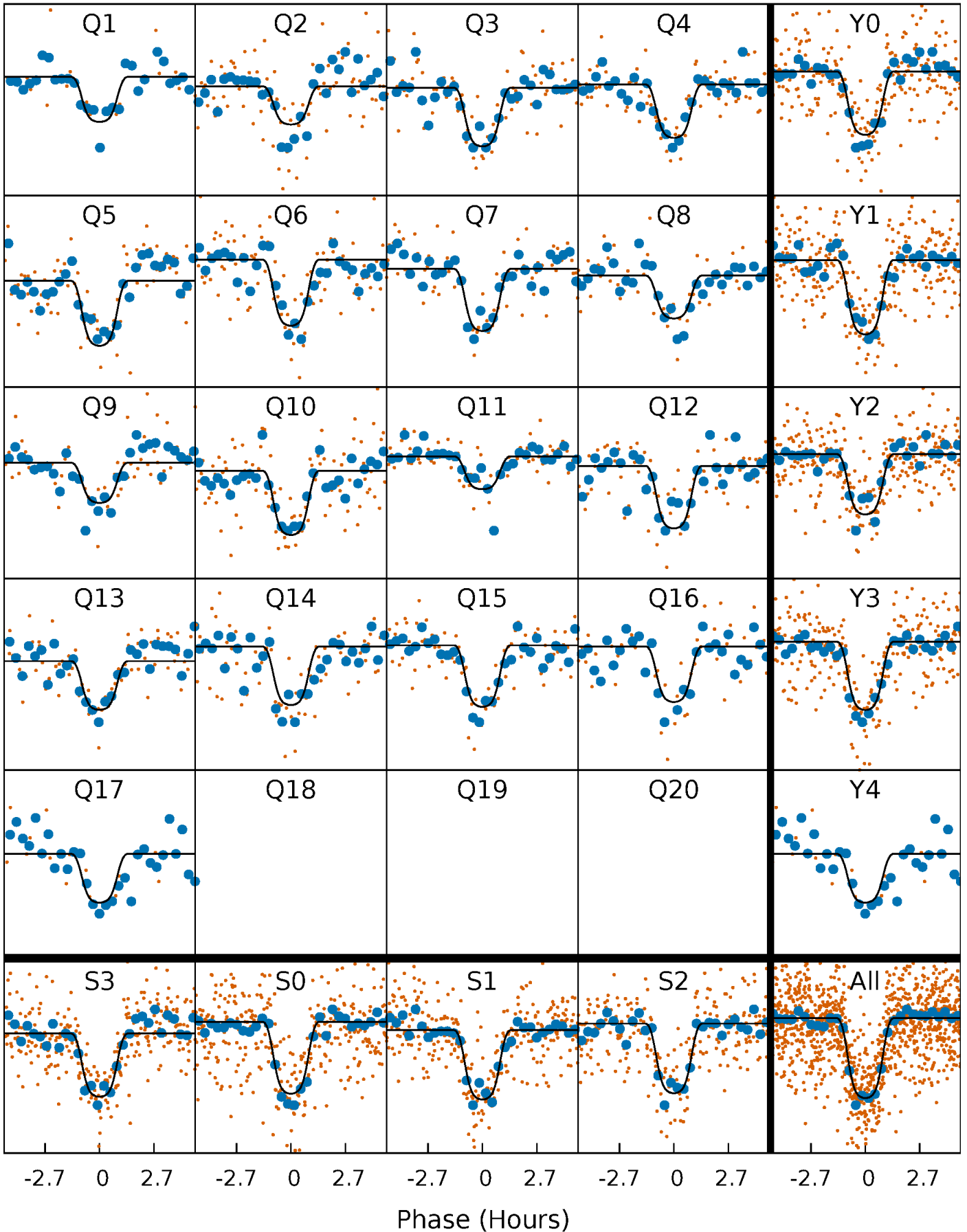
PDC Quarter-Phased Transit Curves

TCE 008424002-01 P= 20.359729 Days $T_0=134.290446$ (BKJD)



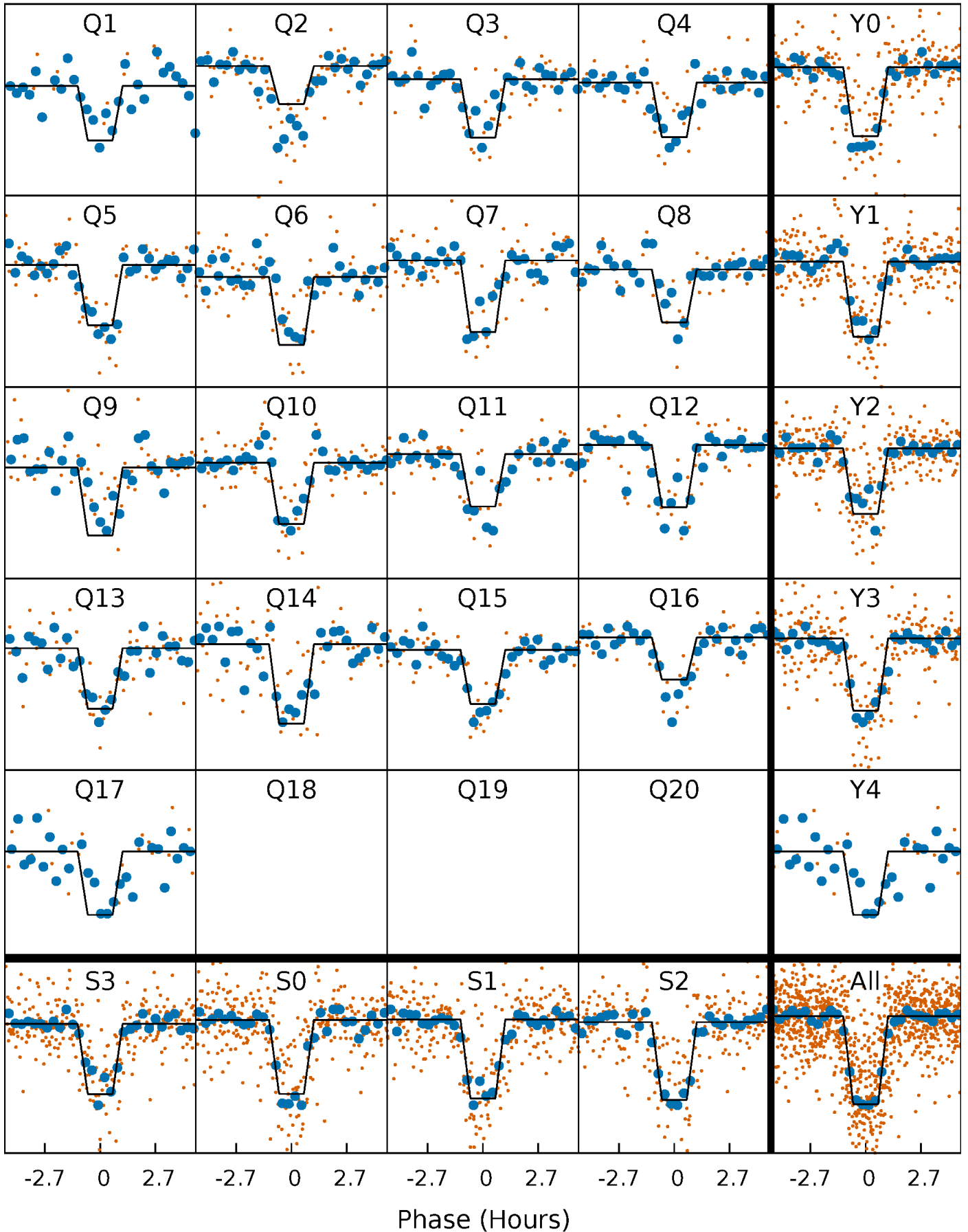
DV Quarter-Phased Transit Curves

TCE 008424002-01 $P = 20.359729$ Days $T_0 = 134.290446$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

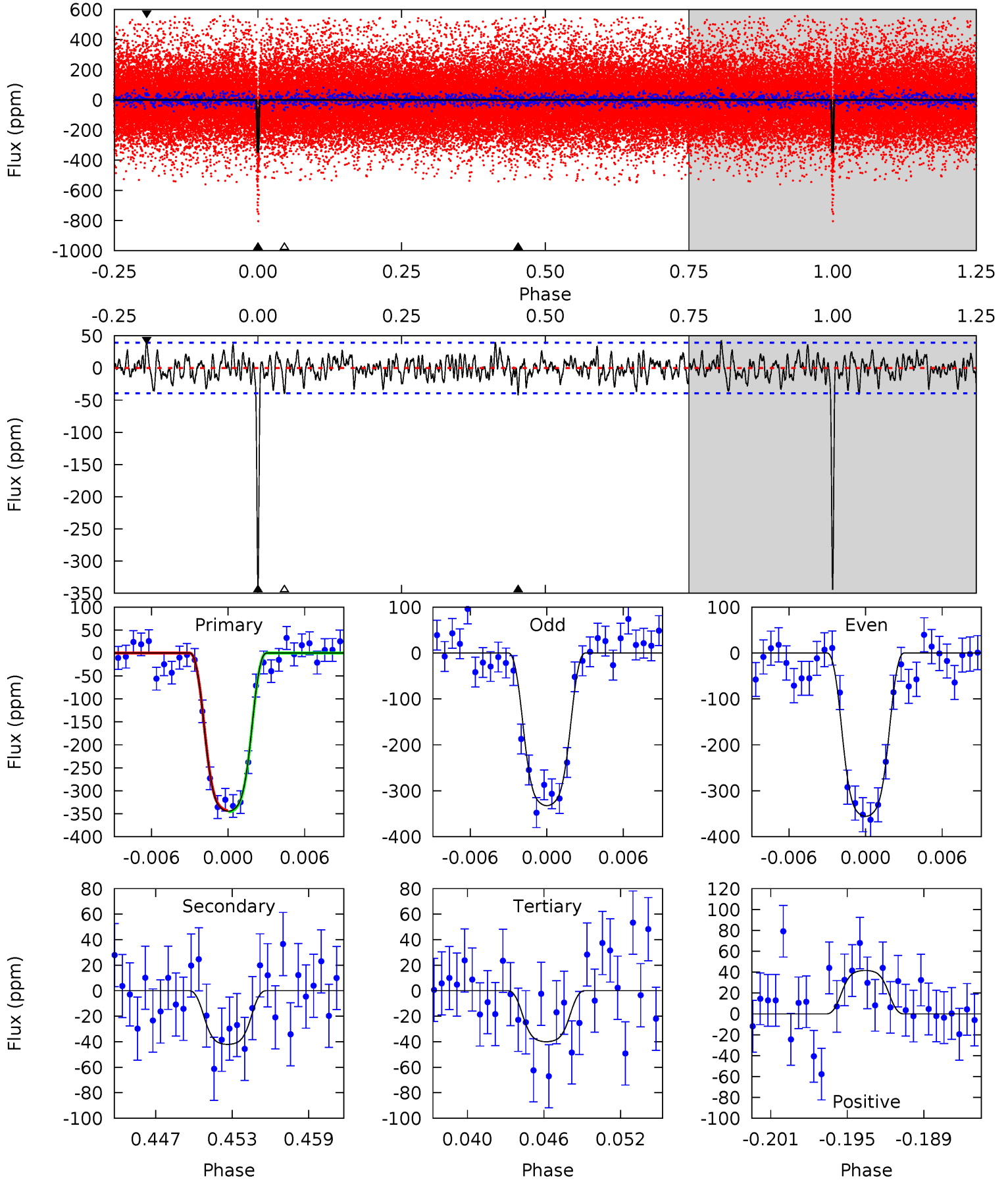
TCE 008424002-01 P= 20.359574 Days $T_0=134.297069$ (BKJD)



DV Model-Shift Uniqueness Test

008424002-01, P = 20.359729 Days, E = 113.930717 Days

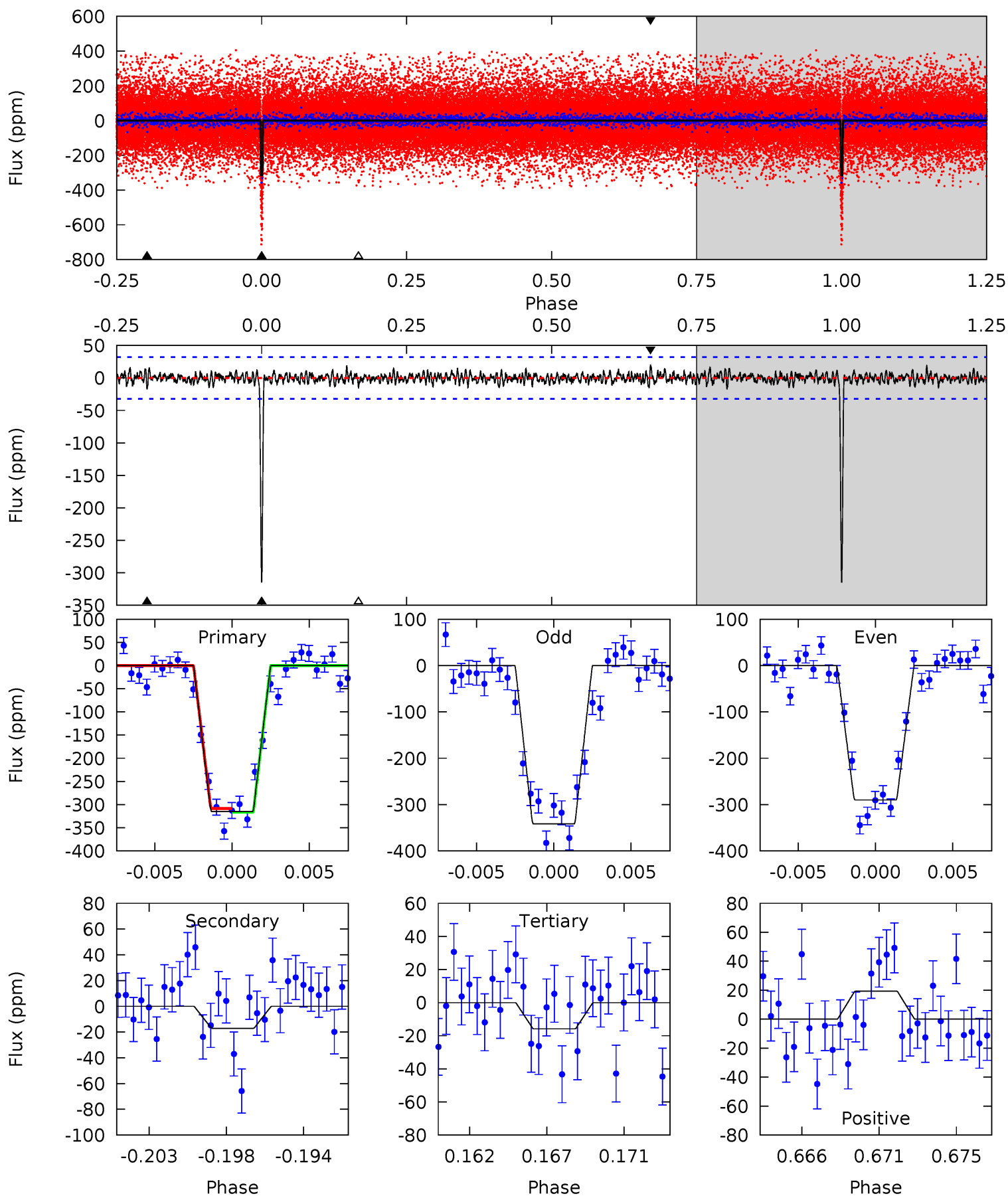
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
45.0	5.50	5.23	5.44	5.13	2.76	1.68	39.8	39.6	0.27	0.06	1.53	1.06	0.11	0.19



Alt Model-Shift Uniqueness Test

008424002-01, P = 20.359574 Days, E = 113.937495 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
50.7	2.75	2.55	3.11	5.18	2.84	0.86	48.1	47.5	0.20	-0.36	4.14	0.98	0.06	0.65



Stellar Parameters For KIC 008424002

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	3419^{+67}_{-76}	$4.904^{+0.084}_{-0.052}$	$0.040^{+0.150}_{-0.150}$	$0.344^{+0.051}_{-0.070}$	$0.346^{+0.066}_{-0.081}$	$11.960^{+6.519}_{-2.812}$
	+2%/-2%	+2%/-1%	+375%/-375%	+15%/-20%	+19%/-23%	+55%/-24%
Source	SPE70	PHO54	SPE70	DSEP		

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

Secondary Eclipse Parameters for KIC 008424002-01 / KOI 3497.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-42 ± 8	$0.84^{+0.10}_{-0.10}$	385^{+13}_{-15}	2441^{+68}_{-76}	355^{+94}_{-87}
Alt.	-17 ± 6	$0.69^{+0.07}_{-0.08}$	384^{+13}_{-15}	2302^{+97}_{-112}	216^{+85}_{-82}

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

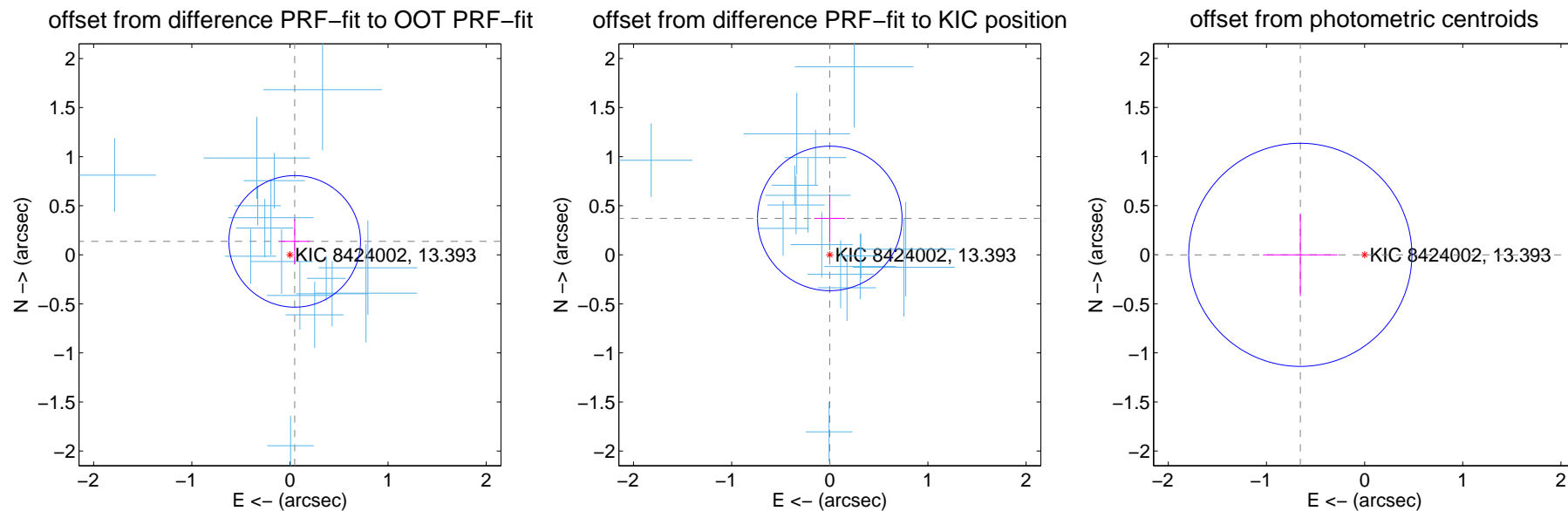
DV Centroid Data

Supplemental centroid analysis for 008424002-01. Kepler magnitude: 13.39. Transit SNR 22.59

There are 17 quarters with good PRF difference image offsets

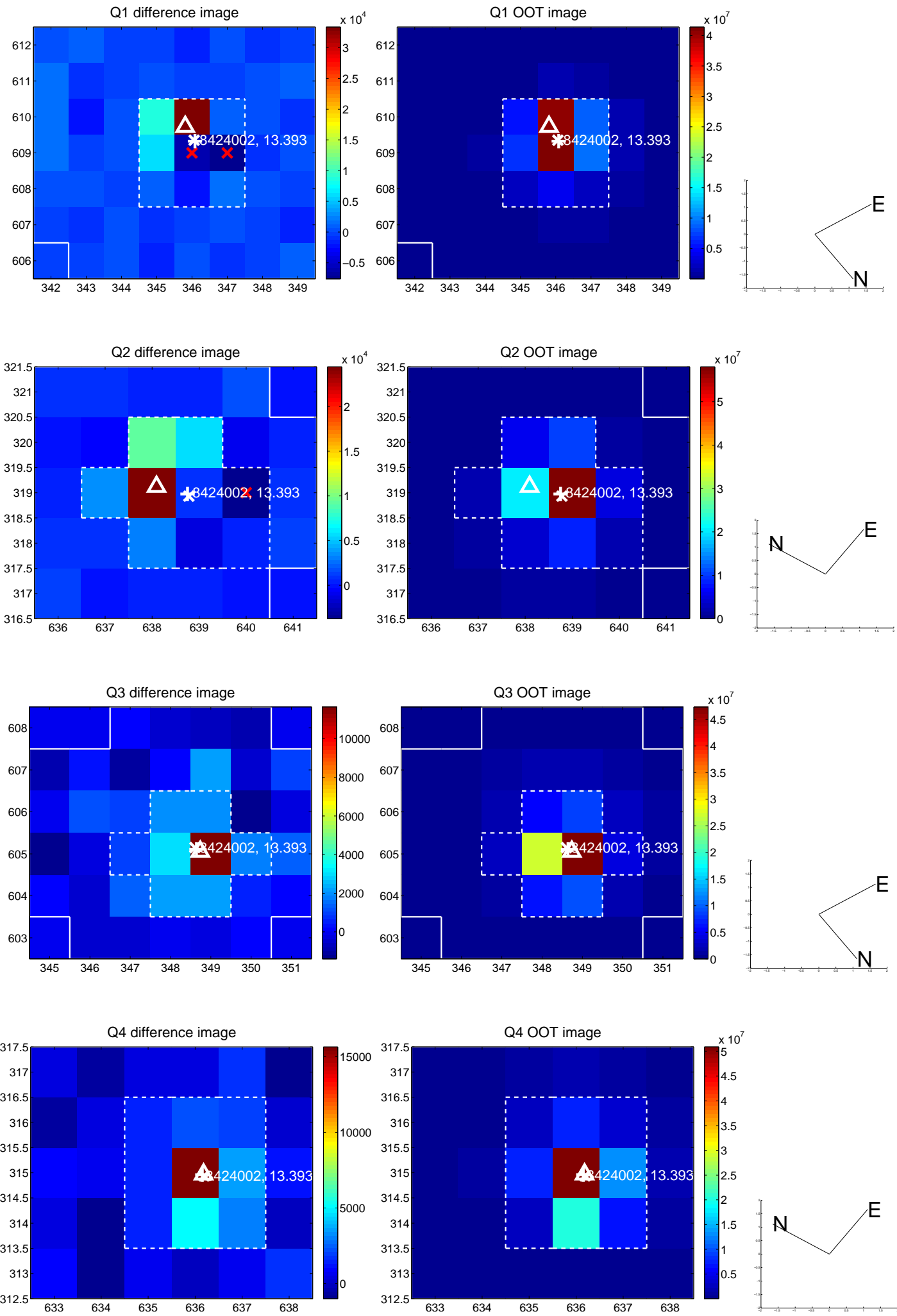
The direct PRF centroid is offset from the target star catalog position by about 0.27 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.145 ± 0.224	0.65	-0.049 ± 0.153	0.136 ± 0.232
PRF-fit source offset from KIC position	0.370 ± 0.246	1.51	0.000 ± 0.158	0.370 ± 0.246
photometric centroid source offset	0.66 ± 0.38	1.73	0.66 ± 0.38	-0.00 ± 0.42

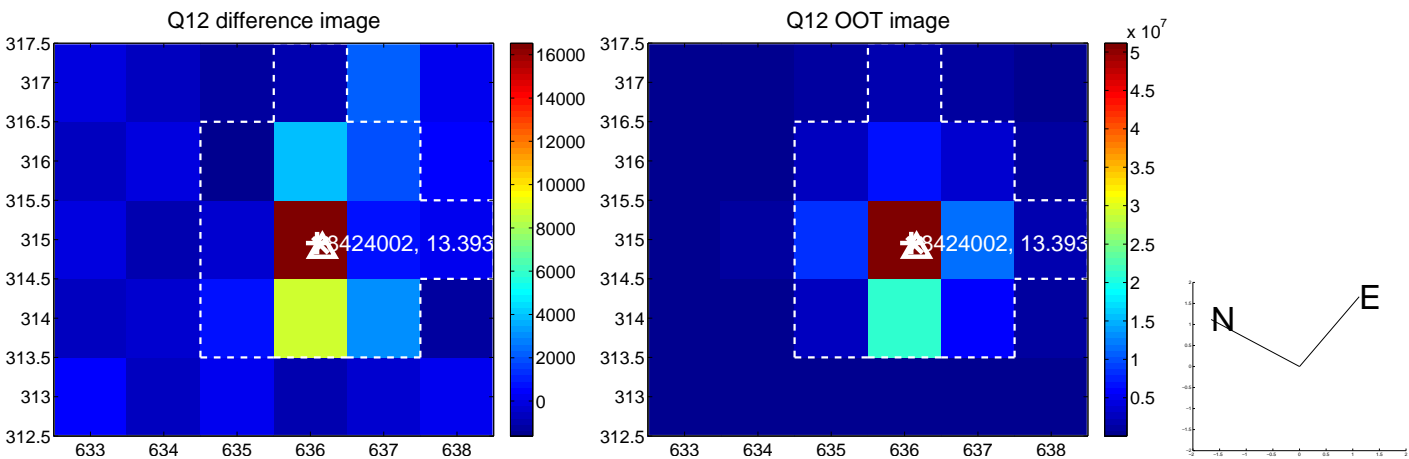
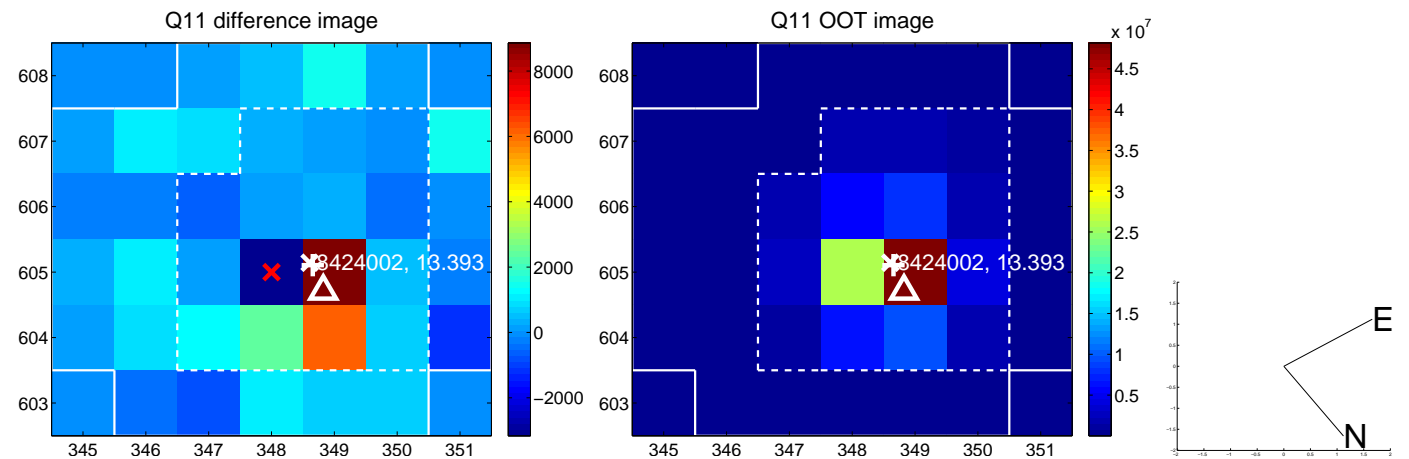
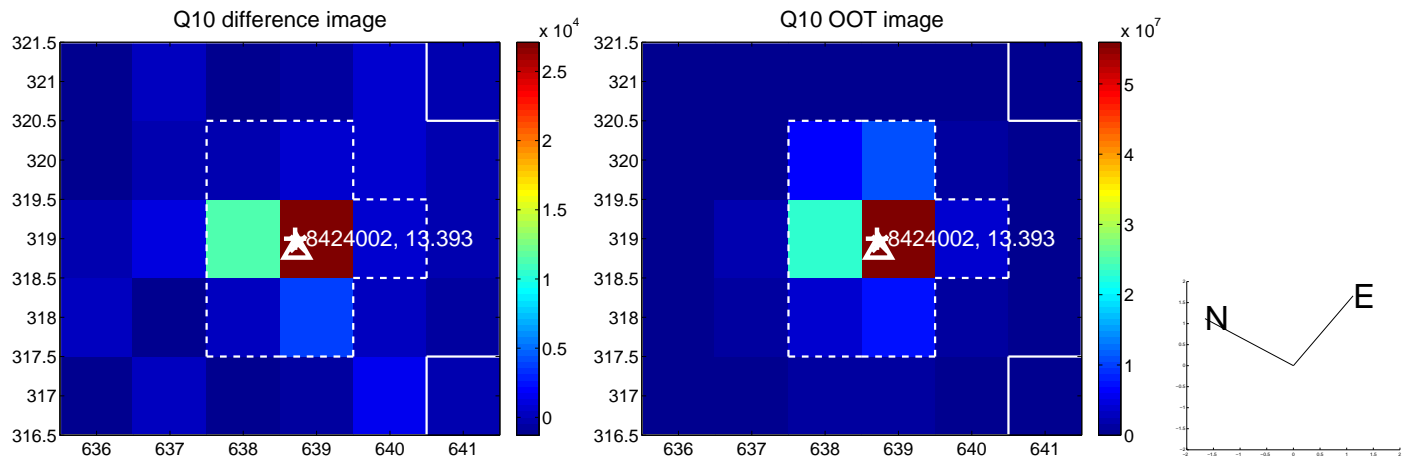
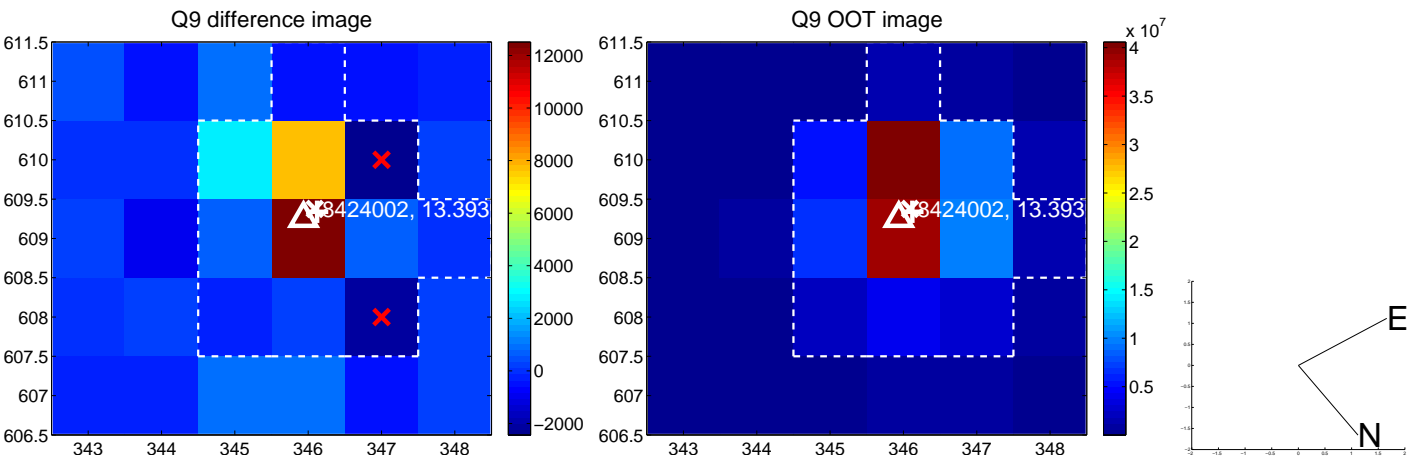


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

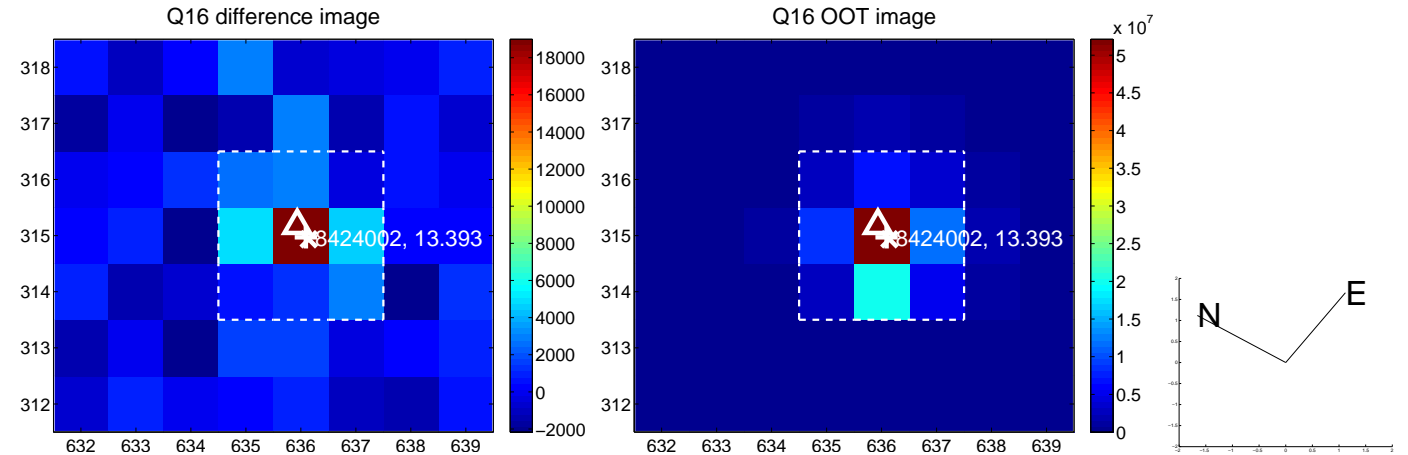
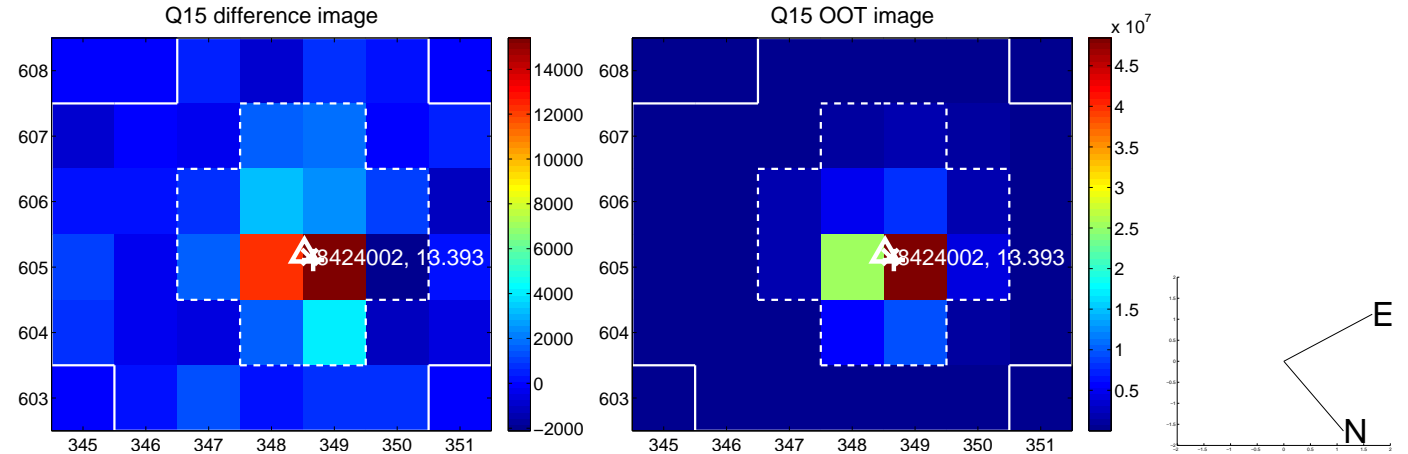
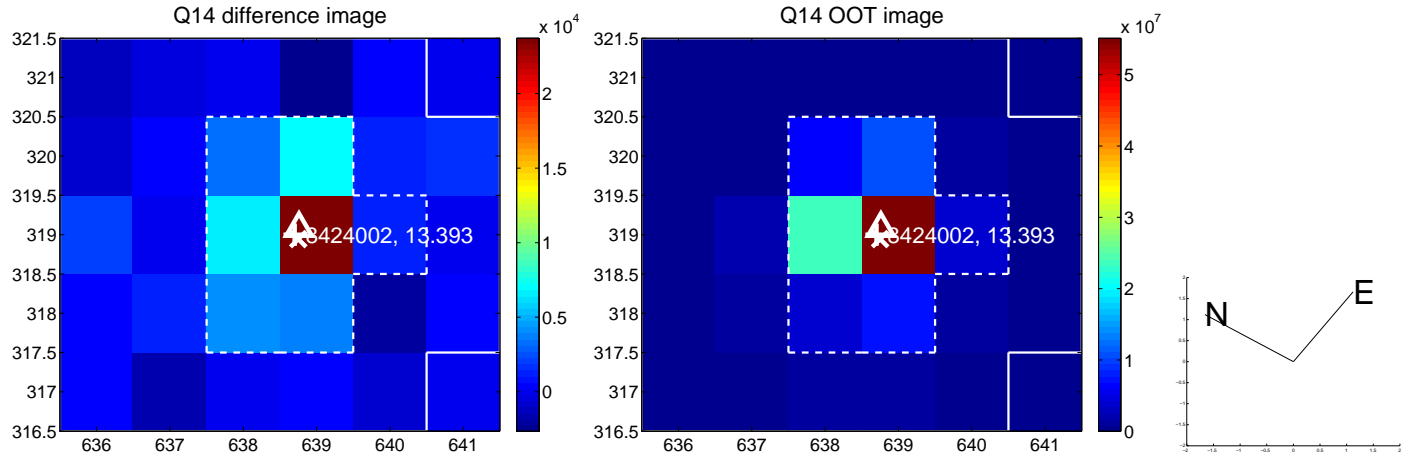
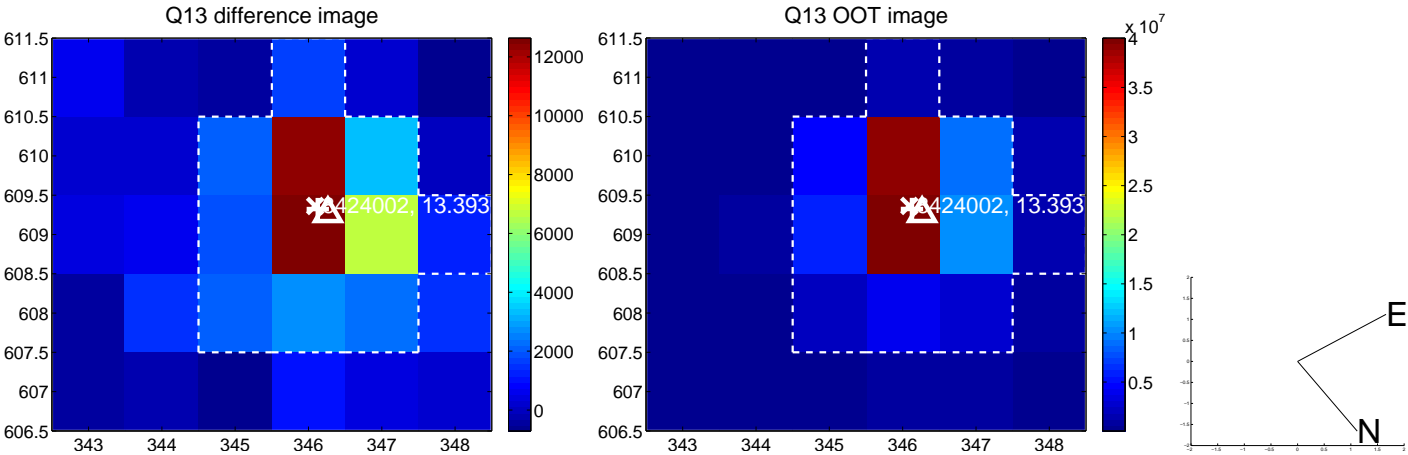
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



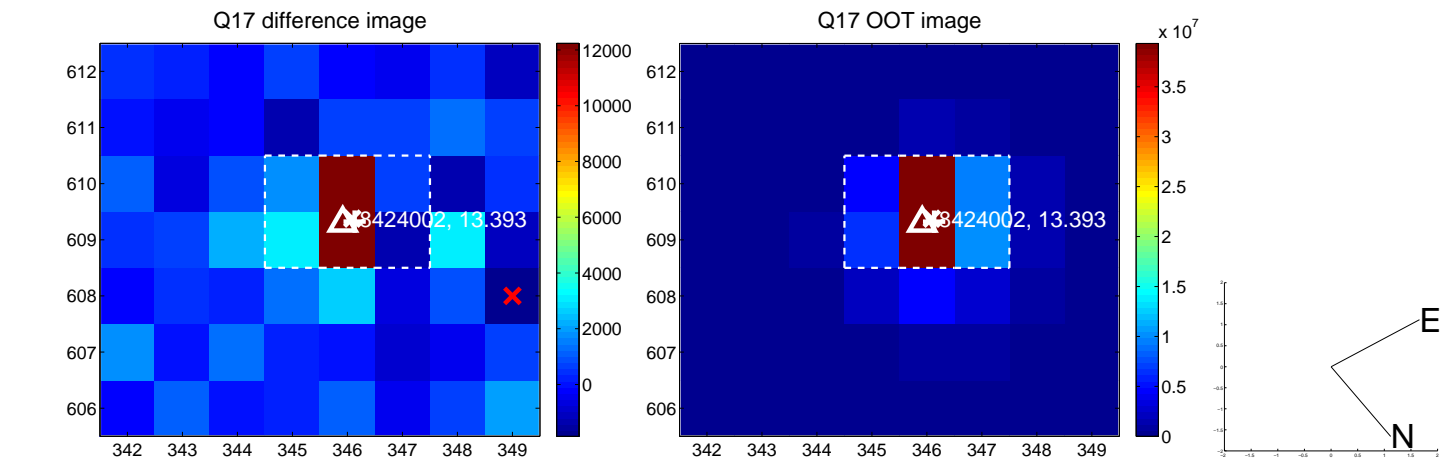
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



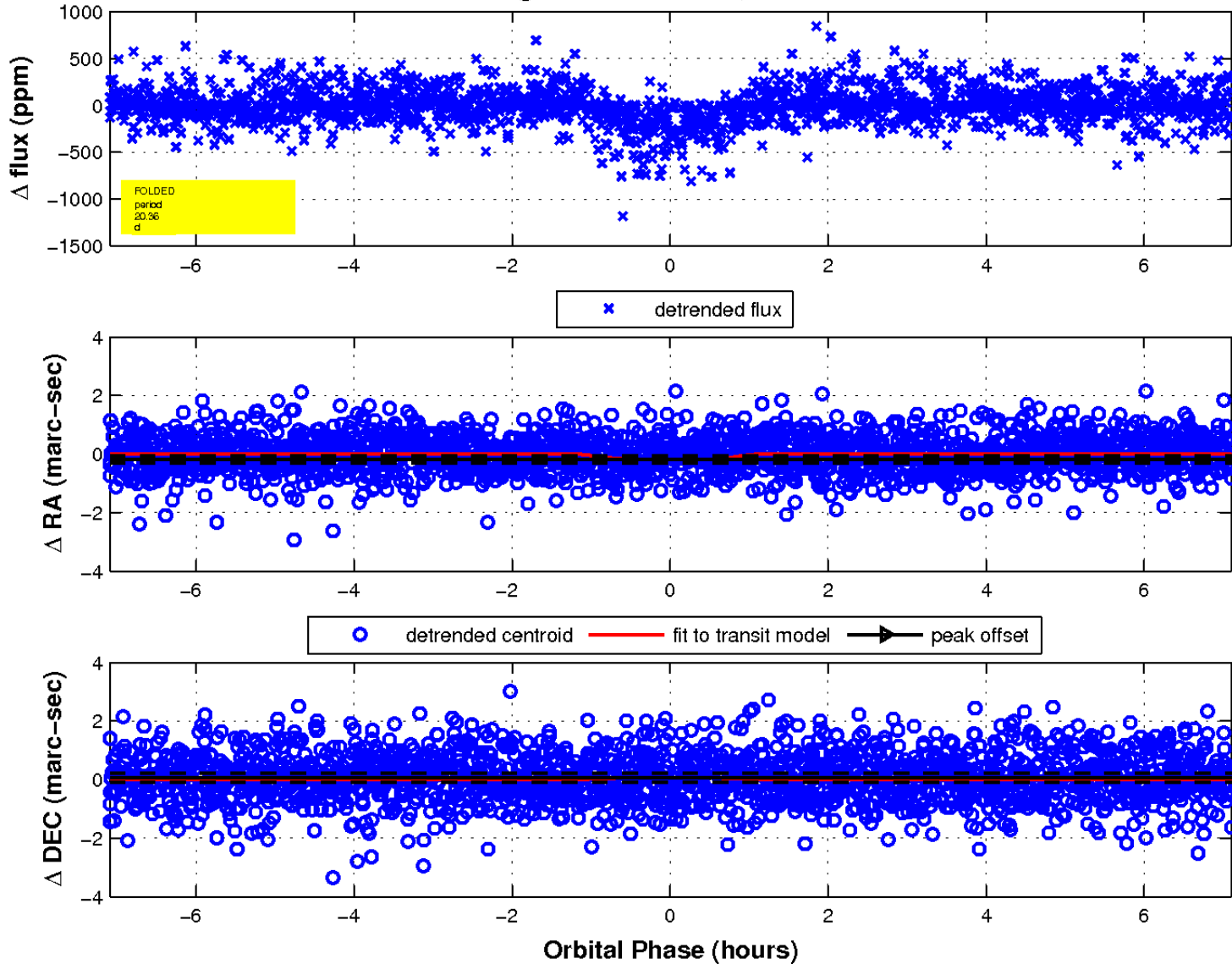
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 1 of 1



UKIRT Image

