

KIC 003848972

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})
003848972-01	OBS	1187.01	0.741054	131.949523	989.2	0.629	48.9	109.9	0.78	5496	3.05	2120.91
003848972-02	OBS	No	0.741065	131.572163	861.9	0.675	55.4	101.0	0.78	5496	2.90	2120.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003848972-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
003848972-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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.

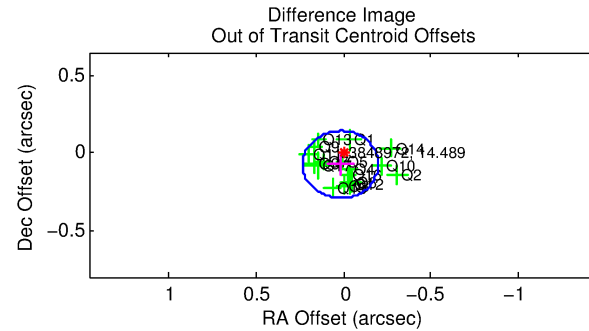
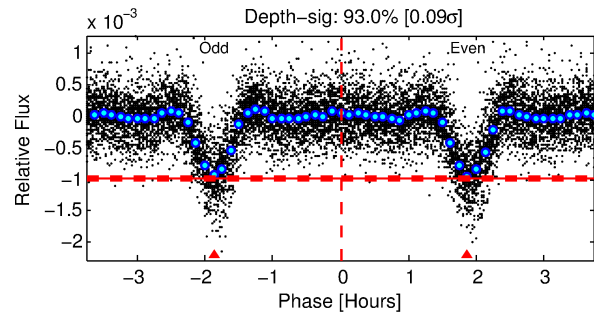
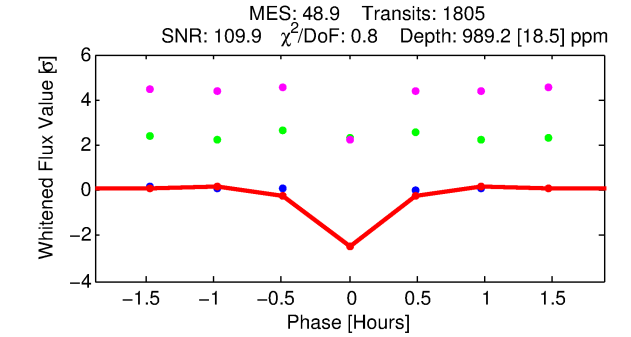
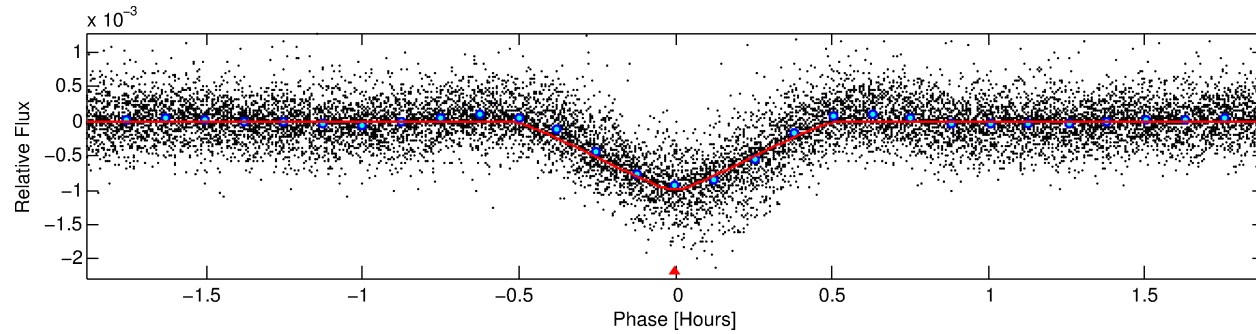
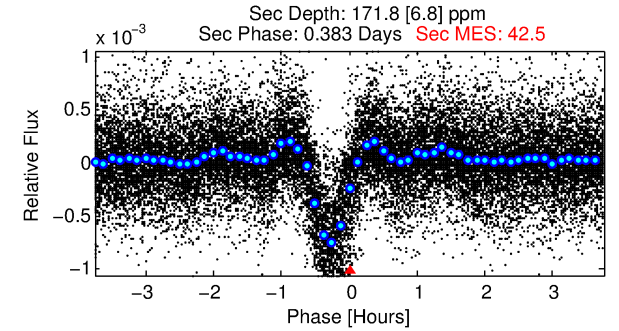
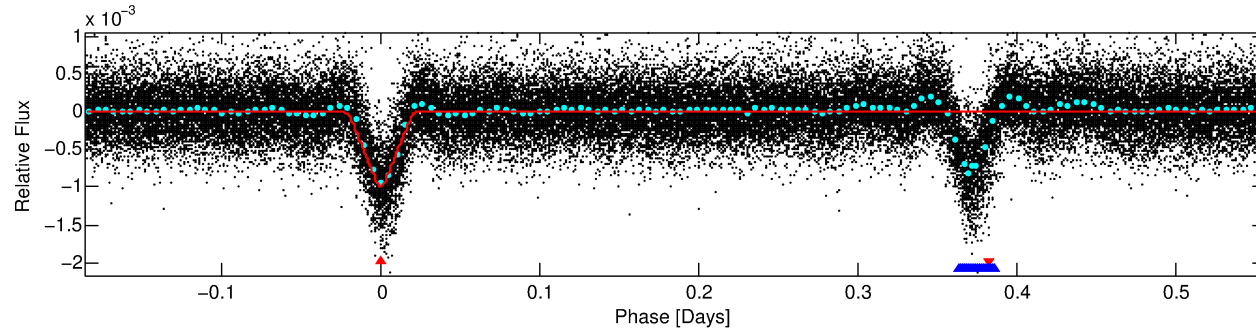
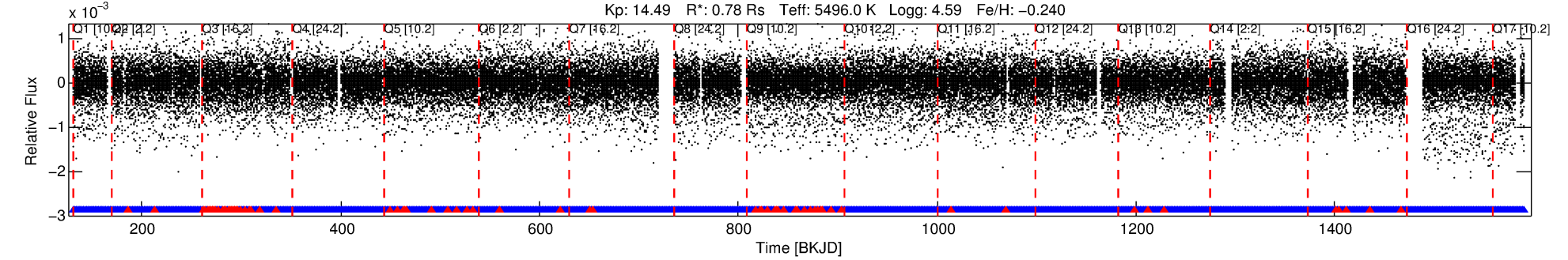
Ephemeris Match Information For 003848972-01

No Significant Match Found

DV One-Page Summary

KIC: 3848972 Candidate: 1 of 2 Period: 0.741 d
KOI: K01187 Corr: No Ephemeris Match

Kp: 14.49 R*: 0.78 Rs Teff: 5496.0 K Logg: 4.59 Fe/H: -0.240



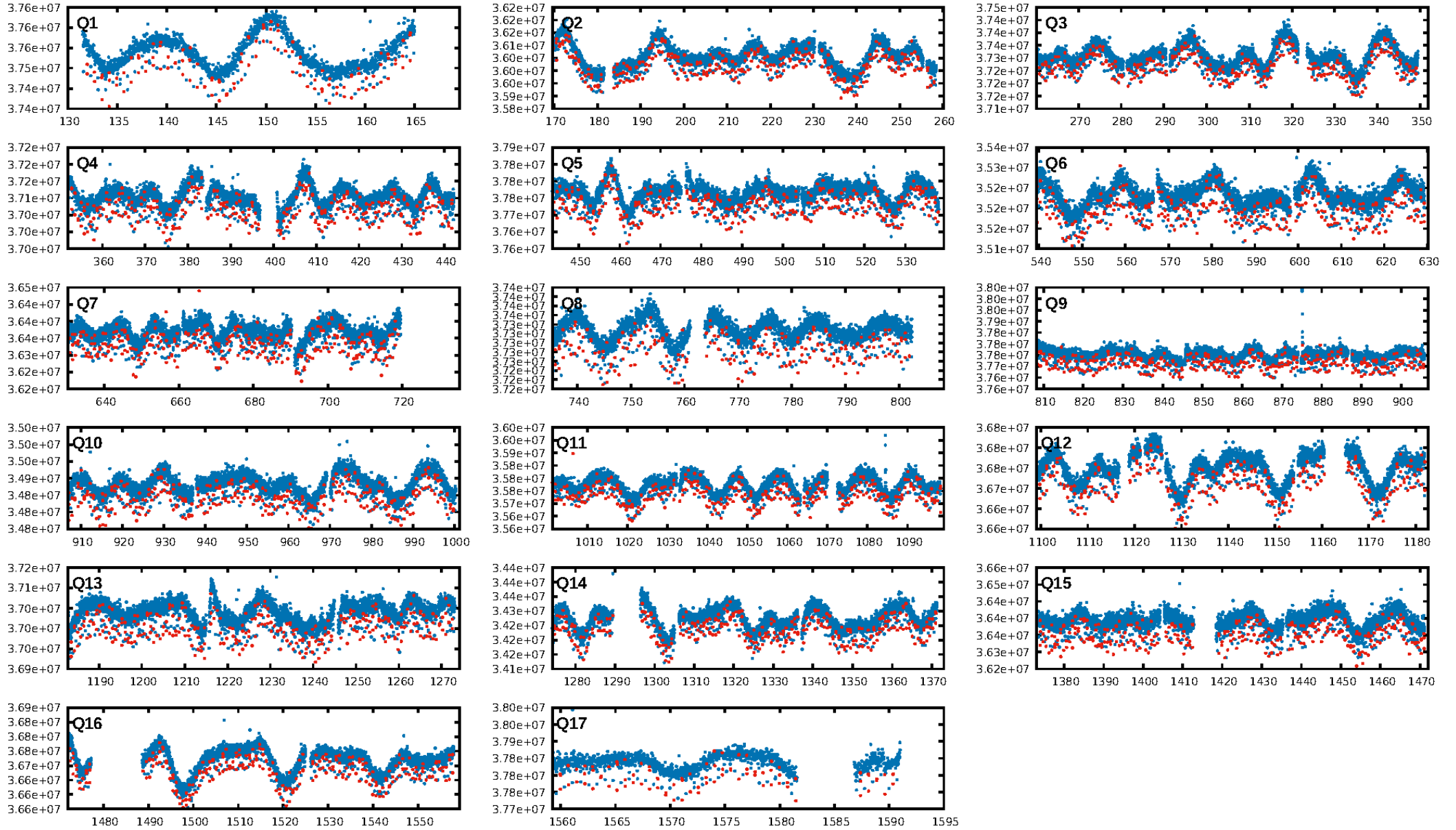
DV Fit Results:

Period = 0.74105 [0.00000] d
Epoch = 131.9495 [0.0001] BKJD
Rp/R* = 0.0361 [0.0020]
a/R* = 4.71 [0.94]
b = 0.90 [0.05]
Seff = 2120.91 [543.14]
Teq = 1730 [111] K
Rp = 3.05 [0.62] Re
a = 0.0152 [0.0024] AU
Ag = 2.35 [0.60] [2.27σ]
Teffp = 3313 [139] K [8.92σ]

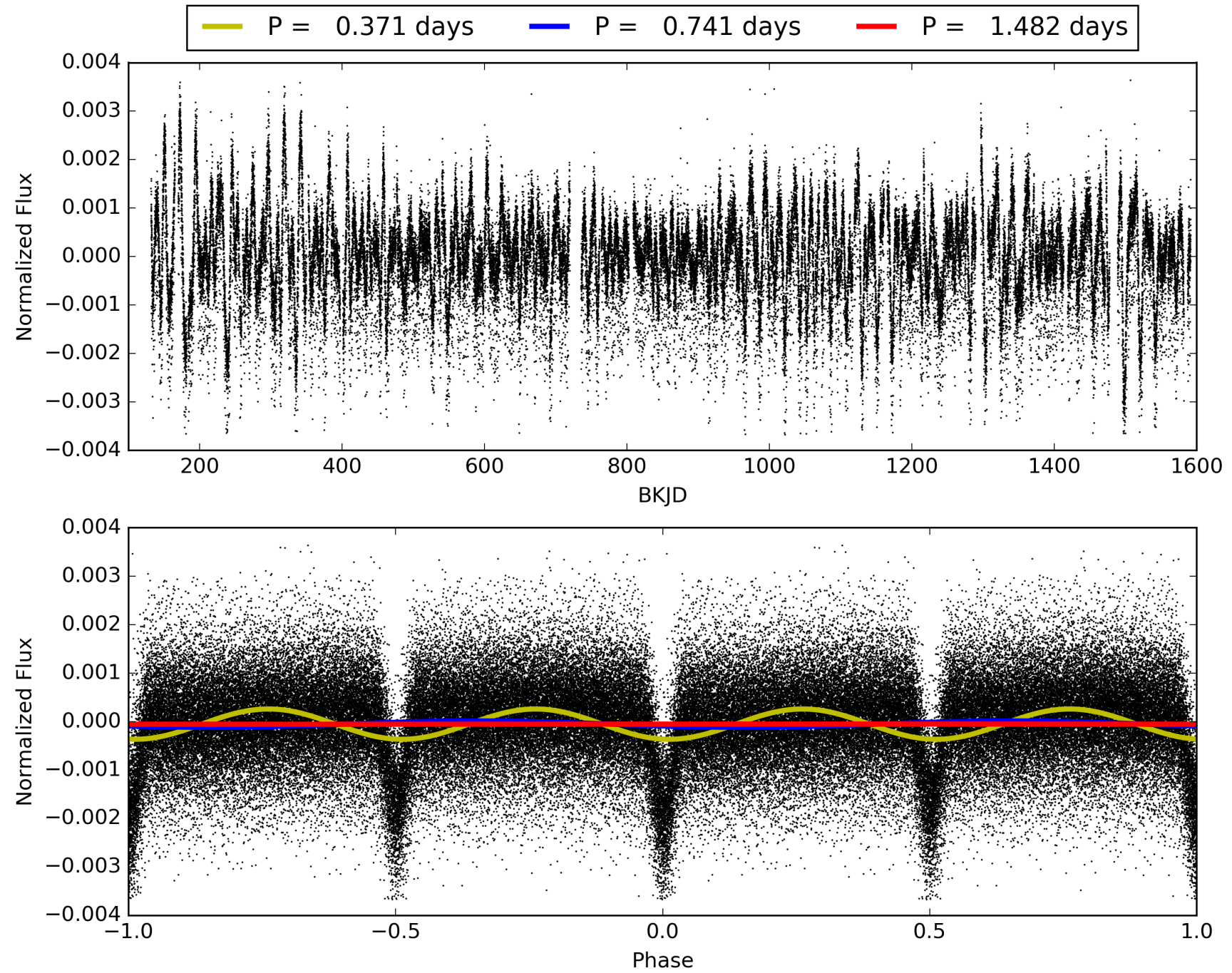
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.96 [1648/1724]
GhostDiagnostic-chr: 3.046
Centroid-sig: 15.1%
Centroid-so: 0.228 arcsec [2.63σ]
OotOffset-rm: 0.075 arcsec [1.05σ]
KicOffset-rm: 0.122 arcsec [1.52σ]
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 003848972-01, PDC Light Curves

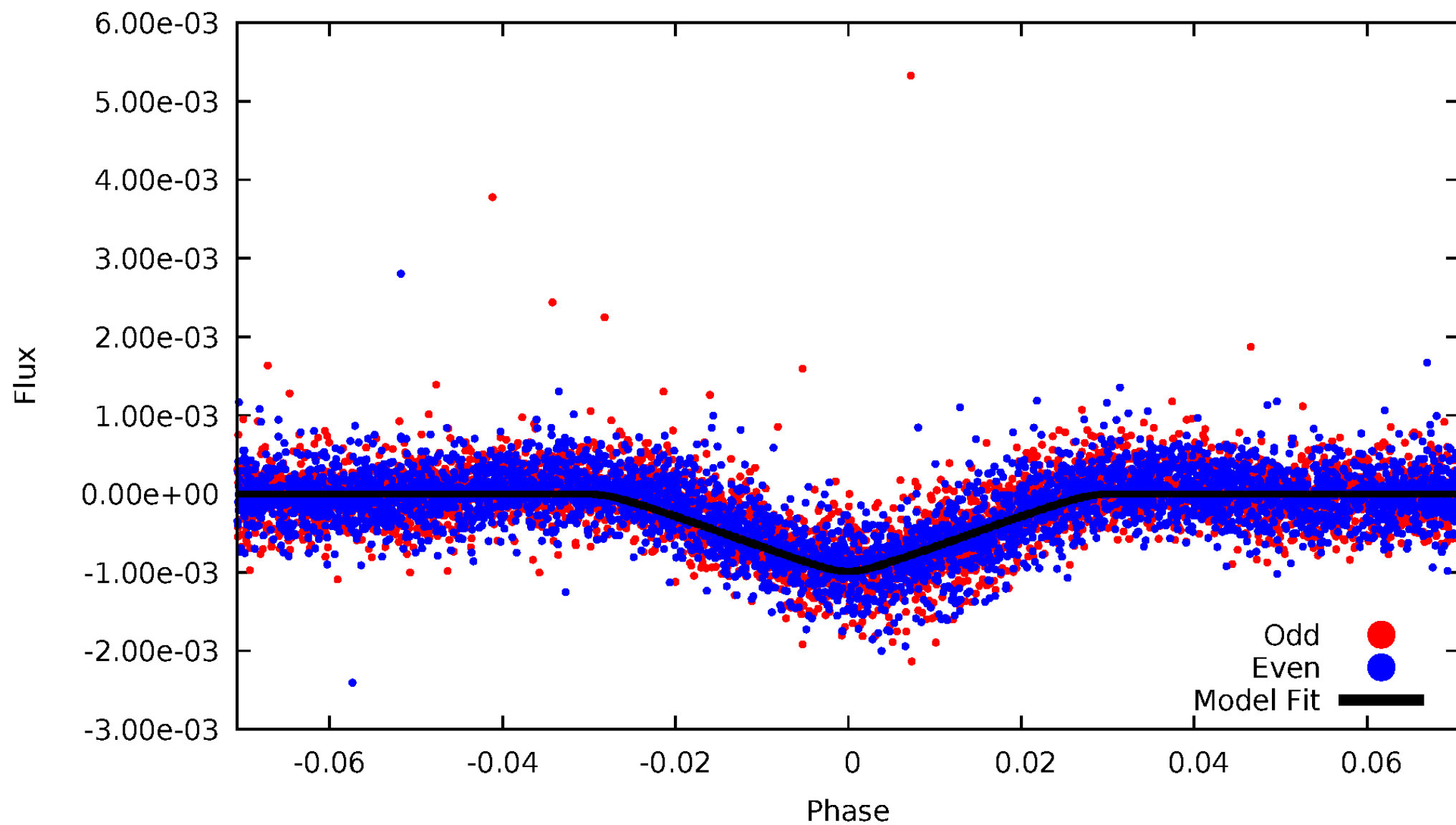


TCE 003848972-01



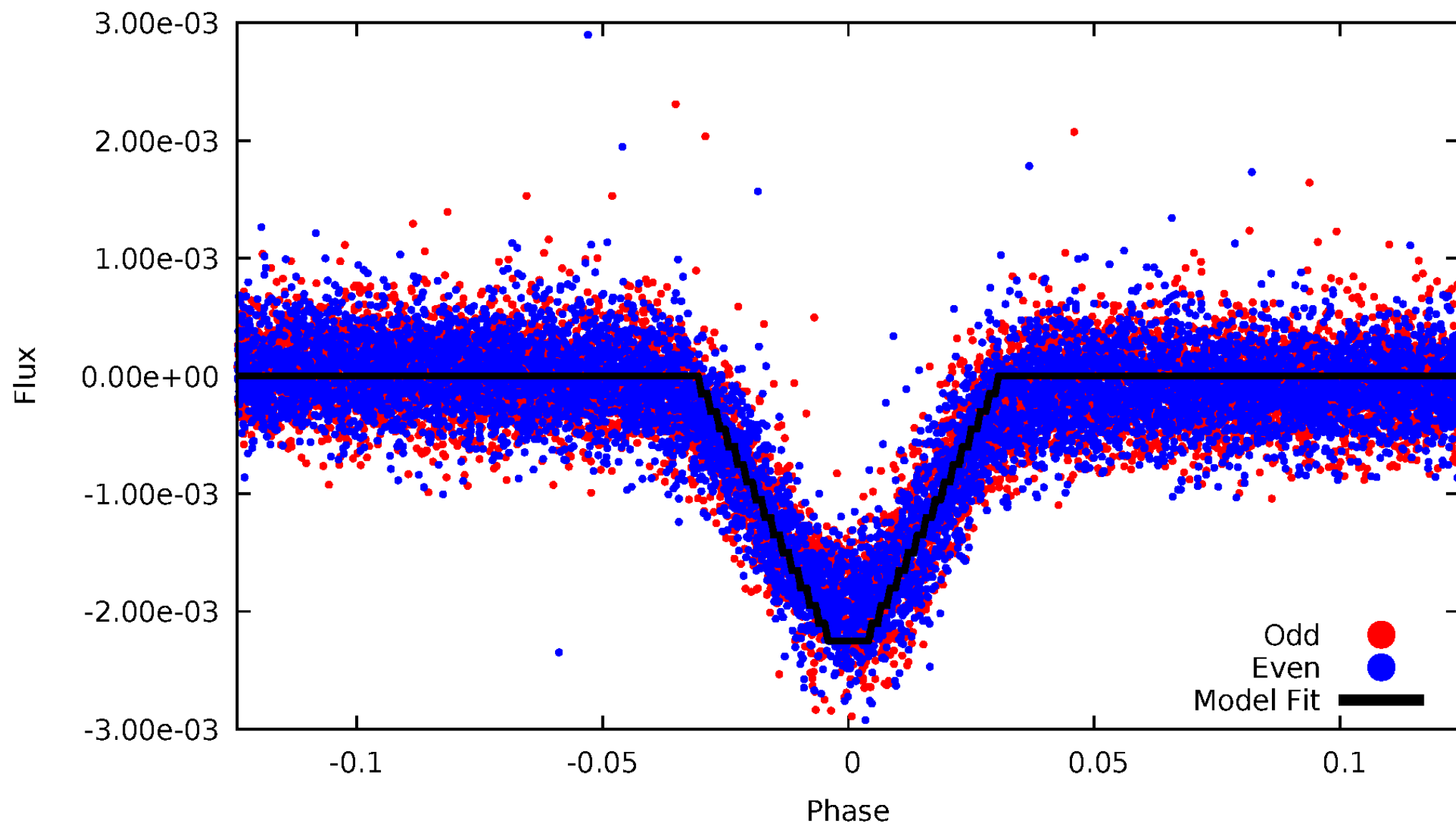
DV Odd/Even

TCE 003848972-01



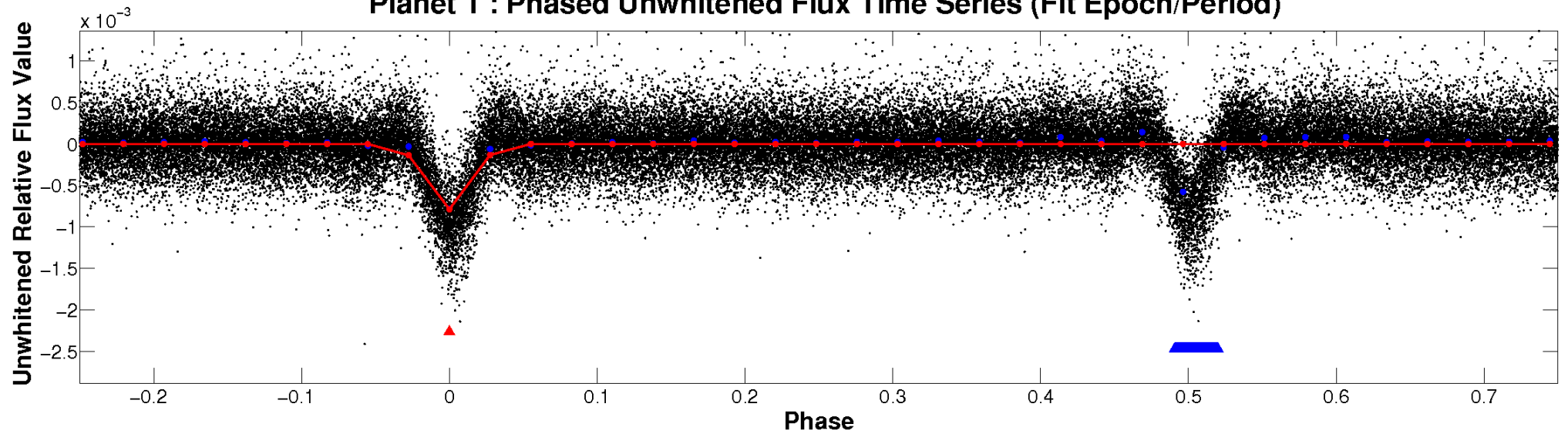
ALT Odd/Even

TCE 003848972-01

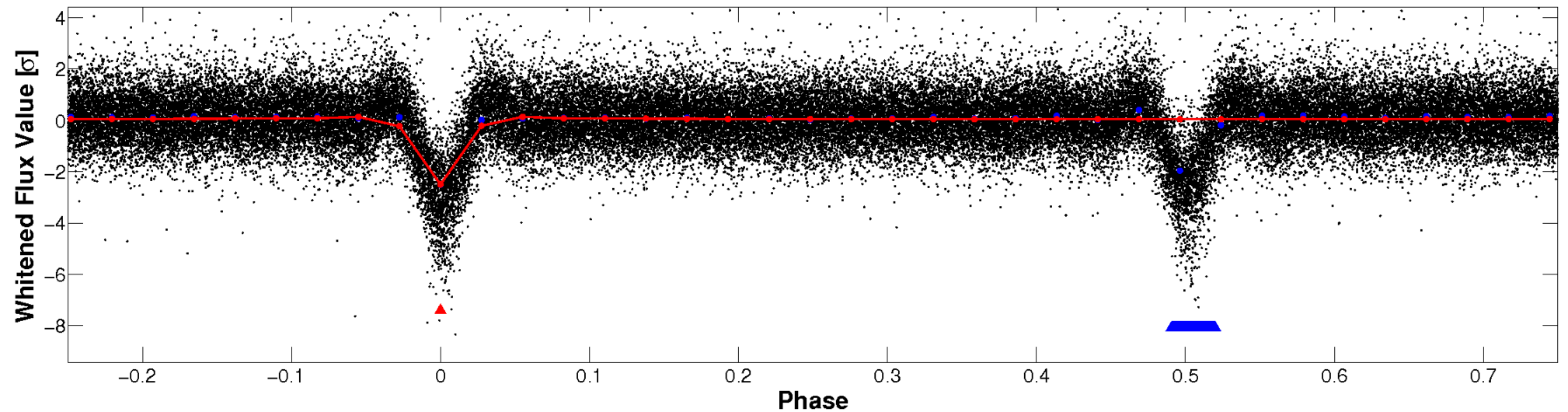


Non-Whitened Vs. Whitened Light Curve

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

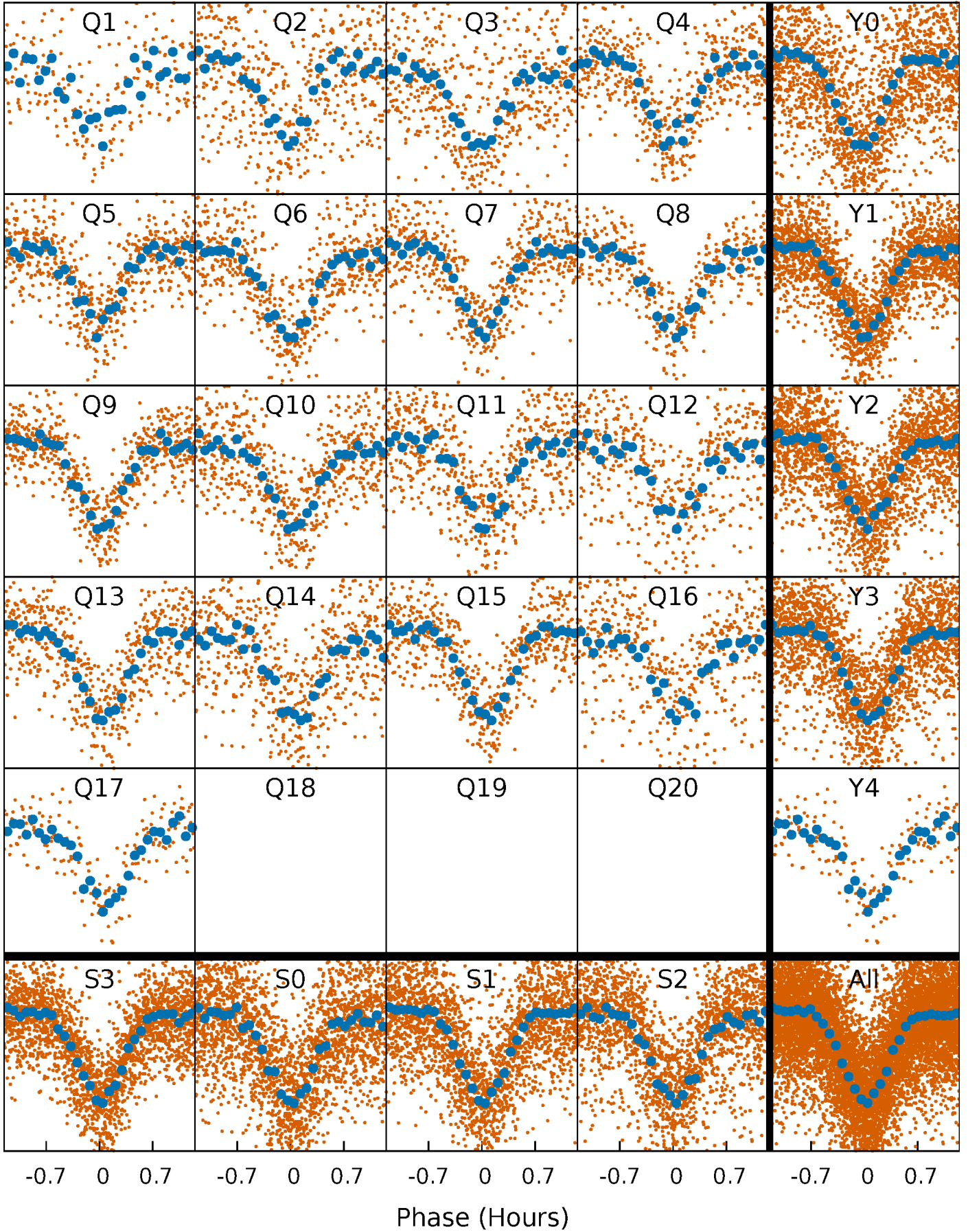


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



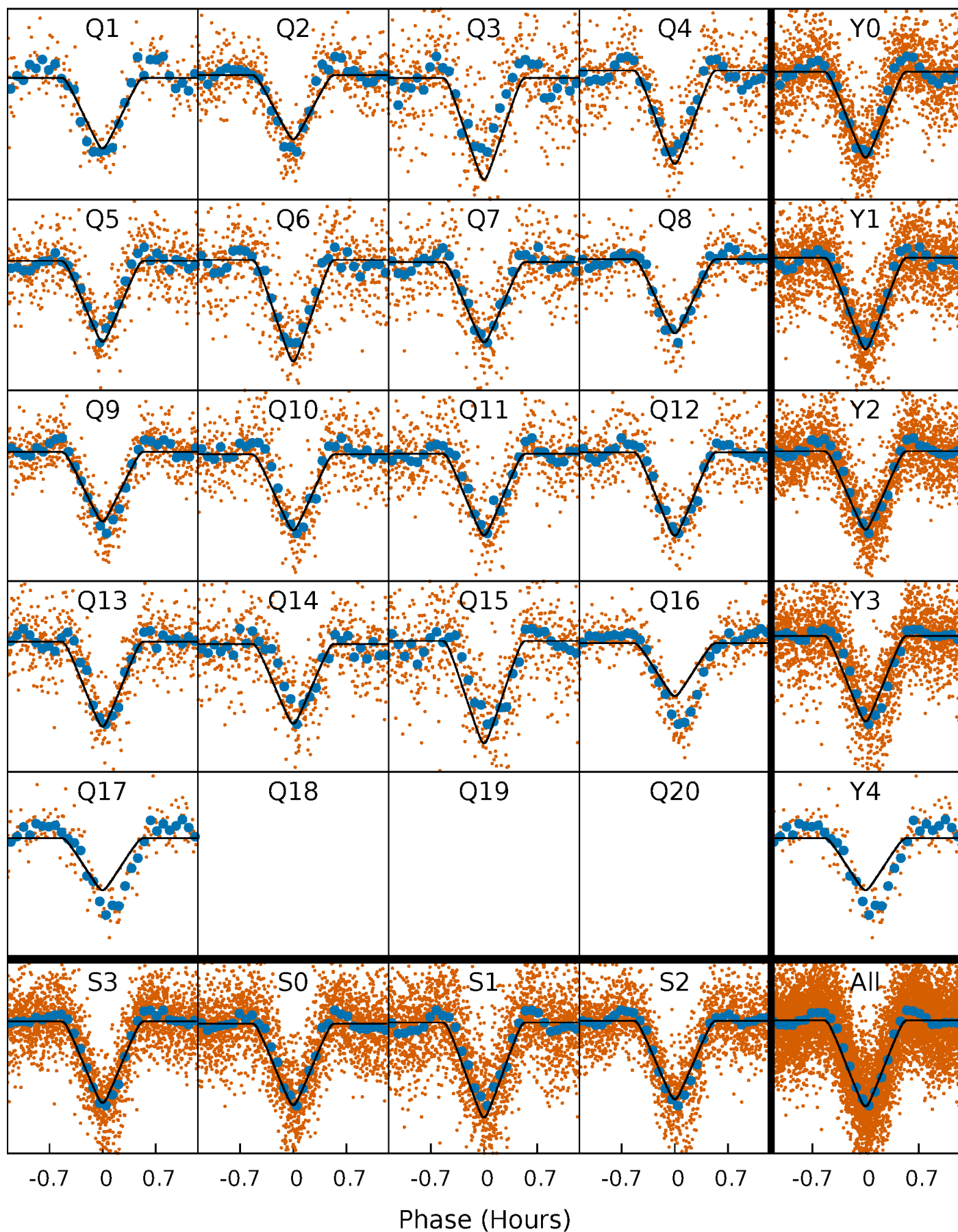
PDC Quarter-Phased Transit Curves

TCE 003848972-01 P= 0.741054 Days $T_0=131.949523$ (BKJD)



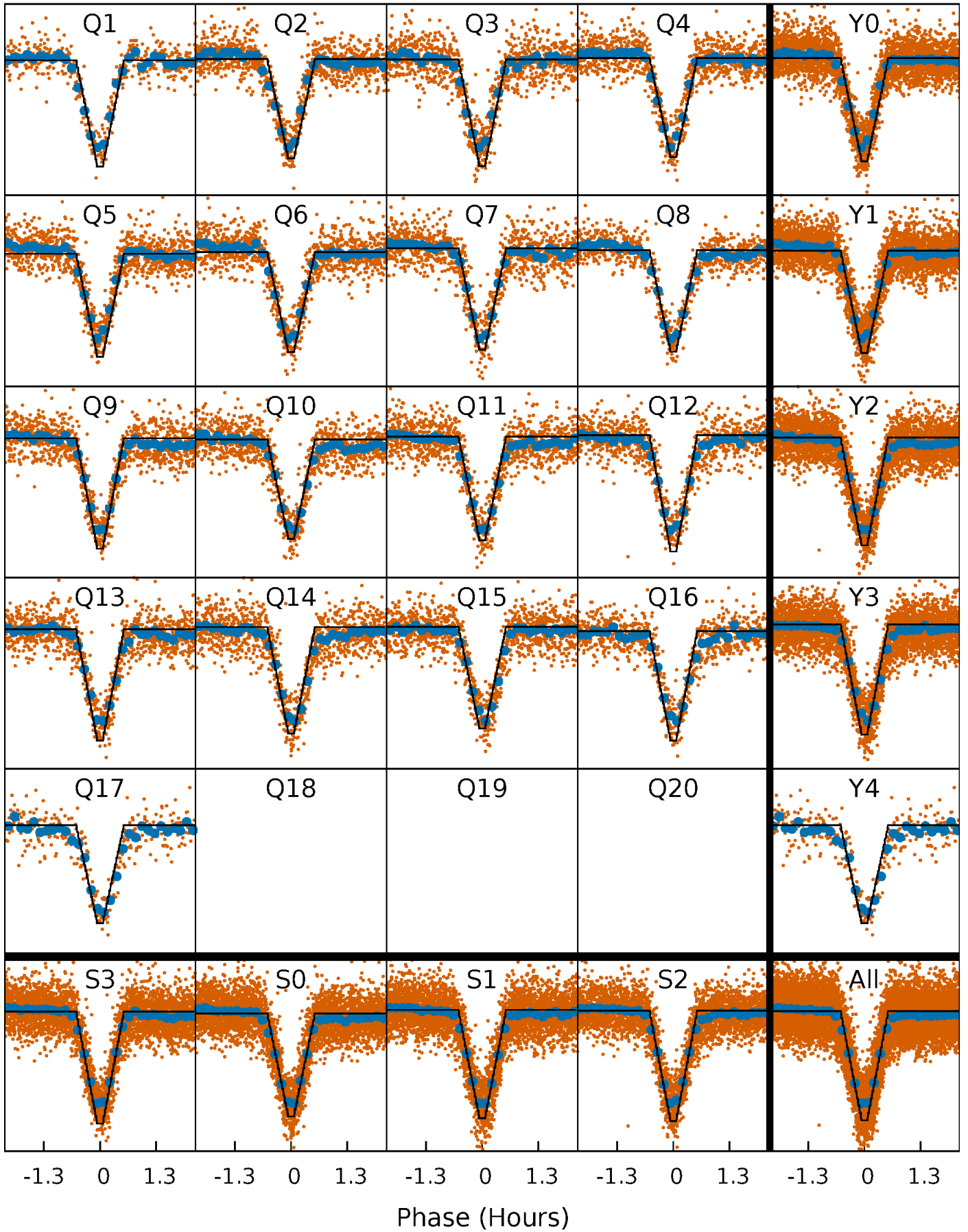
DV Quarter-Phased Transit Curves

TCE 003848972-01 P= 0.741054 Days $T_0=131.949523$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

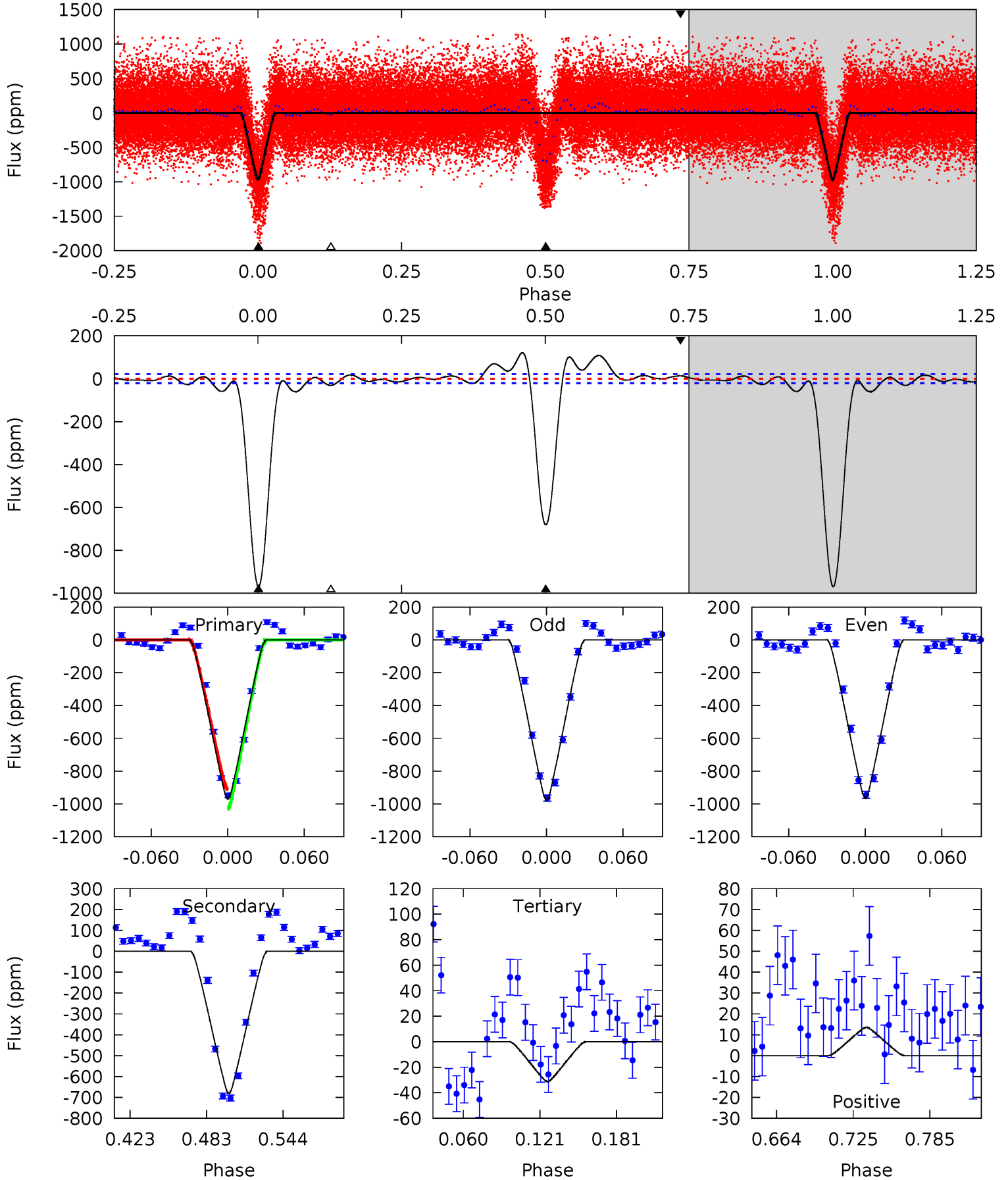
TCE 003848972-01 P= 0.741055 Days $T_0=131.949725$ (BKJD)



DV Model-Shift Uniqueness Test

003848972-01, P = 0.741054 Days, E = 131.208469 Days

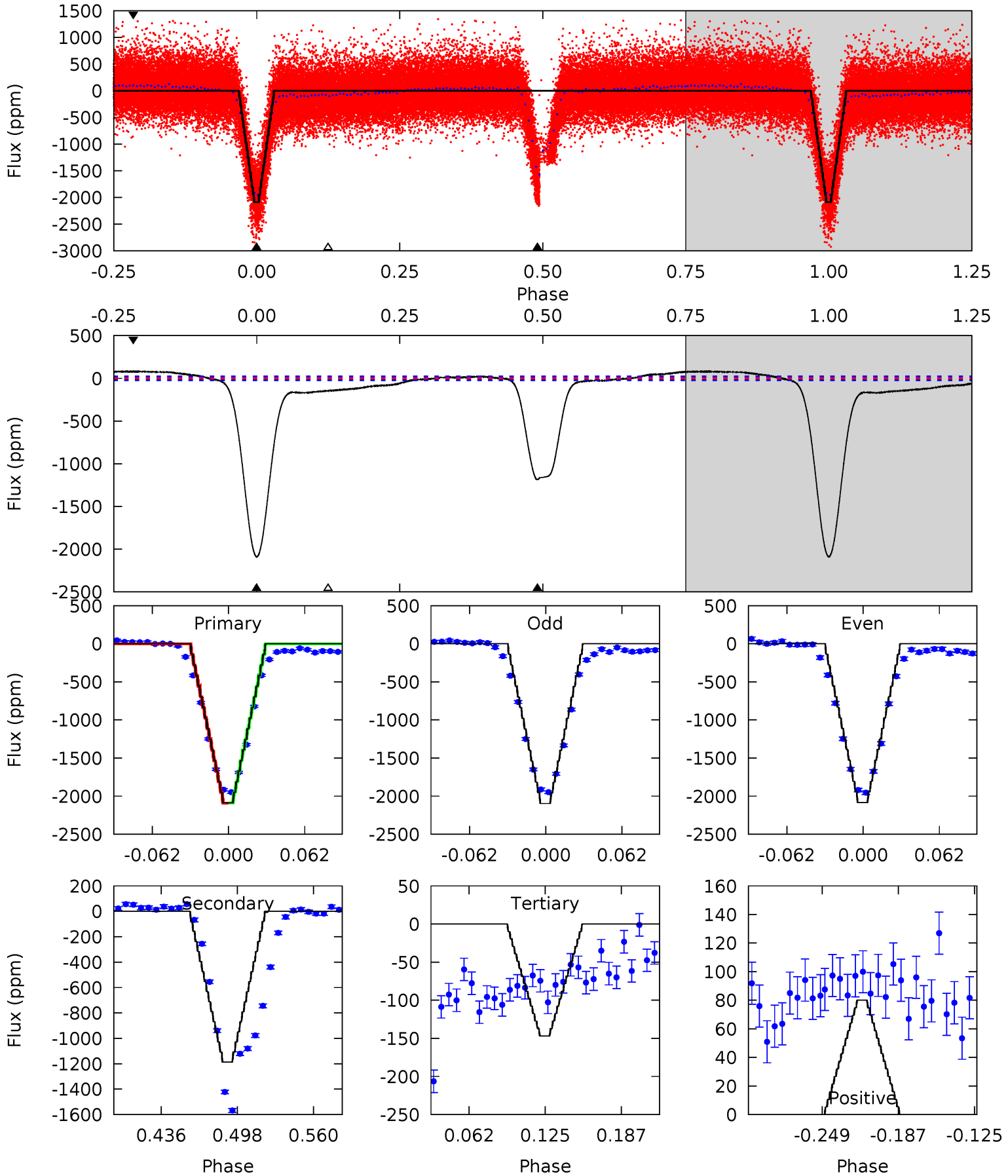
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
214.5	150.6	6.89	2.99	4.67	1.88	6.49	207.6	211.5	143.7	147.6	1.44	1.00	0.11	12.9



Alt Model-Shift Uniqueness Test

003848972-01, P = 0.741055 Days, E = 131.208670 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
437.5	248.5	30.8	16.8	4.66	1.86	15.4	406.7	420.7	217.7	231.7	1.47	1.00	0.04	0.33



Stellar Parameters For KIC 003848972

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5496^{+166}_{-149}	$4.592^{+0.038}_{-0.120}$	$-0.240^{+0.300}_{-0.300}$	$0.776^{+0.152}_{-0.065}$	$0.869^{+0.074}_{-0.102}$	$2.619^{+0.437}_{-0.969}$
	+3%/-3%	+1%/-3%	+125%/-125%	+20%/-8%	+9%/-12%	+17%/-37%
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 003848972-01 / KOI 1187.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-681 ± 5	$3.12^{+0.36}_{-0.27}$	2452^{+107}_{-98}	4741^{+166}_{-151}	$8.815^{+1.641}_{-1.456}$
Alt.	-1186 ± 5	$4.12^{+0.42}_{-0.32}$	2461^{+113}_{-93}	4760^{+152}_{-135}	$8.842^{+1.311}_{-1.413}$

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

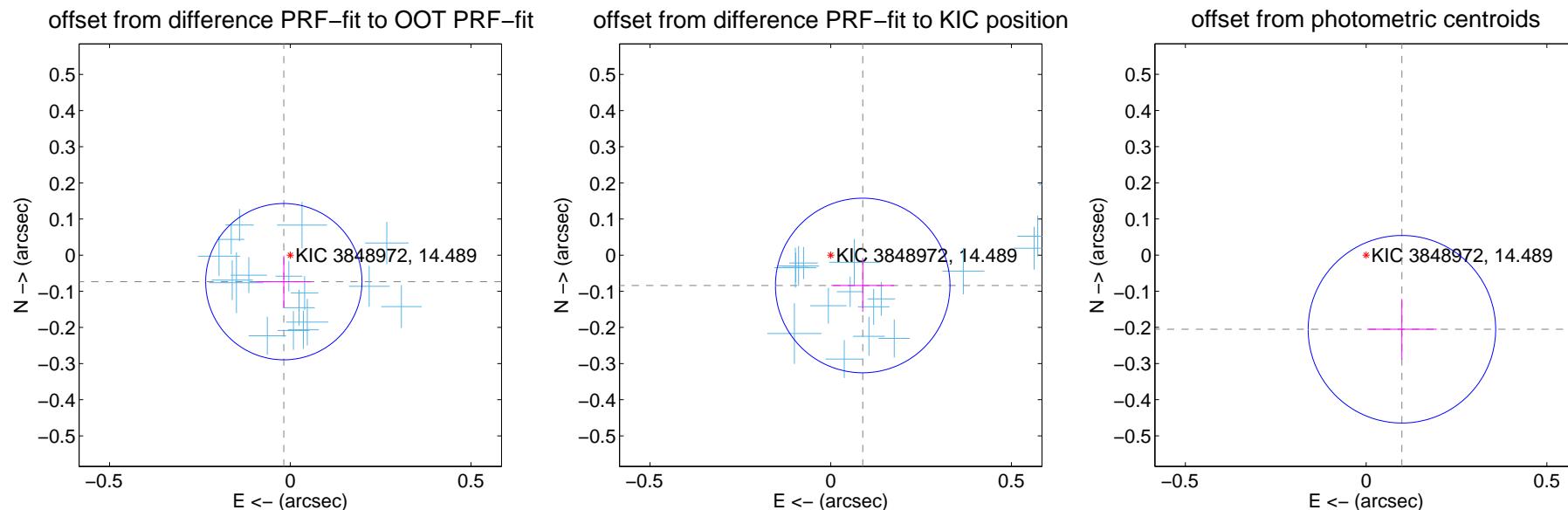
DV Centroid Data

Supplemental centroid analysis for 003848972-01. Kepler magnitude: 14.49. Transit SNR 109.86

There are 17 quarters with good PRF difference image offsets

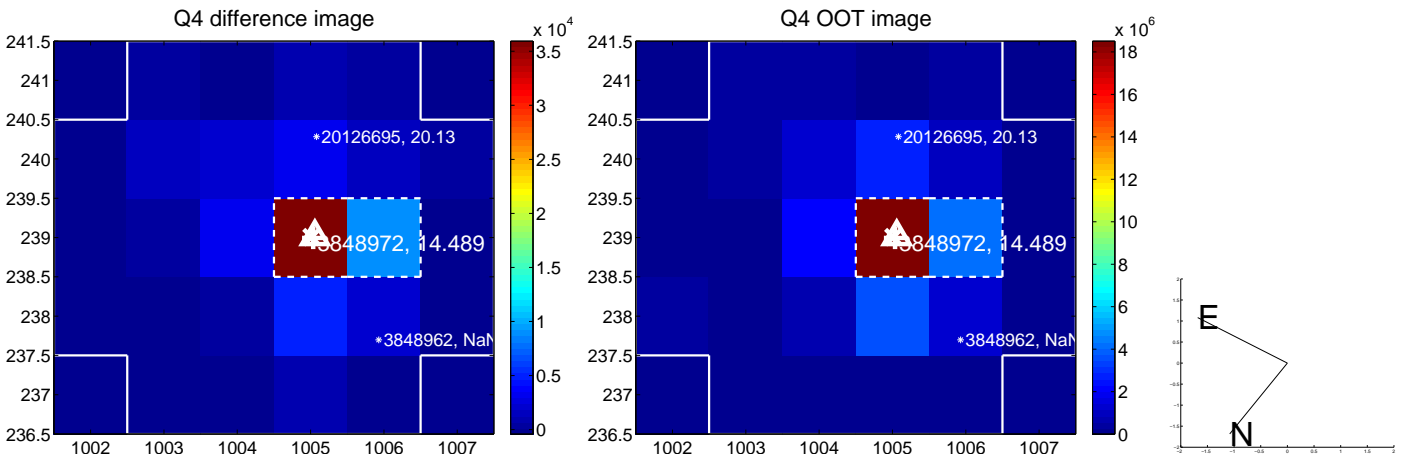
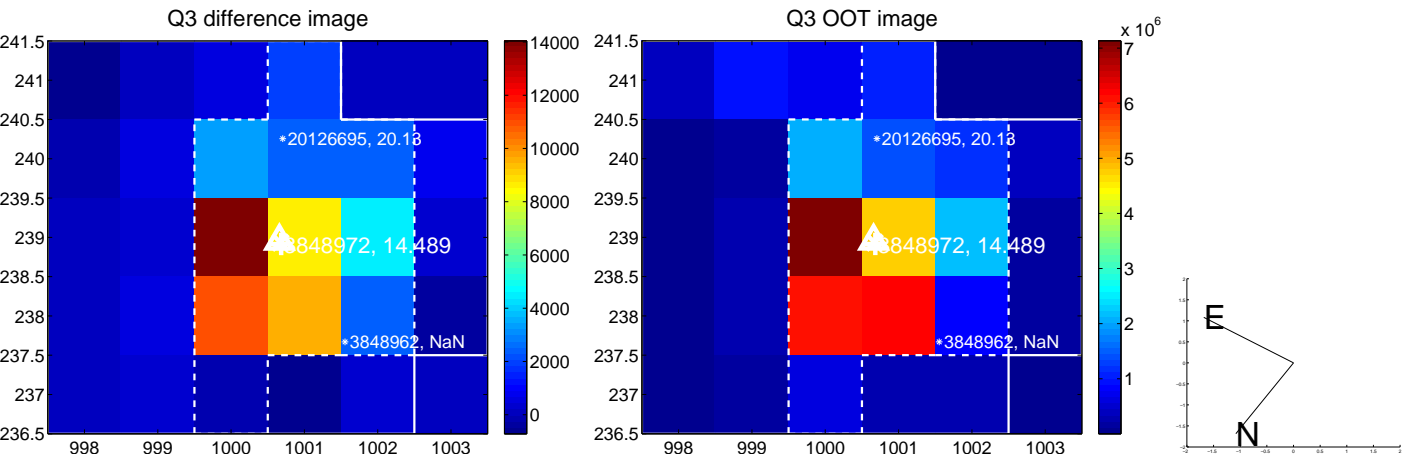
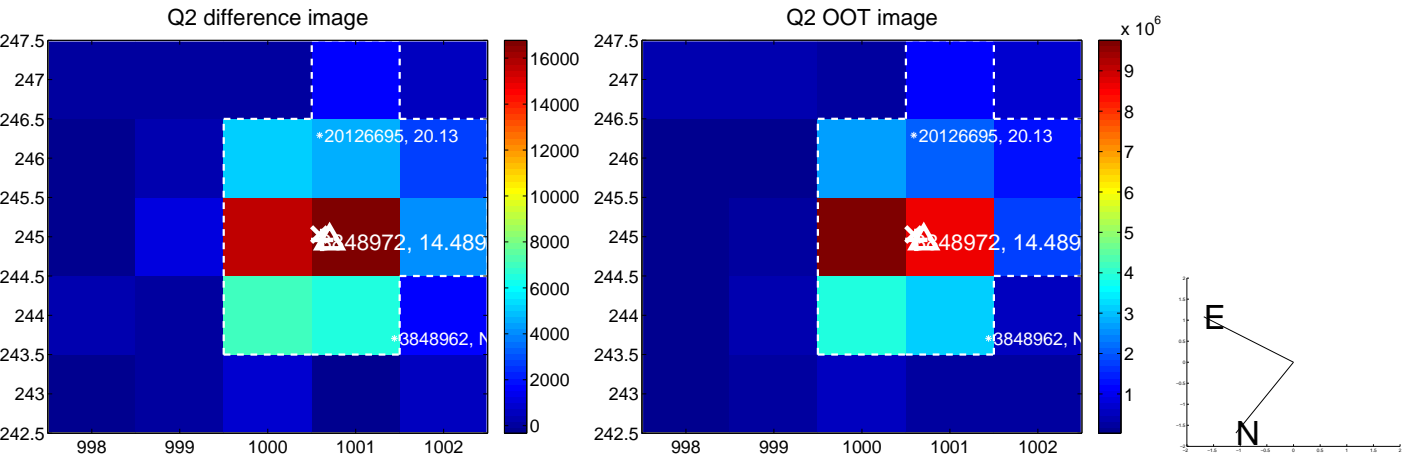
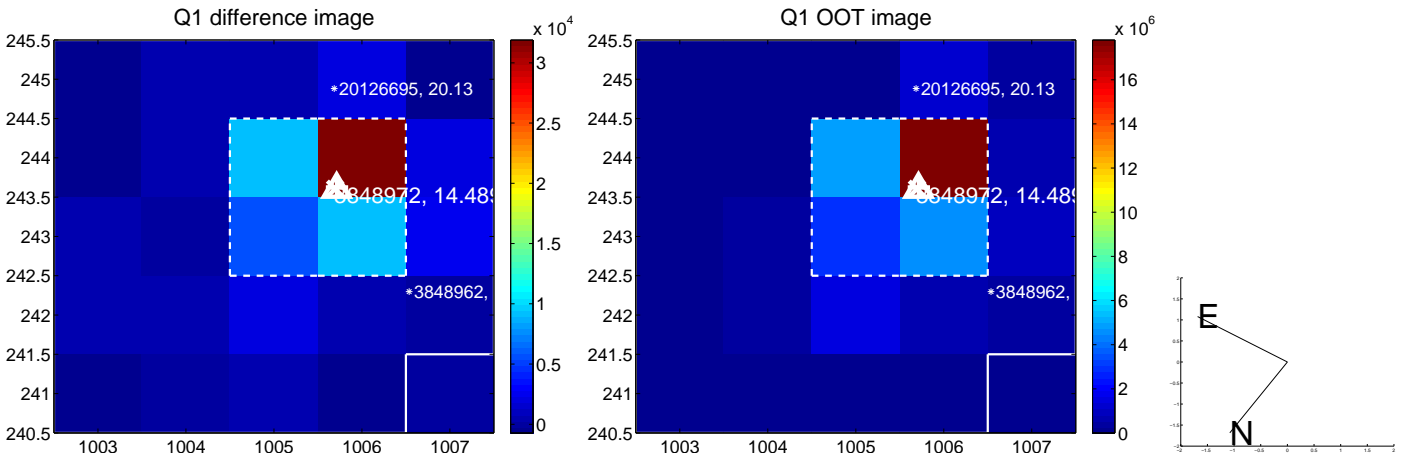
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.075 ± 0.072	1.05	0.018 ± 0.076	-0.073 ± 0.072
PRF-fit source offset from KIC position	0.122 ± 0.081	1.52	-0.089 ± 0.087	-0.084 ± 0.073
photometric centroid source offset	0.23 ± 0.09	2.63	-0.10 ± 0.10	-0.21 ± 0.08

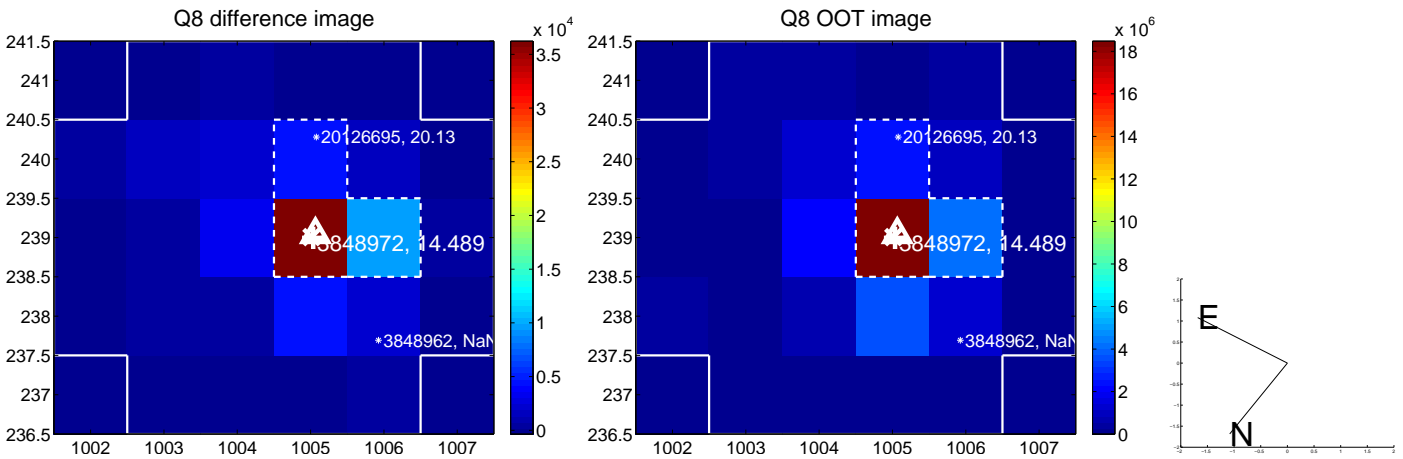
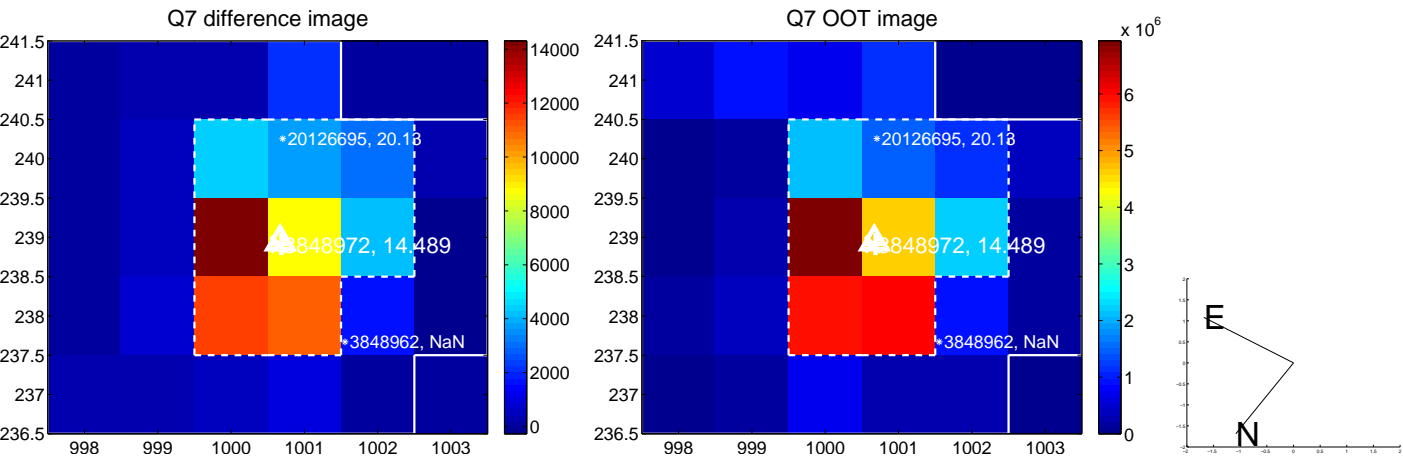
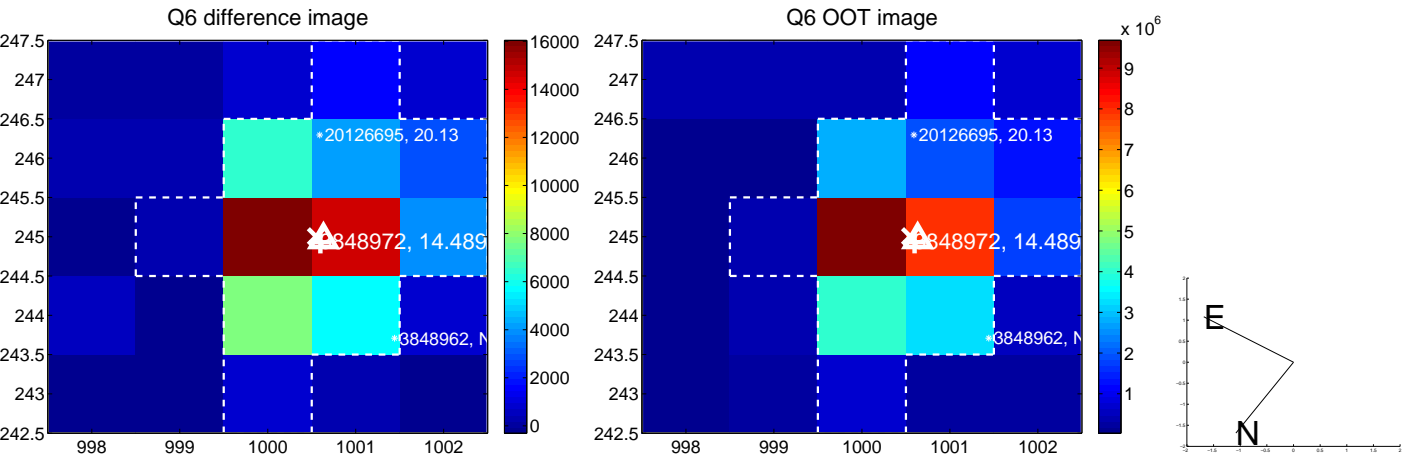
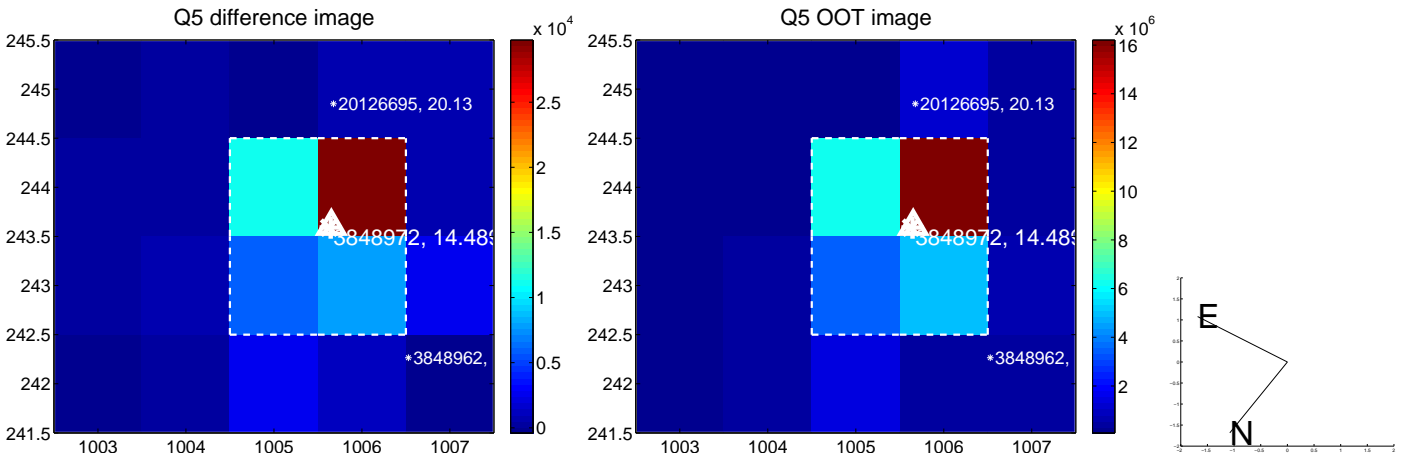


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

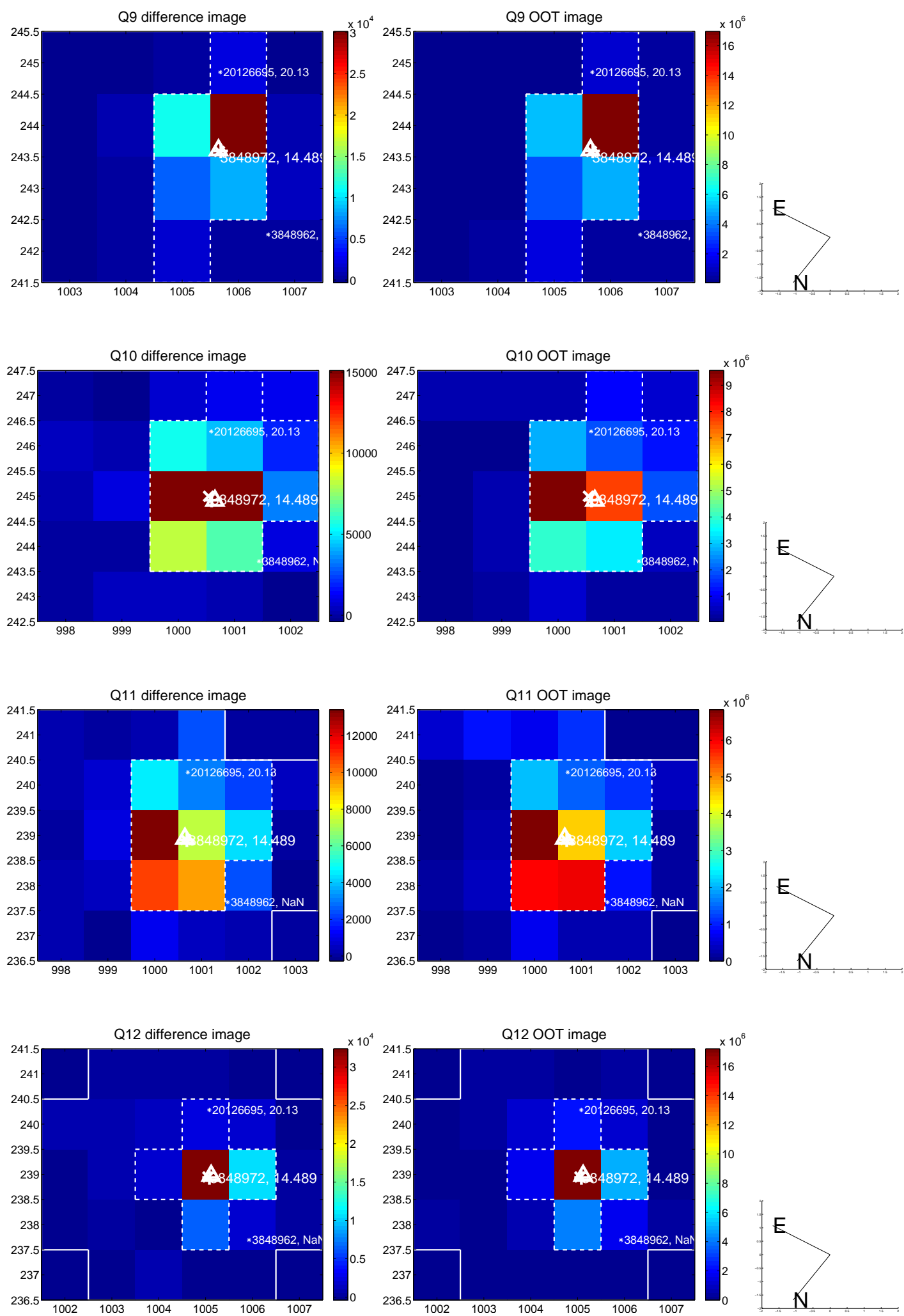
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



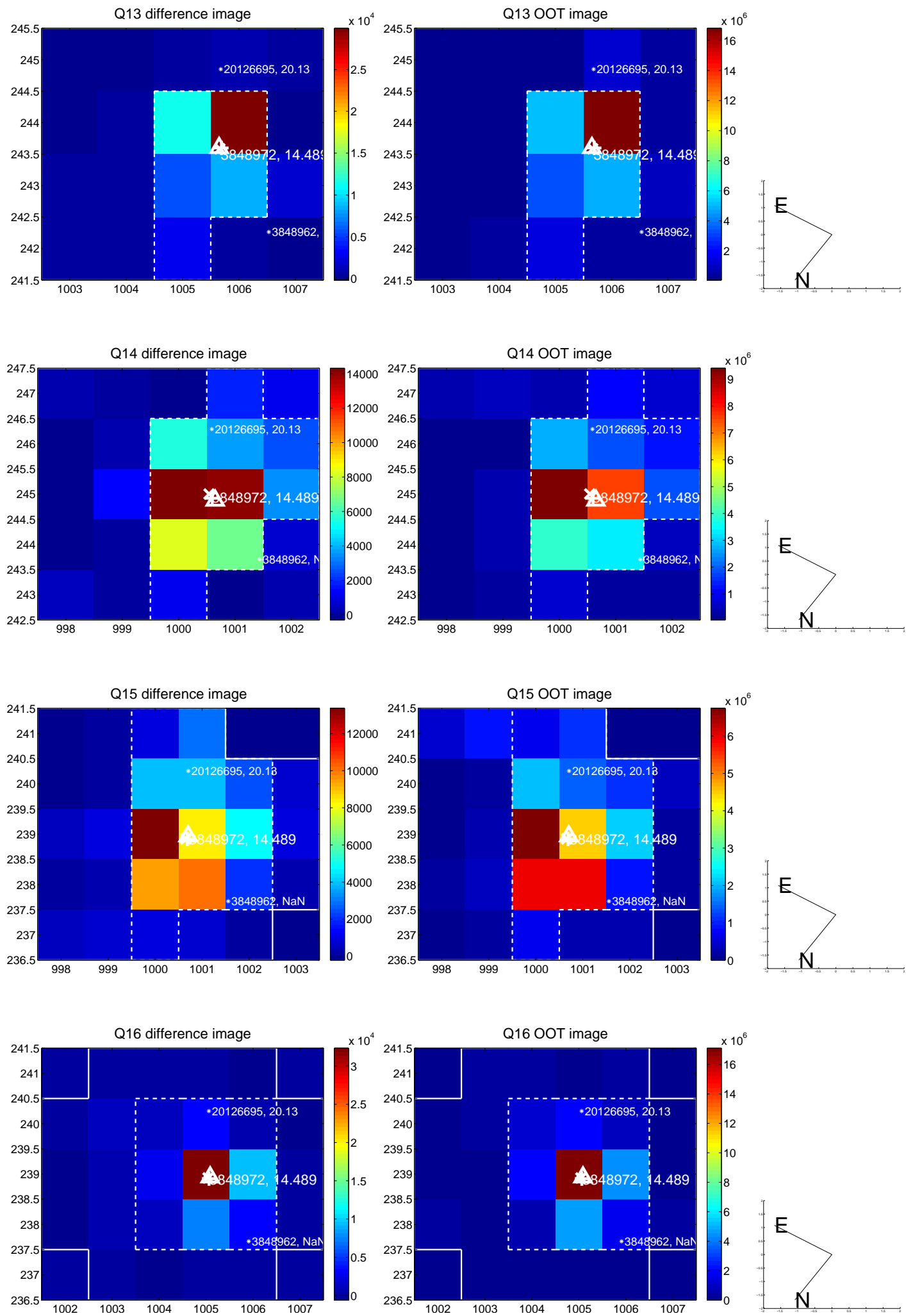
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



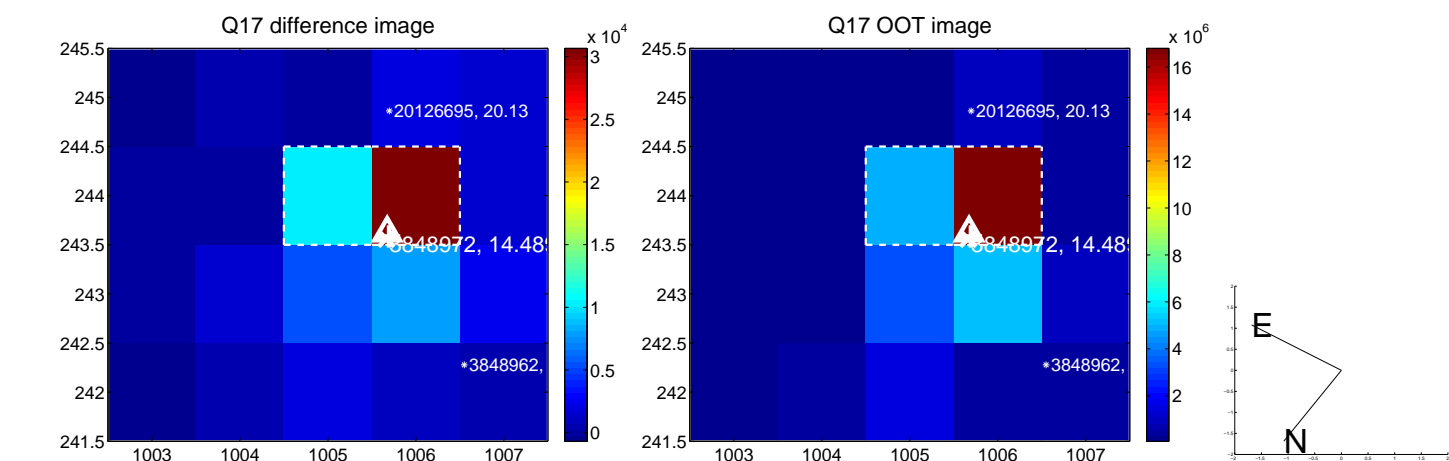
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



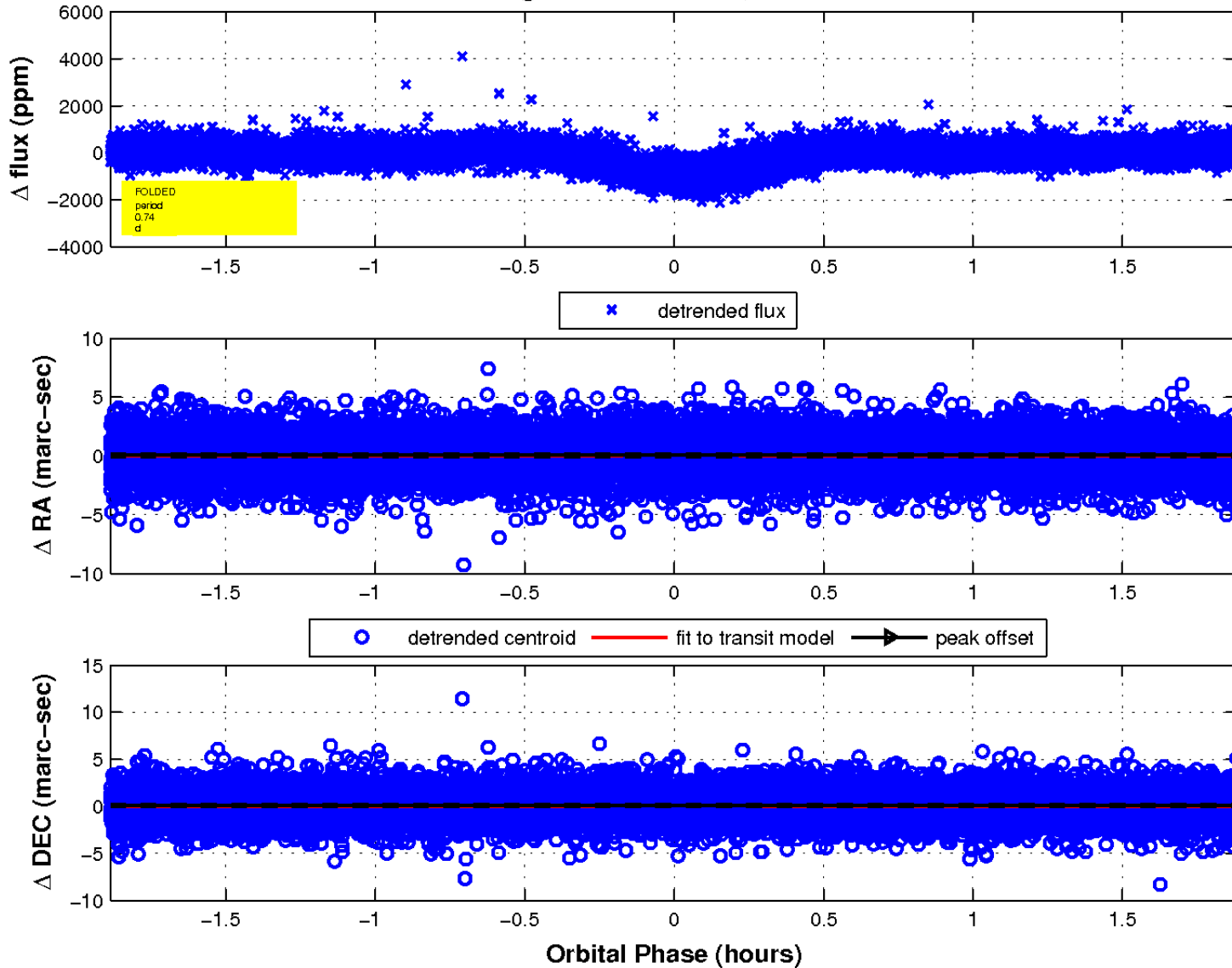
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

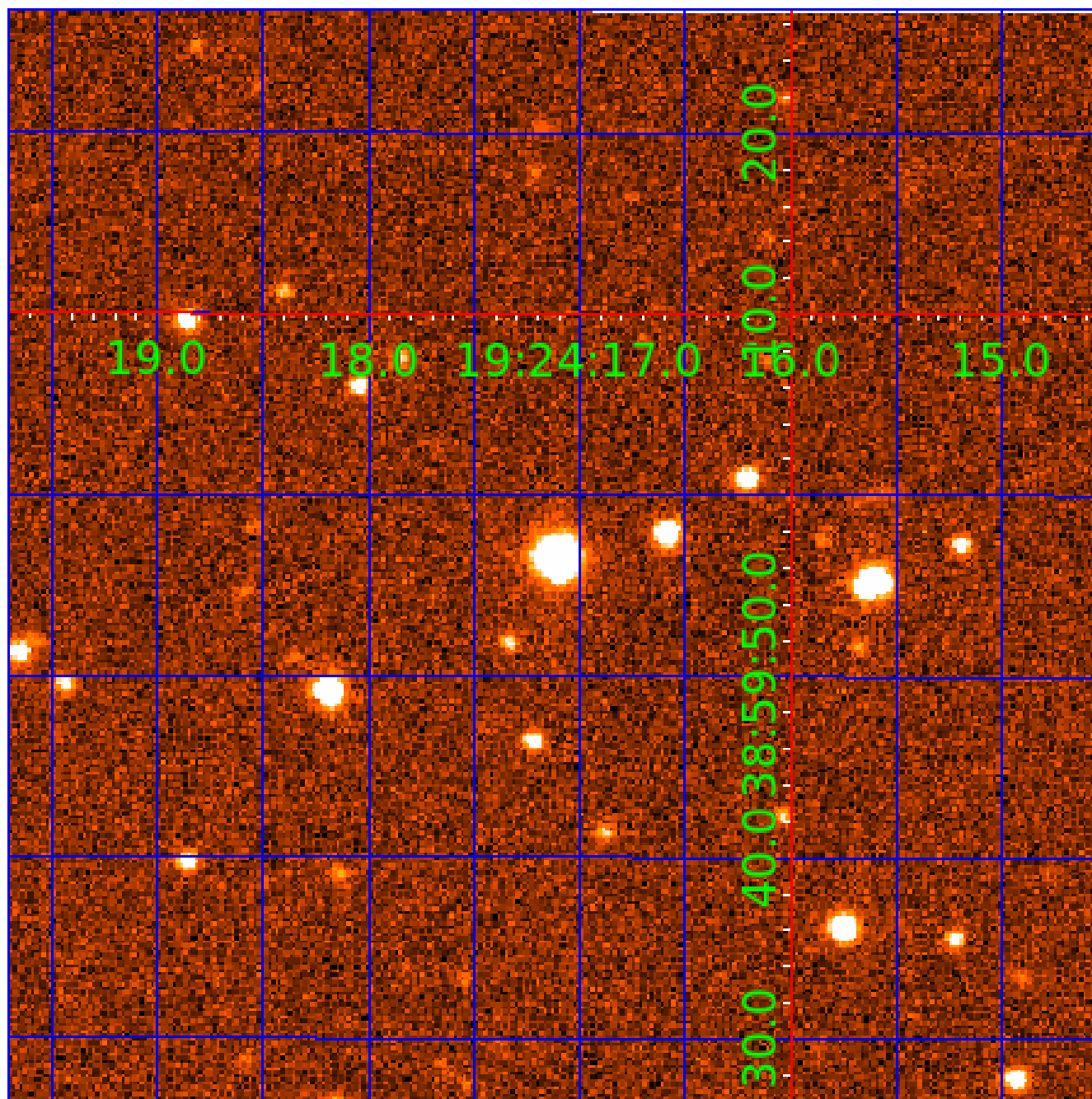


fluxWeightedCentroids, Planet 1 of 2



UKIRT Image

Declination



KIC 003848972

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})
003848972-01	OBS	1187.01	0.741054	131.949523	989.2	0.629	48.9	109.9	0.78	5496	3.05	2120.91
003848972-02	OBS	No	0.741065	131.572163	861.9	0.675	55.4	101.0	0.78	5496	2.90	2120.87

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
003848972-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE
003848972-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE

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 003848972-02

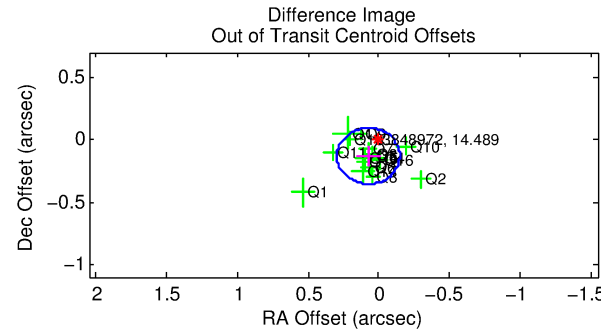
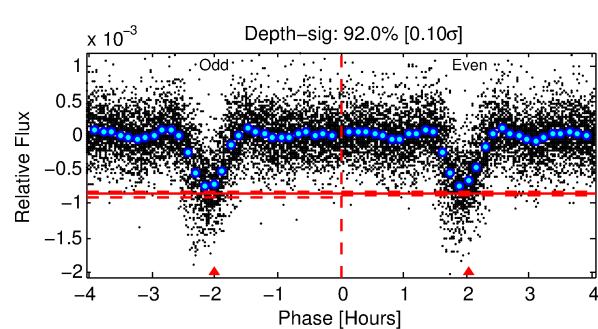
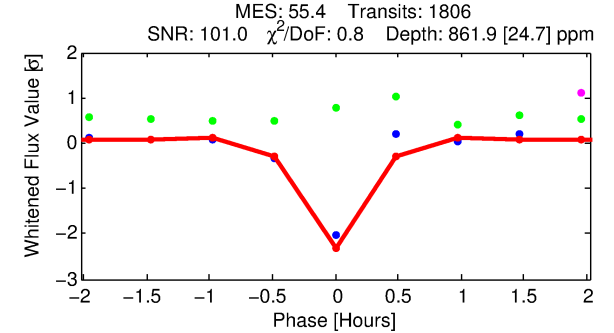
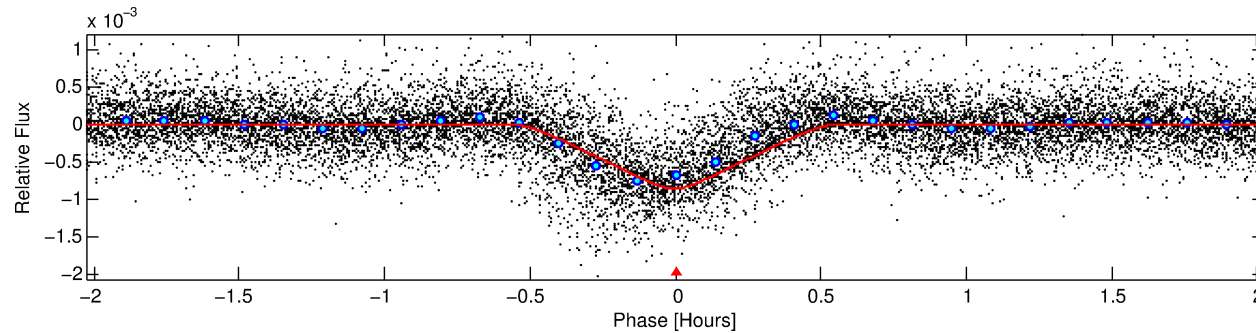
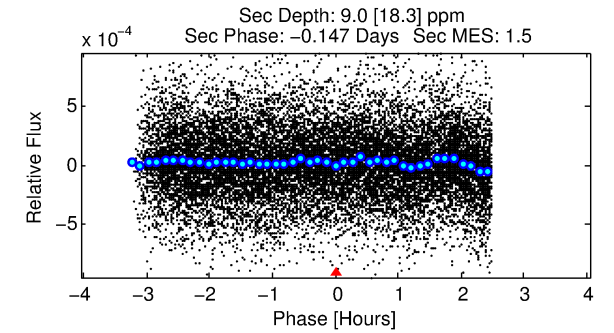
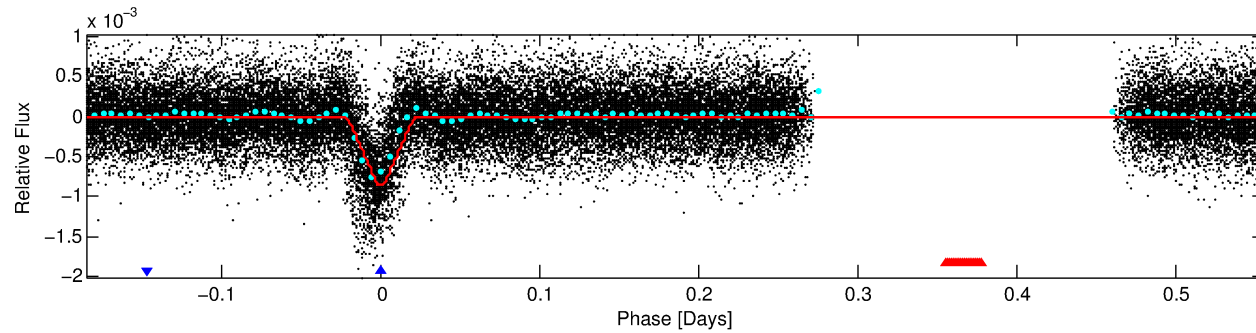
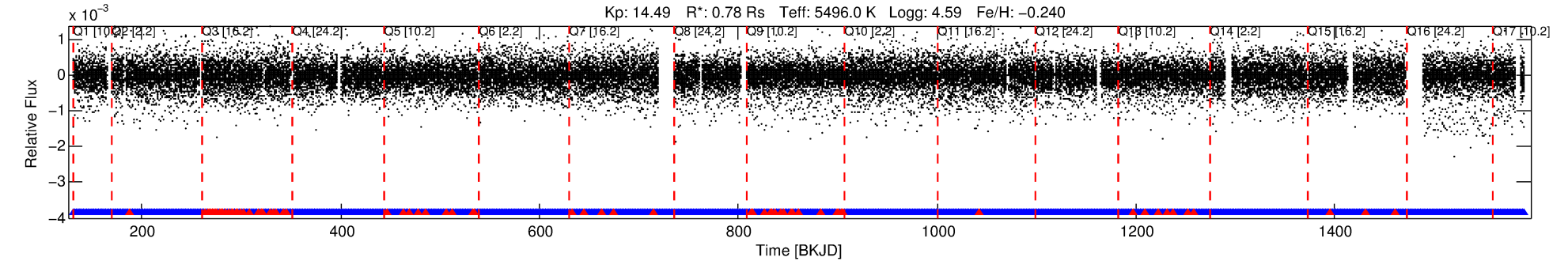
No Significant Match Found

DV One-Page Summary

KIC: 3848972 Candidate: 2 of 2 Period: 0.741 d

KOI: K01187 Corr: No Ephemeris Match

Kp: 14.49 R*: 0.78 Rs Teff: 5496.0 K Logg: 4.59 Fe/H: -0.240



DV Fit Results:

Period = 0.74106 [0.00000] d
Epoch = 131.5722 [0.0001] BKJD
Rp/R* = 0.0342 [0.0023]
a/R* = 4.07 [0.97]
b = 0.92 [0.05]
Seff = 2120.87 [543.13]
Teff = 1730 [111] K
Rp = 2.90 [0.60] Re
a = 0.0152 [0.0024] AU
Ag = 0.14 [0.28] [-3.08σ]
Teffp = 1628 [829] K [-0.12σ]

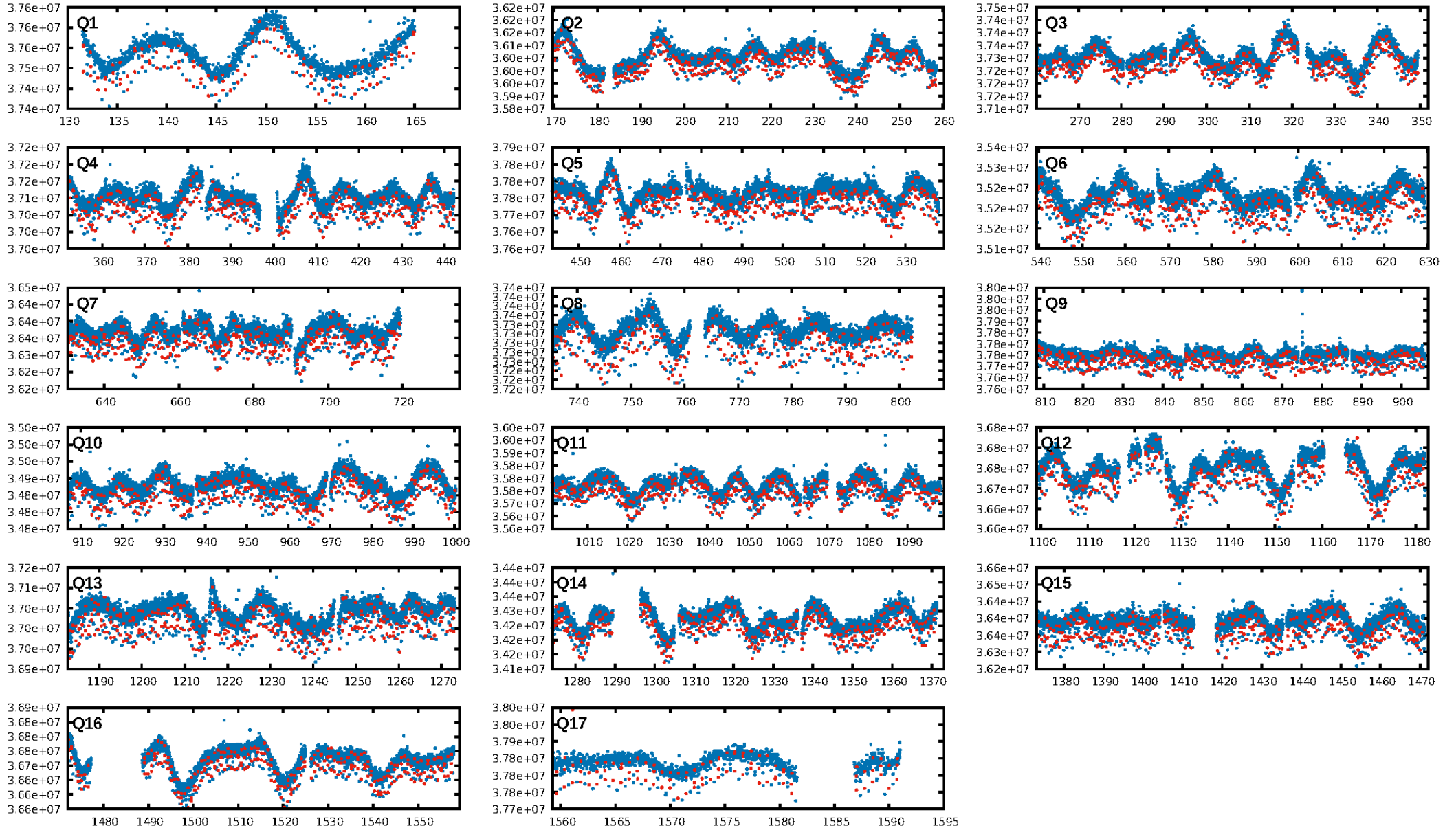
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 0.96 [1647/1724]
GhostDiagnostic-chr: 2.144
Centroid-sig: 0.1%
Centroid-so: 0.364 arcsec [3.64σ]
OotOffset-rm: 0.151 arcsec [2.02σ]
KicOffset-rm: 0.142 arcsec [1.98σ]
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]

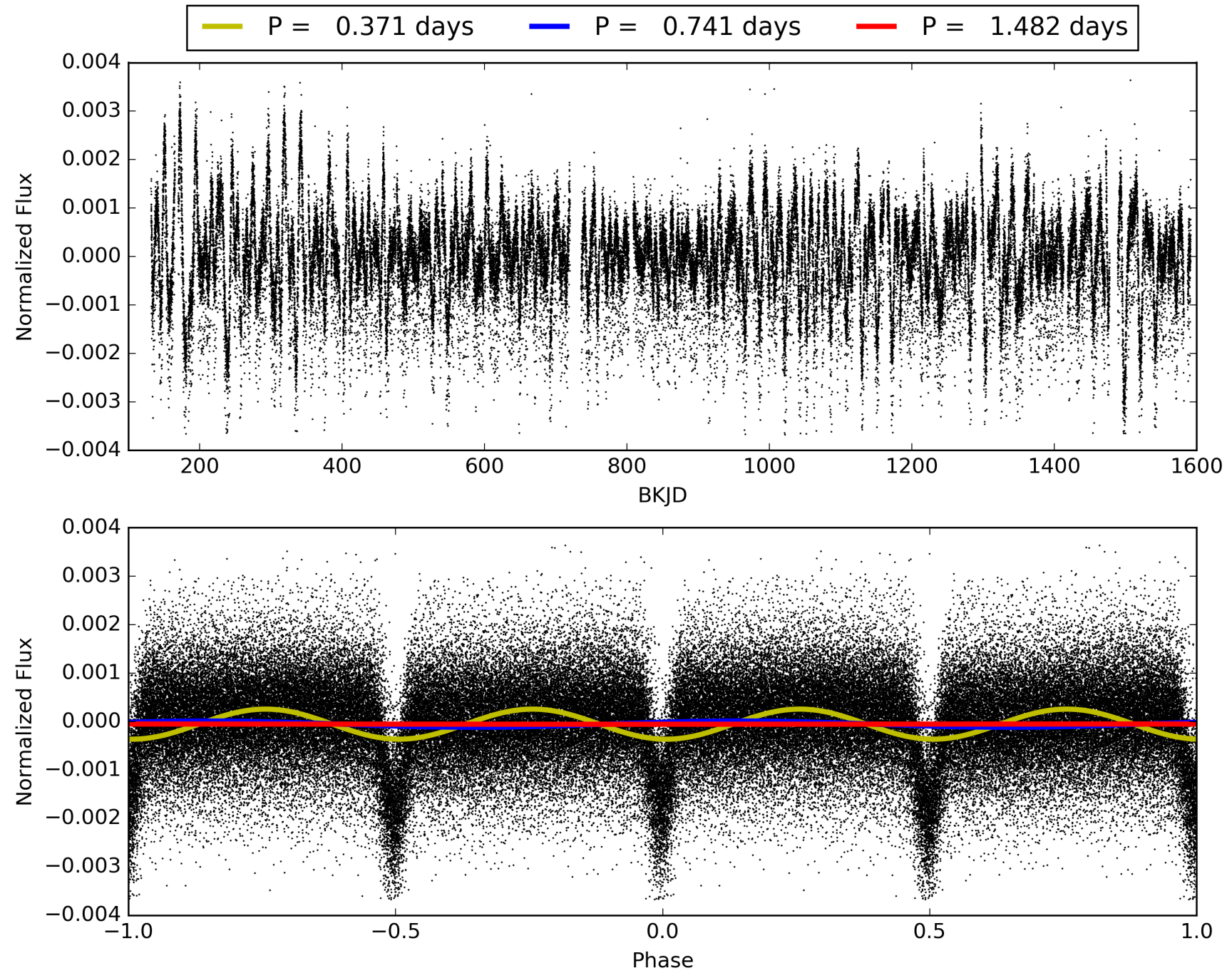
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 19:44:21 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 003848972-02, PDC Light Curves

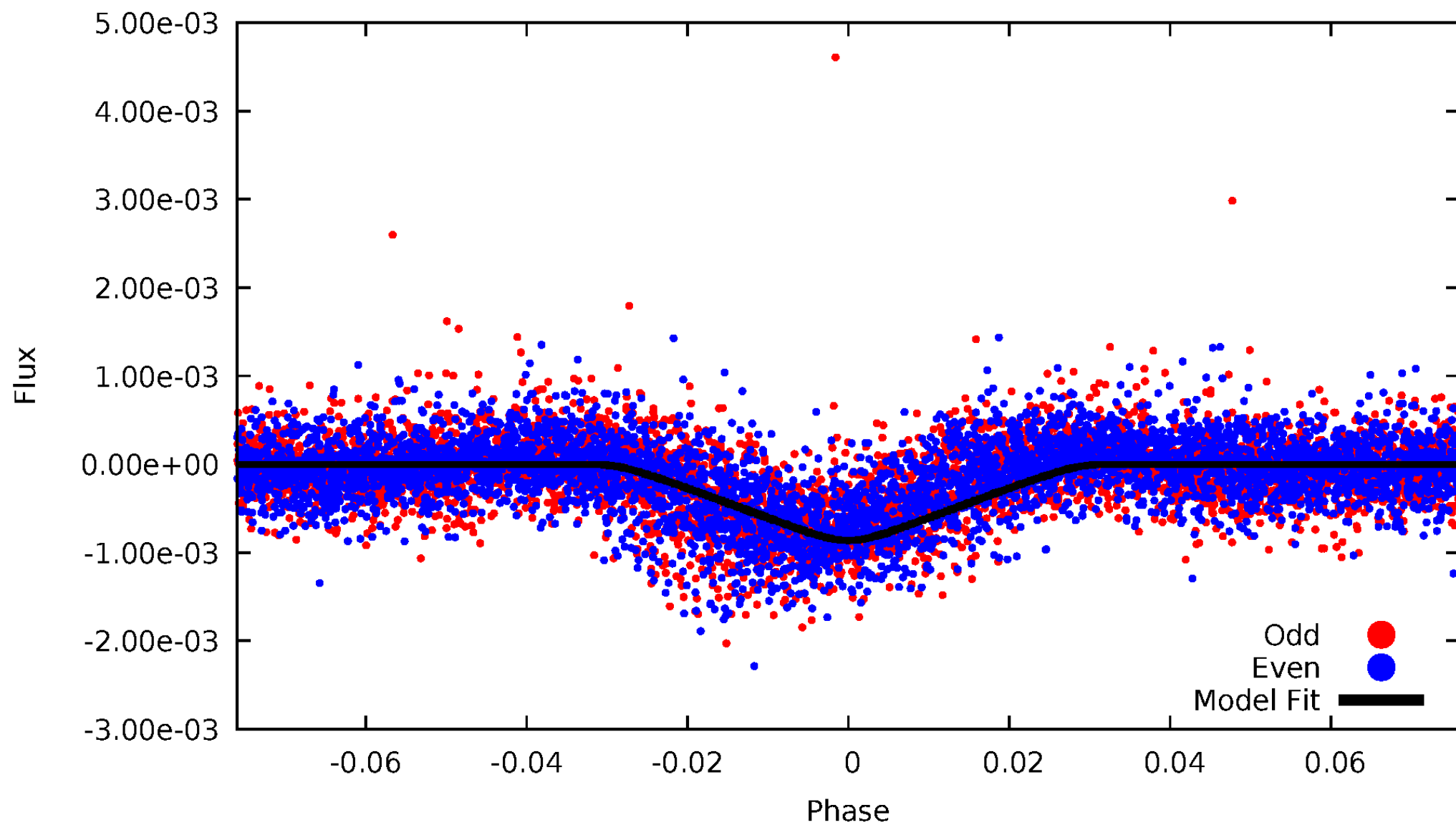


TCE 003848972-02



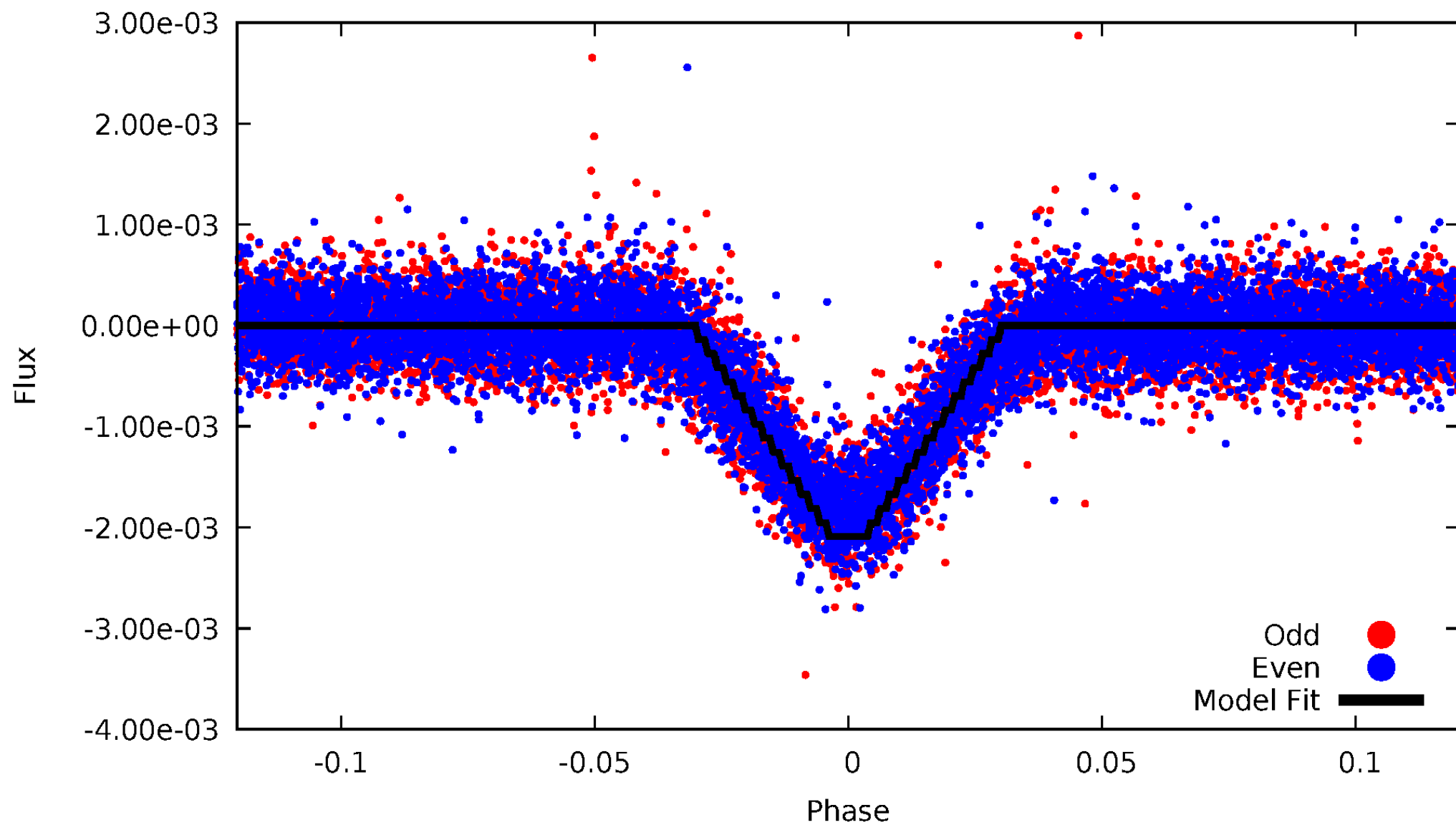
DV Odd/Even

TCE 003848972-02



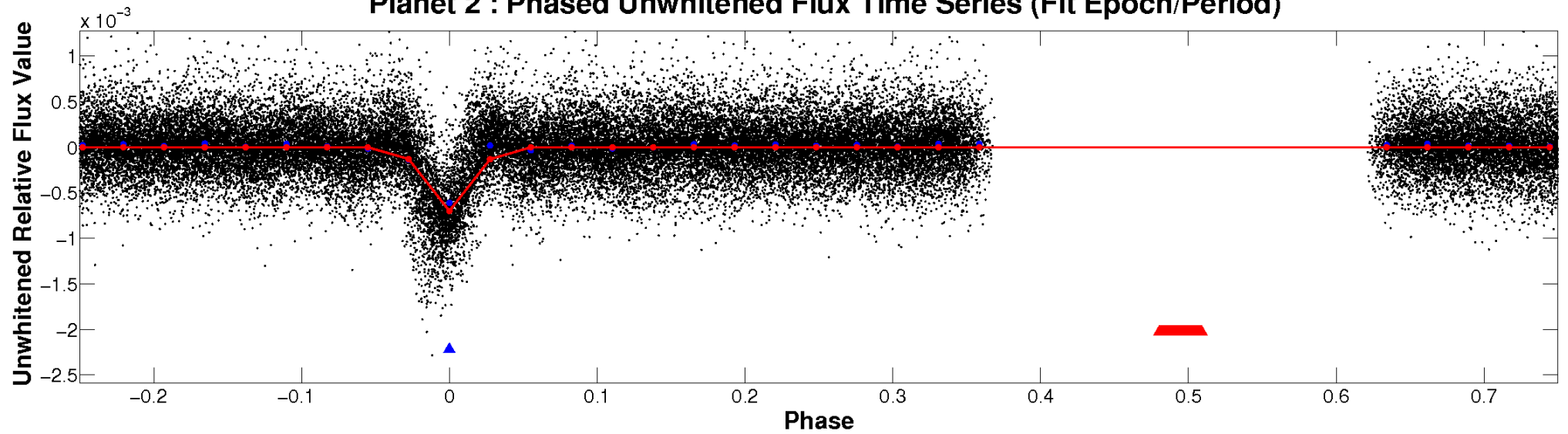
ALT Odd/Even

TCE 003848972-02

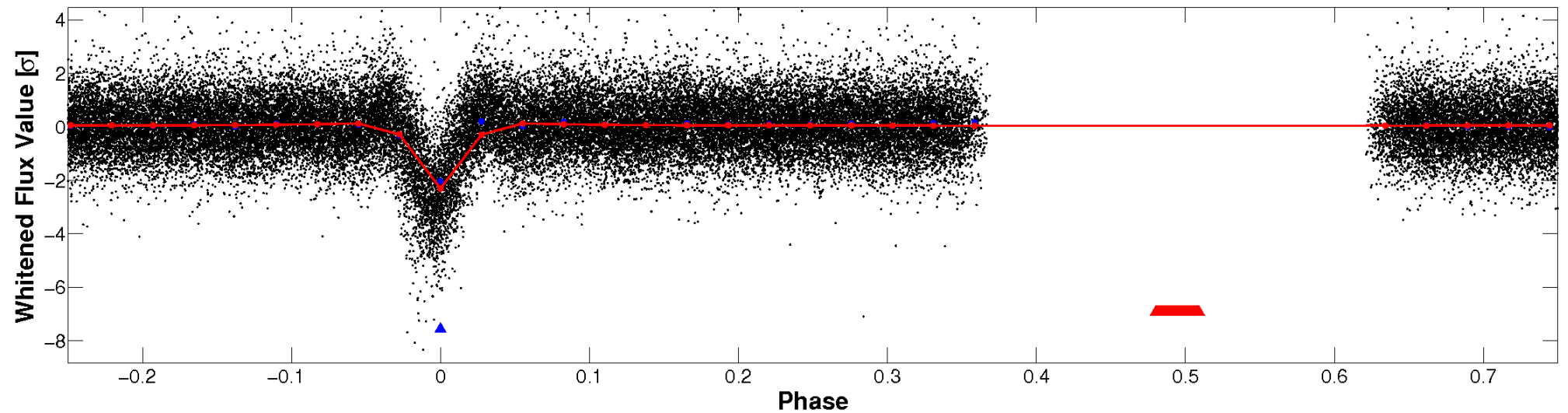


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

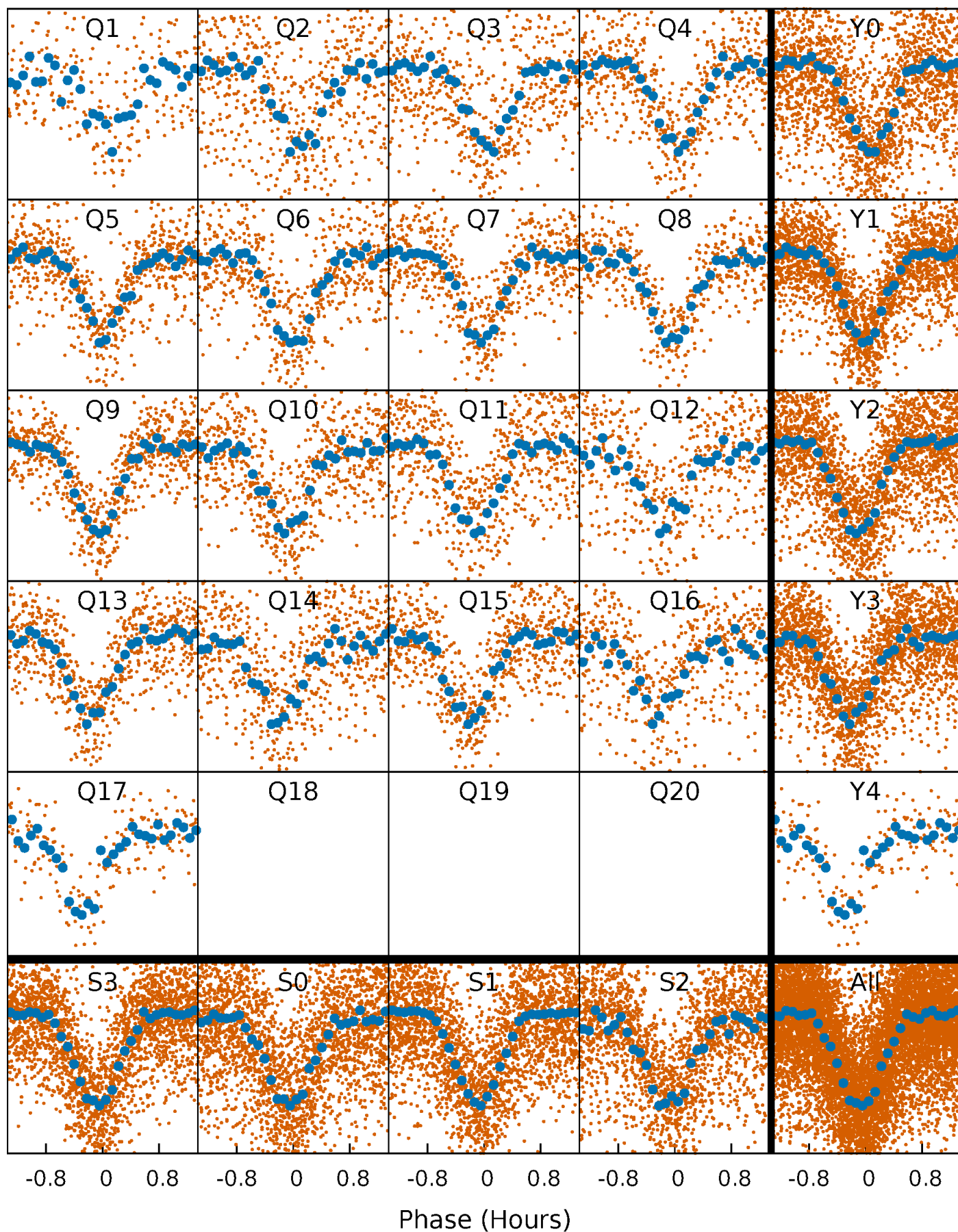


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



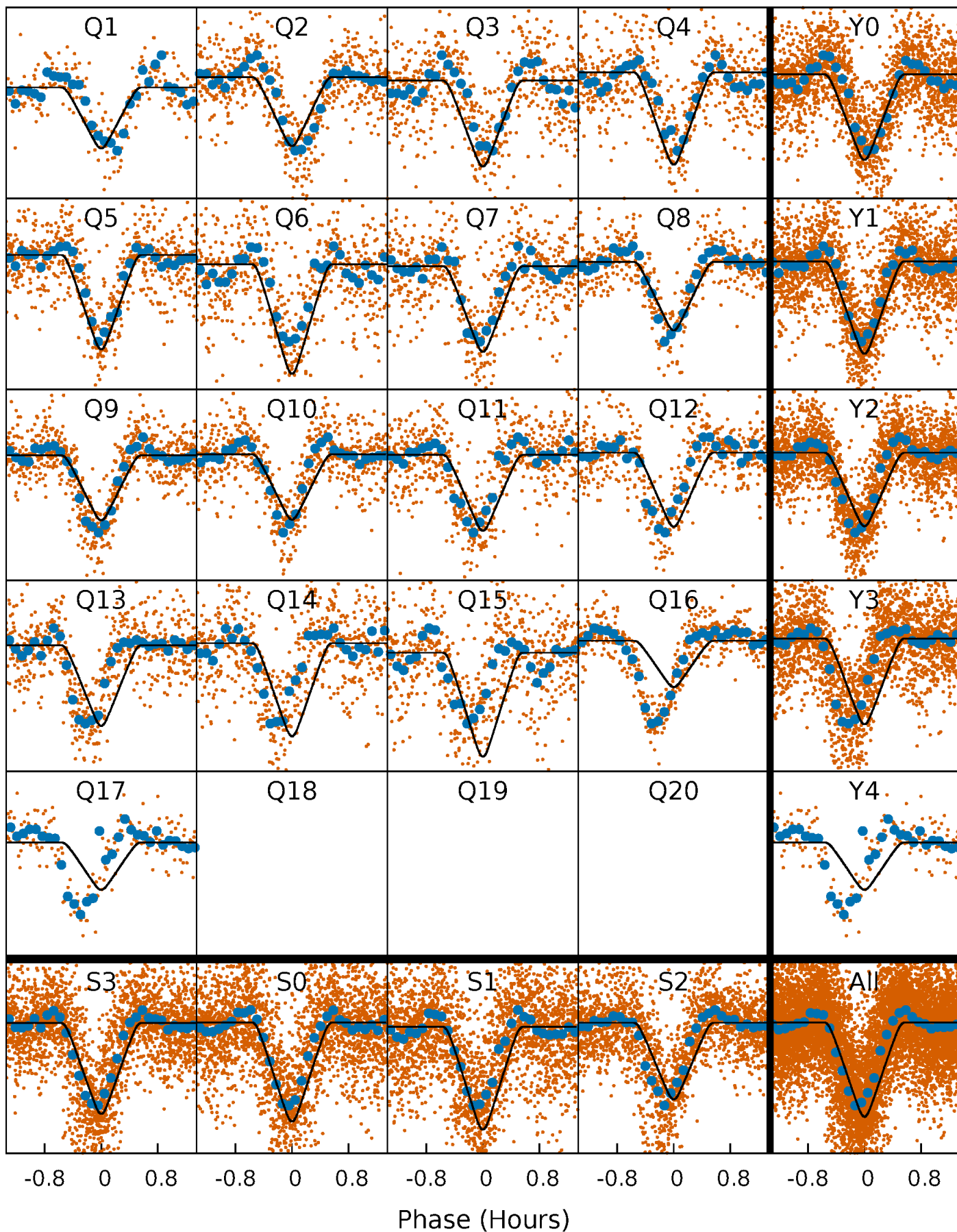
PDC Quarter-Phased Transit Curves

TCE 003848972-02 P= 0.741065 Days $T_0=131.572163$ (BKJD)



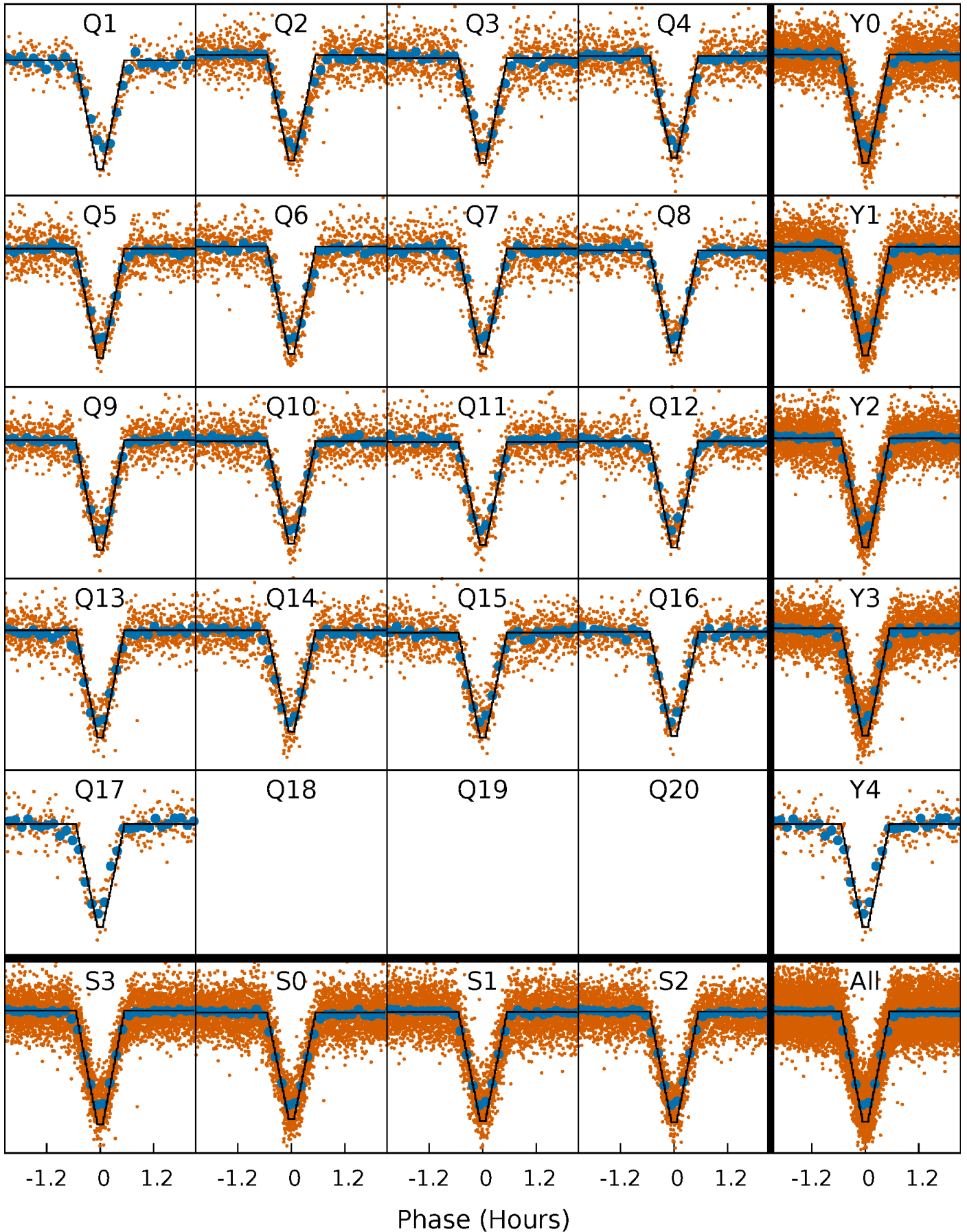
DV Quarter-Phased Transit Curves

TCE 003848972-02 P= 0.741065 Days $T_0=131.572163$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

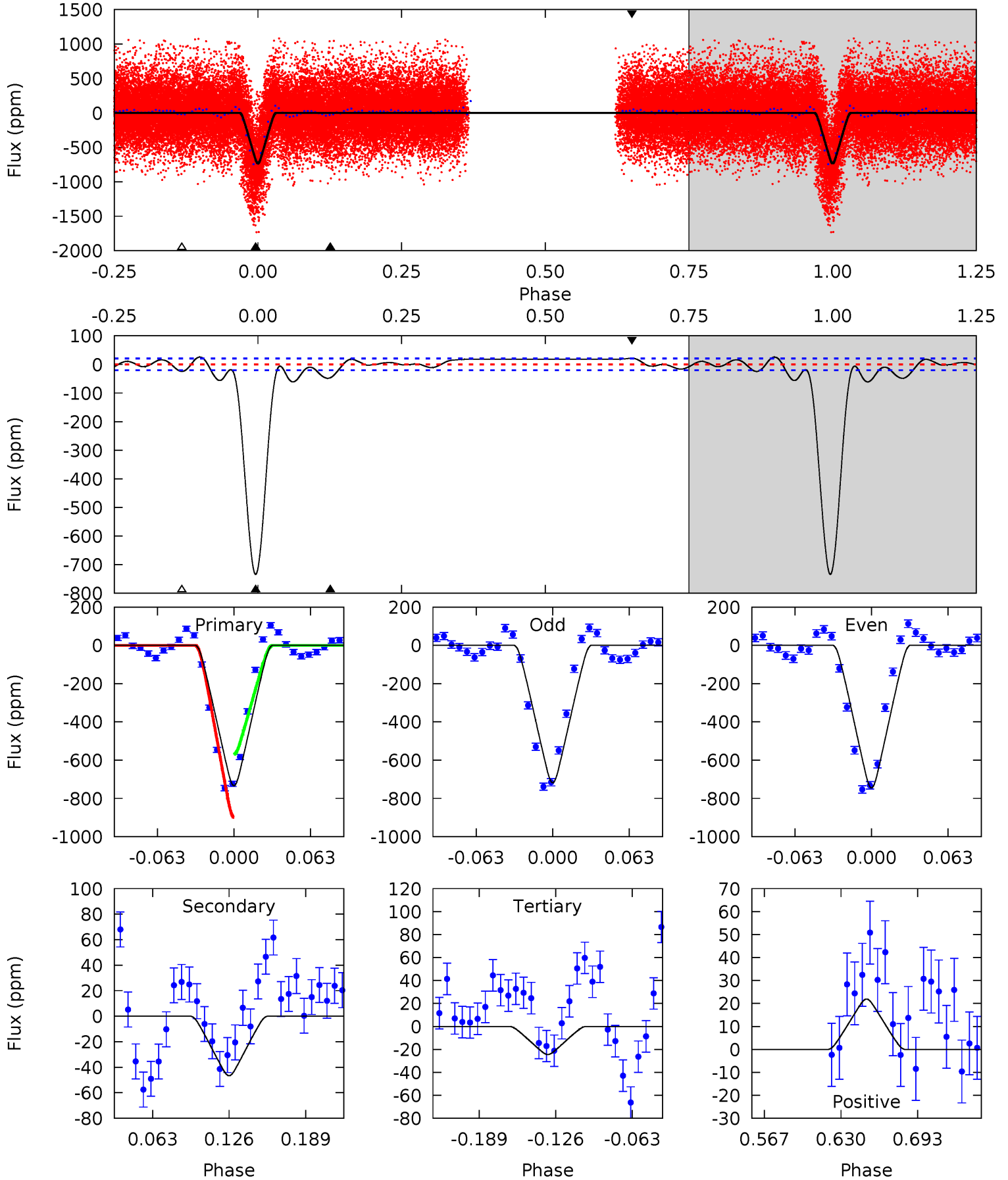
TCE 003848972-02 $P = 0.741060$ Days $T_0 = 131.574134$ (BKJD)



DV Model-Shift Uniqueness Test

003848972-02, P = 0.741065 Days, E = 130.831098 Days

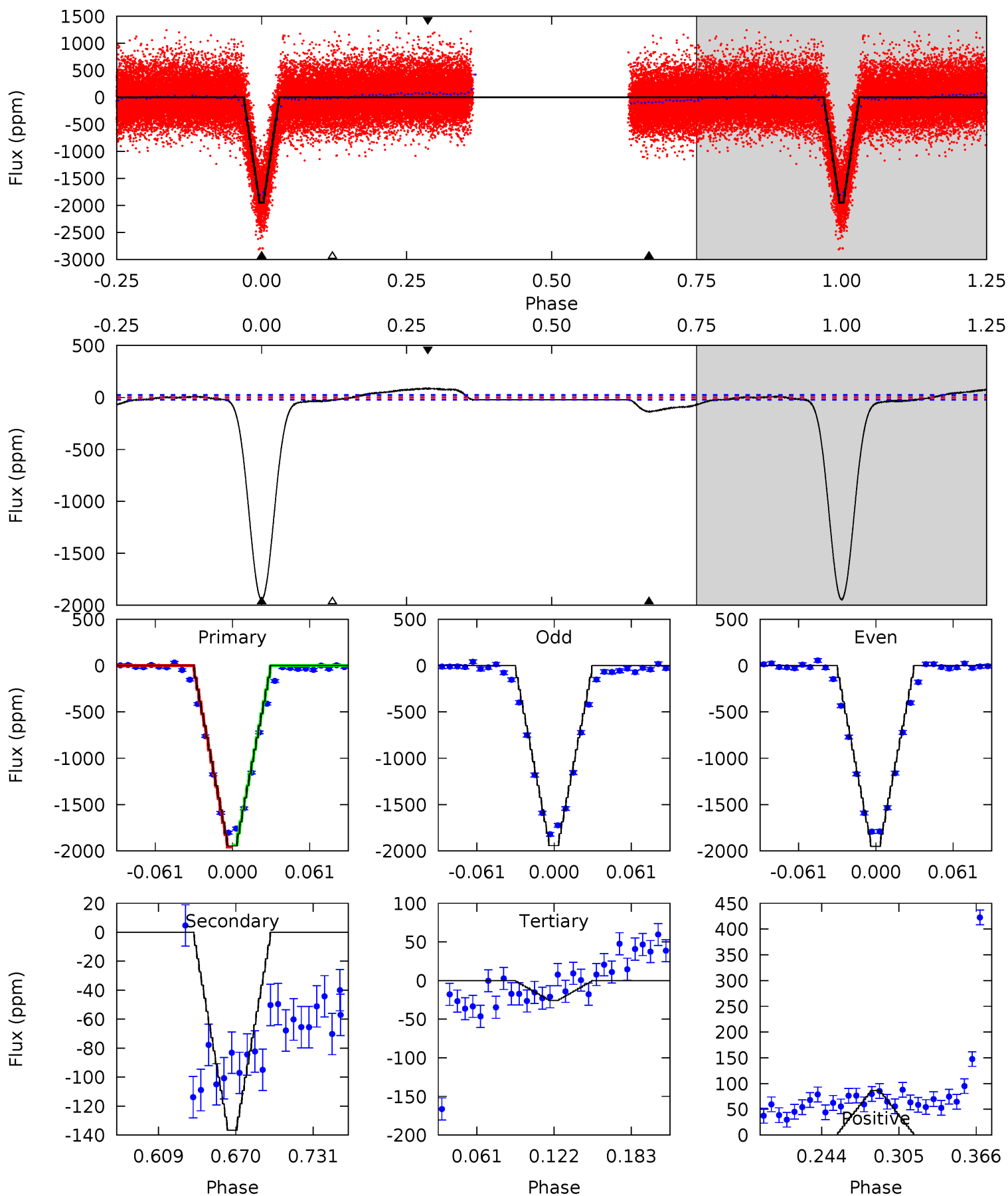
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
166.7	10.6	5.55	4.98	4.66	1.86	3.30	161.1	161.7	5.04	5.62	3.09	0.96	0.03	37.2



Alt Model-Shift Uniqueness Test

003848972-02, P = 0.741060 Days, E = 130.833074 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
410.1	28.8	5.42	18.2	4.67	1.87	9.75	404.7	391.9	23.4	10.6	0.78	1.00	0.04	2.26



Stellar Parameters For KIC 003848972

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5496^{+166}_{-149}	$4.592^{+0.038}_{-0.120}$	$-0.240^{+0.300}_{-0.300}$	$0.776^{+0.152}_{-0.065}$	$0.869^{+0.074}_{-0.102}$	$2.619^{+0.437}_{-0.969}$
	+3%/-3%	+1%/-3%	+125%/-125%	+20%/-8%	+9%/-12%	+17%/-37%
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 003848972-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-47 ± 4	$2.98^{+0.30}_{-0.29}$	2448^{+111}_{-93}	2832^{+131}_{-140}	$0.667^{+0.150}_{-0.123}$
Alt.	-137 ± 5	$3.96^{+0.43}_{-0.32}$	2452^{+127}_{-89}	3162^{+93}_{-93}	$1.104^{+0.167}_{-0.182}$

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

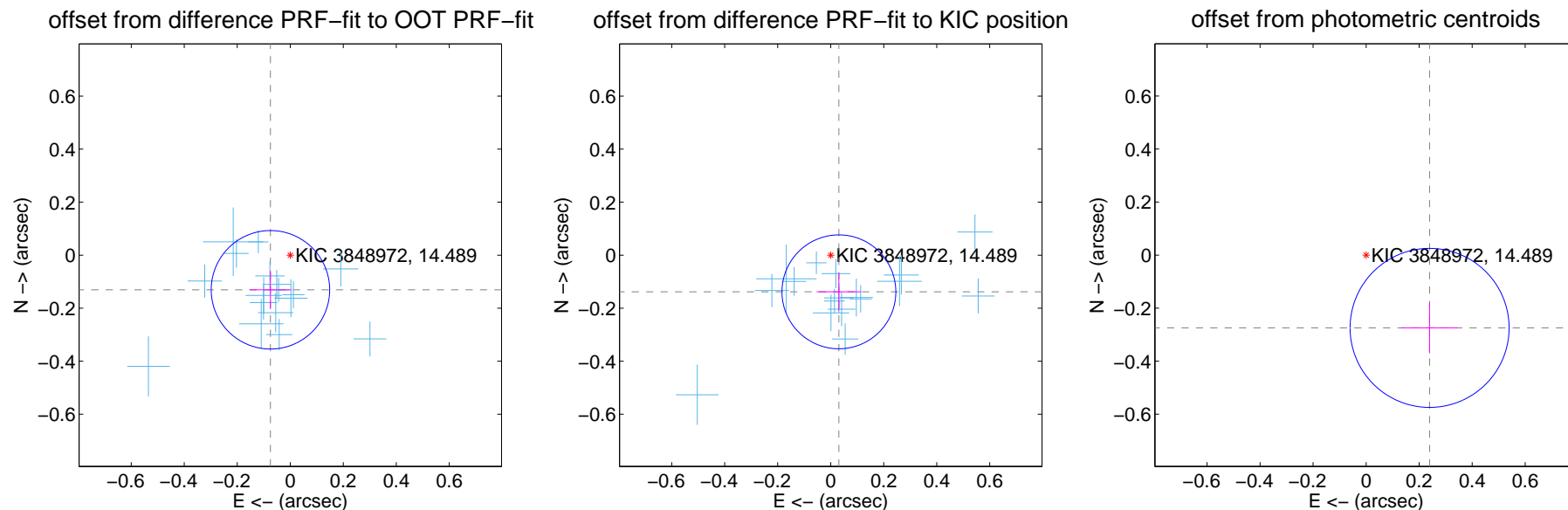
DV Centroid Data

Supplemental centroid analysis for 003848972-02. Kepler magnitude: 14.49. Transit SNR 100.96

There are 17 quarters with good PRF difference image offsets

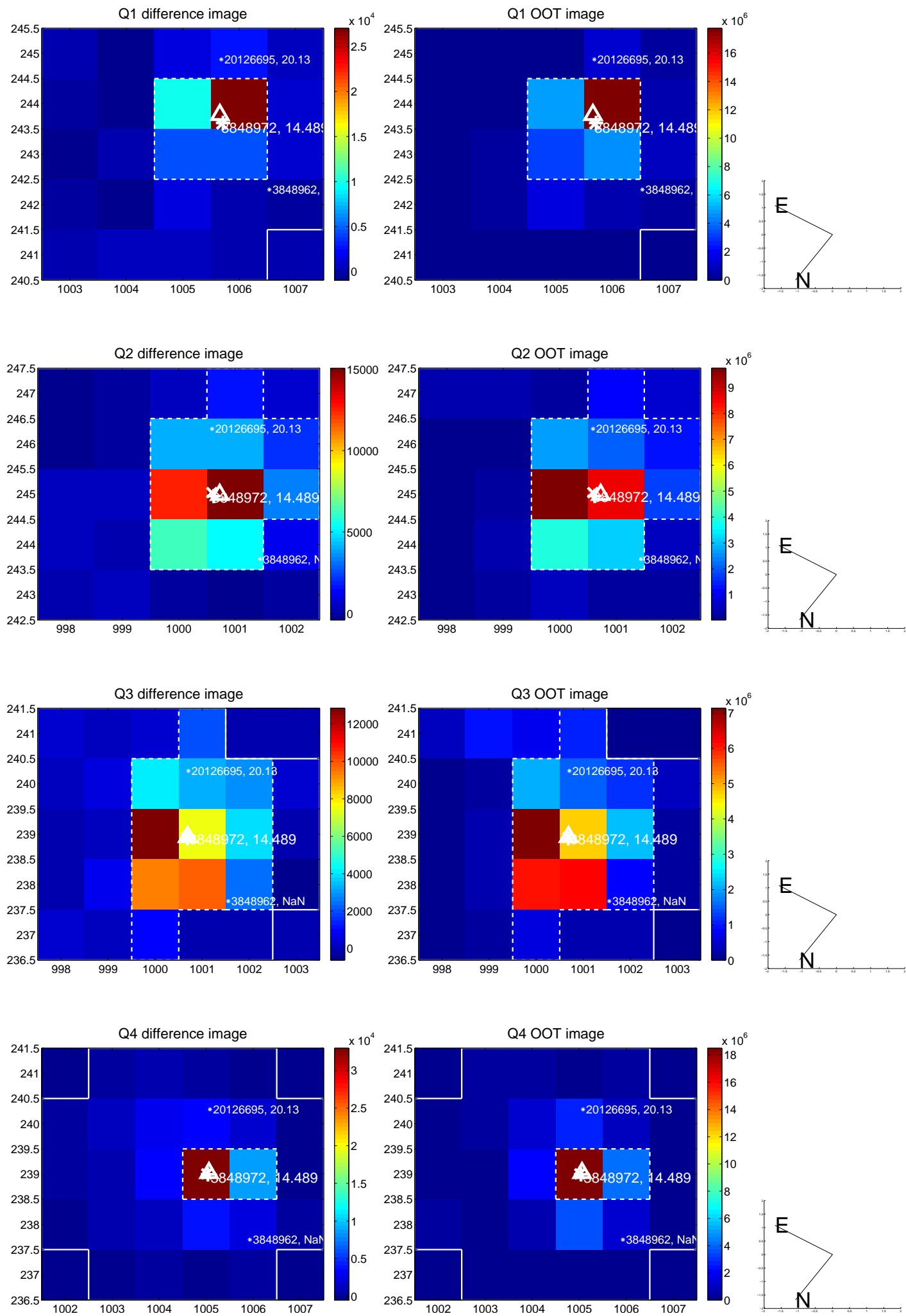
The direct PRF centroid is offset from the target star catalog position by about 0.15 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.151 ± 0.075	2.02	0.075 ± 0.079	-0.131 ± 0.073
PRF-fit source offset from KIC position	0.142 ± 0.072	1.98	-0.031 ± 0.083	-0.138 ± 0.071
photometric centroid source offset	0.36 ± 0.10	3.64	-0.24 ± 0.11	-0.27 ± 0.10

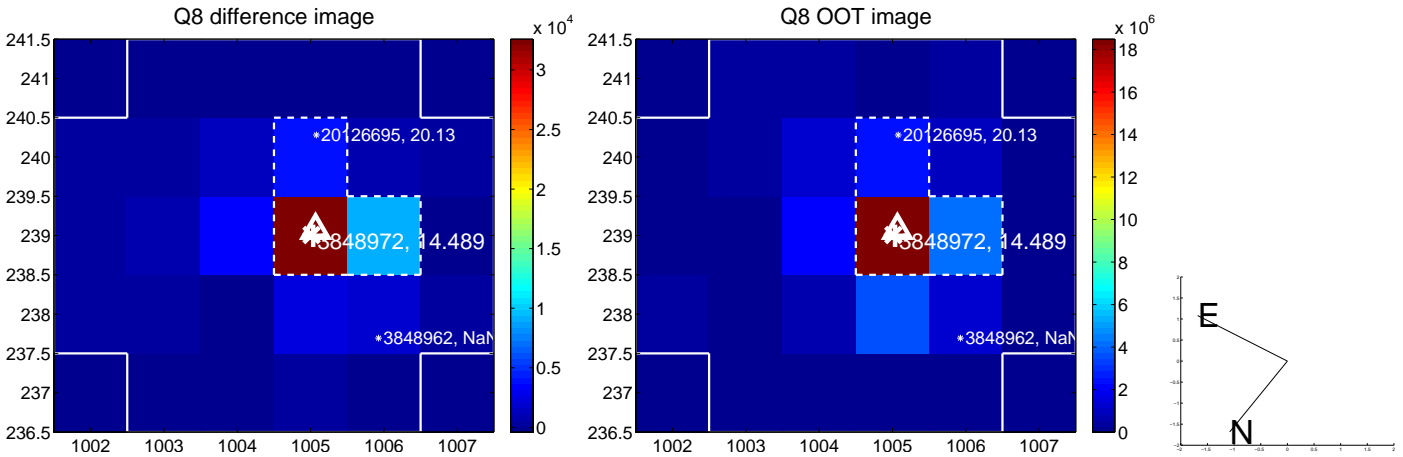
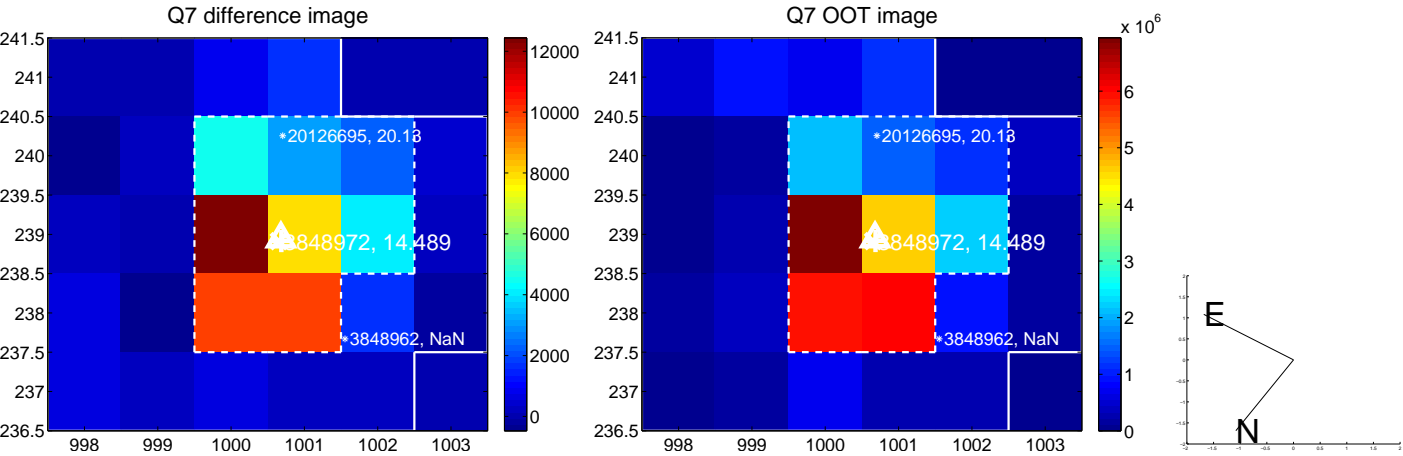
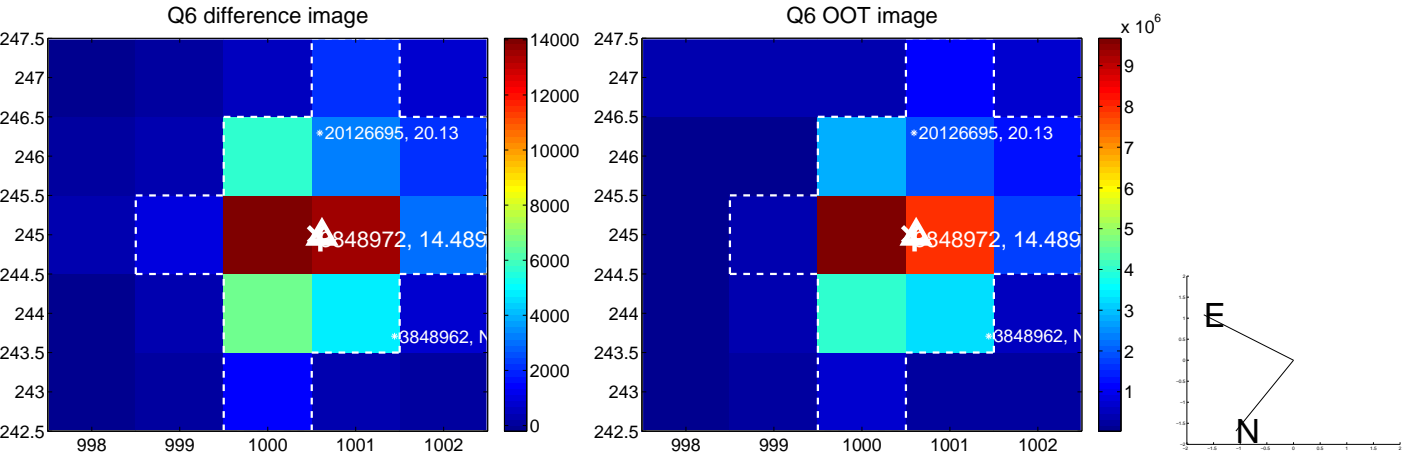
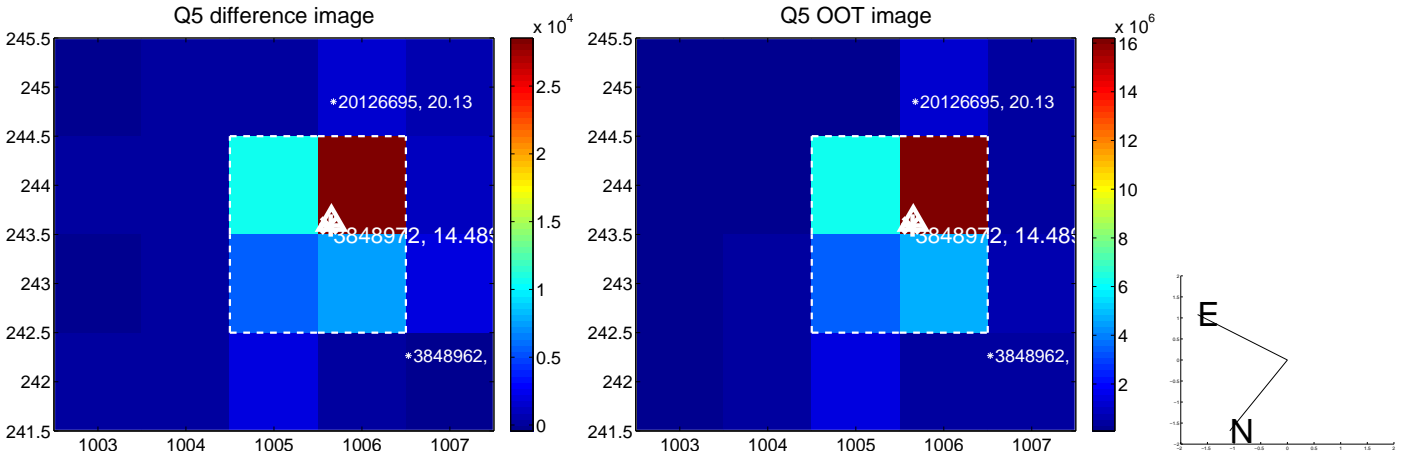


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

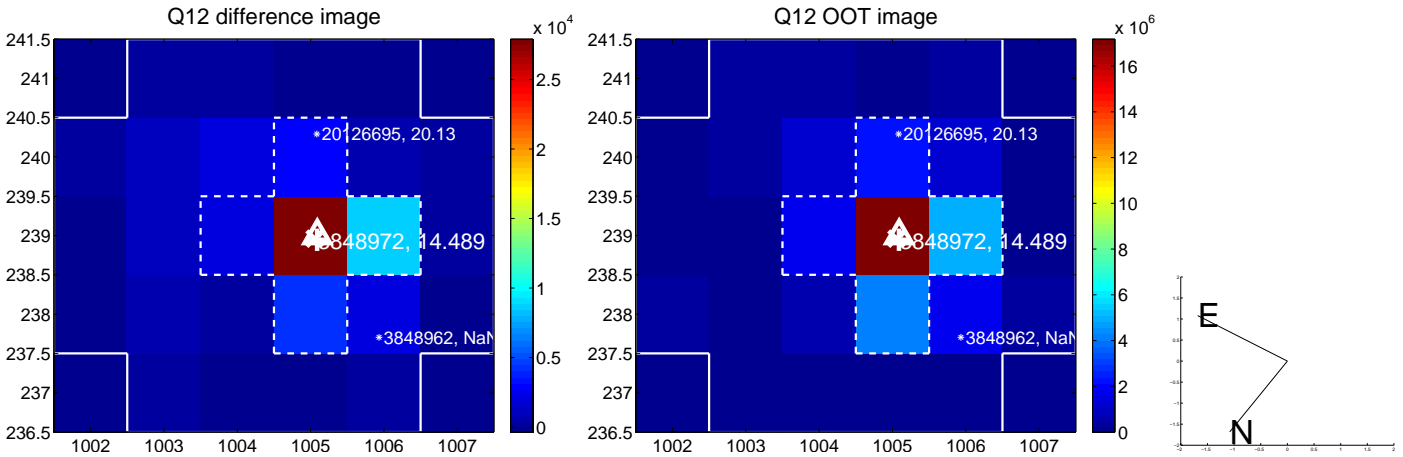
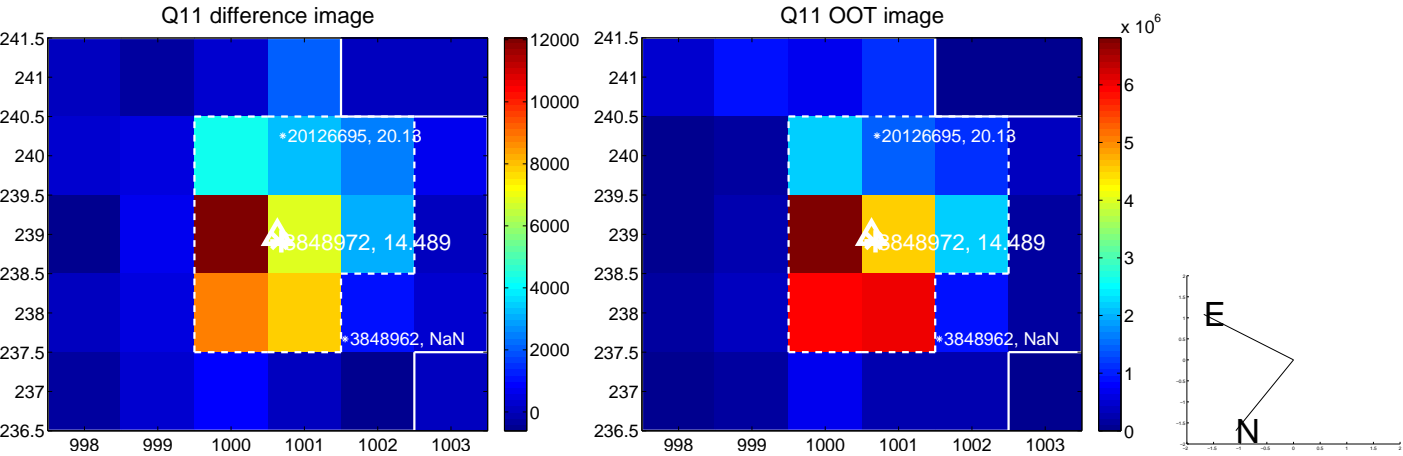
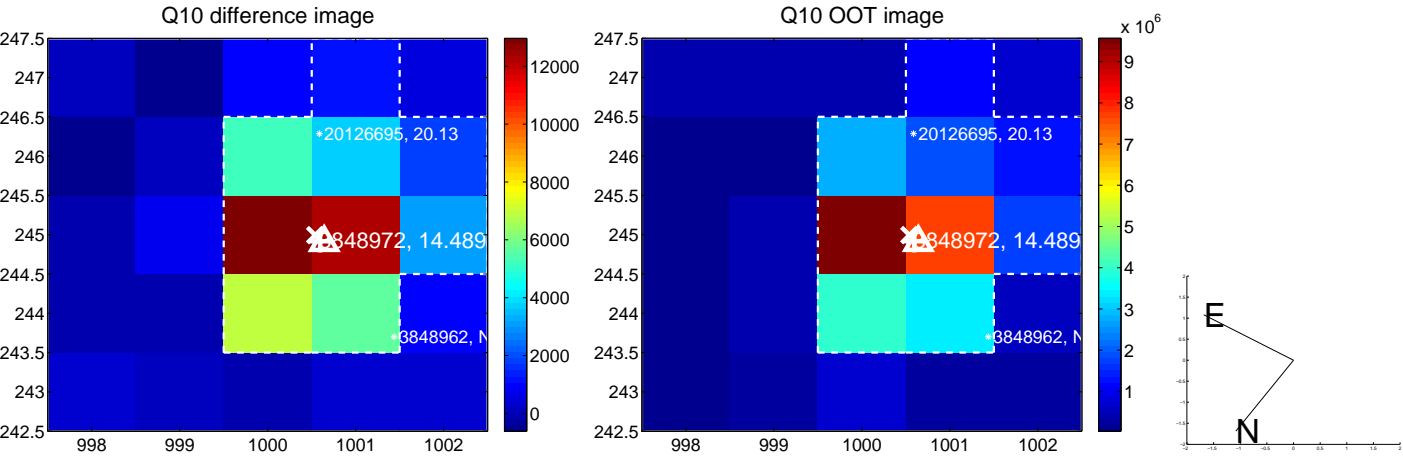
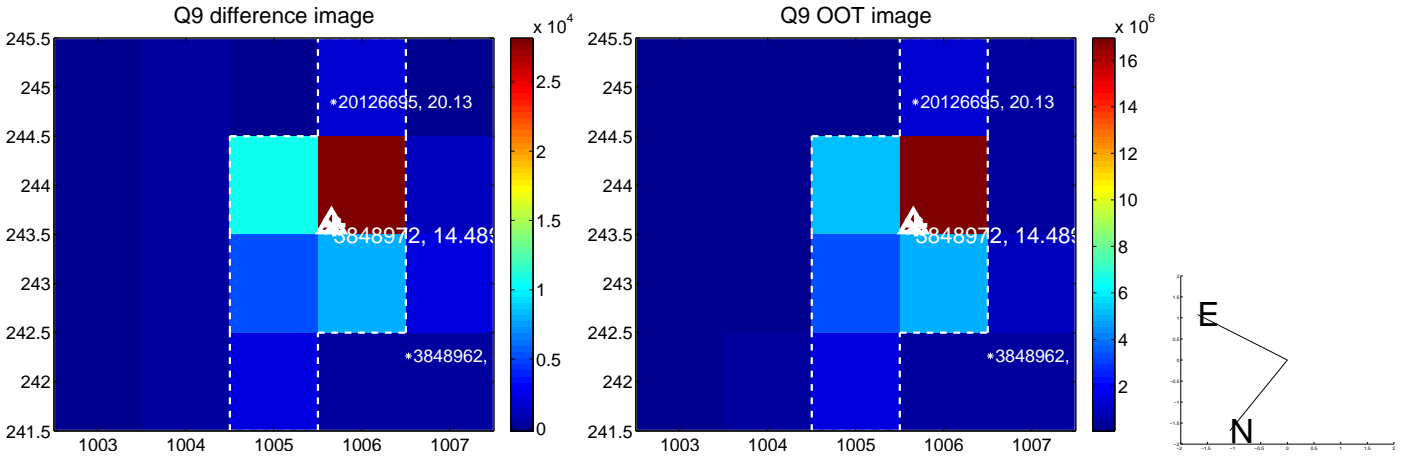
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



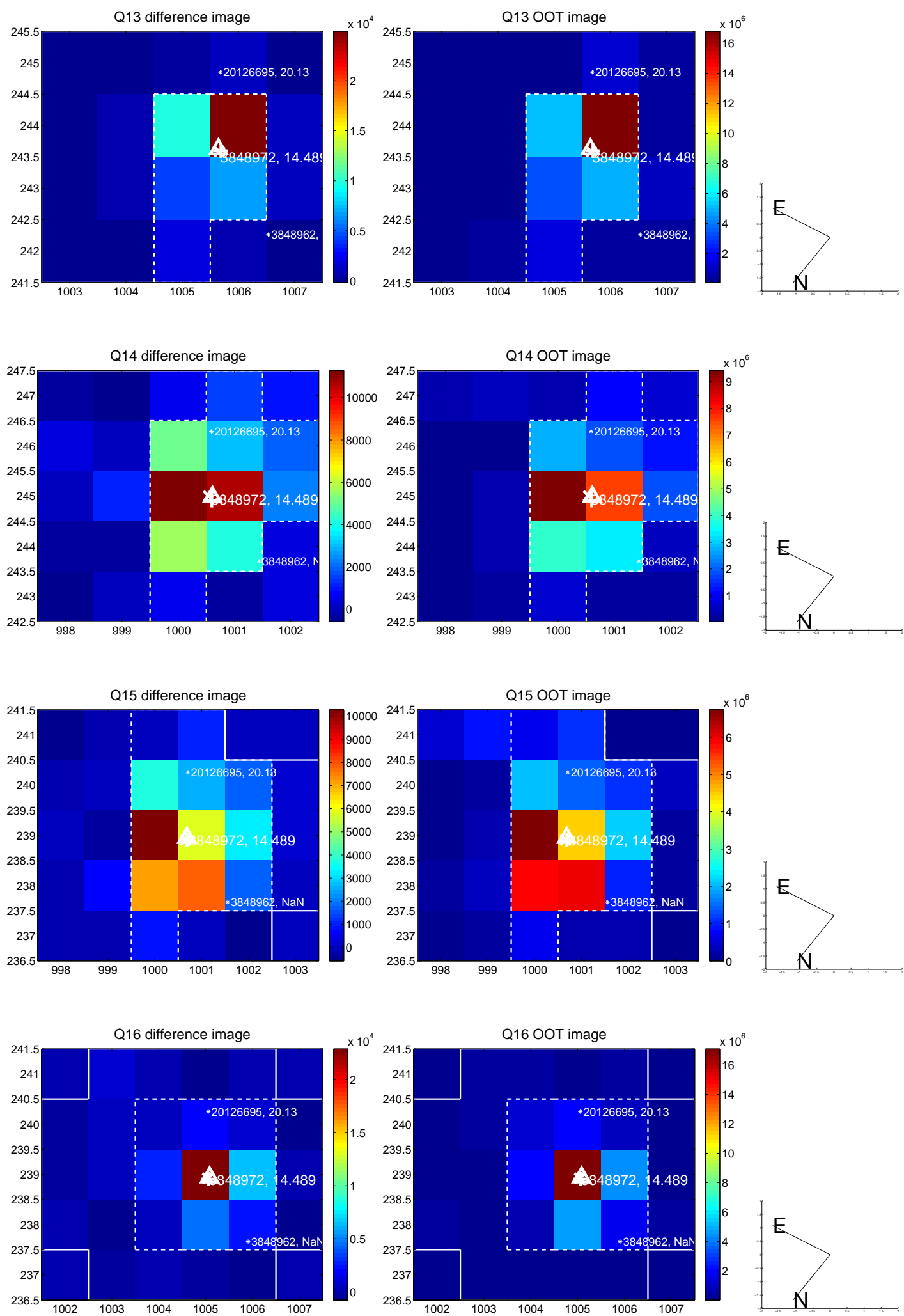
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



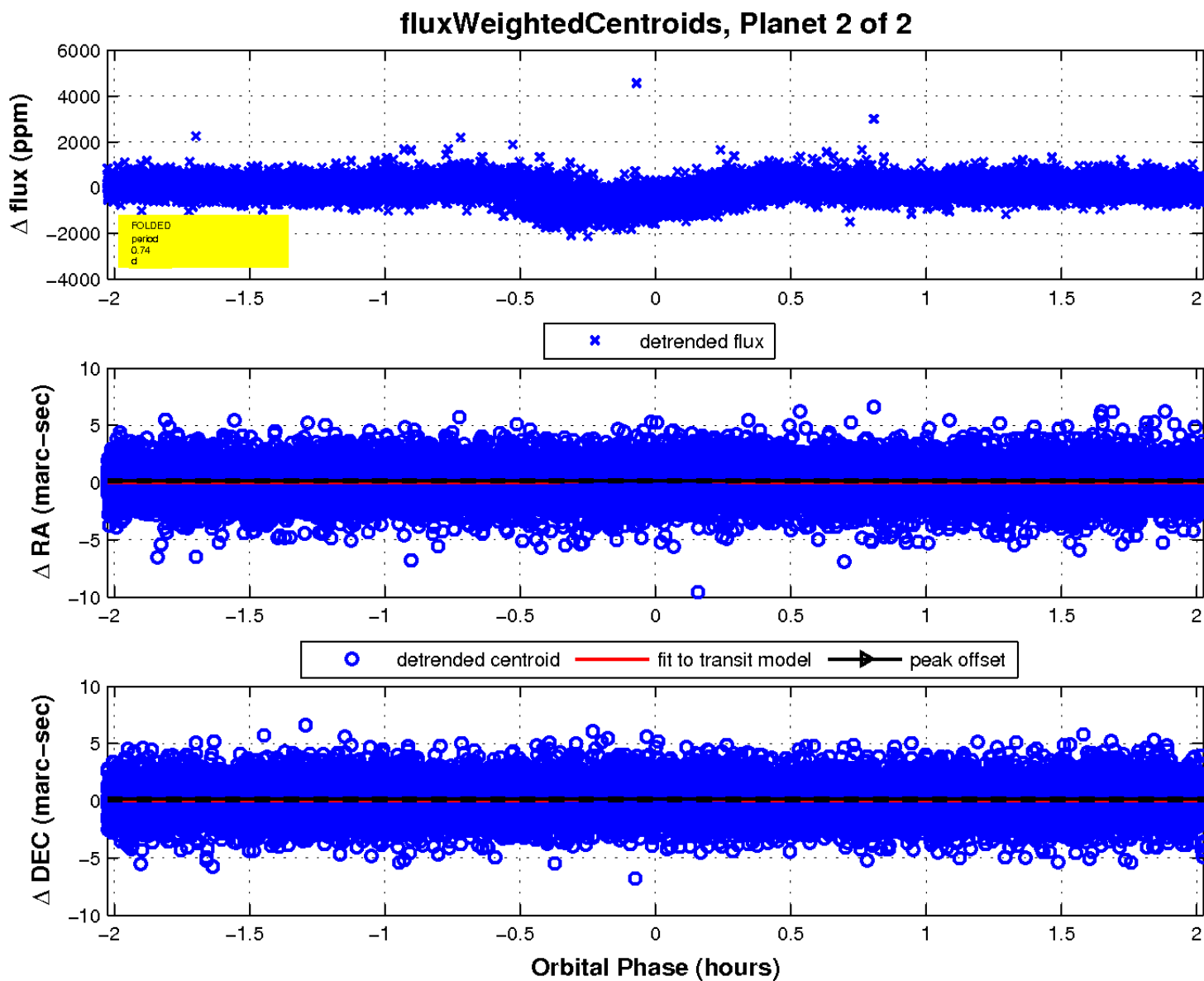
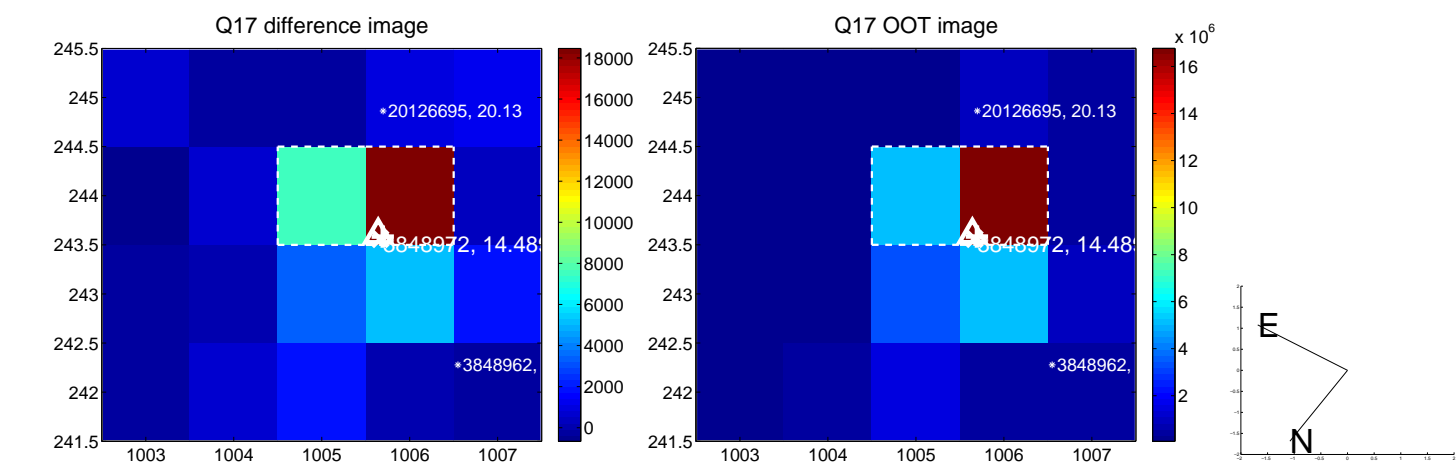
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

