

KIC 009719636

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})
009719636-01	OBS	3686.01	3.351574	134.280572	54965.2	2.916	652.8	592.8	1.03	5984	24.41	639.63
009719636-02	OBS	No	3.351589	132.613022	2078.7	2.894	23.8	25.9	1.03	5984	5.23	639.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009719636-01	OBS	FP	0.01	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
009719636-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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.

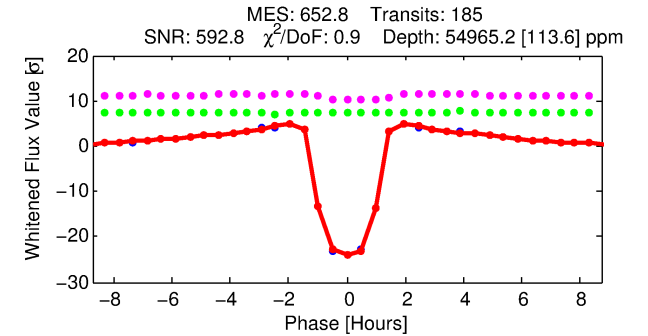
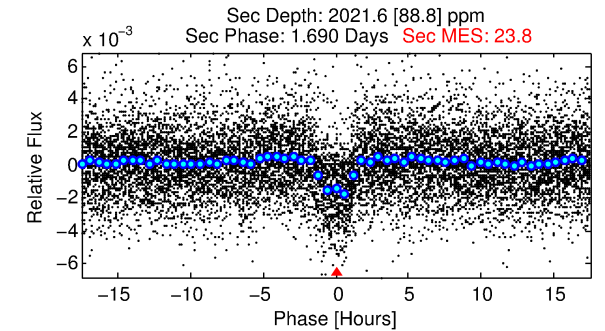
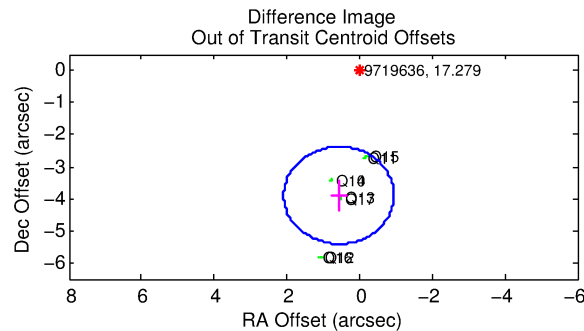
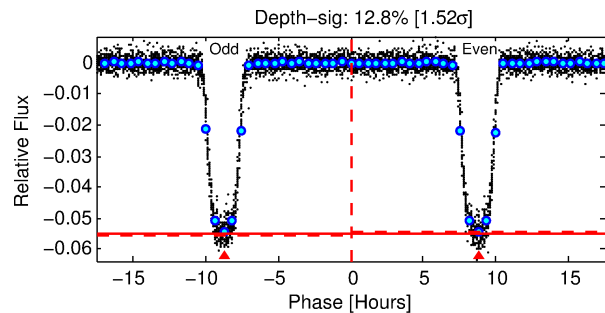
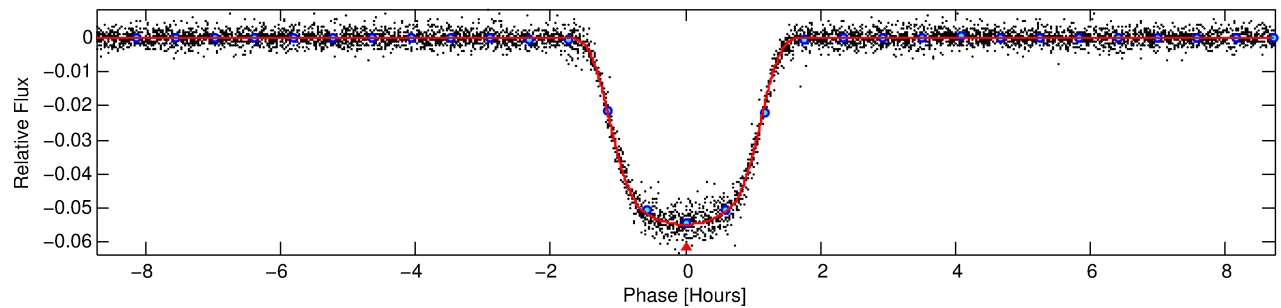
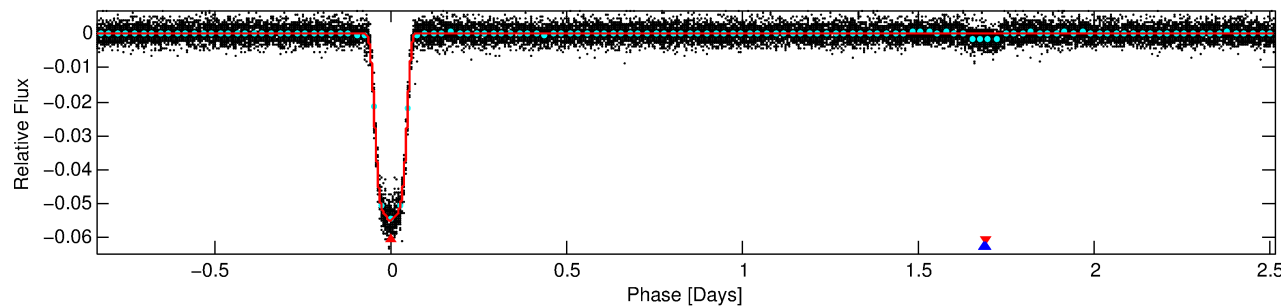
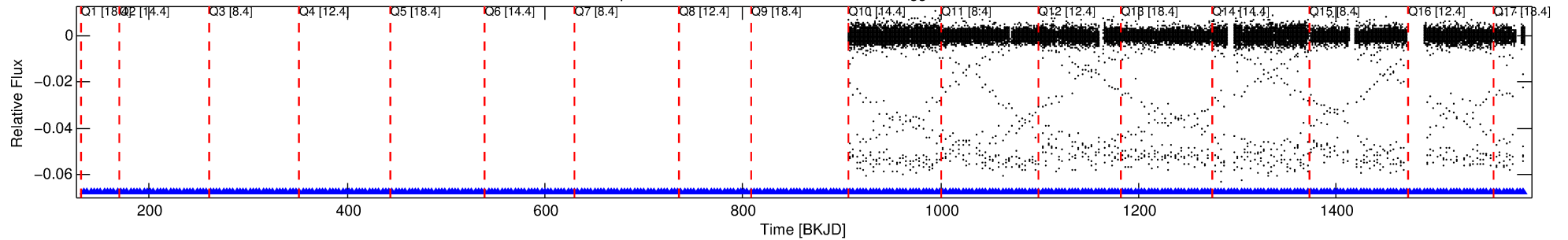
Ephemeris Match Information For 009719636-01

No Significant Match Found

DV One-Page Summary

KIC: 9719636 Candidate: 1 of 2 Period: 3.352 d
KOI: K03686.01 Corr: 0.998

Kp: 17.28 R*: 1.03 Rs Teff: 5984.0 K Logg: 4.41 Fe/H: -0.120



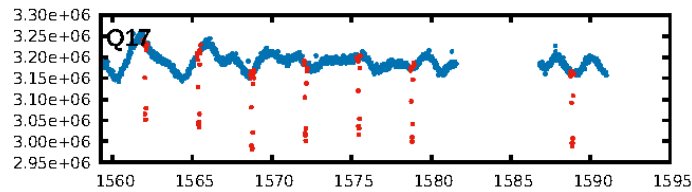
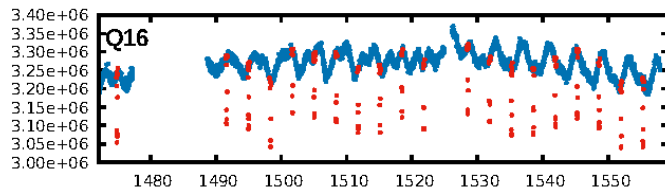
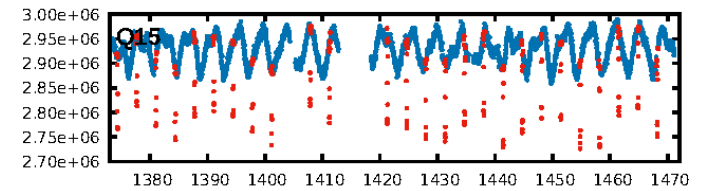
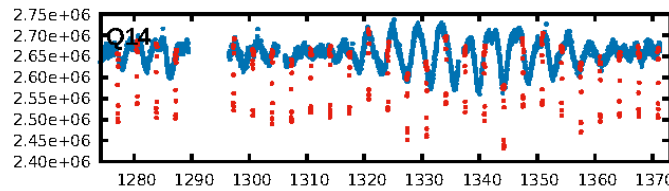
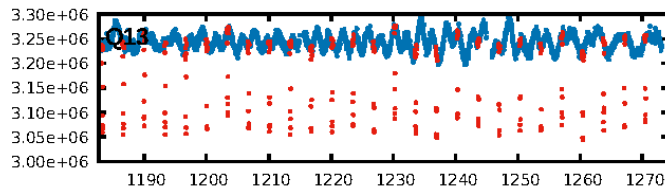
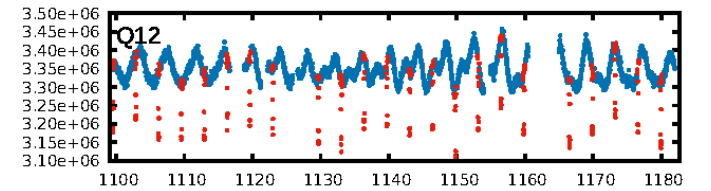
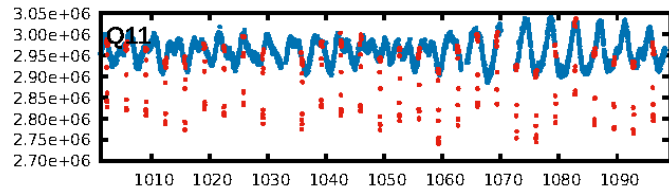
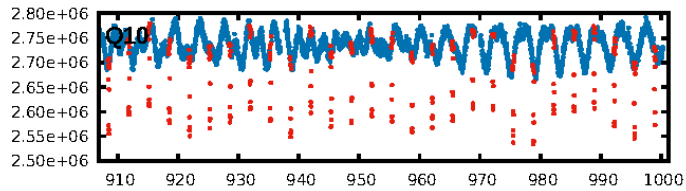
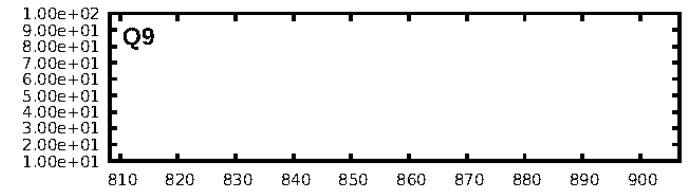
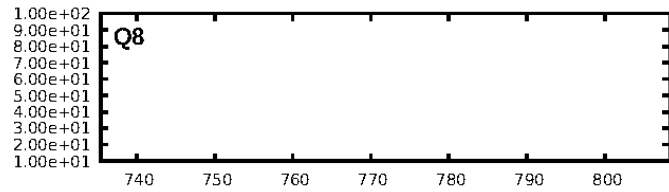
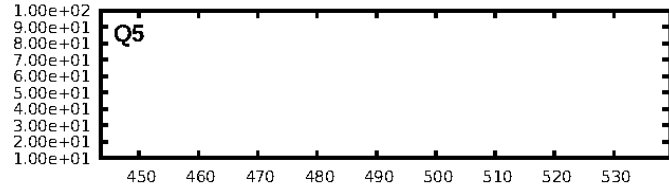
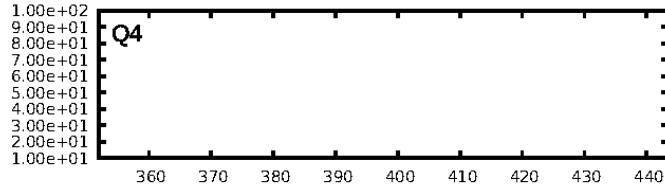
DV Fit Results:

Period = 3.35157 [0.00000] d
Epoch = 134.2806 [0.0001] BKJD
Rp/R* = 0.2165 [0.0005]
a/R* = 10.44 [0.10]
b = 0.27 [0.03]
Seff = 639.63 [249.78]
Teff = 1282 [125] K
Rp = 24.41 [7.61] Re
a = 0.0438 [0.0112] AU
Ag = 3.58 [1.31] [1.96σ]
Teffp = 2727 [100] K [9.00σ]

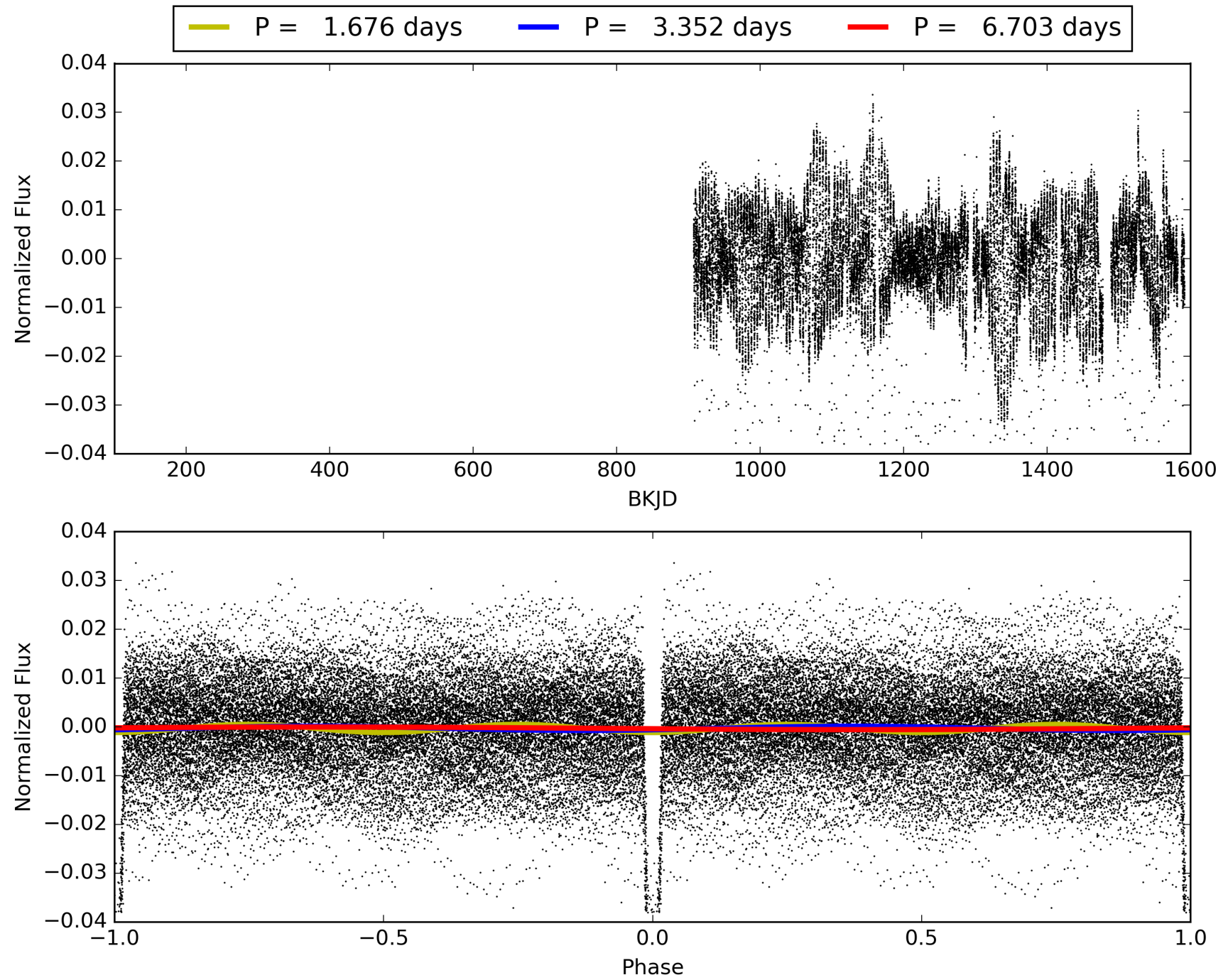
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [178/178]
GhostDiagnostic-chr: 2.502
Centroid-sig: 0.0%
Centroid-so: 2.028 arcsec [205.97σ]
OotOffset-rm: 3.938 arcsec [7.81σ]
KicOffset-rm: 0.306 arcsec [4.25σ]
OotOffset-st: 2/2/2/2 [8]
KicOffset-st: 2/2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
DiffImageOverlap-fno: 1.00 [8/8]

TCE 009719636-01, PDC Light Curves

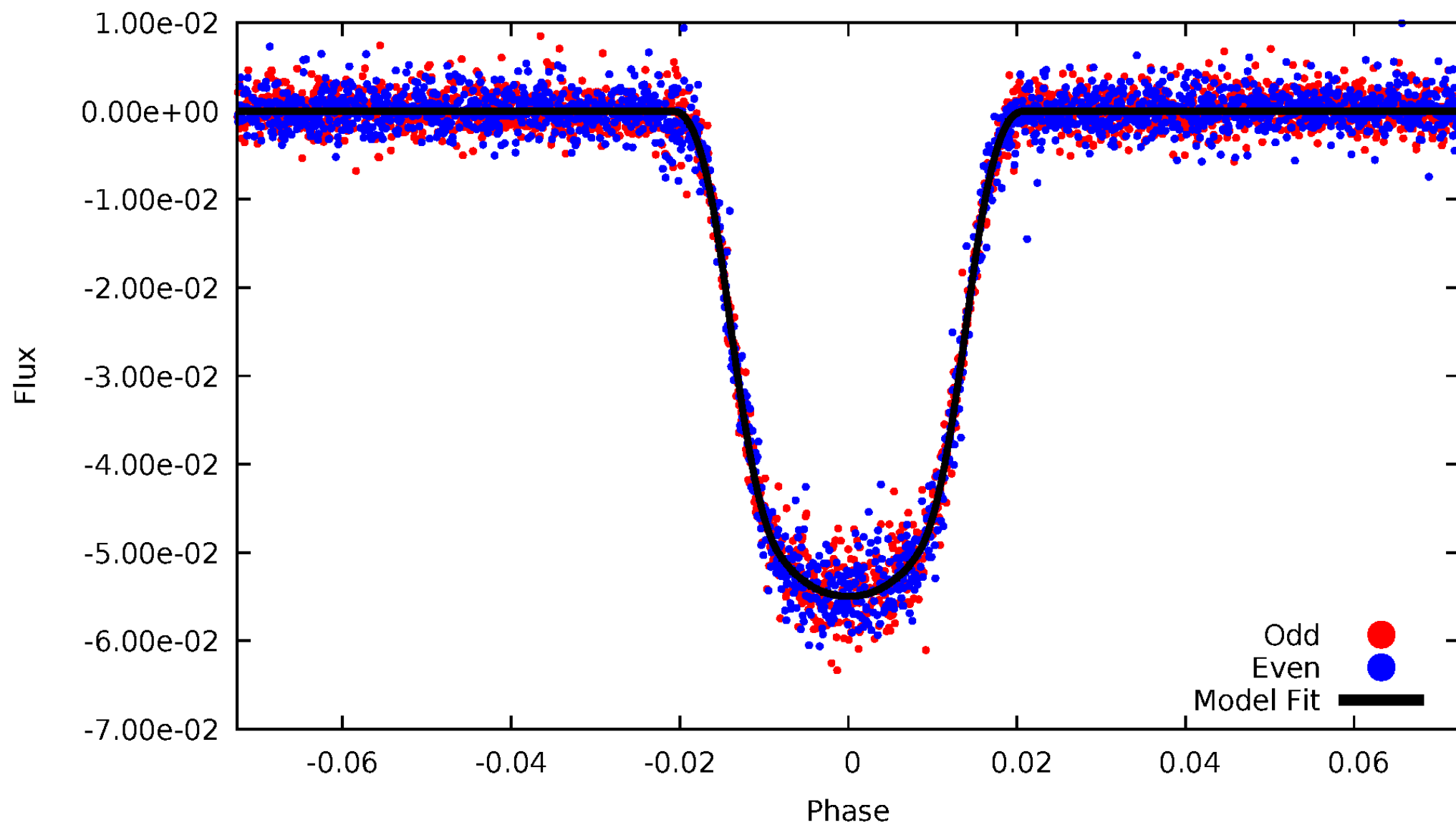


TCE 009719636-01



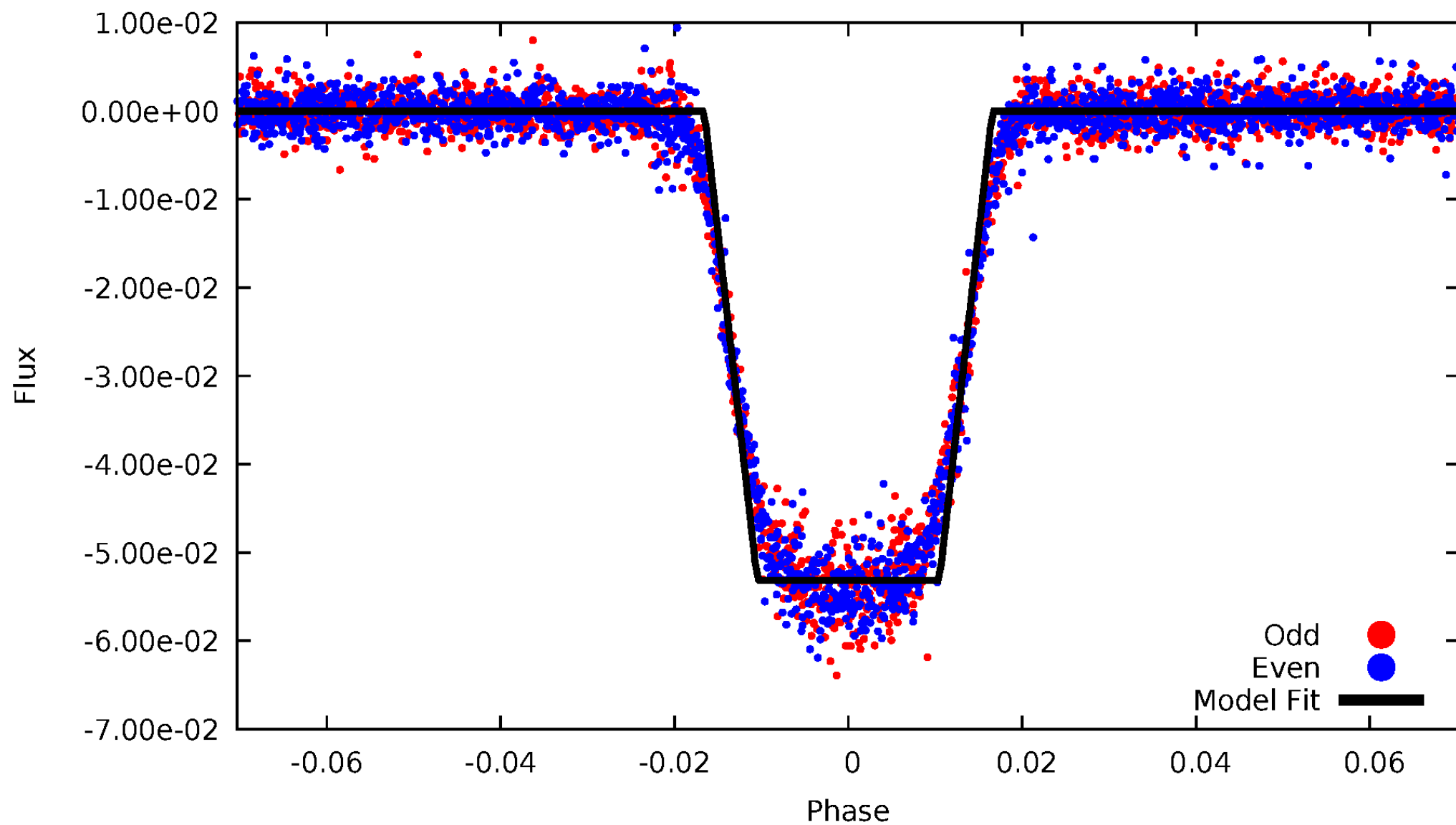
DV Odd/Even

TCE 009719636-01



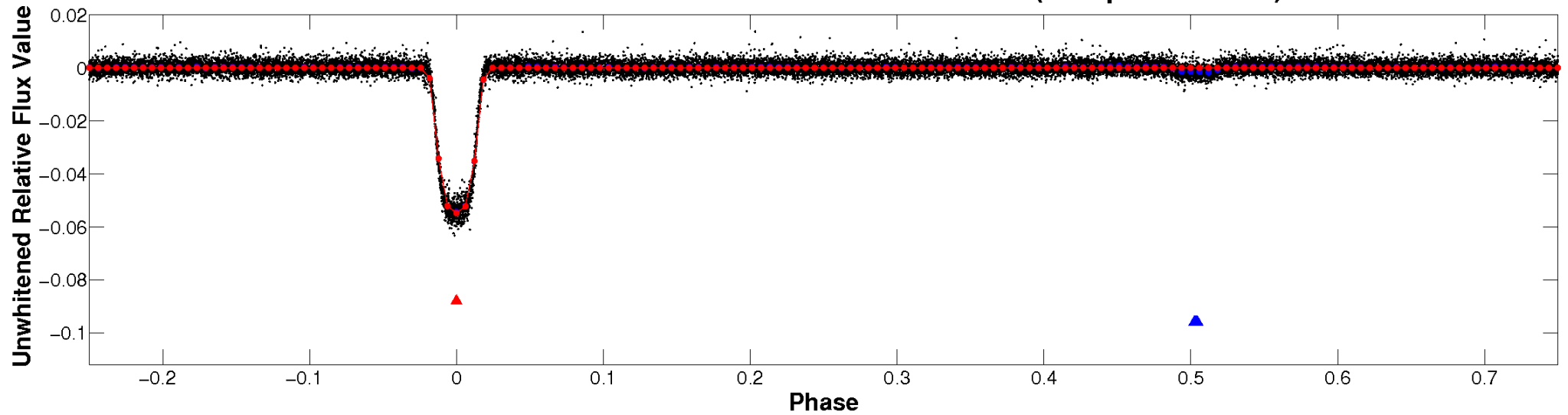
ALT Odd/Even

TCE 009719636-01

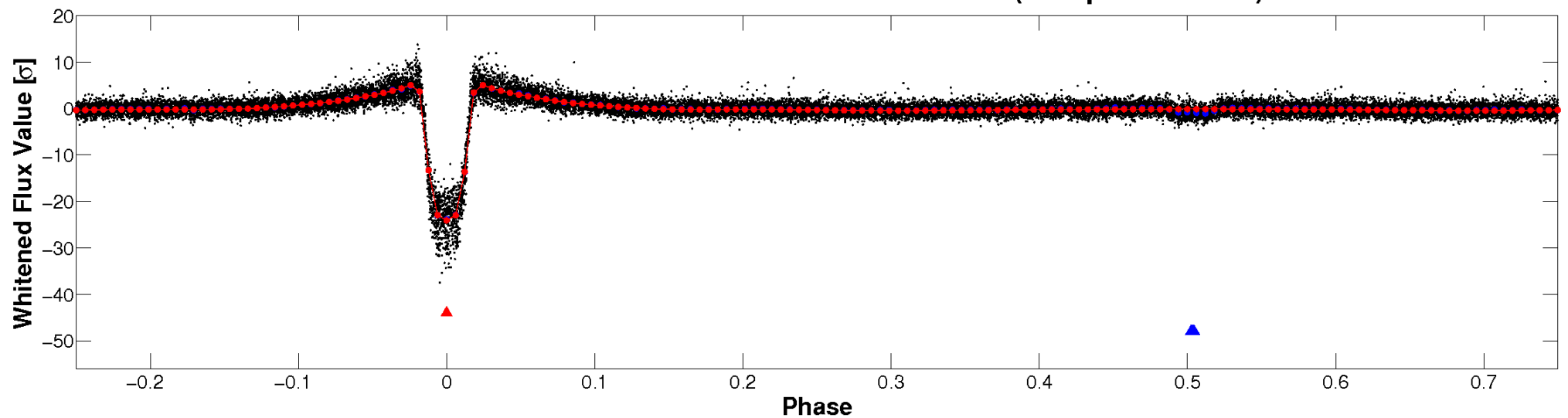


Non-Whitened Vs. Whitened Light Curve

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

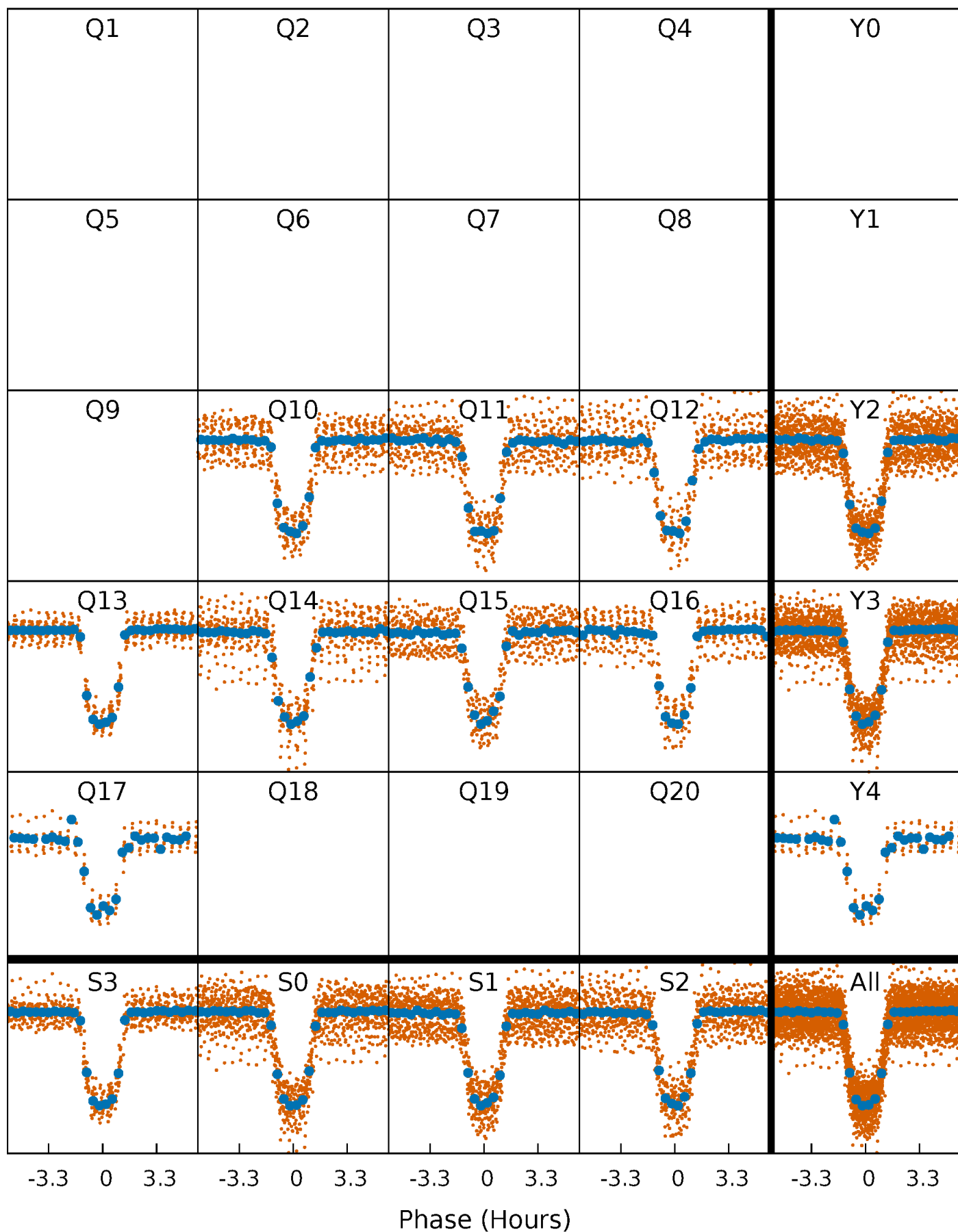


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



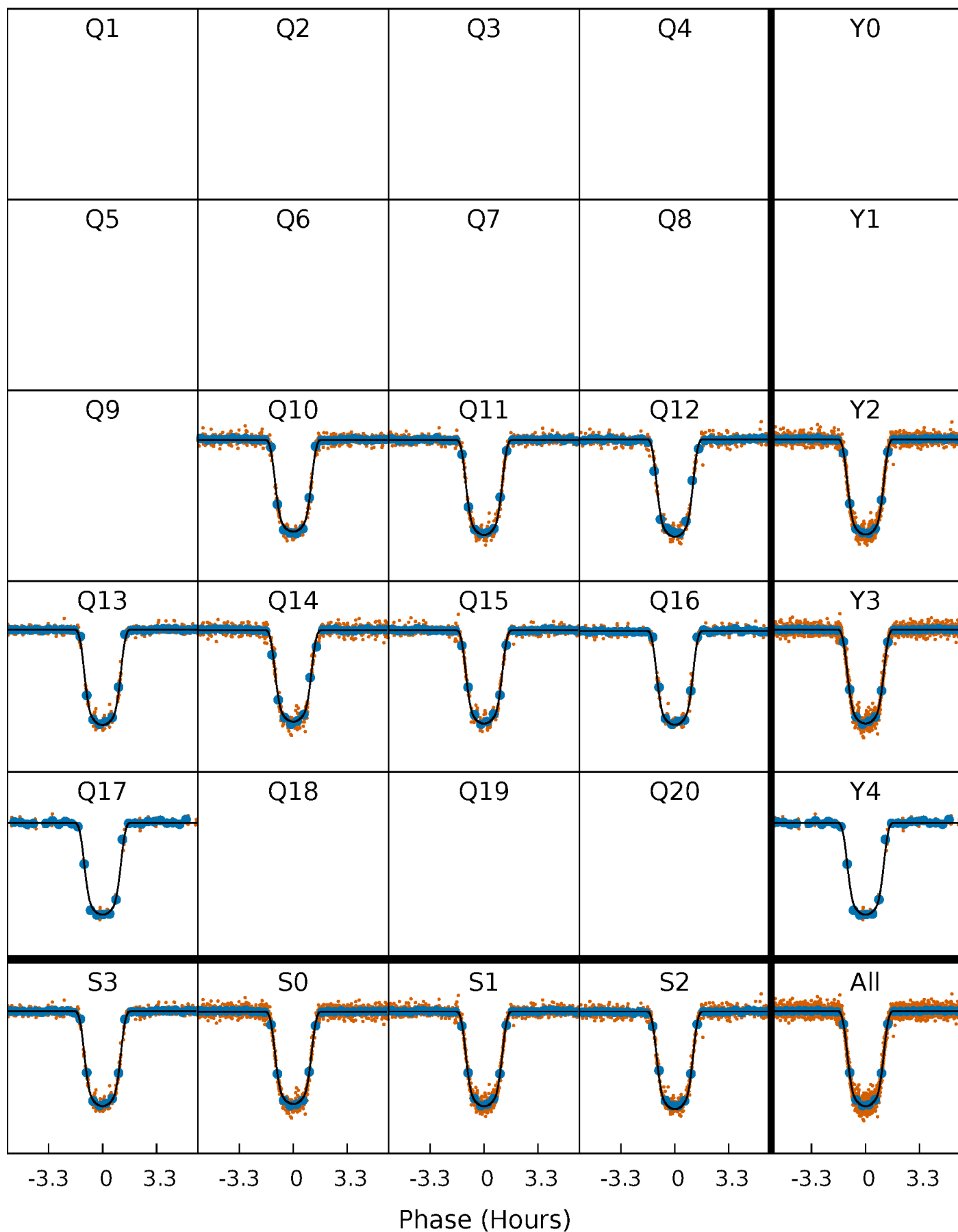
PDC Quarter-Phased Transit Curves

TCE 009719636-01 P= 3.351574 Days $T_0=134.280572$ (BKJD)



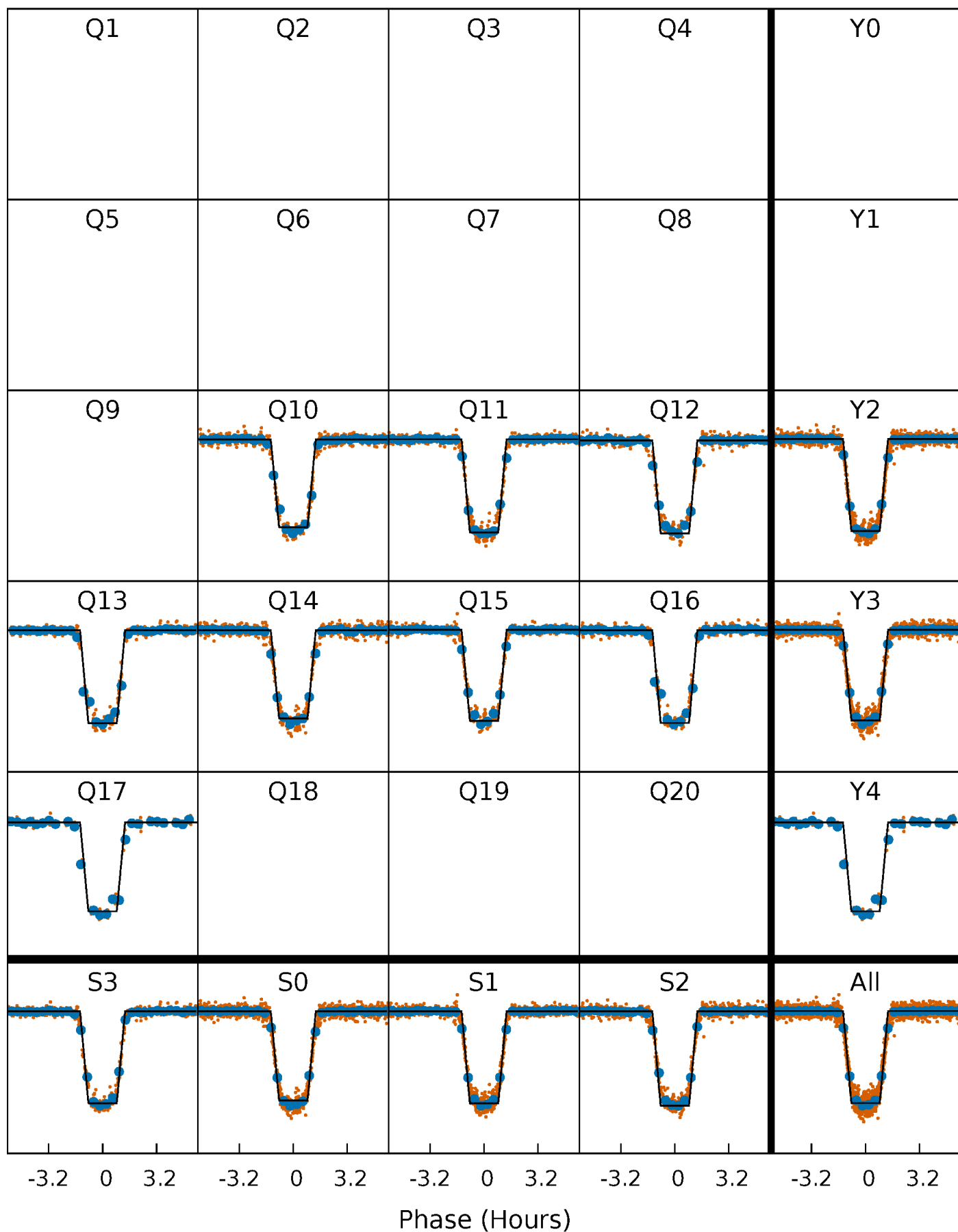
DV Quarter-Phased Transit Curves

TCE 009719636-01 P= 3.351574 Days $T_0=134.280572$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

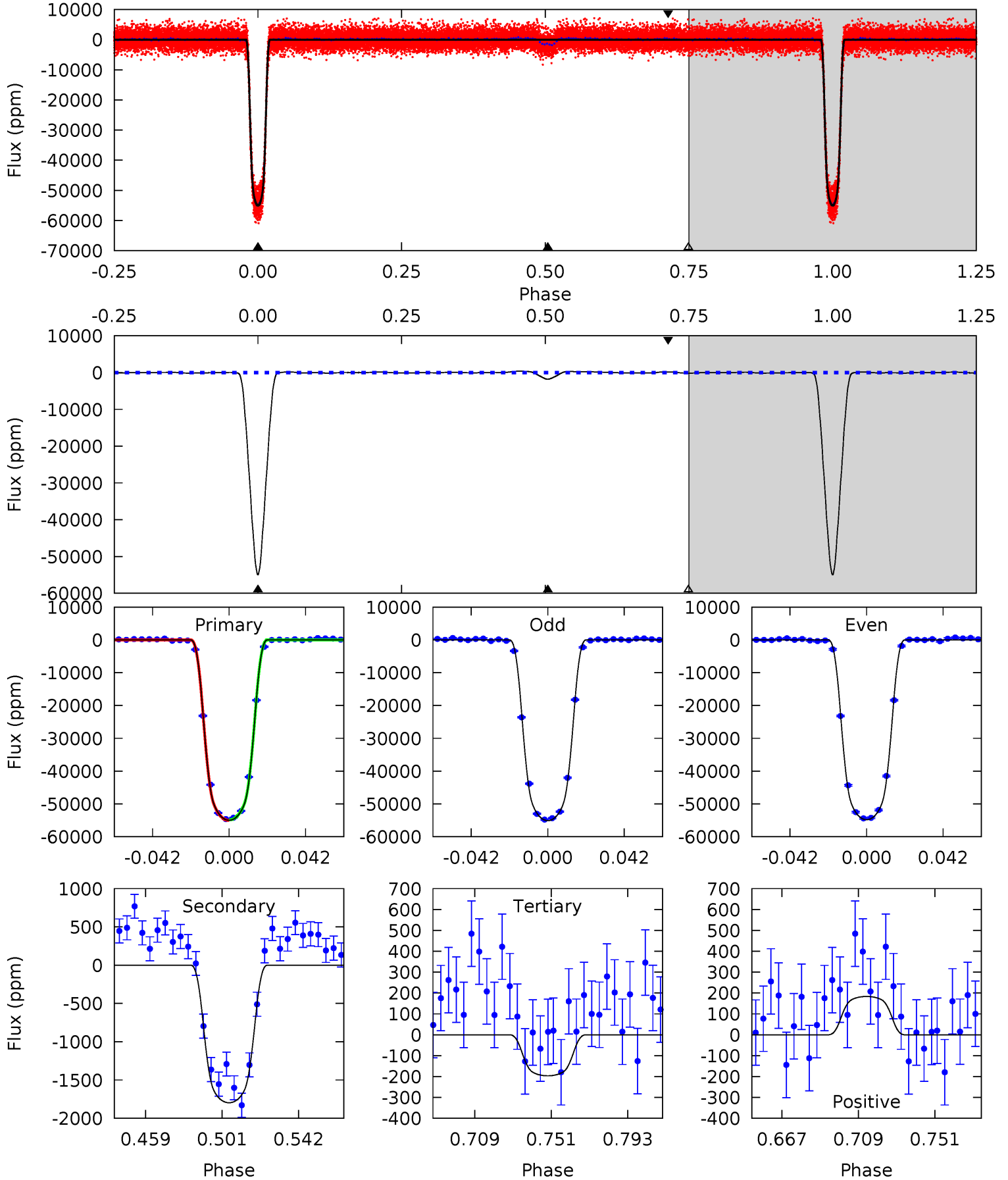
TCE 009719636-01 P= 3.351584 Days $T_0=134.277252$ (BKJD)



DV Model-Shift Uniqueness Test

009719636-01, P = 3.351574 Days, E = 134.280572 Days

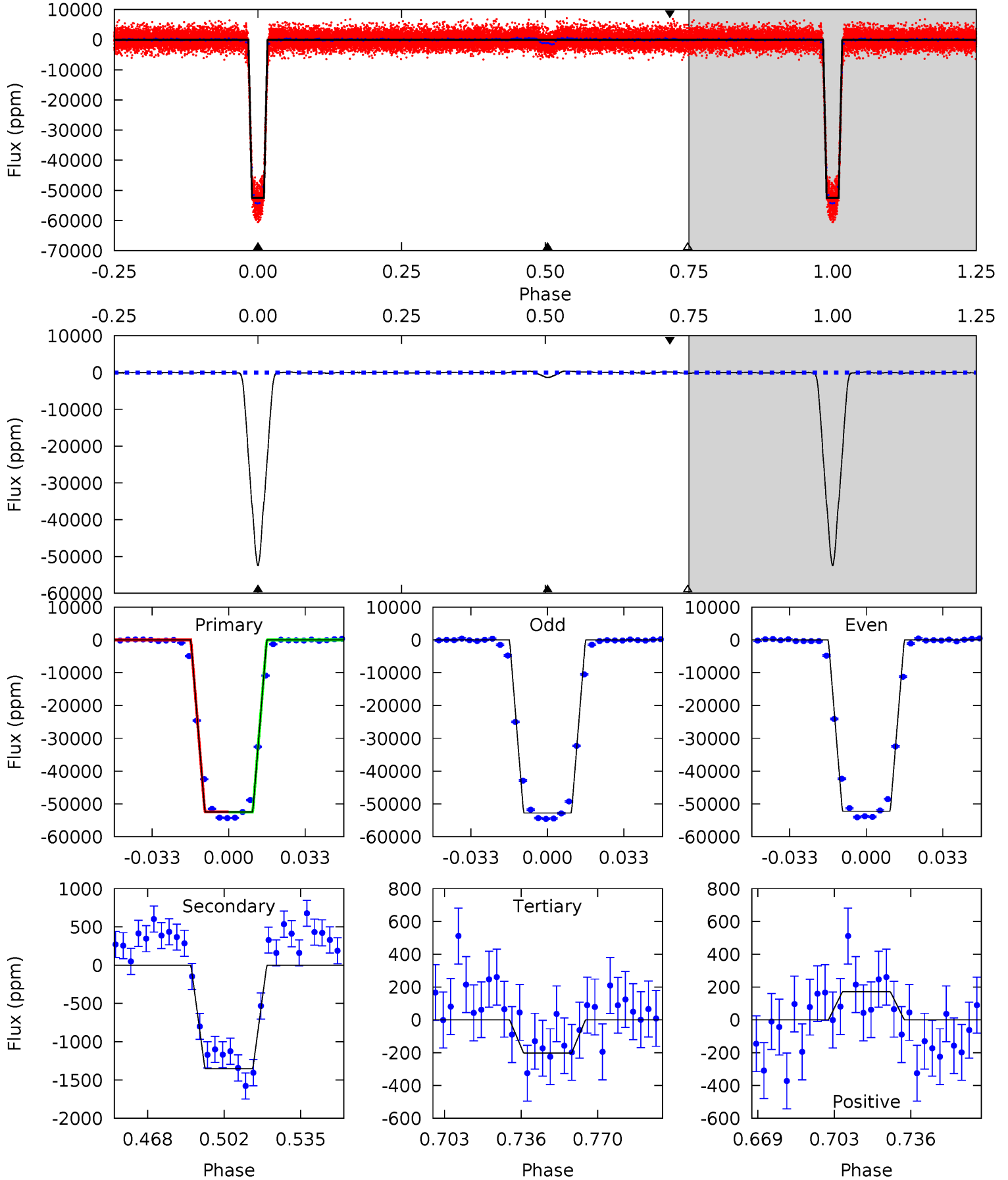
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1075	35.1	3.84	3.59	4.74	2.04	2.16	1071	1072	31.3	31.5	2.66	1.00	0.01	1.56



Alt Model-Shift Uniqueness Test

009719636-01, P = 3.351584 Days, E = 134.277252 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
928.5	23.9	3.59	3.04	4.79	2.13	1.81	924.9	925.4	20.4	20.9	4.51	1.00	0.01	0.65



Stellar Parameters For KIC 009719636

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5984^{+189}_{-210}	$4.408^{+0.090}_{-0.195}$	$-0.120^{+0.300}_{-0.300}$	$1.033^{+0.322}_{-0.161}$	$0.995^{+0.153}_{-0.126}$	$1.271^{+0.598}_{-0.656}$
	+3%/-4%	+2%/-4%	+250%/-250%	+31%/-16%	+15%/-13%	+47%/-52%
Source	KIC0	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 009719636-01 / KOI 3686.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-1797 ± 51	$24.75^{+3.94}_{-2.01}$	1810^{+142}_{-90}	3178^{+69}_{-70}	$3.045^{+0.579}_{-0.701}$
Alt.	-1352 ± 56	$26.58^{+4.24}_{-2.52}$	1819^{+131}_{-101}	2969^{+63}_{-66}	$1.992^{+0.425}_{-0.470}$

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 $A_{obs} \gg 1.0$

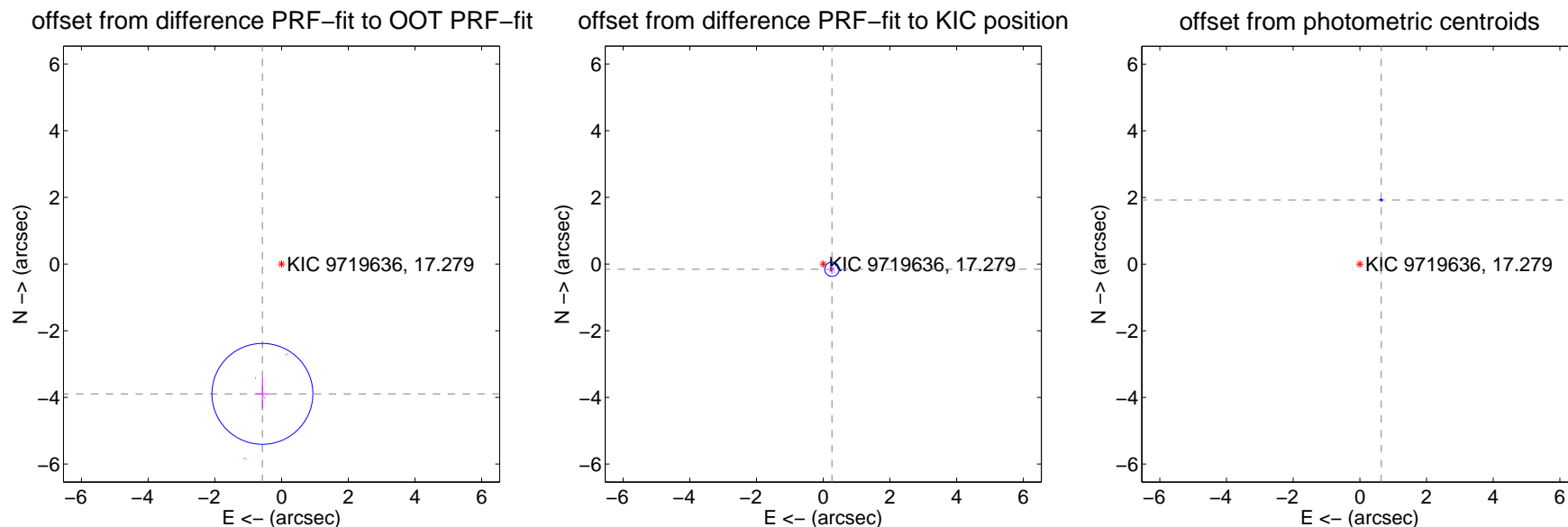
DV Centroid Data

Supplemental centroid analysis for 009719636-01. Kepler magnitude: 17.28. Transit SNR 592.81

There are 8 quarters with good PRF difference image offsets

The OOT PRF centroid is offset from the target star catalog position by about 4.01 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.938 ± 0.504	7.81	0.575 ± 0.197	-3.895 ± 0.486
PRF-fit source offset from KIC position	0.306 ± 0.072	4.25	-0.263 ± 0.071	-0.156 ± 0.073
photometric centroid source offset	2.03 ± 0.01	205.97	-0.64 ± 0.01	1.92 ± 0.01



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.

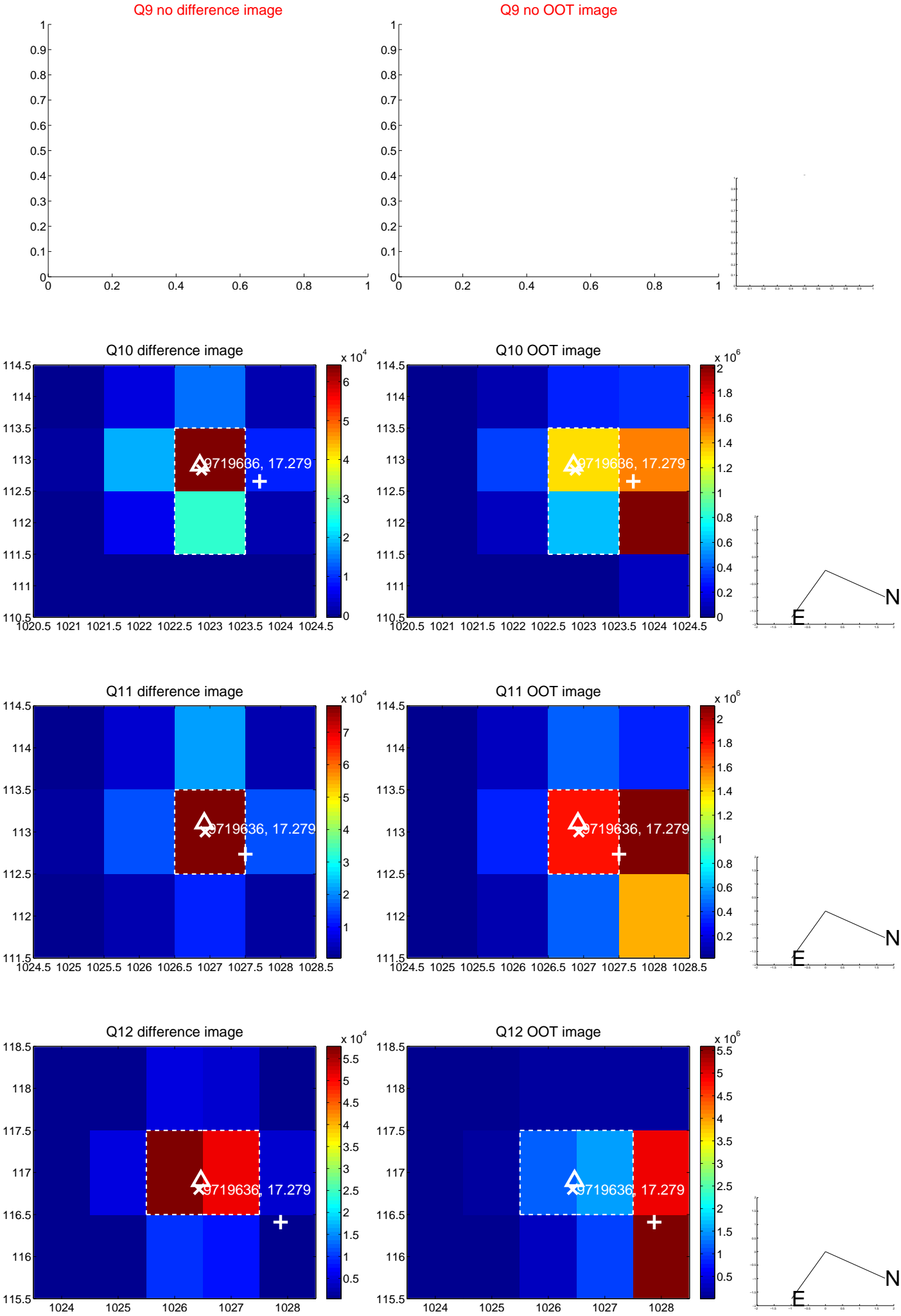
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



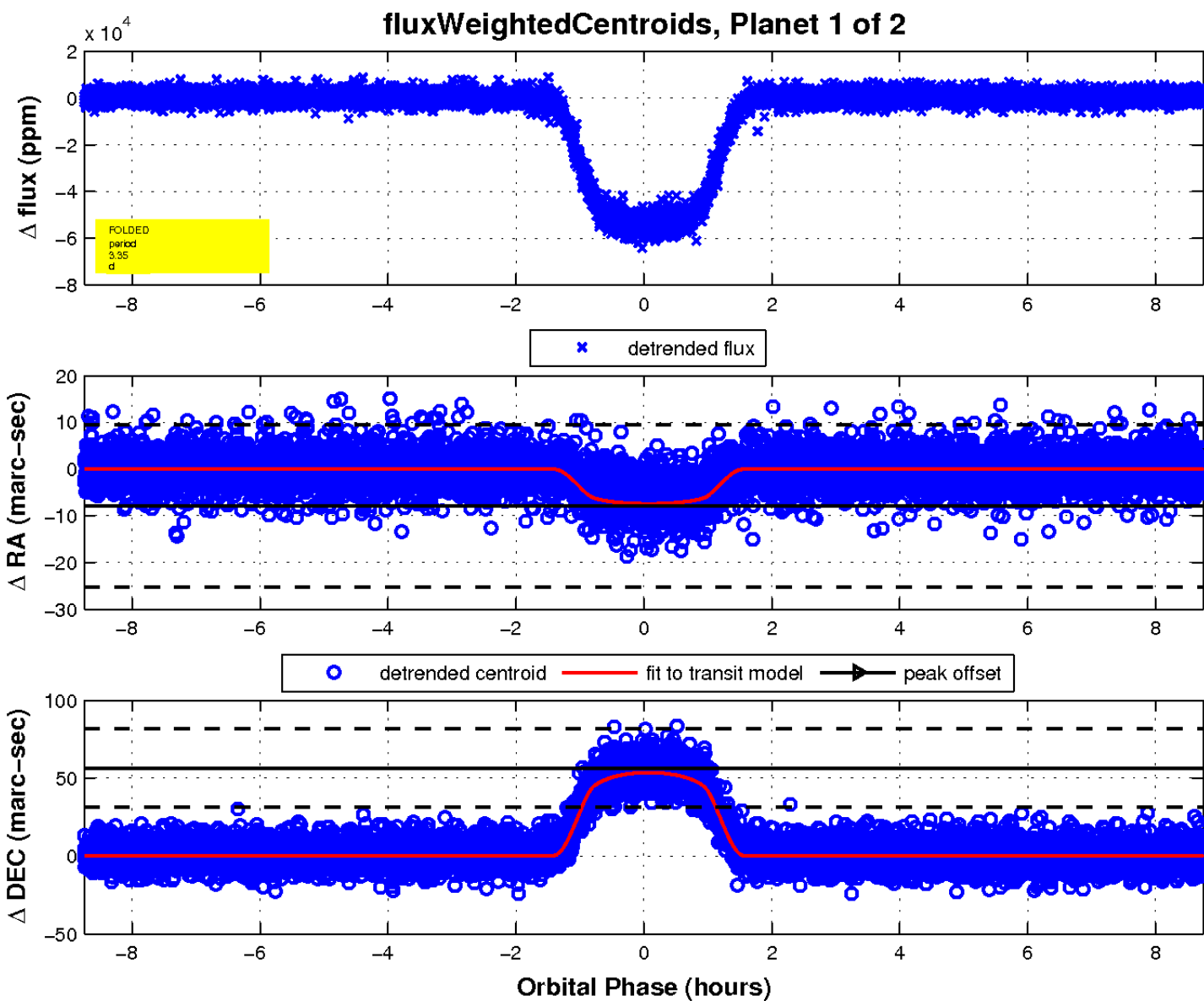
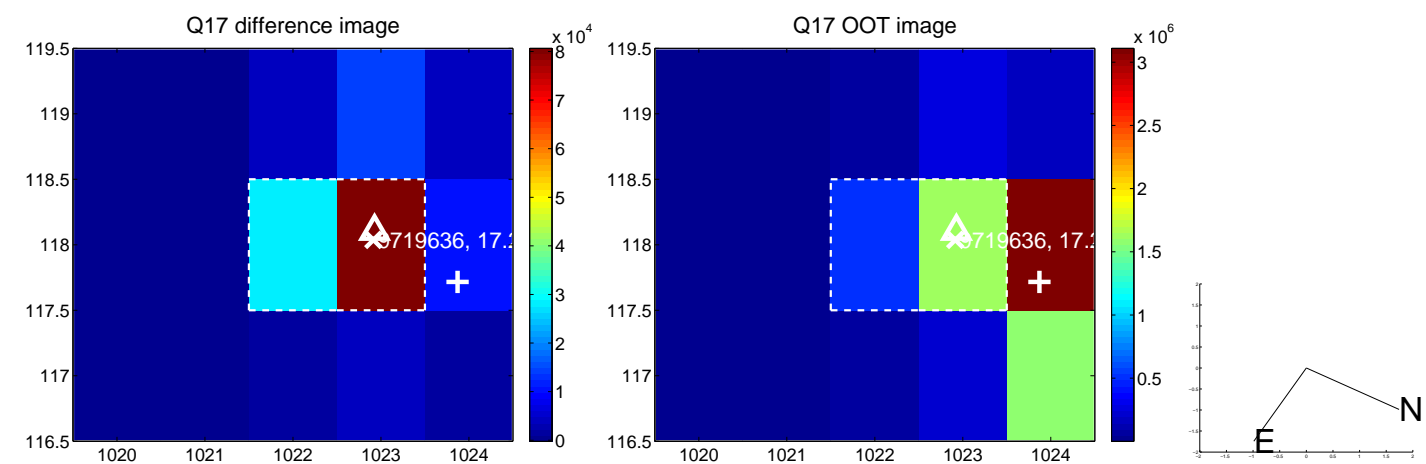
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

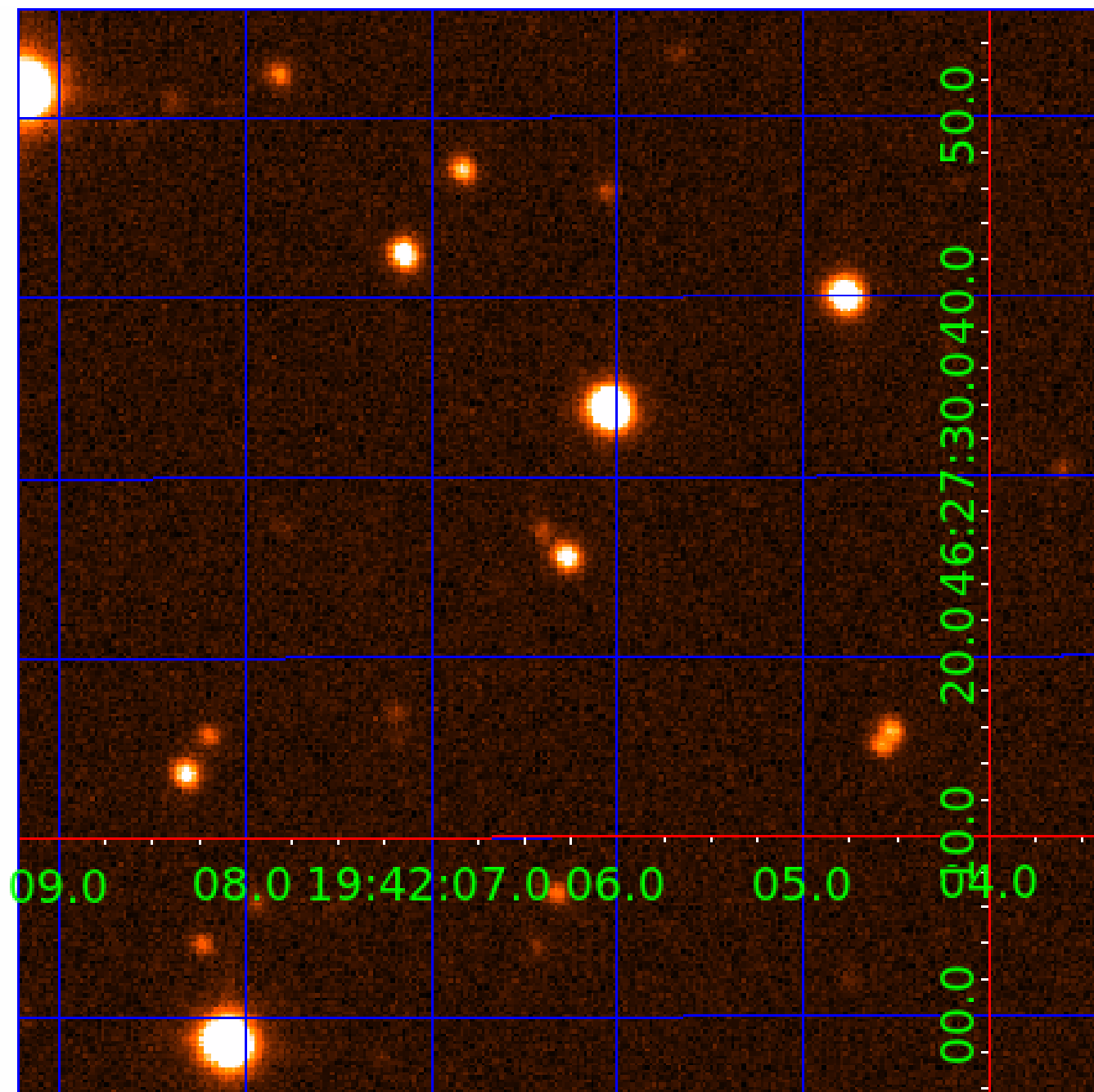


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009719636

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})
009719636-01	OBS	3686.01	3.351574	134.280572	54965.2	2.916	652.8	592.8	1.03	5984	24.41	639.63
009719636-02	OBS	No	3.351589	132.613022	2078.7	2.894	23.8	25.9	1.03	5984	5.23	639.63

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009719636-01	OBS	FP	0.01	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
009719636-02	OBS	FP	0.00	1	1	0	0	IS_SEC_TCE—CENT_KIC_POS

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.

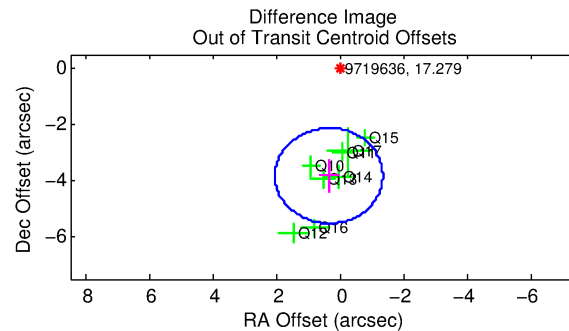
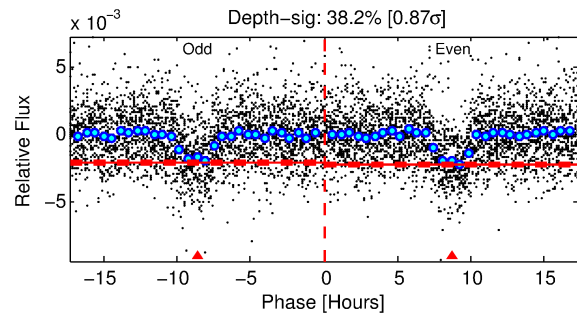
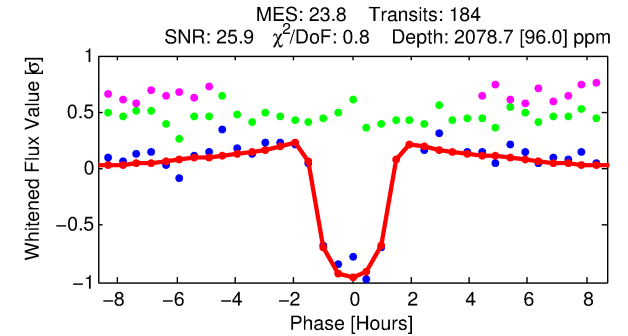
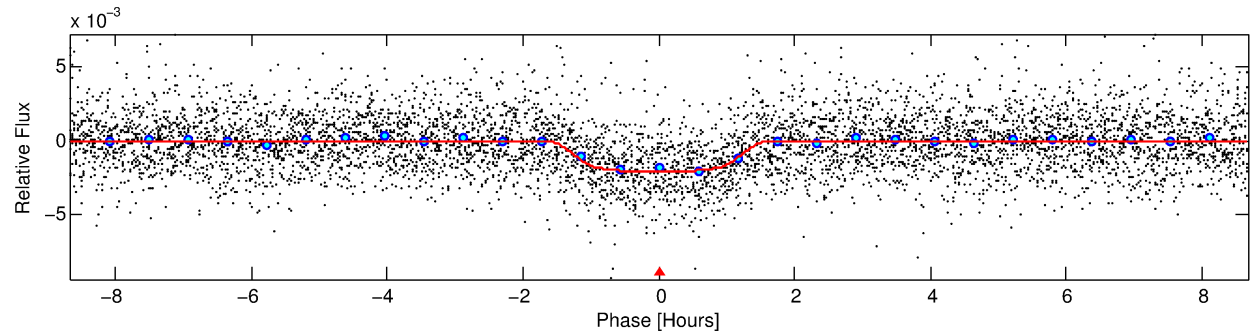
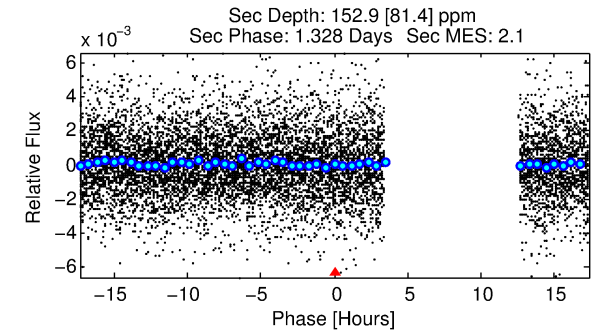
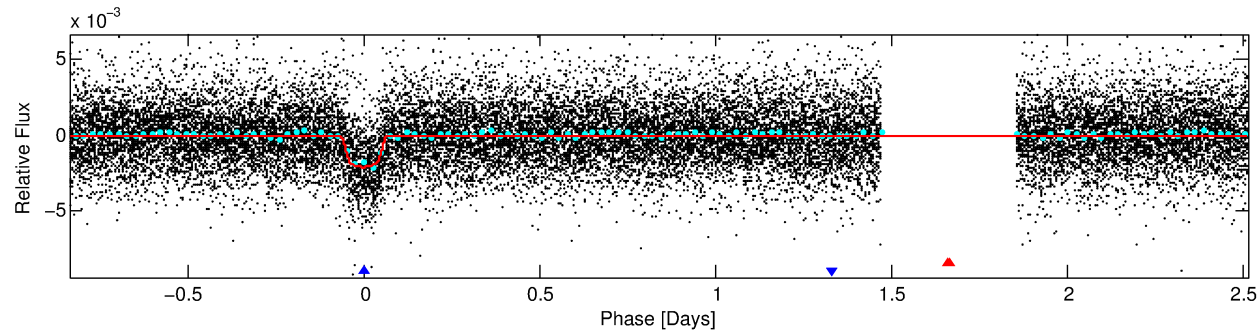
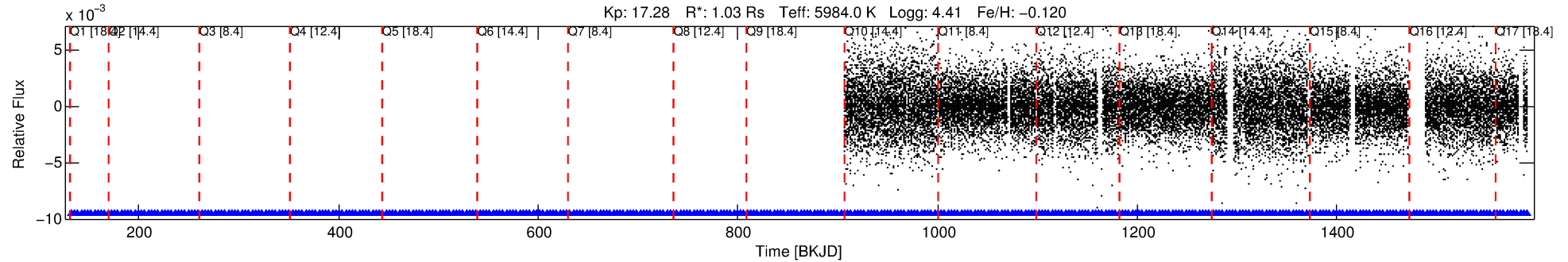
Ephemeris Match Information For 009719636-02

No Significant Match Found

DV One-Page Summary

KIC: 9719636 Candidate: 2 of 2 Period: 3.352 d

KOI: K03686 Corr: No Ephemeris Match



DV Fit Results:

Period = 3.35159 [0.00001] d
Epoch = 132.6130 [0.0016] BKJD
Rp/R* = 0.0464 [0.0053]
a/R* = 6.01 [3.03]
b = 0.80 [0.23]
Seff = 639.63 [249.78]
Teq = 1282 [125] K
Rp = 5.23 [1.73] Re
a = 0.0438 [0.0112] AU
Ag = 5.89 [4.03] [1.21σ]
Teffp = 3089 [460] K [3.79σ]

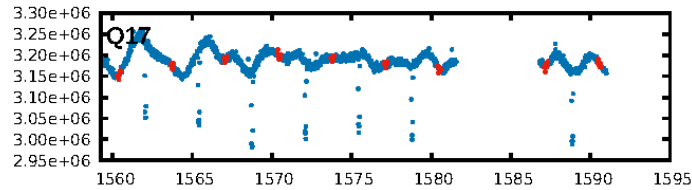
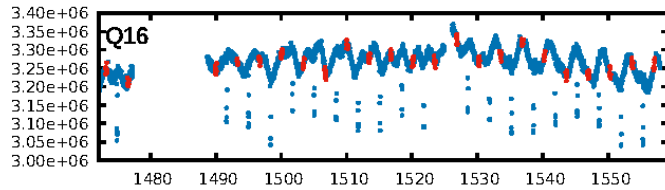
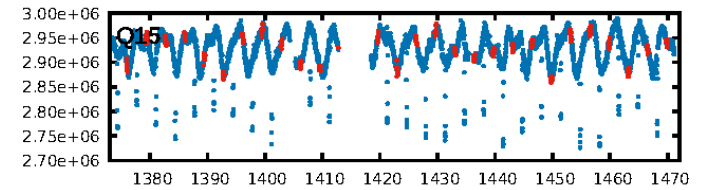
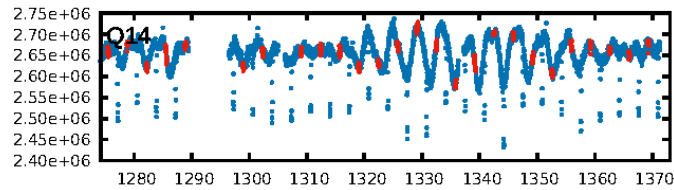
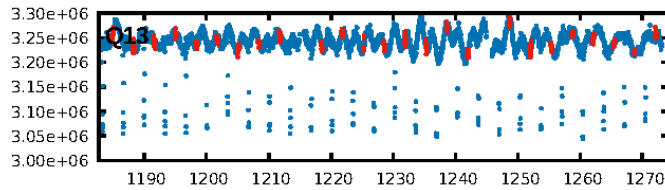
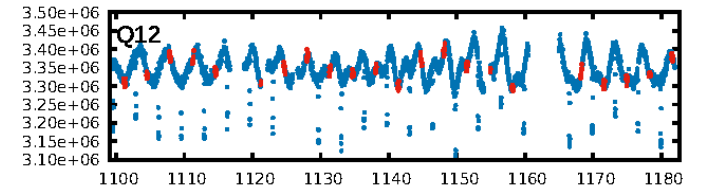
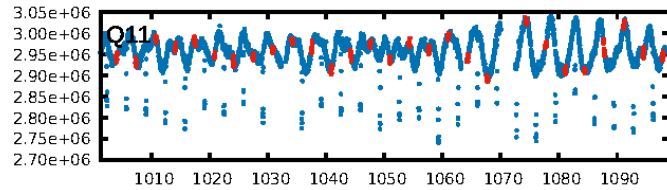
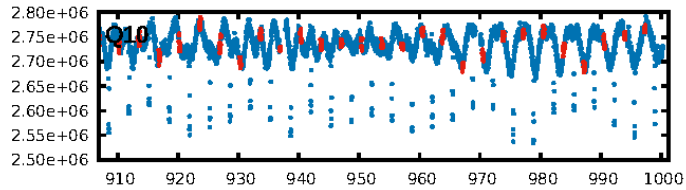
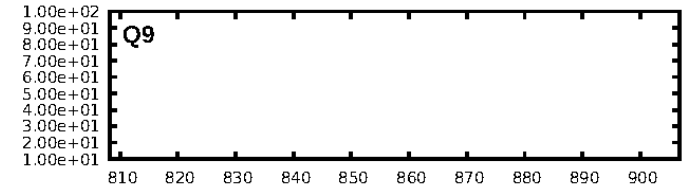
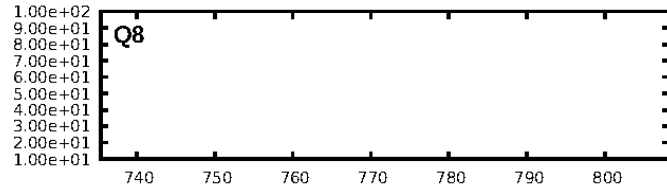
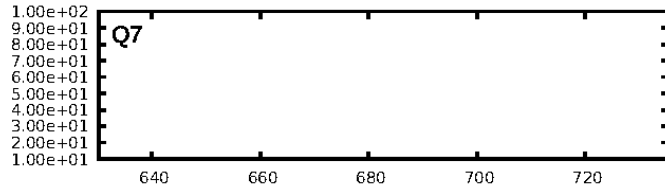
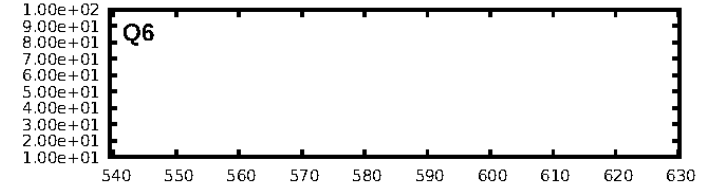
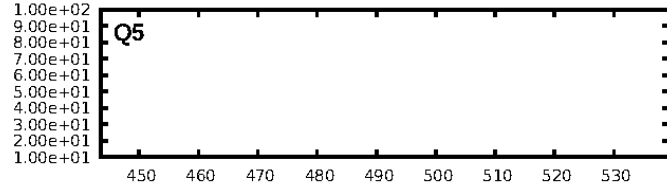
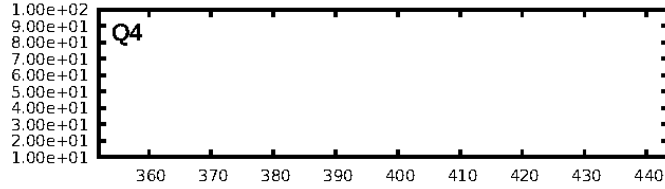
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 9.86e-122
RollingBand-fgt: 1.00 [175/175]
GhostDiagnostic-chr: 2.874
Centroid-sig: 0.0%
Centroid-so: 2.283 arcsec [9.35σ]
OotOffset-rm: 3.844 arcsec [6.80σ]
KicOffset-rm: 0.481 arcsec [2.74σ]
OotOffset-st: 2/2/2 [8]
KicOffset-st: 2/2/2 [8]
DiffImageQuality-fgm: 1.00 [8/8]
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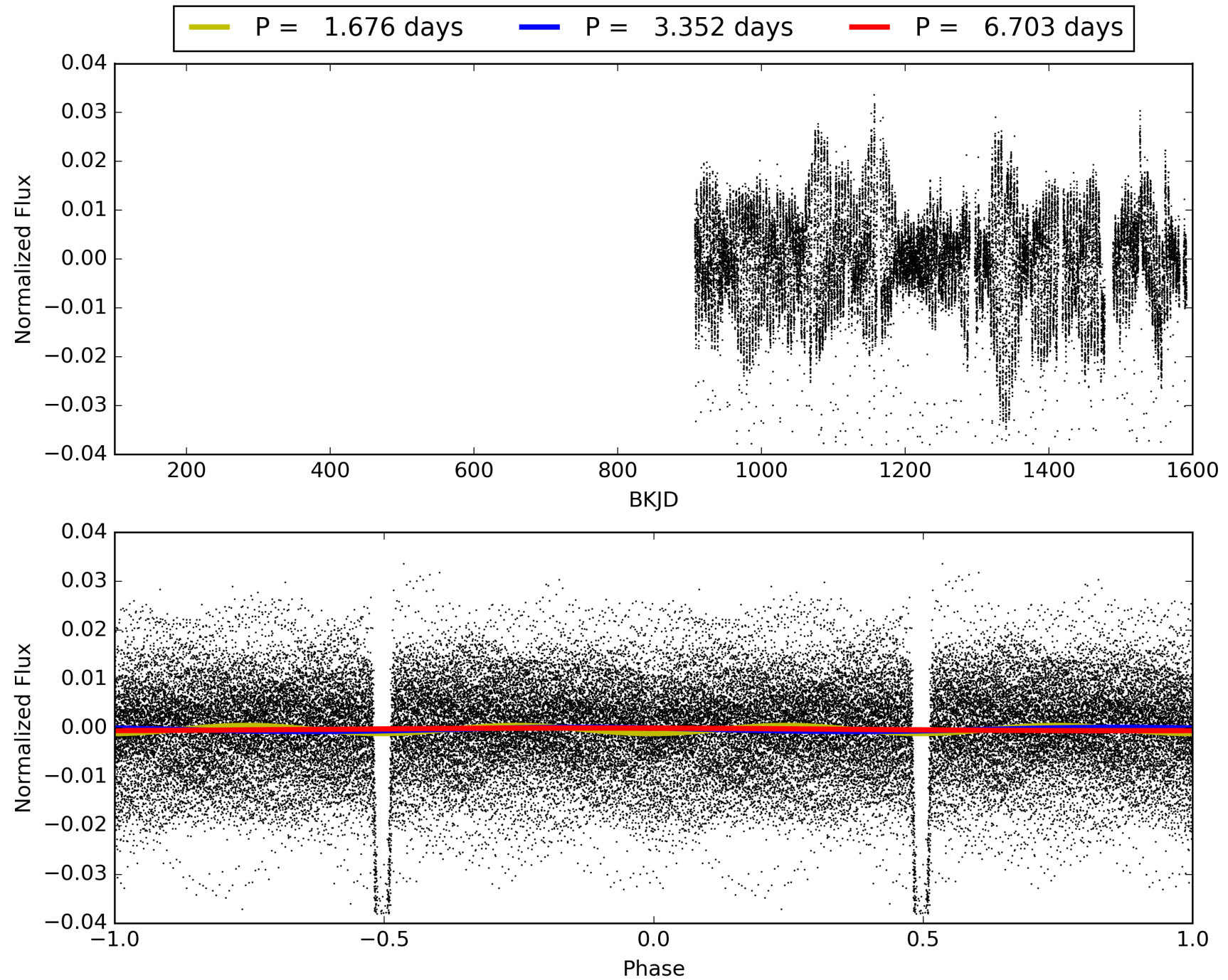
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This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 009719636-02, PDC Light Curves

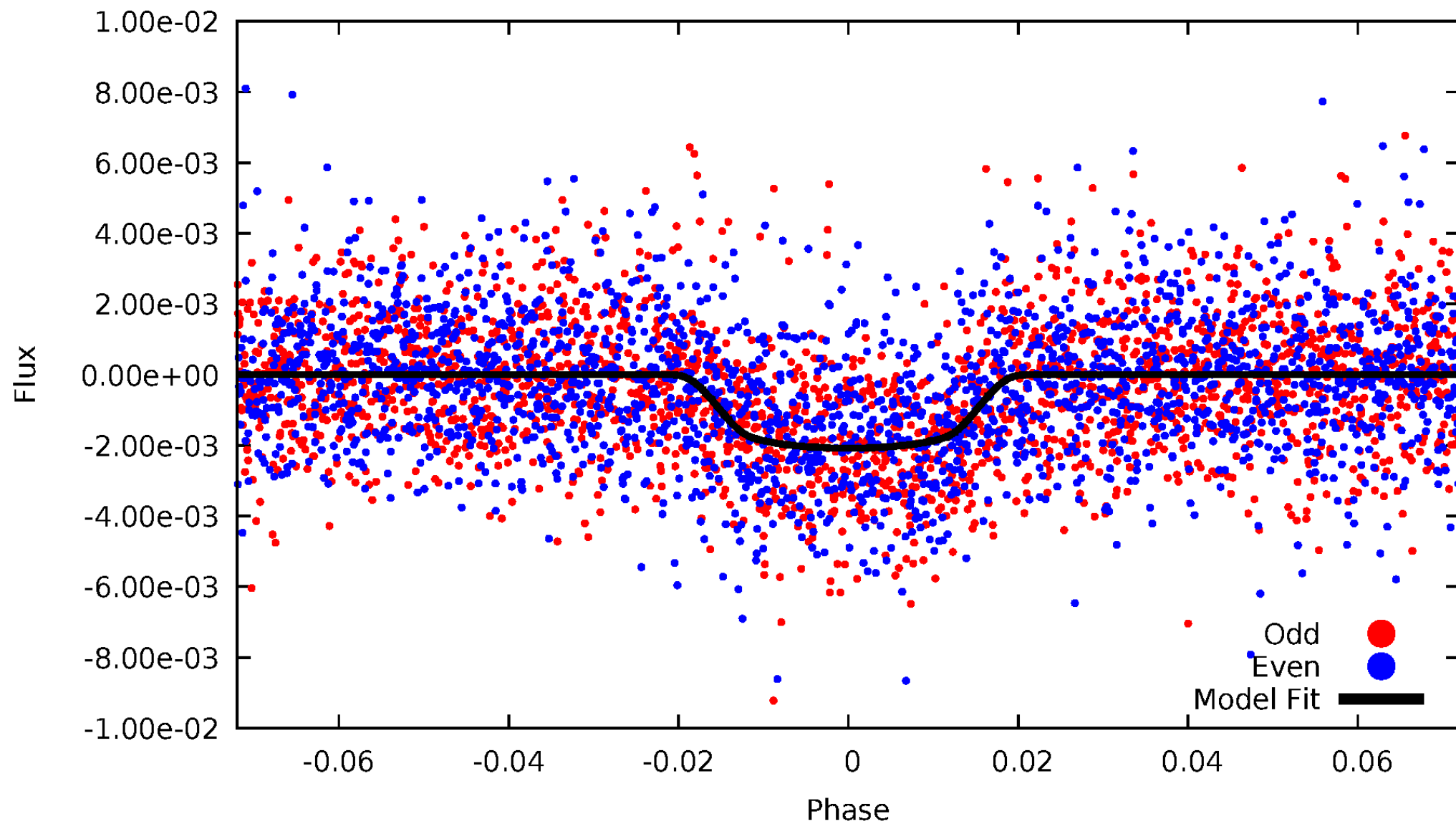


TCE 009719636-02



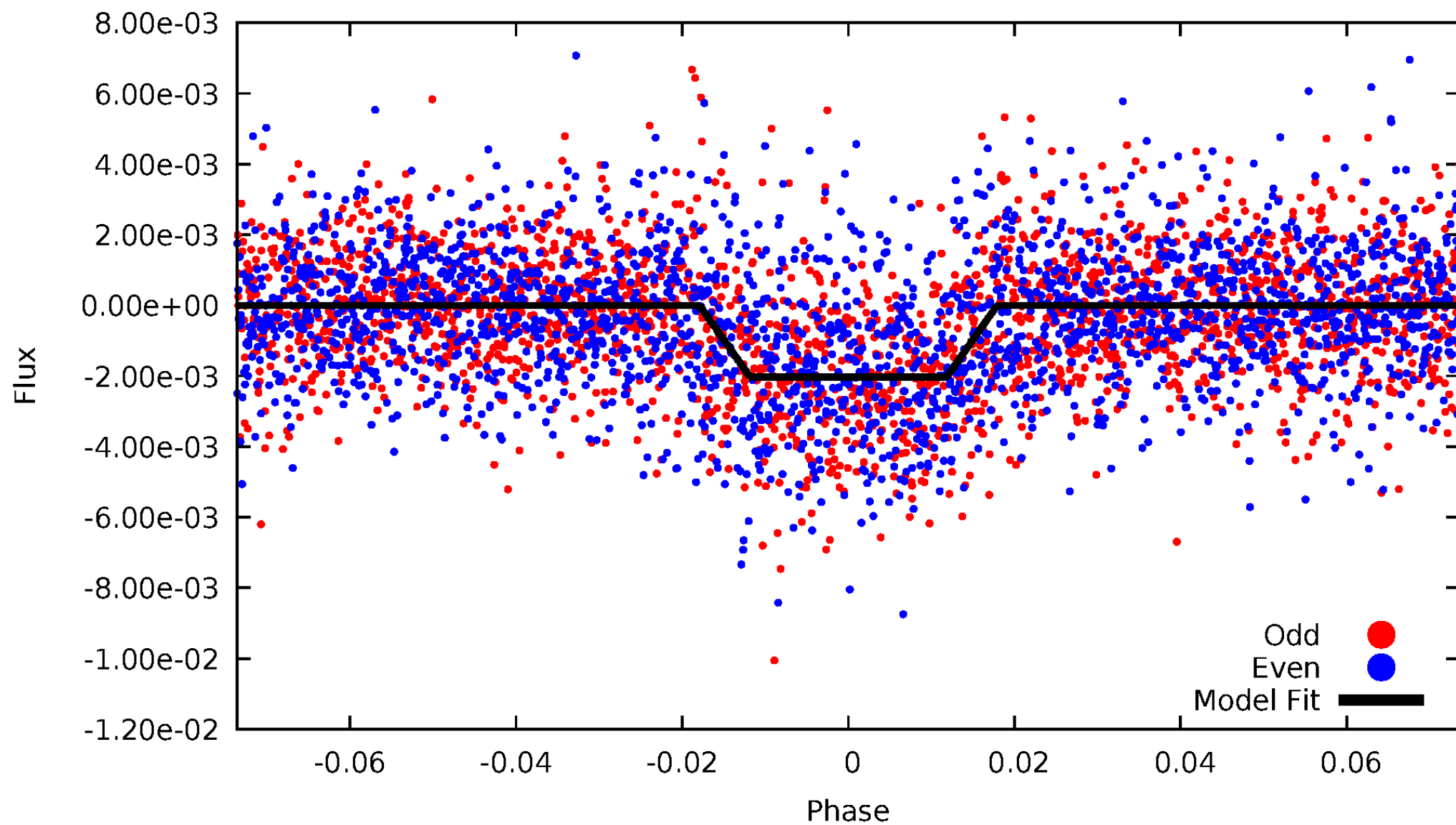
DV Odd/Even

TCE 009719636-02



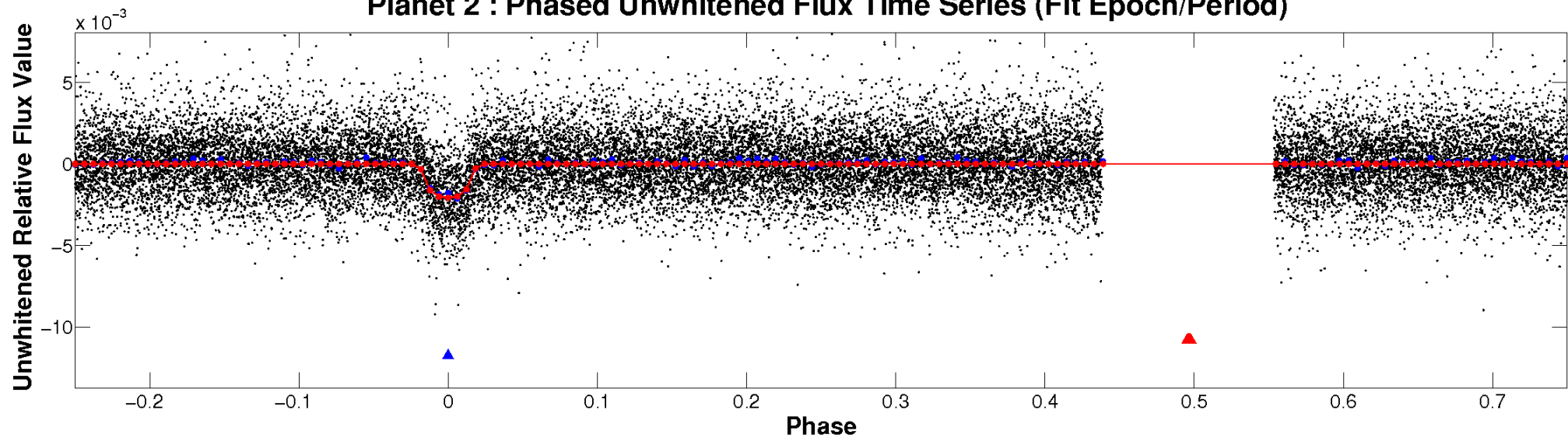
ALT Odd/Even

TCE 009719636-02

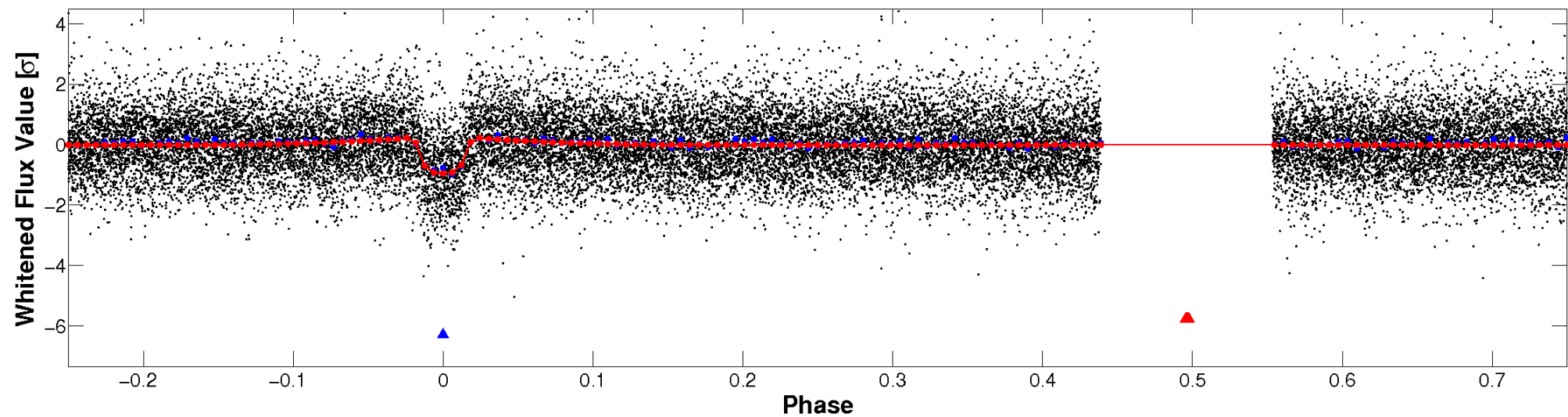


Non-Whitened Vs. Whitened Light Curve

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

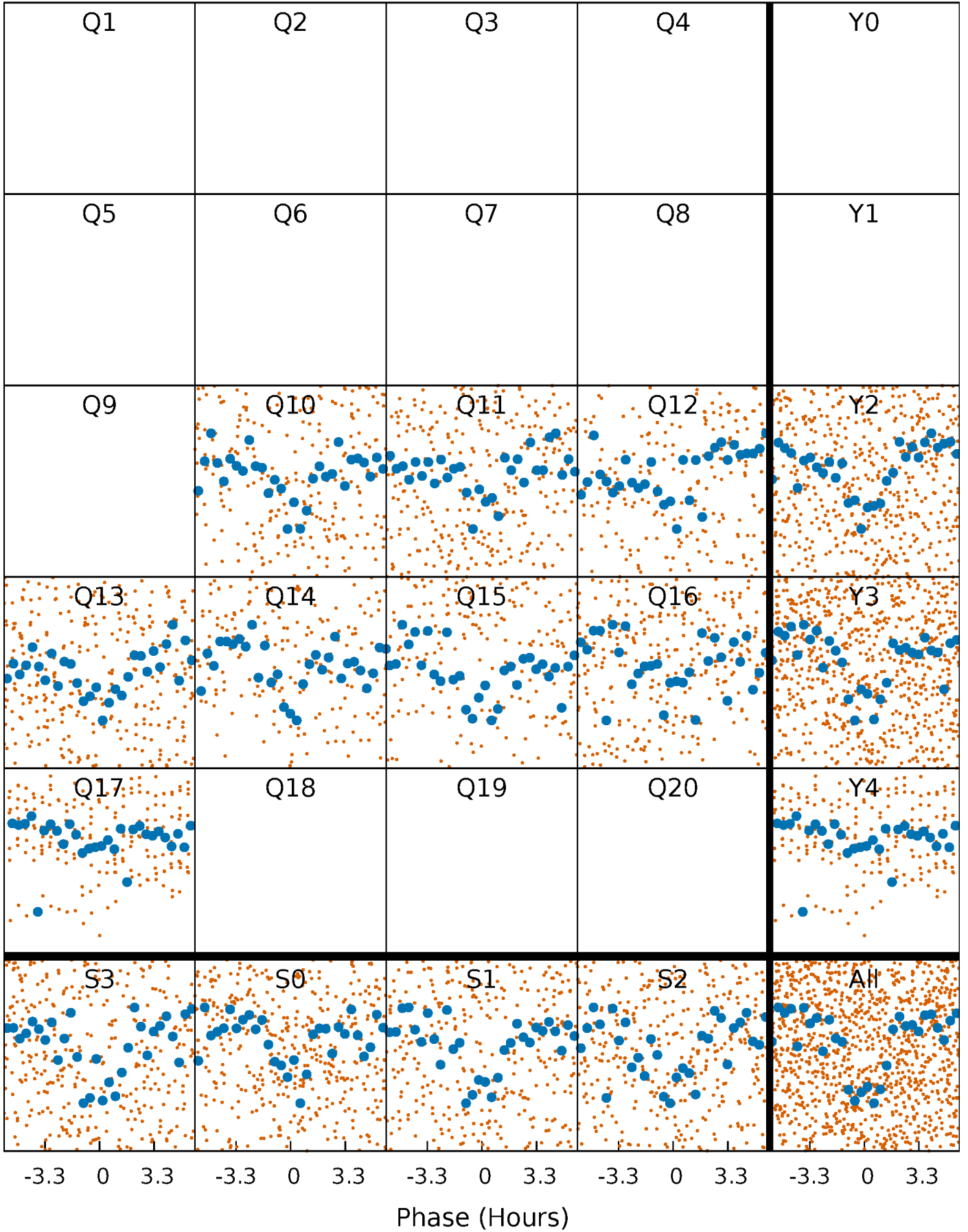


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



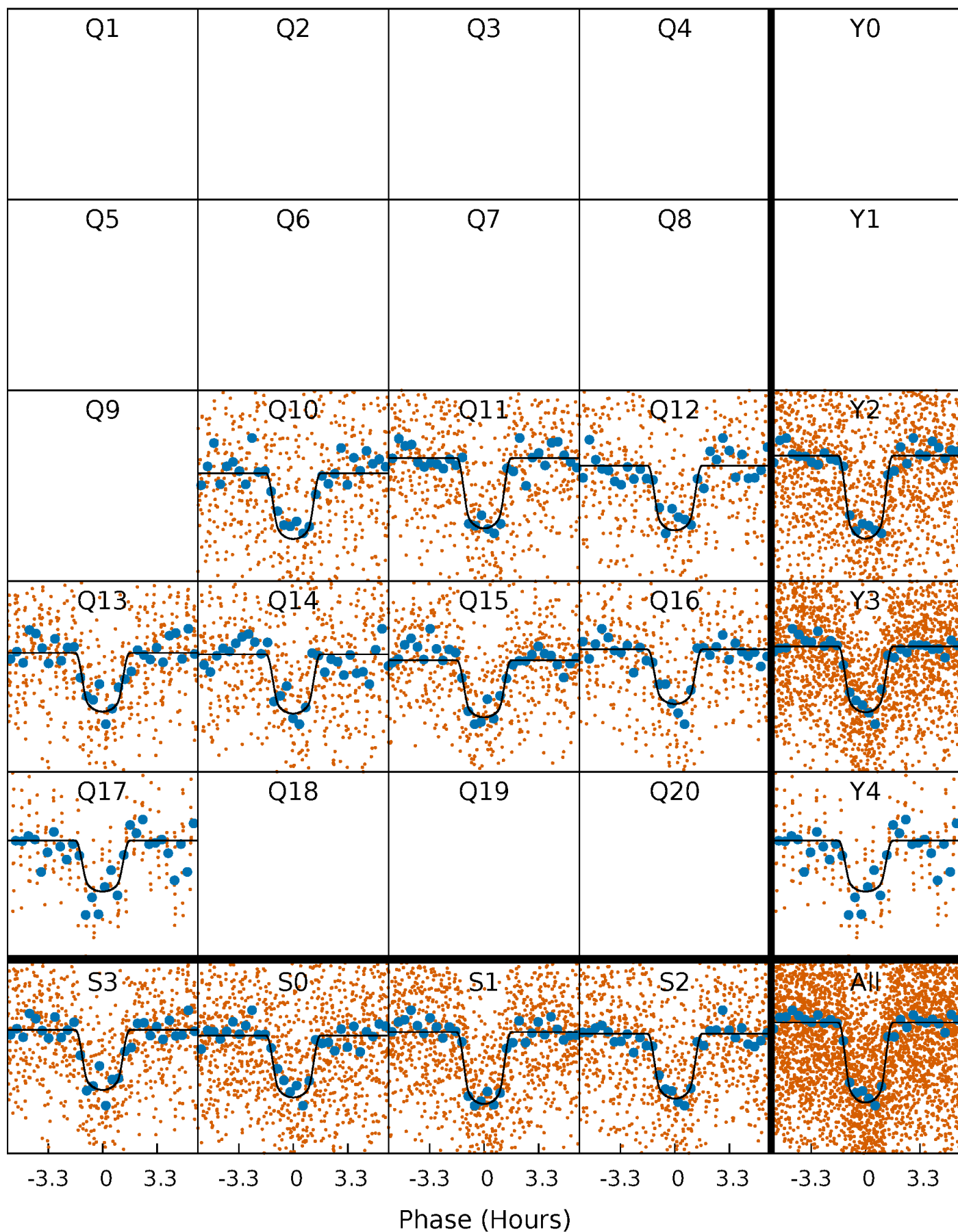
PDC Quarter-Phased Transit Curves

TCE 009719636-02 P= 3.351589 Days $T_0=132.613022$ (BKJD)



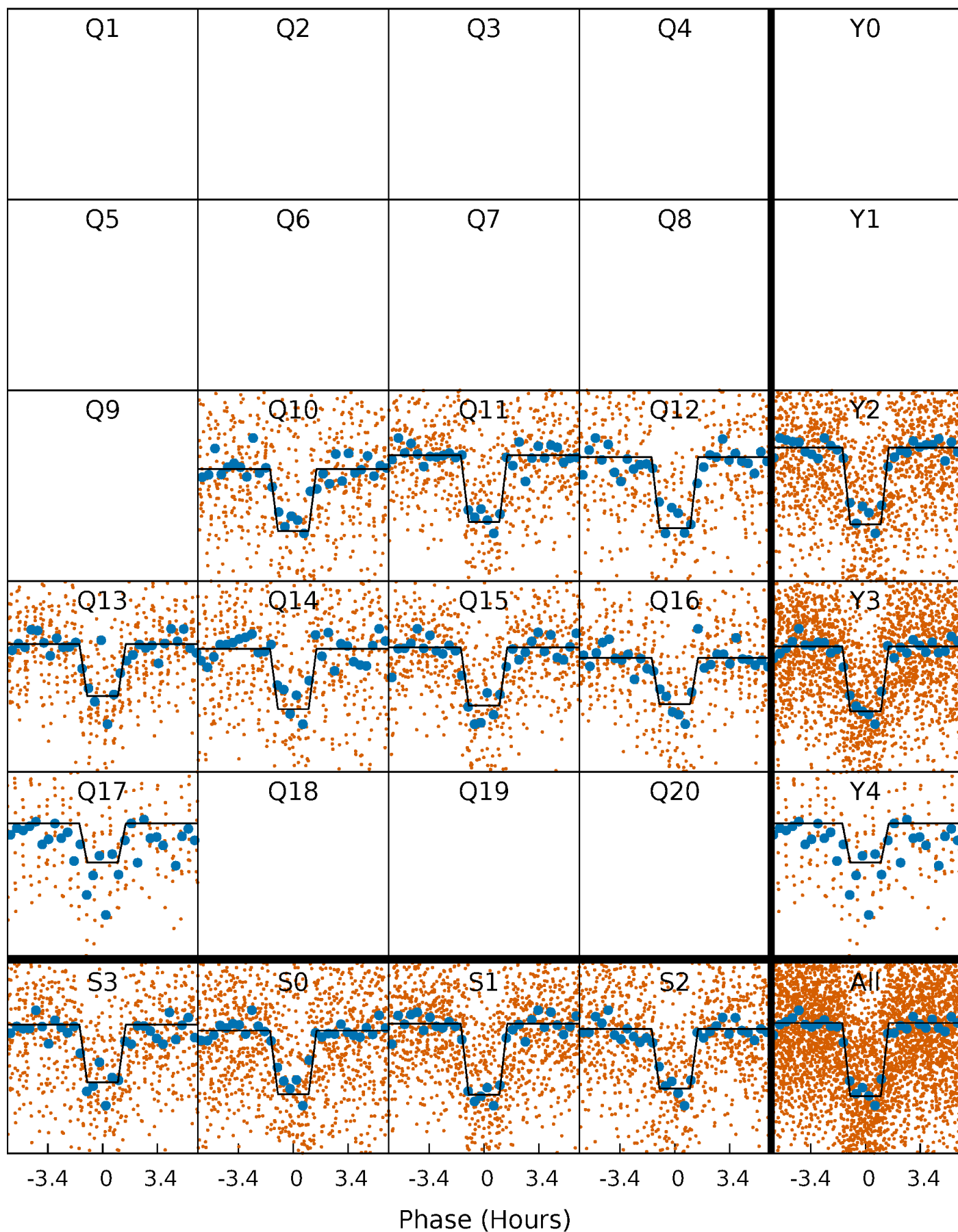
DV Quarter-Phased Transit Curves

TCE 009719636-02 P= 3.351589 Days $T_0=132.613022$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

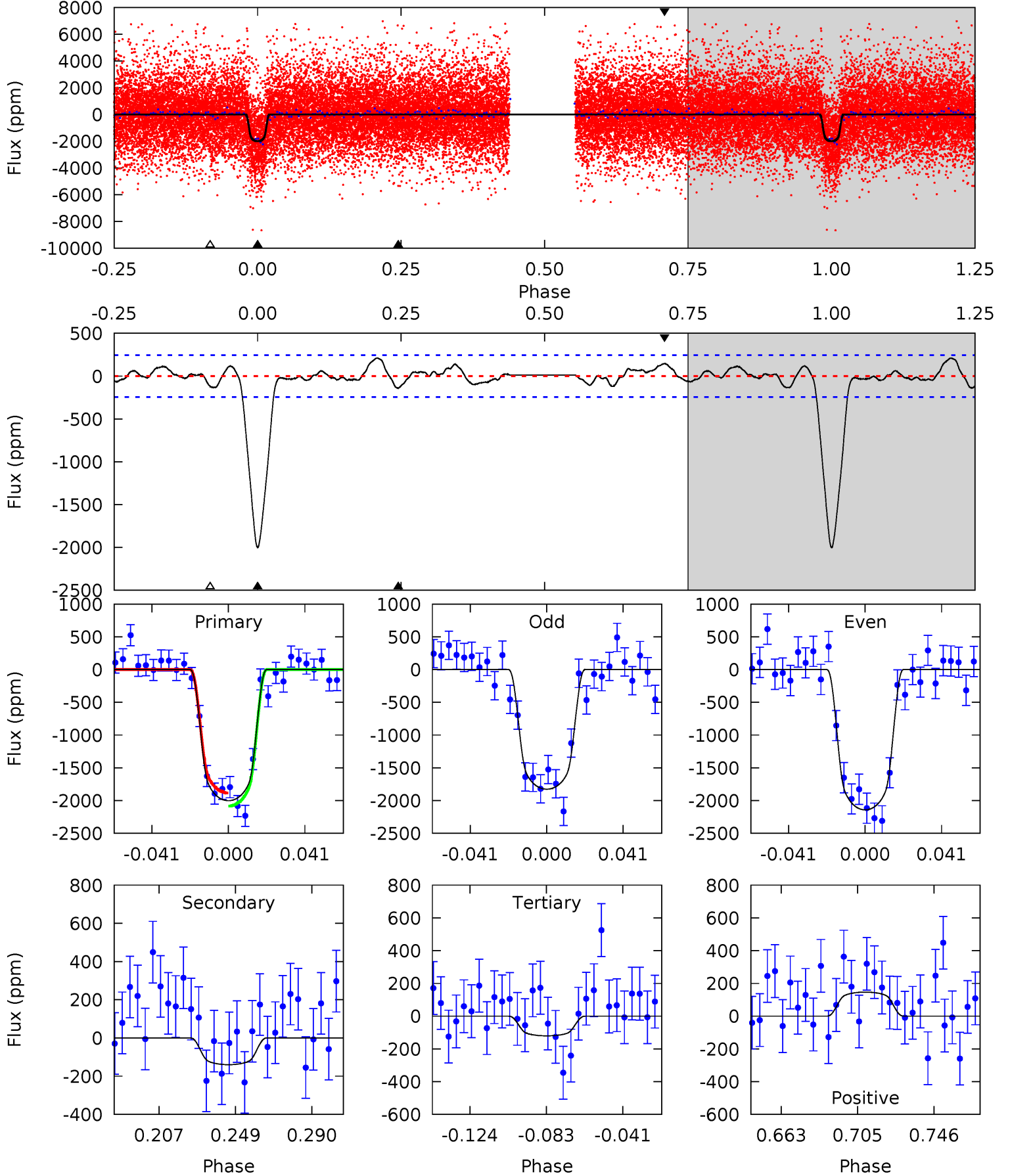
TCE 009719636-02 $P = 3.351580$ Days $T_0 = 132.616831$ (BKJD)



DV Model-Shift Uniqueness Test

009719636-02, P = 3.351589 Days, E = 132.613022 Days

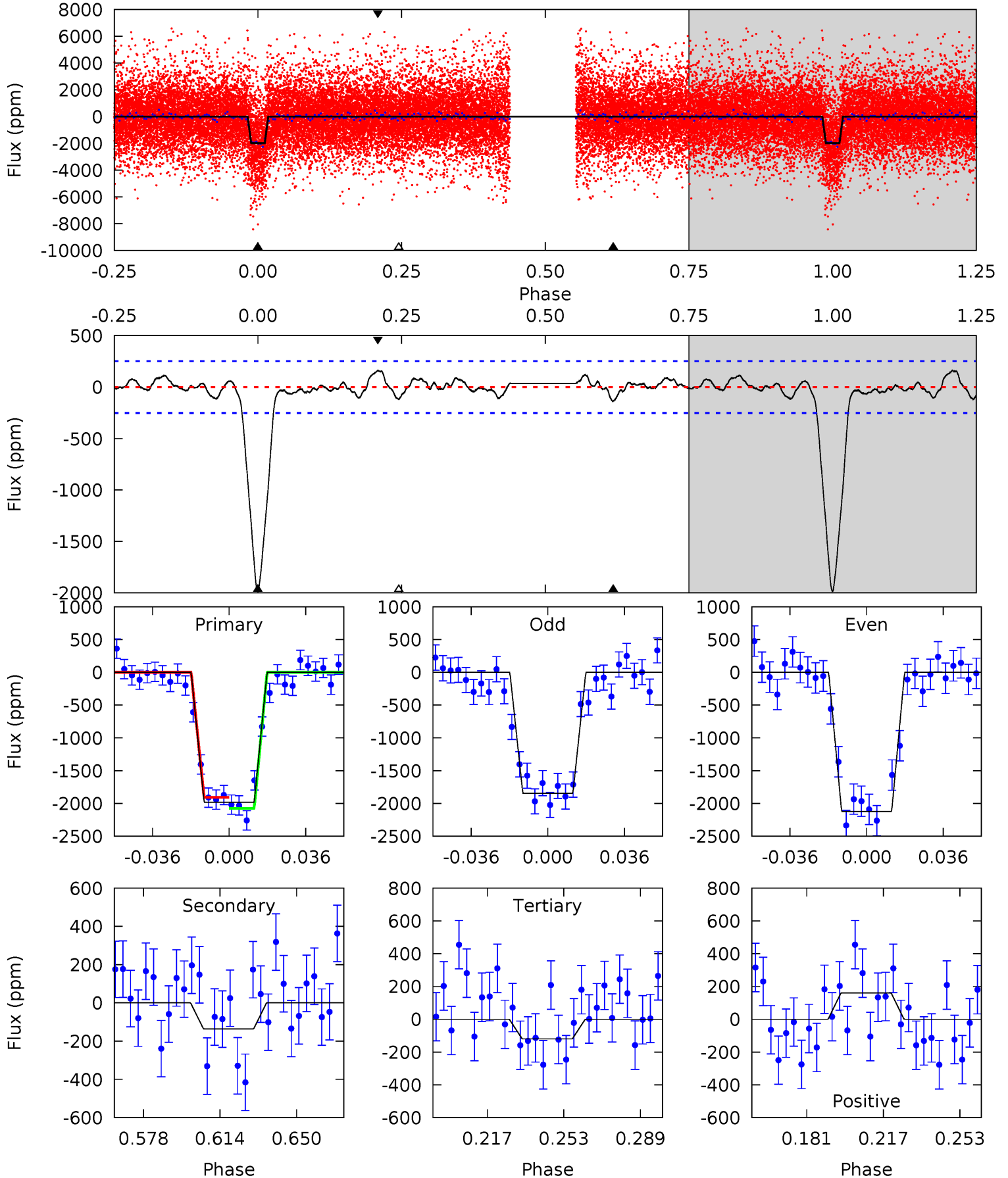
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
39.0	2.72	2.34	2.85	4.75	2.04	1.26	36.6	36.1	0.38	-0.13	3.09	0.92	0.10	1.96



Alt Model-Shift Uniqueness Test

009719636-02, P = 3.351580 Days, E = 132.616831 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
37.6	2.59	2.28	3.06	4.77	2.10	1.05	35.4	34.6	0.31	-0.47	2.62	1.00	0.08	1.62



Stellar Parameters For KIC 009719636

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5984^{+189}_{-210}	$4.408^{+0.090}_{-0.195}$	$-0.120^{+0.300}_{-0.300}$	$1.033^{+0.322}_{-0.161}$	$0.995^{+0.153}_{-0.126}$	$1.271^{+0.598}_{-0.656}$
	+3%/-4%	+2%/-4%	+250%/-250%	+31%/-16%	+15%/-13%	+47%/-52%
Source	KIC0	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 009719636-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-140 ± 51	$5.39^{+0.99}_{-0.86}$	1821^{+135}_{-109}	3476^{+244}_{-281}	$4.946^{+2.830}_{-2.118}$
Alt.	-136 ± 53	$5.31^{+0.92}_{-0.77}$	1818^{+143}_{-105}	3470^{+278}_{-314}	$4.962^{+2.985}_{-2.203}$

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

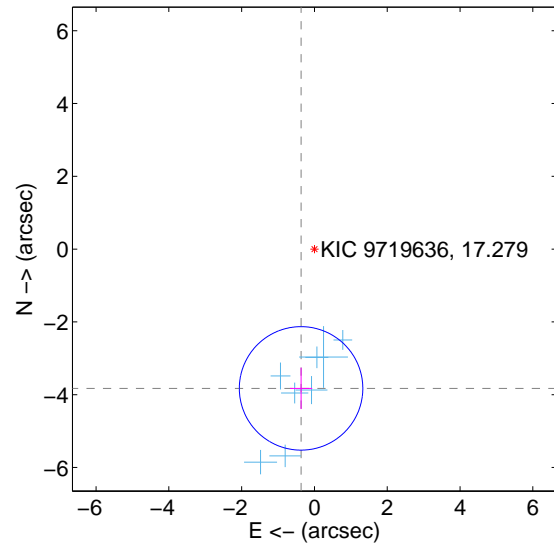
Supplemental centroid analysis for 009719636-02. Kepler magnitude: 17.28. Transit SNR 25.86

There are 8 quarters with good PRF difference image offsets

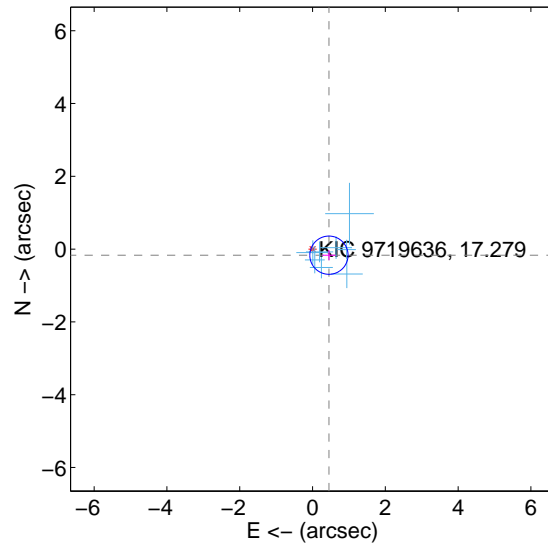
The OOT PRF centroid is offset from the target star catalog position by about 4.01 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	3.844 ± 0.565	6.80	0.367 ± 0.306	-3.827 ± 0.567
PRF-fit source offset from KIC position	0.481 ± 0.175	2.74	-0.451 ± 0.179	-0.167 ± 0.140
photometric centroid source offset	2.28 ± 0.24	9.35	-0.82 ± 0.14	2.13 ± 0.26

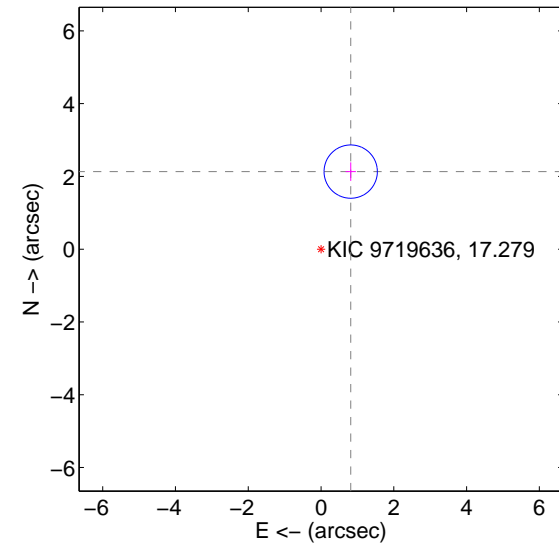
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids



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.

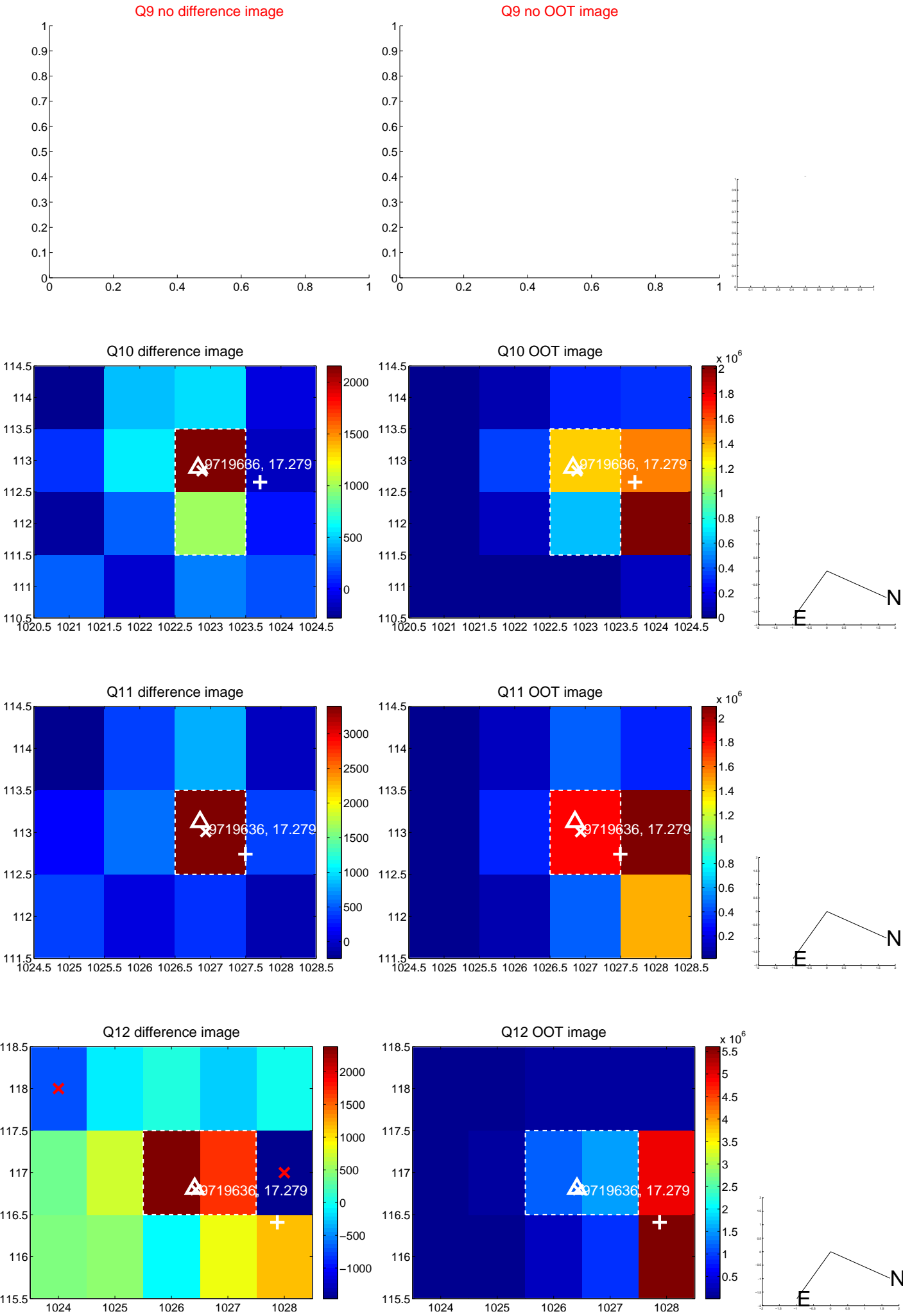
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



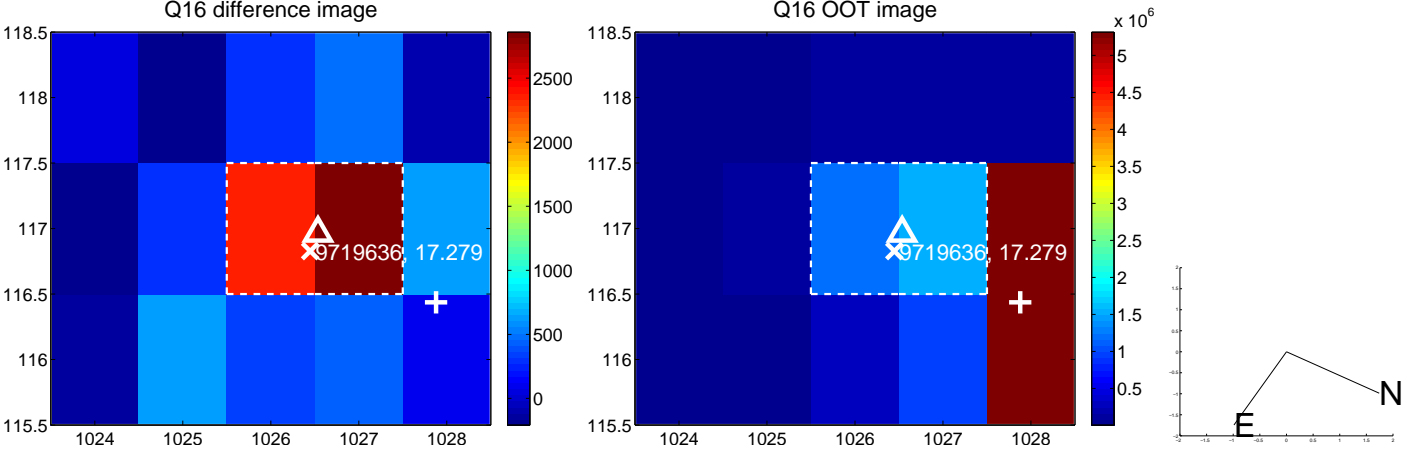
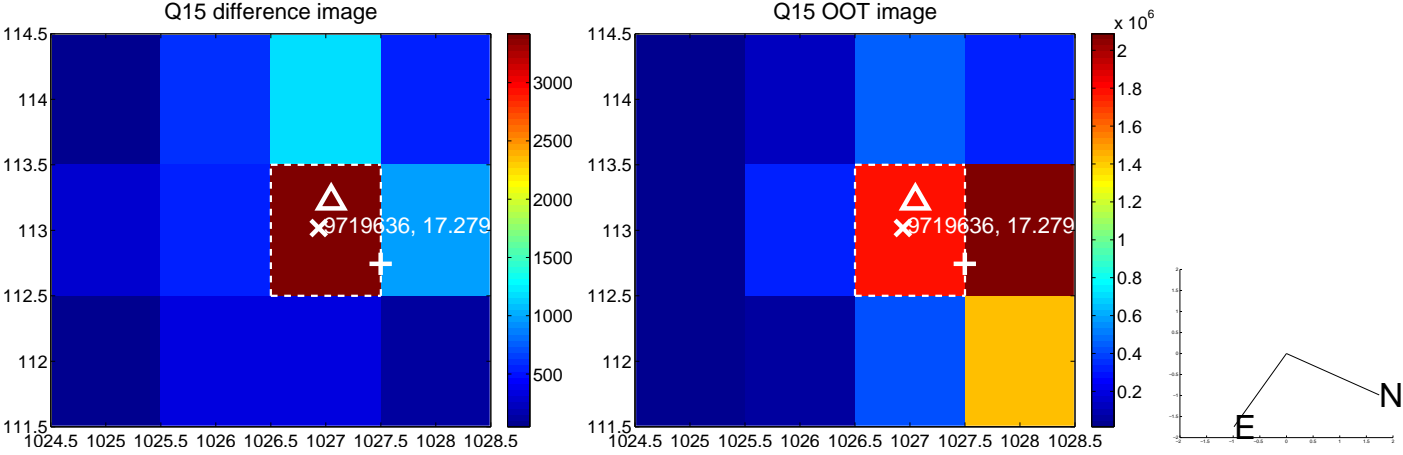
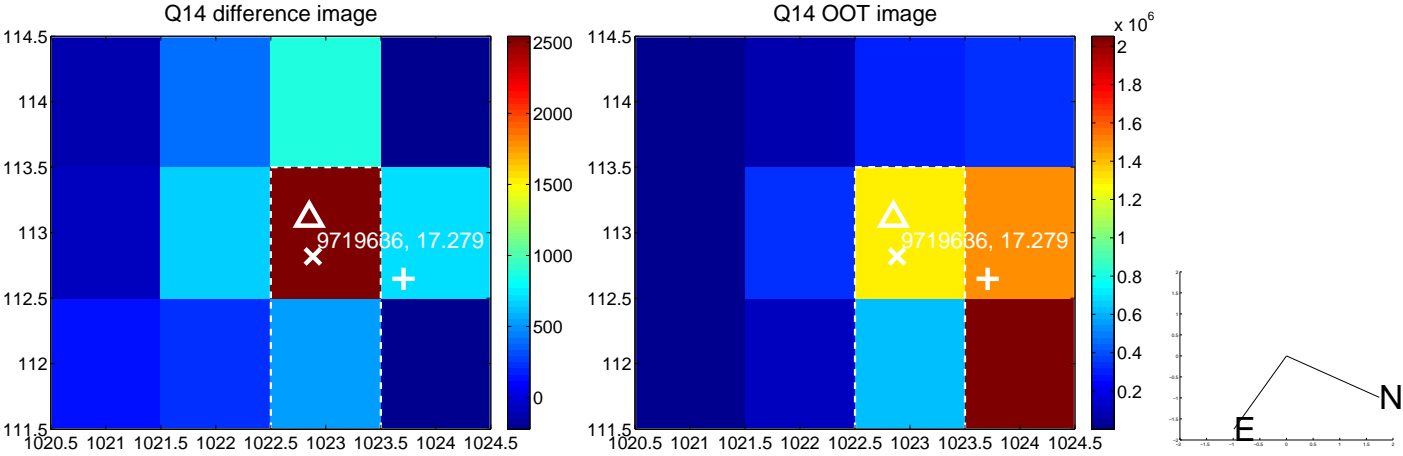
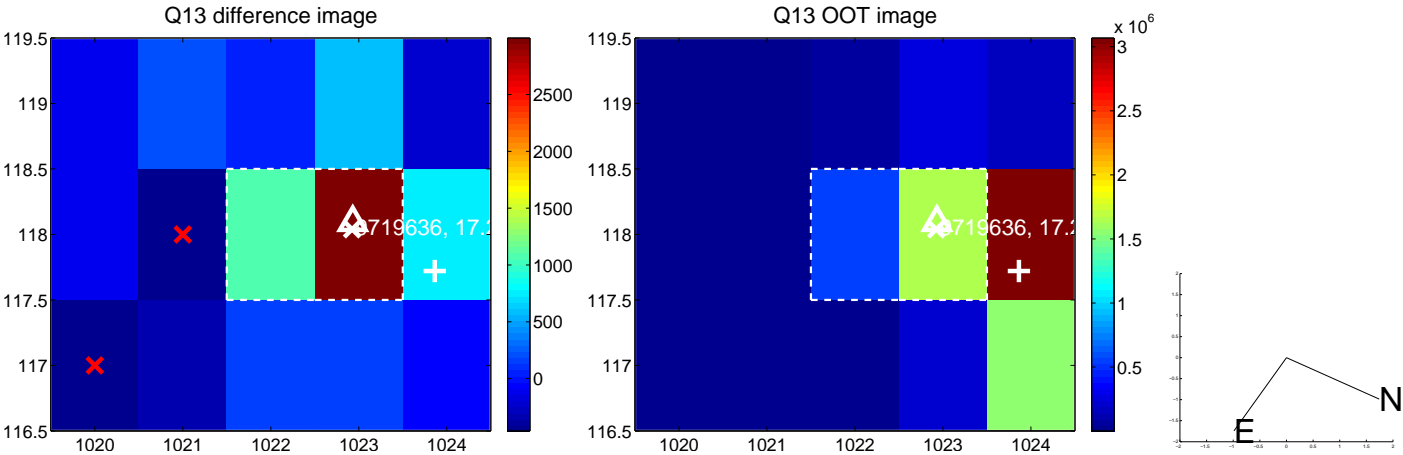
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



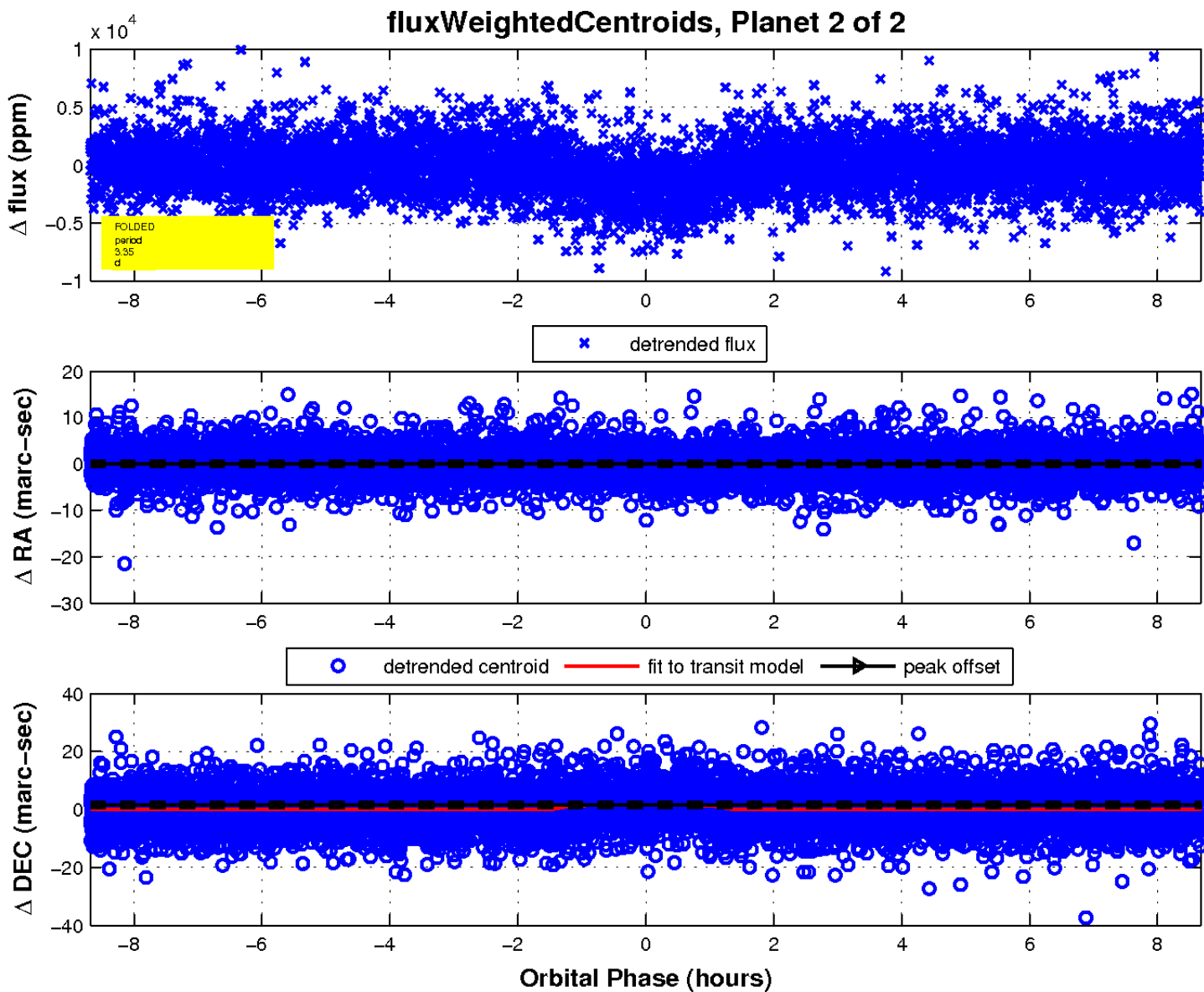
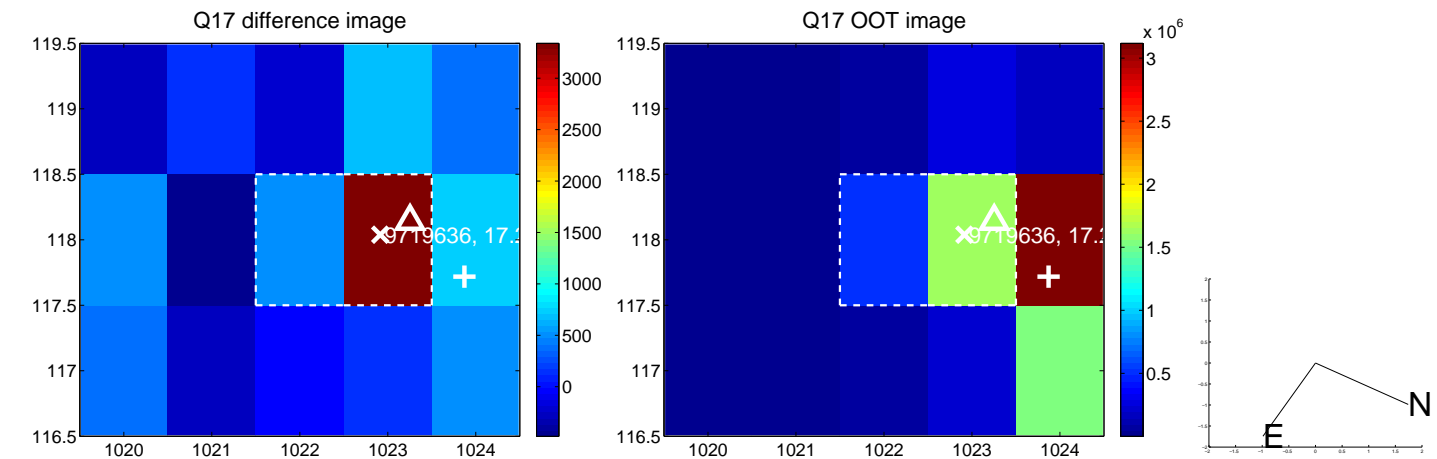
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

