

KIC 008240904

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})
008240904-01	OBS	1070.01	6.618330	135.346328	564.7	3.899	27.7	29.7	1.29	5529	3.52	305.57
008240904-02	OBS	1070.02	107.721695	138.748682	1394.2	8.333	20.7	22.7	1.29	5529	5.17	7.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008240904-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008240904-02	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.

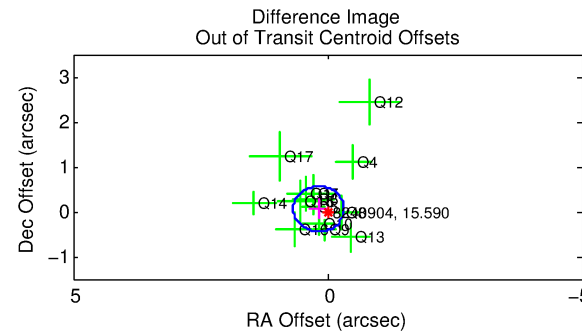
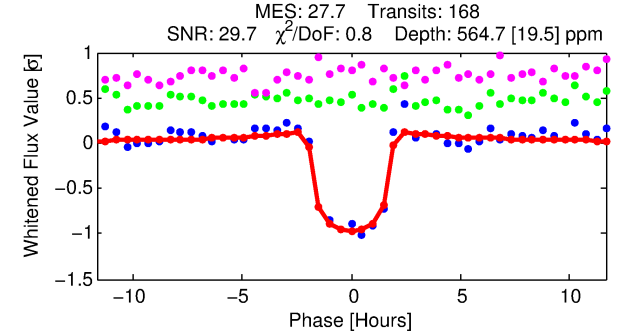
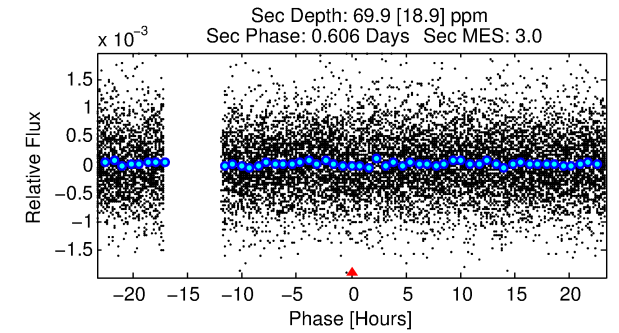
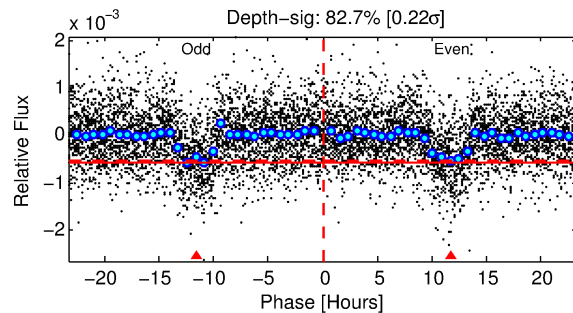
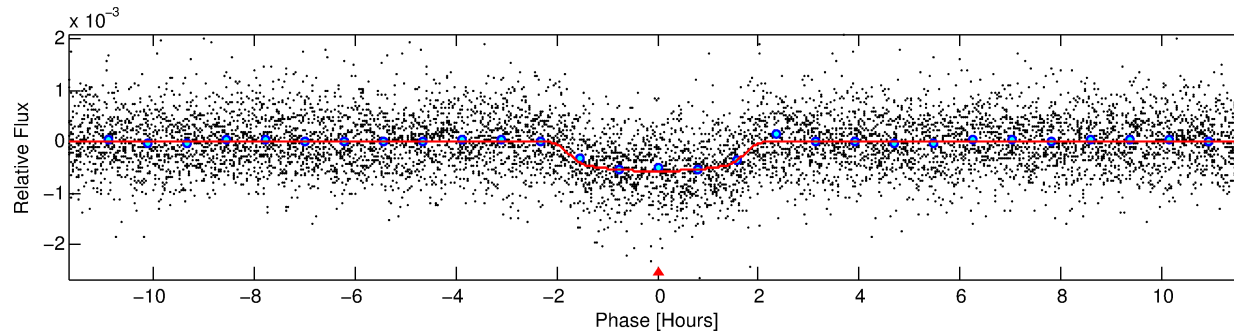
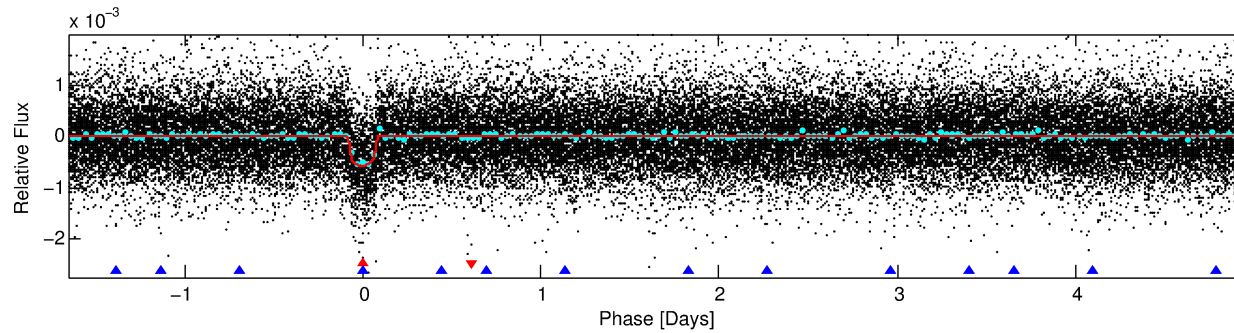
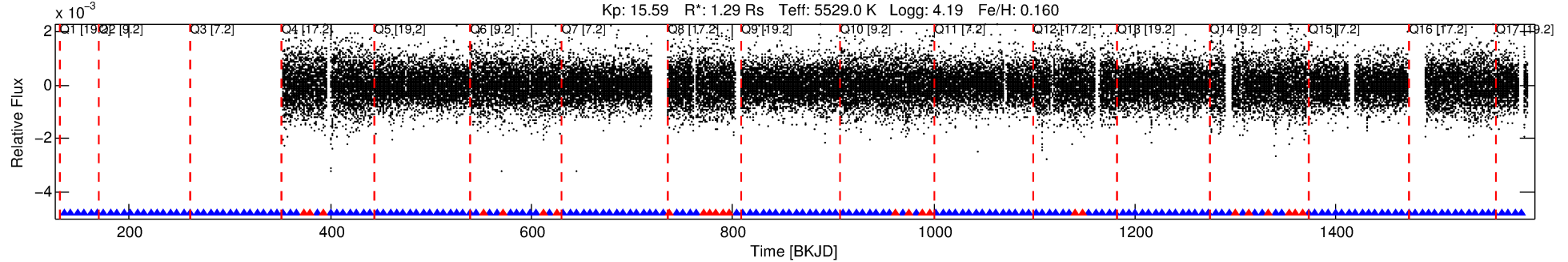
Ephemeris Match Information For 008240904-01

No Significant Match Found

DV One-Page Summary

KIC: 8240904 Candidate: 1 of 2 Period: 6.618 d
KOI: K01070.01 Name: Kepler-266b Corr: 0.975

Kp: 15.59 R*: 1.29 Rs Teff: 5529.0 K Logg: 4.19 Fe/H: 0.160



DV Fit Results:

Period = 6.61833 [0.00002] d
Epoch = 135.3463 [0.0027] BKJD
Rp/R* = 0.0249 [0.0043]
a/R* = 7.57 [5.40]
b = 0.85 [0.25]
Seff = 305.57 [99.81]
Teq = 1066 [87] K
Rp = 3.52 [0.99] Re
a = 0.0677 [0.0139] AU
Ag = 14.23 [7.75] [1.71σ]
Teffp = 3201 [355] K [5.84σ]

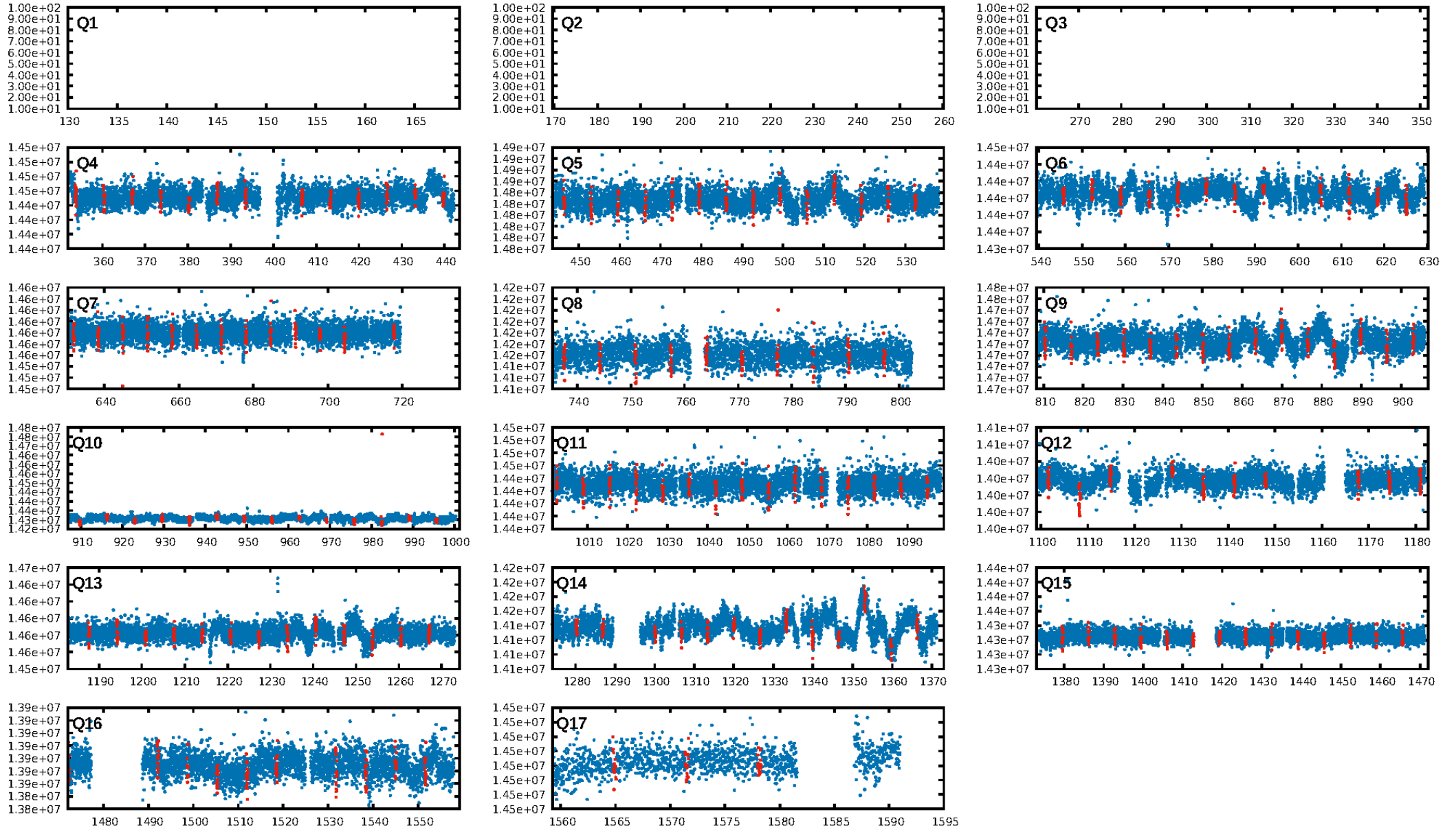
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [263.75σ]
ModelChiSquare2-sig: 99.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.09e-160
RollingBand-fgt: 0.85 [140/165]
GhostDiagnostic-chr: 6.109
Centroid-sig: 2.1%
Centroid-so: 0.915 arcsec [1.70σ]
OotOffset-rm: 0.186 arcsec [1.11σ]
KicOffset-rm: 0.248 arcsec [1.57σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 0.93 [13/14]
DiffImageOverlap-fno: 1.00 [14/14]

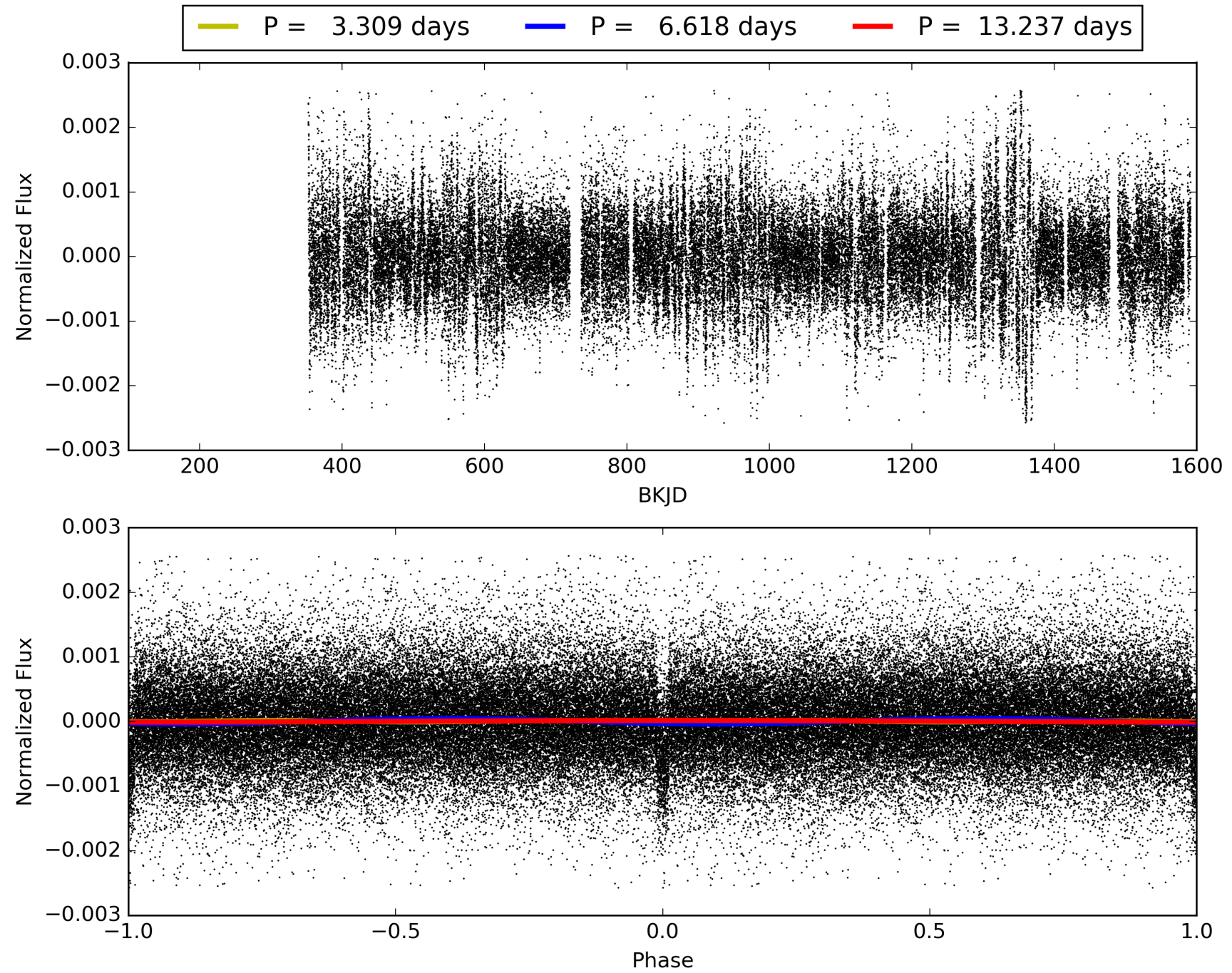
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:18:58 Z

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

TCE 008240904-01, PDC Light Curves

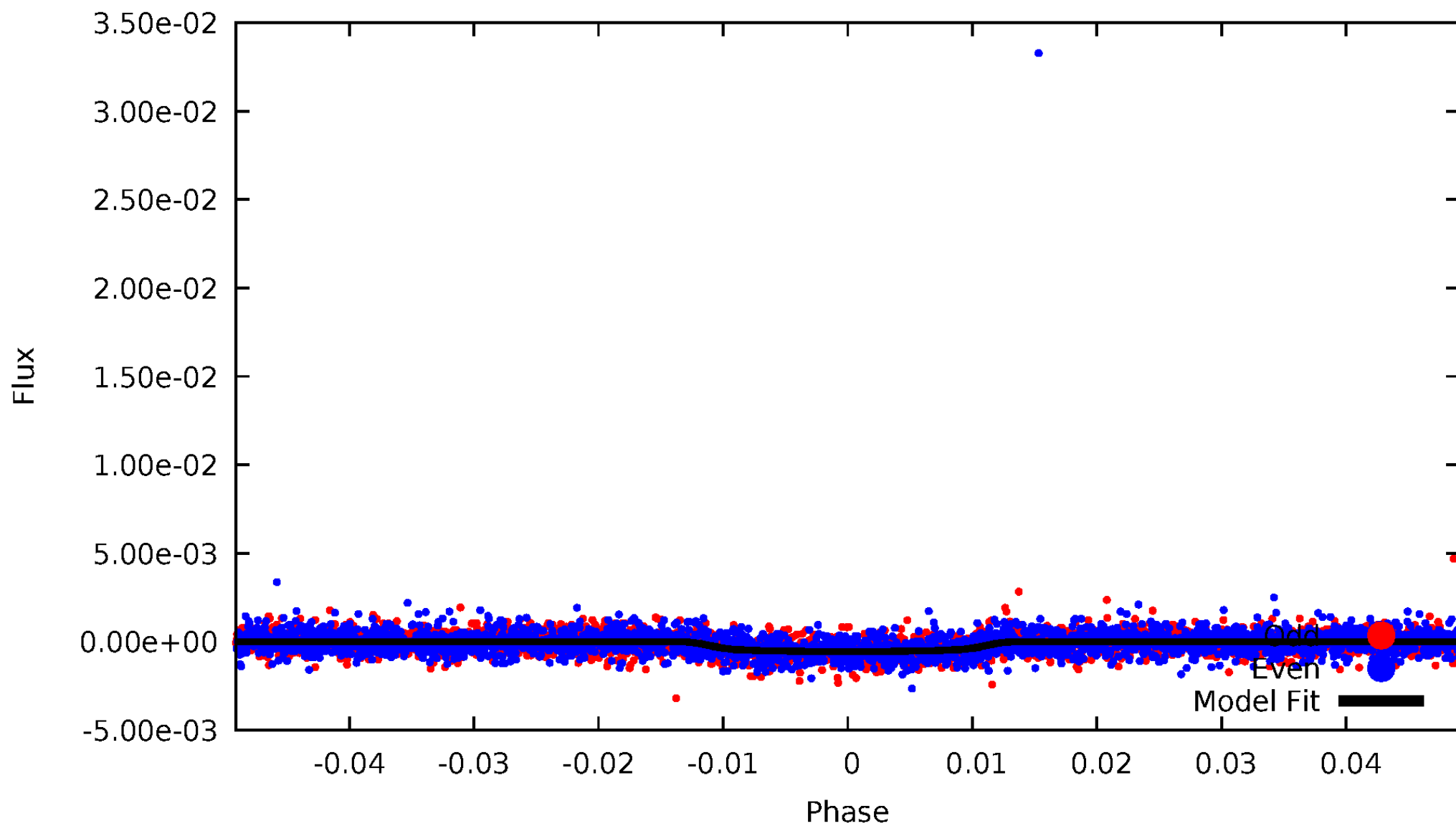


TCE 008240904-01



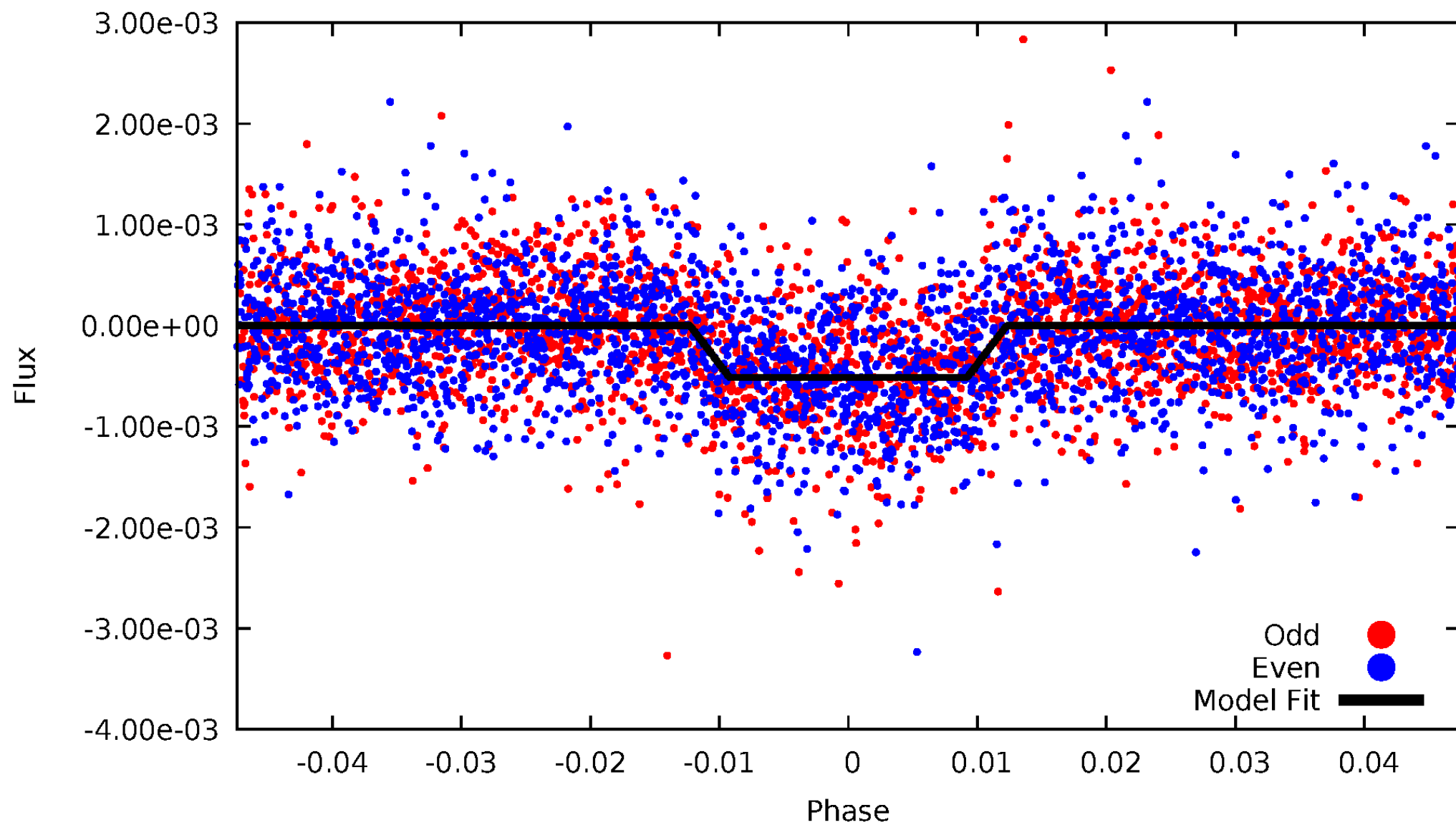
DV Odd/Even

TCE 008240904-01



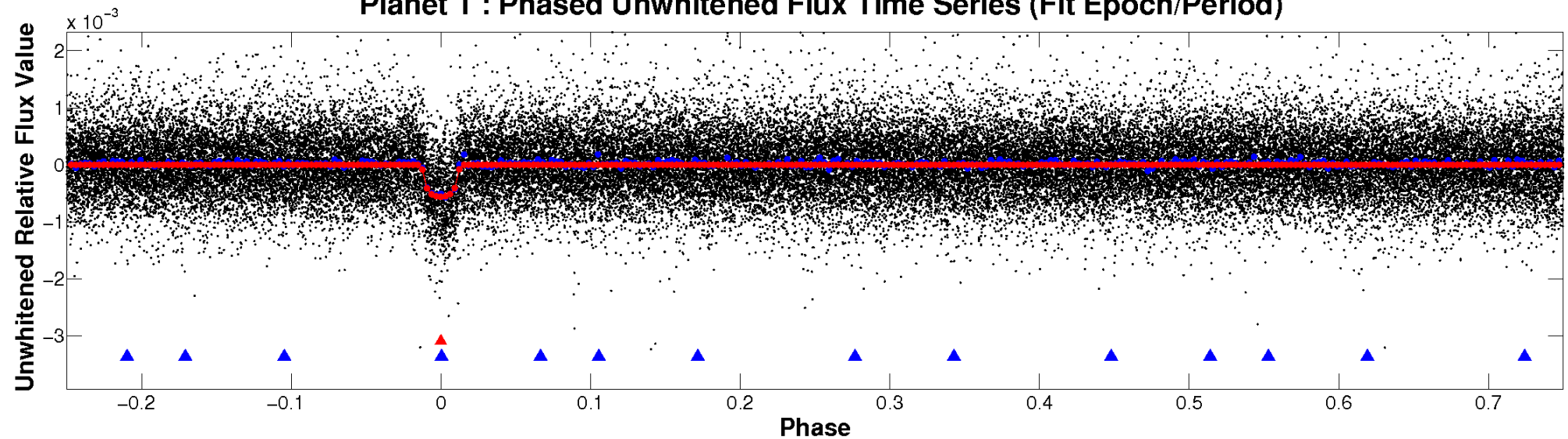
ALT Odd/Even

TCE 008240904-01

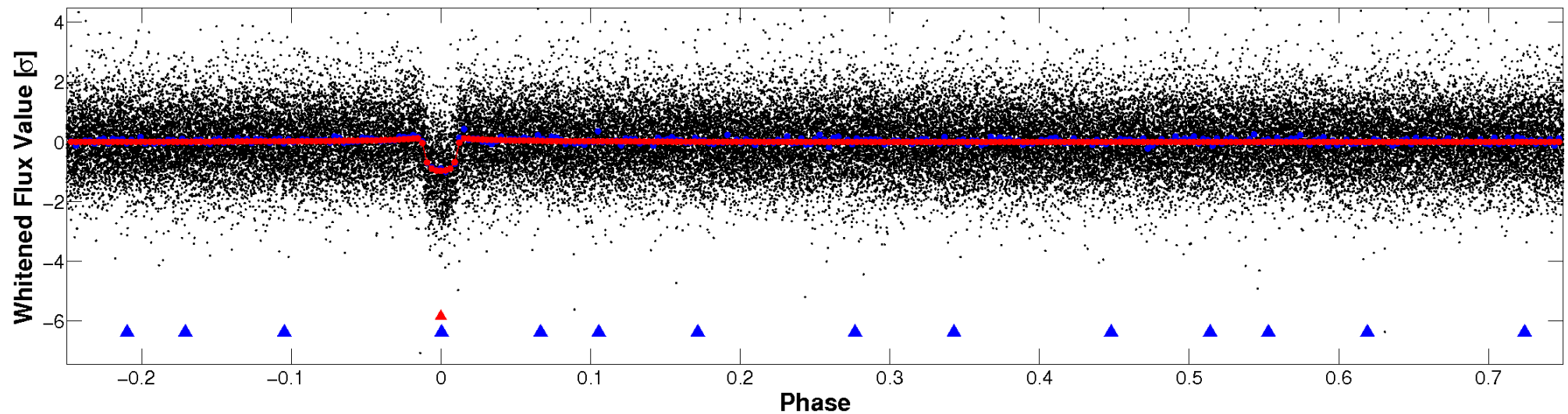


Non-Whitened Vs. Whitened Light Curve

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

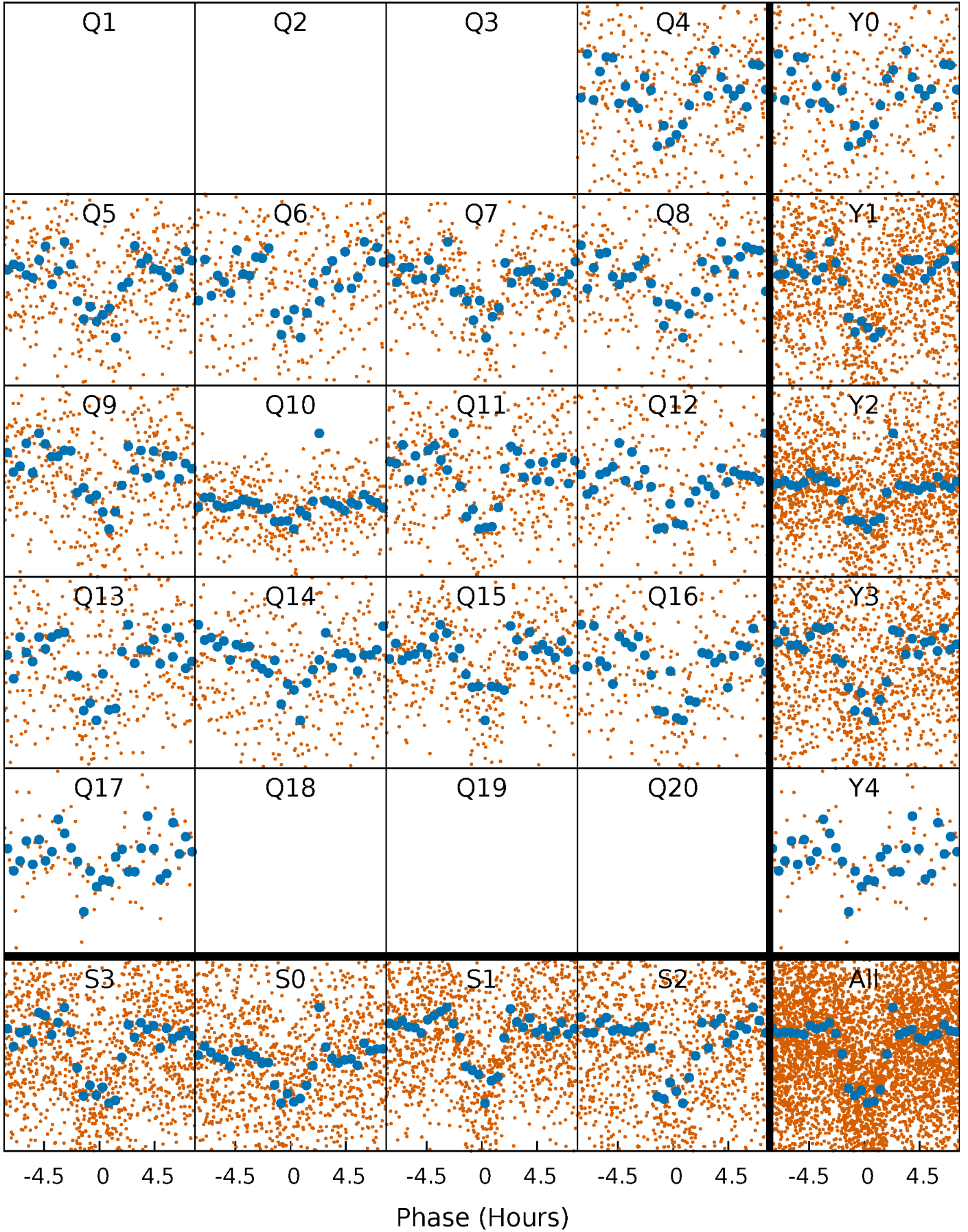


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



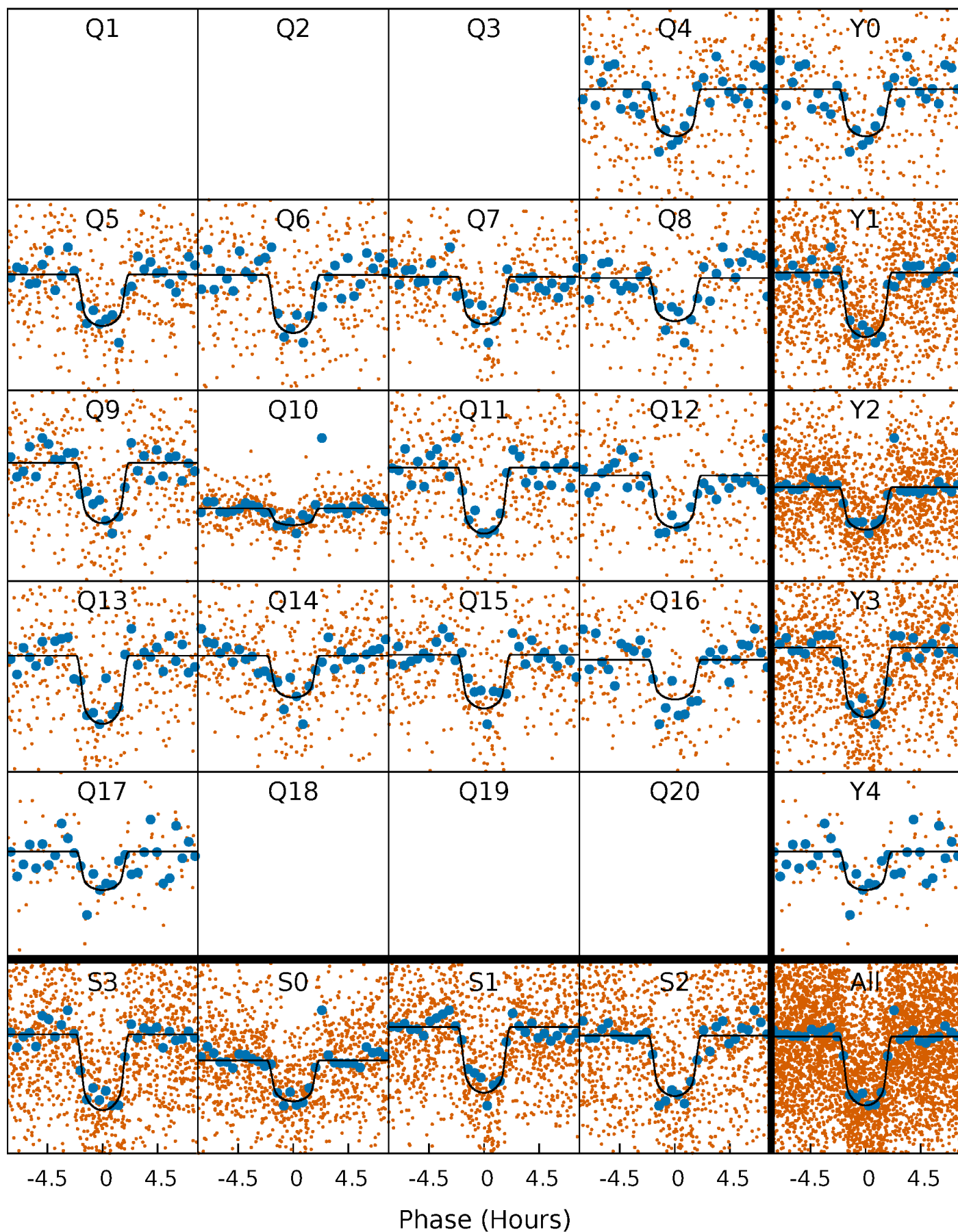
PDC Quarter-Phased Transit Curves

TCE 008240904-01 P= 6.618330 Days $T_0=135.346328$ (BKJD)



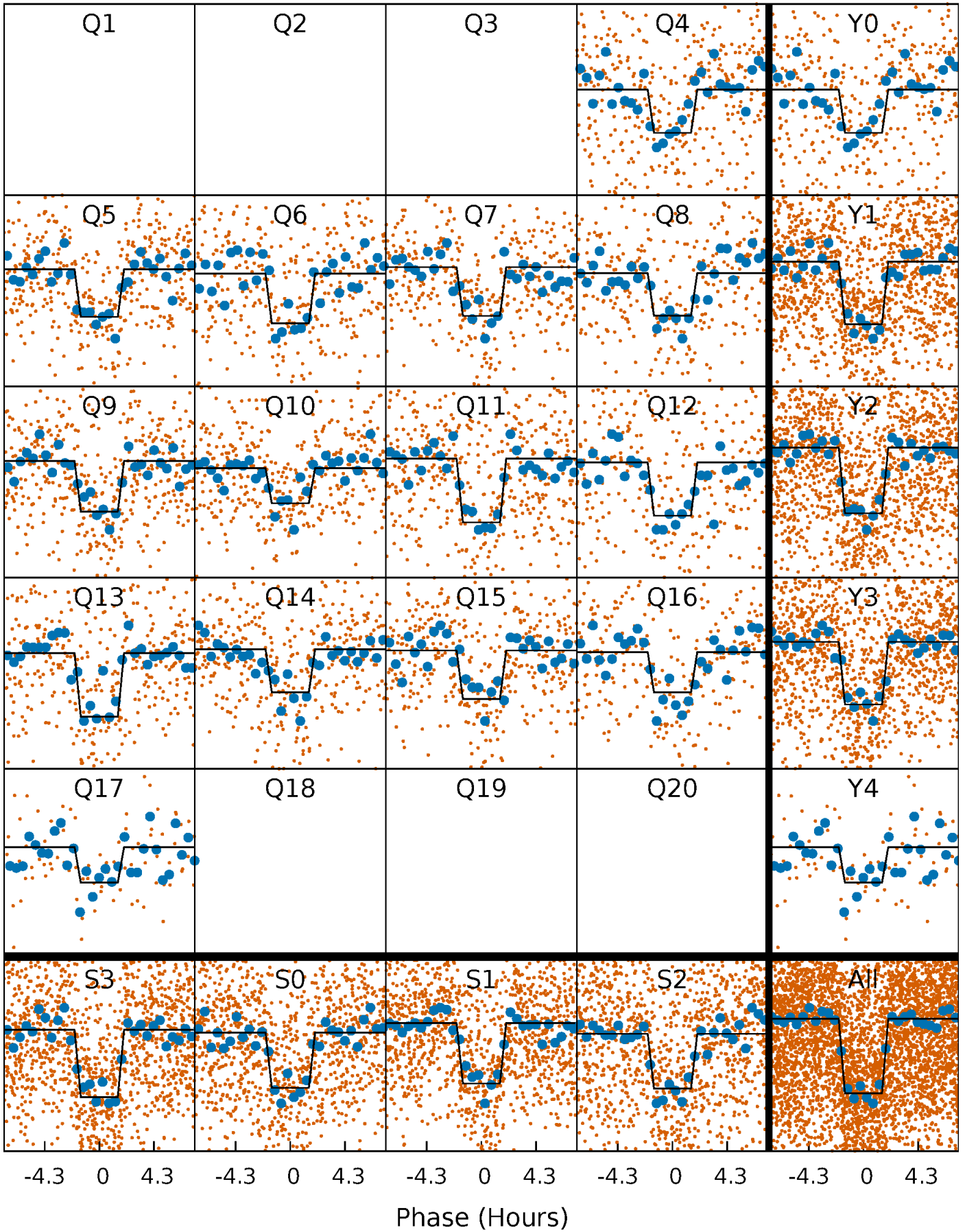
DV Quarter-Phased Transit Curves

TCE 008240904-01 P= 6.618330 Days $T_0=135.346328$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

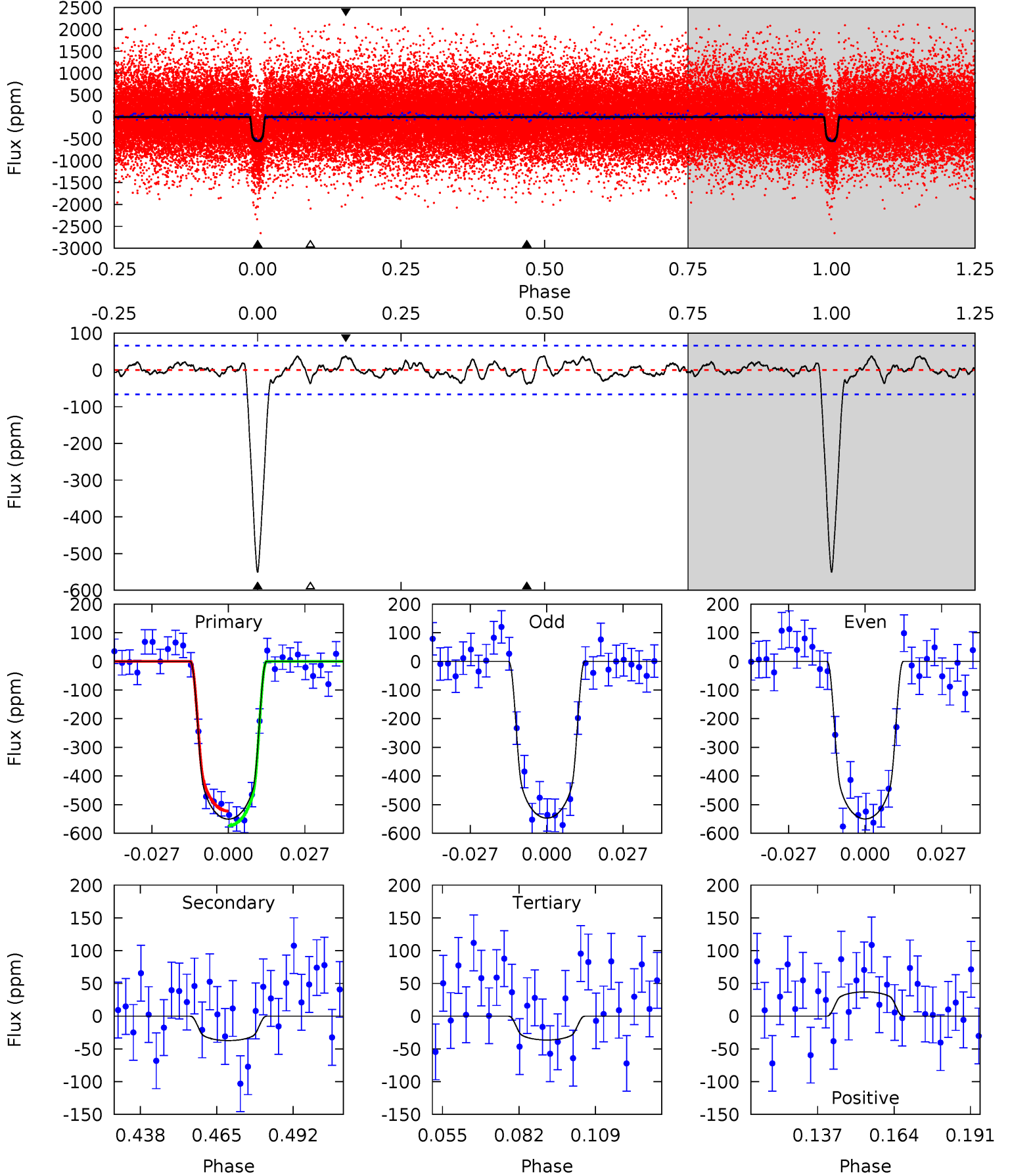
TCE 008240904-01 P= 6.618302 Days $T_0=135.350199$ (BKJD)



DV Model-Shift Uniqueness Test

008240904-01, P = 6.618330 Days, E = 135.346328 Days

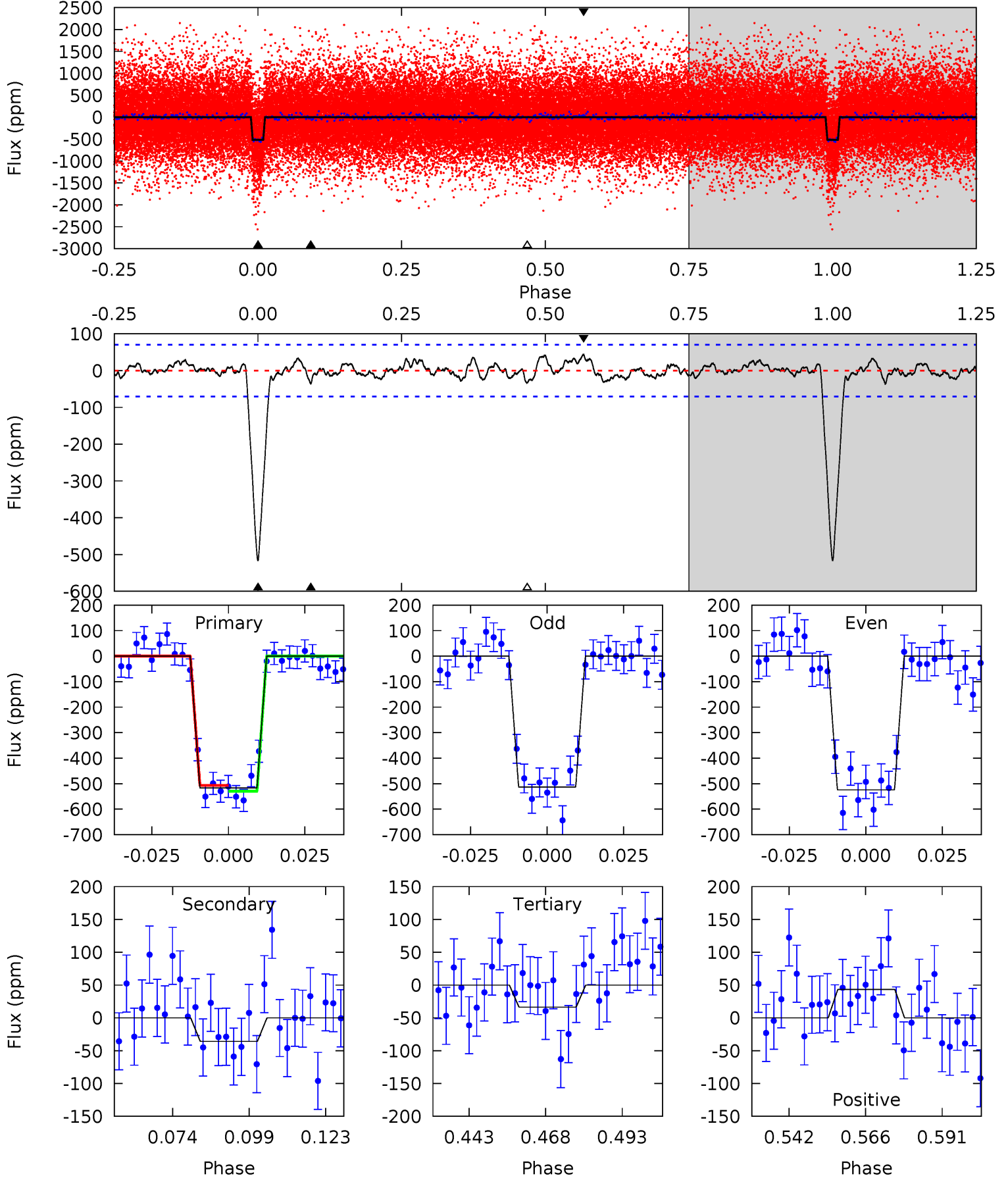
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
40.1	2.72	2.65	2.70	4.83	2.21	1.11	37.4	37.4	0.07	0.02	0.11	1.06	0.07	1.87



Alt Model-Shift Uniqueness Test

008240904-01, P = 6.618302 Days, E = 135.350199 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.6	2.47	2.33	2.99	4.85	2.25	1.08	33.3	32.6	0.15	-0.51	0.40	1.01	0.08	0.78



Stellar Parameters For KIC 008240904

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5529^{+83}_{-66}	$4.190^{+0.186}_{-0.108}$	$0.160^{+0.150}_{-0.100}$	$1.294^{+0.214}_{-0.285}$	$0.947^{+0.067}_{-0.044}$	$0.615^{+0.577}_{-0.199}$
	+2%/-1%	+4%/-3%	+94%/-62%	+17%/-22%	+7%/-5%	+94%/-32%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 008240904-01 / KOI 1070.01

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-37 ± 14	$3.48^{+0.71}_{-0.75}$	1485^{+66}_{-90}	3258^{+277}_{-257}	$7.811^{+5.873}_{-3.524}$
Alt.	-36 ± 15	$3.16^{+0.71}_{-0.69}$	1485^{+72}_{-90}	3337^{+288}_{-313}	$8.812^{+6.809}_{-4.212}$

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

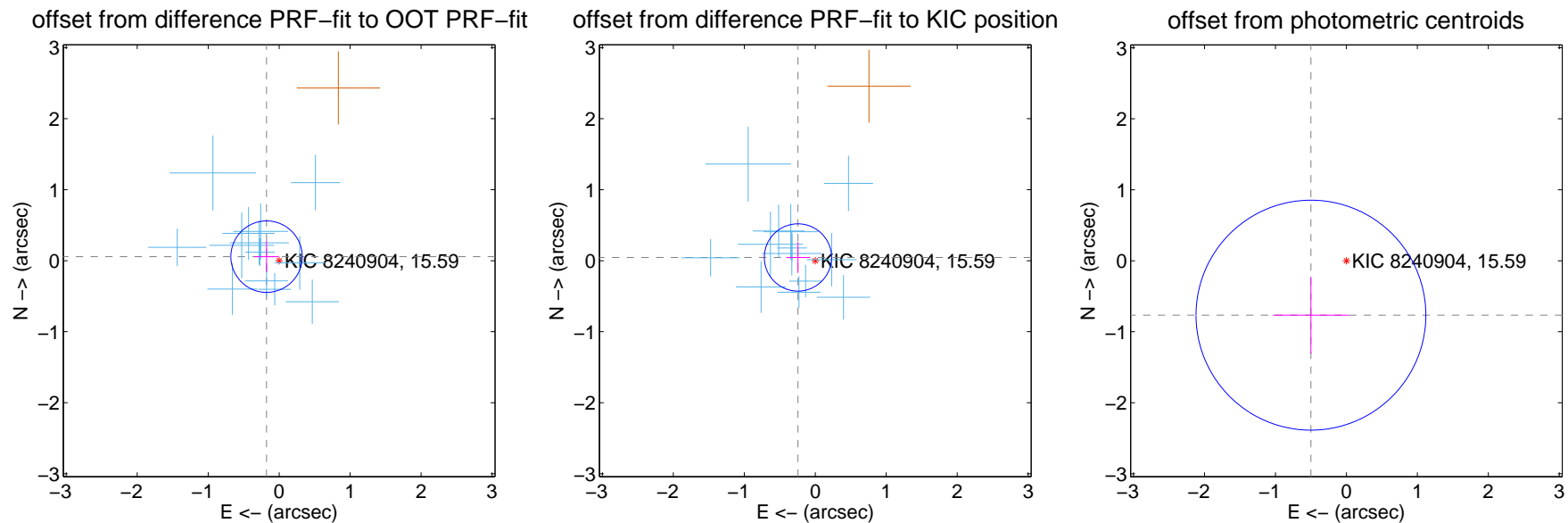
DV Centroid Data

Supplemental centroid analysis for 008240904-01. Kepler magnitude: 15.59. Transit SNR 29.67

There are 13 quarters with good PRF difference image offsets

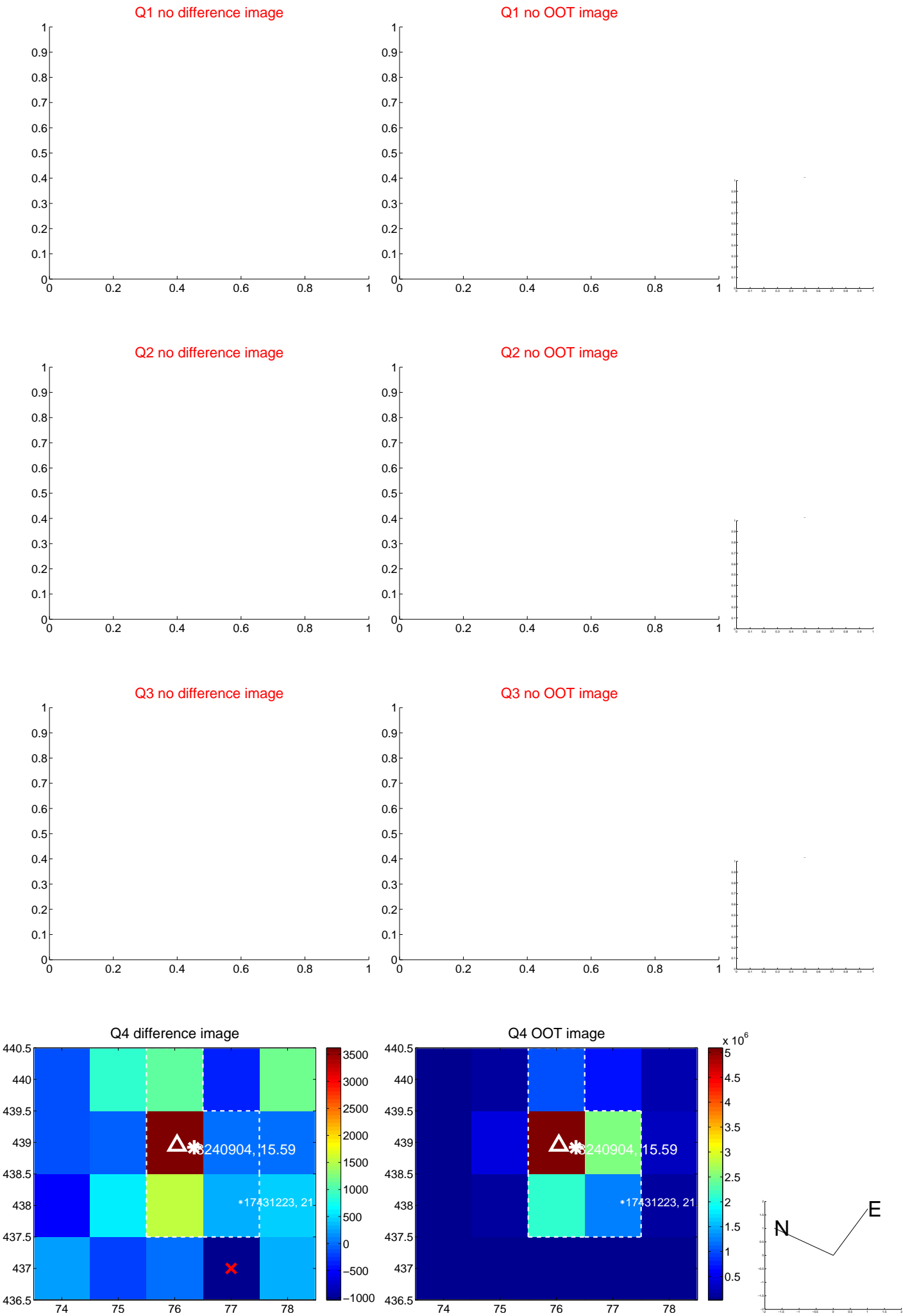
The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.186 ± 0.168	1.11	0.177 ± 0.173	0.057 ± 0.220
PRF-fit source offset from KIC position	0.248 ± 0.158	1.57	0.244 ± 0.164	0.045 ± 0.217
photometric centroid source offset	0.91 ± 0.54	1.70	0.50 ± 0.54	-0.77 ± 0.54

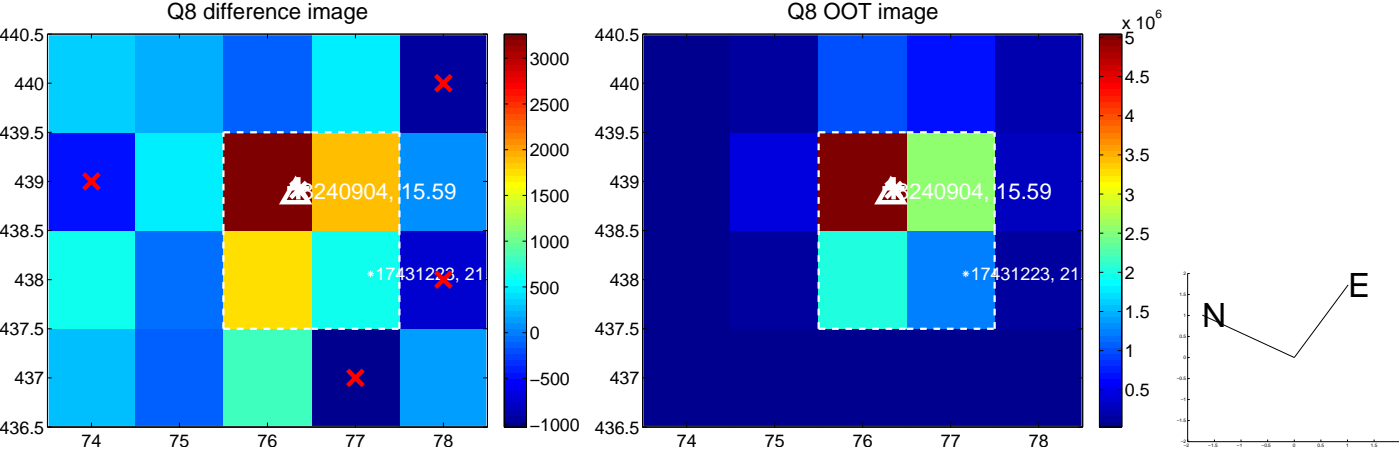
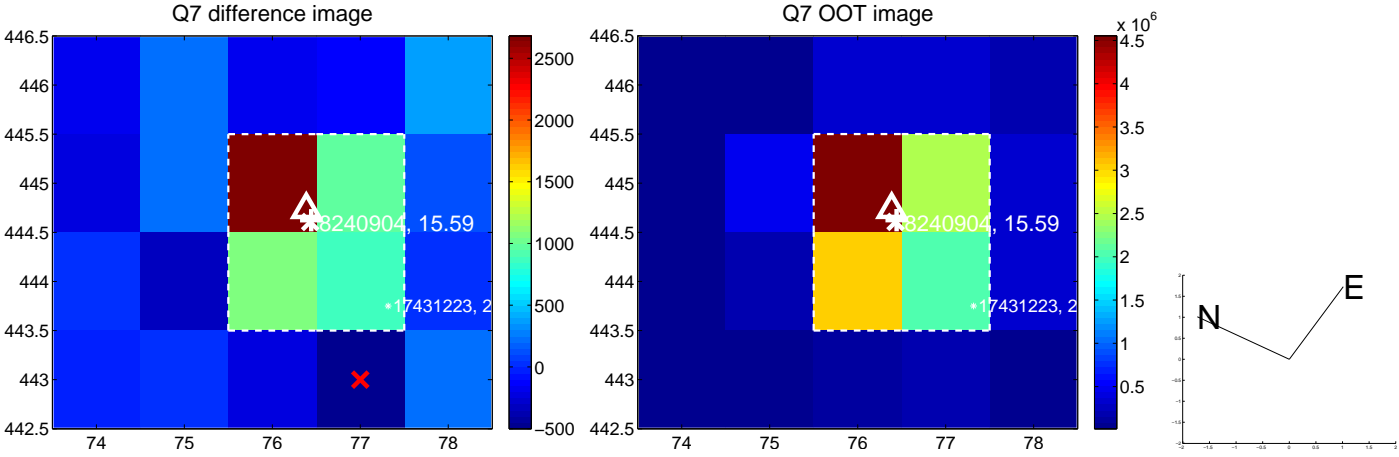
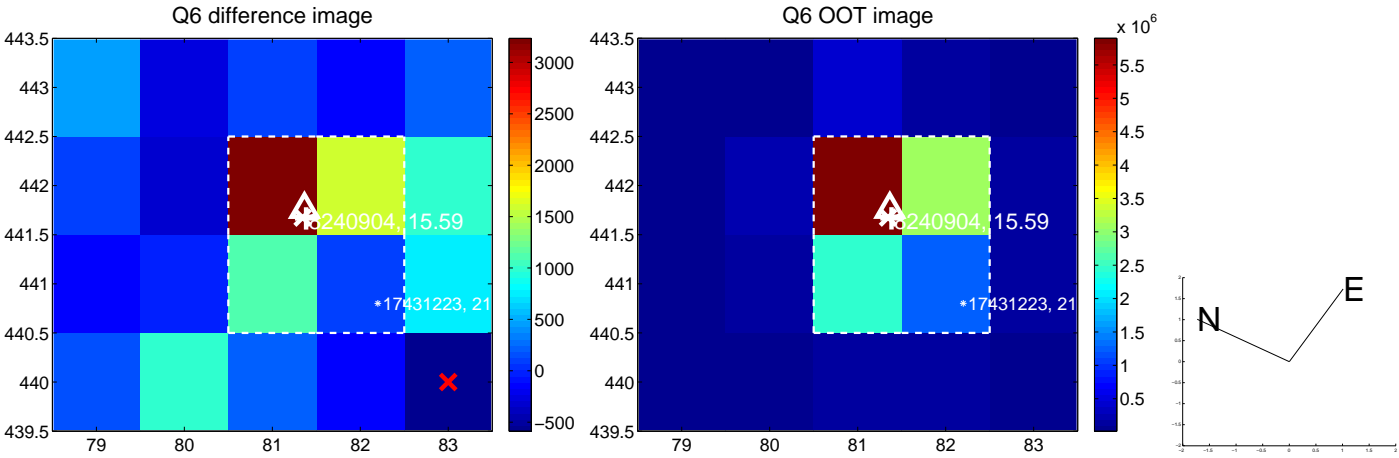
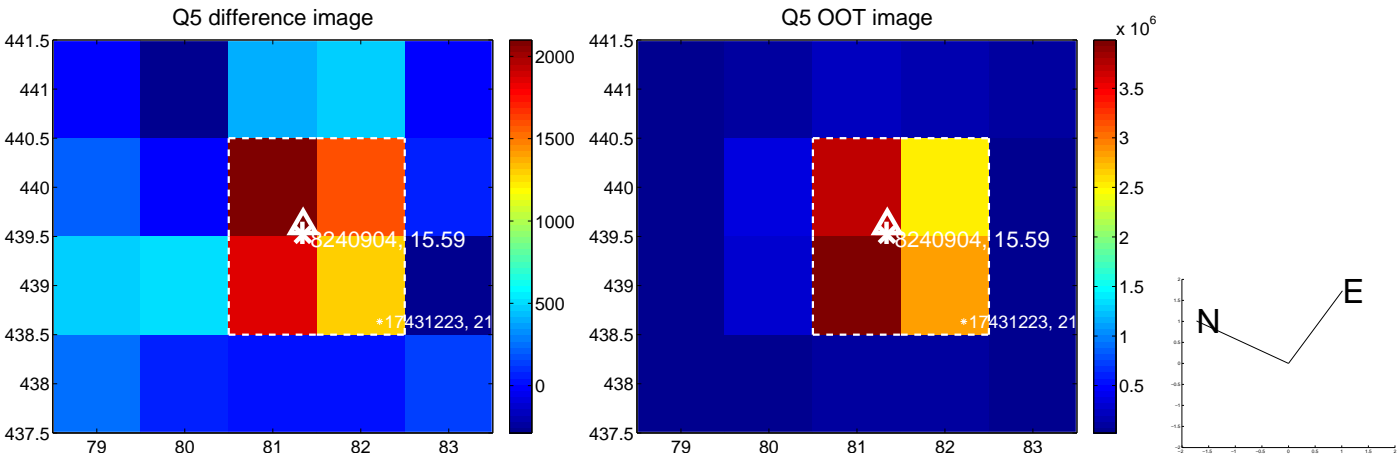


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

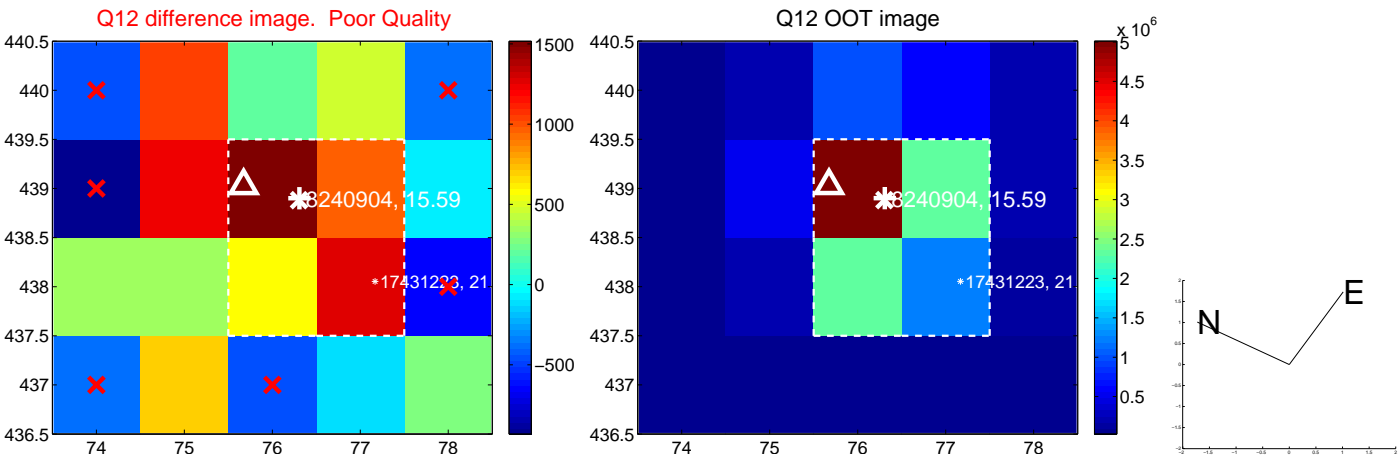
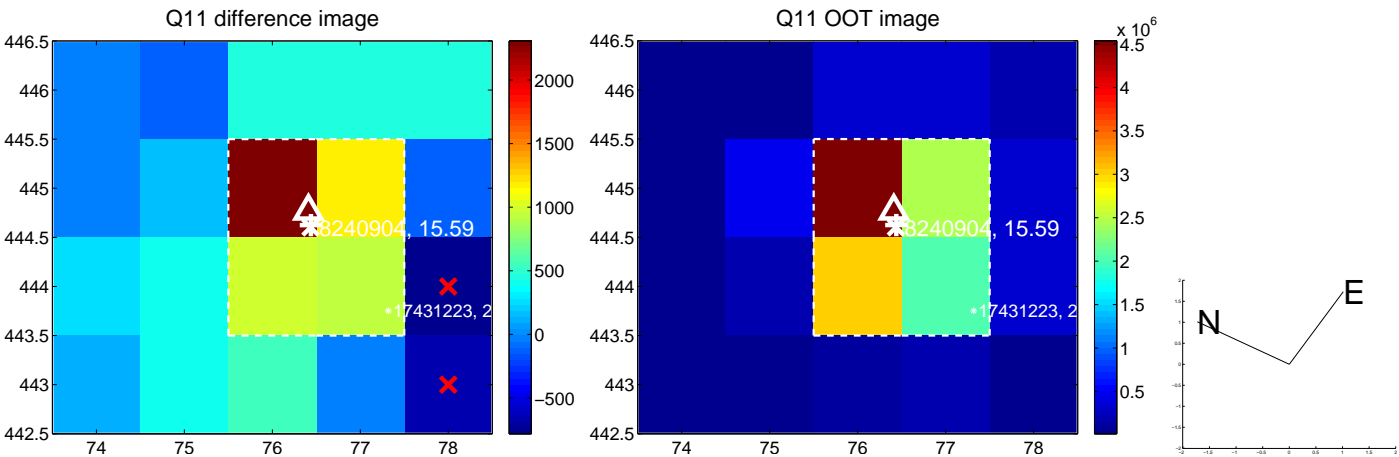
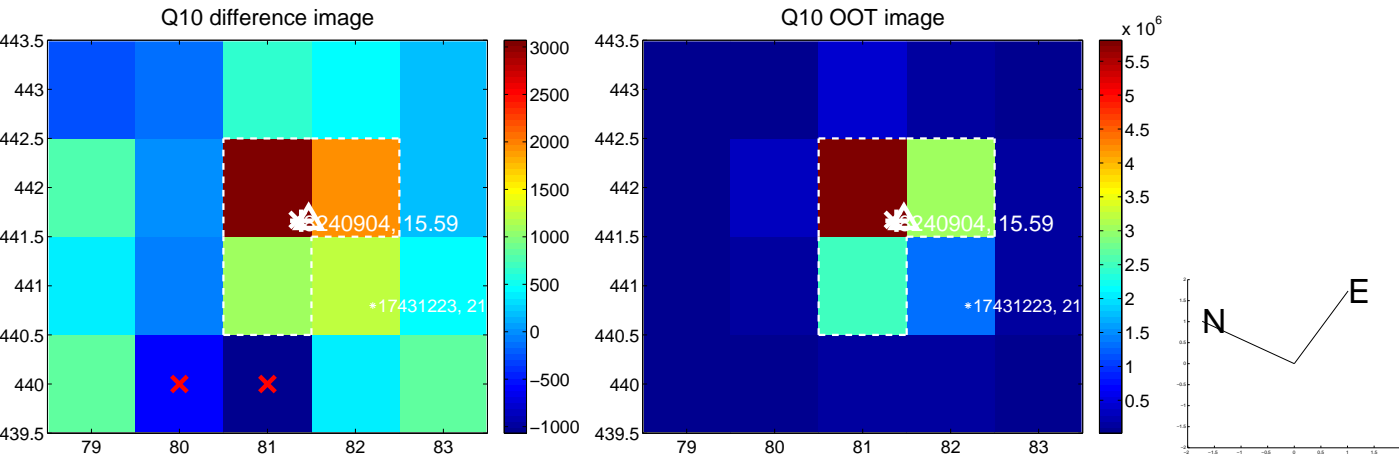
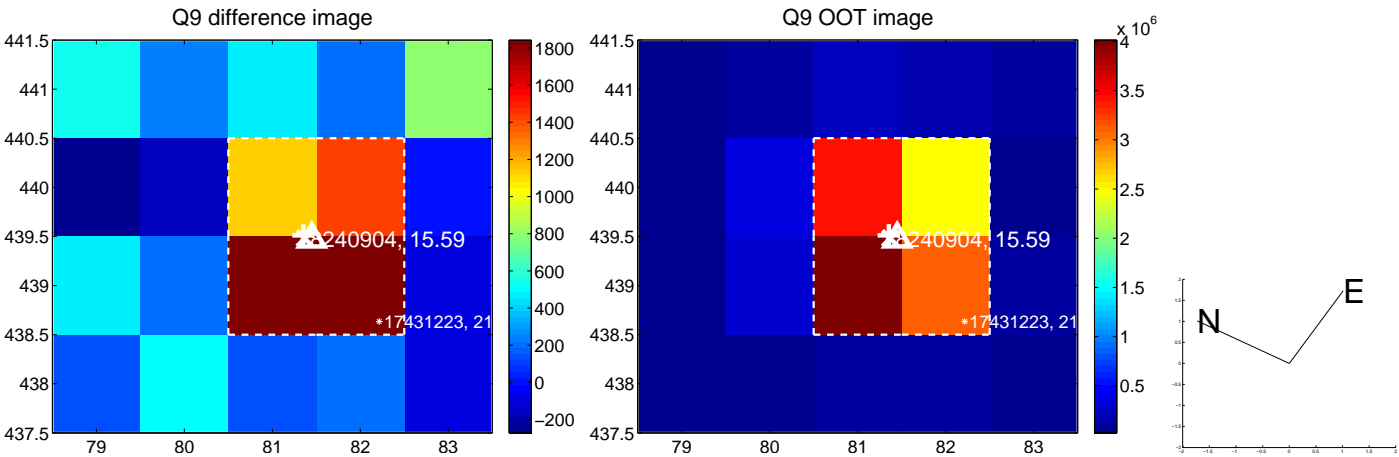
white \times : KIC target position; $+$: OOT centroid; Δ : difference centroid. red \times : large negative pixel value.



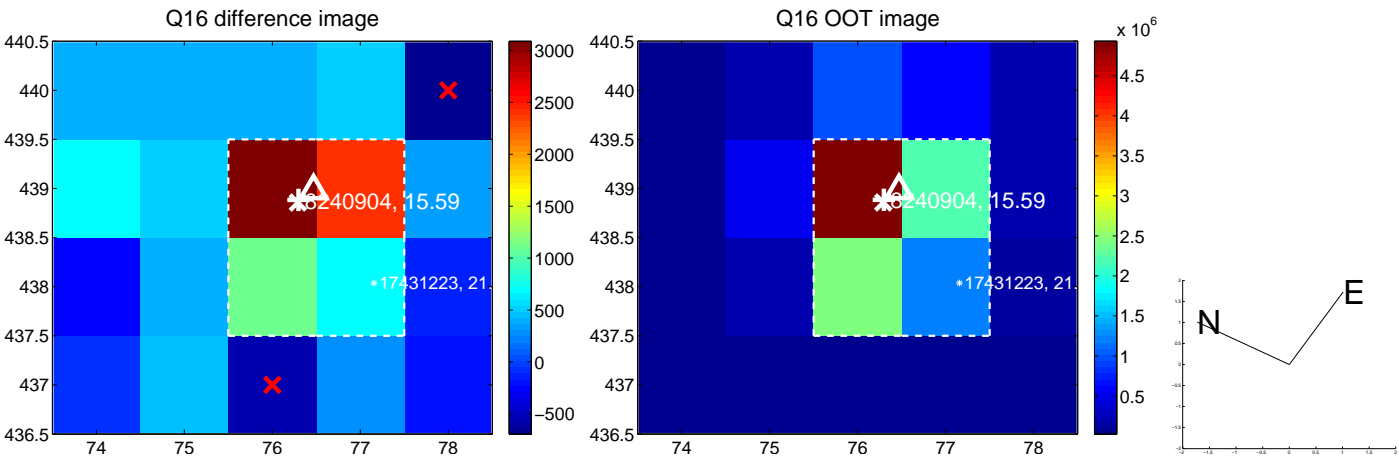
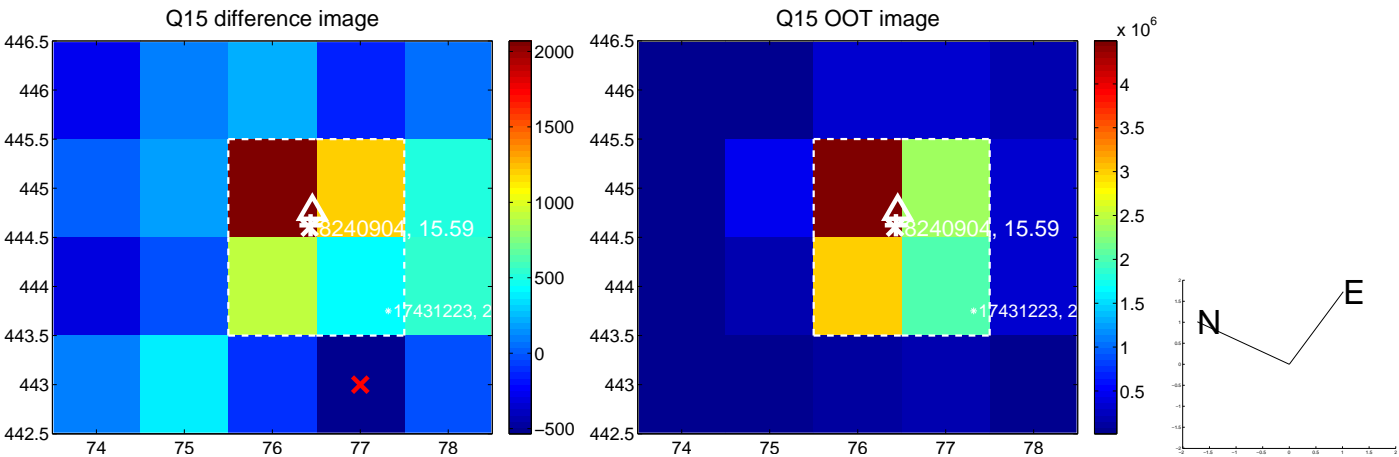
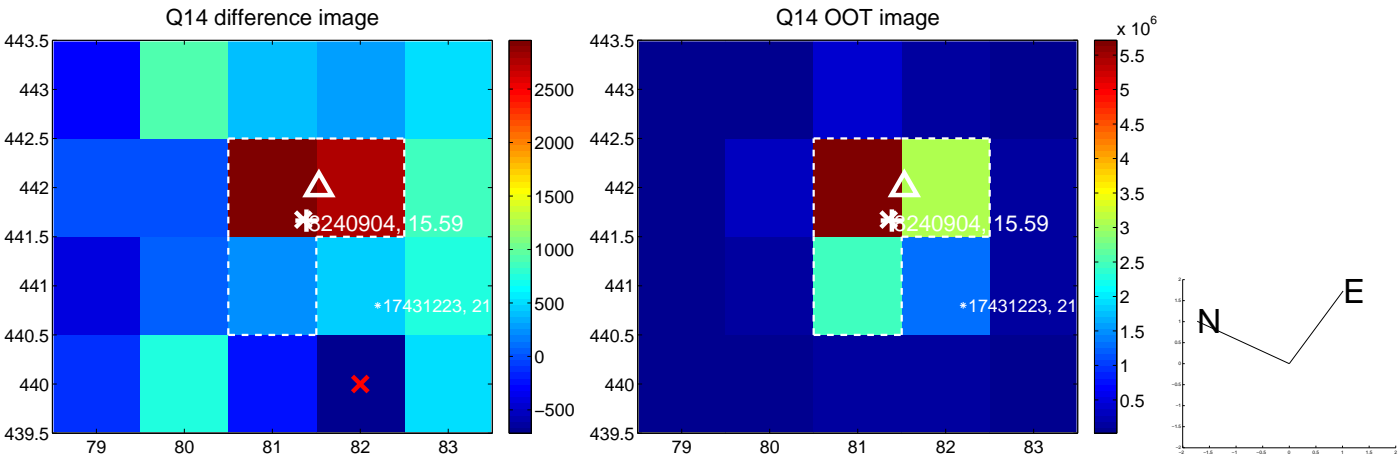
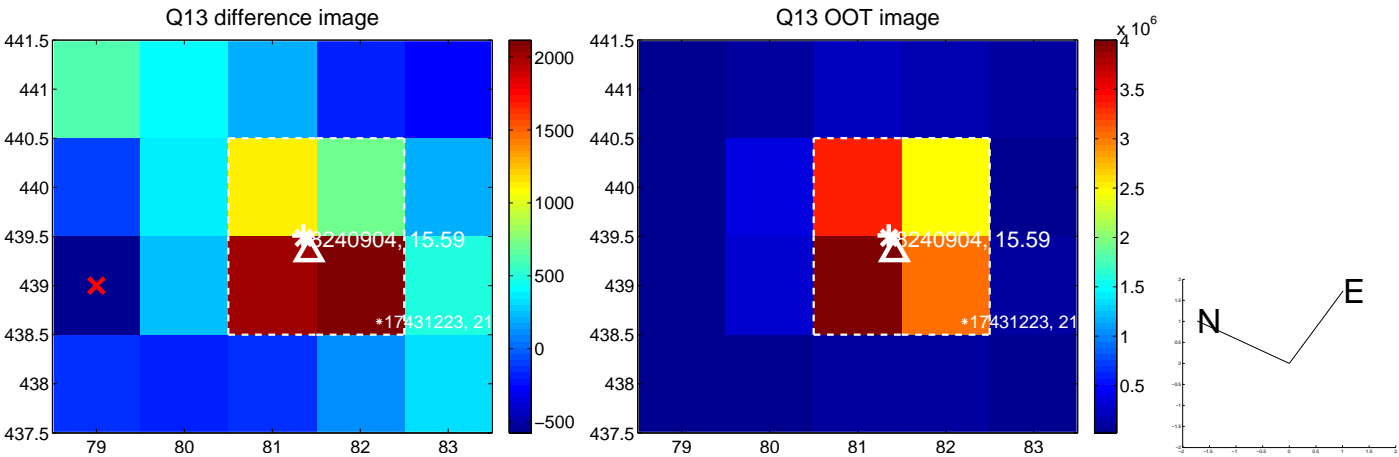
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



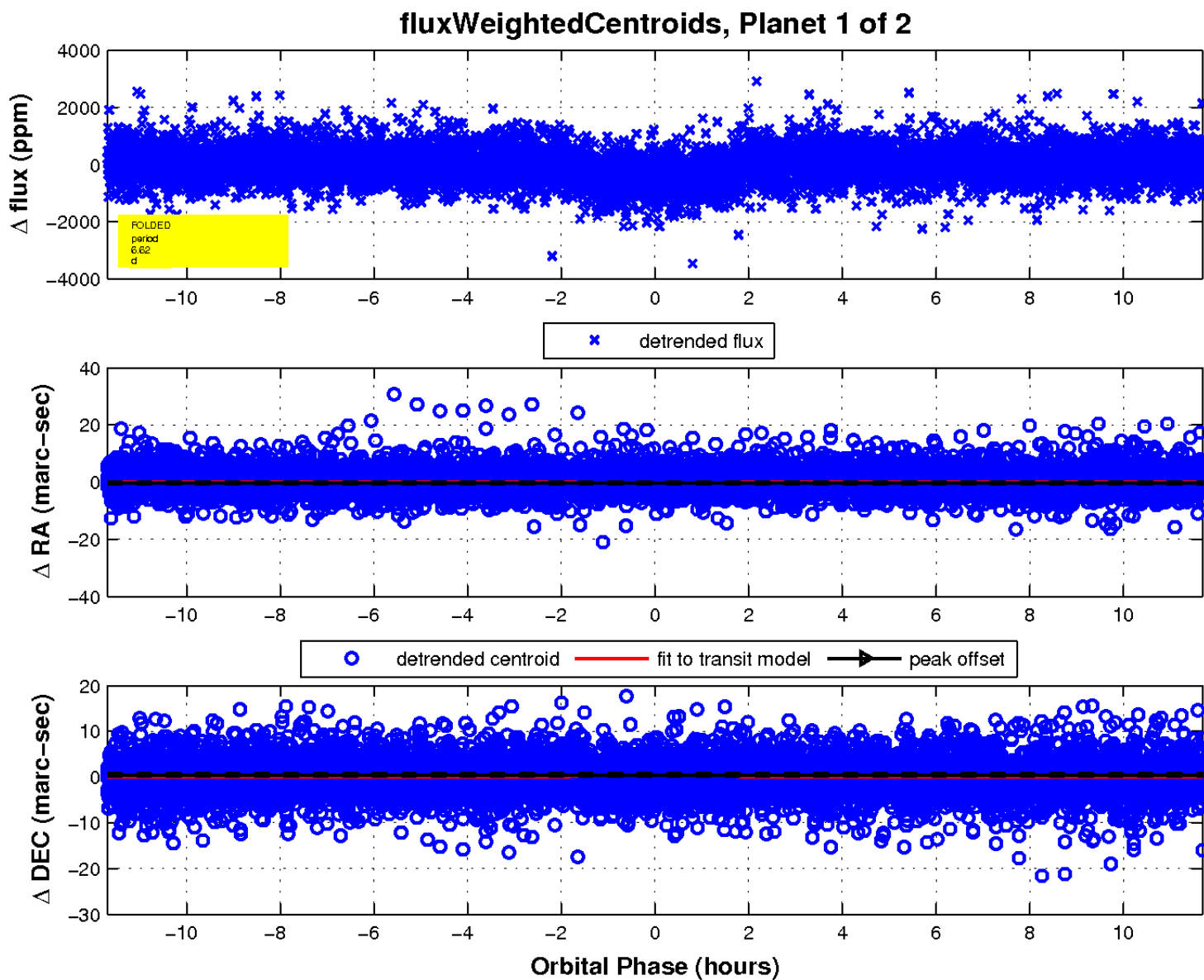
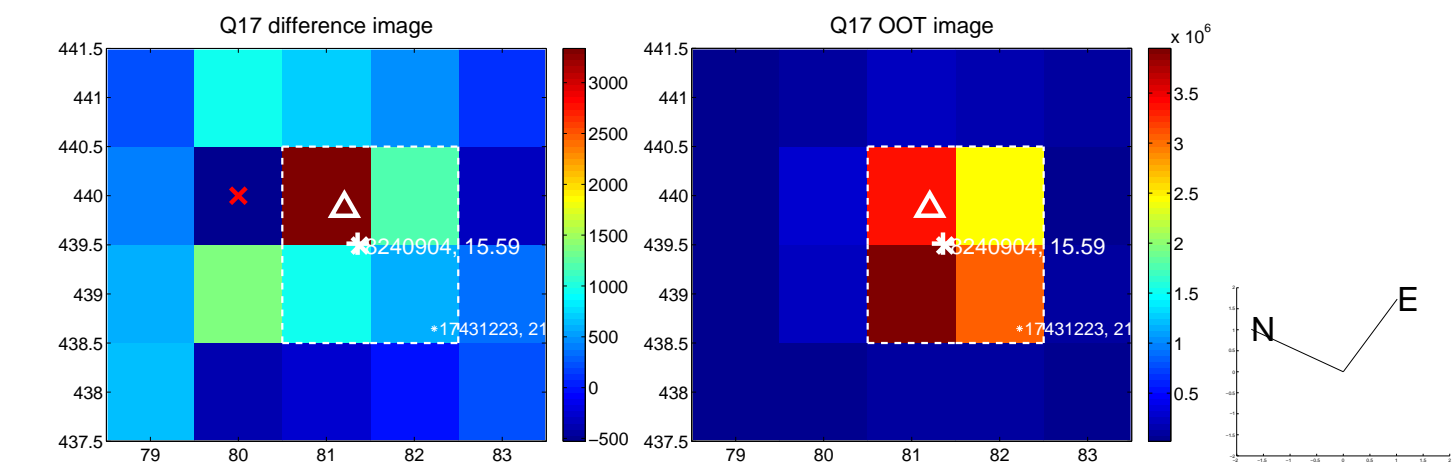
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



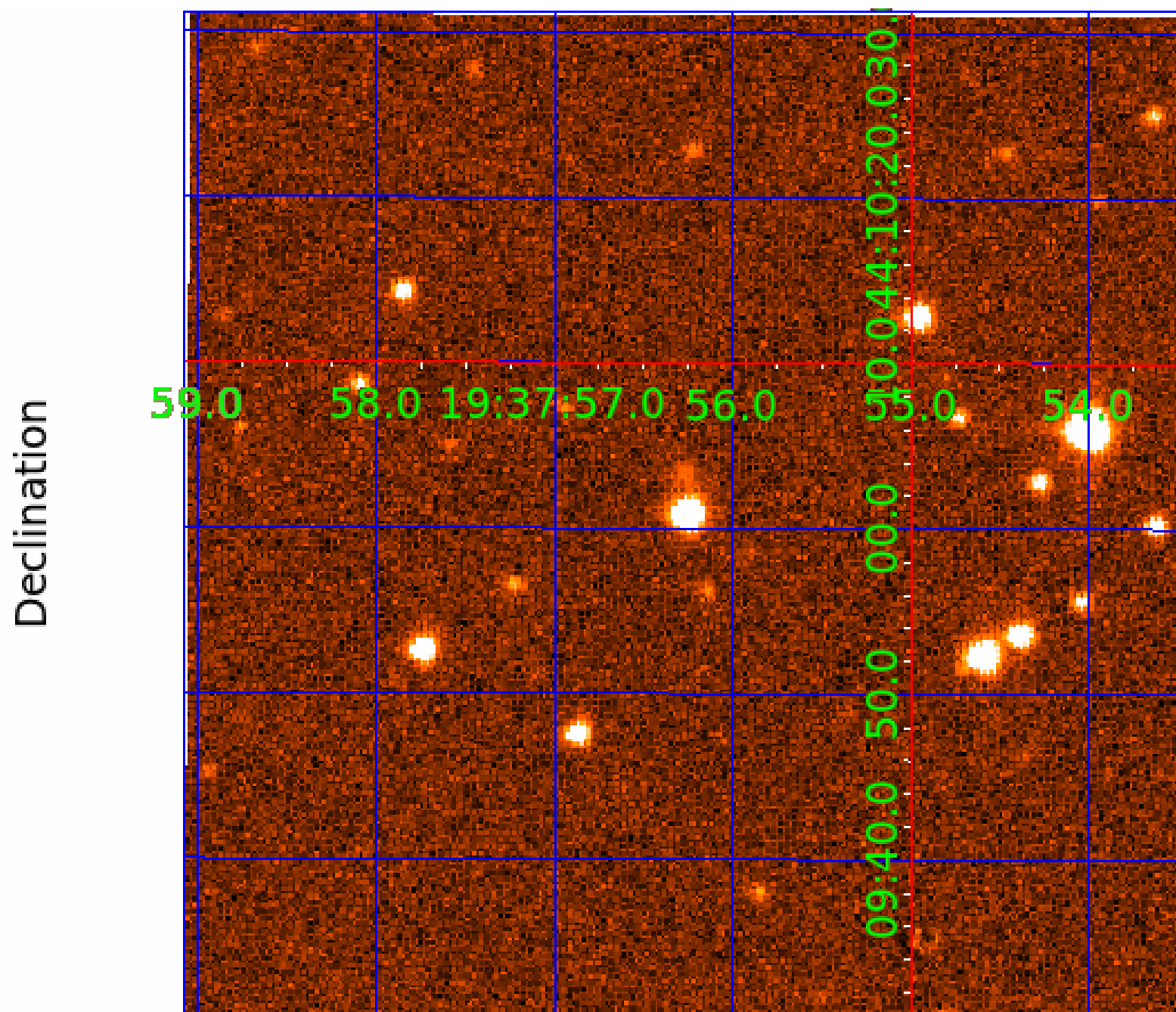
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 008240904

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})
008240904-01	OBS	1070.01	6.618330	135.346328	564.7	3.899	27.7	29.7	1.29	5529	3.52	305.57
008240904-02	OBS	1070.02	107.721695	138.748682	1394.2	8.333	20.7	22.7	1.29	5529	5.17	7.41

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008240904-01	OBS	PC	1.00	0	0	0	0	NO_COMMENT
008240904-02	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.

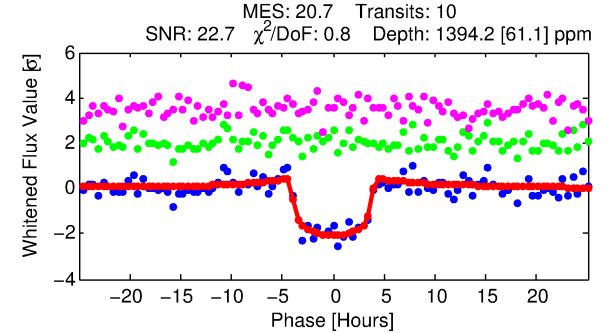
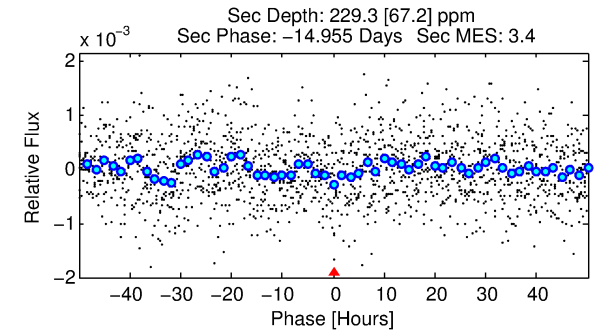
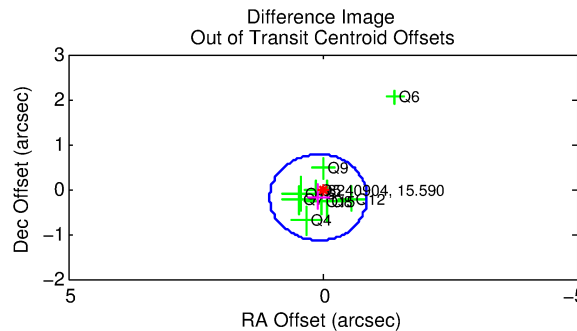
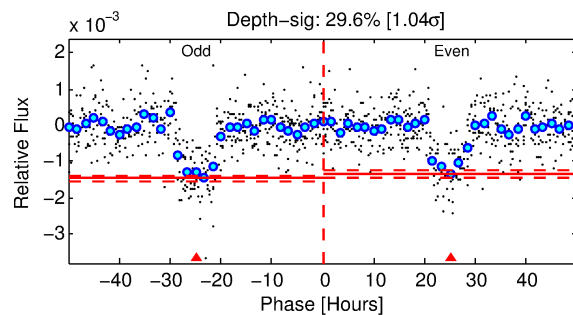
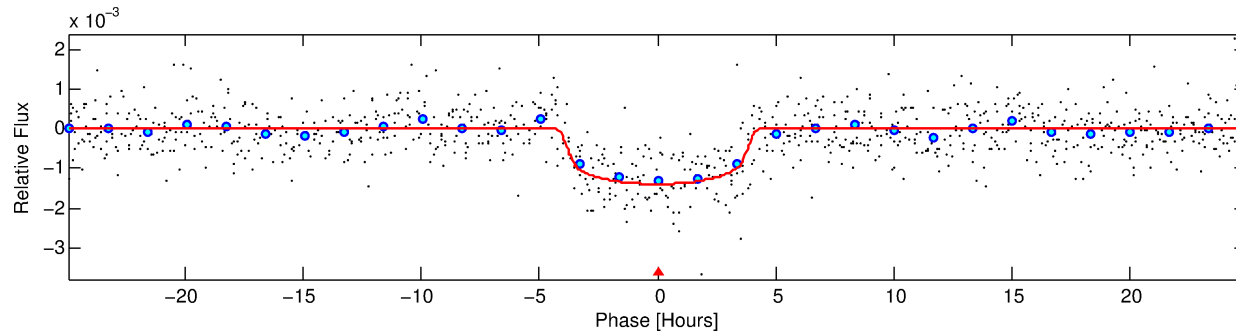
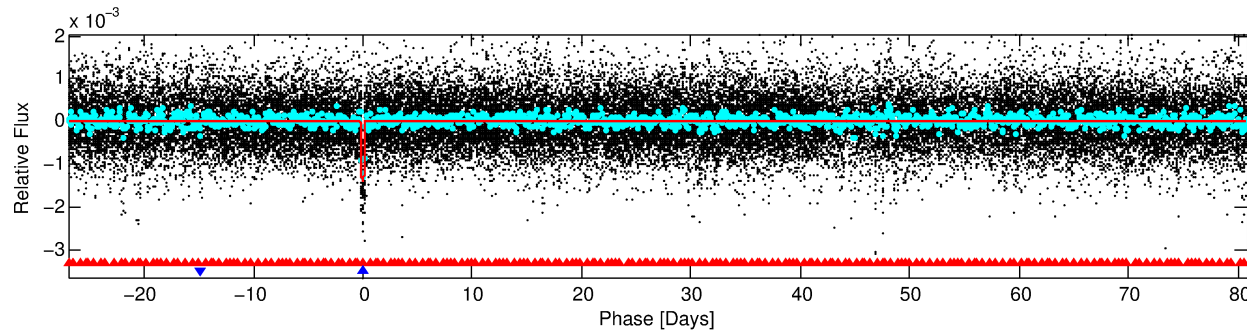
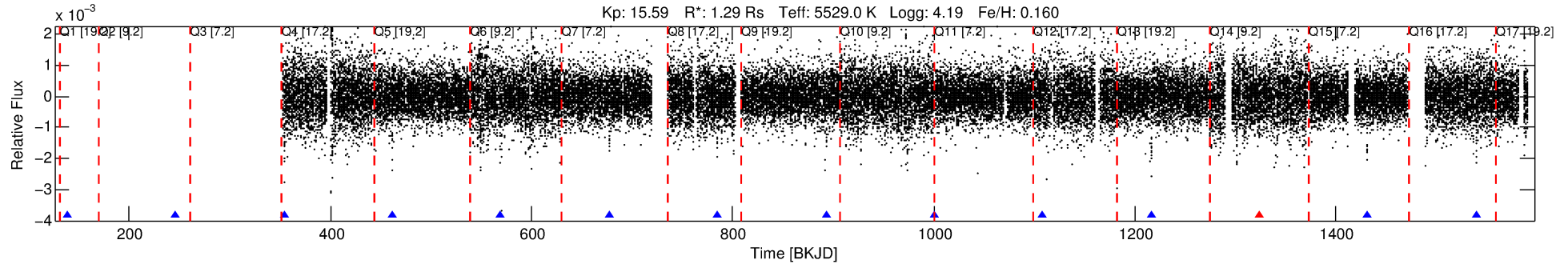
Ephemeris Match Information For 008240904-02

No Significant Match Found

DV One-Page Summary

KIC: 8240904 Candidate: 2 of 2 Period: 107.722 d
KOI: K01070.02 Name: Kepler-266c Corr: 0.986

Kp: 15.59 R*: 1.29 Rs Teff: 5529.0 K Logg: 4.19 Fe/H: 0.160



DV Fit Results:

Period = 107.72170 [0.00085] d
Epoch = 138.7487 [0.0074] BKJD
Rp/R* = 0.0366 [0.0050]
a/R* = 74.80 [40.40]
b = 0.71 [0.39]
Seff = 7.41 [2.42]
Teq = 421 [34] K
Rp = 5.17 [1.34] Re
a = 0.4350 [0.0891] AU
Ag = 893.54 [459.96] [1.94σ]
Teffp = 3556 [362] K [8.63σ]

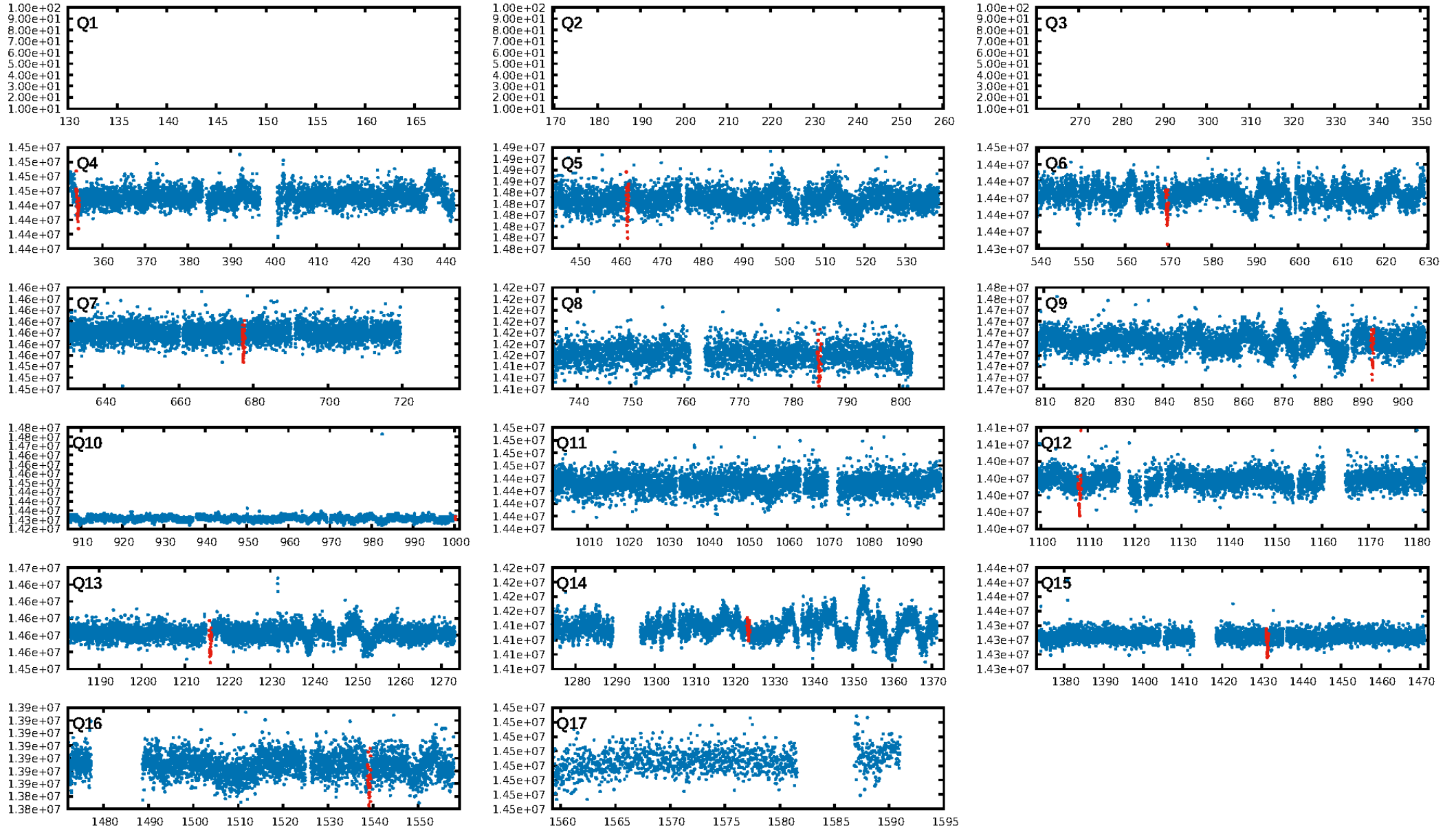
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [263.75σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 53.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.05e-70
RollingBand-fgt: 0.90 [9/10]
GhostDiagnostic-chr: 11.26
Centroid-sig: 8.5%
Centroid-so: 0.872 arcsec [1.33σ]
OotOffset-rm: 0.201 arcsec [0.63σ]
KicOffset-rm: 0.224 arcsec [0.80σ]
OotOffset-st: 1/2/4/2 [9]
KicOffset-st: 1/2/4/2 [9]
DiffImageQuality-fgm: 1.00 [9/9]
DiffImageOverlap-fno: 0.60 [6/10]

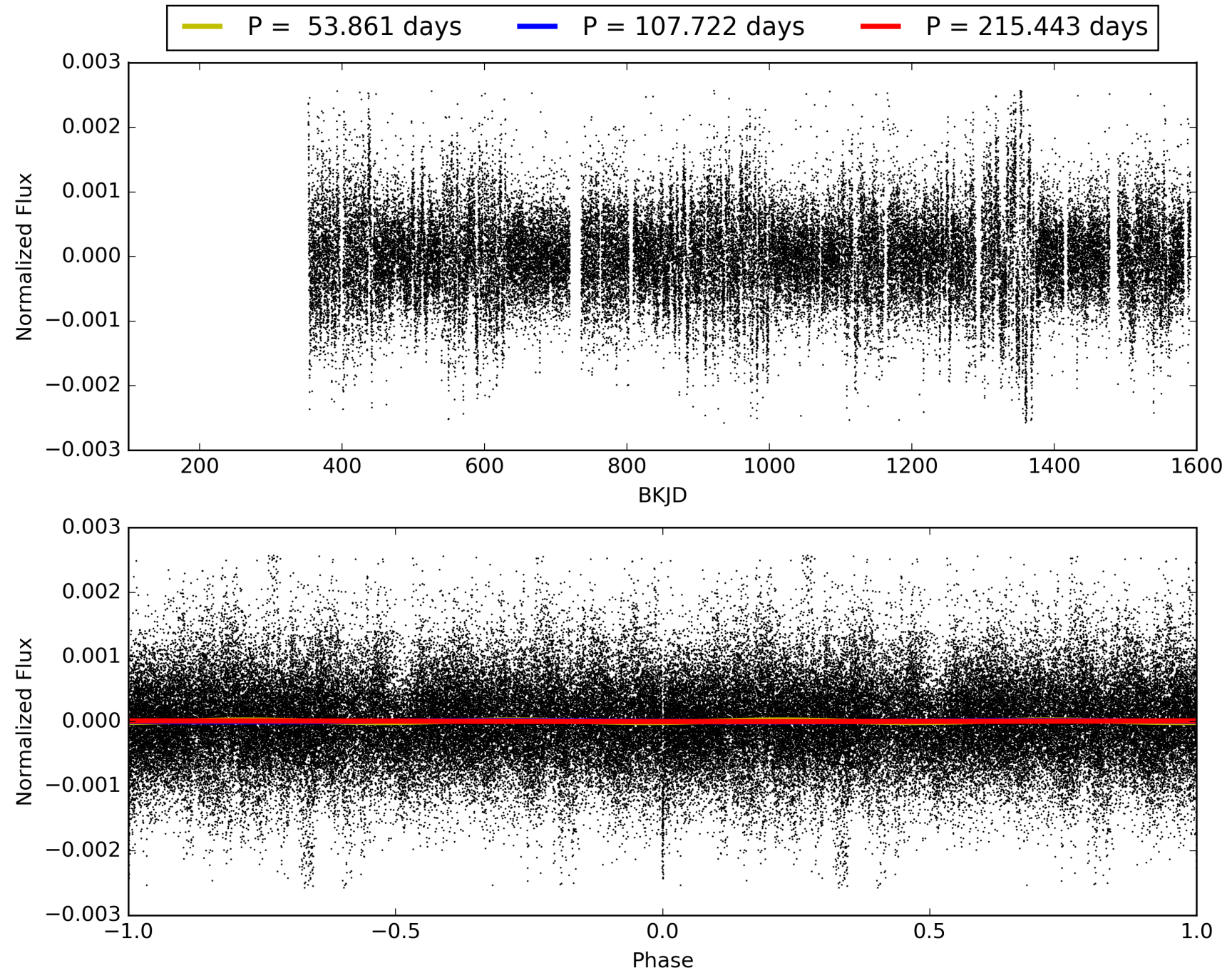
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 29-Jan-2016 06:19:05 Z

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

TCE 008240904-02, PDC Light Curves

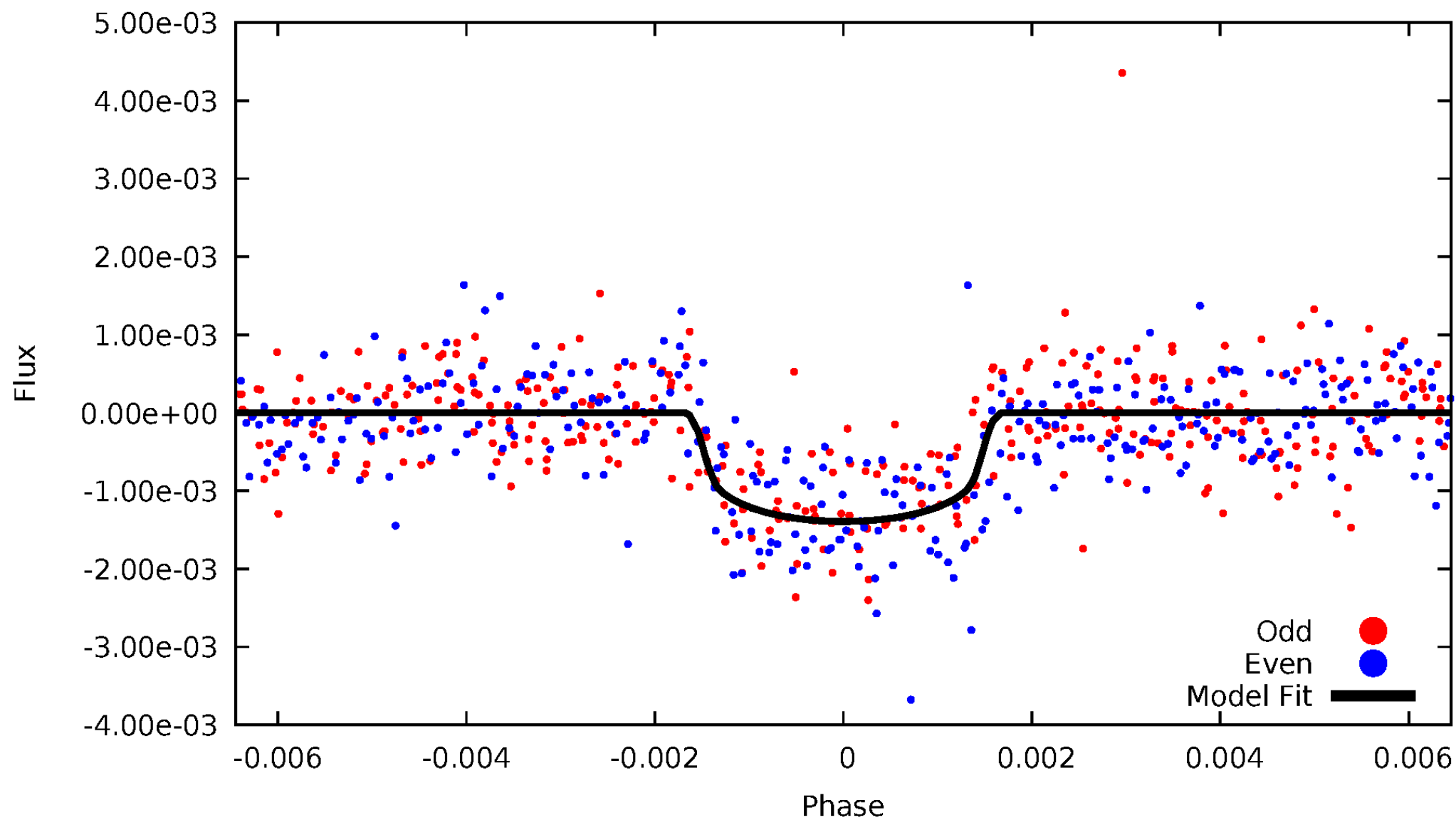


TCE 008240904-02



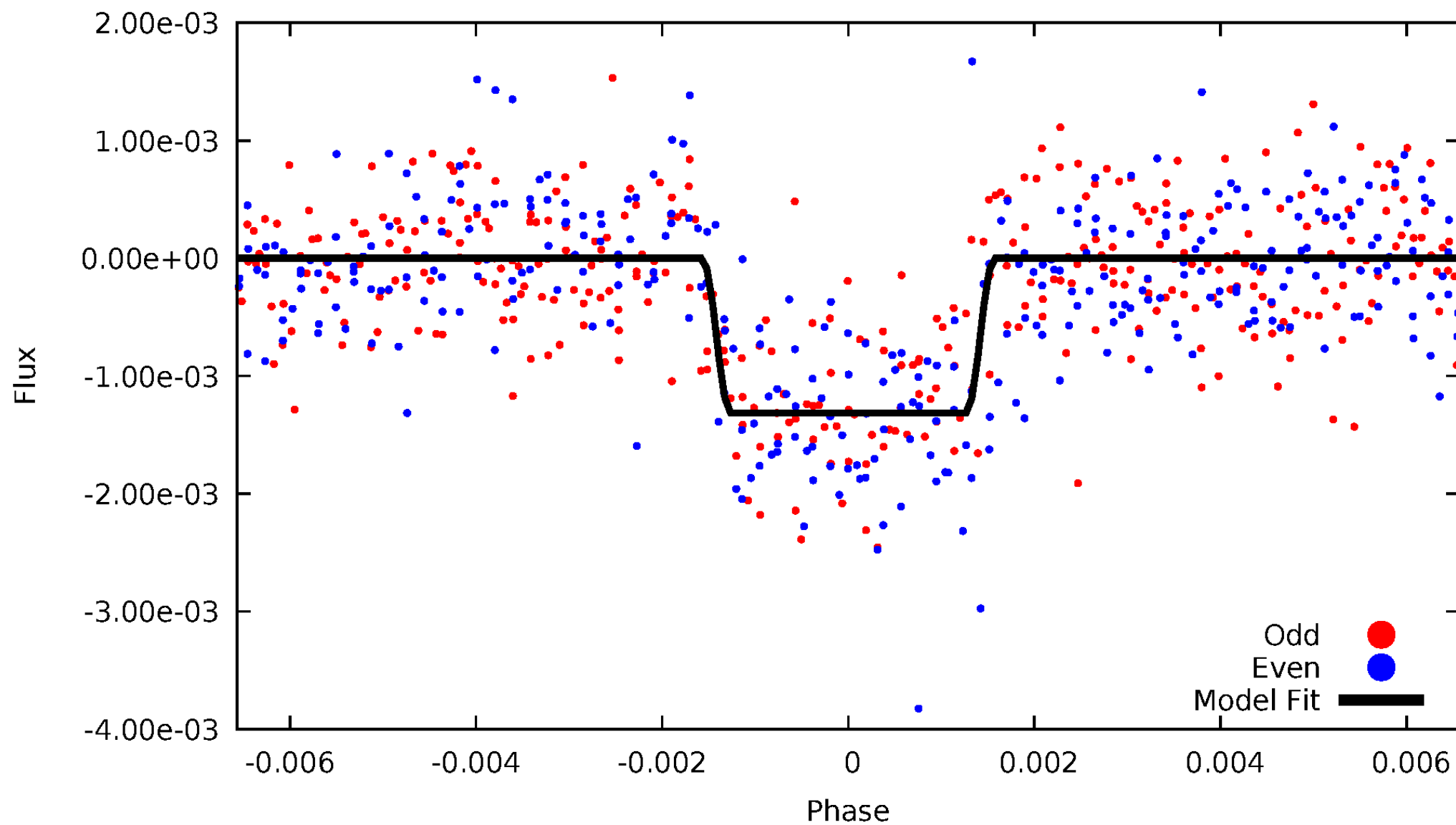
DV Odd/Even

TCE 008240904-02



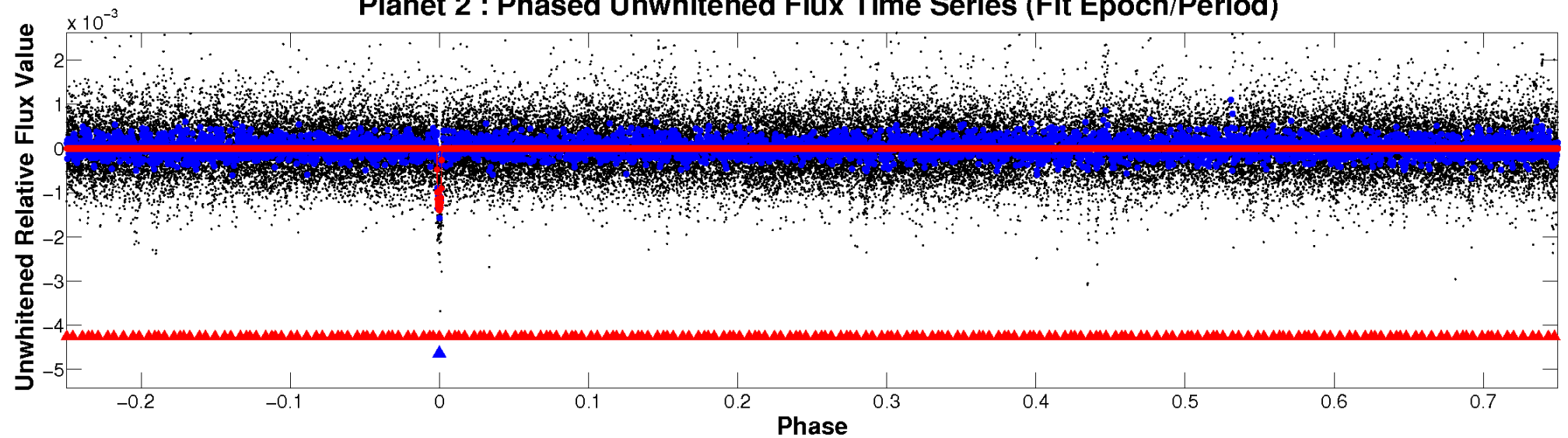
ALT Odd/Even

TCE 008240904-02

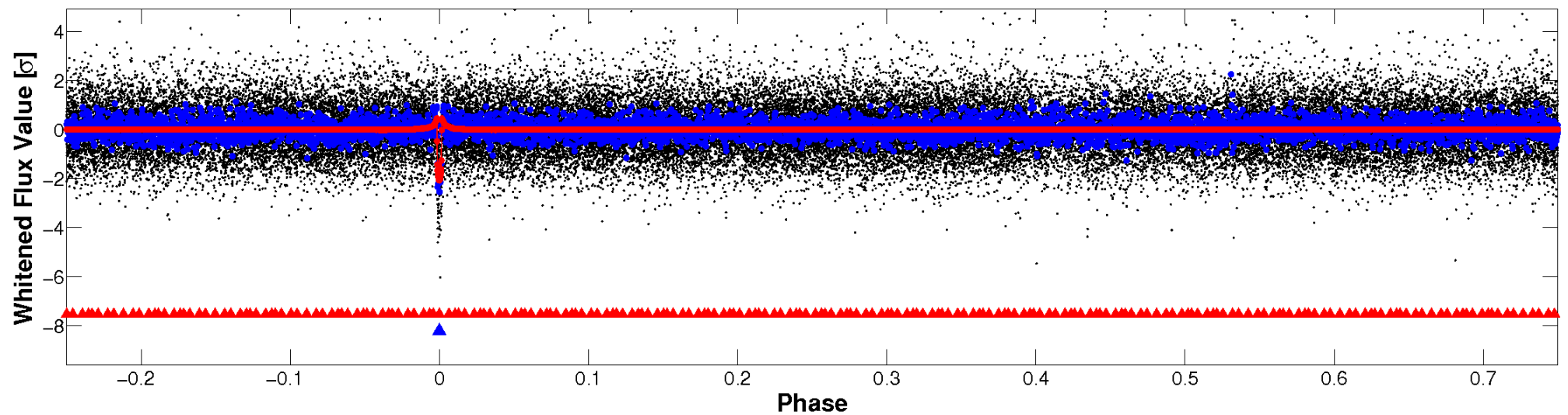


Non-Whitened Vs. Whitened Light Curve

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

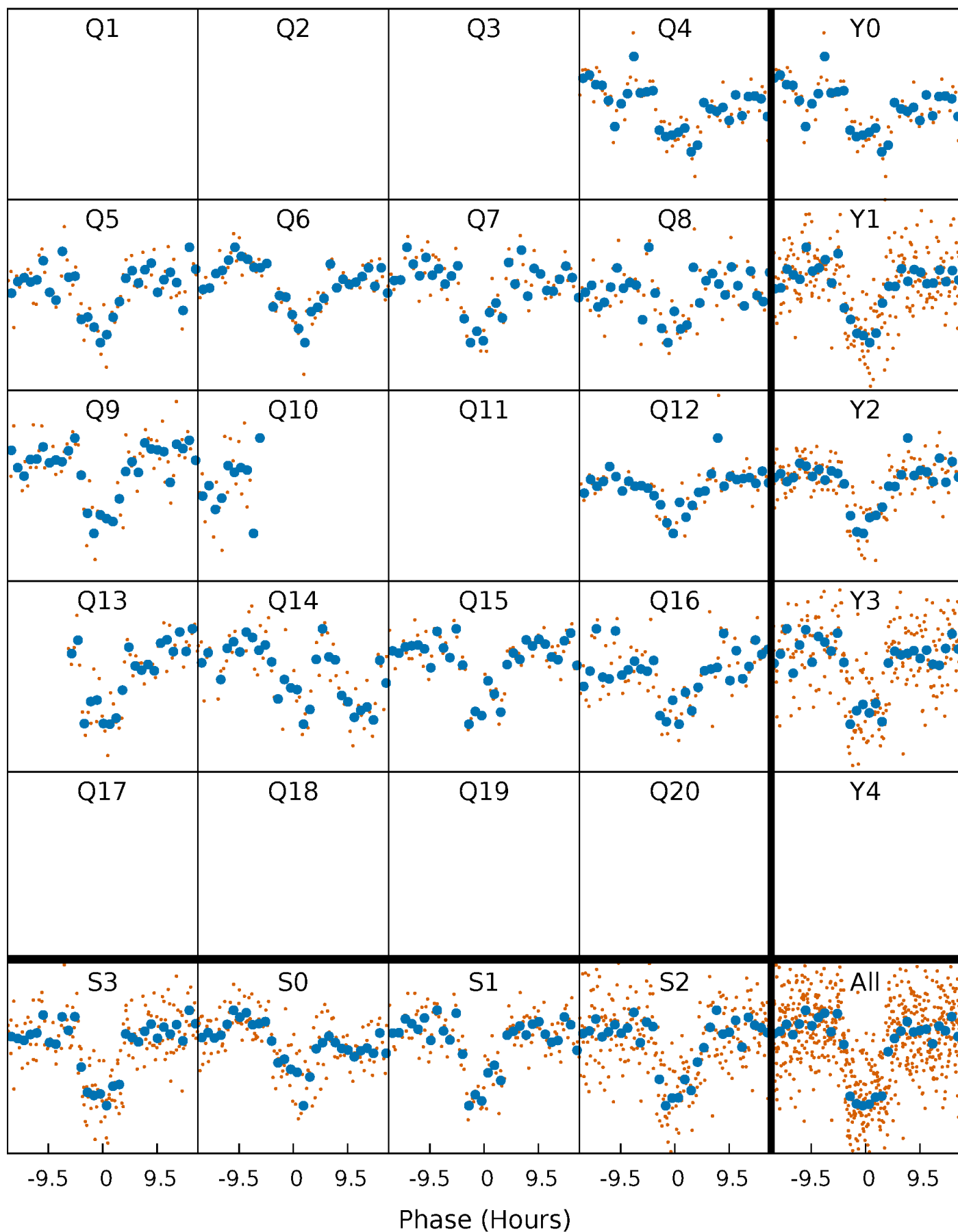


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



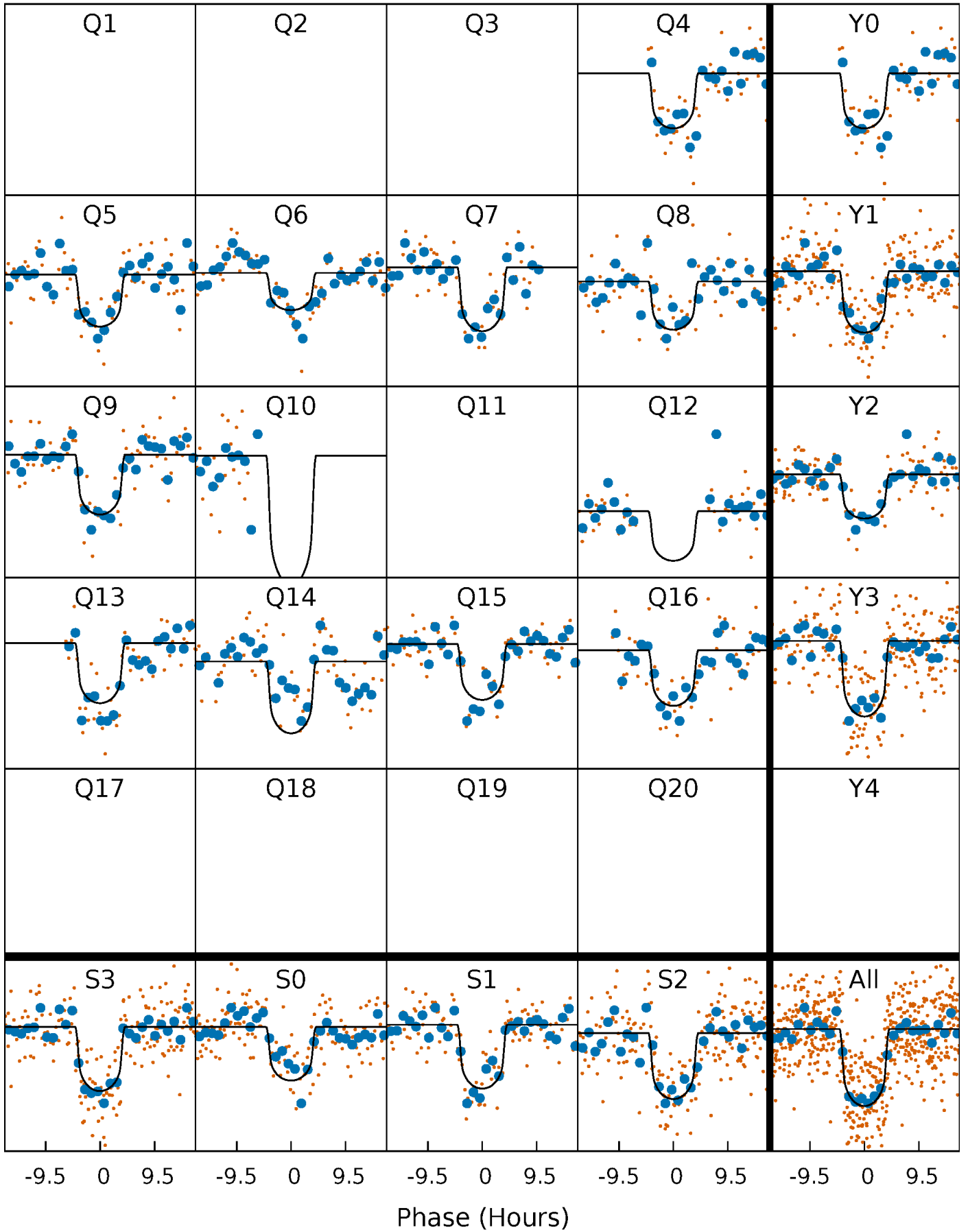
PDC Quarter-Phased Transit Curves

TCE 008240904-02 $P=107.721695$ Days $T_0=138.748682$ (BKJD)



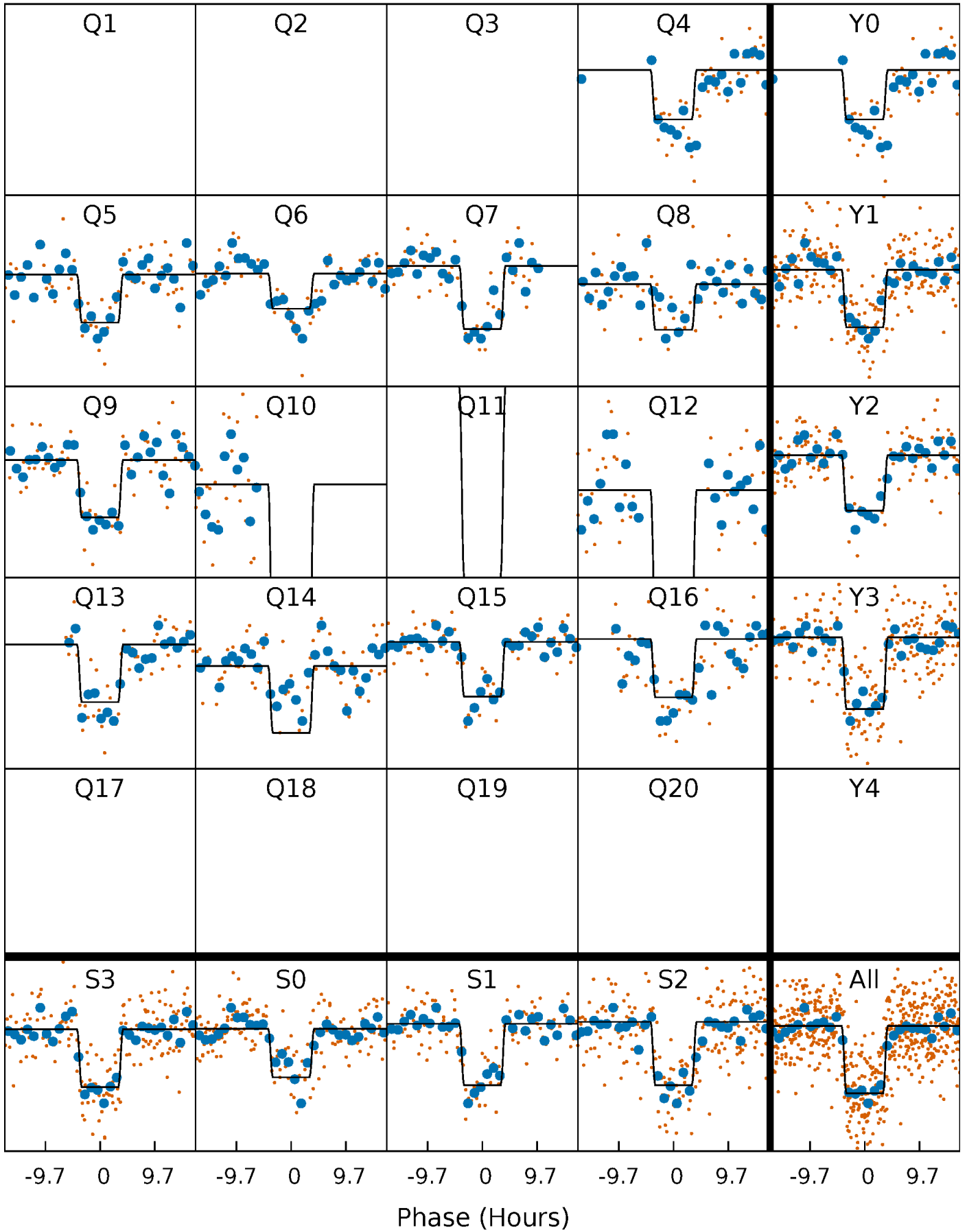
DV Quarter-Phased Transit Curves

TCE 008240904-02 P=107.721695 Days $T_0=138.748682$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

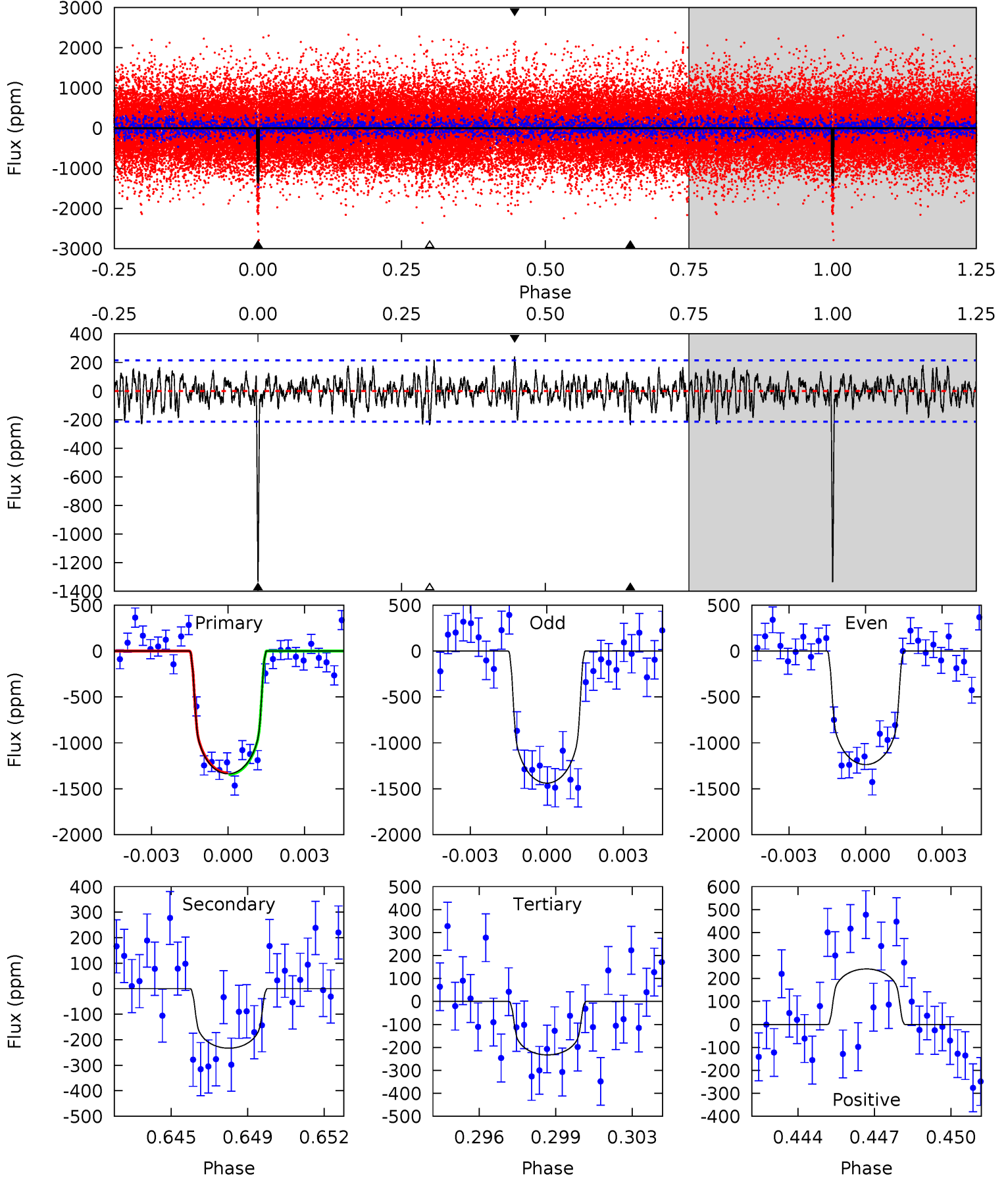
TCE 008240904-02 P=107.723057 Days $T_0=138.739257$ (BKJD)



DV Model-Shift Uniqueness Test

008240904-02, P = 107.721695 Days, E = 138.748682 Days

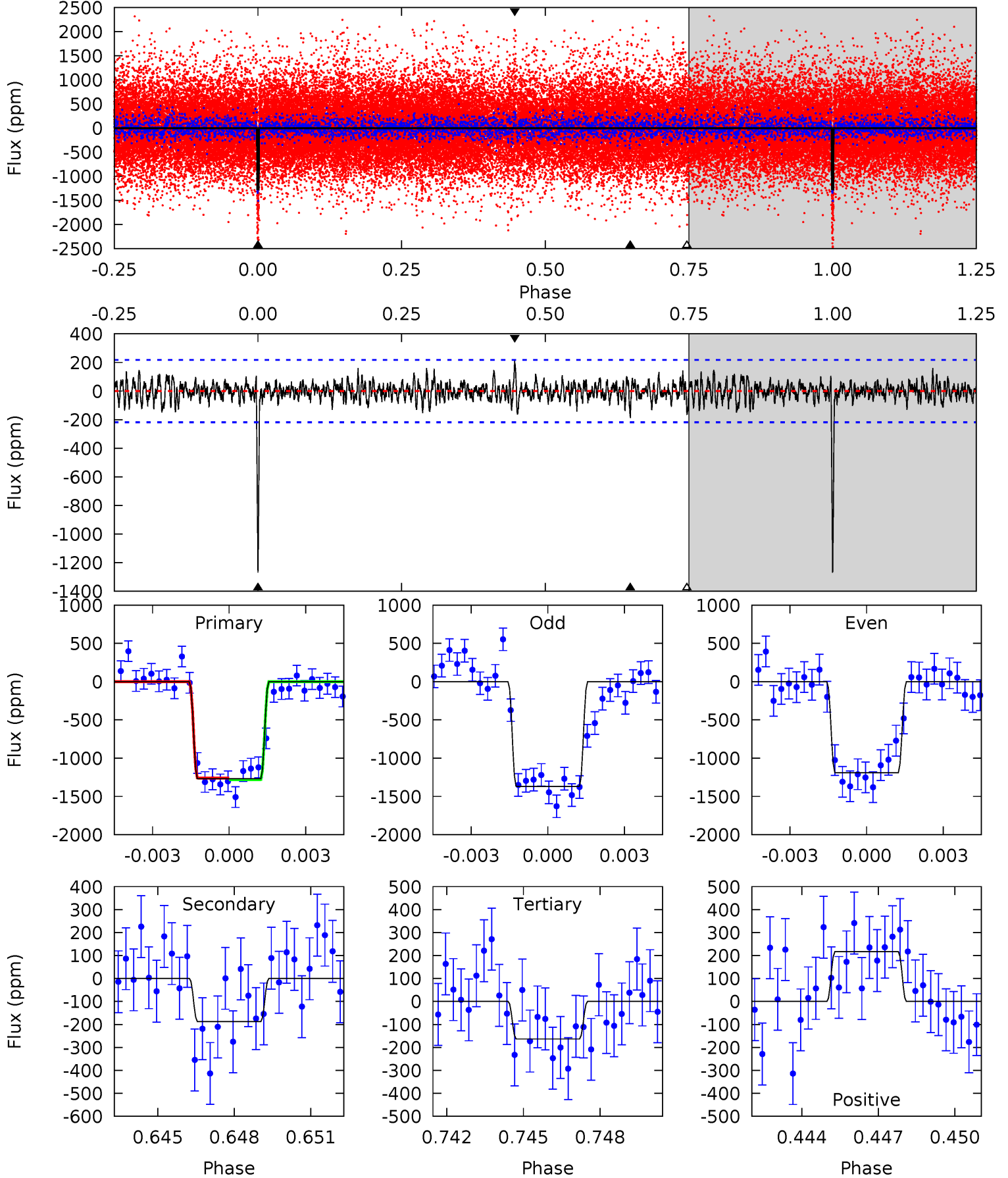
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
32.6	5.69	5.68	5.90	5.23	2.93	1.68	27.0	26.7	0.01	-0.20	2.47	0.95	0.15	0.22



Alt Model-Shift Uniqueness Test

008240904-02, P = 107.723057 Days, E = 138.739257 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.6	4.53	3.94	5.24	5.25	2.96	1.21	26.7	25.4	0.59	-0.70	2.15	0.93	0.15	0.24



Stellar Parameters For KIC 008240904

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5529^{+83}_{-66}	$4.190^{+0.186}_{-0.108}$	$0.160^{+0.150}_{-0.100}$	$1.294^{+0.214}_{-0.285}$	$0.947^{+0.067}_{-0.044}$	$0.615^{+0.577}_{-0.199}$
	+2%/-1%	+4%/-3%	+94%/-62%	+17%/-22%	+7%/-5%	+94%/-32%
Source	SPE90	SPE90	SPE90	DSEP		

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

Secondary Eclipse Parameters for KIC 008240904-02 / KOI 1070.02

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-233 ± 41	$5.10^{+0.95}_{-0.87}$	586^{+28}_{-34}	3892^{+273}_{-199}	923^{+508}_{-287}
Alt.	-188 ± 41	$5.06^{+0.95}_{-0.85}$	586^{+29}_{-32}	3783^{+233}_{-231}	772^{+398}_{-270}

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

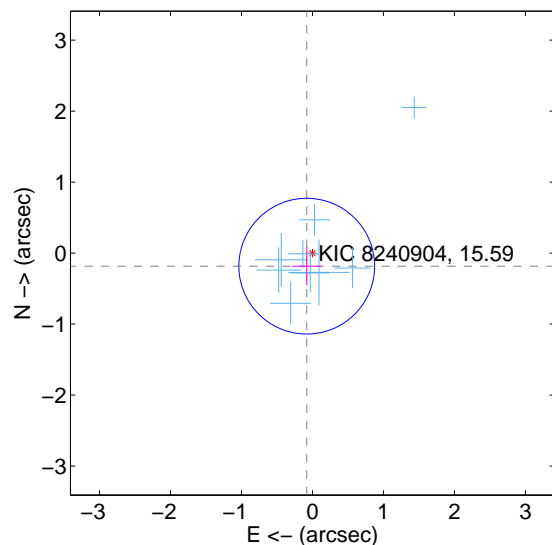
Supplemental centroid analysis for 008240904-02. Kepler magnitude: 15.59. Transit SNR 22.71

There are 9 quarters with good PRF difference image offsets

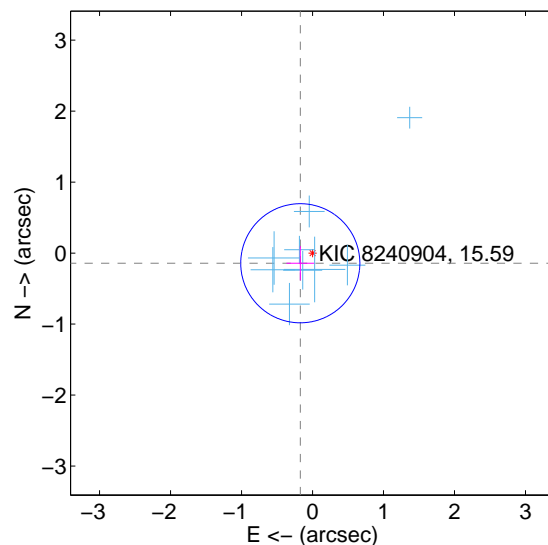
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.201 ± 0.319	0.63	0.080 ± 0.209	-0.184 ± 0.273
PRF-fit source offset from KIC position	0.224 ± 0.280	0.80	0.172 ± 0.195	-0.143 ± 0.240
photometric centroid source offset	0.87 ± 0.66	1.33	-0.35 ± 0.66	-0.80 ± 0.66

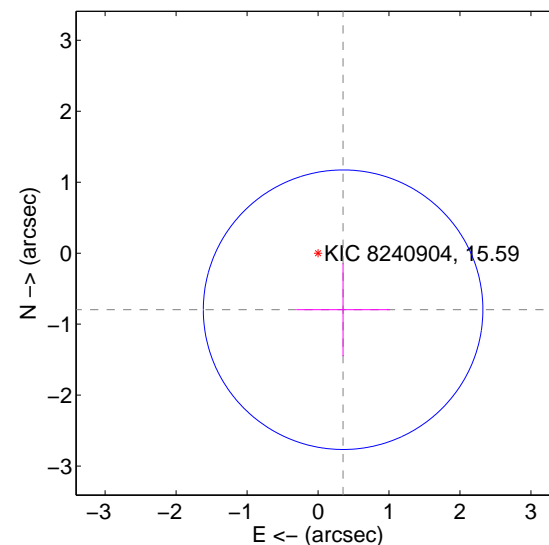
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

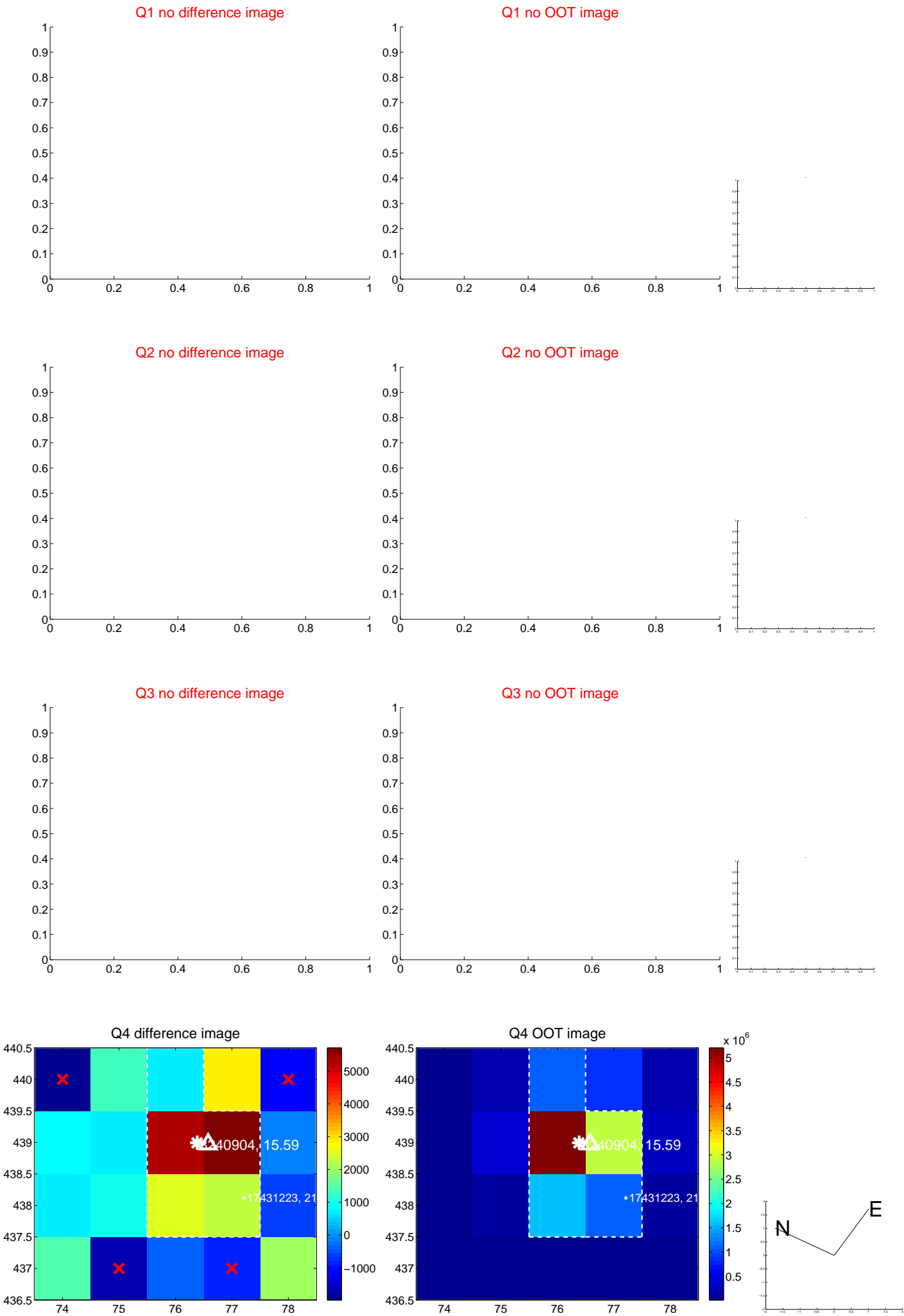


offset from photometric centroids

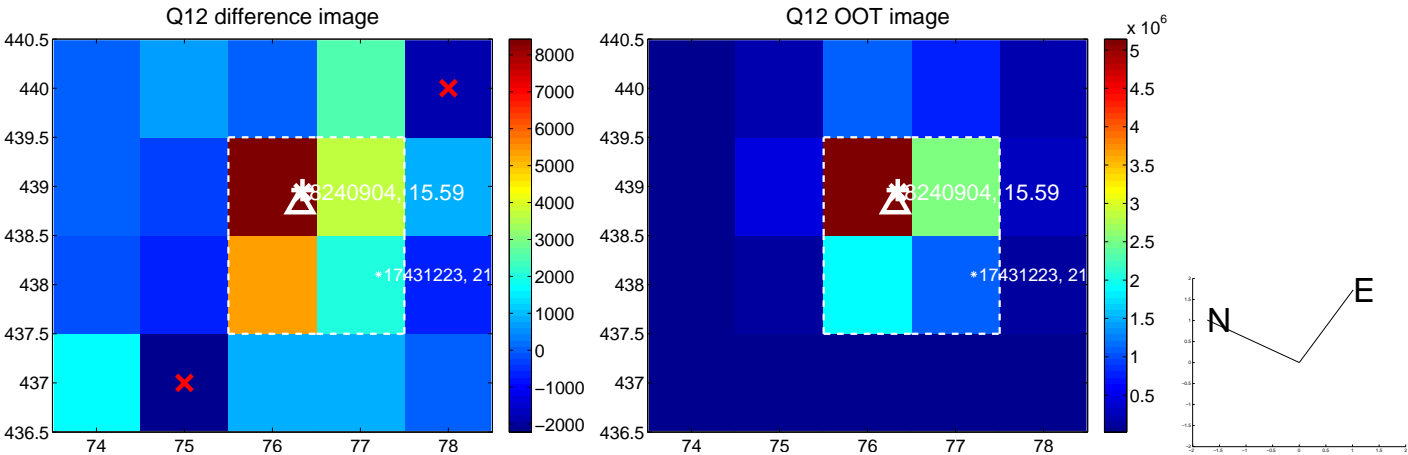
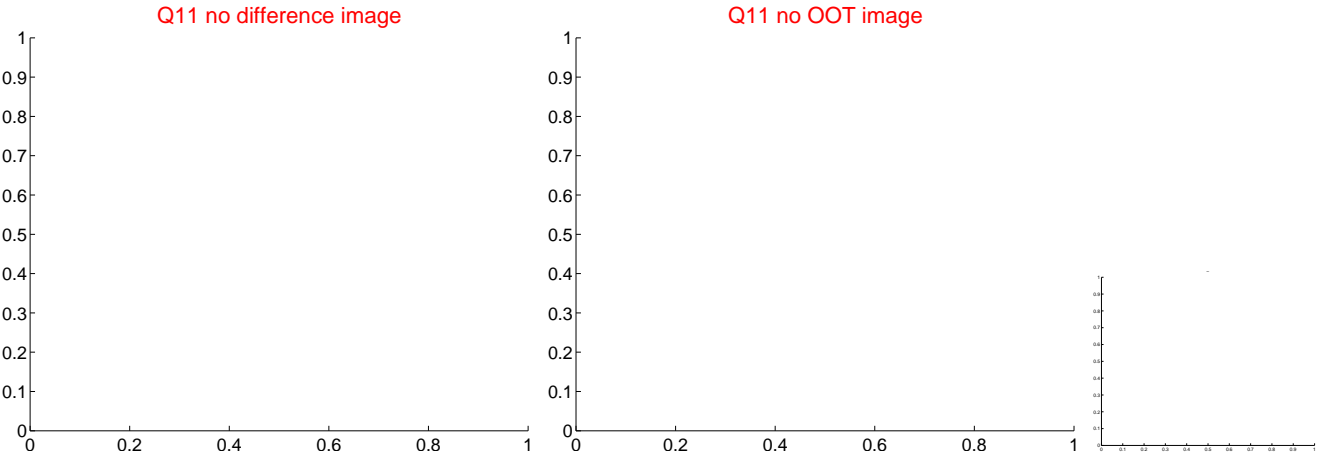
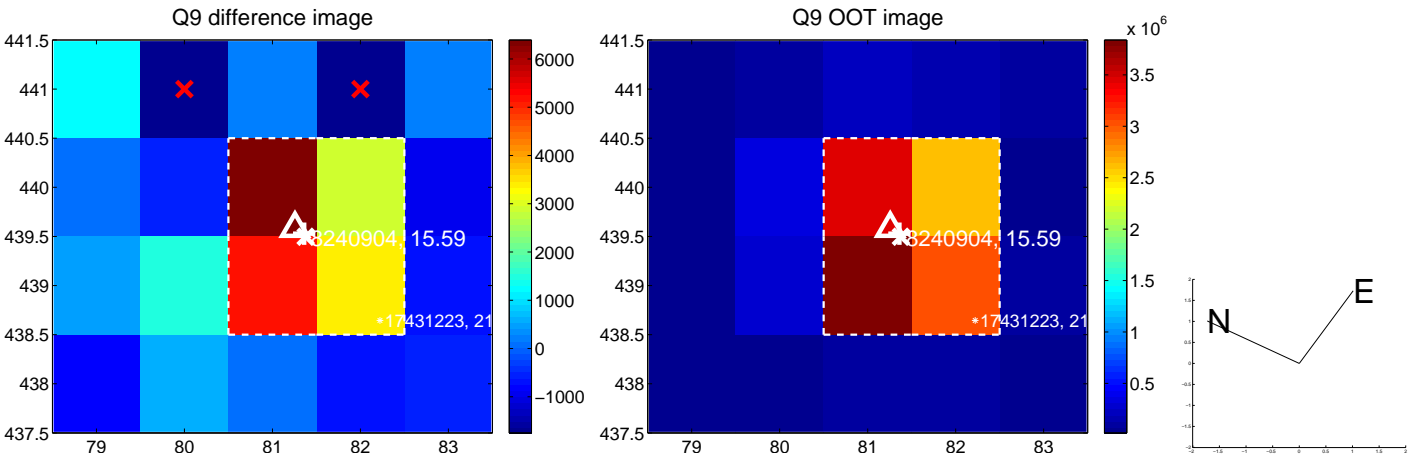


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets**; **Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

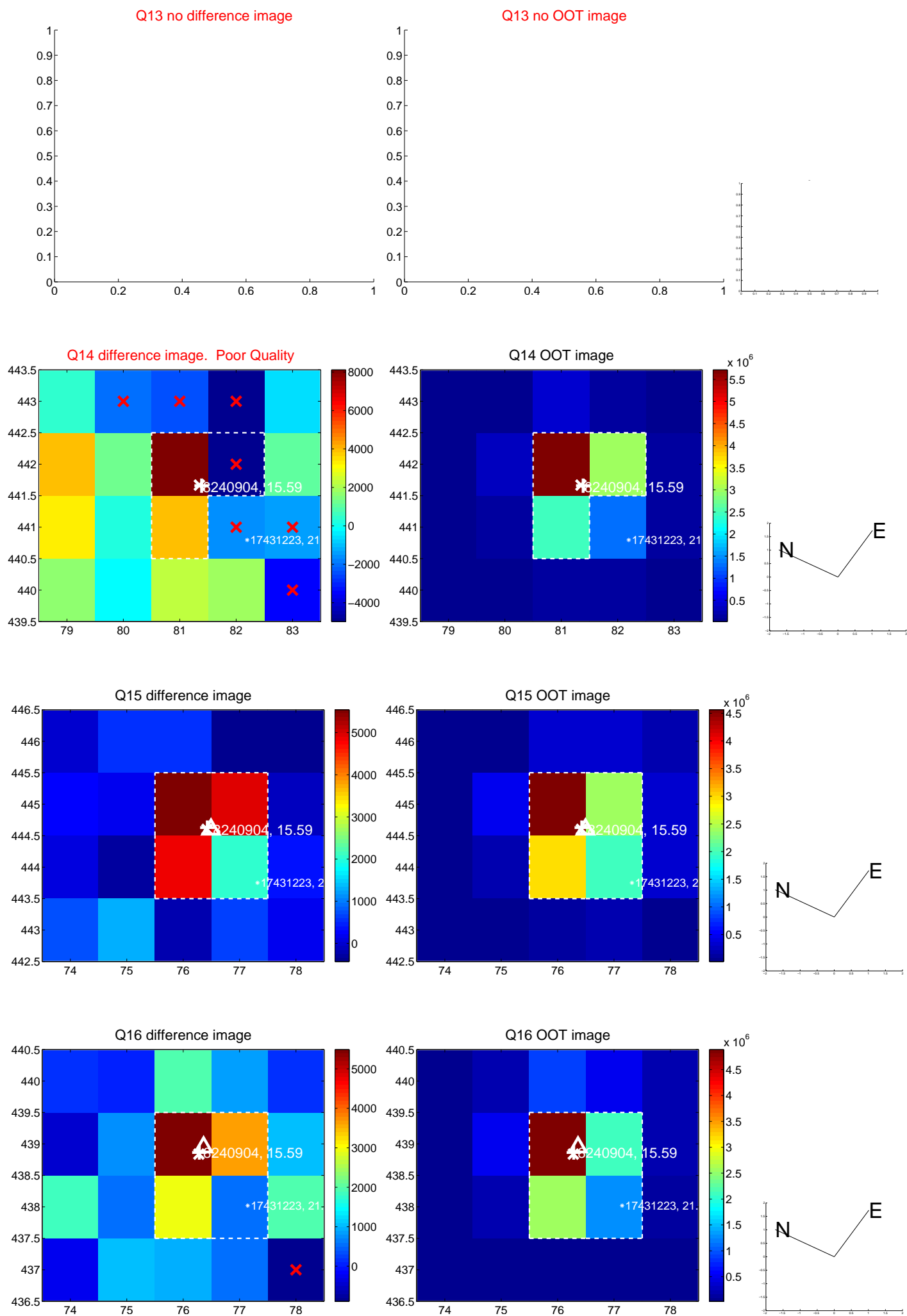
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



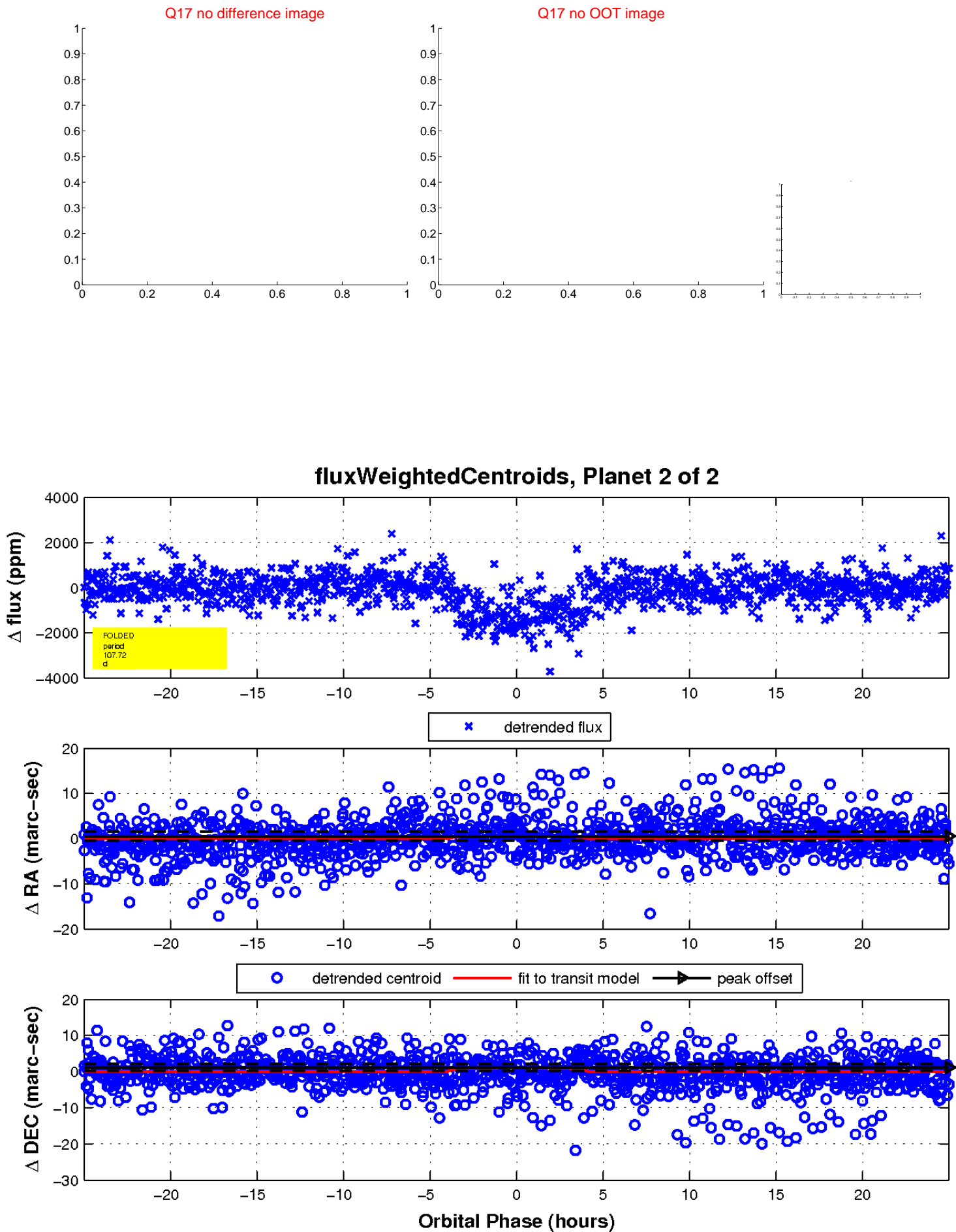
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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.



UKIRT Image

