

KIC 004038095

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})
004038095-01	OBS	No	4.852474	131.594642	114.7	5.652	16.8	18.7	3.30	7612	6.89	6271.46
004038095-02	OBS	No	0.882208	131.910195	16.1	4.060	7.7	6.5	3.30	7612	1.54	60891.74
004038095-03	OBS	No	86.607520	201.490702	235.7	5.634	8.8	6.6	3.30	7612	5.43	134.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004038095-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL —LPP_DV
004038095-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004038095-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

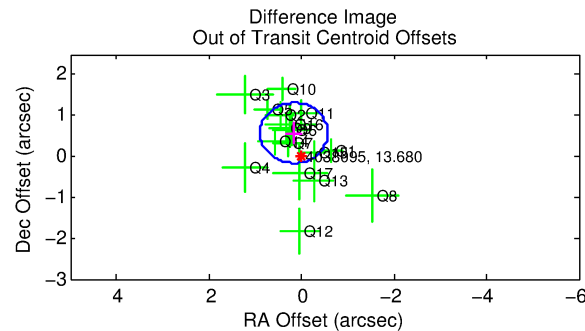
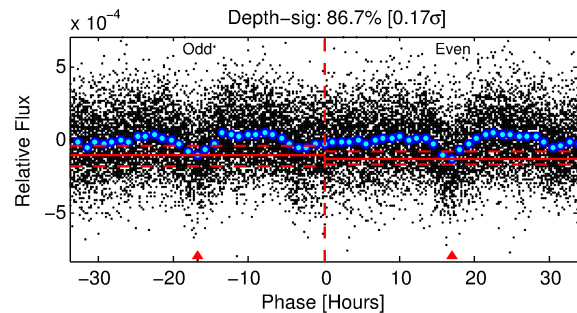
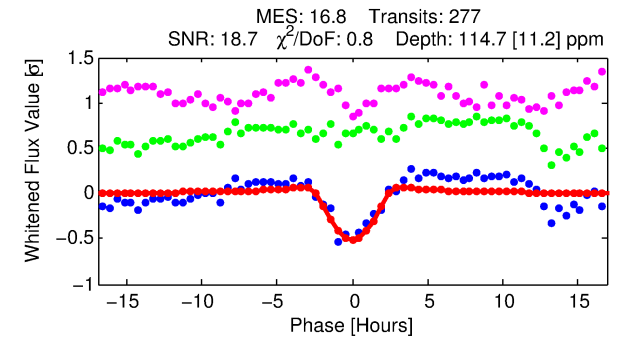
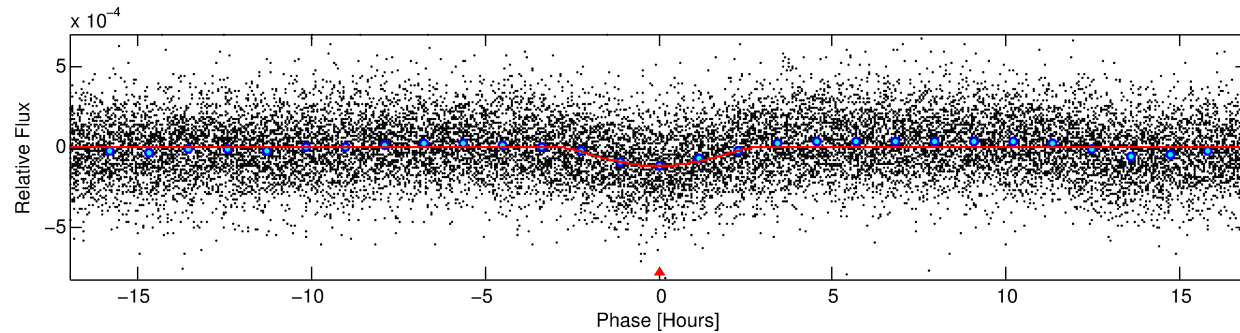
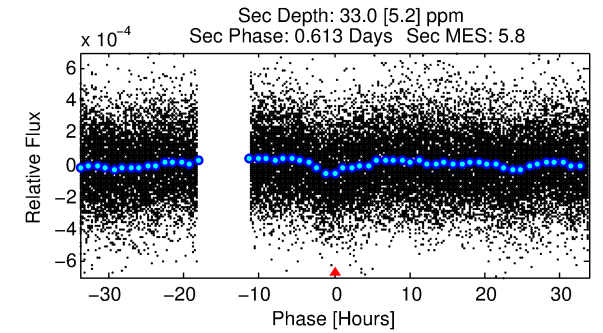
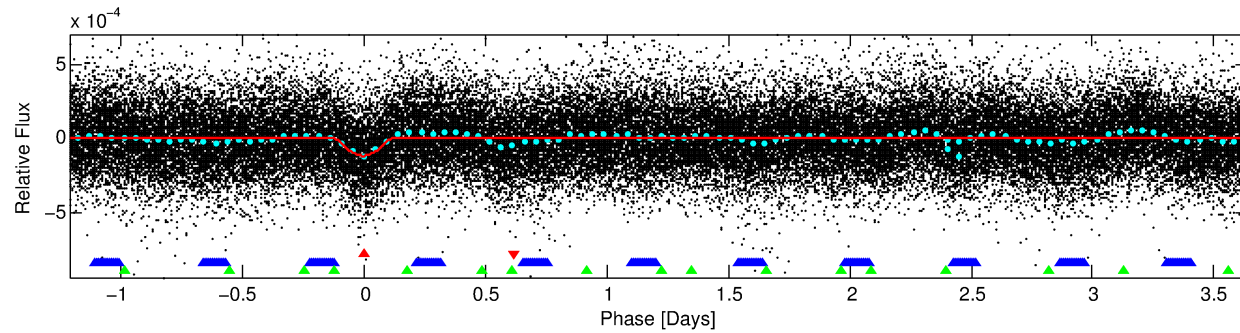
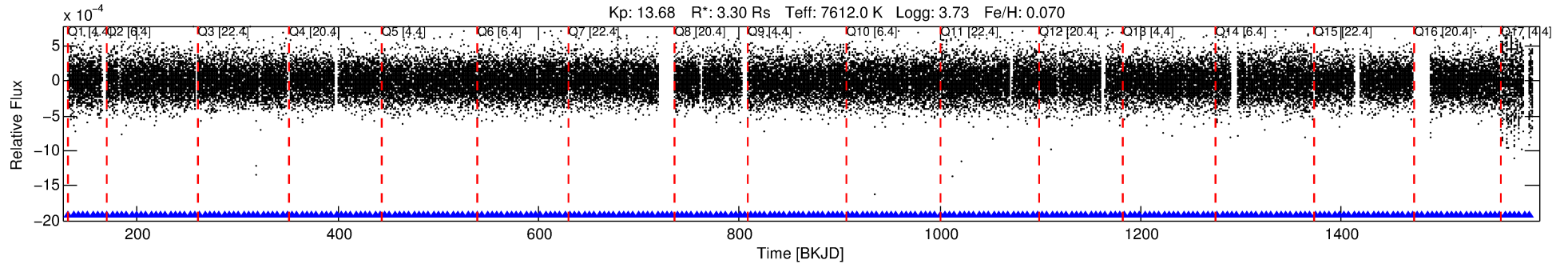
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004038095-01

No Significant Match Found

DV One-Page Summary

KIC: 4038095 Candidate: 1 of 3 Period: 4.852 d



DV Fit Results:

Period = 4.85247 [0.00004] d
Epoch = 131.5946 [0.0061] BKJD
Rp/R* = 0.0191 [0.0293]
a/R* = 1.64 [0.42]
b = 1.00 [0.05]
Seff = 6271.46 [4242.55]
Teff = 2269 [384] K
Rp = 6.89 [10.96] Re
a = 0.0723 [0.0298] AU
Ag = 2.00 [6.26] [0.16σ]
Teffp = 4171 [3202] K [0.59σ]

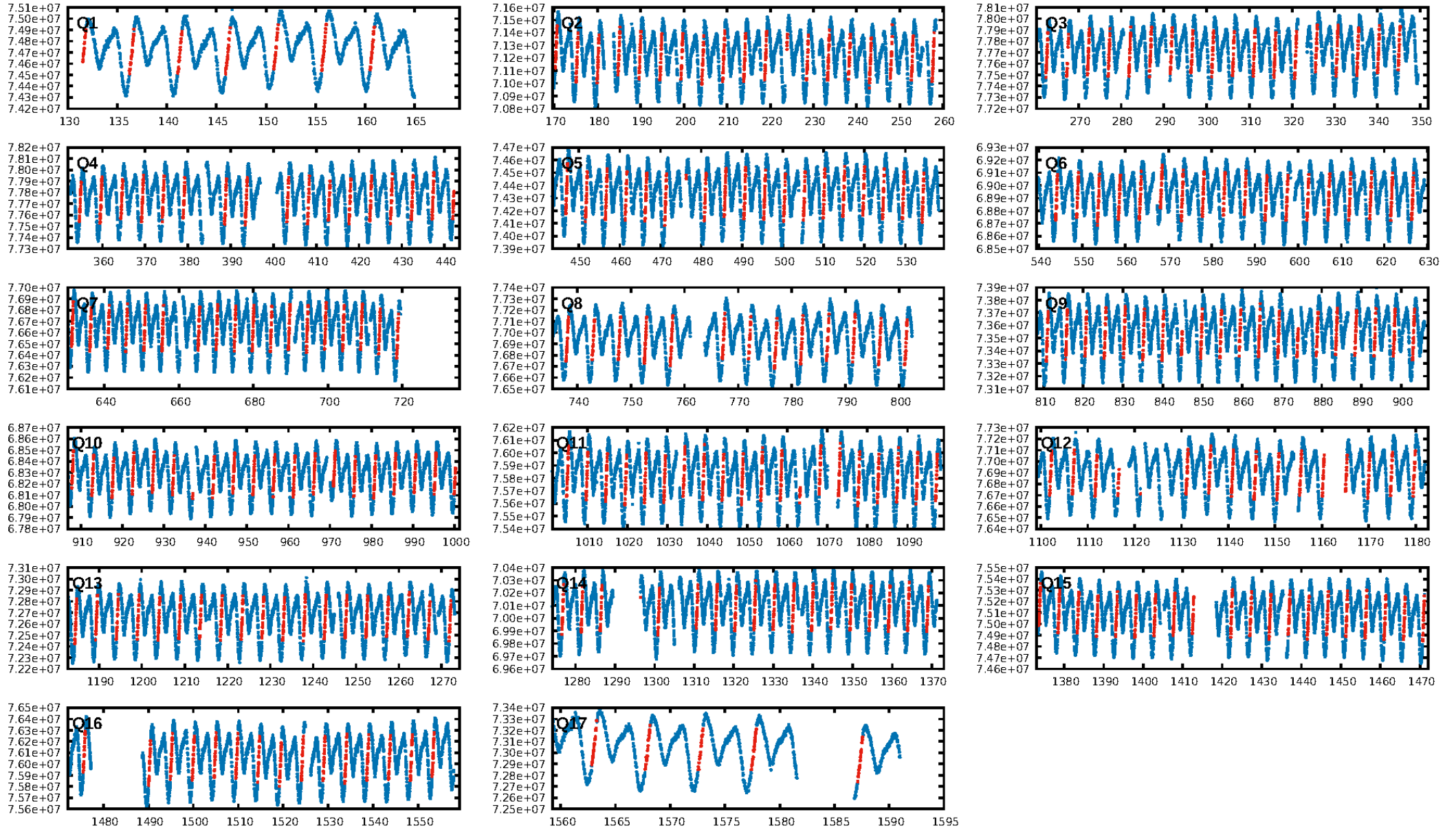
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [13.69σ]
LongPeriod-sig: 100.0% [245.88σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 4.20e-44
RollingBand-fgt: 1.00 [265/265]
GhostDiagnostic-chr: 0.569
Centroid-sig: 0.1%
Centroid-so: 1.462 arcsec [2.33σ]
OotOffset-rm: 0.597 arcsec [2.43σ]
KicOffset-rm: 0.563 arcsec [2.38σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 1.00 [17/17]
DiffImageOverlap-fno: 0.00 [0/17]

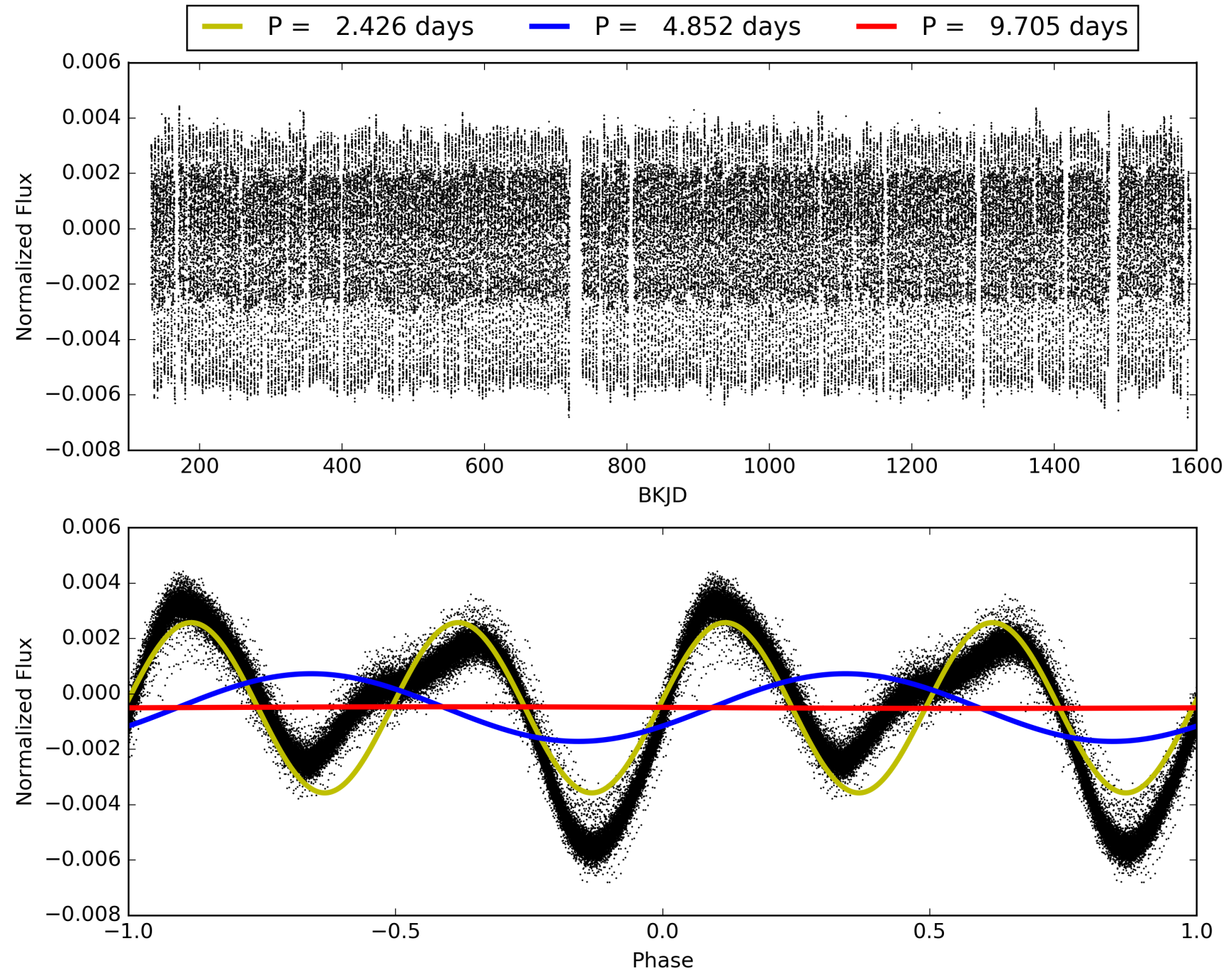
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:25:57 Z

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

TCE 004038095-01, PDC Light Curves

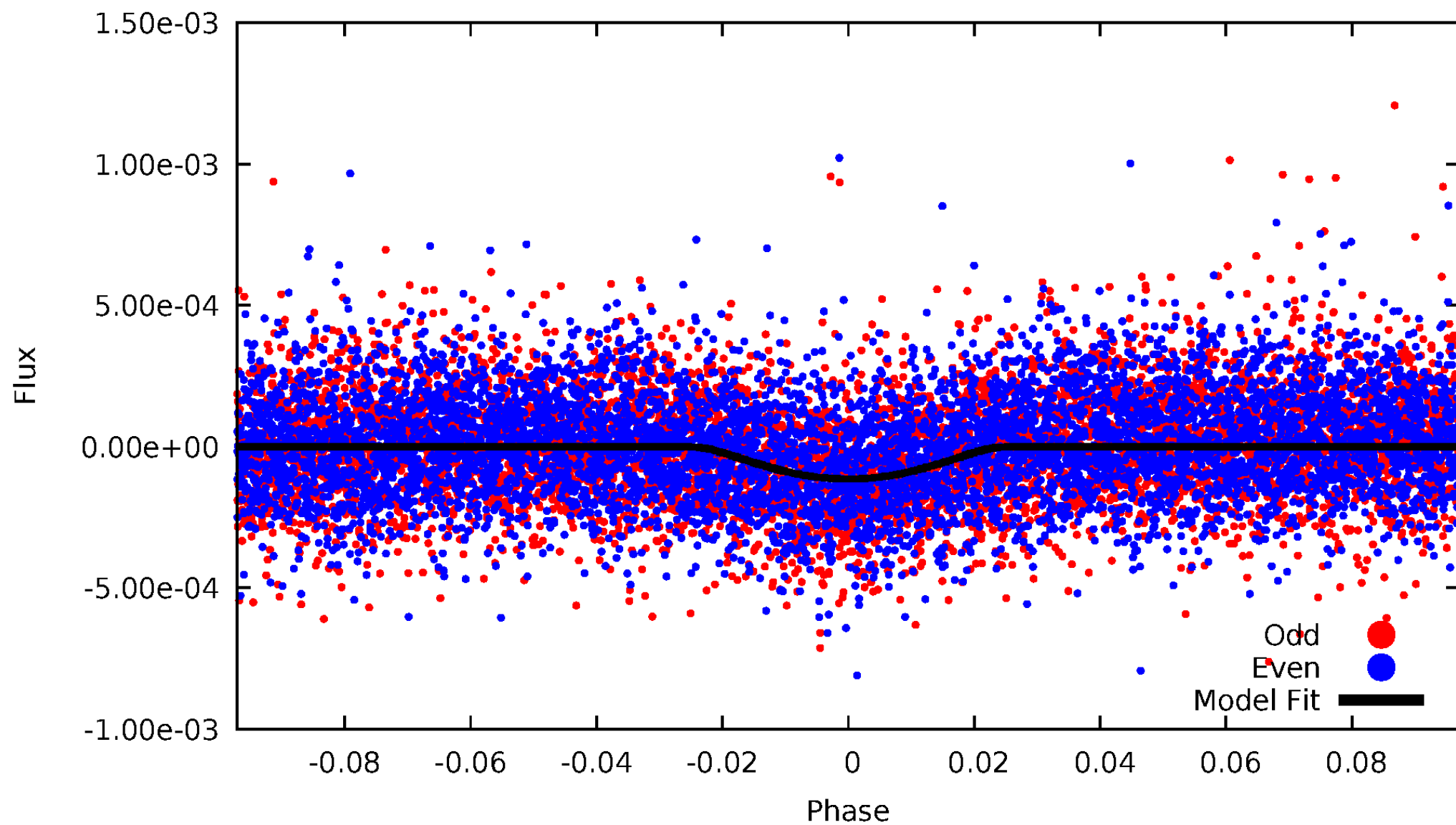


TCE 004038095-01



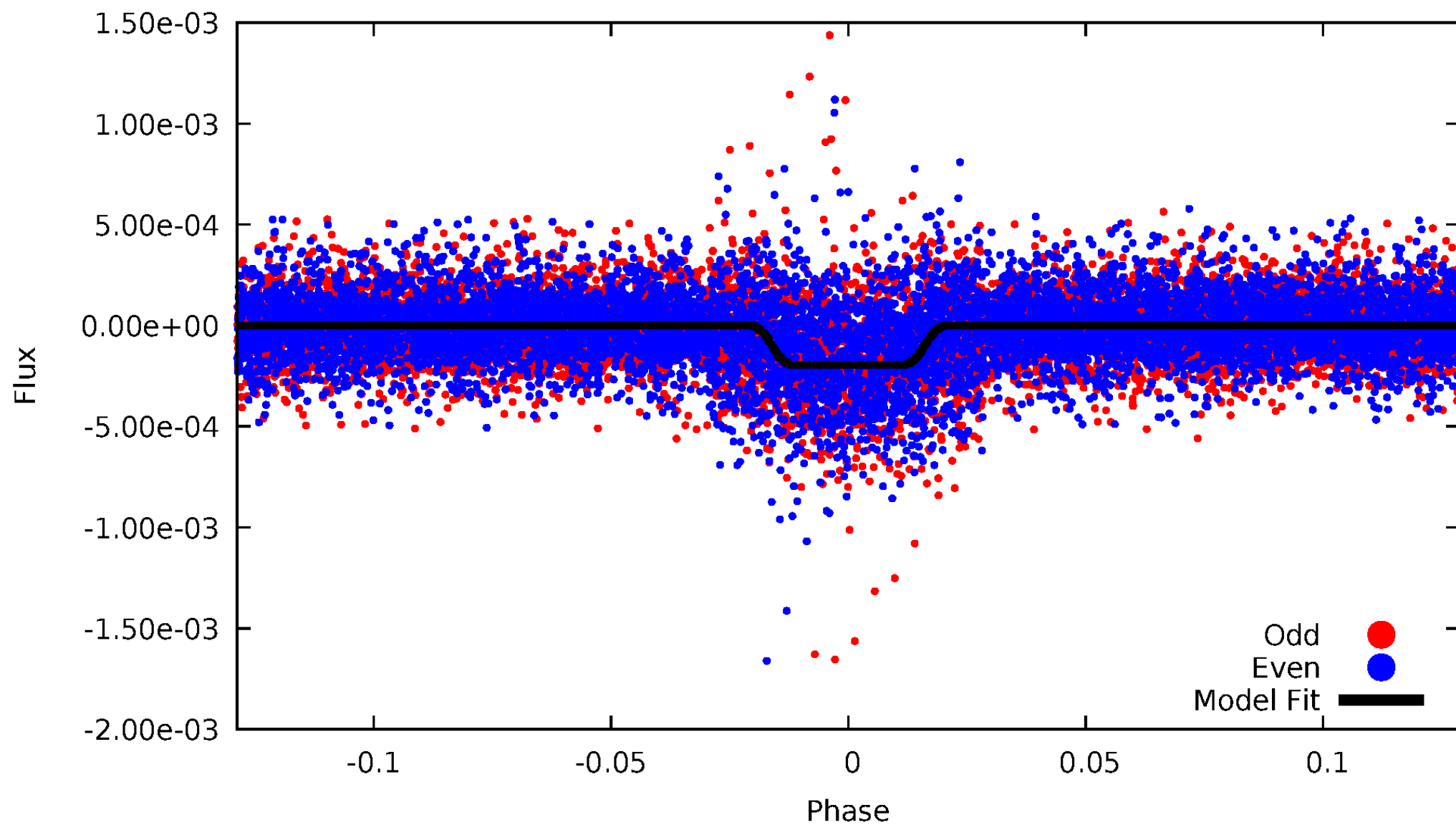
DV Odd/Even

TCE 004038095-01

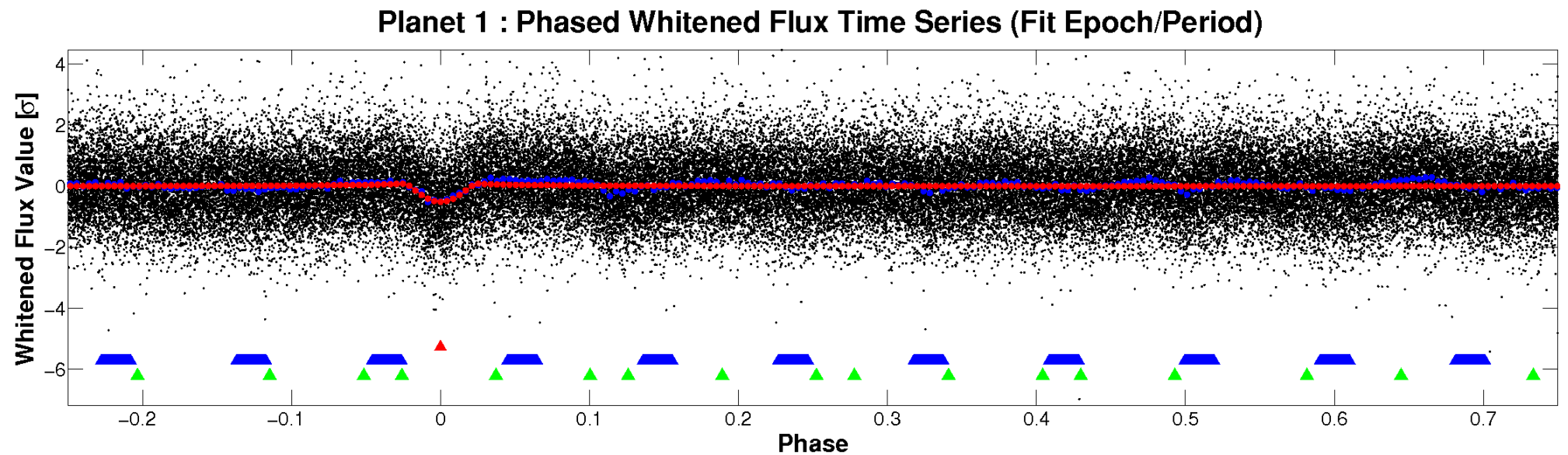
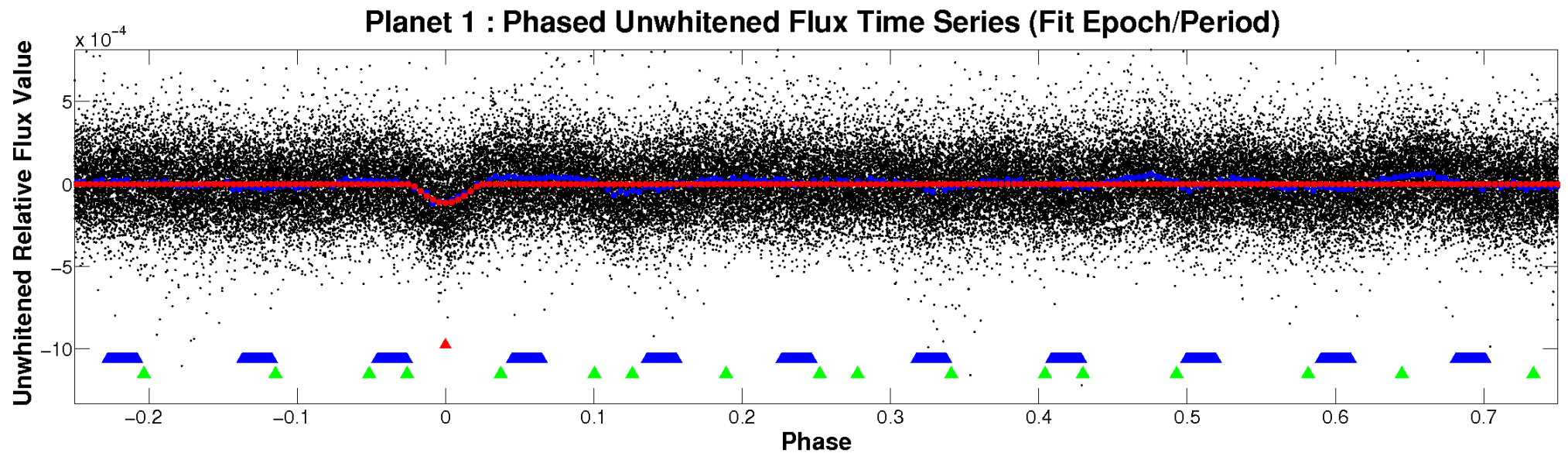


ALT Odd/Even

TCE 004038095-01

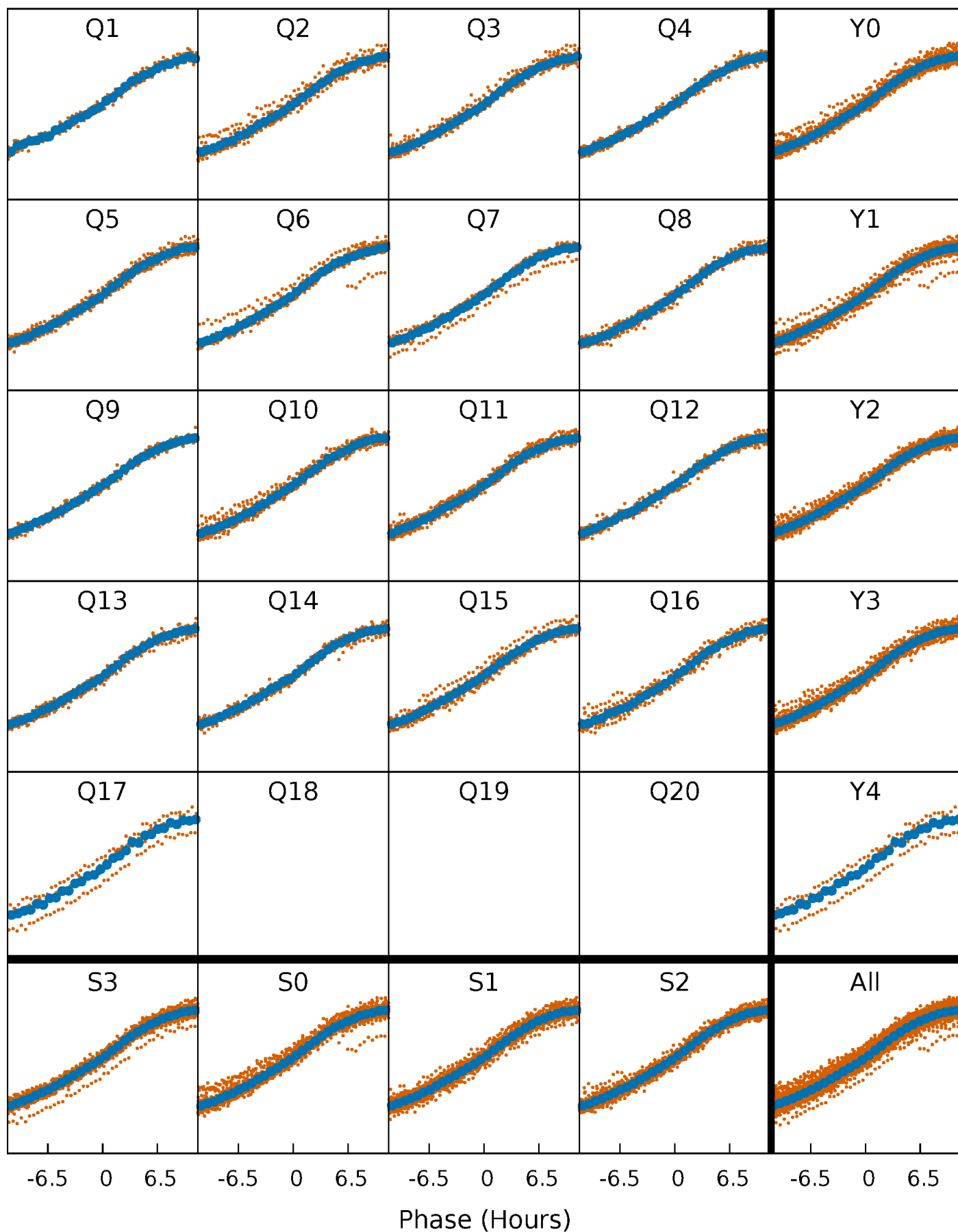


Non-Whitened Vs. Whitened Light Curve



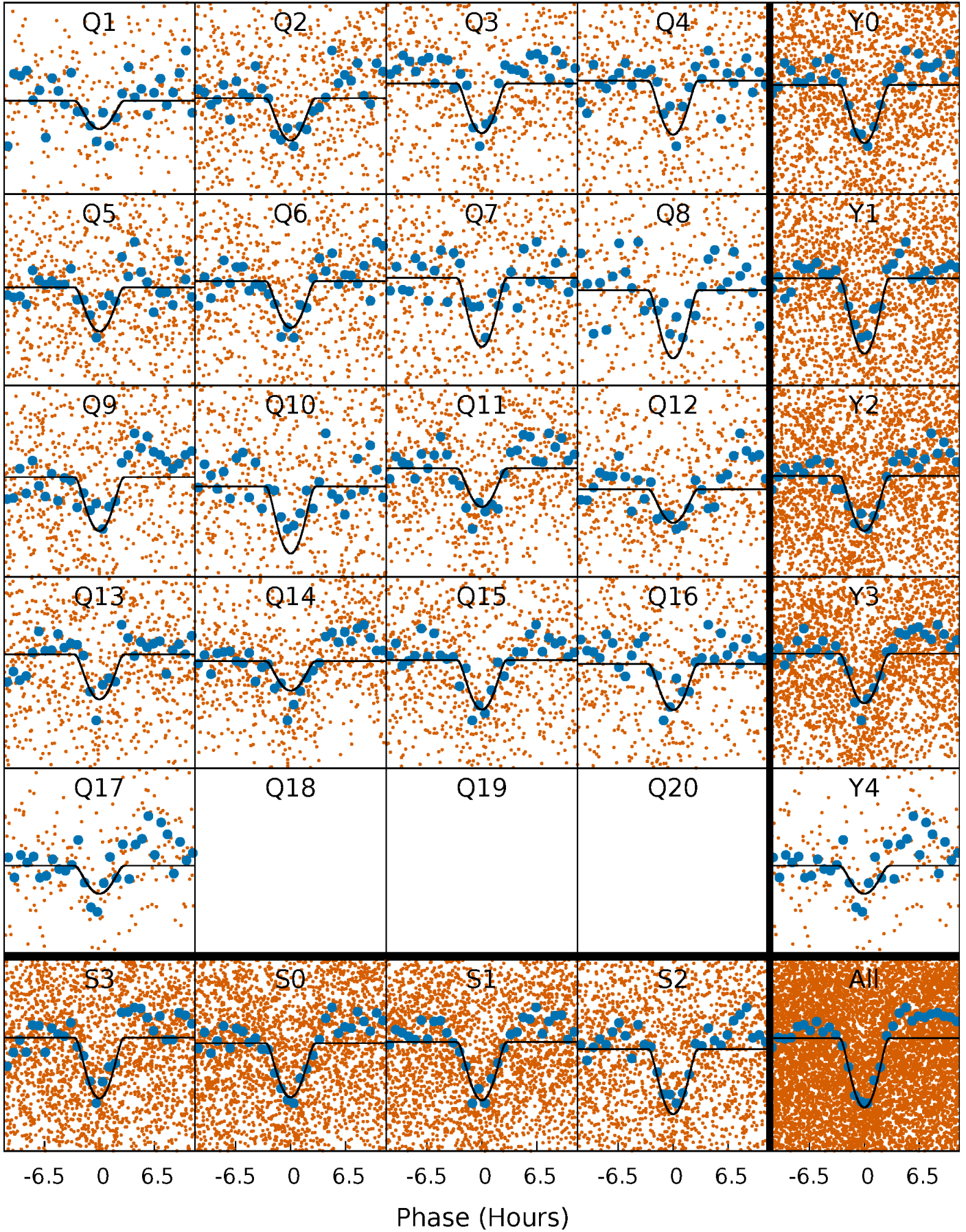
PDC Quarter-Phased Transit Curves

TCE 004038095-01 P= 4.852474 Days $T_0=131.594642$ (BKJD)



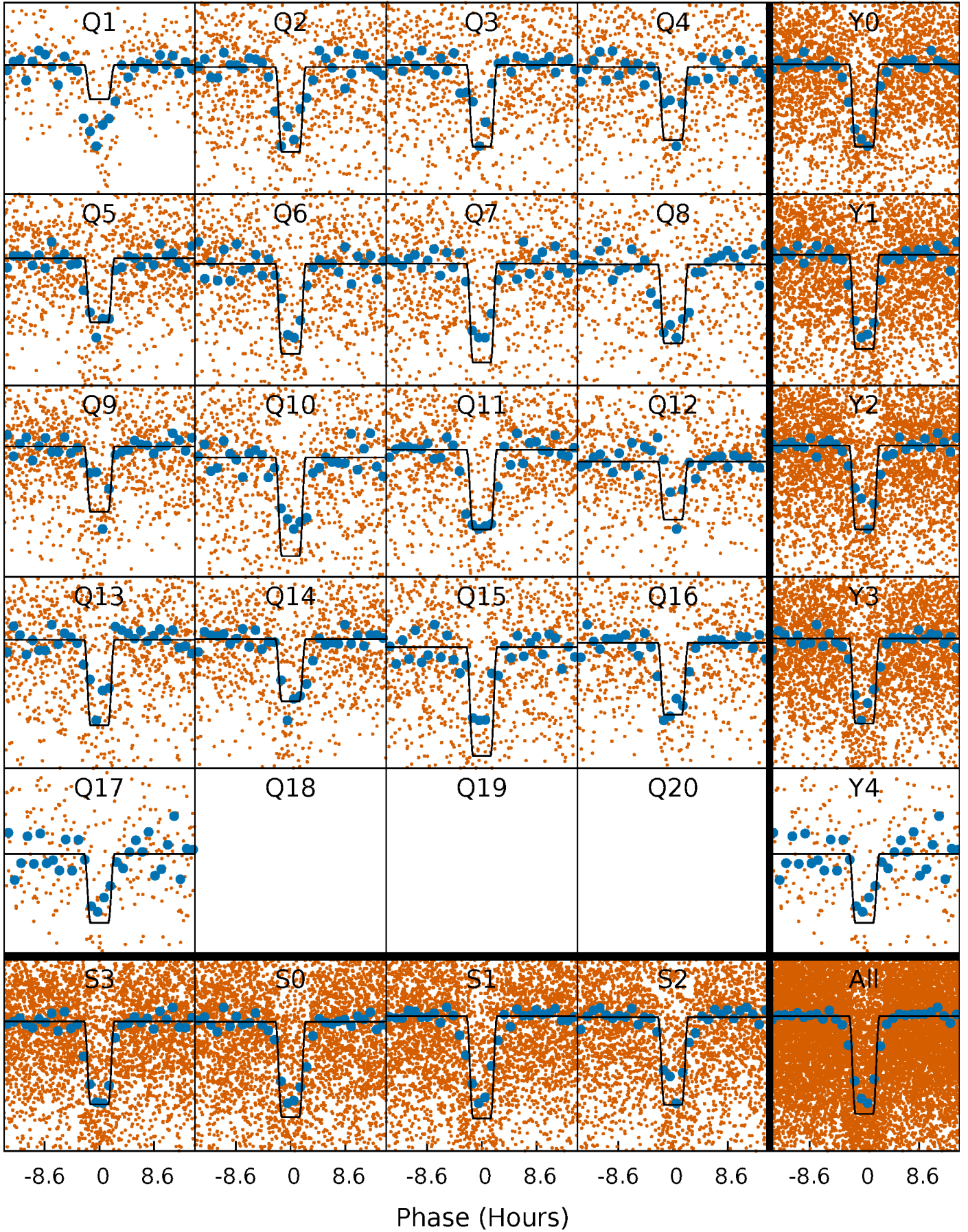
DV Quarter-Phased Transit Curves

TCE 004038095-01 $P = 4.852474$ Days $T_0 = 131.594642$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

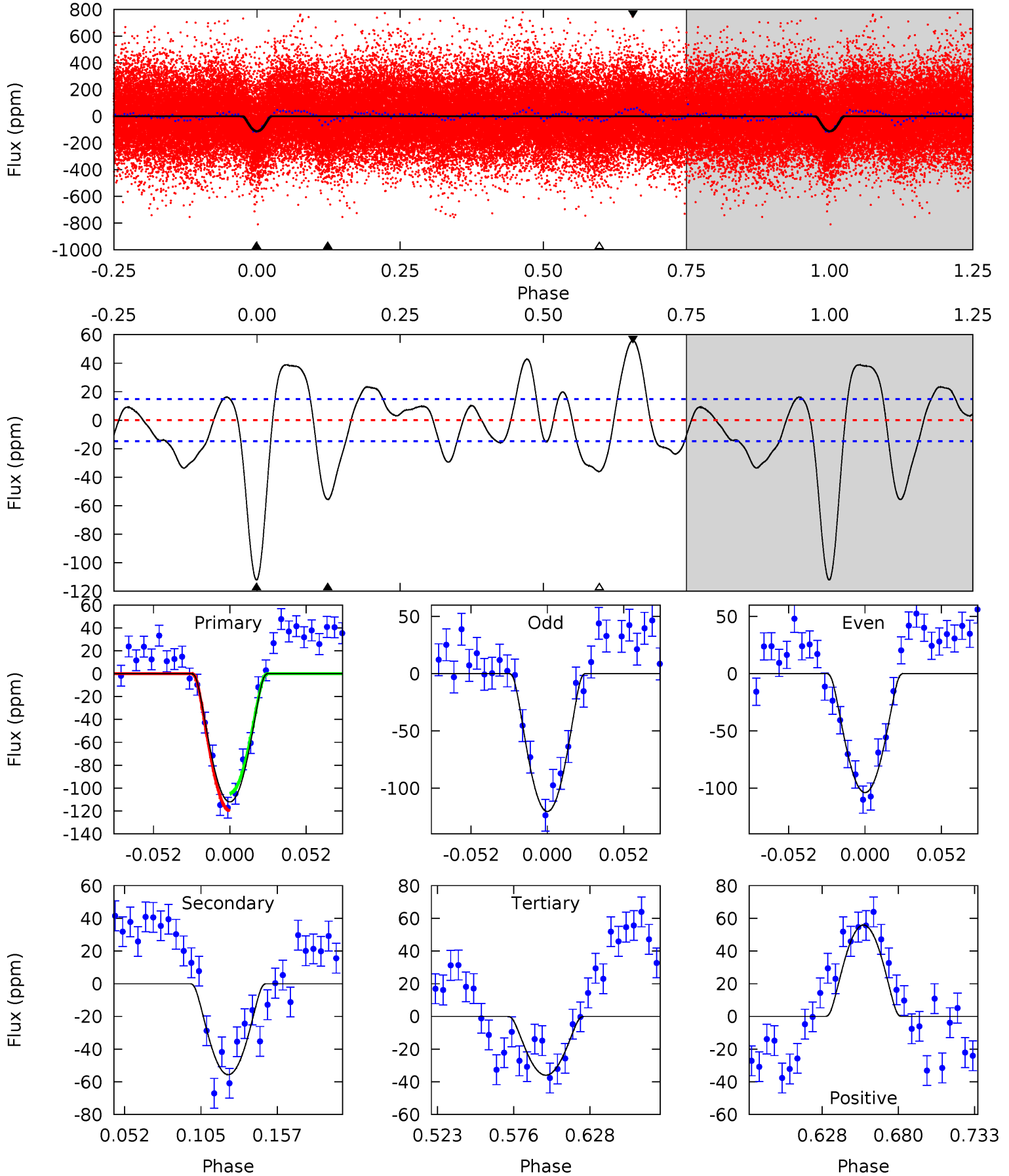
TCE 004038095-01 P= 4.852492 Days $T_0=131.596492$ (BKJD)



DV Model-Shift Uniqueness Test

004038095-01, P = 4.852474 Days, E = 126.742168 Days

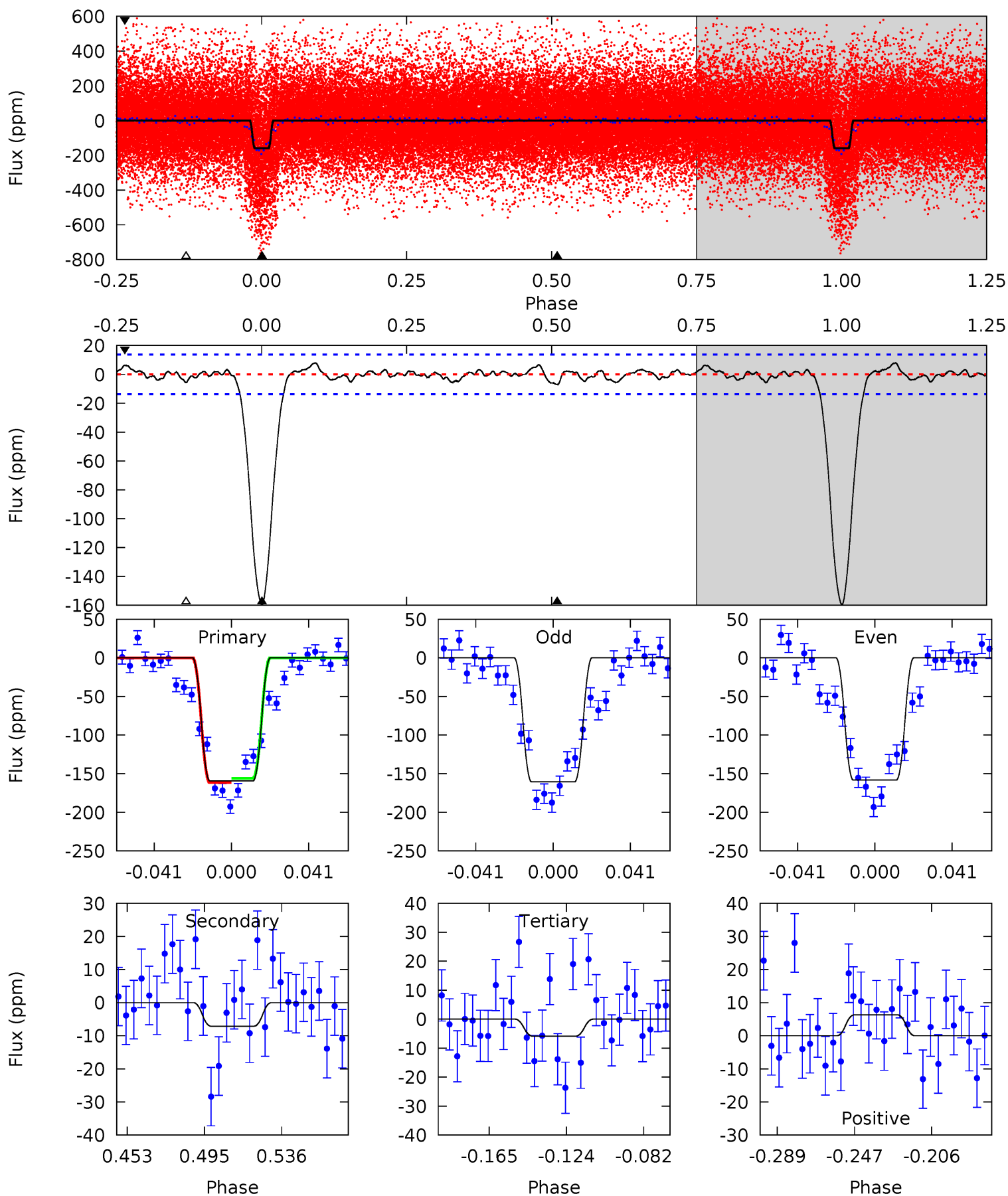
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
35.5	17.6	11.4	17.7	4.70	1.94	6.80	24.1	17.8	6.25	-0.07	2.63	1.08	0.33	2.41



Alt Model-Shift Uniqueness Test

004038095-01, P = 4.852492 Days, E = 126.744000 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
55.0	2.45	2.02	2.18	4.75	2.04	0.89	53.0	52.8	0.43	0.27	0.40	1.10	0.05	0.92



Stellar Parameters For KIC 004038095

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7612^{+211}_{-316}	$3.731^{+0.384}_{-0.096}$	$0.070^{+0.200}_{-0.350}$	$3.301^{+0.508}_{-1.423}$	$2.136^{+0.250}_{-0.584}$	$0.084^{+0.302}_{-0.025}$
	+3%/-4%	+10%/-3%	+286%/-500%	+15%/-43%	+12%/-27%	+361%/-30%
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 004038095-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-56 ± 3	$9.56^{+8.54}_{-6.22}$	3099^{+201}_{-326}	3920^{+2445}_{-997}	$1.747^{+12.854}_{-1.254}$
Alt.	-7 ± 3	$8.28^{+8.13}_{-5.85}$	3061^{+222}_{-332}	-2296^{+6612}_{-718}	$0.264^{+2.701}_{-0.199}$

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

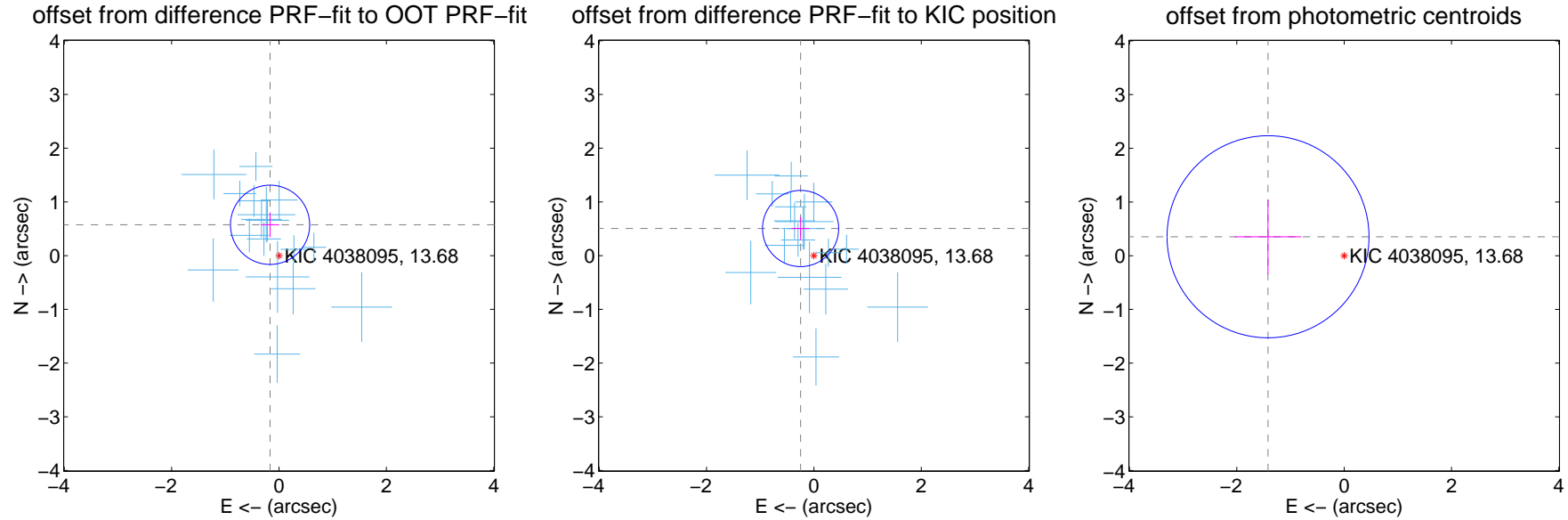
DV Centroid Data

Supplemental centroid analysis for 004038095-01. Kepler magnitude: 13.68. Transit SNR 18.69

There are 17 quarters with good PRF difference image offsets

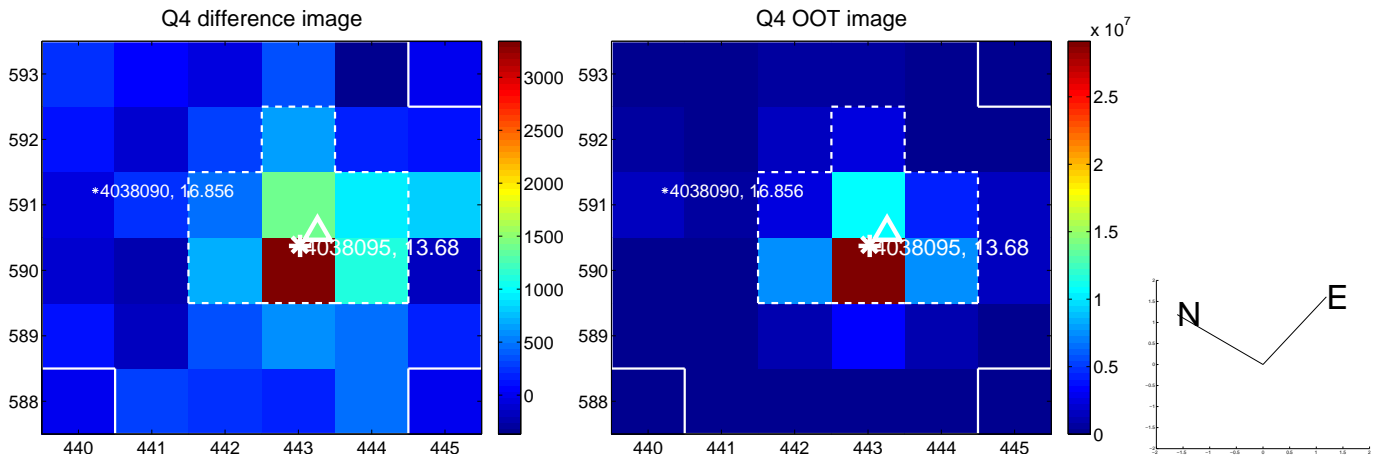
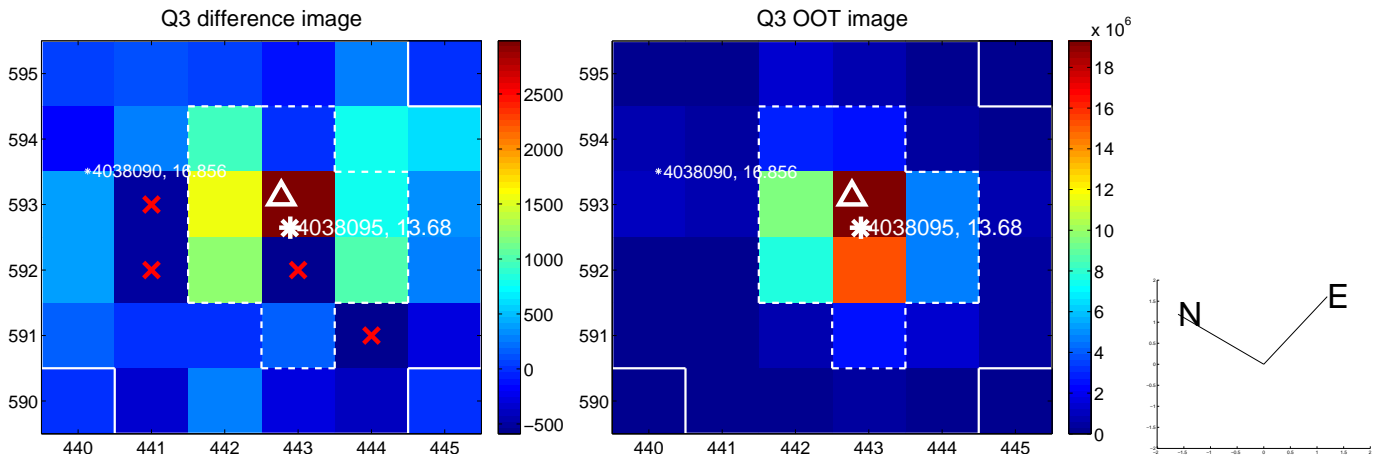
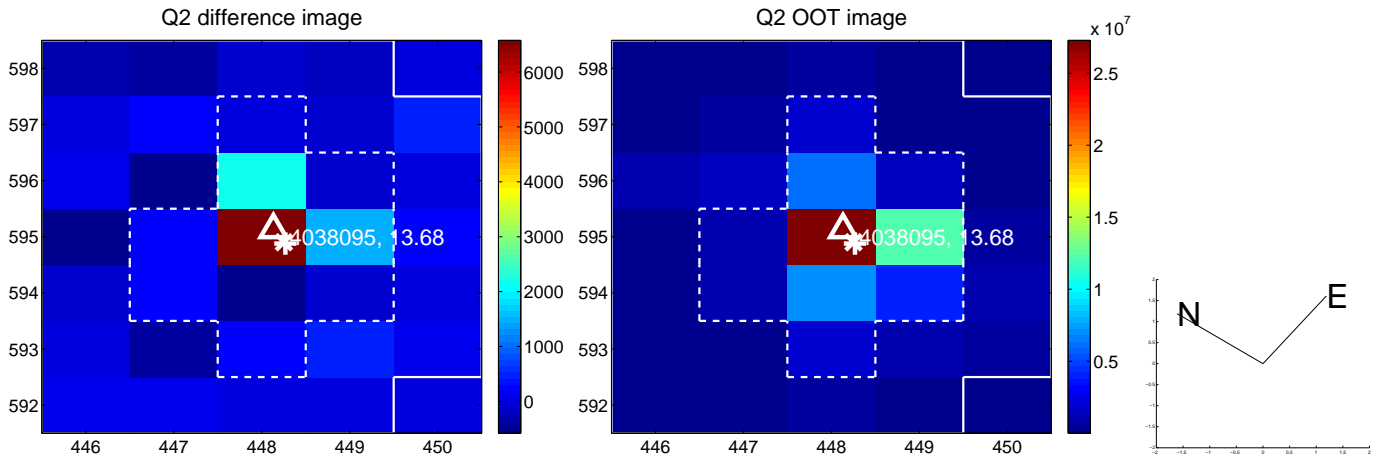
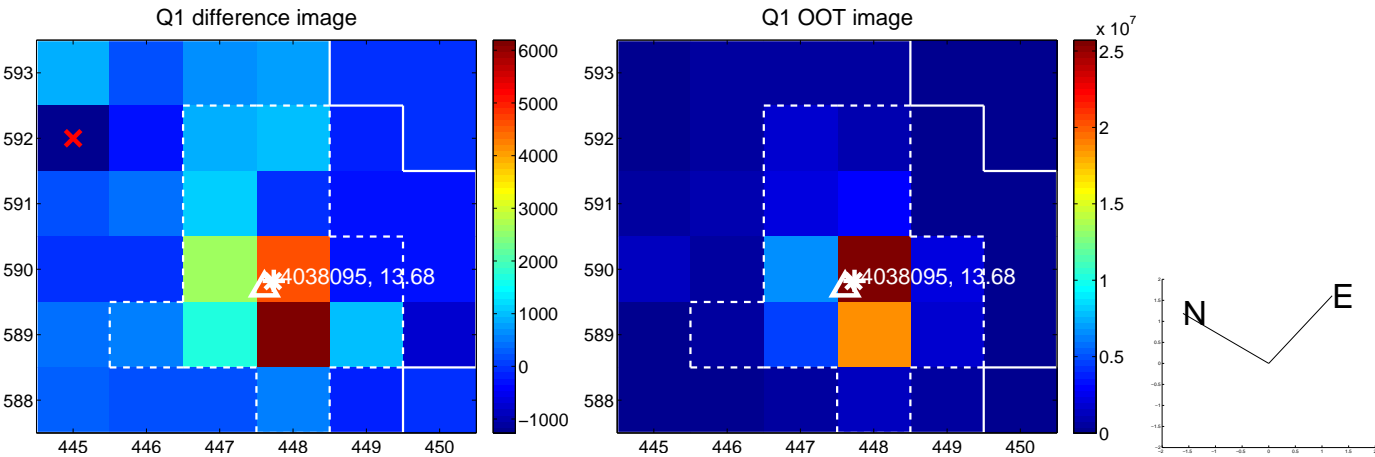
The direct PRF centroid is offset from the target star catalog position by about 0.06 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.597 ± 0.246	2.43	0.166 ± 0.172	0.574 ± 0.230
PRF-fit source offset from KIC position	0.563 ± 0.236	2.38	0.248 ± 0.169	0.505 ± 0.216
photometric centroid source offset	1.46 ± 0.63	2.33	1.42 ± 0.62	0.35 ± 0.70

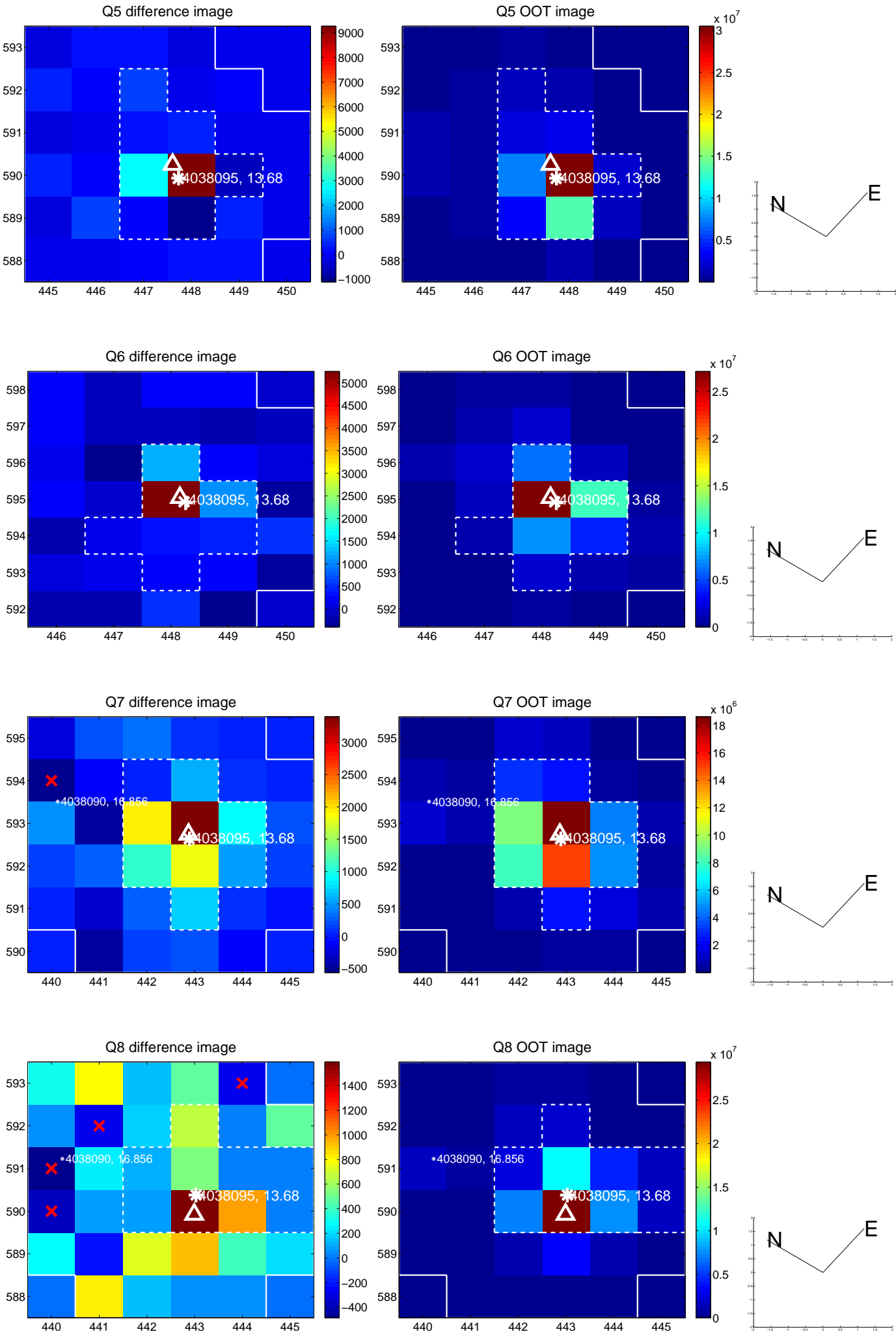


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

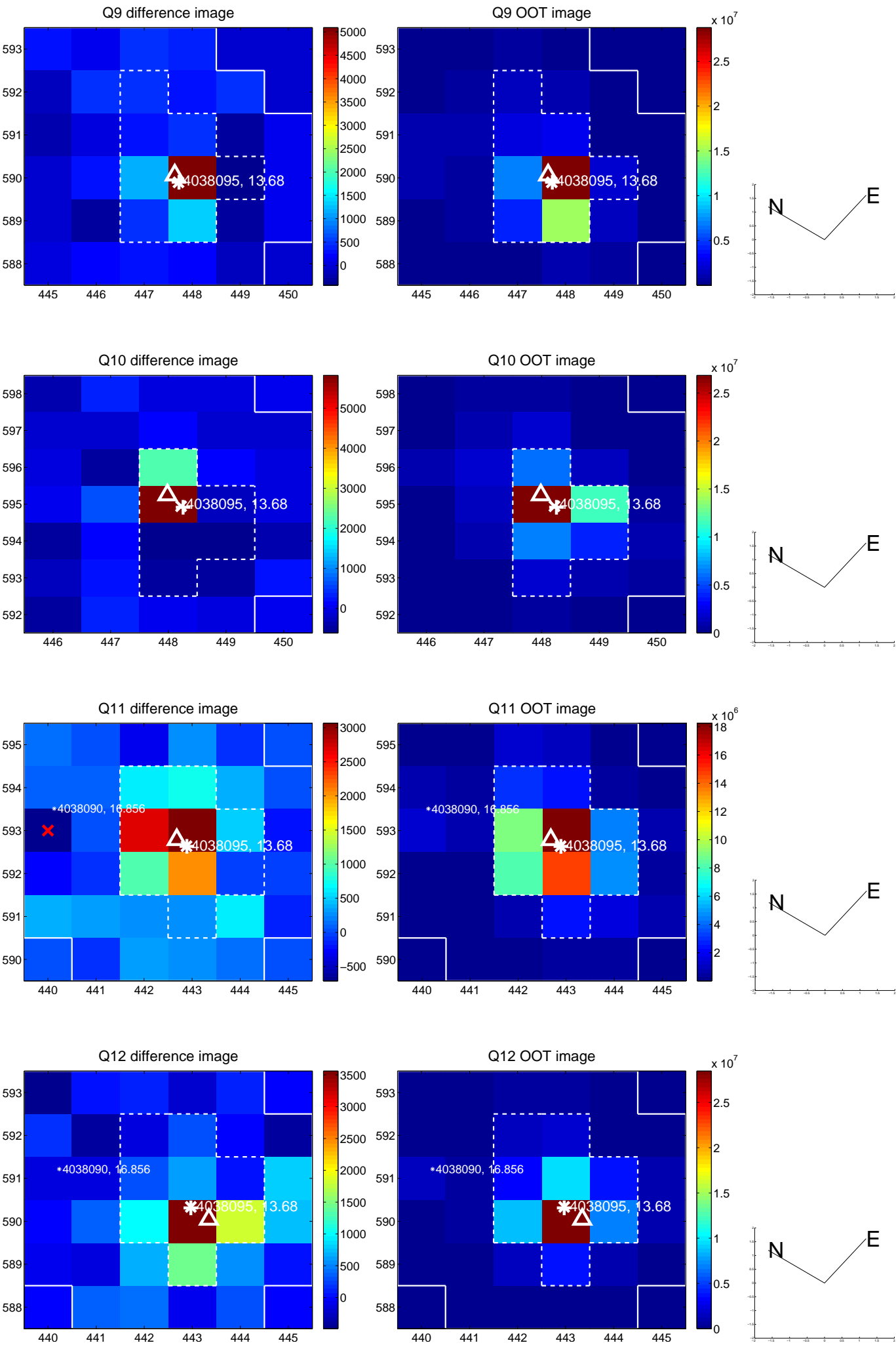
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



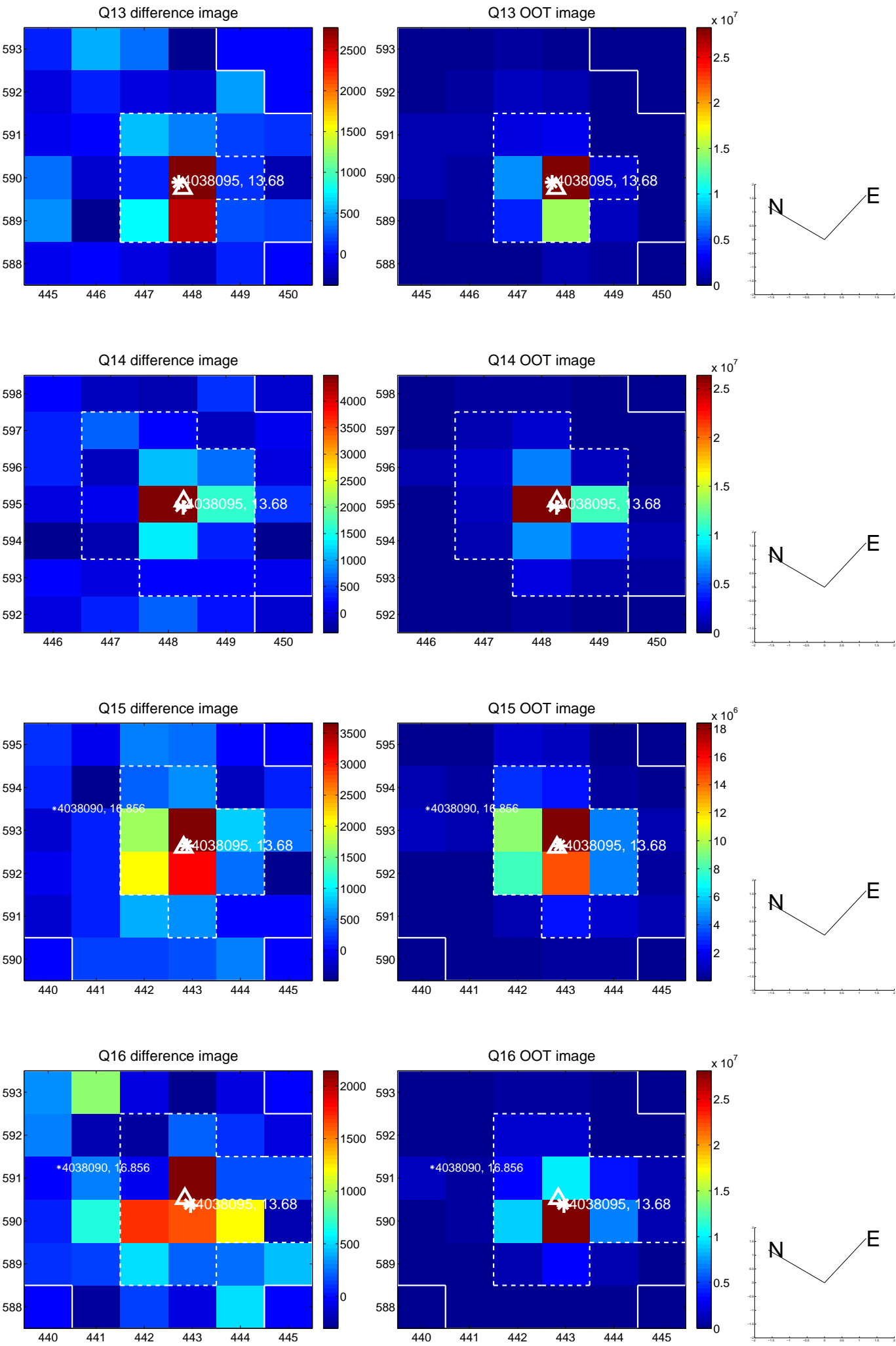
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



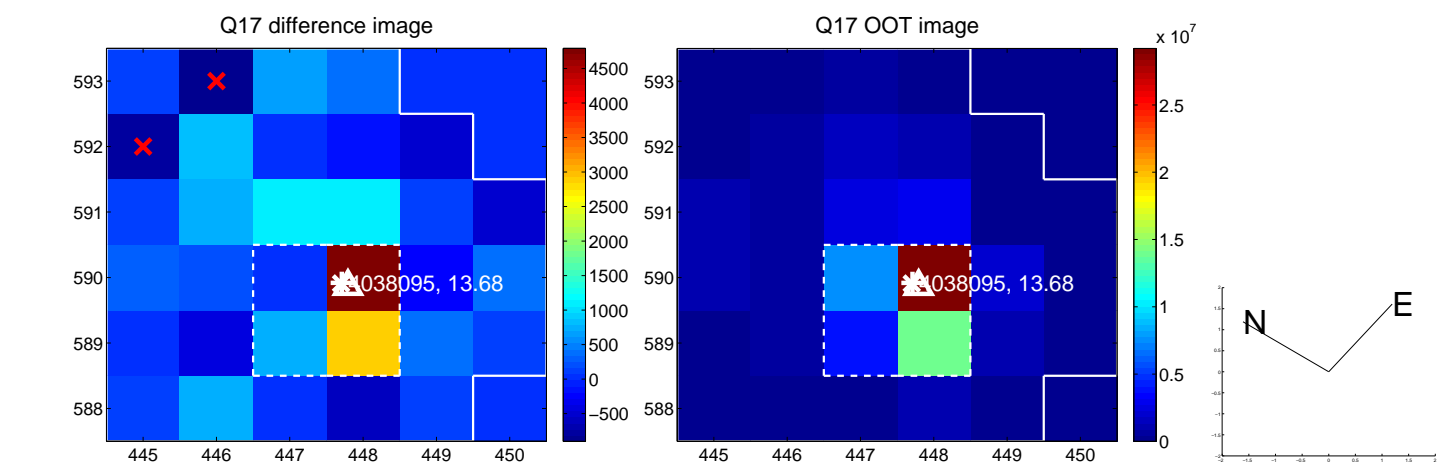
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



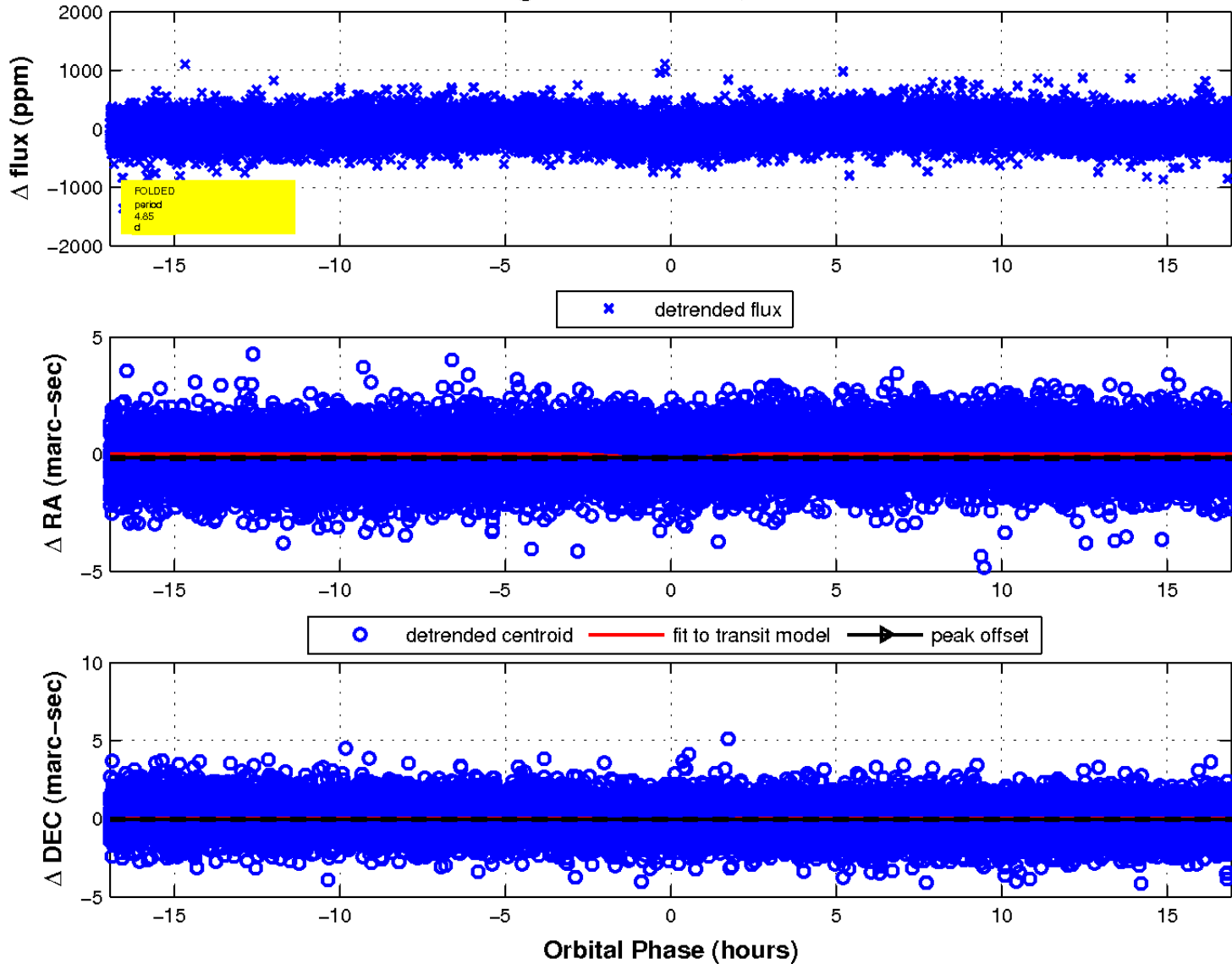
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

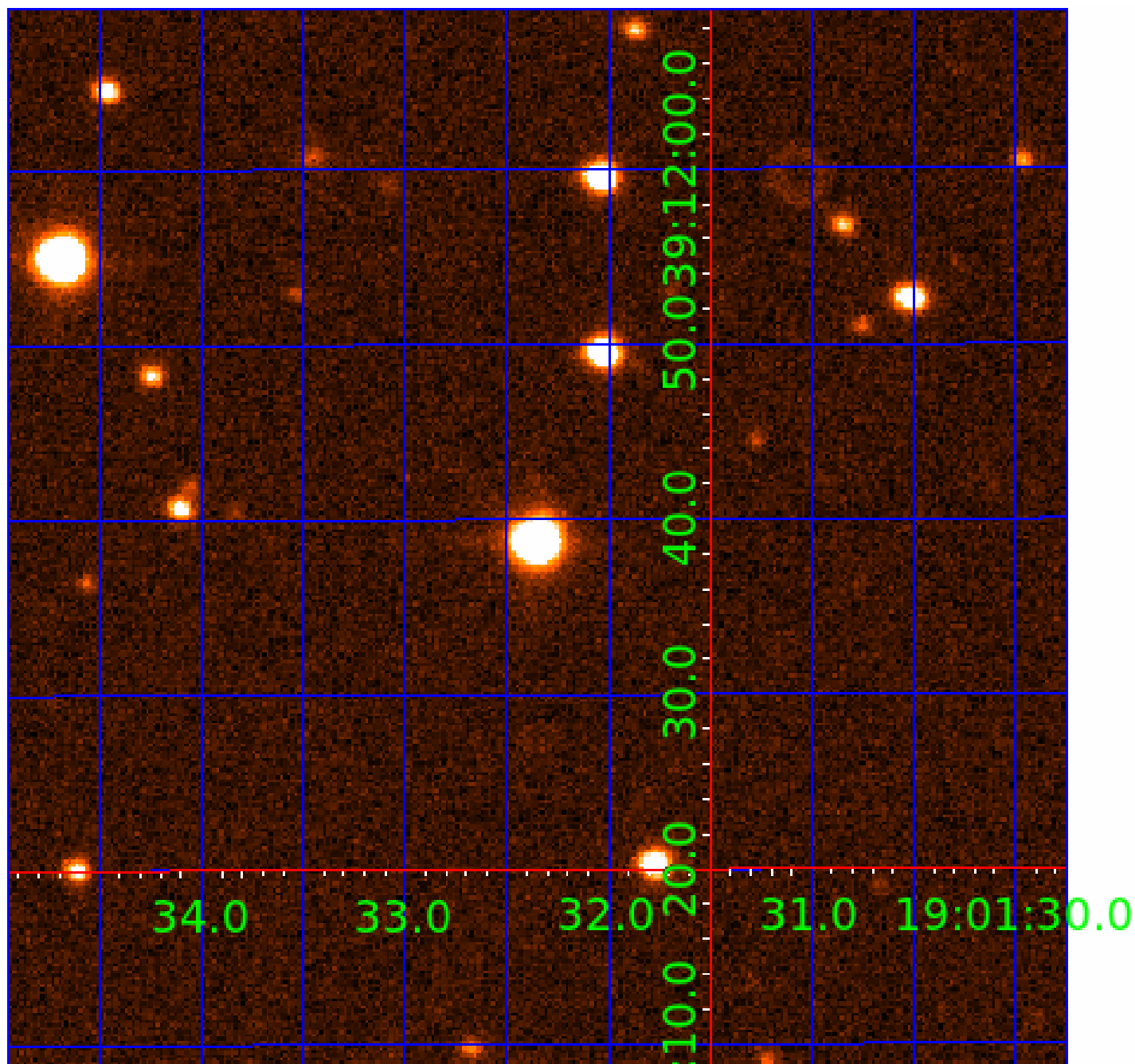


fluxWeightedCentroids, Planet 1 of 3



UKIRT Image

Declination



KIC 004038095

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})
004038095-01	OBS	No	4.852474	131.594642	114.7	5.652	16.8	18.7	3.30	7612	6.89	6271.46
004038095-02	OBS	No	0.882208	131.910195	16.1	4.060	7.7	6.5	3.30	7612	1.54	60891.74
004038095-03	OBS	No	86.607520	201.490702	235.7	5.634	8.8	6.6	3.30	7612	5.43	134.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004038095-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL—LPP_DV
004038095-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004038095-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

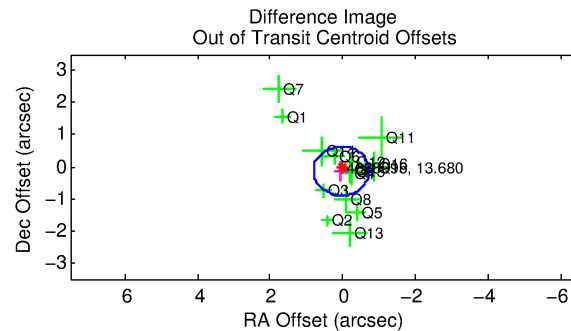
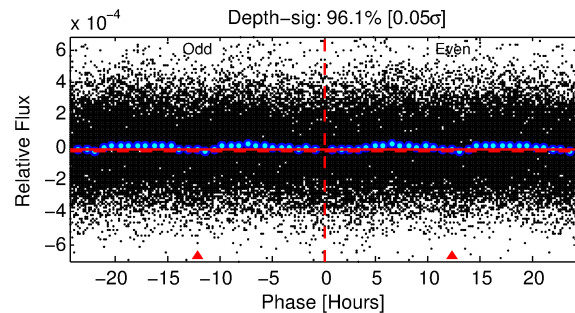
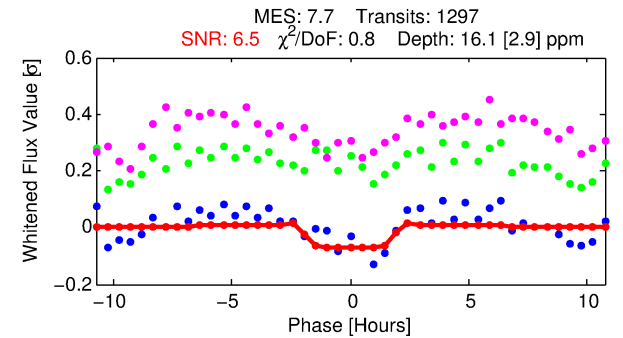
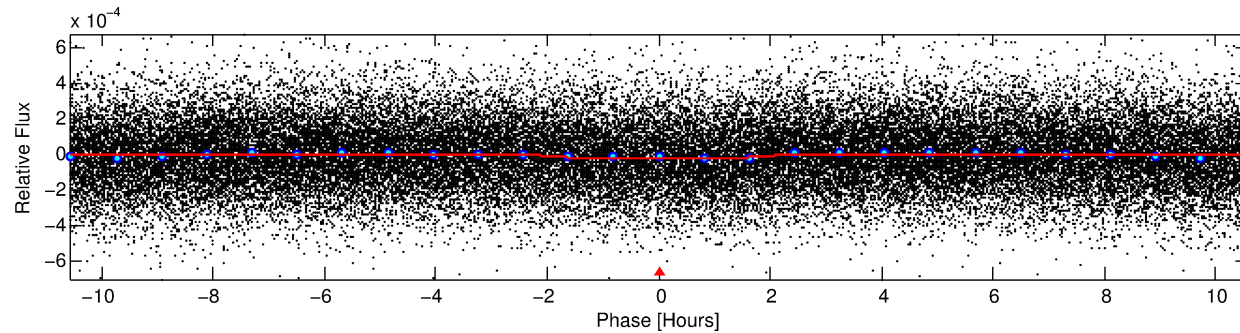
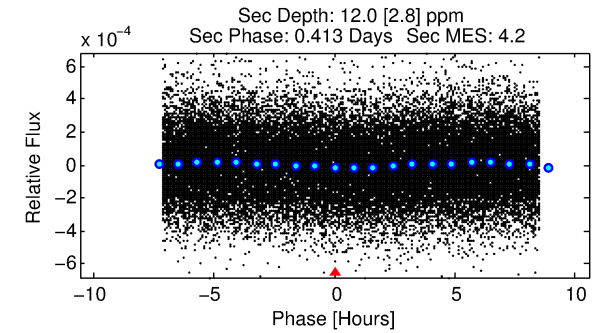
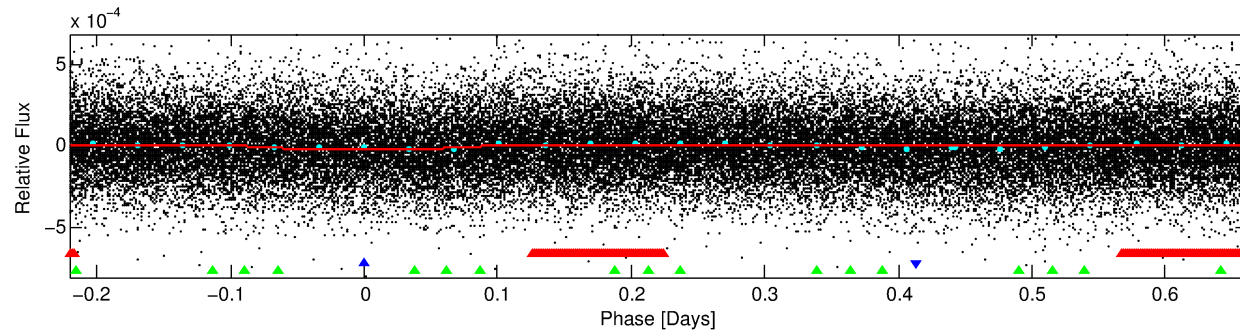
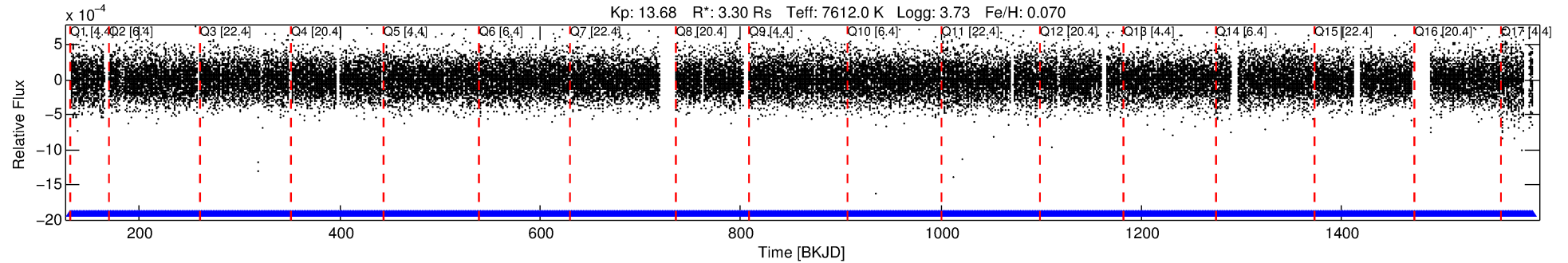
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004038095-02

No Significant Match Found

DV One-Page Summary

KIC: 4038095 Candidate: 2 of 3 Period: 0.882 d



DV Fit Results:

Period = 0.88221 [0.00002] d
Epoch = 131.9102 [0.0060] BKJD
Rp/R* = 0.0043 [0.0025]
a/R* = 1.20 [1.35]
b = 0.90 [0.81]
Seff = 60891.74 [41192.29]
Teq = 4006 [677] K
Rp = 1.54 [1.12] Re
a = 0.0232 [0.0096] AU
Ag = 1.50 [2.05] [0.24σ]
Teffp = 6856 [2074] K [1.31σ]

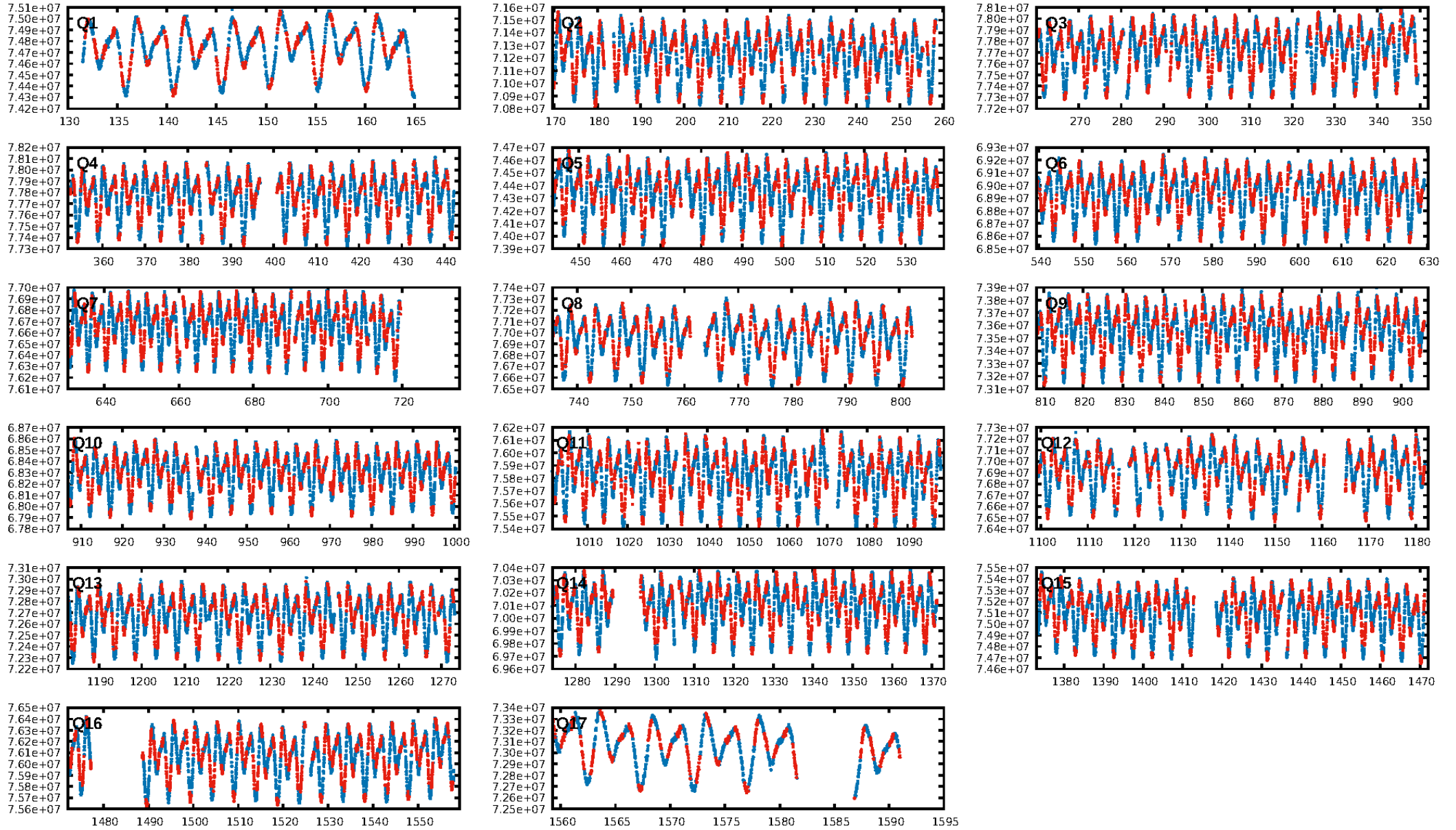
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [13.69σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.13e-12
RollingBand-fgt: 1.00 [1236/1236]
GhostDiagnostic-chr: -2.91
Centroid-sig: 25.0%
Centroid-so: 1.557 arcsec [0.93σ]
OotOffset-rm: 0.146 arcsec [0.57σ]
OotOffset-st: 4/4/4/4 [16]
KicOffset-rm: 0.235 arcsec [0.87σ]
KicOffset-st: 4/4/4/4 [16]
DiffImageQuality-fgm: 1.00 [16/16]
DiffImageOverlap-fno: 1.00 [17/17]

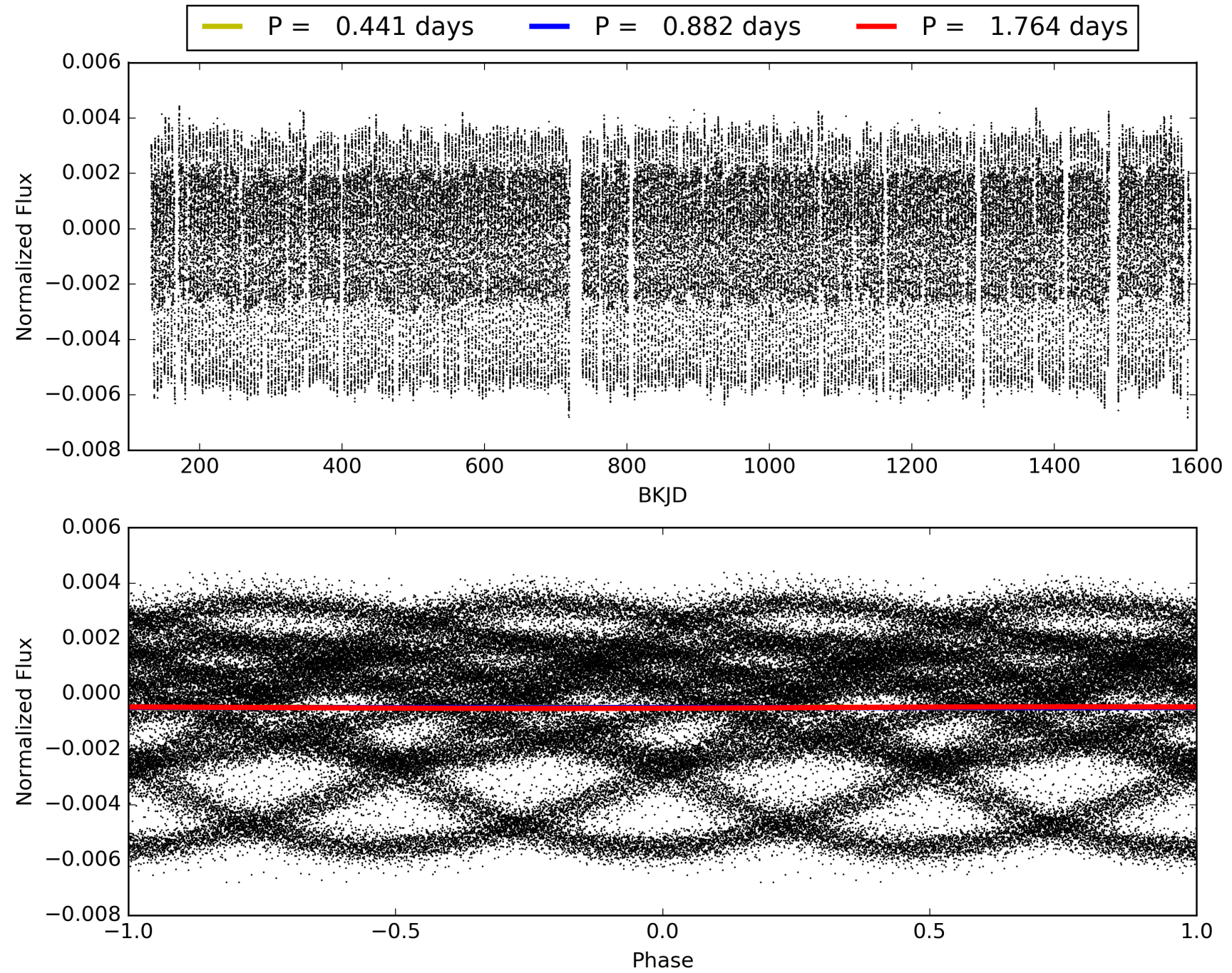
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:26:07 Z

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

TCE 004038095-02, PDC Light Curves

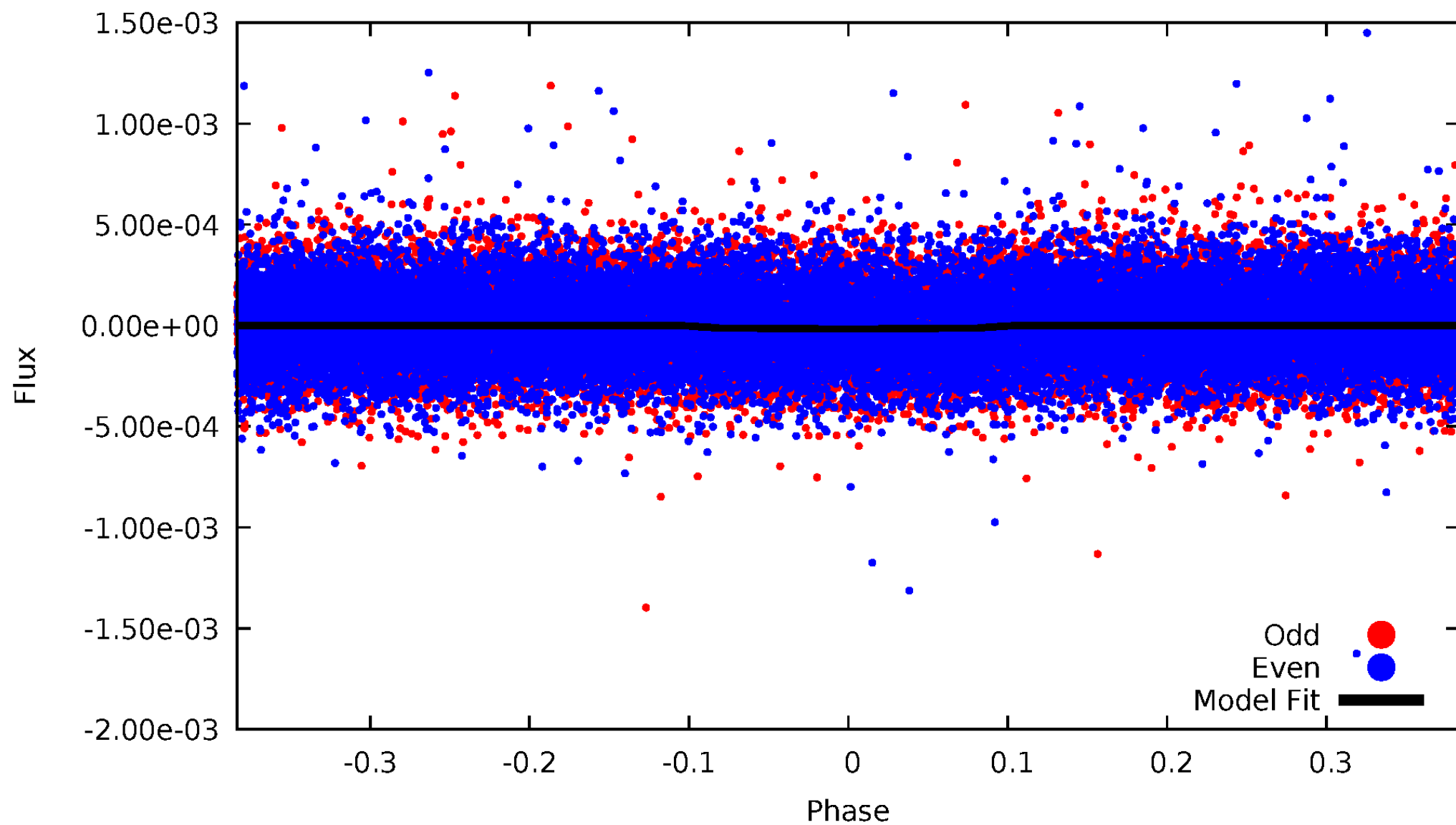


TCE 004038095-02



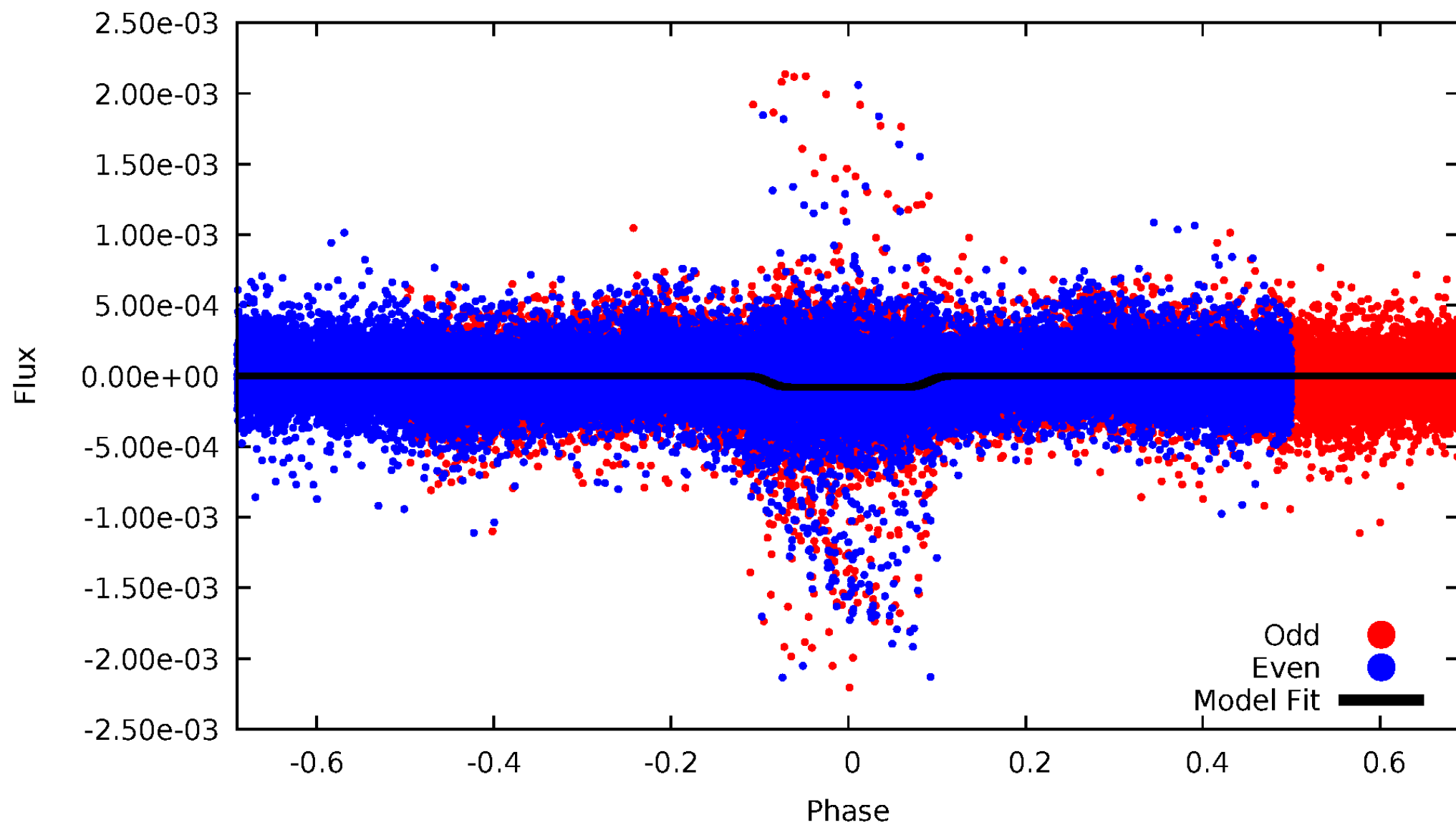
DV Odd/Even

TCE 004038095-02



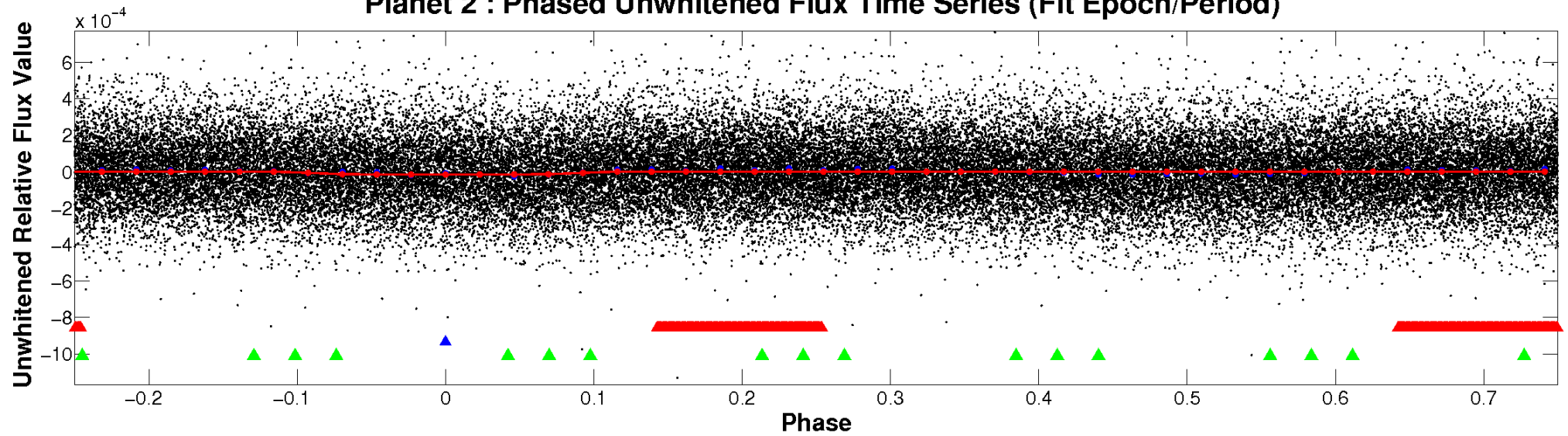
ALT Odd/Even

TCE 004038095-02

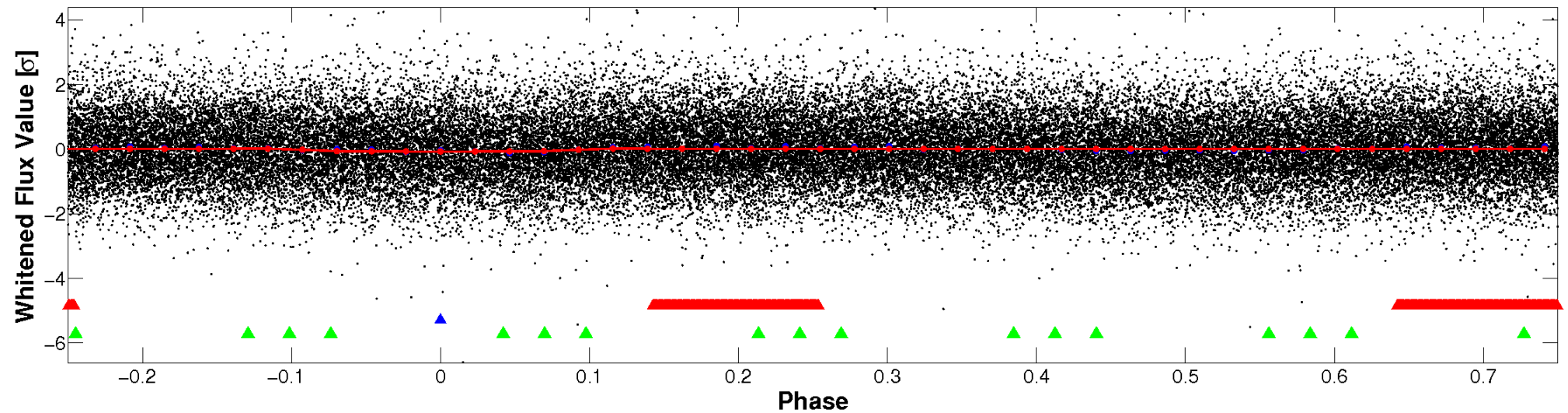


Non-Whitened Vs. Whitened Light Curve

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

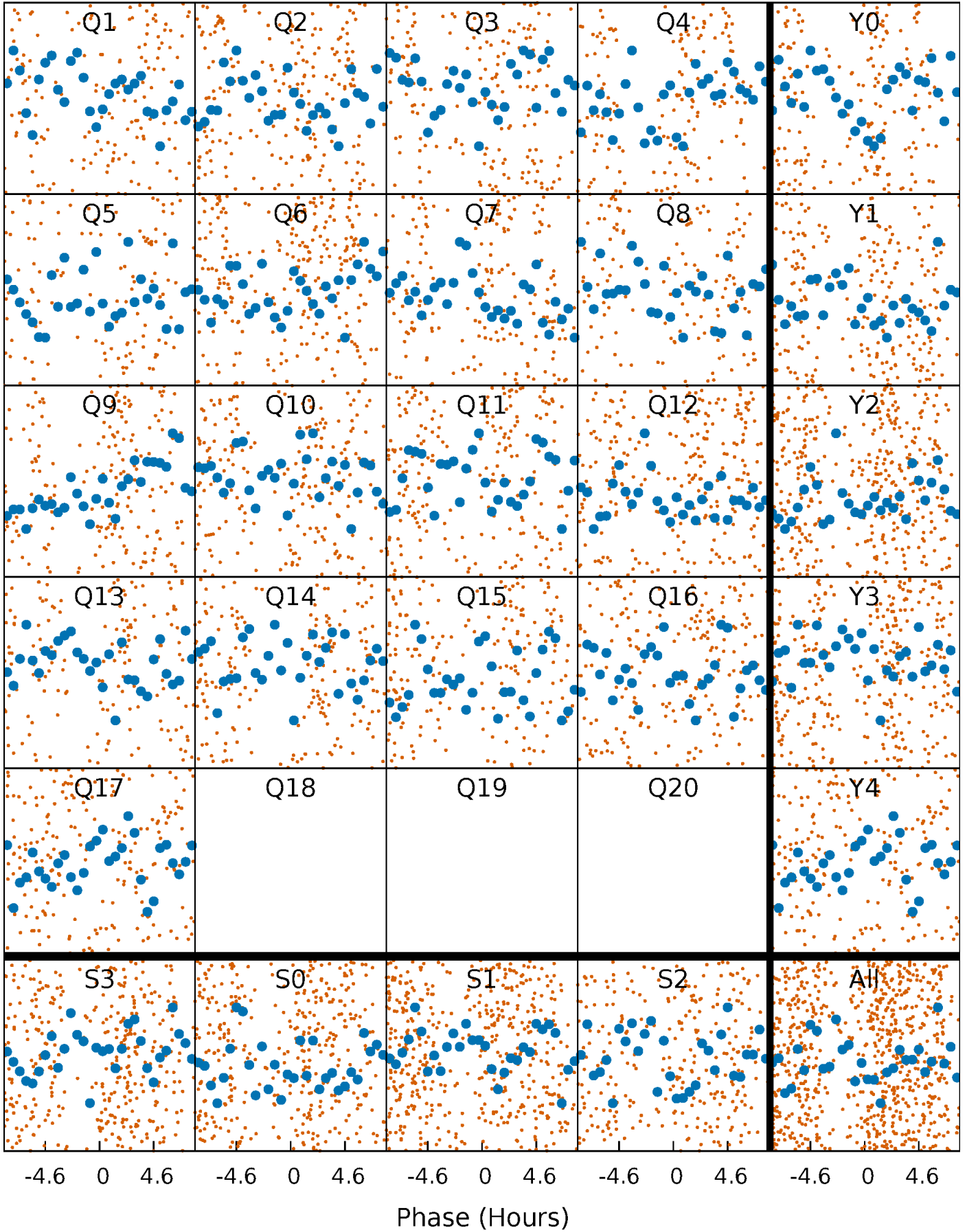


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



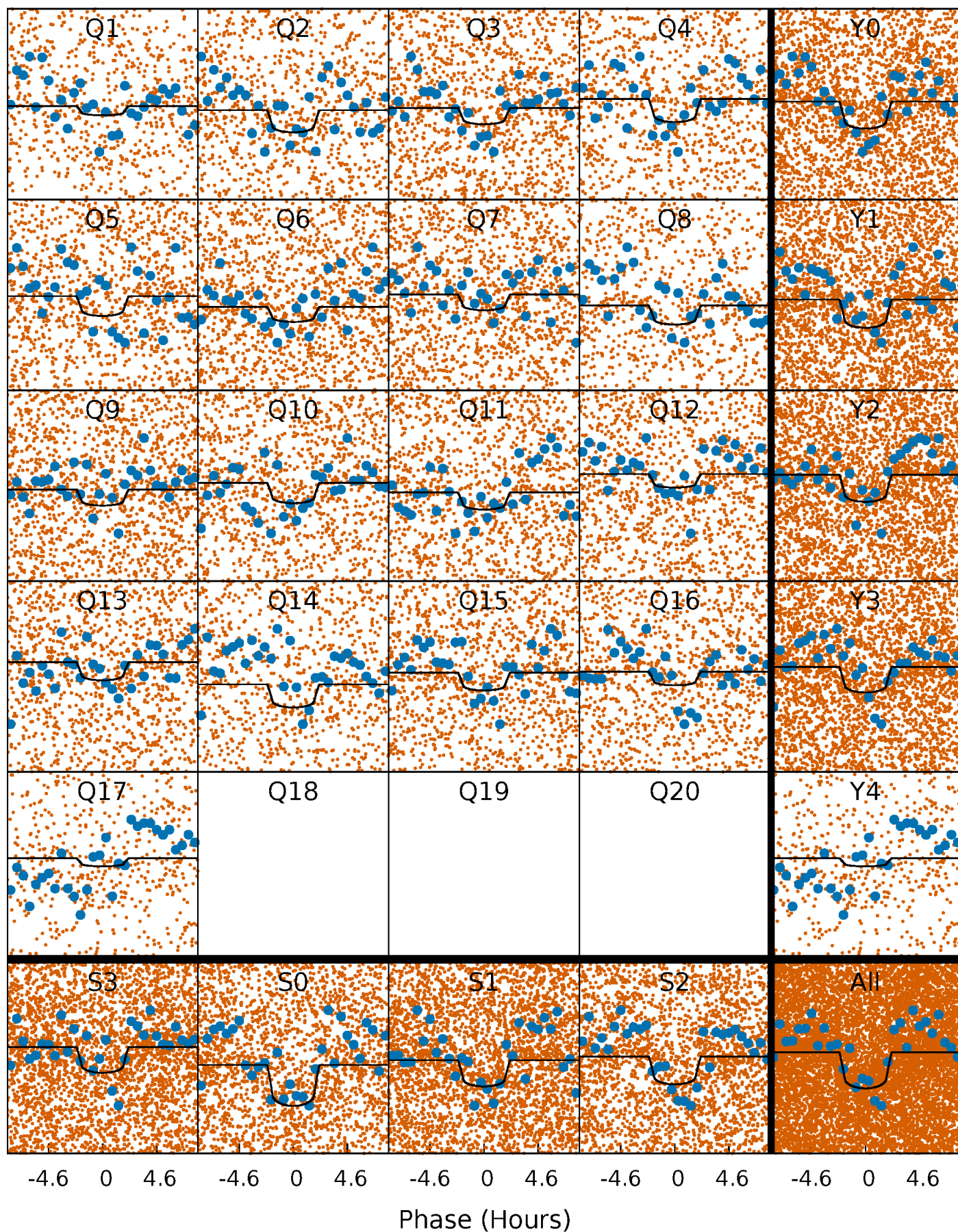
PDC Quarter-Phased Transit Curves

TCE 004038095-02 P= 0.882208 Days $T_0=131.910195$ (BKJD)



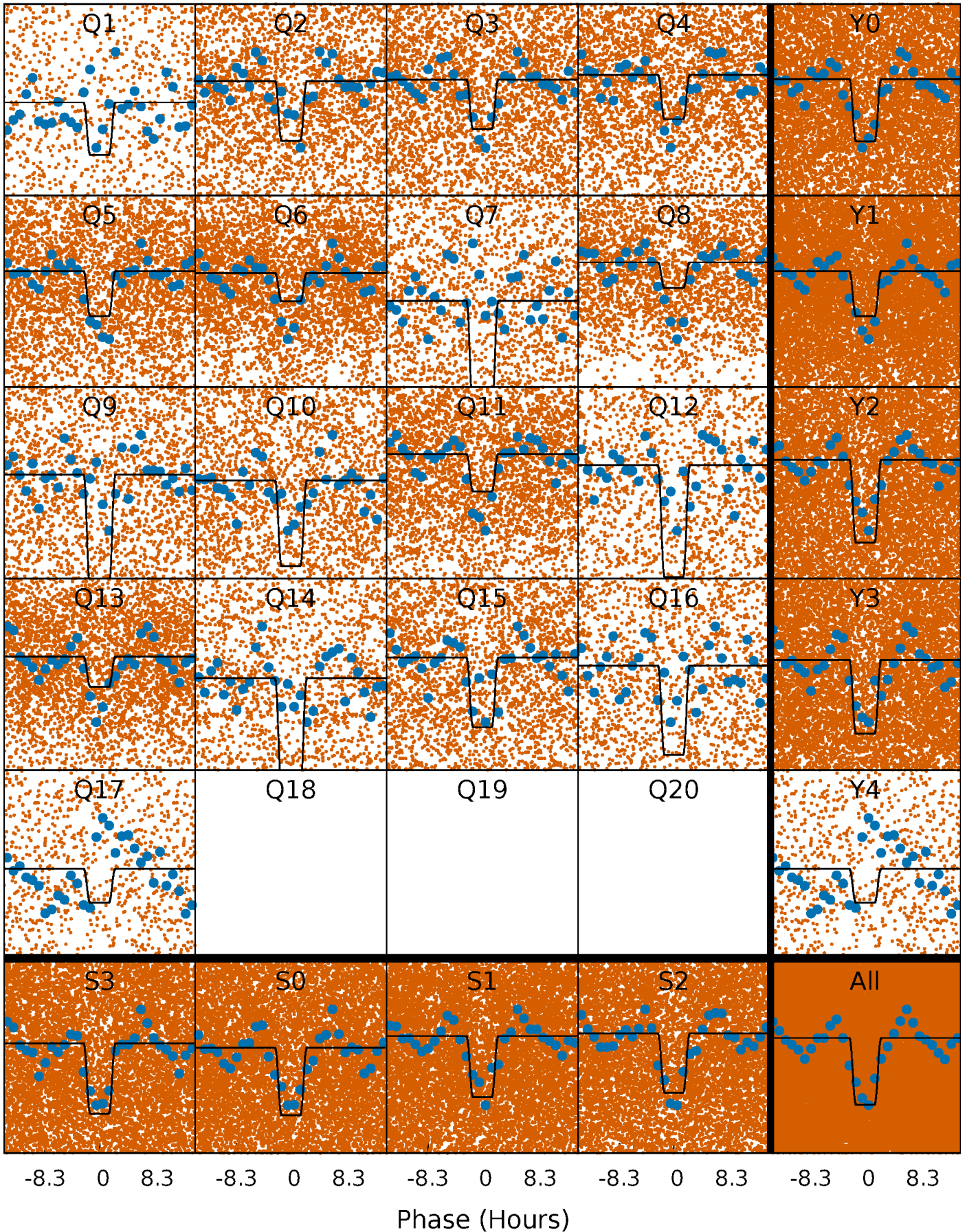
DV Quarter-Phased Transit Curves

TCE 004038095-02 P= 0.882208 Days $T_0=131.910195$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

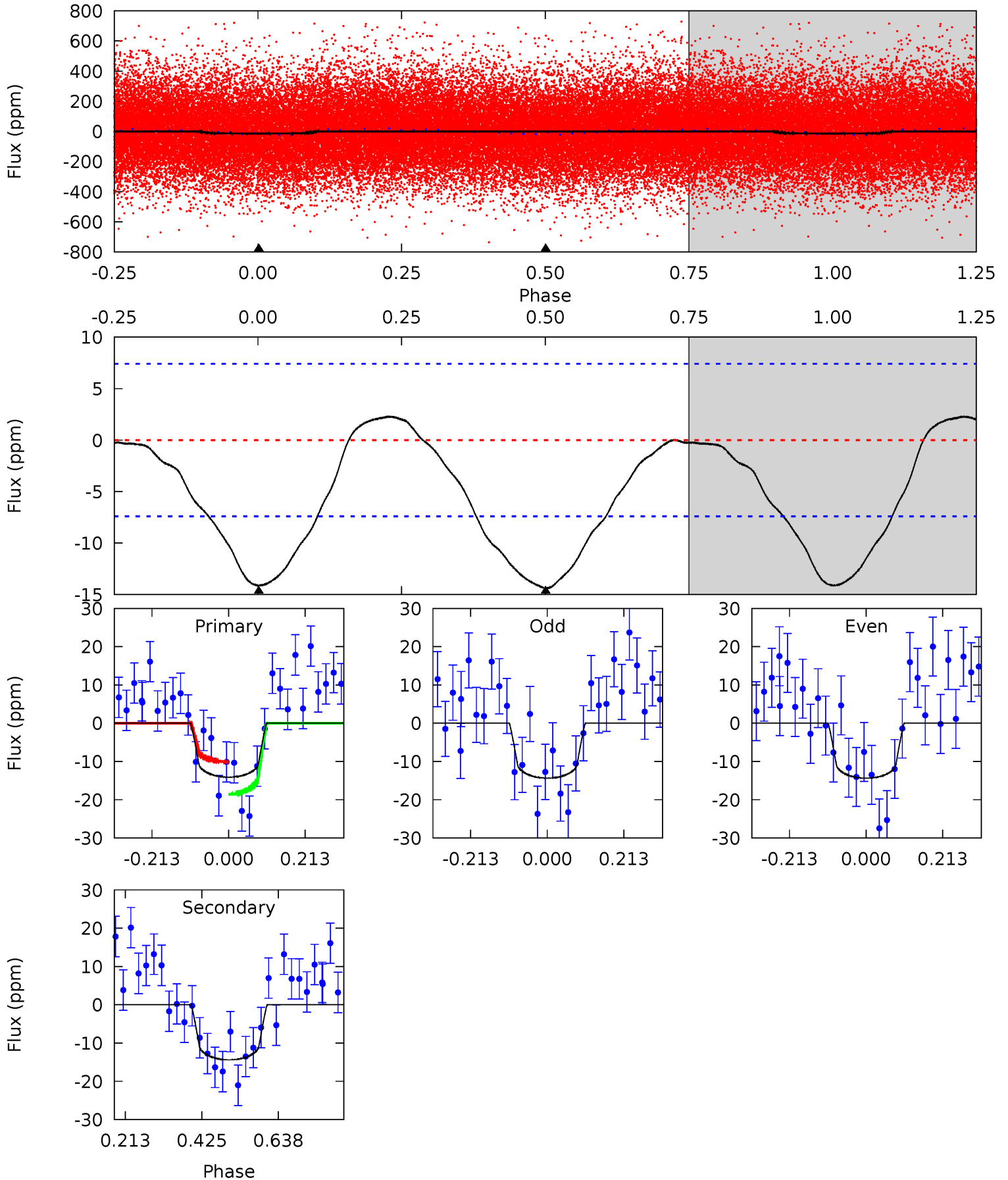
TCE 004038095-02 $P = 0.882235$ Days $T_0 = 131.905317$ (BKJD)



DV Model-Shift Uniqueness Test

004038095-02, P = 0.882208 Days, E = 131.910195 Days

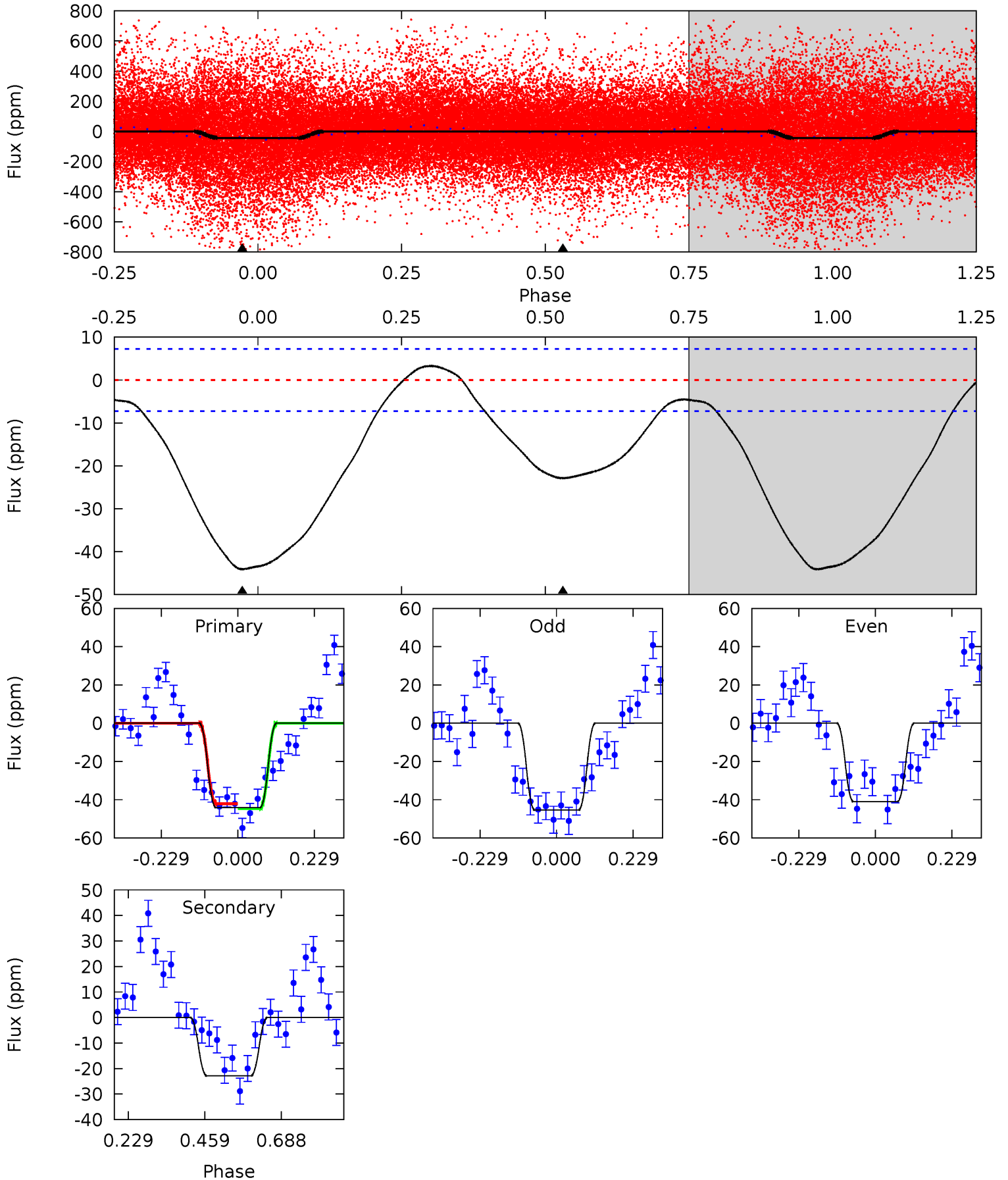
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.39	8.56	0	0	4.40	1.25	0.63	8.39	8.39	8.56	8.56	0.01	0.99	0.14	2.56



Alt Model-Shift Uniqueness Test

004038095-02, P = 0.882235 Days, E = 131.905317 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.7	13.9	0	0	4.39	1.20	2.28	26.7	26.7	13.9	13.9	1.32	2.20	0.07	0.76



Stellar Parameters For KIC 004038095

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7612^{+211}_{-316}	$3.731^{+0.384}_{-0.096}$	$0.070^{+0.200}_{-0.350}$	$3.301^{+0.508}_{-1.423}$	$2.136^{+0.250}_{-0.584}$	$0.084^{+0.302}_{-0.025}$
	+3%/-4%	+10%/-3%	+286%/-500%	+15%/-43%	+12%/-27%	+361%/-30%
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 004038095-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-14 ± 2	$1.41^{+0.92}_{-0.71}$	5414^{+376}_{-579}	6634^{+4165}_{-1611}	$2.130^{+6.063}_{-1.344}$
Alt.	-23 ± 2	$2.88^{+1.09}_{-1.01}$	5435^{+377}_{-605}	4982^{+1221}_{-982}	$0.800^{+1.031}_{-0.367}$

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

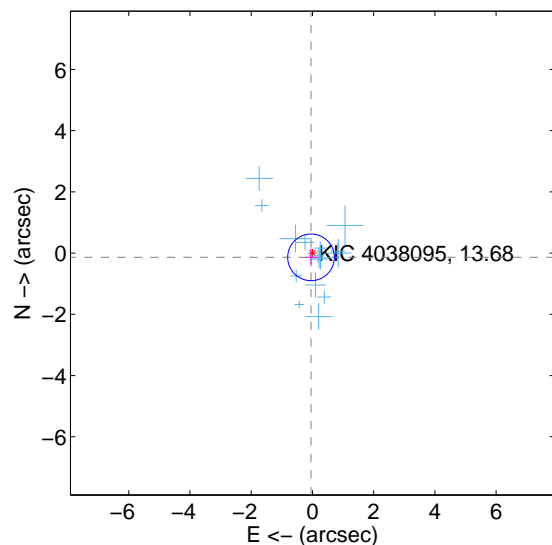
Supplemental centroid analysis for 004038095-02. Kepler magnitude: 13.68. Transit SNR 6.52

There are 16 quarters with good PRF difference image offsets

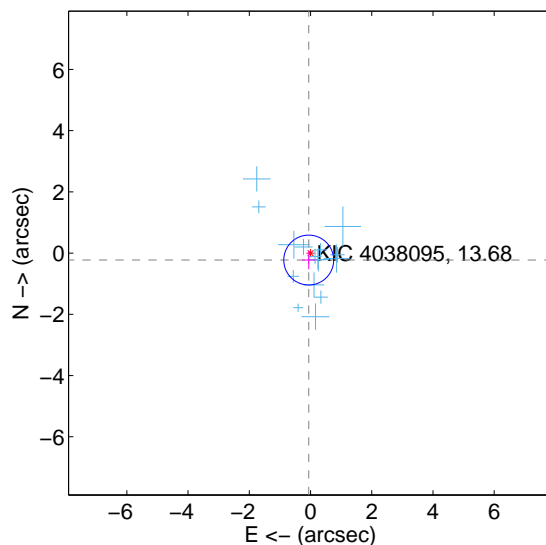
The direct PRF centroid is offset from the target star catalog position by about 0.12 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.146 ± 0.254	0.57	0.047 ± 0.196	-0.138 ± 0.290
PRF-fit source offset from KIC position	0.235 ± 0.271	0.87	0.059 ± 0.215	-0.227 ± 0.301
photometric centroid source offset	1.56 ± 1.68	0.93	1.21 ± 1.60	0.97 ± 1.79

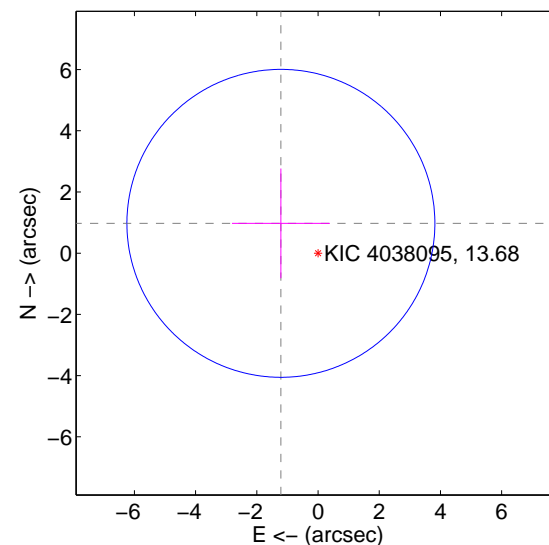
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

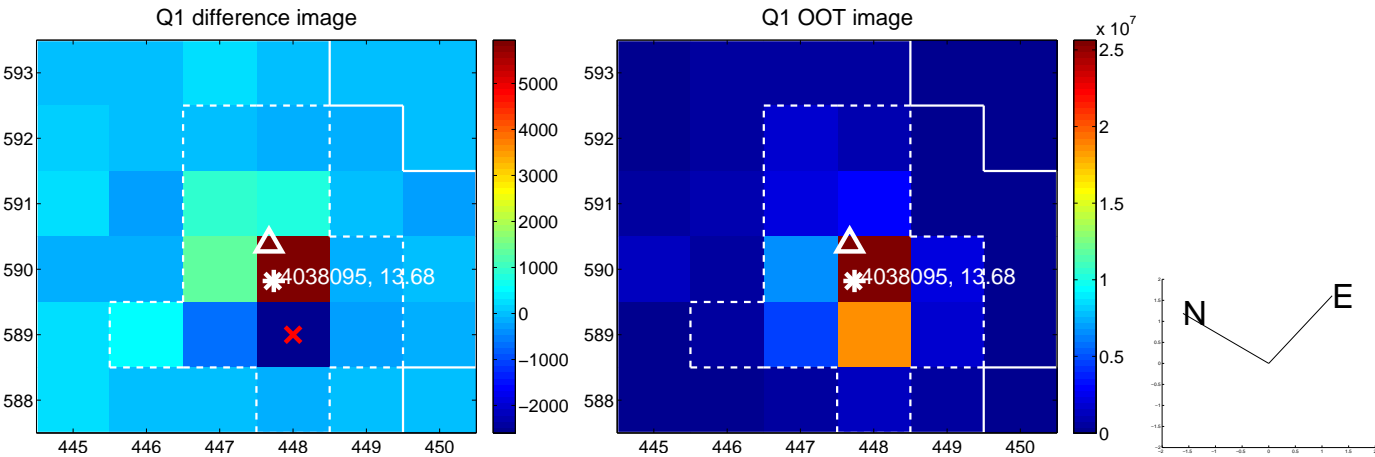


offset from photometric centroids

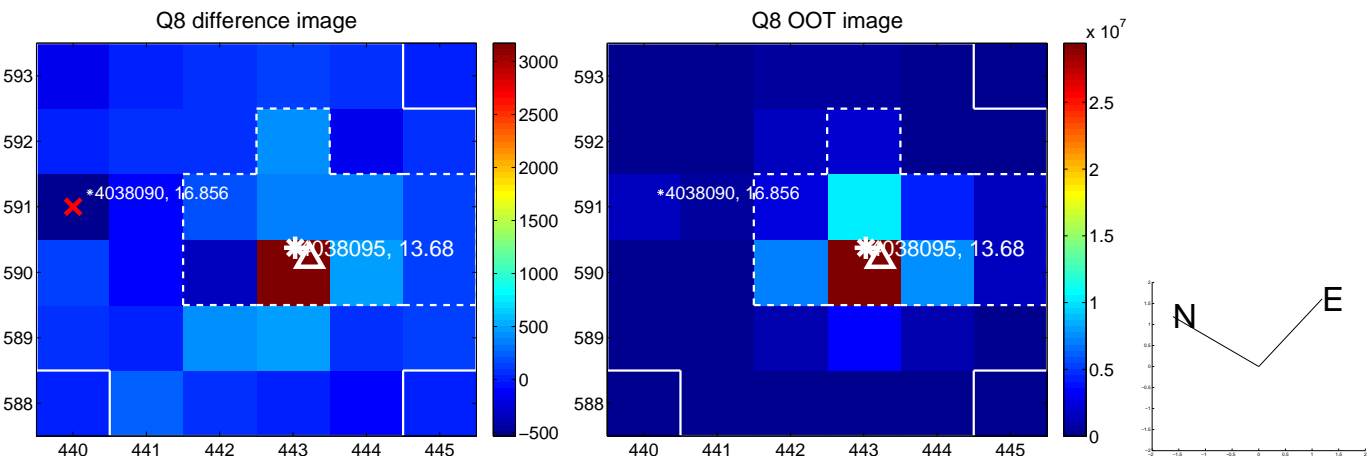
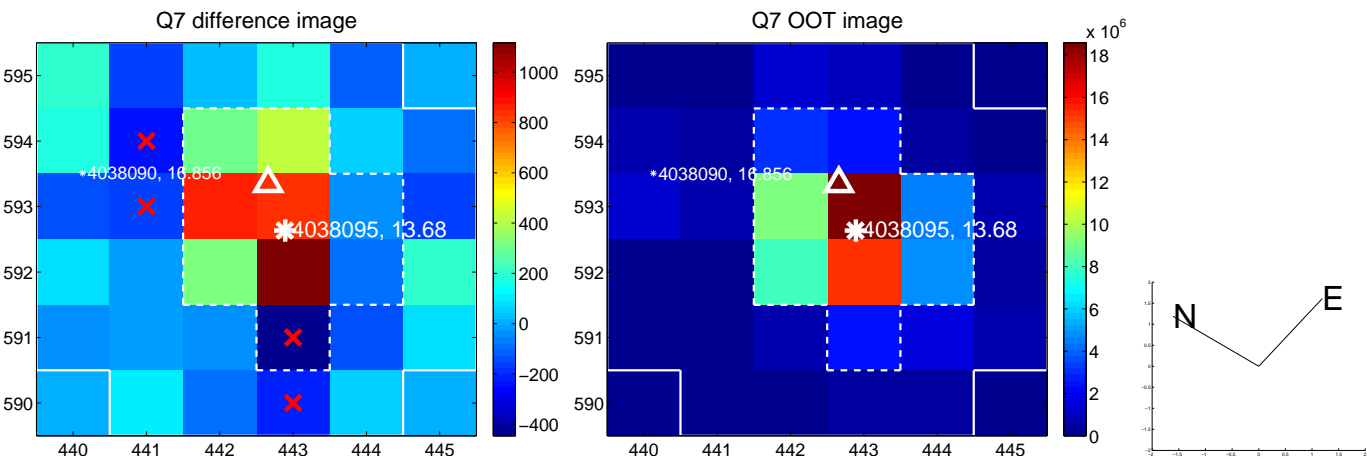
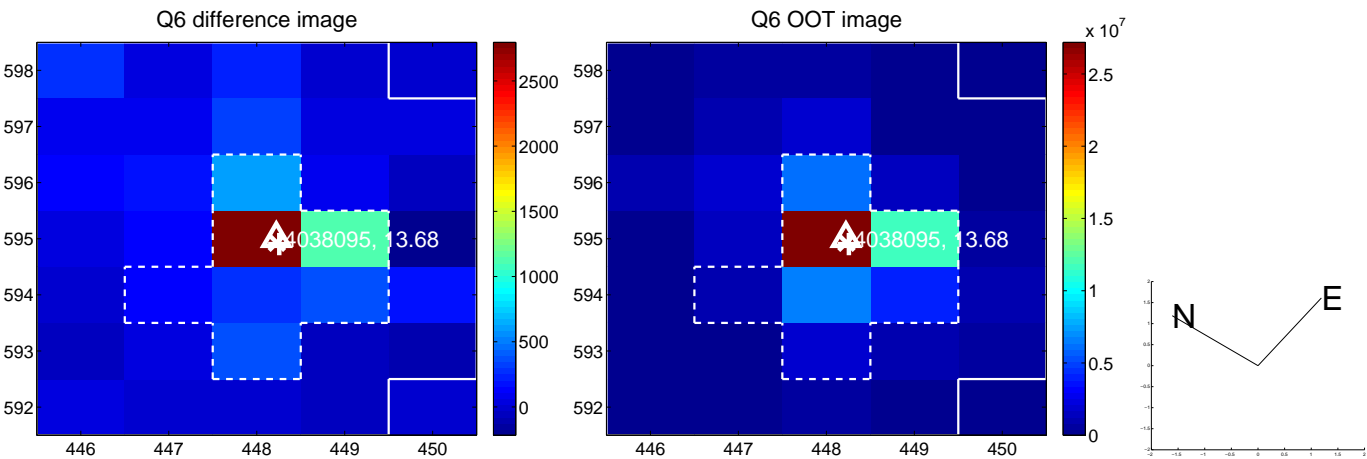
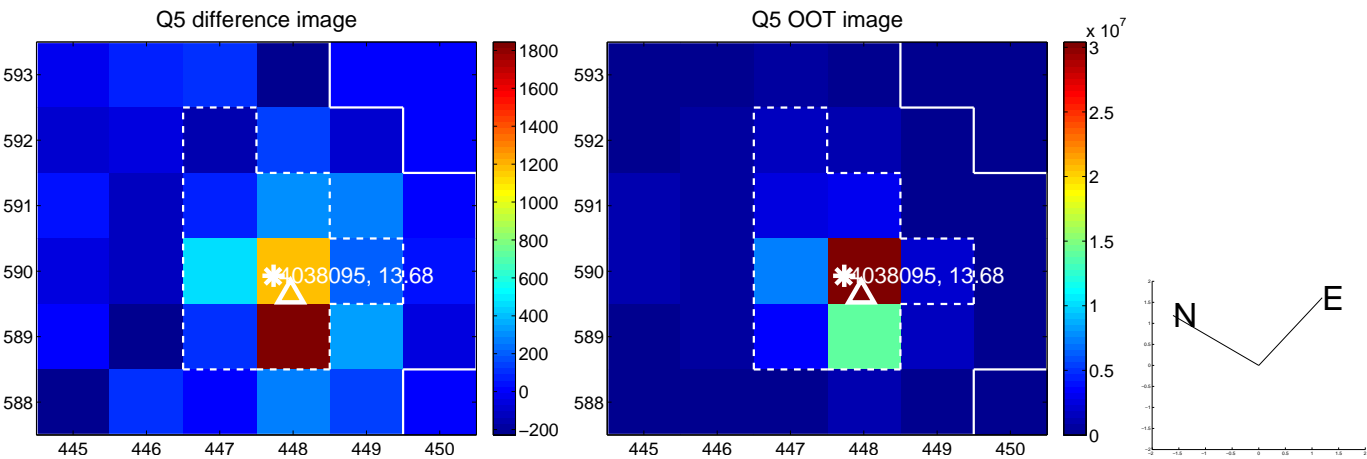


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

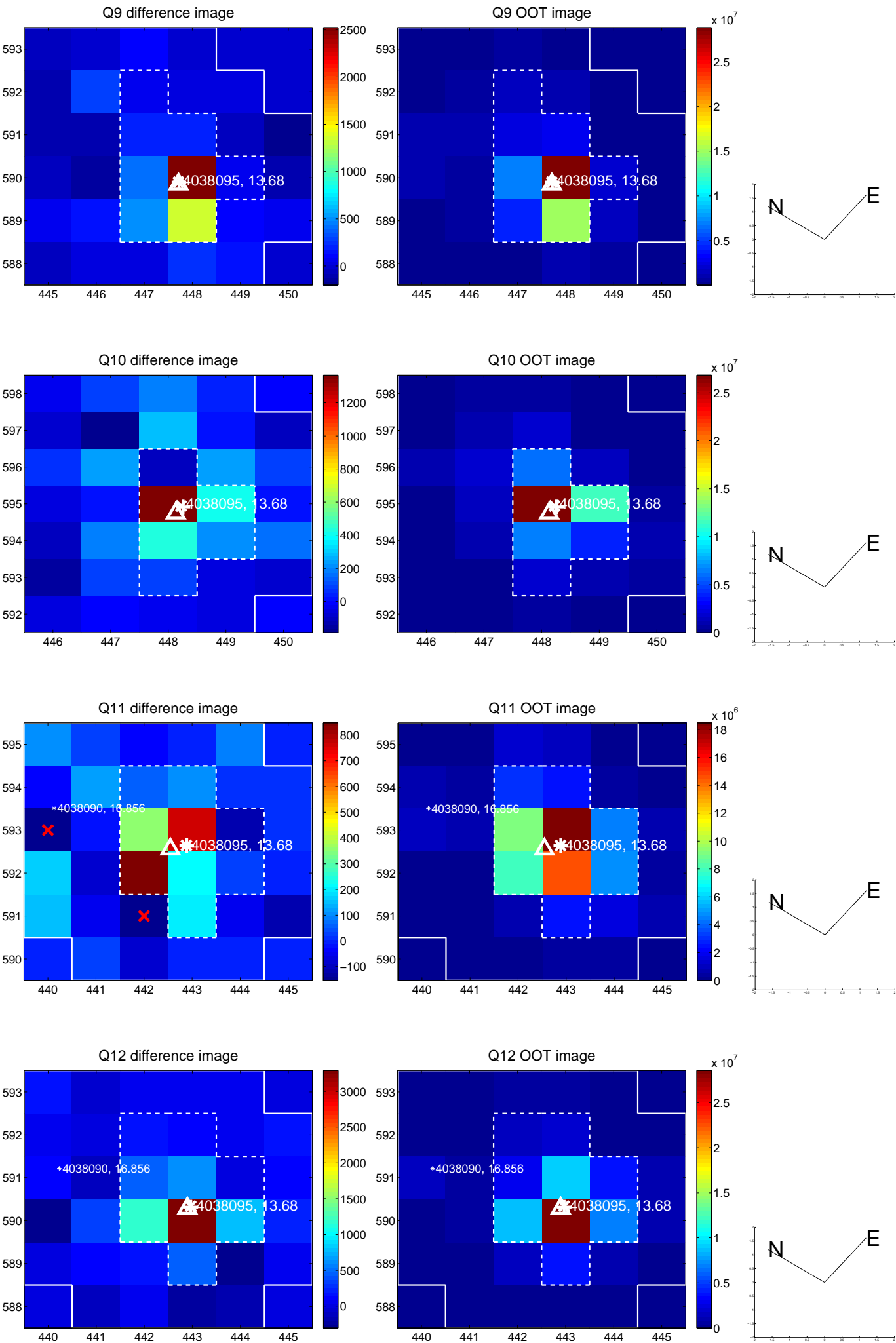
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



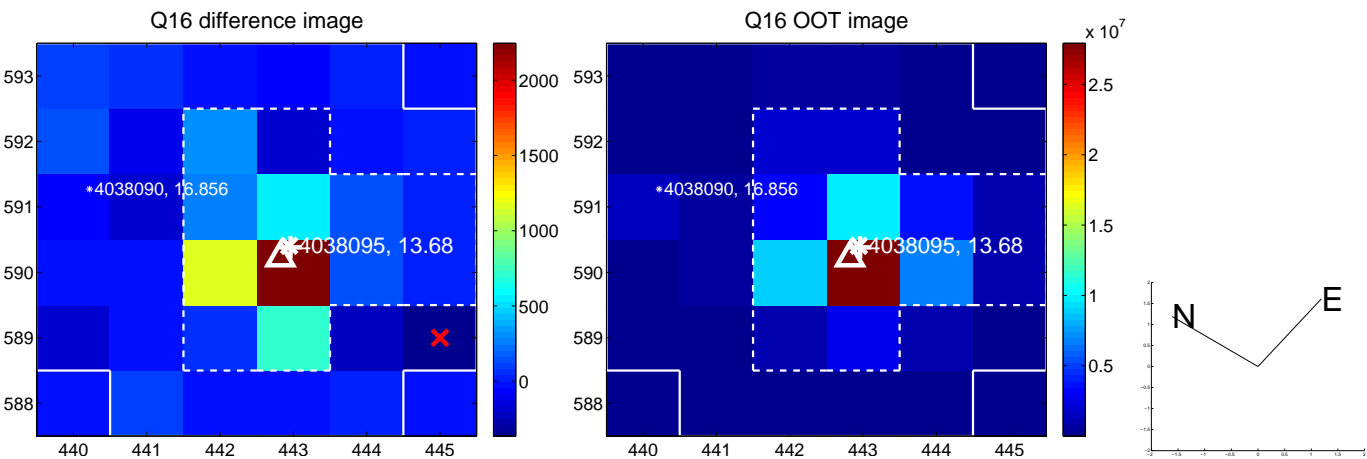
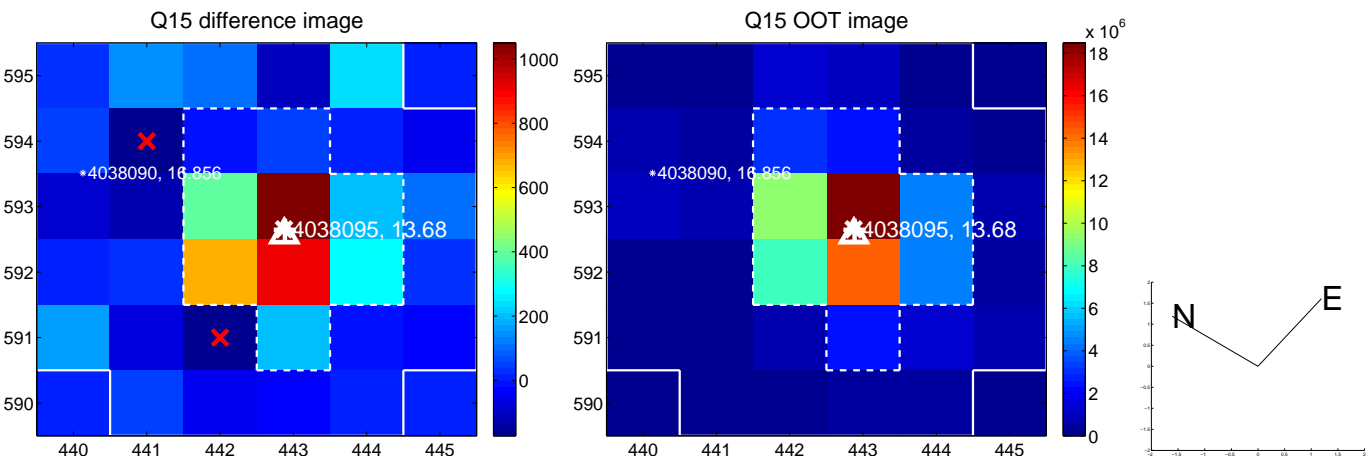
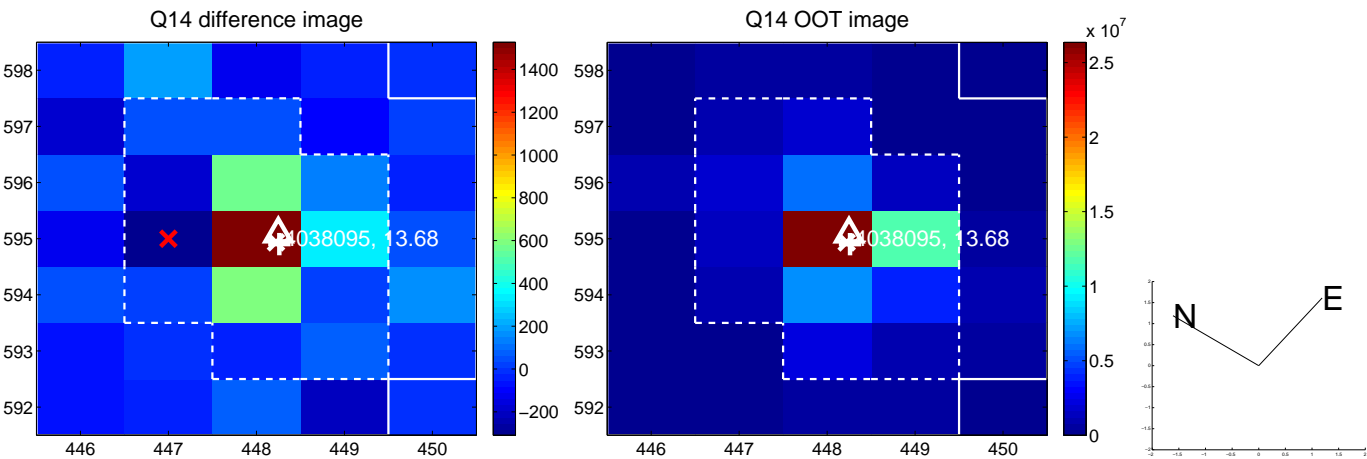
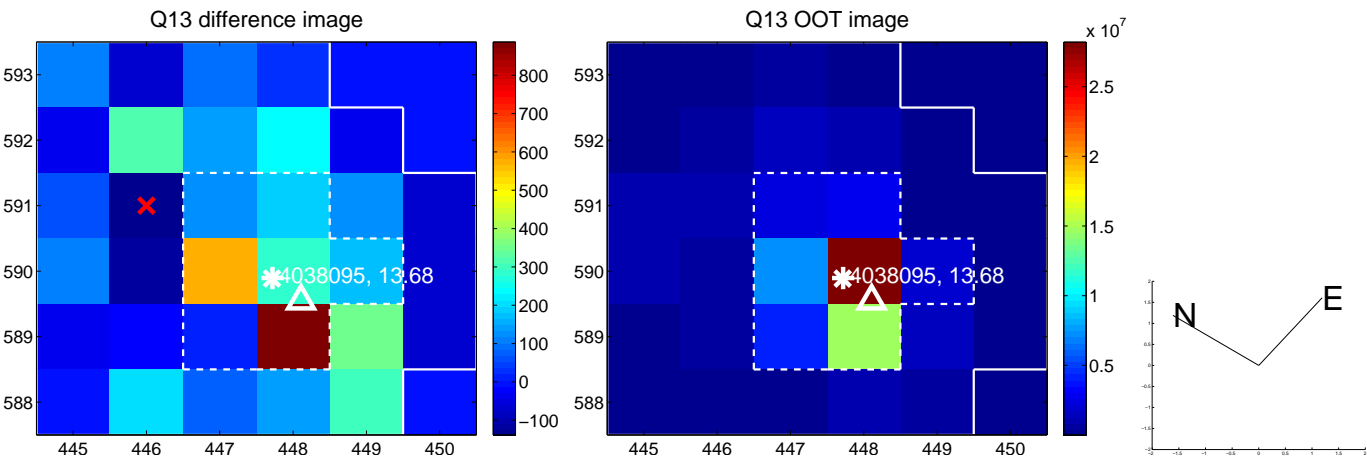
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



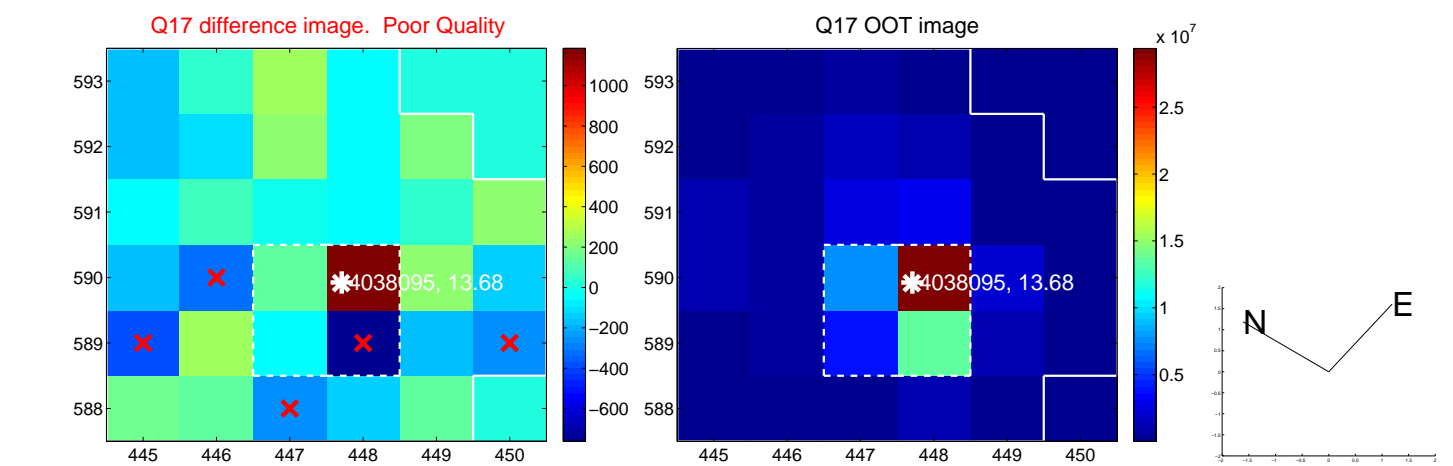
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



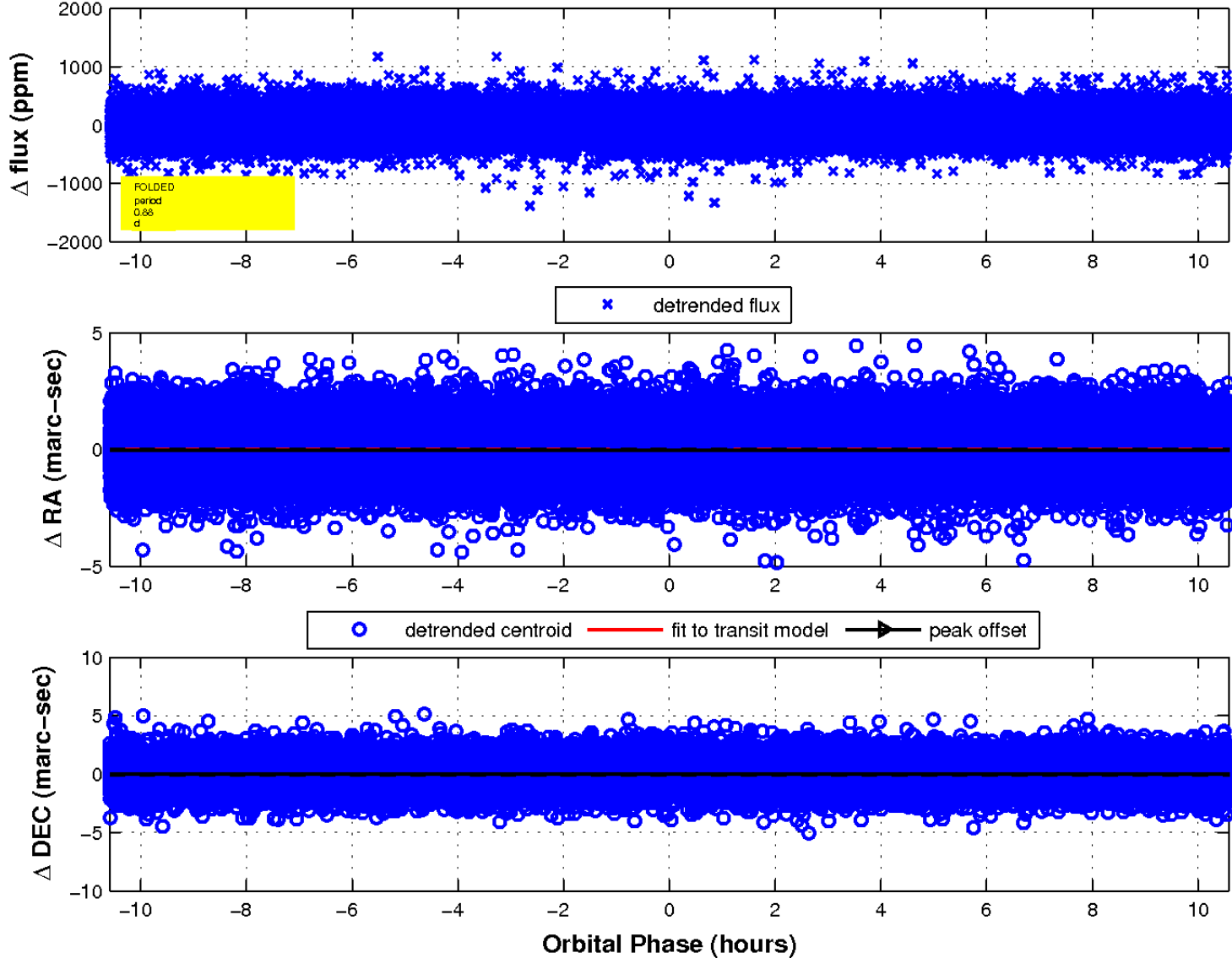
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

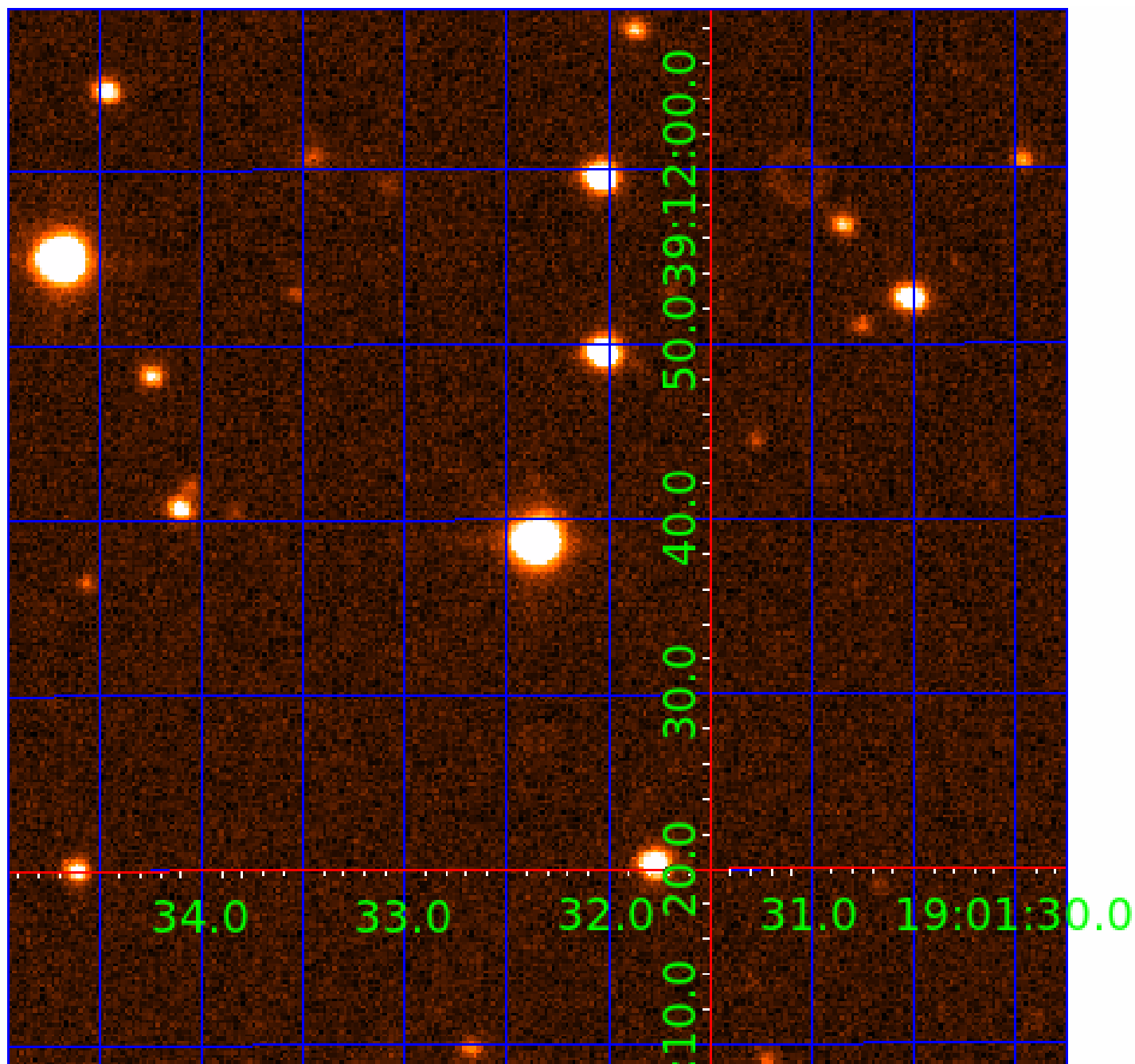


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 004038095

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})
004038095-01	OBS	No	4.852474	131.594642	114.7	5.652	16.8	18.7	3.30	7612	6.89	6271.46
004038095-02	OBS	No	0.882208	131.910195	16.1	4.060	7.7	6.5	3.30	7612	1.54	60891.74
004038095-03	OBS	No	86.607520	201.490702	235.7	5.634	8.8	6.6	3.30	7612	5.43	134.46

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004038095-01	OBS	FP	0.00	1	0	0	0	SWEET_NTL — LPP_DV
004038095-02	OBS	FP	0.00	1	0	0	0	LPP_DV
004038095-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE — TRANS_GAPPED — ALL_TRANS_CHASES — MOD_NONUNIQ_DV — HALO_GHOST

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

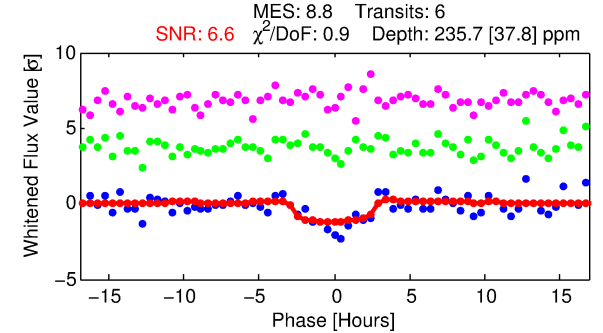
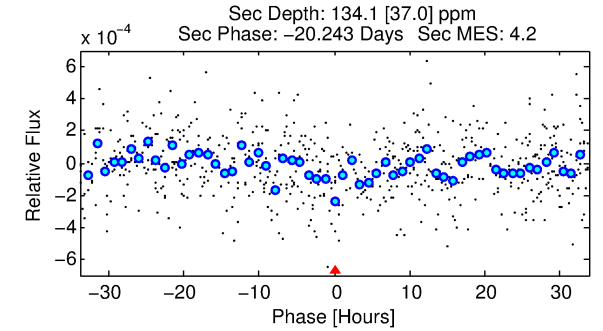
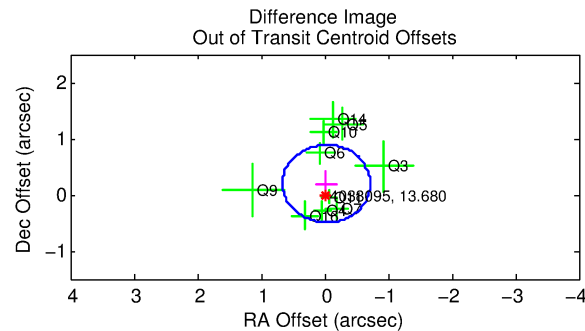
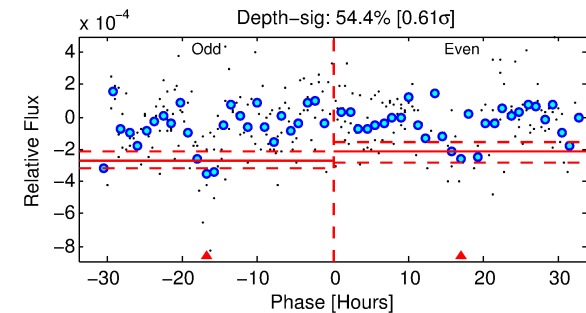
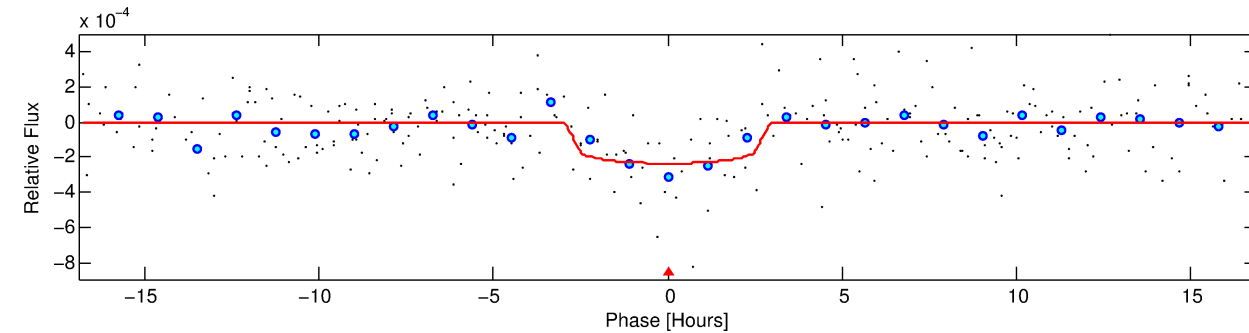
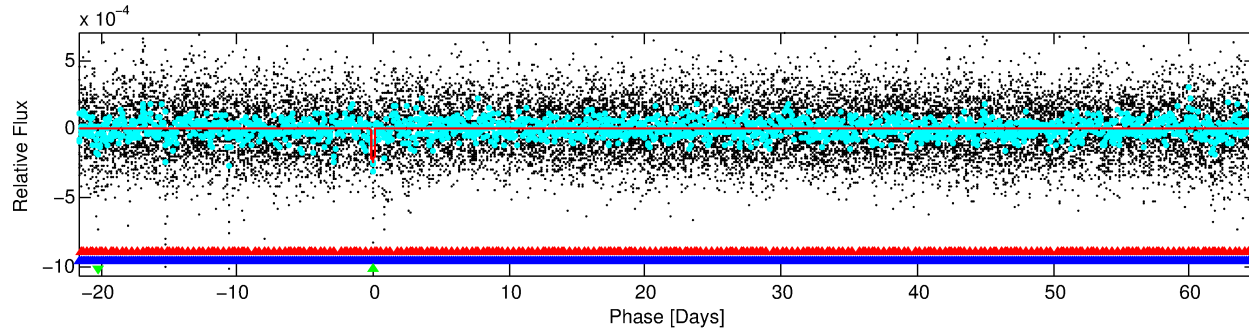
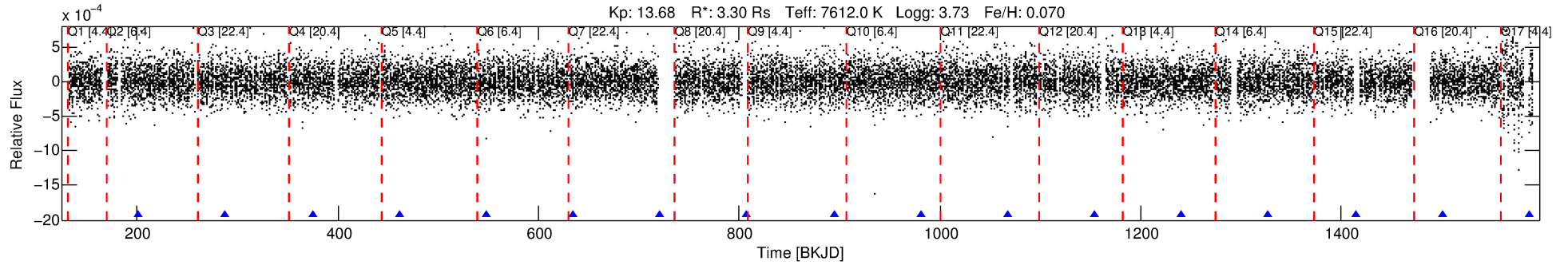
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004038095-03

No Significant Match Found

DV One-Page Summary

KIC: 4038095 Candidate: 3 of 3 Period: 86.608 d



DV Fit Results:

Period = 86.60752 [0.00187] d
Epoch = 201.4907 [0.0168] BKJD
Rp/R* = 0.0151 [0.0152]
a/R* = 86.22 [518.72]
b = 0.70 [4.38]
Seff = 134.46 [90.96]
Teff = 868 [147] K
Rp = 5.43 [5.94] Re
a = 0.4937 [0.2032] AU
Ag = 609.80 [1301.01] [0.47 σ]
Teffp = 6671 [3397] K [1.71 σ]

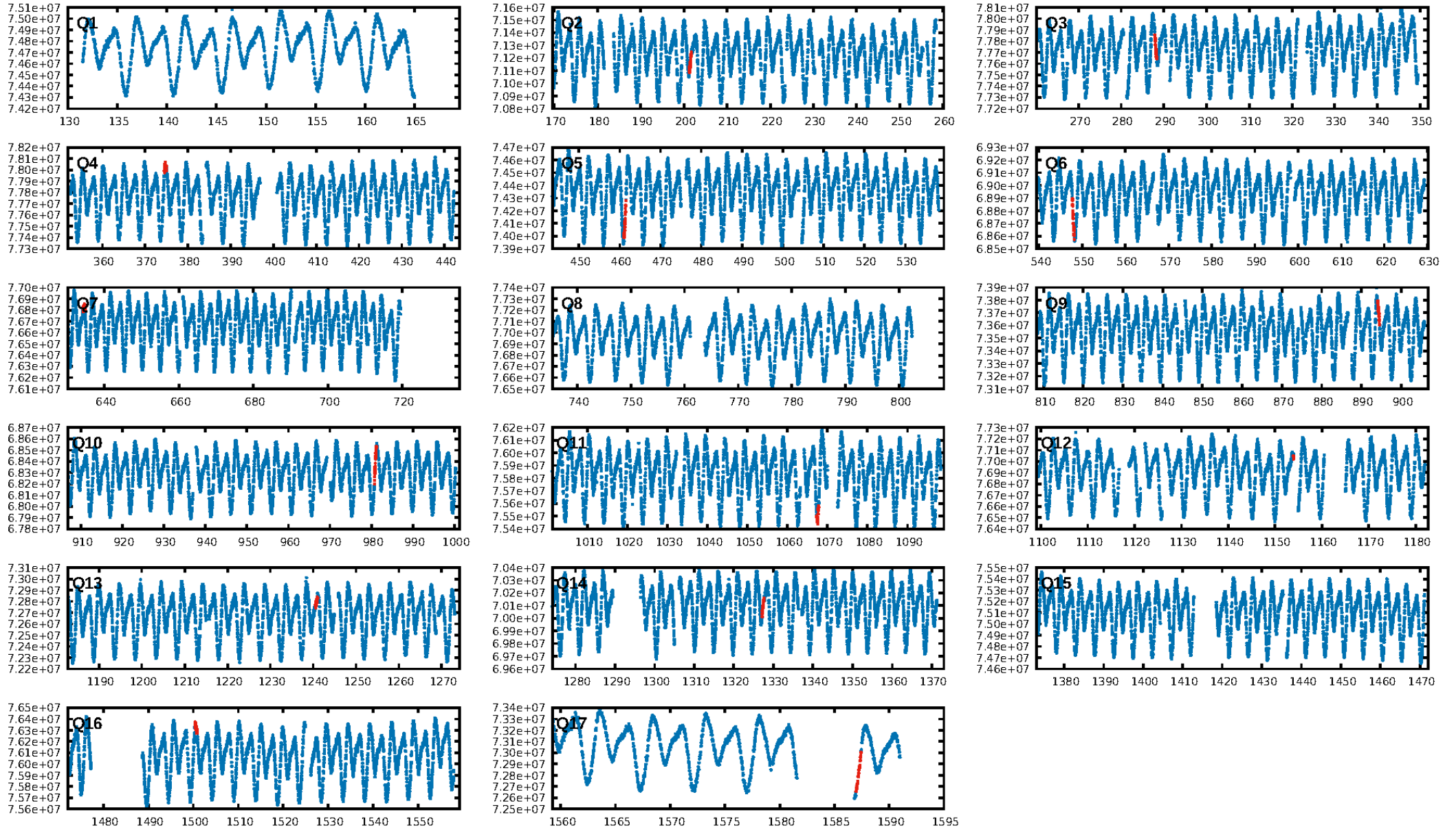
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [245.88 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 46.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 1.90e-13
RollingBand-fgt: 1.00 [6/6]
GhostDiagnostic-chr: 0.1371
Centroid-sig: 56.8%
Centroid-so: 0.536 arcsec [0.45 σ]
OotOffset-rm: 0.198 arcsec [0.86 σ]
KicOffset-rm: 0.129 arcsec [0.59 σ]
OotOffset-st: 3/3/2/2 [10]
KicOffset-st: 3/3/2/2 [10]
DiffImageQuality-fgm: 0.40 [4/10]
DiffImageOverlap-fno: 0.00 [0/12]

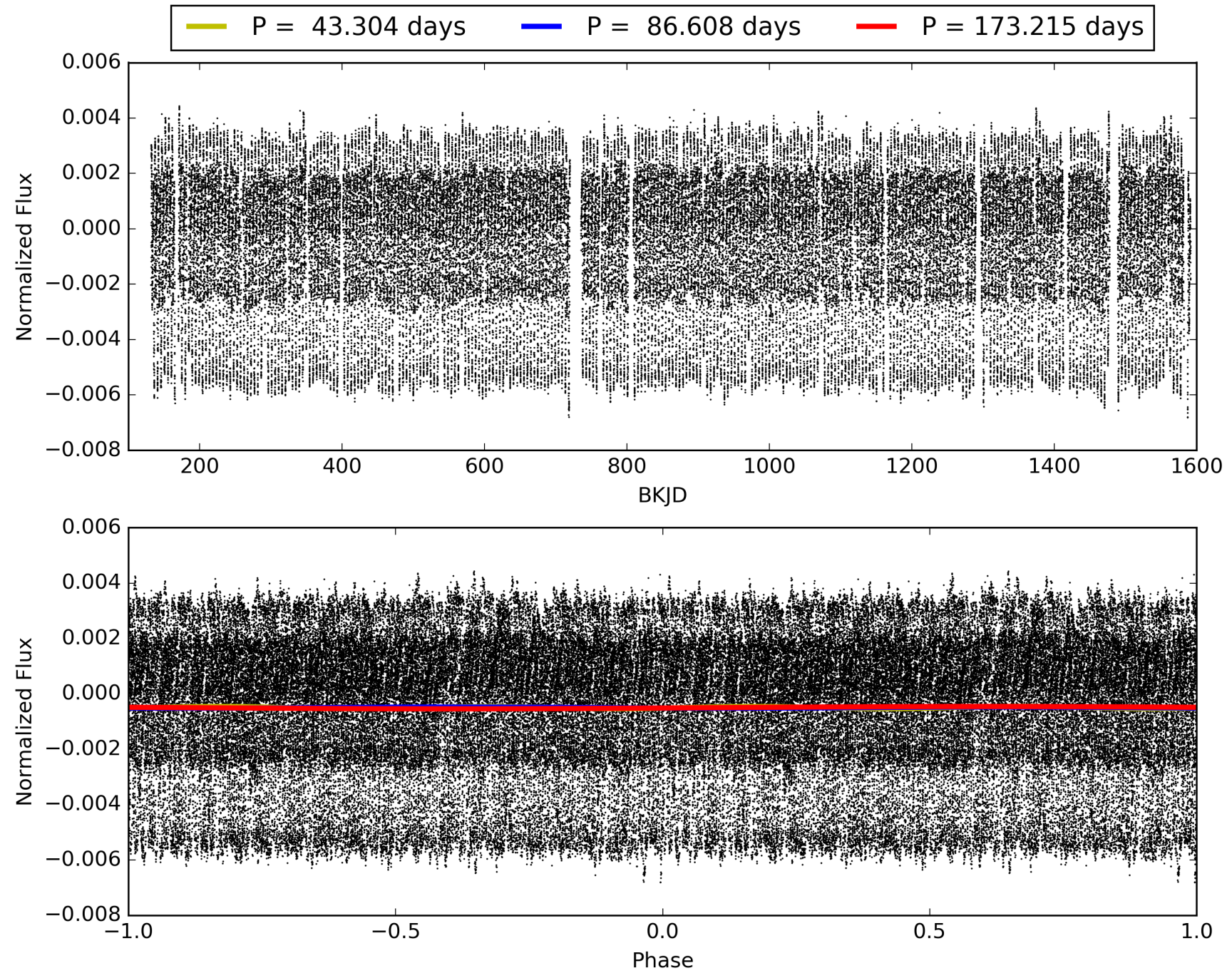
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 12:26:17 Z

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

TCE 004038095-03, PDC Light Curves

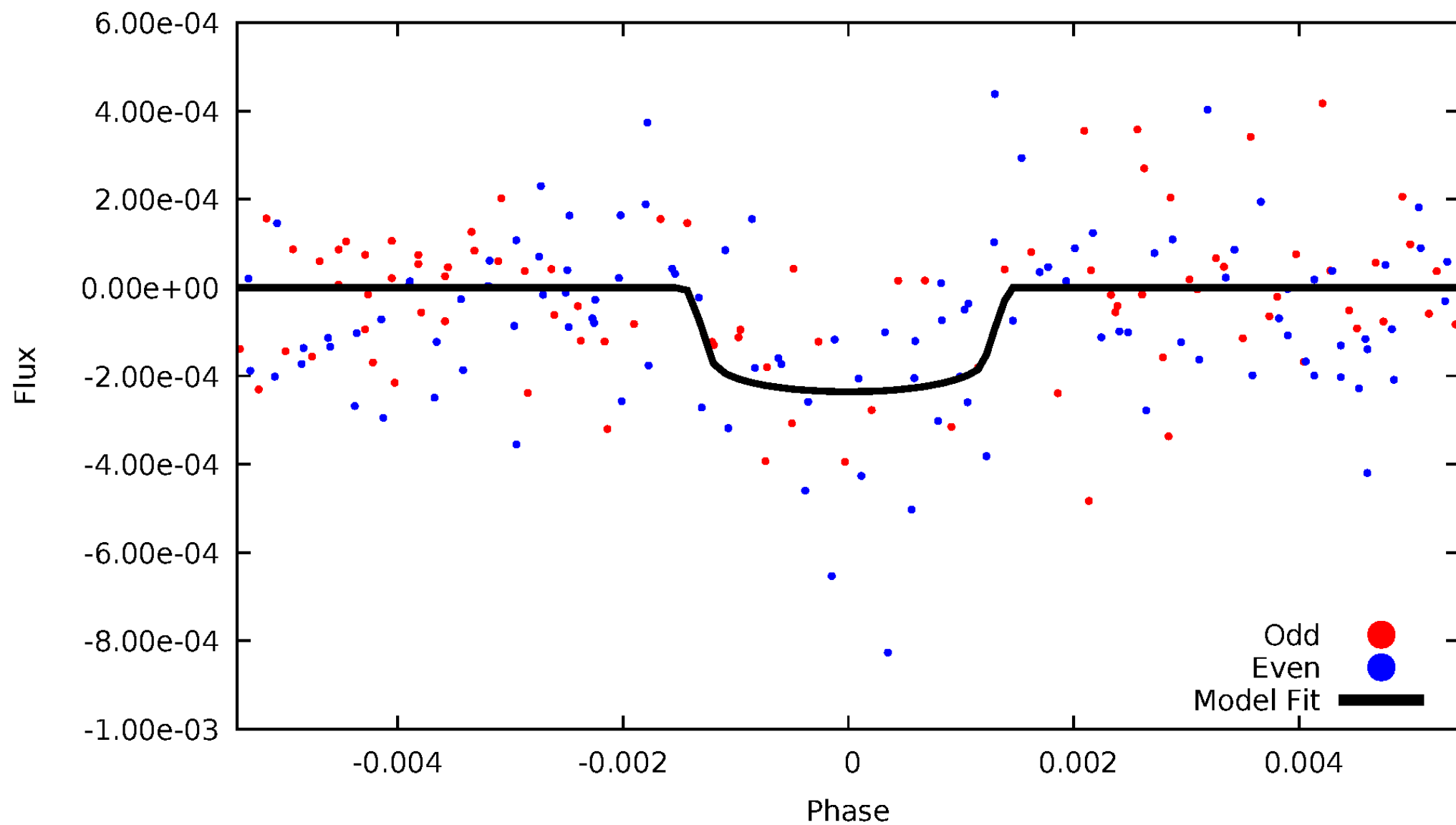


TCE 004038095-03



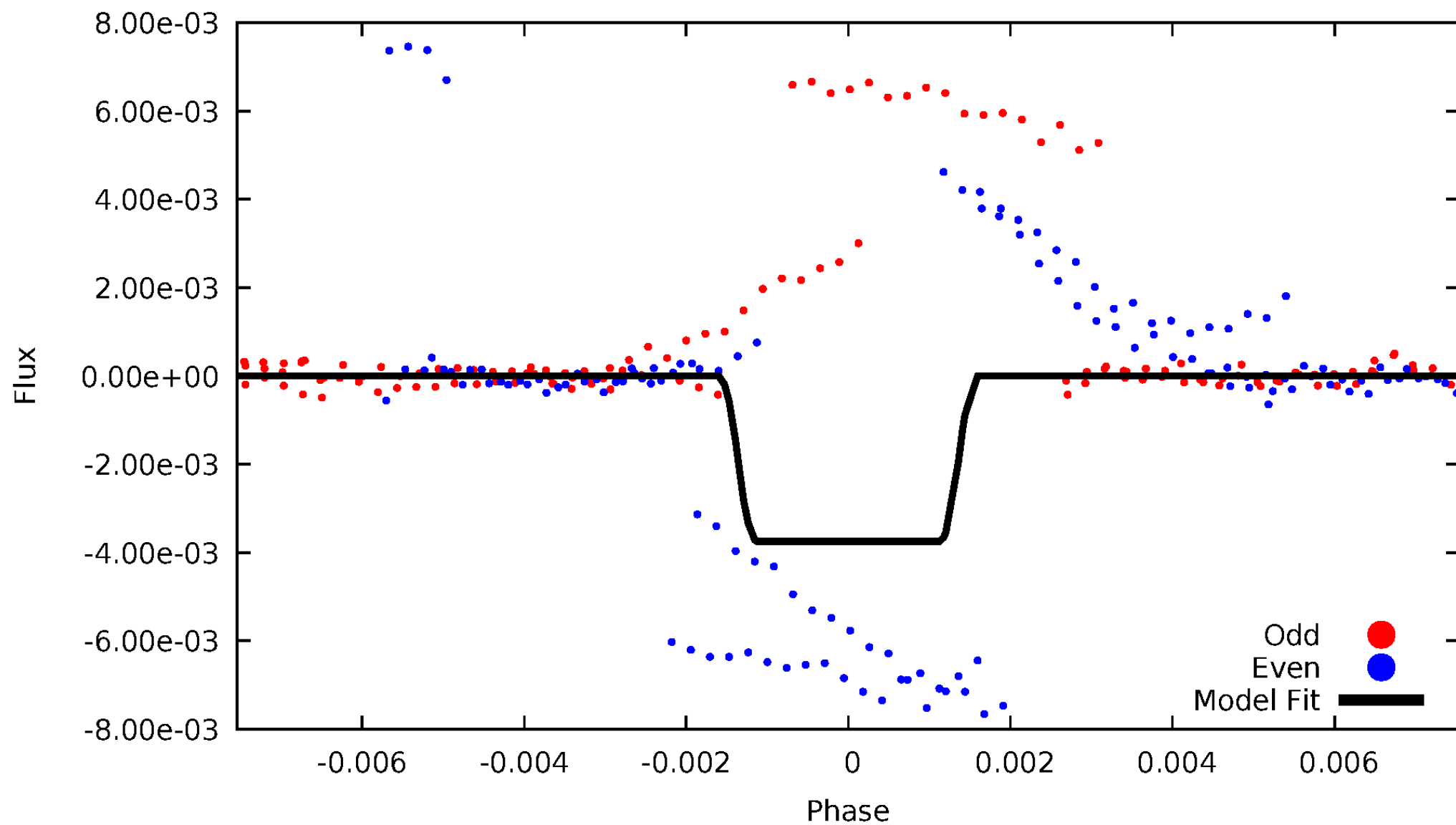
DV Odd/Even

TCE 004038095-03



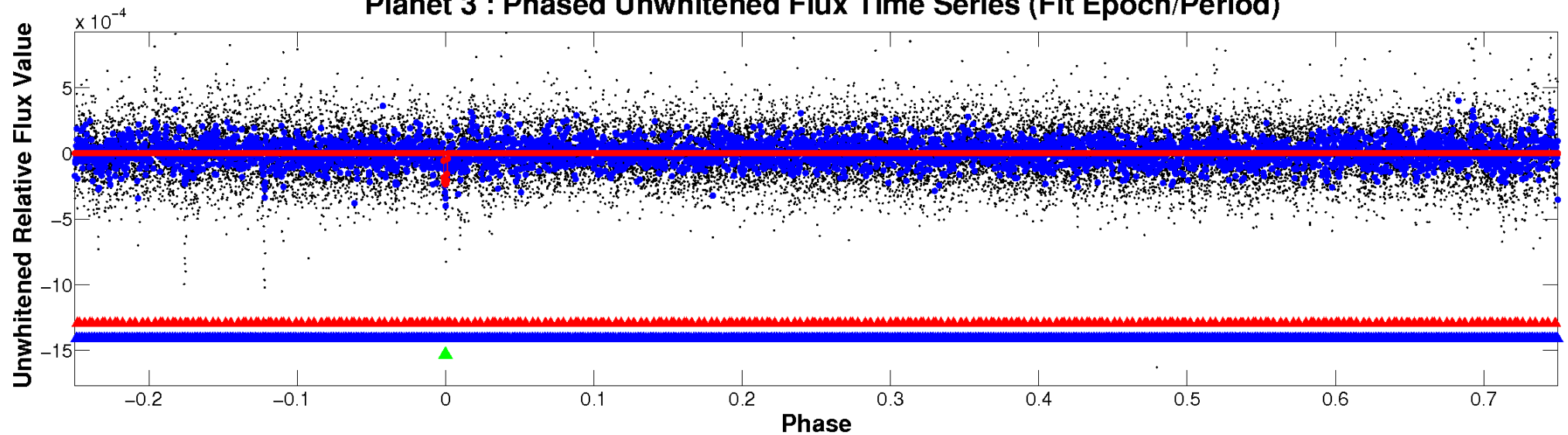
ALT Odd/Even

TCE 004038095-03

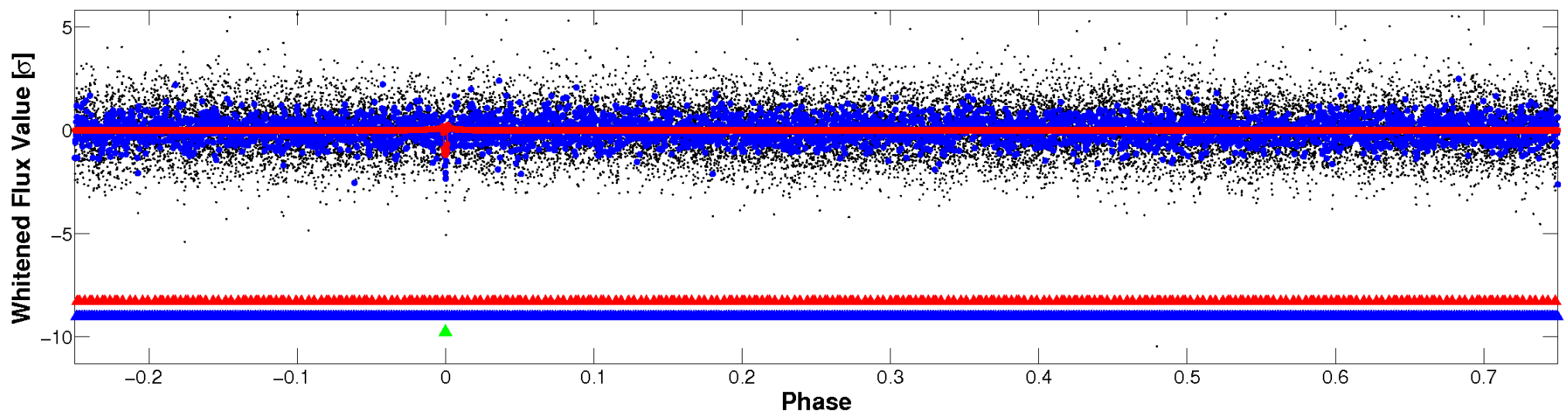


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

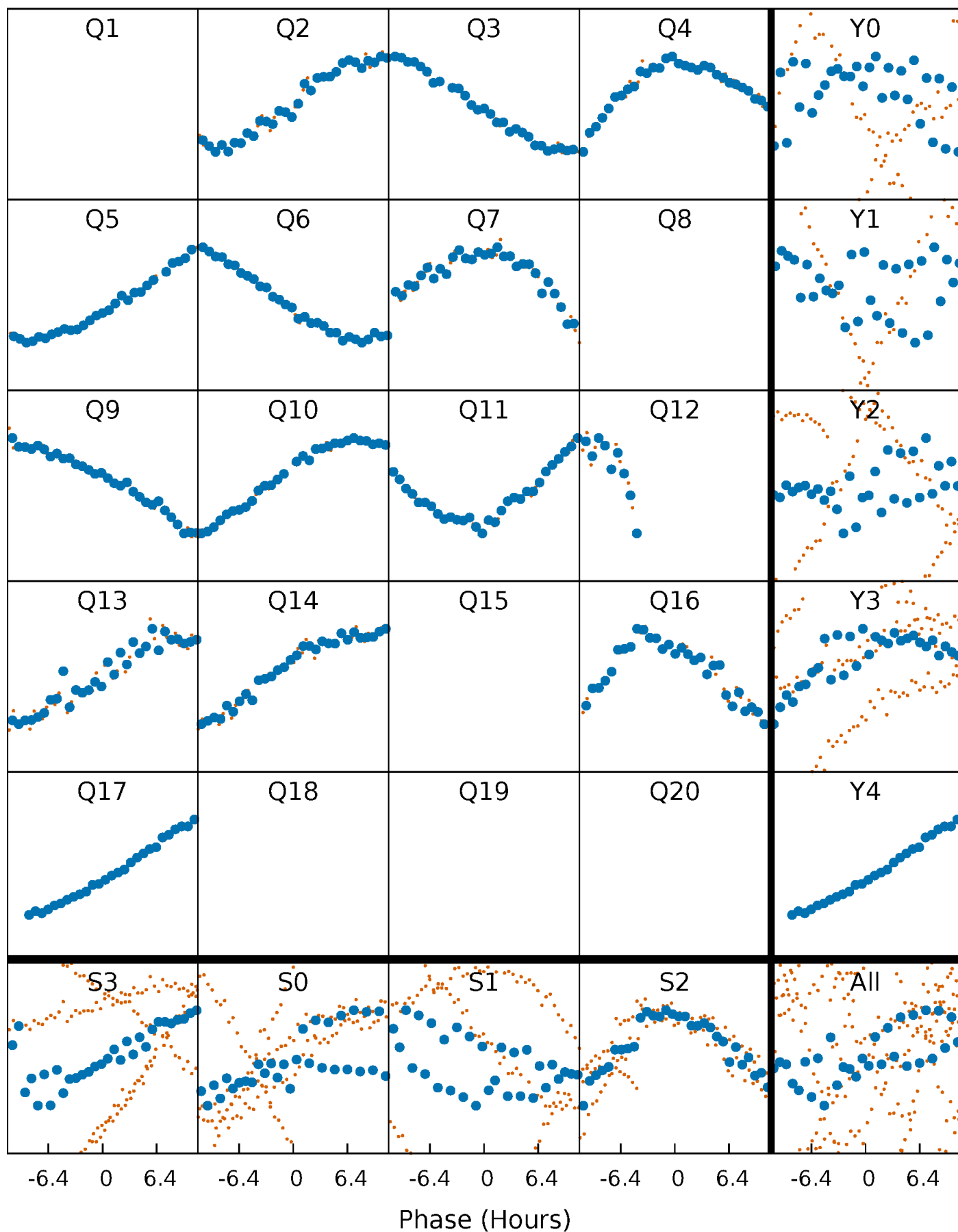


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



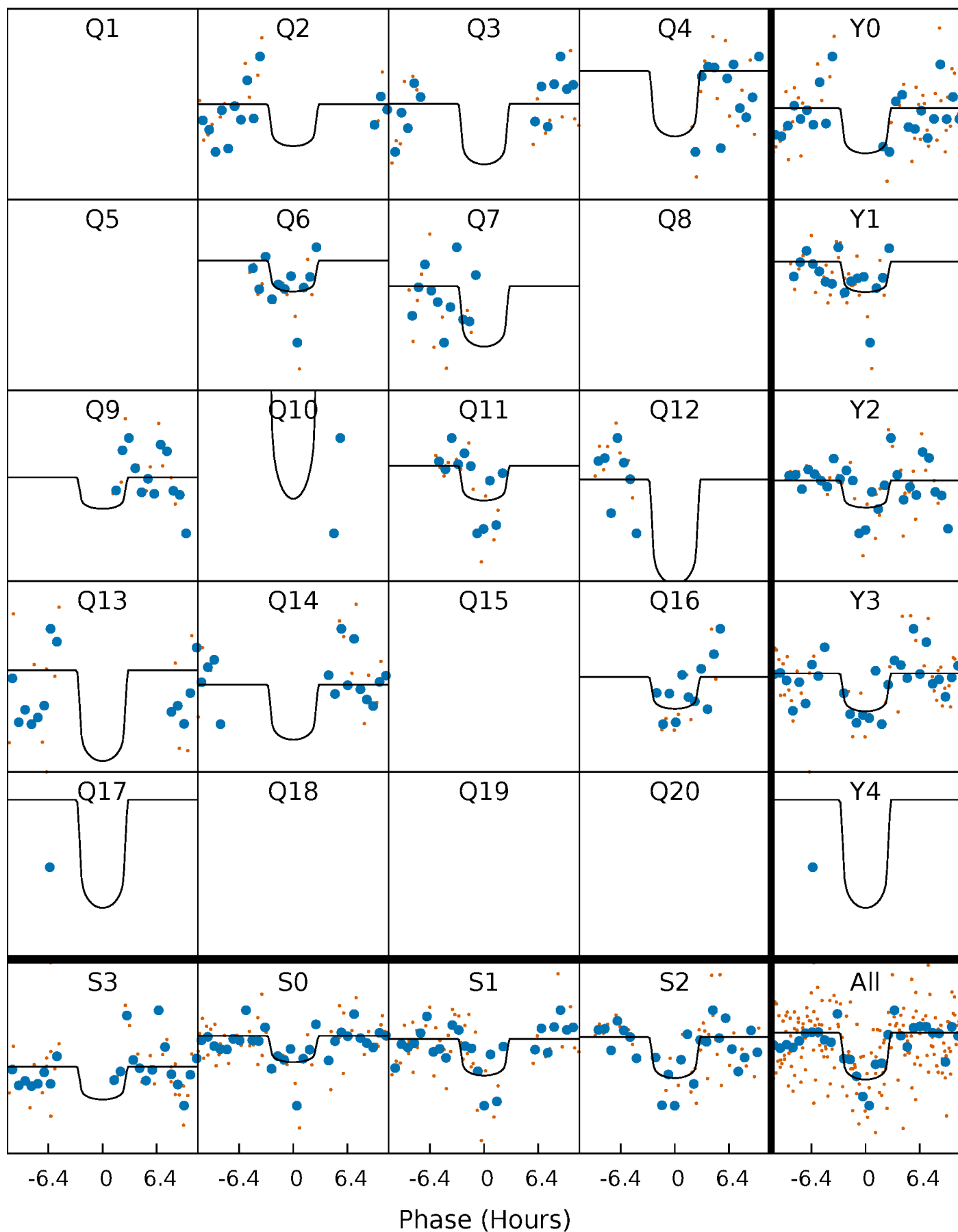
PDC Quarter-Phased Transit Curves

TCE 004038095-03 P= 86.607520 Days $T_0=201.490702$ (BKJD)



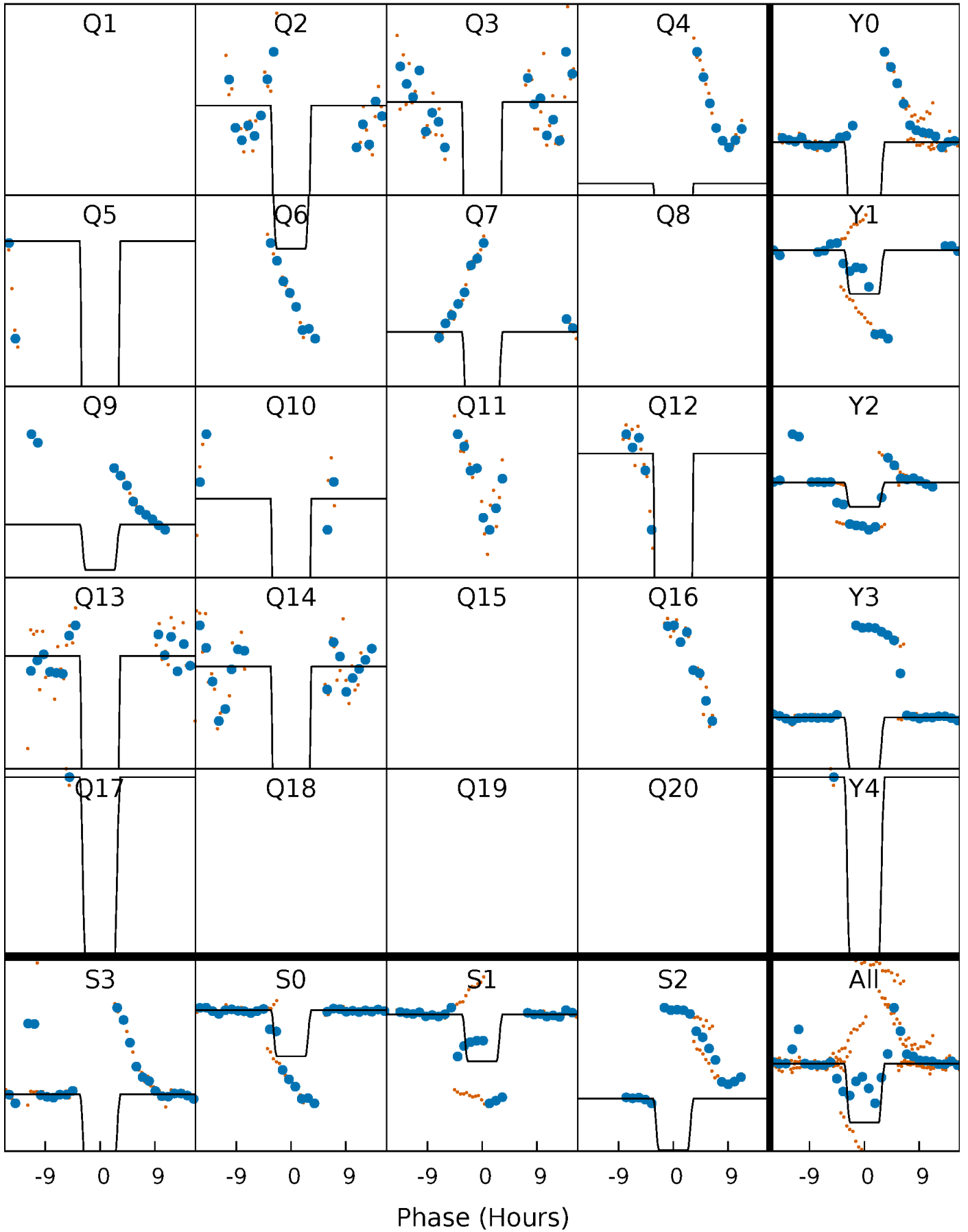
DV Quarter-Phased Transit Curves

TCE 004038095-03 P= 86.607520 Days $T_0=201.490702$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

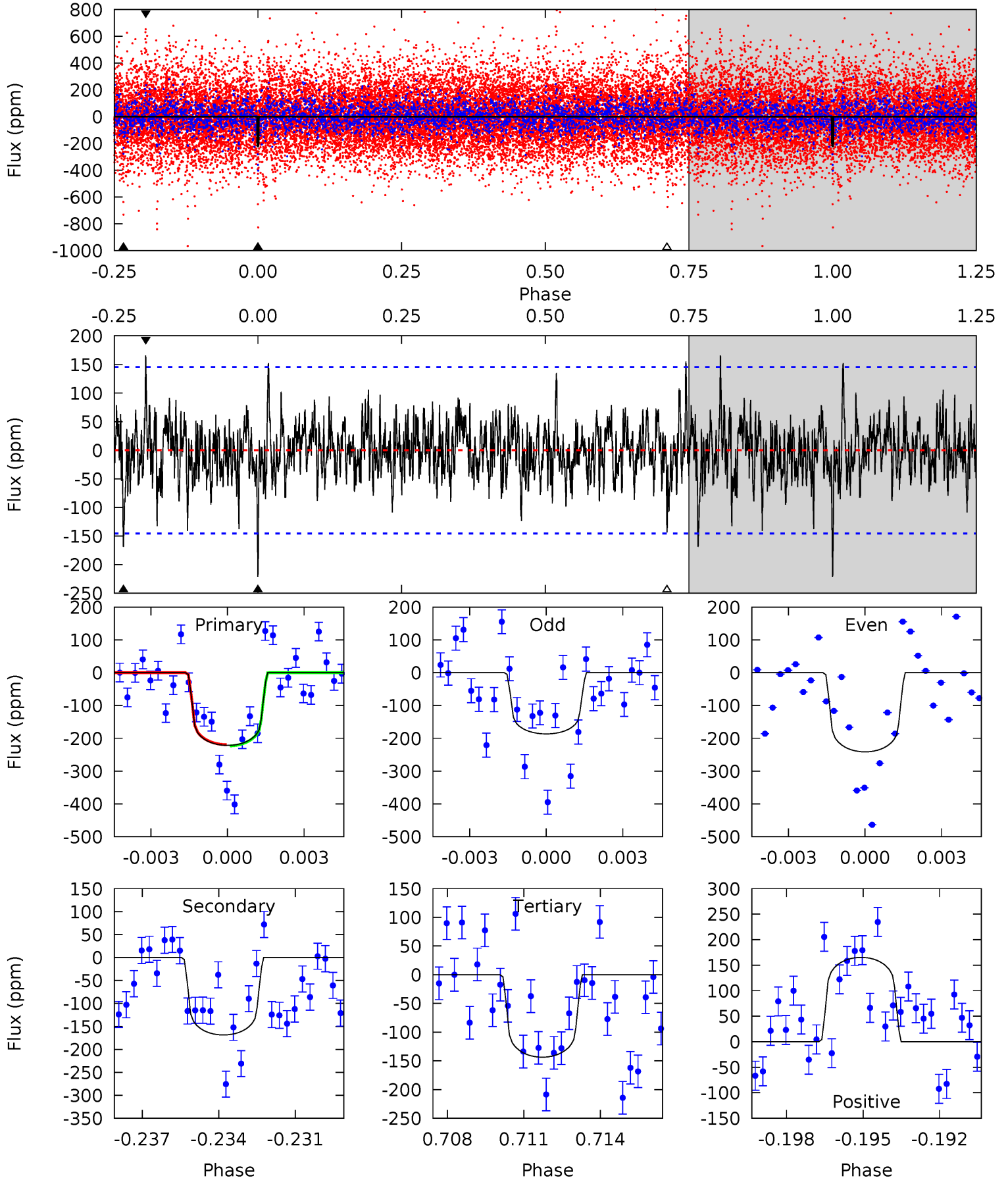
TCE 004038095-03 P= 86.608300 Days $T_0=201.434090$ (BKJD)



DV Model-Shift Uniqueness Test

004038095-03, P = 86.607520 Days, E = 114.883182 Days

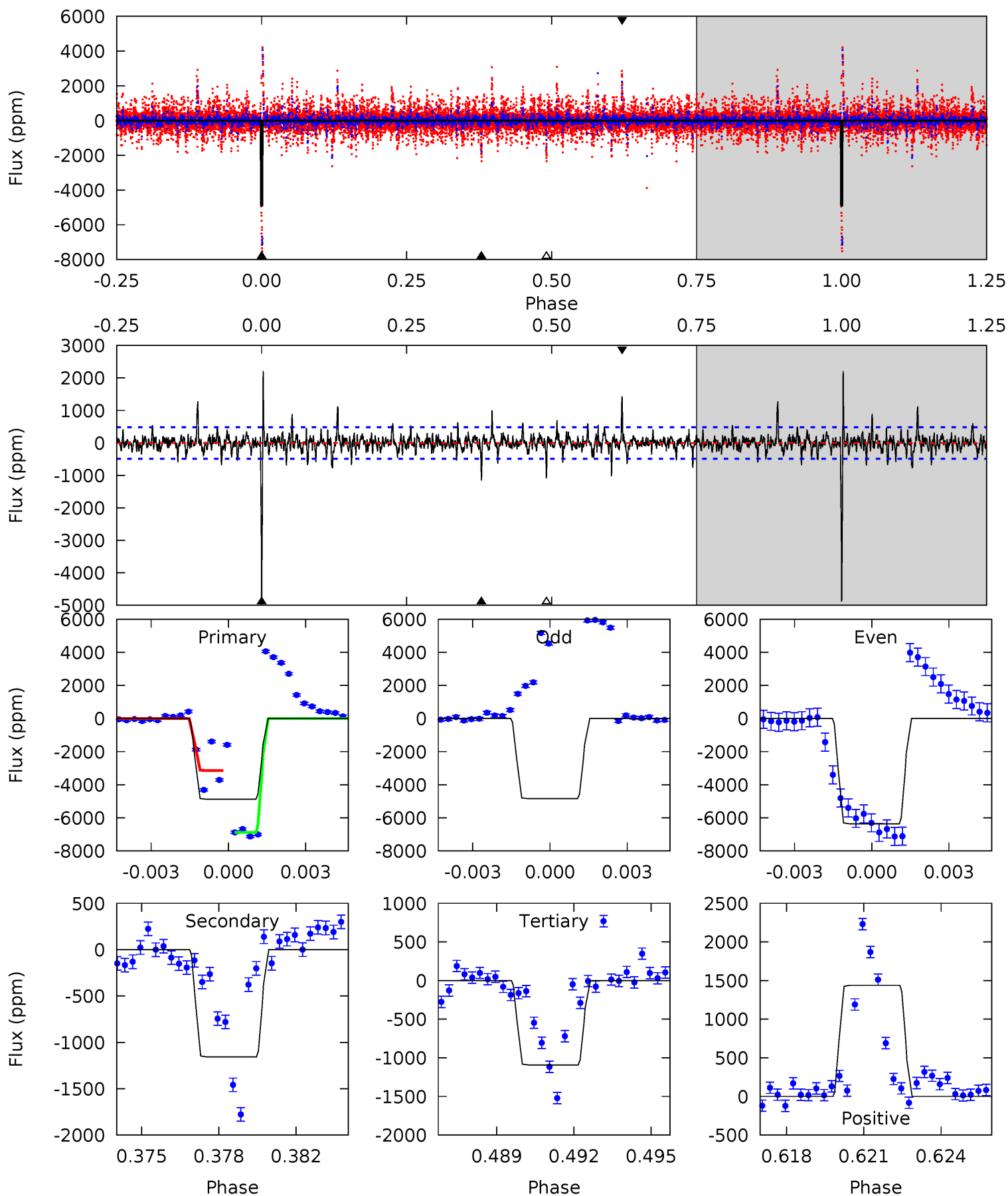
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.02	6.10	5.19	5.98	5.27	2.99	1.47	2.83	2.04	0.91	0.12	0.96	0.89	0.43	0.07



Alt Model-Shift Uniqueness Test

004038095-03, P = 86.608300 Days, E = 114.825790 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
52.7	12.5	11.8	15.5	5.24	2.95	1.95	40.9	37.1	0.71	-3.03	9.49	0.24	0.31	0



Stellar Parameters For KIC 004038095

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	7612^{+211}_{-316}	$3.731^{+0.384}_{-0.096}$	$0.070^{+0.200}_{-0.350}$	$3.301^{+0.508}_{-1.423}$	$2.136^{+0.250}_{-0.584}$	$0.084^{+0.302}_{-0.025}$
	+3%/-4%	+10%/-3%	+286%/-500%	+15%/-43%	+12%/-27%	+361%/-30%
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 004038095-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-169 ± 28	$5.83^{+5.04}_{-3.62}$	1178^{+84}_{-122}	6362^{+5165}_{-1509}	652^{+3760}_{-464}
Alt.	-1157 ± 93	$19.98^{+7.01}_{-6.43}$	1176^{+88}_{-124}	5597^{+899}_{-598}	389^{+412}_{-178}

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

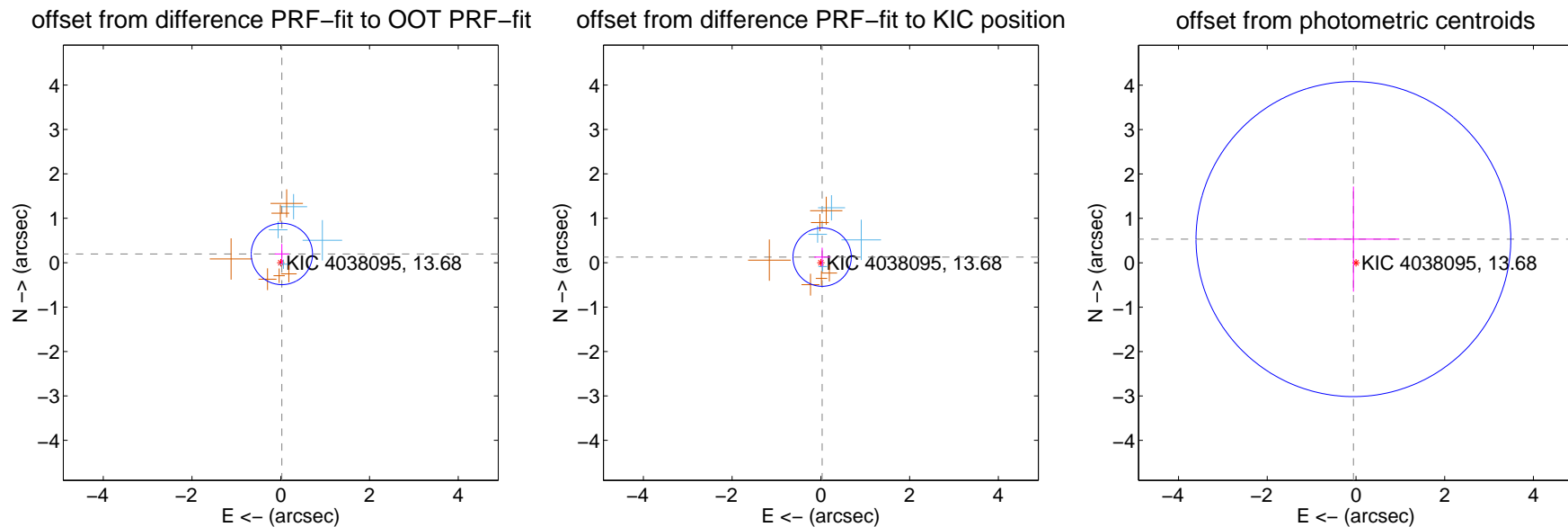
DV Centroid Data

Supplemental centroid analysis for 004038095-03. Kepler magnitude: 13.68. Transit SNR 6.57

There are 4 quarters with good PRF difference image offsets

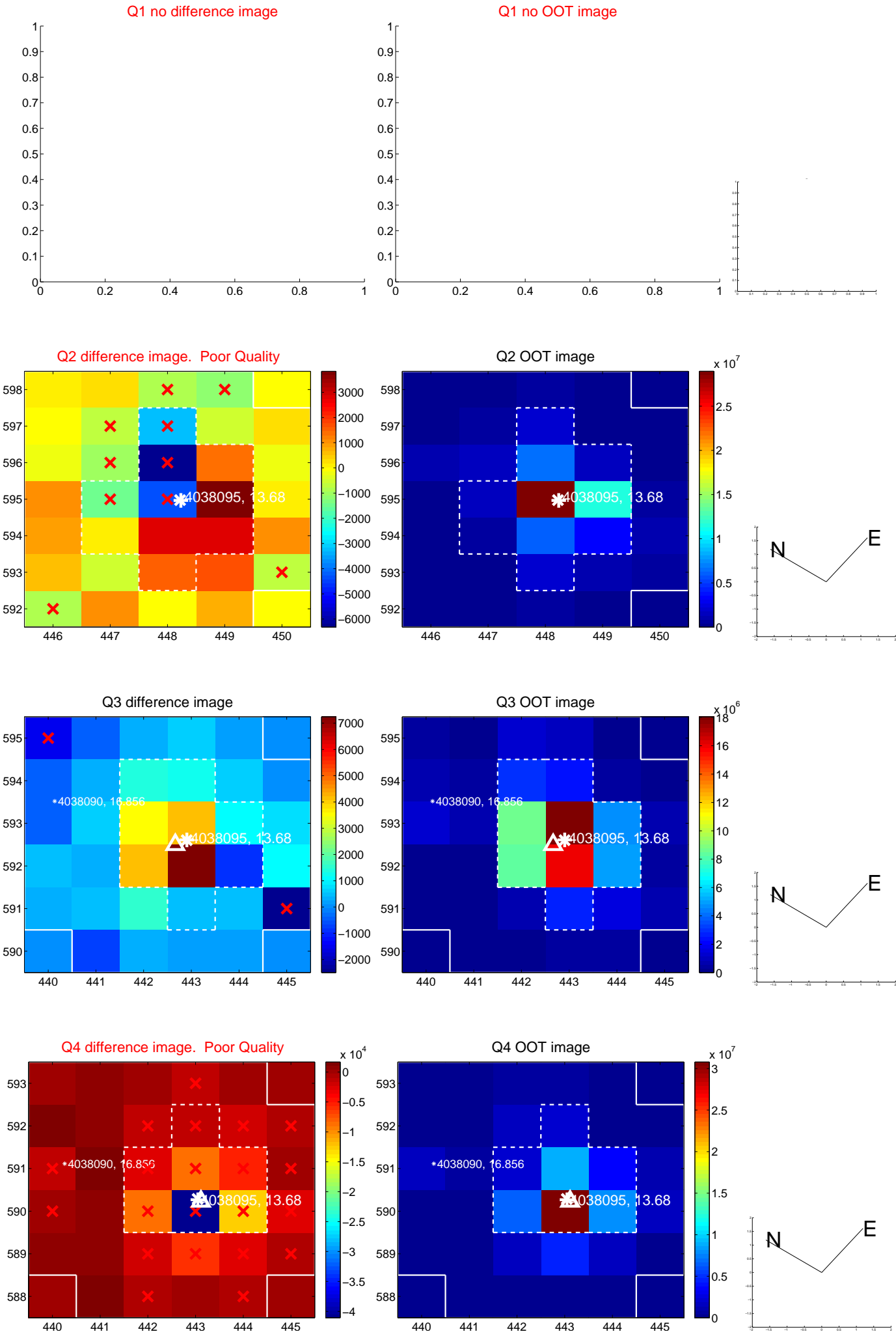
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.198 ± 0.230	0.86	-0.025 ± 0.161	0.196 ± 0.228
PRF-fit source offset from KIC position	0.129 ± 0.219	0.59	-0.029 ± 0.179	0.125 ± 0.211
photometric centroid source offset	0.54 ± 1.18	0.45	0.06 ± 1.04	0.53 ± 1.18

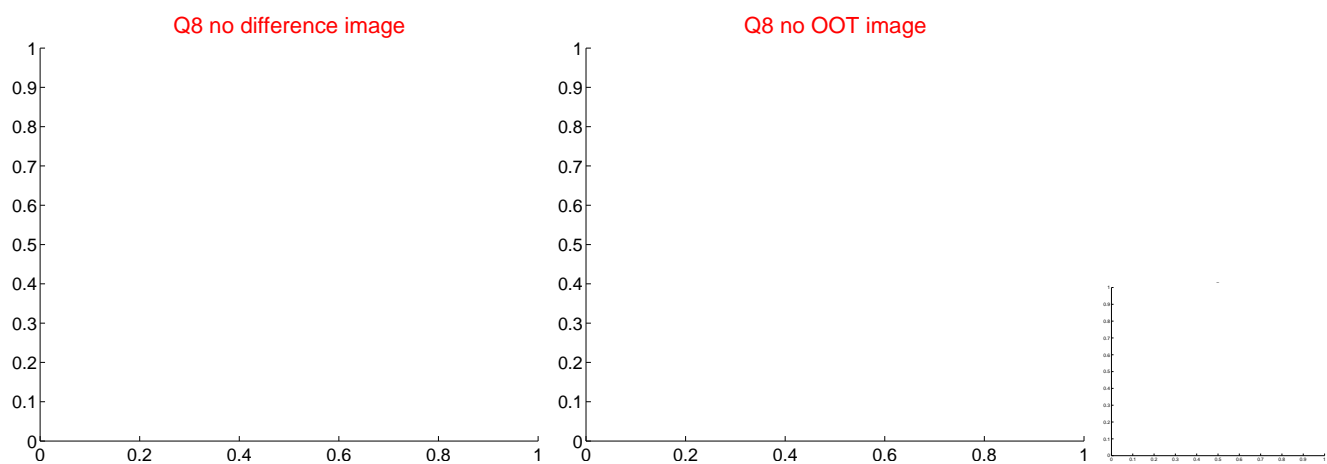
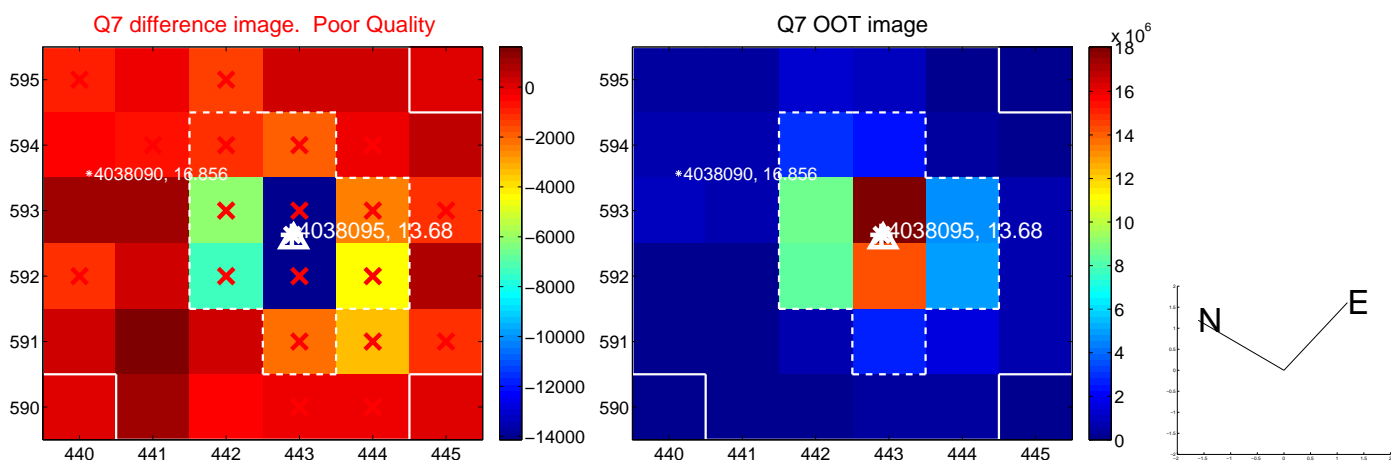
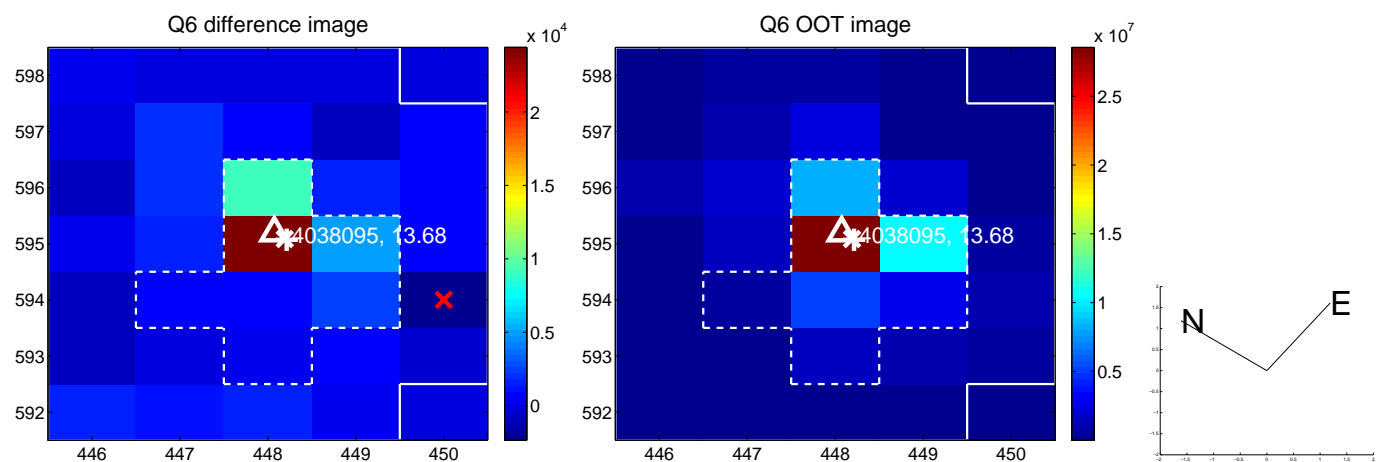
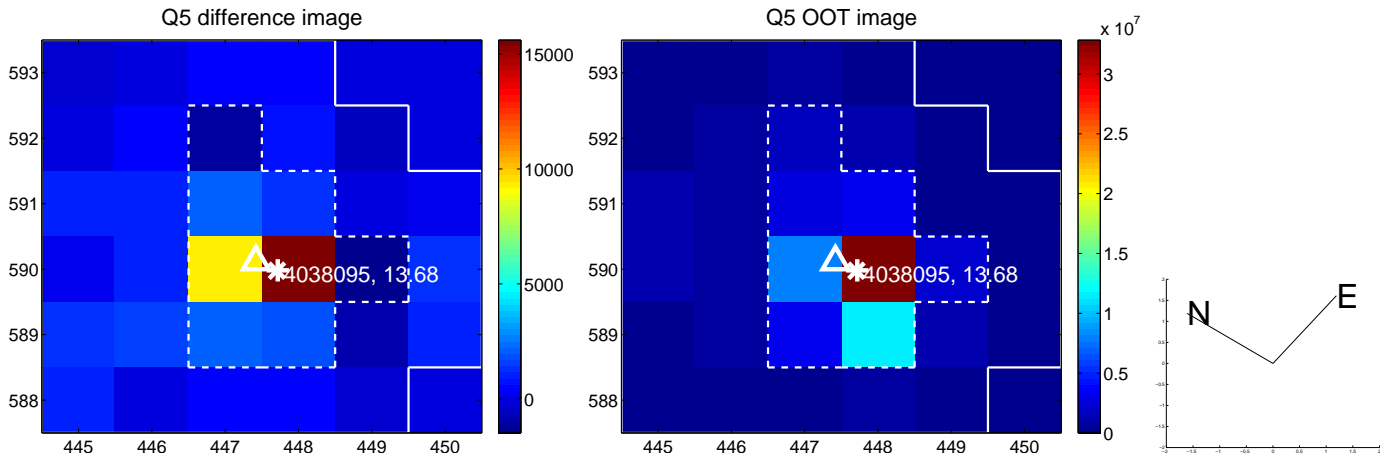


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

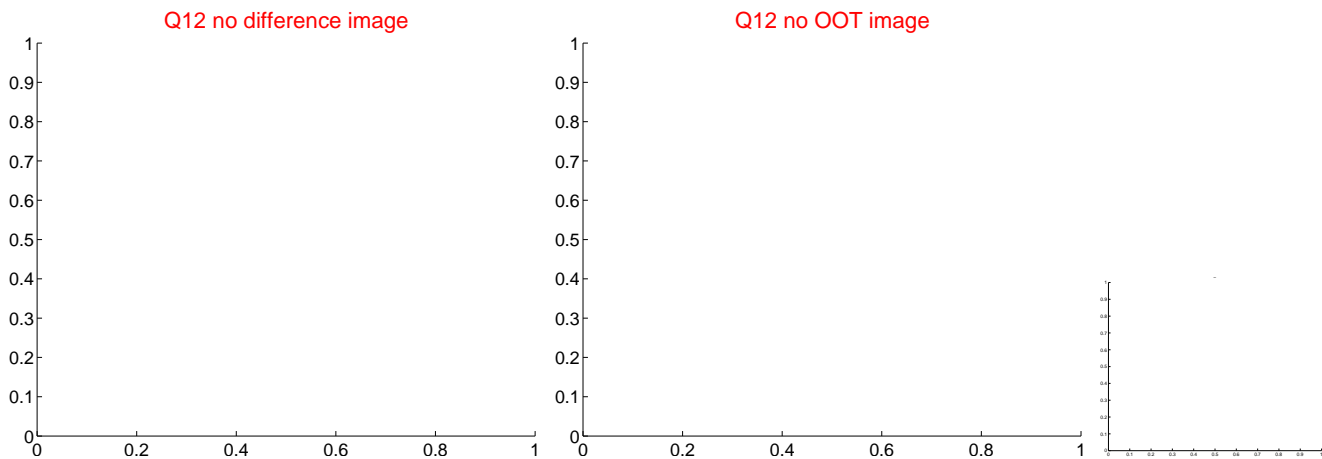
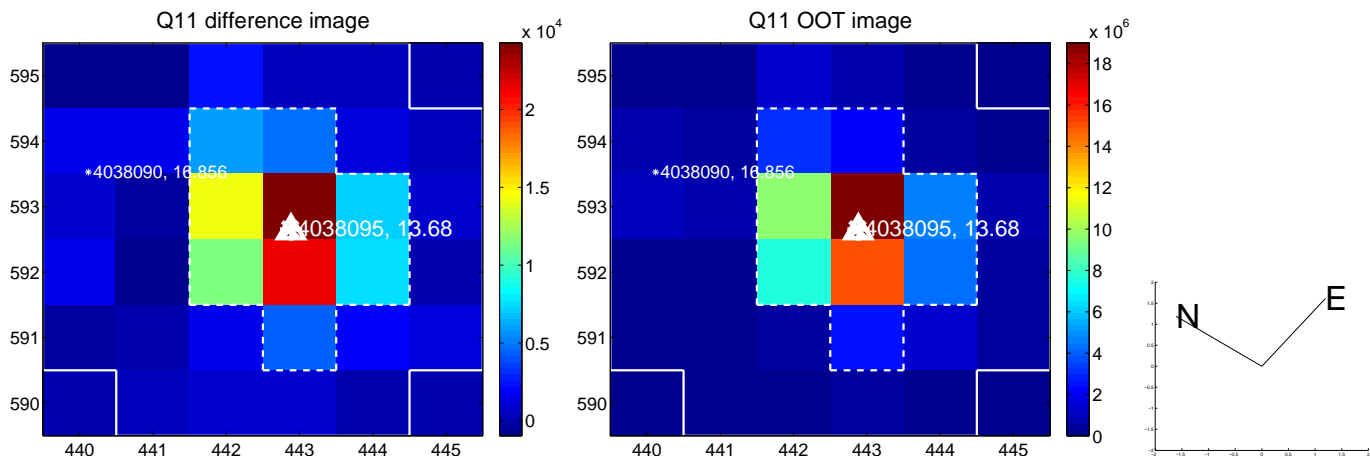
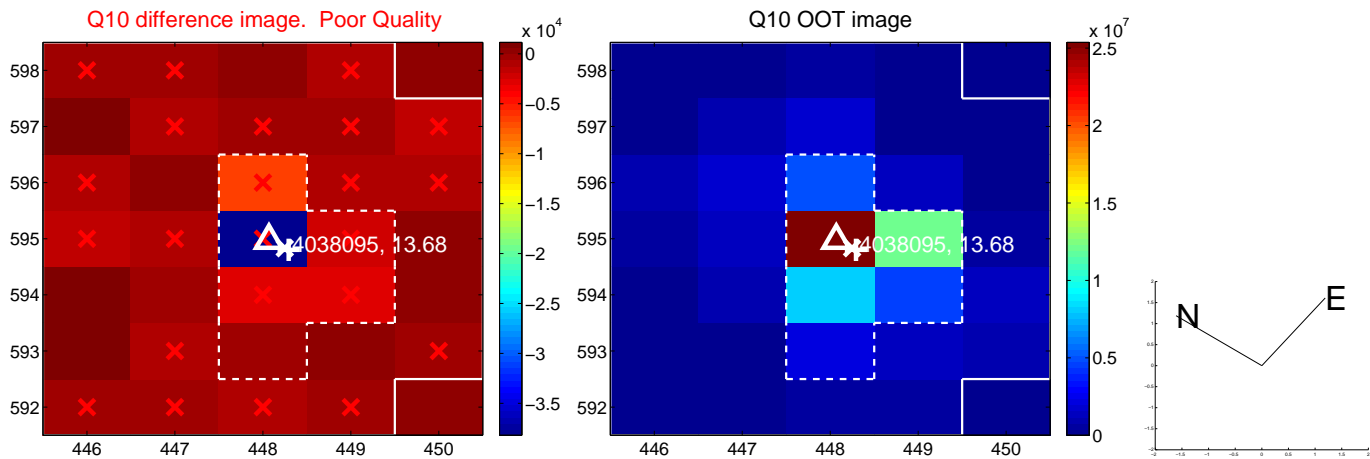
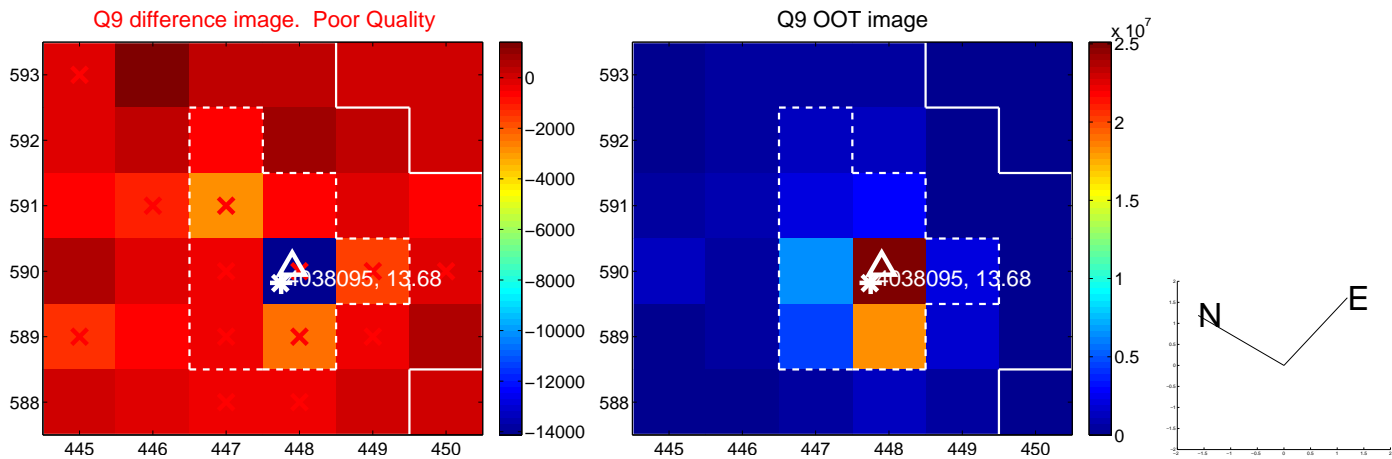
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



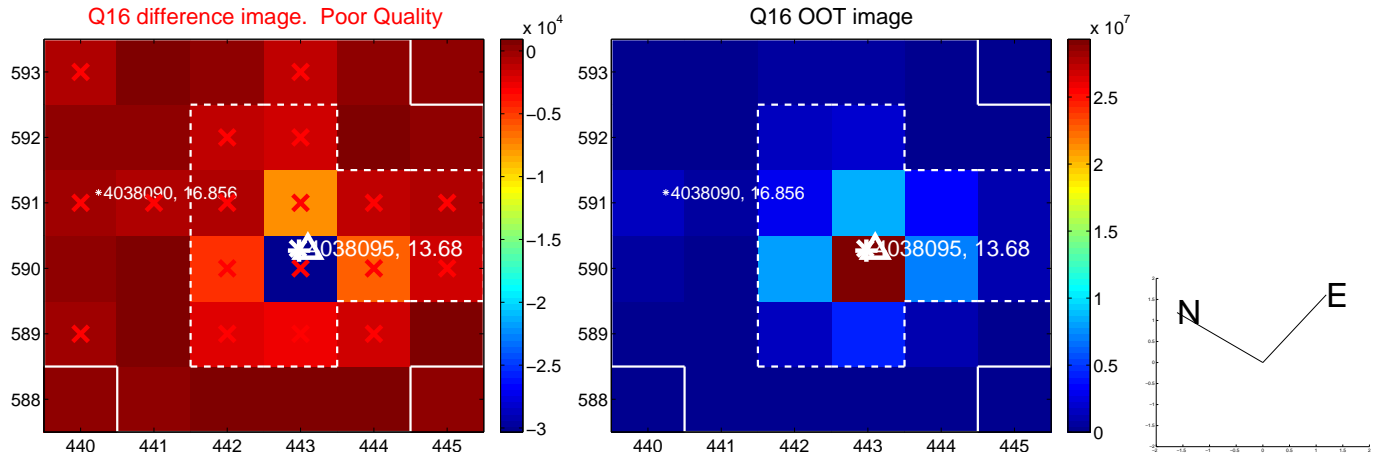
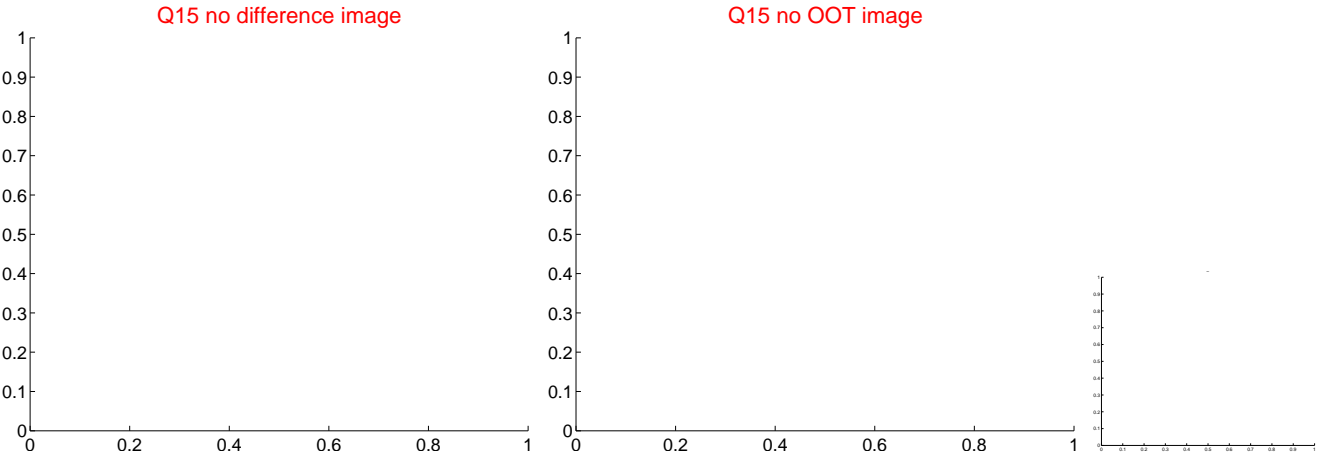
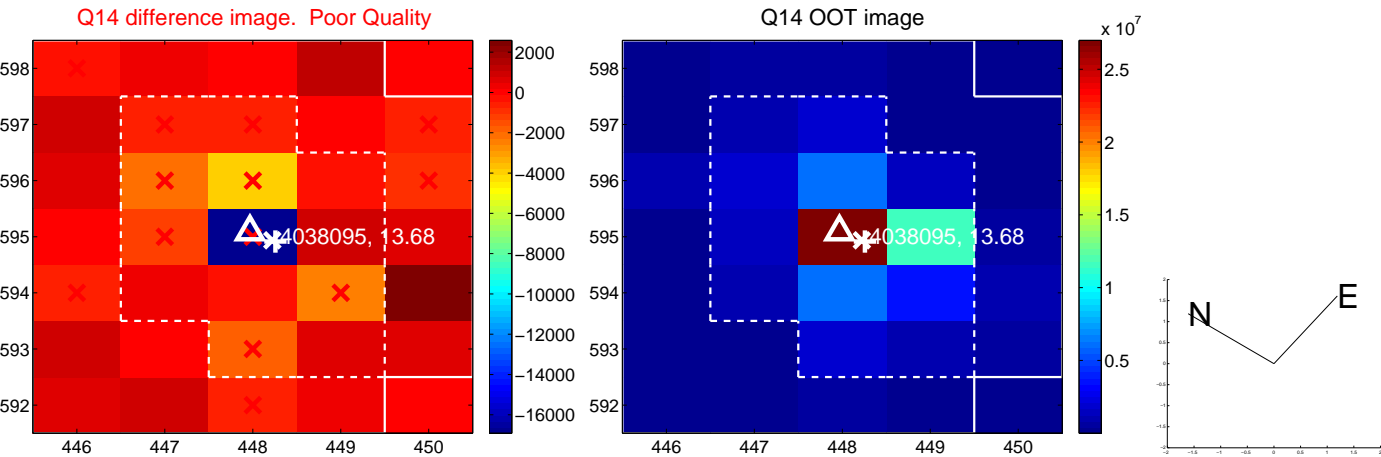
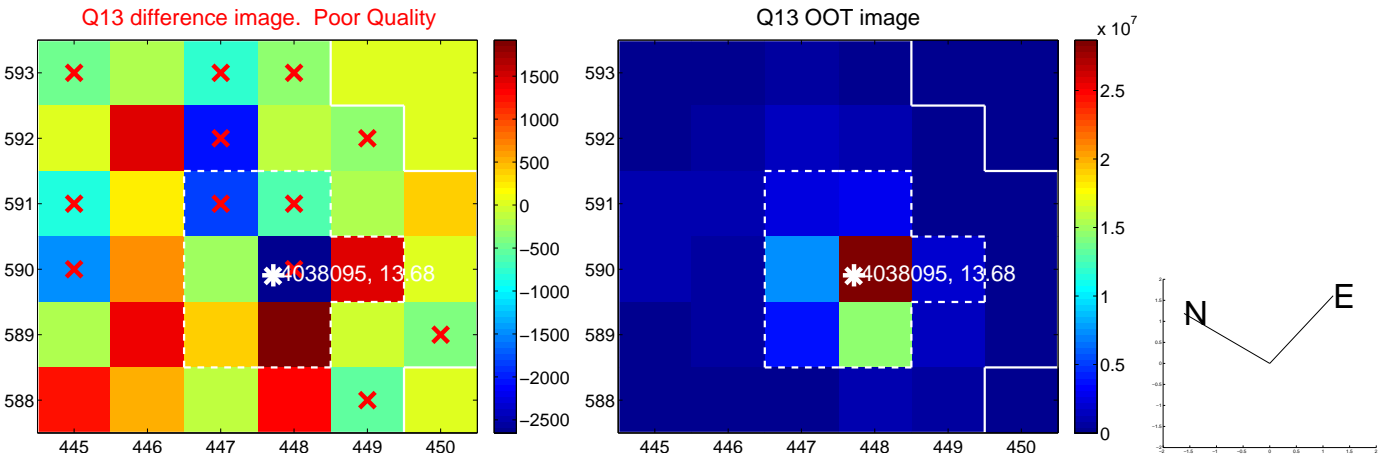
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



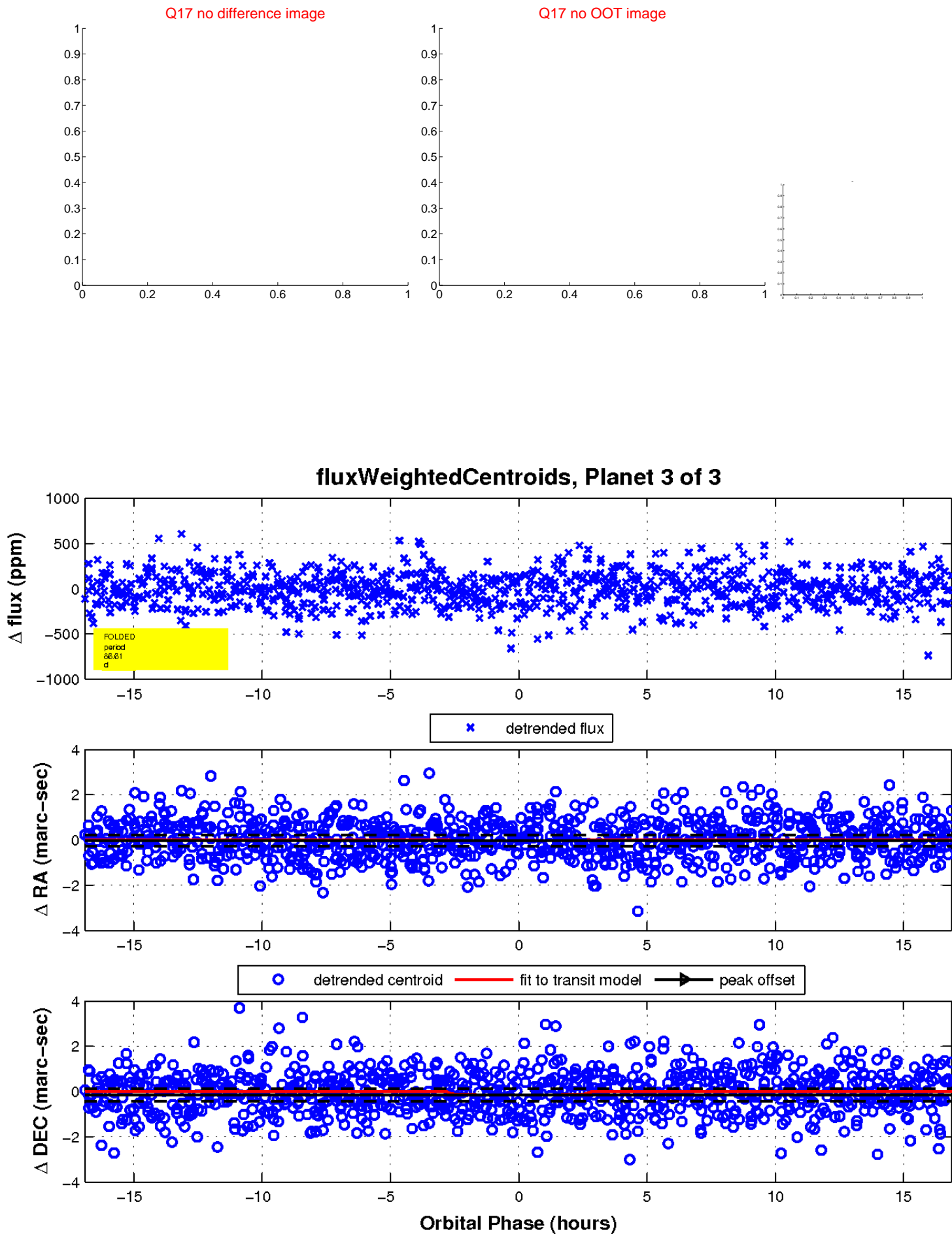
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

