

KIC 008495415

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})
008495415-01	OBS	2362.01	2.237173	133.684388	453.5	1.540	19.7	21.9	0.79	5080	1.83	391.08
008495415-02	OBS	2362.02	11.085091	133.332409	754.7	1.682	14.3	16.1	0.79	5080	2.58	46.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008495415-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET
008495415-02	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.

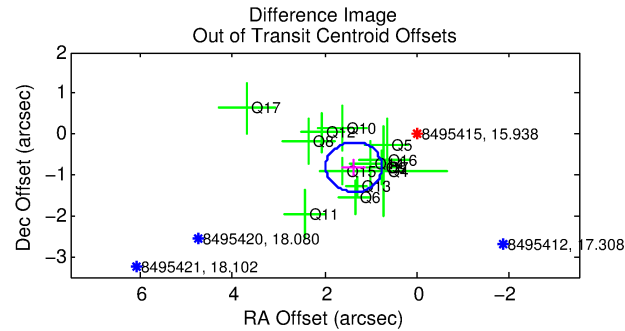
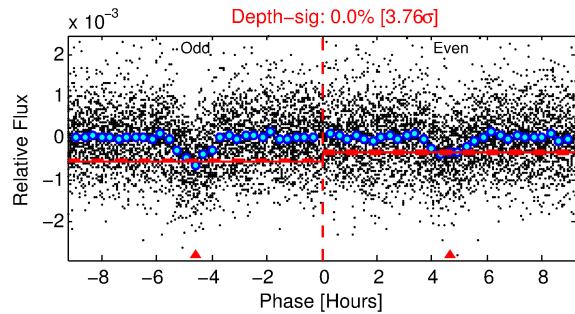
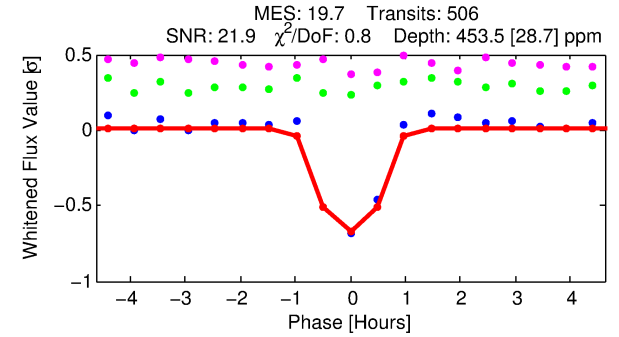
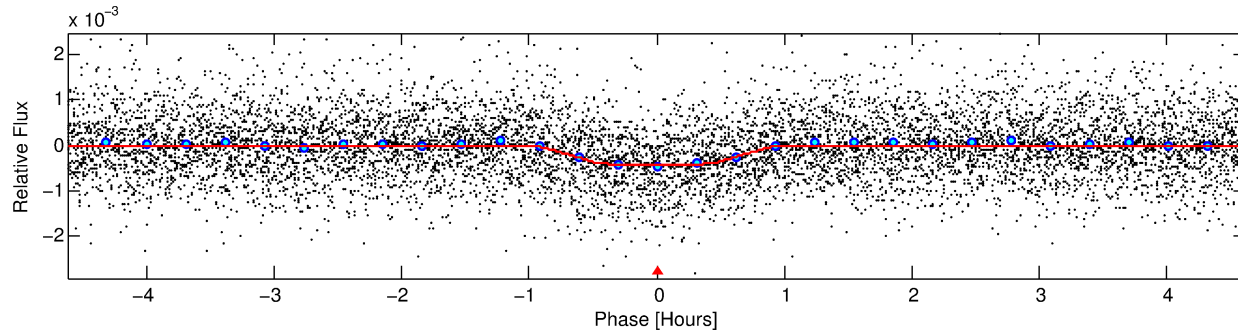
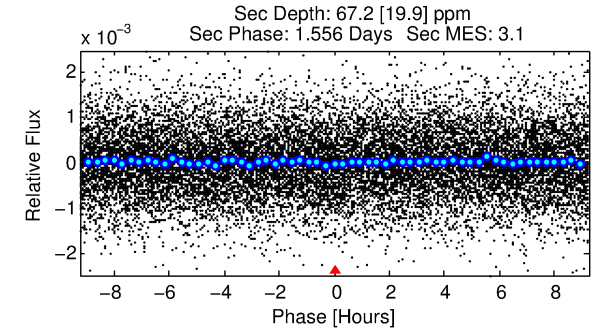
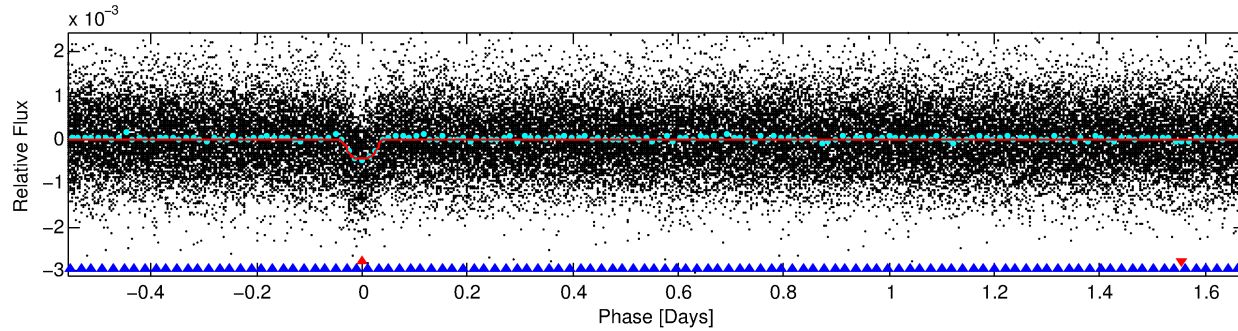
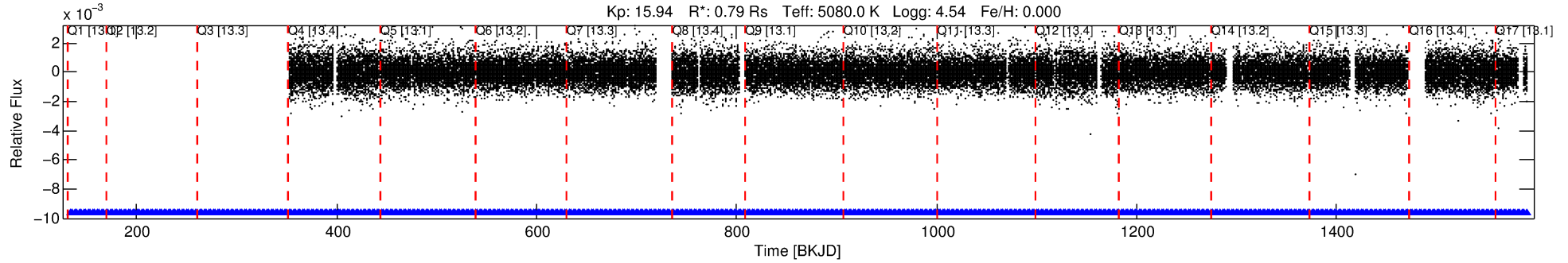
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008495415-01

No Significant Match Found

DV One-Page Summary

KIC: 8495415 Candidate: 1 of 2 Period: 2.237 d
KOI: K02362.01 Corr: 0.971



DV Fit Results:

Period = 2.23717 [0.00001] d
Epoch = 133.6844 [0.0013] BKJD
Rp/R* = 0.0211 [0.0167]
a/R* = 8.06 [22.25]
b = 0.72 [1.91]
Seff = 391.08 [74.76]
Teq = 1134 [54] K
Rp = 1.83 [1.46] Re
a = 0.0310 [0.0028] AU
Ag = 10.64 [17.20] [0.56σ]
Teffp = 3166 [1281] K [1.58σ]

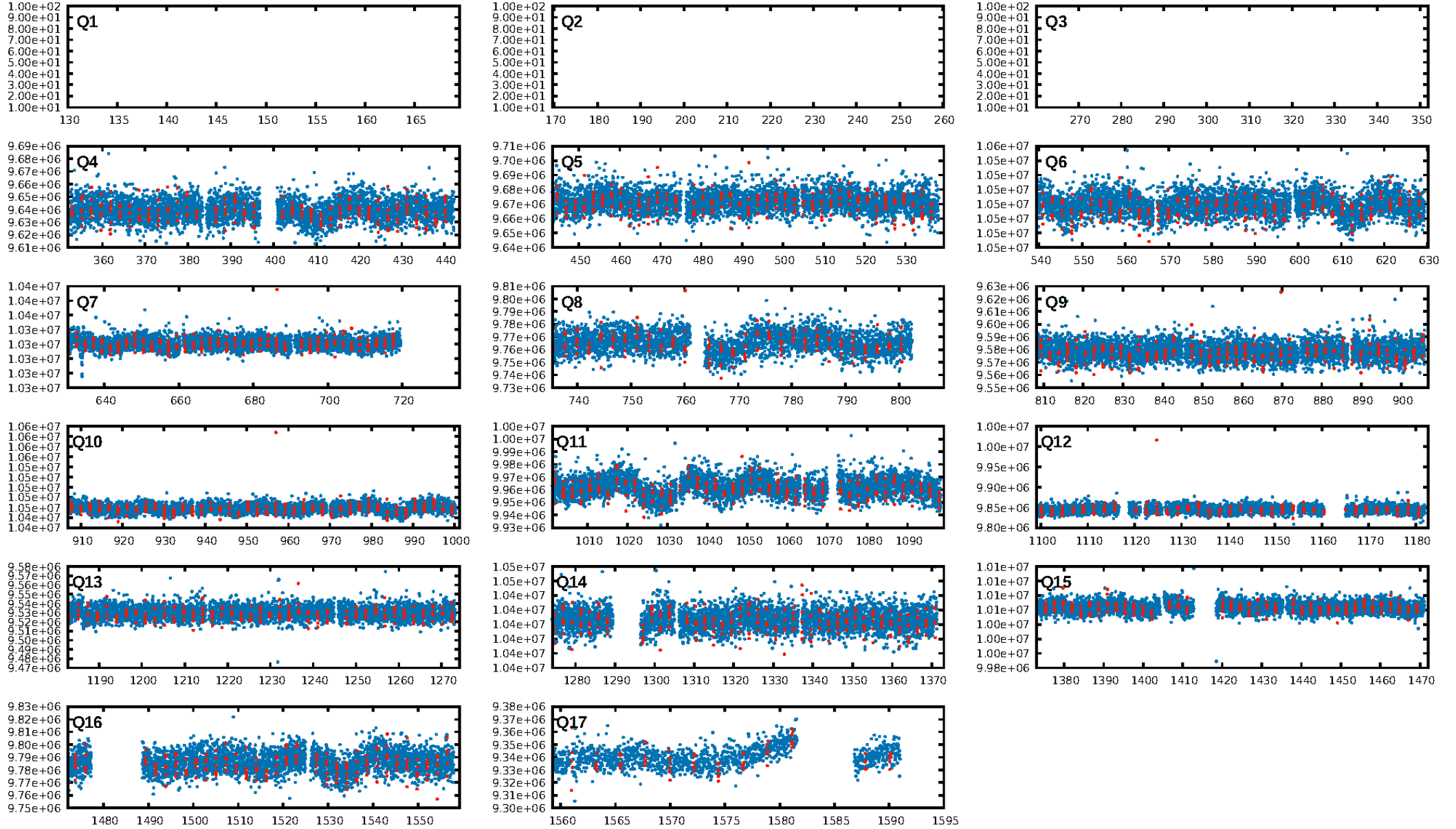
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [93.12σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 9.48e-84
RollingBand-fgt: 1.00 [494/494]
GhostDiagnostic-chr: 0.6867
Centroid-sig: 0.1%
Centroid-so: 1.244 arcsec [2.33σ]
OotOffset-rm: 1.592 arcsec [7.85σ]
KicOffset-rm: 1.643 arcsec [8.47σ]
OotOffset-st: 3/3/4/4 [14]
KicOffset-st: 3/3/4/4 [14]
DiffImageQuality-fgm: 1.00 [14/14]
DiffImageOverlap-fno: 1.00 [14/14]

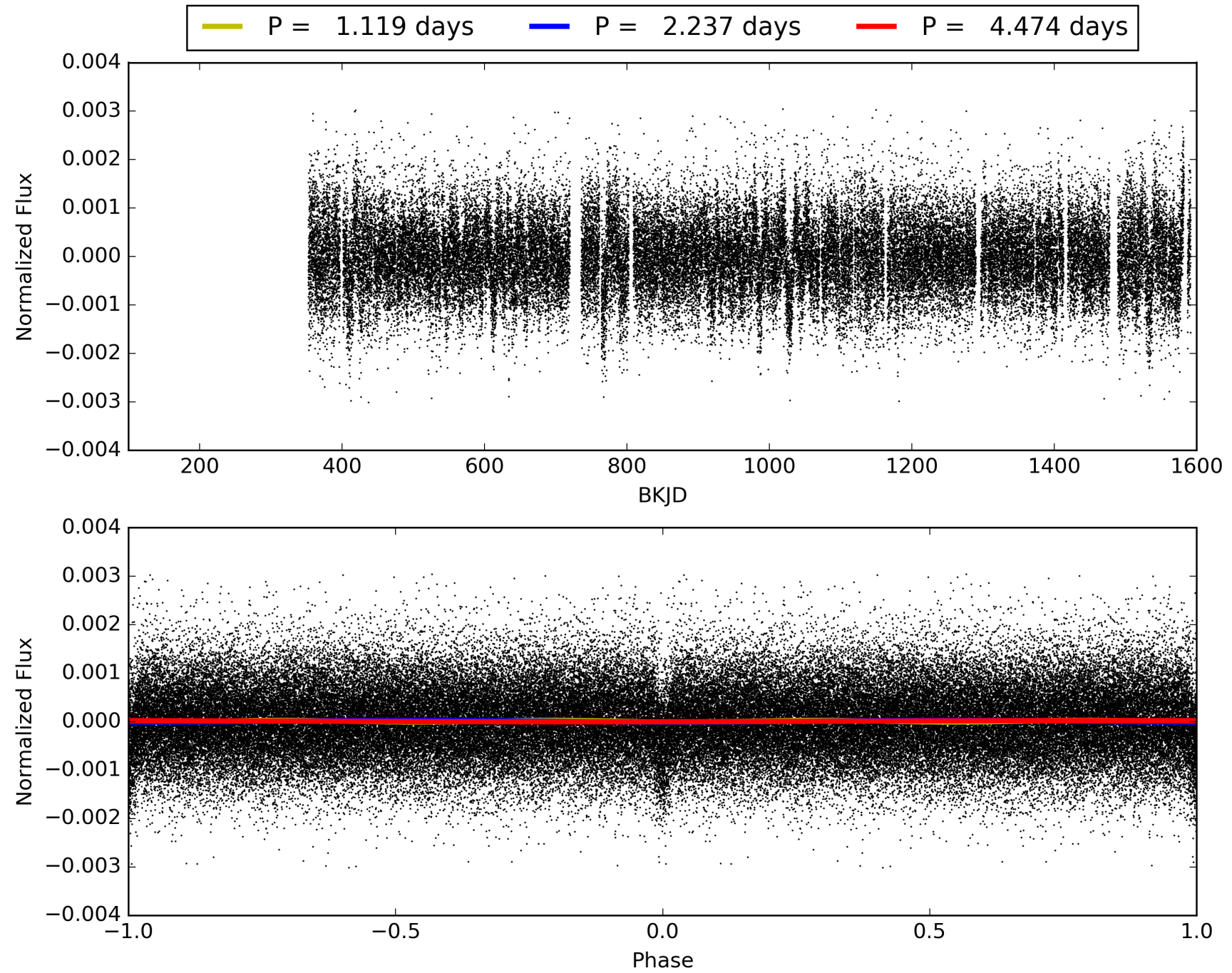
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 15:48:17 Z

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

TCE 008495415-01, PDC Light Curves

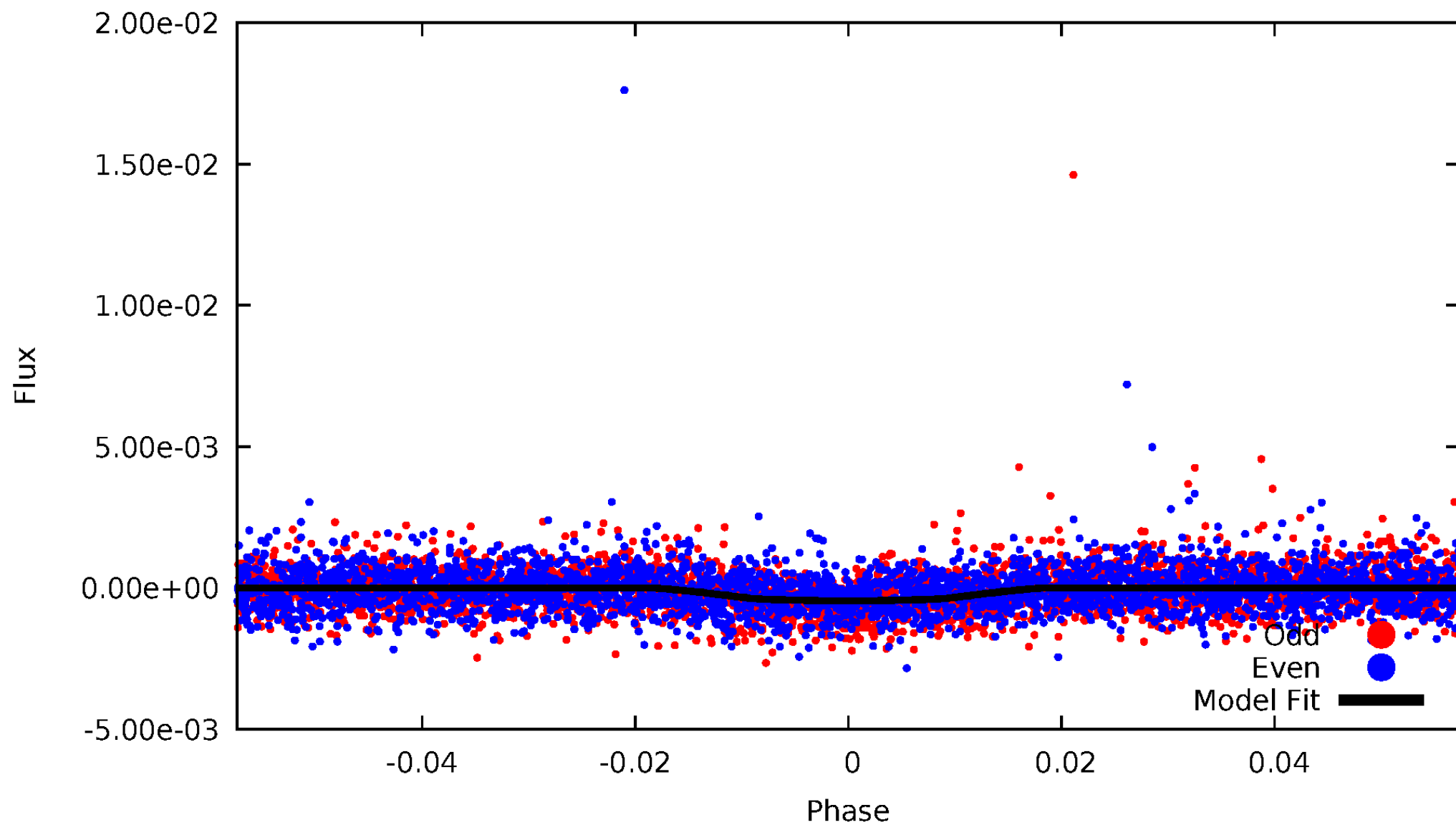


TCE 008495415-01



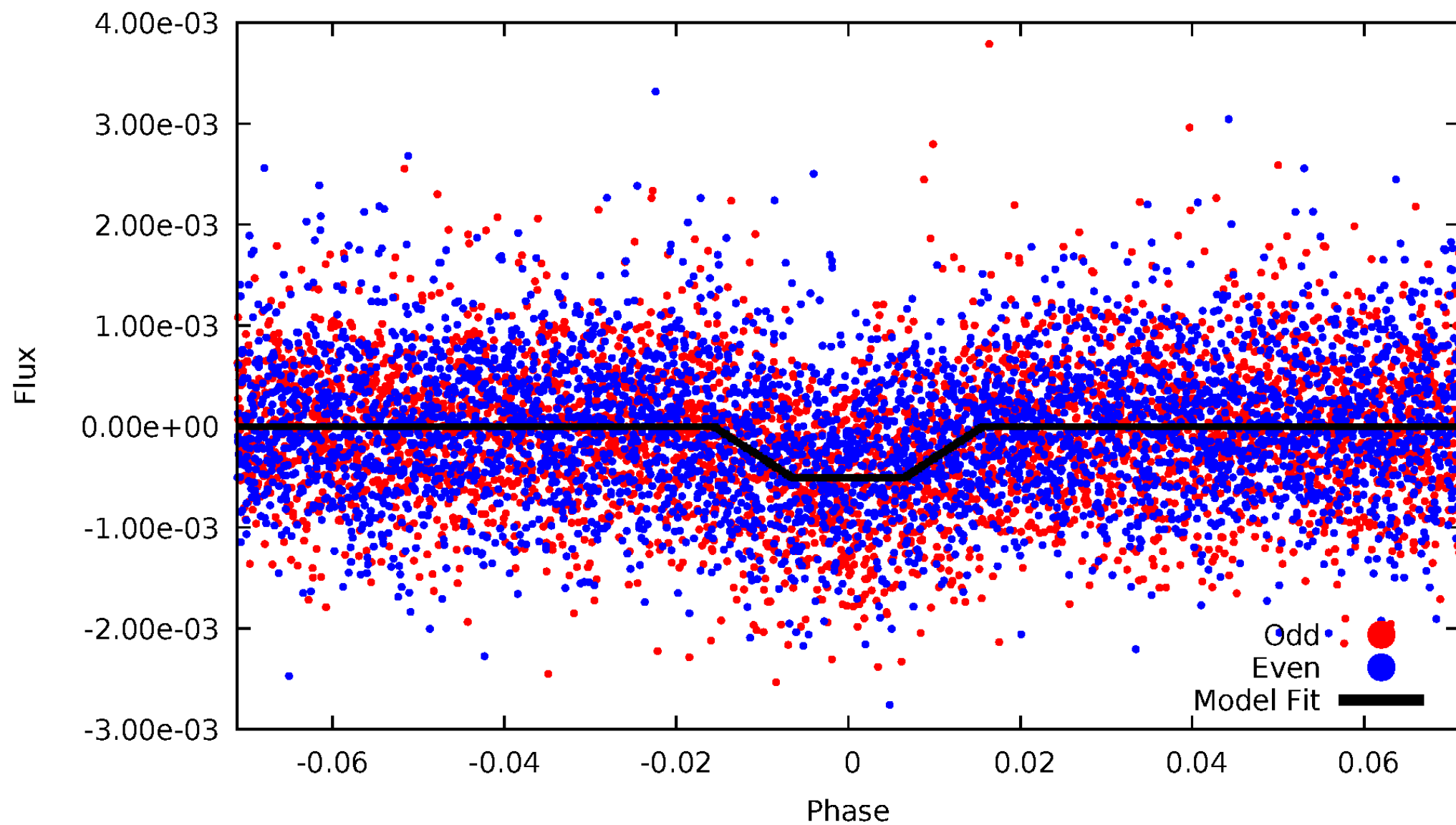
DV Odd/Even

TCE 008495415-01



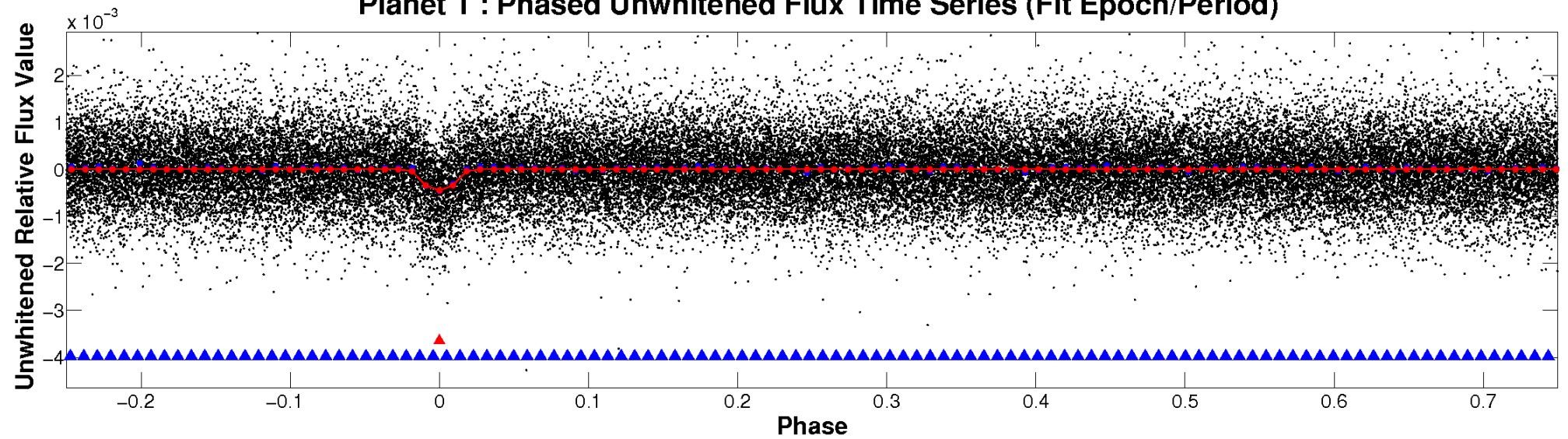
ALT Odd/Even

TCE 008495415-01

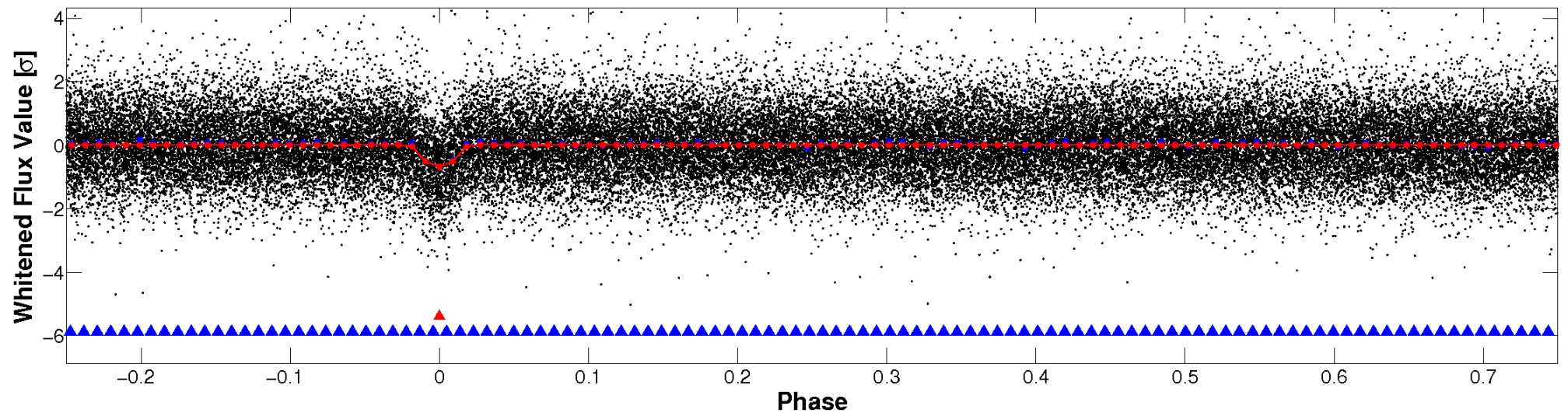


Non-Whitened Vs. Whitened Light Curve

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

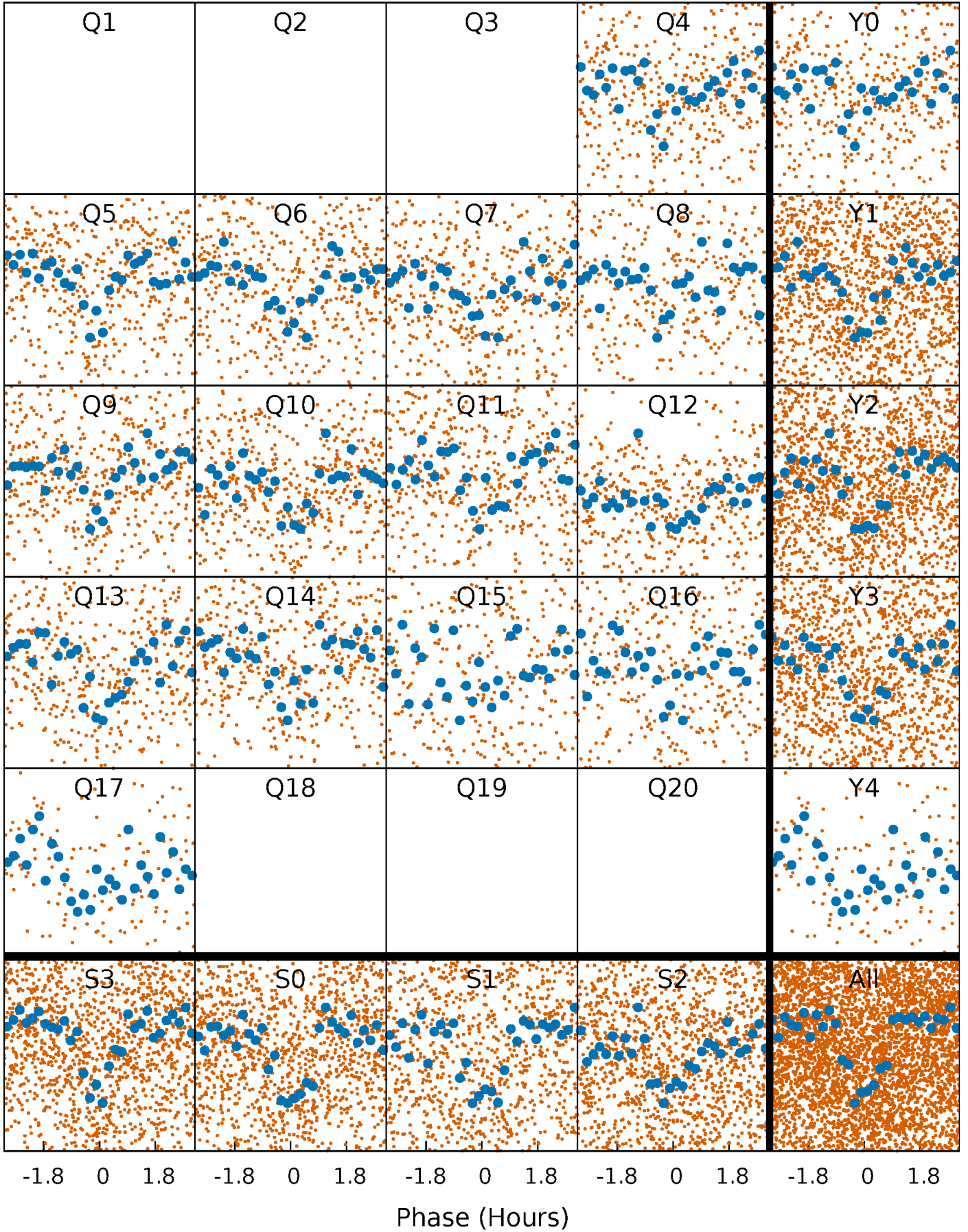


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



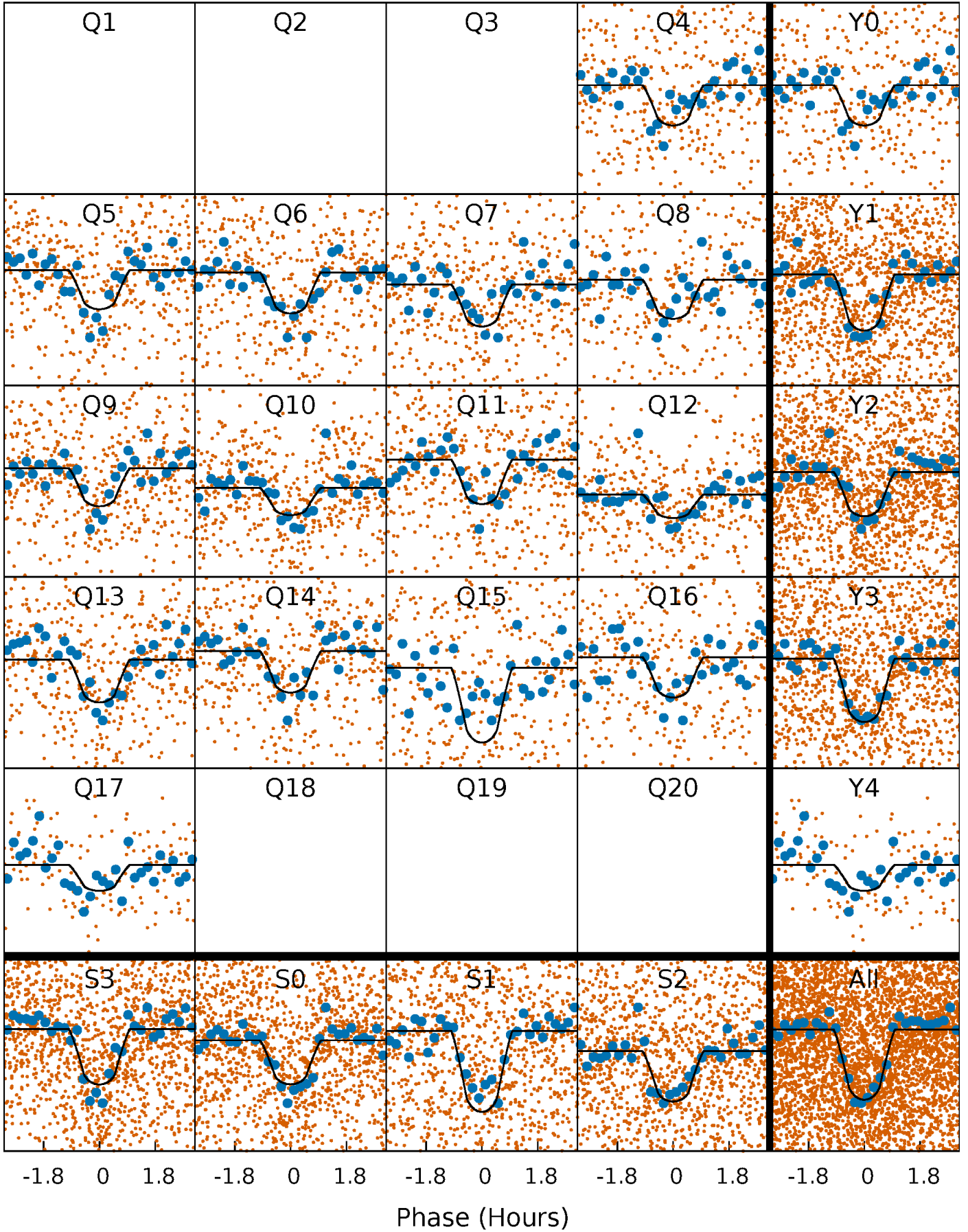
PDC Quarter-Phased Transit Curves

TCE 008495415-01 P= 2.237173 Days $T_0=133.684388$ (BKJD)



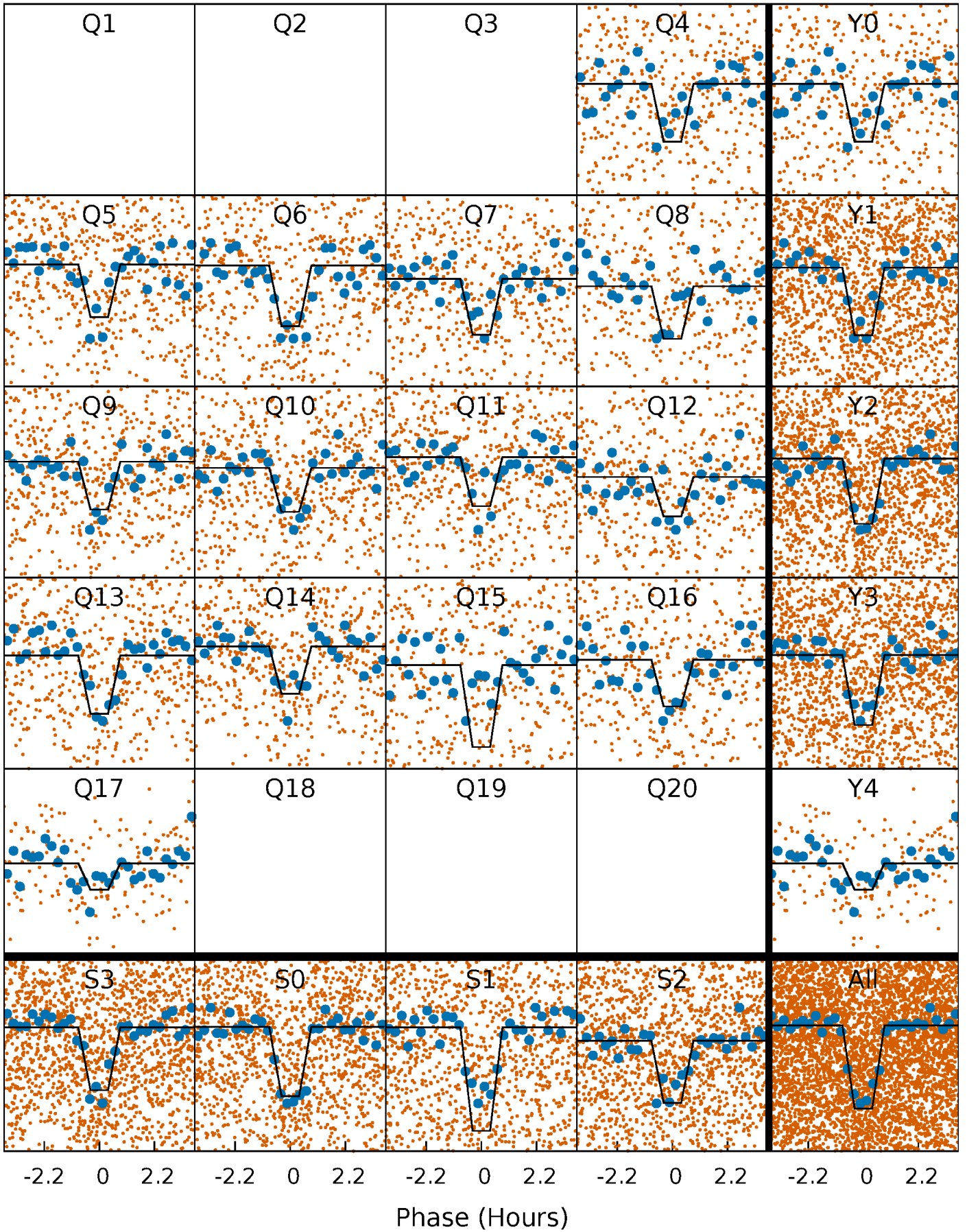
DV Quarter-Phased Transit Curves

TCE 008495415-01 P= 2.237173 Days $T_0=133.684388$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

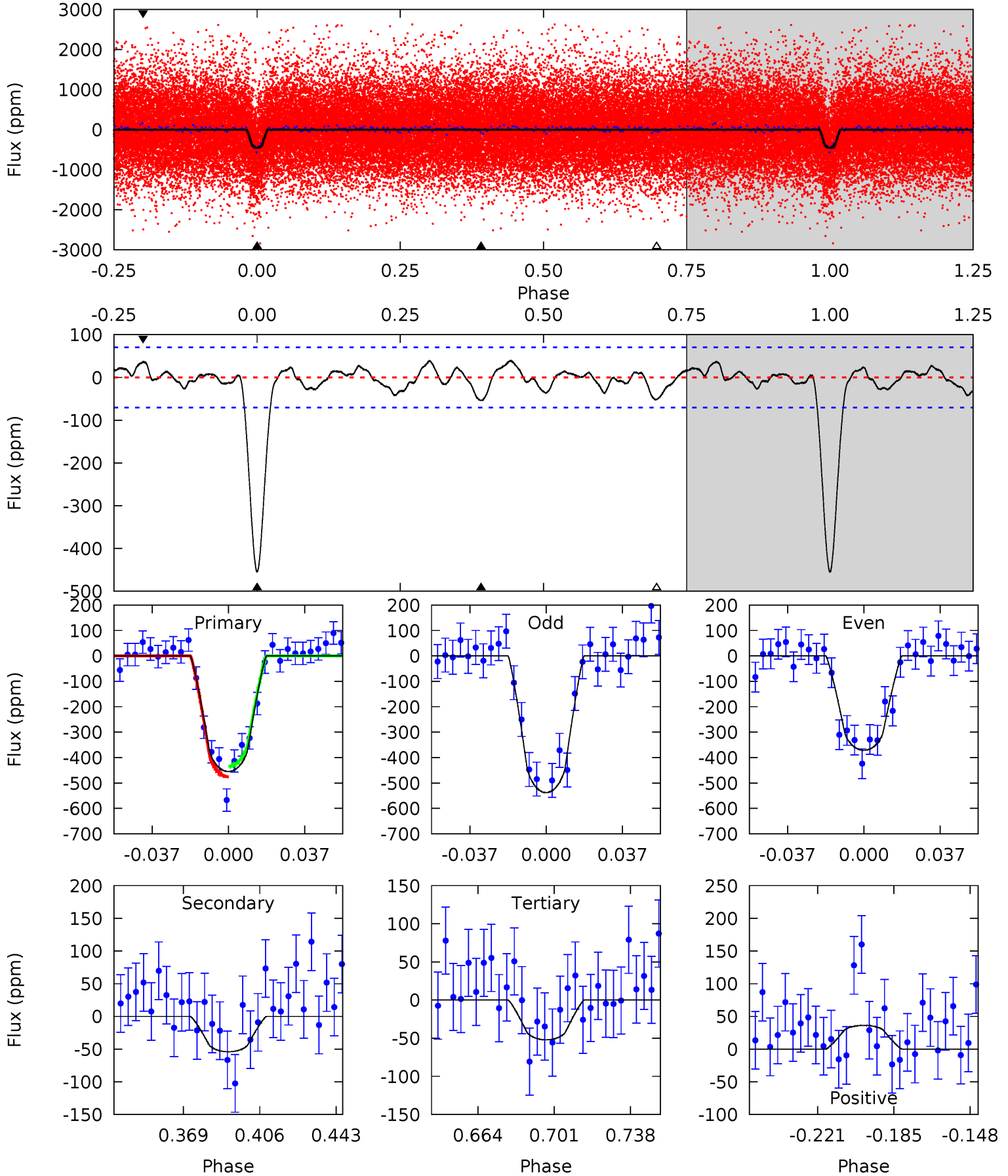
TCE 008495415-01 P= 2.237179 Days $T_0=133.681711$ (BKJD)



DV Model-Shift Uniqueness Test

008495415-01, P = 2.237173 Days, E = 133.684388 Days

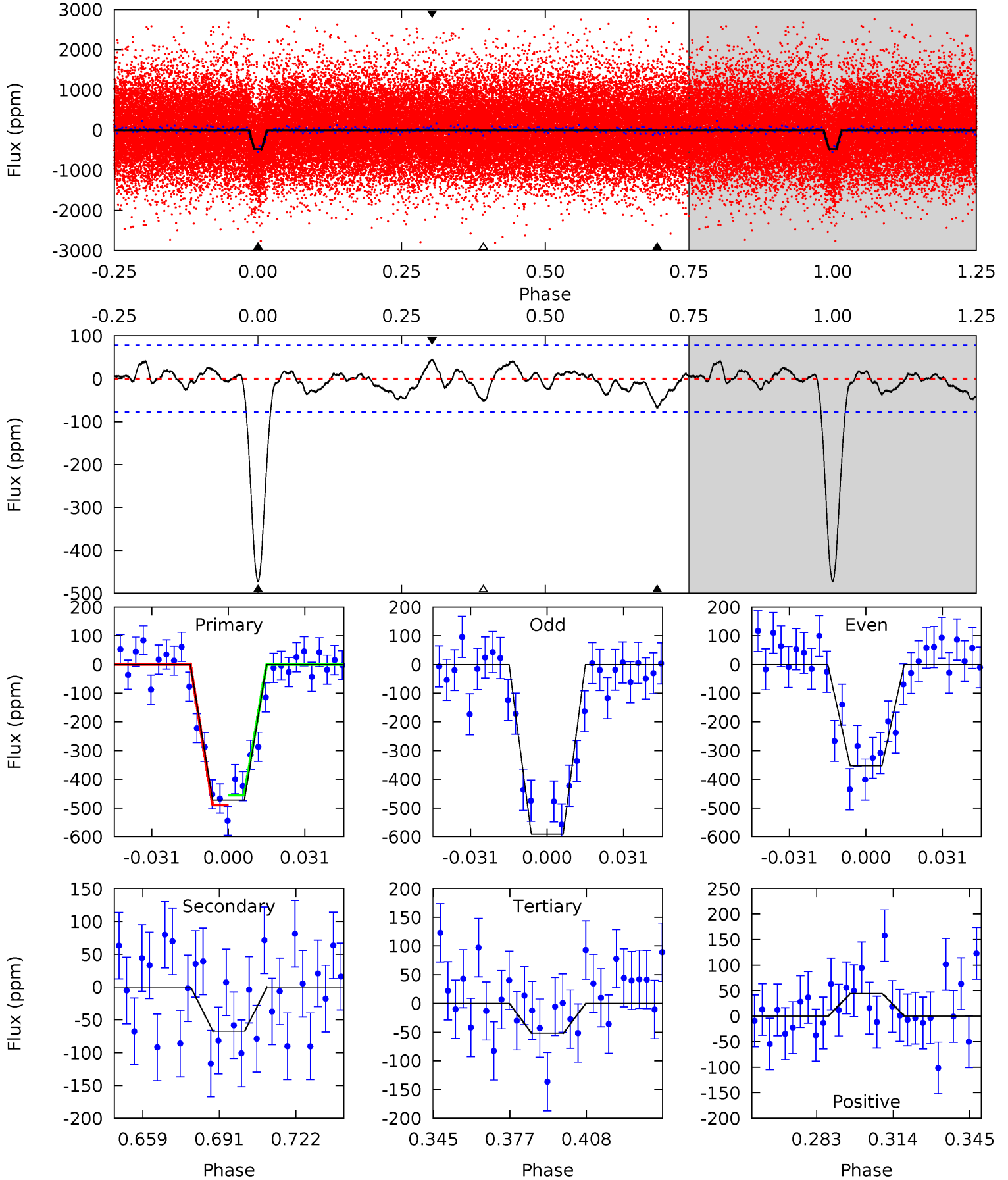
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.7	3.65	3.52	2.45	4.77	2.09	1.29	27.2	28.3	0.13	1.21	5.64	1.01	0.08	1.42



Alt Model-Shift Uniqueness Test

008495415-01, P = 2.237179 Days, E = 133.681711 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.1	4.13	3.19	2.73	4.80	2.15	1.22	25.9	26.3	0.94	1.40	7.35	1.03	0.09	1.06



Stellar Parameters For KIC 008495415

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5080^{+184}_{-163}	$4.538^{+0.065}_{-0.065}$	$0.000^{+0.250}_{-0.300}$	$0.793^{+0.089}_{-0.073}$	$0.792^{+0.088}_{-0.066}$	$2.239^{+0.607}_{-0.476}$
	+4%/-3%	+1%/-1%	+inf%/-inf%	+11%/-9%	+11%/-8%	+27%/-21%
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 008495415-01 / KOI 2362.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-54 ± 15	$2.11^{+1.37}_{-1.29}$	1584^{+69}_{-60}	3262^{+1271}_{-489}	$6.186^{+35.958}_{-3.977}$
Alt.	-67 ± 16	$2.10^{+1.51}_{-1.15}$	1584^{+74}_{-70}	3373^{+1129}_{-516}	$7.843^{+31.701}_{-5.203}$

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

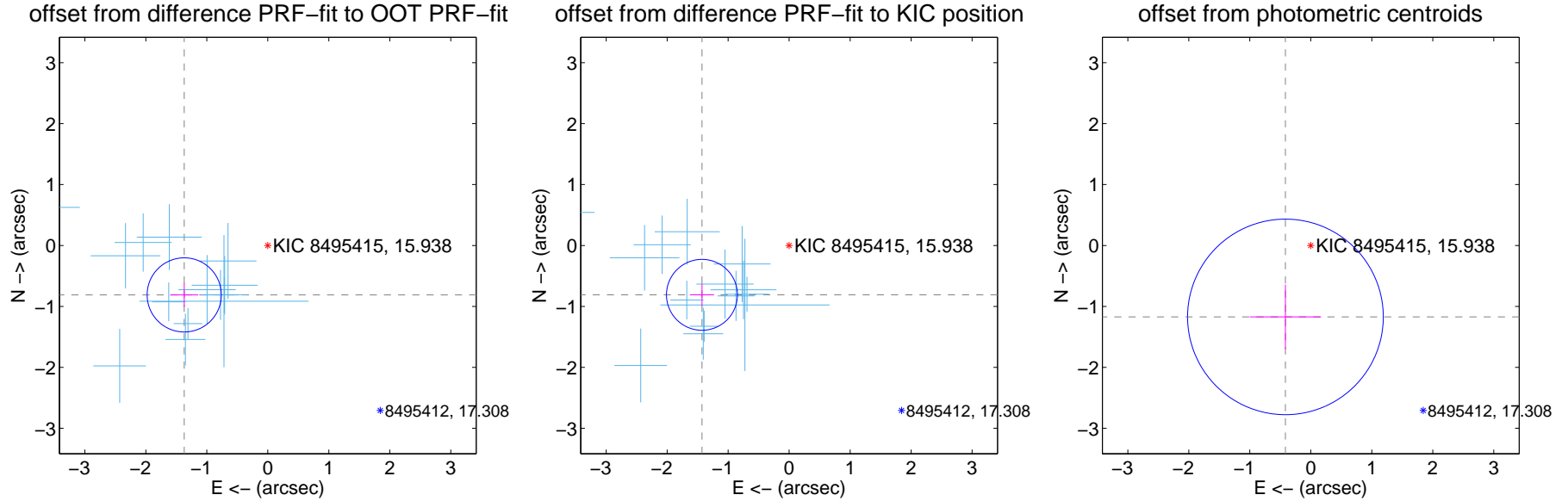
DV Centroid Data

Supplemental centroid analysis for 008495415-01. Kepler magnitude: 15.94. Transit SNR 21.93

There are 14 quarters with good PRF difference image offsets

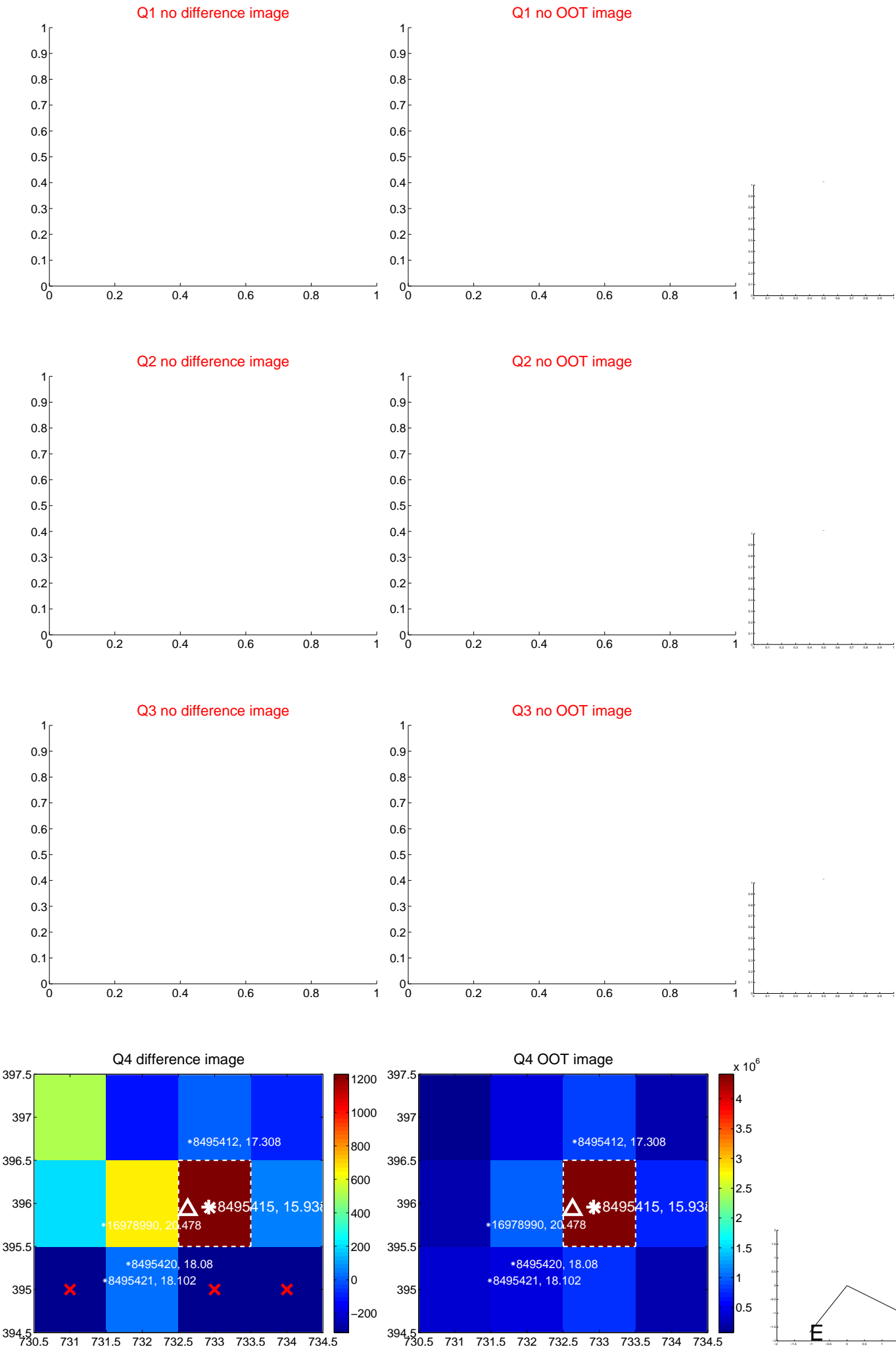
The direct PRF centroid is offset from the target star catalog position by about 0.14 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.592 ± 0.203	7.85	1.370 ± 0.230	-0.811 ± 0.194
PRF-fit source offset from KIC position	1.643 ± 0.194	8.47	1.430 ± 0.197	-0.810 ± 0.183
photometric centroid source offset	1.24 ± 0.53	2.33	0.42 ± 0.58	-1.17 ± 0.53

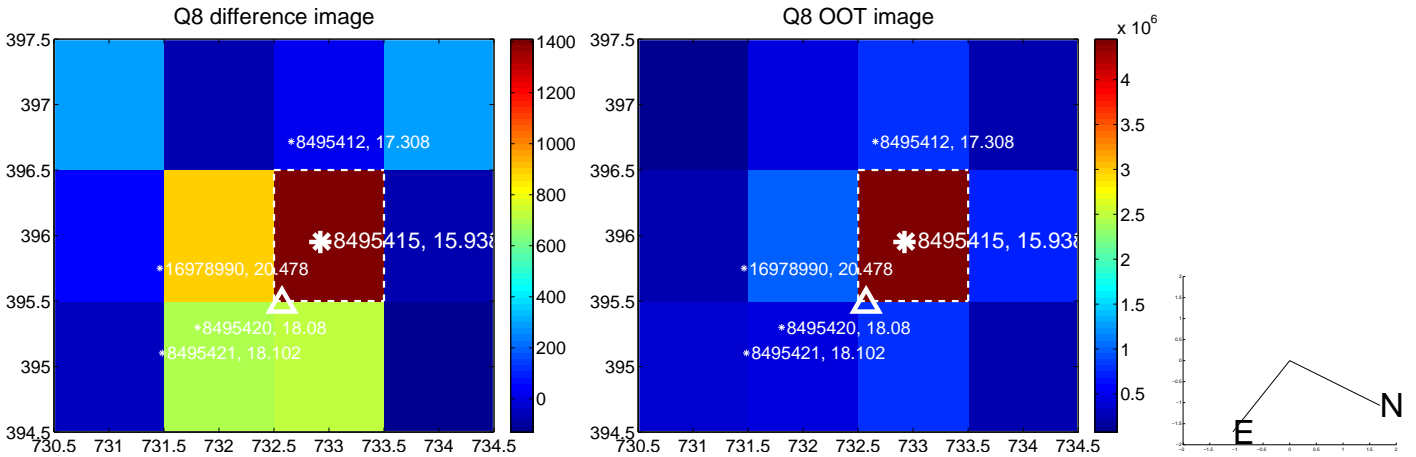
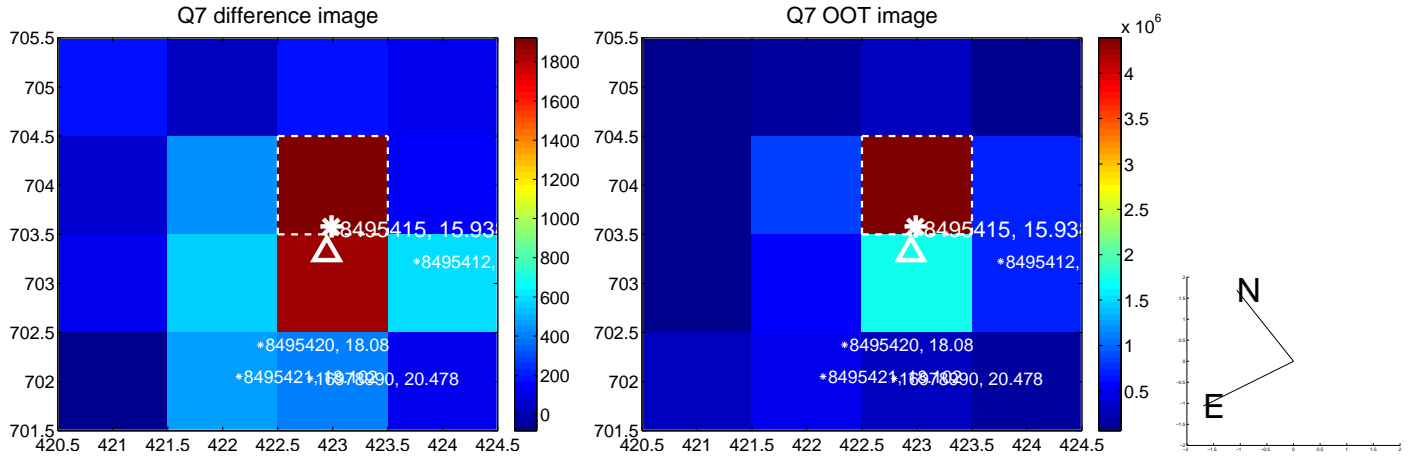
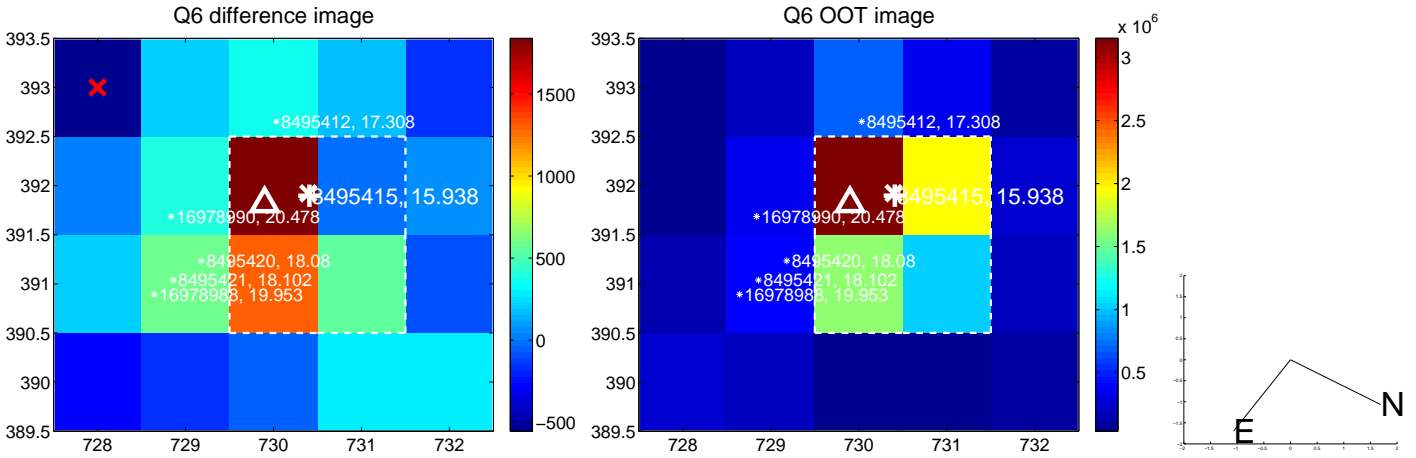
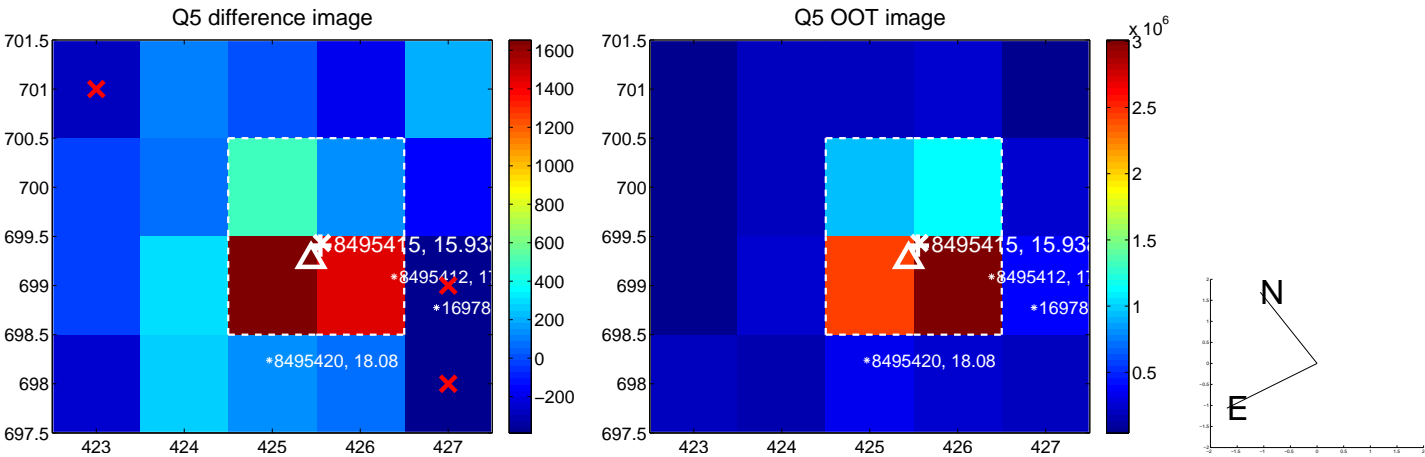


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

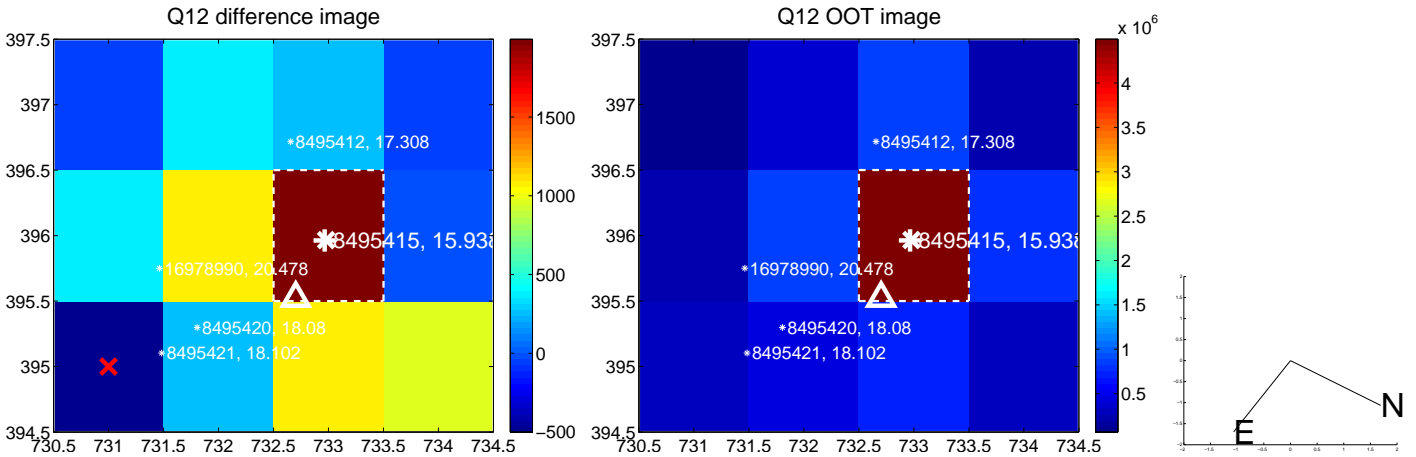
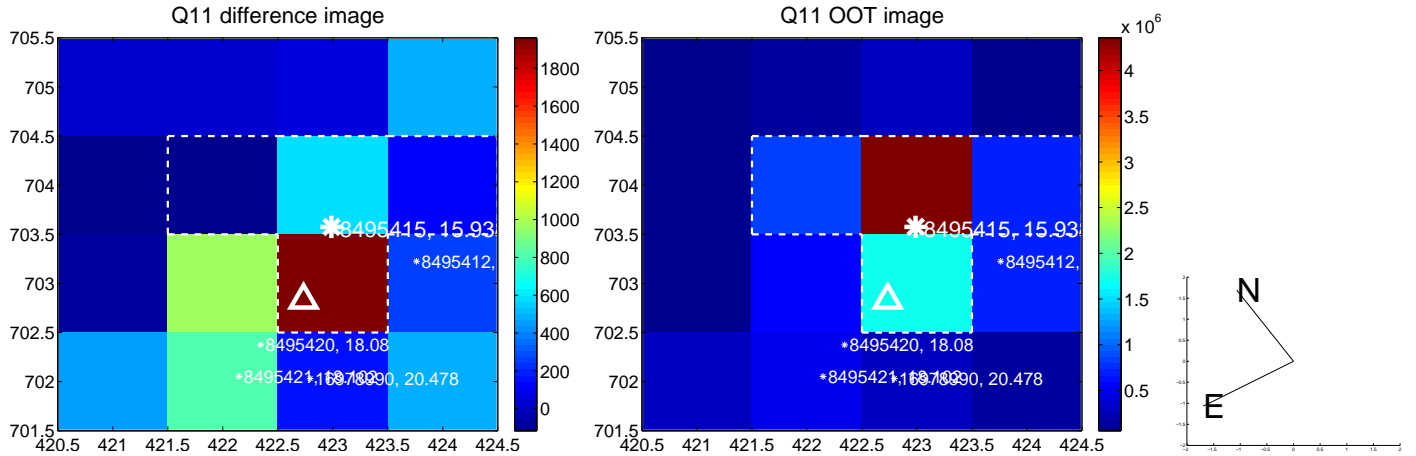
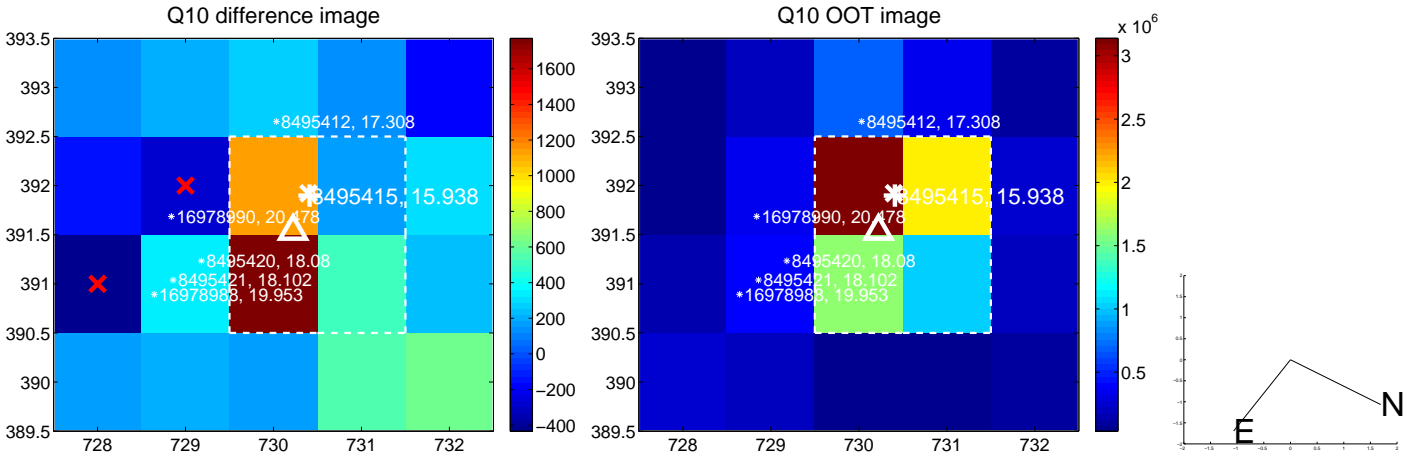
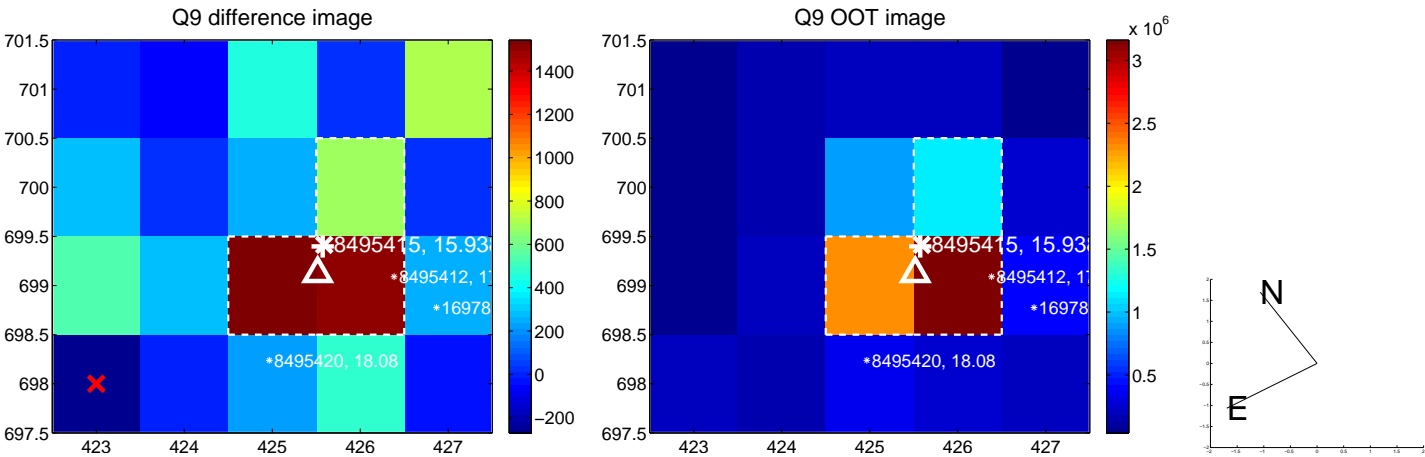
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



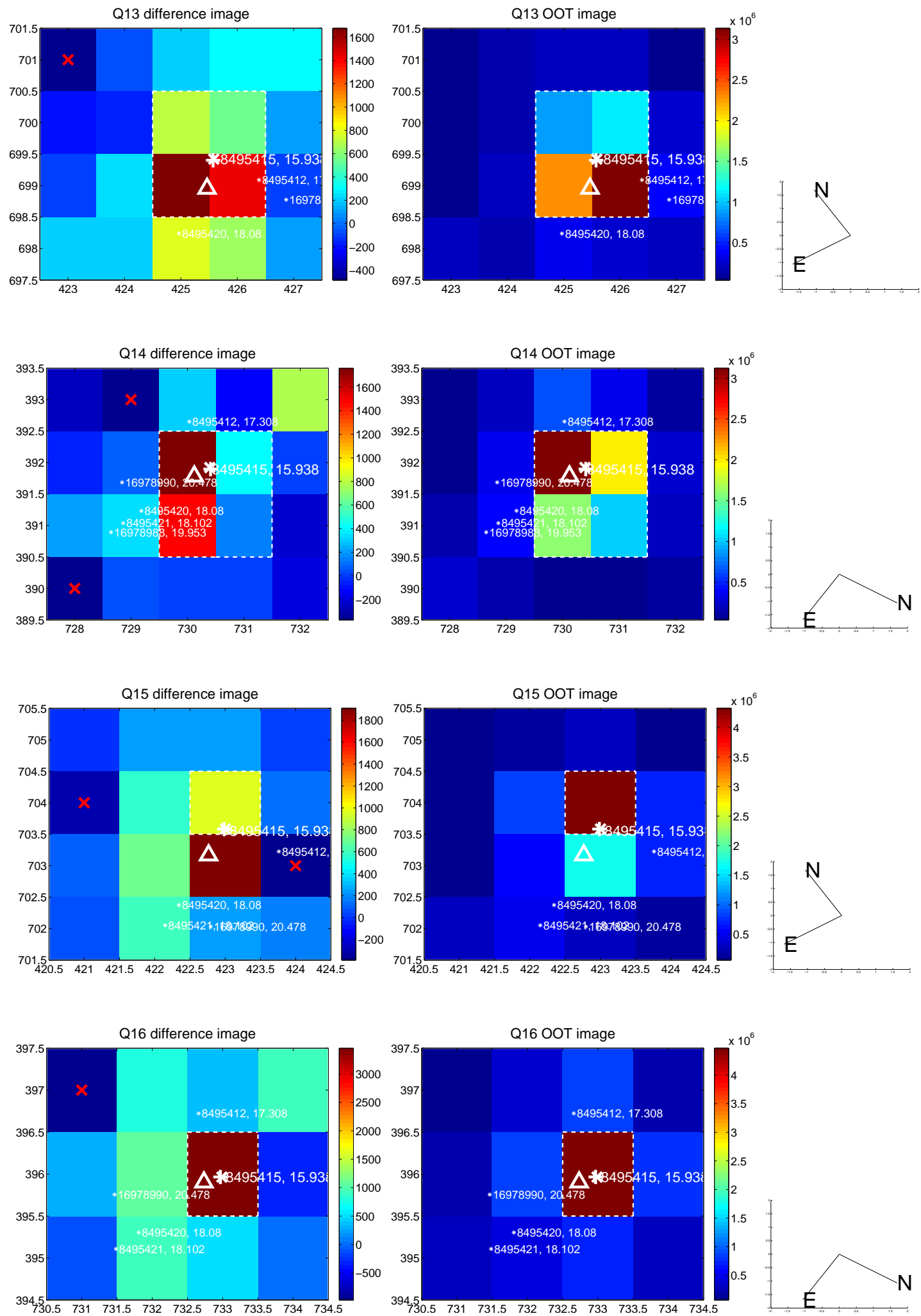
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



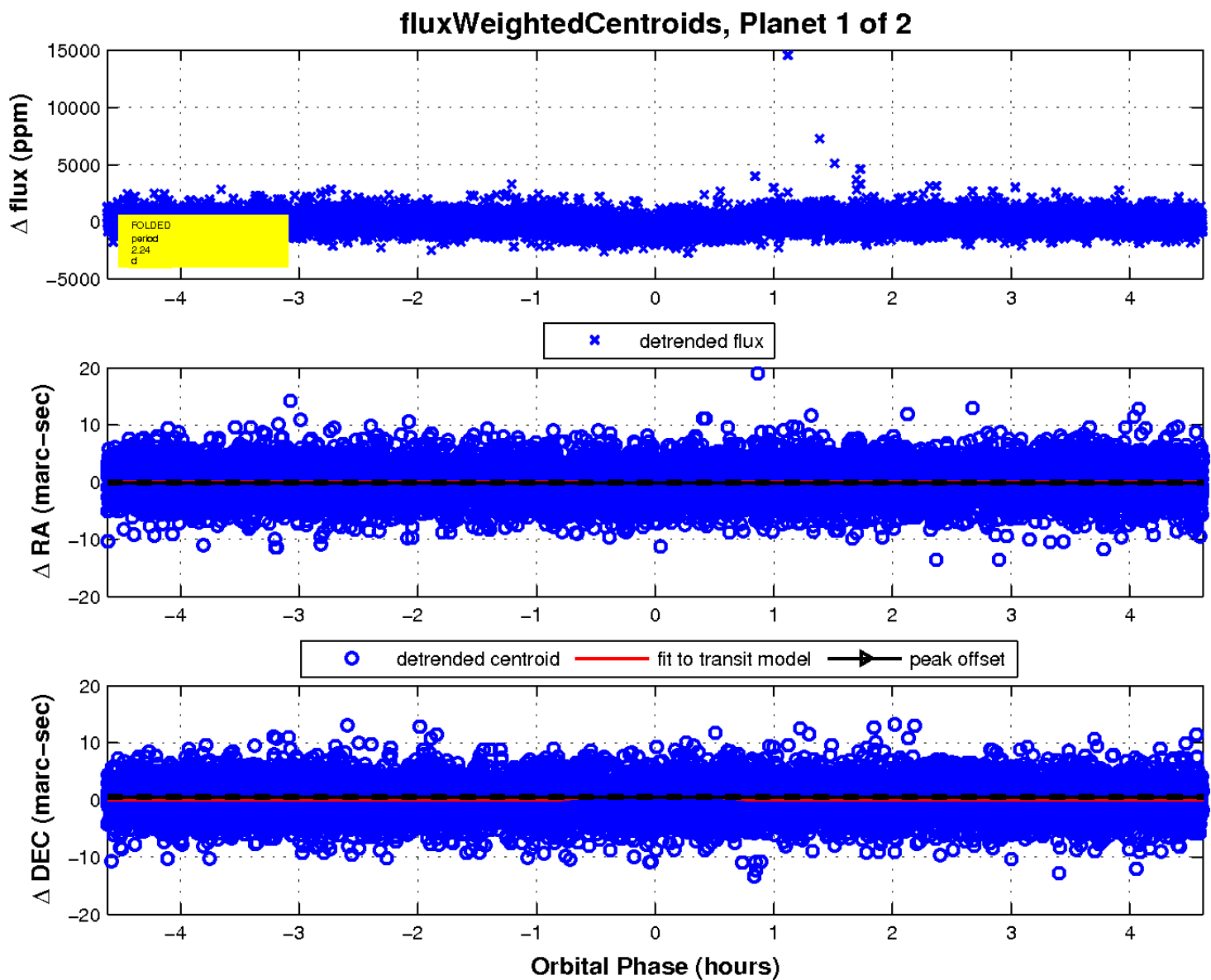
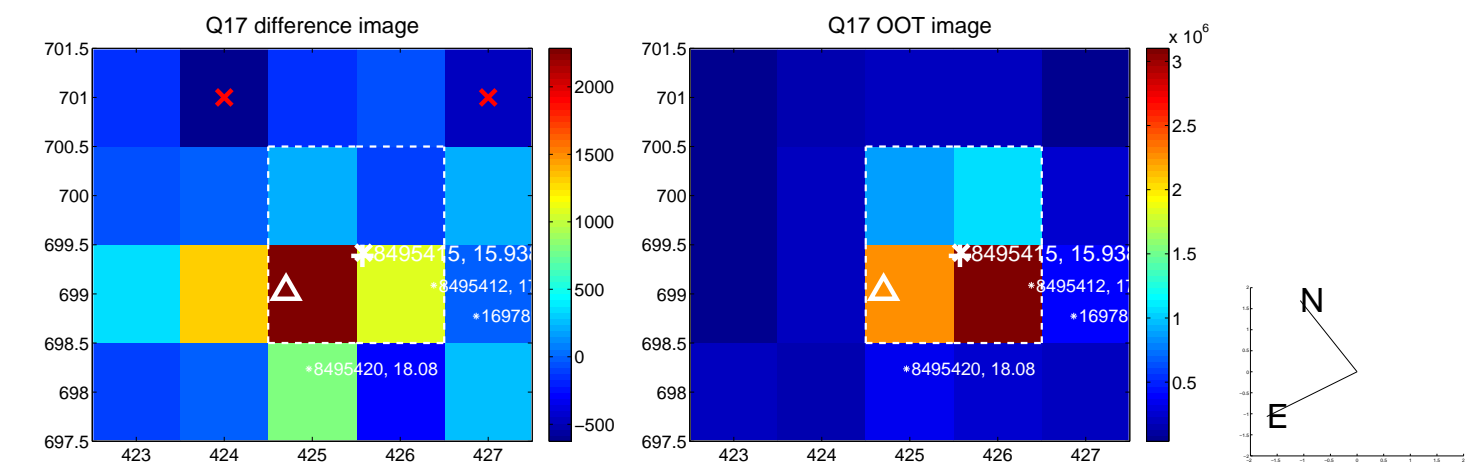
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

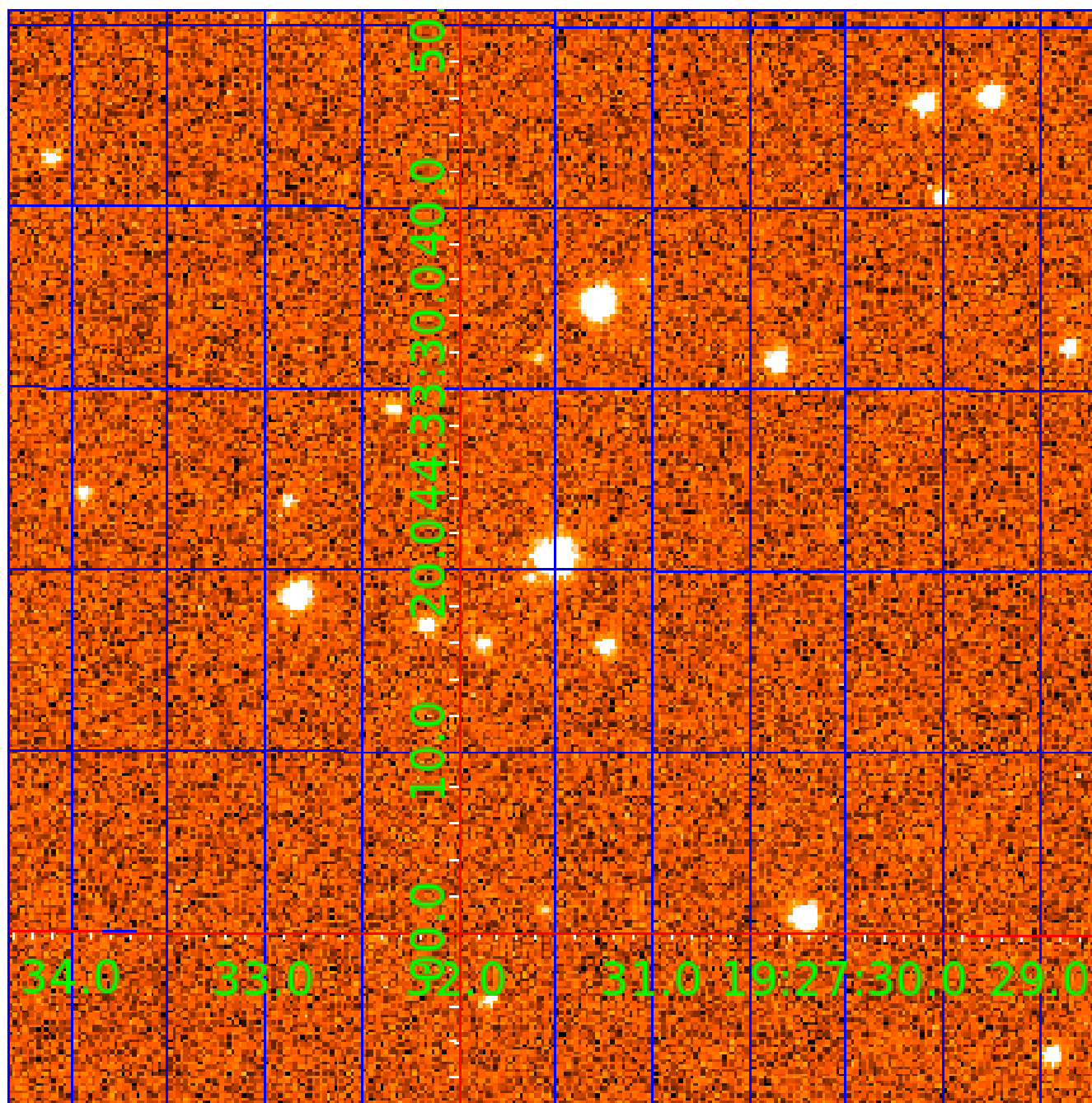


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008495415

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})
008495415-01	OBS	2362.01	2.237173	133.684388	453.5	1.540	19.7	21.9	0.79	5080	1.83	391.08
008495415-02	OBS	2362.02	11.085091	133.332409	754.7	1.682	14.3	16.1	0.79	5080	2.58	46.30

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008495415-01	OBS	FP	0.00	0	0	1	0	CENT_UNRESOLVED_OFFSET
008495415-02	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.

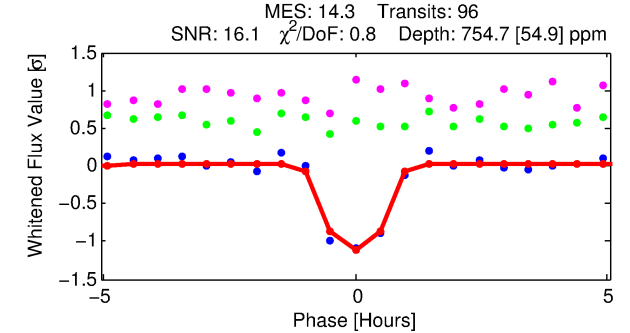
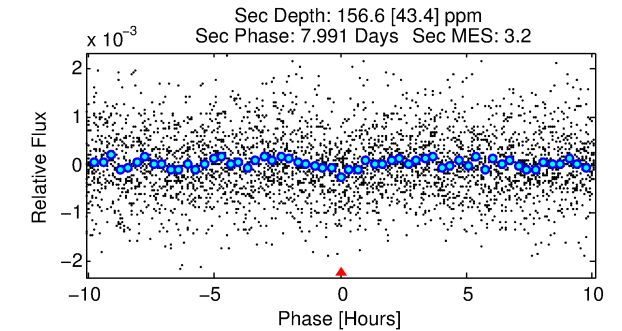
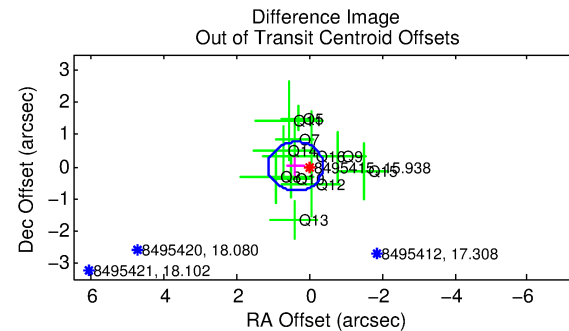
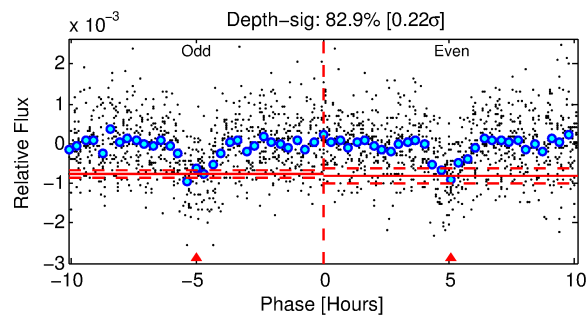
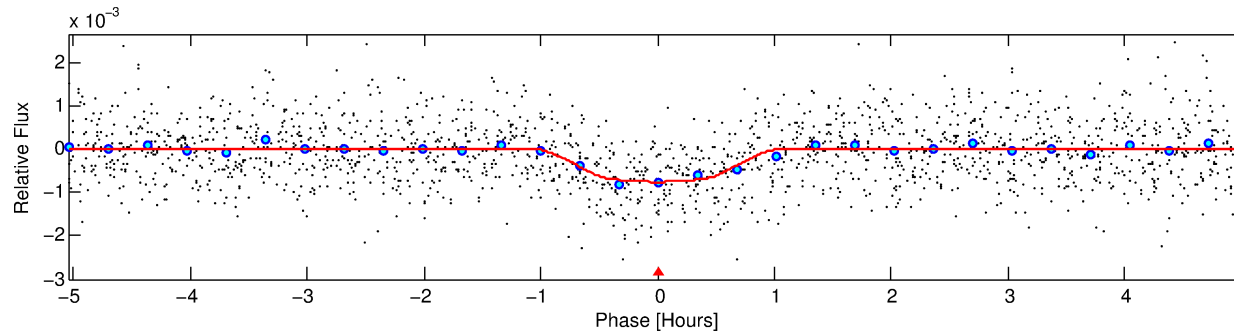
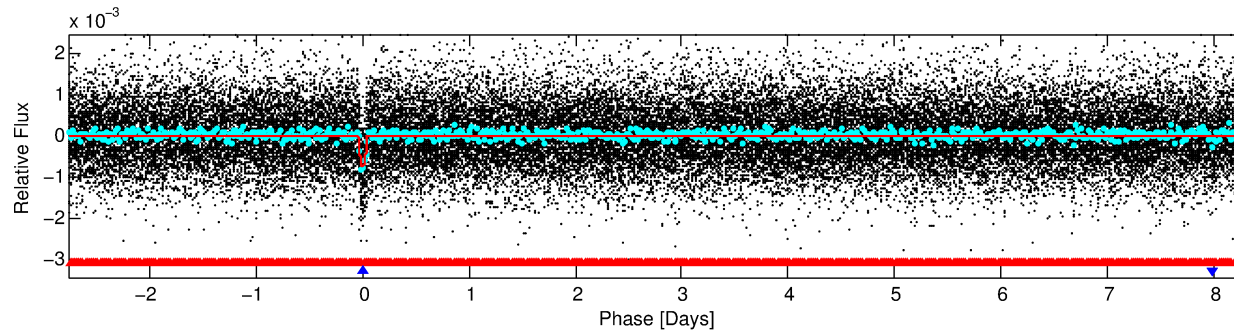
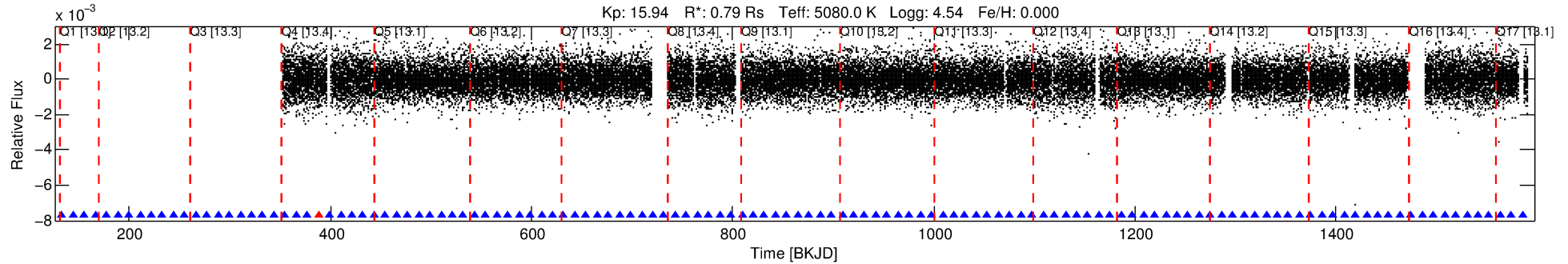
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 008495415-02

No Significant Match Found

DV One-Page Summary

KIC: 8495415 Candidate: 2 of 2 Period: 11.085 d
KOI: K02362.02 Corr: 0.975



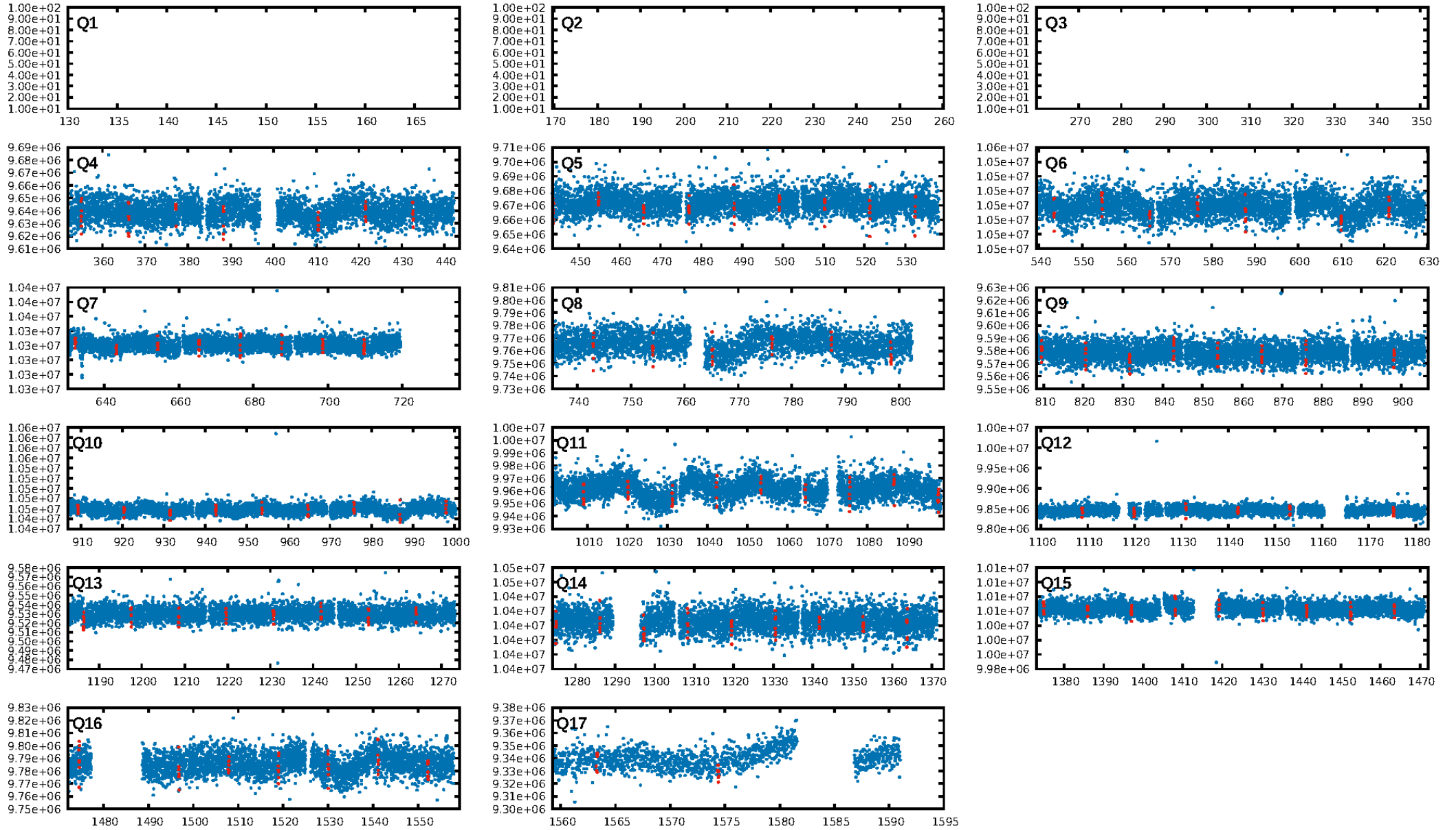
DV Fit Results:

Period = 11.08509 [0.00004] d
Epoch = 133.3324 [0.0034] BKJD
Rp/R* = 0.0299 [0.0165]
a/R* = 27.51 [57.22]
b = 0.87 [0.59]
Seff = 46.30 [8.85]
Teq = 665 [32] K
Rp = 2.59 [1.46] Re
a = 0.0900 [0.0081] AU
Ag = 104.47 [119.53] [0.87 σ]
Teffp = 3288 [942] K [2.78 σ]

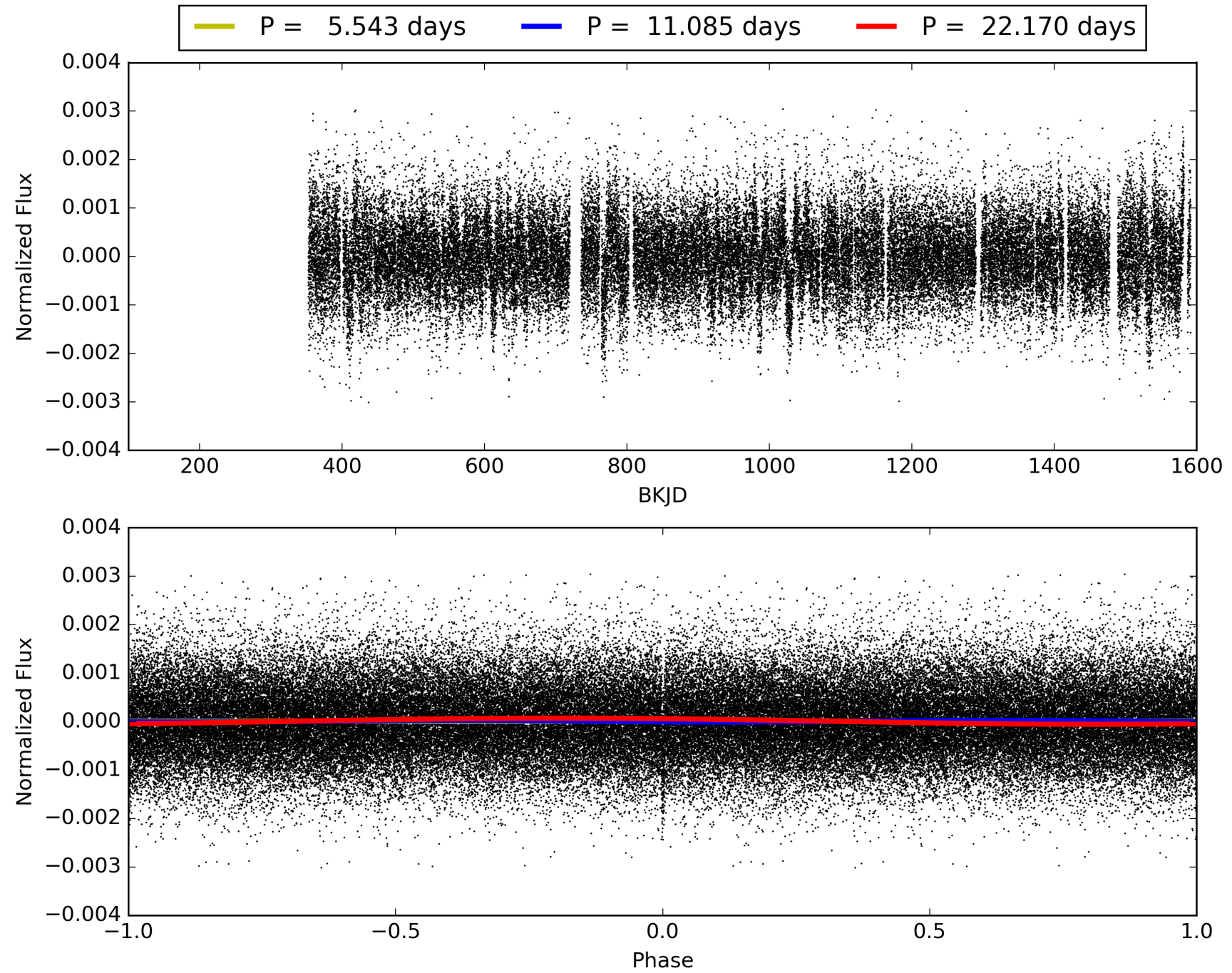
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [93.12 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 4.79e-46
RollingBand-fgt: 0.99 [94/95]
GhostDiagnostic-chr: 3.845
Centroid-sig: 4.9%
Centroid-so: 0.986 arcsec [1.45 σ]
OotOffset-rm: 0.379 arcsec [1.50 σ]
KicOffset-rm: 0.425 arcsec [1.68 σ]
OotOffset-st: 2/3/3/3 [11]
KicOffset-st: 2/3/3/3 [11]
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TCE 008495415-02, PDC Light Curves

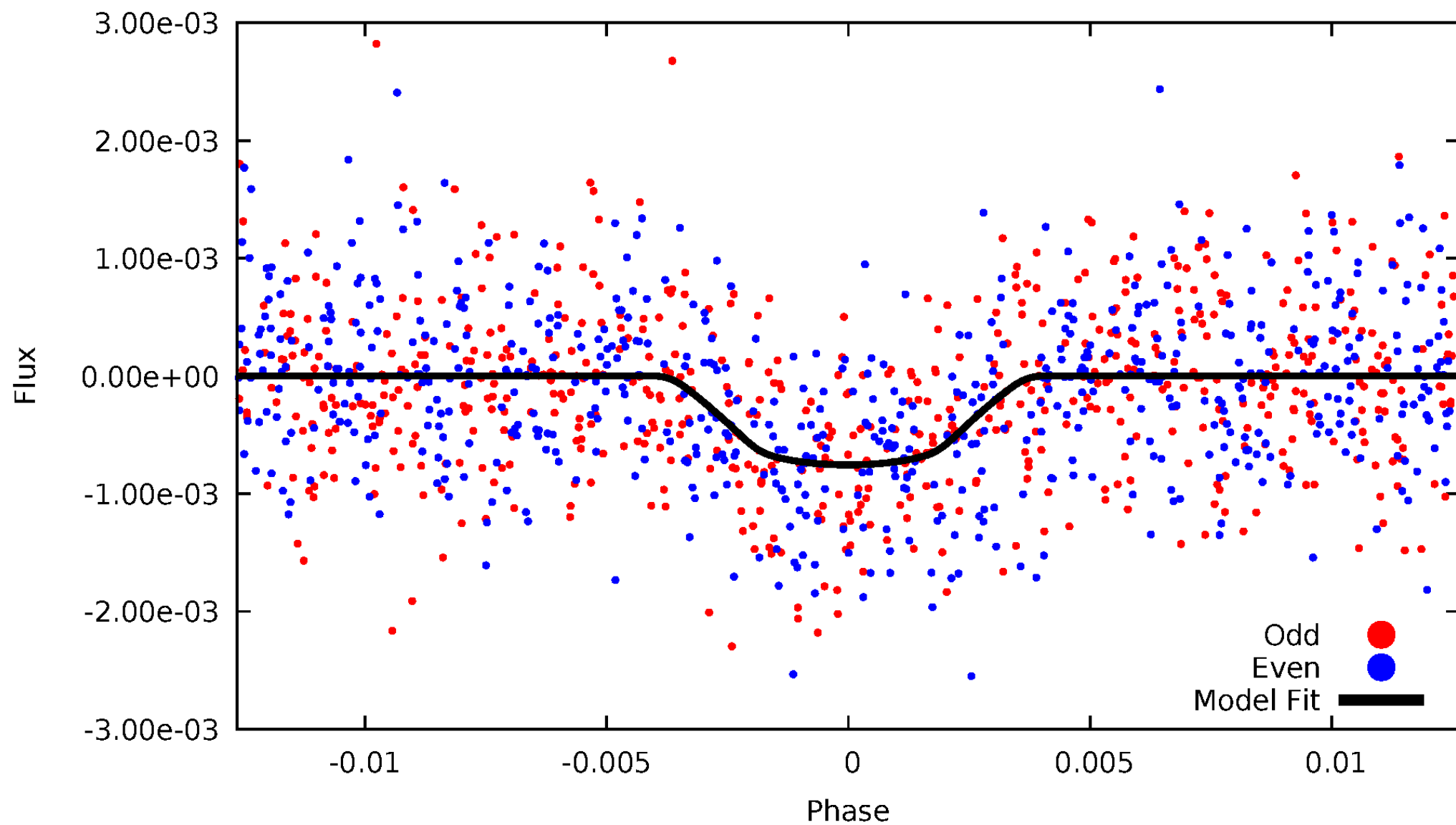


TCE 008495415-02



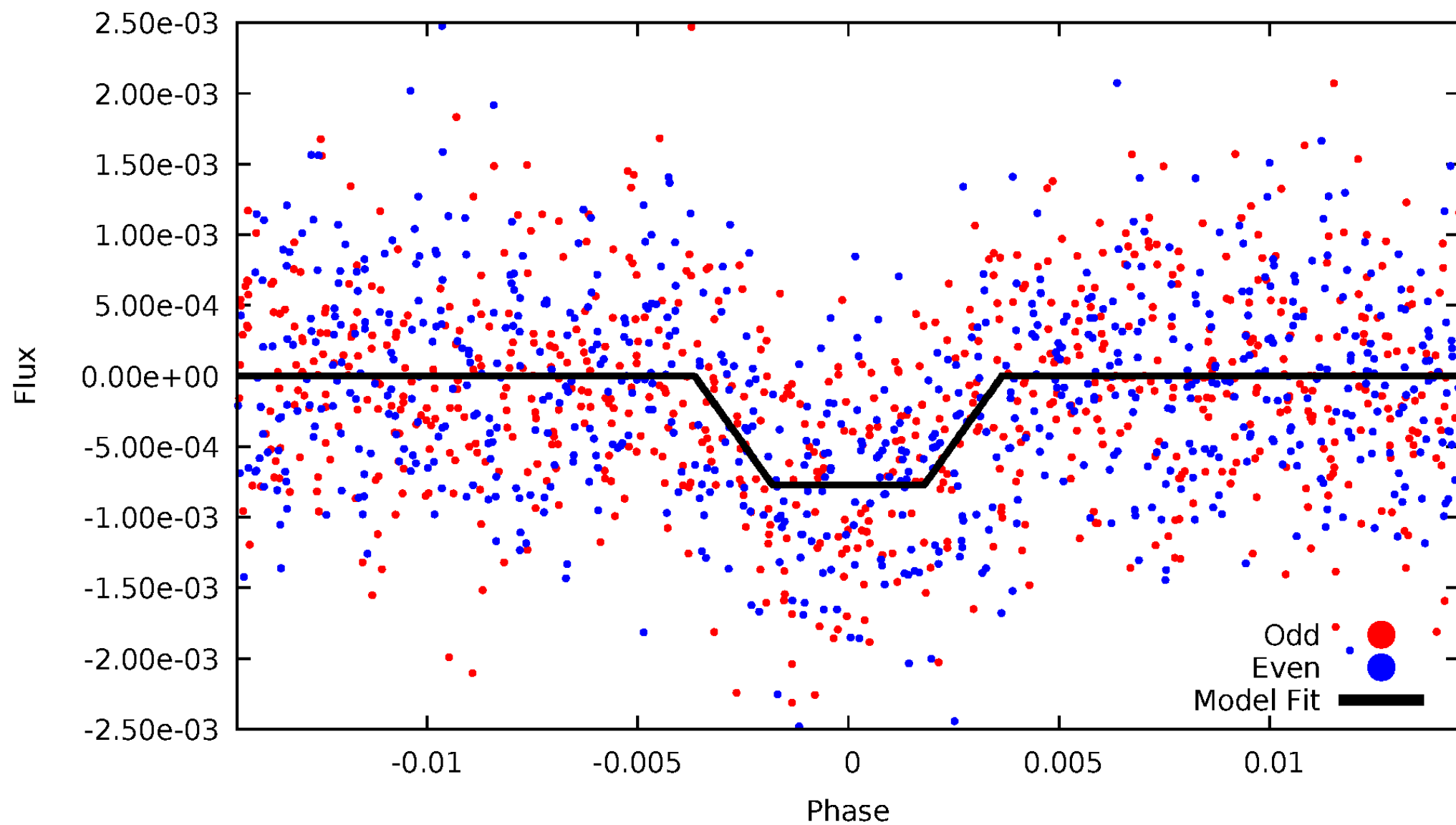
DV Odd/Even

TCE 008495415-02



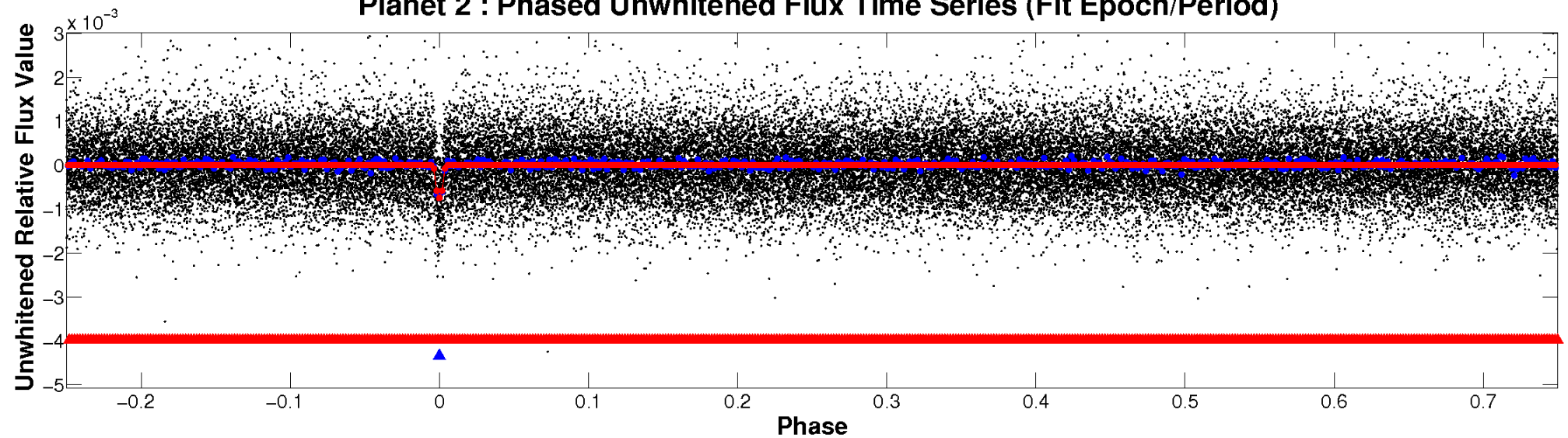
ALT Odd/Even

TCE 008495415-02

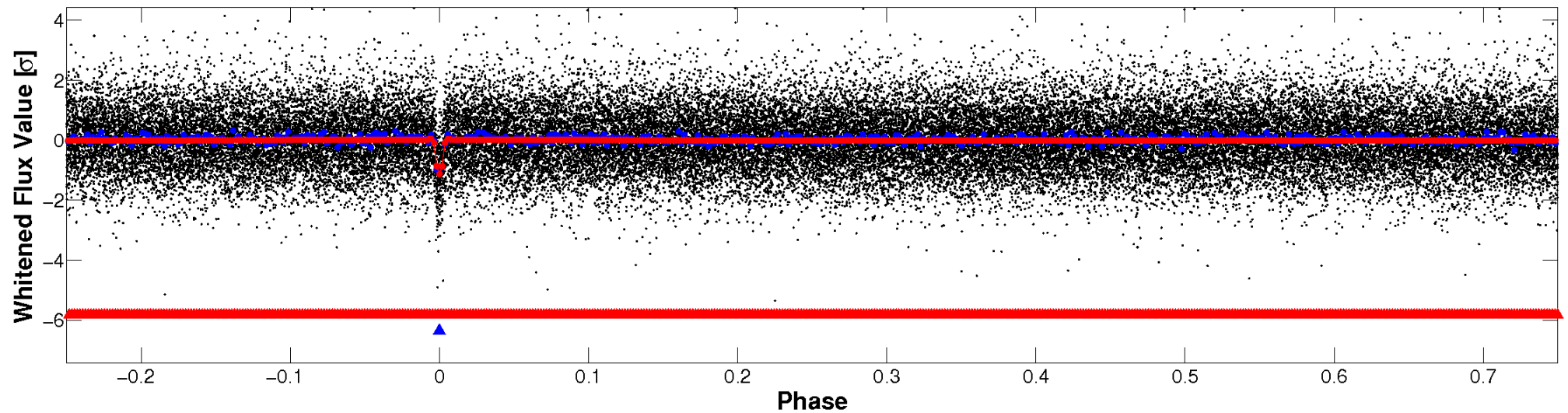


Non-Whitened Vs. Whitened Light Curve

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

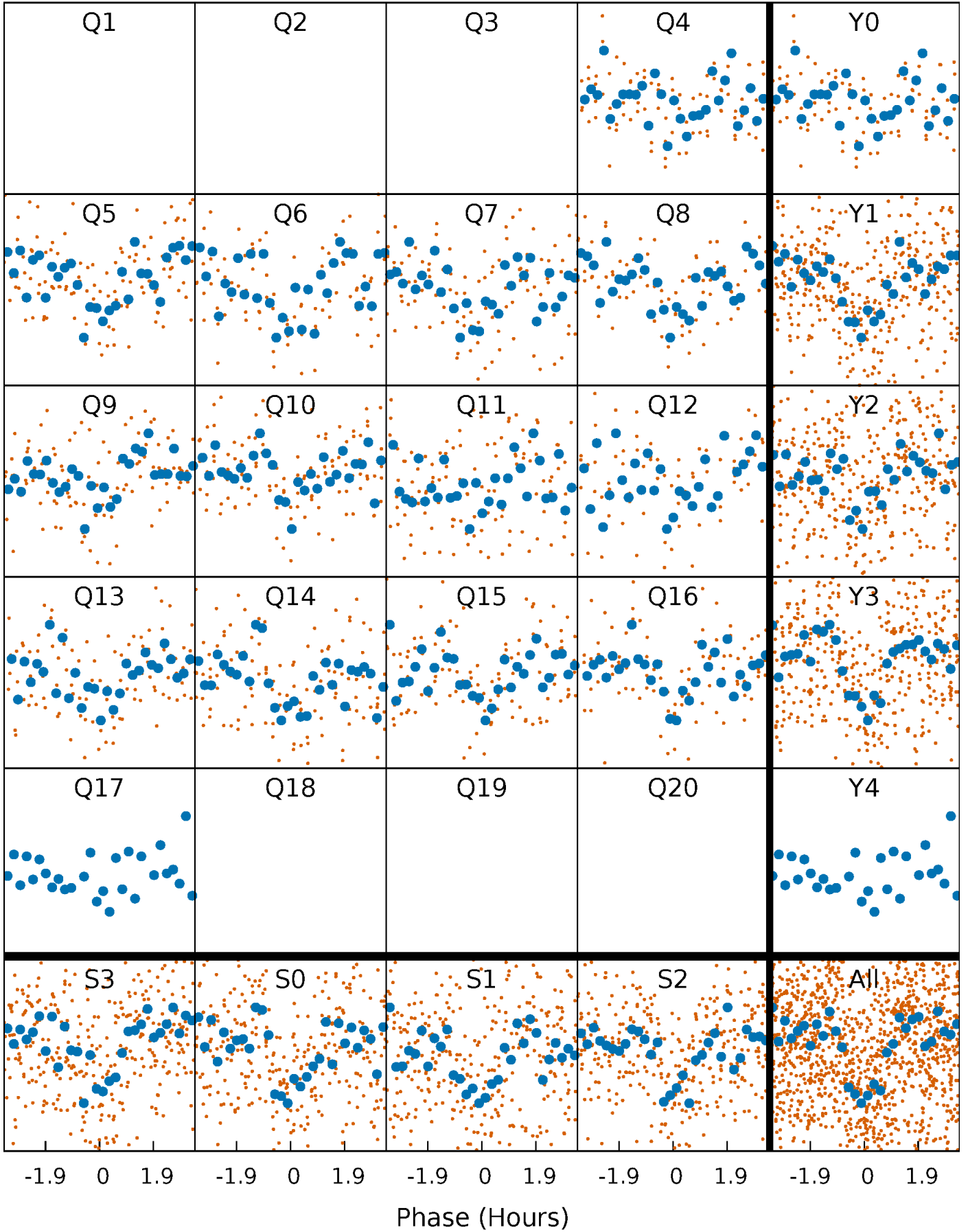


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



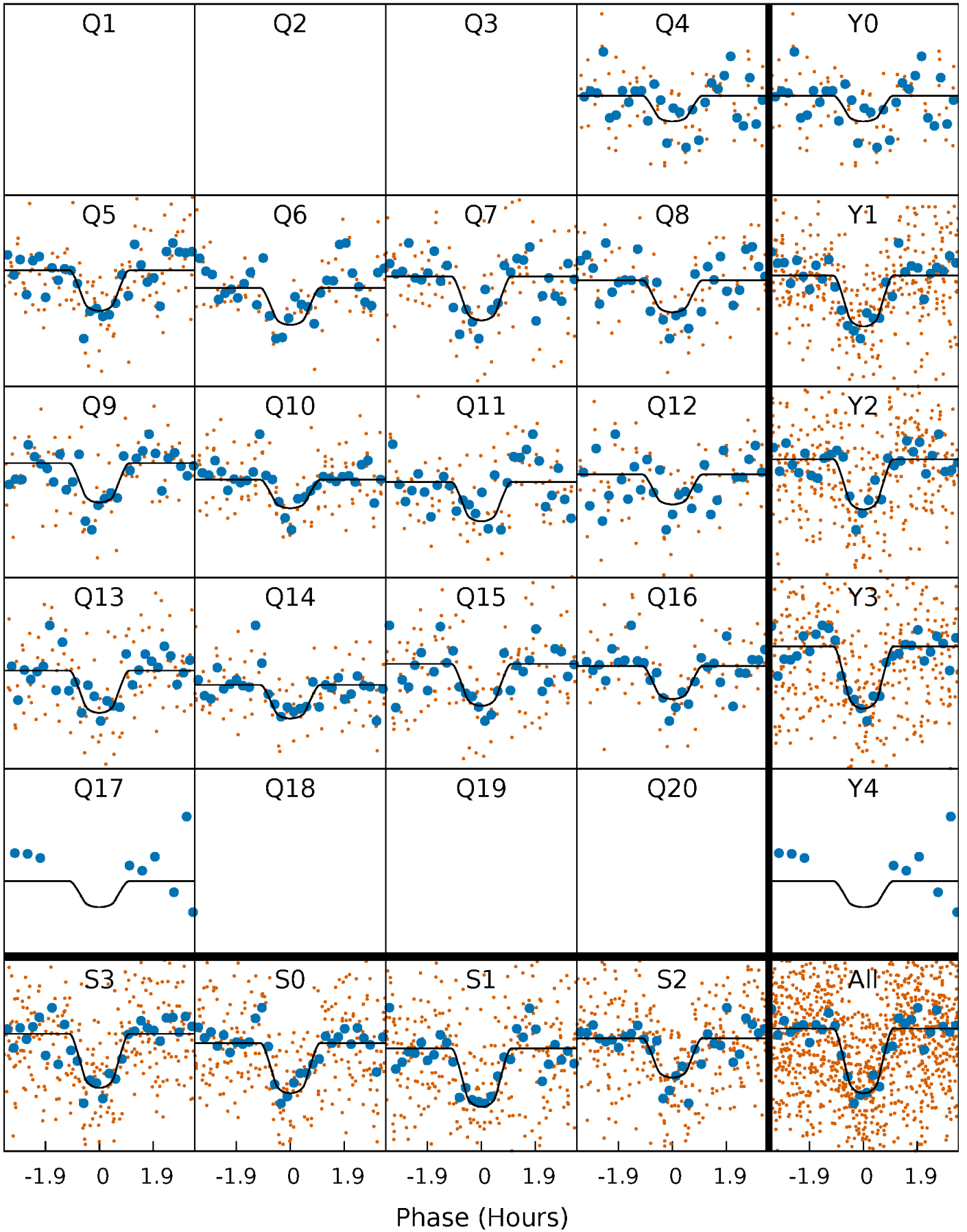
PDC Quarter-Phased Transit Curves

TCE 008495415-02 P= 11.085091 Days $T_0=133.332410$ (BKJD)



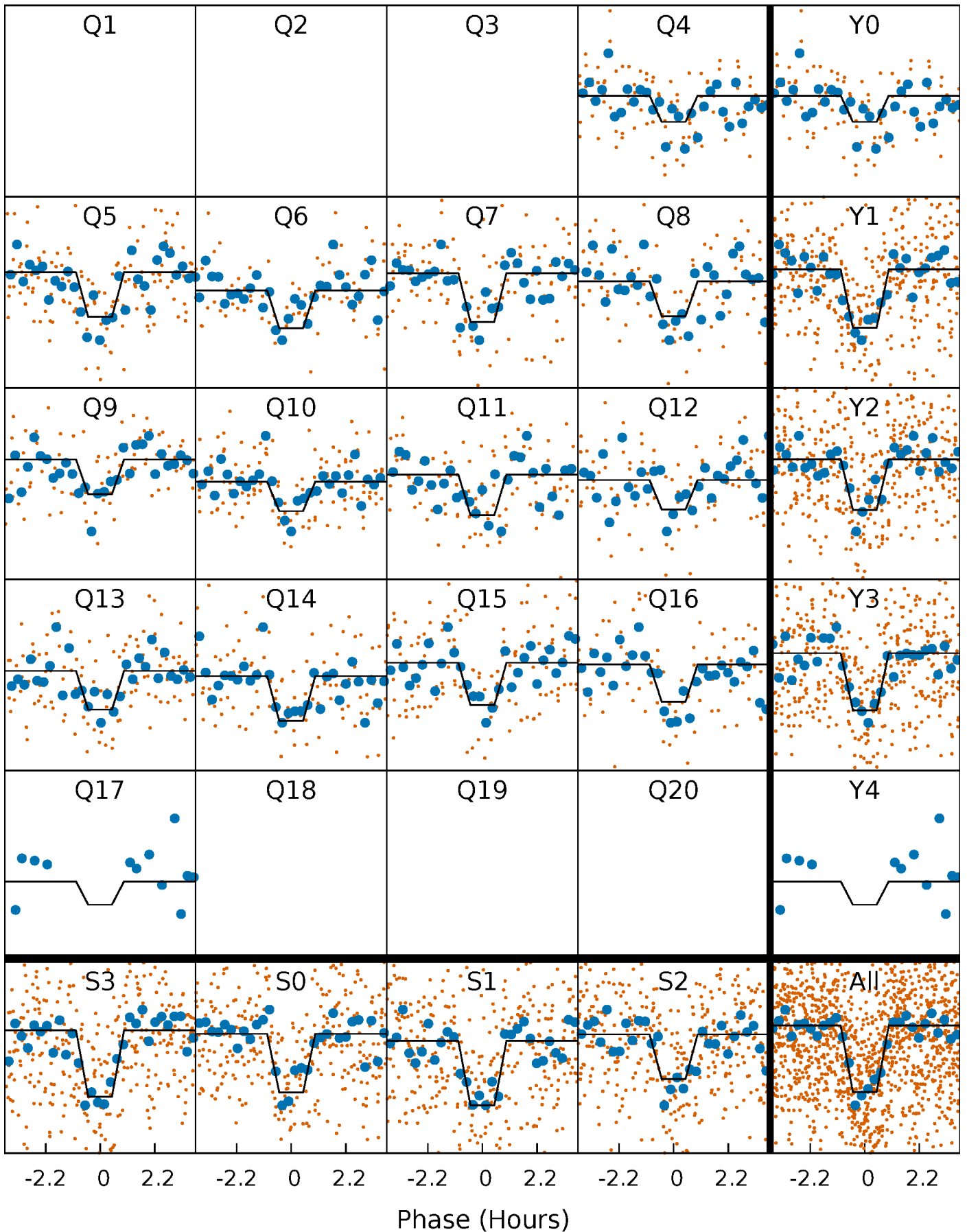
DV Quarter-Phased Transit Curves

TCE 008495415-02 P= 11.085091 Days $T_0=133.332410$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

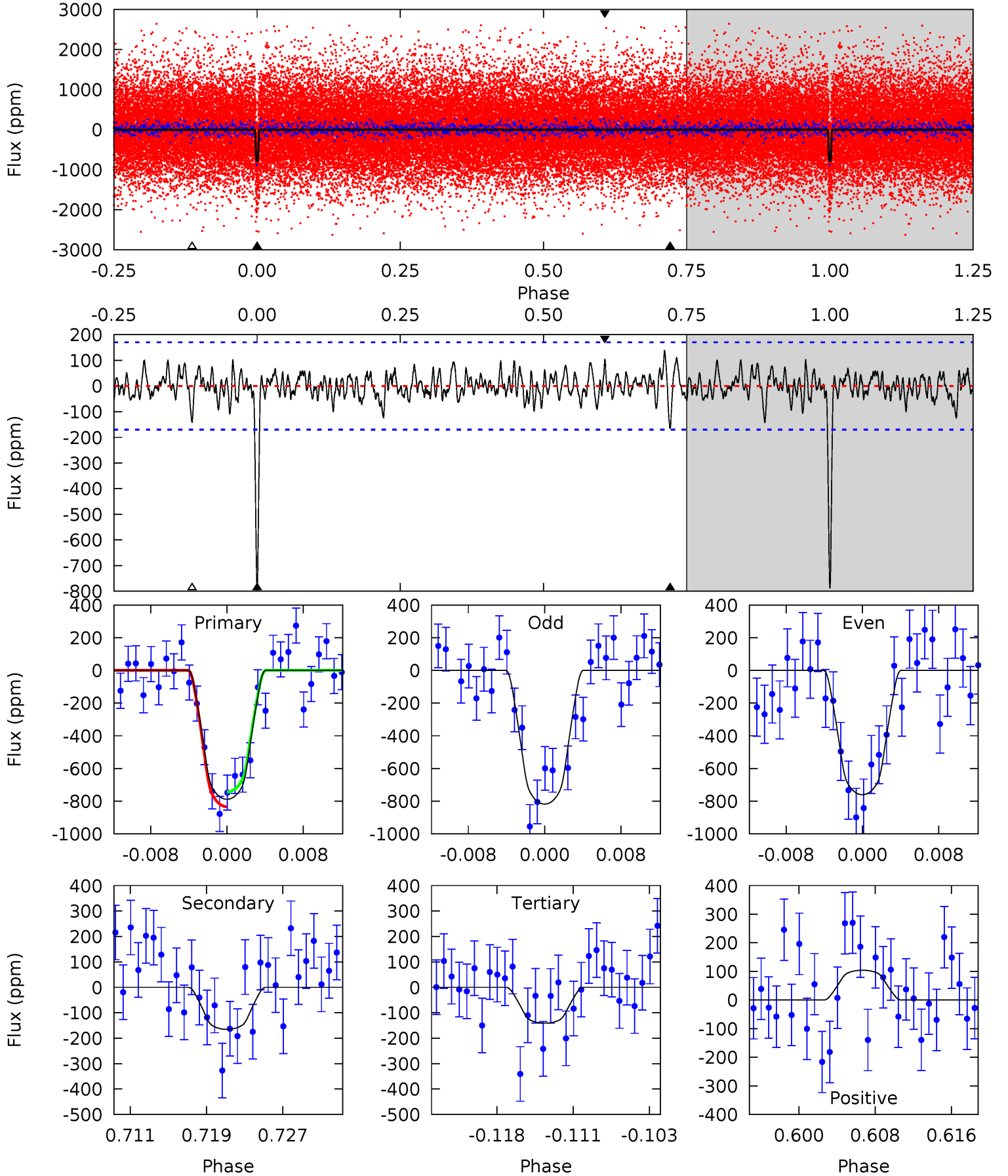
TCE 008495415-02 P= 11.085047 Days $T_0=133.336668$ (BKJD)



DV Model-Shift Uniqueness Test

008495415-02, P = 11.085091 Days, E = 133.332410 Days

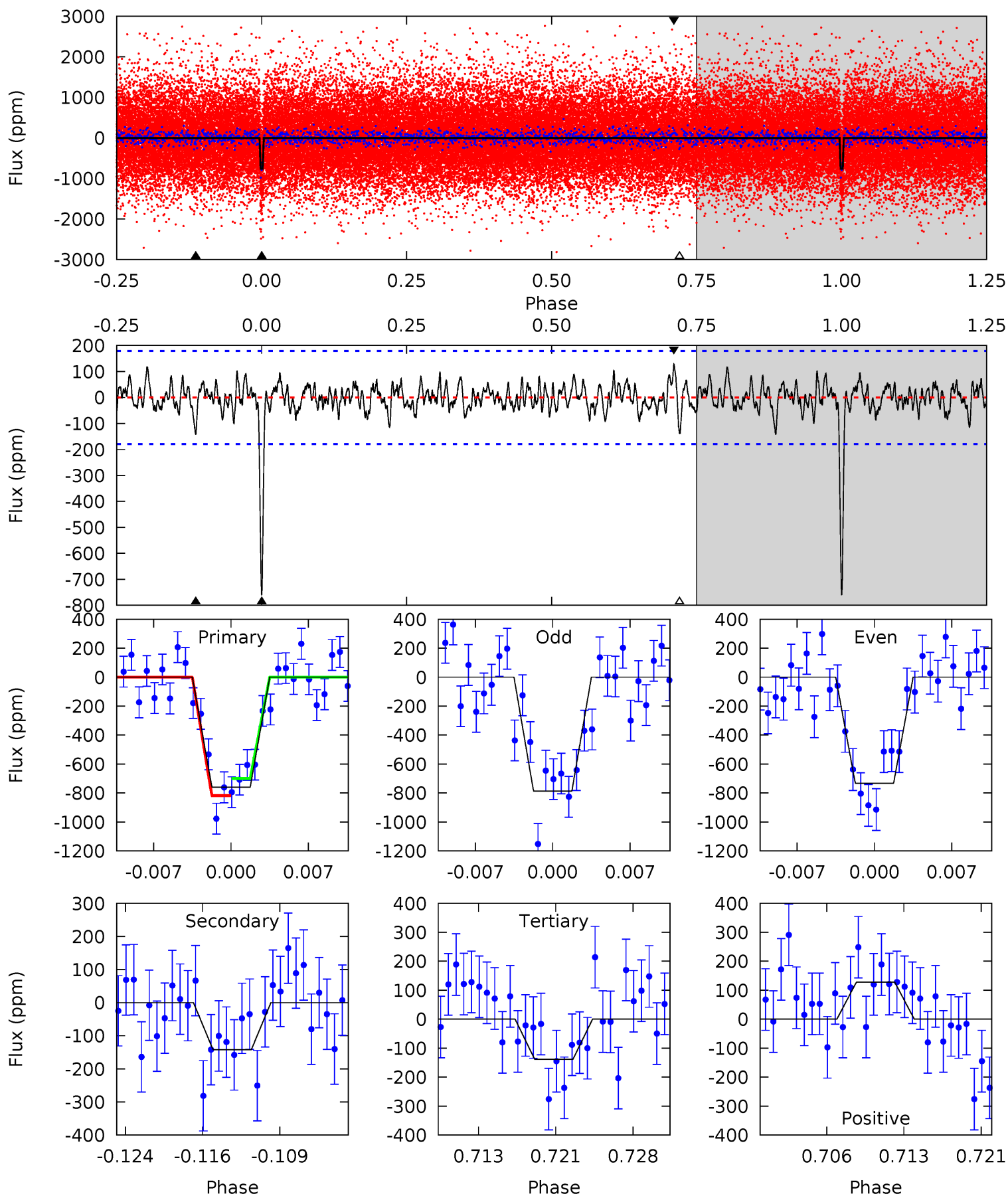
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
23.5	4.93	4.21	3.11	5.07	2.66	1.22	19.3	20.4	0.72	1.82	0.86	1.03	0.15	1.35



Alt Model-Shift Uniqueness Test

008495415-02, P = 11.085047 Days, E = 133.336668 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
21.6	4.04	3.93	3.63	5.09	2.68	1.16	17.6	17.9	0.11	0.41	0.78	1.01	0.14	1.68



Stellar Parameters For KIC 008495415

	$T_{\text{eff}} (K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M (M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5080^{+184}_{-163}	$4.538^{+0.065}_{-0.065}$	$0.000^{+0.250}_{-0.300}$	$0.793^{+0.089}_{-0.073}$	$0.792^{+0.088}_{-0.066}$	$2.239^{+0.607}_{-0.476}$
	+4%/-3%	+1%/-1%	+inf%/-inf%	+11%/-9%	+11%/-8%	+27%/-21%
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 008495415-02 / KOI 2362.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-165 ± 34	$2.68^{+1.35}_{-1.41}$	931^{+43}_{-39}	3666^{+1208}_{-476}	105^{+350}_{-60}
Alt.	-142 ± 35	$2.53^{+1.43}_{-1.28}$	934^{+41}_{-37}	3640^{+1082}_{-488}	100^{+305}_{-61}

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

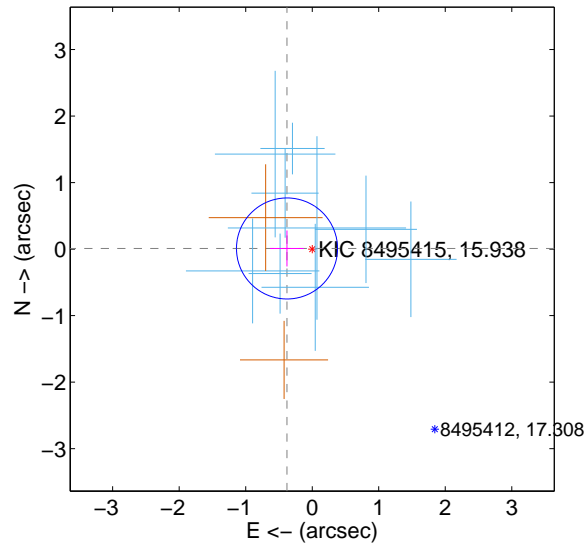
Supplemental centroid analysis for 008495415-02. Kepler magnitude: 15.94. Transit SNR 16.07

There are 9 quarters with good PRF difference image offsets

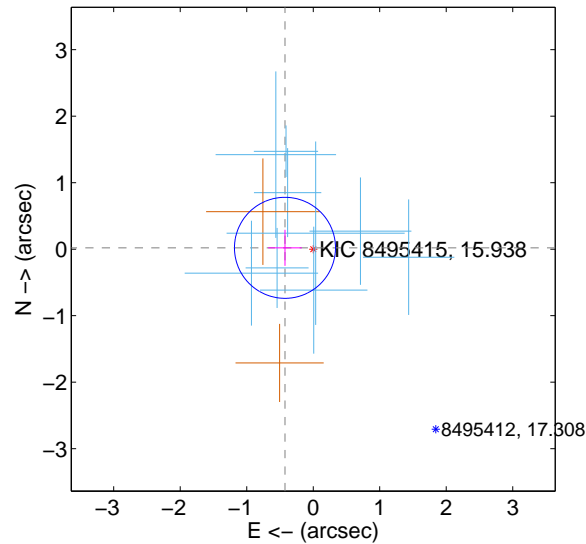
The direct PRF centroid is offset from the target star catalog position by about 0.09 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.379 ± 0.253	1.50	0.379 ± 0.253	0.010 ± 0.271
PRF-fit source offset from KIC position	0.425 ± 0.253	1.68	0.425 ± 0.253	0.020 ± 0.271
photometric centroid source offset	0.99 ± 0.68	1.45	0.07 ± 0.75	-0.98 ± 0.68

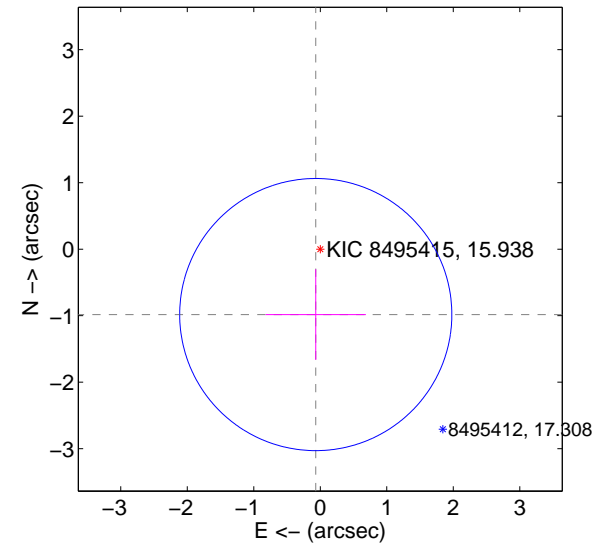
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

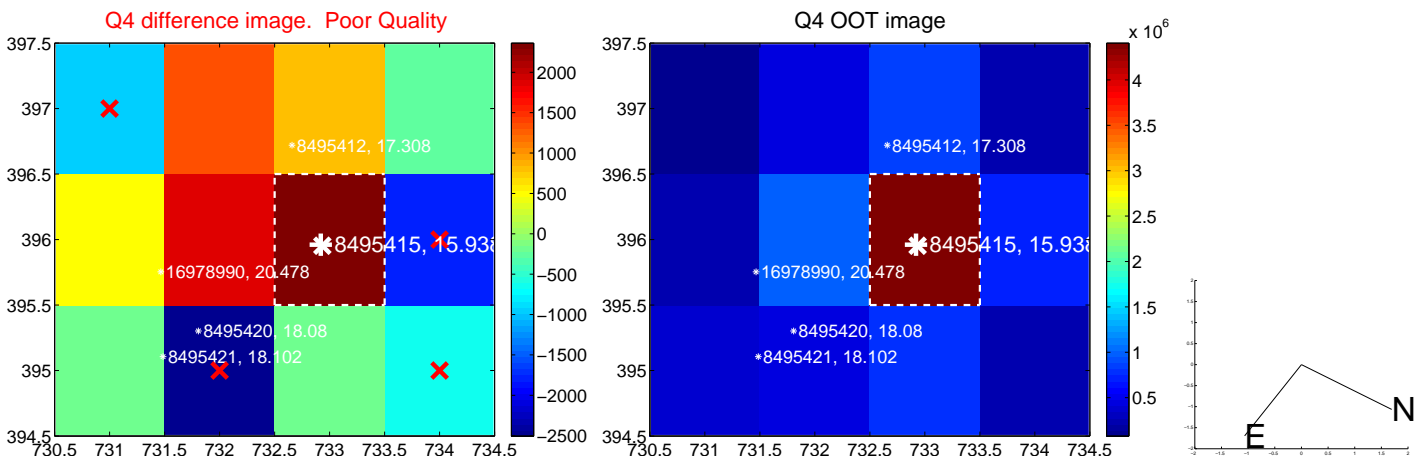
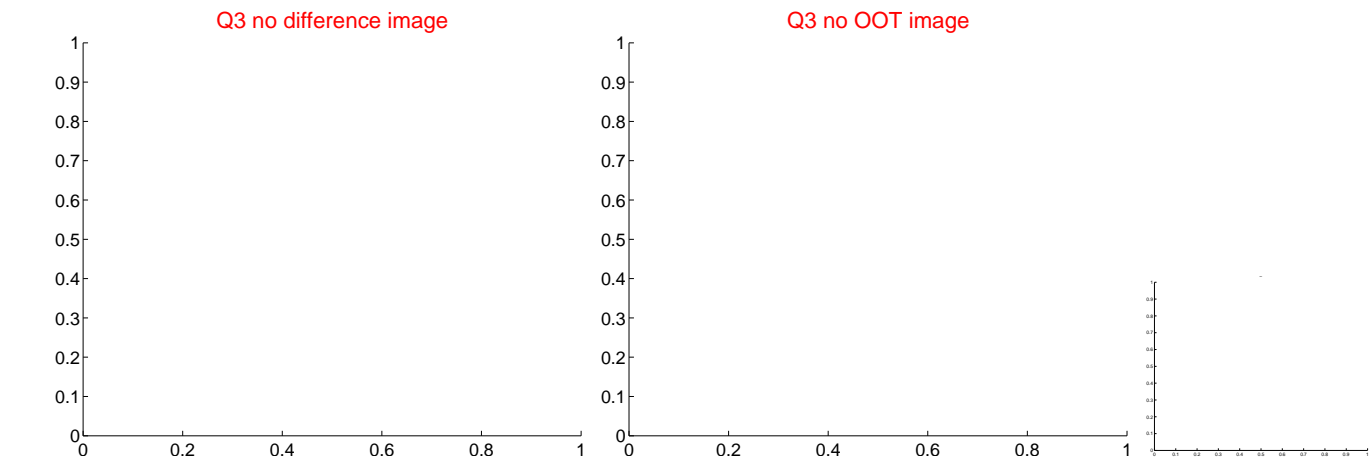
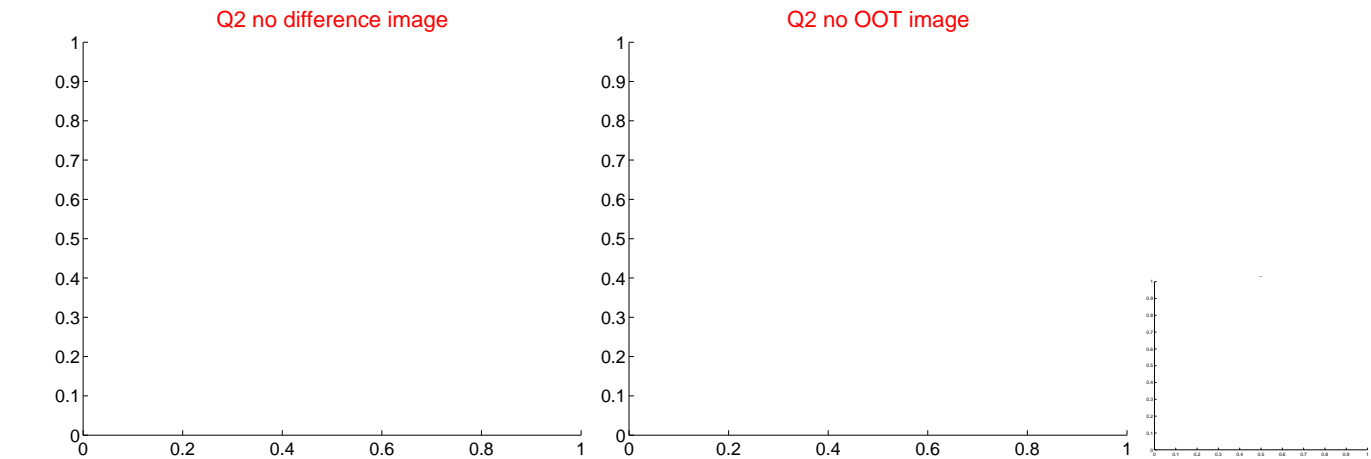
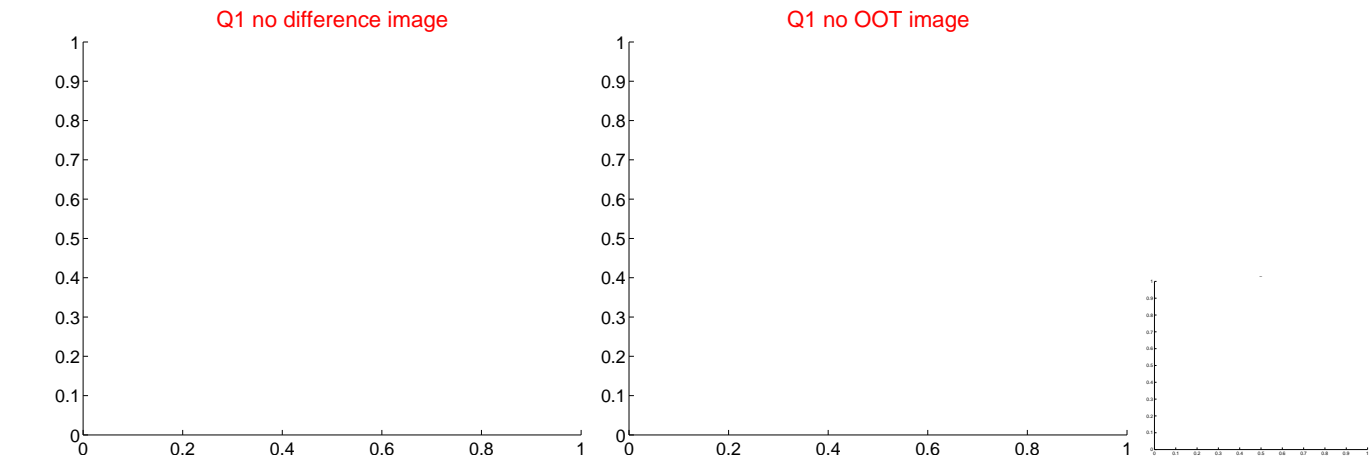


offset from photometric centroids

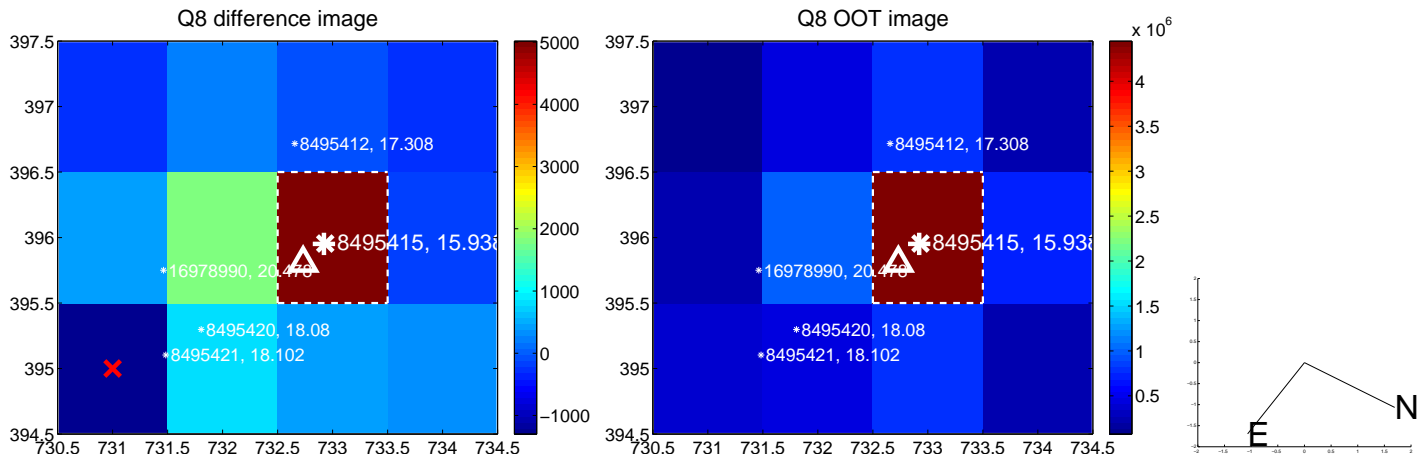
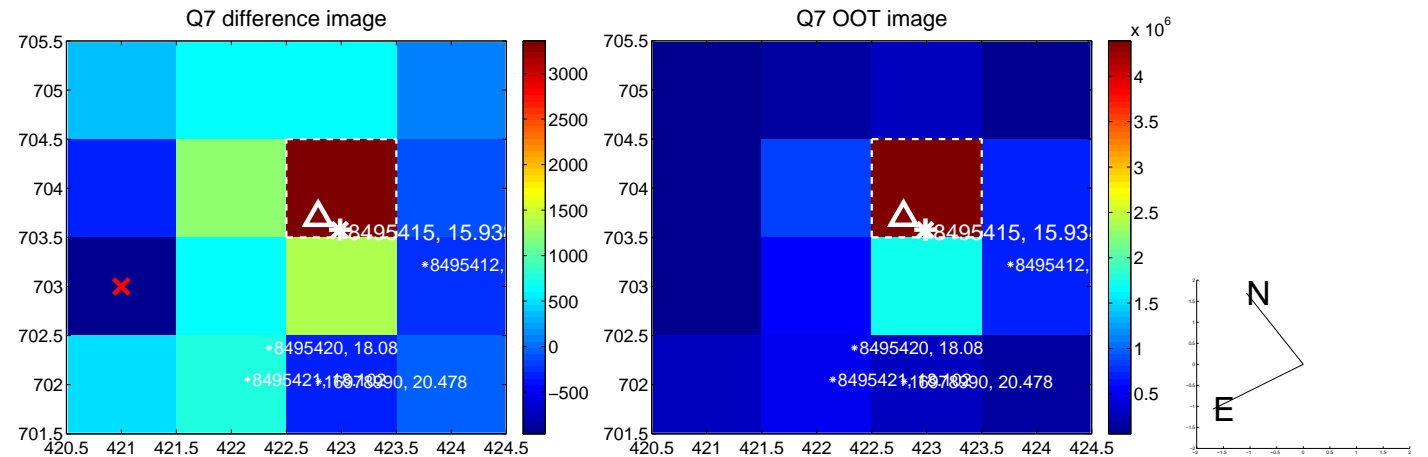
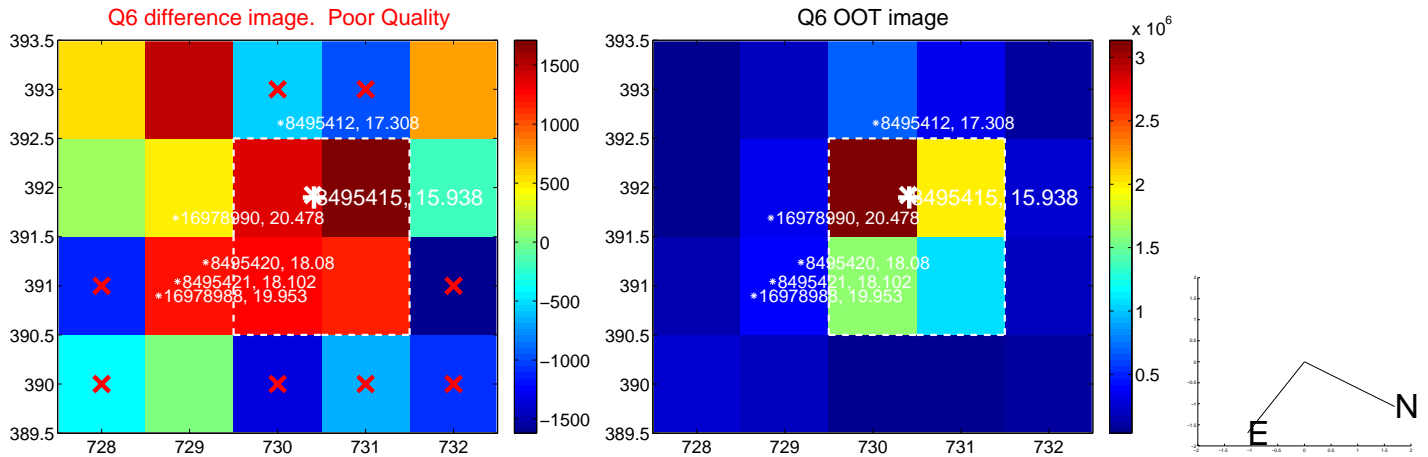
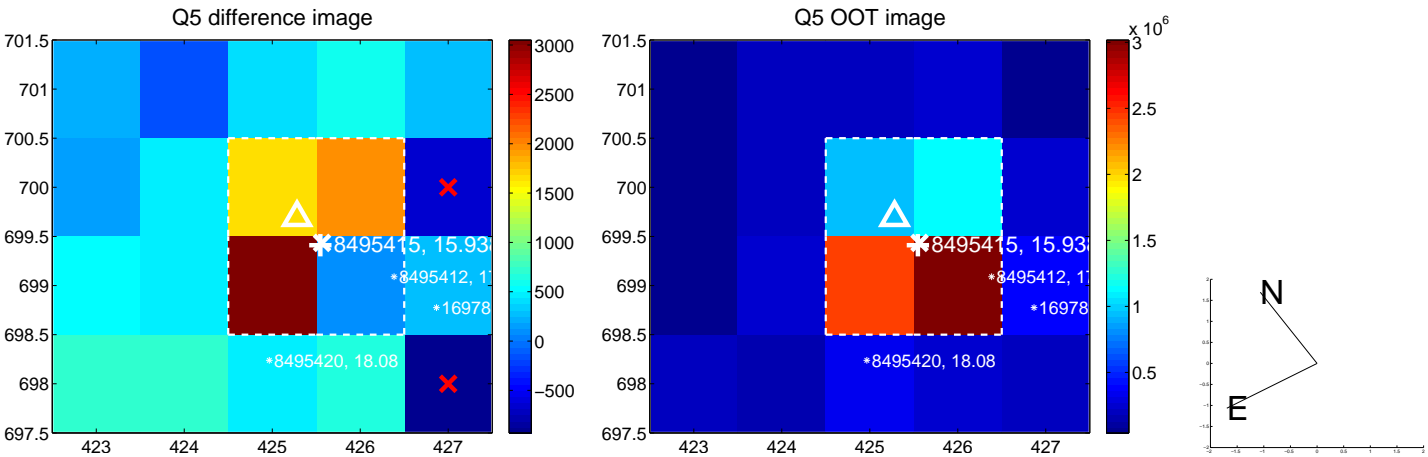


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

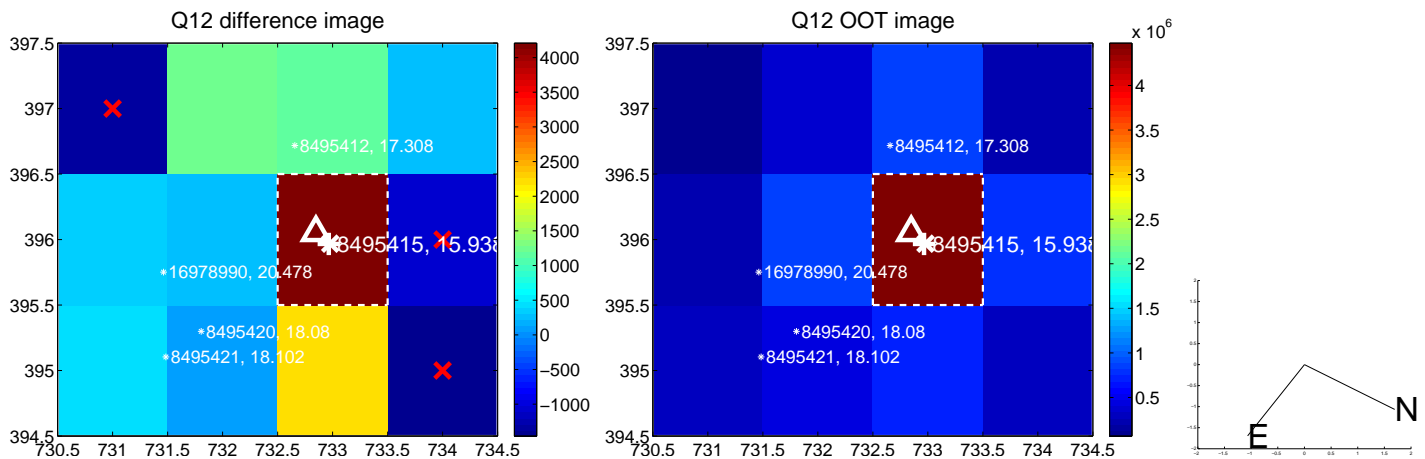
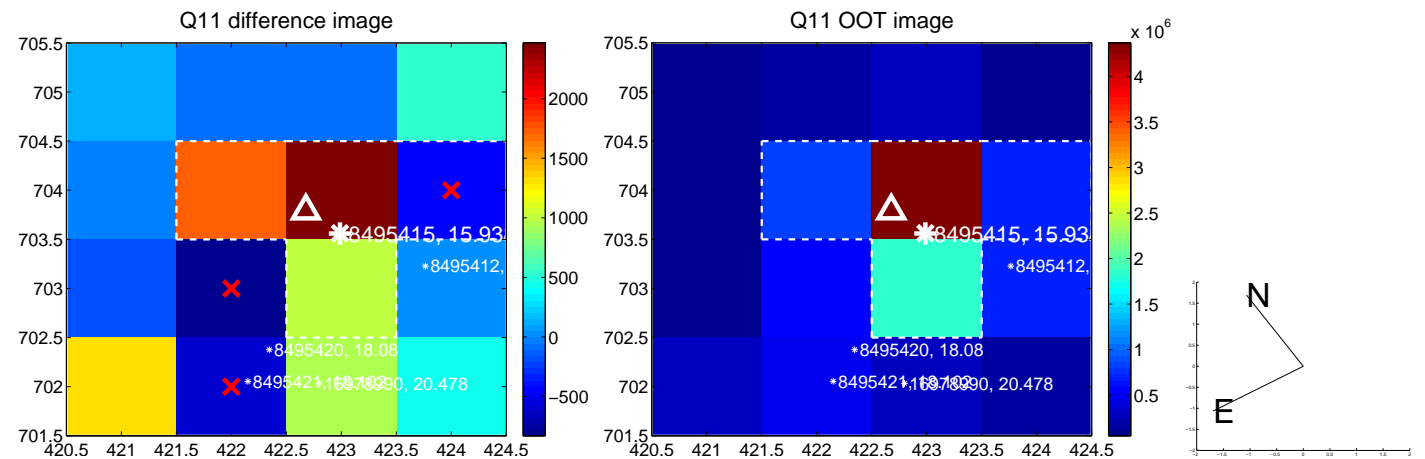
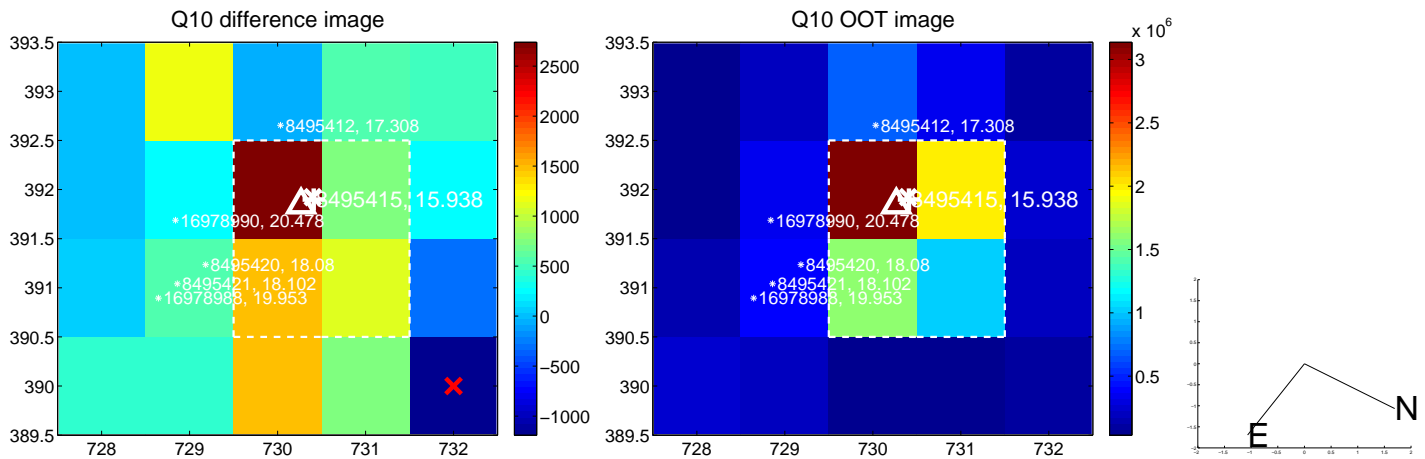
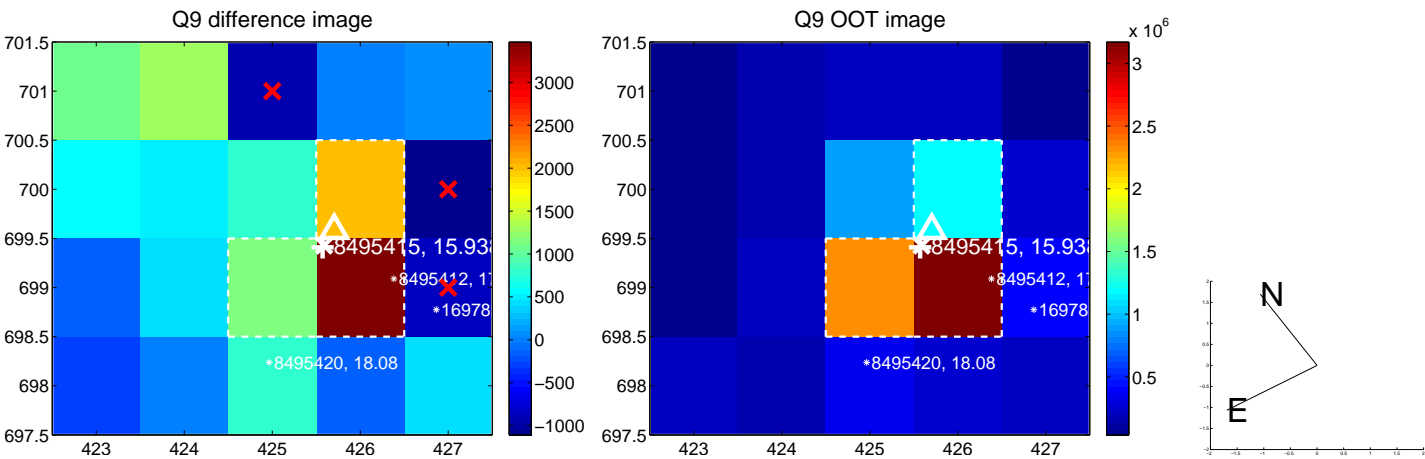
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



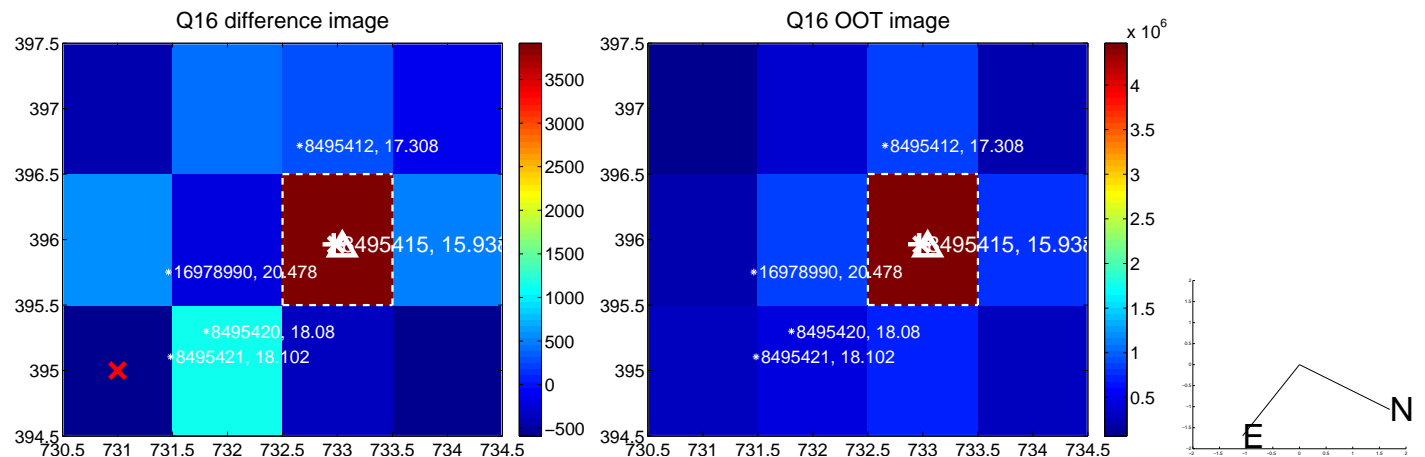
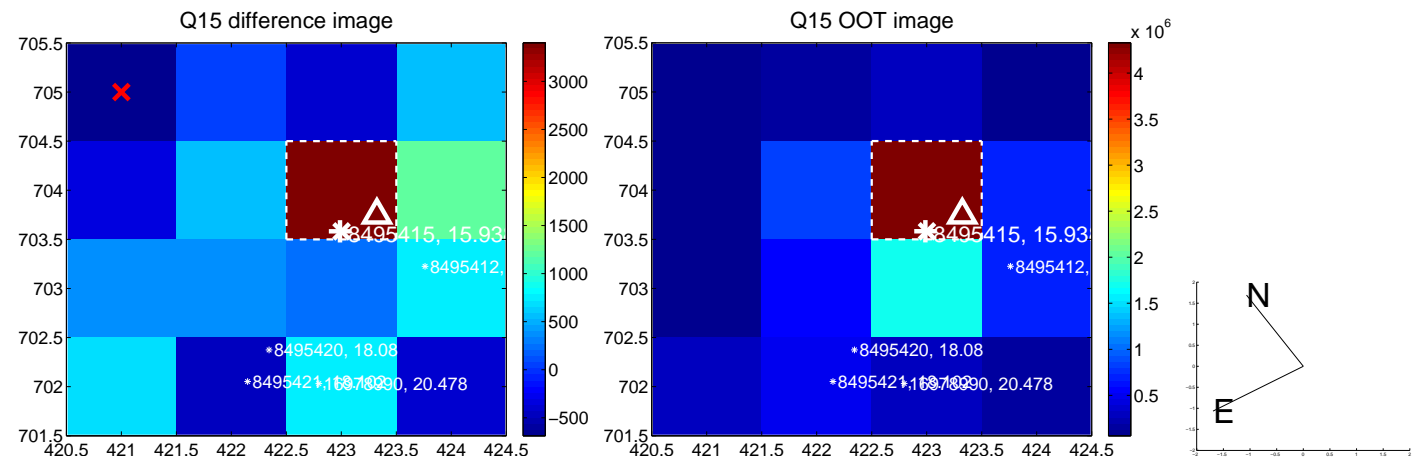
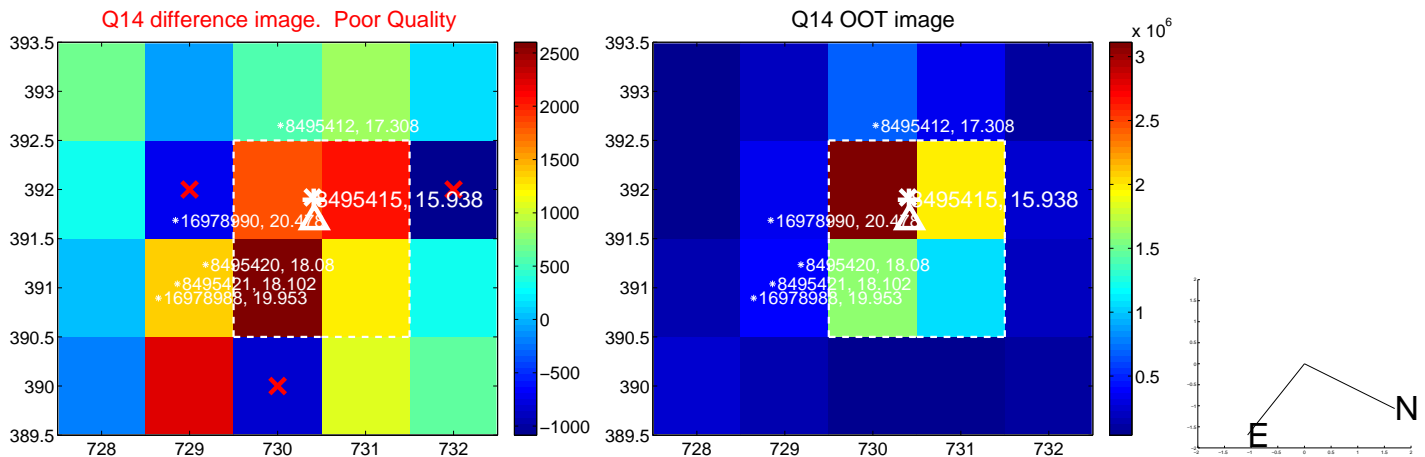
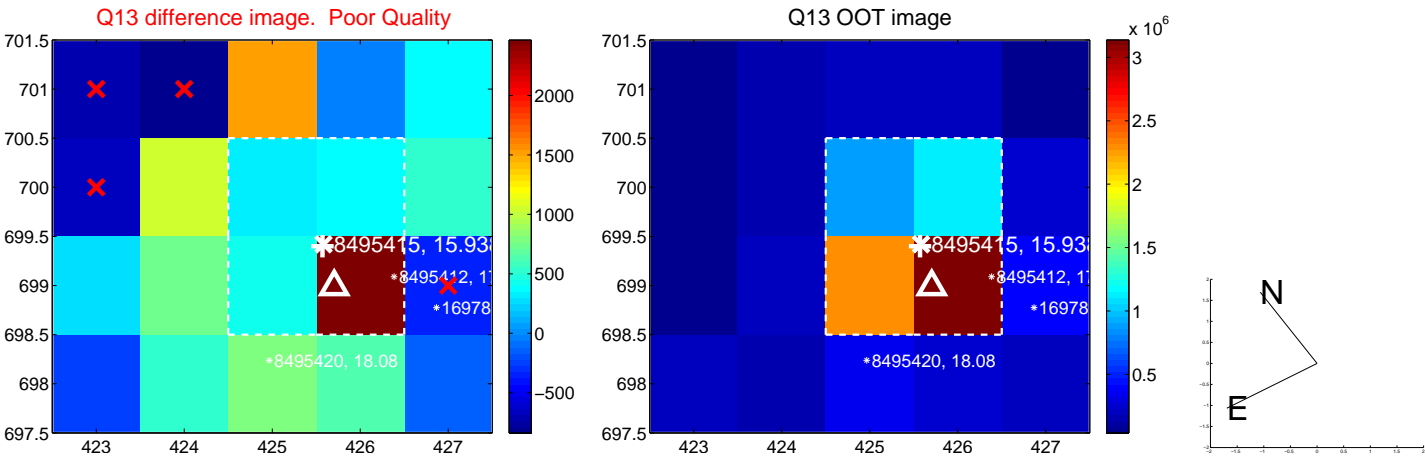
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



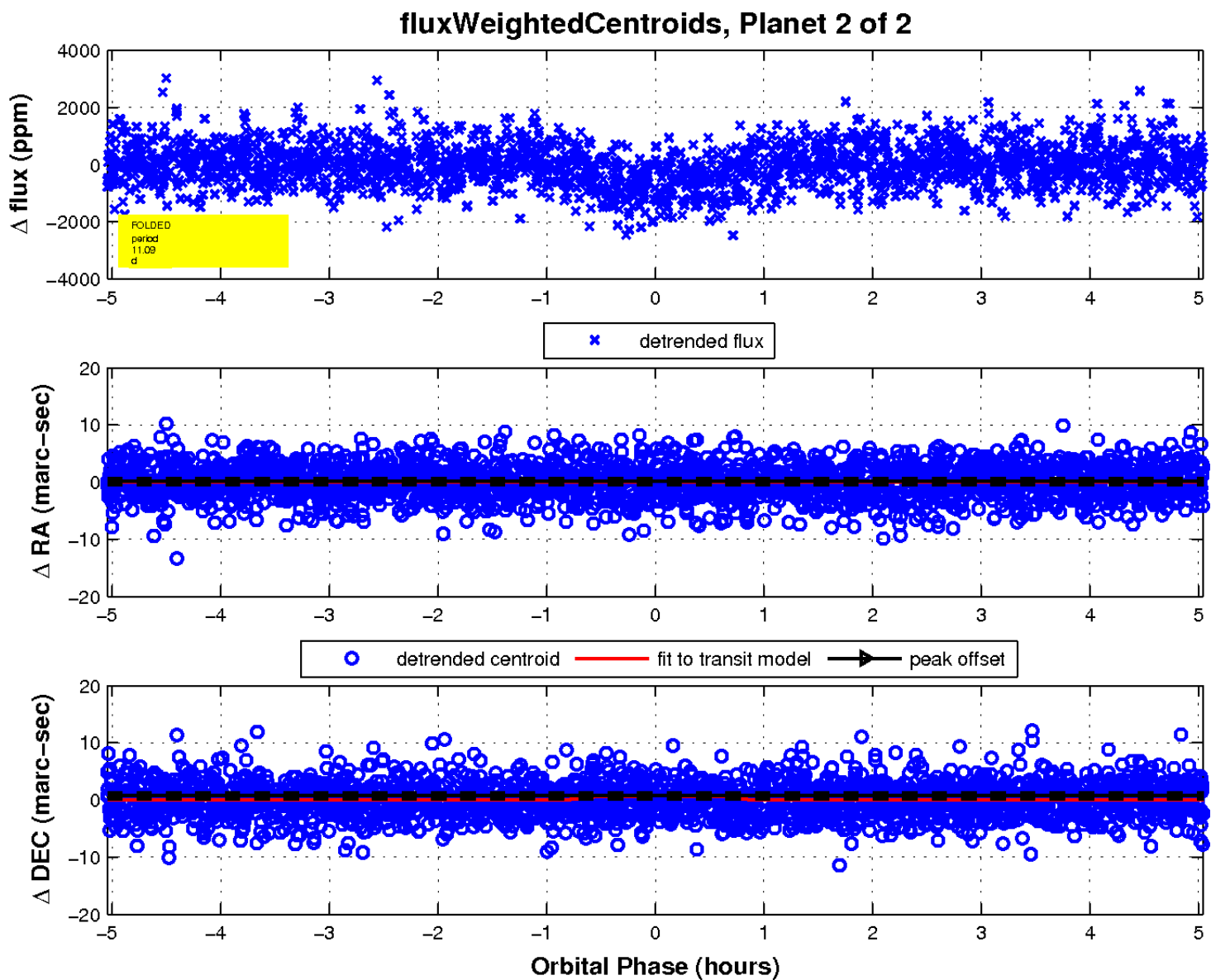
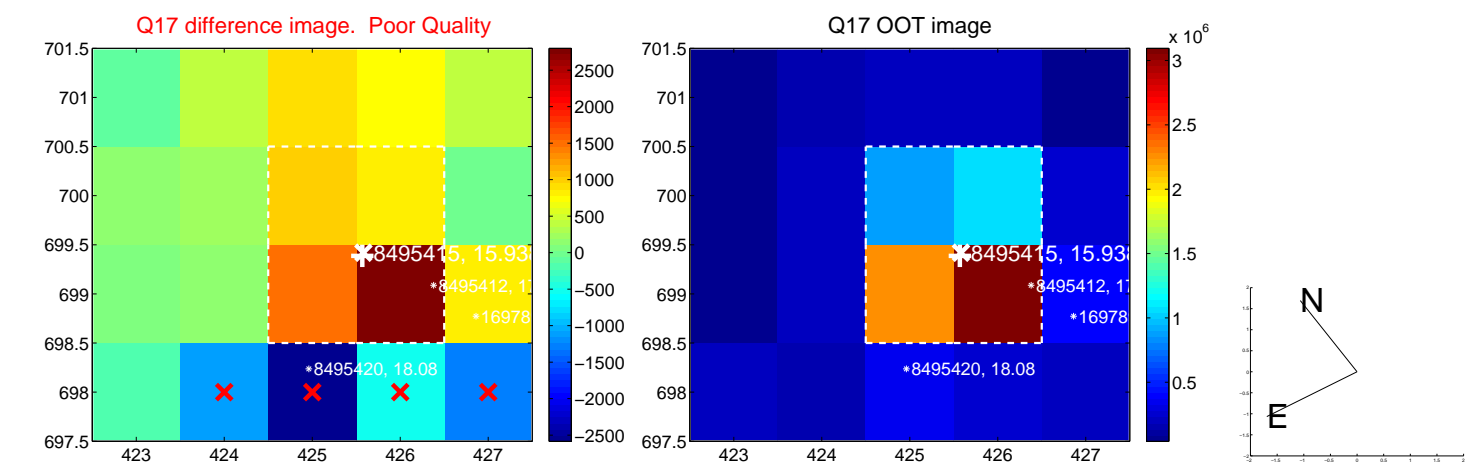
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



UKIRT Image

Declination

