

KIC 008892720

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})
008892720-01	OBS	3336.01	61.491163	163.633367	58528.0	9.743	1553.8	1322.0	0.88	5830	22.77	8.71
008892720-02	OBS	No	61.491381	151.273681	2731.5	9.663	72.1	70.5	0.88	5830	5.51	8.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008892720-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
008892720-02	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.

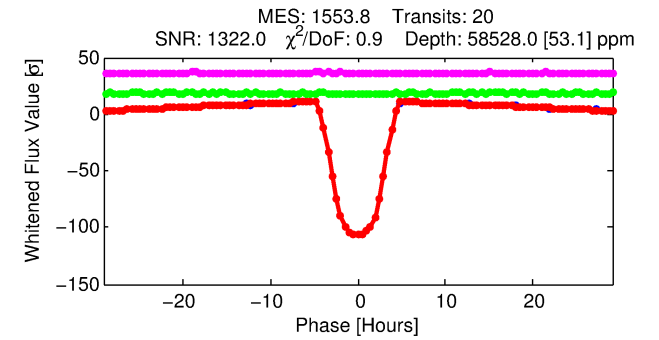
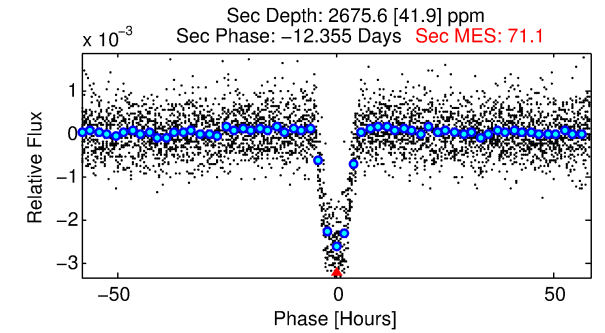
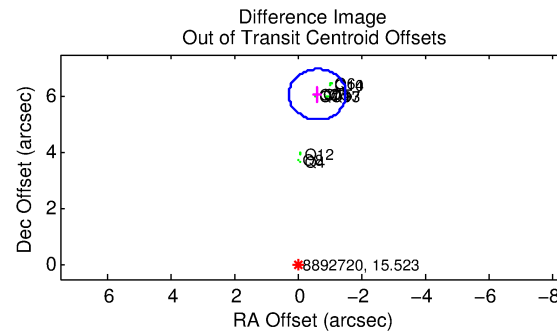
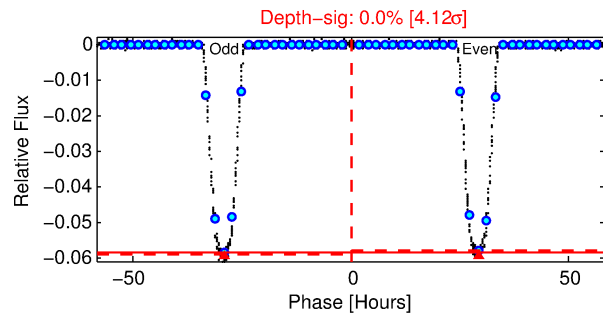
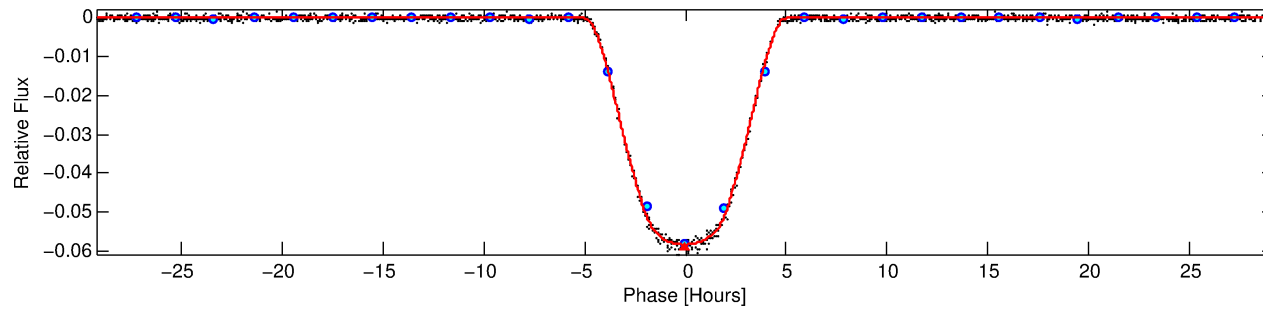
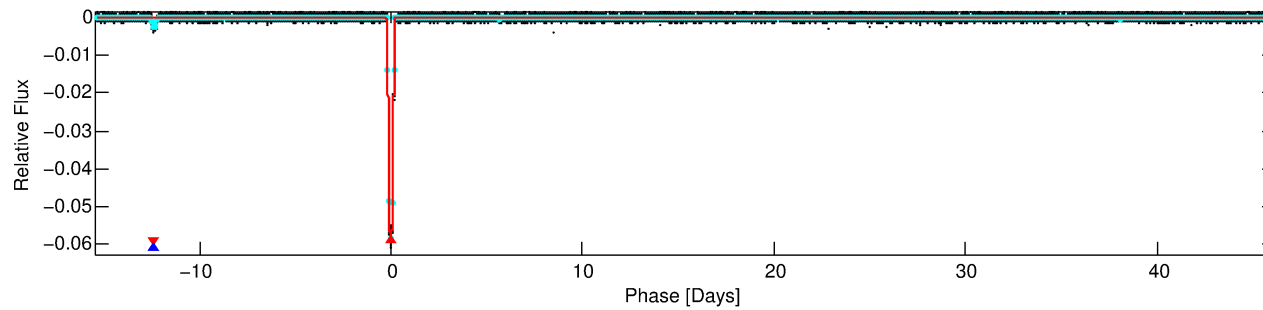
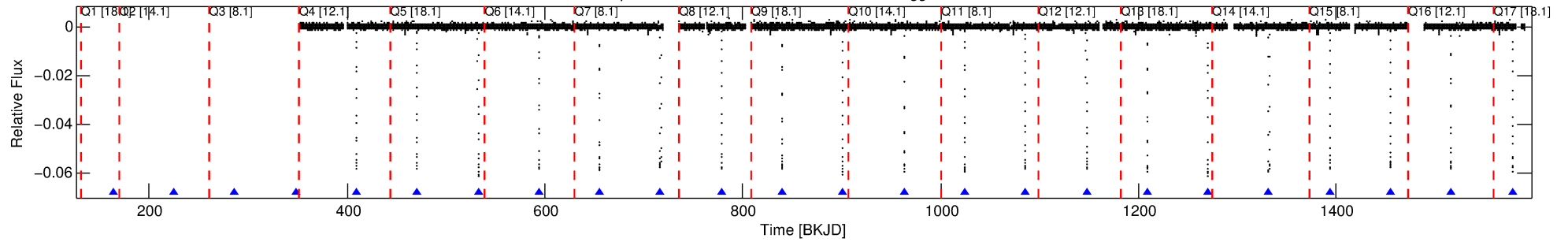
Ephemeris Match Information For 008892720-01

No Significant Match Found

DV One-Page Summary

KIC: 8892720 Candidate: 1 of 2 Period: 61.491 d
KOI: K03336.01 Corr: 0.999

Kp: 15.52 R*: 0.88 Rs Teff: 5830.0 K Logg: 4.54 Fe/H: -0.140



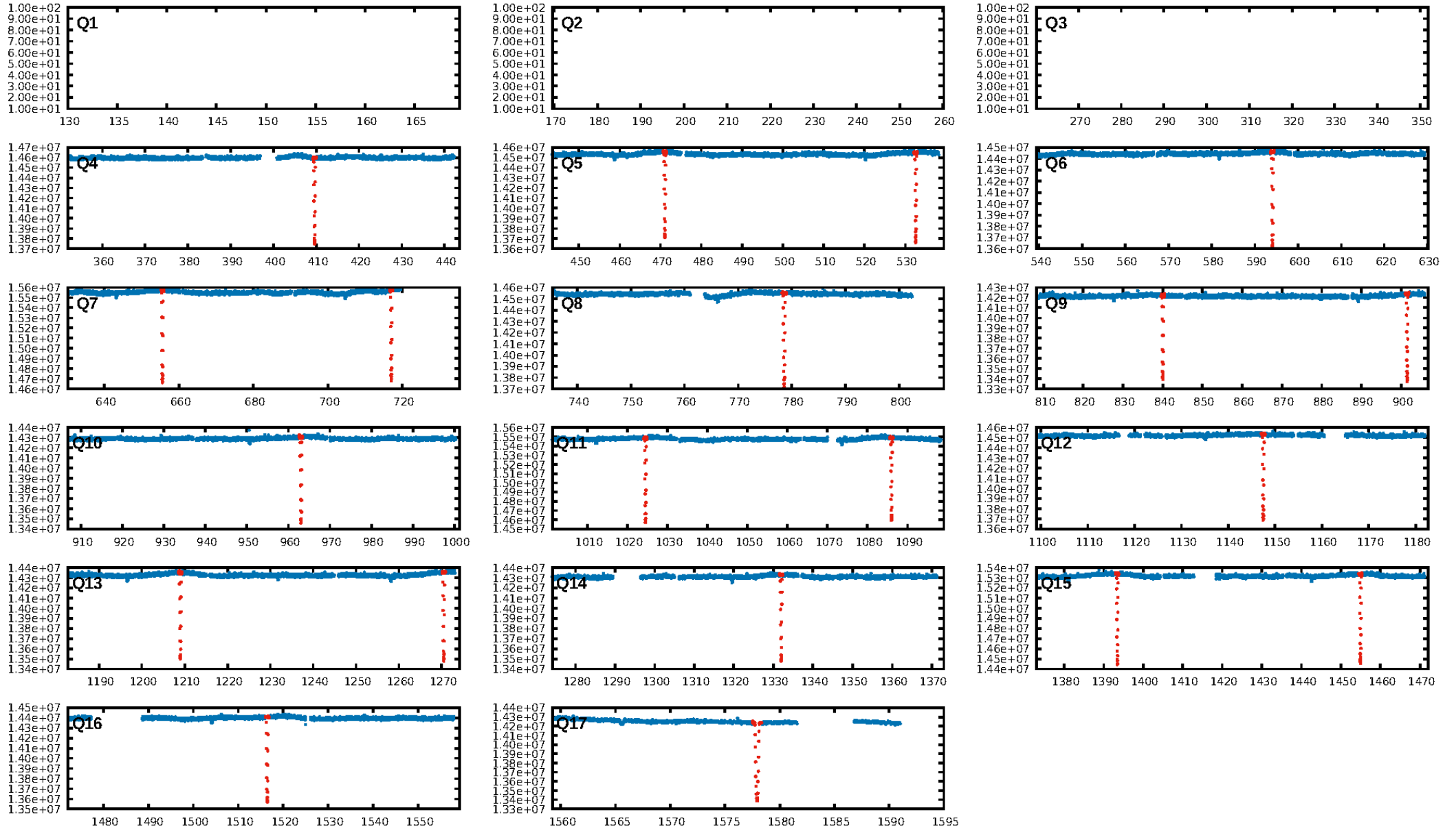
DV Fit Results:

Period = 61.49116 [0.00001] d
Epoch = 163.6334 [0.0002] BKJD
Rp/R* = 0.2382 [0.0002]
a/R* = 49.78 [0.08]
b = 0.68 [0.00]
Seff = 8.71 [3.41]
Teq = 438 [43] K
Rp = 22.77 [6.78] Re
a = 0.3019 [0.0758] AU
Ag = 258.88 [94.75] [2.72σ]
Teffp = 2717 [96] K [21.65σ]

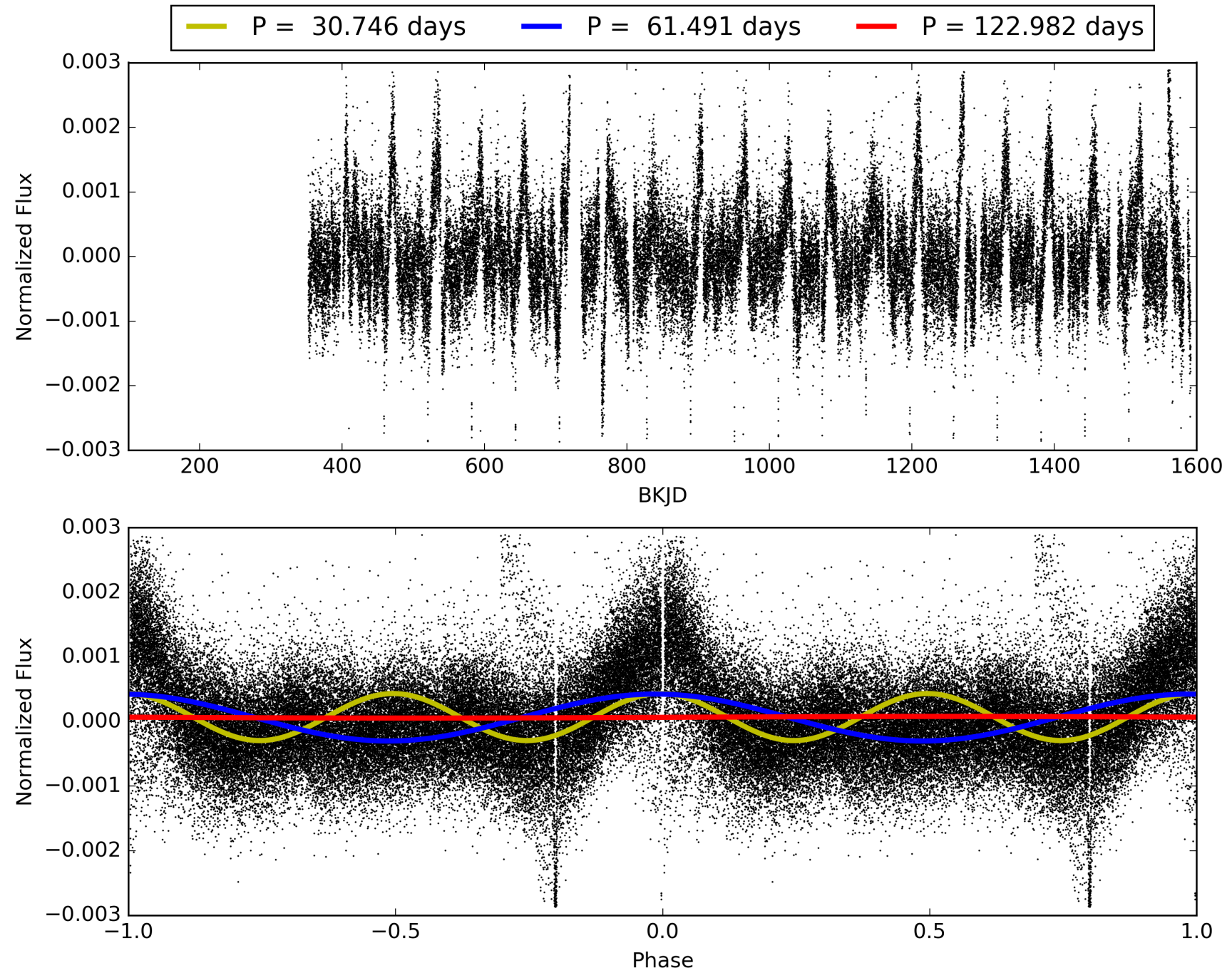
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 99.6%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [19/19]
GhostDiagnostic-chr: 6.614
Centroid-sig: 0.0%
Centroid-so: 1.200 arcsec [156.61σ]
OotOffset-rm: 6.101 arcsec [20.28σ]
KicOffset-rm: 0.080 arcsec [1.19σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
DiffImageOverlap-fno: 1.00 [13/13]

TCE 008892720-01, PDC Light Curves

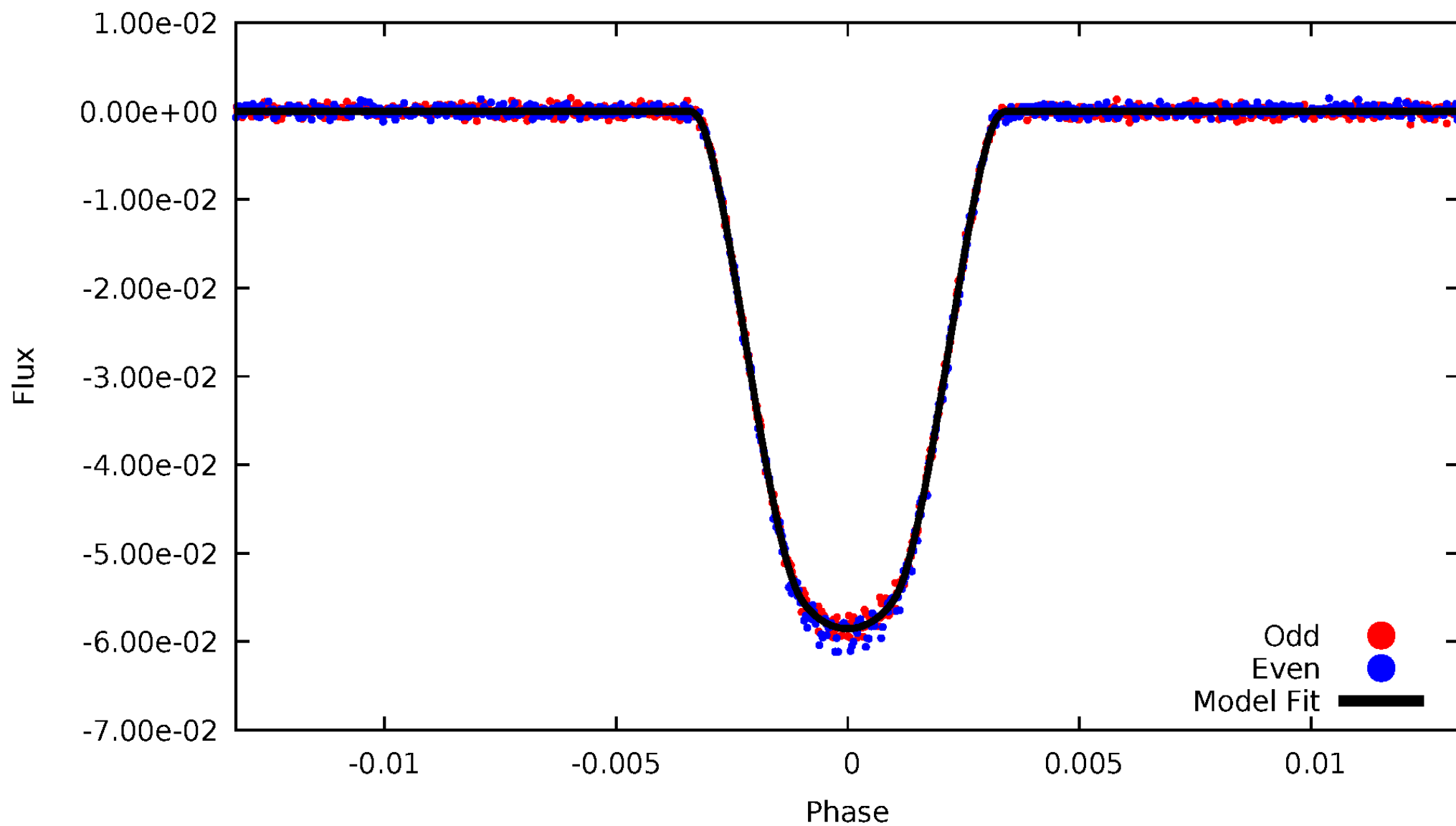


TCE 008892720-01



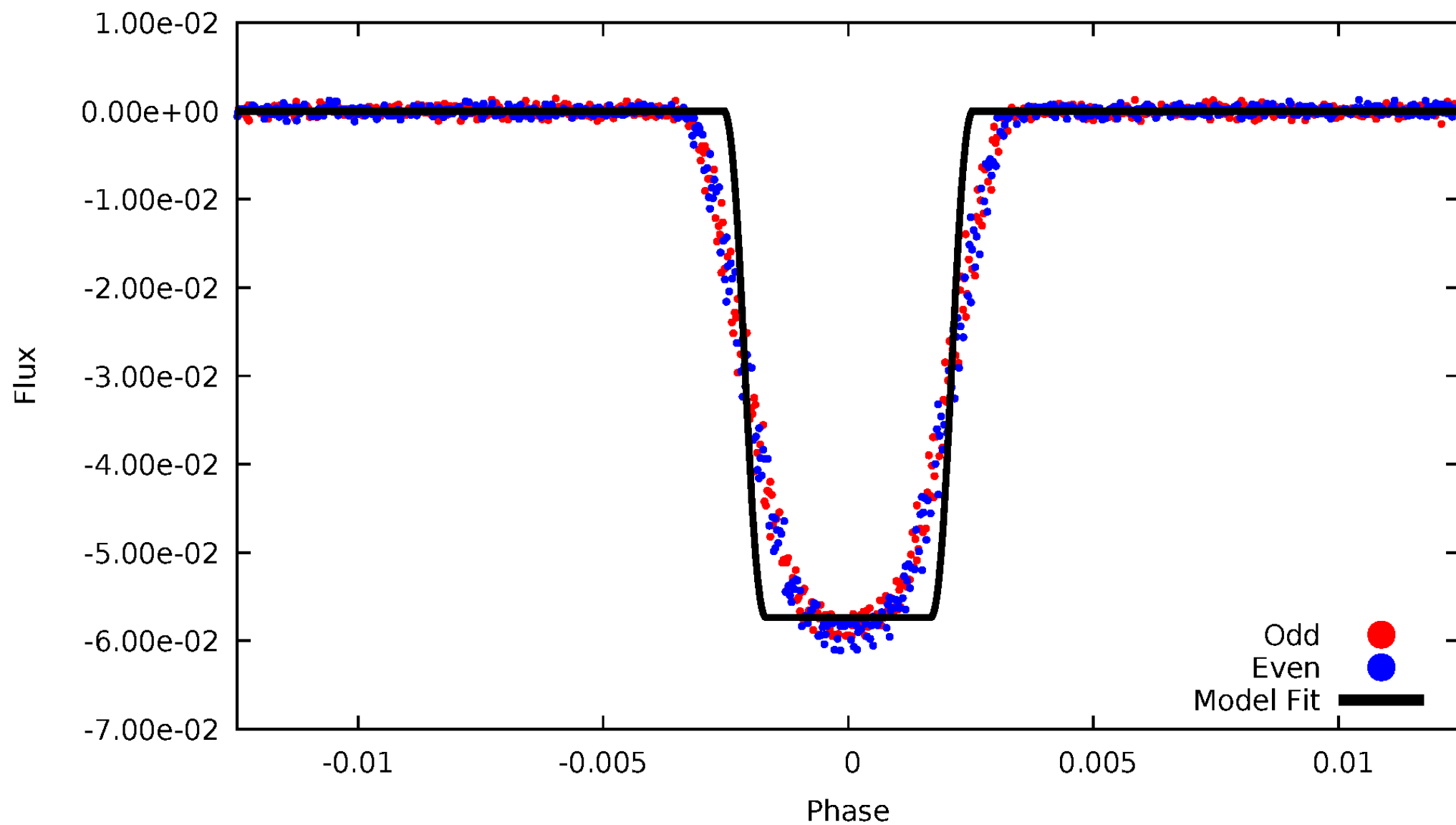
DV Odd/Even

TCE 008892720-01



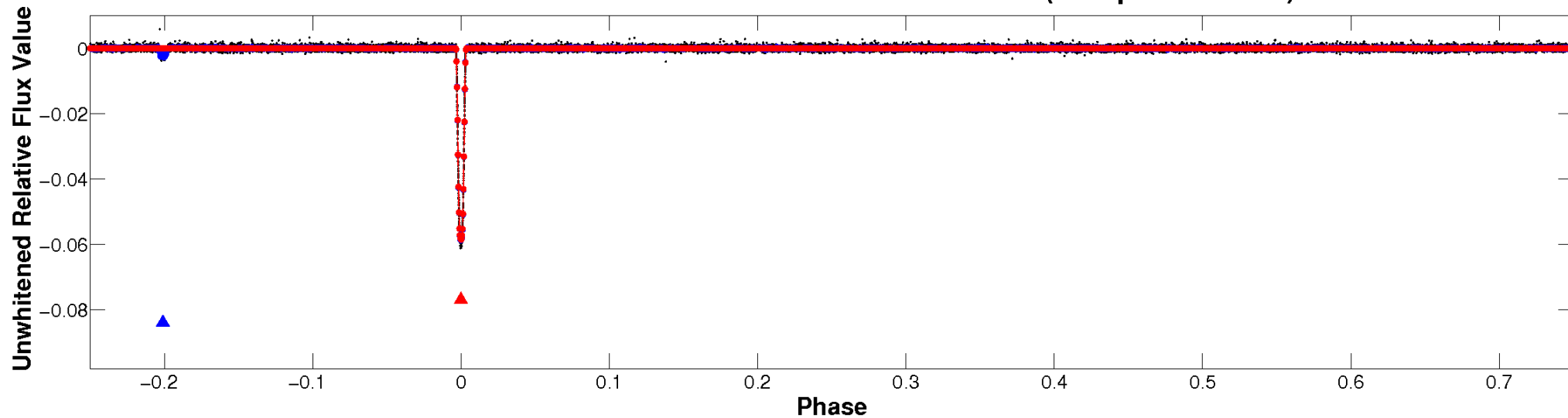
ALT Odd/Even

TCE 008892720-01

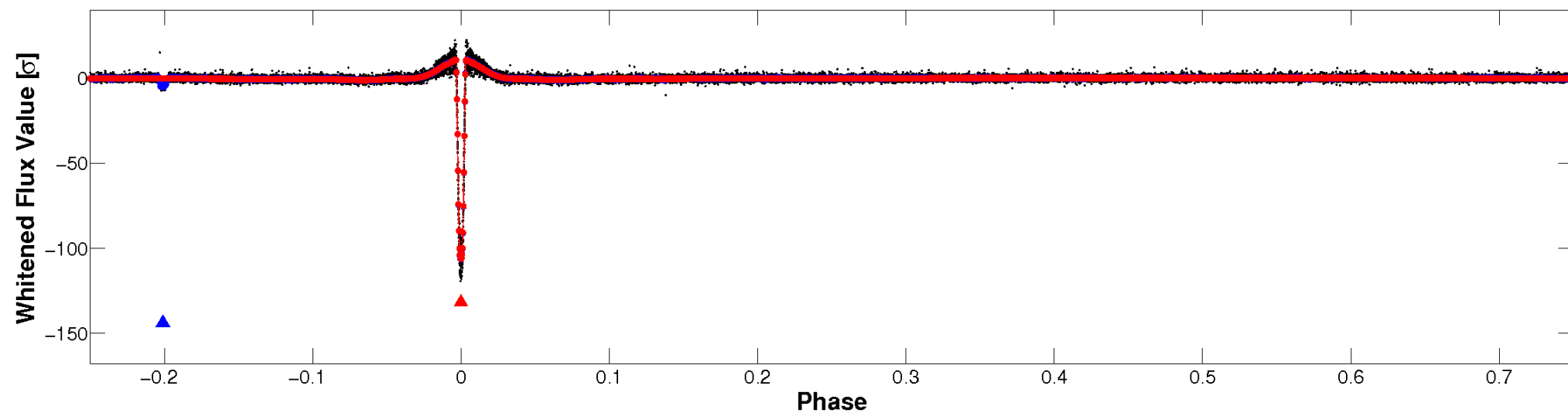


Non-Whitened Vs. Whitened Light Curve

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

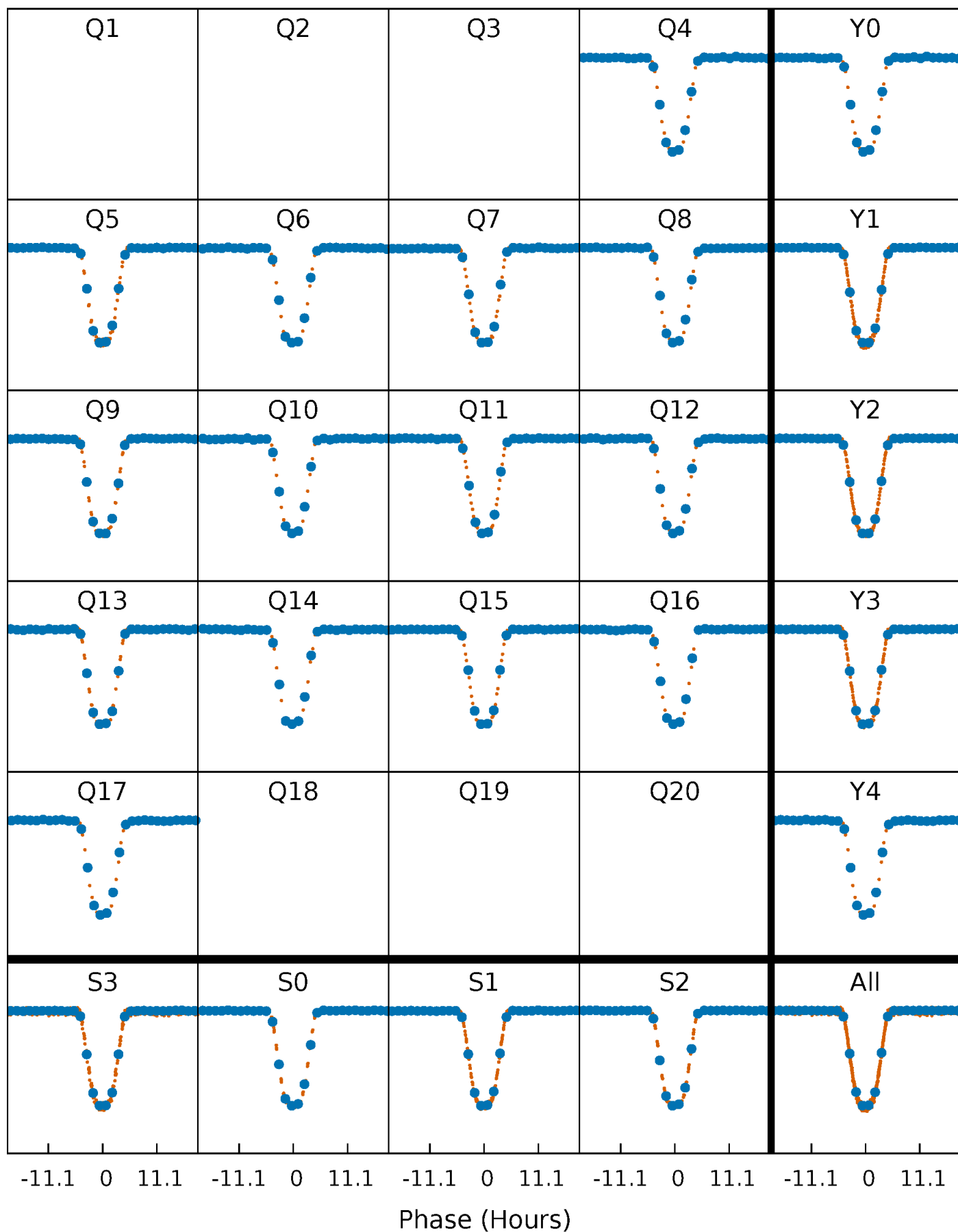


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



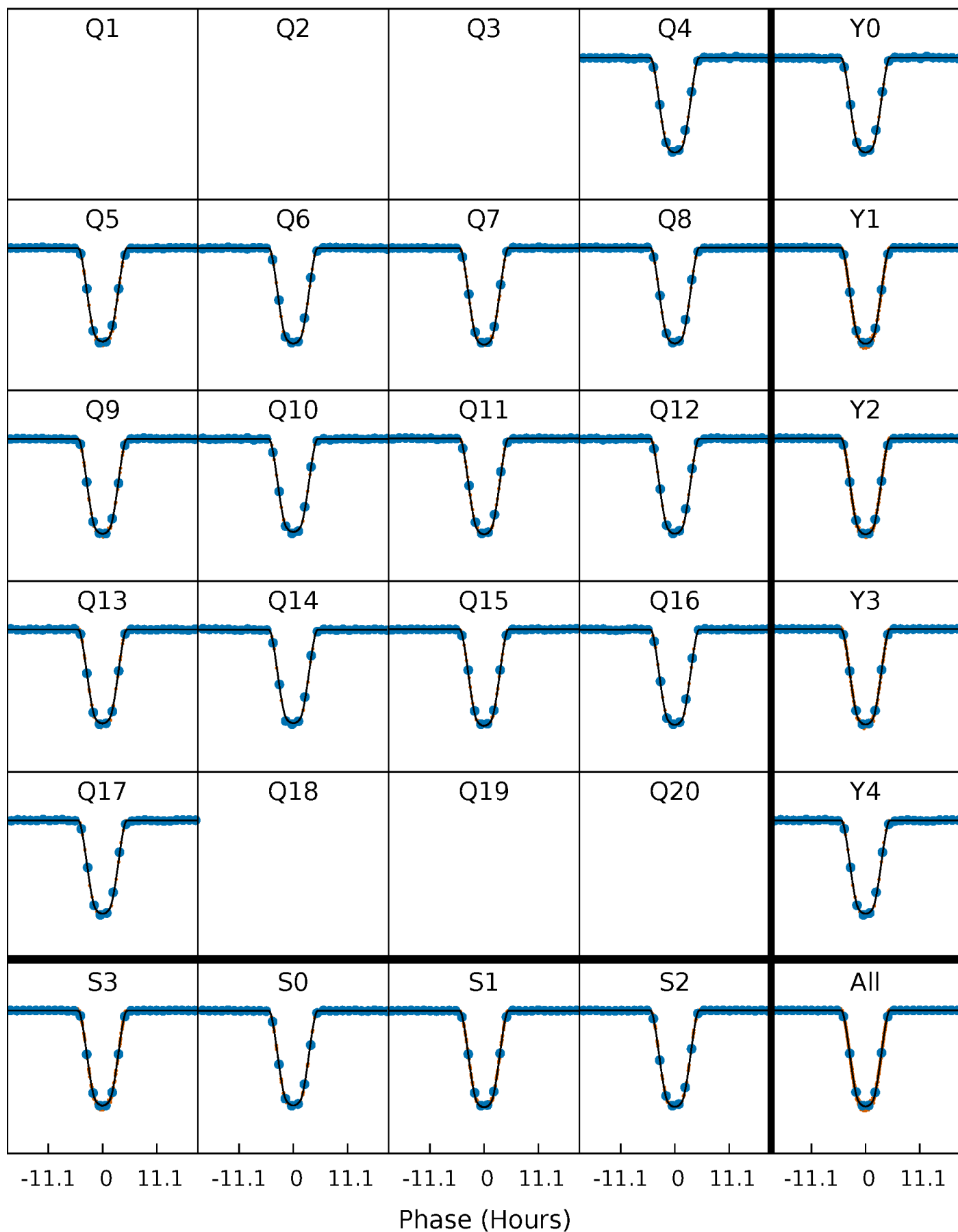
PDC Quarter-Phased Transit Curves

TCE 008892720-01 P= 61.491163 Days $T_0=163.633367$ (BKJD)



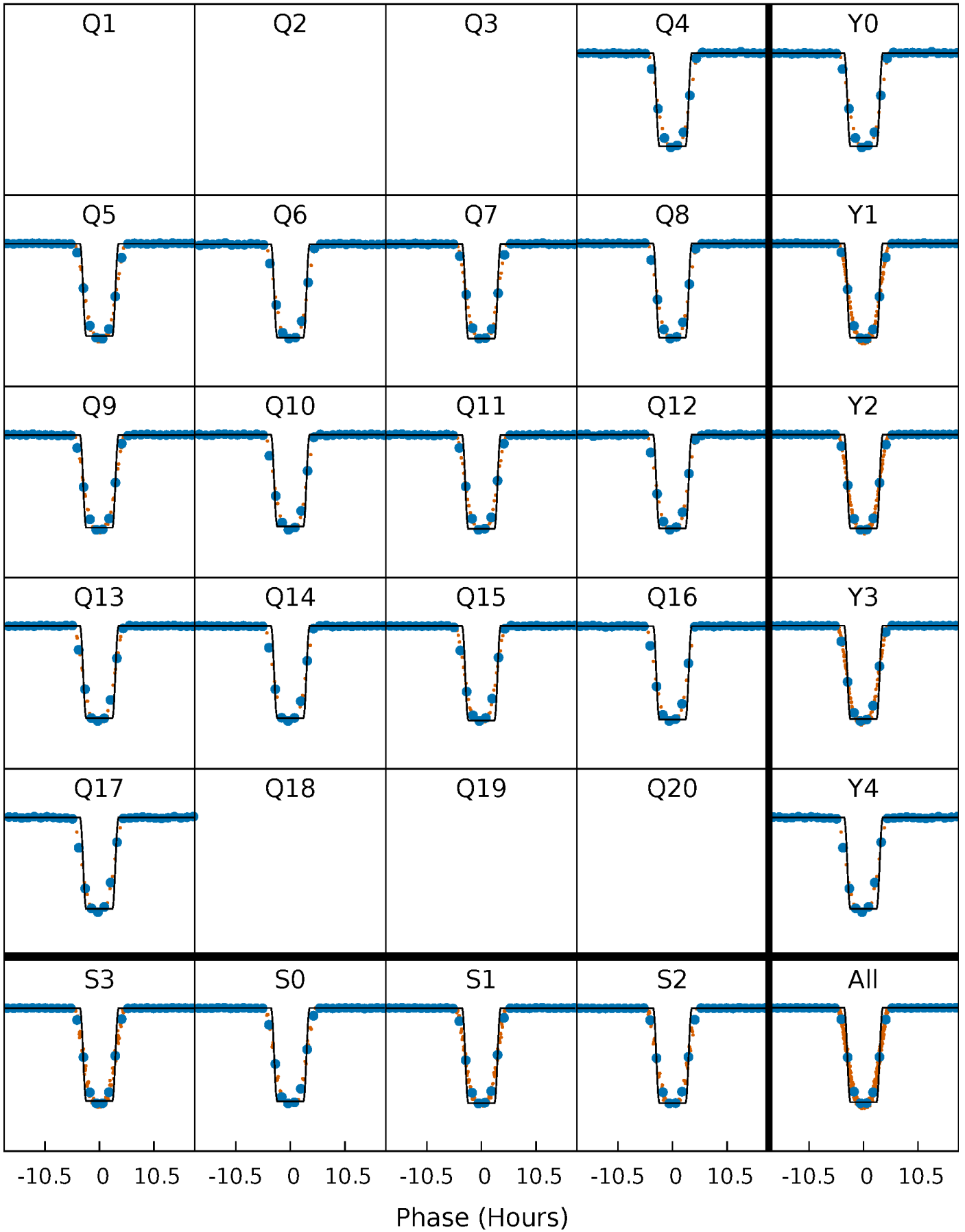
DV Quarter-Phased Transit Curves

TCE 008892720-01 P= 61.491163 Days $T_0=163.633367$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

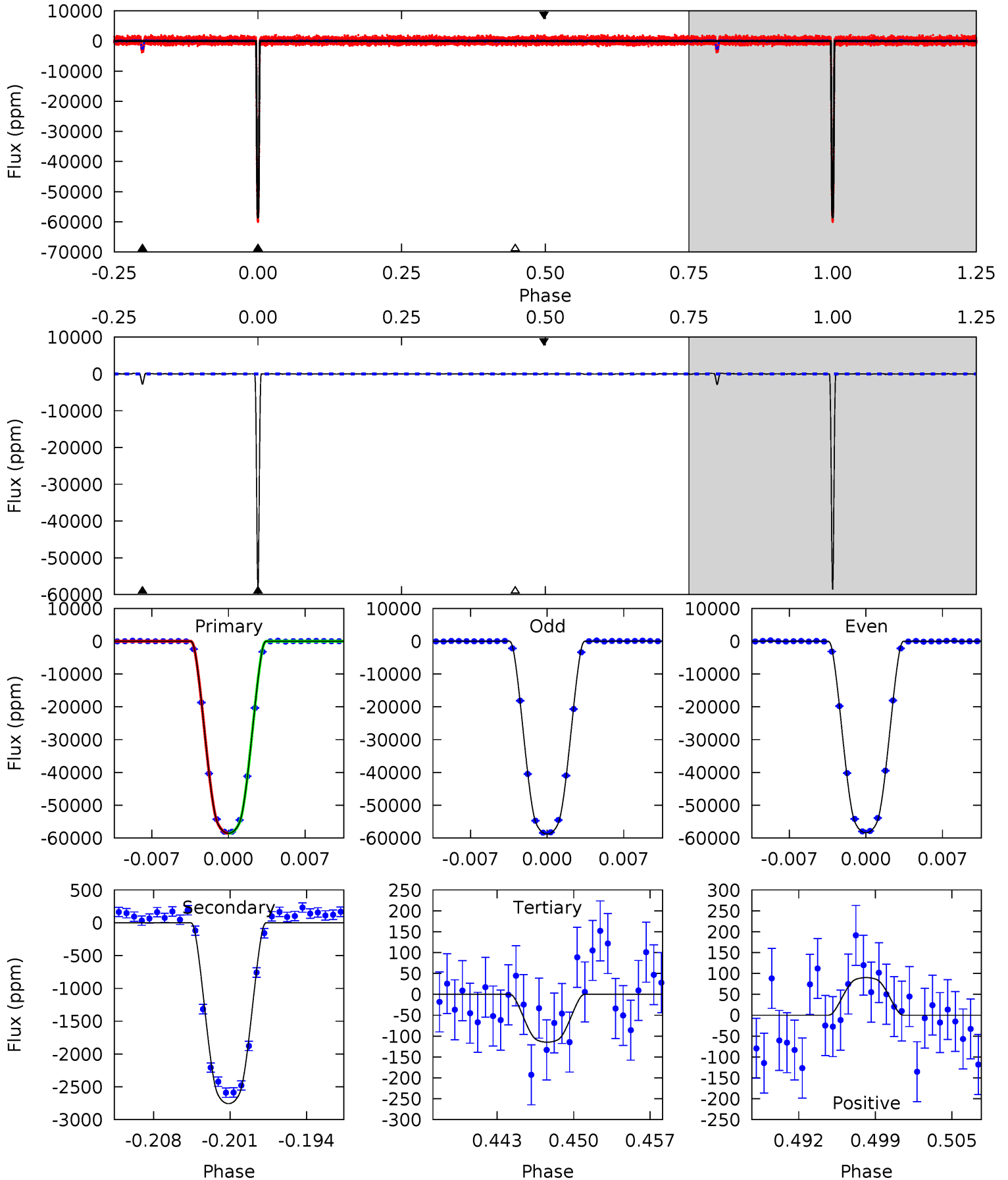
TCE 008892720-01 P= 61.492132 Days $T_0=163.620367$ (BKJD)



DV Model-Shift Uniqueness Test

008892720-01, P = 61.491163 Days, E = 163.633367 Days

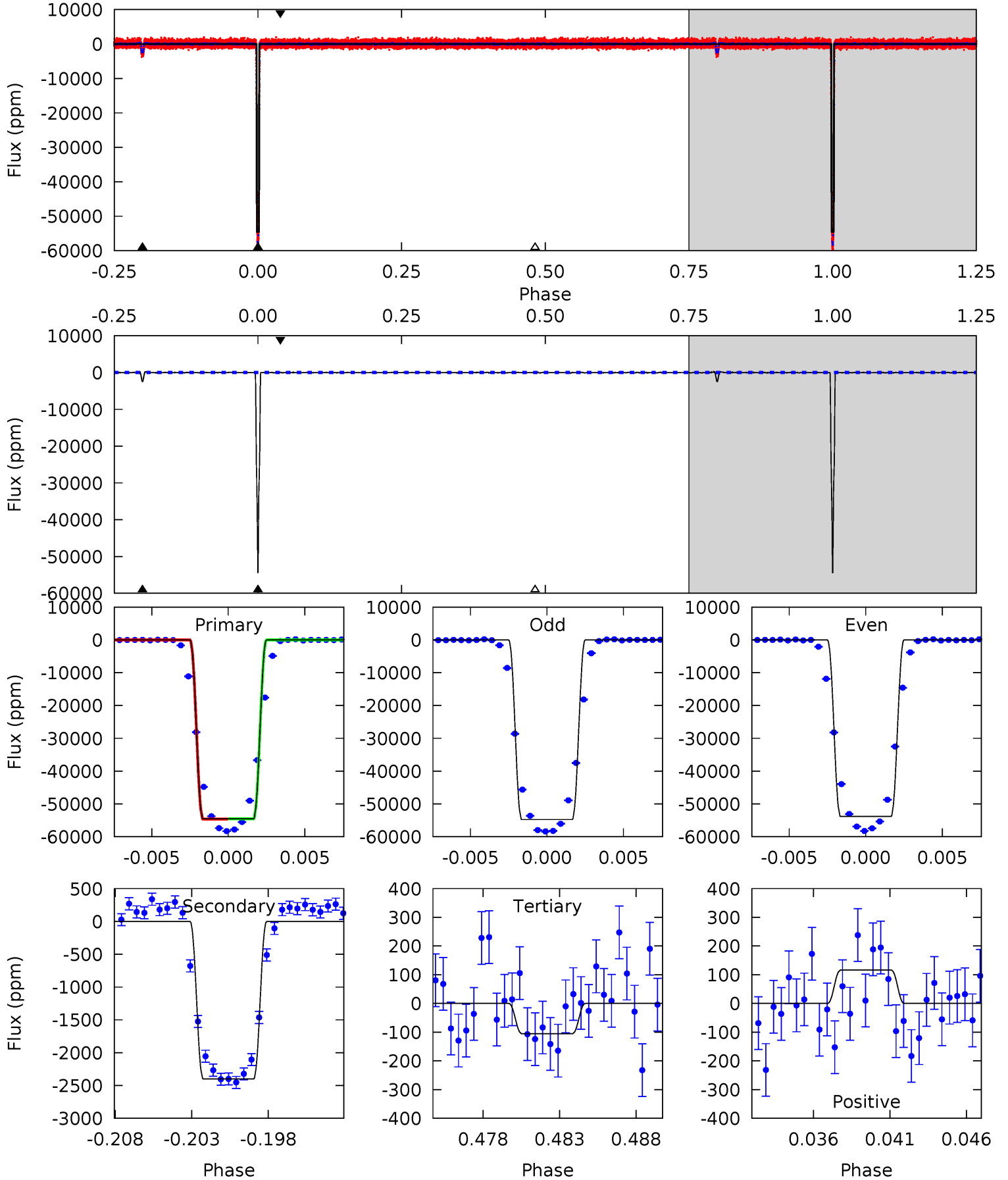
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2485	117.0	4.86	3.82	5.10	2.70	1.68	2480	2481	112.1	113.1	8.39	1.00	0.00	0.47



Alt Model-Shift Uniqueness Test

008892720-01, P = 61.492132 Days, E = 163.620367 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1693	74.4	3.27	3.61	5.15	2.80	1.14	1689	1689	71.2	70.8	14.4	1.00	0.00	1.10



Stellar Parameters For KIC 008892720

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5830^{+164}_{-205}	$4.540^{+0.037}_{-0.200}$	$-0.140^{+0.300}_{-0.300}$	$0.876^{+0.261}_{-0.087}$	$0.970^{+0.108}_{-0.121}$	$2.036^{+0.406}_{-1.047}$
	+3%/-4%	+1%/-4%	+214%/-214%	+30%/-10%	+11%/-12%	+20%/-51%
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 008892720-01 / KOI 3336.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-2757 ± 24	$23.99^{+3.58}_{-2.10}$	629^{+47}_{-31}	3294^{+62}_{-69}	241^{+35}_{-57}
Alt.	-2399 ± 32	$23.65^{+3.86}_{-1.73}$	626^{+46}_{-28}	3224^{+57}_{-75}	211^{+28}_{-50}

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

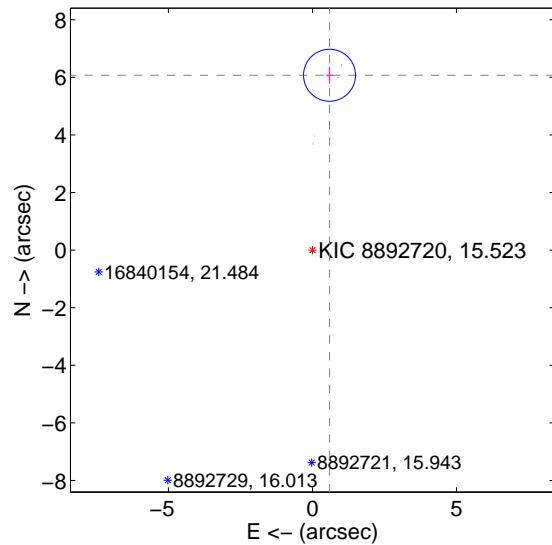
Supplemental centroid analysis for 008892720-01. Kepler magnitude: 15.52. Transit SNR 1322.02

There are 13 quarters with good PRF difference image offsets

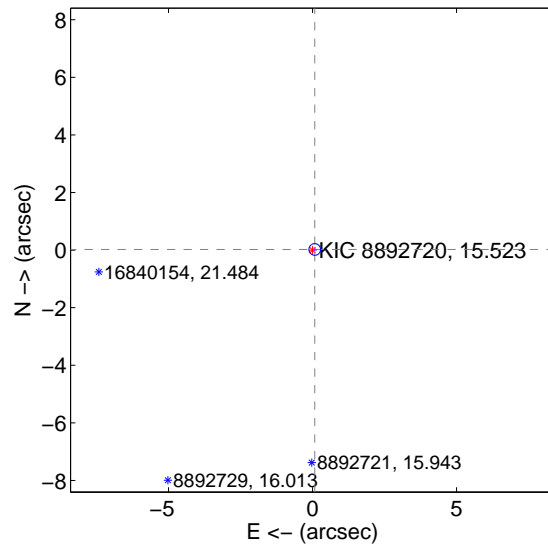
The OOT PRF centroid is offset from the target star catalog position by about 5.99 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.101 ± 0.301	20.28	-0.594 ± 0.125	6.072 ± 0.293
PRF-fit source offset from KIC position	0.080 ± 0.067	1.19	-0.077 ± 0.067	0.023 ± 0.068
photometric centroid source offset	1.20 ± 0.01	156.61	0.04 ± 0.00	-1.20 ± 0.01

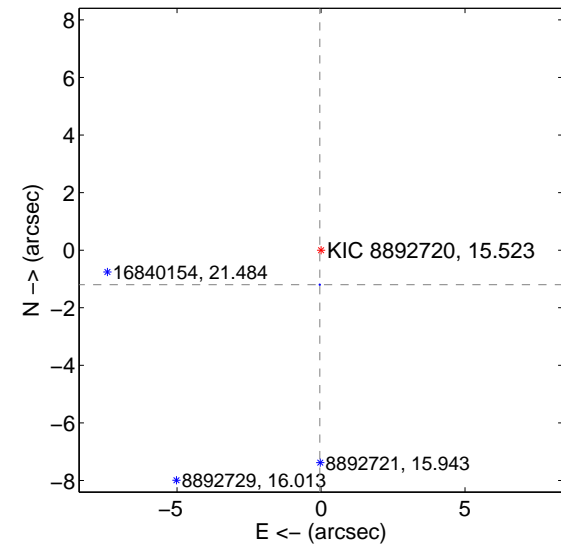
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

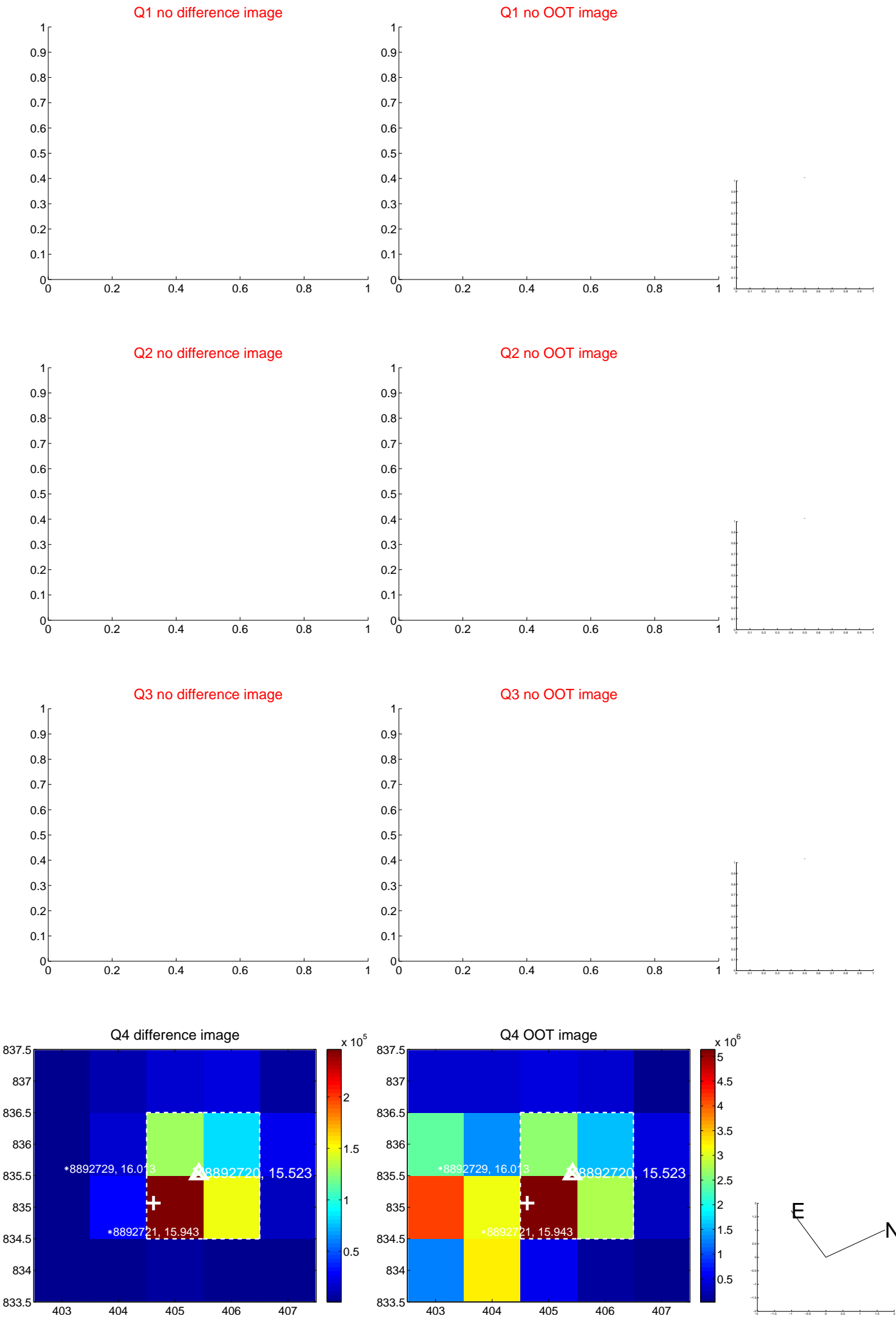


offset from photometric centroids

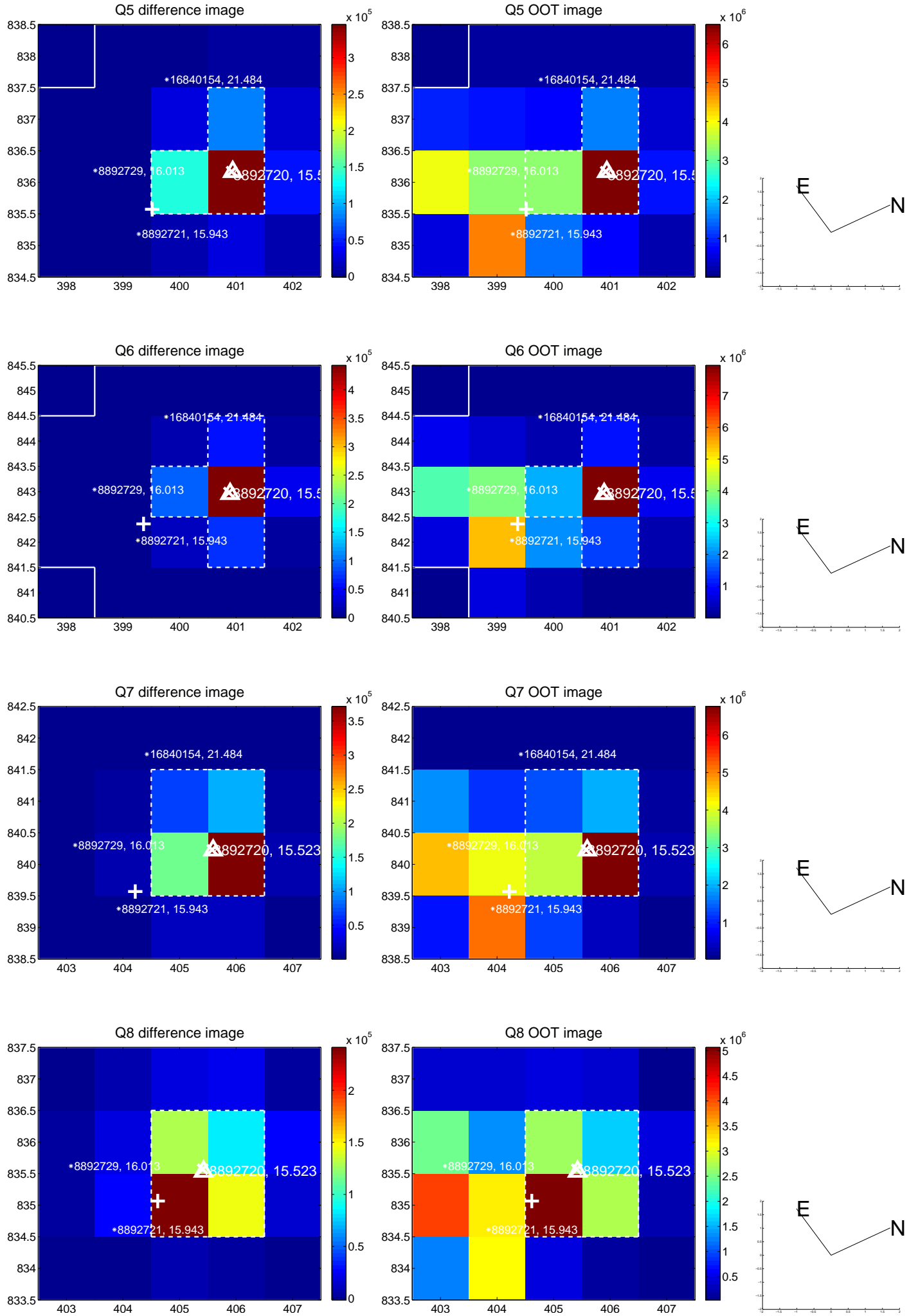


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

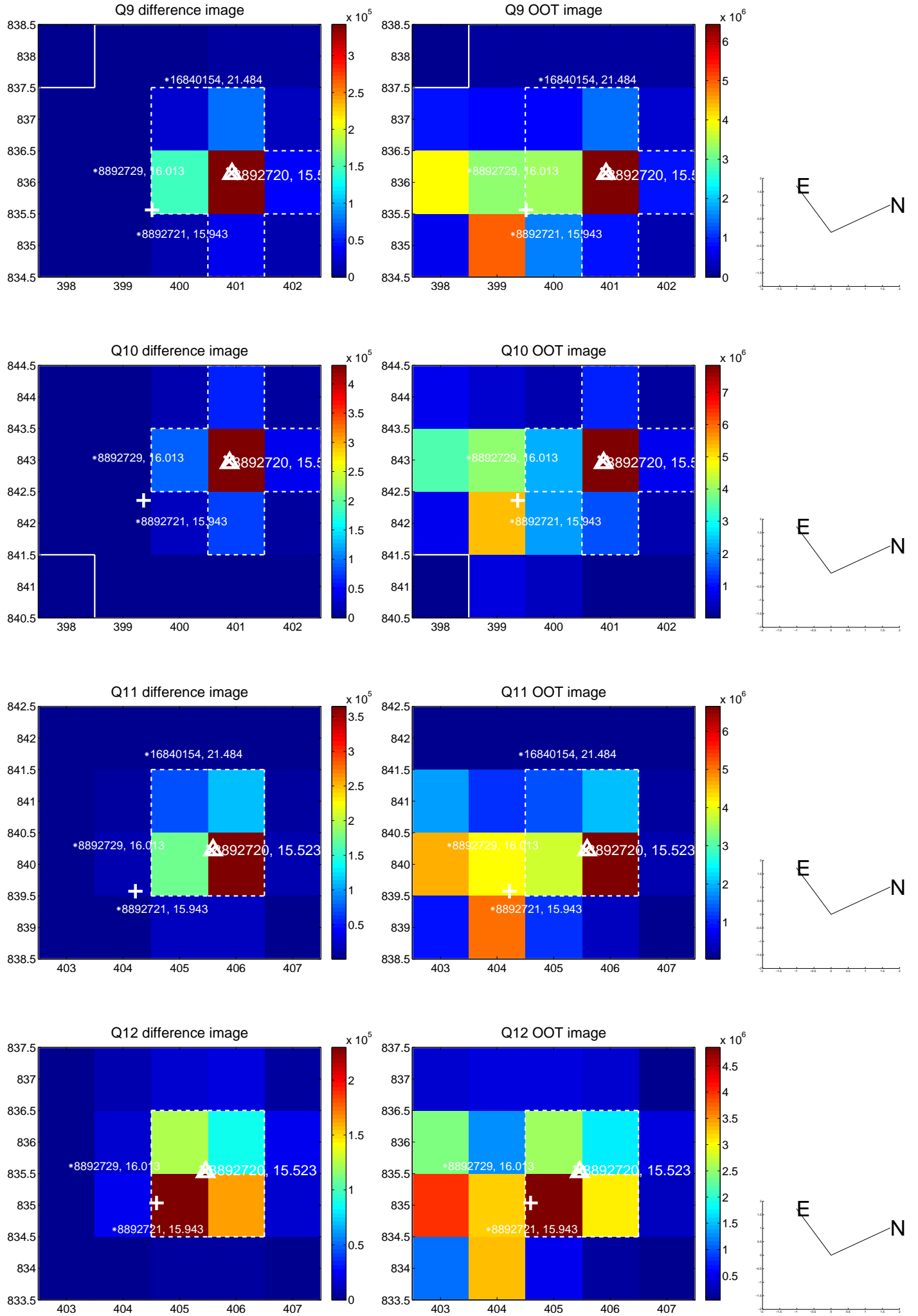
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



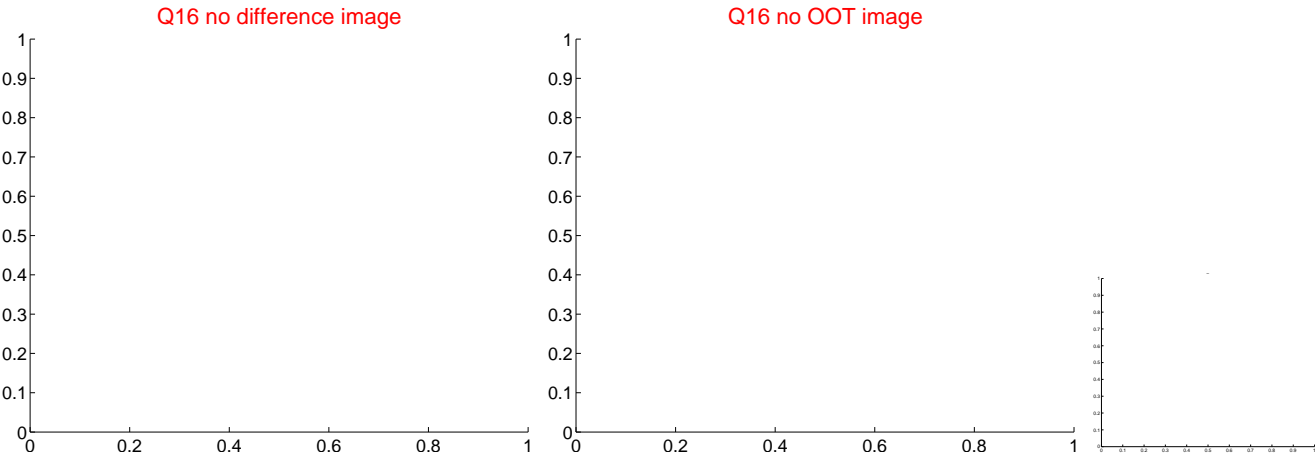
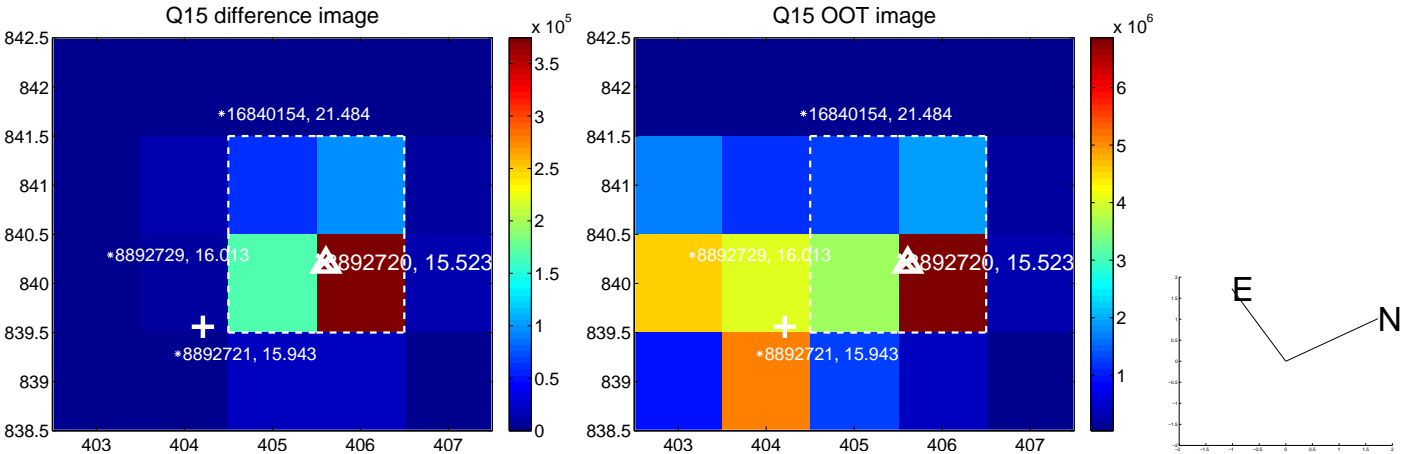
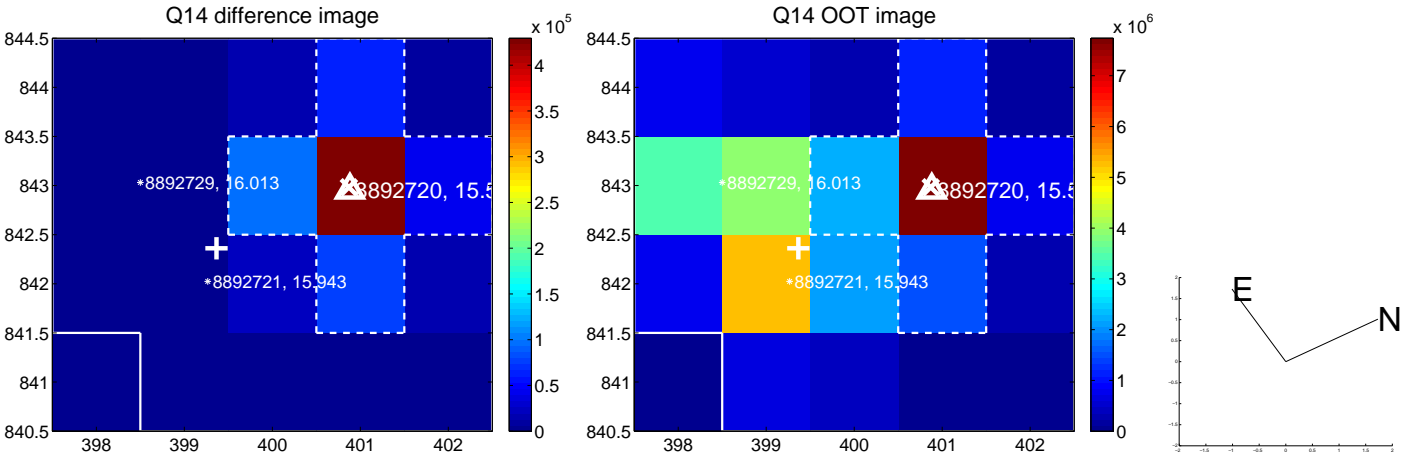
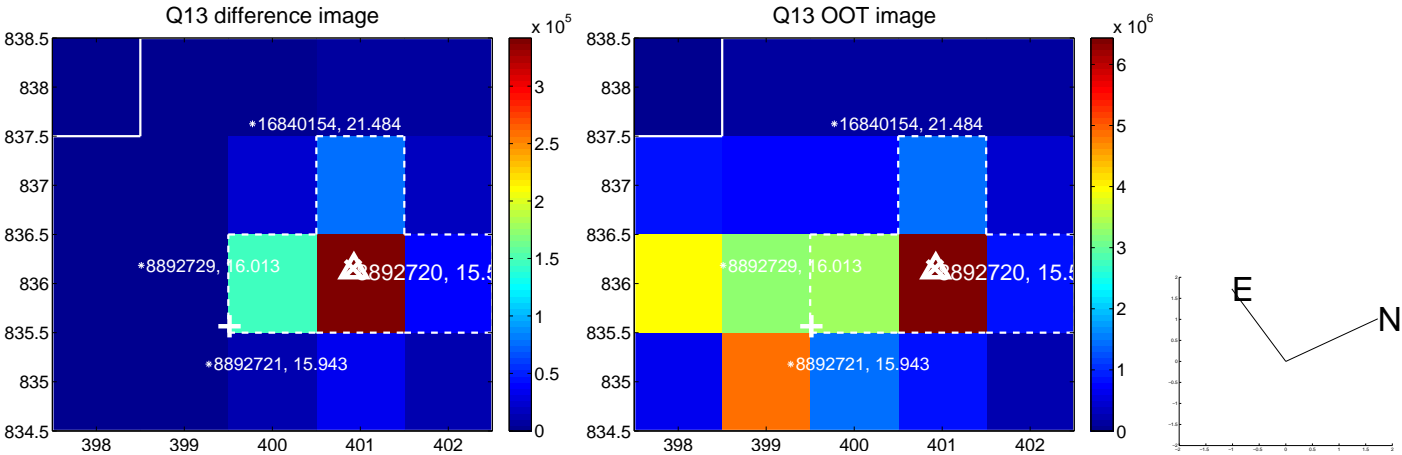
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



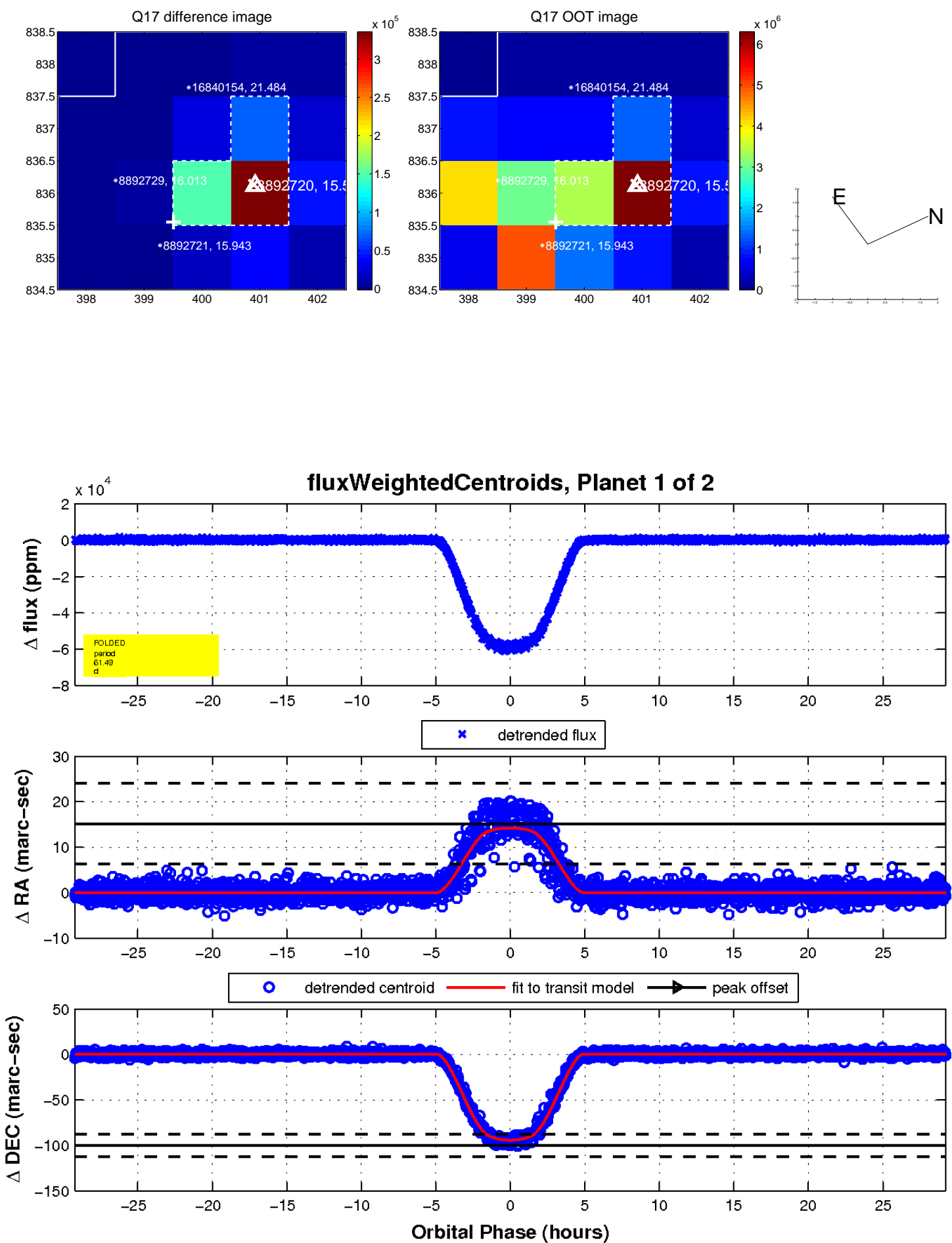
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

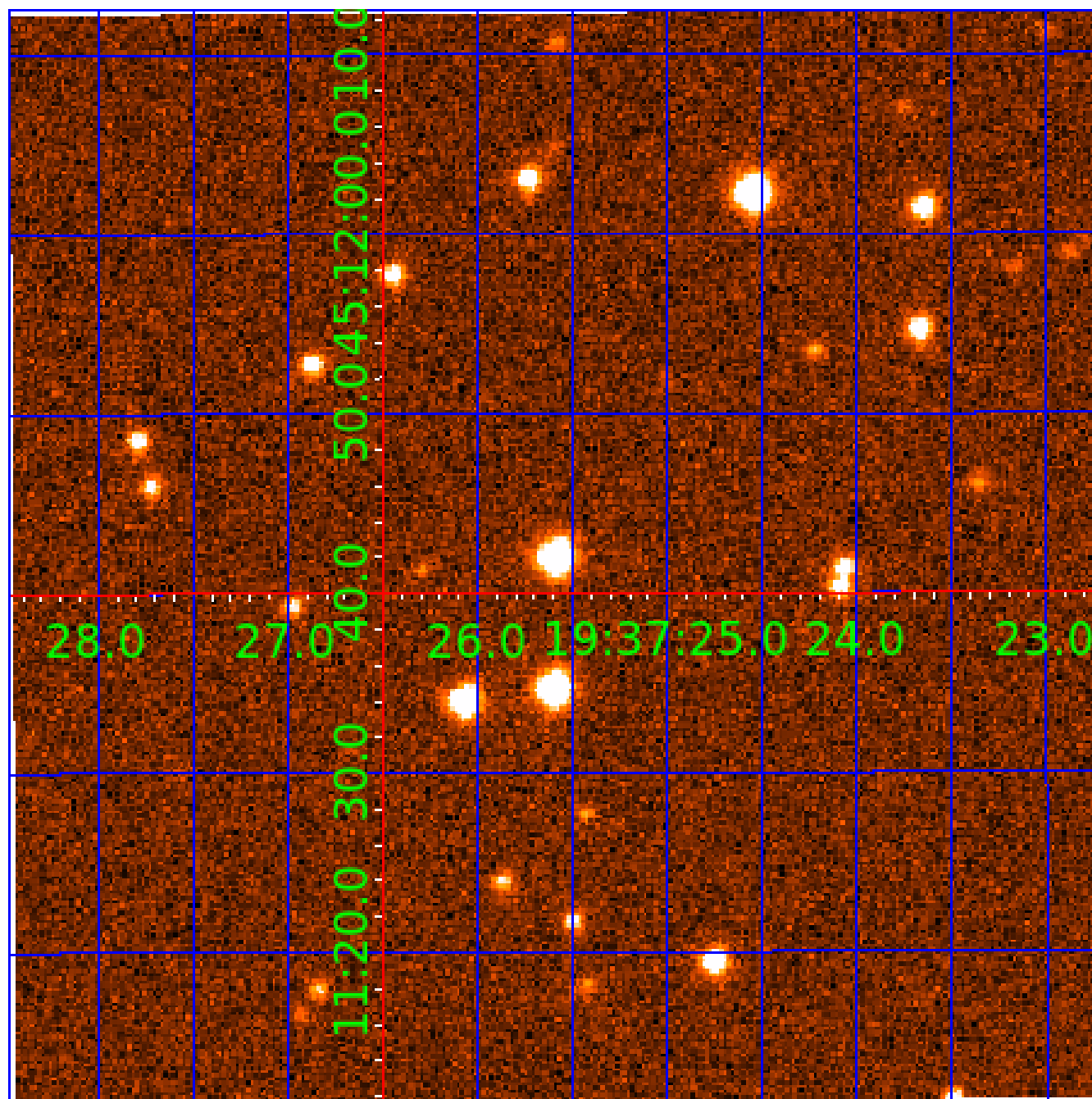


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 008892720

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})
008892720-01	OBS	3336.01	61.491163	163.633367	58528.0	9.743	1553.8	1322.0	0.88	5830	22.77	8.71
008892720-02	OBS	No	61.491381	151.273681	2731.5	9.663	72.1	70.5	0.88	5830	5.51	8.71

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
008892720-01	OBS	FP	0.00	0	1	0	0	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_KIC_POS
008892720-02	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.

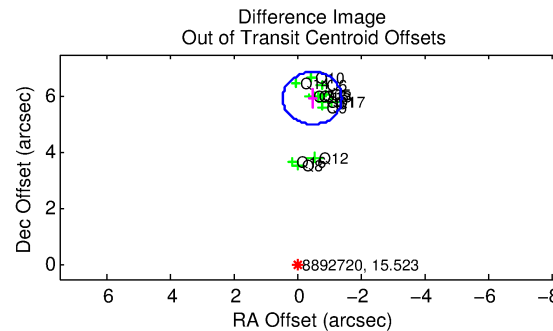
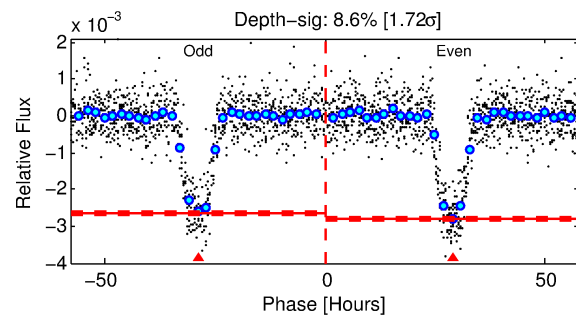
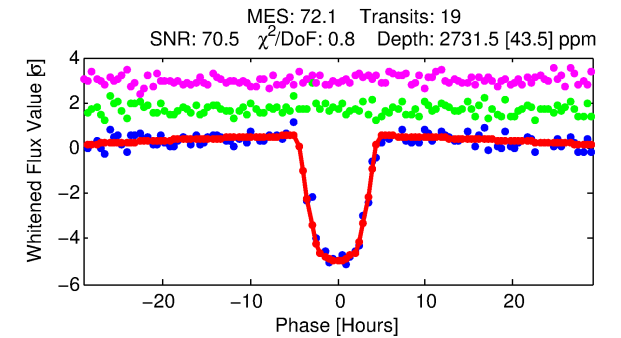
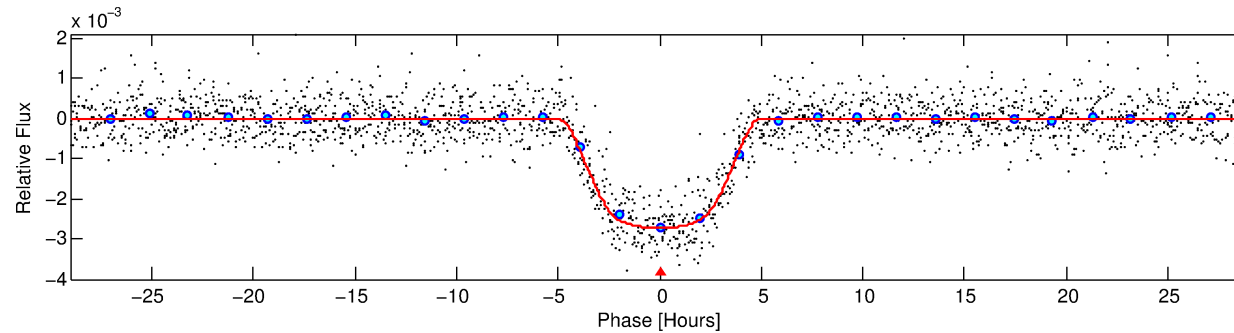
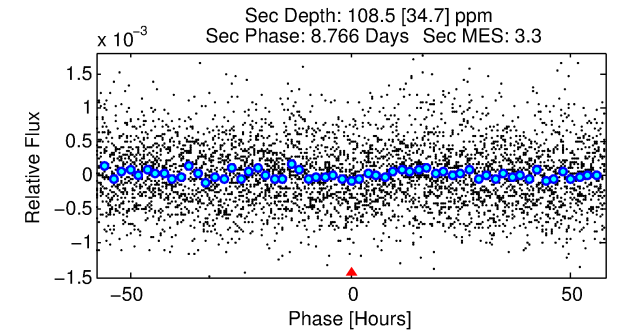
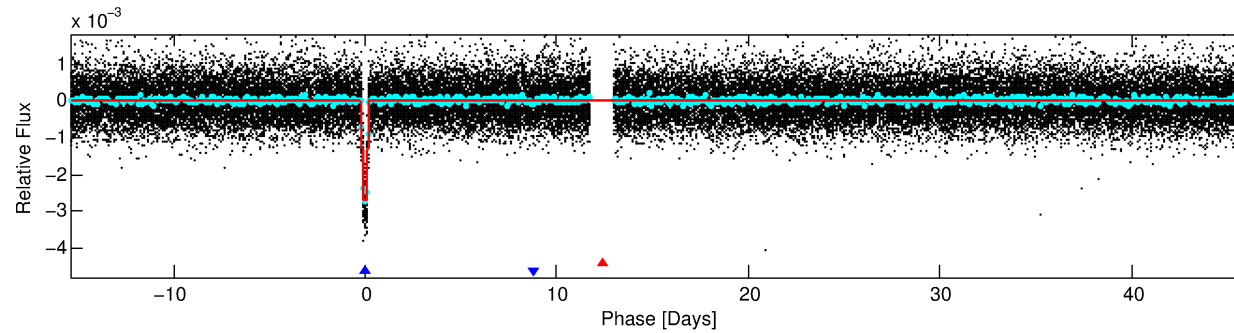
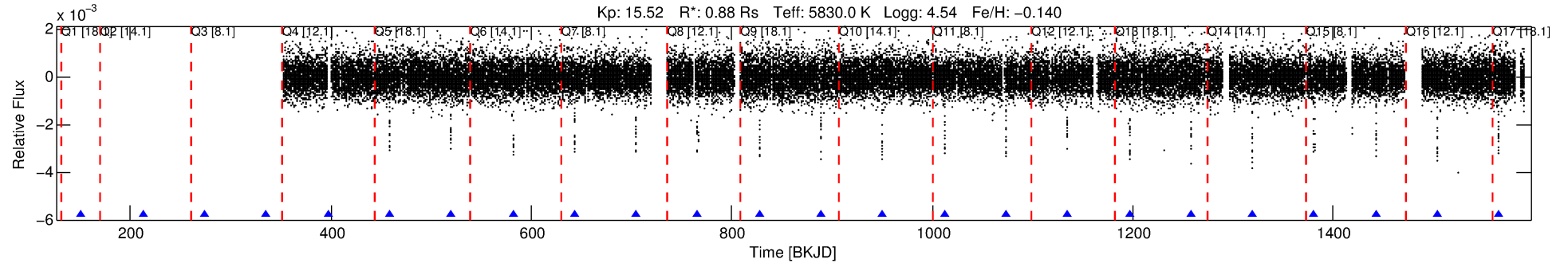
Ephemeris Match Information For 008892720-02

No Significant Match Found

DV One-Page Summary

KIC: 8892720 Candidate: 2 of 2 Period: 61.491 d
KOI: K03336 Corr: No Ephemeris Match

Kp: 15.52 R*: 0.88 Rs Teff: 5830.0 K Logg: 4.54 Fe/H: -0.140



DV Fit Results:

Period = 61.49138 [0.00027] d
Epoch = 151.2737 [0.0040] BKJD
Rp/R* = 0.0577 [0.0007]
a/R* = 26.04 [0.87]
b = 0.91 [0.01]
Seff = 8.71 [3.41]
Teq = 438 [43] K
Rp = 5.51 [1.64] Re
a = 0.3019 [0.0758] AU
Ag = 178.93 [87.01] [2.04σ]
Teff = 2477 [217] K [9.23σ]

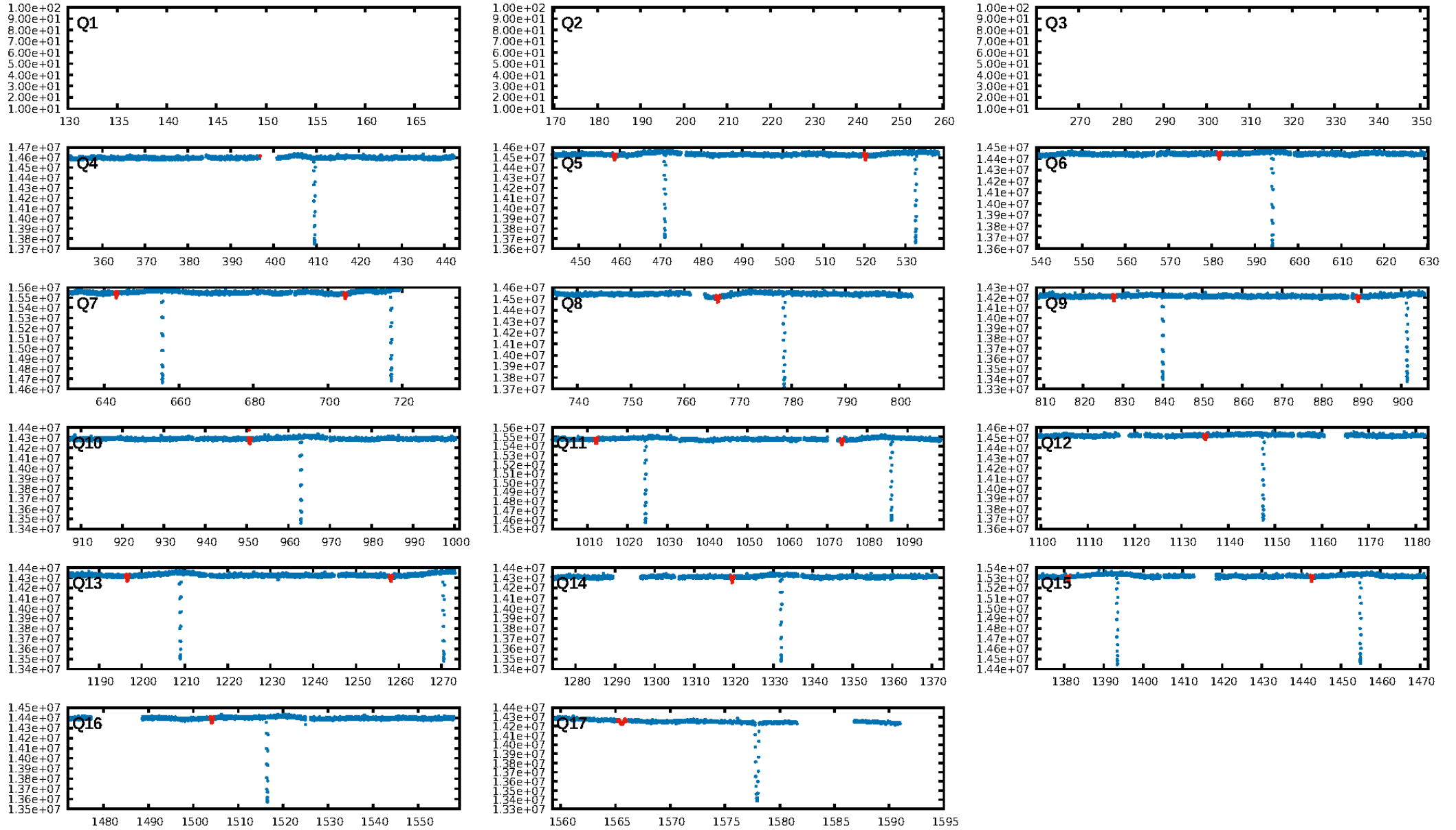
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 86.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 0.00e+00
RollingBand-fgt: 1.00 [18/18]
GhostDiagnostic-chr: 10.08
Centroid-sig: 0.0%
Centroid-so: 1.574 arcsec [9.91σ]
OotOffset-rm: 5.955 arcsec [19.18σ]
KicOffset-rm: 0.042 arcsec [0.49σ]
OotOffset-st: 3/3/3/4 [13]
KicOffset-st: 3/3/3/4 [13]
DiffImageQuality-fgm: 1.00 [13/13]
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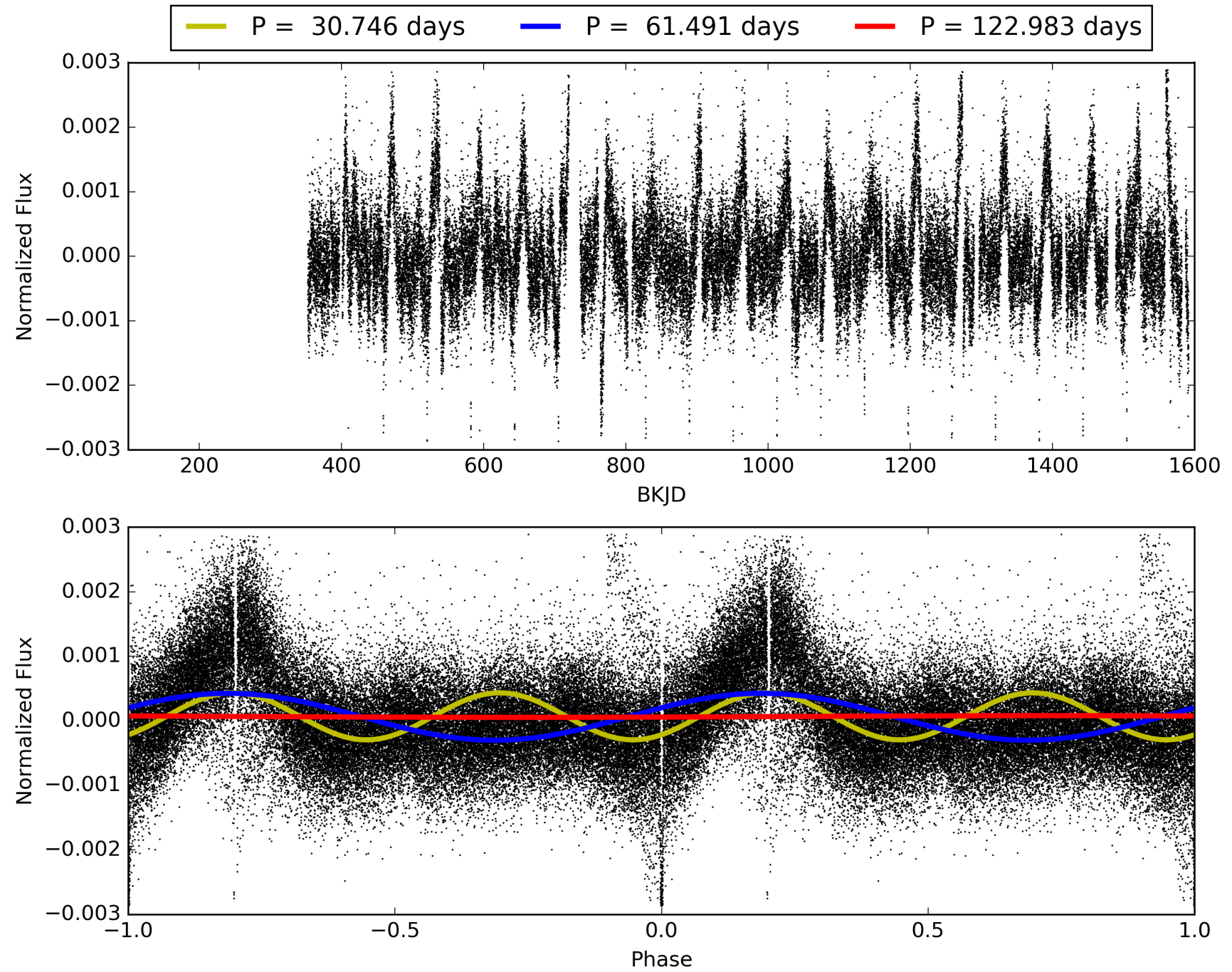
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 18:27:32 Z

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

TCE 008892720-02, PDC Light Curves

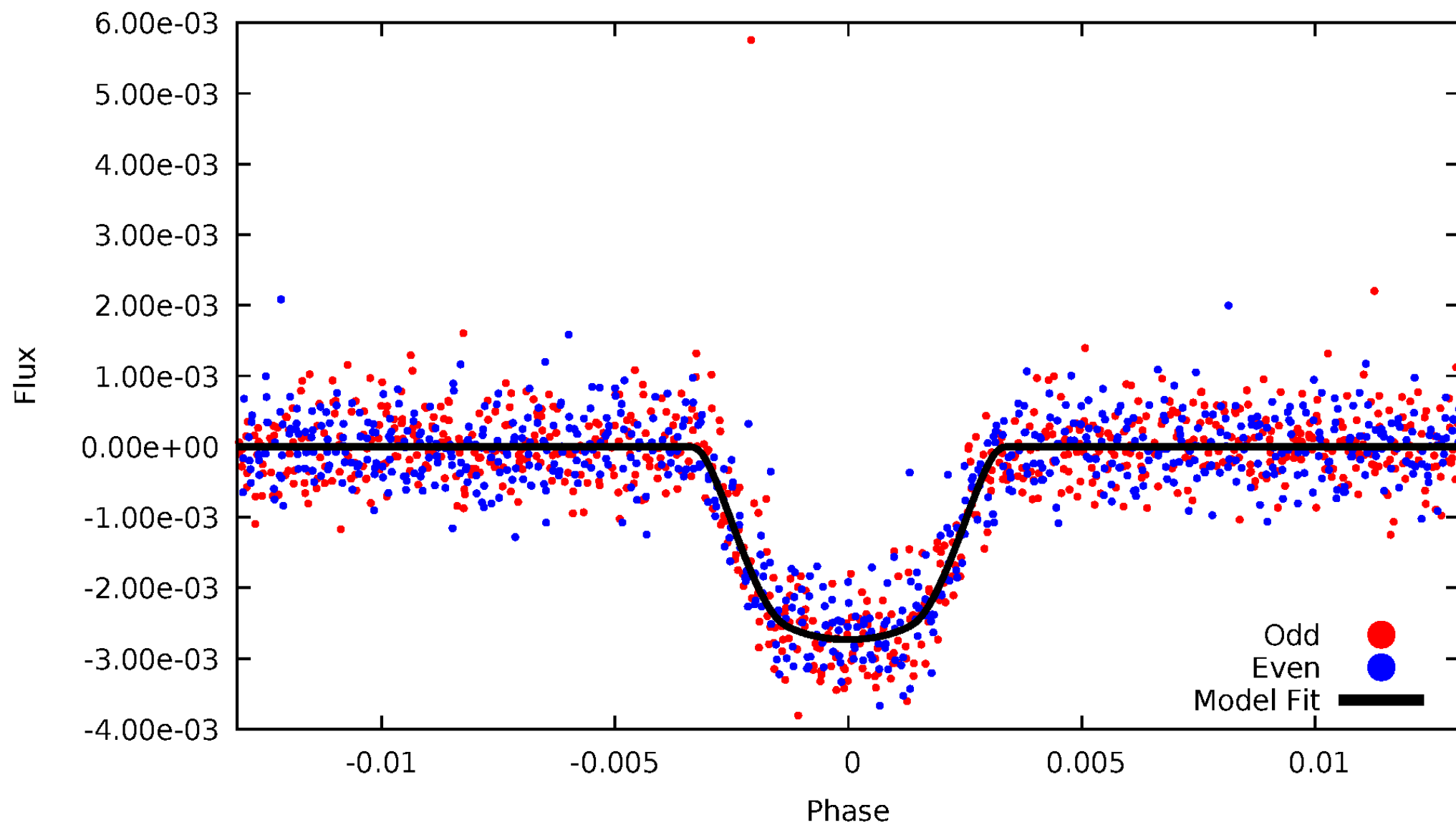


TCE 008892720-02



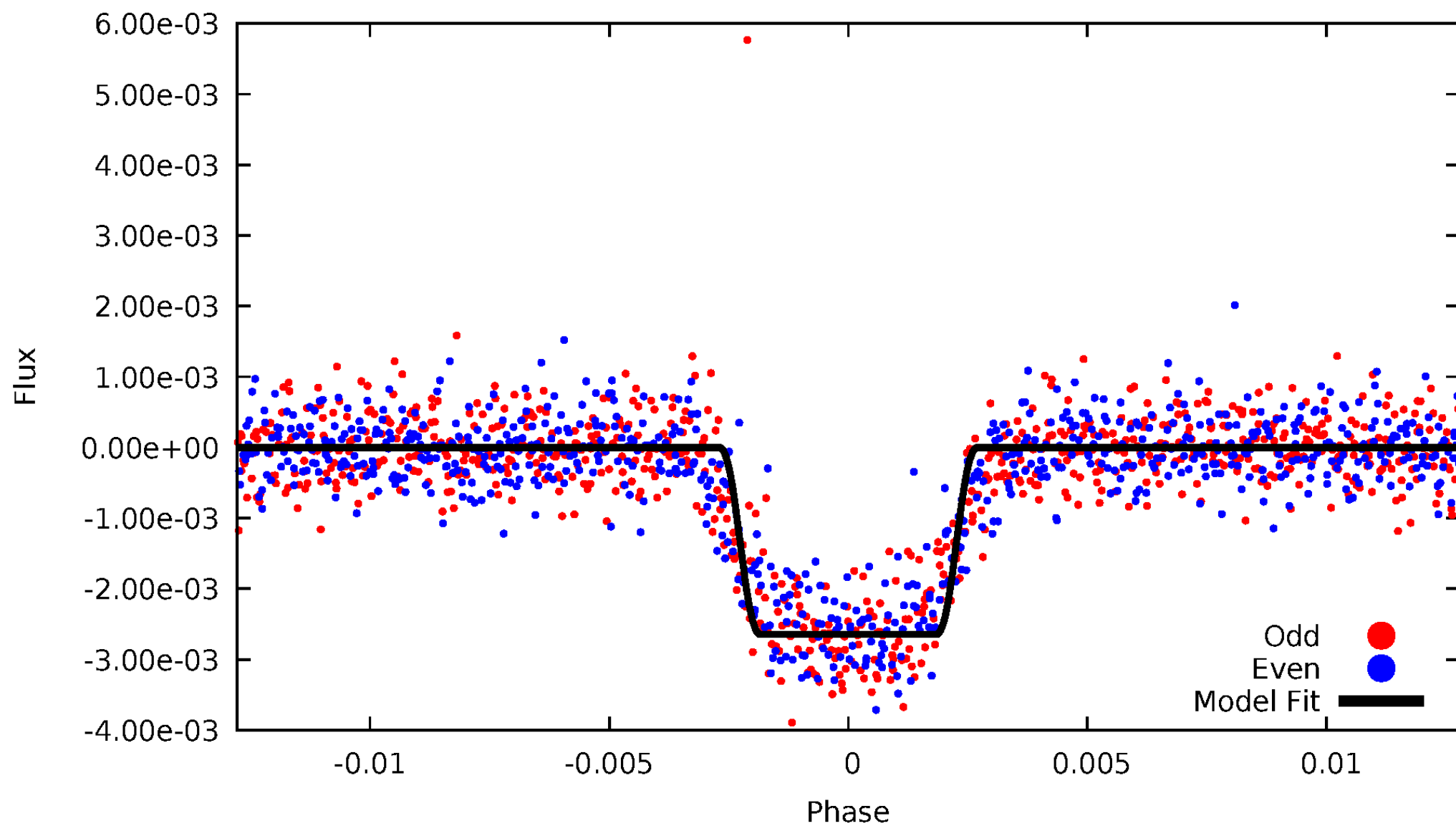
DV Odd/Even

TCE 008892720-02



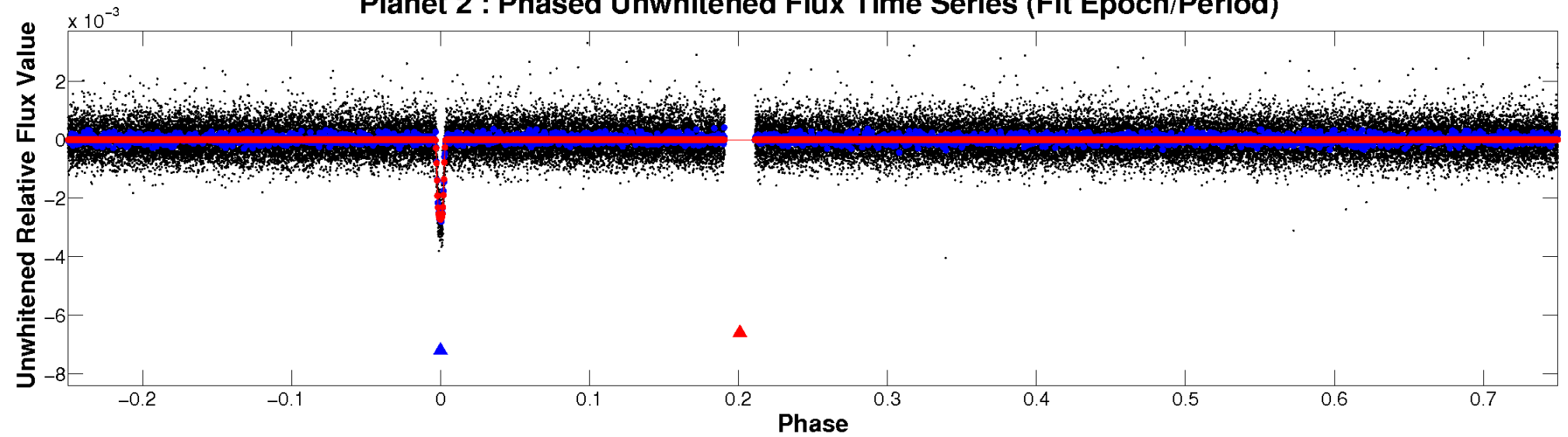
ALT Odd/Even

TCE 008892720-02

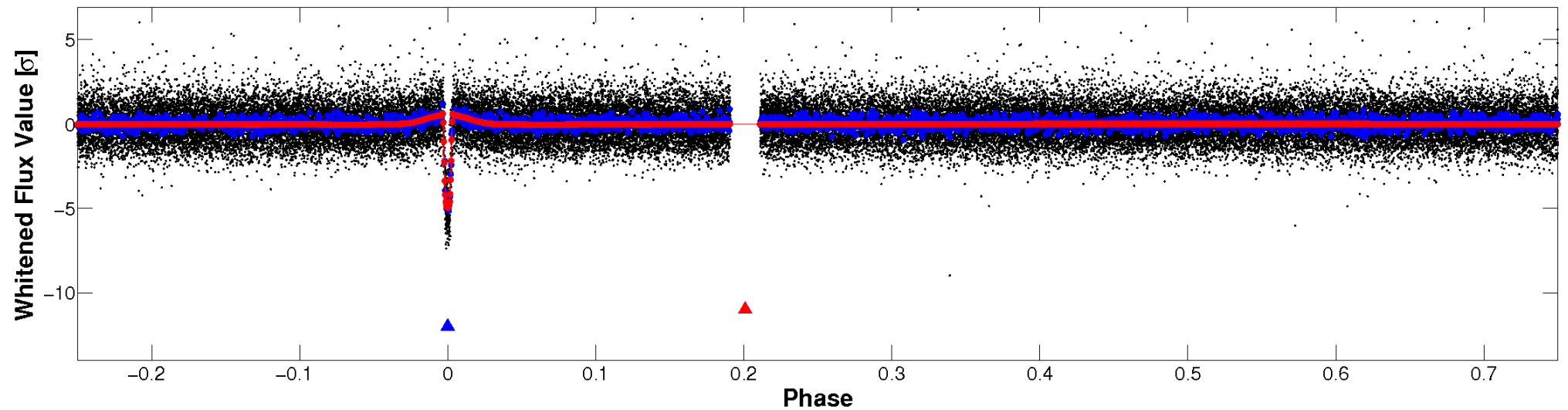


Non-Whitened Vs. Whitened Light Curve

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

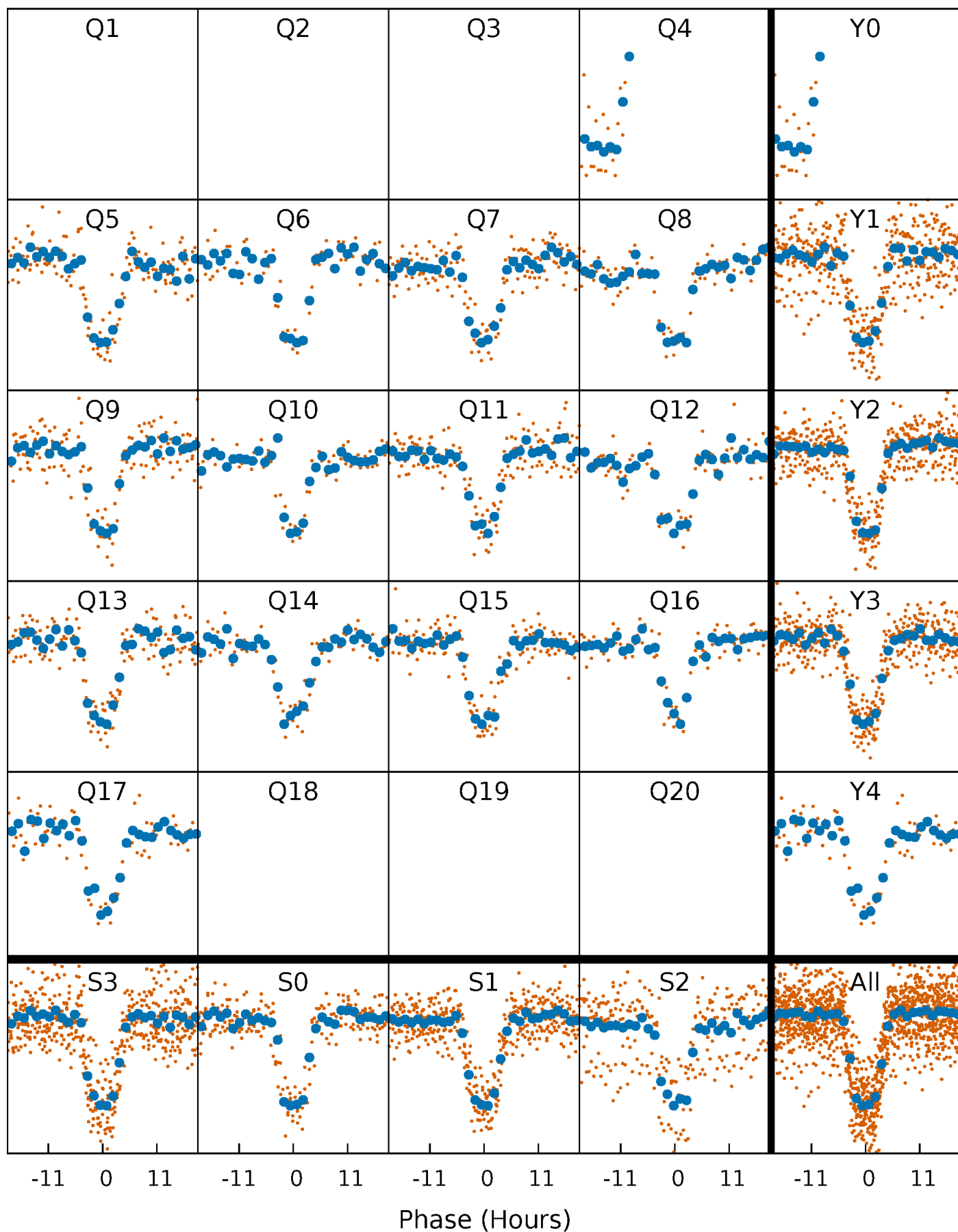


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



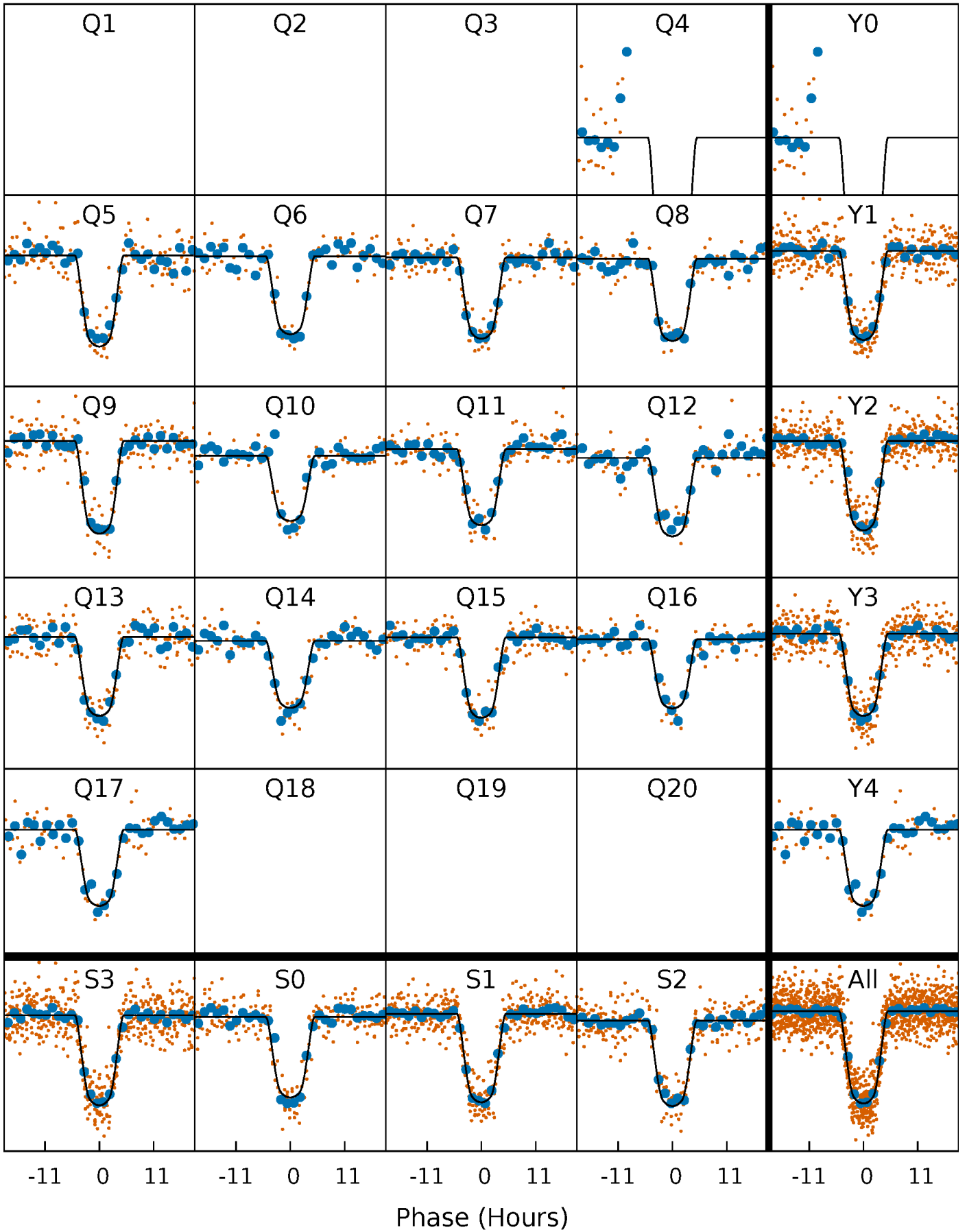
PDC Quarter-Phased Transit Curves

TCE 008892720-02 $P = 61.491381$ Days $T_0 = 151.273681$ (BKJD)



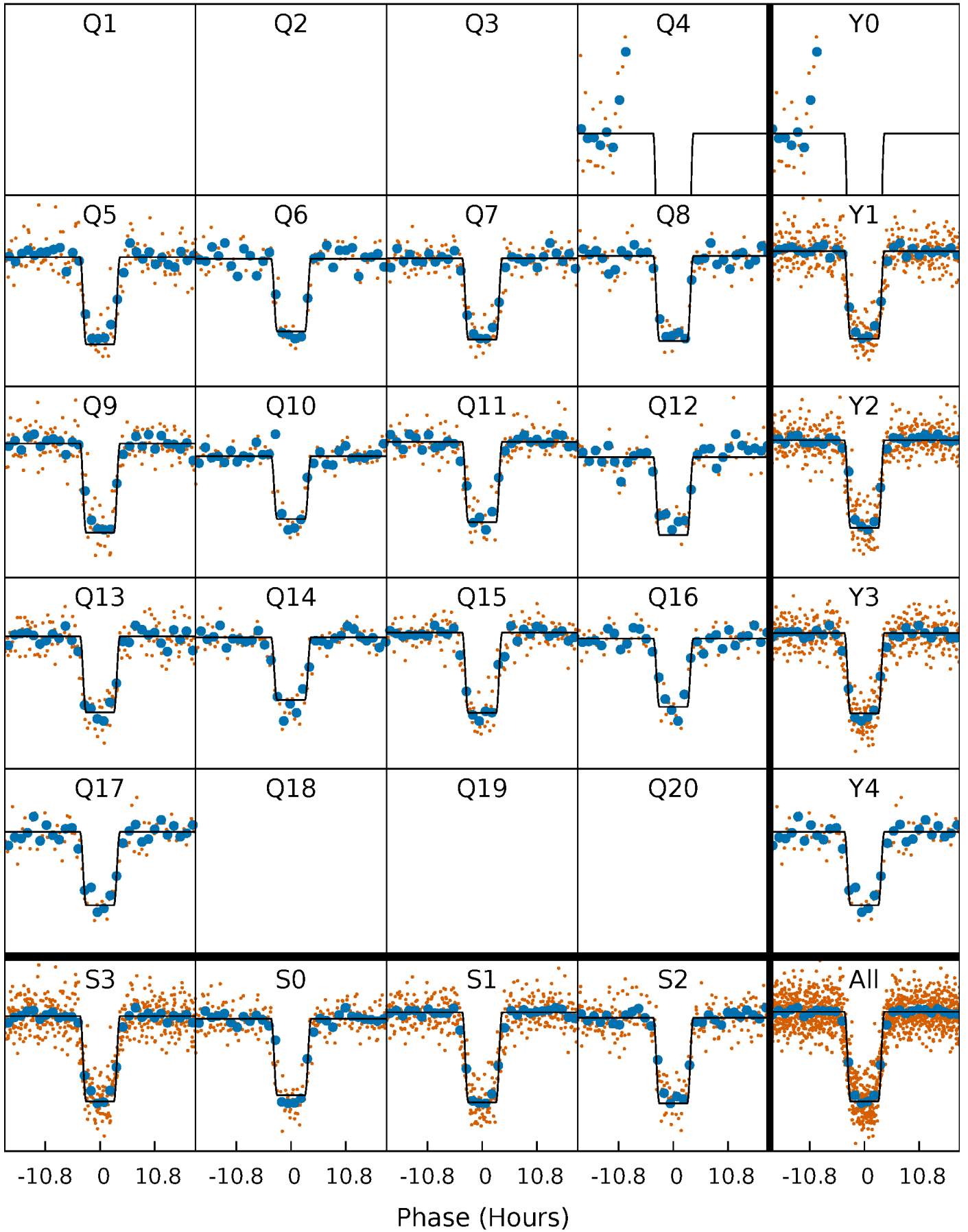
DV Quarter-Phased Transit Curves

TCE 008892720-02 P= 61.491381 Days $T_0=151.273681$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

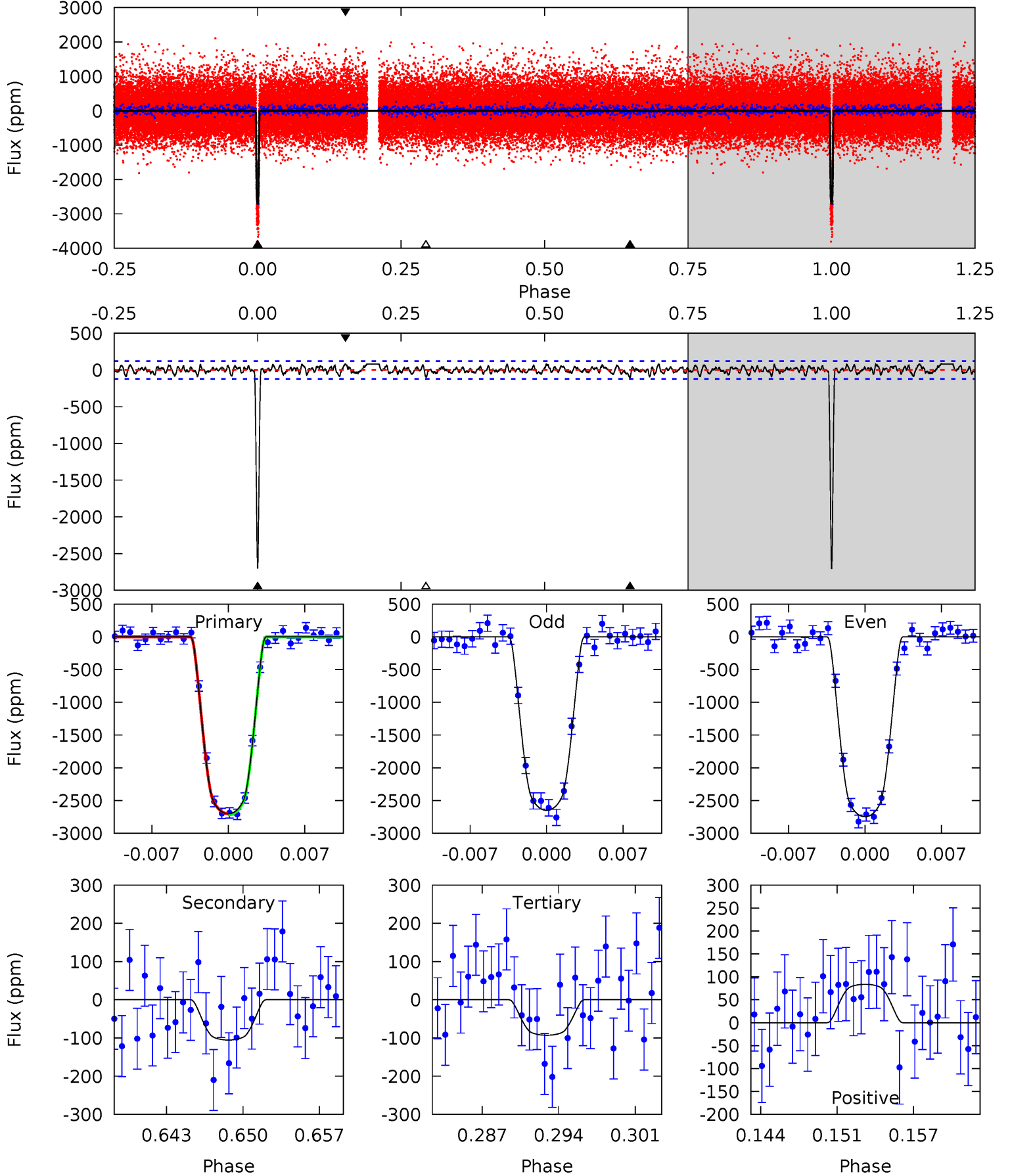
TCE 008892720-02 P= 61.492132 Days $T_0=151.265839$ (BKJD)



DV Model-Shift Uniqueness Test

008892720-02, P = 61.491381 Days, E = 151.273681 Days

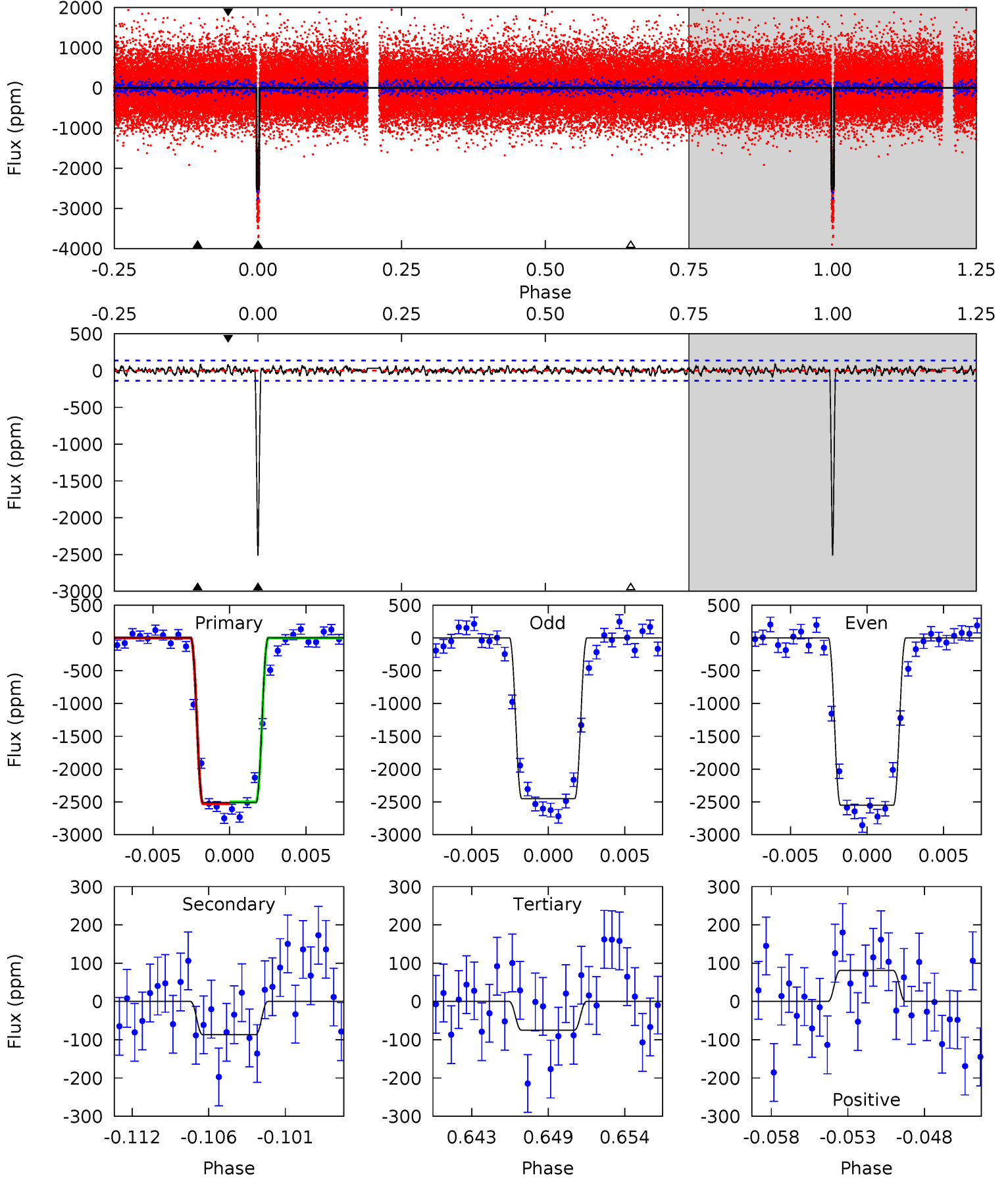
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
113.3	4.42	3.89	3.51	5.10	2.70	1.38	109.4	109.8	0.52	0.91	2.06	0.98	0.03	0.38



Alt Model-Shift Uniqueness Test

008892720-02, P = 61.492132 Days, E = 151.265839 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
94.3	3.26	2.81	3.04	5.15	2.79	1.00	91.5	91.3	0.45	0.22	1.85	1.00	0.03	0.52



Stellar Parameters For KIC 008892720

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5830^{+164}_{-205}	$4.540^{+0.037}_{-0.200}$	$-0.140^{+0.300}_{-0.300}$	$0.876^{+0.261}_{-0.087}$	$0.970^{+0.108}_{-0.121}$	$2.036^{+0.406}_{-1.047}$
	+3%/-4%	+1%/-4%	+214%/-214%	+30%/-10%	+11%/-12%	+20%/-51%
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 008892720-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-105 ± 24	$5.76^{+0.89}_{-0.50}$	628^{+44}_{-31}	3077^{+119}_{-131}	150^{+48}_{-43}
Alt.	-87 ± 27	$5.10^{+0.78}_{-0.41}$	628^{+44}_{-30}	3104^{+145}_{-176}	157^{+59}_{-54}

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

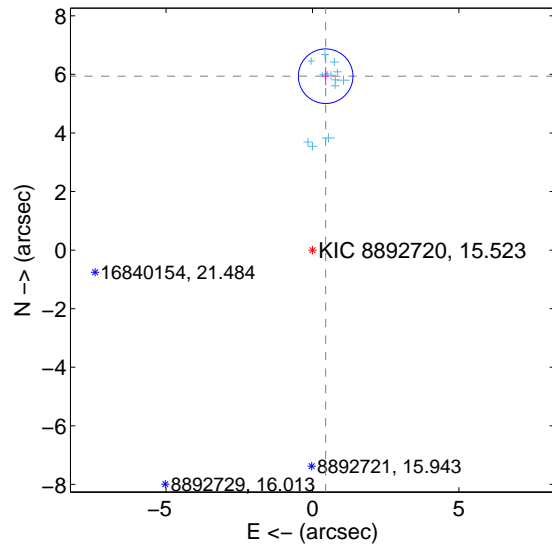
Supplemental centroid analysis for 008892720-02. Kepler magnitude: 15.52. Transit SNR 70.46

There are 13 quarters with good PRF difference image offsets

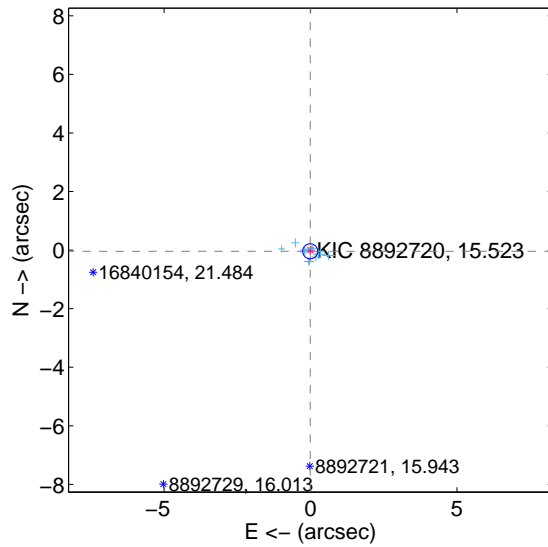
The OOT PRF centroid is offset from the target star catalog position by about 6.00 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	5.955 ± 0.311	19.18	-0.451 ± 0.117	5.938 ± 0.308
PRF-fit source offset from KIC position	0.042 ± 0.086	0.49	0.011 ± 0.102	-0.041 ± 0.084
photometric centroid source offset	1.57 ± 0.16	9.91	0.13 ± 0.10	-1.57 ± 0.16

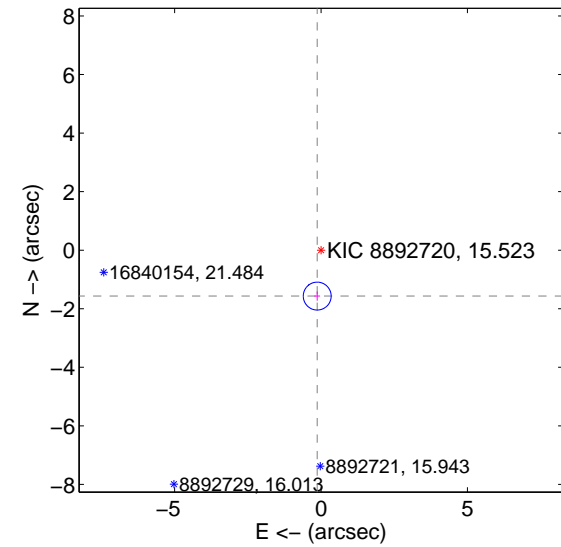
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position



offset from photometric centroids

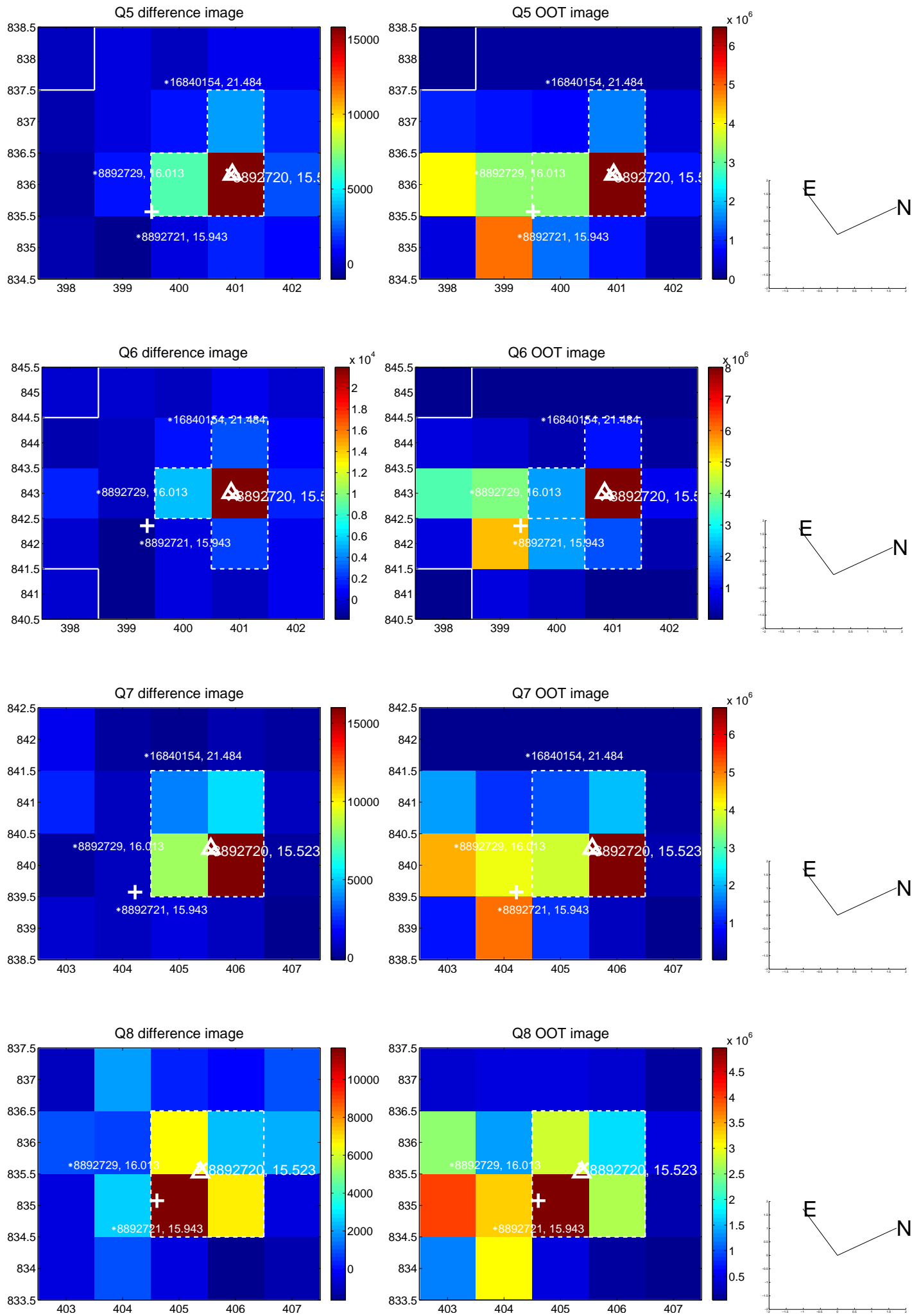


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

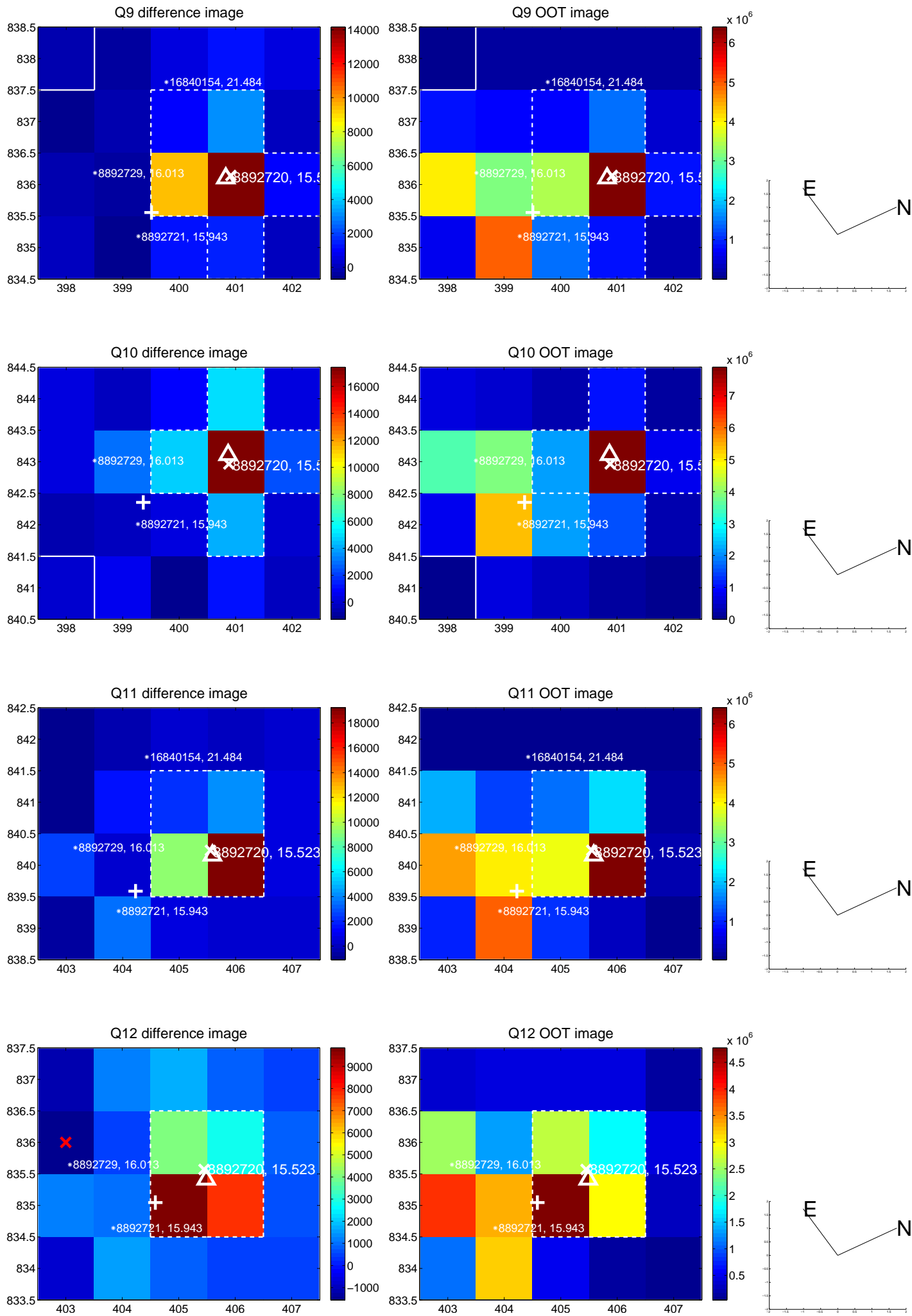
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



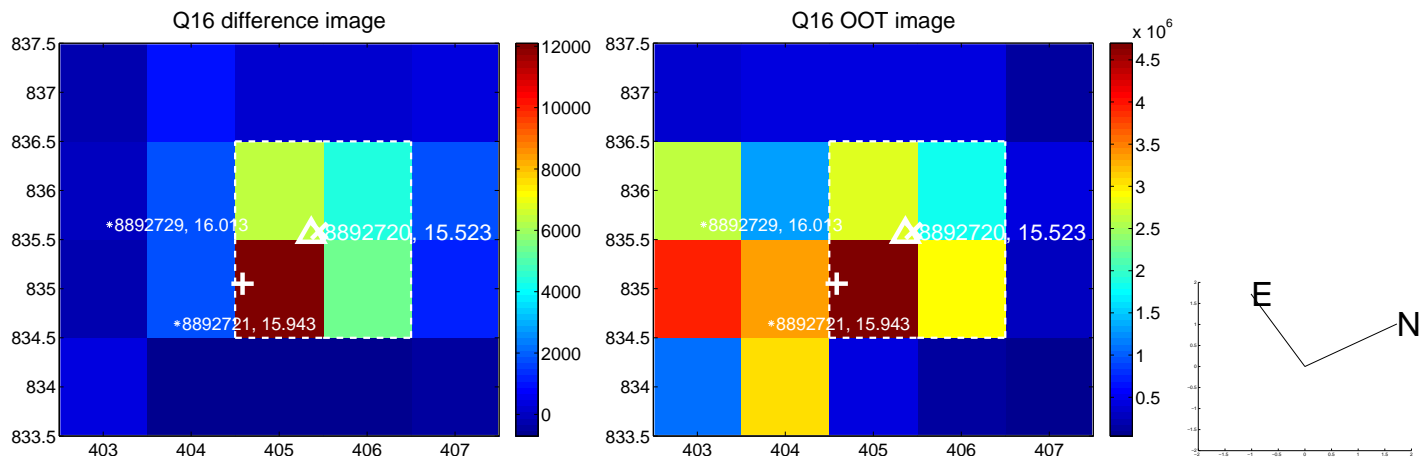
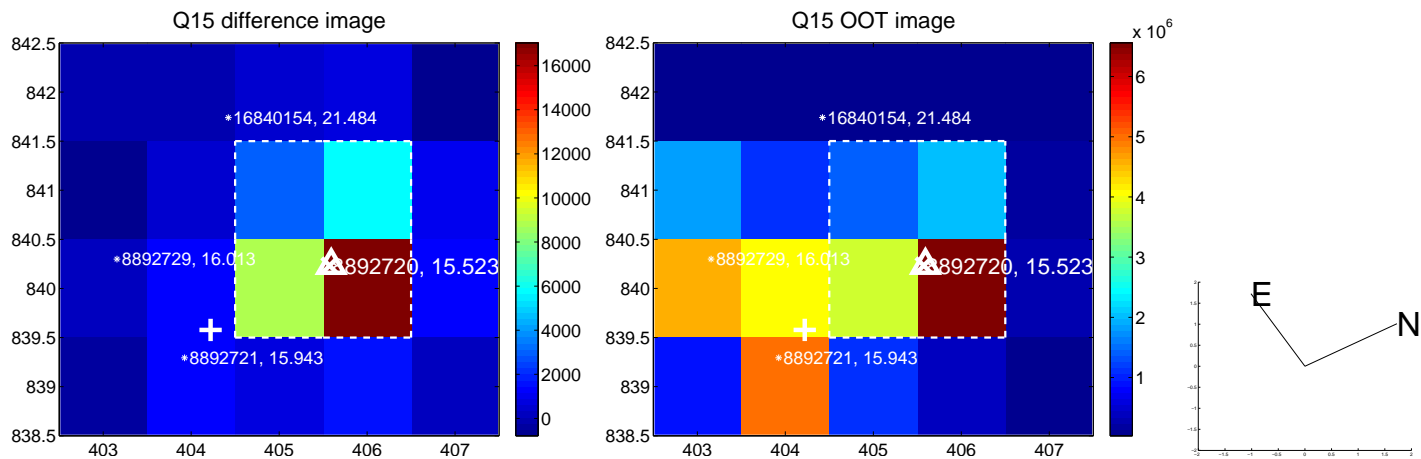
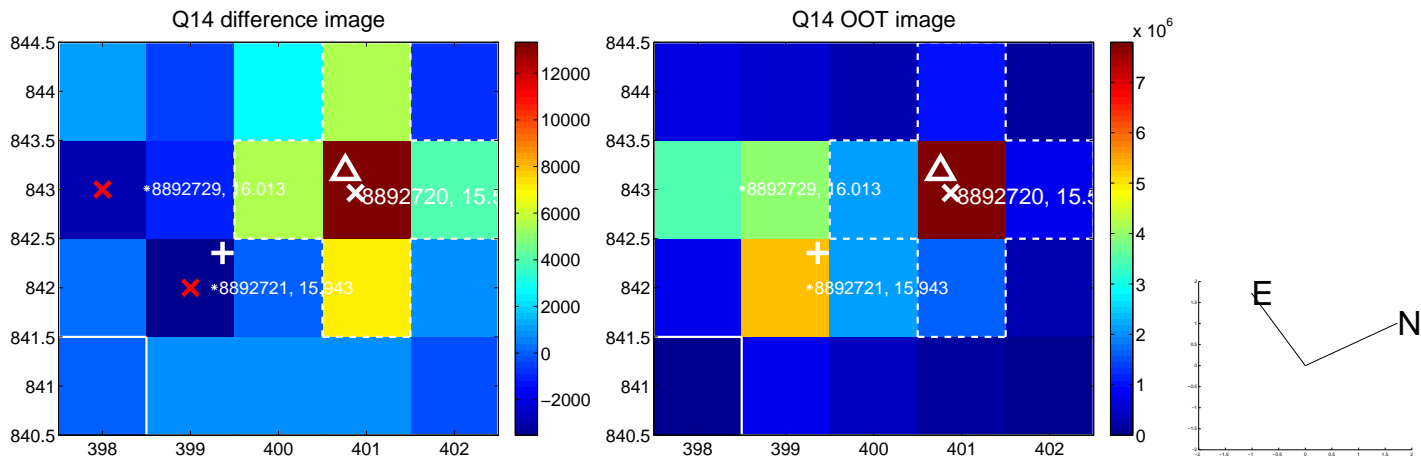
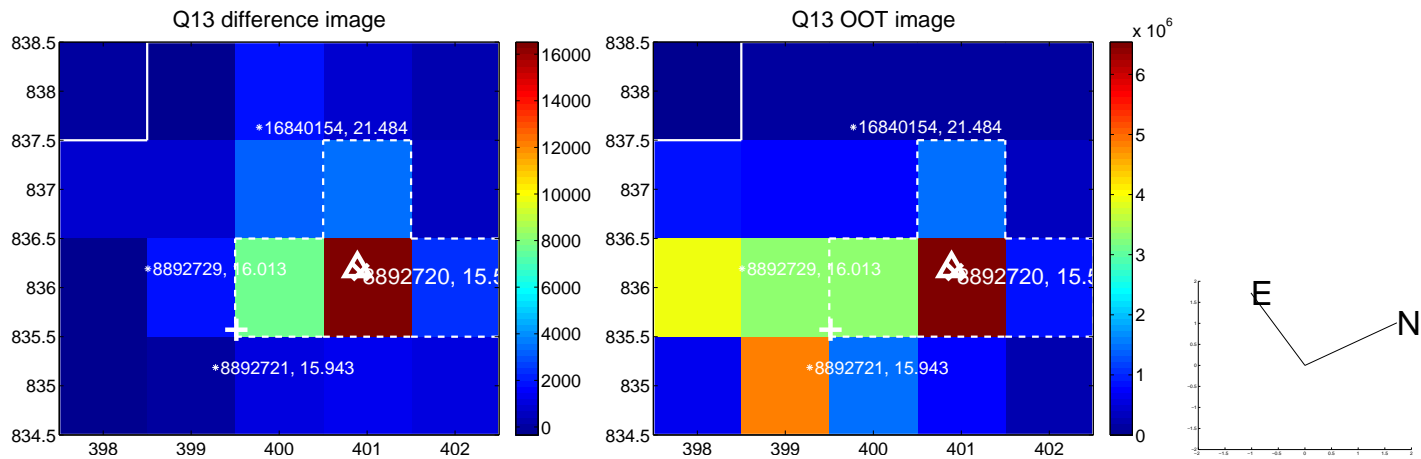
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



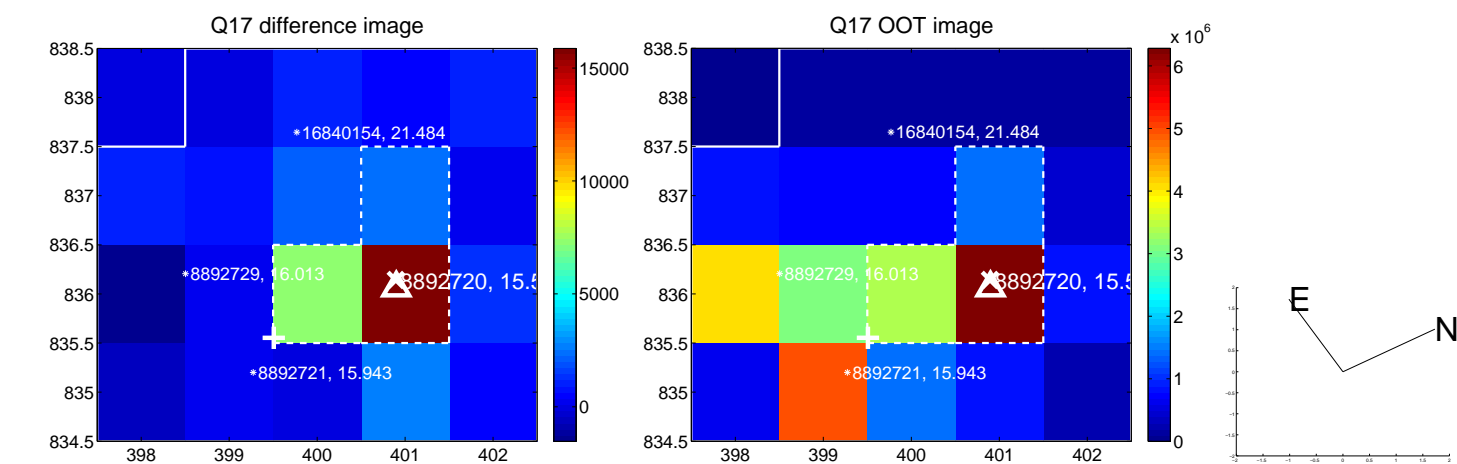
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



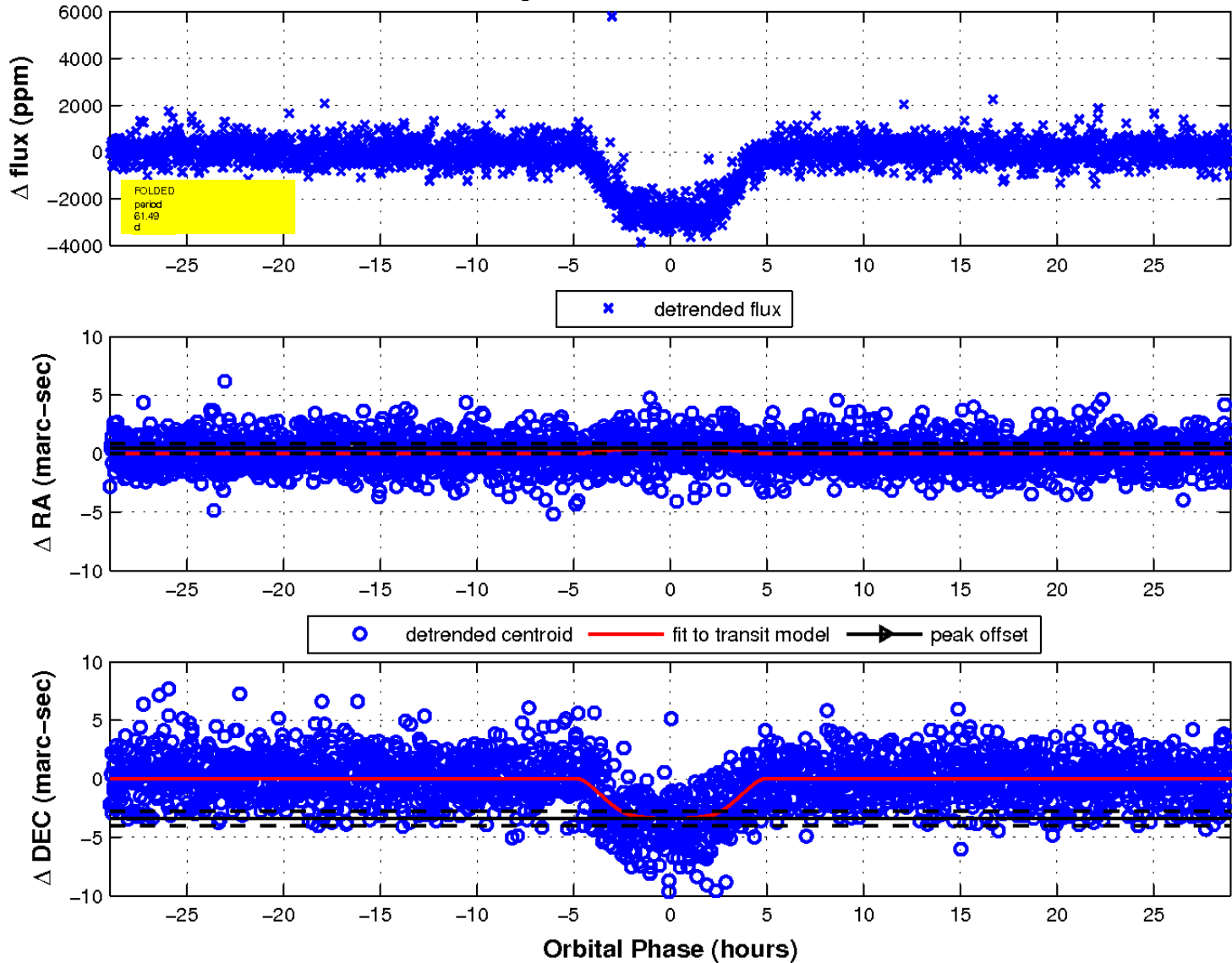
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



fluxWeightedCentroids, Planet 2 of 2



UKIRT Image

Declination

