

KIC 007670943

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})
007670943-01	OBS	0269.01	18.011596	149.070166	104.3	6.640	38.9	42.0	1.46	6477	1.75	155.72
007670943-02	OBS	No	320.951171	213.895762	58.0	16.520	7.6	6.7	1.46	6477	1.22	3.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007670943-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
007670943-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_SATURATED

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

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

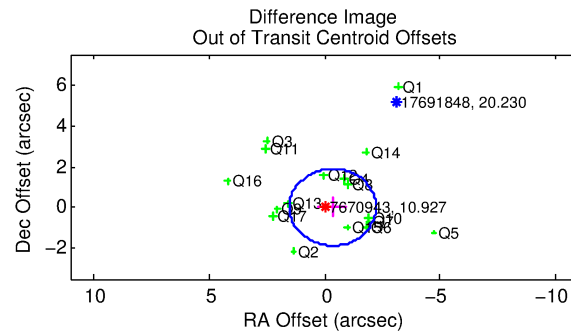
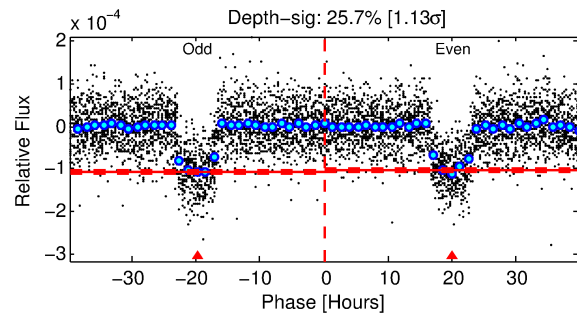
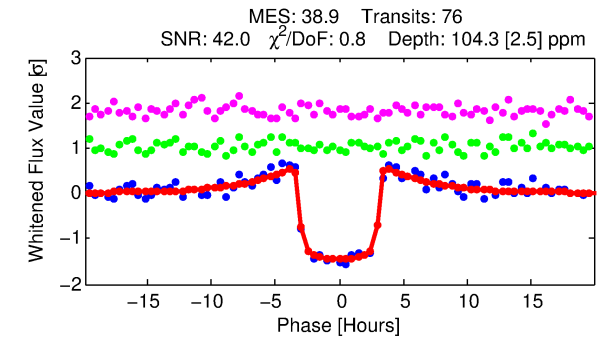
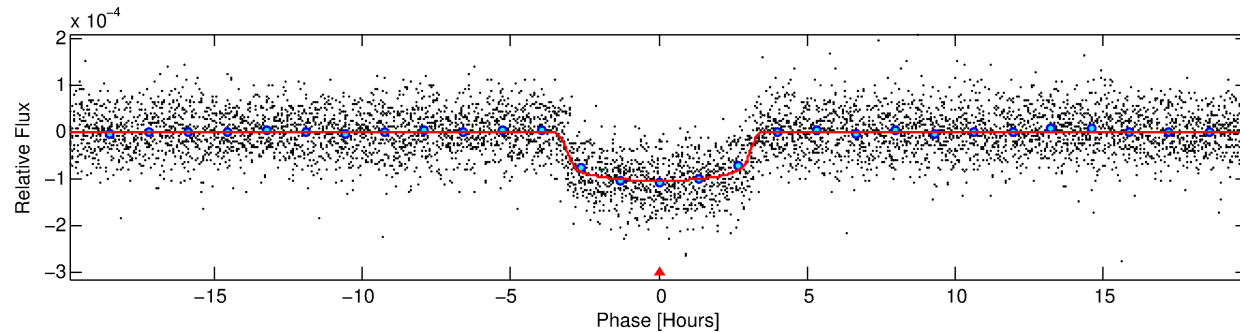
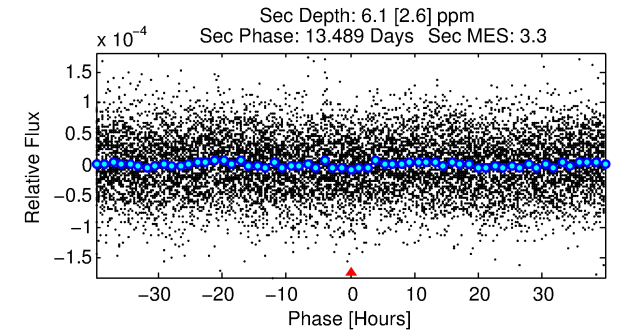
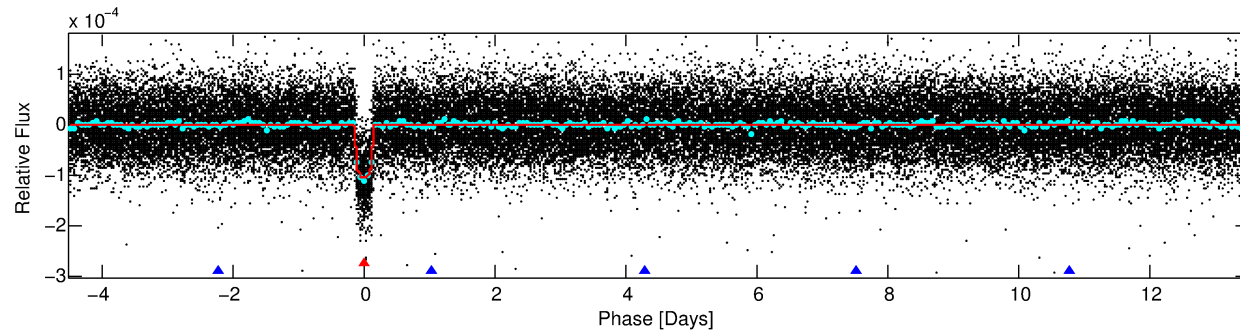
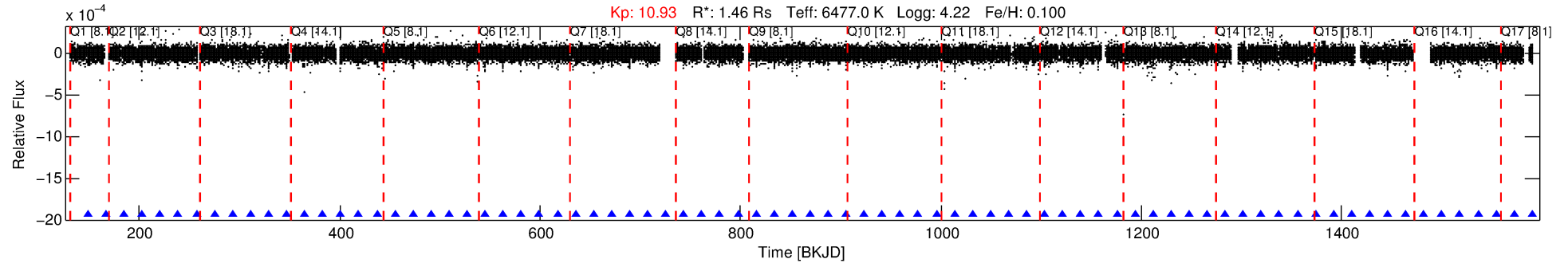
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 007670943-01

No Significant Match Found

DV One-Page Summary

KIC: 7670943 Candidate: 1 of 2 Period: 18.012 d
KOI: K00269.01 Corr: 0.993



DV Fit Results:

Period = 18.01160 [0.00005] d
Epoch = 149.0702 [0.0021] BKJD
Rp/R* = 0.0110 [0.0005]
a/R* = 9.33 [2.21]
b = 0.91 [0.05]
Seff = 155.72 [14.97]
Teq = 901 [22] K
Rp = 1.75 [0.13] Re
a = 0.1468 [0.0069] AU
Ag = 23.40 [10.31] [2.17σ]
Teffp = 3063 [338] K [6.38σ]

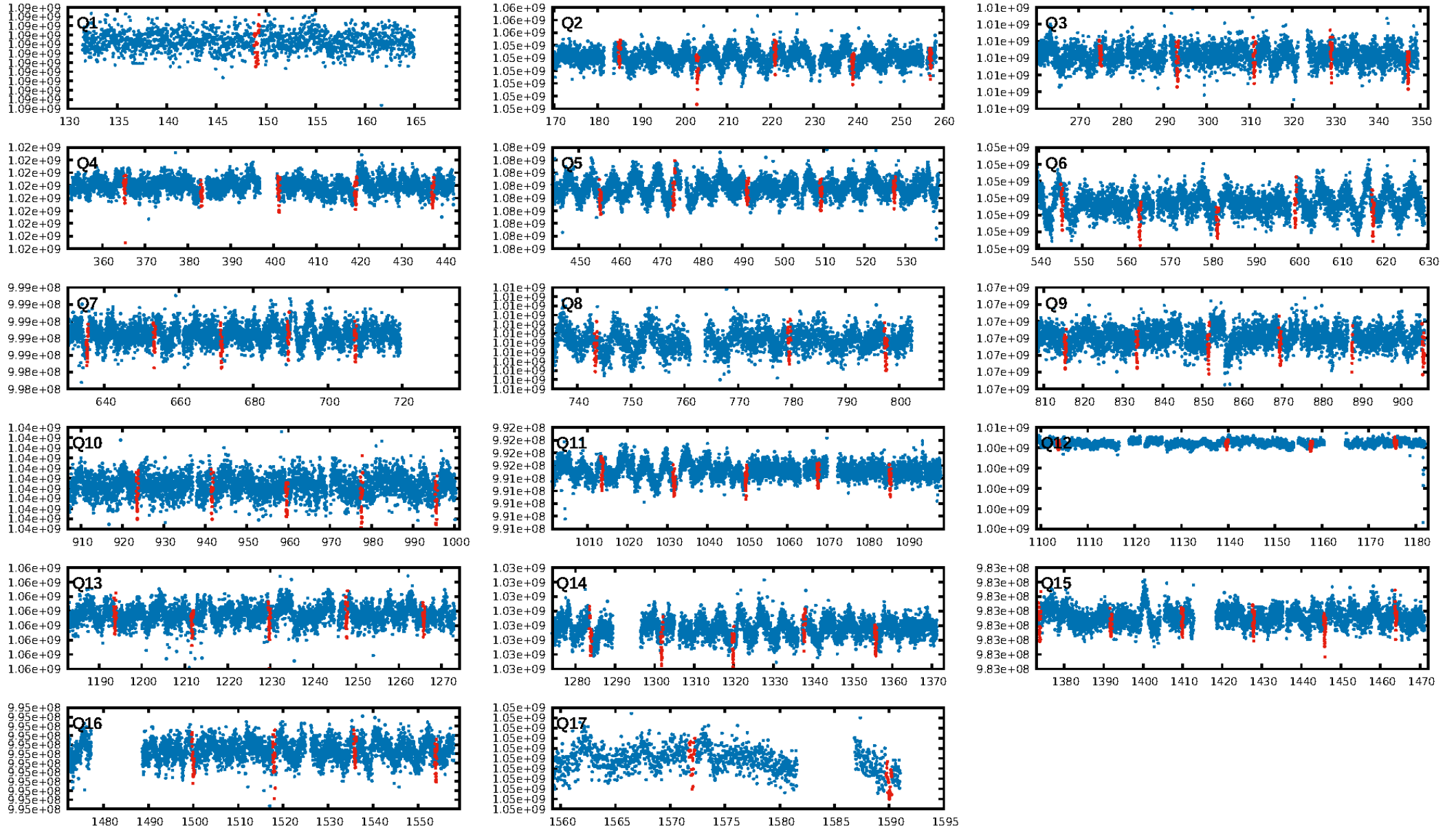
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [408.35σ]
ModelChiSquare2-sig: 99.8%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 8.69e-306
RollingBand-fgt: 1.00 [73/73]
GhostDiagnostic-chr: 5.751
Centroid-sig: N/A
Centroid-so: 0.371 arcsec [1.24σ]
OotOffset-rm: 0.343 arcsec [0.55σ]
KicOffset-rm: 0.431 arcsec [0.68σ]
OotOffset-st: 4/4/4/5 [17]
KicOffset-st: 4/4/4/5 [17]
DiffImageQuality-fgm: 0.88 [15/17]
DiffImageOverlap-fno: 1.00 [17/17]

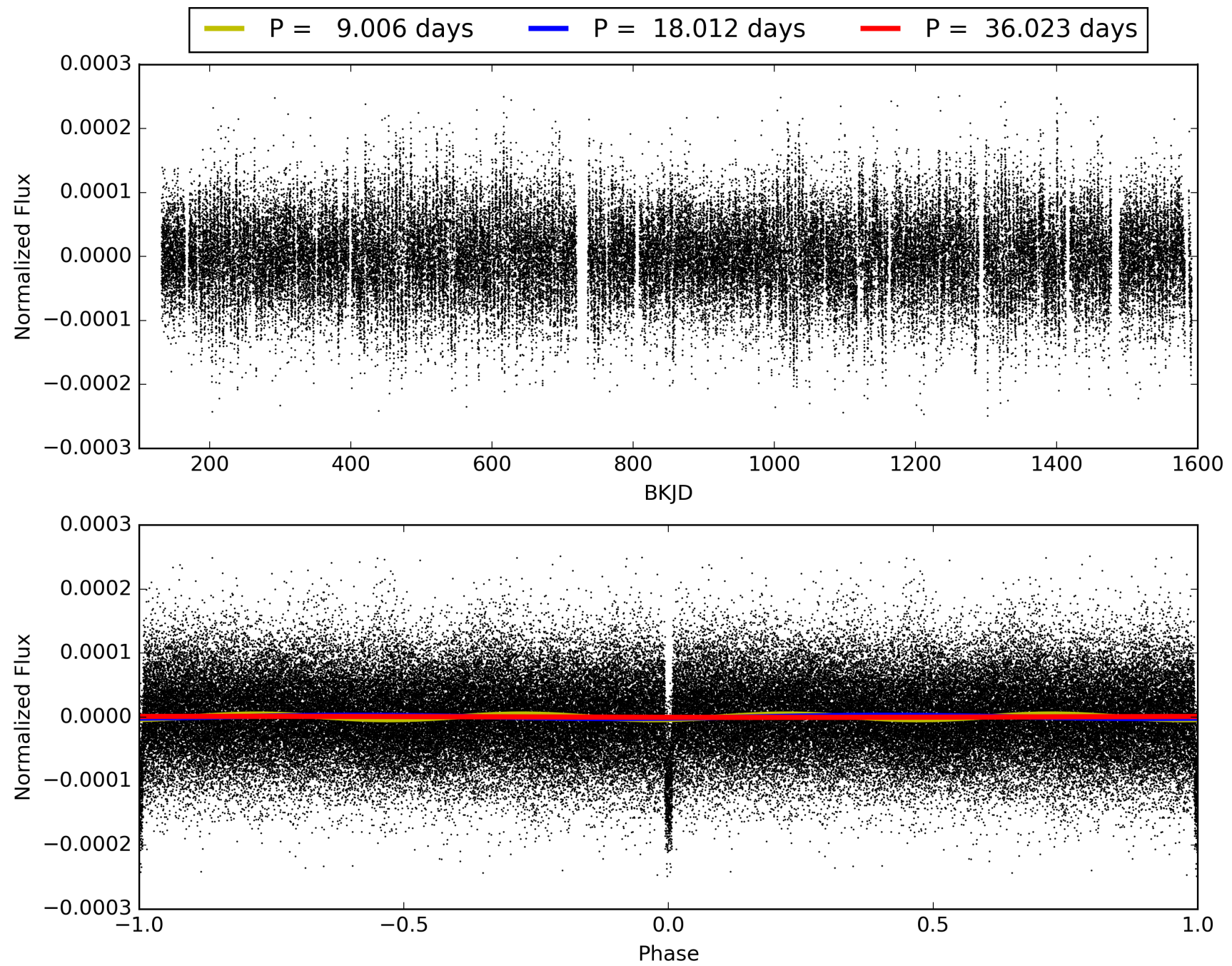
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:12:24 Z

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

TCE 007670943-01, PDC Light Curves

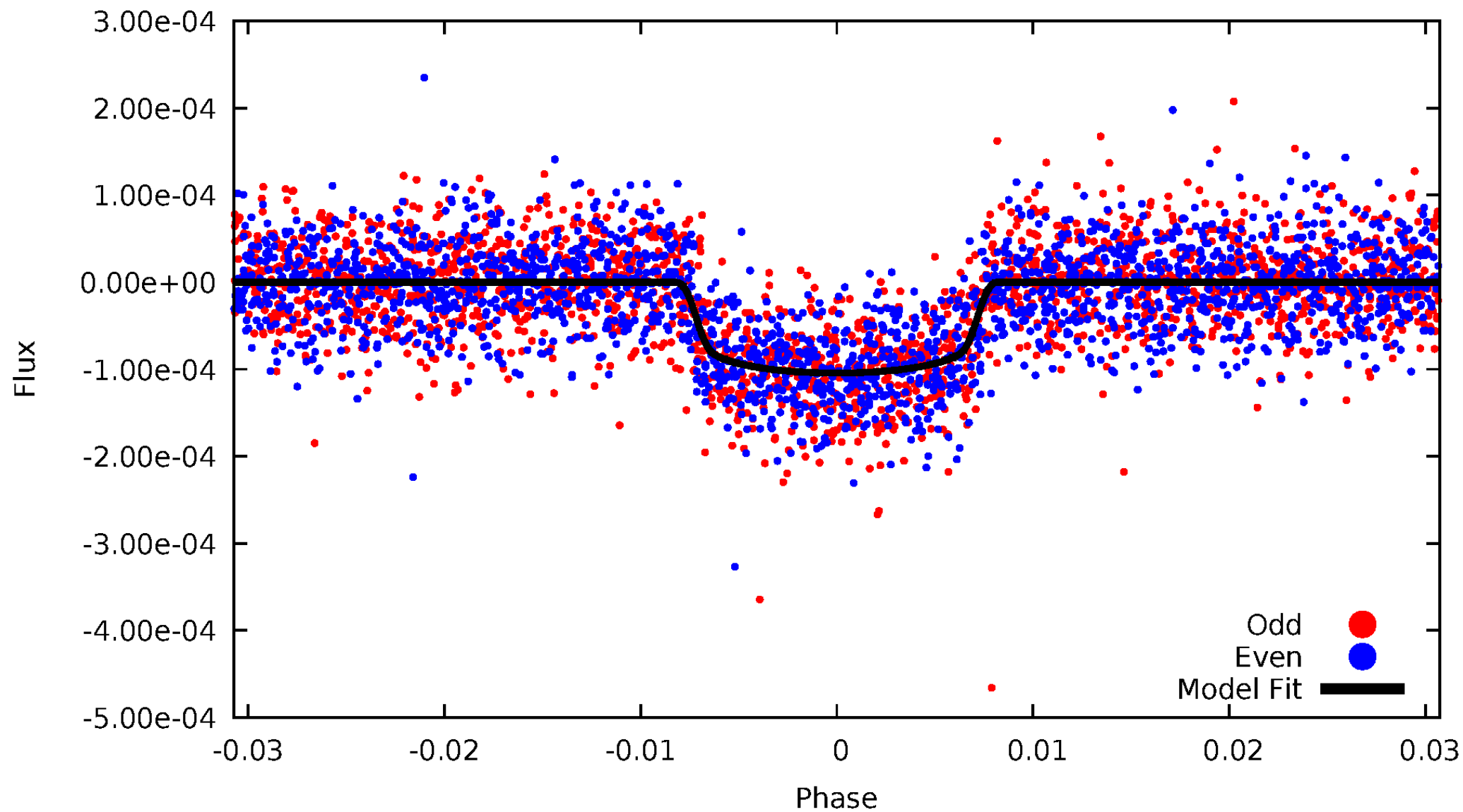


TCE 007670943-01



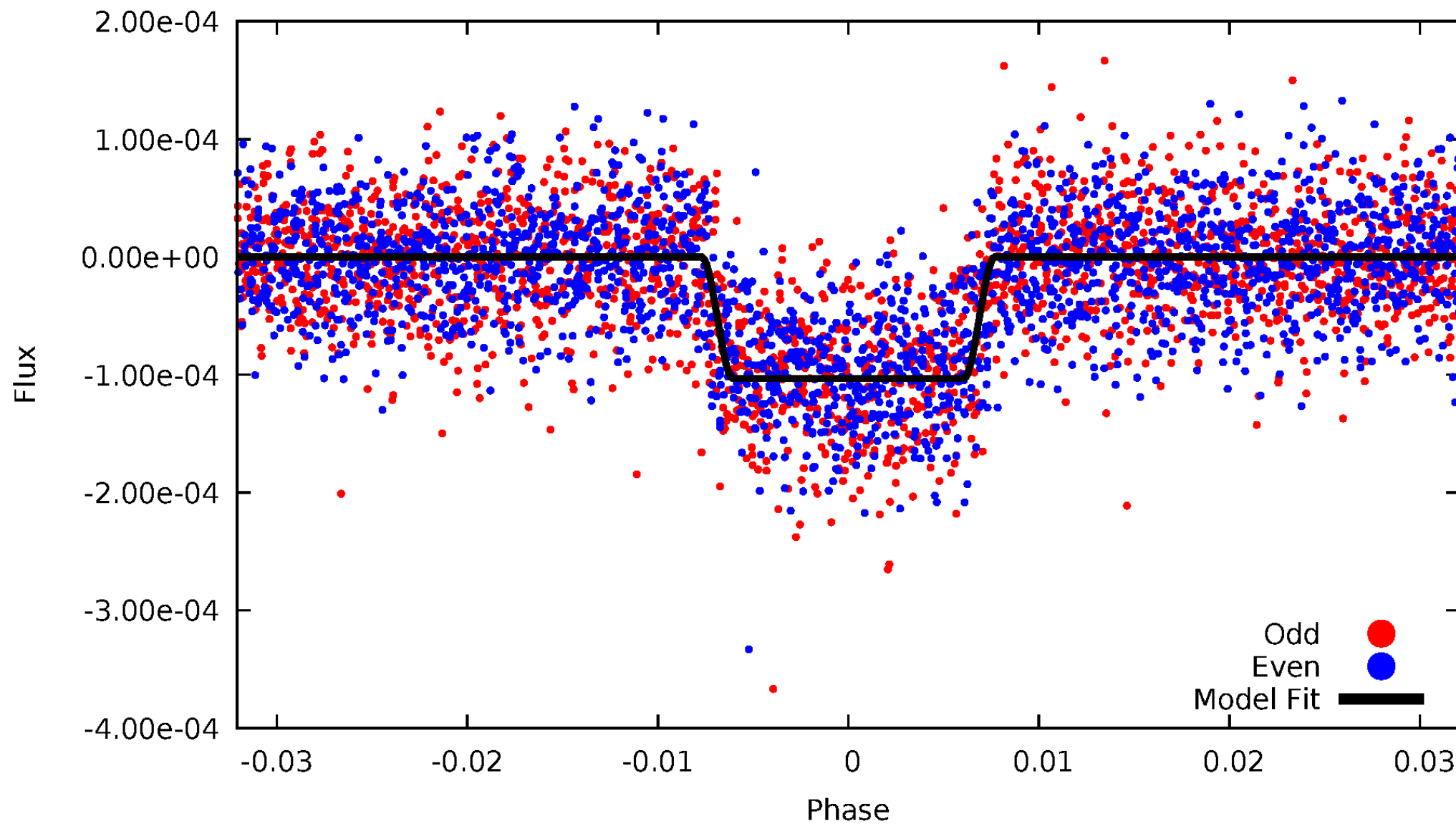
DV Odd/Even

TCE 007670943-01



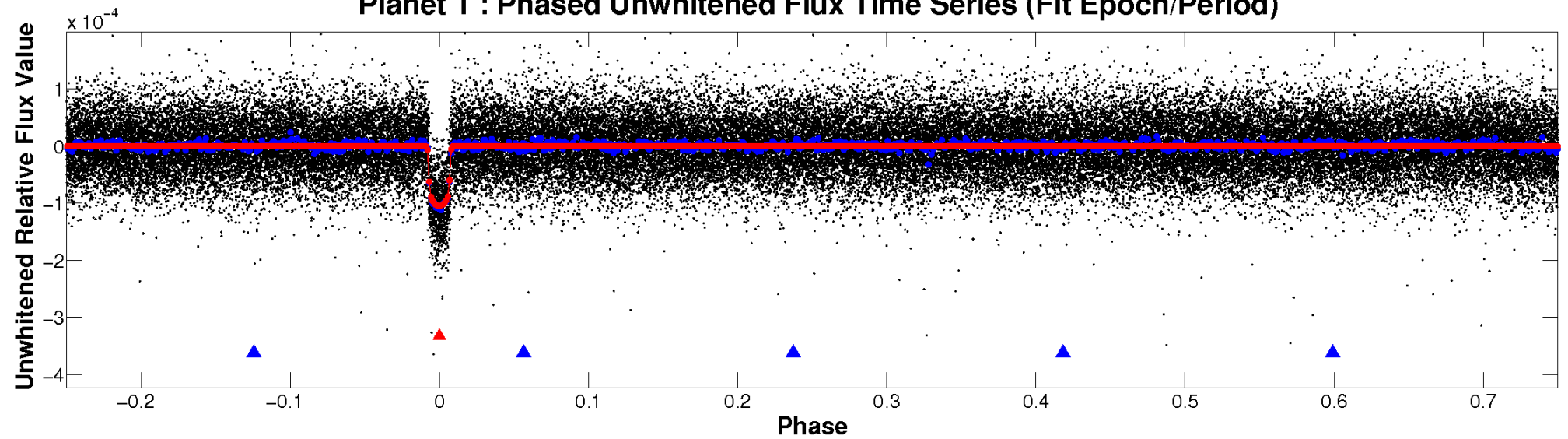
ALT Odd/Even

TCE 007670943-01

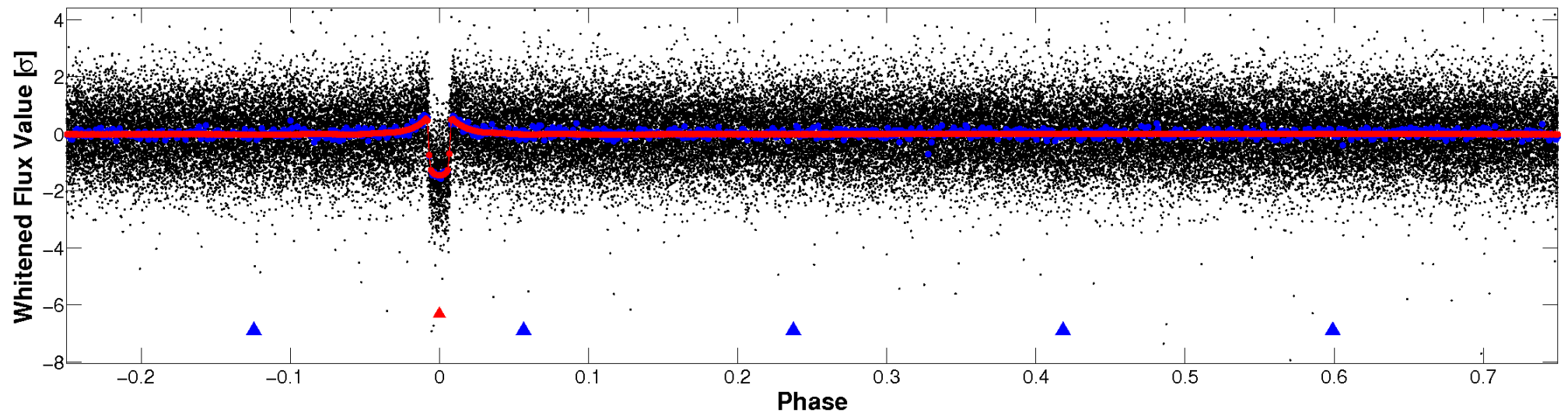


Non-Whitened Vs. Whitened Light Curve

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

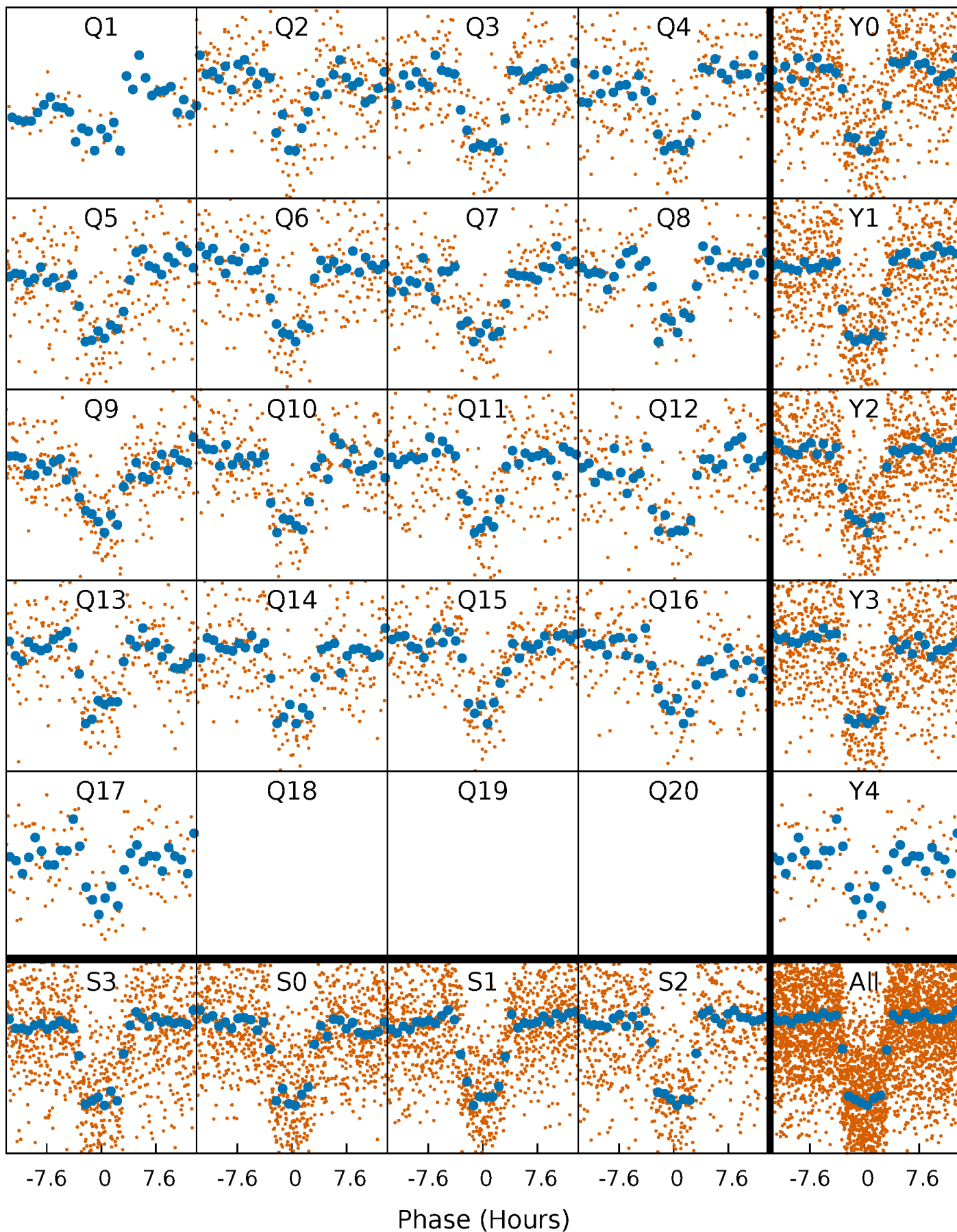


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



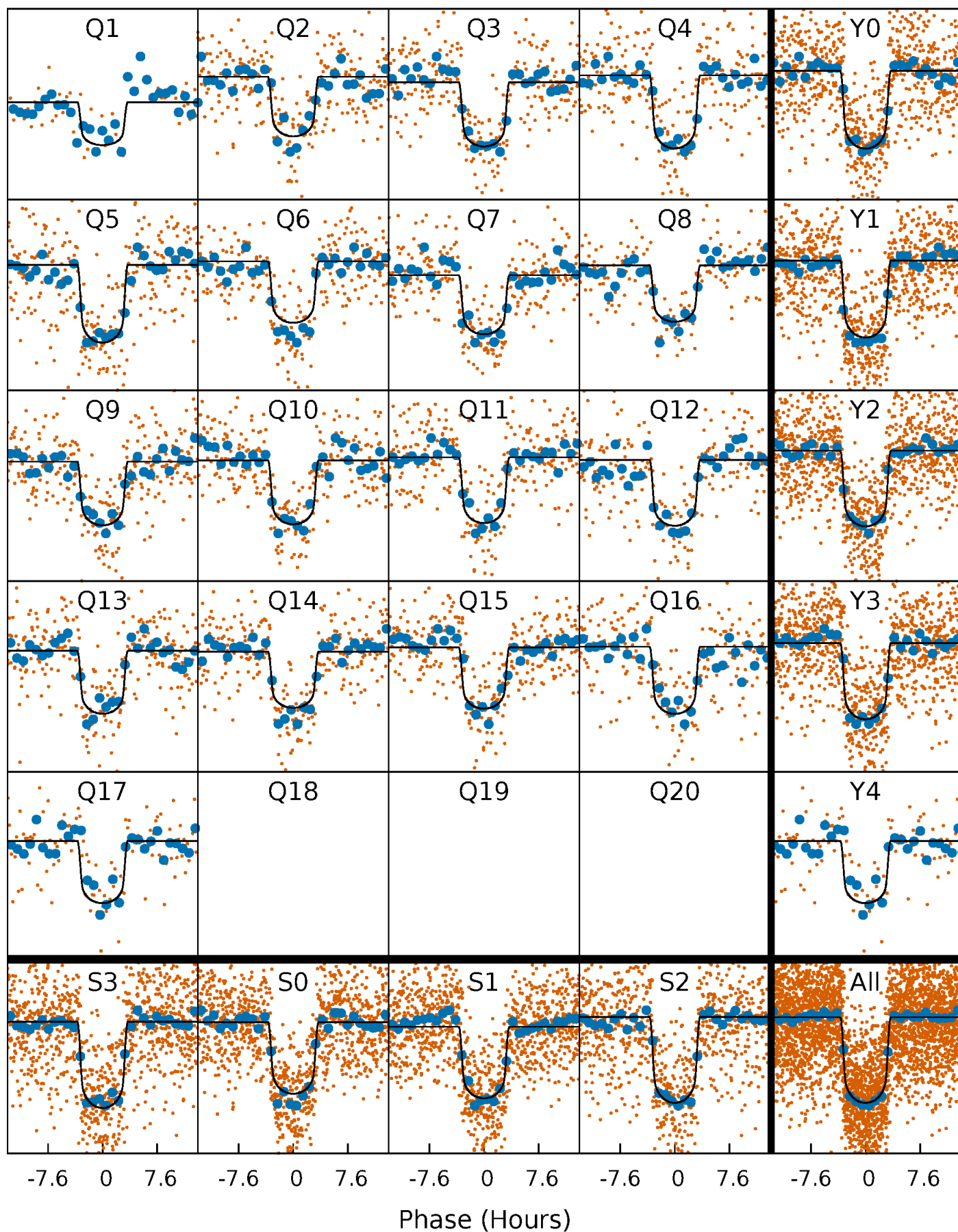
PDC Quarter-Phased Transit Curves

TCE 007670943-01 P= 18.011596 Days $T_0=149.070166$ (BKJD)



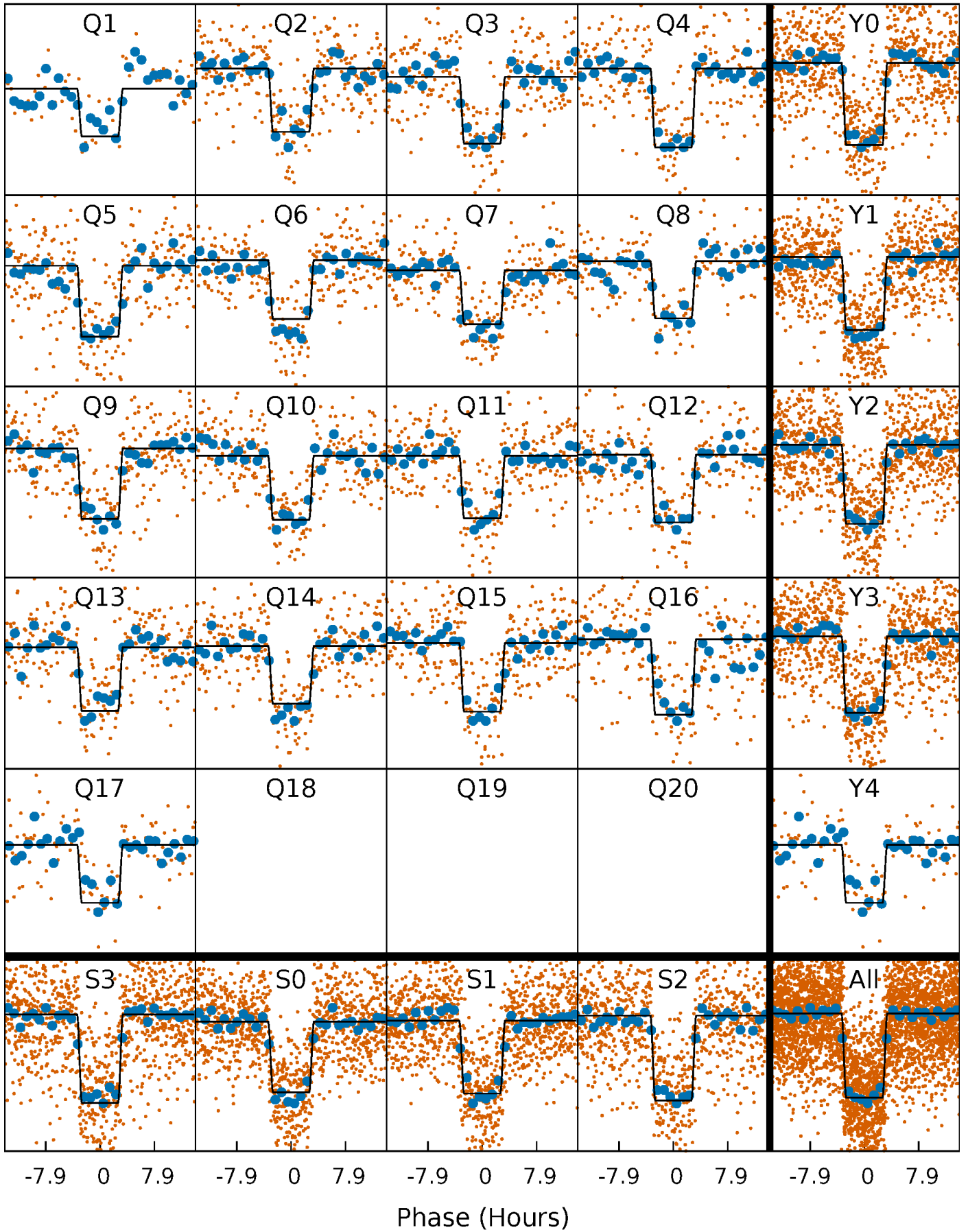
DV Quarter-Phased Transit Curves

TCE 007670943-01 P= 18.011596 Days $T_0=149.070166$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

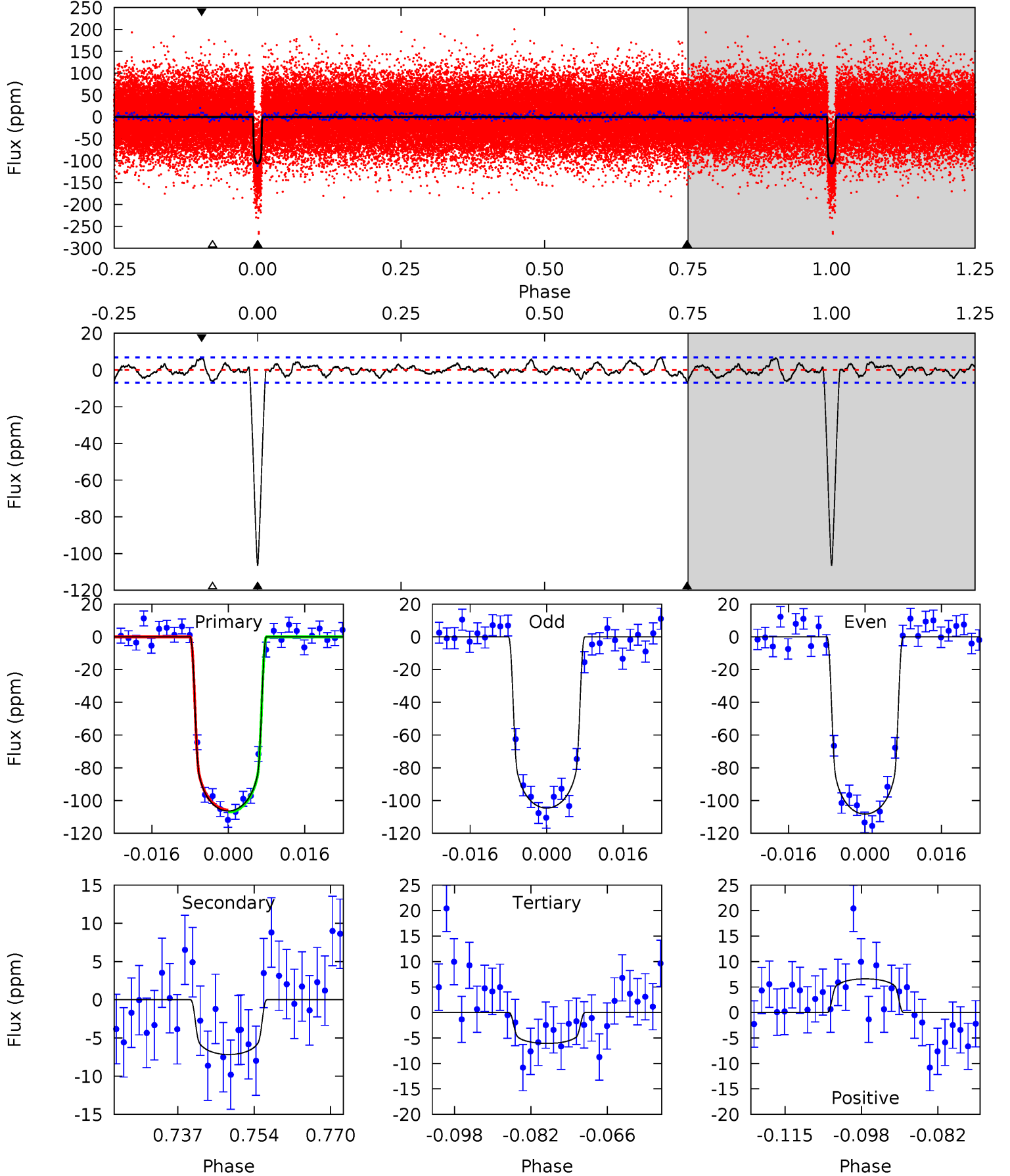
TCE 007670943-01 P= 18.011589 Days $T_0=149.070835$ (BKJD)



DV Model-Shift Uniqueness Test

007670943-01, $P = 18.011596$ Days, $E = 131.058570$ Days

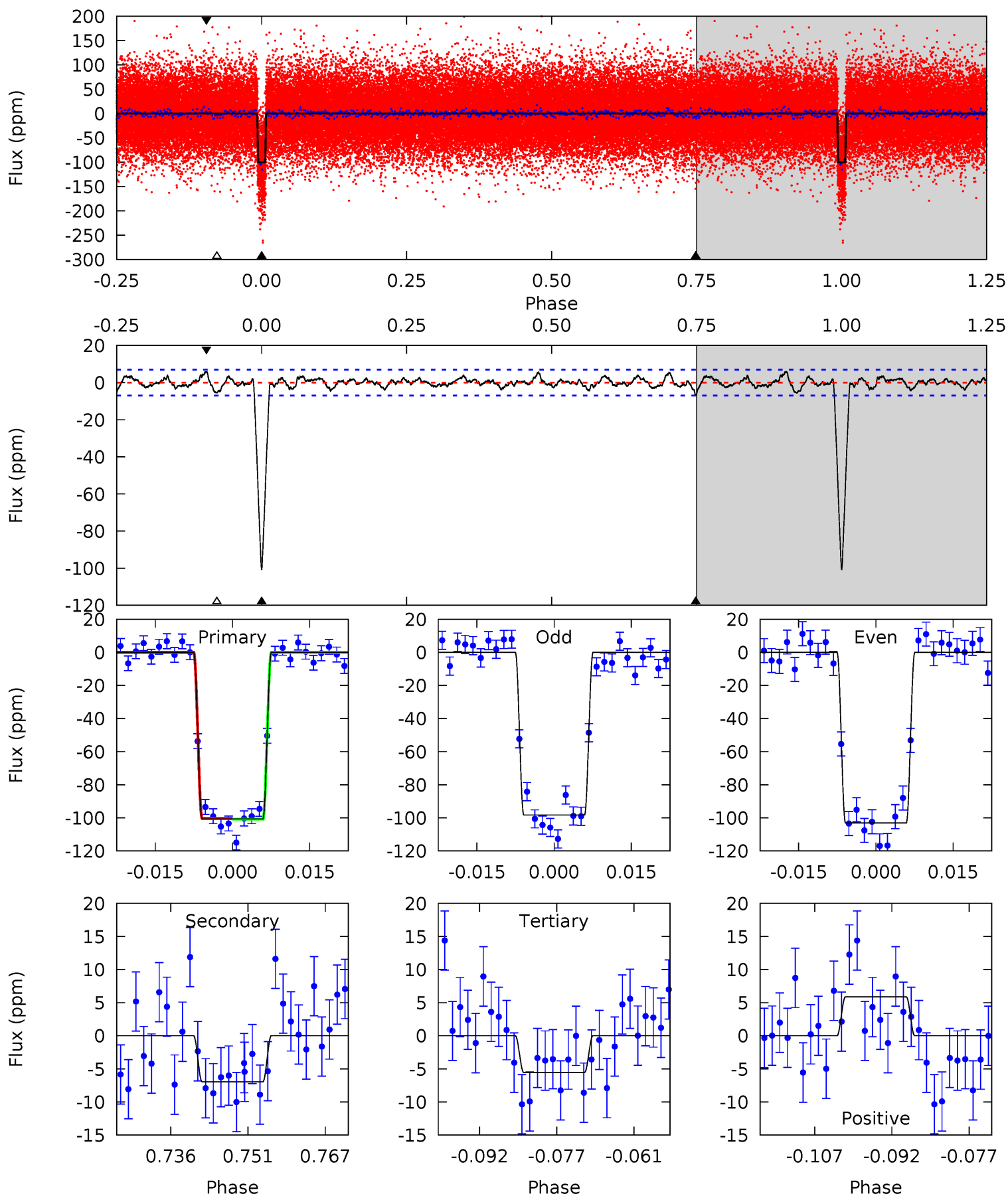
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
76.2	5.14	4.35	4.73	4.93	2.40	1.62	71.9	71.5	0.79	0.41	1.31	0.99	0.06	0.43



Alt Model-Shift Uniqueness Test

007670943-01, $P = 18.011589$ Days, $E = 131.059246$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
71.5	4.94	3.95	4.17	4.94	2.42	1.36	67.6	67.4	0.99	0.77	1.74	0.98	0.06	0.16



Stellar Parameters For KIC 007670943

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6477^{+103}_{-116}	$4.224^{+0.033}_{-0.027}$	$0.100^{+0.100}_{-0.150}$	$1.459^{+0.058}_{-0.086}$	$1.300^{+0.059}_{-0.072}$	$0.590^{+0.080}_{-0.052}$
	+2%/-2%	+1%/-1%	+100%/-150%	+4%/-6%	+5%/-6%	+14%/-9%
Source	SPE8	AST69	SPE69	DSEP		

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

Secondary Eclipse Parameters for KIC 007670943-01 / KOI 0269.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-7 ± 1	$1.75^{+0.10}_{-0.09}$	1255^{+24}_{-25}	3617^{+131}_{-141}	28^{+6}_{-6}
Alt.	-7 ± 1	$1.62^{+0.09}_{-0.09}$	1258^{+26}_{-29}	3702^{+143}_{-151}	31^{+8}_{-7}

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

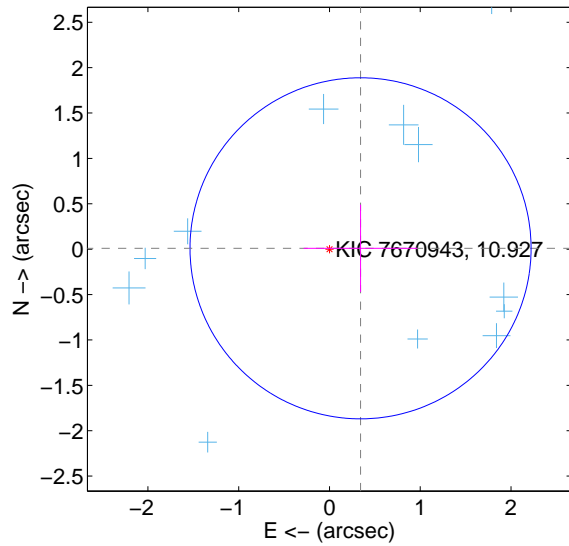
Supplemental centroid analysis for 007670943-01. **Kepler magnitude: 10.93.** Transit SNR 41.95

There are 15 quarters with good PRF difference image offsets

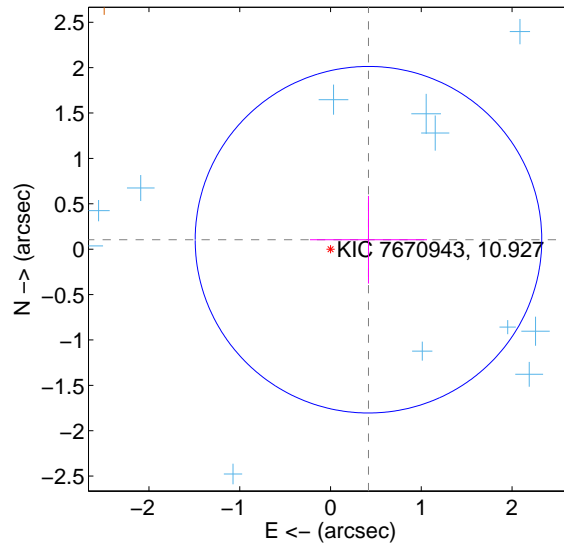
The direct PRF centroid is offset from the target star catalog position by about 0.67 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.343 ± 0.626	0.55	-0.342 ± 0.626	0.009 ± 0.480
PRF-fit source offset from KIC position	0.431 ± 0.636	0.68	-0.418 ± 0.645	0.104 ± 0.483
photometric centroid source offset	0.37 ± 0.30	1.24	-0.16 ± 0.32	0.33 ± 0.29

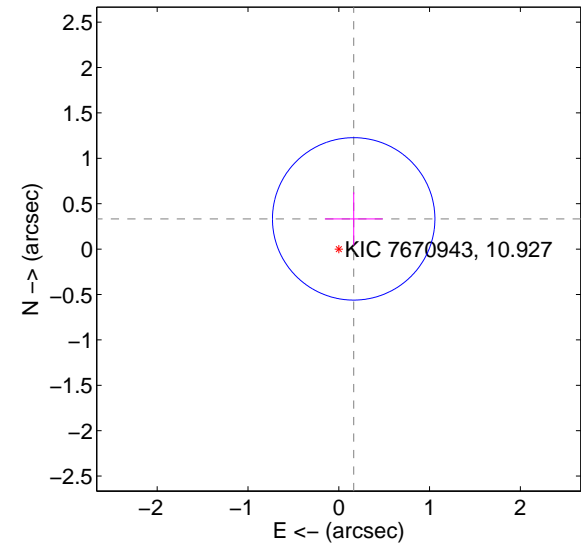
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

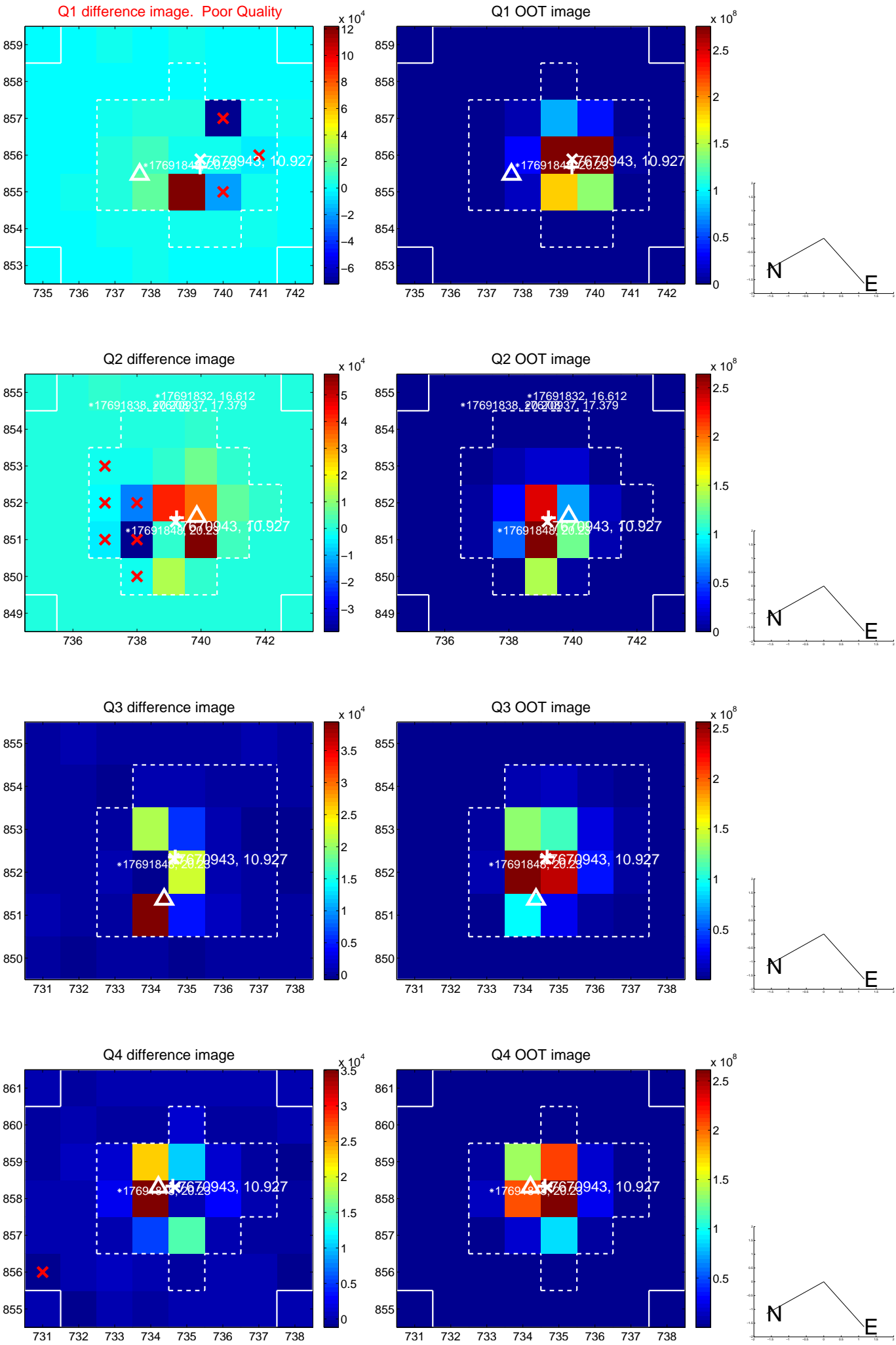


offset from photometric centroids

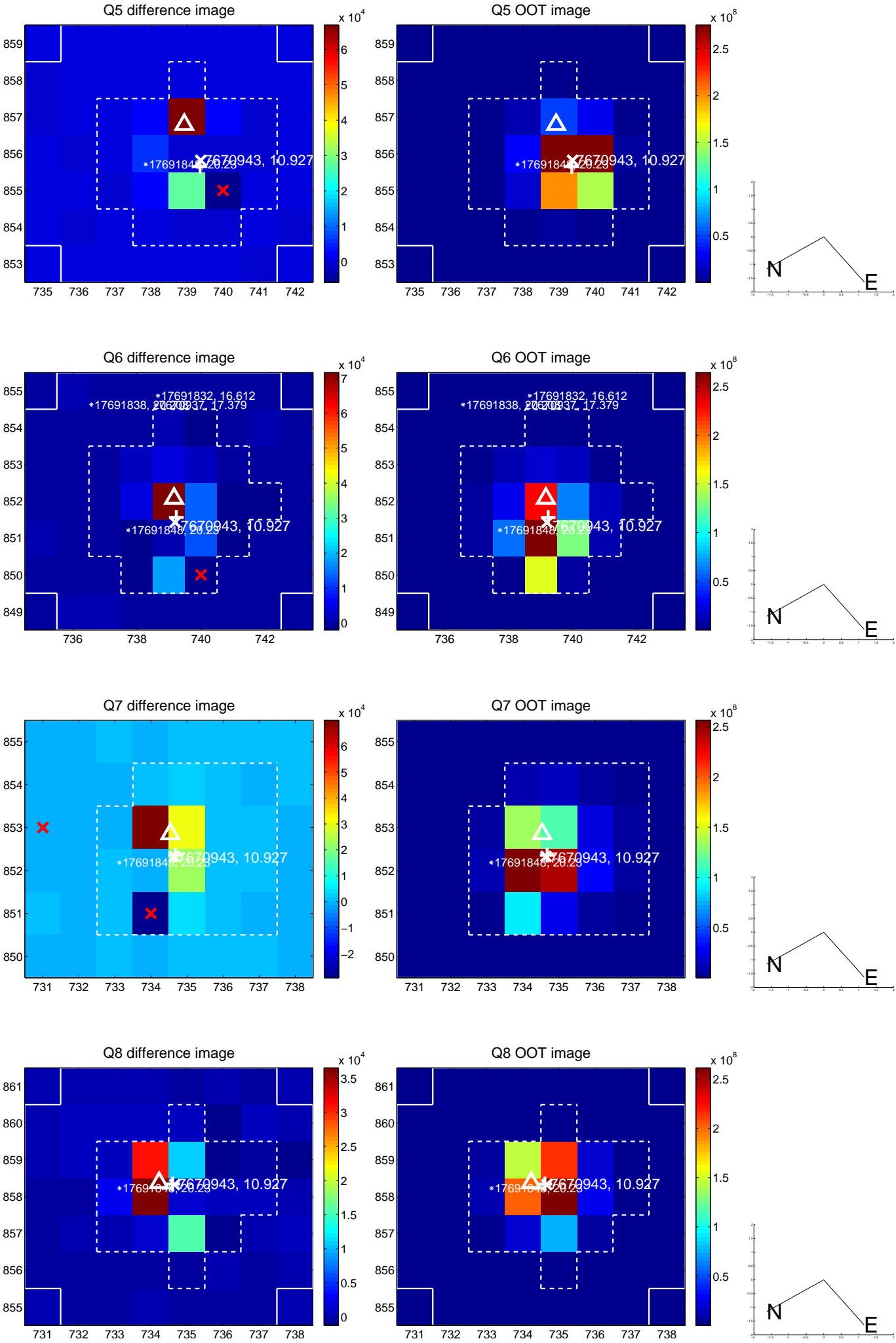


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

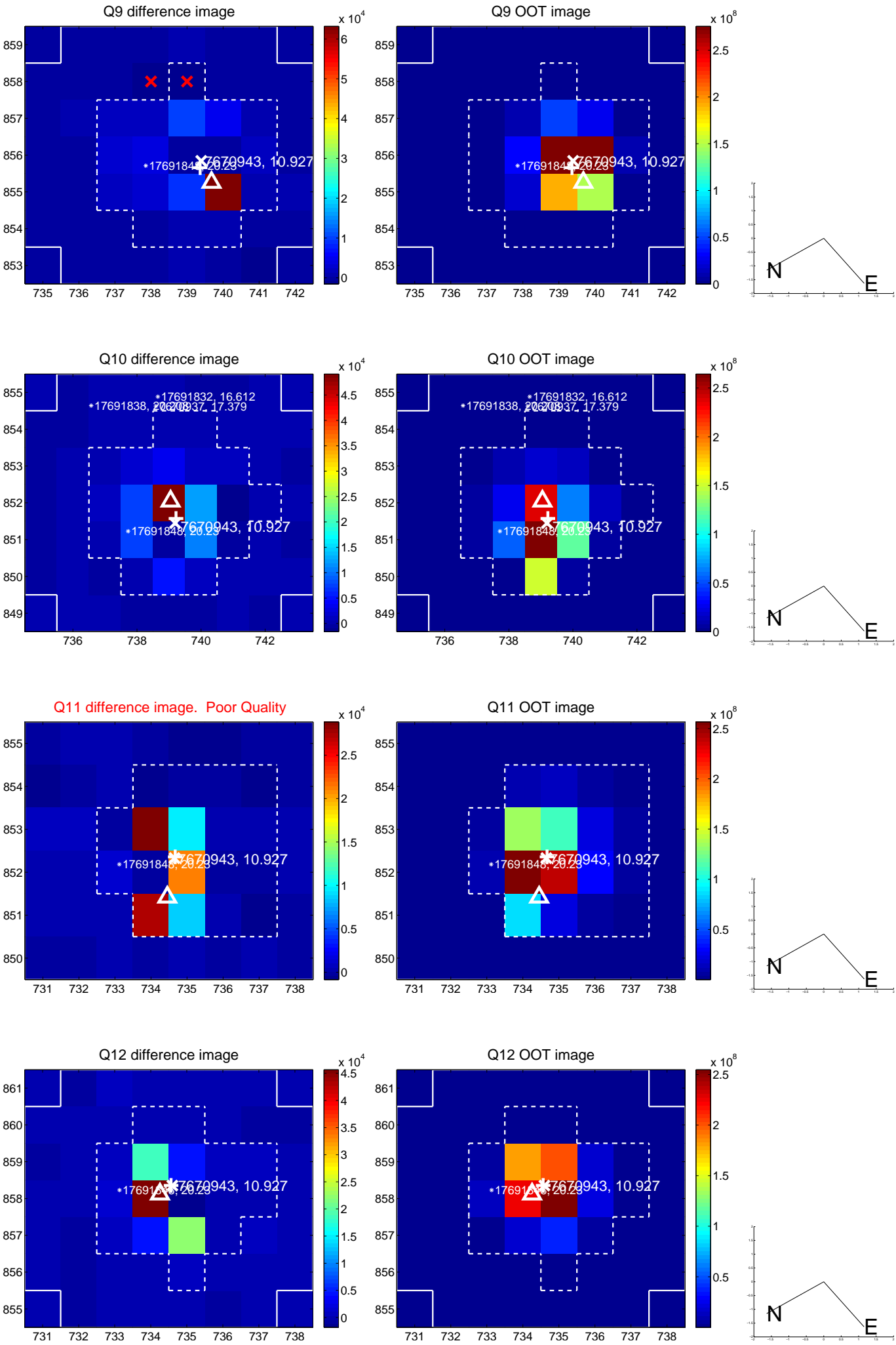
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



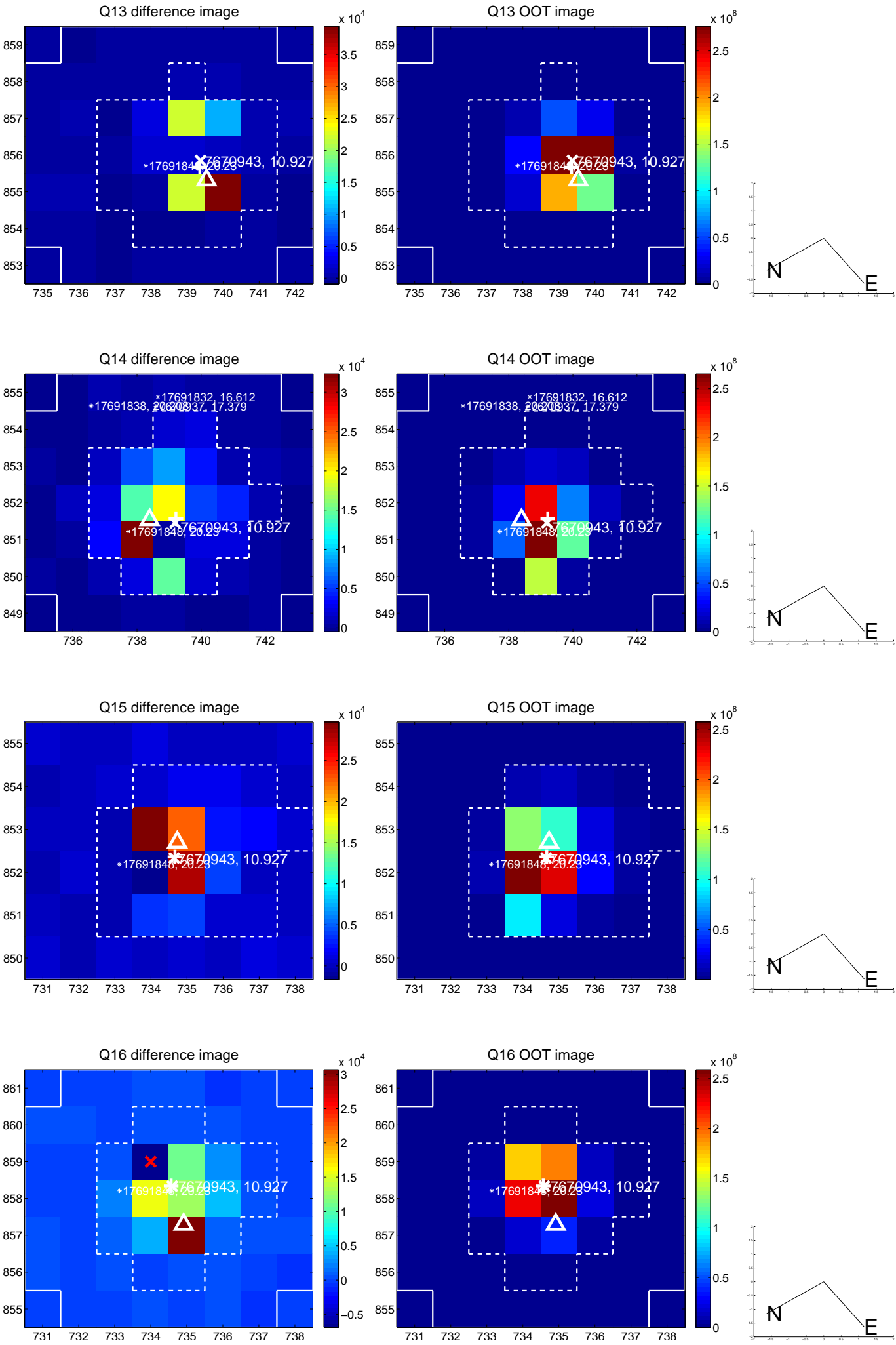
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



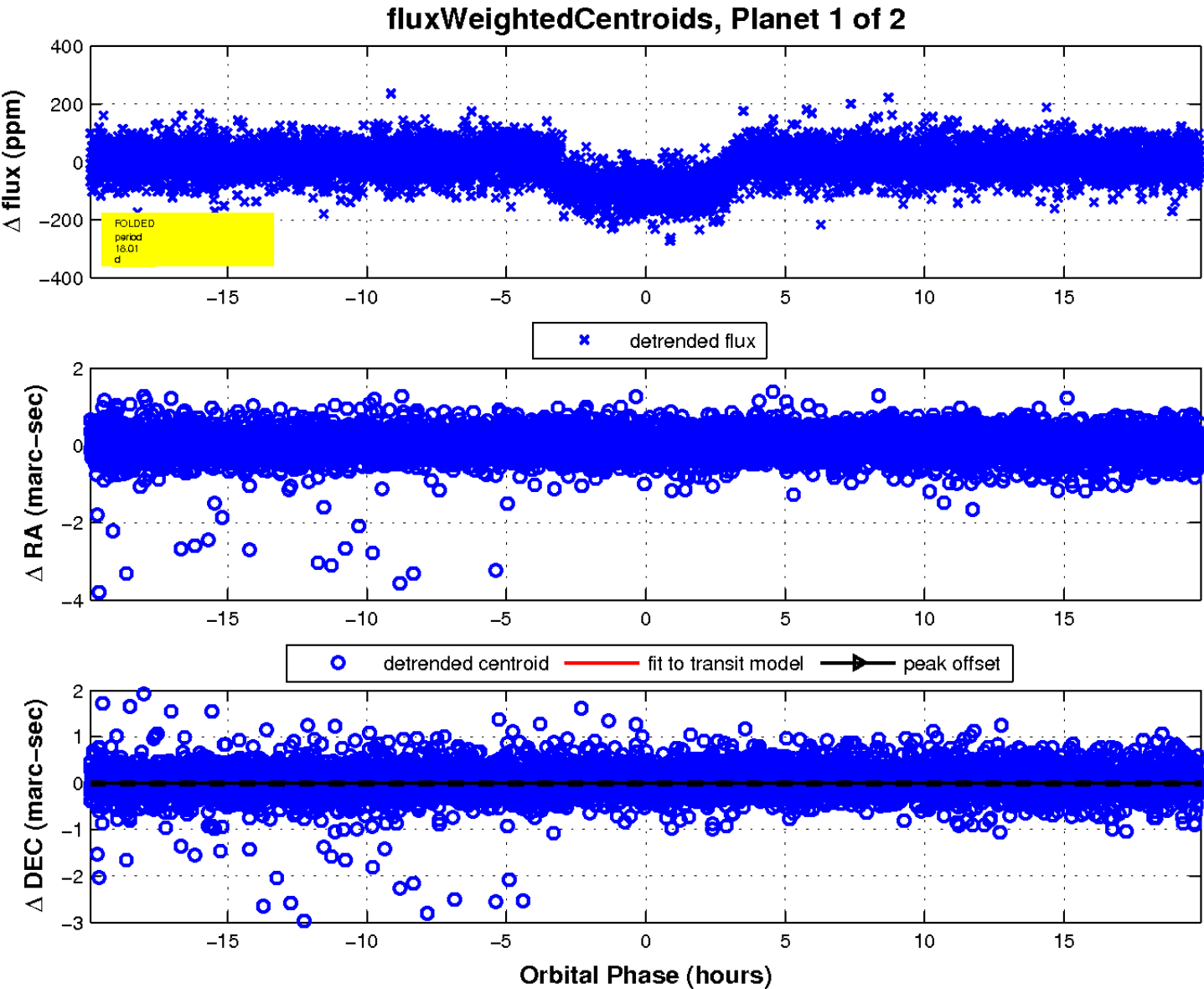
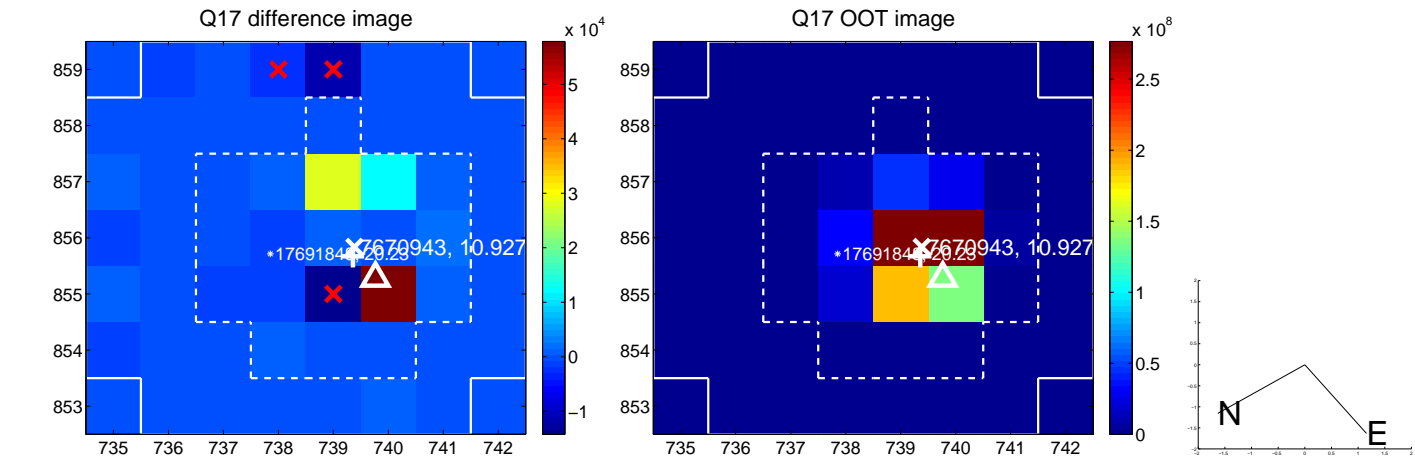
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

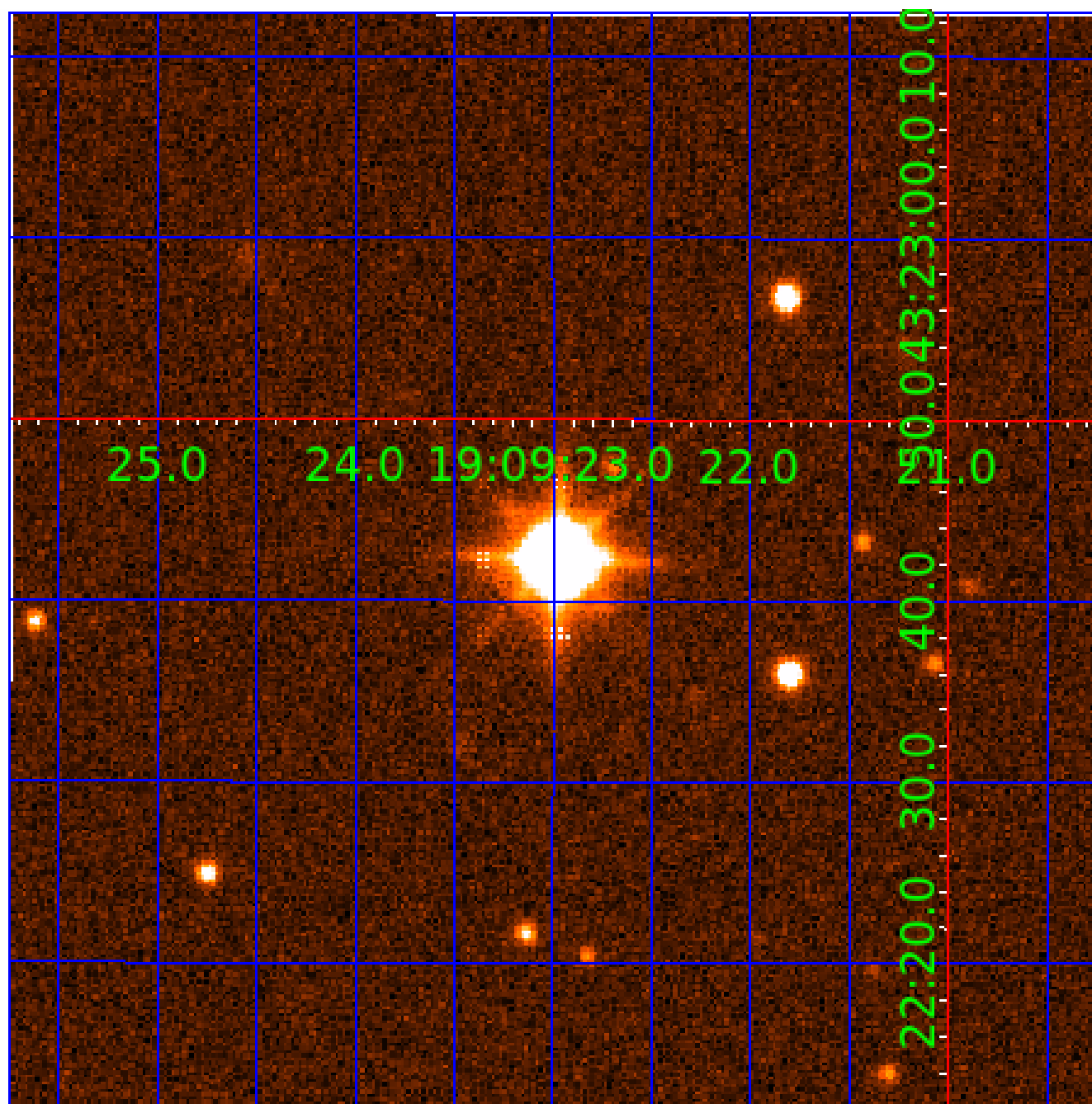


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 007670943

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})
007670943-01	OBS	0269.01	18.011596	149.070166	104.3	6.640	38.9	42.0	1.46	6477	1.75	155.72
007670943-02	OBS	No	320.951171	213.895762	58.0	16.520	7.6	6.7	1.46	6477	1.22	3.35

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007670943-01	OBS	PC	1.00	0	0	0	0	CENT_SATURATED
007670943-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_MARSHALL—INCONSISTENT_TRANS—CENT_SATURATED

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.

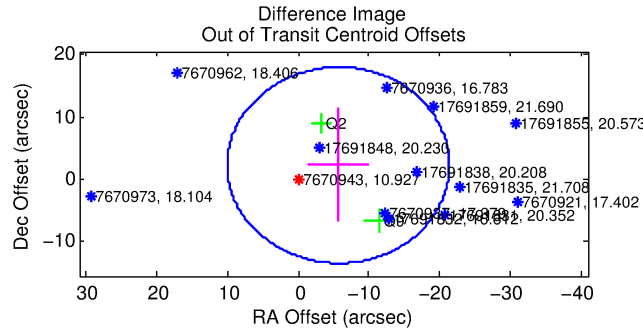
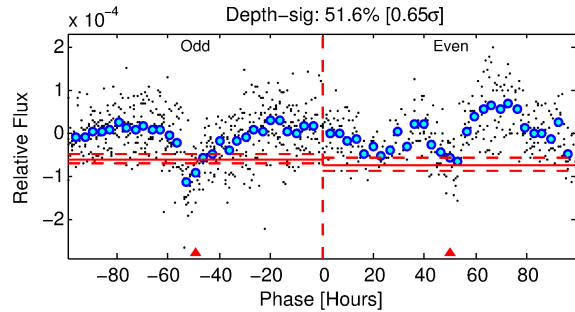
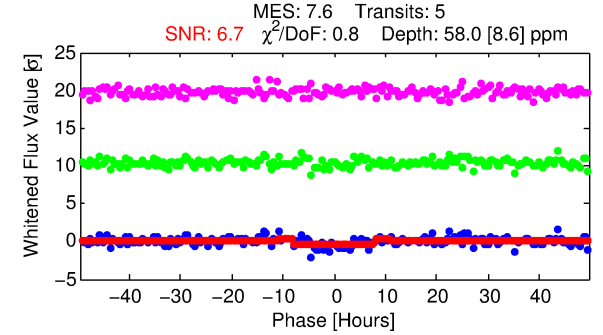
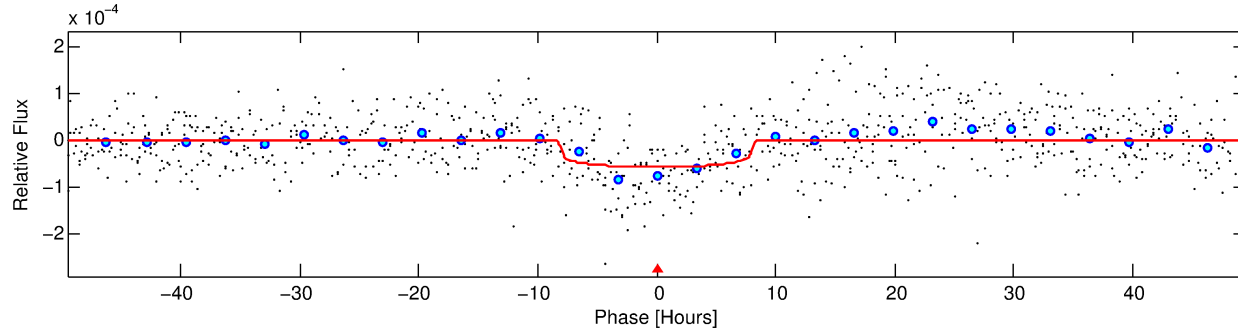
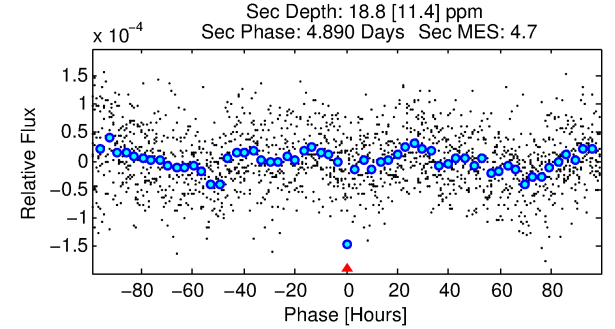
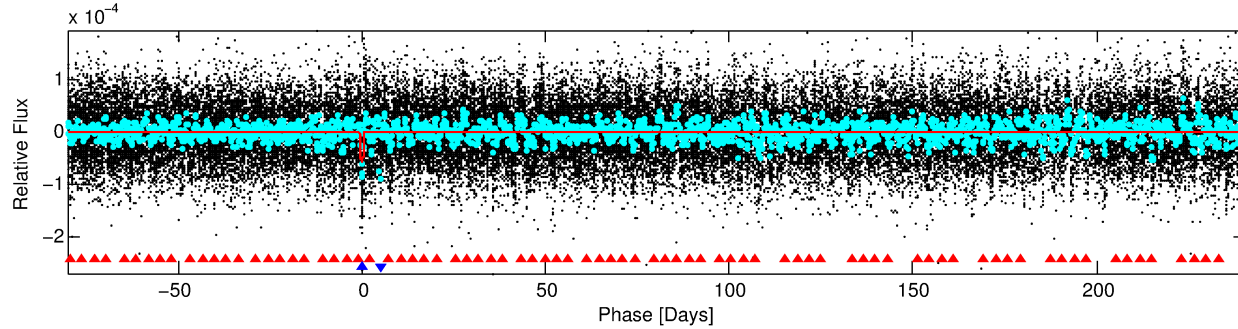
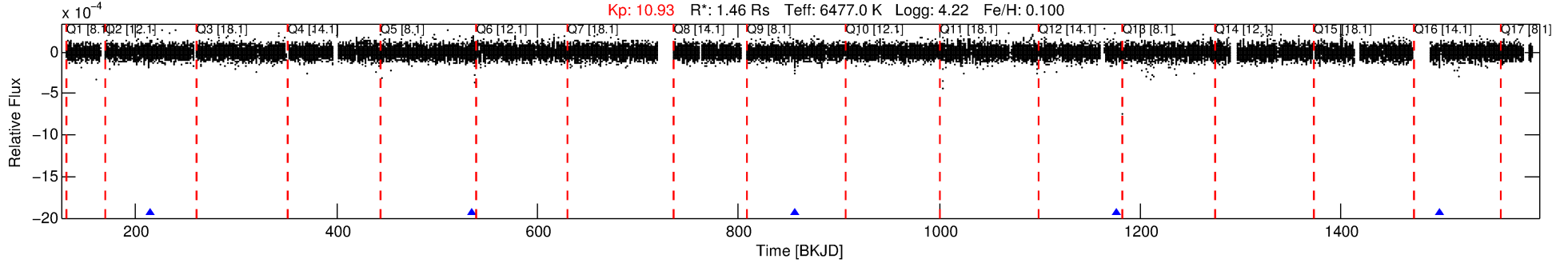
Ephemeris Match Information For 007670943-02

No Significant Match Found

DV One-Page Summary

KIC: 7670943 Candidate: 2 of 2 Period: 320.951 d

KOI: K00269 Corr: No Ephemeris Match



DV Fit Results:

Period = 320.95117 [0.00766] d
Epoch = 213.8958 [0.0170] BKJD
Rp/R* = 0.0076 [0.0019]
a/R* = 94.86 [121.30]
b = 0.78 [0.64]
Seff = 3.35 [0.32]
Teq = 345 [8] K
Rp = 1.22 [0.31] Re
a = 1.0016 [0.0468] AU
Ag = 6991.88 [5523.91] [1.27σ]
Teffp = 4876 [964] K [4.70σ]

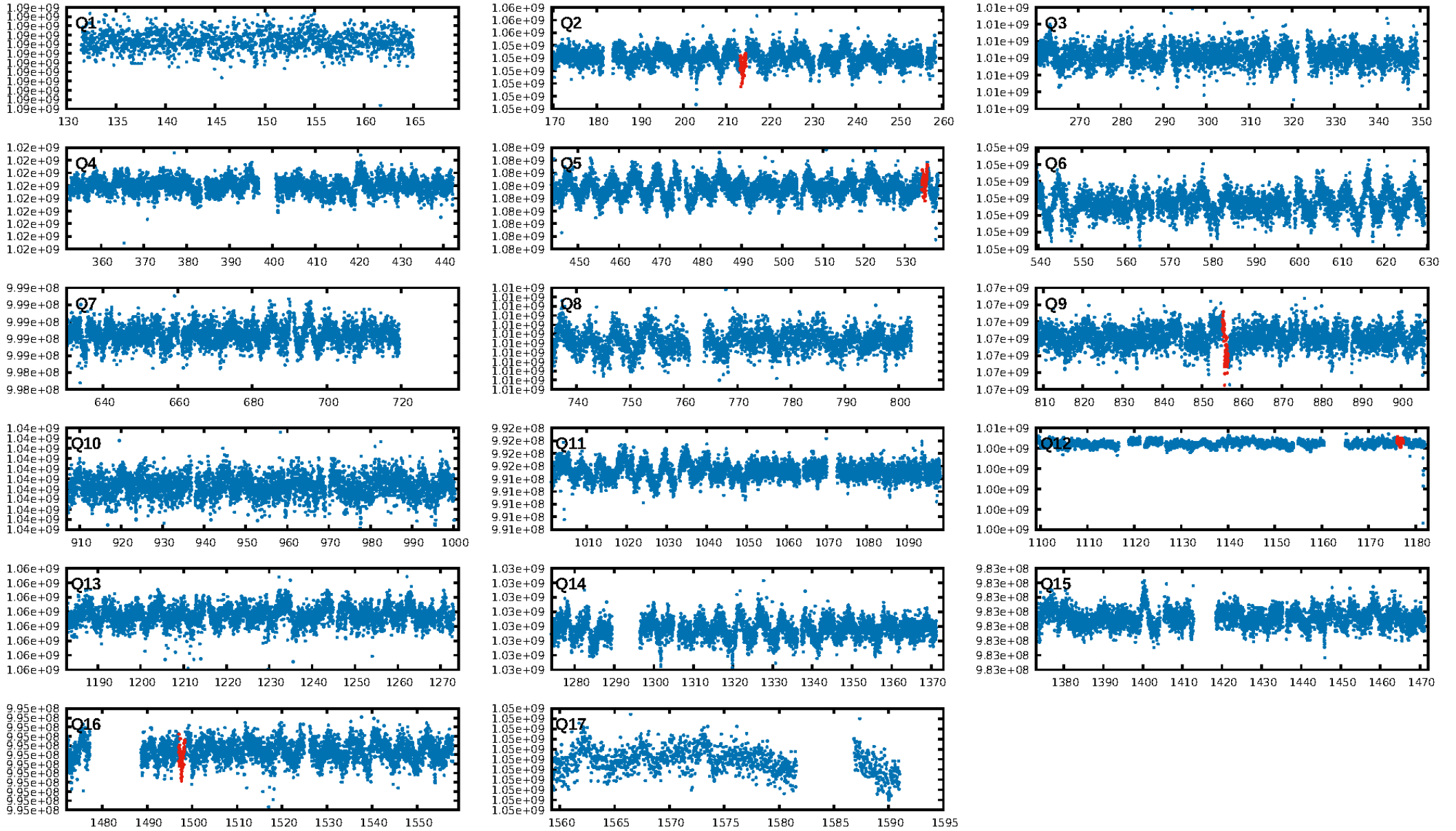
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [408.35σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.1%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.89e-12
RollingBand-fgt: 1.00 [5/5]
GhostDiagnostic-chr: 39.63
Centroid-sig: N/A
Centroid-so: 0.562 arcsec [0.25σ]
OotOffset-rm: 6.099 arcsec [1.16σ]
KicOffset-rm: 6.151 arcsec [1.28σ]
OotOffset-st: 1/0/0/1 [2]
KicOffset-st: 1/0/0/1 [2]
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DiffImageOverlap-fno: 1.00 [3/3]

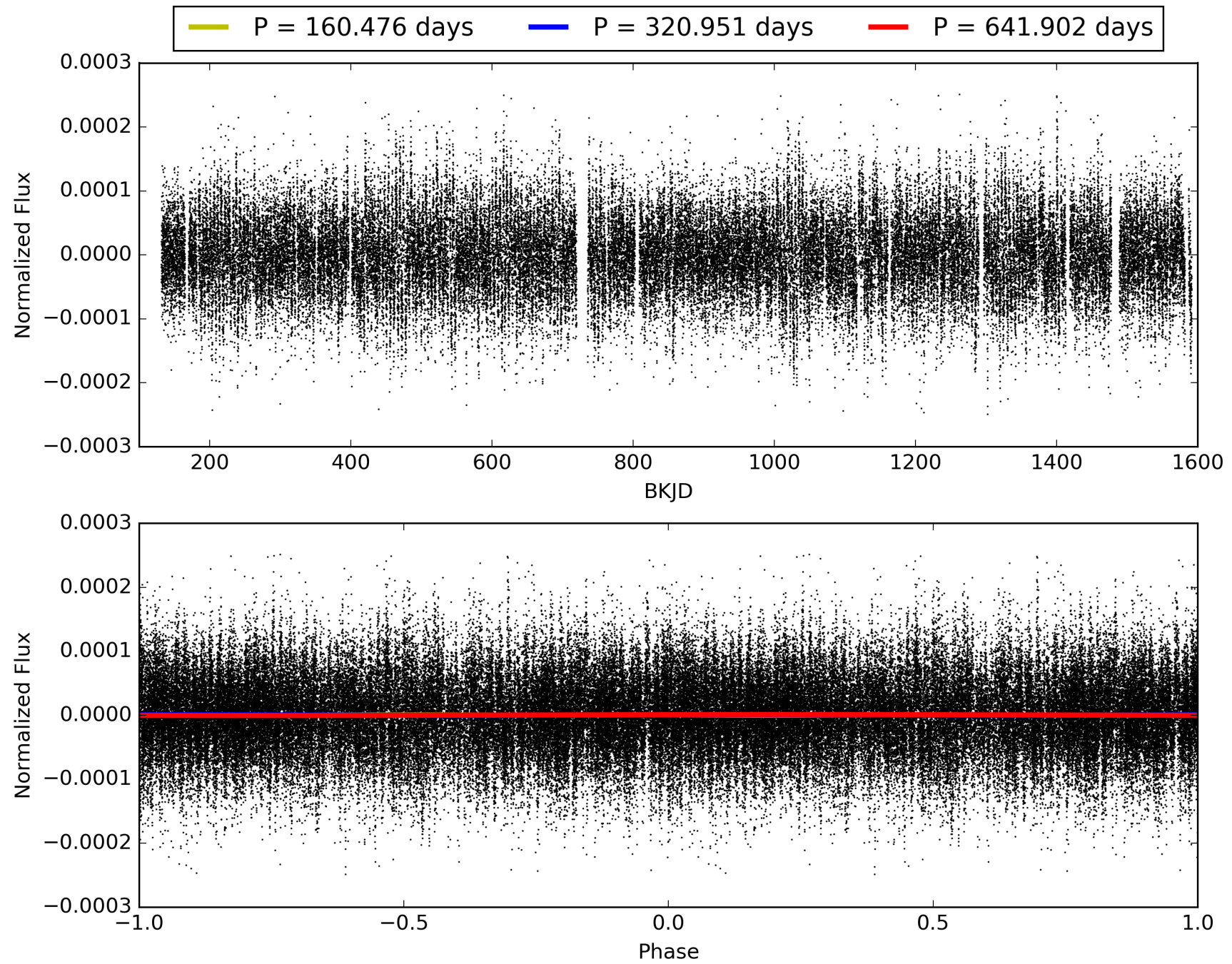
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 04:12:33 Z

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

TCE 007670943-02, PDC Light Curves

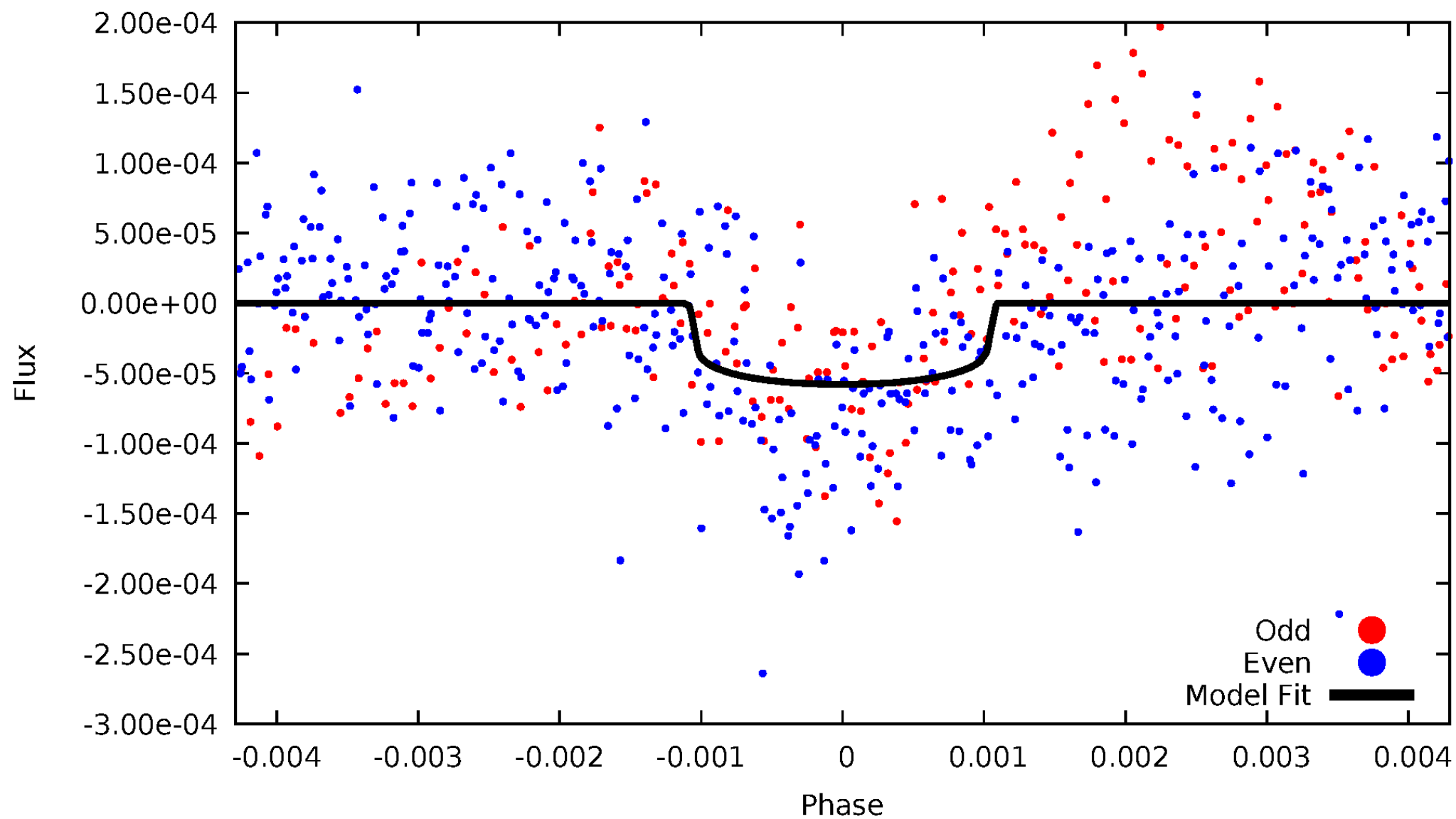


TCE 007670943-02



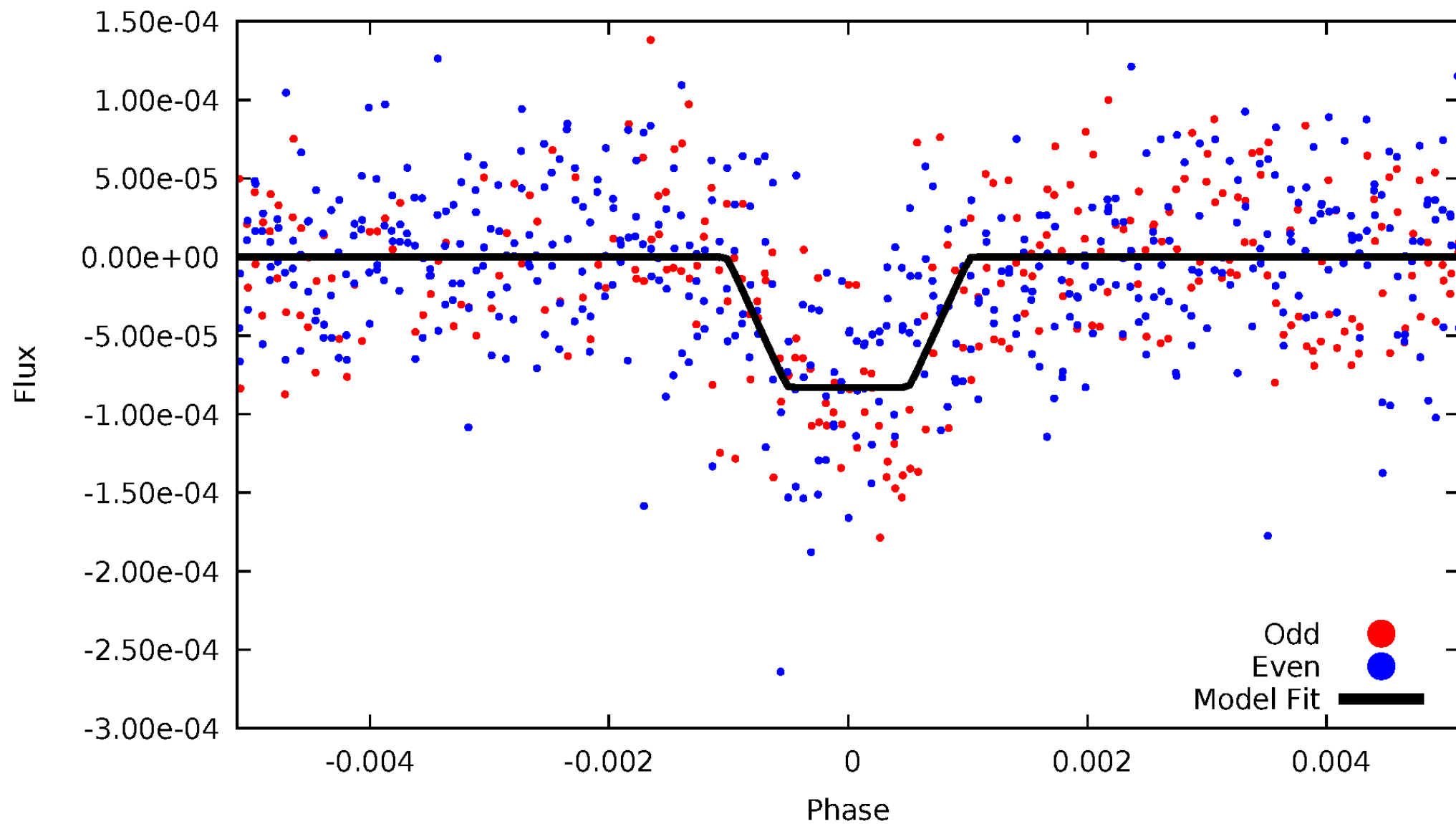
DV Odd/Even

TCE 007670943-02



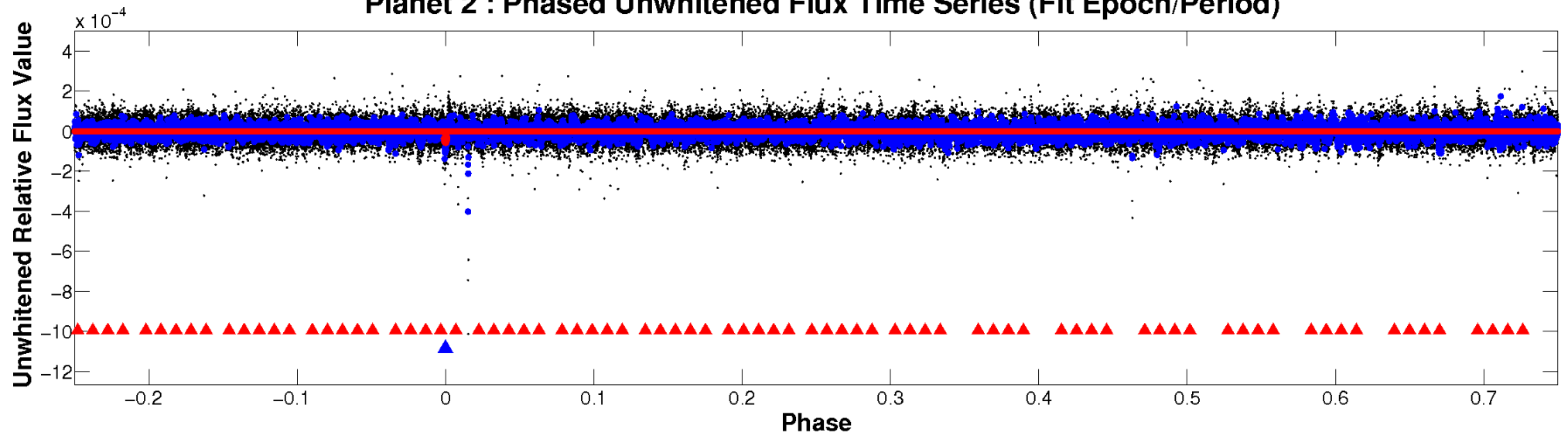
ALT Odd/Even

TCE 007670943-02

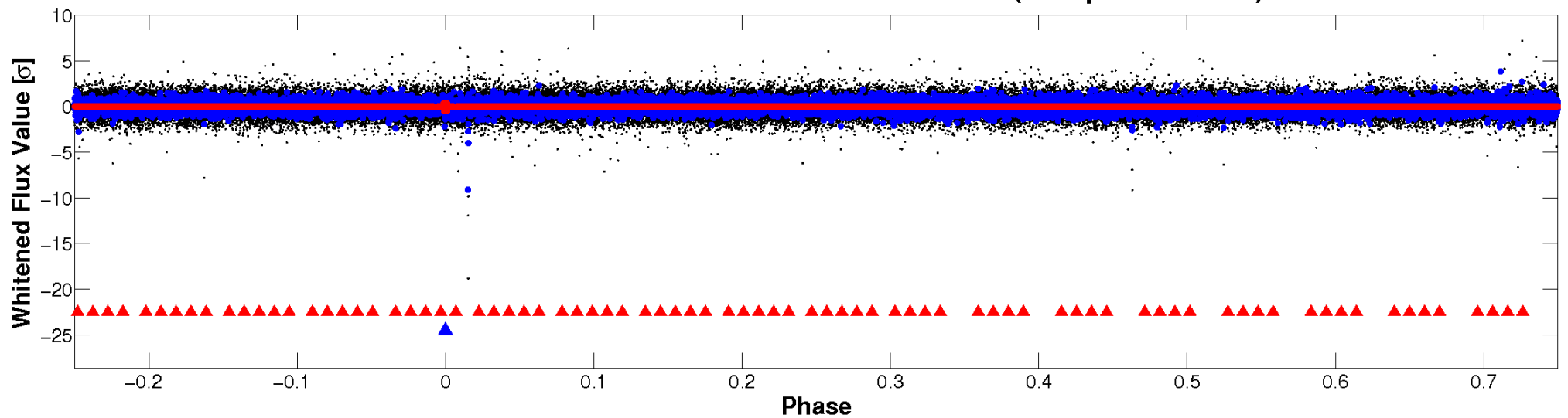


Non-Whitened Vs. Whitened Light Curve

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



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



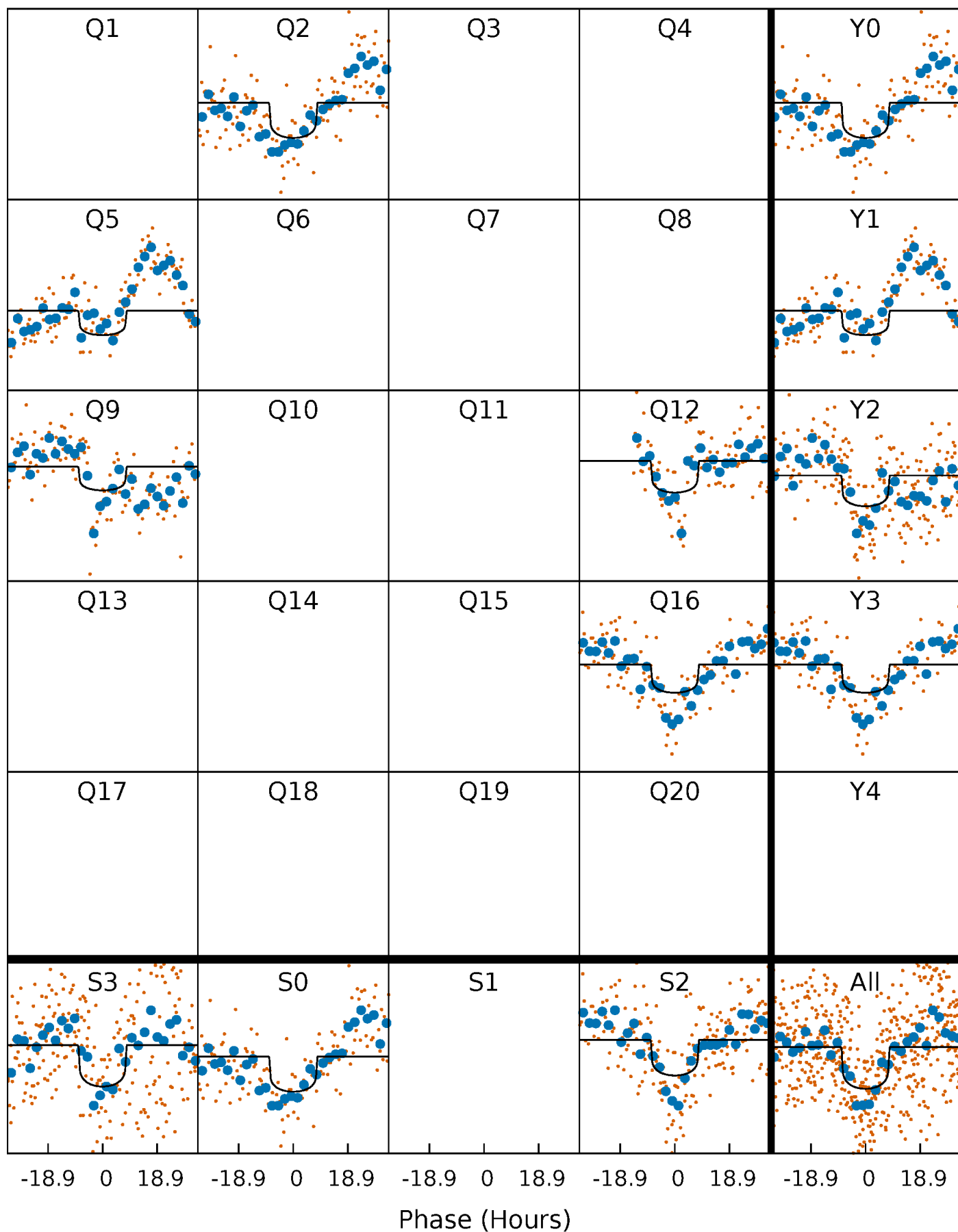
PDC Quarter-Phased Transit Curves

TCE 007670943-02 $P=320.951171$ Days $T_0=213.895762$ (BKJD)



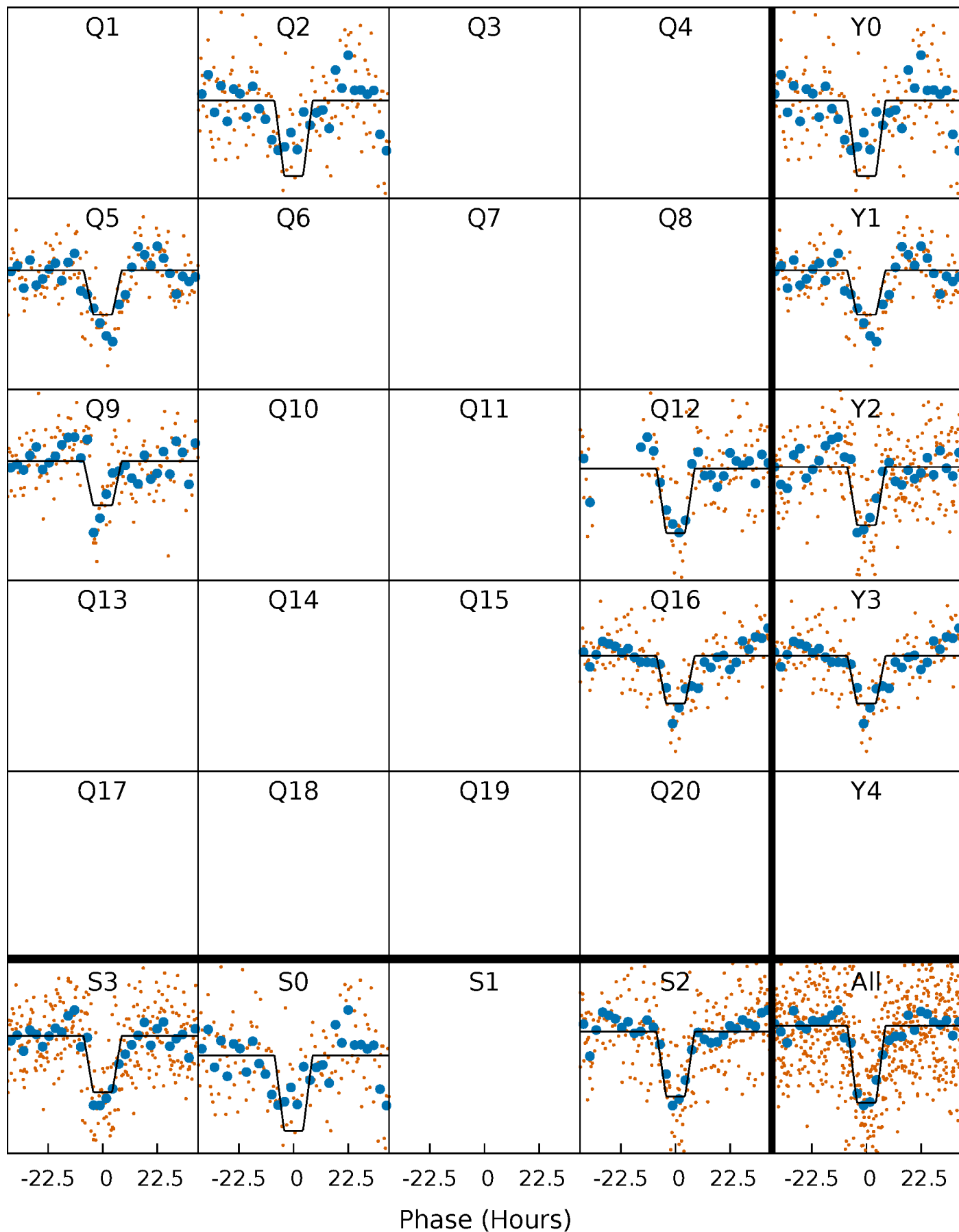
DV Quarter-Phased Transit Curves

TCE 007670943-02 $P=320.951171$ Days $T_0=213.895762$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

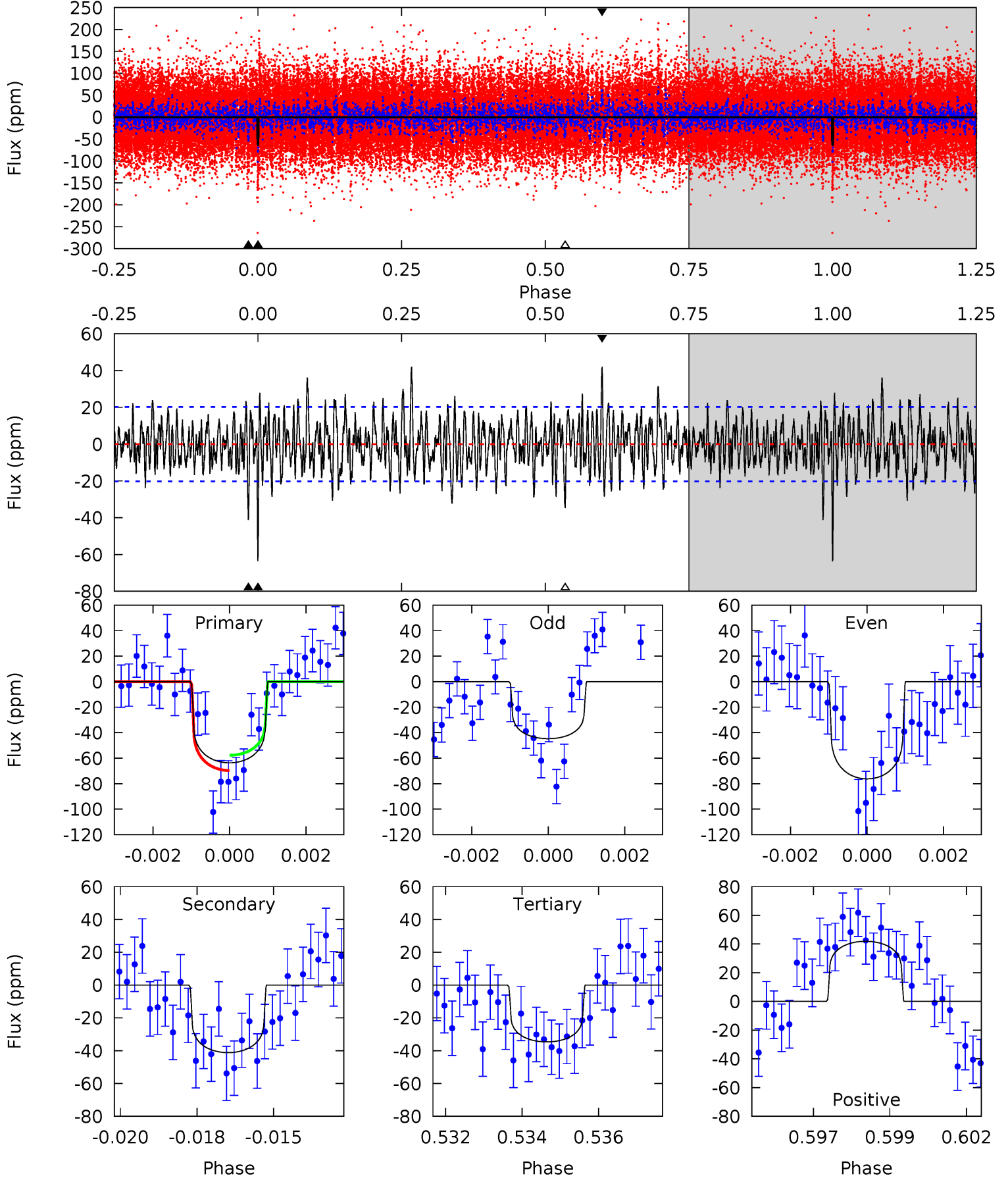
TCE 007670943-02 P=320.929493 Days $T_0=213.940204$ (BKJD)



DV Model-Shift Uniqueness Test

007670943-02, P = 320.951171 Days, E = 213.895762 Days

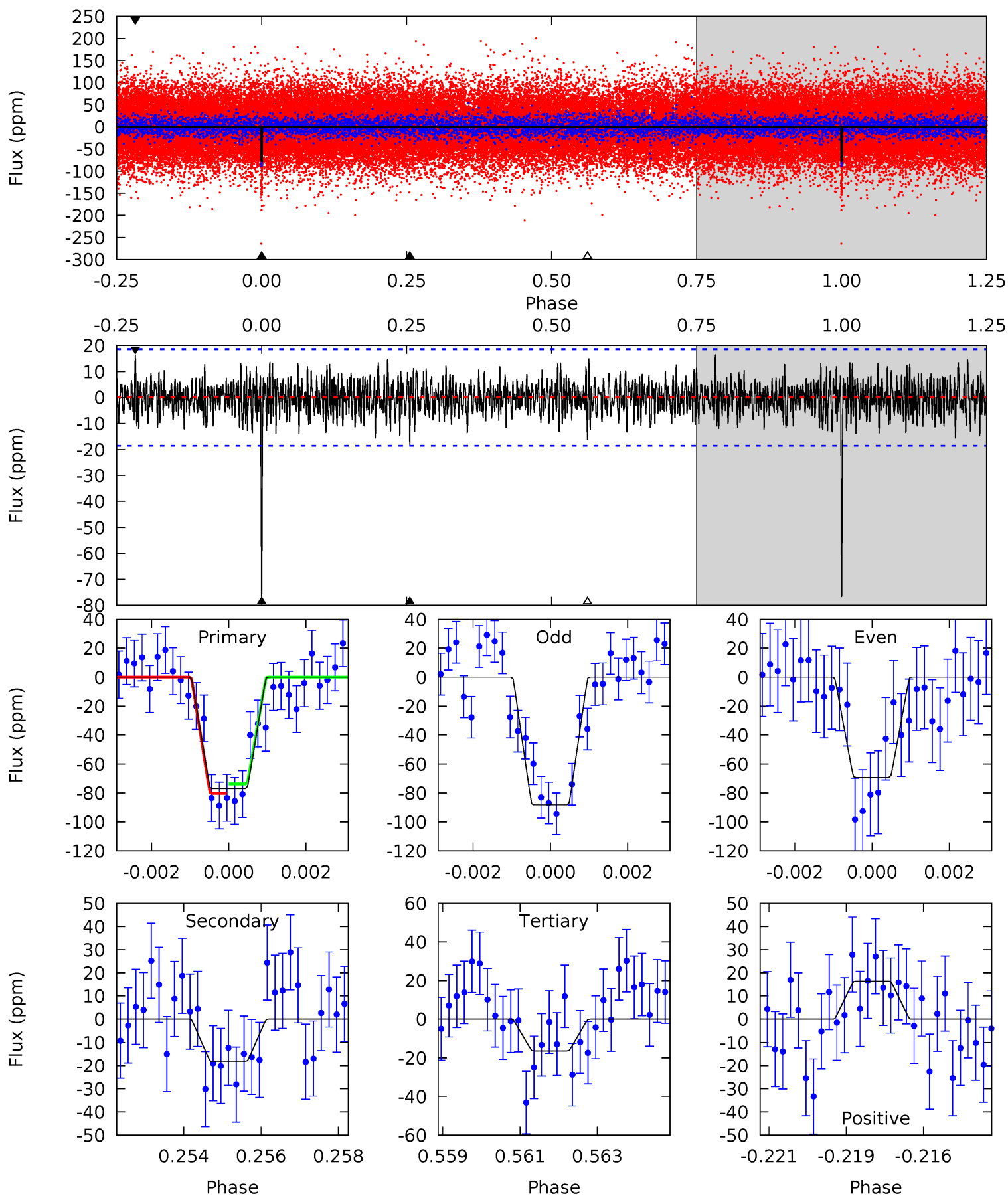
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.7	10.8	9.11	11.0	5.31	3.06	2.98	7.62	5.71	1.72	-0.19	4.03	0.93	0.40	1.58



Alt Model-Shift Uniqueness Test

007670943-02, $P = 320.929493$ Days, $E = 213.940204$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
22.0	5.20	4.68	4.69	5.32	3.08	1.48	17.3	17.3	0.51	0.51	2.66	0.99	0.18	0.91



Stellar Parameters For KIC 007670943

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	6477^{+103}_{-116}	$4.224^{+0.033}_{-0.027}$	$0.100^{+0.100}_{-0.150}$	$1.459^{+0.058}_{-0.086}$	$1.300^{+0.059}_{-0.072}$	$0.590^{+0.080}_{-0.052}$
	+2%/-2%	+1%/-1%	+100%/-150%	+4%/-6%	+5%/-6%	+14%/-9%
Source	SPE8	AST69	SPE69	DSEP		

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

Secondary Eclipse Parameters for KIC 007670943-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-41 ± 4	$1.21^{+0.30}_{-0.29}$	480^{+10}_{-9}	5942^{+973}_{-599}	15555^{+11816}_{-5680}
Alt.	-18 ± 3	$1.46^{+0.32}_{-0.33}$	482^{+9}_{-11}	4564^{+570}_{-356}	4661^{+3317}_{-1582}

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 $A_{obs} \gg 1.0$

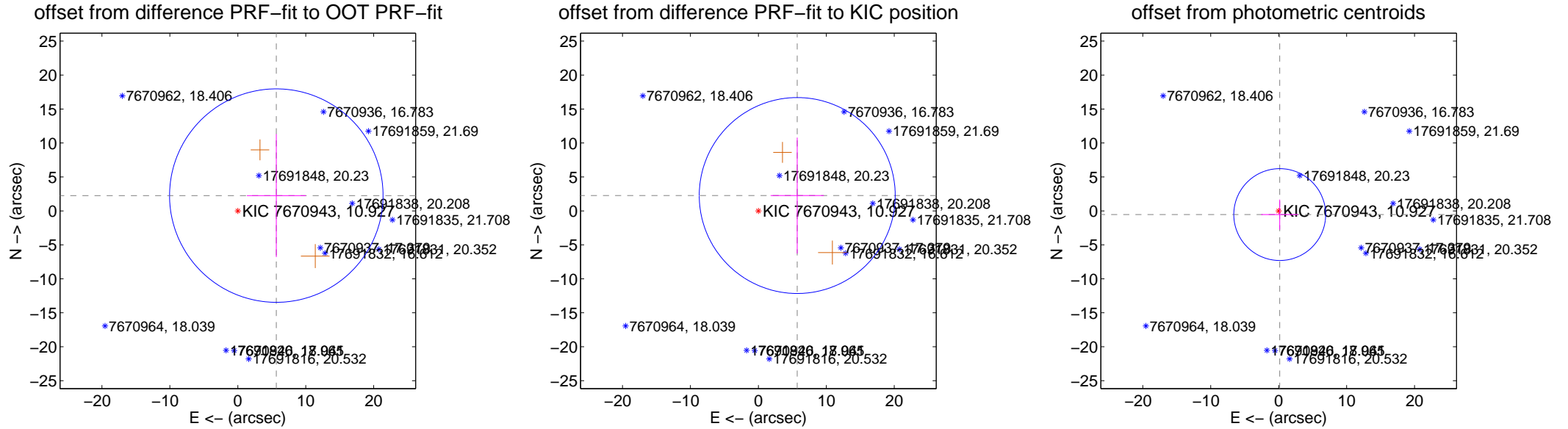
DV Centroid Data

Supplemental centroid analysis for 007670943-02. **Kepler magnitude: 10.93.** Transit SNR 6.66

There are 0 quarters with good PRF difference image offsets

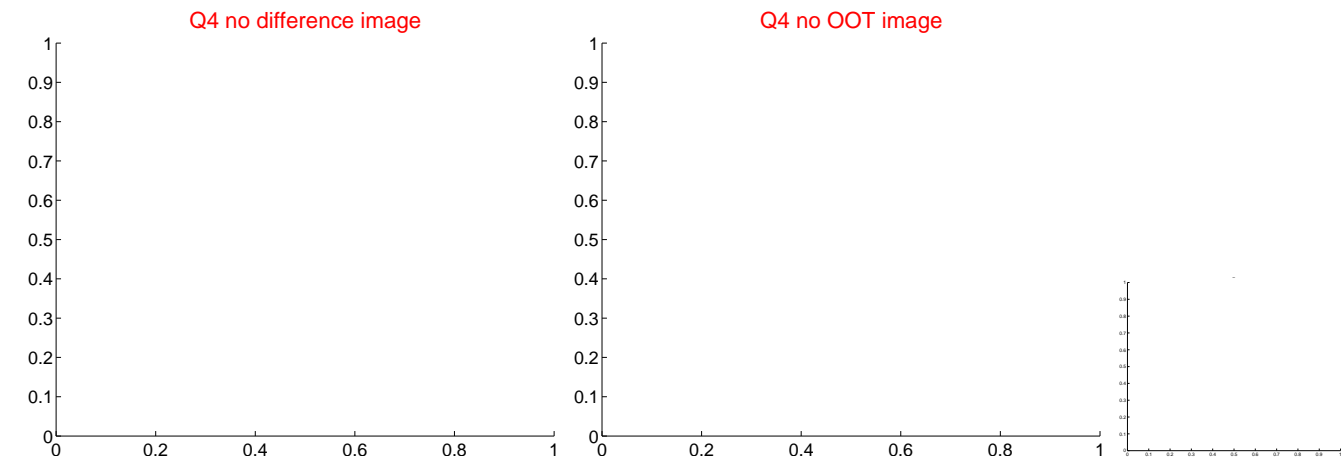
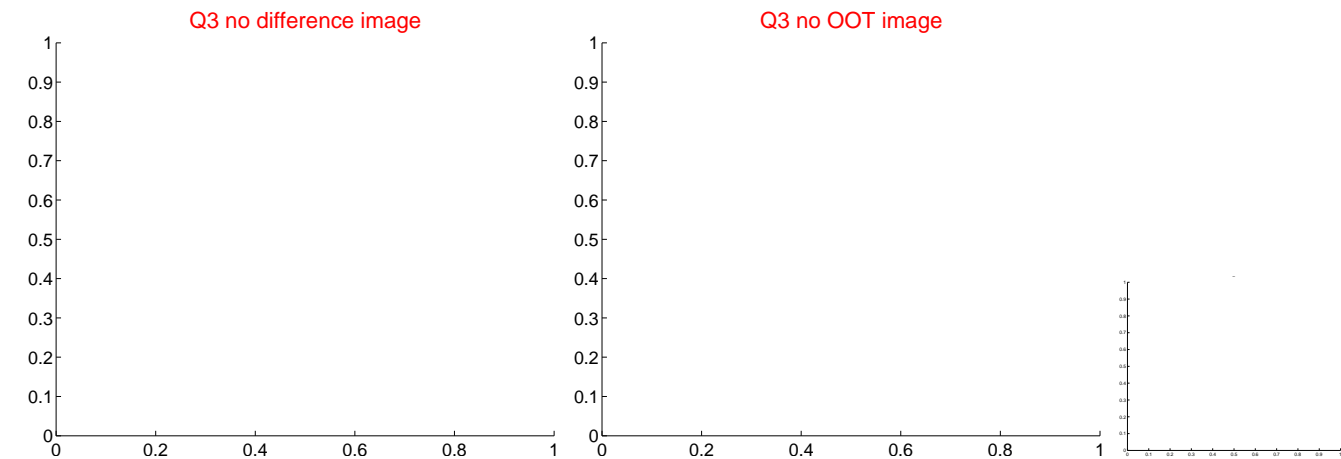
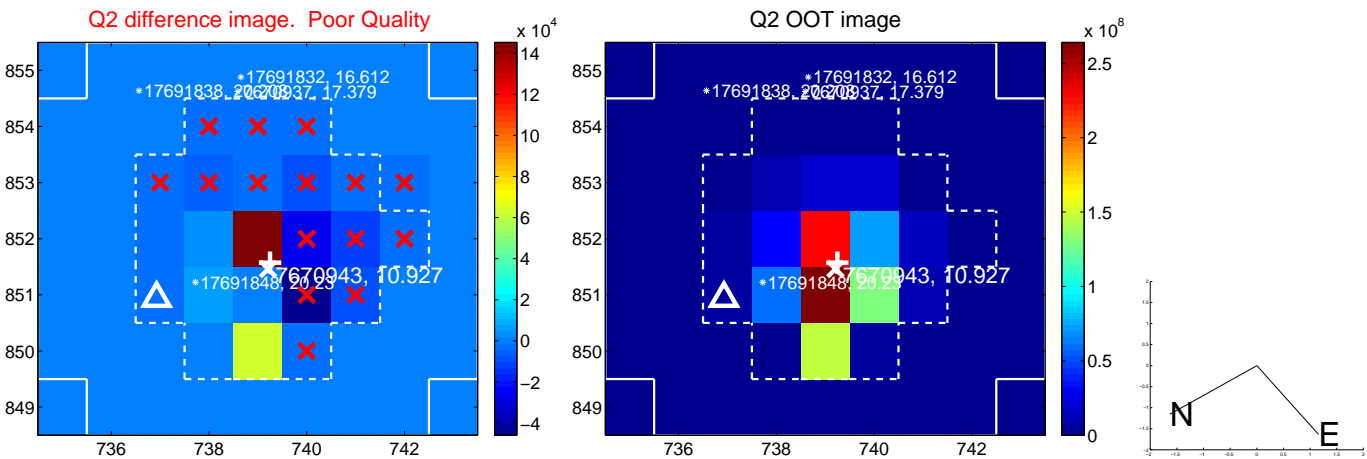
The direct PRF centroid is offset from the target star catalog position by about 0.73 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.099 ± 5.238	1.16	-5.667 ± 4.336	2.254 ± 9.053
PRF-fit source offset from KIC position	6.151 ± 4.807	1.28	-5.719 ± 3.916	2.263 ± 8.532
photometric centroid source offset	0.56 ± 2.25	0.25	-0.15 ± 2.72	-0.54 ± 2.21

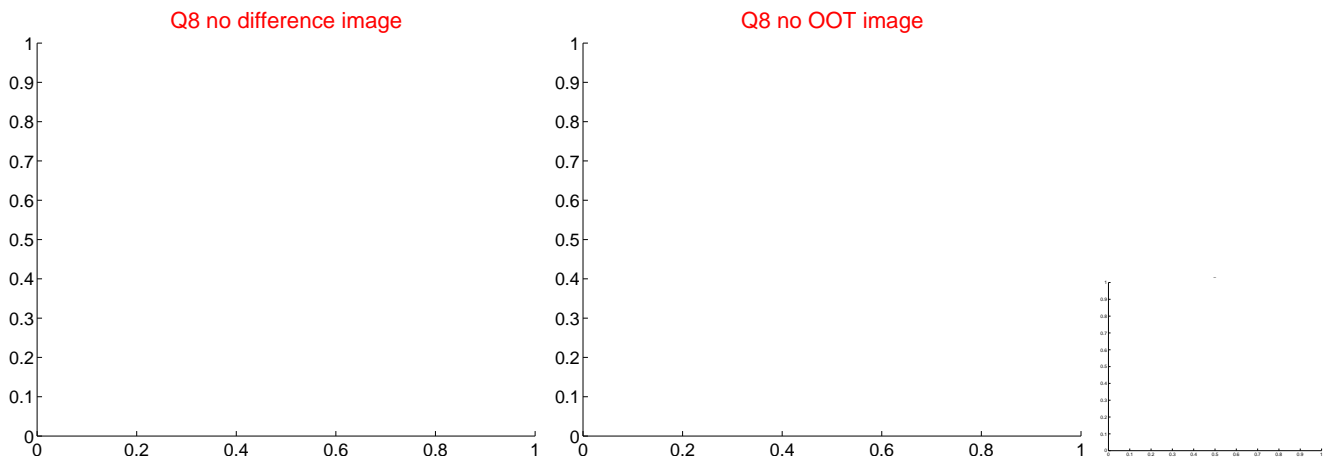
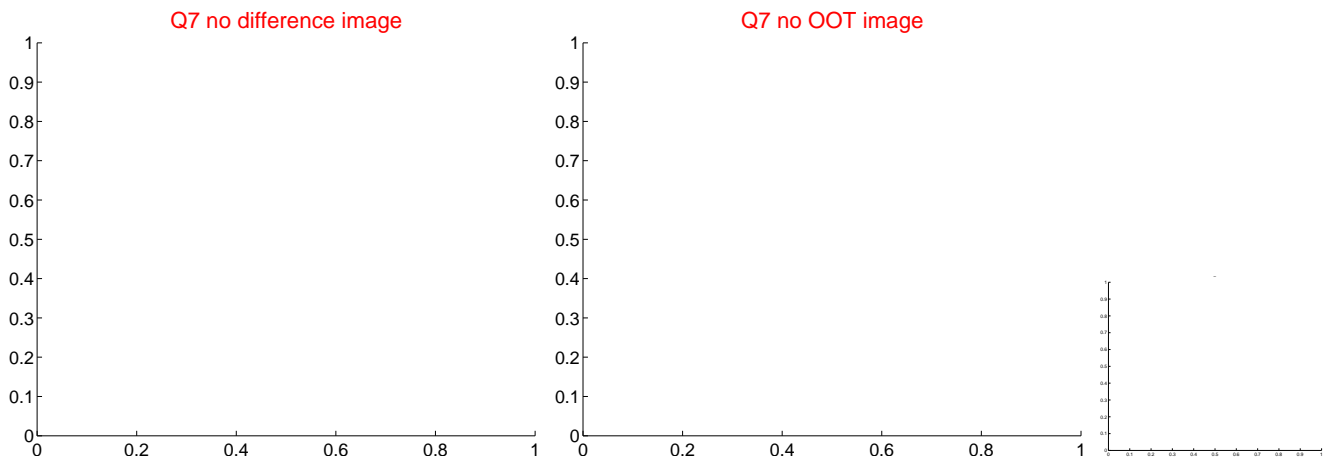
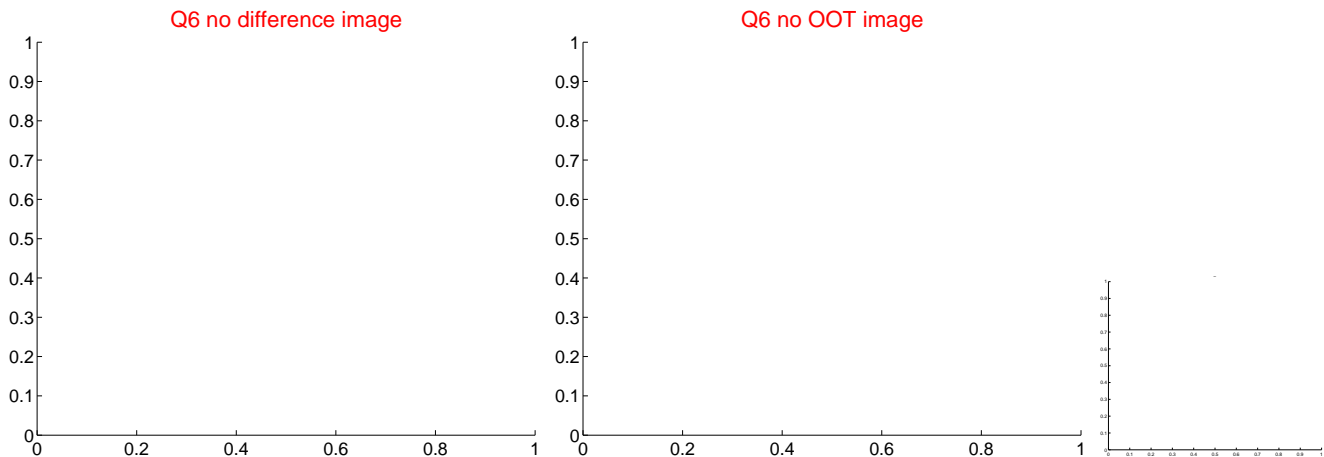
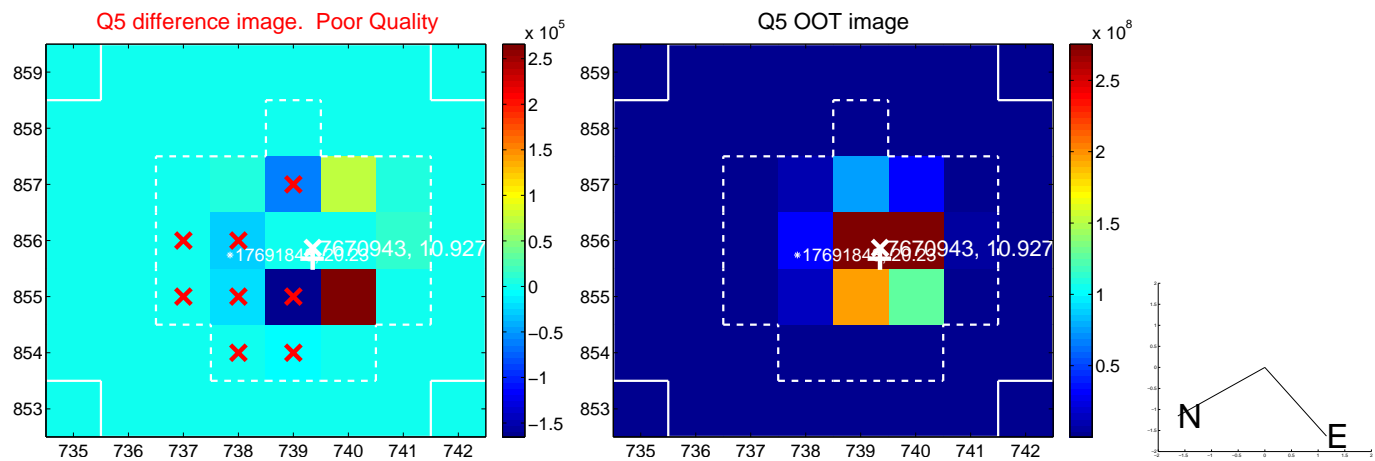


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

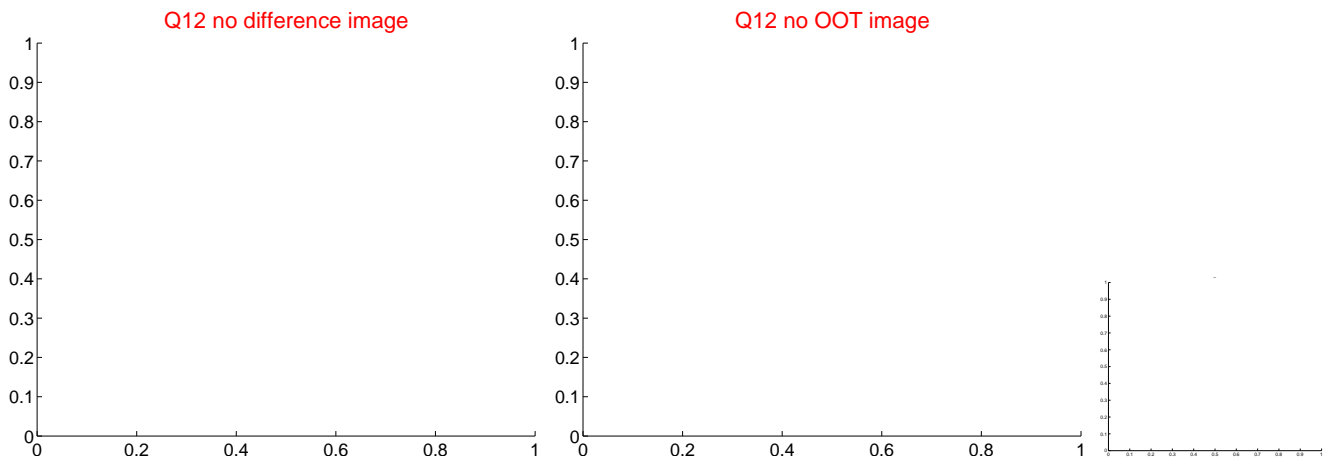
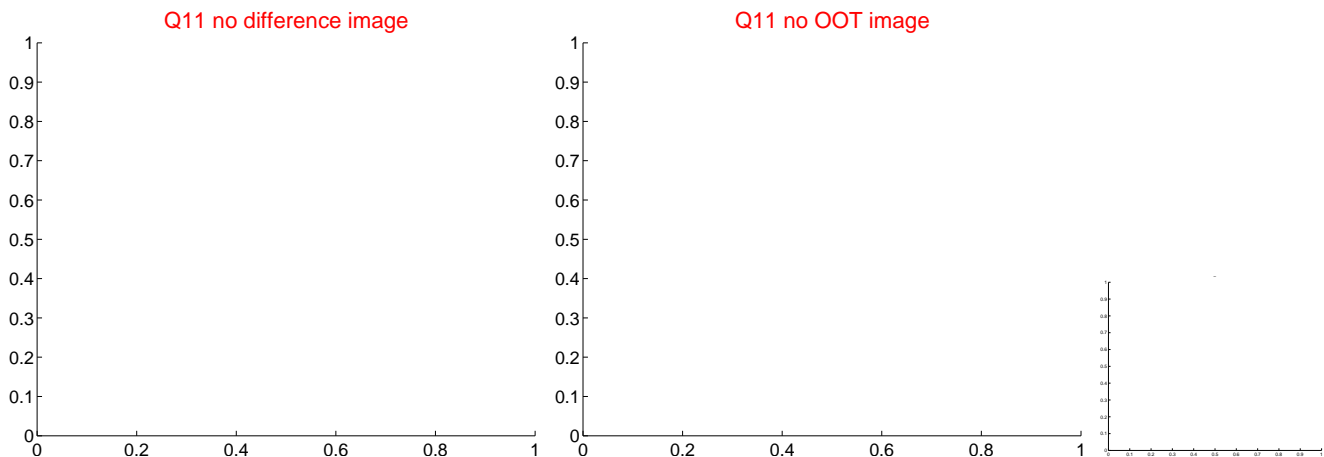
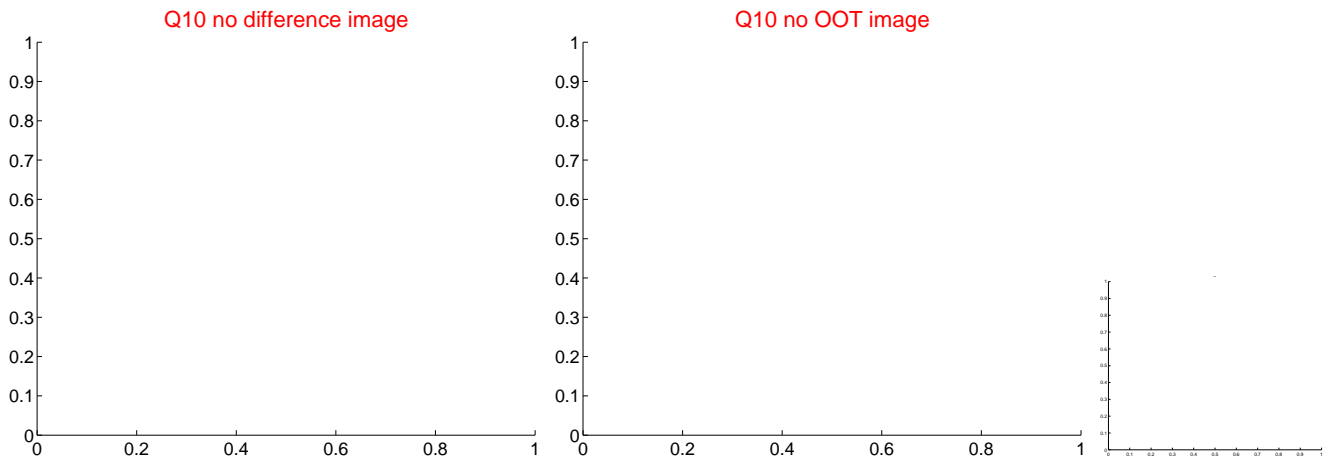
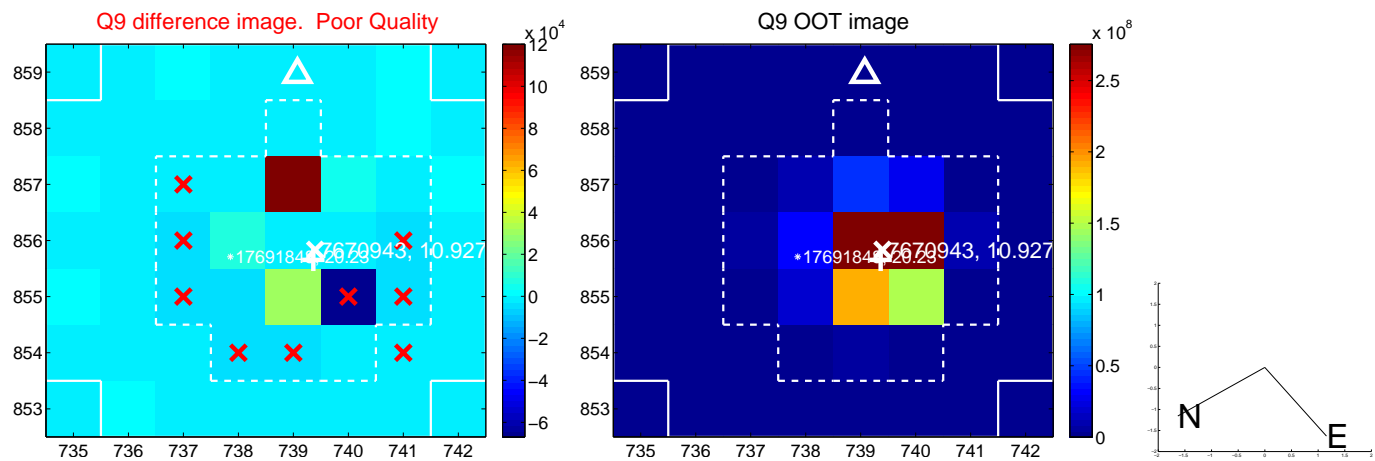
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



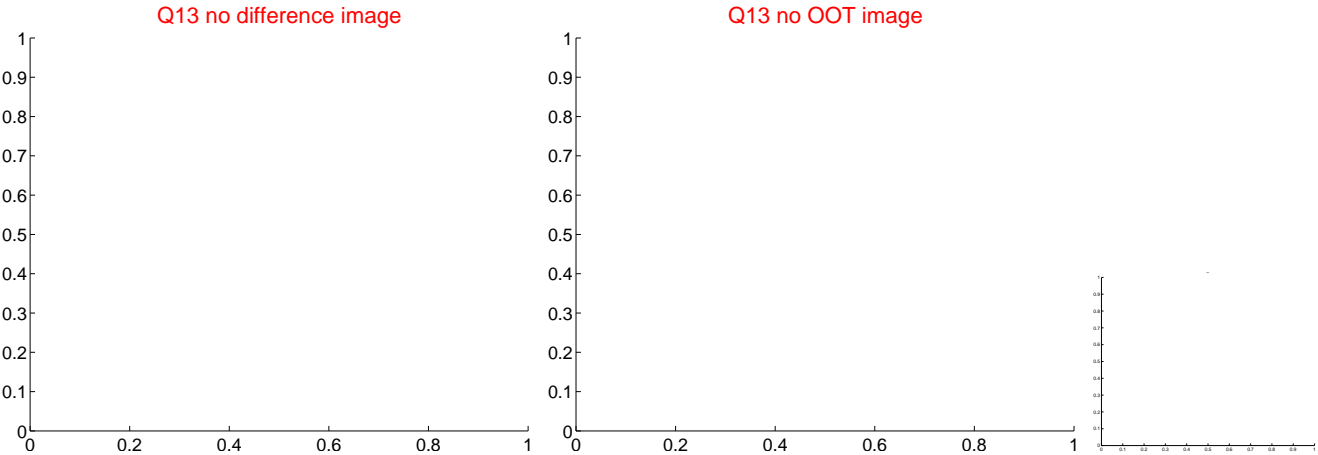
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



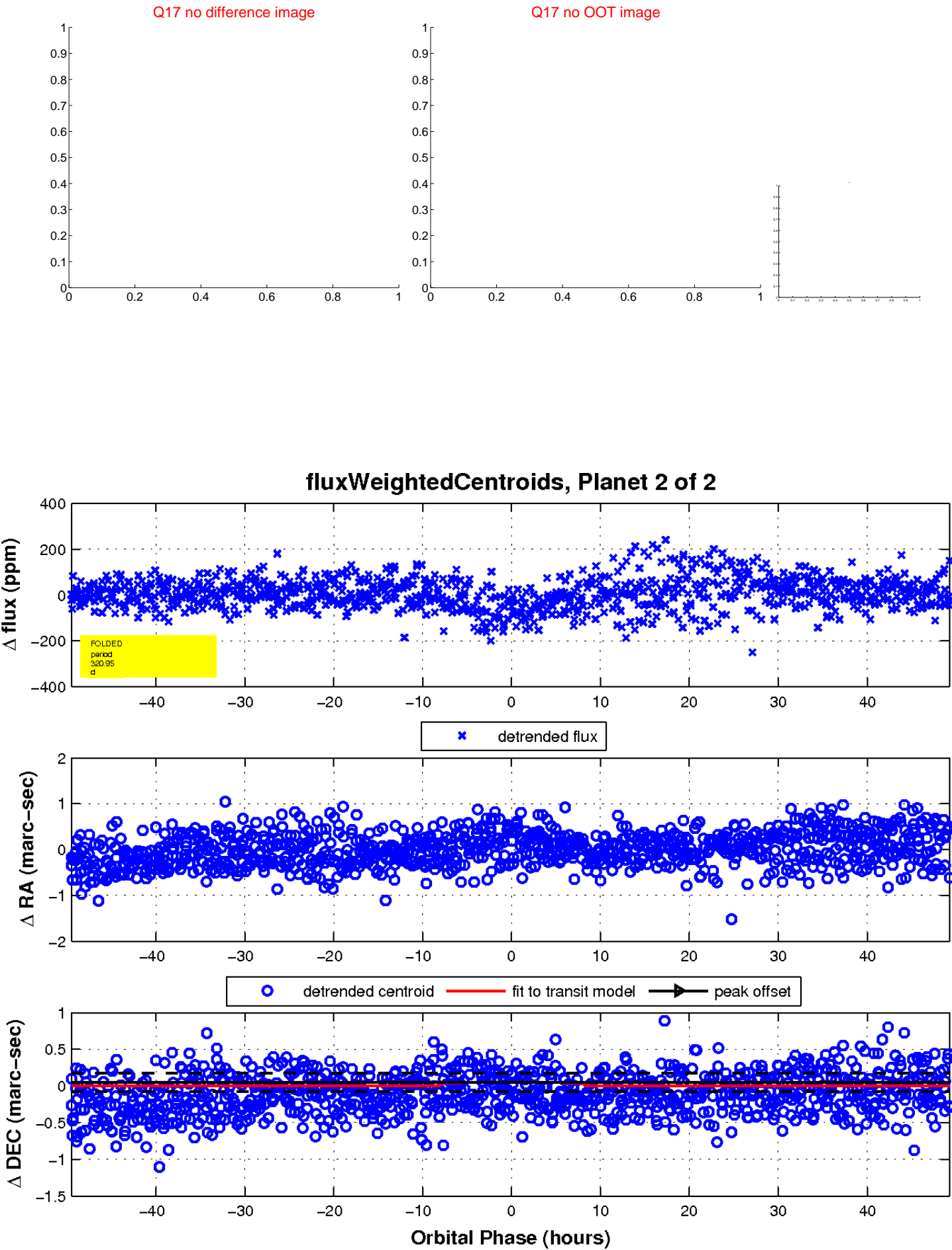
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

