

KIC 009095110

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})
009095110-01	OBS	No	385.196495	455.391605	2805.1	4.713	20.8	14.0	0.71	5134	3.71	0.38
009095110-02	OBS	No	404.432347	303.234519	2596.3	6.169	19.3	10.9	0.71	5134	4.62	0.35
009095110-03	OBS	No	587.071508	357.265866	1282.3	5.139	13.4	7.4	0.71	5134	2.65	0.21
009095110-04	OBS	No	440.044695	200.773029	1312.6	4.545	11.3	7.7	0.71	5134	2.75	0.32
009095110-05	OBS	No	377.911881	484.177211	1342.9	9.000	13.6	-1.0	0.71	5134	2.54	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009095110-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009095110-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

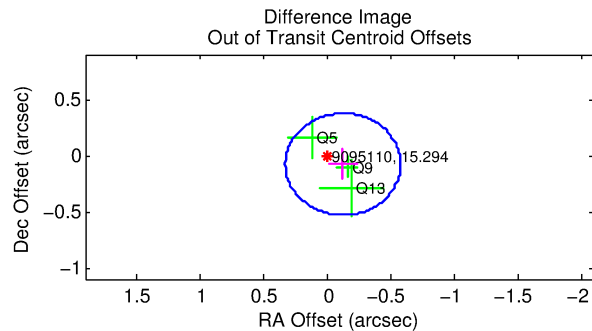
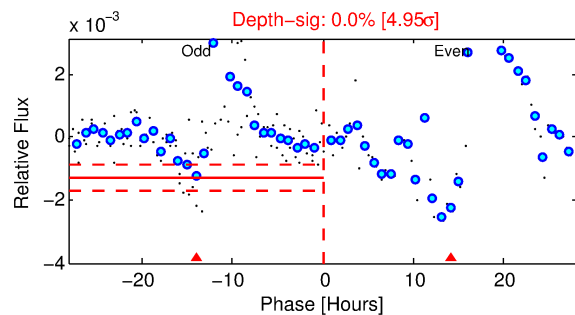
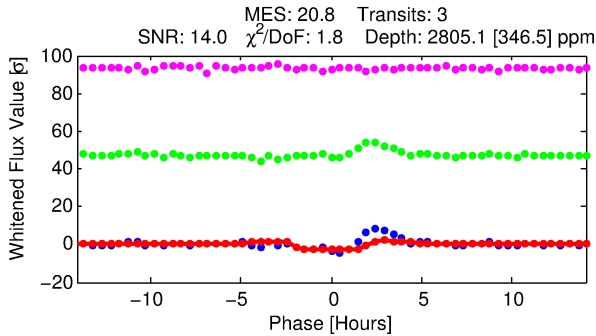
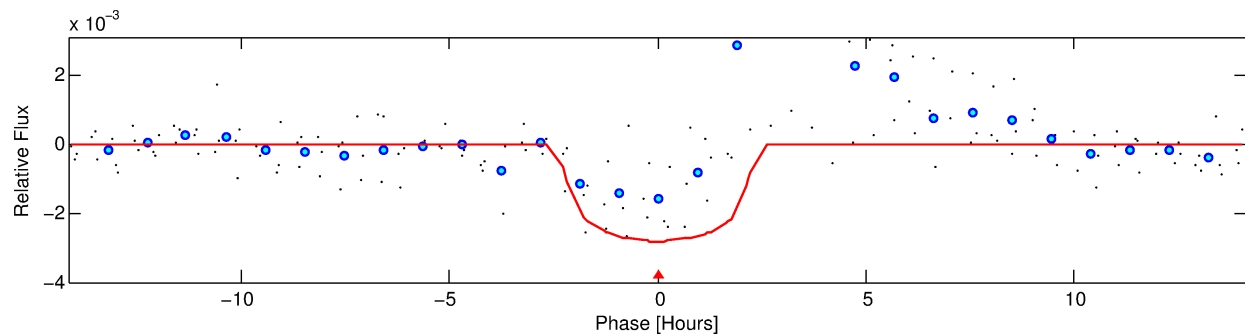
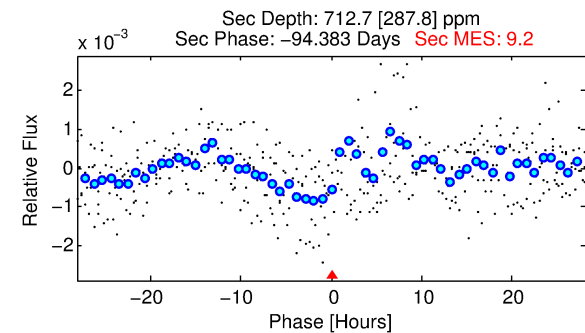
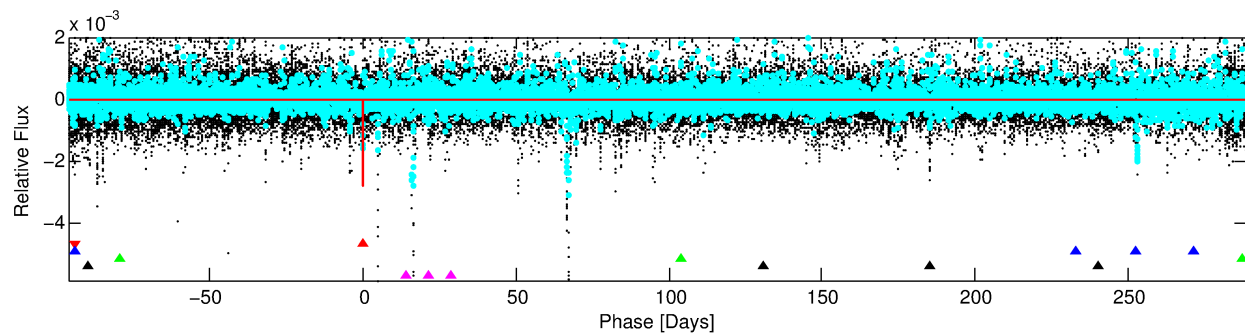
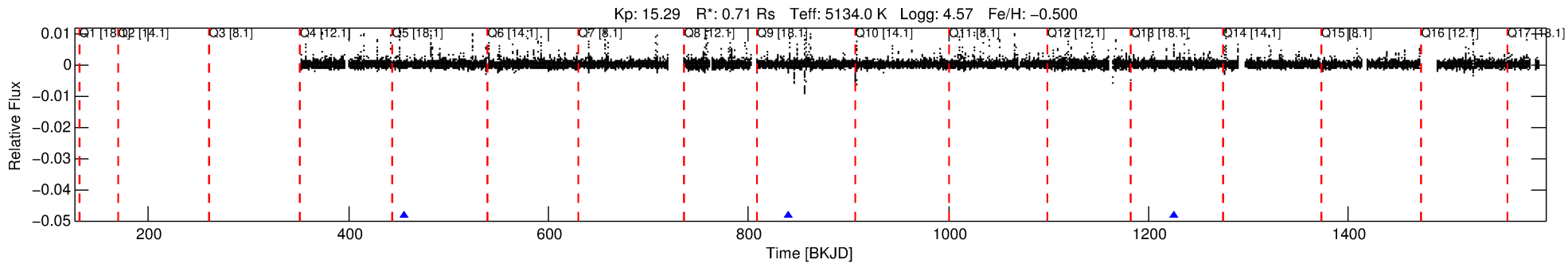
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009095110-01

No Significant Match Found

DV One-Page Summary

KIC: 9095110 Candidate: 1 of 5 Period: 385.196 d



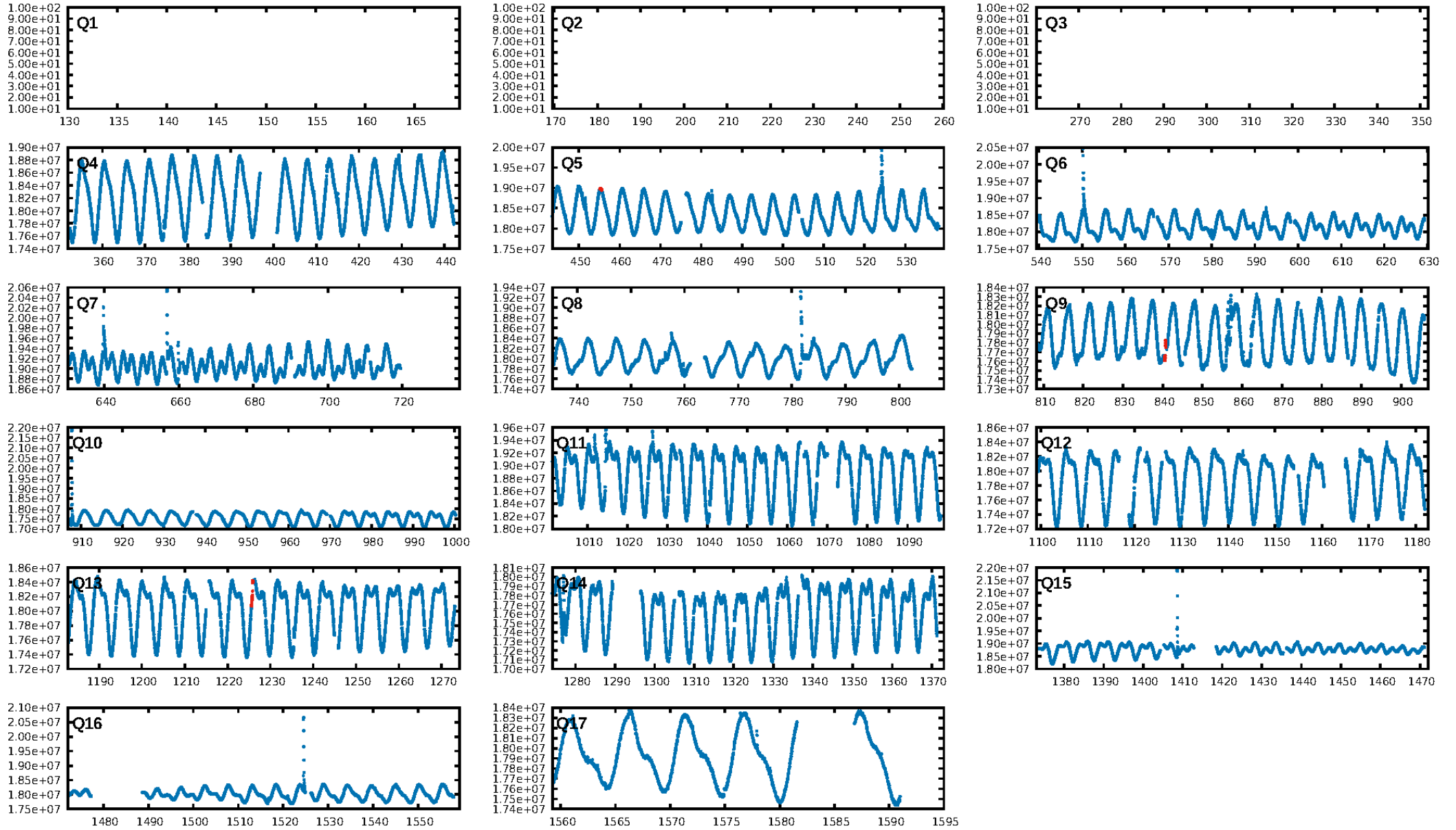
DV Fit Results:

Period = 385.19649 [0.00410] d
Epoch = 455.3916 [0.0049] BKJD
Rp/R* = 0.0480 [0.1839]
a/R* = 628.68 [9190.00]
b = 0.29 [46.59]
Seff = 0.38 [0.07]
Teq = 200 [10] K
Rp = 3.71 [14.19] Re
a = 0.9094 [0.0871] AU
Ag = 23607.24 [180993.07] [0.13σ]
Teffp = 3827 [7336] K [0.49σ]

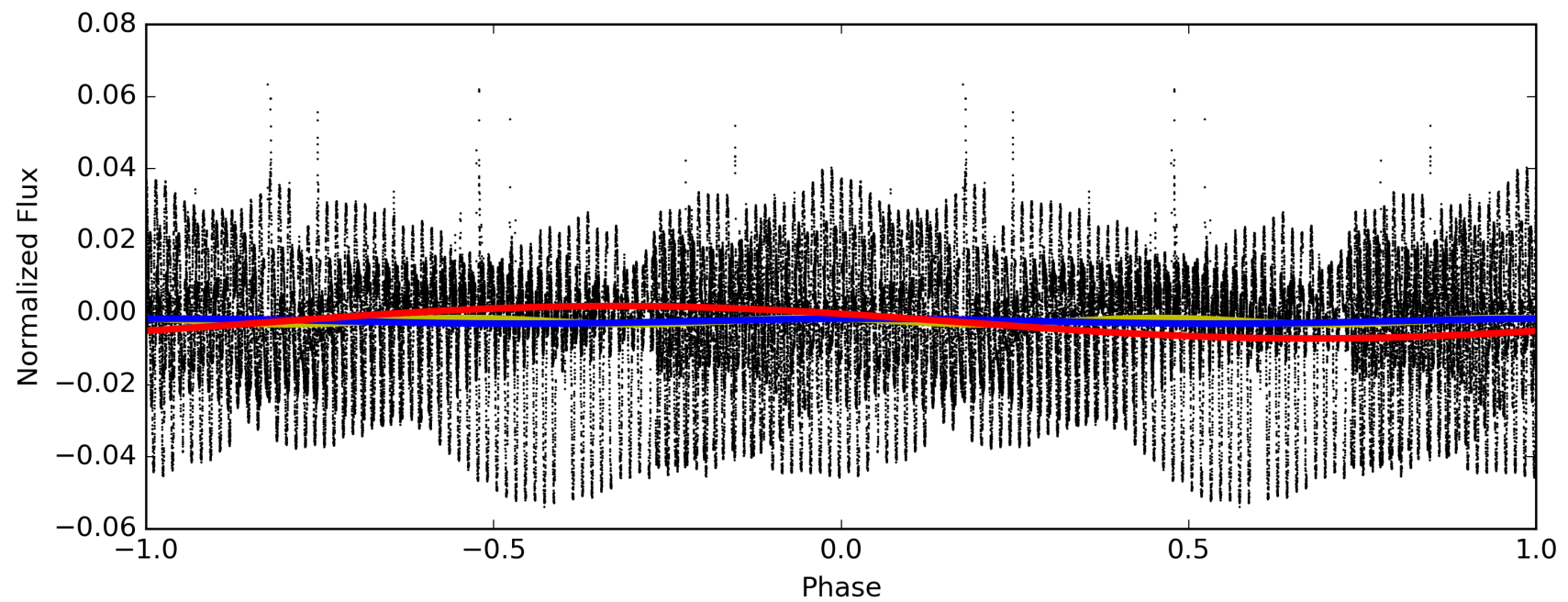
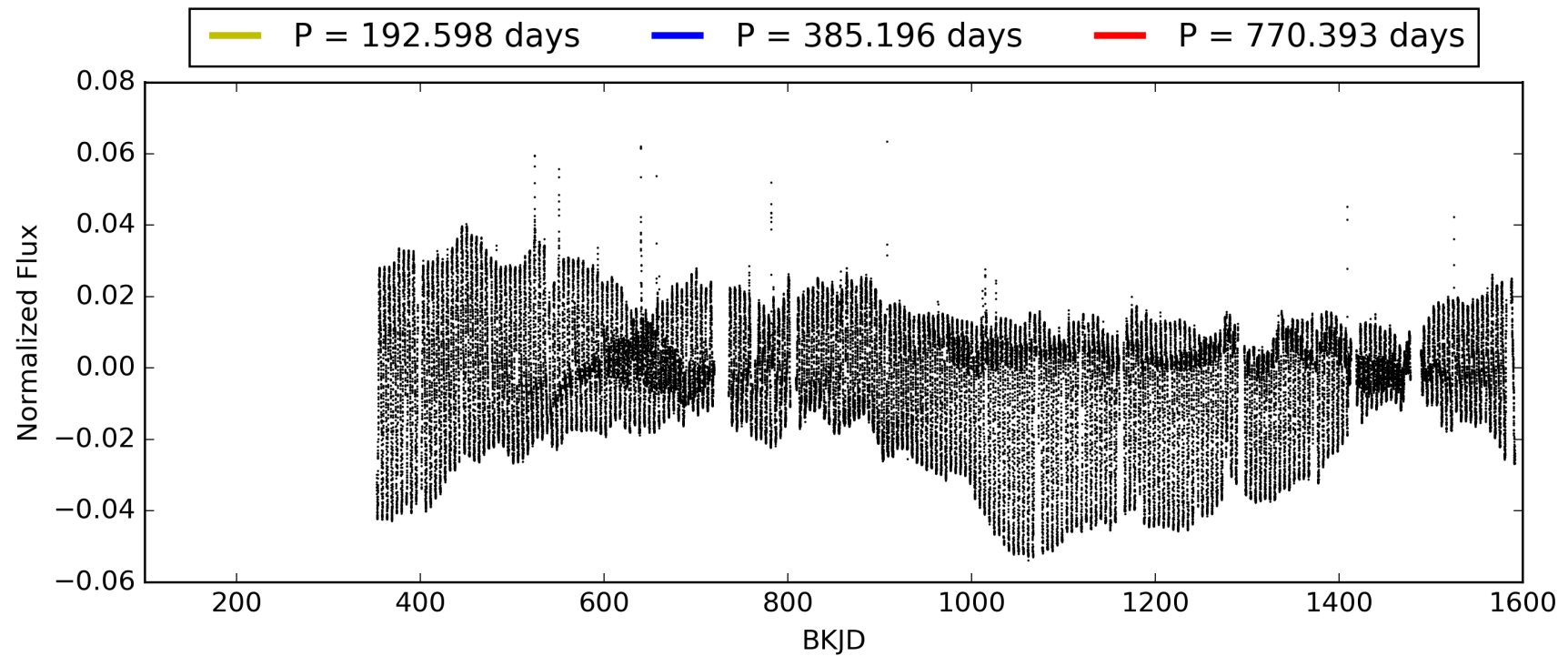
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [17.21σ]
LongPeriod-sig: 100.0% [59.47σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 0.5%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.5396
Centroid-sig: 1.6%
Centroid-so: 0.962 arcsec [1.86σ]
OotOffset-rm: 0.149 arcsec [0.99σ]
KicOffset-rm: 0.131 arcsec [0.74σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 009095110-01, PDC Light Curves

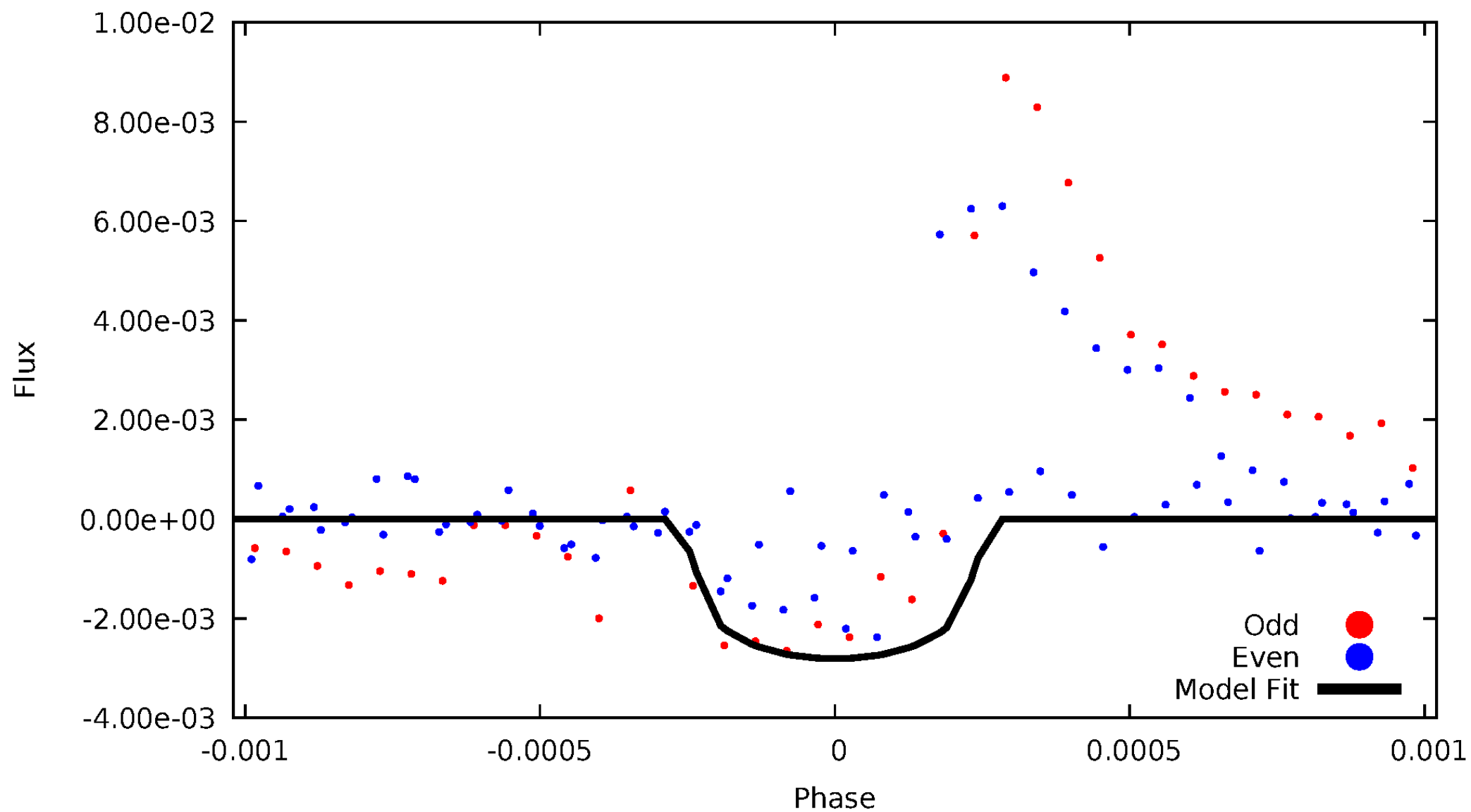


TCE 009095110-01



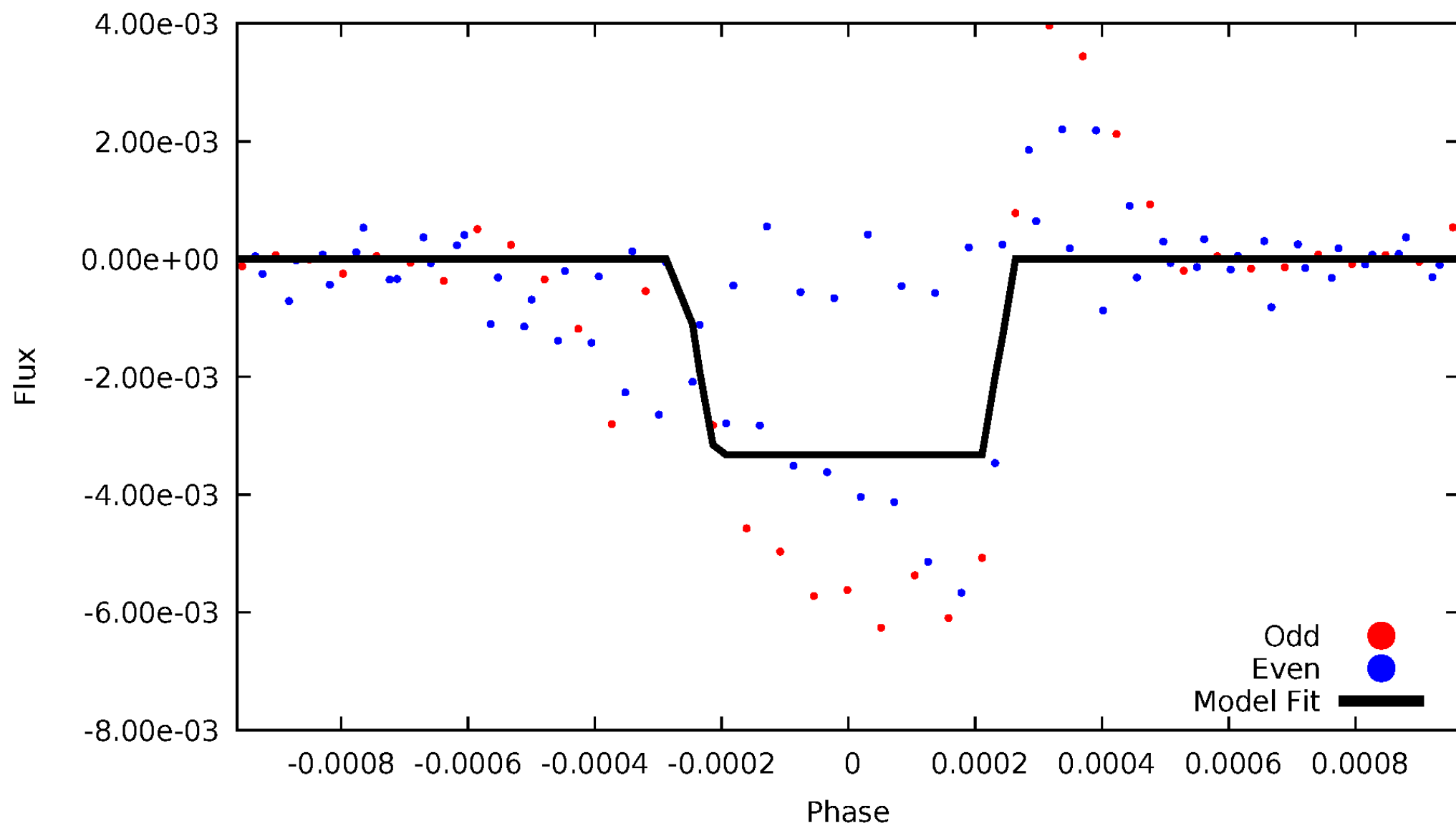
DV Odd/Even

TCE 009095110-01



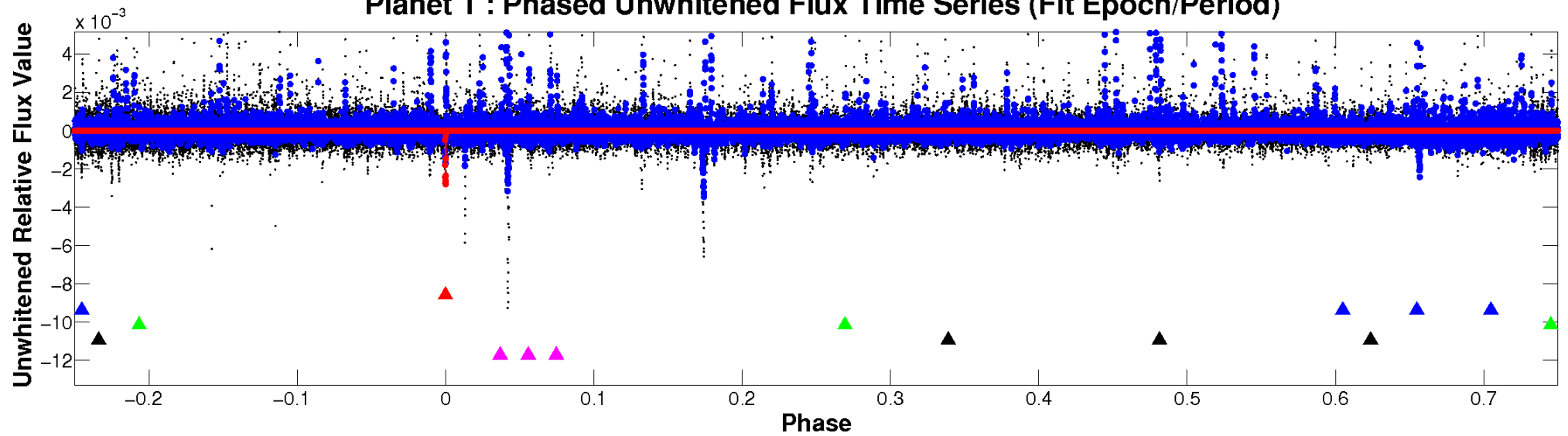
ALT Odd/Even

TCE 009095110-01

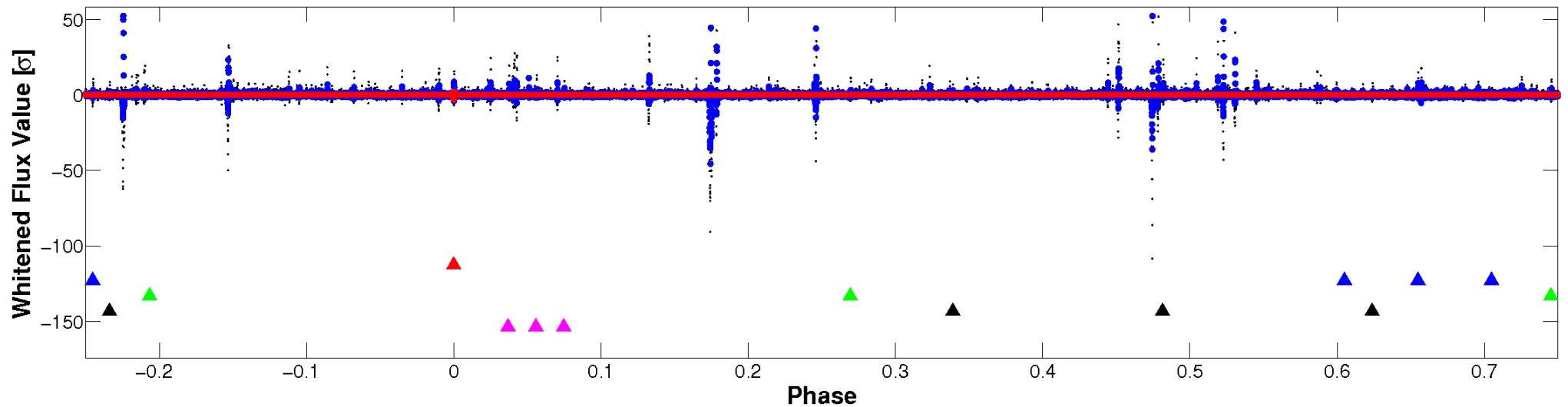


Non-Whitened Vs. Whitened Light Curve

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

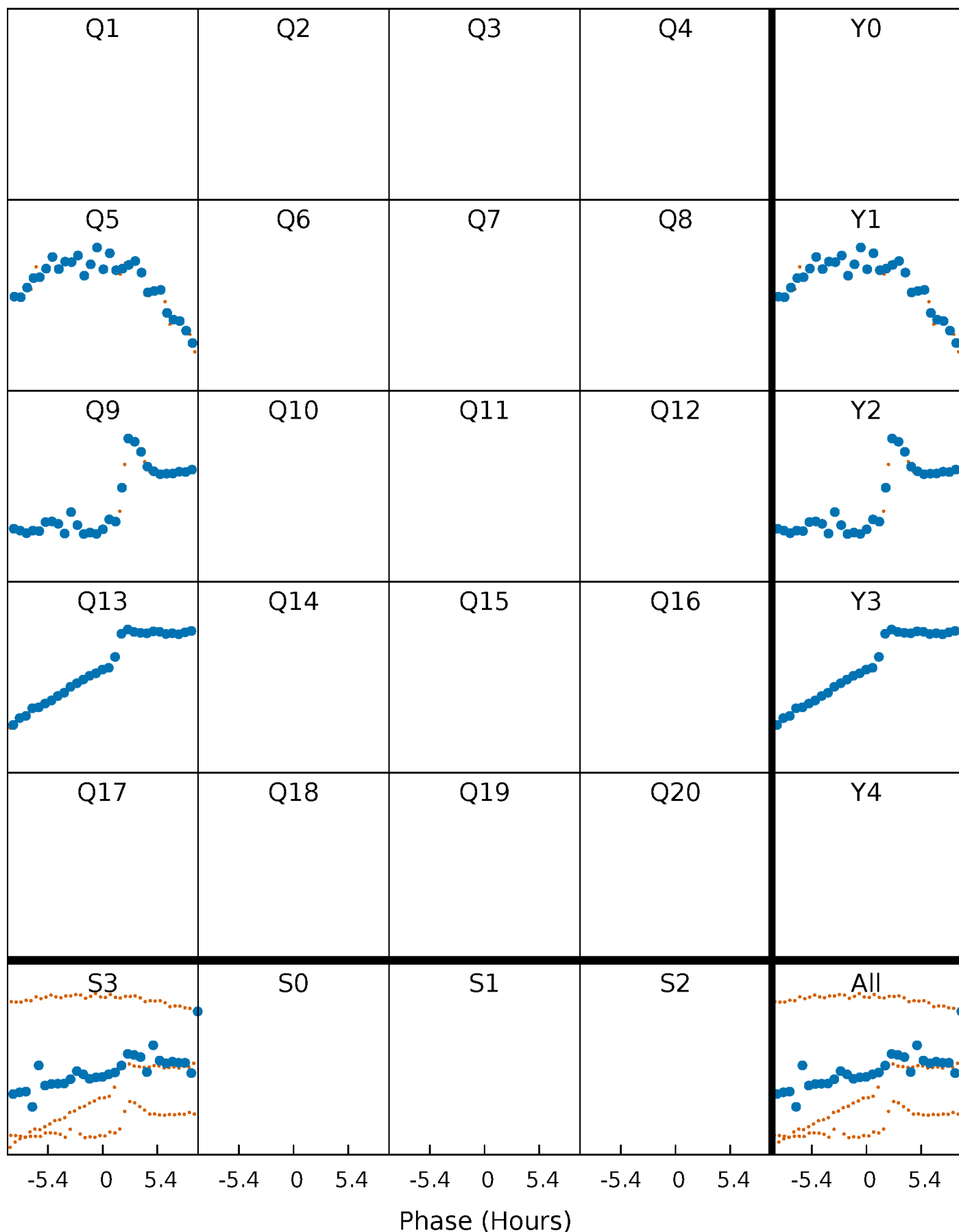


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



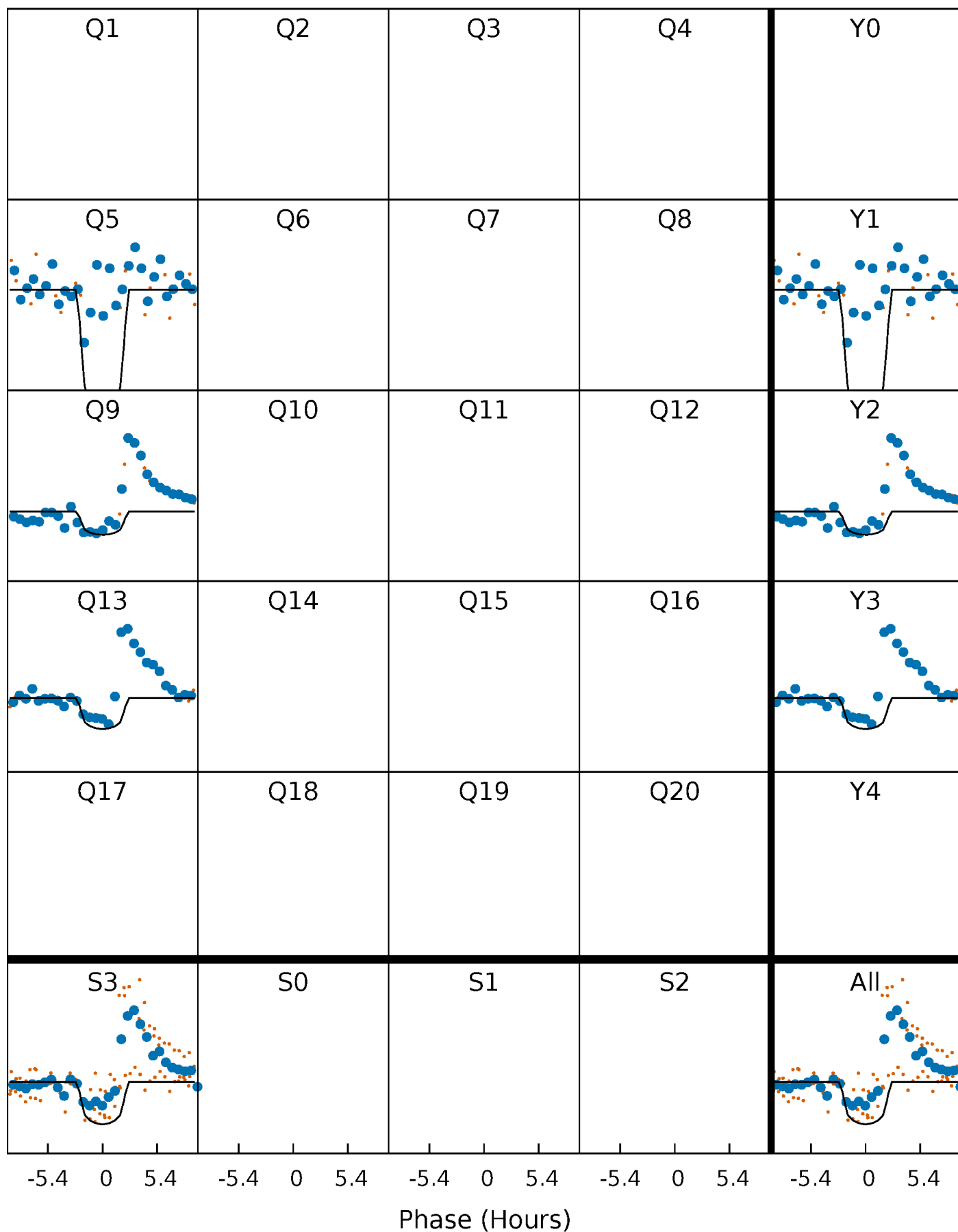
PDC Quarter-Phased Transit Curves

TCE 009095110-01 P=385.196495 Days $T_0=455.391605$ (BKJD)



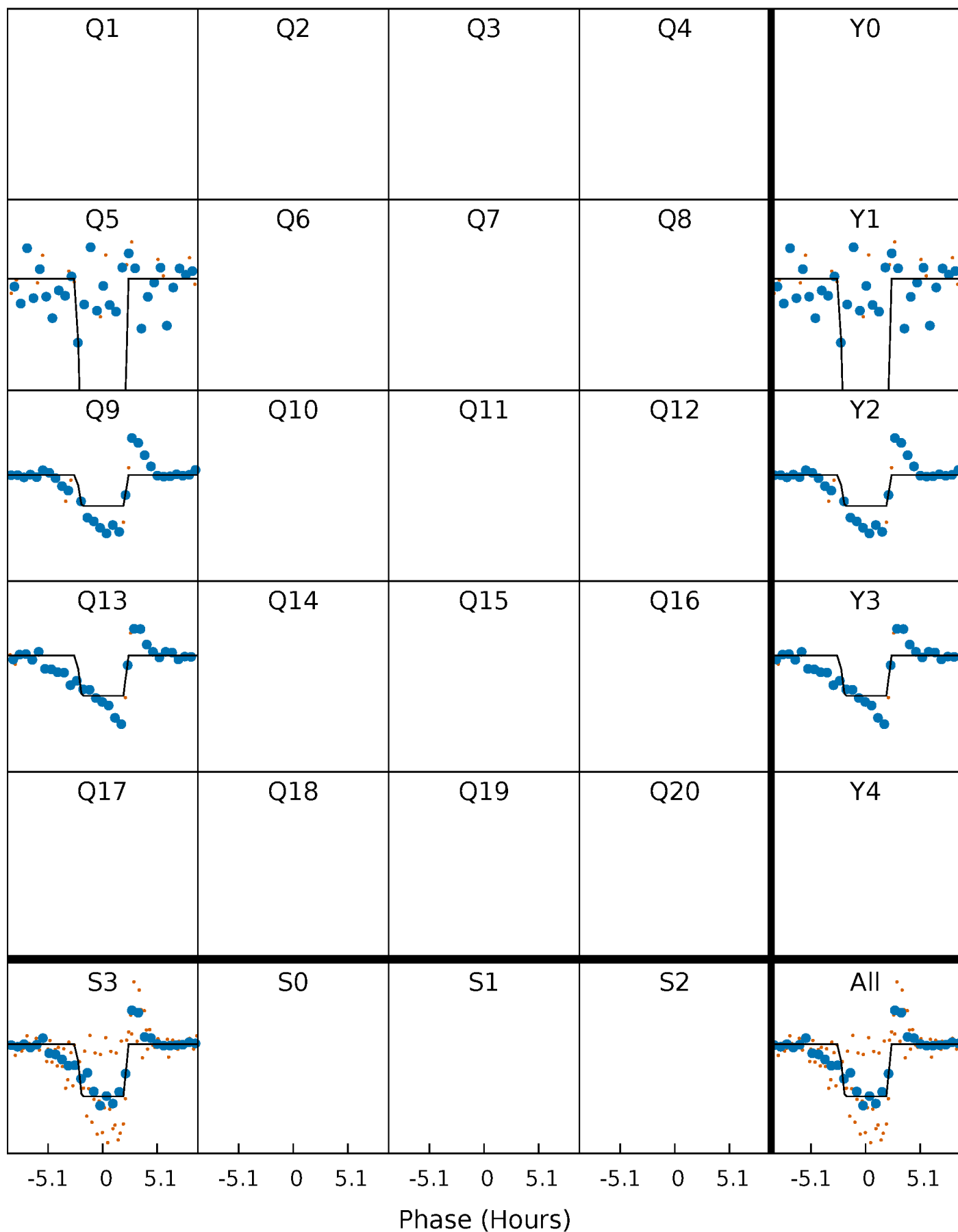
DV Quarter-Phased Transit Curves

TCE 009095110-01 $P=385.196495$ Days $T_0=455.391605$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

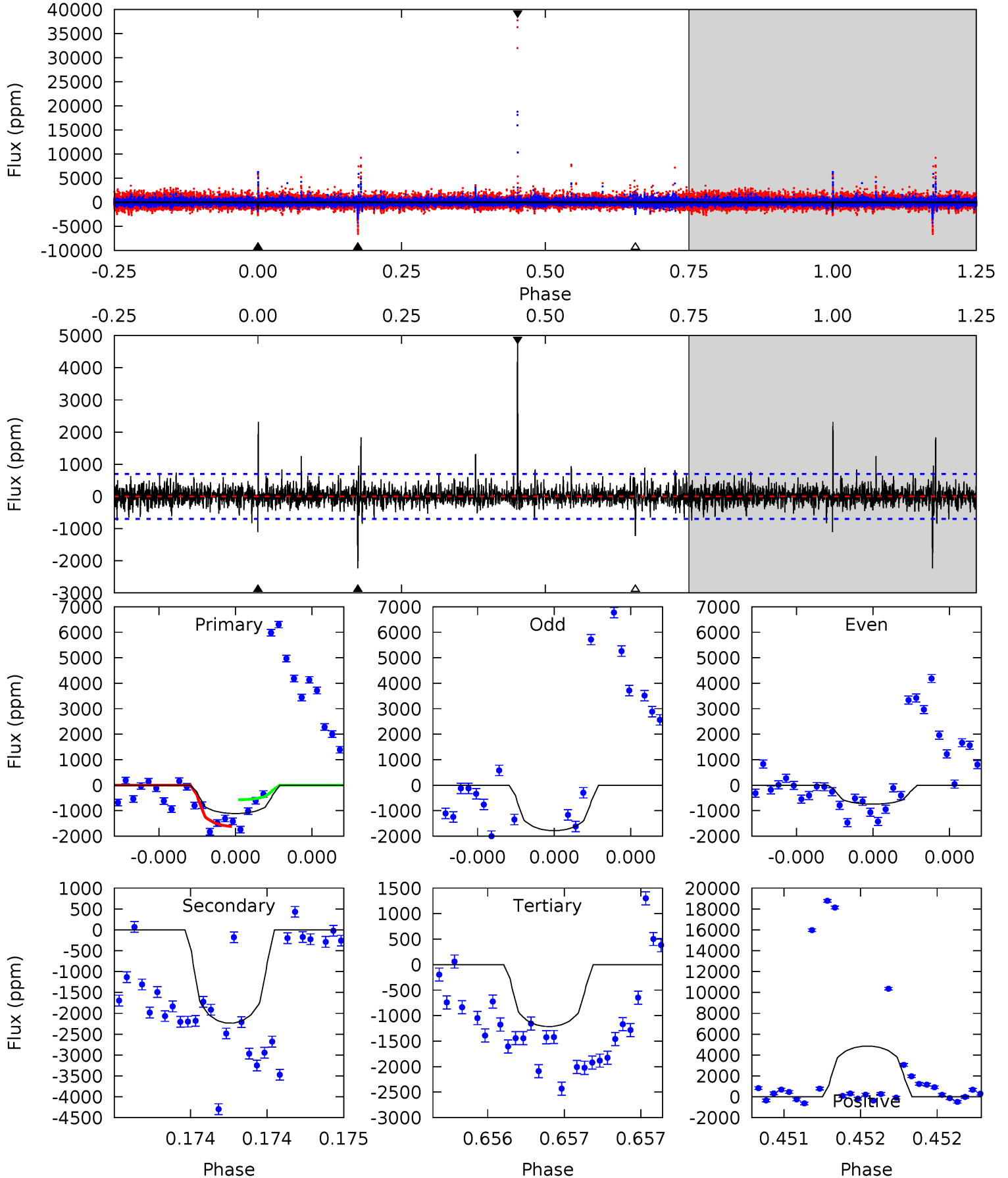
TCE 009095110-01 P=385.165795 Days $T_0=455.411819$ (BKJD)



DV Model-Shift Uniqueness Test

009095110-01, P = 385.196495 Days, E = 70.195110 Days

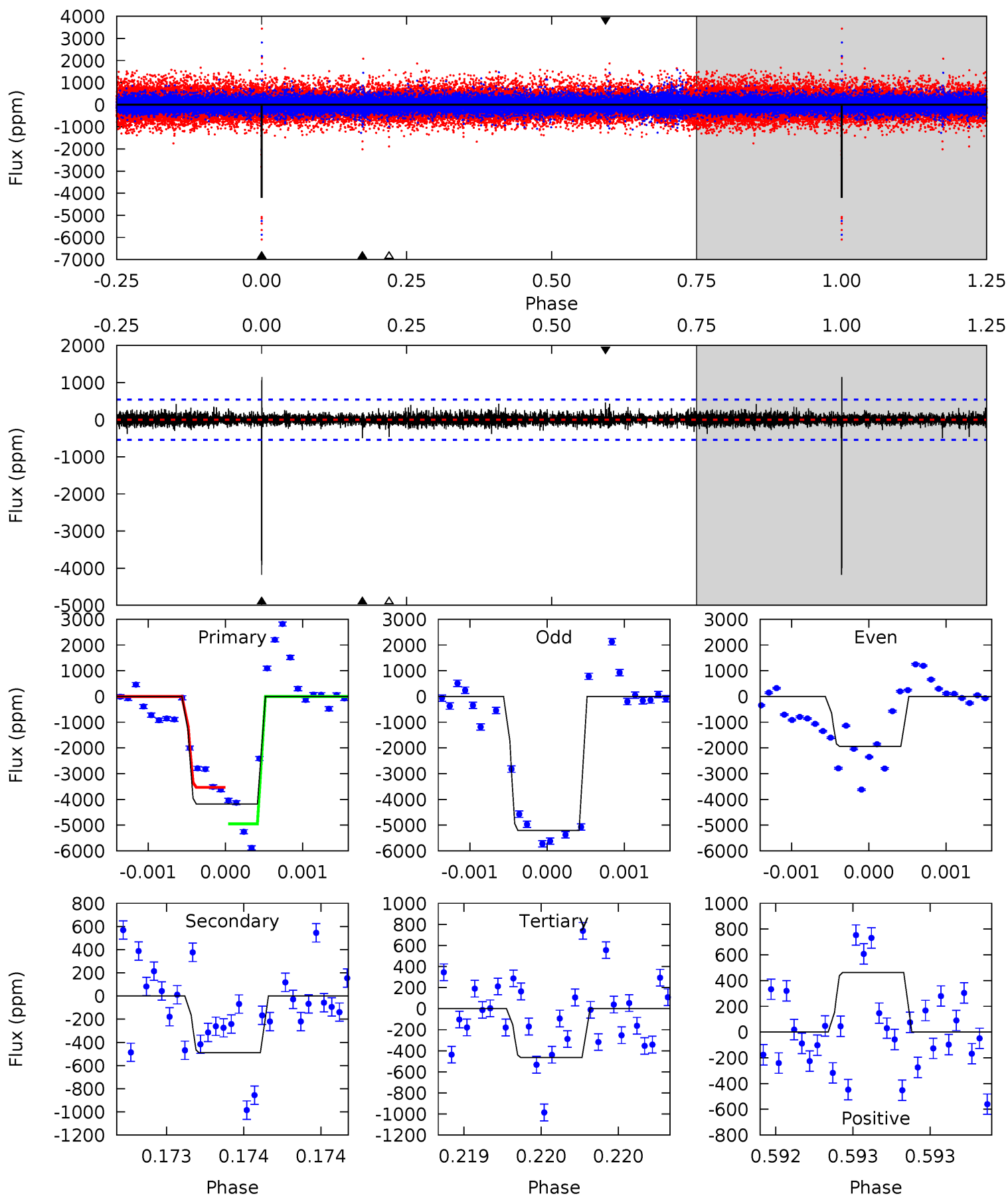
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.85	17.8	9.68	38.7	5.58	3.49	1.79	-0.83	-29.9	8.16	-20.9	1.22	1.92	0.68	4.18



Alt Model-Shift Uniqueness Test

009095110-01, P = 385.165795 Days, E = 70.246024 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
42.8	5.03	4.77	4.74	5.57	3.48	0.81	38.0	38.1	0.26	0.29	20.9	0.78	0.22	7.52



Stellar Parameters For KIC 009095110

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5134^{+179}_{-179}	$4.569^{+0.077}_{-0.056}$	$-0.500^{+0.300}_{-0.300}$	$0.707^{+0.080}_{-0.080}$	$0.676^{+0.087}_{-0.044}$	$2.696^{+0.920}_{-0.519}$
	+3%/-3%	+2%/-1%	+60%/-60%	+11%/-11%	+13%/-7%	+34%/-19%
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 009095110-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2235 ± 125	$10.61^{+12.08}_{-7.58}$	278^{+11}_{-13}	3445^{+2059}_{-649}	$9007^{+103986}_{-6943}$
Alt.	-490 ± 97	$11.83^{+11.48}_{-8.12}$	279^{+11}_{-14}	2707^{+1093}_{-426}	1643^{+15179}_{-1242}

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

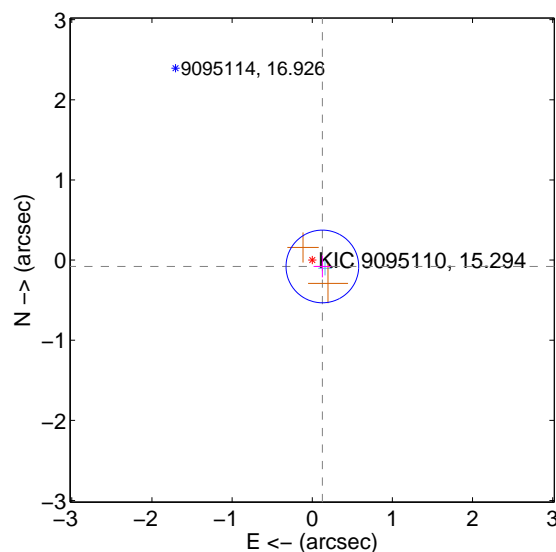
Supplemental centroid analysis for 009095110-01. Kepler magnitude: 15.29. Transit SNR 13.99

There are 1 quarters with good PRF difference image offsets

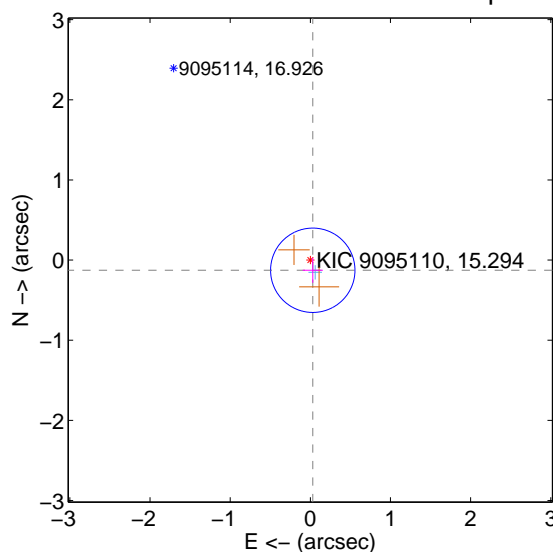
The direct PRF centroid is offset from the target star catalog position by about 0.10 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.149 ± 0.151	0.99	-0.126 ± 0.109	-0.079 ± 0.136
PRF-fit source offset from KIC position	0.131 ± 0.175	0.74	-0.031 ± 0.126	-0.127 ± 0.156
photometric centroid source offset	0.96 ± 0.52	1.86	-0.78 ± 0.50	-0.57 ± 0.54

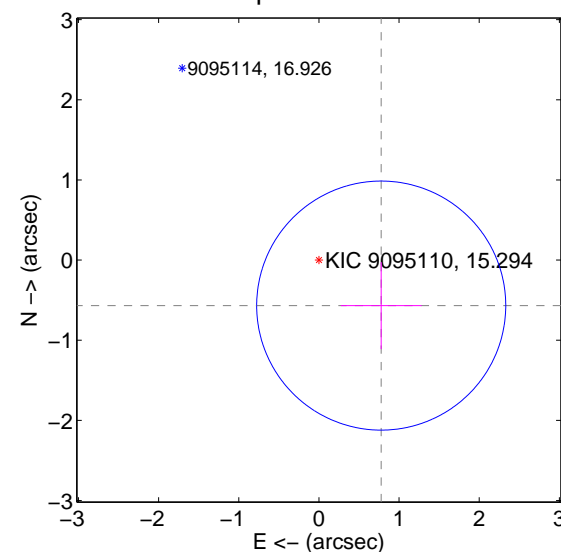
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

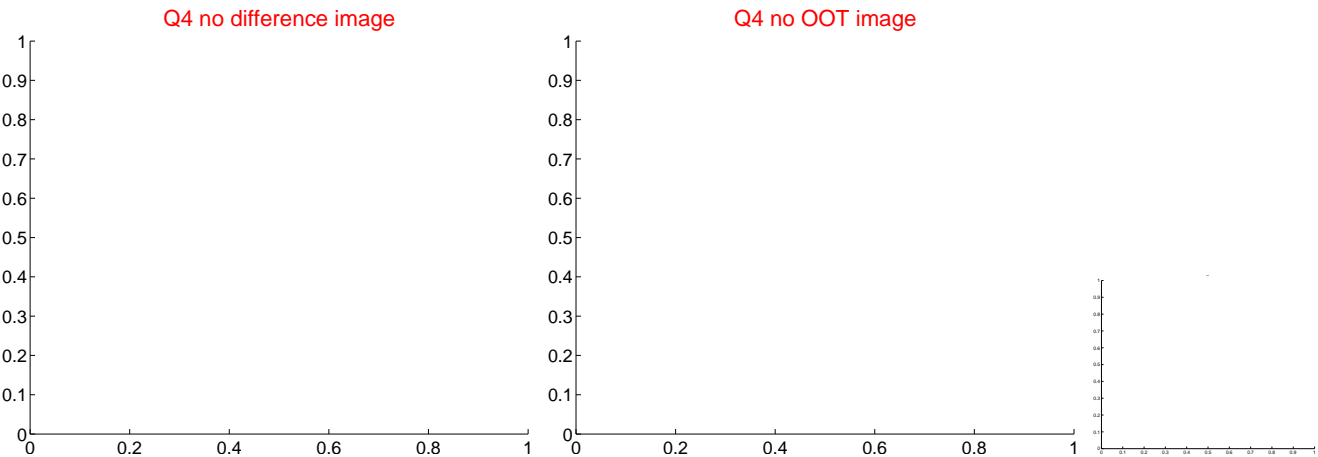
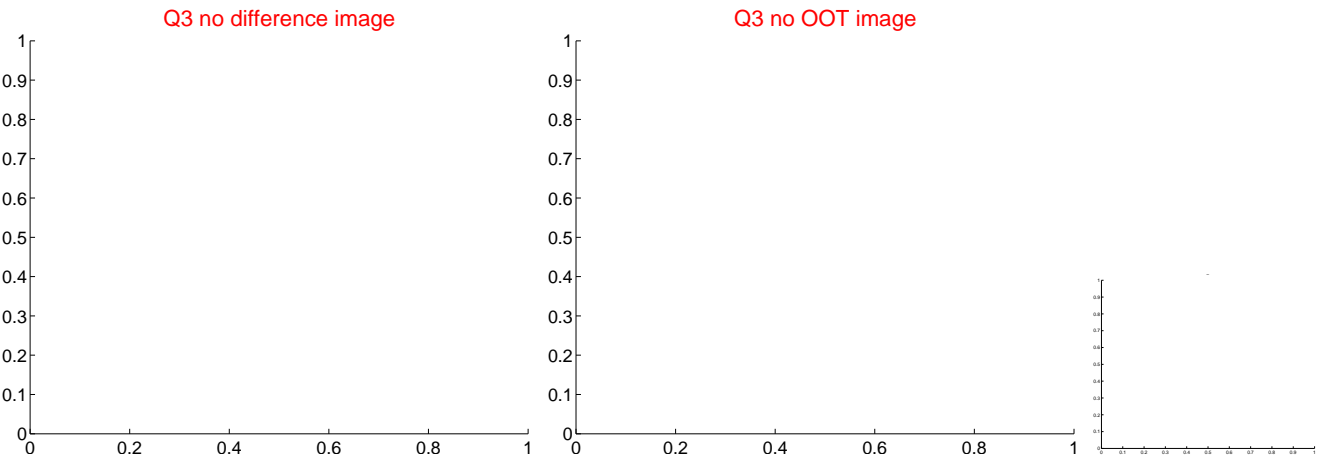
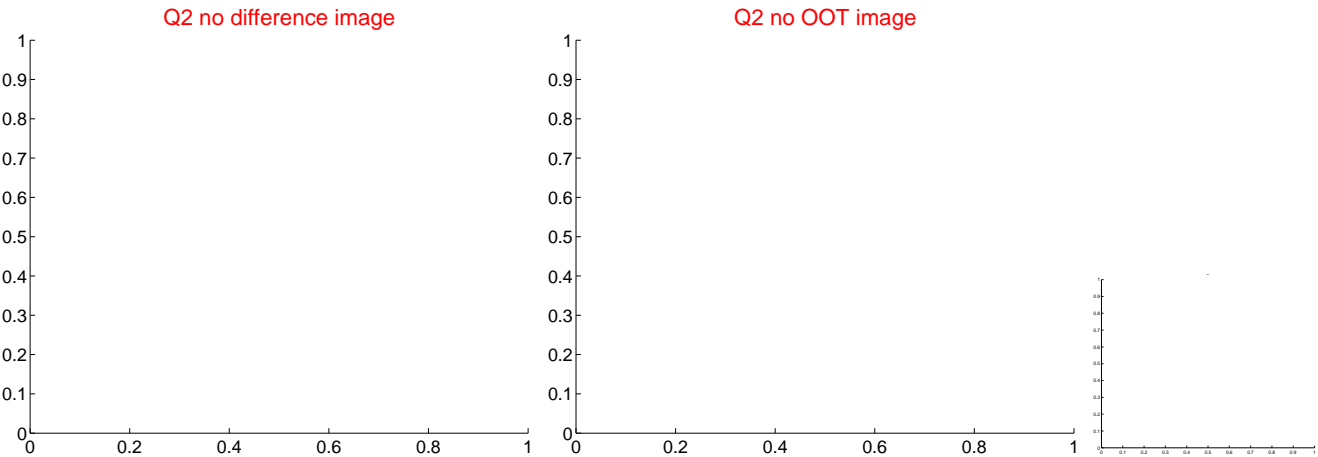
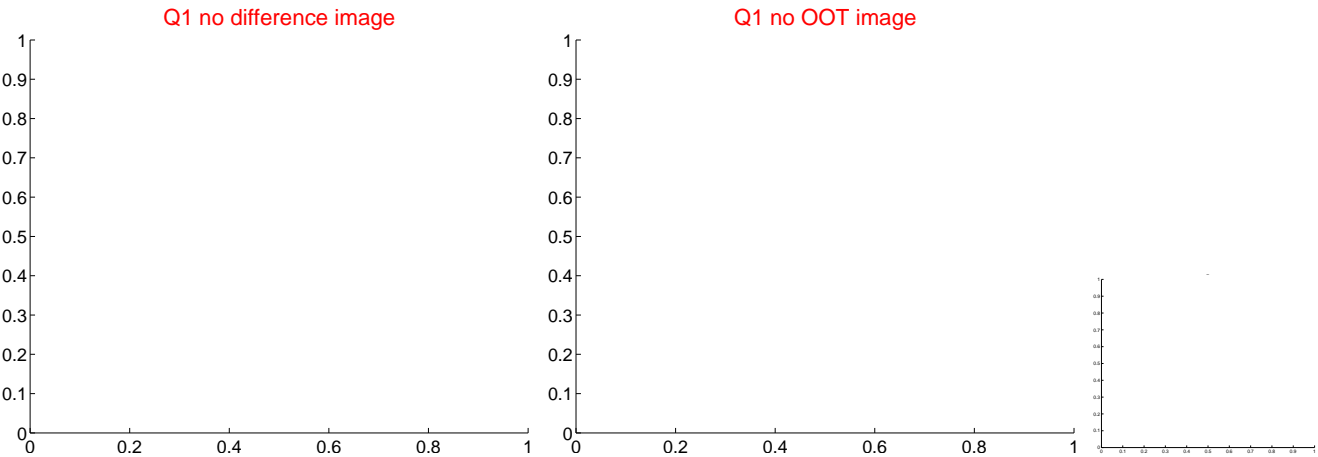


offset from photometric centroids

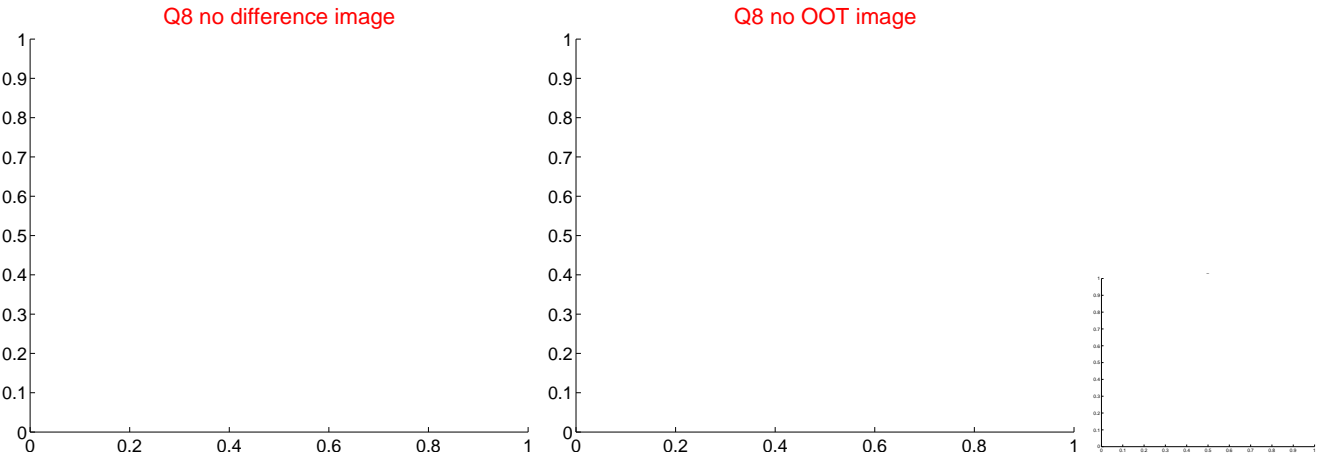
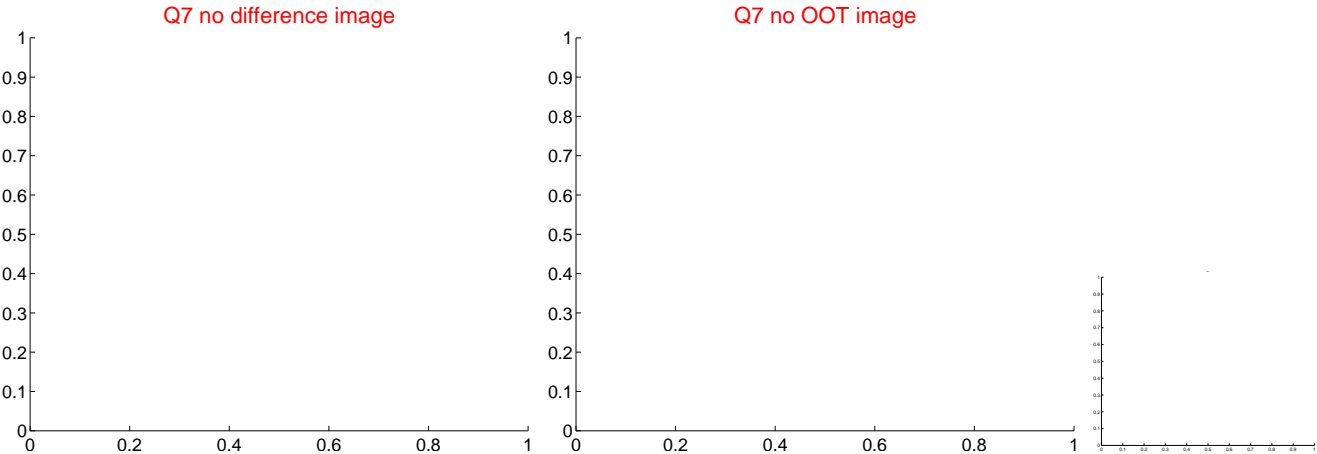
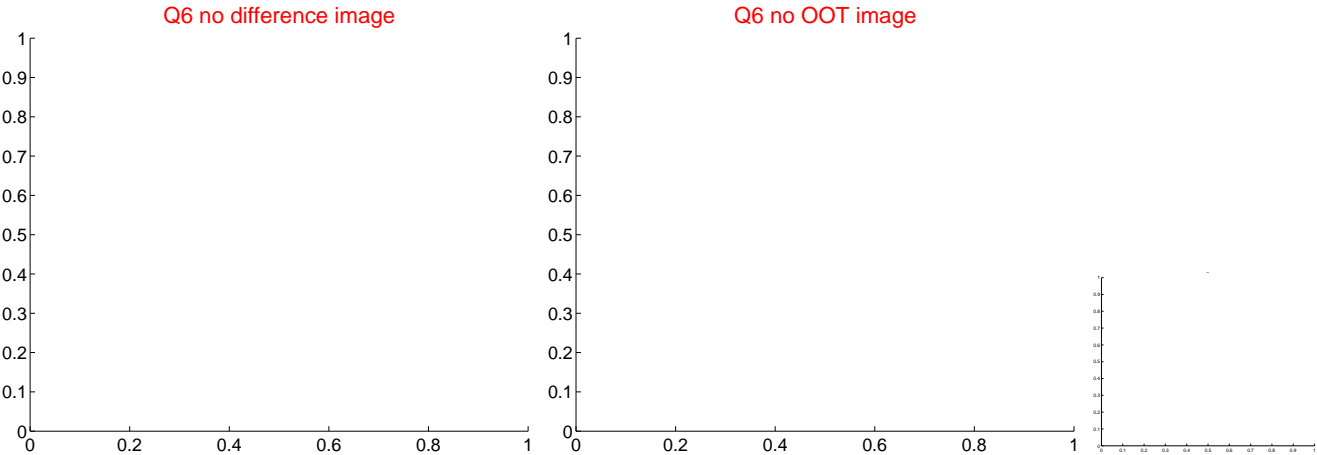
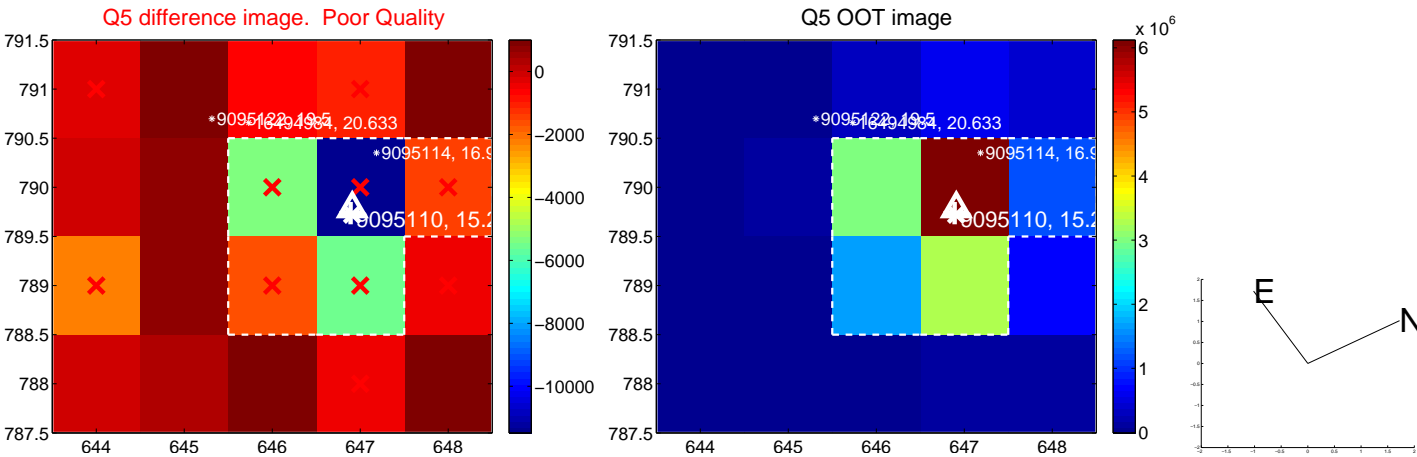


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

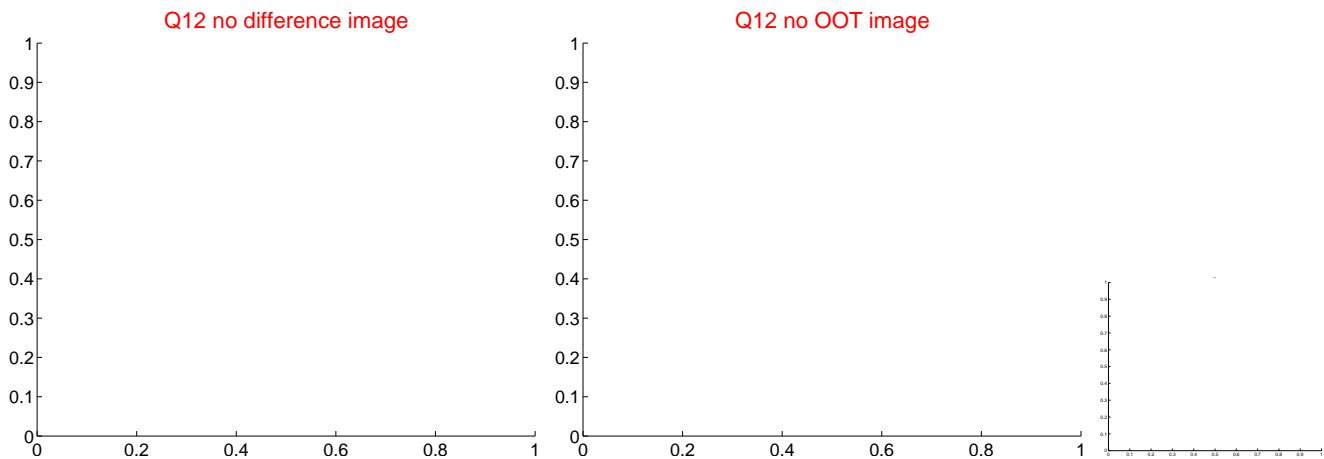
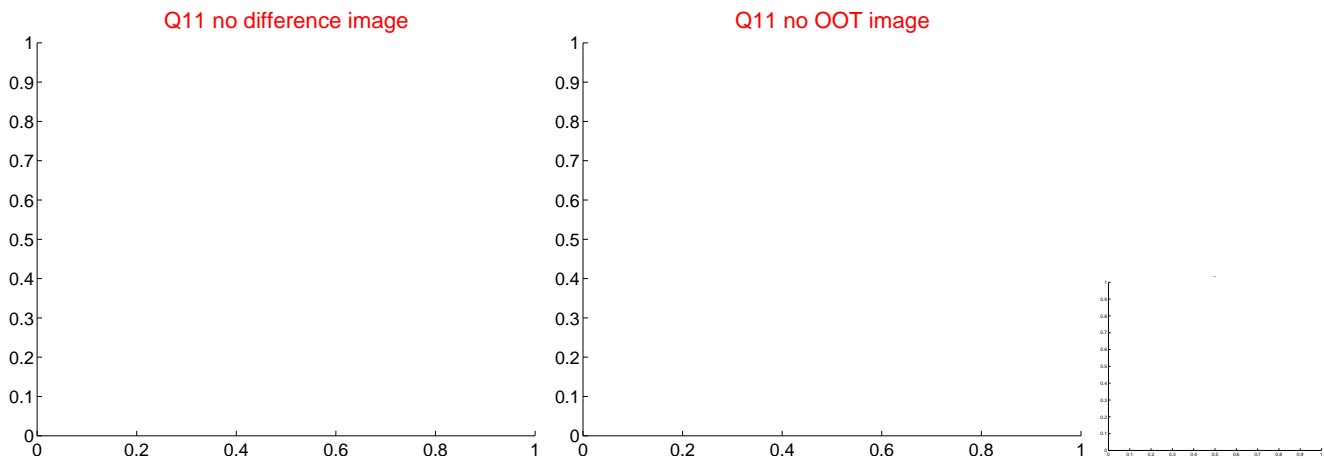
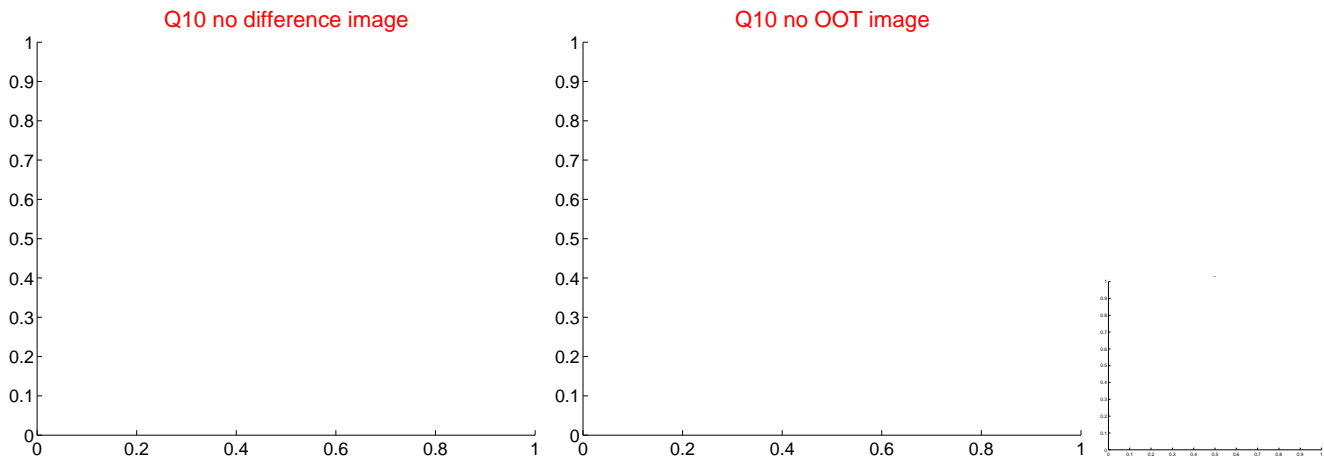
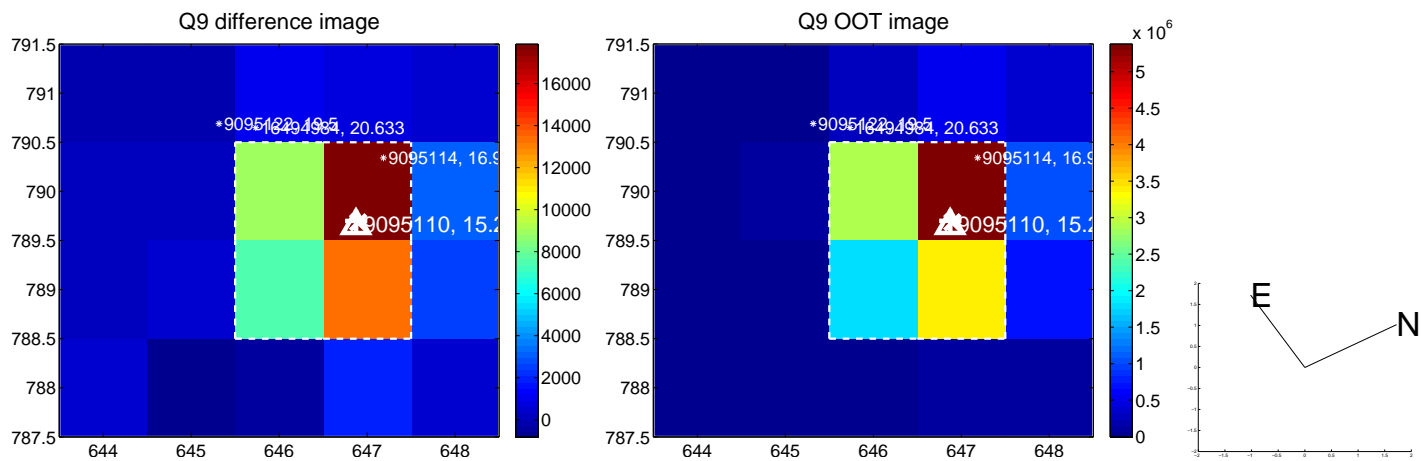
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



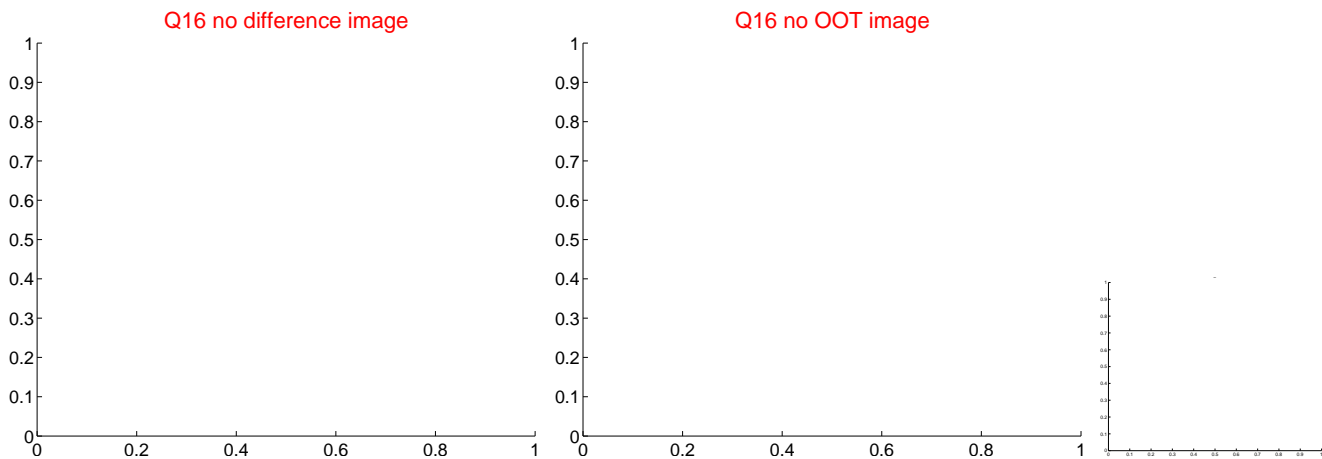
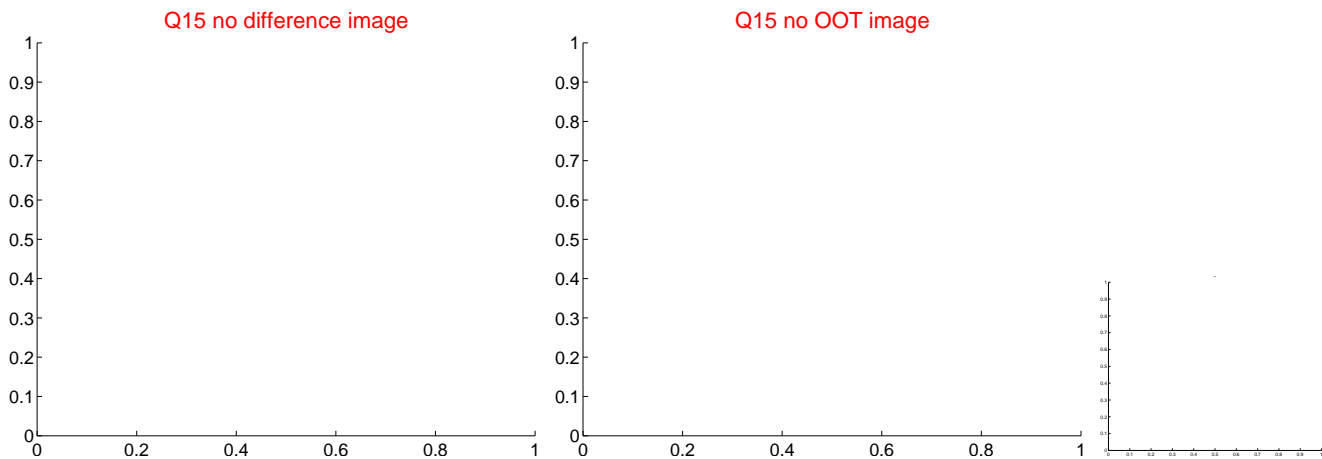
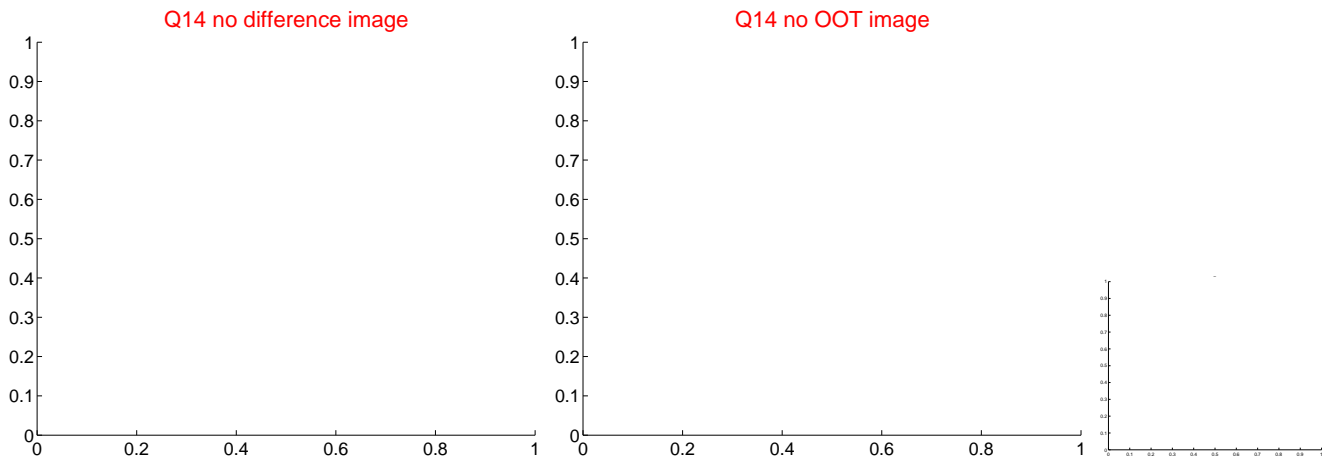
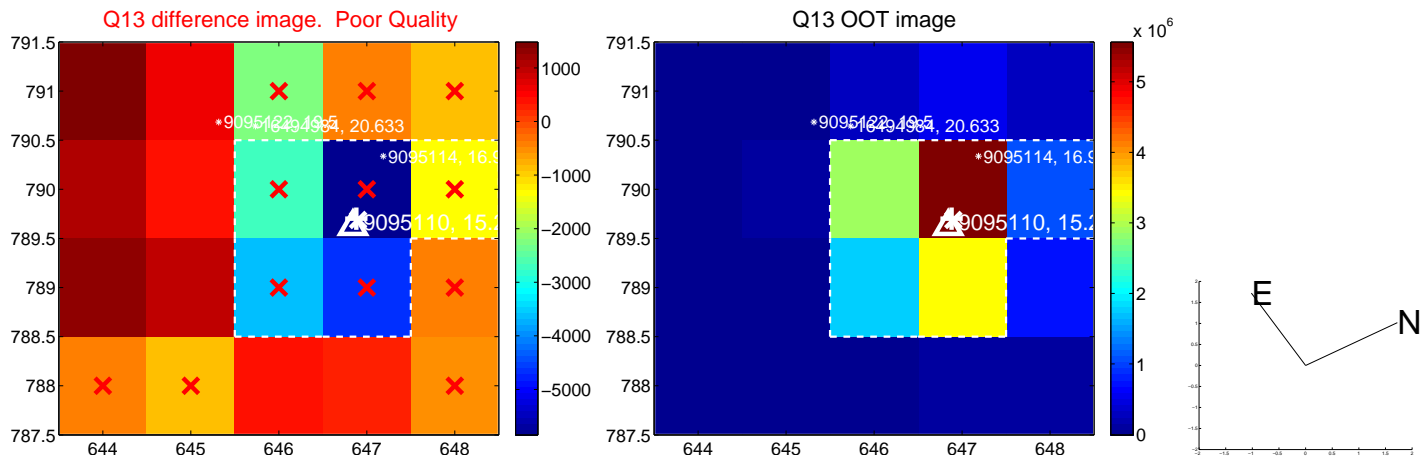
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



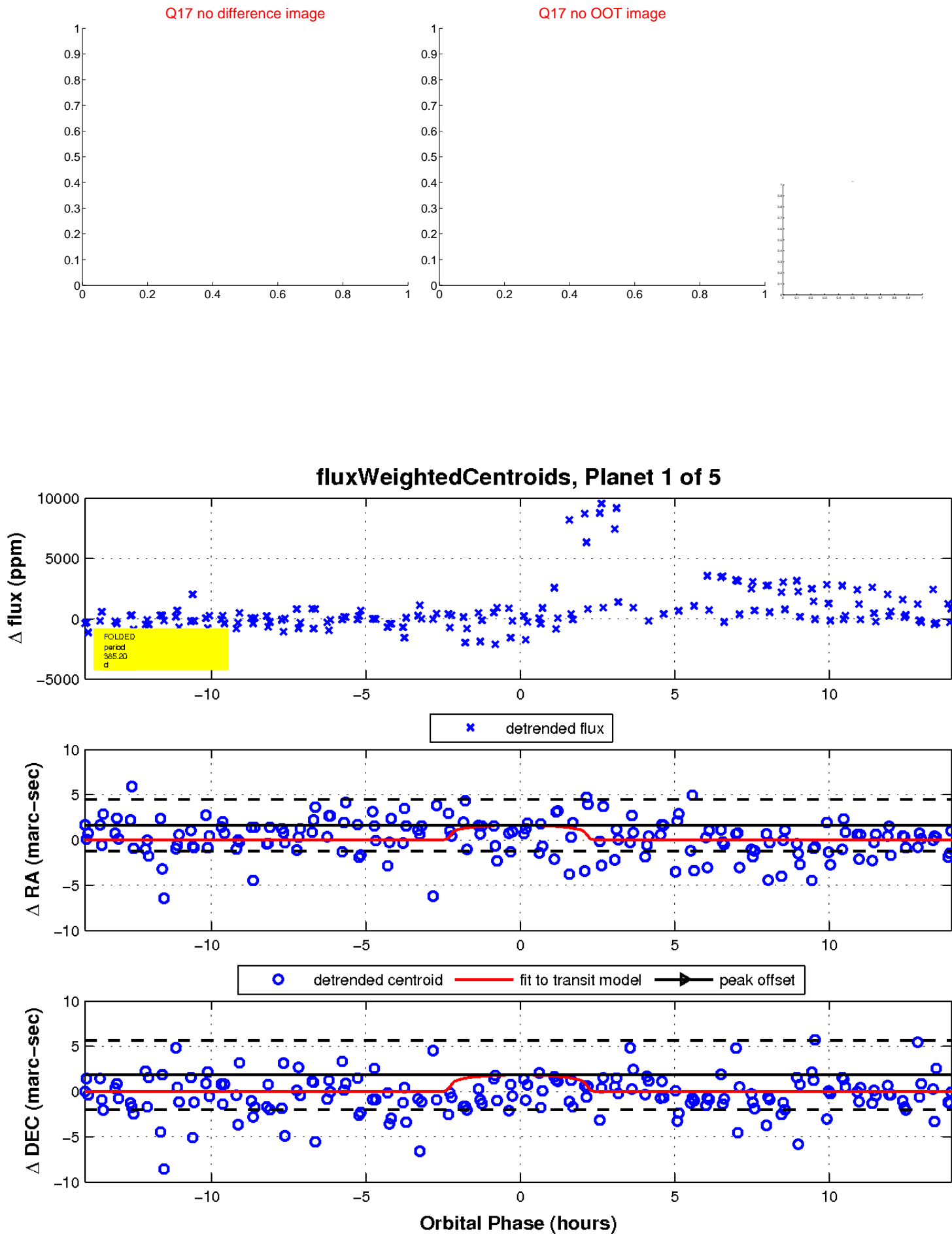
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

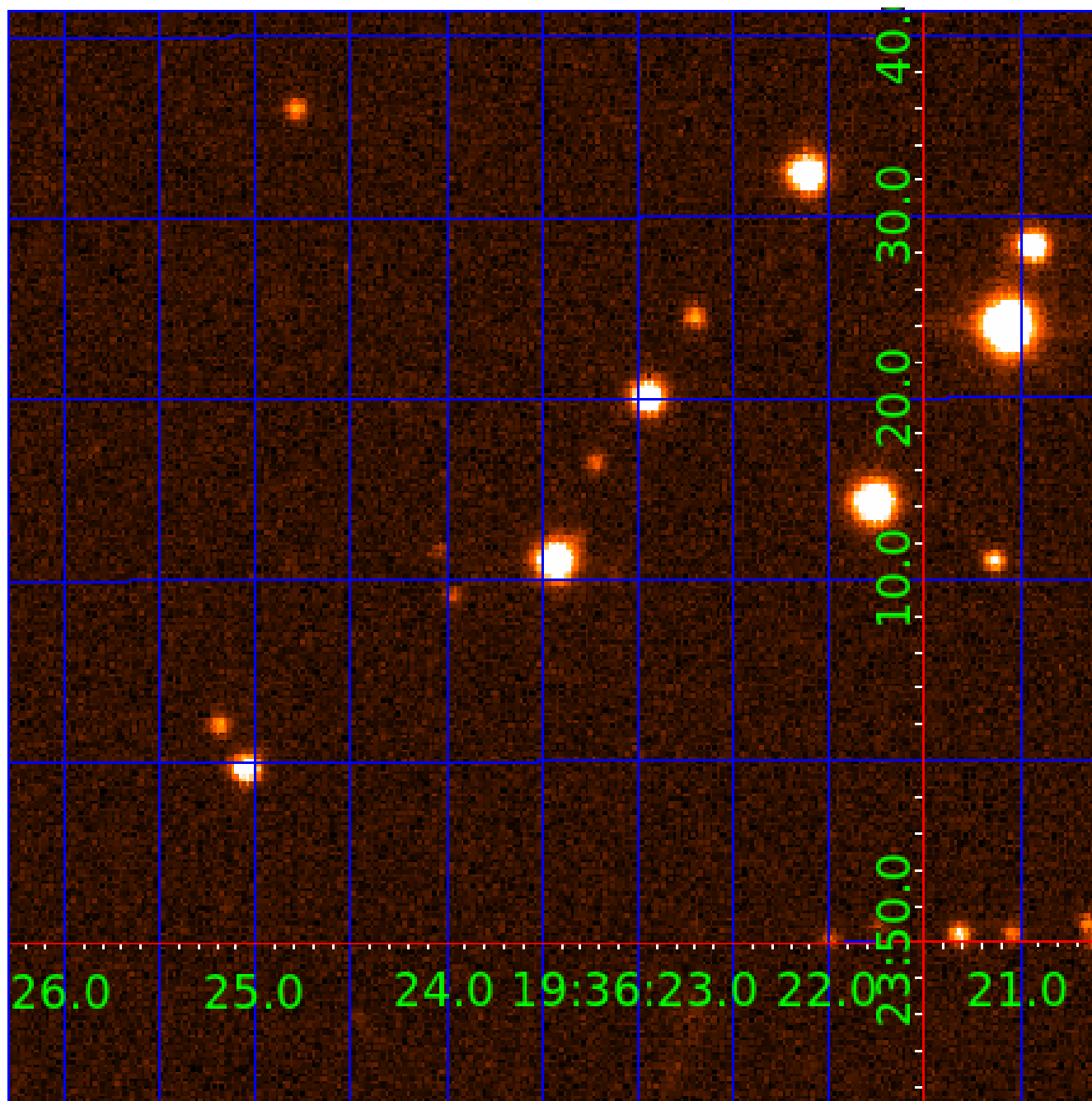


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009095110

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})
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009095110-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009095110-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

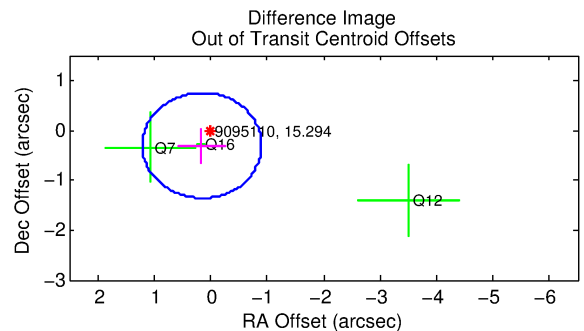
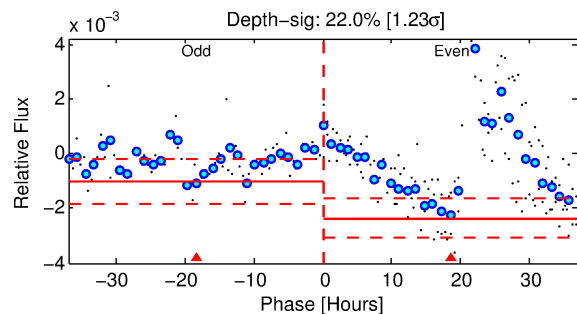
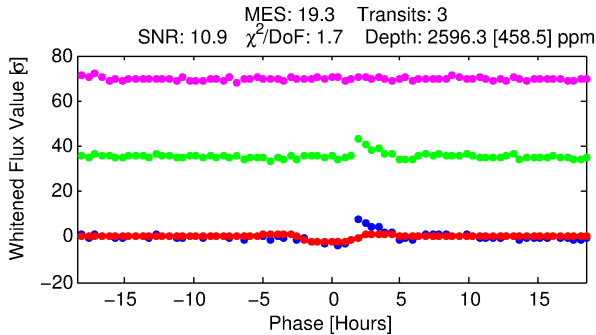
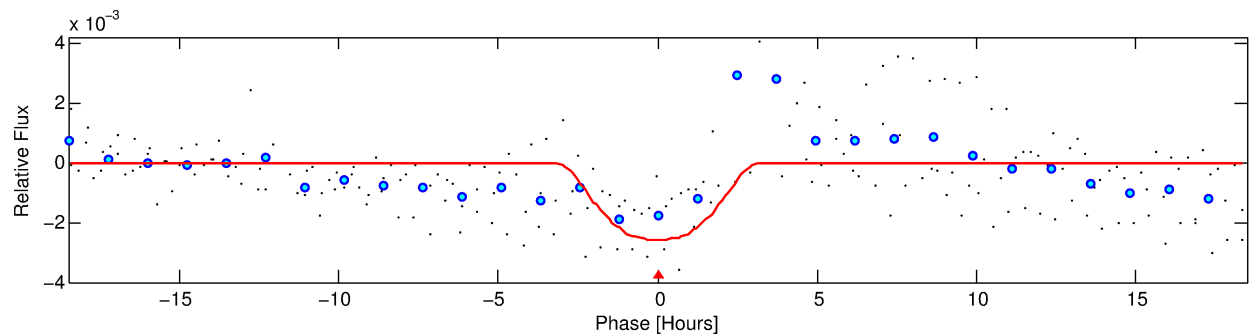
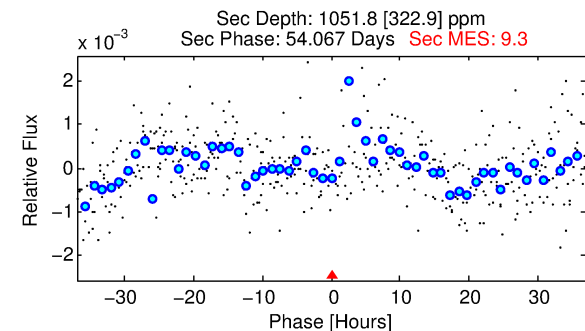
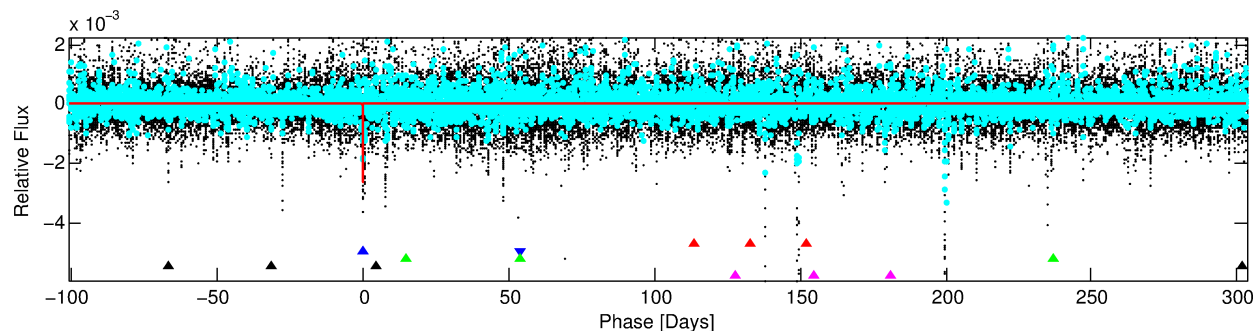
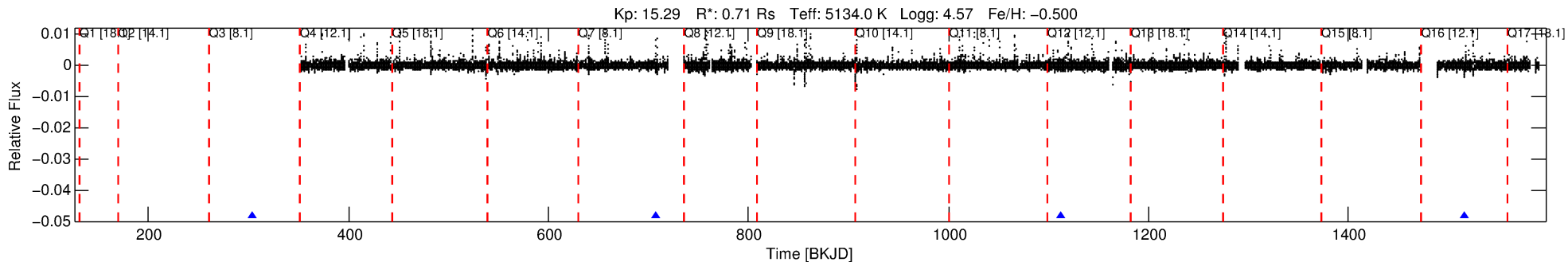
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009095110-02

No Significant Match Found

DV One-Page Summary

KIC: 9095110 Candidate: 2 of 5 Period: 404.432 d



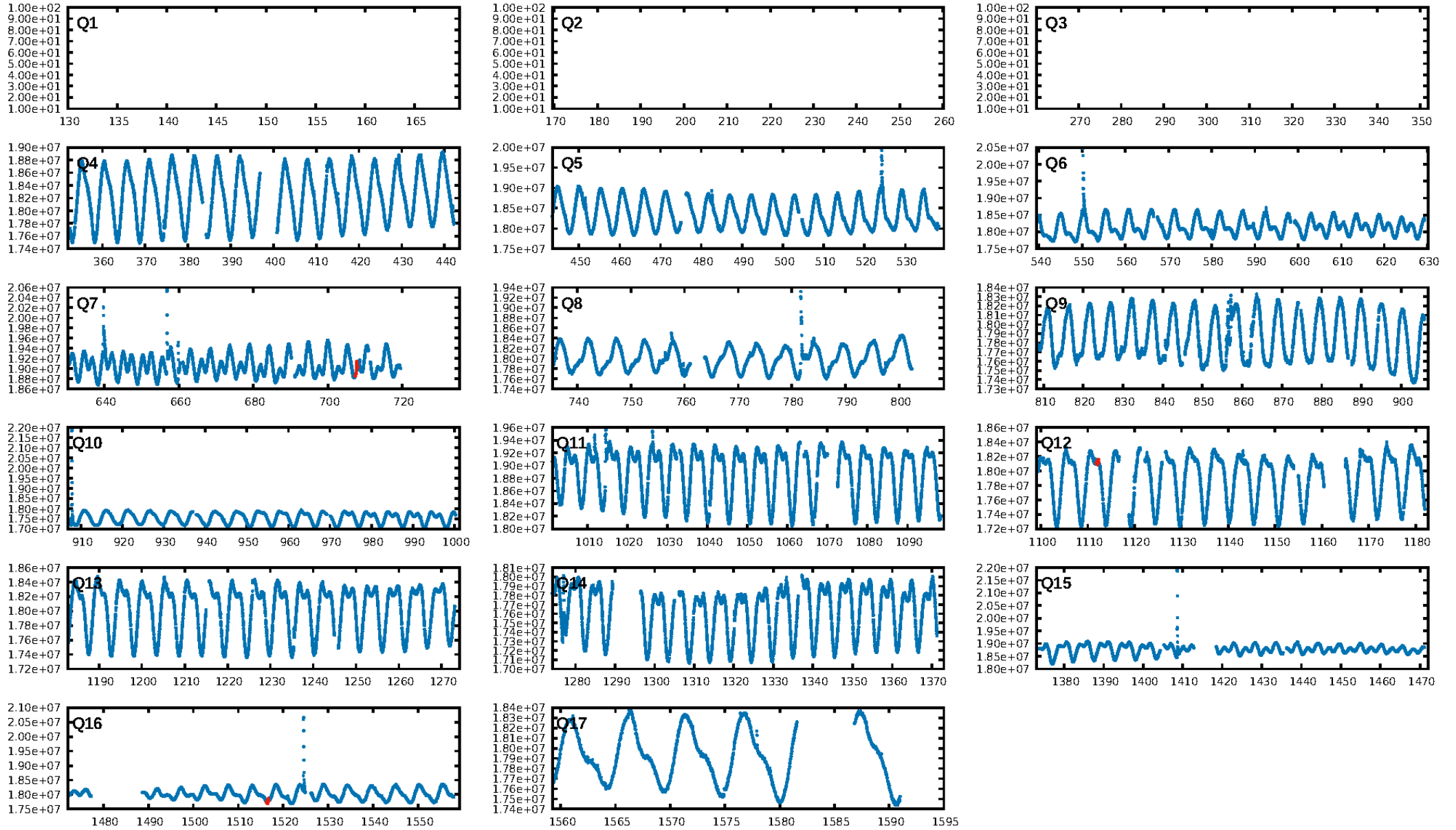
DV Fit Results:

Period = 404.43235 [0.00821] d
Epoch = 303.2345 [0.0186] BKJD
Rp/R* = 0.0598 [0.0080]
a/R* = 246.65 [41.84]
b = 0.94 [0.03]
Seff = 0.35 [0.07]
Teff = 196 [10] K
Rp = 4.62 [0.81] Re
a = 0.9395 [0.0900] AU
Ag = 23955.96 [10334.71] [2.32σ]
Teffp = 3779 [407] K [8.79σ]

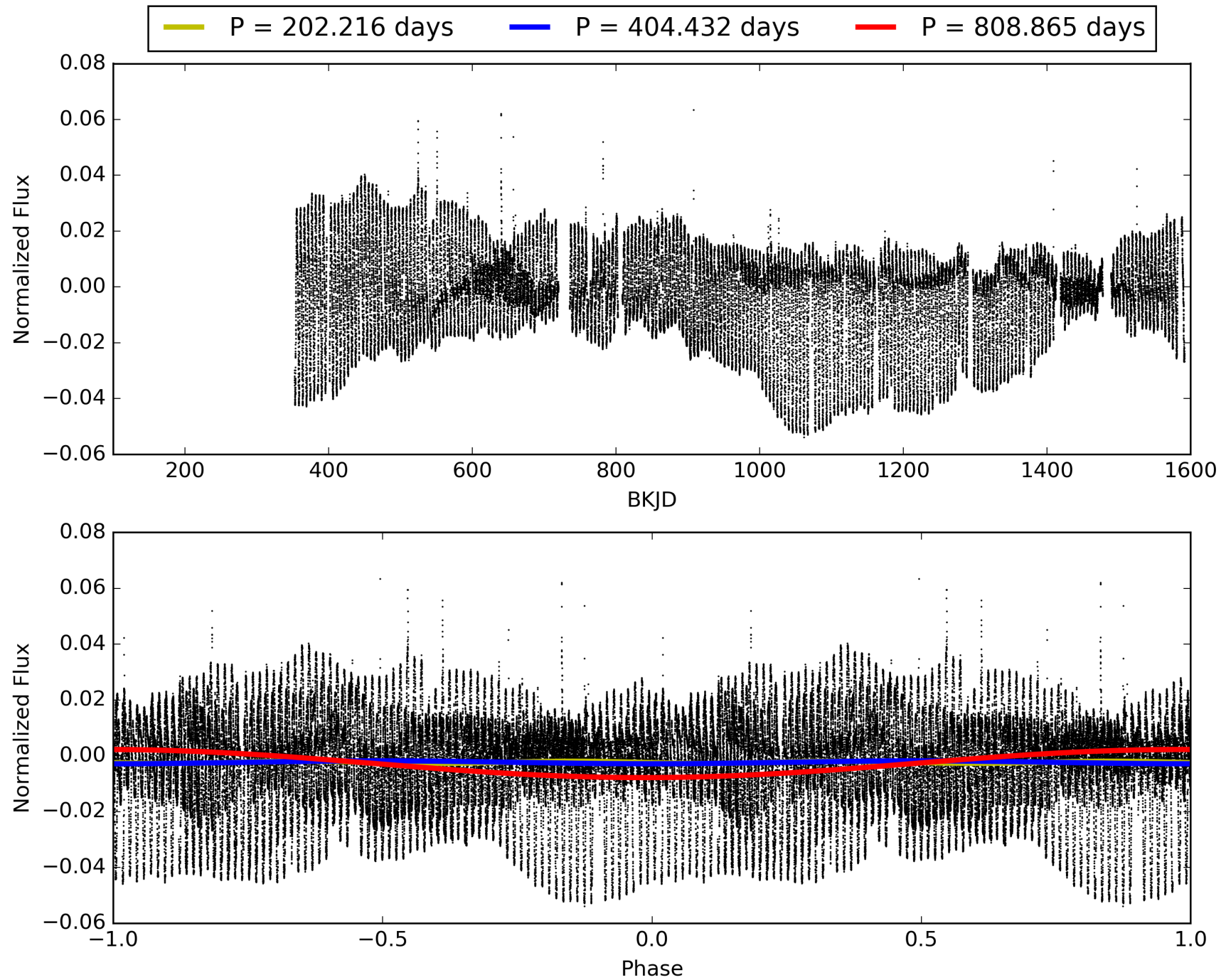
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [59.47σ]
LongPeriod-sig: 100.0% [111.54σ]
ModelChiSquare2-sig: 0.0%
ModelChiSquareGof-sig: 12.2%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 19.19
Centroid-sig: 83.9%
Centroid-so: 0.206 arcsec [0.29σ]
OotOffset-rm: 0.343 arcsec [0.97σ]
OotOffset-st: 0/1/2/0 [3]
KicOffset-rm: 0.368 arcsec [0.92σ]
KicOffset-st: 0/1/2/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 009095110-02, PDC Light Curves

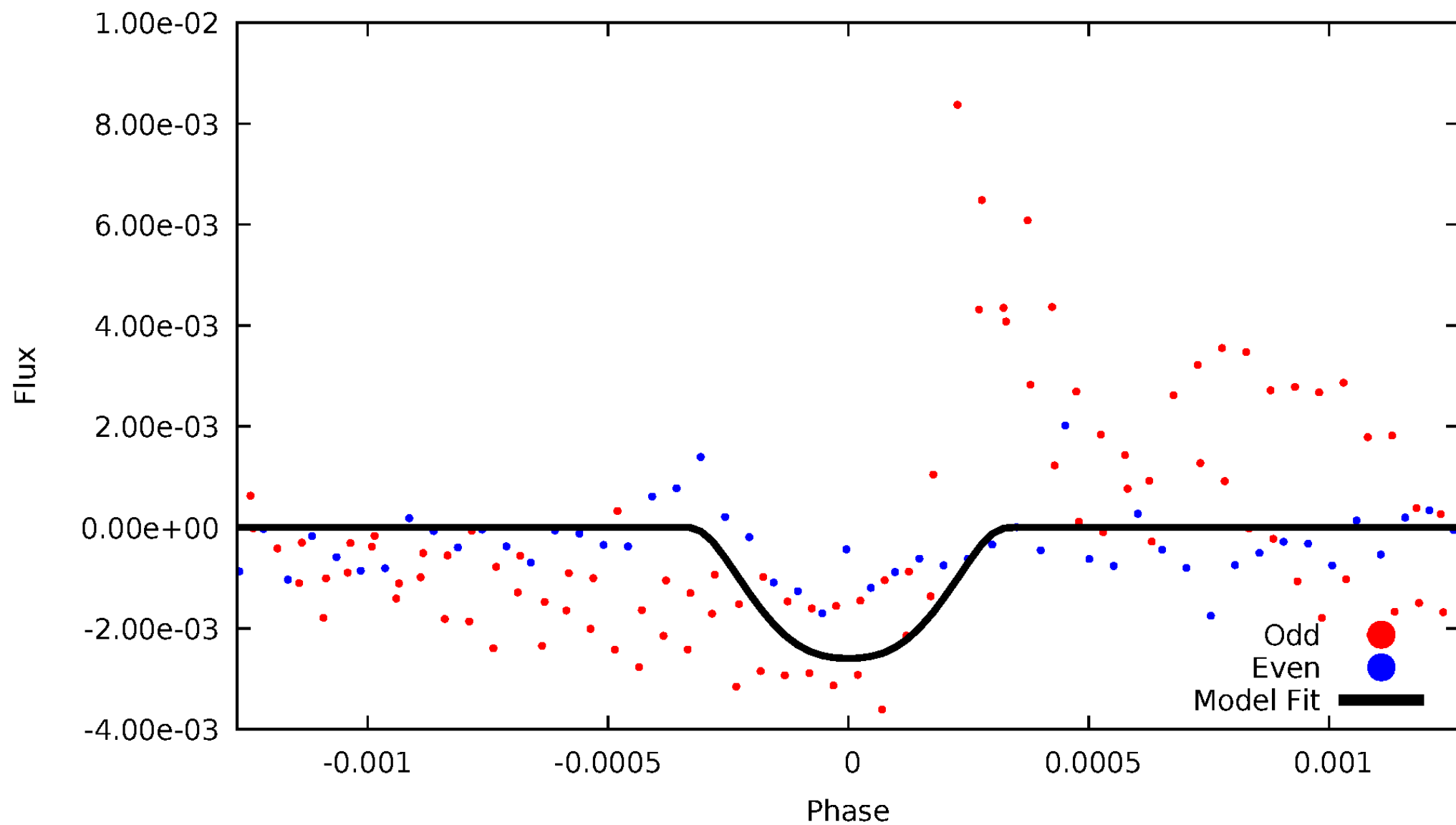


TCE 009095110-02



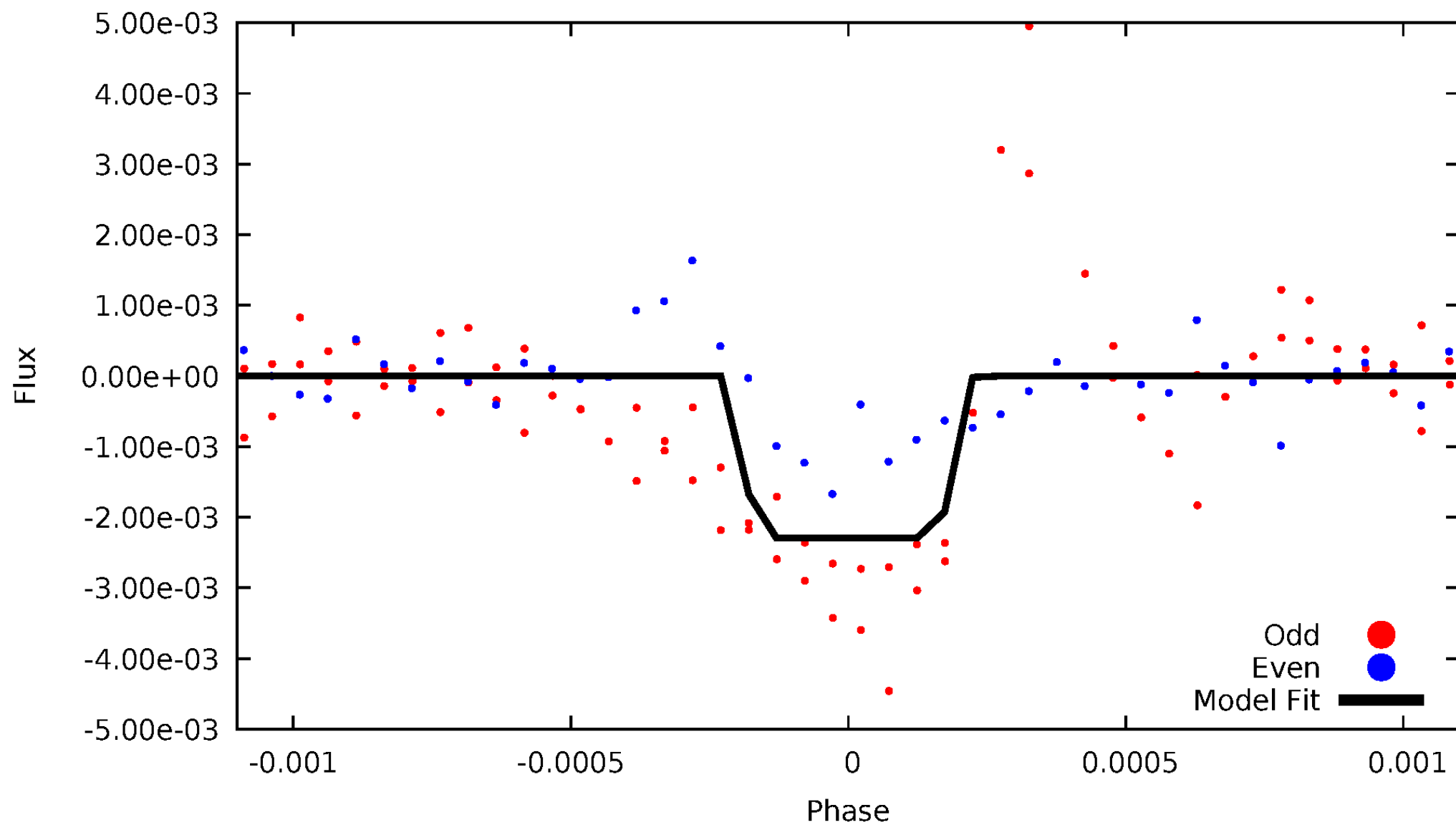
DV Odd/Even

TCE 009095110-02



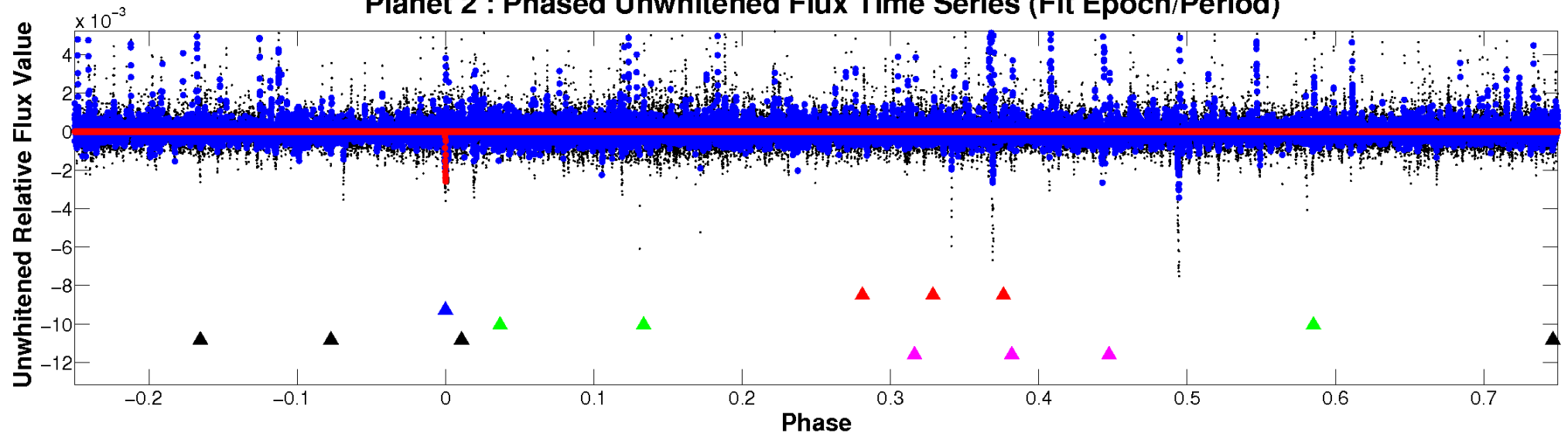
ALT Odd/Even

TCE 009095110-02

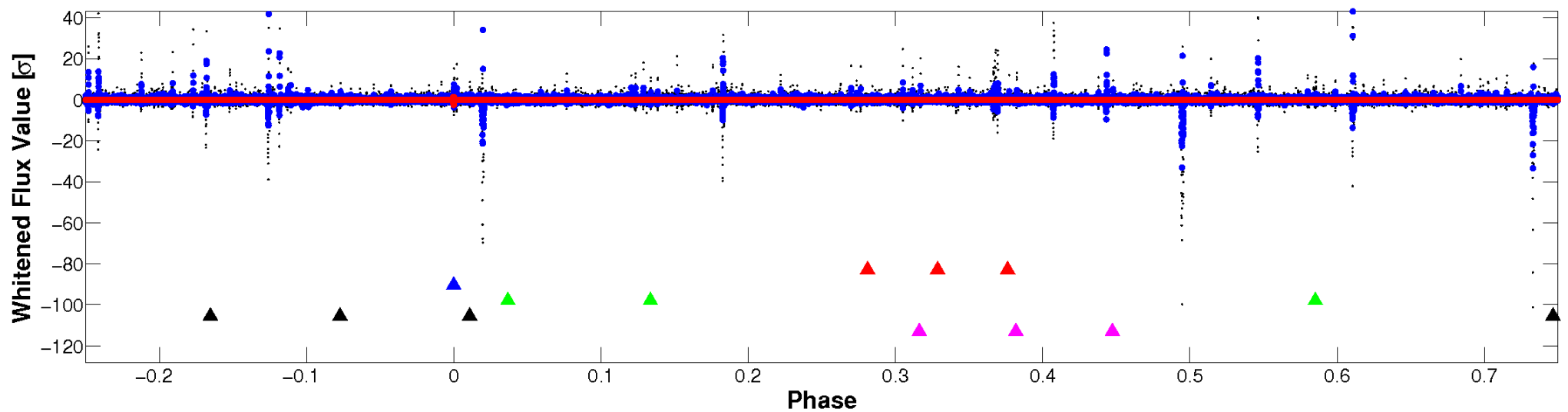


Non-Whitened Vs. Whitened Light Curve

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

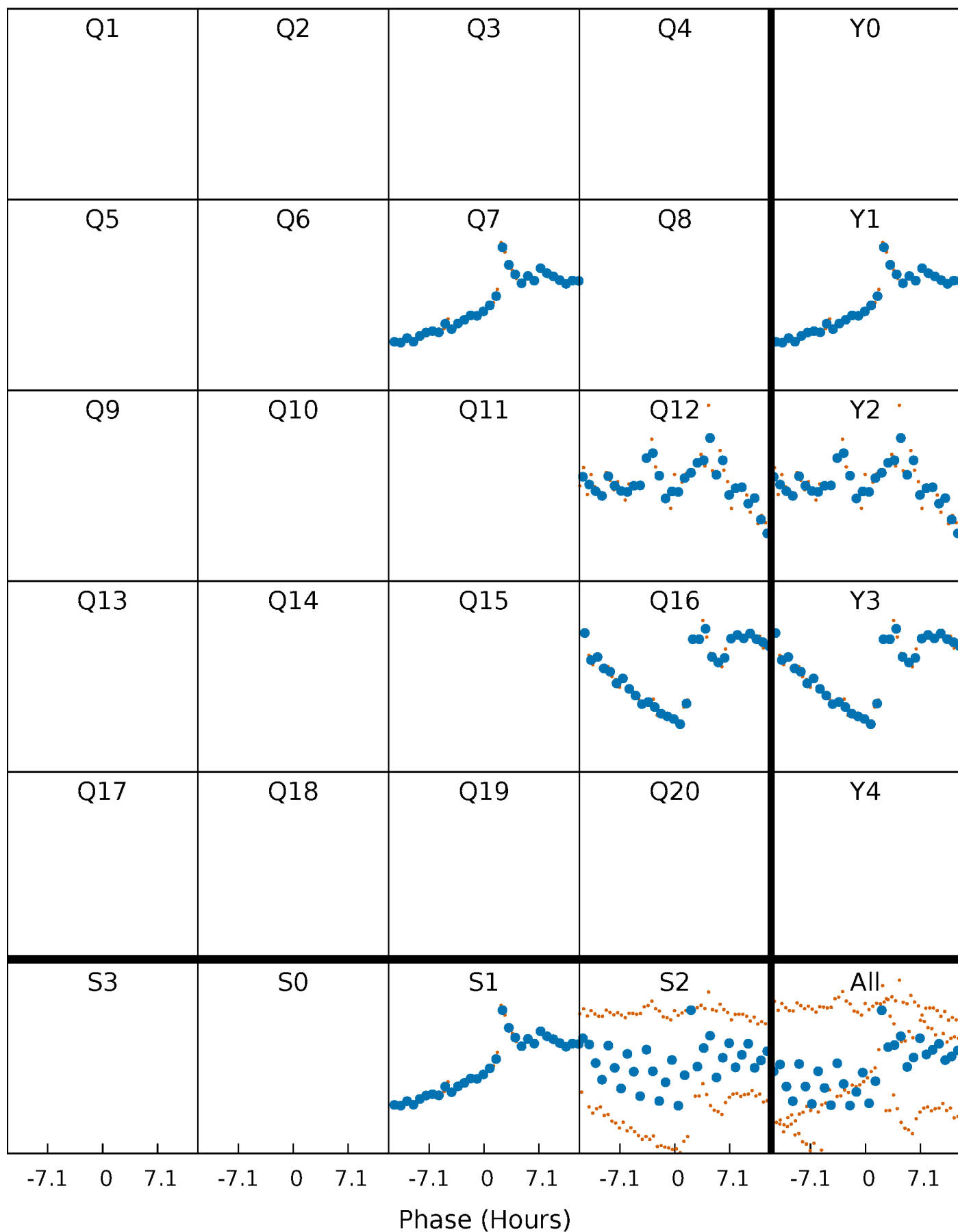


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



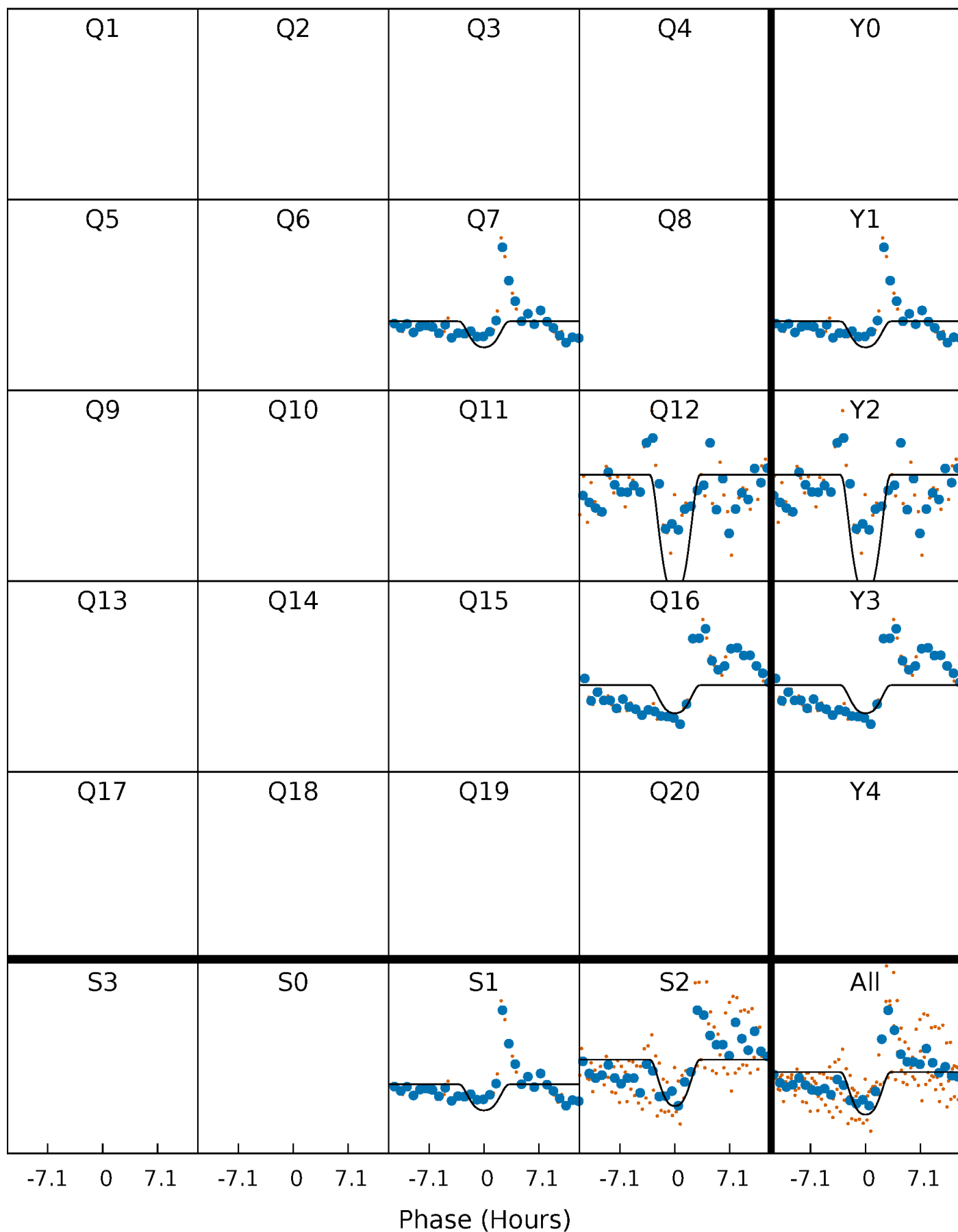
PDC Quarter-Phased Transit Curves

TCE 009095110-02 P=404.432347 Days $T_0=303.234519$ (BKJD)



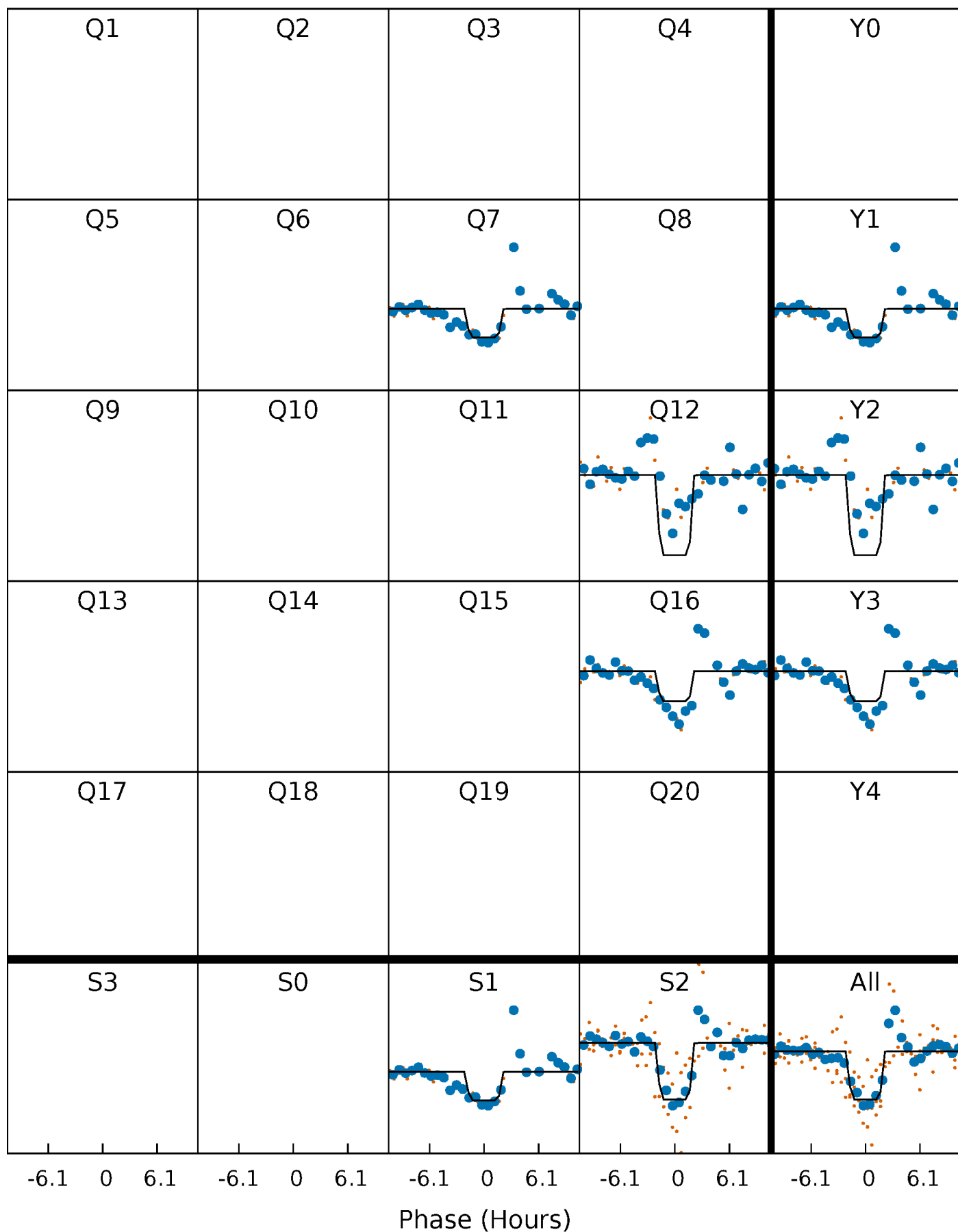
DV Quarter-Phased Transit Curves

TCE 009095110-02 $P=404.432347$ Days $T_0=303.234519$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

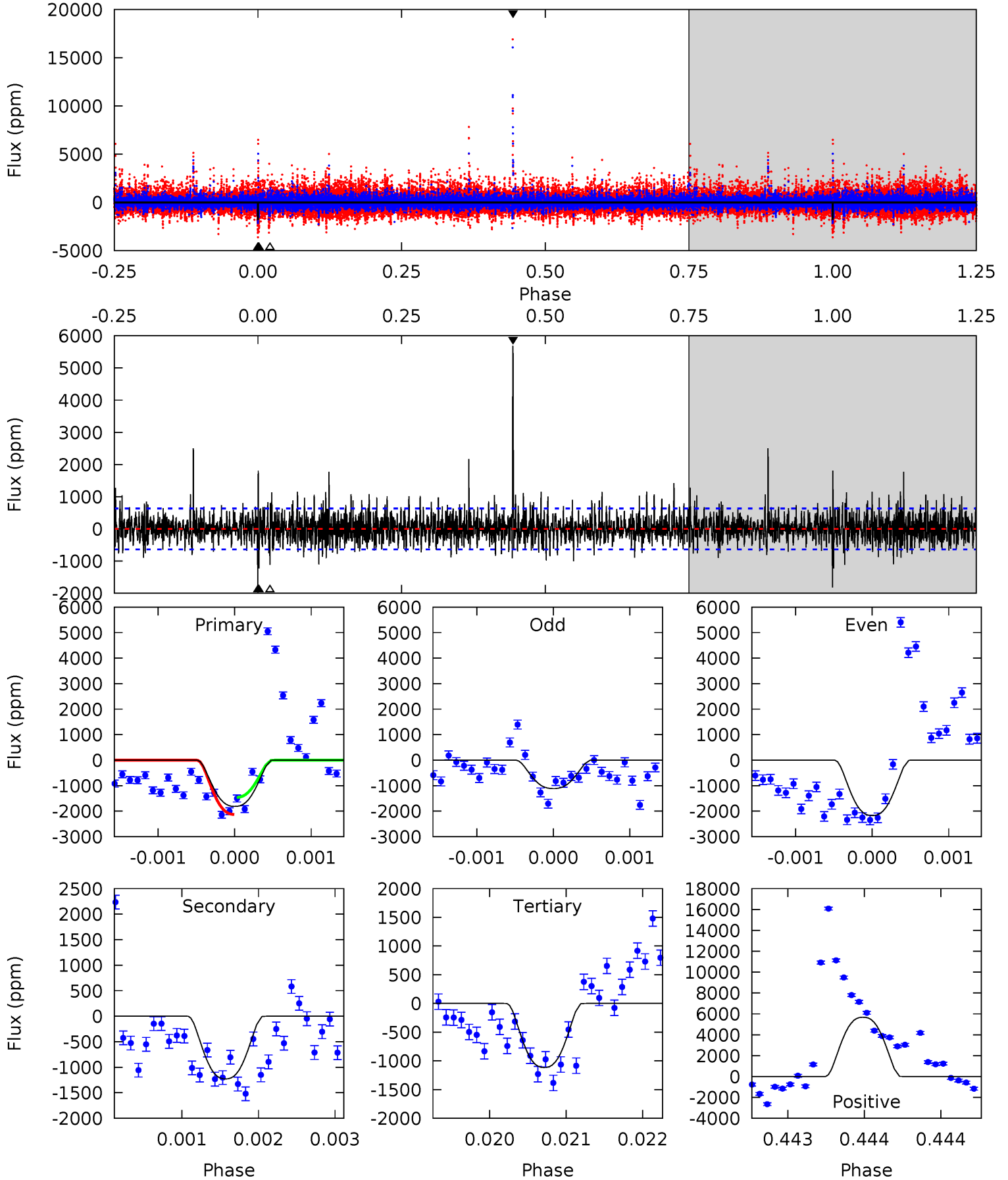
TCE 009095110-02 P=404.441453 Days $T_0=303.205943$ (BKJD)



DV Model-Shift Uniqueness Test

009095110-02, P = 404.432347 Days, E = 303.234519 Days

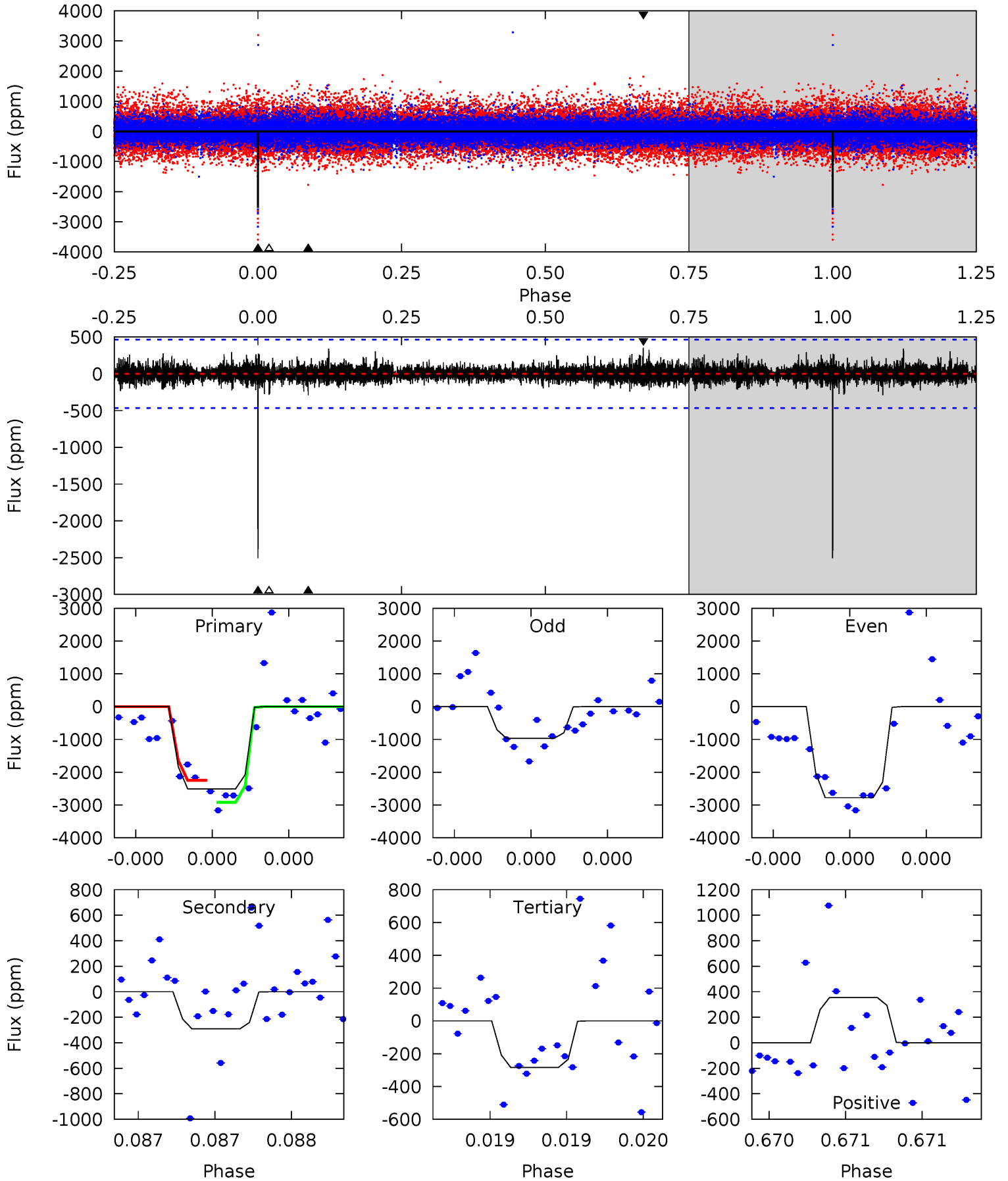
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.7	10.7	9.69	49.3	5.52	3.40	2.92	6.05	-33.6	0.97	-38.7	2.17	1.47	0.76	2.91



Alt Model-Shift Uniqueness Test

009095110-02, P = 404.441453 Days, E = 303.205943 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.2	3.51	3.41	4.27	5.61	3.54	0.73	26.8	26.0	0.09	-0.76	11.5	0.90	0.12	3.99



Stellar Parameters For KIC 009095110

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5134^{+179}_{-179}	$4.569^{+0.077}_{-0.056}$	$-0.500^{+0.300}_{-0.300}$	$0.707^{+0.080}_{-0.080}$	$0.676^{+0.087}_{-0.044}$	$2.696^{+0.920}_{-0.519}$
	+3%/-3%	+2%/-1%	+60%/-60%	+11%/-11%	+13%/-7%	+34%/-19%
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 009095110-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1229±115	$4.60^{+0.71}_{-0.65}$	273^{+13}_{-12}	4154^{+281}_{-229}	28487^{+11088}_{-6870}
Alt.	-291±83	$3.68^{+0.68}_{-0.63}$	273^{+12}_{-12}	3486^{+303}_{-250}	10247^{+6448}_{-3835}

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

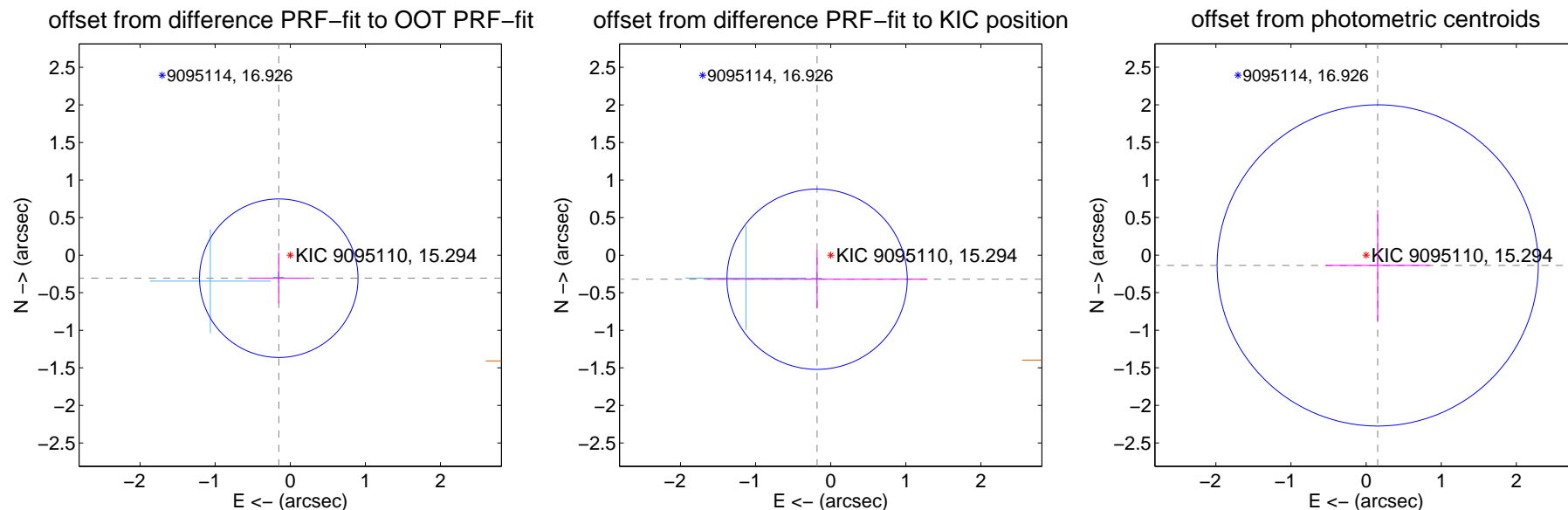
DV Centroid Data

Supplemental centroid analysis for 009095110-02. Kepler magnitude: 15.29. Transit SNR 10.94

There are 2 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.343 ± 0.352	0.97	0.153 ± 0.408	-0.307 ± 0.336
PRF-fit source offset from KIC position	0.368 ± 0.400	0.92	0.181 ± 1.470	-0.320 ± 0.389
photometric centroid source offset	0.21 ± 0.71	0.29	-0.15 ± 0.69	-0.14 ± 0.74



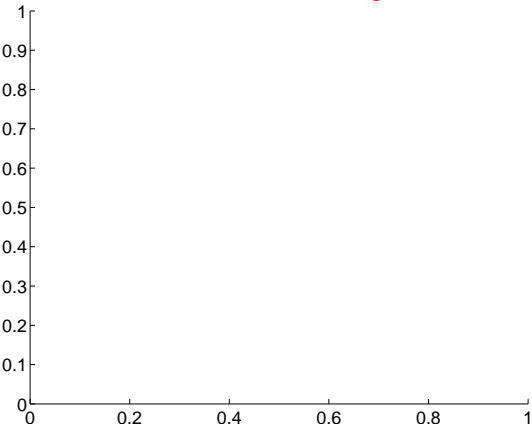
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

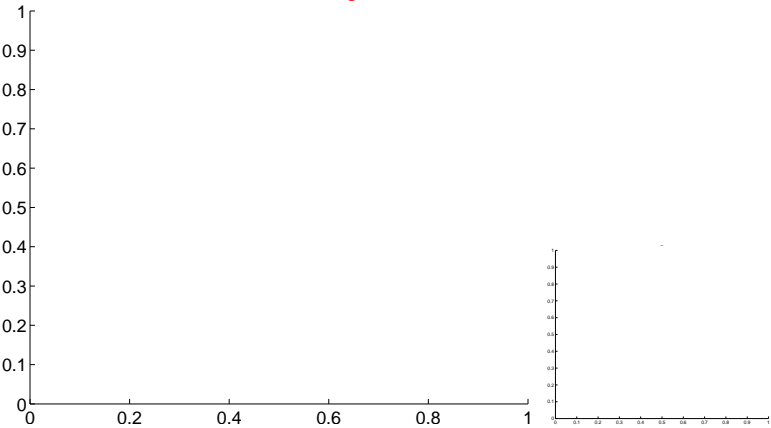


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

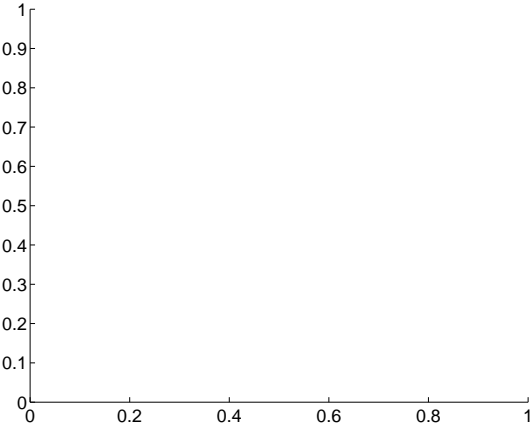
Q5 no difference image



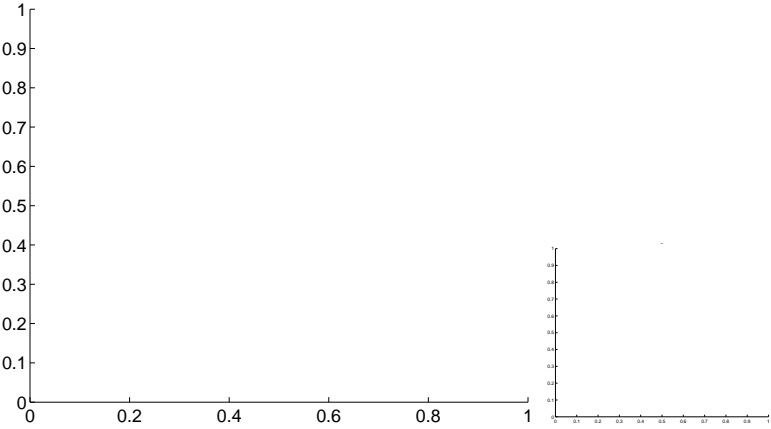
Q5 no OOT image



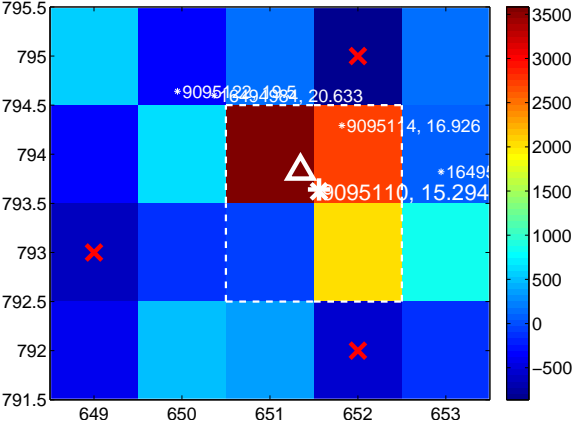
Q6 no difference image



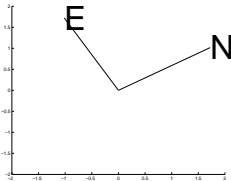
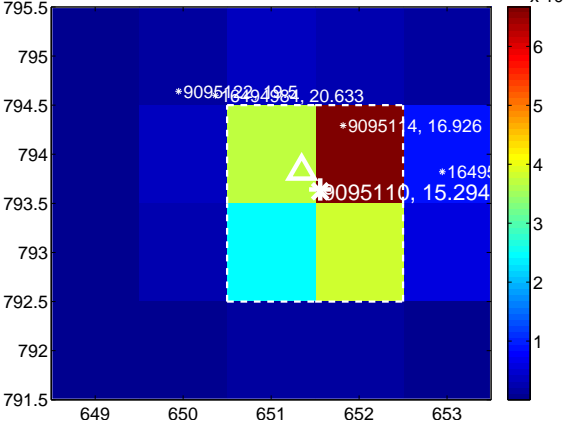
Q6 no OOT image



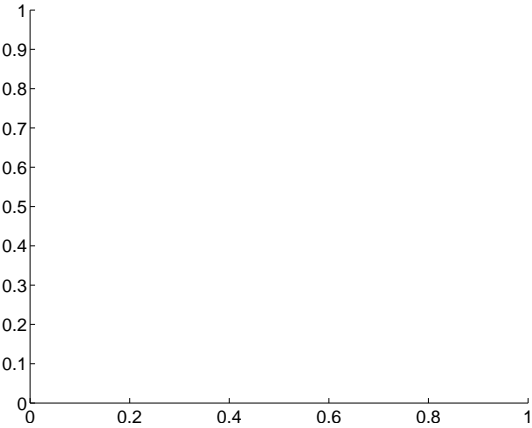
Q7 difference image



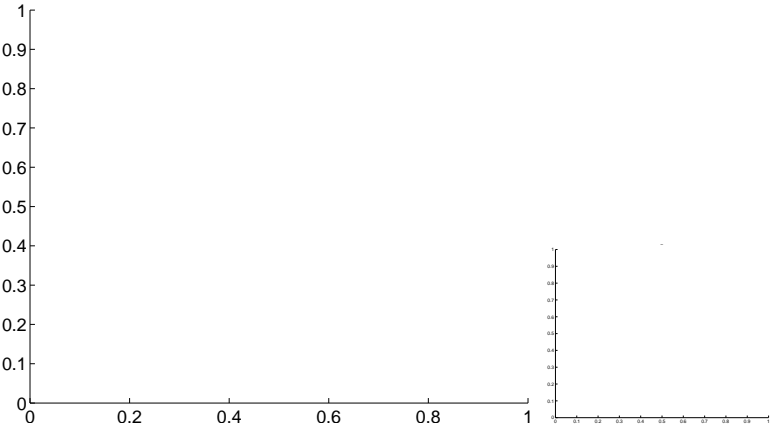
Q7 OOT image



Q8 no difference image

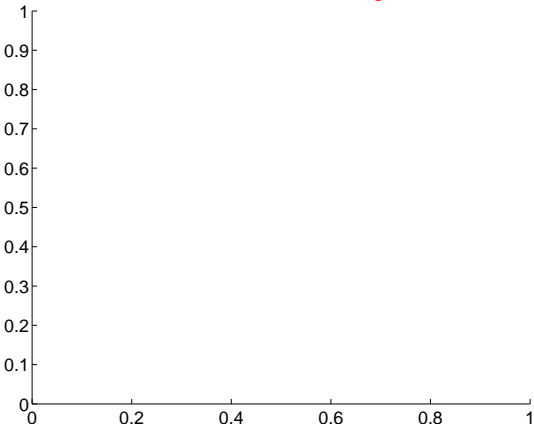


Q8 no OOT image

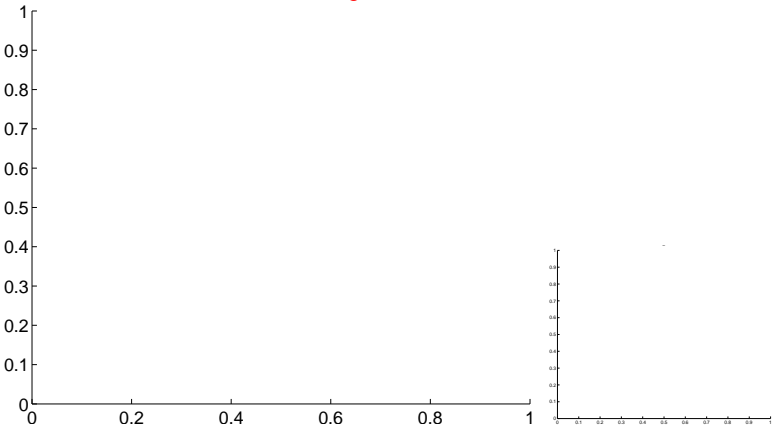


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

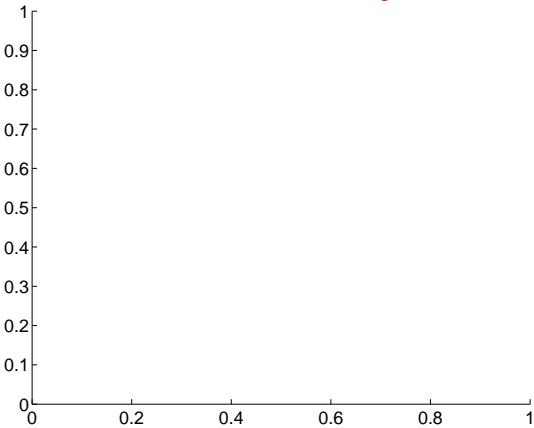
Q9 no difference image



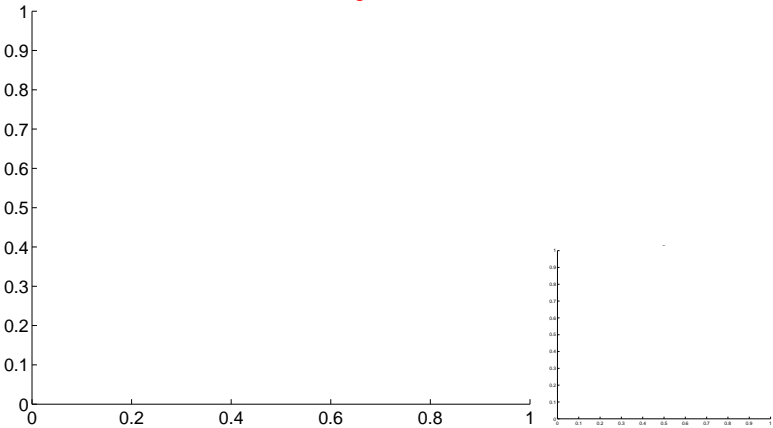
Q9 no OOT image



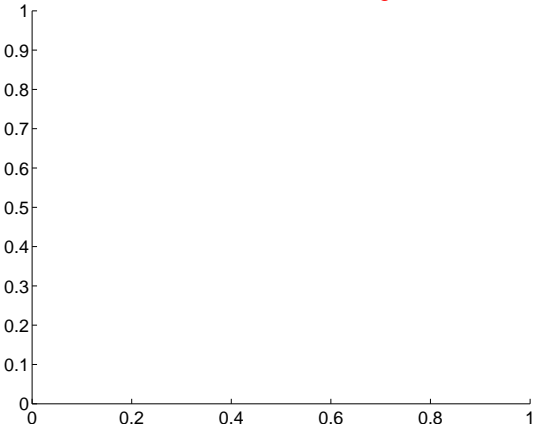
Q10 no difference image



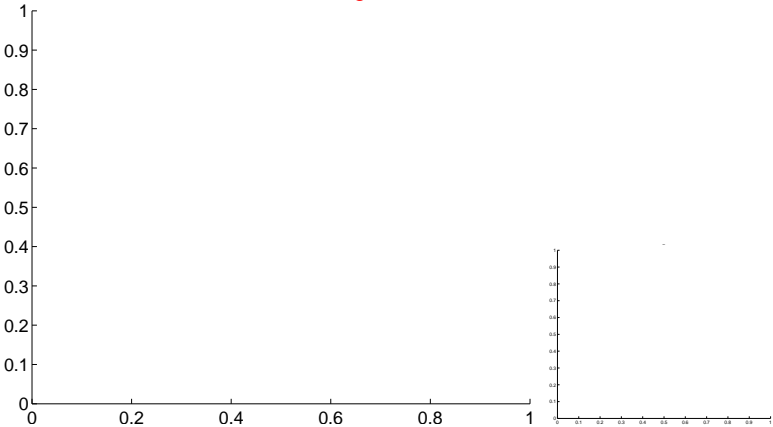
Q10 no OOT image



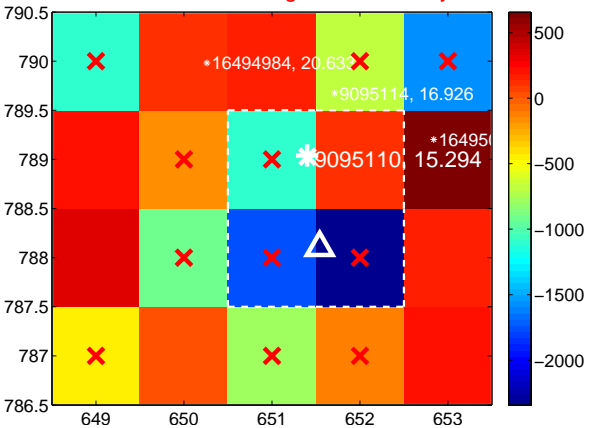
Q11 no difference image



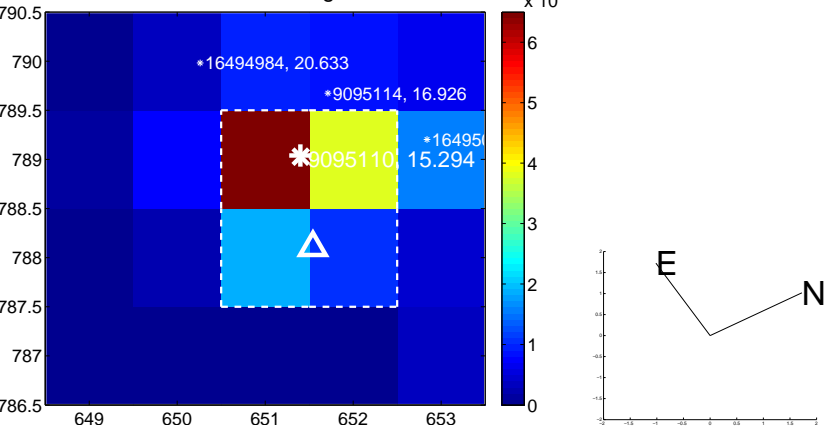
Q11 no OOT image



Q12 difference image. Poor Quality

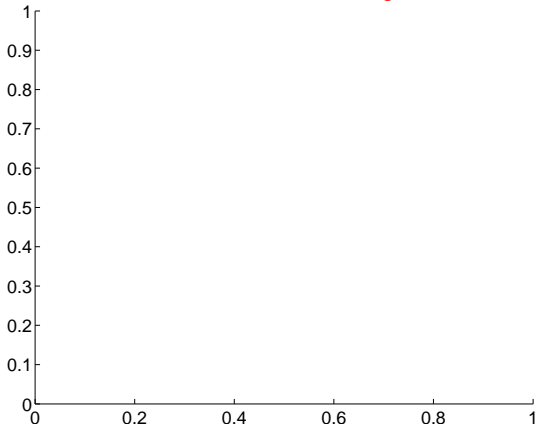


Q12 OOT image

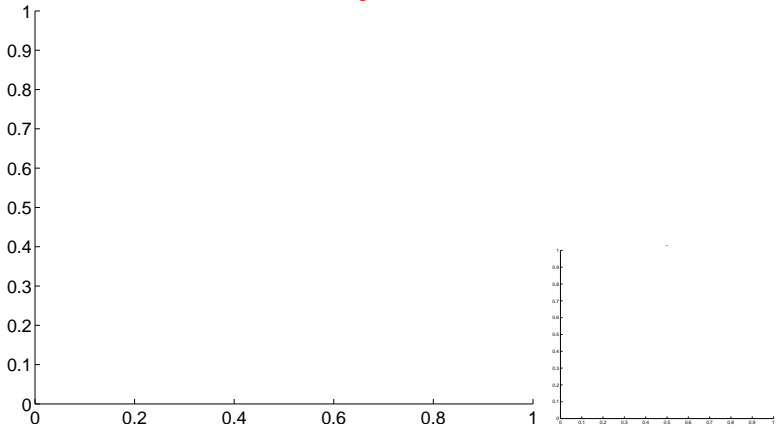


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

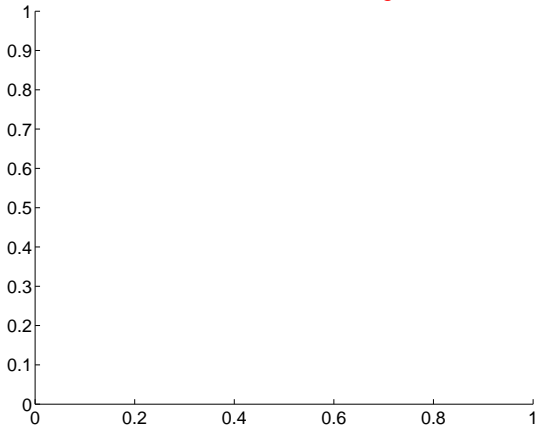
Q13 no difference image



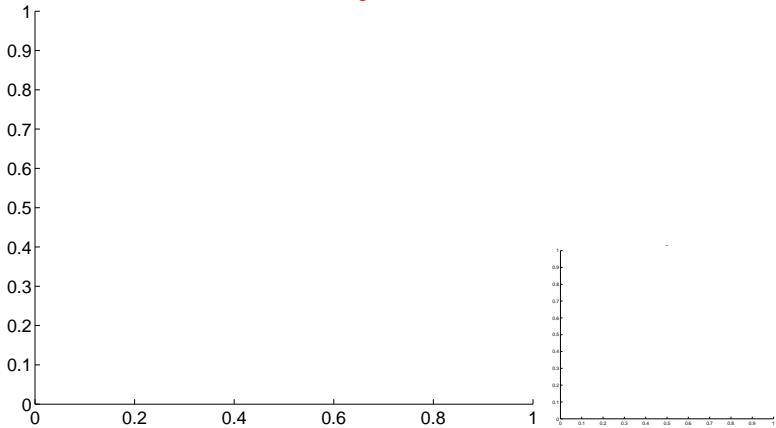
Q13 no OOT image



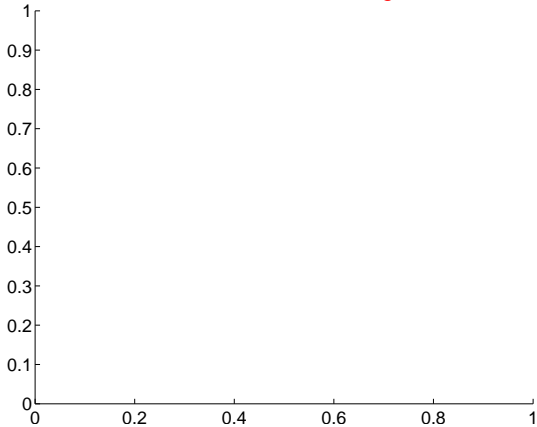
Q14 no difference image



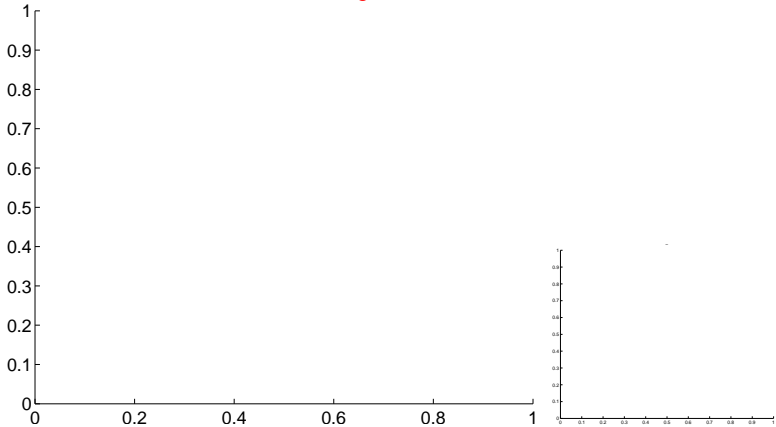
Q14 no OOT image



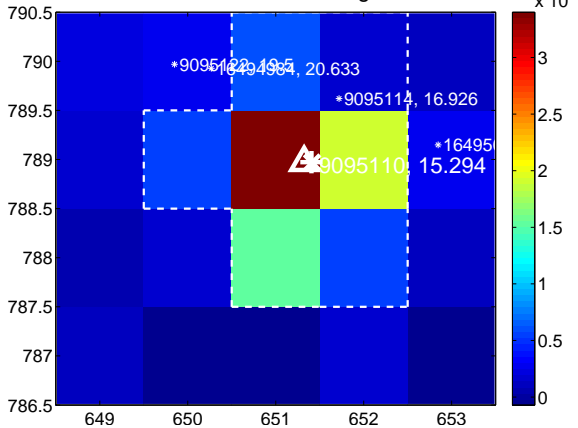
Q15 no difference image



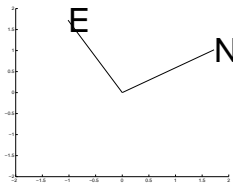
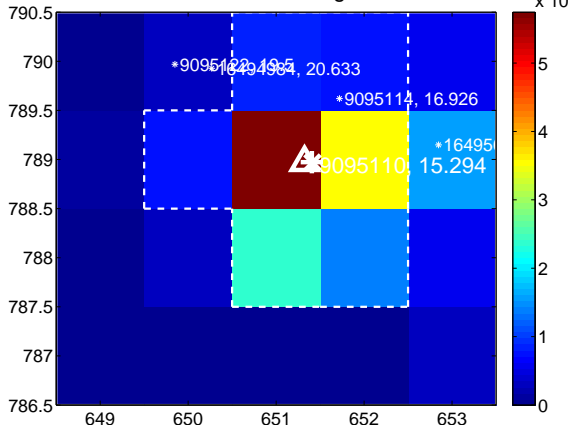
Q15 no OOT image



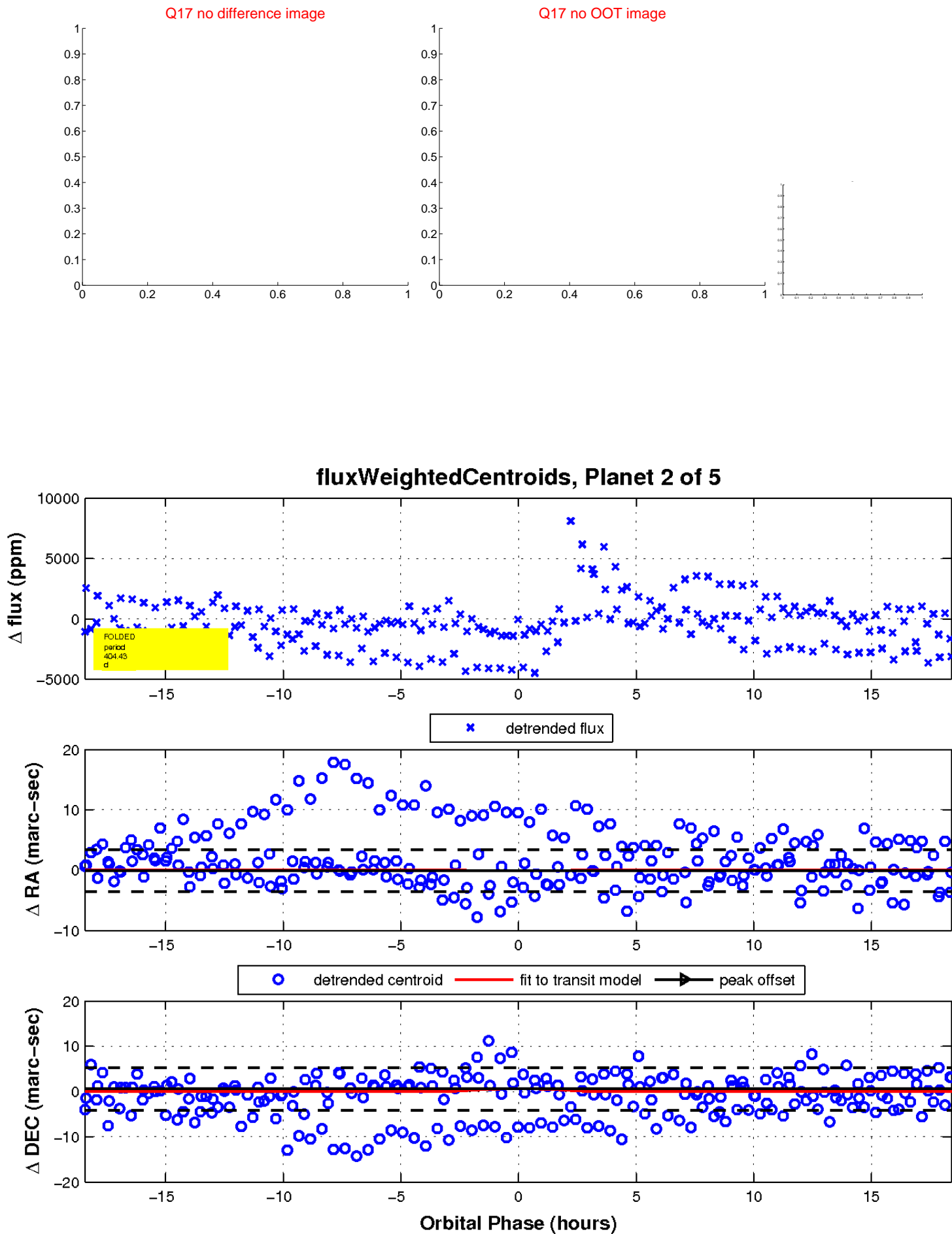
Q16 difference image



Q16 OOT image

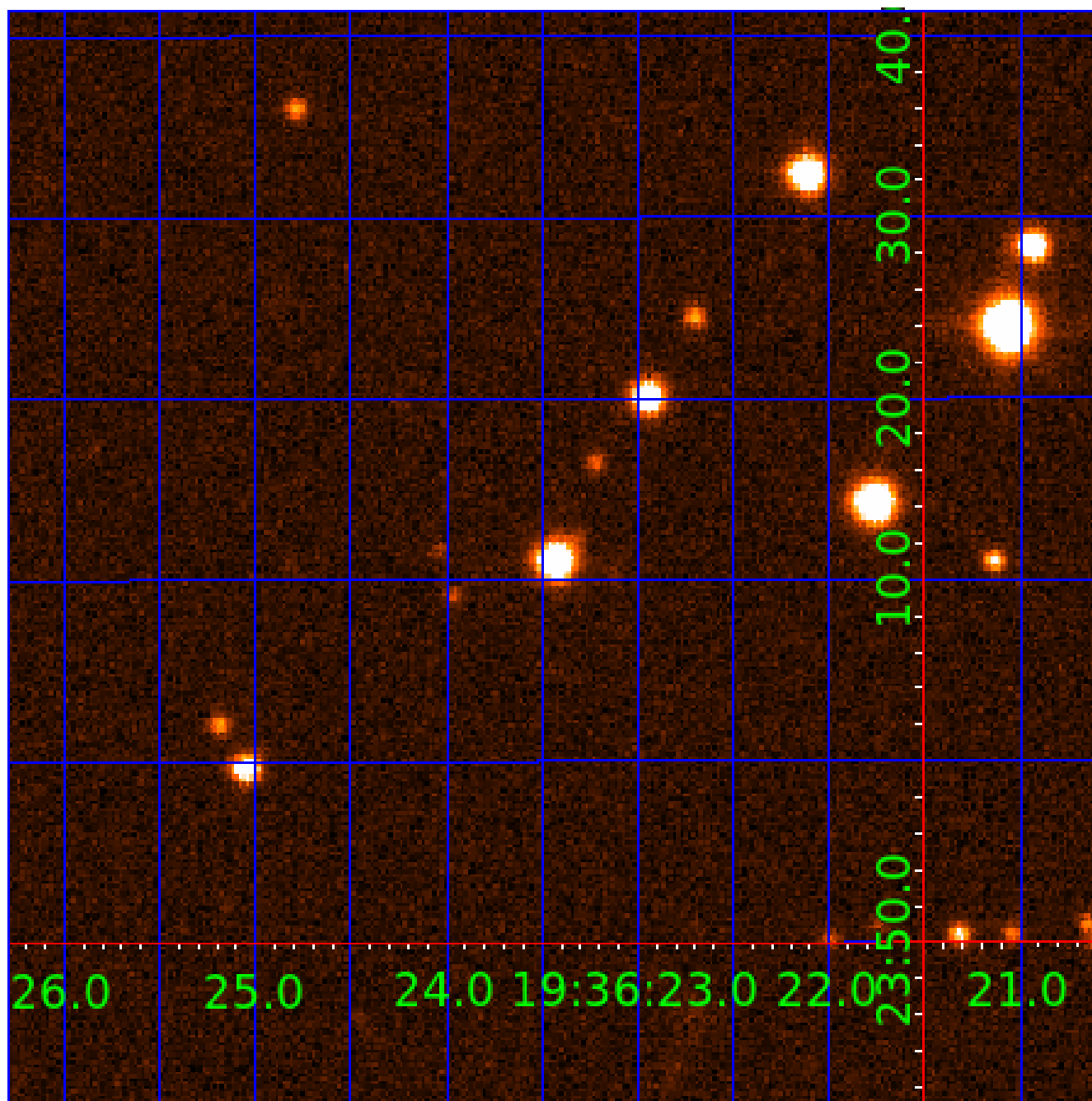


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009095110

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})
009095110-01	OBS	No	385.196495	455.391605	2805.1	4.713	20.8	14.0	0.71	5134	3.71	0.38
009095110-02	OBS	No	404.432347	303.234519	2596.3	6.169	19.3	10.9	0.71	5134	4.62	0.35
009095110-03	OBS	No	587.071508	357.265866	1282.3	5.139	13.4	7.4	0.71	5134	2.65	0.21
009095110-04	OBS	No	440.044695	200.773029	1312.6	4.545	11.3	7.7	0.71	5134	2.75	0.32
009095110-05	OBS	No	377.911881	484.177211	1342.9	9.000	13.6	-1.0	0.71	5134	2.54	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009095110-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009095110-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

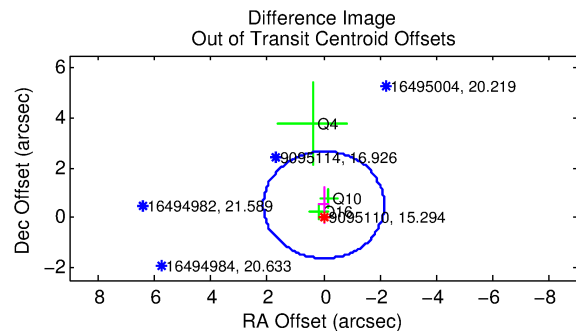
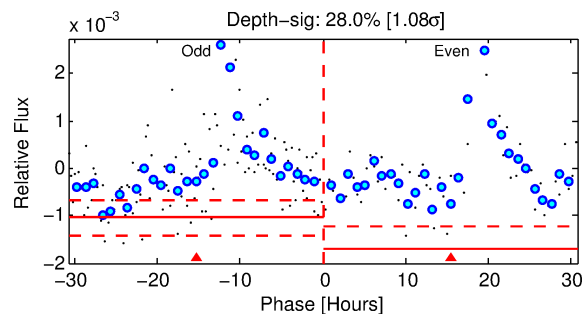
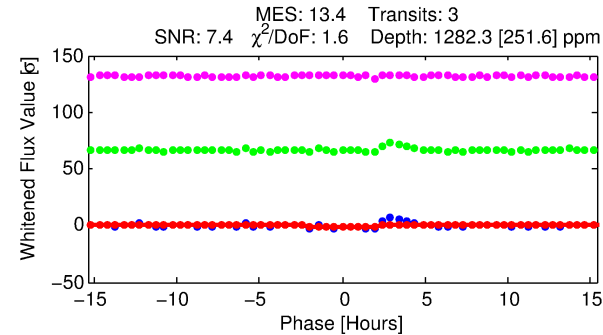
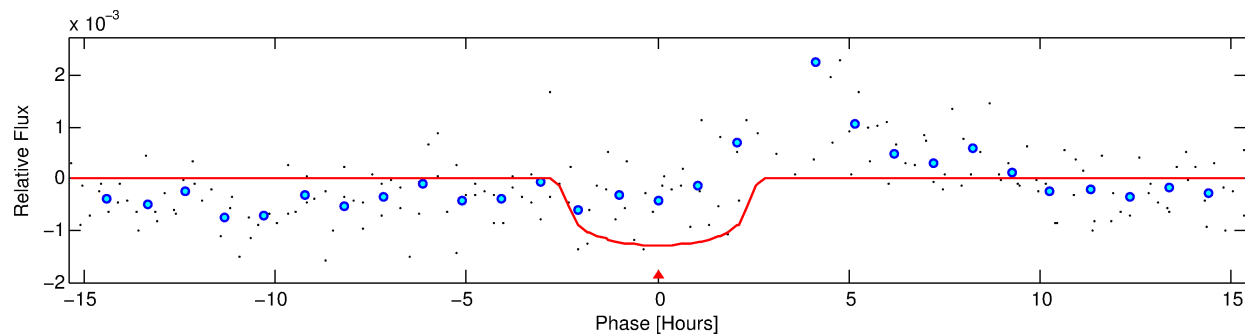
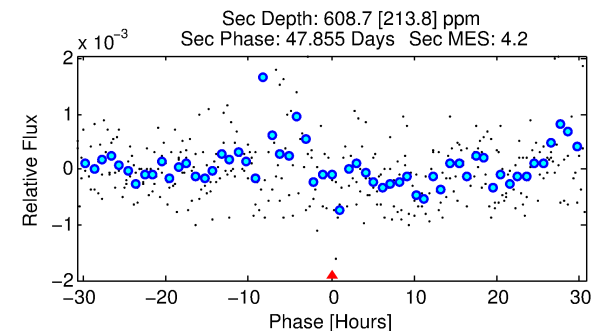
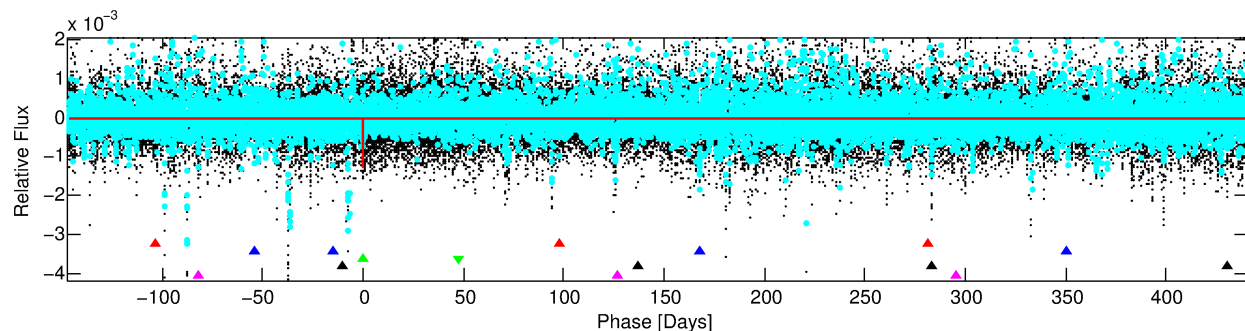
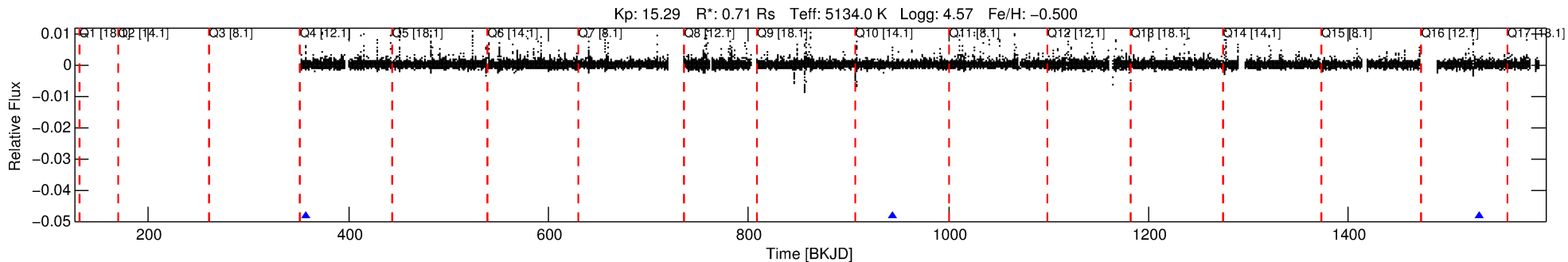
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009095110-03

No Significant Match Found

DV One-Page Summary

KIC: 9095110 Candidate: 3 of 5 Period: 587.072 d



DV Fit Results:

Period = 587.07151 [0.00951] d
Epoch = 357.2659 [0.0118] BKJD
Rp/R* = 0.0344 [0.0550]
a/R* = 707.65 [4249.54]
b = 0.64 [5.61]
Seff = 0.21 [0.04]
Teff = 174 [9] K
Rp = 2.65 [4.25] Re
a = 1.2044 [0.1154] AU
Ag = 69070.40 [222381.98] [0.31σ]
Teffp = 4350 [3501] K [1.19σ]

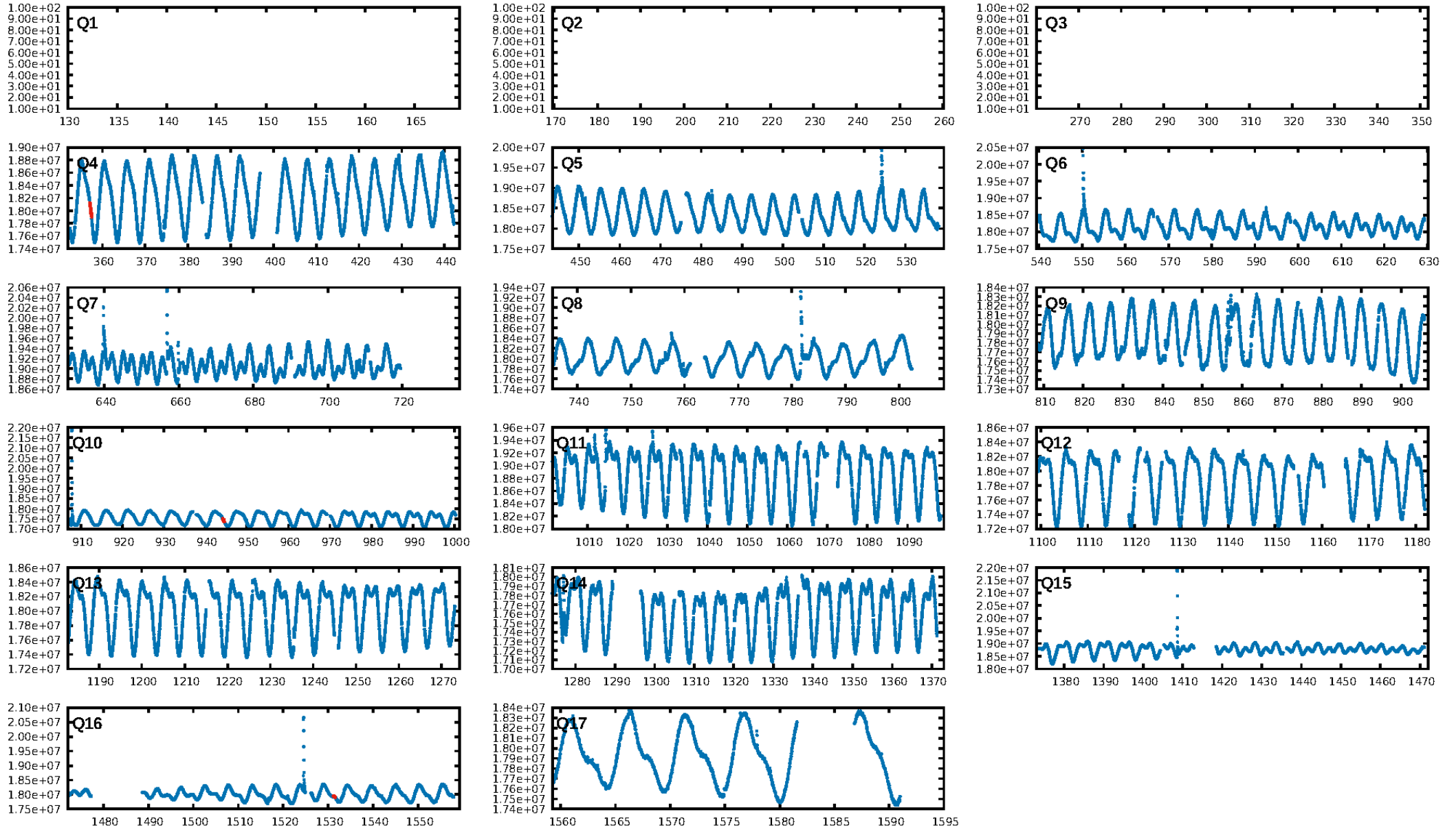
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [514.31σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 18.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.499
Centroid-sig: 43.9%
Centroid-so: 0.704 arcsec [0.57σ]
OotOffset-rm: 0.504 arcsec [0.71σ]
OotOffset-st: 1/0/2/0 [3]
KicOffset-rm: 0.478 arcsec [0.65σ]
KicOffset-st: 1/0/2/0 [3]
DiffImageQuality-fgm: 0.33 [1/3]
DiffImageOverlap-fno: 1.00 [3/3]

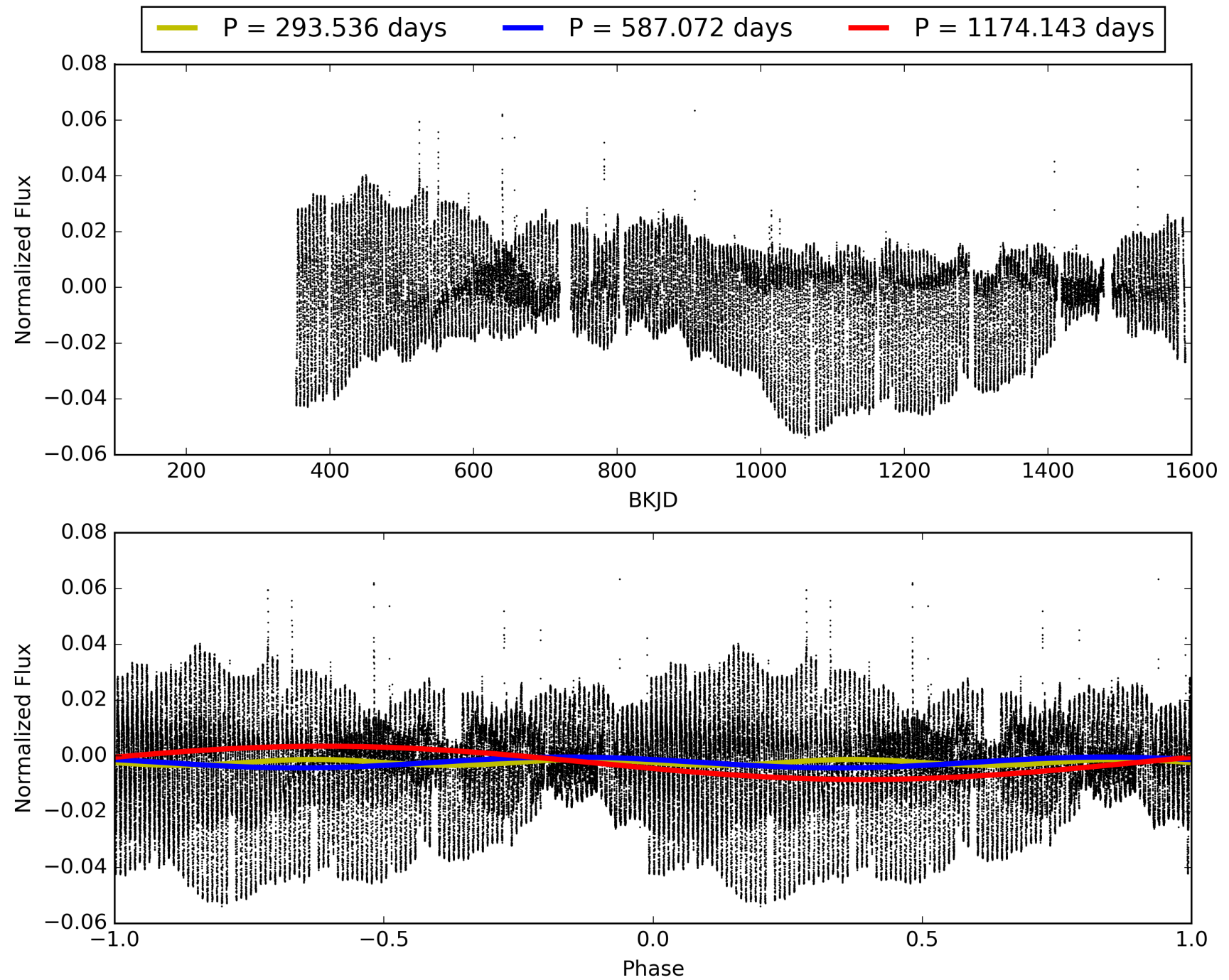
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:09:01 Z

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

TCE 009095110-03, PDC Light Curves

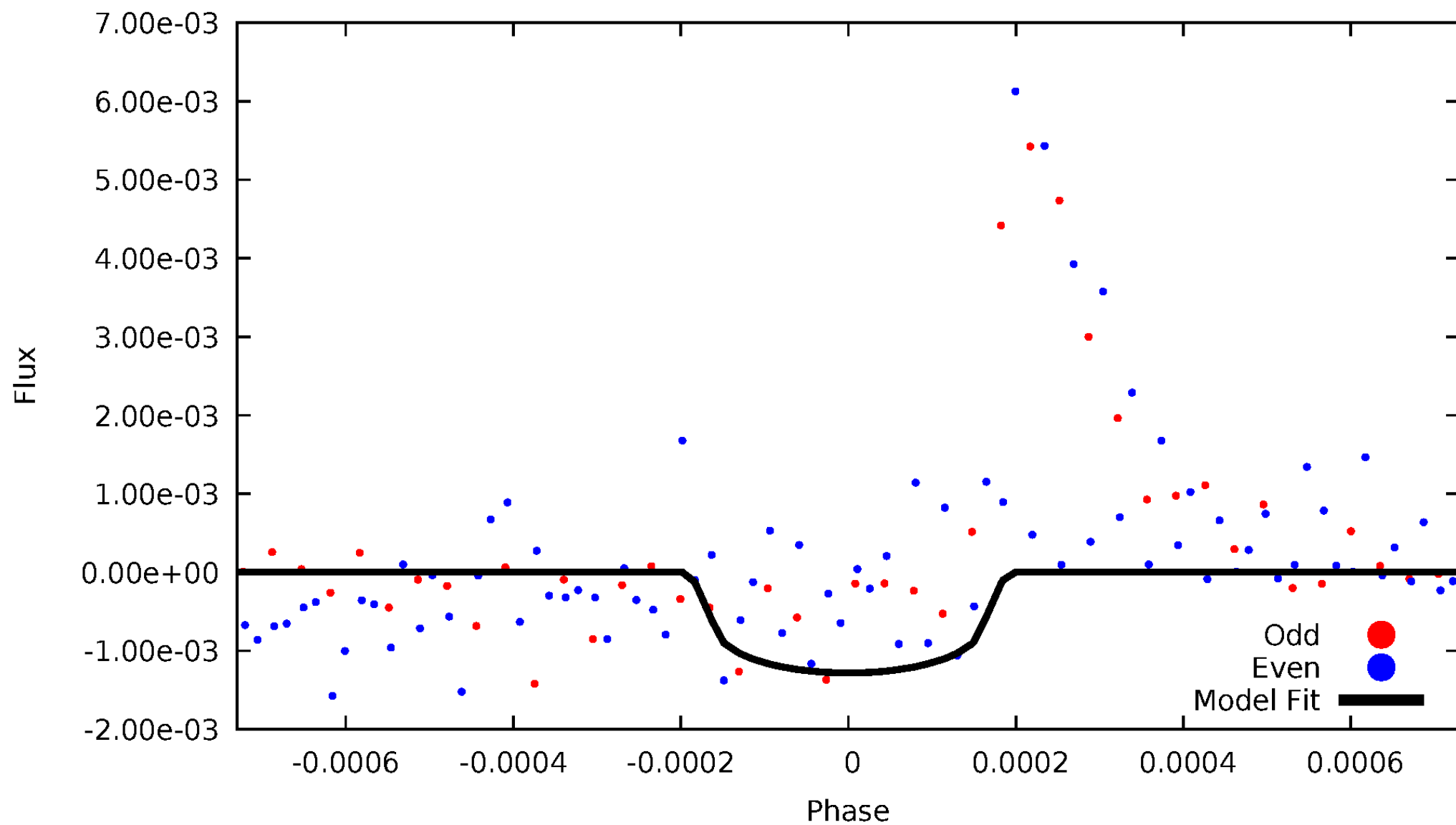


TCE 009095110-03



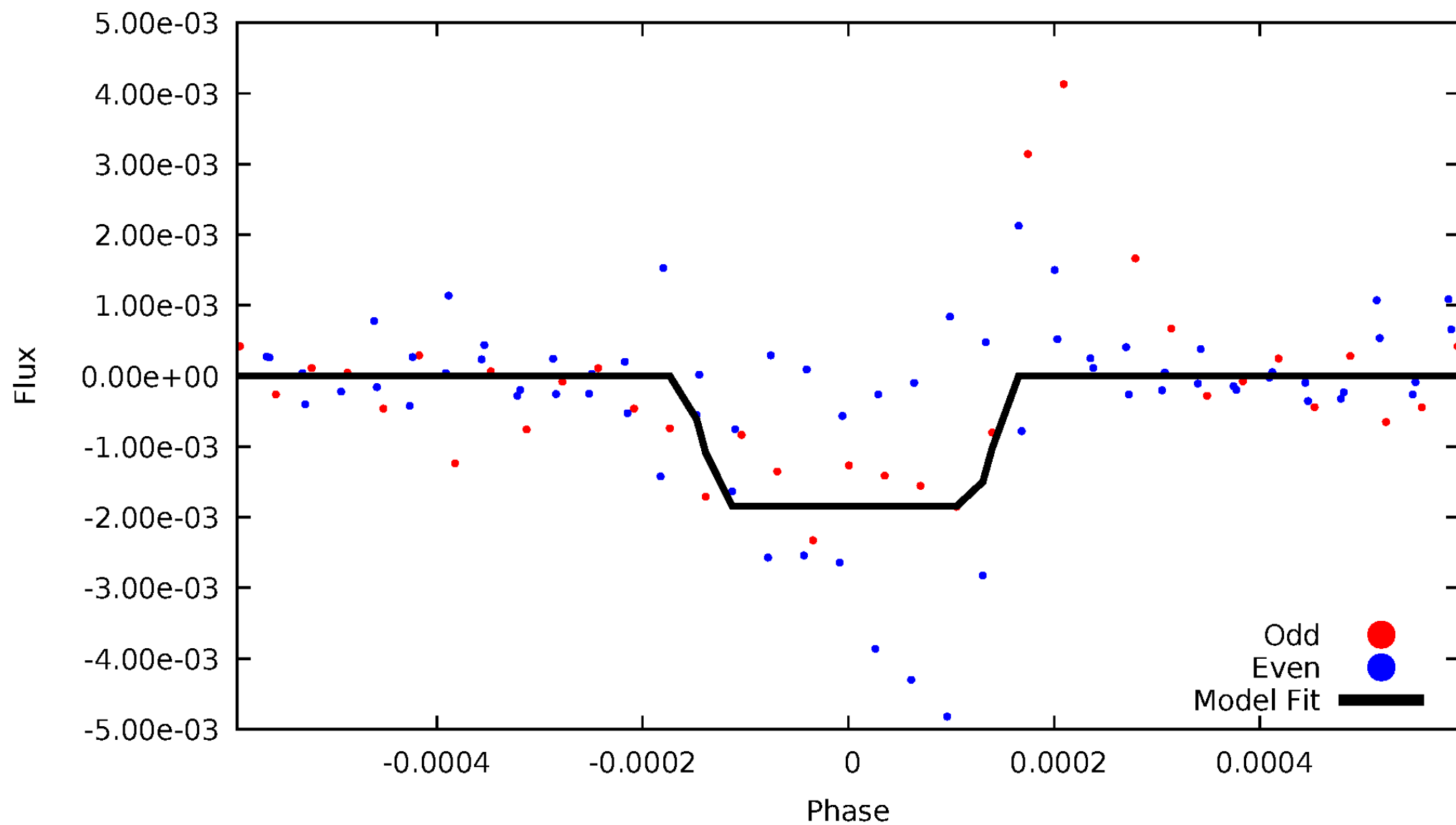
DV Odd/Even

TCE 009095110-03



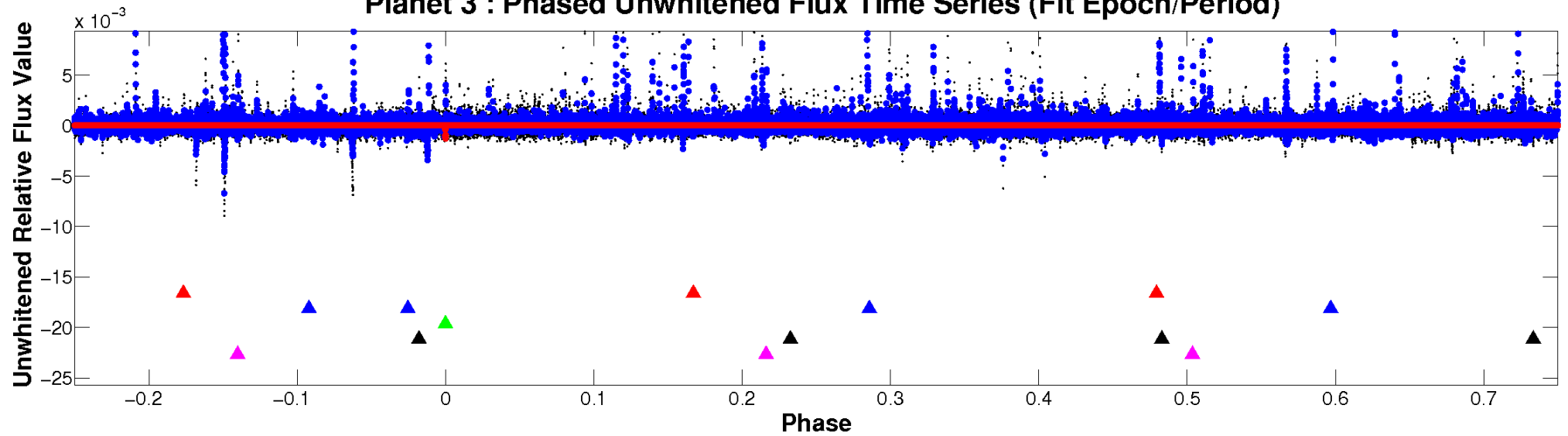
ALT Odd/Even

TCE 009095110-03

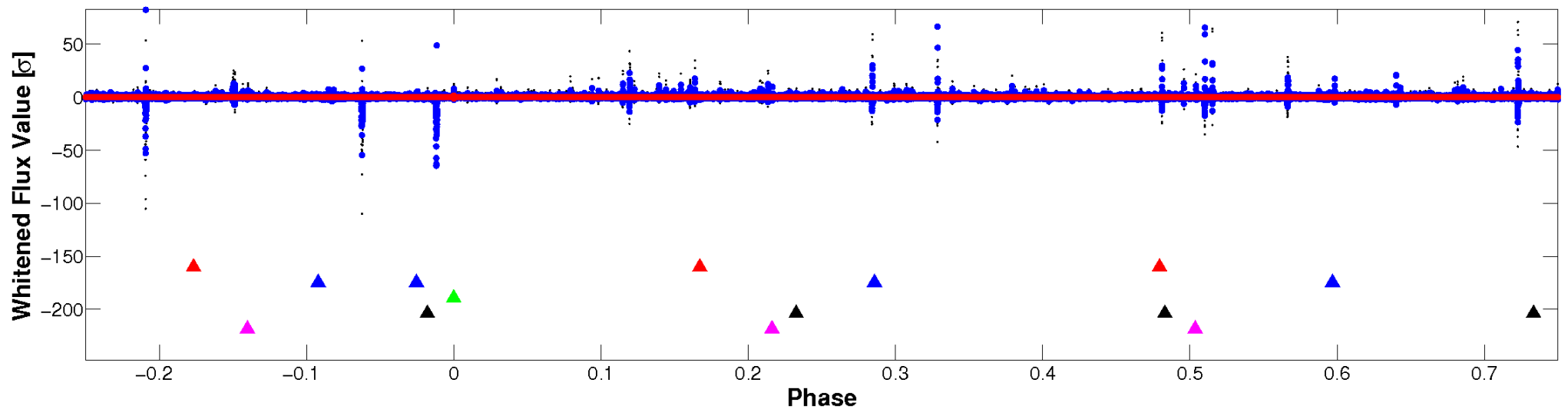


Non-Whitened Vs. Whitened Light Curve

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

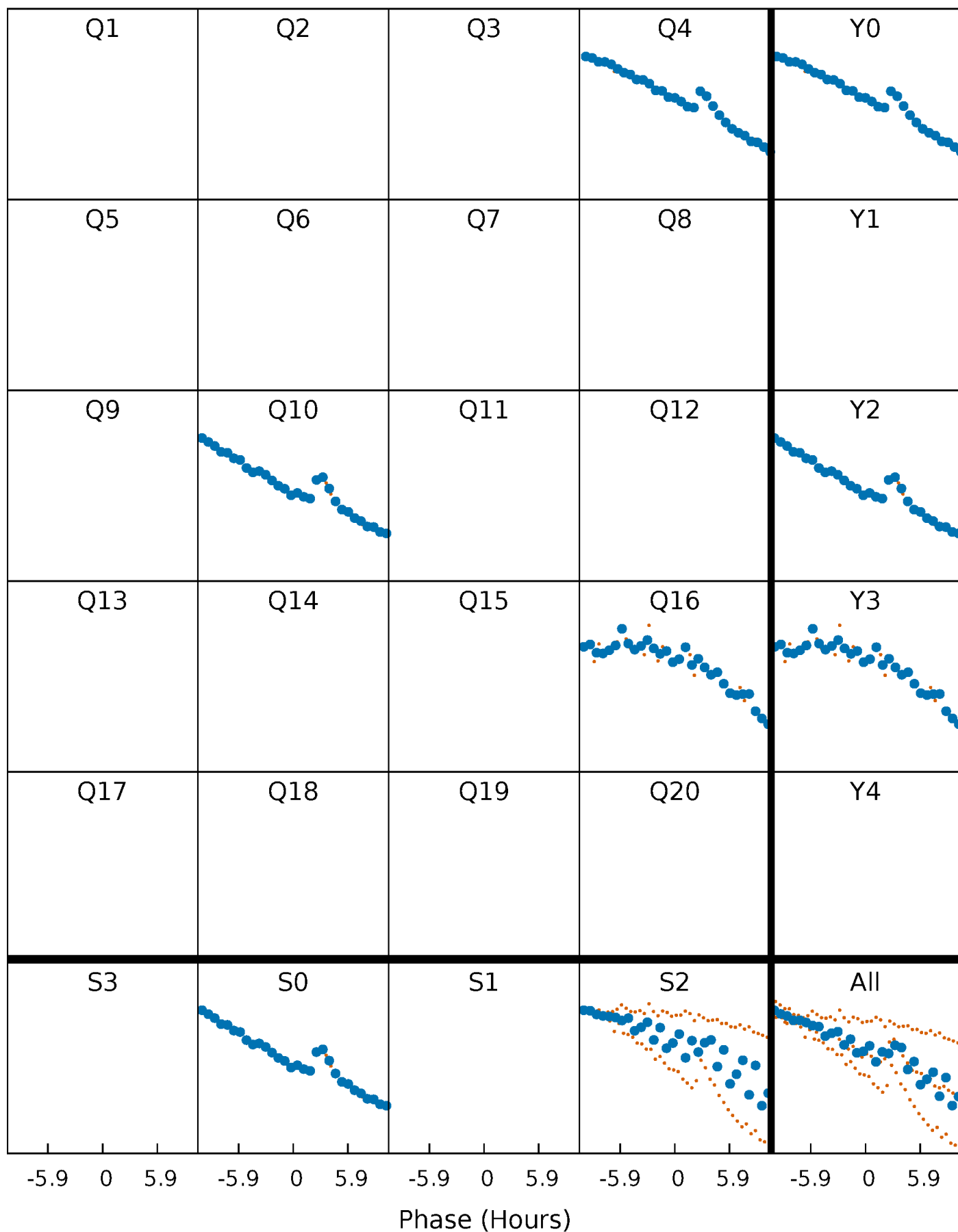


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



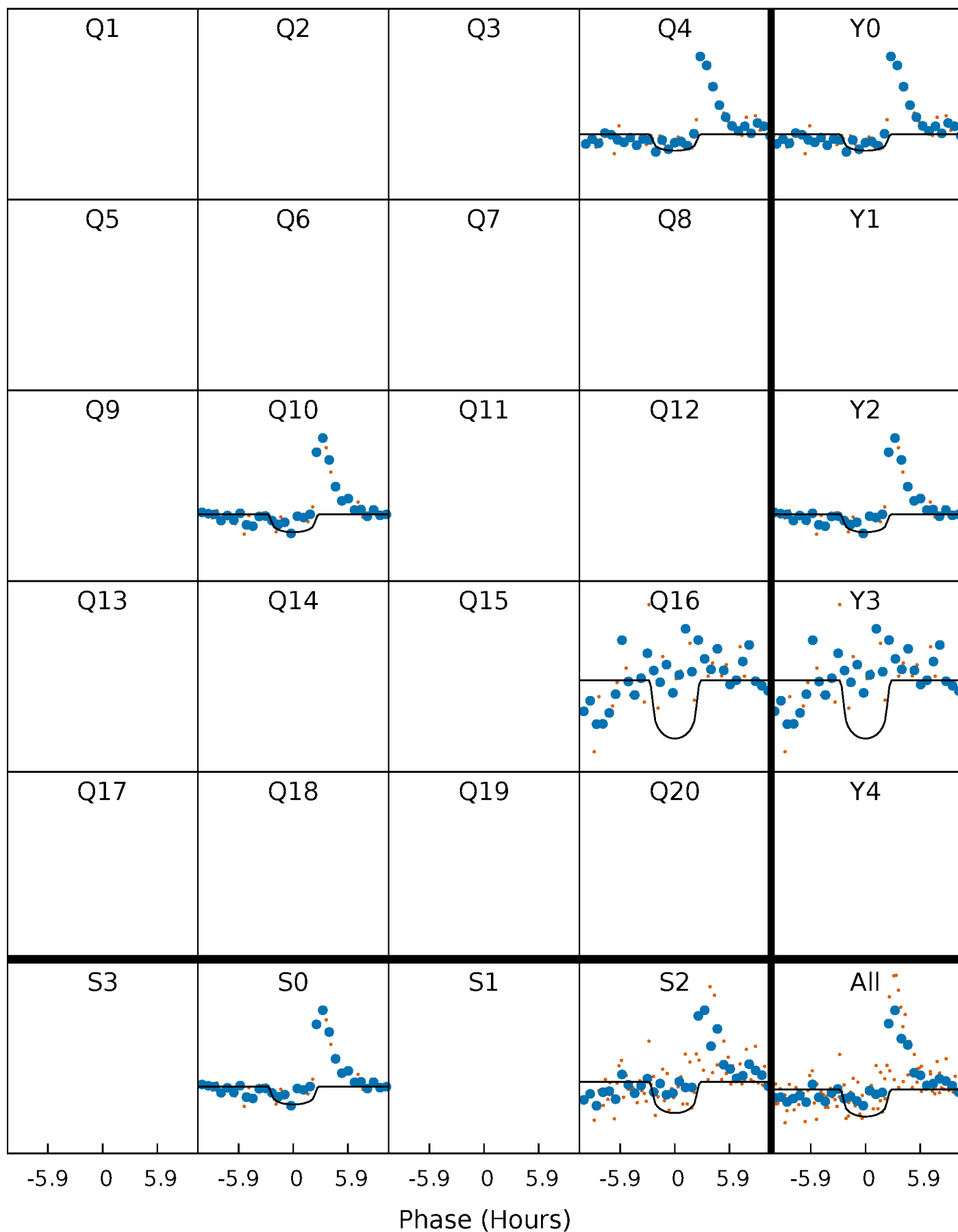
PDC Quarter-Phased Transit Curves

TCE 009095110-03 P=587.071508 Days $T_0=357.265866$ (BKJD)



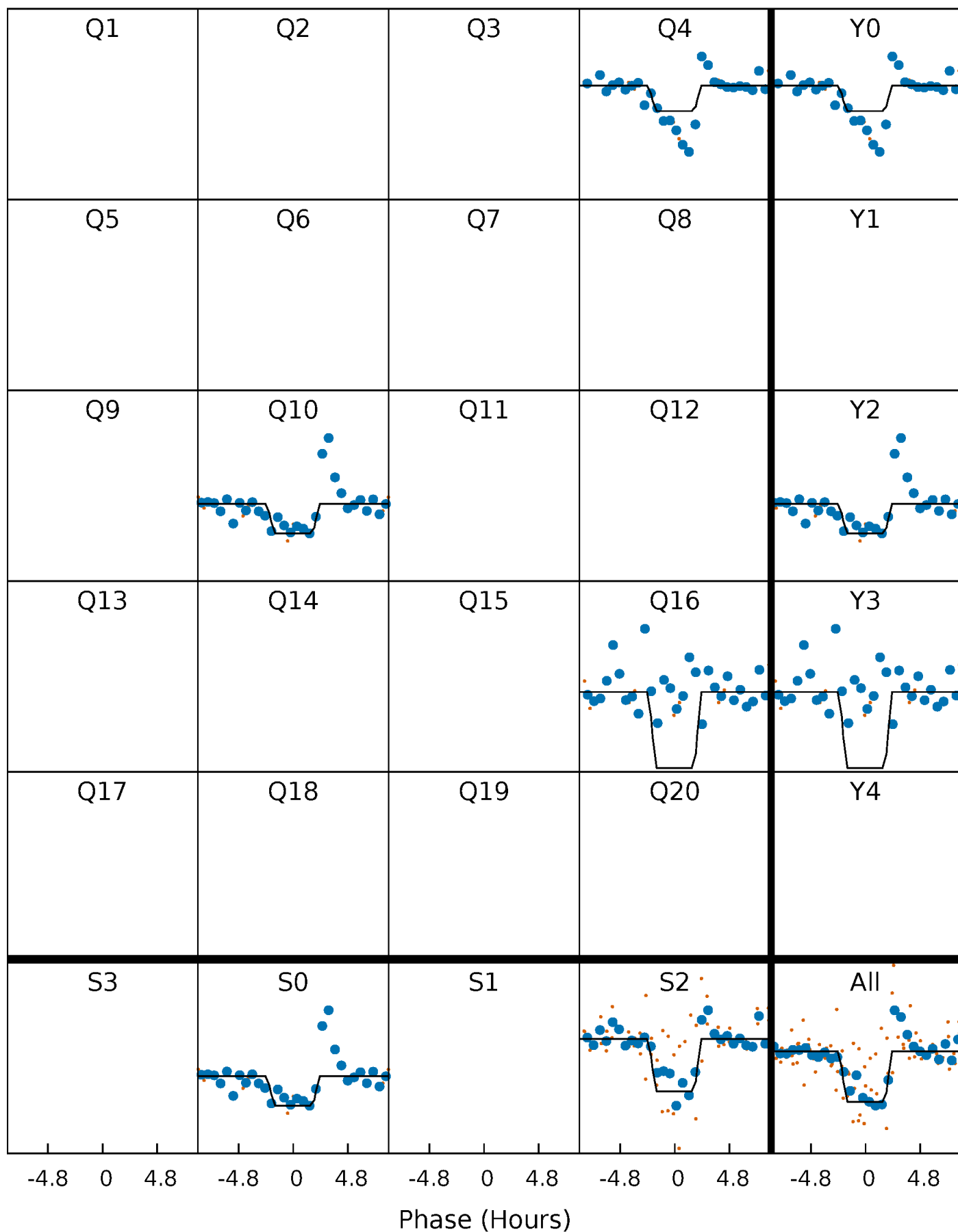
DV Quarter-Phased Transit Curves

TCE 009095110-03 $P=587.071508$ Days $T_0=357.265866$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

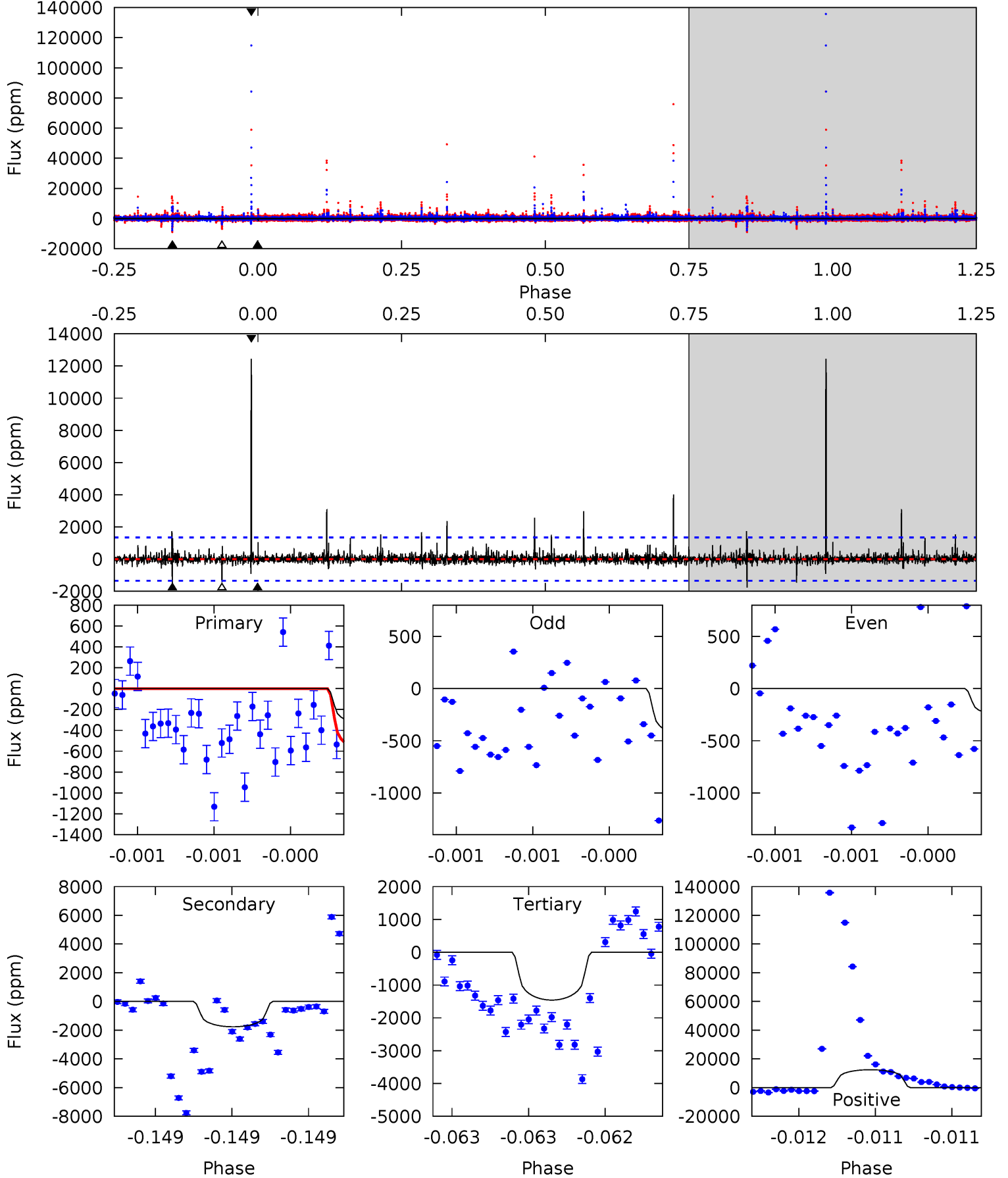
TCE 009095110-03 P=587.056179 Days $T_0=357.285774$ (BKJD)



DV Model-Shift Uniqueness Test

009095110-03, P = 587.071508 Days, E = 357.265866 Days

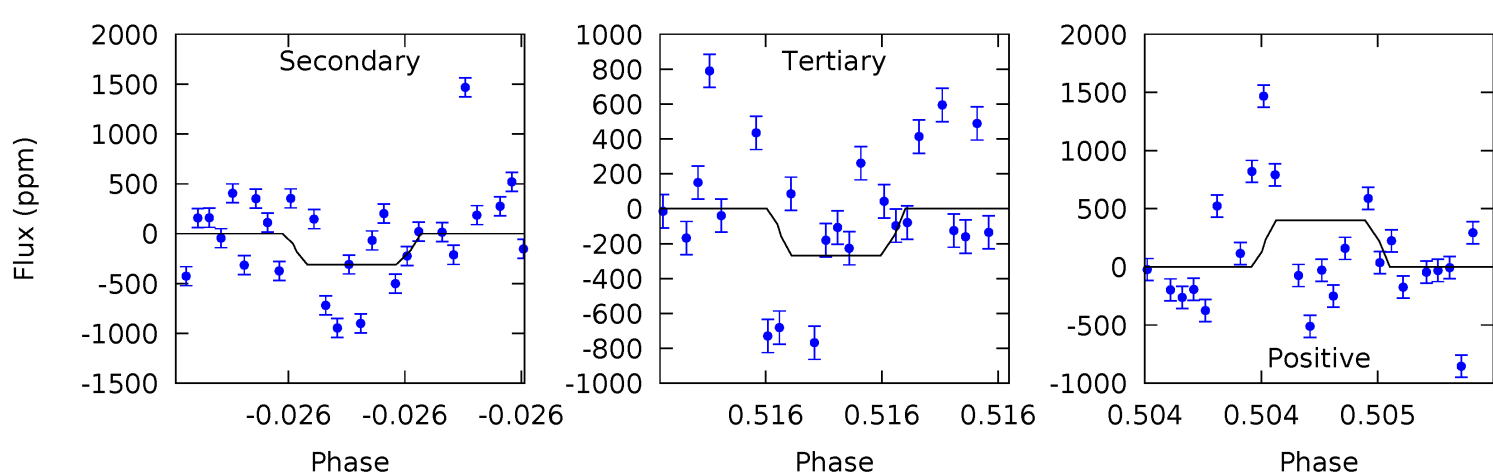
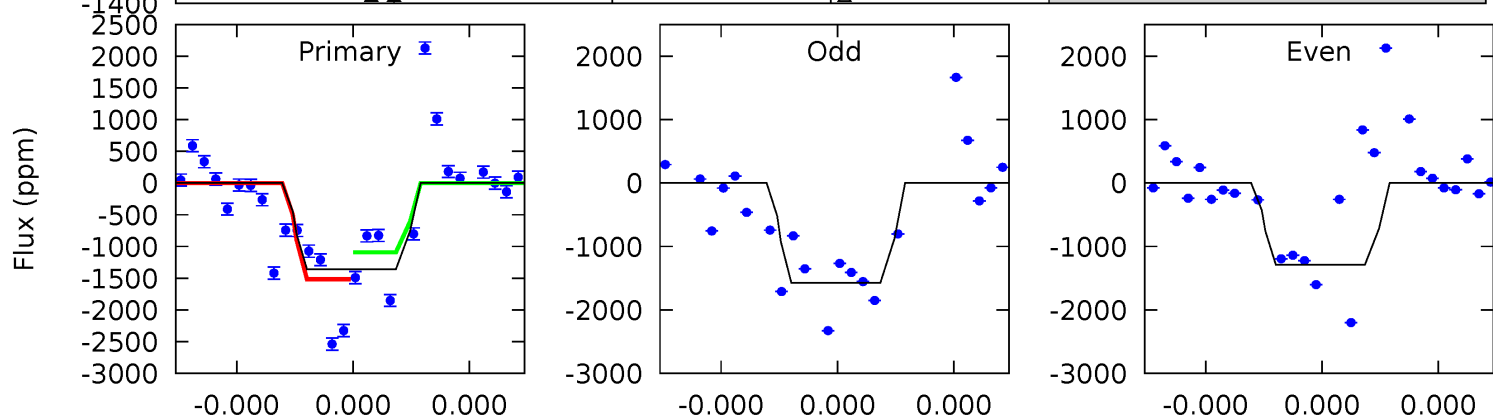
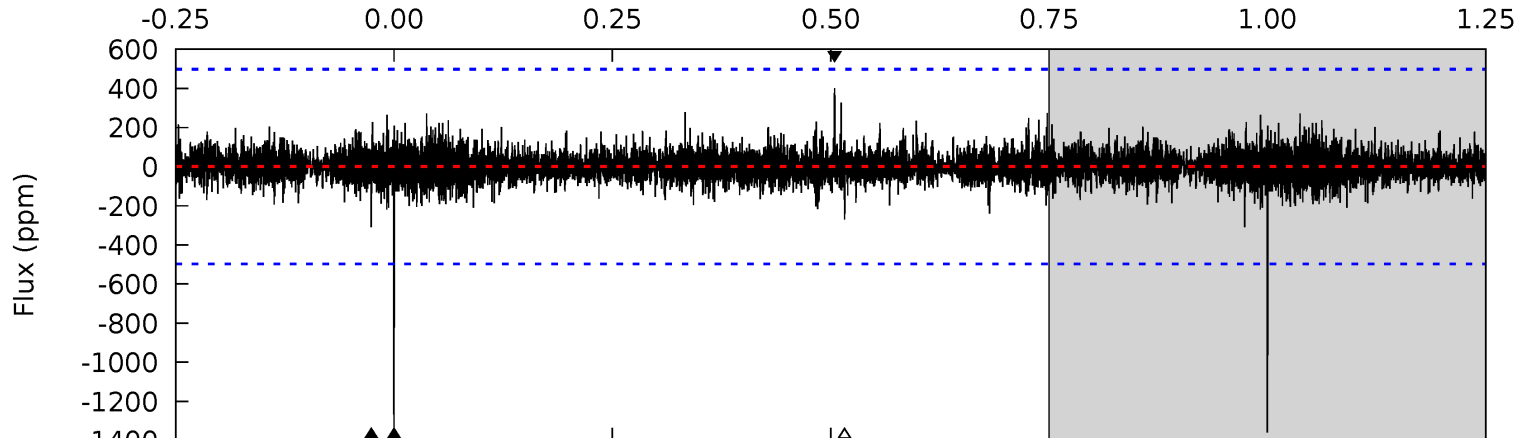
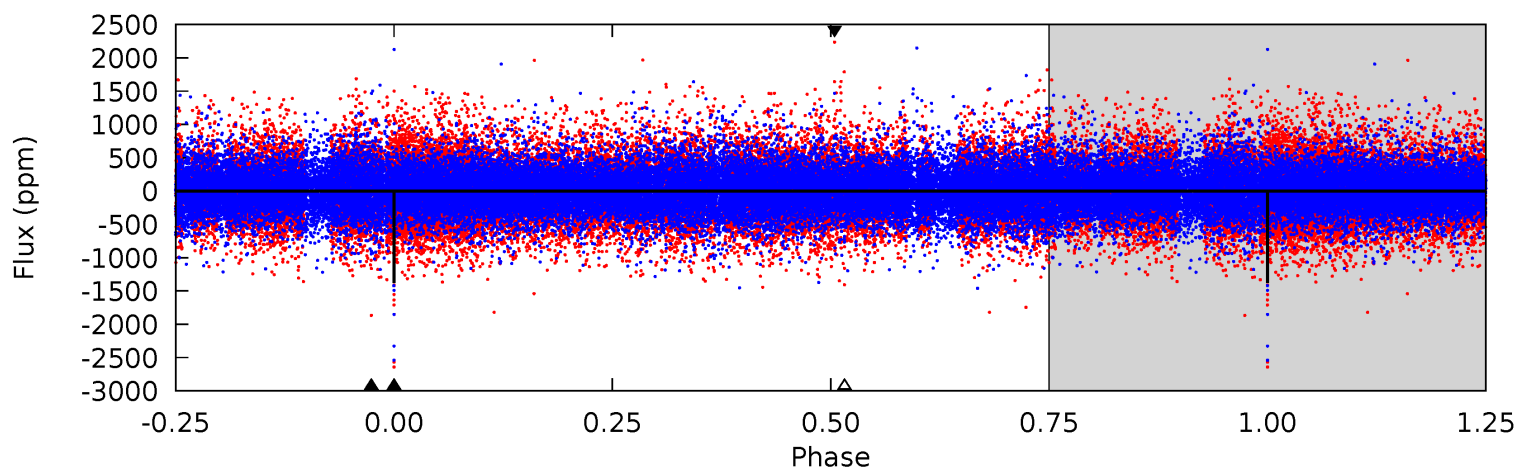
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.42	7.38	6.09	52.1	5.62	3.55	1.40	-4.68	-50.7	1.29	-44.7	0.19	0.72	0.88	1.05



Alt Model-Shift Uniqueness Test

009095110-03, P = 587.056179 Days, E = 357.285774 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
15.5	3.52	3.07	4.56	5.67	3.63	0.59	12.4	10.9	0.45	-1.04	1.14	1.01	0.23	2.33



Stellar Parameters For KIC 009095110

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5134^{+179}_{-179}	$4.569^{+0.077}_{-0.056}$	$-0.500^{+0.300}_{-0.300}$	$0.707^{+0.080}_{-0.080}$	$0.676^{+0.087}_{-0.044}$	$2.696^{+0.920}_{-0.519}$
	+3%/-3%	+2%/-1%	+60%/-60%	+11%/-11%	+13%/-7%	+34%/-19%
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 009095110-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1765 ± 239	$4.11^{+3.73}_{-2.64}$	242^{+11}_{-11}	4677^{+3025}_{-973}	$85742^{+574023}_{-62051}$
Alt.	-309 ± 88	$4.28^{+4.10}_{-2.72}$	241^{+11}_{-11}	3376^{+1505}_{-600}	13593^{+92913}_{-10177}

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

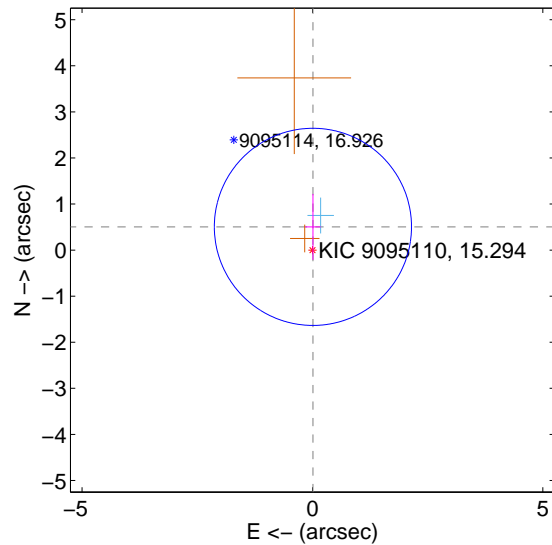
Supplemental centroid analysis for 009095110-03. Kepler magnitude: 15.29. Transit SNR 7.35

There are 1 quarters with good PRF difference image offsets

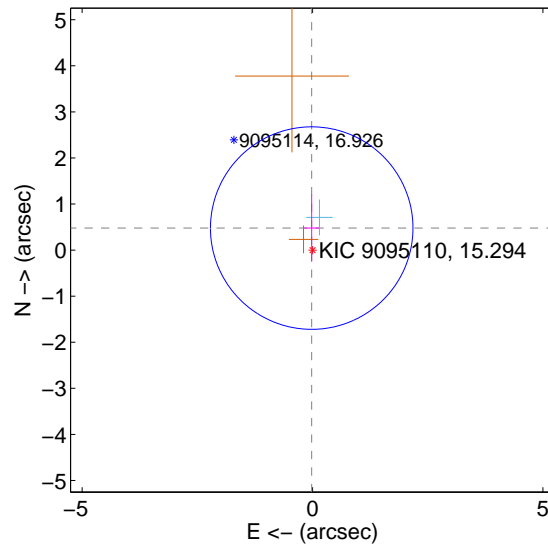
The direct PRF centroid is offset from the target star catalog position by about 0.03 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.504 ± 0.713	0.71	-0.010 ± 0.169	0.504 ± 0.716
PRF-fit source offset from KIC position	0.478 ± 0.733	0.65	0.018 ± 0.160	0.478 ± 0.728
photometric centroid source offset	0.70 ± 1.22	0.57	0.44 ± 1.14	-0.55 ± 1.27

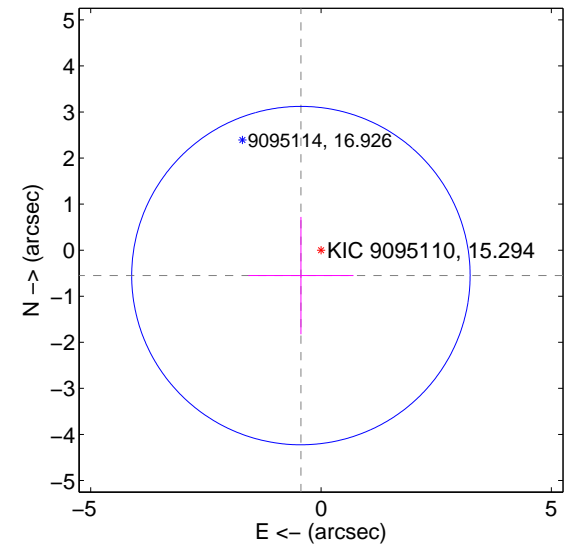
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

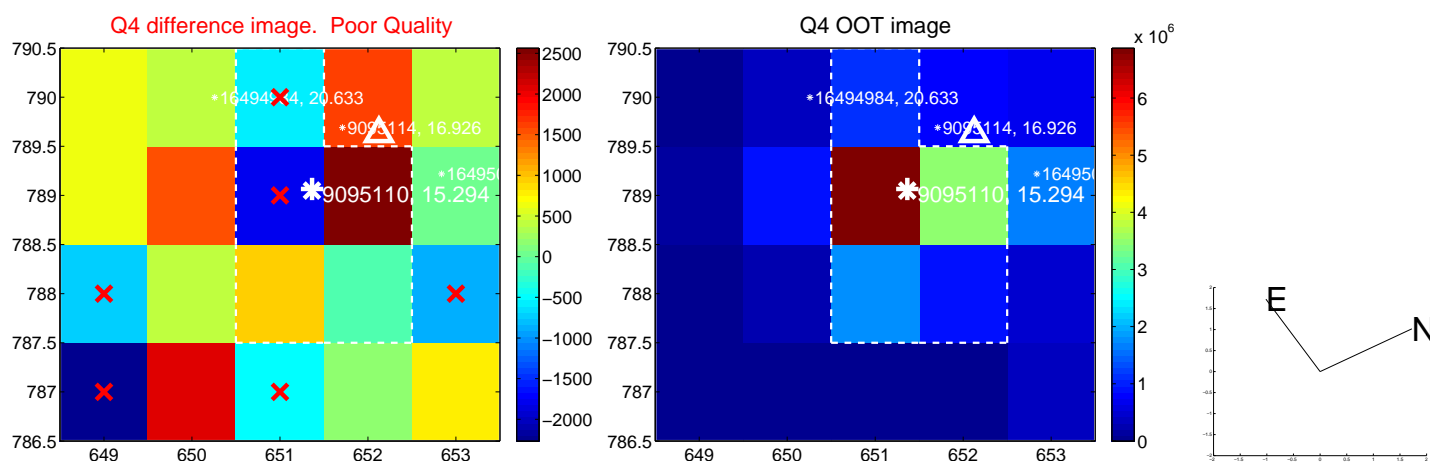
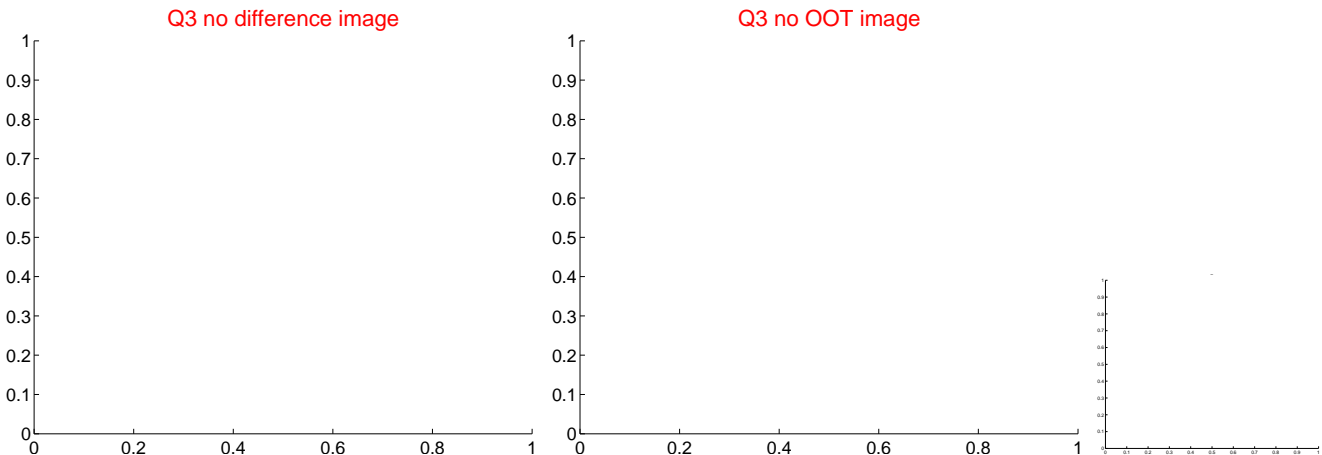
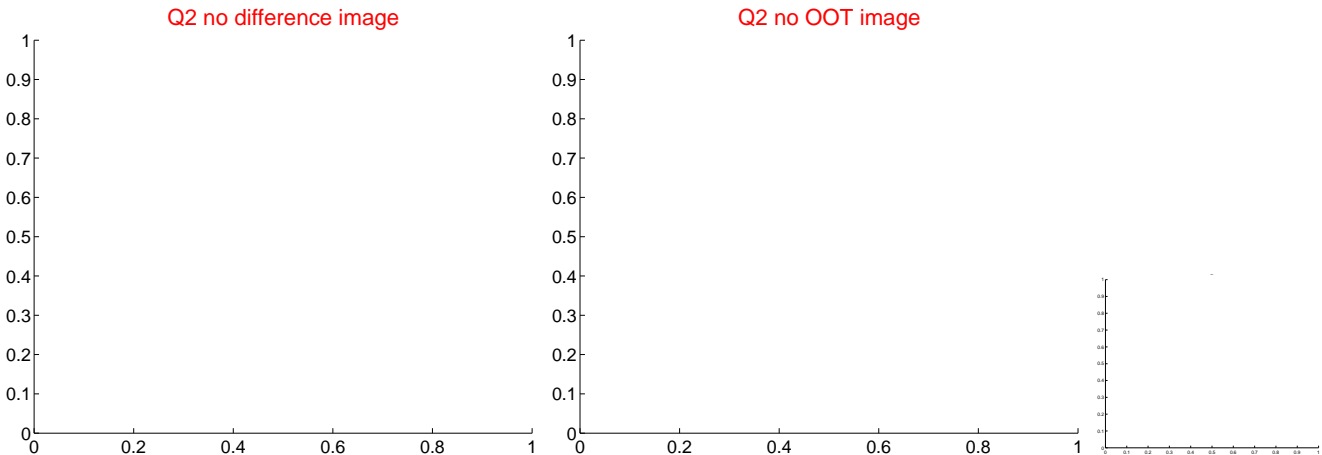
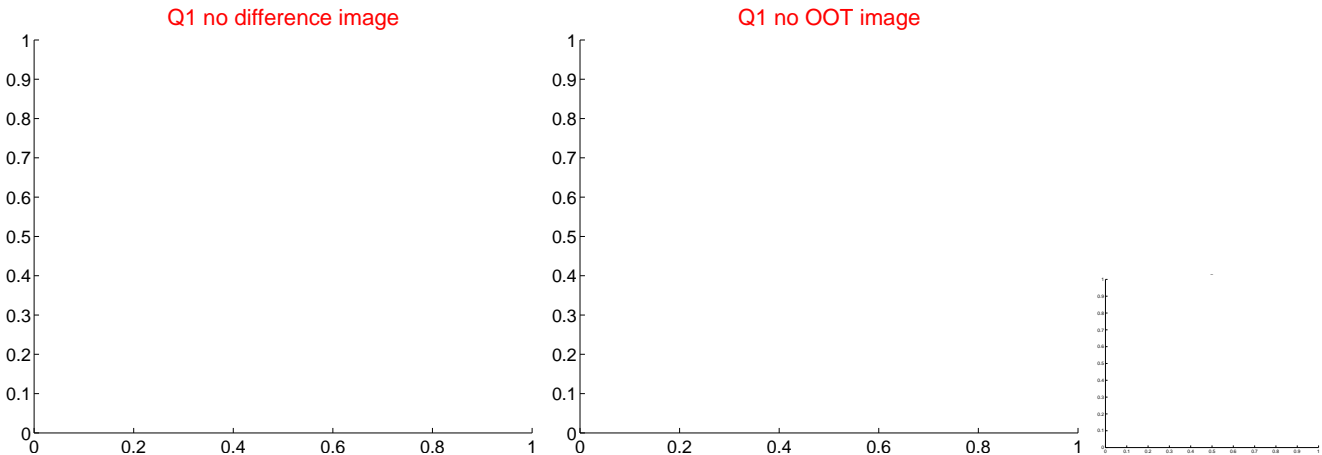


offset from photometric centroids

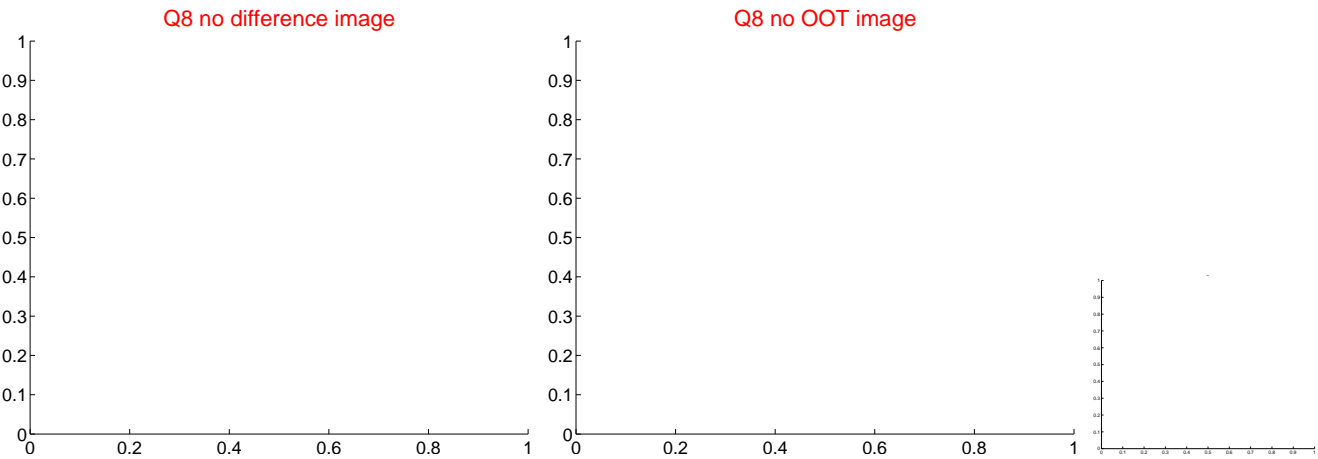
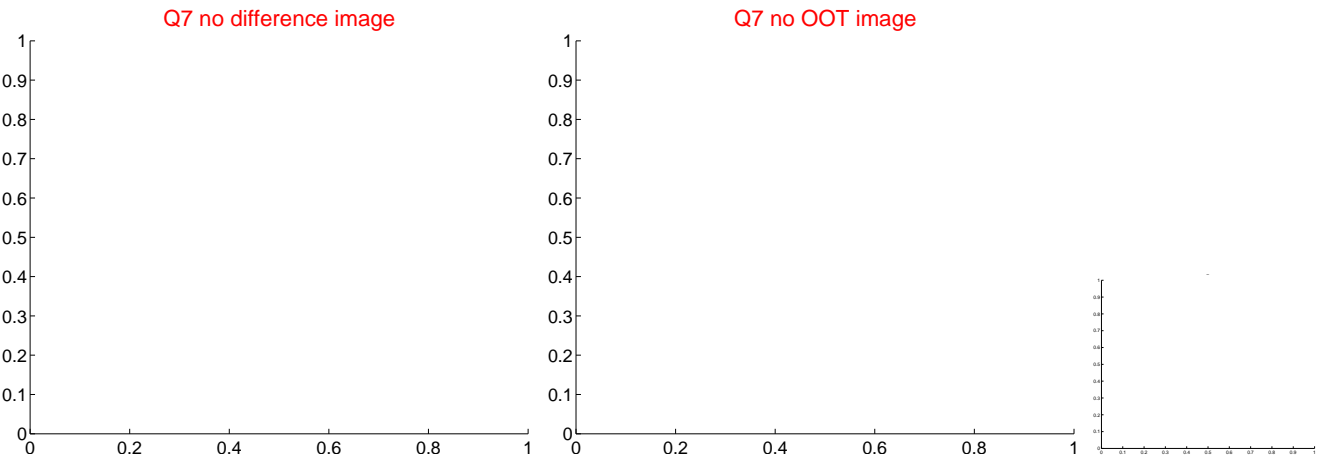
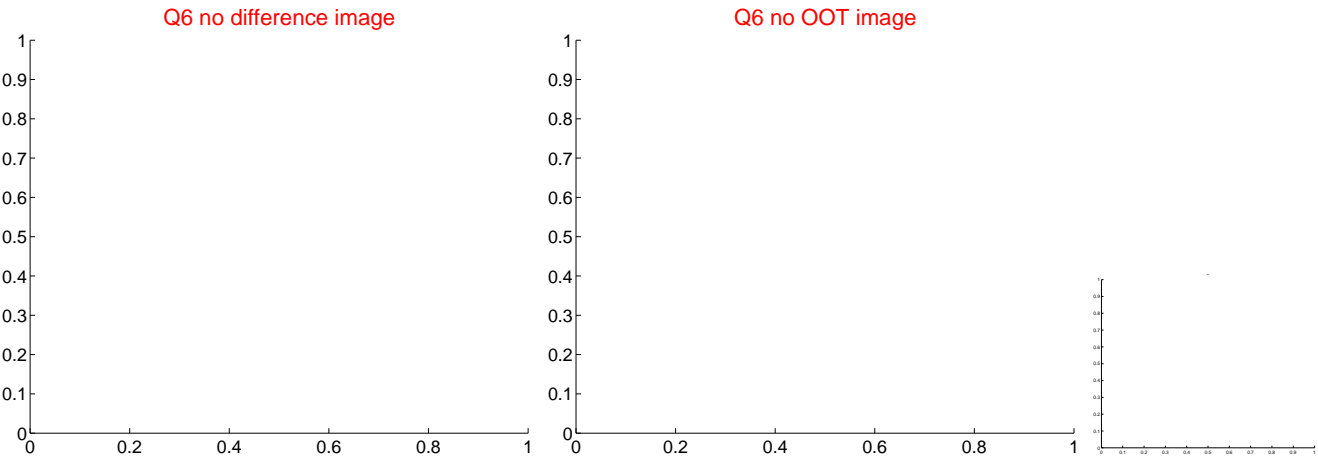
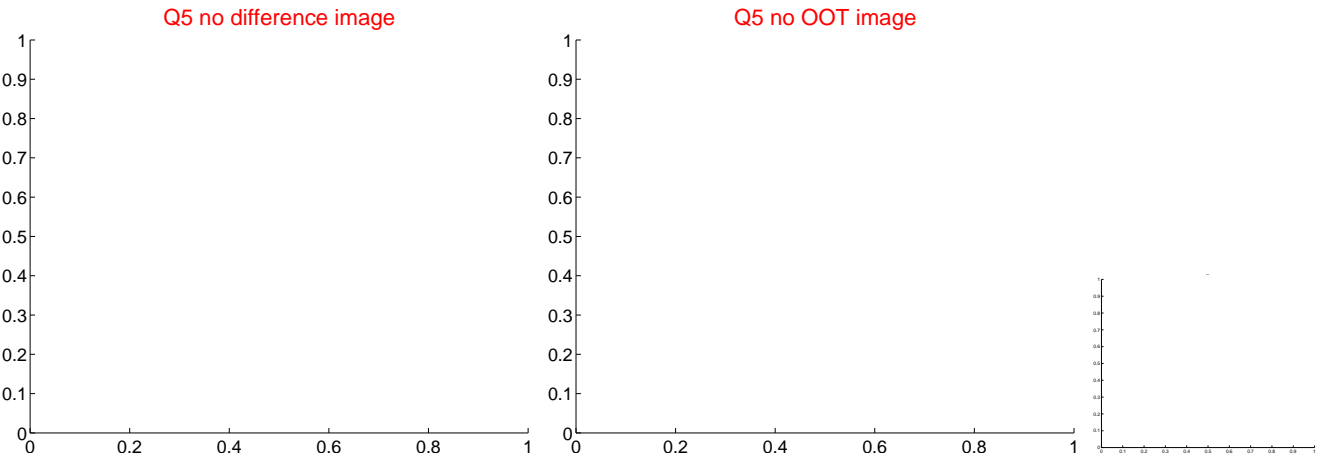


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

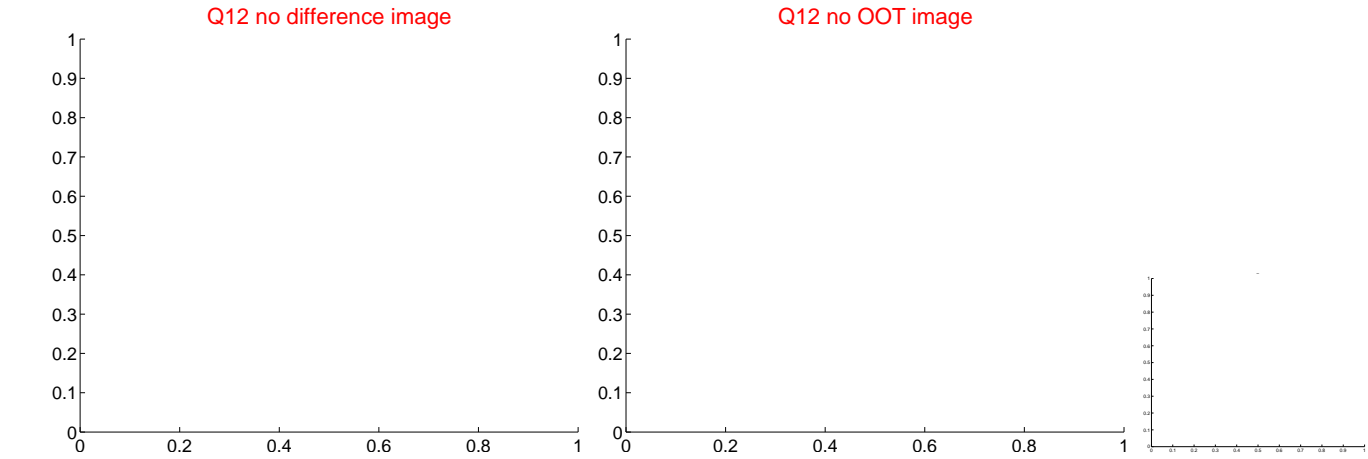
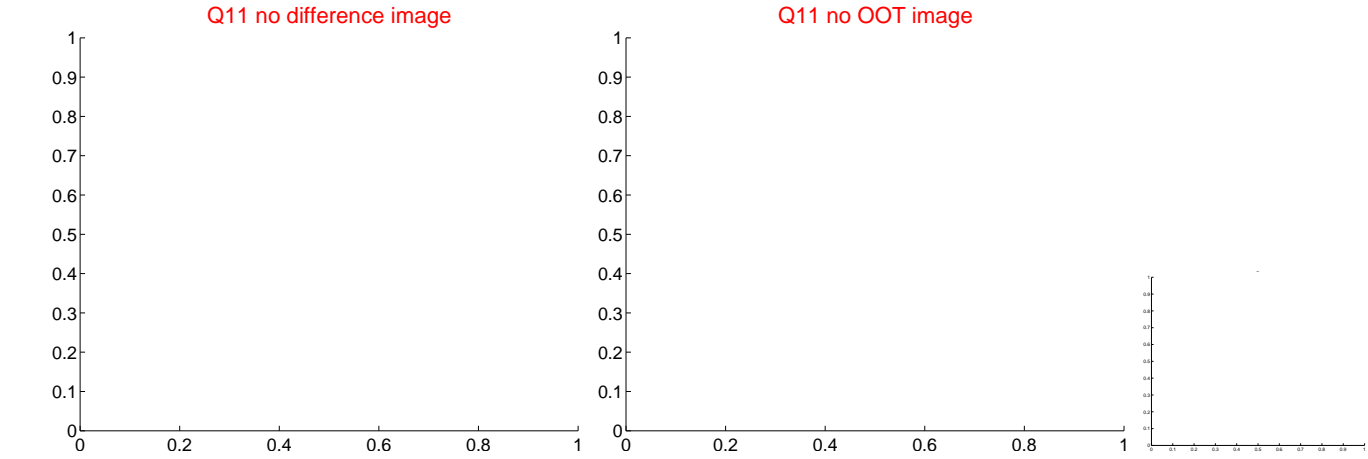
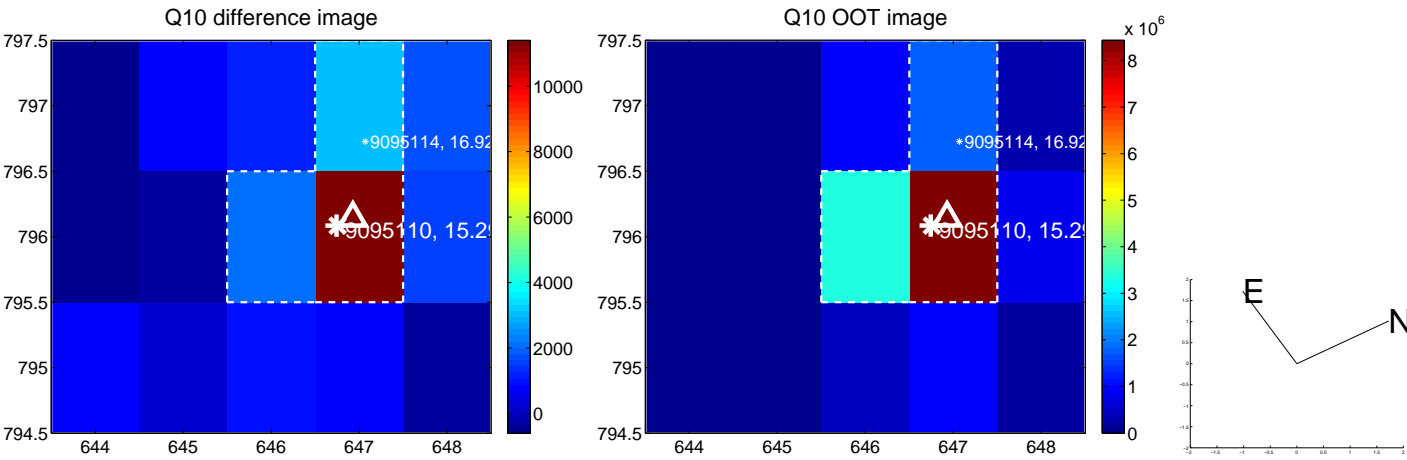
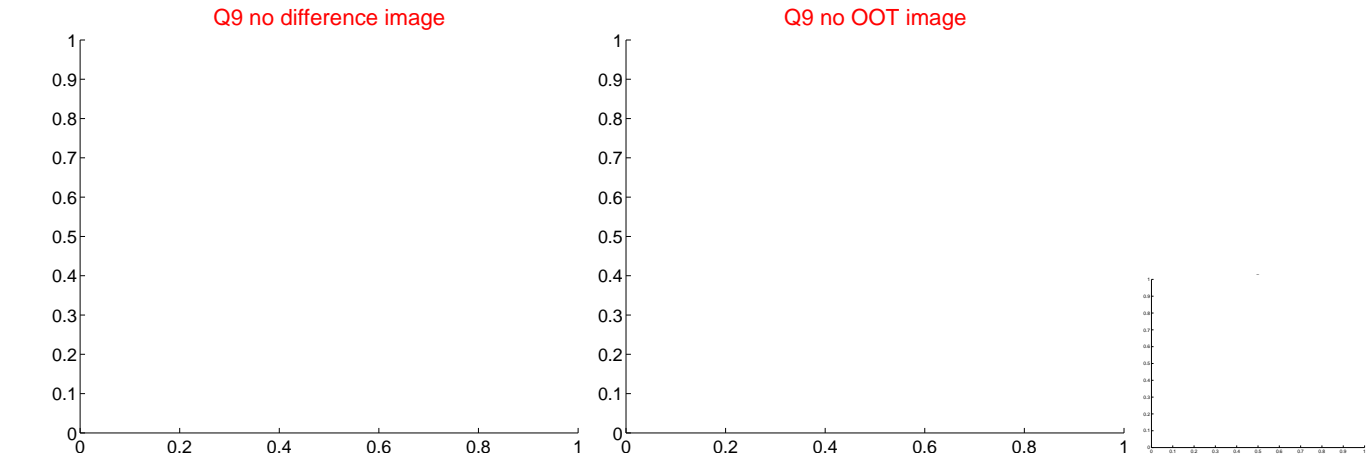
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value



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

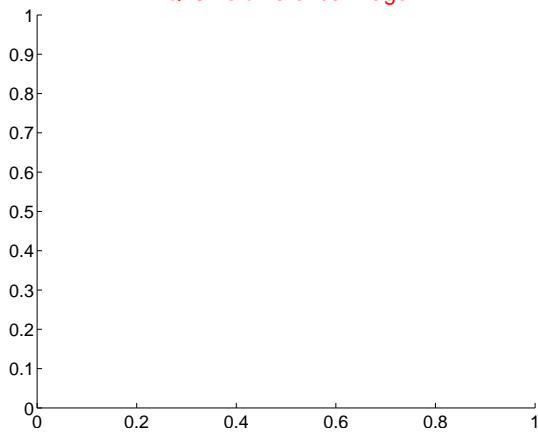


white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.

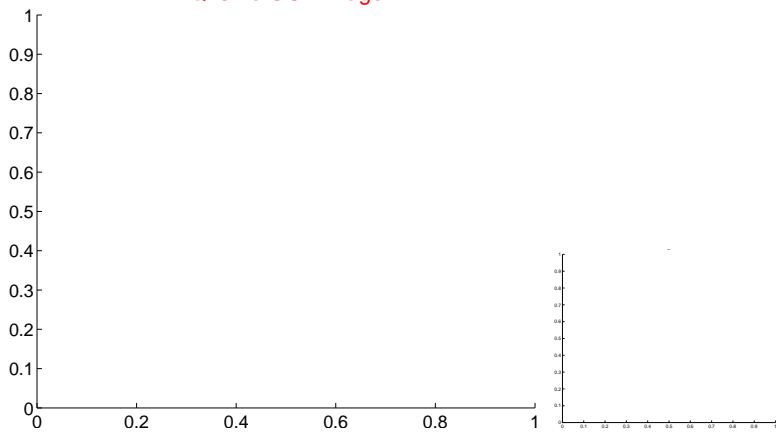


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

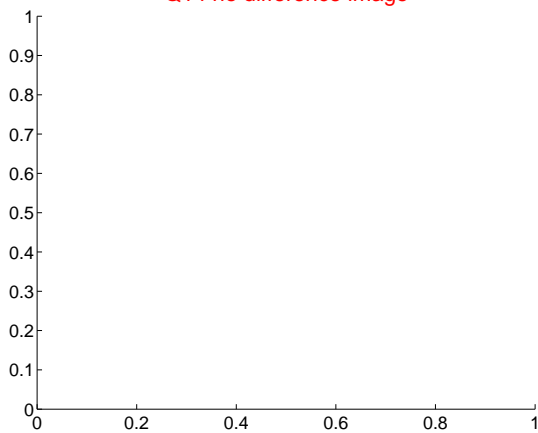
Q13 no difference image



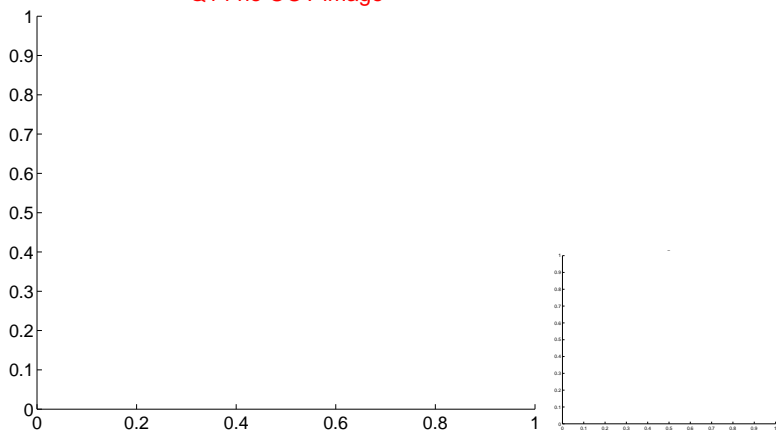
Q13 no OOT image



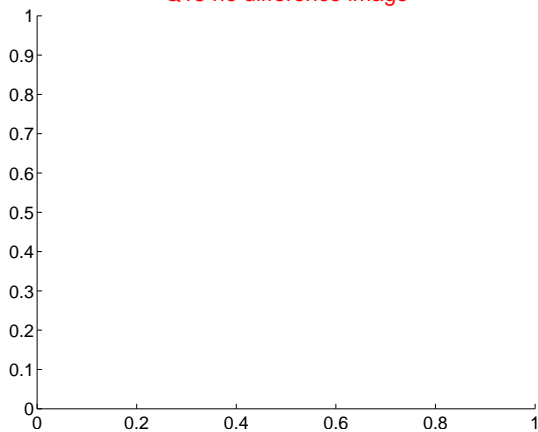
Q14 no difference image



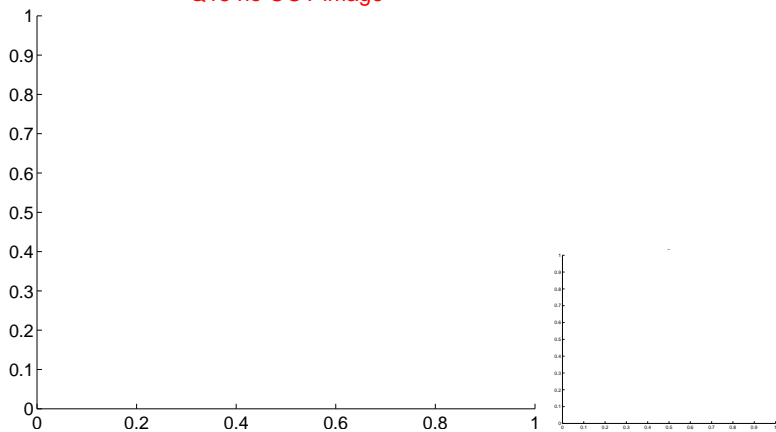
Q14 no OOT image



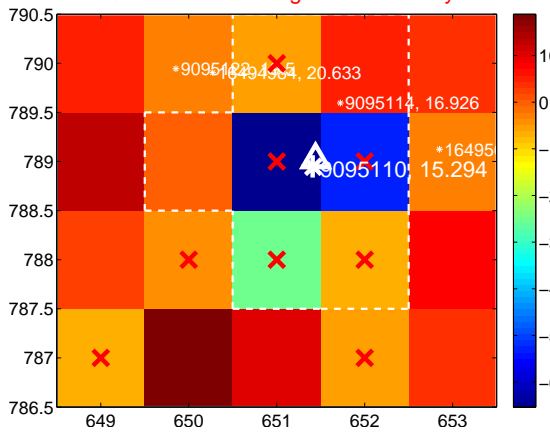
Q15 no difference image



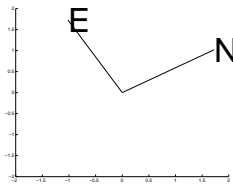
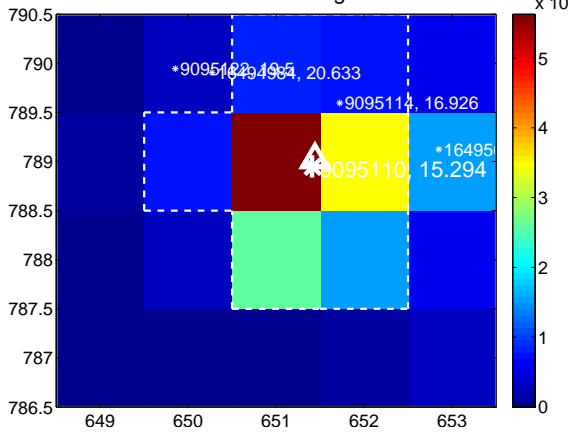
Q15 no OOT image



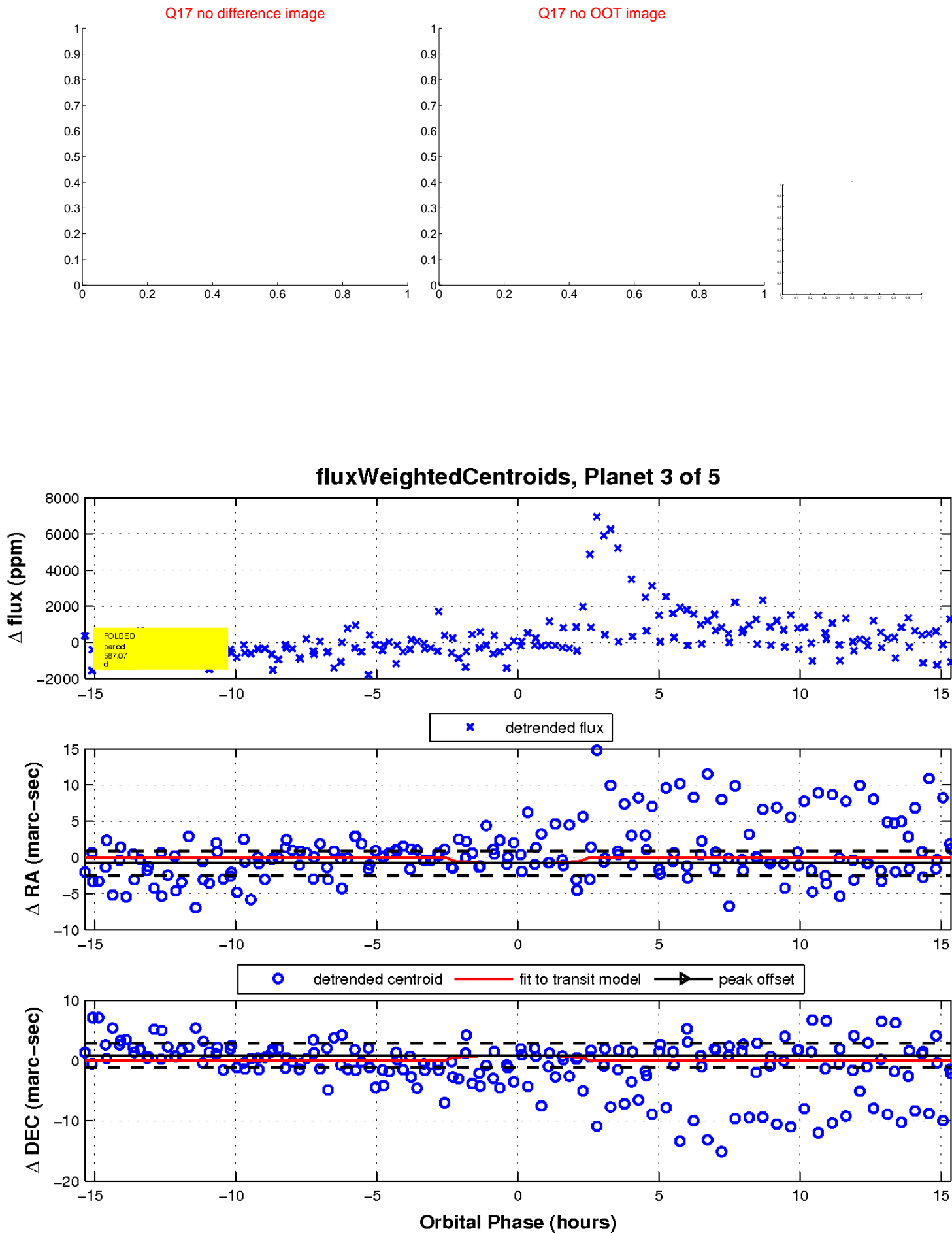
Q16 difference image. Poor Quality



Q16 OOT image

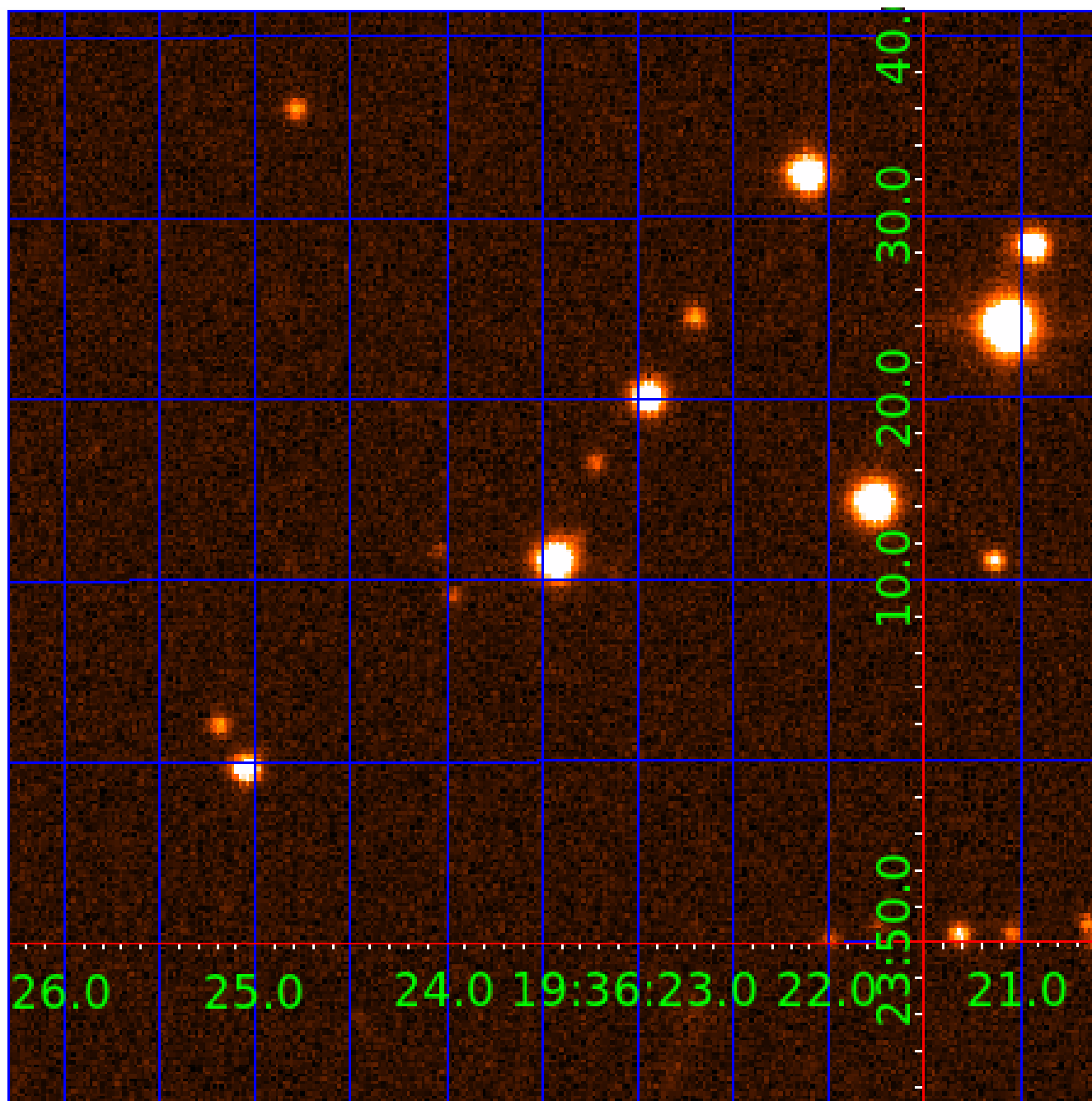


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009095110

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})
009095110-01	OBS	No	385.196495	455.391605	2805.1	4.713	20.8	14.0	0.71	5134	3.71	0.38
009095110-02	OBS	No	404.432347	303.234519	2596.3	6.169	19.3	10.9	0.71	5134	4.62	0.35
009095110-03	OBS	No	587.071508	357.265866	1282.3	5.139	13.4	7.4	0.71	5134	2.65	0.21
009095110-04	OBS	No	440.044695	200.773029	1312.6	4.545	11.3	7.7	0.71	5134	2.75	0.32
009095110-05	OBS	No	377.911881	484.177211	1342.9	9.000	13.6	-1.0	0.71	5134	2.54	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009095110-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009095110-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

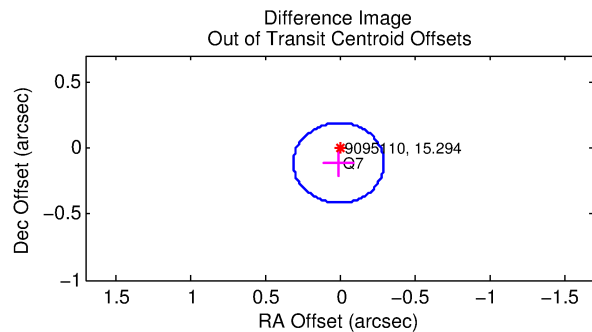
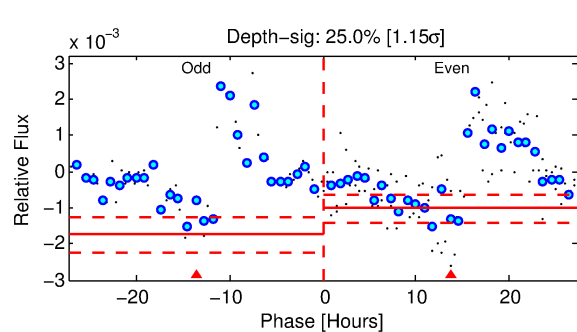
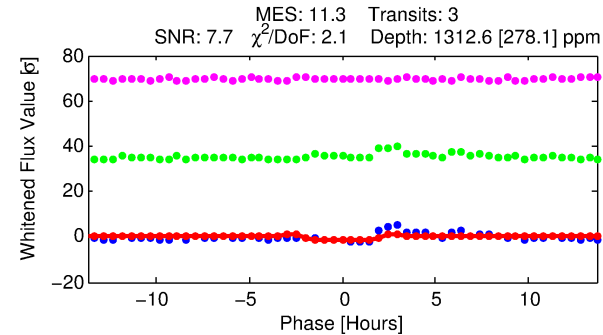
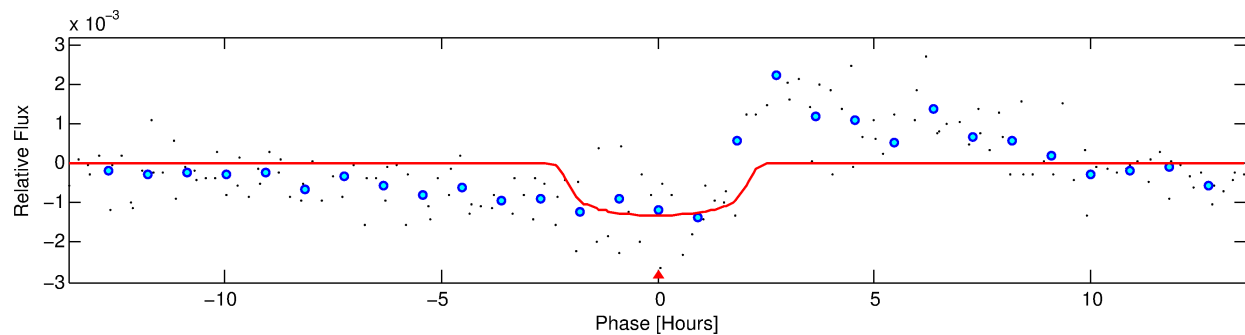
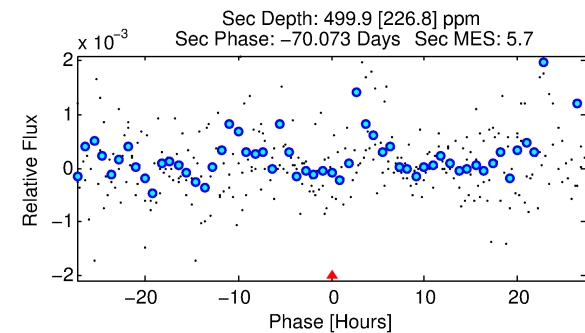
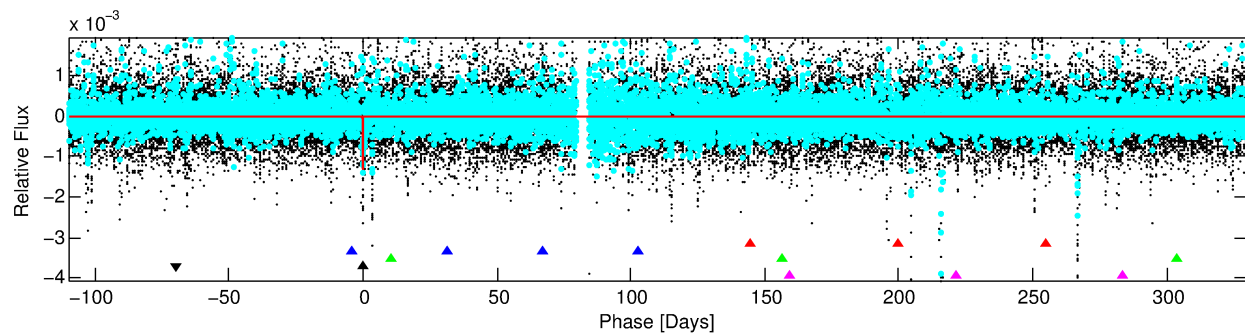
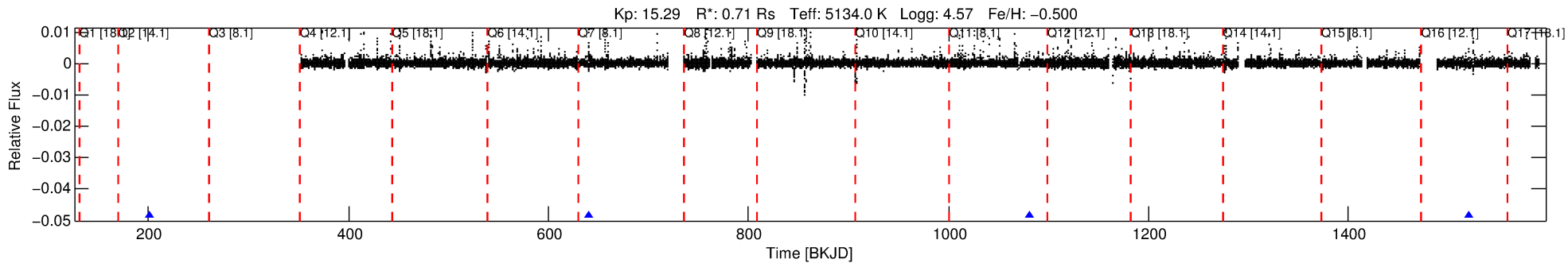
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009095110-04

No Significant Match Found

DV One-Page Summary

KIC: 9095110 Candidate: 4 of 5 Period: 440.045 d



DV Fit Results:

Period = 440.04470 [0.00965] d
Epoch = 200.7730 [0.0209] BKJD
Rp/R* = 0.0357 [0.0348]
a/R* = 551.62 [2018.90]
b = 0.72 [2.51]
Seff = 0.32 [0.06]
Teq = 191 [9] K
Rp = 2.75 [2.70] Re
a = 0.9938 [0.0952] AU
Ag = 35879.64 [72018.69] [0.50σ]
Teffp = 4065 [2040] K [1.90σ]

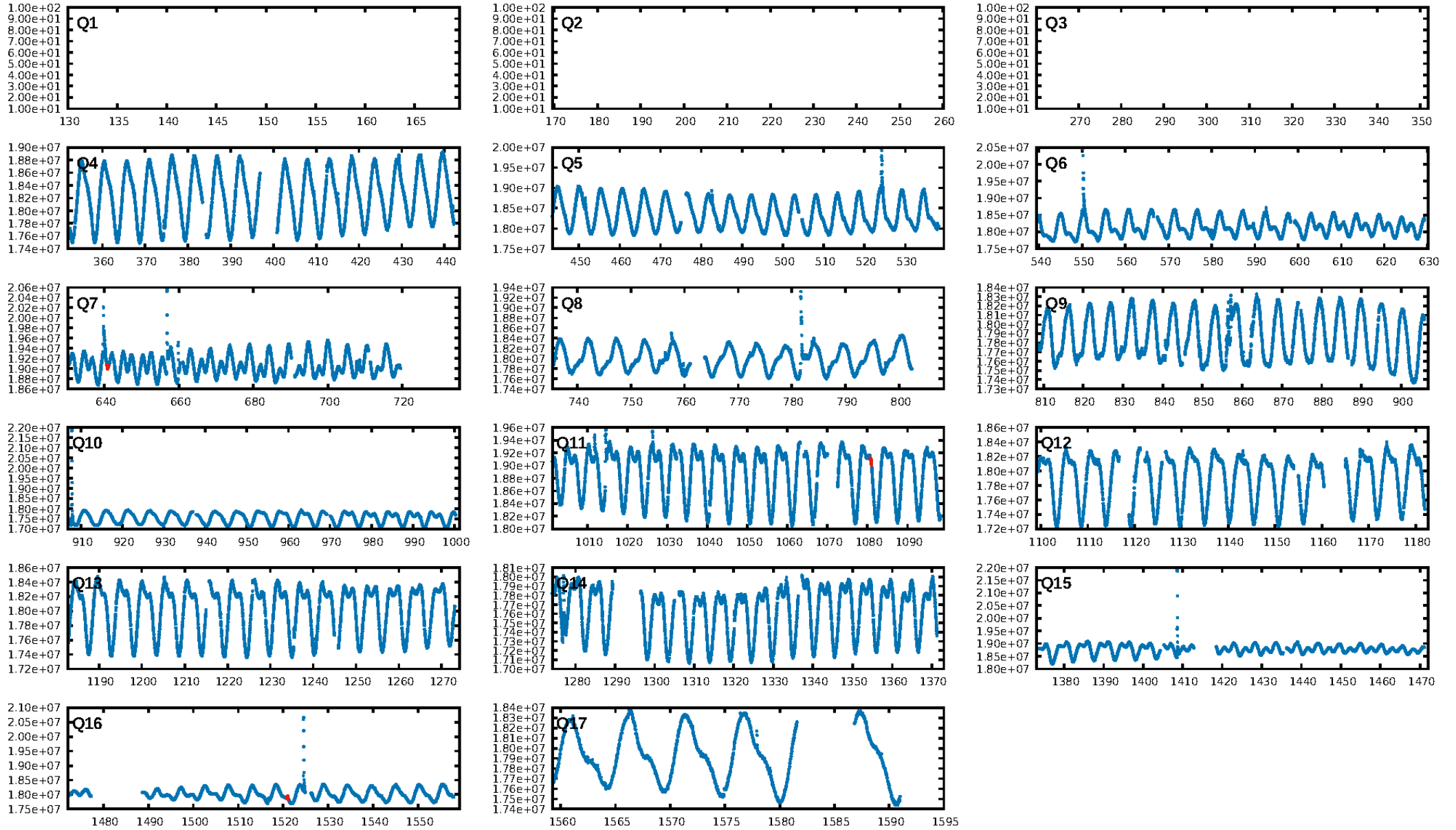
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [111.54σ]
LongPeriod-sig: 100.0% [514.31σ]
ModelChiSquare2-sig: 22.7%
ModelChiSquareGof-sig: 31.6%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 2.406
Centroid-sig: 23.0%
Centroid-so: 1.093 arcsec [0.88σ]
OotOffset-rm: 0.115 arcsec [1.13σ]
KicOffset-rm: 0.150 arcsec [1.48σ]
OotOffset-st: 0/1/0/0 [1]
KicOffset-st: 0/1/0/0 [1]
DiffImageQuality-fgm: 1.00 [1/1]
DiffImageOverlap-fno: 1.00 [3/3]

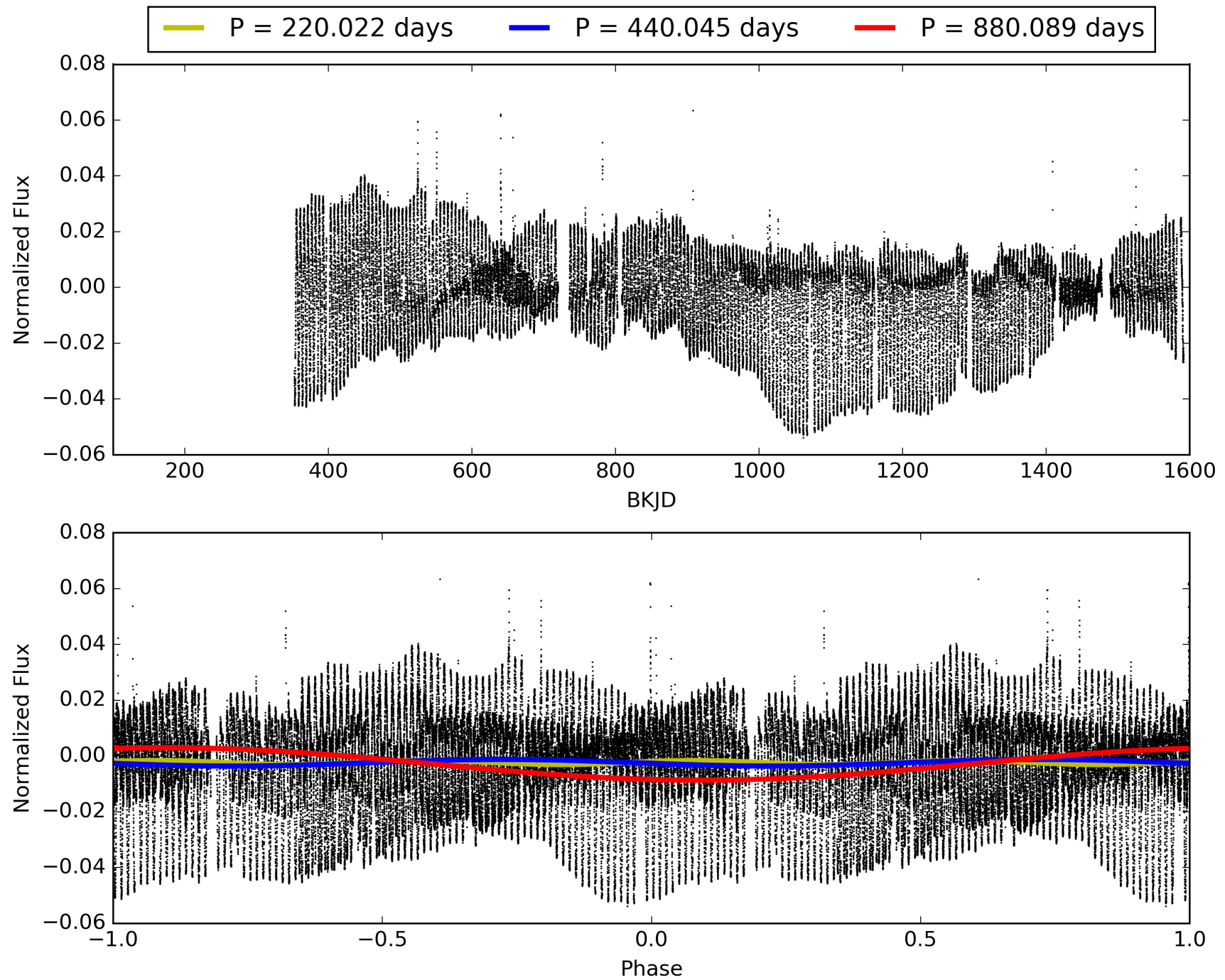
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:09:14 Z

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

TCE 009095110-04, PDC Light Curves

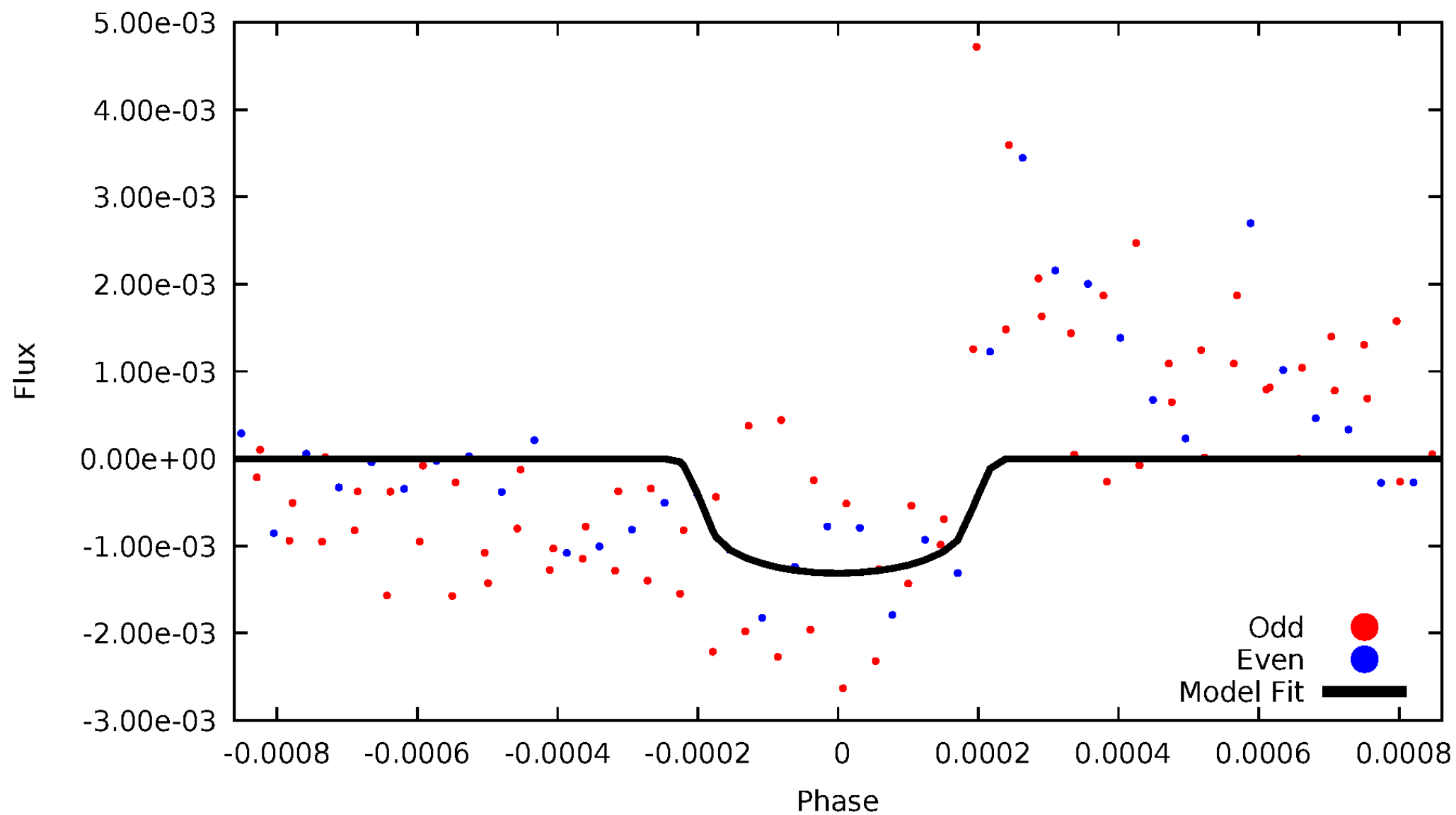


TCE 009095110-04



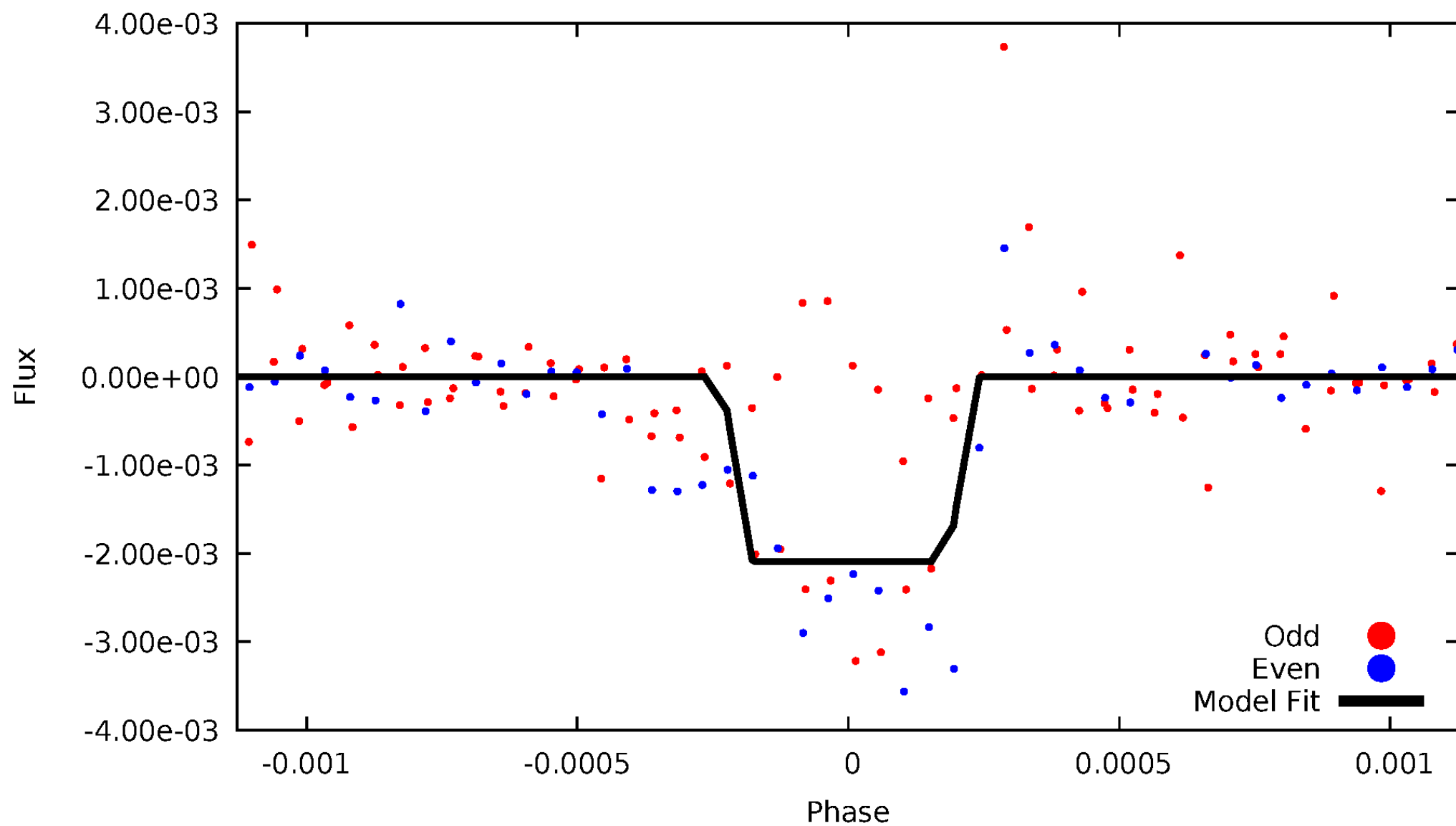
DV Odd/Even

TCE 009095110-04



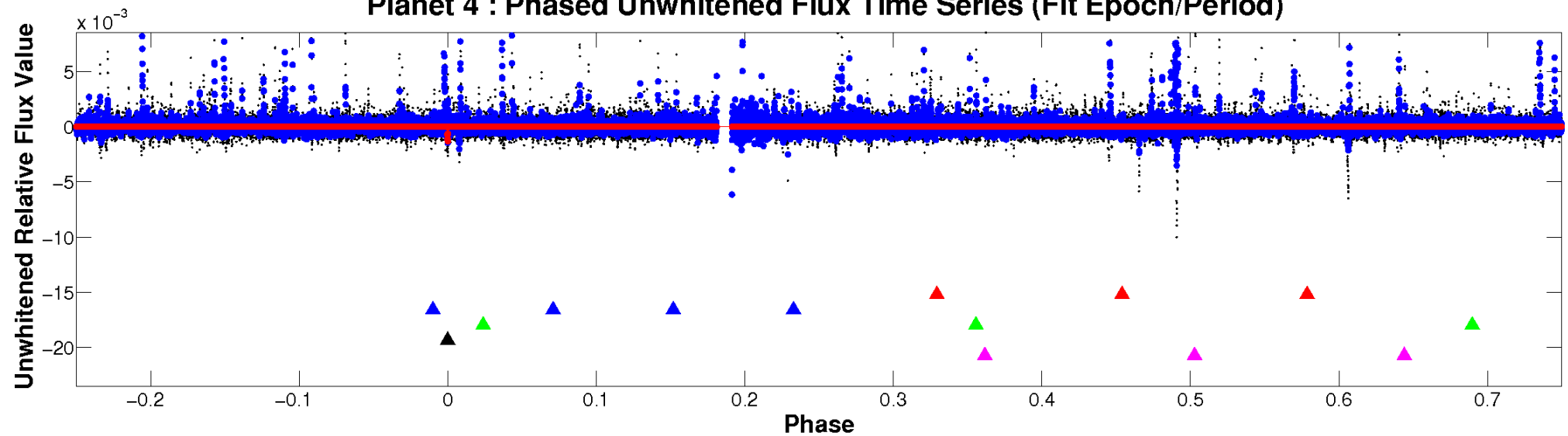
ALT Odd/Even

TCE 009095110-04

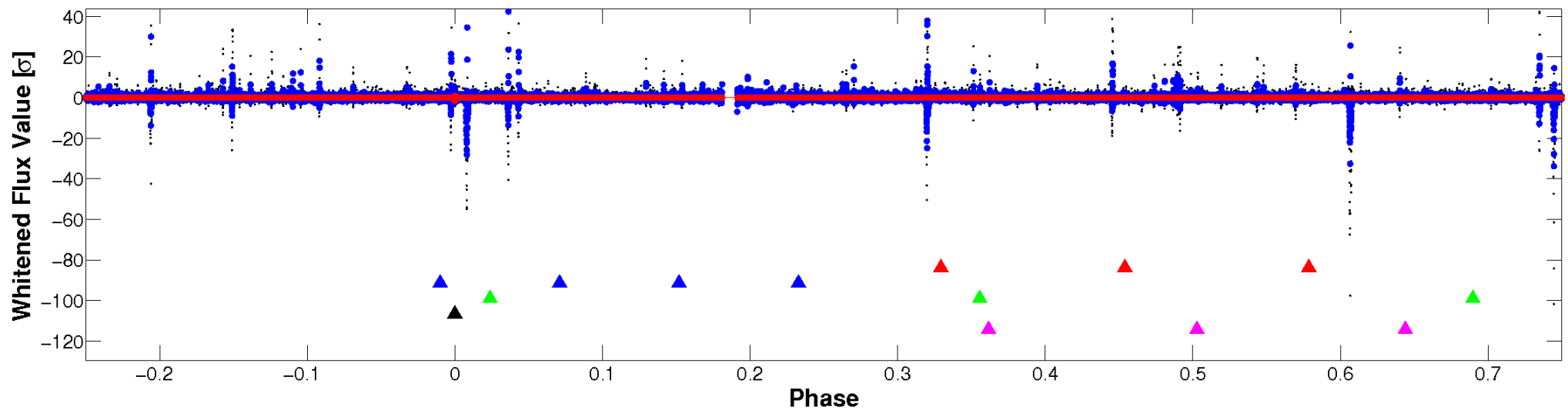


Non-Whitened Vs. Whitened Light Curve

Planet 4 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

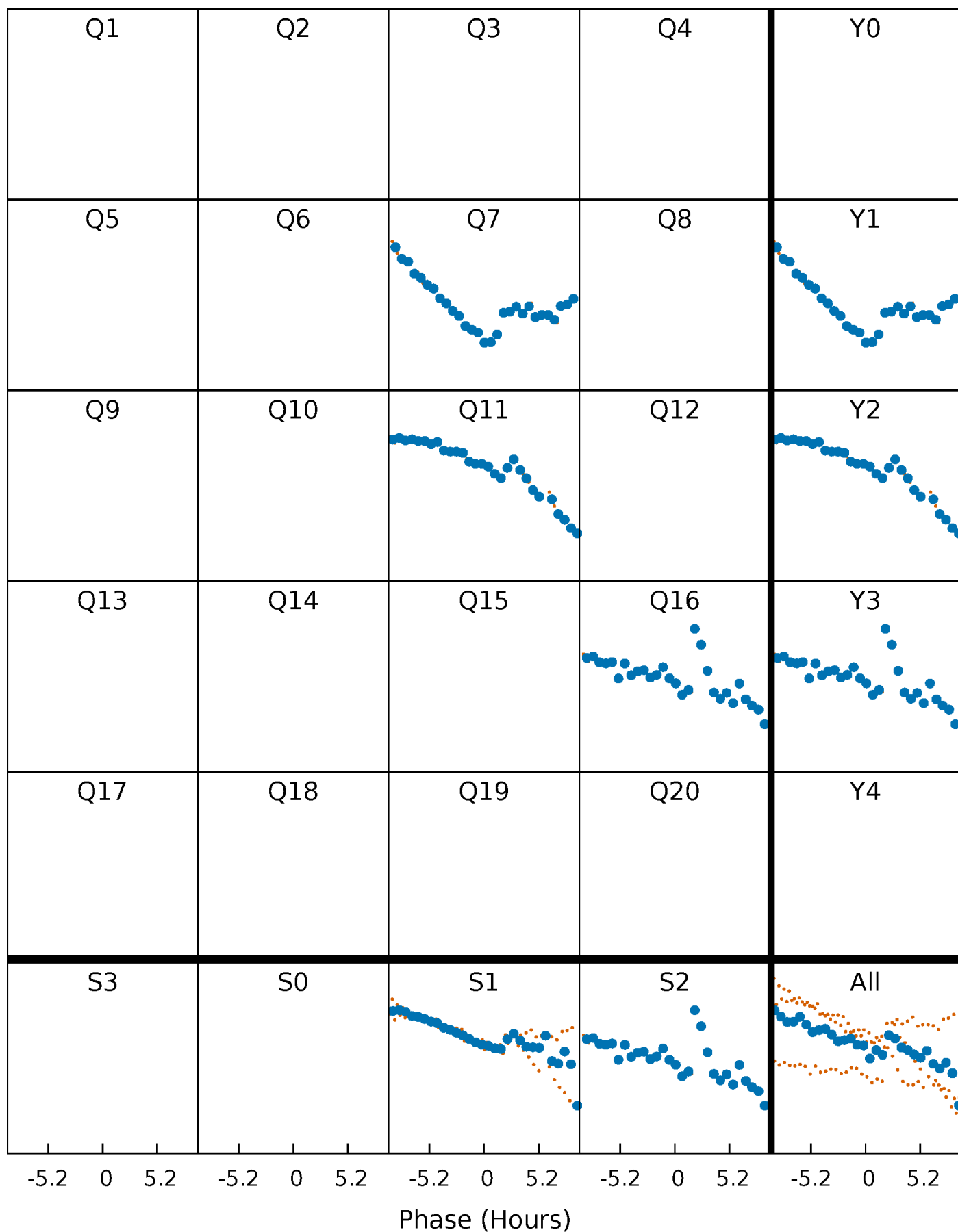


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



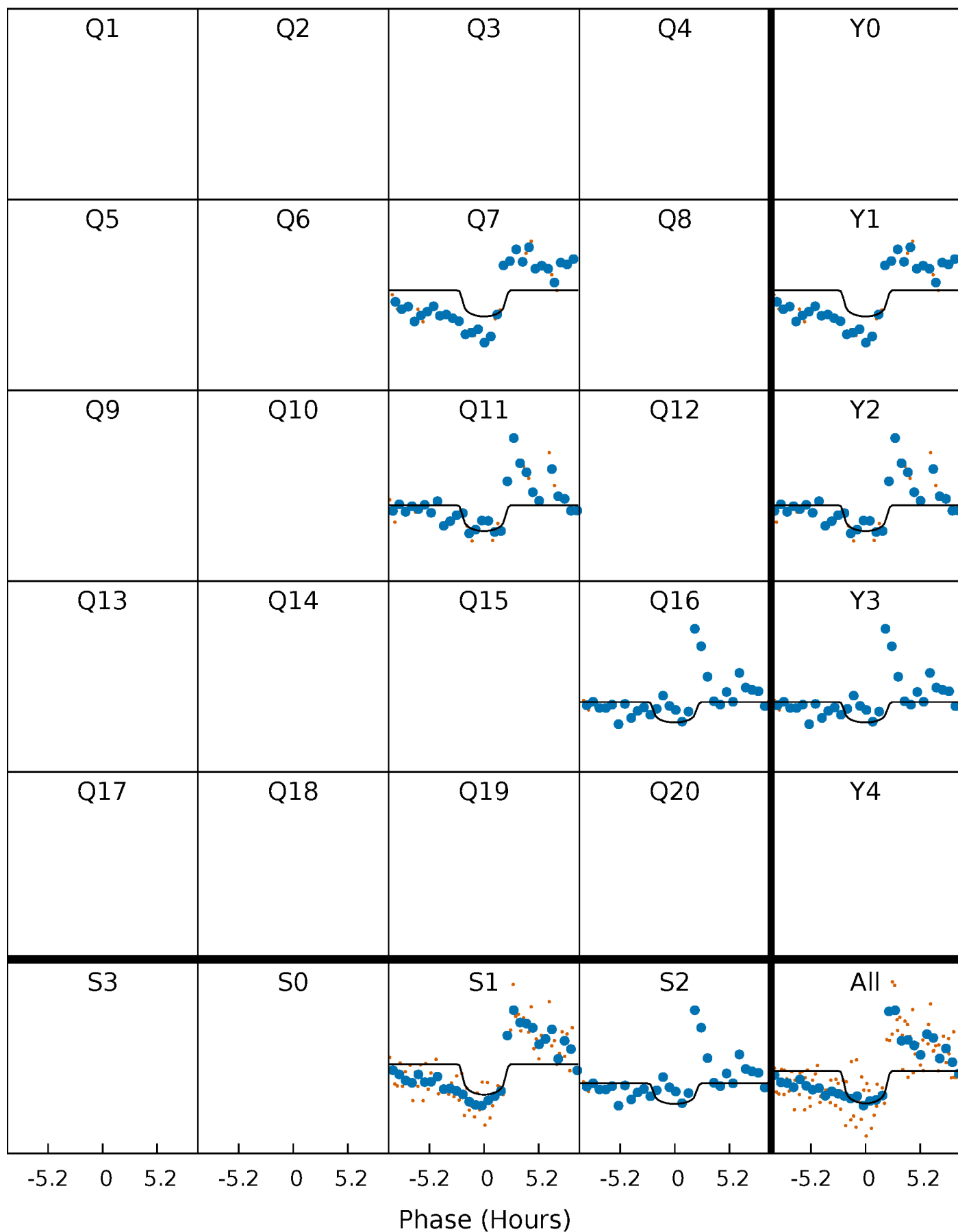
PDC Quarter-Phased Transit Curves

TCE 009095110-04 $P=440.044695$ Days $T_0=200.773029$ (BKJD)



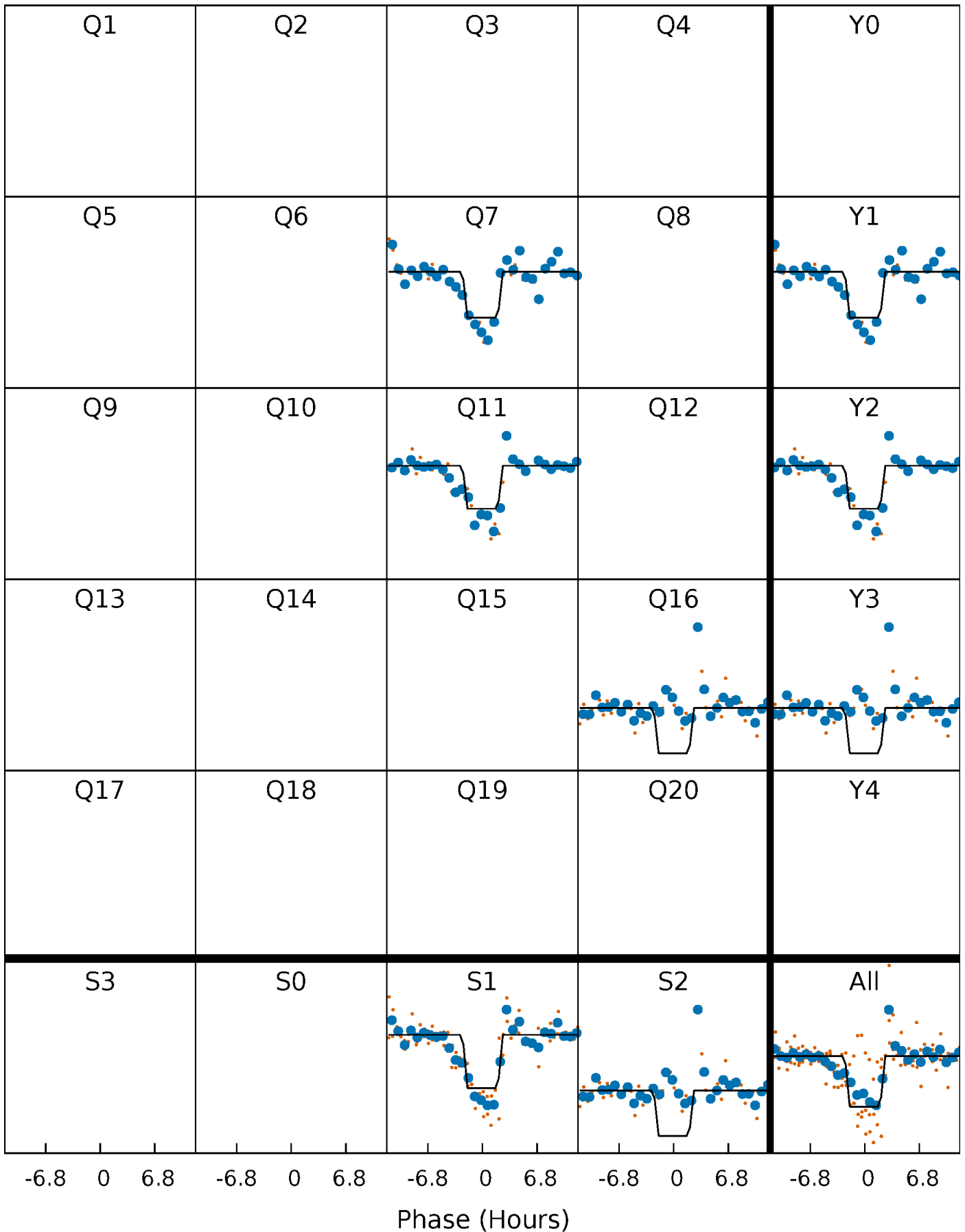
DV Quarter-Phased Transit Curves

TCE 009095110-04 $P=440.044695$ Days $T_0=200.773029$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

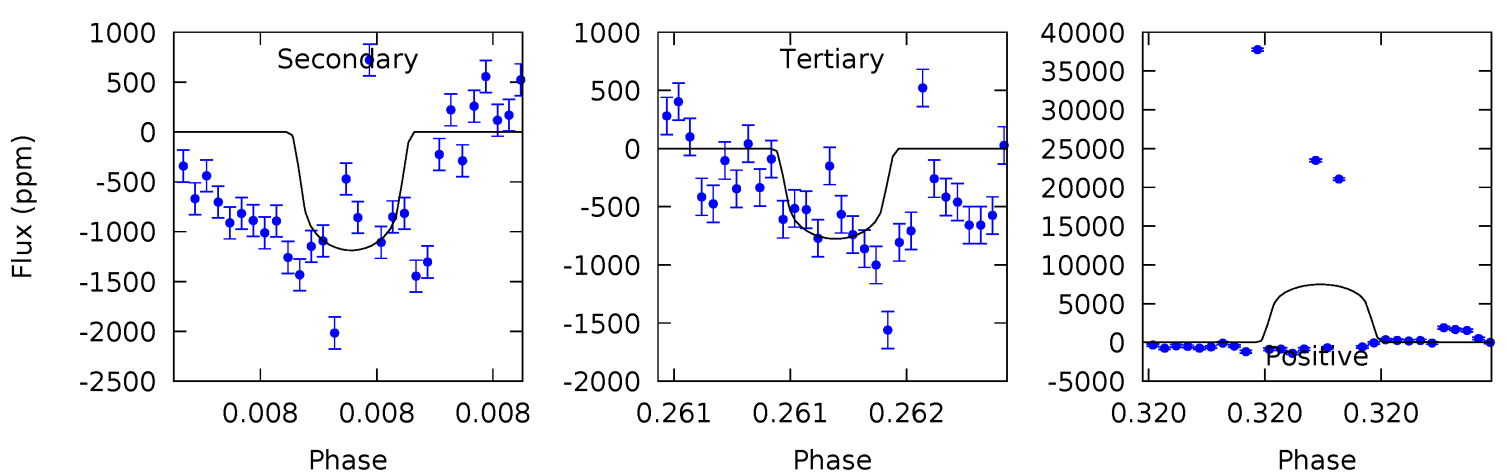
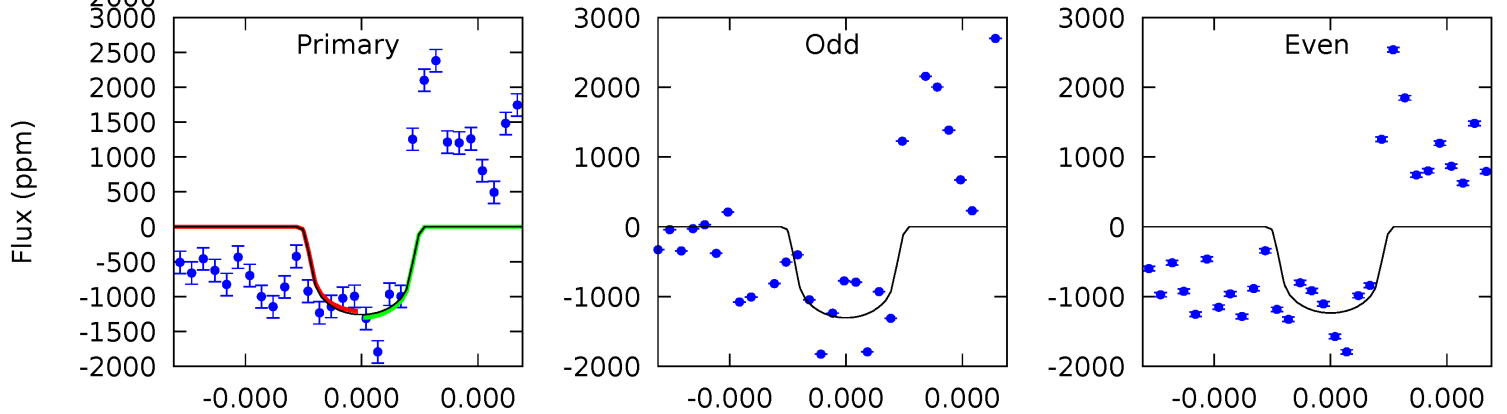
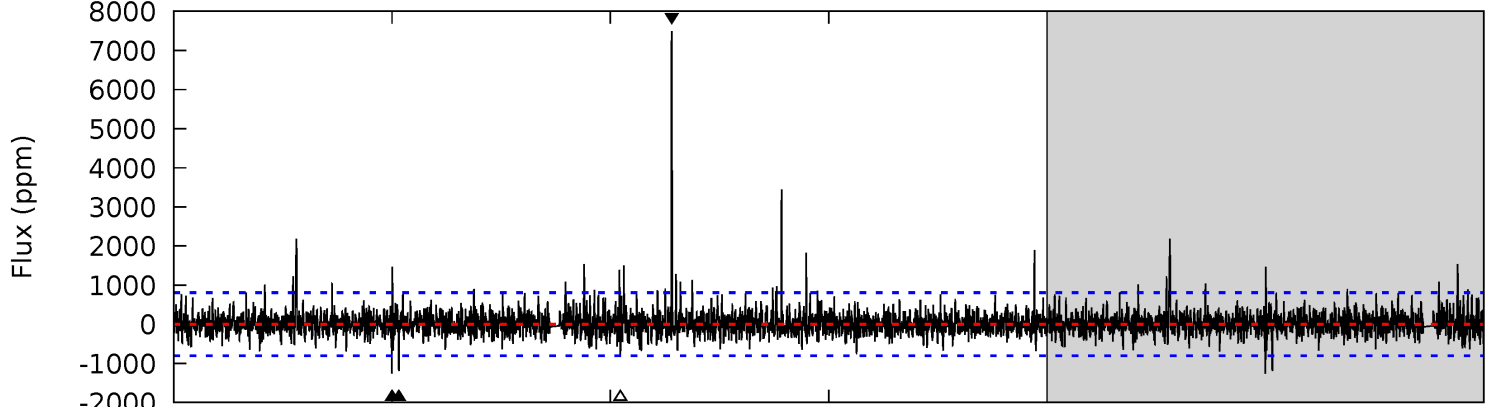
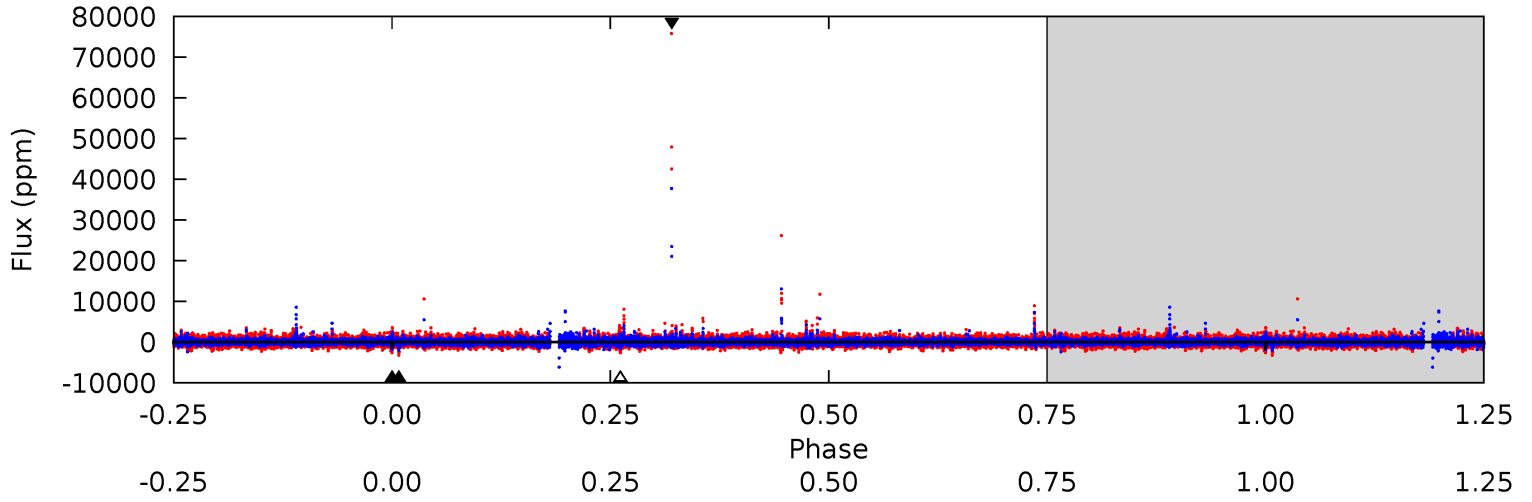
TCE 009095110-04 P=440.036715 Days $T_0=200.778111$ (BKJD)



DV Model-Shift Uniqueness Test

009095110-04, P = 440.044695 Days, E = 200.773029 Days

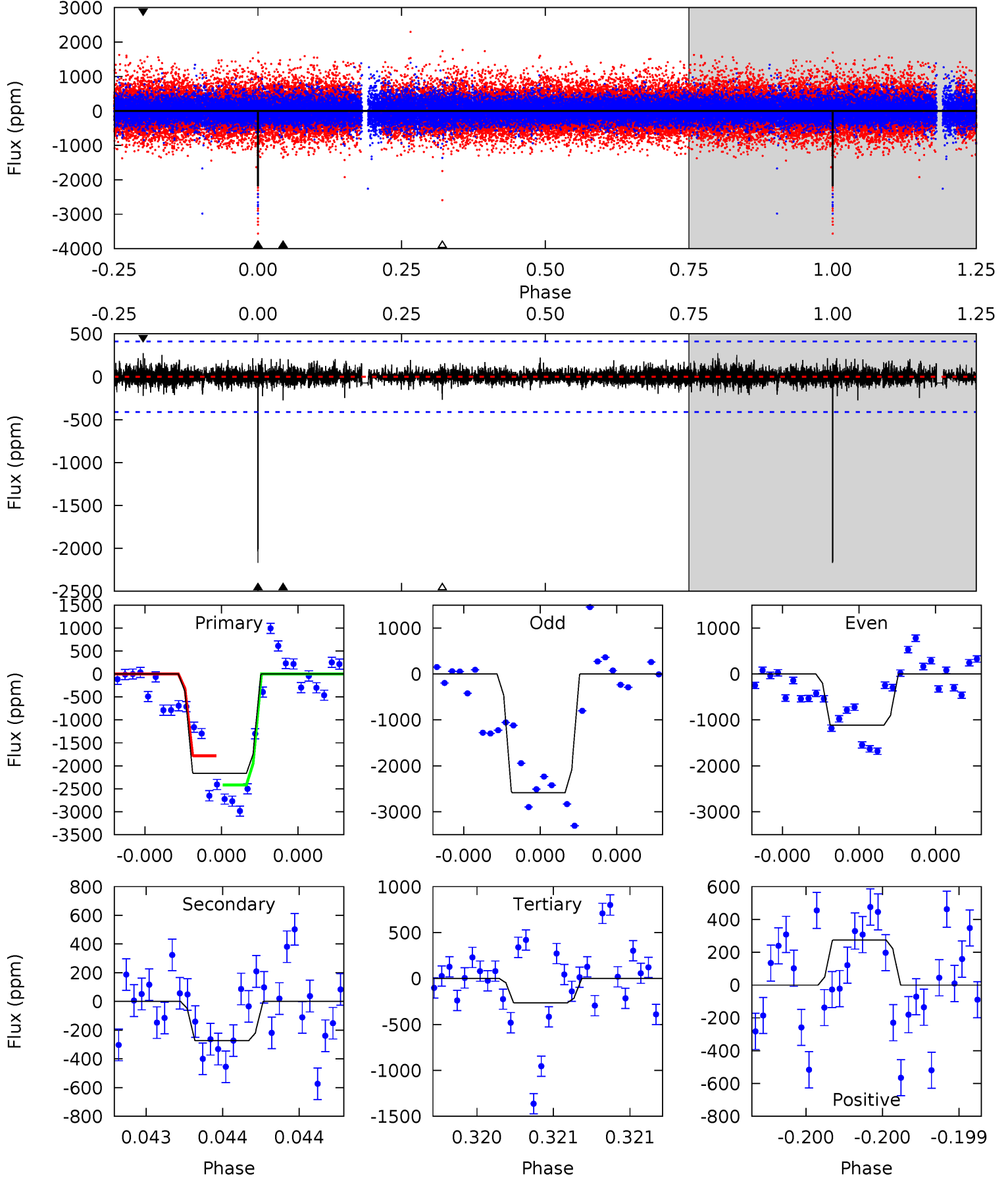
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
8.74	8.24	5.39	52.0	5.59	3.51	1.99	3.35	-43.3	2.86	-43.7	0.10	0.90	0.86	0.32



Alt Model-Shift Uniqueness Test

009095110-04, P = 440.036715 Days, E = 200.778111 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
29.5	3.73	3.62	3.74	5.58	3.50	0.65	25.9	25.8	0.11	-0.01	10.7	0.71	0.11	4.23



Stellar Parameters For KIC 009095110

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5134^{+179}_{-179}	$4.569^{+0.077}_{-0.056}$	$-0.500^{+0.300}_{-0.300}$	$0.707^{+0.080}_{-0.080}$	$0.676^{+0.087}_{-0.044}$	$2.696^{+0.920}_{-0.519}$
	+3%/-3%	+2%/-1%	+60%/-60%	+11%/-11%	+13%/-7%	+34%/-19%
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 009095110-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-1187 ± 144	$3.12^{+2.58}_{-2.03}$	265^{+12}_{-11}	4809^{+3243}_{-1019}	$67246^{+464405}_{-47438}$
Alt.	-274 ± 73	$3.77^{+2.47}_{-2.08}$	266^{+12}_{-11}	3442^{+1159}_{-523}	10485^{+45978}_{-7045}

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 $A_{obs} \gg 1.0$

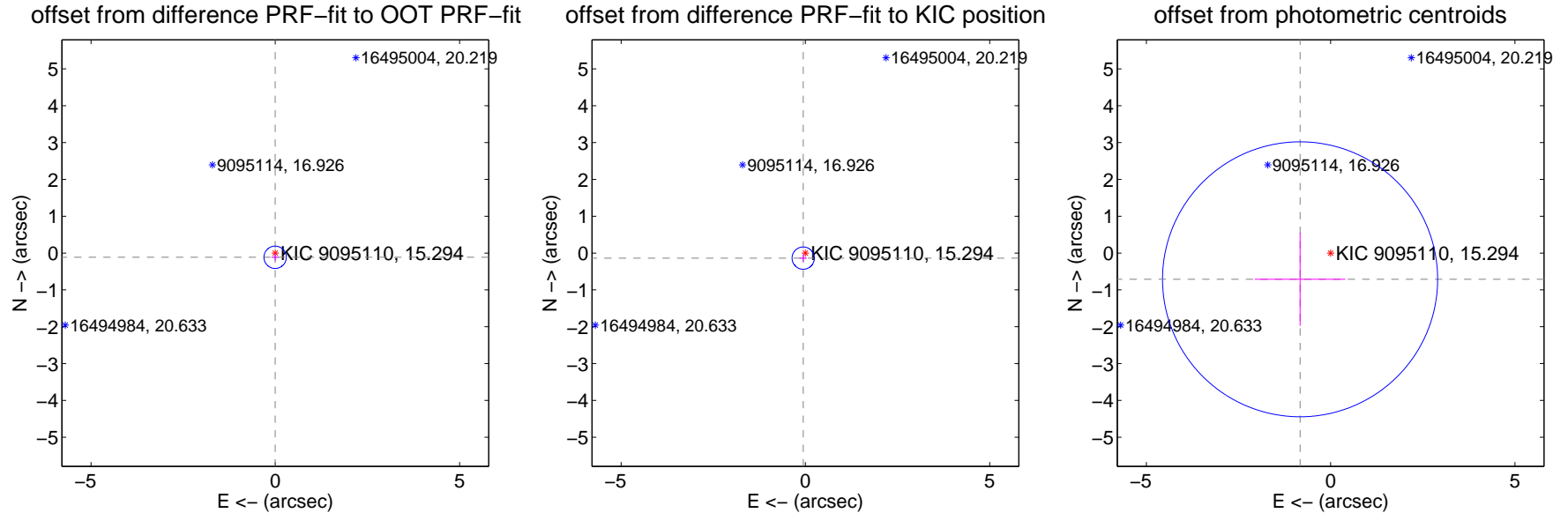
DV Centroid Data

Supplemental centroid analysis for 009095110-04. Kepler magnitude: 15.29. Transit SNR 7.70

There are 1 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	0.115 ± 0.101	1.13	0.005 ± 0.100	-0.115 ± 0.101
PRF-fit source offset from KIC position	0.150 ± 0.101	1.48	0.060 ± 0.100	-0.137 ± 0.101
photometric centroid source offset	1.09 ± 1.24	0.88	0.83 ± 1.23	-0.71 ± 1.26



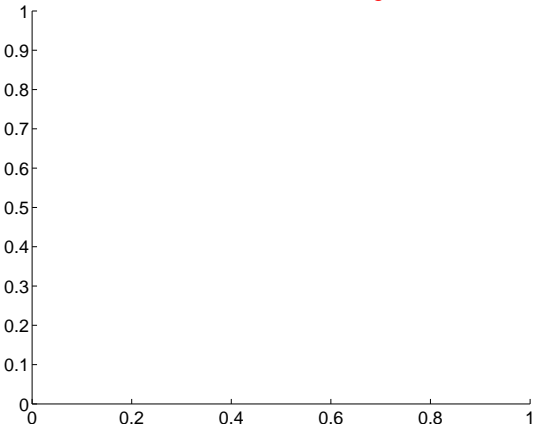
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

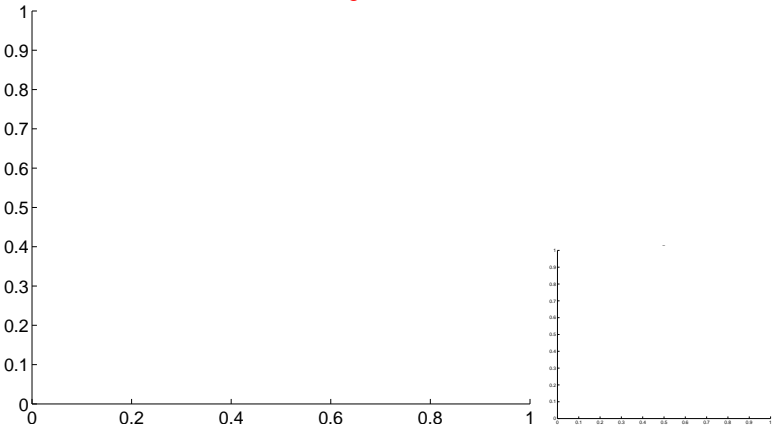


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

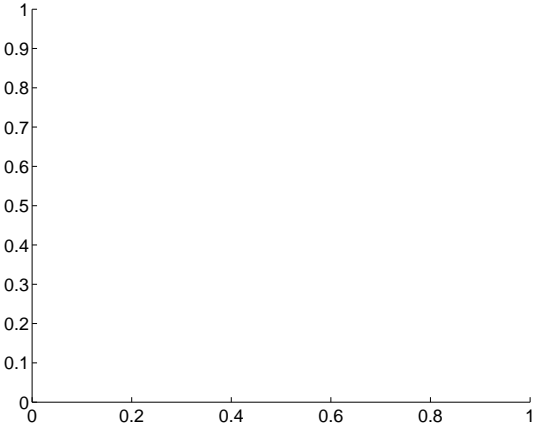
Q5 no difference image



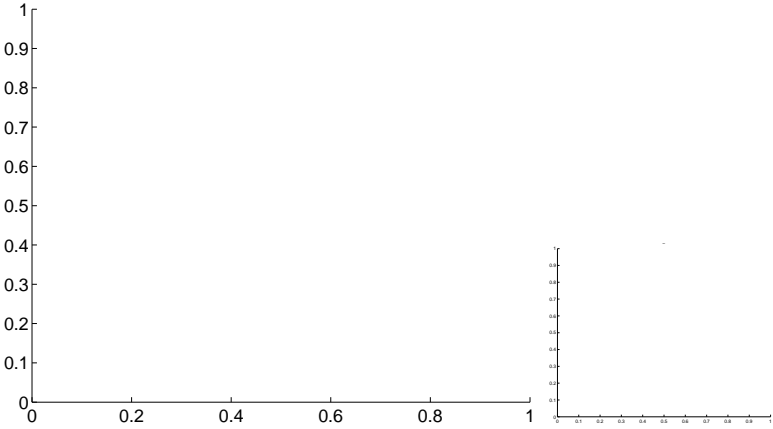
Q5 no OOT image



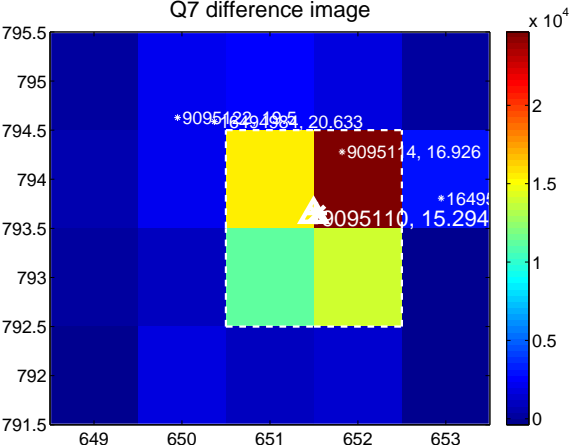
Q6 no difference image



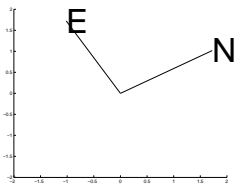
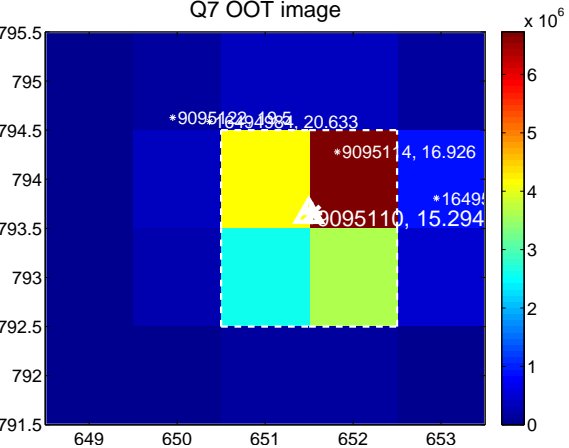
Q6 no OOT image



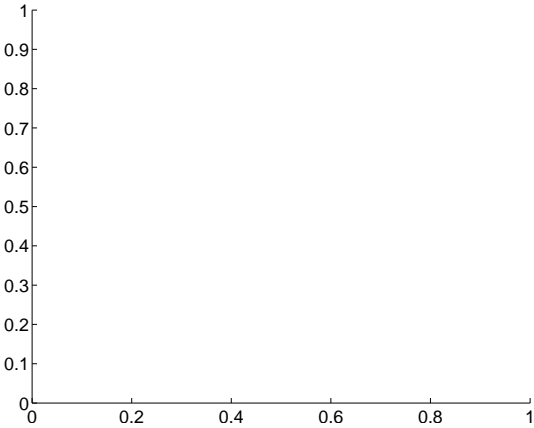
Q7 difference image



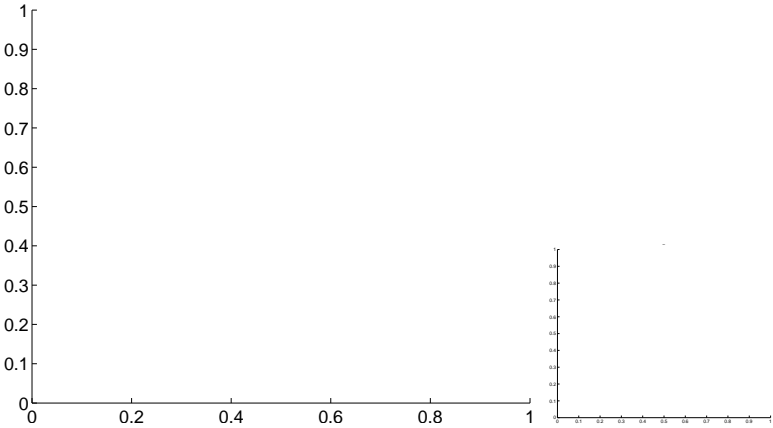
Q7 OOT image



Q8 no difference image

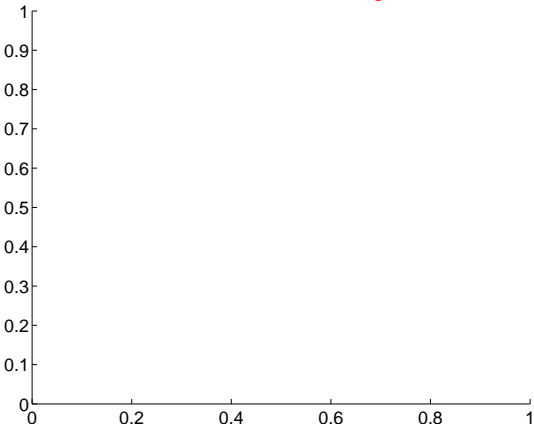


Q8 no OOT image

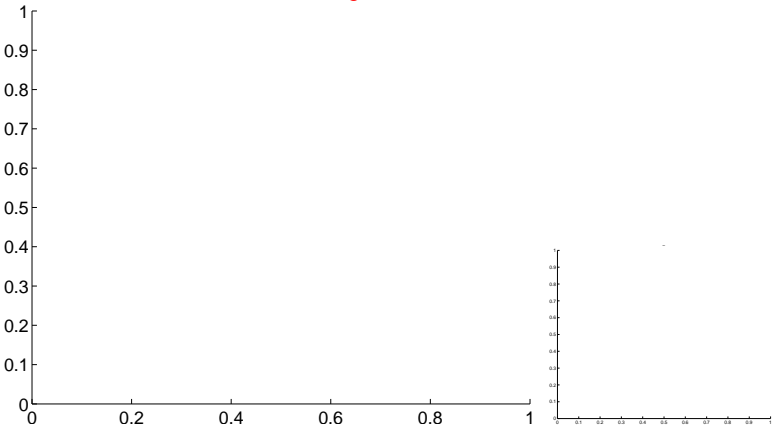


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

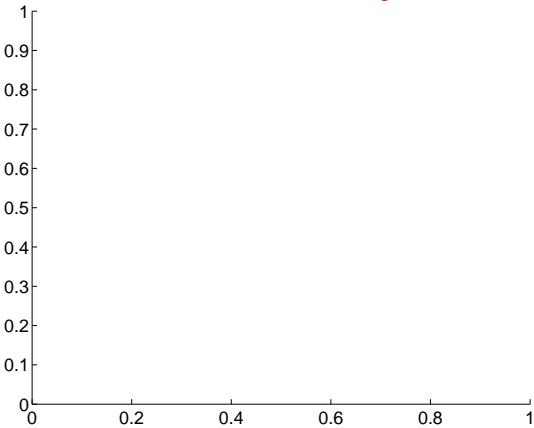
Q9 no difference image



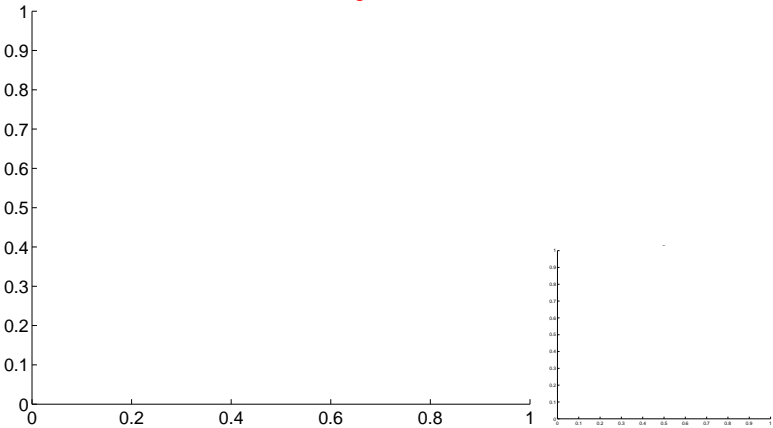
Q9 no OOT image



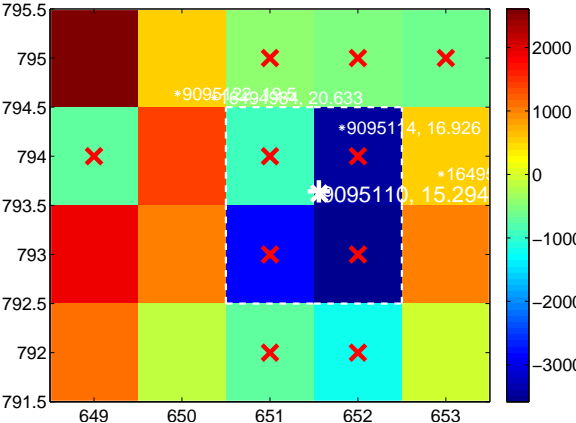
Q10 no difference image



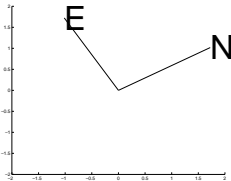
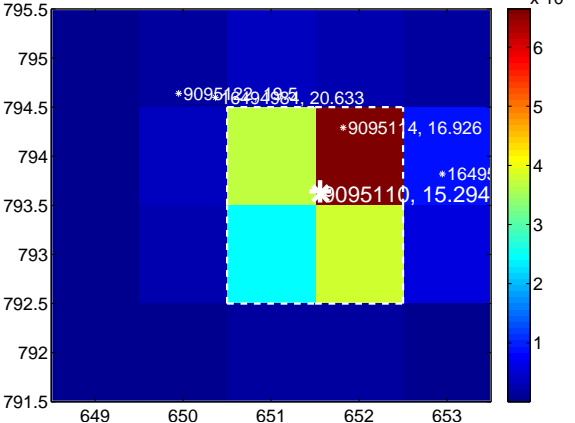
Q10 no OOT image



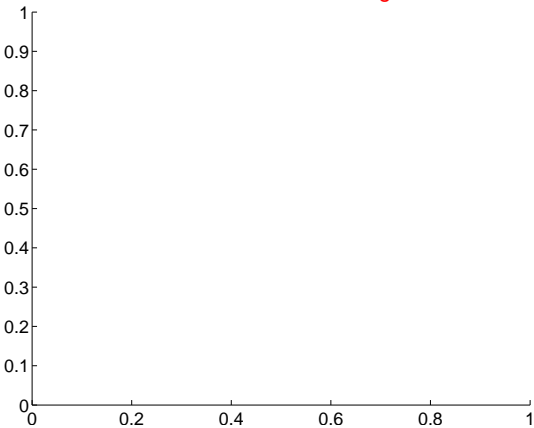
Q11 difference image. Poor Quality



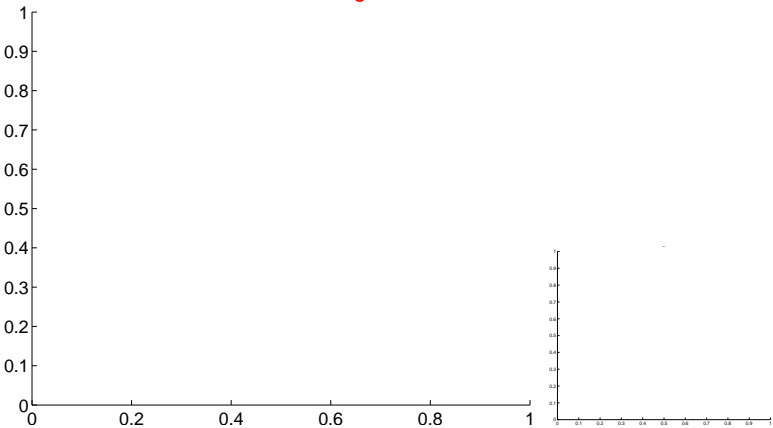
Q11 OOT image



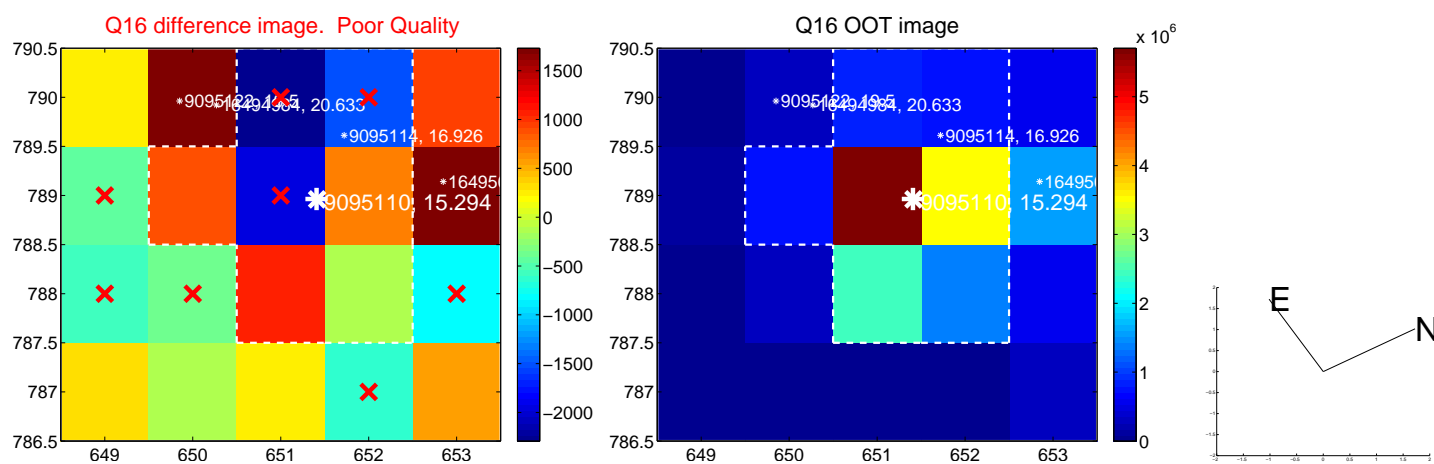
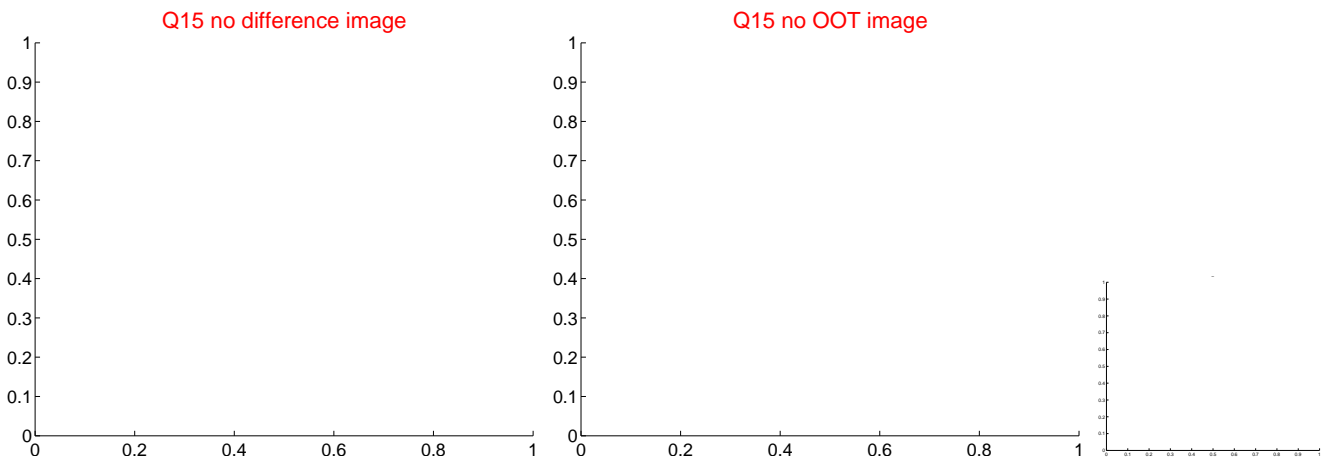
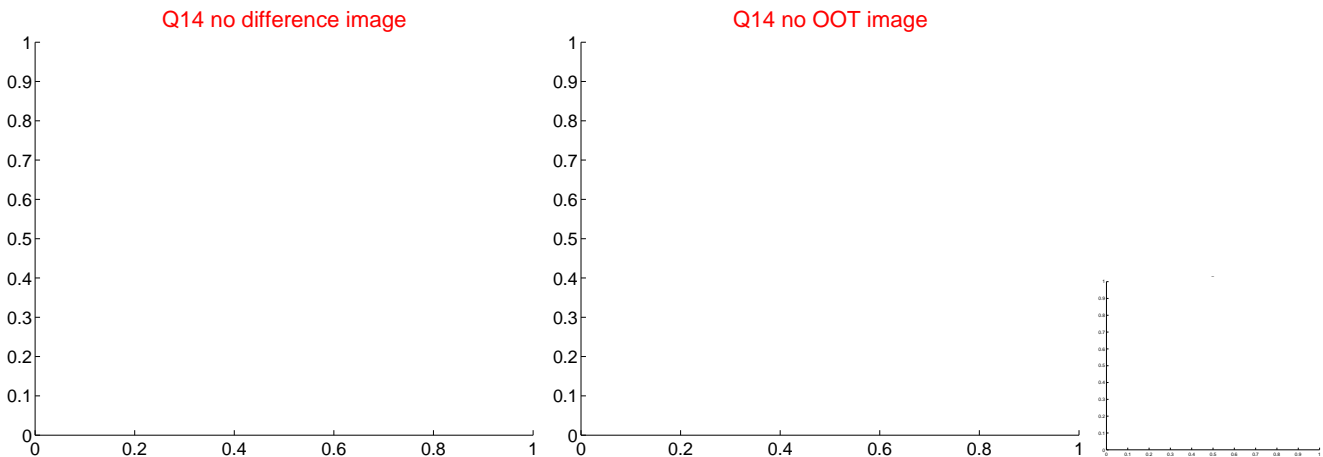
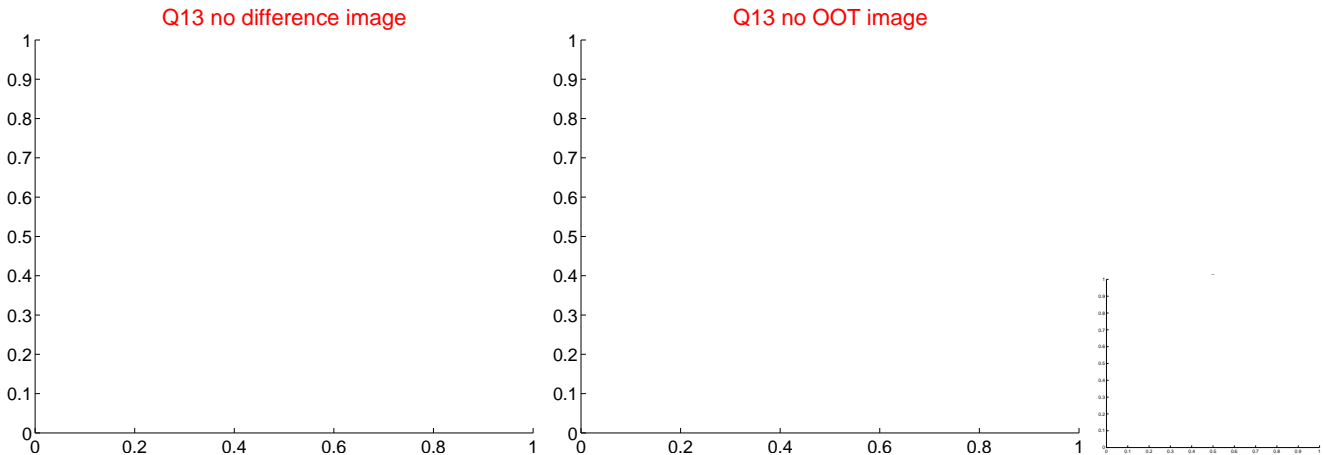
Q12 no difference image



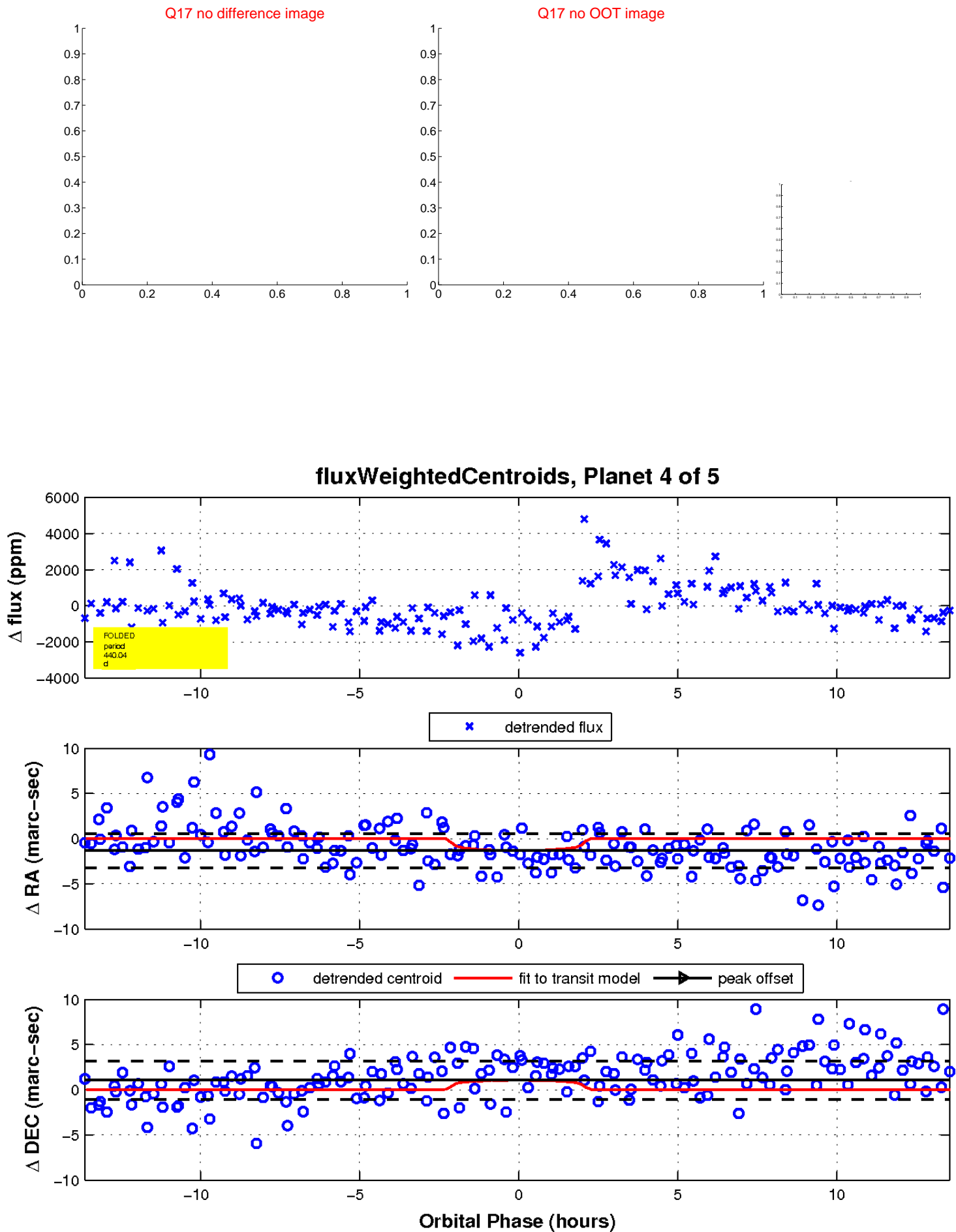
Q12 no OOT image



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

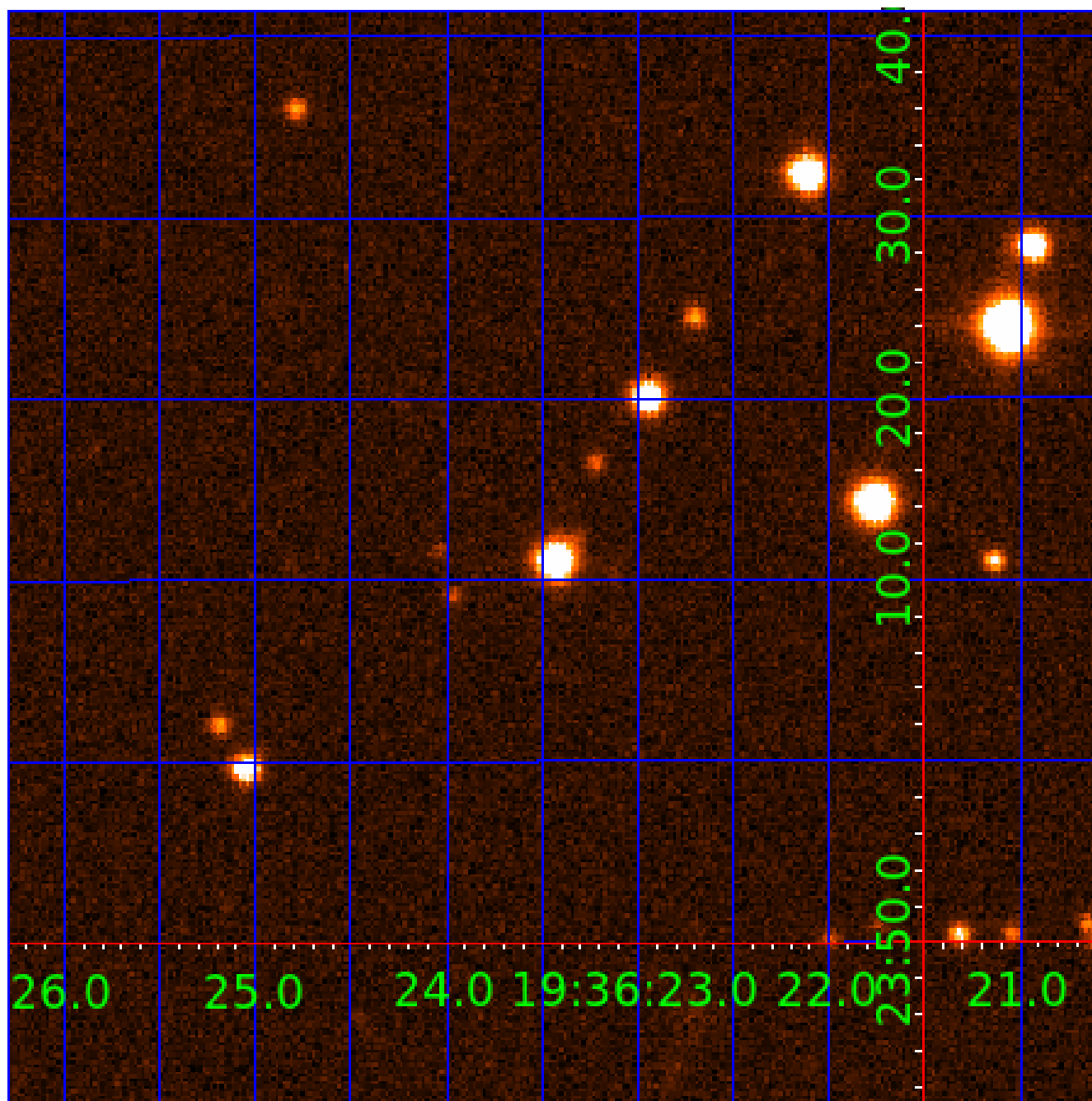


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 009095110

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})
009095110-01	OBS	No	385.196495	455.391605	2805.1	4.713	20.8	14.0	0.71	5134	3.71	0.38
009095110-02	OBS	No	404.432347	303.234519	2596.3	6.169	19.3	10.9	0.71	5134	4.62	0.35
009095110-03	OBS	No	587.071508	357.265866	1282.3	5.139	13.4	7.4	0.71	5134	2.65	0.21
009095110-04	OBS	No	440.044695	200.773029	1312.6	4.545	11.3	7.7	0.71	5134	2.75	0.32
009095110-05	OBS	No	377.911881	484.177211	1342.9	9.000	13.6	-1.0	0.71	5134	2.54	0.39

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
009095110-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-03	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
009095110-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—MOD_POS_DV—CENT_FEW_DIFFS
009095110-05	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES—LPP_DV—ALL_TRANS_CHASES—INCONSISTENT_TRANS—CENT_NOFITS

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

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

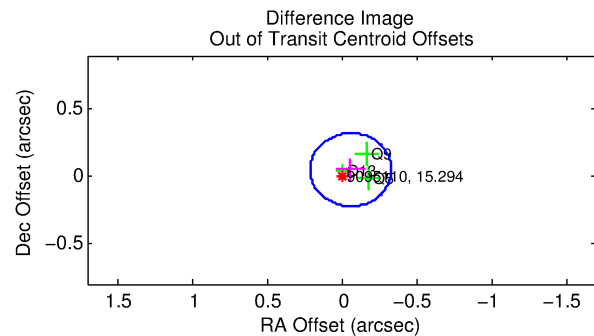
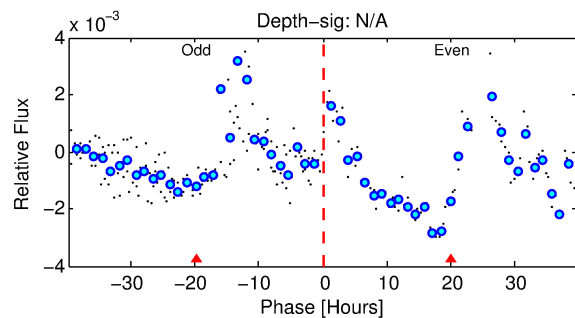
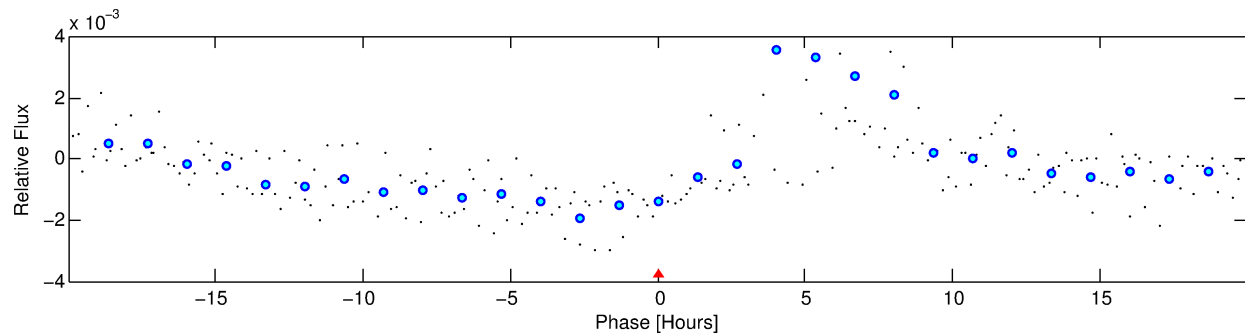
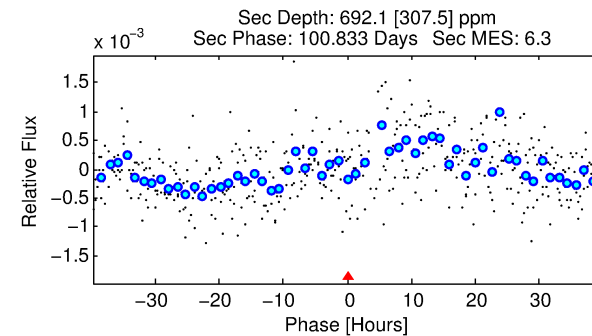
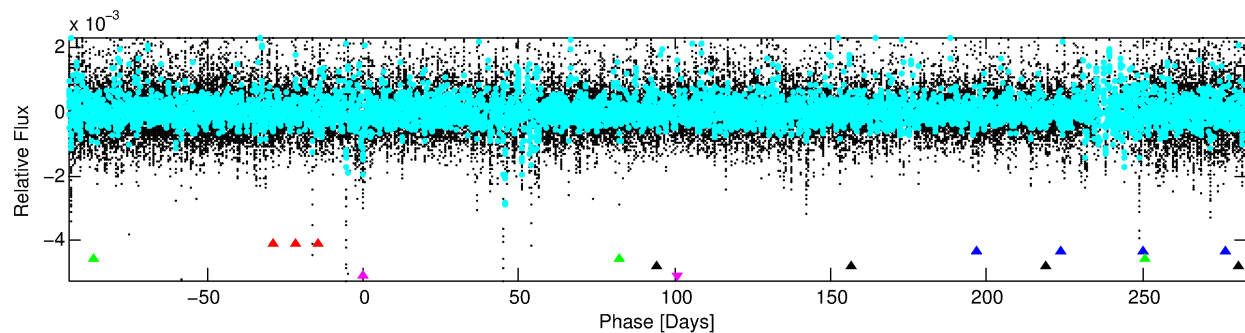
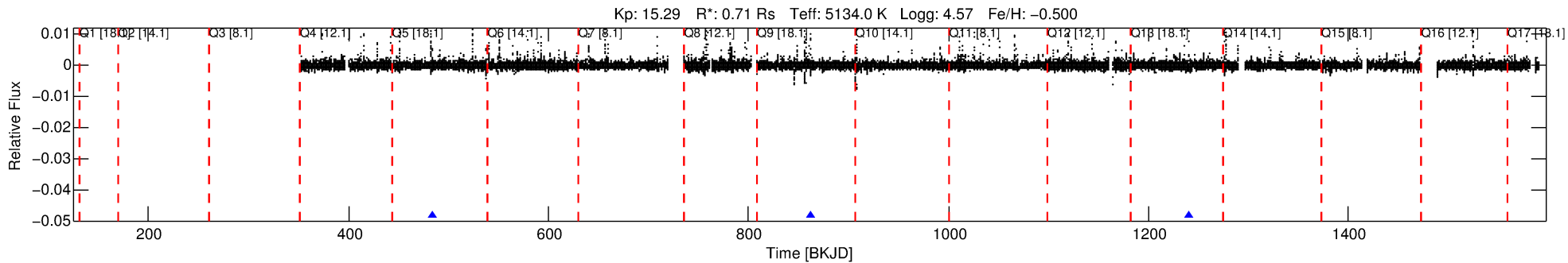
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 009095110-05

No Significant Match Found

DV One-Page Summary

KIC: 9095110 Candidate: 5 of 5 Period: 377.912 d



TPS TCE Results:

Period = 377.91188 d
Epoch = 484.1772 BKJD

DV fit results are unavailable

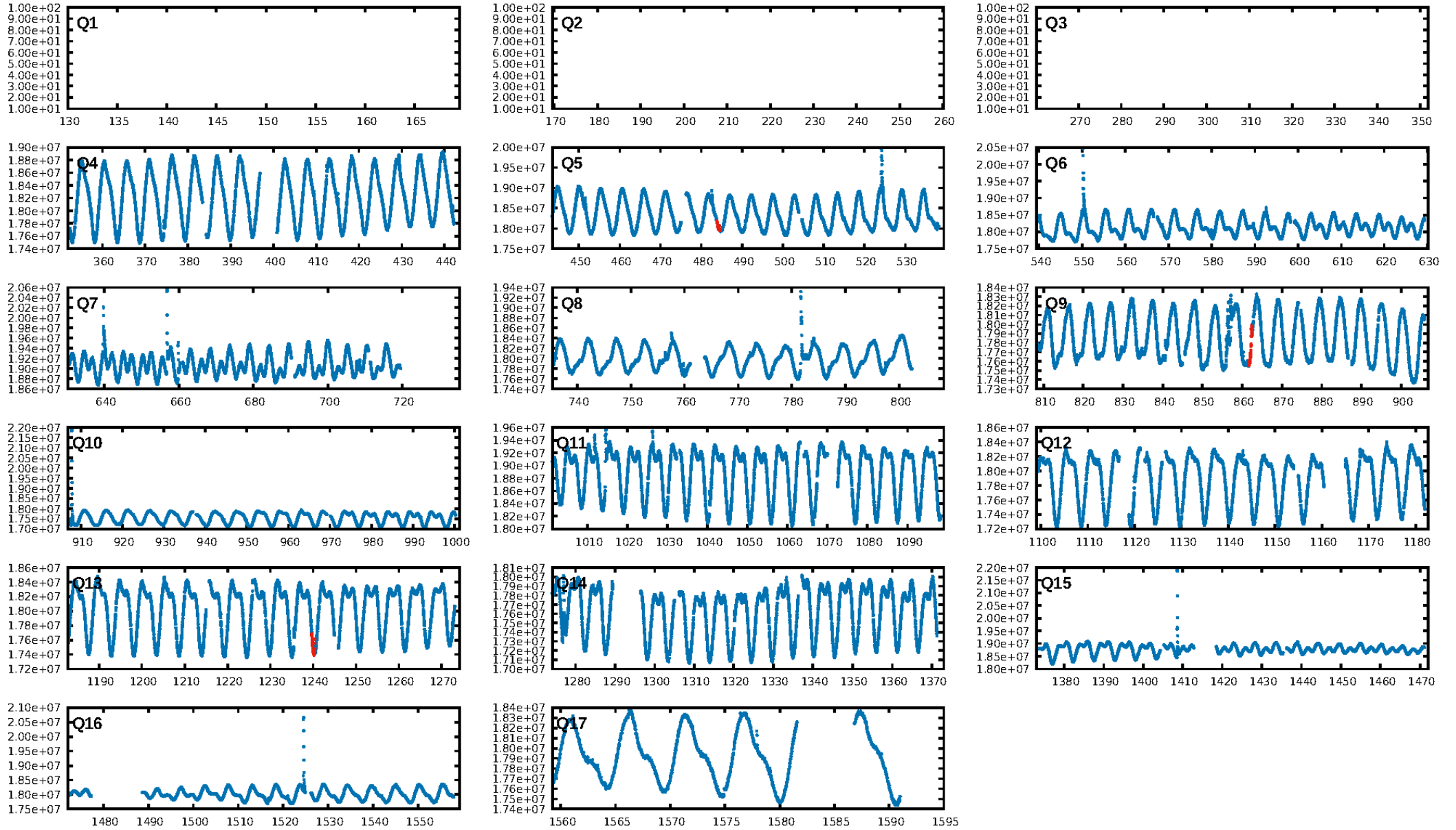
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [17.21 σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 0.6935
Centroid-sig: 94.2%
Centroid-so: 0.097 arcsec [0.19 σ]
OotOffset-rm: 0.079 arcsec [0.87 σ]
KicOffset-rm: 0.029 arcsec [0.32 σ]
OotOffset-st: 0/0/0/3 [3]
KicOffset-st: 0/0/0/3 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

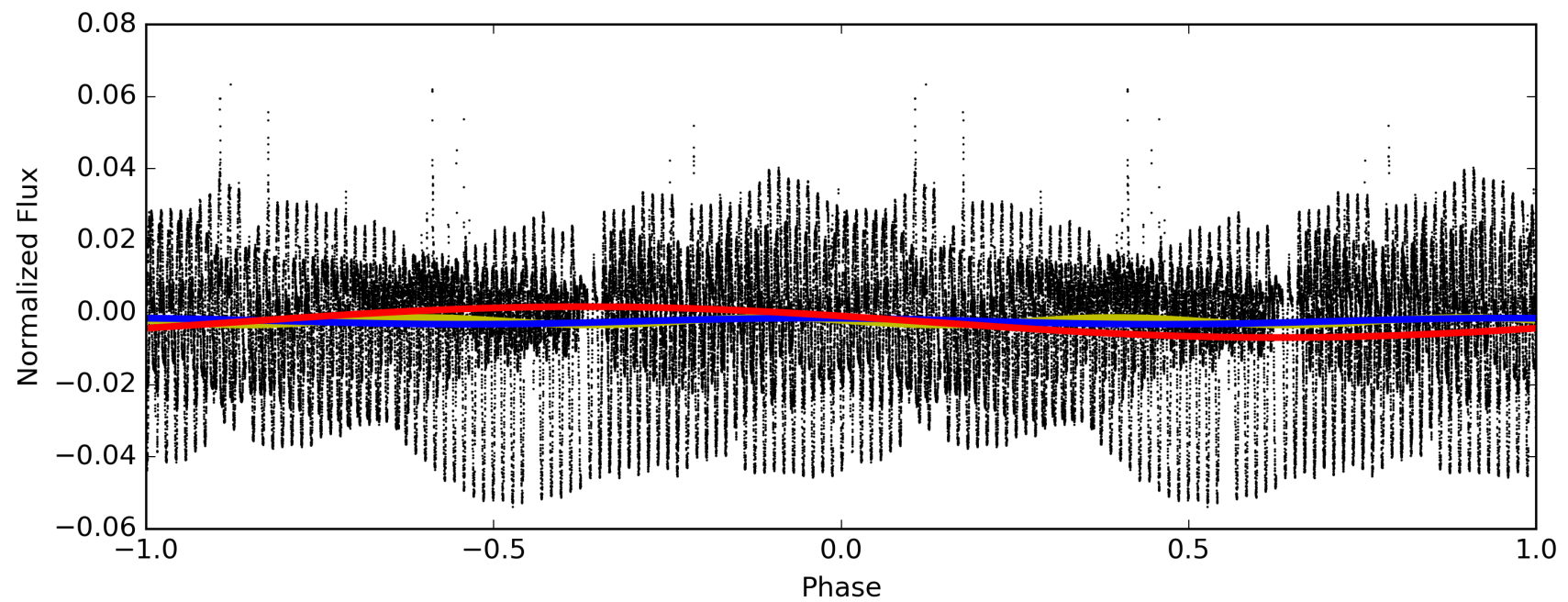
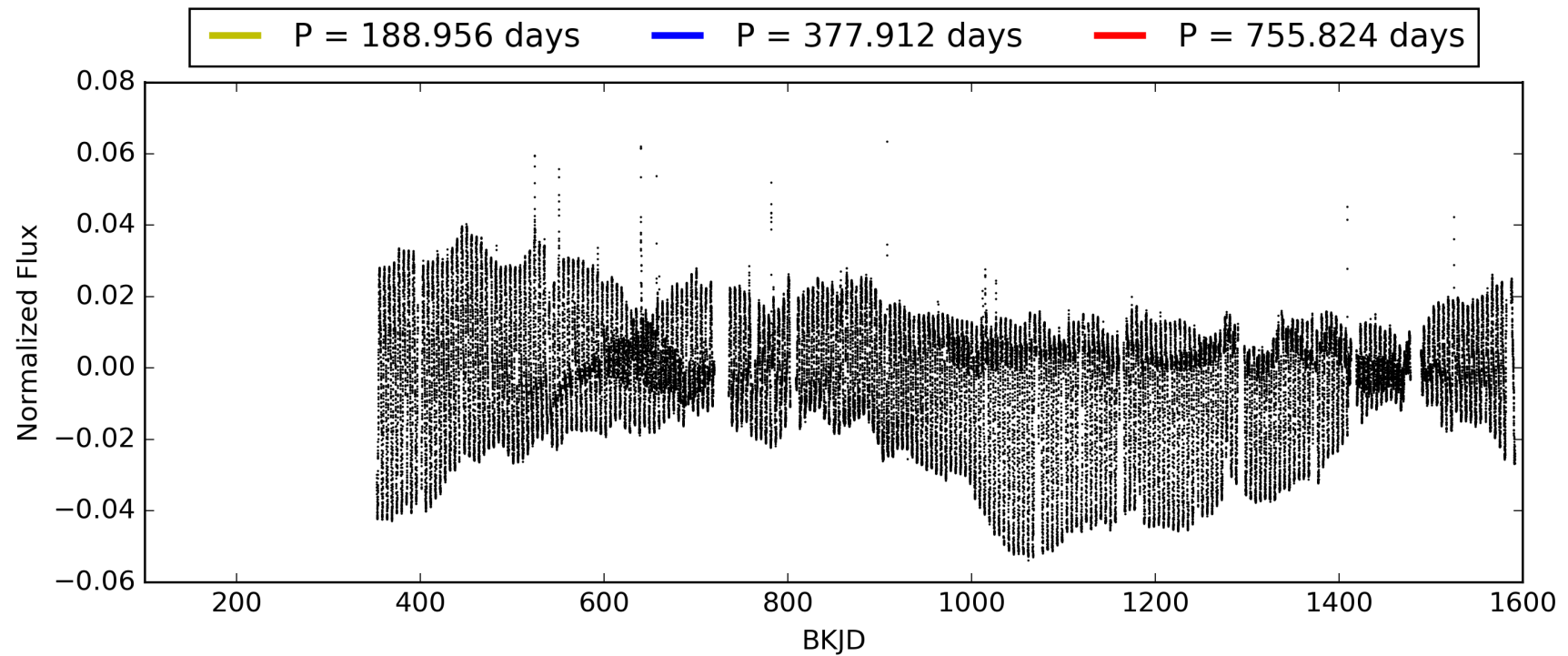
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 23:09:24 Z

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

TCE 009095110-05, PDC Light Curves

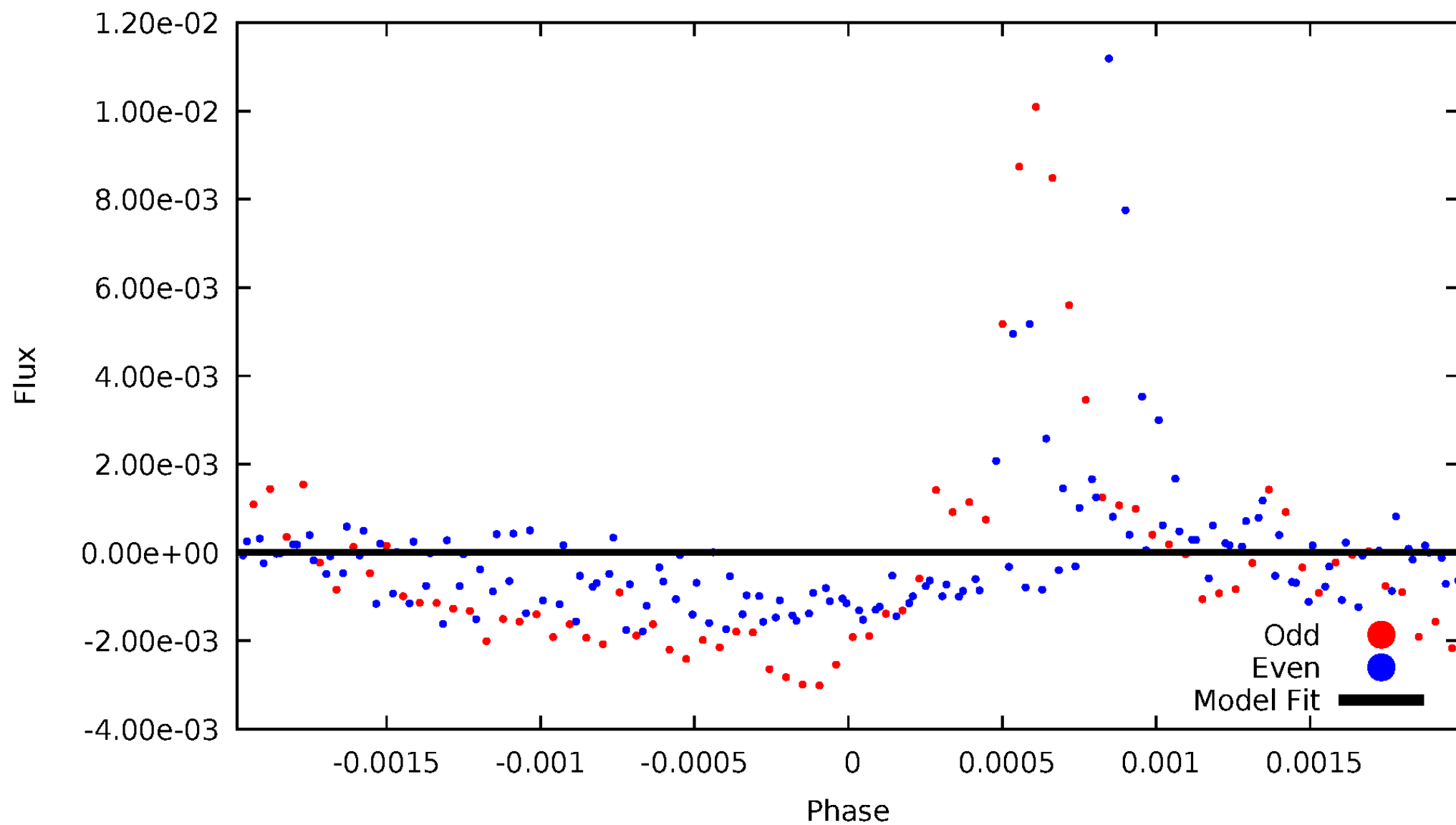


TCE 009095110-05



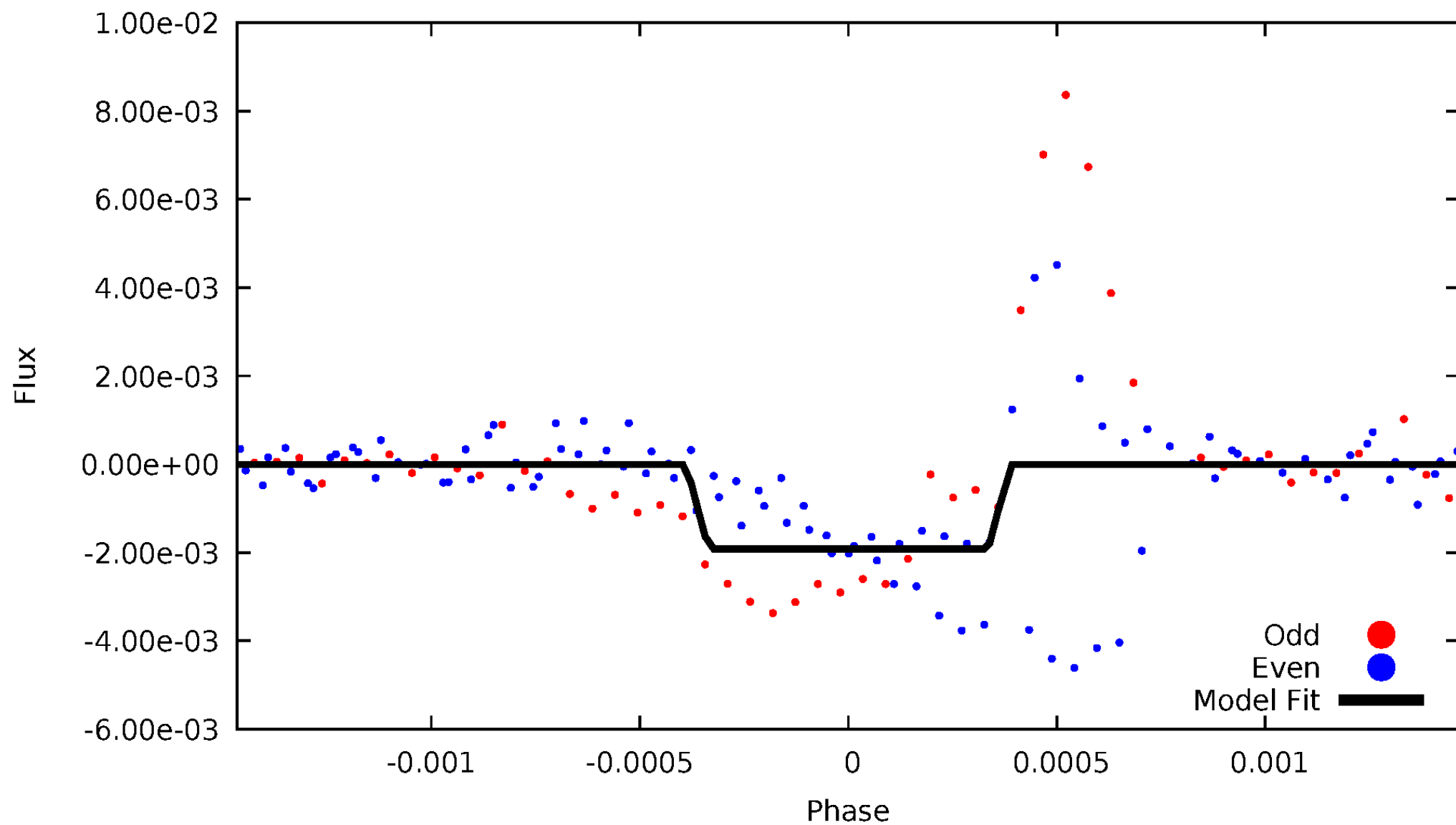
DV Odd/Even

TCE 009095110-05

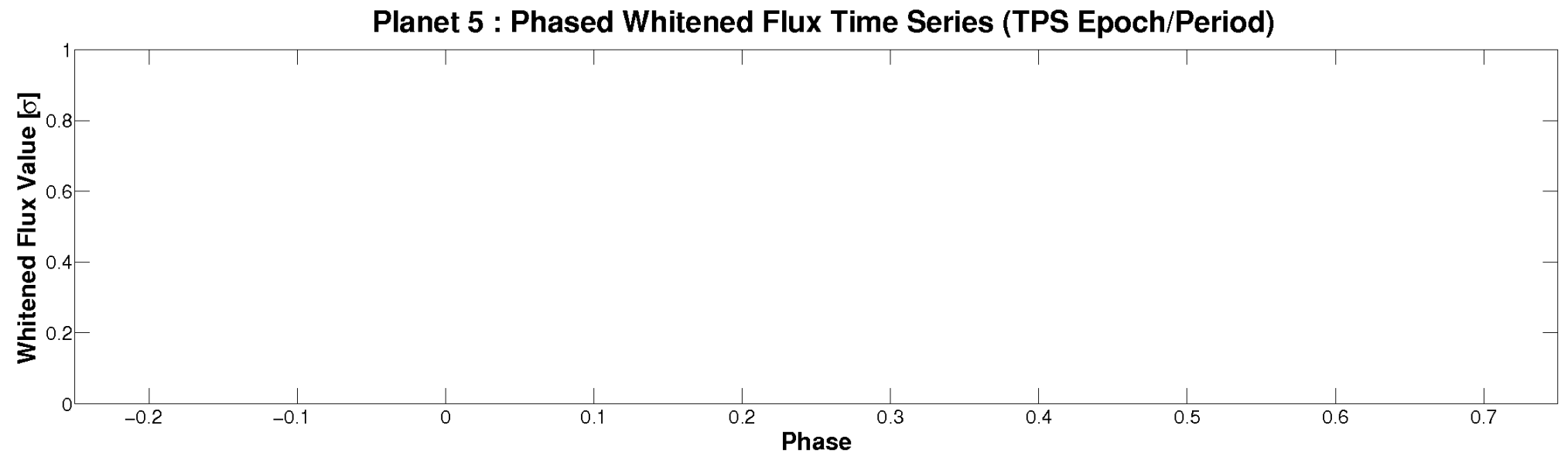
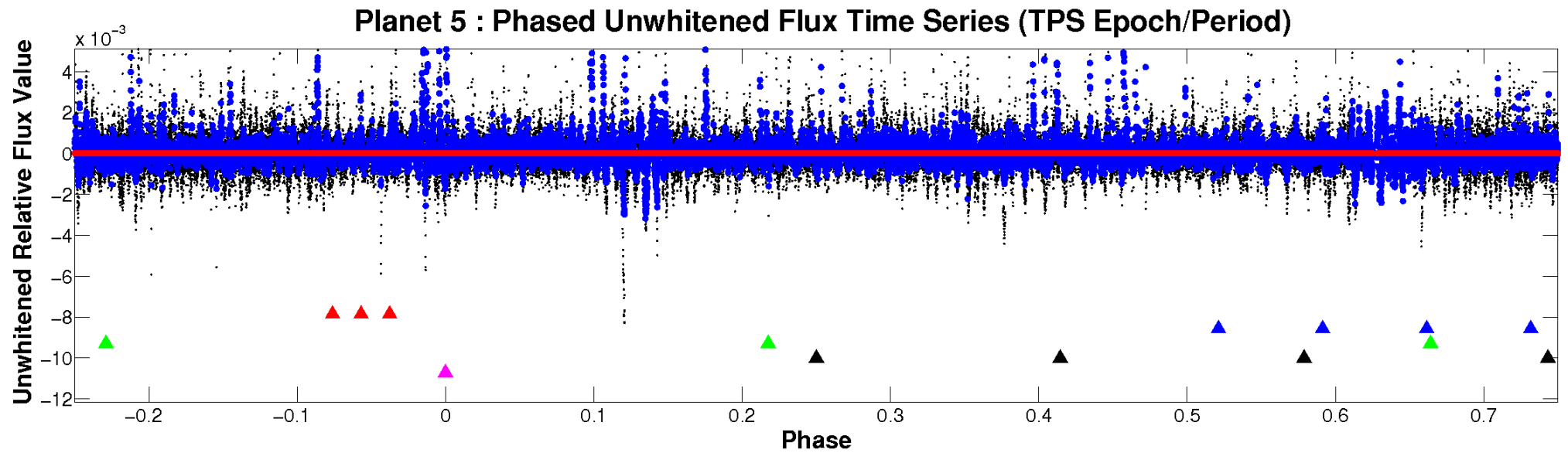


ALT Odd/Even

TCE 009095110-05

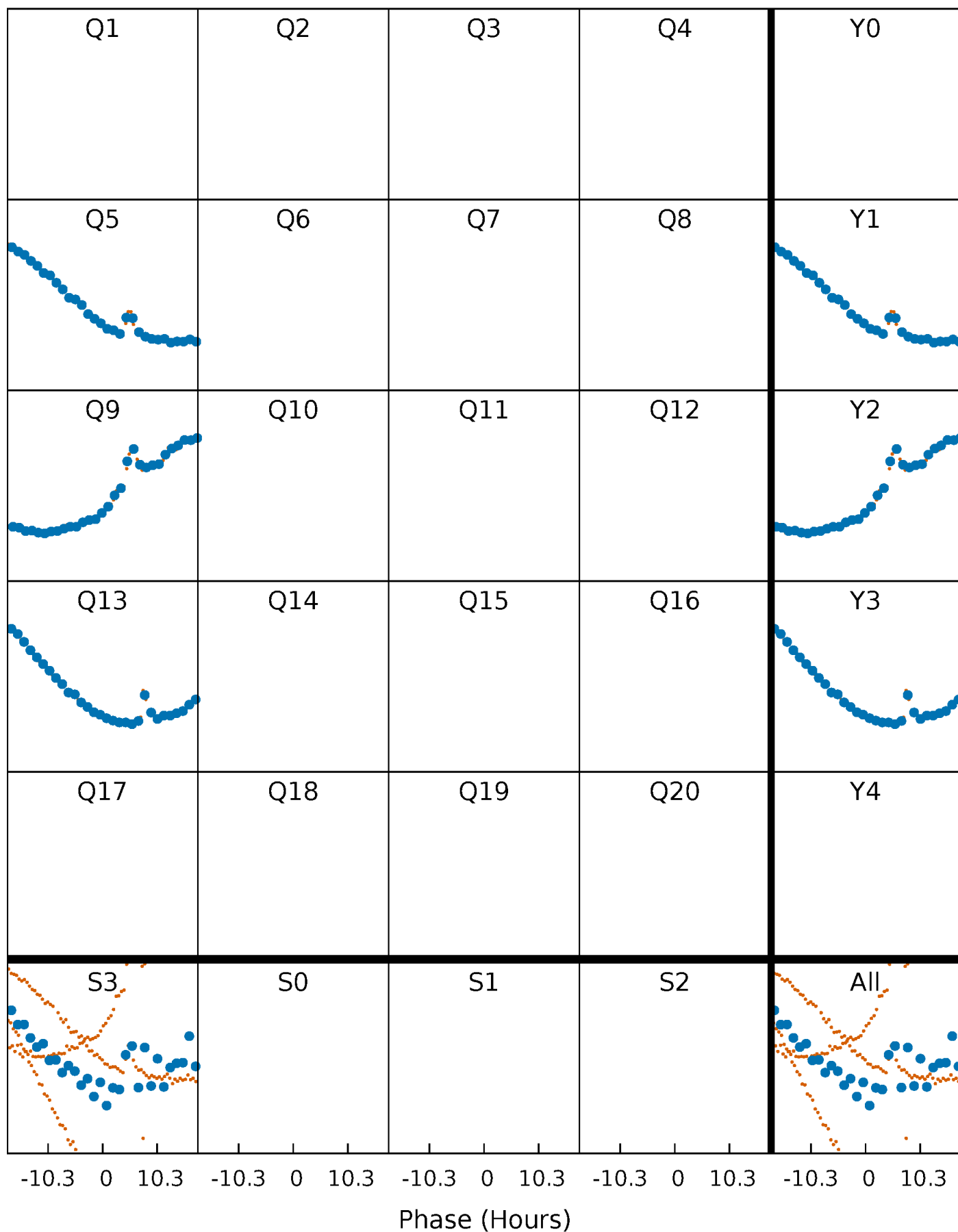


Non-Whitened Vs. Whitened Light Curve



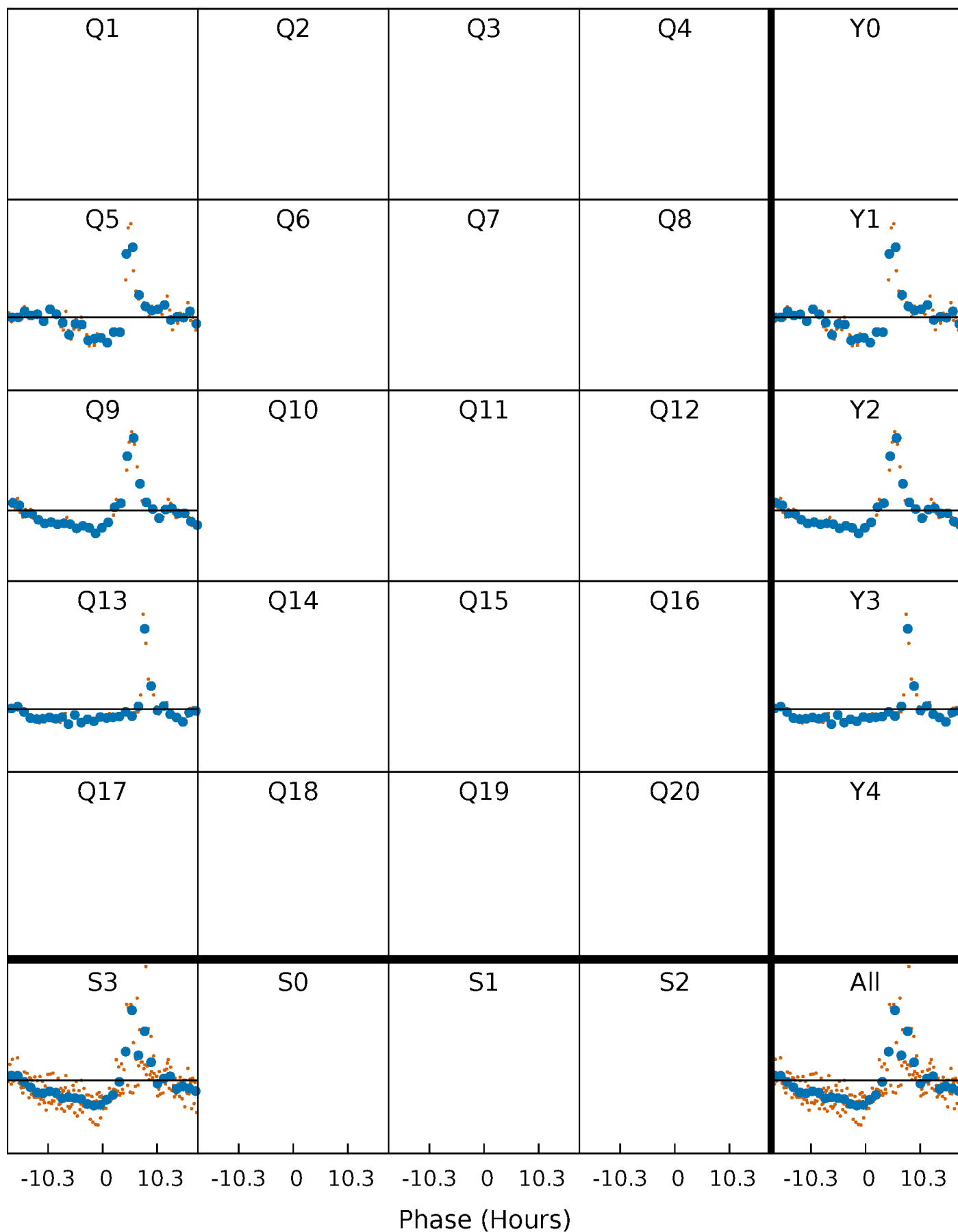
PDC Quarter-Phased Transit Curves

TCE 009095110-05 $P=377.911881$ Days $T_0=484.177211$ (BKJD)



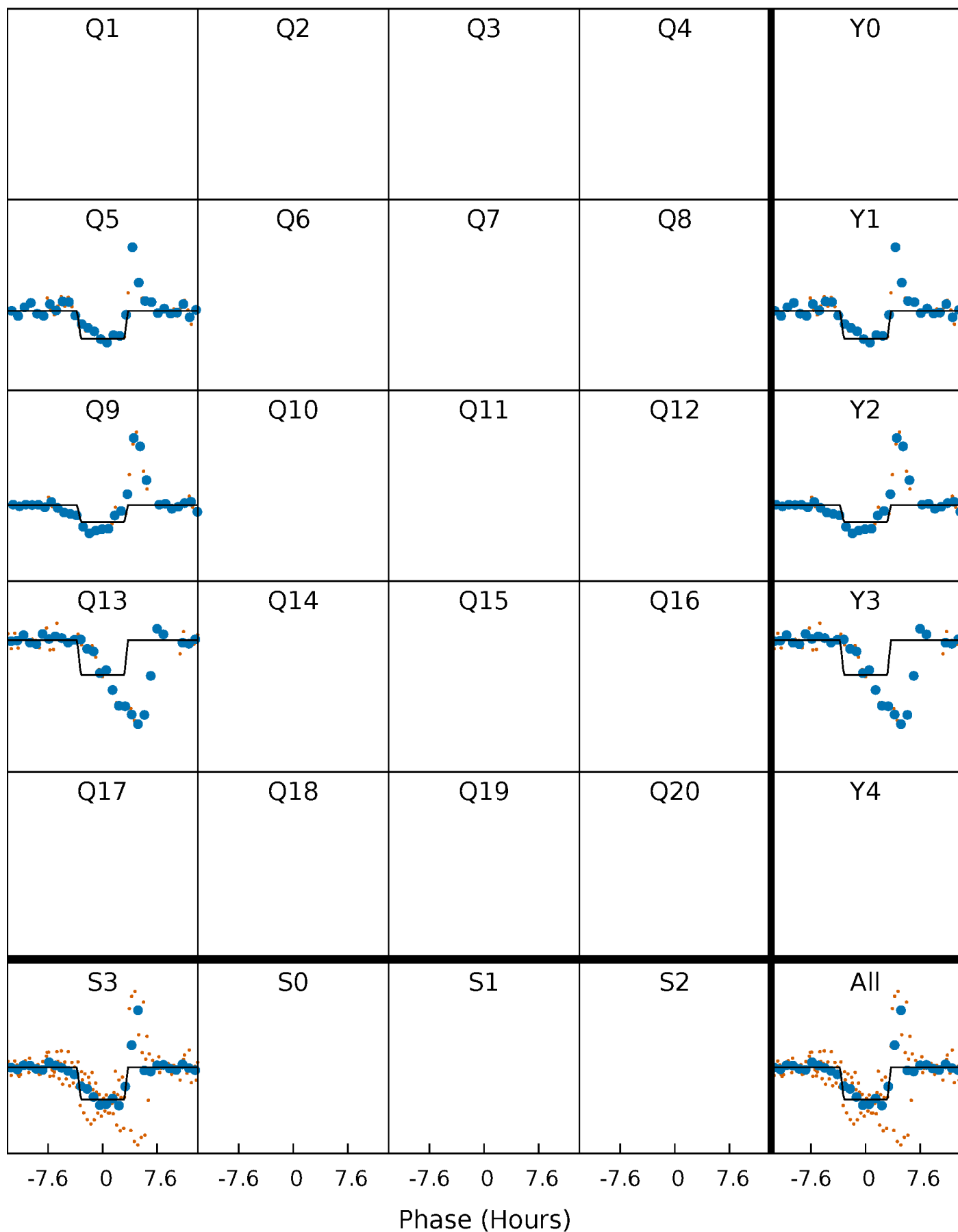
DV Quarter-Phased Transit Curves

TCE 009095110-05 $P=377.911881$ Days $T_0=484.177211$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

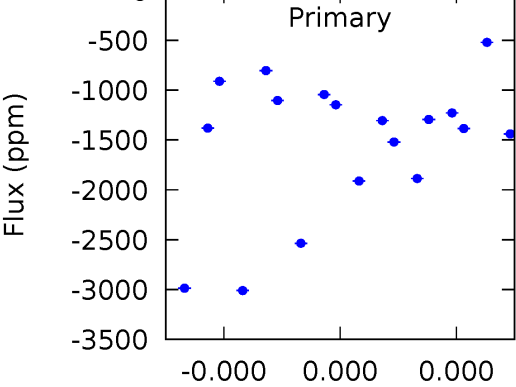
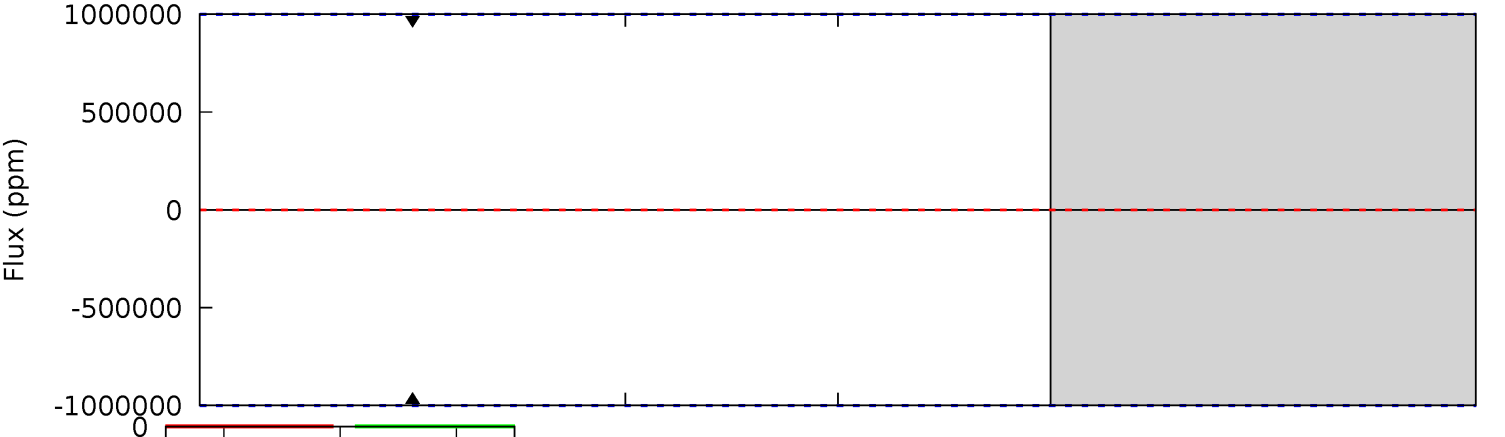
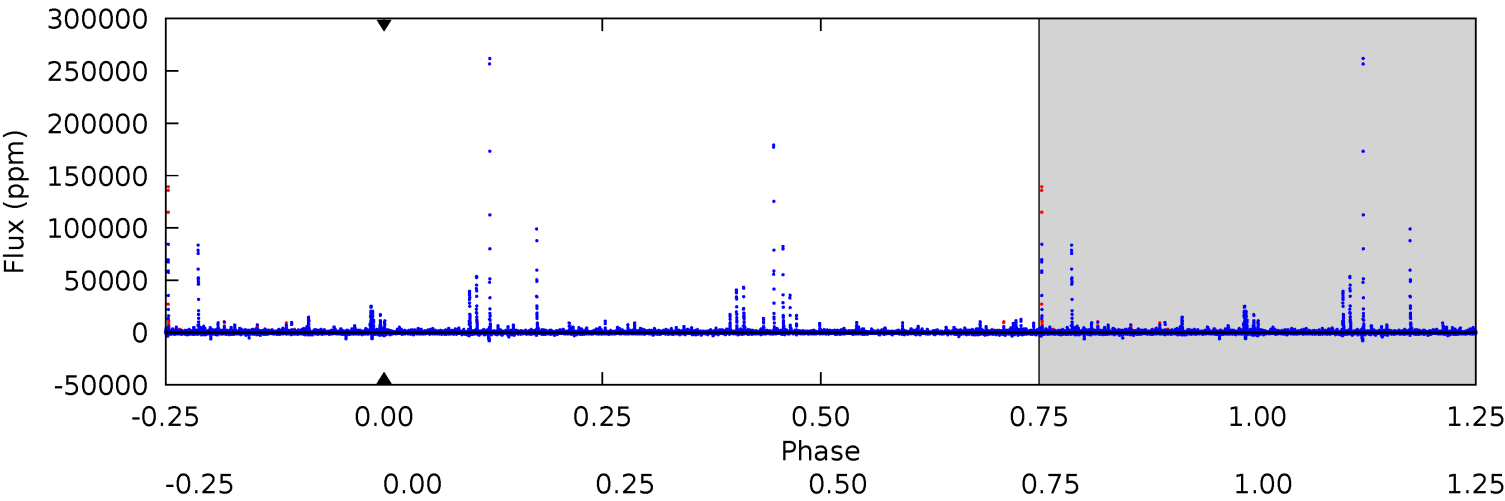
TCE 009095110-05 $P=377.911881$ Days $T_0=484.210272$ (BKJD)



DV Model-Shift Uniqueness Test

009095110-05, P = 377.911881 Days, E = 106.265330 Days

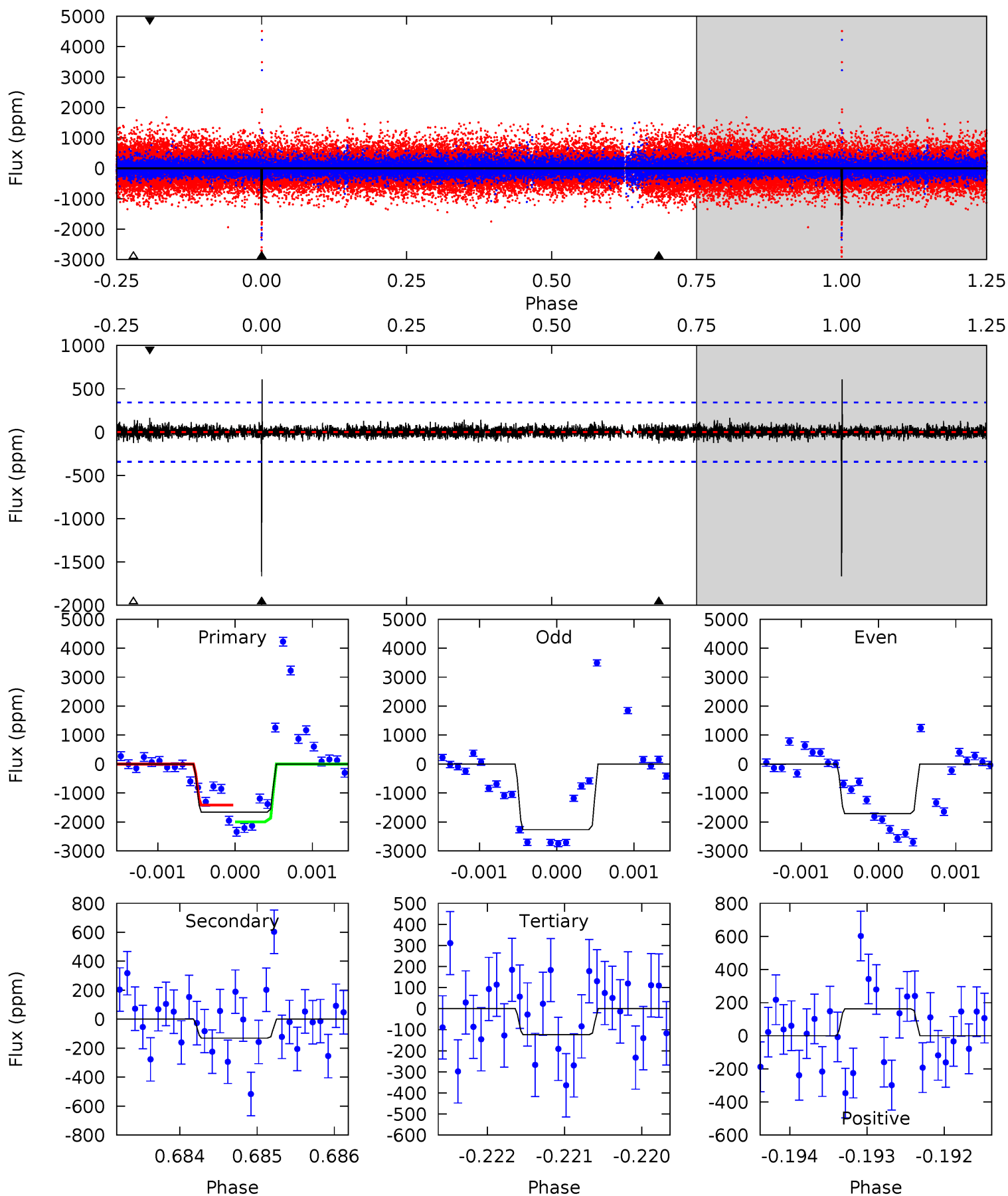
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

009095110-05, P = 377.911881 Days, E = 106.298391 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
26.8	2.10	2.00	2.61	5.51	3.38	0.54	24.8	24.2	0.10	-0.51	4.46	1.03	0.27	4.61



Stellar Parameters For KIC 009095110

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	5134^{+179}_{-179}	$4.569^{+0.077}_{-0.056}$	$-0.500^{+0.300}_{-0.300}$	$0.707^{+0.080}_{-0.080}$	$0.676^{+0.087}_{-0.044}$	$2.696^{+0.920}_{-0.519}$
	+3%/-3%	+2%/-1%	+60%/-60%	+11%/-11%	+13%/-7%	+34%/-19%
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 009095110-05 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	0 ± 1000000	$6.37^{+5.62}_{-4.36}$	280^{+12}_{-13}	-3417^{+18516}_{-10048}	$-7656.318^{+2174044.338}_{-1699975.924}$
Alt.	-130 ± 62	$6.70^{+6.02}_{-4.42}$	280^{+13}_{-12}	2610^{+981}_{-424}	1174^{+10461}_{-906}

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 $A_{obs} \gg 1.0$

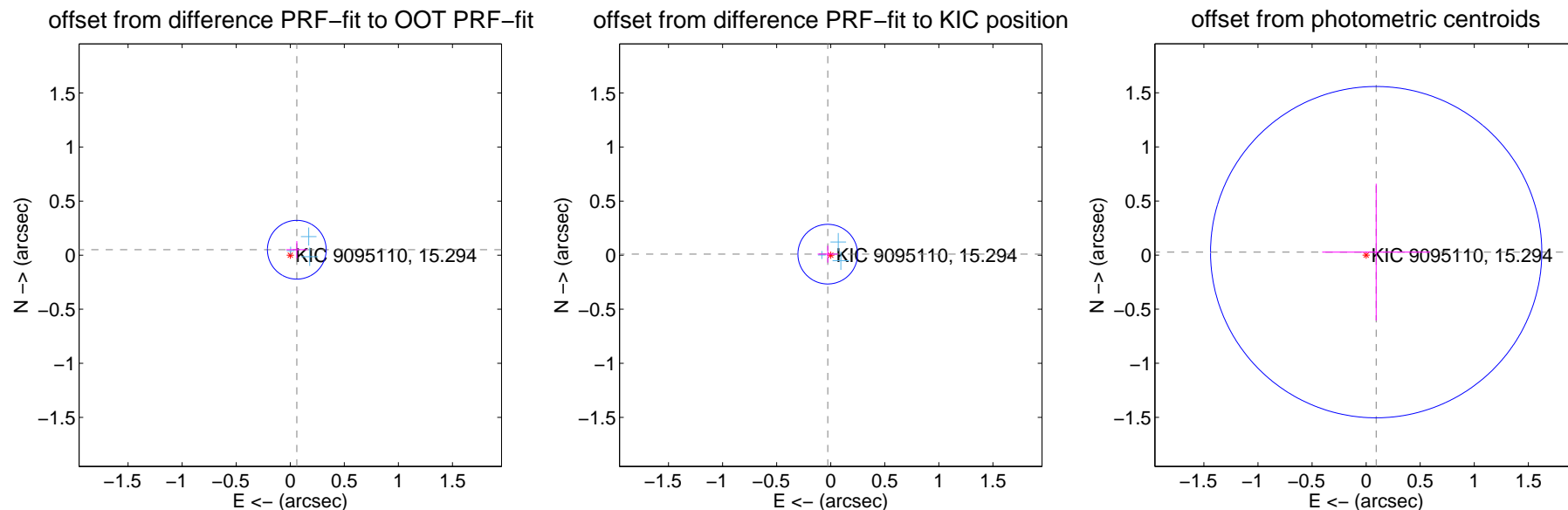
DV Centroid Data

Supplemental centroid analysis for 009095110-05. Kepler magnitude: 15.29. Transit SNR -1.00

There are 3 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	0.079 ± 0.091	0.87	-0.061 ± 0.097	0.050 ± 0.080
PRF-fit source offset from KIC position	0.029 ± 0.092	0.32	0.028 ± 0.093	0.009 ± 0.078
photometric centroid source offset	0.10 ± 0.51	0.19	-0.09 ± 0.50	0.03 ± 0.63

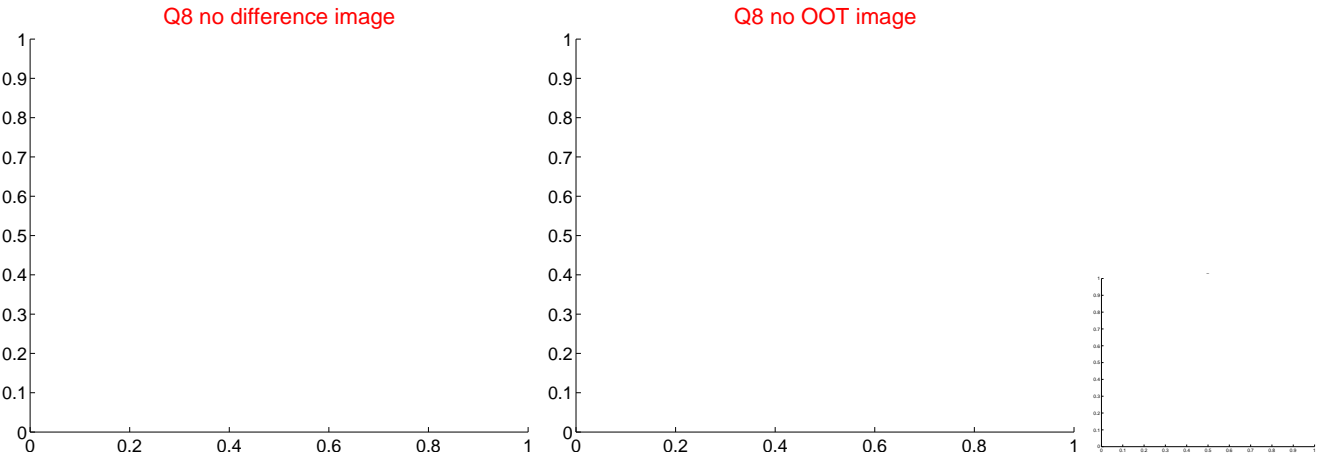
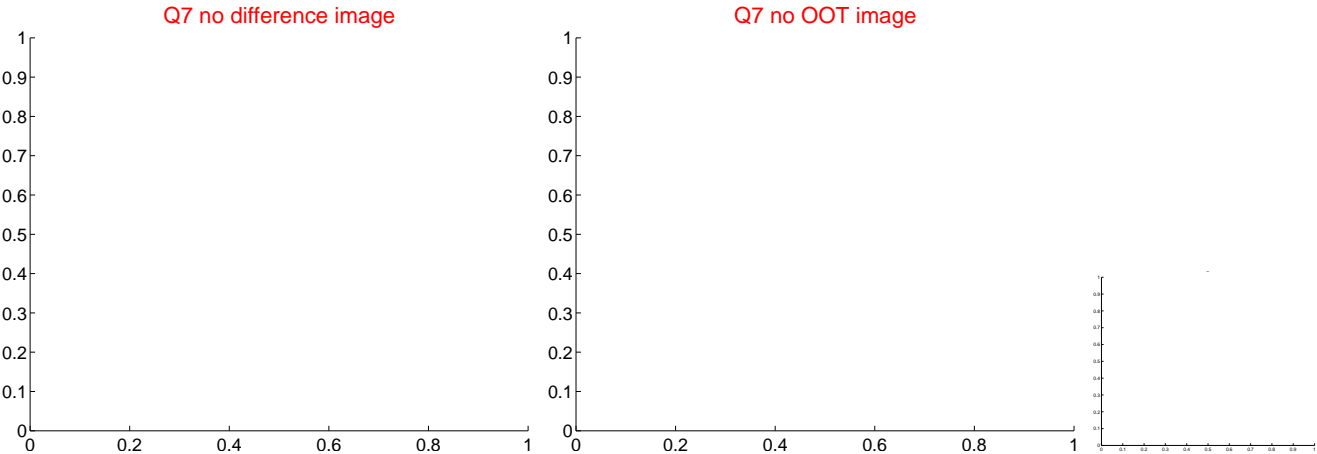
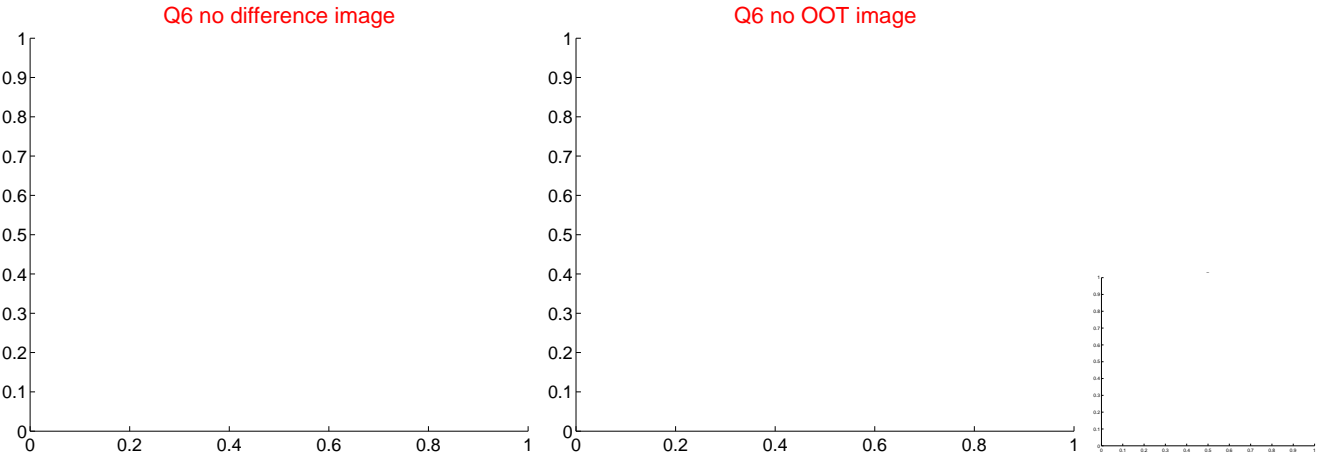
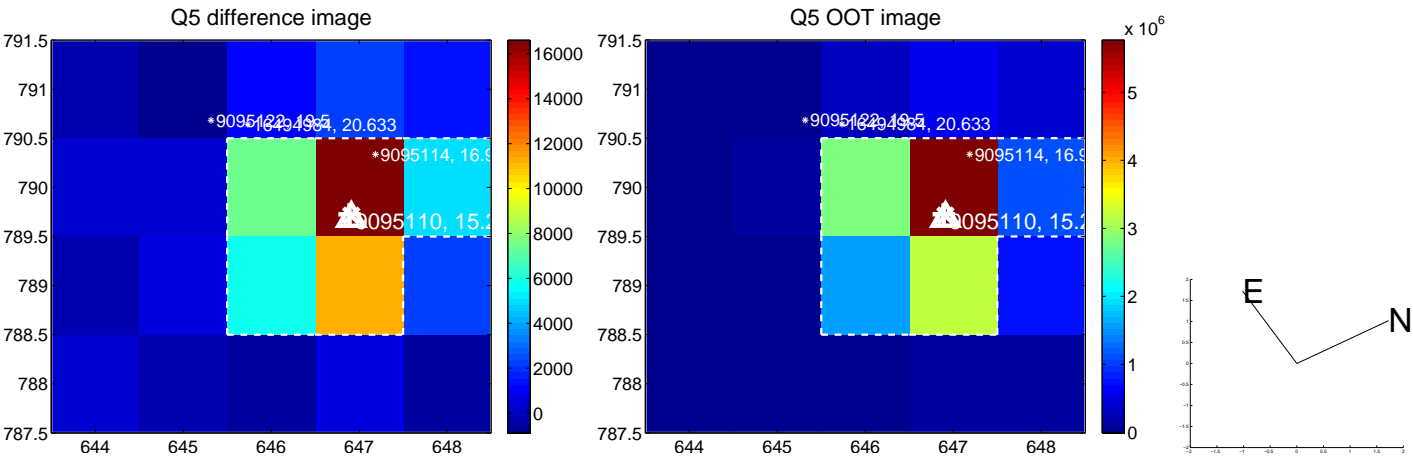


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

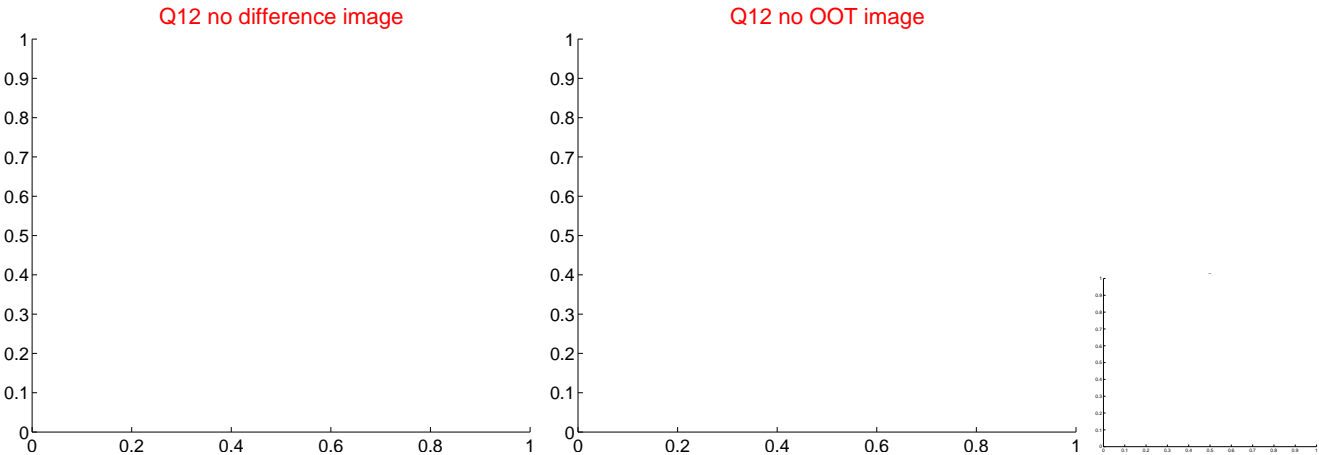
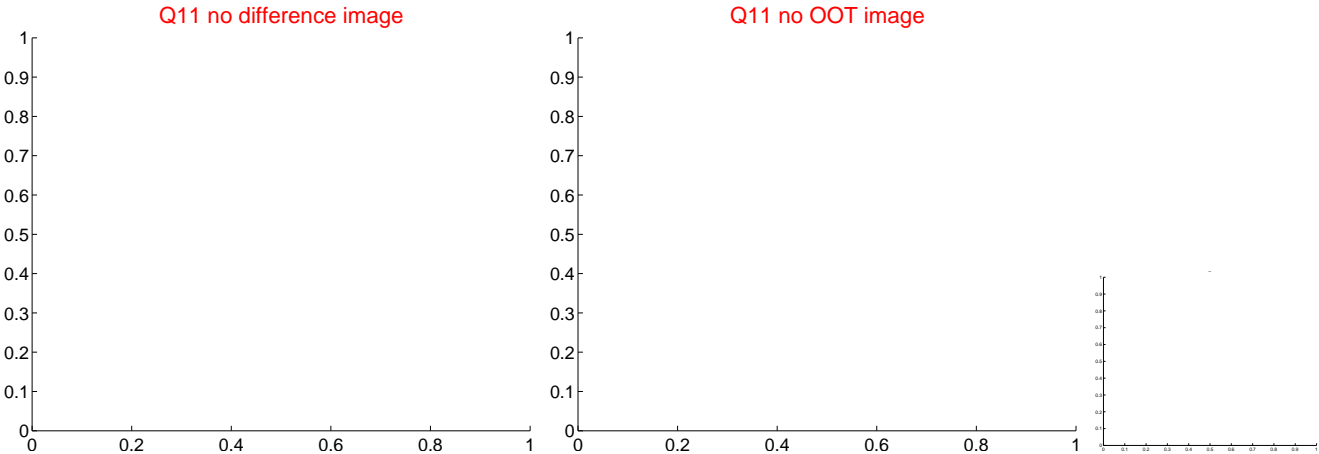
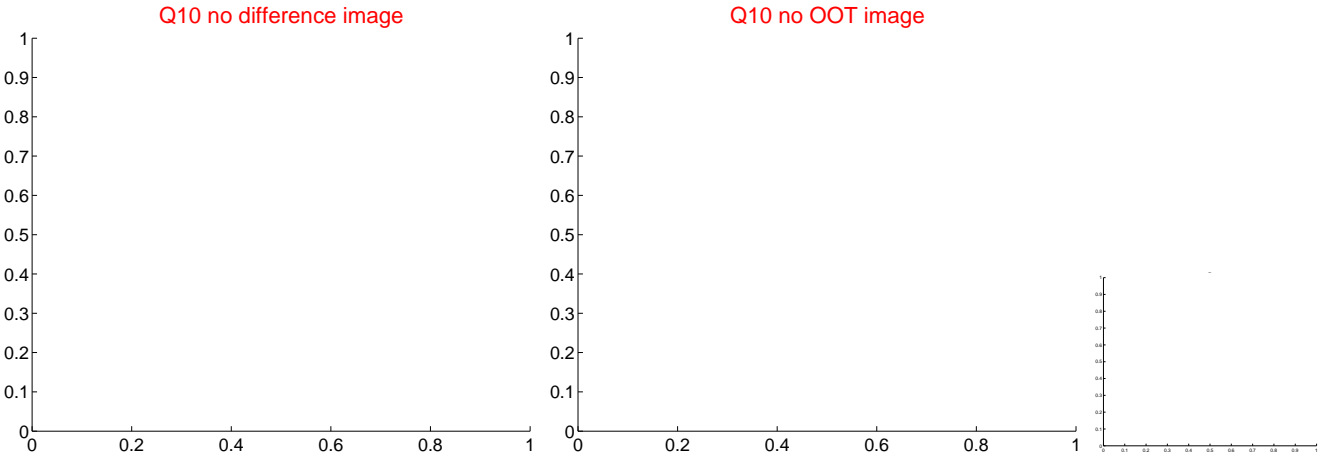
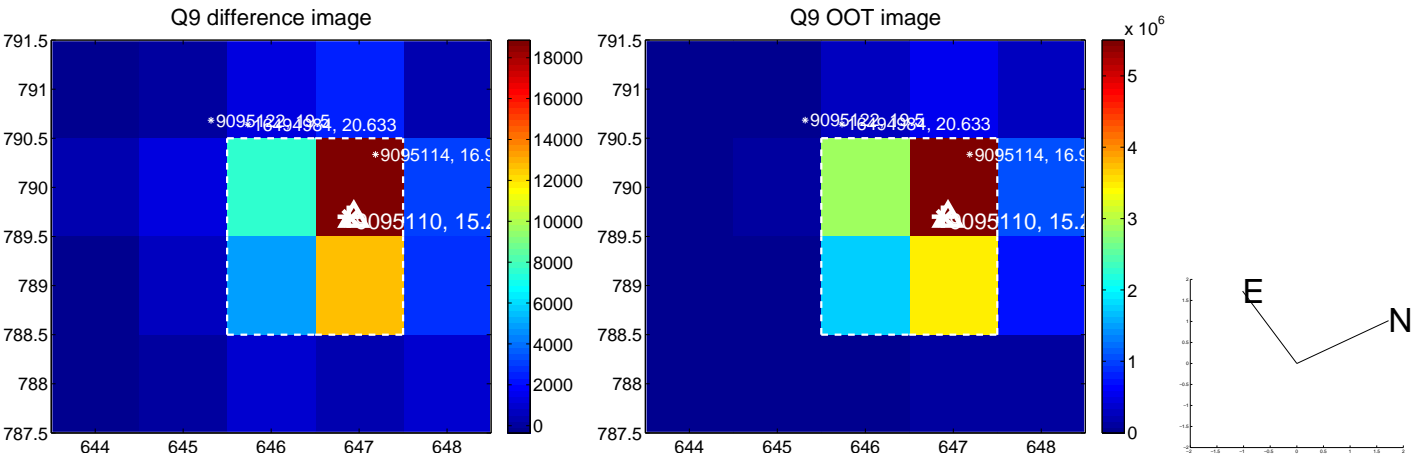
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



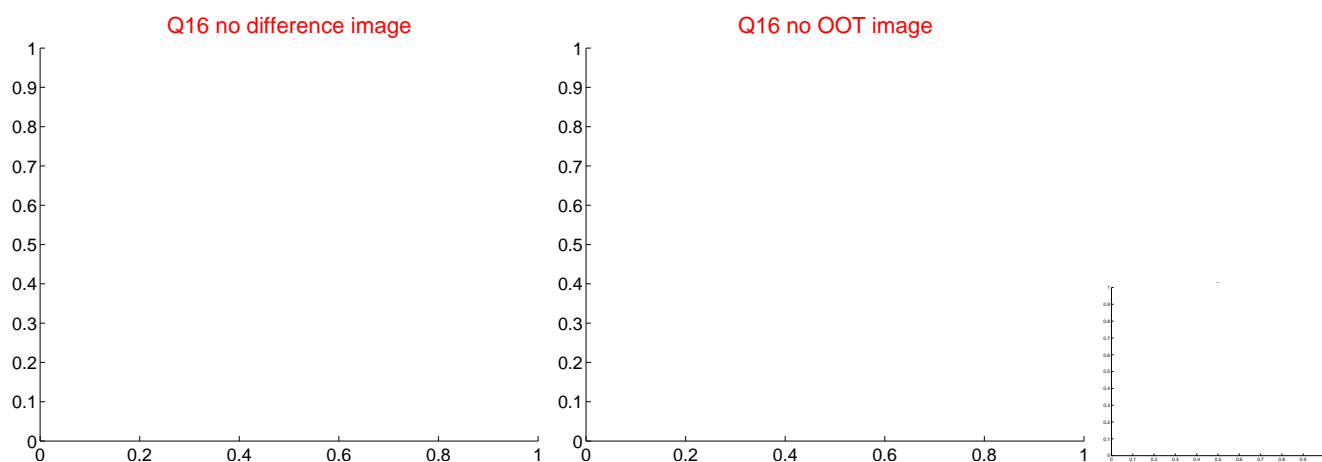
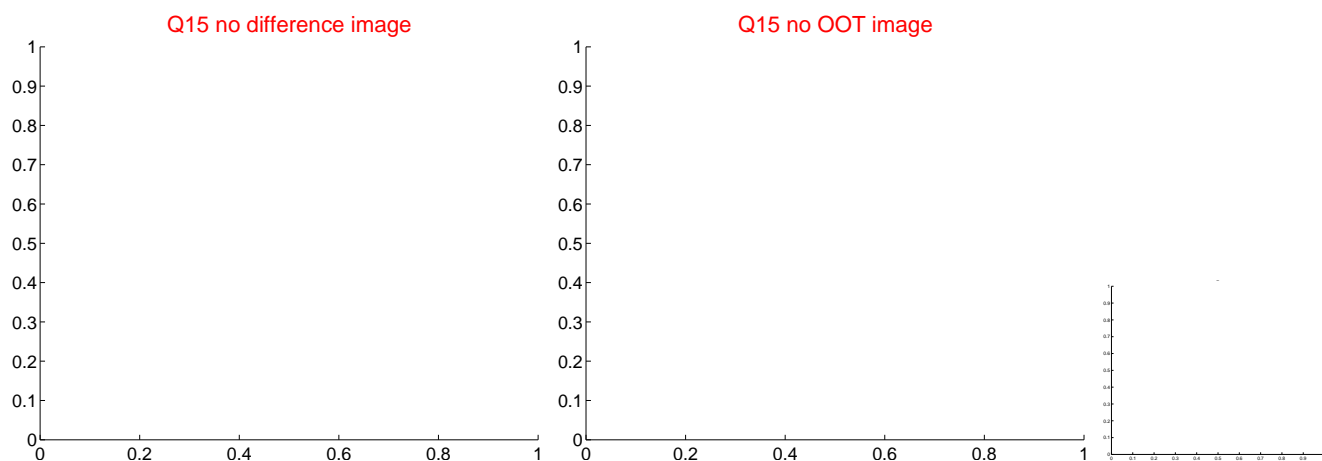
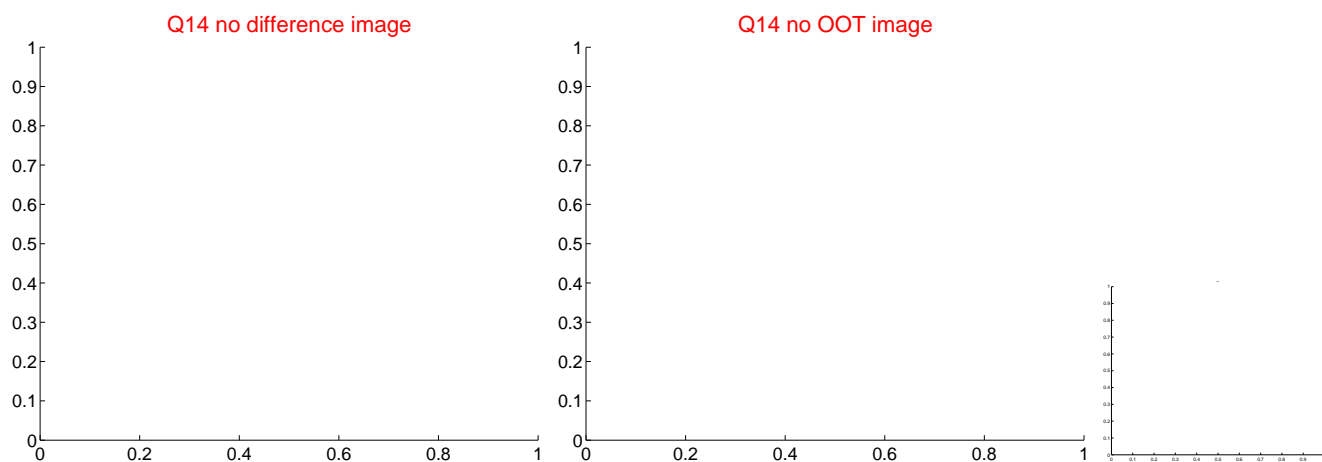
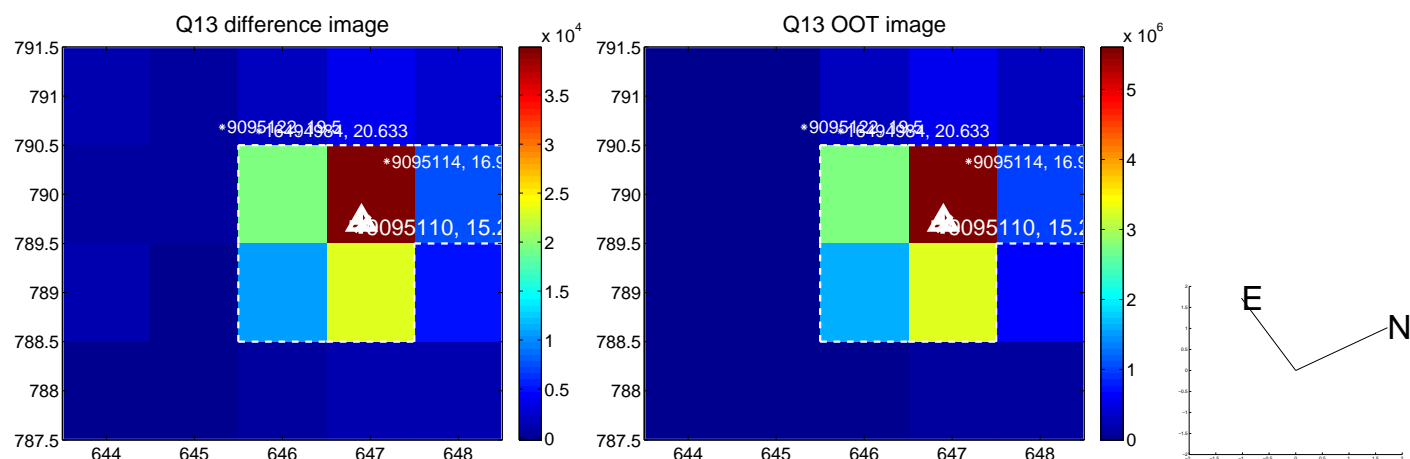
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



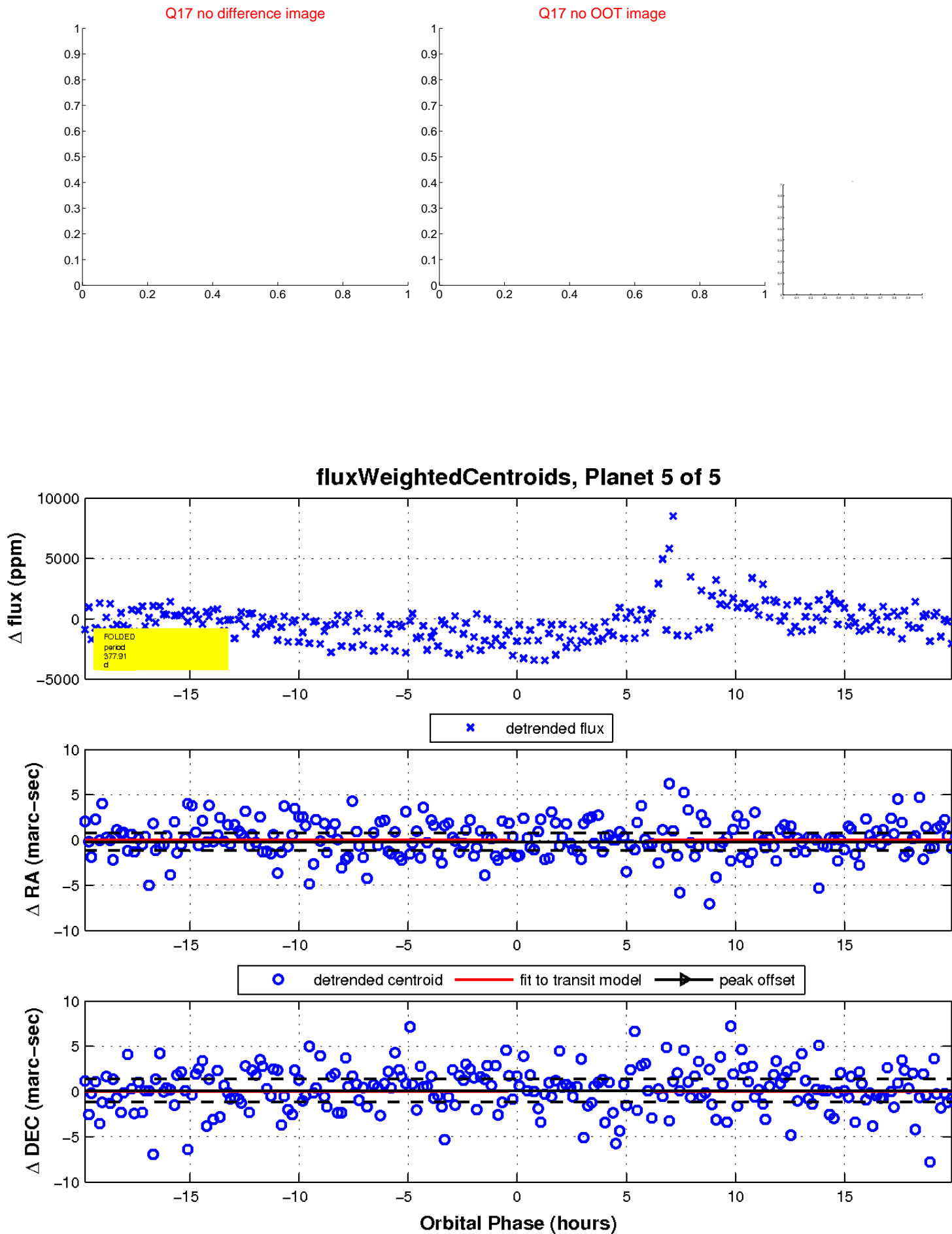
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

