

KIC 011862915

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})
011862915-01	OBS	No	406.259047	279.201862	2525.6	18.150	24.3	5.6	2.46	5055	14.00	3.46
011862915-02	OBS	No	687.352839	138.304905	1175.7	3.942	14.8	4.8	2.46	5055	8.63	1.71
011862915-03	OBS	No	539.404203	470.611508	3232.2	5.589	21.7	8.0	2.46	5055	13.66	2.37
011862915-04	OBS	No	215.556723	144.038280	346.8	3.000	14.3	-1.0	2.46	5055	4.48	8.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011862915-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011862915-02	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—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011862915-03	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—CENT_FEW_DIFFS
011862915-04	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS

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

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

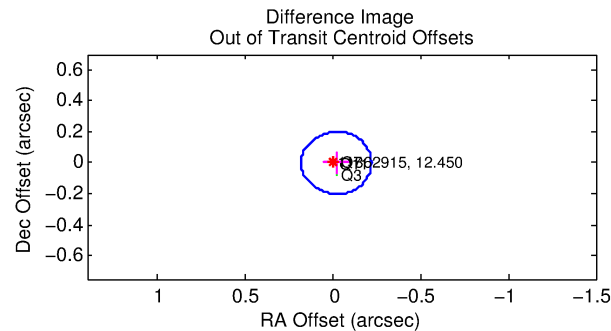
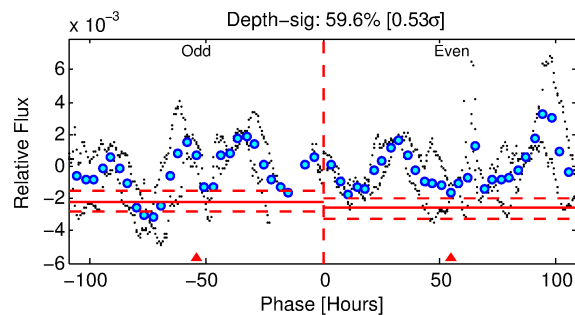
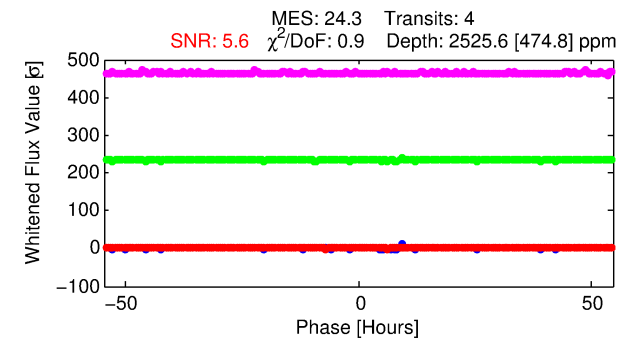
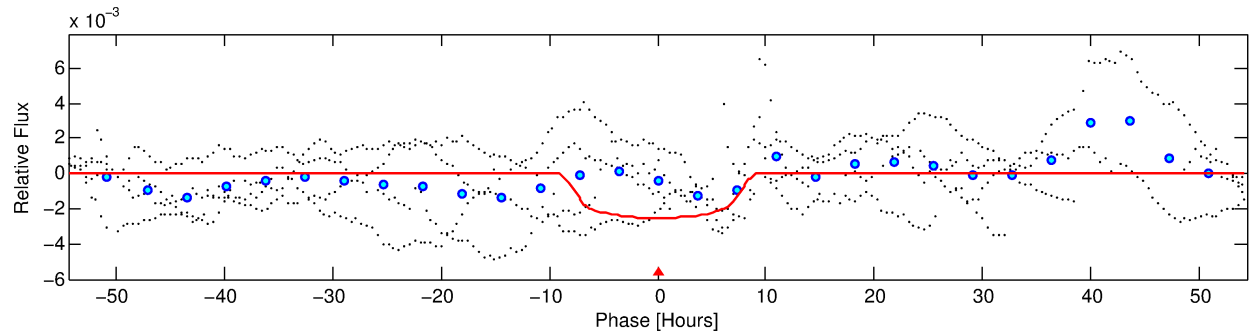
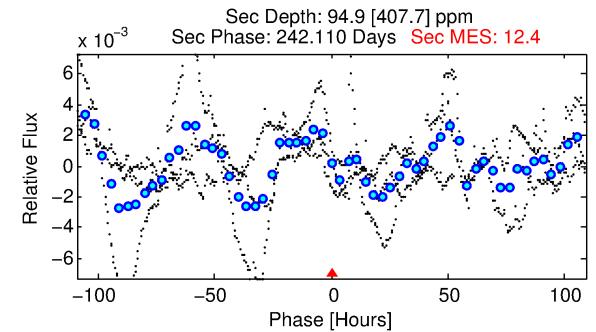
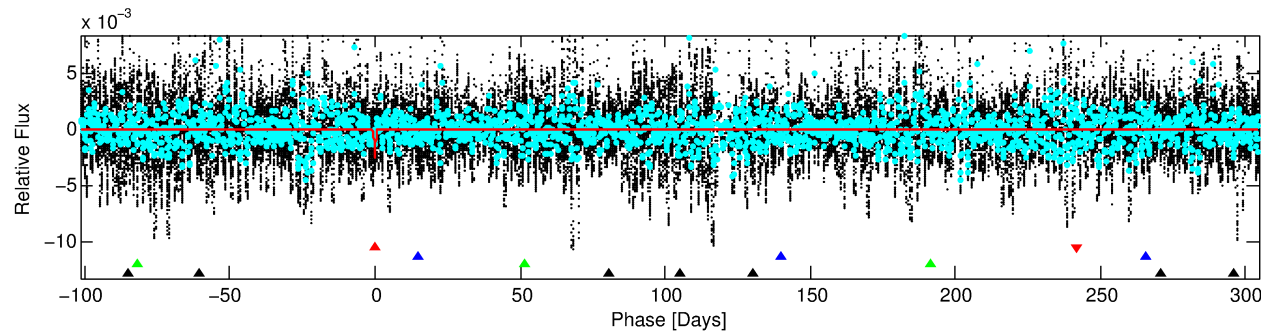
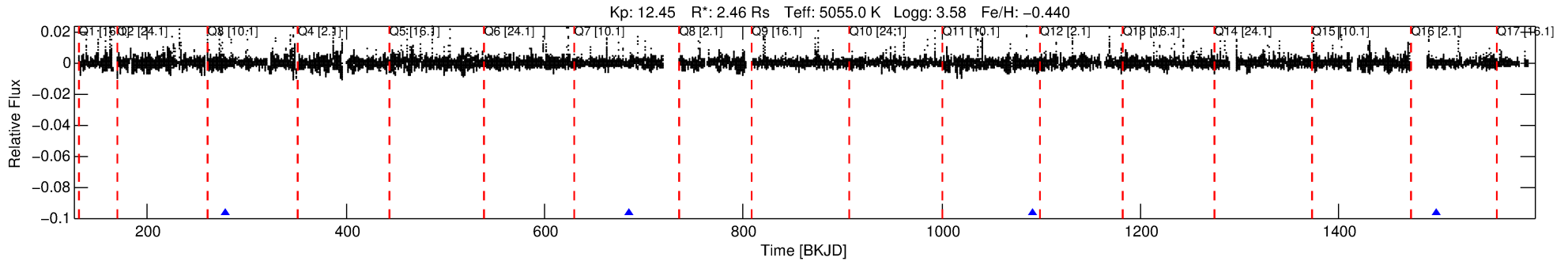
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011862915-01

No Significant Match Found

DV One-Page Summary

KIC: 11862915 Candidate: 1 of 4 Period: 406.259 d



DV Fit Results:

Period = 406.25905 [0.00655] d
Epoch = 279.2019 [0.0119] BKJD
Rp/R* = 0.0521 [0.0049]
a/R* = 112.57 [8.16]
b = 0.82 [0.03]
Seff = 3.46 [5.71]
Teq = 348 [144] K
Rp = 14.00 [10.22] Re
a = 1.0139 [0.9377] AU
Ag = 273.83 [1261.19] [0.22 σ]
Teffp = 2187 [2351] K [0.78 σ]

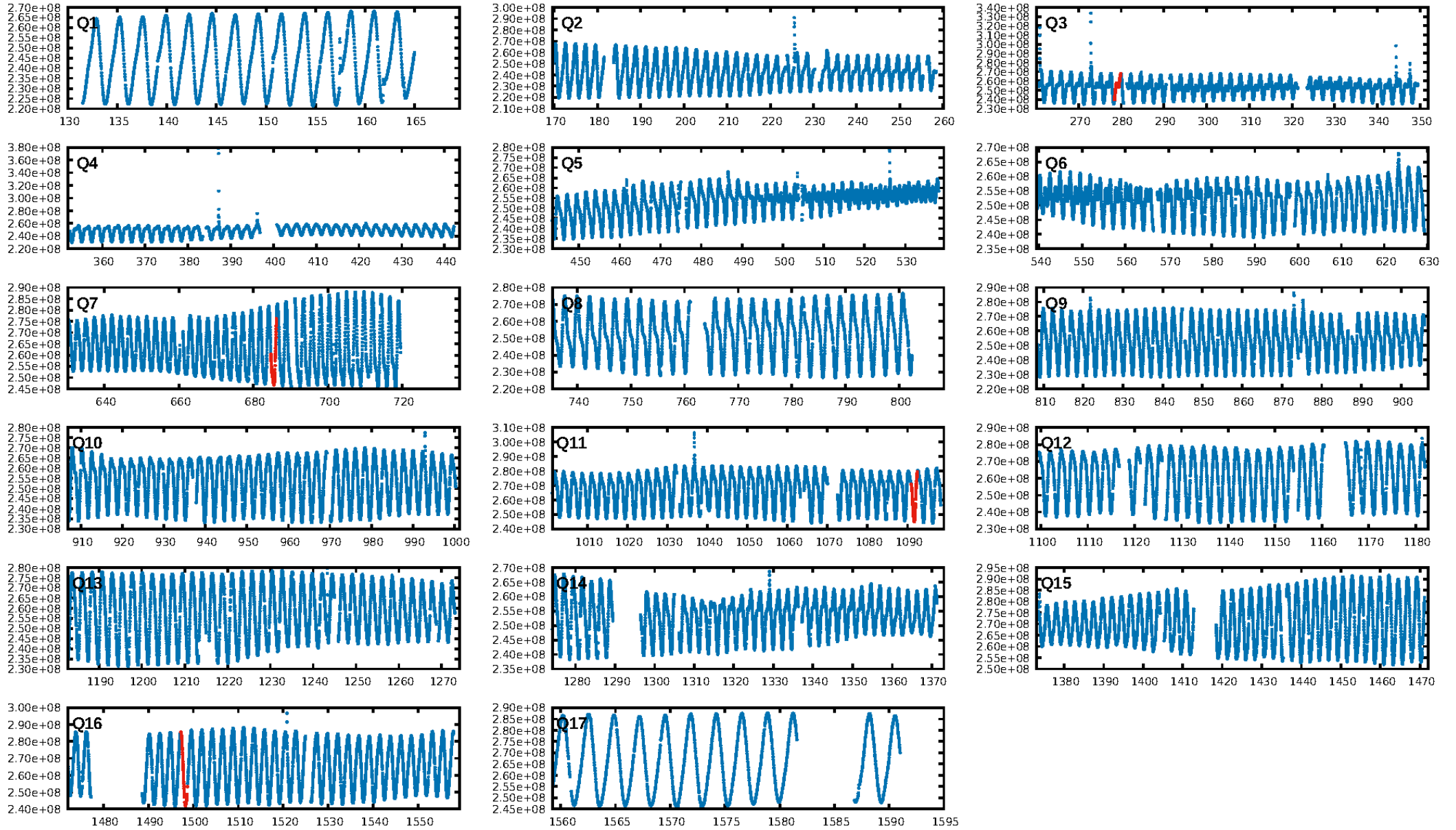
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [248.79 σ]
LongPeriod-sig: 100.0% [168.26 σ]
ModelChiSquare2-sig: 96.2%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [4/4]
GhostDiagnostic-chr: 0.6999
Centroid-sig: 49.0%
Centroid-so: 0.265 arcsec [2.92 σ]
OotOffset-rm: 0.021 arcsec [0.31 σ]
KicOffset-rm: 0.146 arcsec [1.84 σ]
OotOffset-st: 0/3/0/0 [3]
KicOffset-st: 0/3/0/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

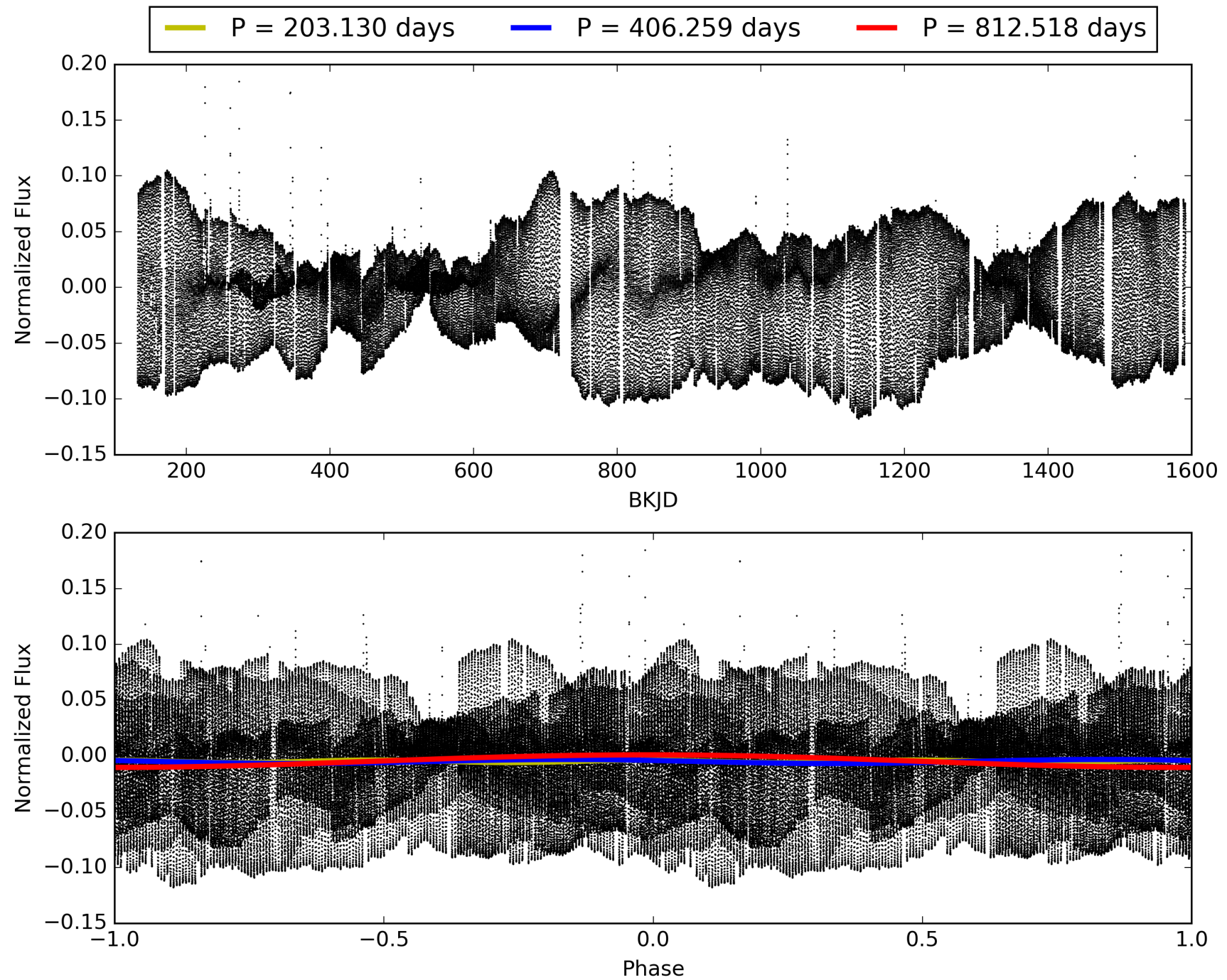
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:50:13 Z

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

TCE 011862915-01, PDC Light Curves

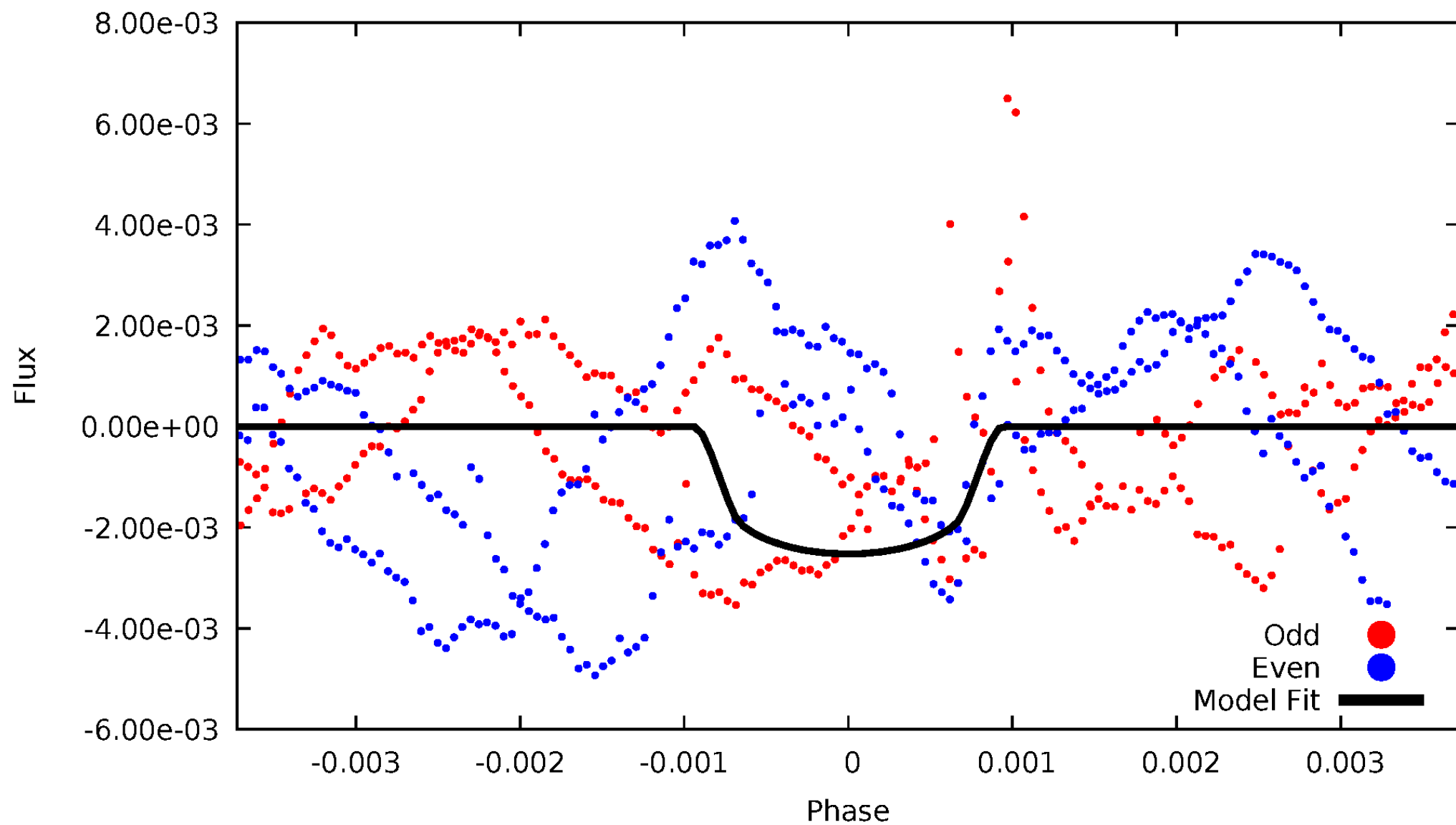


TCE 011862915-01



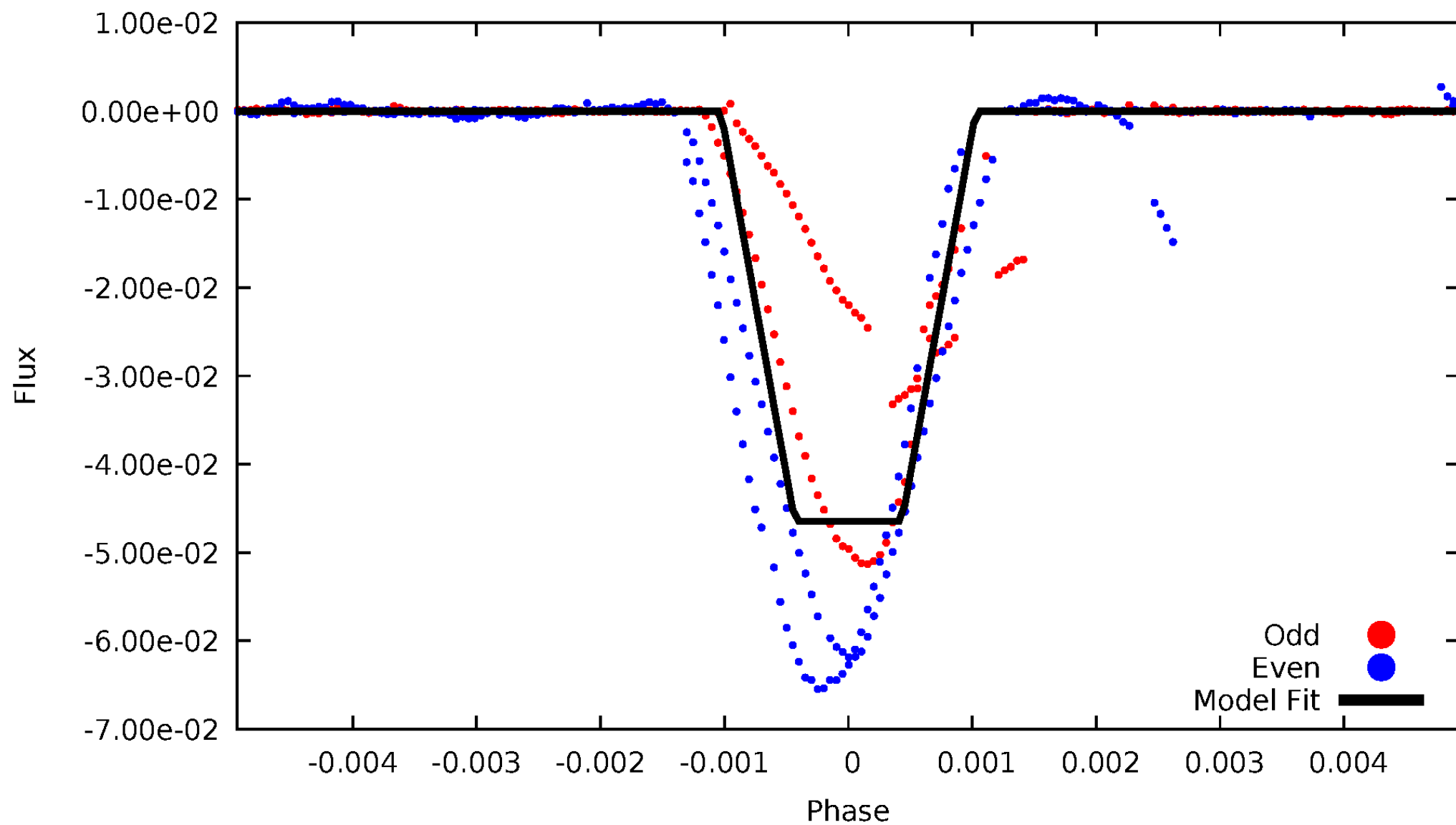
DV Odd/Even

TCE 011862915-01



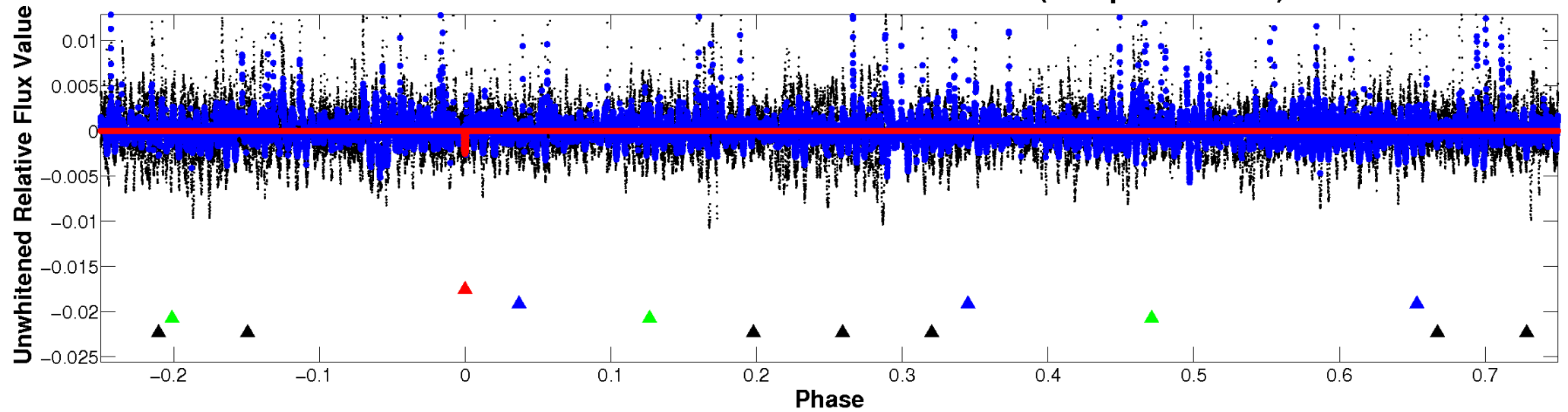
ALT Odd/Even

TCE 011862915-01

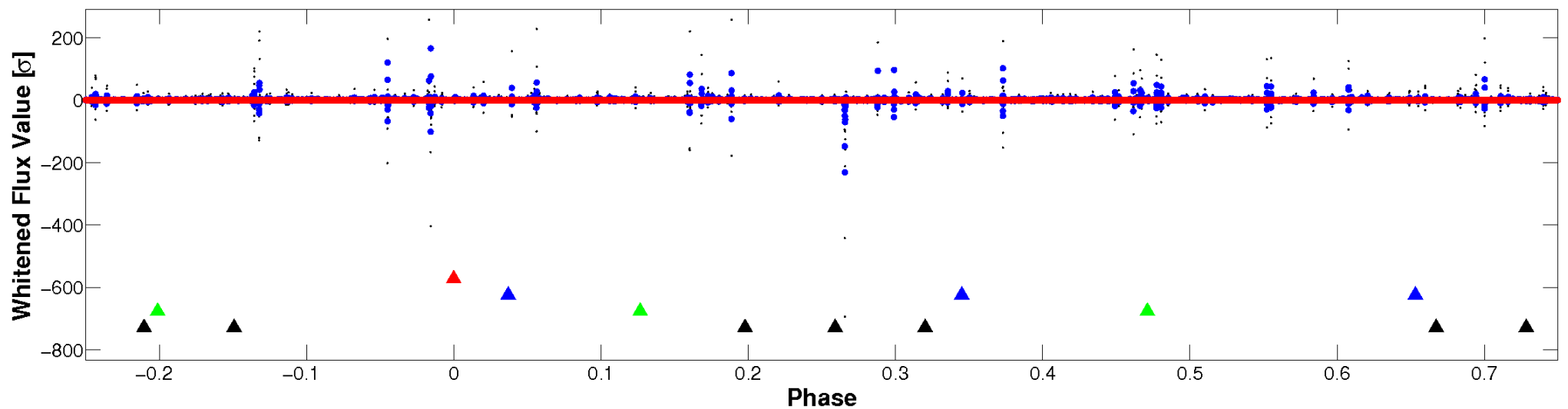


Non-Whitened Vs. Whitened Light Curve

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

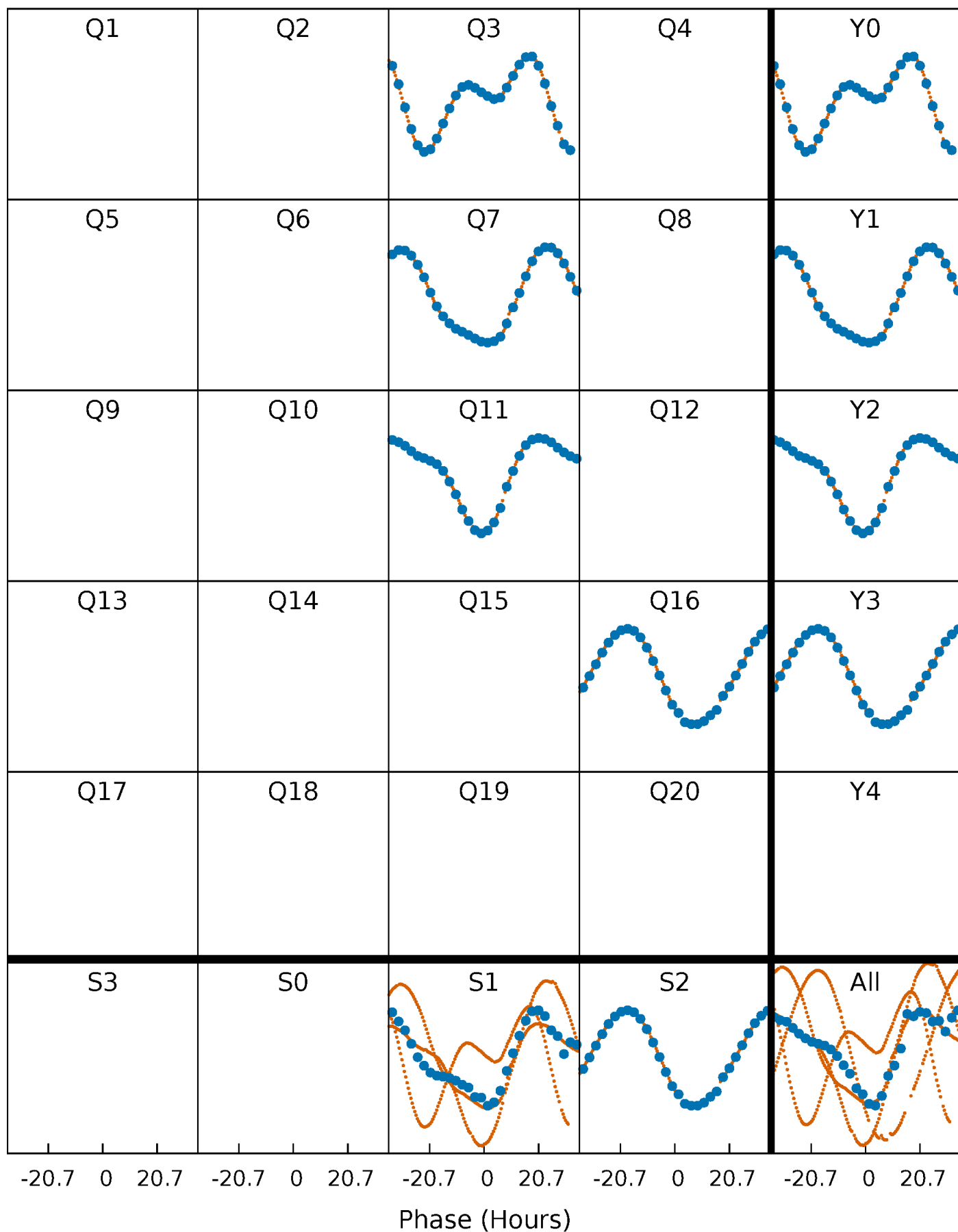


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



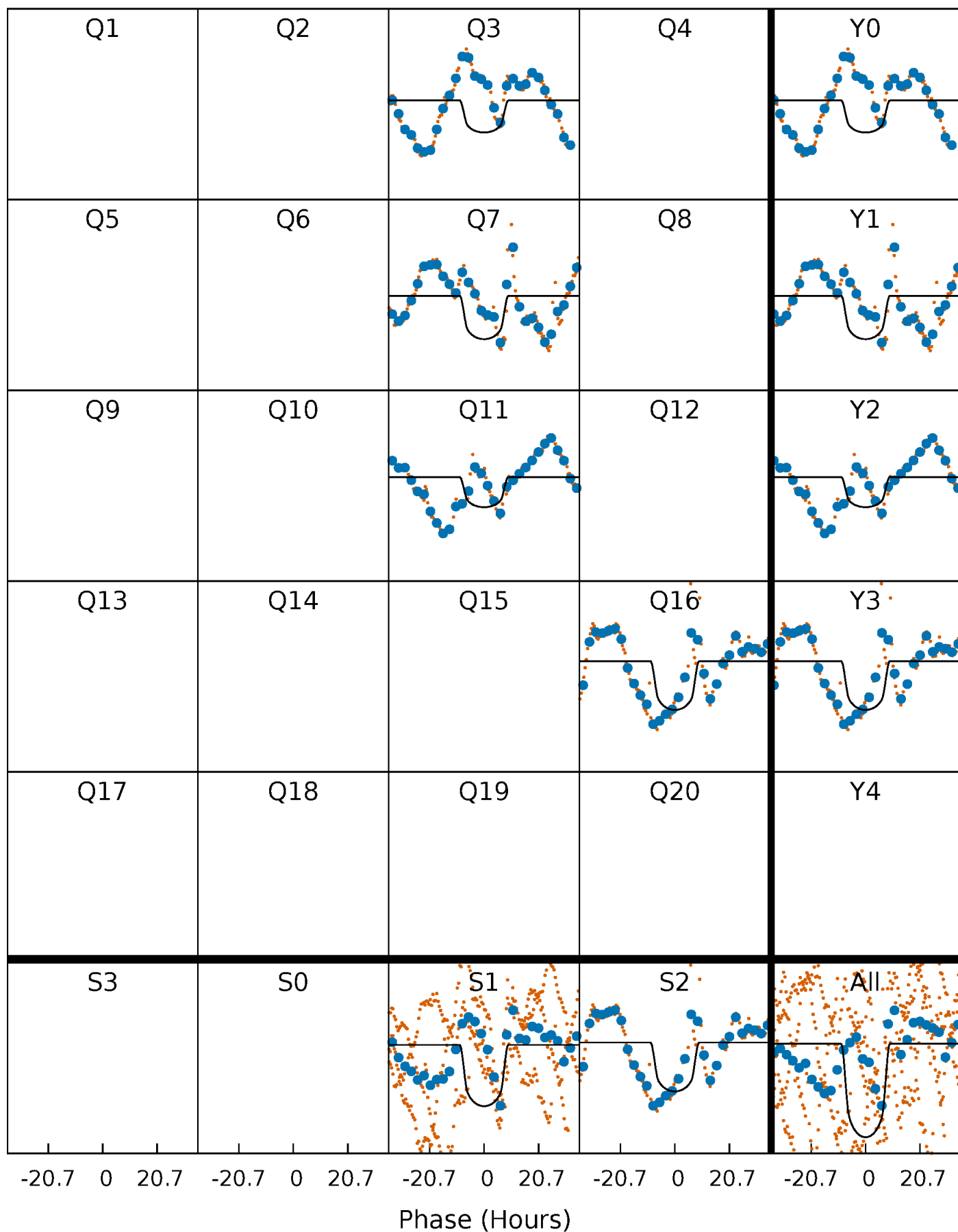
PDC Quarter-Phased Transit Curves

TCE 011862915-01 P=406.259047 Days $T_0=279.201862$ (BKJD)



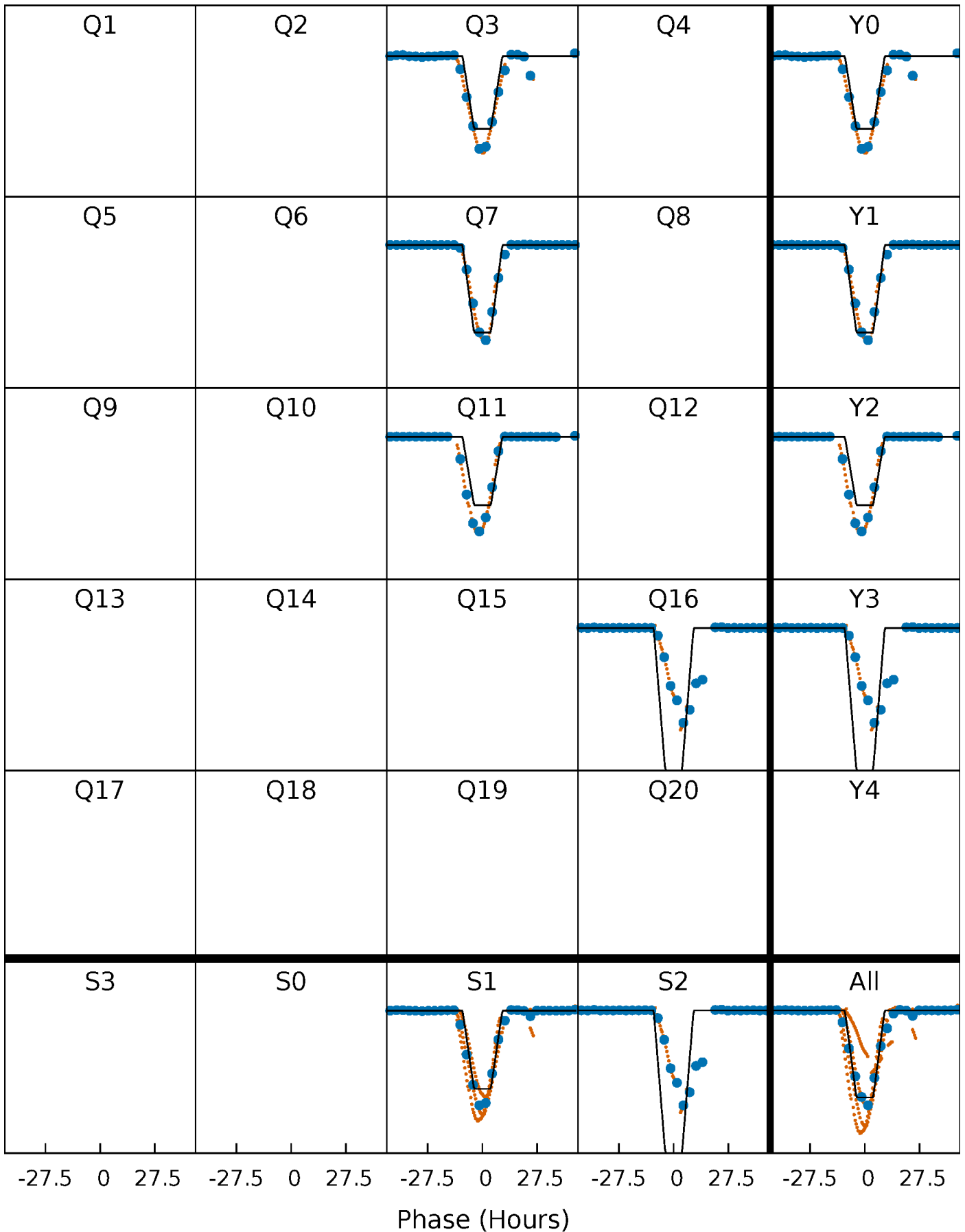
DV Quarter-Phased Transit Curves

TCE 011862915-01 P=406.259047 Days $T_0=279.201862$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

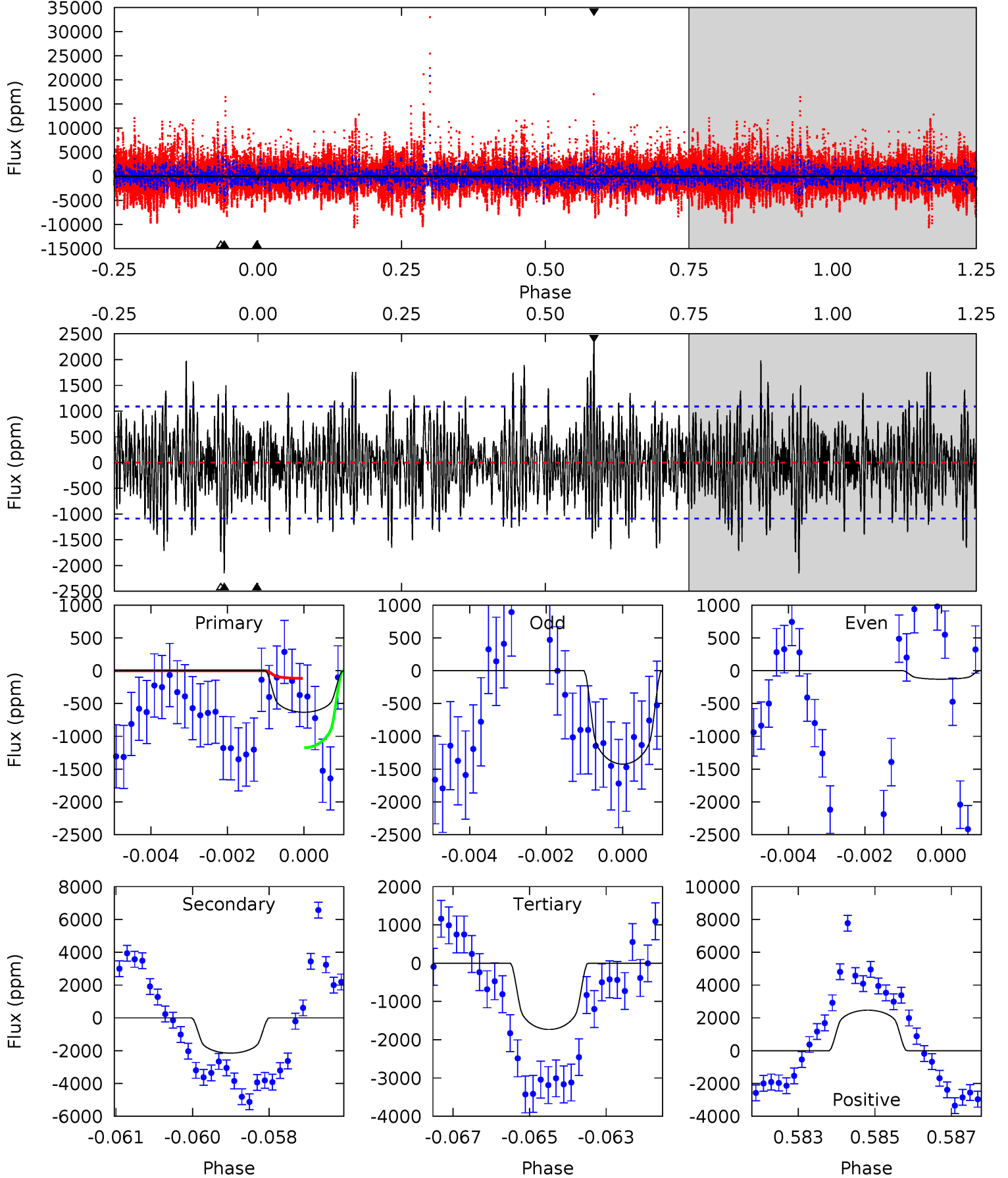
TCE 011862915-01 P=406.178306 Days $T_0=279.429545$ (BKJD)



DV Model-Shift Uniqueness Test

011862915-01, P = 406.259047 Days, E = 279.201862 Days

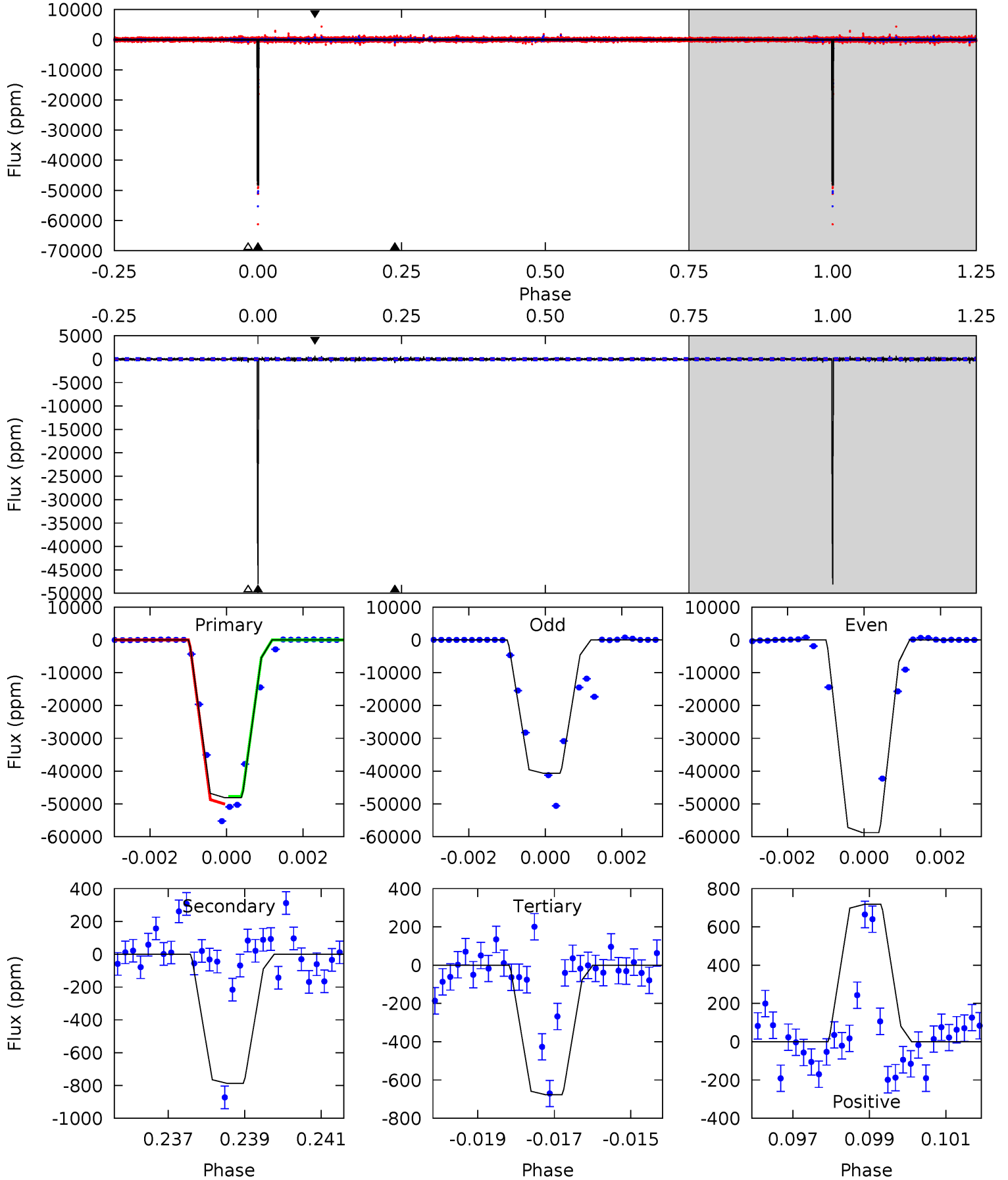
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
3.11	10.5	8.50	12.1	5.34	3.11	2.90	-5.39	-9.01	2.04	-1.58	2.78	0.70	0.53	2.61



Alt Model-Shift Uniqueness Test

011862915-01, P = 406.178306 Days, E = 279.429545 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
960.2	15.7	13.5	14.3	5.32	3.07	1.70	946.7	945.8	2.19	1.38	184.3	0.90	0.01	23.3



Stellar Parameters For KIC 011862915

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	M (M_{\odot})	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5055^{+139}_{-114}	$3.580^{+1.028}_{-0.343}$	$-0.440^{+0.300}_{-0.250}$	$2.464^{+1.459}_{-1.783}$	$0.842^{+0.259}_{-0.173}$	$0.079^{+3.473}_{-0.050}$
	+3%/-2%	+29%/-10%	+68%/-57%	+59%/-72%	+31%/-21%	+4381%/-63%
Source	PHO1	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 011862915-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2148 ± 204	$13.22^{+5.59}_{-5.28}$	474^{+79}_{-103}	4844^{+238}_{-248}	7071^{+13021}_{-3481}
Alt.	-787 ± 50	$56.20^{+19.60}_{-22.14}$	477^{+79}_{-107}	2611^{+51}_{-44}	143^{+252}_{-64}

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 $A_{obs} \gg 1.0$

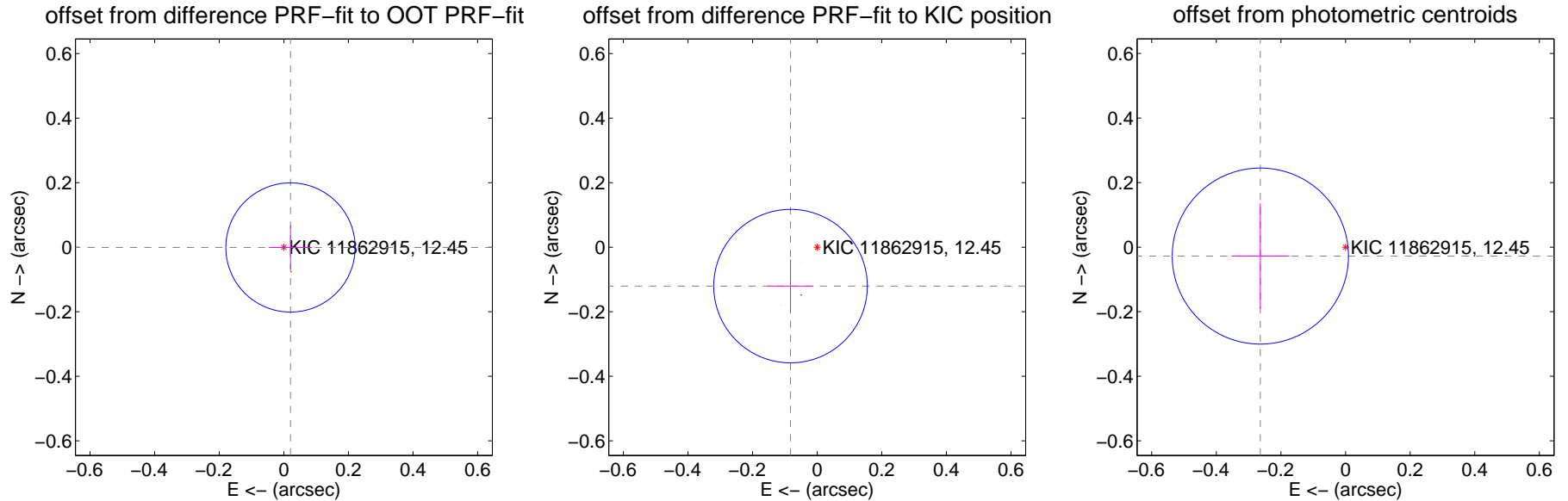
DV Centroid Data

Supplemental centroid analysis for 011862915-01. Kepler magnitude: 12.45. Transit SNR 5.62

There are 2 quarters with good PRF difference image offsets

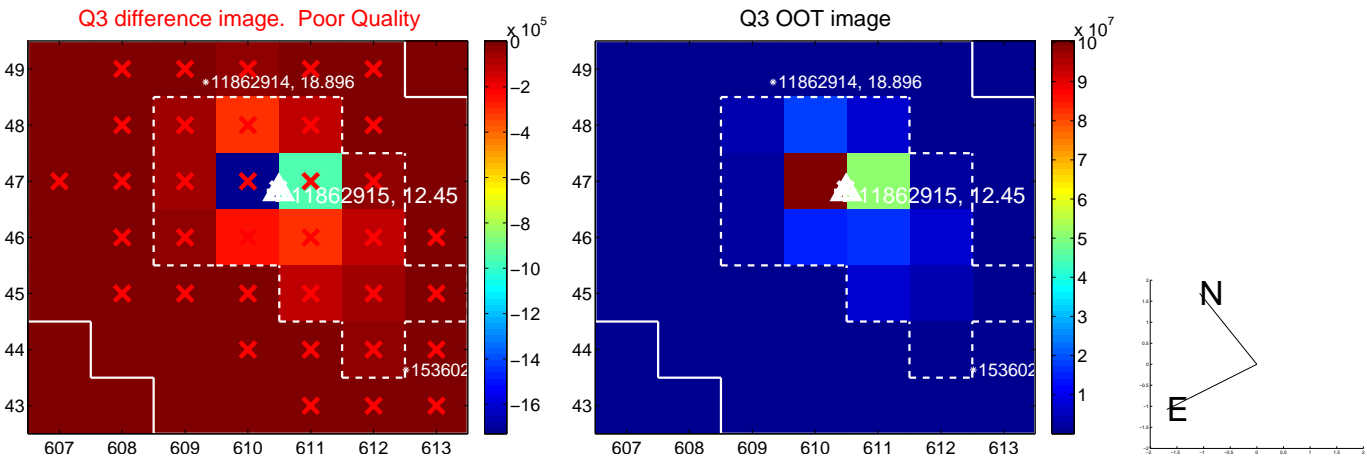
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.021 ± 0.067	0.31	-0.021 ± 0.067	-0.001 ± 0.068
PRF-fit source offset from KIC position	0.146 ± 0.079	1.84	0.083 ± 0.071	-0.121 ± 0.083
photometric centroid source offset	0.27 ± 0.09	2.92	0.26 ± 0.09	-0.03 ± 0.16

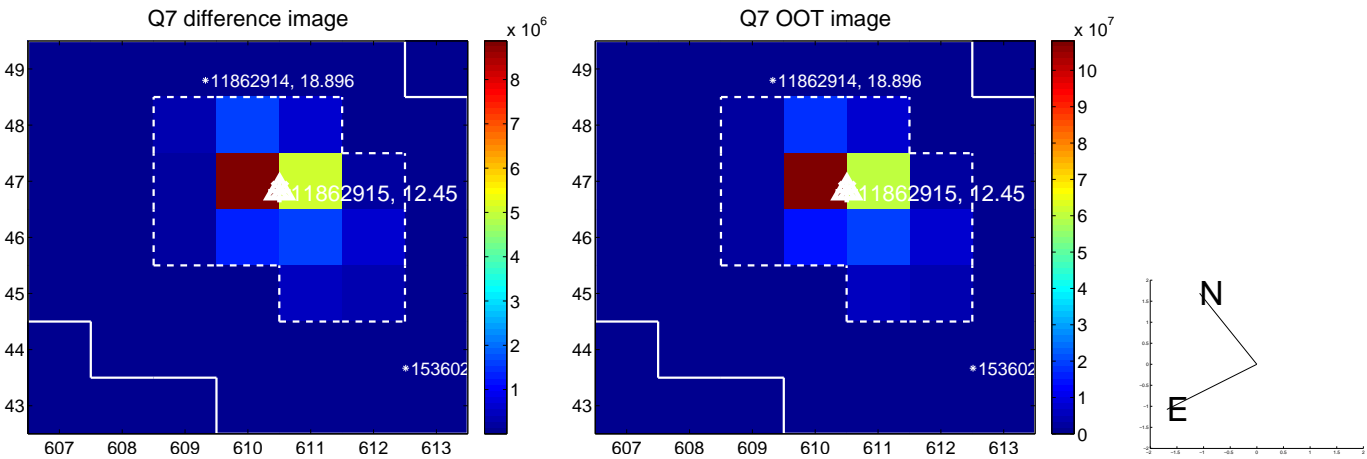


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

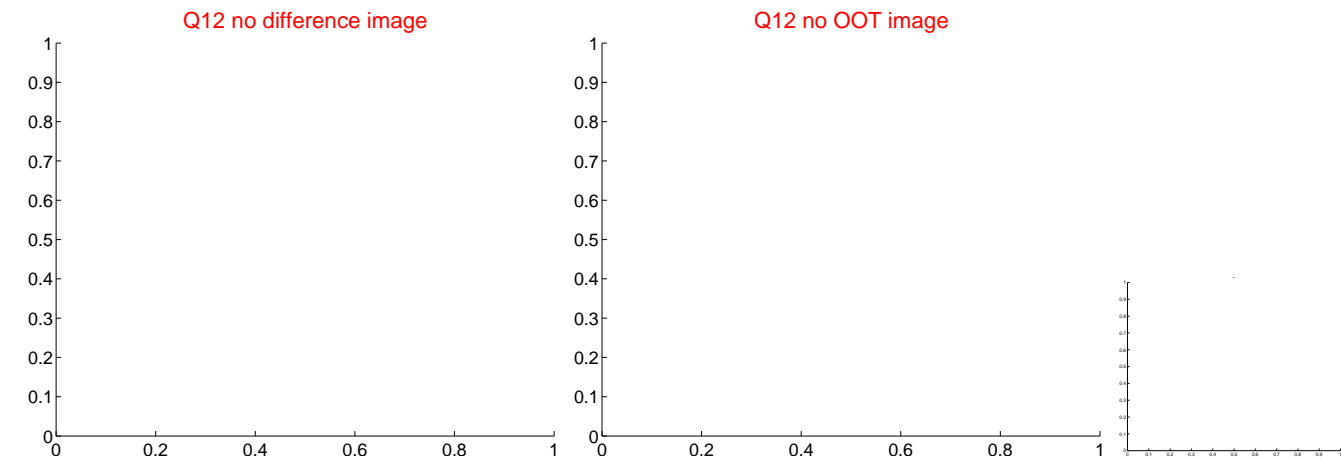
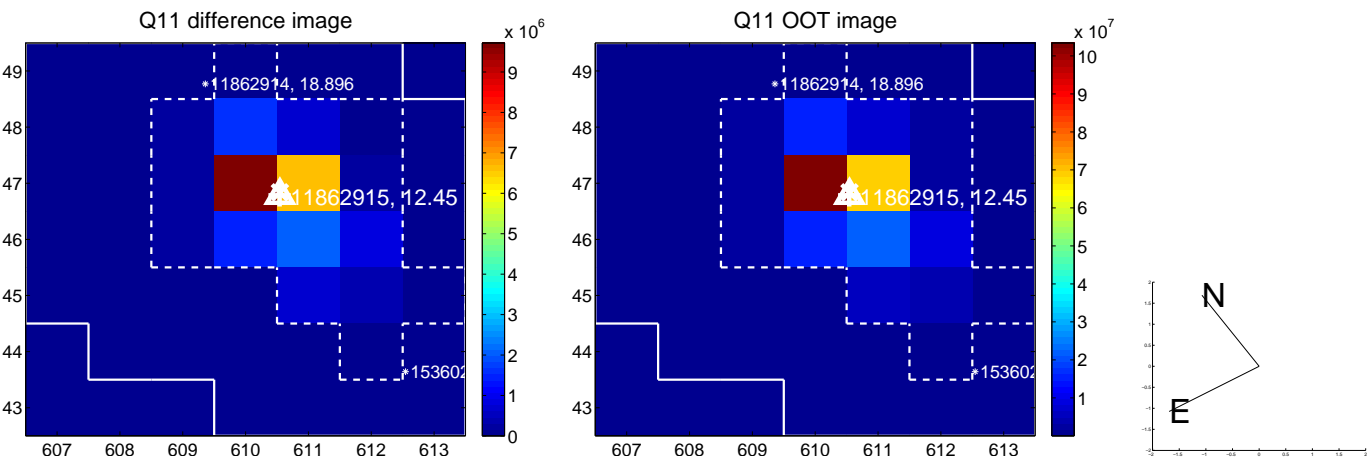
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



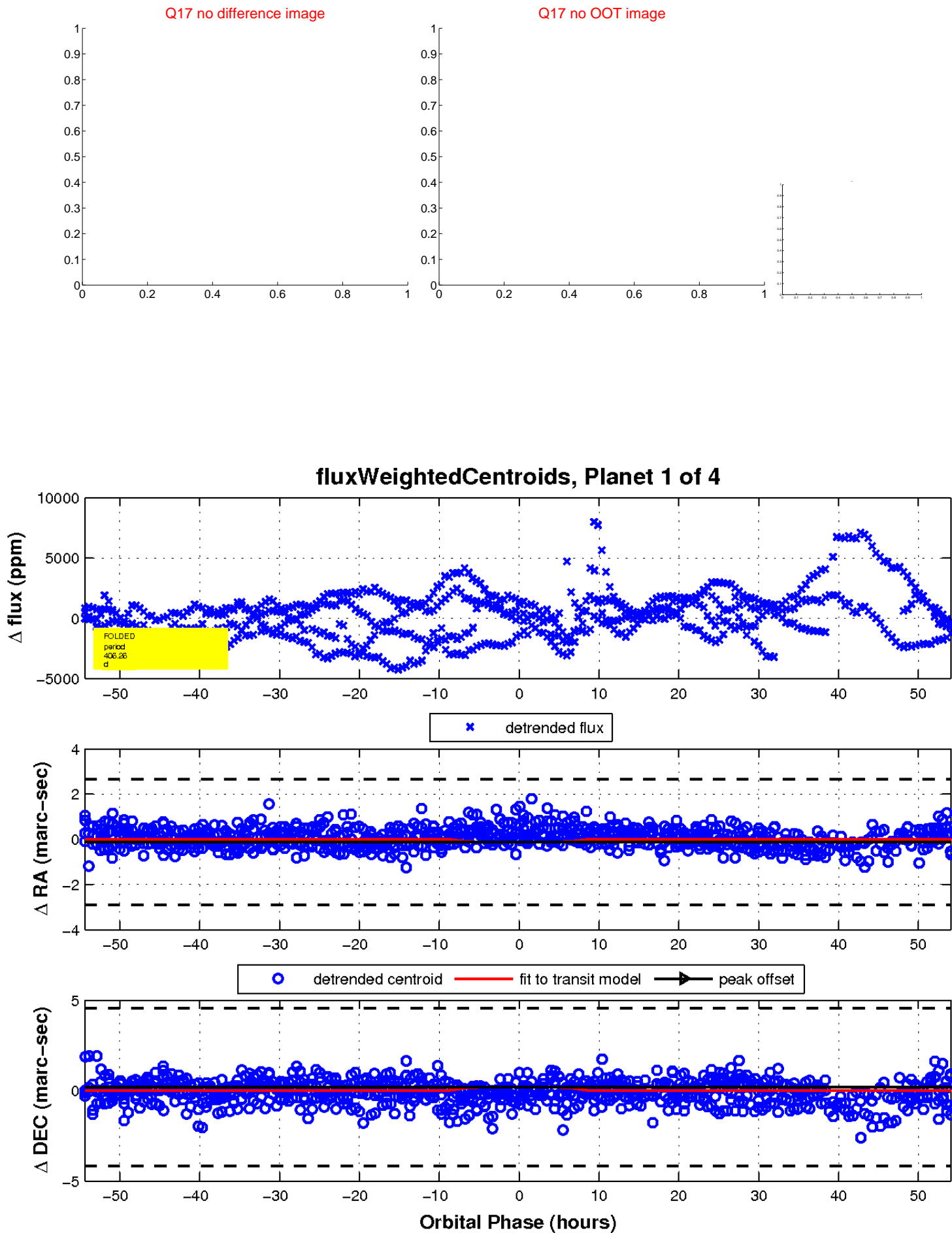
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



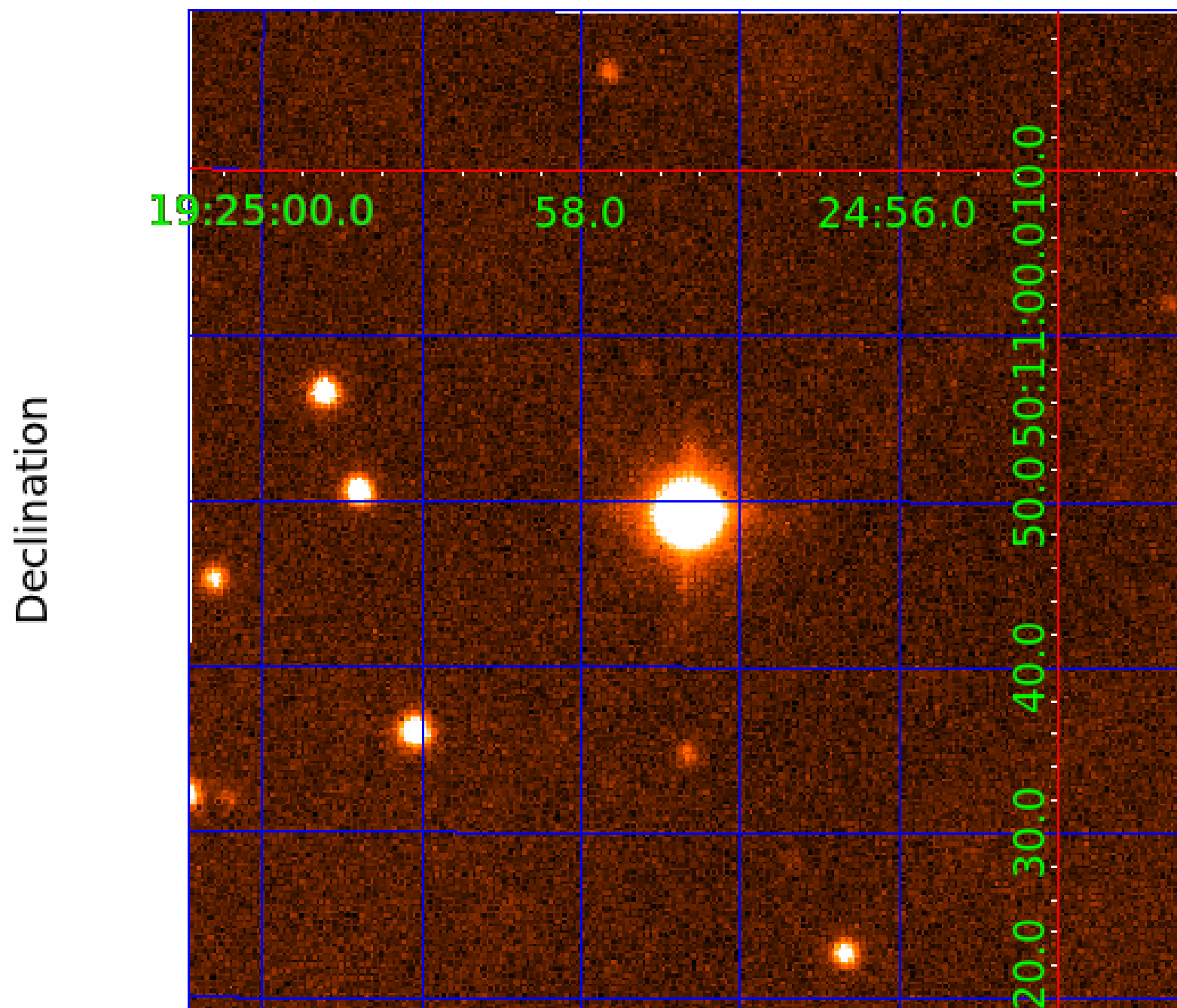
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011862915

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})
011862915-01	OBS	No	406.259047	279.201862	2525.6	18.150	24.3	5.6	2.46	5055	14.00	3.46
011862915-02	OBS	No	687.352839	138.304905	1175.7	3.942	14.8	4.8	2.46	5055	8.63	1.71
011862915-03	OBS	No	539.404203	470.611508	3232.2	5.589	21.7	8.0	2.46	5055	13.66	2.37
011862915-04	OBS	No	215.556723	144.038280	346.8	3.000	14.3	-1.0	2.46	5055	4.48	8.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011862915-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011862915-02	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—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011862915-03	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—CENT_FEW_DIFFS
011862915-04	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS

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

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

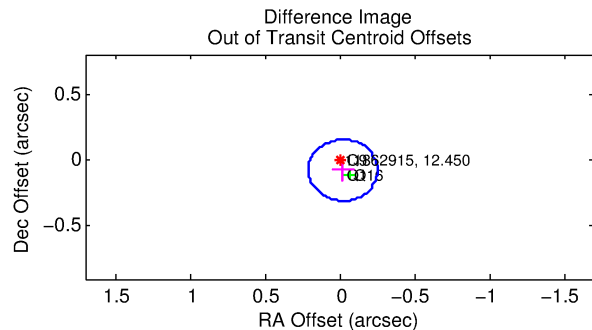
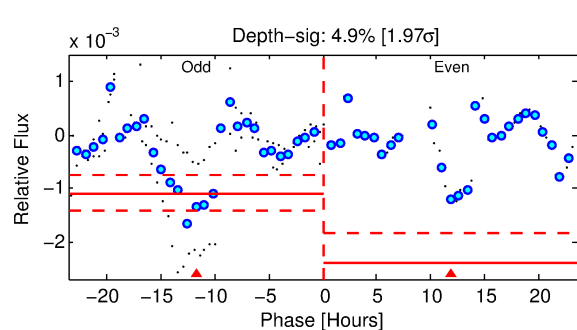
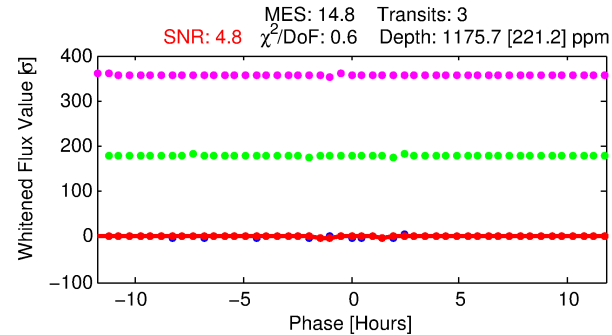
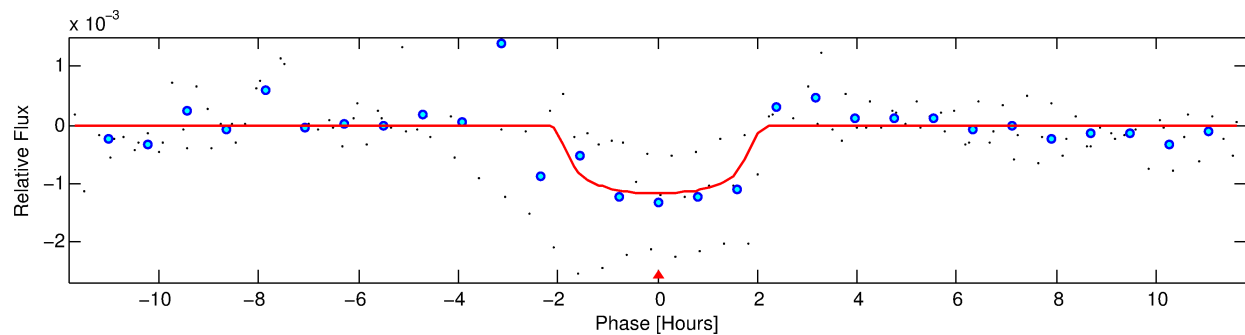
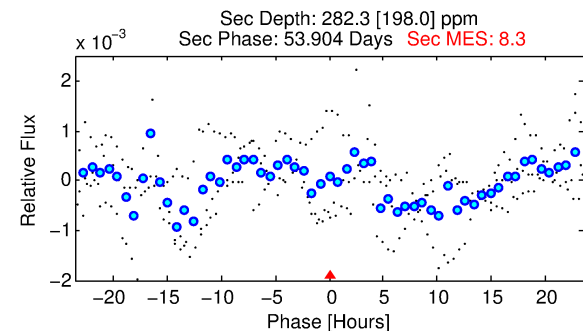
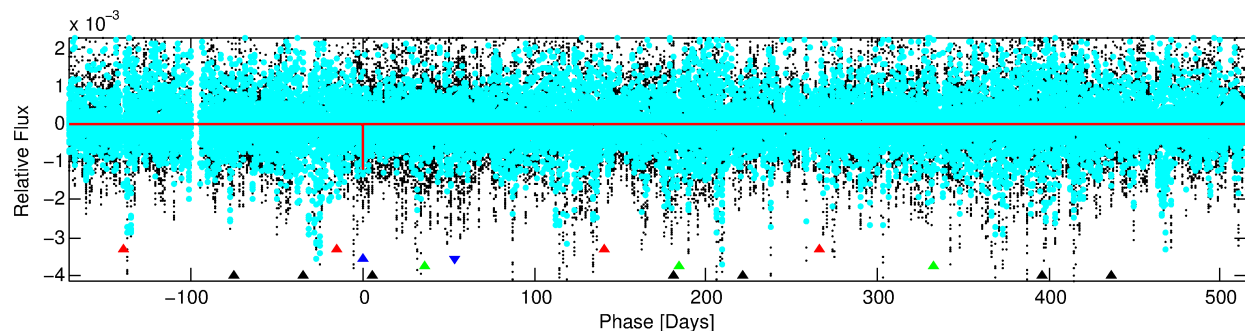
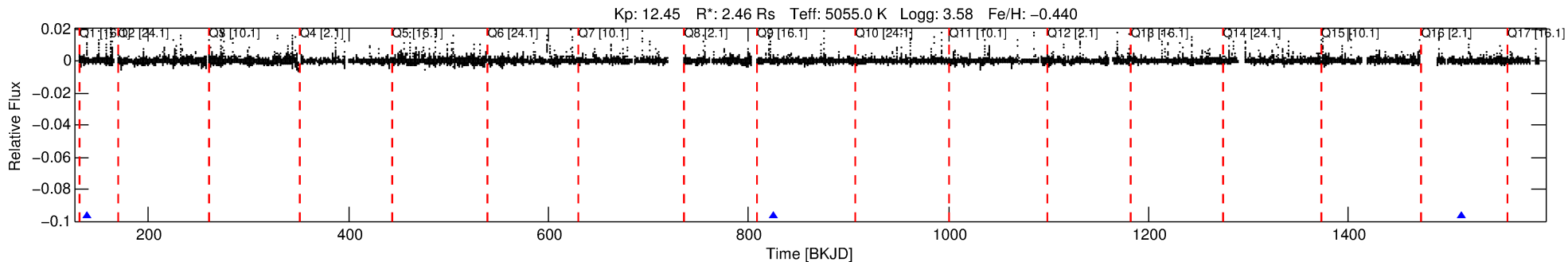
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011862915-02

No Significant Match Found

DV One-Page Summary

KIC: 11862915 Candidate: 2 of 4 Period: 687.353 d



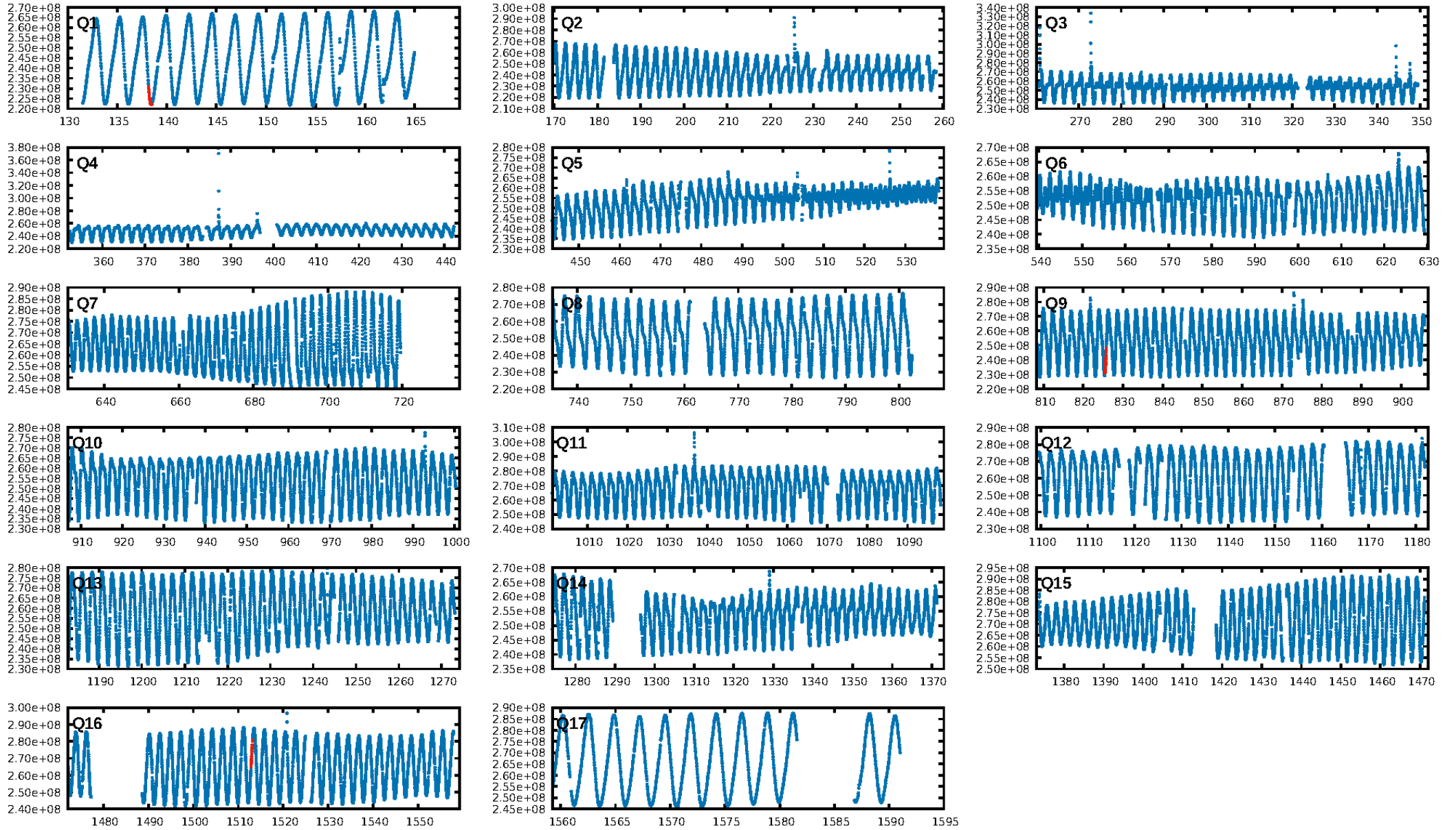
DV Fit Results:

Period = 687.35284 [0.00317] d
Epoch = 138.3049 [0.0043] BKJD
Rp/R* = 0.0321 [0.0247]
a/R* = 1168.66 [3247.94]
b = 0.54 [3.65]
Seff = 1.71 [2.83]
Teq = 292 [121] K
Rp = 8.64 [9.11] Re
a = 1.4396 [1.3314] AU
Ag = 4316.76 [10189.24] [0.42 σ]
Teffp = 3656 [1546] K [2.17 σ]

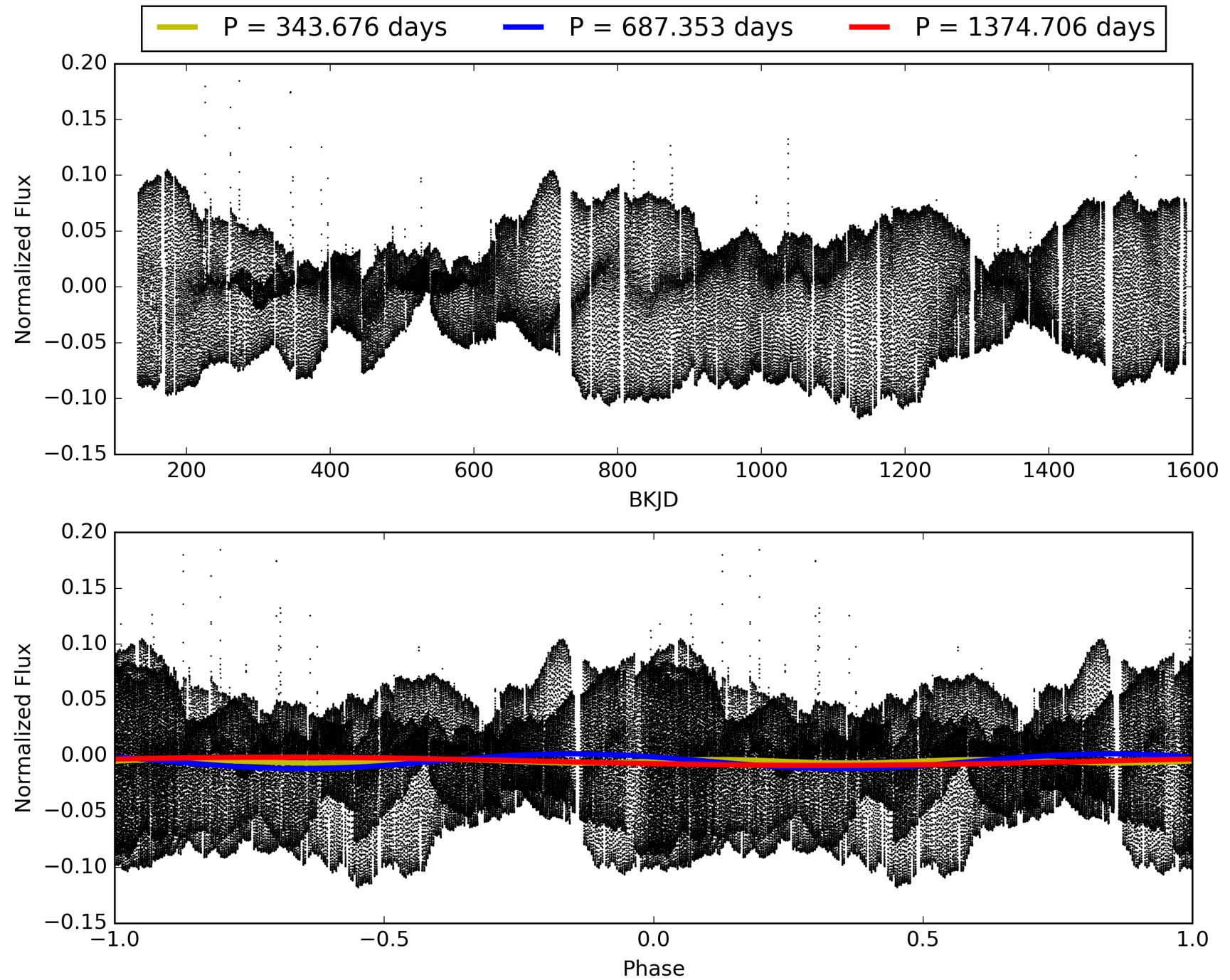
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [519.18 σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 51.6%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: -0.269
Centroid-sig: 4.5%
Centroid-so: 0.800 arcsec [1.36 σ]
OotOffset-rm: 0.080 arcsec [1.04 σ]
KicOffset-rm: 0.155 arcsec [2.24 σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 011862915-02, PDC Light Curves

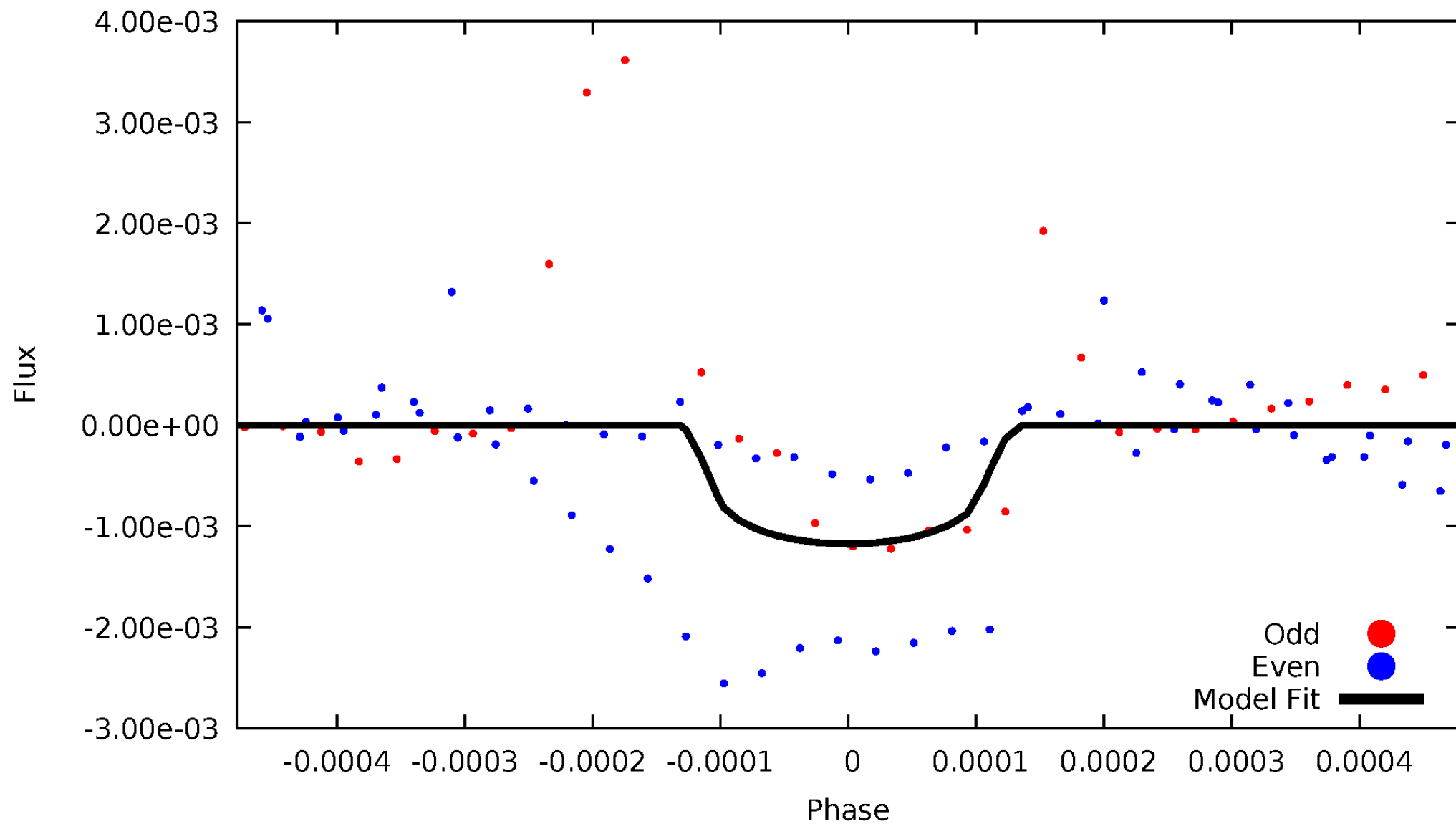


TCE 011862915-02



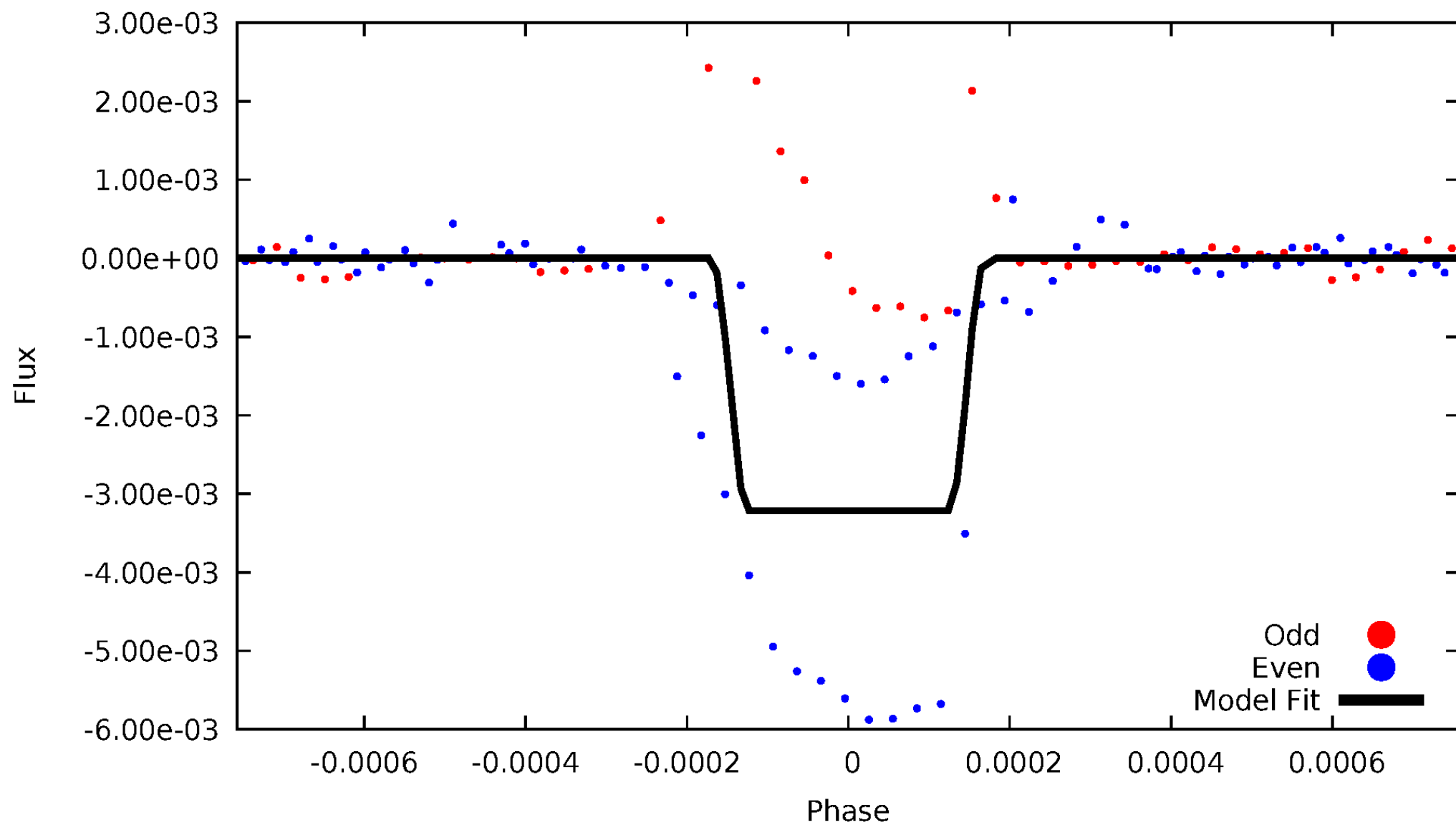
DV Odd/Even

TCE 011862915-02



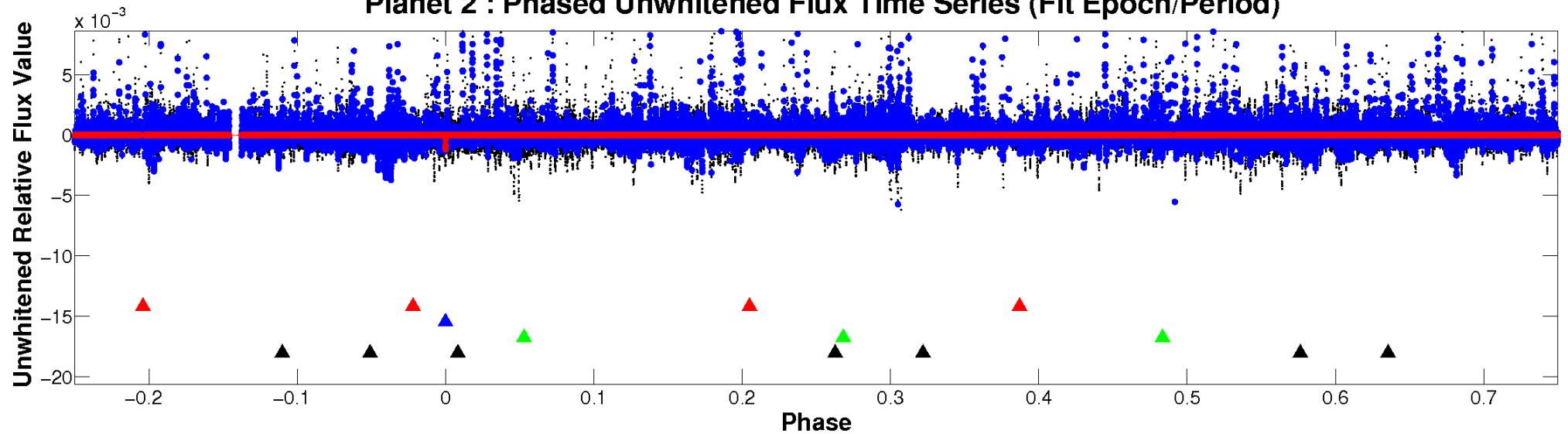
ALT Odd/Even

TCE 011862915-02

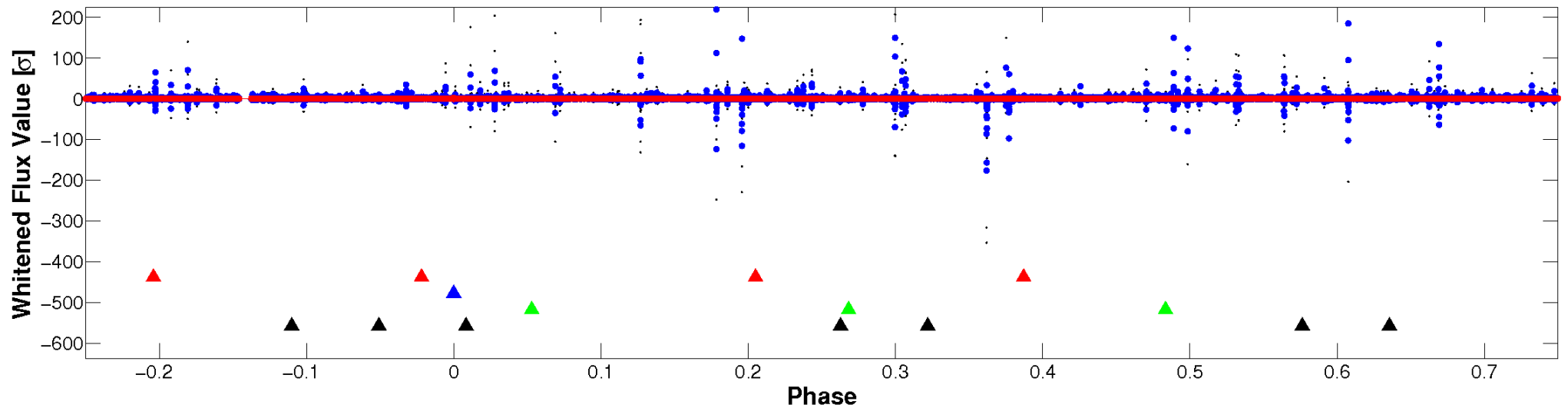


Non-Whitened Vs. Whitened Light Curve

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

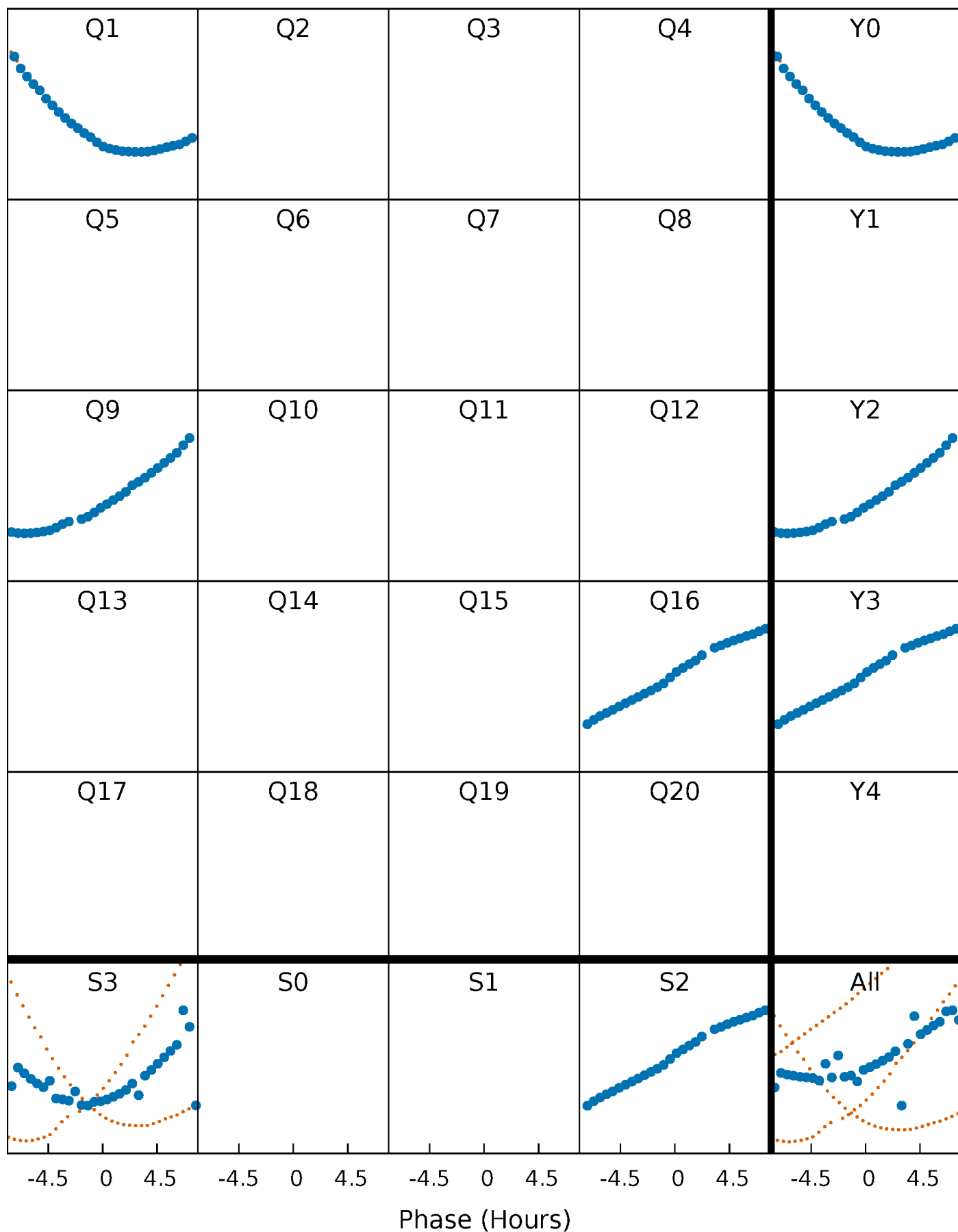


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



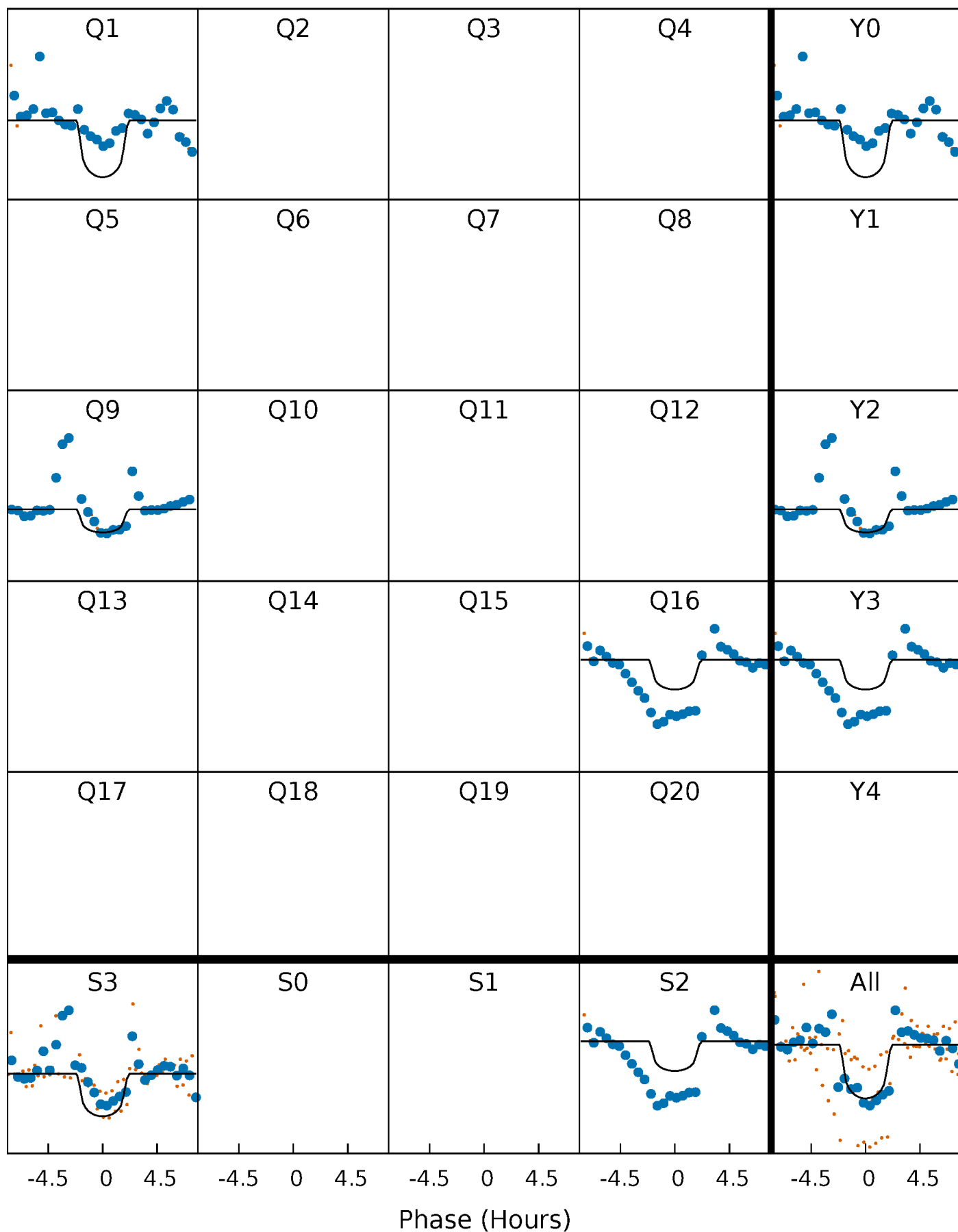
PDC Quarter-Phased Transit Curves

TCE 011862915-02 P=687.352839 Days $T_0=138.304905$ (BKJD)



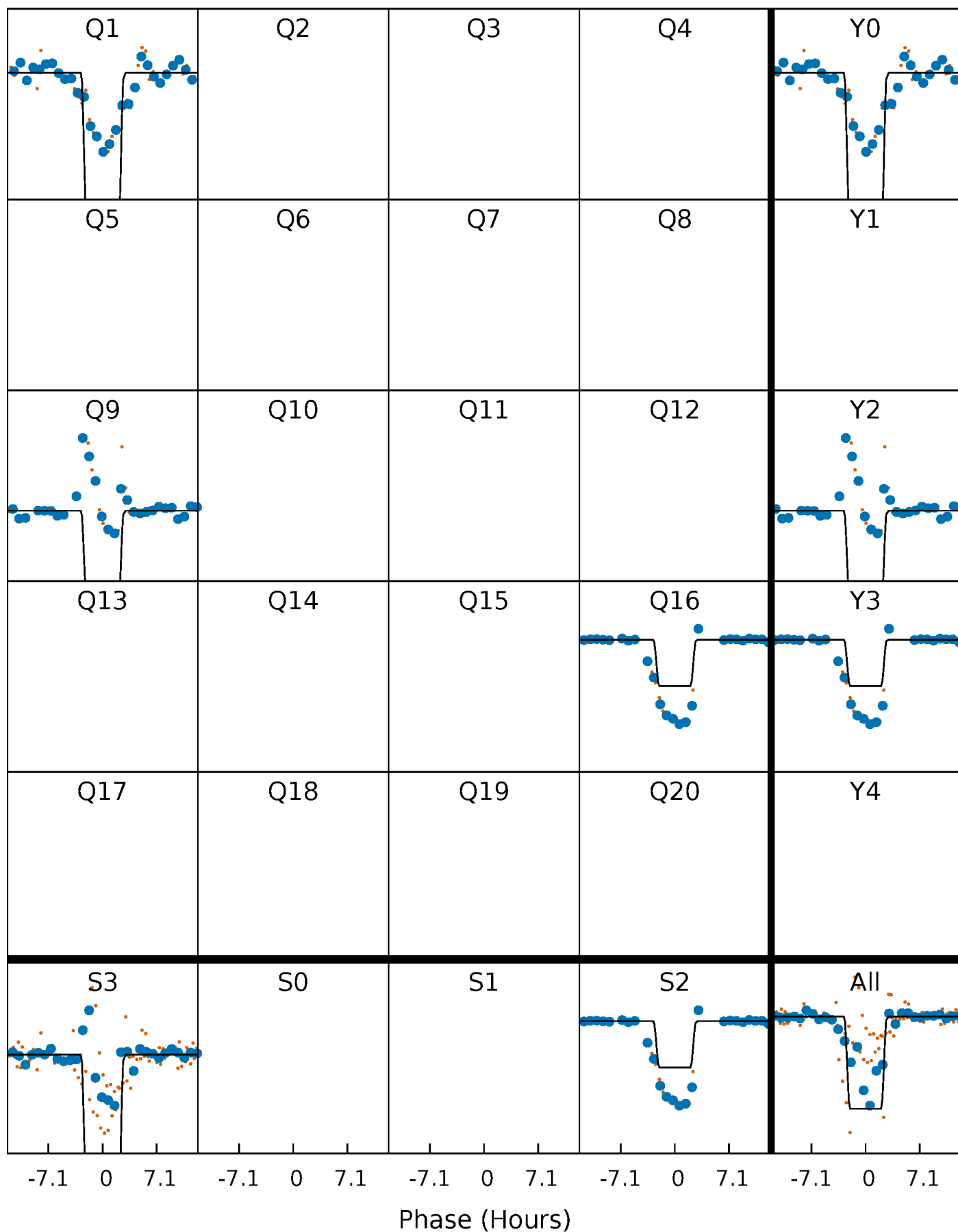
DV Quarter-Phased Transit Curves

TCE 011862915-02 P=687.352839 Days $T_0=138.304905$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

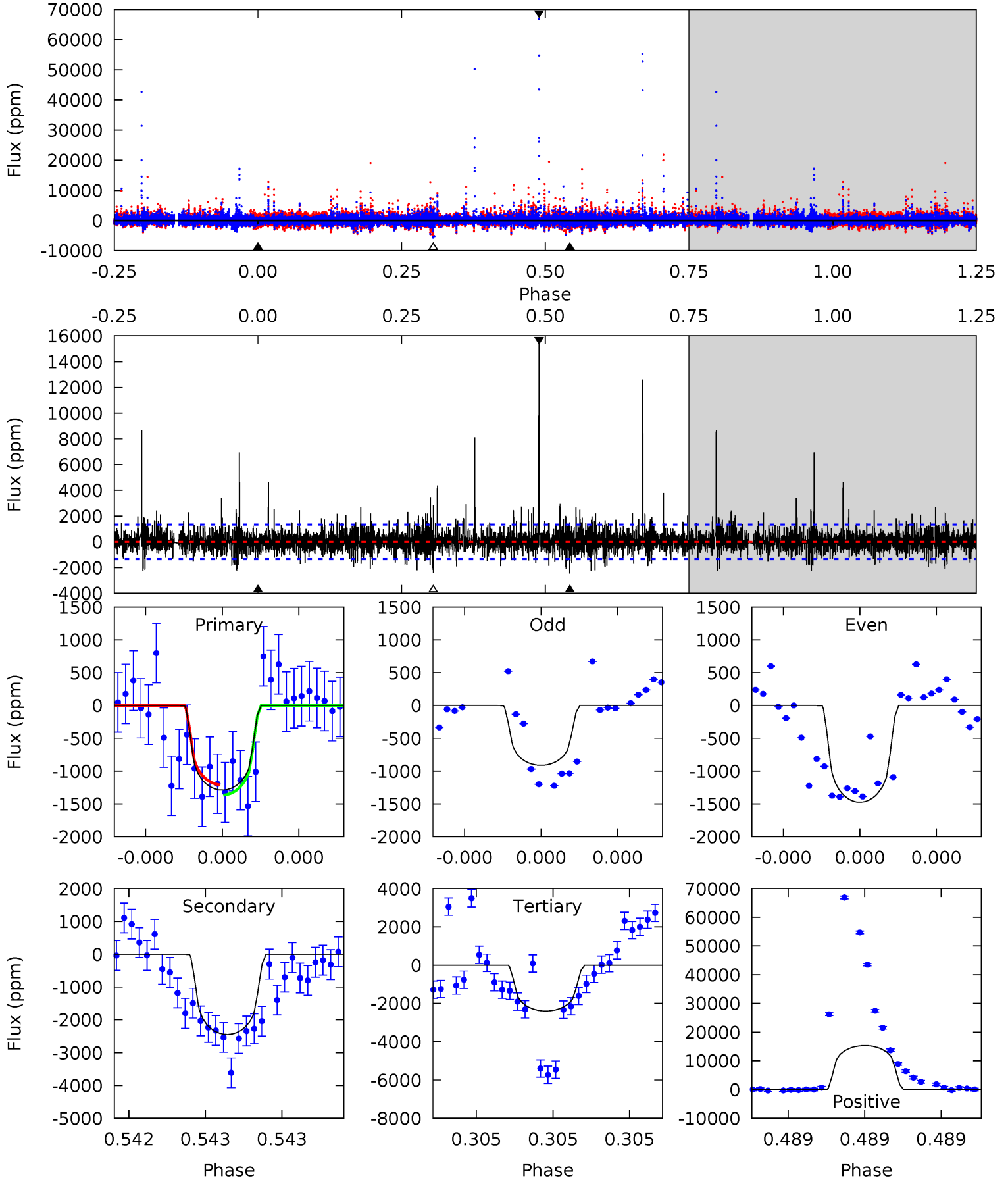
TCE 011862915-02 P=687.350902 Days $T_0=138.305985$ (BKJD)



DV Model-Shift Uniqueness Test

011862915-02, P = 687.352839 Days, E = 138.304905 Days

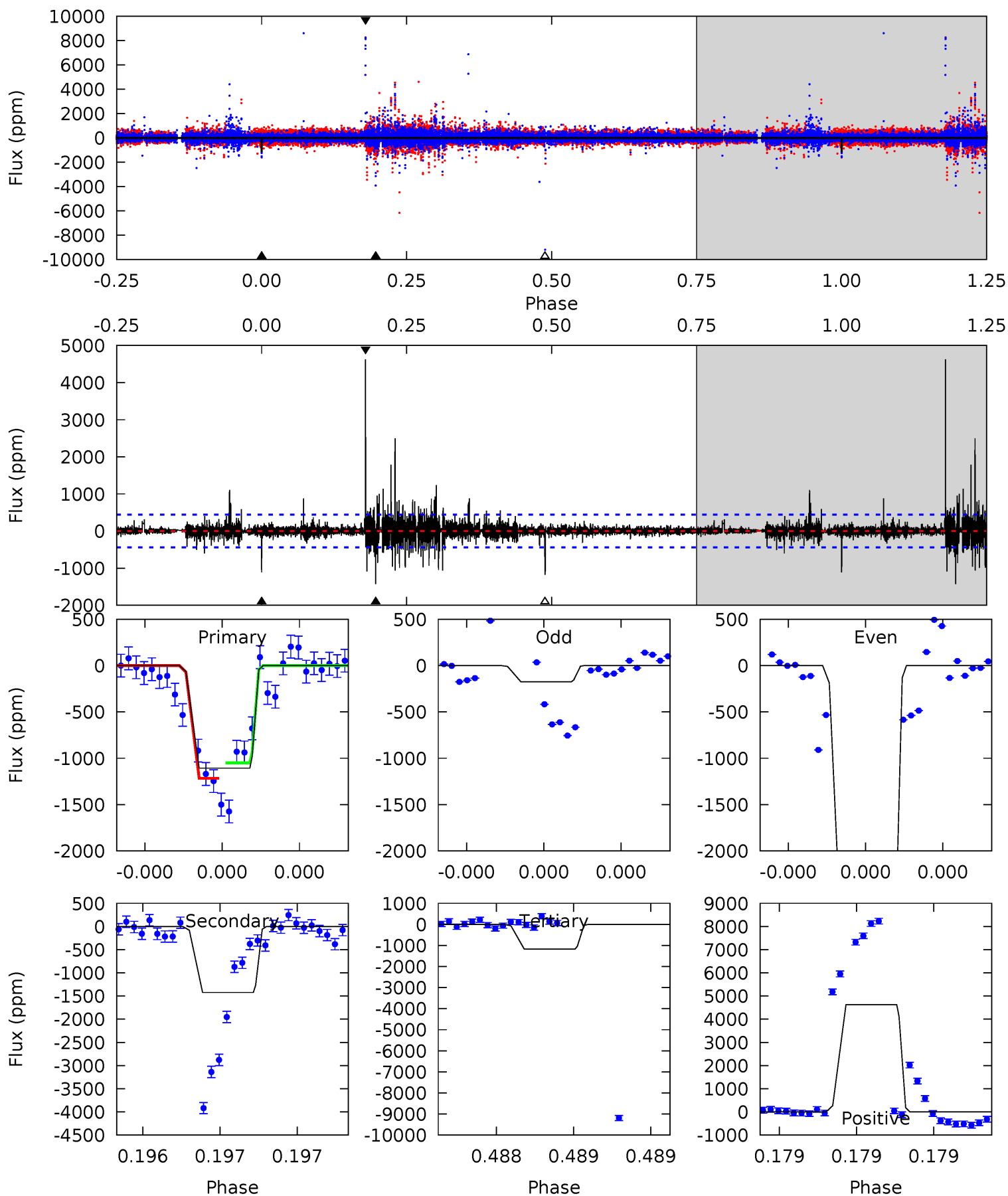
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
5.47	10.4	10.2	65.1	5.68	3.64	3.03	-4.69	-59.6	0.21	-54.7	0.44	1.41	0.86	0.34



Alt Model-Shift Uniqueness Test

011862915-02, P = 687.350902 Days, E = 138.305985 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.2	18.2	15.0	59.2	5.64	3.58	1.81	-0.87	-45.1	3.19	-41.0	20.6	1.81	0.76	0



Stellar Parameters For KIC 011862915

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5055^{+139}_{-114}	$3.580^{+1.028}_{-0.343}$	$-0.440^{+0.300}_{-0.250}$	$2.464^{+1.459}_{-1.783}$	$0.842^{+0.259}_{-0.173}$	$0.079^{+3.473}_{-0.050}$
	+3%/-2%	+29%/-10%	+68%/-57%	+59%/-72%	+31%/-21%	+4381%/-63%
Source	PHO1	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 011862915-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-2444 ± 236	$7.94^{+8.27}_{-5.12}$	399^{+69}_{-83}	5955^{+4096}_{-1211}	$45278^{+316122}_{-34060}$
Alt.	-1424 ± 78	$13.55^{+9.59}_{-7.08}$	396^{+66}_{-83}	4310^{+999}_{-525}	9087^{+30134}_{-6011}

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

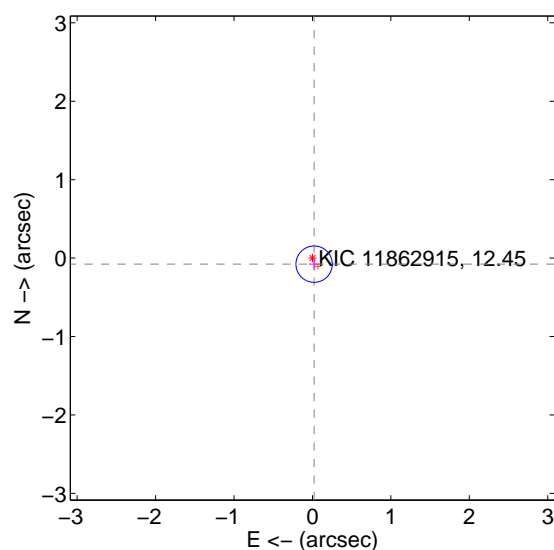
Supplemental centroid analysis for 011862915-02. Kepler magnitude: 12.45. Transit SNR 4.77

There are 2 quarters with good PRF difference image offsets

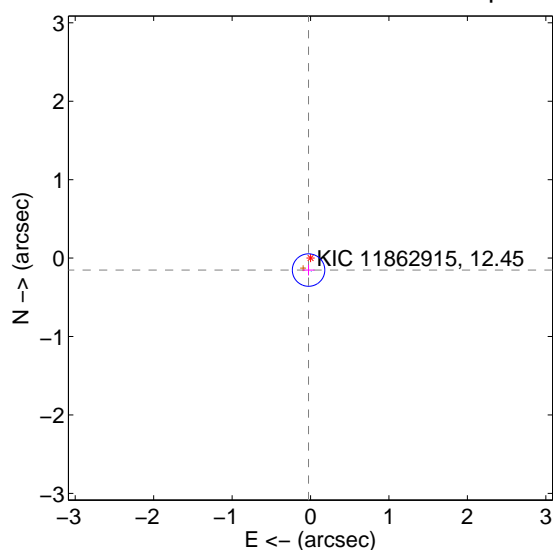
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.080 ± 0.077	1.04	-0.021 ± 0.067	-0.077 ± 0.078
PRF-fit source offset from KIC position	0.155 ± 0.069	2.24	0.025 ± 0.075	-0.152 ± 0.069
photometric centroid source offset	0.80 ± 0.59	1.36	0.17 ± 0.30	0.78 ± 0.60

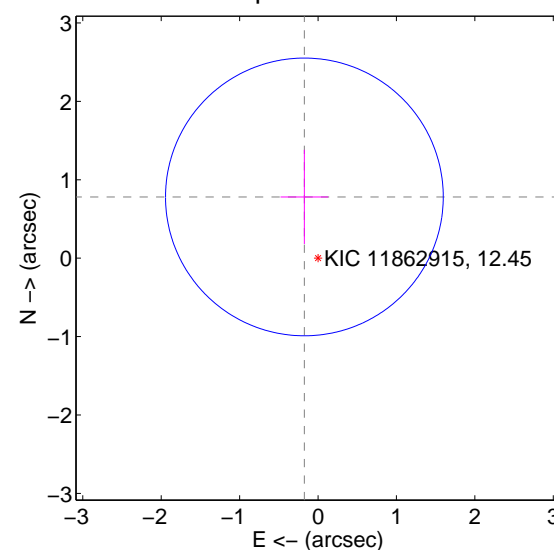
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

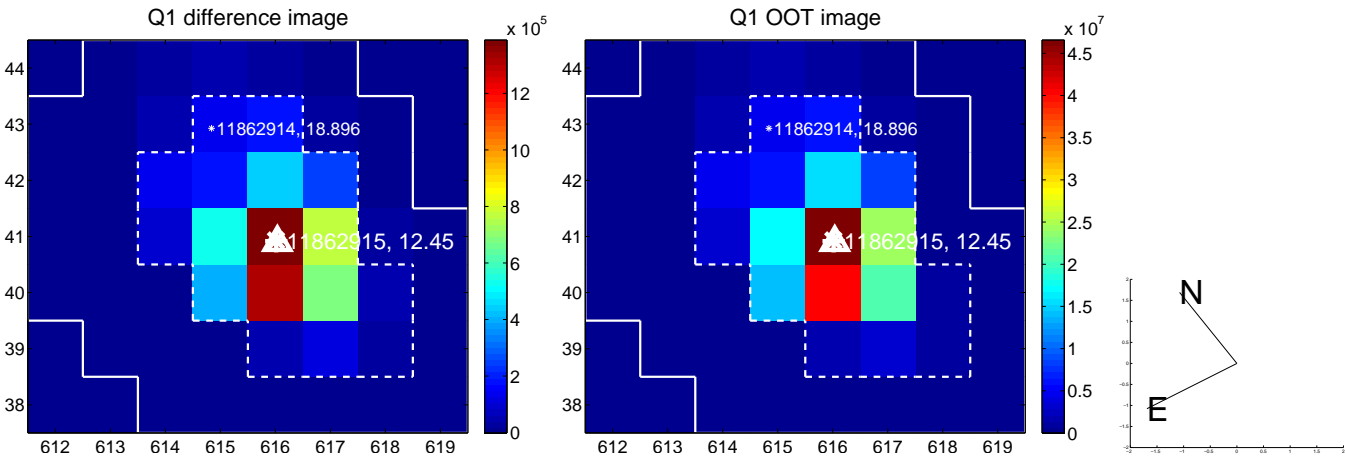


offset from photometric centroids



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.

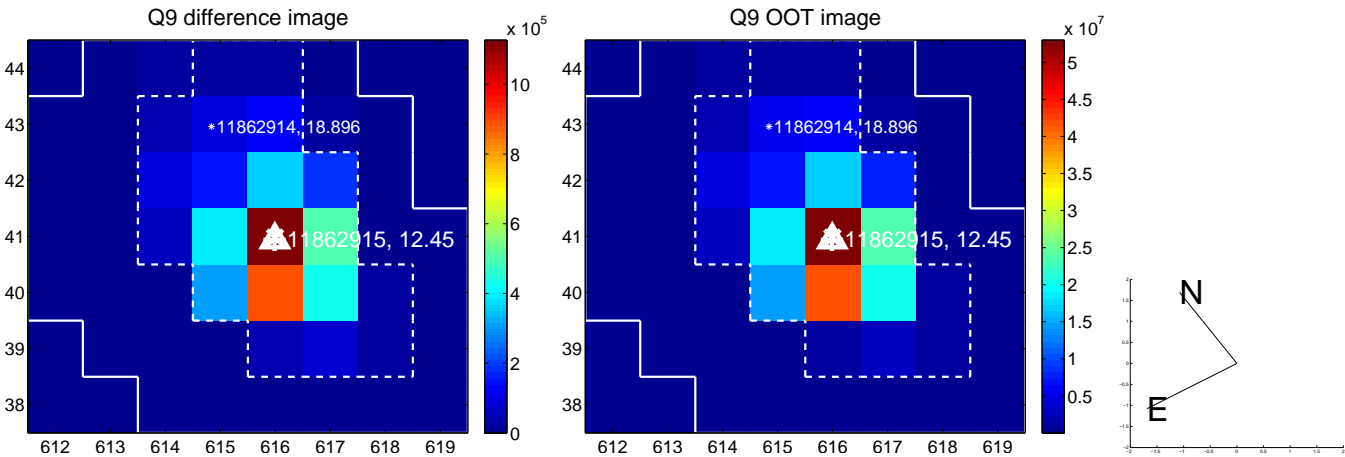
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



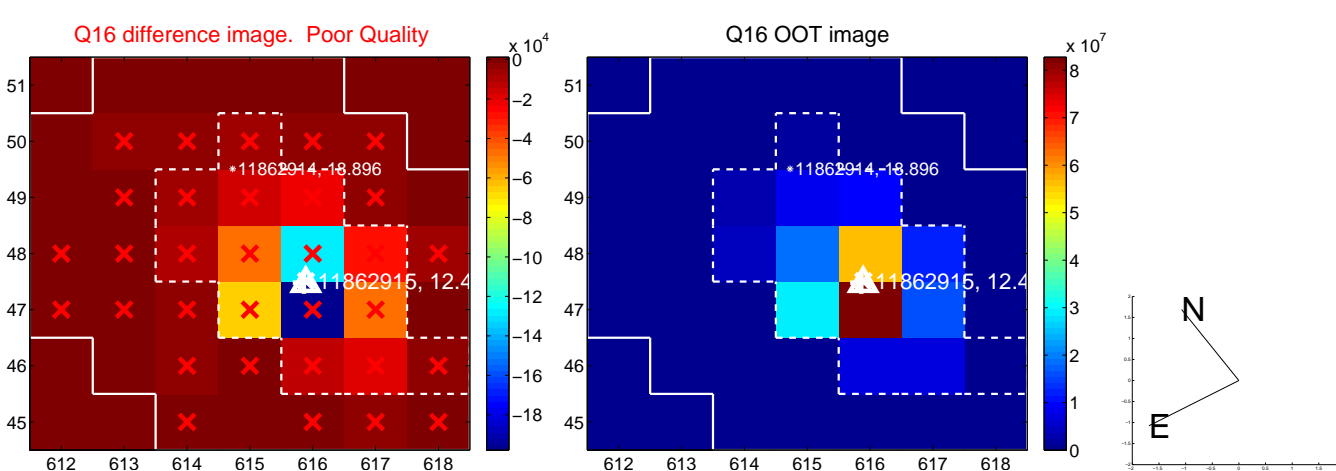
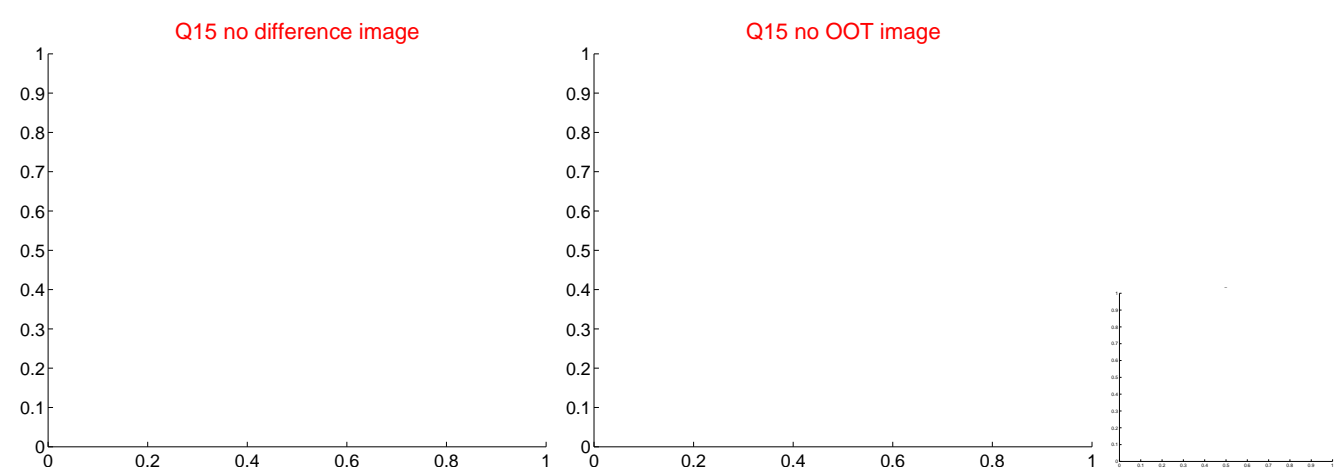
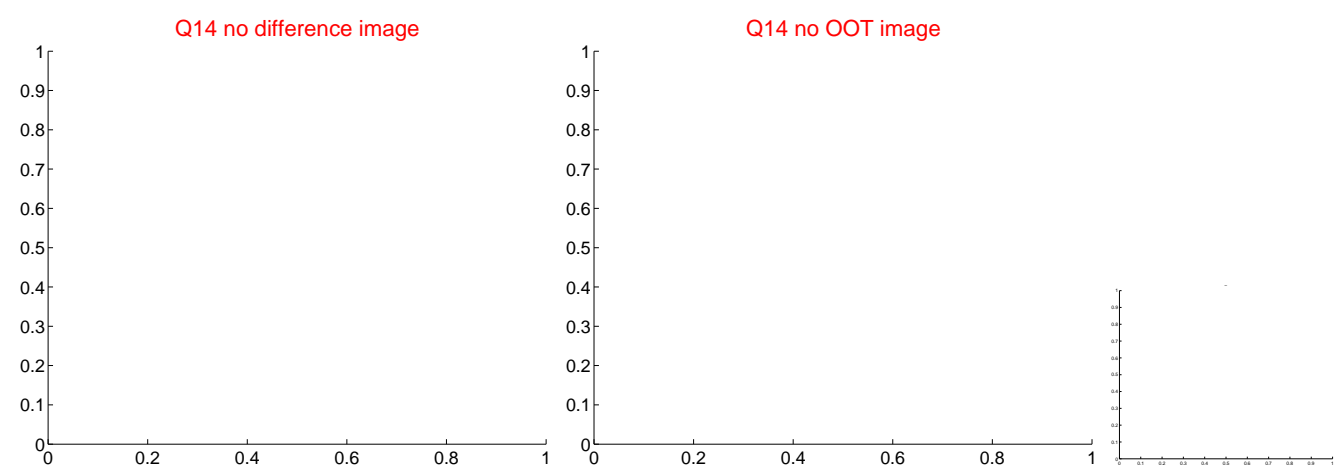
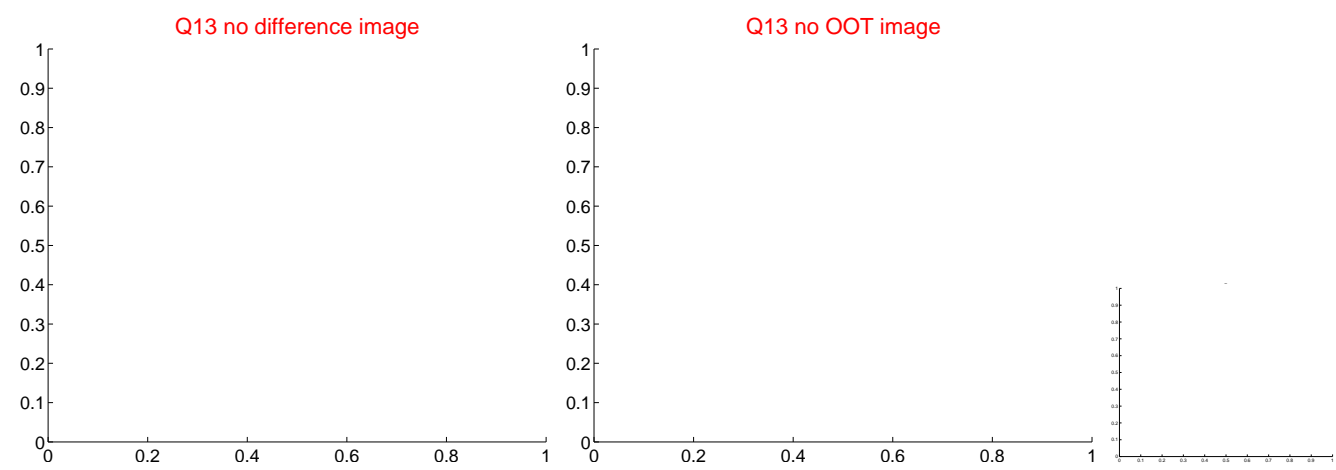
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



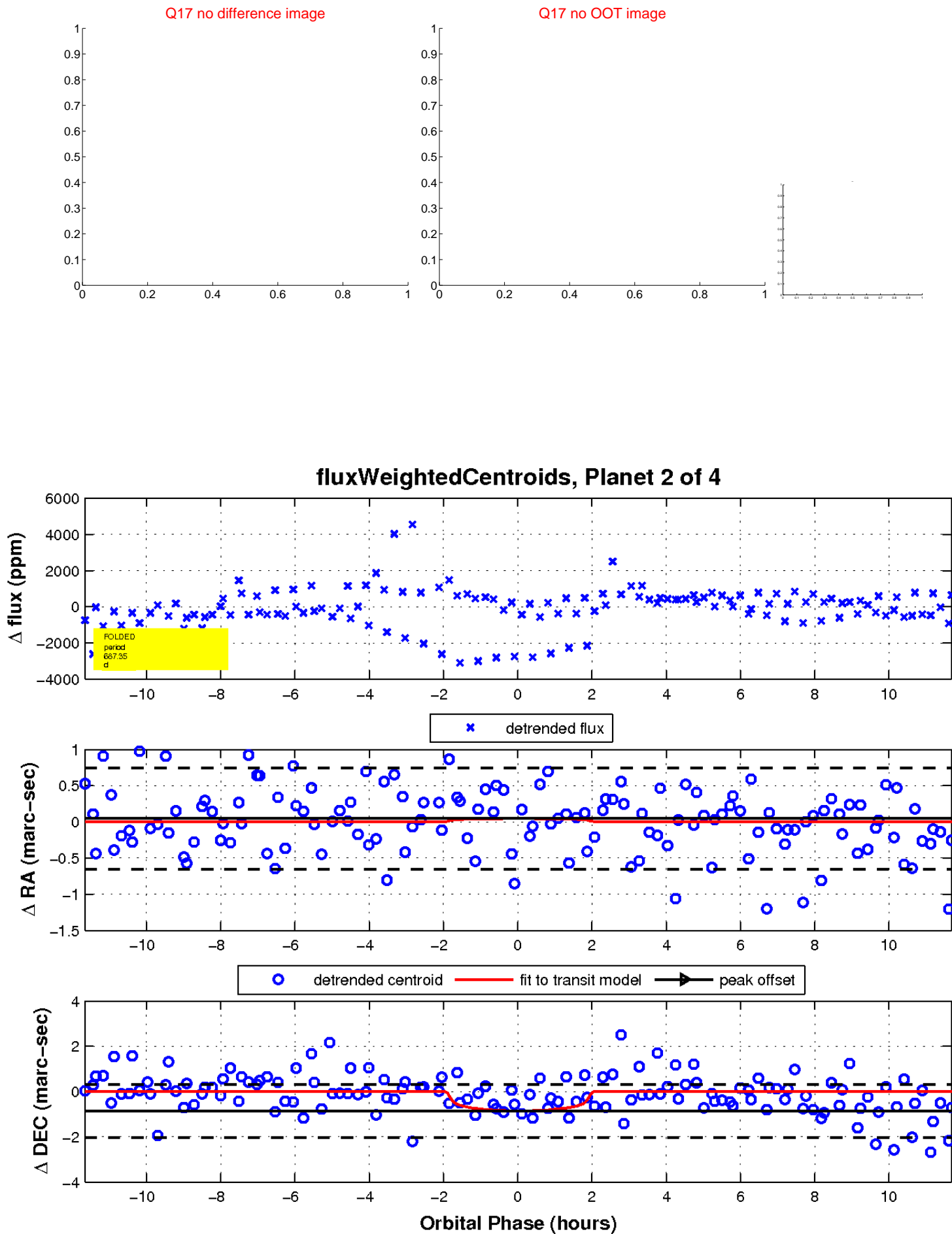
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



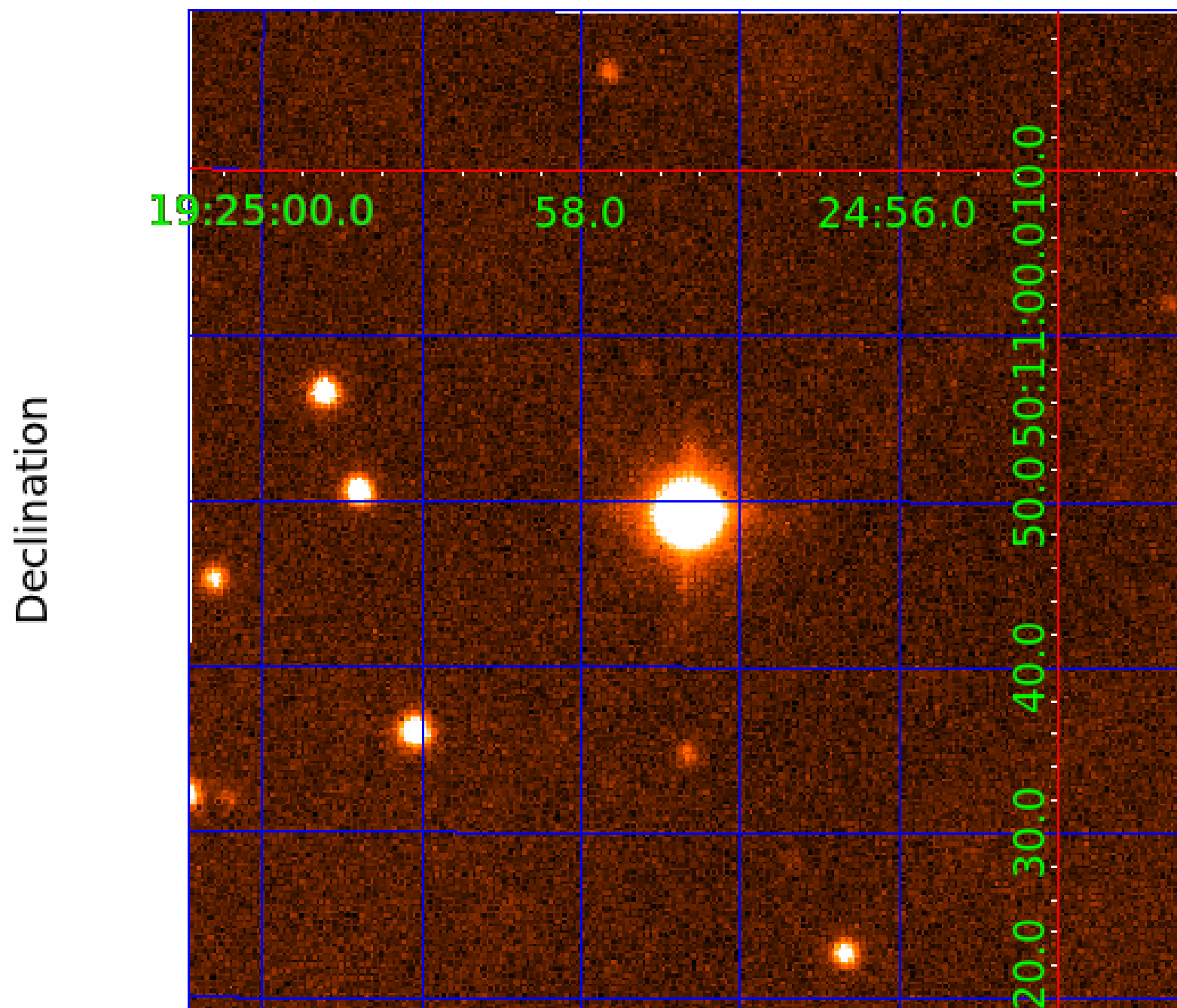
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011862915

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})
011862915-01	OBS	No	406.259047	279.201862	2525.6	18.150	24.3	5.6	2.46	5055	14.00	3.46
011862915-02	OBS	No	687.352839	138.304905	1175.7	3.942	14.8	4.8	2.46	5055	8.63	1.71
011862915-03	OBS	No	539.404203	470.611508	3232.2	5.589	21.7	8.0	2.46	5055	13.66	2.37
011862915-04	OBS	No	215.556723	144.038280	346.8	3.000	14.3	-1.0	2.46	5055	4.48	8.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011862915-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011862915-02	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—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011862915-03	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—CENT_FEW_DIFFS
011862915-04	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS

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

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

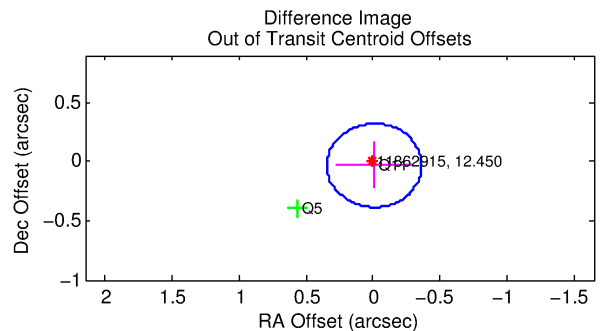
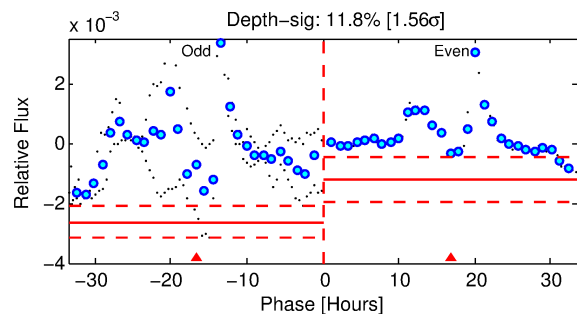
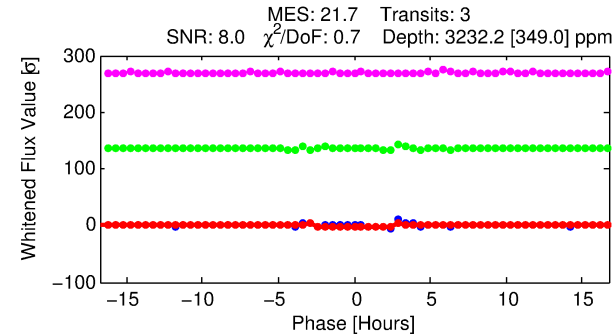
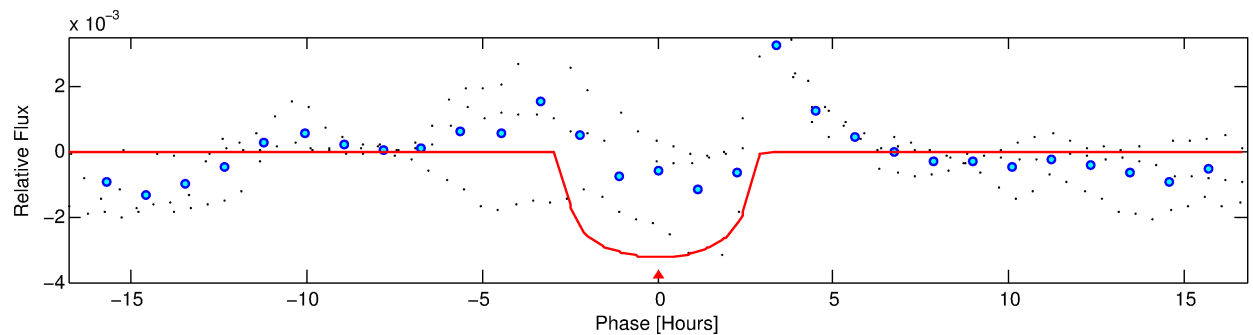
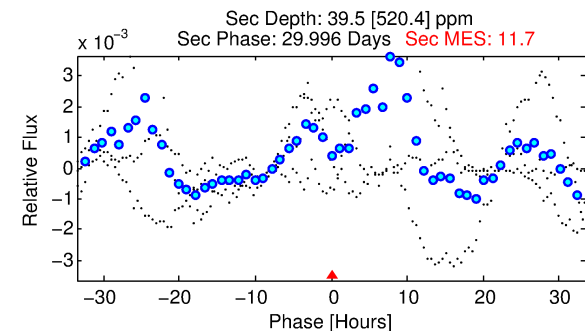
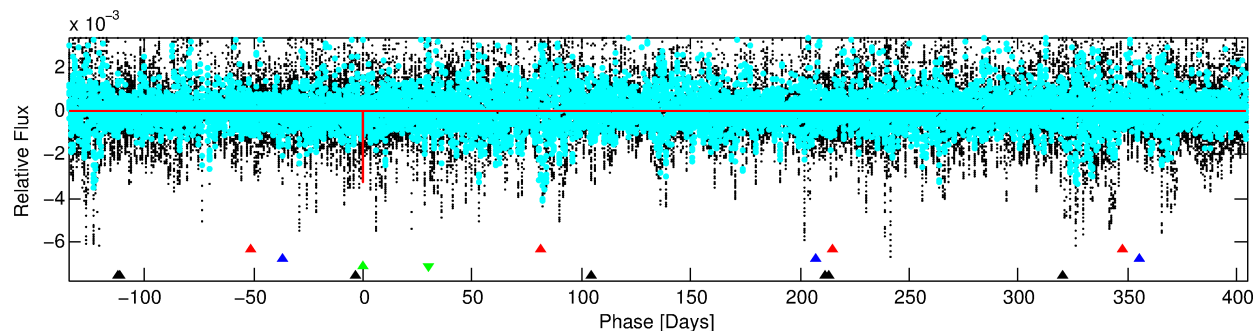
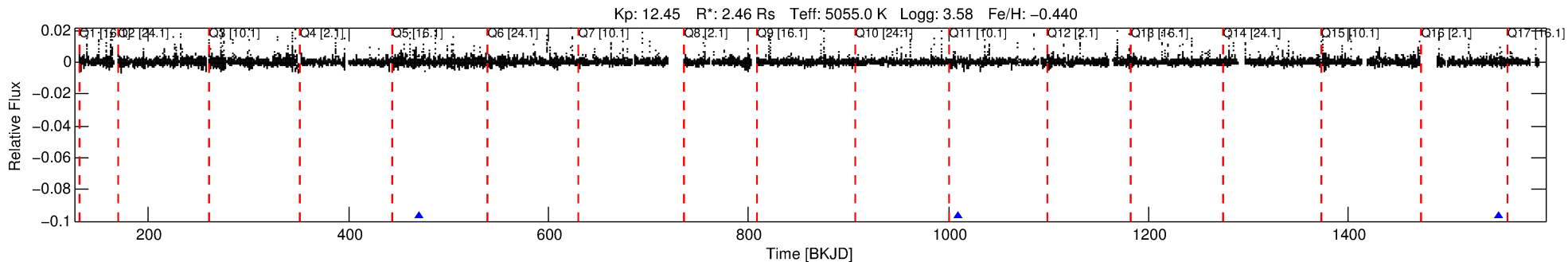
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011862915-03

No Significant Match Found

DV One-Page Summary

KIC: 11862915 Candidate: 3 of 4 Period: 539.404 d



DV Fit Results:

Period = 539.40420 [0.00161] d
Epoch = 470.6115 [0.0023] BKJD
Rp/R* = 0.0508 [0.0110]
a/R* = 774.75 [522.01]
b = 0.01 [108.85]
Seff = 2.37 [3.92]
Teq = 316 [131] K
Rp = 13.66 [10.32] Re
a = 1.2248 [1.1327] AU
Ag = 174.52 [2320.61] [0.07 σ]
Teffp = 1778 [5863] K [0.25 σ]

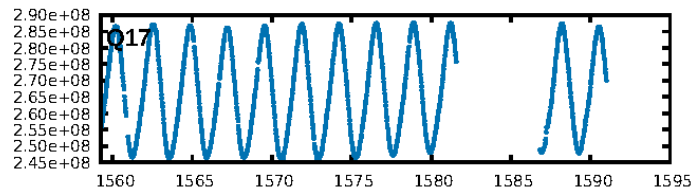
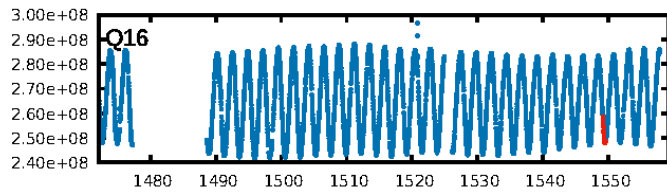
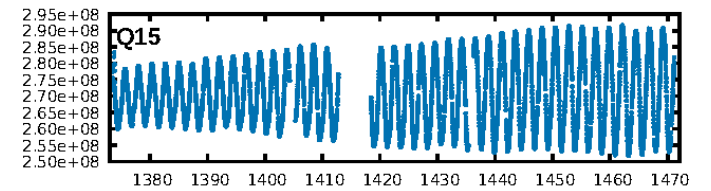
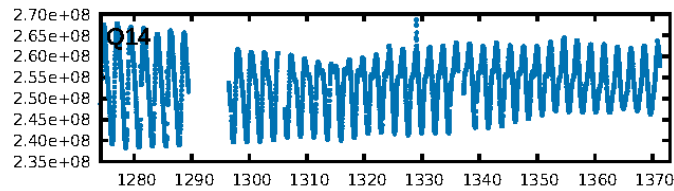
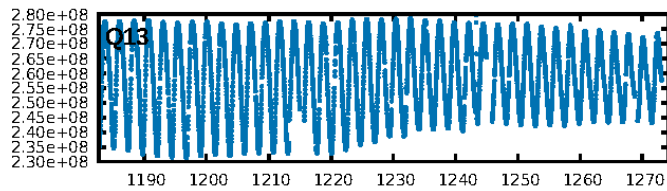
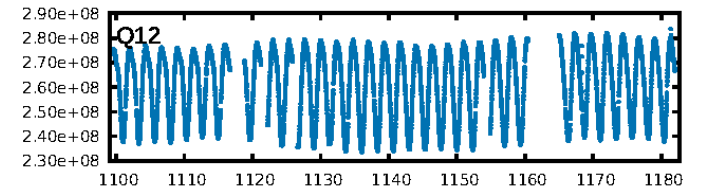
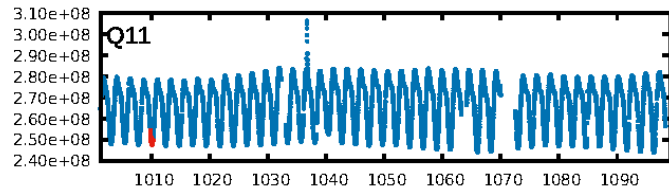
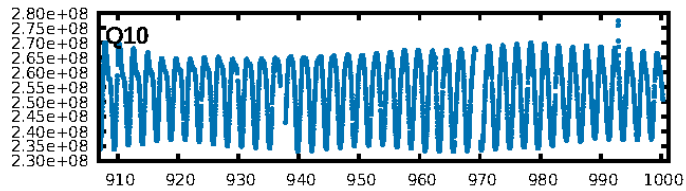
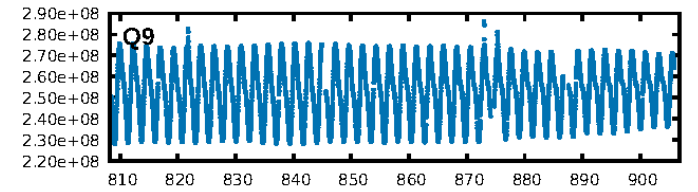
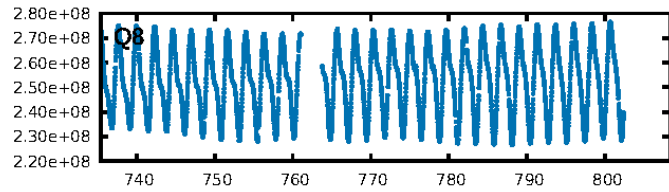
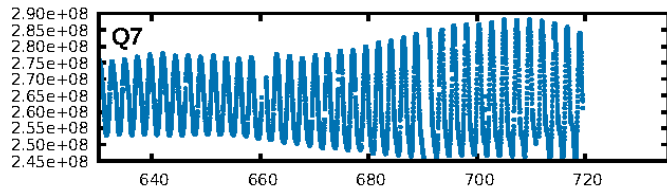
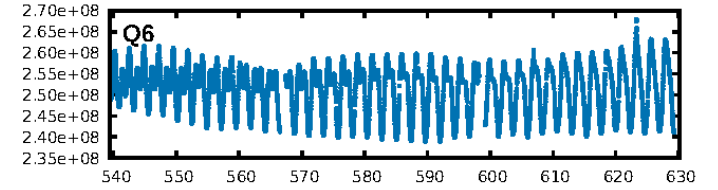
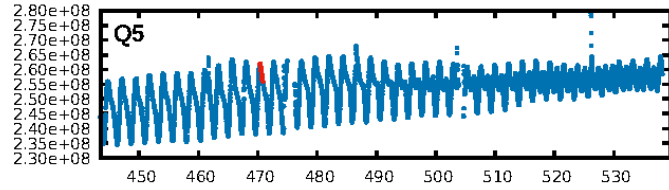
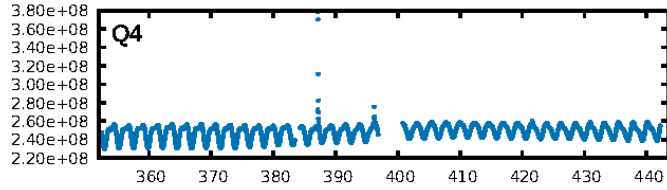
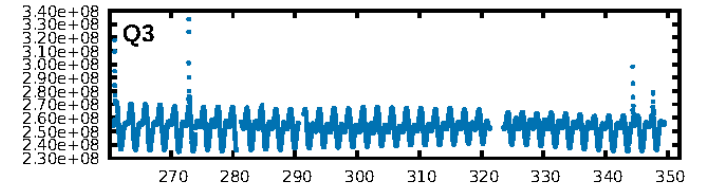
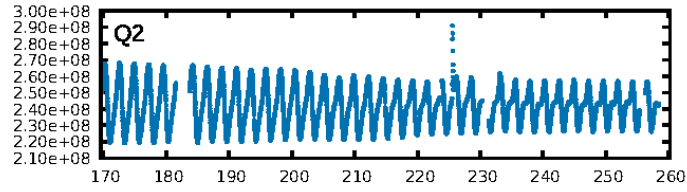
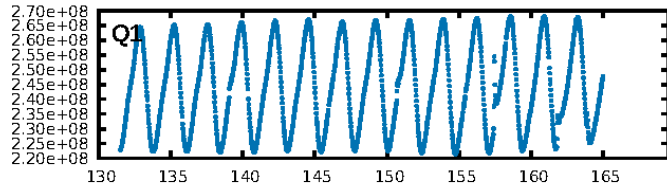
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [168.26 σ]
LongPeriod-sig: 100.0% [519.18 σ]
ModelChiSquare2-sig: 78.3%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 1.089
Centroid-sig: 44.7%
Centroid-so: 0.239 arcsec [2.36 σ]
OotOffset-rm: 0.033 arcsec [0.28 σ]
KicOffset-rm: 0.156 arcsec [2.08 σ]
OotOffset-st: 0.1/0/1 [2]
KicOffset-st: 0.1/0/1 [2]
DiffImageQuality-fgm: 0.50 [1/2]
DiffImageOverlap-fno: 1.00 [2/2]

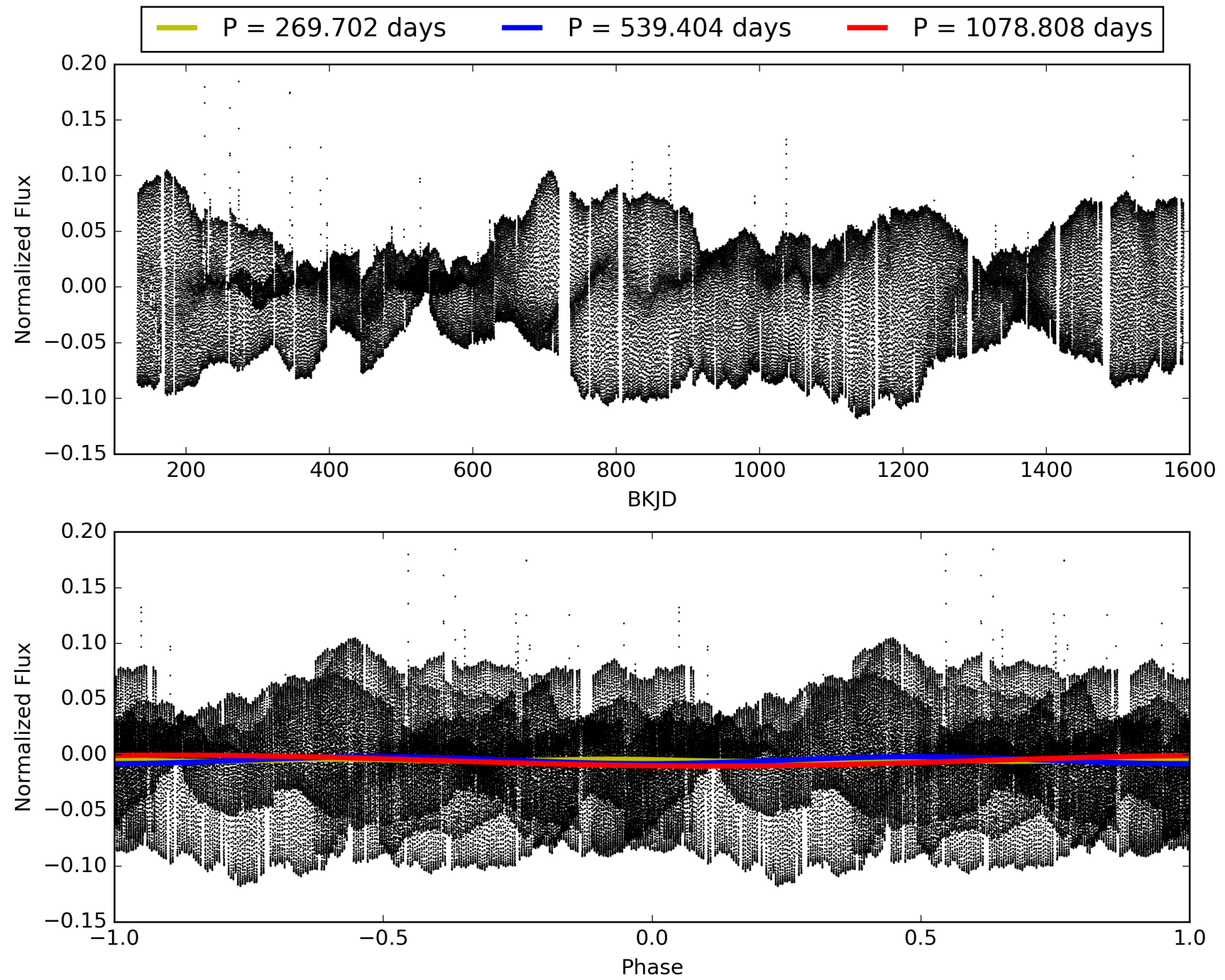
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 30-Jan-2016 05:50:49 Z

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

TCE 011862915-03, PDC Light Curves

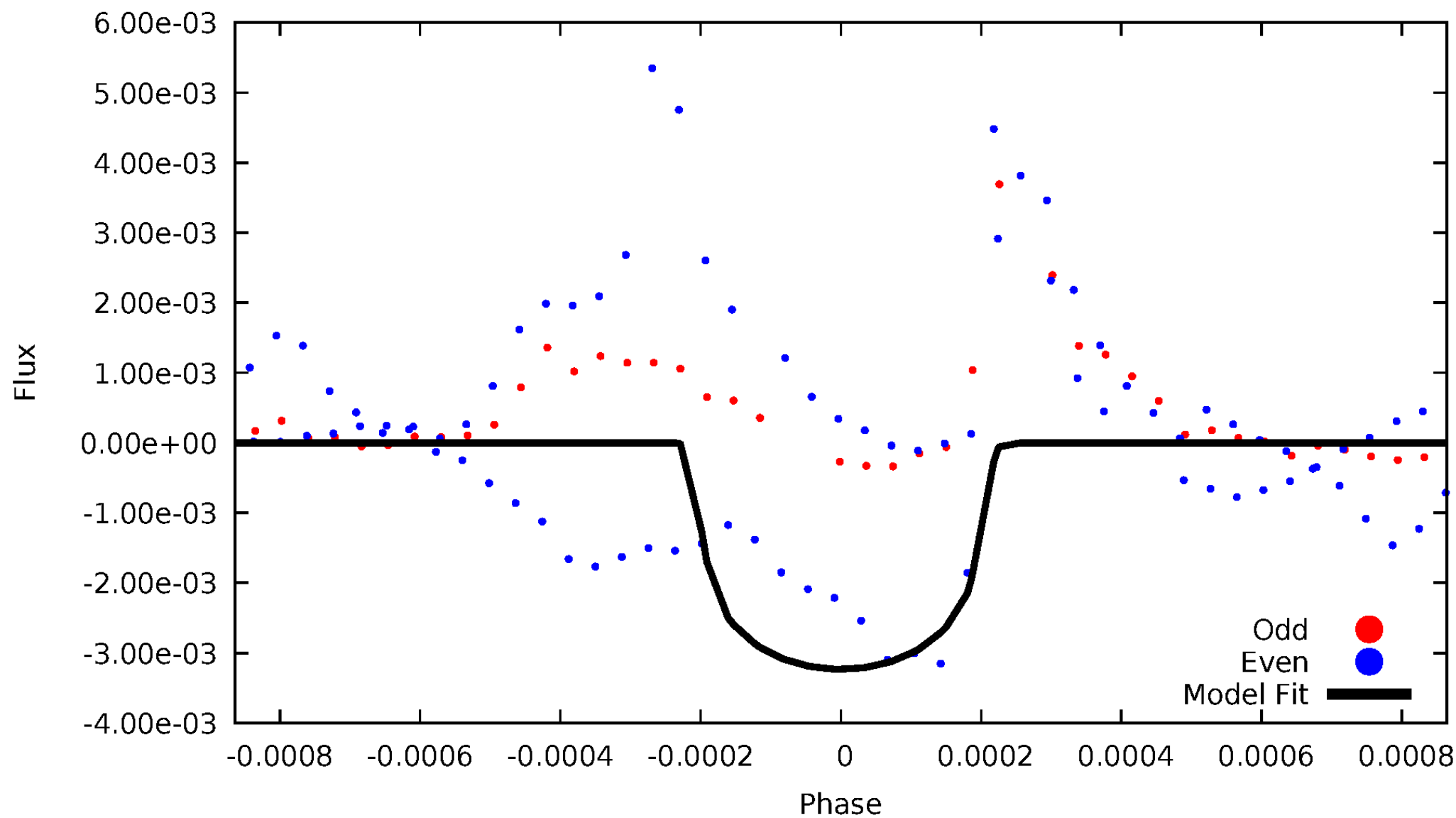


TCE 011862915-03



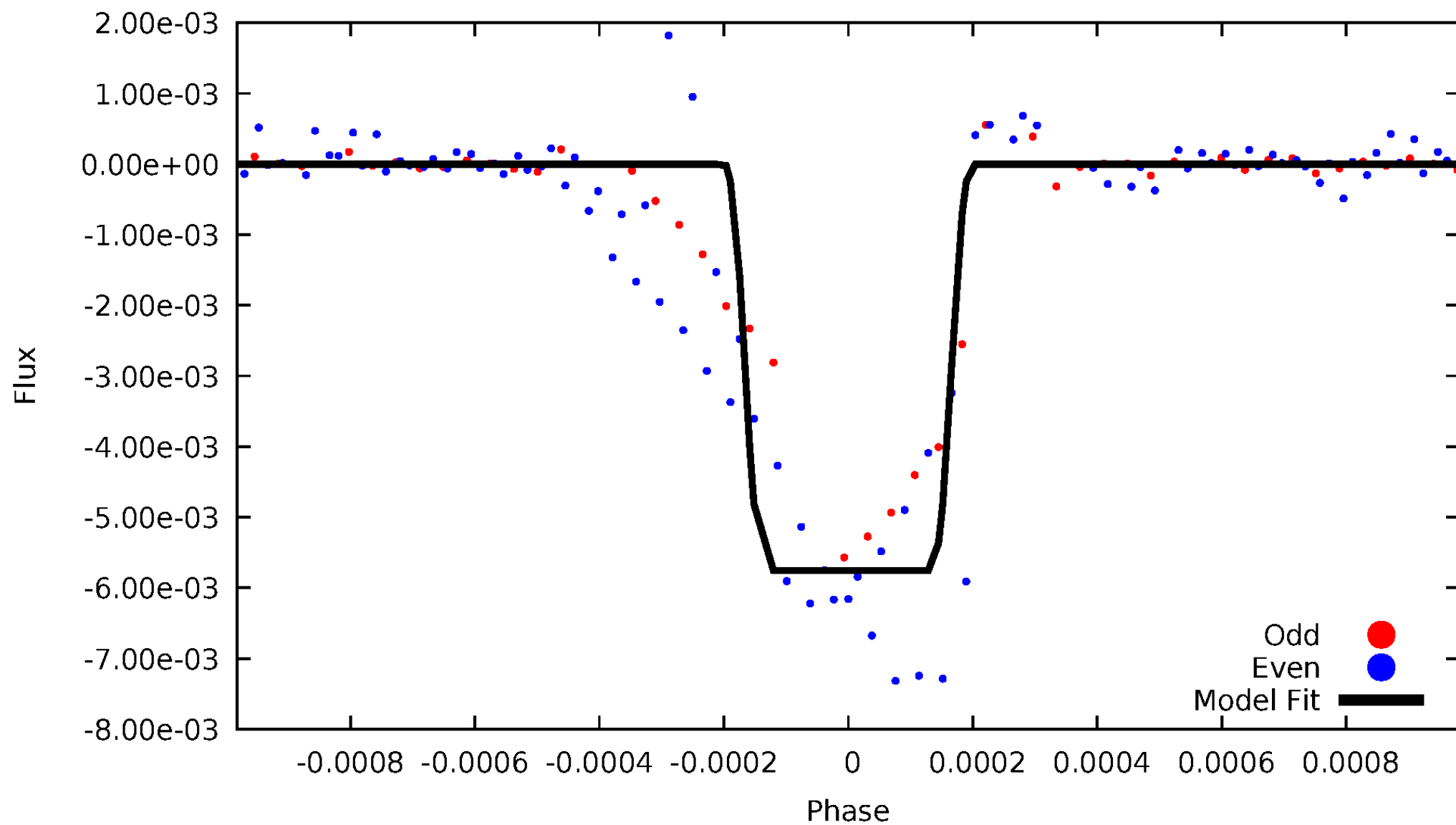
DV Odd/Even

TCE 011862915-03



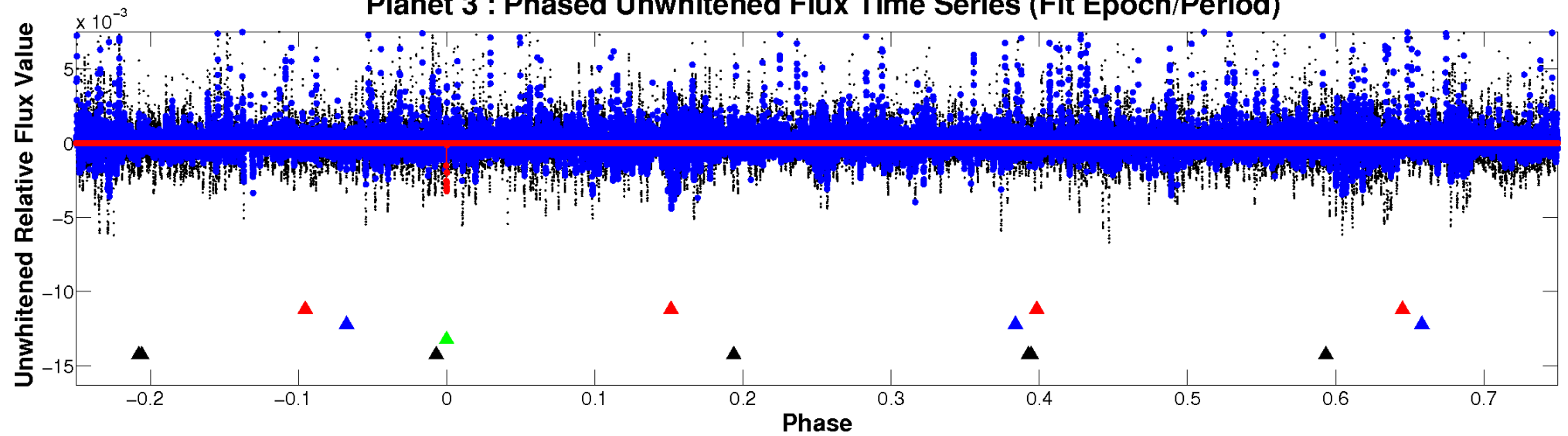
ALT Odd/Even

TCE 011862915-03

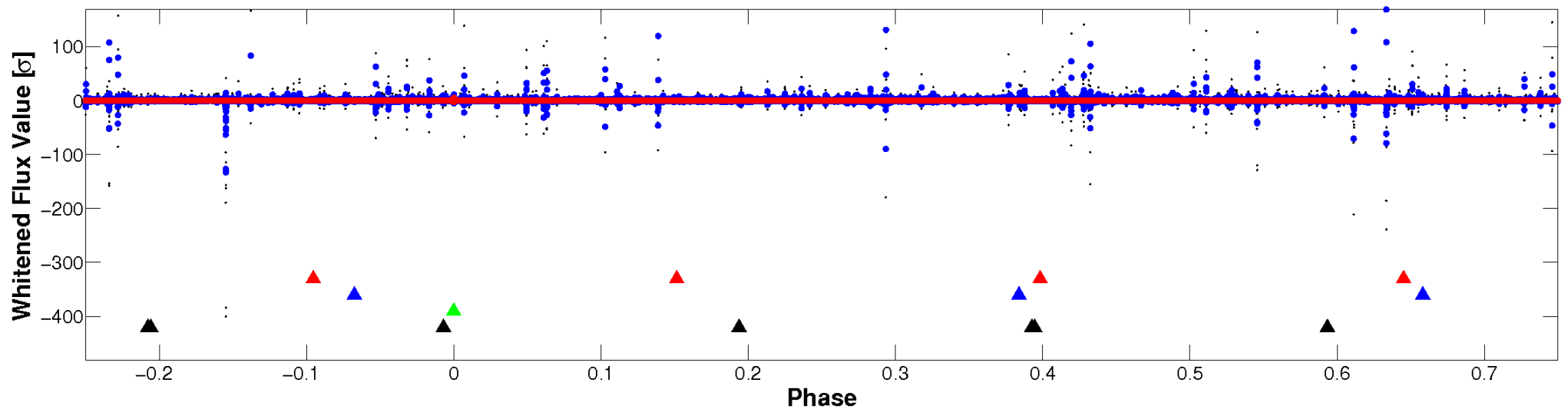


Non-Whitened Vs. Whitened Light Curve

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

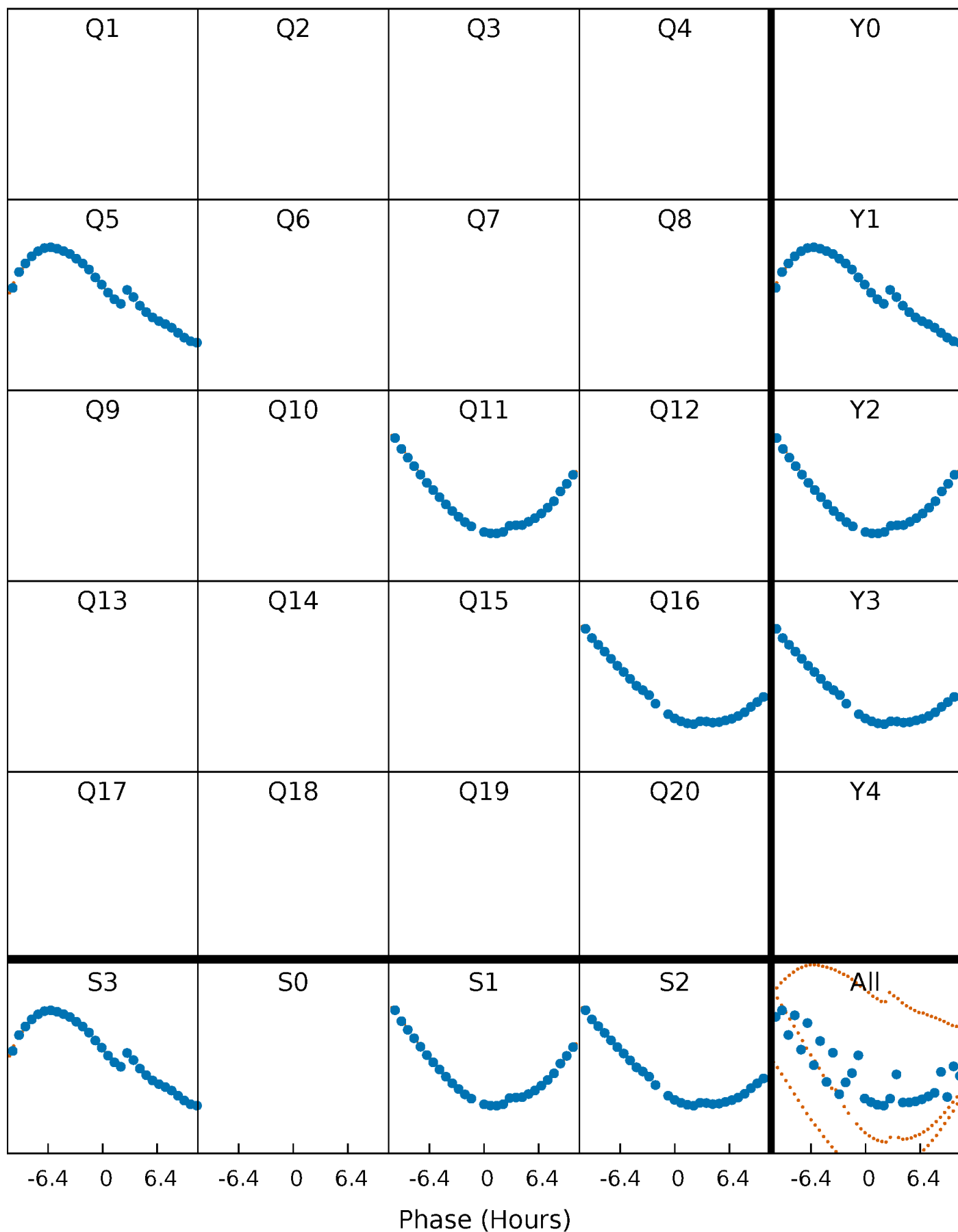


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



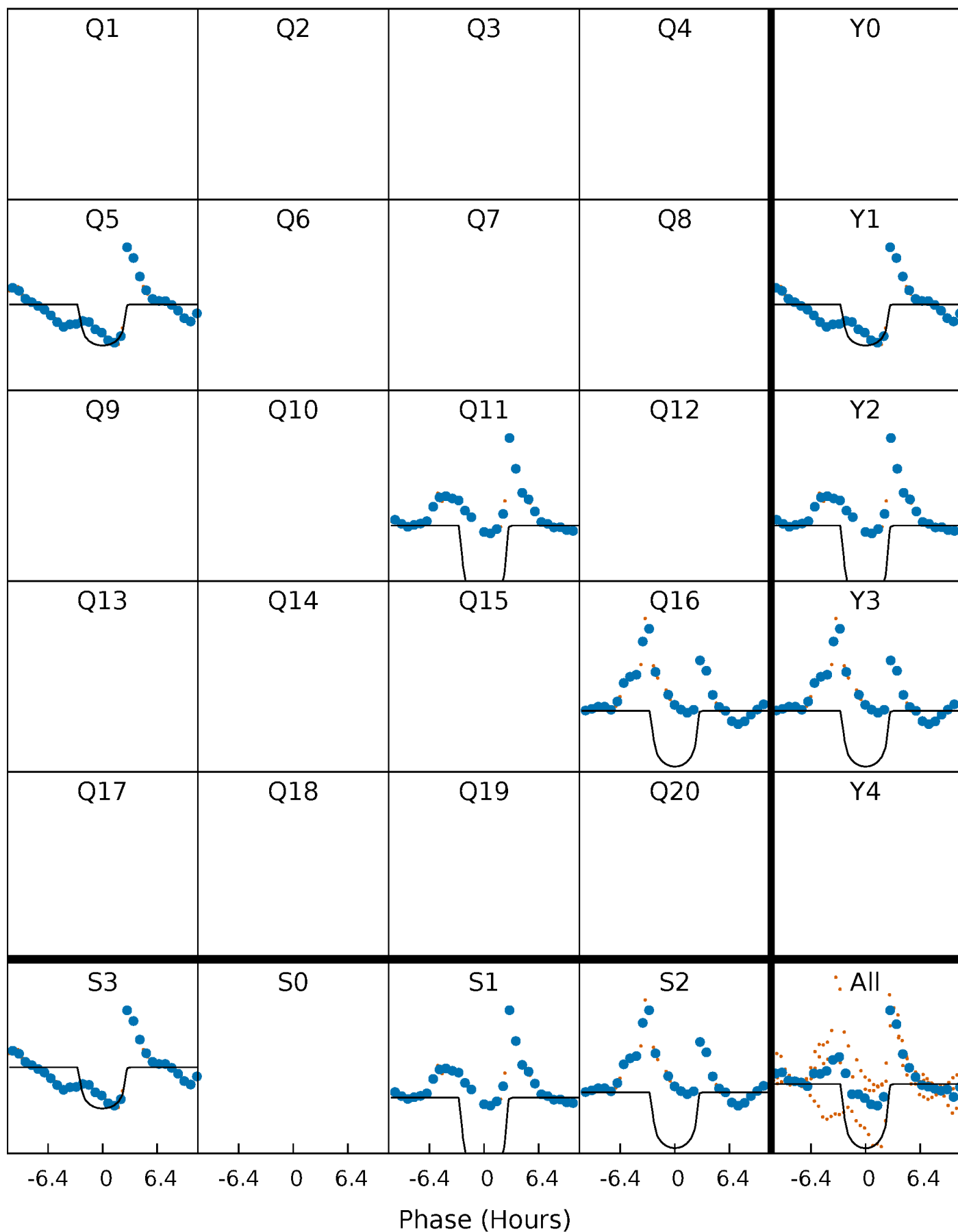
PDC Quarter-Phased Transit Curves

TCE 011862915-03 P=539.404203 Days $T_0=470.611508$ (BKJD)



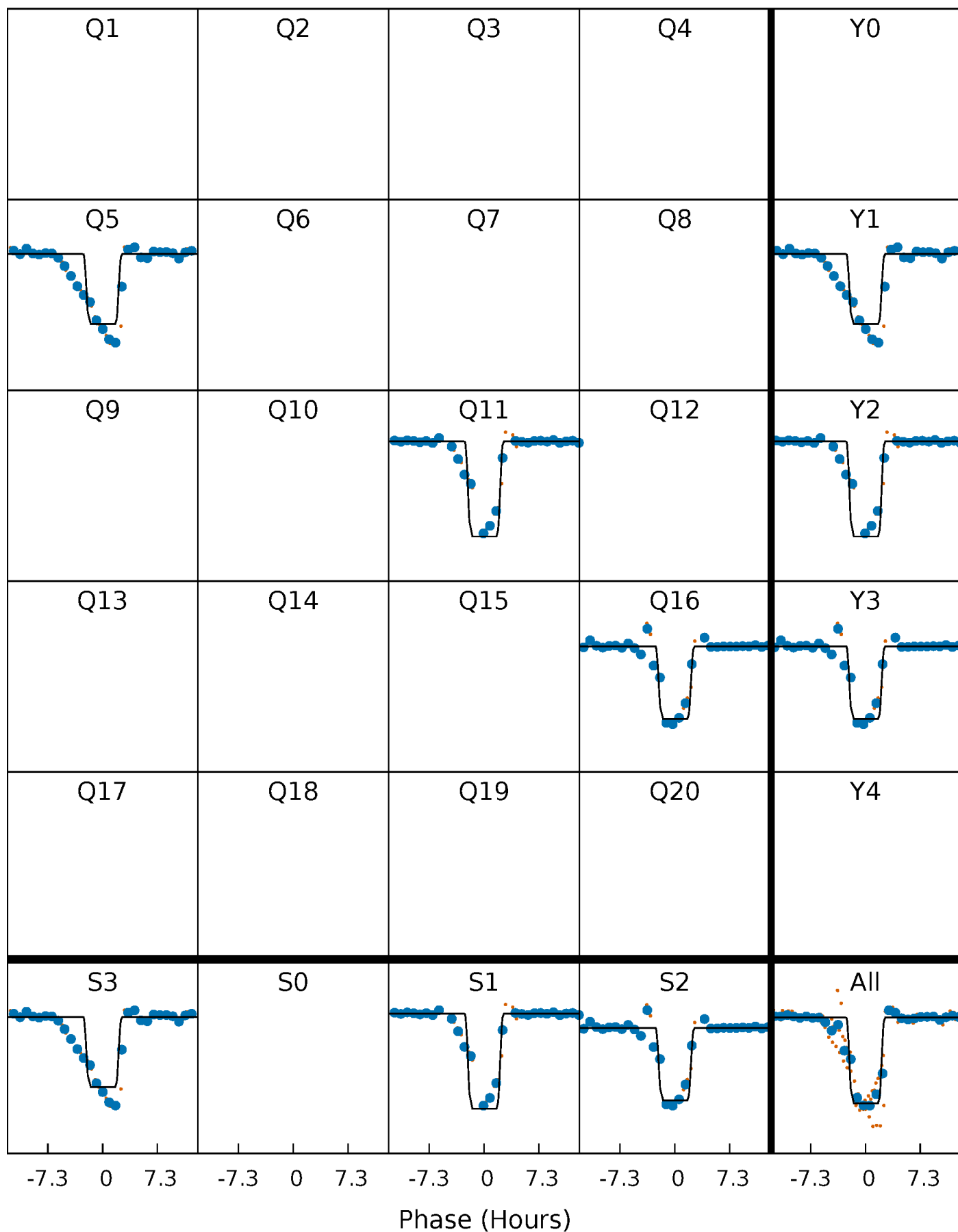
DV Quarter-Phased Transit Curves

TCE 011862915-03 P=539.404203 Days $T_0=470.611508$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

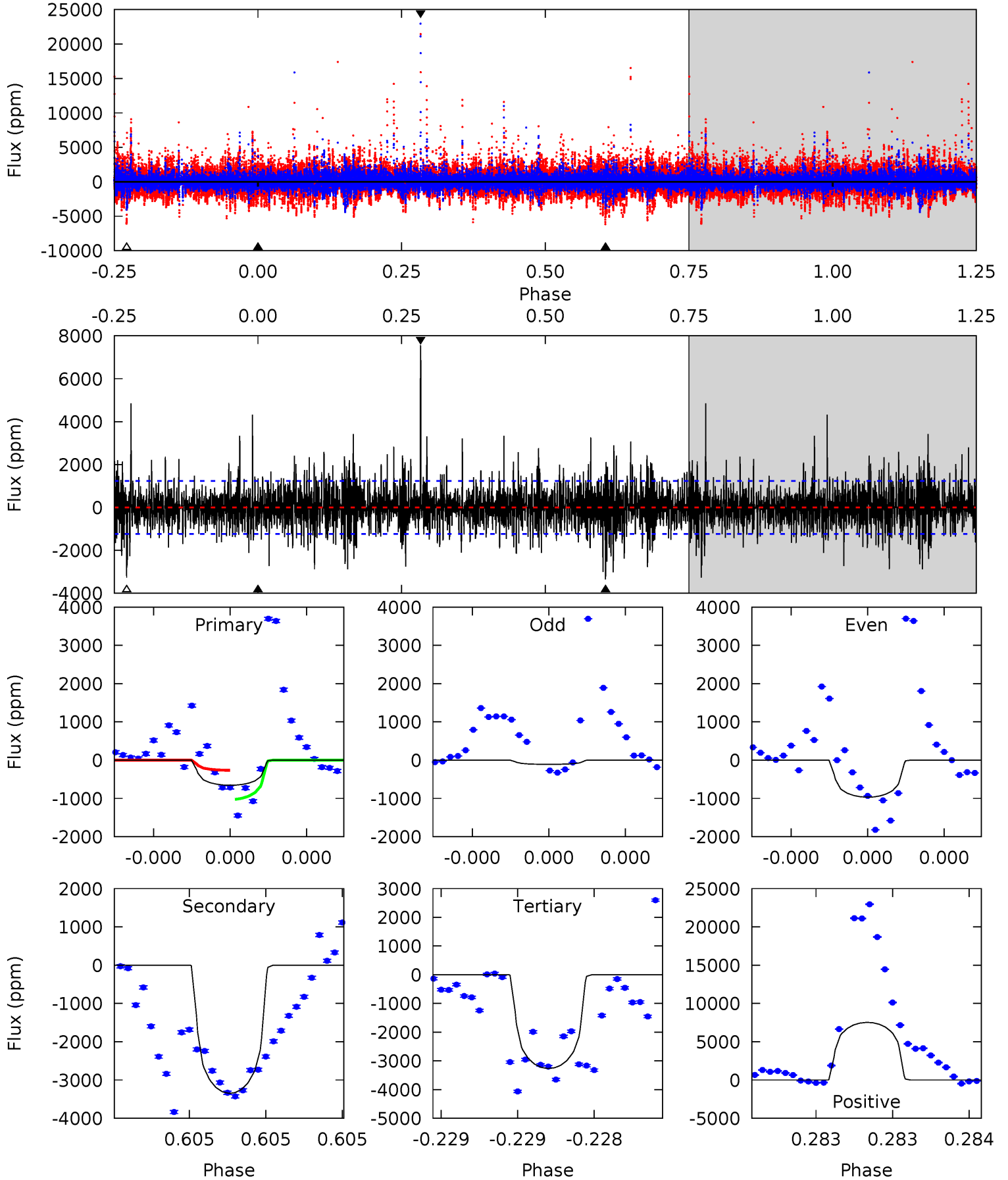
TCE 011862915-03 P=539.411928 Days $T_0=470.606563$ (BKJD)



DV Model-Shift Uniqueness Test

011862915-03, P = 539.404203 Days, E = 470.611508 Days

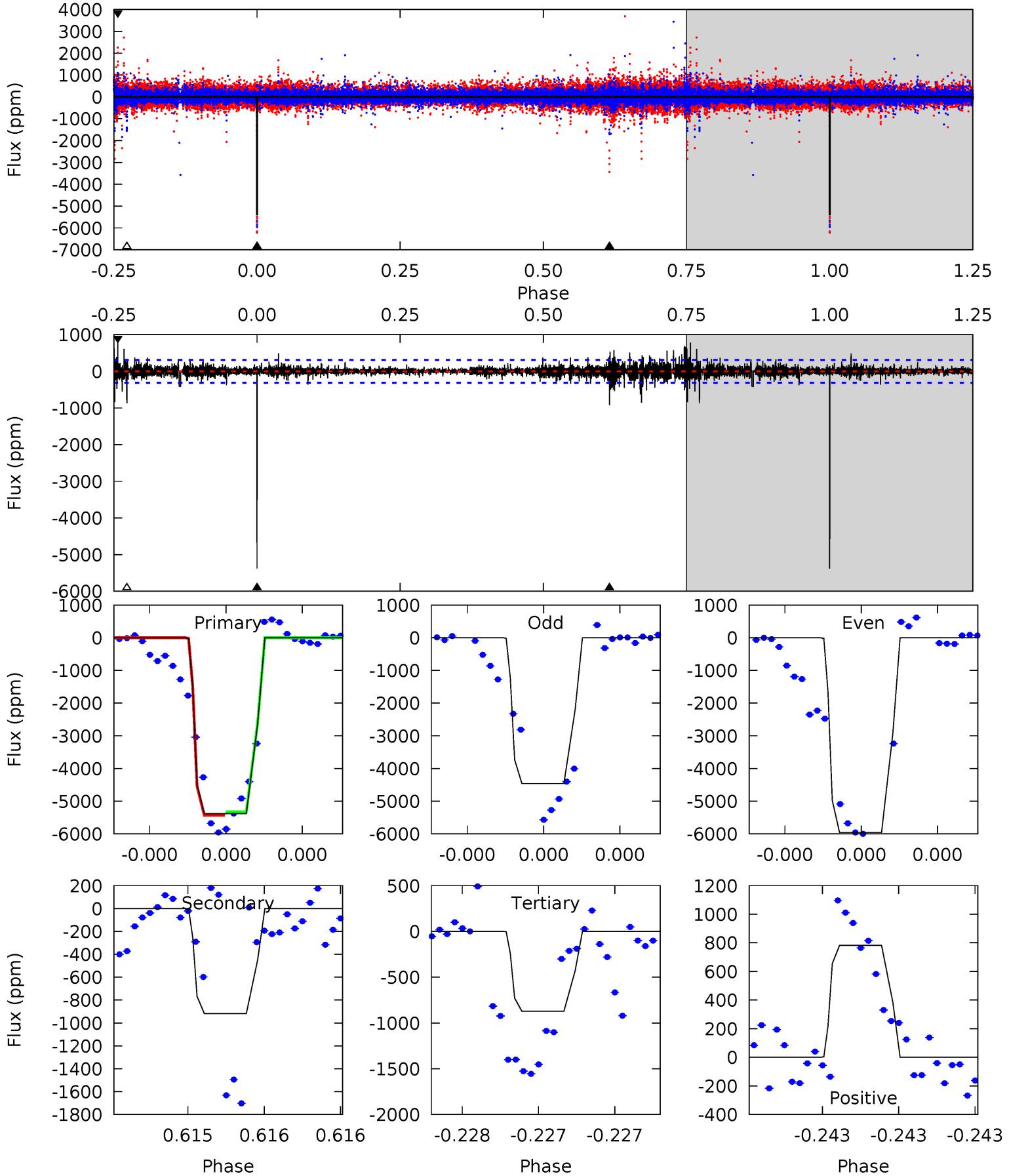
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
2.97	15.2	14.8	34.1	5.59	3.51	3.43	-11.8	-31.1	0.38	-18.9	1.21	-5.06	0.69	1.72



Alt Model-Shift Uniqueness Test

011862915-03, P = 539.411928 Days, E = 470.606563 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
96.7	16.5	15.7	14.1	5.61	3.54	1.60	81.0	82.6	0.83	2.44	11.1	0.97	0.13	0.96



Stellar Parameters For KIC 011862915

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5055^{+139}_{-114}	$3.580^{+1.028}_{-0.343}$	$-0.440^{+0.300}_{-0.250}$	$2.464^{+1.459}_{-1.783}$	$0.842^{+0.259}_{-0.173}$	$0.079^{+3.473}_{-0.050}$
	+3%/-2%	+29%/-10%	+68%/-57%	+59%/-72%	+31%/-21%	+4381%/-63%
Source	PHO1	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 011862915-03 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-3347 ± 221	$12.51^{+6.39}_{-5.10}$	432^{+68}_{-92}	5377^{+699}_{-502}	17855^{+35549}_{-9790}
Alt.	-918 ± 56	$19.31^{+8.55}_{-7.47}$	430^{+77}_{-91}	3604^{+214}_{-174}	2128^{+3219}_{-1126}

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

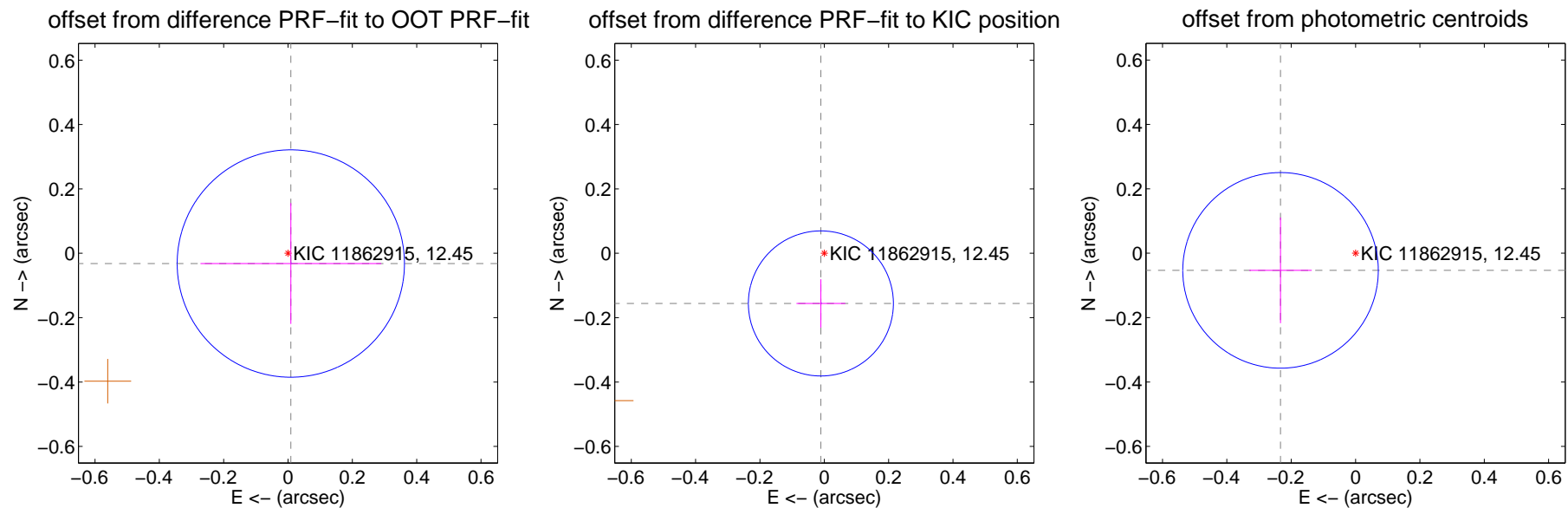
DV Centroid Data

Supplemental centroid analysis for 011862915-03. Kepler magnitude: 12.45. Transit SNR 7.97

There are 1 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.13 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.033 ± 0.118	0.28	-0.009 ± 0.281	-0.032 ± 0.188
PRF-fit source offset from KIC position	0.156 ± 0.075	2.08	0.011 ± 0.076	-0.156 ± 0.075
photometric centroid source offset	0.24 ± 0.10	2.36	0.23 ± 0.10	-0.05 ± 0.16

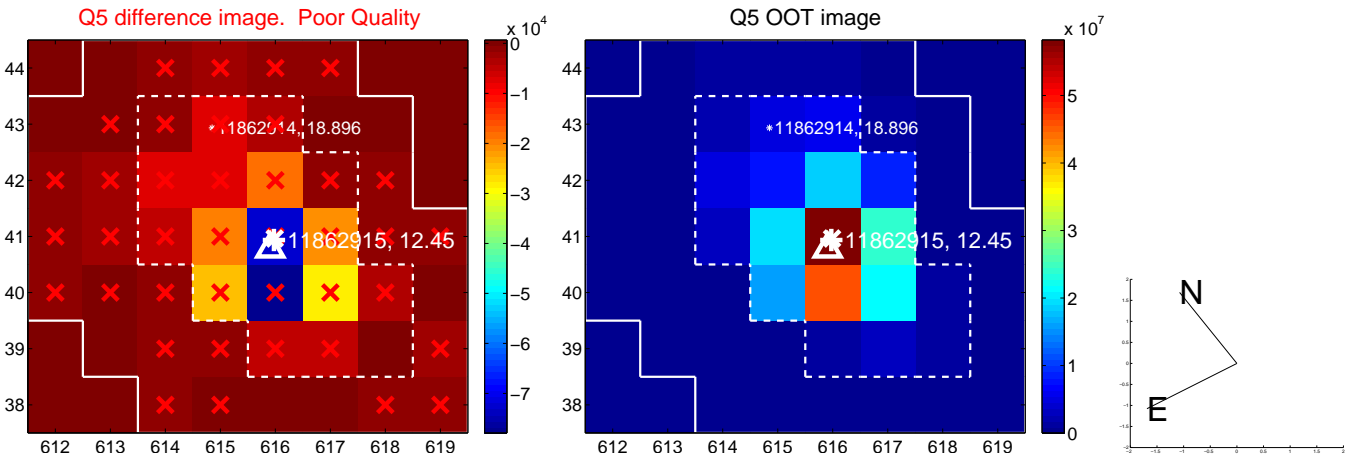


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

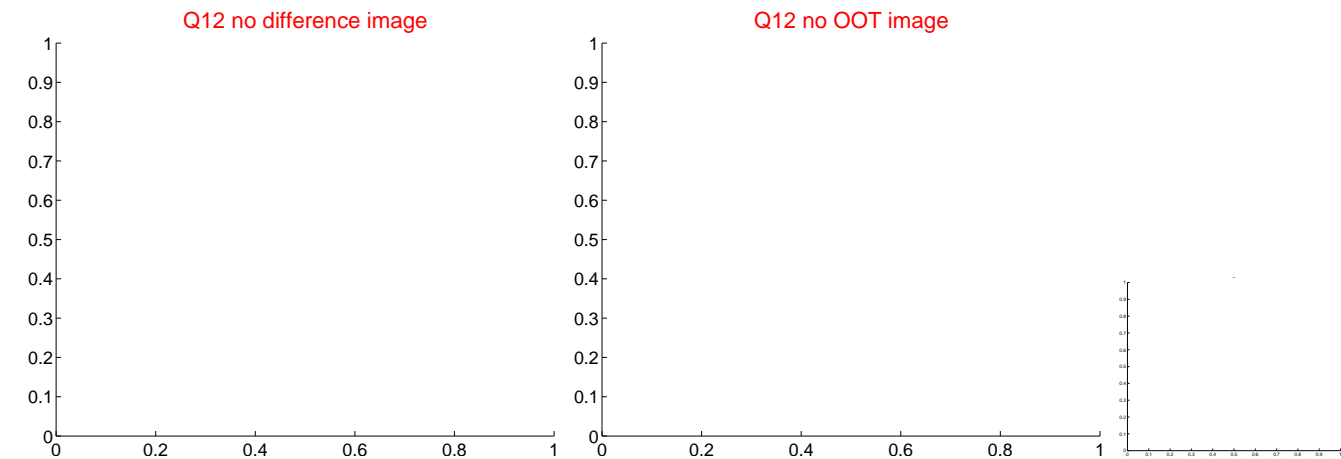
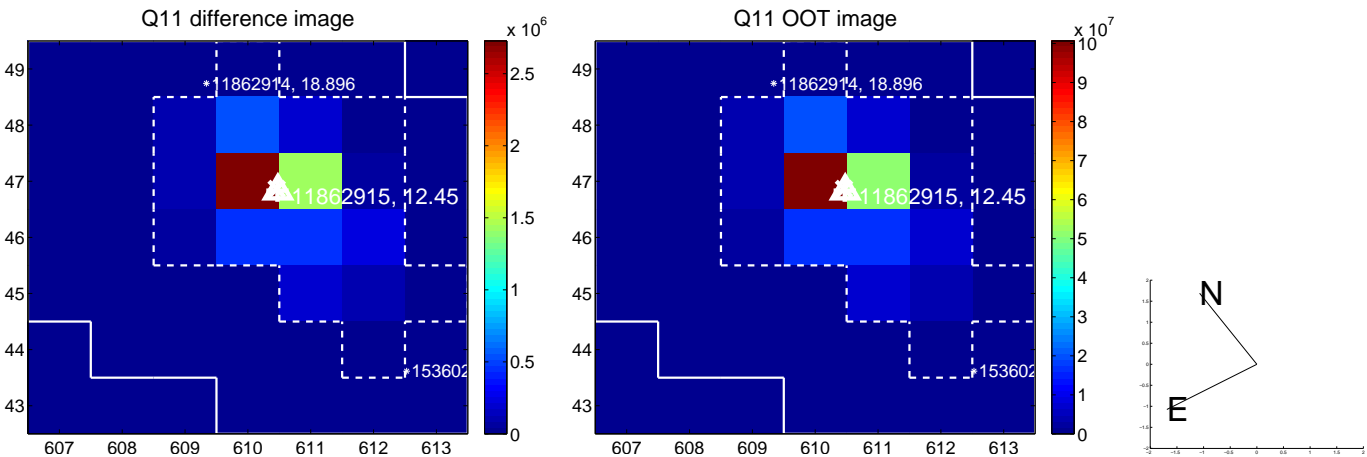
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



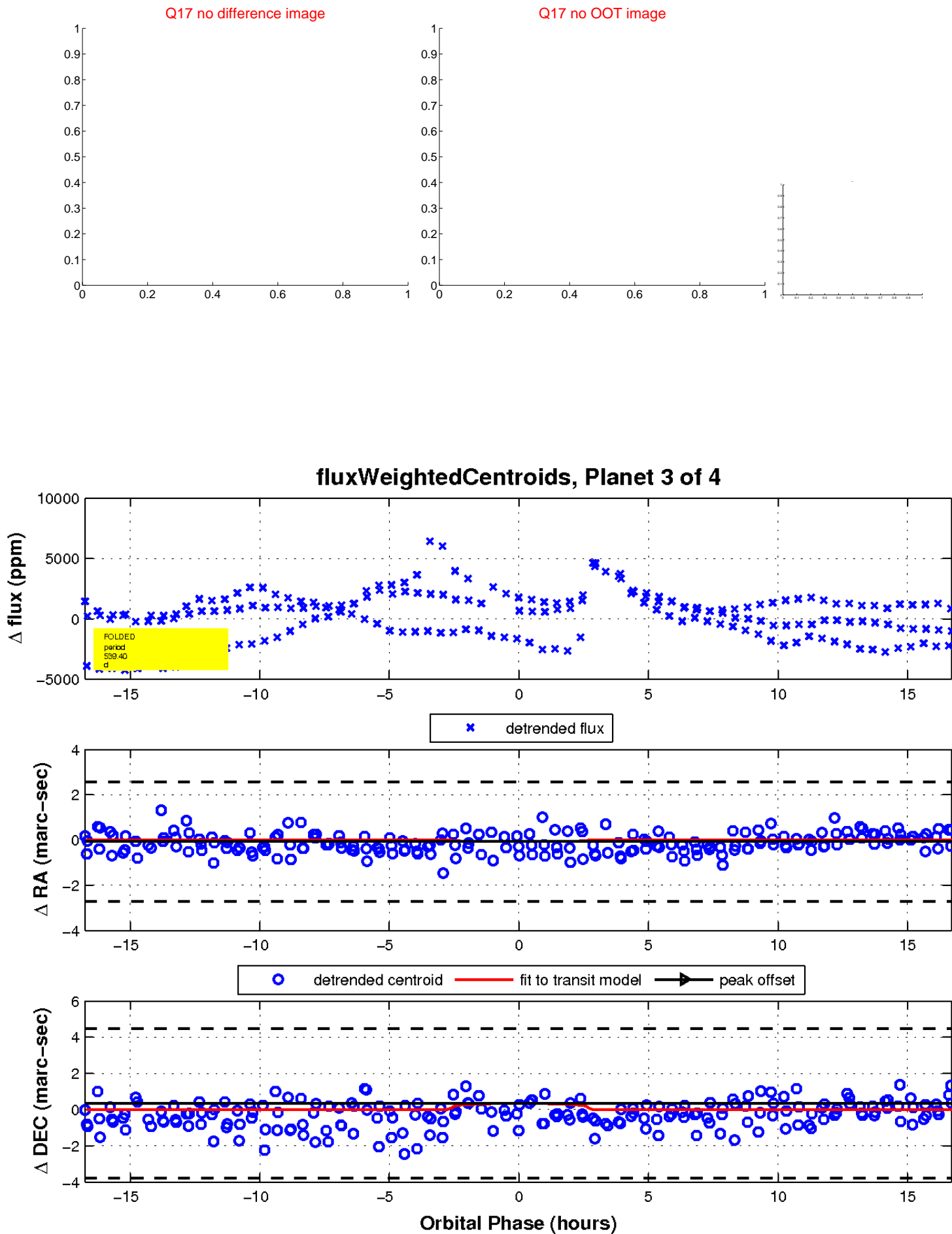
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



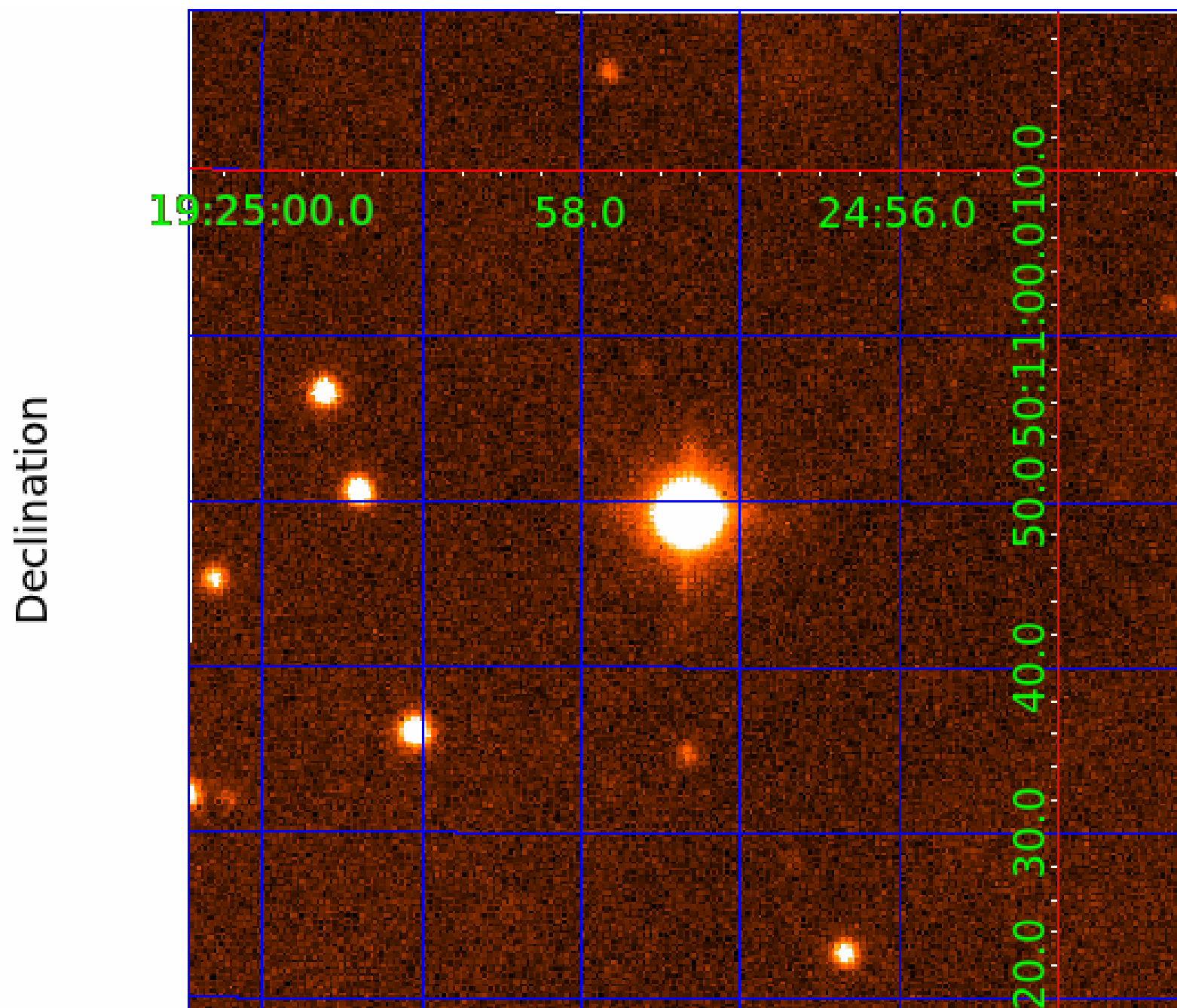
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



UKIRT Image



KIC 011862915

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})
011862915-01	OBS	No	406.259047	279.201862	2525.6	18.150	24.3	5.6	2.46	5055	14.00	3.46
011862915-02	OBS	No	687.352839	138.304905	1175.7	3.942	14.8	4.8	2.46	5055	8.63	1.71
011862915-03	OBS	No	539.404203	470.611508	3232.2	5.589	21.7	8.0	2.46	5055	13.66	2.37
011862915-04	OBS	No	215.556723	144.038280	346.8	3.000	14.3	-1.0	2.46	5055	4.48	8.04

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
011862915-01	OBS	FP	0.00	1	0	0	0	LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011862915-02	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—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
011862915-03	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—CENT_FEW_DIFFS
011862915-04	OBS	FP	0.00	1	0	0	0	LPP_DV—CENT_NOFITS

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

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

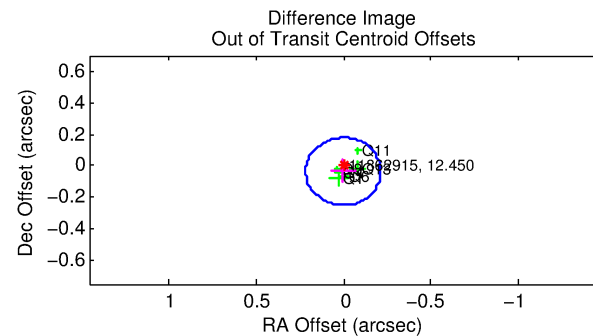
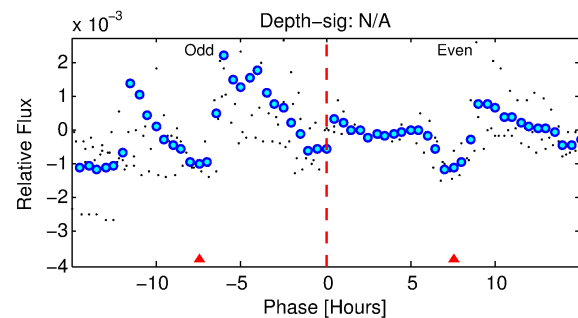
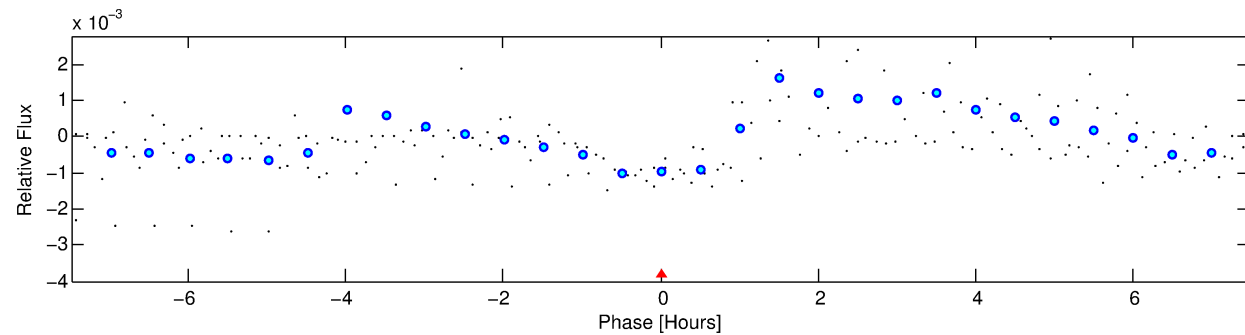
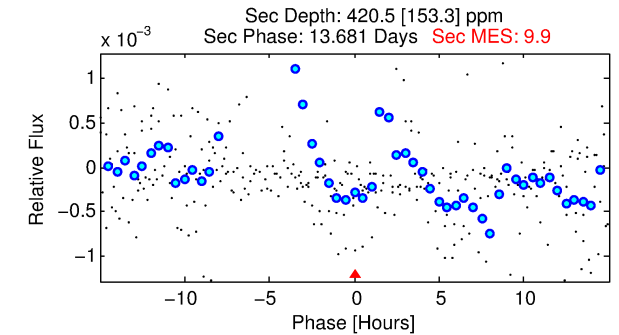
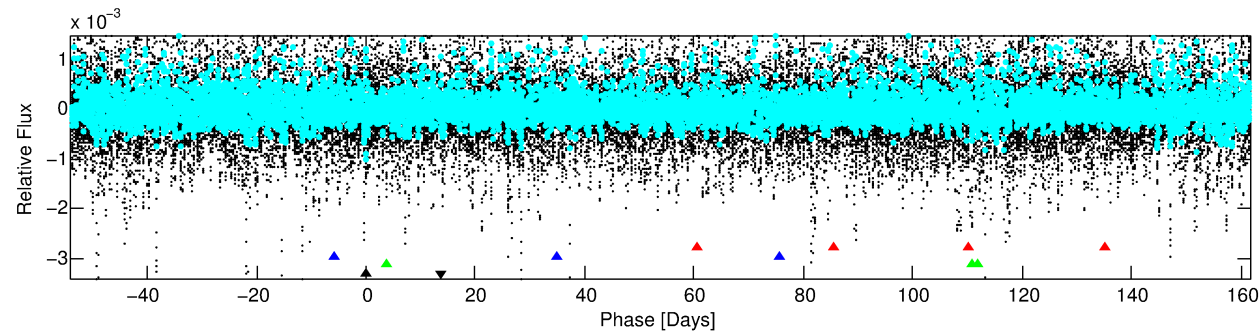
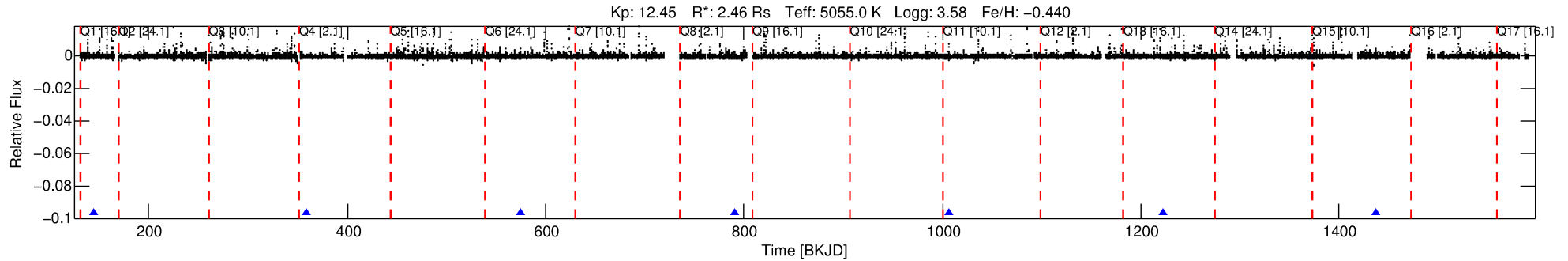
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 011862915-04

No Significant Match Found

KIC: 11862915 Candidate: 4 of 4 Period: 215.557 d

KIC: 11862915 Candidate: 4 of 4 Period: 215.557 d



TPS TCE Results:

Period = 215.55672 d
Epoch = 144.0383 BKJD

DV fit results are unavailable

DV Diagnostic Results:

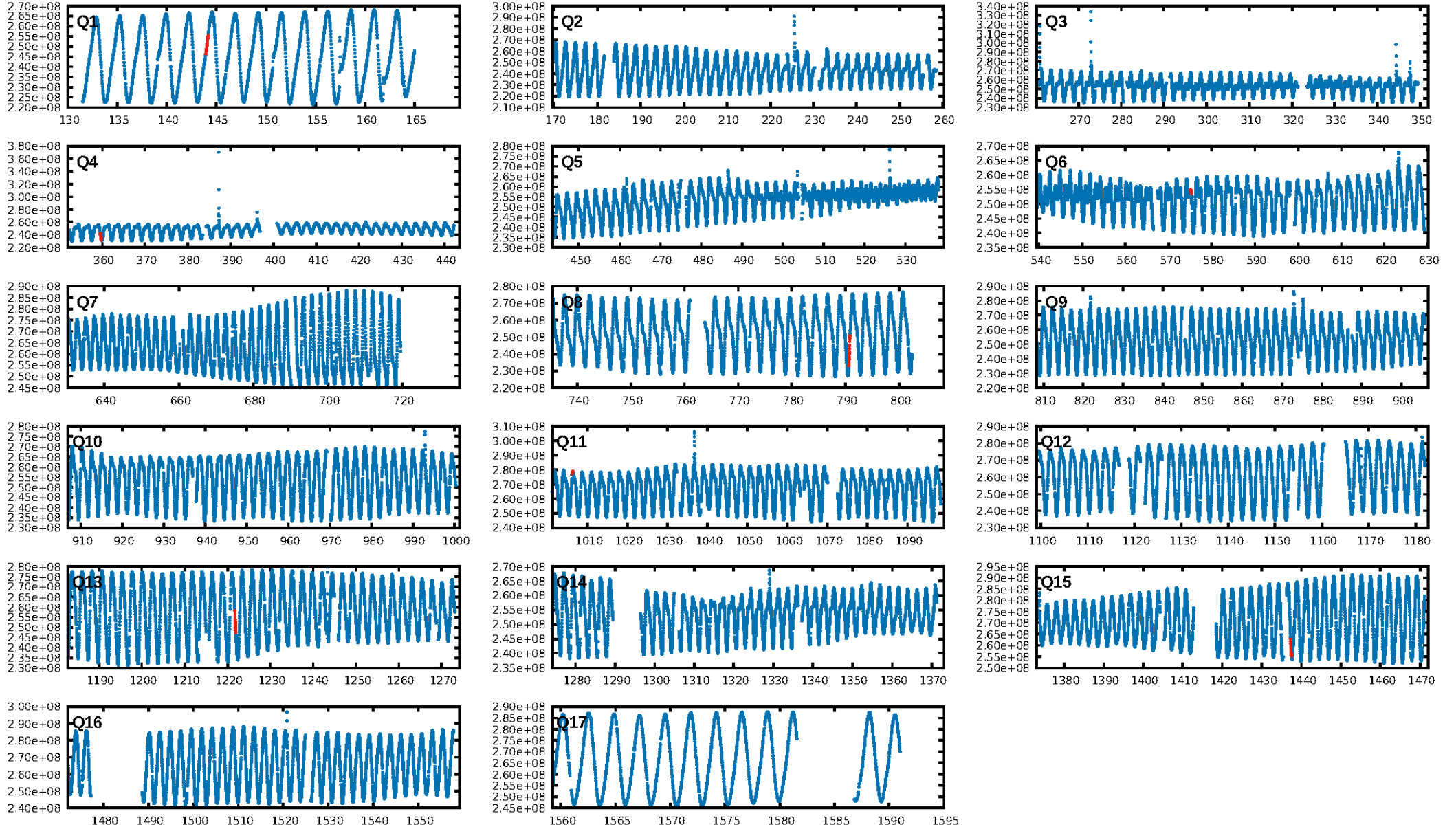
ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [248.79σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: N/A
RollingBand-ftgt: 1.00 [6/6]
GhostDiagnostic-chr: 9.188

Centroid-sig: 83.1%
Centroid-so: 0.222 arcsec [1.07σ]
OotOffset-rm: 0.035 arcsec [0.49σ]
KicOffset-rm: 0.117 arcsec [1.33σ]
OotOffset-st: 1/1/2/2 [6]
KicOffset-st: 1/1/2/2 [6]
DiffImageQuality-fgm: 0.67 [4/6]
DiffImageOverlap-fno: 1.00 [6/6]

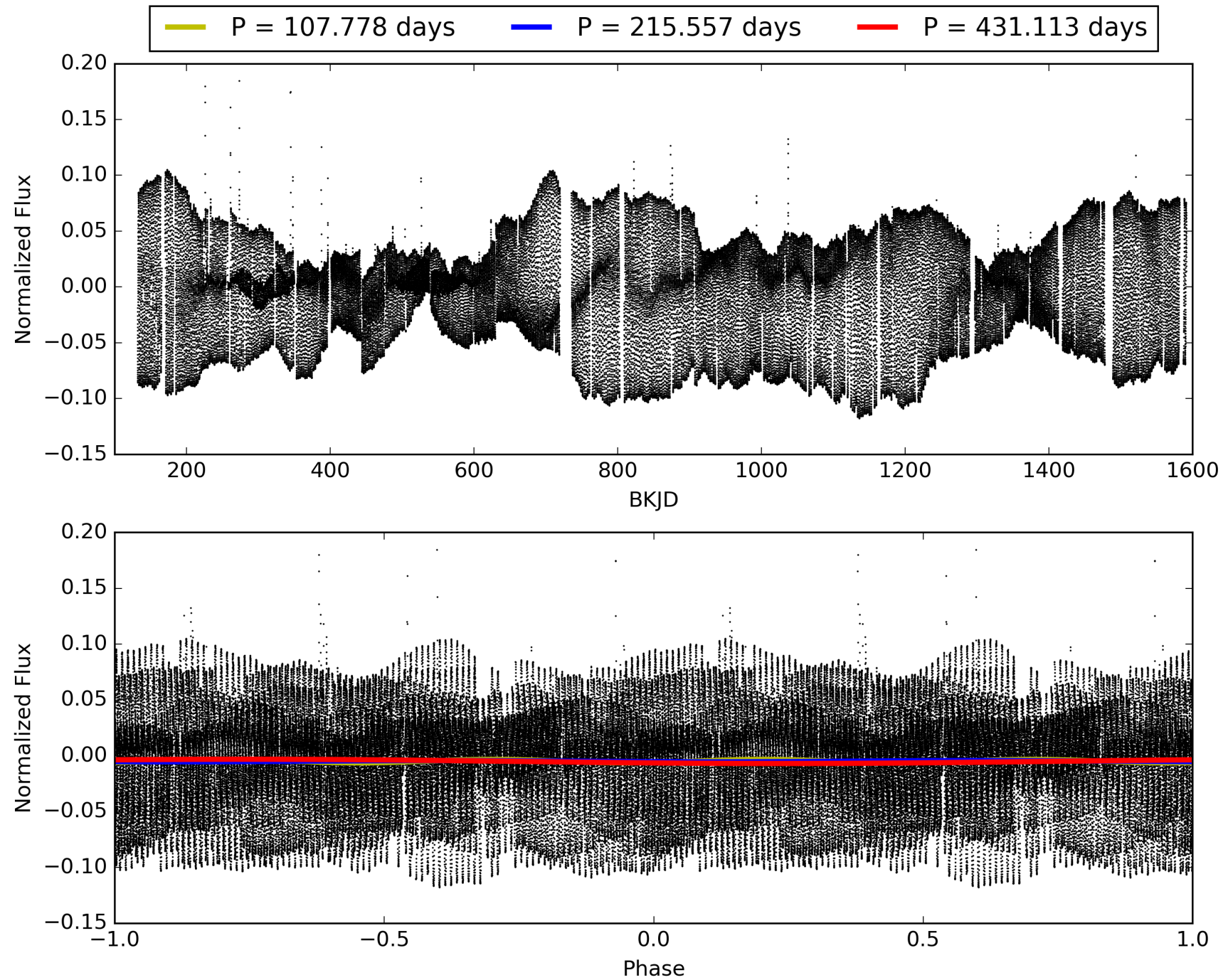
Software Revision: <svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958> -- Date Generated: 30-Jan-2016 05:51:02 Z

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

TCE 011862915-04, PDC Light Curves

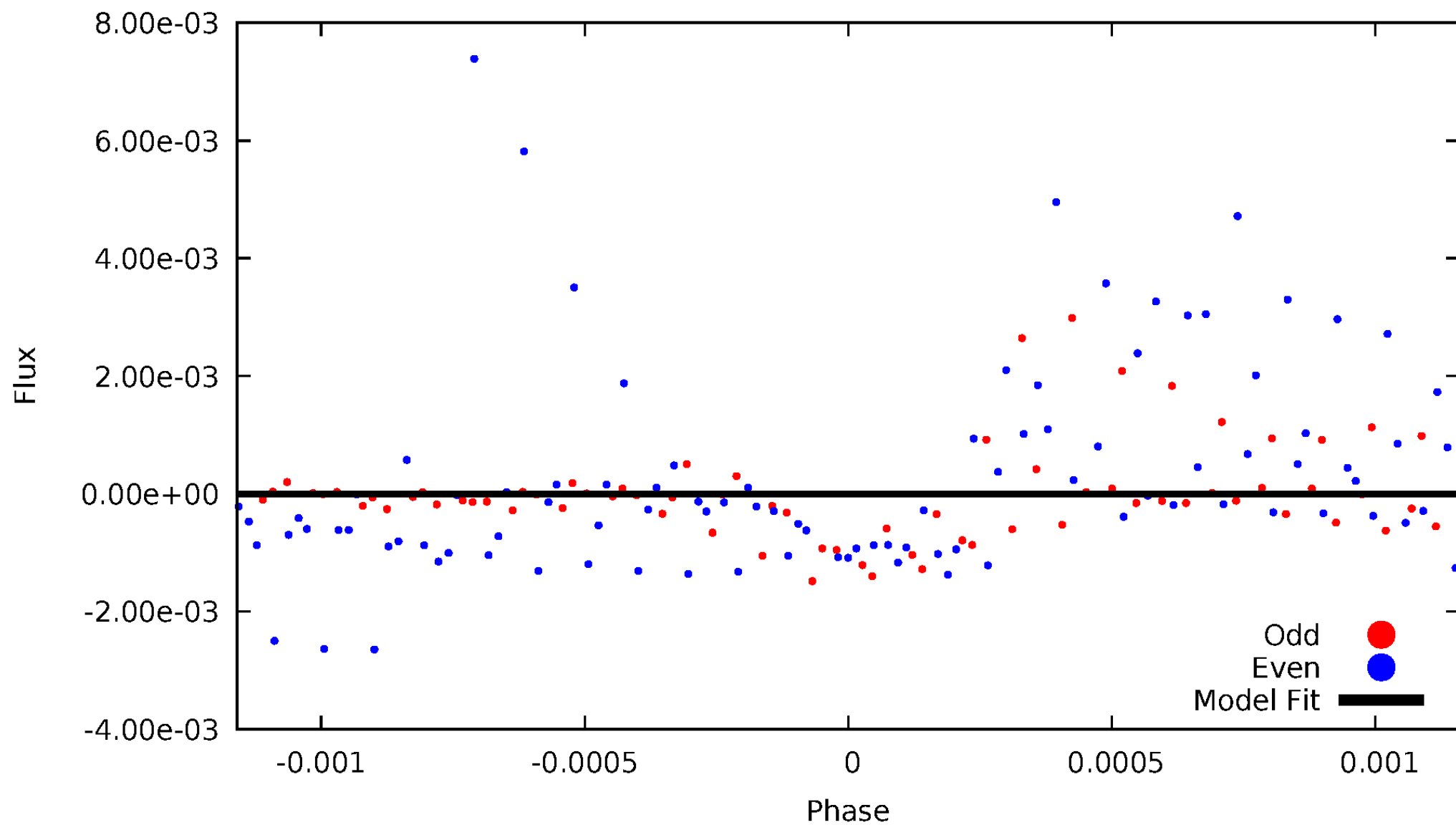


TCE 011862915-04



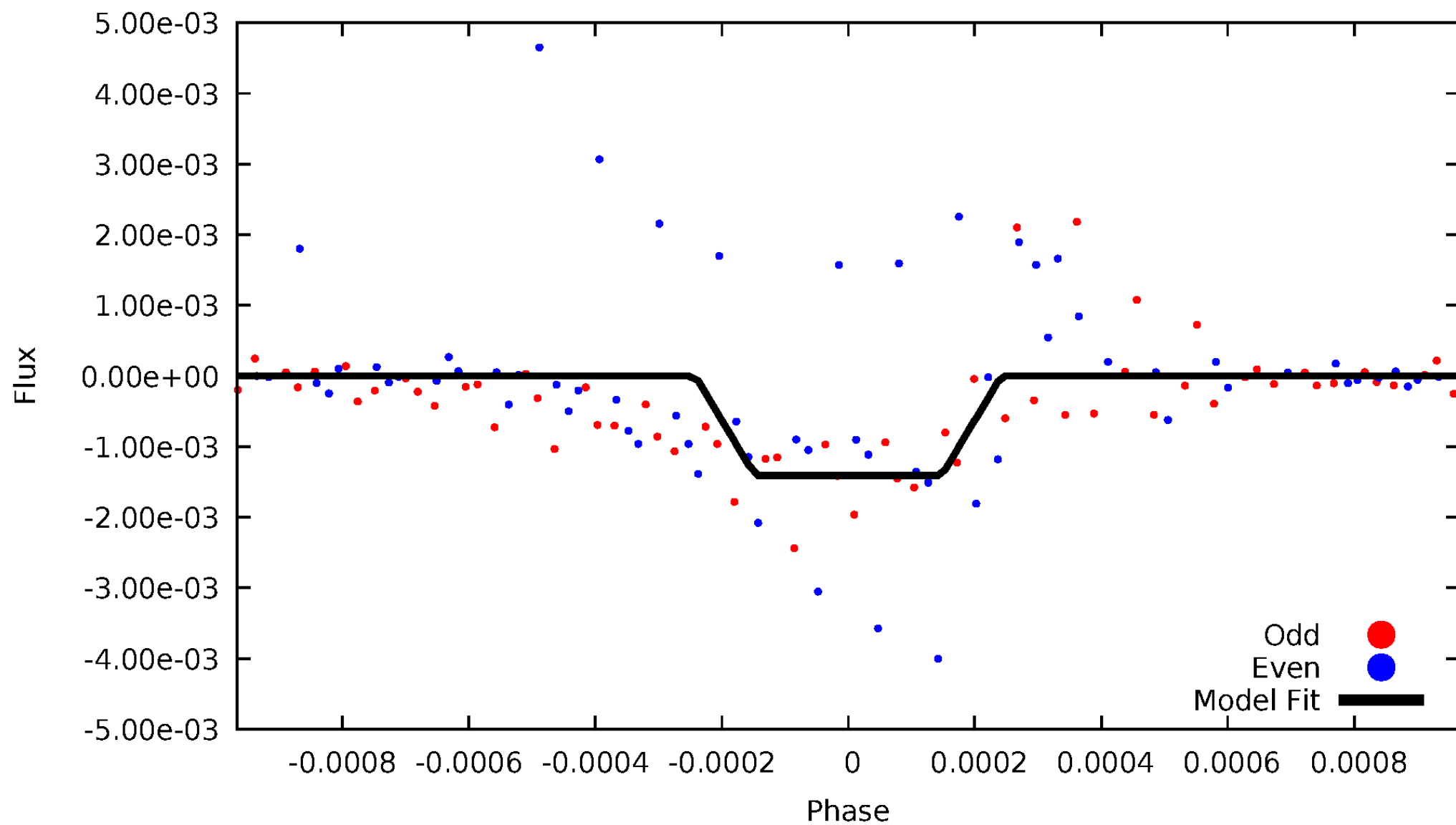
DV Odd/Even

TCE 011862915-04



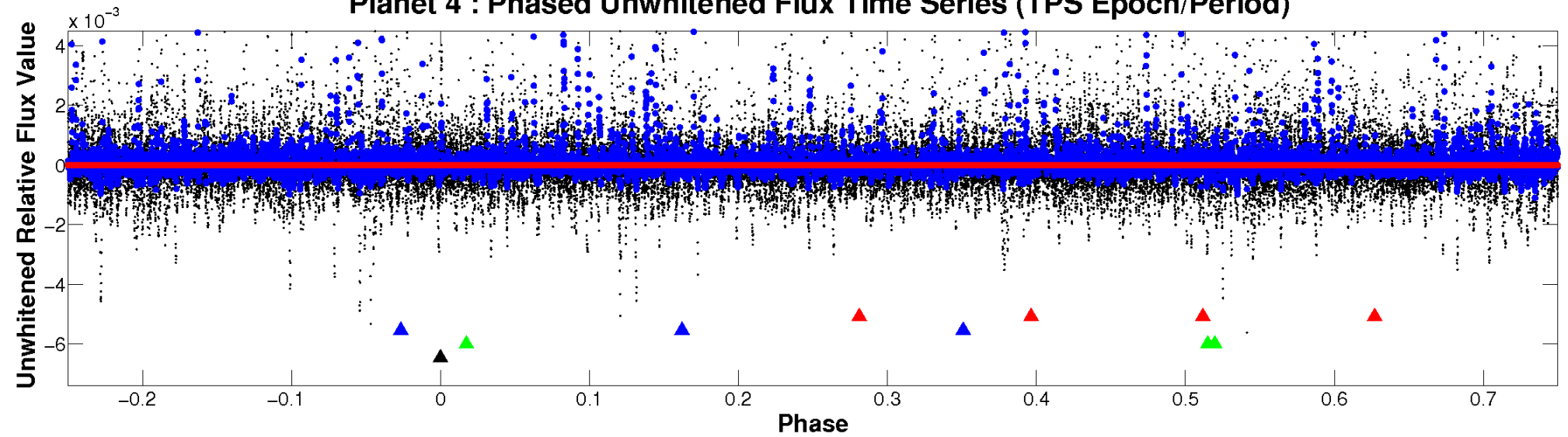
ALT Odd/Even

TCE 011862915-04



Non-Whitened Vs. Whitened Light Curve

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

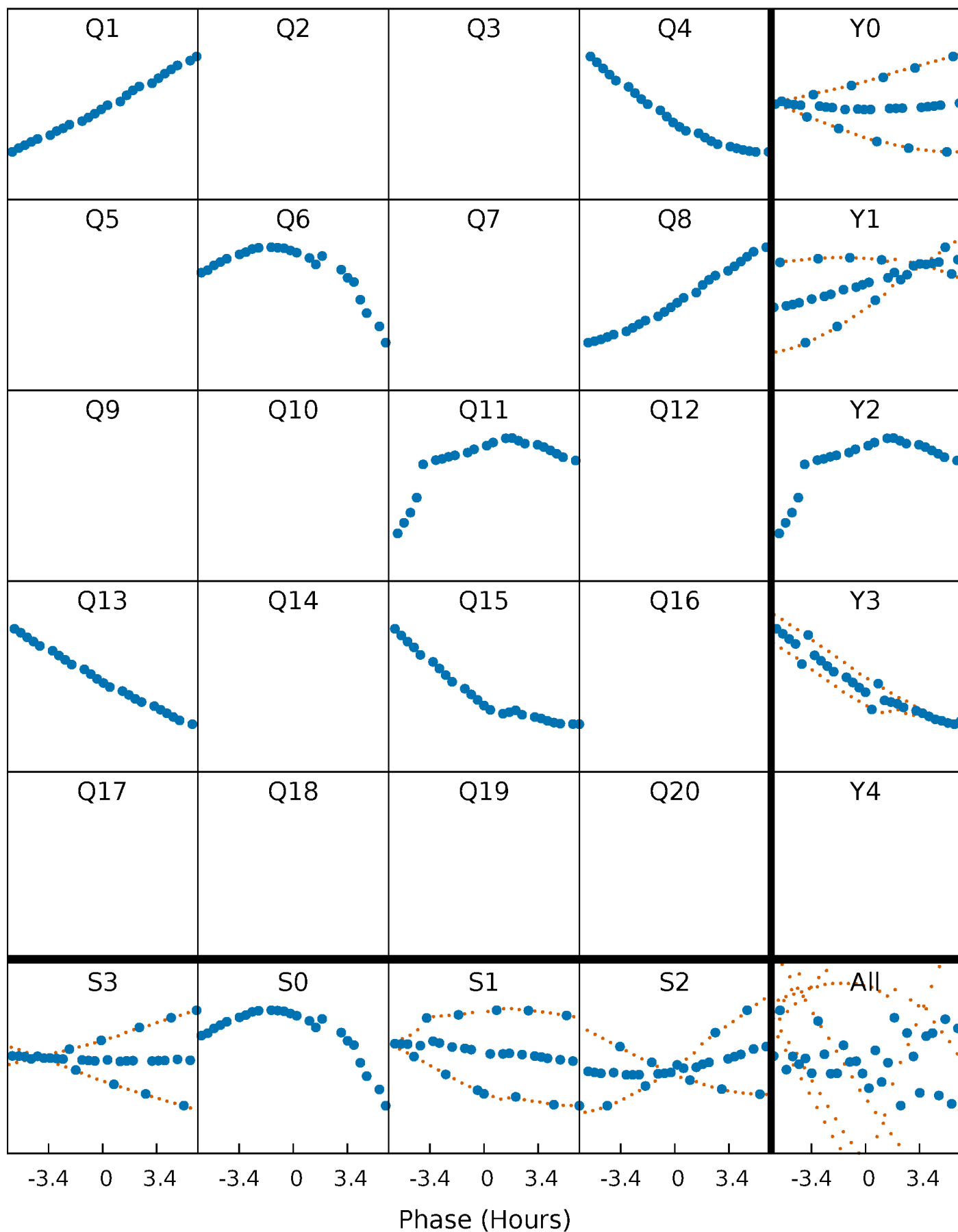


Planet 4 : Phased Whitened Flux Time Series (TPS Epoch/Period)



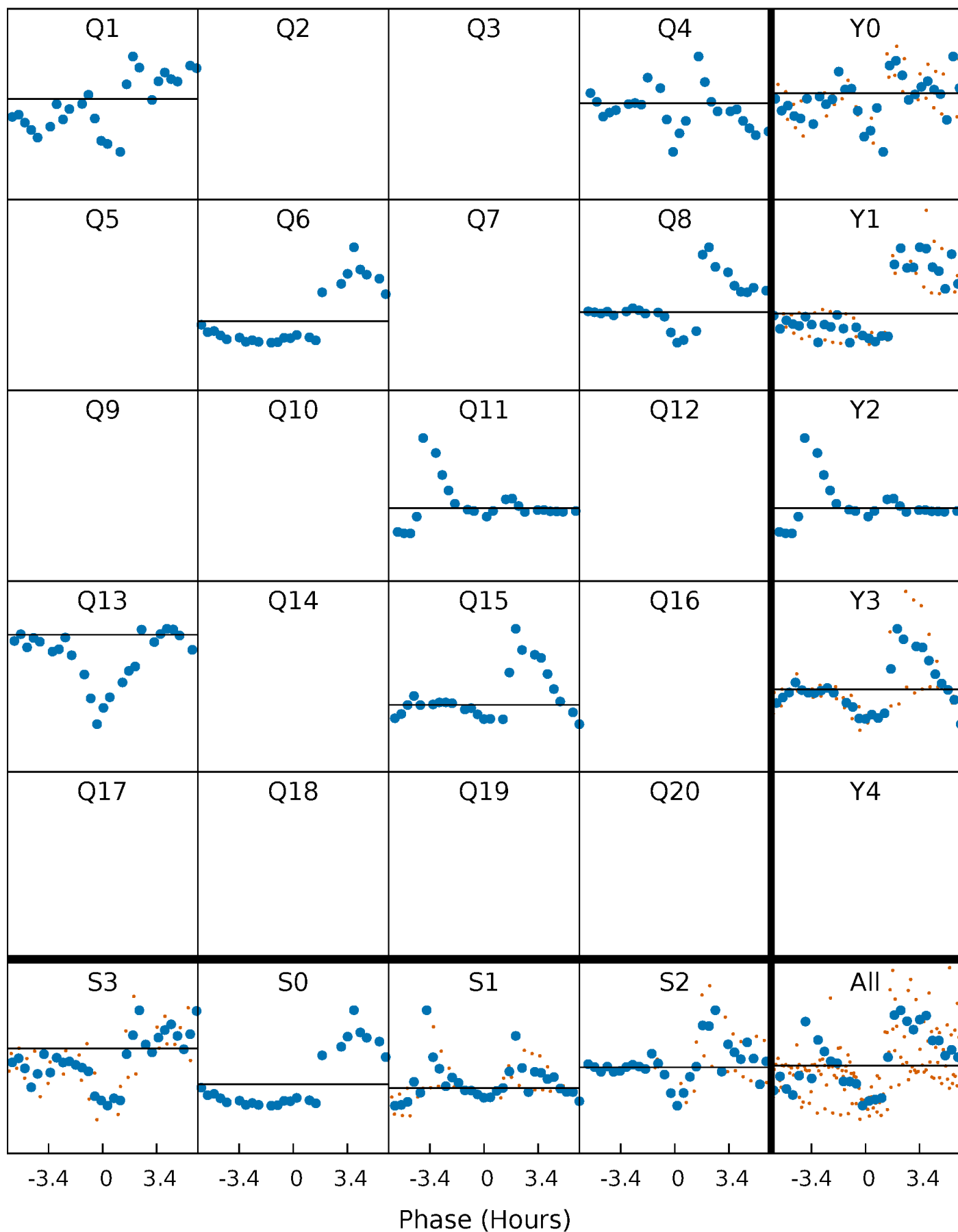
PDC Quarter-Phased Transit Curves

TCE 011862915-04 P=215.556723 Days $T_0=144.038280$ (BKJD)



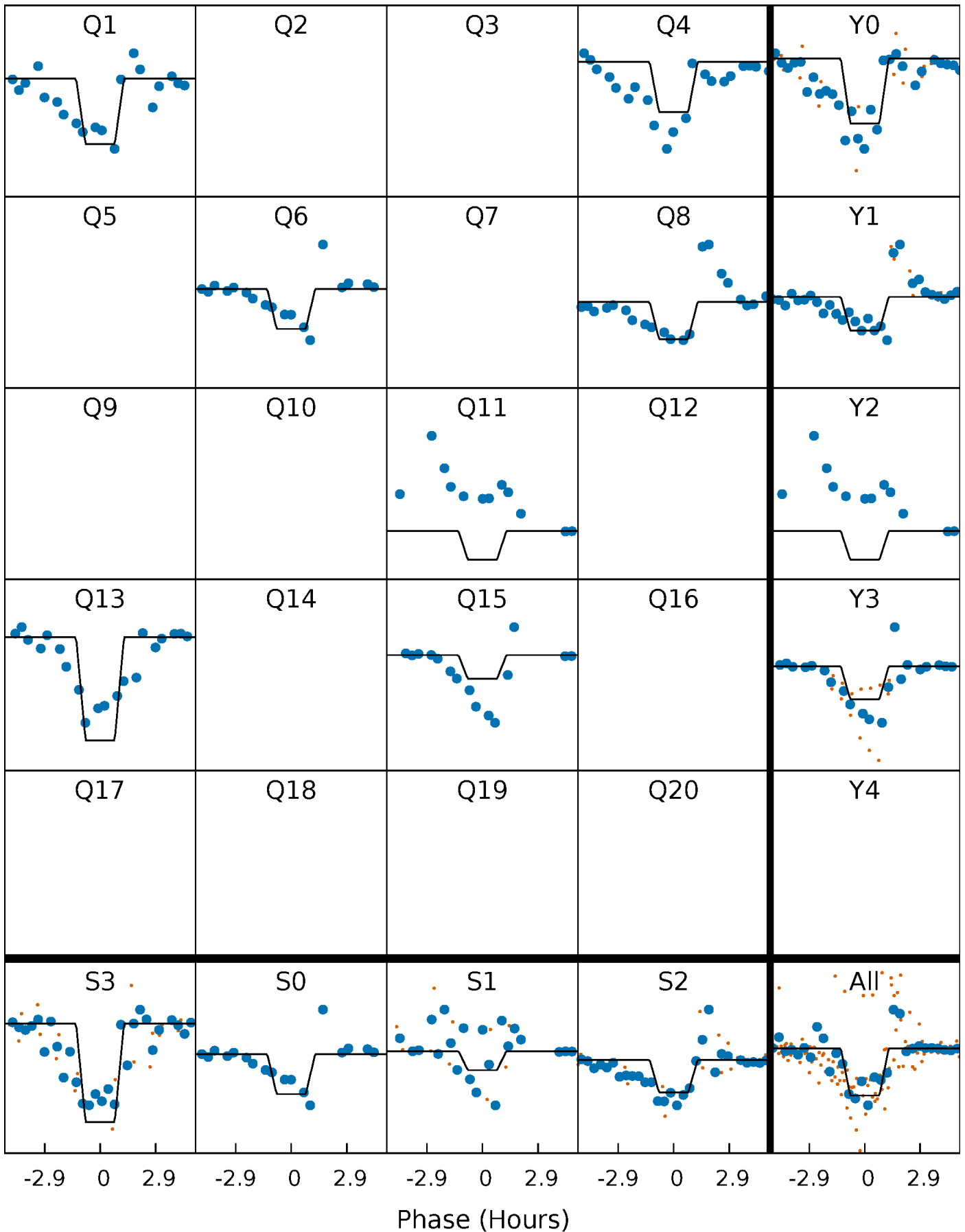
DV Quarter-Phased Transit Curves

TCE 011862915-04 $P=215.556723$ Days $T_0=144.038280$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

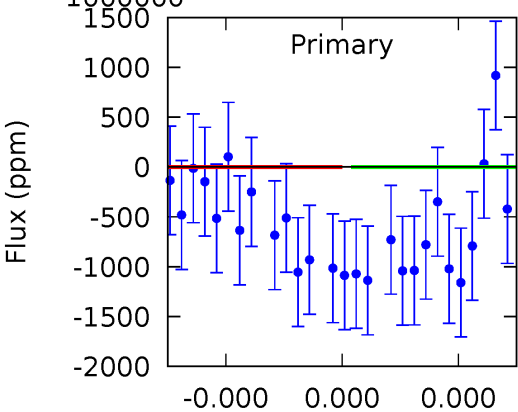
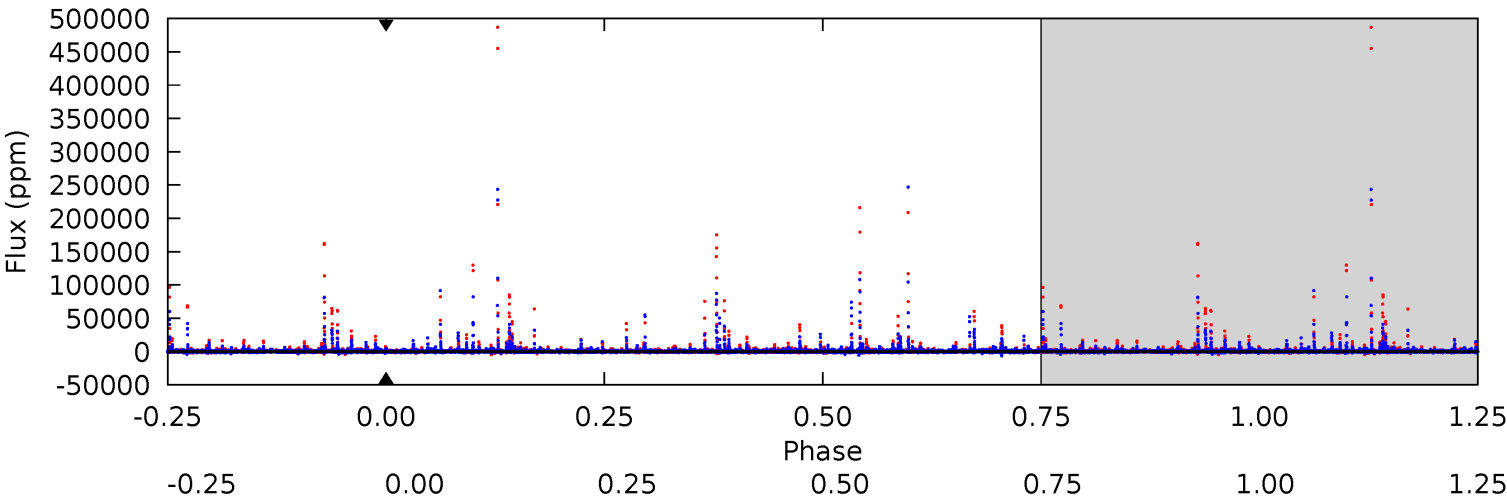
TCE 011862915-04 P=215.556723 Days $T_0=144.051829$ (BKJD)



DV Model-Shift Uniqueness Test

011862915-04, P = 215.556723 Days, E = 144.038280 Days

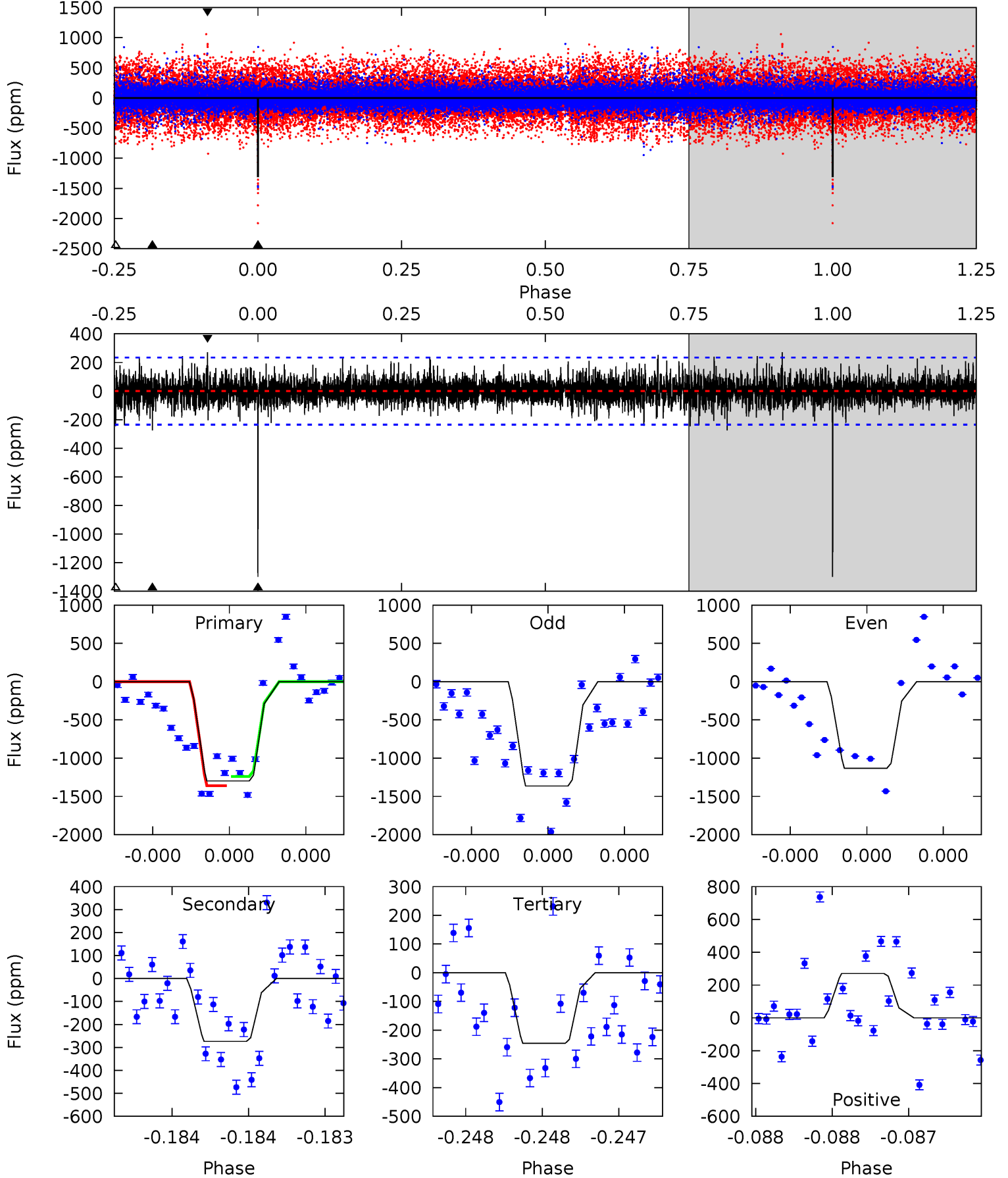
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



Alt Model-Shift Uniqueness Test

011862915-04, P = 215.556723 Days, E = 144.051829 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
30.8	6.50	5.84	6.42	5.58	3.49	1.40	25.0	24.4	0.66	0.08	2.43	0.93	0.17	0



Stellar Parameters For KIC 011862915

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5055^{+139}_{-114}	$3.580^{+1.028}_{-0.343}$	$-0.440^{+0.300}_{-0.250}$	$2.464^{+1.459}_{-1.783}$	$0.842^{+0.259}_{-0.173}$	$0.079^{+3.473}_{-0.050}$
	+3%/-2%	+29%/-10%	+68%/-57%	+59%/-72%	+31%/-21%	+4381%/-63%
Source	PHO1	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 011862915-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	0 ± 1000000	$17.42^{+21.81}_{-13.20}$	591^{+94}_{-124}	4242^{+12861}_{-20124}	$1228^{+193043}_{-154219}$
Alt.	-274 ± 42	$20.42^{+23.32}_{-14.24}$	587^{+101}_{-128}	2895^{+1194}_{-453}	172^{+1578}_{-138}

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

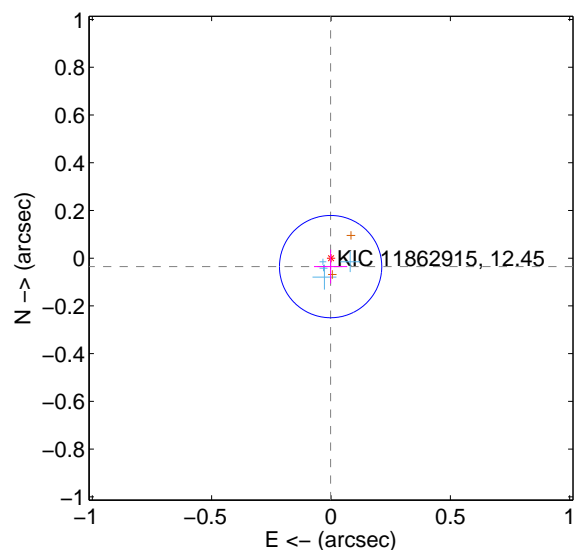
Supplemental centroid analysis for 011862915-04. Kepler magnitude: 12.45. Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

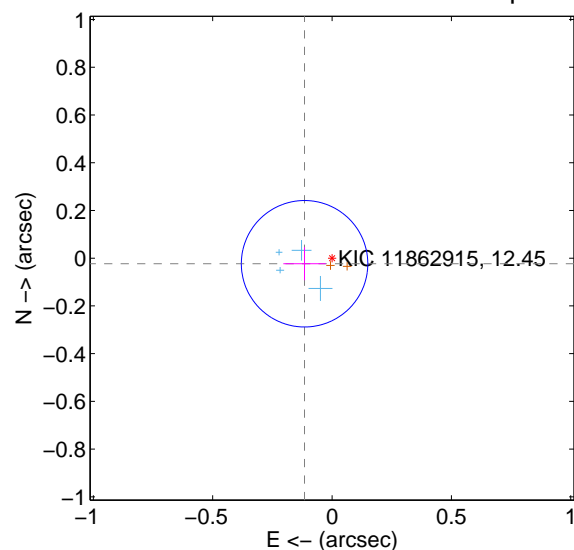
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.035 ± 0.071	0.49	0.002 ± 0.070	-0.035 ± 0.071
PRF-fit source offset from KIC position	0.117 ± 0.088	1.33	0.115 ± 0.089	-0.023 ± 0.069
photometric centroid source offset	0.22 ± 0.21	1.07	0.18 ± 0.18	0.13 ± 0.25

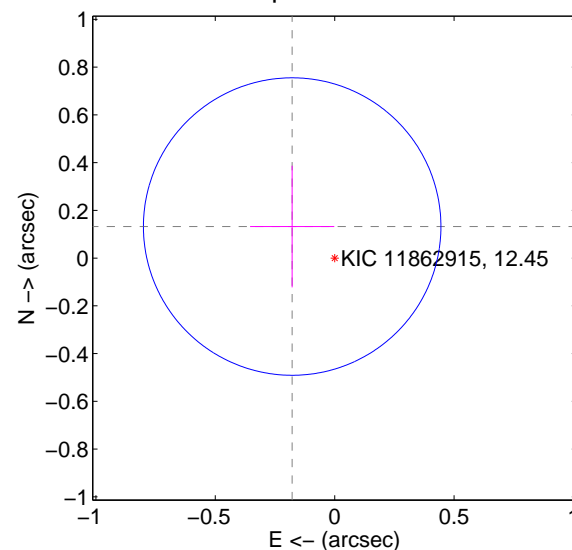
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

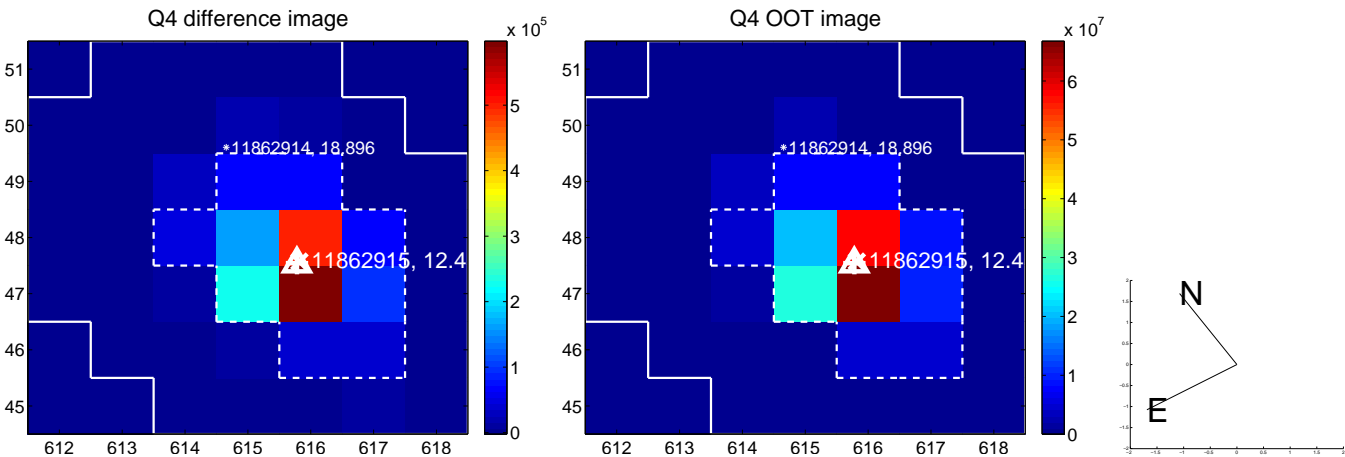
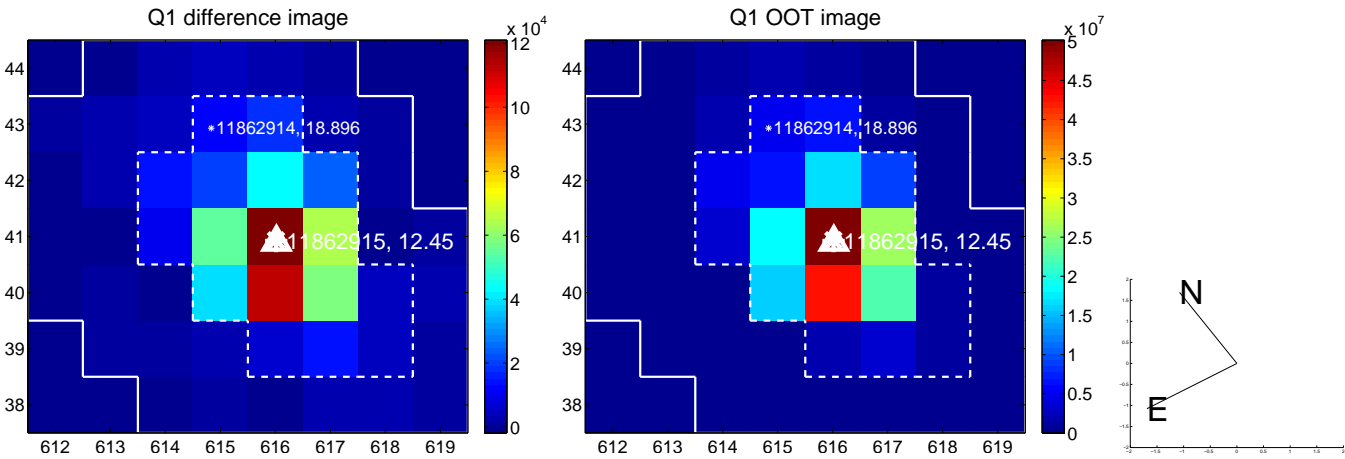


offset from photometric centroids

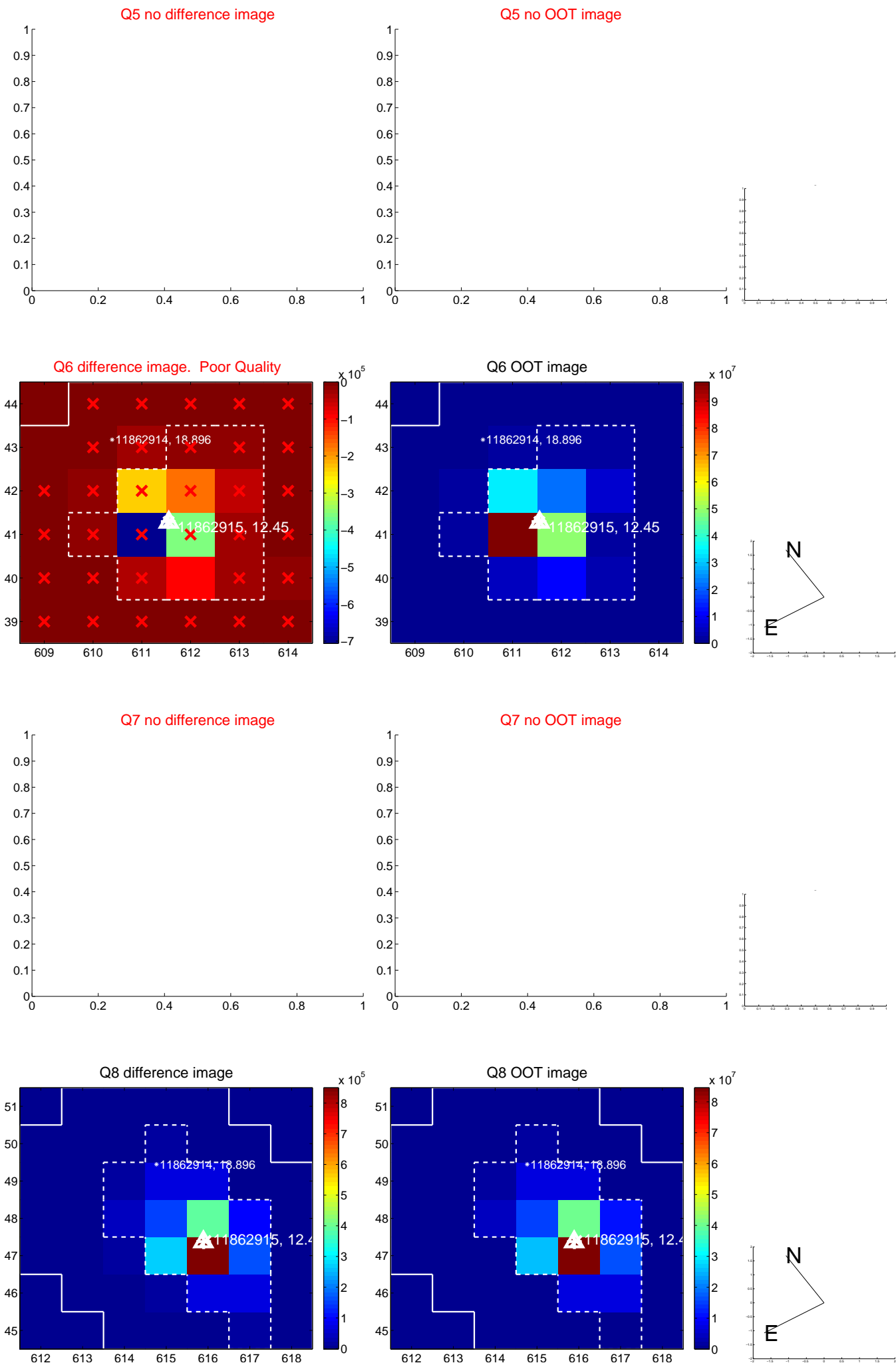


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses:** good quarterly centroid offsets; **Vermillion crosses:** bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three-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

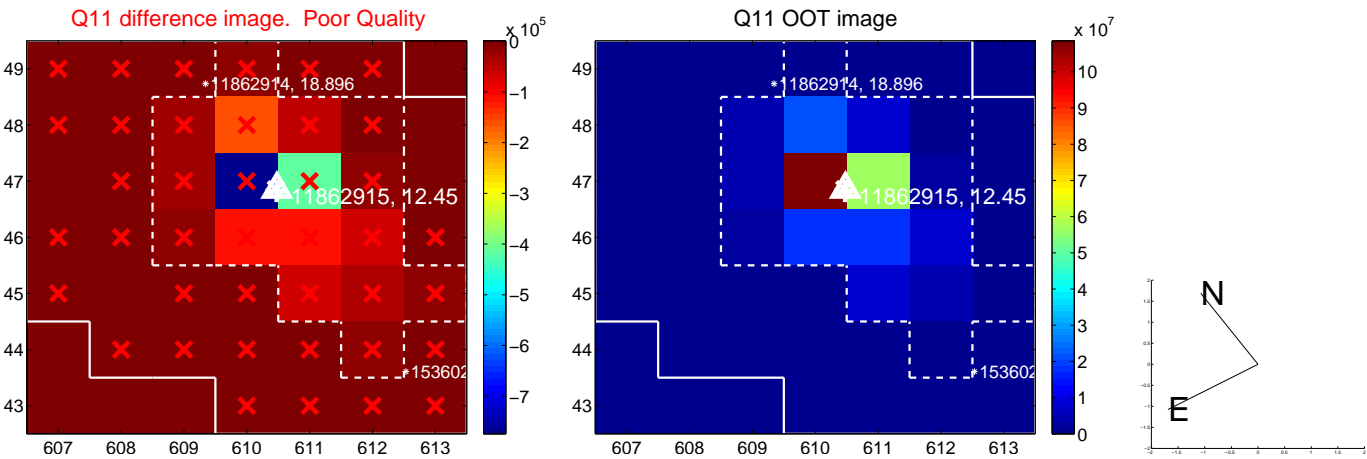
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



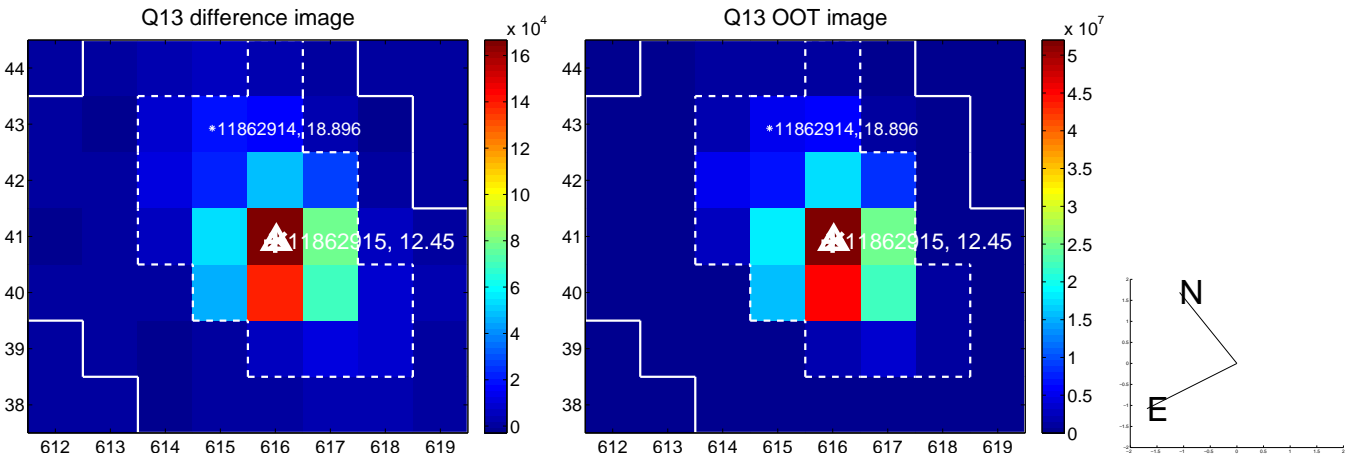
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



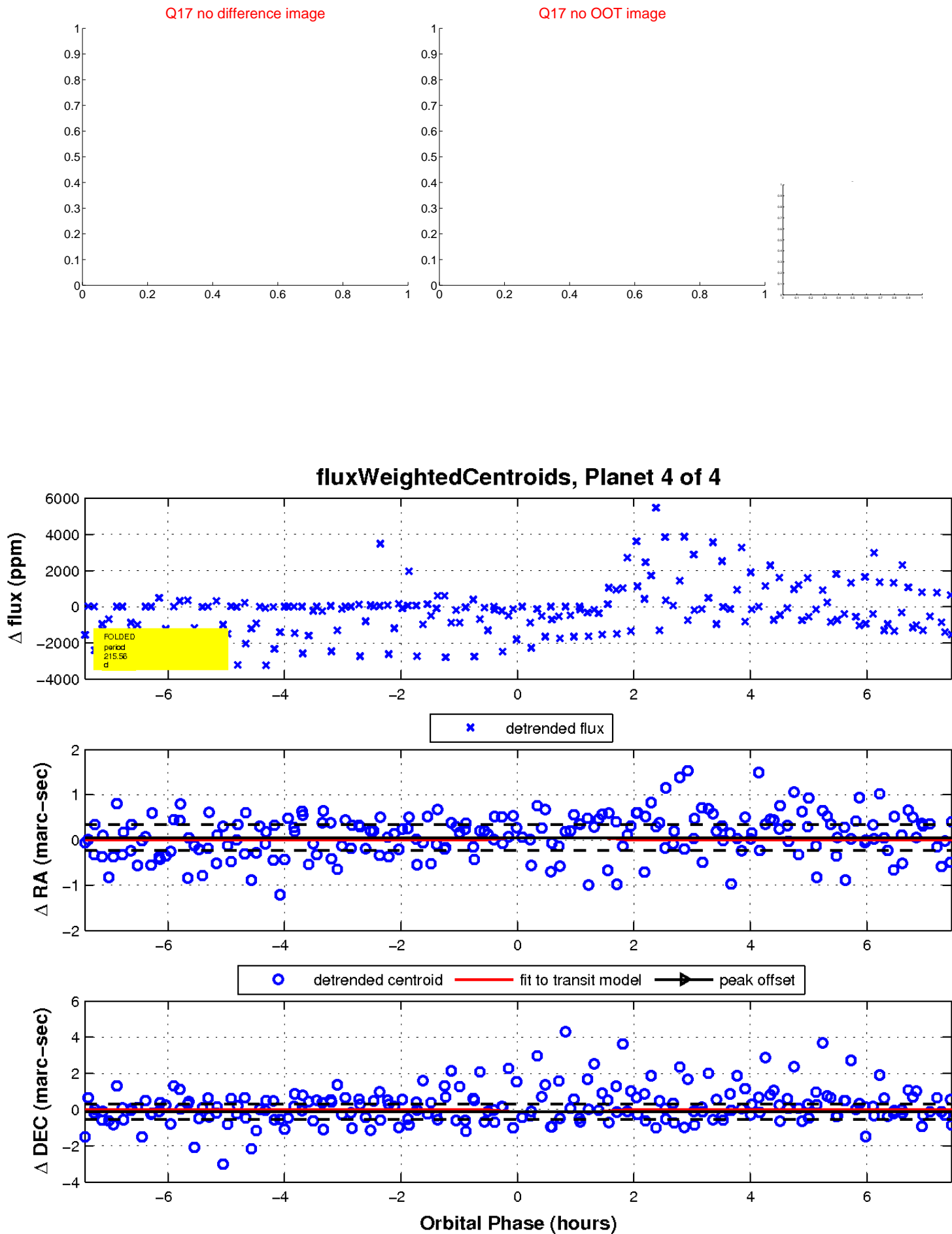
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

