

KIC 004919243

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})
004919243-01	OBS	No	507.644997	174.366957	331.4	11.005	17.4	3.3	2.35	5008	4.29	2.22
004919243-02	OBS	No	678.691387	136.363745	636.8	7.526	19.8	5.9	2.35	5008	6.32	1.51
004919243-04	OBS	No	371.477440	366.393844	711.3	3.259	13.6	6.9	2.35	5008	6.85	3.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004919243-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919243-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919243-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

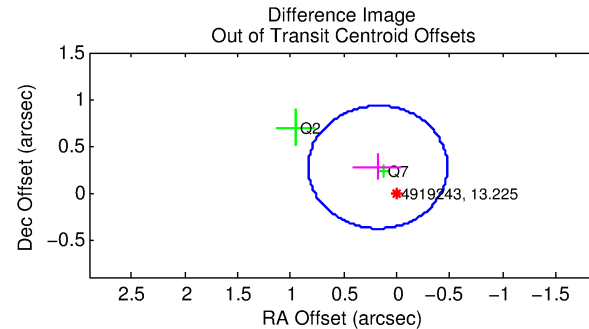
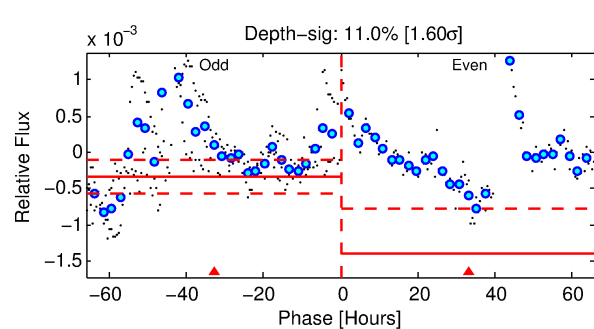
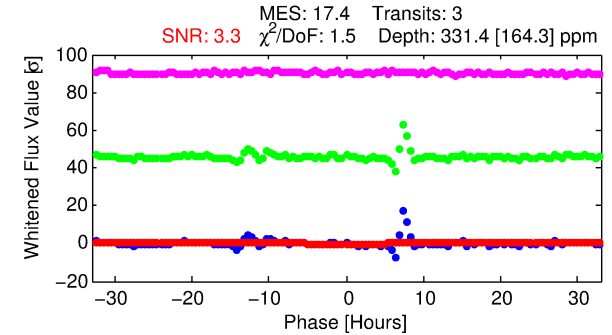
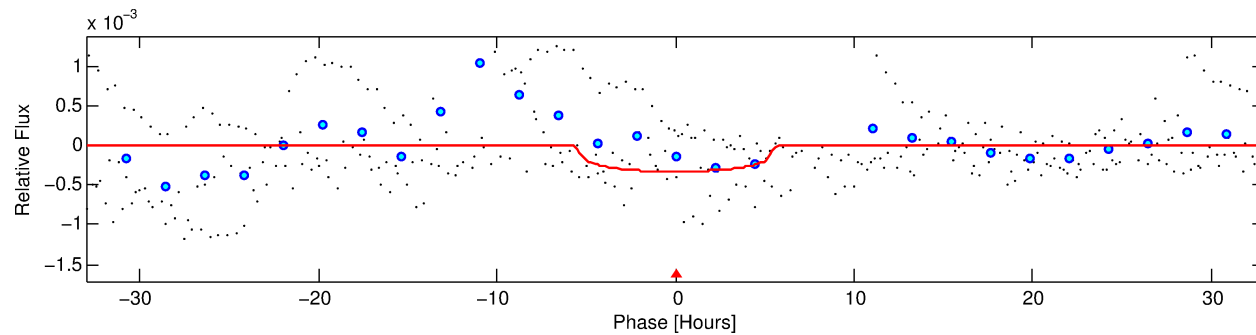
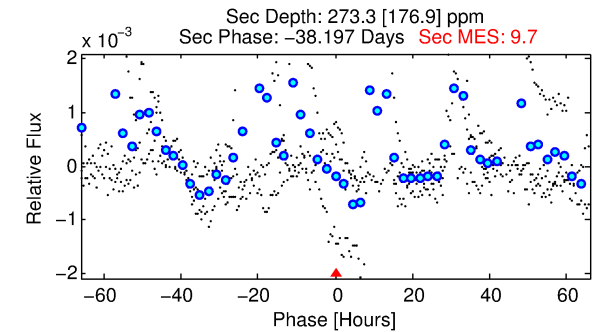
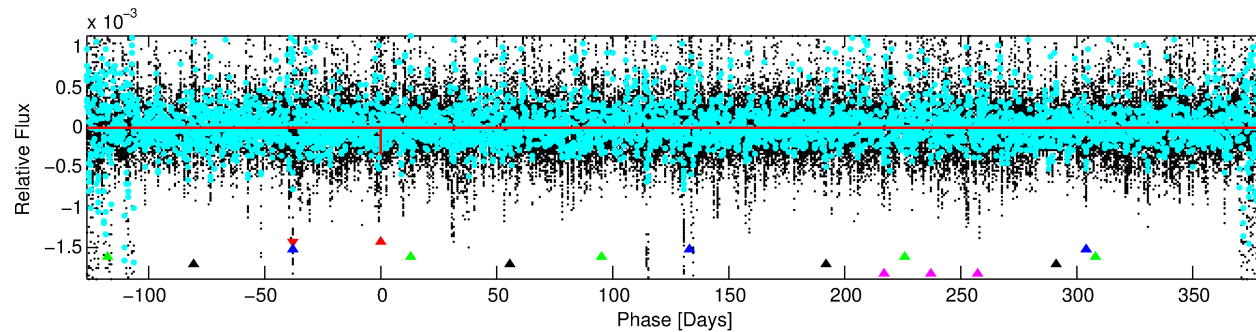
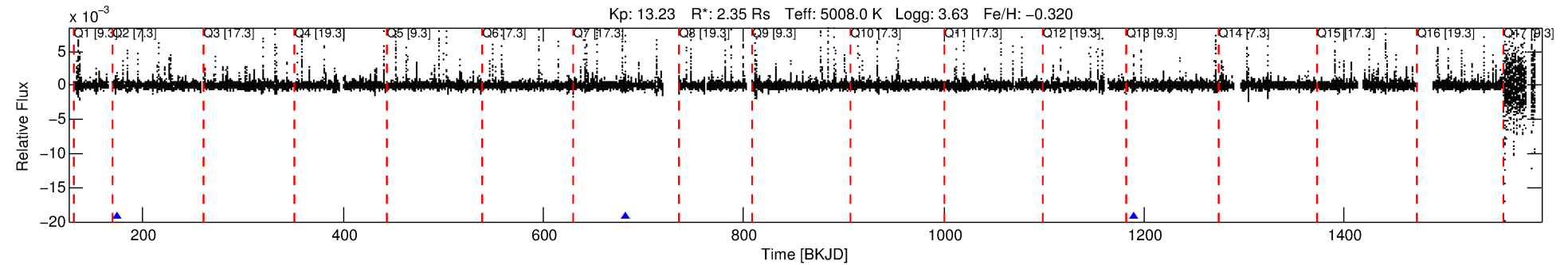
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004919243-01

No Significant Match Found

DV One-Page Summary

KIC: 4919243 Candidate: 1 of 5 Period: 507.645 d



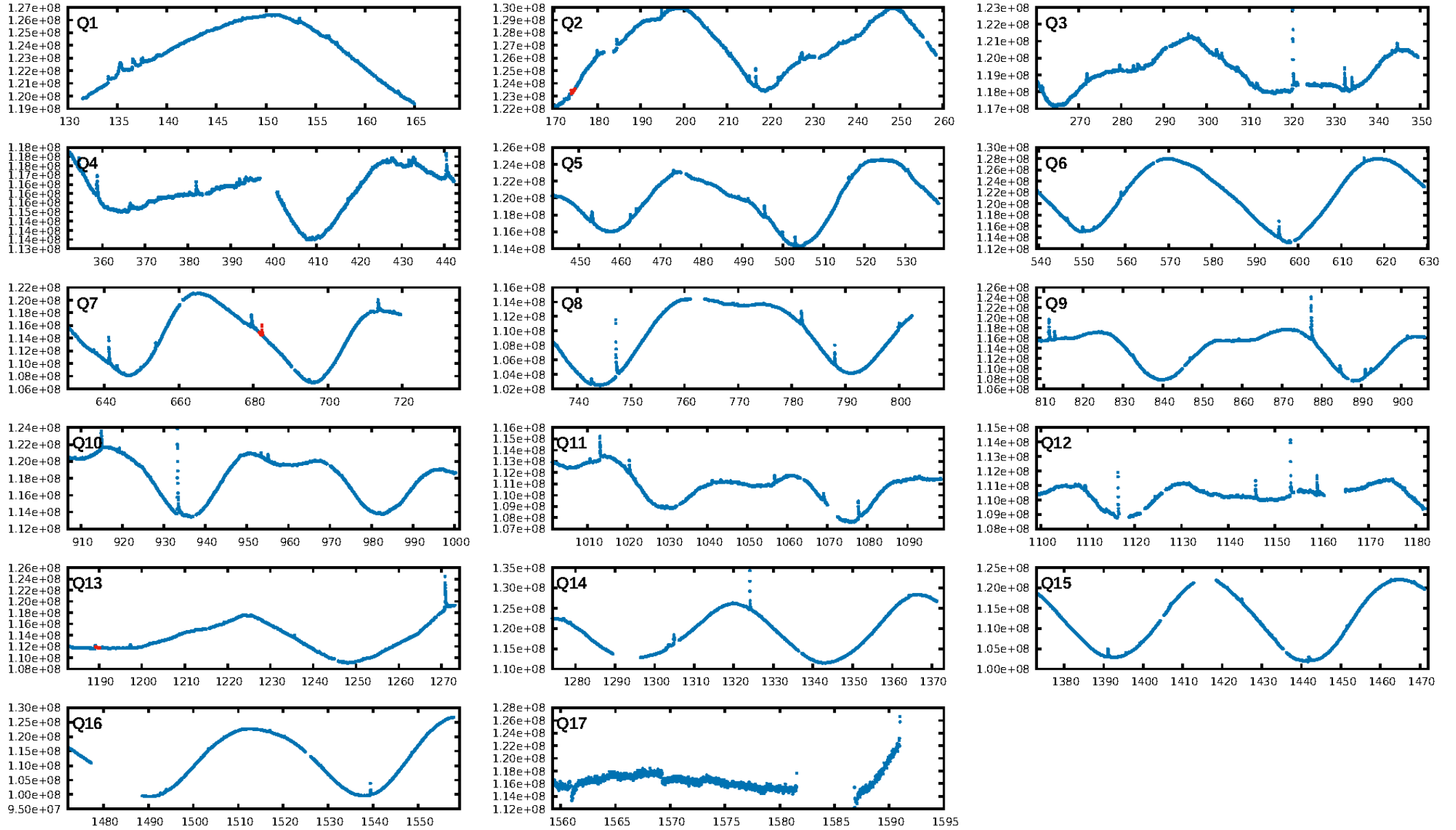
DV Fit Results:

Period = 507.64500 [0.01588] d
Epoch = 174.3670 [0.0191] BKJD
Rp/R* = 0.0167 [0.0335]
a/R* = 321.79 [2388.43]
b = 0.45 [13.39]
Seff = 2.22 [3.75]
Teq = 311 [132] K
Rp = 4.29 [9.22] Re
a = 1.1862 [1.1296] AU
Ag = 11487.75 [50573.00] [0.23σ]
Teffp = 4981 [5065] K [0.92σ]

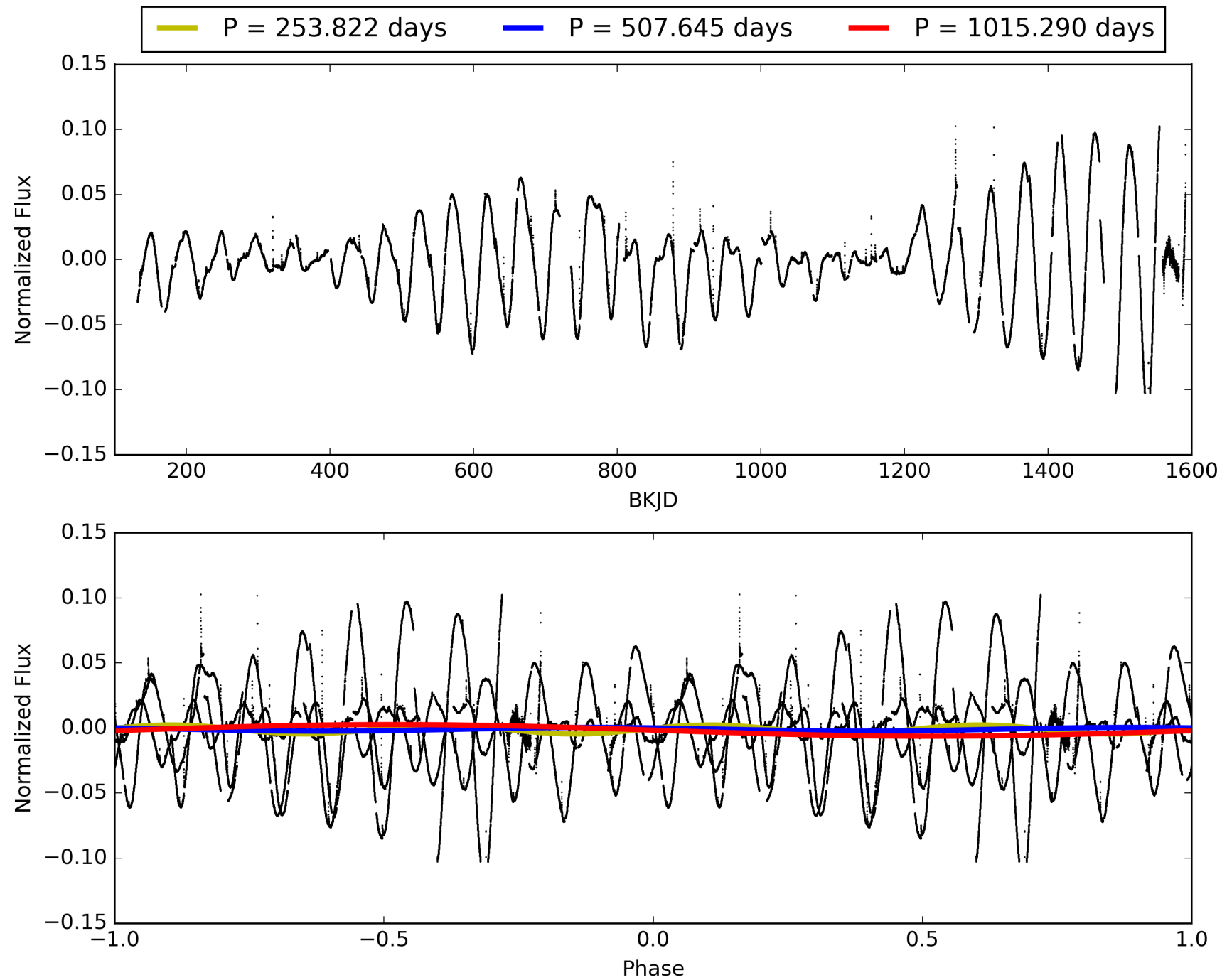
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [40.36σ]
LongPeriod-sig: 100.0% [307.91σ]
ModelChiSquare2-sig: 0.2%
ModelChiSquareGof-sig: 57.4%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: -1.327
Centroid-sig: 25.1%
Centroid-so: 0.902 arcsec [1.11σ]
OotOffset-rm: 0.325 arcsec [1.49σ]
KicOffset-rm: 0.137 arcsec [0.56σ]
OotOffset-st: 1/1/0/0 [2]
KicOffset-st: 1/1/0/0 [2]
DiffImageQuality-fgm: 1.00 [2/2]
DiffImageOverlap-fno: 1.00 [3/3]

TCE 004919243-01, PDC Light Curves

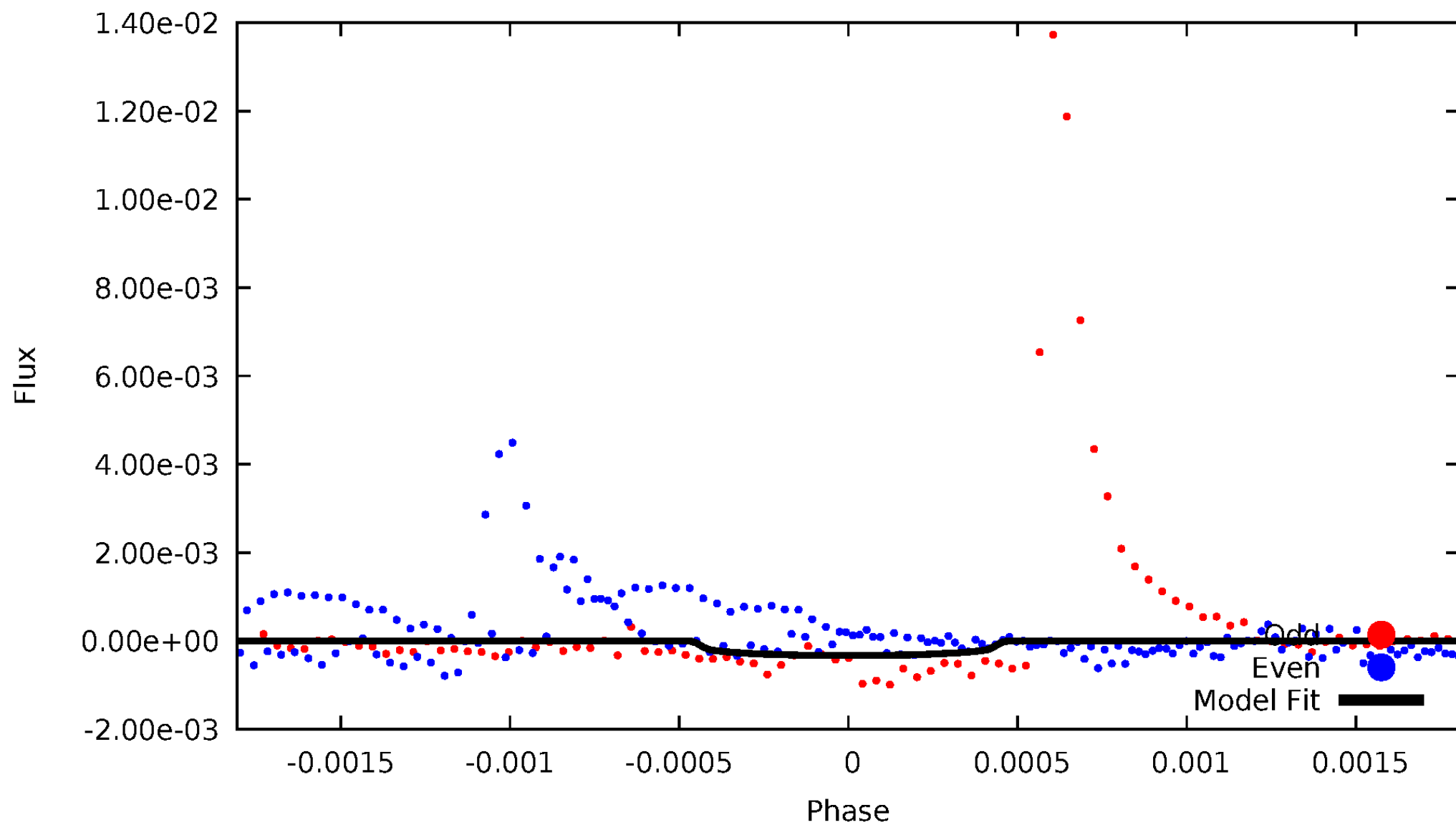


TCE 004919243-01



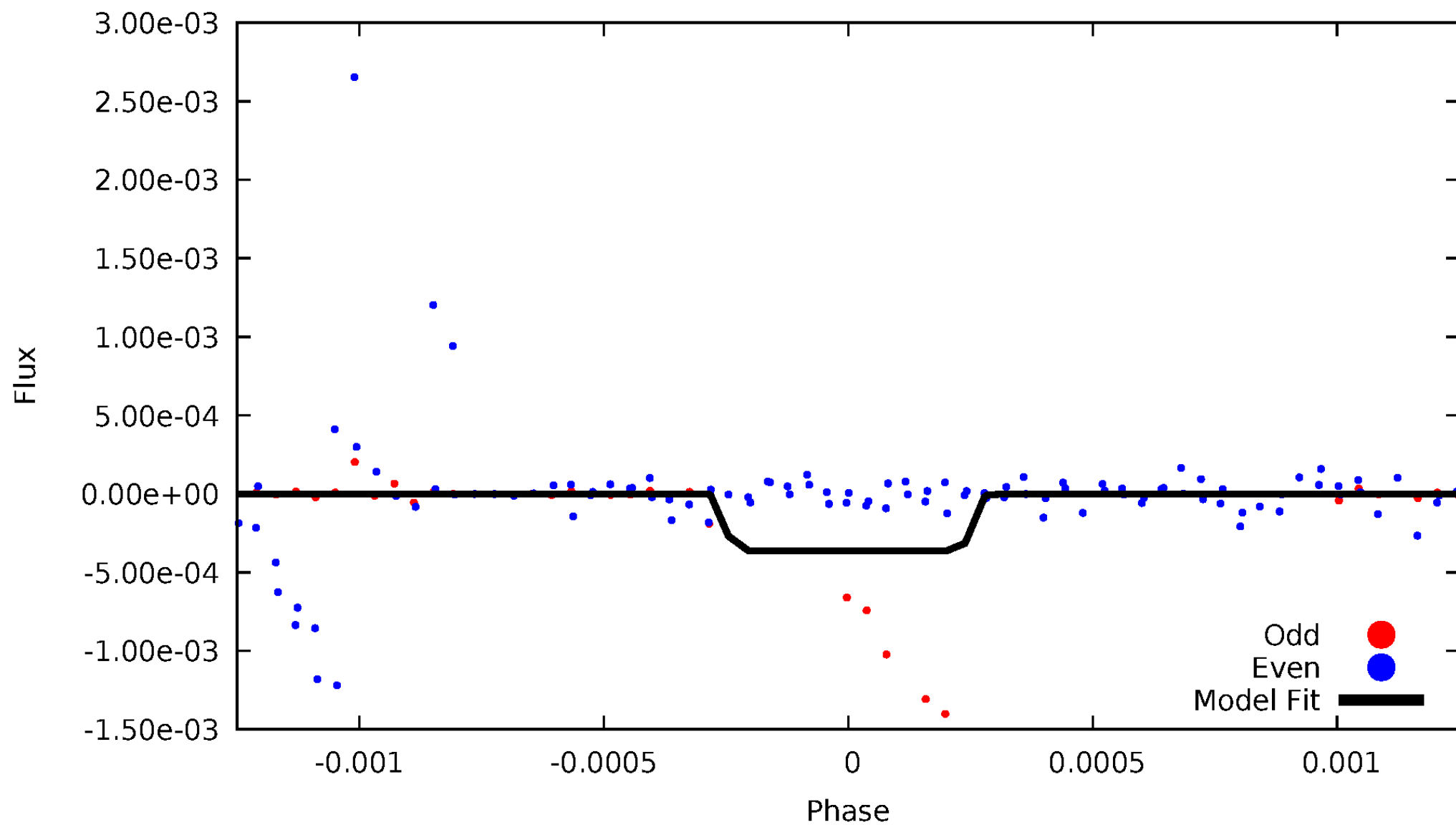
DV Odd/Even

TCE 004919243-01



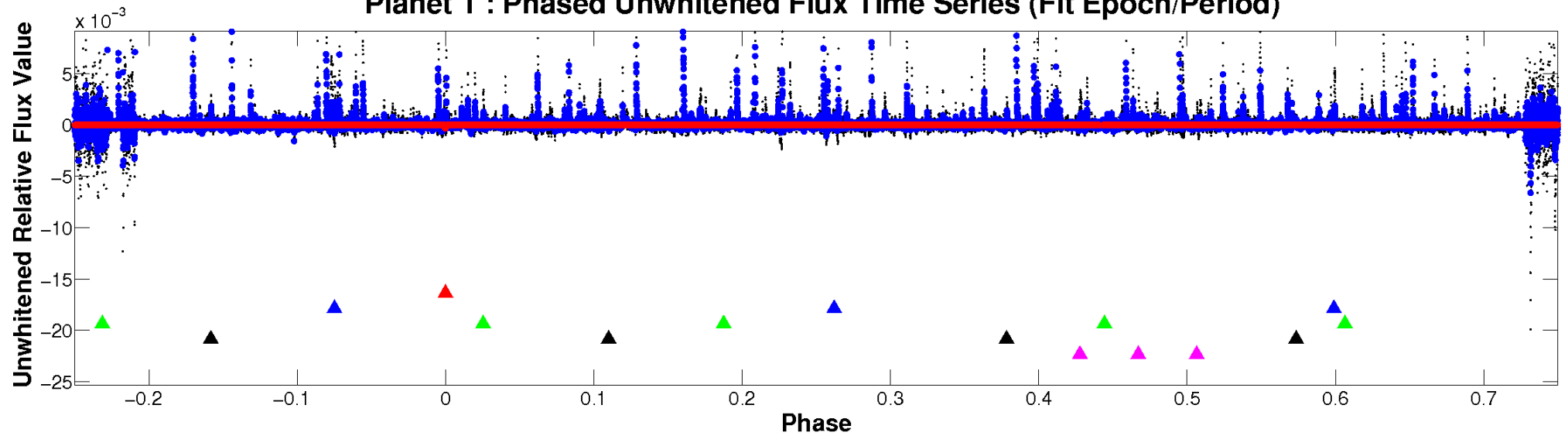
ALT Odd/Even

TCE 004919243-01

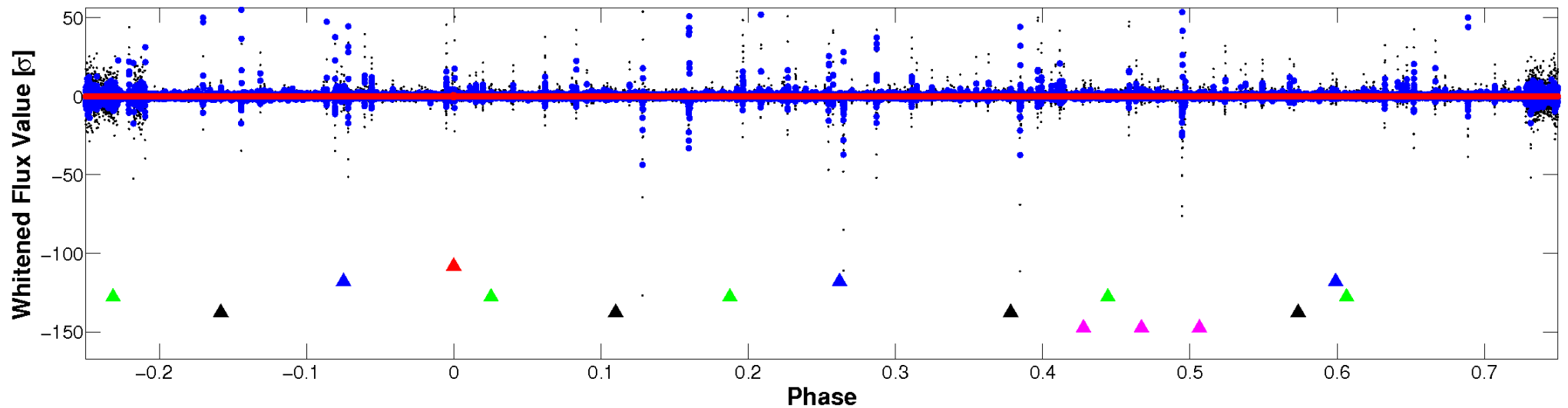


Non-Whitened Vs. Whitened Light Curve

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

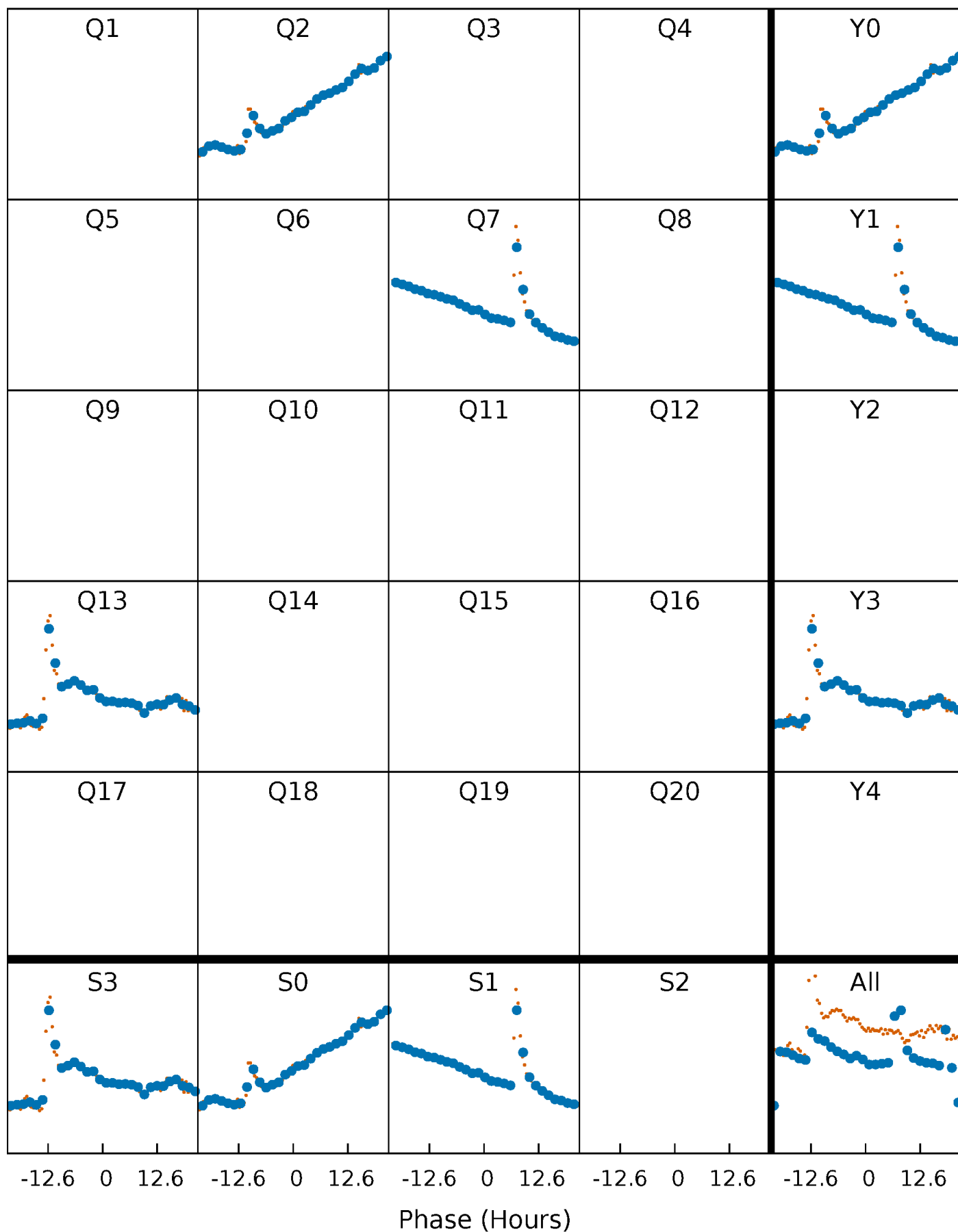


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



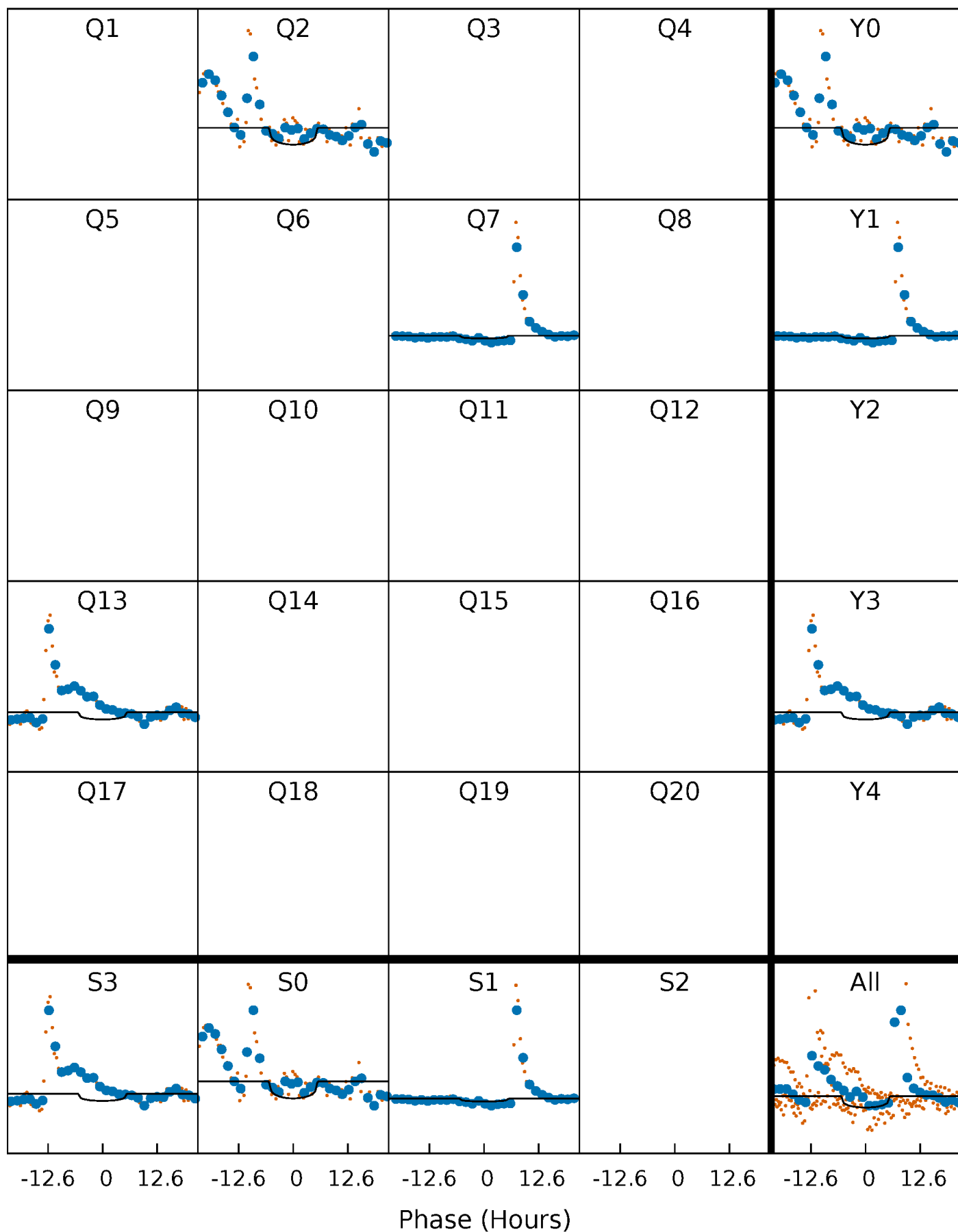
PDC Quarter-Phased Transit Curves

TCE 004919243-01 P=507.644997 Days $T_0=174.366957$ (BKJD)



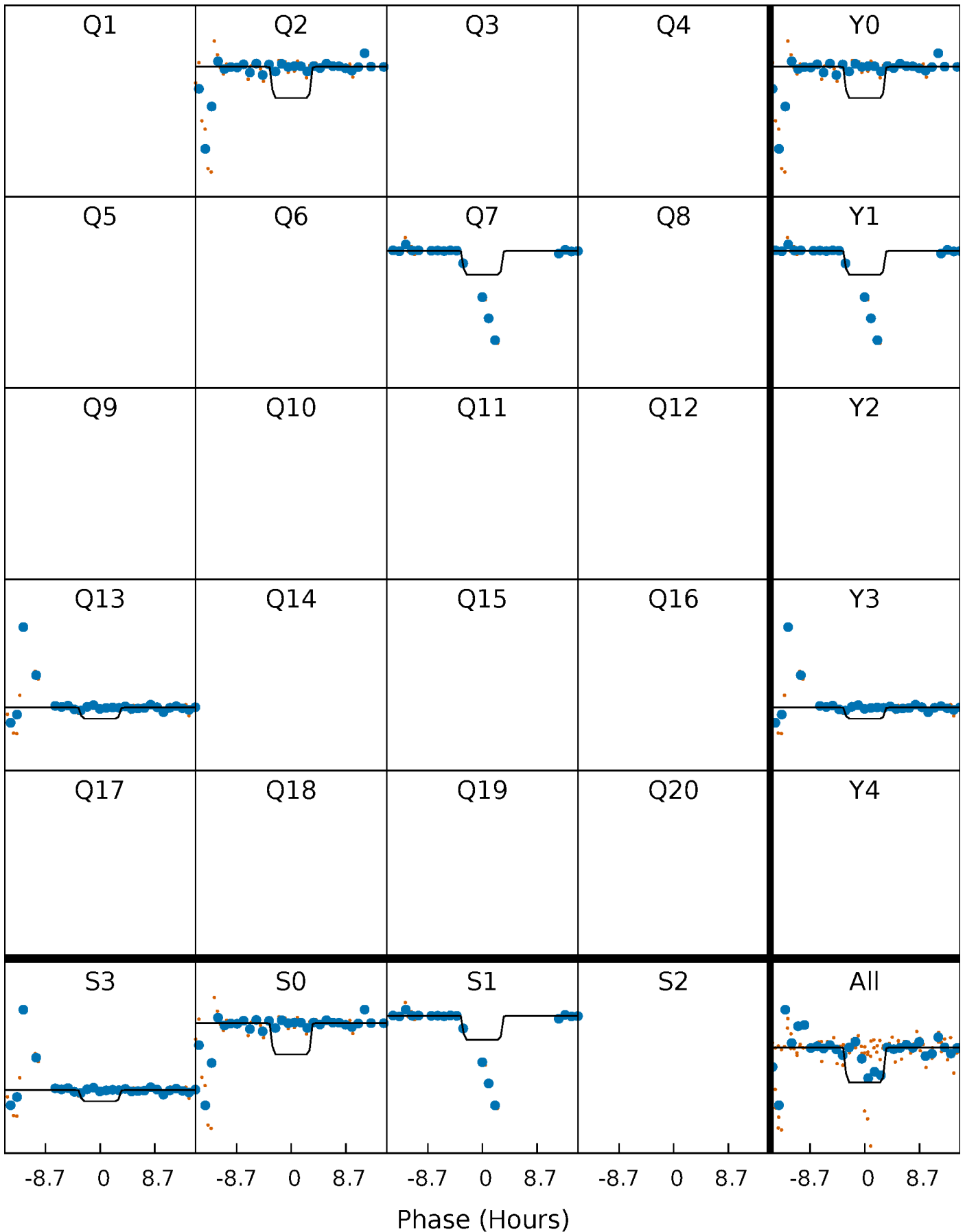
DV Quarter-Phased Transit Curves

TCE 004919243-01 P=507.644997 Days $T_0=174.366957$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

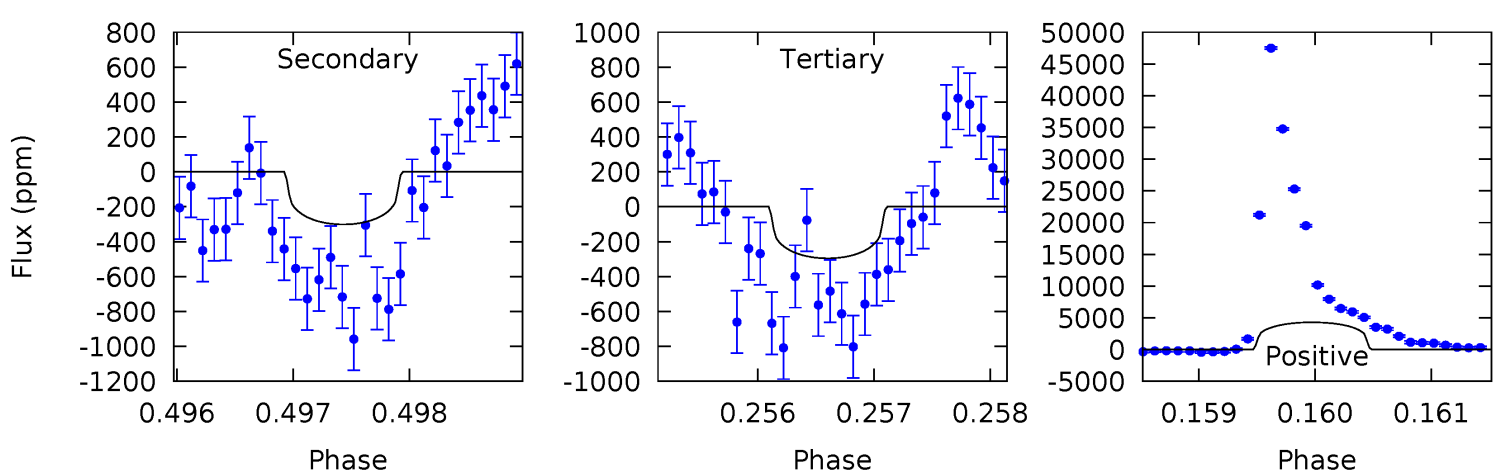
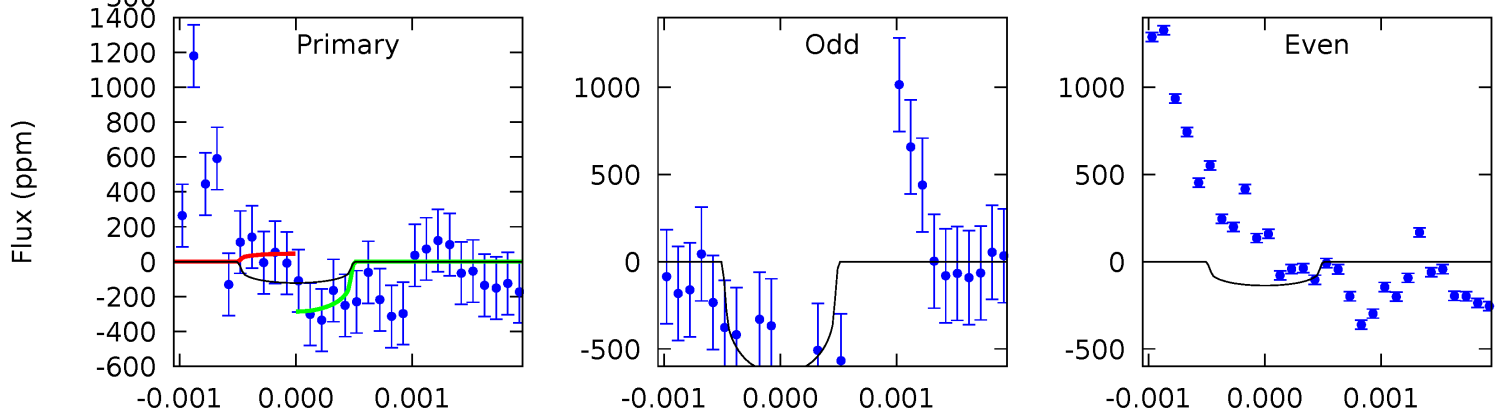
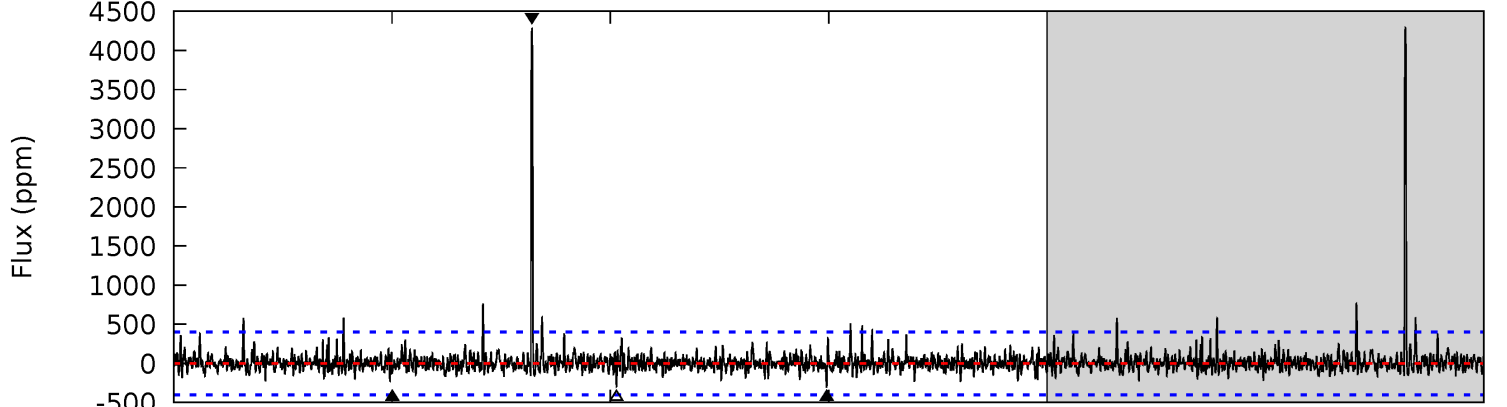
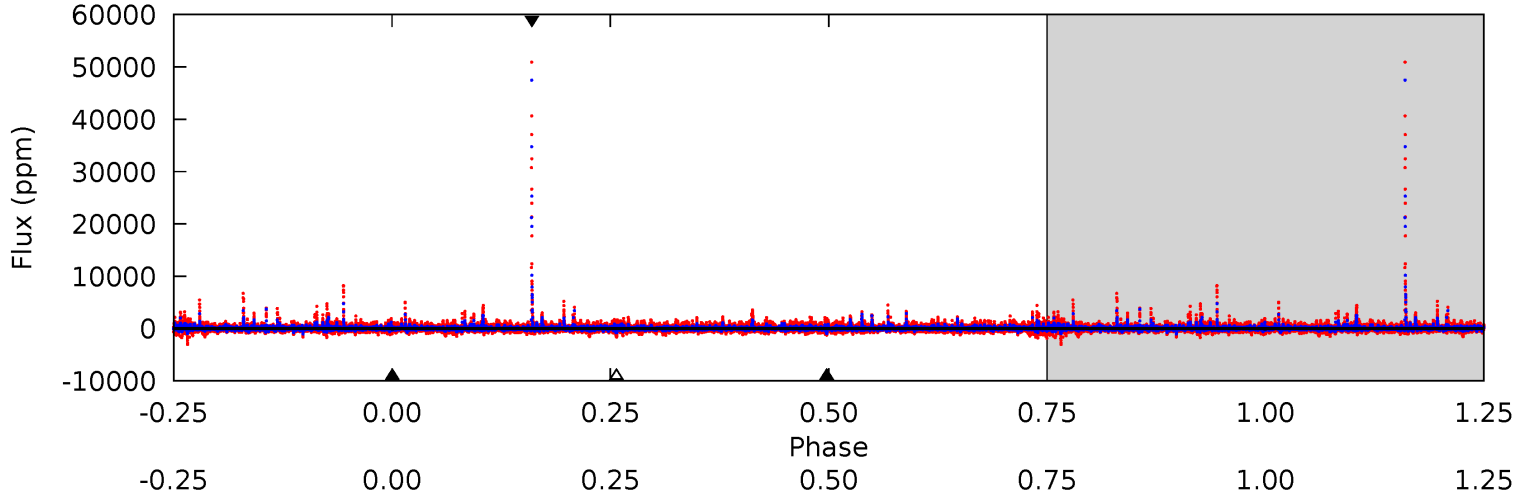
TCE 004919243-01 P=507.590064 Days $T_0=174.444805$ (BKJD)



DV Model-Shift Uniqueness Test

004919243-01, P = 507.644997 Days, E = 174.366957 Days

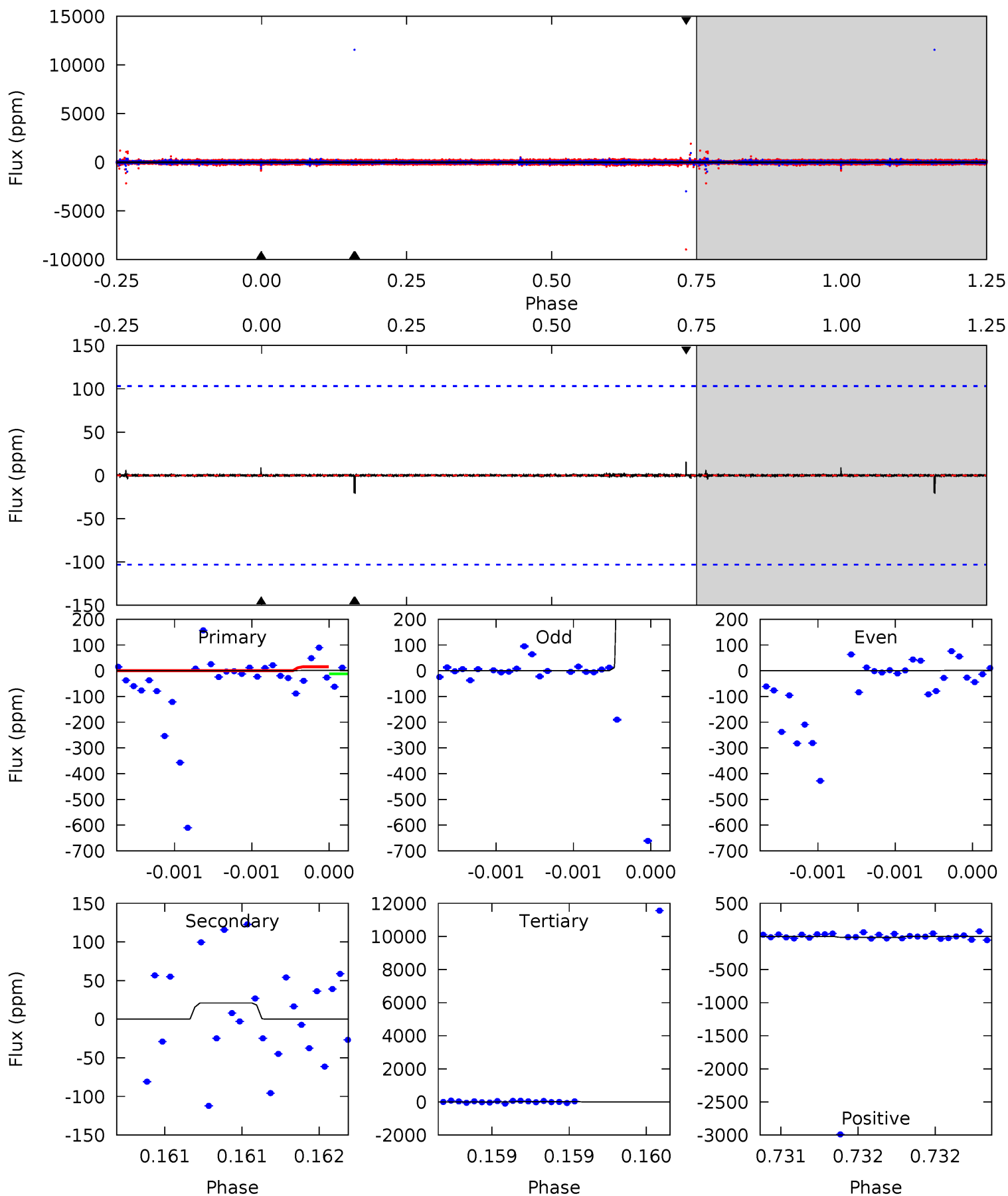
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
1.66	4.10	4.02	58.4	5.46	3.31	2.02	-2.36	-56.7	0.08	-54.2	1.39	1.11	0.93	1.69



Alt Model-Shift Uniqueness Test

004919243-01, P = 507.590064 Days, E = 174.444805 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.05	1.13	1.08	0.83	5.54	3.43	0.03	-1.03	-0.78	0.05	0.30	17.7	55.4	0.42	0



Stellar Parameters For KIC 004919243

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5008^{+124}_{-149}	$3.631^{+1.048}_{-0.328}$	$-0.320^{+0.300}_{-0.300}$	$2.353^{+1.349}_{-1.799}$	$0.863^{+0.241}_{-0.197}$	$0.093^{+2.968}_{-0.060}$
	+2%/-3%	+29%/-9%	+94%/-94%	+57%/-76%	+28%/-23%	+3183%/-65%
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 004919243-01 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-302 ± 73	$6.65^{+8.12}_{-4.61}$	424^{+71}_{-89}	4000^{+2460}_{-787}	4935^{+52516}_{-3947}
Alt.	-21 ± 19	$6.92^{+8.35}_{-4.70}$	426^{+67}_{-90}	2550^{+1007}_{-656}	223^{+2422}_{-213}

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

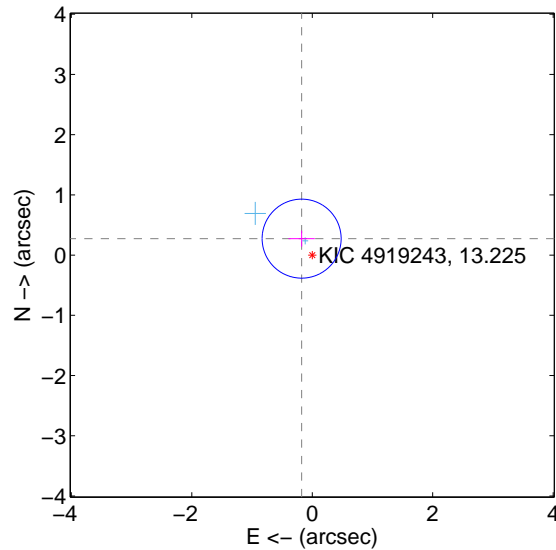
Supplemental centroid analysis for 004919243-01. Kepler magnitude: 13.22. Transit SNR 3.28

There are 2 quarters with good PRF difference image offsets

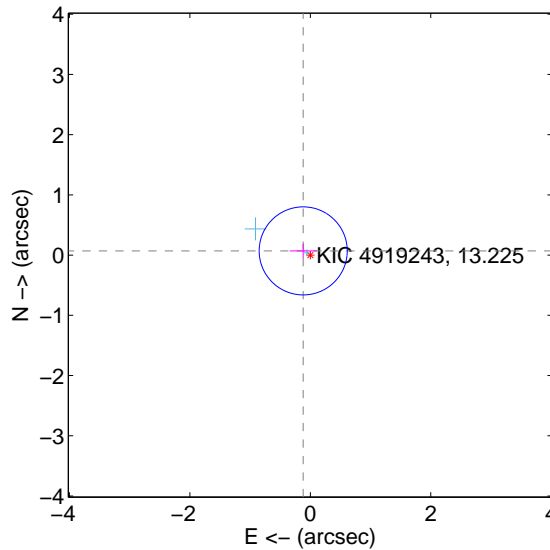
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.325 ± 0.219	1.49	0.176 ± 0.218	0.273 ± 0.132
PRF-fit source offset from KIC position	0.137 ± 0.244	0.56	0.118 ± 0.224	0.070 ± 0.120
photometric centroid source offset	0.90 ± 0.82	1.11	0.51 ± 0.74	-0.74 ± 0.85

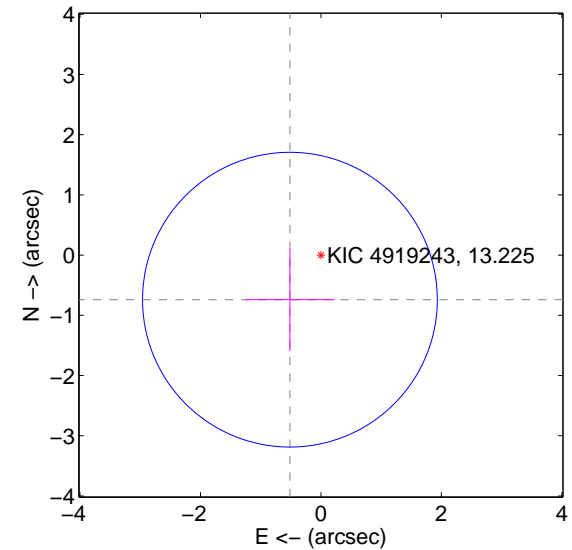
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

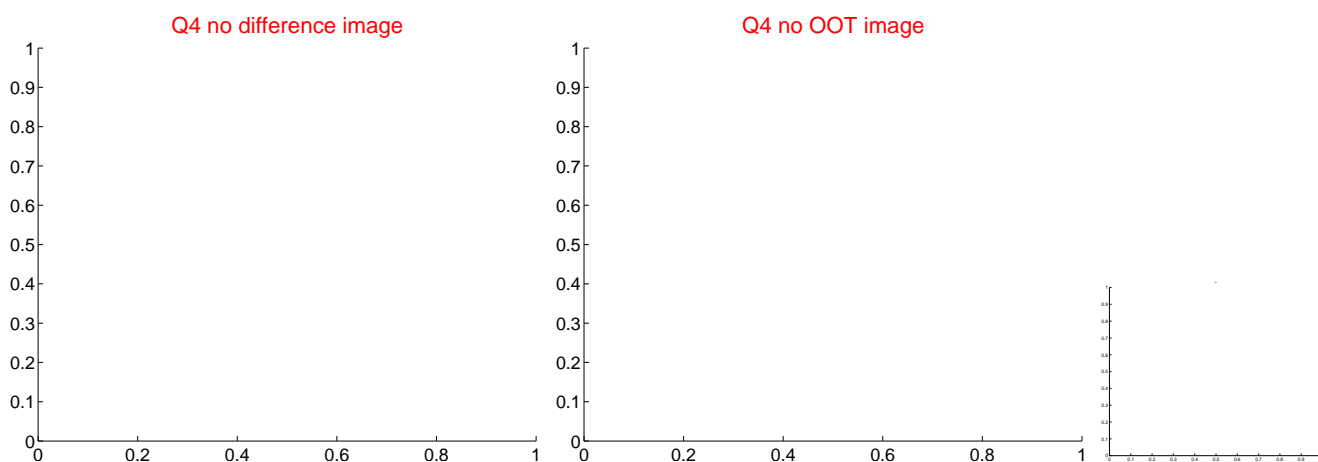
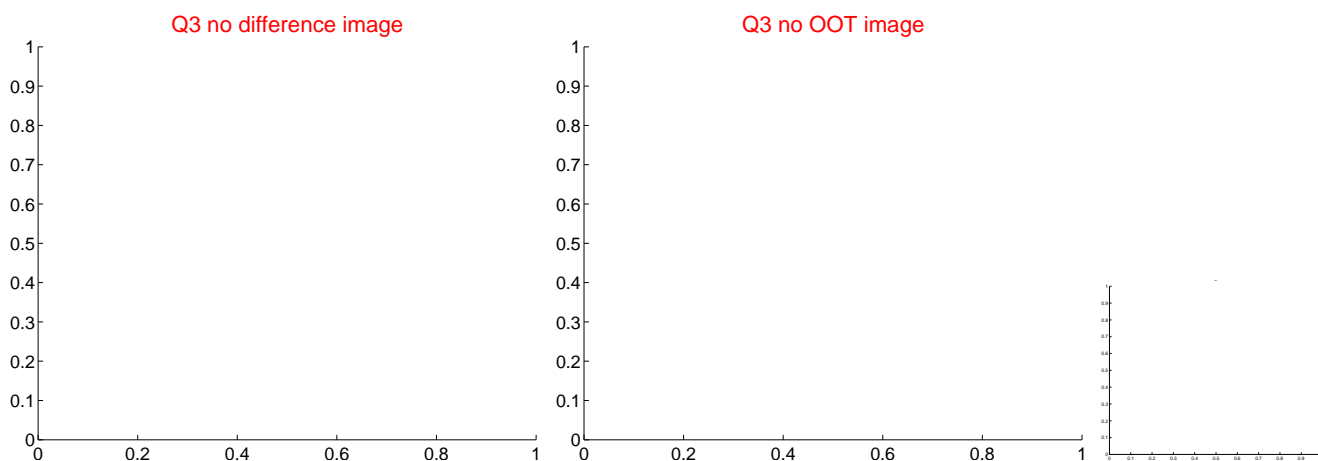
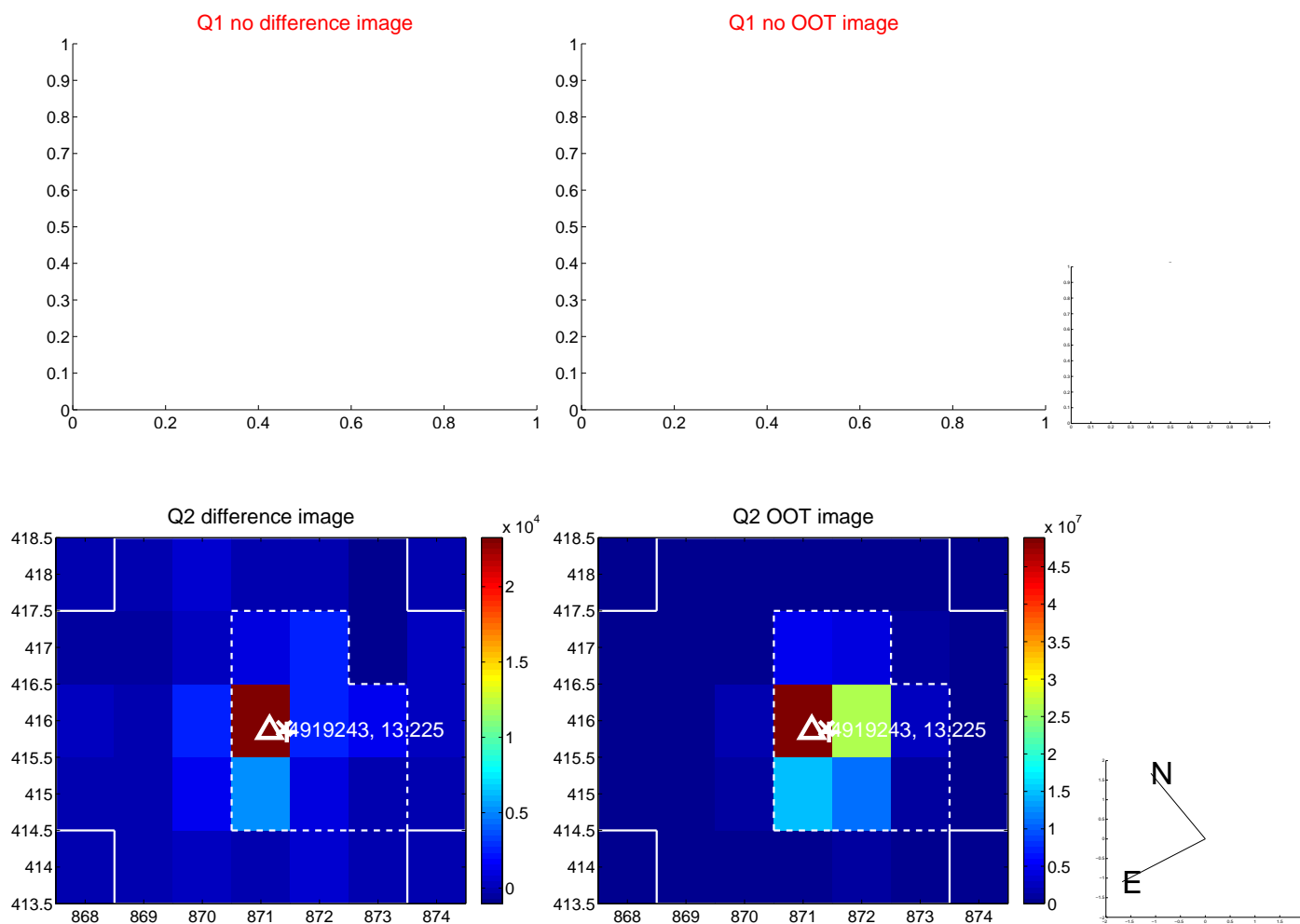


offset from photometric centroids



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.

Q5 no difference image



Q5 no OOT image



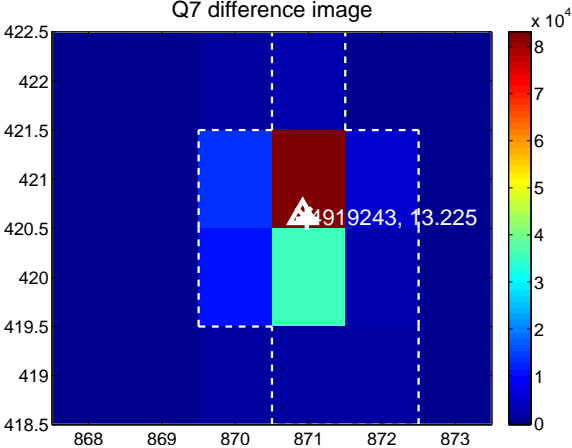
Q6 no difference image



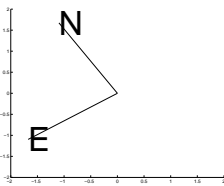
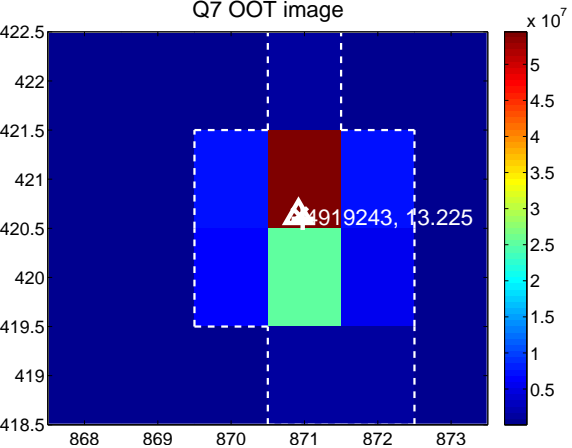
Q6 no OOT image



Q7 difference image



Q7 OOT image



Q8 no difference image



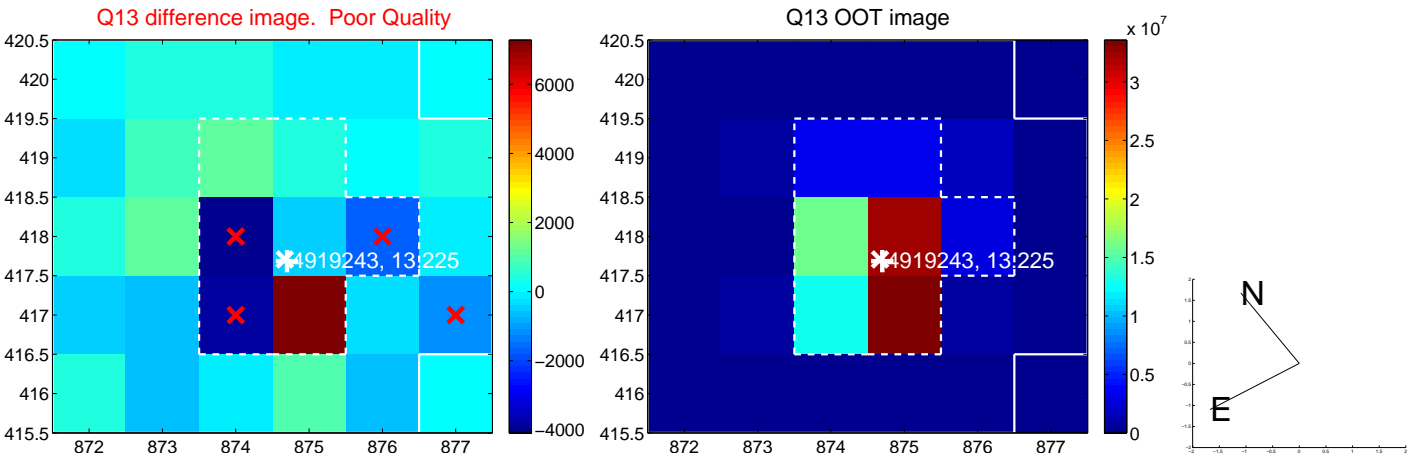
Q8 no OOT image



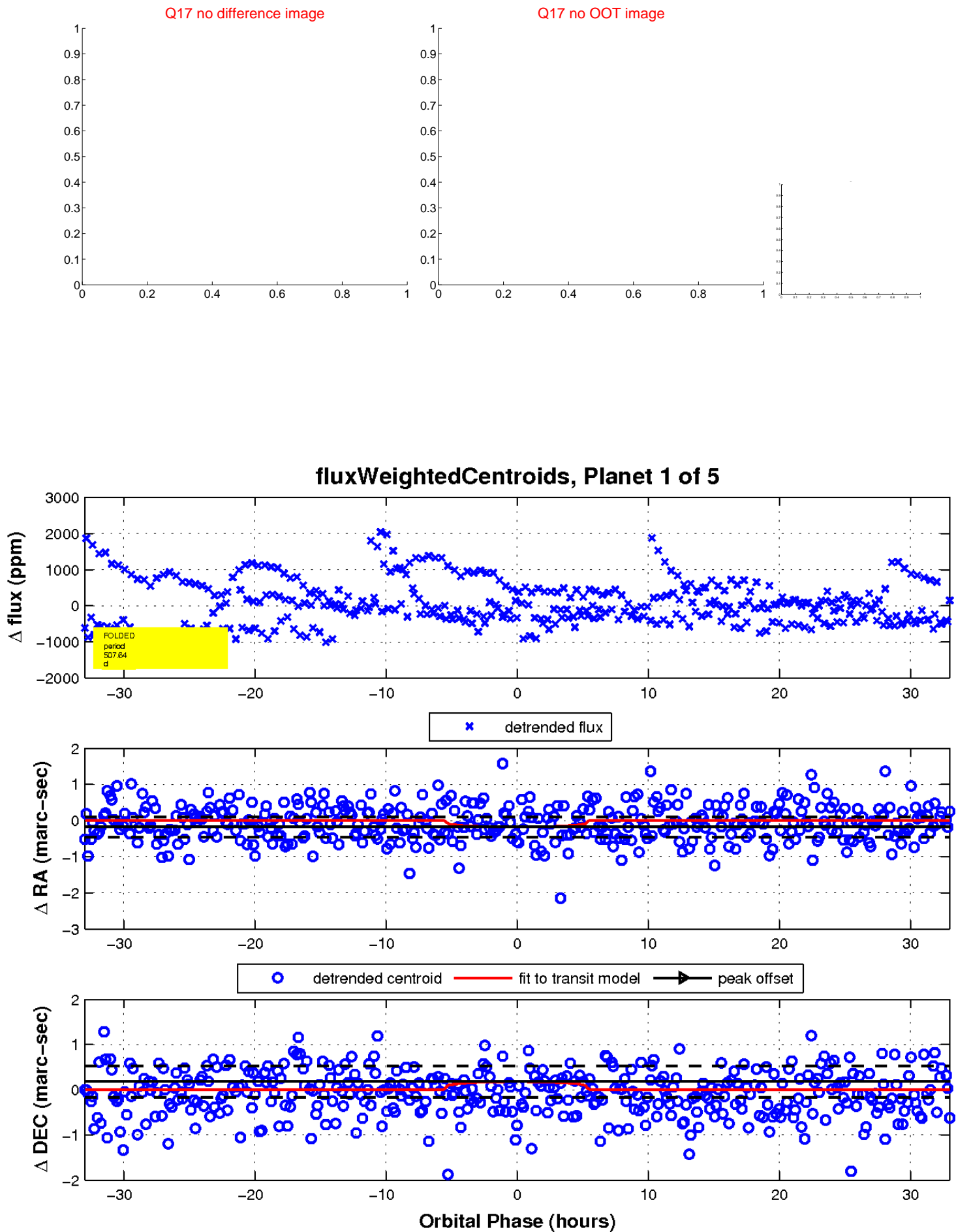
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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

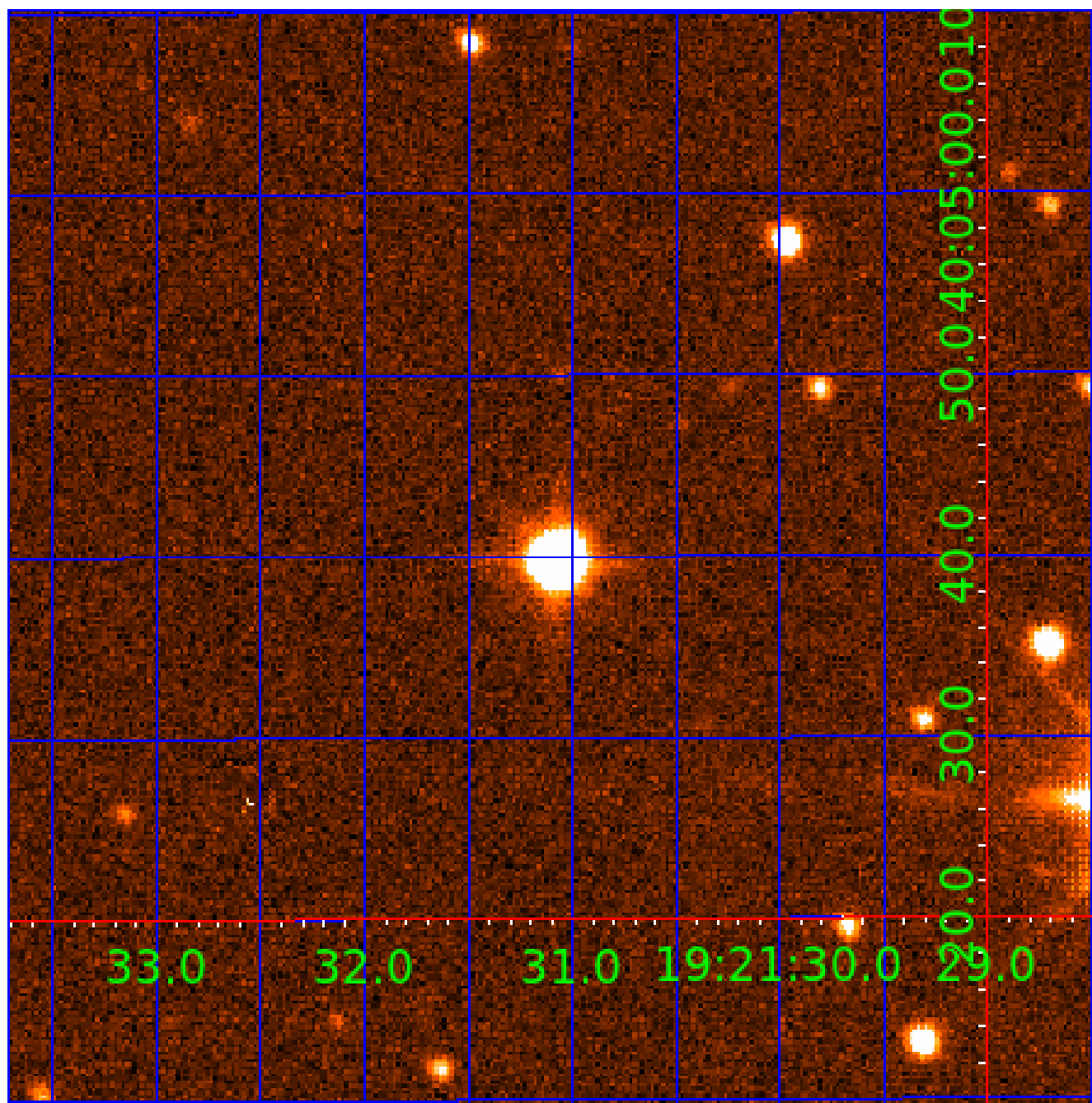


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004919243

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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Robovetter Results

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004919243-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919243-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919243-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

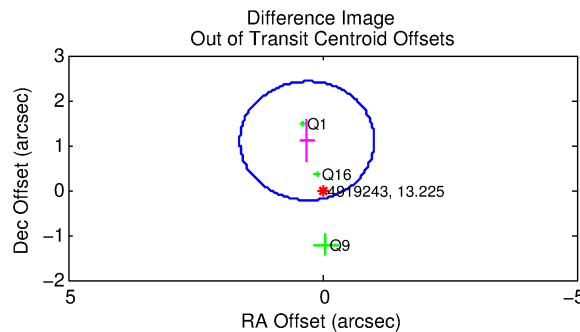
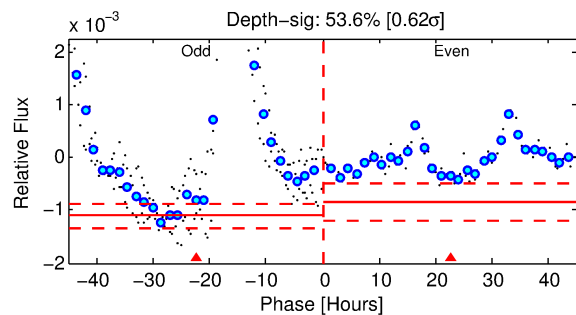
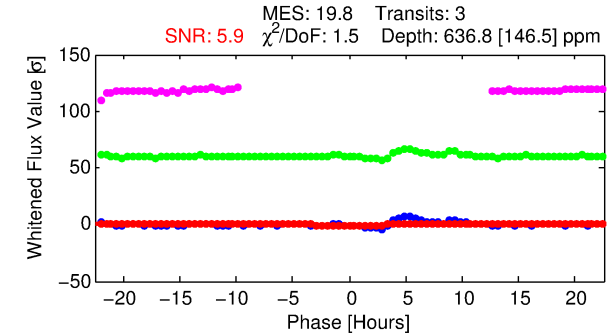
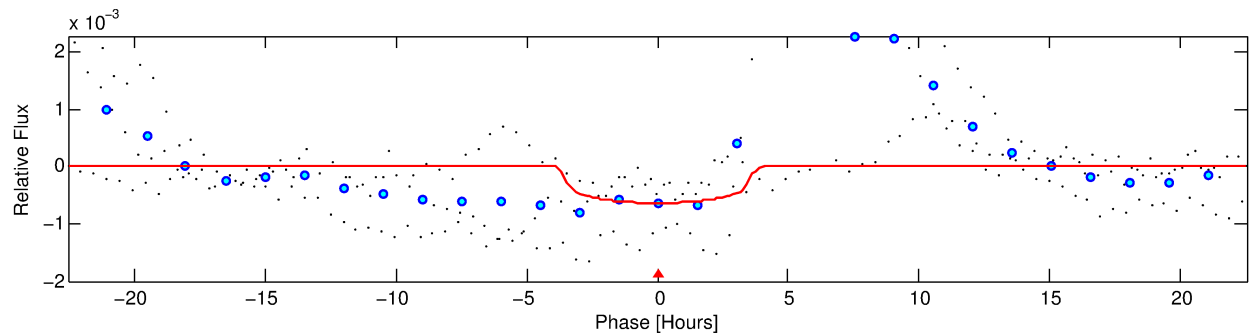
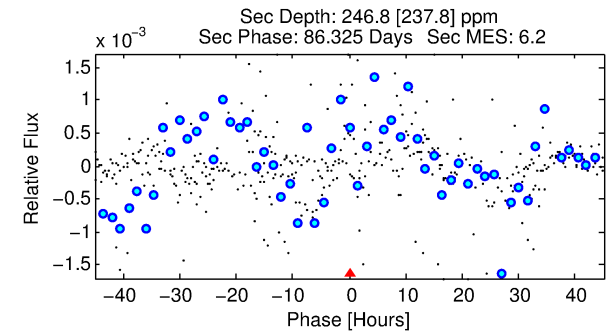
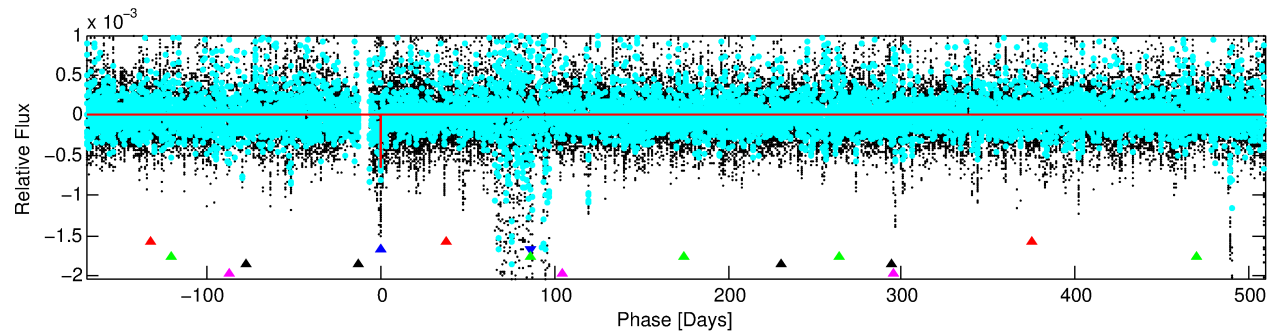
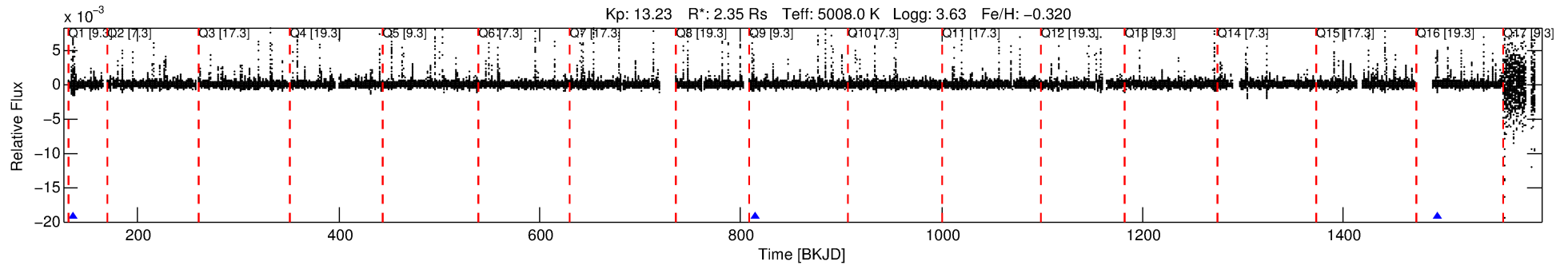
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004919243-02

No Significant Match Found

DV One-Page Summary

KIC: 4919243 Candidate: 2 of 5 Period: 678.691 d



DV Fit Results:

Period = 678.69139 [0.00800] d
Epoch = 136.3637 [0.0116] BKJD
Rp/R* = 0.0246 [0.0166]
a/R* = 517.55 [1247.82]
b = 0.70 [1.80]
Seff = 1.51 [2.55]
Teq = 282 [119] K
Rp = 6.32 [6.44] Re
a = 1.4395 [1.3708] AU
Ag = 7039.26 [16646.19] [0.42σ]
Teffp = 4000 [1661] K [2.23σ]

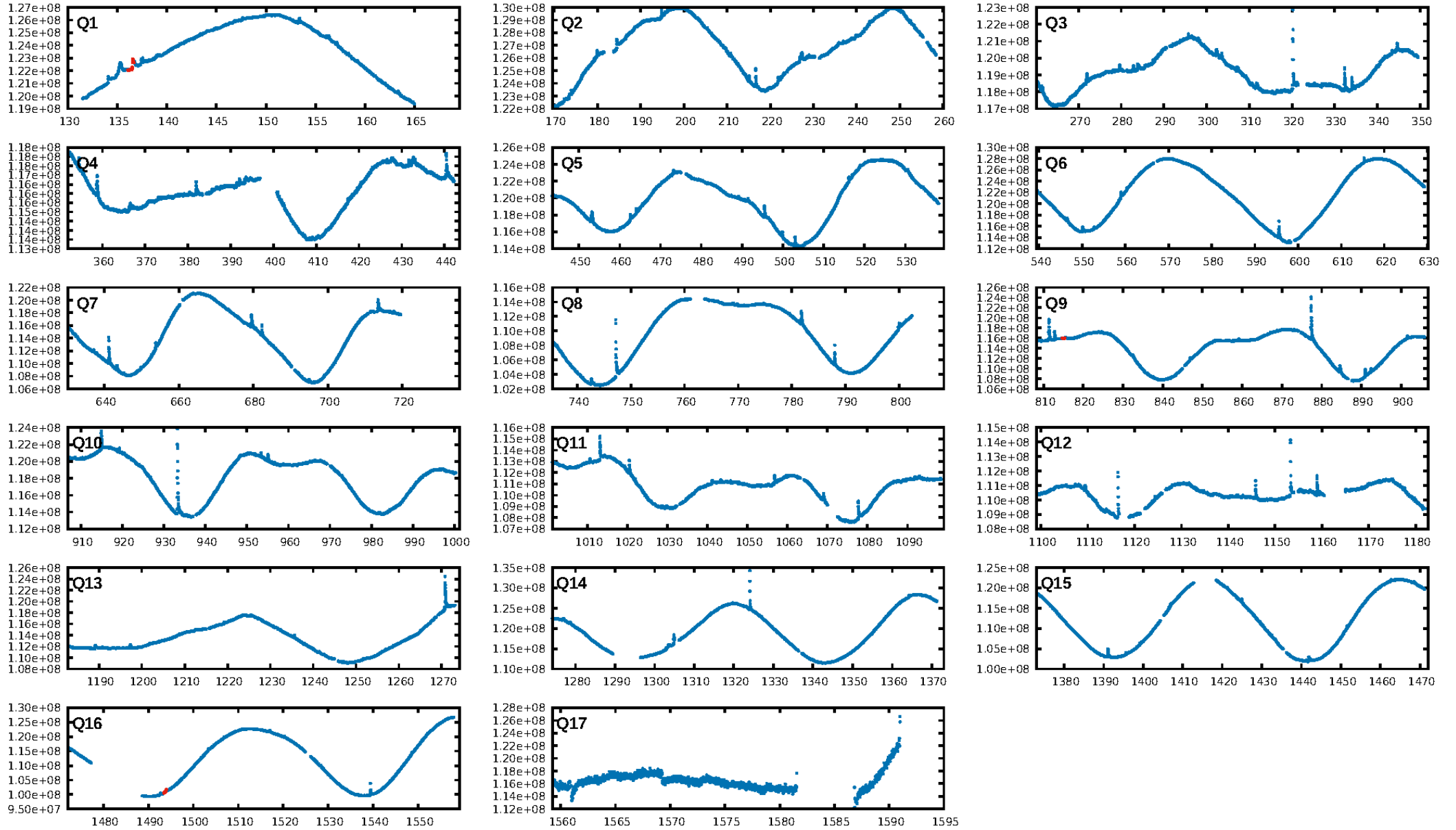
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [307.91σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 0.9%
ModelChiSquareGof-sig: 71.8%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [2/2]
GhostDiagnostic-chr: 10.55
Centroid-sig: 40.7%
Centroid-so: 0.477 arcsec [1.14σ]
OotOffset-rm: 1.138 arcsec [2.58σ]
KicOffset-rm: 0.988 arcsec [2.14σ]
OotOffset-st: 0/0/1/2 [3]
KicOffset-st: 0/0/1/2 [3]
DiffImageQuality-fgm: 1.00 [3/3]
DiffImageOverlap-fno: 1.00 [3/3]

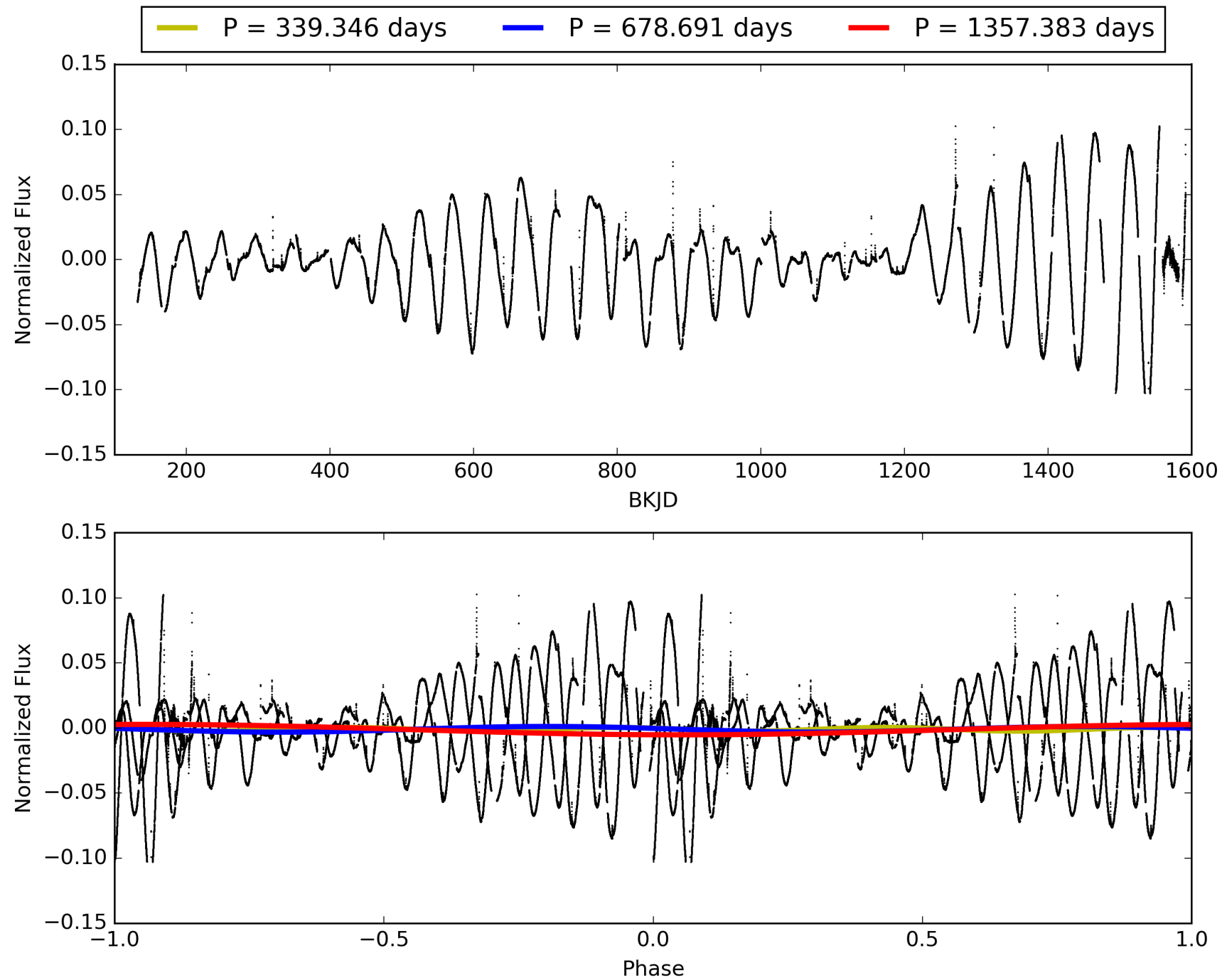
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:11:14 Z

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

TCE 004919243-02, PDC Light Curves

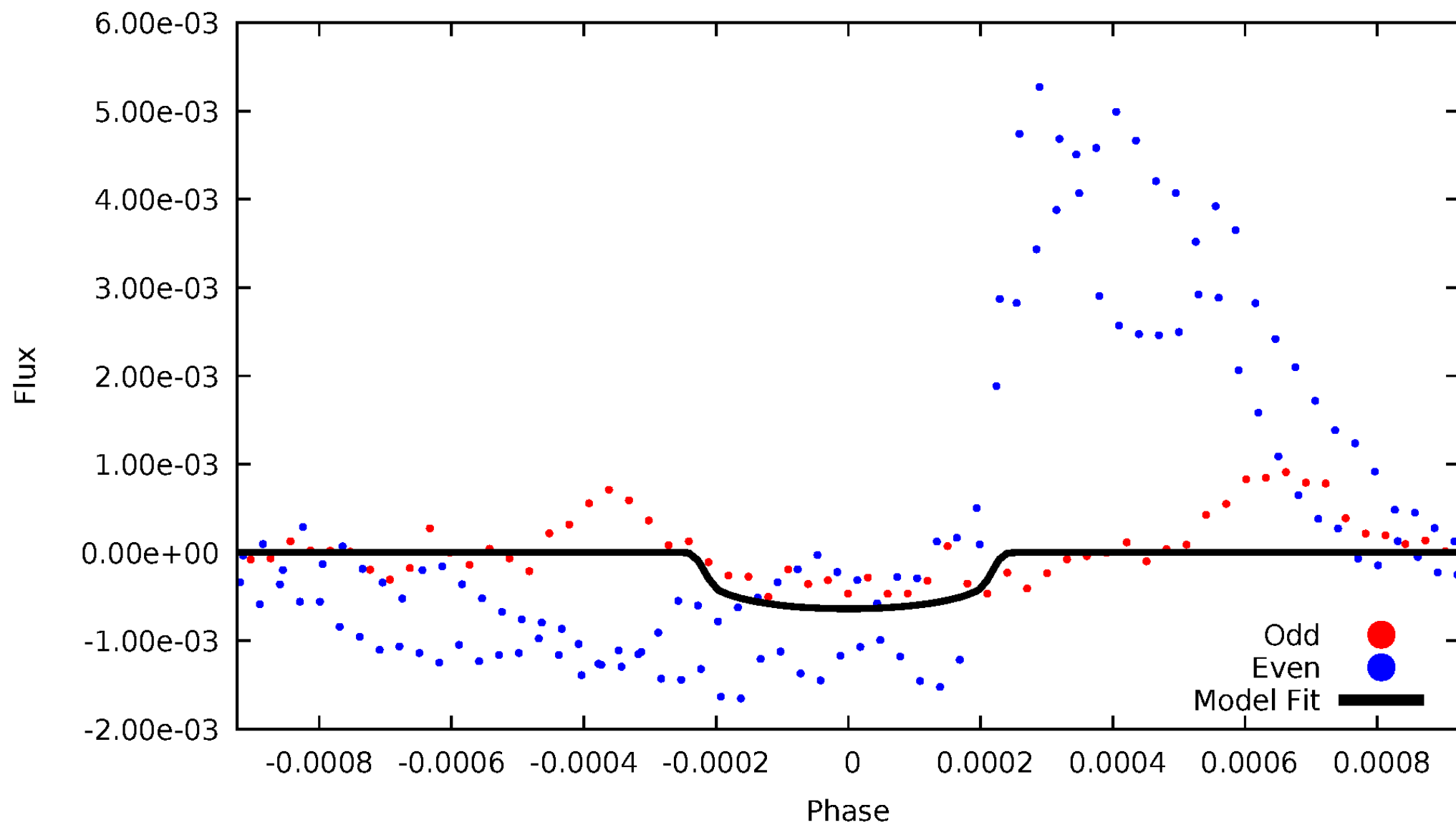


TCE 004919243-02



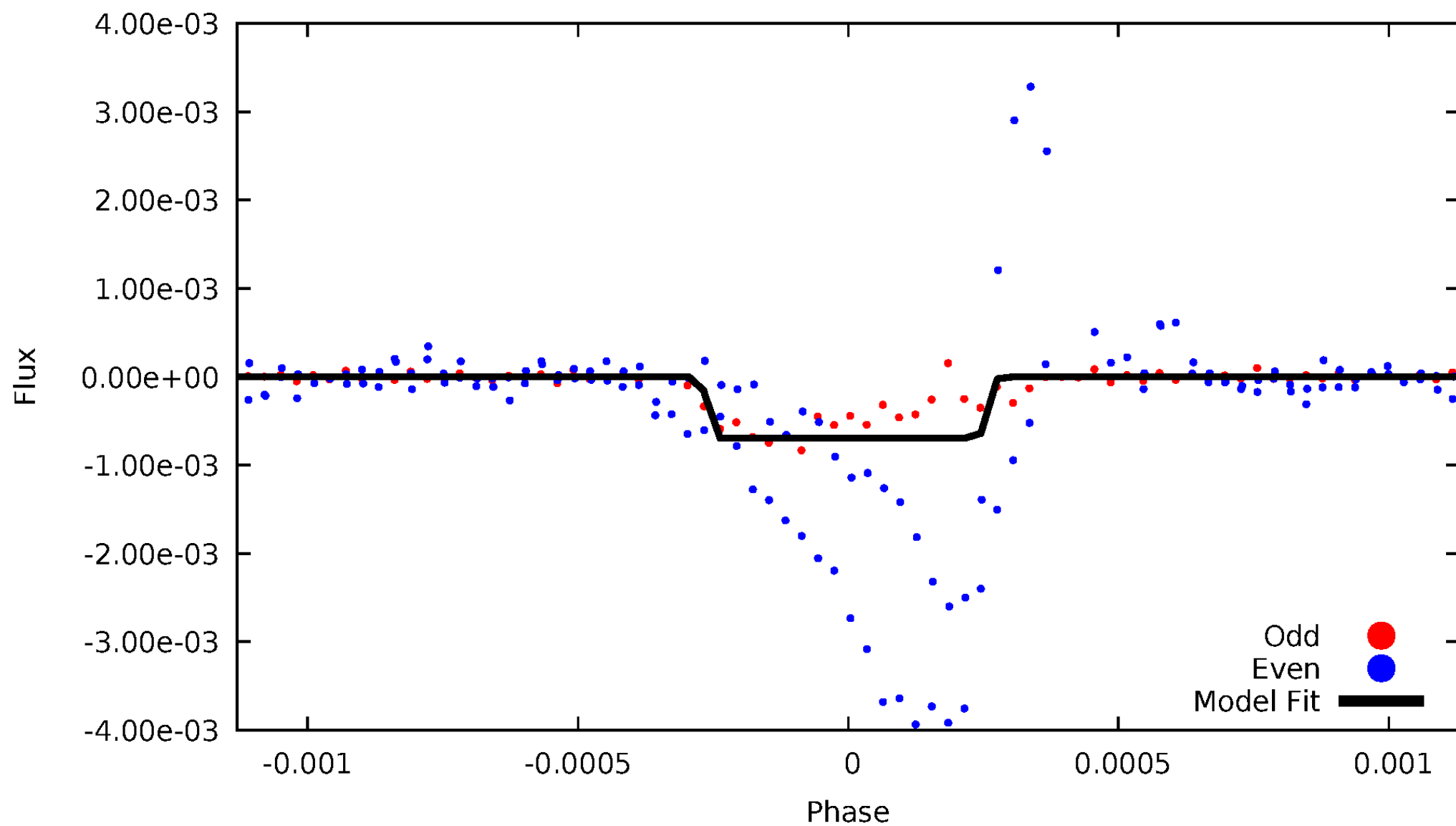
DV Odd/Even

TCE 004919243-02



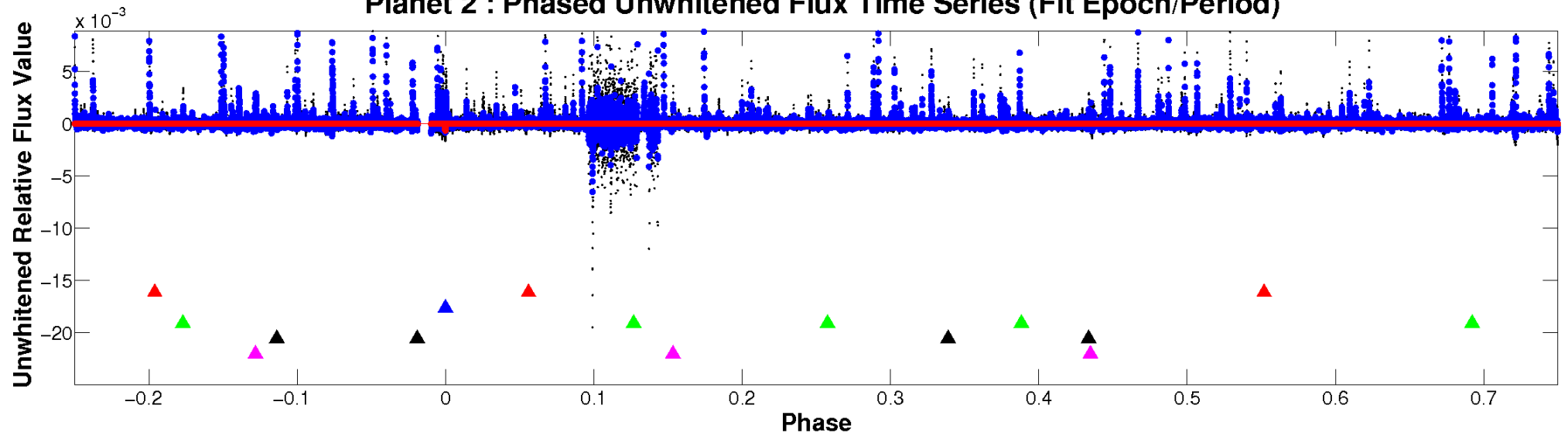
ALT Odd/Even

TCE 004919243-02

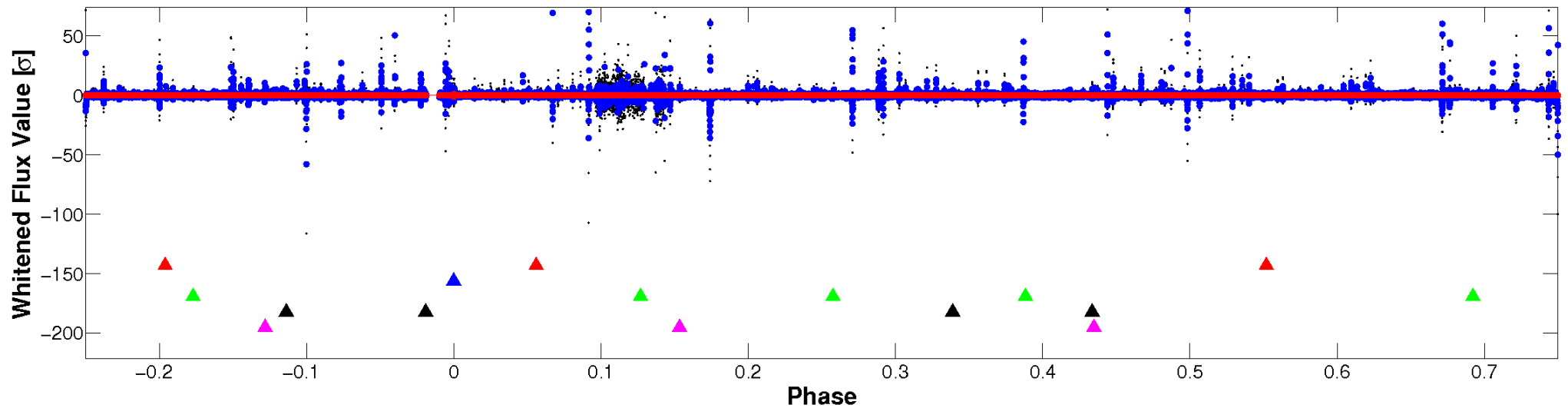


Non-Whitened Vs. Whitened Light Curve

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

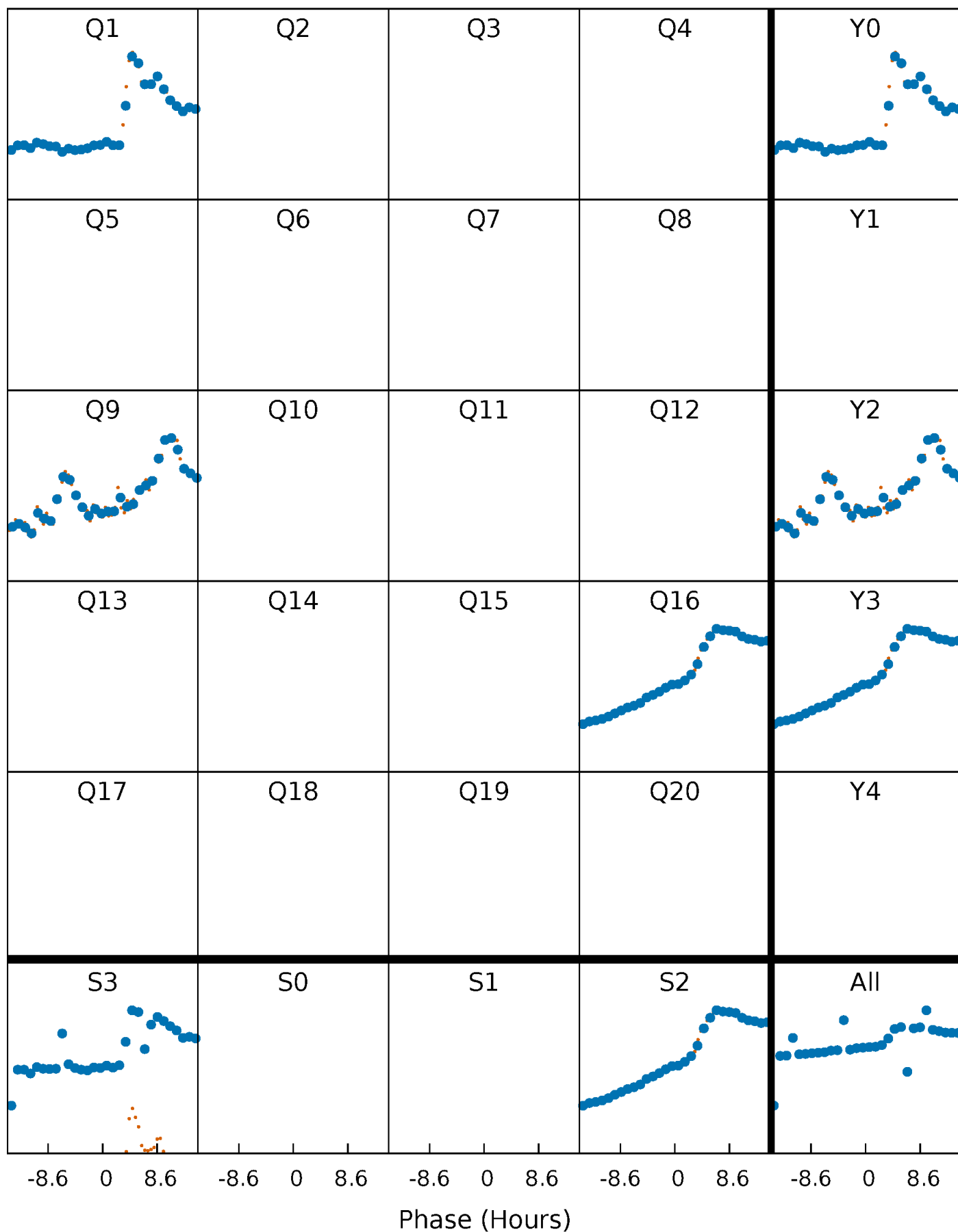


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



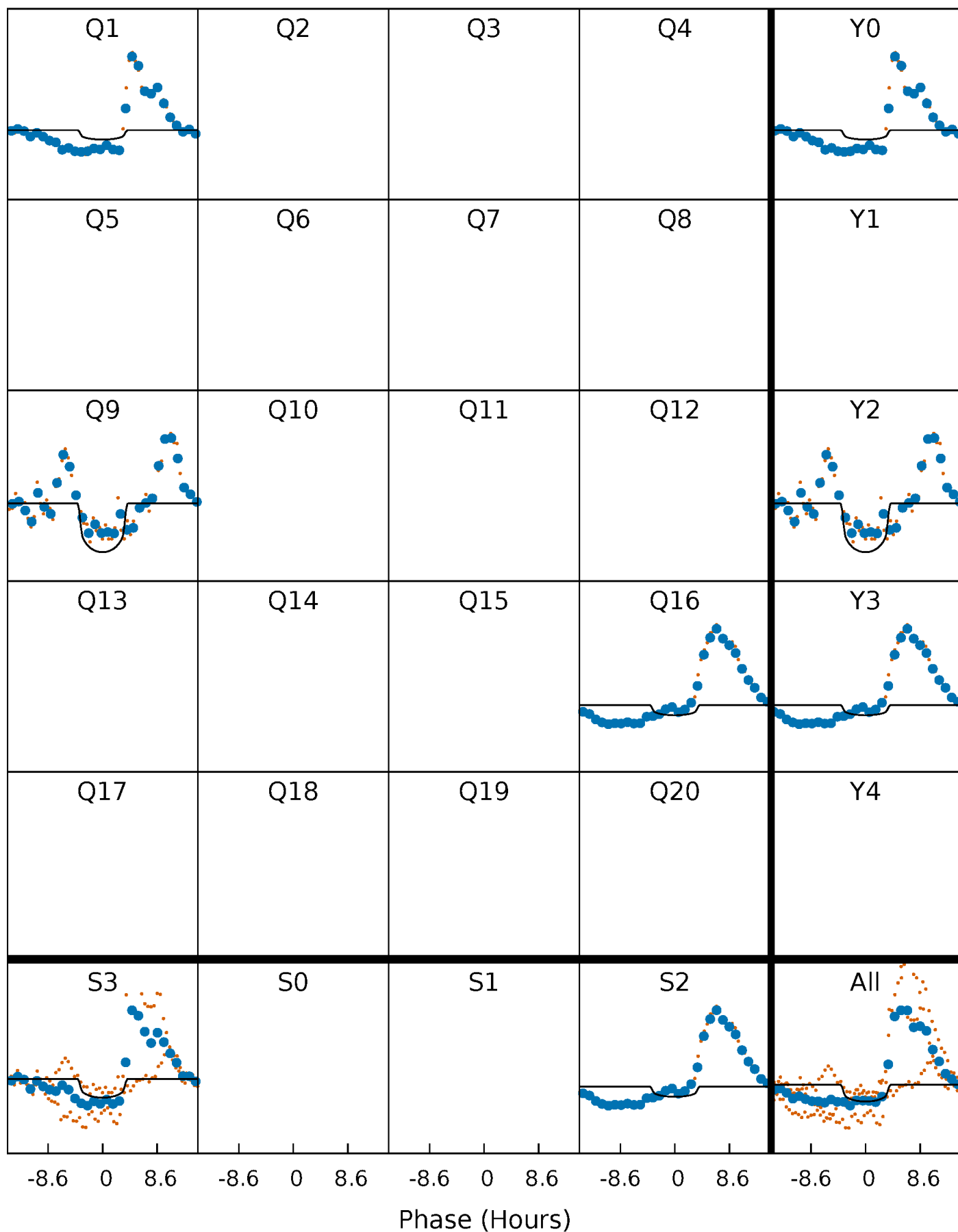
PDC Quarter-Phased Transit Curves

TCE 004919243-02 P=678.691387 Days $T_0=136.363745$ (BKJD)



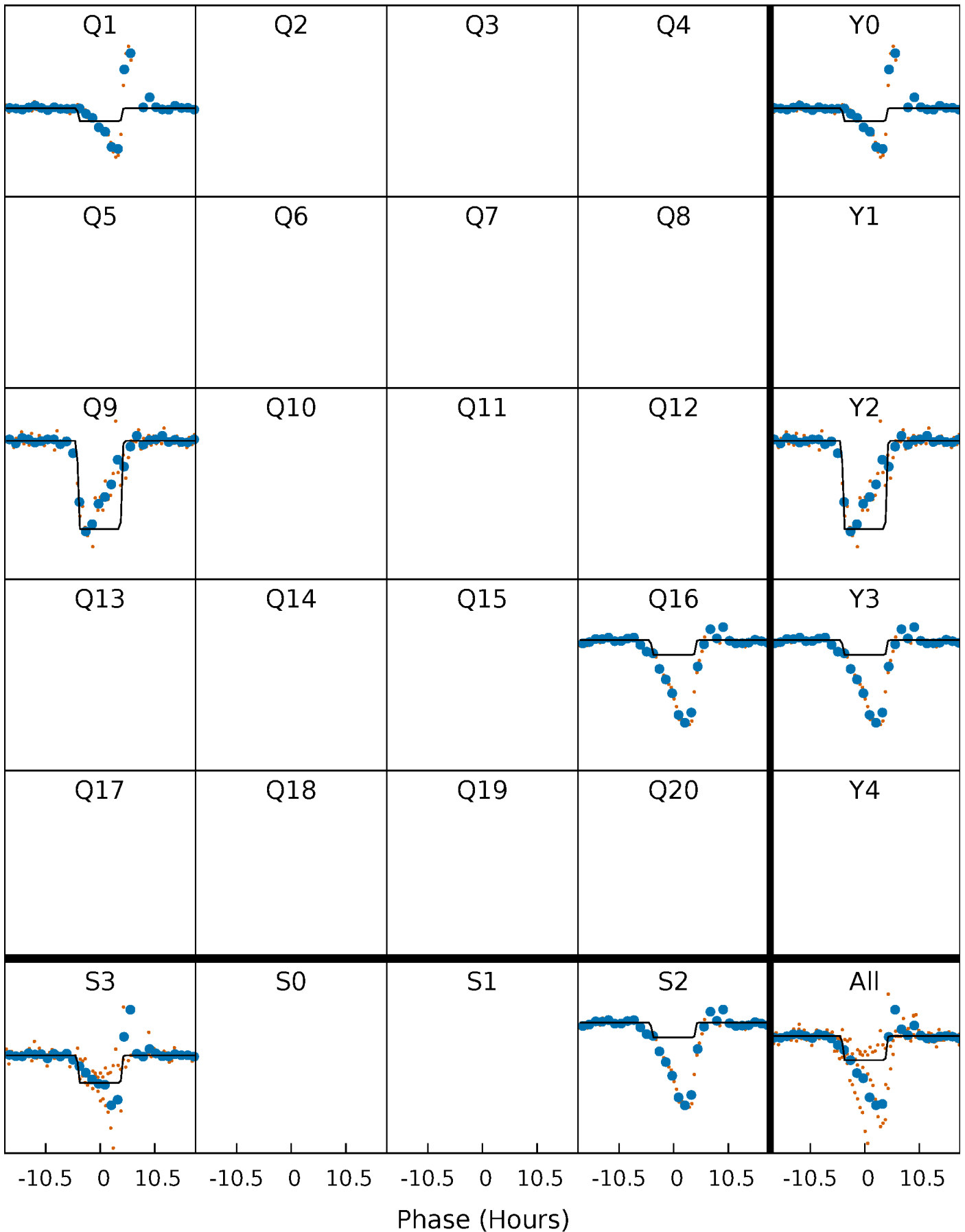
DV Quarter-Phased Transit Curves

TCE 004919243-02 $P=678.691387$ Days $T_0=136.363745$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

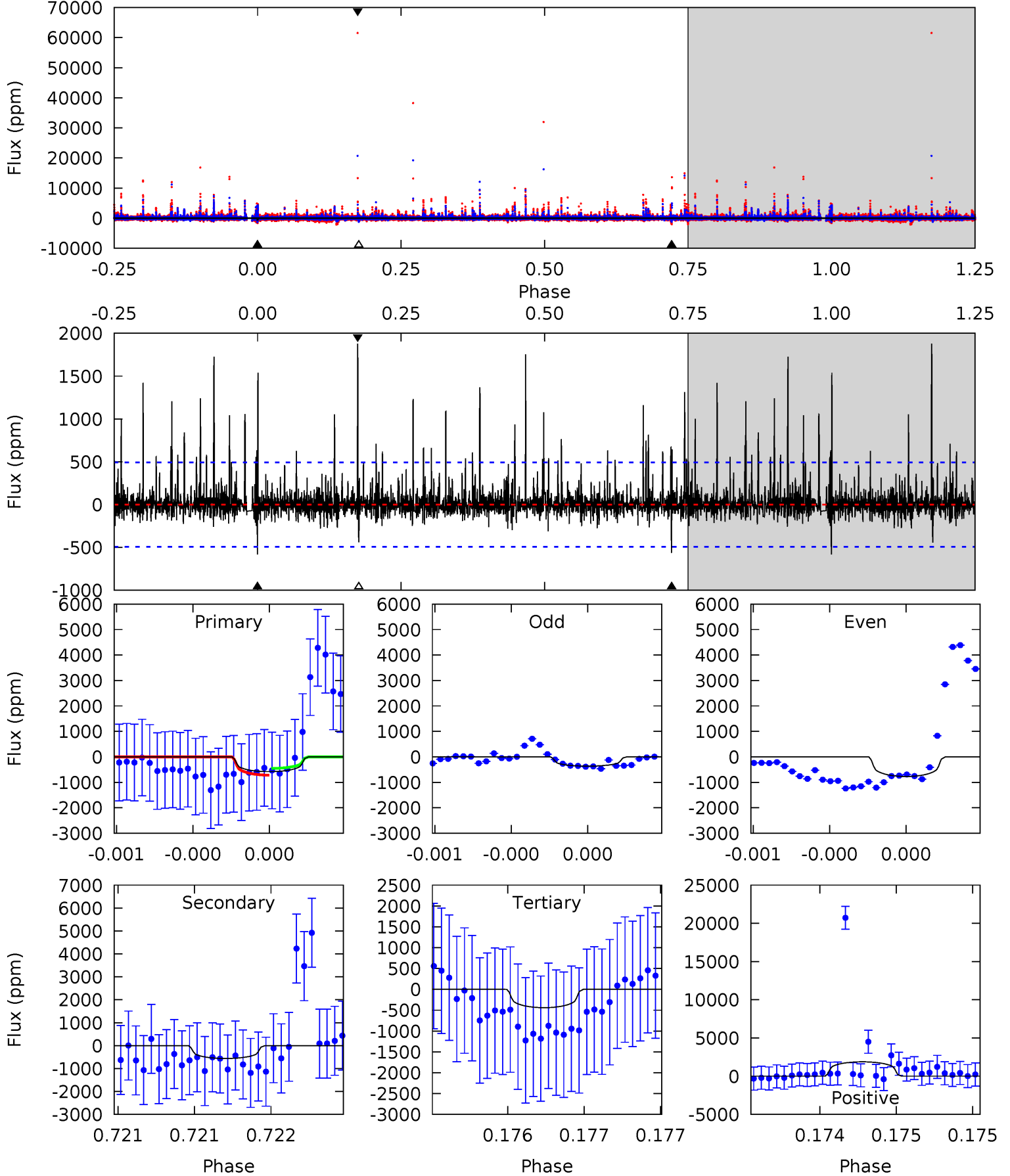
TCE 004919243-02 P=678.700695 Days $T_0=136.331171$ (BKJD)



DV Model-Shift Uniqueness Test

004919243-02, P = 678.691387 Days, E = 136.363745 Days

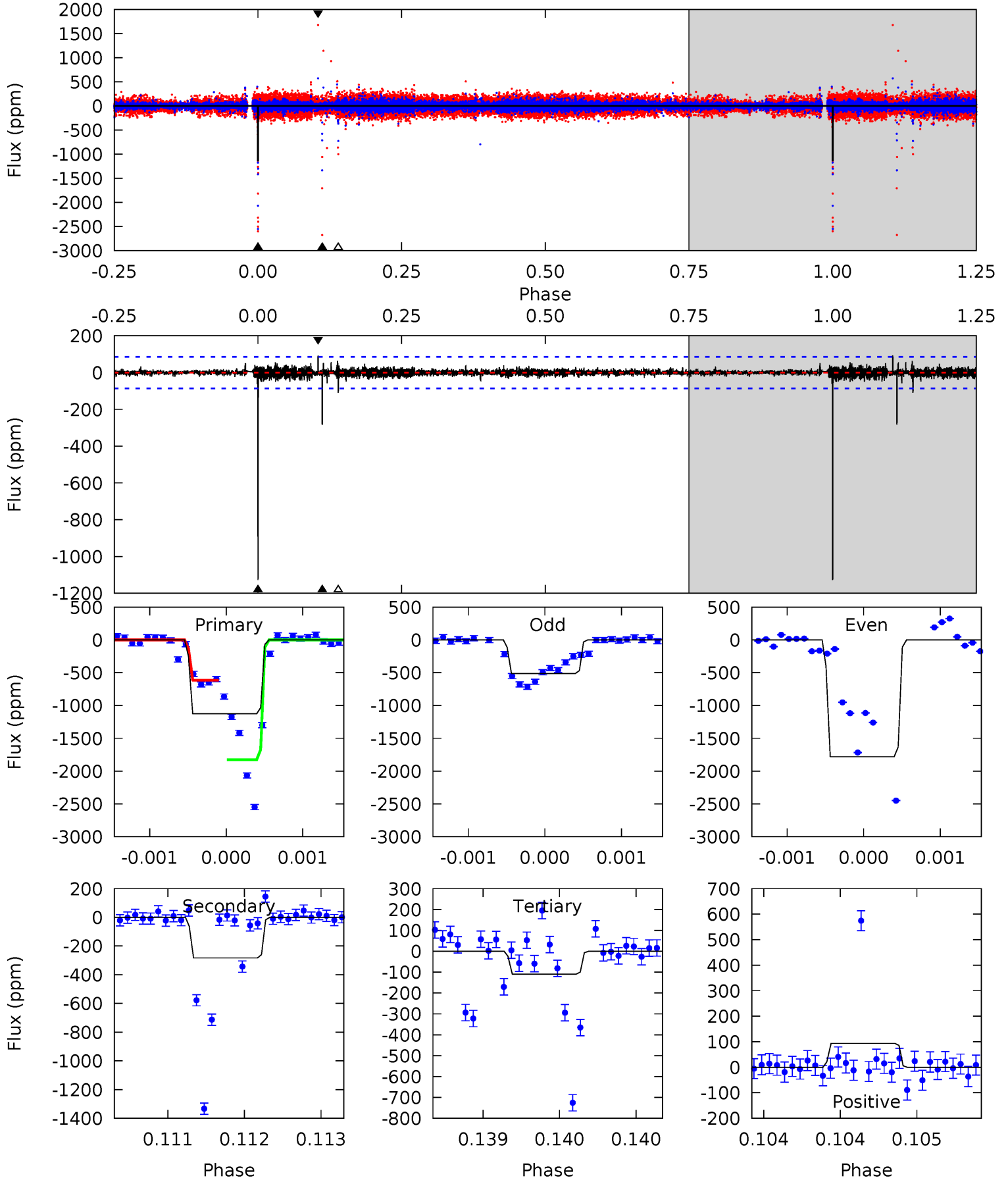
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
6.58	6.36	4.99	21.3	5.57	3.48	1.88	1.59	-14.7	1.37	-14.9	0.92	1.78	0.76	1.49



Alt Model-Shift Uniqueness Test

004919243-02, P = 678.700695 Days, E = 136.331171 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
73.1	18.4	7.09	6.06	5.56	3.46	0.66	66.0	67.0	11.3	12.3	16.5	1.24	0.08	0



Stellar Parameters For KIC 004919243

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5008^{+124}_{-149}	$3.631^{+1.048}_{-0.328}$	$-0.320^{+0.300}_{-0.300}$	$2.353^{+1.349}_{-1.799}$	$0.863^{+0.241}_{-0.197}$	$0.093^{+2.968}_{-0.060}$
	+2%/-3%	+29%/-9%	+94%/-94%	+57%/-76%	+28%/-23%	+3183%/-65%
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 004919243-02 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-561 ± 88	$6.09^{+5.04}_{-3.73}$	389^{+58}_{-80}	4818^{+2008}_{-765}	16741^{+98307}_{-11107}
Alt.	-283 ± 15	$6.09^{+5.60}_{-3.73}$	385^{+58}_{-83}	4176^{+1507}_{-653}	9050^{+51243}_{-6600}

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

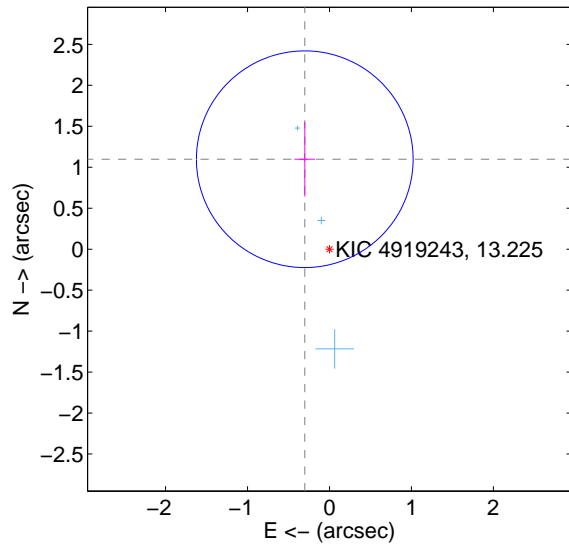
Supplemental centroid analysis for 004919243-02. Kepler magnitude: 13.22. Transit SNR 5.92

There are 3 quarters with good PRF difference image offsets

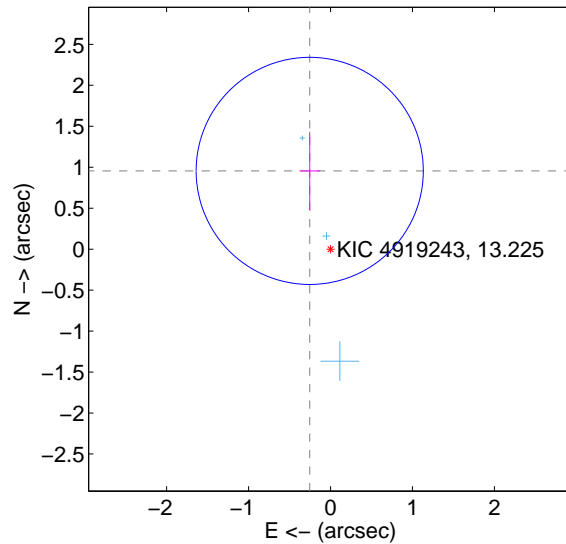
The direct PRF centroid is offset from the target star catalog position by about 0.20 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	1.138 ± 0.441	2.58	0.302 ± 0.125	1.098 ± 0.456
PRF-fit source offset from KIC position	0.988 ± 0.462	2.14	0.254 ± 0.126	0.955 ± 0.477
photometric centroid source offset	0.48 ± 0.42	1.14	-0.03 ± 0.43	-0.48 ± 0.42

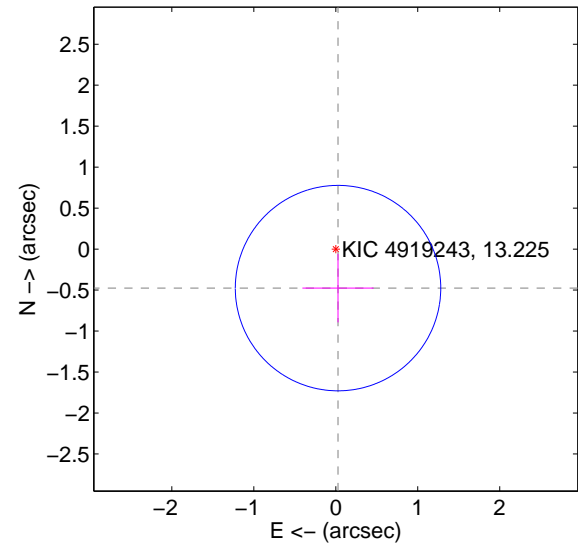
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

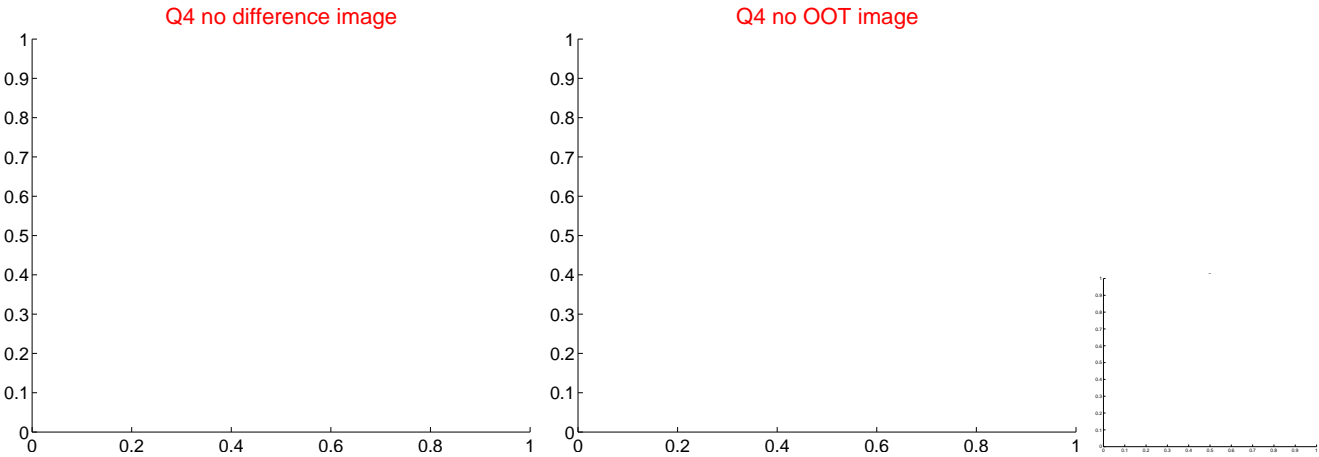
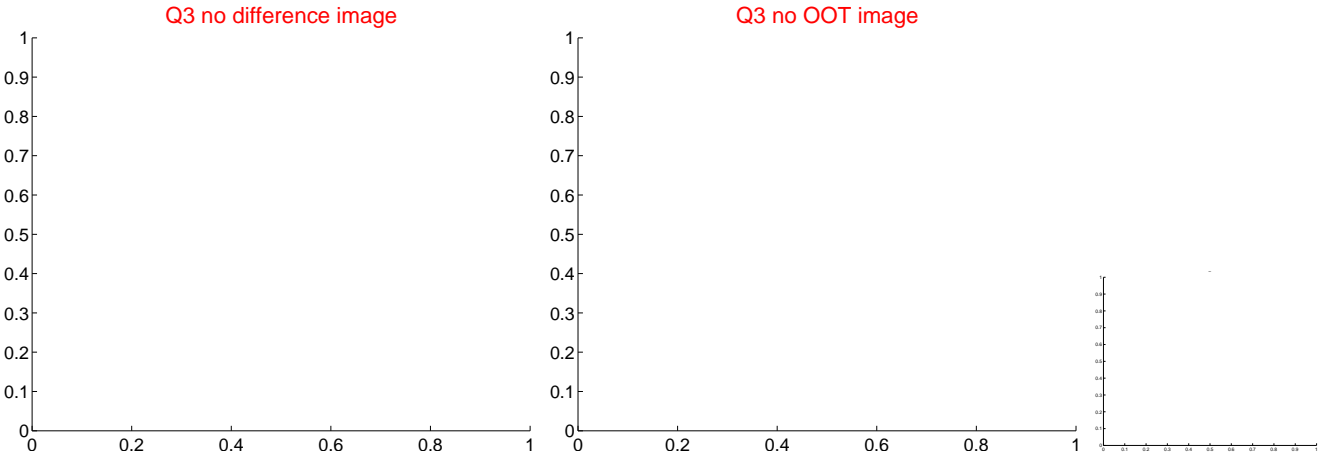
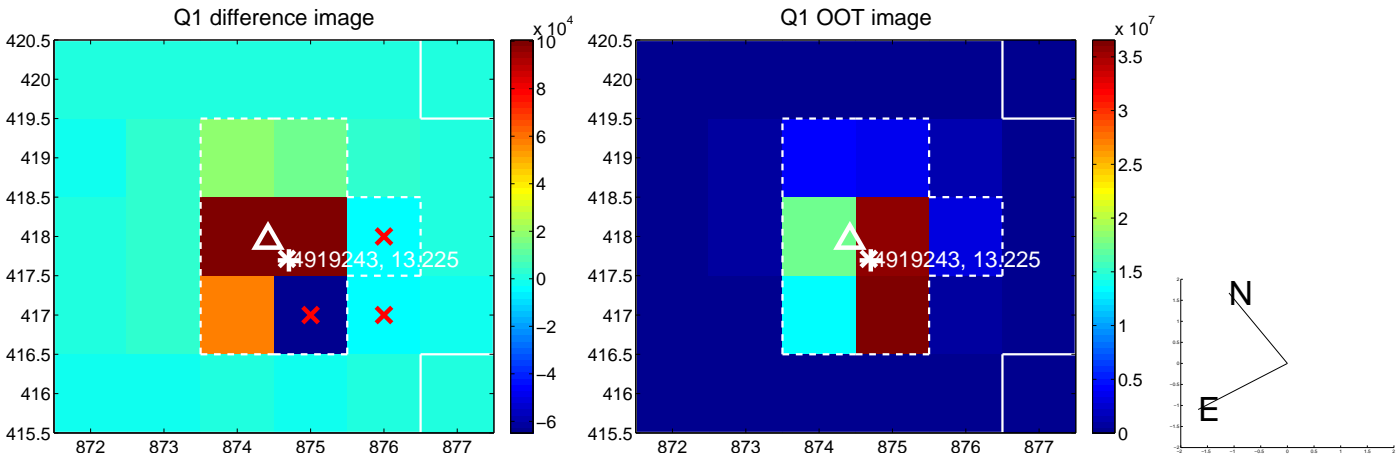


offset from photometric centroids



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.

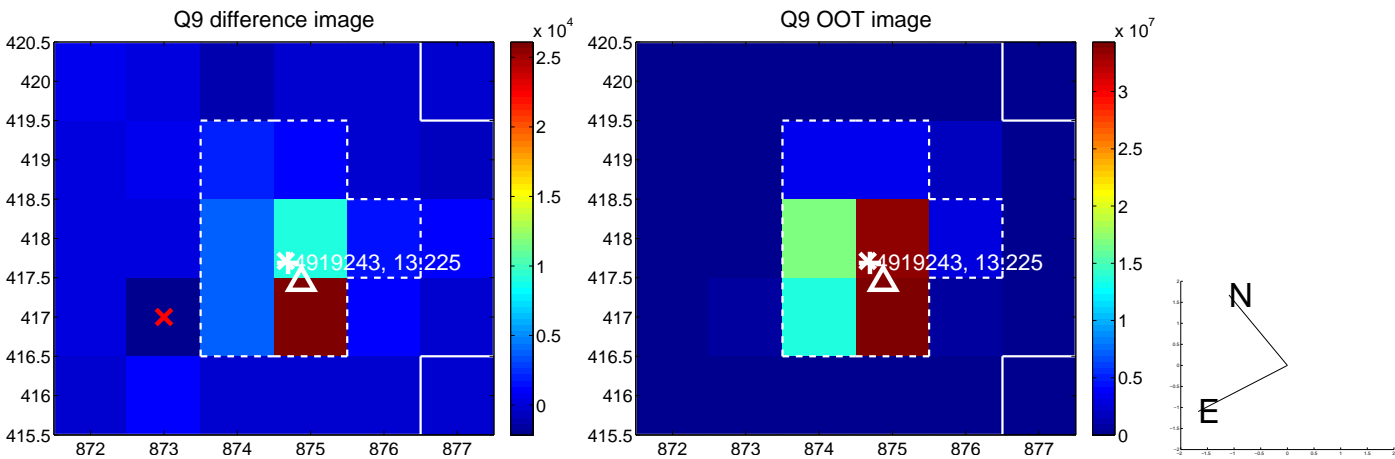
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



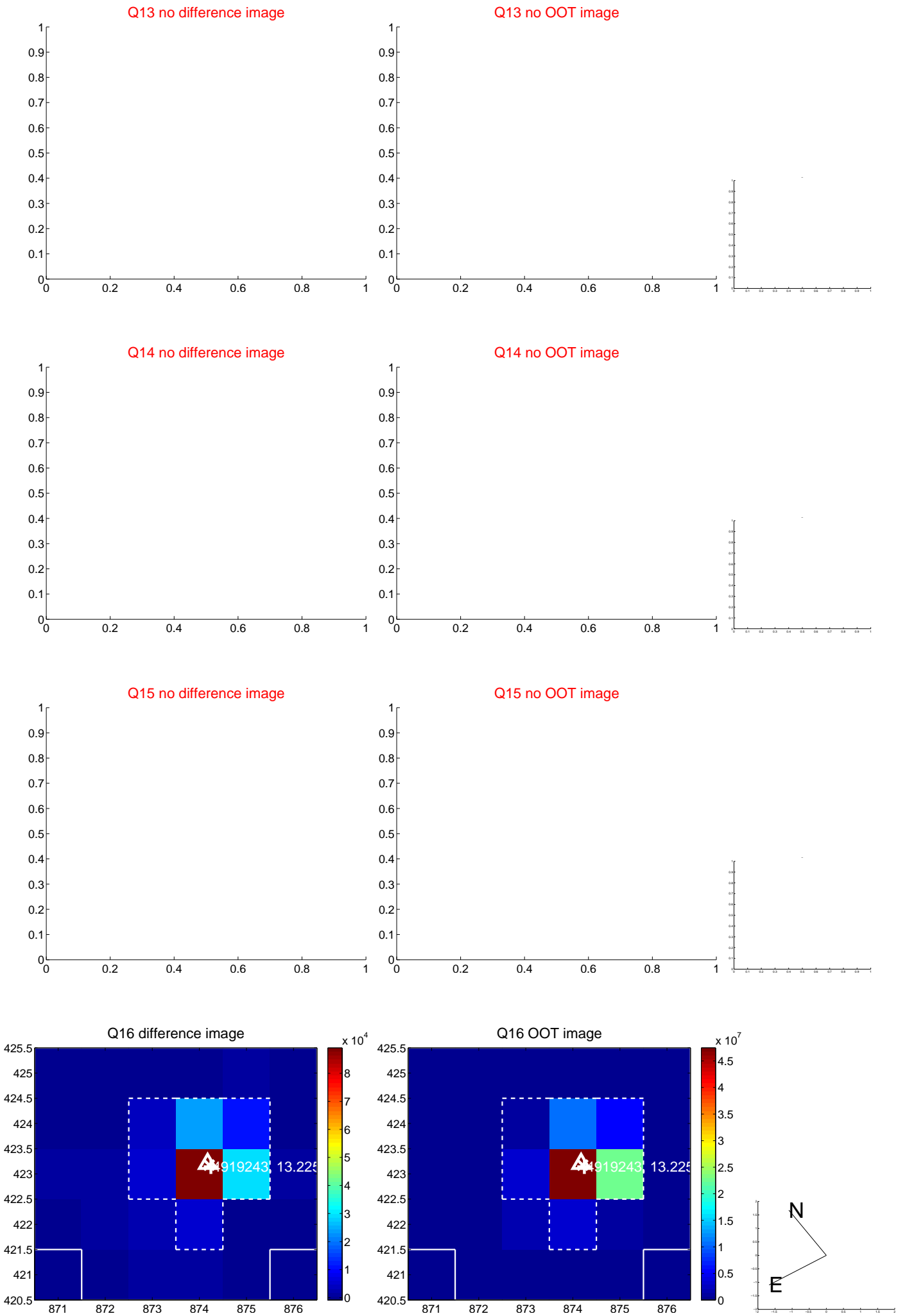
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



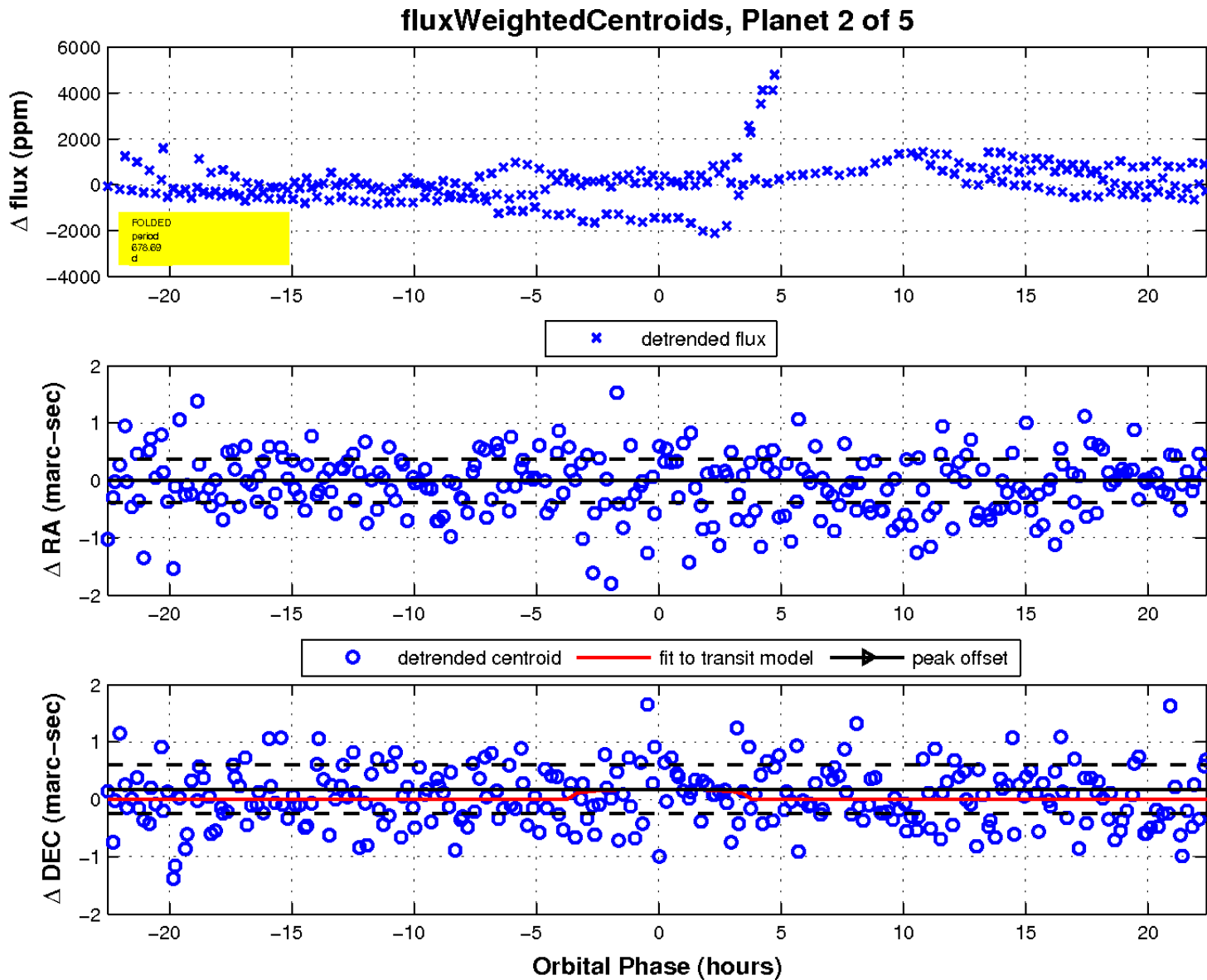
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ×: large negative pixel value.



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

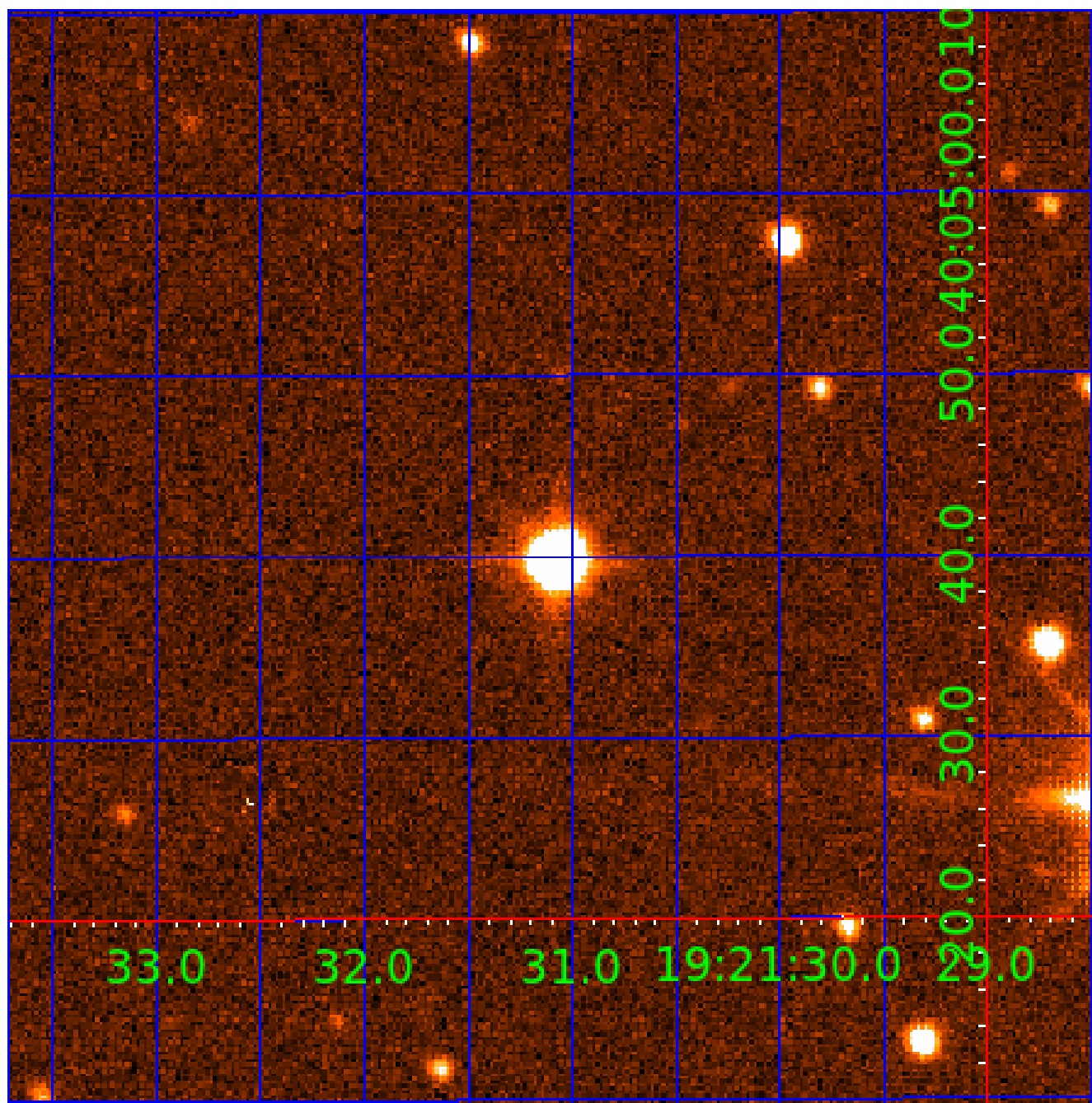


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 004919243

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})
004919243-01	OBS	No	507.644997	174.366957	331.4	11.005	17.4	3.3	2.35	5008	4.29	2.22
004919243-02	OBS	No	678.691387	136.363745	636.8	7.526	19.8	5.9	2.35	5008	6.32	1.51
004919243-04	OBS	No	371.477440	366.393844	711.3	3.259	13.6	6.9	2.35	5008	6.85	3.36

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
004919243-01	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_TRACKER—LPP_DV—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919243-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS
004919243-04	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_CHASES_MARSHALL—LPP_DV—ALL_TRANS_CHASES—MOD_NONUNIQ_DV—MOD_TER_DV—MOD_POS_DV—INCONSISTENT_TRANS—CENT_FEW_DIFFS

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

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

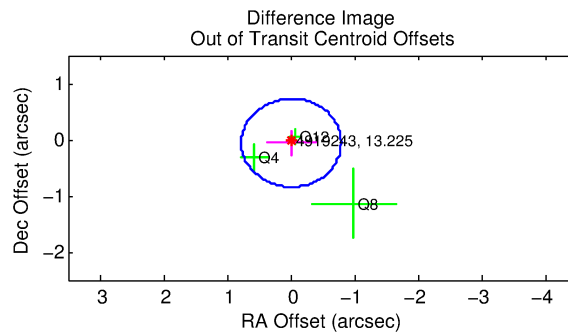
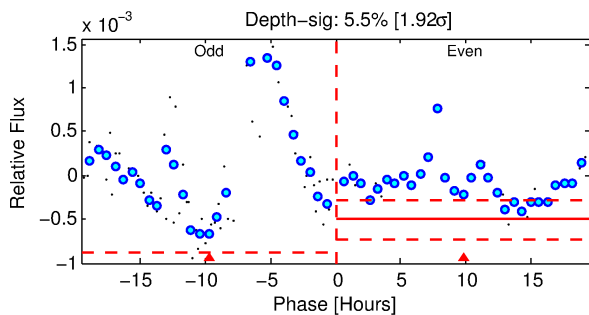
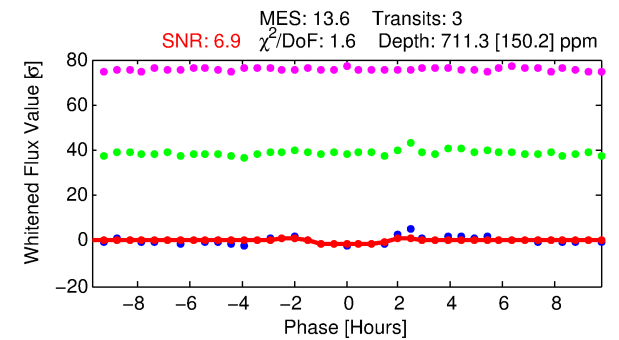
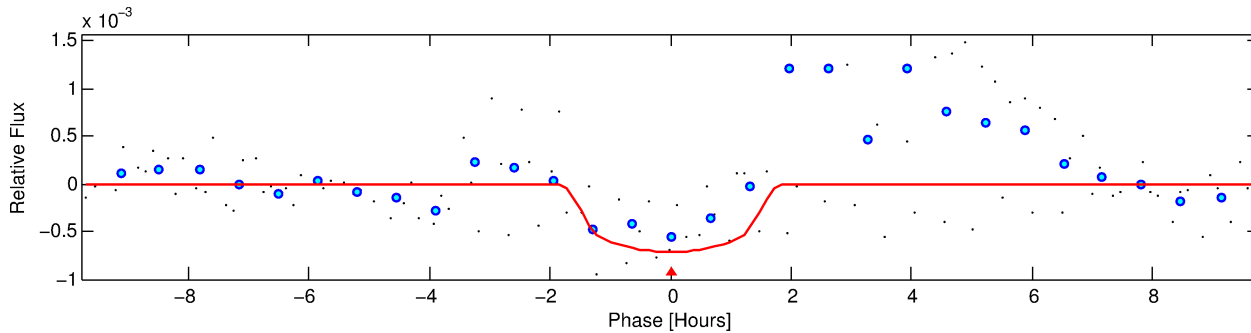
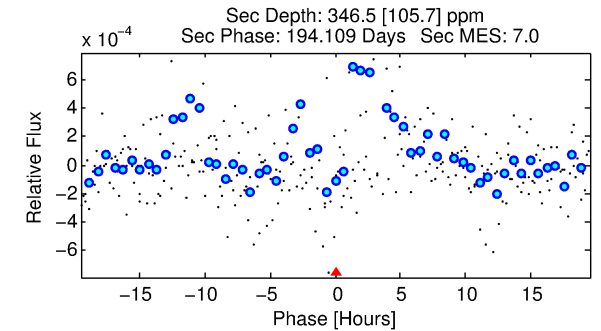
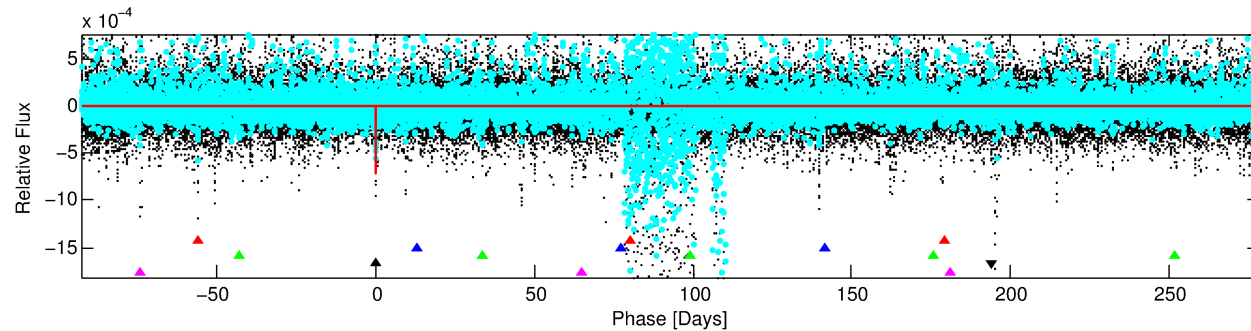
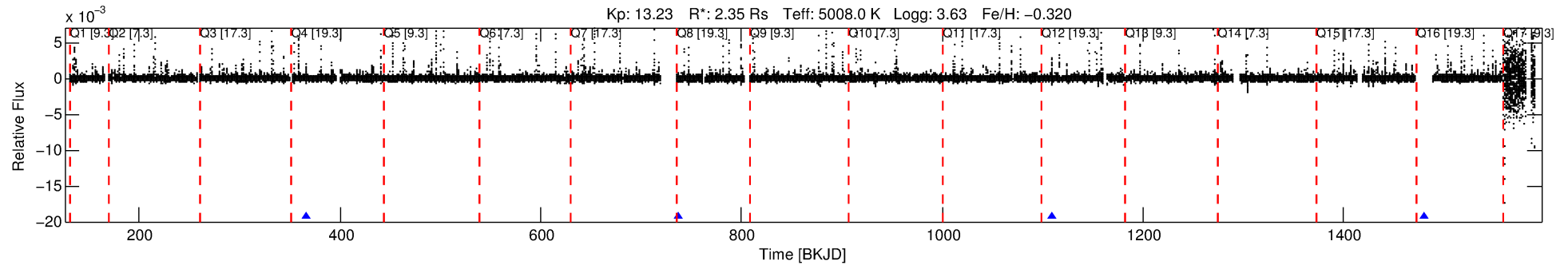
See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 004919243-04

No Significant Match Found

DV One-Page Summary

KIC: 4919243 Candidate: 4 of 5 Period: 371.477 d



DV Fit Results:

Period = 371.47744 [0.00661] d
Epoch = 366.3938 [0.0077] BKJD
Rp/R* = 0.0267 [0.0378]
a/R* = 607.12 [3126.60]
b = 0.75 [3.01]
Seff = 3.36 [5.69]
Teq = 345 [146] K
Rp = 6.85 [11.03] Re
a = 0.9632 [0.9173] AU
Ag = 3769.75 [12489.40] [0.30σ]
Teffp = 4183 [2984] K [1.28σ]

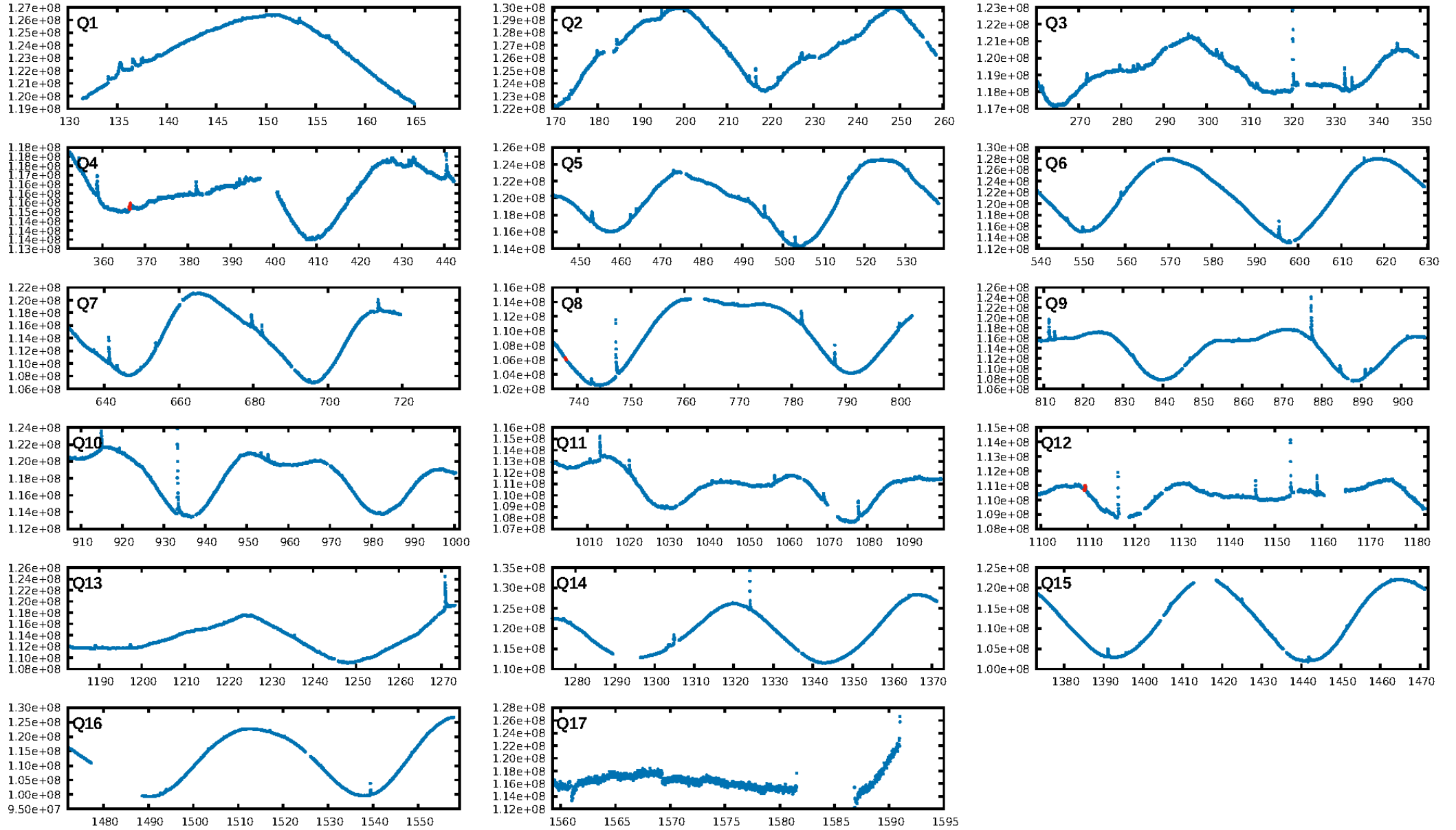
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [442.42σ]
LongPeriod-sig: 100.0% [501.84σ]
ModelChiSquare2-sig: 0.6%
ModelChiSquareGof-sig: 53.1%
Bootstrap-pfa: N/A
RollingBand-fgt: 1.00 [3/3]
GhostDiagnostic-chr: 3.545
Centroid-sig: 42.2%
Centroid-so: 0.673 arcsec [1.10σ]
OotOffset-rm: 0.059 arcsec [0.23σ]
KicOffset-rm: 0.218 arcsec [0.73σ]
OotOffset-st: 0/0/3/0 [3]
KicOffset-st: 0/0/3/0 [3]
DiffImageQuality-fgm: 0.67 [2/3]
DiffImageOverlap-fno: 1.00 [3/3]

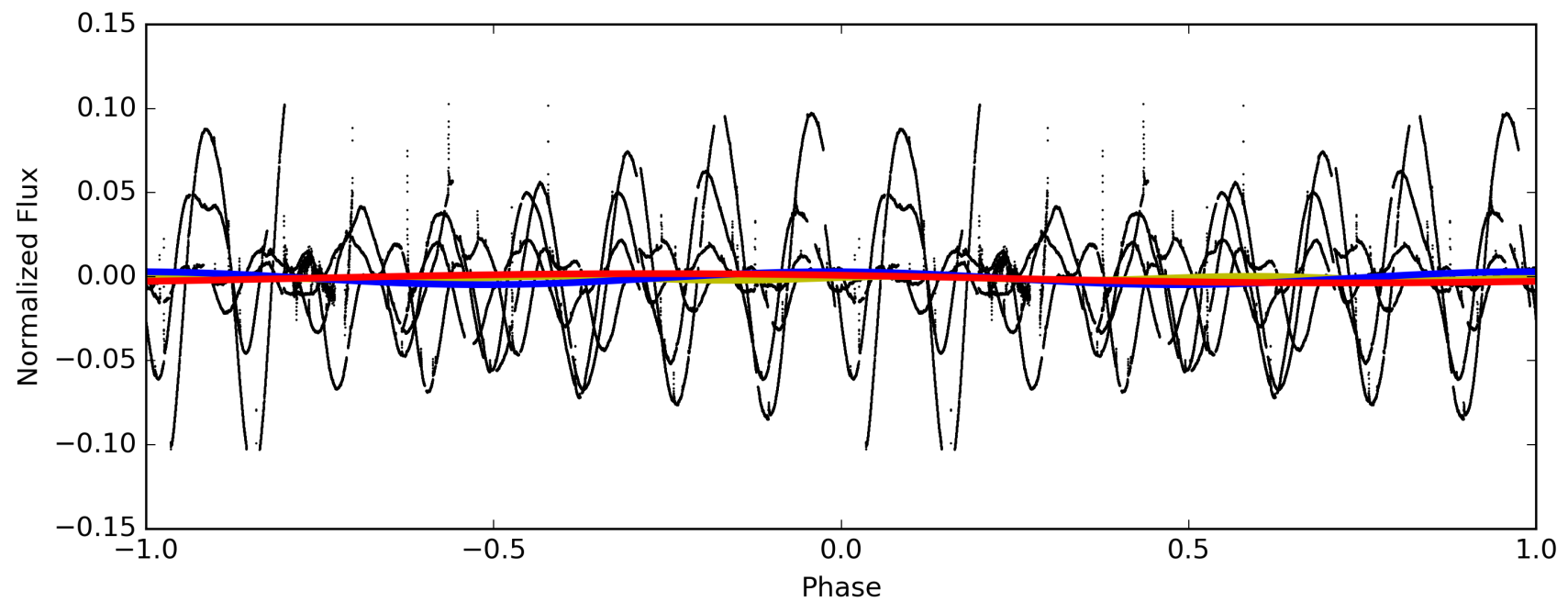
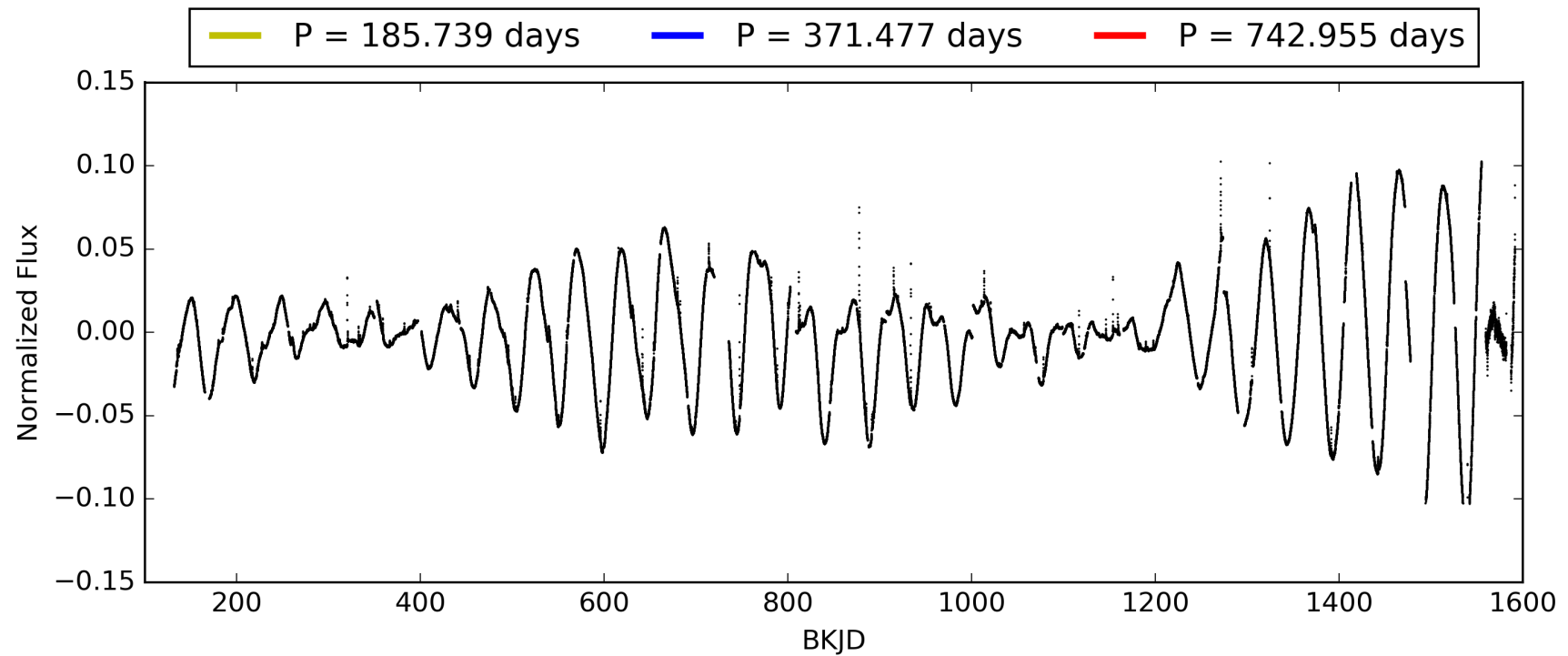
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 13:11:47 Z

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

TCE 004919243-04, PDC Light Curves

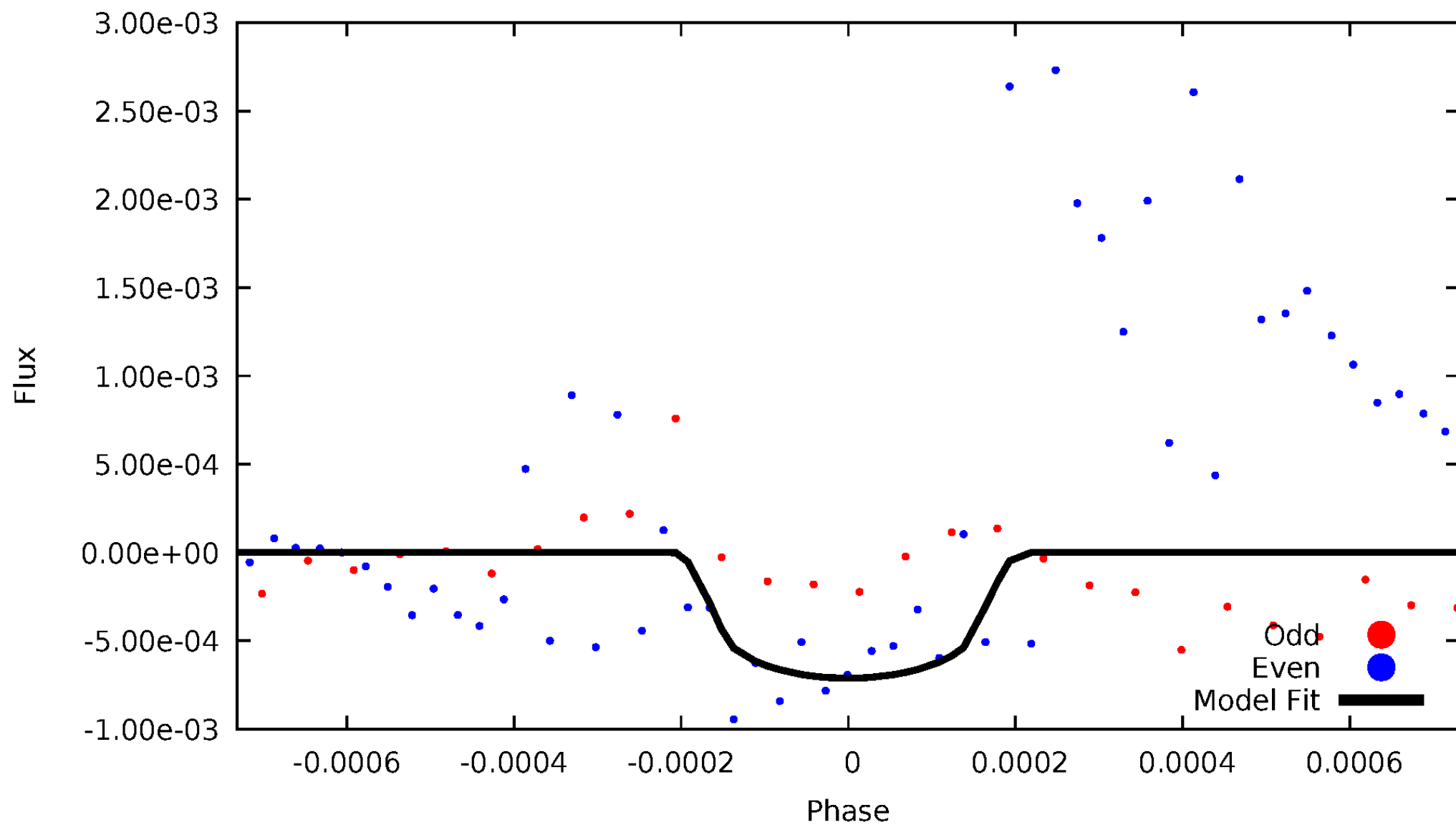


TCE 004919243-04



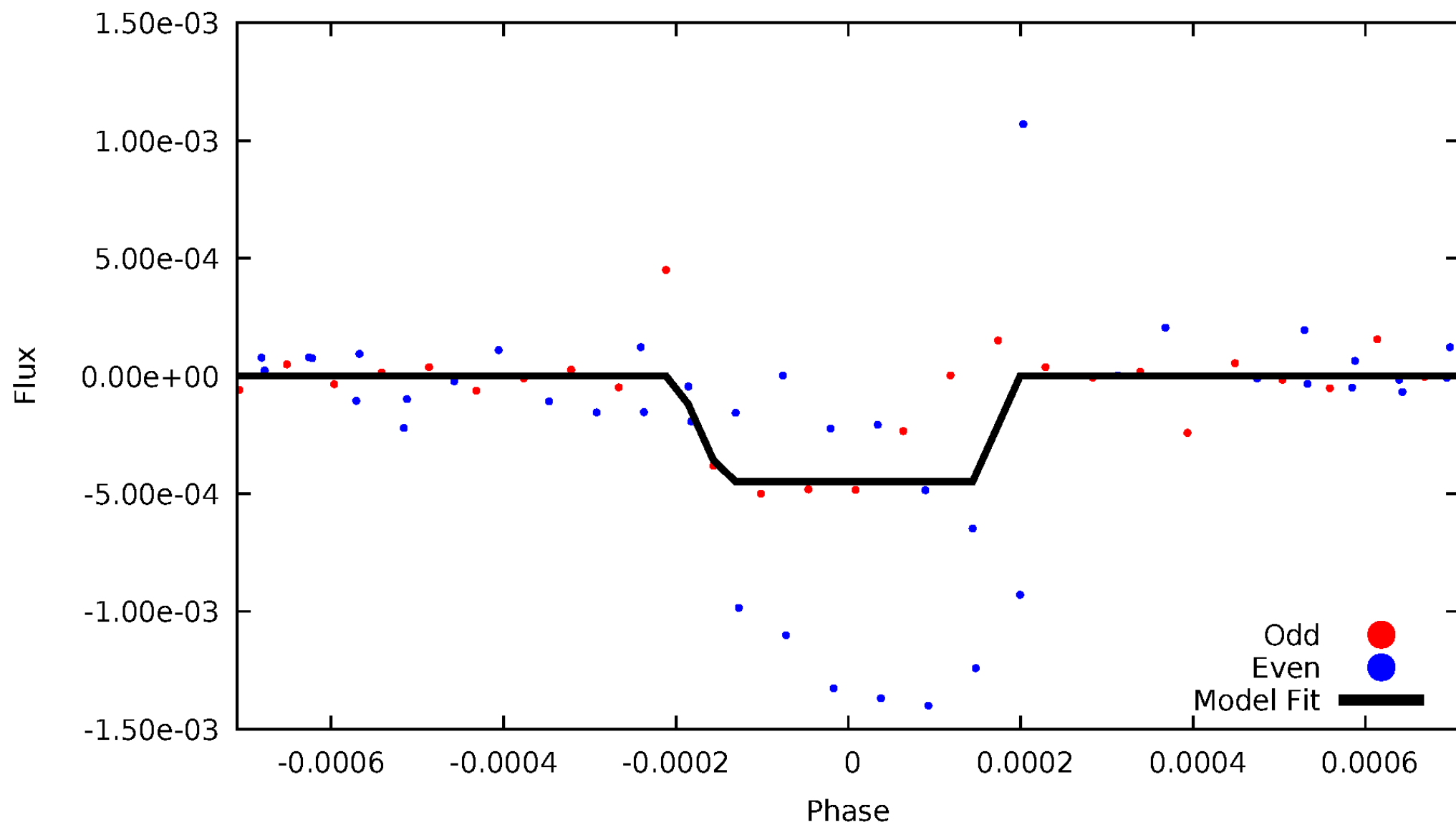
DV Odd/Even

TCE 004919243-04



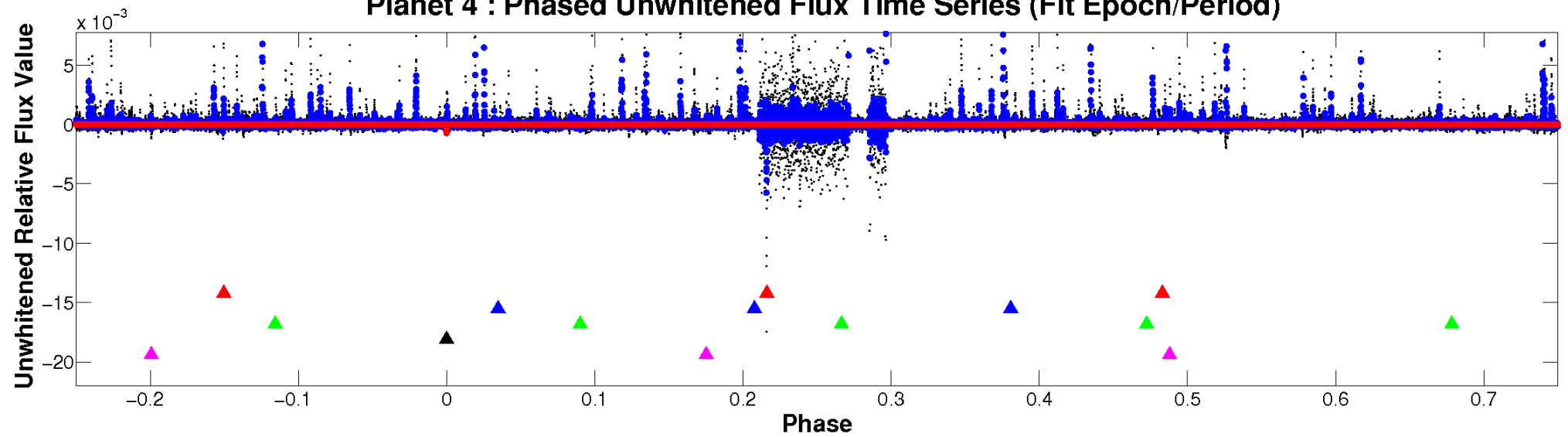
ALT Odd/Even

TCE 004919243-04

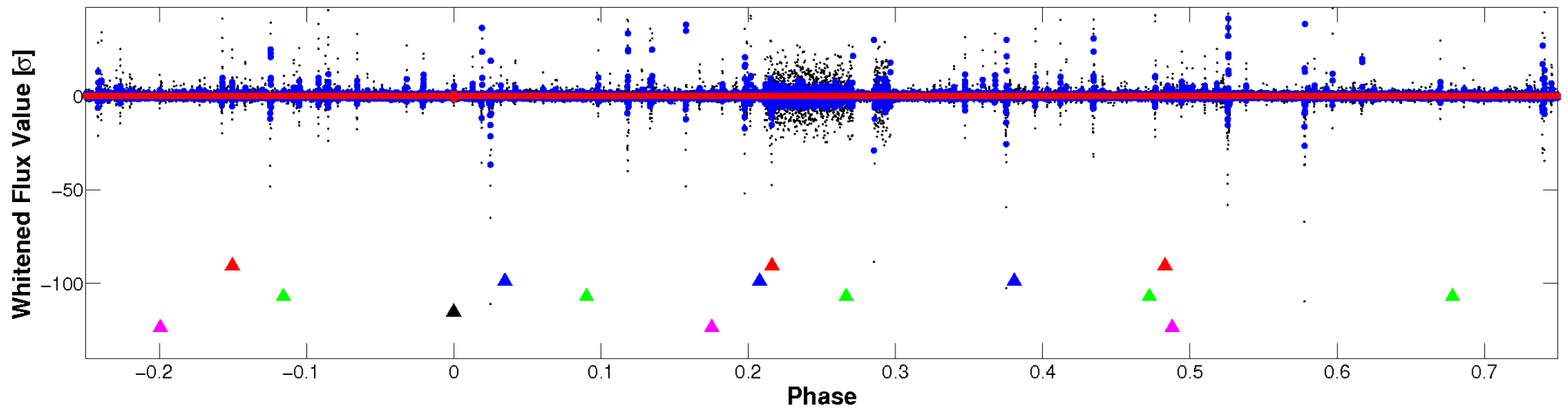


Non-Whitened Vs. Whitened Light Curve

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

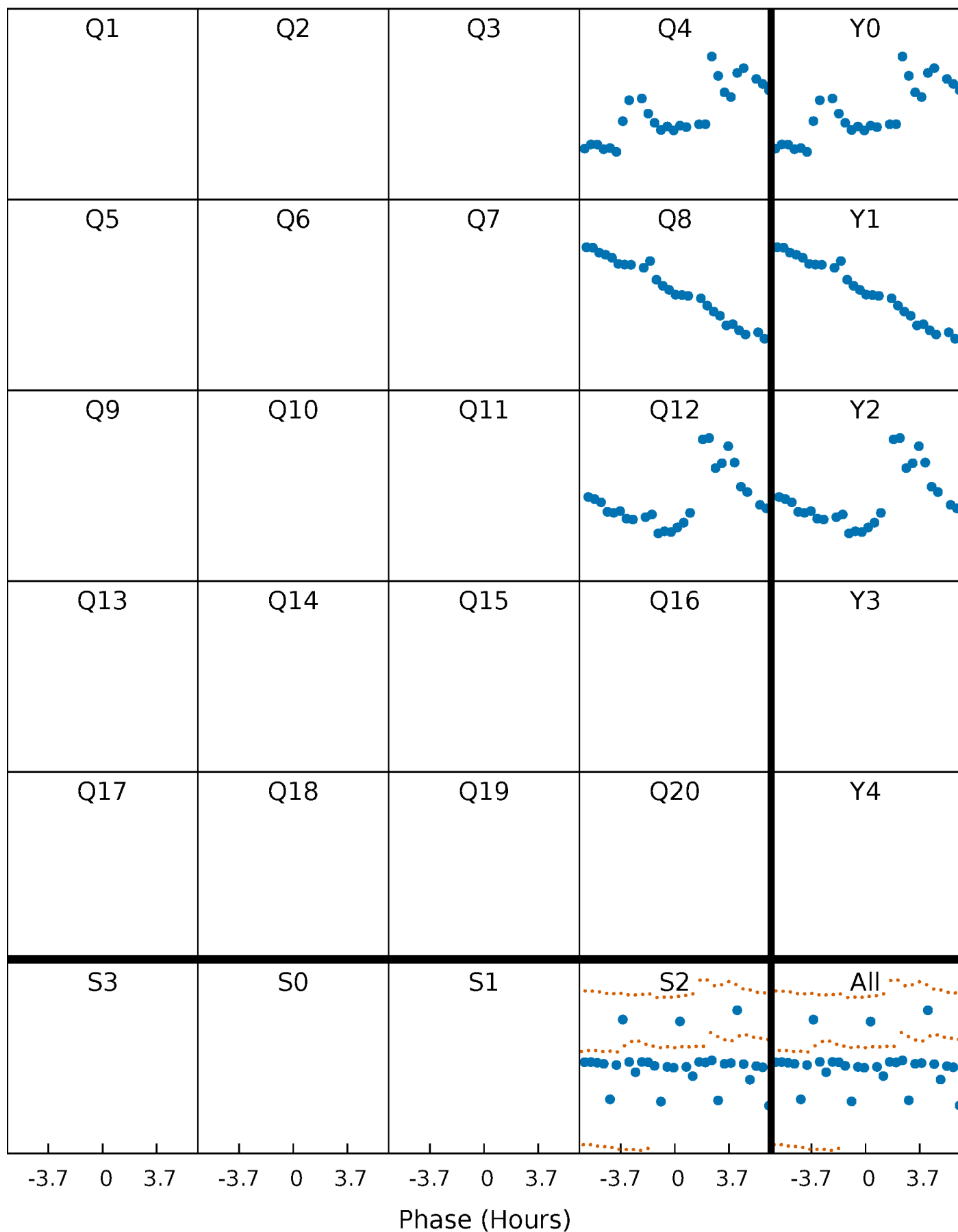


Planet 4 : Phased Whitened Flux Time Series (Fit Epoch/Period)



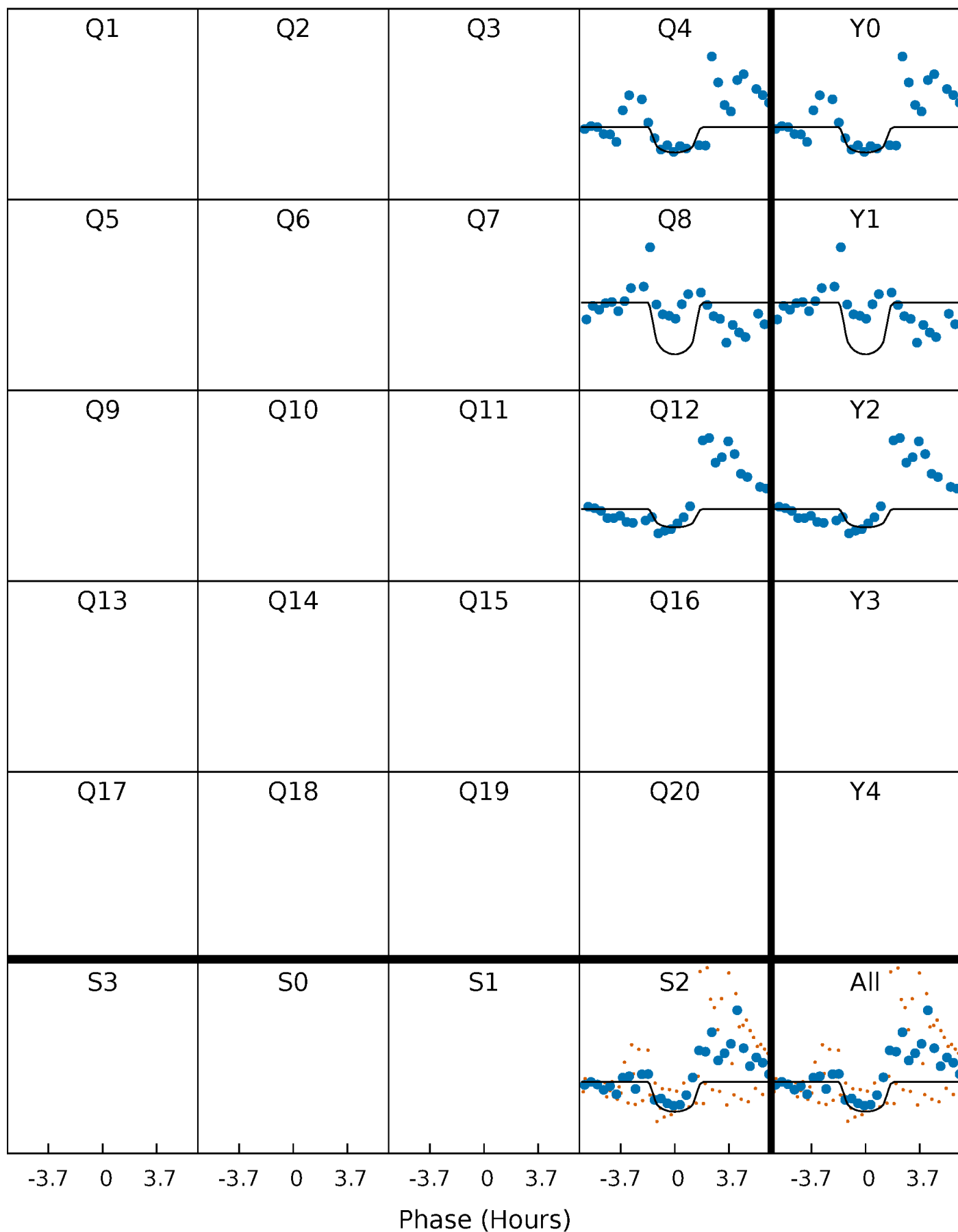
PDC Quarter-Phased Transit Curves

TCE 004919243-04 P=371.477440 Days $T_0=366.393844$ (BKJD)



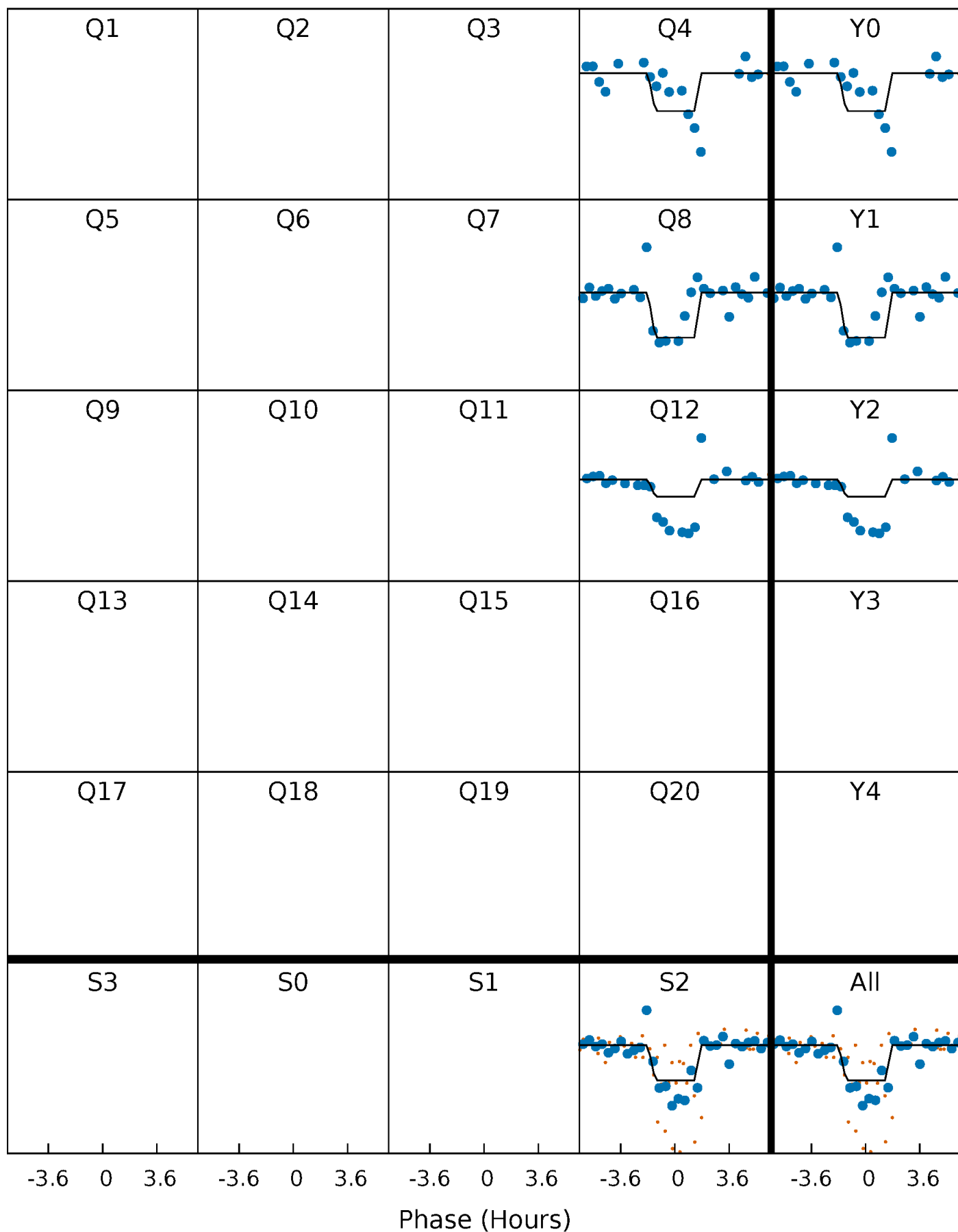
DV Quarter-Phased Transit Curves

TCE 004919243-04 $P=371.477440$ Days $T_0=366.393844$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

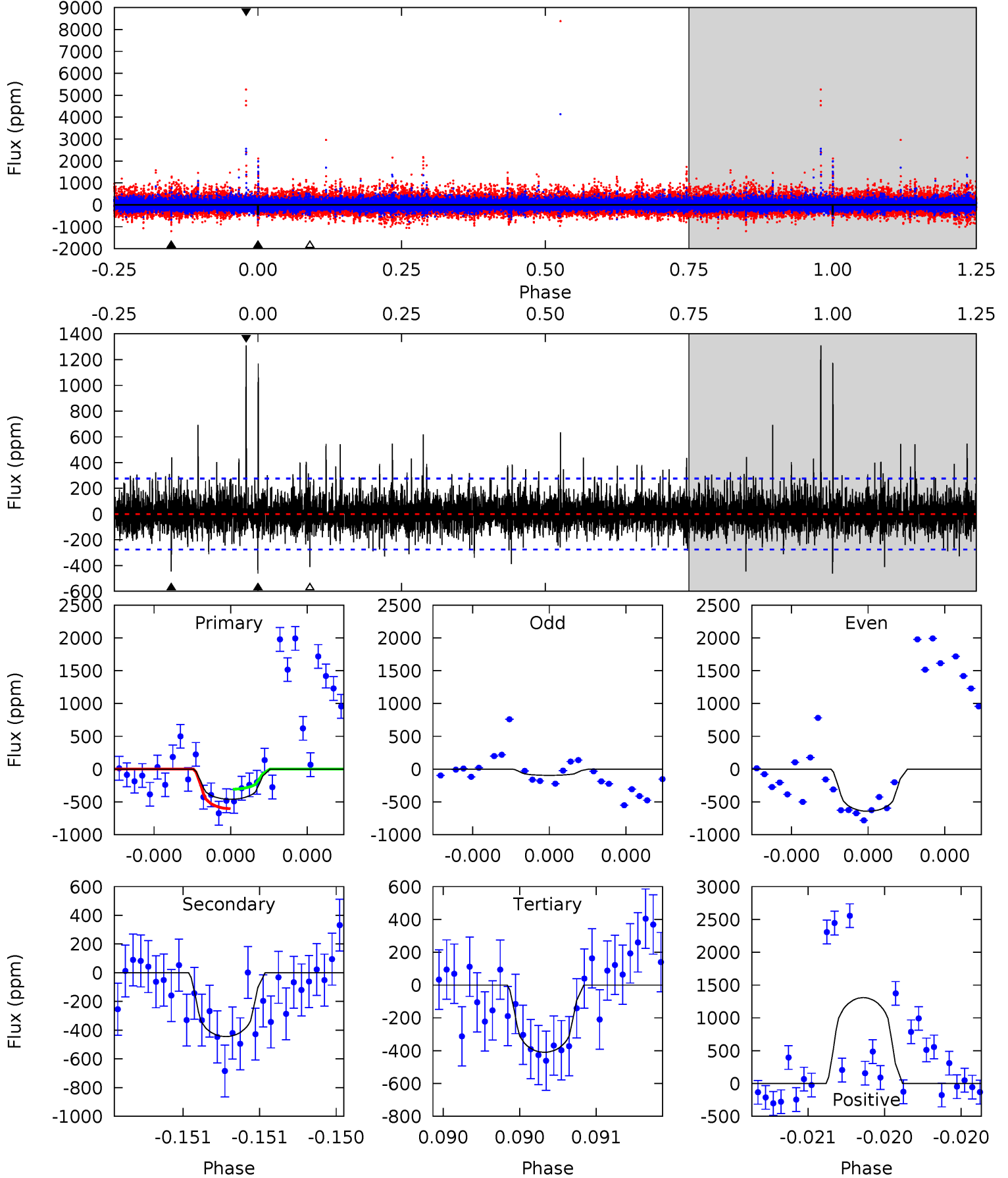
TCE 004919243-04 $P=371.471938$ Days $T_0=366.401154$ (BKJD)



DV Model-Shift Uniqueness Test

004919243-04, P = 371.477440 Days, E = 366.393844 Days

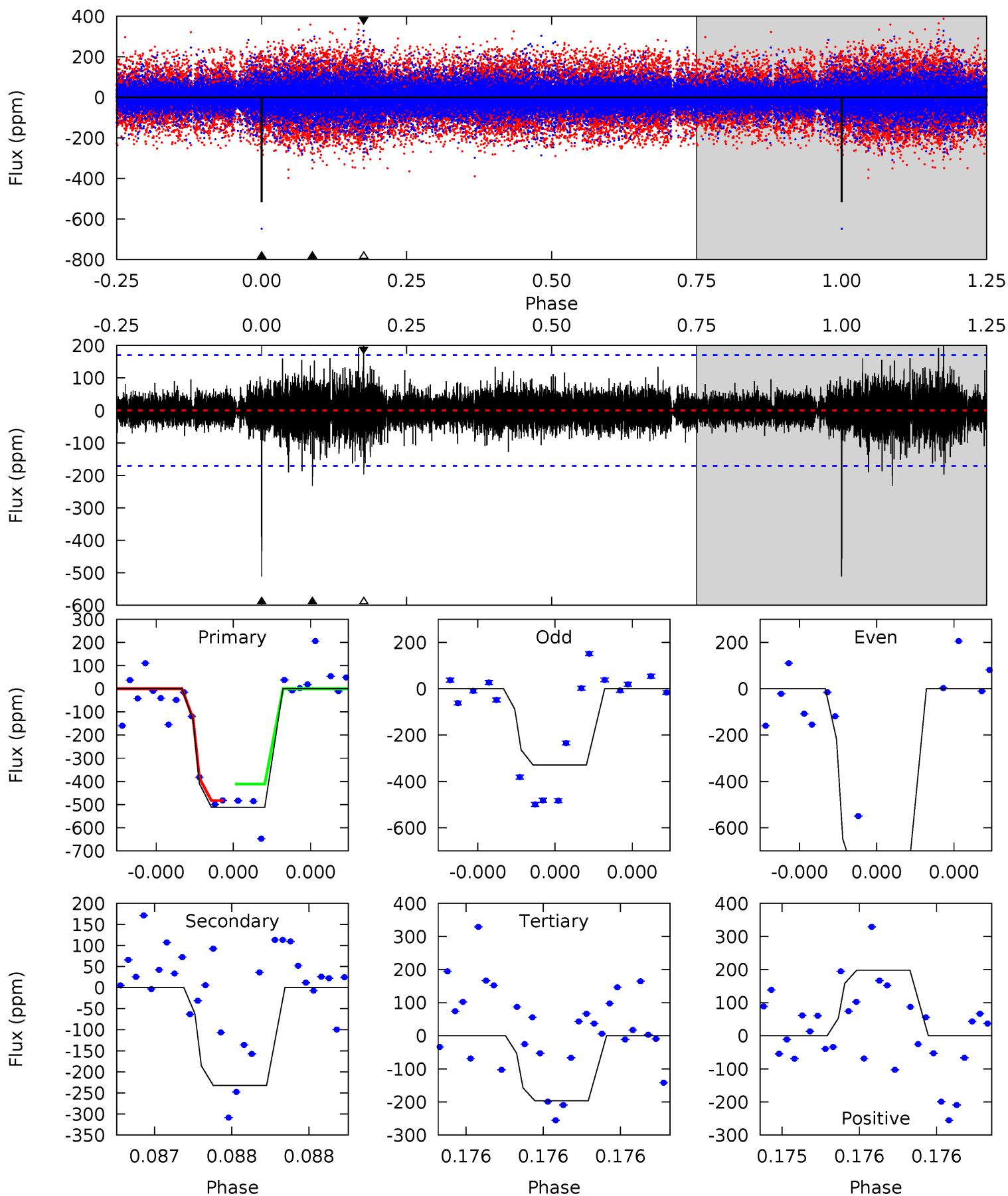
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.38	9.06	8.35	26.7	5.60	3.52	1.97	1.04	-17.3	0.71	-17.6	2.72	0.75	0.74	3.03



Alt Model-Shift Uniqueness Test

004919243-04, P = 371.471938 Days, E = 366.401154 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
16.9	7.66	6.49	6.52	5.63	3.57	0.97	10.4	10.4	1.17	1.13	8.62	1.87	0.28	0



Stellar Parameters For KIC 004919243

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	R (R_{\odot})	$M(M_{\odot})$	p_{\star} ($\text{g}\cdot\text{cm}^{-3}$)
	5008^{+124}_{-149}	$3.631^{+1.048}_{-0.328}$	$-0.320^{+0.300}_{-0.300}$	$2.353^{+1.349}_{-1.799}$	$0.863^{+0.241}_{-0.197}$	$0.093^{+2.968}_{-0.060}$
	+2%/-3%	+29%/-9%	+94%/-94%	+57%/-76%	+28%/-23%	+3183%/-65%
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 004919243-04 / KOI

Detrend	Depth (ppm)	R_p (R_{\oplus})	T_{max} (K)	T_{obs} (K)	A_{obs}
DV	-445 ± 49	$8.47^{+9.34}_{-5.75}$	472^{+69}_{-104}	4040^{+2225}_{-783}	3233^{+27600}_{-2524}
Alt.	-232 ± 30	$7.79^{+9.80}_{-5.05}$	468^{+75}_{-94}	3636^{+1786}_{-646}	1972^{+14210}_{-1563}

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 $A_{obs} \gg 1.0$

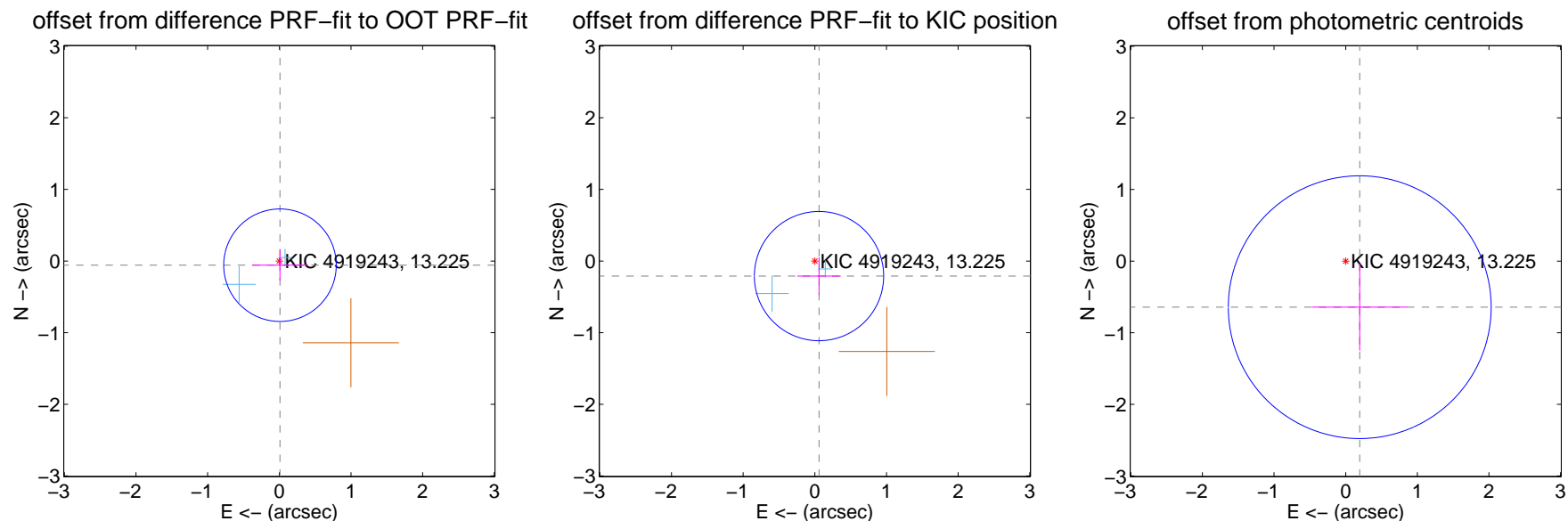
DV Centroid Data

Supplemental centroid analysis for 004919243-04. Kepler magnitude: 13.22. Transit SNR 6.89

There are 2 quarters with good PRF difference image offsets

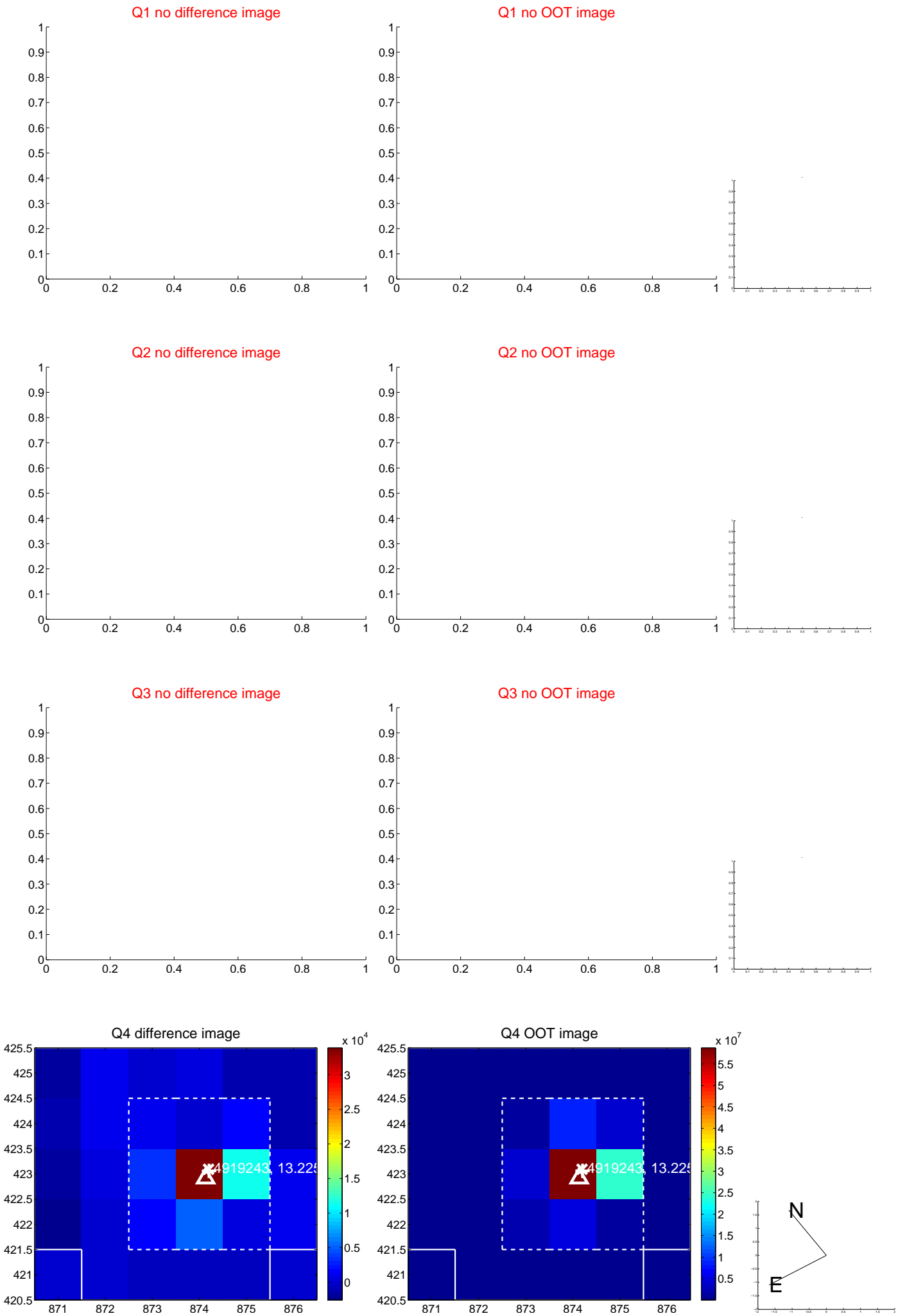
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	0.059 ± 0.262	0.23	-0.009 ± 0.390	-0.058 ± 0.214
PRF-fit source offset from KIC position	0.218 ± 0.301	0.73	-0.059 ± 0.303	-0.210 ± 0.263
photometric centroid source offset	0.67 ± 0.61	1.10	-0.20 ± 0.67	-0.64 ± 0.61

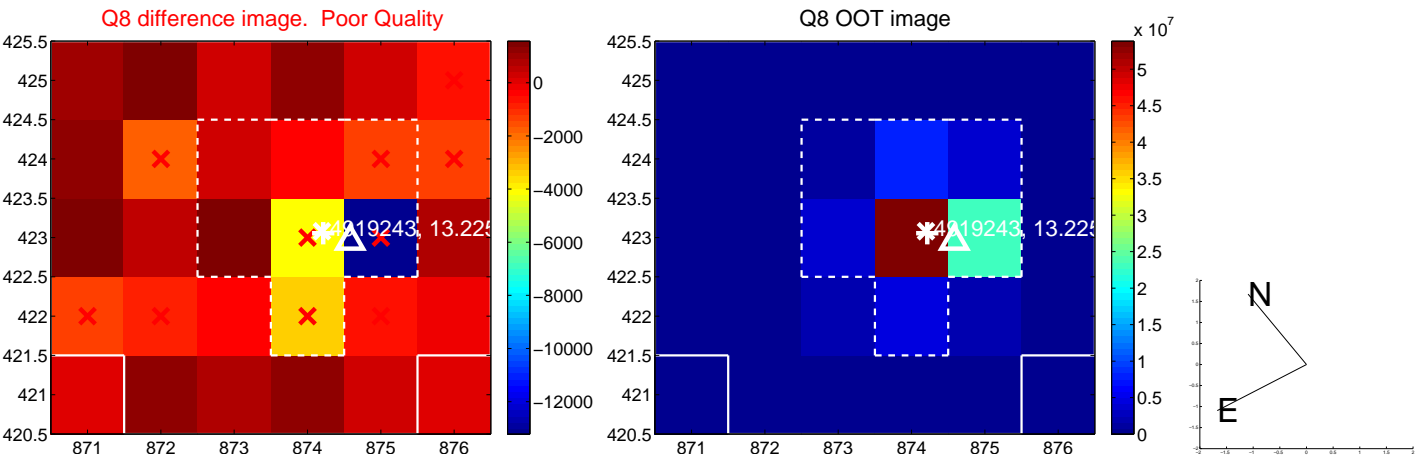


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ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

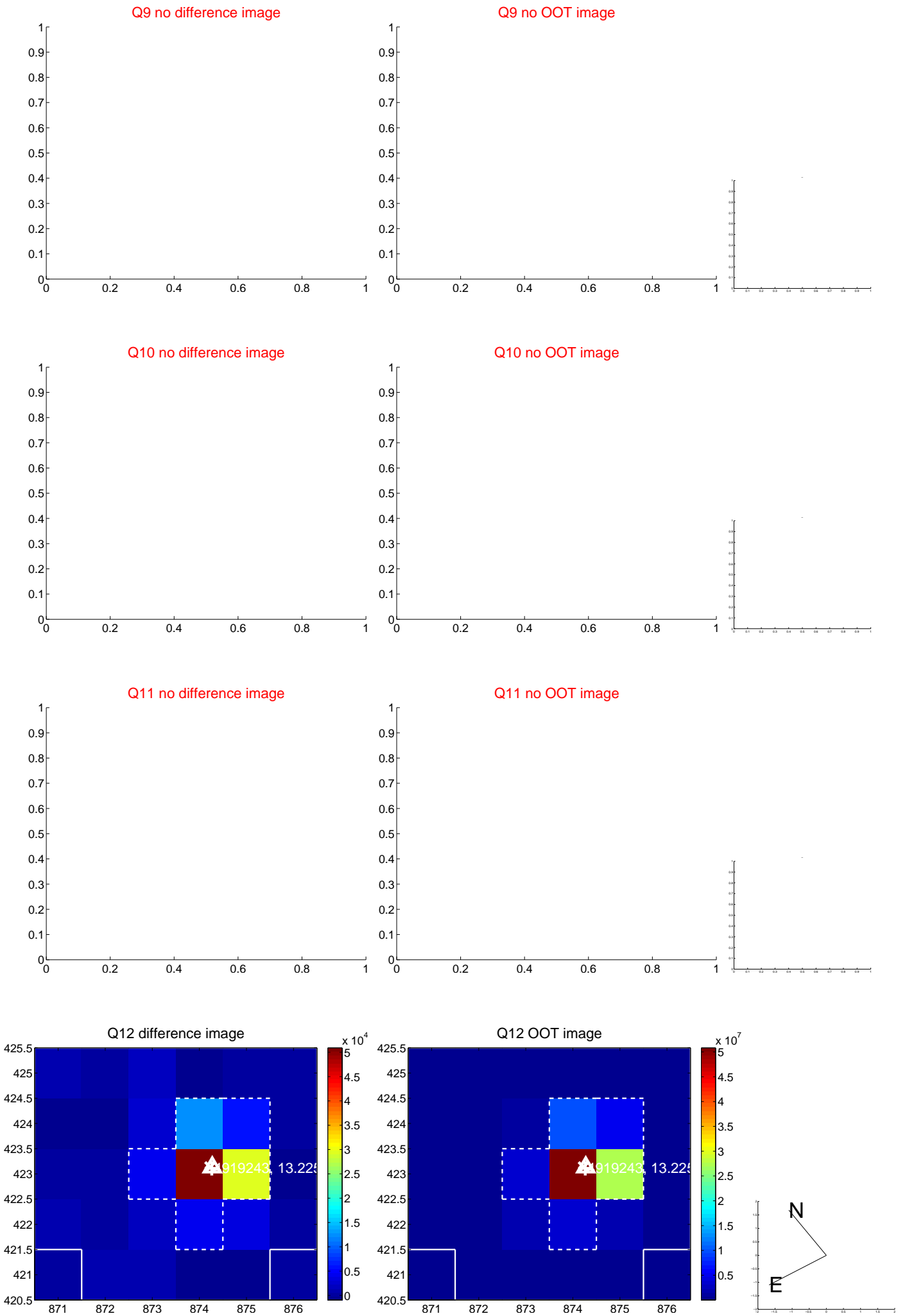
white ×: KIC target position; +: OOT centroid; △: difference centroid. red ✕: large negative pixel value.



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



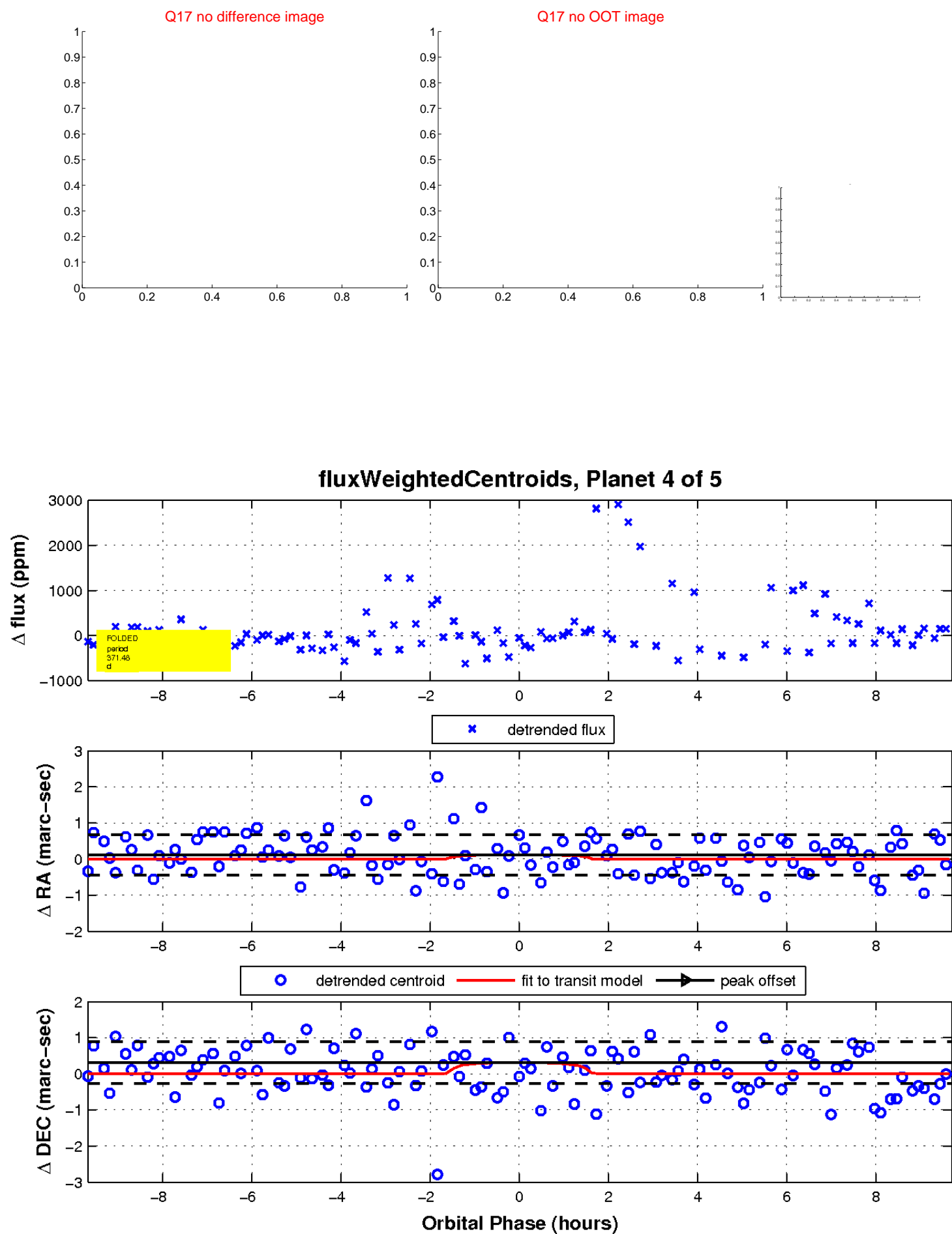
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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



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



UKIRT Image

Declination

